EAU

MAY 2018

PROJECT ID: 7730-02-60

COUNTY: BUFFALO

ORDER OF SHEETS

TOTAL SHEETS = 98

40

N

DESIGN DESIGNATION

A.A.D.T.	2017	= 530
A.A.D.T.	2037	= 570
D.H.V.		=
D.D.		= 62/38
T.		= 7.8%
DESIGN SPEED		= 55 MPH RURAL, 35 MPH GILMANTON
ESALS		= 335, 151

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE		ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY		GRADE ELEVATION	95.36
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE		ELECTRIC	E
EXISTING CULVERT		FIBER OPTIC	FO
PROPOSED CULVERT (Box or Pipe)		GAS	G
COMBUSTIBLE FLUIDS	CAUTION	SANITARY SEWER	SAN
		STORM SEWER	SS
MARSH AREA		TELEPHONE	T
		WATER	W
		UTILITY PEDESTAL	
		POWER POLE	
WOODED OR SHRUB AREA		TELEPHONE POLE	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CREAM - MONDOVI

CTH U TO STH 37

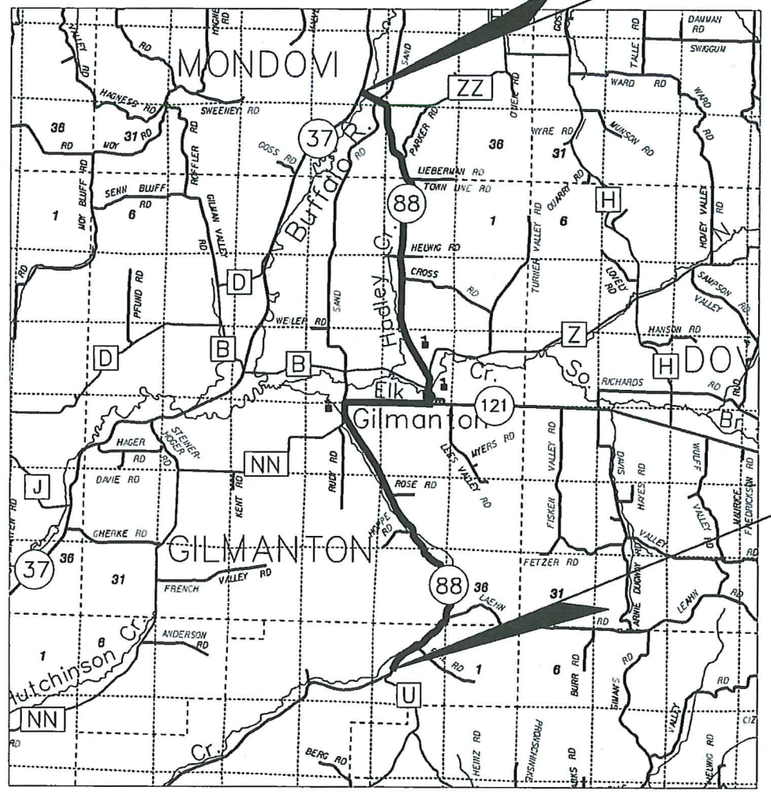
STH 88

BUFFALO COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7730-02-60	—	—

STATE PROJECT NUMBER
7730-02-60

END PROJECT 7730-02-60
STA. 1576+11.03
Y = 381,160.966
X = 600,955.643



BEGIN PROJECT 7730-02-60
STA. 1027+00.00
Y = 339,521.412
X = 604,201.367

LAYOUT
SCALE 0 2 MILES

TOTAL NET LENGTH OF CENTERLINE = 10.400 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, BUFFALO 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.

ORIGINAL PLANS PREPARED BY
Mead & Hunt

WISCONSIN
KEITH E. KOSBAU
E-28476
MILWAUKEE, WI
PROFESSIONAL ENGINEER

DATE: 1-19-2018 Keith Kosbau
(Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	MEAD & HUNT, INC.
Designer	MEAD & HUNT, INC.
Project Manager	NICOLE PASSUELLO, P.E.
Regional Examiner	JENNIFER OLDENBURG
Regional Supervisor	TIM MASON, P.E.

APPROVED FOR THE DEPARTMENT
DATE: 1/24/18 Nicole Passuello
(Signature)

E

STANDARD ABBREVIATIONS

AGG	AGGREGATE
ASPH	ASPHALTIC
AVG	AVERAGE
AADT	ANNUAL AVERAGE DAILY TRAFFIC
BR	BRIDGE
CTH	COUNTY TRUNK HIGHWAY
CY	CUBIC YARD
D	DEGREE OF CURVE
DHV	DESIGN HOUR VOLUME
DIA	DIAMETER
EAT	ENERGY ABSORBING TERMINAL
E	EAST
X	EAST GRID COORDINATE
EB	EAST BOUND
ELEC	ELECTRIC
EL	ELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
EBS	EXCAVATION BELOW SUBGRADE
FS	FULL SUPERELEVATION
G	GAS
LS	LUMP SUM
LWT	LANE WEDGE THICKNESS
MGS	MIDWEST GUARD RAIL SYSTEM
N	NORTH
NC	NORMAL CROWN
Y	NORTH GRID COORDINATE
NB	NORTHBOUND
OH	OVERHEAD
PIPL	PIPELINE
REINF	REINFORCING OR REINFORCEMENT
REQD	REQUIRED
RT	RIGHT
R/W	RIGHT-OF-WAY
RD	ROAD
RDWY	ROADWAY
SALV	SALVAGED
SSS	SANITARY AND STORM SEWER
SAN S	SANITARY SEWER
SE	SUPERELEVATION
SEC	SECTION
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWINGS
STA	STATION
SWT	SHOULDER WEDGE THICKNESS
TEL	TELEPHONE
TEMP	TEMPORARY
T or TN	TOWN
T	TRUCKS
TYP	TYPICAL
UG	UNDERGROUND
VOL	VOLUME
WB	WESTBOUND

UTILITY CONTACTS

RIVERLAND ENERGY COOPERATIVE
ELECTRIC
ATTN: TIM HOLTAN
625 W MAIN ST
P.O. BOX 277
ARCADIA, WI 54612-0277
608-323-3381 EXT 224
THOLTAN@RIVERLANDENERGY.COM

FRONTIER COMMUNICATIONS OF MONDOVI, LLC - COMMUNICATION LINE
COMMUNICATION
ATTN: CHRIS POLLACK
521 N 4TH ST
WAUSAU, WI 55403
715-847-1240
CHRISTOPHER.POLLACK@FTR.COM

NELSON COMMUNICATION COOPERATIVE - COMMUNICATION LINE
COMMUNICATION
ATTN: MATT HOYT
318 3RD AVE W
P.O. BOX 228
DURAND, WI 54736
715-672-4204
MATT@NTEC.NET

GENERAL NOTES:

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE SEEDED AND FERTILIZED AS DIRECTED BY THE ENGINEER.

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

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT PRIOR APPROVAL OF THE ENGINEER IN THE FIELD.

THE EXACT LOCATIONS AND LIMITS OF DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER.

EROSION CONTROL FEATURES AS SHOWN ON THE PLAN ARE SUGGESTED LOCATIONS. THEIR EXACT LOCATION WILL BE DETERMINED IN THE FIELD.

THE LANE AND SHOULDER SIDE SLOPES WILL REQUIRE WEDGING TO CORRECT THE ROAD SLOPE TO CURRENT STANDARDS. THE EXISTING LANE AND SHOULDER SLOPES ARE VARIABLE. THE LANE AND SHOULDER WEDGE THICKNESSES SHOWN IN THE PLAN ARE APPROXIMATE, AND WERE USED FOR QUANTITY ESTIMATING PURPOSES. THE ACTUAL WEDGE THICKNESSES WILL DEPEND ON FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER.

WHEN THE QUANTITY OF BASE AGGREGATE AND PULVERIZE AND RELAY ASPHALT PAVEMENT IS MEASURED FOR PAYMENT BY THE TON. THE DEPTH OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAY PAVEMENTS AND SIDEROADS AT REMOVAL LIMITS.

* DENOTES NON-DIGGERS HOTLINE MEMBER

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

ORDER OF DETAIL DRAWINGS

PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAIL

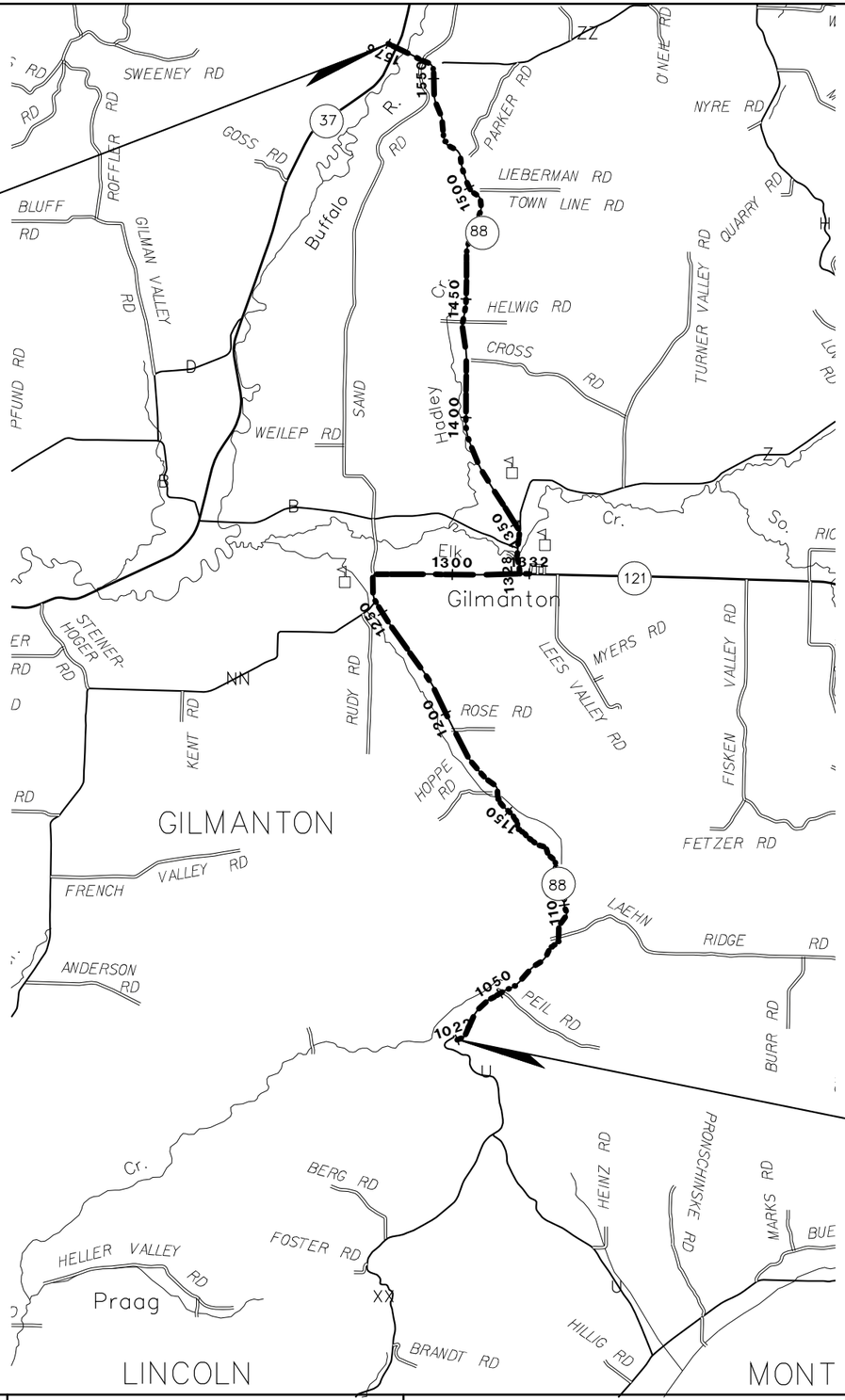
CONSULTANT CONTACT
MEAD & HUNT, INC.
750 N 3RD ST
LA CROSSE, WI 54601

ATTN: MR. JAY WHEATON, P.E.
TELEPHONE: 608-443-7048 EXT. 104
E-MAIL: JAY.WHEATON@MEADHUNT.COM

DNR LIAISON
DEPARTMENT OF NATURAL RESOURCES
DNR SERVICE CENTER
1300 W. CLAIREMONT AVE
EAU CLAIRE, WI 54701

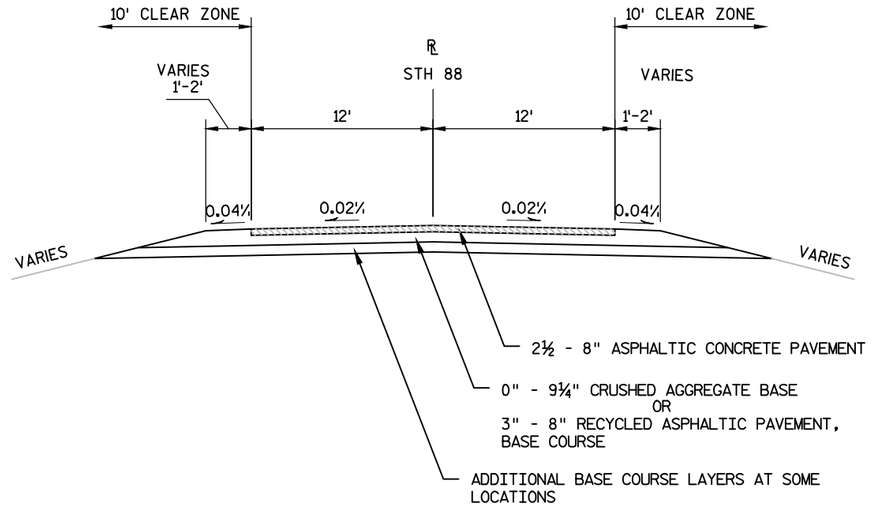
ATTN: MS. AMY LESIK
TELEPHONE: 715-836-6571
E-MAIL: AMYL.LESIK@WISCONSIN.GOV

END PROJECT 7730-02-60
STA. 1576+11.03
Y = 381,160.966
X = 600,955.643



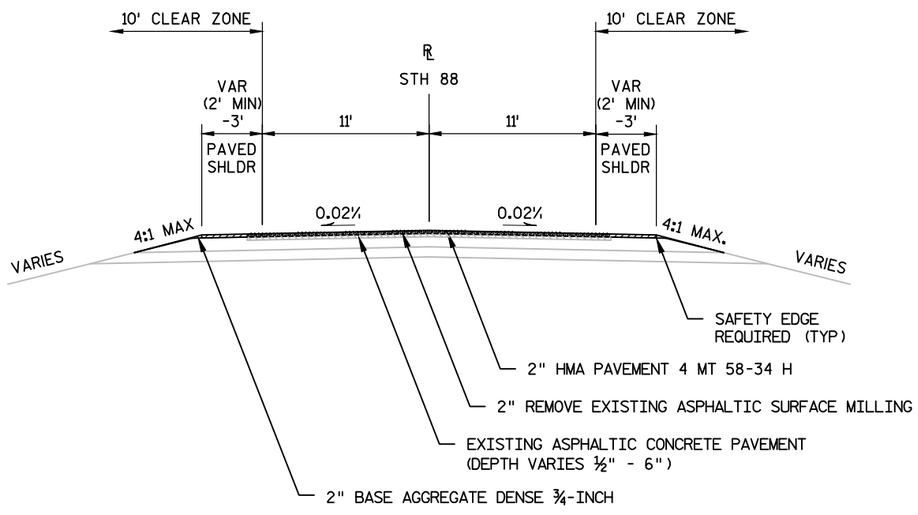
BEGIN PROJECT 7730-02-60
STA. 1027+00.00
Y = 339,521.412
X = 604,201.367

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PROJECT OVERVIEW	SHEET -----	E



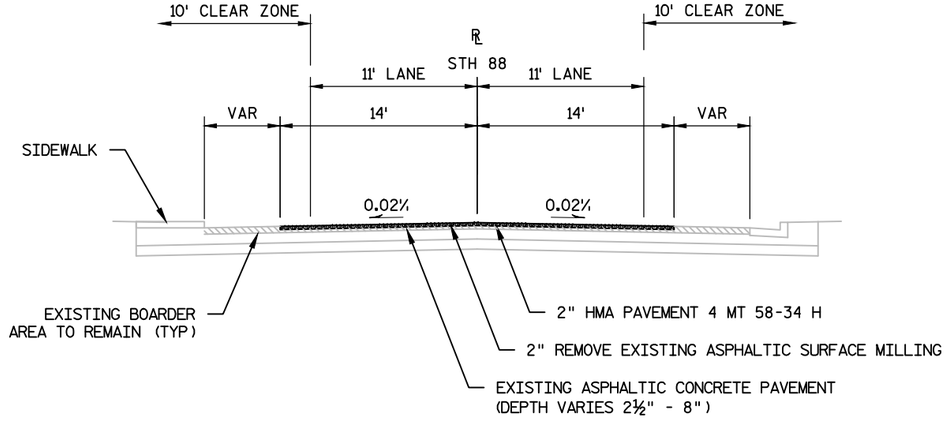
EXISTING TYPICAL SECTION

STA 1027+00 TO STA 1576+11.03



FINISHED TYPICAL SECTION

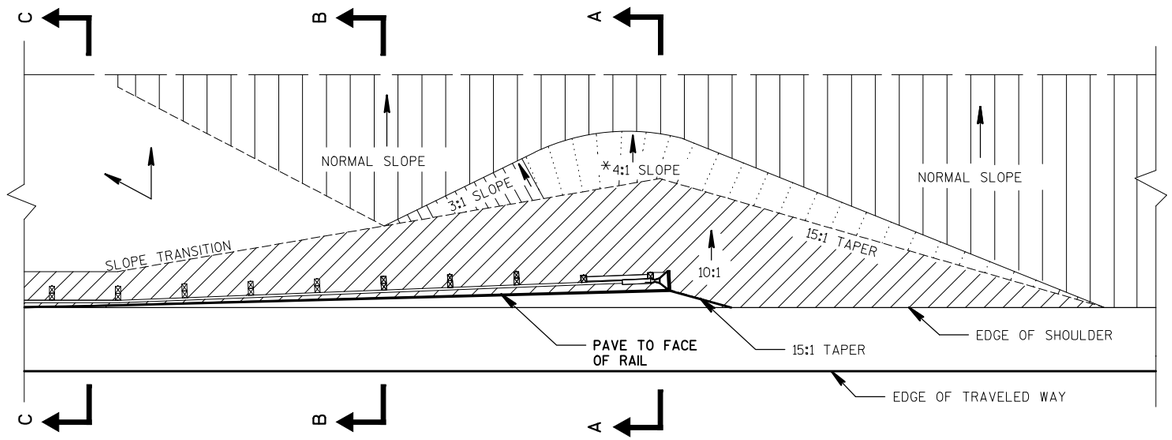
STA 1027+00 TO STA 1337+80
STA 1346+00 TO STA 1576+11



FINISHED TYPICAL SECTION

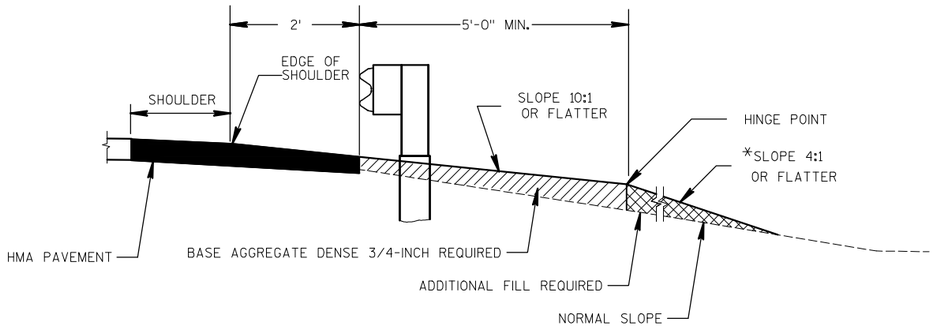
STA 1337+75 TO STA 1346+50

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	TYPICAL SECTIONS	SHEET	E

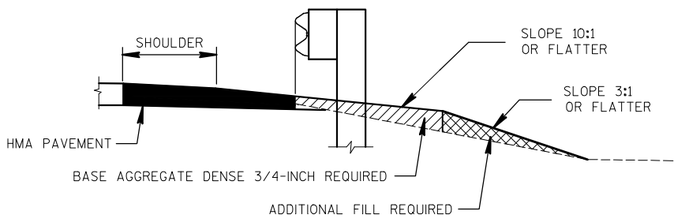


PLAN VIEW

*A 3:1 MAXIMUM SLOPE MAY BE USED FOR INSTALLATIONS ON EXISTING HIGHWAYS.

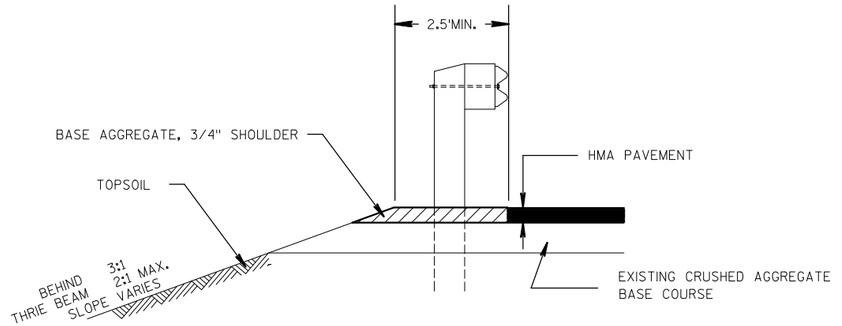


SECTION A-A



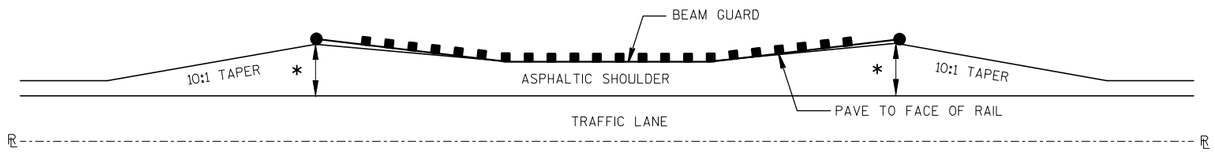
SECTION B-B

FILL AREA AT BEAM GUARD



ASPHALTIC SHOULDER AT GUARD RAIL

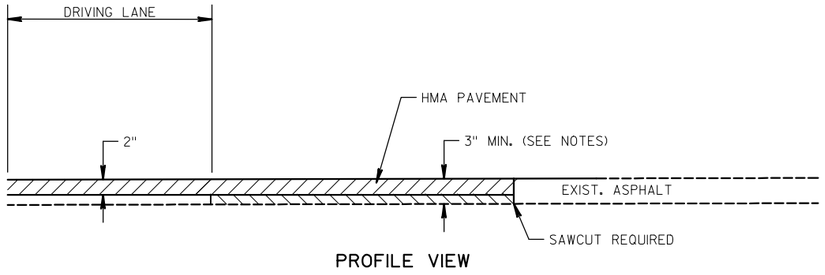
SECTION C-C



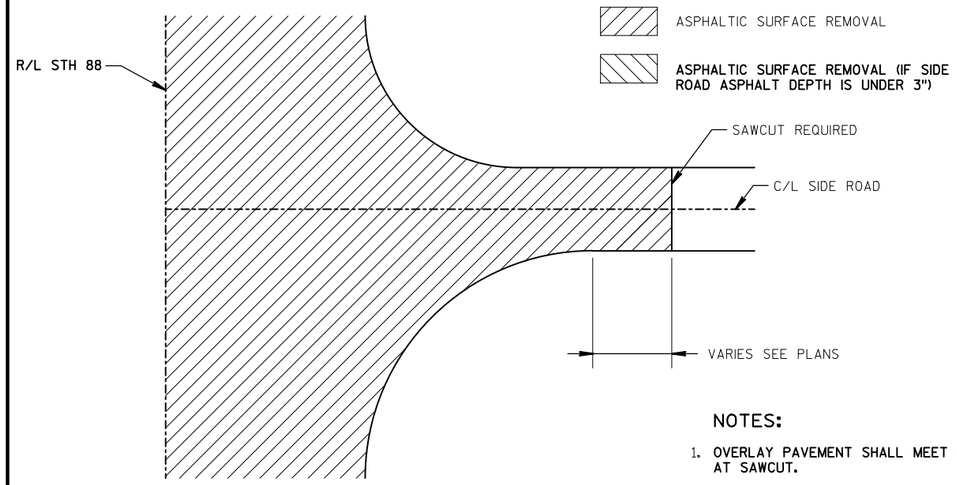
DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD

* SEE PLAN VIEW SHEETS FOR STATION OFFSETS

STA 1331+90 - 1334+84
STA 1395+47 - 1398+78



PROFILE VIEW

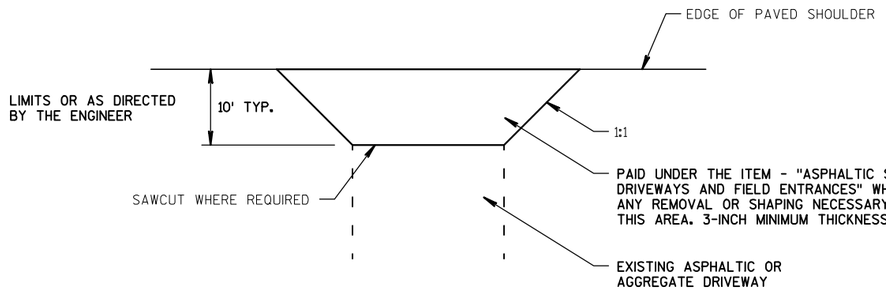


PLAN VIEW

NOTES:

1. OVERLAY PAVEMENT SHALL MEET EXISTING ELEVATION AT SAWCUT.
2. WHEN EXISTING ASPHALT IS LESS THAN 3", MILL/REMOVE EXISTING PAVEMENT FULL DEPTH. NEW PAVEMENT SHALL MATCH EXISTING THICKNESS (3" MIN). THE BASE AGGREGATE SHALL BE ADJUSTED FOR EXISTING PAVEMENT THICKNESS LESS THAN 3".

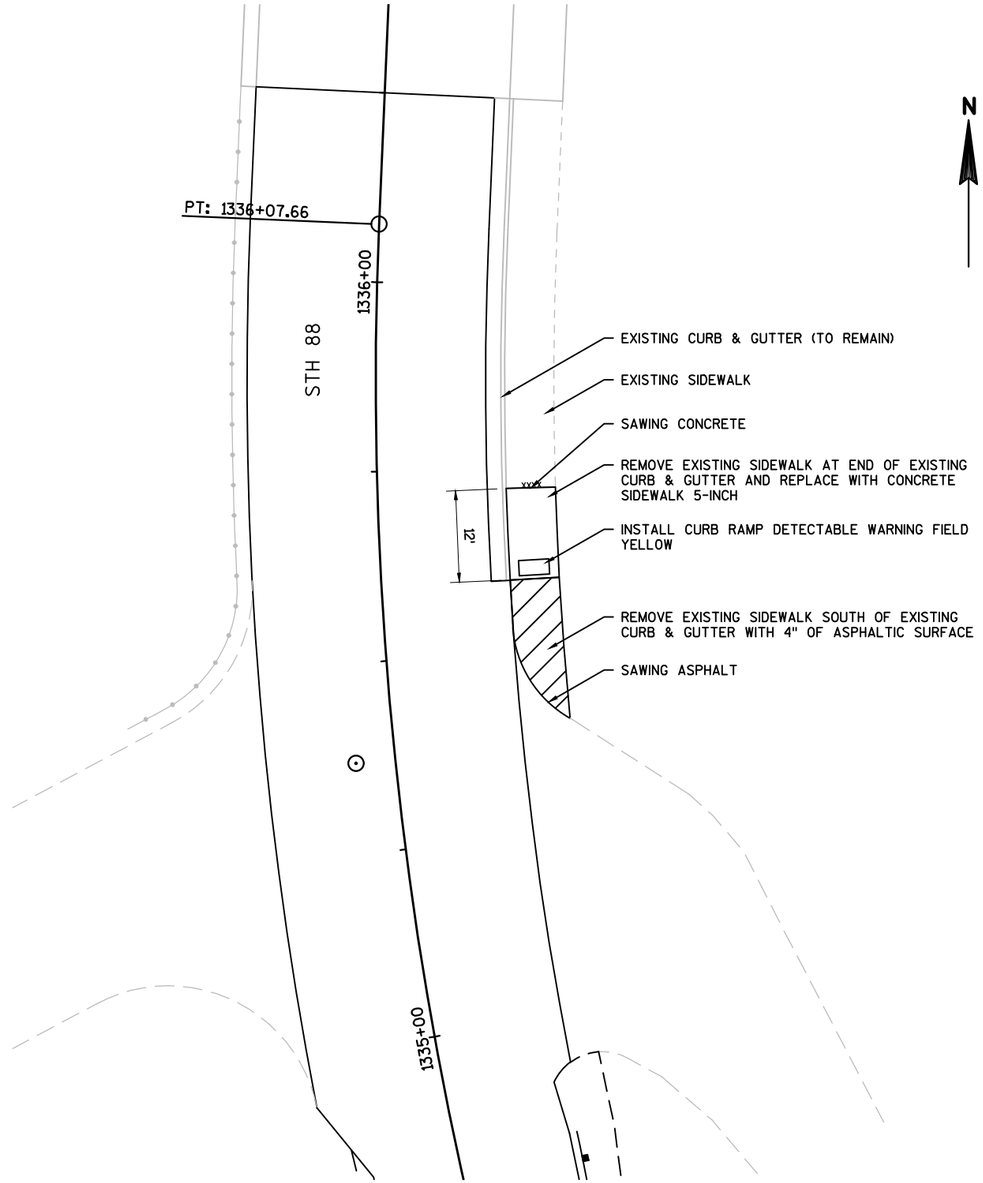
INTERSECTION DETAIL



NOTE:

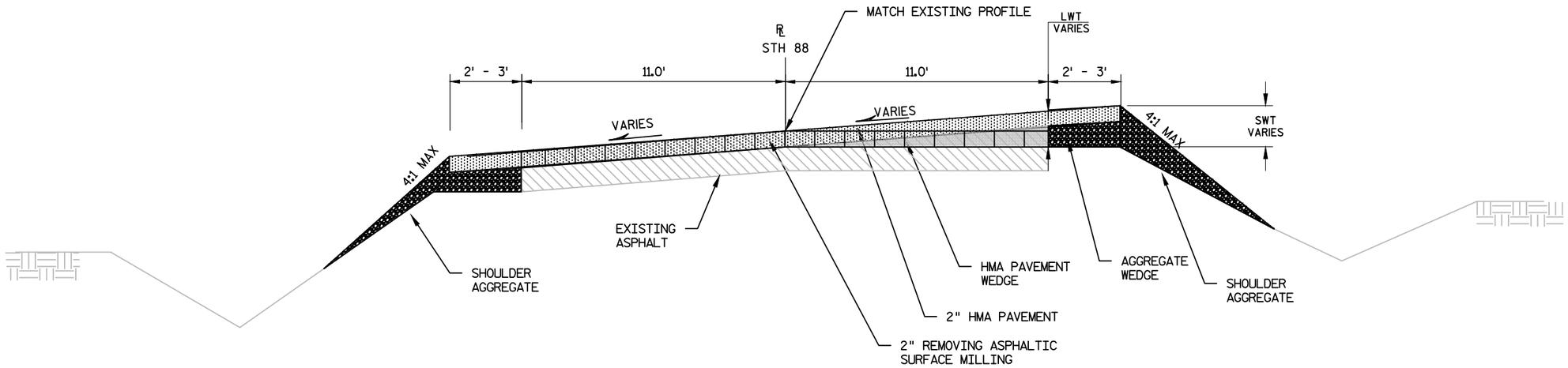
ANY ADDITIONAL BASE AGGREGATE DENSE REQUIRED SHALL BE PAID UNDER THE ITEM - "BASE AGGREGATE DENSE 3/4-INCH"

RURAL DRIVEWAY DETAIL



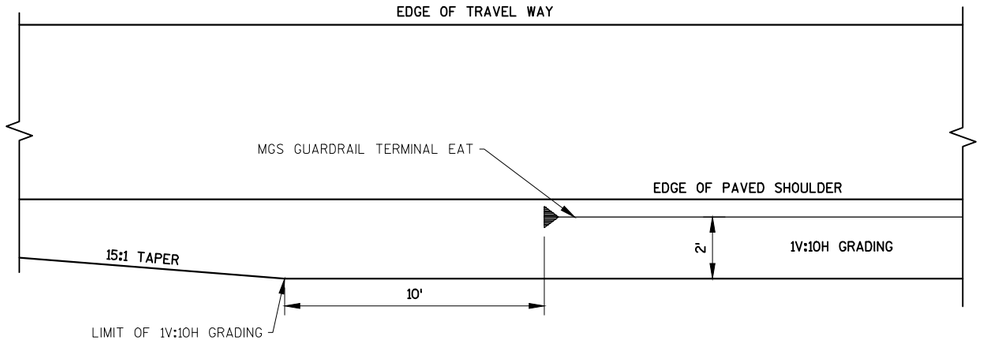
CURB RAMP DETAIL SOUTH SIDE OF BRIDGE

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CONSTRUCTION DETAILS	SHEET	E



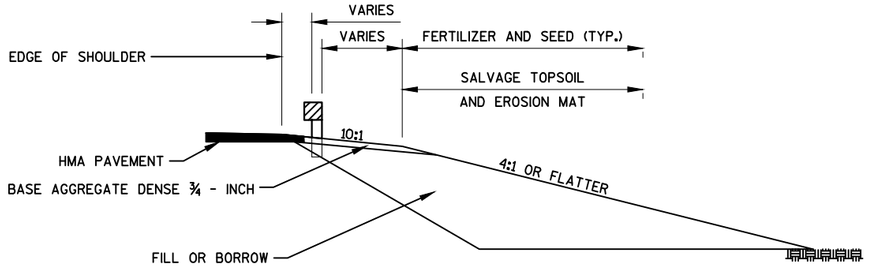
NOTE
LWT = LANE WEDGE THICKNESS
SWT = SHOULDER WEDGE THICKNESS
THICKNESSES ARE SHOWN ON THE
PLAN VIEW SHEETS.

WEDGING DETAIL



ALTERNATIVE GRADING FOR NON-FLARED GUARDRAIL END TREATMENT

STA 1395+47

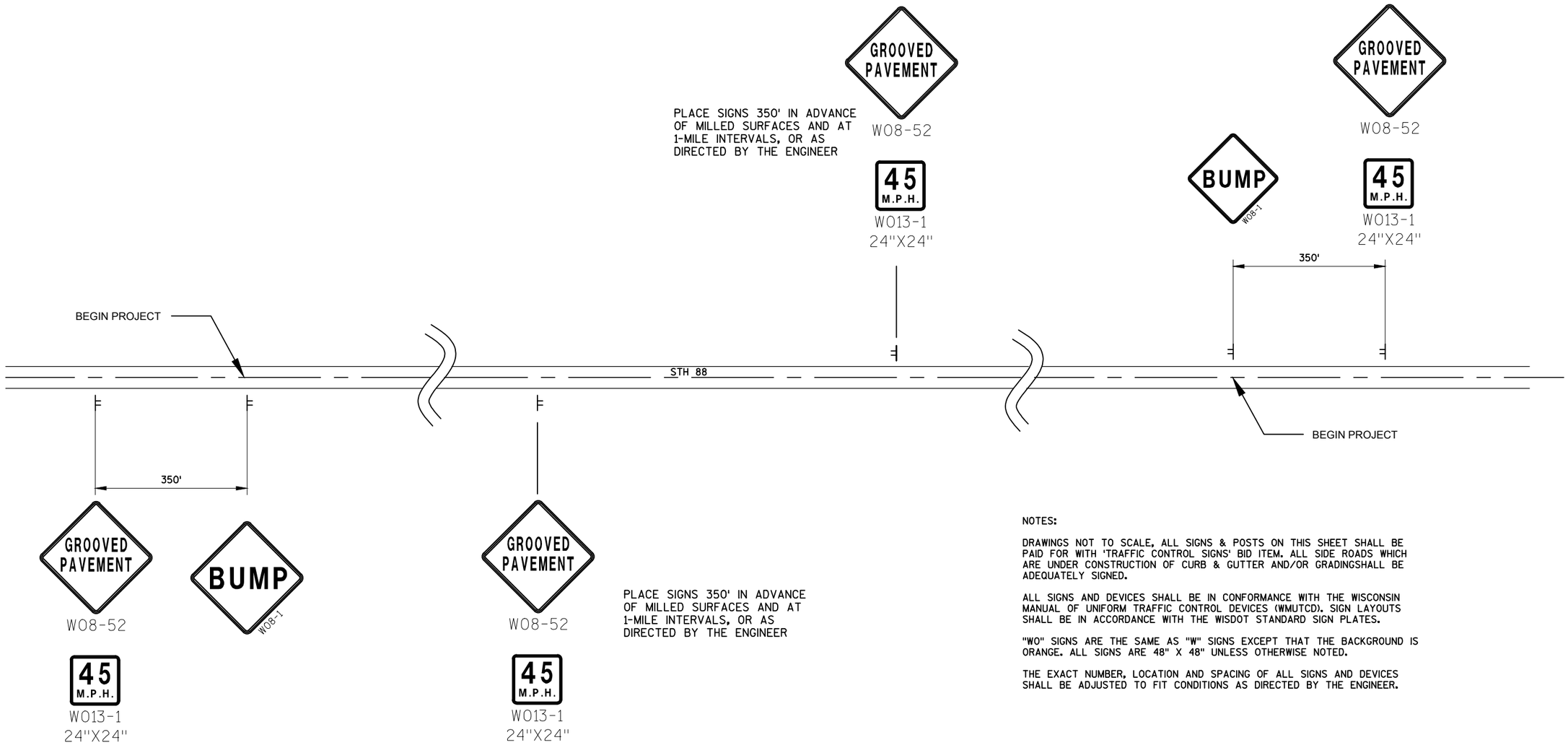


* SEE STANDARD DETAIL DRAWINGS FOR BEAM GUARD OFFSETS

TYPICAL WIDENING AT END TREATMENTS FOR
ALTERNATE GRADING

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CONSTRUCTION DETAILS	SHEET	E

2



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

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

NOTES:

DRAWINGS NOT TO SCALE, ALL SIGNS & POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB & GUTTER AND/OR GRADINGSHALL 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 CONDITIONS AS DIRECTED BY THE ENGINEER.

DETAIL FOR SIGNING ON MAINLINE MILLED SURFACES

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	TRAFFIC CONTROL DETAILS	SHEET	E

7730-02-60

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	3.000	3.000
0004	201.0205	Grubbing	STA	3.000	3.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	148,666.000	148,666.000
0008	204.0155	Removing Concrete Sidewalk	SY	9.000	9.000
0010	204.0165	Removing Guardrail	LF	697.000	697.000
0012	205.0100	Excavation Common	CY	340.000	340.000
0014	208.0100	Borrow	CY	1,808.000	1,808.000
0016	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 7730-02-60	LS	1.000	1.000
0018	213.0100	Finishing Roadway (project) 01. 7730-02-60	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	15,121.000	15,121.000
0022	305.0500	Shaping Shoulders	STA	1,074.000	1,074.000
0024	440.4410	Incentive IRI Ride	DOL	20,800.000	20,800.000
0026	455.0605	Tack Coat	GAL	3,717.000	3,717.000
0028	460.2005	Incentive Density PWL HMA Pavement	DOL	22,620.000	22,620.000
0030	460.2010	Incentive Air Voids HMA Pavement	DOL	22,620.000	22,620.000
0032	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	53,675.000	53,675.000
0034	460.6444	HMA Pavement 4 MT 58-34 H	TON	30,790.000	30,790.000
0036	465.0110	Asphaltic Surface Patching	TON	125.000	125.000
0038	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	251.000	251.000
0040	602.0410	Concrete Sidewalk 5-Inch	SF	78.000	78.000
0042	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	10.000	10.000
0044	614.0230	Steel Thrie Beam	LF	83.000	83.000
0046	614.0305	Steel Plate Beam Guard Class A	LF	214.000	214.000
0048	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	4.000	4.000
0050	614.2300	MGS Guardrail 3	LF	413.000	413.000
0052	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0054	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7730-02-60	EACH	1.000	1.000
0056	619.1000	Mobilization	EACH	1.000	1.000
0058	624.0100	Water	MGAL	30.000	30.000
0060	625.0500	Salvaged Topsoil	SY	3,785.000	3,785.000
0062	628.1504	Silt Fence	LF	2,000.000	2,000.000
0064	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0066	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0068	628.2004	Erosion Mat Class I Type B	SY	3,785.000	3,785.000
0070	629.0210	Fertilizer Type B	CWT	2.450	2.450
0072	630.0130	Seeding Mixture No. 30	LB	50.000	50.000
0074	630.0300	Seeding Borrow Pit	LB	5.000	5.000
0076	642.5001	Field Office Type B	EACH	1.000	1.000

7730-02-60

Line	Item	Item Description	Unit	Total	Qty
0078	643.0300	Traffic Control Drums	DAY	1,080.000	1,080.000
0080	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000
0082	643.0900	Traffic Control Signs	DAY	2,196.000	2,196.000
0084	643.5000	Traffic Control	EACH	1.000	1.000
0086	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	198,410.000	198,410.000
0088	646.6120	Marking Stop Line Epoxy 18-Inch	LF	36.000	36.000
0090	648.0100	Locating No-Passing Zones	MI	10.400	10.400
0092	649.0105	Temporary Marking Line Paint 4-Inch	LF	179,260.000	179,260.000
0094	650.8000	Construction Staking Resurfacing Reference	LF	54,900.000	54,900.000
0096	650.9000	Construction Staking Curb Ramps	EACH	1.000	1.000
0098	650.9910	Construction Staking Supplemental Control (project) 01. 7730-02-60	LS	1.000	1.000
0100	690.0150	Sawing Asphalt	LF	1,080.000	1,080.000
0102	690.0250	Sawing Concrete	LF	5.000	5.000
0104	SPV.0060	Special 01. HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0106	SPV.0060	Special 02. HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000

CLEARING AND GRUBBING

PROJECT ID	STATION - STATION		LOCATION	201.0105 CLEARING (STA)	201.0205 GRUBBING (STA)
7730-02-60	1395+50	1397+50	RT	2	2
	1570+50	1571+00	RT	0.5	0.5
	1573+00	1573+50	RT	0.5	0.5
			TOTAL	3	3

REMOVING GUARDRAIL

PROJECT ID	STATION - STATION		LOCATION	204.0165 REMOVING GUARDRAIL (LF)
7730-02-60	1331+94	1333+68	RT	174
	1397+35	1398+64	RT	129
	1569+90	1570+88	RT	98
	1569+90	1570+88	LT	98
	1572+84	1573+83	RT	99
	1572+84	1573+83	LT	99
			TOTAL	697

FINISHING ROADWAY

PROJECT ID	STATION - STATION		LOCATION	213.0100 FINISHING ROADWAY (PROJECT 7730-02-60) (EACH)
7730-02-60	1027+00	1576+00	PROJECT	1
			TOTAL	1

TACK COAT

PROJECT ID	STATION - STATION		LOCATION	455.0605 TACK COAT (GAL)
7730-02-60	1027+00	1329+50	MAINLINE	2,017
	1328+40	1335+00	MAINLINE	44
	1335+00	1336+25	MAINLINE	10
	1337+75	1346+50	MAINLINE	68
	1346+50	1370+85	MAINLINE	162
	1372+85	1576+11	MAINLINE	1,355
	1053+25 RT		PEIL RD	2
	1084+92 RT		LAEHN RIDGE RD	3
	1159+10 LT		HOPPE RD	2
	1254+10 LT		CTH NN	5
	1266+80 LT		SAND RD	15
	1328+40 RT		STH 121	7
	1423+70 RT		CROSS RD	2
	1440+16 RT		LOESEL RD	2
	1498+10 RT		LIEBERMAN RD	3
	1513+50 RT		PARKER RD	1
	1556+00 RT		CTH ZZ	9
	1563+25 RT		SAND RD	5
	1563+70 LT		SAND RD	4
			TOTAL	3717

REMOVING ASPHALTIC SURFACE MILLING

PROJECT ID	STATION - STATION		LOCATION	204.0120 REMOVING ASPHALTIC SURFACE MILLING (SY)
7730-02-60	1027+00	1329+50 '121'	MAINLINE	80,667
	1328+40	1335+00	MAINLINE	1,760
	1335+00	1336+25	MAINLINE	389
	1337+75	1346+50	MAINLINE	2,722
	1346+50	1370+85	MAINLINE	6,493
	1372+85	1576+11	MAINLINE	54,203
	1053+25 RT		PEIL RD	75
	1084+92 RT		LAEHN RIDGE RD	135
	1159+10 LT		HOPPE RD	65
	1254+10 LT		CTH NN	196
	1266+80 LT		SAND RD	588
	1328+40 RT		STH 121	295
	1423+70 RT		CROSS RD	89
	1440+16 RT		LOESEL RD	94
	1498+10 RT		LIEBERMAN RD	112
	1513+50 RT		PARKER RD	48
	1556+00 RT		CTH ZZ	359
	1563+25 RT		SAND RD	210
	1563+70 LT		SAND RD	166
			TOTAL	148,666

SHAPING SHOULDERS

PROJECT ID	STATION		LOCATION	305.0500 SHAPING SHOULDERS (STA)
7730-02-60	1027+00	-	1336+25	LT & RT 619
	1346+50	-	1570+85	LT & RT 449
	1572+85	-	1576+00	LT & RT 6
				TOTAL 1,074

REMOVING CONCRETE SIDEWALK

PROJECT ID	STATION	LOCATION	204.0155 REMOVING CONCRETE SIDEWALK (SY)
7730-02-60	1335+65	RT	9
		TOTAL	9

PREPARE FOUNDATION FOR ASPHALTIC PAVING

PROJECT ID	STATION - STATION		LOCATION	211.0100 PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT 7730-02-60) (LS)
7730-02-60	1027+00	1576+00	PROJECT	1
			TOTAL	1

REHEATING LOGITUDINAL JOINTS

PROJECT ID	STATION - STATION		LOCATION	460.4110.S REHEATING HMA LONGITUDINAL JOINTS LF
7730-02-60	1027+00	1336+25	MAINLINE	30,925
	1346+50	1570+85	MAINLINE	22,435
	1572+85	1576+00	MAINLINE	315
			TOTAL	53675

EARTHWORK SUMMARY

PROJECT ID	CATEGORY	STATION - STATION	LOCATION	205.0100 EXCAVATION COMMON (1) (2) CUT FROM EW DATA CY	(3) EBS CY	(4) SALVAGED/ UNUSABLE PAVEMENT MATERIAL CY	(5) AVAILABLE MATERIAL CY	(6) REDUCED EBS IN FILL FACTOR = 0.8 CY	(7) EXPANDED FILL FROM EW DATA CY	(8) MASS ORDINATE (+/-) CY	208.0100 BORROW (8) BORROW (CY)	REMARKS
7730-02-60	0010	1333+58 - 1334+83	STH 88	61			61		360	-299		
		1394+87 - 1399+98	STH 88	109			109		61	48		
		1568+25 - 1575+25	STH 88	170			170		1,727	-1,557		
		TOTAL		340			340		2,148	-1,808	1,808	
				340								

(1) EXCAVATION COMMON IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100.
(2) COMMON FROM COMPUTER EARTHWORK DATA, INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL.
(3) EBS IS TO BE BACKFILLED WITH SELECT CRUSHED MATERIAL.
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL.
(5) AVAILABLE MATERIAL = CUT - UNUSABLE PAVEMENT MATERIAL.
(6) REDUCED EBS IN FILL - EXCAVATED EBS MATERIAL IS USABLE IN FILLS OUTSIDE THE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = 0.8
(7) EXPANDED FILL FROM COMPUTER EARTHWORK DATA. EXPANDED FILL FACTOR = 1.3
(8) MASS ORDINATE = (CUT - UNUSABLE PAVEMENT MATERIAL) - EXPANDED FILL
MASS ORDINATE IS + OR - QUANTITY FOR THE DIVISION. PLUS IS EXCESS, MINUS IS SHORTAGE

ASPHALTIC PAVEMENT AND BASE AGGREGATE

			460.6444	305.0110
PROJECT ID	STATION - STATION	LOCATION	(1) HMA PAVEMENT 4 MT 58-34 H (TON)	(2) BASE AGGREGATE DENSE 3/4 INCH (TON)
7730-02-60	1027+00 - 1027+94	MAINLINE	57	34
	1027+94 - 1033+46	MAINLINE	192	82
	1033+46 - 1040+46	MAINLINE	420	286
	1040+46 - 1040+77	MAINLINE	11	5
	1040+77 - 1046+44	MAINLINE	263	266
	1046+44 - 1049+90	MAINLINE	193	111
	1049+90 - 1054+35	MAINLINE	225	164
	1054+35 - 1057+02	MAINLINE	156	82
	1057+02 - 1062+62	MAINLINE	283	111
	1062+62 - 1064+09	MAINLINE	51	22
	1064+09 - 1070+72	MAINLINE	335	285
	1070+72 - 1076+09	MAINLINE	260	140
	1076+09 - 1079+87	MAINLINE	191	148
	1079+87 - 1081+35	MAINLINE	66	29
	1081+35 - 1083+60	MAINLINE	136	86
	1083+60 - 1086+13	MAINLINE	157	77
	1086+13 - 1087+97	MAINLINE	64	27
	1087+97 - 1092+52	MAINLINE	256	119
	1092+52 - 1093+50	MAINLINE	34	15
	1093+50 - 1097+75	MAINLINE	215	136
	1097+75 - 1103+68	MAINLINE	300	180
	1103+68 - 1104+28	MAINLINE	21	9
	1104+28 - 1107+22	MAINLINE	115	50
	1107+22 - 1110+15	MAINLINE	148	81
	1110+15 - 1112+00	MAINLINE	93	55
	1112+00 - 1113+32	MAINLINE	67	30
	1113+32 - 1116+79	MAINLINE	174	78
	1116+79 - 1119+20	MAINLINE	122	64
	1119+20 - 1120+94	MAINLINE	88	72
	1120+94 - 1125+37	MAINLINE	224	221
	1125+37 - 1128+84	MAINLINE	199	169
	1128+84 - 1132+25	MAINLINE	172	99
	1132+25 - 1134+41	MAINLINE	109	50
	1134+41 - 1137+22	MAINLINE	139	76
	1137+22 - 1139+12	MAINLINE	96	47
	1139+12 - 1140+92	MAINLINE	67	70
	1140+92 - 1143+01	MAINLINE	92	47
	1143+01 - 1145+00	MAINLINE	102	46
	1145+00 - 1146+66	MAINLINE	84	52
	1146+66 - 1149+73	MAINLINE	155	90
	1149+73 - 1154+15	MAINLINE	223	121
	1154+15 - 1156+68	MAINLINE	105	51
	1156+68 - 1158+96	MAINLINE	115	69
	1158+96 - 1164+56	MAINLINE	283	120
	1164+56 - 1164+91	MAINLINE	12	5
	1164+91 - 1170+16	MAINLINE	265	135
	1170+16 - 1175+09	MAINLINE	213	96
	1175+09 - 1180+90	MAINLINE	303	169
	1180+90 - 1190+27	MAINLINE	326	139
	1190+27 - 1198+39	MAINLINE	325	255
	1198+39 - 1209+97	MAINLINE	403	172
	1209+97 - 1216+64	MAINLINE	487	261
	1216+64 - 1241+83	MAINLINE	878	373
	1241+83 - 1246+58	MAINLINE	240	124
	1246+58 - 1252+00	MAINLINE	189	80
	1252+00 - 1255+34	MAINLINE	184	65
	1255+34 - 1260+80	MAINLINE	256	138
	1260+80 - 1264+76	MAINLINE	138	59
	1264+76 - 1269+08	MAINLINE	232	129
	1269+08 - 1273+11	MAINLINE	140	60
	1273+11 - 1274+09	MAINLINE	40	22
	1274+09 - 1287+82	MAINLINE	478	203
	1287+82 - 1292+94	MAINLINE	192	84
	1292+94 - 1295+57	MAINLINE	92	39
	1295+57 - 1296+76	MAINLINE	41	28
	1296+76 - 1329+00	MAINLINE	1123	478
	1329+00 - 1336+25	MAINLINE	253	107
	1137+78 - 1347+00	MAINLINE	7290	3100

ASPHALTIC PAVEMENT AND BASE AGGREGATE (CONT'D)

			460.6444	305.0110
PROJECT ID	STATION - STATION	LOCATION	(1) HMA PAVEMENT 4 MT 58-34 H (TON)	(2) BASE AGGREGATE DENSE 3/4 INCH (TON)
	1347+00 - 1357+88	MAINLINE	379	161
	1357+88 - 1359+58	MAINLINE	59	59
	1359+58 - 1366+10	MAINLINE	227	97
	1366+10 - 1371+29	MAINLINE	197	90
	1371+29 - 1374+62	MAINLINE	116	49
	1374+62 - 1381+52	MAINLINE	349	217
	1381+52 - 1386+05	MAINLINE	158	67
	1386+05 - 1390+47	MAINLINE	219	164
	1390+47 - 1395+35	MAINLINE	247	129
	1395+35 - 1400+18	MAINLINE	249	118
	1400+18 - 1402+44	MAINLINE	111	38
	1402+44 - 1409+91	MAINLINE	260	111
	1409+91 - 1411+29	MAINLINE	50	25
	1411+29 - 1417+57	MAINLINE	219	93
	1417+57 - 1419+42	MAINLINE	78	27
	1419+42 - 1422+79	MAINLINE	117	50
	1422+79 - 1430+74	MAINLINE	402	174
	1430+74 - 1436+68	MAINLINE	207	88
	1436+68 - 1441+53	MAINLINE	245	143
	1441+53 - 1444+85	MAINLINE	121	66
	1444+85 - 1449+98	MAINLINE	259	96
	1449+98 - 1452+36	MAINLINE	83	46
	1452+36 - 1457+75	MAINLINE	188	80
	1457+75 - 1459+48	MAINLINE	79	36
	1459+48 - 1465+73	MAINLINE	218	93
	1465+73 - 1466+33	MAINLINE	24	12
	1466+33 - 1467+47	MAINLINE	40	17
	1467+47 - 1471+29	MAINLINE	173	68
	1471+29 - 1474+62	MAINLINE	168	93
	1474+62 - 1478+29	MAINLINE	128	54
	1478+29 - 1482+56	MAINLINE	153	63
	1482+56 - 1486+24	MAINLINE	155	72
	1486+24 - 1491+53	MAINLINE	234	94
	1491+53 - 1496+27	MAINLINE	190	72
	1496+27 - 1499+13	MAINLINE	122	57
	1499+13 - 1501+55	MAINLINE	122	70
	1501+55 - 1507+03	MAINLINE	225	167
	1507+03 - 1512+00	MAINLINE	251	148
	1512+00 - 1519+14	MAINLINE	282	132
	1519+14 - 1522+92	MAINLINE	165	73
	1522+92 - 1525+64	MAINLINE	137	73
	1525+64 - 1528+90	MAINLINE	160	82
	1528+90 - 1529+77	MAINLINE	30	13
	1529+77 - 1536+34	MAINLINE	332	160
	1536+34 - 1537+66	MAINLINE	67	45
	1537+66 - 1544+92	MAINLINE	344	157
	1544+92 - 1551+07	MAINLINE	214	91
	1551+07 - 1558+64	MAINLINE	295	116
	1558+64 - 1558+69	MAINLINE	2	1
	1558+69 - 1563+19	MAINLINE	227	92
	1563+19 - 1570+87	MAINLINE	268	114
	1572+86 - 1576+11	MAINLINE	213	110
	1053+25 RT	PEIL RD	8	1
	1084+92 RT	LAEHN RIDGE RD	15	1
	1159+10 LT	HOPPE RD	7	1
	1254+10 LT	CTH NN	22	1
	1266+80 LT	SAND RD	67	3
	1328+40 RT	STH 121	33	2
	1423+70 RT	CROSS RD	10	1
	1440+16 RT	LOESEL RD	11	1
	1498+10 RT	LIEBERMAN RD	13	1
	1513+50 RT	PARKER RD	5	1
	1556+00 RT	CTH ZZ	40	2
	1563+25 RT	SAND RD	24	2
	1563+70 LT	SAND RD	19	2
		TOTAL	30790	15075

(1) & (2) INCLUDES QUANTITY TO ADJUST MAINLINE SUPER ELEVATION
(2) ADDITIONAL QUANTITIY SHOWN IN ANOTHER TABLE

ASPHALTIC SURFACE AND BASE AGGREGATE (PRIVATE ENTRANCES)

				465.0120	305.0110
PROJECT ID	STATION	LOCATION	ENTRANCE SURFACE	(1) ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (TON)	(2) BASE AGGREGATE DENSE 3/4 INCH (TON)
7730-02-60	1027+00	LT	GRAV	2	0.6
	1042+26	RT	GRAV	2	0.4
	1053+50	LT	GRAV	4	0.8
	1059+56	RT	GRAV	2	0.4
	1063+00	LT	GRAV	3	0.6
	1067+10	RT	GRAV	2	0.3
	1082+80	RT	GRAV	1	0.2
	1083+93	RT	GRAV	2	0.2
	1087+94	LT	GRAV	2	0.6
	1088+30	RT	GRAV	2	0.4
	1106+56	RT	GRAV	5	0.8
	1114+00	LT	GRAV	1	0.3
	1130+75	LT	GRAV	2	0.4
	1143+60	RT	GRAV	3	0.7
	1151+33	LT	GRAV	4	0.8
	1151+47	RT	GRAV	1	0.2
	1159+10	RT	GRAV	2	0.4
	1161+80	RT	GRAV	4	0.3
	1176+90	RT	GRAV	3	0.6
	1179+48	LT	GRAV	2	0.6
	1191+42	LT	GRAV	2	0.3
	1191+42	RT	GRAV	3	0.7
	1199+73	RT	GRAV	2	0.5
	1209+81	RT	GRAV	2	0.5
	1212+98	RT	GRAV	1	0.3
	1216+96	LT	ASPH	2	-
	1217+15	RT	GRAV	2	0.6
	1221+38	RT	GRAV	2	0.5
	1221+75	LT	GRAV	2	0.4
	1223+86	RT	GRAV	2	0.5
	1223+96	LT	GRAV	2	0.5
	1229+59	RT	GRAV	2	0.5
	1237+06	LT	GRAV	2	0.5
	1240+88	LT	GRAV	1	0.4
	1244+66	RT	GRAV	4	0.4
	1245+88	LT	GRAV	5	1.5
	1248+68	LT	ASPH	4	-
	1256+28	LT	ASPH	3	-
	1256+56	RT	GRAV	5	1.1
	1258+72	LT	ASPH	2	-
	1260+27	LT	ASPH	2	-
	1260+35	RT	GRAV	3	0.6
	1263+48	RT	GRAV	2	0.5
	1268+73	LT	GRAV	2	0.6
	1288+38	LT	GRAV	2	0.4
	1290+60	LT	GRAV	2	0.4
	1293+38	RT	ASPH	1	-
	1300+30	RT	GRAV	3	0.8
	1302+55	LT	GRAV	2	0.5
	1314+67	LT	GRAV	2	0.5
	1316+86	LT	GRAV	3	0.8
	1316+91	RT	ASPH	3	-
	1317+95	RT	GRAV	2	0.5
	1321+70	RT	ASPH	5	-
	1323+84	LT	GRAV	3	0.9
	1324+29	RT	GRAV	5	1.6
	1329+28	RT	GRAV	2	0.4
	1329+35	LT	GRAV	2	0.4
	1330+48	RT	ASPH	1	-
	1330+93	LT	GRAV	3	0.9
	1332+00	LT	ASPH	2	-
	1335+13	RT	ASPH	2	-
	1335+25	LT	ASPH	3	-
	1346+57	LT	ASPH	2	-
	1346+57	LT	GRAV	2	-
	1347+42	LT	GRAV	2	0.5
	1350+57	LT	GRAV	2	0.6
	1351+32	LT	GRAV	2	0.6
	1352+10	RT	ASPH	4	-
	1353+00	LT	GRAV	4	0.8

ASPHALTIC SURFACE AND BASE AGGREGATE (PRIVATE ENTRANCES) (CONT'D)

				465.0120	305.0110
PROJECT ID	STATION	LOCATION	ENTRANCE SURFACE	(1) ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (TON)	(2) BASE AGGREGATE DENSE 3/4 INCH (TON)
	1353+88	LT	GRAV	3	0.6
	1361+20	LT	GRAV	2	0.6
	1364+08	RT	GRAV	2	0.6
	1382+06	RT	GRAV	2	0.4
	1385+90	LT	GRAV	1	0.3
	1389+80	LT	ASPH	3	-
	1390+68	LT	ASPH	3	-
	1393+50	RT	GRAV	3	0.9
	1400+96	LT	GRAV	2	0.6
	1419+80	LT	GRAV	4	1.0
	1425+54	RT	GRAV	2	0.4
	1436+34	RT	GRAV	5	1.5
	1439+80	LT	GRAV	4	0.4
	1446+59	LT	ASPH	4	-
	1450+90	LT	GRAV	4	1.0
	1458+29	LT	GRAV	2	0.6
	1460+32	LT	ASPH	4	-
	1468+80	RT	GRAV	3	0.9
	1471+25	LT	GRAV	1	0.3
	1478+20	LT	ASPH	2	-
	1499+00	LT	GRAV	4	1.2
	1517+45	LT	ASPH	2	-
	1521+53	LT	GRAV	2	0.5
	1527+60	LT	GRAV	1	0.3
	1529+72	RT	ASPH	3	-
	1533+63	RT	GRAV	2	0.6
	1535+93	LT	GRAV	4	1.6
	1539+05	RT	GRAV	1	0.3
	1559+25	RT	GRAV	1	0.3
	1355+53	RT	SIDEWALK	1	-
			TOTAL	251	46

(1) PAVE THE SHOULDER AND THRESHOLD AT EVERY DRIVEWAY
(2) ADDITIONAL QUANTITIY SHOWN IN ANOTHER TABLE

ASPHALTIC SURFACE PATCHING

			465.0110
PROJECT ID	STATION - STATION	LOCATION	ASPHALTIC SURFACE PATCHING (TON)
7730-02-60	1027+00 - 1576+00	MAINLINE	125
		TOTAL	125

INCENTIVE IRI RIDE

			440.4410
PROJECT ID	STATION - STATION	LOCATION	INCENTIVE IRI RIDE (DOL)
7730-02-60	1027+00 - 1576+00	MAINLINE	20,800
		TOTAL	20800

CONCRETE SIDEWALK

PROJECT ID	STATION - STATION	LOCATION	602.0410 CONCRETE SIDEWALK 5-INCH (SF)	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW (SF)
7730-02-60	1335+76 - 1355+88	RT	78	10
		TOTAL	78	10

BEAM GUARD

PROJECT ID	STATION - STATION		LOCATION	614.2300 MGS GUARDRAIL 3 (LF)	614.2610 MGS GUARDRAIL TERMINAL EAT (EA)	614.0305 STEEL PLATE BEAM GUARD CLASS A (LF)	614.0230 STEEL THRIE BEAM (LF)	614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL (SY)
7730-02-60	1331+90	1334+84	RT	188	2		--	--
	1395+47	1398+78	RT	225	2		--	--
	1569+46	1570+89	RT	--	--	72	21	1
	1569+83	1570+89	LT	--	--	35	21	1
	1572+84	1573+89	RT	--	--	34	21	1
	1572+84	1574+27	LT	--	--	72	21	1
			TOTAL	413	4	214	83	4

EROSION CONTROL

PROJECT ID	STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	628.2004 EROSION MAT CLASS I TYPE B (SY)	628.1504 SILT FENCE (LF)	629.0210 FERTILIZER TYPE B (CWT)	630.0130 SEEDING MIXTURE NO. 30 (LB)	630.0300 SEEDING BORROW PIT (LB)
7730-02-60	1331+83 - 1334+93	RT	773	773	310	0.49	9	--
	1394+85 - 1399+97	RT	425	425	512	0.28	6	--
	1568+25 - 1570+87	LT	663	663	262	0.43	9	--
	1568+24 - 1570+87	RT	580	580	263	0.38	8	--
	1572+87 - 1575+66	LT	610	610	279	0.39	8	--
	1572+89 - 1575+69	RT	696	696	280	0.45	9	--
	UNDISTRIBUTED		38	38	94	0.03	1	5
		TOTAL	3,785	3,785	2,000	2.45	50	5

MAINTENANCE AND REPAIR OF HAUL ROADS

PROJECT ID	LOCATION	618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS (EACH)
7730-02-60	PROJECT	1
	TOTAL	1

MOBILIZATION

PROJECT ID	LOCATION	619.1000 MOBILIZATION (EACH)
7730-02-60	PROJECT	1
	TOTAL	1

WATER

PROJECT ID	LOCATION	624.0100 WATER (MGAL)
7730-02-60	PROJECT	30
	TOTAL	30

MOBILIZATION EROSION CONTROL

PROJECT ID	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)
7730-02-60	PROJECT	2	1
	TOTAL	2	1

TRAFFIC CONTROL

PROJECT ID	LOCATION	643.0300 TRAFFIC CONTROL DRUMS (DAY)	643.0310.S TEMPORARY PORTABLE RUMBLE STRIPS (LS)	643.0900 TRAFFIC CONTROL SIGNS (DAY)	643.5000 TRAFFIC CONTROL (EACH)
7730-02-60	PROJECT	1080	1	2196	1
	TOTAL	1080	1	2196	1

LOCATING NO PASSING ZONES

PROJECT ID	STATION - STATION	LOCATION	648.0100 LOCATING NO-PASSING ZONES (MI)
7730-02-60	1027+00 - 1576+00	PROJECT	10.4
		TOTAL	10.4

PAVEMENT MARKING

PROJECT ID	STATION - STATION	LOCATION	646.4520 MARKING LINE SAME DAY EPOXY 4-INCH YELLOW (LF)	646.4520 MARKING LINE SAME DAY EPOXY 4-INCH WHITE (LF)	646.6120 MARKING STOP LINE EPOXY 18-INCH (LF)	649.0100 TEMPORARY MARKING LINE PAINT (YELLOW) 4-INCH (LF)
7730-02-60	1027+00 - 1176+75	CL NP : NP	29,950	--	--	59,900
	1027+00 - 1053+00	RT EDGE LINE	--	2,600	--	--
	1053+50 - 1084+50	RT EDGE LINE	--	3,100	--	--
	1027+00 - 1253+70	LT EDGE LINE	--	22,670	--	--
	1176+75 - 1186+00	CL NP : SD	1,156	--	--	2,312
	1186+00 - 1192+50	CL SD	163	--	--	326
	1192+50 - 1201+00	CL SD : NP	1,063	--	--	2,126
	1201+00 - 1214+50	CL NP : NP	2,700	--	--	5,400
	1085+10 - 1329+50	RT EDGE LINE	--	24,440	--	--
	1214+50 - 1222+10	CL NP : SD	950	--	--	1,900
	1222+10 - 1238+50	CL SD	410	--	--	820
	1238+50 - 1246+50	CL SD : NP	1,000	--	--	2,000
	1246+50 - 1299+00	CL NP : NP	10,500	--	--	21,000
	1254+50 - 1327+60	LT EDGE LINE	--	7,310	--	--
	1299+00 - 1307+00	CL NP : SD	1,000	--	--	2,000
	1307+00 - 1321+00	CL SD	350	--	--	700
	1321+00 - 1327+60	CL SD : NP	825	--	--	1,650
	1327+60	STOP BAR	--	--	12	--
	1329+10	STOP BAR	--	--	12	--
	1329+10 - 1329+50	CL NP : SD	50	--	--	100
	1329+10 - 1329+50	LT EDGE LINE	--	40	--	--
	1328+60 - 1347+00	CL NP : NP	3,680	--	--	7,360
	1329+10 - 1339+00	LT EDGE LINE	--	990	--	--
	1329+10 - 1350+50	RT EDGE LINE	--	2,140	--	--
	1347+00 - 1352+70	CL NP : SD	713	--	--	1,426
	1352+70 - 1370+20	CL SD	438	--	--	876
	1351+20 - 1423+40	RT EDGE LINE	--	7,220	--	--
	1339+80 - 1563+30	LT EDGE LINE	--	22,350	--	--
	1370+20 - 1378+00	CL SD : NP	975	--	--	1,950
	1378+00 - 1395+50	CL NP : NP	3,500	--	--	7,000
	1395+50 - 1403+00	CL NP : SD	938	--	--	1,876
	1403+00 - 1419+50	CL SD	413	--	--	826
	1419+50 - 1427+70	CL SD : NP	1,025	--	--	2,050
	1427+70 - 1557+30	CL NP : NP	25,920	--	--	51,840
	1424+00 - 1439+80	RT EDGE LINE	--	1,580	--	--
	1440+40 - 1497+80	RT EDGE LINE	--	5,740	--	--
	1498+60 - 1513+20	RT EDGE LINE	--	1,460	--	--
	1513+80 - 1555+50	RT EDGE LINE	--	4,170	--	--
	1556+50 - 1562+80	RT EDGE LINE	--	630	--	--
	1563+90 - 1575+70	RT EDGE LINE	--	1,180	--	--
	1564+10 - 1575+70	LT EDGE LINE	--	1,160	--	--
	1557+30 - 1566+60	CL NP : SD	1,163	--	--	2,326
	1566+60 - 1570+50	CL SD	98	--	--	196
	1570+50 - 1575+70	CL SD : NP	650	--	--	1,300
	157570	STOP BAR	--	--	12	--
		TOTAL	89,630	108,780	36	179260
			198,410			

NOTE: THE STATION LIMITS ARE APPROXIMATE. THE ACTUAL PAVEMENT MARKING LIMITS WILL BE DETERMINED IN THE FIELD BY THE LOCATING NO PASSING ZONES ITEM FOR PERMANENT MARKINGS AND BY THE EXISTING LOCATIONS FOR THE TEMPORARY MARKINGS. ABBREVIATIONS USED IN THIS TABLE: NP = NO PASSING, SD = SKIP DASH.

CONSTRUCTION STAKING

PROJECT ID	STATION - STATION	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE (LF)	650.9000 CONSTRUCTION STAKING CURB RAMPS (EACH)	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (LS)
7730-02-60	102700 - 1576+00	54,900	1	1
	TOTAL	54,900	1	1

FIELD OFFICE

PROJECT ID	LOCATION	642.5001 FIELD OFFICE TYPE B (EACH)
7730-02-60	PROJECT	1
	TOTAL	1

SAWING ASPHALT

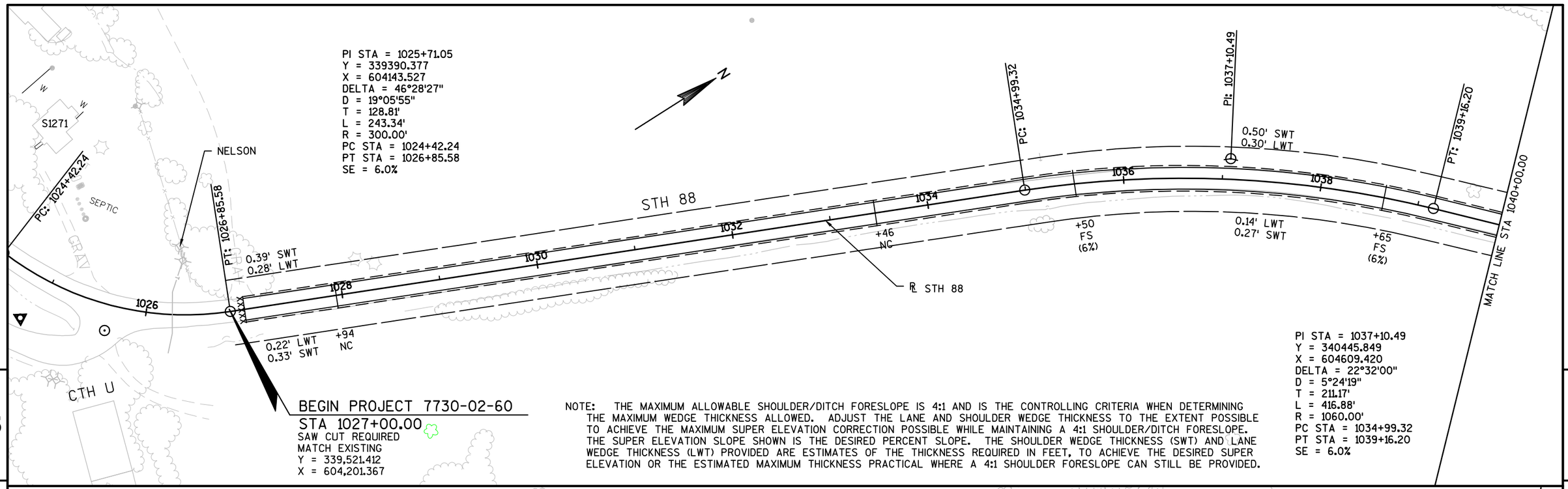
PROJECT ID	STATION	LOCATION	690.0150 SAWING ASPHALT (LF)	REMARKS
7730-02-60	1027+00	STH 88	24	MAINLINE
	1053+20	RT	20	PEIL RD
	1084+87	RT	18	LAEHN RIDGE RD
	1217+00	LT	20	DRIVEWAY
	1254+10	LT	26	CTH NN
	1256+25	LT	18	DRIVEWAY
	1258+70	LT	18	DRIVEWAY
	1260+30	LT	12	DRIVEWAY
	1267+00	LT	25	SAND RD
	1293+38	RT	13	DRIVEWAY
	1316+90	RT	26	DRIVEWAY
	1329+50	STH 121	24	MAINLINE
	1330+50	RT	16	DRIVEWAY
	1332+00	LT	15	DRIVEWAY
	1335+25	LT	67	DRIVEWAY
	1335+25	RT	53	DRIVEWAY
	1339+00	LT	100	CTH B
	1346+55	LT	20	DRIVEWAY
	1346+60	RT	46	DRIVEWAY
	1350+88	RT	82	CHURCH RD
	1352+15	RT	59	DRIVEWAY
	1389+82	LT	27	DRIVEWAY
	1390+63	LT	25	DRIVEWAY
	1423+69	RT	20	CROSS RD
	1425+54	RT	15	DRIVEWAY
	1440+13	RT	15	LOESEL RD
	1446+60	LT	34	DRIVEWAY
	1478+19	LT	22	DRIVEWAY
	1517+43	LT	15	DRIVEWAY
	1529+70	RT	23	DRIVEWAY
	1556+00	RT	24	CTH ZZ
	1563+31	RT	22	SAND RD
	1563+69	LT	16	SAND RD
	1576+11	STH 88	120	MAINLINE
		TOTAL	1,080	

HMA PERCENT WITHIN LIMITS

PROJECT ID	LOCATION	SPV.0060.01 PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMETRICS (EACH)	SPV.0060.02 PERCENT WITHIN LIMITS (PWL) TEST STRIP DENSITY (EACH)	460.2005 INCENTIVE DENSITY PWL HMA PAVEMENT (DOL)	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT (DOL)
7730-02-60	PROJECT	1	1	22620	22620
	TOTAL	1	1	22620	22620

SAWING CONCRETE

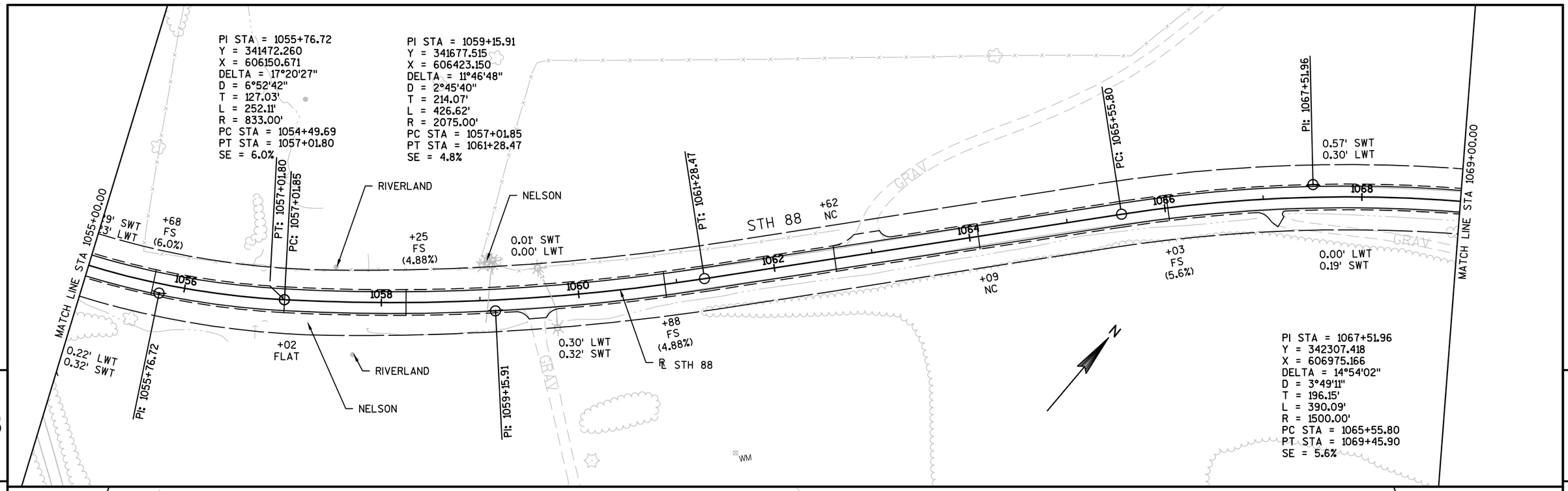
PROJECT ID	STATION	LOCATION	690.0250 SAWING CONCRETE (LF)	REMARKS
7730-02-60	1355+88	RT	5	SIDEWALK
		TOTAL	5	

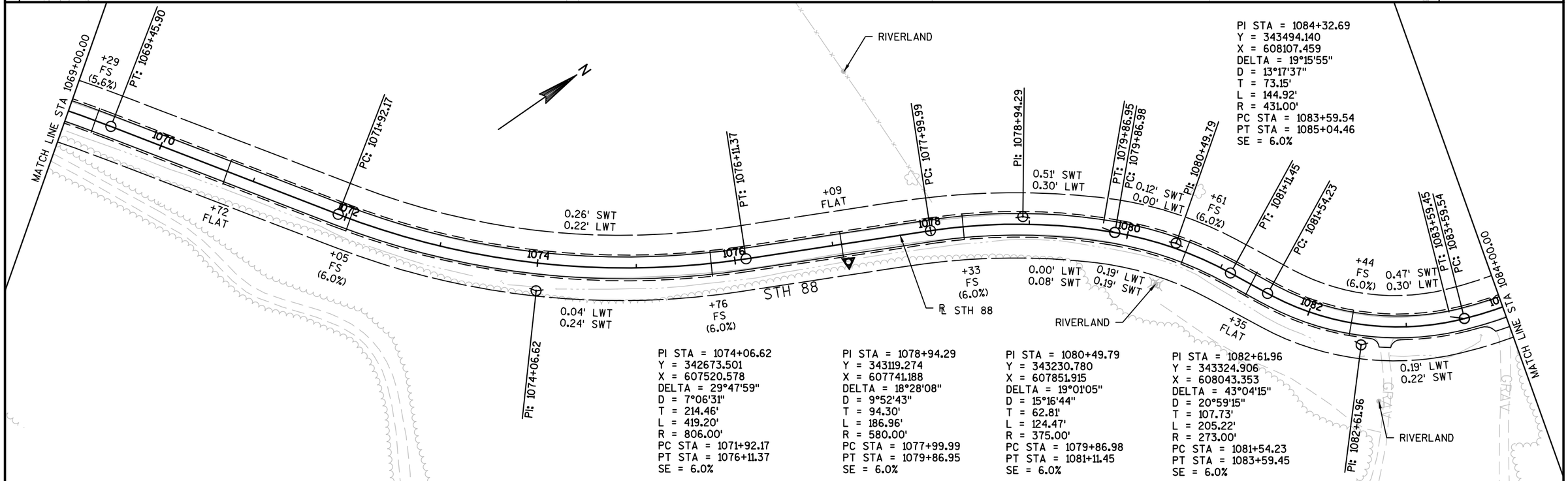


NOTE: THE MAXIMUM ALLOWABLE SHOULDER/DITCH FORESLOPE IS 4:1 AND IS THE CONTROLLING CRITERIA WHEN DETERMINING THE MAXIMUM WEDGE THICKNESS ALLOWED. ADJUST THE LANE AND SHOULDER WEDGE THICKNESS TO THE EXTENT POSSIBLE TO ACHIEVE THE MAXIMUM SUPER ELEVATION CORRECTION POSSIBLE WHILE MAINTAINING A 4:1 SHOULDER/DITCH FORESLOPE. THE SUPER ELEVATION SLOPE SHOWN IS THE DESIRED PERCENT SLOPE. THE SHOULDER WEDGE THICKNESS (SWT) AND LANE WEDGE THICKNESS (LWT) PROVIDED ARE ESTIMATES OF THE THICKNESS REQUIRED IN FEET, TO ACHIEVE THE DESIRED SUPER ELEVATION OR THE ESTIMATED MAXIMUM THICKNESS PRACTICAL WHERE A 4:1 SHOULDER FORESLOPE CAN STILL BE PROVIDED.

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

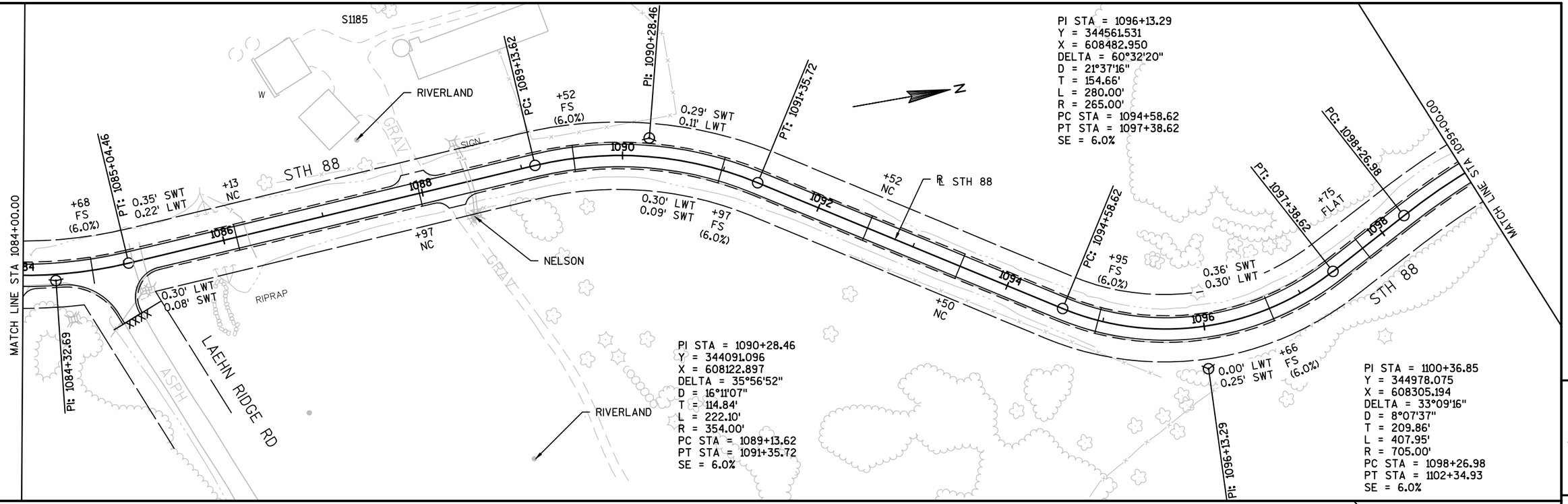
FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-PN - 050201-PN
PLOT DATE : 1/18/2018 3:32 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:100 FT





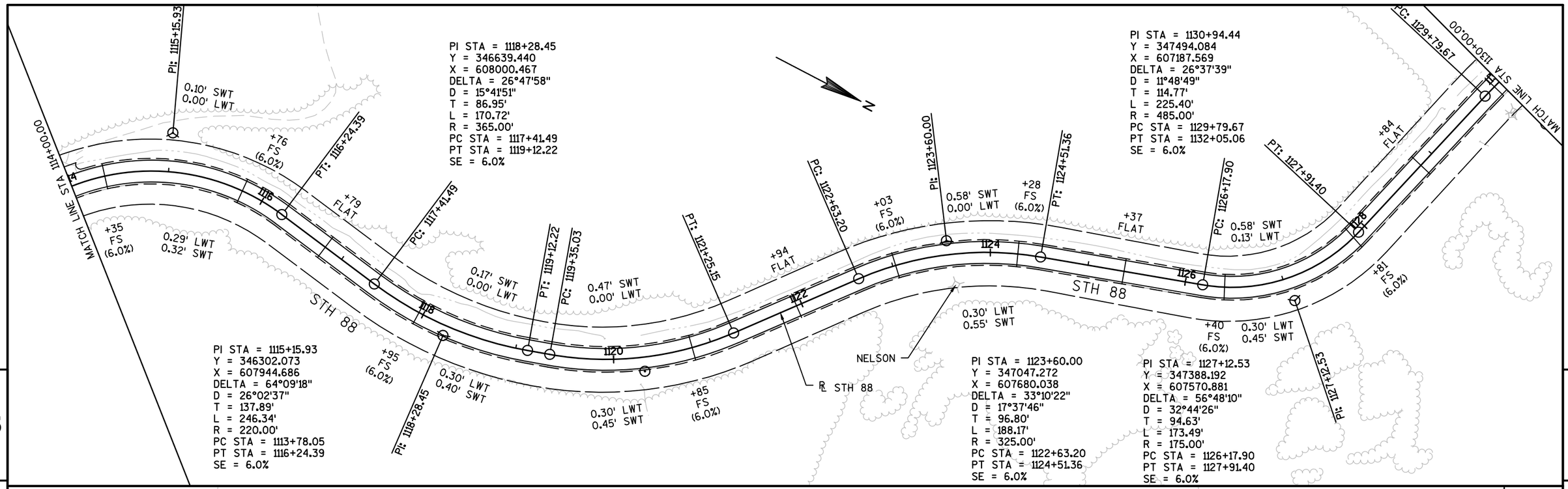
PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

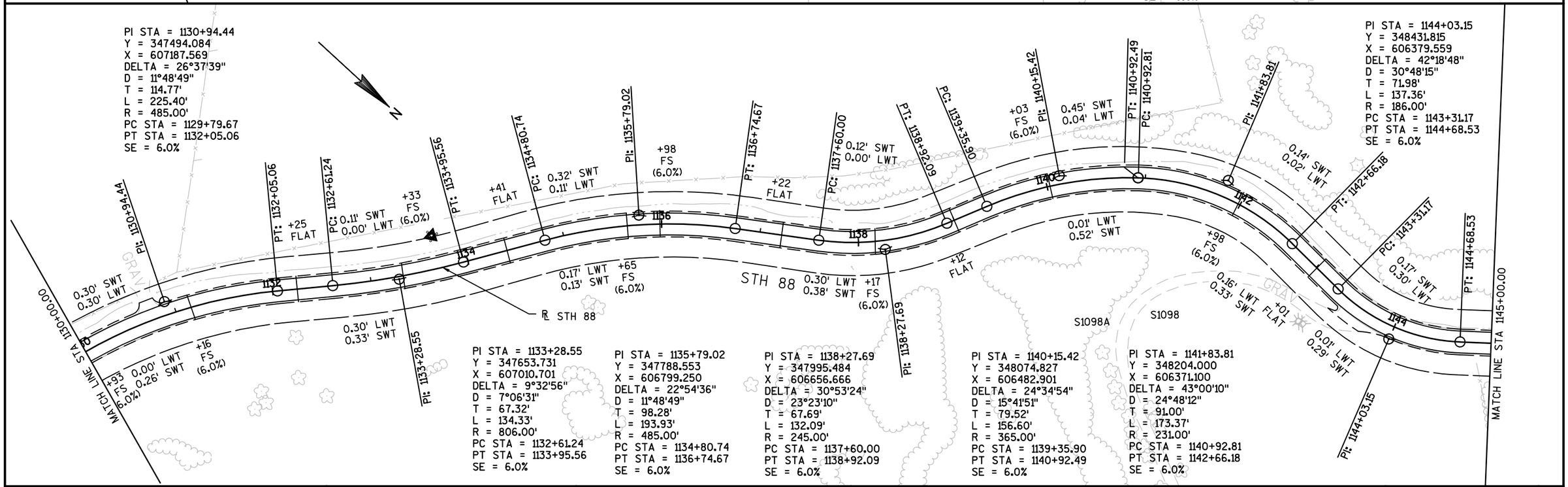
FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-PN - 050202-PN
PLOT DATE : 1/18/2018 3:33 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : **********



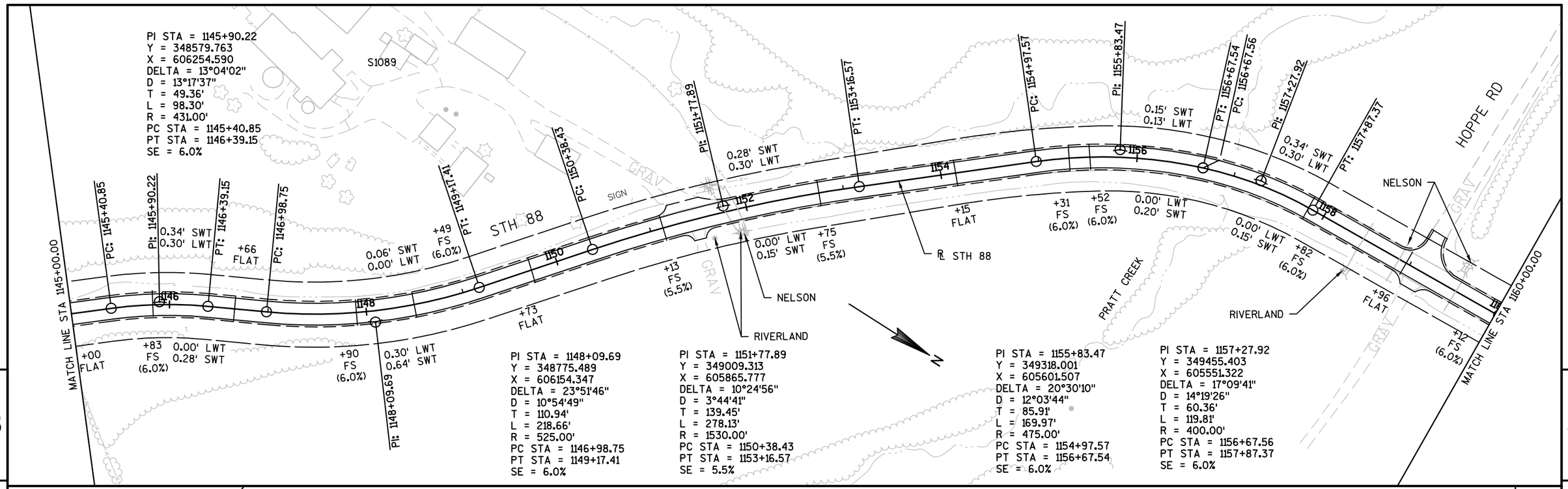
PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-PN - 050203-PN
PLOT DATE : 1/18/2018 3:33 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : **********



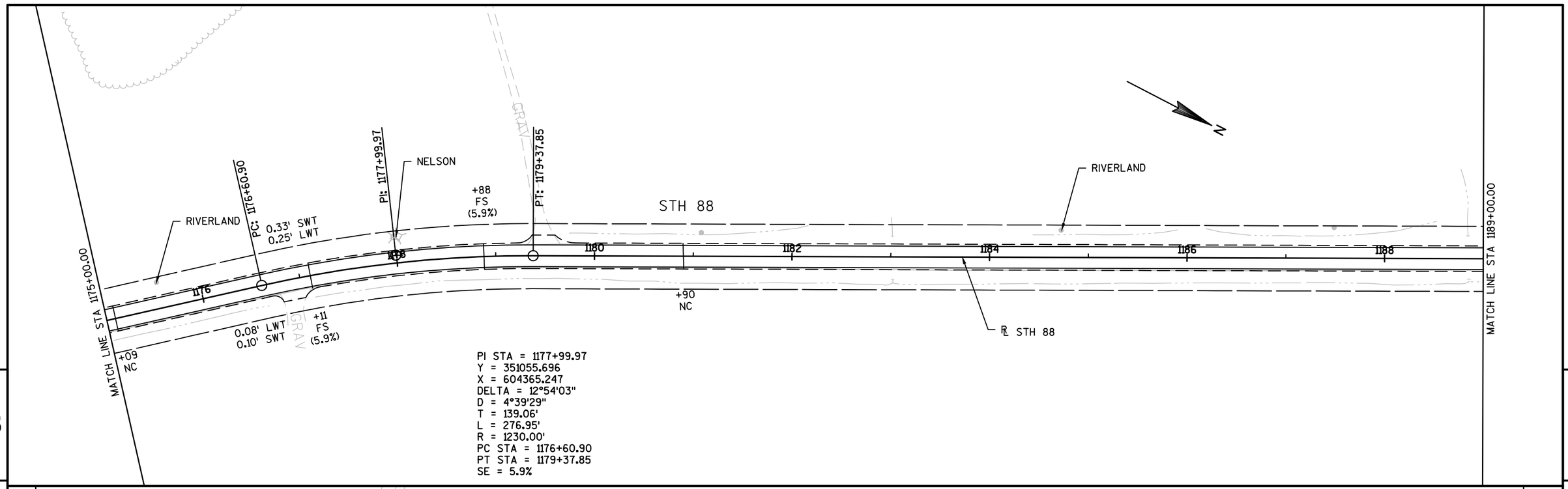


PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

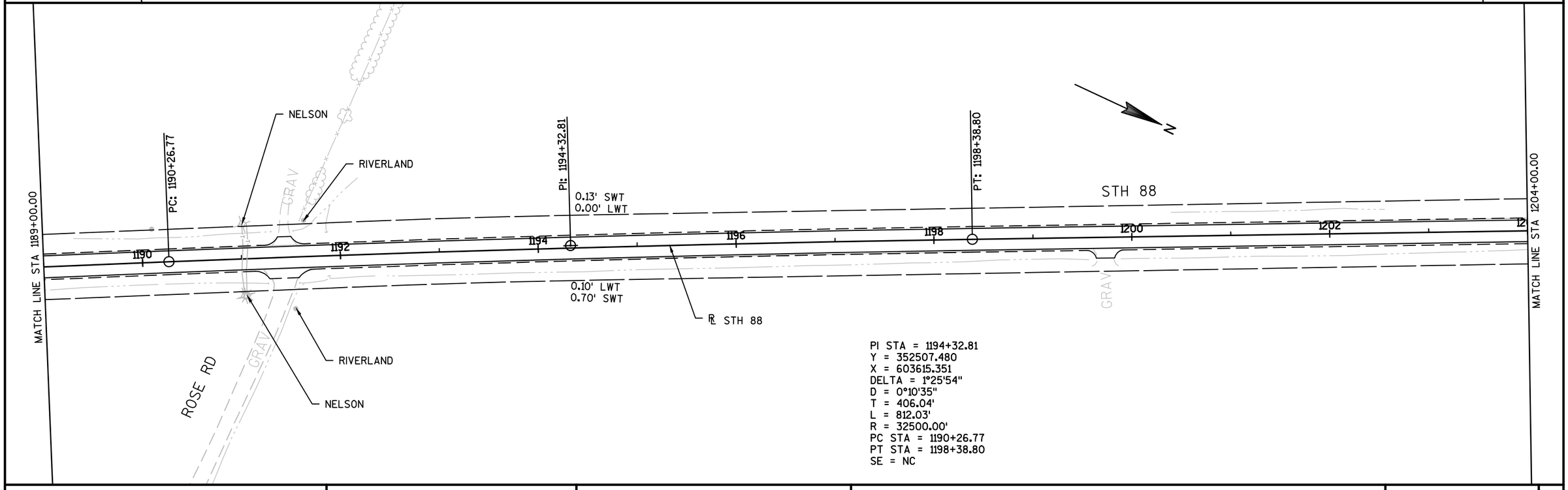


PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-PN - 050205-PN
PLOT DATE : 1/18/2018 3:33 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : **********

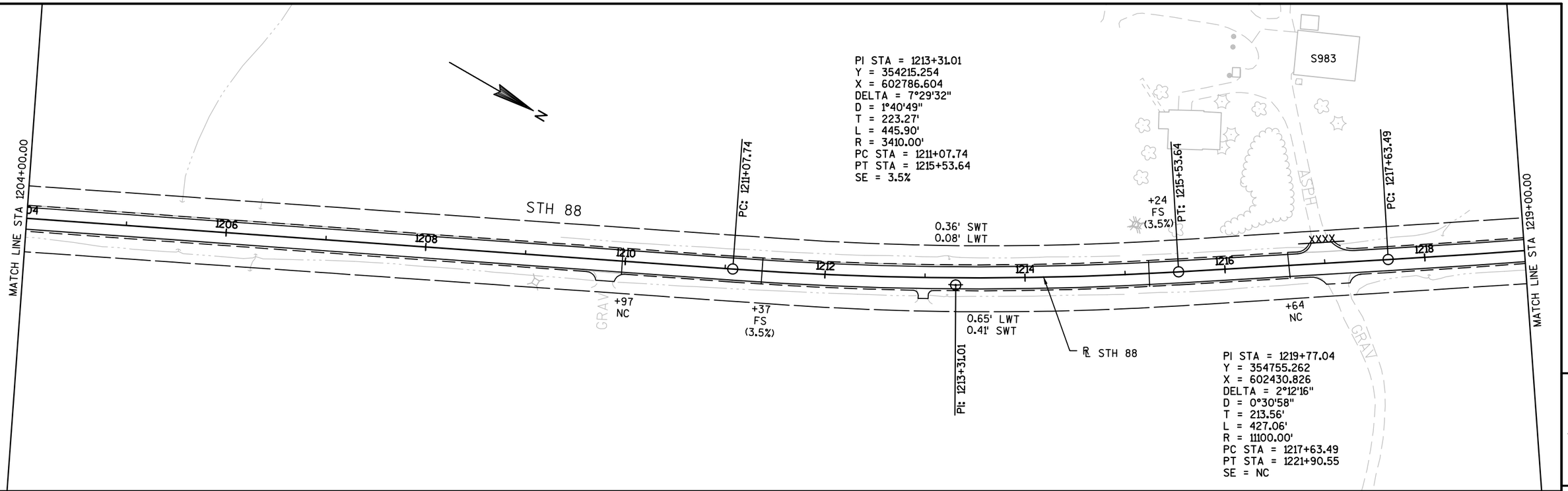


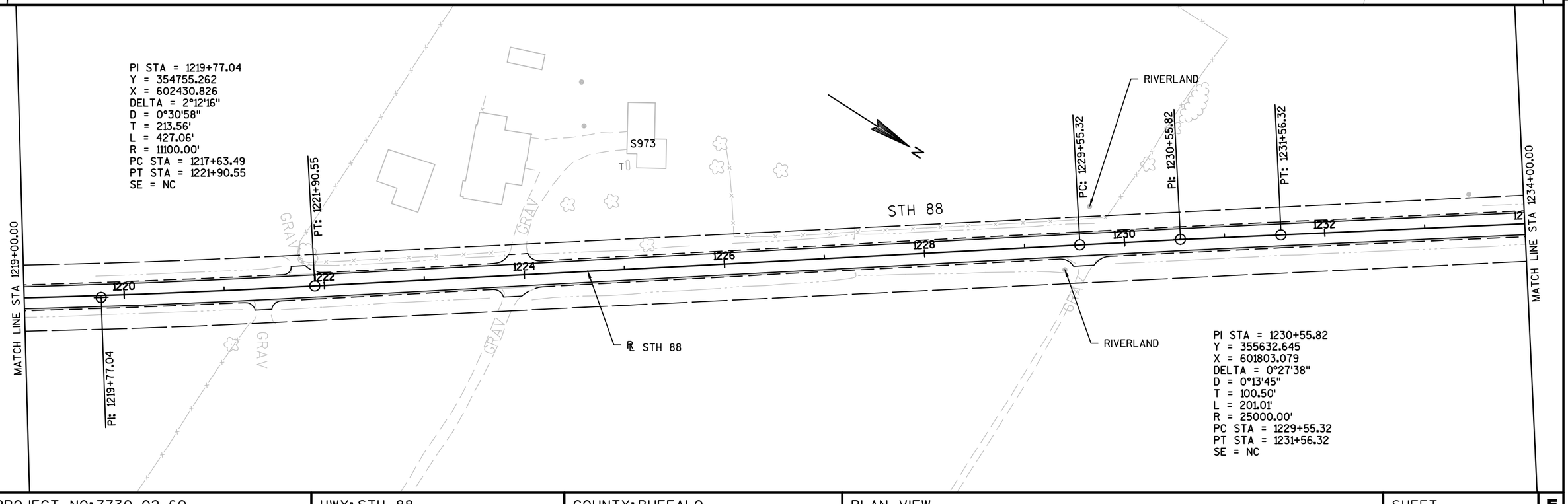
PI STA = 1177+99.97
Y = 351055.696
X = 604365.247
DELTA = 12°54'03"
D = 4°39'29"
T = 139.06'
L = 276.95'
R = 1230.00'
PC STA = 1176+60.90
PT STA = 1179+37.85
SE = 5.9%



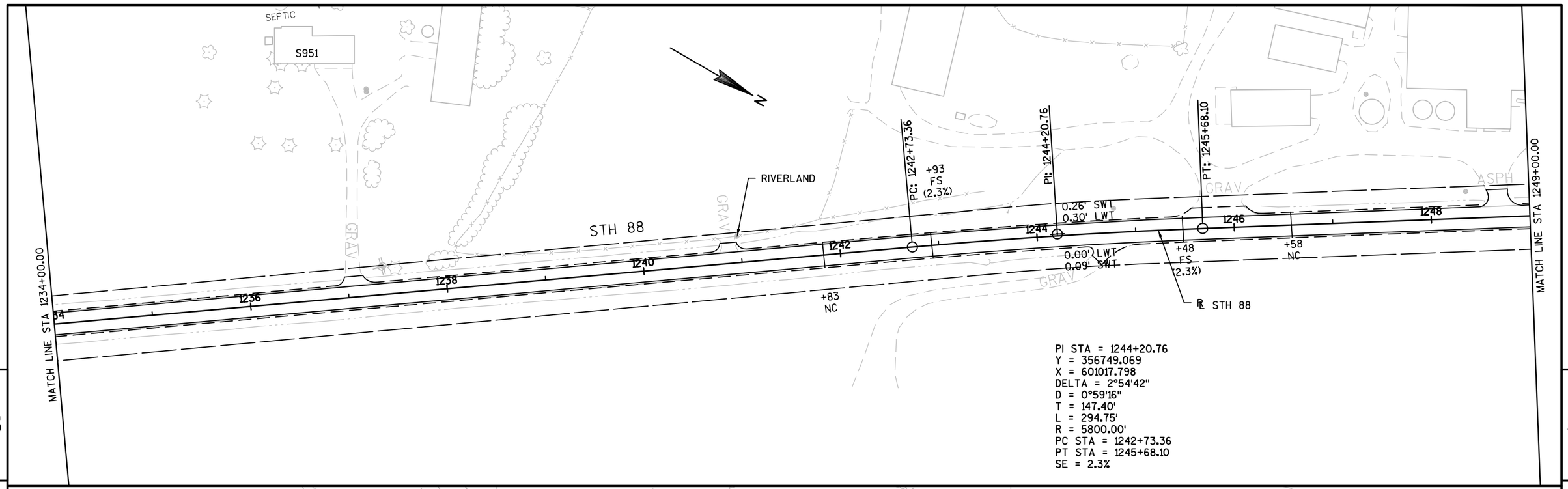
PI STA = 1194+32.81
Y = 352507.480
X = 603615.351
DELTA = 1°25'54"
D = 0°10'35"
T = 406.04'
L = 812.03'
R = 32500.00'
PC STA = 1190+26.77
PT STA = 1198+38.80
SE = NC

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

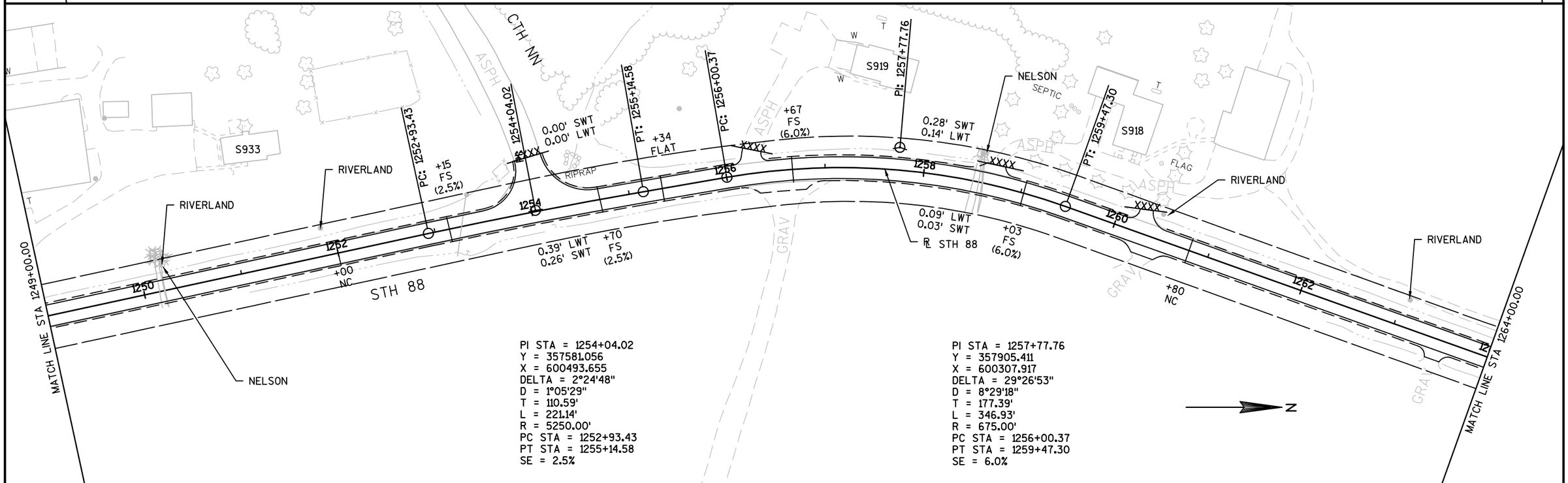




PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E



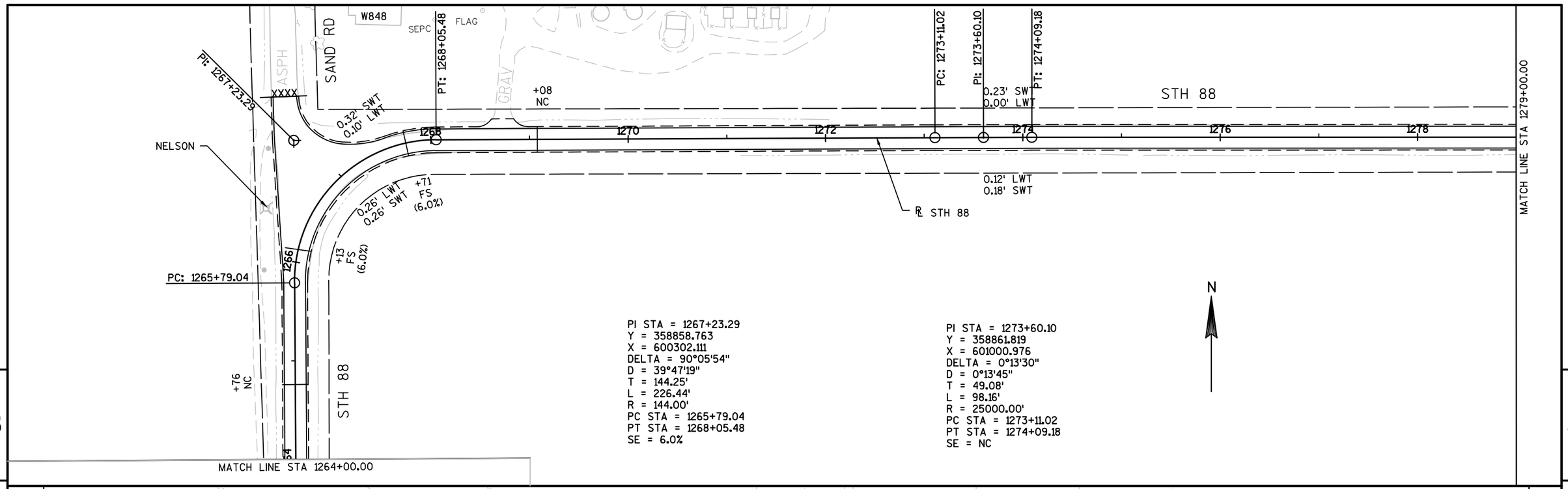
PI STA = 1244+20.76
Y = 356749.069
X = 601017.798
DELTA = 2°54'42"
D = 0°59'16"
T = 147.40'
L = 294.75'
R = 5800.00'
PC STA = 1242+73.36
PT STA = 1245+68.10
SE = 2.3%

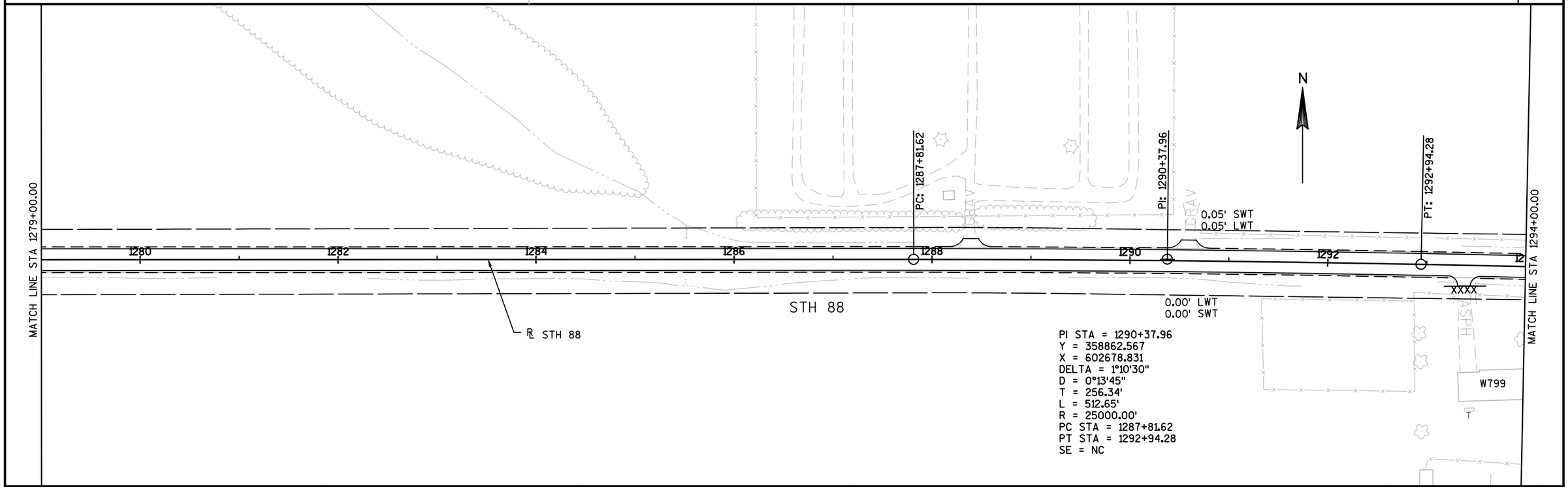


PI STA = 1254+04.02
Y = 357581.056
X = 600493.655
DELTA = 2°24'48"
D = 1°05'29"
T = 110.59'
L = 221.14'
R = 5250.00'
PC STA = 1252+93.43
PT STA = 1255+14.58
SE = 2.5%

PI STA = 1257+77.76
Y = 357905.411
X = 600307.917
DELTA = 29°26'53"
D = 8°29'18"
T = 177.39'
L = 346.93'
R = 675.00'
PC STA = 1256+00.37
PT STA = 1259+47.30
SE = 6.0%

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E





PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-PN - 050209-PN
PLOT DATE : 1/18/2018 3:33 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : **********

PI STA = 1296+16.59
Y = 358850.960
X = 603257.366
DELTA = 0°28'57"
D = 0°24'23"
T = 59.38'
L = 118.76'
R = 14100.00'
PC STA = 1295+57.21
PT STA = 1296+75.97
SE = NC

N

NELSON

STH 88

PC: 1295+57.21

0.26' SWT
0.00' LWT

PT: 1296+75.97

MATCH LINE STA 1294+00.00

1294

1296

1298

1300

1302

1304

1306

1308

PC: 1308+76.33

MATCH LINE STA 1309+00.00

0.00' LWT
0.08' SWT

PI: 1296+16.59

℄ STH 88

W783

T

SLAB

GRAV

5

5

PI STA = 1311+53.11
Y = 358833.078
X = 604793.780
DELTA = 2°14'57"
D = 0°24'23"
T = 276.78'
L = 553.49'
R = 14100.00'
PC STA = 1308+76.33
PT STA = 1314+29.82
SE = NC

N

W754

PT: 1314+29.82

GRAV

STH 88

MATCH LINE STA 1309+00.00

1310

1312

1314

1316

1318

1320

1322

1324

MATCH LINE STA 1324+00.00

XXXX

ASPH

SLAB

SIGN

SIGN

FILLER CAP

GP

GP

W737

W738

SEPC

SEPTIC

SEPV

SEPC

SEPV

NELSON

PI: 1311+53.11

℄ STH 88

W755

T

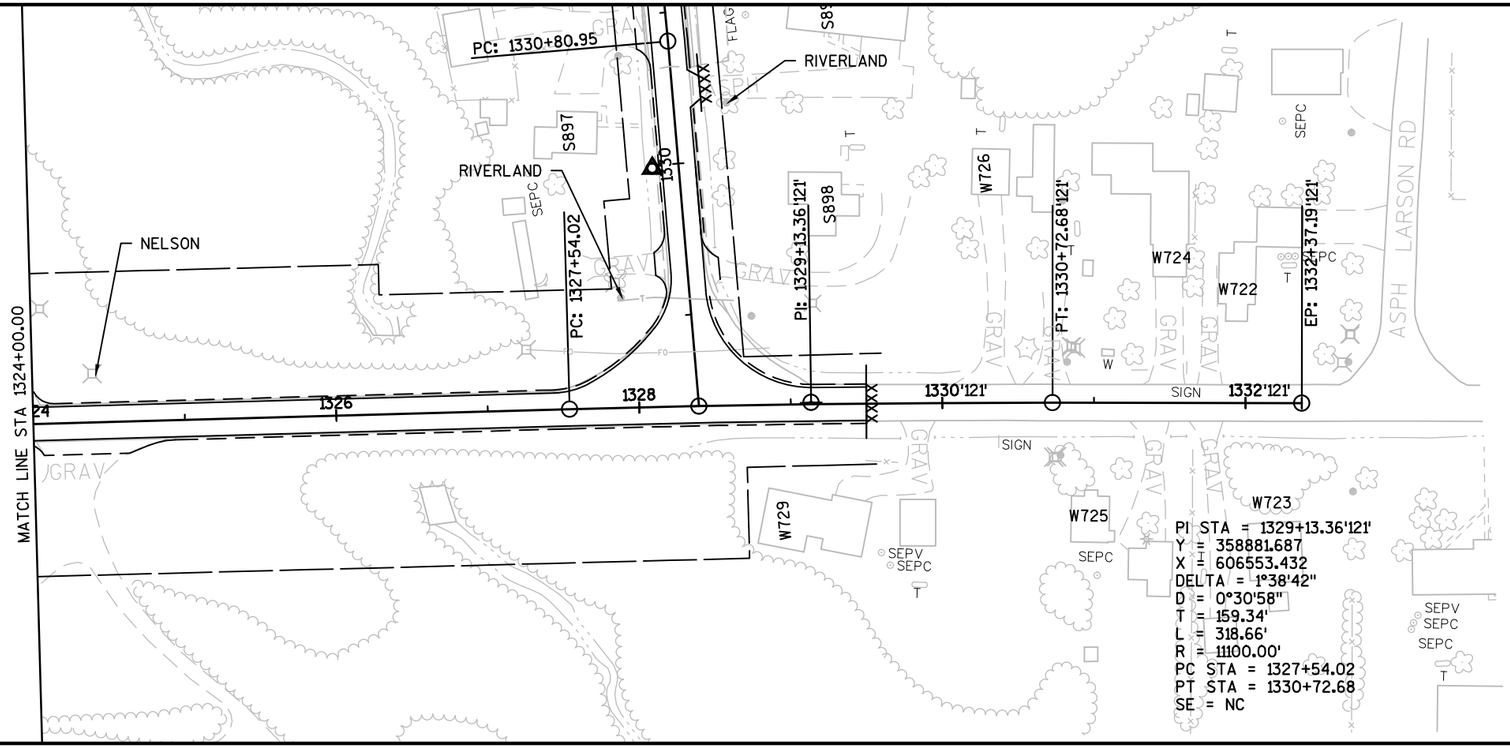
SEPV

SEPC

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-PN - 050210-PN

PLOT DATE : 1/18/2018 3:33 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : **********



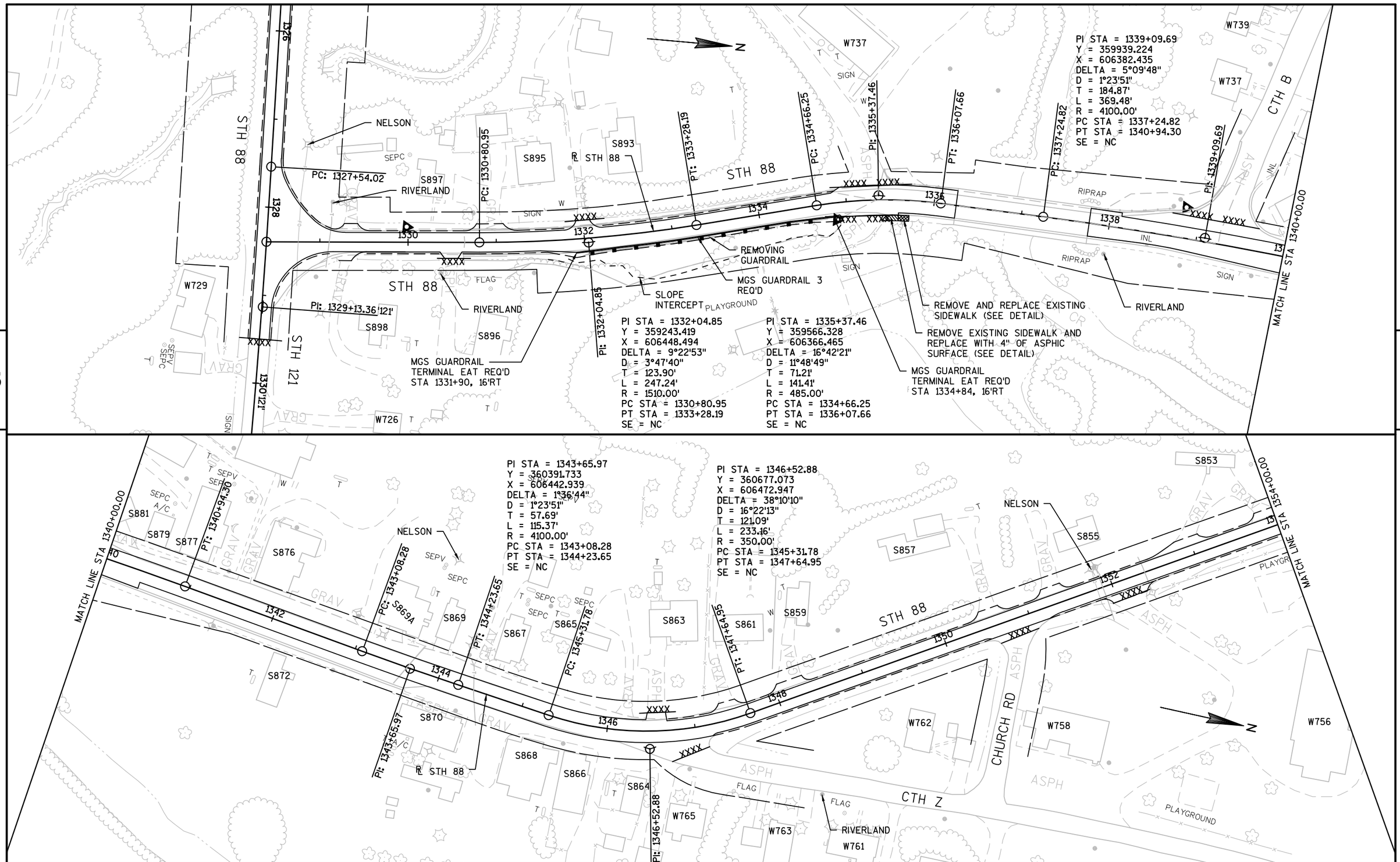
5

5

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

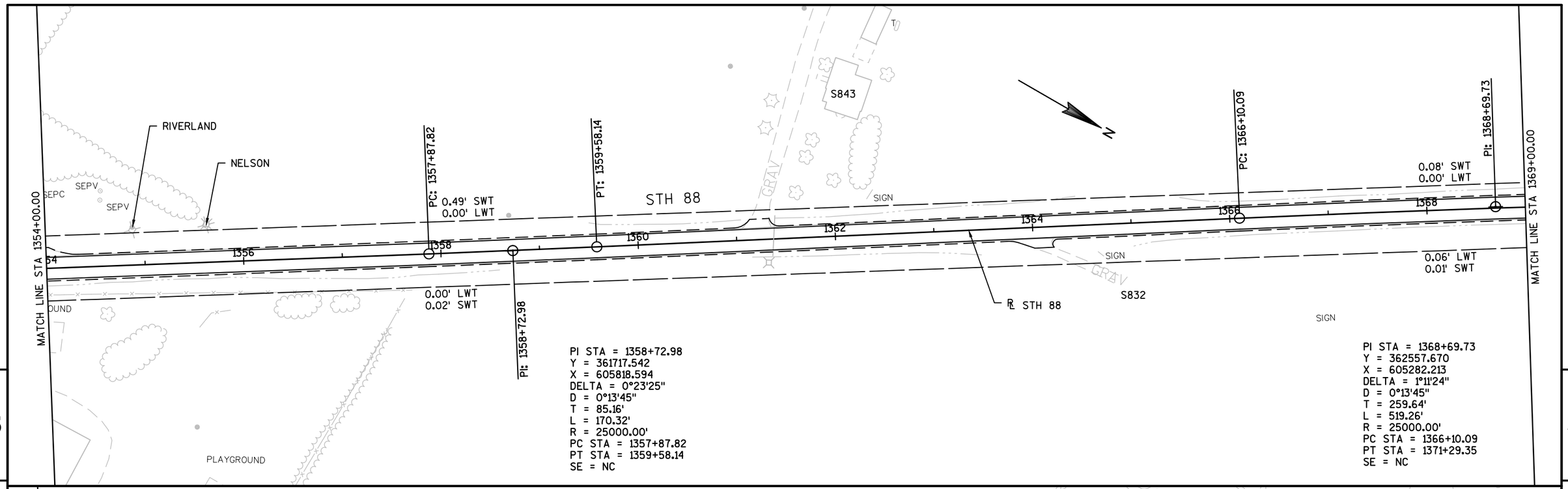
FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-PN - 050211-PN

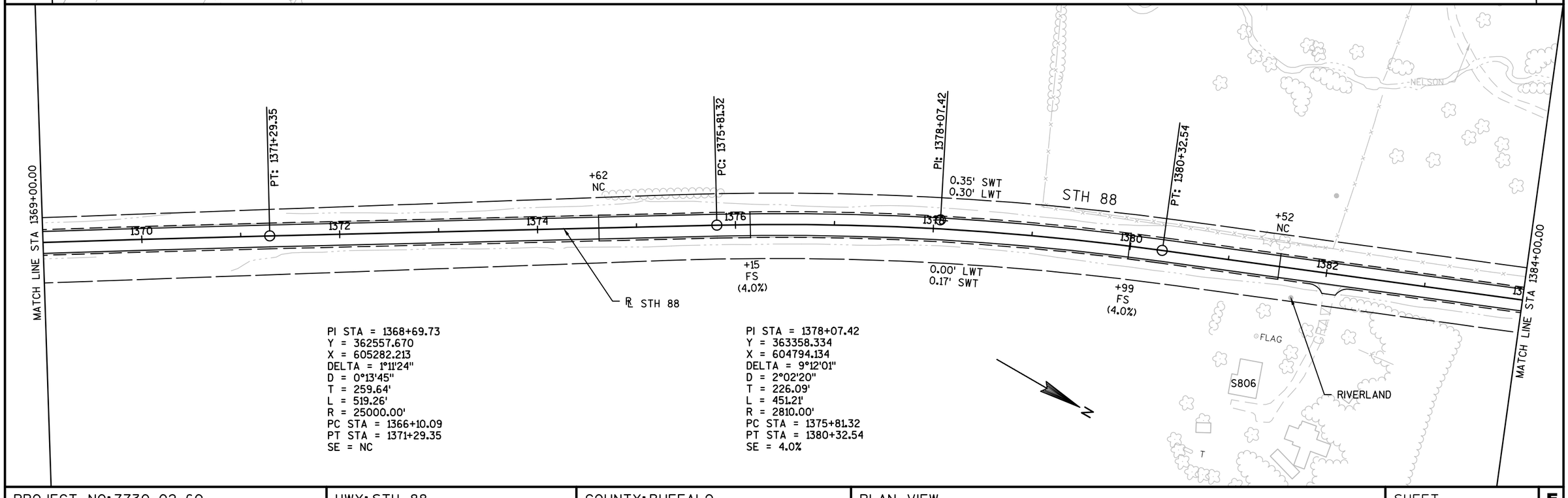
PLOT DATE : 1/18/2018 3:33 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : **********



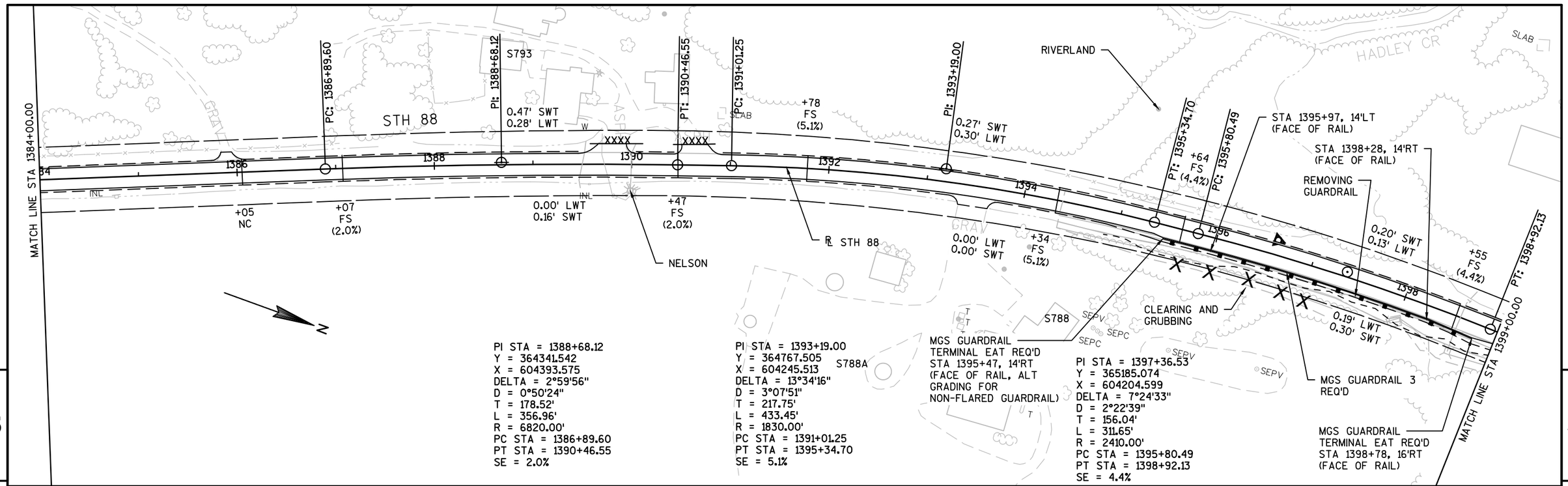
PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-PN - 050212-PN
PLOT DATE : 1/18/2018 3:33 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : **********





PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E



PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-PN - 050214-PN
PLOT DATE : 1/18/2018 3:33 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : **********
WISDOT/CADDS SHEET 44

5

MATCH LINE STA 1414+00.00

N

PC: 1417+57.47

PT: 1419+42.01

0.00' SWT
0.10' LWT

STH 88

+79
NC

PC: 1423+81.54

NELSON

0.14' SWT
0.00' LWT

MATCH LINE STA 1429+00.00

1414 1416 1418 1420 1422 1424 1426 1428

0.04' LWT
0.00' SWT

PI: 1418+49.74

PI STA = 1418+49.74
Y = 367298.455
X = 604231.877
DELTA = 0°57'09"
D = 0°30'58"
T = 92.28'
L = 184.55'
R = 11100.00'
PC STA = 1417+57.47
PT STA = 1419+42.01
SE = NC

℄ STH 88

RIVERLAND

NELSON

XXXX

+07
FS
(3.0%)

CROSS RD

ASPH

XXXX

SIGN

0.30' LWT
0.21' SWT

PI: 1426+76.94

S726

ANT

T

W W

SEPC

T

PI STA = 1426+76.94
Y = 368125.656
X = 604231.049
DELTA = 8°02'47"
D = 1°21'51"
T = 295.40'
L = 589.83'
R = 4200.00'
PC STA = 1423+81.54
PT STA = 1429+71.37
SE = 3.0%

5

N

PI STA = 1439+11.46
Y = 369348.815
X = 604056.887
DELTA = 19°30'27"
D = 8°54'39"
T = 110.53'
L = 218.92'
R = 643.00'
PC STA = 1438+00.93
PT STA = 1440+19.86
SE = 6.0%

PI STA = 1443+34.08
Y = 369765.184
X = 604140.870
DELTA = 1°47'29"
D = 0°30'58"
T = 173.53'
L = 347.03'
R = 11100.00'
PC STA = 1441+60.55
PT STA = 1445+07.58
SE = NC

PI: 1429+71.37

MATCH LINE STA 1429+00.00

+46
FS
(3.0%)

+74
NC

+68
NC

STH 88

PC: 1438+00.93

PI: 1439+11.46

+45
FS
(6.0%)

0.33' SWT
0.30' LWT

+76
FS
(6.0%)

PT: 1440+19.86

PC: 1441+60.55

NELSON

0.16' SWT
0.00' LWT

1430 1432 1434 1436 1438 1440 1442 1444

0.00' LWT
0.00' SWT

XXXX

+53
NC

0.03' LWT
0.05' SWT

PI: 1443+34.08

MATCH LINE STA 1444+00.00

℄ STH 88

SEPV

NELSON

W W

S706

T T W

RIVERLAND

GRAV

ASPH

LOESEL RD

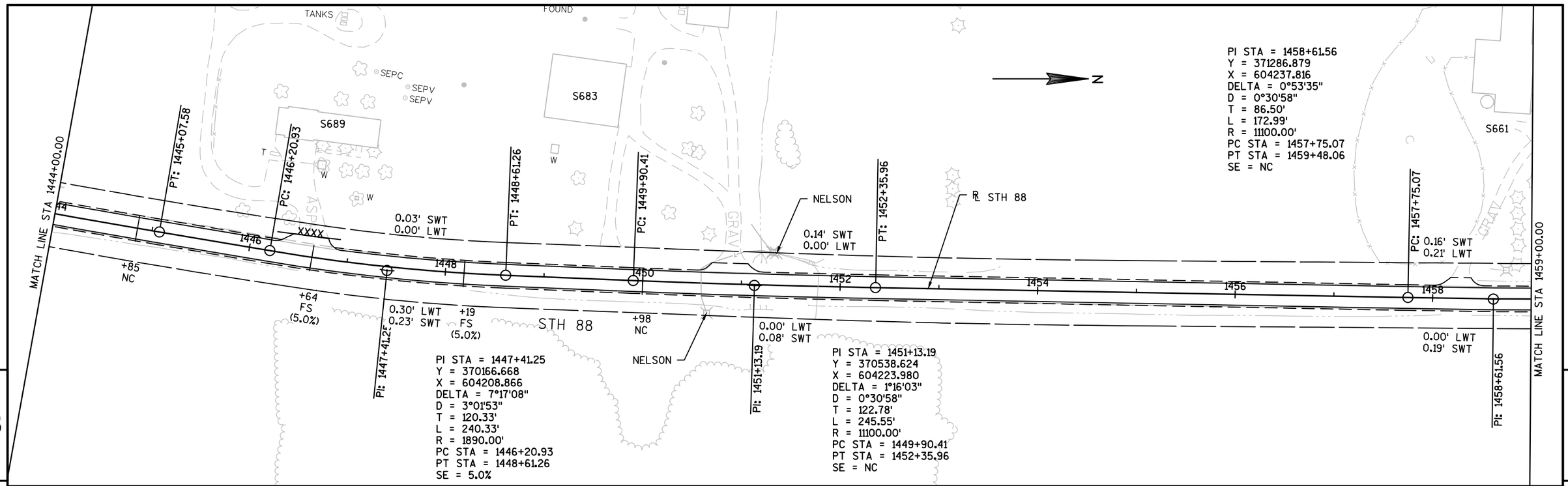
SEPV

W

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-PN - 050215-PN

PLOT DATE : 1/18/2018 3:33 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : **********



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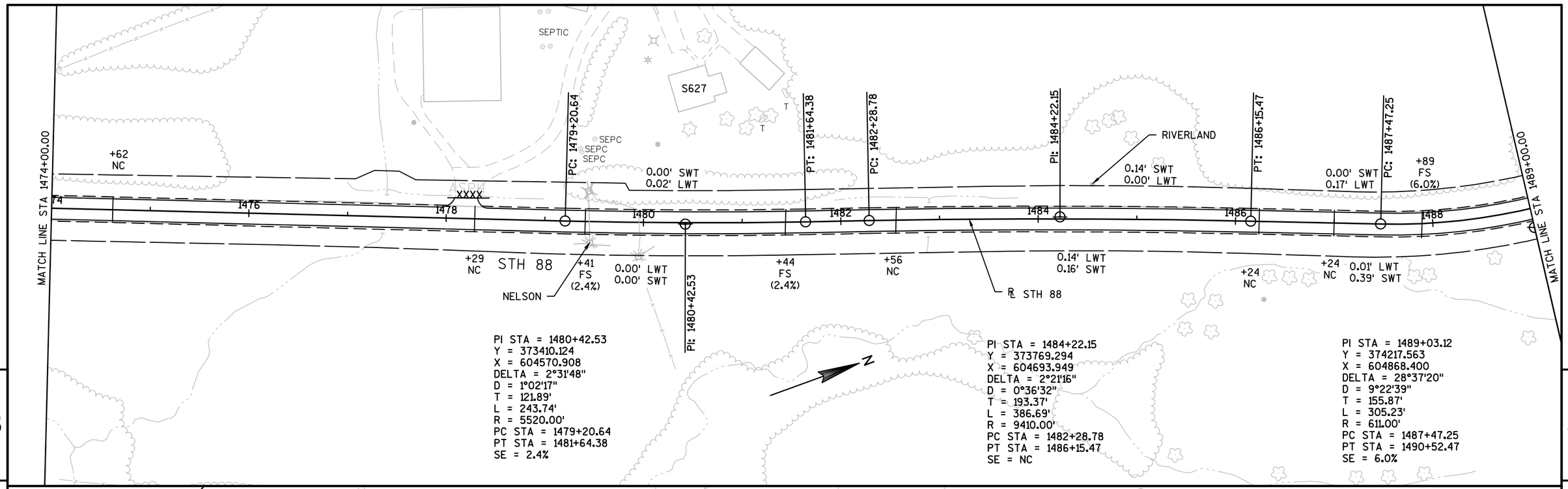
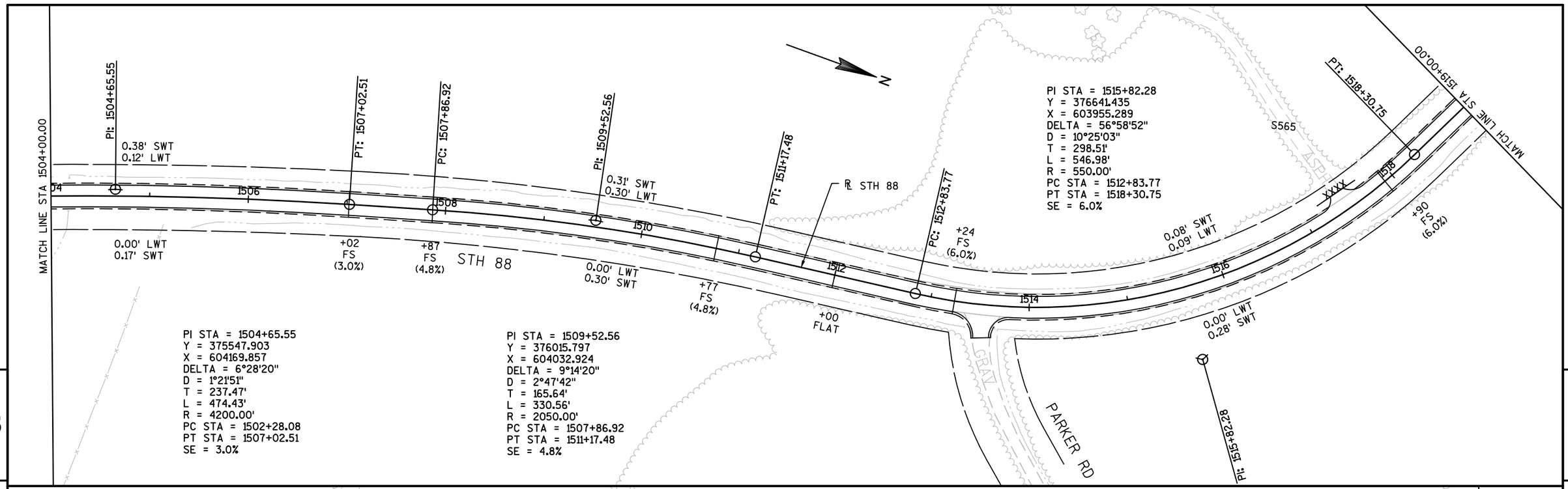
PLOT NAME :
PLOT SCALE : **********



PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E



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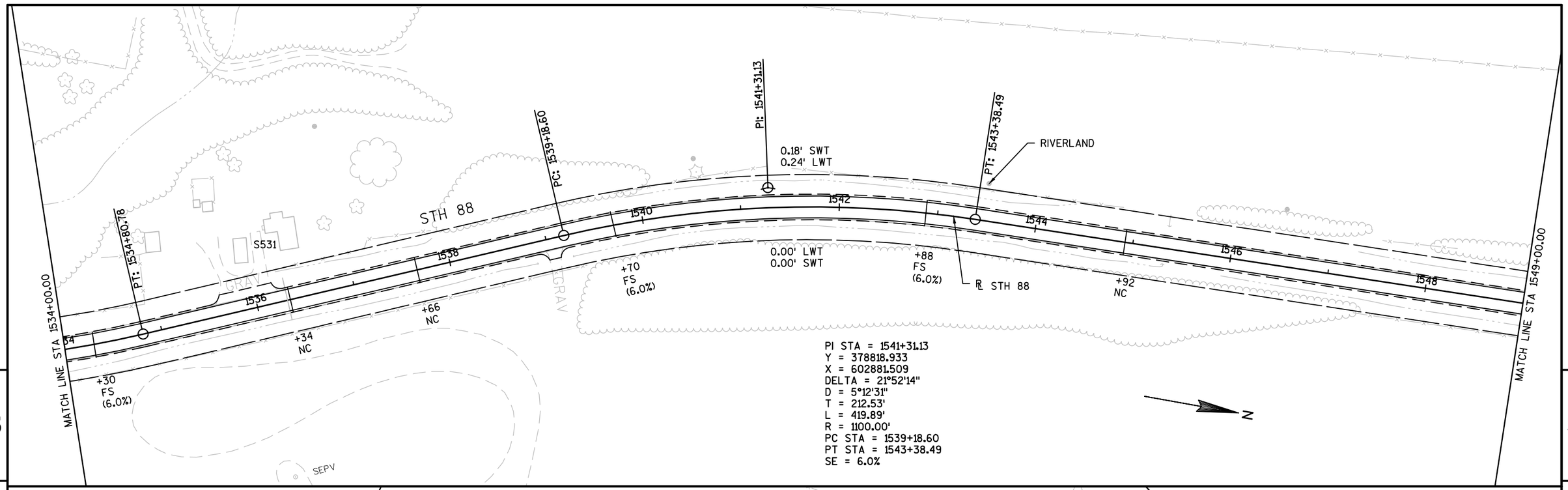

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

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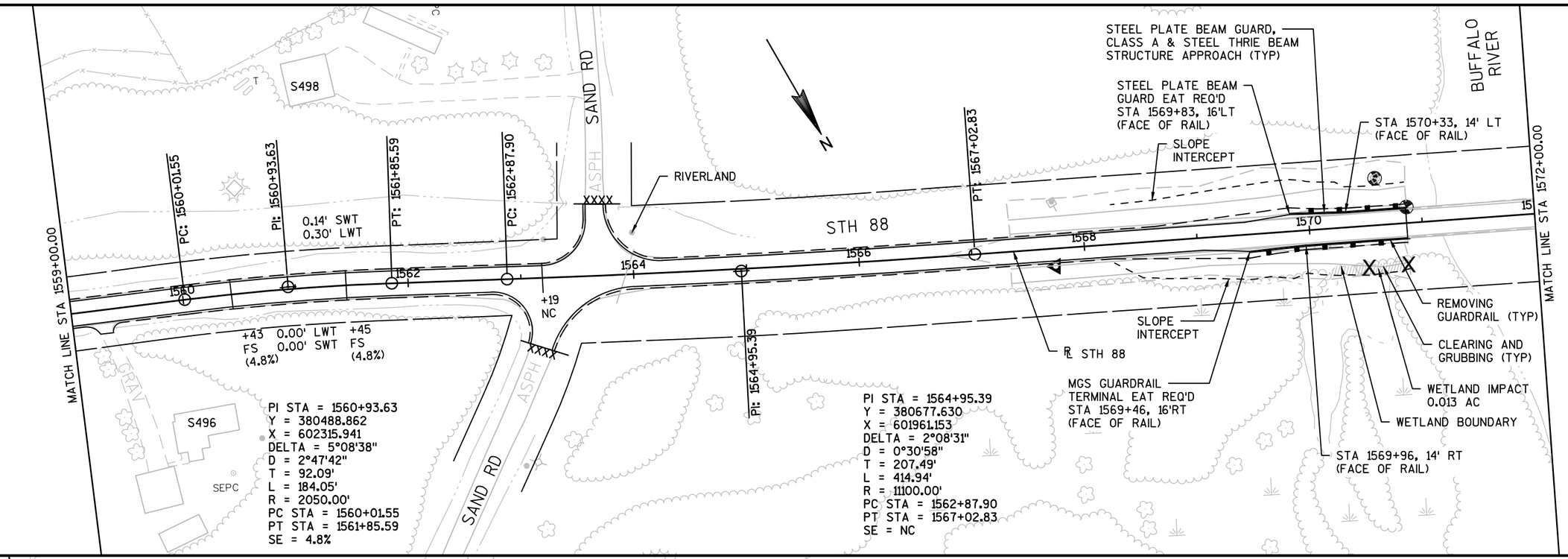

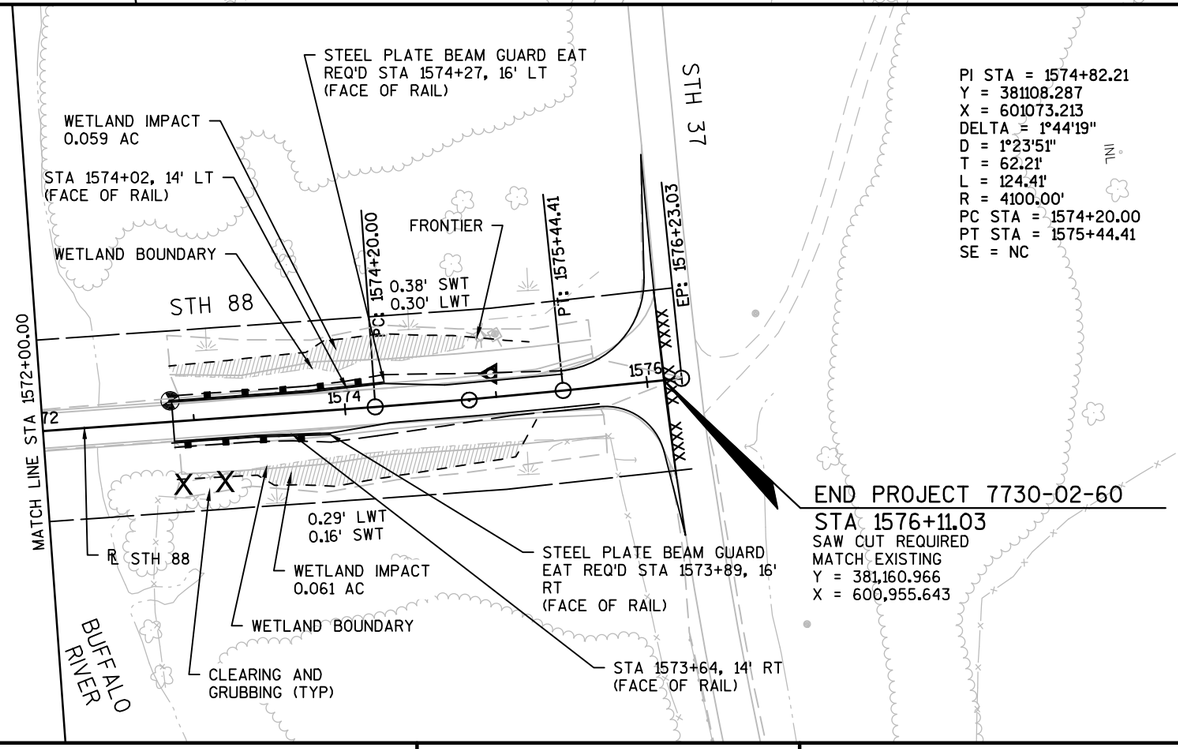

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	PLAN VIEW	SHEET	E

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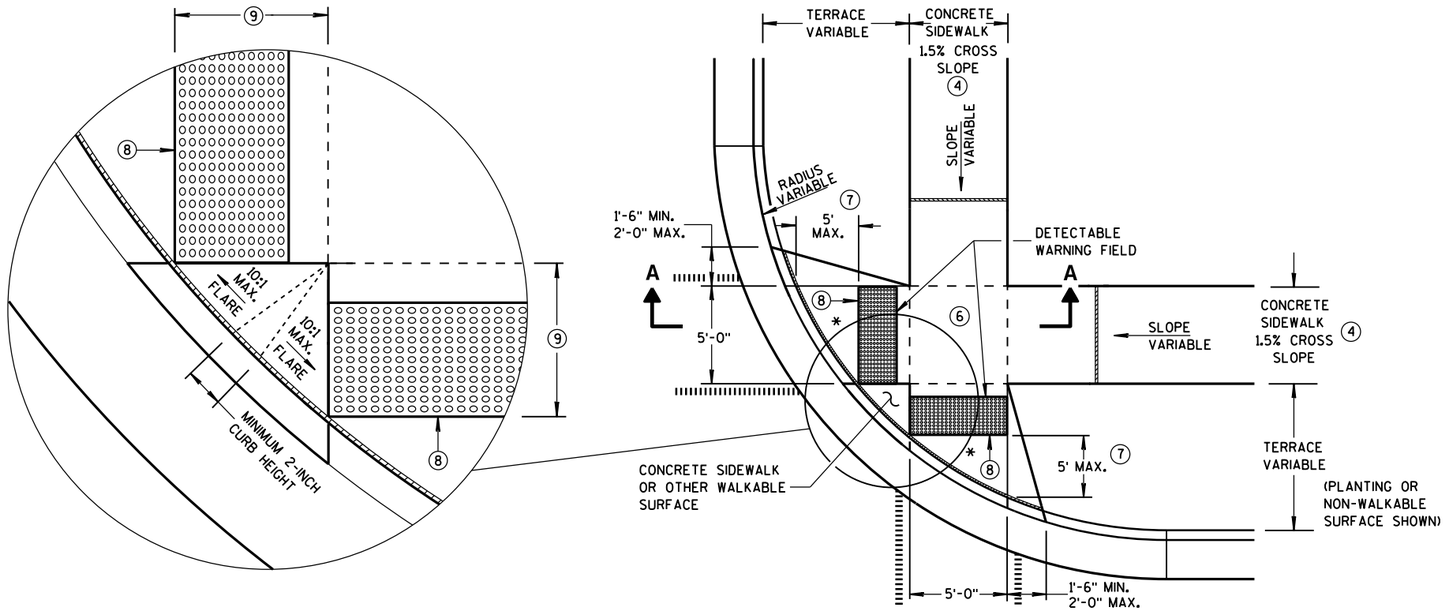
PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : **********
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

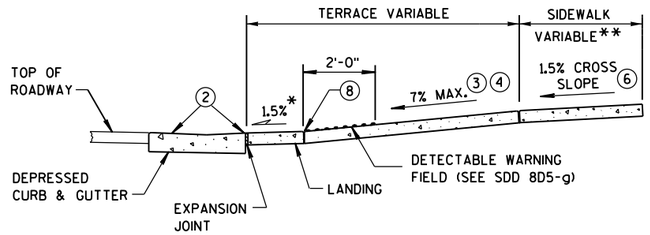
08D05-19B	CURB RAMPS TYPES 2 AND 3
08D05-19C	CURB RAMPS TYPES 4A AND 4A1
08D05-19F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-19G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
14B15-10A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-10B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-10C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11E	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B29-01	SAFETY EDGE
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-03A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C04-04	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C11-07A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-05A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-02A	PAVEMENT MARKING (INTERSECTIONS)
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-01	TRAFFIC CONTROL, DROP-OFF SIGNING

6



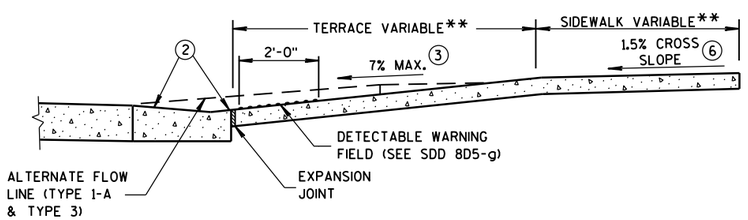
PLAN VIEW
TYPE 2 RAMP
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

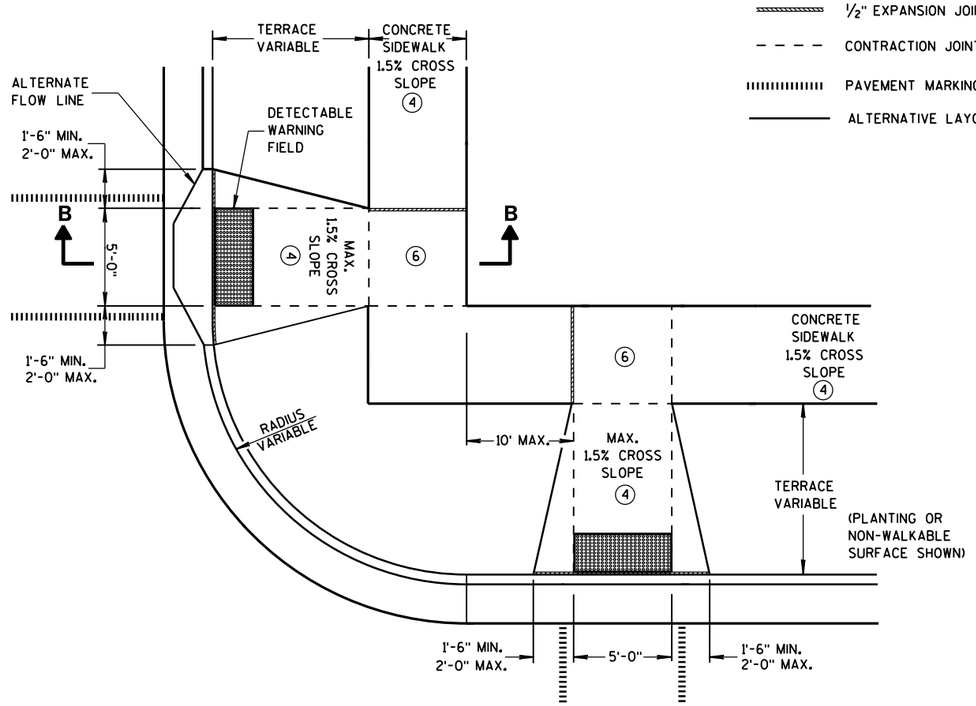


SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(9) WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

LEGEND

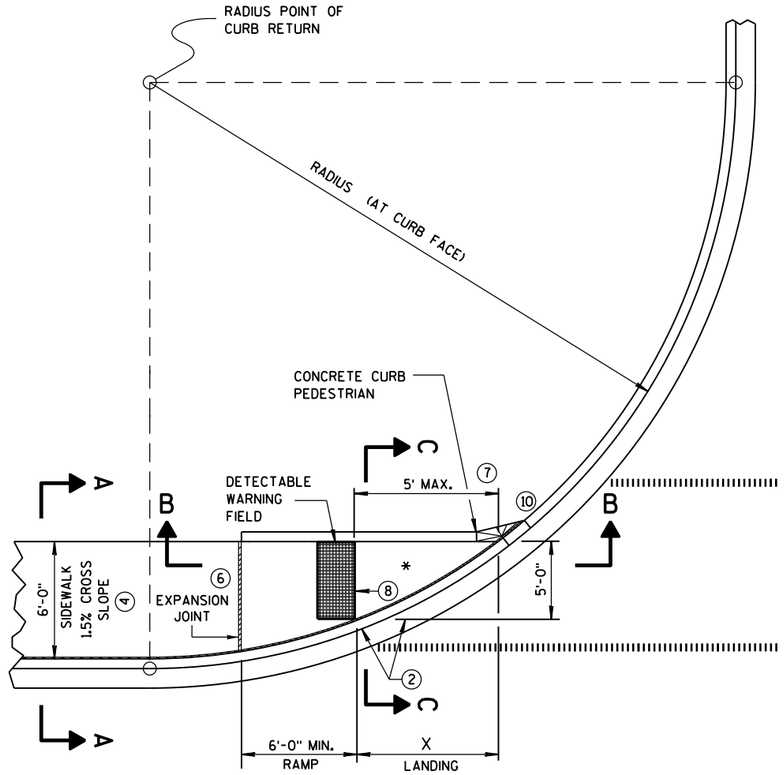
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

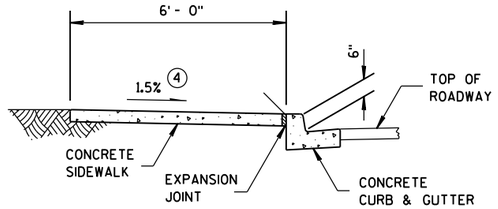
S.D.D. 8 D 5-19b



CURB RAMP TYPE 4A
PLAN VIEW

RADIUS (AT CURB FACE)	X
10 FEET	4'-7"
15 FEET	6'-5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

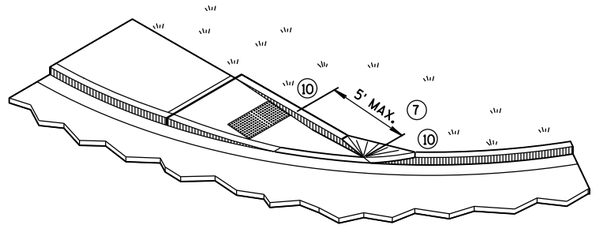
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

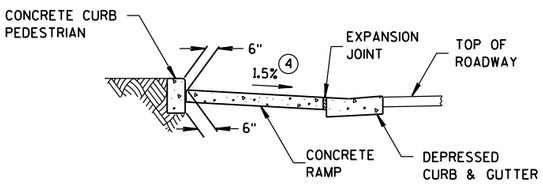
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

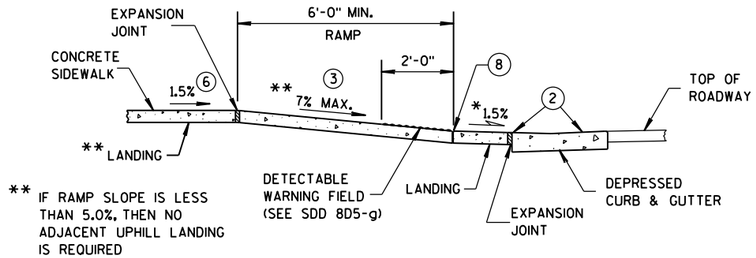
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4A



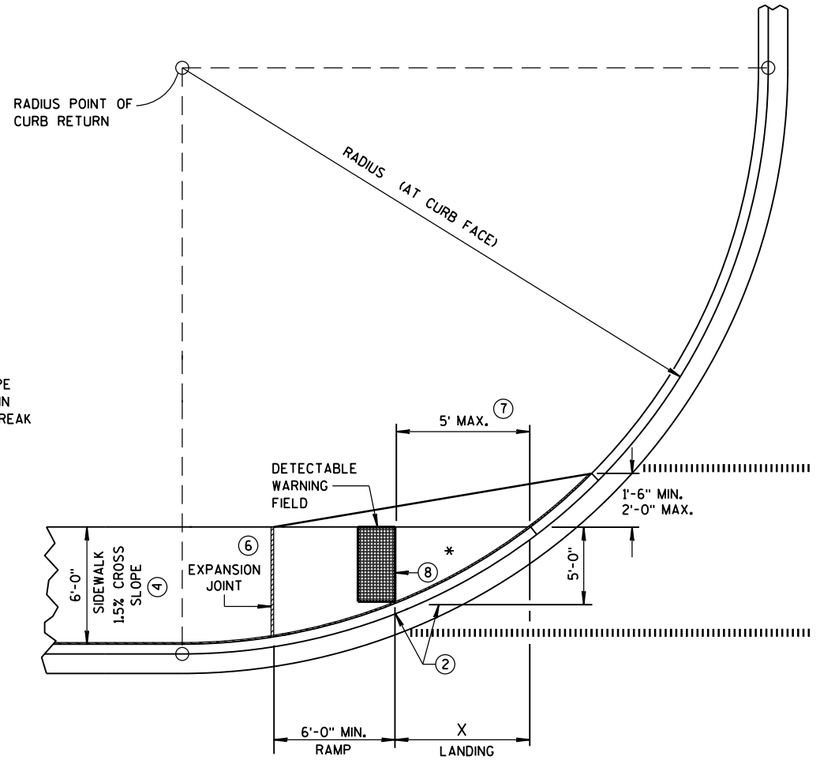
SECTION C-C FOR TYPE 4A



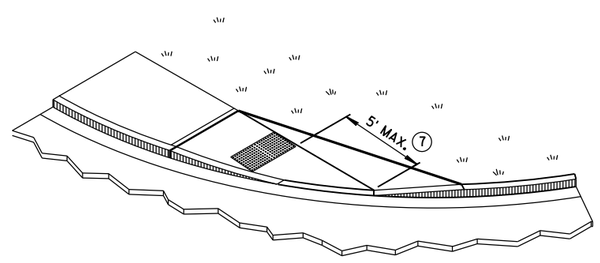
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

SECTION B-B FOR TYPE 4A

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPES 4A AND 4A1

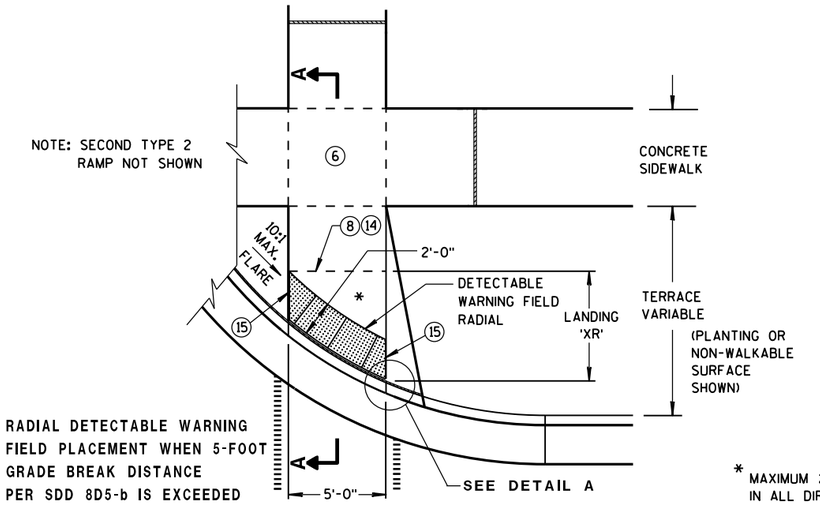
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 8 D 5-19c

6

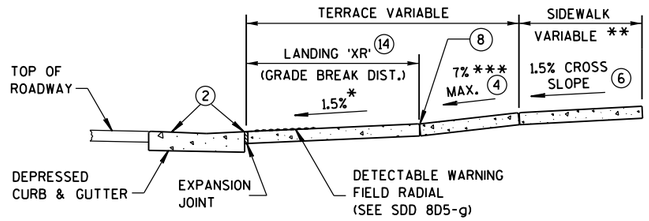
S.D.D. 8 D 5-19c



TYPE 2 RAMP
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION A-A

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS (DWFs) THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

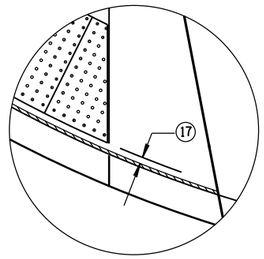
(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION 'XR') REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

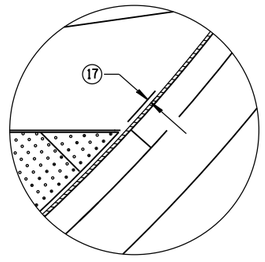
(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

(16) USE 1'X 2' RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2'-0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.

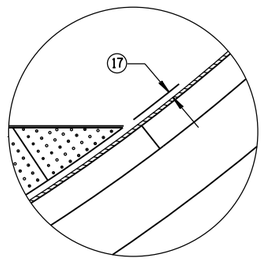
(17) A MAXIMUM 3-INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.



DETAIL A

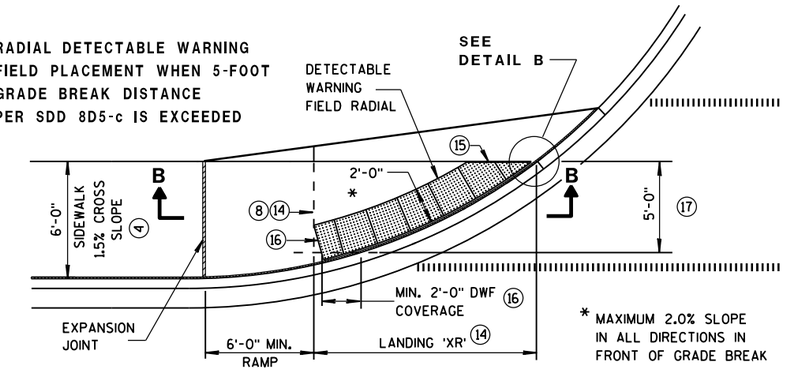


DETAIL C



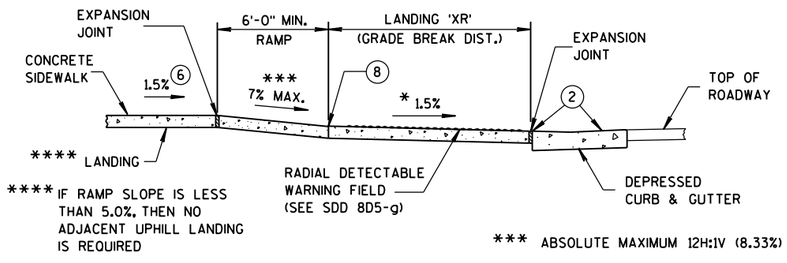
DETAIL B

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5-FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED



* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

CURB RAMP TYPE 4A1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

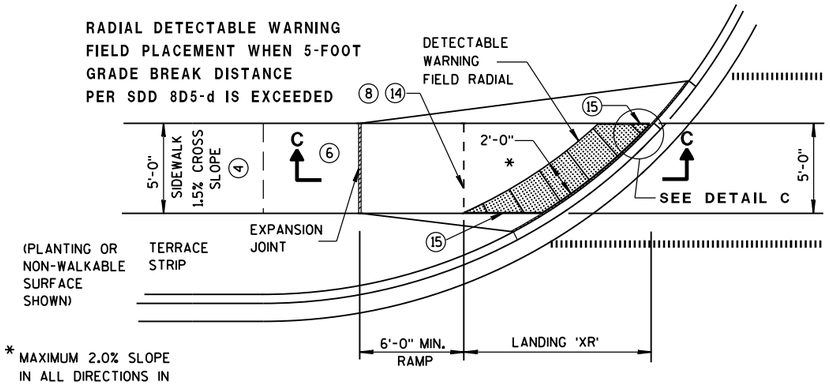


**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

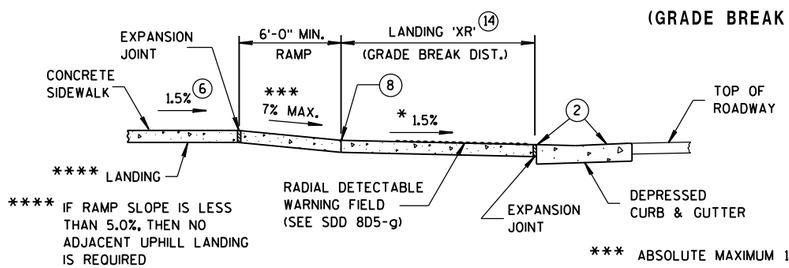
SECTION B-B FOR TYPE 4A1

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5-FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

CURB RAMP TYPE 4B1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION C-C FOR TYPE 4B1

CURB RAMPS
RADIAL DETECTABLE WARNING FIELD APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

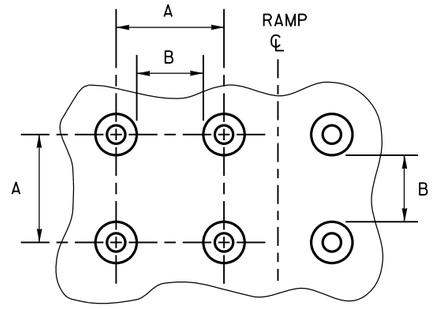
S.D.D. 8 D 5-19f

6

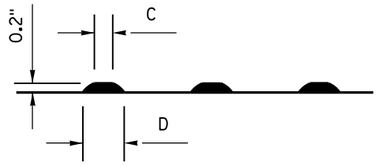
S.D.D. 8 D 5-19f

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



PLAN VIEW



ELEVATION VIEW

TRUNCATED DOMES

DETECTABLE WARNING PATTERN DETAIL

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

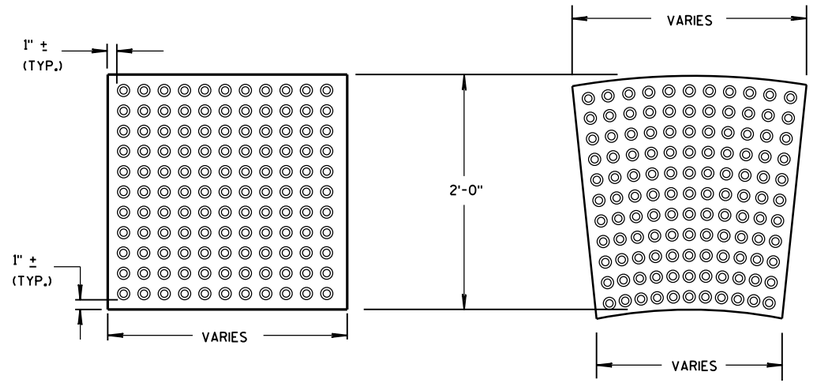
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGES IN COMBINATION WITH SQUARE PANELS ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

⑮ FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

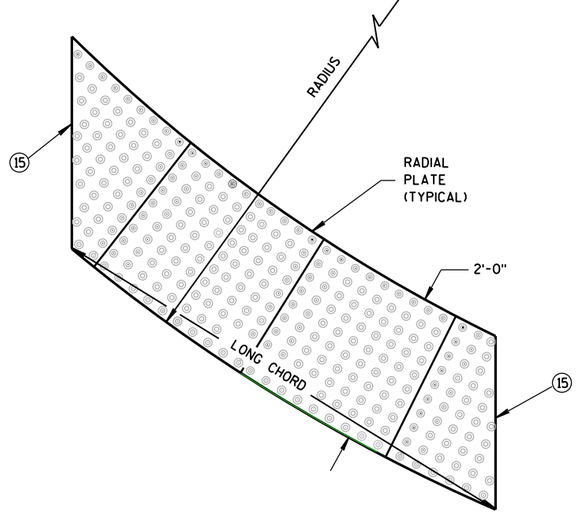


RECTANGULAR PLATES

RADIAL PLATES

DETECTABLE WARNING FIELDS (TYPICAL)

PLAN VIEW



RADIAL DETECTABLE WARNING FIELD ATTRIBUTES

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

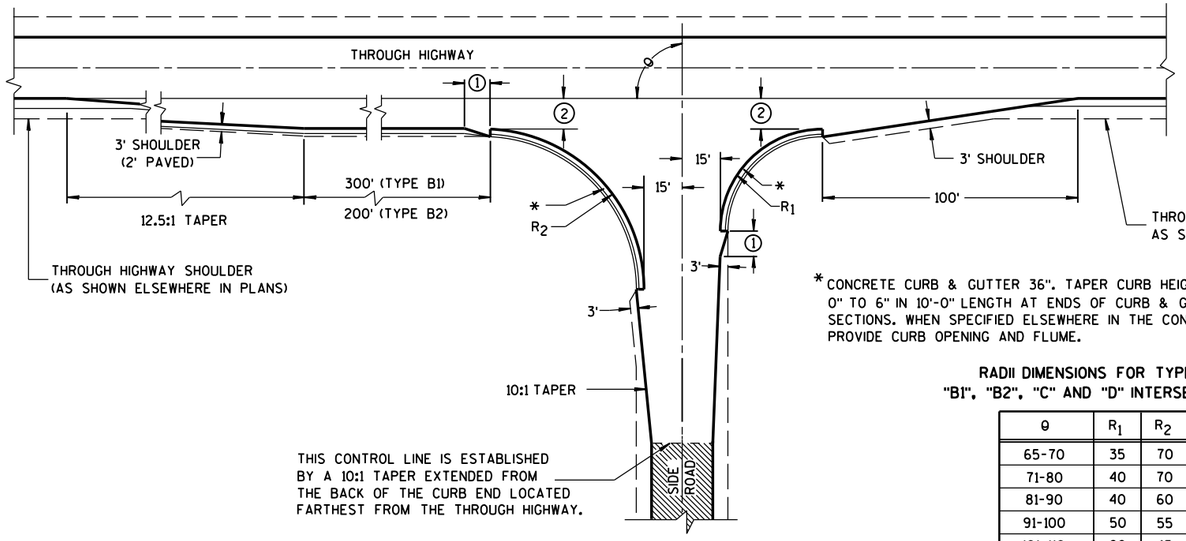
FHWA

6

S.D.D. 8 D 5-19g

6

S.D.D. 8 D 5-19g

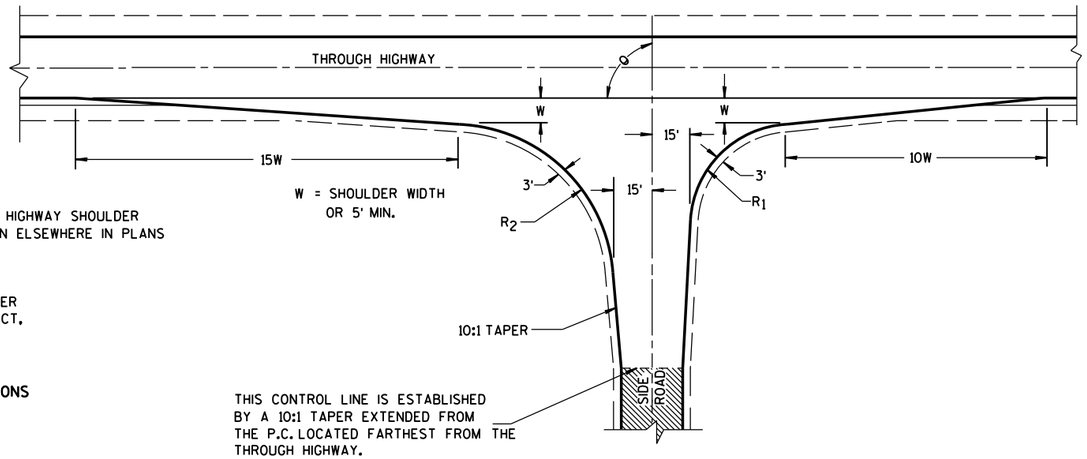


TYPE "B1" AND "B2"

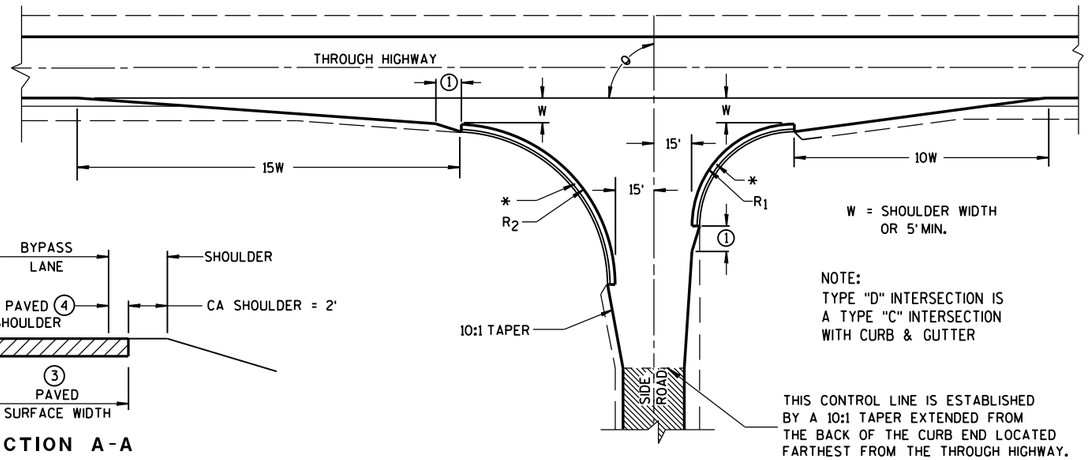
*CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



TYPE "C"



TYPE "D"

GENERAL NOTES

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

SIDE ROAD SURFACING NOTE

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

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

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

EXISTING PAVED SURFACE

BYPASS LANE

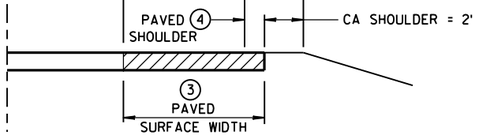
(1) 10-FT TYPICAL.

(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

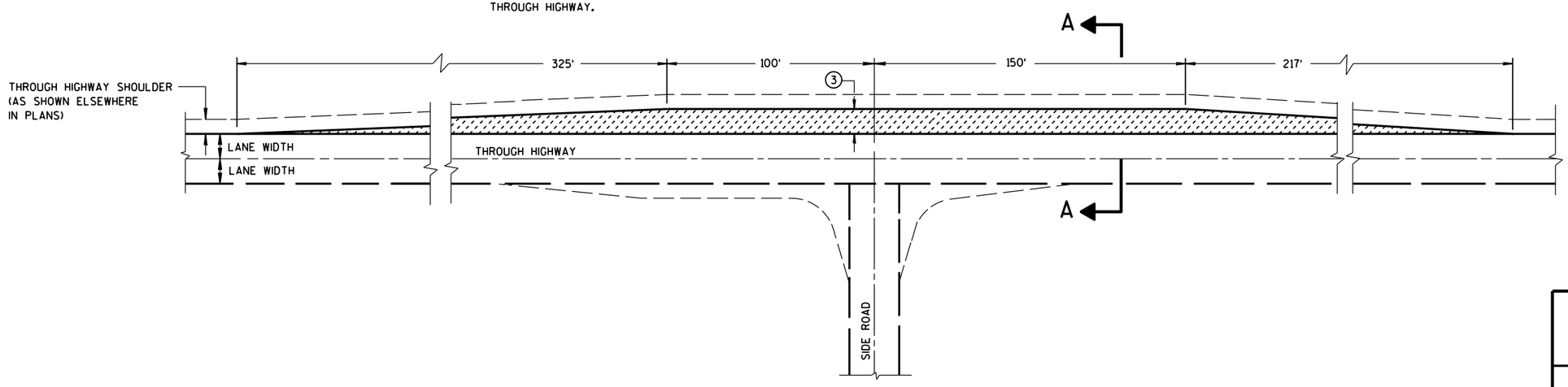
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.

(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)



TEE INTERSECTION BYPASS LANE DETAIL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 9 A 1-13a

GENERAL NOTES

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

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

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

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

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

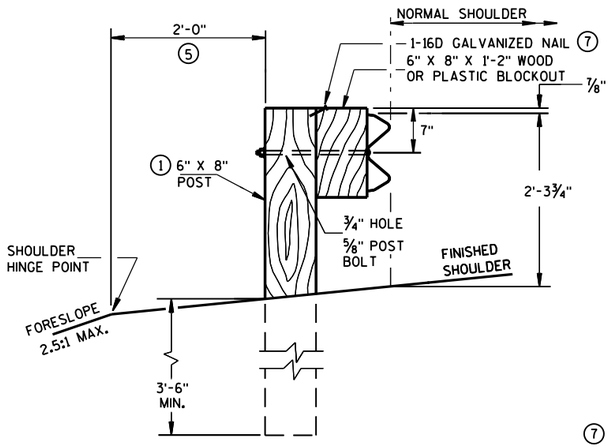
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

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

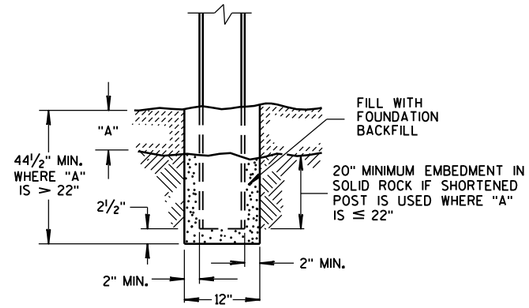
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

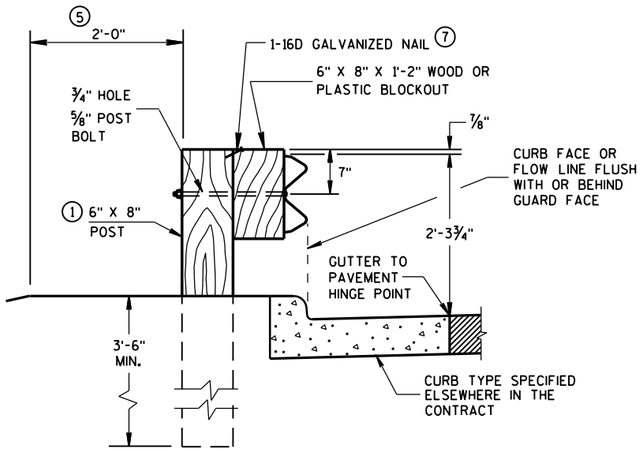
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



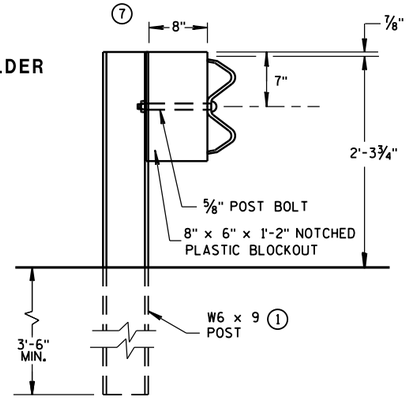
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



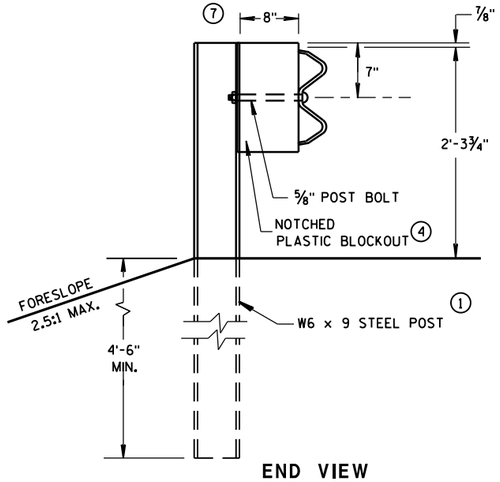
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



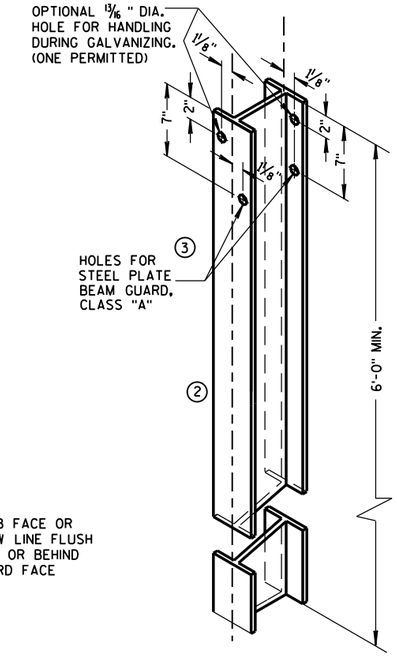
END VIEW
LOCATED ALONG A CURBED ROADWAY



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION

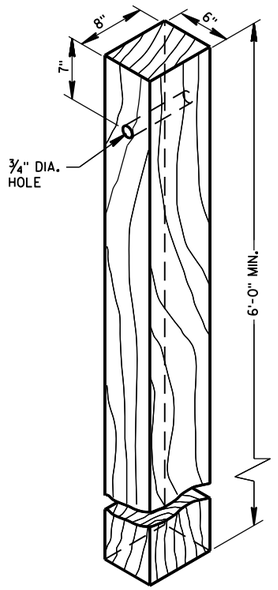


END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

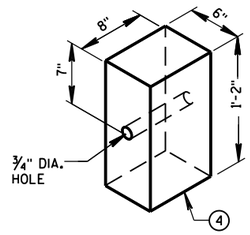


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

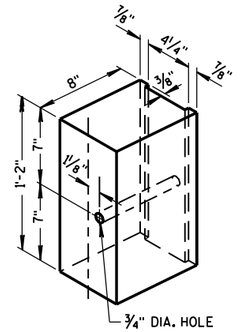
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



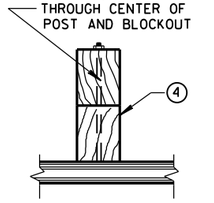
WOOD POST
(6"X8") NOMINAL



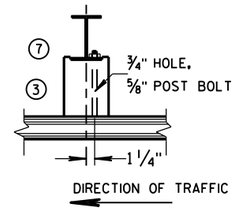
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



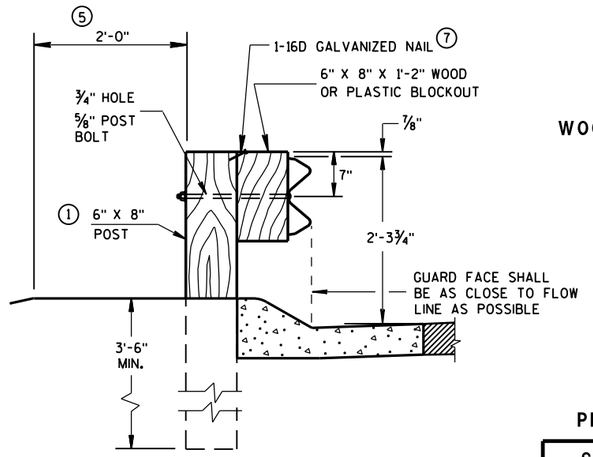
TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

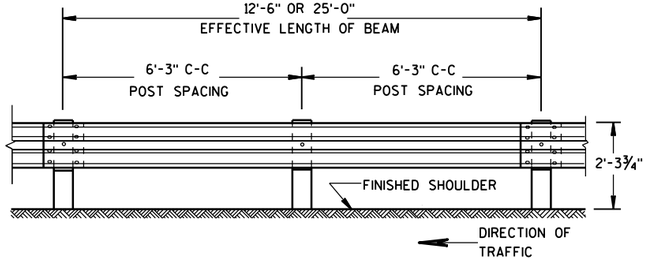


END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

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

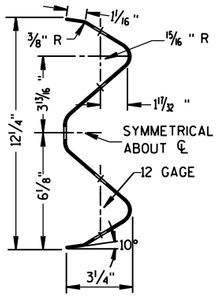
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

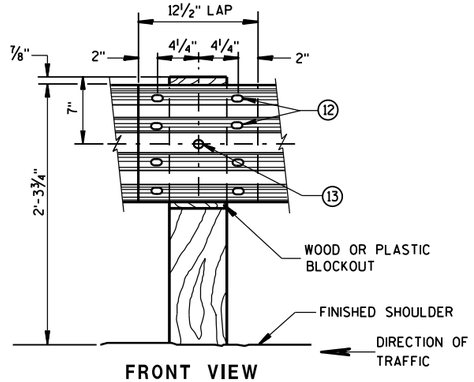


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

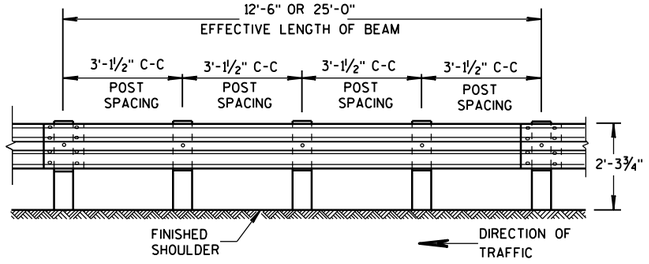
BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

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

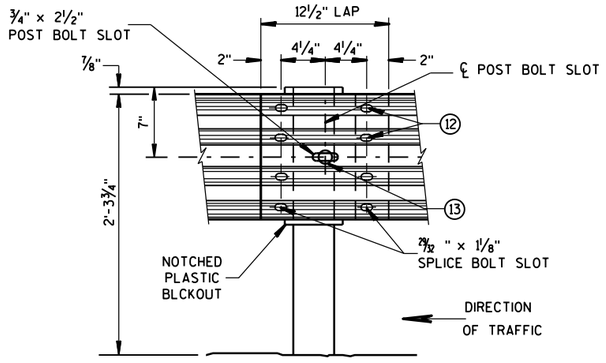
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

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



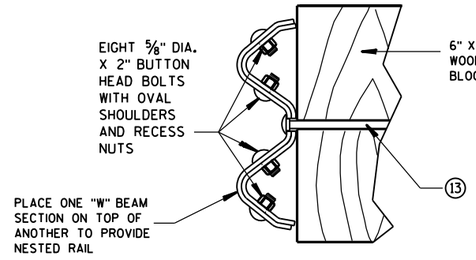
FRONT VIEW

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



FRONT VIEW

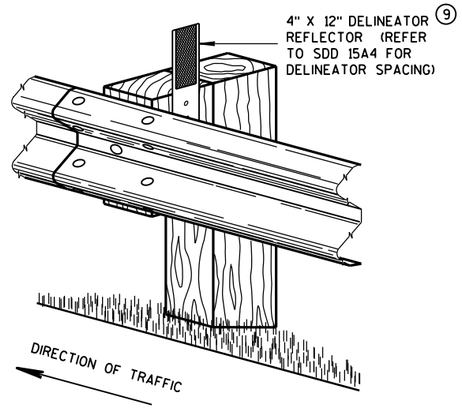
BEAM SPLICE AT STEEL POST



NESTED W BEAM (NW)

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

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

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

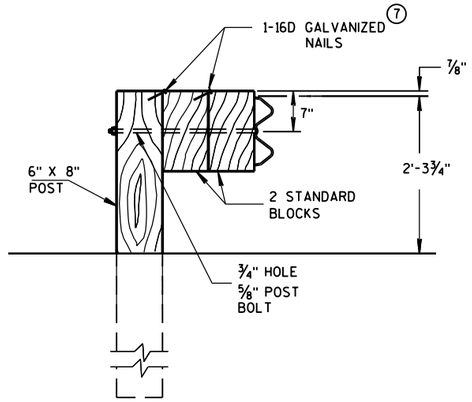
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 15-10b

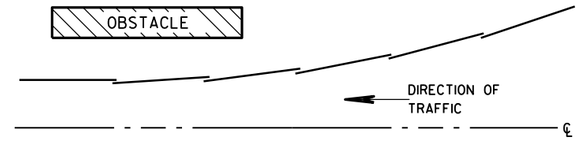
6

S.D.D. 14 B 15-10b

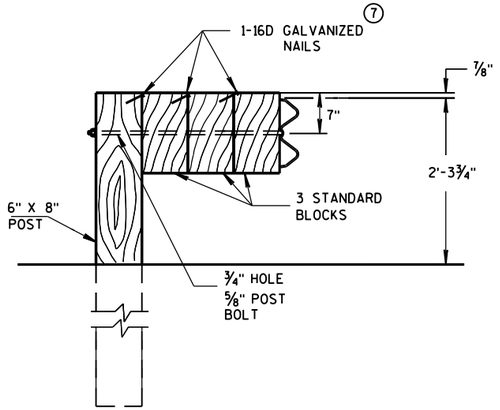


DETAIL FOR DOUBLE BLOCKS

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

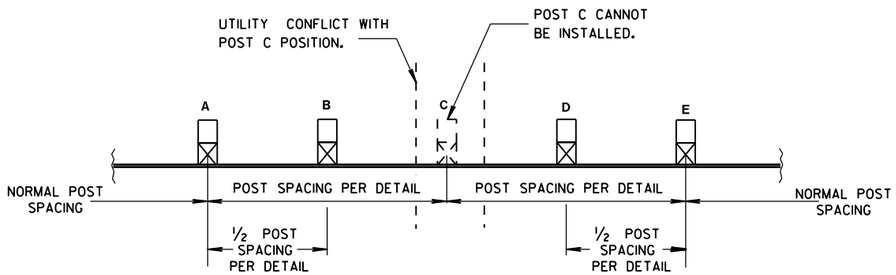


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

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



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

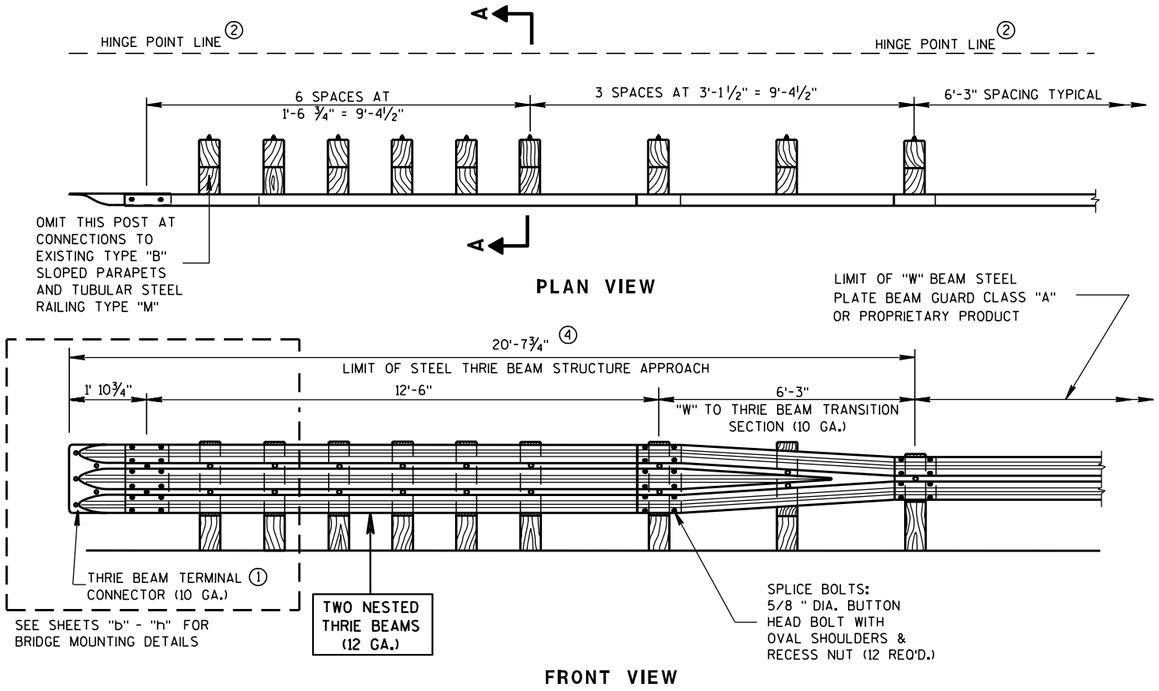
DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 14 B 15-10c



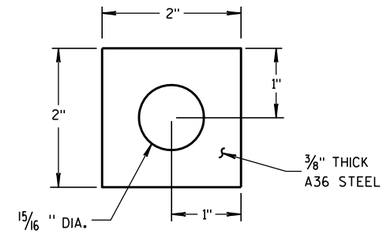


PLATE WASHER DETAIL

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

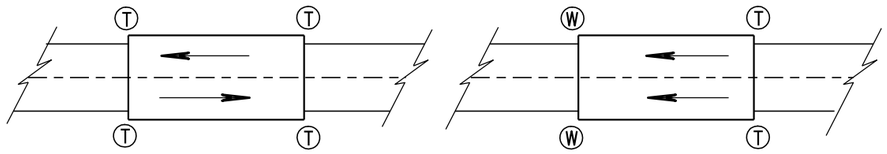
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



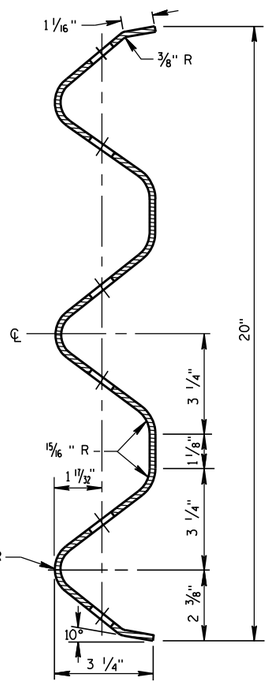
TWO WAY TRAFFIC

ONE WAY TRAFFIC

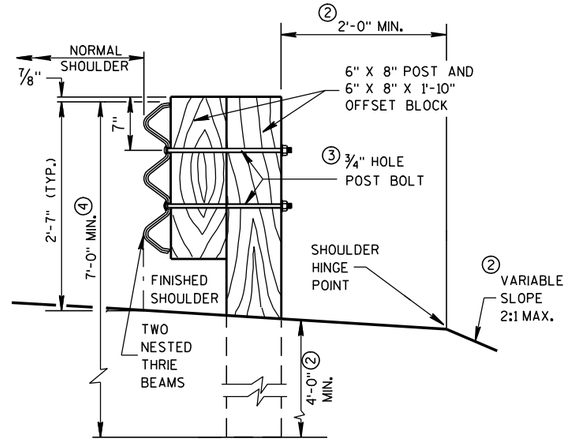
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

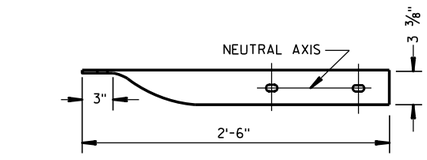
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

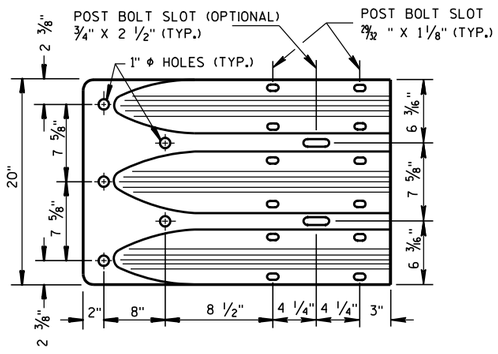


SECTION THRU THRIE BEAM RAIL ELEMENT

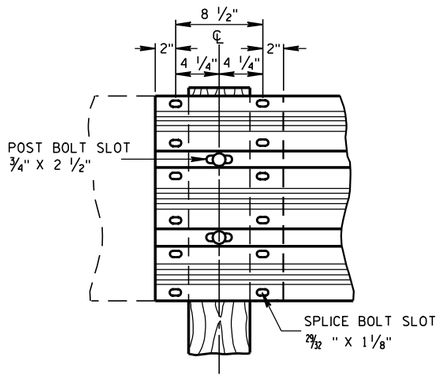


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 14 B 20-11a

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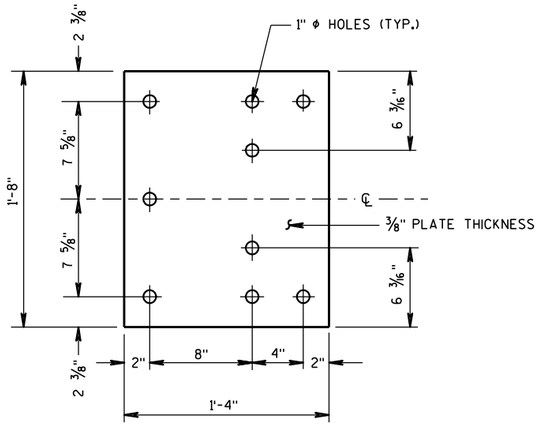
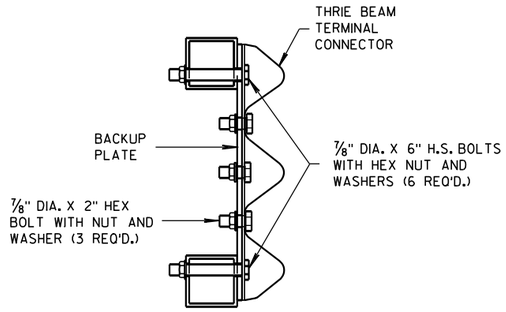
S.D.D. 14 B 20-11a



BACK-UP PLATE DETAIL



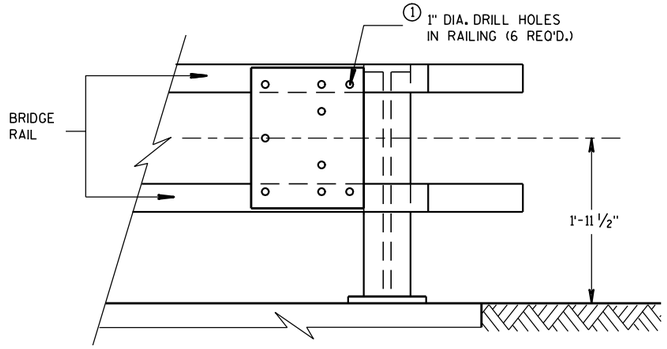
SECTION G-G

GENERAL NOTES

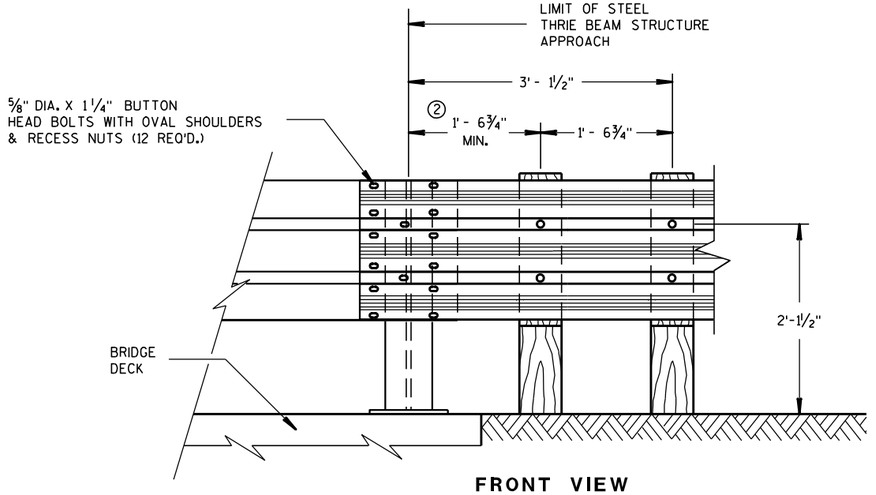
BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

② VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL AS CLOSE AS FEASIBLE TO THE STEEL END POST.

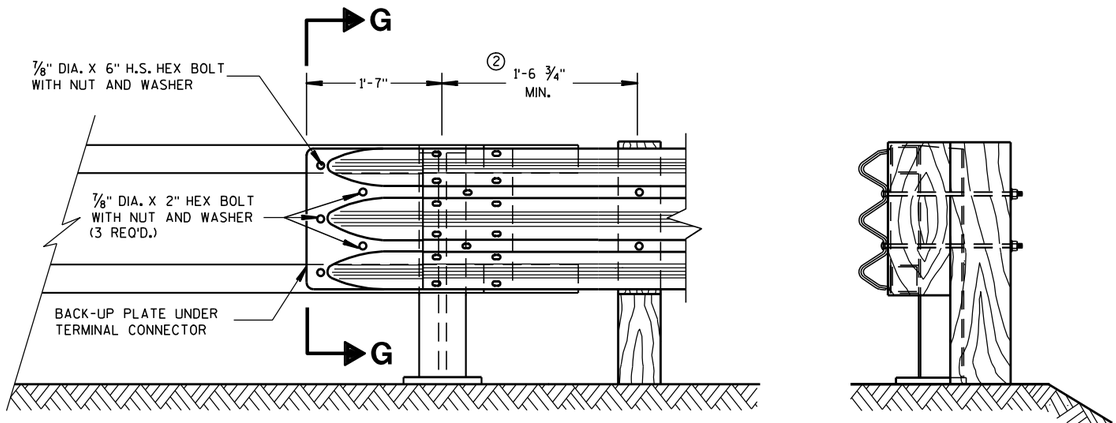


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW

END VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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S.D.D. 14 B 20-11e

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S.D.D. 14 B 20-11e

BILL OF MATERIALS

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

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

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

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

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

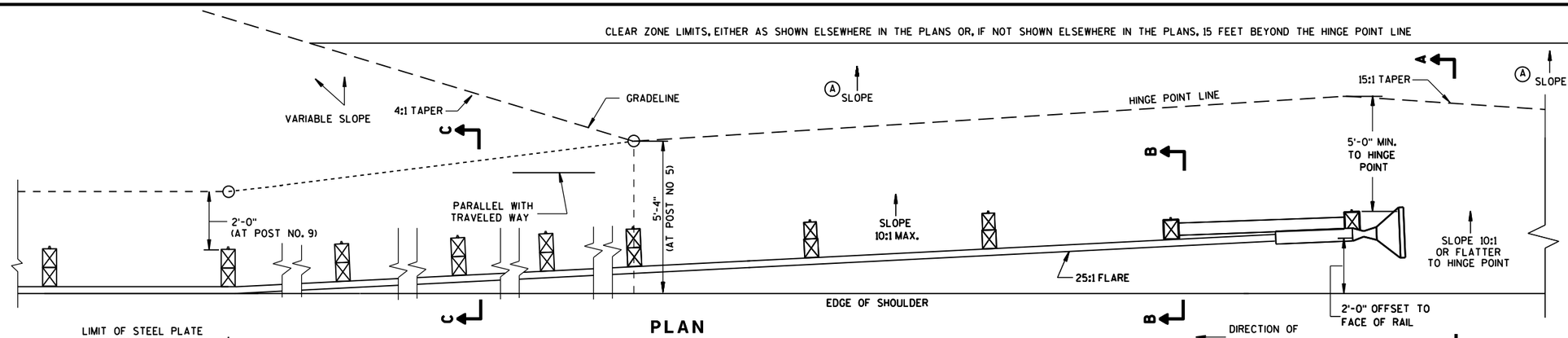
(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

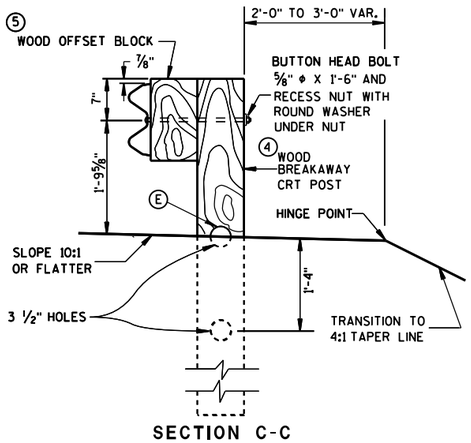
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

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

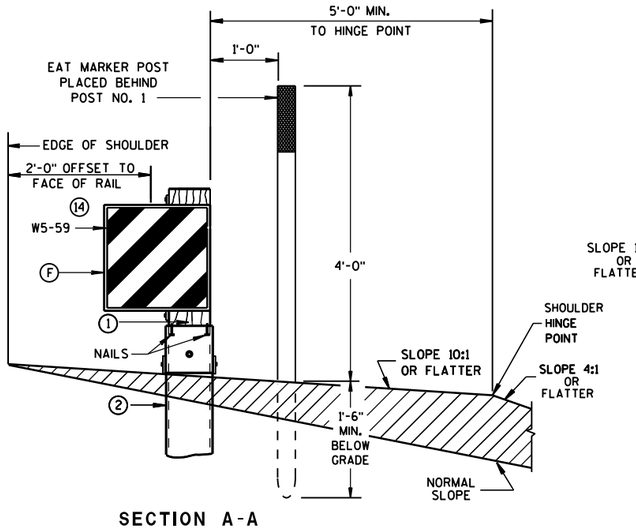
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

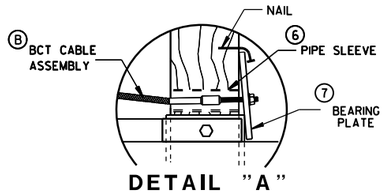




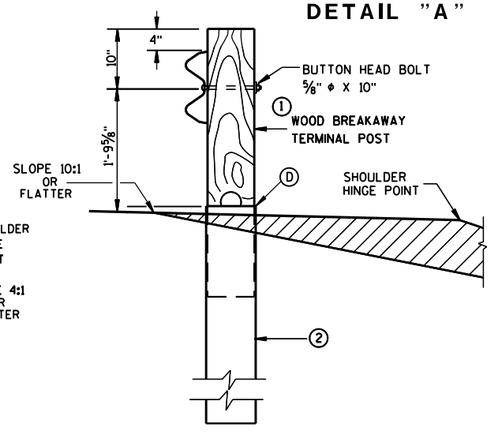
SECTION C-C
TYPICAL AT POST NOS. 6, 8



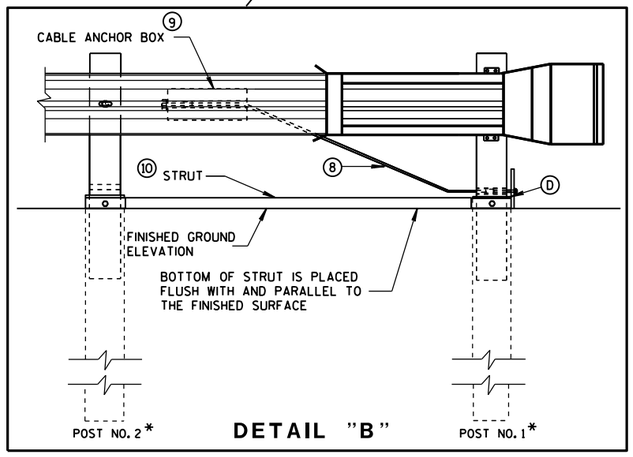
SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



SECTION B-B
TYPICAL AT POST NO. 2*



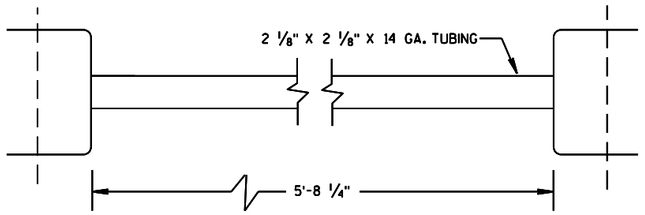
DETAIL "B"

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

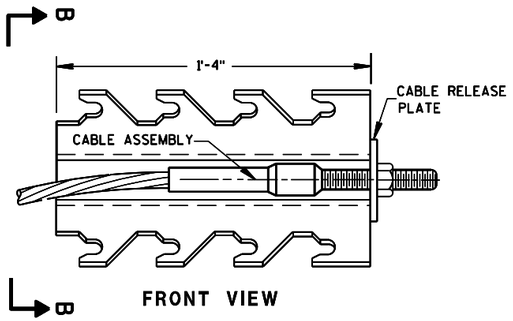
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

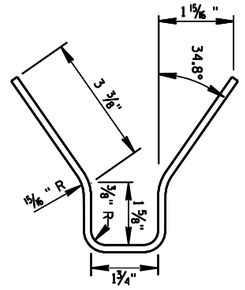
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL

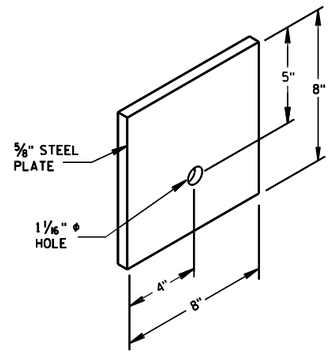


FRONT VIEW



SECTION B-B

⑨ CABLE ANCHOR BOX



⑦ STEEL BEARING PLATE

6

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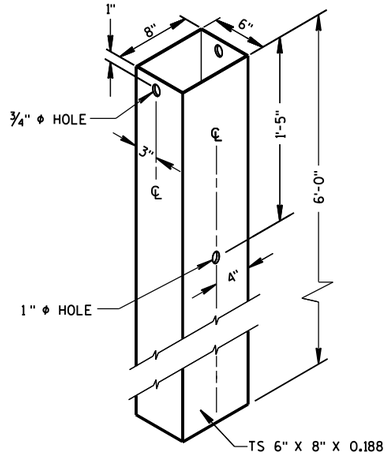
S.D.D. 14 B 24-9b

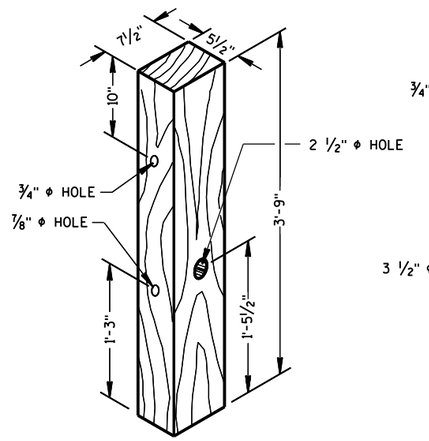
S.D.D. 14 B 24-9b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

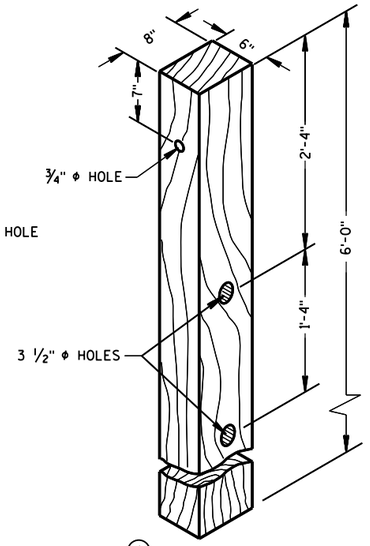
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



② 72" STEEL TUBE
(POSTS NO. 1-4



① TERMINAL POST

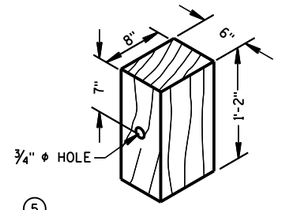


④ CRT POST
(POSTS NO'S 5-8)

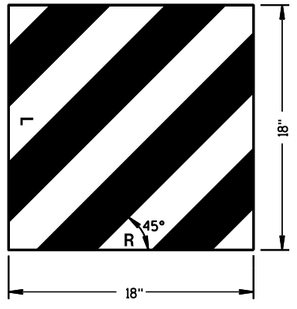
WOOD BREAKAWAY POSTS

GENERAL NOTES

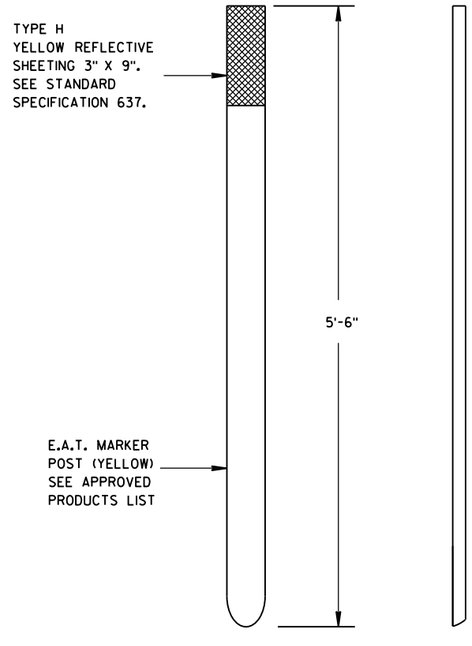
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH,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



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



⑭ REFLECTIVE SHEETING DETAILS



E.A.T. MARKER POST

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

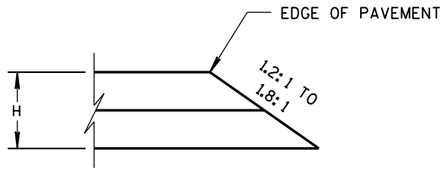
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

6

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

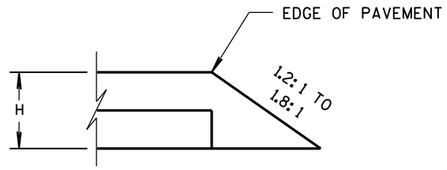
6

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



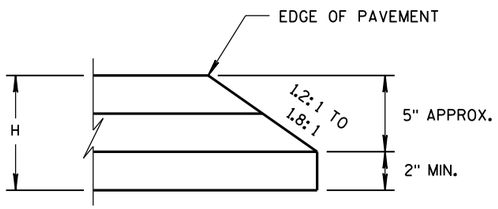
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



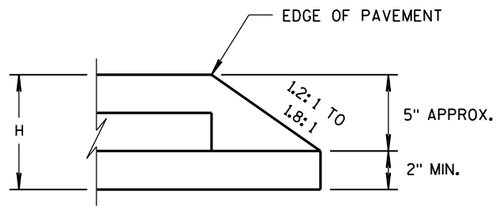
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

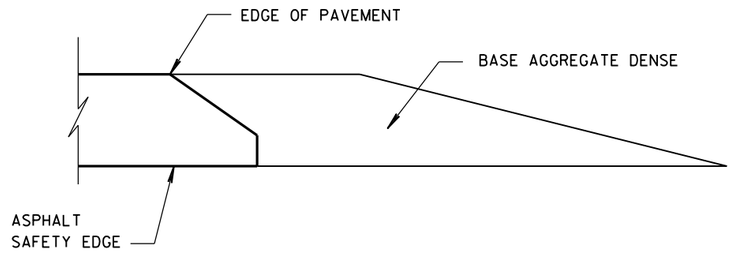
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

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S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

SAFETY EDGE SM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

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.

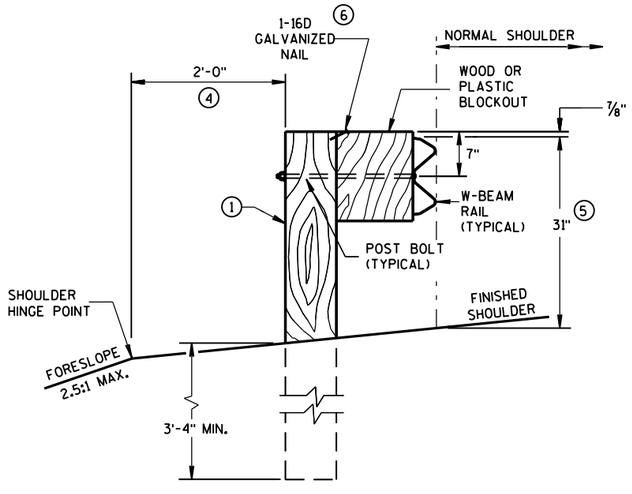
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ 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).

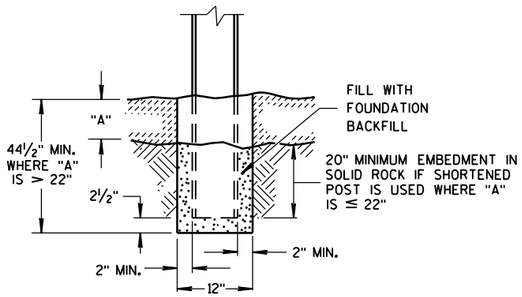
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

(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.



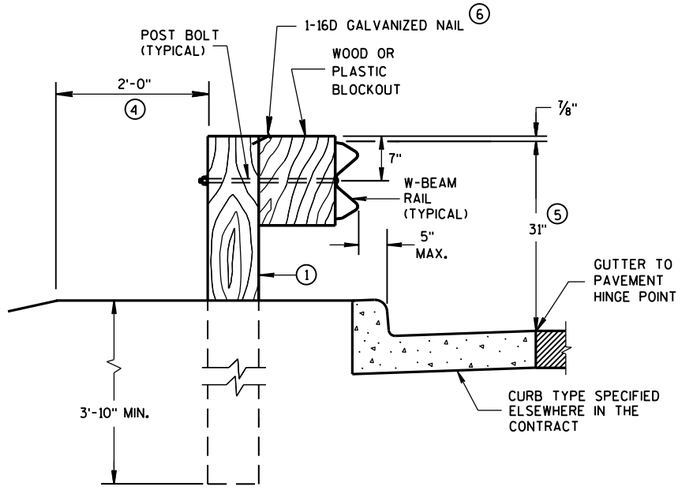
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



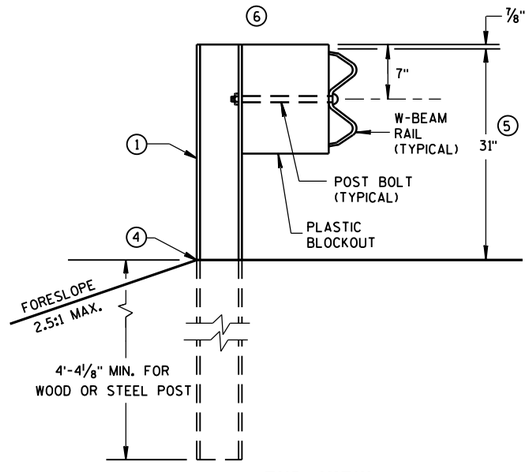
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



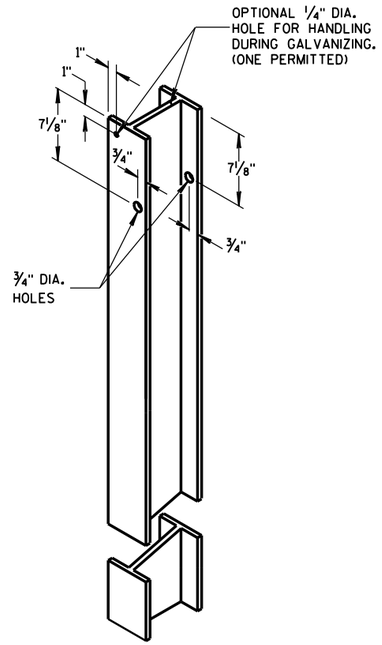
END VIEW

LOCATED ALONG A CURBED ROADWAY

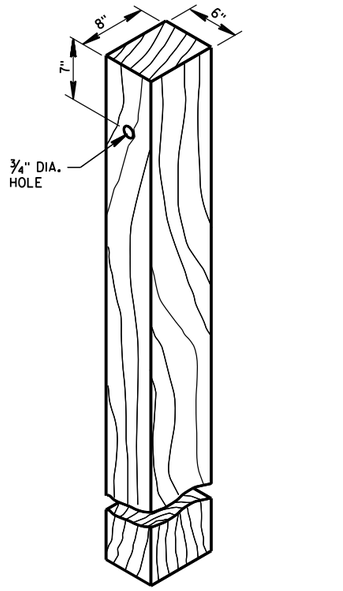


END VIEW

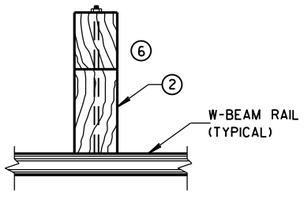
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



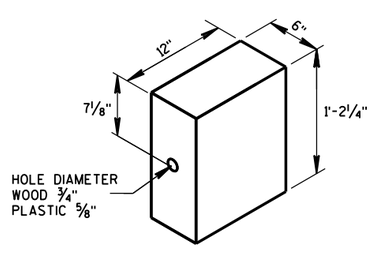
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



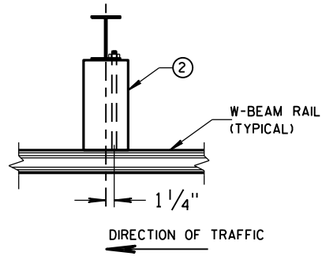
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 42-5a

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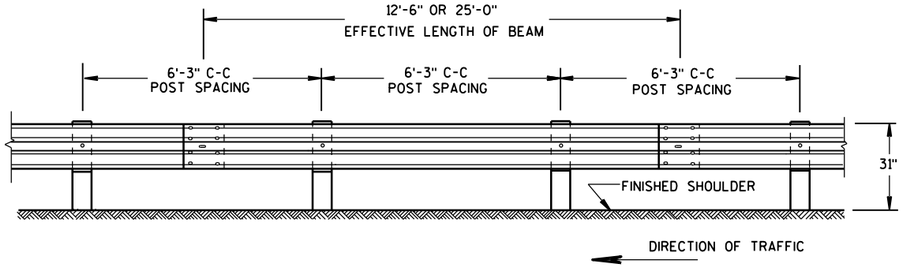
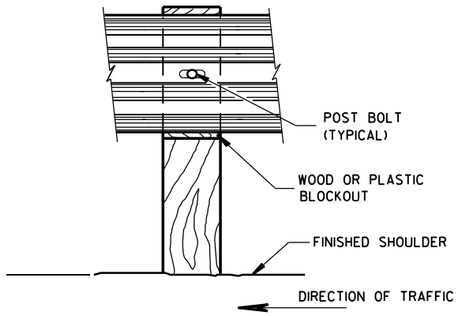
S.D.D. 14 B 42-5a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



FRONT VIEW AT WOOD POST

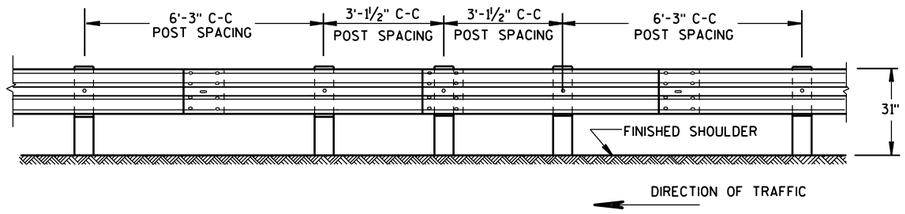
GENERAL NOTES

(8) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

(11) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

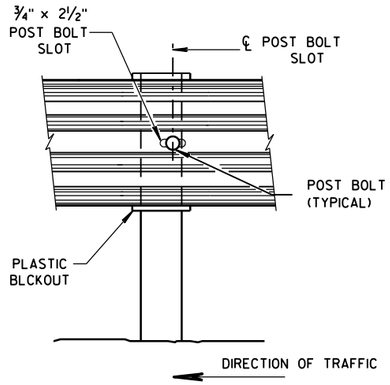
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

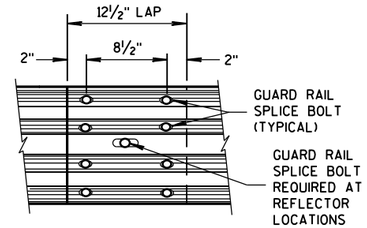


FRONT VIEW

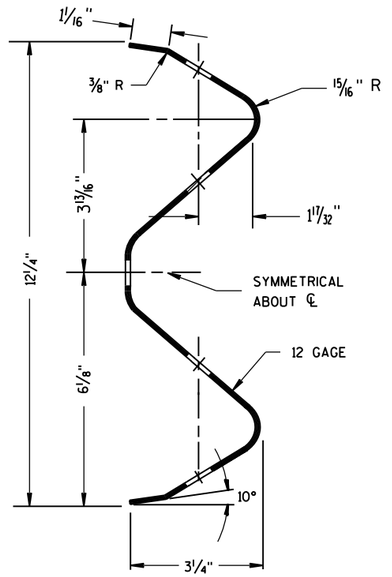
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



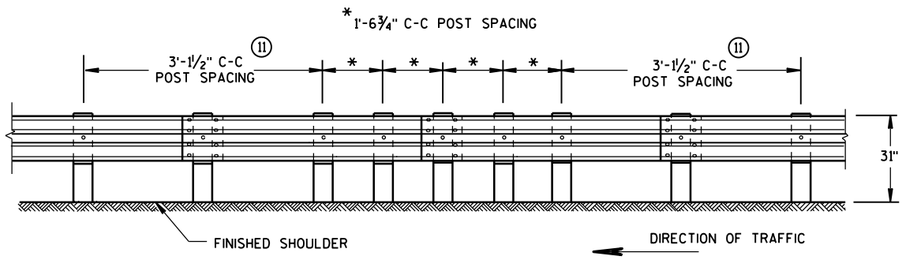
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE

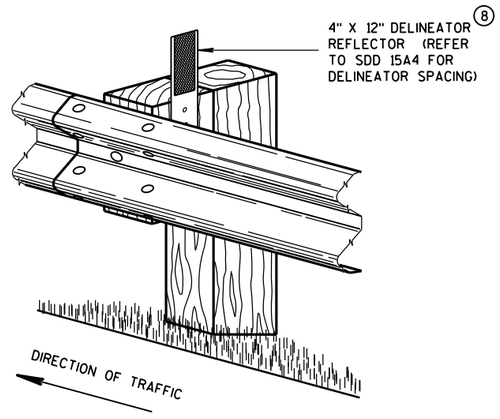


SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

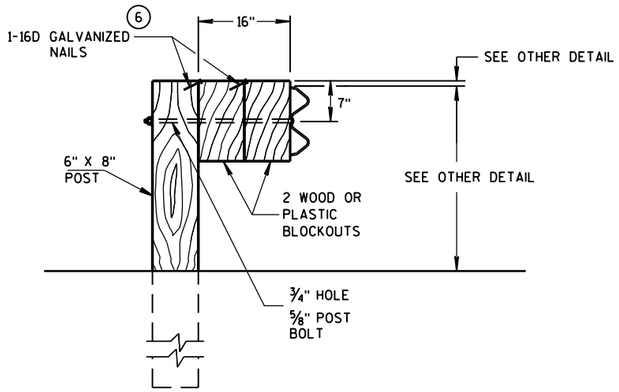
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 42-5b

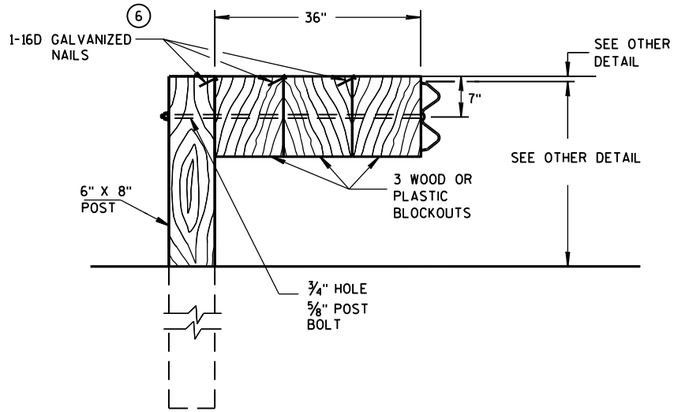
6

S.D.D. 14 B 42-5b



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.

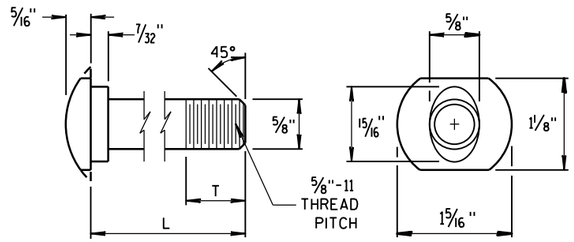


DETAIL FOR 36" BLOCKOUT DEPTH

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.

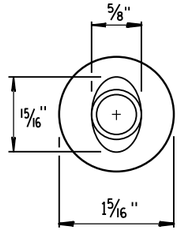
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

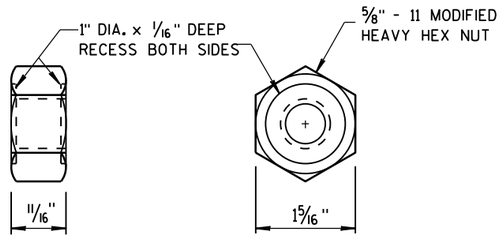


POST BOLT TABLE

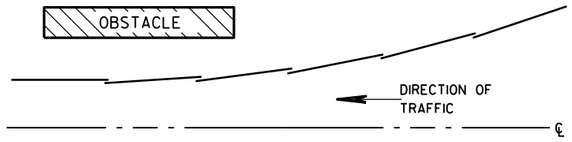
L	T (MIN.)
1¼"	1⅛"
2"	1¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

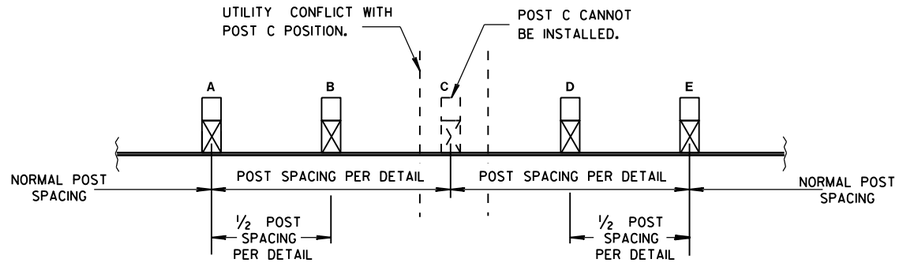


POST BOLT, SPLICE BOLT AND RECESS NUT

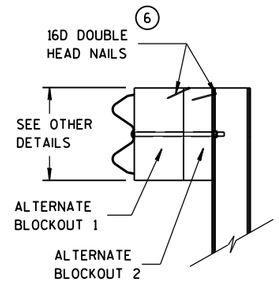


PLAN VIEW

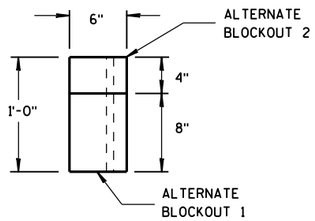
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 42-5c

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 MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

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

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

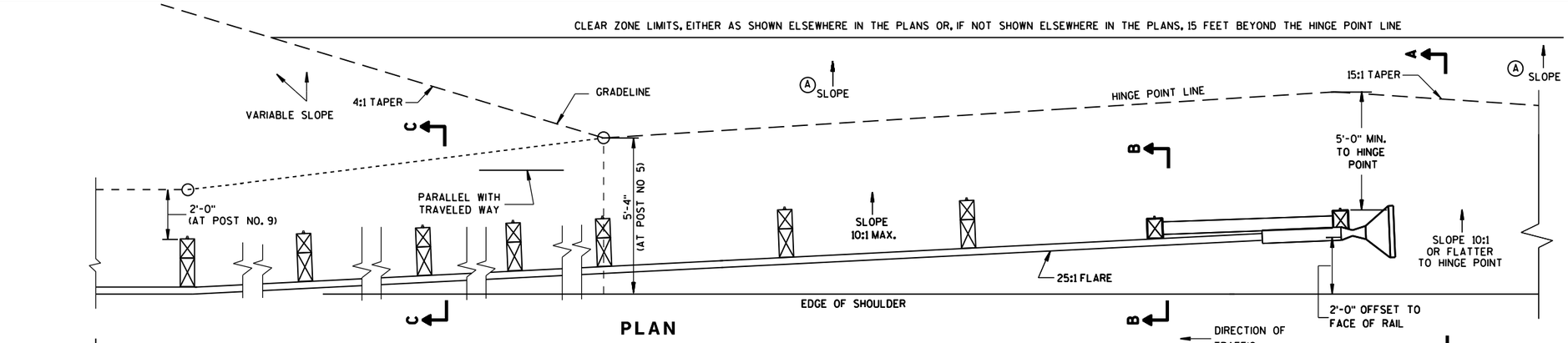
SEE SDD 14B42 FOR MORE INFORMATION.

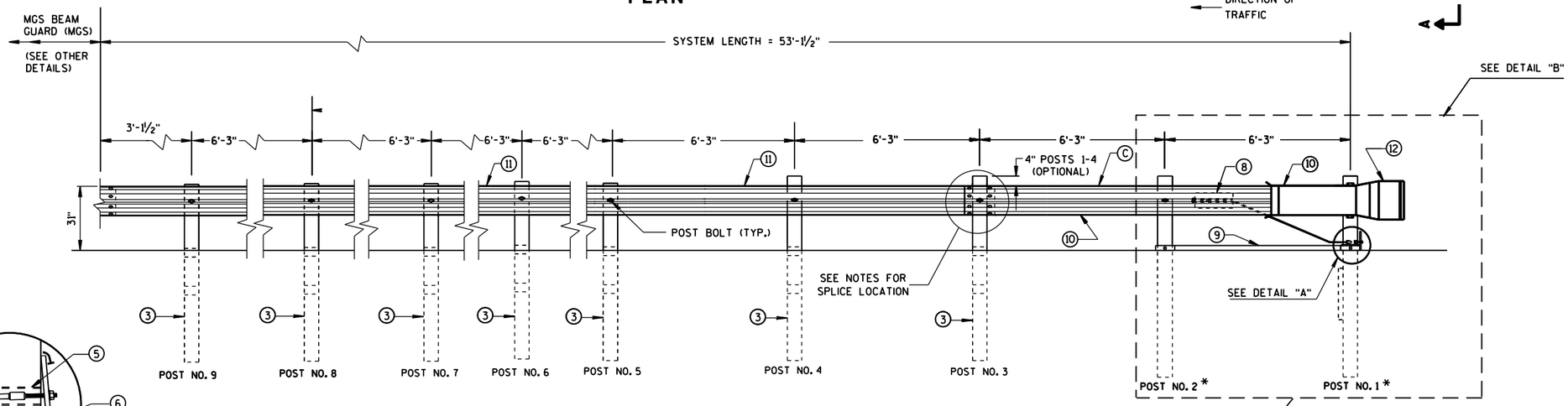
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

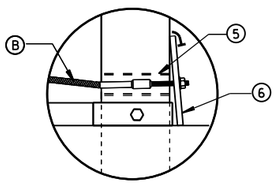
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

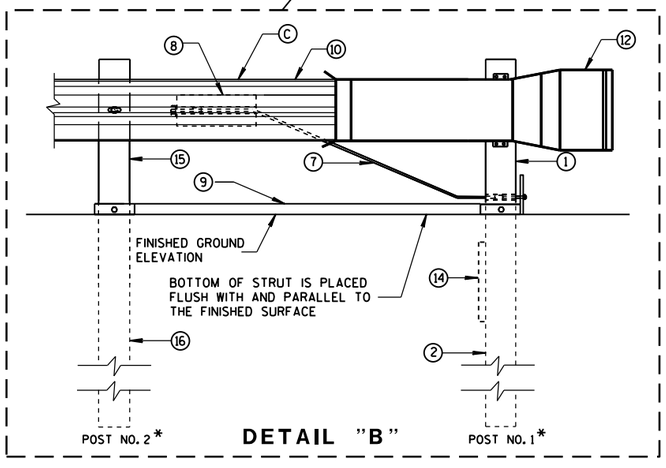
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

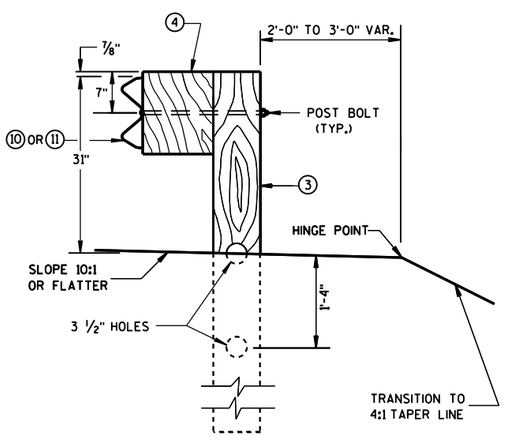
THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



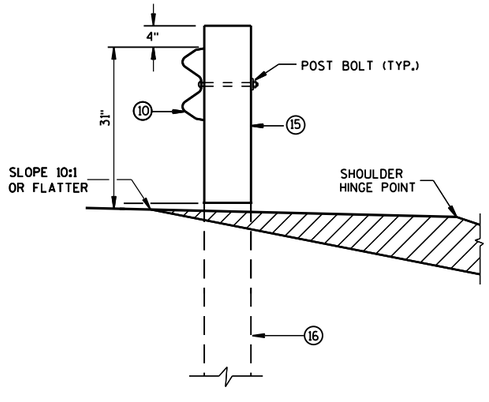




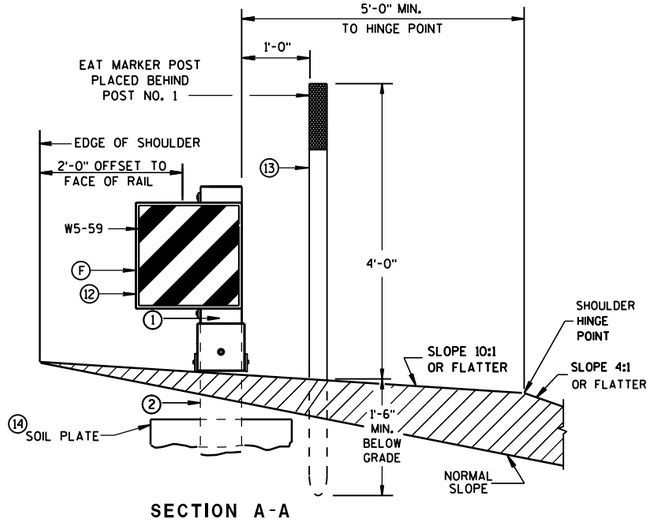




SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*

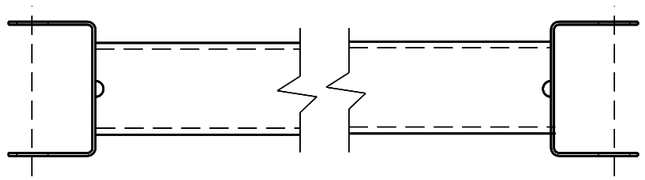
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-3a

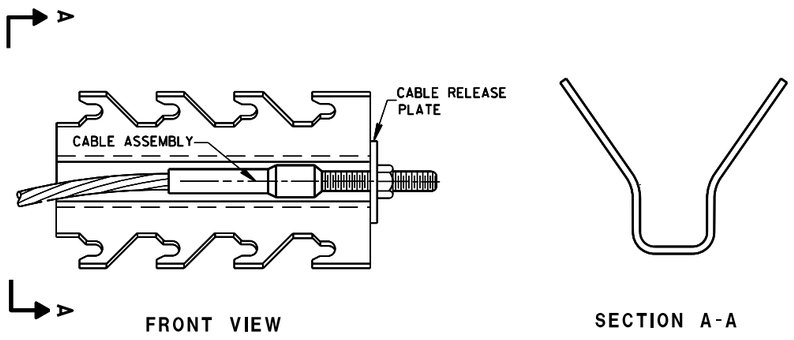
6

S.D.D. 14 B 44-3a



(9) (H)

GENERIC GROUND STRUT



FRONT VIEW

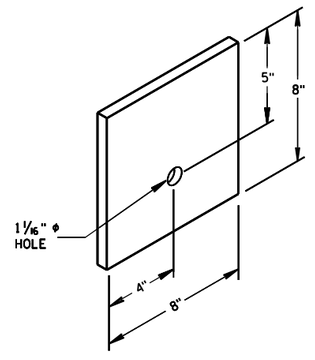
SECTION A-A

(8) (H)

GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'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



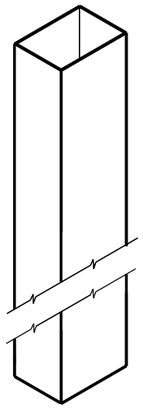
(6)

BEARING PLATE

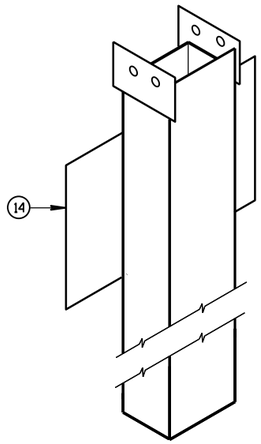
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

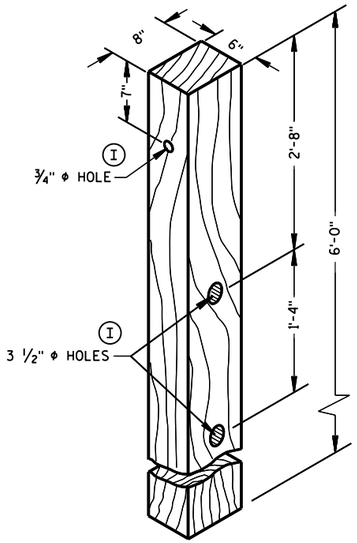
6
S.D.D. 14 B 44-3b



UPPER POST NO. 1 (1)

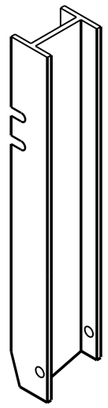


LOWER POST NO. 1 (2)

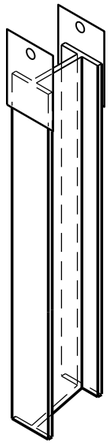


POSTS NUMBER 3-9

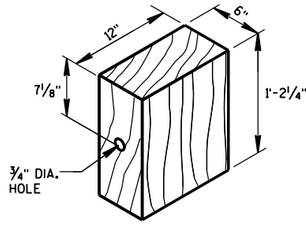
WOOD CRT POST (3)



UPPER POST NO. 2 (15)

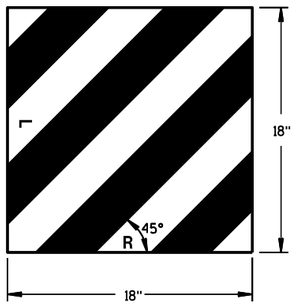


LOWER POST NO. 2 (16)



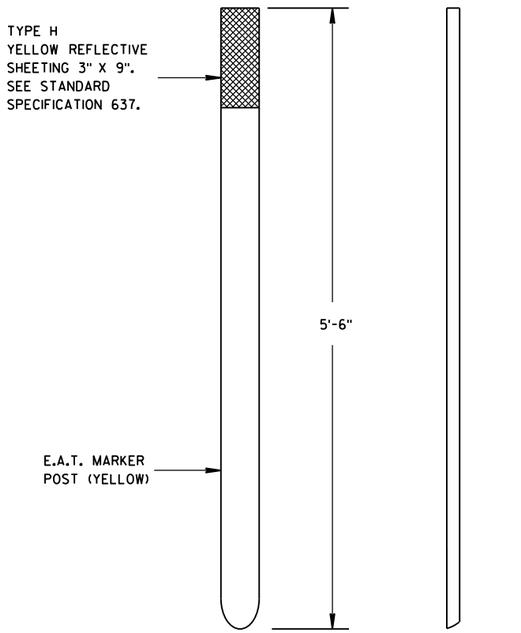
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



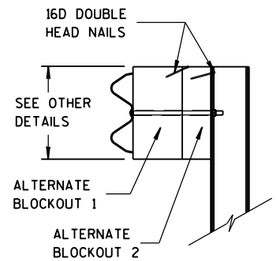
W5-59

REFLECTIVE SHEETING DETAIL (H)

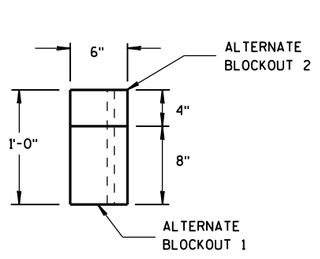


FRONT VIEW SIDE VIEW

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

June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

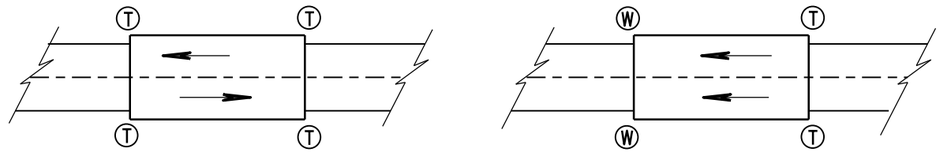
FHWA

6

S.D.D. 14 B 44-3c

6

S.D.D. 14 B 44-3c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

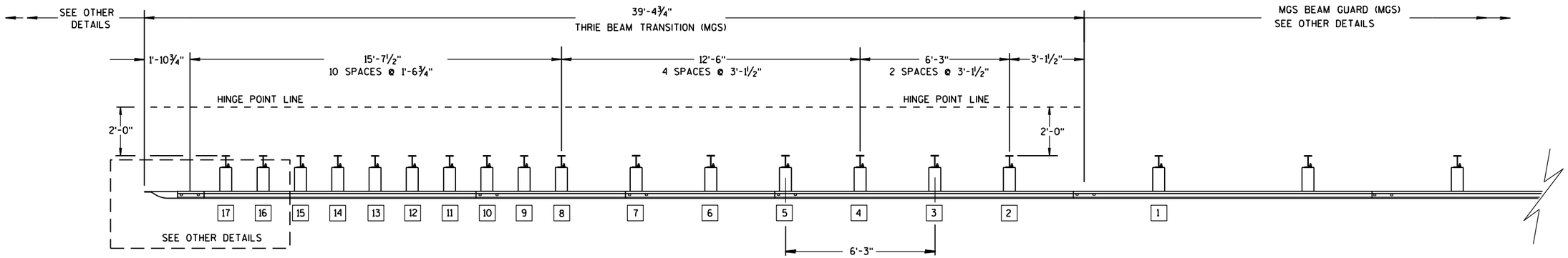
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

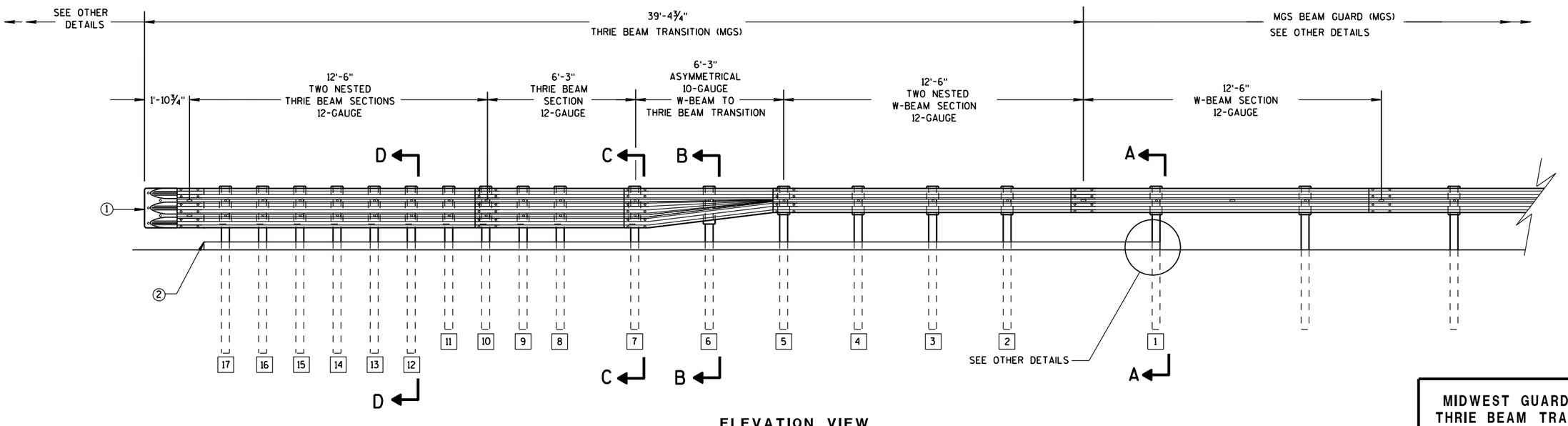
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 45-4a

6

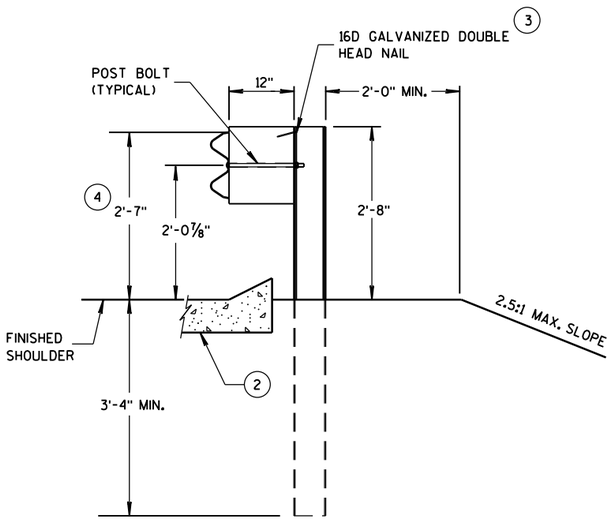
S.D.D. 14 B 45-4a

GENERAL NOTES

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE_FEATURE SEE PLAN FOR INFORMATION.

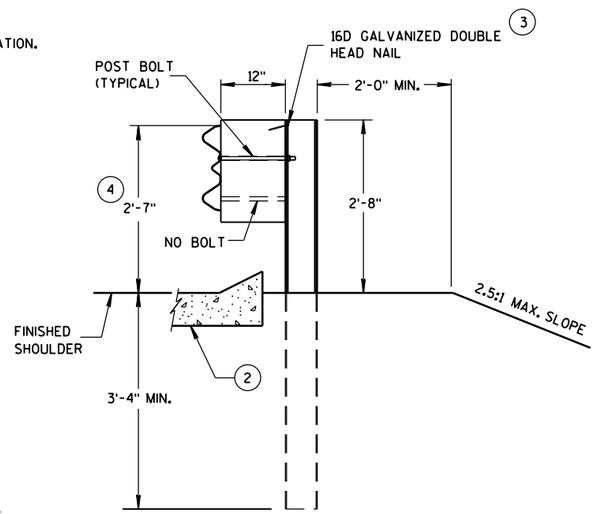
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



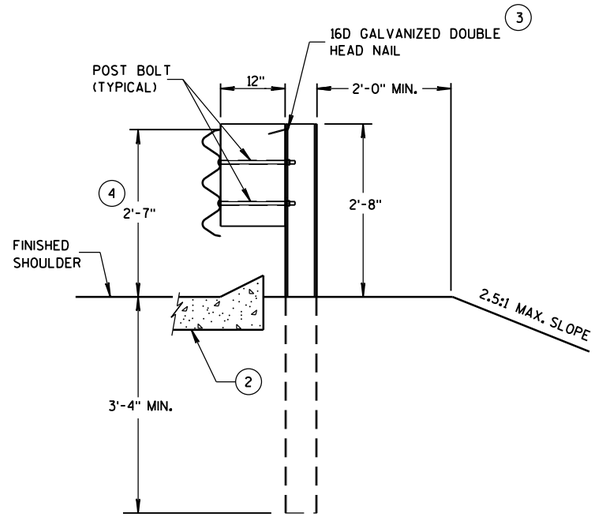
SECTION A-A

POSTS 1-5



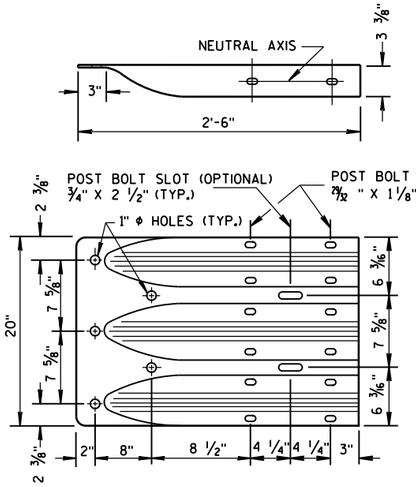
SECTION B-B

POST 6



SECTION C-C

POSTS 7-11



THRIE BEAM TERMINAL CONNECTOR

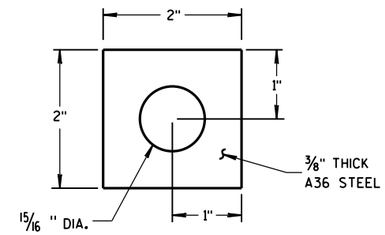
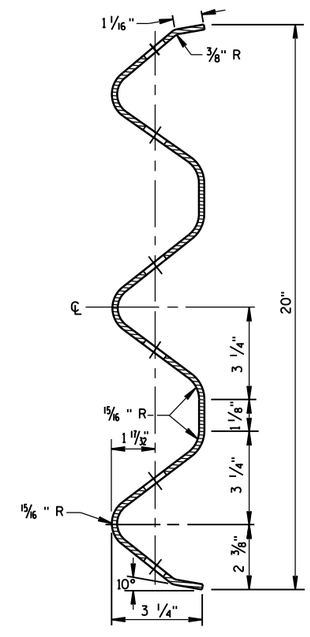
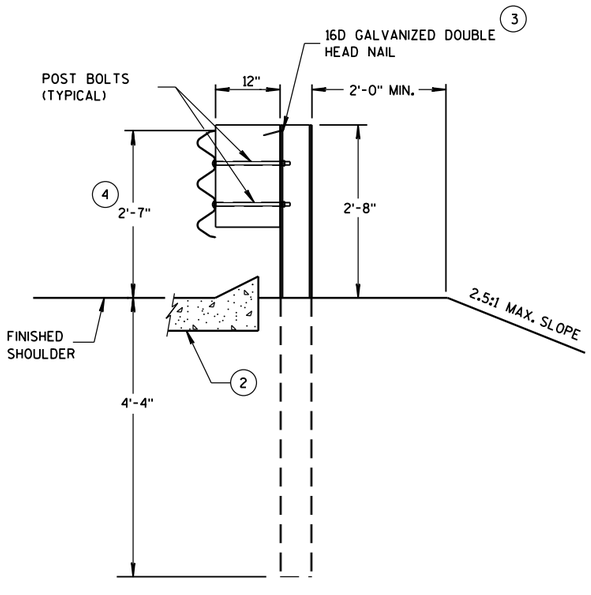


PLATE WASHER DETAIL

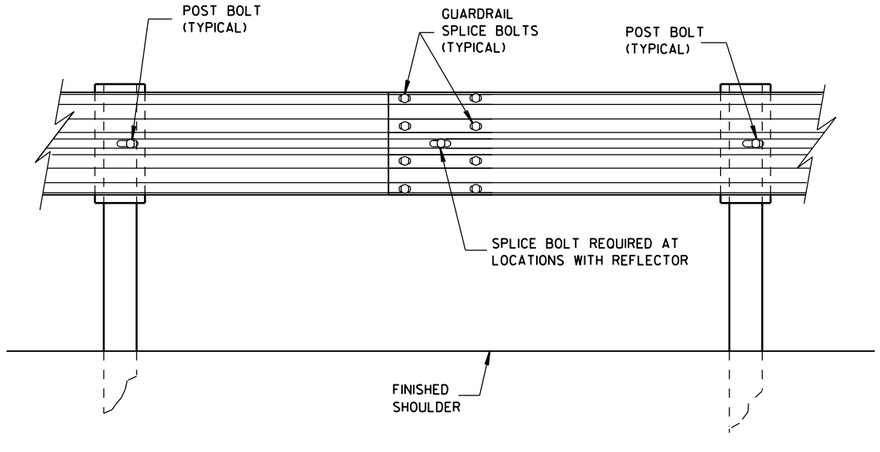


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-17



SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

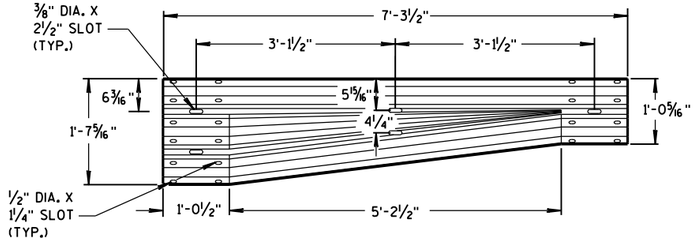
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

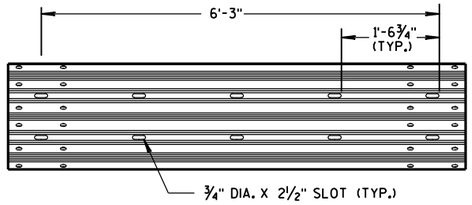
S.D.D. 14 B 45-4b

6

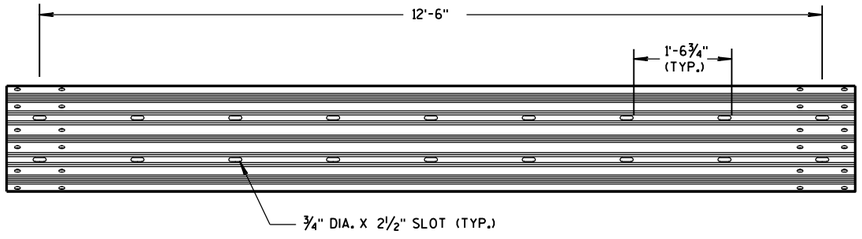
S.D.D. 14 B 45-4b



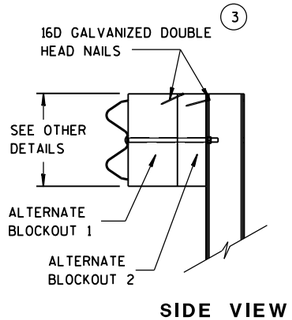
W-BEAM TO THRIE BEAM TRANSITION SECTION



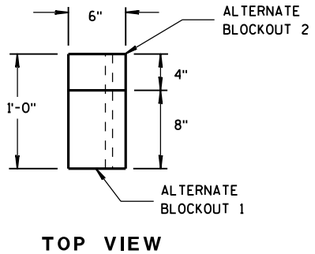
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

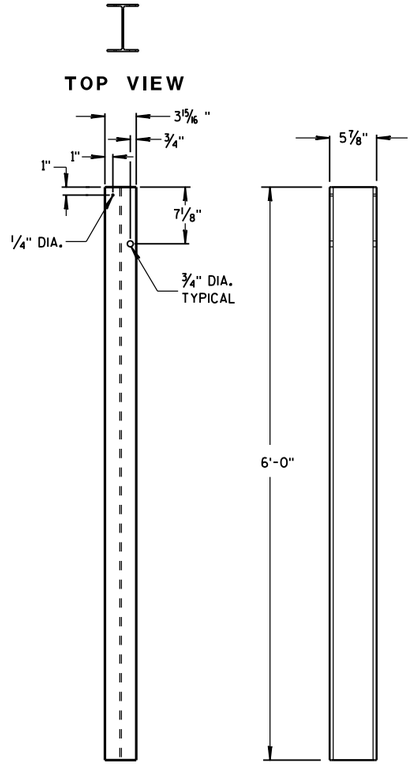


SIDE VIEW



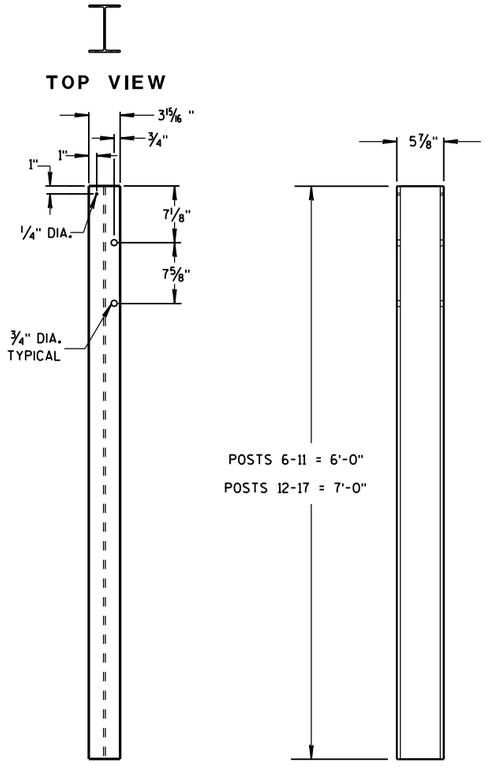
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



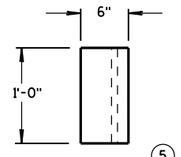
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5

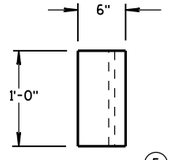


FRONT VIEW SIDE VIEW

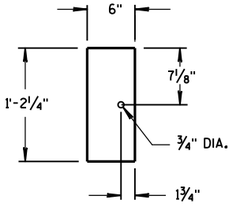
STEEL POSTS 6-17



TOP VIEW

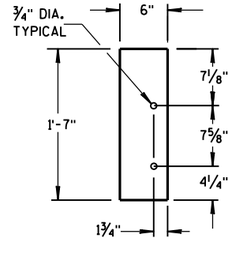


TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

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

(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

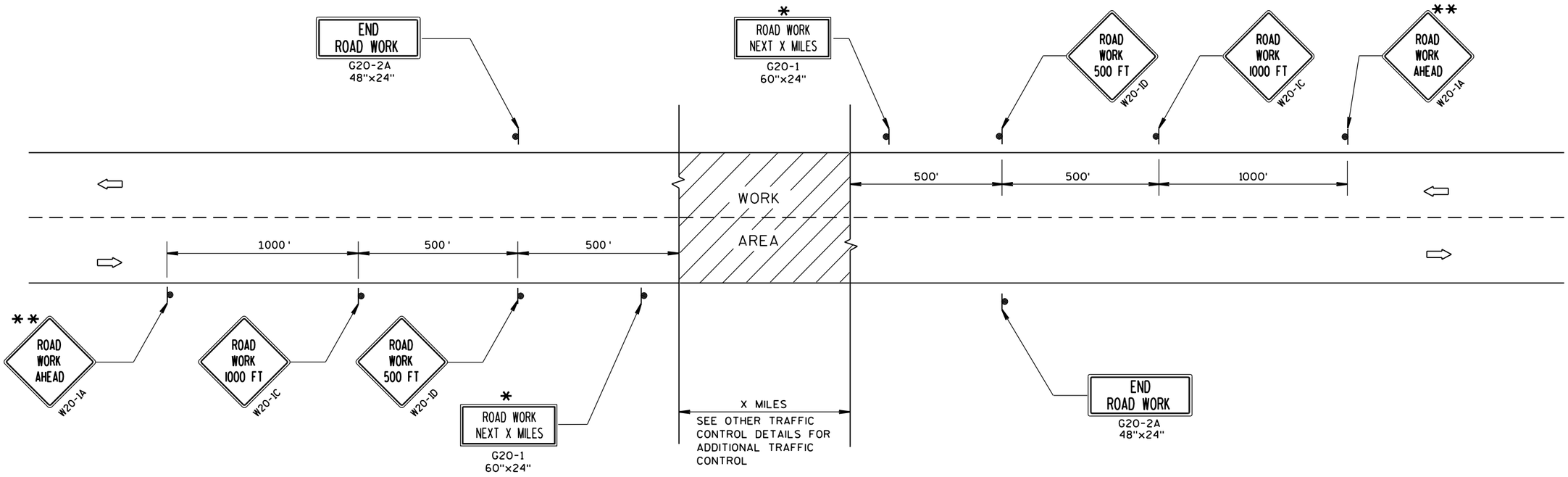
6

S.D.D. 14 B 45-4c

6

S.D.D. 14 B 45-4c

TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



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.

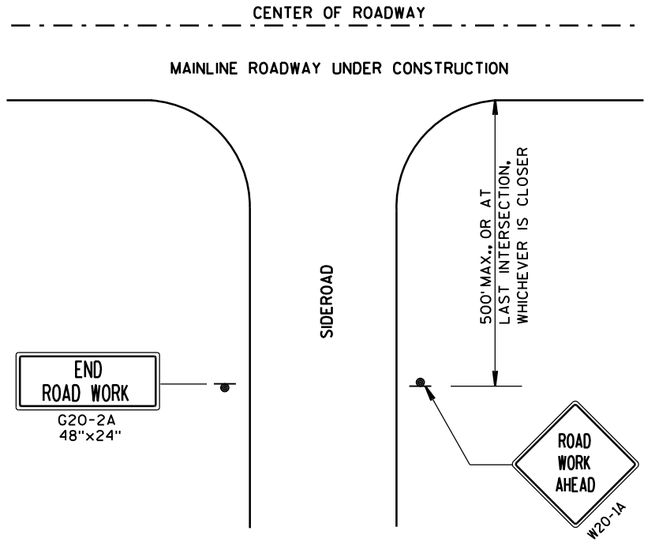
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 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 RE-ESTABLISHED.

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

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



LEGEND

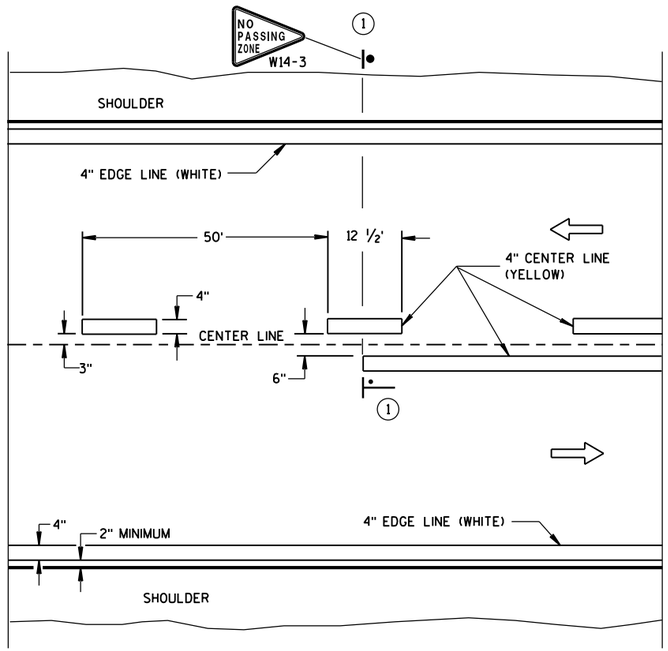
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

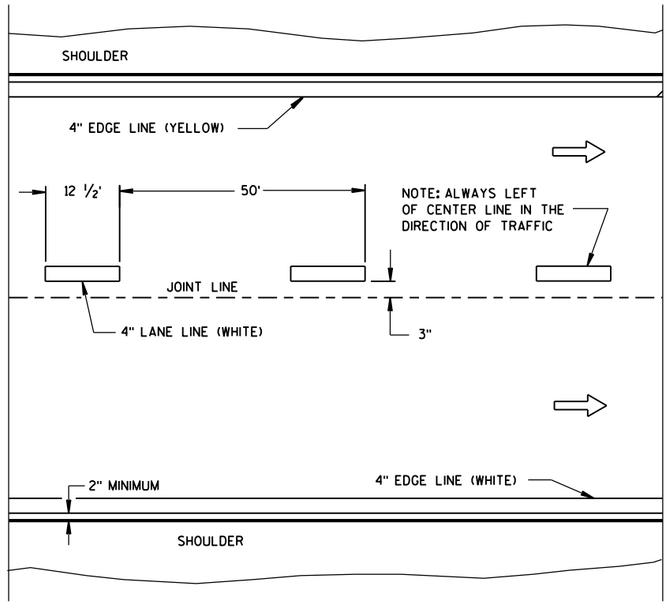
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2017 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

6
S.D.D. 15 C 4-4



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

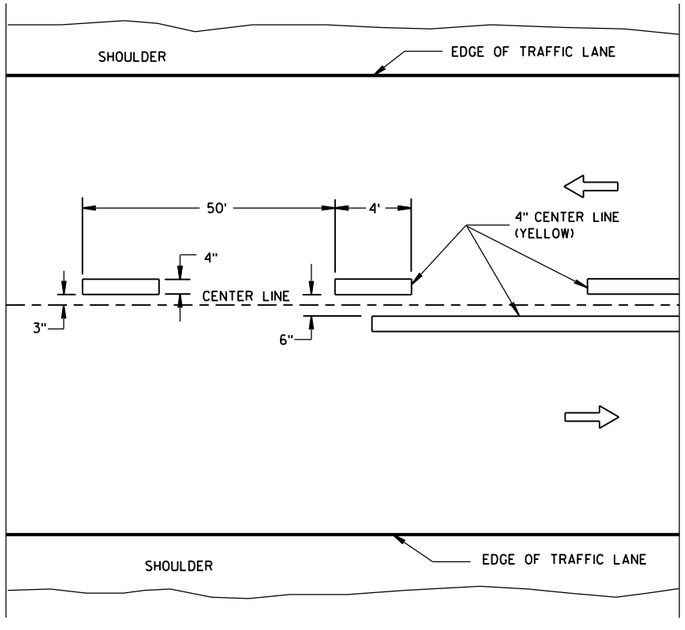
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

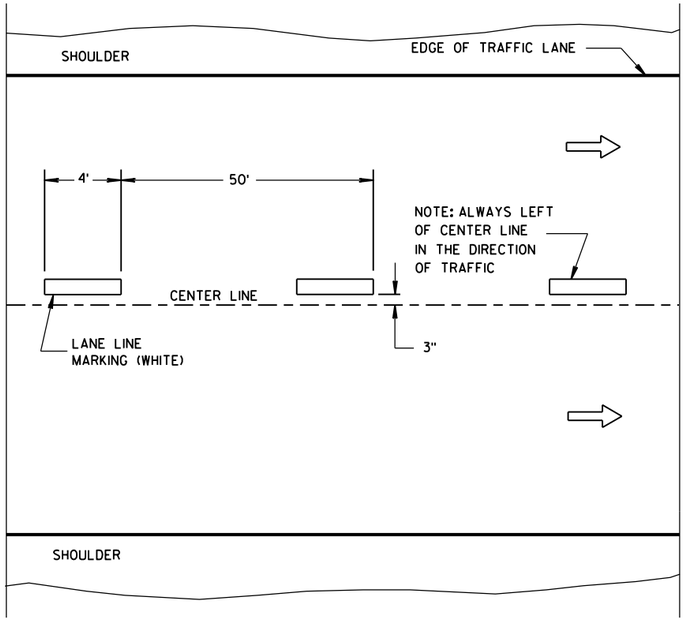
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

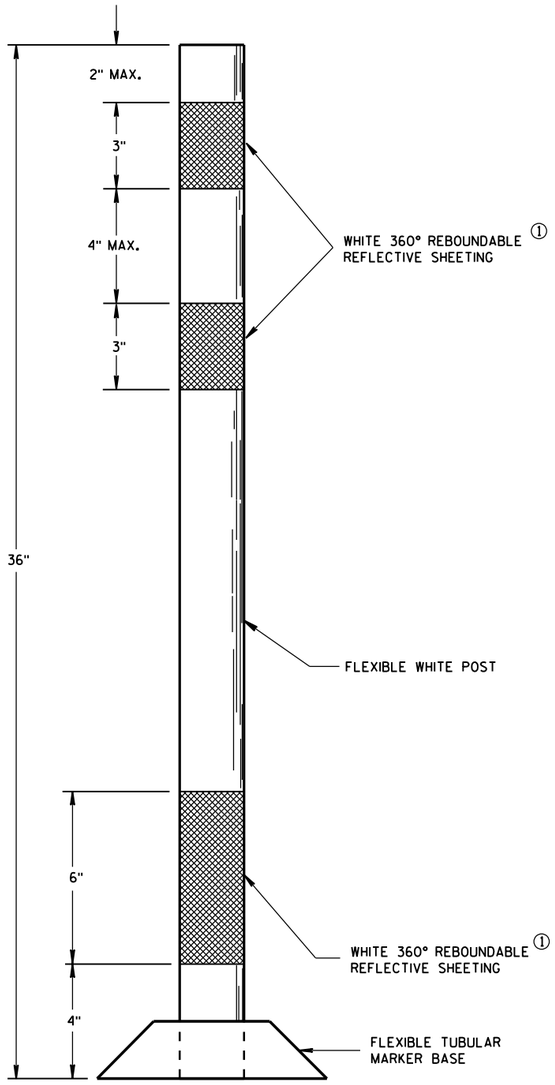
APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

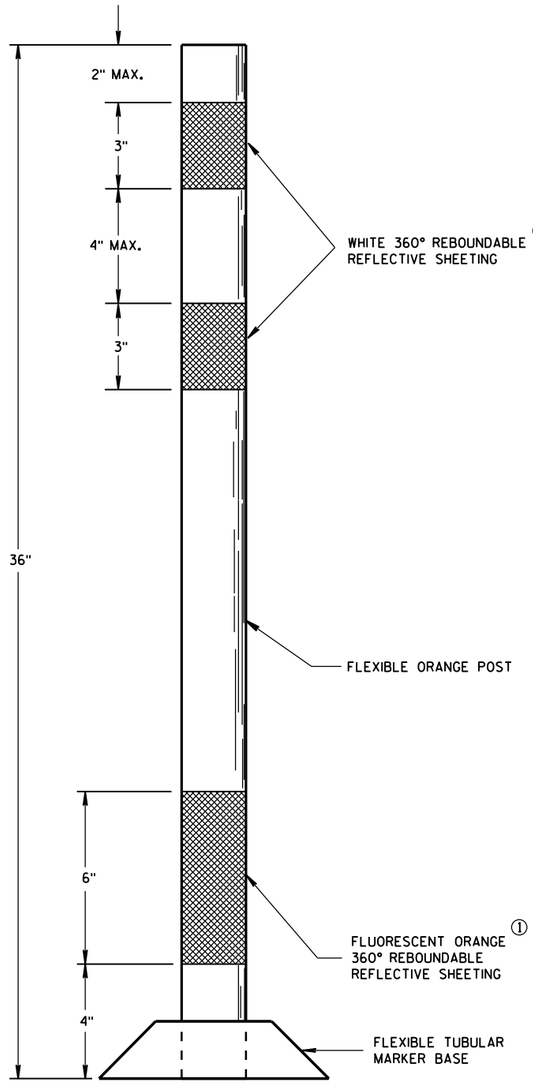
S.D.D. 15 C 8-18a

6

S.D.D. 15 C 8-18a



FLEXIBLE
TUBULAR MARKER POST
PERMANENT CROSSOVER



FLEXIBLE
TUBULAR MARKER POST
WORK ZONE

GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

CHANNELIZING DEVICES
FLEXIBLE TUBULAR MARKER POST

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

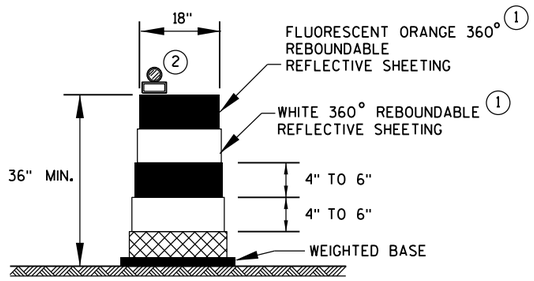
June 2017 — DATE

/S/ Andrew Heldtke — WORK ZONE ENGINEER

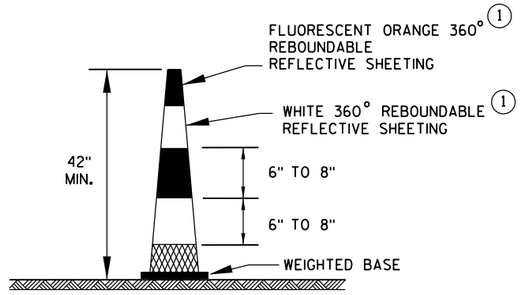
FHWA

6

S.D.D. 15 C 11-7a



DRUM

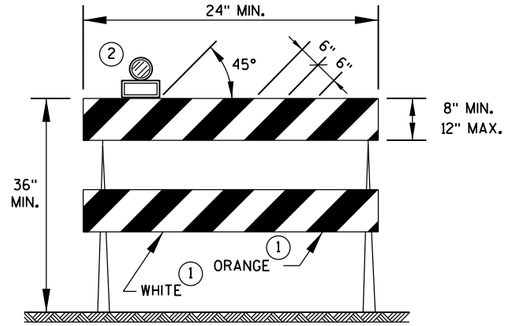


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

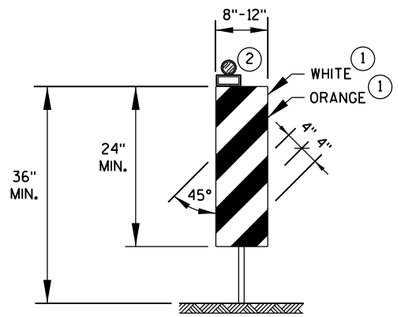
GENERAL NOTES

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



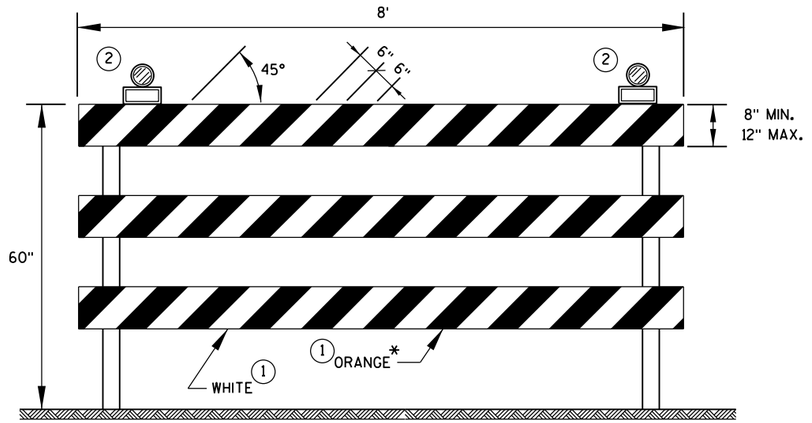
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 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

June 2017	/S/ Andrew Heidtke
DATE	WORK ZONE ENGINEER

FHWA

6

S.D.D. 15 C 11-7b

6

S.D.D. 15 C 11-7b

LEGEND

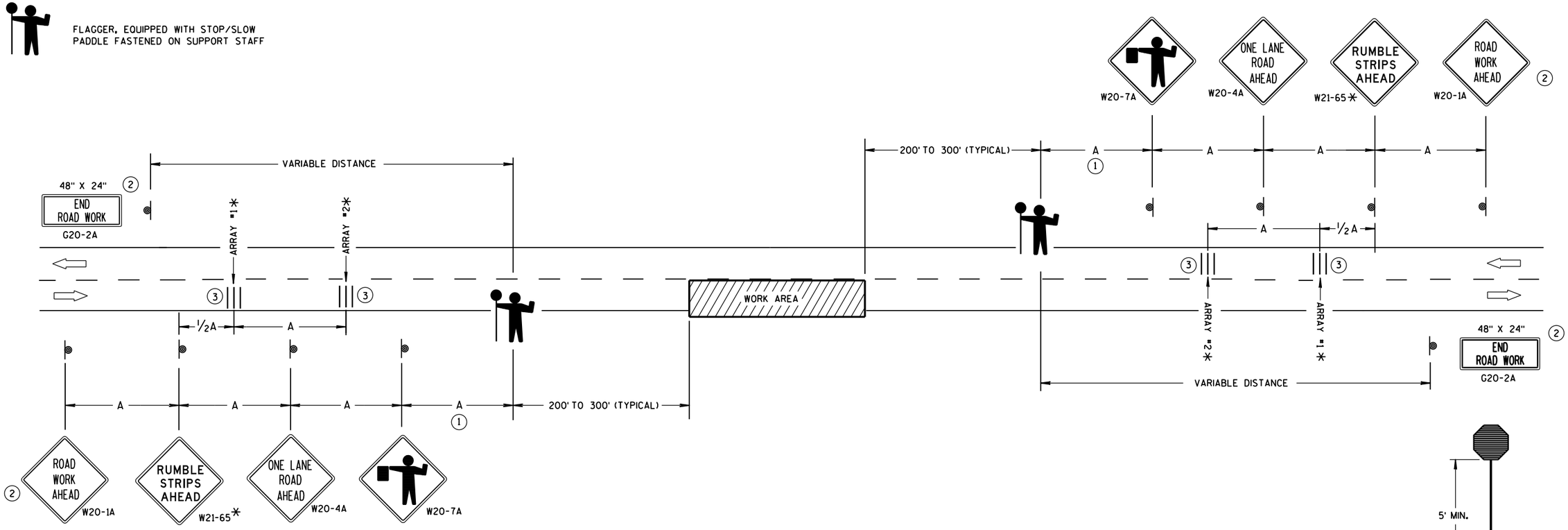
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

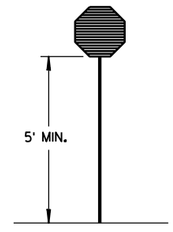
SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'

W03-4

USE OF THE "BE PREPARED TO STOP" 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



STOP/SLOW PADDLE ON SUPPORT STAFF

GENERAL NOTES

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

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE 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.

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

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.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

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 RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

(1) FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT 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.

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

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

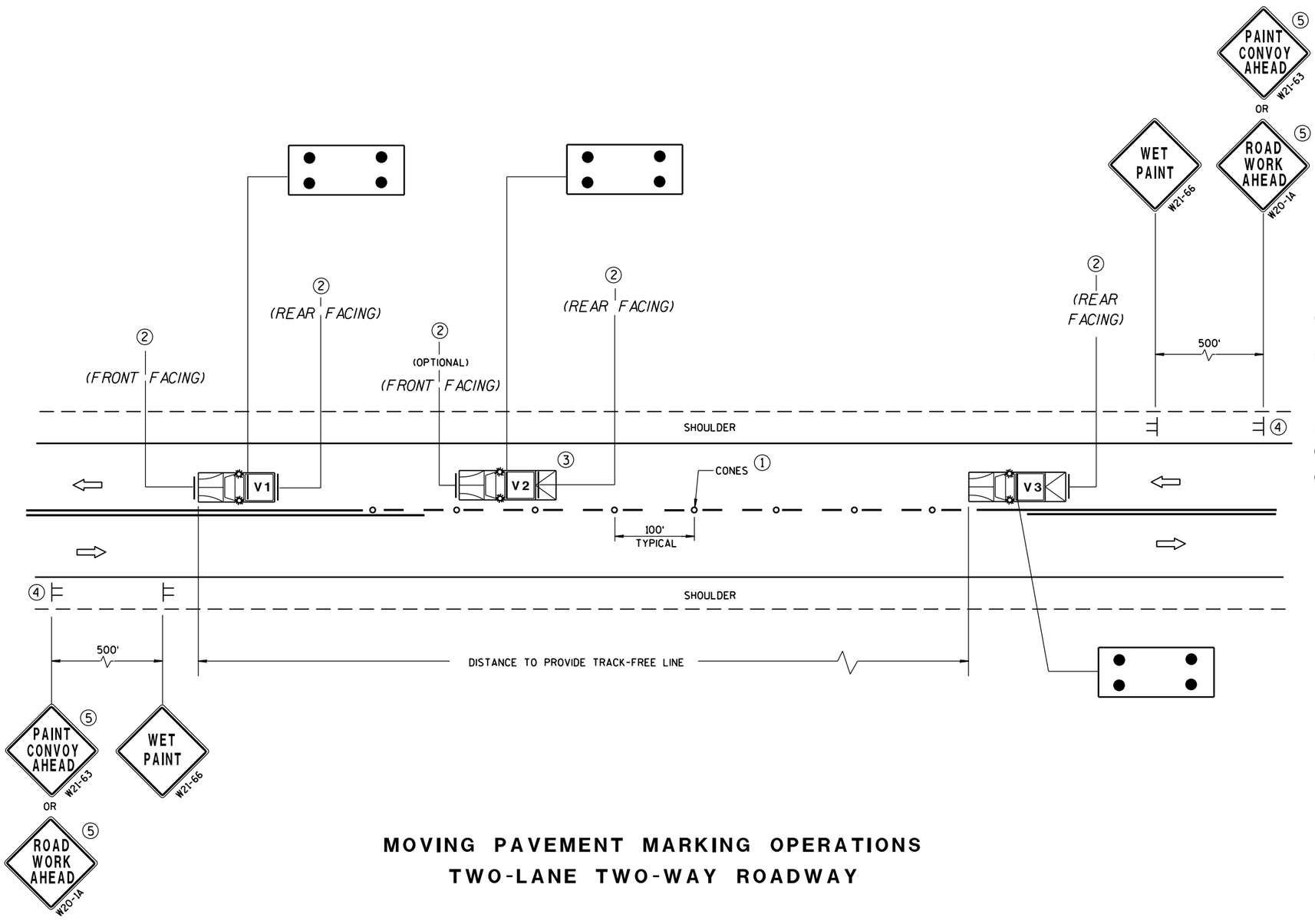
APPROVED

June 2017 — DATE

/S/ Andrew Heldtke — WORK ZONE ENGINEER

FHWA

6
S.D.D. 15 C 12-6



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

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.

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.

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

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 OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

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

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

(1) CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

(2) USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT W21-64 OR WET PAINT W21-64

(3) OPTIONAL TRUCK-MOUNTED ATTENUATOR.

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

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

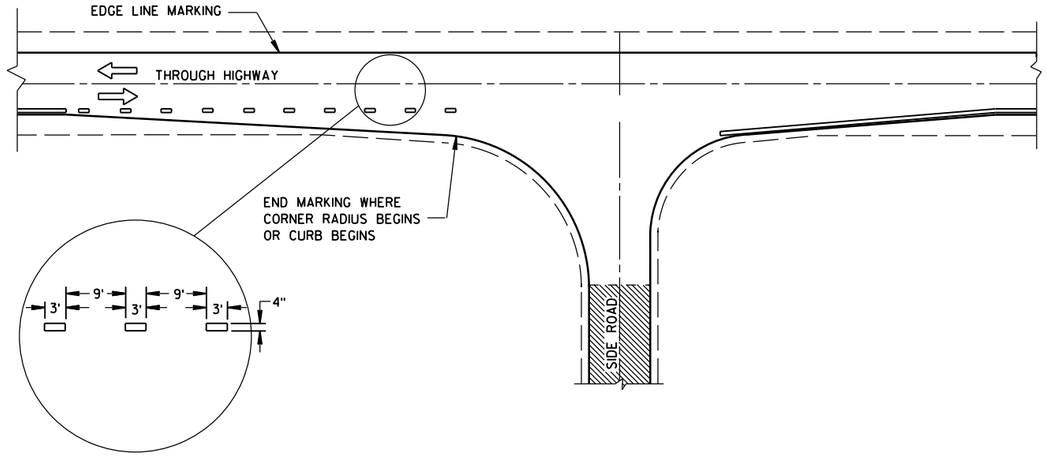
LEGEND

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

MOVING PAVEMENT MARKING OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA



MINOR INTERSECTION

GENERAL NOTES

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

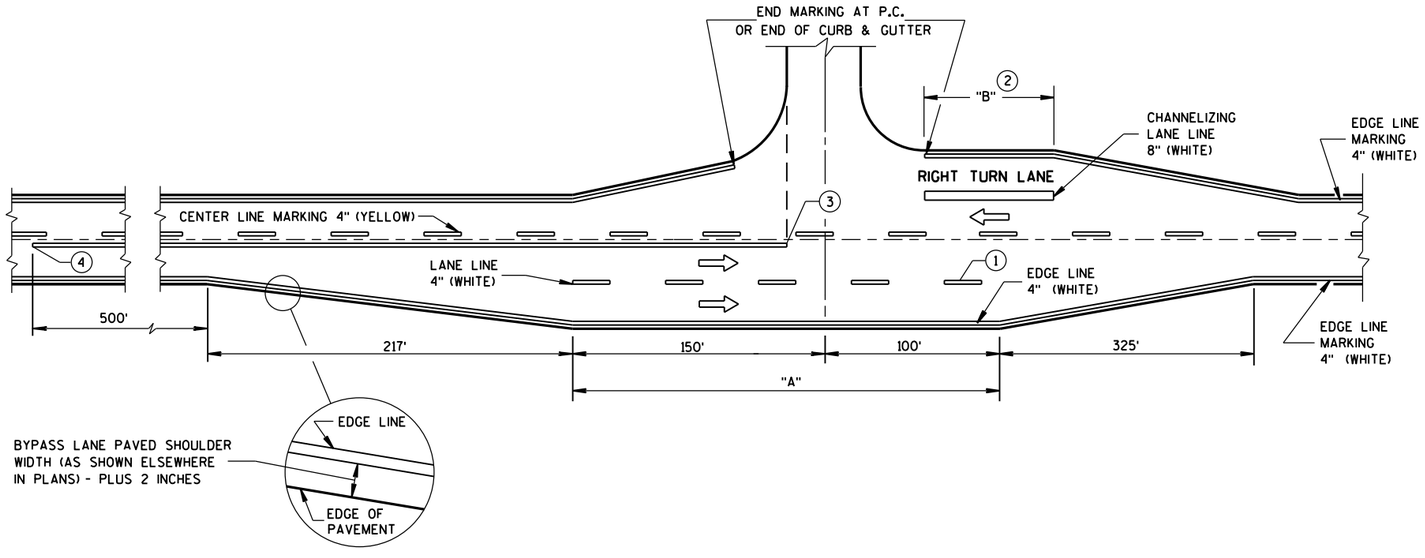
(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(4) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 C 35-2a

GENERAL NOTES

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

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

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

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

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

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

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

TABLE A

S \ W	SHOULDER TAPER LENGTH (FEET) 4	6	8	10	BUFFER SPACE (FEET)
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

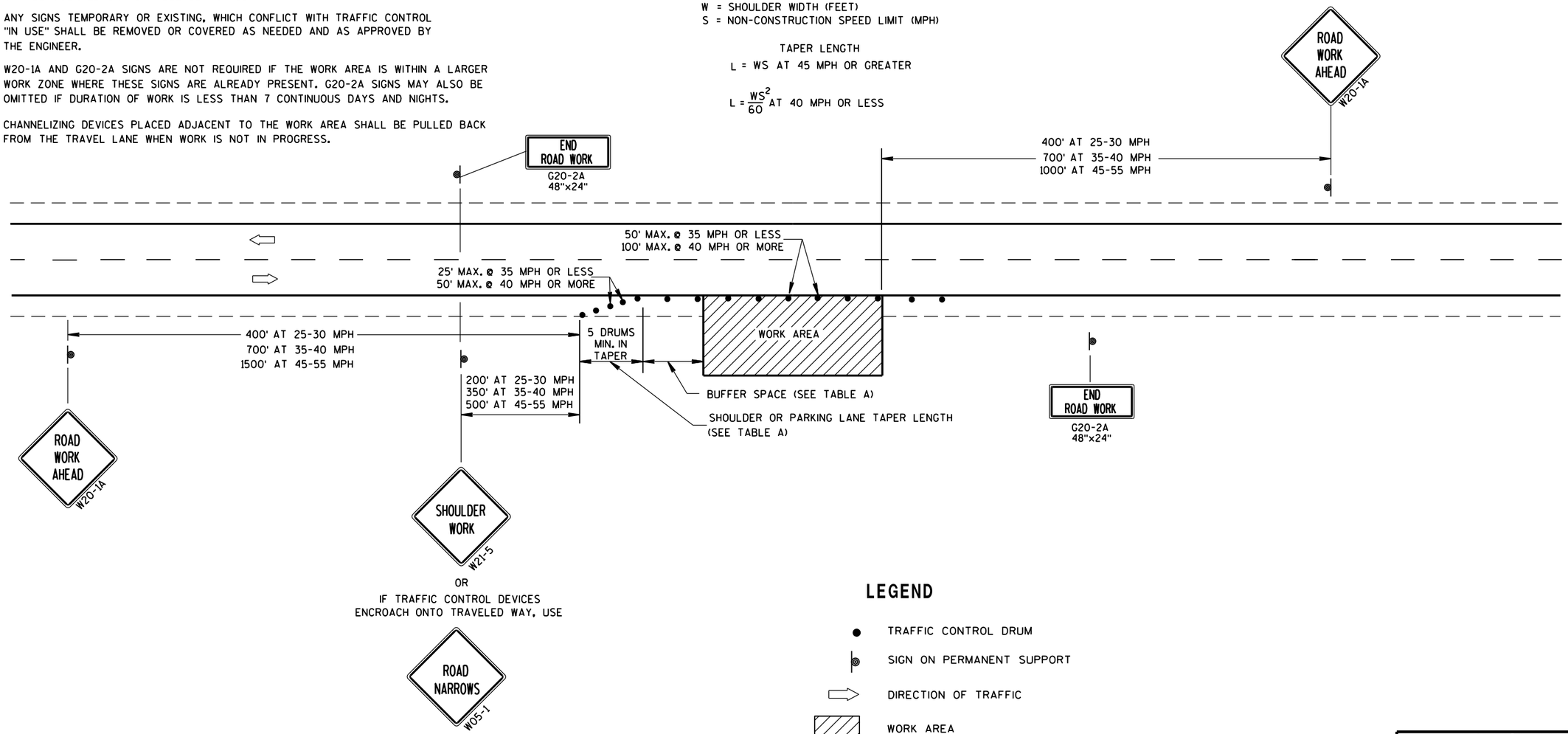
W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

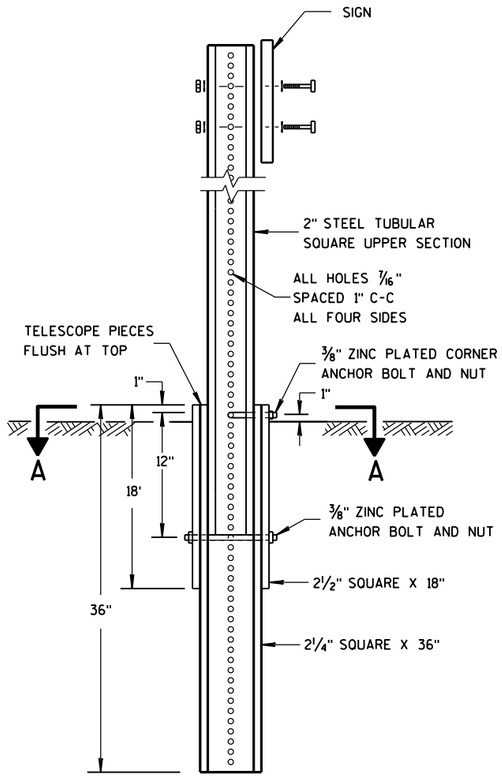
July 14, 2015 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

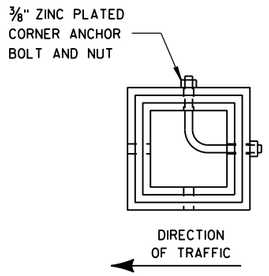
FHWA

6

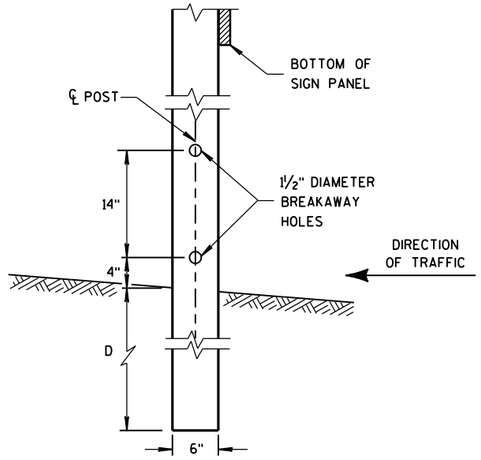
S.D.D. 15 D 28-3



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



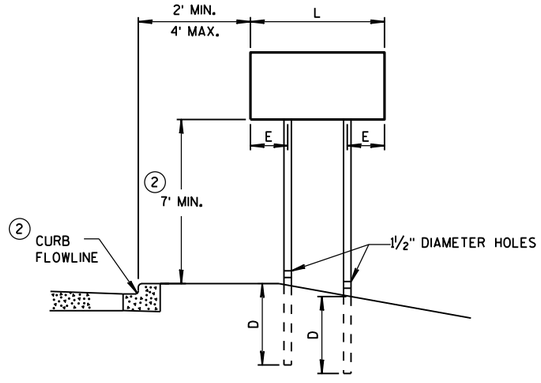
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

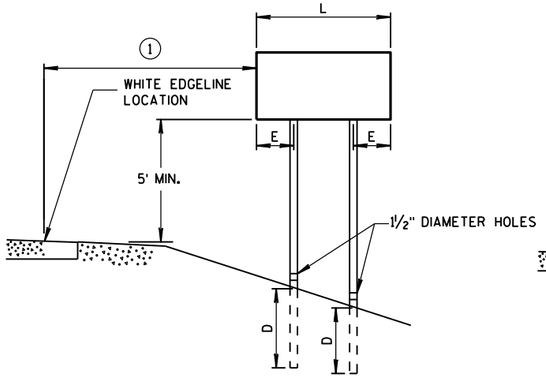
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

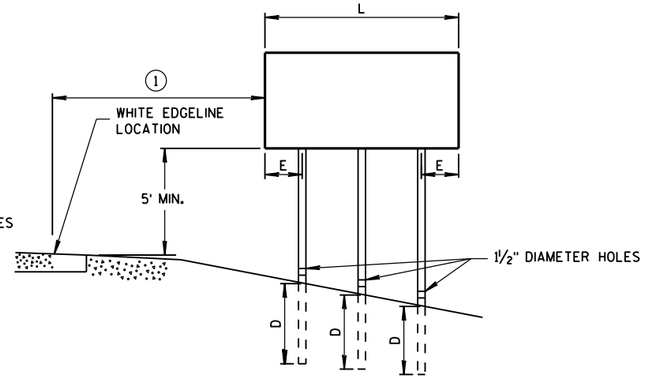
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK 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 TRANSPORTATION

6

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

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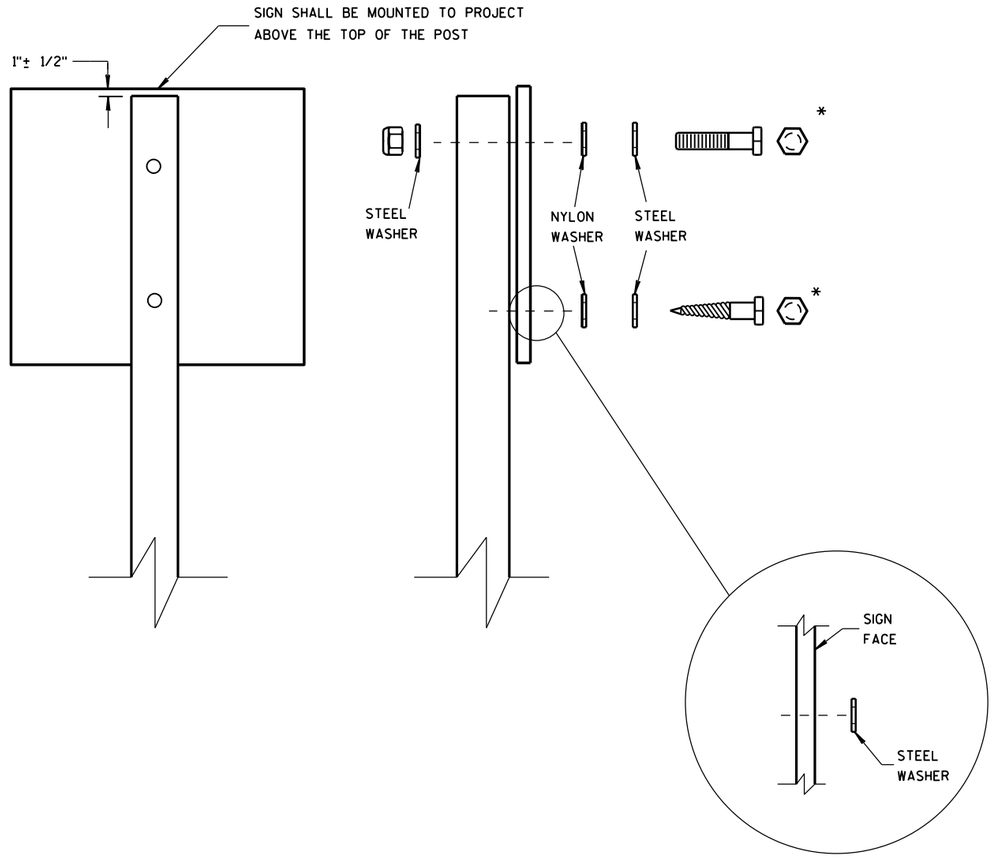
S.D.D. 15 D 38-2a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

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 POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

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 FOR ALL TYPE H SIGNS

* 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.

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S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

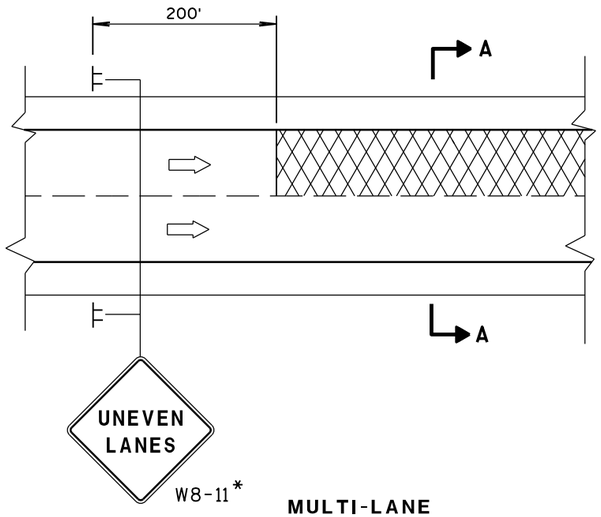
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

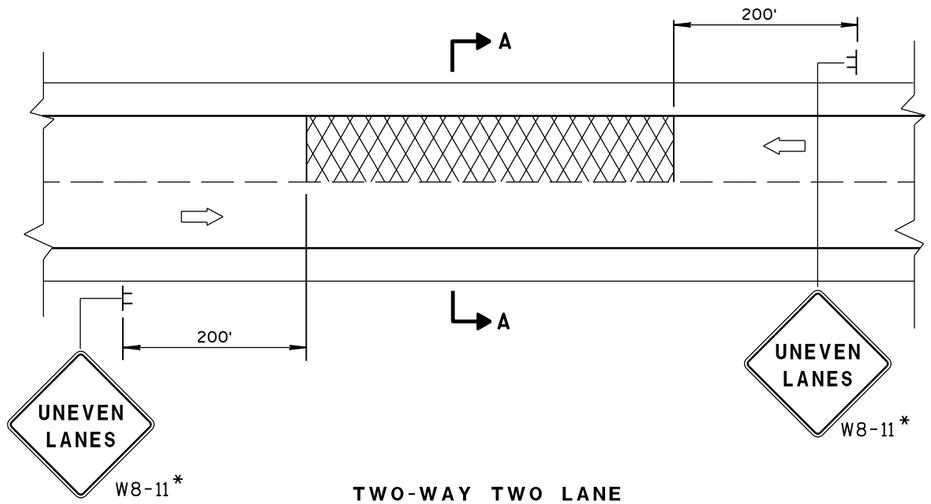
June 2017
DATE

/S/ Andrew Heldtke
WORK ZONE ENGINEER

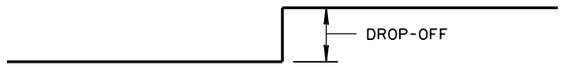
FHWA



MULTI-LANE

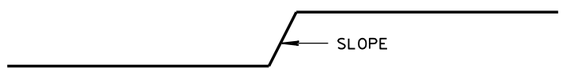


TWO-WAY TWO LANE

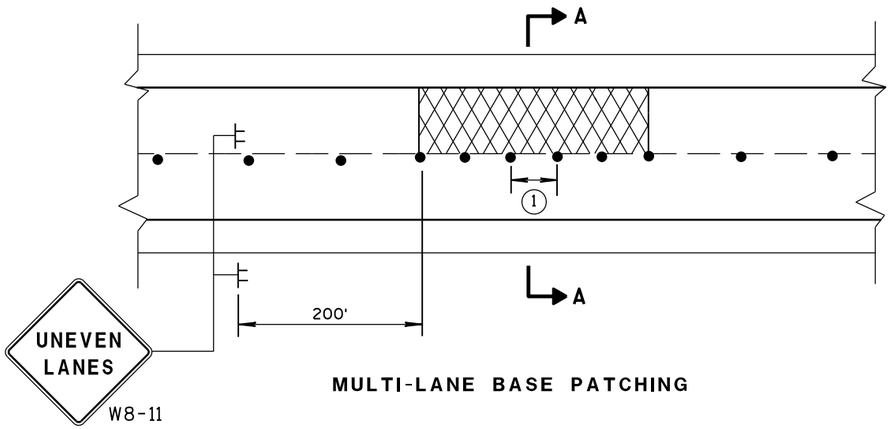


SECTION A-A

OR



SECTION A-A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

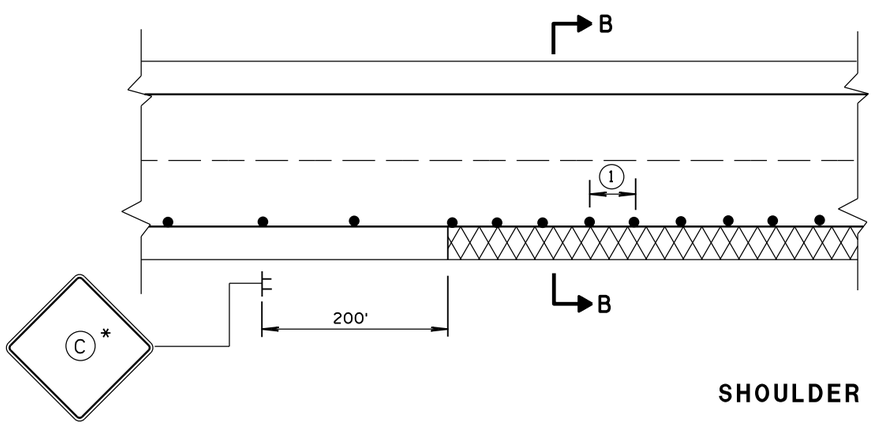
* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1/2 MILE.

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

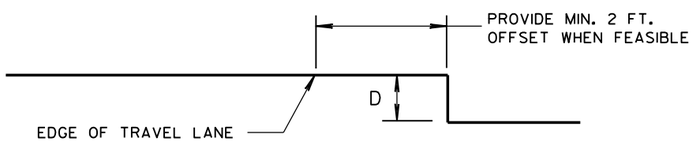
LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER W08-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP-OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT



SHOULDER DROP-OFFS



SECTION B-B

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March, 2017 — DATE
/S/ Andrew Heldtke — WORK ZONE ENGINEER
FHWA

6

S.D.D. 15 D 39-1

6

S.D.D. 15 D 39-1

EARTHWORK TABULATION - STH 88 (1333+58 - 1334+83) EXPANSION FACTOR = 1.3

STATION	END AREA CUT (SF)	END AREA FILL (SF)	INCREMENTAL VOLUME CUT (CY)	INCREMENTAL VOLUME EXP FILL (CY)	CUMMULATIVE VOLUME CUT (CY)	CUMMULATIVE VOLUME EXP FILL (CY)	MASS ORDINATE (CY)
1331+58.00	7.36	0	0	0	0	0	0
1331+90.00	7.76	0.36	9	0	9	0	9
1332+00.00	8.39	0.39	3	0	12	0	11
1332+14.99	6.88	0.46	4	0	16	1	15
1332+40.00	4.46	6.19	5	4	21	5	17
1332+50.00	3.6	28.42	1	8	23	13	10
1333+00.00	3.84	71.36	7	120	30	133	-103
1333+50.00	5.47	33.57	9	126	38	260	-221
1334+00.00	5.19	8.09	10	50	48	310	-261
1334+33.75	4.01	10.54	6	15	54	325	-271
1334+50.00	3.85	18.79	2	11	56	336	-280
1334+58.47	3.91	16.49	1	7	58	343	-286
1334+83.75	2.3	10.76	3	17	61	360	-299
		TOTAL	61	360			

EARTHWORK TABULATION - STH 88 (1394+87 - 1399+98) EXPANSION FACTOR = 1.3

STATION	END AREA CUT (SF)	END AREA FILL (SF)	INCREMENTAL VOLUME CUT (CY)	INCREMENTAL VOLUME EXP FILL (CY)	CUMMULATIVE VOLUME CUT (CY)	CUMMULATIVE VOLUME EXP FILL (CY)	MASS ORDINATE (CY)
1394+87.00	10.23	0	0	0	0	0	0
1395+00.00	9.64	0	5	0	5	0	5
1395+47.00	12.70	0.94	19	1	24	1	23
1395+72.00	11.63	1.72	11	2	35	3	33
1395+97.00	5.48	1.87	8	2	43	5	39
1396+50.00	3.31	1.77	9	5	52	9	43
1397+00.00	5.62	0	8	2	60	12	49
1397+50.00	5.33	0.56	10	1	70	12	58
1398+00.00	4.33	17.39	9	22	79	34	46
1398+28.00	5.07	4.61	5	15	84	49	36
1398+53.00	6.80	1.21	5	4	90	52	38
1398+78.00	5.39	3.22	6	3	95	55	41
1399+00.00	3.74	1.56	4	3	99	57	42
1399+50.00	2.71	0.58	6	3	105	60	45
1399+98.00	1.86	0.02	4	1	109	61	48
		TOTAL	109	61			

EARTHWORK TABULATION - STH 88 (1568+25 - 1575+25) EXPANSION FACTOR = 1.3

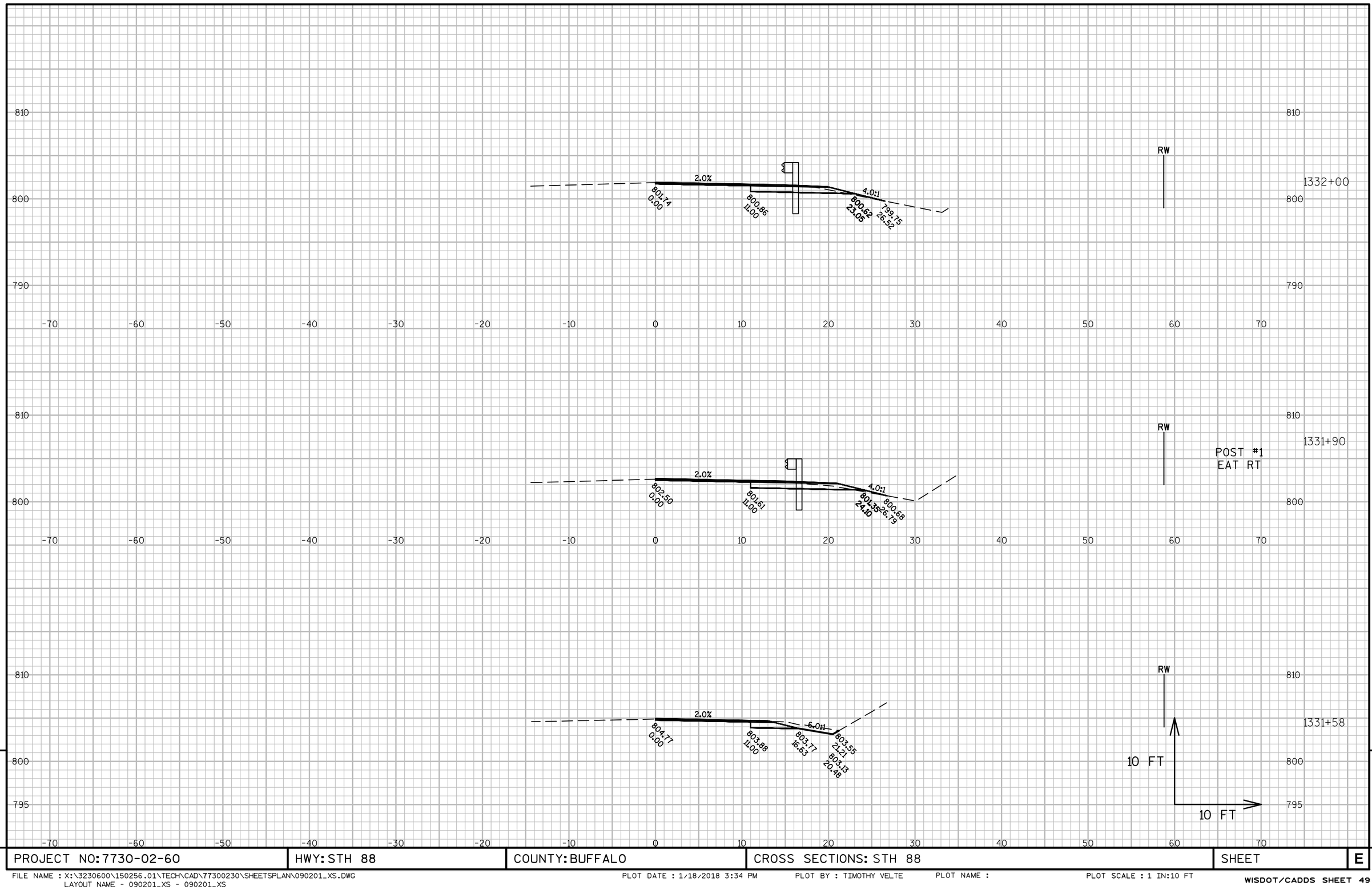
STATION	Real Station	Distance	END AREA CUT (SF)	END AREA FILL (SF)	INCREMENTAL VOLUME CUT (CY)	INCREMENTAL VOLUME EXP FILL (CY)	CUMMULATIVE VOLUME CUT (CY)	CUMMULATIVE VOLUME EXP FILL (CY)	MASS ORDINATE (CY)
1568+25.68	156825.68	0.0	11.79	19.01	0	0	0	0	0
1568+50.00	156850	24.3	9.60	32.39	10	30	10	30	-20
1568+63.17	156863.17	13.2	9.87	38.62	5	23	14	53	-38
1569+00.00	156900	36.8	11.02	62.17	14	89	29	142	-113
1569+45.68	156945.68	45.7	9.89	94.98	18	173	46	315	-268
1569+50.00	156950	4.3	9.74	96.07	2	20	48	335	-287
1569+70.68	156970.68	20.7	9.46	96.48	7	96	55	431	-375
1569+83.17	156983.17	12.5	9.62	98.20	4	59	60	489	-429
1569+95.68	156995.68	12.5	9.76	62.07	4	48	64	537	-473
1570+00.00	157000	4.3	9.81	52.18	2	12	66	549	-483
1570+08.17	157008.17	8.2	9.90	44.59	3	19	69	568	-500
1570+33.17	157033.17	25.0	10.16	28.73	9	44	78	612	-534
1570+50.00	157050	16.8	11.00	33.79	7	25	85	638	-553
1570+75.00	157075	25.0	11.36	43.18	10	46	95	684	-589
1573+00.00	157300	0.0	13.05	35.68	0	0	95	684	-589
1573+39.28	157339.28	39.3	12.87	44.76	19	76	114	760	-646
1573+50.00	157350	10.7	12.26	82.82	5	33	119	793	-674
1573+64.28	157364.28	14.3	11.52	93.73	6	61	125	854	-729
1573+76.78	157376.78	12.5	11.01	105.71	5	60	130	914	-783
1573+89.28	157389.28	12.5	10.11	152.45	5	78	135	991	-856
1574+01.77	157401.77	12.5	9.39	151.71	5	91	140	1,083	-943
1574+26.78	157426.78	25.0	8.18	157.26	8	186	148	1,269	-1,121
1574+50.00	157450	23.2	6.06	131.77	6	162	154	1,430	-1,277
1575+00.00	157500	50.0	5.45	70.78	11	244	165	1,674	-1,510
1575+09.20	157509.2	9.2	6.04	54.53	2	28	167	1,702	-1,535
1575+25.00	157525	15.8	6.99	11.22	4	25	170	1,727	-1,557
				TOTAL	170	1,727			

9

9

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	EARTHWORK	SHEET ____ E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : _____ PLOT SCALE : $$.....plotscale.....$$



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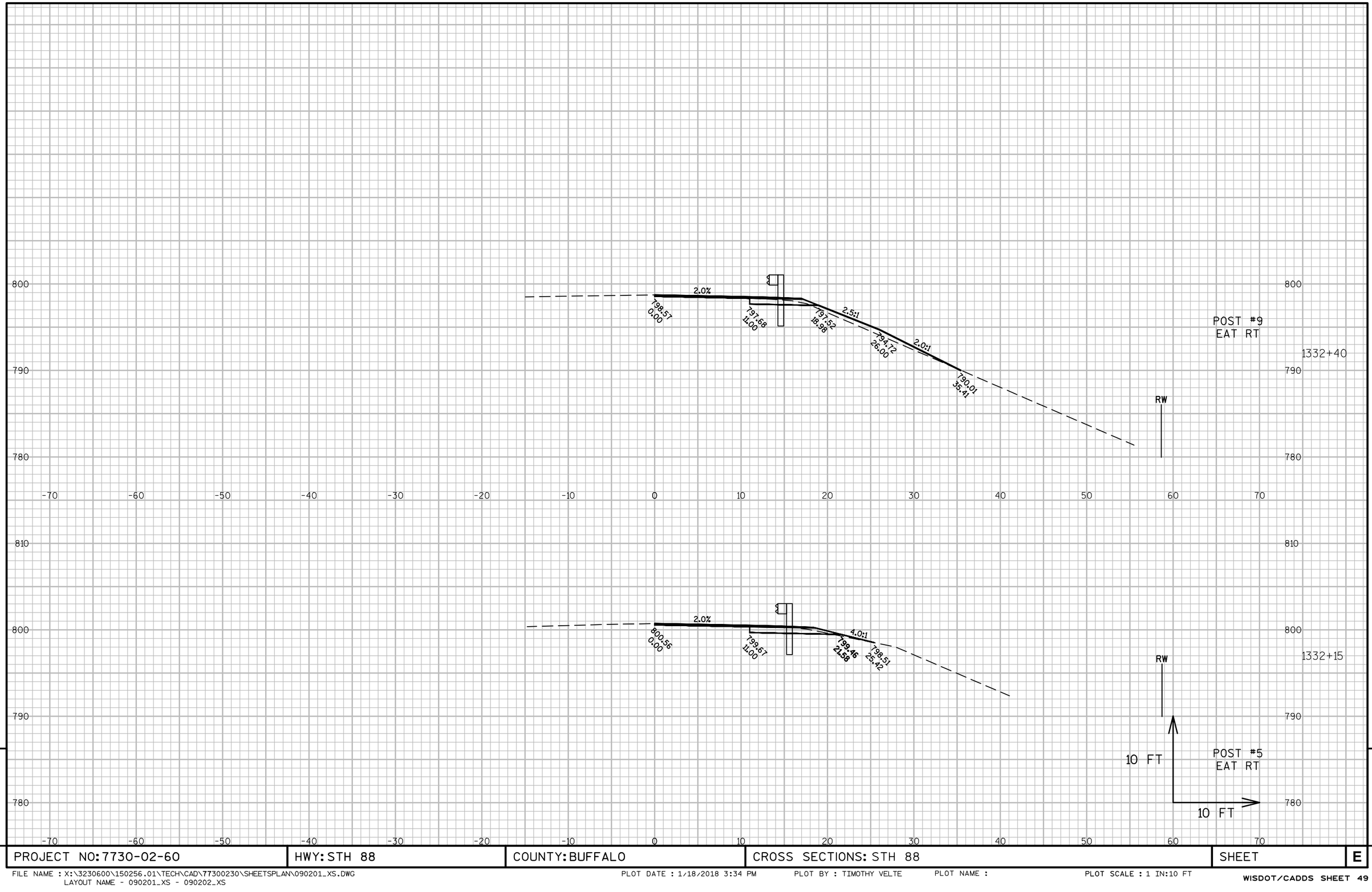

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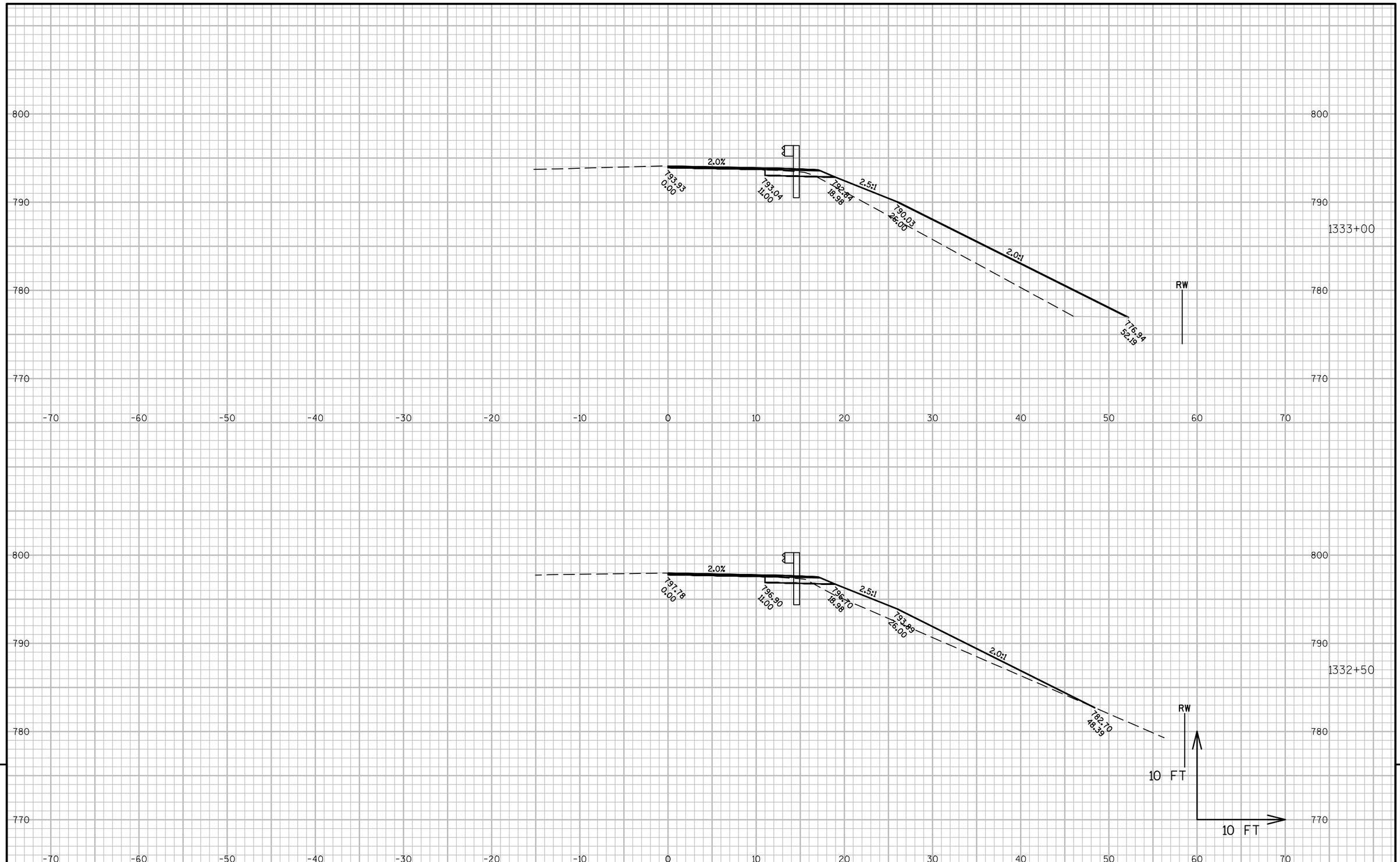

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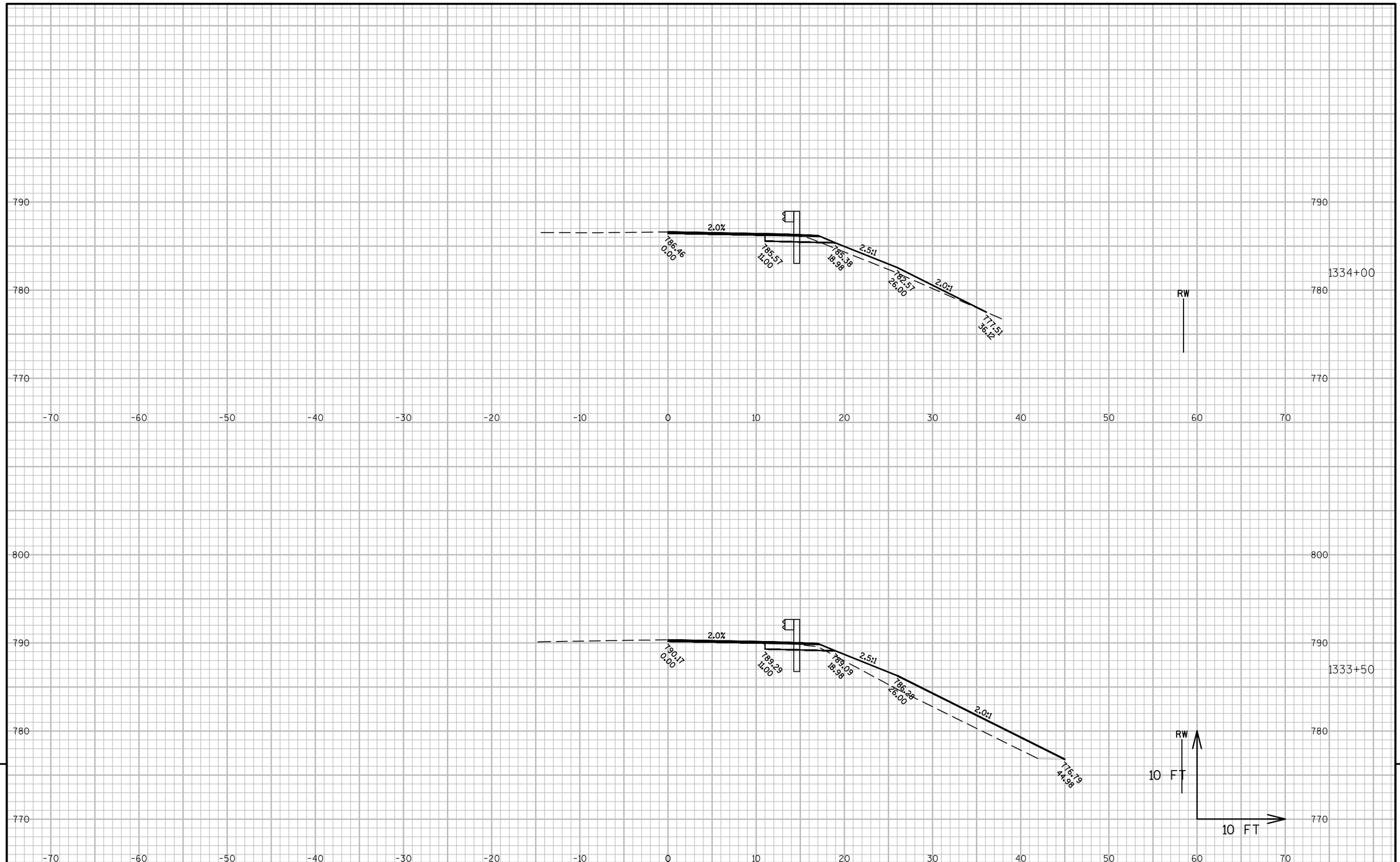

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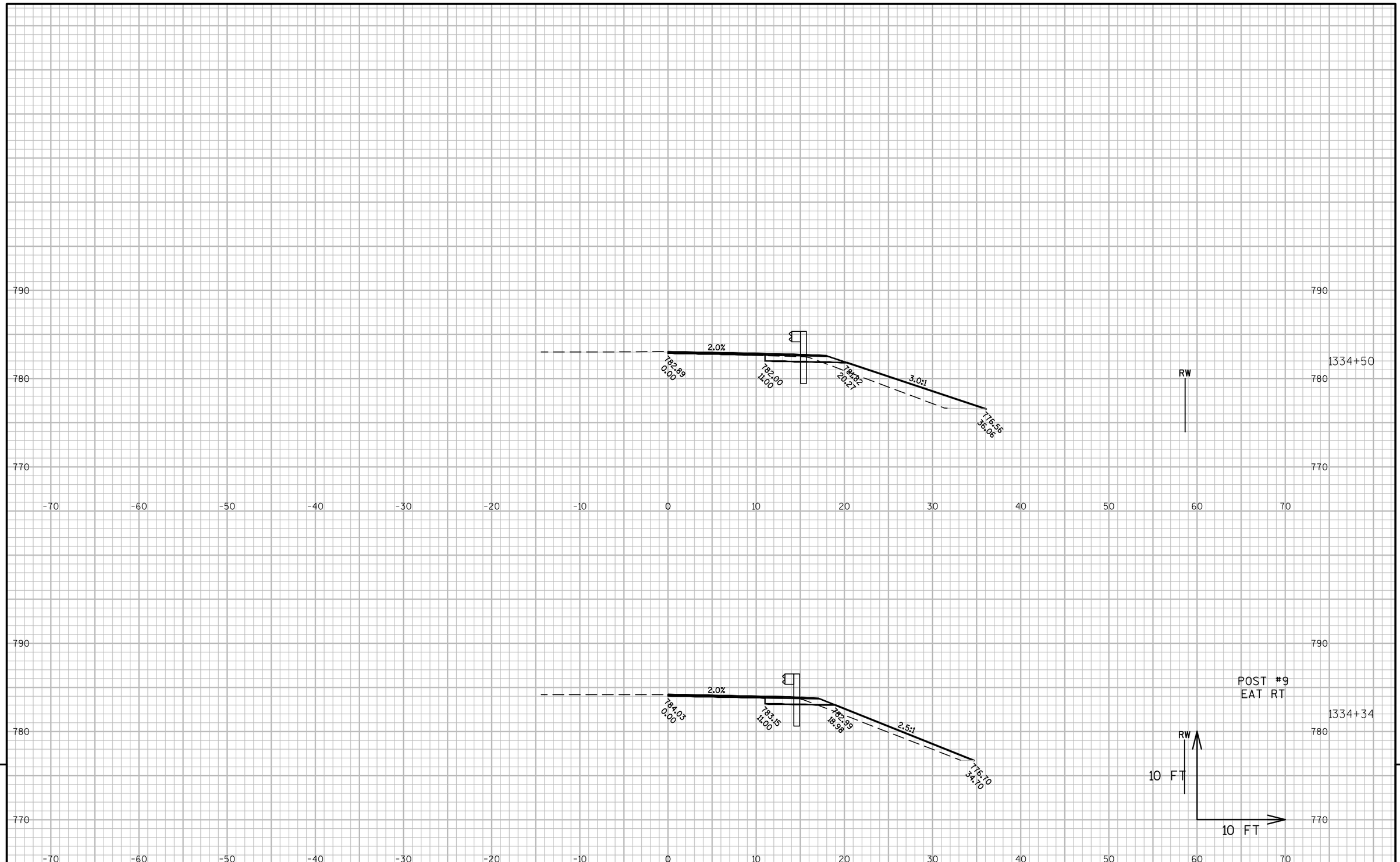

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PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

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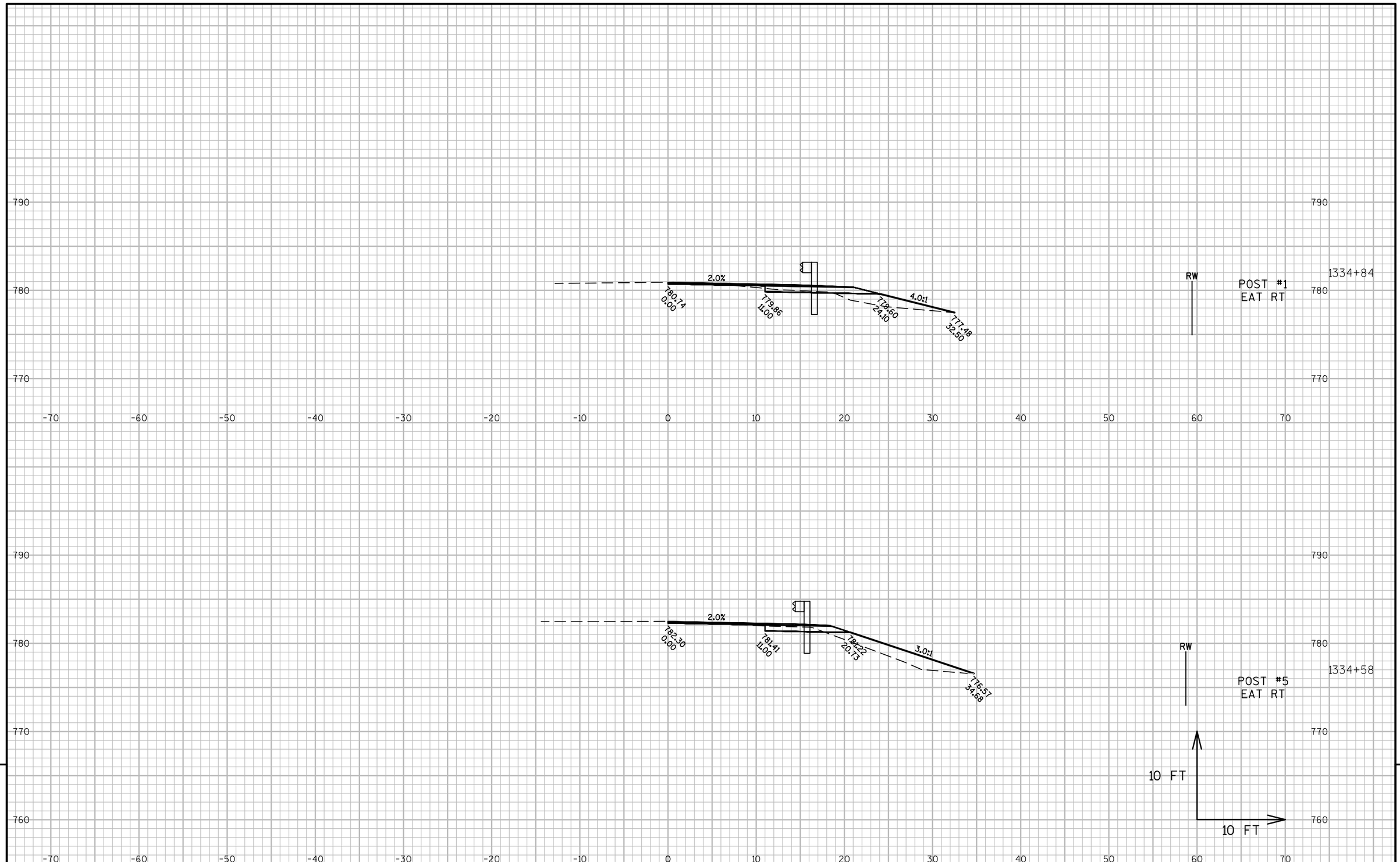

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PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

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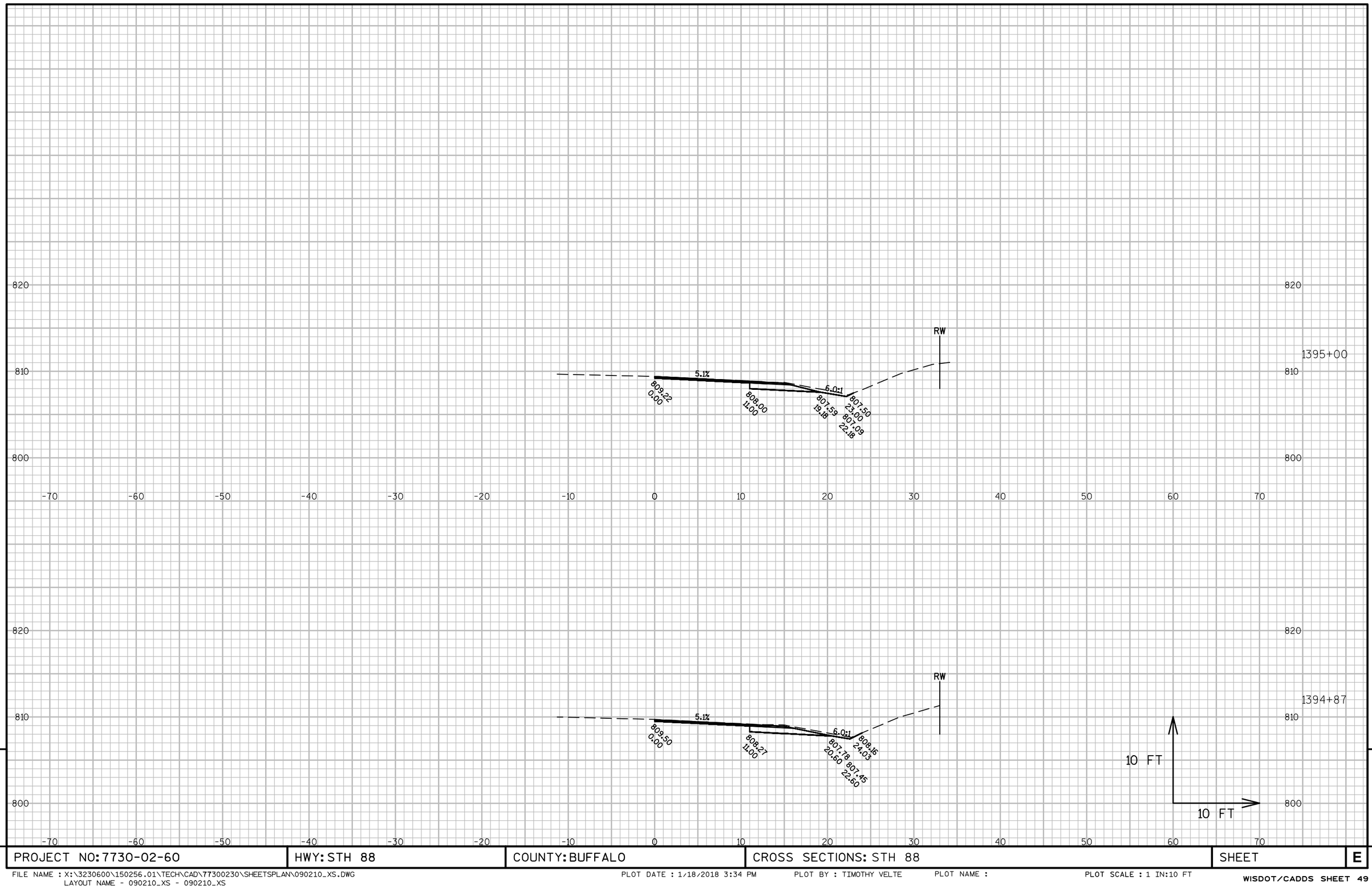

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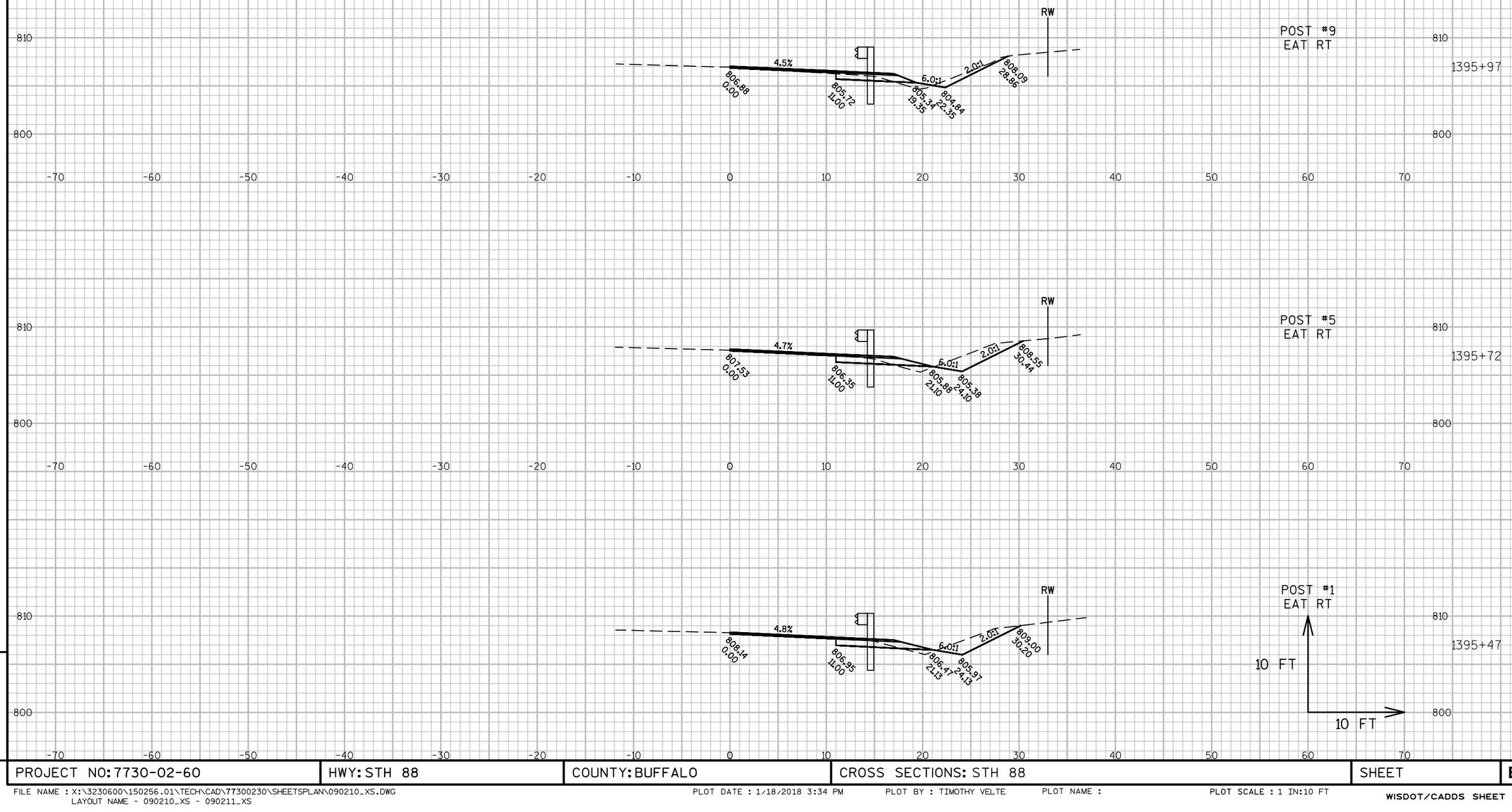
PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

9

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090210_XS.DWG
LAYOUT NAME - 090210_XS - 090210_XS

PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT



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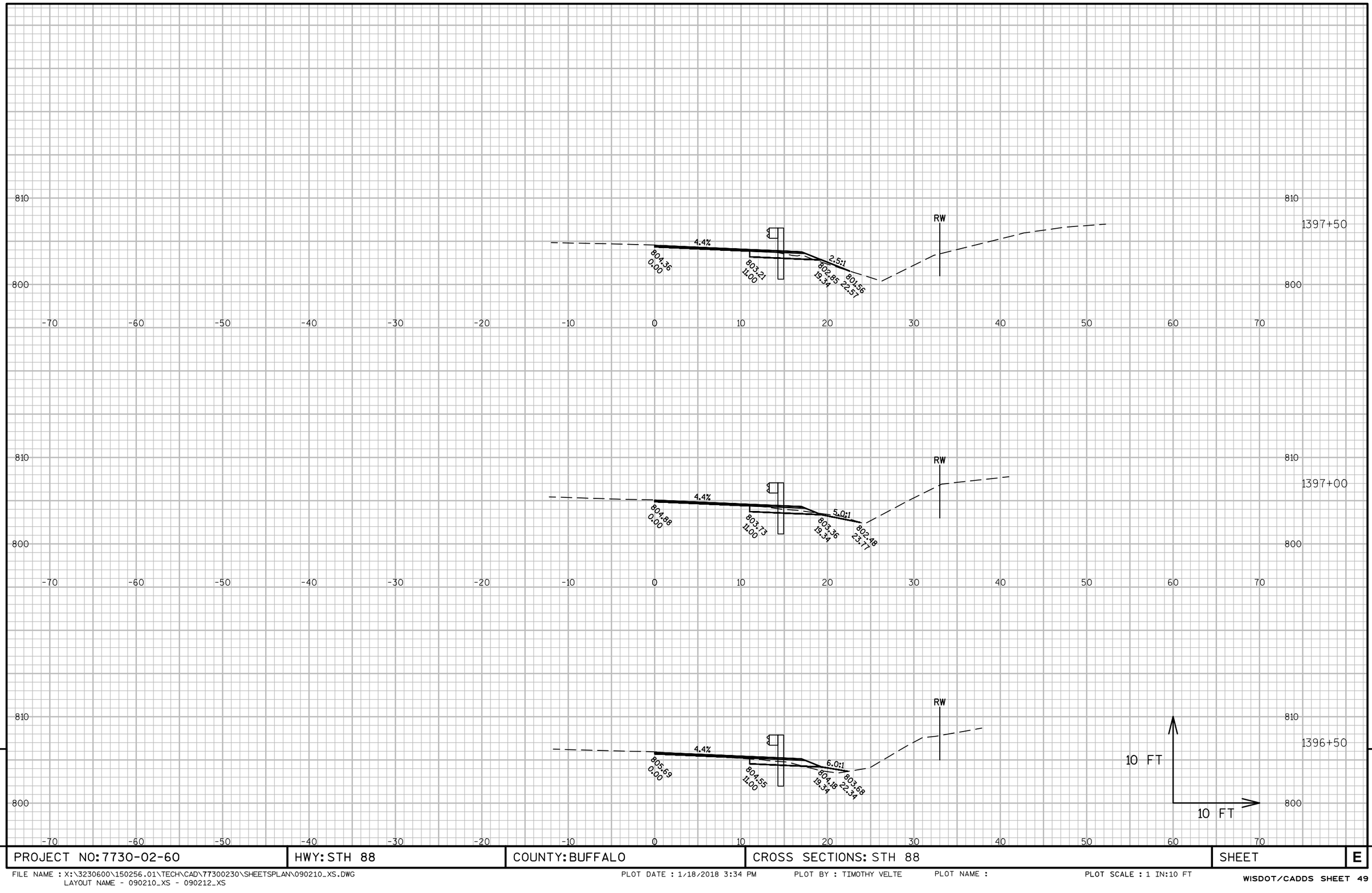
PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

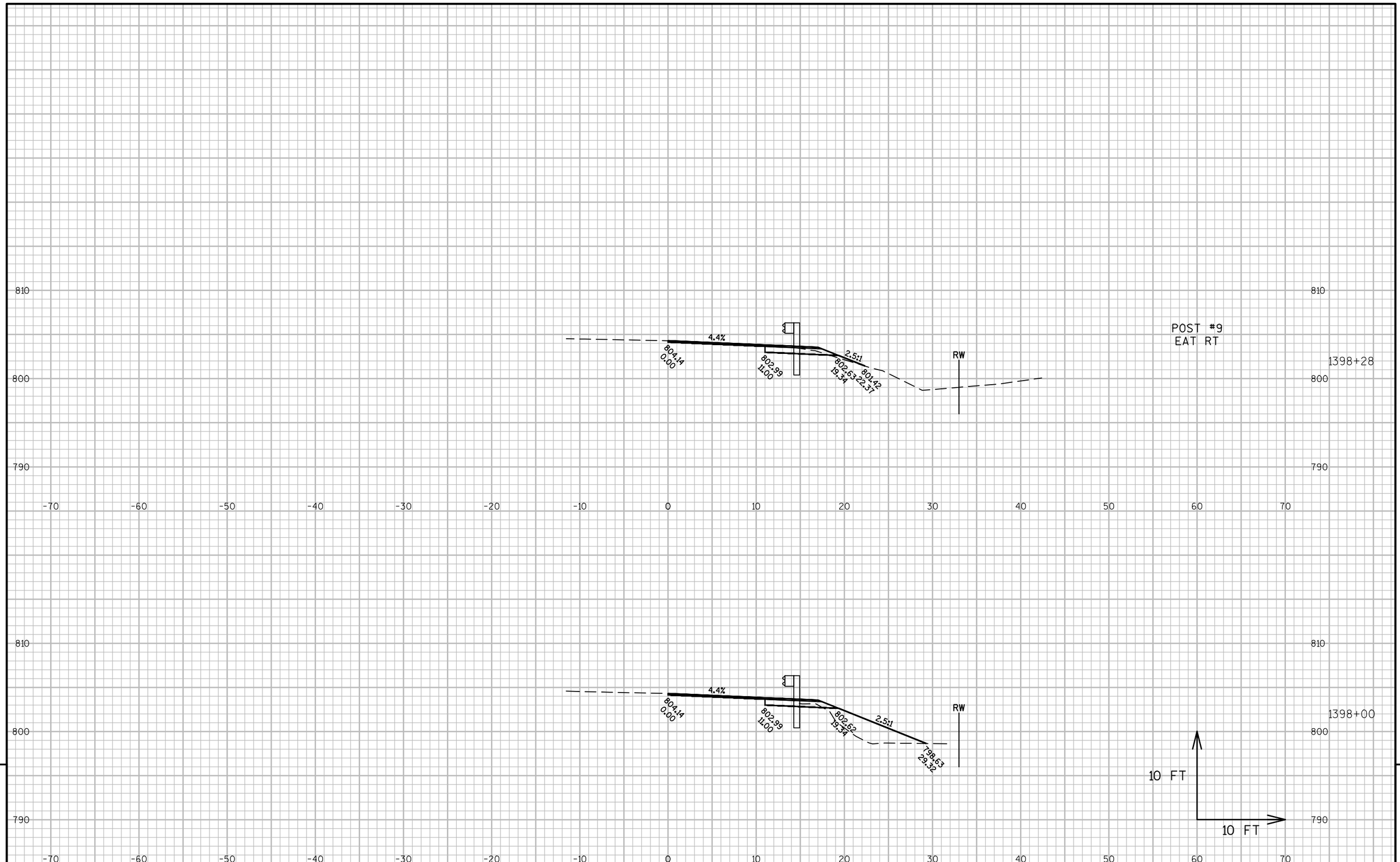
FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090210_XS.DWG
LAYOUT NAME - 090210_XS - 090211_XS
PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090210_XS.DWG
LAYOUT NAME - 090210_XS - 090212_XS

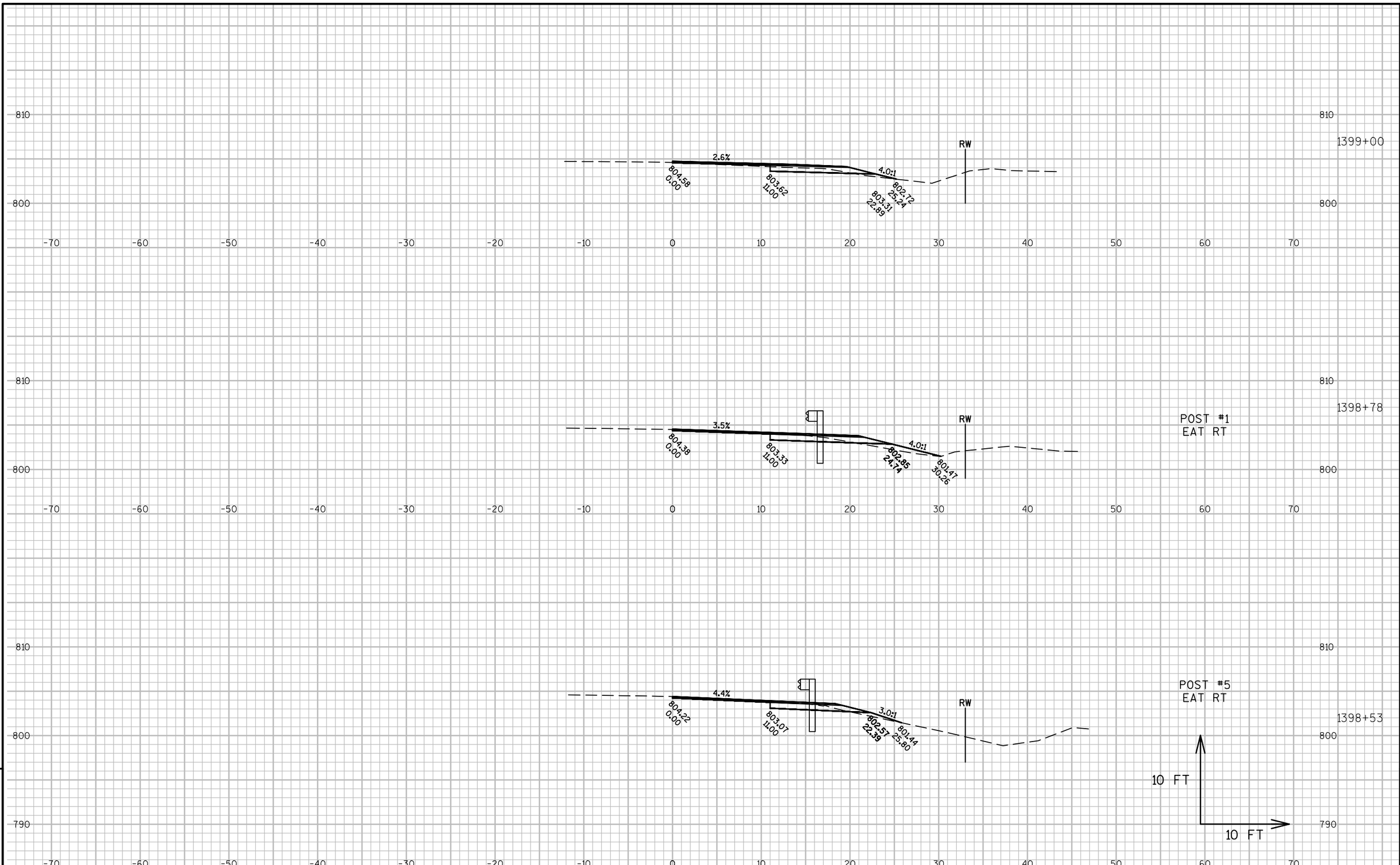
PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090210_XS.DWG
LAYOUT NAME - 090210_XS - 090213_XS

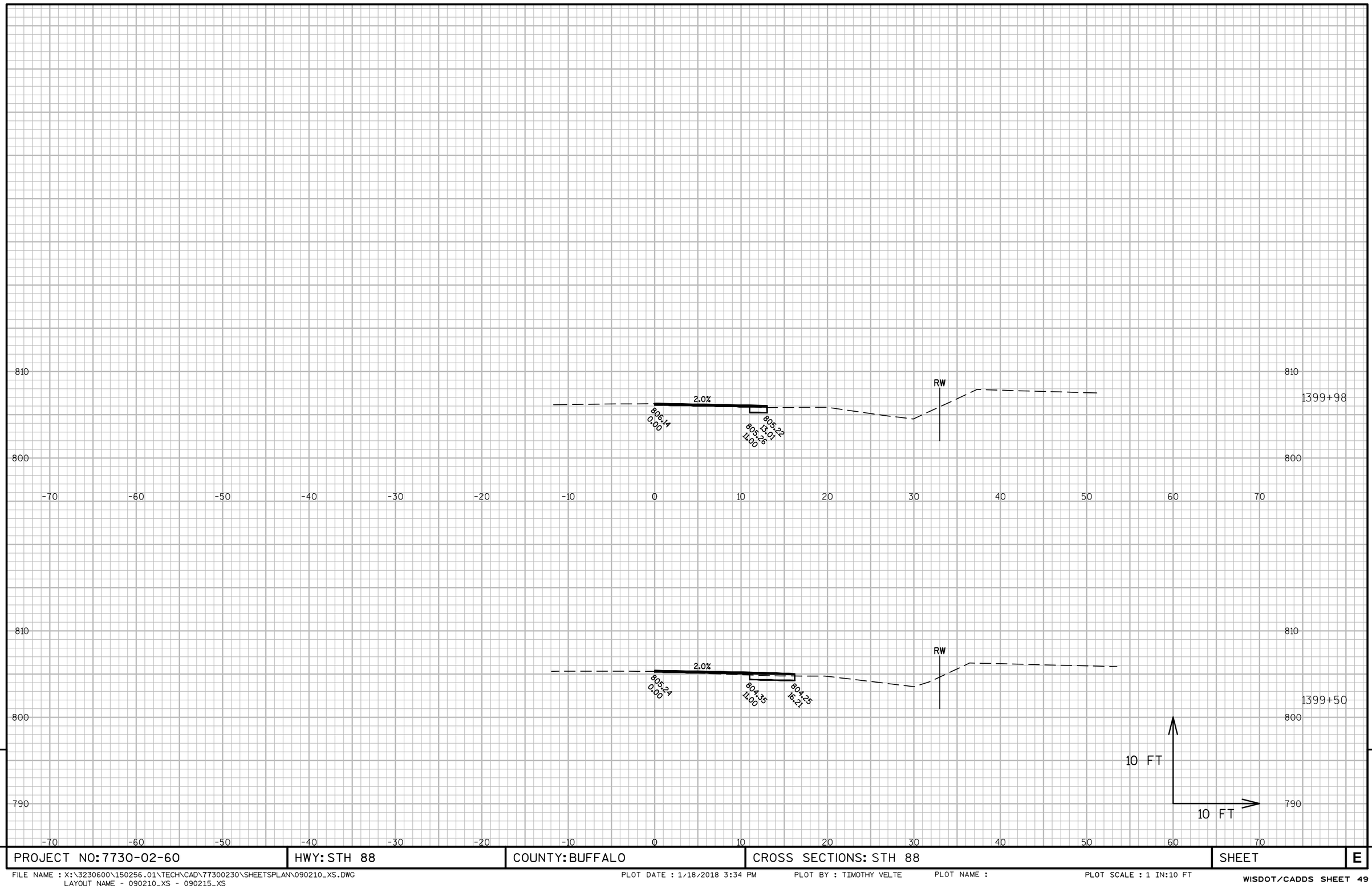
PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090210_XS.DWG
LAYOUT NAME - 090210_XS - 090214_XS

PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT



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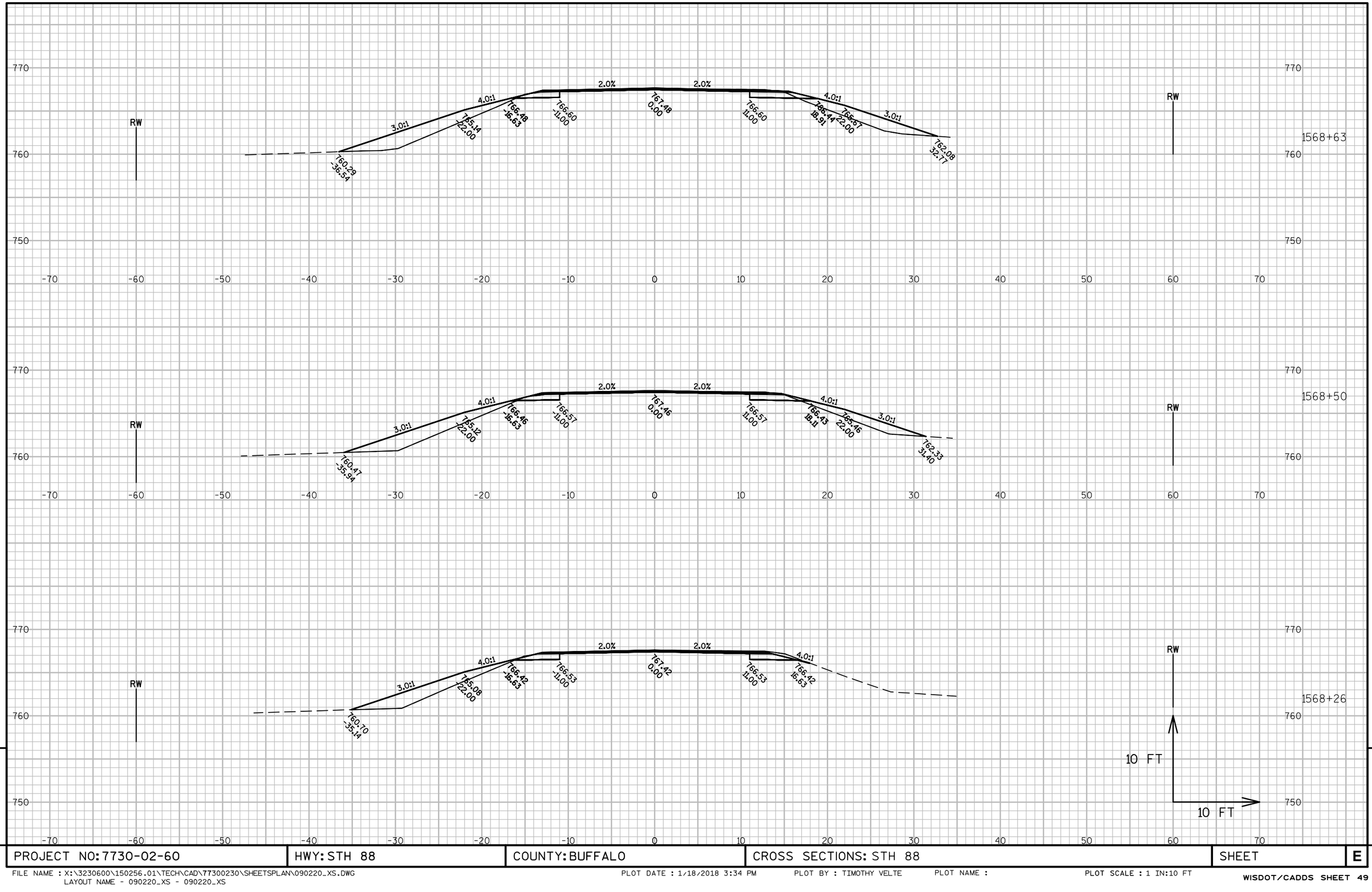
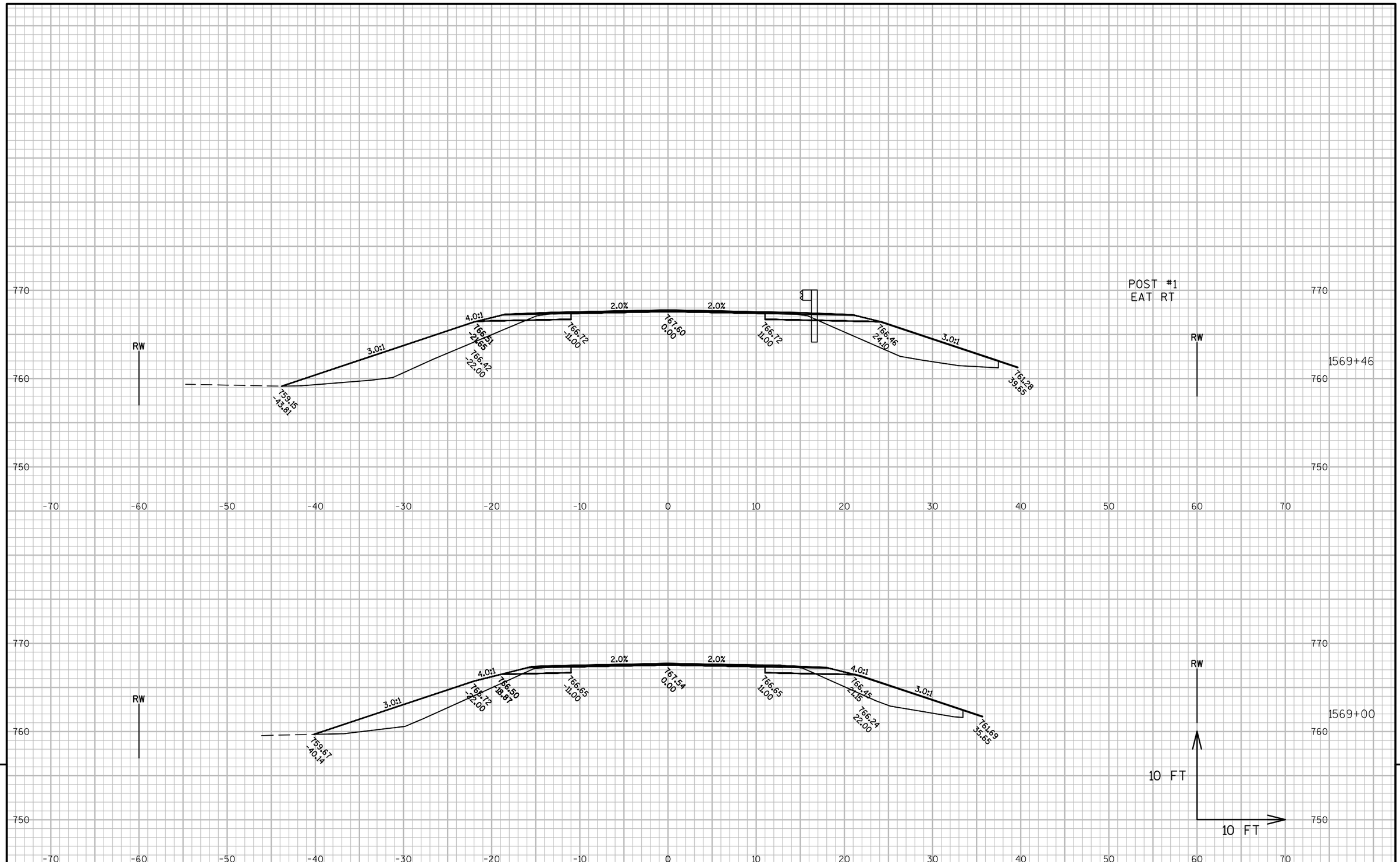
PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090210_XS.DWG
LAYOUT NAME - 090210_XS - 090215_XS

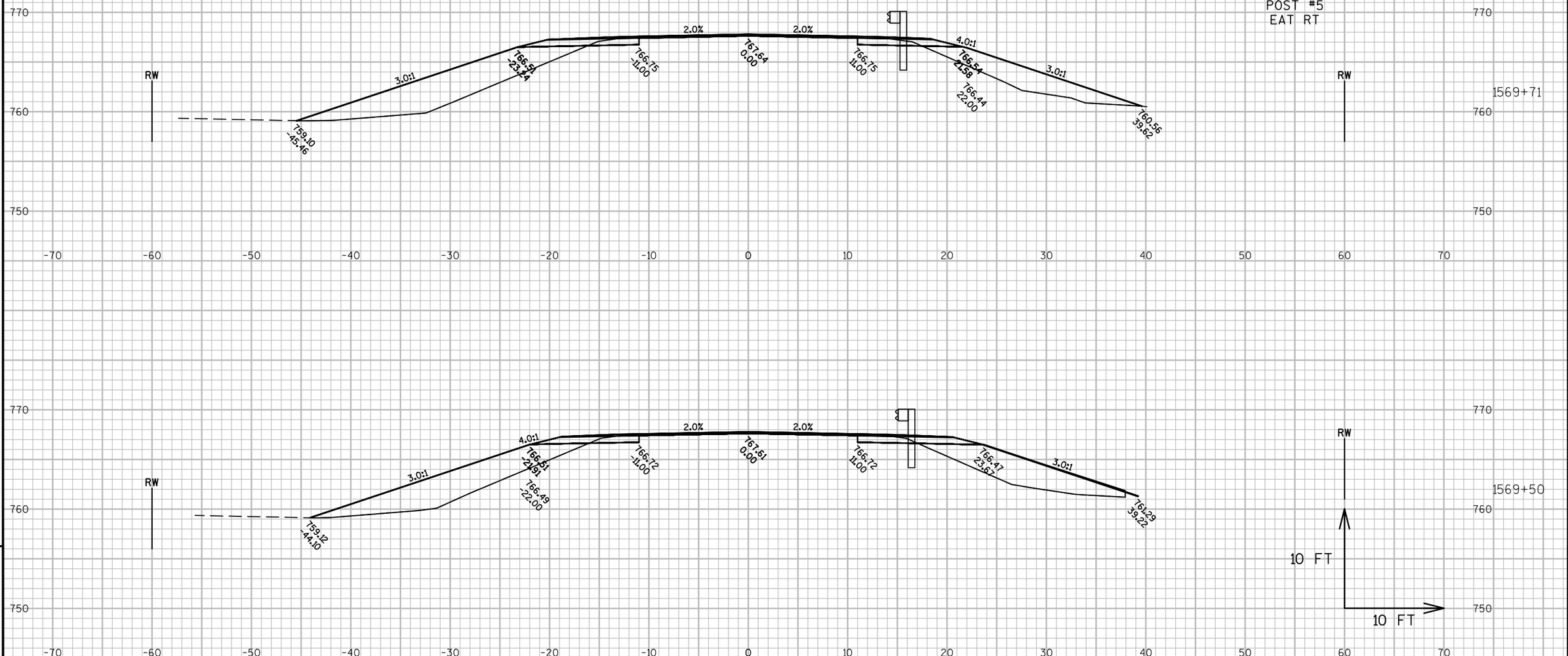
PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E



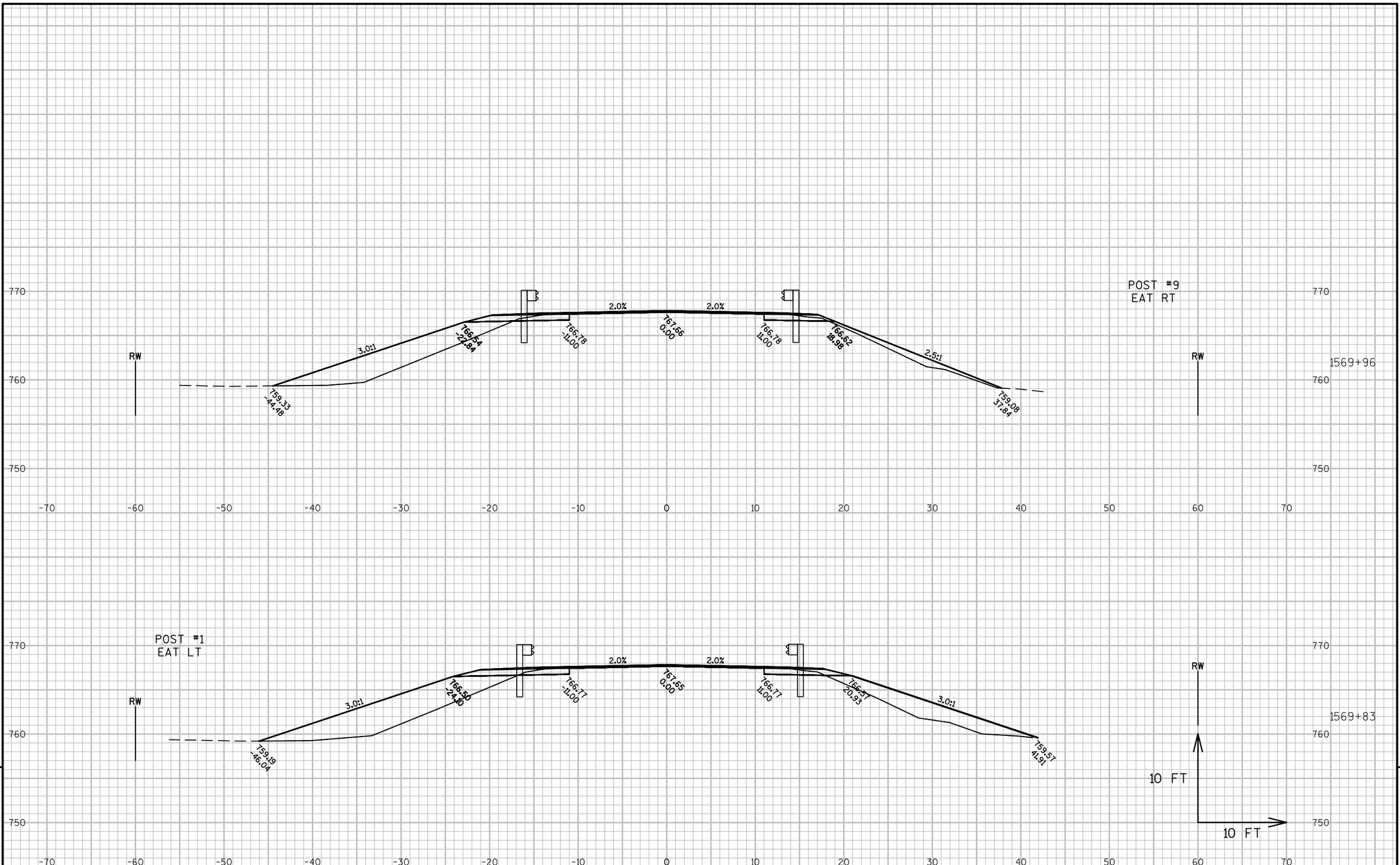
PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E



PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090220_XS.DWG
LAYOUT NAME - 090220_XS - 090222_XS

PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT



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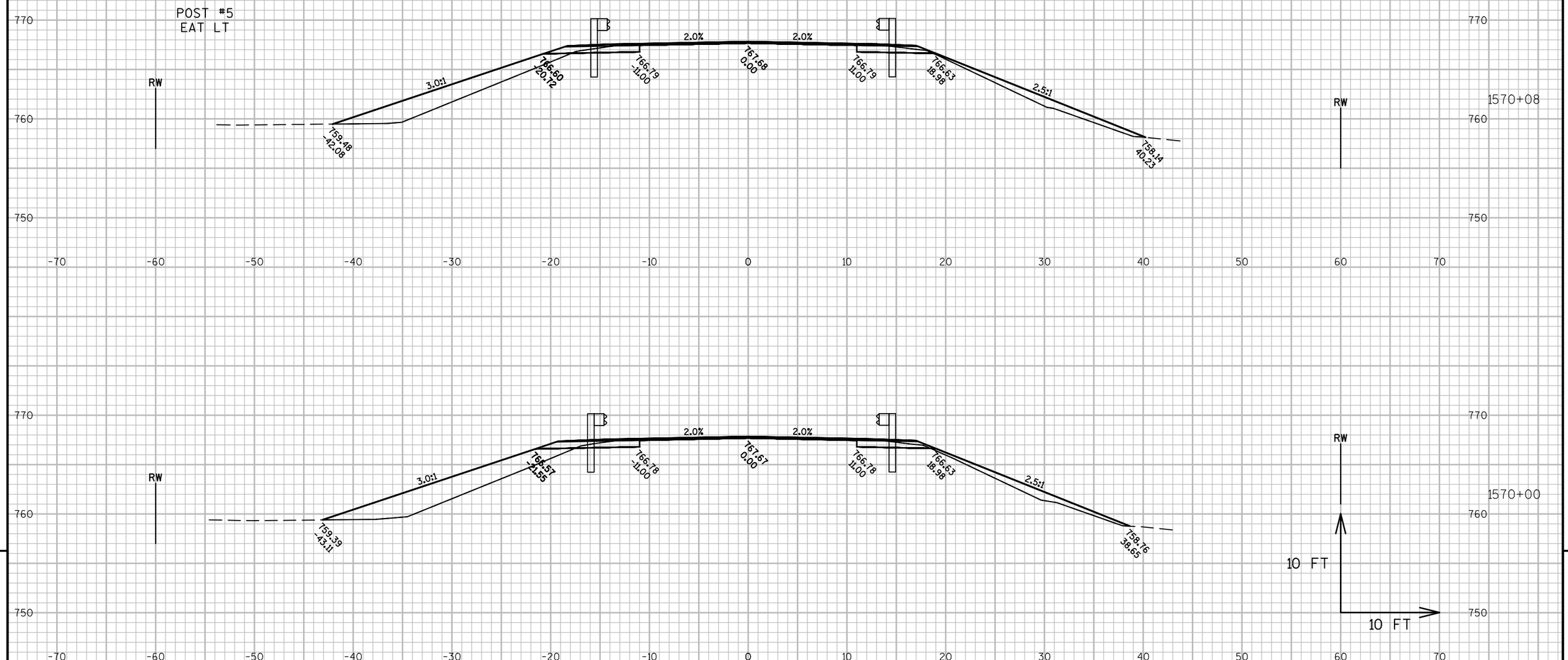
PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

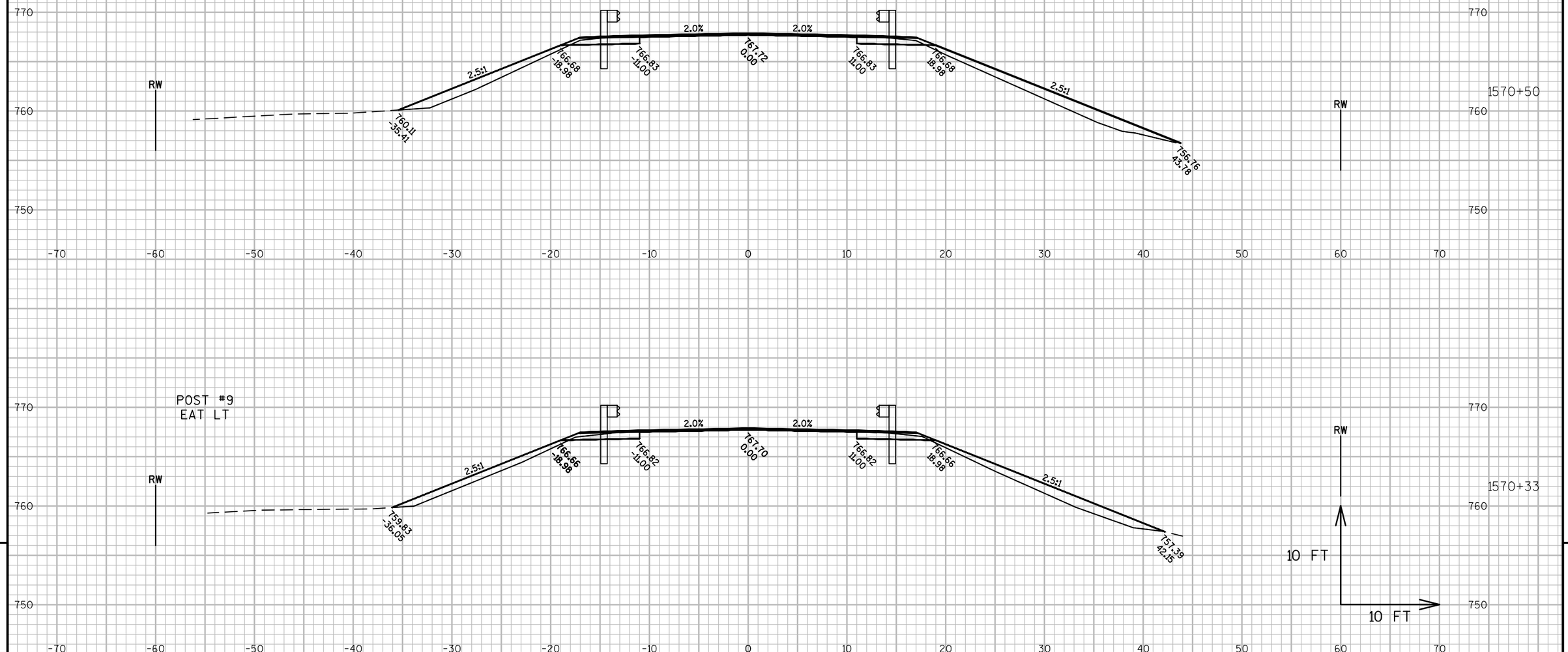
FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090220_XS.DWG
LAYOUT NAME - 090220_XS - 090223_XS
PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090220_XS.DWG
LAYOUT NAME - 090220_XS - 090224_XS

PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT



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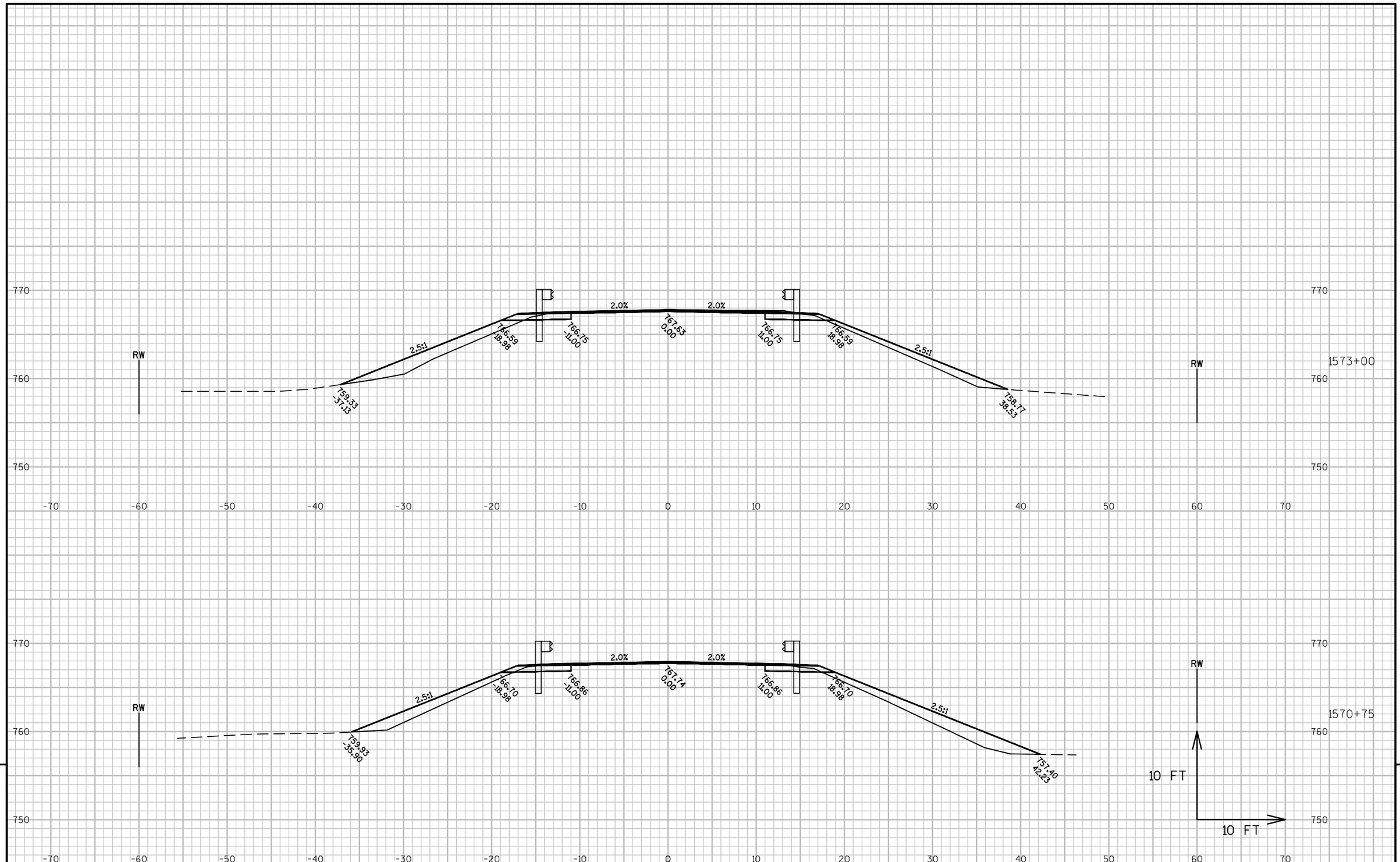
PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

9

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090220_XS.DWG
LAYOUT NAME - 090220_XS - 090225_XS
PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



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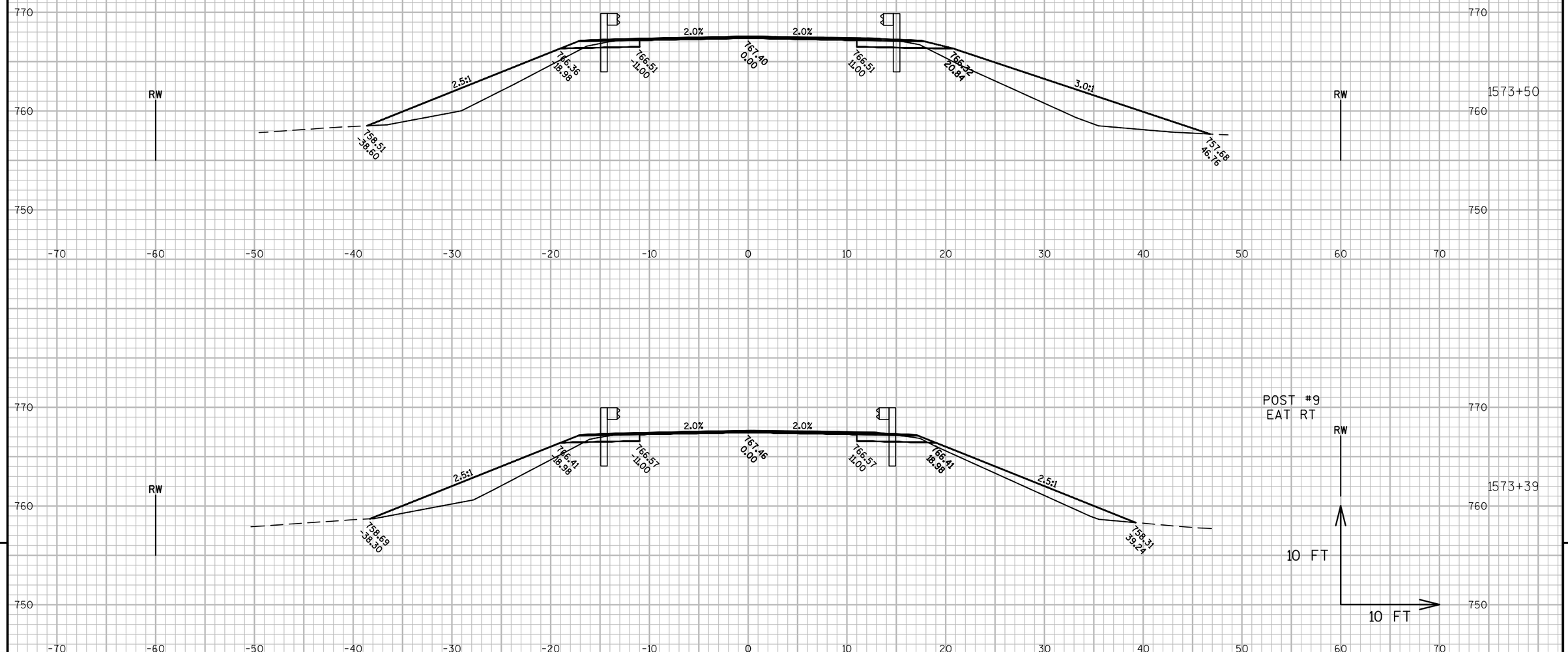
PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090220_XS.DWG
LAYOUT NAME - 090220_XS - 090226_XS

PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT

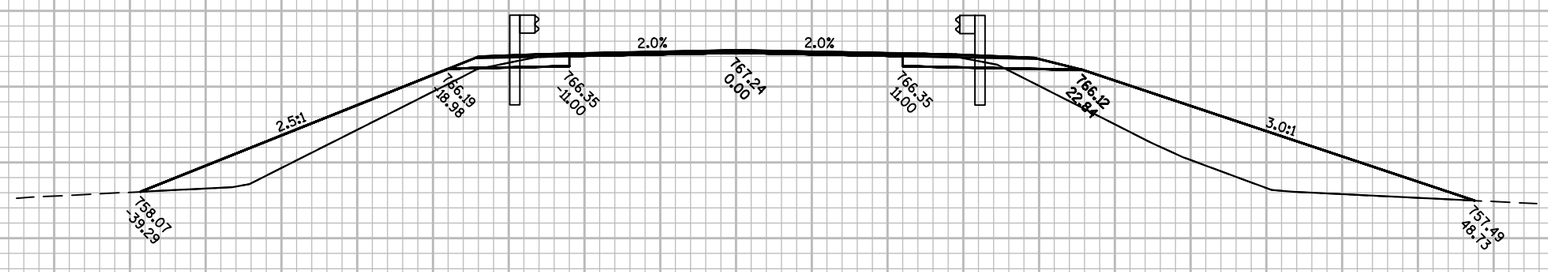


PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090220_XS.DWG
LAYOUT NAME - 090220_XS - 090227_XS

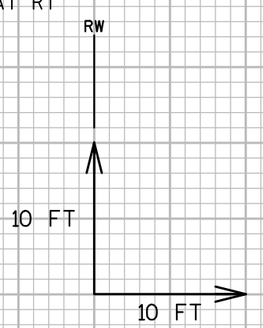
PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT

POST #9
EAT LT



1573+77

POST #5
EAT RT



1573+64

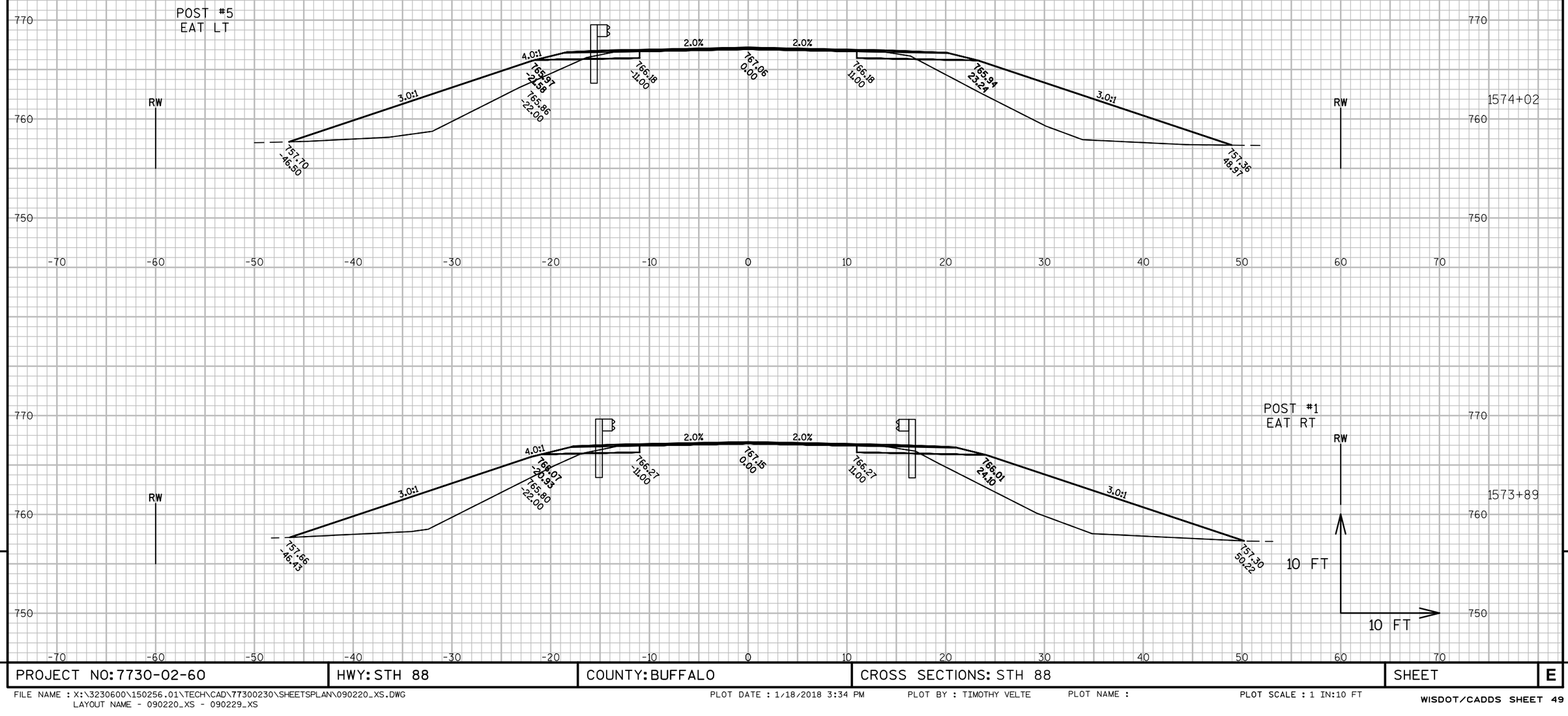
9

9

PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090220_XS.DWG
LAYOUT NAME - 090220_XS - 090228_XS

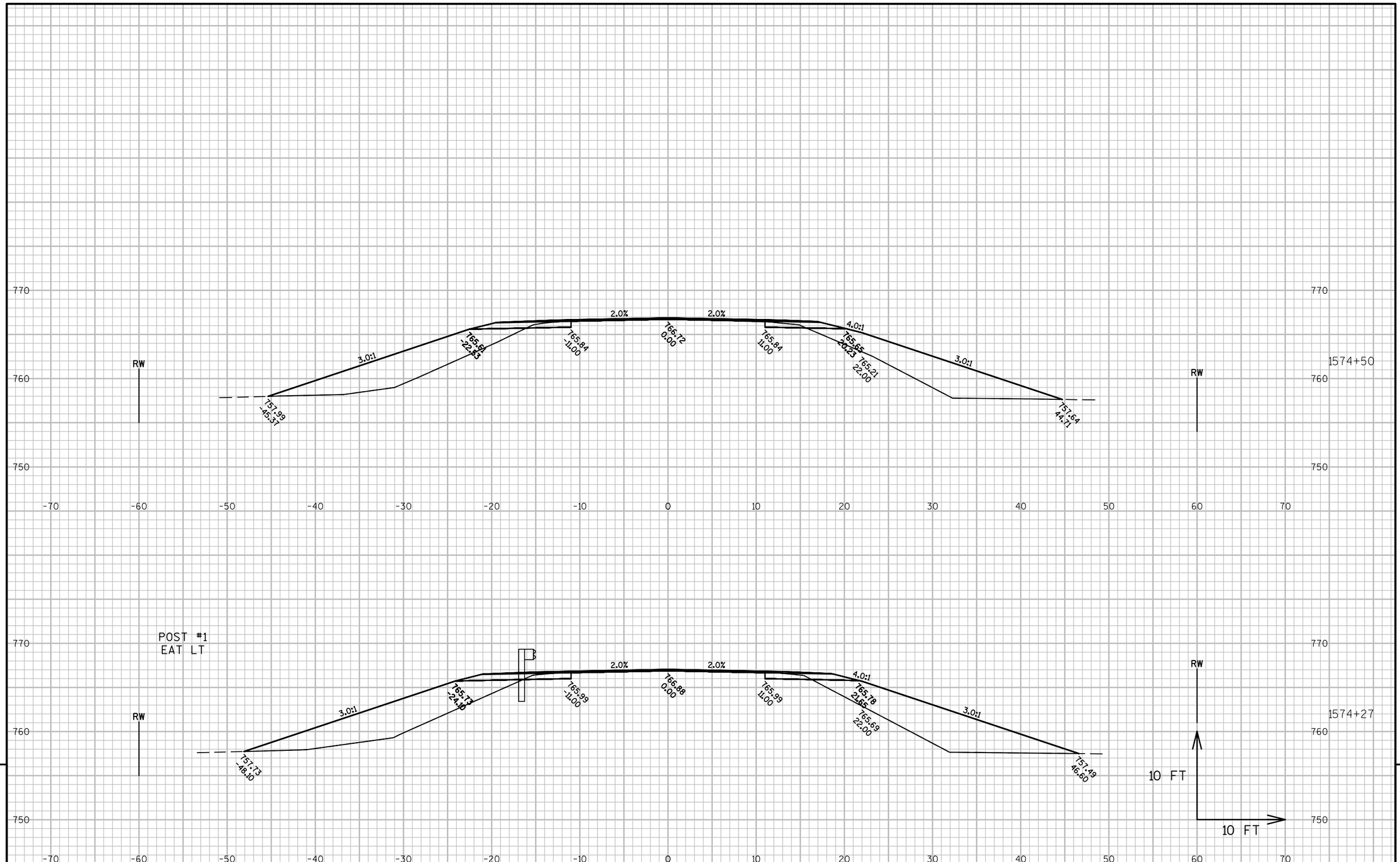
PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090220_XS.DWG
LAYOUT NAME - 090220_XS - 090229_XS

PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT

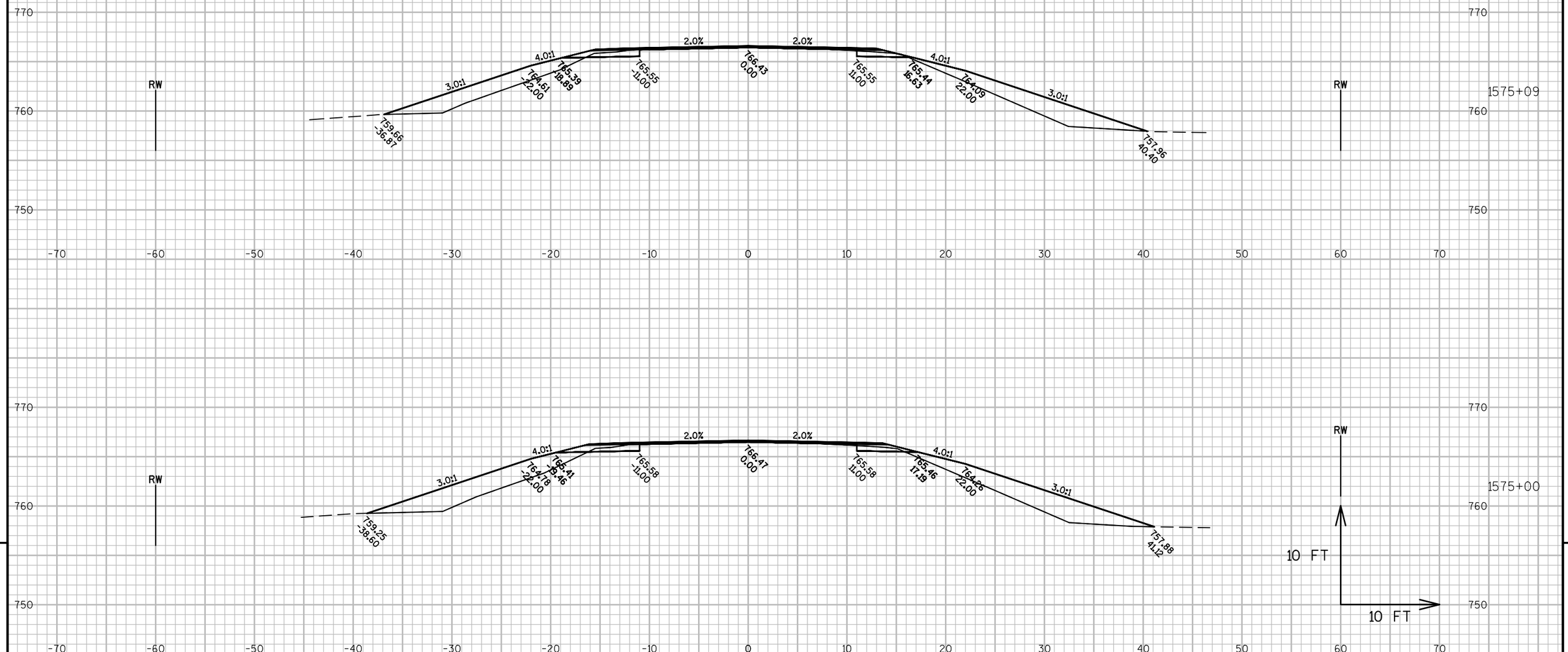


PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090220_XS.DWG
LAYOUT NAME - 090220_XS - 090230_XS

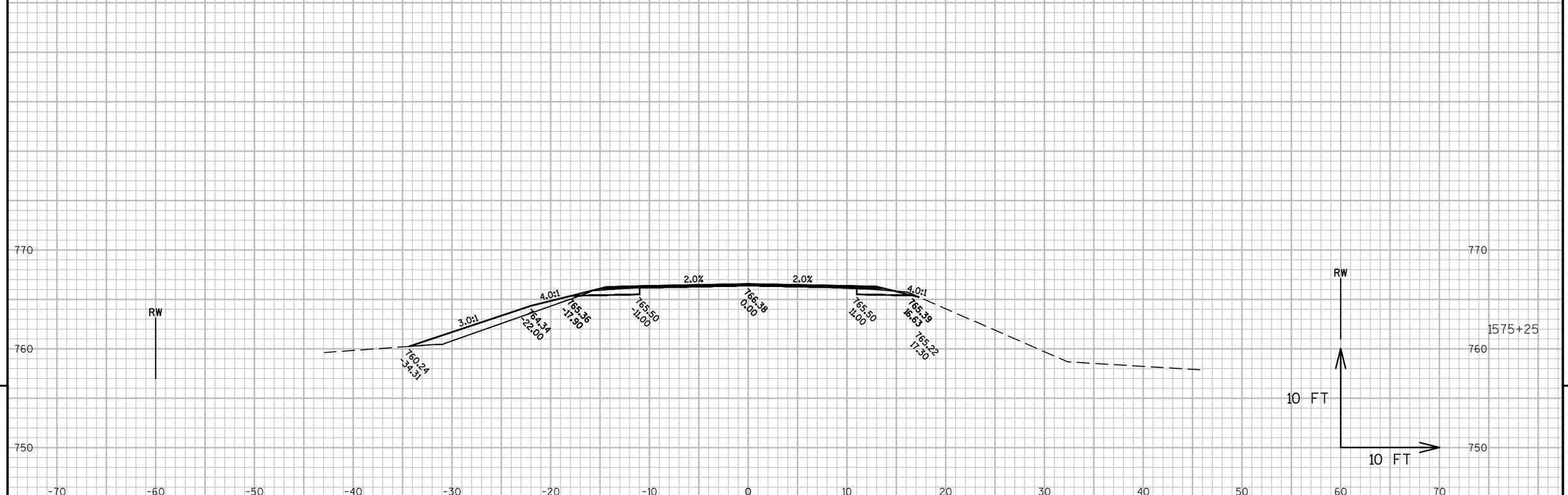
PLOT DATE : 1/18/2018 3:34 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090220_XS.DWG
LAYOUT NAME - 090220_XS - 090231_XS
PLOT DATE : 1/18/2018 3:35 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



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PROJECT NO: 7730-02-60	HWY: STH 88	COUNTY: BUFFALO	CROSS SECTIONS: STH 88	SHEET	E

FILE NAME : X:\3230600\150256.01\TECH\CAD\77300230\SHEETSPLAN\090220_XS.DWG
LAYOUT NAME - 090220_XS - 090232_XS

PLOT DATE : 1/18/2018 3:35 PM PLOT BY : TIMOTHY VELTE PLOT NAME : PLOT SCALE : 1 IN:10 FT

Notes

Wisconsin Department of Transportation

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