RHI JUNE 2021

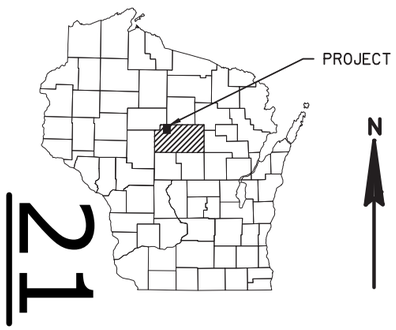
PROJECT ID: 9535-05-70

WITH: N/A

COUNTY: MARATHON

ORDER OF SHEETS

TOTAL SHEETS = 100



DESIGN DESIGNATION

A.A.D.T.	(2021)	= 1780
A.A.D.T.	(2041)	= 2080
D.H.V.		= 11.6
D.D.		= 60/40
T.		= 11.0%
DESIGN SPEED		= 60 MPH
ESALS		= 500,000

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) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STRATFORD - GOODRICH

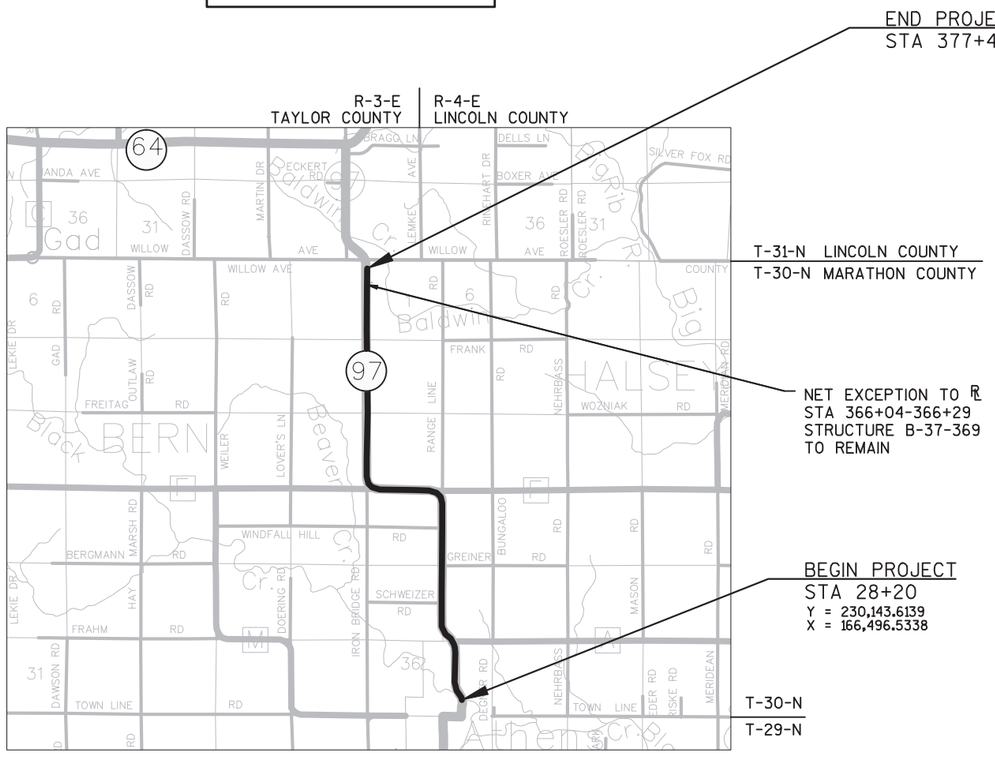
BLACK CREEK BRDGE TO TAYLOR CO LINE

STH 97

MARATHON COUNTY

STATE PROJECT NUMBER
9535-05-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9535-05-70	WISC 2021370	1



LAYOUT

SCALE 0 2 MILE

TOTAL NET LENGTH OF CENTERLINE = 6.610 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, MARATHON COUNTY, NAD83 (YEAR), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO NAVD 88 (2012).

ORIGINAL PLANS PREPARED BY

CORRE Structural Environmental Municipal Transportation

6510 GRAND TETON PLAZA, SUITE 214
MADISON, WI 53719
(608)838-1011
www.corre-engineering.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT/CORRE, INC.
Designer	CORRE, INC.
Project Manager	FRED McCUE
Regional Examiner	NC REGION
Regional Supervisor	ROBIN STAFFORD
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 10/28/19 (Signature)

E

UTILITY CONTACTS

* CHARTER COMMUNICATIONS - COMMUNICATION LINE

JESSE GRUNY
503 E IVES ST #316
MARSHFIELD WI, 54449
(715) 651-5605
jesse.gruny@charter.com

* FRONTIER COMMUNICATIONS - COMMUNICATION LINE

CAL KLADE
1851 N 14TH AVE
WAUSAU, WI 54403
(715) 573-2110
calvin.klade@ftr.com

* TAYLOR COUNTY ELECTRIC COOPERATIVE - ELECTRIC

KEVIN COMSTOCK
N 1831 STH 13
MEDFORD, WI 54451
(715) 678-2411
kevin@taylorelectric.org

* WE ENERGIES - GAS

TAYLOR WIETING
1921 8TH ST S
WISCONSIN RAPIDS, WI 54494
(715) 421-7277
taylor.wieting@wecenergygroup.com

* XCEL ENERGY - ELECTRIC

PAMELA DENZINE
400 N 5TH ST
ABBOTSFORD, WI 54405
(715) 737-7174
pamela.denzine@xcelenergy.com

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

* DENOTES UTILITIES THAT ARE DIGGERS HOTLINE MEMBERS

DNR CONTACT

CASEY JONES
DNR WISCONSIN RAPIDS SERVICE CENTER
473 GRIFFITH DRIVE
WISCONSIN RAPIDS, WI 54494
715-421-7867
Casey.Jones@wisconsin.gov

GENERAL NOTES

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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

UTILITY REFERENCE LINES ON THE CROSS SECTIONS ARE FOR HORIZONTAL REFERENCE ONLY.

THE CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING, SEEDING, FERTILIZING, AND MULCHING OR PLACING EROSION MAT ON ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY THEIR OPERATIONS OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

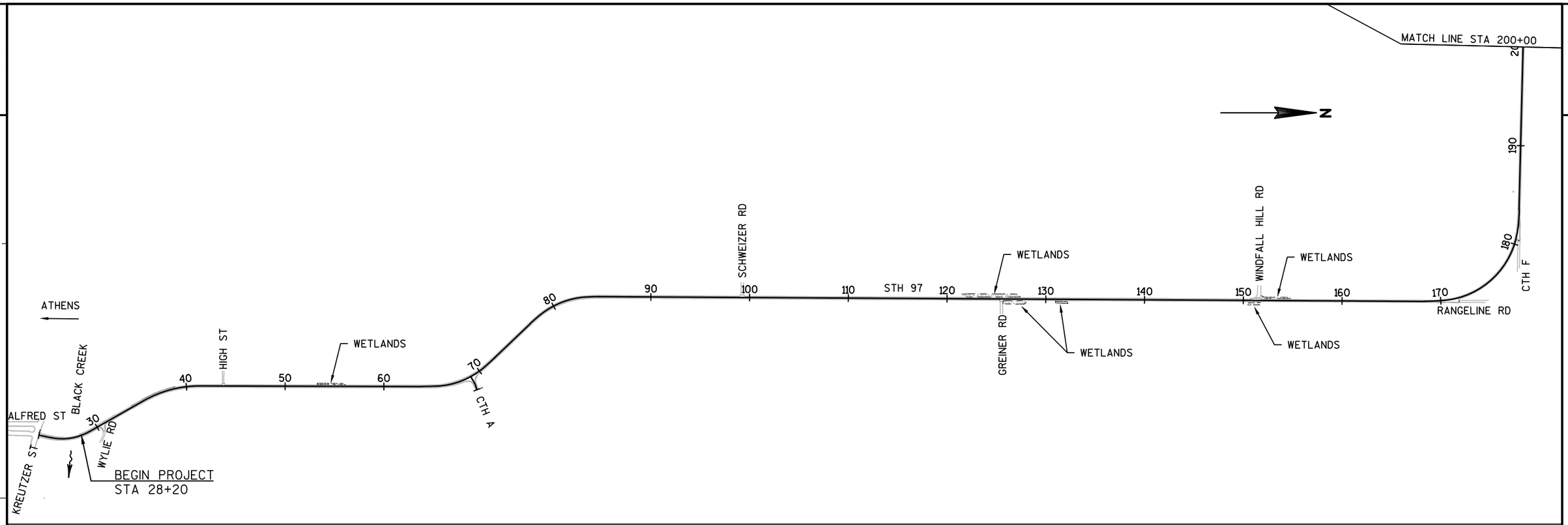
BORINGS TABLE

CORE NO.	STATION	OFFSET	CORE (INCHES)	PAVEMENT TYPE	N	E
C-1	42+14.21	1.03', RT	3.25	HMA	231,420.90	165,998.70
C-2	90+62.43	8.05', RT	2.50	HMA	235,972.10	165,990.30
C-3	72+85.63	3.74', RT	3.50	HMA	234,389.20	165,659.30
C-4	88+66.13	8.38', LT	3.75	HMA	235,775.90	165,087.90
C-5	104+10.82	4.10', RT	3.25	HMA	237,320.50	165,109.10
C-6	119+44.58	8.06', LT	2.75	HMA	238,854.30	165,105.60
C-7	134+97.67	2.58', RT	3.50	HMA	240,407.30	165,125.00
C-8	150+64.94	6.67', LT	3.50	HMA	241,974.60	165,124.60
C-9	166+27.91	2.51', RT	3.25	HMA	243,537.50	165,142.60
C-10	181+52.63	1.32', LT	4.00	HMA	244,686.50	164,413.50
C-11	196+88.63	8.30', RT	3.50	HMA	244,743.60	162,878.90
C-12	212+83.31	1.34', LT	3.00	HMA	244,768.80	161,284.40
C-13	228+38.74	1.69', RT	3.00	HMA	245,288.70	159,939.60
C-14	243+75.34	8.43', LT	2.75	HMA	246,816.30	159,861.60
C-15	259+24.97	1.23', LT	2.75	HMA	248,365.70	159,895.30
C-16	274+91.61	7.65', LT	2.75	HMA	249,932.20	159,917.30
C-17	290+13.51	0.38', RT	3.00	HMA	251,453.80	159,940.50
C-18	306+01.70	7.28', LT	3.50	HMA	253,041.90	159,921.50
C-19	321+45.18	1.65', RT	4.50	HMA	254,585.40	159,919.40
C-20	336+62.99	8.81', LT	1.75	HMA	256,103.10	159,898.10
C-21	352+24.77	0.64', RT	3.00	HMA	257,664.90	159,896.40
C-22	367+91.93	9.61', LT	5.75	HMA	259,232.10	159,889.90

RUNOFF COEFFICIENT TABLE

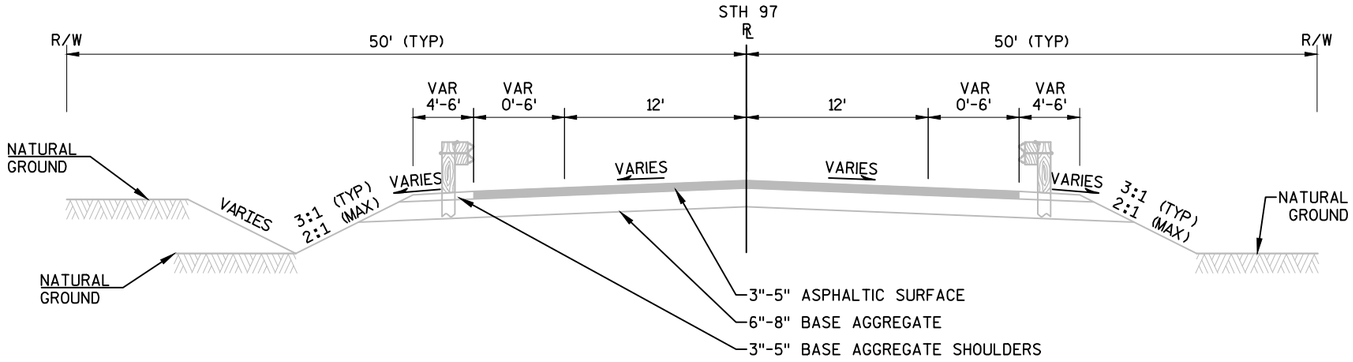
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

TOTAL PROJECT AREA = 60 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.94 ACRES



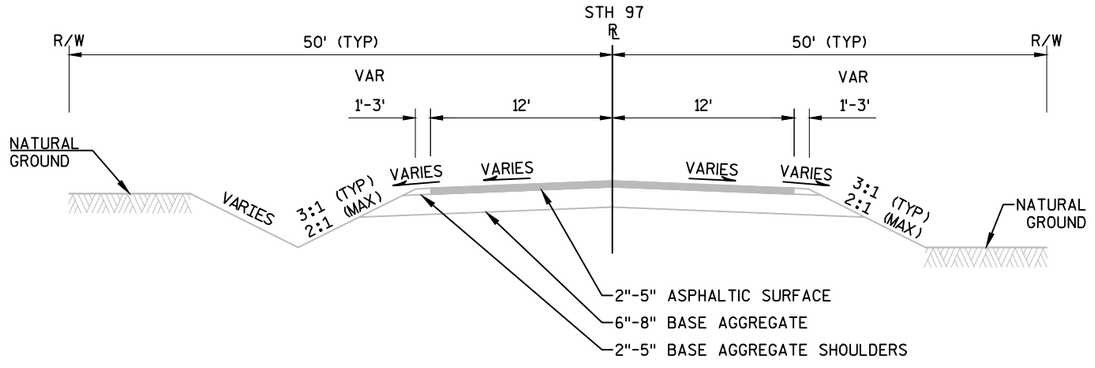
PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PROJECT OVERVIEW	SHEET 3	E

2



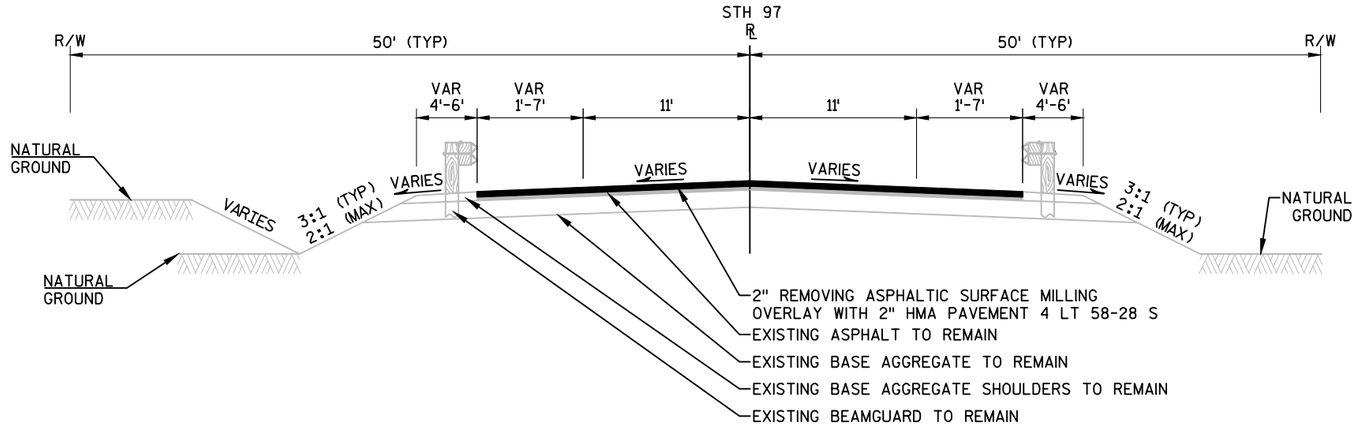
TYPICAL EXISTING SECTION WITH BEAMGUARD - STH 97

LEFT STATIONING	RIGHT STATIONING
STA 28+20 - 32+14 LT	STA 28+20 - 30+50 RT
STA 34+12 - 38+80 LT	STA 364+90 - 367+07 RT
STA 365+27 - 367+44 LT	



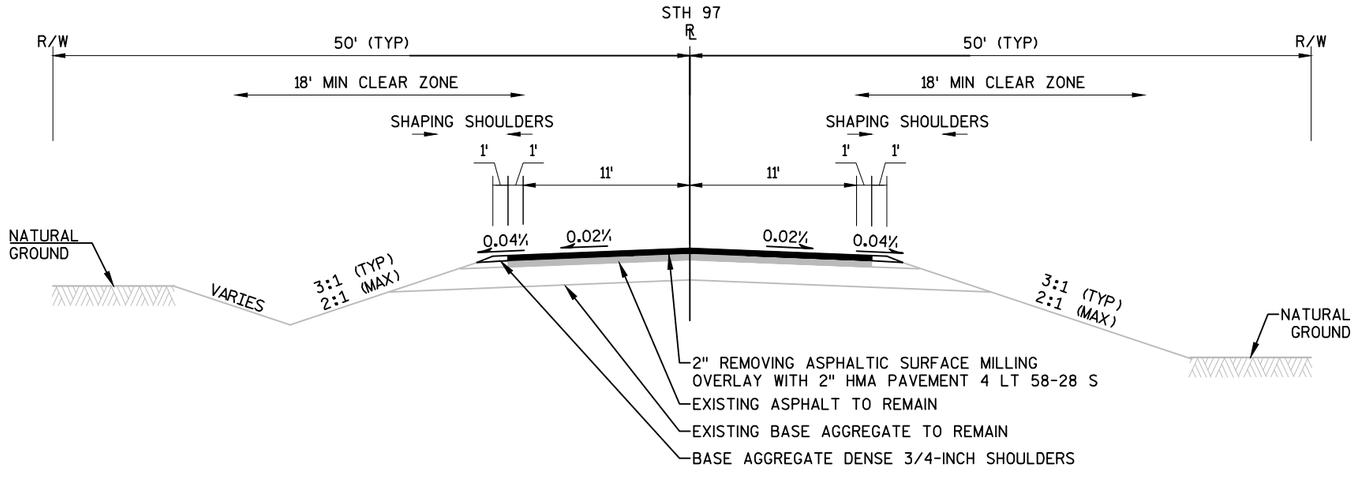
TYPICAL EXISTING SECTION - STH 97

LEFT STATIONING	RIGHT STATIONING
STA 32+14 - 34+12 LT	STA 30+50 - 364+90 RT
STA 38+80 - 365+27 LT	STA 367+07 - 377+45 RT
STA 367+44 - 377+45 LT	



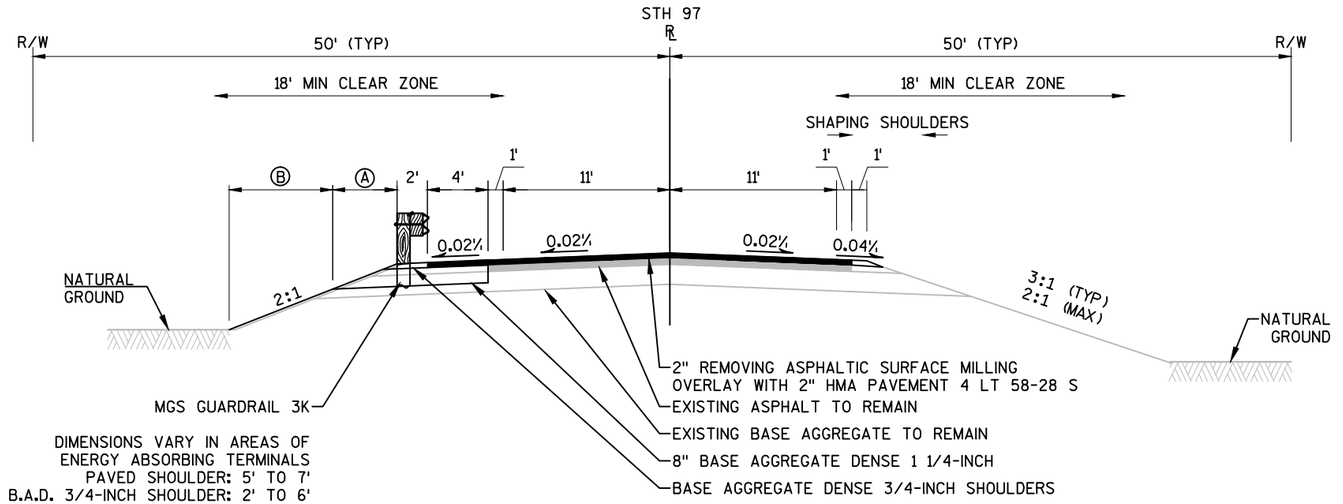
TYPICAL FINISHED SECTION WITH EXISTING BEAMGUARD - STH 97

LEFT STATIONING	RIGHT STATIONING
STA 28+20 - 32+14 LT	STA 28+20 - 30+50 RT
STA 365+27 - 367+44 LT	STA 364+90 - 367+07 RT



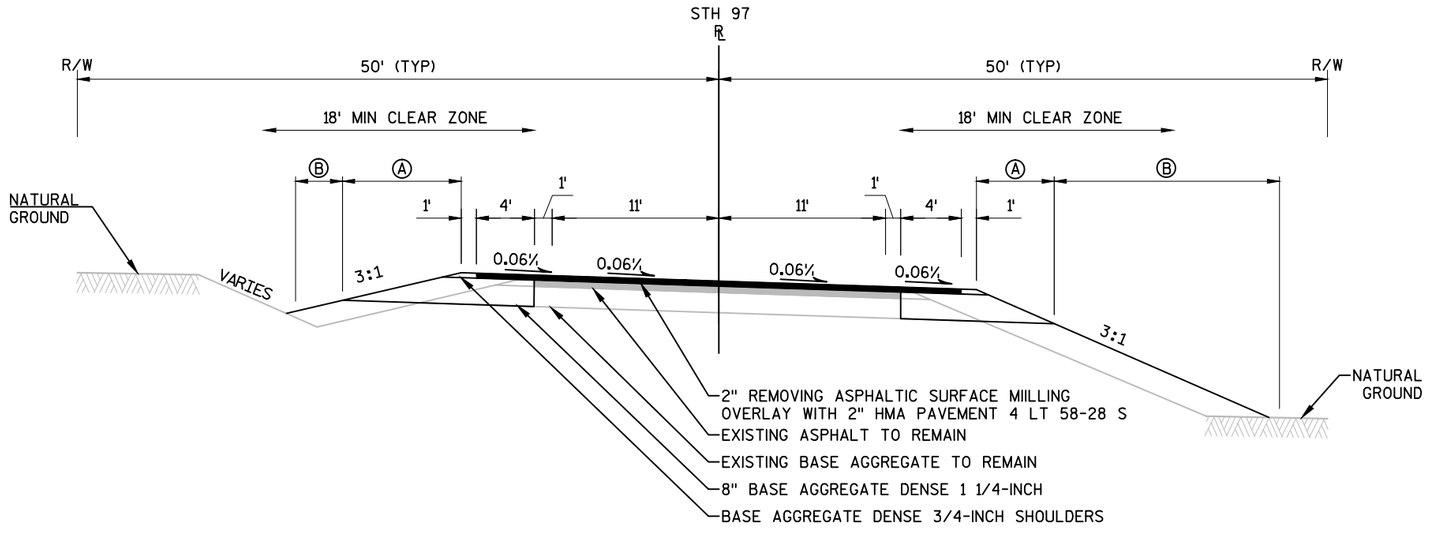
TYPICAL FINISHED SECTION - STH 97

LEFT STATIONING	RIGHT STATIONING
STA 32+14 - 34+09 LT	STA 30+50 - 63+92 RT
STA 38+85 - 63+92 LT	STA 72+07 - 92+70 RT
STA 72+07 - 78+70 LT	STA 121+70 - 217+78 RT
STA 94+70 - 97+70 LT	STA 232+63 - 242+70 RT
STA 102+70 - 199+70 LT	STA 271+70 - 315+70 RT
STA 209+70 - 213+70 LT	STA 318+70 - 327+70 RT
STA 232+63 - 365+27 LT	STA 328+70 - 364+90 RT
STA 367+44 - 377+45 LT	STA 367+07 - 377+45 RT



TYPICAL FINISHED SECTION WITH PROPOSED BEAM GUARD - STH 97

STA 34+09 - 38+85 LT



TYPICAL FINISHED SUPERELEVATED SECTION - STH 97 WIDENING AREAS

STA 63+92 - 72+07 LT & RT
STA 228+70 - 232+63 LT & RT

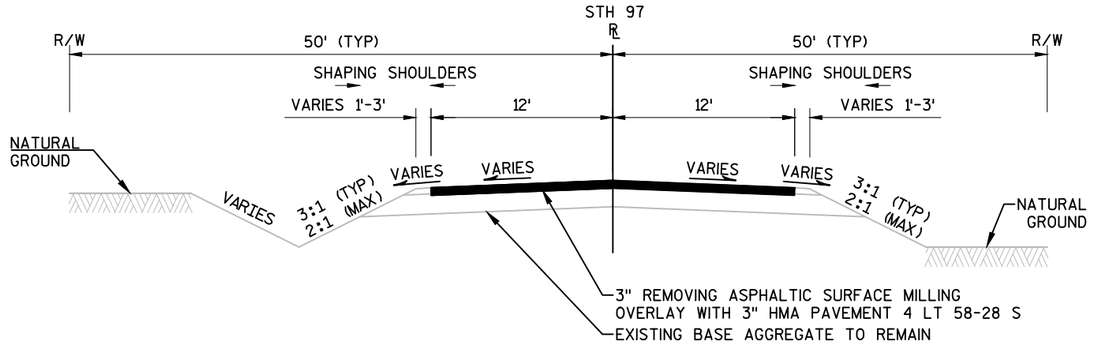
IN ANY DISTURBED AREAS

Ⓐ FERTILIZER TYPE B, SEEDING MIXTURE NO. 20

Ⓑ TOPSOIL; MULCHING; FERTILIZER TYPE B; SEEDING MIXTURE NO. 20 UNLESS NOTED OTHERWISE ON THE PLAN

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 6	E

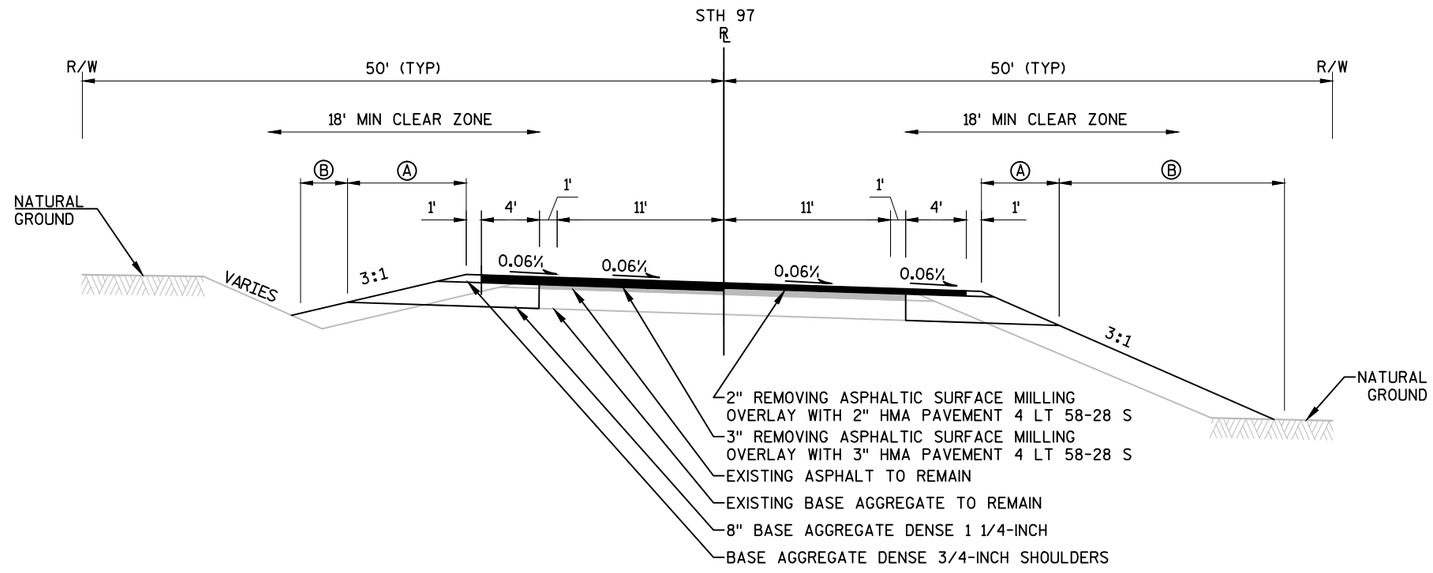
2



TYPICAL FINISHED SECTION - STH 97
3-INCH MILL AND OVERLAY

LEFT STATIONING
STA 78+70 - 94+70 LT
STA 97+70 - 102+70 LT
STA 199+70 - 209+70 LT
STA 213+70 - 217+78 LT
STA 236+70 - 253+70 LT
STA 275+70 - 279+70 LT

RIGHT STATIONING
STA 92+70 - 121+70 RT
STA 242+70 - 271+70 RT
STA 315+70 - 318+70 RT
STA 327+70 - 328+70 RT



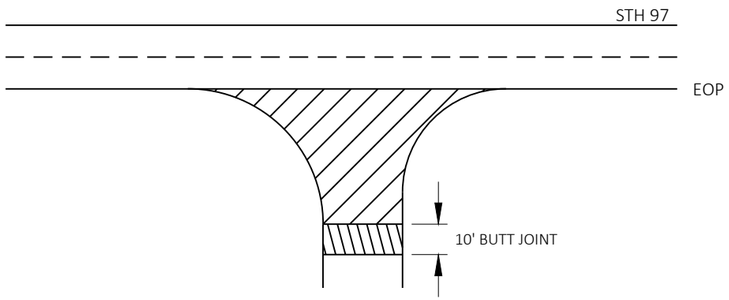
TYPICAL FINISHED SUPERELEVATED SECTION - STH 97 WIDENING AREAS

STA 217+78 - 228+70 LT & RT

IN ANY DISTURBED AREAS

Ⓐ FERTILIZER TYPE B, SEEDING MIXTURE NO. 20

Ⓑ TOPSOIL; MULCHING; FERTILIZER TYPE B; SEEDING MIXTURE NO. 20 UNLESS NOTED OTHERWISE ON THE PLAN

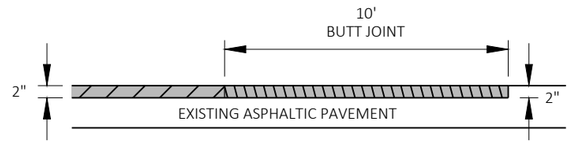


REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

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

SIDEROADS

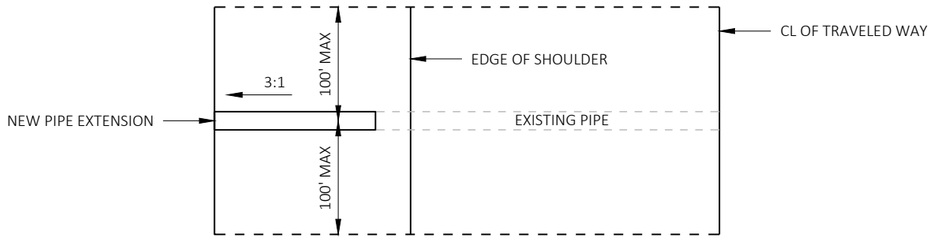


HMA PAVEMENT

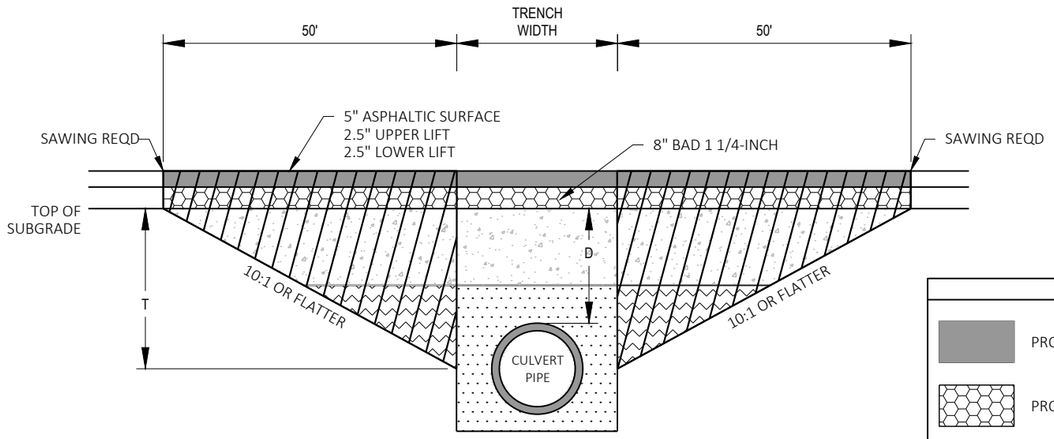
REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE BUTT JOINTS

BUTT JOINTS
MAINLINE AND SIDE ROADS



DETAIL FOR GRADING AT CULVERT PIPE EXTENSIONS

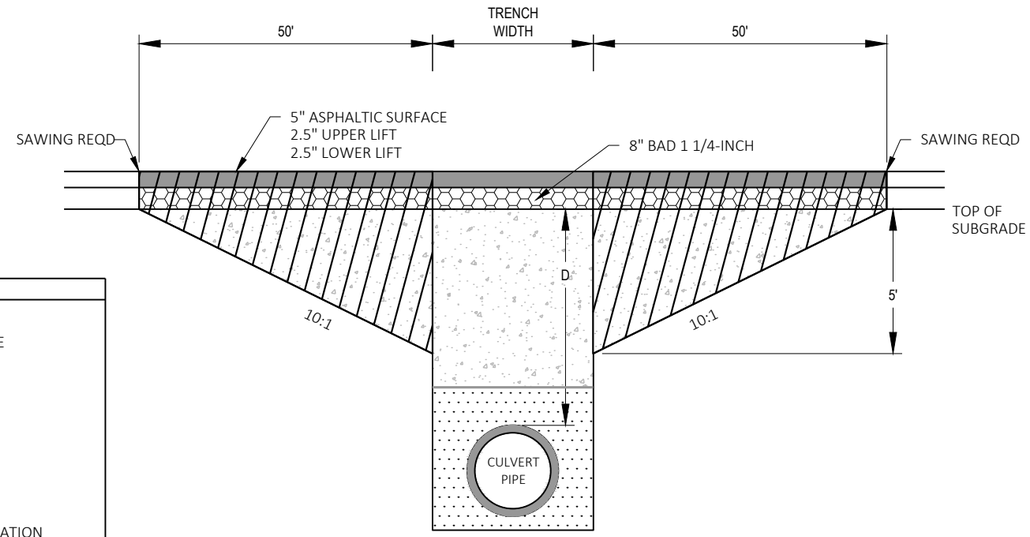


TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.

DEPTH D < 6 FT

KEY

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



DEPTH D ≥ 6 FT

NOTES

TRANSITION CUT IS PAID AS EXCAVATION COMMON.
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.
PLACE ASPHALTIC SURFACE AFTER CULVERT PIPE INSTALLATION AND BEFORE MAINLINE RESURFACING.
BUMP SIGNS (W8-1) REQUIRED.

CULVERT PIPE TRANSITION

STA 36+86 TO 37+92	D = 4.7' AT CENTERLINE
STA 99+91 TO 100+97	D = 2.7' AT CENTERLINE

2

SUPERELEVATION TABLE C-1			
	STATION	SE LT	SE RT
NORMAL CROWN	23+83	-2.00%	-2.00%
LEVEL CROWN	24+23	-2.00%	0.00%
REVERSE CROWN	24+64	-2.00%	2.00%
BEGIN FULL SE	25+47	-6.00%	6.00%
END FULL SE	28+64	-6.00%	6.00%
REVERSE CROWN	29+47	-2.00%	2.00%
LEVEL CROWN	29+88	-2.00%	0.00%
NORMAL CROWN	30+29	-2.00%	-2.00%

SUPERELEVATION TABLE C-2			
	STATION	SE LT	SE RT
NORMAL CROWN	33+92	-2.00%	-2.00%
LEVEL CROWN	34+43	0.00%	-2.00%
REVERSE CROWN	34+94	2.00%	-2.00%
BEGIN FULL SE	35+96	6.00%	-6.00%
END FULL SE	40+86	6.00%	-6.00%
REVERSE CROWN	41+88	2.00%	-2.00%
LEVEL CROWN	42+39	0.00%	-2.00%
NORMAL CROWN	42+90	-2.00%	-2.00%

SUPERELEVATION TABLE C-4			
	STATION	SE LT	SE RT
NORMAL CROWN	63+81	-2.00%	-2.00%
LEVEL CROWN	64+32	-2.00%	0.00%
REVERSE CROWN	64+83	-2.00%	2.00%
BEGIN FULL SE	65+85	-6.00%	6.00%
END FULL SE	70+14	-6.00%	6.00%
REVERSE CROWN	71+16	-2.00%	2.00%
LEVEL CROWN	71+67	-2.00%	0.00%
NORMAL CROWN	72+18	-2.00%	-2.00%

SUPERELEVATION TABLE C-7			
	STATION	SE LT	SE RT
NORMAL CROWN	76+89	-2.00%	-2.00%
LEVEL CROWN	77+40	0.00%	-2.00%
REVERSE CROWN	77+91	2.00%	-2.00%
BEGIN FULL SE	78+93	6.00%	-6.00%
END FULL SE	82+78	6.00%	-6.00%
REVERSE CROWN	83+80	2.00%	-2.00%
LEVEL CROWN	84+31	0.00%	-2.00%
NORMAL CROWN	84+82	-2.00%	-2.00%

SUPERELEVATION TABLE C-10			
	STATION	SE LT	SE RT
NORMAL CROWN	168+82	-2.00%	-2.00%
LEVEL CROWN	169+33	-2.00%	0.00%
REVERSE CROWN	169+84	-2.00%	2.00%
BEGIN FULL SE	170+86	-6.00%	6.00%
END FULL SE	181+04	-6.00%	6.00%
REVERSE CROWN	182+06	-2.00%	2.00%
LEVEL CROWN	182+57	-2.00%	0.00%
NORMAL CROWN	183+08	-2.00%	-2.00%

SUPERELEVATION TABLE C-13			
	STATION	SE LT	SE RT
NORMAL CROWN	217+64	-2.00%	-2.00%
LEVEL CROWN	218+15	0.00%	-2.00%
REVERSE CROWN	218+66	2.00%	-2.00%
BEGIN FULL SE	219+68	6.00%	-6.00%
END FULL SE	230+73	6.00%	-6.00%
REVERSE CROWN	231+75	2.00%	-2.00%
LEVEL CROWN	232+26	0.00%	-2.00%
NORMAL CROWN	232+77	-2.00%	-2.00%

9535-05-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0004	204.0115	Removing Asphaltic Surface Butt Joints	SY	243.000	243.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	96,150.000	96,150.000
0008	204.0165	Removing Guardrail	LF	475.000	475.000
0010	204.9060.S	Removing (item description) 01. Endwalls	EACH	4.000	4.000
0012	205.0100	Excavation Common	CY	1,625.000	1,625.000
0014	208.0100	Borrow	CY	958.000	958.000
0016	208.1500.S	Temporary Lane Shift During Culvert Work	EACH	2.000	2.000
0018	213.0100	Finishing Roadway (project) 01. 9530-05-70	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,330.000	1,330.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,320.000	2,320.000
0024	305.0500	Shaping Shoulders	STA	700.000	700.000
0026	455.0605	Tack Coat	GAL	8,070.000	8,070.000
0028	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0030	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0032	460.2005	Incentive Density PWL HMA Pavement	DOL	10,430.000	10,430.000
0034	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	13,960.000	13,960.000
0036	460.2010	Incentive Air Voids HMA Pavement	DOL	11,950.000	11,950.000
0038	460.5224	HMA Pavement 4 LT 58-28 S	TON	11,950.000	11,950.000
0040	465.0105	Asphaltic Surface	TON	160.000	160.000
0042	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	3,385.000	3,385.000
0044	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	2.000	2.000
0046	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	2.000	2.000
0048	520.3424	Culvert Pipe Class III-A Non-metal 24-Inch	LF	60.000	60.000
0050	520.3430	Culvert Pipe Class III-A Non-metal 30-Inch	LF	52.000	52.000
0052	520.8000	Concrete Collars for Pipe	EACH	10.000	10.000
0054	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	6.000	6.000
0056	522.0130	Culvert Pipe Reinforced Concrete Class III 30-Inch	LF	12.000	12.000
0058	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	6.000	6.000
0060	522.0142	Culvert Pipe Reinforced Concrete Class III 42-Inch	LF	12.000	12.000
0062	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0064	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	2.000	2.000
0066	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	2.000	2.000
0068	522.1042	Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch	EACH	4.000	4.000
0070	614.2330	MGS Guardrail 3 K	LF	375.000	375.000
0072	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0074	618.0100	Maintenance And Repair of Haul Roads (project) 01.	EACH	1.000	1.000

9535-05-70

Line	Item	Item Description	Unit	Total	Qty
		9530-05-70			
0076	619.1000	Mobilization	EACH	1.000	1.000
0078	624.0100	Water	MGAL	20.000	20.000
0080	625.0500	Salvaged Topsoil	SY	9,580.000	9,580.000
0082	627.0200	Mulching	SY	8,165.000	8,165.000
0084	628.1504	Silt Fence	LF	3,435.000	3,435.000
0086	628.1520	Silt Fence Maintenance	LF	3,435.000	3,435.000
0088	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0090	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0092	628.2004	Erosion Mat Class I Type B	SY	525.000	525.000
0094	628.2027	Erosion Mat Class II Type C	SY	900.000	900.000
0096	628.7555	Culvert Pipe Checks	EACH	36.000	36.000
0098	629.0210	Fertilizer Type B	CWT	7.000	7.000
0100	630.0120	Seeding Mixture No. 20	LB	265.000	265.000
0102	630.0500	Seed Water	MGAL	224.000	224.000
0104	633.5200	Markers Culvert End	EACH	16.000	16.000
0106	638.2102	Moving Signs Type II	EACH	12.000	12.000
0108	638.4000	Moving Small Sign Supports	EACH	12.000	12.000
0110	642.5001	Field Office Type B	EACH	1.000	1.000
0112	643.0300	Traffic Control Drums	DAY	16,650.000	16,650.000
0114	643.0900	Traffic Control Signs	DAY	1,200.000	1,200.000
0116	643.5000	Traffic Control	EACH	1.000	1.000
0118	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	68,800.000	68,800.000
0120	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	47,300.000	47,300.000
0122	648.0100	Locating No-Passing Zones	MI	6.610	6.610
0124	650.4500	Construction Staking Subgrade	LF	2,808.000	2,808.000
0126	650.5000	Construction Staking Base	LF	2,808.000	2,808.000
0128	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0130	650.8000	Construction Staking Resurfacing Reference	LF	34,925.000	34,925.000
0132	650.9910	Construction Staking Supplemental Control (project) 01. 9530-05-70	LS	1.000	1.000
0134	650.9920	Construction Staking Slope Stakes	LF	2,808.000	2,808.000
0136	690.0150	Sawing Asphalt	LF	96.000	96.000
0138	740.0440	Incentive IRI Ride	DOL	24,400.000	24,400.000
0140	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,200.000	1,200.000
0142	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	600.000	600.000

203.0100 REMOVING SMALL PIPE CULVERTS

CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	37+39	ML	1	60 LF, 24-INCH CPRC
0010	100+44	ML	1	50 LF, 30-INCH CPRC
		TOTAL 0010	2	

204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS

CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS
0010	28+20	-	28+30	ML	27	STH 97
0010			68+97	SIDEROAD	27	CTH A
0010			171+81	SIDEROAD	27	RANGELINE RD
0010			180+46	SIDEROAD	27	CTH F EAST
0010			221+36	SIDEROAD	27	CTH F WEST
0010			229+30	SIDEROAD	27	IRON BRIDGE RD
0010	365+94	-	366+04	ML	27	BALDWIN CREEK BRIDGE
0010	366+29	-	366+39	ML	27	BALDWIN CREEK BRIDGE
0010	377+35	-	377+45	ML	27	STH 97
				TOTAL 0010	243	

204.0120 REMOVING ASPHALTIC SURFACE MILLING

CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS
0010	28+20	-	377+45	ML	94,200	VARIABLE DEPTH
0010			30+50	SIDEROAD	190	2-INCH DEPTH
0010			43+73	SIDEROAD	40	2-INCH DEPTH
0010			68+97	SIDEROAD	360	2-INCH DEPTH
0010			99+26	SIDEROAD	70	2-INCH DEPTH
0010			125+50	SIDEROAD	60	2-INCH DEPTH
0010			151+50	SIDEROAD	120	2-INCH DEPTH
0010			171+00	SIDEROAD	320	2-INCH DEPTH
0010			181+00	SIDEROAD	300	2-INCH DEPTH
0010			220+50	SIDEROAD	350	2-INCH DEPTH
0010			229+50	SIDEROAD	140	2-INCH DEPTH
				TOTAL 0010	96,150	

204.0165 REMOVING GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	LF
0010	34+12	-	38+80	LT	475
				TOTAL 0010	475

204.9060.S.01 REMOVING ENDWALLS

CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	54+83	LT	1	FIELD STONE ENDWALL
0010	149+53	LT	1	FIELD STONE ENDWALL
0010	272+69	RT	1	FIELD STONE ENDWALL
0010	272+75	RT	1	FIELD STONE ENDWALL
		TOTAL 0010	4	

305.0500 SHAPING SHOULDERS

CATEGORY	STATION	TO	STATION	LOCATION	STA	REMARKS
0010	28+20	-	377+45	ML	700	STH 97
				TOTAL 0010	700	

305.0110 BASE AGGREGATE DENSE 3/4-INCH; 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH

STATION	TO	STATION	LOCATION	TON	TON	REMARKS
28+20	-	32+73	ML	10	-	1' SHOULDER
32+73	-	40+51	ML	60	350	1' SHOULDER, BG WIDENING
40+51	-	63+92	ML	80	-	1' SHOULDER
63+92	-	72+07	ML	30	500	1' SHOULDER, SHOULDER WIDENING
72+07	-	217+78	ML	480	-	1' SHOULDER
217+78	-	232+63	ML	50	850	1' SHOULDER, SHOULDER WIDENING
232+63	-	366+04	ML	470	-	1' SHOULDER
366+30	-	377+45	ML	70	-	1' SHOULDER
		171+00	SIDEROAD	6	-	RANGELINE RD
		181+00	SIDEROAD	5	-	CTH F EAST
		220+50	SIDEROAD	5	-	CTH F WEST
		229+50	SIDEROAD	4	-	IRON BRIDGE RD
36+86	-	37+92	ML	30	310	TRANSITION CUT
99+91	-	100+97	ML	30	310	TRANSITION CUT
			TOTAL 0010	1,330	2,320	

465.0425 ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL

CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	64+32	-	71+67	LT	725	TYPE 1
0010	64+32	-	66+50	RT	220	TYPE 1
0010	70+87	-	71+67	RT	80	TYPE 1
0010	218+18	-	232+23	RT	1,385	TYPE 1
0010	221+13	-	229+26	LT	825	TYPE 1
0010	230+75		232+23	LT	150	TYPE 1
				TOTAL 0010	3,385	

Division	From/To Station	Location	205.0100 Common Excavation (1)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (6)	Mass Ordinate +/- (7)	Waste	208.0100 Borrow
			Cut (2)				Factor 1.25			
Division 1	32+72 - 39+00	Beam Guard	127	0	127	186	233	-106	0	106
Division 1 Subtotal			127	0	127	186	233	-106	0	106
Division 2	69+00 - 74+31	CTH A Widening	358	0	358	136	171	187	187	0
Division 2 Subtotal			358	0	358	136	171	187	187	0
Division 3	217+78 - 232+63	CTH F Widening	590	0	590	1,154	1,442	-852	0	852
Division 3 Subtotal			590	0	590	1,154	1,442	-852	0	852
Division 4	36+86 - 37+92	TRANSITION CUT	300	36	264	205	256	8	95	0
Division 4	99+91 - 100+97	TRANSITION CUT	250	36	214	155	194	20	95	0
Division 4 Subtotal			550	36	478	360	450	28	190	0
Grand Total			1,625	36	1,553	1,836	2,296	-743	377	958
Total Common Exc			1,625							

Notes:
(1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
(2) Salvaged/Unusable Pavement Material is included in Cut.
(4) Salvaged/Unusable Pavement MaterialL
(5) Available Material = Cut - Salvaged/Unusable Pavement Material
(6) Expanded Fill Factor = 1.25
(7) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

CATEGORY	STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	460.5224 HMA PAVEMENT 4 LT 58-28 S TON	465.0105 ASPHALTIC SURFACE TON	REMARKS
0010	28+20	-	377+45	ML	7940	11740	-	STH 97
0010			30+50	SIDEROAD	15	25	-	WYLIE RD
0010			43+73	SIDEROAD	5	5	-	HIGH ST
0010			68+97	SIDEROAD	25	40	-	CTH A
0010			99+26	SIDEROAD	5	10	-	SCHWEIZER RD
0010			125+50	SIDEROAD	5	10	-	GREINER RD
0010			151+50	SIDEROAD	10	15	-	WINDFALL HILL RD
0010			171+00	SIDEROAD	25	40	-	RANGELINE RD
0010			181+00	SIDEROAD	5	10	-	CTH F EAST
0010			220+50	SIDEROAD	10	15	-	CTH F WEST
0010			229+50	SIDEROAD	25	40	-	IRON BRIDGE RD
0010	36+86	-	37+92	ML	-	-	80	TRANSITIION CUT
0010	99+91	-	100+97	ML	-	-	80	TRANSITION CUT
				TOTAL 0010	8,070	11,950	160	

PWL MIXTURE USE TABLE								
THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE TO THIS PROJECT								
LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
11-FOOT DRIVING LANE	28+20 TO 377+45	UPPER LAYER	MILLED HMA SURFACE	4 LT 58-28 S	10,430	2-INCHES	INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
PAVED SHOULDER	28+20 TO 377+45	UPPER LAYER	MILLED HMA SURFACE	4 LT 58-28 S	1,520	2-INCHES		ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
VARIOUS		CULVERT PATCHES	BASE AGGREGATE	ASPHALTIC SURFACE	160	2-INCHES	QMP AS PER SS 465	ACCEPTANCE BY ORDINARY COMPACTION

CATEGORY	STATION	LOCATION	208.1500.S TEMPORARY LANE SHIFT DURING CULVERT WORK EACH	520.1024 APRON ENDWALLS FOR CULVERT PIPE 24-INCH EACH	520.1030 APRON ENDWALLS FOR CULVERT PIPE 30-INCH EACH	520.3424 CULVERT PIPE CLASS III-A NON-METAL 24-INCH LF	520.3430 CULVERT PIPE CLASS III-A NON-METAL 30-INCH LF	520.8000 CONCRETE COLLARS FOR PIPE EACH	522.0124 CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH LF	522.0130 CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH LF	522.0136 CULVERT PIPE REINFORCED CONCRETE CLASS III 36-INCH LF	522.0142 CULVERT PIPE REINFORCED CONCRETE CLASS III 42-INCH LF	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH EACH	522.1036 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH EACH	522.1042 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 42-INCH EACH
0010	37+39	ML	1	2	-	60	-	-	-	-	-	-	-	-	-	-
0010	54+83	ML	-	-	-	-	-	1	6	-	-	-	1	-	-	-
0010	100+44	ML	1	-	2	-	52	-	-	-	-	-	-	-	-	-
0010	149+53	ML	-	-	-	-	-	2	-	-	6	-	-	-	2	-
0010	151+74	ML	-	-	-	-	-	1	-	-	-	-	1	-	-	-
0010	224+10	ML	-	-	-	-	-	2	-	12	-	-	-	2	-	-
0010	272+69	ML	-	-	-	-	-	2	-	-	-	6	-	-	-	2
0010	272+75	ML	-	-	-	-	-	2	-	-	-	6	-	-	-	2
		TOTAL 0010	2	2	2	60	52	10	6	12	6	12	2	2	2	4

CATEGORY	STATION	TO	STATION	LOCATION	614.2330 MGS GUARDRAIL 3 K LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
0010	34+09	-	38+85	LT	375	2
				TOTAL 0010	375	2

CATEGORY	LOCATION	624.0100 WATER MGAL	REMARKS
0010	PROJECT	20	UNDISTRIBUTED
	TOTAL 0010	20	

CATEGORY	STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	628.2004 EROSION MAT CLASS I TYPE B SY	628.2027 EROSION MAT CLASS II TYPE C SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0500 SEED WATER MGAL	REMARKS
0010	32+72	-	39+00	LT	780	-	-	780	0.5	21	18	BEAM GUARD
0010	63+92	-	72+07	LT	1,305	1,305	-	-	1.0	36	30	WIDENING
0010	63+92	-	72+07	RT	1,015	1,015	-	-	0.7	28	23	WIDENING
0010	217+78	-	232+63	RT	2,540	2,540	-	-	1.7	69	58	WIDENING
0010	221+13	-	232+63	LT	2,235	2,235	-	-	1.5	61	51	WIDENING
0010			37+39	RT	45	-	45	-	0.1	2	2	CULVERT
0010			54+83	LT	95	-	95	-	0.1	3	3	CULVERT
0010			100+44	LT & RT	150	-	150	-	0.1	5	4	CULVERT
0010			149+53	LT & RT	55	-	55	-	0.1	2	2	CULVERT
0010			151+74	RT	15	-	15	-	0.1	1	1	CULVERT
0010	272+69	-	272+75	LT & RT	95	-	95	-	0.1	3	3	CULVERT
0010				PROJECT	1,250	1,070	70	120	1.0	34	29	UNDISTRIBUTED
				TOTAL 0010	9,580	8,165	525	900	7.0	265	224	

CATEGORY	STATION	LOCATION	628.7555 CULVERT PIPE CHECKS EACH	REMARKS
0010	37+39	RT	3	24-INCH CPRC
0010	54+83	LT	3	24-INCH CPRC
0010	100+44	LT	5	30-INCH CPRC
0010	149+53	LT	6	36-INCH CPRC
0010	224+10	RT	5	30-INCH CPRC
0010	272+69	RT	7	42-INCH CPRC
0010	272+75	RT	7	42-INCH CPRC
		TOTAL 0010	36	

CATEGORY	STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	REMARKS
0010	32+70	-	39+05	LT	665	665	BEAM GUARD
0010	63+65	-	65+92	RT	235	235	WIDENING
0010	71+04	-	72+28	LT	125	125	WIDENING
0010	217+61	-	225+13	RT	740	740	WIDENING
0010	221+97	-	228+57	LT	700	700	WIDENING
0010	230+41	-	233+00	LT	280	280	WIDENING
0010				PROJECT	690	690	UNDISTRIBUTED
				TOTAL 0010	3,435	3,435	

CATEGORY	STATION	LOCATION	633.5200 MARKERS CULVERT END EACH
0010	37+39	LT & RT	2
0010	54+83	LT & RT	2
0010	100+44	LT & RT	2
0010	149+53	LT & RT	2
0010	151+74	LT & RT	2
0010	224+10	LT & RT	2
0010	272+69	LT & RT	2
0010	272+75	LT & RT	2
		TOTAL 0010	16

CATEGORY	LOCATION	638.2102 MOVING SIGNS TYPE II EACH	638.4000 MOVING SMALL SIGN SUPPORTS EACH
0010	PROJECT	12	12
	TOTAL 0010	12	12

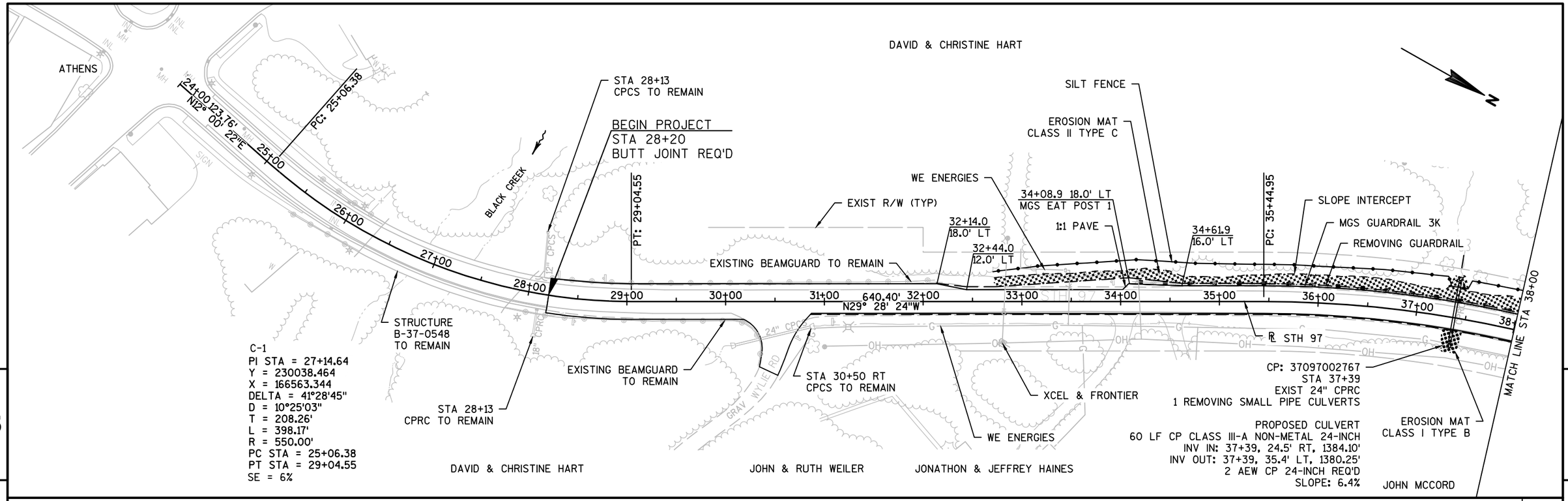
CATEGORY	STATION	TO	STATION	LOCATION	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH LF	646.4520 MARKING LINE SAME DAY EPOXY 4-INCH LF	REMARKS
0010	28+20	-	377+45	CENTERLINE	-	47300	YELLOW
0010	28+20	-	377+45	LT EDGE LINE	34500	-	WHITE
0010	28+20	-	377+45	RT EDGE LINE	34300	-	WHITE
				TOTAL 0010	68,800	47,300	

CATEGORY	STATION	LF	REMARKS
0010	36+86	24	TRANSITION CUT
0010	37+92	24	TRANSITION CUT
0010	99+91	24	TRANSITION CUT
0010	100+97	24	TRANSITION CUT
		96	

CATEGORY	LOCATION	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.5000 TRAFFIC CONTROL EACH
0010	PROJECT	16,650	1,200	1
	TOTAL 0010	16,650	1,200	1

CATEGORY	LOCATION	648.0100 LOCATING NO-PASSING ZONES MI
0010	PROJECT	6.61
	TOTAL 0010	6.61

CATEGORY	STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF	650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 9535-05-70) LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	REMARKS
0010	33+00	-	39+00	LT	600	600	-	-	-	600	BEAM GUARD
0010	63+92	-	72+00	LT & RT	808	808	-	-	-	808	WIDENING
0010	218+00	-	232+00	LT & RT	1,400	1,400	-	-	-	1,400	WIDENING
0010			37+39	ML	-	-	1	-	-	-	24-INCH CPRC
0010			100+44	ML	-	-	1	-	-	-	30-INCH CPRC
0010	28+20	-	377+45	PROJECT	-	-	-	34,925	1	-	PROJECT
				TOTAL 0010	2,808	2,808	2	34,925	1	2,808	



PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 17	E

JAMES & JOSEPH HEIER

HEARTLAND COOPERATIVE

CP: 37097002768
STA 54+83
EXIST 24" CPRC
REMOVE ENDWALL LT (FIELD STONE)
6' PIPE EXT LT
1-AEW CPRC 24-INCH LT
1 CONC COLLAR REQ'D

WETLAND BOUNDARY (TYP)

EROSION MAT
CLASS I TYPE B

WETLAND IMPACTS 1
WETLAND TYPE: DEGRADED MEADOW M(D)
AREA: 500 SF = 0.011 ACRES

WETLAND BOUNDARY (TYP)

EXIST R/W (TYP)

CHARTER

℄ STH 97

PC: 63+92.11

63+92.1
12.0' LT

64+32.1
16.0' LT

PCC: 65+33.88

SLOPE INTERCEPT

MATCH LINE STA 68+00

MATCH LINE STA 53+00

53+00 STH 97 54+00 55+00 56+00 57+00 58+00 59+00 60+00 2254.92' N0° 08' 13"E 61+00 STH 97 62+00 63+00 64+00 65+00 66+00 67+00 68+

WE ENERGIES

WE ENERGIES

FRONTIER

XCEL

63+92.1
12.0' RT

64+32.1
16.0' RT

SILT FENCE

66+50.0
16.0' RT

67+25.0
22.0' RT

SLOPE INTERCEPT

C-3
PI STA = 64+63.01
Y = 233669.695
X = 166003.043
DELTA = 2°48'38"
D = 1°58'57"
T = 70.90'
L = 141.77'
R = 2890.00'
PC STA = 63+92.11
PT STA = 65+33.88

C-4
PI STA = 68+09.88
Y = 234016.215
X = 165986.861
DELTA = 38°12'06"
D = 7°11'20"
T = 276.00'
L = 531.40'
R = 797.00'
PC STA = 65+33.88
PT STA = 70+65.28
SE = 6%

DAVID WOGERNESE

ANDREW & BETH BELTER

5

5

VILLAGE OF ATHENS
CORPORATE LIMITS

HEARTLAND COOPERATIVE

JEFFREY & ARLON BALZ

CP: 37097002769
STA 76+60
EXIST 30" CPRC
TO REMAIN

PHILIP AND KARLYN MILLER

EXIST R/W (TYP)

SLOPE INTERCEPT

PCC: 70+65.28

SLOPE
INTERCEPT

71+67.0
16.0' LT

PT: 72+07.05

SILT FENCE

72+07.0
12.0' LT

℄ STH 97

PC: 77+00.52

PCC: 78+42.29

STA 78+70 TO 94+70 SOUTHBOUND LANE
3-INCH REMOVING ASPHALTIC SURFACE MILLING
3-INCH HMA PAVEMENT 4 LT 58-28 S

TAYLOR ELECTRIC & CHARTER

MATCH LINE STA 68+00

00 69+00 70+00 STH 97 71+00 72+00 73+00 74+00 493.47' N43° 41' 10"W 75+00 76+00 77+00 78+00 79+00 80+00 81+00 82+00 83+

70+36.6
16.0' RT

71+67.0
16.0' RT

72+07.0
12.0' RT

BUTT JOINT REQ'D
STA 68+97, 79' RT

SLOPE INTERCEPT

FRONTIER

CHARTER

MATCH LINE STA 83+00

C-5
PI STA = 71+36.18
Y = 234278.517
X = 165759.845
DELTA = 2°48'38"
D = 1°58'57"
T = 70.90'
L = 141.77'
R = 2890.00'
PC STA = 70+65.28
PT STA = 72+07.05

C-6
PI STA = 77+71.45
Y = 234737.924
X = 165321.040
DELTA = 4°57'40"
D = 3°29'58"
T = 70.93'
L = 141.77'
R = 1637.30'
PC STA = 77+00.52
PT STA = 78+42.29

C-7
PI STA = 80+93.24
Y = 234989.043
X = 165119.676
DELTA = 34°05'14"
D = 6°59'57"
T = 250.95'
L = 487.01'
R = 818.60'
PC STA = 78+42.29
PT STA = 83+29.30
SE = 6%

JOSEPH & CHERYL SHREINER

ANDREW & BETH BELTER

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 18	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050202 PN
PLOT DATE : 10/28/2019 9:34 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : **********
WISDOT/CADDS SHEET 44

PHILIP & KARLYN MILLER

M&S ATHENS REAL ESTATE

CLARENCE & ELAINE BRUNKE

N

TAYLOR ELECTRIC & CHARTER

EXIST R/W (TYP)

℄ STH 97

STA 78+70 TO 94+70 SOUTHBOUND LANE
3-INCH REMOVING ASPHALTIC SURFACE MILLING
3-INCH HMA PAVEMENT 4 LT 58-28 S

STA 97+70 TO 102+70 SOUTHBOUND LANE
3-INCH REMOVING ASPHALTIC SURFACE MILLING
3-INCH HMA PAVEMENT 4 LT 58-28 S

PCC: 83+29.30

PT: 84+71.07

MATCH LINE STA 83+00

MATCH LINE STA 98+00

84+00 85+00 86+00 87+00 88+00 89+00 90+00 8366.06' N0° 19' 24"E 91+00 92+00 93+00 94+00 95+00 96+00 97+00

C-8
PI STA = 84+00.23
Y = 235309.871
X = 165093.651
DELTA = 4°57'40"
D = 3°29'58"
T = 70.93'
L = 141.77'
R = 1637.30'
PC STA = 83+29.30
PT STA = 84+71.07

STA 92+70 TO 121+70 NORTHBOUND LANE
3-INCH REMOVING ASPHALTIC SURFACE MILLING
3-INCH HMA PAVEMENT 4 LT 58-28 S

FRONTIER

ANDREW & BETH BELTER

5

5

M&S ATHENS REAL ESTATE

CP: 37097002770
STA 100+44
EXIST 30" CPRC
1 REMOVING SMALL PIPE CULVERTS

PROPOSED CULVERT
52 LF CP CLASS III-A NON-METAL 30-INCH
INV IN: 100+44, 24.7' LT, 1426.55'
INV OUT: 100+44, 27.3' RT, 1425.75'
2 AEW CP 30-INCH REQ'D
SLOPE: 1.5%

EROSION MAT
CLASS I TYPE B

CLARENCE &
ELAINE BRUNKE

SCHWEIZER RD

STA 97+70 TO 102+70 SOUTHBOUND LANE
3-INCH REMOVING ASPHALTIC SURFACE MILLING
3-INCH HMA PAVEMENT 4 LT 58-28 S

TAYLOR ELECTRIC & CHARTER

EXIST R/W (TYP)

M&S ATHENS REAL ESTATE

N

℄ STH 97

CP: 37097002771
STA 108+02
EXIST 24" CPRC
TO REMAIN

MATCH LINE STA 98+00

MATCH LINE STA 113+00

99+00 100+00 101+00 102+00 103+00 104+00 105+00 8366.06' N0° 19' 24"E 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00

FRONTIER

EROSION MAT
CLASS I TYPE B

ANDREW &
BETH BELTER

JOHN & MARY JANE BEERY

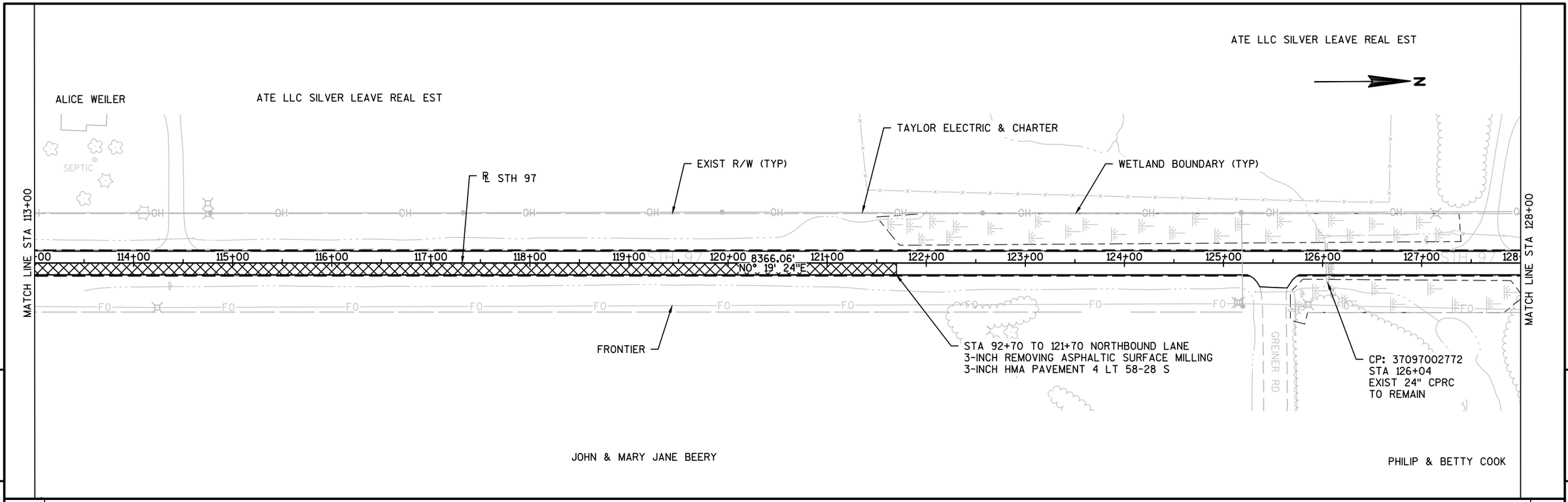
JOHN & MARY JANE BEERY

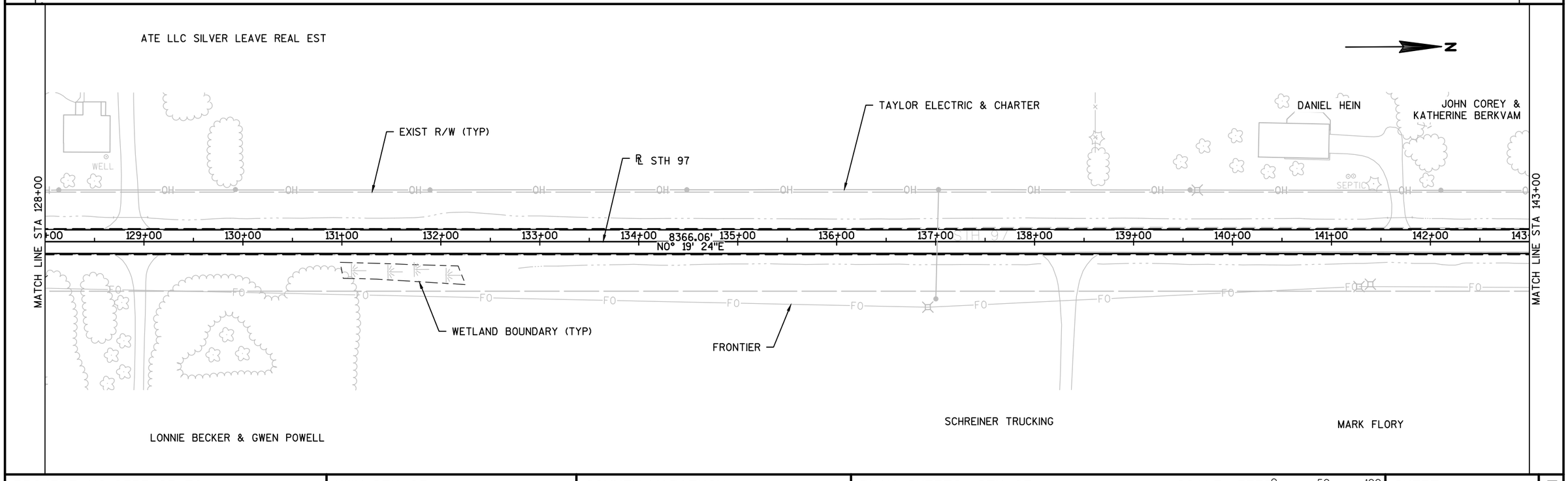
PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 19	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050203 PN

PLOT DATE : 4/5/2021 10:57 AM PLOT BY : NICHOLAS WATHKE PLOT NAME : PLOT SCALE : **********

WISDOT/CADDS SHEET 44





PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 20	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050204 PN
PLOT DATE : 10/28/2019 9:34 AM
PLOT BY : CAMERON SHIFFER, PE PLOT NAME :
PLOT SCALE : **********
WISDOT/CADDS SHEET 44

JOHN COREY & KATHERINE BERKVAM

OOT LIVING EDWIN A & JANICE M R TRUST

CP: 37097002773
STA 149+53
EXIST 36" CPRC
REMOVE ENDWALL LT (FIELD STONE)
6' PIPE EXT LT
2-AEW CPRC 36-INCH
2 CONC COLLAR REQ'D

TAYLOR ELECTRIC & CHARTER

EXIST R/W (TYP)

EROSION MAT
CLASS I TYPE B

℄ STH 97

WINDFALL HILL RD

WETLAND BOUNDARY (TYP)

MATCH LINE STA 143+00

144+00 145+00 146+00 STH 97 147+00 148+00 149+00 150+00 8366.06' N0° 19' 24"E 151+00 152+00 153+00 154+00 155+00 STH 97 156+00 157+00 158

MATCH LINE STA 158+00

FRONTIER

EROSION MAT
CLASS I TYPE B

WETLAND BOUNDARY (TYP)

EROSION MAT
CLASS I TYPE B

CP: 37097002774
STA 151+74
EXIST 24" CPRC
1-AEW CPRC 24-INCH RT
1 CONC COLLAR REQ'D

WETLAND IMPACTS 2
WETLAND TYPE: DEGRADED MEADOW M(D)
AREA: 120 SF = 0.003 ACRES

MARK FLORY

MARK FLORY

5

5

OOT LIVING EDWIN A & JANICE M R TRUST

OOT LIVING EDWIN A & JANICE M R TRUST

MATCH LINE STA 158+00

EXIST R/W (TYP)

℄ STH 97

TAYLOR ELECTRIC & CHARTER

PC: 168+37.13

PCC: 170+35.22

CP: 37097002775
STA 172+58
EXIST 24" CPRC
TO REMAIN

MATCH LINE STA 173+00

159+00 160+00 161+00 162+00 163+00 8366.06' N0° 19' 24"E 164+00 STH 97 165+00 166+00 167+00 168+00 169+00 170+00 171+00 172+00 173

171+82.9
12.0' RT

171+83.4
26.3' RT

169+65.7
12.0' RT

171+78.3
45.8' RT

STA 172+33 RT
2-EXIST 30" CPRC
TO REMAIN

BUTT JOINT
REQ'D
STA 171+81

DAMIAN WAMPOLE &
DESTINEY ROESLER

SEPTIC

FRONTIER

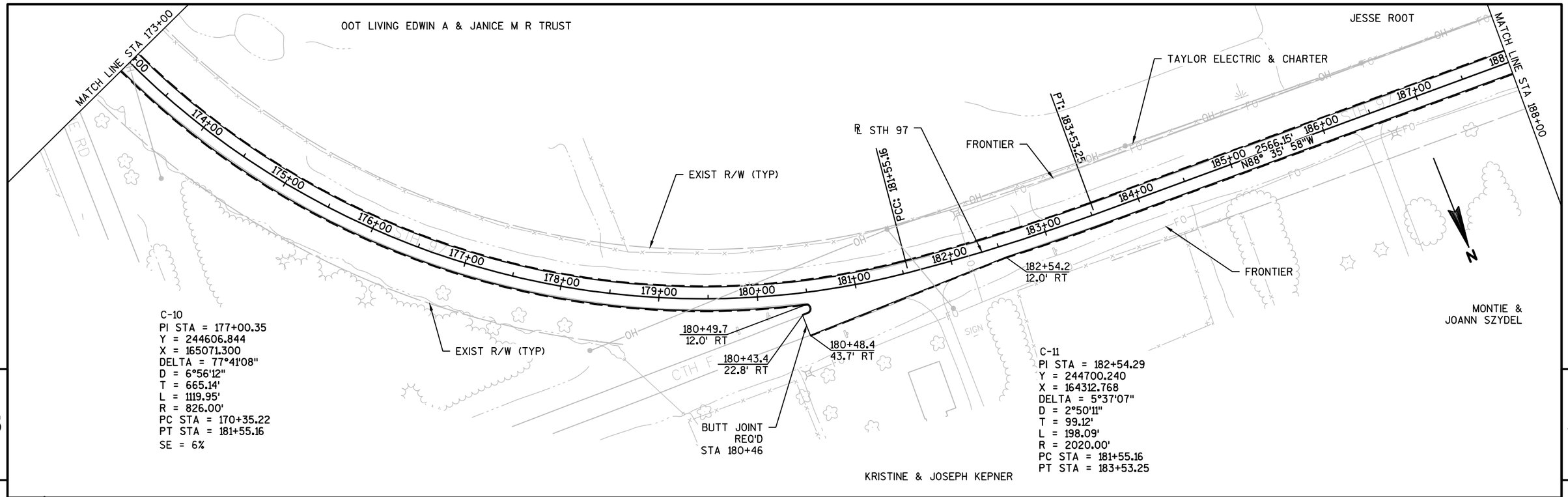
C-9
PI STA = 169+36.25
Y = 243845.846
X = 165141.833
DELTA = 5°37'07"
D = 2°50'11"
T = 99.12'
L = 198.09'
R = 2020.00'
PC STA = 168+37.13
PT STA = 170+35.22

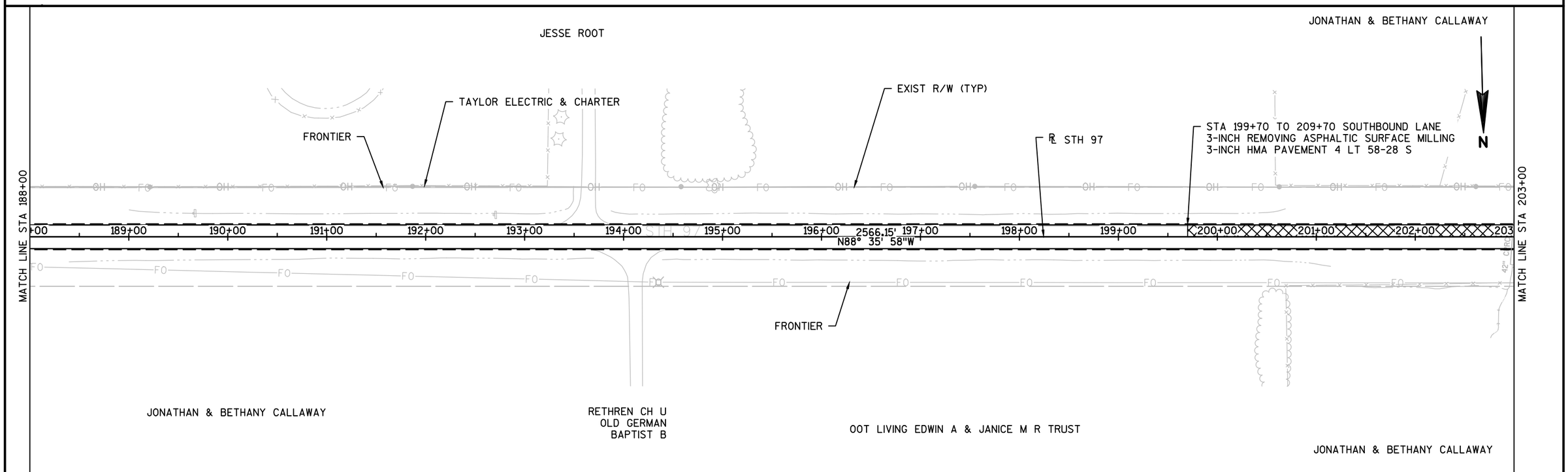
MARK FLORY

MARK FLORY

CLIFF ANGE & WANDA ROTHAMER

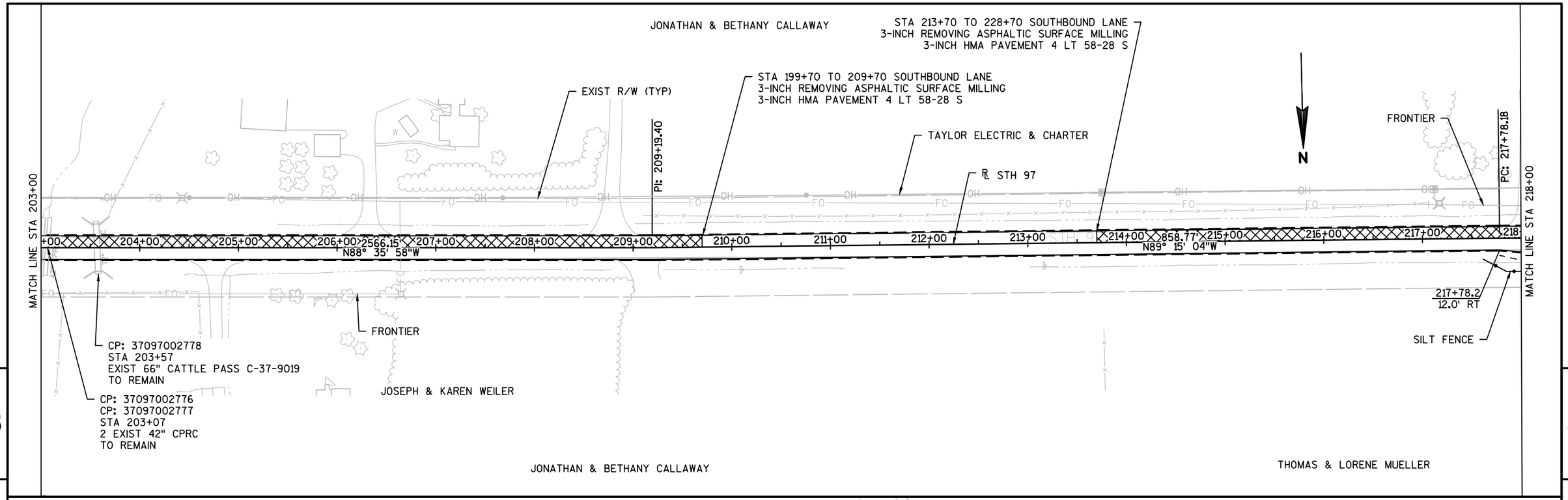
PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 21	E

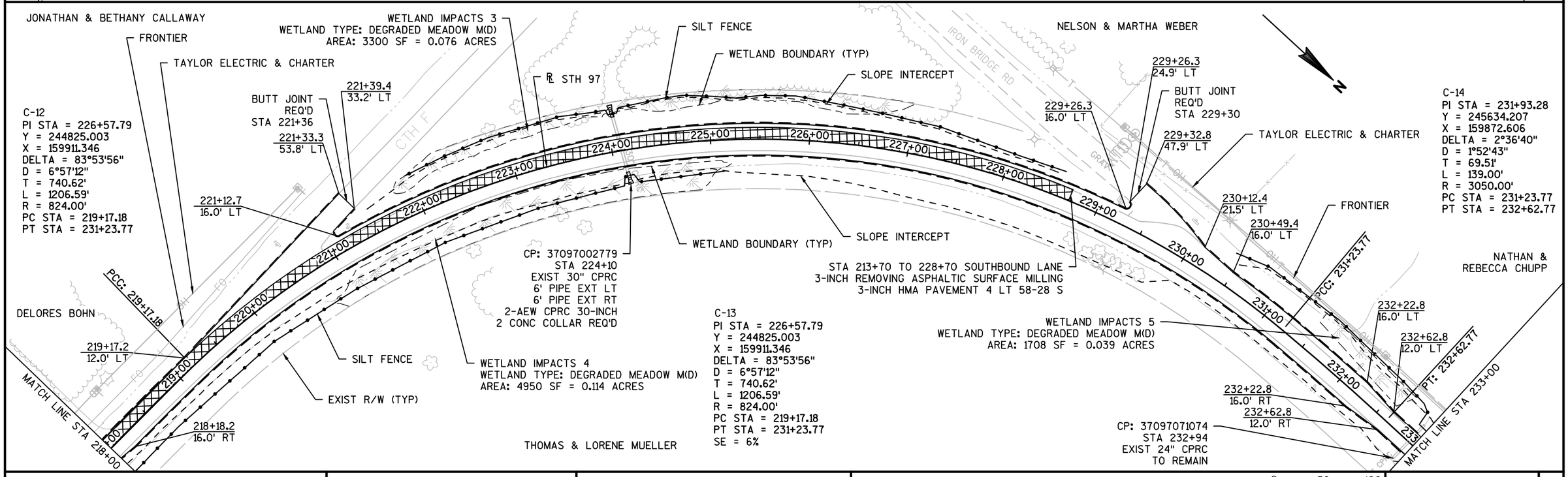




PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 22	E

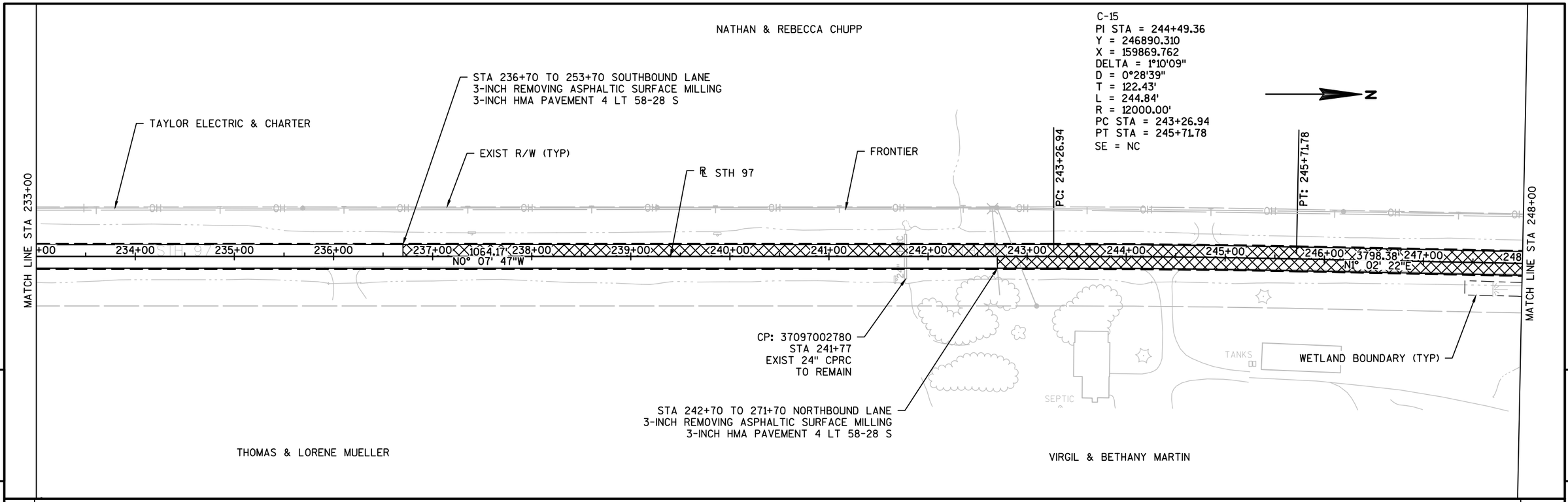
FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050206 PN
PLOT DATE : 10/28/2019 9:35 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME :
PLOT SCALE : **********
WISDOT/CADDS SHEET 44

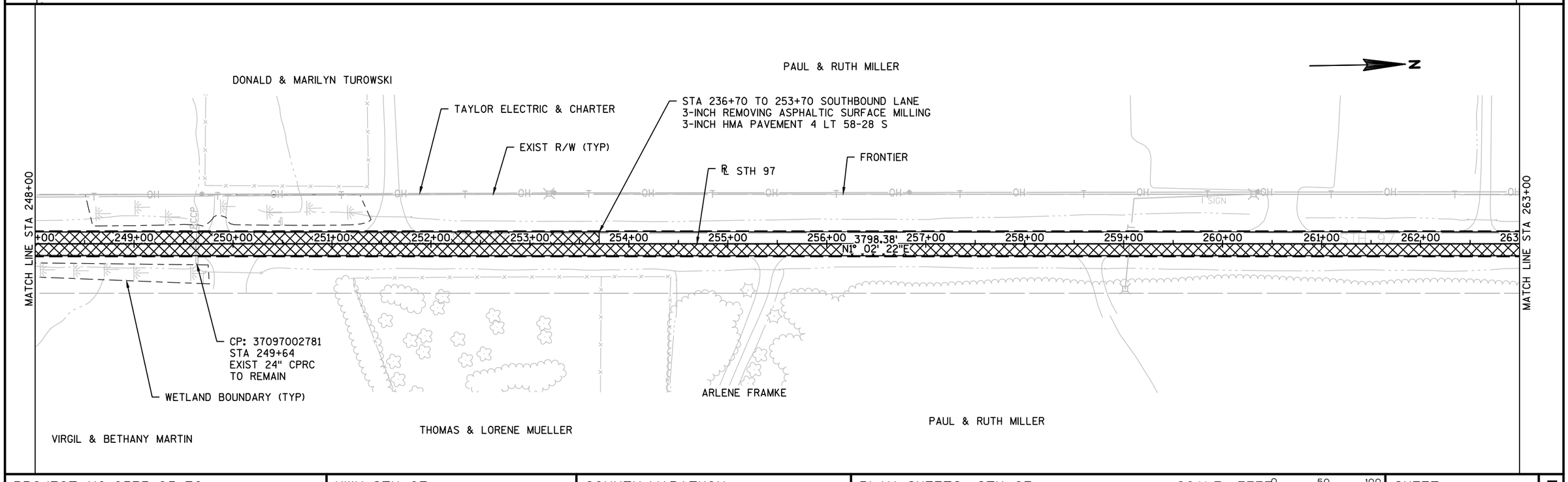




PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 23	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050207 PN
PLOT DATE : 10/28/2019 9:35 AM
PLOT BY : CAMERON SHIFFER, PE PLOT NAME :
PLOT SCALE : **********
WISDOT/CADDS SHEET 44





PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 24	E

RAYMOND WEISS

ROY & CAROLINE BONESKE

WETLAND IMPACTS 6
WETLAND TYPE: DEGRADED MEADOW M(D)
AREA: 515 SF = 0.012 ACRES

STA 275+70 TO 279+70 SOUTHBOUND LANE
3-INCH REMOVING ASPHALTIC SURFACE MILLING
3-INCH HMA PAVEMENT 4 LT 58-28 S

EXIST R/W (TYP)

TAYLOR ELECTRIC & CHARTER

SLOPE INTERCEPT

FRONTIER

EROSION MAT
CLASS I TYPE B

℄ STH 97

WETLAND BOUNDARY (TYP)

MATCH LINE STA 263+00

MATCH LINE STA 278+00

+00 264+00 265+00 266+00 267+00 268+00 269+00 270+00 271+00 272+00 273+00 274+00 275+00 276+00 277+00 278

3798.38'
N1° 02' 22"E

SIGN SIGN

GREENHOUSE

GREENHOUSE

STA 242+70 TO 271+70 NORTHBOUND LANE
3-INCH REMOVING ASPHALTIC SURFACE MILLING
3-INCH HMA PAVEMENT 4 LT 58-28 S

FRONTIER

CP: 37097002783
STA 272+69
EXIST 42" CPRC
6' PIPE EXT LT
REMOVE ENDWALL RT (FIELD STONE)
2-AEW CPRC 42-INCH
2 CONC COLLAR REQ'D

WETLAND BOUNDARY (TYP)

MAINTAIN FLOW OF UNNAMED TRIBUTARY DURING CONSTRUCTION AND EXCAVATION OPERATIONS BY ISOLATING FLOW TO ONE CULVERT AT A TIME USING NON-ERODIBLE MATERIALS.

CP: 37097002782
STA 263+87
EXIST 30" CPRC
TO REMAIN

MICHAEL & JESSICA JORDAN

CP: 37097002784
STA 272+75
EXIST 42" CPRC
6' PIPE EXT LT
REMOVE ENDWALL RT (FIELD STONE)
2-AEW CPRC 42-INCH
2 CONC COLLAR REQ'D

WETLAND IMPACTS 7
WETLAND TYPE: DEGRADED MEADOW M(D)
AREA: 340 SF = 0.008 ACRES

BRUCE & ETHEL BEIDLER

ROGER & LAURA NOWACKI

5

5

ROY & CAROLINE BONESKE

STA 275+70 TO 279+70 SOUTHBOUND LANE
3-INCH REMOVING ASPHALTIC SURFACE MILLING
3-INCH HMA PAVEMENT 4 LT 58-28 S

C-16
PI STA = 285+21.86
Y = 250962.147
X = 159943.633
DELTA = 1°26'55"
D = 0°28'39"
T = 151.70'
L = 303.39'
R = 12000.00'
PC STA = 283+70.16
PT STA = 286+73.55
SE = NC

KEITH & KRISTINA BONESKE

THOMAS & RONALD NOWACKI

TAYLOR ELECTRIC & CHARTER

FRONTIER

EXIST R/W (TYP)

℄ STH 97

PC: 283+70.16

PT: 286+73.55

MATCH LINE STA 278+00

MATCH LINE STA 293+00

+00 279+00 280+00 281+00 282+00 283+00 284+00 285+00 286+00 287+00 288+00 289+00 290+00 291+00 292+00 293

3798.38'
N1° 02' 22"E

7157.29'
N0° 24' 33"W

SIGN

SEPTIC

FRONTIER

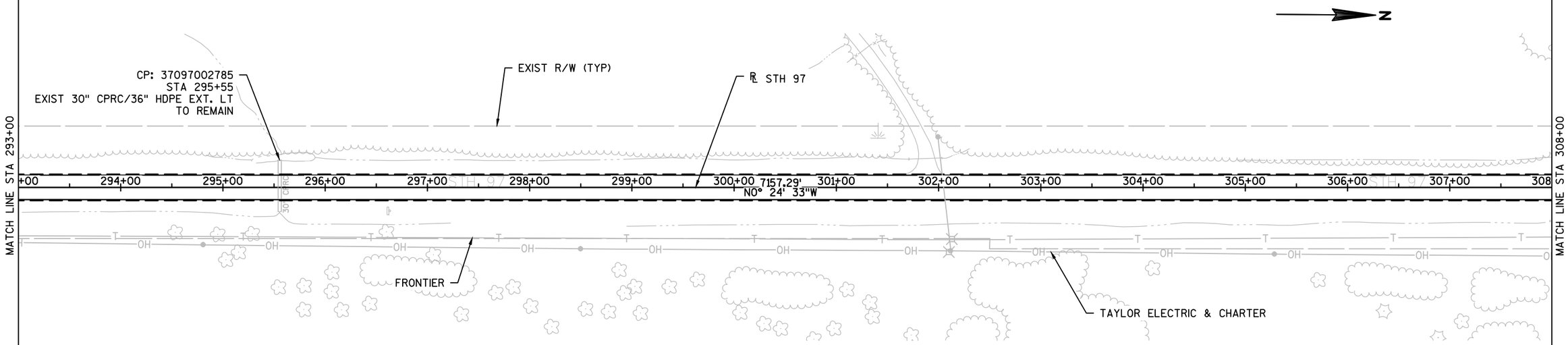
ROGER & LAURA NOWACKI

LEE & MELINDA RUFENER

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 25	E

THOMAS & RONALD NOWACKI

ROBERT & BETTY ERDMAN



TENZIN & STACEY BOTSFORD

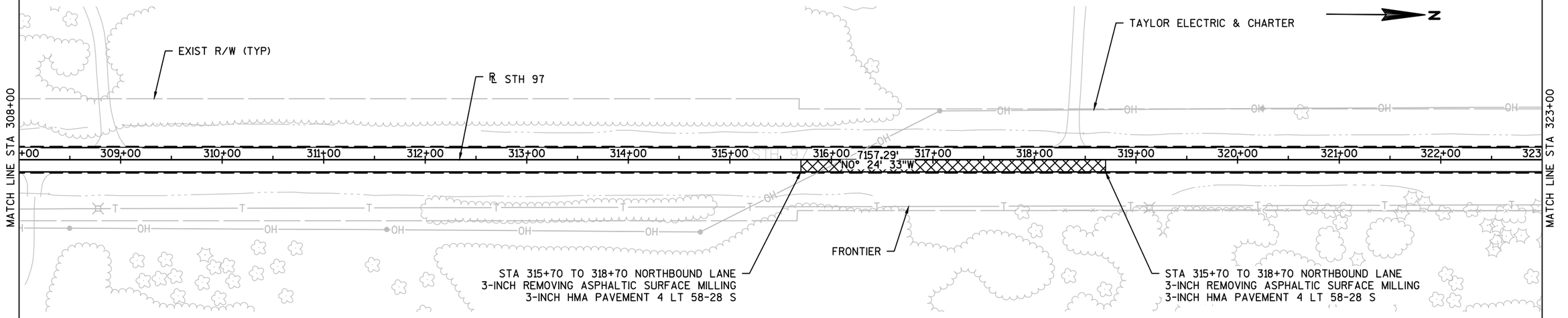
WESTLY RAJEK

5

5

ROBERT & BETTY ERDMAN

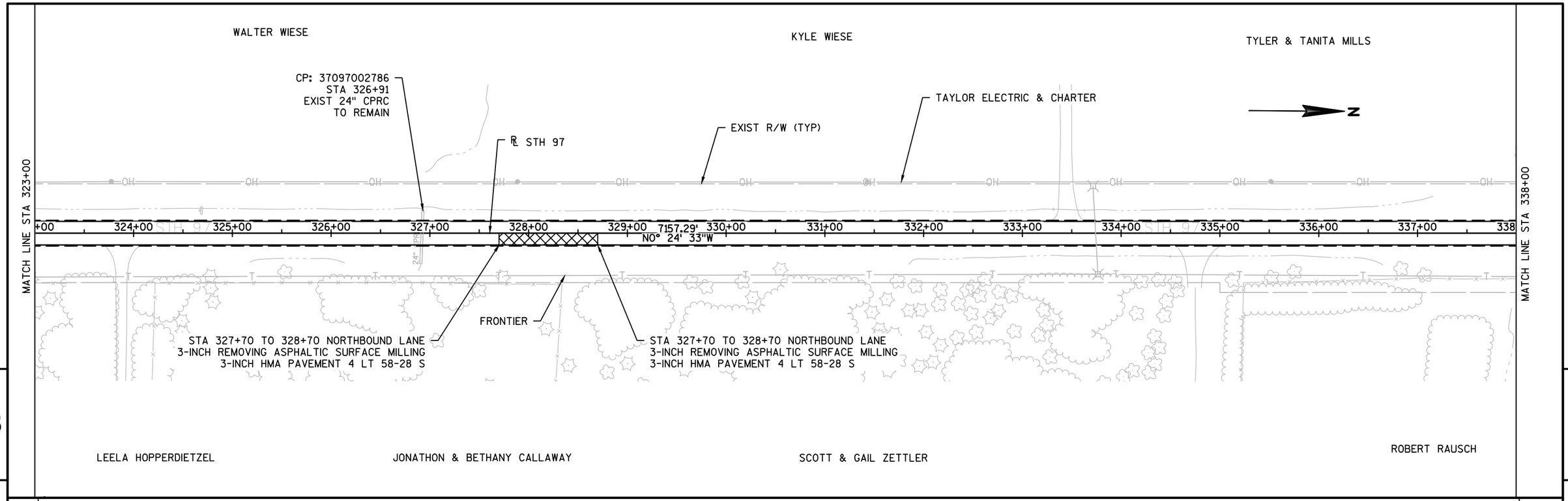
WALTER WEISE

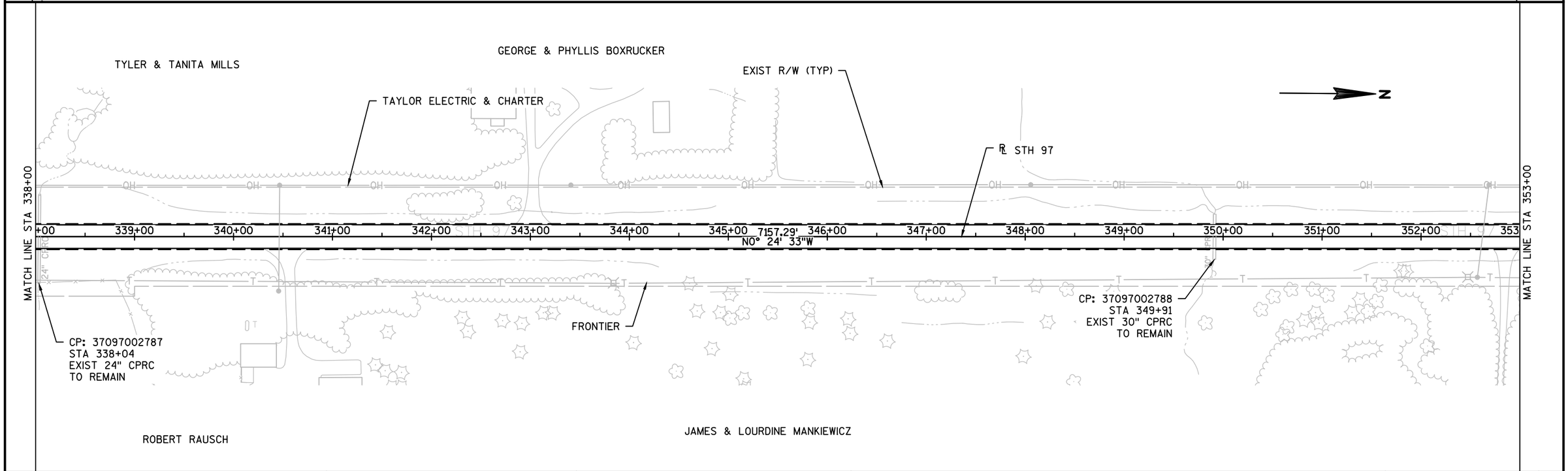


WESTLY RAJEK

LEELA HOPPERDIETZEL

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 26	E





PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 27	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050211 PN

PLOT DATE : 10/28/2019 9:36 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : **********

WISDOT/CADDS SHEET 44

TYLER PETERSON &
ALYSSA QUANTE

MICHAEL & SARAH YOUNG

N

TAYLOR ELECTRIC & CHARTER

MATCH LINE STA 353+00

PC: 358+30.84

PT: 360+40.31

℄ STH 97

EXISTING BEAMGUARD TO REMAIN

BUTT JOINT REQ'D
STA 366+29

364+51.6
12.0' LT

365+26.6
18.0' LT

367+44.0
18.0' LT

MATCH LINE STA 368+00

+00 354+00 355+00 356+00 7157.29' 357+00 358+00 359+00 360+00 361+00 362+00 1776.89' 363+00 364+00 365+00 366+00 367+00 368

N0° 24' 33"W

N0° 35' 27"E

FRONTIER

C-17
PI STA = 359+35.57
Y = 258375.686
X = 159890.679
DELTA = 1°00'01"
D = 0°28'39"
T = 104.74'
L = 209.47'
R = 12000.00'
PC STA = 358+30.84
PT STA = 360+40.31
SE = NC

EXIST R/W (TYP)

364+14.5
12.0' RT

364+89.5
18.0' RT

367+07.4
18.0' RT

367+82.4
12.0' RT

EXISTING BEAMGUARD TO REMAIN

BUTT JOINT REQ'D
STA 366+04

BALDWIN CREEK

NET EXCEPTION TO ℄
STA 366+04-366+29
B-37-369 TO REMAIN

EXISTING BEAMGUARD TO REMAIN

JAMES & LOURDINE MANKIEWICZ

JEREMY BRUNKE

5

5

RUDY & CLARA BYLER

RUDY & CLARA BYLER

END PROJECT
STA 377+45
MATCH EXISTING
CONCRETE PAVEMENT
BUTT JOINT REQ'D

N

TAYLOR ELECTRIC & CHARTER

EXIST R/W (TYP)

368+19.0
12.0' LT

MATCH LINE STA 368+00

℄ STH 97

PC: 378+17.20

+00 369+00 370+00 371+00 372+00 1776.89' 373+00 374+00 375+00 376+00 377+00 378+00 379+00 380+00 381+00 382+00 383+00

N0° 35' 27"E

24" CPCS

FRONTIER

CP: 37097002789
STA 378+93
EXIST 24" CPCS
TO REMAIN

MASON BURGER

SEPTIC

WELL

JOEL & KRISTINA WIPF

LEE & MELINDA RUFENER

MASON BURGER

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	PLAN SHEETS: STH 97	SCALE, FEET 0 50 100	SHEET 28	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050212 PN

PLOT DATE : 10/28/2019 9:36 AM

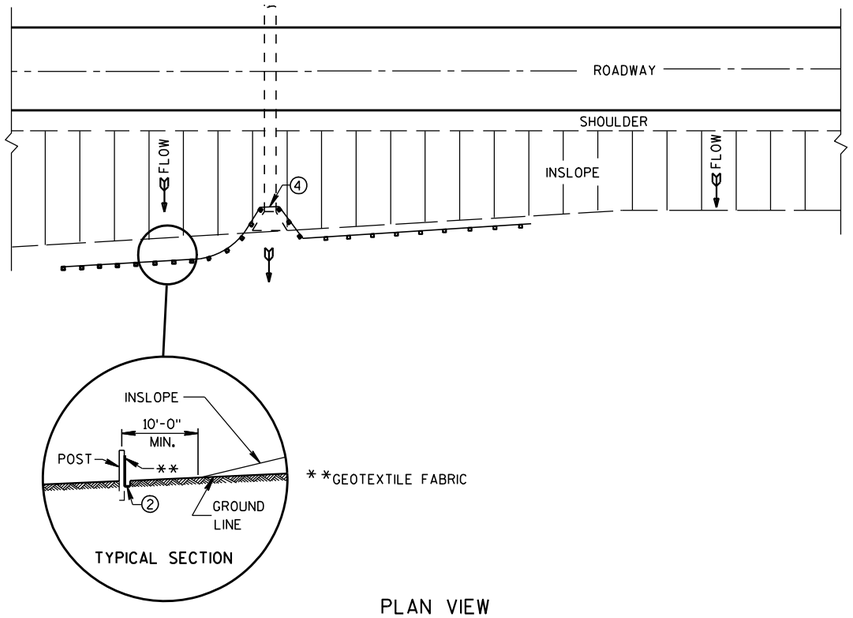
PLOT BY : CAMERON SHIFFER, PE PLOT NAME :

PLOT SCALE : **********

WISDOT/CADDS SHEET 44

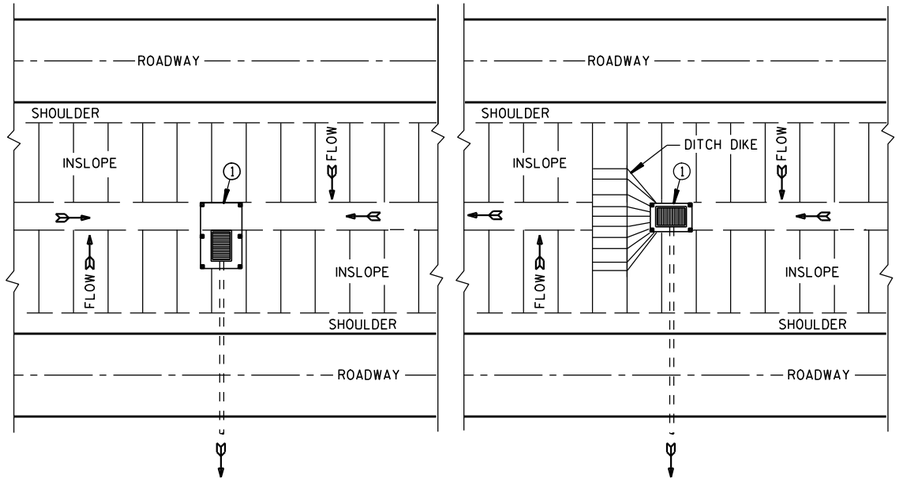
Standard Detail Drawing List

08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A10-02A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02B	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C08-20B	PAVEMENT MARKING (TURN LANES)
15C08-20C	PAVEMENT MARKING (TURN LANES)
15C11-08B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D48-01	TRAFFIC CONTROL, TEMPORARY LANE SHIFT DURING CULVERT WORK



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



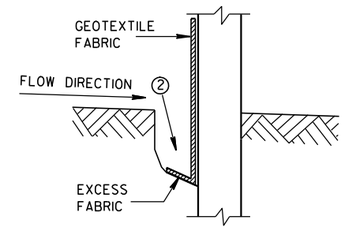
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

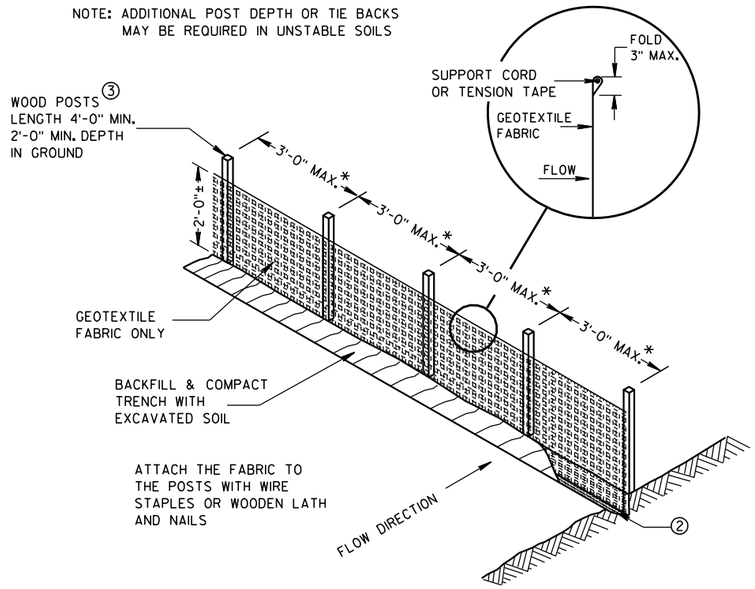
GENERAL NOTES

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

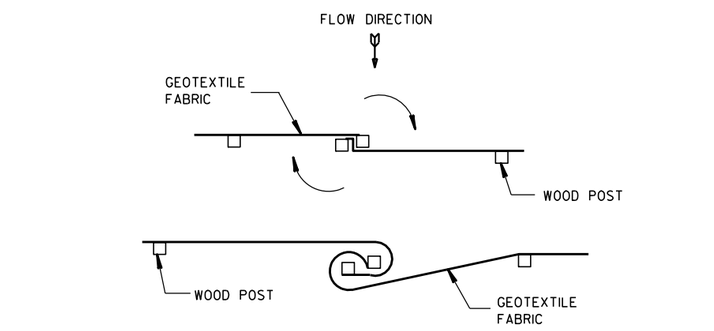
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



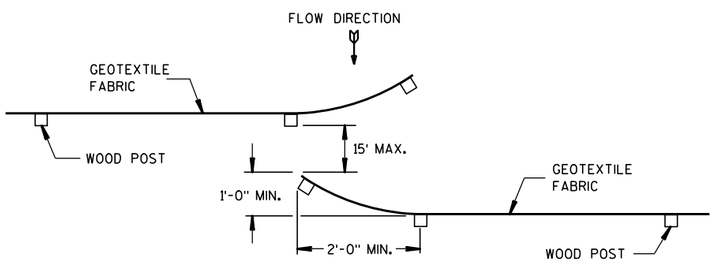
TRENCH DETAIL



SILT FENCE

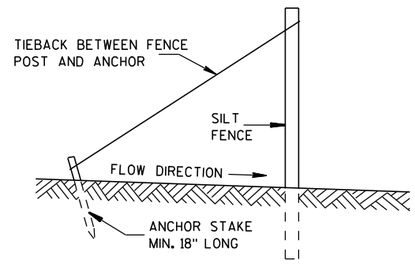


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

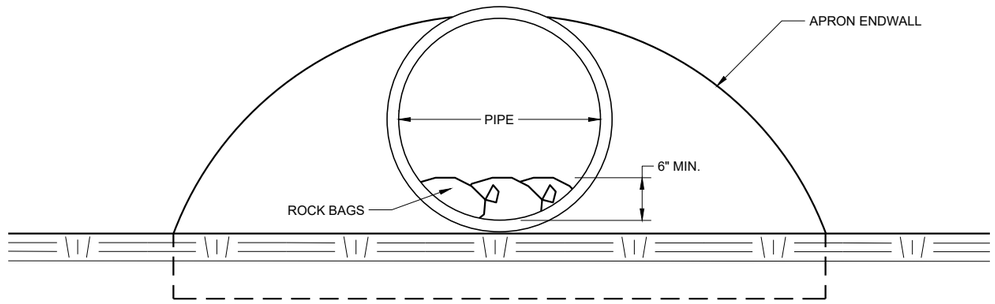
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

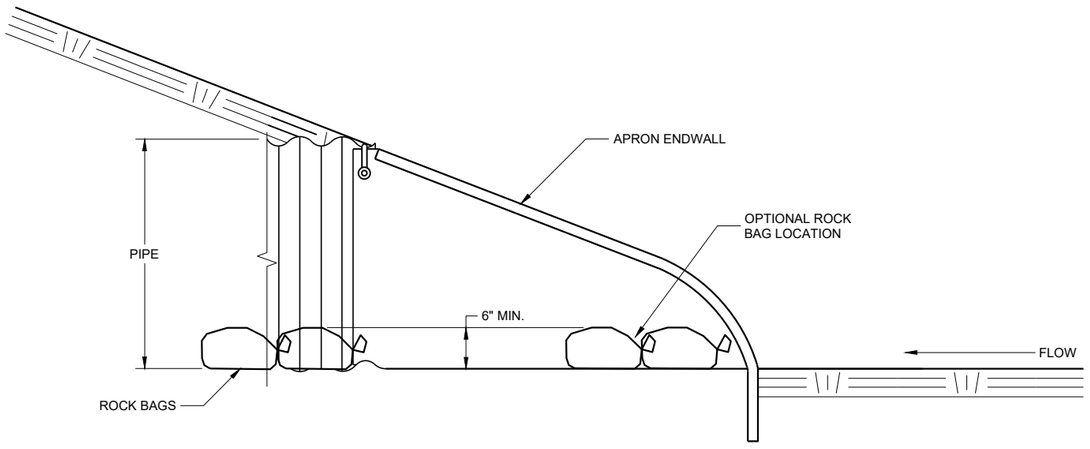
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



END VIEW



SIDE VIEW

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE
/S/ Daniel Schave
EROSION CONTROL ENGI

FHWA

6

SDD 08E15 - 01

6

SDD 08E15 - 01

METAL APRON ENDWALLS

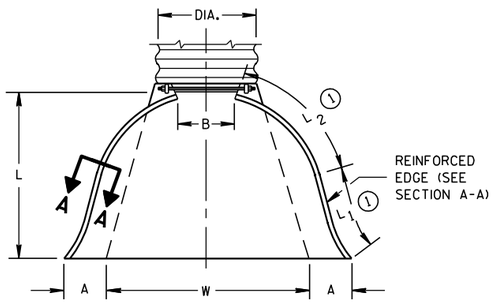
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

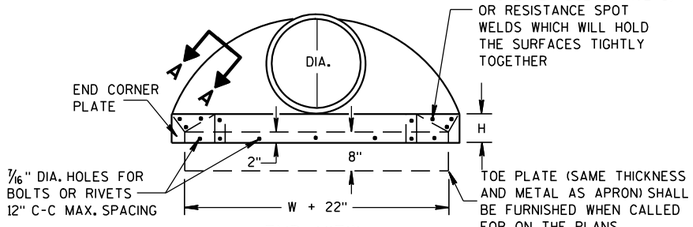
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

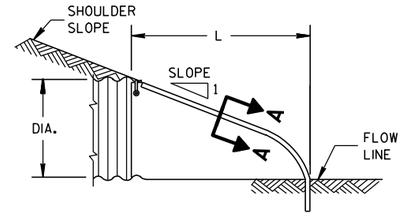
*MINIMUM
**MAXIMUM



PLAN VIEW

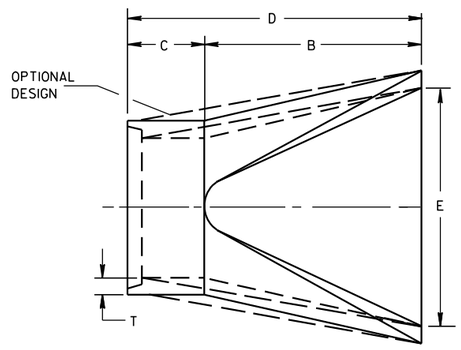


END VIEW

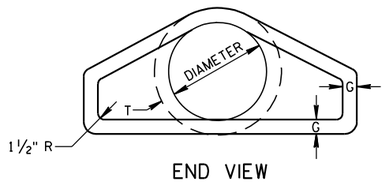


SIDE ELEVATION

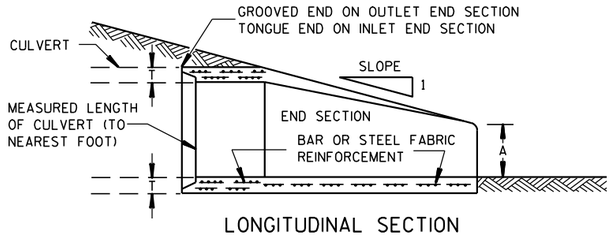
METAL ENDWALLS



PLAN

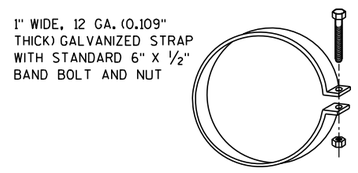


END VIEW



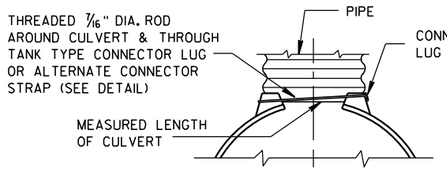
LONGITUDINAL SECTION

CONCRETE ENDWALLS

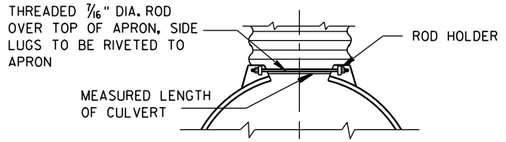


ALTERNATE FOR TYPE 1 CONNECTION

END SECTION CONNECTOR STRAP

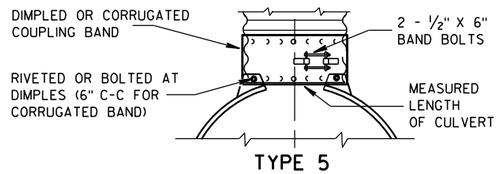


TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE

TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

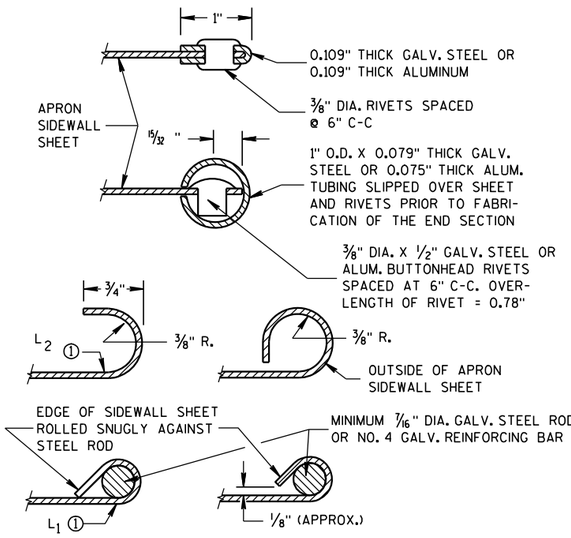
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

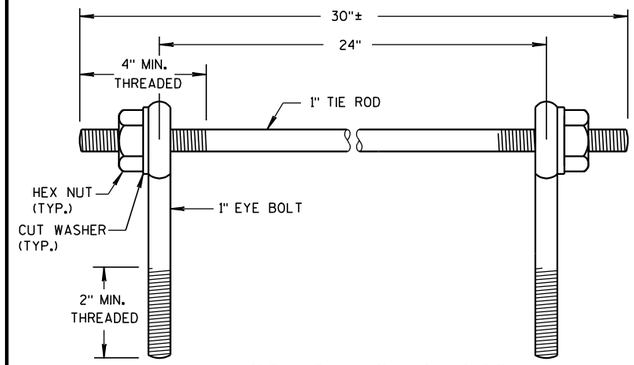
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

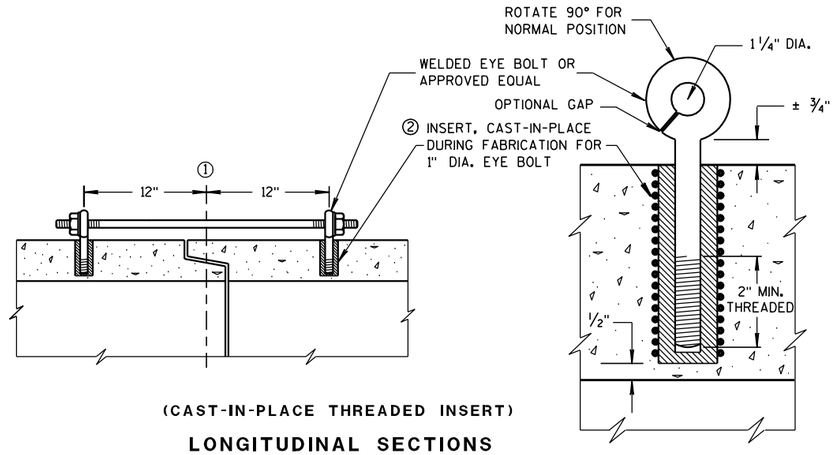
APPROVED
11/30/94 — DATE
/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

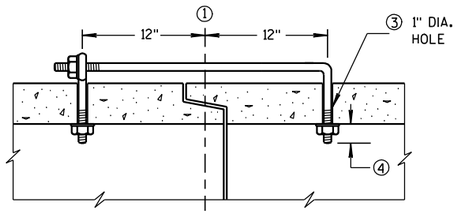
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

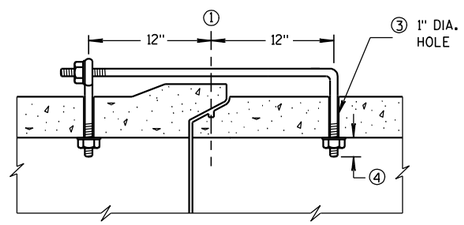
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

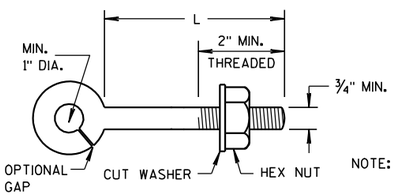


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

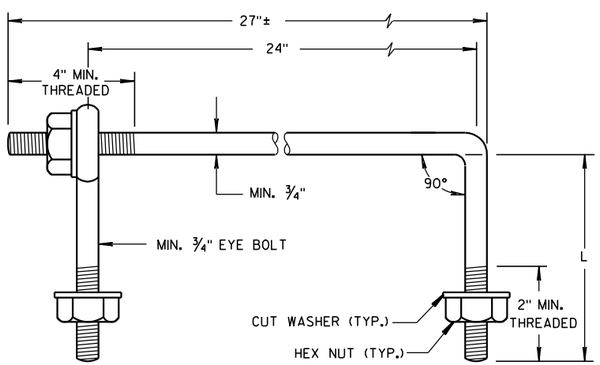
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

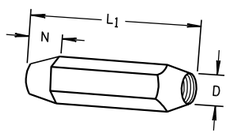
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

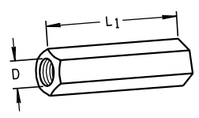
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES



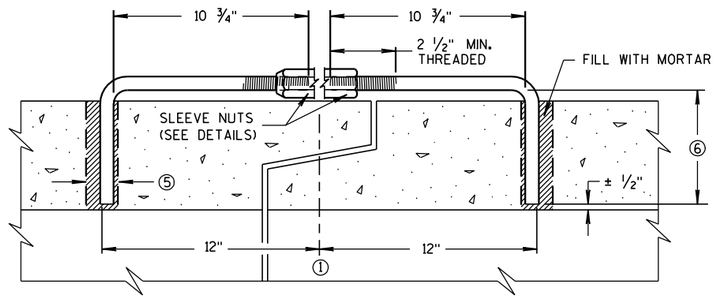
TAPERED



PLAIN

RIGHT AND LEFT THREADS

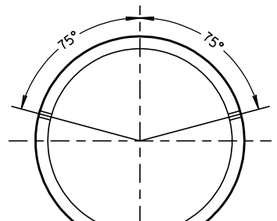
SLEEVE NUTS



LONGITUDINAL SECTION

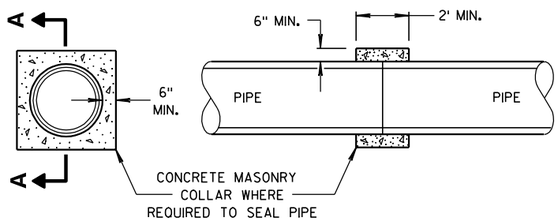
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

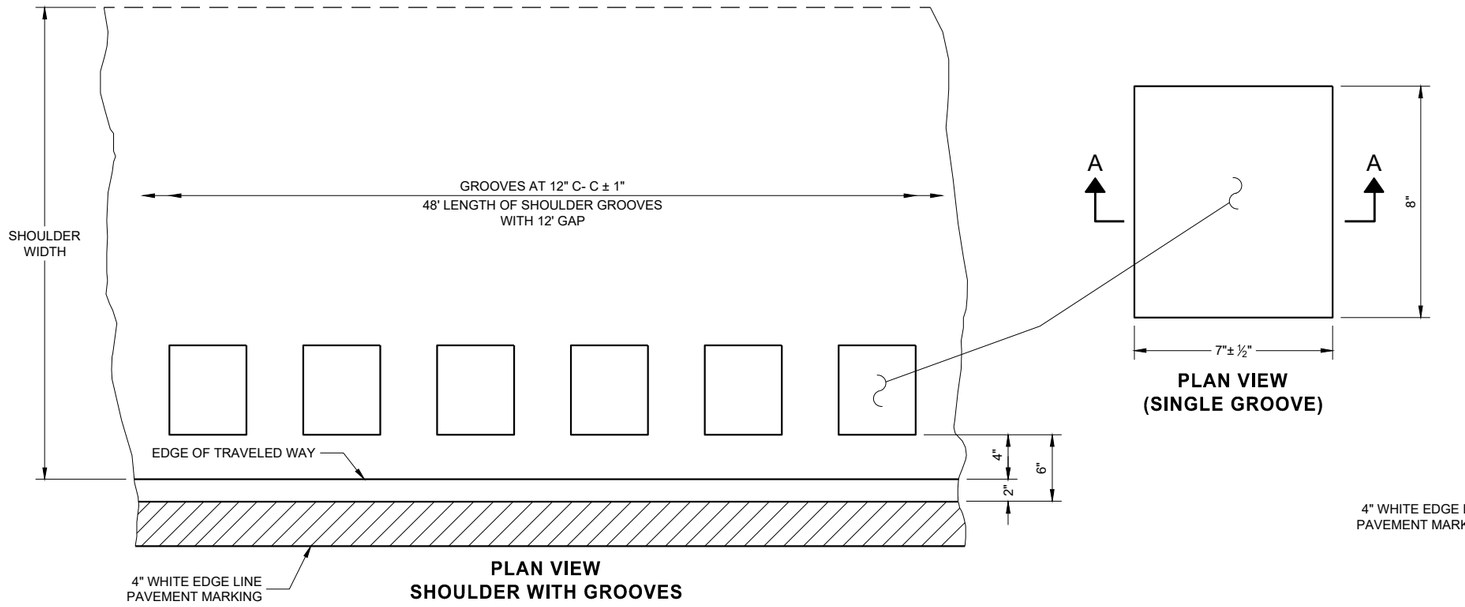
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
33
FHWA

6

S.D.D. 8 F 4-7



PLAN VIEW
SHOULDER WITH GROOVES

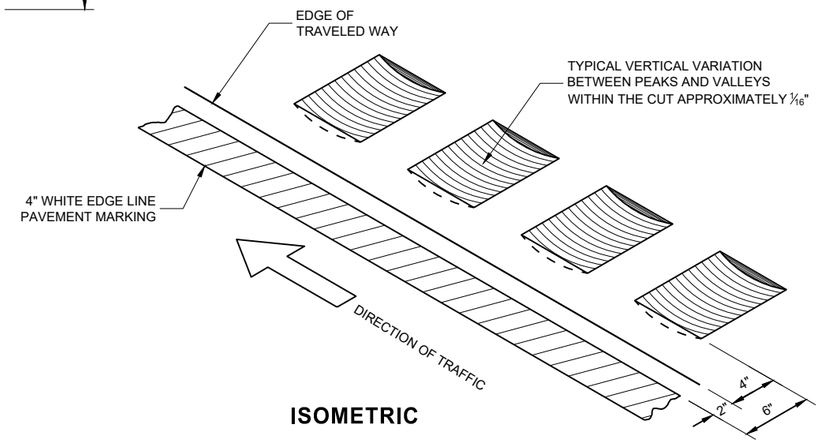
PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

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

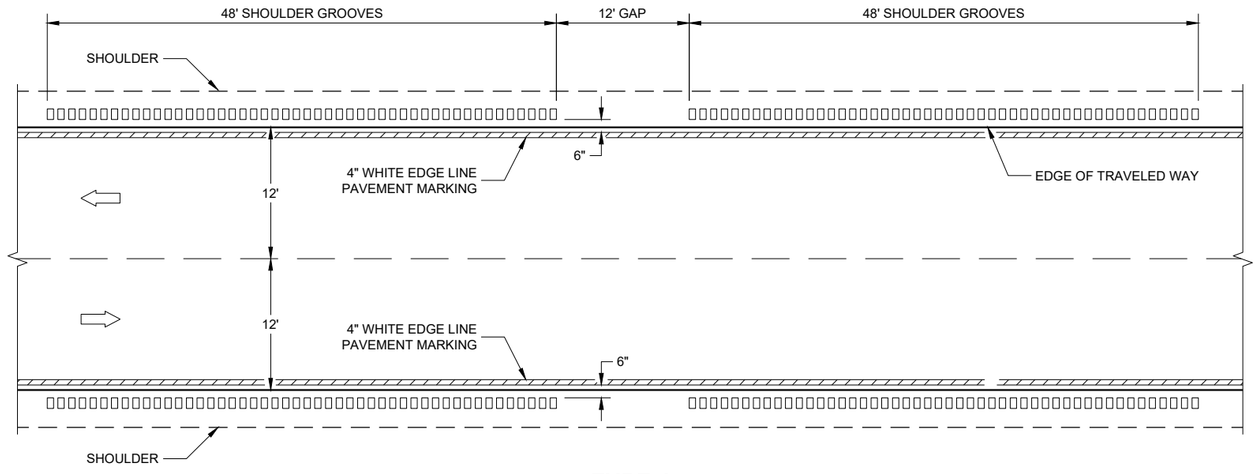
DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

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

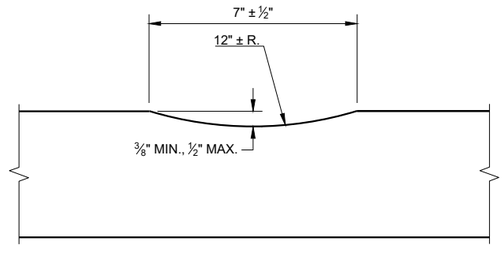


ISOMETRIC

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



TYPE 1
2 - LANE SHOULDER RUMBLE STRIP



SECTION A - A

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING

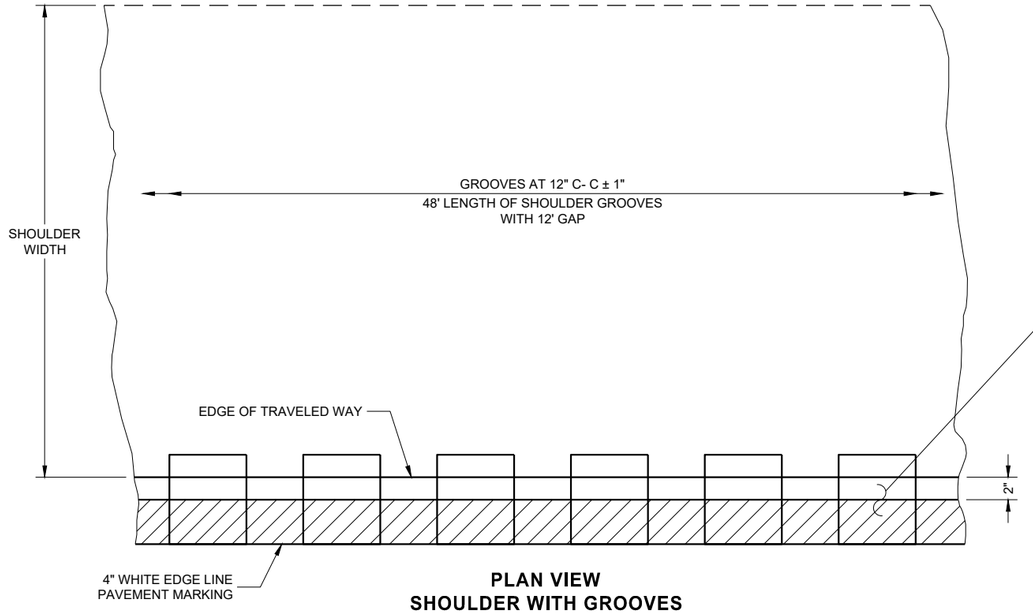
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

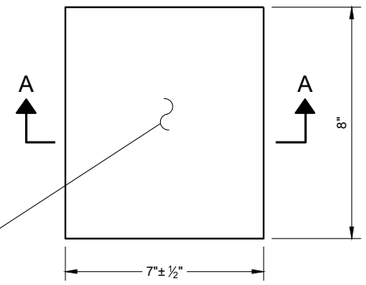
SDD 13A10 - 02a

6

SDD 13A10 - 02a



PLAN VIEW
SHOULDER WITH GROOVES



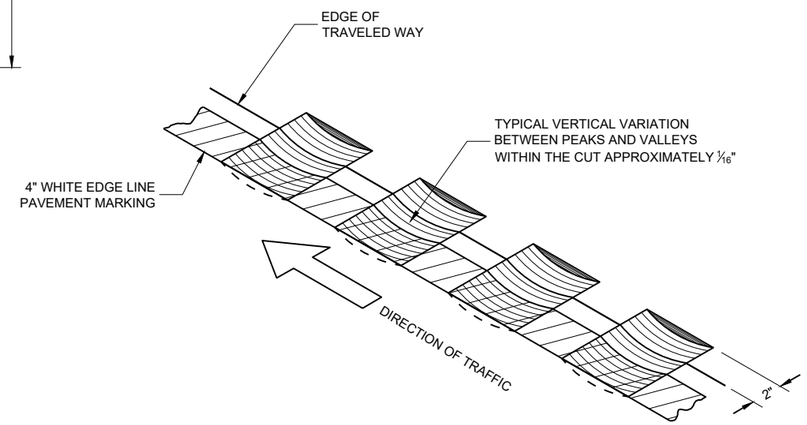
PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

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

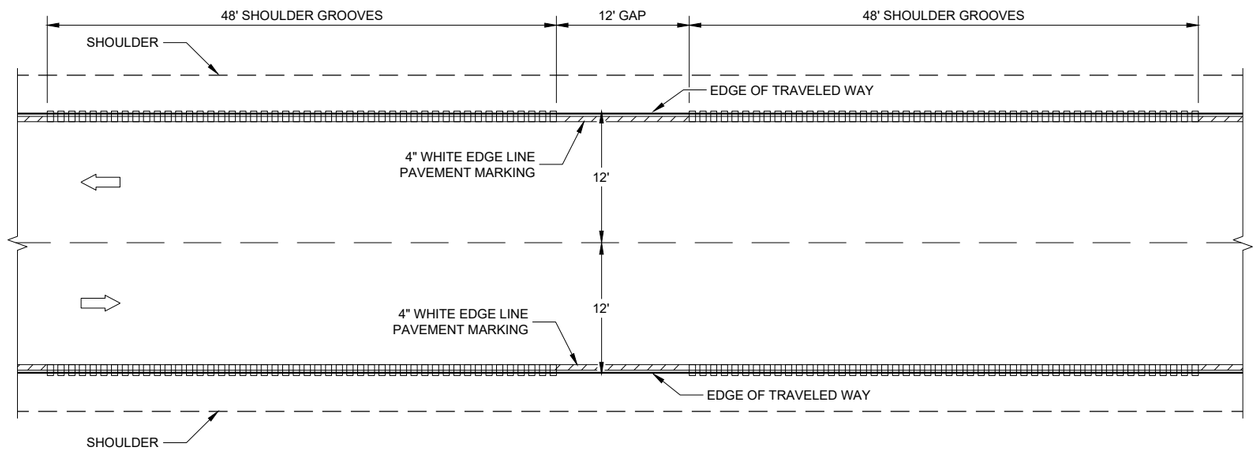
DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

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

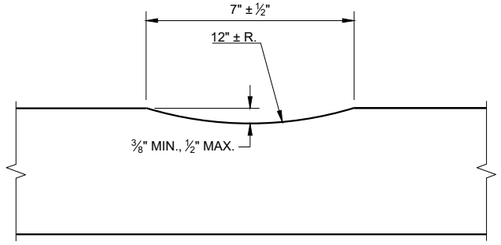


ISOMETRIC

PLACEMENT DETAIL FOR TYPE 2 MILLED RUMBLE STRIP



TYPE 2
2 - LANE SHOULDER RUMBLE STRIP



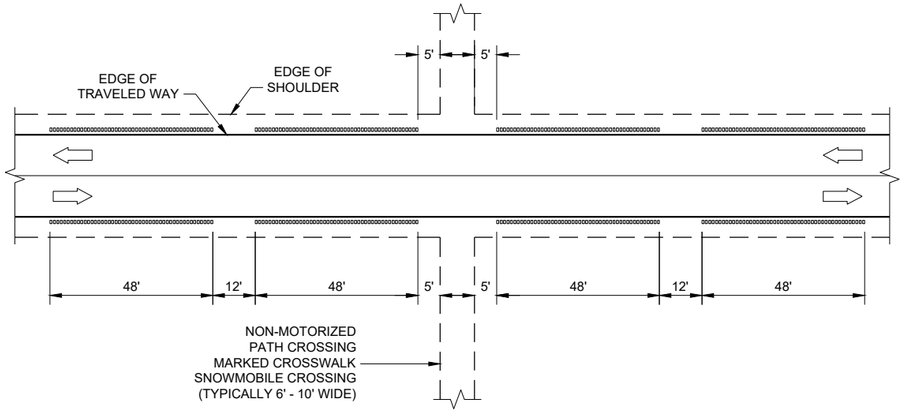
SECTION A - A

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING

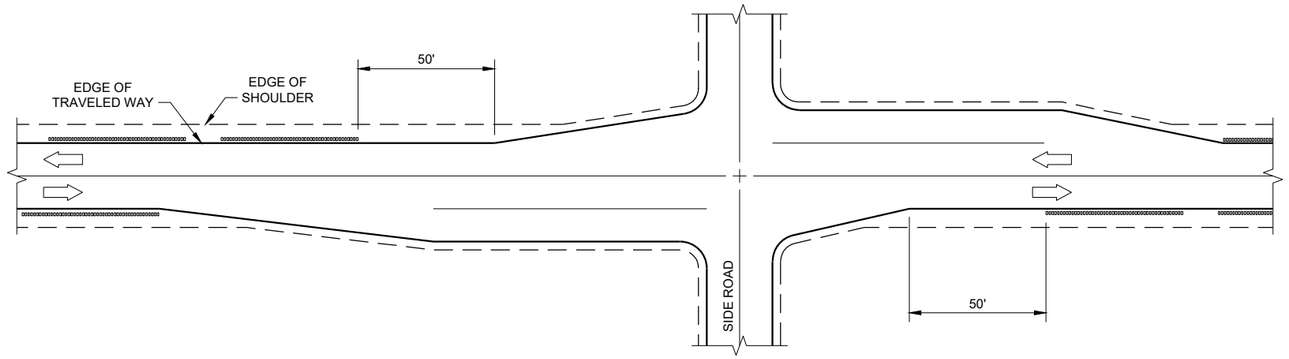
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 13A10 - 02b

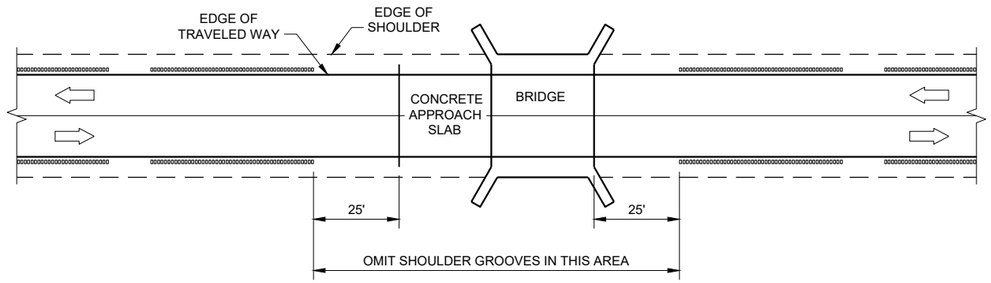
SDD13A10 - 02b



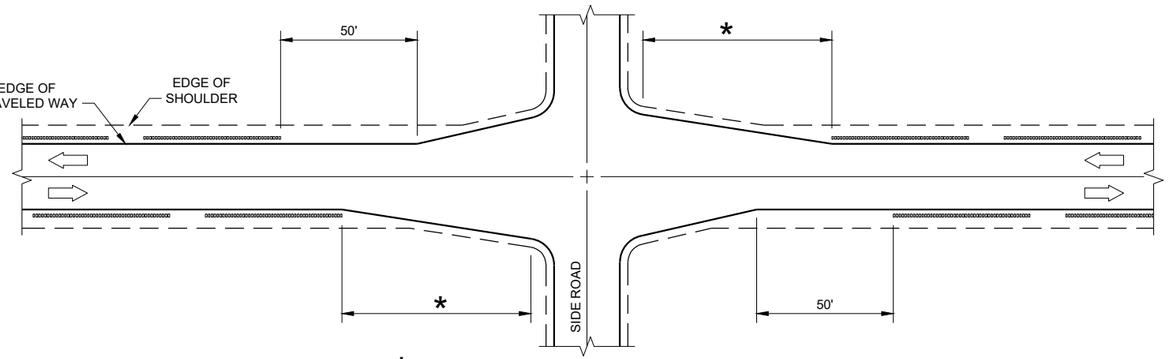
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



SHOULDER GROOVES AT RIGHT TURN LANE

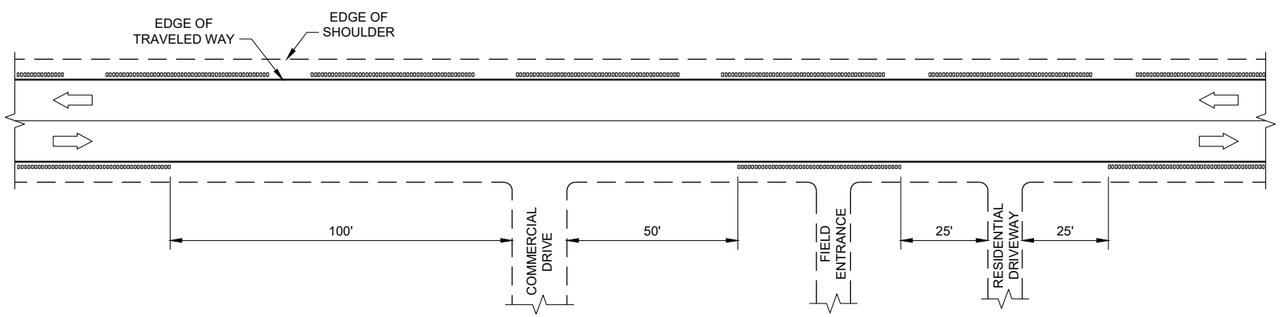


SHOULDER GROOVES AT BRIDGES



* GREATER OF 100' OR APPROACH TAPER LENGTH

SHOULDER GROOVES AT INTERSECTIONS WITH APPROACH TAPER



SHOULDER GROOVES AT DRIVEWAYS (1)

GENERAL NOTES

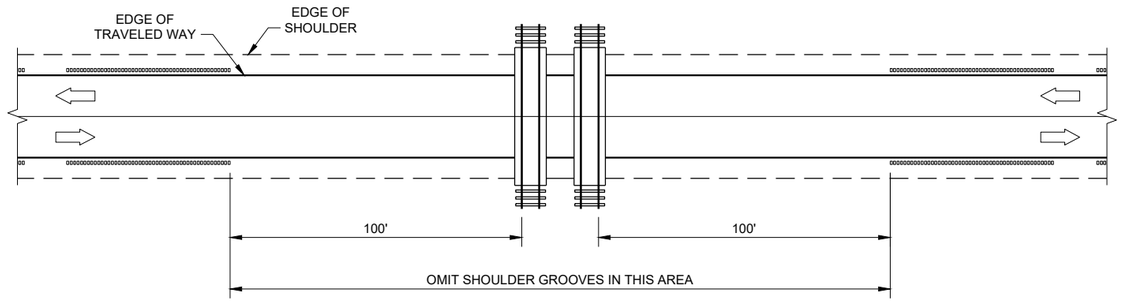
(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING

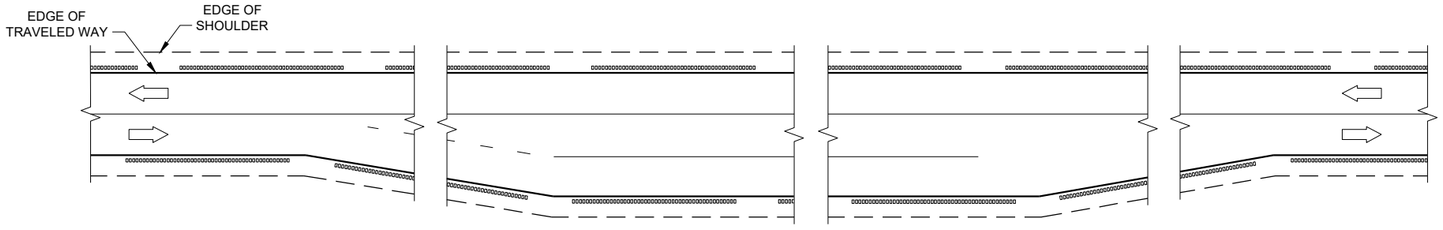
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

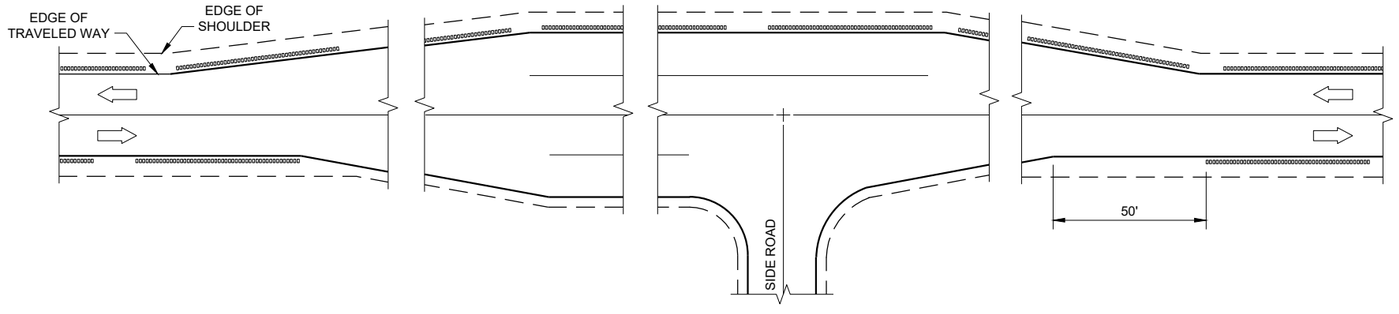
SDD 13A10 - 02c



SHOULDER GROOVES AT RAILROADS



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

6

6

SDD 13A10 - 02d

SDD13A10 - 02d

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING

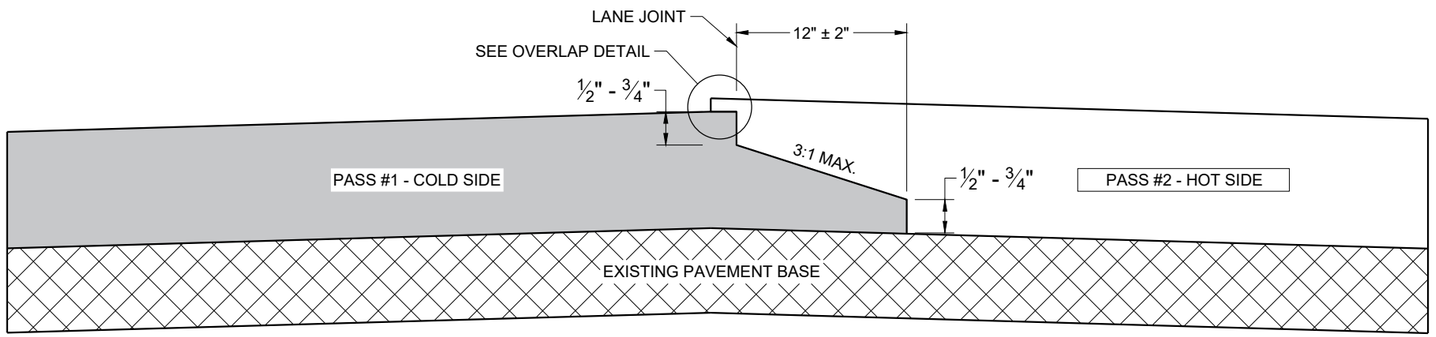
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

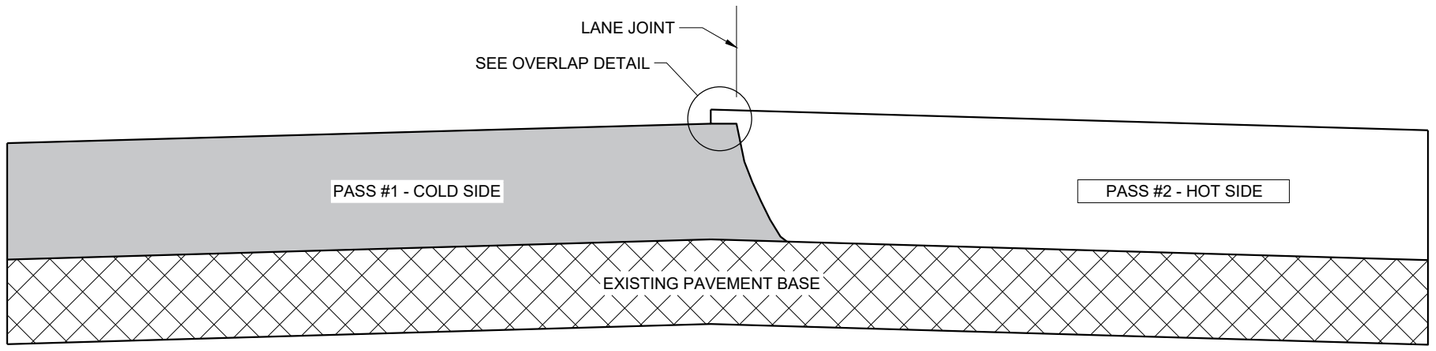
7/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

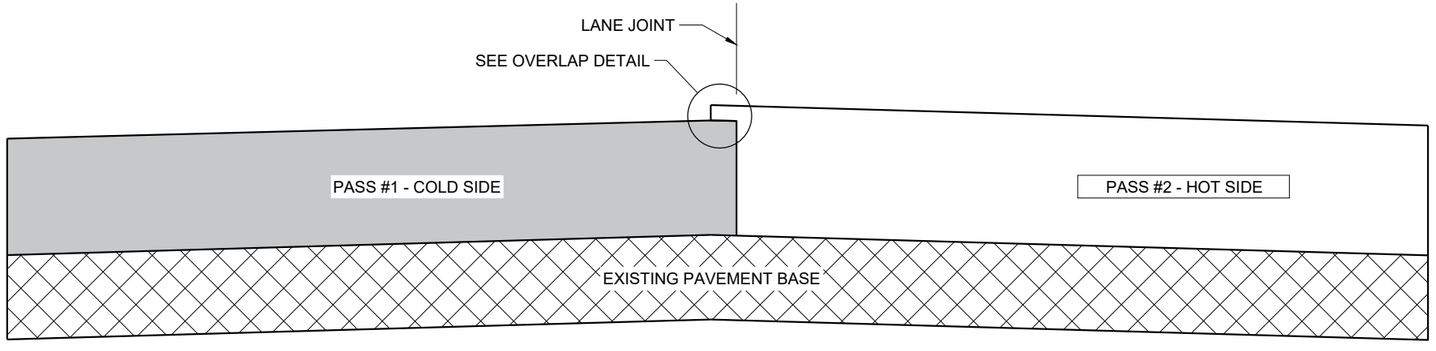
FHWA



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

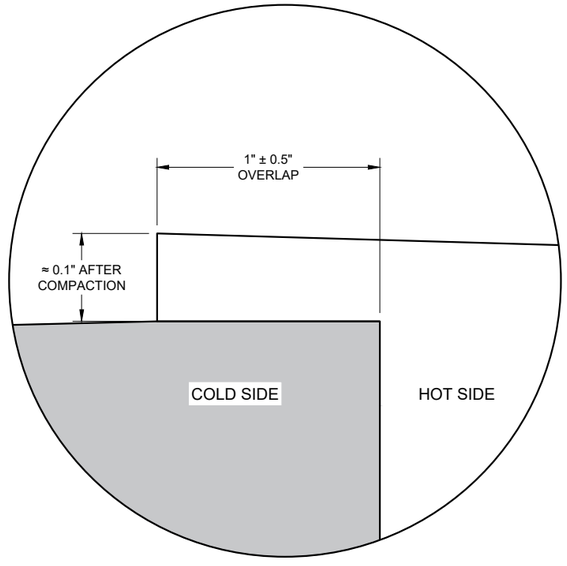
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

6

SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA

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

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

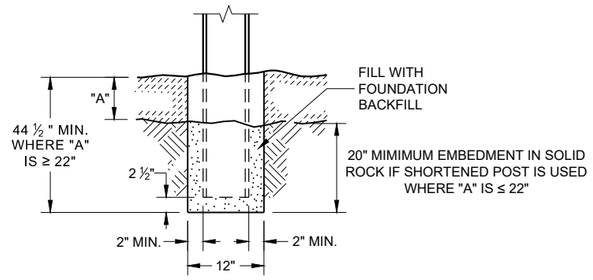
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

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

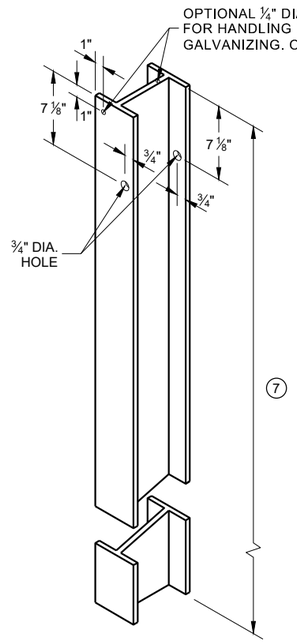
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

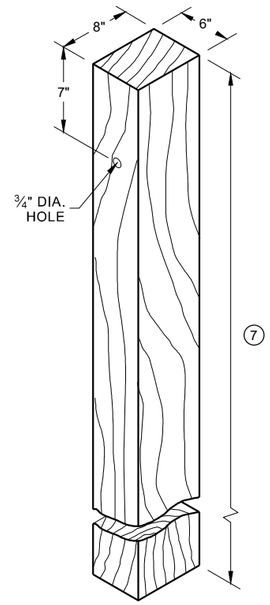
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



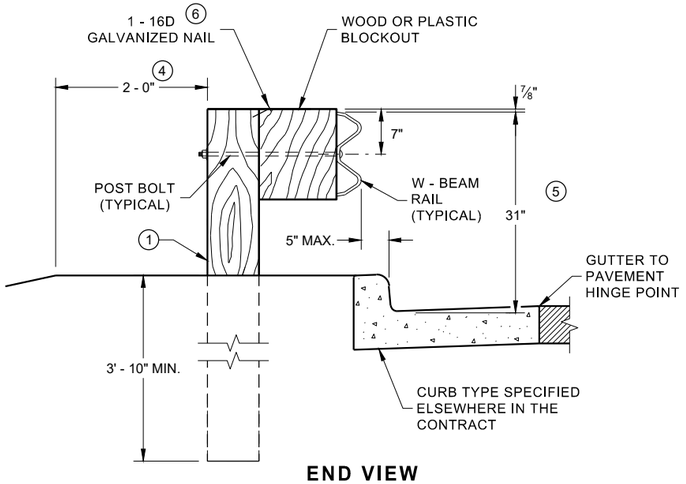
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



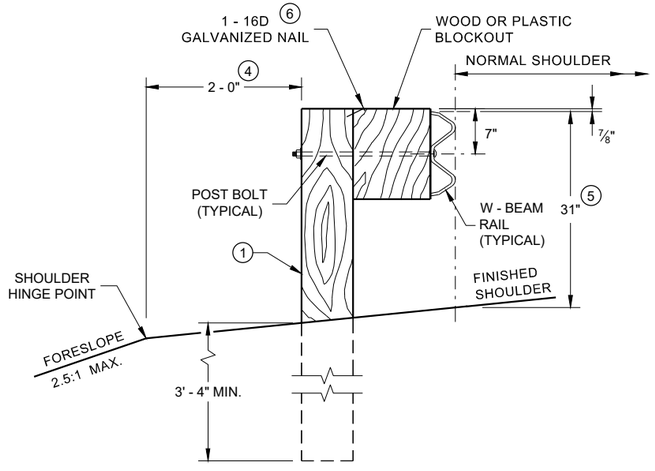
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



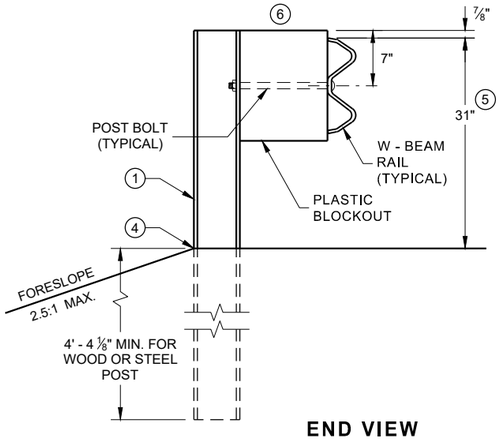
WOOD POST (6" X 8") NOMINAL (1)



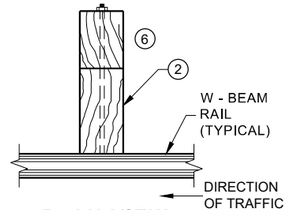
END VIEW
LOCATED ALONG A CURBED ROADWAY



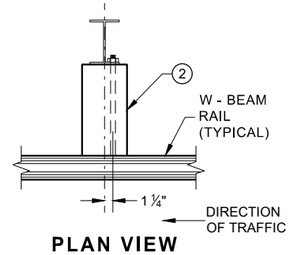
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



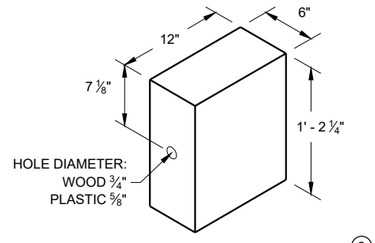
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



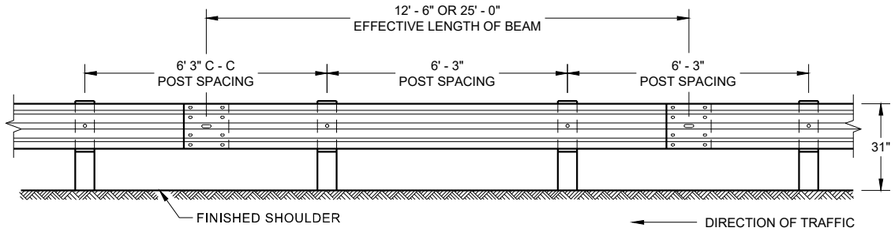
WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

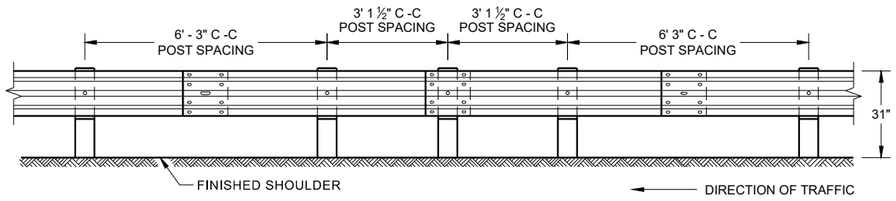
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B42 - 06a

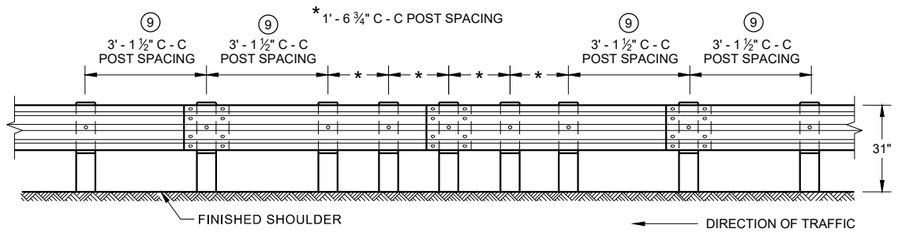
SDD 14B42 - 06a



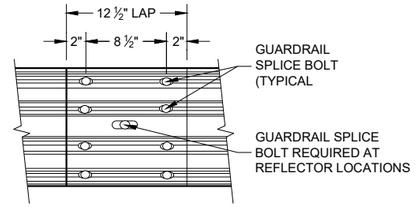
FRONT VIEW
POST SPACING STANDARD INSTALLATION



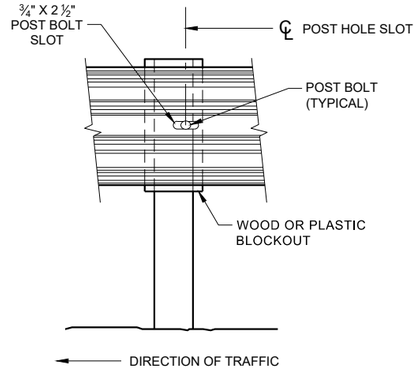
FRONT VIEW
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



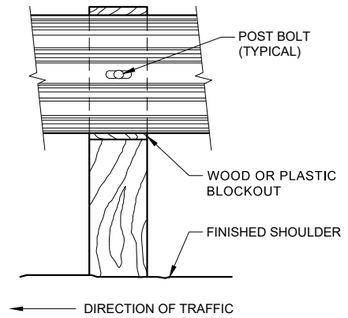
FRONT VIEW
QUARTER POST SPACING (QS)



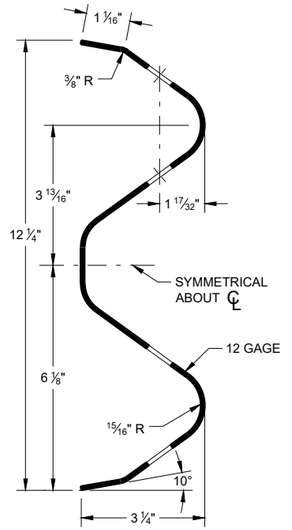
FRONT VIEW
MID-SPAN BEAM SPLICE



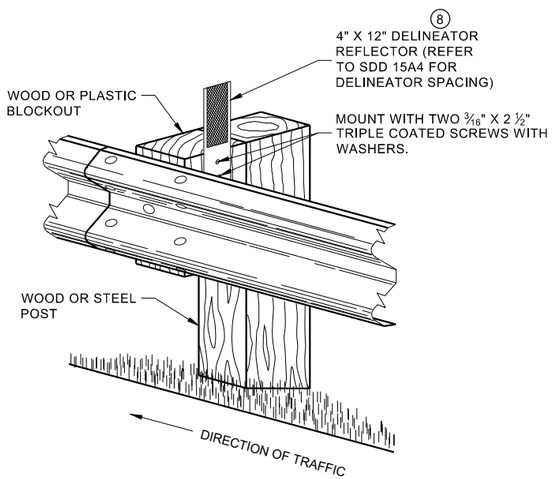
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

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

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

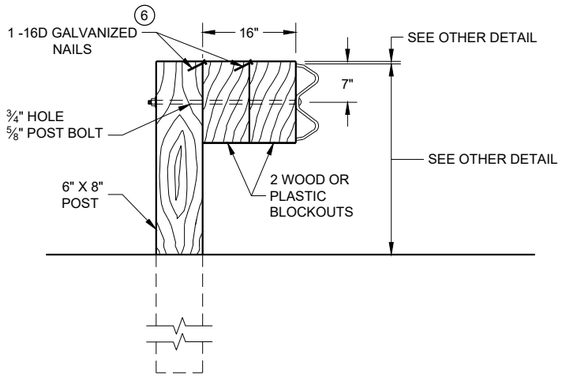
POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B42 - 06b

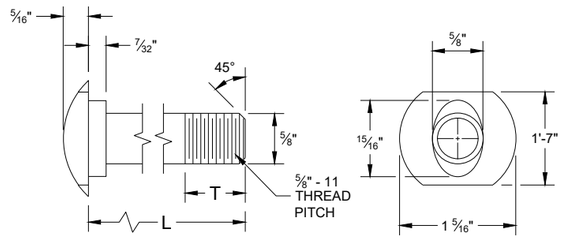


DETAIL FOR 16" BLOCKOUT DEPTH

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

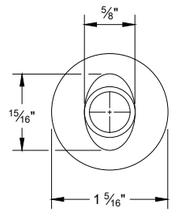
NOTE:

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

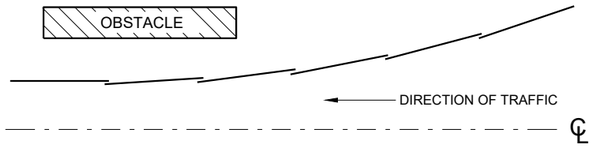


POST BOLT TABLE

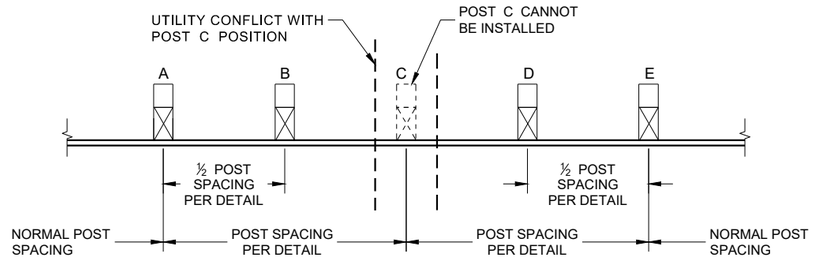
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



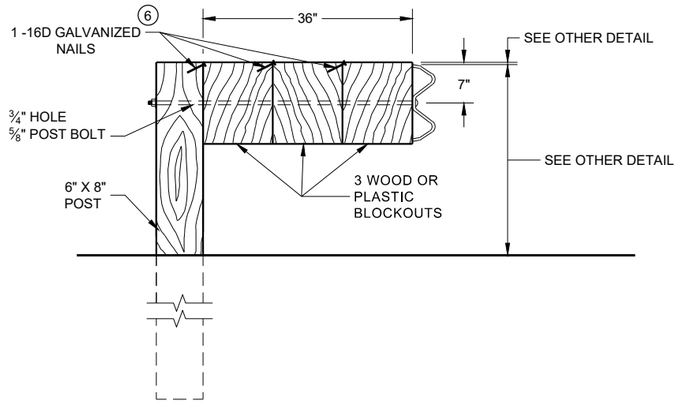
ALTERNATE BOLT HEAD



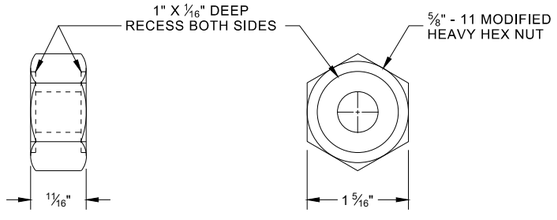
PLAN VIEW
BEAM LAPPING DETAIL



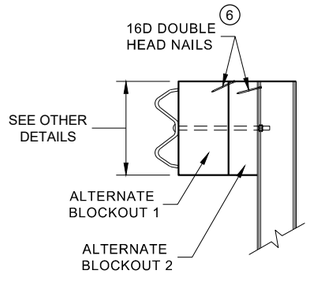
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



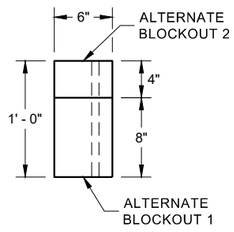
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

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

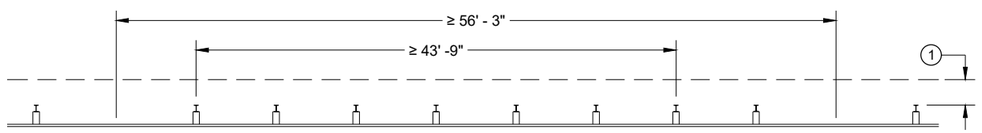
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

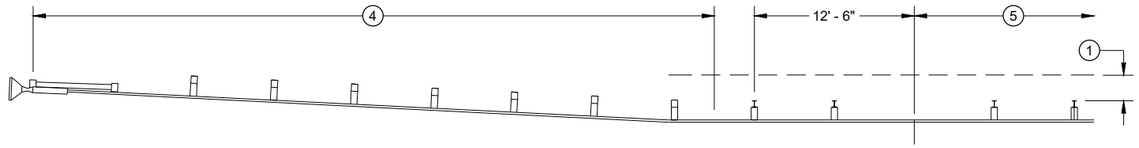
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

6

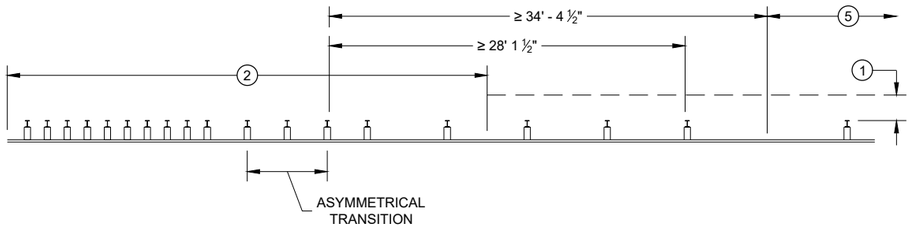
SDD 14B42 - 06c



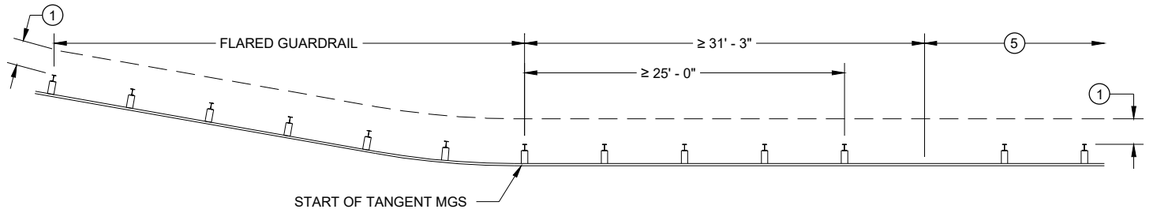
MISSING POST IN NORMAL BEAM GUARD RUN



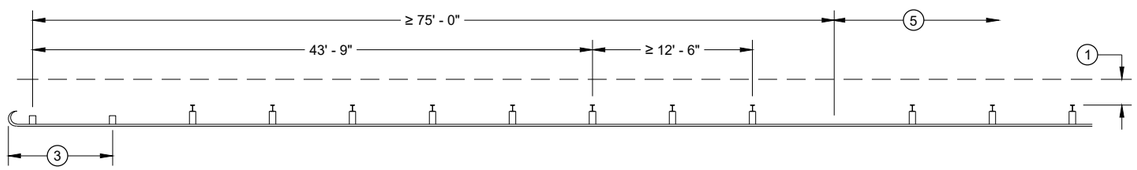
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



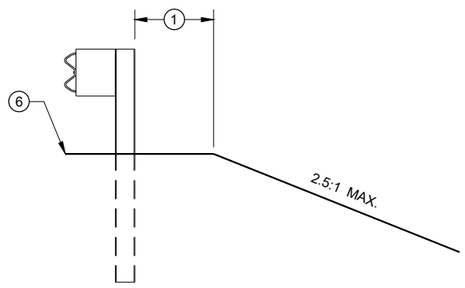
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

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

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

SDD 14B42 - 06d

SDD 14B42 - 06d

GENERAL NOTES

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

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

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

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

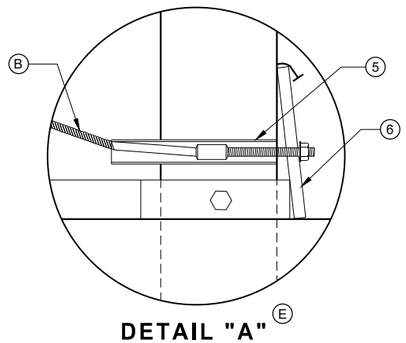
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

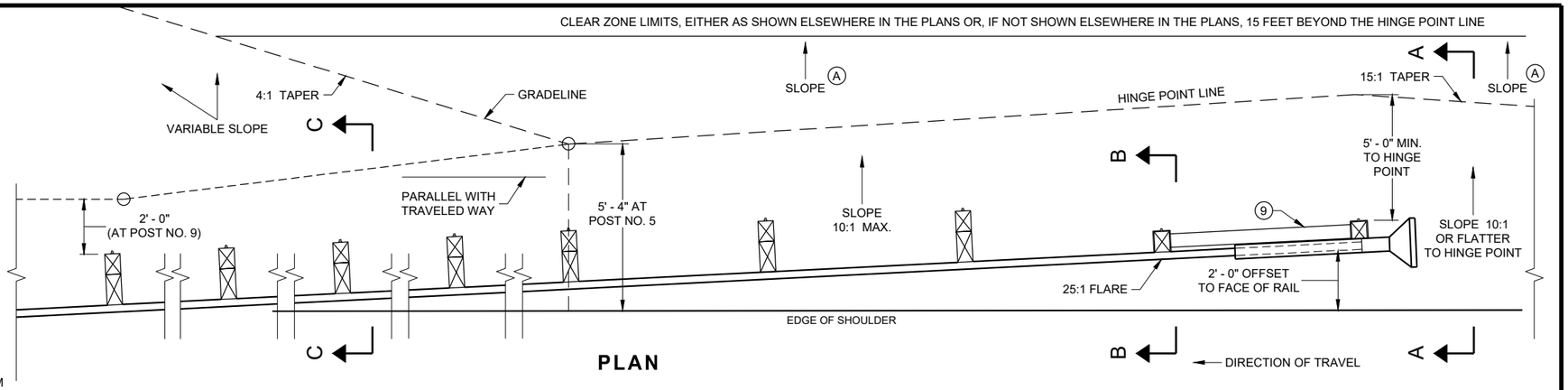
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

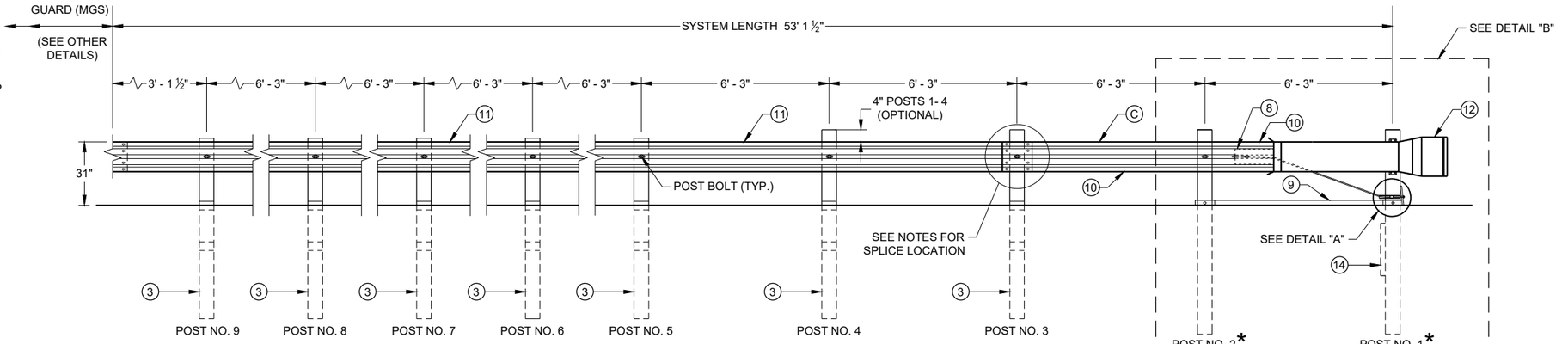
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



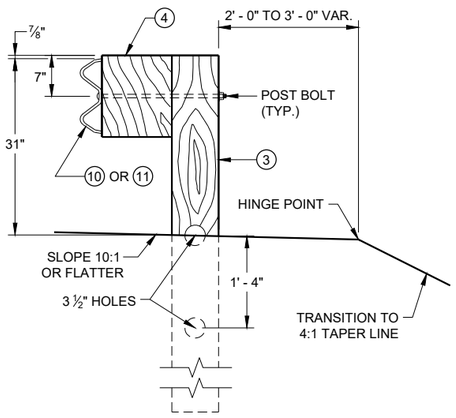
DETAIL "A" (E)



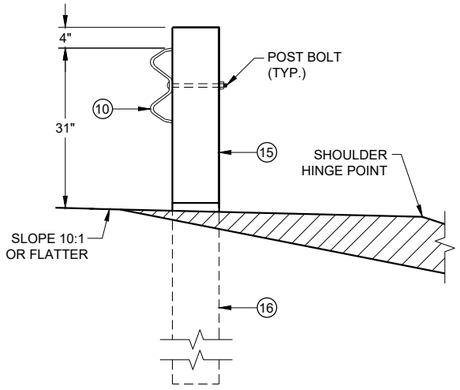
PLAN



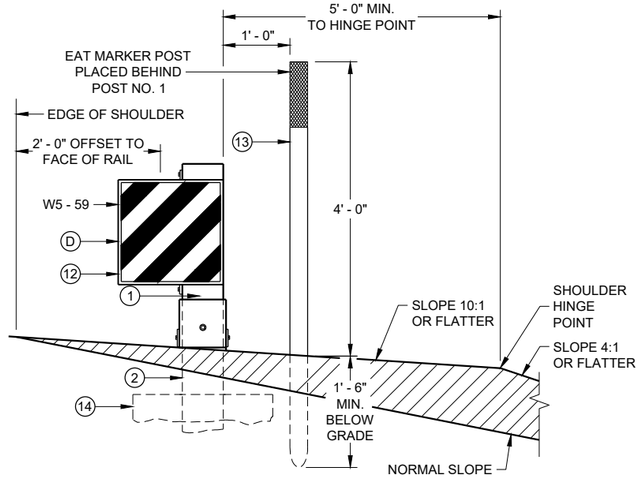
ELEVATION



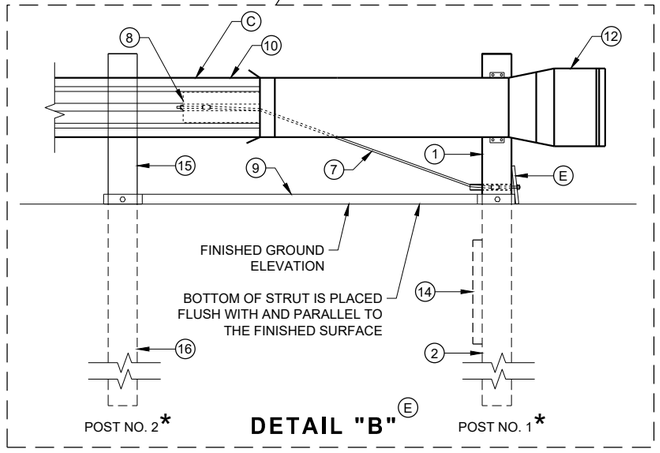
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



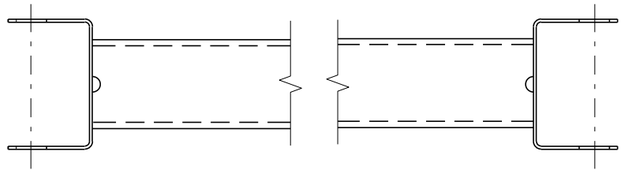
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

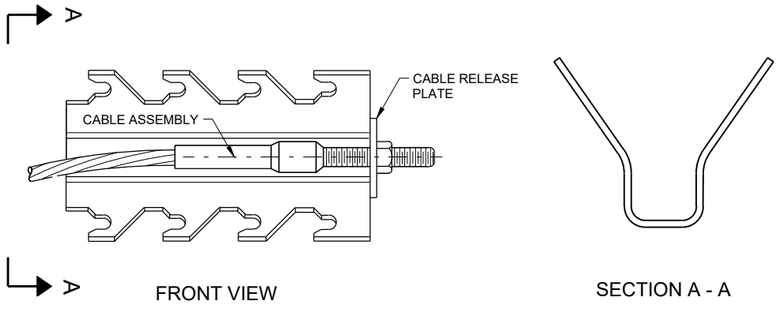
SDD 14B44 - 04a



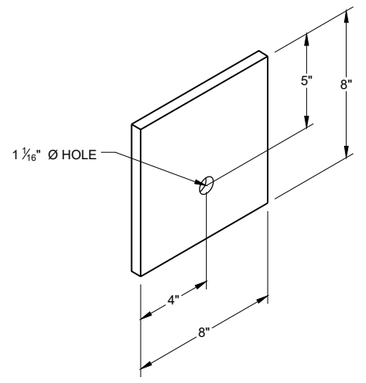
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑨ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

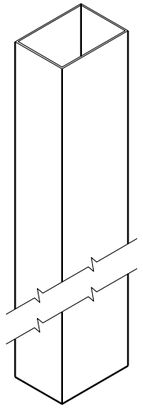
6

SDD 14B44 - 04b

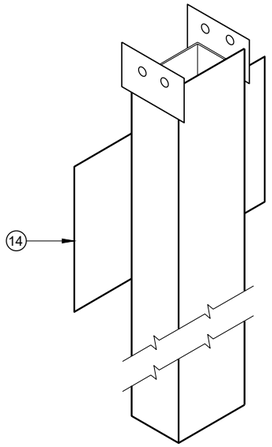
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

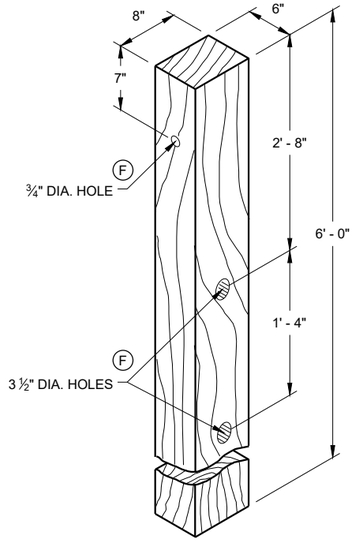
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



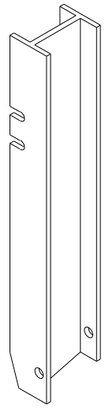
UPPER POST NO. 1 (1) (E)



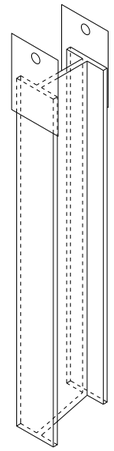
LOWER POST NO. 1 (2) (E)



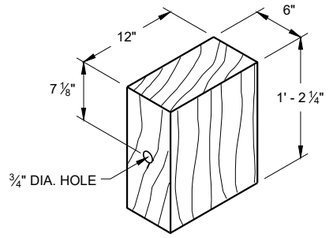
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



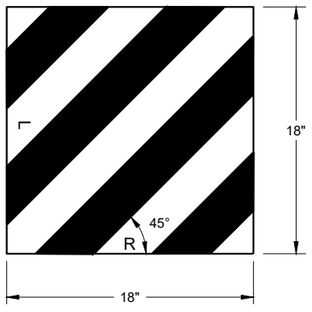
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

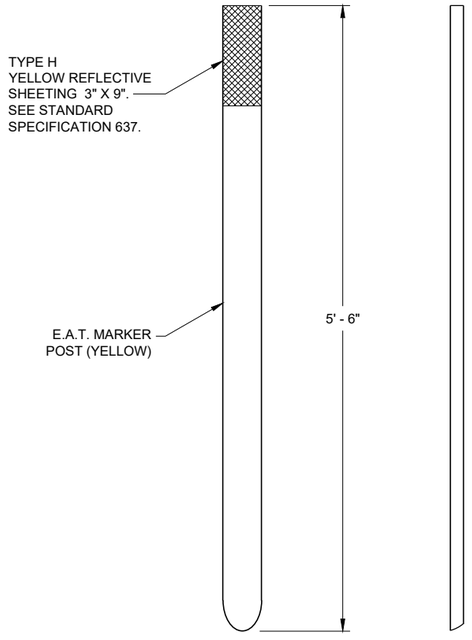


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



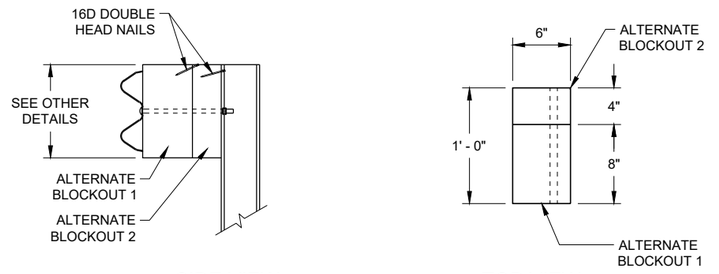
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

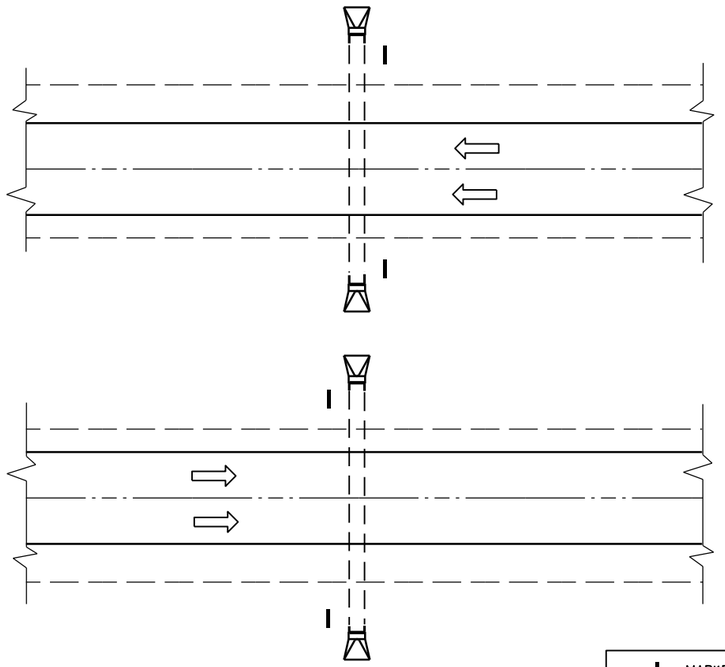
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

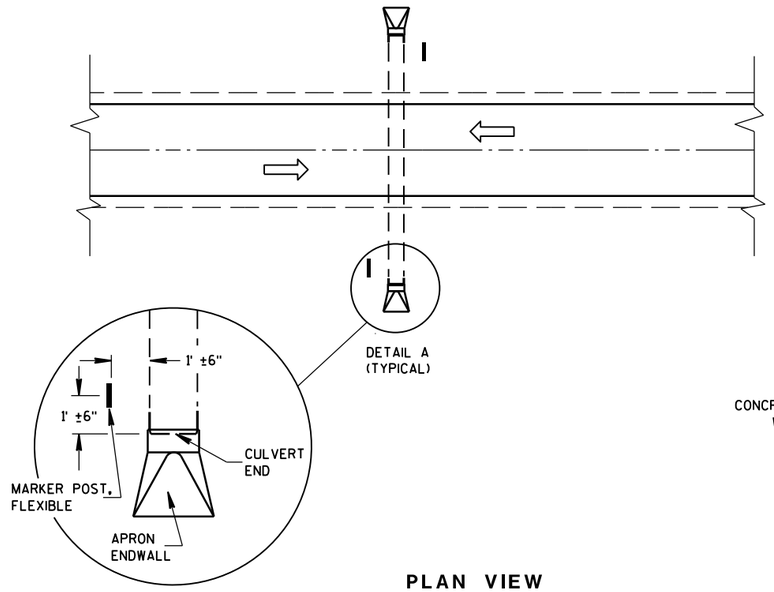
6

SDD 14B44 - 04c



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

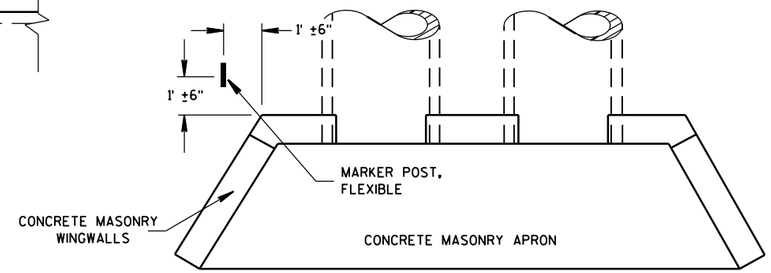
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

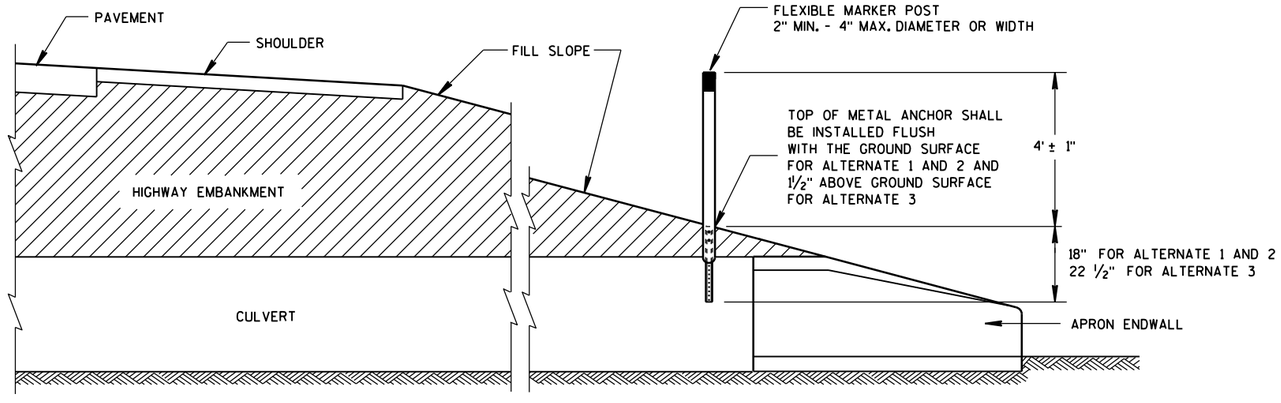
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

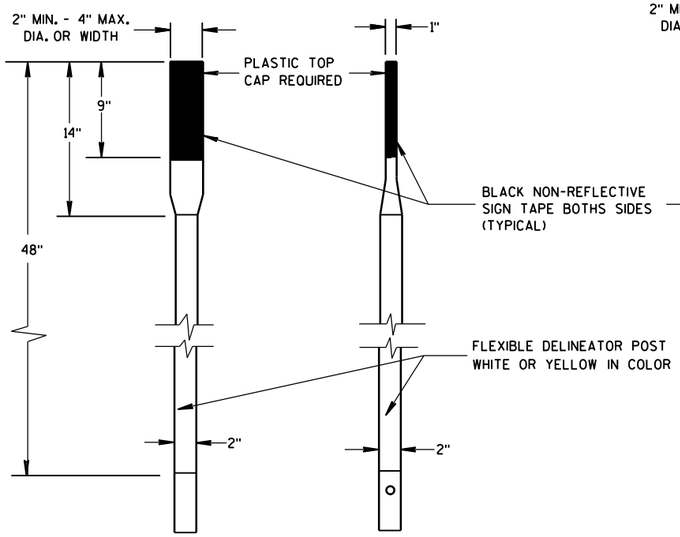
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

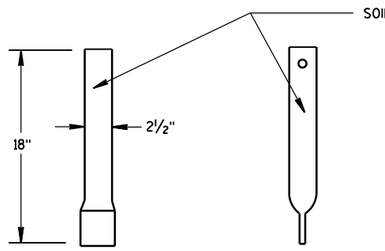
6

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

6

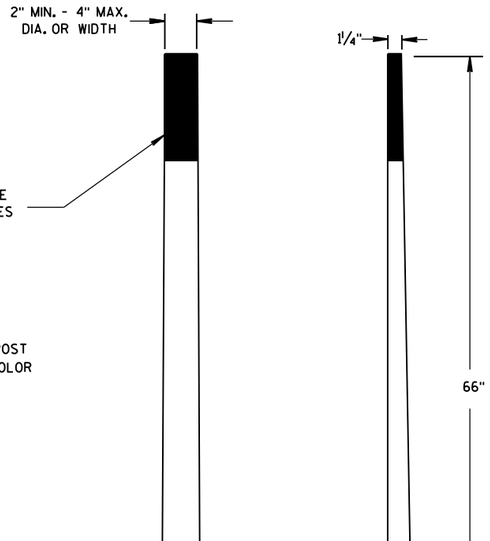
S.D.D. 15 A 3-2a





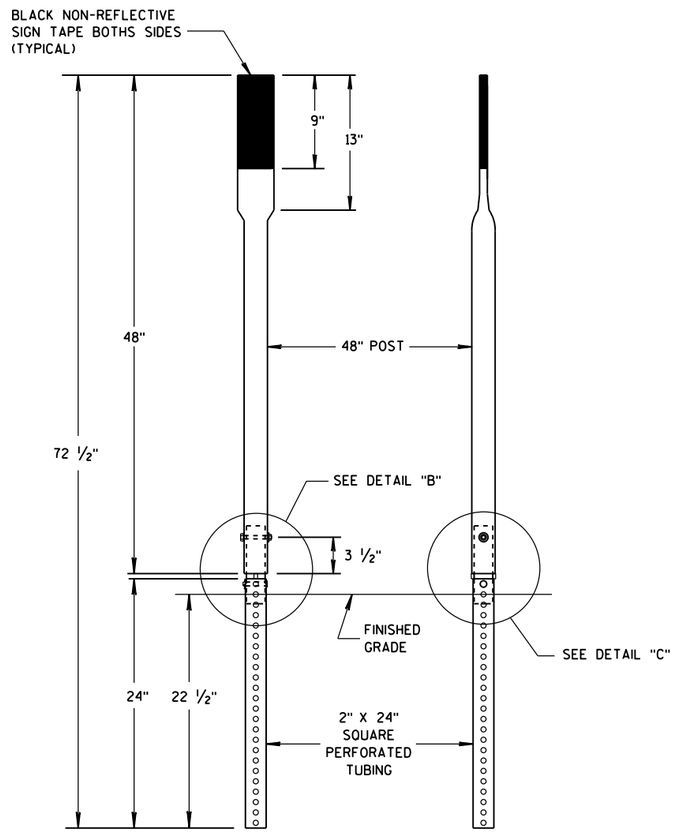
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

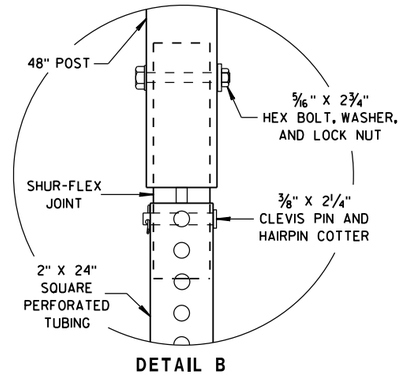
ALTERNATE 2



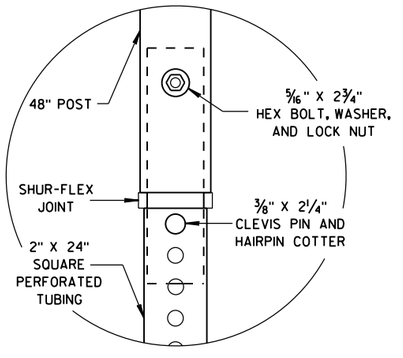
FRONT VIEW SIDE VIEW

ALTERNATE 3

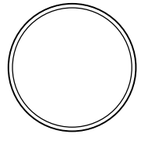
FLEXIBLE MARKER POSTS



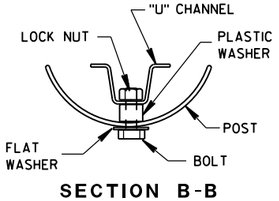
DETAIL B



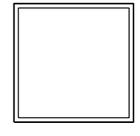
DETAIL C



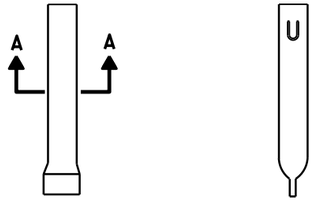
SECTION A-A



SECTION B-B

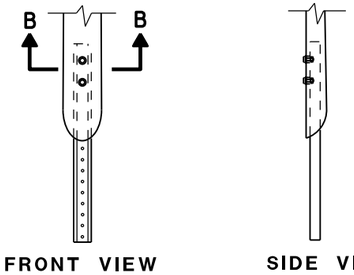


SECTION C-C



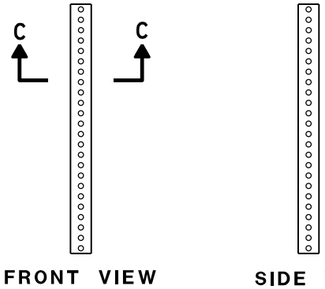
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

ALTERNATE 2



FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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

6

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

GENERAL NOTES

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

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

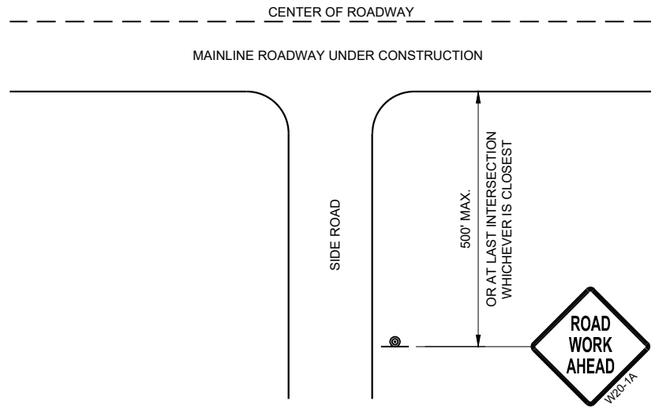
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

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

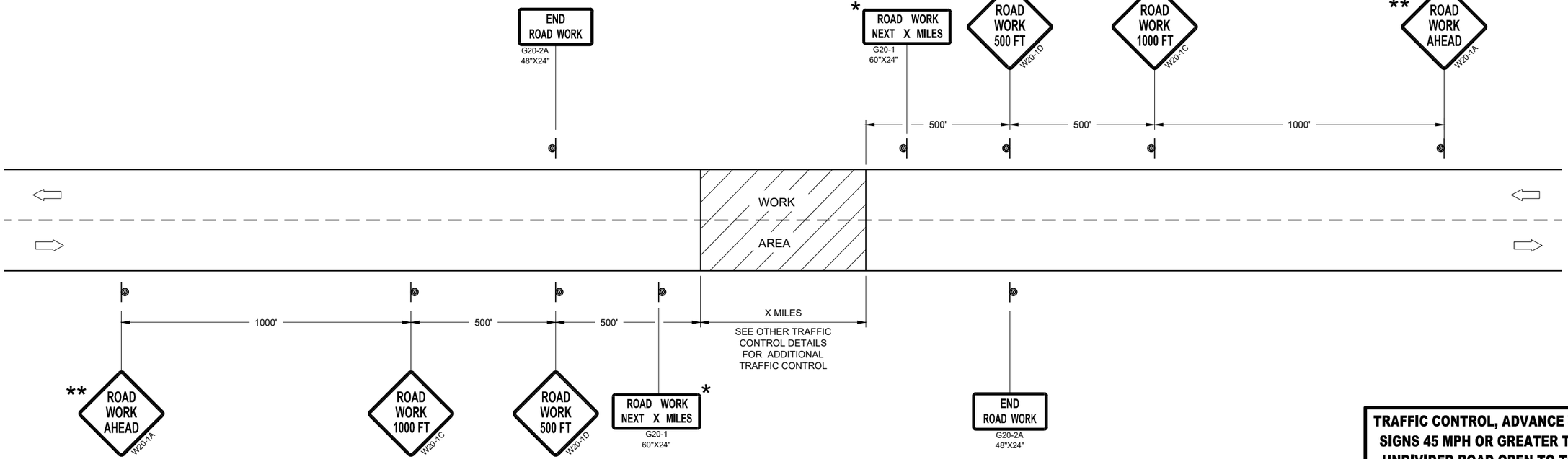
** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

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



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

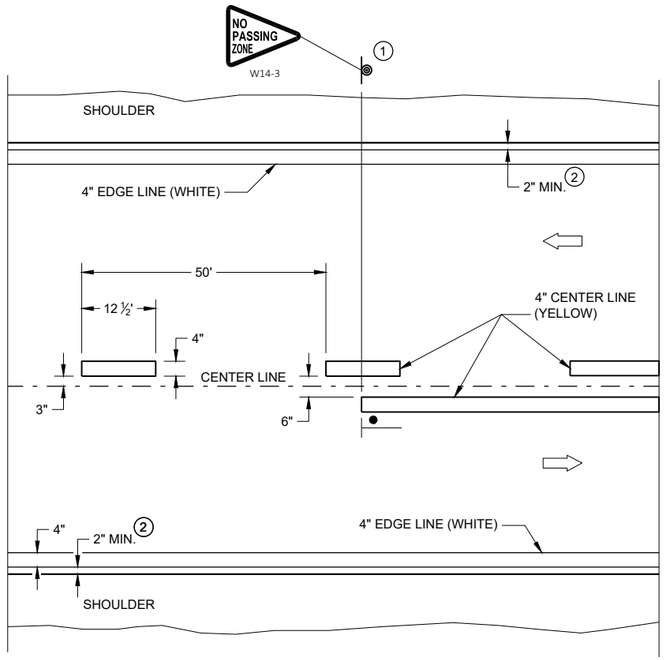
APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

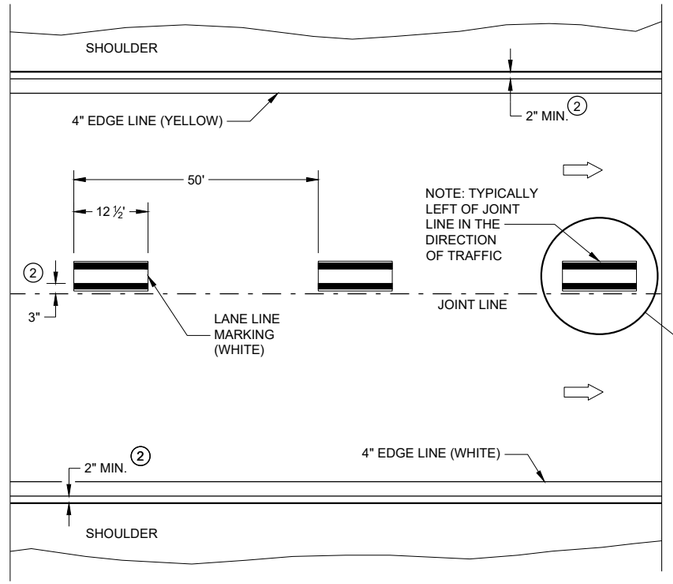
FHWA

6

SDD 15C04 - 05

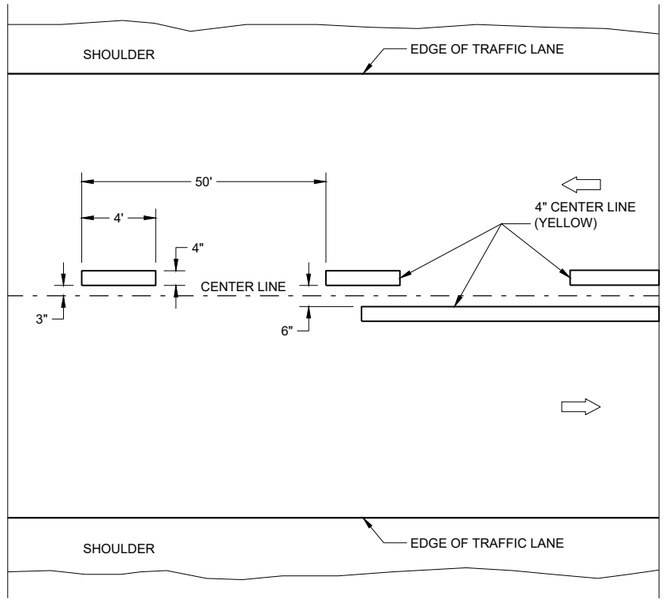


TWO WAY TRAFFIC

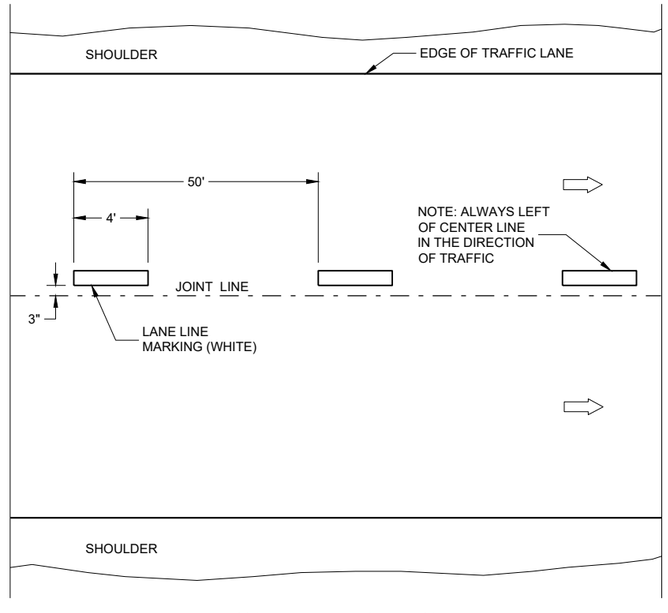


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

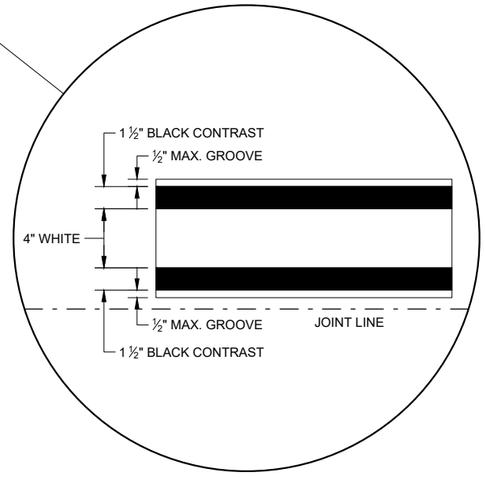
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITH 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

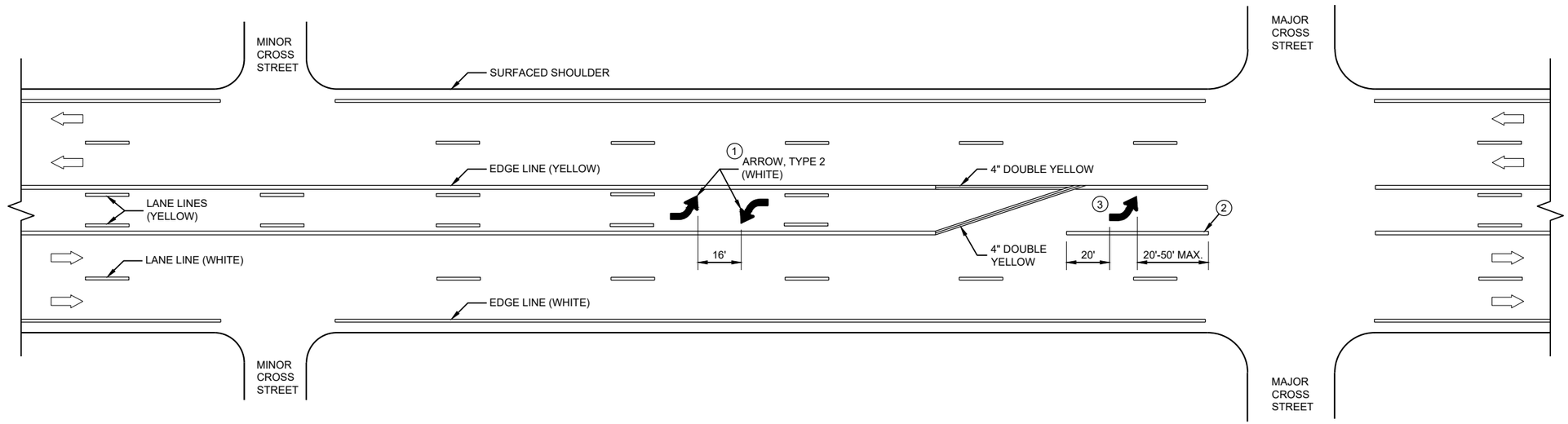
SDD 15C08 - 20a

SDD 15C08 - 20a

GENERAL NOTES

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

DIRECTION OF TRAFFIC



TWO WAY LEFT TURN LANE

6

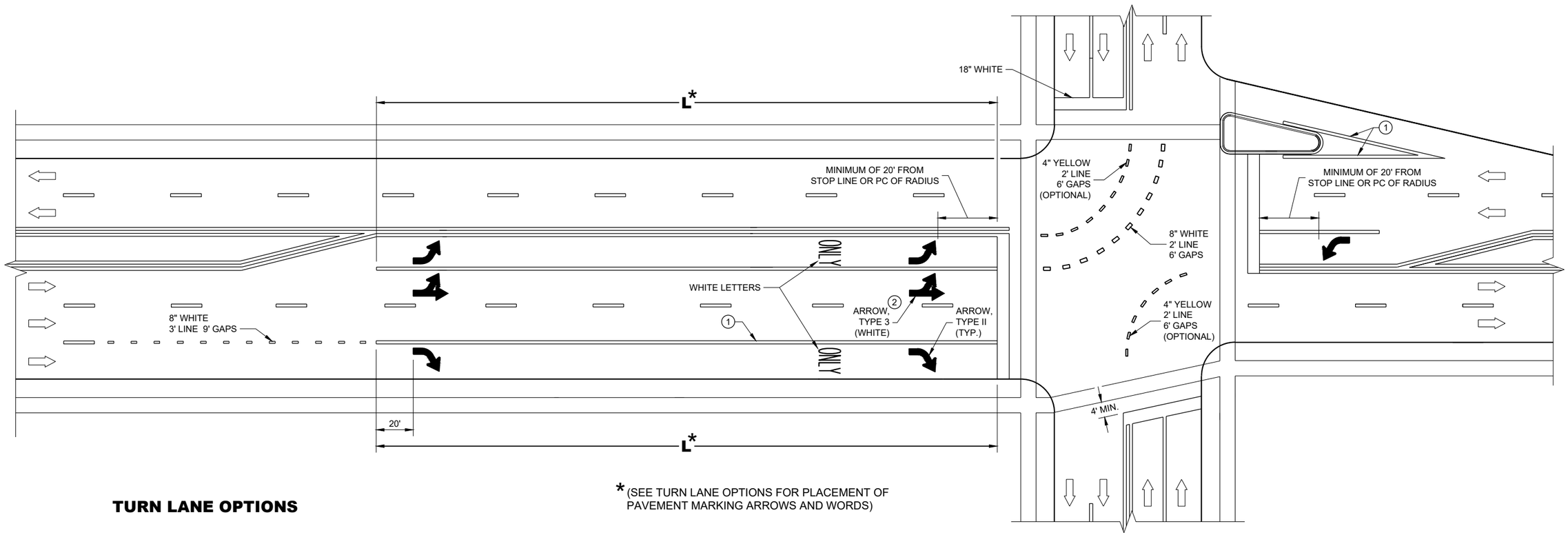
SDD 15C08 - 20b

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

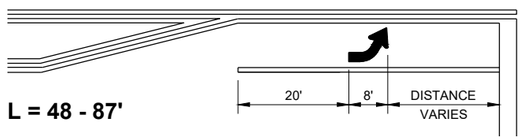
SDD 15C08 - 20b



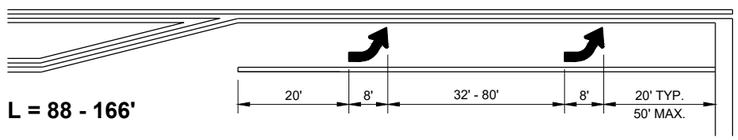
* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

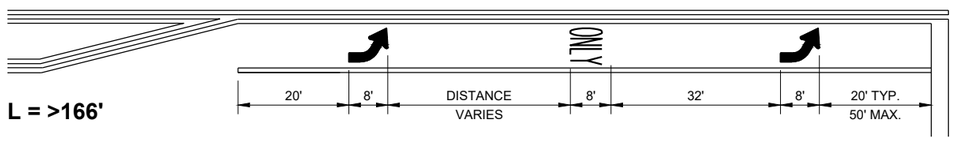
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

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

DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

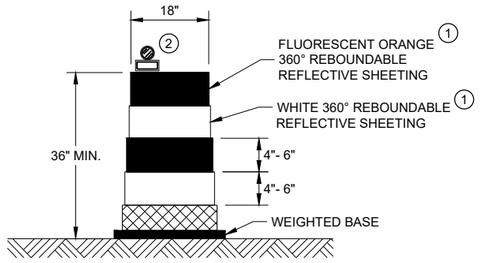
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

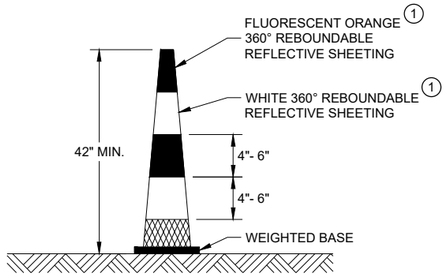
SDD 15C08 - 20c

GENERAL NOTES

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

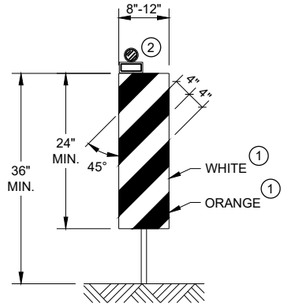


DRUM



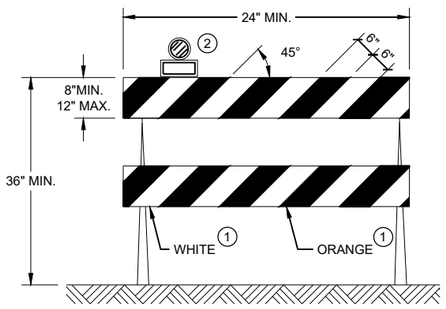
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



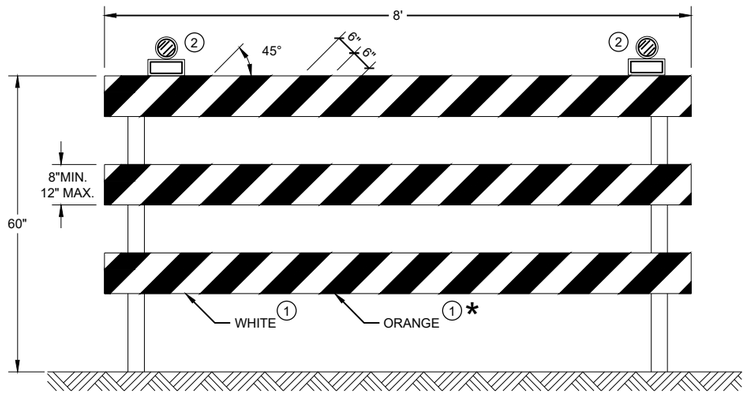
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

SDD 15C11 - 08b

6

SDD 15C11 - 08b

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

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

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

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

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

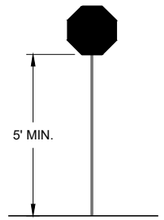
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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



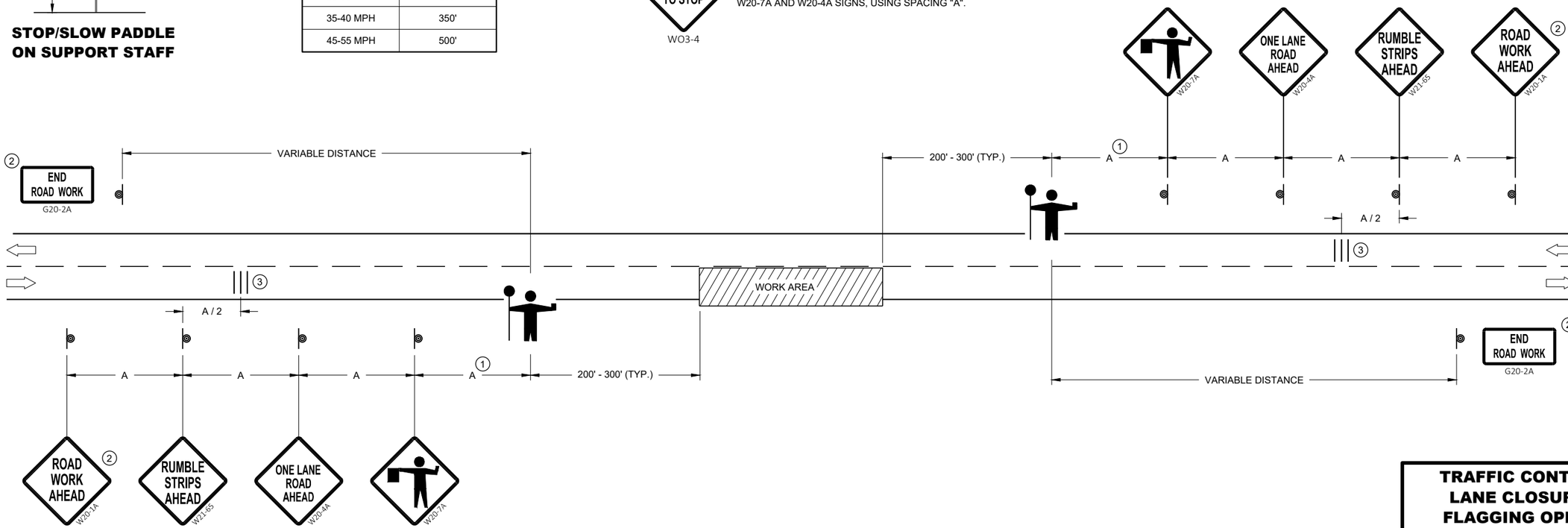
STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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

WO3-4

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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15C12 - 07

SDD 15C12 - 07

LEGEND

V1 LEAD VEHICLE

V2 MARKING VEHICLE

V3 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

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

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

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

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

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

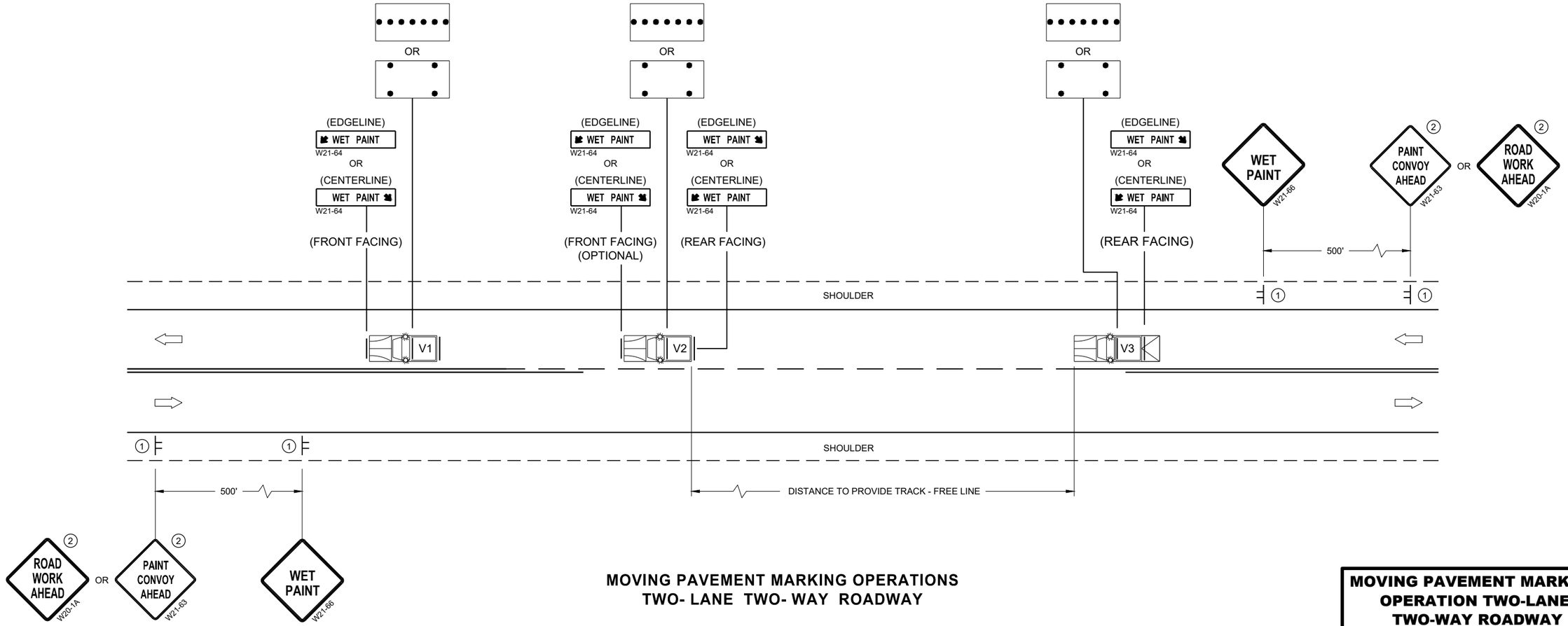
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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

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

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

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



MOVING PAVEMENT MARKING OPERATIONS TWO- LANE TWO- WAY ROADWAY

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

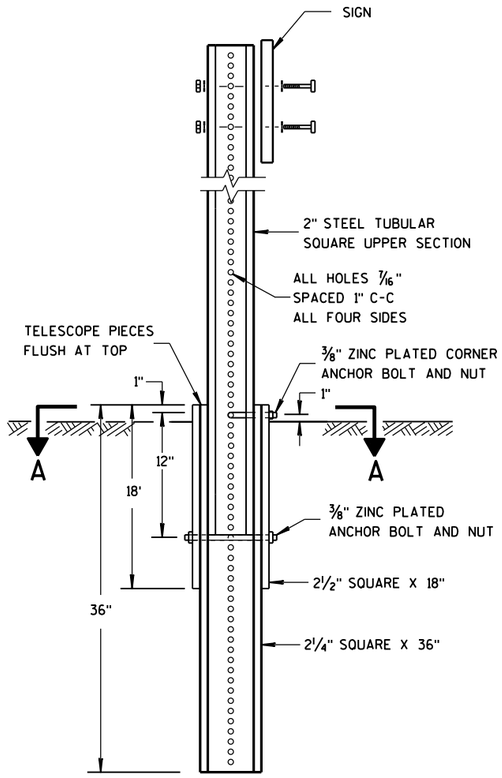
APPROVED
November 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

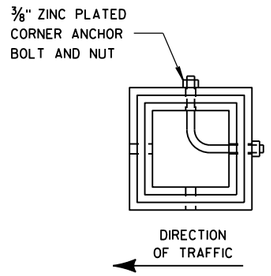
FHWA

SDD 15C19 - 06a

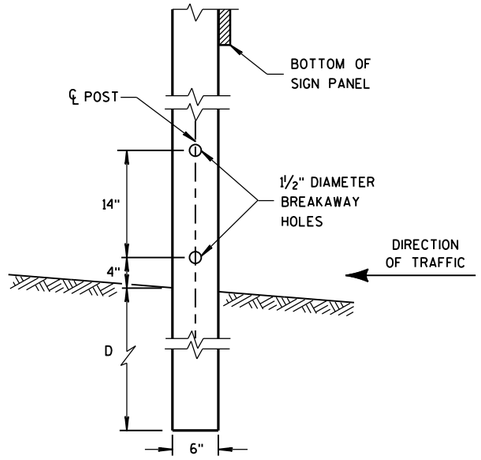
SDD 15C19 - 06a



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



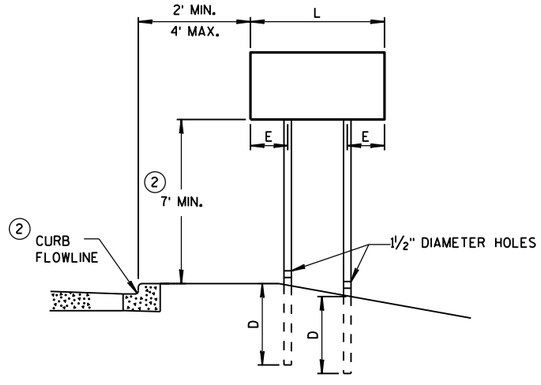
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

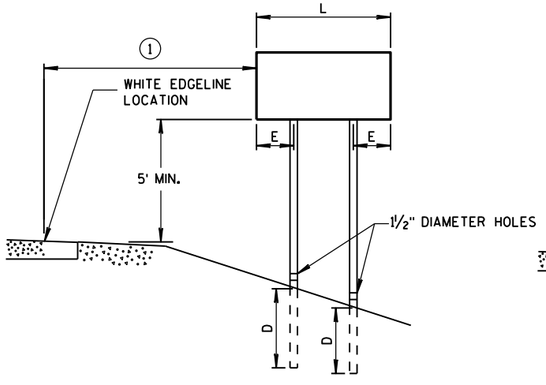
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

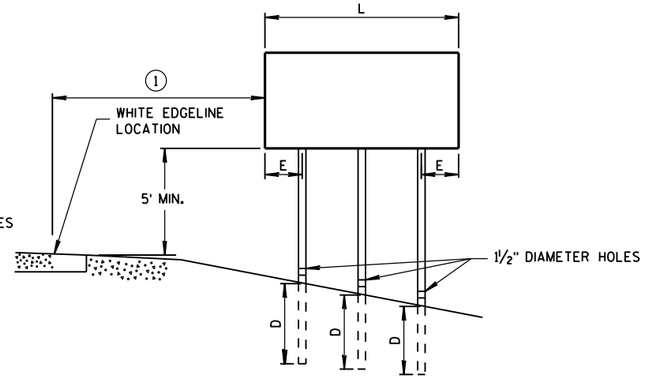
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

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



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

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

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

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

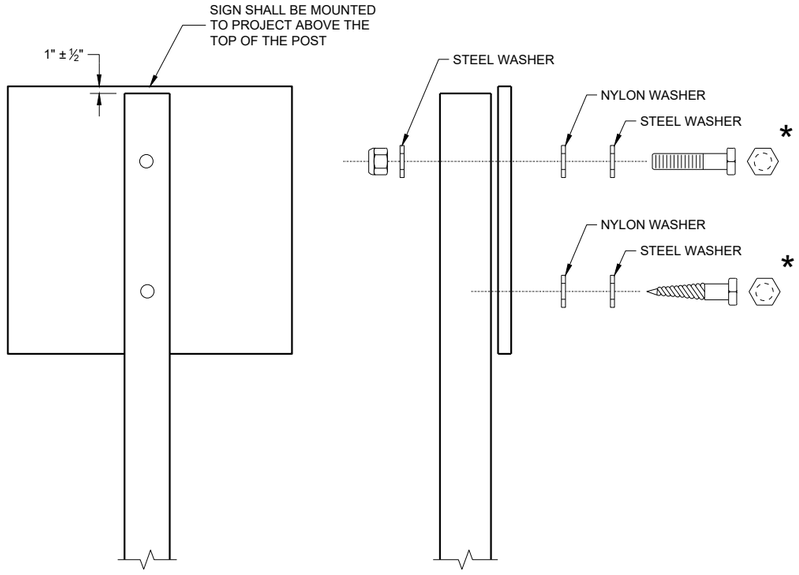
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

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



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

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

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

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

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

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

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

6

6

SDD 15D38 - 02b

SDD15D38 - 02b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

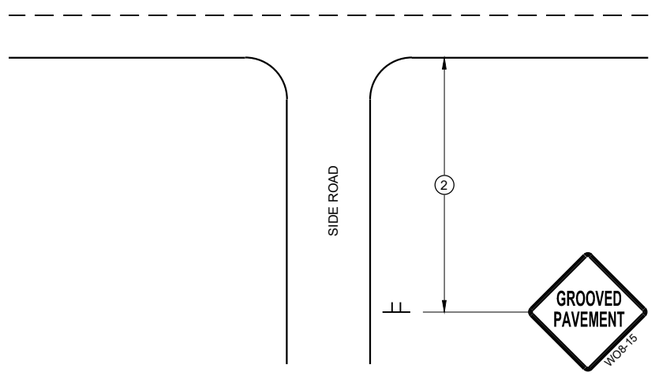
(1) PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

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

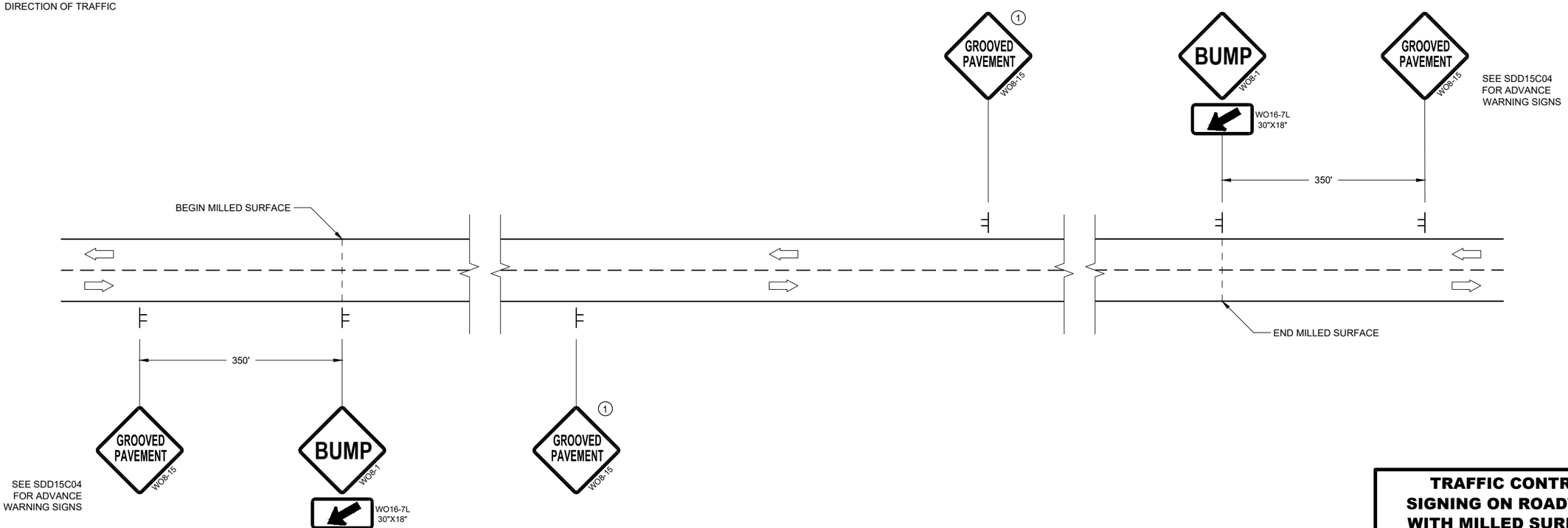
LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

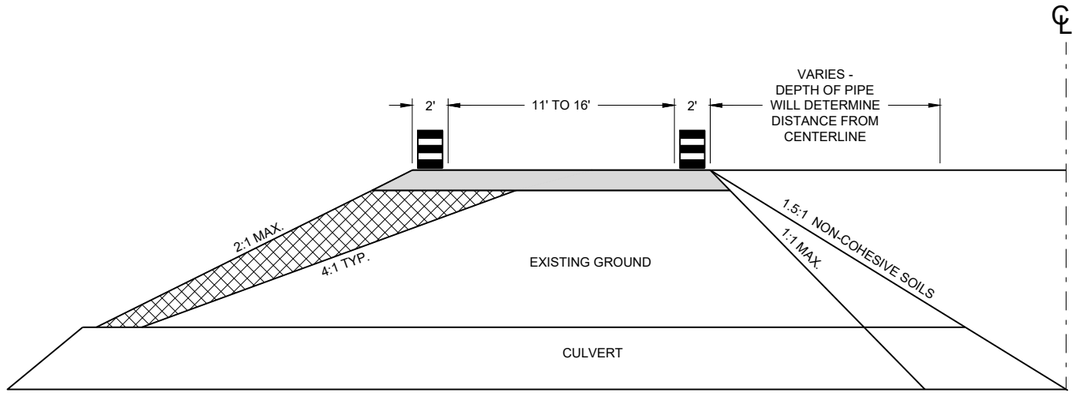
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6
SDD 15D44 - 02



CROSS SECTION

GENERAL NOTES

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

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

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

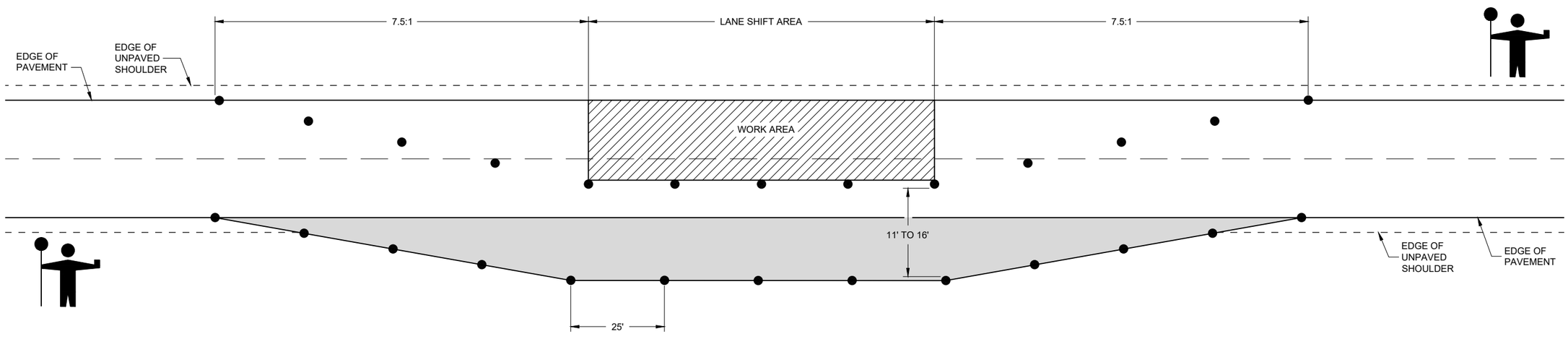
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

LEGEND

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



LANE SHIFT IN FLAGGING OPERATION

TRAFFIC CONTROL, TEMPORARY LANE SHIFT DURING CULVERT WORK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

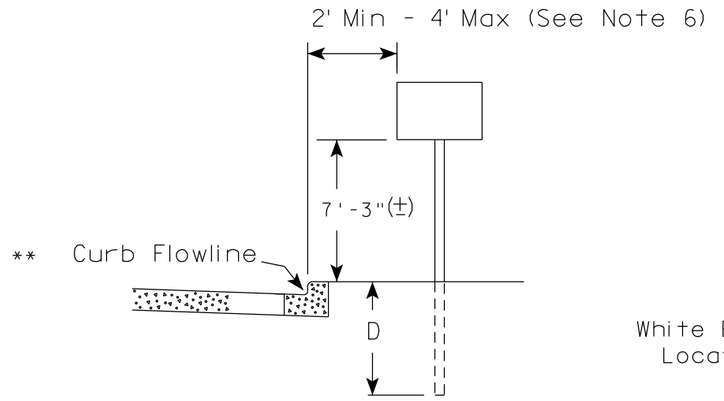
6

SDD 15D48 - 01

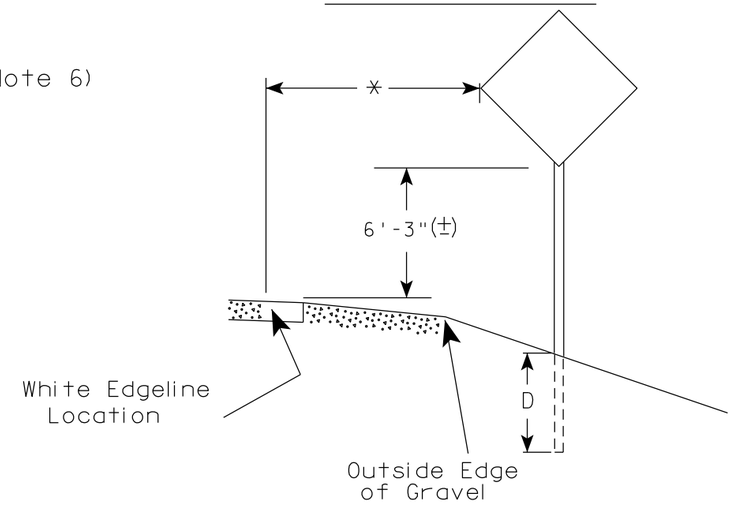
6

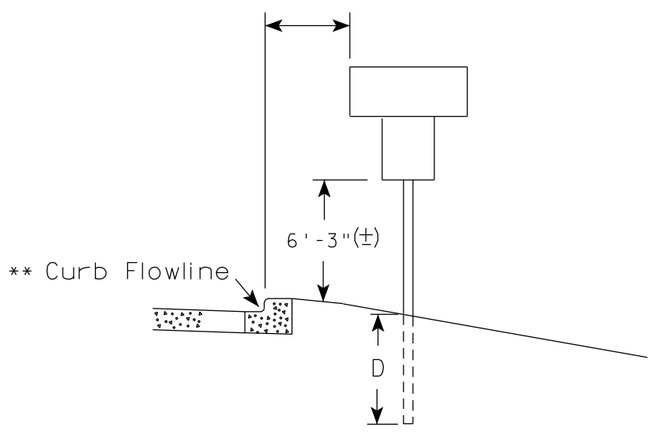
SDD 15D48 - 01

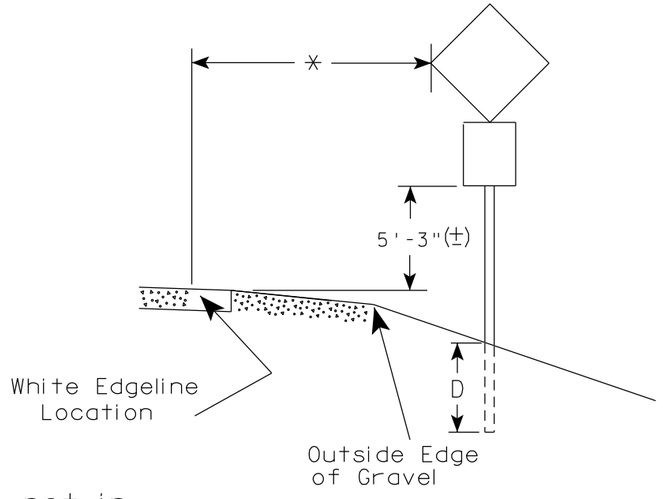
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

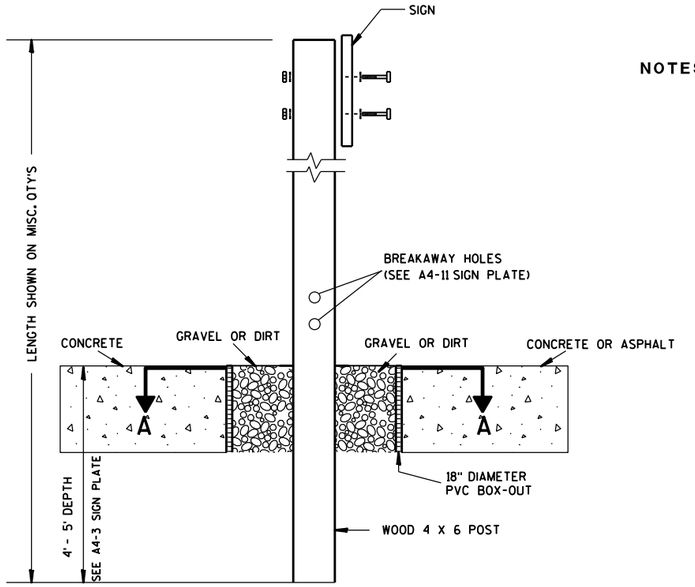
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

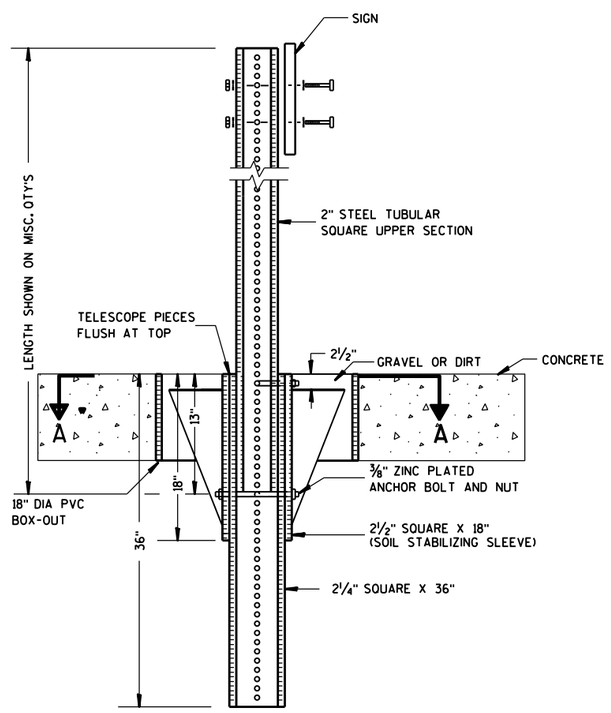
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 59	E



ELEVATION VIEW

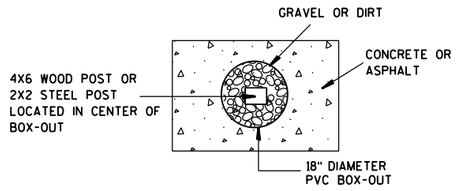
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

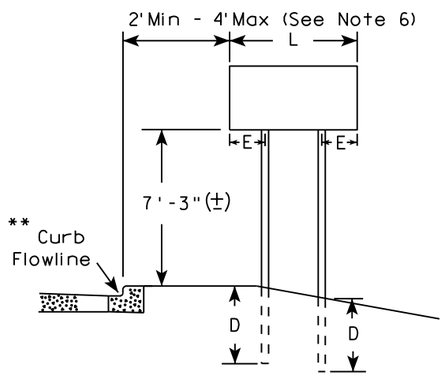
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

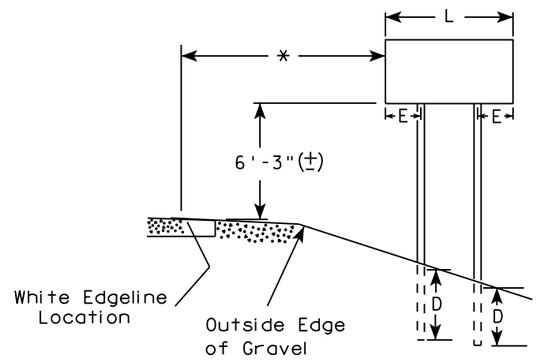
DATE 1/27/14 PLATE NO. A4-3B.1

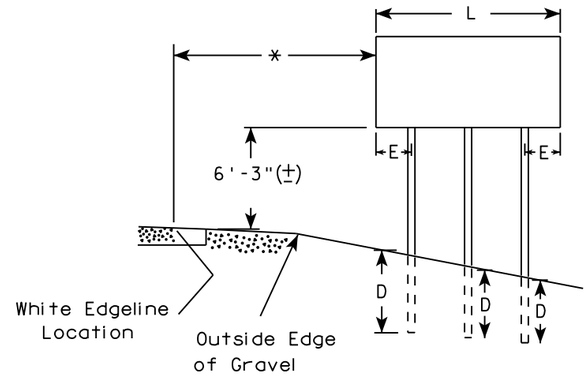
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

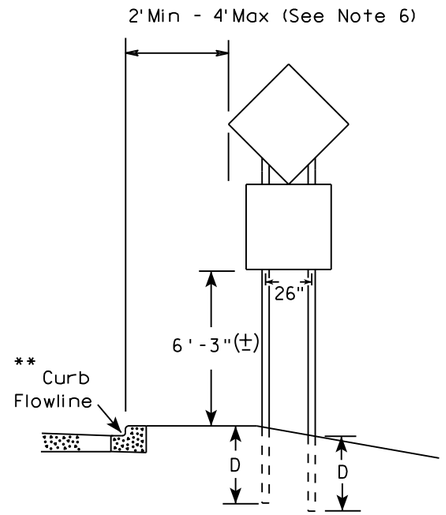
URBAN AREA



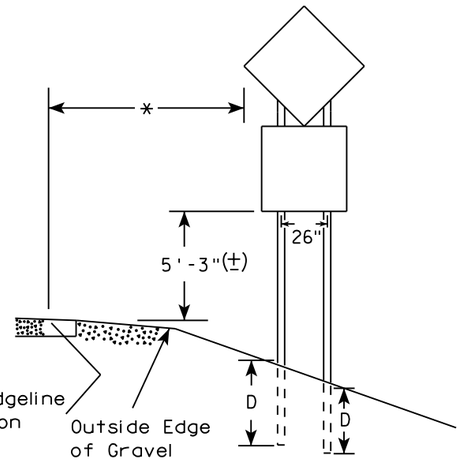
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

***

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

GENERAL NOTES

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

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

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

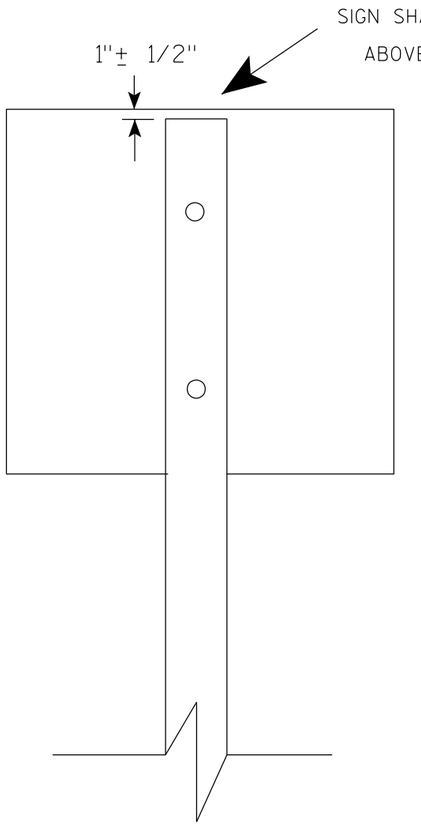
APPROVED Matthew R Rauch
For State Traffic Engineer

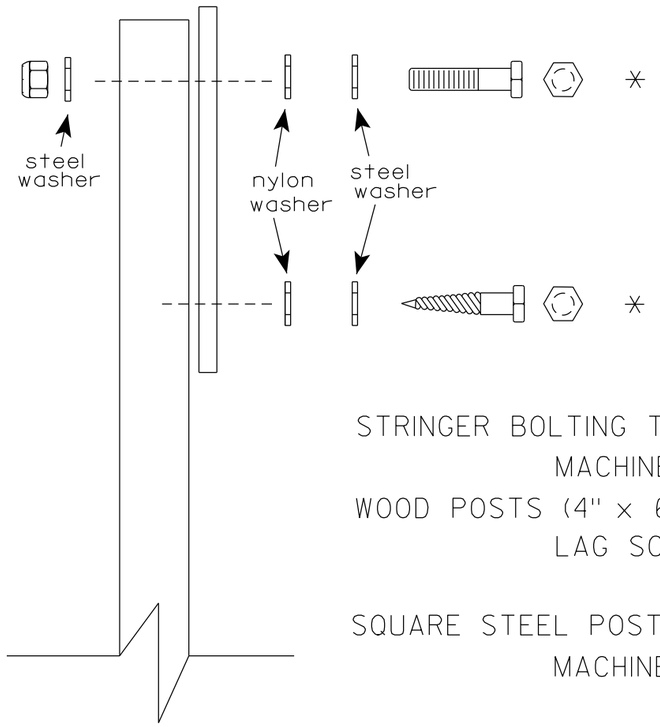
DATE 8/21/17 PLATE NO. A4-4.15

7

7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 61 | E





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

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

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

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

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

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

WOOD POSTS (4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

ATTACHMENT OF SIGNS TO POSTS

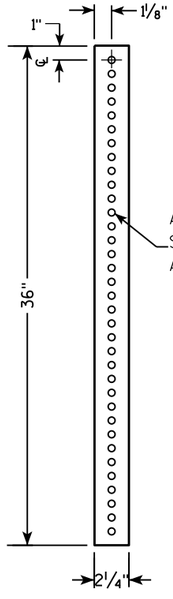
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

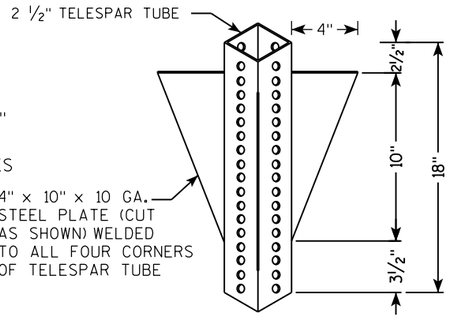
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

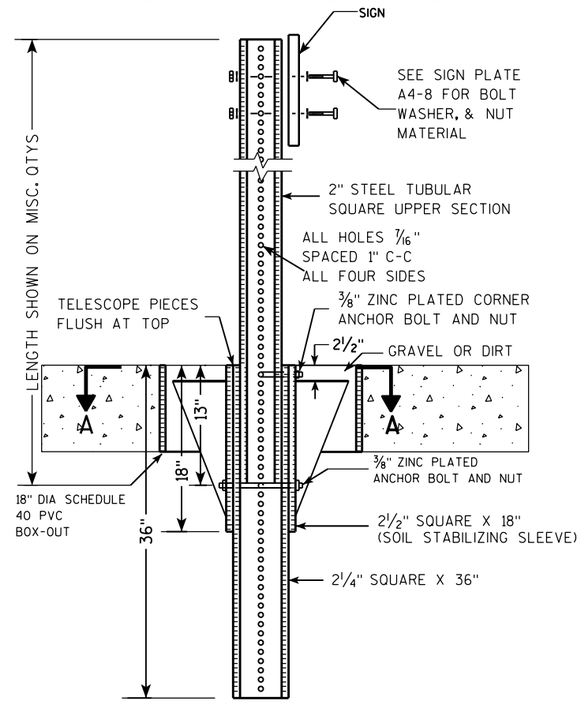
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



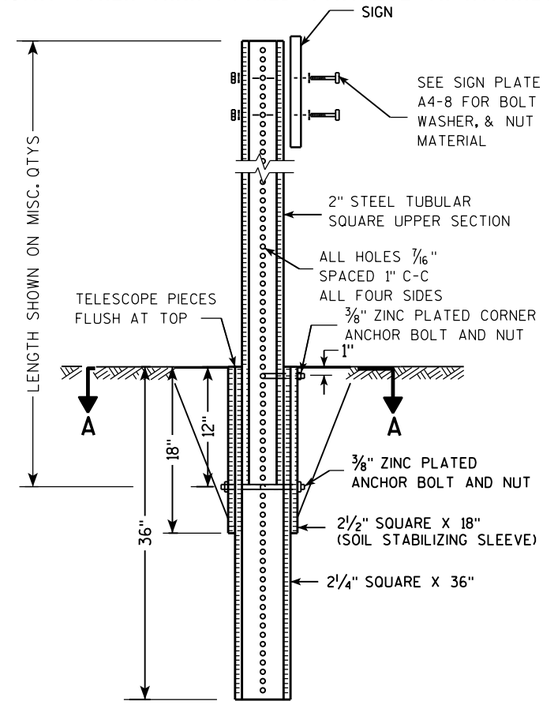
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

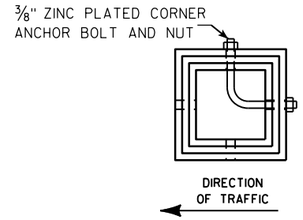


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

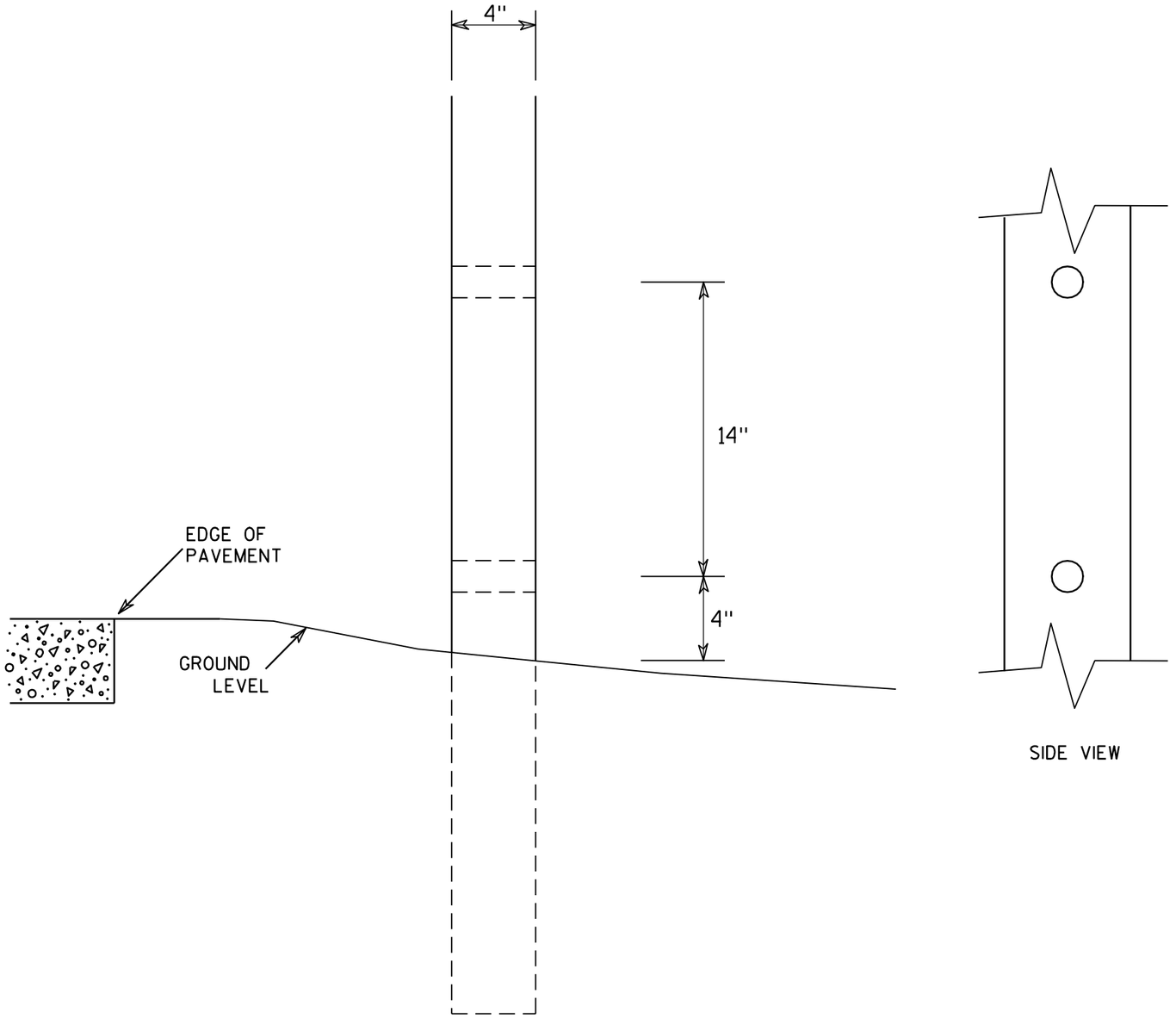
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

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



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

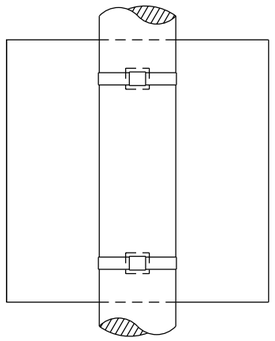
APPROVED Chester J Spang
for State Traffic Engineer

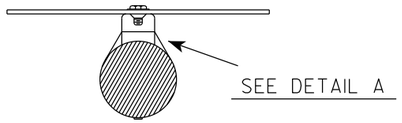
DATE 3/27/97 PLATE NO. A4-11.2

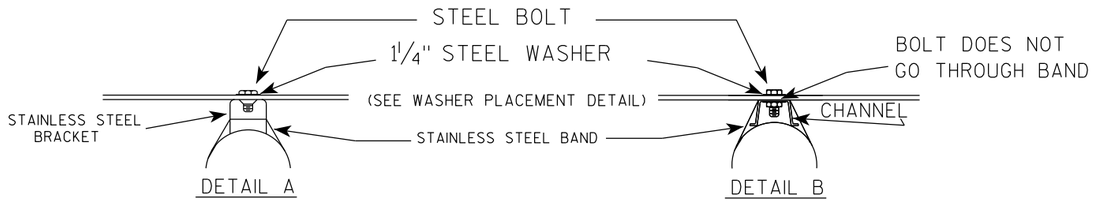
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 64	E

BANDING

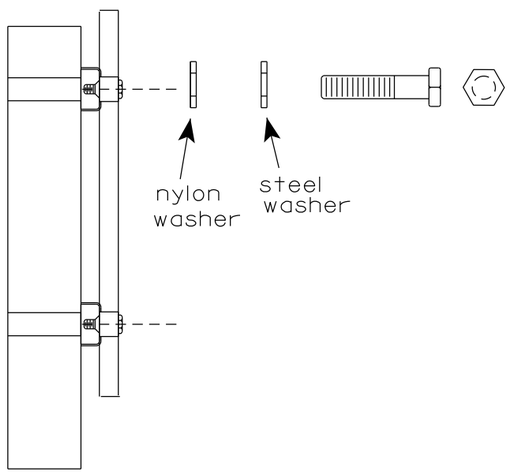
SINGLE SIGN







WASHER PLACEMENT

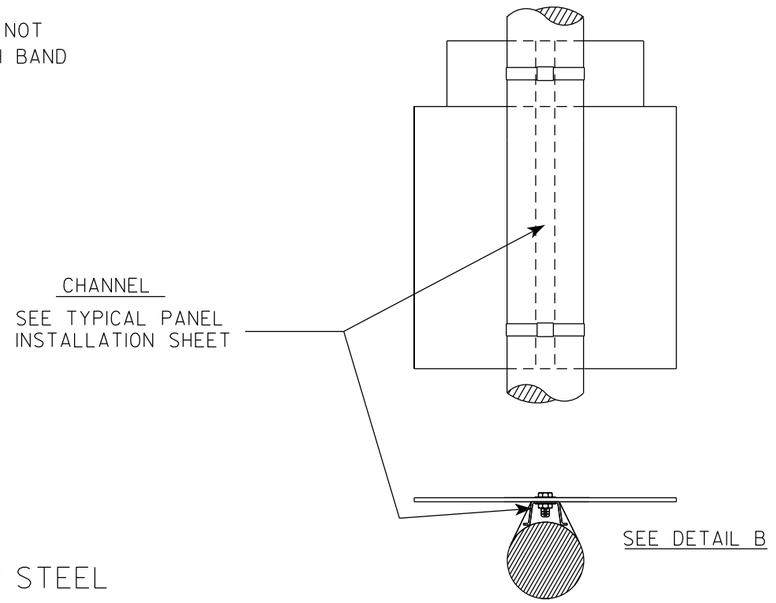


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

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

"J" ASSEMBLY



STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

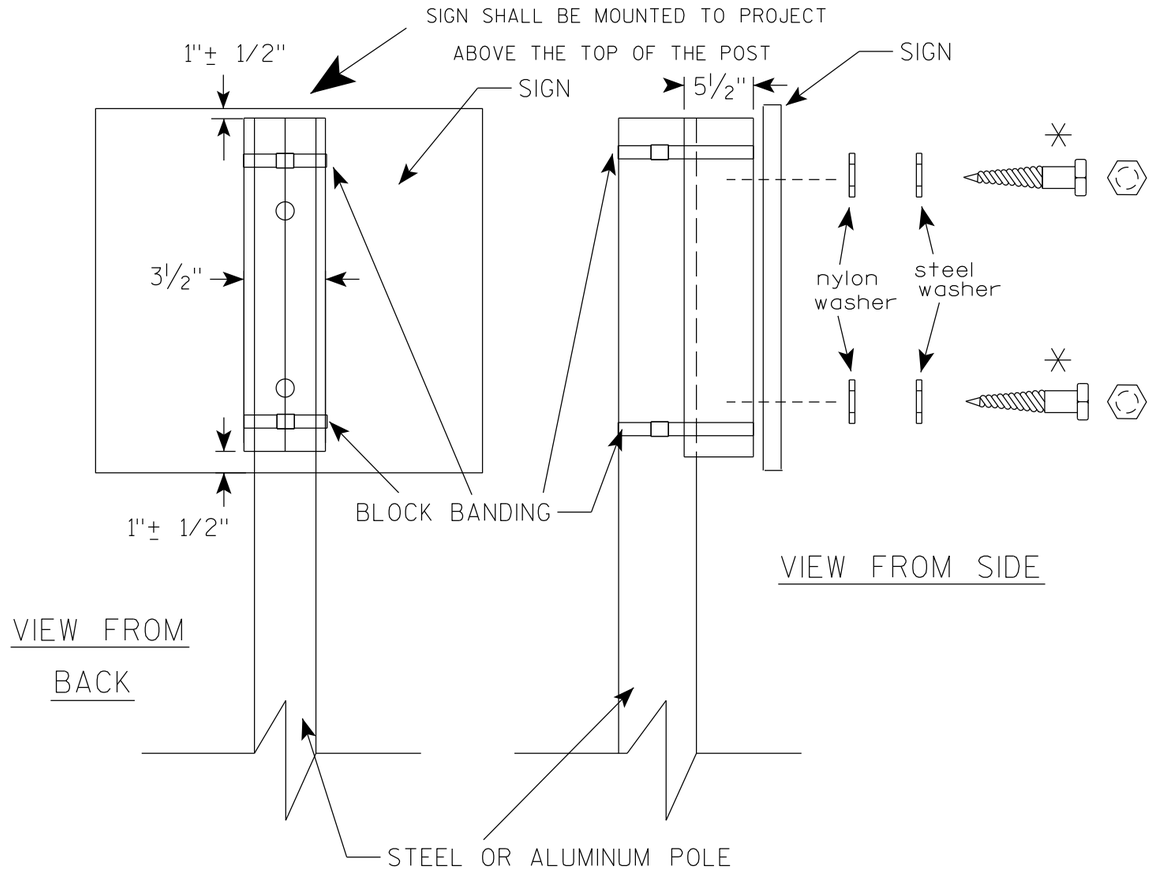
DATE 6/10/19 PLATE NO. A5-9.4

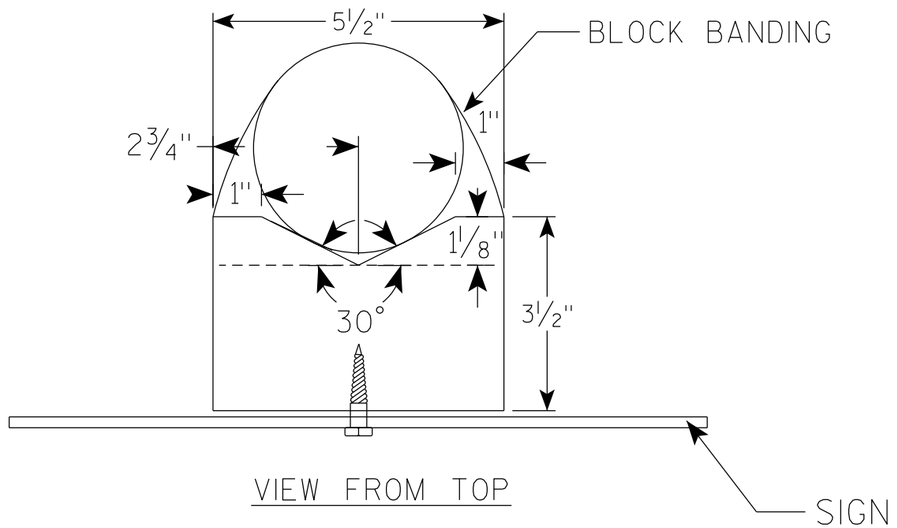
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 65	E

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

7

7





GENERAL NOTES

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

✳ LAG BOLTS SHALL BE ⅜" X 2½"

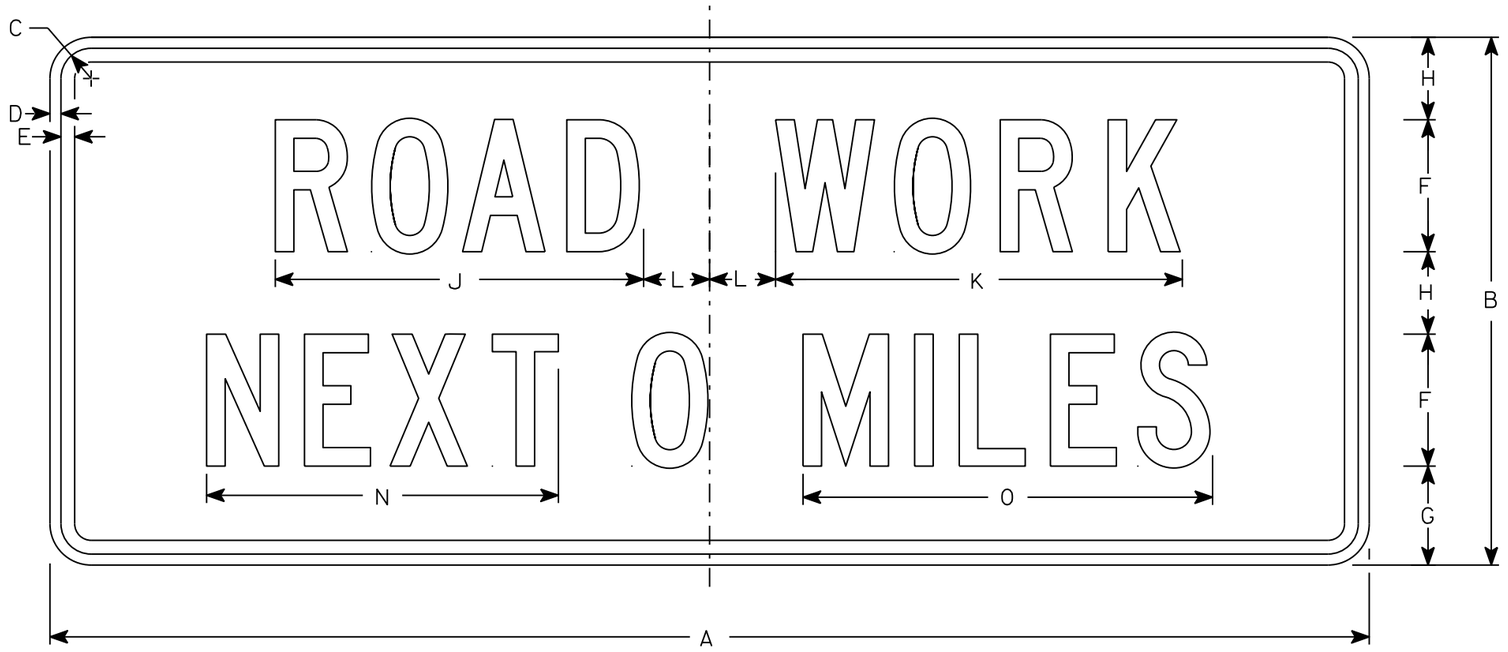
BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO:				SHEET NO: 66	E



G20-1

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Round distance to nearest whole Mile and substitute appropriate numerals and optically 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	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8												10
3																											
4	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8												10
5																											

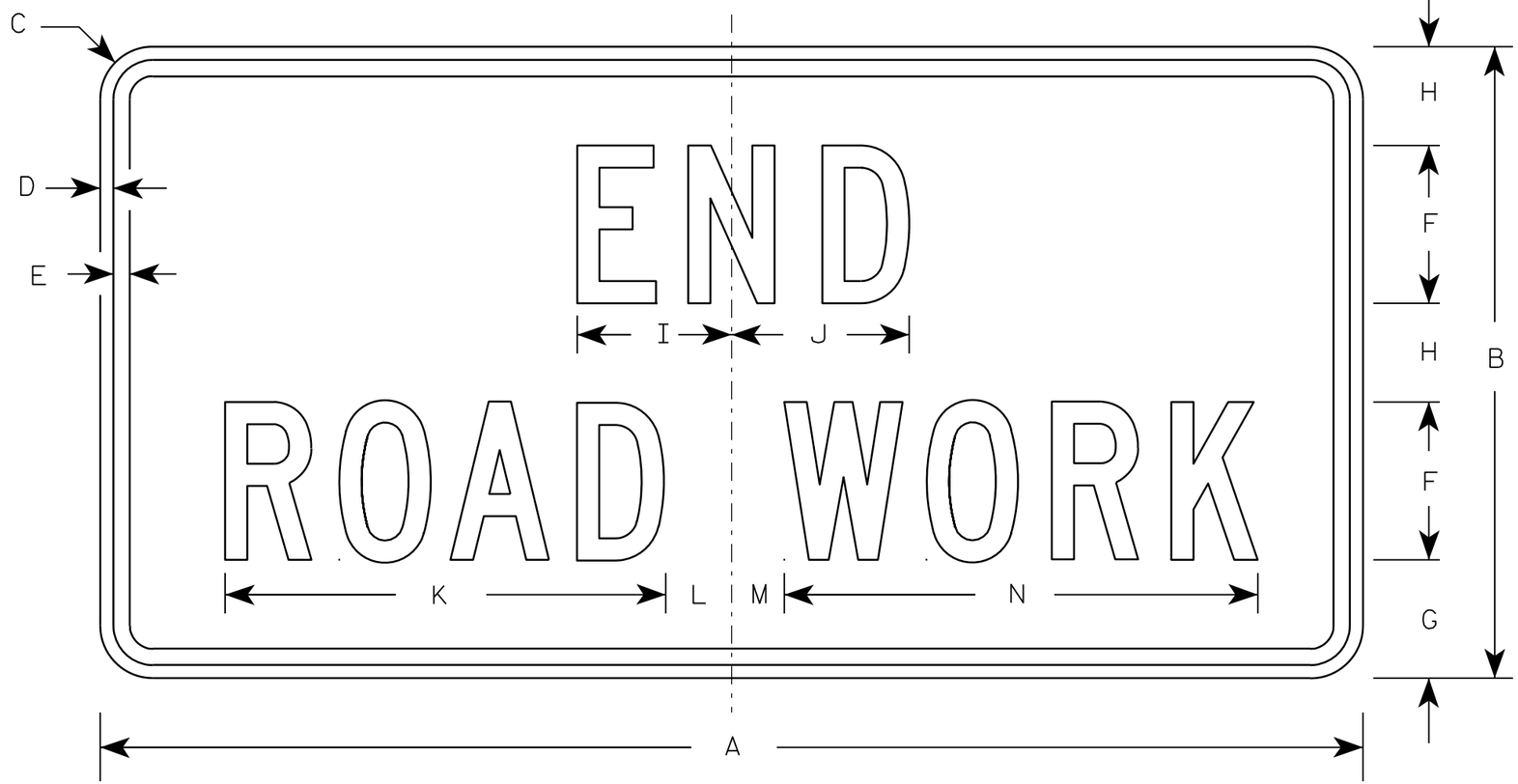
STANDARD SIGN
G20-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/14/17 PLATE NO. G20-1.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 67 | E



G20-2A

NOTES

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

Metric equivalent for this sign is:

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

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

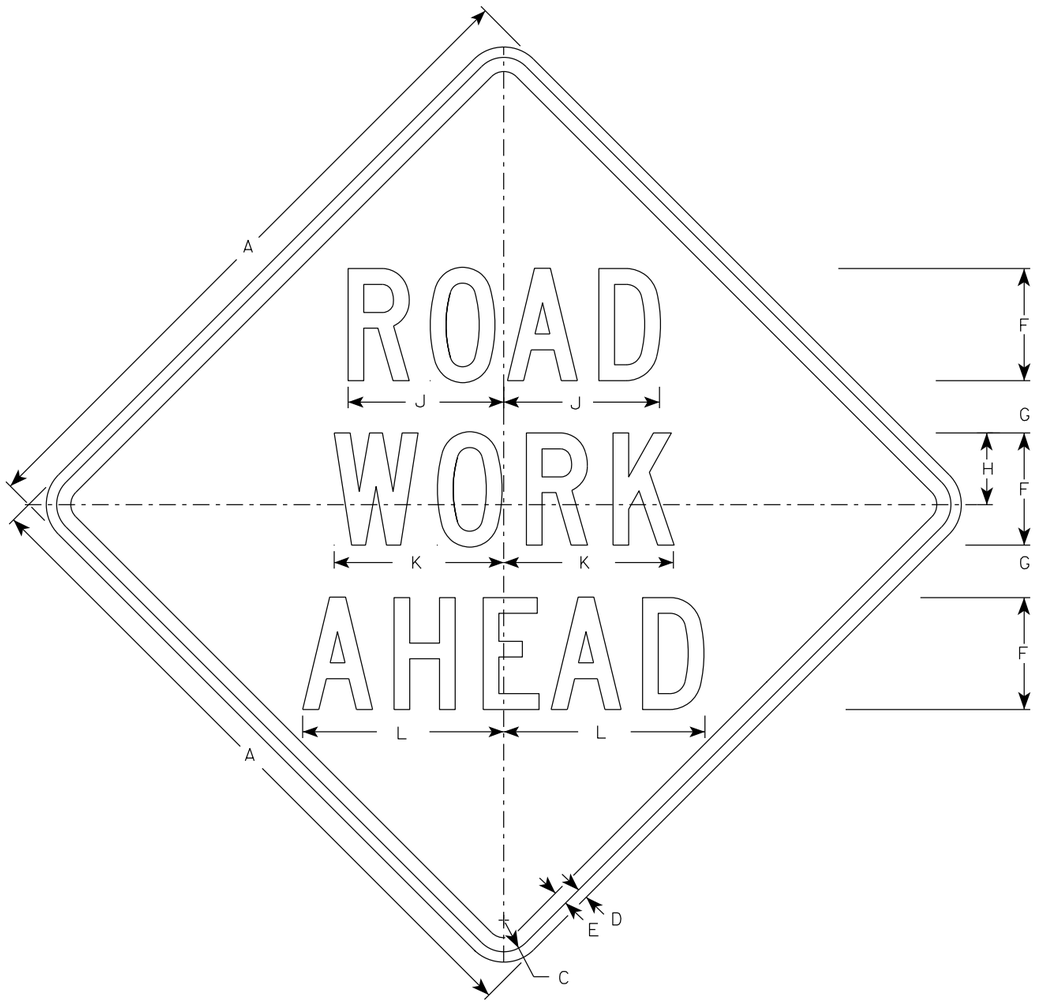
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

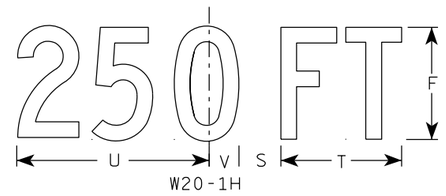
APPROVED Matthew R Rauch
for State Traffic Engineer

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

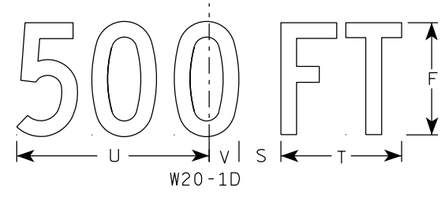
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 68	E



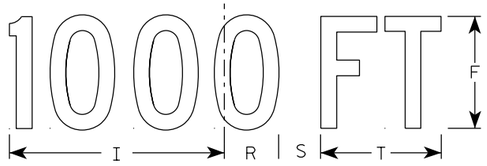
W20-1A



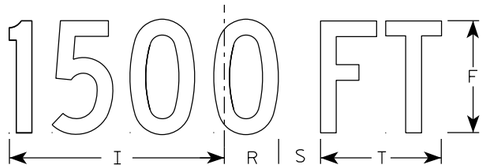
W20-1H



W20-1D



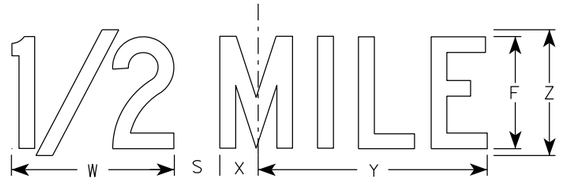
W20-1C



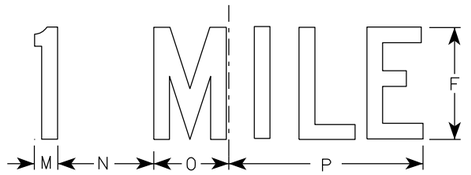
W20-1B

NOTES

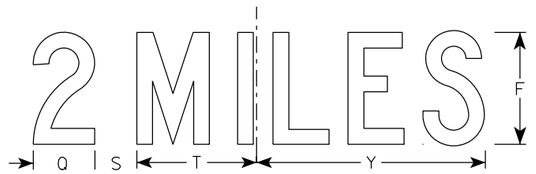
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



W20-1F



W20-1E

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

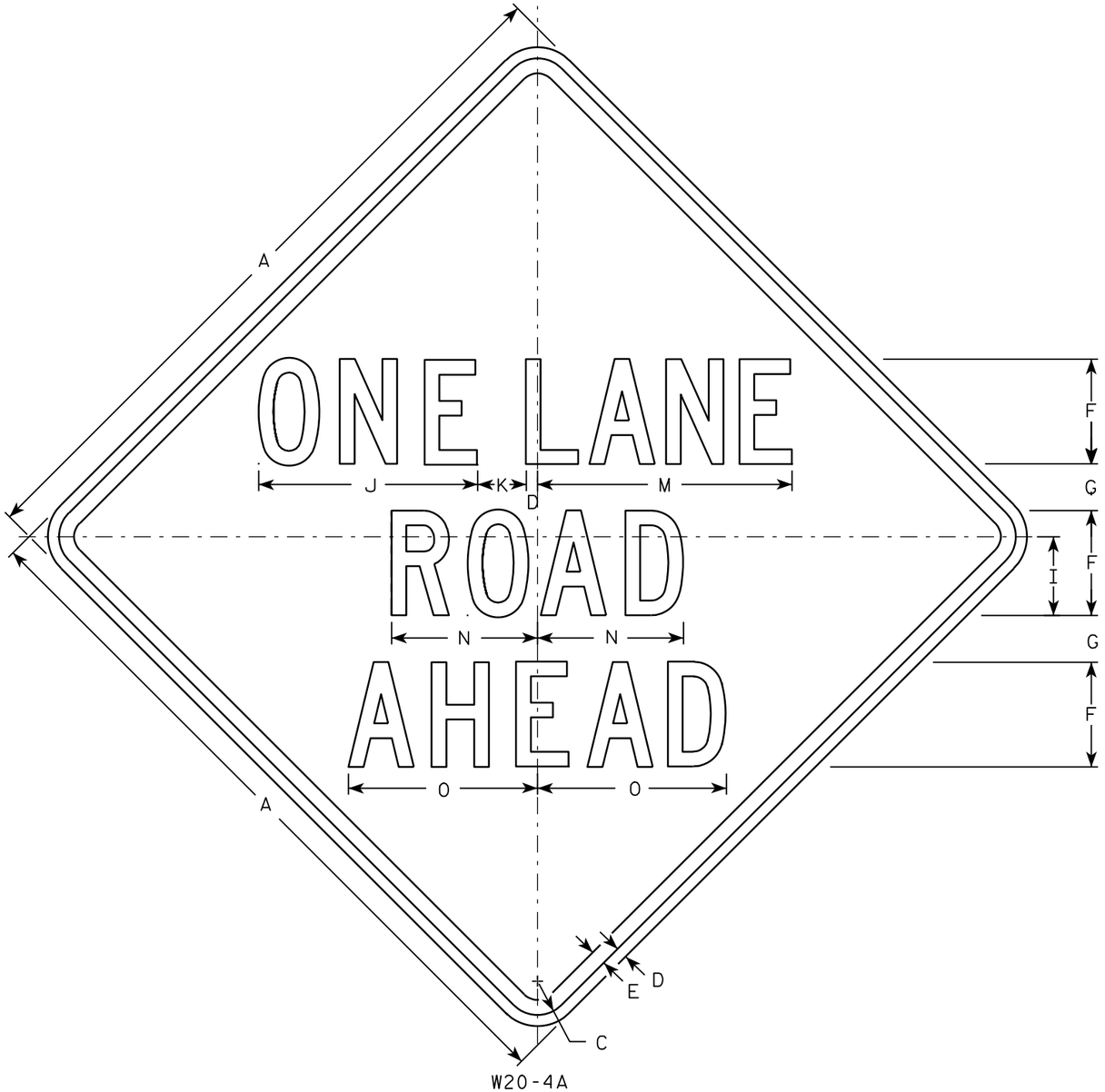
SHEET NO: E

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

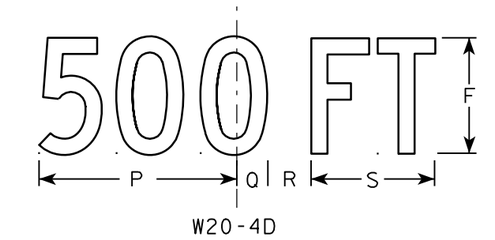
WISDOT/CADDS SHEET 42

7

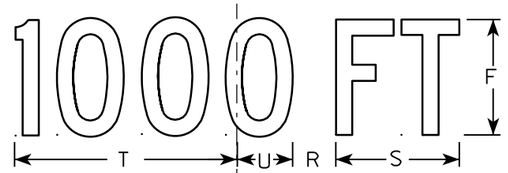
7



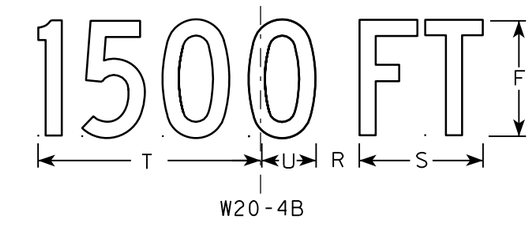
W20-4A



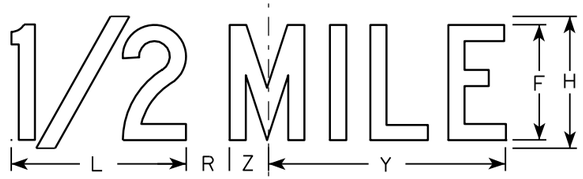
W20-4D



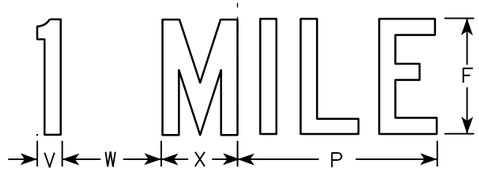
W20-4C



W20-4B



W20-4G



W20-4F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0

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

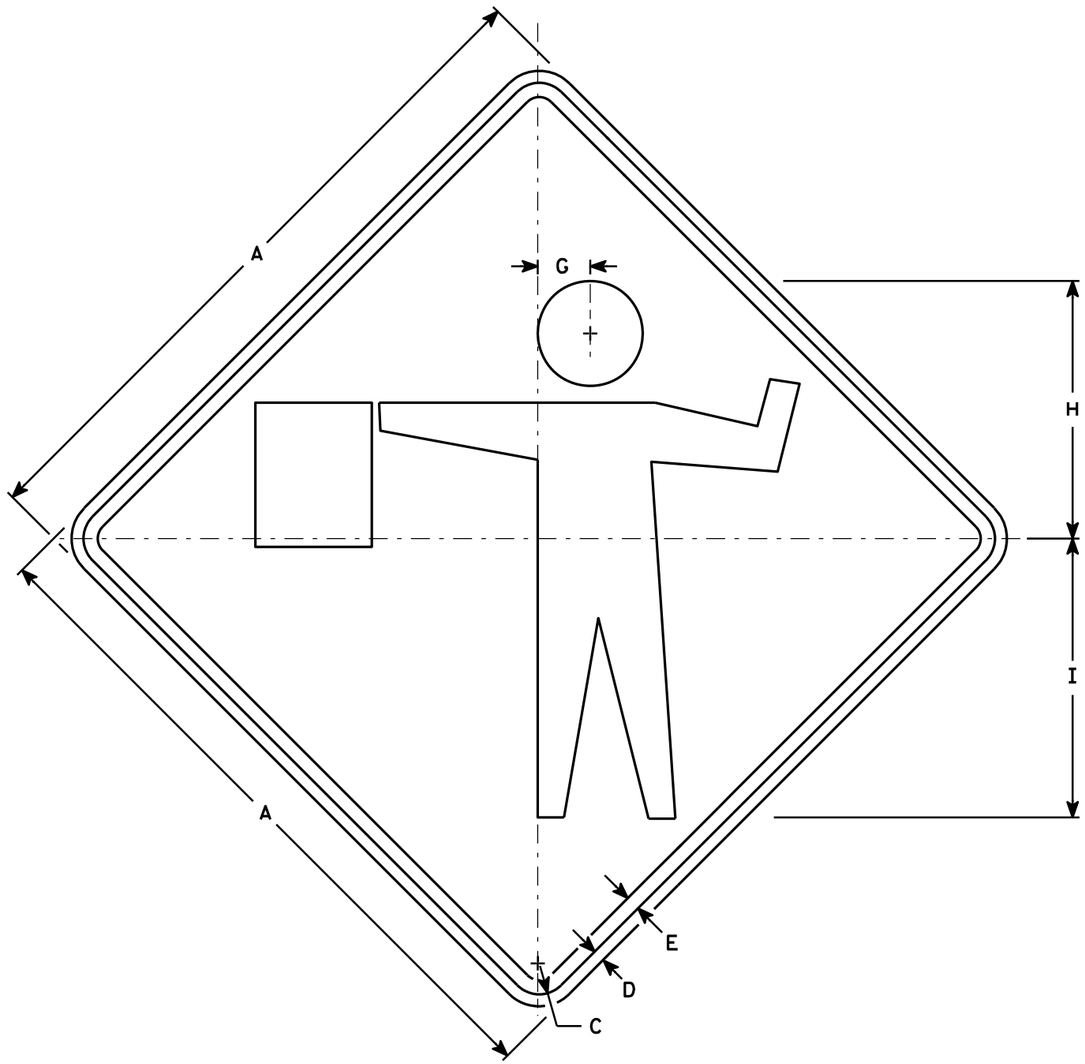
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 70 E



W20-7A

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4		2 3/4	13 1/2	14 5/8																		9.00
2S	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
2M	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
3	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
4	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
5	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00

STANDARD SIGN
W20-7A

WISCONSIN DEPT OF TRANSPORTATION

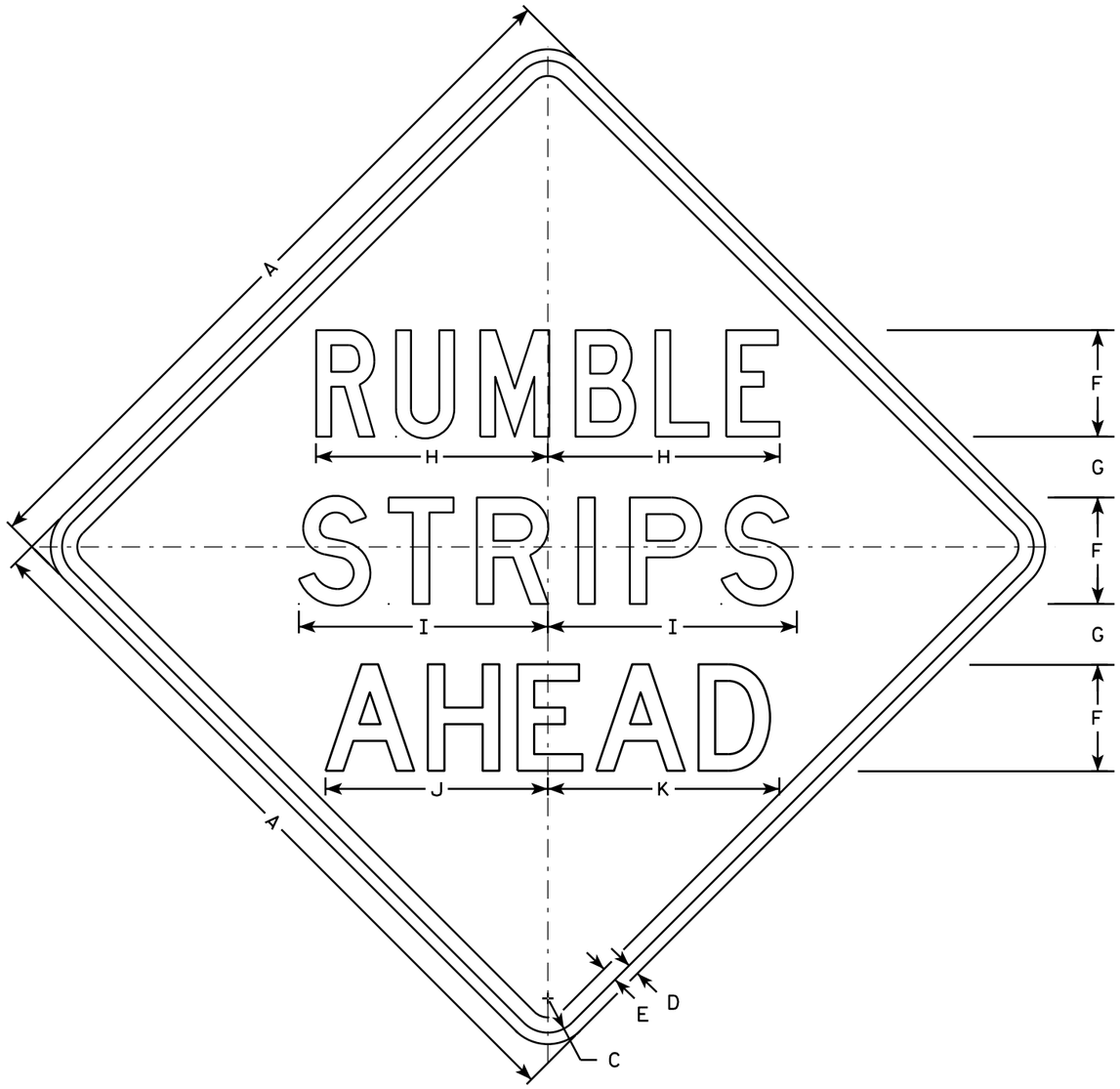
APPROVED Matthew R Rauch
for State Traffic Engineer

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

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

7

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



W21-65

NOTES

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

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

STANDARD SIGN

W21-65

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/28/14 PLATE 72 W21-65.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

DIVISION 1 - BEAM GUARD WIDENING

Station	AREA (SF) CUT	AREA (SF) FILL	INCR. VOL. (CY) CUT	INCR. VOL. (CY) FILL	CUM. VOL. (CY) CUT	CUM. VOL. (CY) EXPANDED FILL 1.25	MASS HAUL (CY)
					1.00		
33+00.0	6	3	0	0	0	0	0
34+00.0	7	9	24	22	24	28	-4
34+09.0	7	13	2	4	26	33	-7
34+34.0	6	14	6	13	32	49	-17
34+59.0	7	2	6	7	38	58	-20
35+00.0	7	1	11	2	49	61	-12
36+00.0	5	2	22	6	71	69	2
37+00.0	6	2	20	7	91	78	13
38+00.0	4	14	19	30	110	116	-6
38+35.0	5	14	6	18	116	139	-23
38+60.0	5	48	5	29	121	175	-54
38+85.0	4	30	4	36	125	220	-95
39+00.0	4	5	2	10	127	233	-106
					LESS SALVAGED/UNUSABLE PAVEMENT MATERIAL		0
						TOTAL	-106

DIVISION 2 - CTH A WIDENING

Station	AREA (SF) CUT	AREA (SF) FILL	INCR. VOL. (CY) CUT	INCR. VOL. (CY) FILL	CUM. VOL. (CY) CUT	CUM. VOL. (CY) EXPANDED FILL 1.25	MASS HAUL (CY)
					1.00		
63+92.0	8	6	0	0	0	0	0
64+00.0	9	6	3	2	3	3	0
65+00.0	20	17	54	43	57	57	0
66+00.0	8	3	52	37	109	103	6
67+00.0	8	1	30	7	139	112	27
68+00.0	8	1	30	4	169	117	52
69+00.0	4	4	22	9	191	128	63
70+00.0	18	6	41	19	232	152	80
71+00.0	23	0	76	11	308	166	142
72+00.0	4	2	50	4	358	171	187
					LESS SALVAGED/UNUSABLE PAVEMENT MATERIAL		0
						TOTAL	187

DIVISION 3 - CTH F WIDENING

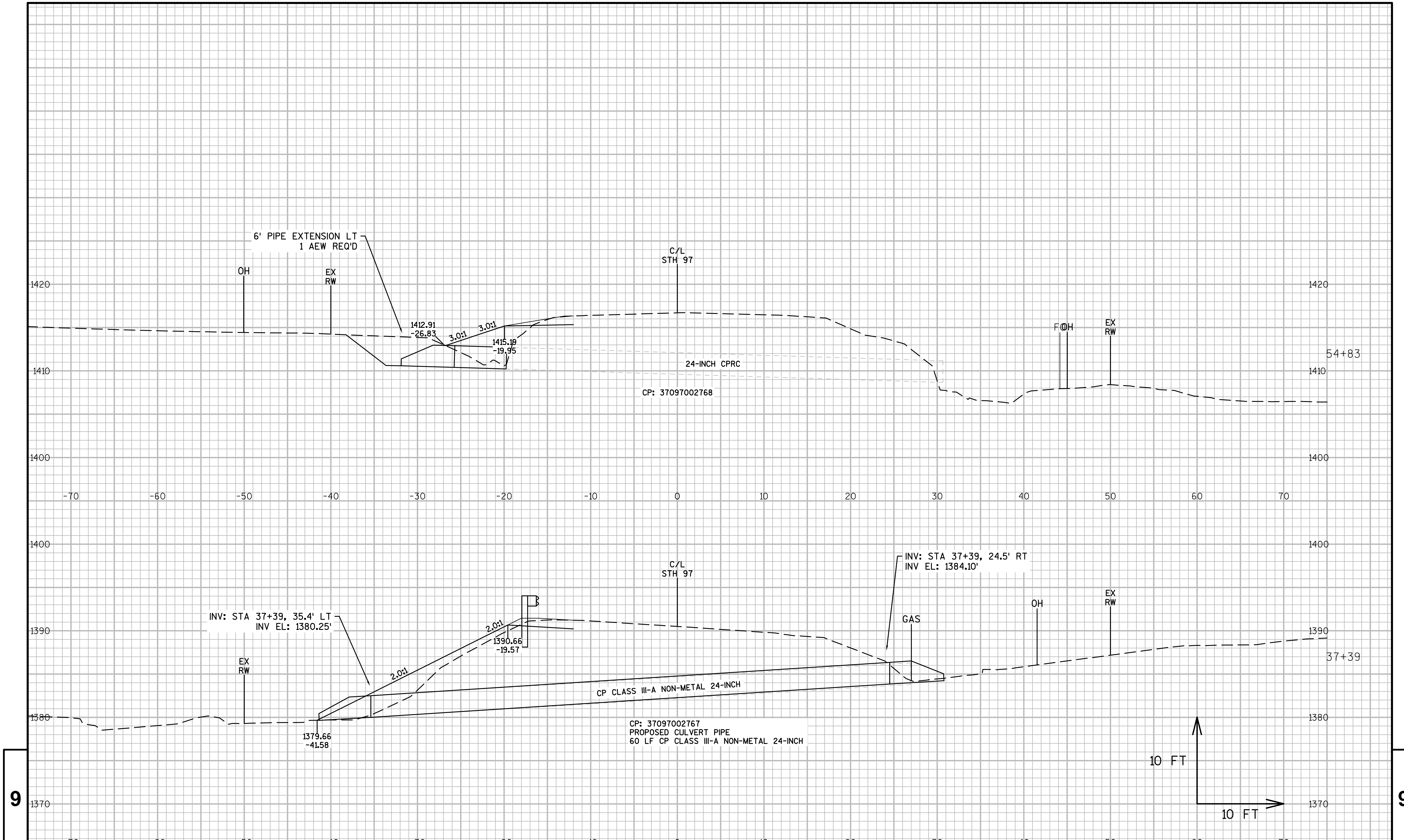
Station	AREA (SF) CUT	AREA (SF) FILL	INCR. VOL. (CY) CUT	INCR. VOL. (CY) FILL	CUM. VOL. (CY) CUT	CUM. VOL. (CY) EXPANDED FILL 1.25	MASS HAUL (CY)
					1.00		
218+00.0	6	0	0	0	0	0	0
219+00.0	6	2	22	4	22	5	17
220+00.0	6	4	22	11	44	19	25
221+00.0	6	6	22	19	66	43	23
222+00.0	8	43	26	91	92	157	-65
223+00.0	7	50	28	172	120	372	-252
224+00.0	6	48	24	181	144	598	-454
225+00.0	6	44	22	170	166	811	-645
226+00.0	9	32	28	141	194	987	-793
227+00.0	30	19	72	94	266	1105	-839
228+00.0	25	4	102	43	368	1159	-791
229+00.0	24	4	91	15	459	1178	-719
230+00.0	8	2	59	11	518	1192	-674
231+00.0	11	39	35	76	553	1287	-734
232+00.0	9	28	37	124	590	1442	-852
					LESS SALVAGED/UNUSABLE PAVEMENT MATERIAL		0
						TOTAL	-852

9

9

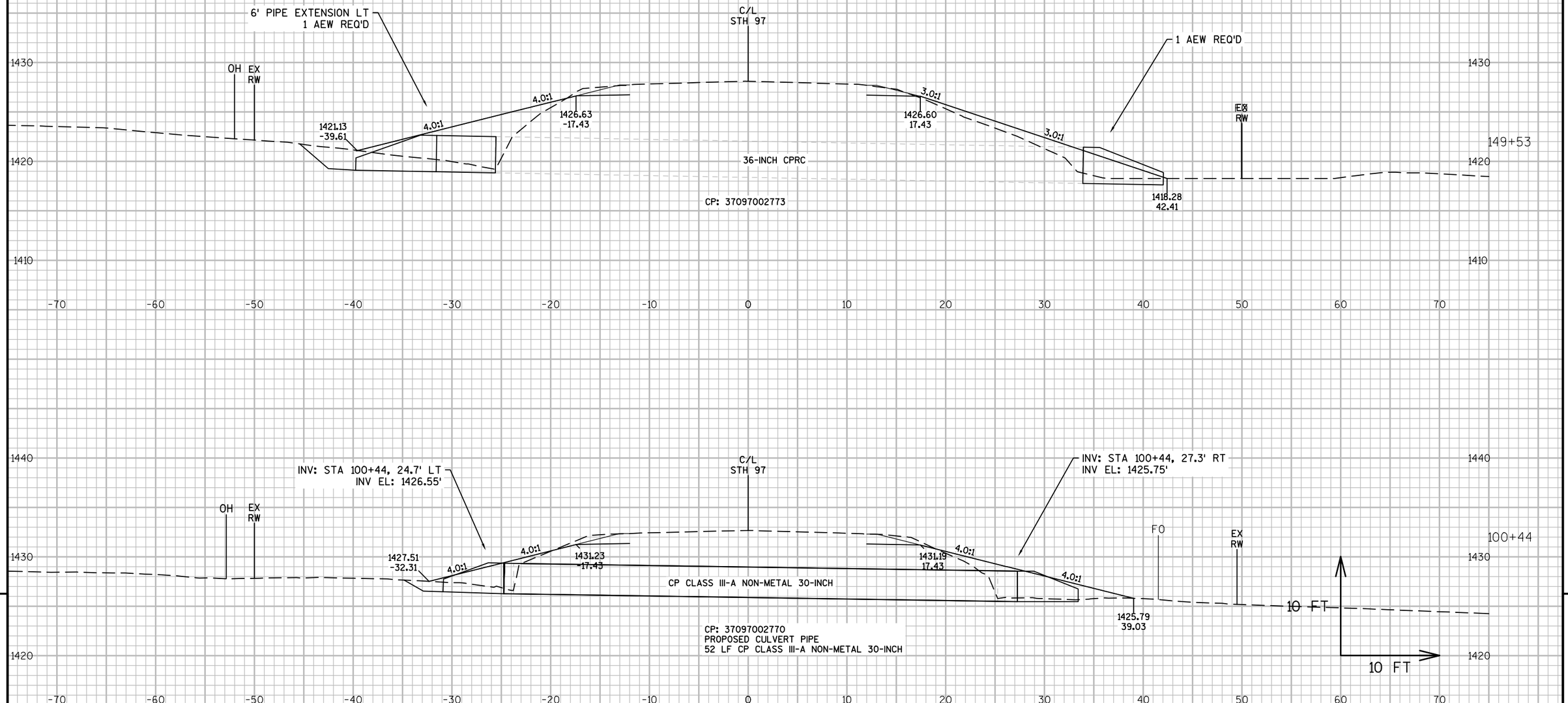
PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	EARTHWORK QUANTITIES	SHEET NO: 73	E

PLOT DATE : 9/30/2019 PLOT BY : CORRE INC. PLOT NAME : PLOT SCALE : 1:1



6' PIPE EXTENSION LT
1 AEW REQ'D
C/L
STH 97
OH
EX
RW
1412.91
-26.83
3.0:1
3.0:1
1415.19
-19.95
24-INCH CPRC
CP: 37097002768
FOH
EX
RW
54+83
1420
1410
1400
-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70
INV: STA 37+39, 24.5' RT
INV EL: 1384.10'
C/L
STH 97
INV: STA 37+39, 35.4' LT
INV EL: 1380.25'
2.0:1
1390.66
-19.57
2.0:1
GAS
OH
EX
RW
37+39
EX
RW
CP CLASS III-A NON-METAL 24-INCH
1379.66
-41.58
CP: 37097002767
PROPOSED CULVERT PIPE
60 LF CP CLASS III-A NON-METAL 24-INCH
10 FT
10 FT
1390
1380
1370
9
9

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: CULVERT MODIFICATIONS	SHEET 74	E



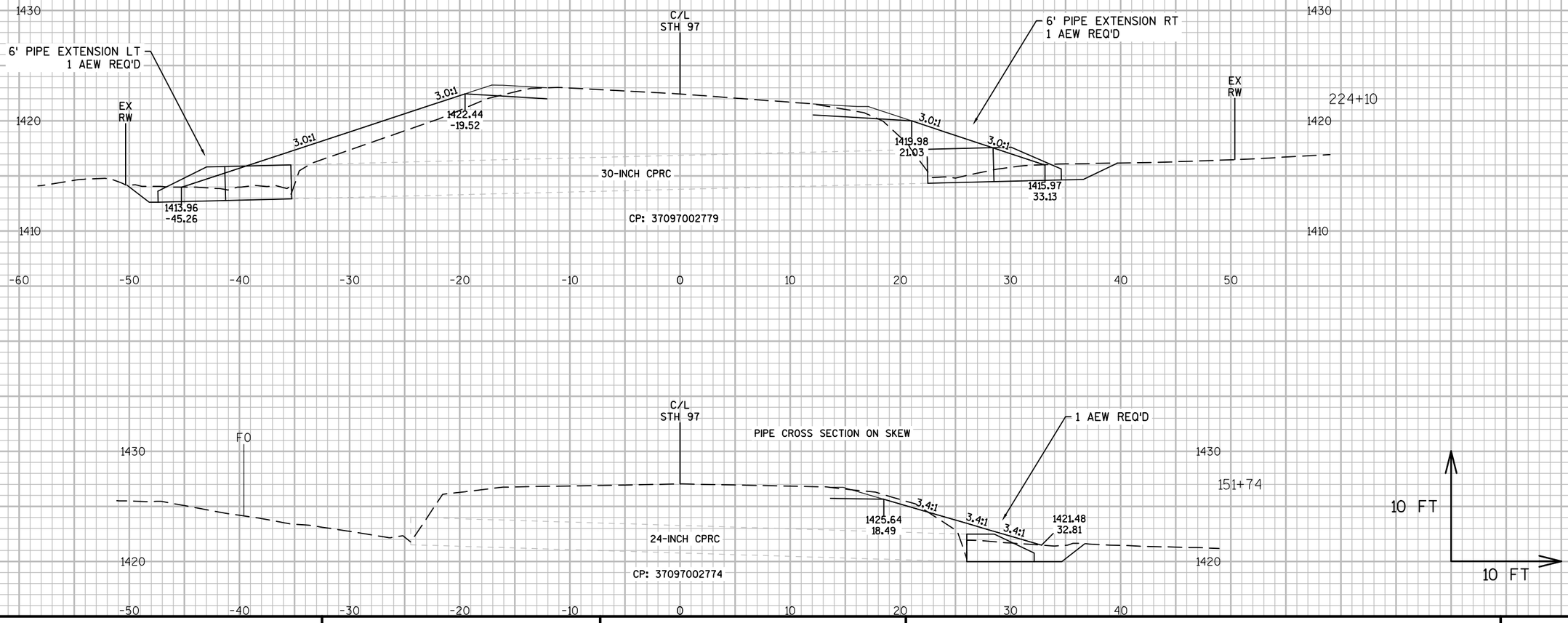
9

9

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: CULVERT MODIFICATIONS	SHEET 75	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090201 XS.DWG
LAYOUT NAME - 090201 XS - CULVERT MOD. SHEET (2)

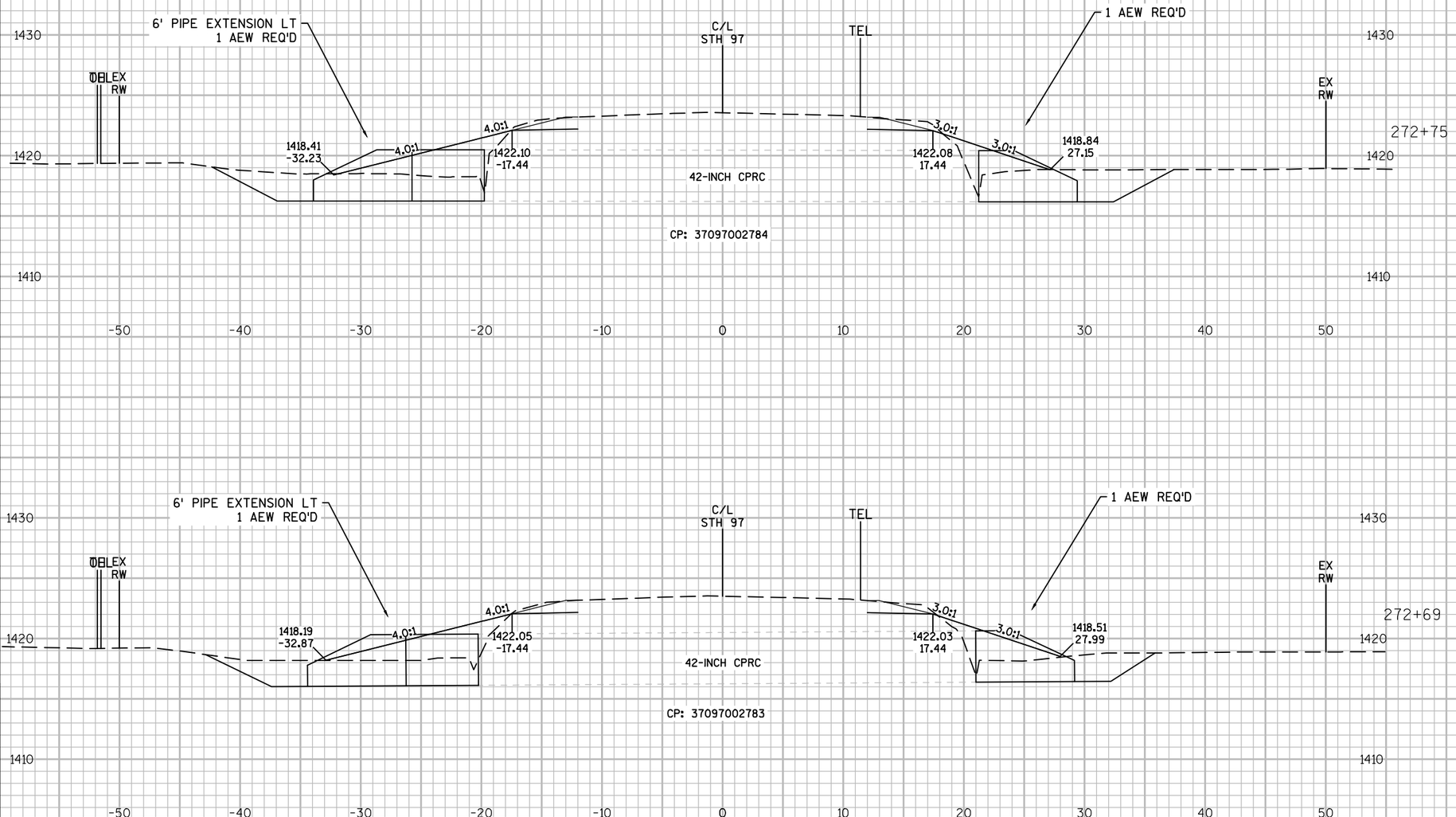
PLOT DATE : 4/5/2021 11:29 AM PLOT BY : NICHOLAS WATHKE PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: CULVERT MODIFICATIONS	SHEET 76	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090201 XS.DWG
LAYOUT NAME - 090201 XS - CULVERT MOD. SHEET (3)

PLOT DATE : 10/1/2019 10:29 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT



9

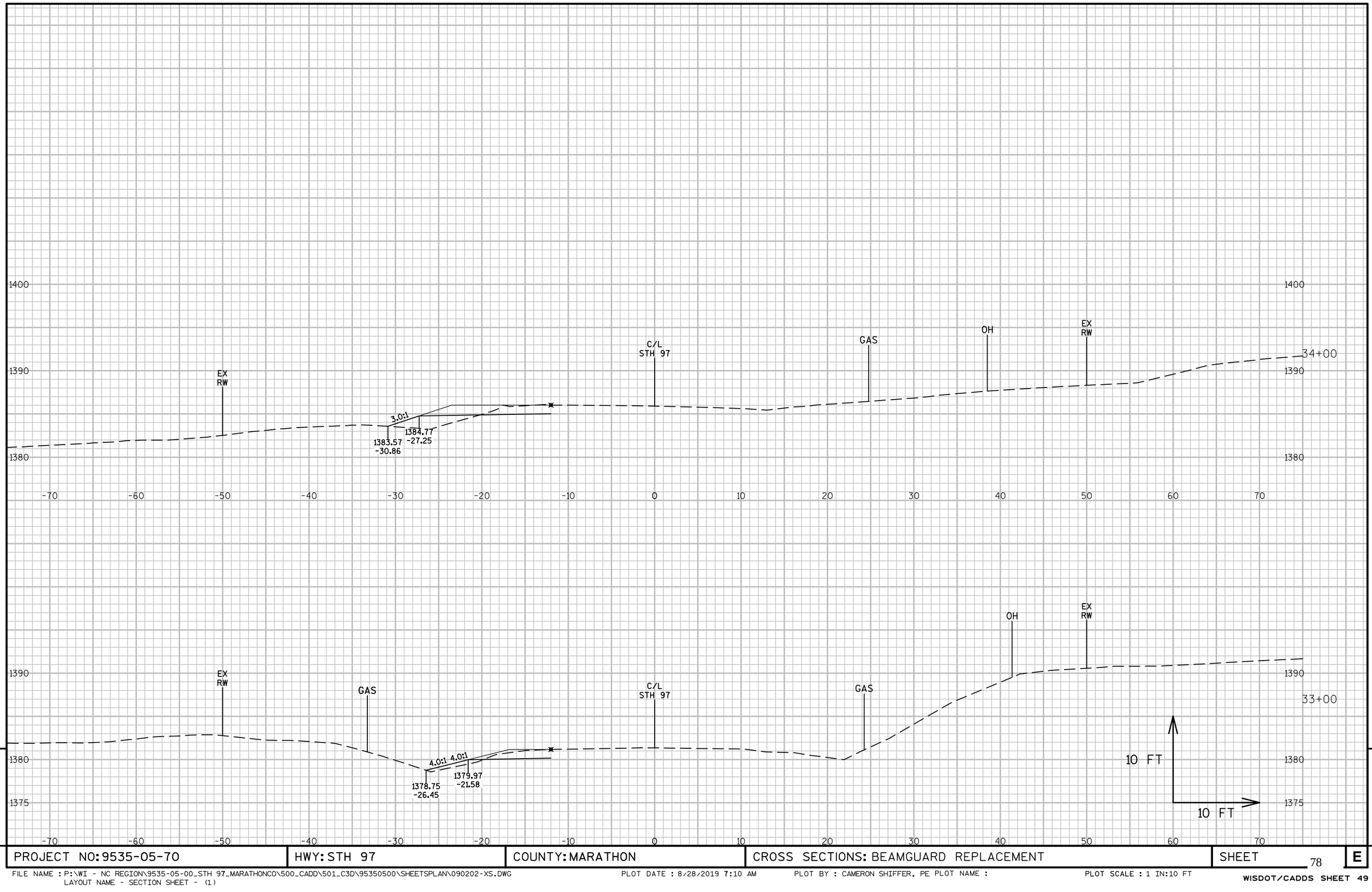
9

PROJECT NO:9535-05-70	HWY:STH 97	COUNTY:MARATHON	CROSS SECTIONS:CULVERT MODIFICATIONS	SHEET 77	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090201 XS.DWG
LAYOUT NAME - 090201 XS - CULVERT MOD. SHEET (4)

PLOT DATE : 10/1/2019 10:30 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

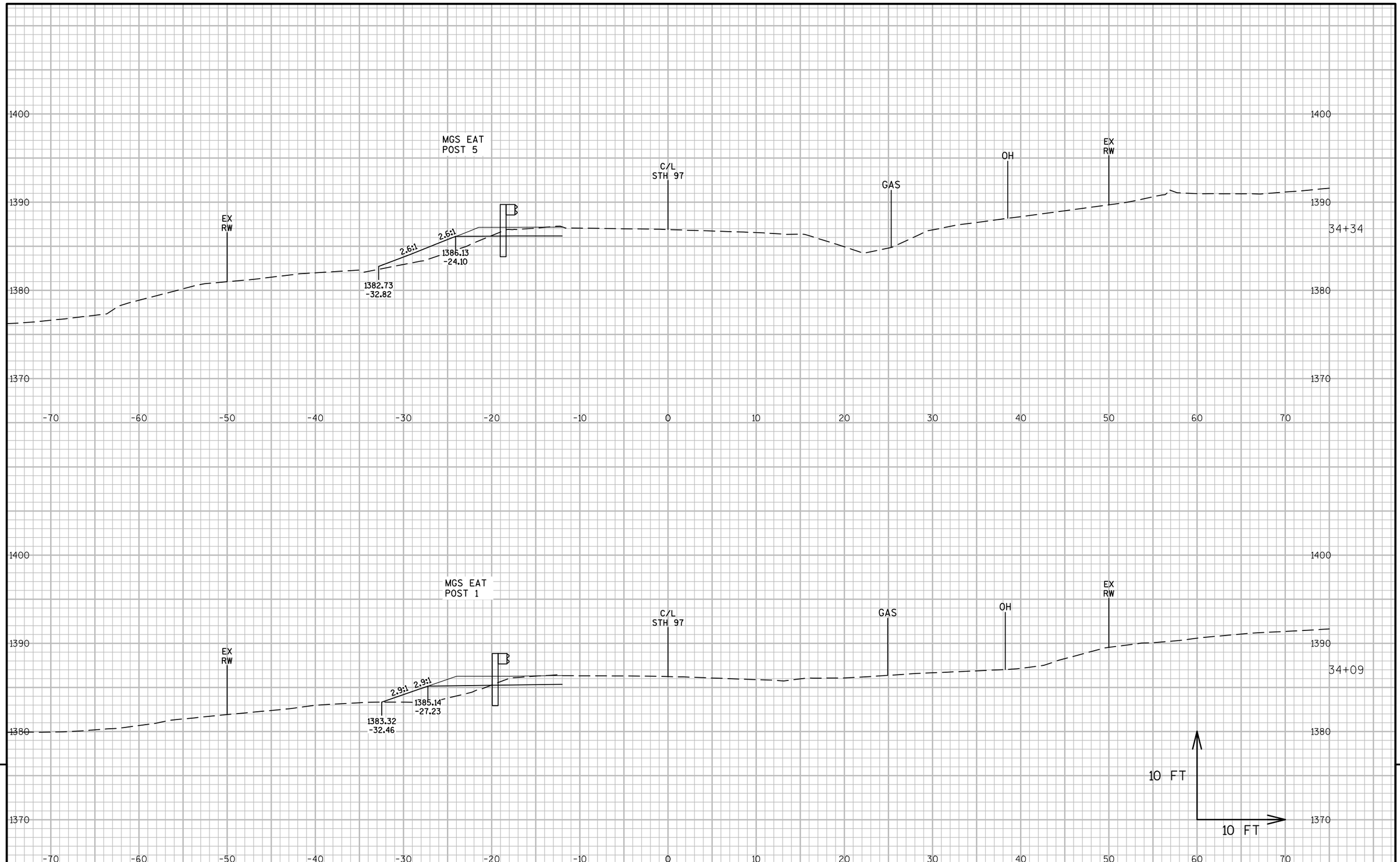


PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: BEAMGUARD REPLACEMENT	SHEET 78	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (1)

PLOT DATE : 8/28/2019 7:10 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

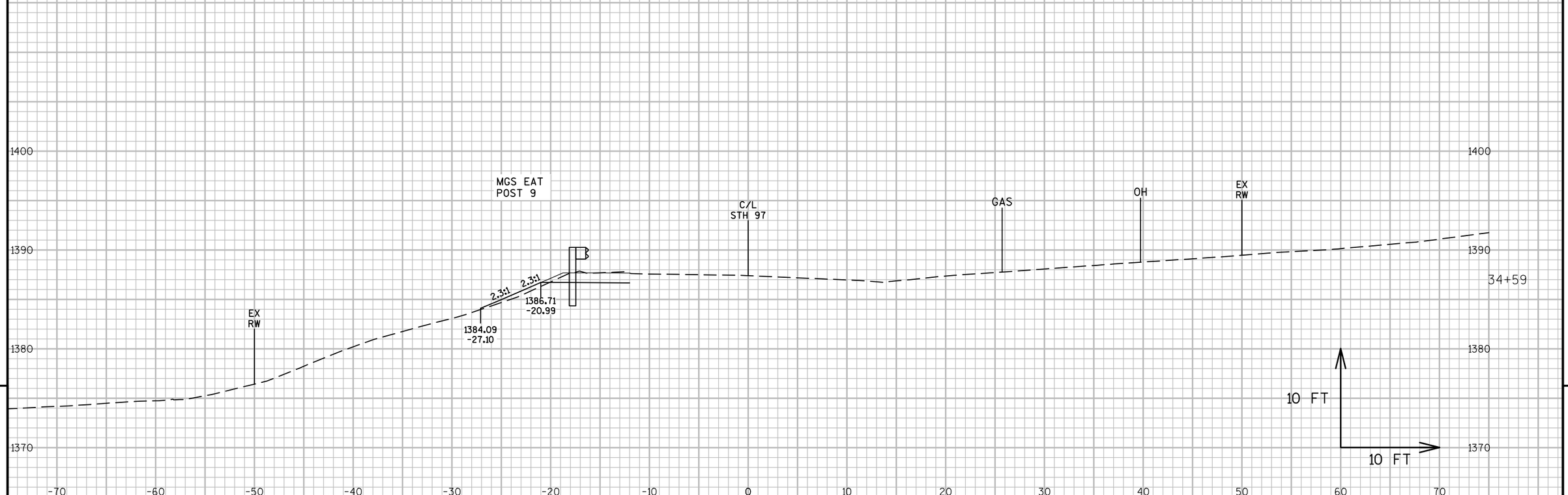


PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: BEAMGUARD REPLACEMENT	SHEET 79	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (2)

PLOT DATE : 8/28/2019 7:10 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT

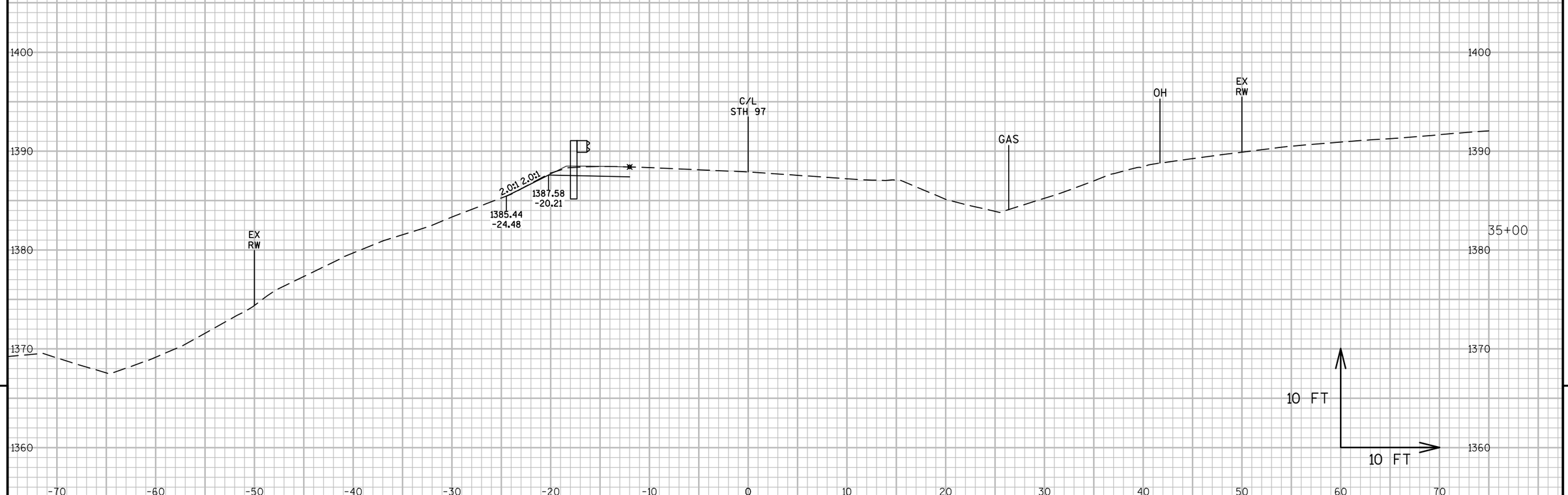
WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: BEAMGUARD REPLACEMENT	SHEET 80	E



9

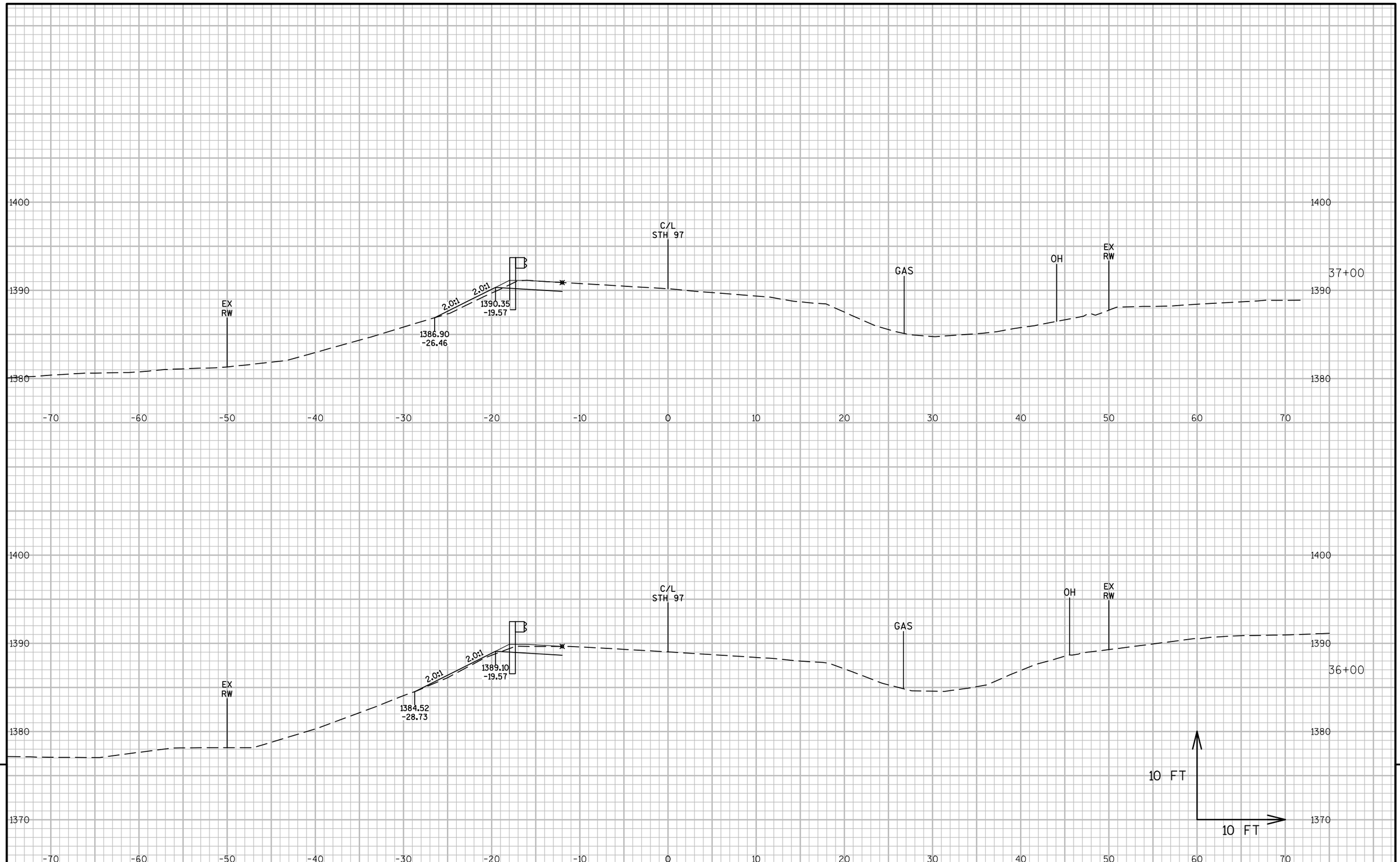
9

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: BEAMGUARD REPLACEMENT	SHEET 81	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (4)

PLOT DATE : 8/28/2019 7:11 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



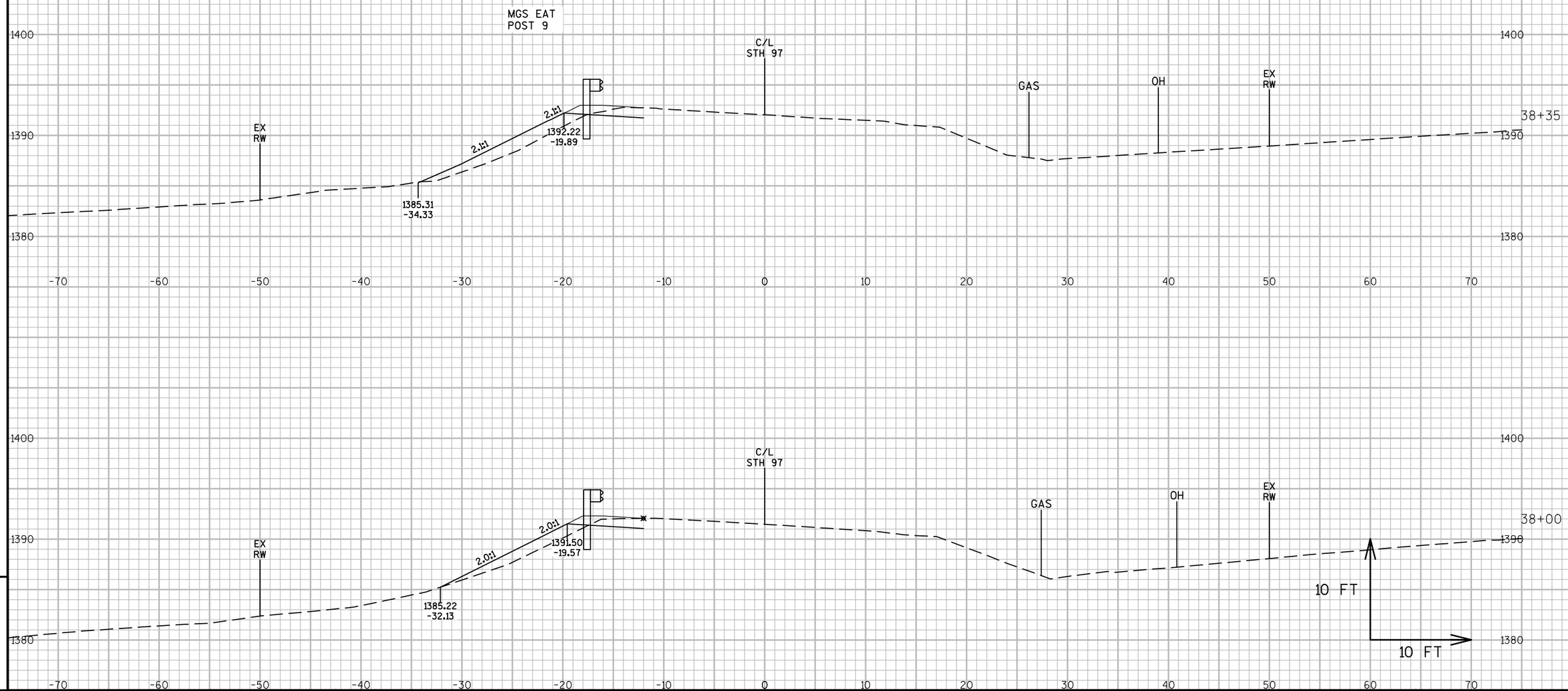
9

9

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: BEAMGUARD REPLACEMENT	SHEET 82	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (5)

PLOT DATE : 8/28/2019 7:11 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT



9

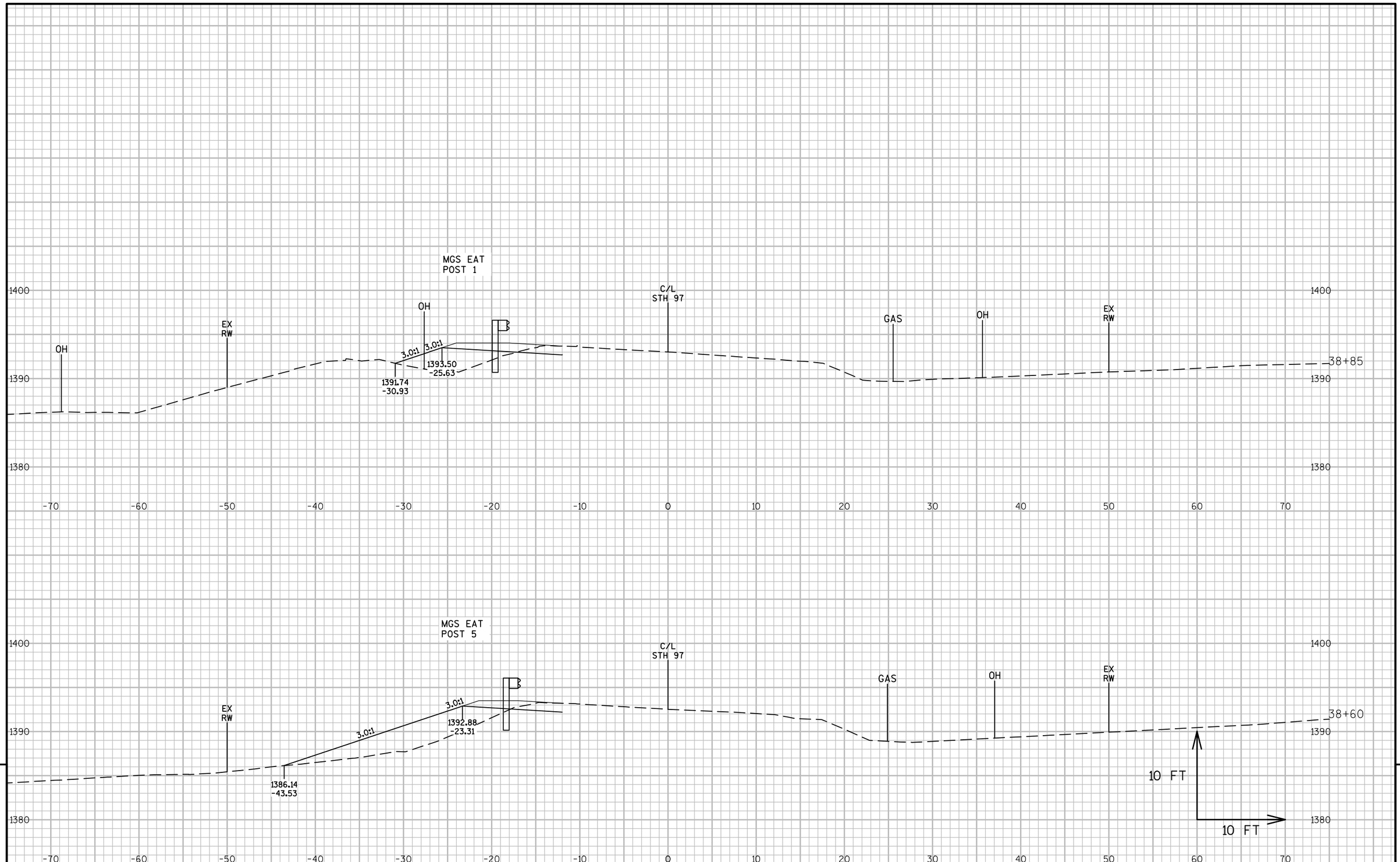
9

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: BEAMGUARD REPLACEMENT	SHEET 83	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (6)

PLOT DATE : 8/28/2019 7:11 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

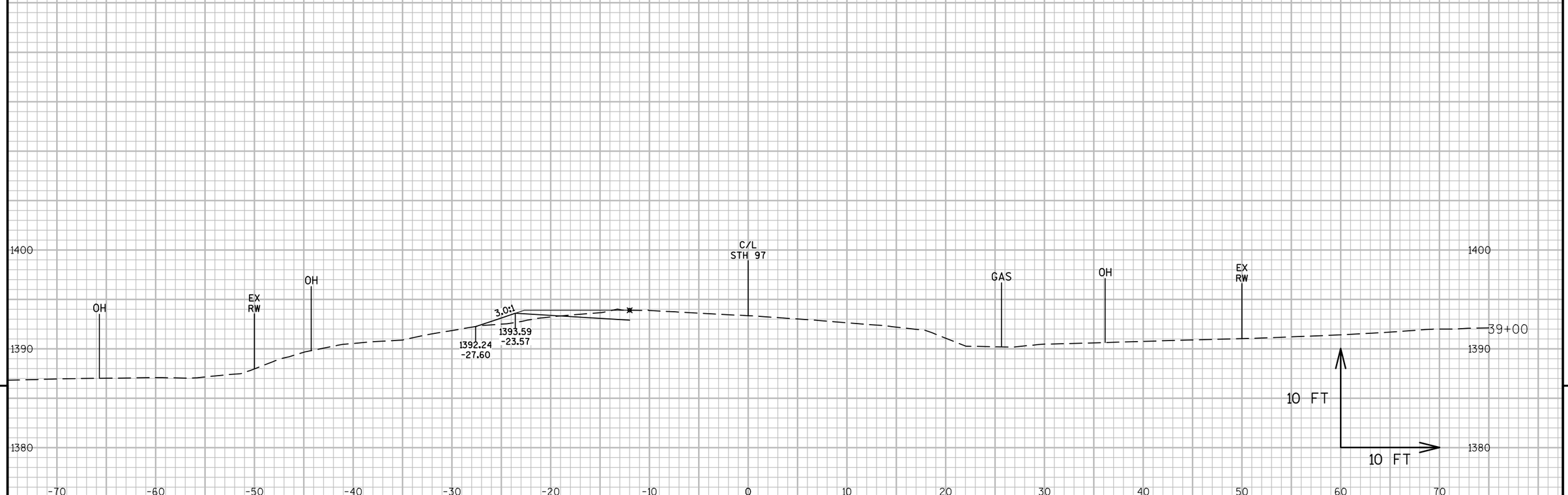


PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: BEAMGUARD REPLACEMENT	SHEET 84	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (7)

PLOT DATE : 8/28/2019 7:11 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT

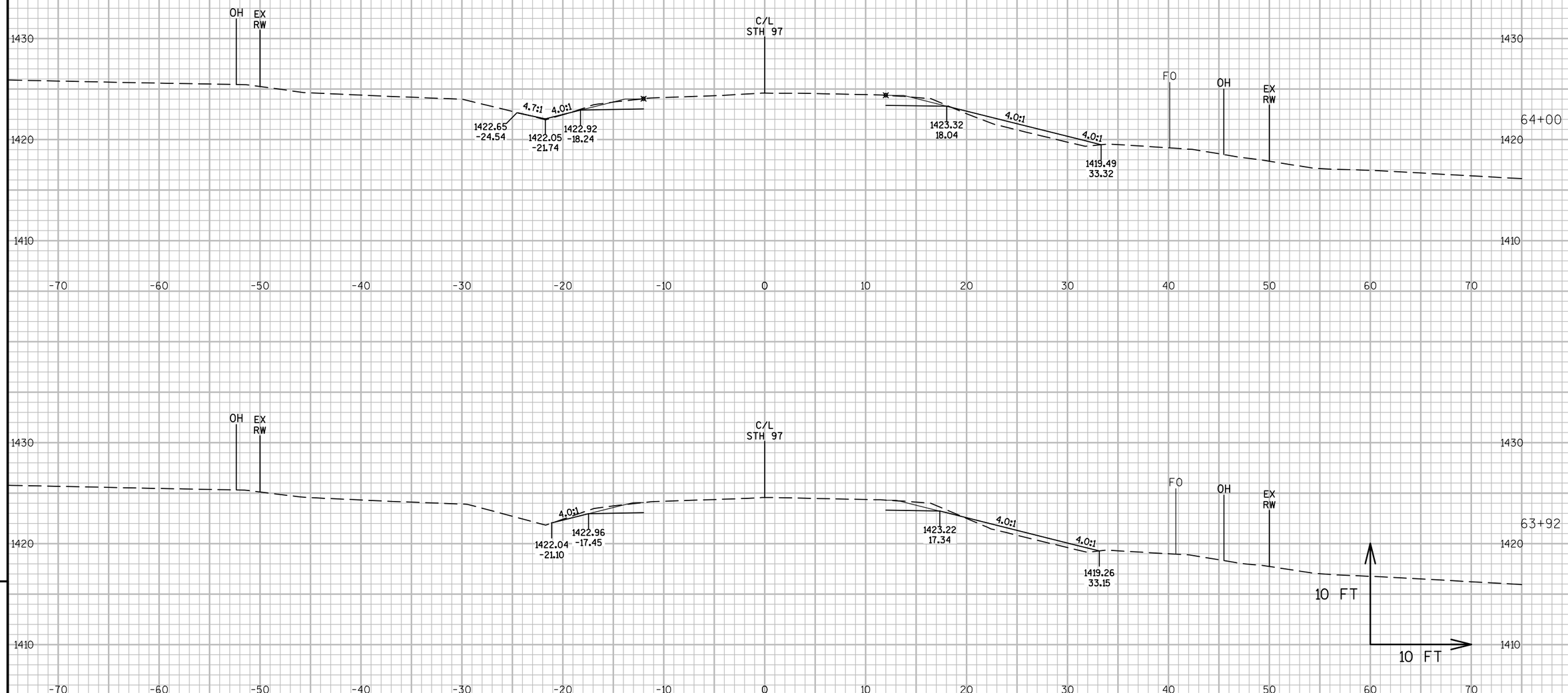
WISDOT/CADDS SHEET 49



9

9

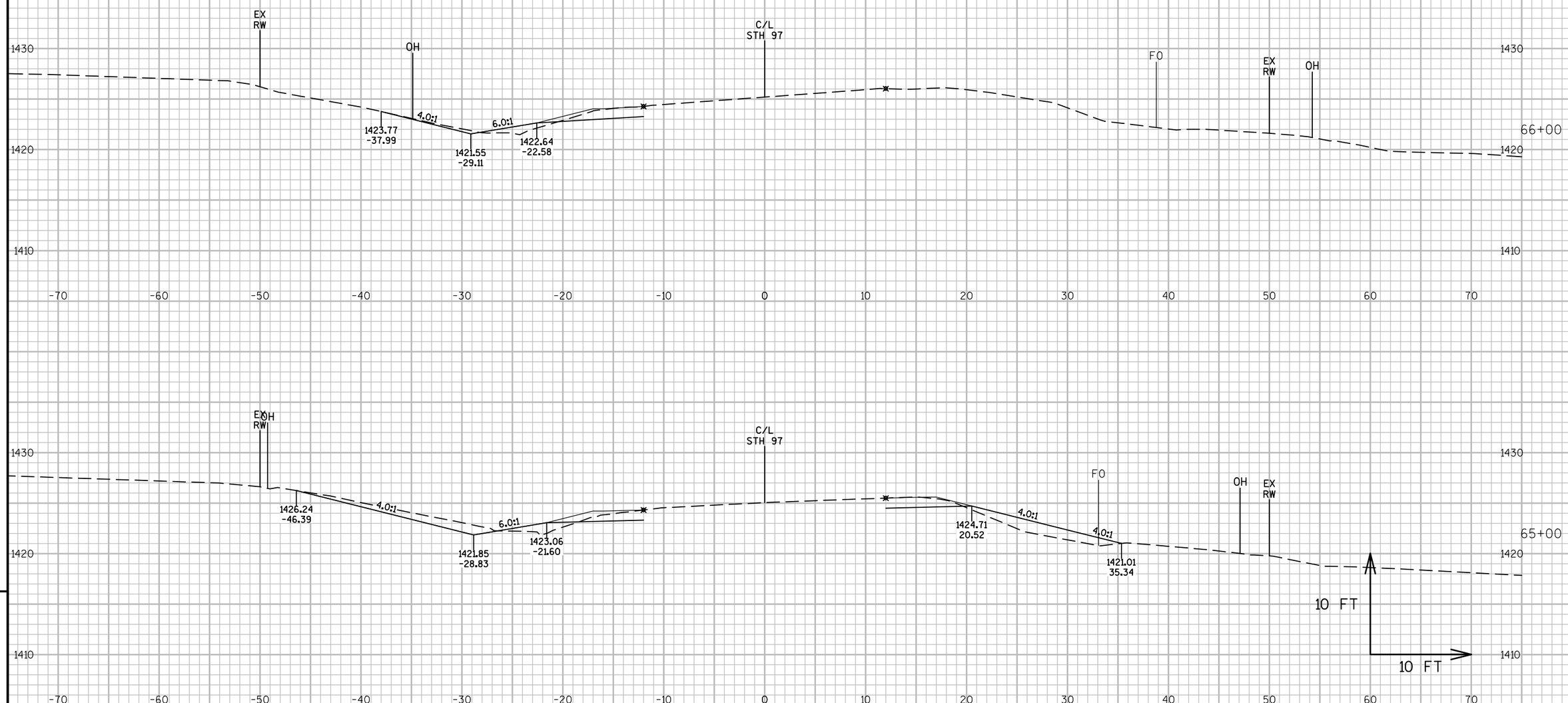
PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: BEAMGUARD REPLACEMENT	SHEET 85	E



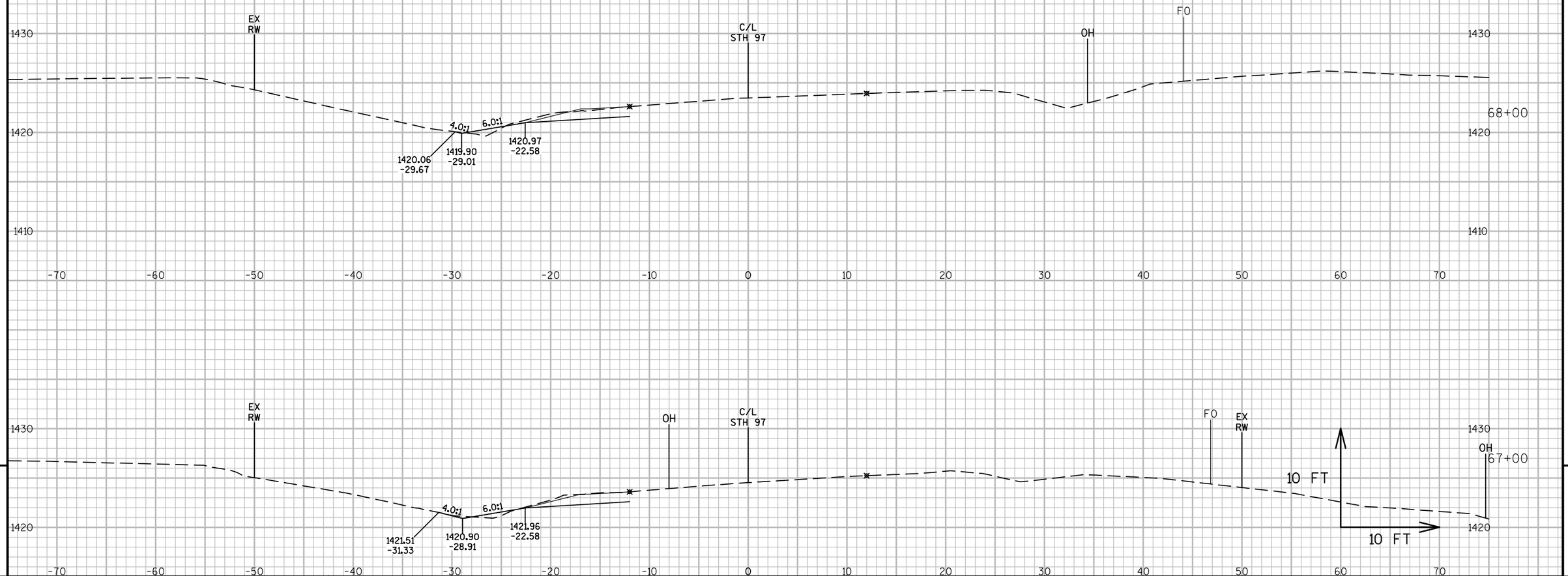
9

9

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 86	E



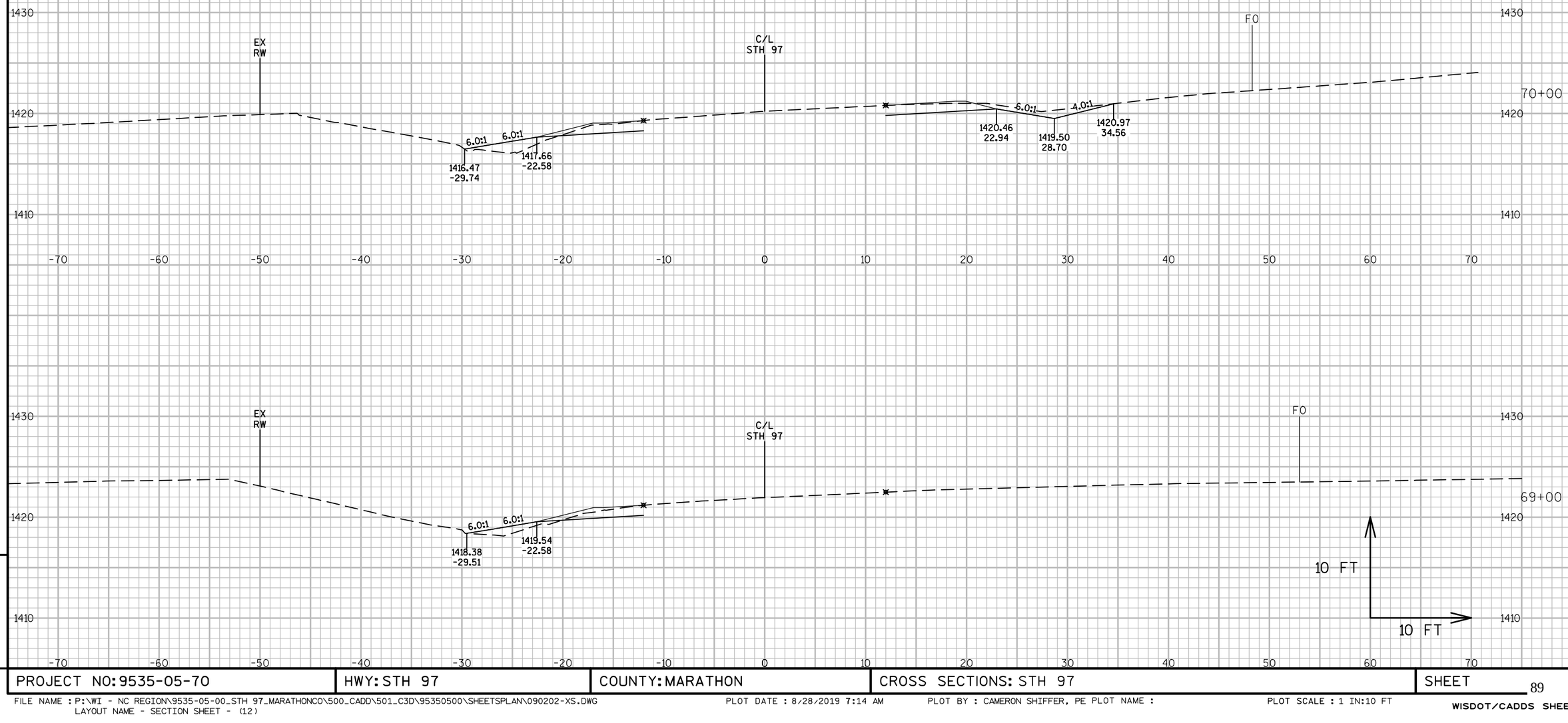
PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 87	E



9

9

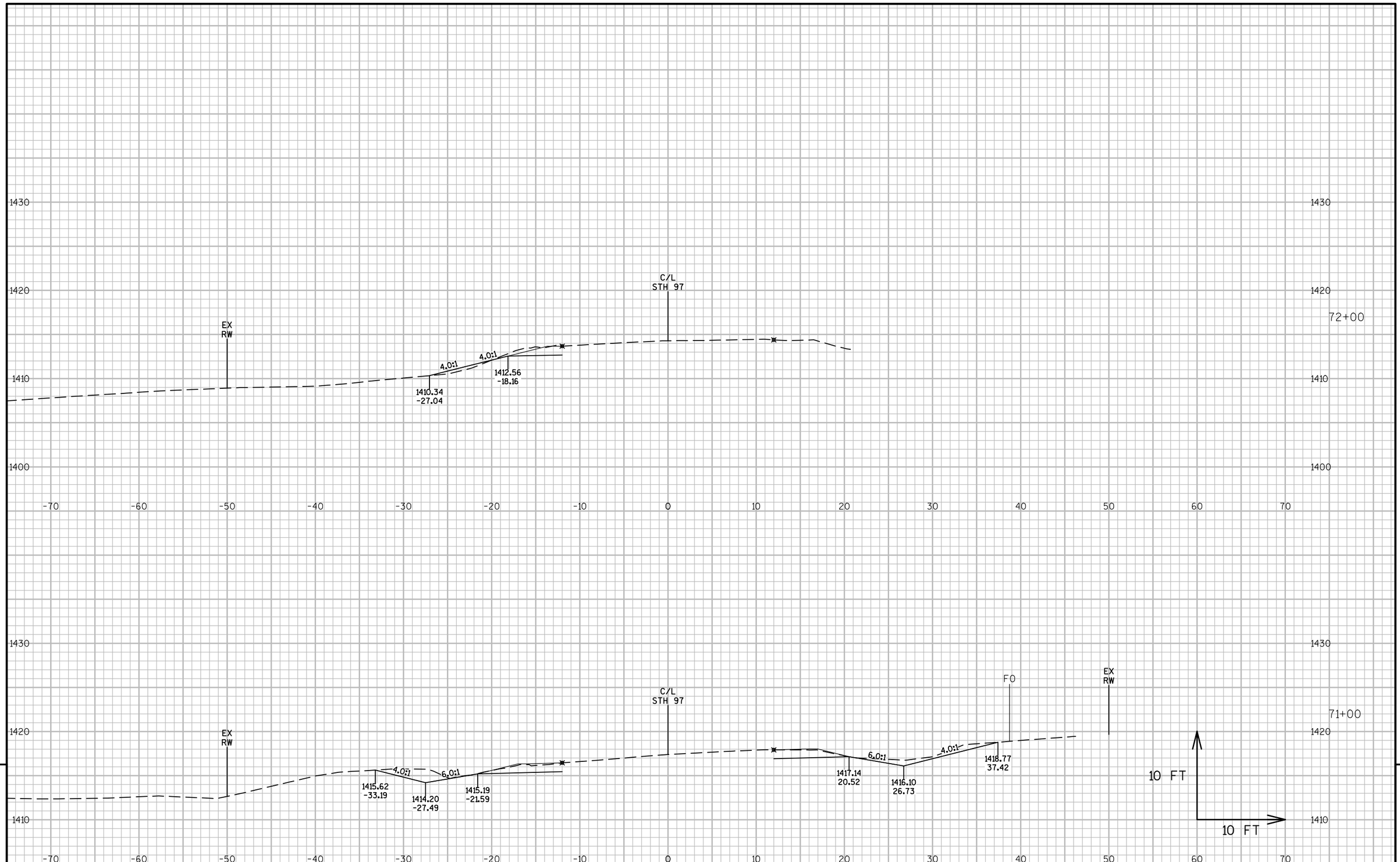
PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 88	E



9

9

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 89	E



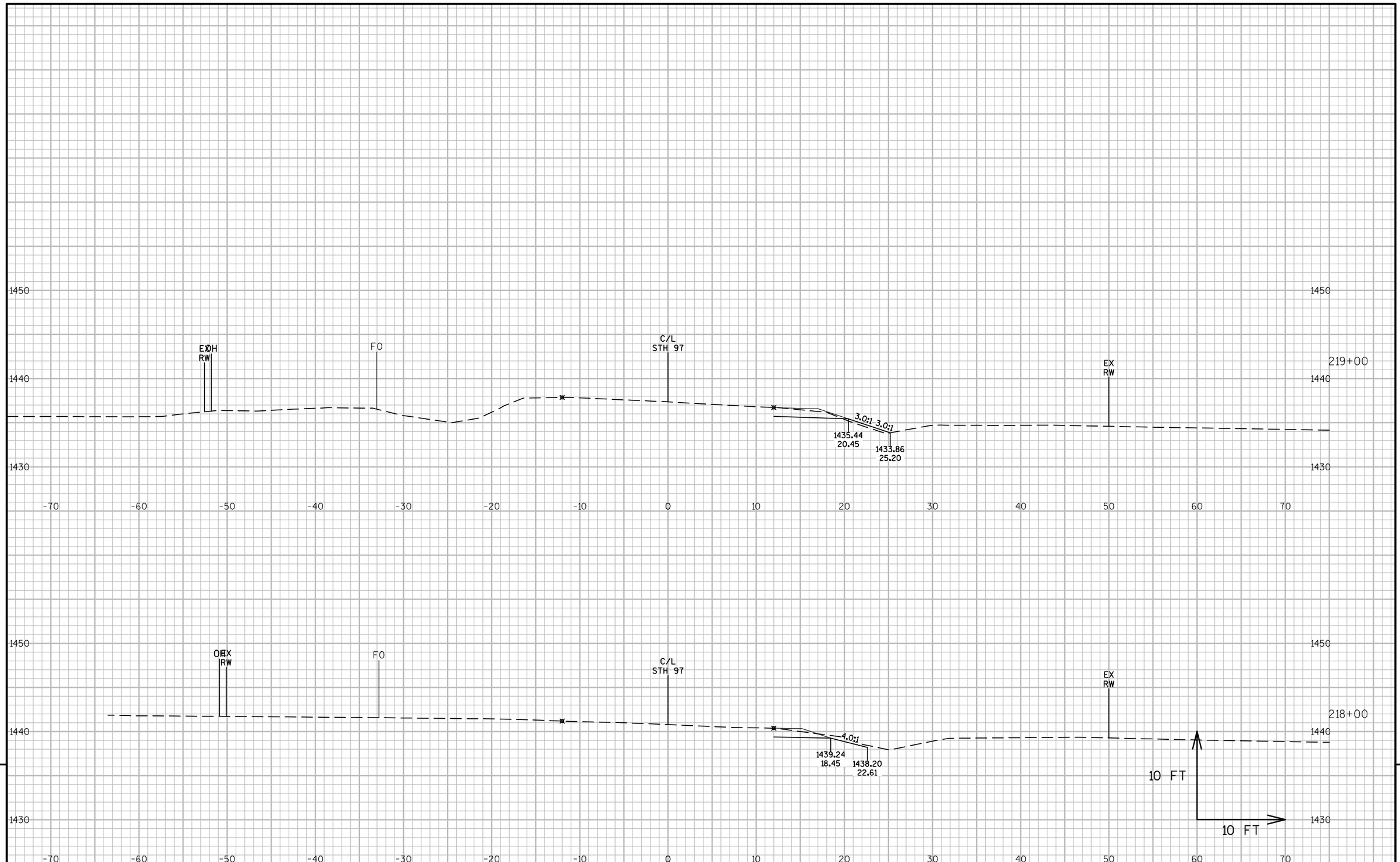
PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 90	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (13)

PLOT DATE : 8/28/2019 7:14 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



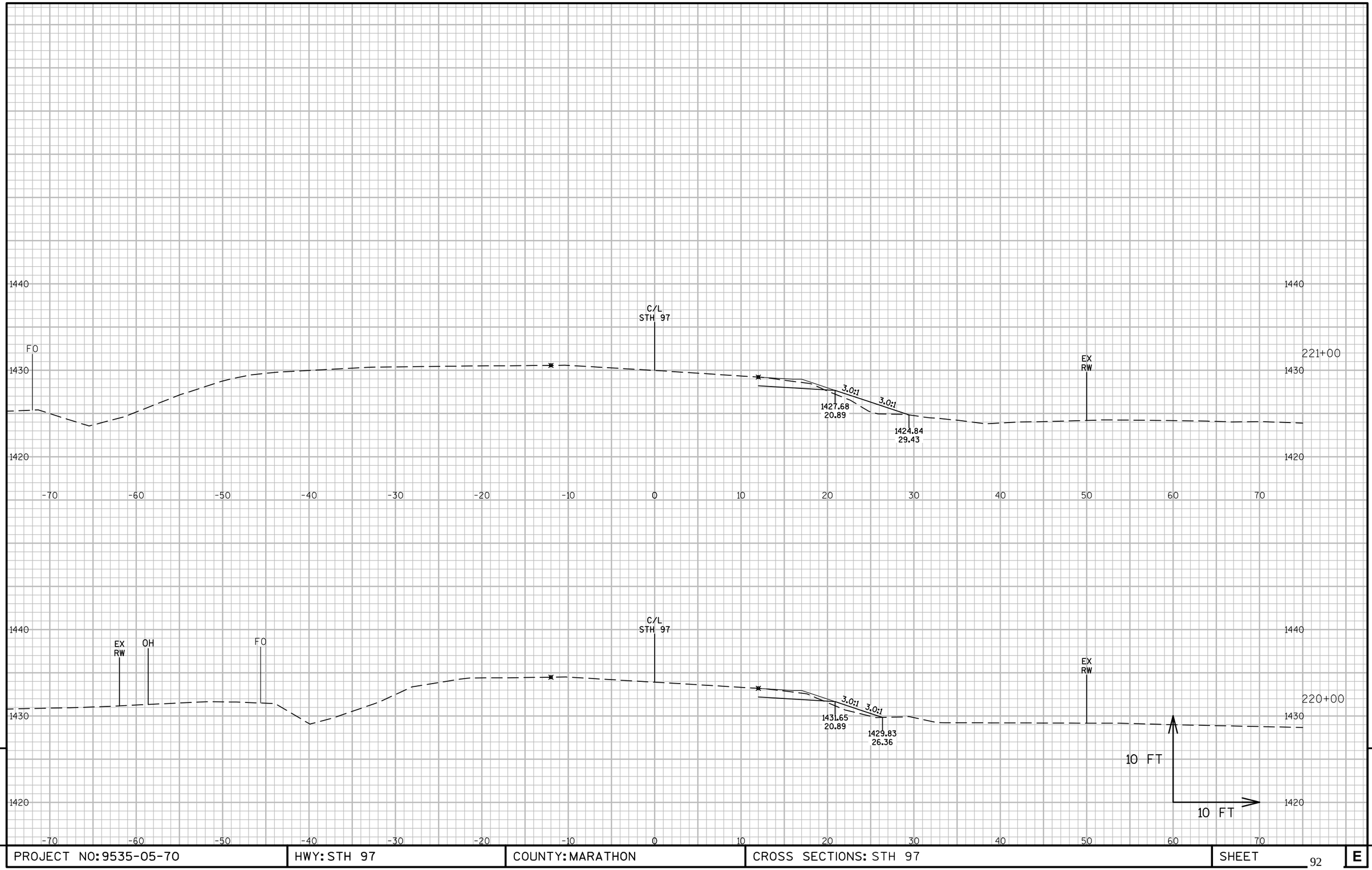
PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 91	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (14)

PLOT DATE : 8/28/2019 7:15 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

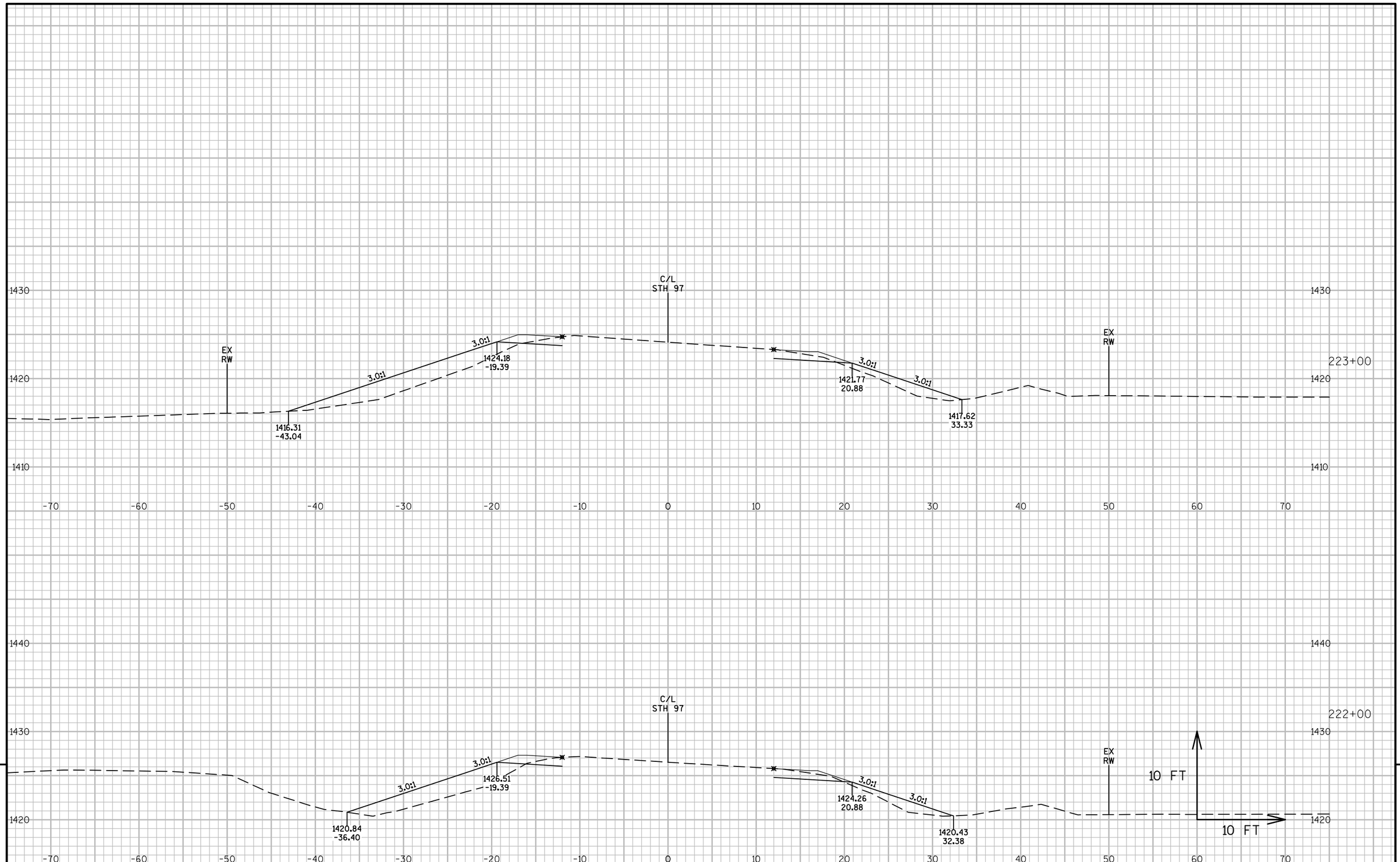


PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 92	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (15)

PLOT DATE : 8/28/2019 7:15 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

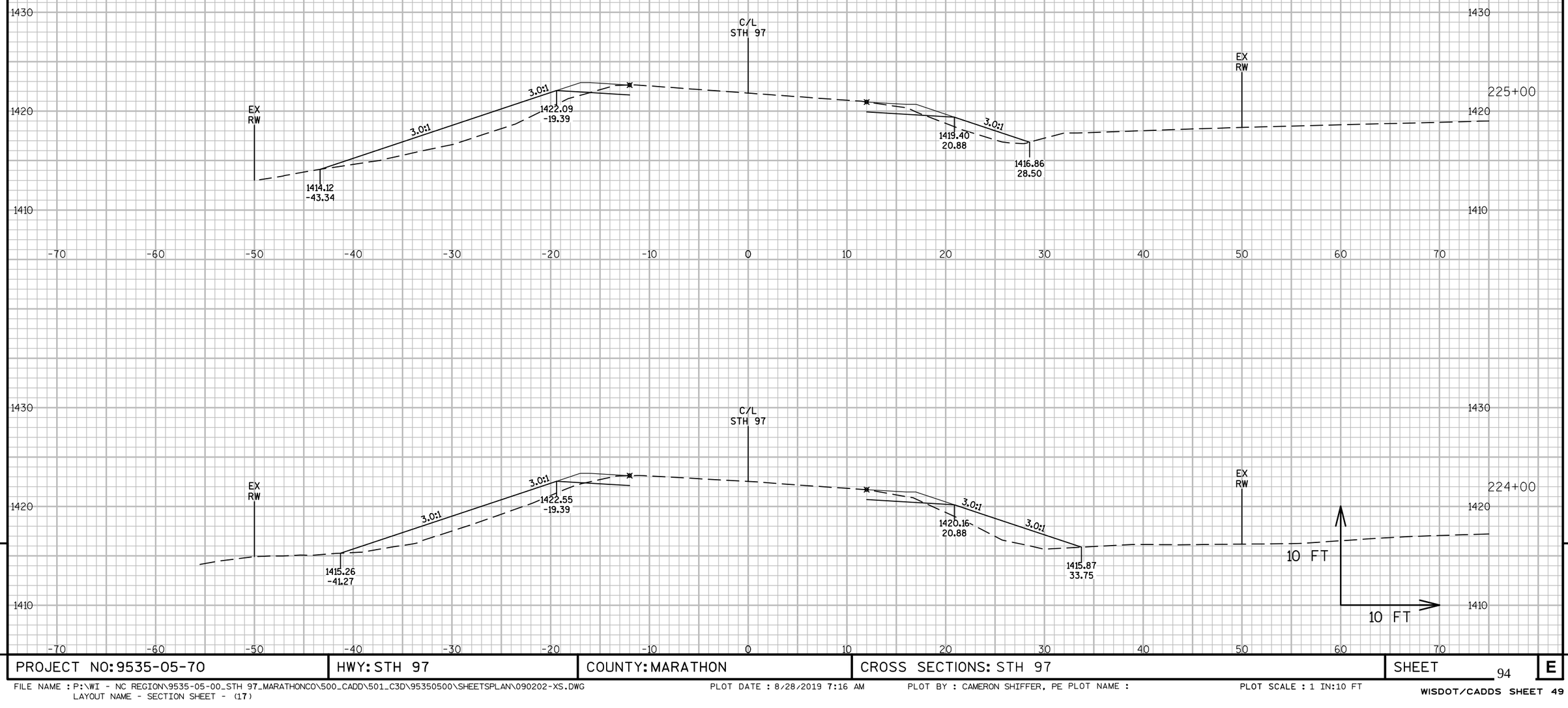


PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 93	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (16)

PLOT DATE : 8/28/2019 7:15 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

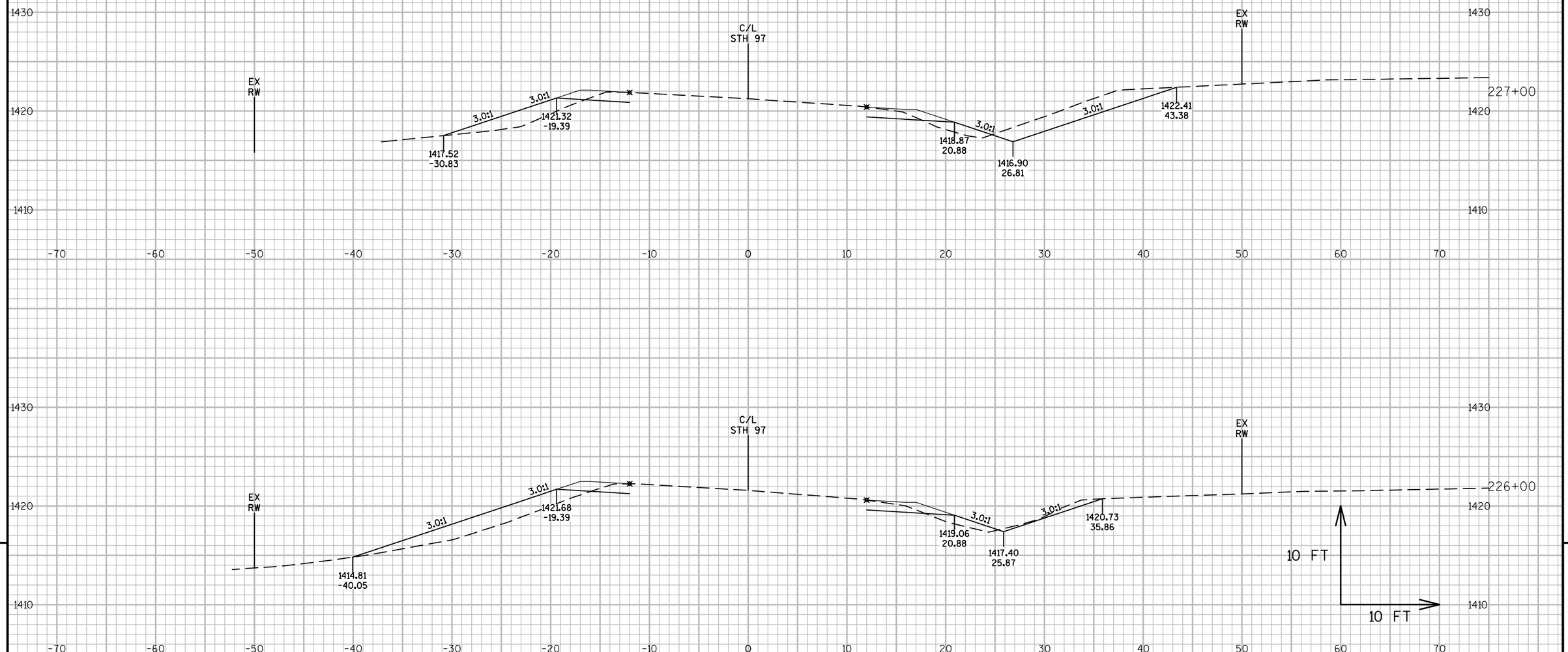


PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 94	E

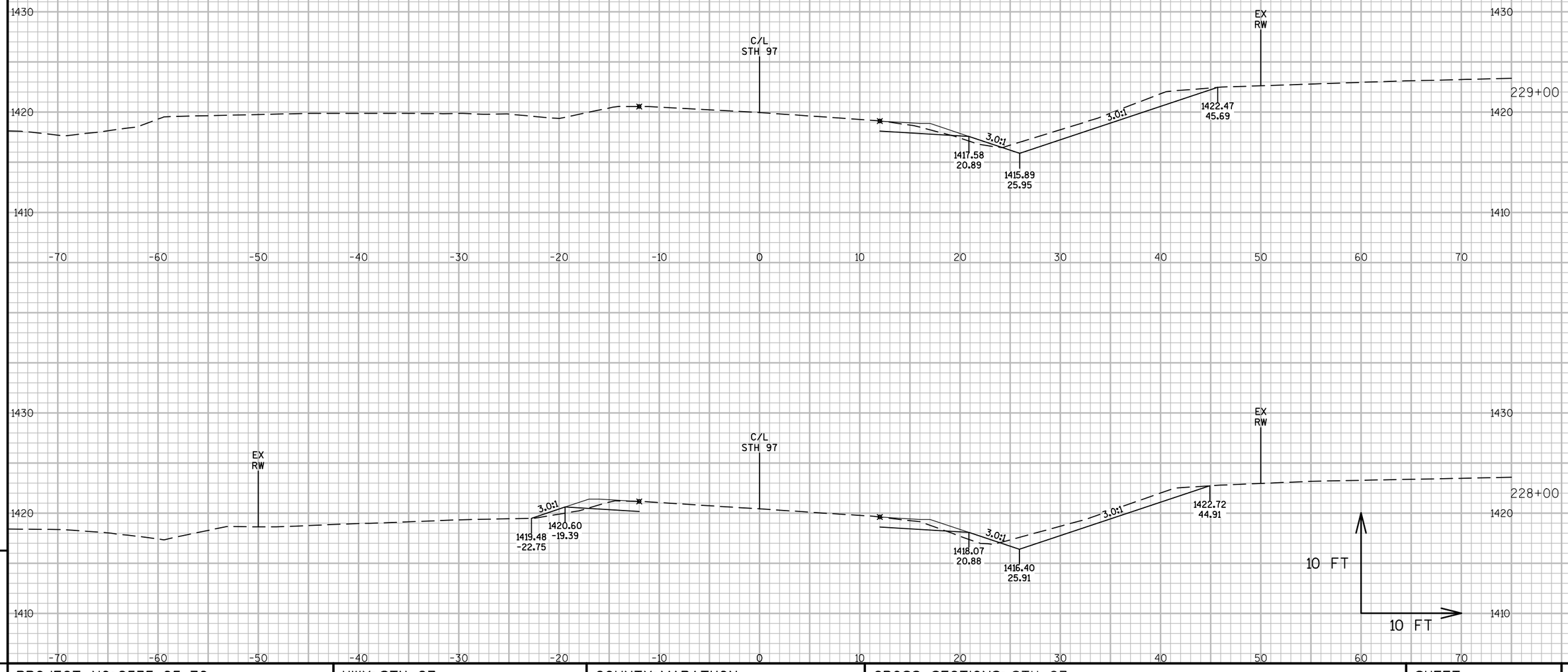
FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (17)

PLOT DATE : 8/28/2019 7:16 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT

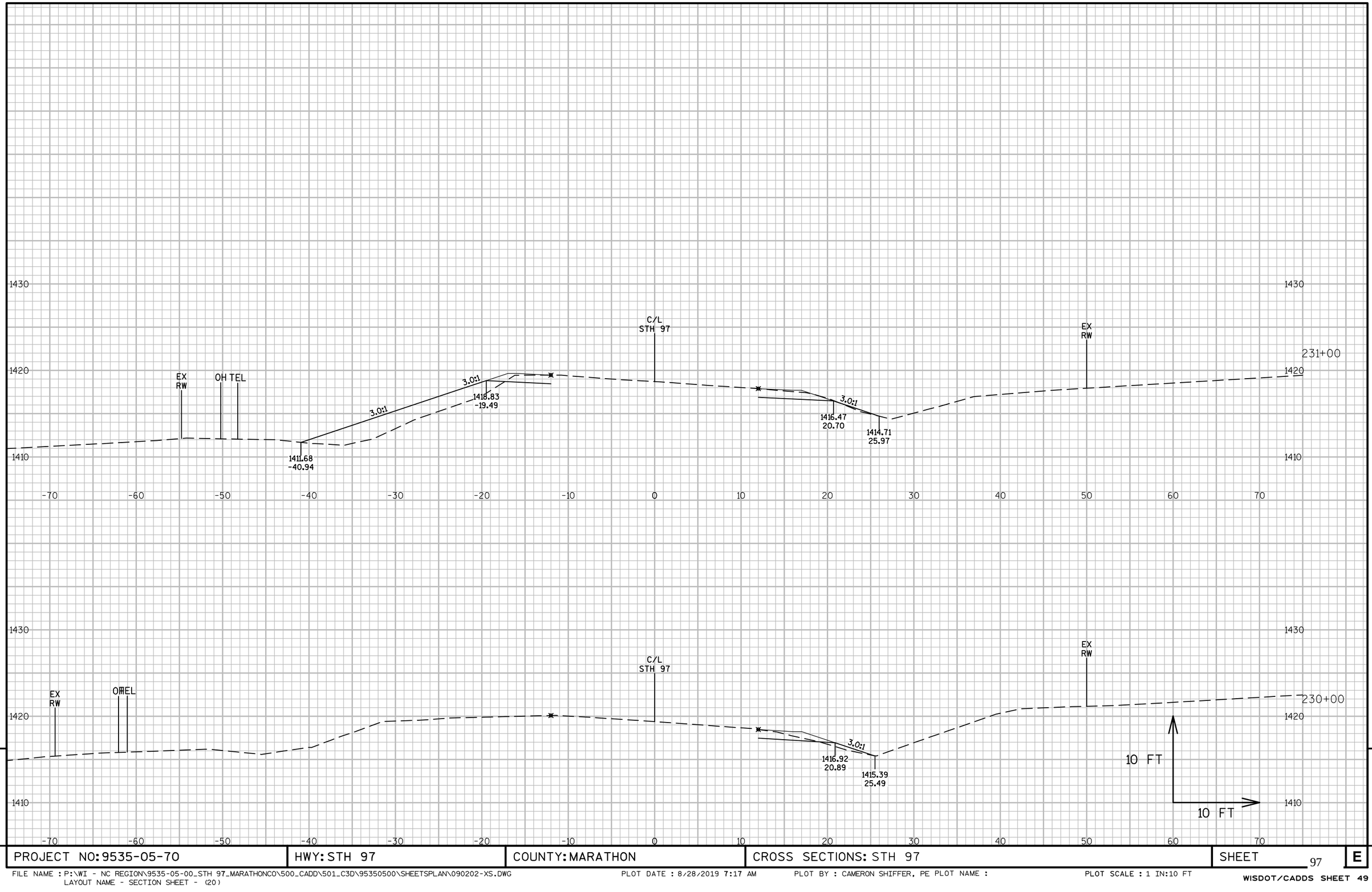
WISDOT/CADDS SHEET 49



PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 95	E



PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 96	E



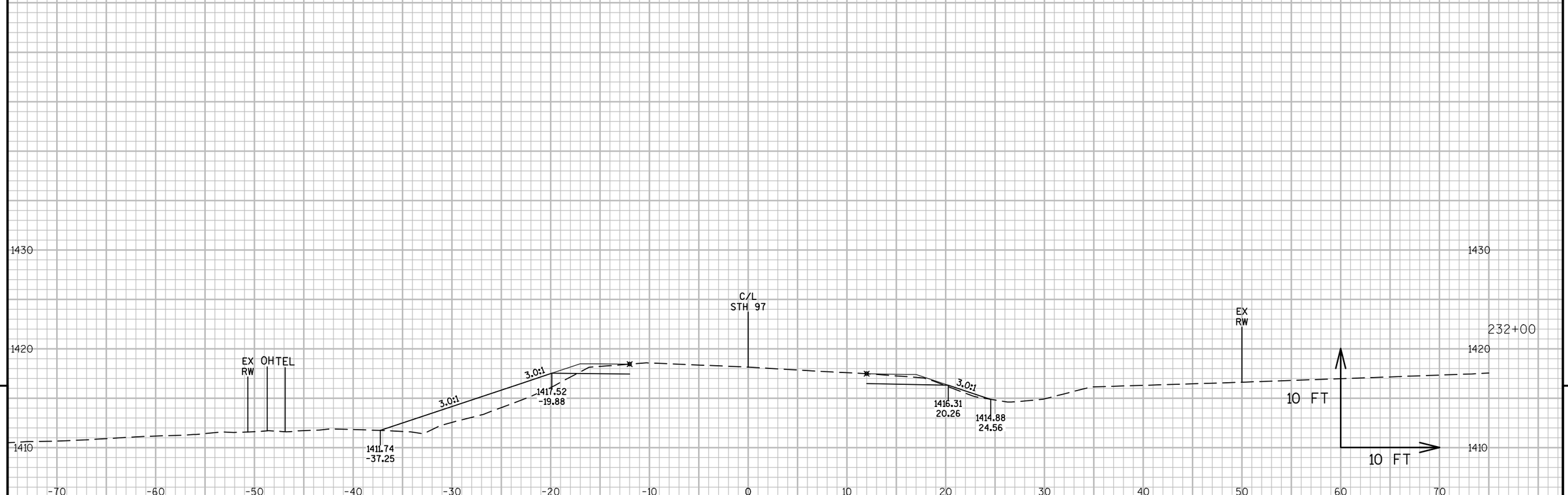
9

9

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 97	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (20)

PLOT DATE : 8/28/2019 7:17 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT



9

9

PROJECT NO: 9535-05-70	HWY: STH 97	COUNTY: MARATHON	CROSS SECTIONS: STH 97	SHEET 98	E

FILE NAME : P:\WI - NC REGION\9535-05-00_STH 97_MARATHONCO\500_CADD\501_C3D\95350500\SHEETSPLAN\090202-XS.DWG
LAYOUT NAME - SECTION SHEET - (21)

PLOT DATE : 8/28/2019 7:17 AM PLOT BY : CAMERON SHIFFER, PE PLOT NAME : PLOT SCALE : 1 IN:10 FT

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov