

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 = 98



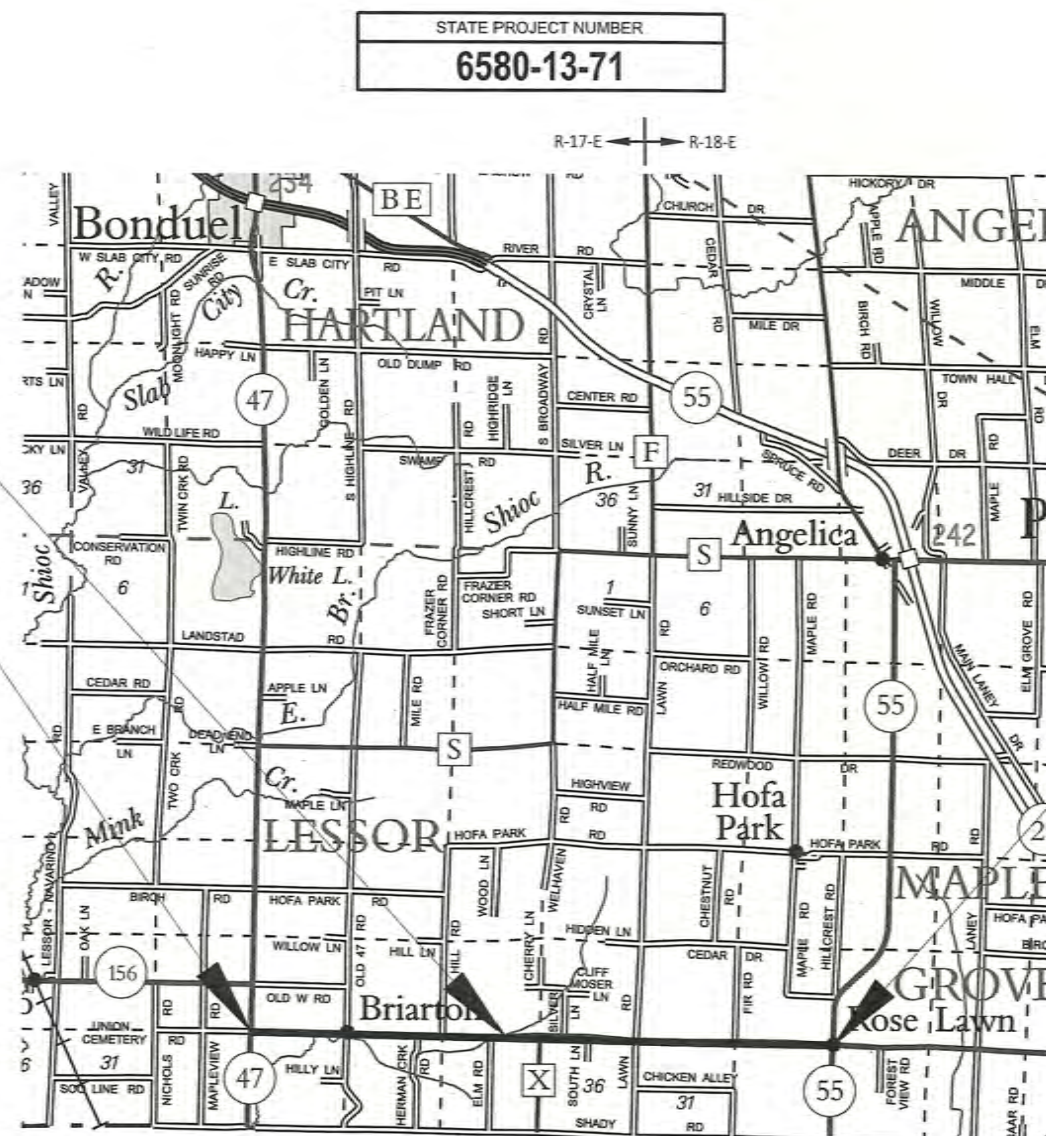
DESIGN DESIGNATION 6580-13-01

A.A.D.T.	2027	=	1490
A.A.D.T.	2047	=	1630
D.H.V.		=	175
D.D.		=	60/40
T.		=	17.00
DESIGN SPEED		=	55
ESALS		=	370,000

CONVENTIONAL SYMBOLS

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

PROFILE	
GRADE LINE	---
ORIGINAL GROUND	---
MARSH OR ROCK PROFILE (To be noted as such)	---
SPECIAL DITCH	---
GRADE ELEVATION	---
CULVERT (Profile View)	---
UTILITIES	
ELECTRIC	---
FIBER OPTIC	---
GAS	---
SANITARY SEWER	---
STORM SEWER	---
TELEPHONE	---
WATER	---
UTILITY PEDESTAL	---
POWER POLE	---
TELEPHONE POLE	---

STRUCTURE B-58-119
TO REMAINBEGIN PROJECT
STA 1+37
Y = 206,909.325
X = 902,502.602LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 5.966

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), SHAWANO 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 2012

STATE PROJECT

6580-13-71

FEDERAL PROJECT

PROJECT

WISC 2025609

CONTRACT

1

ORIGINAL PLANS PREPARED BY

exp U.S. Services Inc.
t +1.414.221.0688 | f +1.414.221.0637
241 N Broadway, Suite 203
Milwaukee, WI 53202
U.S.A.
www.exp.com• BUILDINGS • EARTH & ENVIRONMENT • ENERGY
• INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITYDATE: 4/23/2025
(Professional Engineer Signature)STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	EXP US SERVICES
Designer	EXP US SERVICES
Project Manager	TIMOTHY HANLEY
Regional Examiner	FRED SCHUNK
Regional Supervisor	NICHOLE LYSNE

APPROVED FOR THE DEPARTMENT

DATE: 4-23-25
Signature: Timothy R. Hanley

E

UTILITIES CONTACTS

ATC MANAGEMENT, INC.
ELECTRICITY -TRANSMISSION
CHRIS DAILEY
PO BOX 47
WAUKESHA, WI 53187
PHONE: 262-506-6884
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TDS TELECOM
COMMUNICATION
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SHERWOOD, WI 54169-9795
PHONE: 920-989-4027
EMAIL: NICK.PINGEL@TDSTELECOM.COM
MOBILE: 920-428-3234

CENTURYLINK COMMUNICATION, LLC
COMMUNICATION
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3235 INTERTECH DR, SUITE 600
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PHONE: 608-658-2899
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WE ENERGIES
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APPLETON, WI 54914
PHONE: 920-380-3458
EMAIL: ZACHARY.DUGA@WE-ENERGIES.COM
MOBILE: 920-450-9314

NSIGHT TELS ERVICES
COMMUNICATION
RICK VINCENT
470 SECURITY BLVD
GREEN BAY, WI 54313
PHONE: 920-617-7316
EMAIL: RICK.VINCENT@NSIGHT.COM

WISCONSIN PUBLIC SERVICE CORPORATION
GAS/PETROLEUM
ADAM VANDENHOUTEN
2850 S ASHLAND AVE
GREEN BAY, WI 54304
PHONE: 920-617-5231
EMAIL: ADAM.VANDENHOUTEN@WISCONSINPUBLICSERVICE.COM

WISCONSIN DNR LIAISON

JIM DOPERALSKI JR.
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2984 SHAWANO AVE
GREEN BAY, WI 54313
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EMAIL: JAMES.DOPERALSKI@WISCONSIN.GOV

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
CULVERT DETAILS
TRAFFIC CONTROL
ALIGNMENT DETAIL

GENERAL NOTES

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

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 53 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.44 ACRES

DIGGERSHOTLINE

Dial 811 or (800)242-8511

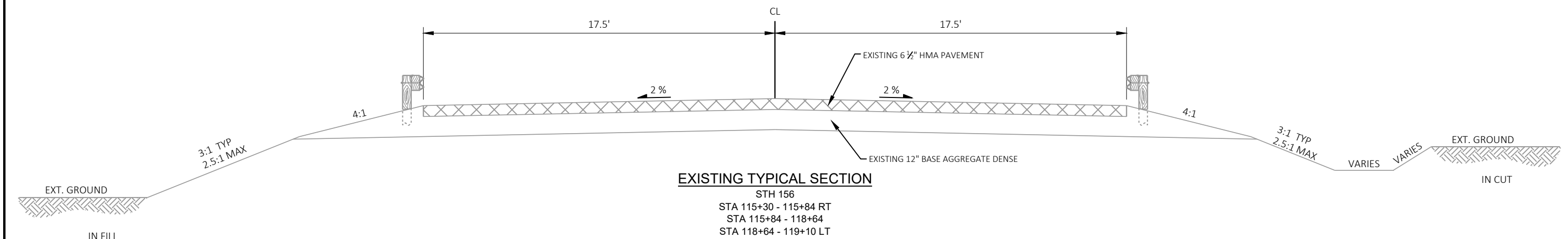
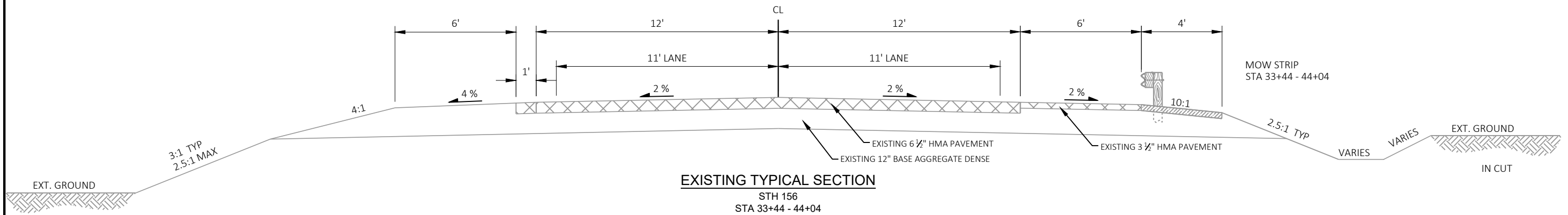
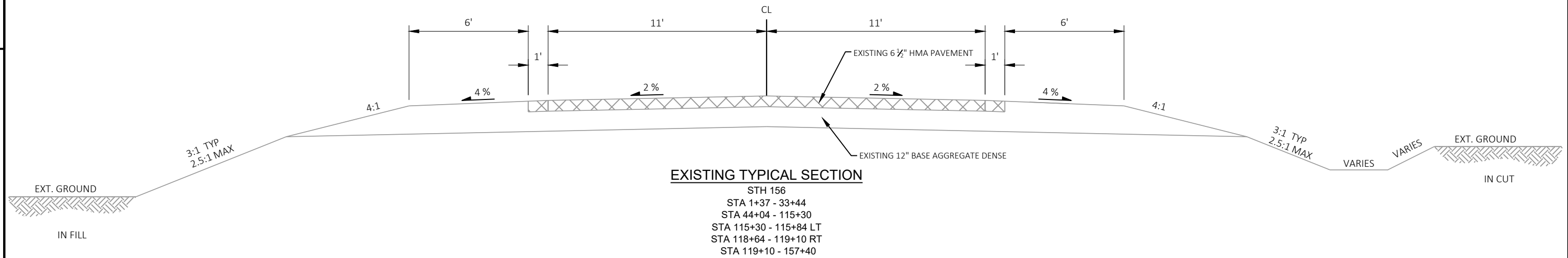
www.DiggersHotline.com

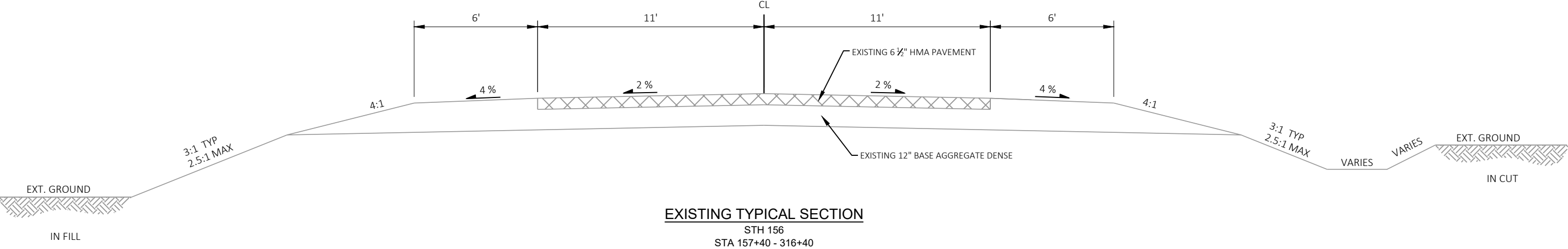


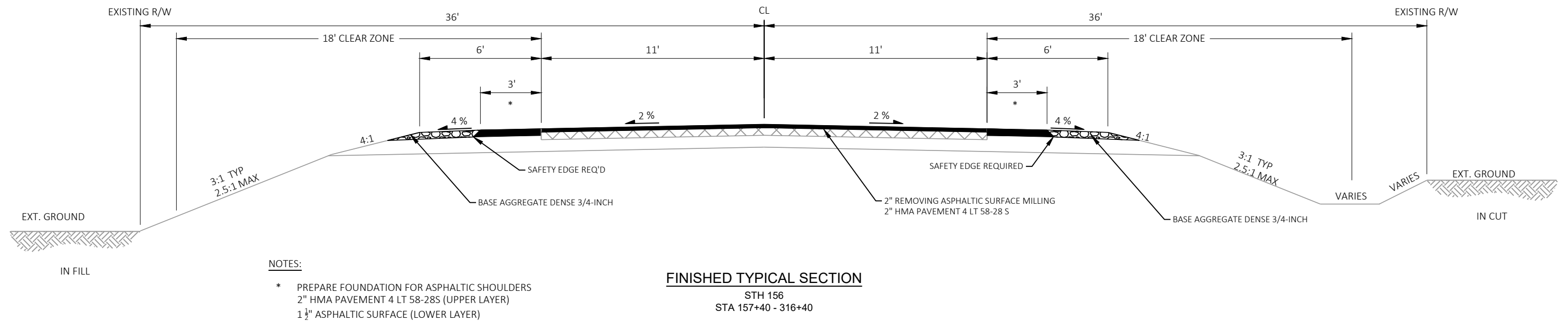
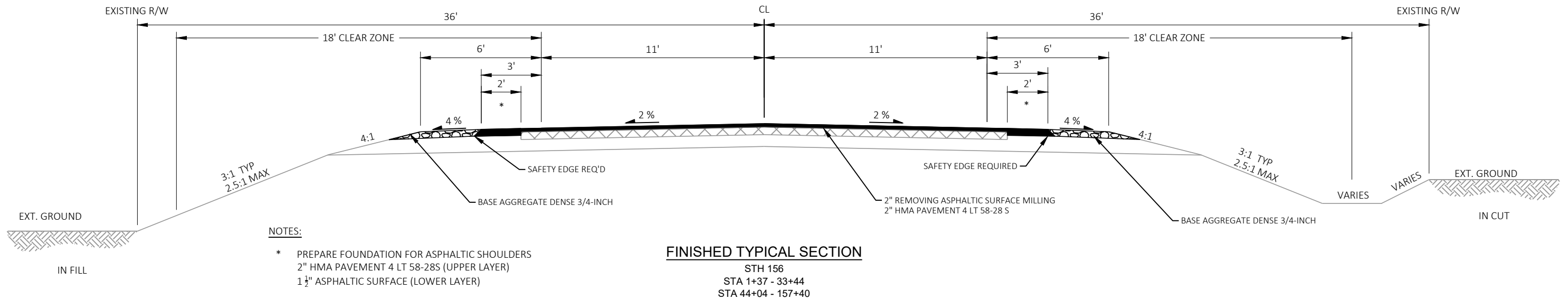
PROJECT NO: 6580-13-71	HWY: STH 156	COUNTY: SHAWANO	PROJECT OVERVIEW	SHEET	E
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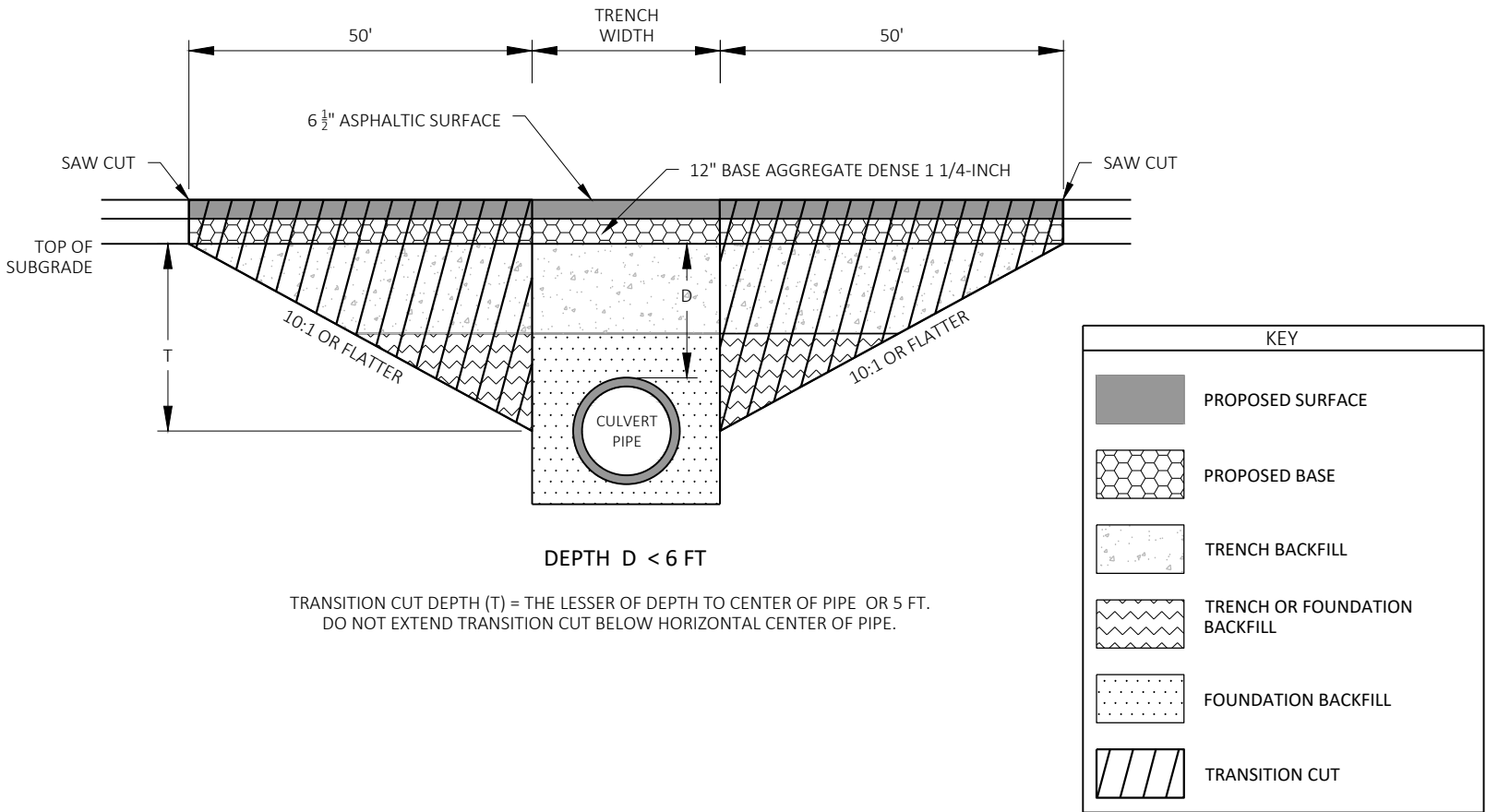
PROJECT NO: 6580-13-71	HWY: STH 156	COUNTY: SHAWANO	PROJECT OVERVIEW	SHEET	E
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CULVERT PIPE TRANSITION		
ROUTE	STATION	DEPTH (FT)
STH 156	13+36	1
STH 156	88+80	1
STH 156	95+80	1
STH 156	117+43	3
STH 156	160+05	0.5
STH 156	181+15	1.25
STH 156	209+55	0.5
STH 156	231+55	0.5
STH 156	239+47	0.5
STH 156	253+68	1.5
STH 156	313+54	0.5



NOTES

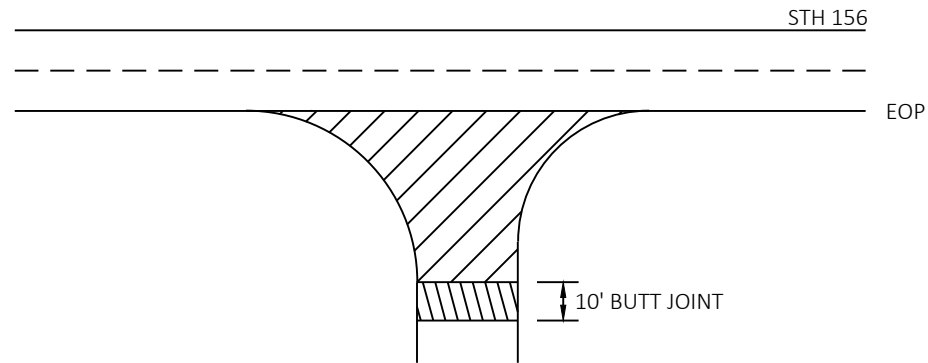
TRANSITION CUT IS PAID AS EXCAVATION COMMON.

TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.

BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.

PERFORM CULVERT PIPE INSTALLATION BEFORE MILLING AND PAVING.

CULVERT PIPE TRANSITION DETAIL
(SEE CULVERT DETAILS AND CROSS SECTIONS FOR LOCATION INFORMATION)

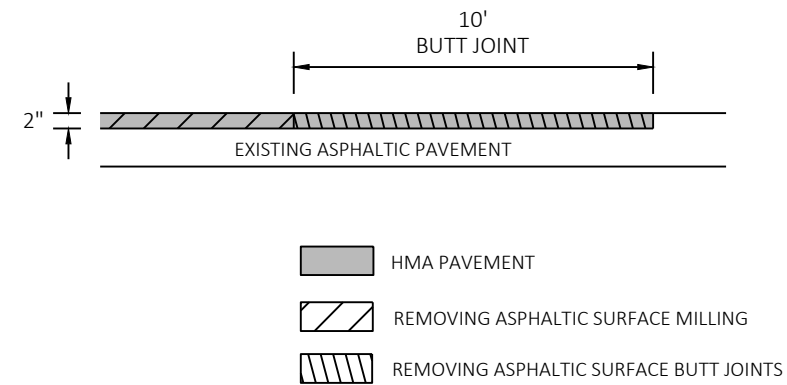


-  REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

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

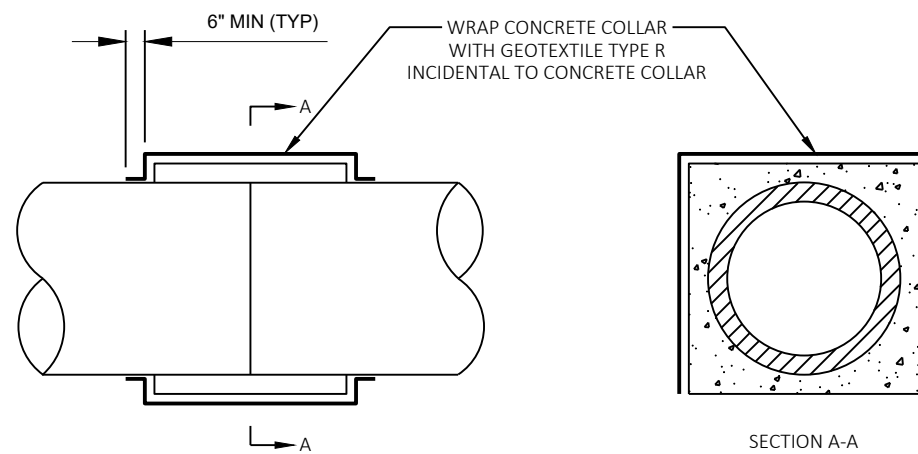
SIDE ROAD BUTT JOINTS DETAIL

OLD 47 ROAD
HERMAN CREEK ROAD
HILL ROAD
ELM ROAD
CTH X
SILVER LANE
SOUTH LANE ROAD
LAWN ROAD
FIR ROAD



MAINLINE BUTT JOINT DETAIL

(SEE PLANS FOR LOCATION INFORMATION)



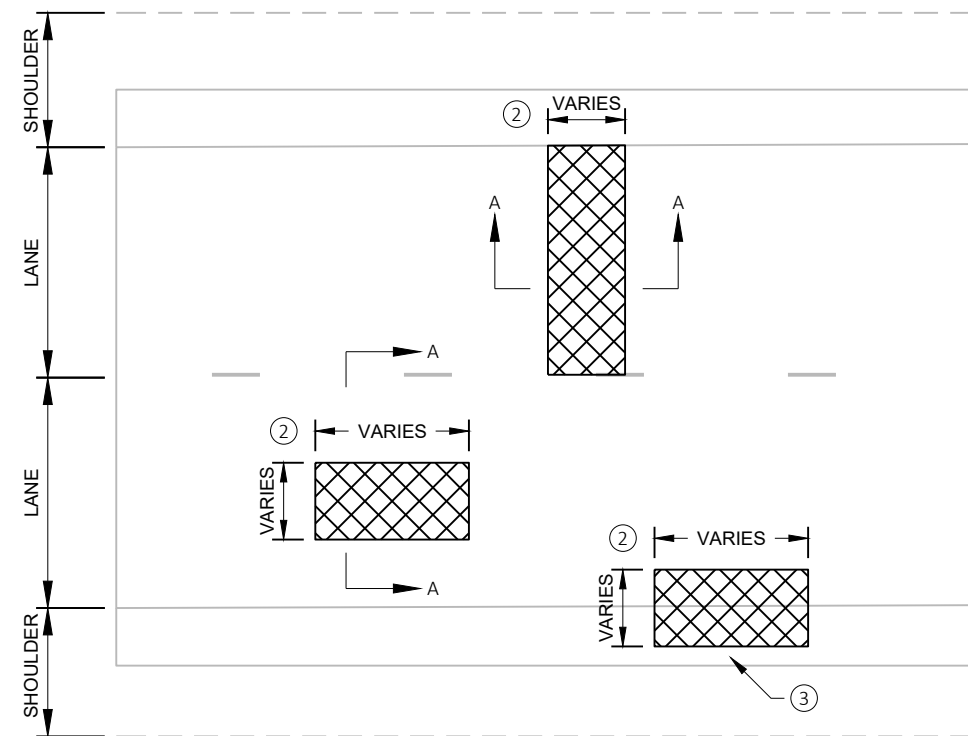
CONCRETE COLLAR DETAIL

SEE SDD JOINT TIES FOR CONCRETE PIPE AND
CONCRETE PIPE COLLARS FOR DETAILS NOT SHOWN

NOTES:

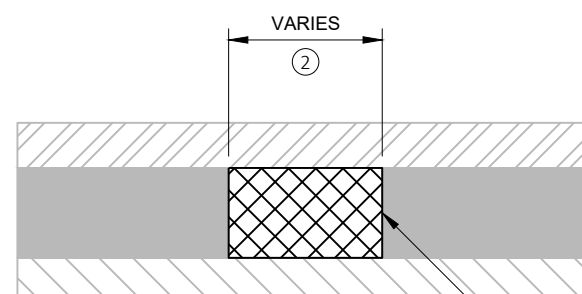
PERFORM REMOVING ASPHALTIC SURFACE MILLING PRIOR TO REMOVING DISTRESSED ASPHALTIC SURFACE MILLING

- ① MILLED VERTICAL EDGES ARE ACCEPTABLE, SAW CUTS ARE NOT REQUIRED.
- ② THE SMALLEST DIMENSION OF REMOVING DISTRESSED ASPHALTIC SURFACE MILLING IS 4 FEET IN ANY DIRECTION.
- ③ WHEN THE DISTANCE FROM THE EDGE OF PAVEMENT TO EDGE OF REMOVING DISTRESSED ASPHALTIC SURFACE MILLING IS LESS THAN 1-FOOT, EXTEND THE REMOVING DISTRESSED ASPHALTIC SURFACE MILLING TO THE EDGE OF PAVEMENT.



PLAN VIEW

- | | |
|---|---|
|  | REMOVING ASPHALTIC SURFACE MILLING |
|  | REMOVING DISTRESSED ASPHALTIC SURFACE MILLING |
|  | EXISTING ASPHALT |
|  | EXISTING BASE COURSE |

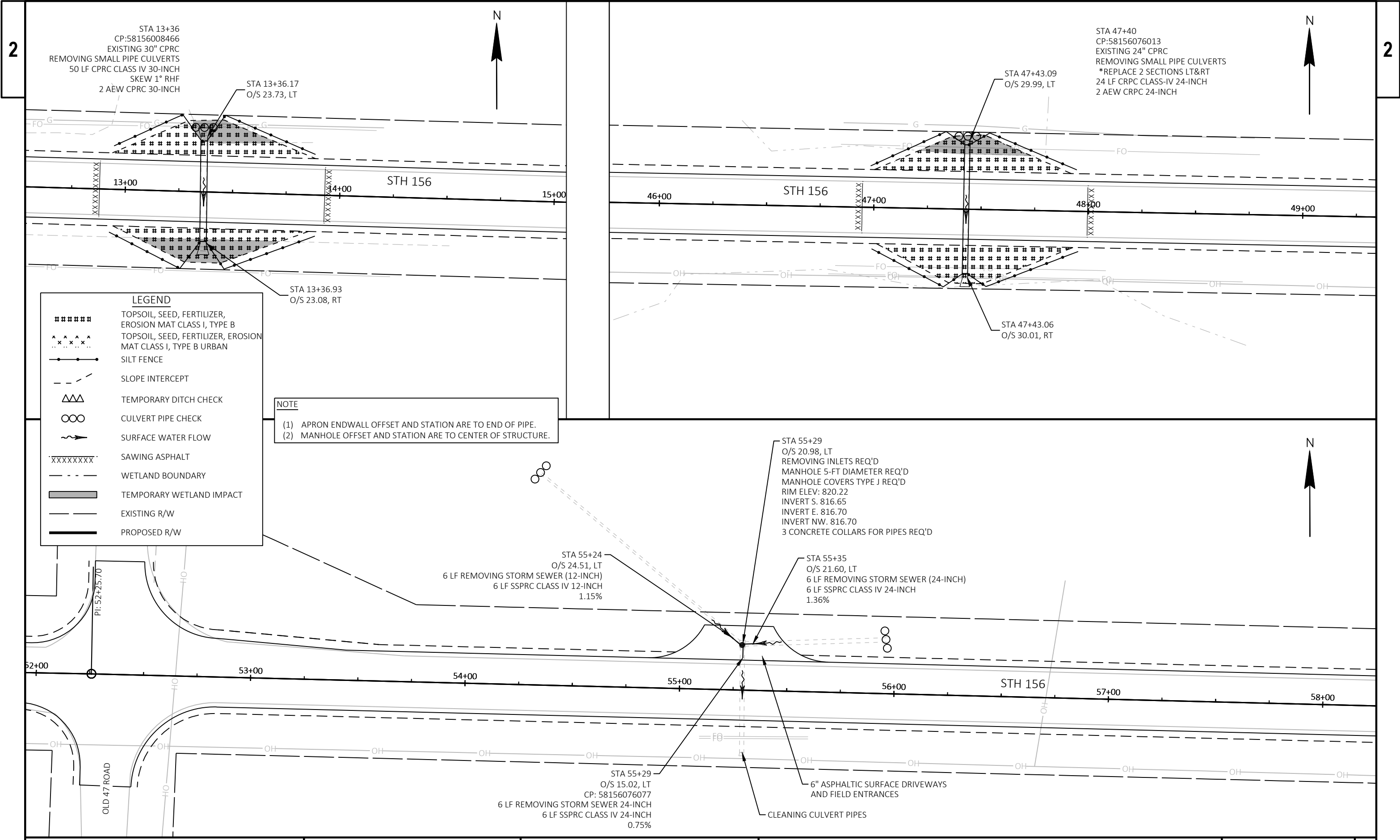


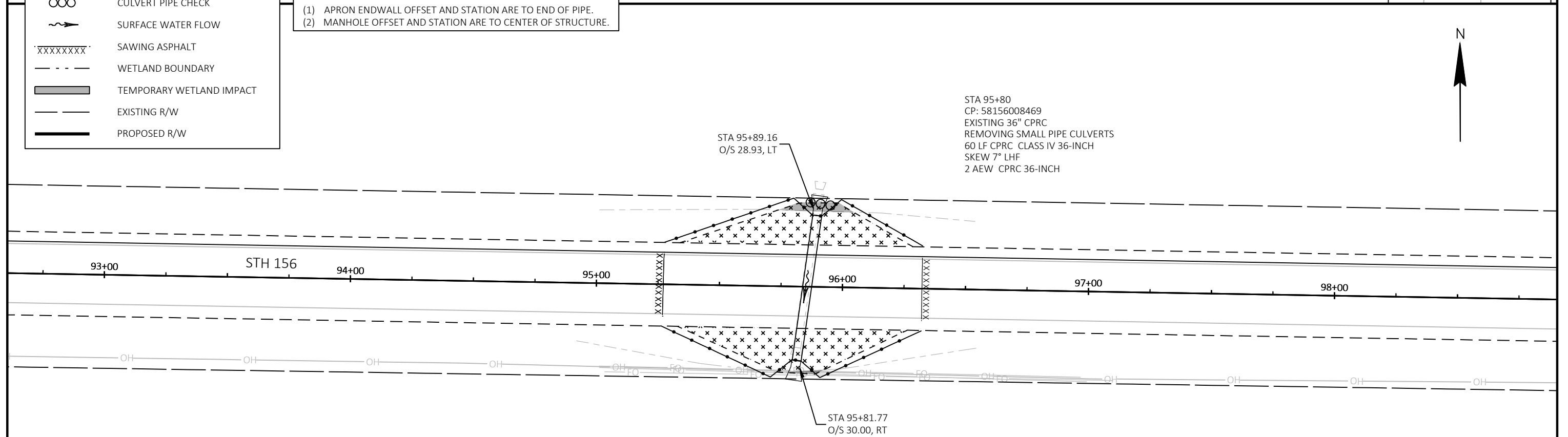
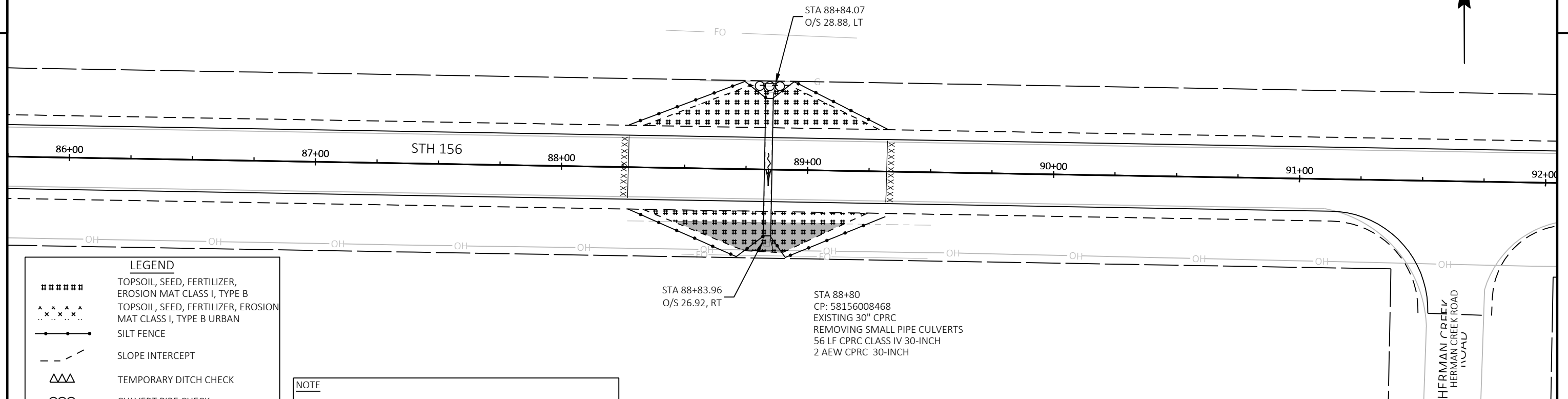
FULL DEPTH

SECTION A-A

REMOVING DISTRESSED ASPHALTIC SURFACE MILLING DETAIL

LOCATIONS AND LIMITS DETERMINED BY THE ENGINEER IN THE FIELD





PROJECT NO: 6580-13-71

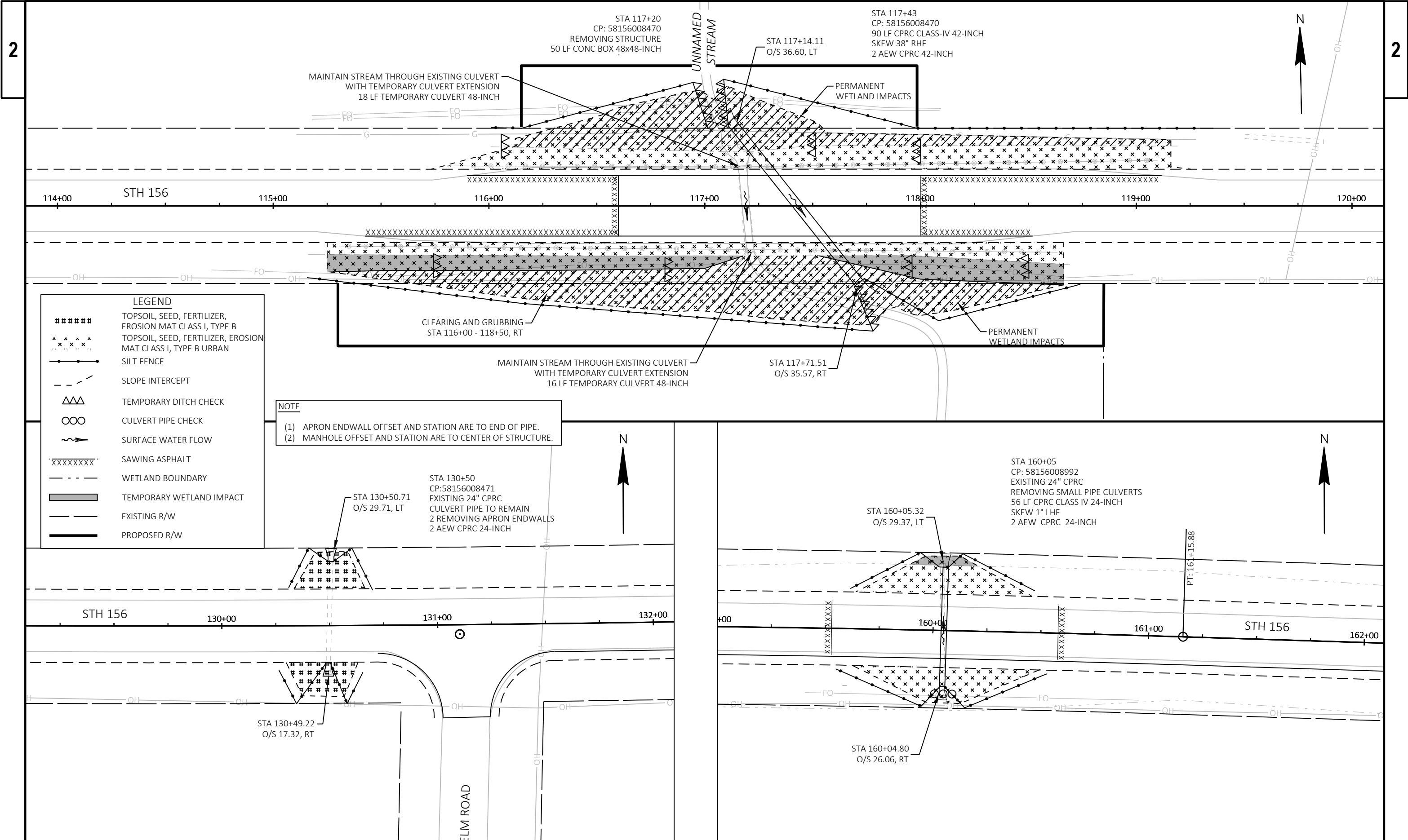
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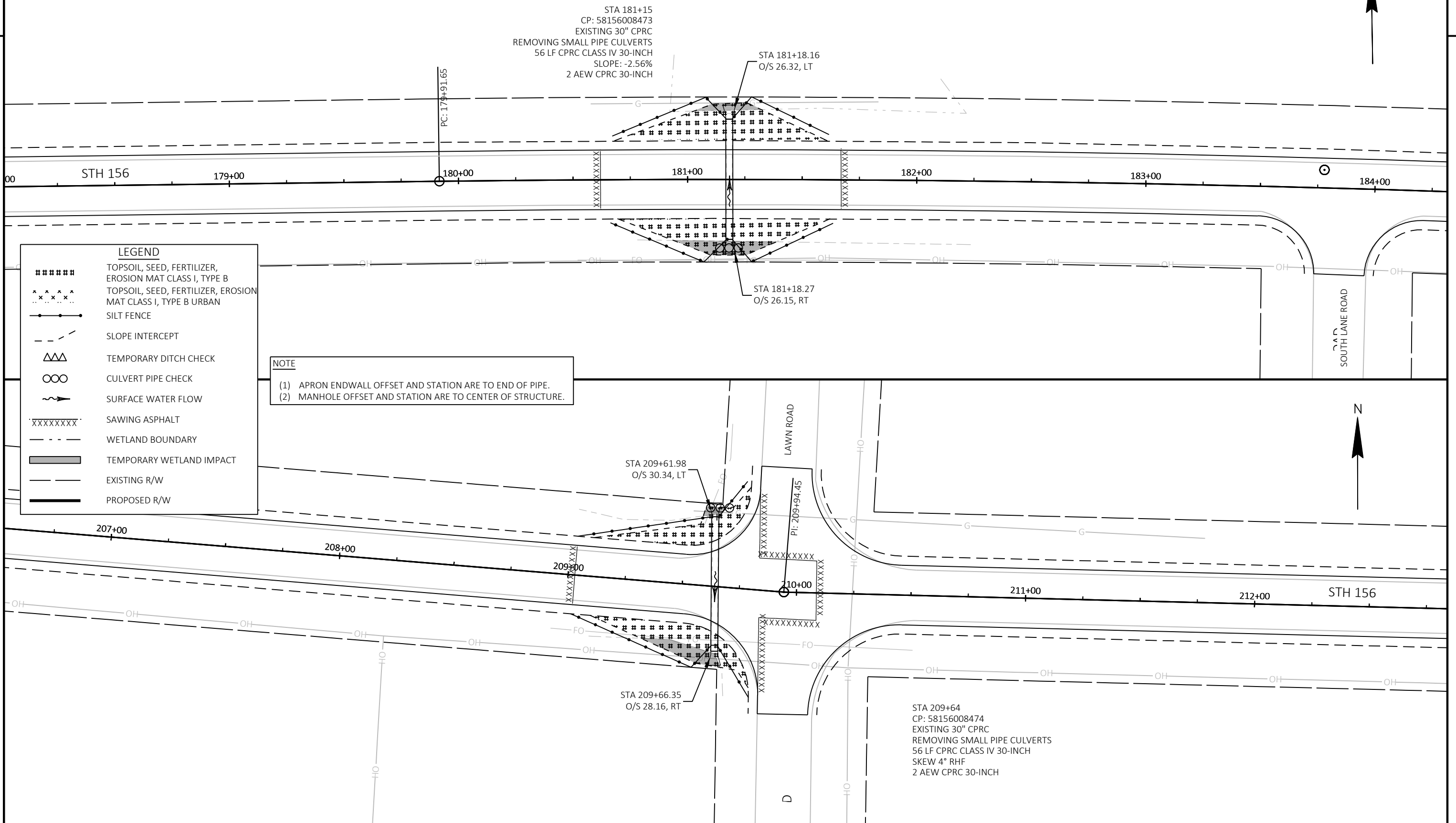
COUNTY: SHAWANO

CULVERT DETAILS

SHEET

E





PROJECT NO: 6580-13-71

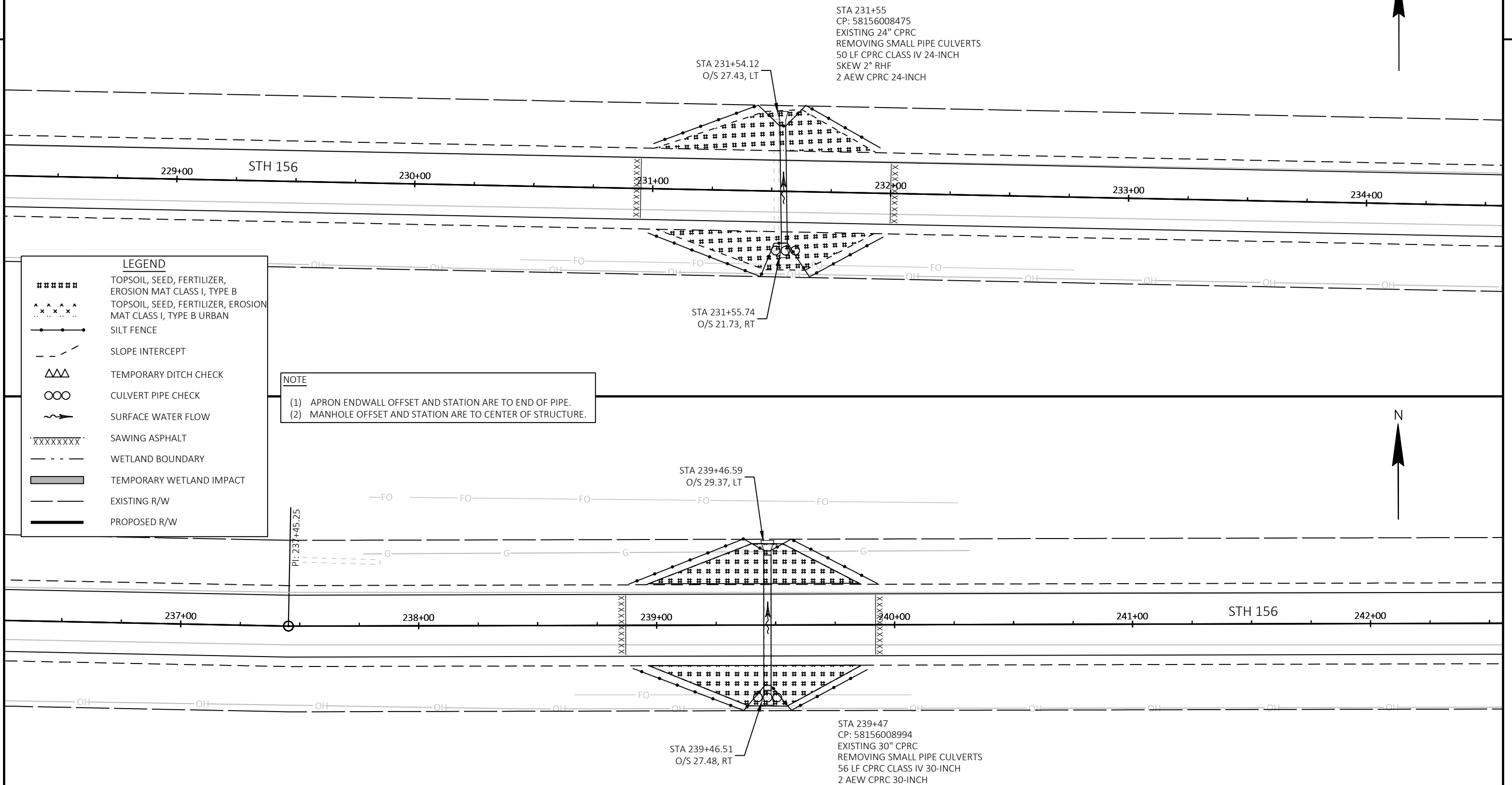
HWY: STH 156

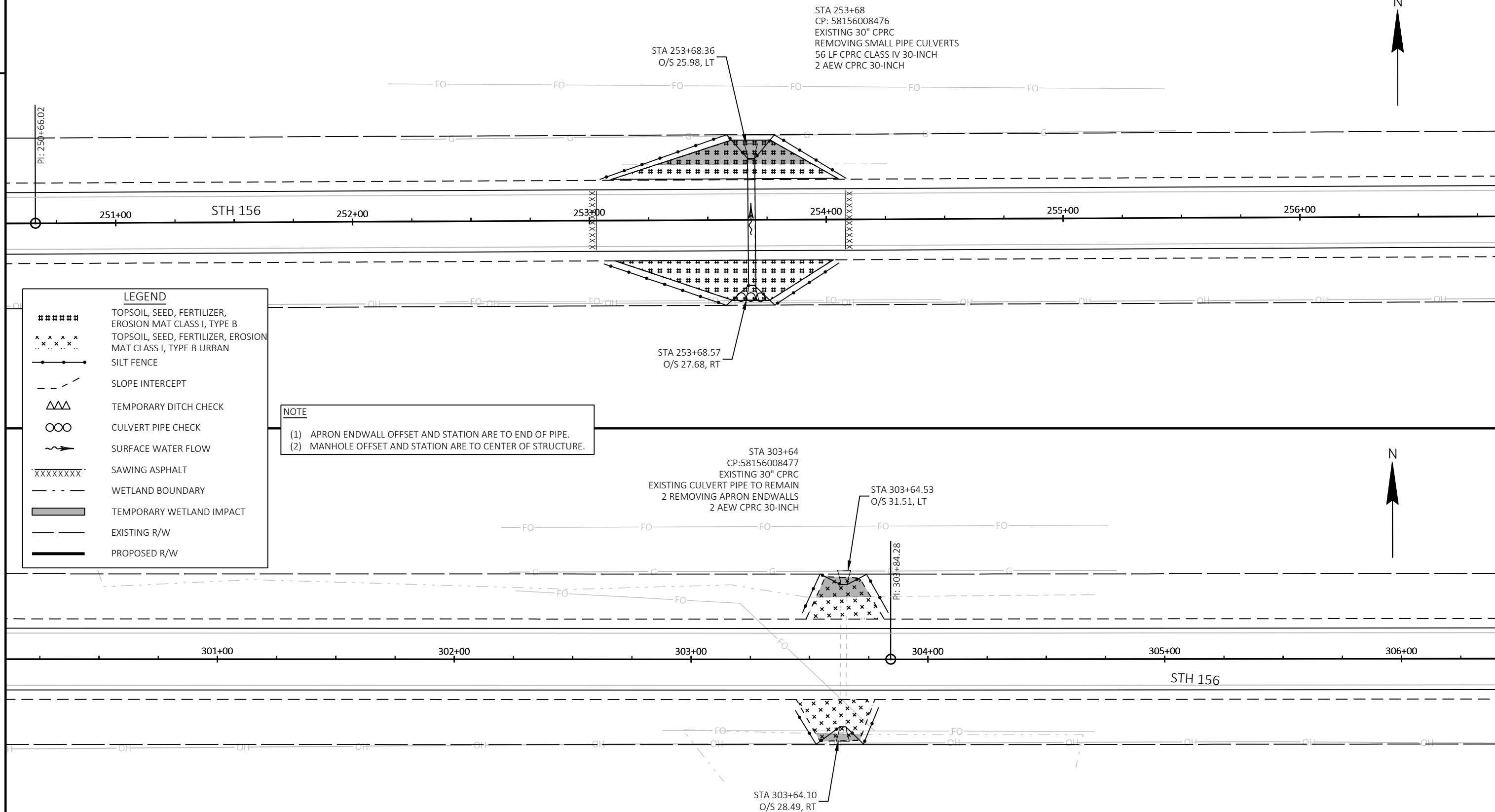
COUNTY: SHAWANO

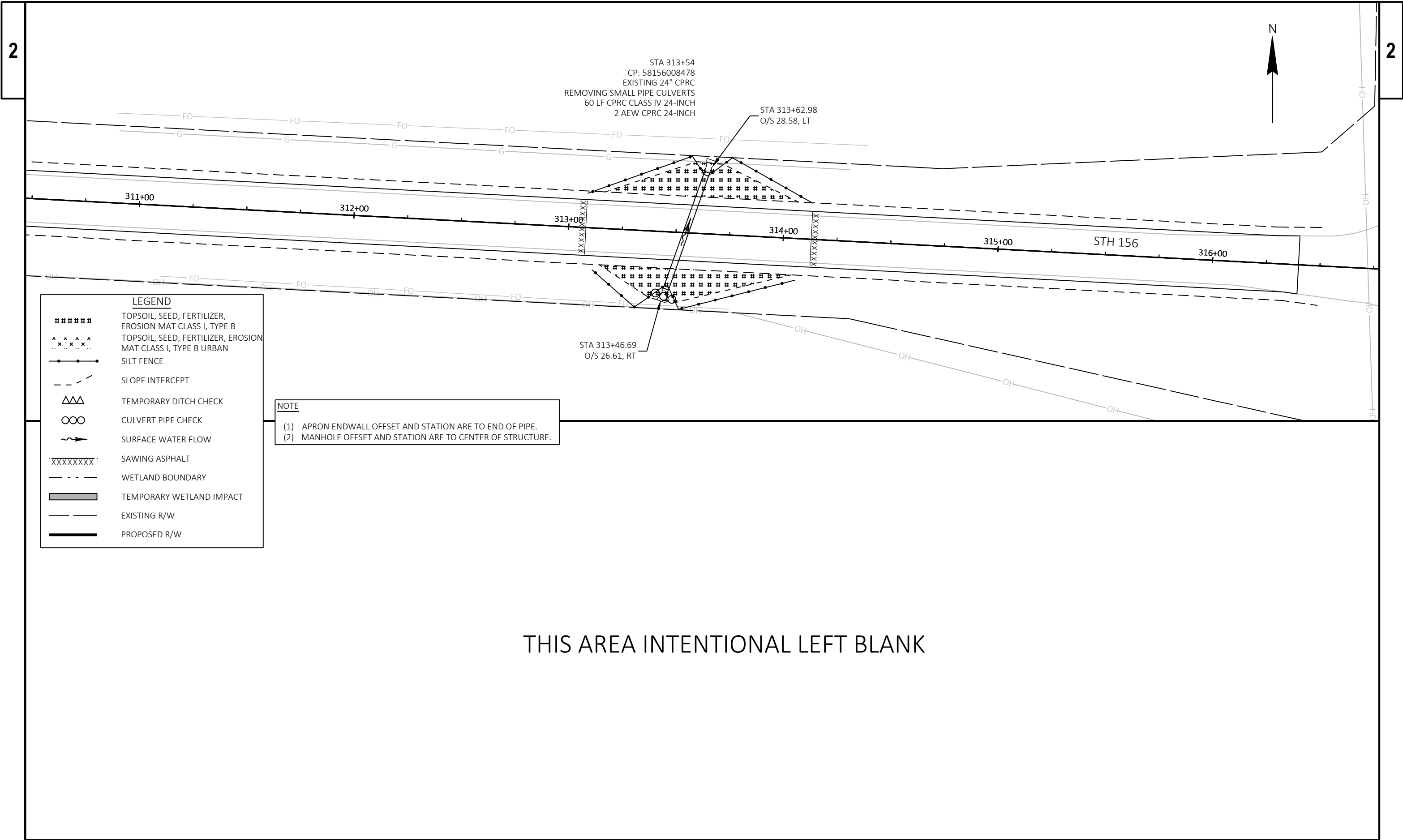
CULVERT DETAILS

SHEET

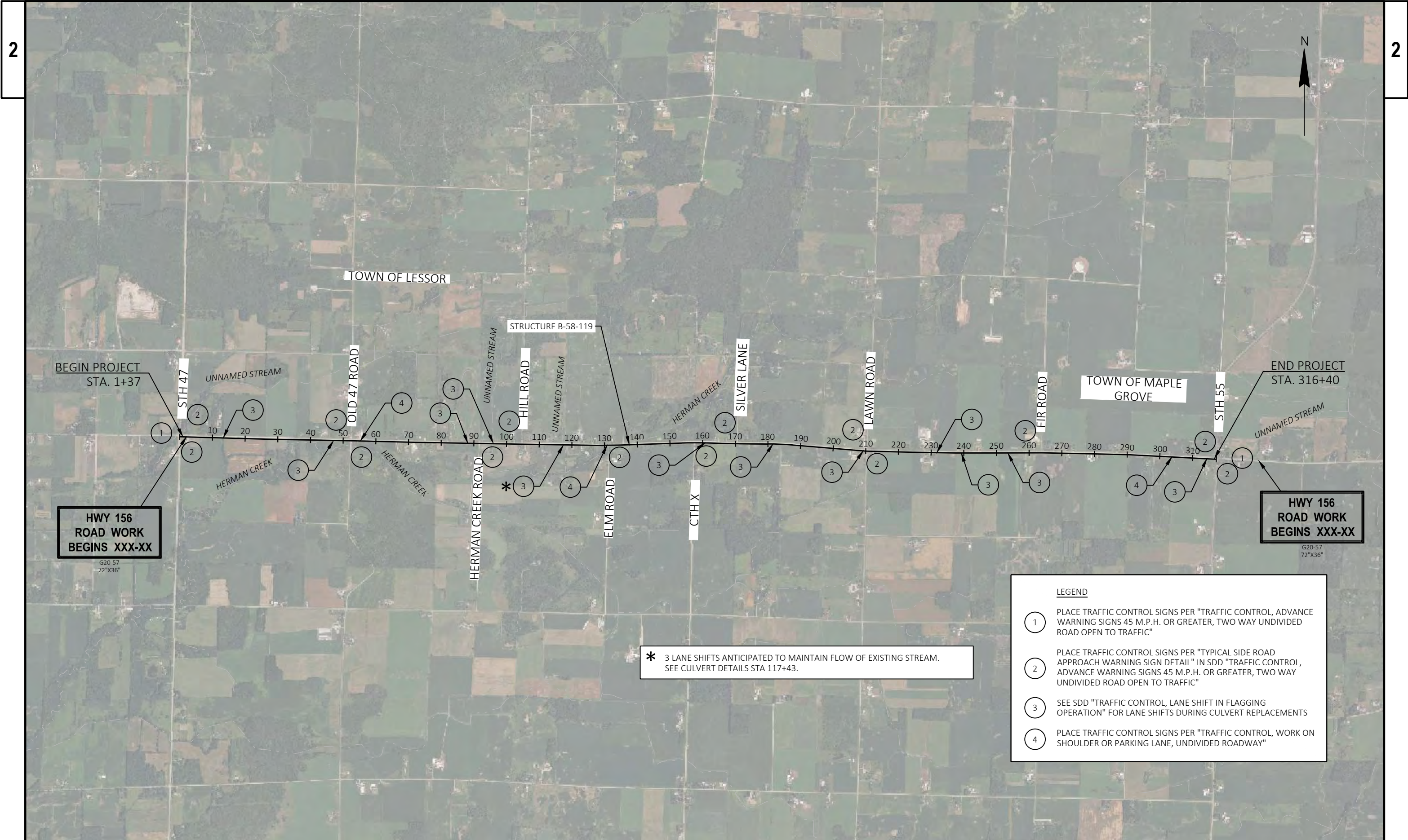
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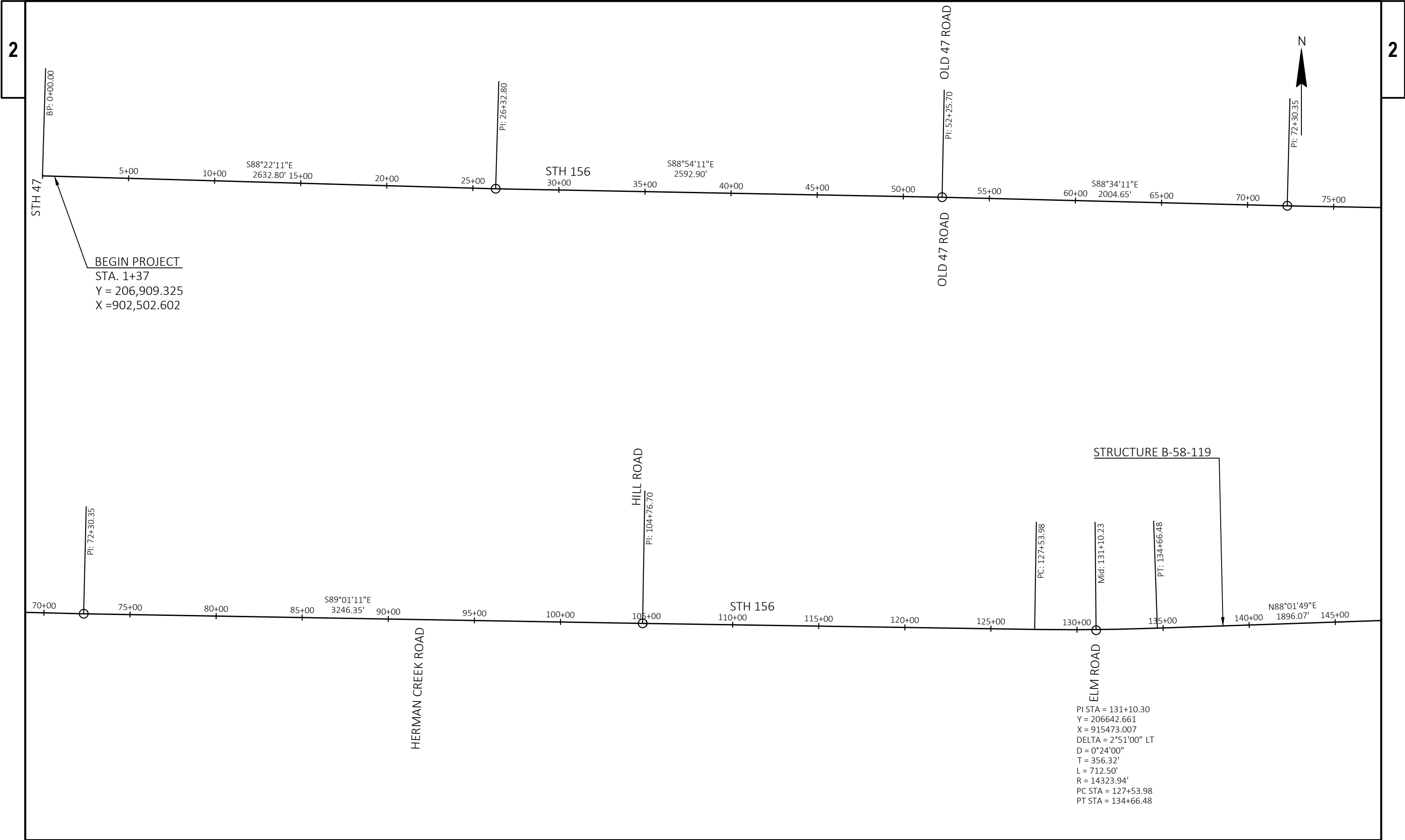




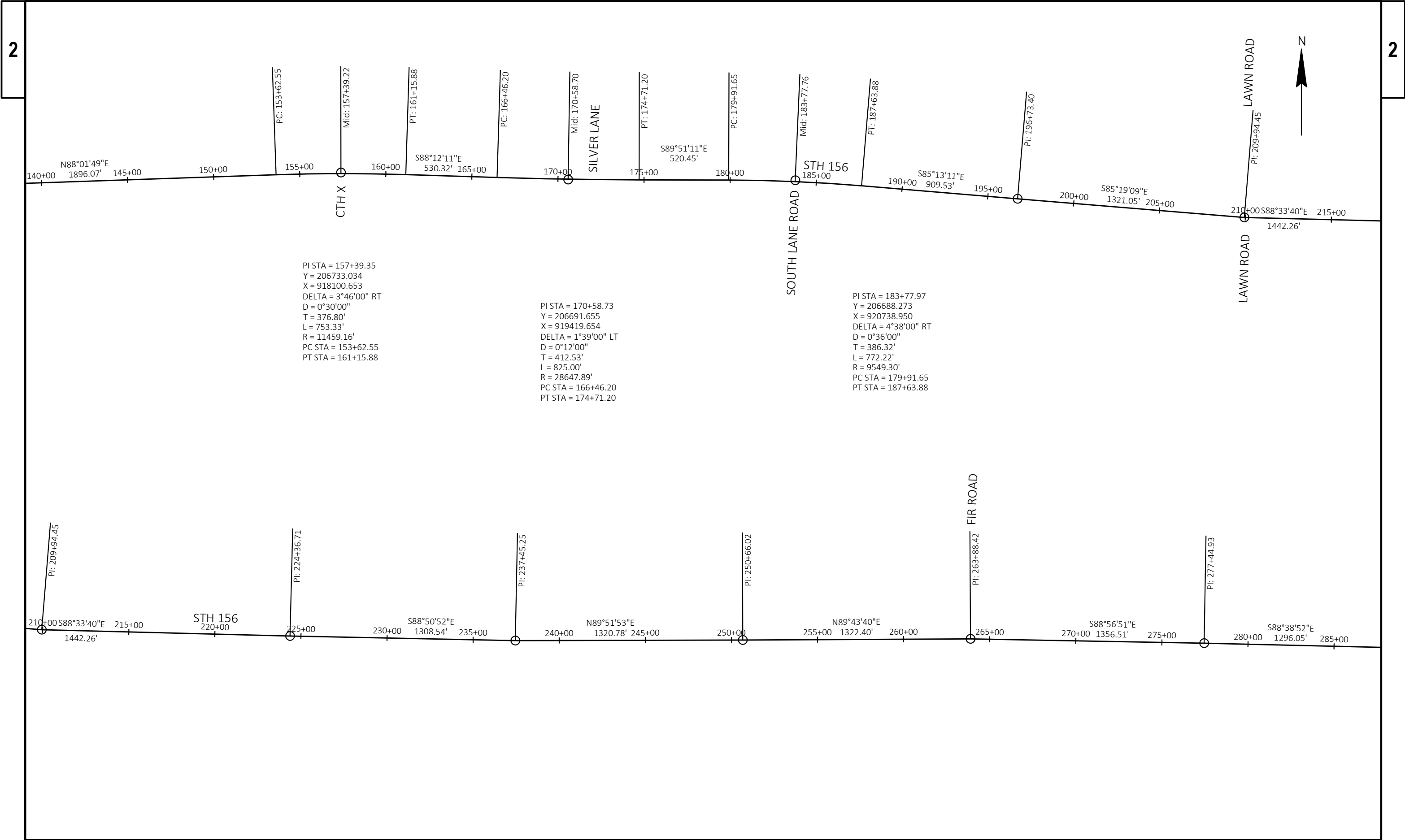


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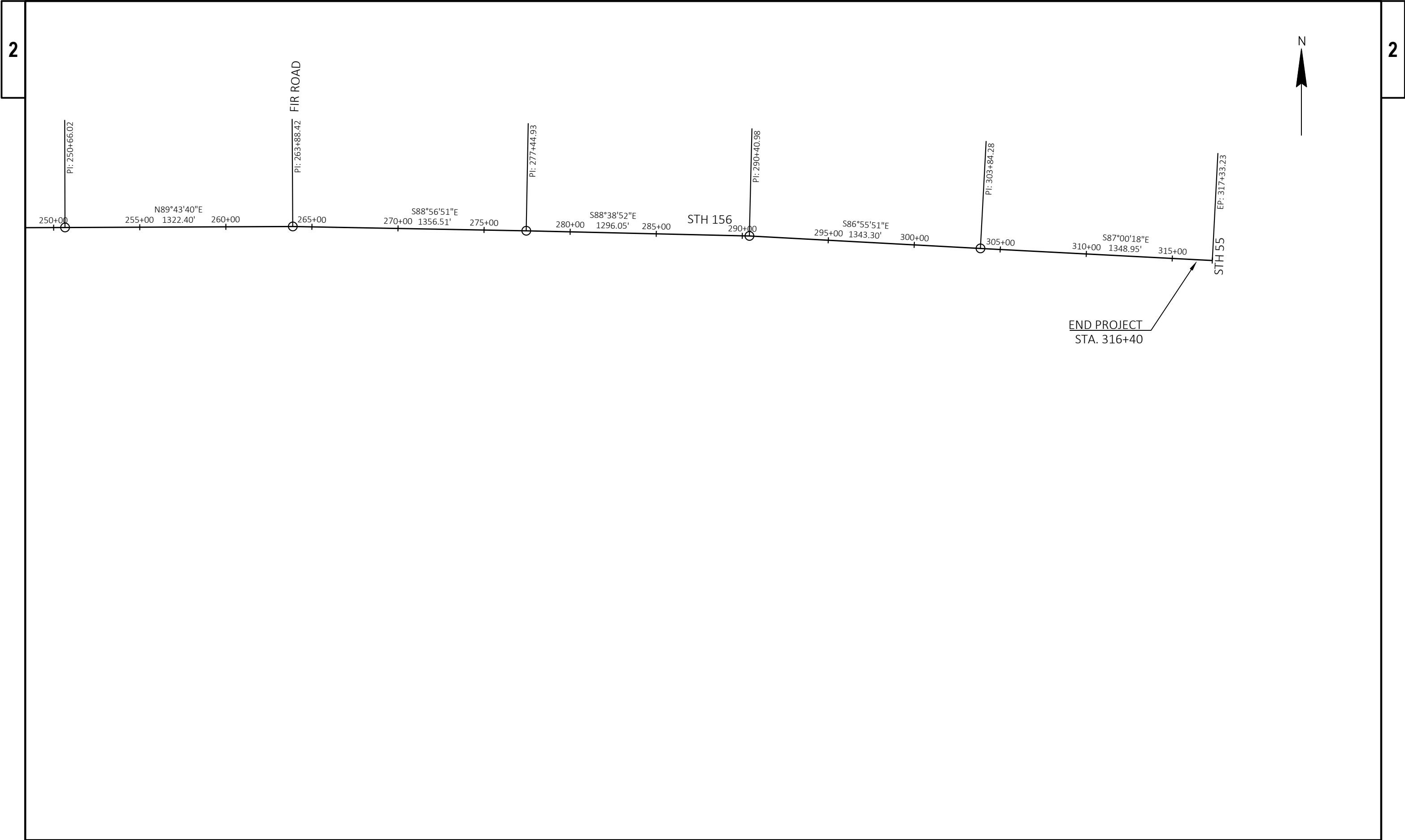




PROJECT NO: 6580-13-71	HWY: STH 156	COUNTY: SHAWANO	ALIGNMENT DETAIL	SHEET	E
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PROJECT NO: 6580-13-71	HWY: STH 156	COUNTY: SHAWANO	ALIGNMENT DETAIL	SHEET	E
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PROJECT NO: 6580-13-71	HWY: STH 156	COUNTY: SHAWANO	ALIGNMENT DETAIL	SHEET	E
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Estimate Of Quantities

6580-13-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	3.000	3.000
0004	201.0205	Grubbing	STA	3.000	3.000
0006	203.0100	Removing Small Pipe Culverts	EACH	11.000	11.000
0008	203.0220	Removing Structure (structure) 01. C-58156008470	EACH	1.000	1.000
0010	204.0110	Removing Asphaltic Surface	SY	137.000	137.000
0012	204.0115	Removing Asphaltic Surface Butt Joints	SY	390.000	390.000
0014	204.0120	Removing Asphaltic Surface Milling	SY	83,410.000	83,410.000
0016	204.0165	Removing Guardrail	LF	660.000	660.000
0018	204.0220	Removing Inlets	EACH	1.000	1.000
0020	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	6.000	6.000
0022	204.0245	Removing Storm Sewer (size) 02. 24-Inch	LF	12.000	12.000
0024	204.9060.S	Removing (item description) 01. Apron Endwalls	EACH	5.000	5.000
0026	205.0100	Excavation Common	CY	4,202.000	4,202.000
0028	208.0100	Borrow	CY	229.000	229.000
0030	208.1500.S	Temporary Lane Shift During Culvert Work	EACH	14.000	14.000
0032	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 6580-13-71	EACH	1.000	1.000
0034	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	620.000	620.000
0036	213.0100	Finishing Roadway (project) 01. 6580-13-71	EACH	1.000	1.000
0038	305.0110	Base Aggregate Dense 3/4-Inch	TON	790.000	790.000
0040	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	3,890.000	3,890.000
0042	450.4000	HMA Cold Weather Paving	TON	2,716.000	2,716.000
0044	455.0605	Tack Coat	GAL	8,336.000	8,336.000
0046	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0048	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0050	460.2005	Incentive Density PWL HMA Pavement	DOL	8,708.000	8,708.000
0052	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	6,100.000	6,100.000
0054	460.2010	Incentive Air Voids HMA Pavement	DOL	11,193.000	11,193.000
0056	460.5224	HMA Pavement 4 LT 58-28 S	TON	10,865.000	10,865.000
0058	465.0105	Asphaltic Surface	TON	2,692.000	2,692.000
0060	465.0110	Asphaltic Surface Patching	TON	443.000	443.000
0062	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	29.000	29.000
0064	465.0580	Asphaltic Rumble Strips, Transverse	SY	72.000	72.000
0066	520.2048	Culvert Pipe Temporary 48-Inch	LF	34.000	34.000
0068	520.8000	Concrete Collars for Pipe	EACH	3.000	3.000
0070	520.8700	Cleaning Culvert Pipes	EACH	1.000	1.000
0072	522.0424	Culvert Pipe Reinforced Concrete Class IV 24-Inch	LF	80.000	80.000
0074	522.0430	Culvert Pipe Reinforced Concrete Class IV 30-Inch	LF	392.000	392.000
0076	522.0436	Culvert Pipe Reinforced Concrete Class IV 36-Inch	LF	60.000	60.000
0078	522.0442	Culvert Pipe Reinforced Concrete Class IV 42-Inch	LF	90.000	90.000
0080	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	6.000	6.000
0082	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	16.000	16.000
0084	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	2.000	2.000
0086	522.1042	Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch	EACH	2.000	2.000
0088	522.2419	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch	LF	50.000	50.000
0090	522.2619	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch	EACH	2.000	2.000
0092	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	6.000	6.000
0094	608.0424	Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	LF	12.000	12.000
0096	611.0530	Manhole Covers Type J	EACH	1.000	1.000
0098	611.2005	Manholes 5-FT Diameter	EACH	1.000	1.000

Estimate Of Quantities

6580-13-71

Line	Item	Item Description	Unit	Total	Qty
0100	619.1000	Mobilization	EACH	1.000	1.000
0102	624.0100	Water	MGAL	133.540	133.540
0104	625.0100	Topsoil	SY	3,292.000	3,292.000
0106	628.1504	Silt Fence	LF	6,369.000	6,369.000
0108	628.1520	Silt Fence Maintenance	LF	6,369.000	6,369.000
0110	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0112	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0114	628.2004	Erosion Mat Class I Type B	SY	677.000	677.000
0116	628.2008	Erosion Mat Urban Class I Type B	SY	2,615.000	2,615.000
0118	628.7504	Temporary Ditch Checks	LF	188.000	188.000
0120	628.7555	Culvert Pipe Checks	EACH	68.000	68.000
0122	629.0210	Fertilizer Type B	CWT	2.070	2.070
0124	630.0120	Seeding Mixture No. 20	LB	59.000	59.000
0126	630.0500	Seed Water	MGAL	74.000	74.000
0128	633.5200	Markers Culvert End	EACH	28.000	28.000
0130	642.5001	Field Office Type B	EACH	1.000	1.000
0132	643.0300	Traffic Control Drums	DAY	224.000	224.000
0134	643.0900	Traffic Control Signs	DAY	1,843.000	1,843.000
0136	643.1000	Traffic Control Signs Fixed Message	SF	36.000	36.000
0138	643.3165	Temporary Marking Line Paint 6-Inch	LF	25,300.000	25,300.000
0140	643.5000	Traffic Control	EACH	1.000	1.000
0142	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	87,580.000	87,580.000
0144	646.6466	Cold Weather Marking Epoxy 6-Inch	LF	87,580.000	87,580.000
0146	648.0100	Locating No-Passing Zones	MI	5.970	5.970
0148	650.4000	Construction Staking Storm Sewer	EACH	1.000	1.000
0150	650.6000	Construction Staking Pipe Culverts	EACH	14.000	14.000
0152	650.8000	Construction Staking Resurfacing Reference	LF	31,503.000	31,503.000
0154	650.9911	Construction Staking Supplemental Control (project) 01. 6580-13-71	EACH	1.000	1.000
0156	650.9920	Construction Staking Slope Stakes	LF	600.000	600.000
0158	690.0150	Sawing Asphalt	LF	1,010.000	1,010.000
0160	740.0440	Incentive IRI Ride	DOL	23,900.000	23,900.000
0162	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
0164	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,260.000	1,260.000
0166	SPV.0060	Special 01. Reestablish Section Corner Monuments	EACH	13.000	13.000
0168	SPV.0180	Special 01. Removing Distressed Asphaltic Surface Milling	SY	1,759.000	1,759.000

GRUBBING							REMOVING ASPHALTIC SURFACE						
CATEGORY	STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA	CATEGORY	STATION	TO	STATION	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY	REMARKS
0010	116+00	-	118+50	STH 156 RT	3	3	0010	115+90	-	116+60	STH 156 LT	27	FULL DEPTH SHOULDER REMOVAL
				TOTAL 0010	3	3	0010	115+42	-	116+60	STH 156 RT	46	FULL DEPTH SHOULDER REMOVAL
							0010	118+00	-	119+12	STH 156 LT	44	FULL DEPTH SHOULDER REMOVAL
							0010	118+00	-	118+52	STH 156 RT	20	FULL DEPTH SHOULDER REMOVAL
											TOTAL 0010	137	

REMOVING DRAINAGE											REMARKS
CATEGORY	STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS EACH	203.0220.01 REMOVING STRUCTURE (C- 58156008470) EACH	204.0220 REMOVING INLETS EACH	204.0245.01 REMOVING STORM SEWER (12-INCH) LF	204.9060.S.01 REMOVING APRON ENDWALLS (24- INCH) EACH	204.9060.S.01 REMOVING APRON ENDWALLS (30- INCH) EACH	204.9060.S.01 REMOVING APRON ENDWALLS (48X48-INCH) EACH	204.0245.02 REMOVING STORM SEWER (24-INCH) LF	
0010	13+40	STH 156	1	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	47+40	STH 156	1	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	55+30	STH 156	-	-	1	6	-	-	-	-	INLET REPLACEMENT
0010	55+35	STH 156	-	-	-	-	-	-	-	6	INLET REPLACEMENT
0010	55+40	STH 156	-	-	-	-	-	-	-	6	INLET REPLACEMENT
0010	88+80	STH 156	1	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	95+80	STH 156	1	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	117+20	STH 156	-	1	-	-	-	-	1	-	BOX CULVERT REPLACEMENT
0010	130+50	STH 156	-	-	-	-	2	-	-	-	AEW REPLACEMENT
0010	160+05	STH 156	1	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	181+15	STH 156	1	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	209+55	STH 156	1	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	231+55	STH 156	1	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	239+47	STH 156	1	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	253+68	STH 156	1	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	303+64	STH 156	-	-	-	-	-	2	-	-	AEW REPLACEMENT
0010	313+54	STH 156	1	-	-	-	-	-	-	-	CULVERT REPLACEMENT
		TOTAL 0010	11	1	1	6	2	2	1	12	

REMOVING ASPHALTIC SURFACE

					204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS	204.0120 REMOVING ASPHALTIC SURFACE MILLING		
CATEGORY	STATION	TO	STATION	LOCATION	SY	SY	REMARKS	
0010	1+37	-	33+44	STH 156	64	8,600	MAINLINE	
0010	44+04	-	157+40	STH 156	27	30,200	MAINLINE	
0010	157+40	-	316+40	STH 156	30	42,400	MAINLINE	
0010		52+30		OLD 47 RD LT	24	220	SIDEROAD	
0010		52+30		OLD 47 RD RT	24	220	SIDEROAD	
0010		91+60		HERMAN CREEK RD	24	220	SIDEROAD	
0010		104+85		HILL RD	24	190	SIDEROAD	
0010		131+16		ELM RD	24	160	SIDEROAD	
0010		157+40		CTH X	24	230	SIDEROAD	
0010		170+60		SILVER LN	24	170	SIDEROAD	
0010		183+80		SOUTH LN	24	140	SIDEROAD	
0010		209+90		LAWN RD LT	24	220	SIDEROAD	
0010		209+90		LAWN RD RT	24	240	SIDEROAD	
0010		263+85		FIR RD	24	200	SIDEROAD	
TOTAL 0010					390	83,410		

REMOVING GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF
0010	115+80	-	119+10	STH 156 LT	330
0010	115+30	-	118+60	STH 156 RT	330
TOTAL 0010					660

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

CATEGORY	STATION	TO	STATION	LOCATION	STA	REMARKS
0010	1+37	-	157+40	STH 156 LT	156	2' ASPHALTIC SHOULDER
0010	1+37	-	33+50	STH 156 RT	32	2' ASPHALTIC SHOULDER
0010	43+50	-	157+40	STH 156 RT	114	2' ASPHALTIC SHOULDER
0010	157+40	-	316+40	STH 156 LT & RT	318	3' ASPHALTIC SHOULDER
TOTAL 0010					620	

211.0400
PREPARE
FOUNDATION
FOR ASPHALTIC
SHOULDERS

BASE AGGREGATE DENSE 3/4-INCH

CATEGORY	STATION	TO	STATION	LOCATION	TON	MGAL	REMARKS
0010	1+37	-	157+40	STH 156 LT	300	14.16	SHOULDERS
0010	1+37	-	33+50	STH 156 RT	60	2.92	SHOULDERS
0010	43+50	-	157+40	STH 156 RT	220	10.34	SHOULDERS
0010	157+40	-	316+40	STH 156 LT & RT	210	28.86	SHOULDERS
TOTAL 0010					790	56.26	

* ADDITIONAL QUANTITY SHOWN ELSEWHERE

CULVERT REPLACEMENT

CATEGORY	STATION	LOCATION	EACH	TON	LF	MGAL	EACH	REMARKS
0010	13+36	STH 156	1	320	-	6.44	2	CULVERT REPLACEMENT
0010	47+40	STH 156	1	320	-	6.38	2	CULVERT REPLACEMENT
0010	88+80	STH 156	1	320	-	6.44	2	CULVERT REPLACEMENT
0010	95+80	STH 156	1	330	-	6.50	2	CULVERT REPLACEMENT
0010	117+20	STH 156	3	330	34	6.56	2	CULVERT REPLACEMENT
0010	130+50	STH 156	-	-	-	-	2	AEW REPLACEMENT
0010	160+05	STH 156	1	320	-	6.38	2	CULVERT REPLACEMENT
0010	181+15	STH 156	1	320	-	6.44	2	CULVERT REPLACEMENT
0010	209+55	STH 156	1	320	-	6.44	2	CULVERT REPLACEMENT
0010	231+55	STH 156	1	320	-	6.38	2	CULVERT REPLACEMENT
0010	239+47	STH 156	1	320	-	6.44	2	CULVERT REPLACEMENT
0010	253+68	STH 156	1	320	-	6.44	2	CULVERT REPLACEMENT
0010	303+64	STH 156	-	-	-	-	2	AEW REPLACEMENT
0010	313+54	STH 156	1	320	-	6.44	2	CULVERT REPLACEMENT
TOTAL 0010			14	3,860	34	77.28	28	

* ADDITIONAL QUANTITY SHOWN ELSEWHERE

ASPHALTIC SURFACE - CULVERT REPLACEMENTS

CATEGORY	STATION	LOCATION	* 455.0605 TACK COAT	* 465.0105 ASPHALTIC SURFACE	REMARKS
			GAL	TON	
0010	13+36	MAINLINE	20	102	CULVERT REPLACEMENT
0010	47+40	MAINLINE	20	102	CULVERT REPLACEMENT
0010	88+80	MAINLINE	20	102	CULVERT REPLACEMENT
0010	95+80	MAINLINE	20	103	CULVERT REPLACEMENT
0010	117+20	MAINLINE	38	198	BOX CULVERT REPLACEMENT
0010	160+05	MAINLINE	18	93	CULVERT REPLACEMENT
0010	181+15	MAINLINE	18	93	CULVERT REPLACEMENT
0010	209+55	MAINLINE	18	93	CULVERT REPLACEMENT
0010	231+55	MAINLINE	18	93	CULVERT REPLACEMENT
0010	239+47	MAINLINE	18	93	CULVERT REPLACEMENT
0010	253+68	MAINLINE	18	93	CULVERT REPLACEMENT
0010	313+54	MAINLINE	18	93	CULVERT REPLACEMENT
TOTAL 0010			242	1,258	
TACK COAT ESTIMATED AT 0.07 GAL/SY					

NOTES

1. FURNISH ASPHALTIC SURFACE MIXTURE MEETING THE REQUIREMENTS SPECIFIED FOR HMA PAVEMENT TYPE HMA LT UNDER STANDARD SPEC 460.2; EXCEPT THE ENGINEER WILL NOT REQUIRE THE CONTRACTOR TO CONFORM TO THE QUALITY MANAGEMENT PROGRAM SPECIFIED UNDER STANDARD SPEC 460.2.8.

ASPHALTIC SURFACE PATCHING

* 455.0605 465.0110 SPV.0180.01 REMOVING DISTRESSED ASPHALTIC SURFACE MILLING								
TACK COAT ASPHALTIC SURFACE PATCHING								
CATEGORY	STATION	TO	STATION	LOCATION	GAL	TON	SY	REMARKS
0010	47+75	-	47+85	RT	1	3	13	FULL DEPTH
0010	48+20	-	48+30	LT	1	3	13	FULL DEPTH
0010	49+20	-	49+30	RT	1	3	13	FULL DEPTH
0010	145+10	-	145+25	LT & RT	3	10	40	FULL DEPTH
0010	146+75	-	148+25	LT & RT	28	101	400	FULL DEPTH
0010	152+95	-	156+95	LT & RT	75	269	1,067	FULL DEPTH
0010	165+55	-	165+65	RT	1	3	12	FULL DEPTH
0010	UNDISTRIBUTED				1	50	200	
TOTAL 0010					110	443	1,759	
TACK COAT ESTIMATED AT 0.07 GAL/SY								
* ADDITIONAL QUANTITY SHOWN ELSEWHERE								

ASPHALTIC RUMBLE STRIPS

465.0580 ASPHALTIC RUMBLE STRIPS, TRANSVERSE			
CATEGORY	STATION	LOCATION	SY
0010	4+35	STH 156 LT	24
0010	6+61	STH 156 LT	24
0010	10+10	STH 156 LT	24
TOTAL 0010			72

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

* 305.0120 465.0120 BASE AGGREGATE DENSE 1 1/4- INCH ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES				
CATEGORY	STATION	LOCATION	TON	TON
0010	55+00	STH 156 LT	30	29
TOTAL 0010			30	29
* ADDITIONAL QUANTITY SHOWN ELSEWHERE				

PWL MIXTURE USE TABLE

THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE FOR THIS PROJECT							QUALITY MANAGEMENT PROGRAM TO BE USED	
DESCRIPTION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
11 FOOT DRIVING LANE	1+37 TO 316+40	UPPER LAYER	MILLED SURFACE	4 LT 58-28 S	8708	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	PWL DENSITY
PAVED SHOULDER	1+37 TO 316+40	UPPER LAYER	VARIOUS	4 LT 58-28 S	1912	2"		DEPARTMENT ACCEPTANCE (SS 460.3.3.2) *NOT ELIGIBLE FOR INCENTIVE
PAVED SHOULDER	1+37 TO 316+40	LOWER LAYER	GRAVEL	ASPHALTIC SURFACE	1434	1.5"	QMP AS PER SS 460.2.8	ORDINARY COMPACTION (SS 450.3.2.6.2)
SIDE ROADS	VARIOUS	UPPER LAYER	MILLED SURFACE	4 LT 58-28 S	245	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	DEPARTMENT ACCEPTANCE (SS 460.3.3.2) *NOT ELIGIBLE FOR INCENTIVE
CULVERT REPLACEMENTS	VARIOUS	PATCHING AFTER REPLACEMENTS	BASE AGGREGATE	ASPHALTIC SURFACE	1258	6.5"	QMP AS PER SS 460.2.8	ORDINARY COMPACTION (SS 450.3.2.6.2)
PATCHING	VARIOUS	PATCHING	VARIOUS	ASPHALTIC SURFACE PATCHING	443	2"	QMP AS PER SS 460.2.8	ORDINARY COMPACTION (SS 450.3.2.6.2)

EARTHWORK

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)	AVAILABLE MATERIAL	UNEXPANDED FILL	EXPANDED FILL (2)	MASS ORDINATE +/- (3)	(4) WASTE	208.0100 BORROW	COMMENT
			CUT			FACTOR 1.25				
DIVISION 1										
STA 115+25 TO 119+16.10	115+25/119+16.10	LT&RT	212	212	329	411	-199	0	199	
DIVISION 1 SUBTOTAL			212	212	329	411	-199	0	199	
DIVISION 2										
CULVERTS	13+40	LT&RT	380	380	0	0	0	0	0	INDIVIDUAL
	47+40	LT&RT	190	190	0	0	0	0	0	INDIVIDUAL
	88+80	LT&RT	470	470	0	0	0	0	0	INDIVIDUAL
	95+80	LT&RT	430	430	0	0	0	0	0	INDIVIDUAL
	117+20	LT&RT	430	430	24	30	0	0	30	FILL EXISTING BOX CULVERT
	160+05	LT&RT	170	170	0	0	0	0	0	INDIVIDUAL
	181+15	LT&RT	430	430	0	0	0	0	0	INDIVIDUAL
	209+55	LT&RT	300	300	0	0	0	0	0	INDIVIDUAL
	231+50	LT&RT	340	340	0	0	0	0	0	INDIVIDUAL
	239+40	LT&RT	210	210	0	0	0	0	0	INDIVIDUAL
	253+55	LT&RT	550	550	0	0	0	0	0	INDIVIDUAL
	313+50	LT&RT	90	90	0	0	0	0	0	INDIVIDUAL
DIVISION 2 SUBTOTAL			3990	3990	24	30	0	0	30	
GRAND TOTAL			4202	4202	353	441	-199	0	229	
TOTAL COMMON EXCAVATION			4202							

- NOTES:
- (1) COMMON EXCAVATION IS THE SUM OF THE CUT. ITEM NUMBER 205.0100.
 - (2) EXPANDED FILL FACTOR = 1.25
 - (3) THE MASS ORDINATE +/- QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
 - (4) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.
 - (5) SEE CONSTRUCTION DETAIL IN PLAN SET FOR CULVERT PIPE TRANSITION. EACH CULVERT IS AN ISOLATED LOCATION.

3

3

SECTION CORNER MONUMENTS

SPV.0060.01
REESTABLISH
SECTION CORNER
MONUMENTS

STORM SEWER STRUCTURE					
CATEGORY	STATION	LOCATION	520.8000 CONCRETE COLLARS FOR PIPE EACH	611.0530 MANHOLE COVERS TYPE J EACH	611.2005 MANHOLES 5-FT DIAMETER EACH
0010	55+35	STH 156 LT	3	1	1
		TOTAL 0010	3	1	1

CATEGORY	STATION	EACH
0010	0+31.98	1
0010	26+41.51	1
0010	52+33.60	1
0010	78+61.72	1
0010	104+79.98	1
0010	131+16.83	1
0010	157+42.83	1
0010	183+83.61	1
0010	209+98.74	1
0010	237+46.53	1
0010	263+87.66	1
0010	290+42.62	1
0010	317+29.51	1
TOTAL 0010		13

CULVERT PIPE SUMMARY

			520.8700	522.0424	522.0430	522.0436	522.0442	522.1024	522.1030	522.1036	522.1042	522.2419	522.2619	608.0412	608.0424	
												CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 19X30-INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 19X30- INCH	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH	
CATEGORY	STATION	LOCATION	CLEANING CULVERT PIPES EACH	CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS IV 30-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS IV 36-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS IV 42-INCH LF	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24- INCH EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30- INCH EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36- INCH EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 42- INCH EACH	LF	EACH	LF	LF	REMARKS
0010	13+36	STH 156	-	-	50	-	-	-	2	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	47+40	STH 156	-	24	-	-	-	2	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	55+35	STH 156 LT	1	-	-	-	-	-	-	-	-	-	-	6	12	INLET REPLACEMENT
0010	88+80	STH 156	-	-	56	-	-	-	2	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	95+80	STH 156	-	-	-	60	-	-	-	2	-	-	-	-	-	CULVERT REPLACEMENT
0010	117+20	STH 156	-	-	-	-	90	-	-	-	2	-	-	-	-	BOX CULVERT REPLACEMENT
0010	130+50	STH 156	-	-	-	-	-	2	-	-	-	-	-	-	-	AEW REPLACEMENT
0010	160+05	STH 156	-	56	-	-	-	2	-	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	181+15	STH 156	-	-	56	-	-	-	2	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	209+55	STH 156	-	-	58	-	-	-	2	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	231+55	STH 156	-	-	-	-	-	-	-	-	-	50	2	-	-	CULVERT REPLACEMENT
0010	239+47	STH 156	-	-	56	-	-	-	2	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	253+68	STH 156	-	-	56	-	-	-	2	-	-	-	-	-	-	CULVERT REPLACEMENT
0010	303+64	STH 156	-	-	-	-	-	-	2	-	-	-	-	-	-	AEW REPLACEMENT
0010	313+54	STH 156	-	-	60	-	-	-	2	-	-	-	-	-	-	CULVERT REPLACEMENT
TOTAL 0010			1	80	392	60	90	6	16	2	2	50	2	6	12	

PROJECT NO: 6580-13-71	HWY: STH 156	COUNTY: SHAWANO	MISCELLANEOUS QUANTITIES	SHEET	E
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EROSION CONTROL

			625.0100	628.1504	628.1520	628.2004	628.2008	628.7504	628.7555	629.0210	630.0120	630.0500		
			TOPSOIL	SILT FENCE	SILT FENCE	EROSION MAT	EROSION MAT	TEMPORARY	CULVERT PIPE	FERTILIZER TYPE	SEEDING	SEED WATER		
			SY	LF	MAINTENANCE	CLASS I TYPE B	URBAN CLASS I TYPE B	DITCH CHECKS	CHECKS	B	MIXTURE NO. 20	MGAL		
CATEGORY	STATION	LOCATION	SY	LF	LF	SY	SY	LF	EACH	CWT	LB		REMARKS	
0010	13+40	STH 156	52	225	225	52	-	-	5	0.03	0.94	1	CULVERT REPLACEMENT	
0010	47+40	STH 156	50	200	200	50	-	-	3	0.03	0.91	1	CULVERT REPLACEMENT	
0010	47+65 - 48+40	STH 156 LT & RT	-	150	150	-	-	-	-	-	-	-	BASE PATCHING ASPHALTIC	
0010	55+35	STH 156	-	-	-	-	-	-	5	-	-	-	INLET	
0010	88+80	STH 156	53	200	200	53	-	-	5	0.03	0.95	1	CULVERT REPLACEMENT	
0010	95+80	STH 156	58	200	200	-	58	-	7	0.04	1.04	1	CULVERT REPLACEMENT	
0010	116+00 - 119+35	STH 156 LT	760	400	400	-	760	75	-	0.48	13.68	17	CULVERT REPLACEMENT/REDITCHING	
0010	115+15 - 118+75	STH 156 RT	1161	400	400	-	1161	75	6	0.73	20.89	26	CULVERT REPLACEMENT/REDITCHING	
0010	130+50	STH 156	56	200	200	56	-	-	-	0.04	1.00	1	AEW REPLACEMENT	
0010	145+00 - 148+40	STH 156 LT & RT	-	680	680	-	-	-	-	-	-	-	BASE PATCHING ASPHALTIC	
0010	152+90 - 157+10	STH 156 LT & RT	-	840	840	-	-	-	-	-	-	-	BASE PATCHING ASPHALTIC	
0010	160+05	STH 156	56	200	200	-	56	-	3	0.04	1.00	1	CULVERT REPLACEMENT	
0010	181+15	STH 156	53	200	200	53	-	-	5	0.03	0.96	1	CULVERT REPLACEMENT	
0010	209+55	STH 156	53	200	200	53	-	-	5	0.03	0.95	1	CULVERT REPLACEMENT	
0010	231+50	STH 156	57	200	200	57	-	-	3	0.04	1.02	1	CULVERT REPLACEMENT	
0010	239+40	STH 156	56	200	200	56	-	-	5	0.04	1.00	1	CULVERT REPLACEMENT	
0010	253+55	STH 156	57	200	200	57	-	-	5	0.04	1.02	1	CULVERT REPLACEMENT	
0010	303+60	STH 156	58	200	200	-	58	-	5	0.04	1.04	1	AEW REPLACEMENT	
0010	313+50	STH 156	56	200	200	56	-	-	6	0.04	1.00	1	CULVERT REPLACEMENT	
UNDISTRIBUTED			658	1,274	1,274	135	523	38	-	0.41	12	15		
TOTAL 0010			3,292	6,369	6,369	677	2,615	188	68	2.07	59	74		

TRAFFIC CONTROL								
			643.0300		643.0900		643.1000	
CATEGORY	LOCATION	STAGE DURATION	TRAFFIC CONTROL		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL SIGNS	
		DAYS	DRUMS		FIXED MESSAGE		SF	
			NO.	DAY	NO.	DAY	NO.	SF
0010	PROJECT - ADVANCED WARNING	68	-	-	24	1,632	2	36
0010	CULVERT REPLACEMENT	7	26	182	6	42	-	-
0010	MILL AND OVERLAY	11	-	-	14	154	-	-
0010	SHOULDER WORK	3	14	42	5	15	-	-
	TOTAL 0010		224		1,843		36	

MOBILIZATION EROSION CONTROL							
				628.1905		628.1910	
				MOBILIZATIONS		MOBILIZATIONS	
				EROSION		EROSION	
				CONTROL		CONTROL	
CATEGORY	STATION	TO	STATION	LOCATION	EACH	EACH	
0010	1+37	-	316+40	PROJECT	2	1	
				TOTAL 0010	2	1	

CENTERLINE PAVEMENT MARKING

* 643.3165 TEMPORARY MARKING LINE PAINT 6-INCH								
* 646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH								
648.0100 LOCATING NO- PASSING ZONES								
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	MI	REMARKS
0010	1+37	-	12+20	STH 156	1350	1350	-	SOLID AND SKIPS YELLOW
0010	12+20	-	21+70	STH 156	240	240	-	SKIPS YELLOW
0010	21+70	-	28+25	STH 156	820	820	-	SOLID AND SKIPS YELLOW
0010	28+25	-	32+28	STH 156	100	100	-	SKIPS YELLOW
0010	32+28	-	39+07	STH 156	850	850	-	SOLID AND SKIPS YELLOW
0010	39+07	-	42+38	STH 156	80	80	-	SKIPS YELLOW
0010	42+38	-	49+54	STH 156	900	900	-	SOLID AND SKIPS YELLOW
0010	49+54	-	54+02	STH 156	110	110	-	SKIPS YELLOW
0010	54+02	-	58+30	STH 156	540	540	-	SOLID AND SKIPS YELLOW
0010	58+30	-	60+07	STH 156	350	350	-	DOUBLE YELLOW
0010	60+07	-	69+29	STH 156	1150	1150	-	SOLID AND SKIPS YELLOW
0010	69+29	-	72+59	STH 156	660	660	-	DOUBLE YELLOW
0010	72+59	-	83+75	STH 156	1400	1400	-	SOLID AND SKIPS YELLOW
0010	83+75	-	96+16	STH 156	310	310	-	SKIPS YELLOW
0010	96+16	-	118+18	STH 156	2750	2750	-	SOLID AND SKIPS YELLOW
0010	118+18	-	161+08	STH 156	1070	1070	-	SKIPS YELLOW
0010	161+08	-	168+94	STH 156	980	980	-	SOLID AND SKIPS YELLOW
0010	168+94	-	173+04	STH 156	100	100	-	SKIPS YELLOW
0010	173+04	-	180+05	STH 156	880	880	-	SOLID AND SKIPS YELLOW
0010	180+05	-	187+73	STH 156	190	190	-	SKIPS YELLOW
0010	187+73	-	198+90	STH 156	1400	1400	-	SOLID AND SKIPS YELLOW
0010	198+90	-	205+14	STH 156	1250	1250	-	DOUBLE YELLOW
0010	205+14	-	224+14	STH 156	2380	2380	-	SOLID AND SKIPS YELLOW
0010	224+14	-	225+59	STH 156	40	40	-	SKIPS YELLOW
0010	225+59	-	235+68	STH 156	1260	1260	-	SOLID AND SKIPS YELLOW
0010	235+68	-	262+45	STH 156	670	670	-	SKIPS YELLOW
0010	262+45	-	270+43	STH 156	1000	1000	-	SOLID AND SKIPS YELLOW
0010	270+43	-	273+88	STH 156	90	90	-	SKIPS YELLOW
0010	273+88	-	281+86	STH 156	1000	1000	-	SOLID AND SKIPS YELLOW
0010	281+86	-	311+22	STH 156	730	730	-	SKIPS YELLOW
0010	311+22	-	316+40	STH 156	650	650	-	SOLID AND SKIPS YELLOW
0010	UNDISTRIBUTED			STH 156	-	-	5.97	
TOTAL 0010					25,300	25,300	5.97	

* ADDITIONAL QUANTITY SHOWN ELSEWHERE

EDGE LINE PAVEMENT MARKING

* 646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH						
CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	1+37	-	52+05	STH 156 RT	5070	SOLID WHITE
0010	0+76	-	51+95	STH 156 LT	5120	SOLID WHITE
0010	52+67	-	104+35	STH 156 LT	5170	SOLID WHITE
0010	52+75	-	91+23	STH 156 RT	3850	SOLID WHITE
0010	92+10	-	130+78	STH 156 RT	3870	SOLID WHITE
0010	105+10	-	170+17	STH 156 LT	6510	SOLID WHITE
0010	131+45	-	157+04	STH 156 RT	2560	SOLID WHITE
0010	157+74	-	183+55	STH 156 RT	2580	SOLID WHITE
0010	170+88	-	209+43	STH 156 LT	3860	SOLID WHITE
0010	184+08	-	209+61	STH 156 RT	2550	SOLID WHITE
0010	210+28	-	263+52	STH 156 LT	5320	SOLID WHITE
0010	210+36	-	316+36	STH 156 RT	10600	SOLID WHITE
0010	264+16	-	316+40	STH 156 LT	5220	SOLID WHITE
TOTAL 0010					62,280	

* ADDITIONAL QUANTITY SHOWN ELSEWHERE

CONSTRUCTION STAKING CULVERTS

CATEGORY	STATION	LOCATION	650.4000	650.6000
			CONSTRUCTION STAKING STORM SEWER EACH	CONSTRUCTION STAKING PIPE CULVERTS EACH
0010	13+36	STH 156	-	1
0010	47+40	STH 156	-	1
0010	55+35	STH 156 LT	1	-
0010	88+80	STH 156	-	1
0010	95+80	STH 156	-	1
0010	117+20	STH 156	-	1
0010	130+50	STH 156	-	1
0010	160+05	STH 156	-	1
0010	181+15	STH 156	-	1
0010	209+55	STH 156	-	1
0010	231+55	STH 156	-	1
0010	239+47	STH 156	-	1
0010	253+68	STH 156	-	1
0010	303+64	STH 156	-	1
0010	313+54	STH 156	-	1
TOTAL 0010			1	14

CONSTRUCTION STAKING

CATEGORY	STATION	TO	STATION	LOCATION	650.8000	650.9920
					CONSTRUCTION STAKING RESURFACING REFERENCE LF	CONSTRUCTION STAKING SLOPE STAKES LF
0010	1+37	-	316+40	STH 156	-	-
0010	1+37	-	316+40	STH 156	31503	-
0010	116+25	-	119+00	STH 156 LT	-	275
0010	115+25	-	118+50	STH 156 RT	-	325
TOTAL 0010					31,503	600

SAWING ASPHALT

690.0150 SAWING ASPHALT				
CATEGORY	STATION	LOCATION	LF	REMARKS
0010	12+88	STH 156	24	CULVERT REPLACEMENT
0010	13+93	STH 156	24	CULVERT REPLACEMENT
0010	46+95	STH 156	24	CULVERT REPLACEMENT
0010	47+99	STH 156	24	CULVERT REPLACEMENT
0010	88+27	STH 156	24	CULVERT REPLACEMENT
0010	89+32	STH 156	24	CULVERT REPLACEMENT
0010	95+27	STH 156	24	CULVERT REPLACEMENT
0010	96+33	STH 156	24	CULVERT REPLACEMENT
0010	115+90 - 116+60	STH 156 LT	70	SHOULDER REMOVAL
0010	115+42 - 116+60	STH 156 RT	118	SHOULDER REMOVAL
0010	116+60	STH 156	35	BOX CULVERT REPLACEMENT
0010	118+00	STH 156	35	BOX CULVERT REPLACEMENT
0010	118+00 - 119+12	STH 156 LT	112	SHOULDER REMOVAL
0010	118+00 - 118+52	STH 156 RT	52	SHOULDER REMOVAL
0010	159+53	STH 156	22	CULVERT REPLACEMENT
0010	160+57	STH 156	22	CULVERT REPLACEMENT
0010	180+62	STH 156	22	CULVERT REPLACEMENT
0010	181+67	STH 156	22	CULVERT REPLACEMENT
0010	209+03	STH 156	22	CULVERT REPLACEMENT
0010	210+07	STH 156	110	CULVERT REPLACEMENT
0010	230+95	STH 156	22	CULVERT REPLACEMENT
0010	232+05	STH 156	22	CULVERT REPLACEMENT
0010	238+87	STH 156	22	CULVERT REPLACEMENT
0010	239+92	STH 156	22	CULVERT REPLACEMENT
0010	253+03	STH 156	22	CULVERT REPLACEMENT
0010	254+07	STH 156	22	CULVERT REPLACEMENT
0010	313+08	STH 156	22	CULVERT REPLACEMENT
0010	314+12	STH 156	22	CULVERT REPLACEMENT
TOTAL 0010			1,010	

TRANSPORTATION PROJECT PLAT NO: 6580-13-21-4.01

PART OF LOT 2 CSM 1519, LOCATED IN THE SW 1/4 OF THE SW 1/4 SECTION 26; AND PART OF THE NW 1/4 OF THE NW 1/4 AND THE NE 1/4 OF THE NW 1/4 SECTION 35; ALL IN T25N R17E, TOWN OF LESSOR, SHAWANO COUNTY, WISCONSIN

RELOCATION ORDER STH 156, CLINTONVILLE - HOWARD (STH 47 - STH 55) SHAWANO COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

NOTES:

PROPERTY LINES SHOWN ON THIS PLAT FOR PROPERTIES BEING IMPACTED ARE DRAWN FROM DATA DERIVED FROM FILED/RECORDED MAPS AND DOCUMENTS OF PUBLIC RECORD. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), SHAWANO COUNTY, NAD83(2011), IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, CENTERLINE OF EXISTING PAVEMENTS AND/OR EXISTING OCCUPATIONAL LINES.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

AN EASEMENT FOR HIGHWAY PURPOSES (HE), AS LONG AS SO USED, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE.

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN RHINELANDER.

PARCEL AND UTILITY IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE TPP DETAIL PAGES.

BASIS OF EXISTING RIGHT OF WAY				
ROAD NAME	PROJECT/SURVEY	VOL.	PG.	DOC.
STH 156	S 0114 (4)	-	-	-
STH 156	CSM #1519	5	386	496450
STH 156	CSM #3537	15	107	638309
STH 156	ACCESS COVENANT(PERMIT)	-	-	564863
STH 156	ACCESS COVENANT(PERMIT)	-	-	633190

CONVENTIONAL SYMBOLS AND ABBREVIATIONS

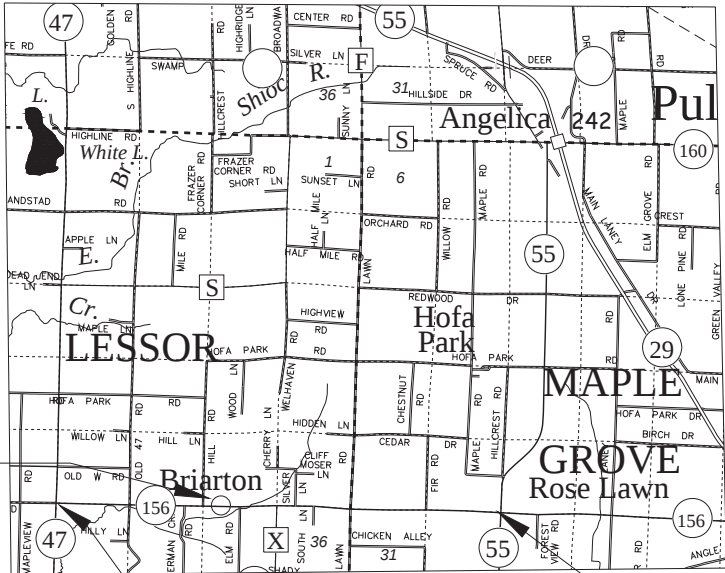
STATE, COUNTY, or TOWN LINE	-----	ACCESS POINT/ DRIVEWAY CONNECTION	AP
SECTION LINE	- - -	ACCESS RIGHTS	AR
QUARTER LINE	- - -	ACRES	AC
SIXTEENTH LINE	- - -	AND OTHERS	ET AL
PROPOSED REFERENCE LINE	-----	CENTERLINE	C/L
PROPOSED R/W LINE	-----	CERTIFIED SURVEY MAP	CSM
EXISTING R/W OR HE LINE	-----	DOCUMENT	DOC
PROPERTY LINE	-----	HIGHWAY EASEMENT	HE
EASEMENT LINE	-----	LAND CONTRACT	LC
CORPORATE LIMITS	-----	MONUMENT	MON
EXISTING CENTERLINE	-----	PAGE	P
LOT & TIE LINES	-----	PERMANENT LIMITED EASEMENT	PLE
UNDERGROUND FACILITY (TELEPHONE, GAS, ELECTRIC, CABLE TV, FIBER OPTIC)	-----	PROPERTY LINE	PL
ACCESS RESTRICTED (BY PREVIOUS ACQUISITION/CONTROL)	-----	RECORDED AS	(100')
ACCESS RESTRICTED (BY ACQUISITION)	-----	REFERENCE LINE	R/L
ACCESS RESTRICTED (BY STATUTORY AUTHORITY)	-----	REMAINING	REM
FEE (HATCH VARIES)	-----	RIGHT-OF-WAY	R/W
TEMPORARY LIMITED EASEMENT	-----	SECTION	SEC
PERMANENT LIMITED EASEMENT	-----	SQUARE FEET	SF
PARCEL NUMBER	-----	STATION	STA
UTILITY NUMBER	-----	TEMPORARY LIMITED EASEMENT	TLE
OFF-PREMISE SIGN	-----	VOLUME	V
BUILDING	-----	CURVE DATA	
FOUND IRON PIPE/PIN	-----	LONG CHORD	LCH
R/W MONUMENT	-----	LONG CHORD BEARING	LCB
R/W STANDARD	-----	RADIUS	R
SIGN	-----	DEGREE OF CURVE	D
SECTION CORNER SYMBOL	-----	CENTRAL ANGLE OR DELTA	Δ/DELTA
		LENGTH OF CURVE	L
		TANGENT	T
		NON COMPENSABLE	NON COMPENSABLE
		COMPENSABLE	COMPENSABLE
		POWER POLE	POWER POLE
		TELEPHONE POLE	TELEPHONE POLE
		TELEPHONE PEDESTAL	TELEPHONE PEDESTAL

FOUND MONUMENT TABLE			
POINT NUMBER	Y	X	DESCRIPTION
4W161	206683.674	912843.003	SURVEY NAIL
4W163	206646.419	915479.576	SURVEY NAIL

CONVENTIONAL UTILITY SYMBOLS

WATER	-----	W
GAS	-----	G
TELEPHONE	-----	T
OVERHEAD TRANSMISSION LINES	-----	OH
ELECTRIC	-----	E
CABLE TELEVISION	-----	TV
FIBER OPTIC	-----	FO
SANITARY SEWER	-----	SAN
STORM SEWER	-----	SS
ELECTRIC TOWER	-----	ET

LOCATION MAP NOT TO SCALE



T-25-N
SHEET
LOCATION

R-17-E
R-18-E
PROJECT LOCATION

UTILITY INTERESTS REQUIRED

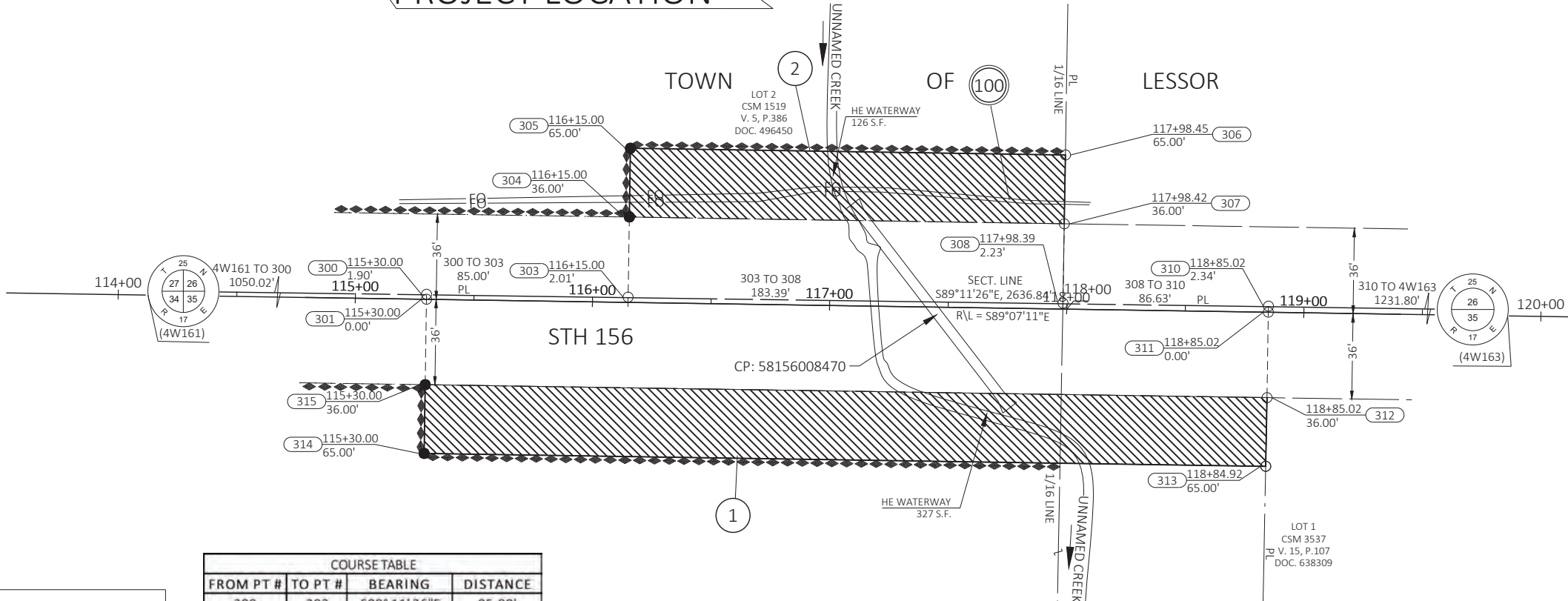
UTILITY NUMBER	OWNER(S)	PARCEL	INTEREST REQUIRED	RECORDING INFORMATION
100	BRIGHTSPEED OF CENTRAL WISCONSIN, LLC	2	RELEASE OF RIGHTS	VOL 421 PG 475 DOC#304026
101	WISCONSIN MICHIGAN POWER COMANY	1	RELEASE OF RIGHTS	VOL 199 PG 580 DOC #158939

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 6580-13-21-4.01
AMENDMENT NO: ____

SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT

PARCEL NUMBER	PARCEL OWNER(S)	INTEREST REQUIRED	R/W ACRES REQUIRED			HE S.F.
			NEW	EXISTING	TOTAL	
1	CARL H. HELING	HE	-	-	-	10,294
2	GLENN S. & SHERRY STRZELECKI	HE	-	-	-	5,320



COURSE TABLE			
FROM PT #	TO PT #	BEARING	DISTANCE
300	303	S89° 11' 26"E	85.00'
303	304	N00° 52' 49"E	33.99'
304	305	N00° 53' 01"E	29.00'
305	306	S89° 07' 11"E	183.45'
306	307	S00° 55' 55"W	29.00'
307	308	S00° 55' 55"W	33.77'
310	311	S00° 52' 26"W	2.34'
311	312	S00° 52' 26"W	36.00'
312	313	S01° 05' 09"W	29.00'
313	314	N89° 07' 11"W	354.92'
314	315	N00° 52' 49"E	29.00'
315	301	N00° 52' 49"E	36.00'
301	300	N00° 52' 49"E	1.90'



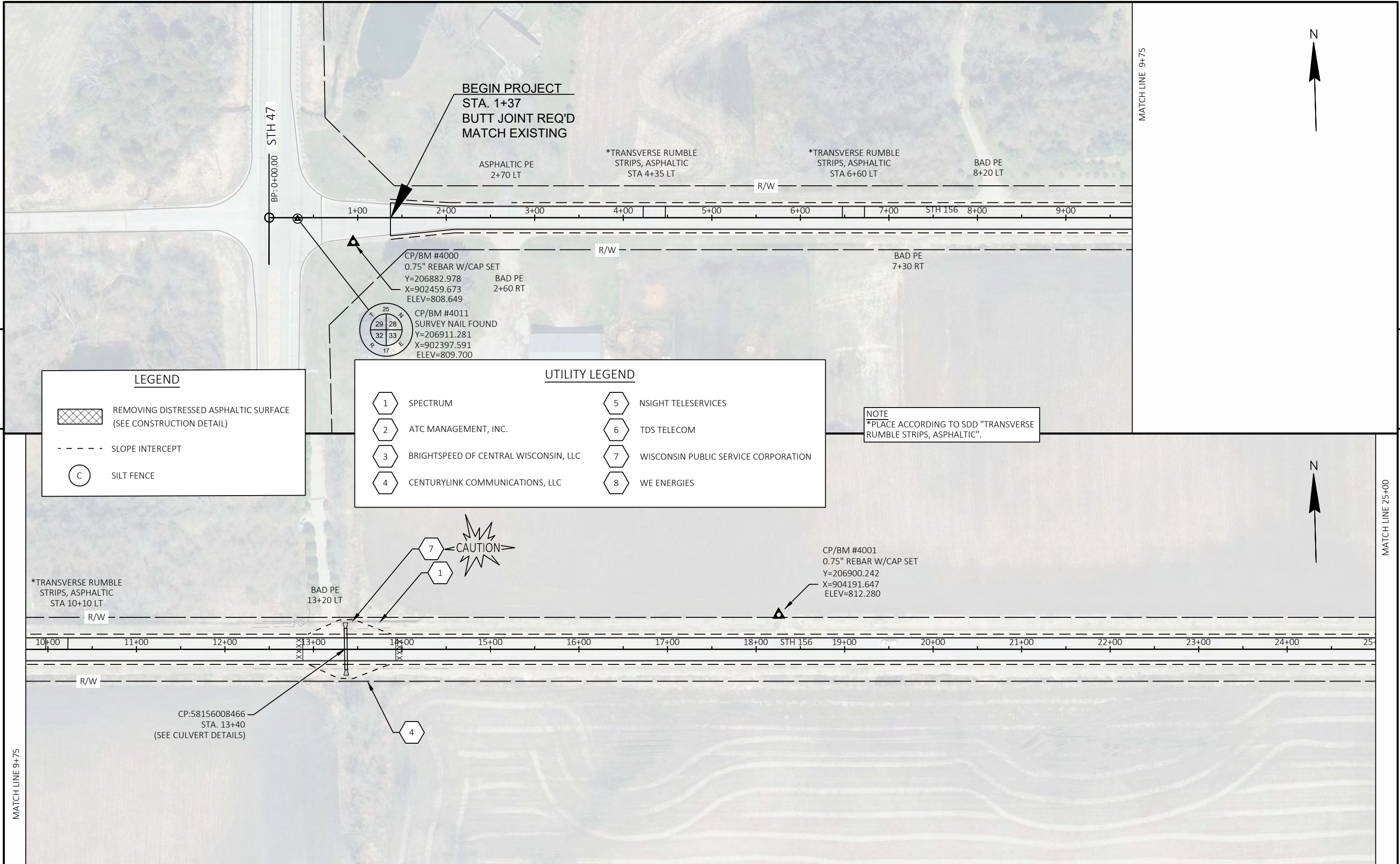
exp U.S. Services Inc.
t: +1.414.221.0088 | f: +1.414.221.0537
241 N Broadway, Suite 203
Milwaukee, WI 53202
U.S.A.
www.exp.com



I, NATHAN ANDEREGG, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF WISCONSIN DEPARTMENT OF TRANSPORTATION I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT AND SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

SIGNATURE: Nathan A. Anderegg DATE: 04/22/24
PRINT NAME: NATHAN A. ANDEREGG
REGISTRATION NUMBER: S-2732

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION NORTH CENTRAL REGION OFFICE RHINELANDER
SIGNATURE: _____ DATE: ____/____/____
PRINT NAME: BRENT L. STELLA



LEGEND



REMOVING DISTRESSED ASPHALTIC SURFACE
(SEE CONSTRUCTION DETAIL)

- - - SLOPE INTERCEPT



SILT FENCE

UTILITY LEGEND



SPECTRUM



ATC MANAGEMENT, INC.



BRIGHTSPEED OF CENTRAL WISCONSIN, LLC



CENTURYLINK COMMUNICATIONS, LLC



NSIGHT TELESERVICES



TDS TELECOM



WISCONSIN PUBLIC SERVICE CORPORATION



WE ENERGIES

NOTE

*PLACE ACCORDING TO SDD "TRANSVERSE
RUMBLE STRIPS, ASPHALTIC".

PROJECT NO: 6580-13-71

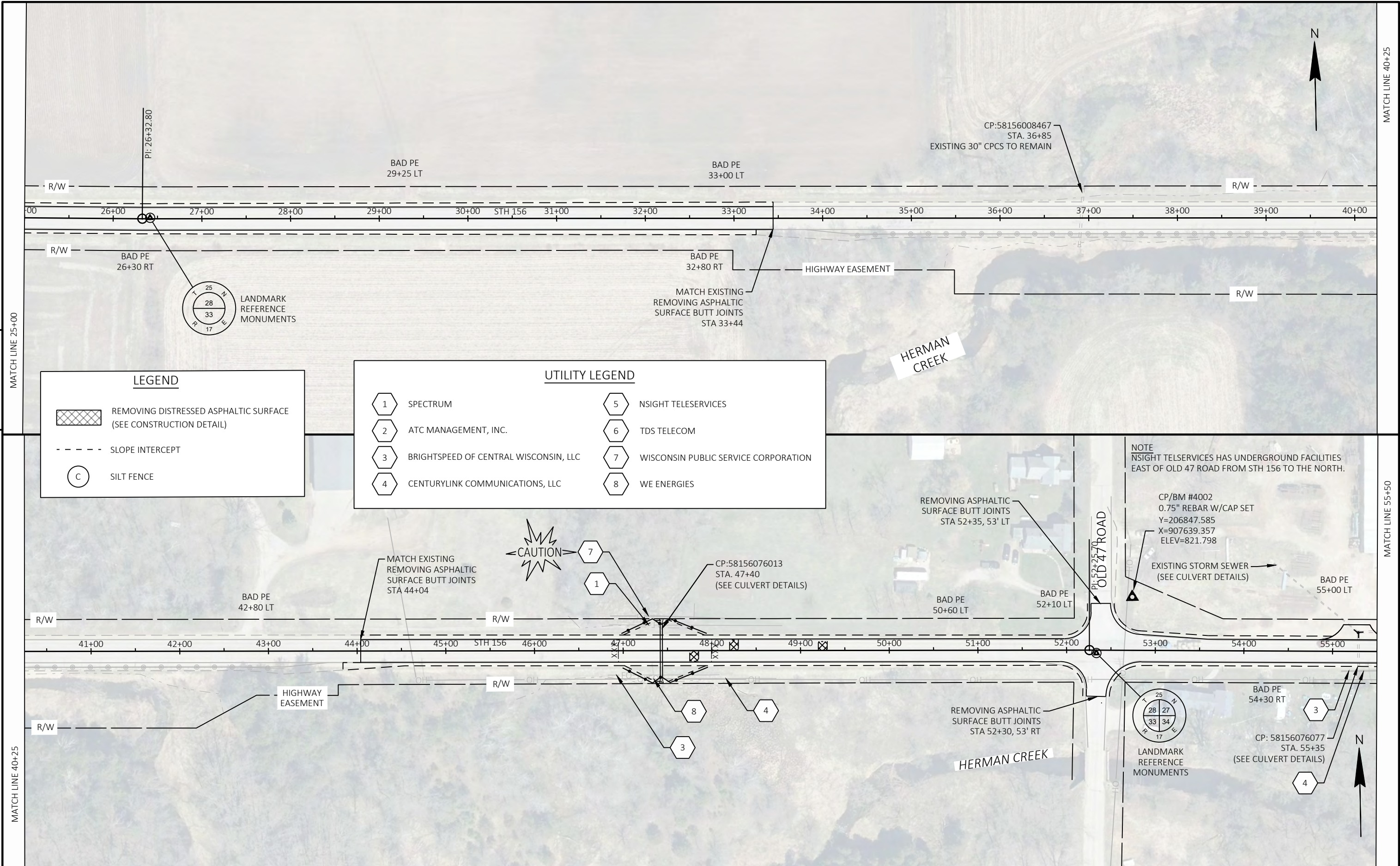
HWY: STH 156

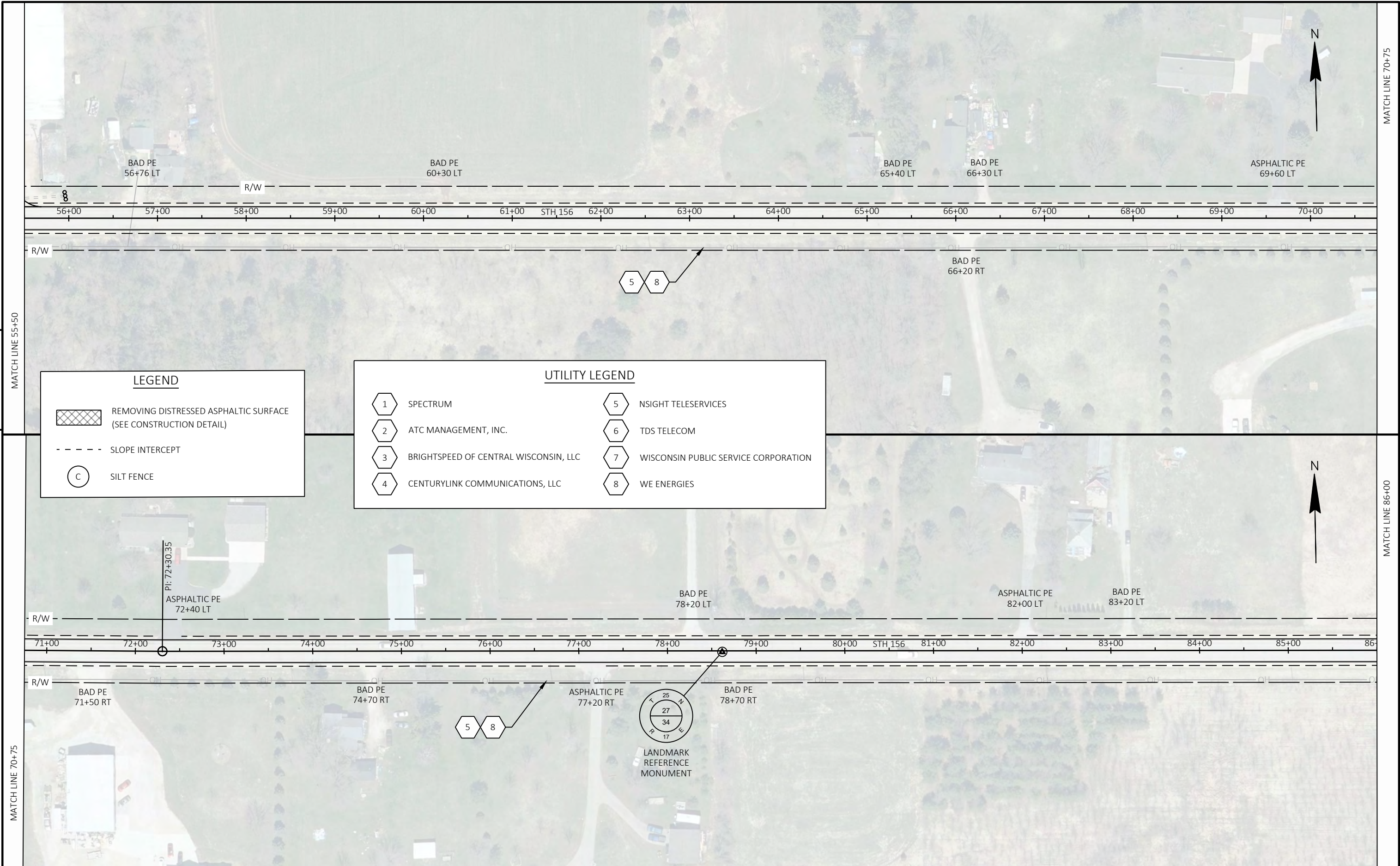
COUNTY: SHAWANO

PLAN

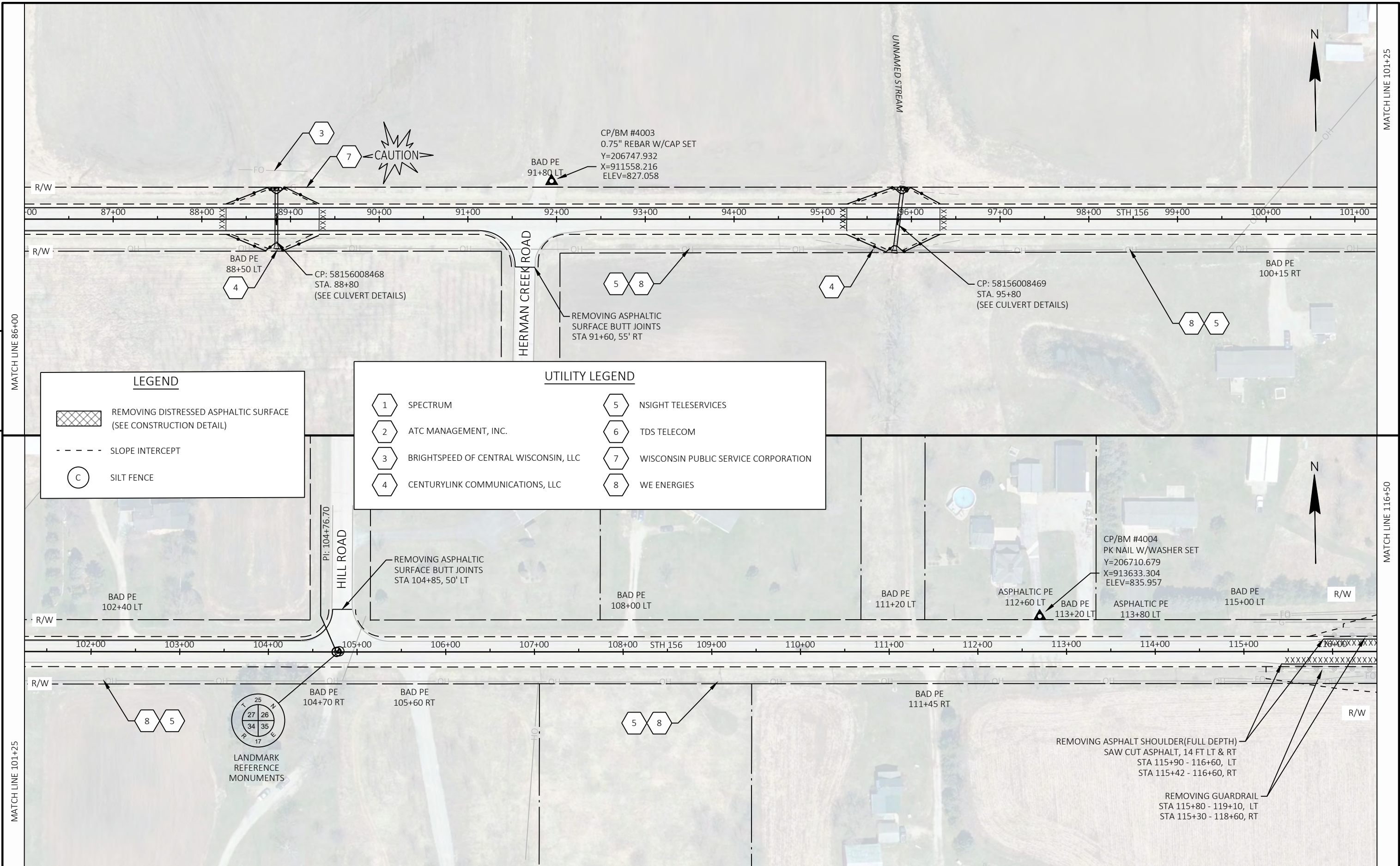
SHEET

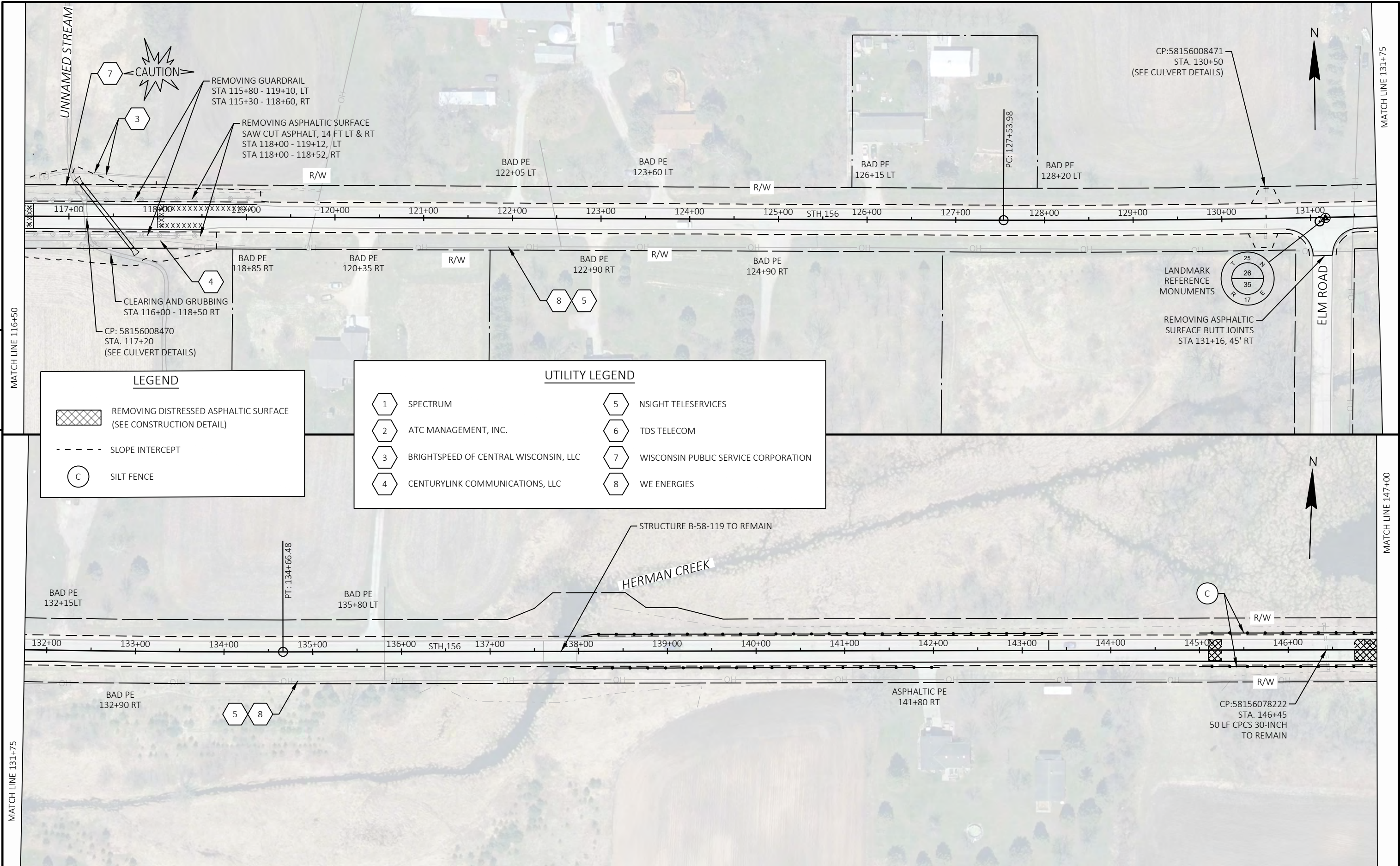
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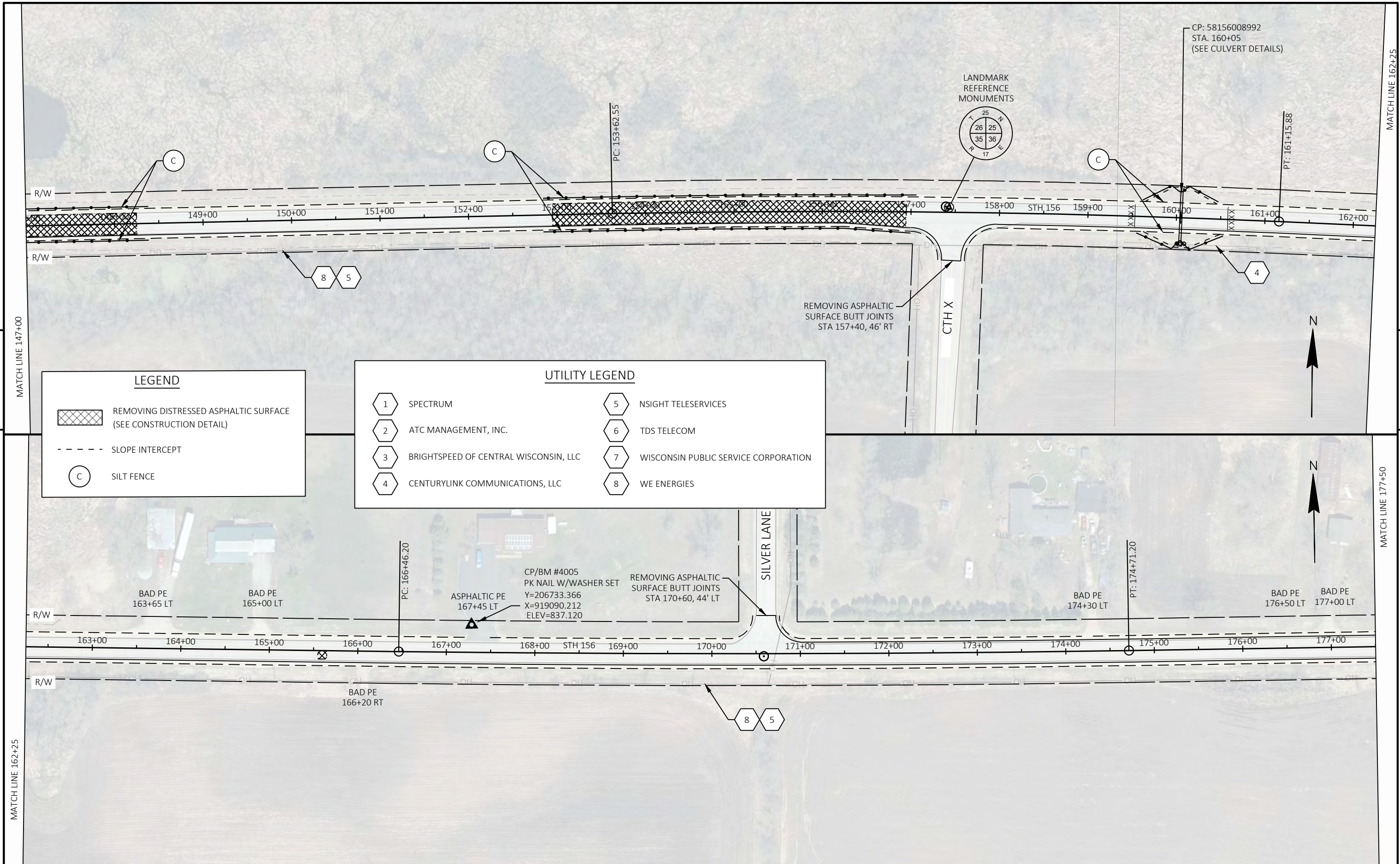




PROJECT NO: 6580-13-71	HWY: STH 156	COUNTY: SHAWANO	PLAN	SHEET	E
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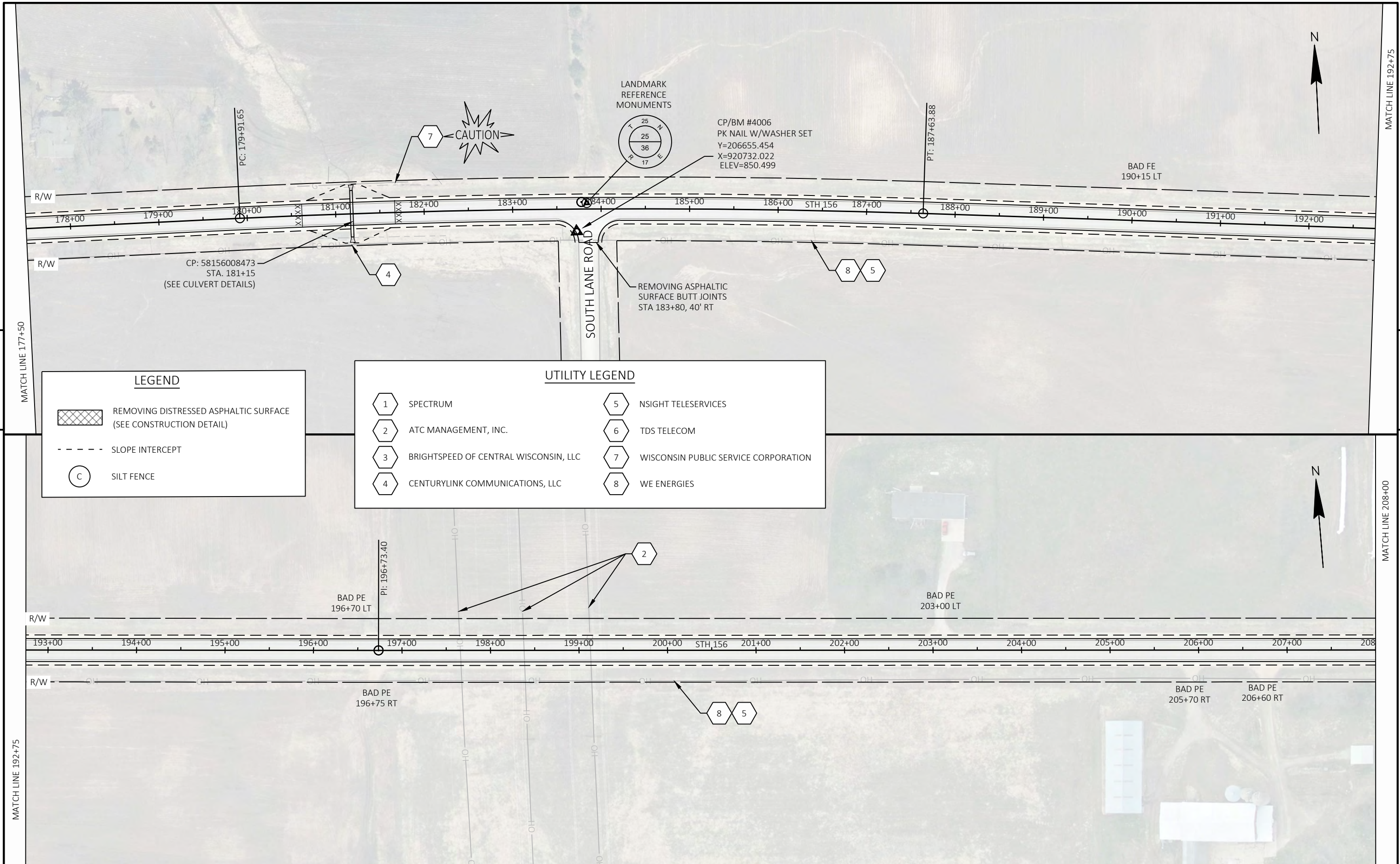


LEGEND

- REMOVING DISTRESSED ASPHALTIC SURFACE (SEE CONSTRUCTION DETAIL)
- SLOPE INTERCEPT
- SILT FENCE

UTILITY LEGEND

- | | |
|---|--|
| 1 SPECTRUM | 5 NSIGHT TELESERVICES |
| 2 ATC MANAGEMENT, INC. | 6 TDS TELECOM |
| 3 BRIGHTSPEED OF CENTRAL WISCONSIN, LLC | 7 WISCONSIN PUBLIC SERVICE CORPORATION |
| 4 CENTURYLINK COMMUNICATIONS, LLC | 8 WE ENERGIES |

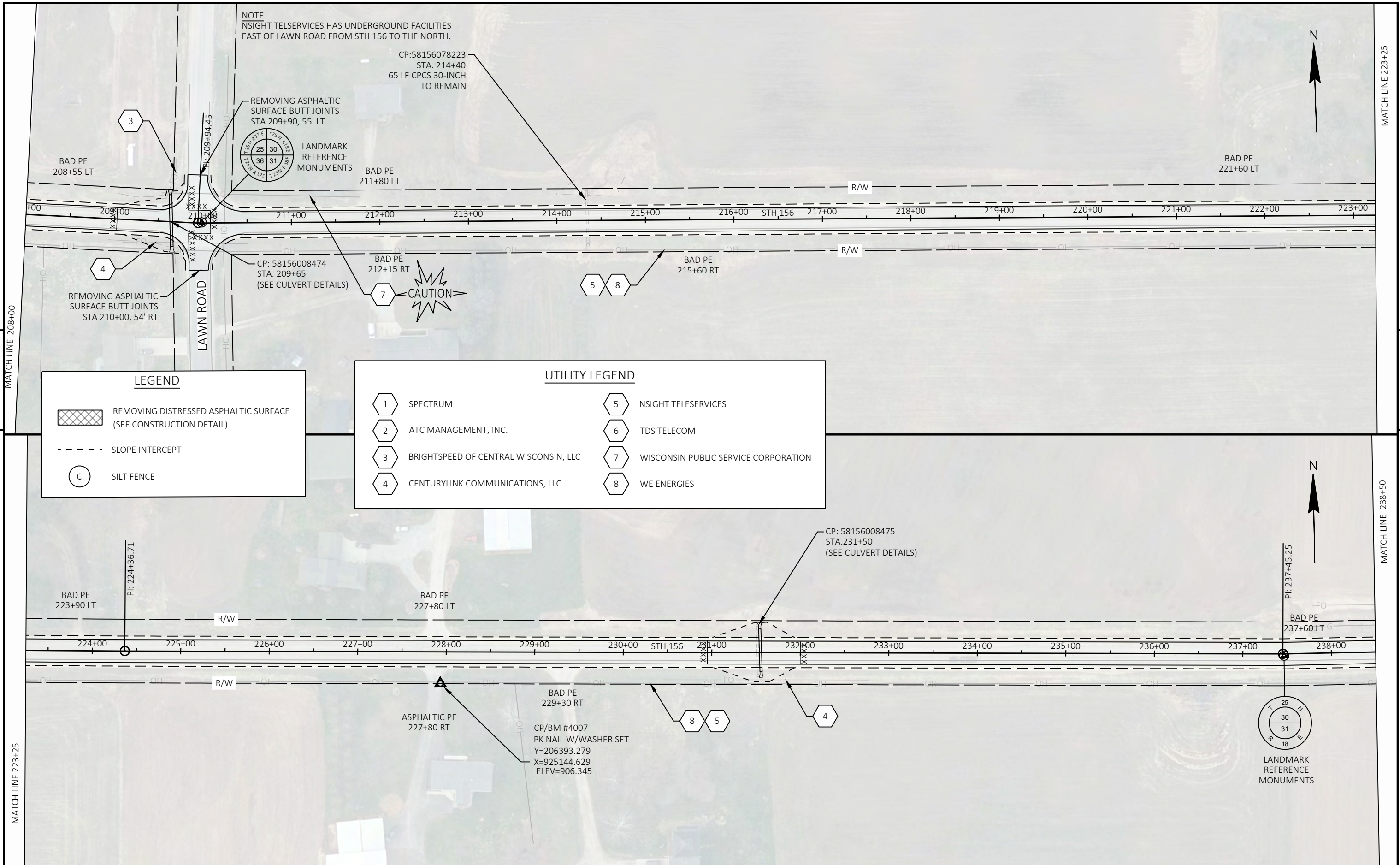


LEGEND

- REMOVING DISTRESSED ASPHALTIC SURFACE (SEE CONSTRUCTION DETAIL)
- SLOPE INTERCEPT
- SILT FENCE

UTILITY LEGEND

- | | | | |
|---|---------------------------------------|---|--------------------------------------|
| 1 | SPECTRUM | 5 | NSIGHT TELESERVICES |
| 2 | ATC MANAGEMENT, INC. | 6 | TDS TELECOM |
| 3 | BRIGHTSPEED OF CENTRAL WISCONSIN, LLC | 7 | WISCONSIN PUBLIC SERVICE CORPORATION |
| 4 | CENTURYLINK COMMUNICATIONS, LLC | 8 | WE ENERGIES |



LEGEND

- REMOVING DISTRESSED ASPHALTIC SURFACE (SEE CONSTRUCTION DETAIL)
- SLOPE INTERCEPT
- SILT FENCE

UTILITY LEGEND

- | | | | |
|---|---------------------------------------|---|--------------------------------------|
| 1 | SPECTRUM | 5 | NSIGHT TELESERVICES |
| 2 | ATC MANAGEMENT, INC. | 6 | TDS TELECOM |
| 3 | BRIGHTSPEED OF CENTRAL WISCONSIN, LLC | 7 | WISCONSIN PUBLIC SERVICE CORPORATION |
| 4 | CENTURYLINK COMMUNICATIONS, LLC | 8 | WE ENERGIES |

PROJECT NO: 6580-13-71

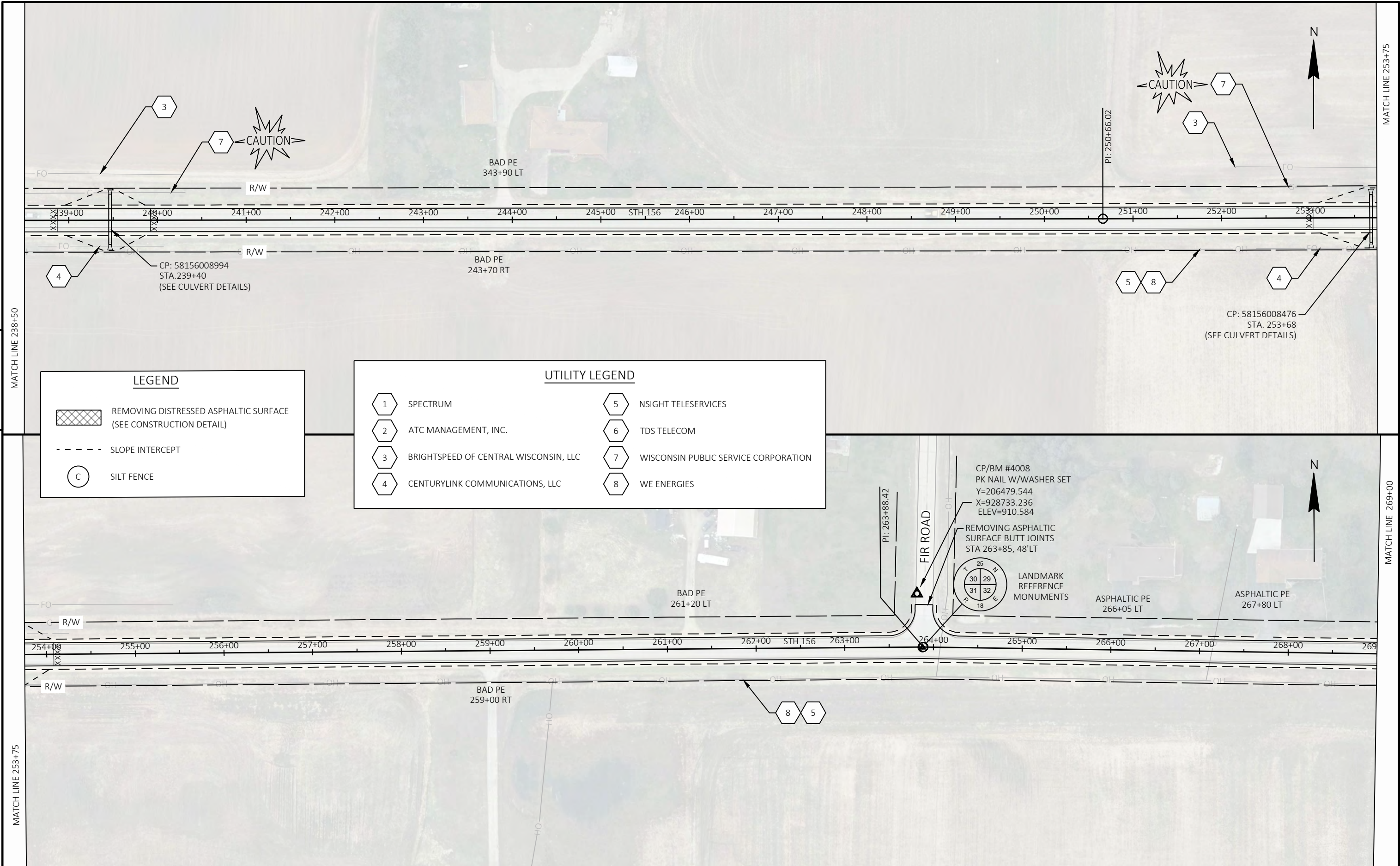
HWY: STH 156

COUNTY: SHAWANO

PLAN

SHEET

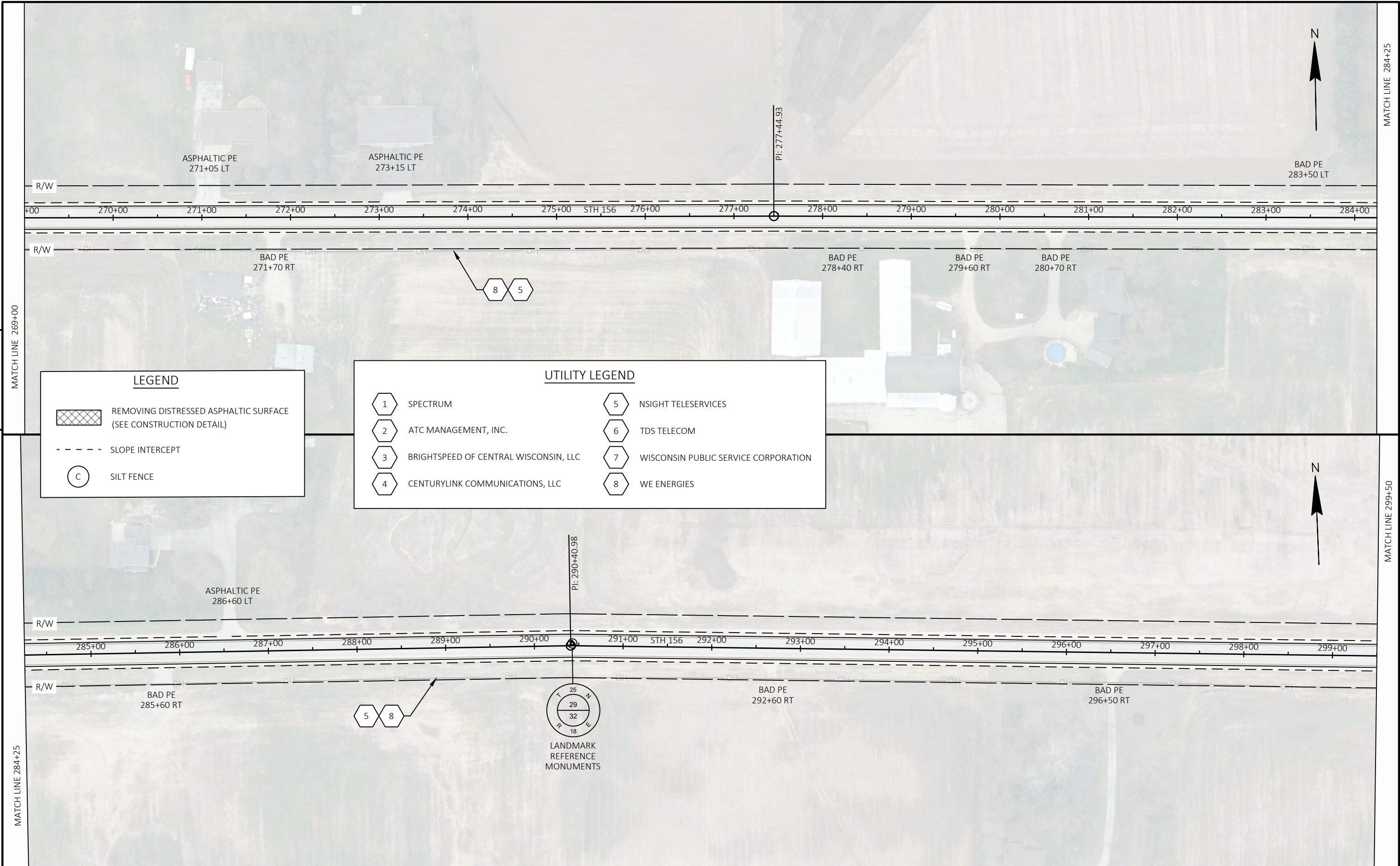
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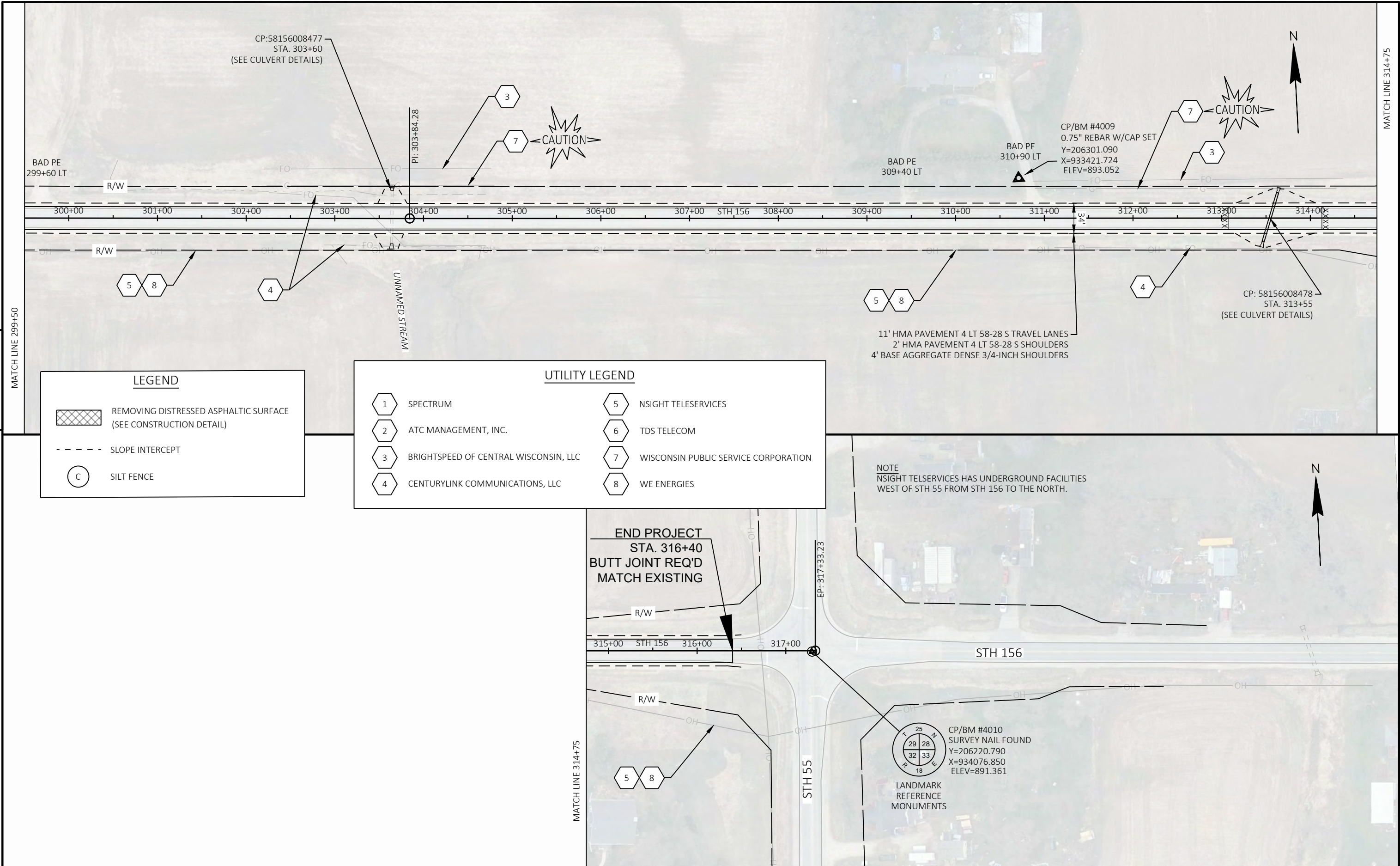


5

5

PROJECT NO:	6580-13-71	HWY: STH 156	COUNTY: SHAWANO	PLAN	SHEET	E
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Standard Detail Drawing List

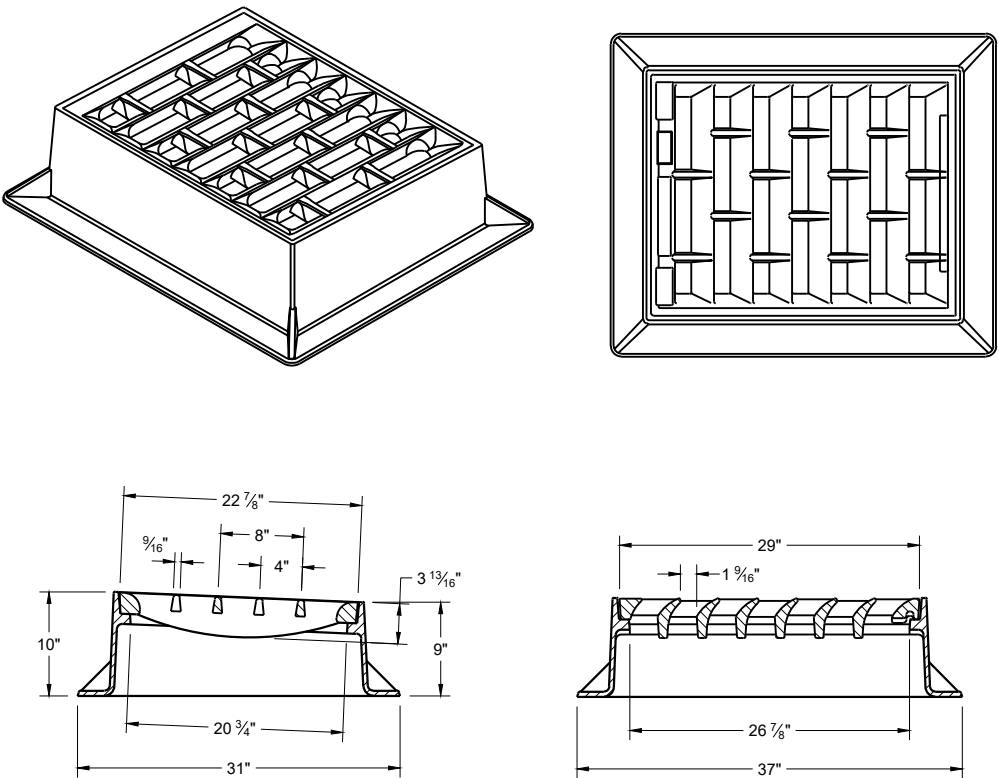
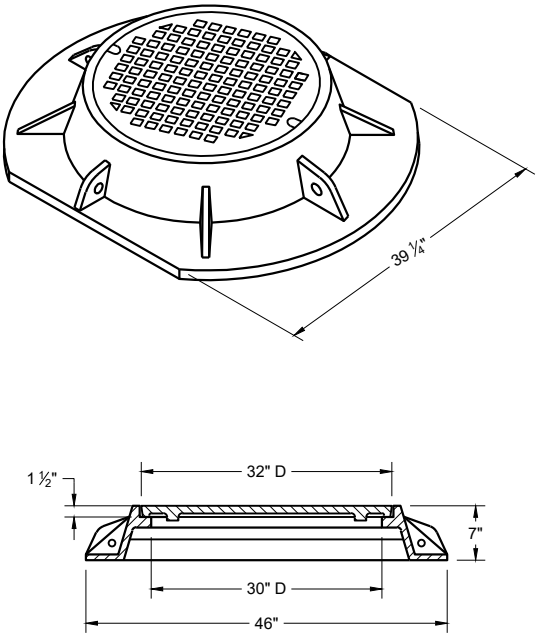
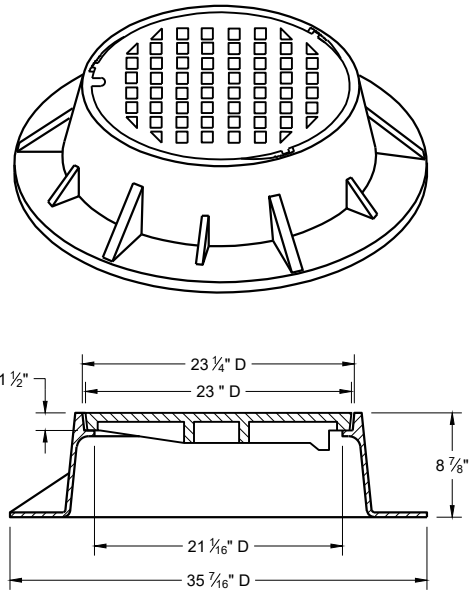
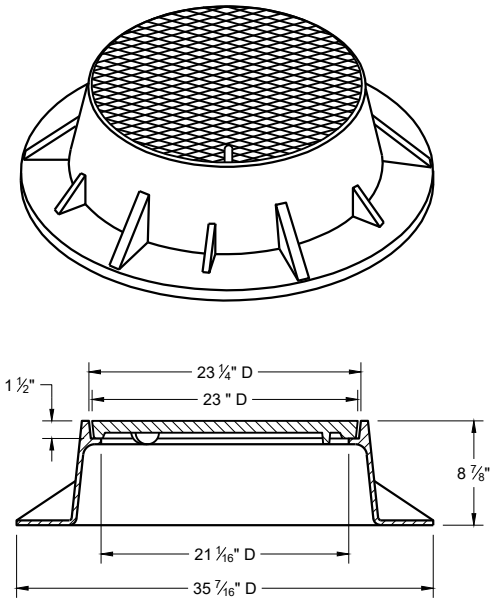
08A05-21E	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-04	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A08-02	TRANSVERSE RUMBLE STRIPS, ASPHALTIC
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C12-09B	TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE
15C19-09A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D33-09	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL
15D48-01	TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY
16A01-07	LANDMARK REFERENCE MONUMENTS AND COVERS

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.

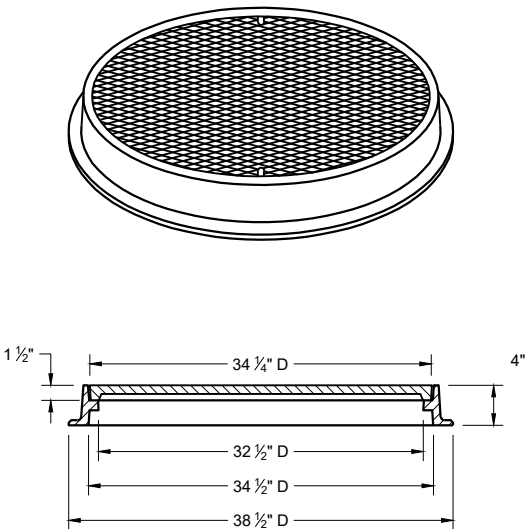
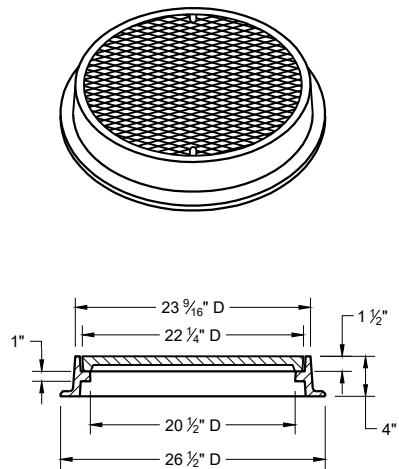
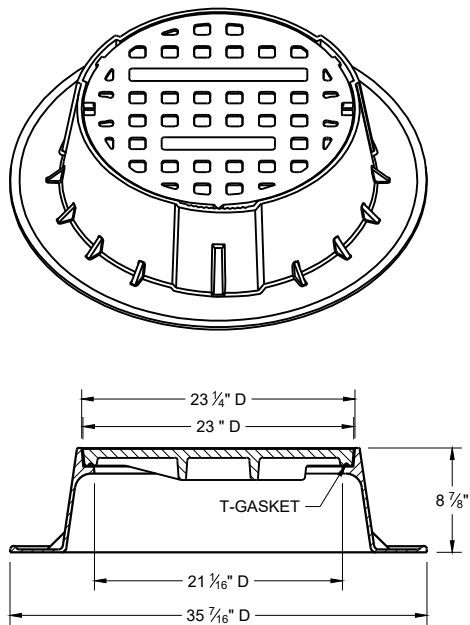
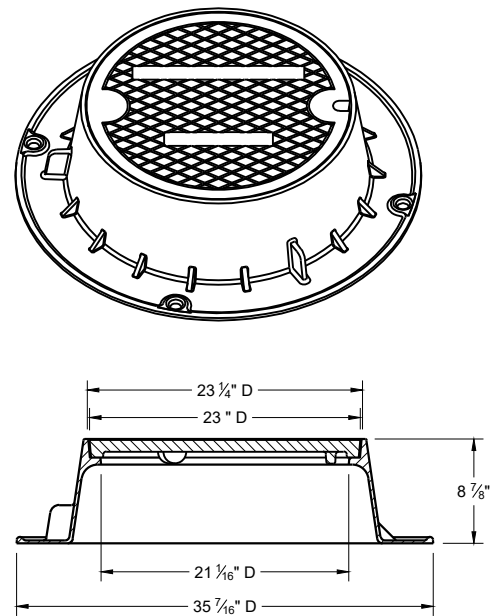
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



TYPE "K"

INLET COVER TYPE "BW"



TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

TYPE "J" SPECIAL

TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

NOTE: EITHER CASTING IS ACCEPTABLE

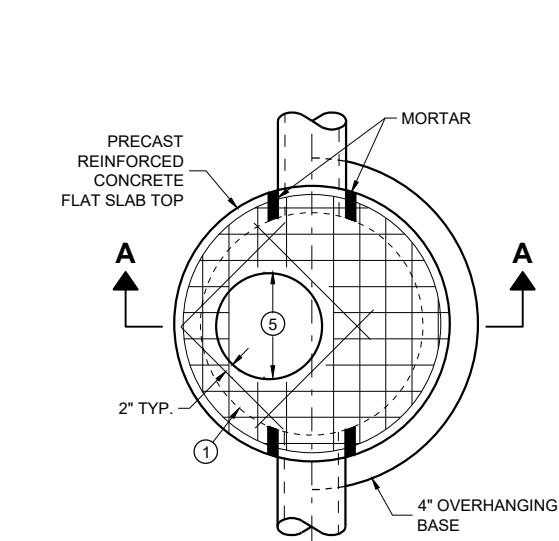
TYPE "L"

TYPE "M"

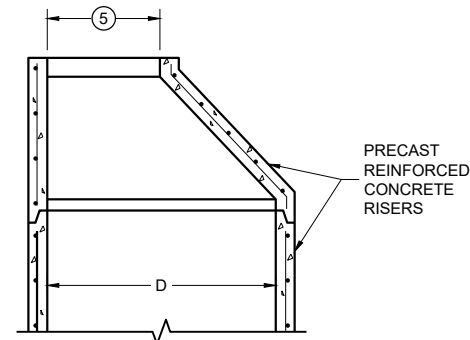
INLET COVERS TYPES BW
MANHOLE COVERS TYPES K,
J, J-S, L, AND M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

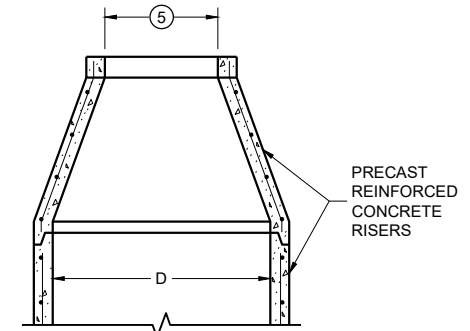
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



PLAN VIEW
CIRCULAR OPENING



OPTIONAL PRECAST
REINFORCED CONCRETE
ECCENTRIC TOP



OPTIONAL PRECAST
REINFORCED CONCRETE
CONCENTRIC TOP

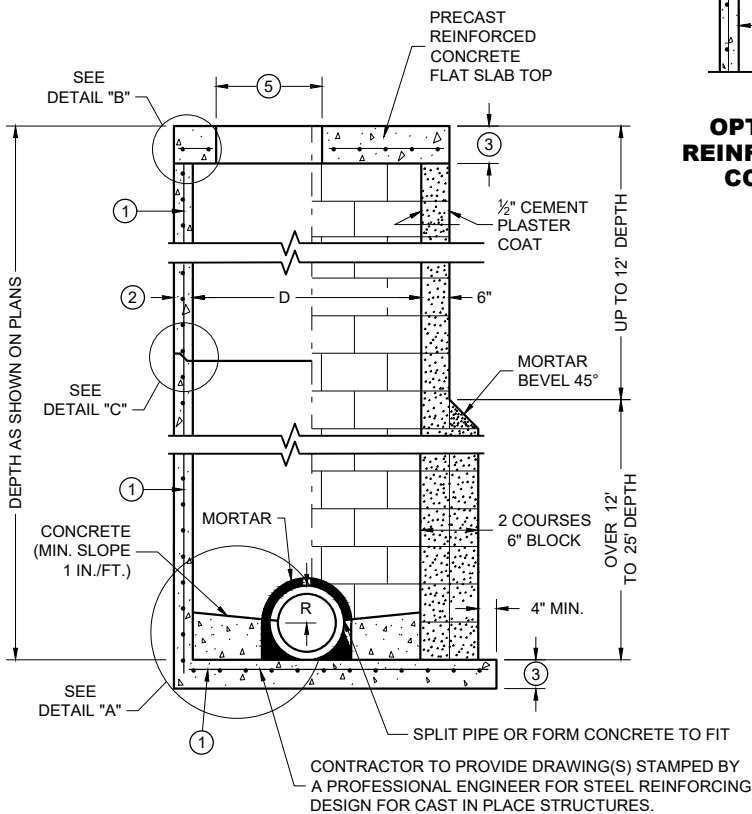
MANHOLE COVER OPENING MATRIX

MANHOLE COVER OPENING SIZE (FT.)	MANHOLE COVER TYPE	C	ALL JS	K	L	M
2 DIA.	5	X	X		X	
3 DIA.				X		X

PIPE MATRIX

MANHOLE SIZE (DIA.)	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES		MINIMUM WALL THICKNESS (IN)	MINIMUM PRECAST FLAT SLAB TOP AND BASE THICKNESS
	180° SEPARATION (IN)	90° SEPARATION (IN)		
3-FT	15	12	4	6
4-FT	24	18	4	6
5-FT	36	24	5	8
6-FT	42	36	6	8
7-FT	48	36/42 *	7	8
8-FT	60	42	8	8
9-FT	66	54	9	10
10-FT	72	60	10	10

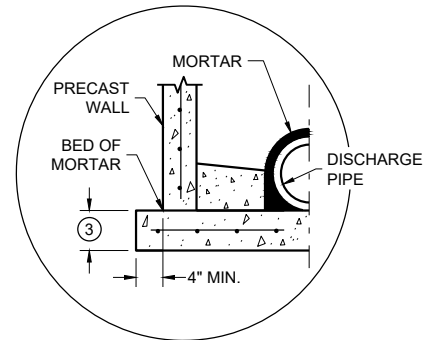
*A 36" PIPE AND A 42" PIPE CAN BE PLACED WITHIN 90 DEGREES.
SEE MINIMUM HORIZONTAL PIPE SEPARATION DETAIL.



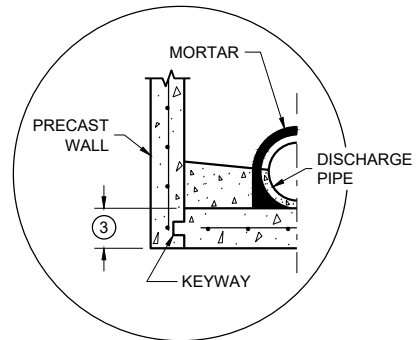
SECTION A - A

PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE

CONCRETE BLOCK WITH
CAST IN PLACE OR
PRECAST REINFORCED
CONCRETE BASE 1

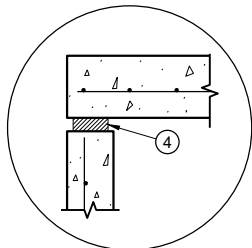


SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

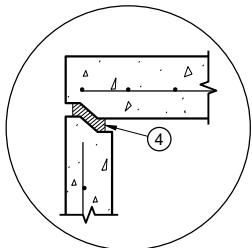


PRECAST REINFORCED CONCRETE
WITH INTEGRAL BASE OPTION

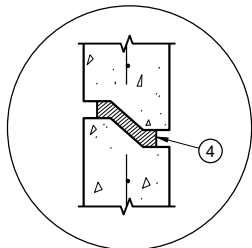
DETAIL "A"



TOP WITH PLAIN
END JOINT



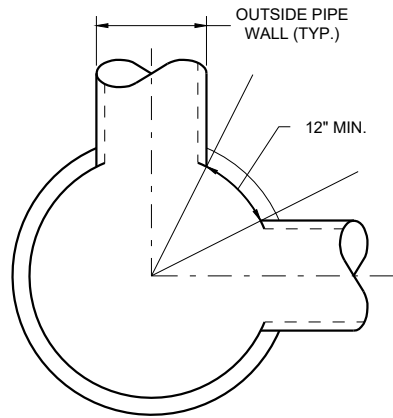
TOP WITH TONGUE
AND GROOVE JOINT



RISER WITH TONGUE
AND GROOVE JOINT

DETAIL "B"

DETAIL "C"



MINIMUM HORIZONTAL
PIPE SEPARATION

DETAIL "D"

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES. CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL IMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2 INCH AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

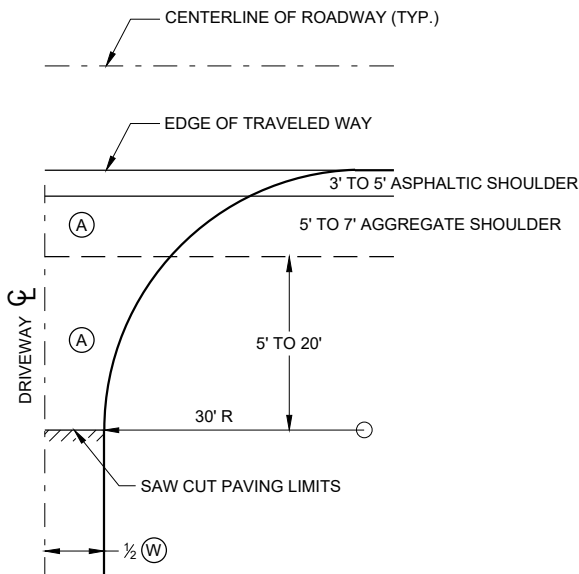
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "D".

- 1 FOR PRECAST MANHOLES AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- 2 SEE PIPE MATRIX TABLE FOR MINIMUM WALL THICKNESS FOR PRECAST MANHOLES
- 3 SEE PIPE MATRIX TABLE FOR MINIMUM THICKNESS OF PRECAST FLAT SLAB TOPS AND BASES.
- 4 JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 OR RUBBER GASKETS CONFORMING TO ASTM C443.
- 5 SEE MANHOLE COVER OPENING MATRIX.

MANHOLES, 3-FT, 4-FT
5-FT, 6-FT, 7-FT, 8-FT, 9-FT
AND 10-FT DIAMETER

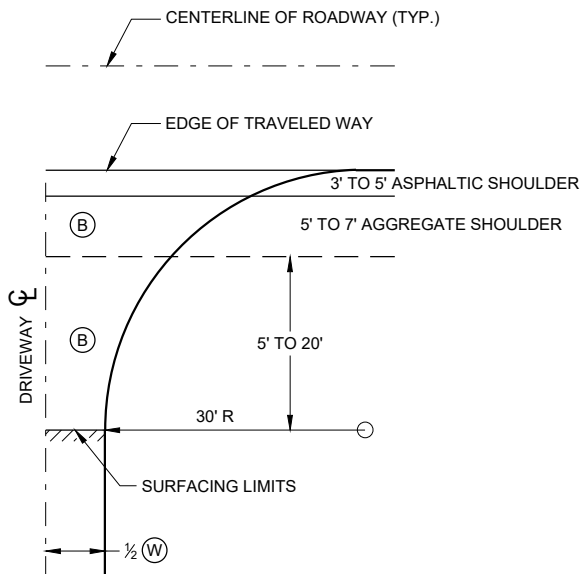
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

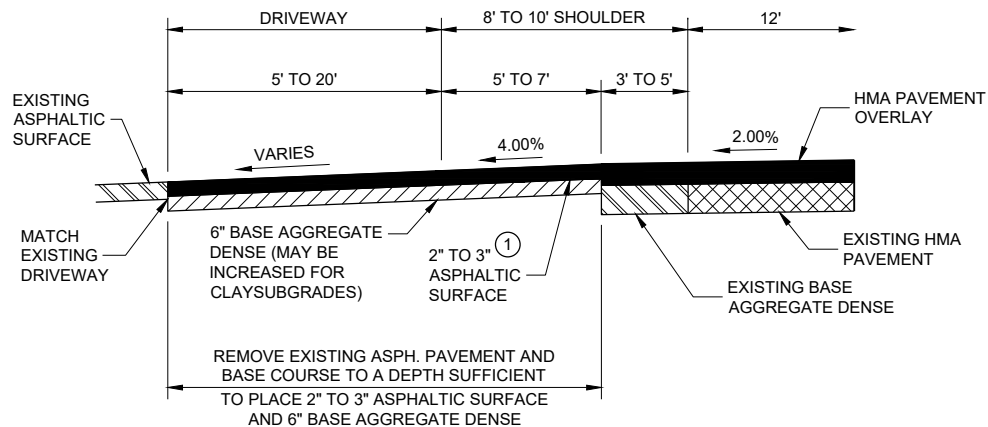


**PLAN VIEW
HALF SECTION**

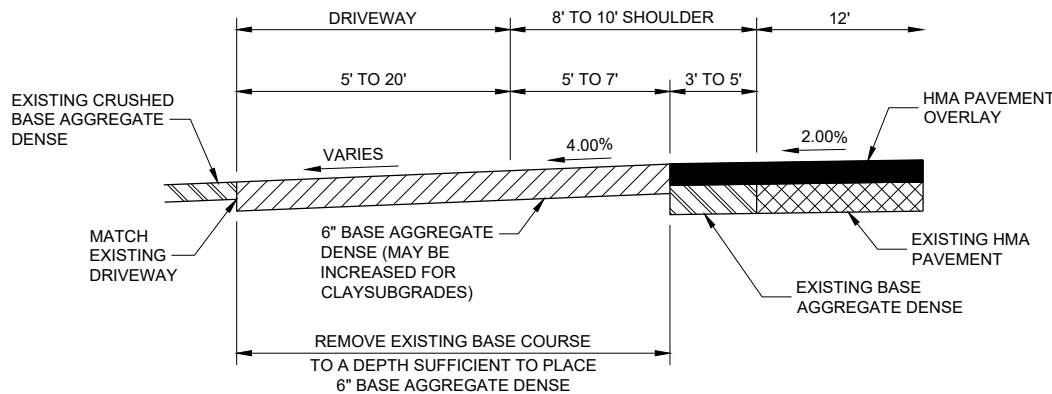
- (A) : PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES. (TON)
- (B) : PAID FOR AS BASE AGGREGATE DENSE 1 1/4" (TON)
- (W) : DRIVEWAY WIDTH 16' MIN. - 24' MAX.



**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**

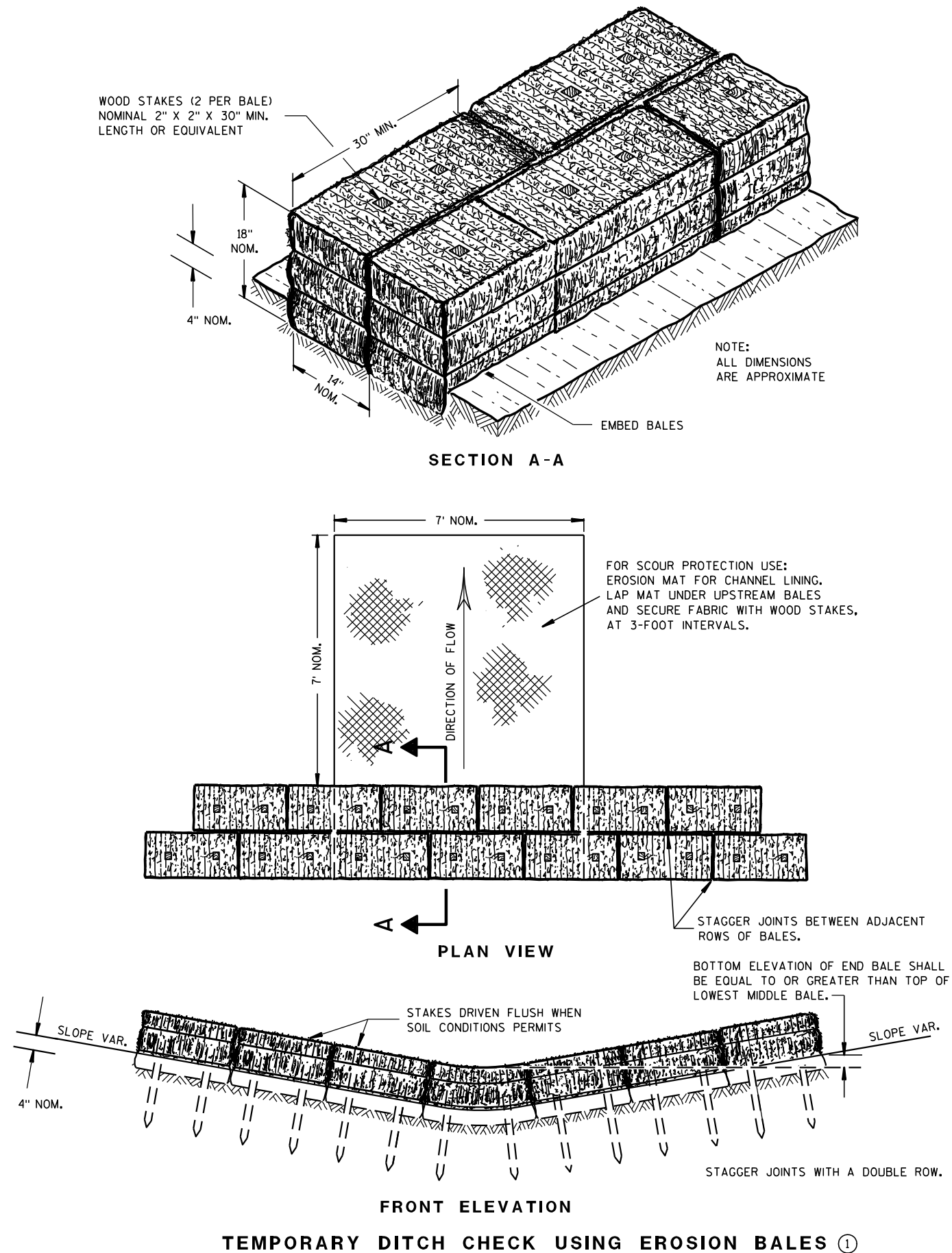
GENERAL NOTES

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

**DRIVEWAYS WITHOUT CURB
AND GUTTER RESURFACING
PROJECTS RURAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

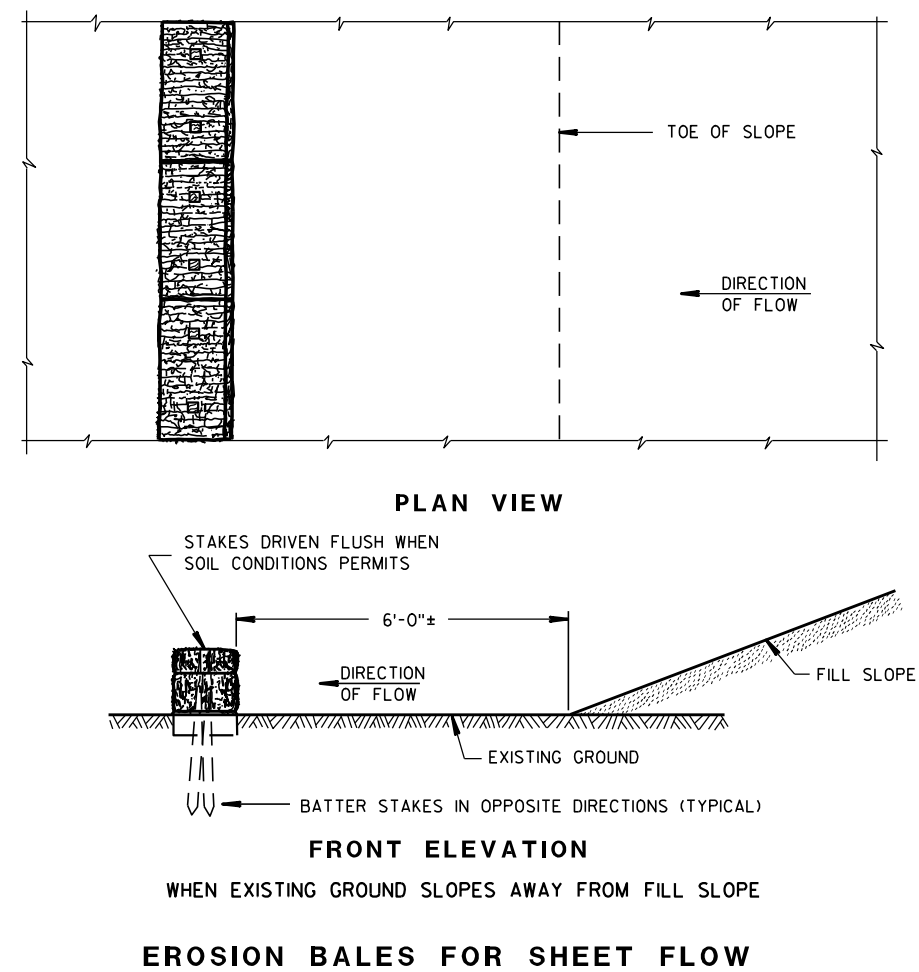
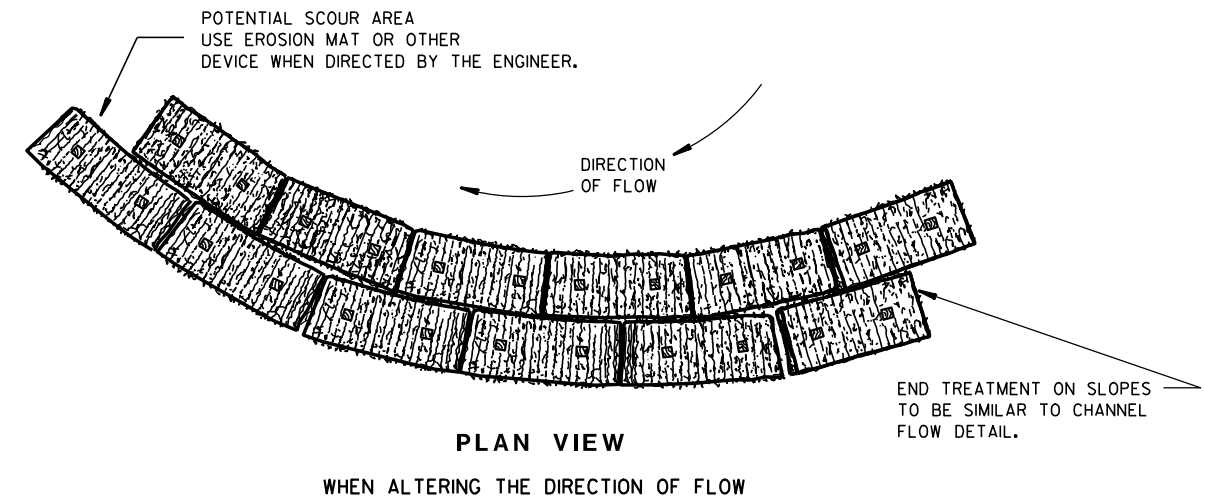
APPROVED
December 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

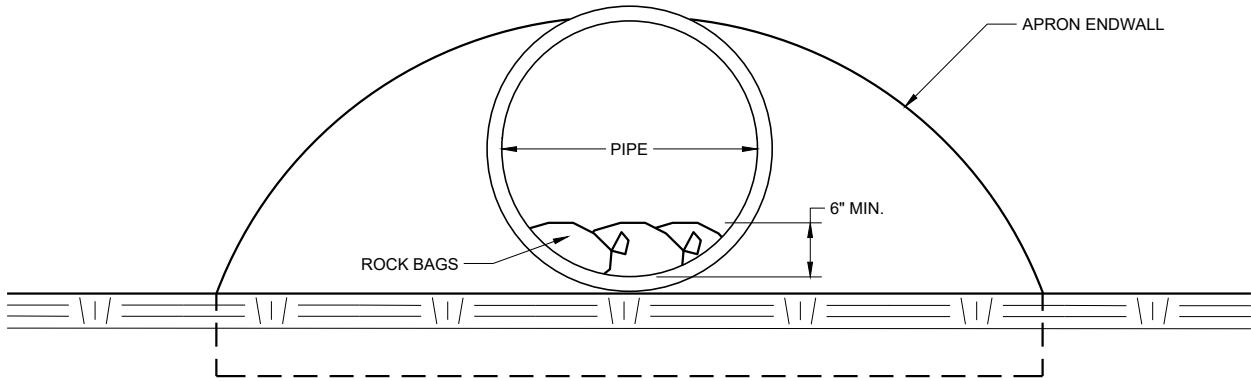
FHWA



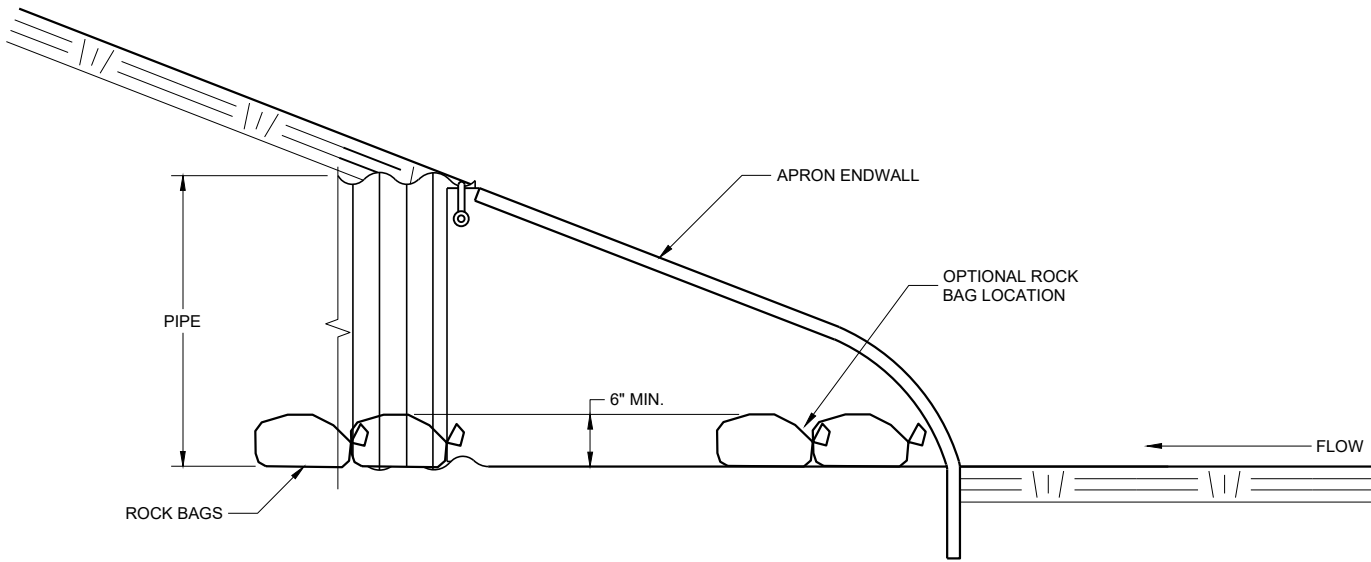
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" 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.



SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/s/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



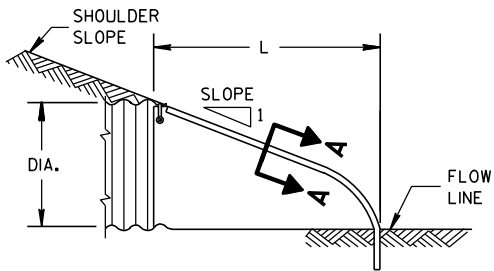
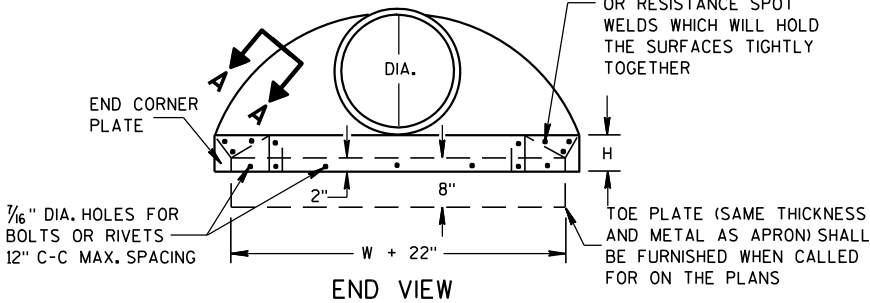
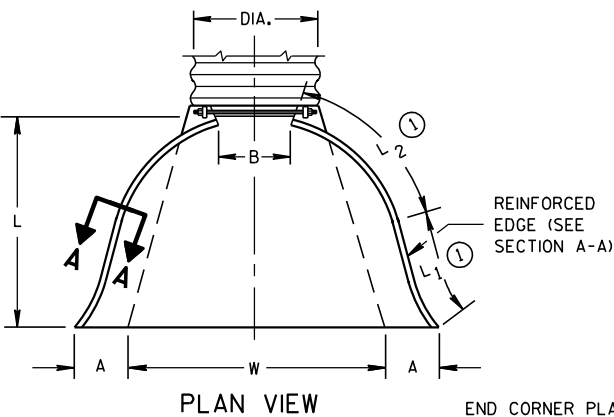
SIDE VIEW

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

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")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.	
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.	
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.	
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.	
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.	
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.	
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.	
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.	
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.	
60	.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.	

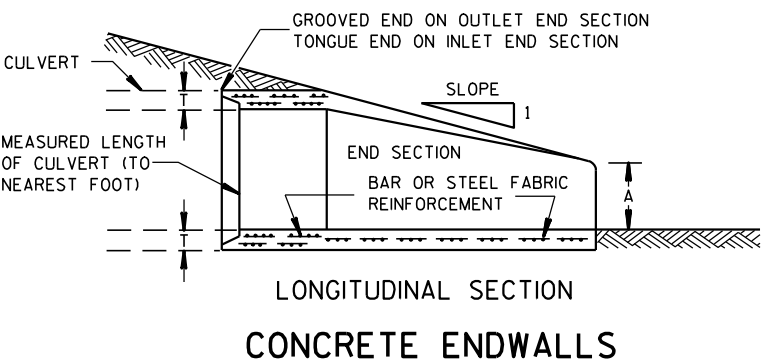
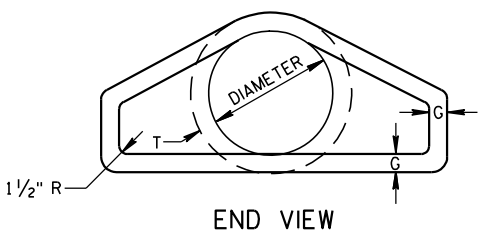
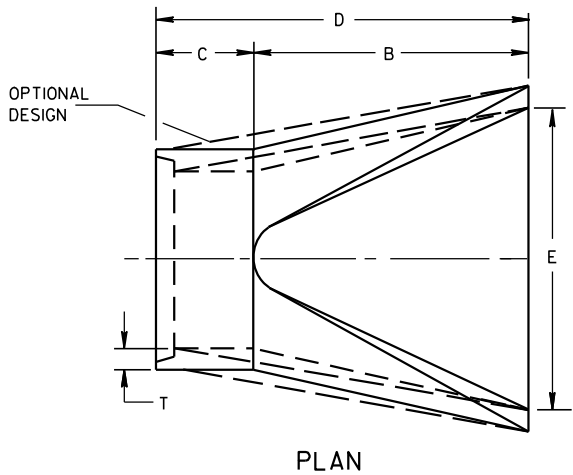
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

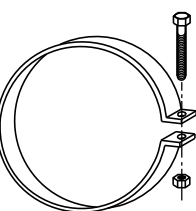
REINFORCED CONCRETE APRON ENDWALLS									
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE	
	T	A	B	C	D	E	G		
12	2	4	24	48 ¹ / ₈	72 ¹ / ₈	24	2	3 to 1	
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1	
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1	
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1	
24	3	9 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	24-30	72-78	21-27	99	102	5 ¹ / ₂	2 to 1	
72	7	24-36	78	21	99	108	6	2 to 1	
78	7 ¹ / ₂	24-36	78	21	99	114	6 ¹ / ₂	2 to 1	
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1	
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1	

* MINIMUM
** MAXIMUM

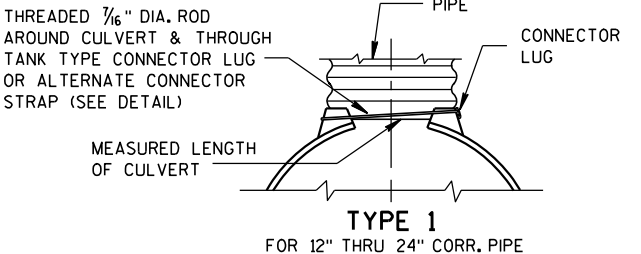


LONGITUDINAL SECTION
CONCRETE ENDWALLS

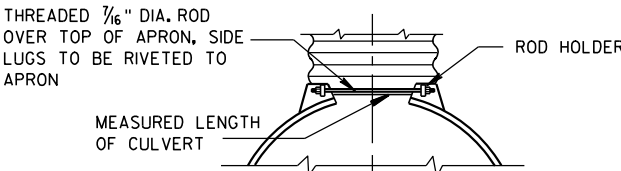
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



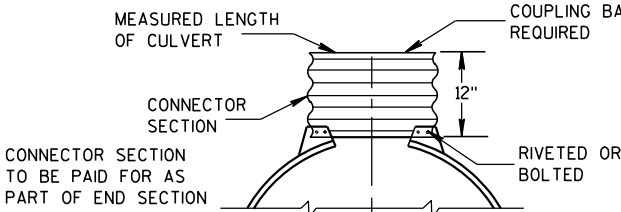
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



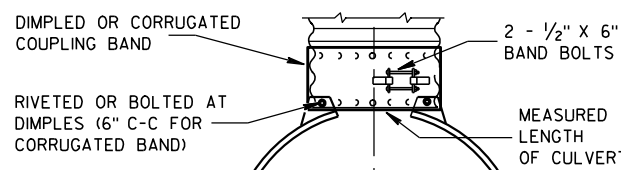
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

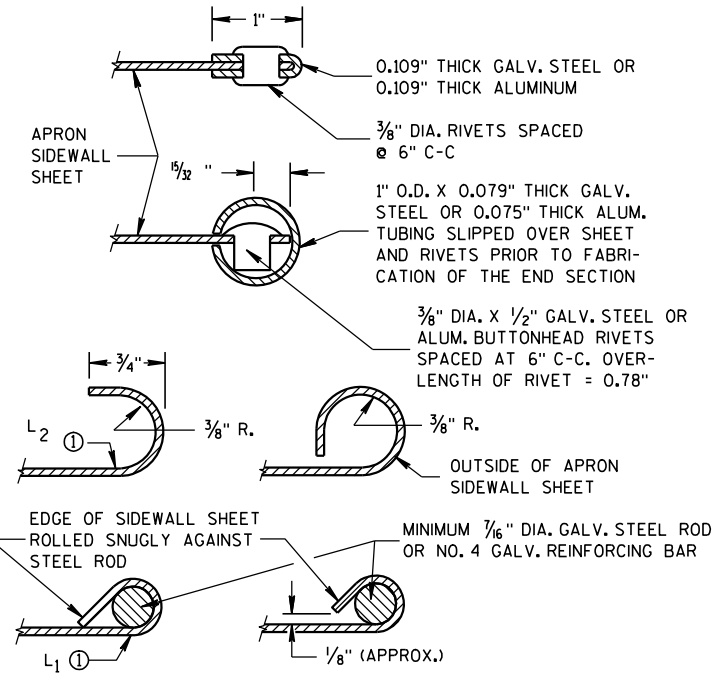
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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 VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

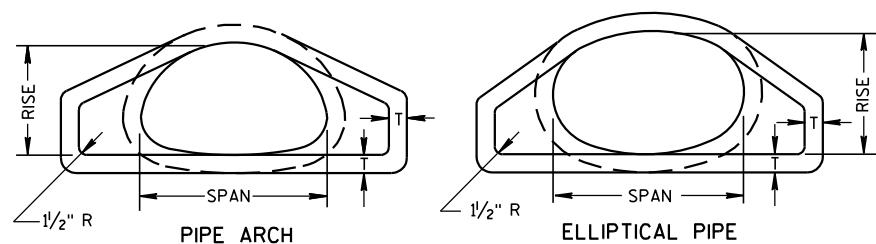
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

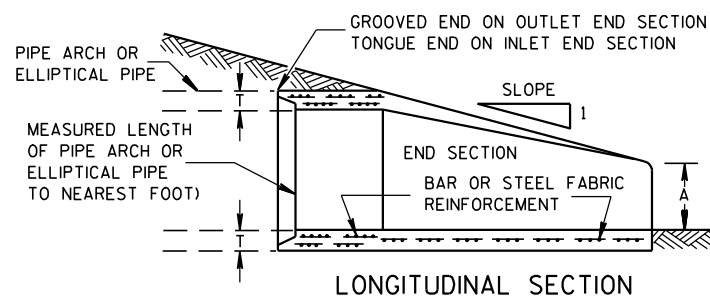
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR CULVERT PIPE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinesmith CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

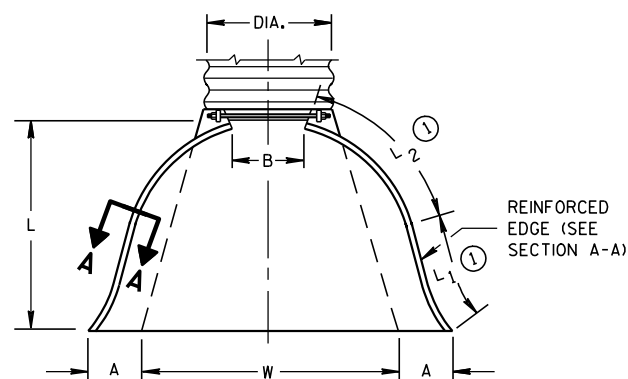


END VIEW



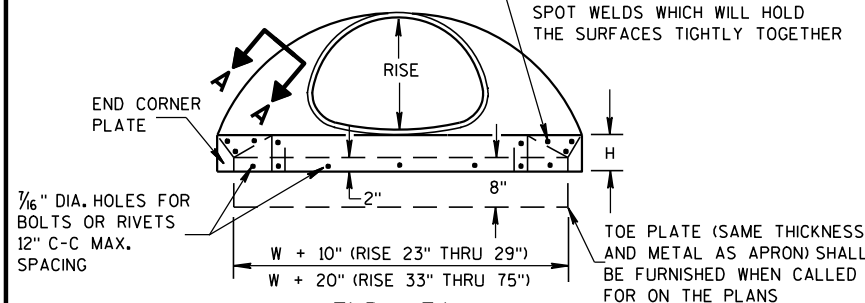
LONGITUDINAL SECTION

CONCRETE ENDWALLS

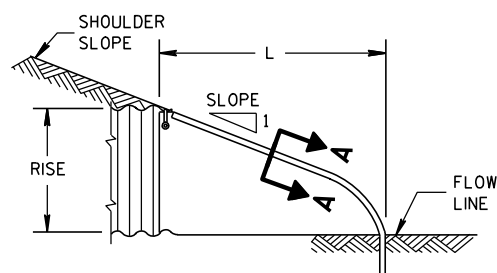
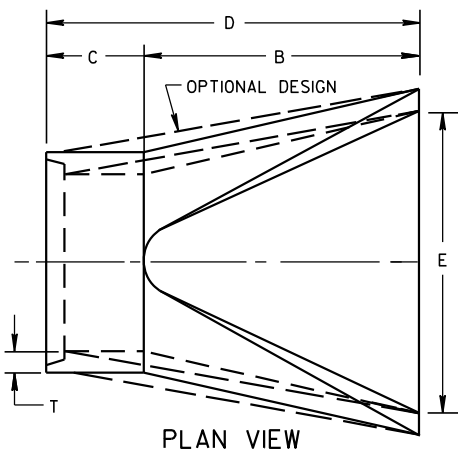


PLAN VIEW

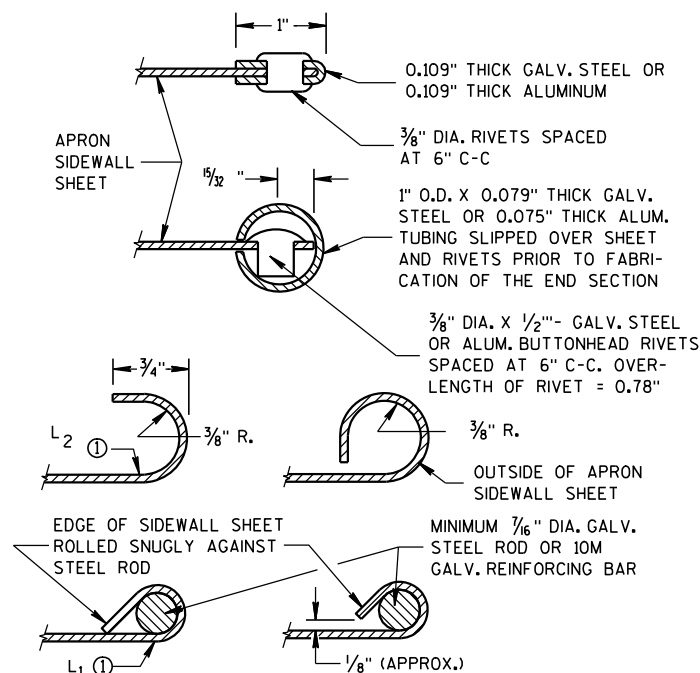
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW

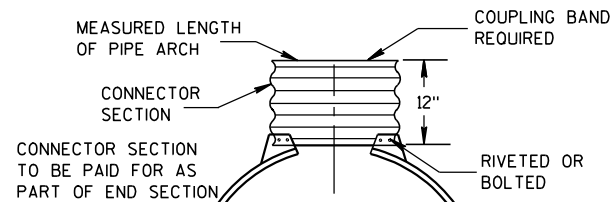


SECTION A-A



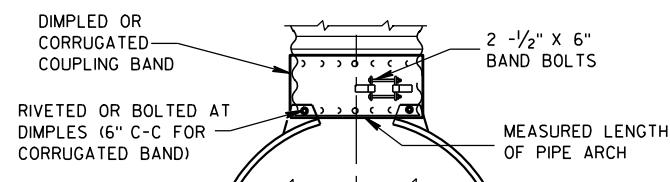
TYPE 2

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

CONNECTION DETAILS

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")		
					(±1")	(MAX.)	(±1")	(±1 1/2")	①	①	(±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")		
					(±1")	(MAX.)	(±1")	(±1 1/2")	①	①	(±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	
	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	
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 1/16	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	
	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	
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 1/4	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.

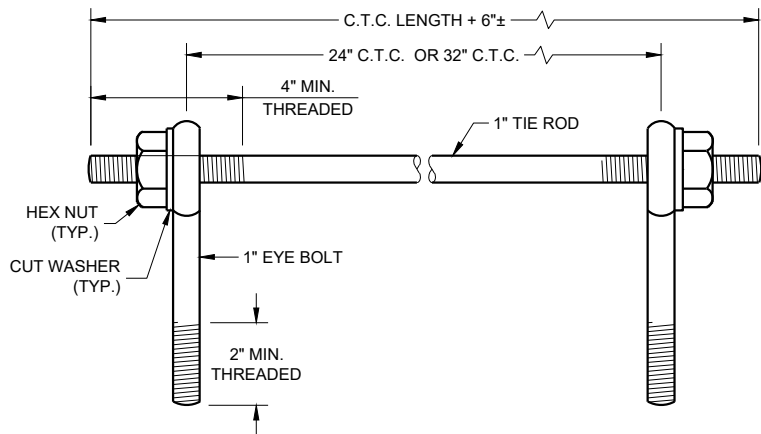
① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPESTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

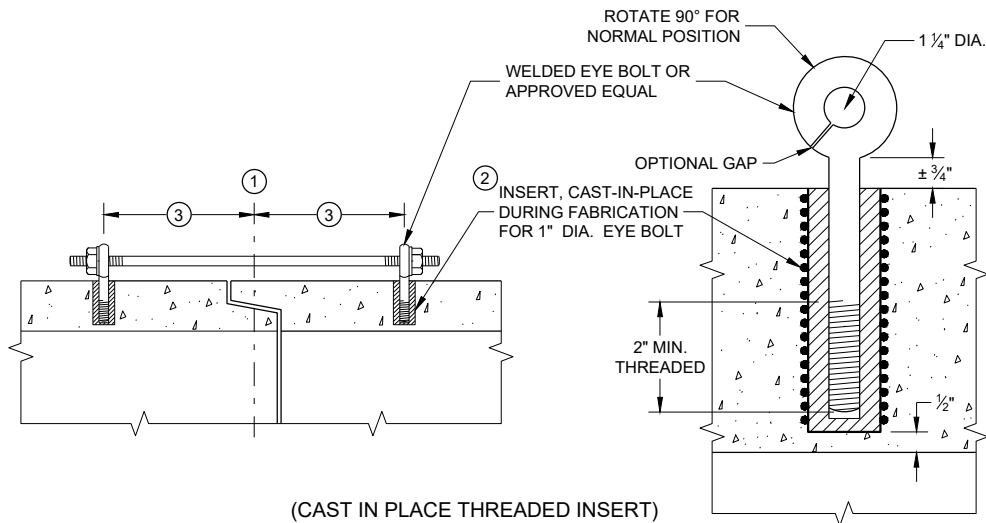
11/30/94
DATE/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

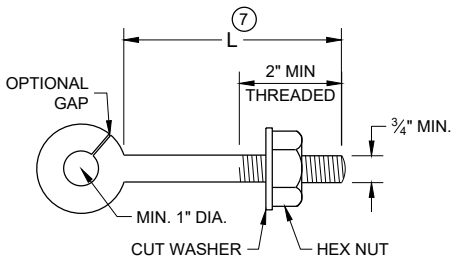
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

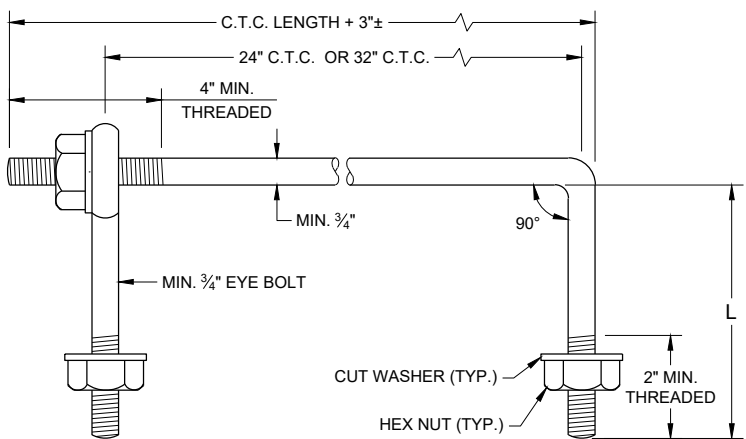
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 1 CENTER LINE 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 PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- 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.
- 7 EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

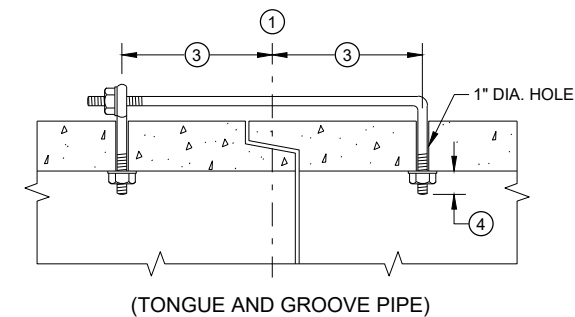


EYE BOLT 7

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



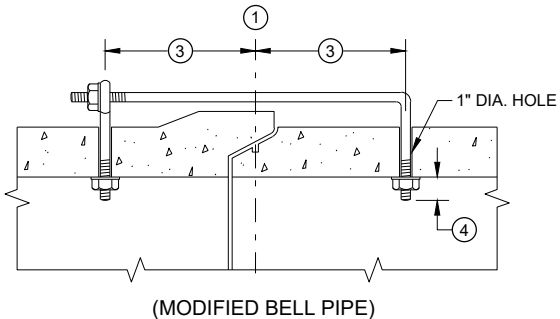
EYE BOLT AND TIE ROD



LONGITUDINAL SECTION

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

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

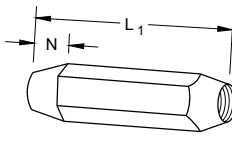


(MODIFIED BELL PIPE)

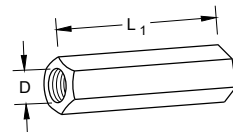
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12 - 60	5/8	5/8	5	1/2
66 - 84	3/4	3/4	5	1/2
90 - 144	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES

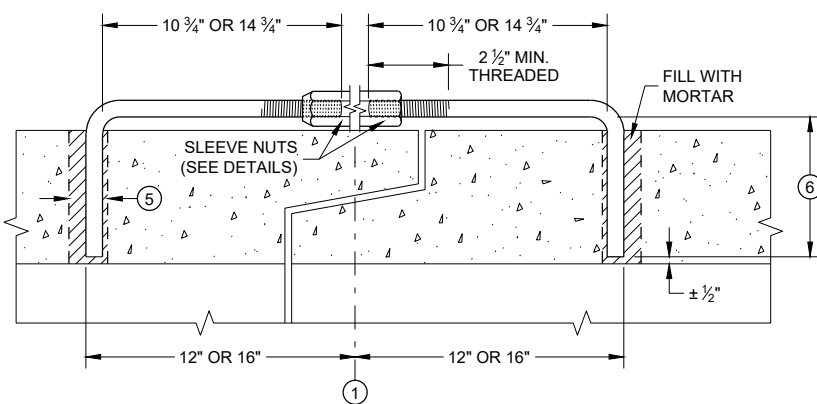


TAPERED



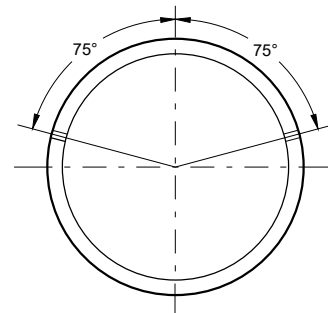
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



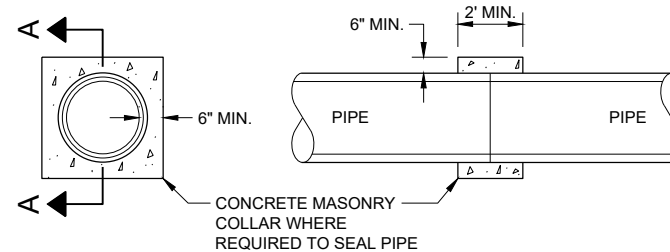
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

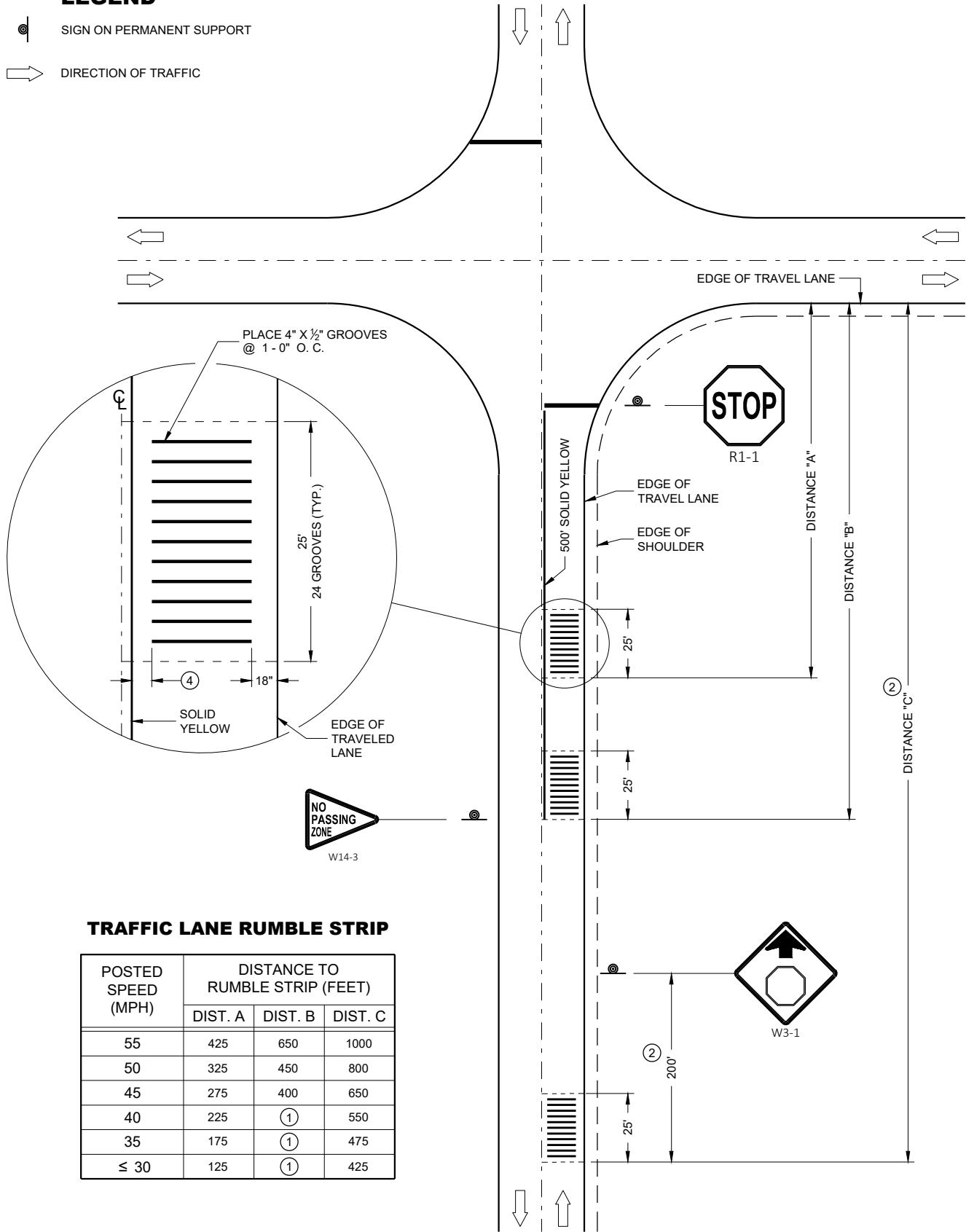
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

LEGEND

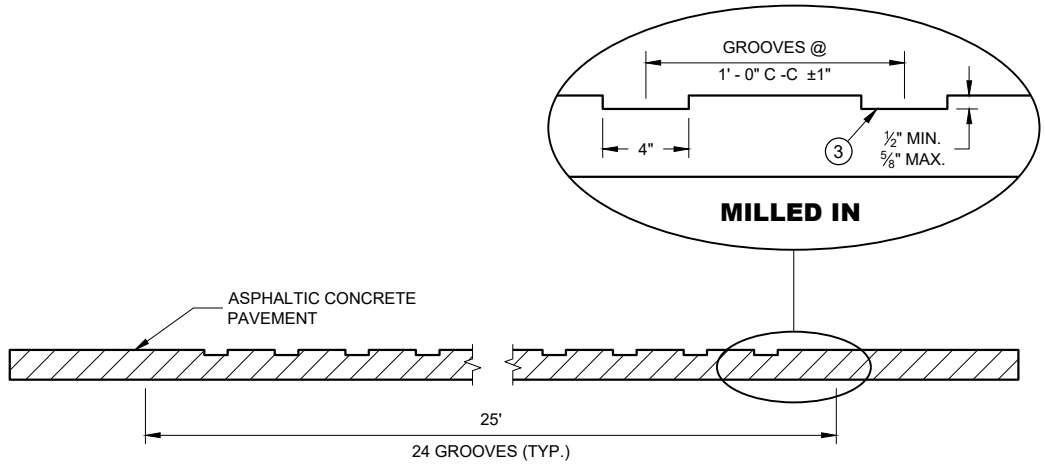
-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC



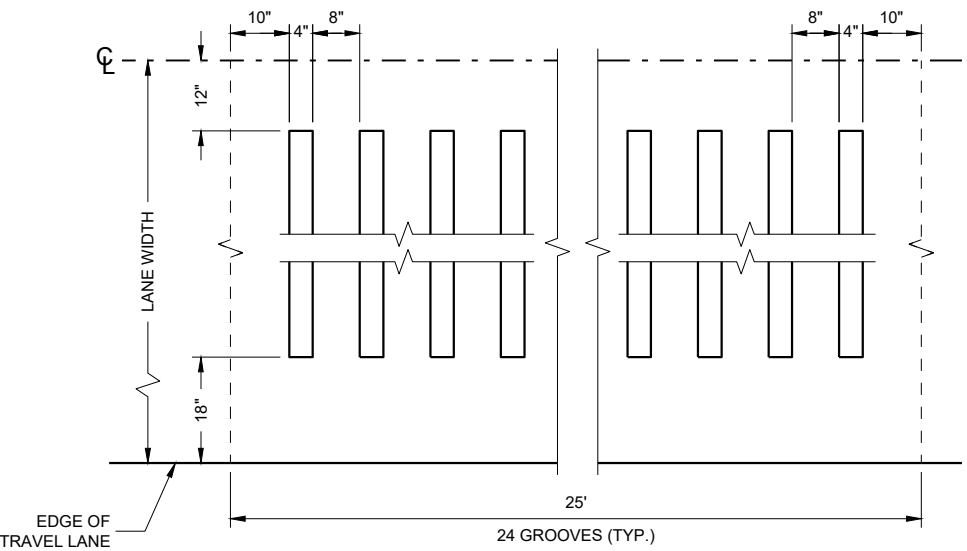
RUMBLE STRIP LOCATION

GENERAL NOTES

- CONTRACTOR SHALL CONFIRM RUMBLE STRIP LOCATION WITH THE ENGINEER PRIOR TO INSTALLATION. THE ENGINEER MAY MODIFY THE RUMBLE STRIP LOCATION AS FIELD CONDITIONS DICTATE.
- WHEN ASPHALTIC PAVEMENT IS NEW IN THE RUMBLE AREA, THE CONTRACTOR SHALL ALLOW THE PAVEMENT TO CURE A MINIMUM OF 7 DAYS PRIOR TO RUMBLE INSTALLATION.
- PAVEMENT MARKING AND SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDE ELSEWHERE IN THE CONTRACT.
- ① ELIMINATE THE MIDDLE SET OF RUMBLE STRIPS.
 - ② LOCATE RUMBLE STRIP 200 FEET IN ADVANCE OF W3-1 SIGN AS SHOWN. IF W3-1 IS NOT IN PLACE, USE DISTANCE "C".
 - ③ TYPICAL VERTICAL VARIATION BETWEEN PEAKS AND VALLEYS WITHIN THE CUT APPROXIMATELY $\frac{1}{16}$ ".
 - ④ 12 INCH CLEAR BETWEEN THE SOLID YELLOW LINE AND THE EDGE OF THE RUMBLE.



ELEVATION VIEW

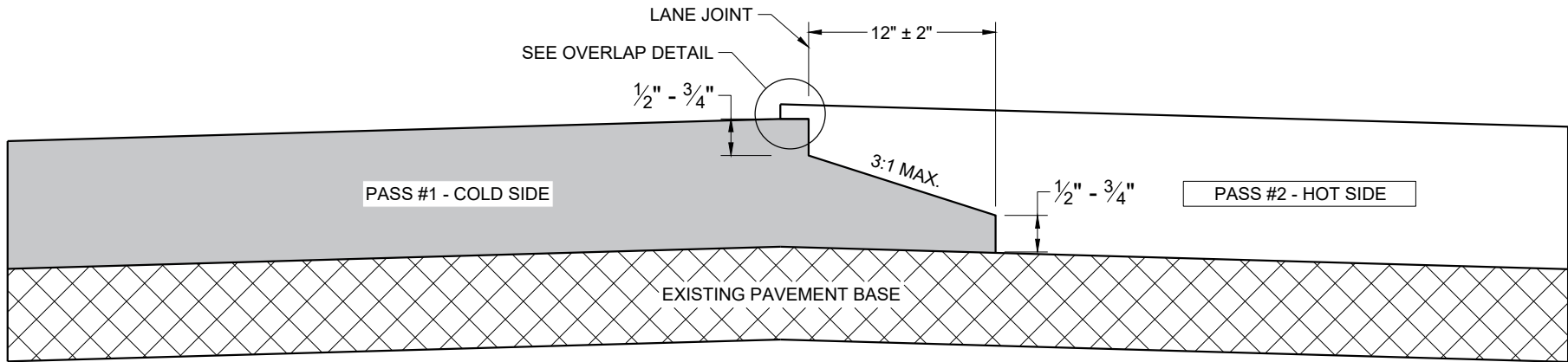


PLAN VIEW
ASPHALTIC PAVEMENT MILLED IN

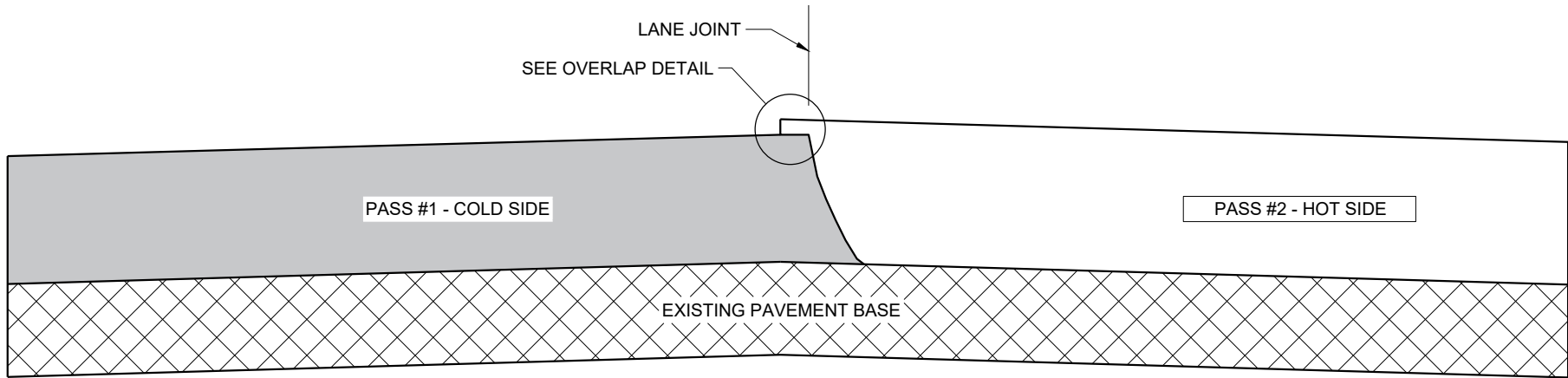
TRANSVERSE RUMBLE STRIPS, ASPHALTIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

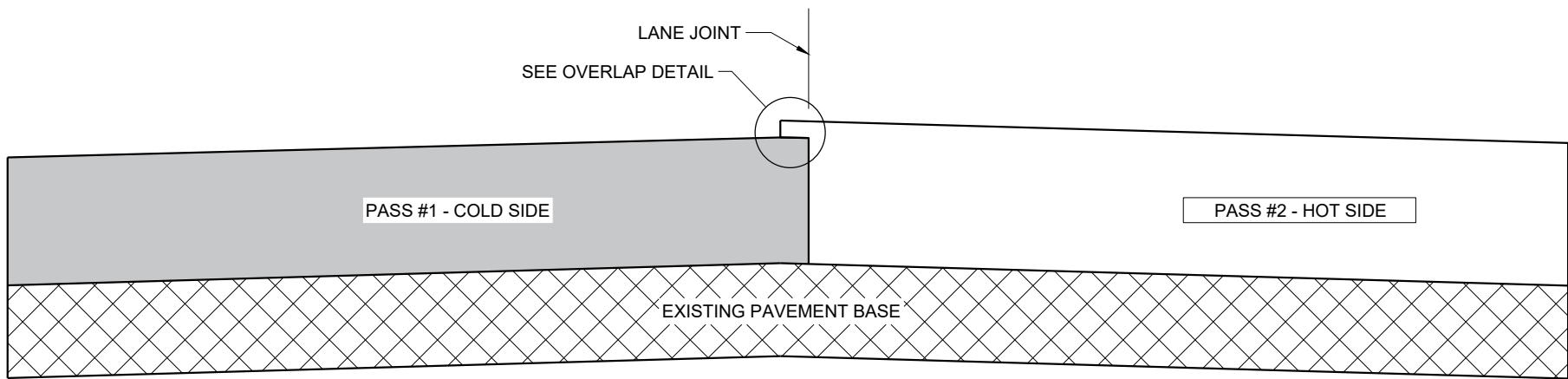
APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY DESIGN STANDARDS
UNIT SUPERVISOR
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



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

GENERAL NOTES

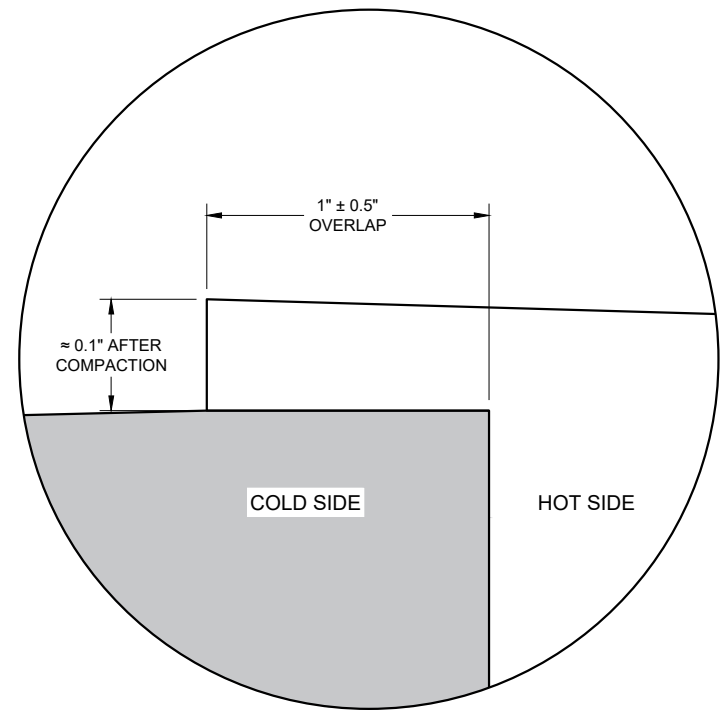
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



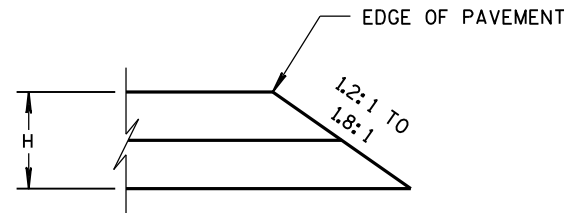
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

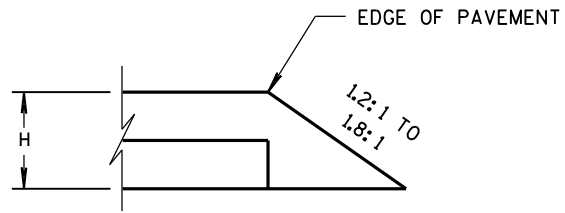
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

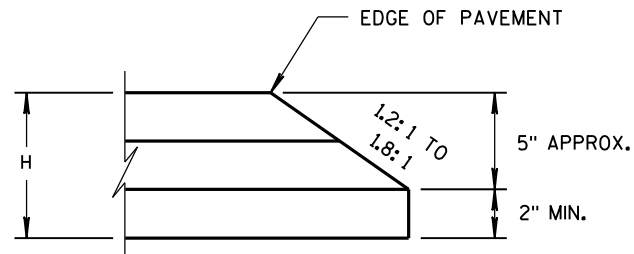
FHWA



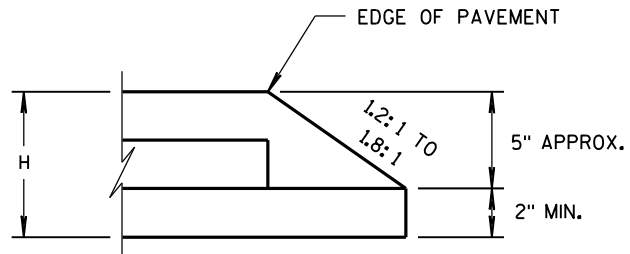
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

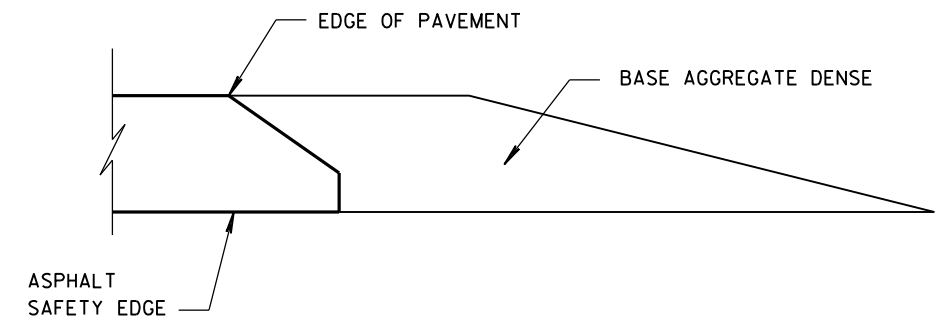


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

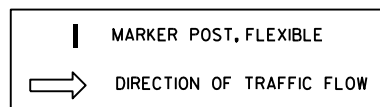
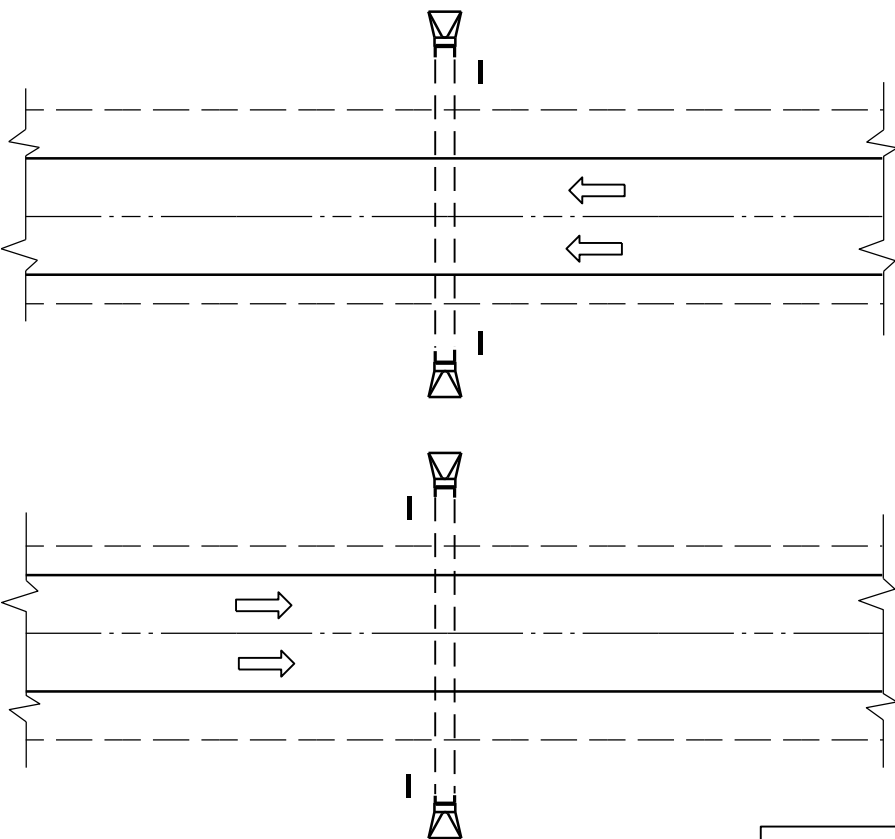
APPROVED

11/30/2012
DATE

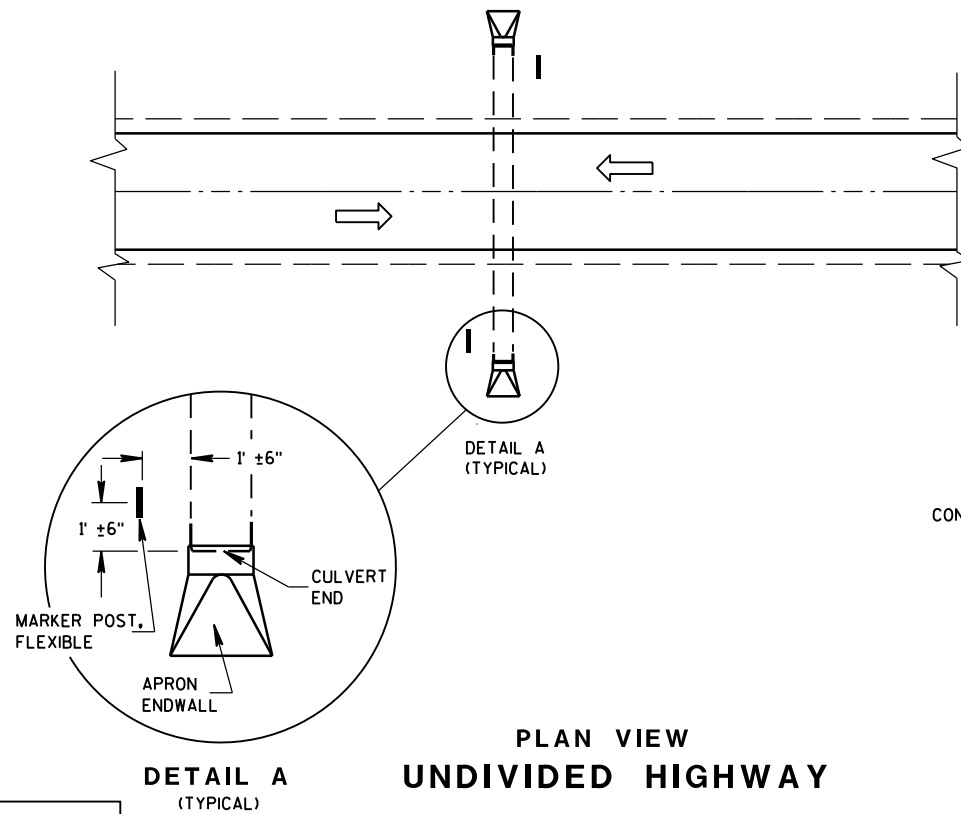
FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

PLAN VIEW
DIVIDED HIGHWAY



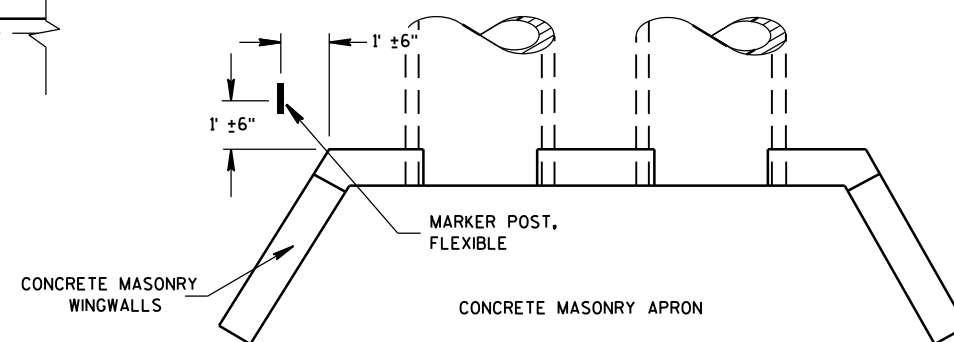
PLAN VIEW
UNDIVIDED HIGHWAY



FLEXIBLE MARKER POST LOCATION

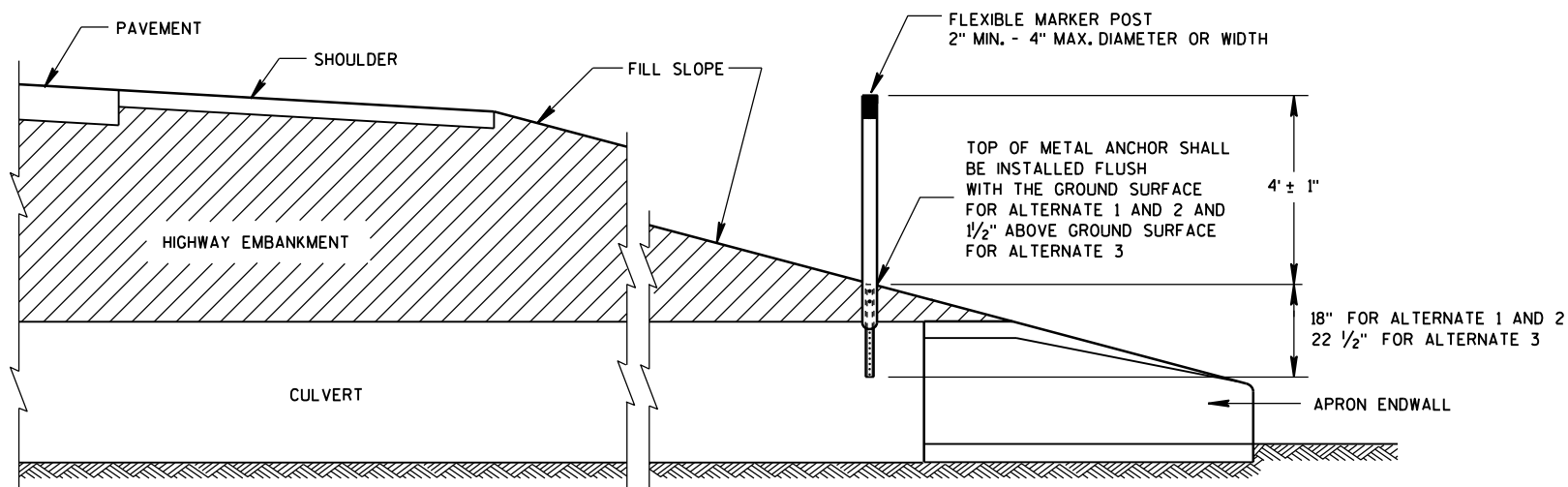
GENERAL NOTES

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.



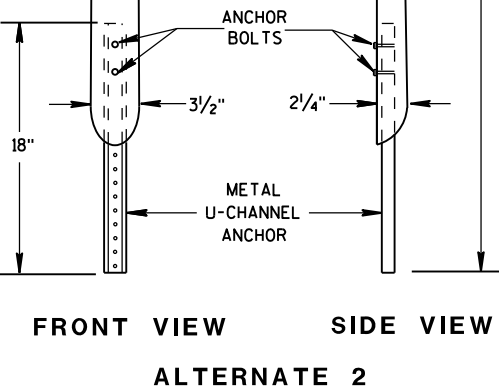
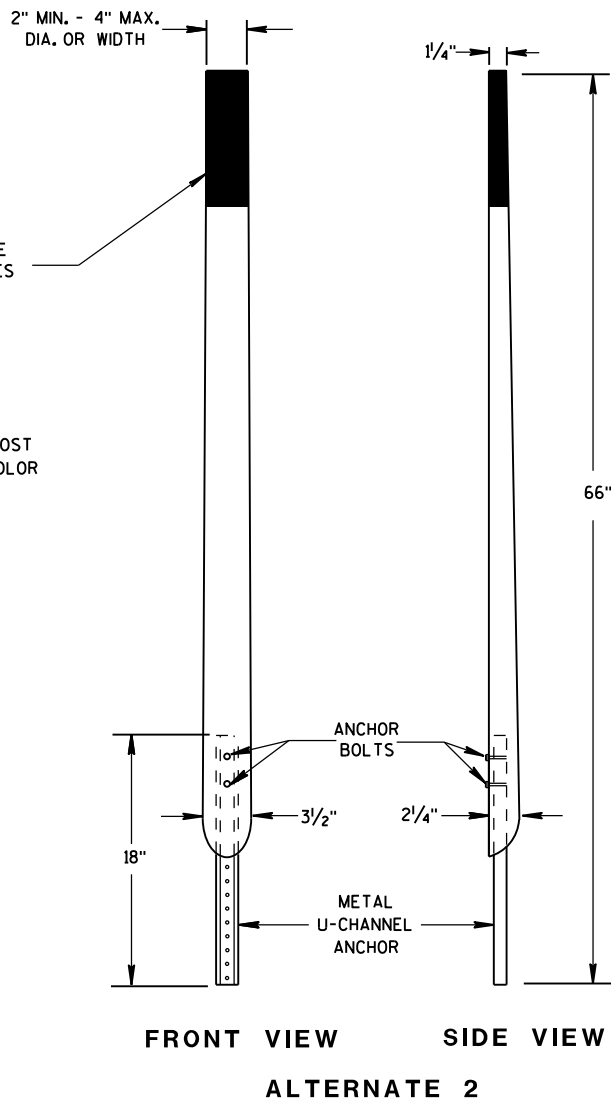
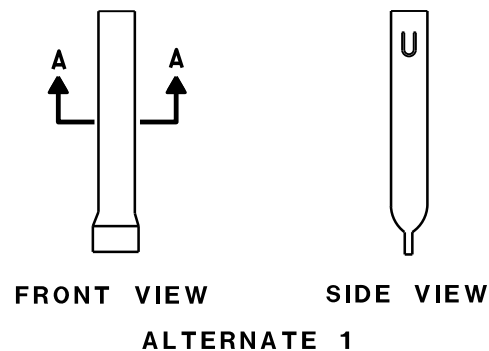
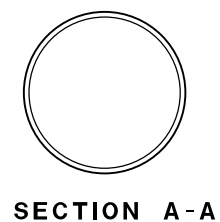
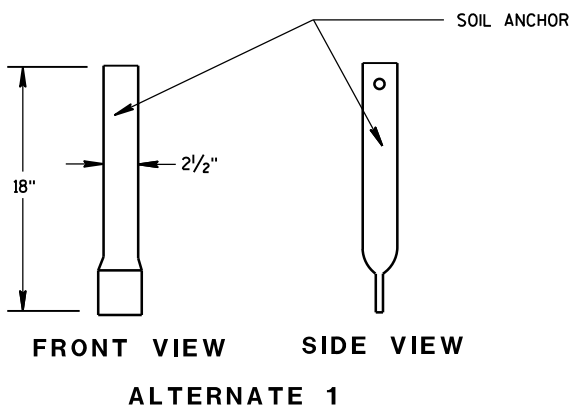
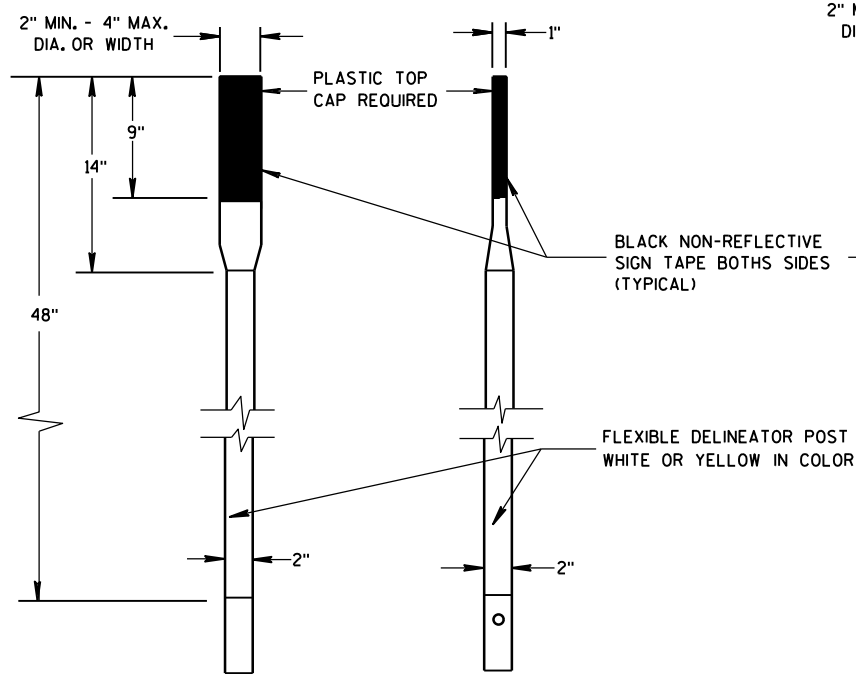
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH

CROSS SECTION
FLEXIBLE MARKER POST

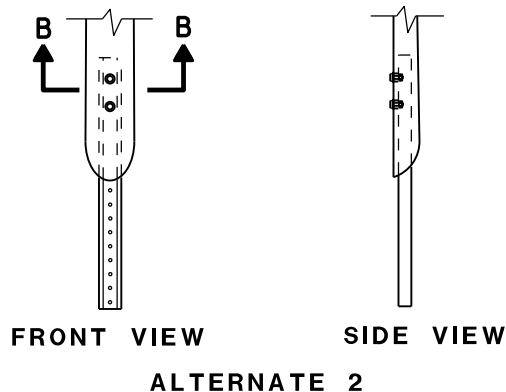
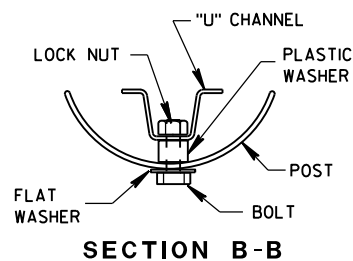


FLEXIBLE MARKER POST
FOR CULVERT END

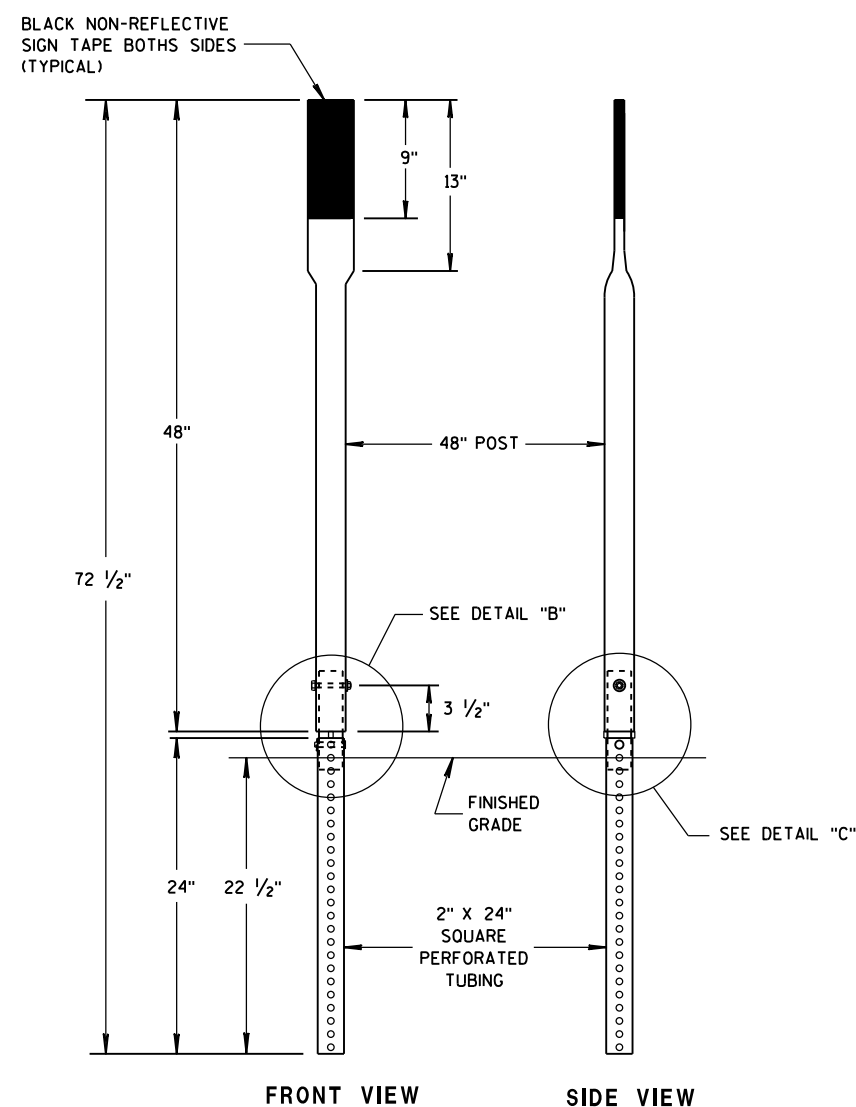
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



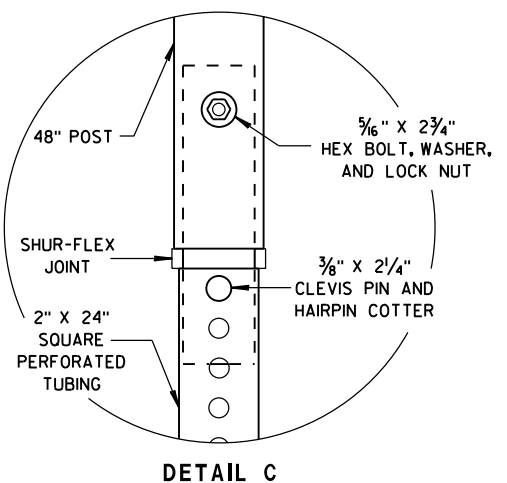
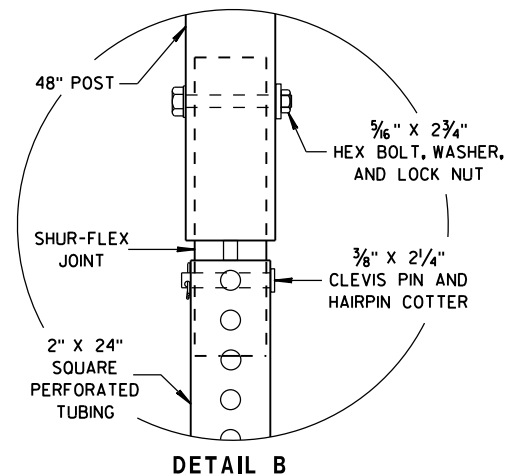
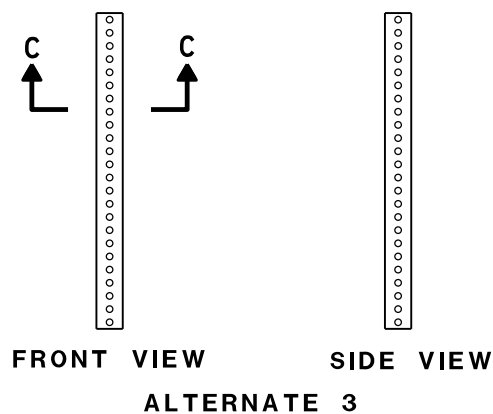
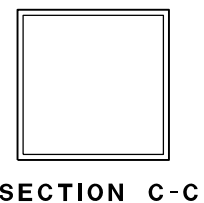
FLEXIBLE MARKER POSTS



FLEXIBLE MARKER POST ANCHORS



**FRONT VIEW SIDE VIEW
ALTERNATE 3**



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	

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.

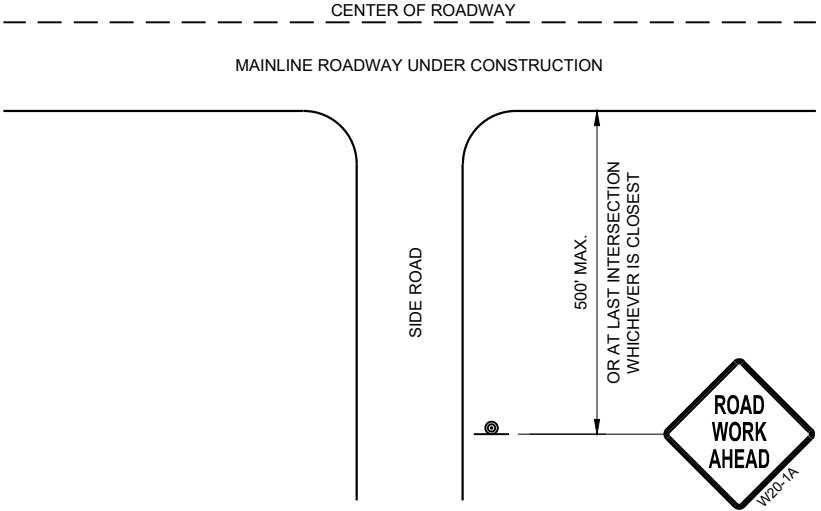
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

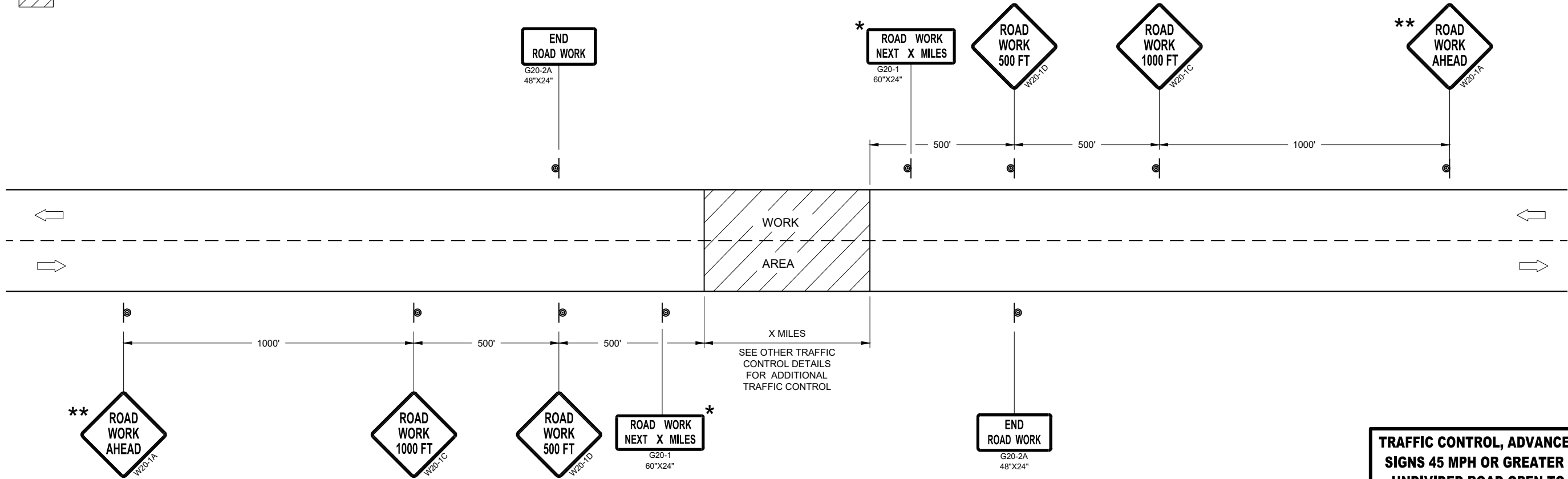
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

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

GENERAL NOTES

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

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

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

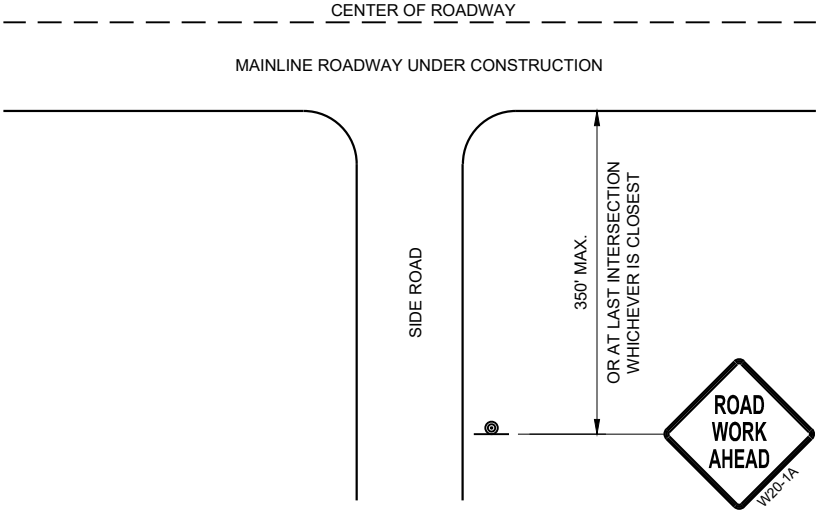
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

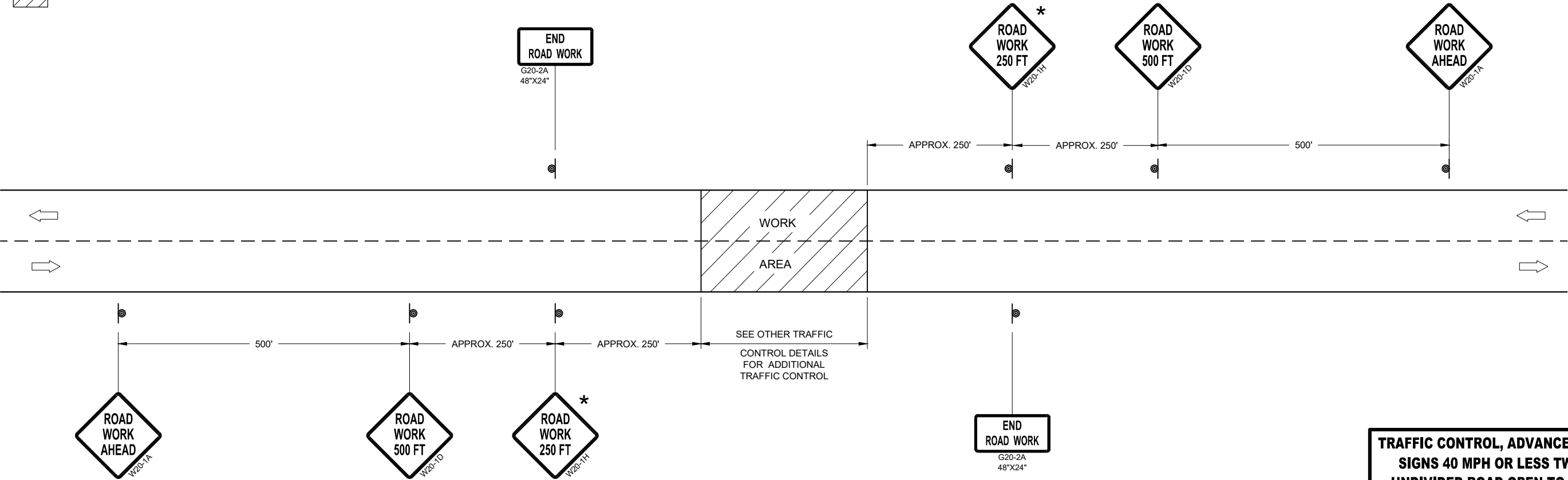
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



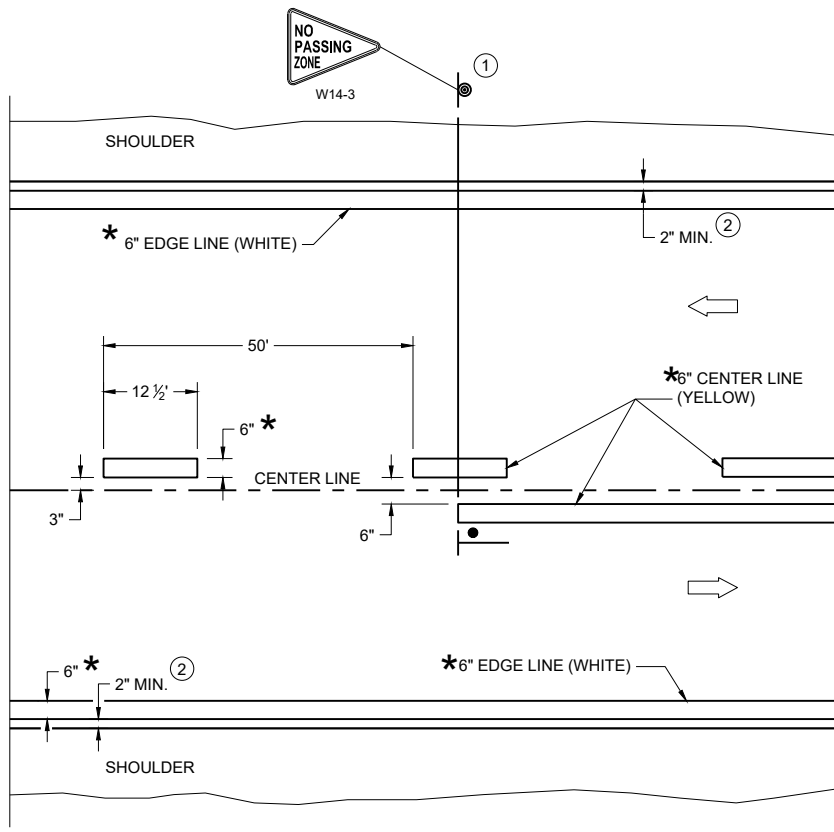
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

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

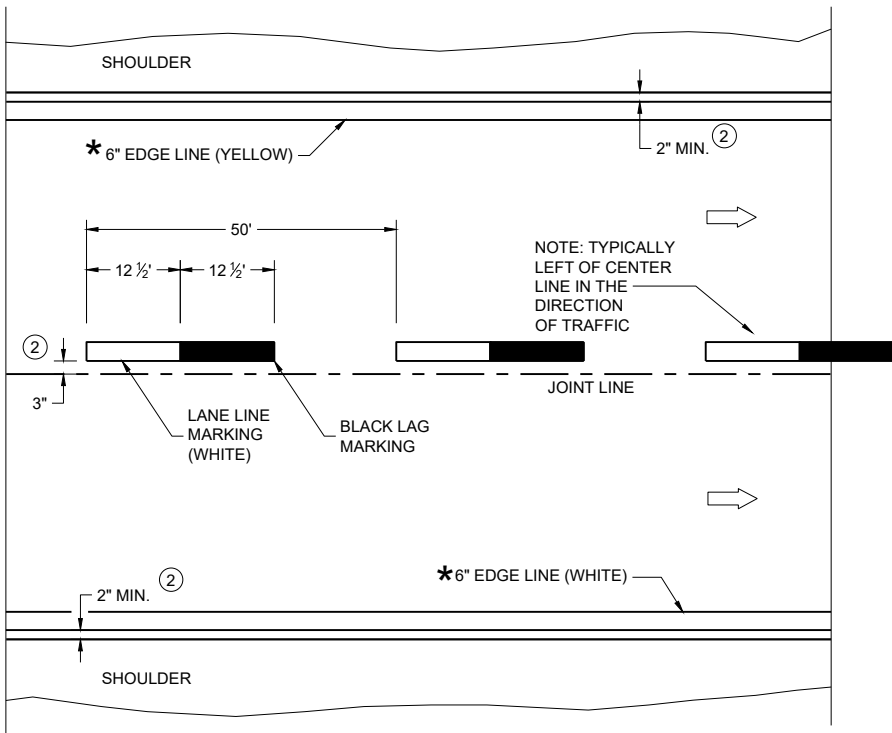
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

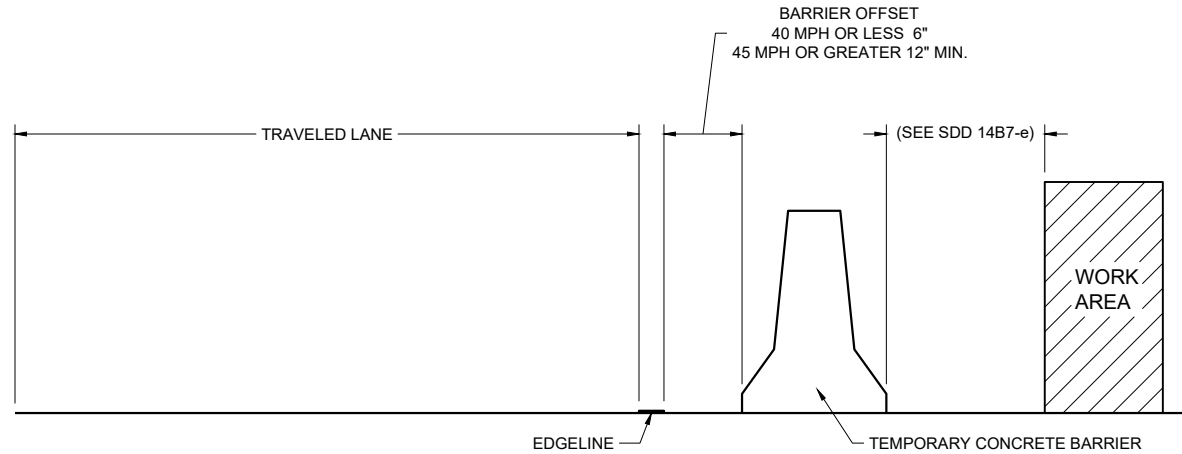
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- 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

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	



TEMPORARY BARRIER OFFSET FROM EDGE LINE

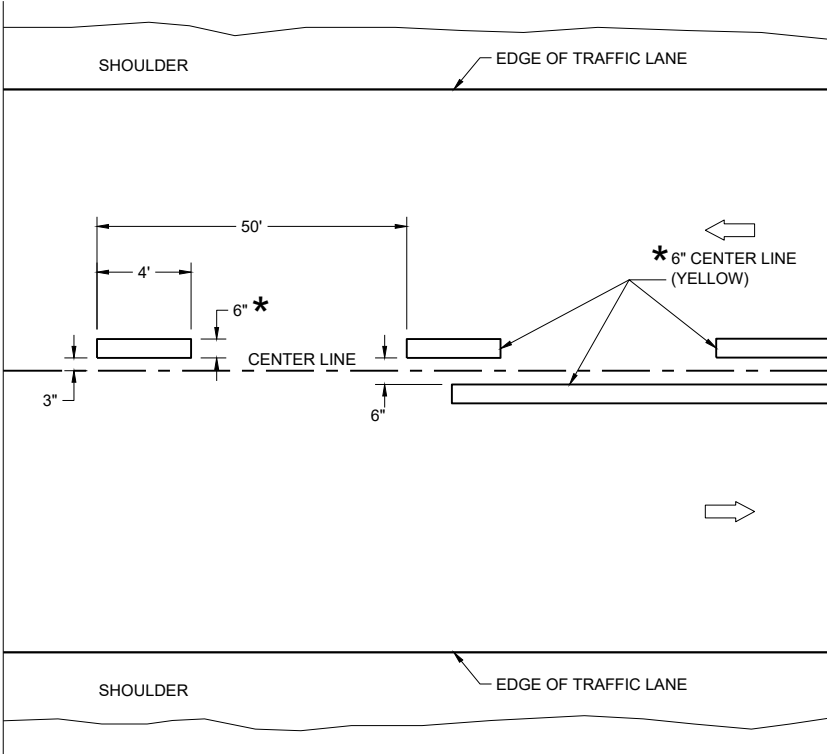
GENERAL NOTES

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

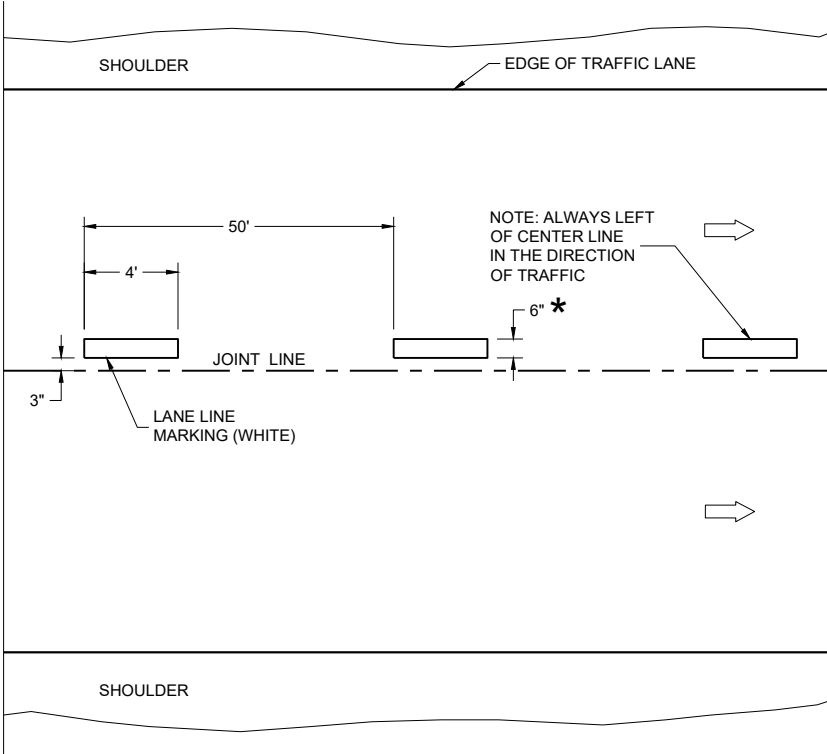
LEGEND

DIRECTION OF TRAFFIC

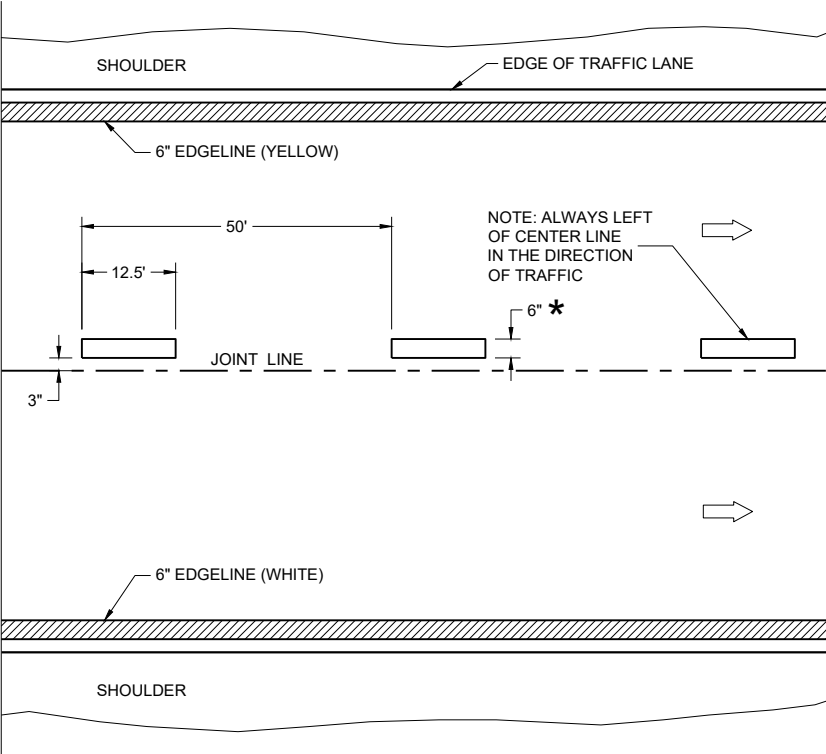
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



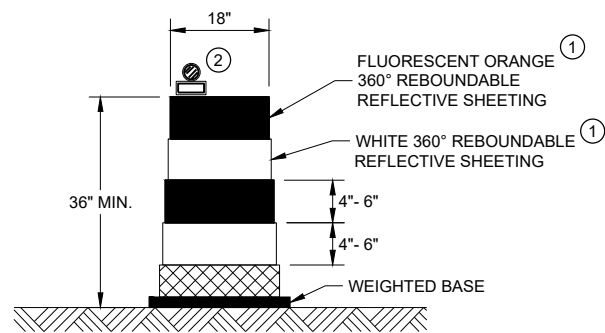
ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

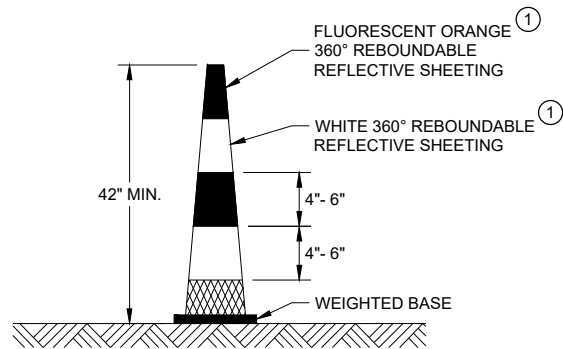
TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	



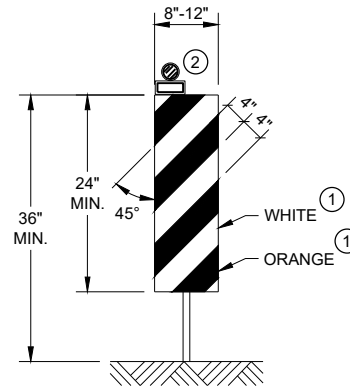
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



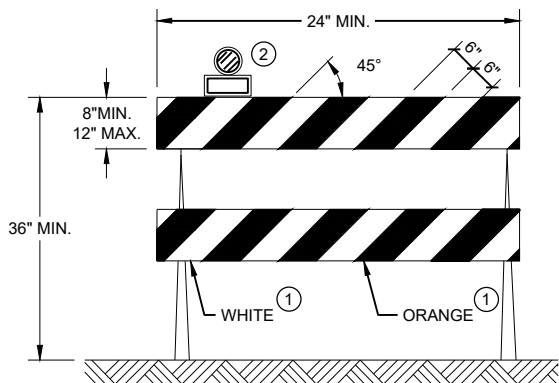
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



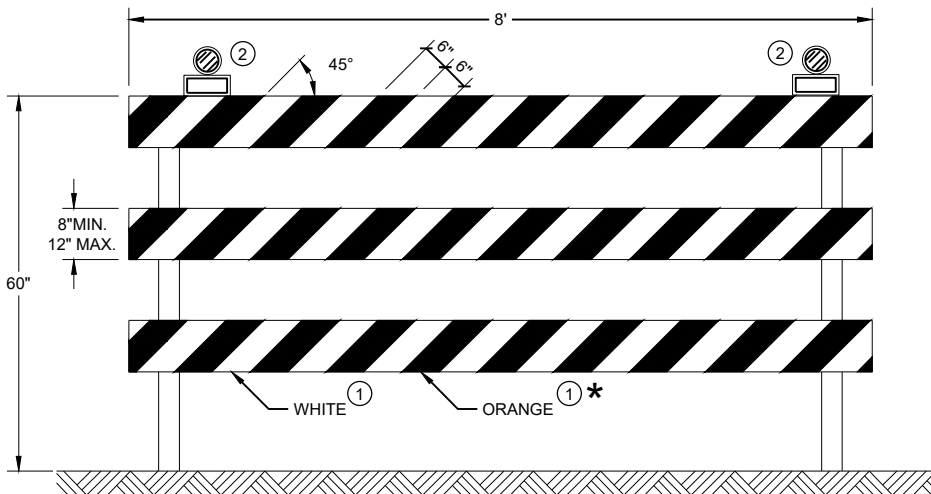
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

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.

**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

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.

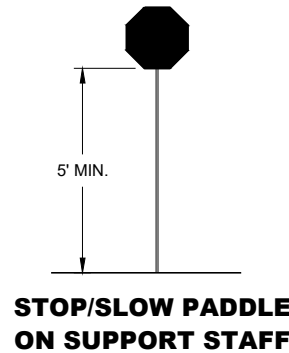
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

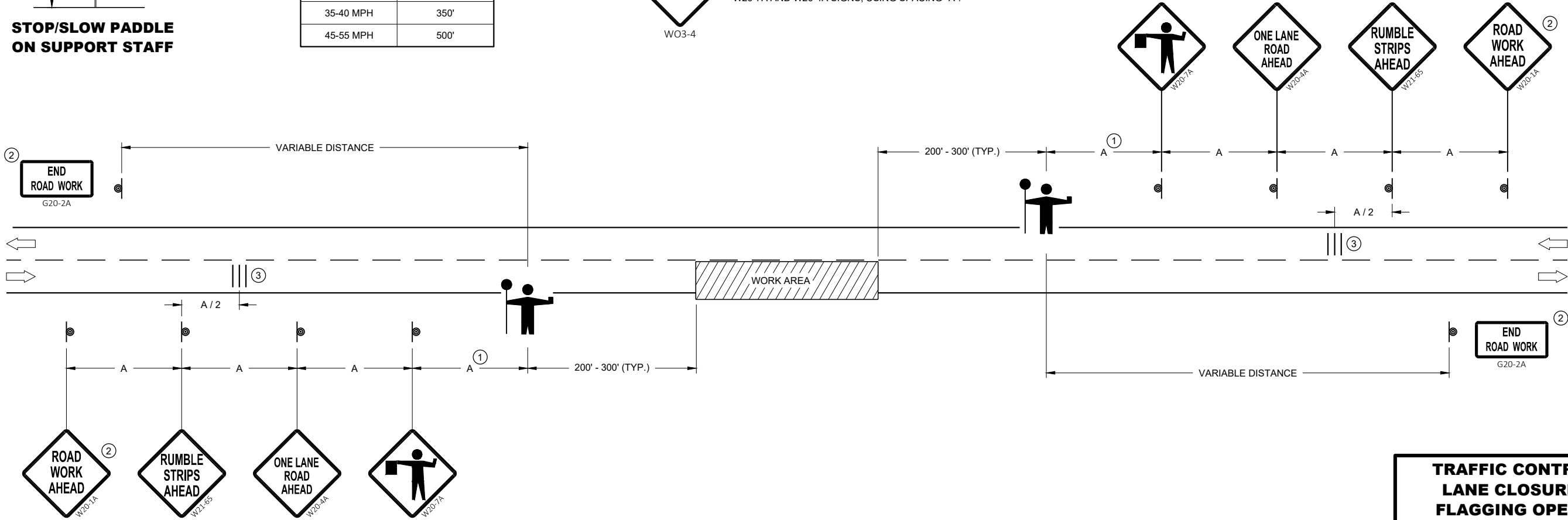


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

	SIGN ON PERMANENT SUPPORT
	TRAFFIC CONTROL CONE 42-INCH
	TRAFFIC CONTROL DRUM
	TEMPORARY PORTABLE RUMBLE STRIP ARRAY
	DIRECTION OF TRAFFIC
	WORK AREA
AFAD	AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

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.

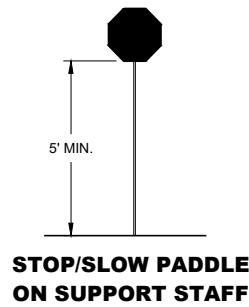
WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

IF THE AUTOMATED FLAGGING ASSISTANCE DEVICE (AFAD) STOPS WORKING, 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.

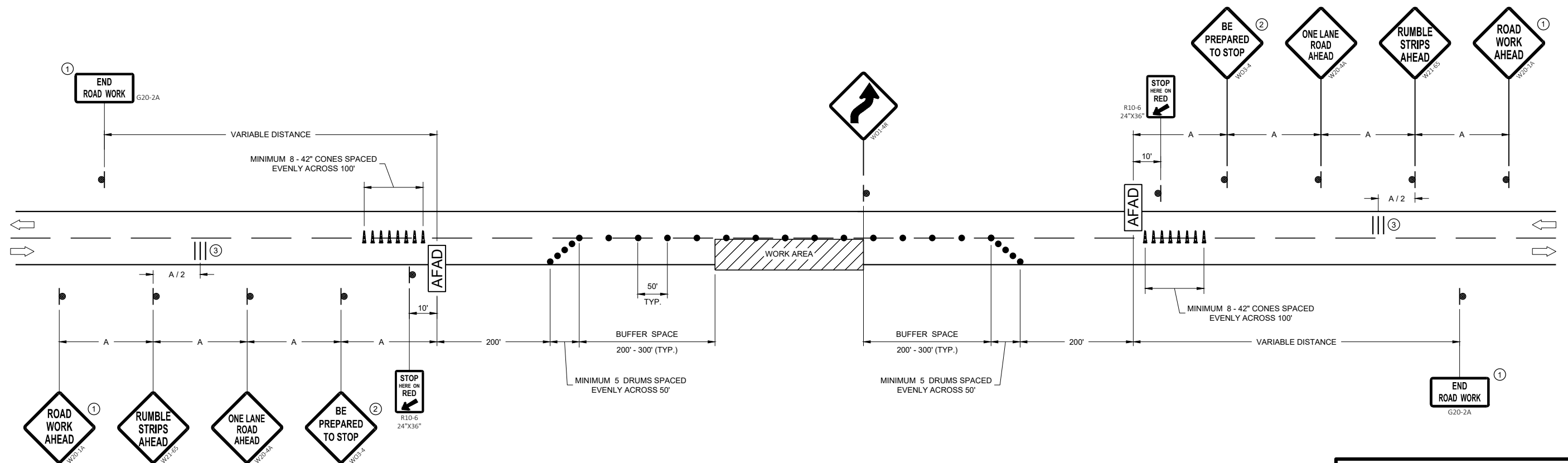
WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

- ① SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ② IF FLAGGERS ARE PHYSICALLY NEEDED TO FLAG, REPLACE W03-4 SIGNS WITH W20-7A SIGNS.

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.
- 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.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSELY AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER.



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



TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

6

SDD 15C12 - 09b

SDD15C12 - 09b

LEGEND

- V1

LEAD VEHICLE
- V2

MARKING VEHICLE
- V3

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

SIGN ON TEMPORARY SUPPORT
- 

DIRECTION OF TRAFFIC

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.

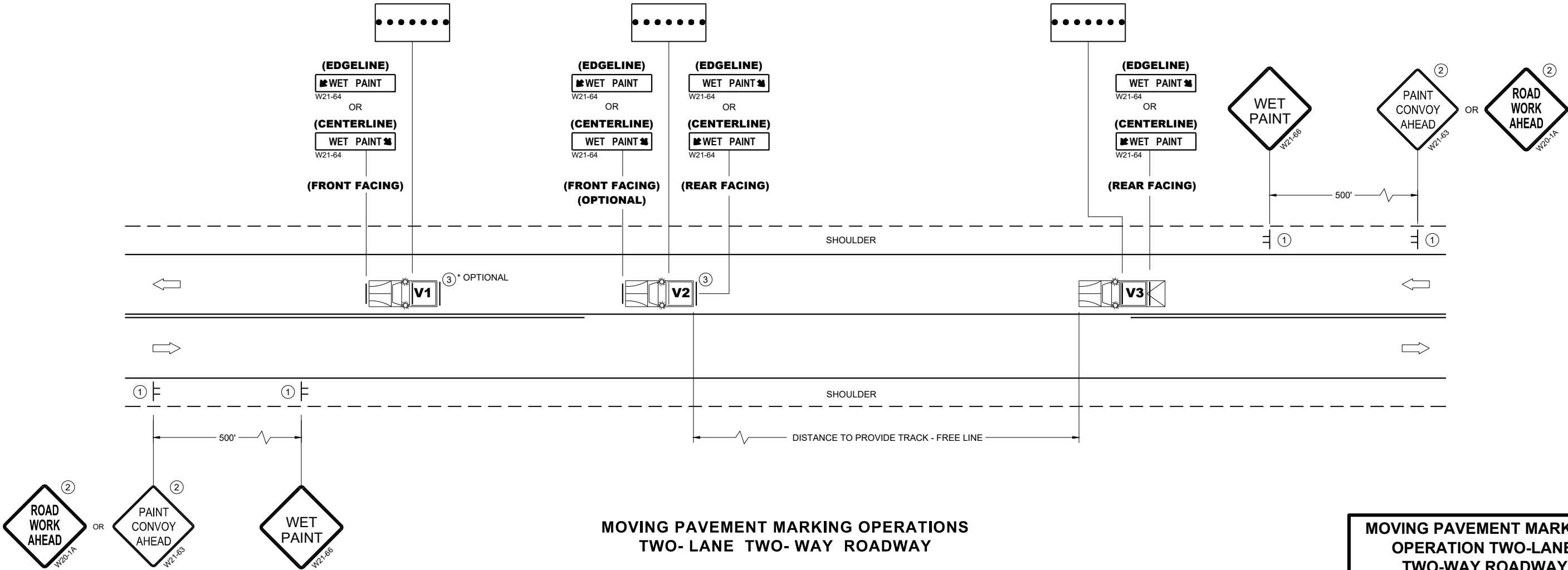
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH

UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

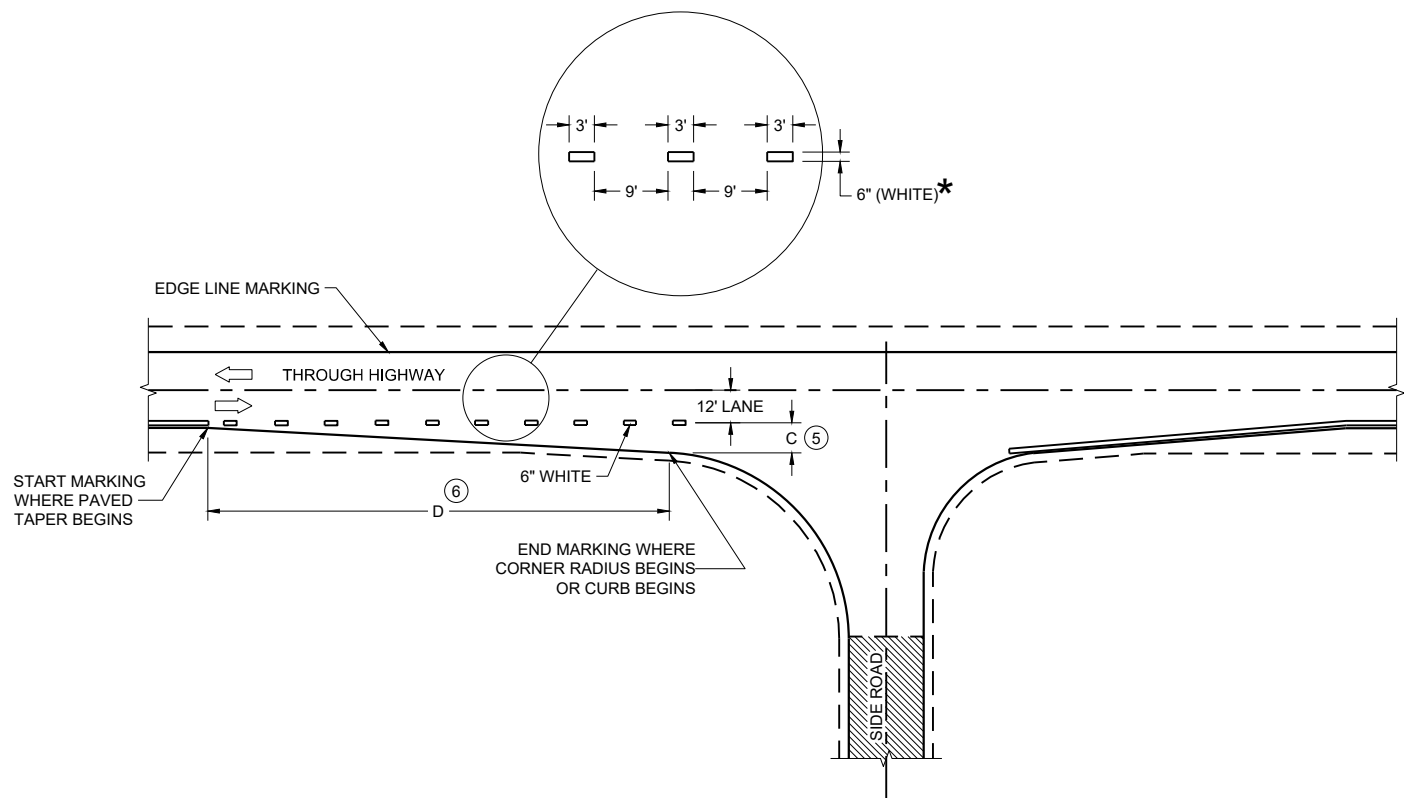
CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

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

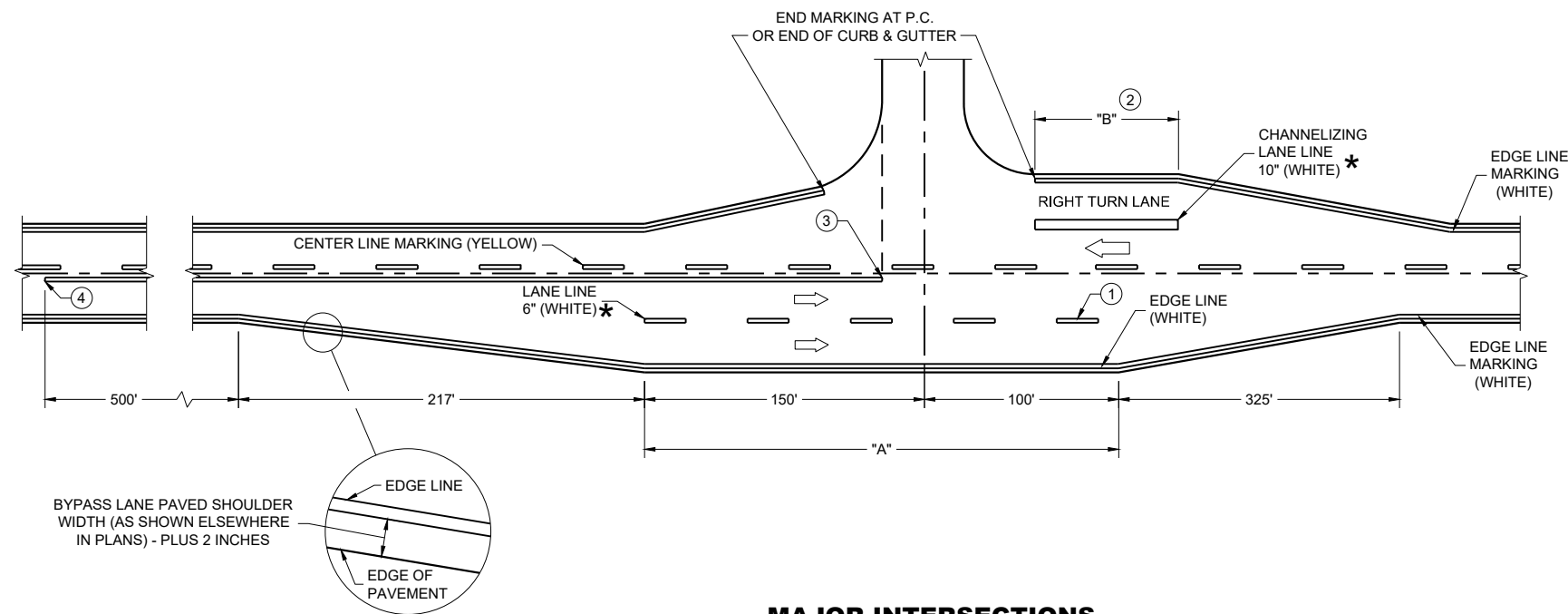
- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY MAJOR INTERSECTION.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.
- ③ V1 AND V2 CAN BE SWITCHED SO THAT THE MARKER IS THE LEAD VEHICLE.



MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2024 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



MINOR INTERSECTION



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

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

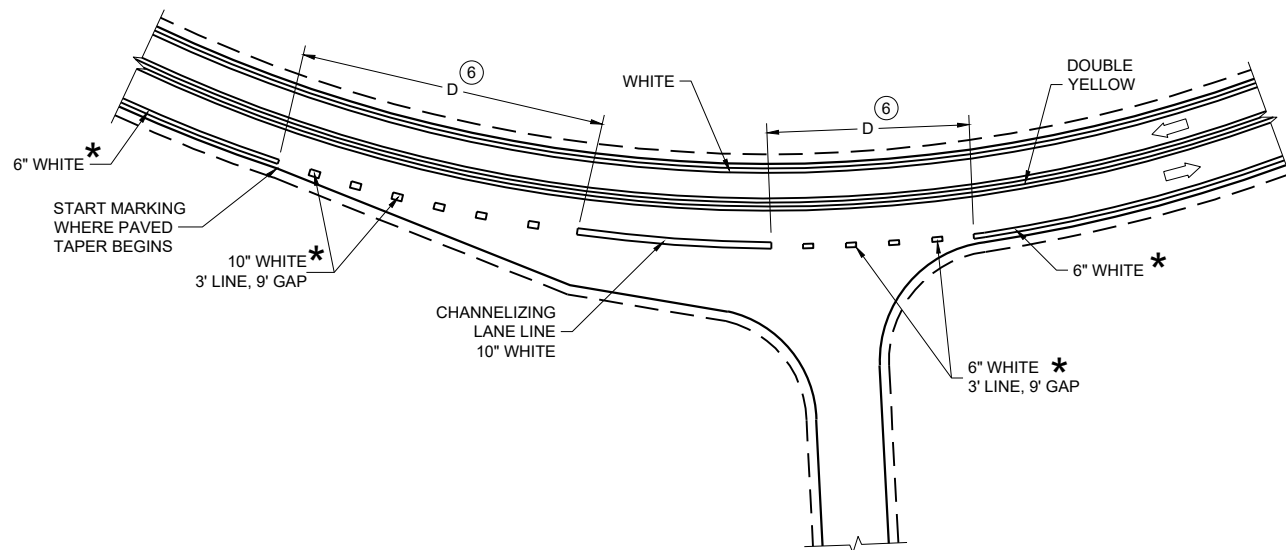
GENERAL NOTES

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.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

GENERAL NOTES

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

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

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

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

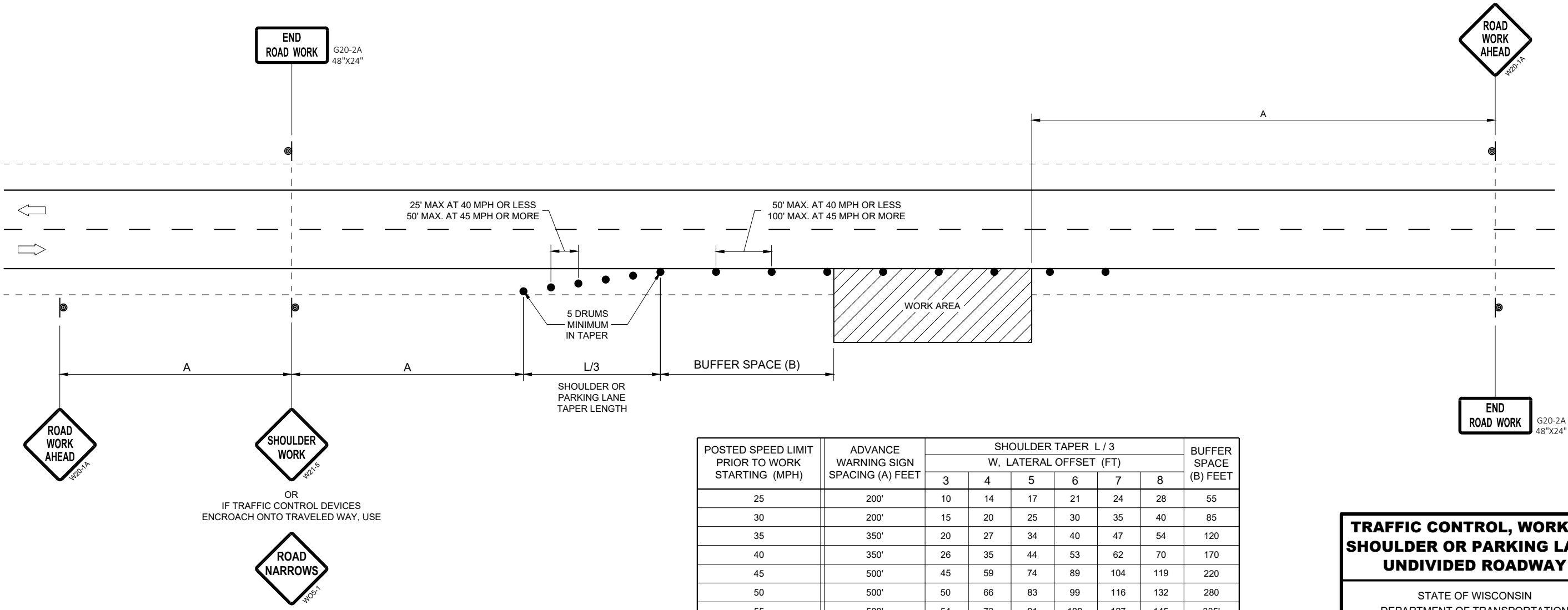
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

6

SDD 15D28 - 04



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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER

FHWA

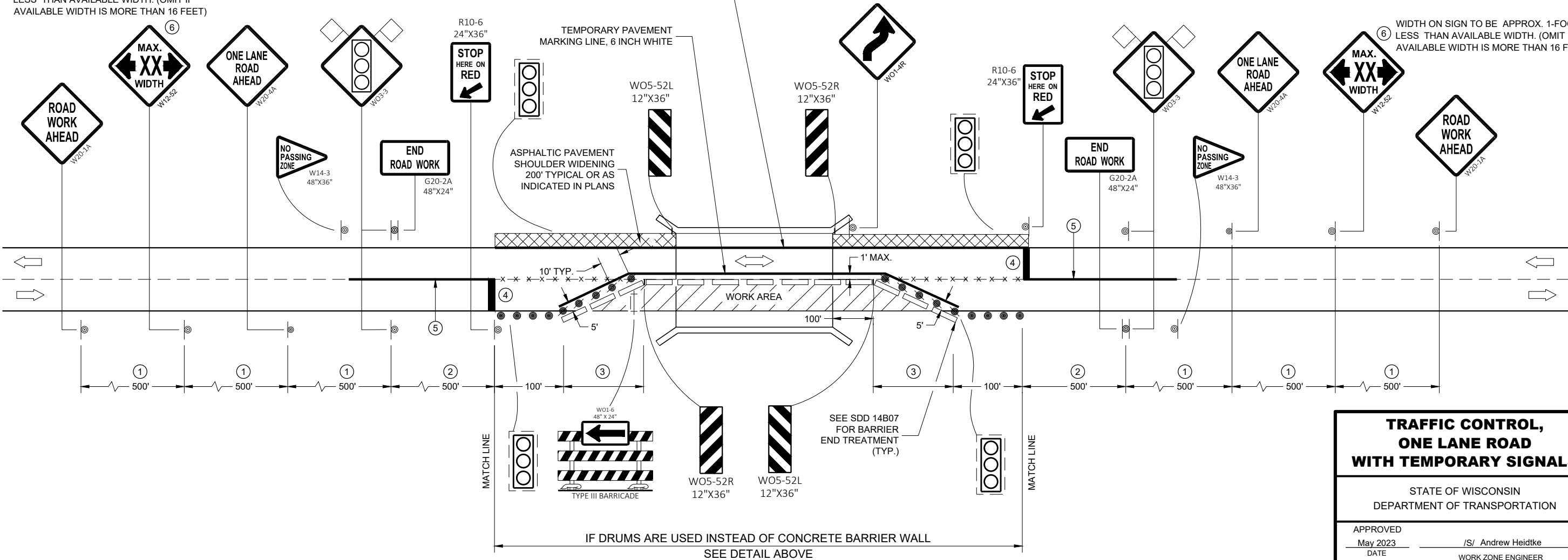
6

SDD 15D28 - 04

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLAGS, 16" X 16" MIN. (ORANGE)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- ASPHALTIC PAVEMENT WIDENING
- CONCRETE BARRIER TEMPORARY PRECAST
- TEMPORARY SIGNAL. SEE SDD 09G02 FOR EXACT PLACEMENT

WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET)



GENERAL NOTES

- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE..
- THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.
- ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.
- "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER.
- REMOVE PAVEMENT MARKING AND PLACE TEMPORARY PAVEMENT MARKING LINES IF THE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.
- INSTALL OVERHEAD TEMPORARY SIGNAL HEADS ABOVE THE MIDDLE OF THE TRAVEL LANE THEY ARE CONTROLLING.
- 500 FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35 - 40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25 - 30 MPH, USE 200 FOOT TYPICAL SPACING.
 - USE 300 FOOT SPACING IF THE PRE - CONSTRUCTION REGULATORY SPEED IS 35 MPH OR LESS.
 - DIMENSION DETERMINED BY CBTP TAPER FROM EDGE LINE TO TANGENT SECTION OF THE ROAD.
 - TEMPORARY PAVEMENT MARKING LINE, 18 INCH WHITE STOP LINE.
 - 700 FOOT TEMPORARY PAVEMENT MARKING LINE, 6 INCH DOUBLE YELLOW . WHEN THE DISTANCE FOR THE PRECEDING NO - PASSING ZONE IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES AS INDICATED IN THE SPECIFICATIONS, THE TWO ZONES SHALL BE CONNECTED.
 - SEE SDD 15C02 - SHEET "F" FOR ADVANCED WIDTH RESTRICTION SIGNING.

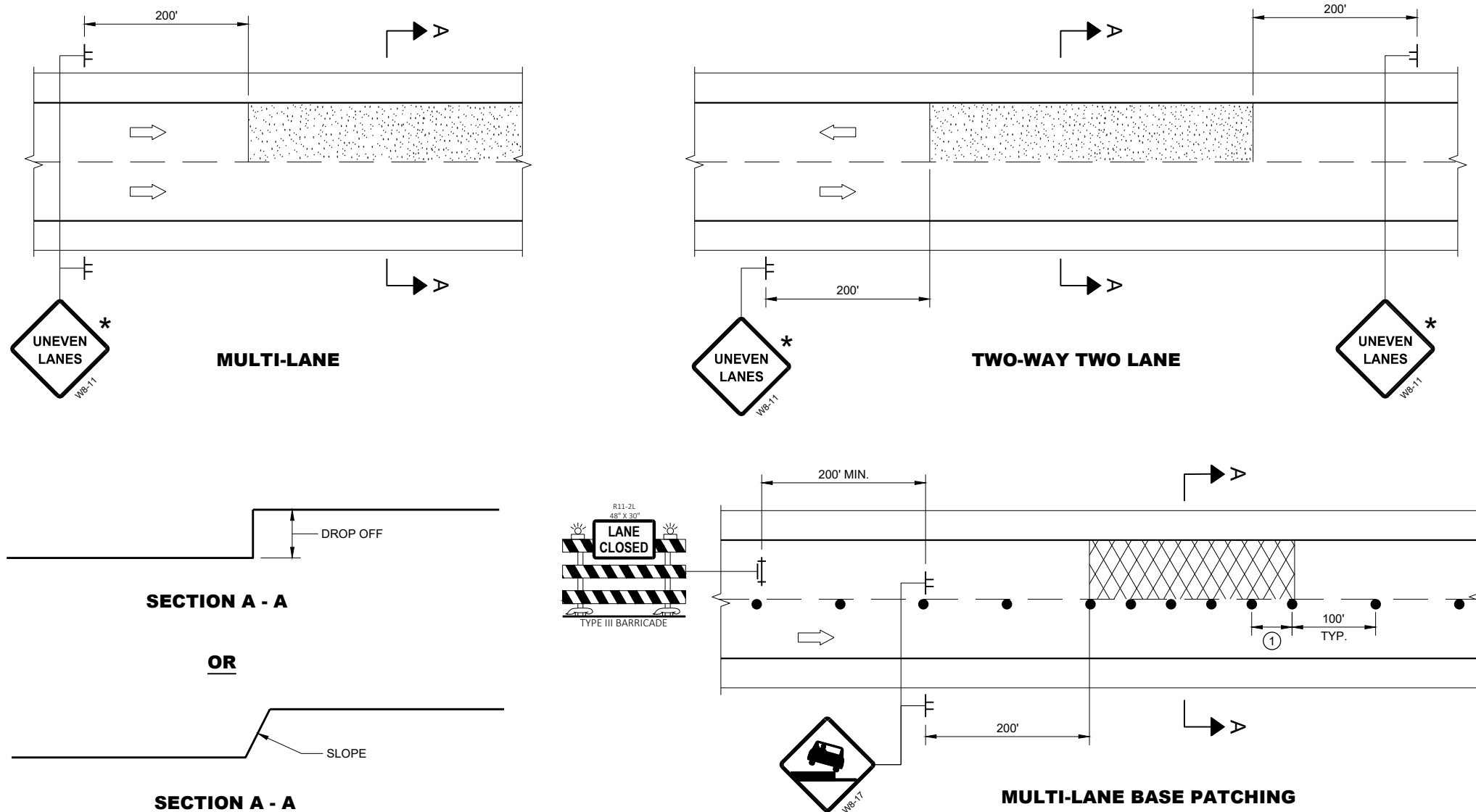
**TRAFFIC CONTROL,
ONE LANE ROAD
WITH TEMPORARY SIGNALS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

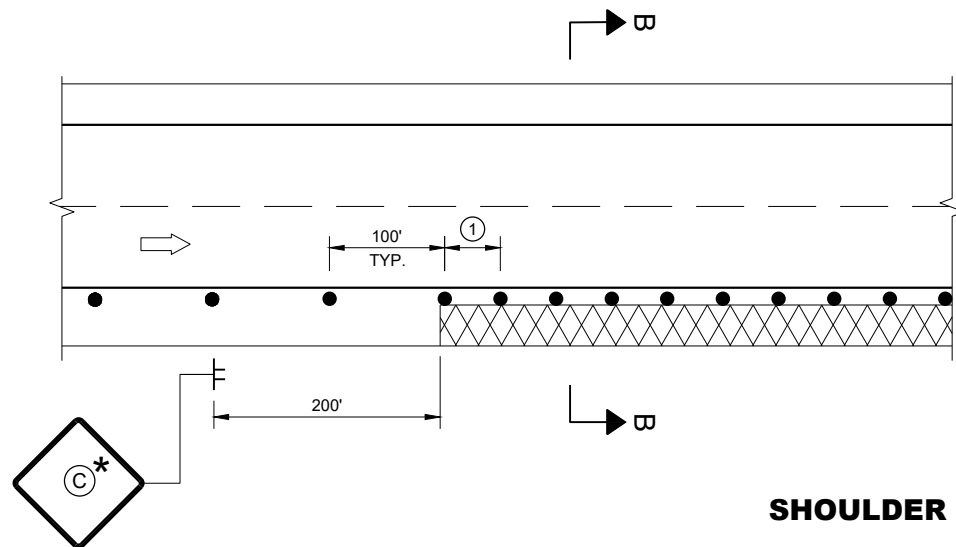
APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

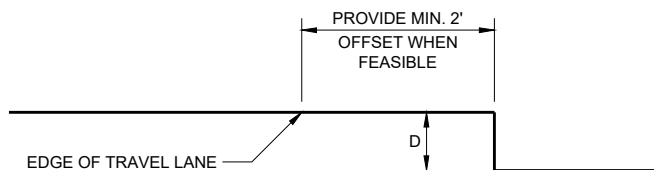
FHWA



ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B - B

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

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

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

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

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

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

TRAFFIC CONTROL,
DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

GENERAL NOTES

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

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

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

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

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

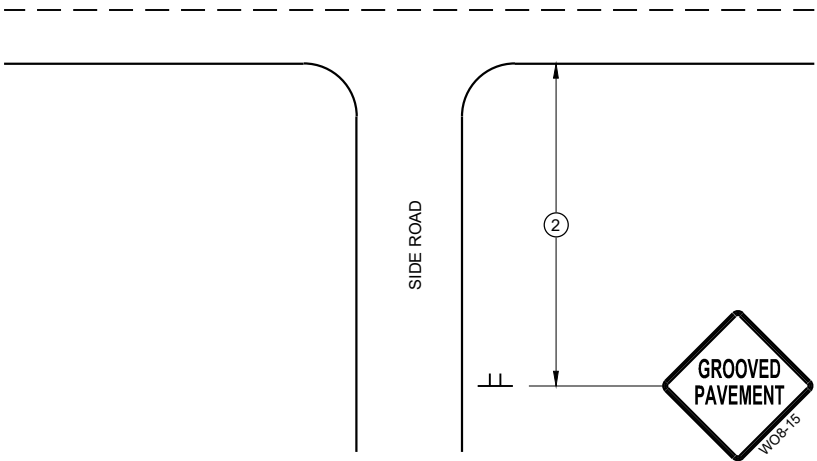
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

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

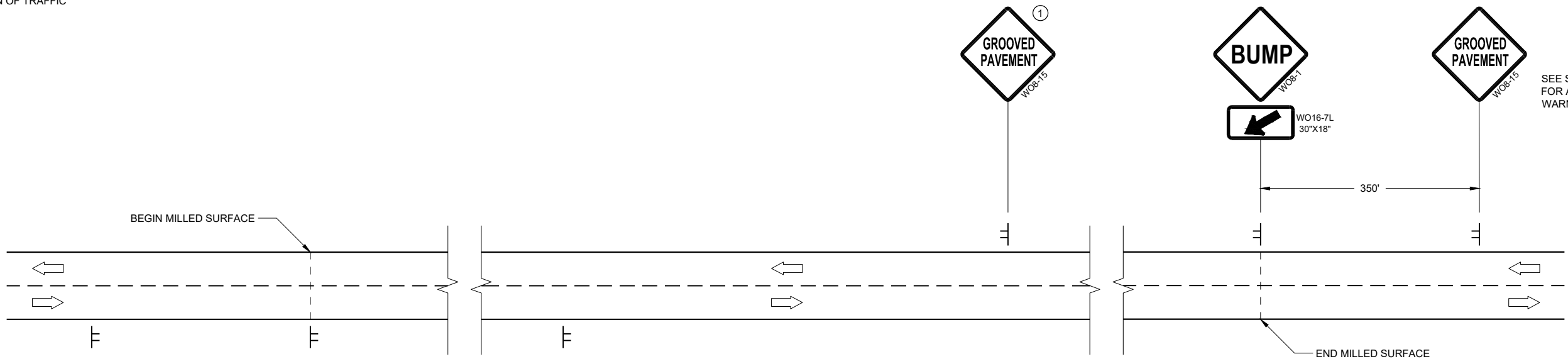
- 1 PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- 2 PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL,
SIGNING ON ROADWAYS
WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

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

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

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

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

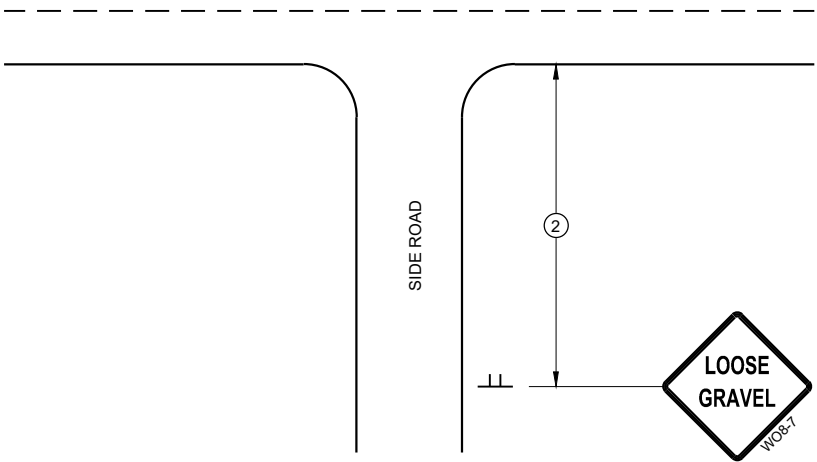
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

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

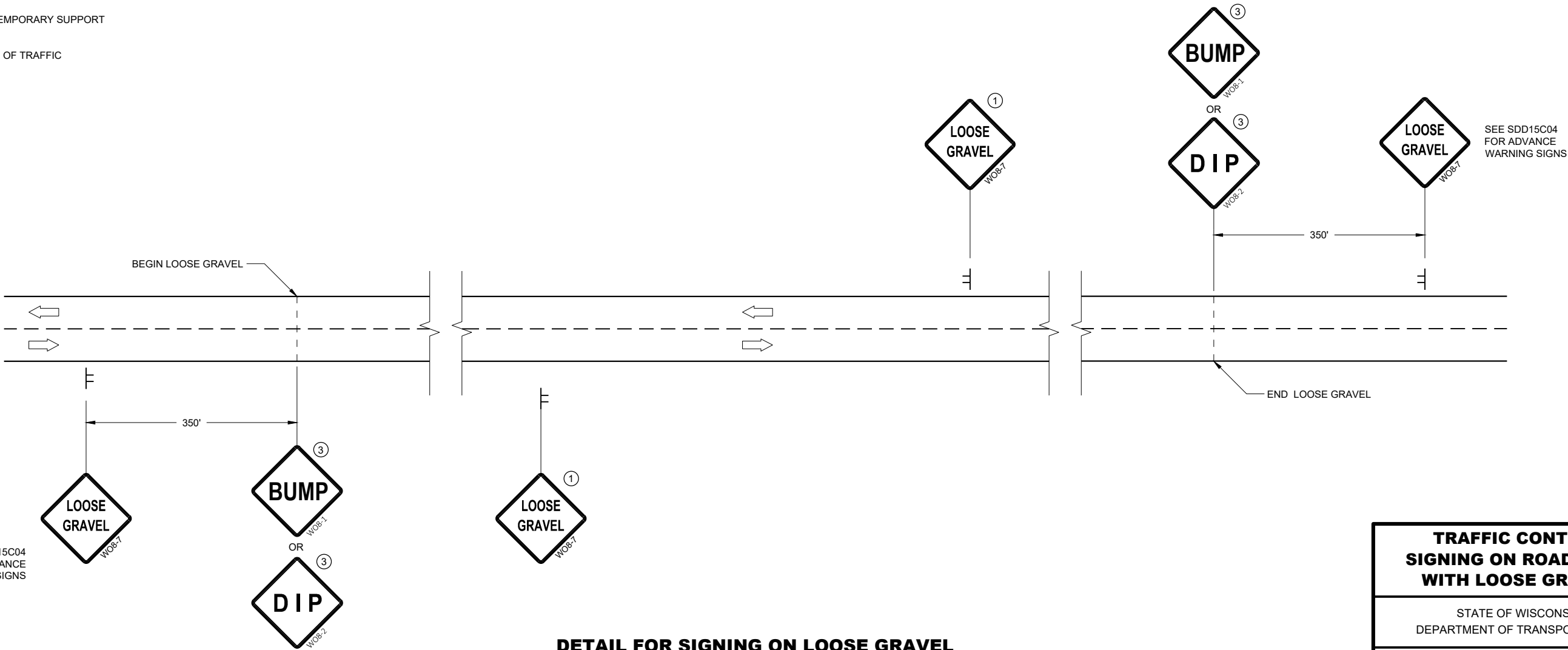
- 1 PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- 2 PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.
- 3 ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



DETAIL FOR SIGNING ON LOOSE GRAVEL
OR CHIP SEALED SURFACES

TRAFFIC CONTROL
SIGNING ON ROADWAYS
WITH LOOSE GRAVEL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



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

	DRUM WITHOUT WARNING LIGHT
	6" BASE AGGREGATE DENSE 1 3/4" -INCIDENTAL TO LANE SHIFT ITEM
	FILL - INCIDENTAL TO LANE SHIFT ITEM
	WORK AREA
	FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



SDD 15D48 - 01

LEGEND

- V1

WORK VEHICLE
- V2

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

FLASHING ARROW PANEL (CAUTION)
- 

WORK AREA
- 

DIRECTION OF TRAFFIC

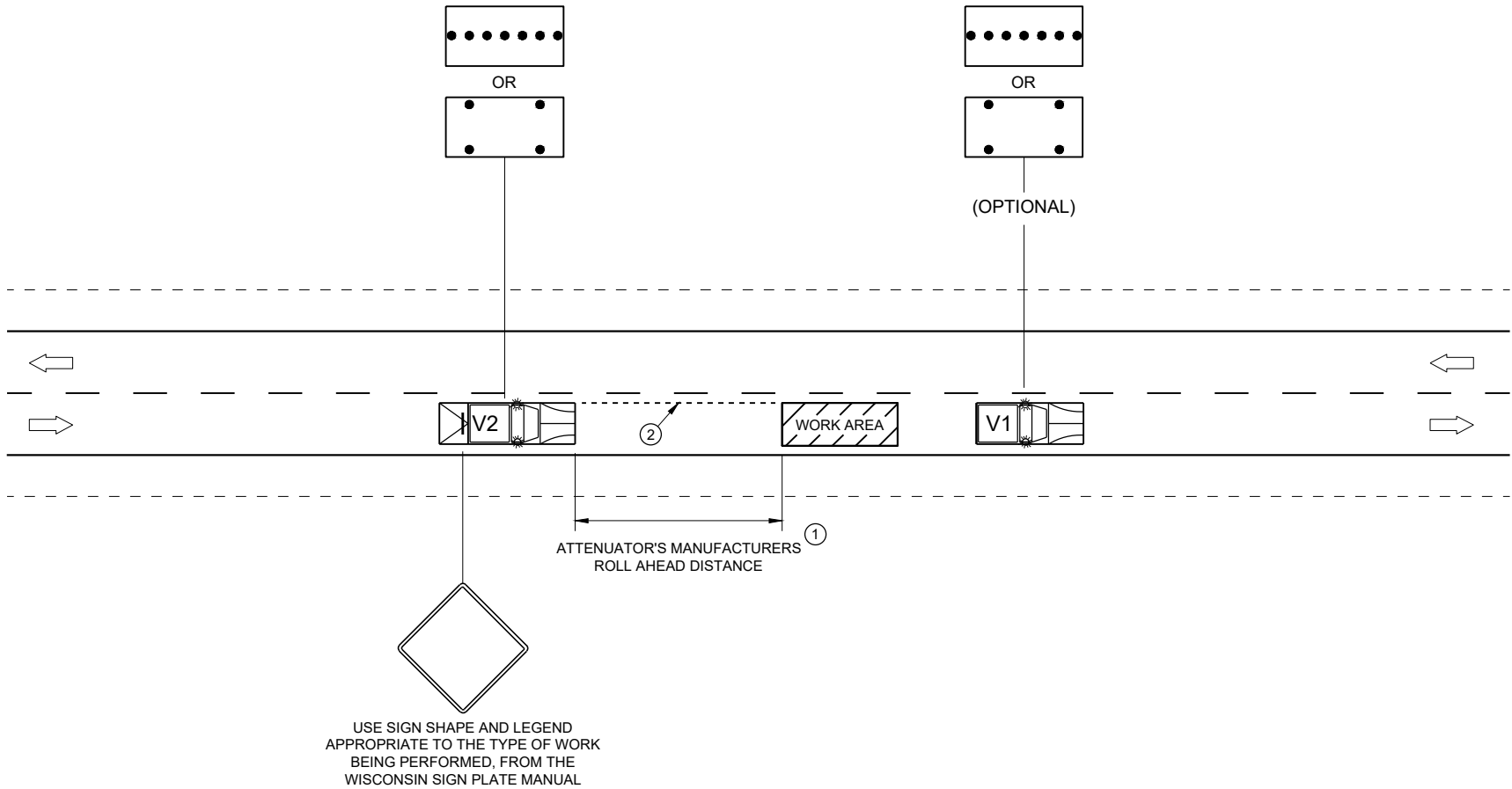
POSTED SPEED PRIOR TO WORK STARTING (MPH)	DECISION SIGHT DISTANCE (D)
0 - 25	550'
30	550'
35	700'
40	700'
45	900'
50	900'
55	1200'

GENERAL NOTES

- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
- MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.
- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL ARROW PANELS SHALL BE REAR FACING, TYPE "B" OR "C", AND DISPLAYING THE FLASHING CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.
- ①

DISTANCE BETWEEN VEHICLES MAY INCREASE FROM THE ATTENUATOR'S ROLL AHEAD BASED ON TERRAIN, SIGHT DISTANCE, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- ②

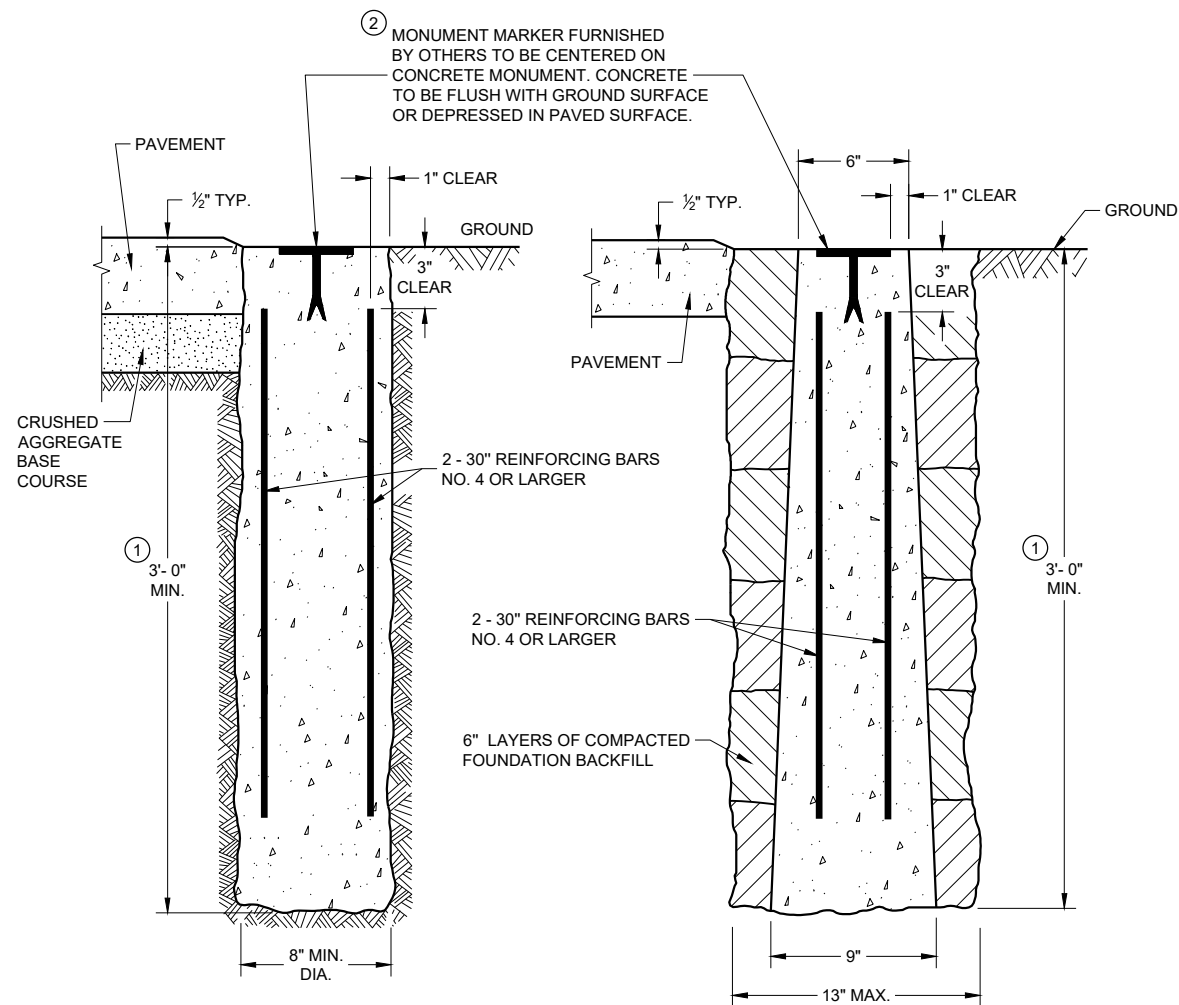
ALIGN LEFT SIDE OF SHADOW VEHICLE WITH EDGE OF WORK AREA.



TRAFFIC CONTROL,
MOBILE OPERATIONS ON
AN UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

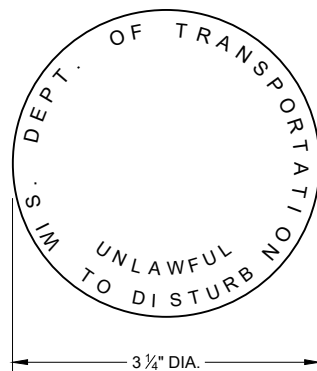
APPROVED
February 2021 /S/ Andrew Heidtke
DATE STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER
FHWA



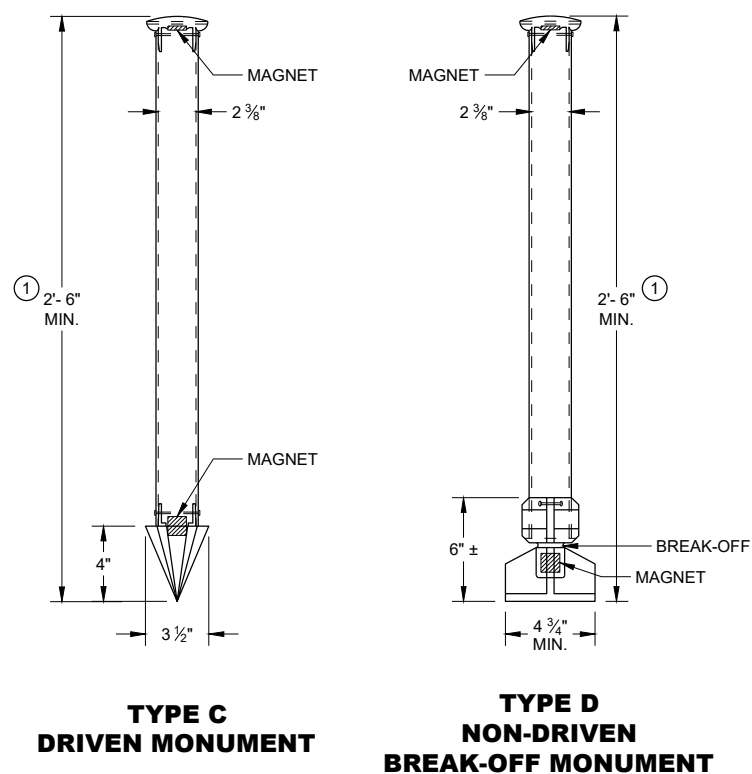
CAST-IN-PLACE

PRECAST

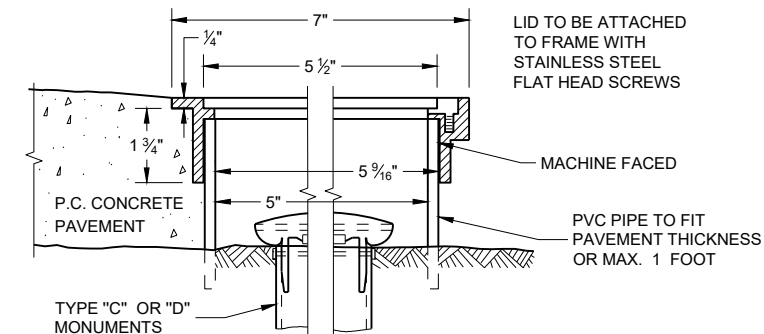
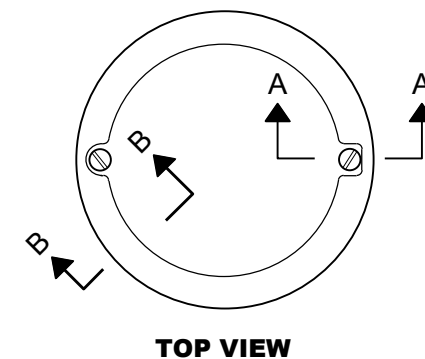
CONCRETE MONUMENTS TYPE A



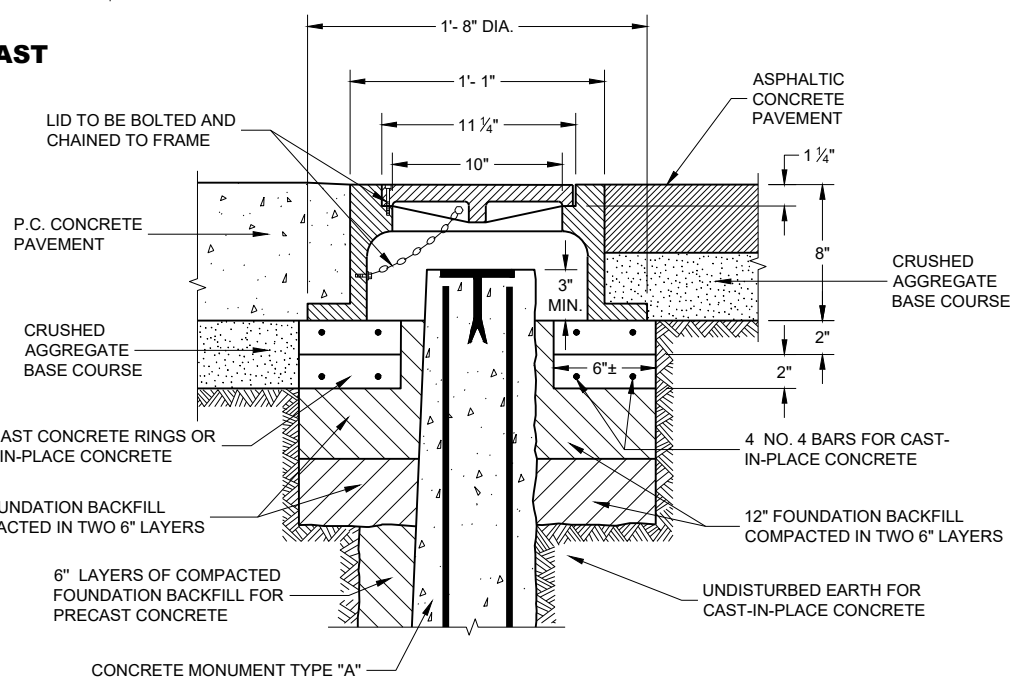
② **WIS DOT MONUMENT
MARKER LOGO**
FOR TYPES "A", "C" & "D"



ALUMINUM MONUMENTS (INCLUDES MARKER)



**SECTION B-B SECTION A-A
ALUMINUM MONUMENT COVER**
(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)



CAST IRON MONUMENT COVER
(APPROXIMATE WEIGHT 95 LBS)

GENERAL NOTES

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

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

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

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

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

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

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

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

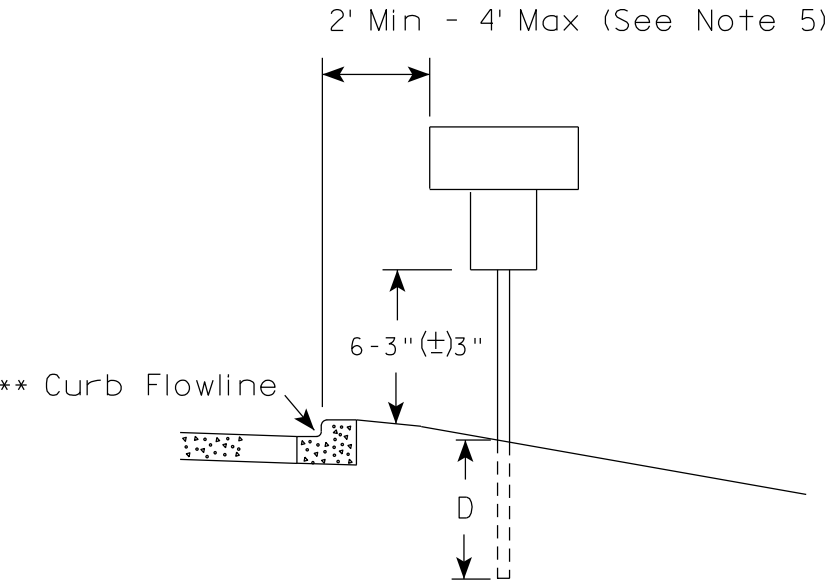
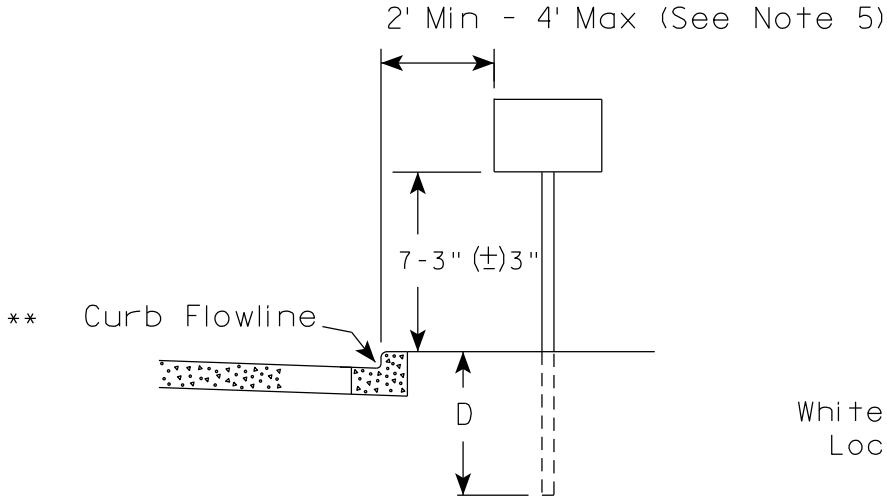
- ① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.
- ② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WISDOT MARKER.

LANDMARK REFERENCE MONUMENTS AND COVERS

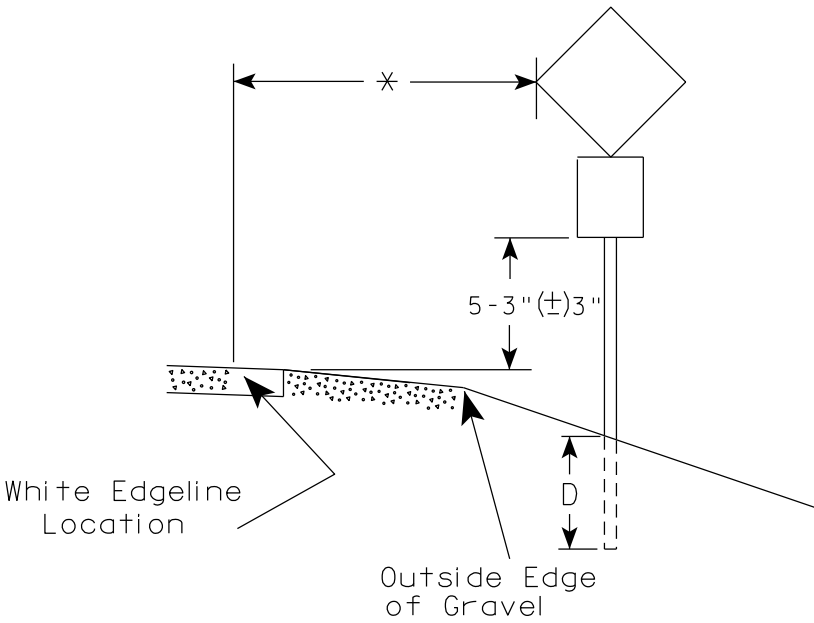
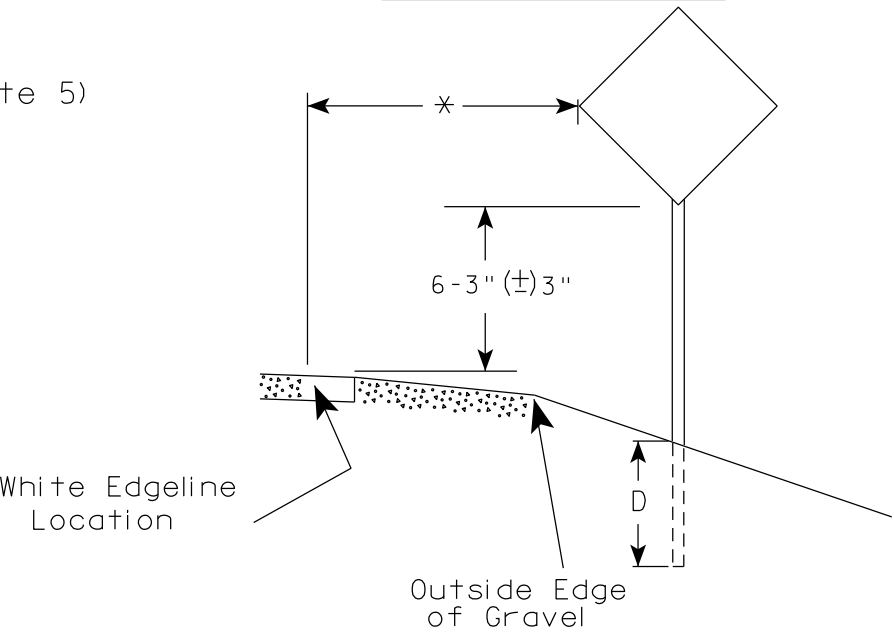
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Raymond A. Kumapayii
DATE CHIEF SURVEYING AND MAPPING
ENGINEER
FHWA

URBAN AREA



RURAL AREA (See Note 2)



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" (±) 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".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 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.

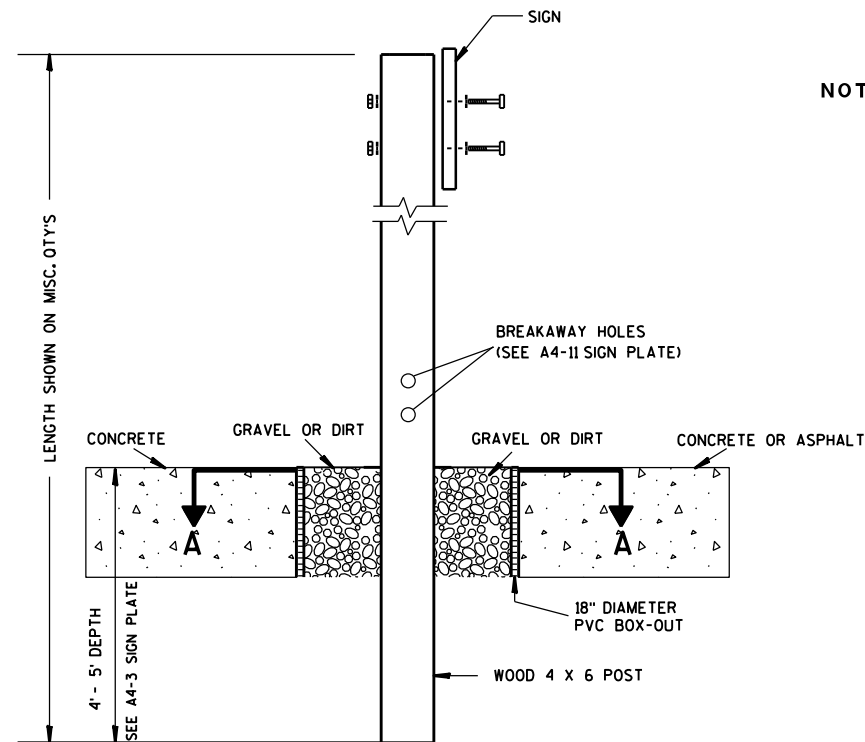
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

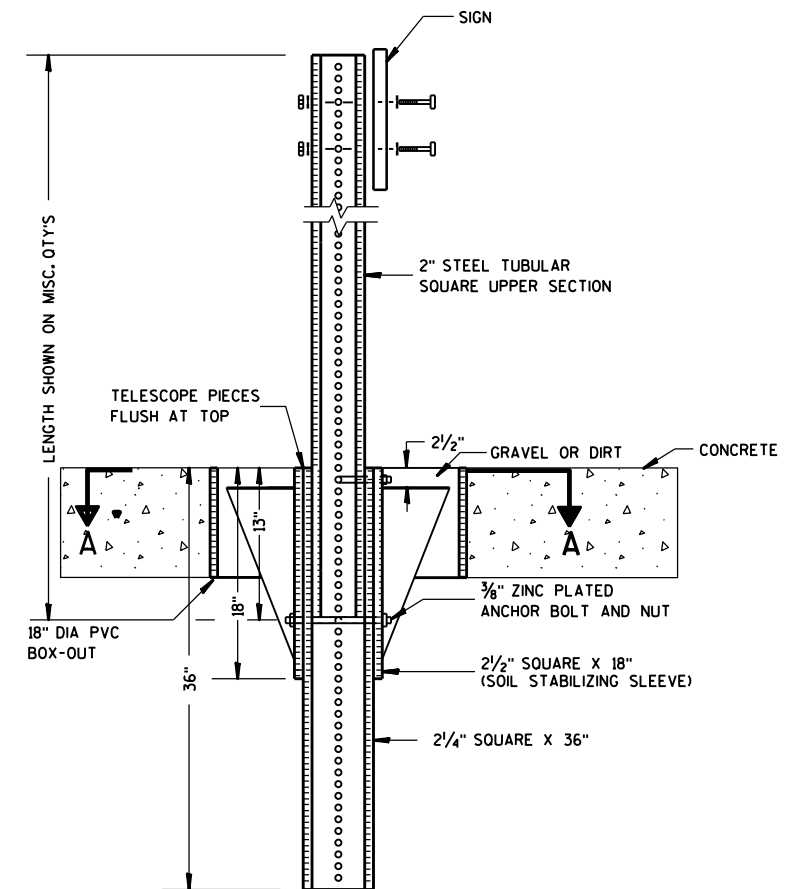
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

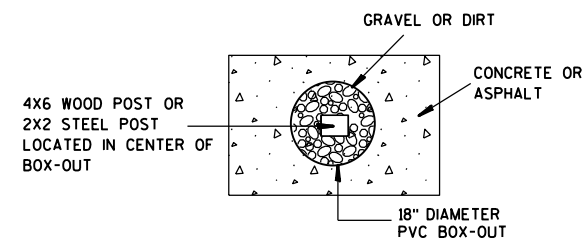
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

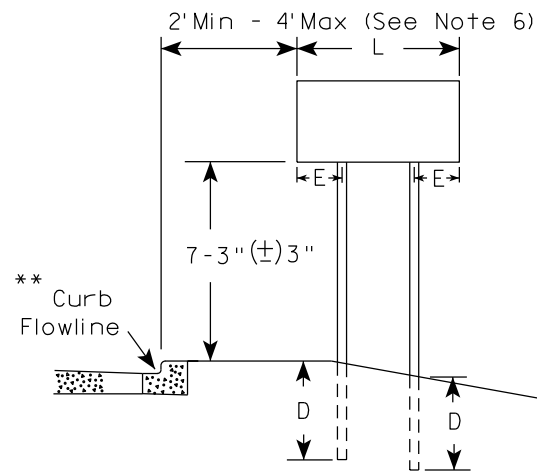
HWY:

COUNTY:

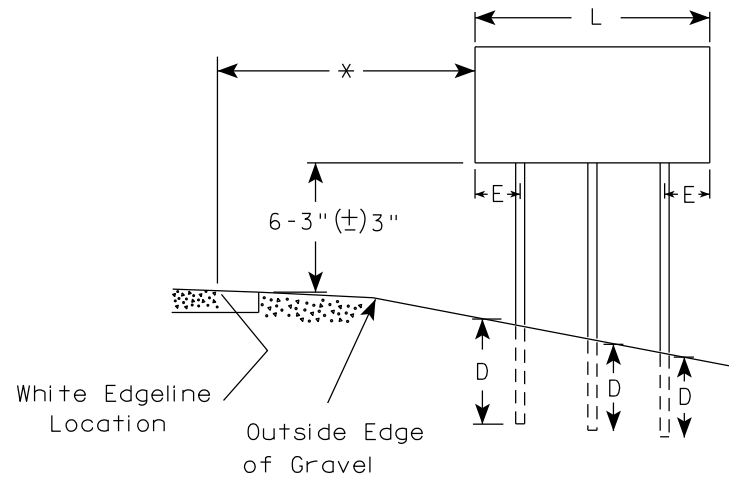
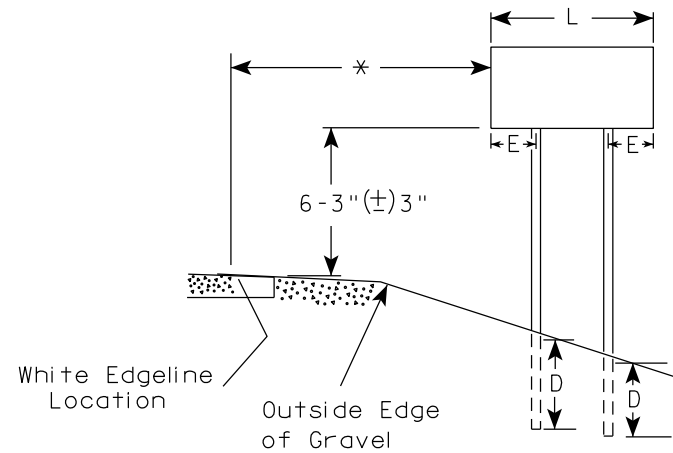
SHEET NO:

E

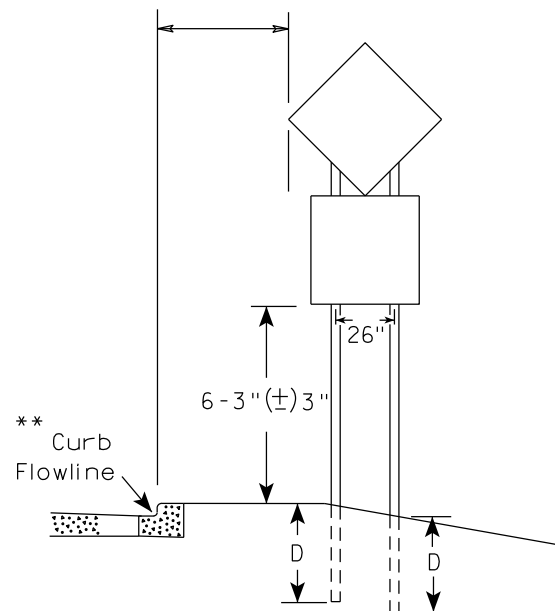
URBAN AREA



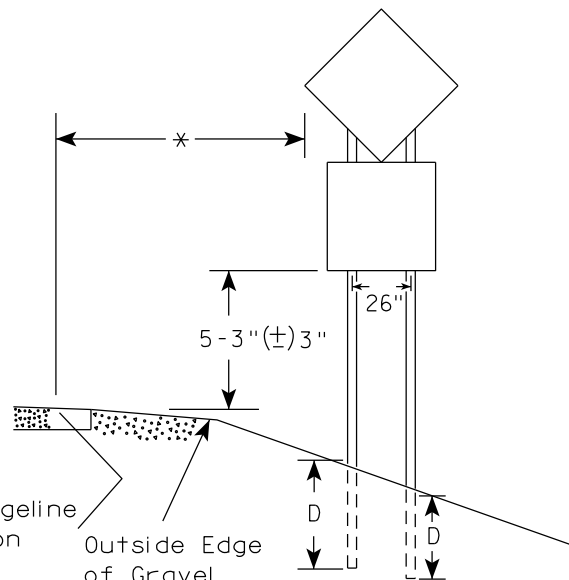
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 12/6/23	PLATE NO. A4-4.16

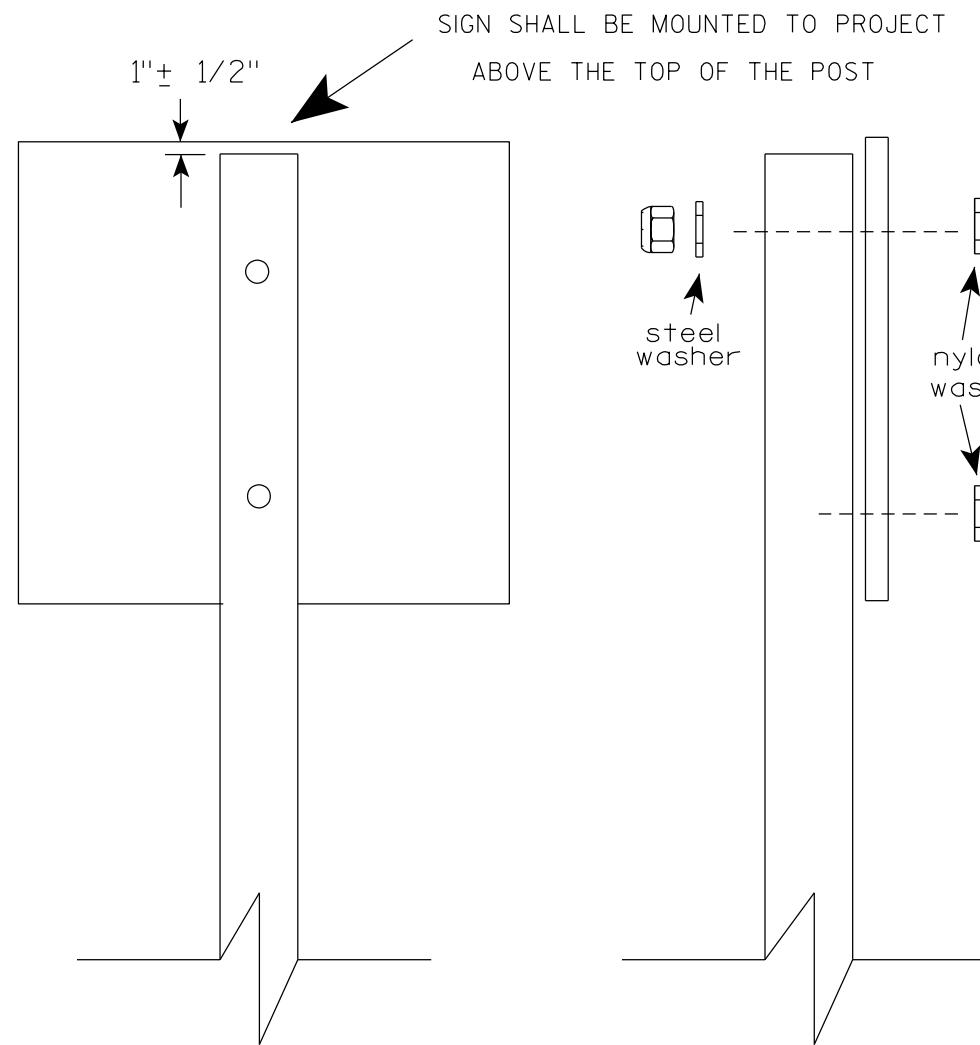
GENERAL NOTES

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

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

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

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



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

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

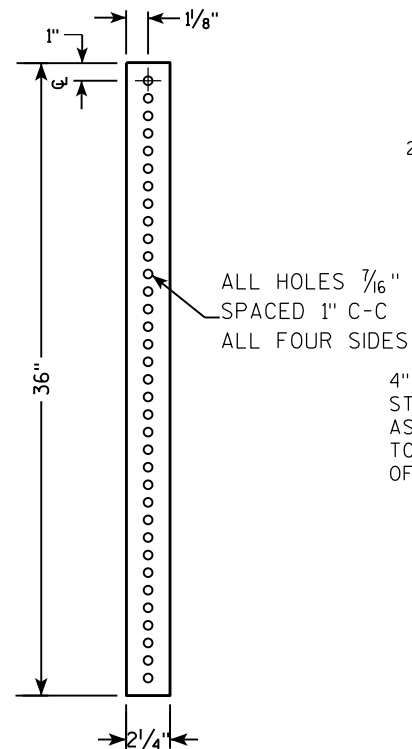
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " 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

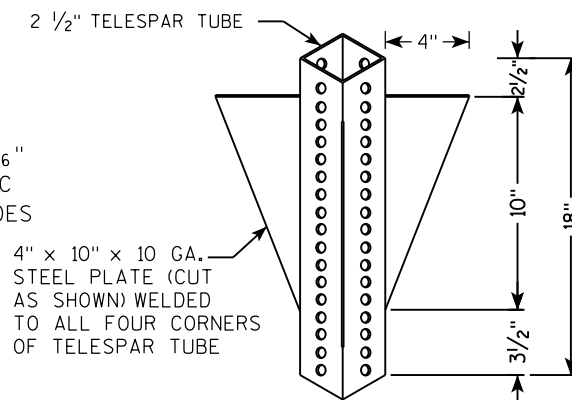
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



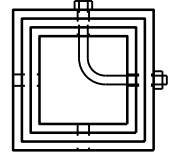
**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



SIGN
 SEE SIGN PLATE
 A4-8 FOR BOLT
 WASHER, & NUT
 MATERIAL
 2" STEEL TUBULAR
 SQUARE UPPER SECTION
 ALL HOLES $\frac{7}{16}$ "
 SPACED 1" C-C
 ALL FOUR SIDES
 $\frac{3}{8}$ " ZINC PLATED CORNER
 ANCHOR BOLT AND NUT
 2 1/2" GRAVEL OR DIRT
 TELESCOPE PIECES
 FLUSH AT TOP
 18" DIA SCHEDULE
 40 PVC
 BOX-OUT
 36"
 18"
 13"
 2 1/2" SQUARE X 18"
 (SOIL STABILIZING SLEEVE)
 2 1/4" SQUARE X 36"
 3/8" ZINC PLATED
 ANCHOR BOLT AND NUT

[illegible]

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



DIRECTION
OF TRAFFIC

SECTION A-A

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

PROJECT NO:

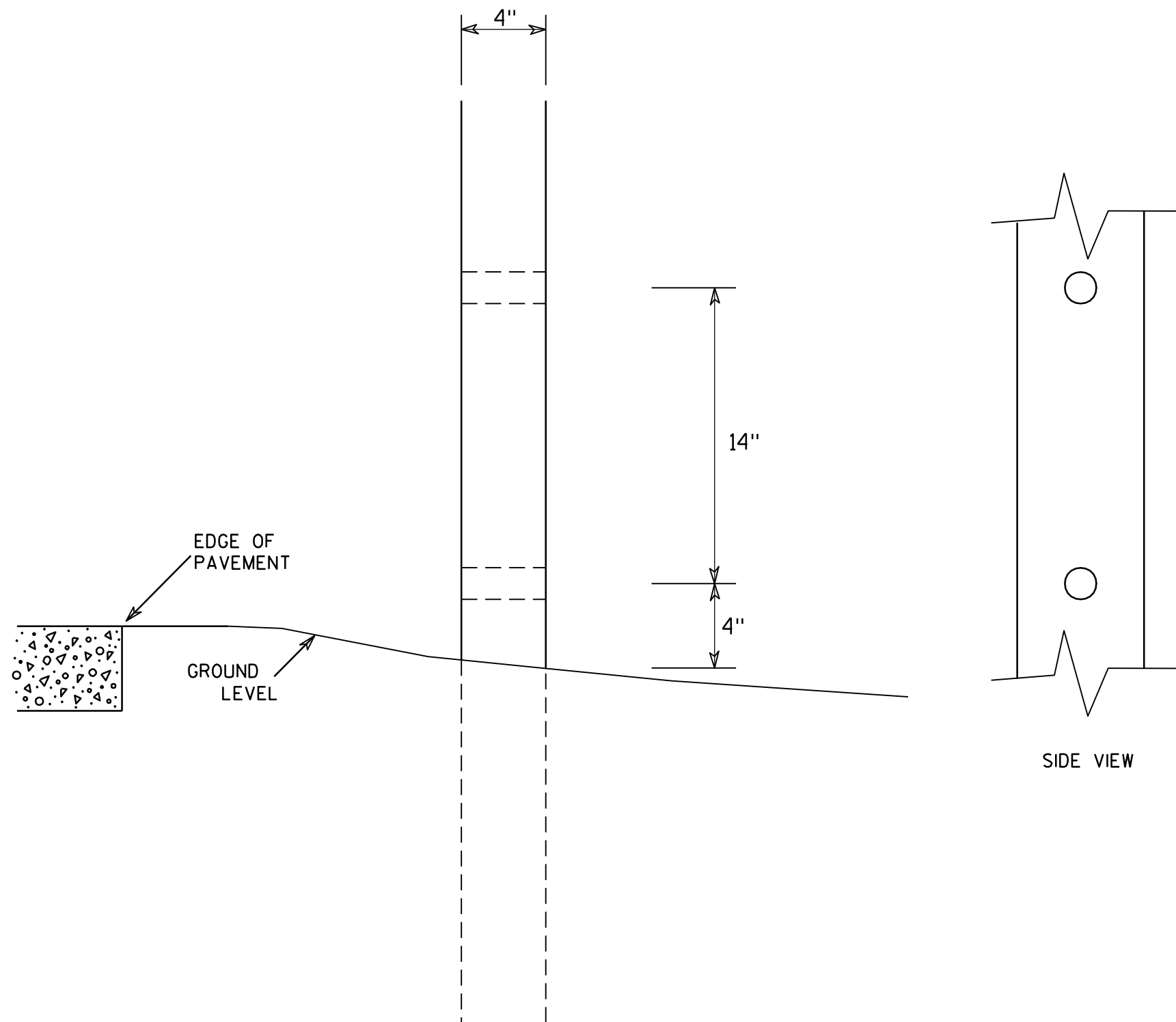
HWY:

COUNTY:

SHEET NO:

11

7



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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

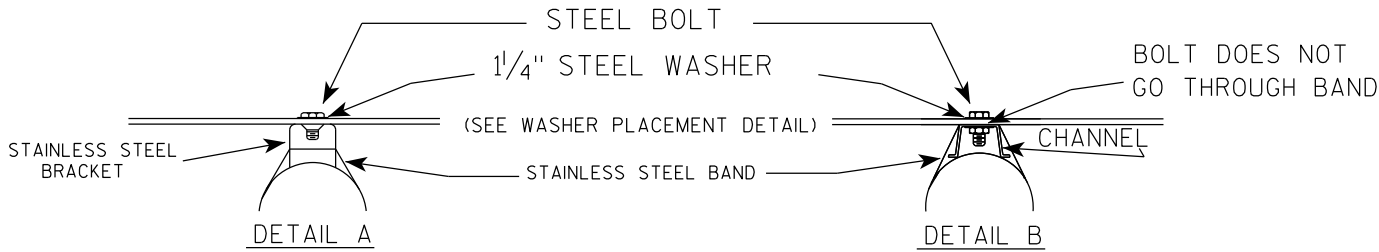
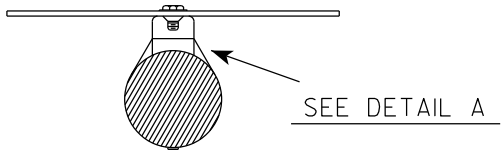
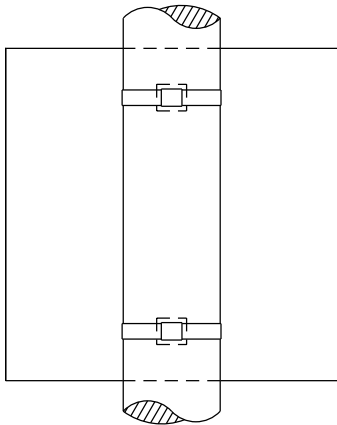
COUNTY:

SHEET NO:

E

BANDING

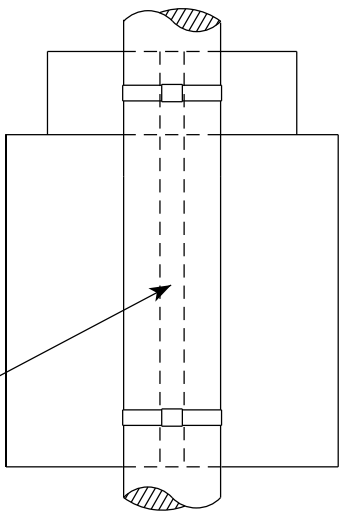
SINGLE SIGN



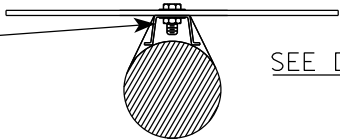
GENERAL NOTES

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

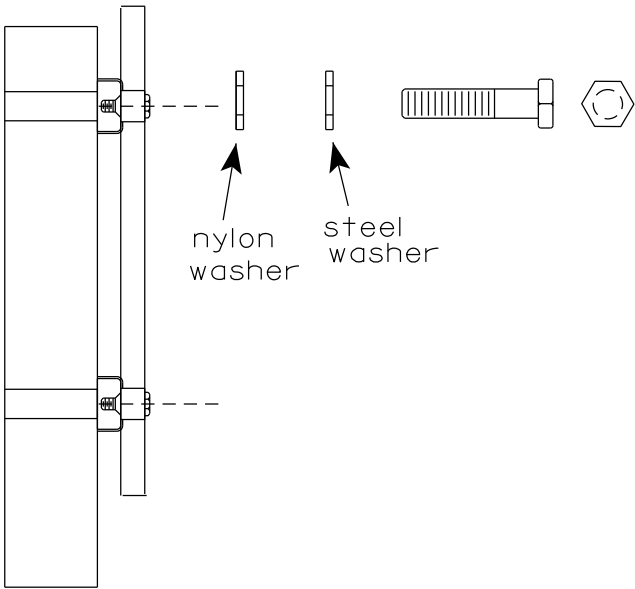
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



WASHER PLACEMENT

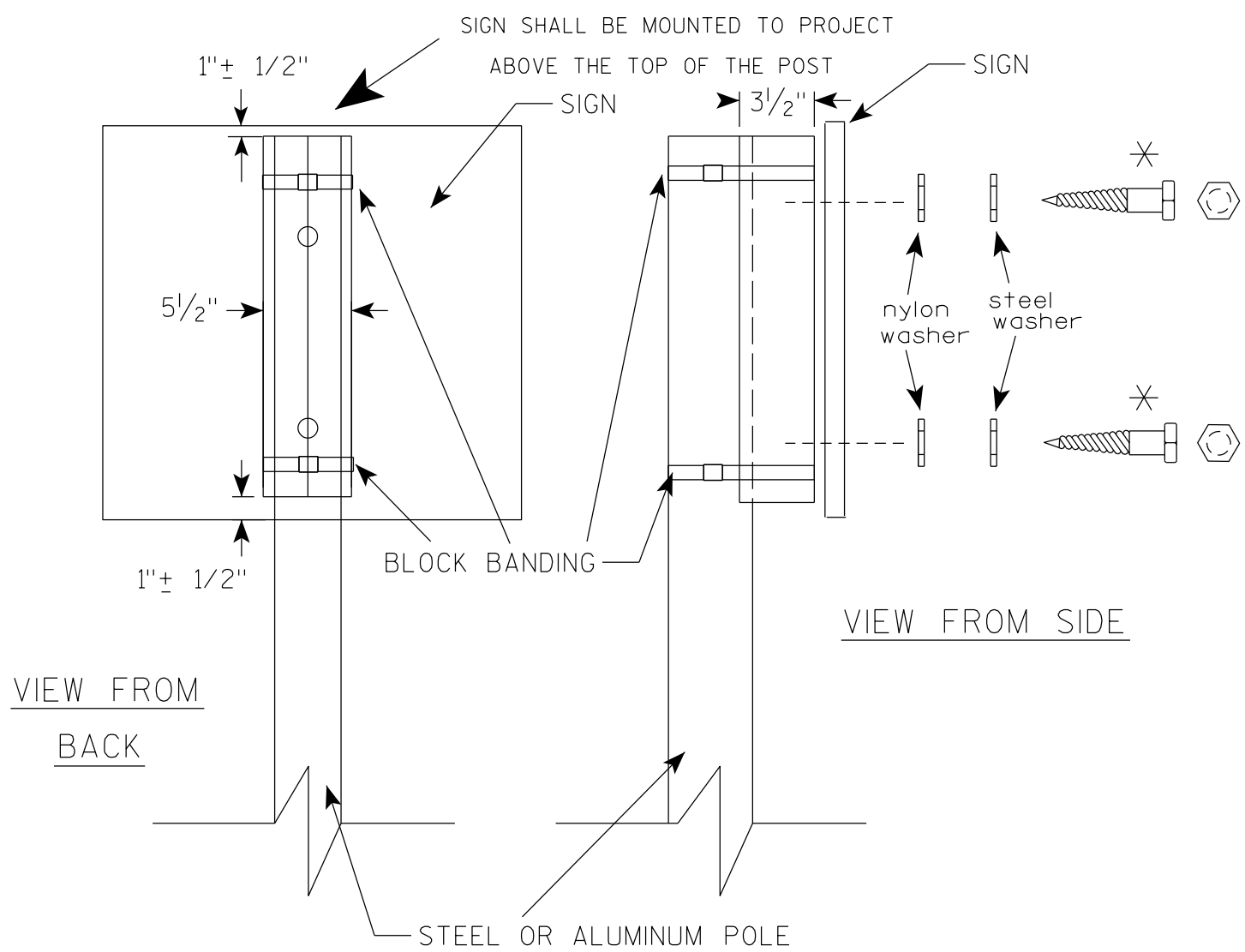


WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

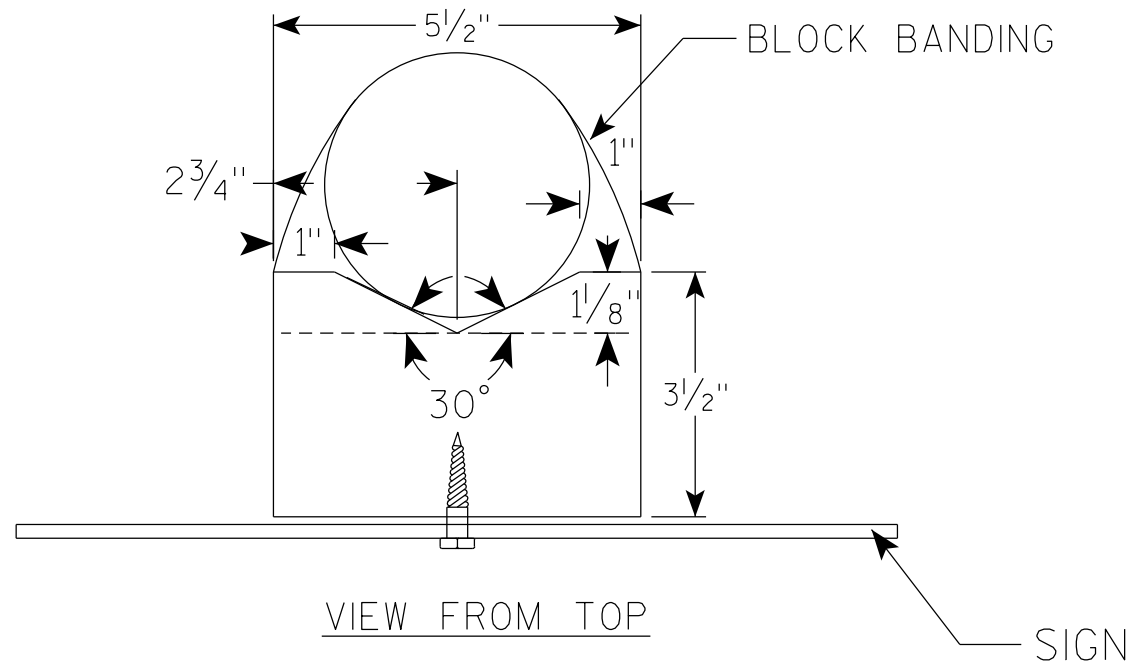
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

GENERAL NOTES

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

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO:

E

NOTES

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



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

STANDARD SIGN
G20-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

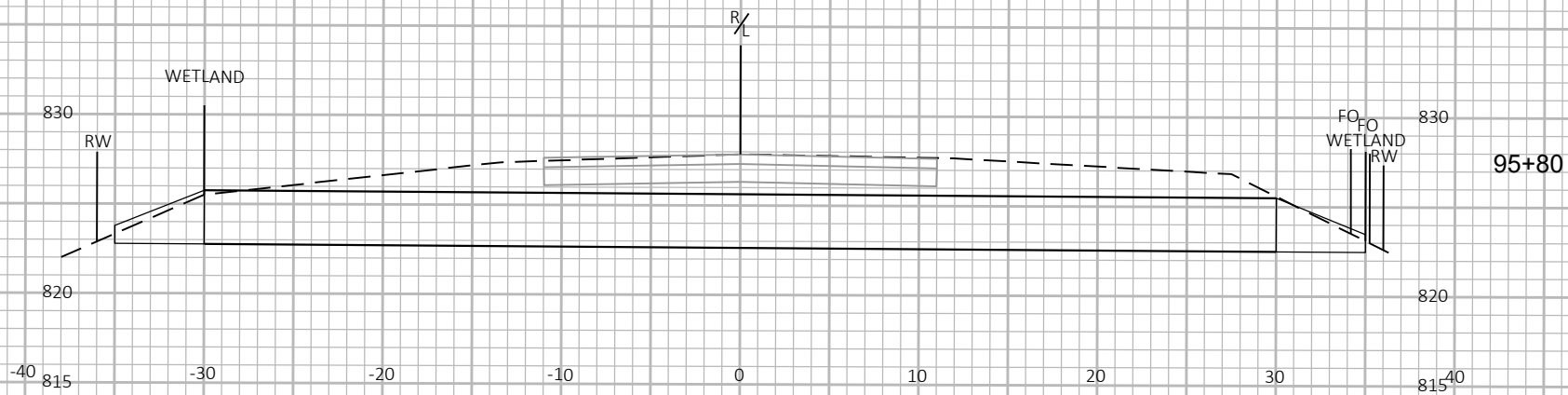
PROJECT NO: HWY: COUNTY: SHEET NO: E

STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
			CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS ORDINATE
							1.00	1.25	
							NOTE 1		
					NOTE 1	NOTE 3	NOTE 1		NOTE 8
115+25	11525.00	0.00	3.42	0.00	0	0	0	0	0
115+50	11550.00	25.00	1.38	0.66	2	0	2	0	2
115+75	11575.00	25.00	5.83	1.48	3	1	5	1	4
116+00	11600.00	25.00	8.72	3.51	7	2	12	4	8
116+25	11625.00	25.00	13.83	9.19	10	6	22	11	11
116+50	11650.00	25.00	25.94	19.80	18	13	40	28	13
116+75	11675.00	25.00	40.18	30.40	31	23	71	56	15
117+00	11700.00	25.00	30.59	54.15	33	39	104	105	-1
117+25	11725.00	25.00	32.53	101.32	29	72	133	195	-62
117+50	11750.00	25.00	21.06	62.39	25	76	158	290	-132
117+75	11775.00	25.00	15.82	27.67	17	42	175	343	-168
118+00	11800.00	25.00	16.99	15.10	15	20	190	368	-178
118+25	11825.00	25.00	9.40	10.01	12	12	202	383	-181
118+50	11850.00	25.00	6.73	7.99	7	8	209	393	-184
118+75	11875.00	25.00	0.00	6.66	3	7	212	401	-189
119+00	11900.00	25.00	0.03	5.45	0	6	212	409	-197
119+16.099	11916.10	16.10	0.00	0.00	0	2	212	411	-199

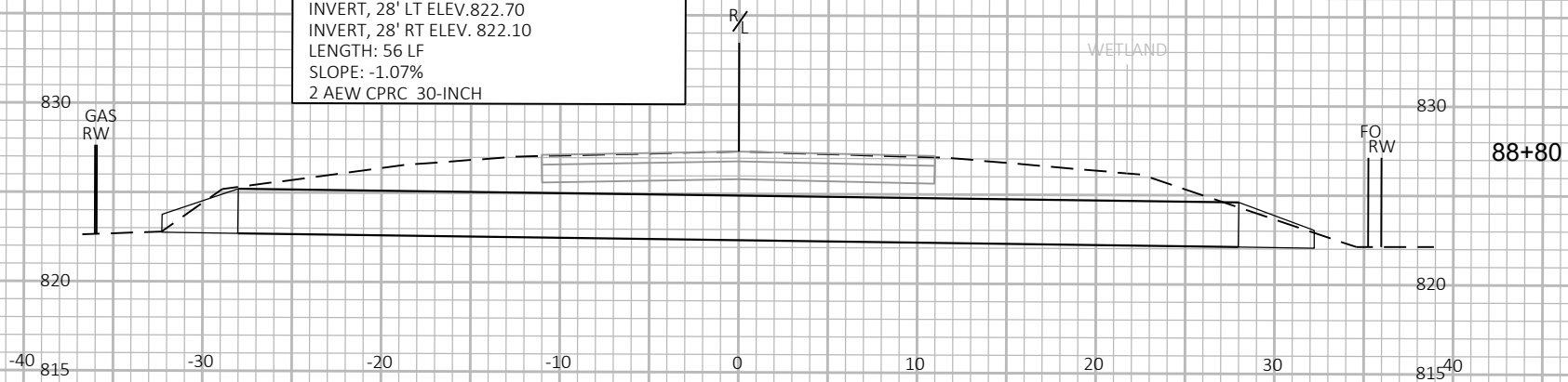
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME

PROPOSED CP:58156008469
CPRC CLASS IV 36-INCH
SKEW 7° LHF
INVERT, 30' LT ELEV. 822.75
INVERT, 30' RT ELEV. 822.50
LENGTH: 60 LF
SLOPE: -0.41%
2 AEW CPRC 36-INCH

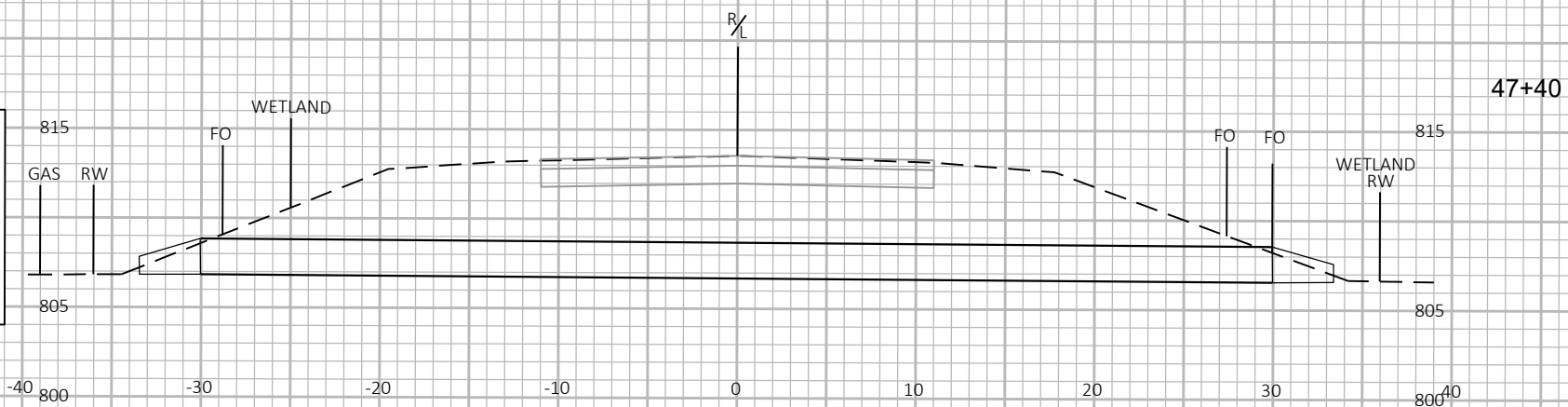
NOTE:
CULVERT PIPE CROSS SECTIONS ARE
FOR INFORMATION ONLY.



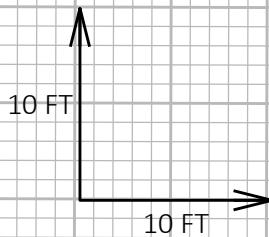
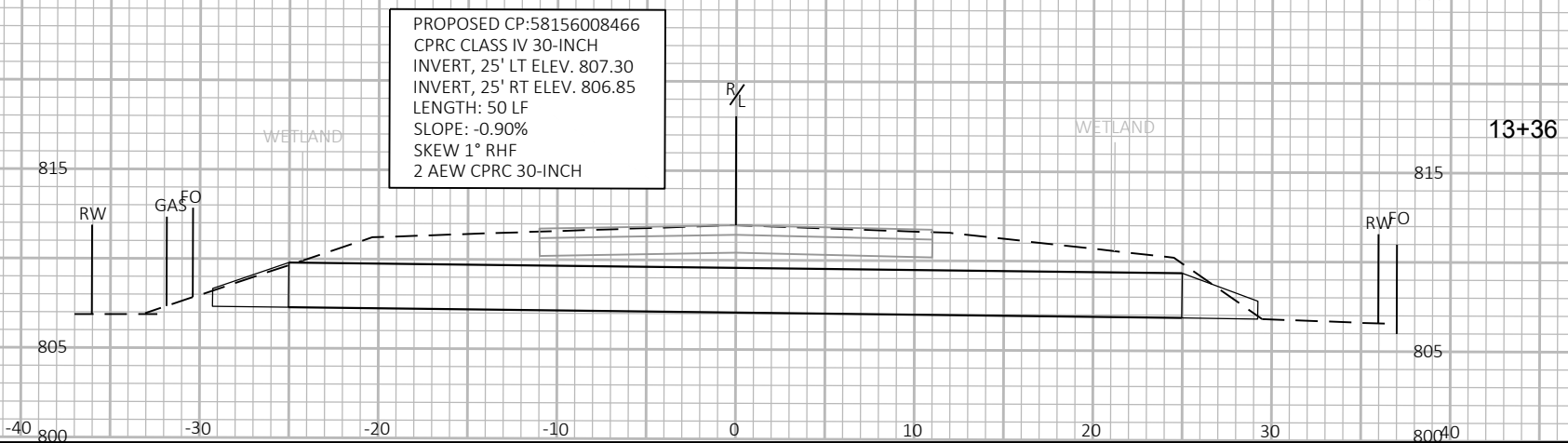
PROPOSED CP: 58156008468
CPRC CLASS IV 30-INCH
INVERT, 28' LT ELEV. 822.70
INVERT, 28' RT ELEV. 822.10
LENGTH: 56 LF
SLOPE: -1.07%
2 AEW CPRC 30-INCH



PROPOSED CP:58156076013
CRPC CLASS IV 24-INCH
INVERT, 30' LT ELEV. 806.85
INVERT, 30' RT ELEV. 806.55
LENGTH: 60 LF
*REPLACE 2 SECTIONS LT&RT
SLOPE: -0.50%
2 AEW CRCP CLASS IV 24-INCH



PROPOSED CP:58156008466
CPRC CLASS IV 30-INCH
INVERT, 25' LT ELEV. 807.30
INVERT, 25' RT ELEV. 806.85
LENGTH: 50 LF
SLOPE: -0.90%
SKEW 1° RHF
2 AEW CPRC 30-INCH



9

9

PROJECT NO: 6580-13-71

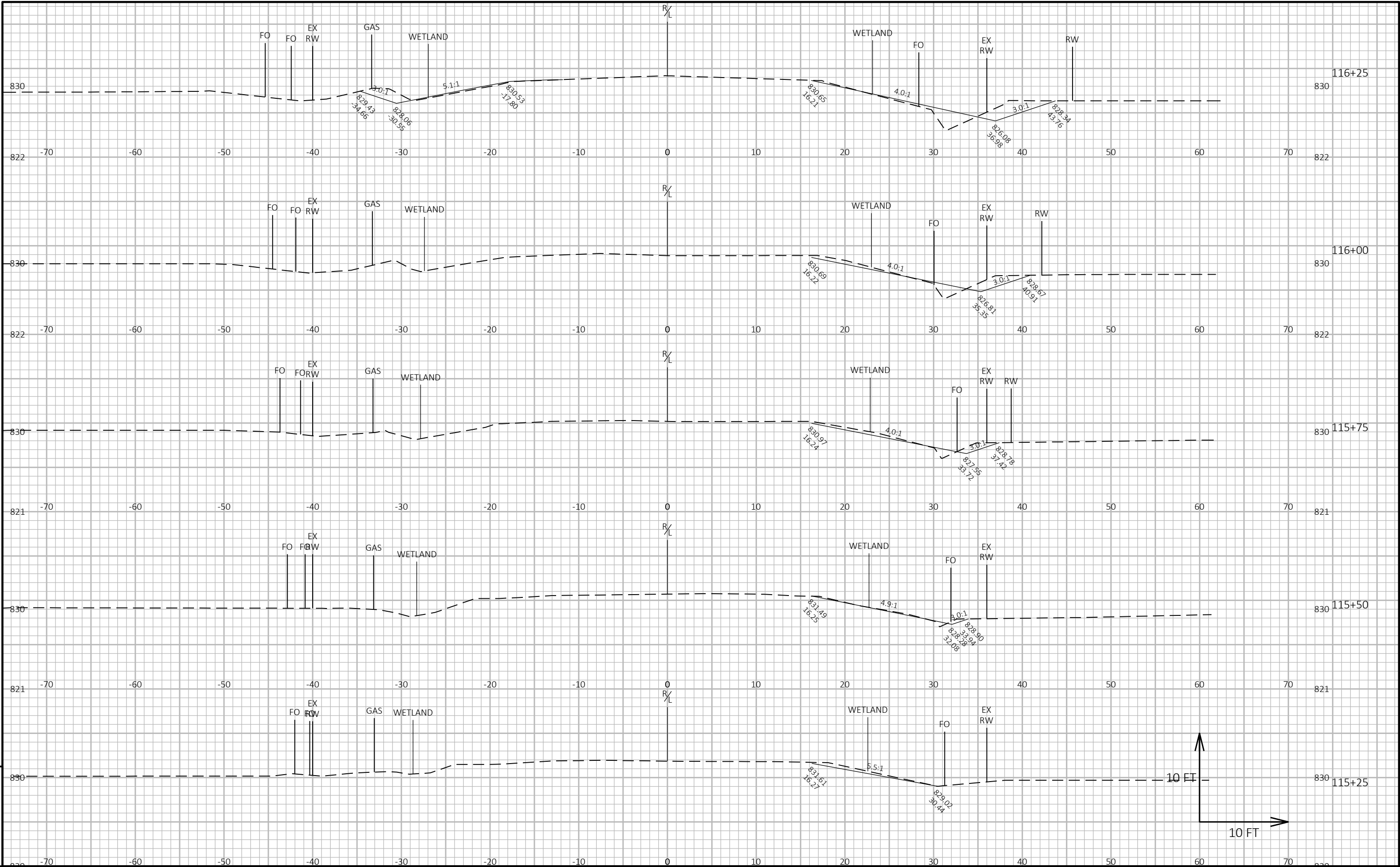
HWY: STH 156

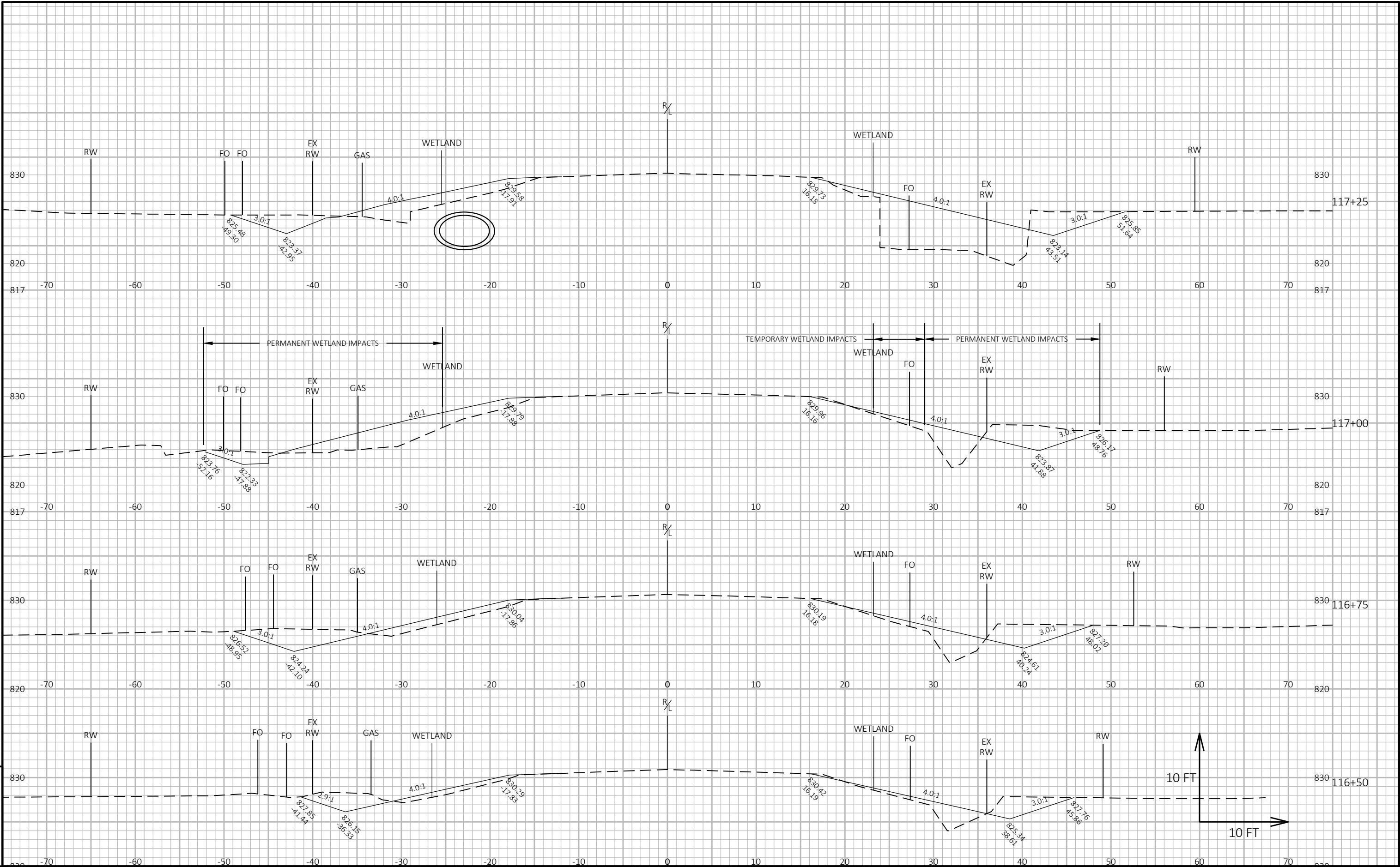
COUNTY: SHAWANO

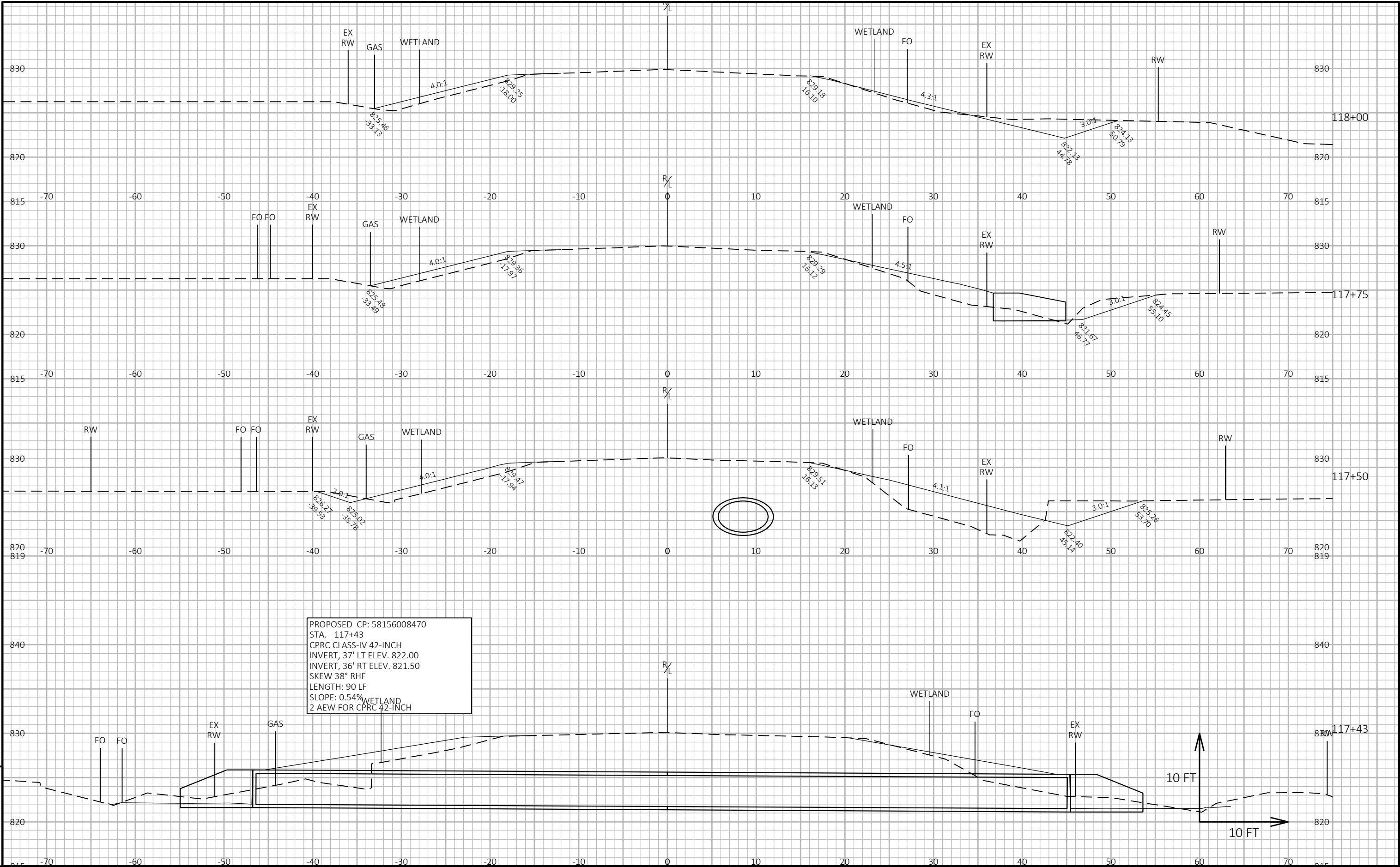
CROSS SECTIONS: STH 156

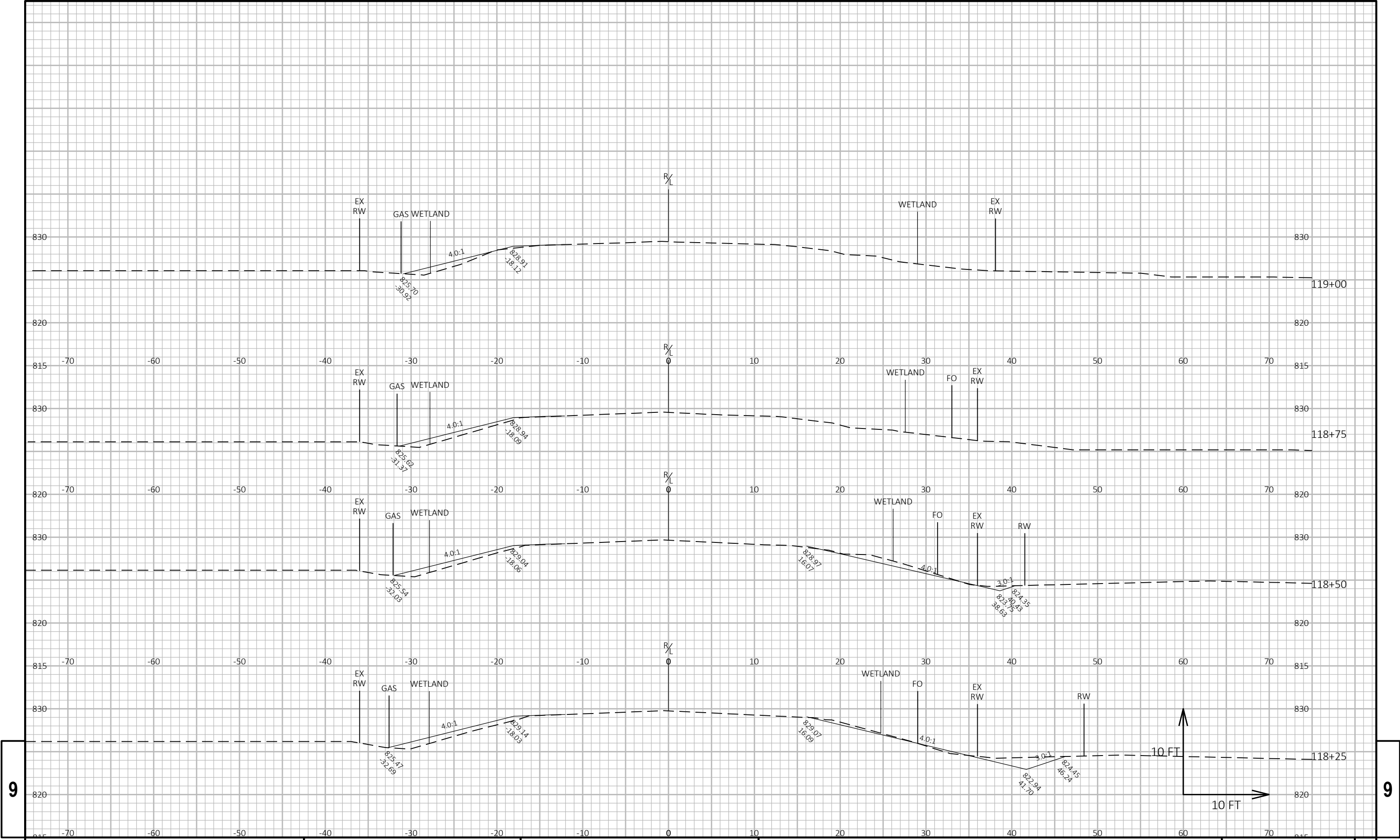
SHEET

E

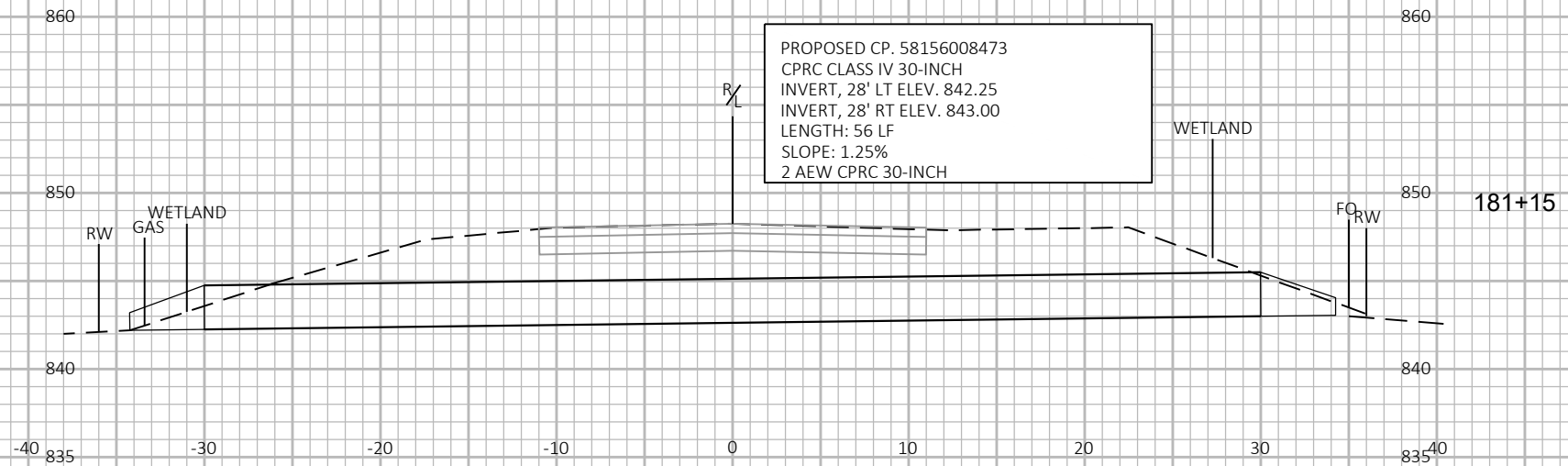
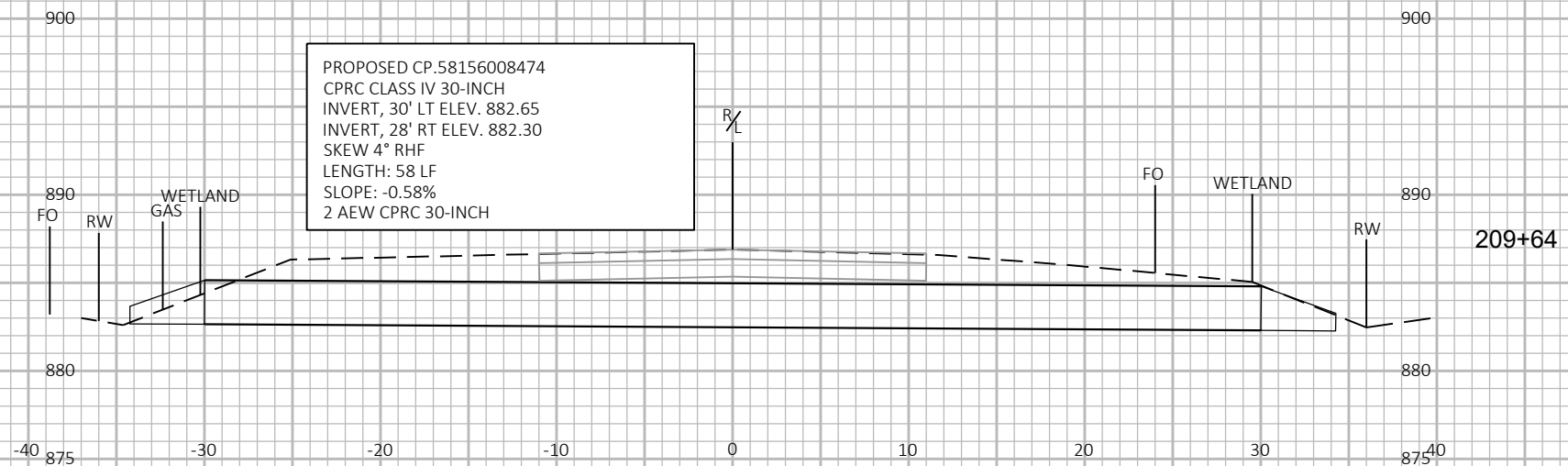




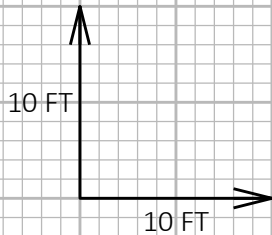




NOTE:
CULVERT PIPE CROSS SECTIONS ARE
FOR INFORMATION ONLY.



PROPOSED CP: 58156008992
CPRC CLASS IV 24-INCH
INVERT, 29' LT ELEV. 824.00
INVERT, 26' RT ELEV. 824.30
SKEW 1° LHF
LENGTH: 56 LF
SLOPE: -0.53%
2 AEW CPRC 24-INCH



9

9

NOTE:
CULVERT PIPE CROSS SECTIONS ARE
FOR INFORMATION ONLY.

313+54

PROPOSED CP.58156008478
CPRC CLASS IV 24-INCH
INVERT, 29' LT ELEV. 889.05
INVERT, 27' RT ELEV. 889.30
SKEW 16° LHF
LENGTH: 60 LF
SLOPE: -0.42%
2 AEW CPRC 24-INCH

253+68

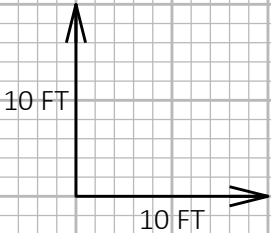
PROPOSED CP. 58156008476
CPRC CLASS IV 30-INCH
INVERT, 28' LT ELEV. 900.60
INVERT, 28' RT ELEV 900.90
LENGTH: 56 LF
SLOPE: -0.54%
2 AEW CPRC 30-INCH

239+47

PROPOSED CP. 58156008994
CPRC CLASS IV 30-INCH
INVERT, 28' LT ELEV. 898.50
INVERT, 28' RT ELEV. 898.70
LENGTH: 56 LF
SLOPE: -0.35%
2 AEW CPRC 30-INCH

231+55

PROPOSED CP.58156008475
CPRC HORIZONTAL ELLIPTICAL CLASS HE-IV 19X30-INCH
INVERT, 27' LT ELEV. 900.10
INVERT, 22' RT ELEV. 900.35
LENGTH: 50 LF
SKEW 2° RHF
SLOPE: -0.50%
2 AEW CPRC HORIZONTAL ELLIPTICAL 19X30-INCH



9

9

PROJECT NO: 6580-13-71

HWY: STH 156

COUNTY: SHAWANO

CROSS SECTIONS: STH 156

SHEET

E

FILE NAME : E:\MKE\WIS-21025539-A0\60 EXECUTION\65 DRAWINGS\65801301\SHEETSPLAN\022501-SS-XS.DWG
LAYOUT NAME - 03

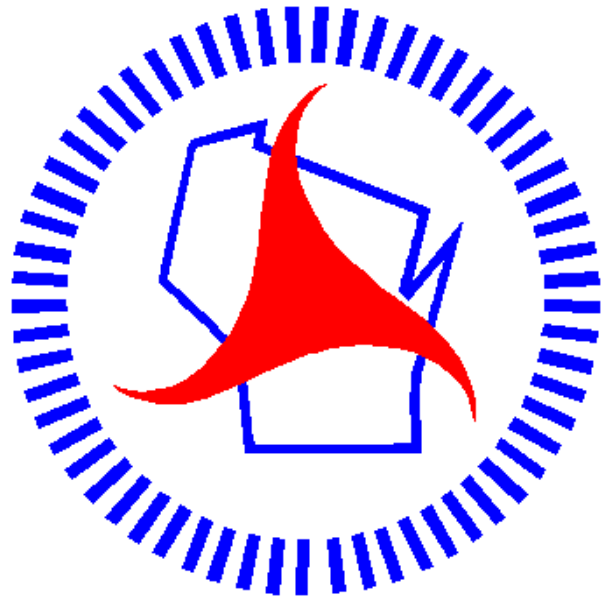
PLOT DATE : 3/10/2025 8:50 AM

PLOT BY : JOHN BOURGEOIS

PLOT NAME :

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

WISDOT/CADDs SHEET 49



Wisconsin Department of Transportation

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