

ORDER OF SHEETS

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

TOTAL SHEETS = 66



DESIGN DESIGNATION

A.A.D.T.	(2018)	=	950
A.A.D.T.	(2038)	=	1300
D.H.V.	(2038)	=	115
D.D.	(%)	=	60/40
T.		=	3.8%
DESIGN SPEED		=	55 MPH
ESALS		=	N/A

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T ST JOSEPH - N COUNTY LINE

SPRING ST - 220TH AVE

CTH I

ST CROIX COUNTY

STATE PROJECT NUMBER

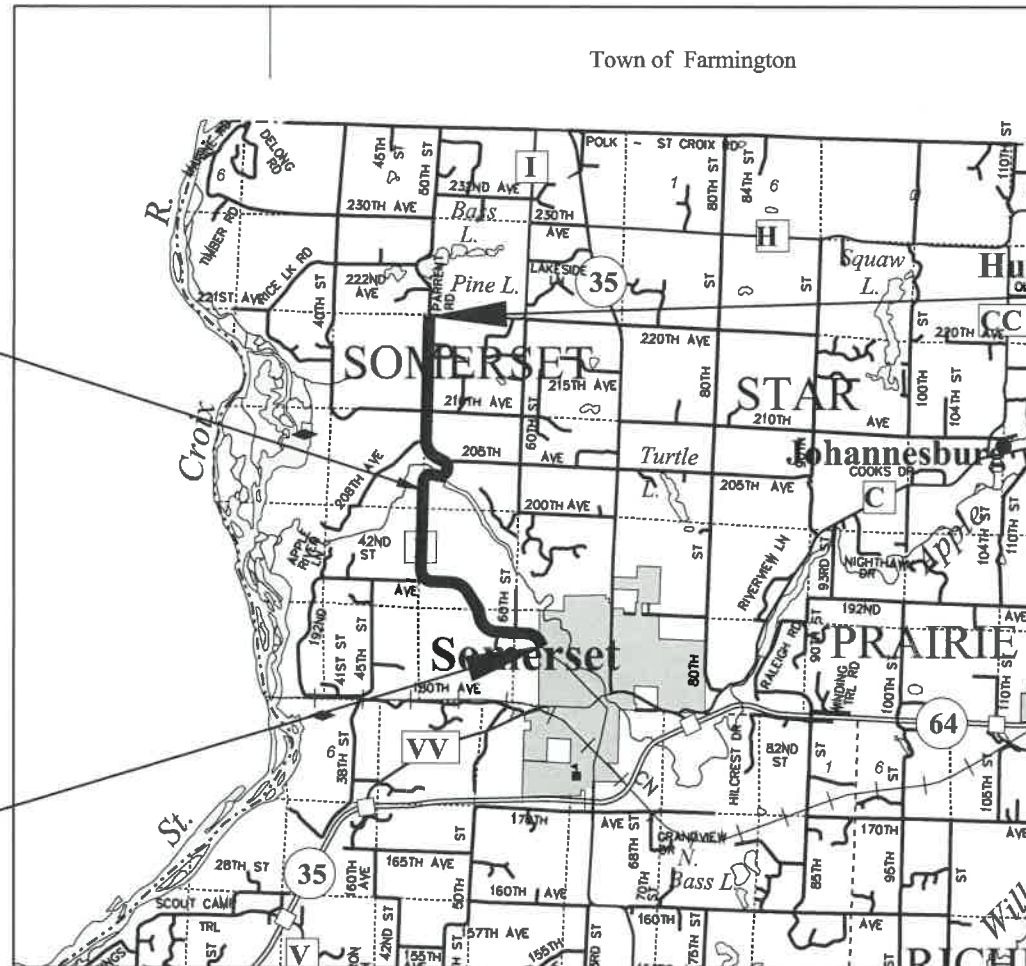
8938-01-72

R-20-W R-19-W

R-19-W R-18-W

EQUATION STA 158+97.29 BK= STA 101+81.72 AHD

BEGIN PROJECT
STA 38+00.00
Y = 399731.57
X = 529030.88



LAYOUT
SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI

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

STATE PROJECT

8938-01-72

FEDERAL PROJECT

PROJECT

WISC 2018202

CONTRACT

1

ACCEPTED FOR

ST CROIX COUNTY

Date: 9/25/17 *Robbie Kray Highway*
(Signature and Title of Official)

ORIGINAL PLANS PREPARED BY

AYRES ASSOCIATES



DATE: 9/20/2017 *[Signature]*
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: AYRES ASSOCIATES INC
Designer: AYRES ASSOCIATES INC
Management Consultant: KNIGHT E/A INC

APPROVED FOR THE DEPARTMENT
DATE: 10/27/17 *Ryan B McKane*
(Management Consultant Signature)

GENERAL NOTES

THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLAN ARE APPROXIMATE. THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT THAT ARE NOT SHOWN. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA.

WHEN THE QUANTITY OF BASE AGGREGATE DENSE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OF THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATIERIAL AS DIRECTED BY THE ENGINEER.

SHRINKAGE OF EARTHWORK IS VARIABLE. AN AVERAGE FACTOR FOR EXCAVATION COMMON IS 30%.

EBS MATERIAL SHALL BE WASTED OUTSIDE THE 1:1 SLOPES AS DIRECTED BY THE ENGINEER. EXCESS EBS MATERIAL NOT UTILIZED SHALL BE WASTED OFF THE PROJECT.

THE EXACT LOCATION AND WIDTH OF DRIVEWAY ENTRANCES WILL BE DETERMINED IN THE FIELD BY THE ENGINEER. ALL DRIVEWAYS ARE TO BE REPLACED IN KIND UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR AS SHOWN ON THE PLANS.

CROSS DRAIN PIPE LOCATIONS AND ELEVATIONS AS SHOWN ON THE CROSS SECTION SHEETS ARE APPROXIMATE AND SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

SEED MIXTURE NO.20 SHALL BE USED THROUGHOUT THE PROJECT.

GRAVEL INSLOPES SHALL BE SEEDED AND FERTILIZED. ALL OTHER DISTURBED AREAS WITHIN THE RIGHT OF WAY SHALL BE SALVAGED TOPSOILED, SEEDED, FERTILIZED, AND MULCHED.

EROSION CONTROL MEASURES WILL BE PLACED AS SHOWN ON THE EROSION CONTROL PLAN. THE EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER. ANY REMOVAL OF ITEMS ARE INCIDENTAL TO THE RESPECTIVE EROSION CONTROL BID ITEM COSTS.

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL BY THE ENGINEER.

EXISTING ELEVATIONS SHALL BE VERIFIED IN THE FIELD.

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 NAVD88(2012).

UTILITY CONTACTS

AT&T DISTRIBUTION
304 SOUTH DEWEY STREET
EAU CLAIRE, WI 54701
ATTN: RICK PODOLAK
715-839-5565
rp4514@att.com

XCEL ENERGY - DISTRIBUTION
1414 WEST HAMILTON AVENUE
P.O. BOX 8
EAU CLAIRE, WI 54702-0008
ATTN: DAWN SCHULTZ
715-737-2482
dawn.schultz@xcelenergy.com

CENTURYLINK
20 SOUTH WILSON AVENUE
RICE LAKE, WI 54868
ATTN: JIM ARQUETTE
715-234-5528
monty.parker@centurylink.com

MIDWEST NATURAL GAS
611 SHAY STREET
SOMERSET, WI 54025
ATTN: JUSTIN JACOBS
715-797-0590
mngjustinjacobs@gmail.com

NORTHWEST COMMUNICATIONS
116 HARRIMAN AVENUE
AMERY, WI 54001
ATTN: GREG CARDINAL
715-268-7101
gregcardinal@amerytel.net

POLK-BURNETT ELECTRIC COOPERATIVE
1001 STATE ROAD 35
CENTURIA, WI 54824
ATTN: ED JOHANSEN
800-421-0283
ejohansen@polkburnett.com

ST CROIX ELECTRIC COOPERATIVE
1925 RIDGEWAY STREET
HAMMOND, WI 54015
ATTN: ROB DOOLEY
715-796-7000
robdooscecnecnet.net

* DENOTES NOT A DIGGERS HOTLINE MEMBER



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

ST CROIX COUNTY

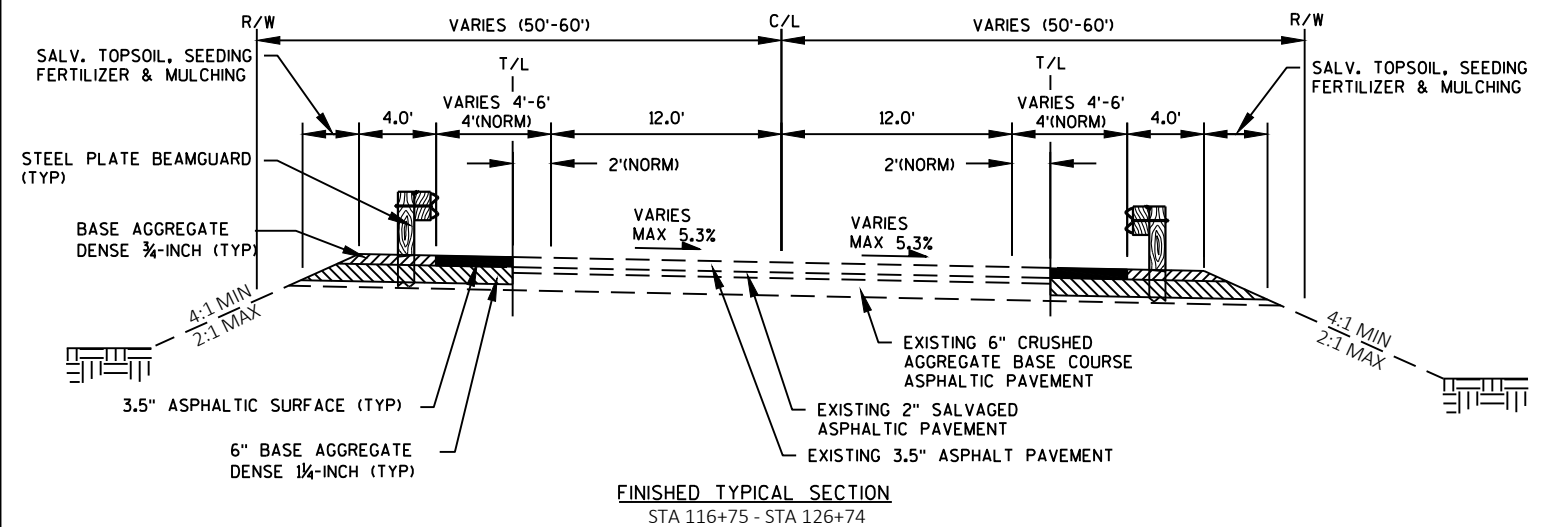
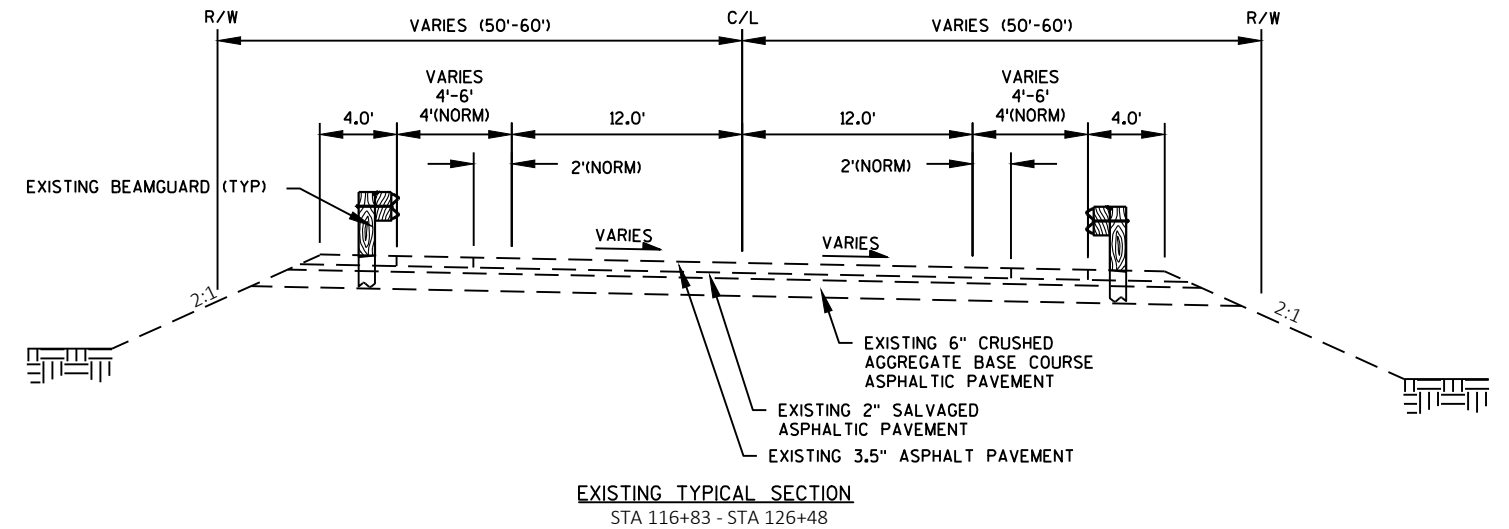
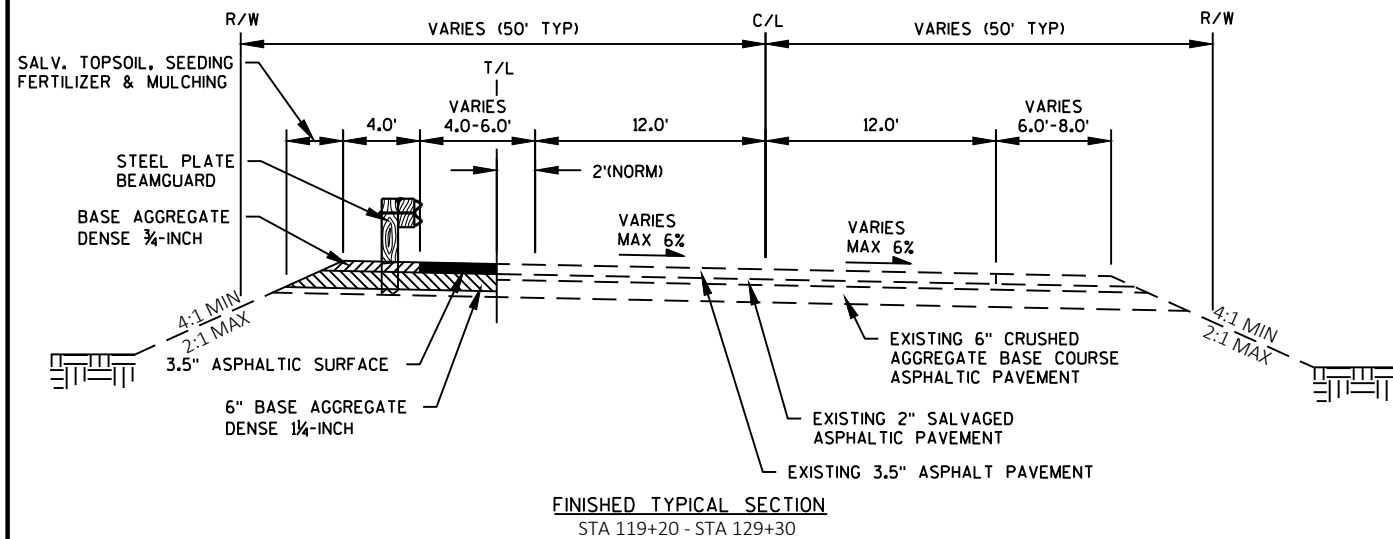
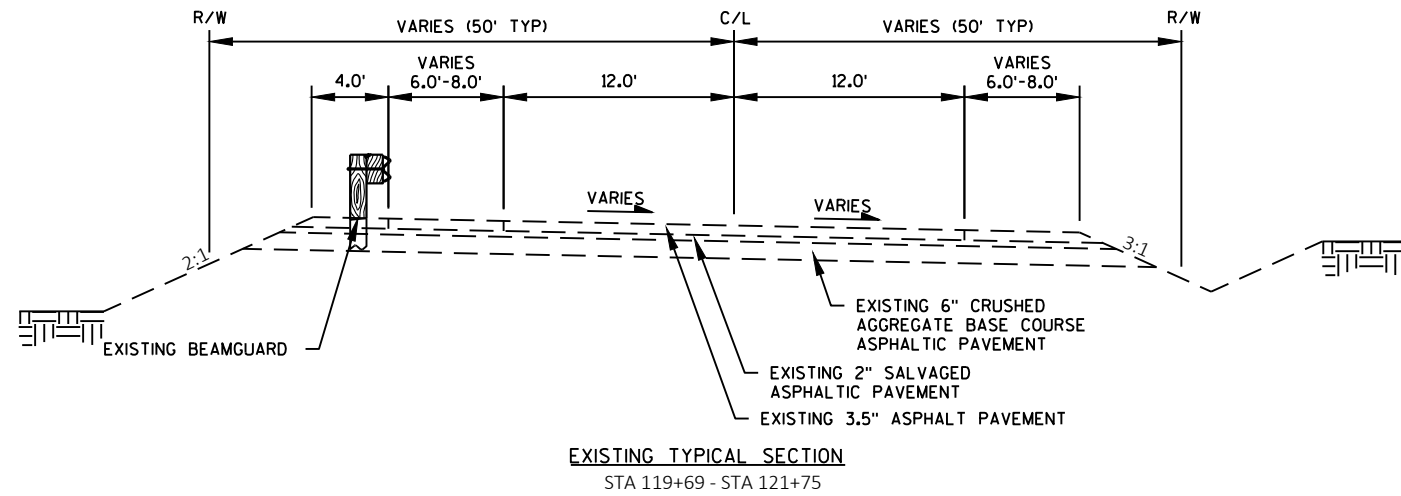
ST CROIX COUNTY HIGHWAY DEPARTMENT
P.O. BOX 108
920 THIRD STREET
HAMMOND, WI 54015
ATTN: ROBBIE KREJCI
715-796-2227
robbie.krejci@co.saint.croix.wi.us

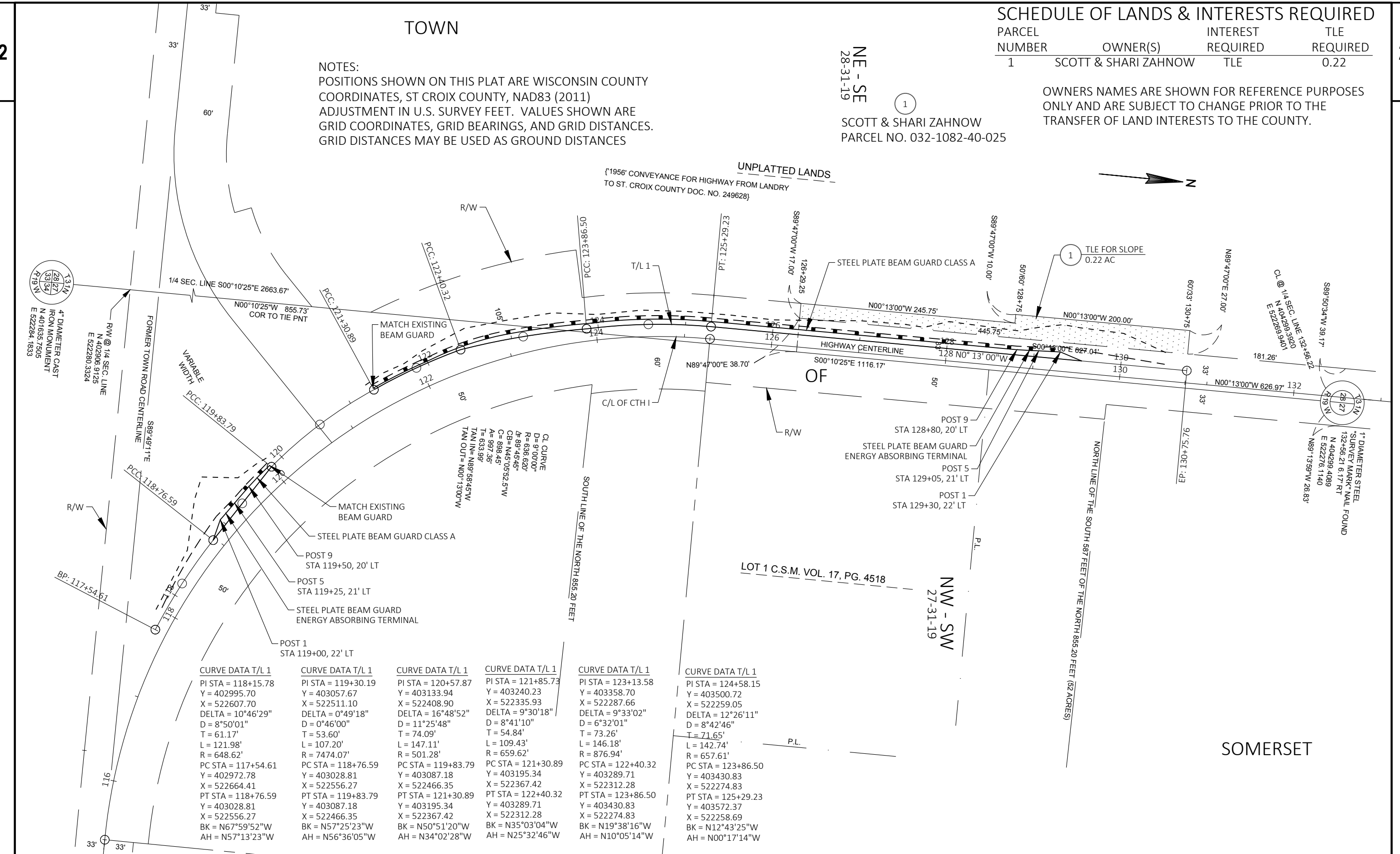
DESIGN CONTACT

AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: BRETT HOLLISTER, PE
715-834-3161
hollisterb@ayresassociates.com

DNR CONTACT

DNR WEST CENTRAL REGION
1300 WEST CLAIREMONT AVENUE
EAU CLAIRE, WI 54702
ATTN: CHRIS WILLGER
715-839-1609
christopherj.willger@wisconsin.gov



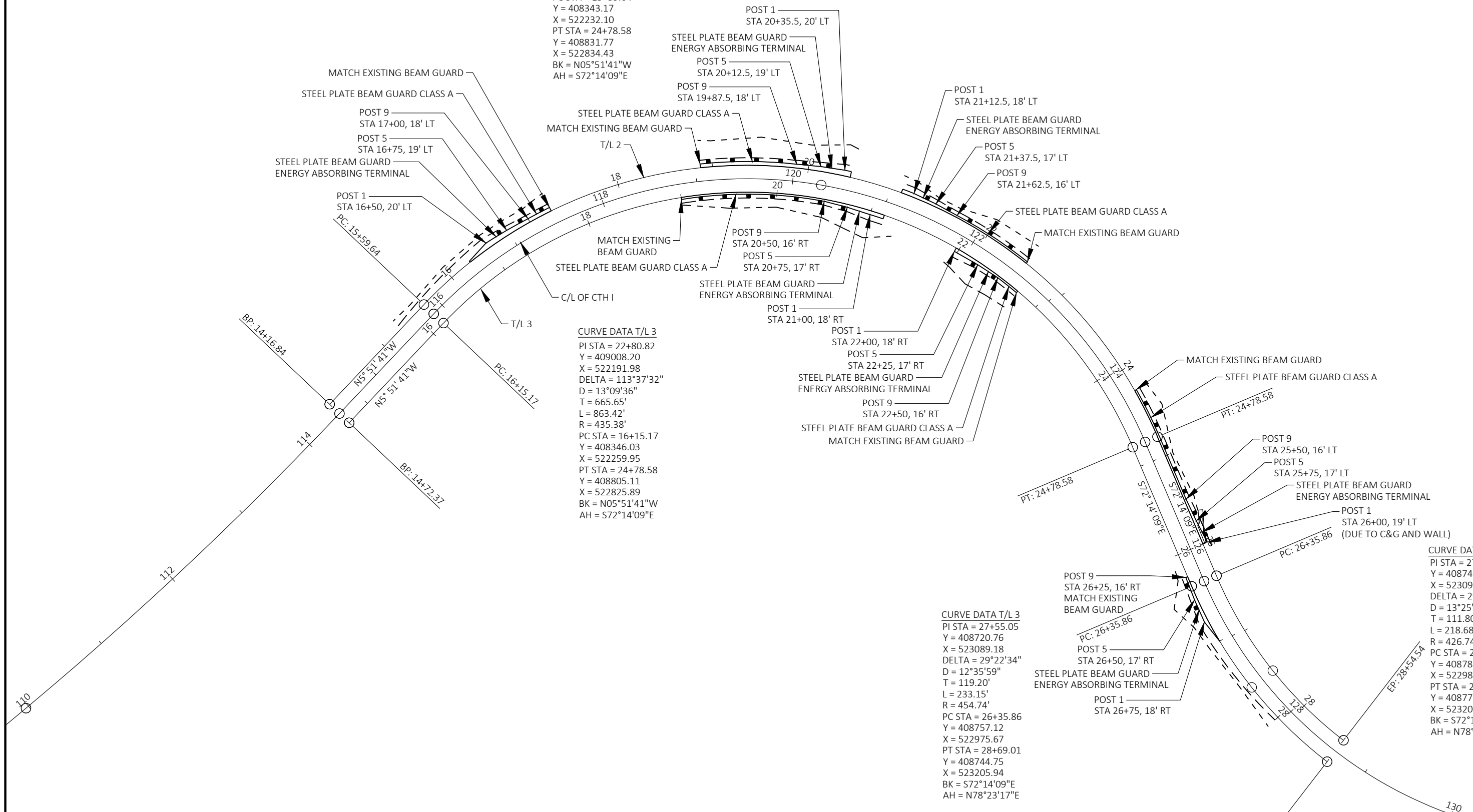


CURVE DATA T/L 2
PI STA = 22+68.10
Y = 409047.93
X = 522159.75
DELTA = 113°37'32"
D = 12°21'53"
T = 708.46'
L = 918.94'
R = 463.38'
PC STA = 15+59.64
Y = 408343.17
X = 522232.10
PT STA = 24+78.58
Y = 408831.77
X = 522834.43
BK = N05°51'41"W
AH = S72°14'09"E

CURVE DATA T/L 3
PI STA = 22+80.82
Y = 409008.20
X = 522191.98
DELTA = 113°37'32"
D = 13°09'36"
T = 665.65'
L = 863.42'
R = 435.38'
PC STA = 16+15.17
Y = 408346.03
X = 522259.95
PT STA = 24+78.58
Y = 408805.11
X = 522825.89
BK = N05°51'41"W
AH = S72°14'09"E

CURVE DATA T/L 3
PI STA = 27+55.05
Y = 408720.76
X = 523089.18
DELTA = 29°22'34"
D = 12°35'59"
T = 119.20'
L = 233.15'
R = 454.74'
PC STA = 26+35.86
Y = 408757.12
X = 522975.67
PT STA = 28+69.01
Y = 408744.75
X = 523205.94
BK = S72°14'09"E
AH = N78°23'17"E

CURVE DATA T/L 2
PI STA = 27+47.66
Y = 408749.68
X = 523090.68
DELTA = 29°21'41"
D = 13°25'35"
T = 111.80'
L = 218.68'
R = 426.74'
PC STA = 26+35.86
Y = 408783.79
X = 522984.21
PT STA = 28+54.54
Y = 408772.16
X = 523200.19
BK = S72°14'09"E
AH = N78°24'10"E



PROJECT NO: 8938-01-72

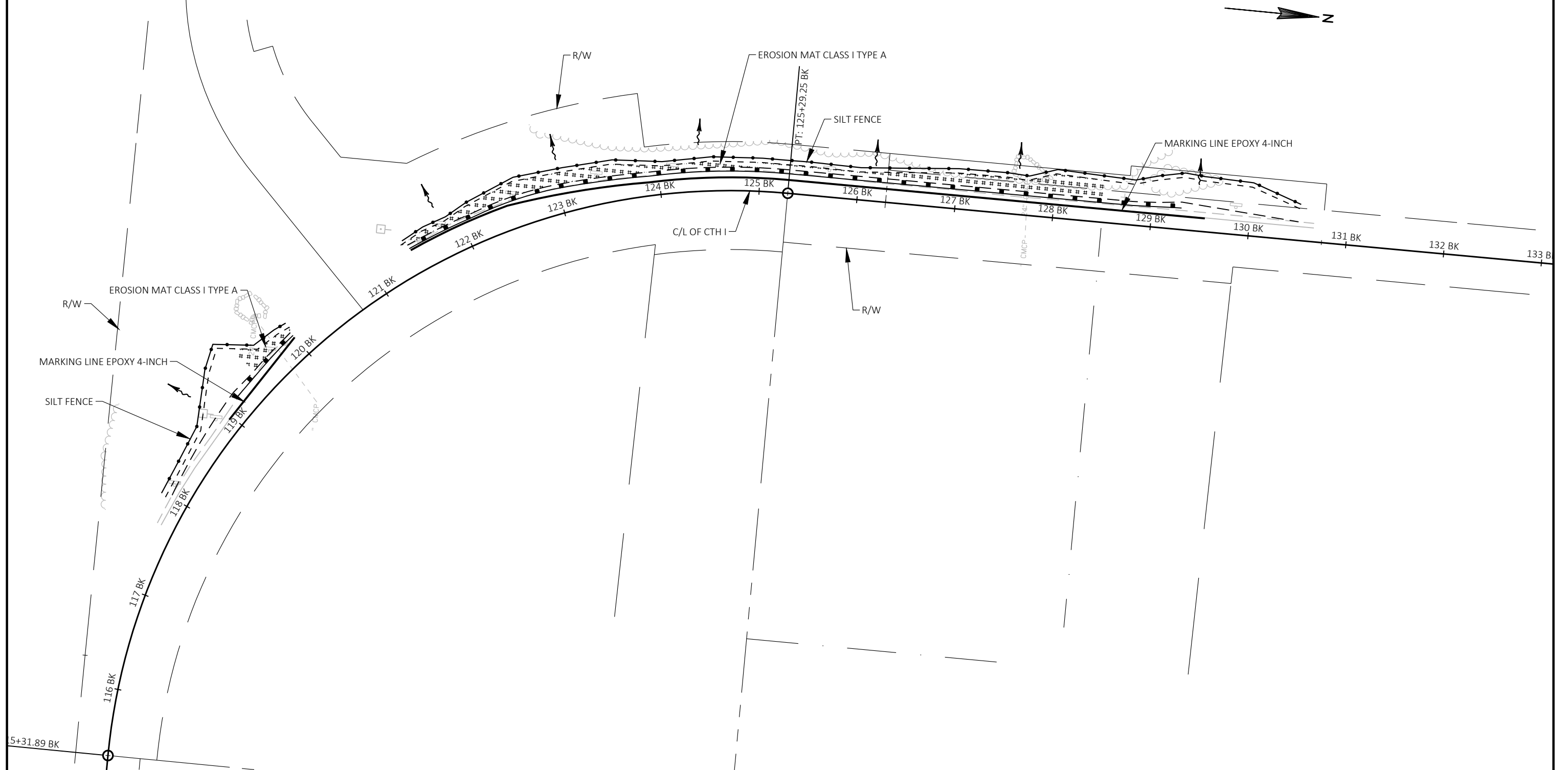
HWY: CTH I

COUNTY: ST CROIX

GUARDRAIL LAYOUT DETAIL

SHEET

E



PROJECT NO: 8938-01-72

HWY: CTH I

COUNTY: ST CROIX

EROSION CONTROL & PAVEMENT MARKING

SHEET

E

FILE NAME : V:\TRANS-EC\410739 ST CROIX - CTH I\C3D\SHEETPLAN\022001-EC.DWG
LAYOUT NAME - 022001-ec

PLOT DATE : 10/17/2017 1:17 PM

PLOT BY : RESHESKE, CARRIE

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

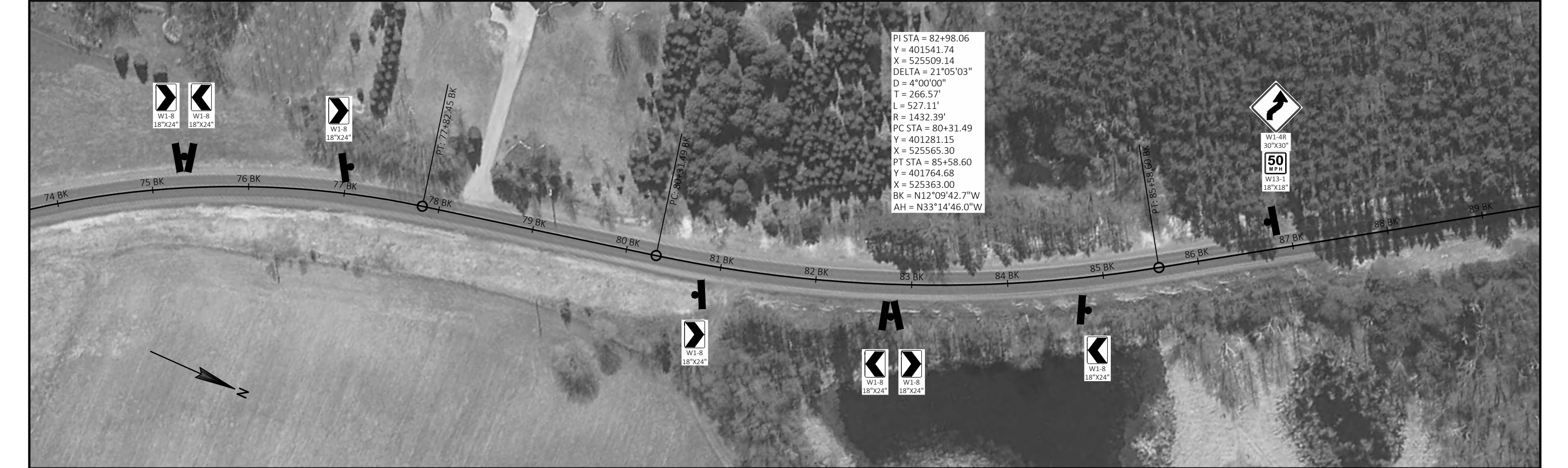
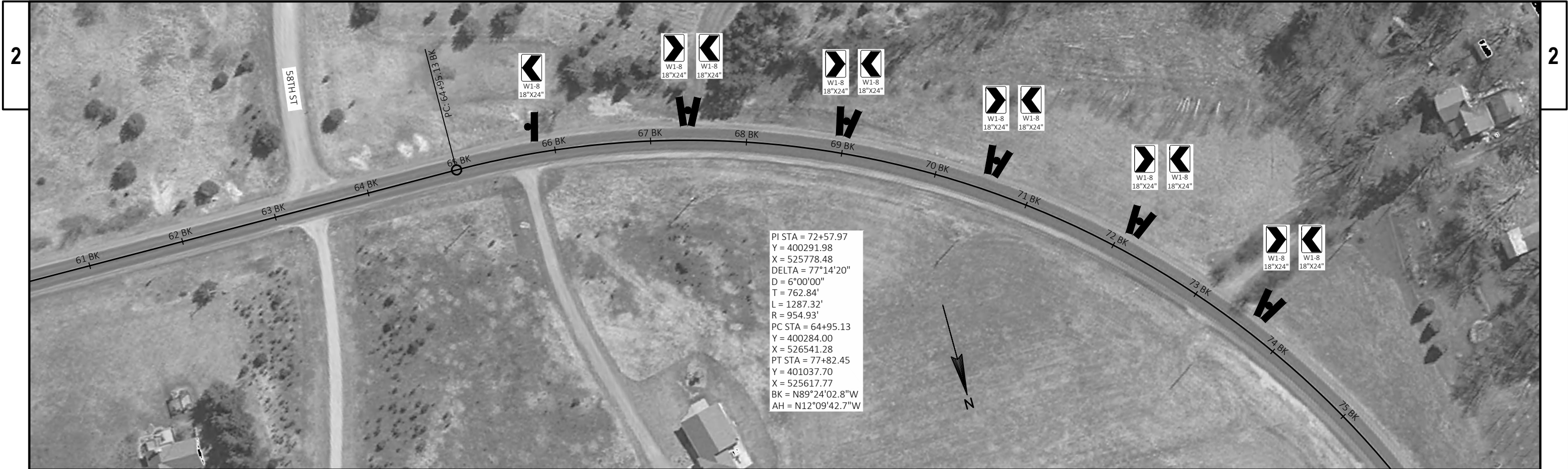
WISDOT/CADD5 SHEET 44

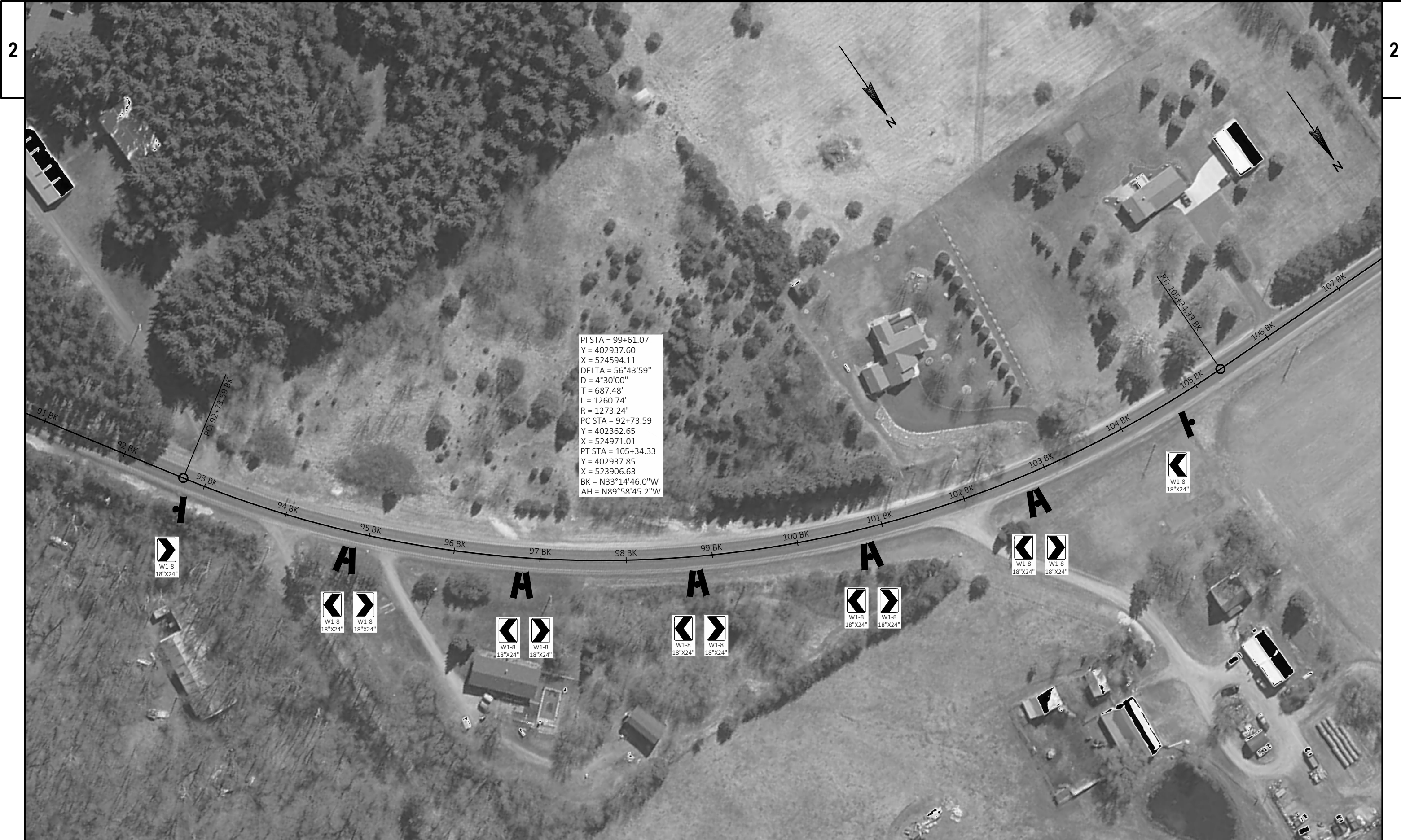




BEGIN PROJECT
STA 38+00.00
Y = 399731.57
X = 529030.88

PI STA = 44+19.86
Y = 400261.33
X = 528709.04
DELTA = 58°07'19"
D = 6°00'00"
T = 530.66'
L = 968.70'
R = 954.93'
PC STA = 38+89.20
Y = 399807.80
X = 528984.56
PT STA = 48+57.90
Y = 400266.88
X = 528178.42
BK = N31°16'43.8"W
AH = N89°24'02.8"W





2

2

PI STA = 99+61.07
Y = 402937.60
X = 524594.11
DELTA = 56°43'59"
D = 4°30'00"
T = 687.48'
L = 1260.74'
R = 1273.24'
PC STA = 92+73.59
Y = 402362.65
X = 524971.01
PT STA = 105+34.33
Y = 402937.85
X = 523906.63
BK = N33°14'46.0"W
AH = N89°58'45.2"W

PROJECT NO: 8938-01-72

HWY: CTH I

COUNTY: ST CROIX

PLAN DETAIL

SHEET

E

FILE NAME : V:\TRANS-EC\410739 ST CROIX - CTH I\C3D\SHEETPLAN\050201_PN.DWG
LAYOUT NAME - 050203-pn

PLOT DATE : 10/17/2017 12:02 PM

PLOT BY : RESHESKE, CARRIE

PLOT NAME :

PLOT SCALE : 1 IN=40 FT

WISDOT/CADDs SHEET 44

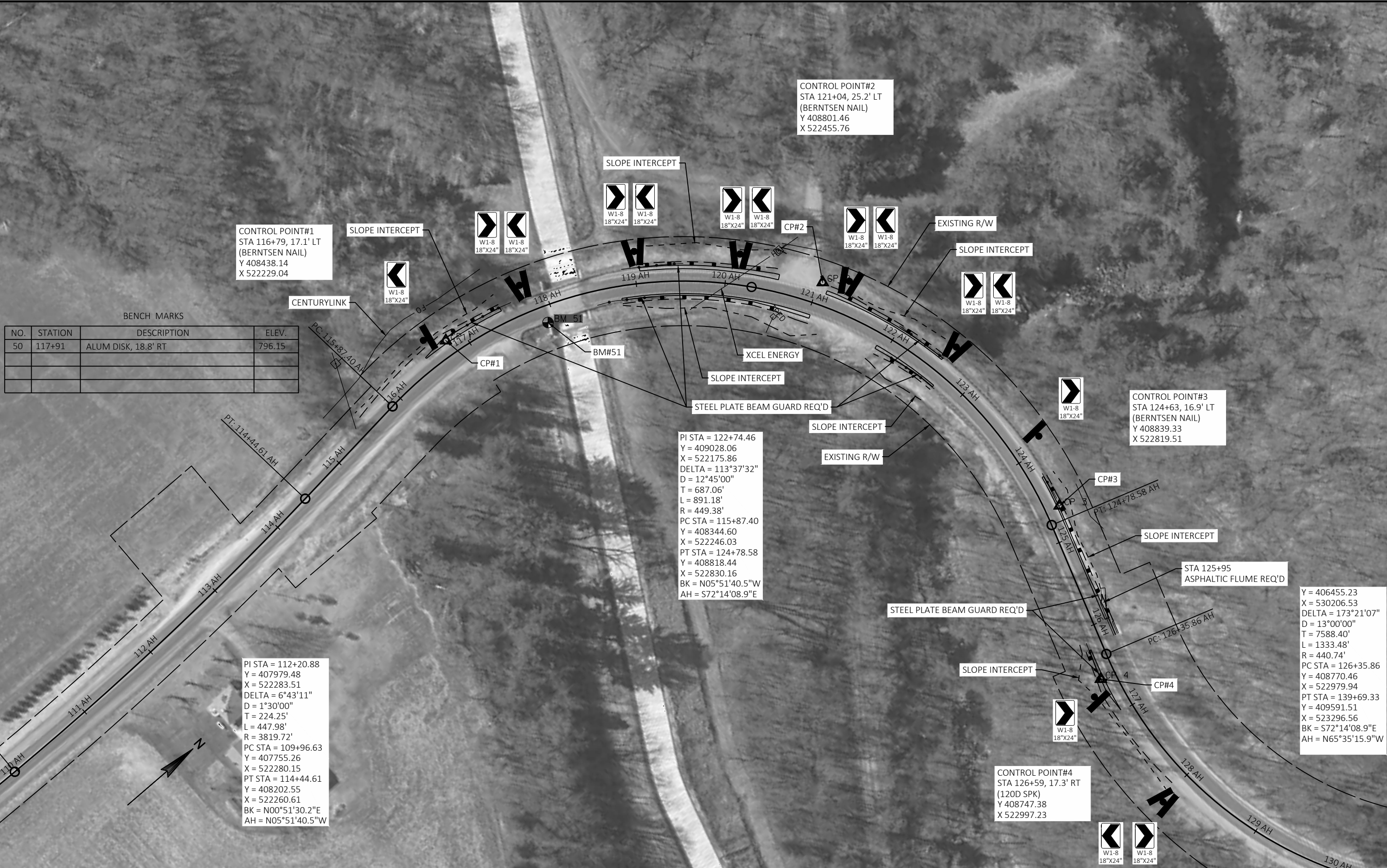


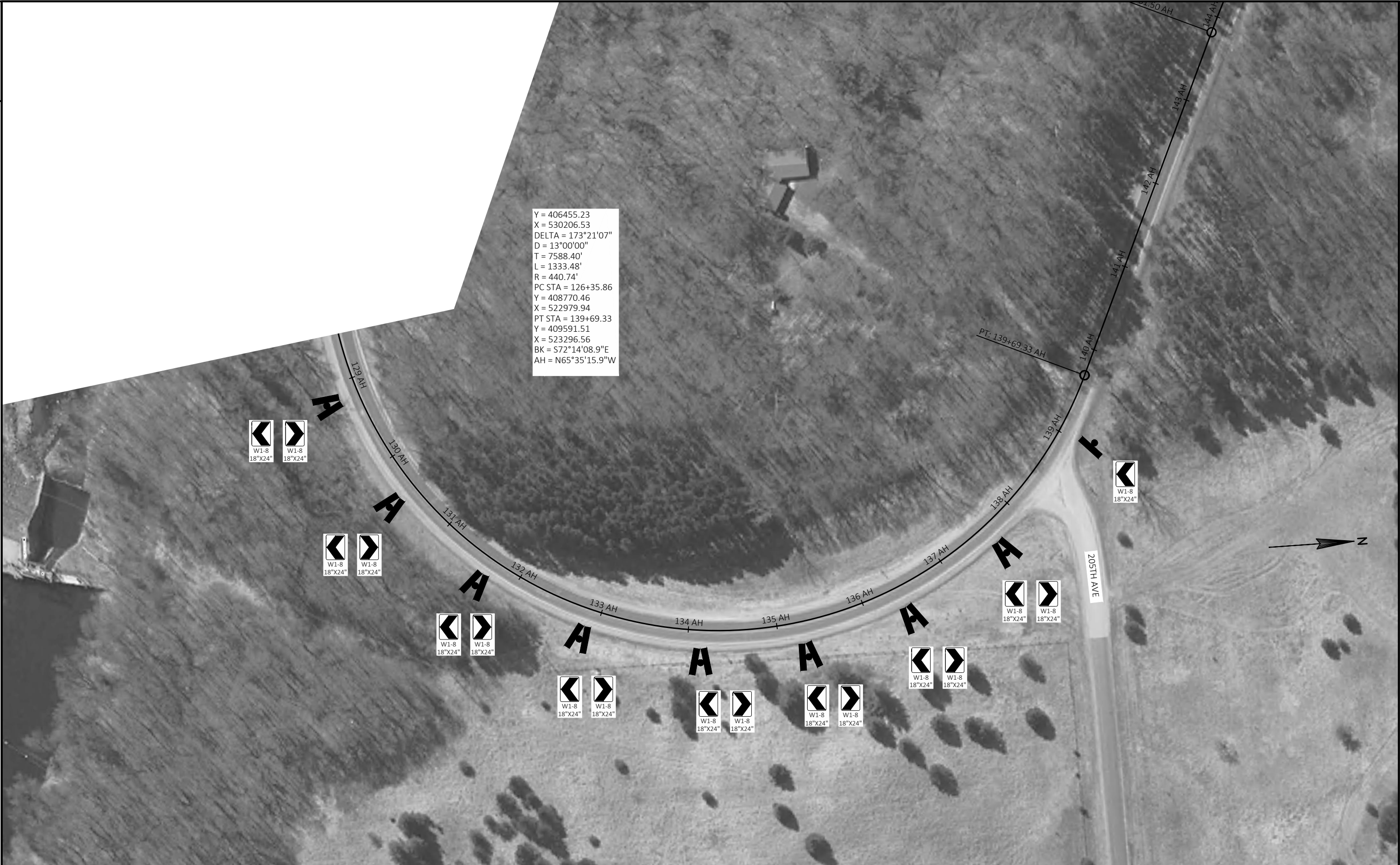
CONTROL POINT#10
STA 125+05, 24.8' LT
(120D SPK)
Y 403546.77
X 522248.49

CONTROL POINT#11
STA 118+99, 29.8' LT
(120D SPK)
Y 403016.43
X 522545.61

PI STA = 121+65.87
Y = 402938.44
X = 522275.09
DELTA = 89°45'45"
D = 9°00'00"
T = 633.99'
L = 997.36'
R = 636.62'
PC STA = 115+31.89
Y = 402938.21
X = 522909.07
PT STA = 125+29.25
Y = 403572.42
X = 522272.69
BK = N89°58'45.2"W
AH = N00°12'59.9"W

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
50	121+27	RR SPK IN PPOL, 58.4' LT	877.11





PROJECT NO: 8938-01-72	HWY: CTH I	COUNTY: ST CROIX	PLAN DETAIL	SHEET	E
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Estimate Of Quantities

8938-01-72

Line	Item	Item Description	Unit	Total	Qty
0002	204.0165	Removing Guardrail	LF	416.000	416.000
0004	205.0100	Excavation Common	CY	332.000	332.000
0006	208.0100	Borrow	CY	1,236.000	1,236.000
0008	213.0100	Finishing Roadway (project) 01. 8938-01-72	EACH	1.000	1.000
0010	305.0110	Base Aggregate Dense 3/4-Inch	TON	284.000	284.000
0012	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	866.000	866.000
0014	465.0105	Asphaltic Surface	TON	170.000	170.000
0016	465.0315	Asphaltic Flumes	SY	18.000	18.000
0018	614.0305	Steel Plate Beam Guard Class A	LF	1,300.000	1,300.000
0020	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	9.000	9.000
0022	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8938-01-72	EACH	1.000	1.000
0024	619.1000	Mobilization	EACH	1.000	1.000
0026	624.0100	Water	MGAL	12.000	12.000
0028	625.0500	Salvaged Topsoil	SY	2,917.000	2,917.000
0030	627.0200	Mulching	SY	2,917.000	2,917.000
0032	628.1504	Silt Fence	LF	2,352.000	2,352.000
0034	628.1520	Silt Fence Maintenance	LF	2,352.000	2,352.000
0036	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0038	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0040	628.2002	Erosion Mat Class I Type A	SY	1,828.000	1,828.000
0042	628.7504	Temporary Ditch Checks	LF	40.000	40.000
0044	629.0210	Fertilizer Type B	CWT	1.900	1.900
0046	630.0120	Seeding Mixture No. 20	LB	79.000	79.000
0048	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	72.000	72.000
0050	634.0620	Posts Wood 4x6-Inch X 20-FT	EACH	1.000	1.000
0052	637.2230	Signs Type II Reflective F	SF	224.500	224.500
0054	642.5001	Field Office Type B	EACH	1.000	1.000
0056	643.0300	Traffic Control Drums	DAY	750.000	750.000
0058	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000
0060	643.0705	Traffic Control Warning Lights Type A	DAY	750.000	750.000
0062	643.0900	Traffic Control Signs	DAY	60.000	60.000
0064	643.5000	Traffic Control	EACH	1.000	1.000
0066	646.1020	Marking Line Epoxy 4-Inch	LF	1,879.000	1,879.000
0068	650.4500	Construction Staking Subgrade	LF	2,407.000	2,407.000
0070	650.5000	Construction Staking Base	LF	2,407.000	2,407.000
0072	650.9910	Construction Staking Supplemental Control (project) 01. 8938-01-72	LS	1.000	1.000
0074	650.9920	Construction Staking Slope Stakes	LF	2,407.000	2,407.000
0076	690.0150	Sawing Asphalt	LF	1,927.000	1,927.000

Estimate Of Quantities

8938-01-72

Line	Item	Item Description	Unit	Total	Qty
0078	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0080	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000

EARTHWORK SUMMARY

DIVISION	STATION TO STATION	LOCATION	205.0100	SALVAGED/	(6)	UNEXPANDED	(2) (4)	(5)	(1)	(3)	MOBILIZATION		WATER	
			EXCAVATION COMMON CY	UNUSABLE PAVEMENT MATERIAL CY	AVAILABLE MATERIAL CY	FILL CY	EXPANDED FILL CY	MASS ORDINATE +/- CY	WASTE CY	208.0100 BORROW CY	PROJECT	619.1000 EACH	LOCATION	624.0100 MGAL
	118+97 - 126+98	CTH I	332	43	289	1173	1525	1236	--	1236	8938-01-72	1	BASE COMPACTION	12
PROJECT ID TOTALS			332							1236	PROJECT ID TOTAL	1	PROJECT ID TOTAL	12

(1) WASTE = EXPANDED FILL - AVAILABLE MATERIAL (FOR INFORMATION ONLY - NOT A BID ITEM)
(2) EXPANSION FACTOR = 1.30
(3) BORROW = EXPANDED FILL - AVAILABLE
(4) EXPANDED FILL = UNEXPANDED FILL * EXPANSION FACTOR

(5) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. MINUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. PLUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
(6) AVAILABLE MATERIAL = COMMON EXCAVATION - SALVAGED/UNUSABLE MATERIAL

BASE AGGREGATE DENSE

STATION TO STATION	LOCATION	305.0110	305.0120
		3/4-INCH TON	1 1/4-INCH TON
118+02 - 120+01	LT	35	90
121+44 - 130+50	LT	108	387
115+53 - 117+48	LT	31	77
118+81 - 121+03	RT	23	66
119+05 - 120+57	LT	17	61
121+11 - 122+57	LT	17	48
121+88 - 122+68	RT	9	26
124+27 - 125+50	LT	18	53
126+25 - 127+95	RT	26	58
PROJECT ID TOTALS		284	866

ASPHALTIC ITEMS

STATION TO STATION	LOCATION	465.0105	465.0315
		ASPHALTIC SURFACE TON	ASPHALTIC FLUME SY
118+97 - 120+01	LT	13	--
121+44 - 129+55	LT	95	--
116+51 - 117+48	LT	10	--
118+81 - 121+03	RT	11	--
119+05 - 120+57	LT	15	--
121+11 - 122+57	LT	8	--
121+88 - 122+68	RT	5	--
124+27 - 125+99	LT	9	--
126+25 - 126+98	RT	4	--
125+95	LT	--	18
PROJECT ID TOTALS		170	18

SALVAGED TOPSOIL, MULCHING, FERTILIZER, & SEEDING

STATION TO STATION	LOCATION	625.0500	627.0200	629.0210	630.0120
		SALVAGED TOPSOIL SY	MULCHING SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB
118+02 - 120+01	LT	361	361	0.2	10
121+44 - 130+50	LT	1269	1269	0.8	34
115+53 - 117+48	LT	131	131	0.1	4
118+81 - 121+03	RT	276	276	0.2	7
119+05 - 120+57	LT	351	351	0.2	9
121+11 - 122+57	LT	150	150	0.1	4
121+88 - 122+68	RT	142	142	0.1	4
124+27 - 125+50	LT	97	97	0.1	3
126+25 - 127+95	RT	140	140	0.1	4
PROJECT ID TOTALS		2917	2917	1.9	79

BEAM GUARD

STATION TO STATION	LOCATION	204.0165	614.0305	614.0370
		REMOVING GUARDRAIL LF	STEEL PLATE BEAM GUARD CLASS A LF	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL EA
119+20 - 120+00	LT	33	37.5	1
121+43 - 129+30	LT	33	750	1
116+75 - 117+48	LT	67	25	1
118+81 - 120+88	RT	50	150	1
119+05 - 120+51	LT	50	100	1
121+24 - 122+57	LT	60	87.5	1
121+91 - 122+68	RT	70	25	1
124+27 - 126+00	LT	29	125	1
126+25 - 126+74	RT	24	0	1
PROJECT ID TOTALS		416	1300	9

SILT FENCE

STATION TO STATION	LOCATION	628.1504	628.1520
		LF	MAINTENANCE LF
118+02 - 120+01	LT	244	244
121+44 - 130+50	LT	944	944
115+53 - 117+48	LT	206	206
118+81 - 121+03	RT	224	224
119+05 - 120+57	LT	170	170
121+11 - 122+57	LT	159	159
121+88 - 122+68	RT	80	80
124+27 - 125+50	LT	128	128
126+25 - 127+95	RT	197	197
PROJECT ID TOTALS		2352	2352

MOBILIZATIONS EROSION CONTROL
AND EMERGENCY EROSION CONTROL

PROJECT	628.1905	628.1910
	EACH	EMERGENCY EACH
8938-01-72	4	2
PROJECT ID TOTALS	4	2

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

SIGNING										
APPROX STATION	LOCATION	SIGN CODE	SIGN SIZE			634.0618	634.0620	637.2230	REFLECTIVE F SF	COMMENT
			WIDTH (INCHES)	X	HEIGHT	POSTS WOOD	POSTS WOOD	SIGNS		
						4X6-INCH	4x6-INCH	TYPE II		
						18-FT EACH	20-FT EACH			
39+75	RT	W1-8	18	X	24	1	---	3.00		
41+35	RT	W1-8	18	X	24	1	---	3.00		
41+35	RT	W1-8	18	X	24	1	---	3.00		
43+10	RT	W1-8	18	X	24	1	---	3.00		
43+10	RT	W1-8	18	X	24	1	---	3.00		
44+50	RT	W1-8	18	X	24	1	---	3.00		
44+50	RT	W1-8	18	X	24	1	---	3.00		
46+20	RT	W1-8	18	X	24	1	---	3.00		
46+20	RT	W1-8	18	X	24	1	---	3.00		
47+75	RT	W1-8	18	X	24	1	---	3.00		
65+80	LT	W1-8	18	X	24	1	---	3.00		
67+40	LT	W1-8	18	X	24	1	---	3.00		
67+40	LT	W1-8	18	X	24	1	---	3.00		
69+00	LT	W1-8	18	X	24	1	---	3.00		
69+00	LT	W1-8	18	X	24	1	---	3.00		
70+50	LT	W1-8	18	X	24	1	---	3.00		
70+50	LT	W1-8	18	X	24	1	---	3.00		
72+05	LT	W1-8	18	X	24	1	---	3.00		
72+05	LT	W1-8	18	X	24	1	---	3.00		
73+75	LT	W1-8	18	X	24	1	---	3.00		
73+75	LT	W1-8	18	X	24	1	---	3.00		
75+30	LT	W1-8	18	X	24	1	---	3.00		
75+30	LT	W1-8	18	X	24	1	---	3.00		
77+00	LT	W1-8	18	X	24	1	---	3.00		
80+80	RT	W1-8	18	X	24	1	---	3.00		
82+75	RT	W1-8	18	X	24	1	---	3.00		
82+75	RT	W1-8	18	X	24	1	---	3.00		
84+75	RT	W1-8	18	X	24	1	---	3.00		
86+90	LT	W1-4R	30	X	30	---	1	6.25		
		W13-1	18	X	18	---	---	2.25	"50 MPH"	SHARE POST W/W1-4R
92+75	RT	W1-8	18	X	24	1	---	3.00		
94+75	RT	W1-8	18	X	24	1	---	3.00		
94+75	RT	W1-8	18	X	24	1	---	3.00		
96+75	RT	W1-8	18	X	24	1	---	3.00		
96+75	RT	W1-8	18	X	24	1	---	3.00		
98+75	RT	W1-8	18	X	24	1	---	3.00		
98+75	RT	W1-8	18	X	24	1	---	3.00		
100+75	RT	W1-8	18	X	24	1	---	3.00		
100+75	RT	W1-8	18	X	24	1	---	3.00		
102+75	RT	W1-8	18	X	24	1	---	3.00		
102+75	RT	W1-8	18	X	24	1	---	3.00		
104+75	RT	W1-8	18	X	24	1	---	3.00		
116+60	LT	W1-8	18	X	24	1	---	3.00		
117+75	LT	W1-8	18	X	24	1	---	3.00		
117+75	LT	W1-8	18	X	24	1	---	3.00		
119+00	LT	W1-8	18	X	24	1	---	3.00		
119+00	LT	W1-8	18	X	24	1	---	3.00		
120+10	LT	W1-8	18	X	24	1	---	3.00		
120+10	LT	W1-8	18	X	24	1	---	3.00		
121+25	LT	W1-8	18	X	24	1	---	3.00		
121+25	LT	W1-8	18	X	24	1	---	3.00		
122+60	LT	W1-8	18	X	24	1	---	3.00		
122+60	LT	W1-8	18	X	24	1	---	3.00		
123+95	LT	W1-8	18	X	24	1	---	3.00		

SIGNING (CONTINUED)									
APPROX STATION	LOCATION	SIGN CODE	SIGN SIZE			634.0618	634.0620	637.2230	COMMENT
			WIDTH	X	HEIGHT	POSTS WOOD	POSTS WOOD	SIGNS	
						4X6-INCH	4x6-INCH	TYPE II	
			(INCHES)			18-FT EACH	20-FT EACH	REFLECTIVE F SF	
126+75	RT	W1-8	18	X	24	1	---	3.00	
128+00	RT	W1-8	18	X	24	1	---	3.00	
128+00	RT	W1-8	18	X	24	1	---	3.00	
129+15	RT	W1-8	18	X	24	1	---	3.00	
129+15	RT	W1-8	18	X	24	1	---	3.00	
130+30	RT	W1-8	18	X	24	1	---	3.00	
130+30	RT	W1-8	18	X	24	1	---	3.00	
131+65	RT	W1-8	18	X	24	1	---	3.00	
131+65	RT	W1-8	18	X	24	1	---	3.00	
132+90	RT	W1-8	18	X	24	1	---	3.00	
132+90	RT	W1-8	18	X	24	1	---	3.00	
134+10	RT	W1-8	18	X	24	1	---	3.00	
134+10	RT	W1-8	18	X	24	1	---	3.00	
135+25	RT	W1-8	18	X	24	1	---	3.00	
135+25	RT	W1-8	18	X	24	1	---	3.00	
136+35	RT	W1-8	18	X	24	1	---	3.00	
136+35	RT	W1-8	18	X	24	1	---	3.00	
137+70	RT	W1-8	18	X	24	1	---	3.00	
137+70	RT	W1-8	18	X	24	1	---	3.00	
139+00	RT	W1-8	18	X	24	1	---	3.00	
PROJECT TOTALS						72	1	224.5	

FIELD OFFICE TYPE B

PROJECT	642.5001
	EACH
8938-01-72	1

PROJECT ID TOTAL 1

FINISHING ROADWAY

LOCATION	213.0100
	EA
8938-01-72	1

PROJECT ID TOTAL 1

TEMPORARY DITCH CHECKS

STATION	LOCATION	628.7504
		LF
116+25	LT	10
116+50	LT	10
116+75	LT	10
117+00	LT	10

PROJECT ID TOTALS 40

EROSION MAT CLASS I TYPE A

STATION TO STATION	LOCATION	628.2002
		SY
119+50 - 120+01	LT	84
121+44 - 128+50	LT	771
117+25 - 117+48	LT	132
118+81 - 120+35	RT	148
119+05 - 120+38	LT	302
121+60 - 122+57	LT	121
121+88 - 122+43	RT	97
124+27 - 125+50	LT	89
126+25 - 127+00	RT	84

PROJECT ID TOTALS 1,828

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

TRAFFIC CONTROL						
	643.0300 TRAFFIC CONTROL DRUMS	643.0310.S TEMPORARY PORTABLE RUMBLE STRIPS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A	643.0900 TRAFFIC CONTROL SIGNS	643.5000 TRAFFIC CONTROL	
LOCATION	DAY	LS	DAY	DAY	EACH	NOTE
DETERMINED IN FIELD BY ENGINEER	--	--	--	30	--	W20-1A
"	--	--	--	30	--	G20-2A
"	750	--	750	--	--	
CTH I	--	1	--	--	1	
PROJECT TOTALS	750	1	750	60	1	

MARKING LINE EPOXY		
		646.1020 4-INCH WHITE LF
STATION TO STATION	DESCRIPTION	
118+97 - 120+01	LT	107
121+44 - 129+55	LT	823
116+51 - 117+48	LT	100
118+81 - 121+03	RT	214
119+05 - 120+57	LT	157
121+11 - 122+57	LT	150
121+88 - 122+68	RT	78
124+27 - 125+99	LT	175
126+25 - 126+98	RT	75
PROJECT ID TOTALS		1,879

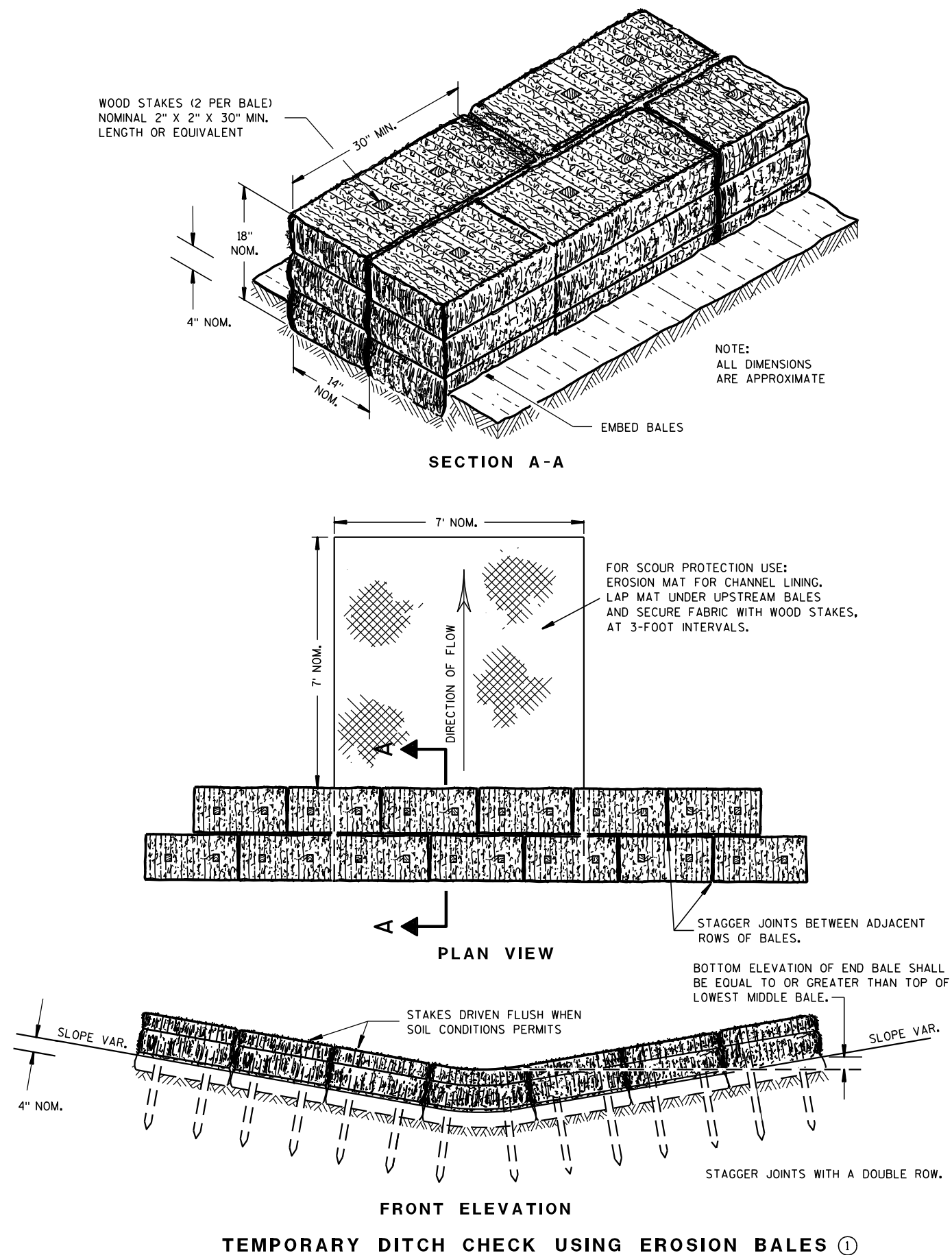
CONSTRUCTION STAKING				
	650.4500 SUBGRADE LF	650.5000 BASE LF	650.9910.01 SUPPLEMENTAL CONTROL (ID 8938-01-72) LS	650.9920 SLOPE STAKES LF
STATION TO STATION				
59+99 - 84+95	2407	2407	1	2407
PROJECT ID TOTALS	2407	2407	1	2407

SAWING		
		690.0150 ASPHALT LF
STATION TO STATION	LOCATION	
118+97 - 120+01	LT	110
121+44 - 129+55	LT	825
116+51 - 117+48	LT	105
118+81 - 121+03	RT	223
119+05 - 120+57	LT	167
121+11 - 122+57	LT	154
121+88 - 122+68	RT	87
124+27 - 125+99	LT	179
126+25 - 126+98	RT	77
PROJECT ID TOTALS		1,927

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

Standard Detail Drawing List

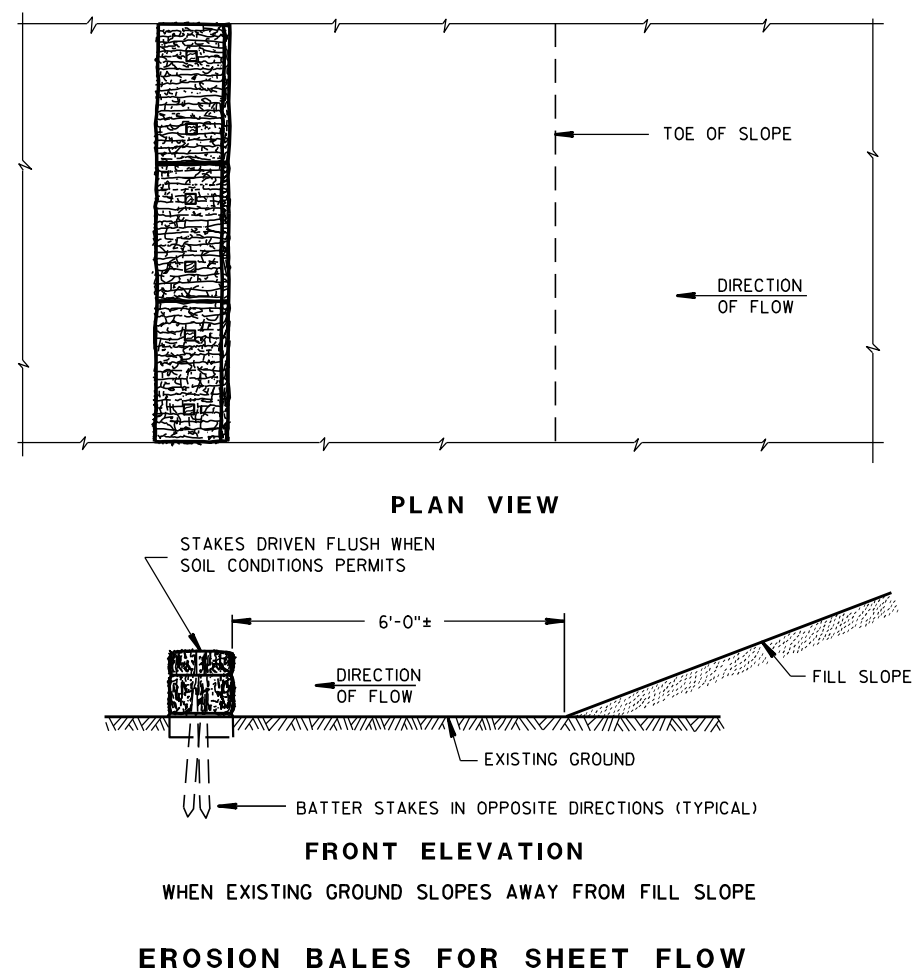
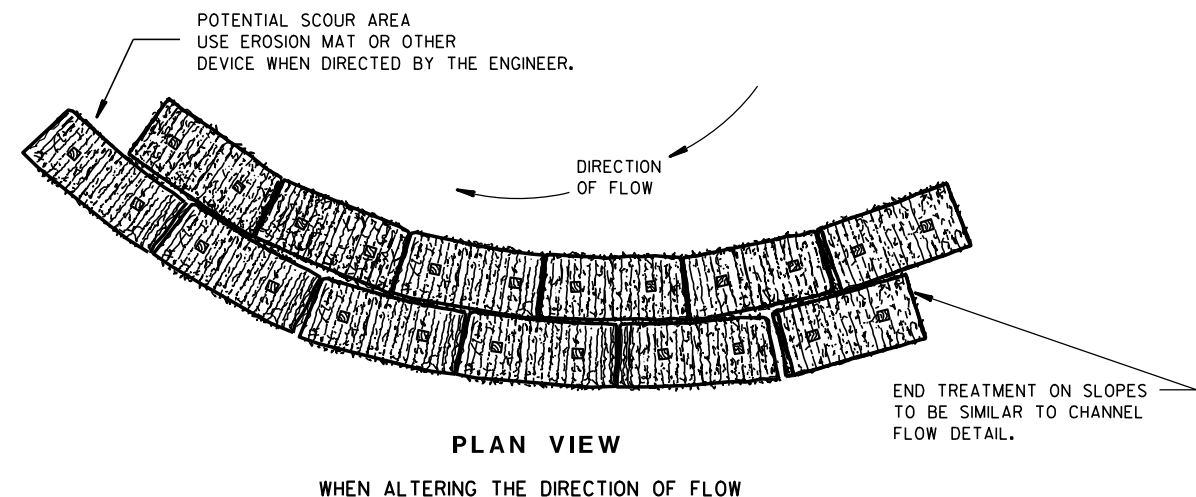
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
14B15-10A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-10B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-10C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-09A	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
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

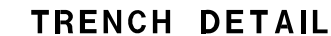
APPROVED

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

FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



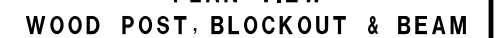
SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ <u>Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER

6

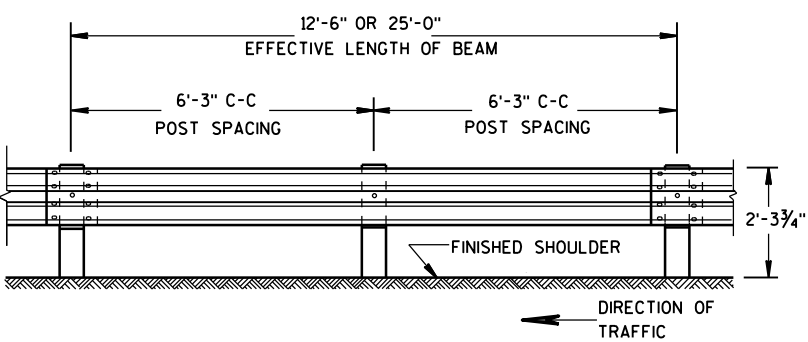
- S.D.D. 14 B 15-10a



TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

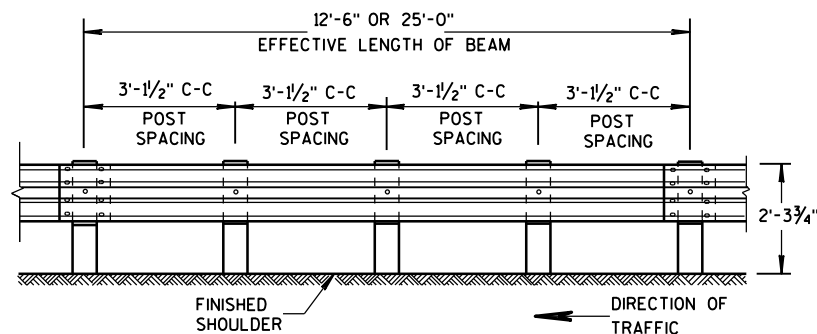


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



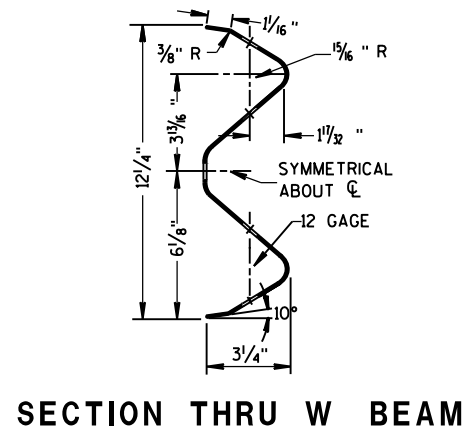
FRONT VIEW

POST SPACING STANDARD INSTALLATION

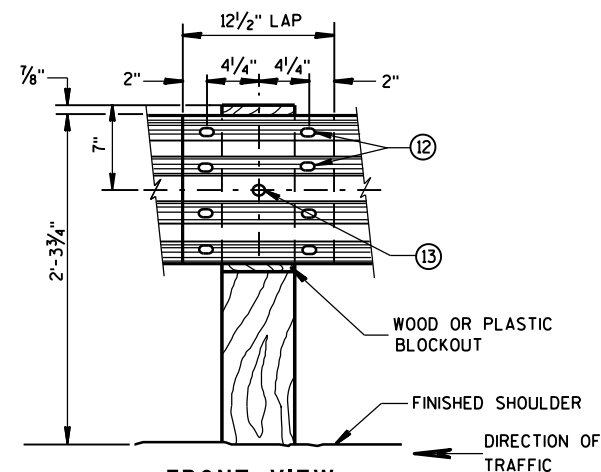


FRONT VIEW

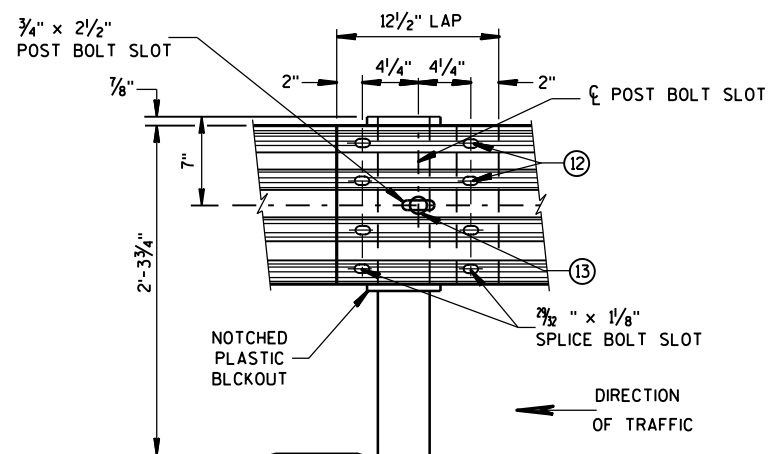
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



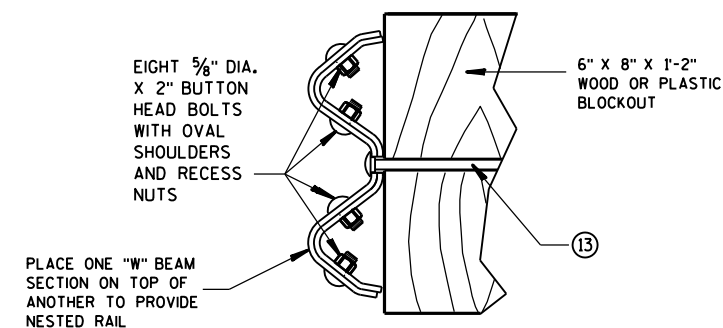
FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



FRONT VIEW
BEAM SPLICE AT STEEL POST
TYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

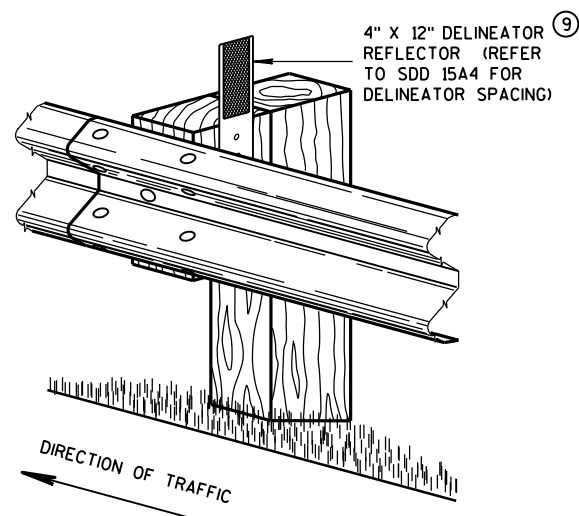
GENERAL NOTES

- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



NESTED W BEAM (NW)

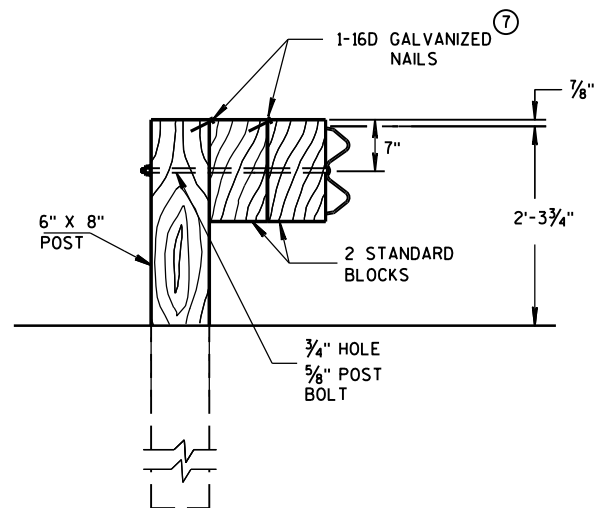
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

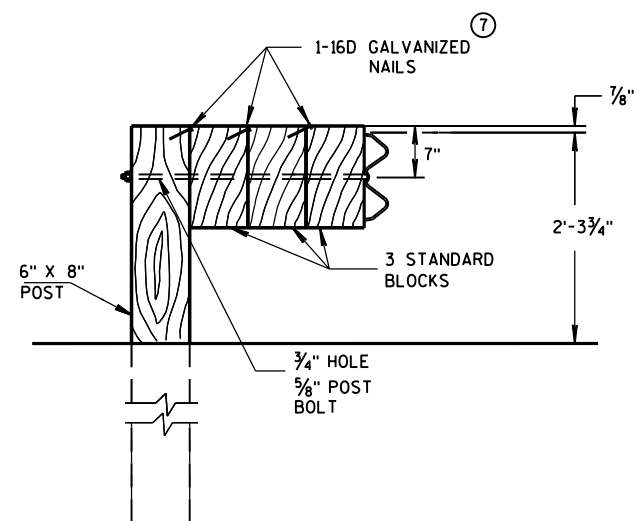
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

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

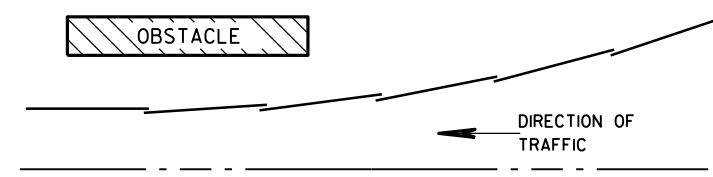


DETAIL FOR TRIPLE BLOCKS

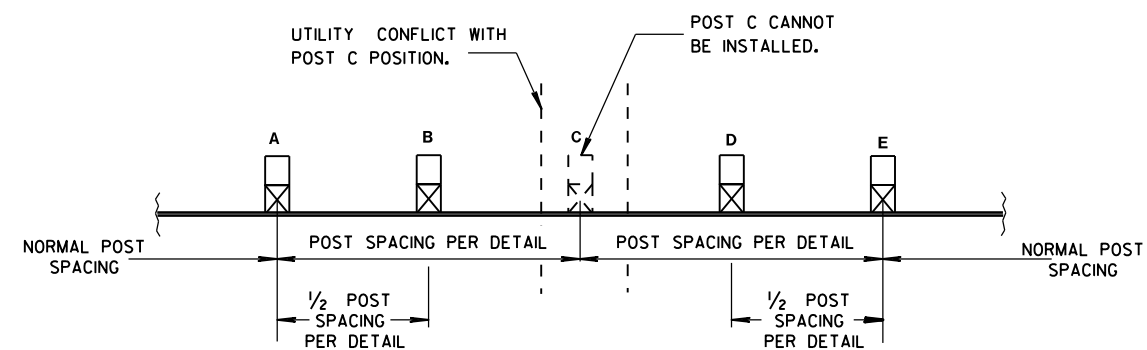
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" 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 1/2" 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'-6 1/2"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

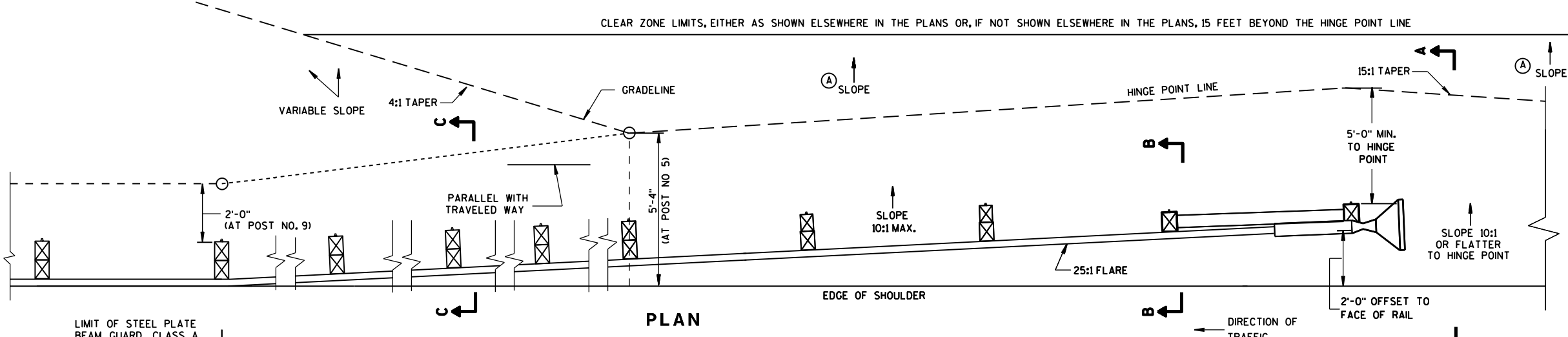
FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

- (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 3/2" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE 3/4" 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.

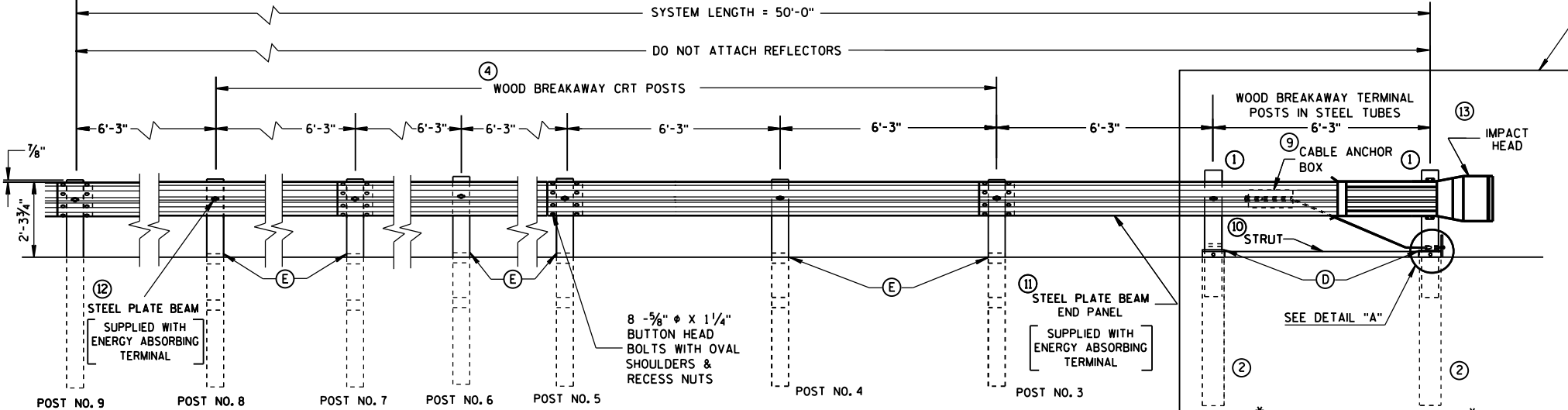
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

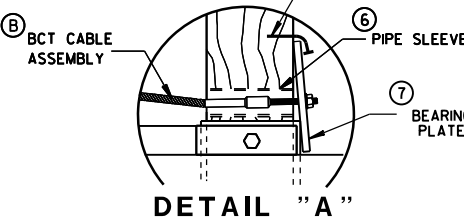
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.



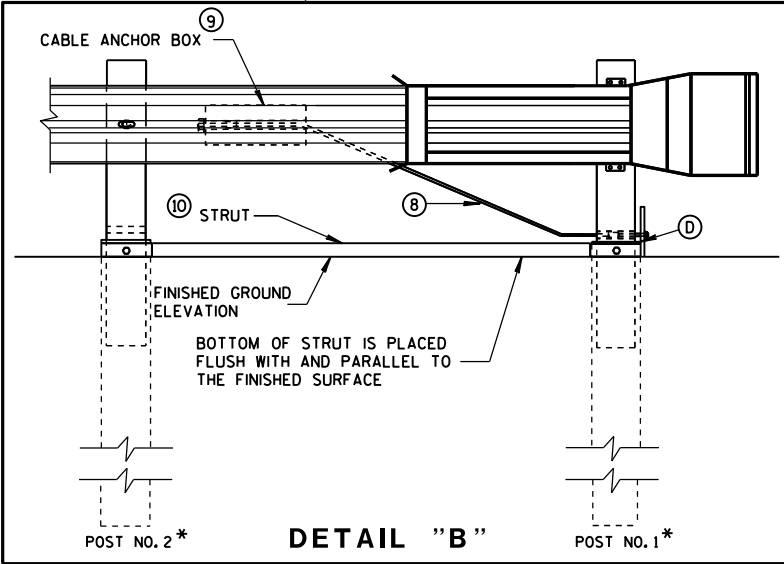
PLAN



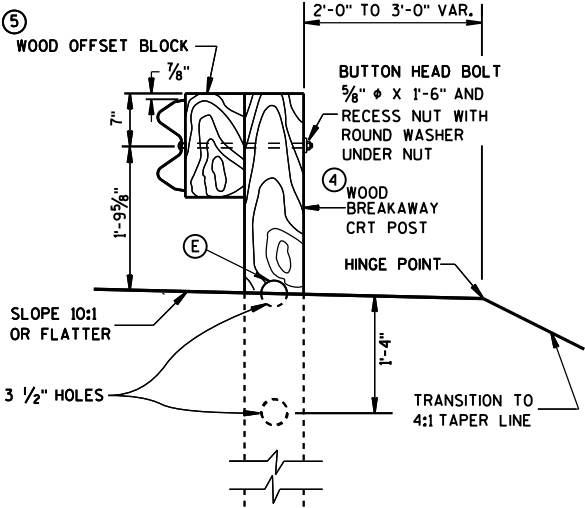
ELEVATION



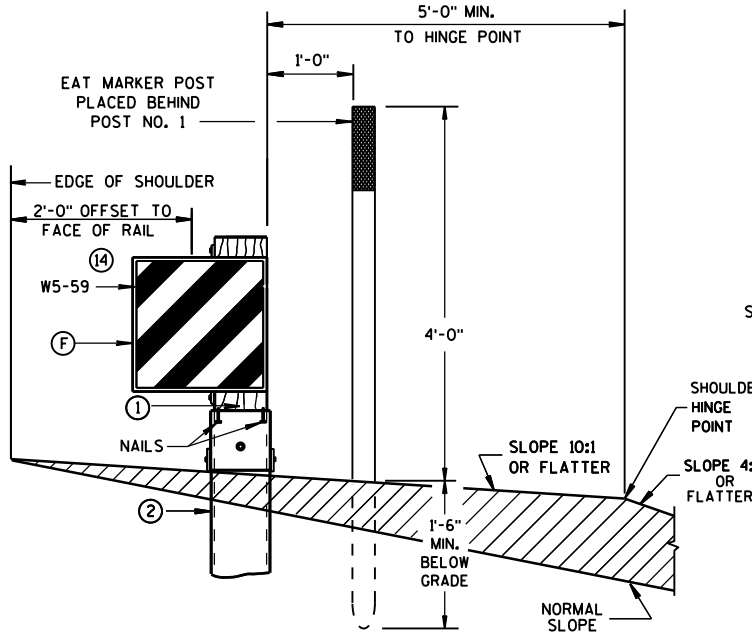
DETAIL "A"



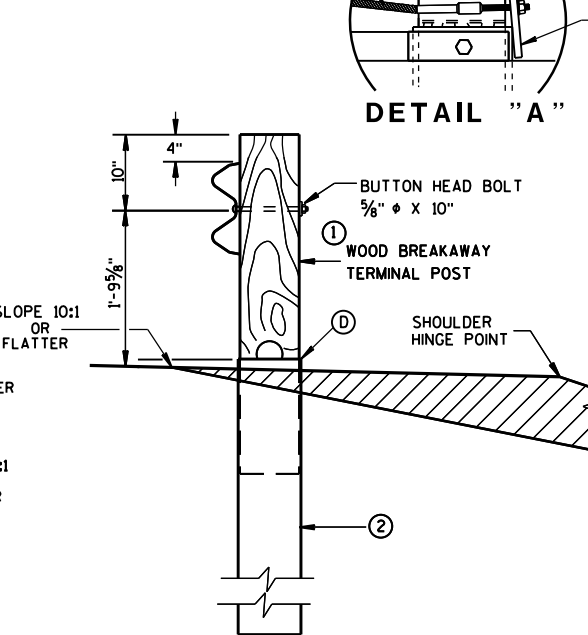
DETAIL "B"



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



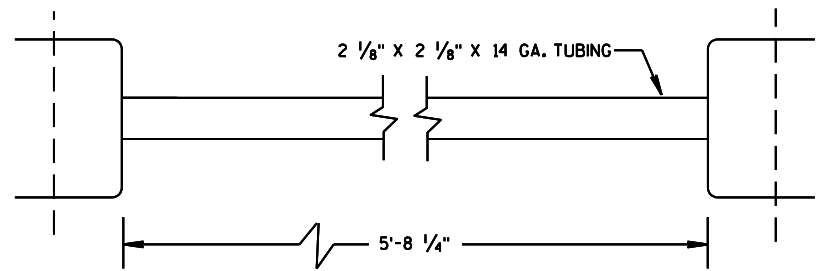
SECTION A-A
TYPICAL AT POST NO. 1*



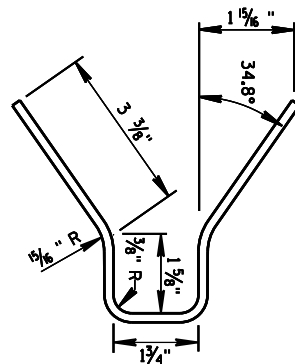
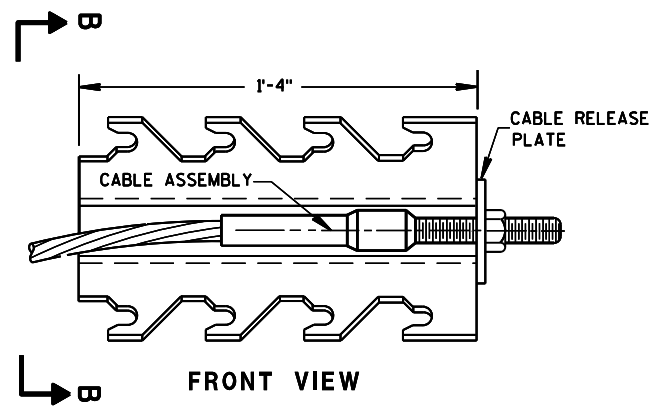
SECTION B-B
TYPICAL AT POST NO. 2*

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

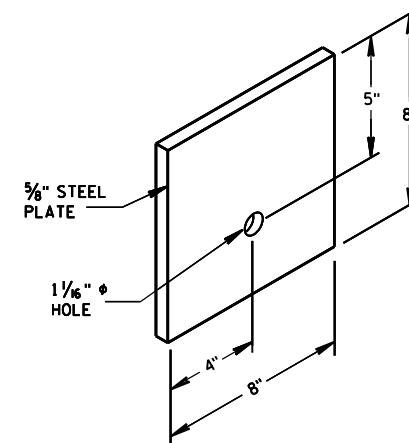
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



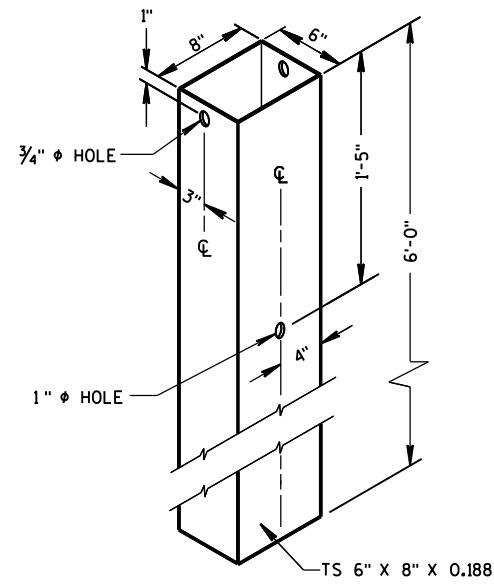
⑩ STRUT DETAIL



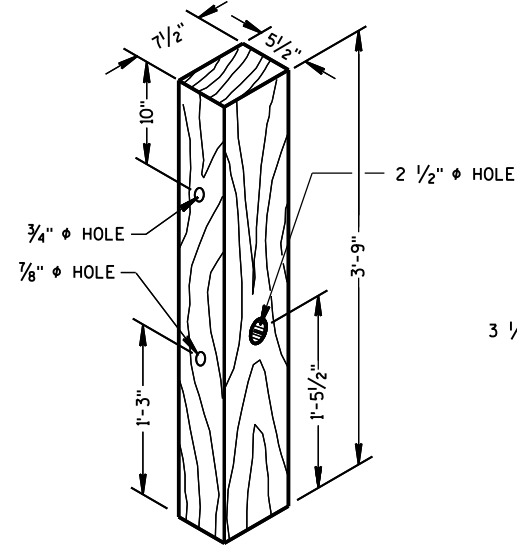
⑨ CABLE ANCHOR BOX



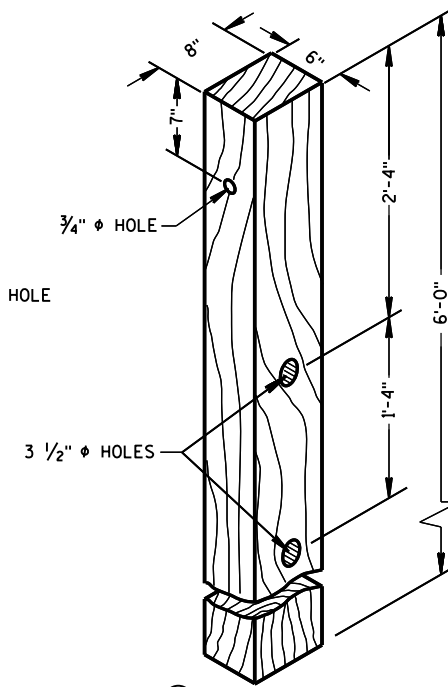
⑦ STEEL BEARING PLATE



② **72" STEEL TUBE**
(POSTS NO. 1-4)



① **TERMINAL POST**

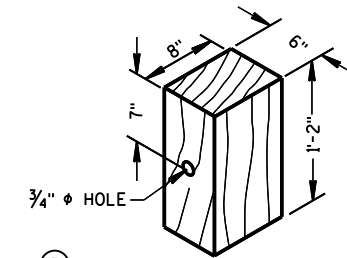


④ **CRT POST**
(POSTS NO'S 5-8)

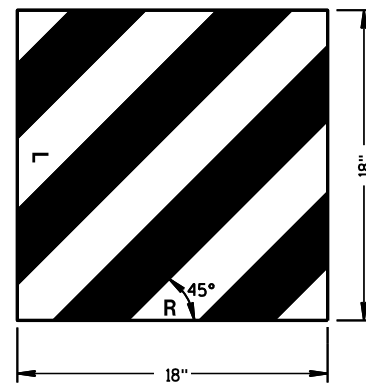
WOOD BREAKAWAY POSTS

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 1/2" 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.

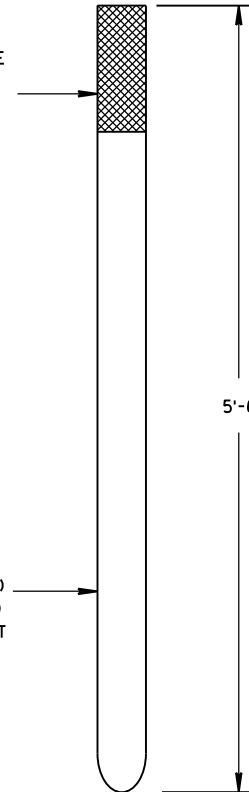


⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



⑭ **REFLECTIVE SHEETING DETAILS**

TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.



FRONT VIEW



SIDE VIEW

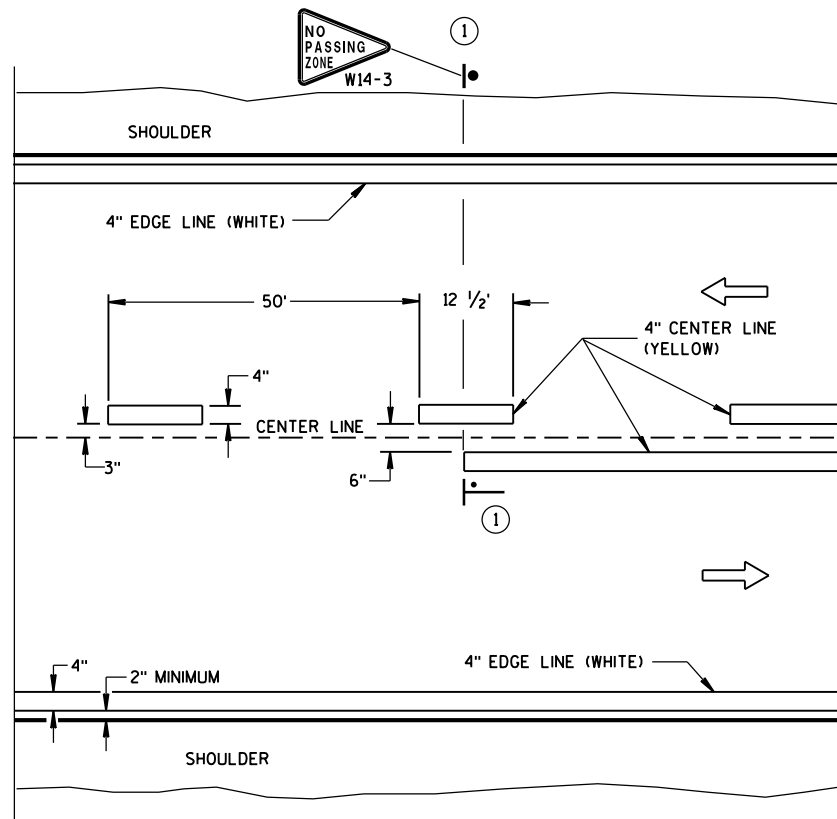
E.A.T. MARKER POST

E.A.T. MARKER
POST (YELLOW)
SEE APPROVED
PRODUCTS LIST

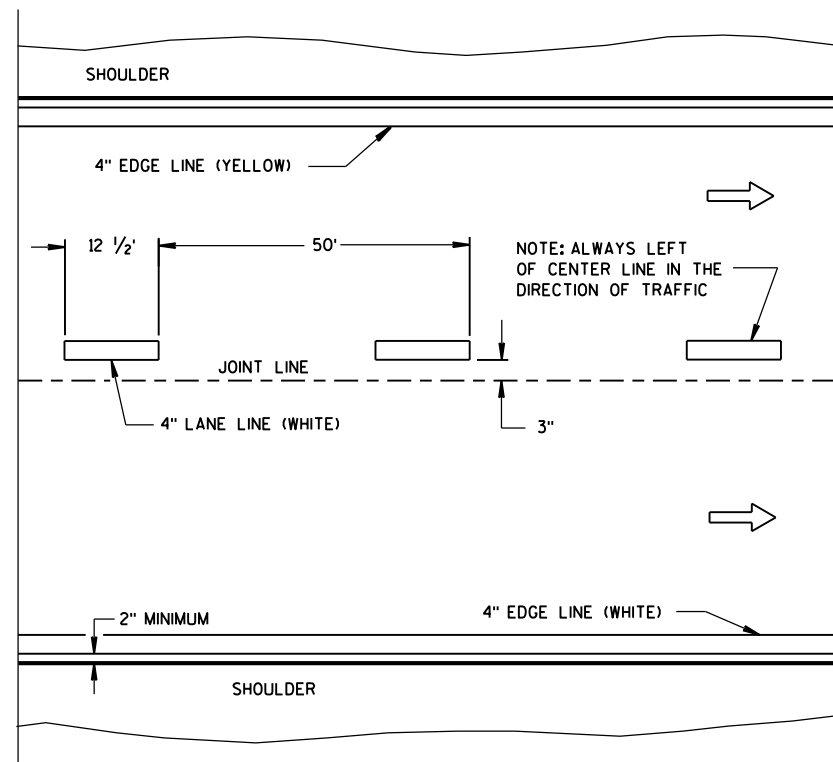
**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

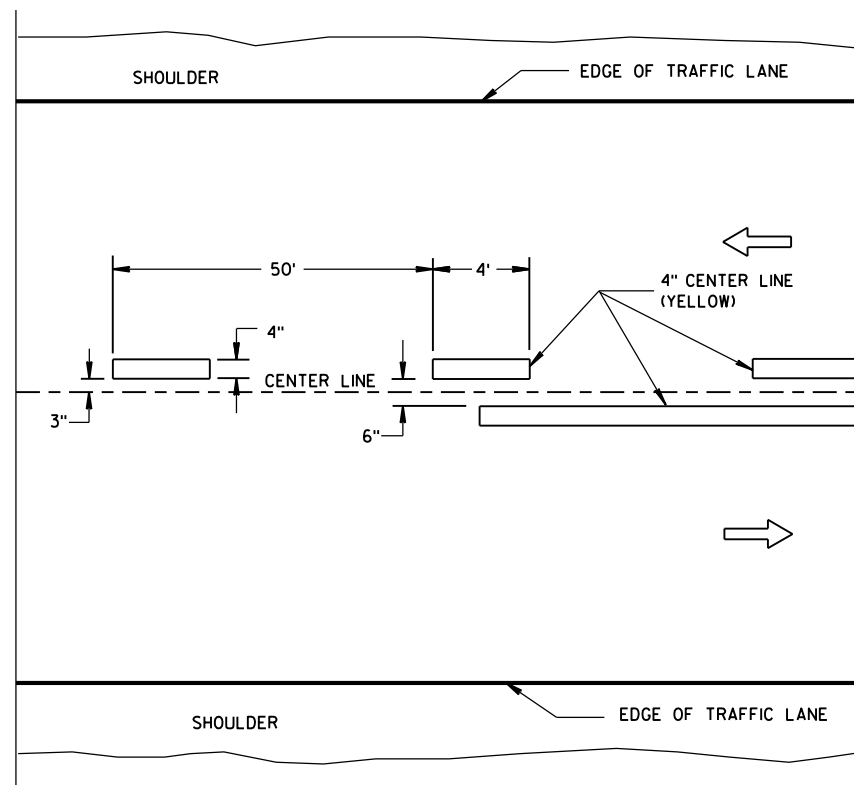


TWO WAY TRAFFIC

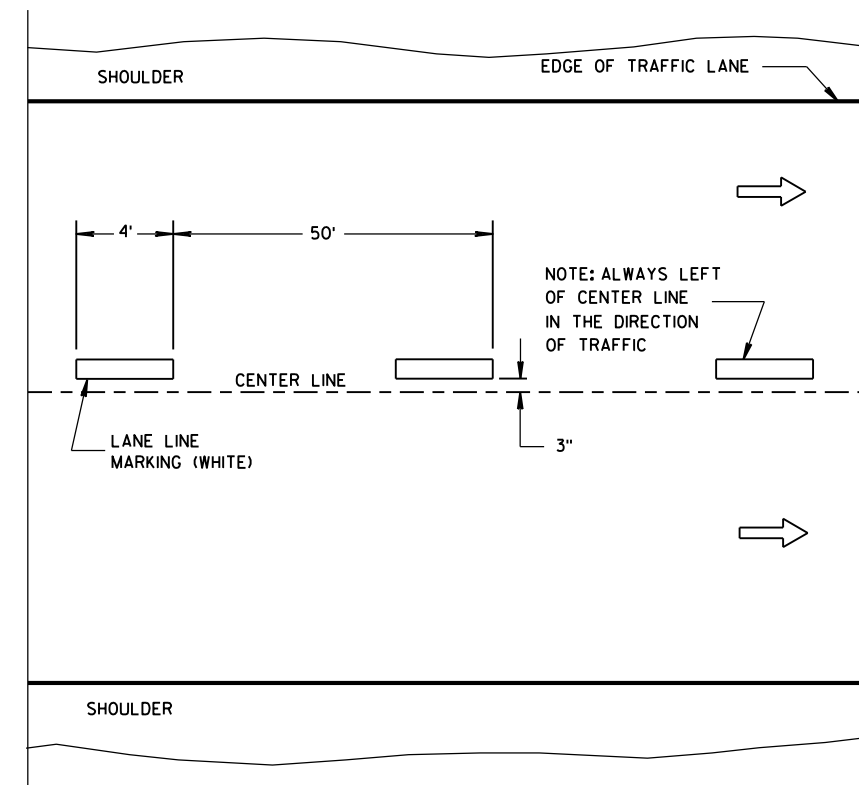


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

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

NOTE

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL

LEGEND

 "T" MARKING

● POST MOUNTED SIGN

6

6 |

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

S.D.D. : Cl. o- pol

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

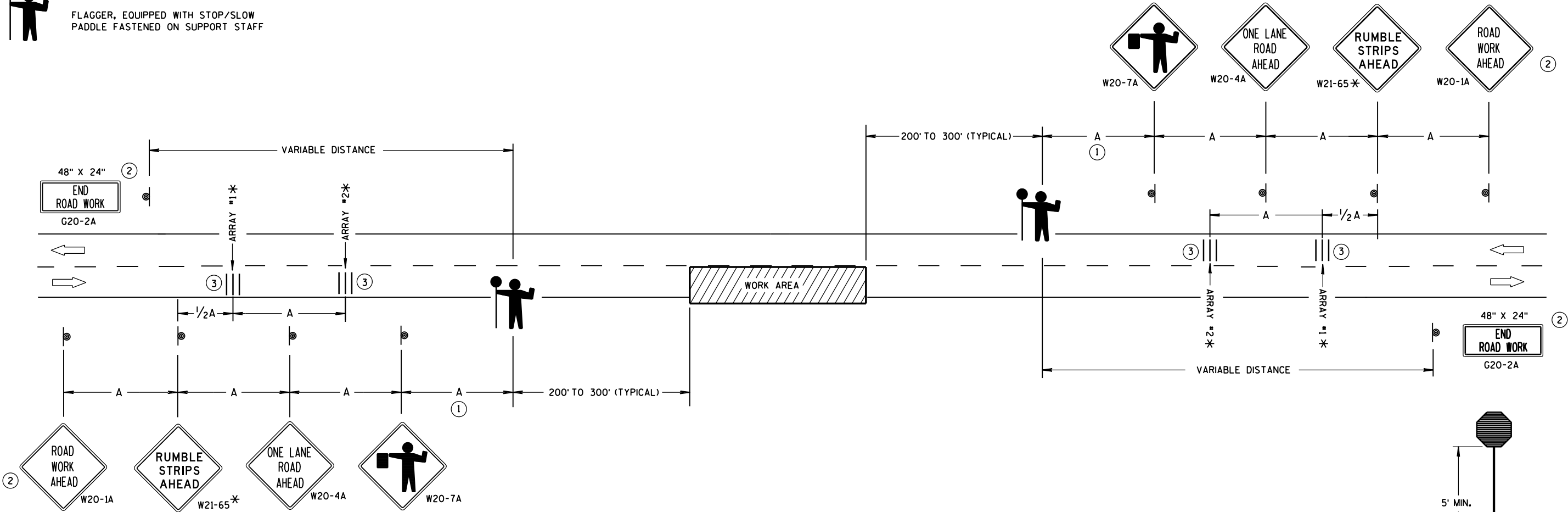
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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

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.

"W0" 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.

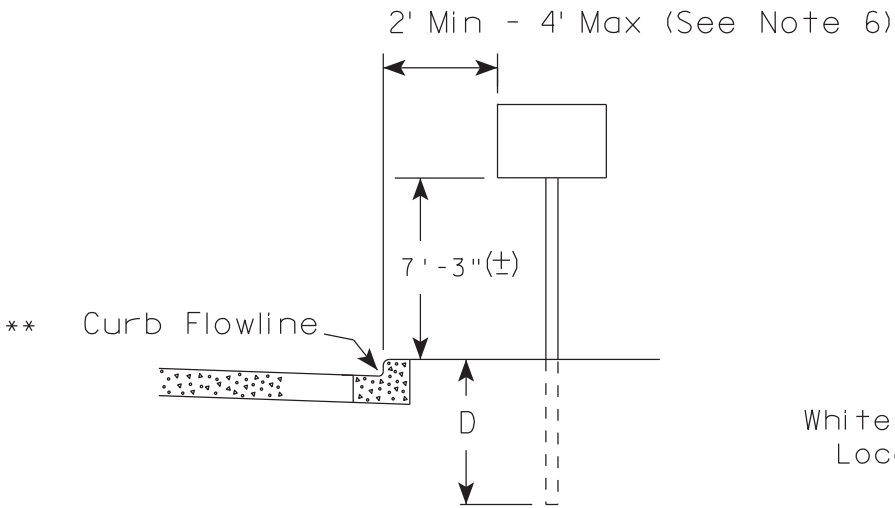
- * UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.
- ① FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING 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

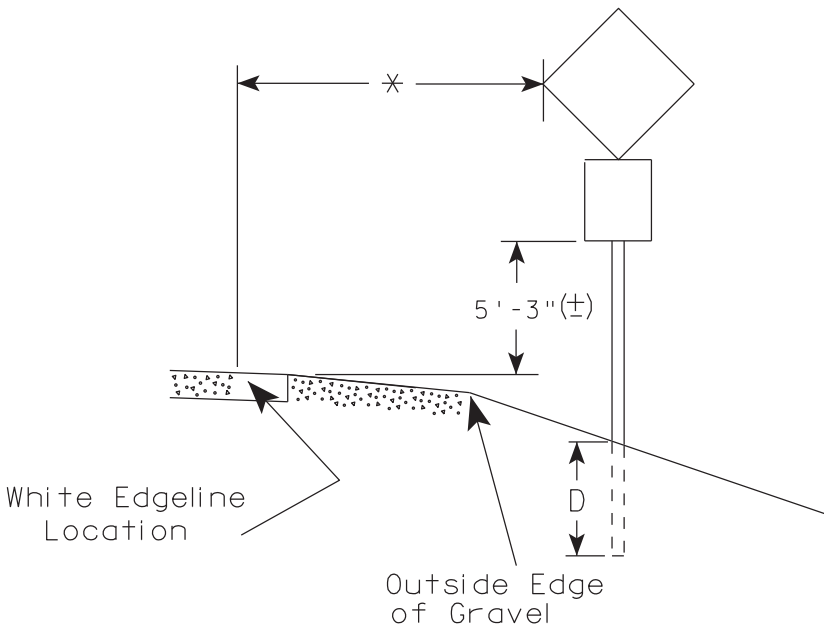
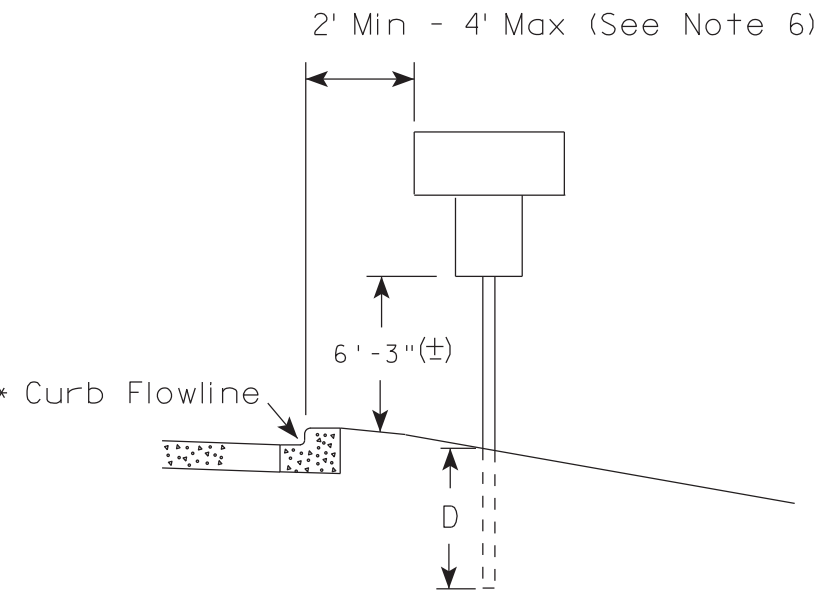
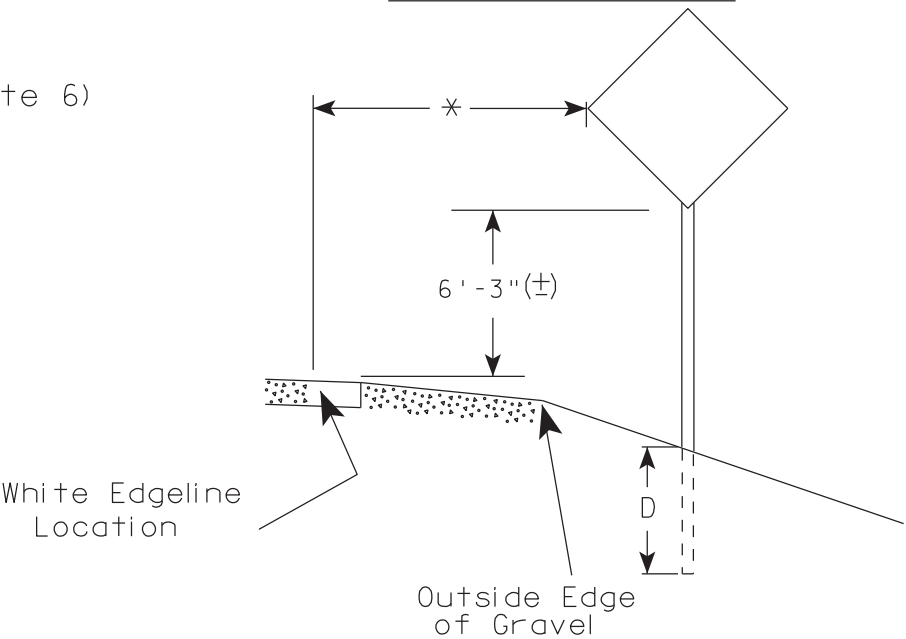
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heldtke
DATE WORK ZONE ENGINEER
FHWA

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

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

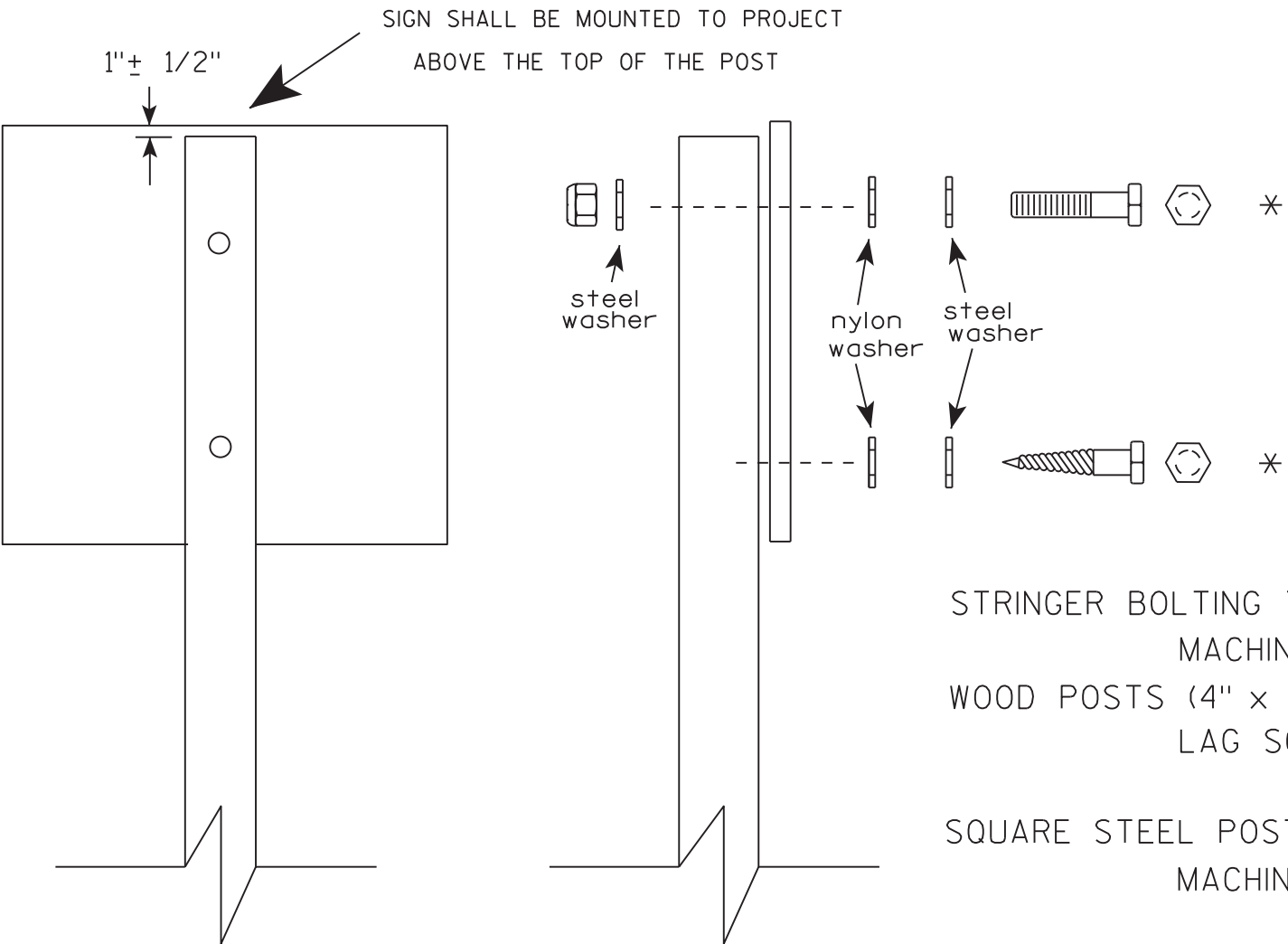
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20



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

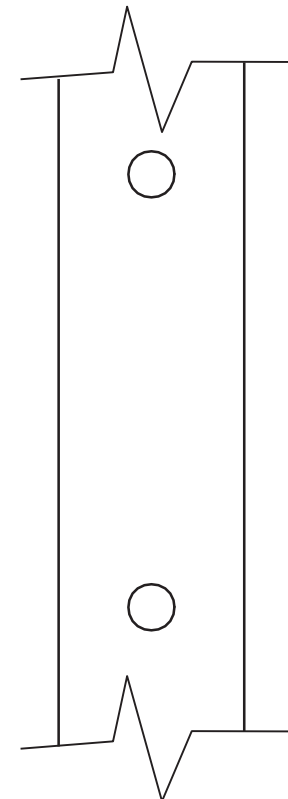
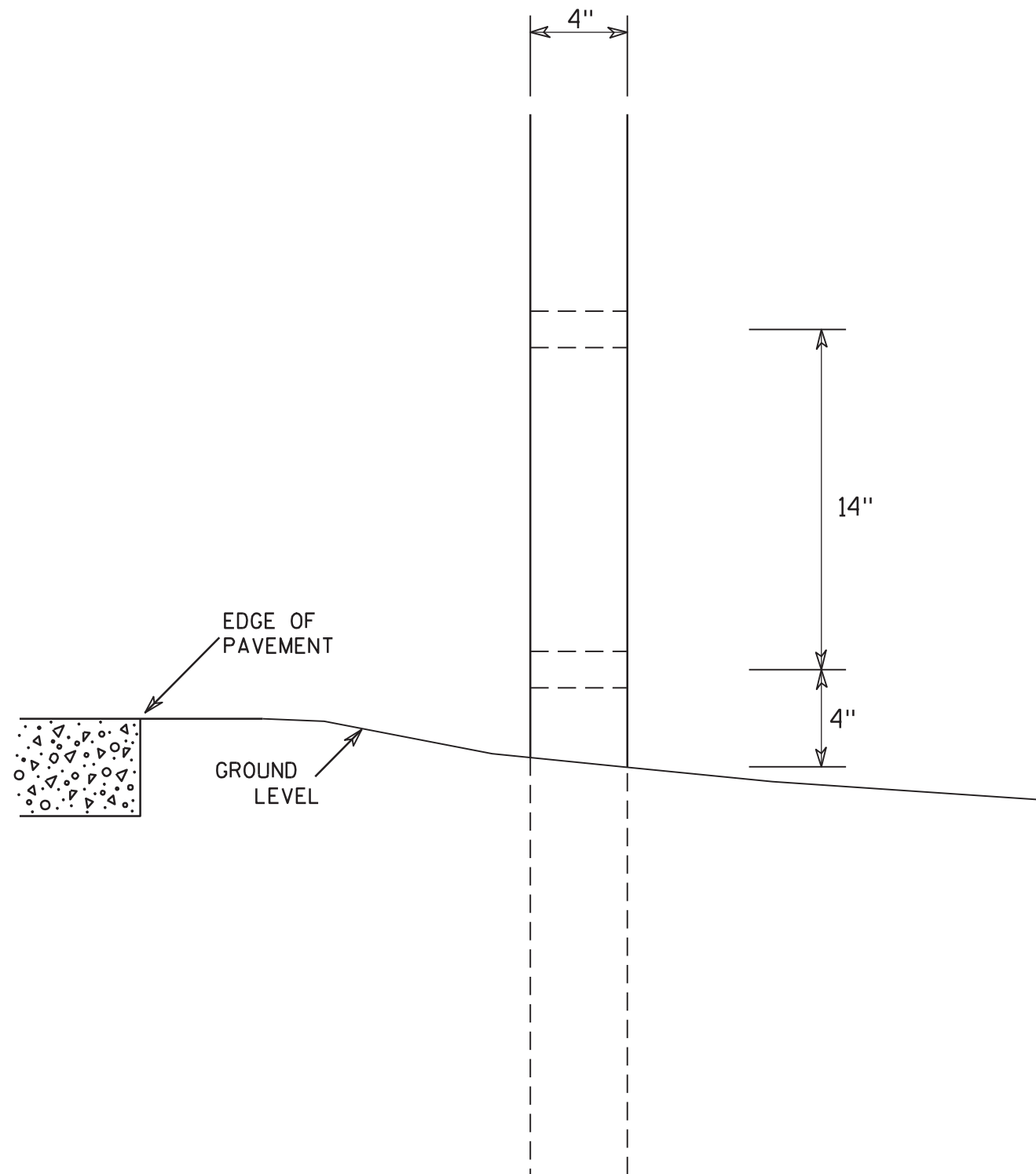
- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

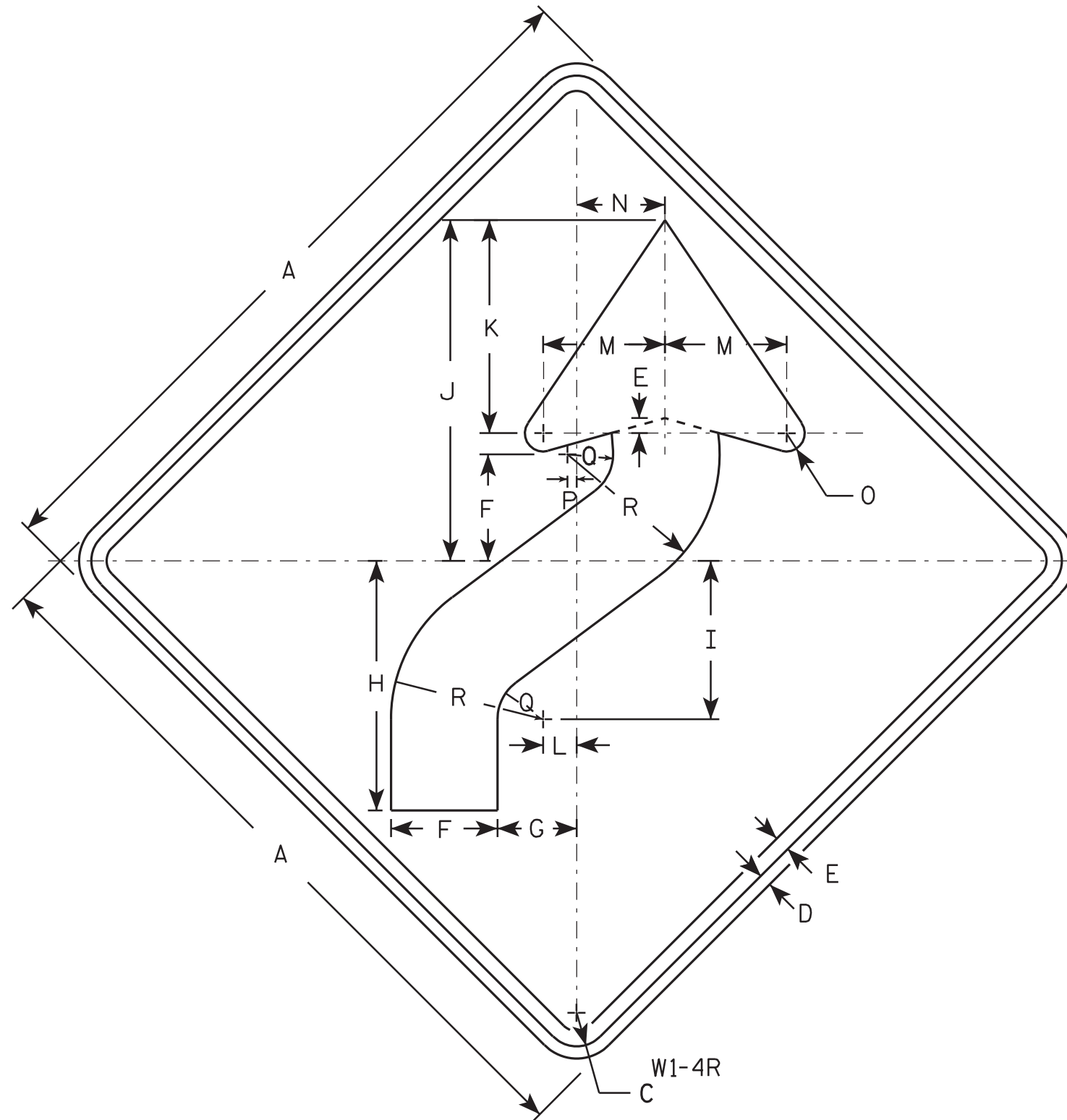
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-4L is the same as W1-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	3 1/2	2 5/8	8 1/4	5 1/4	11 1/4	7	1 1/8	4	3	5/8	1/4	1 1/2	5									4.0
2S	30		1 3/8	1/2	5/8	4 3/8	3 1/4	10 1/4	6 1/2	14	8 3/4	1 3/8	5	3 5/8	3/4	3/8	1 7/8	6 1/4									6.25
2M	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
3	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
4	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN

W1 - 4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/17/12 PLATE NO. W1-4.11

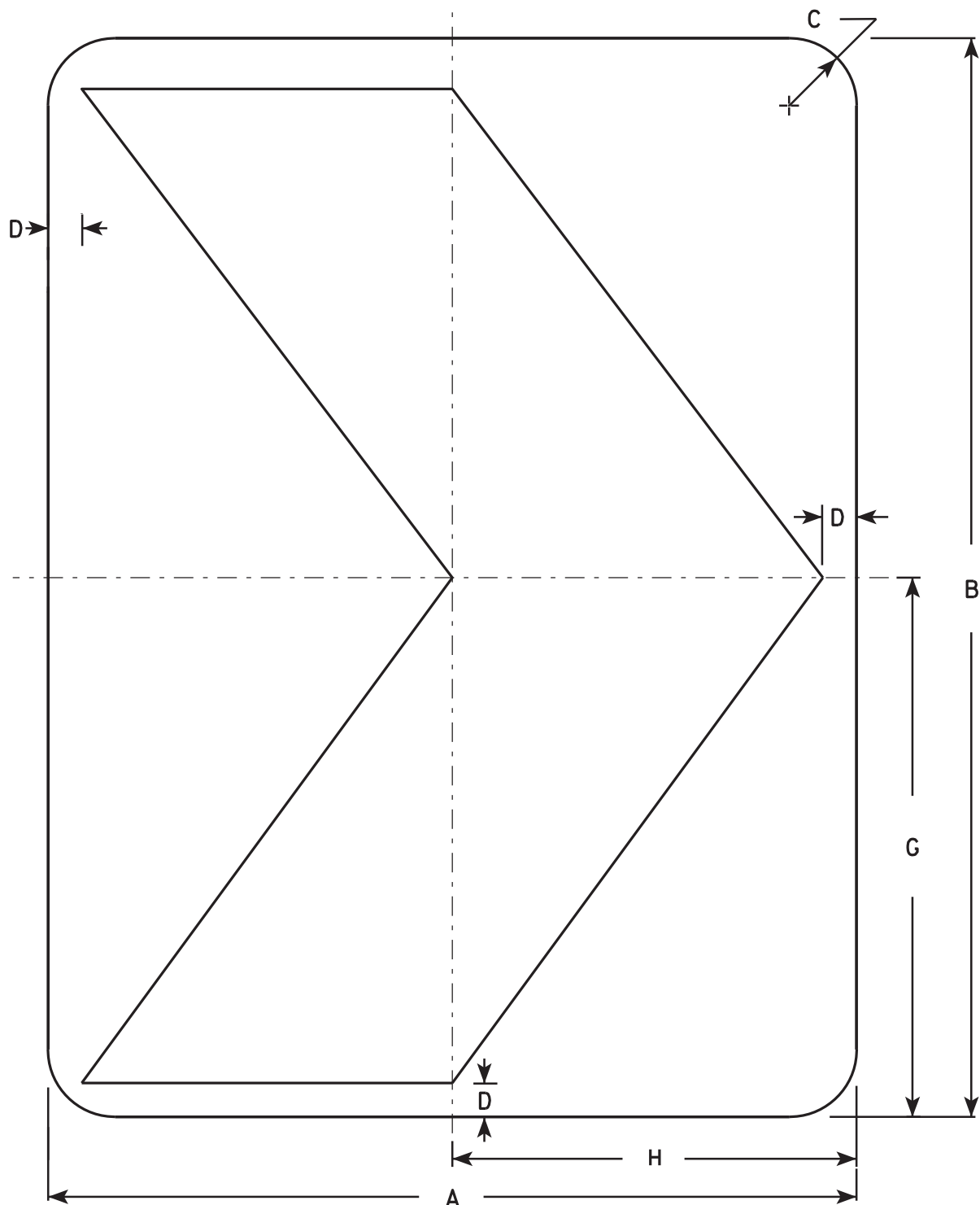
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/2	1/2			9	6																			1.5
2S	18	24	1 1/2	3/4			12	9																			3.0
2M	18	24	1 1/2	3/4			12	9																			3.0
3	24	30	1 1/2	1			15	12																			5.0
4	30	36	1 7/8	1 1/4			18	15																			7.5
5	36	48	2 1/4	1 1/2			24	18																			12.0

STANDARD SIGN

W1-8

WISCONSIN DEPT OF TRANSPORTATION

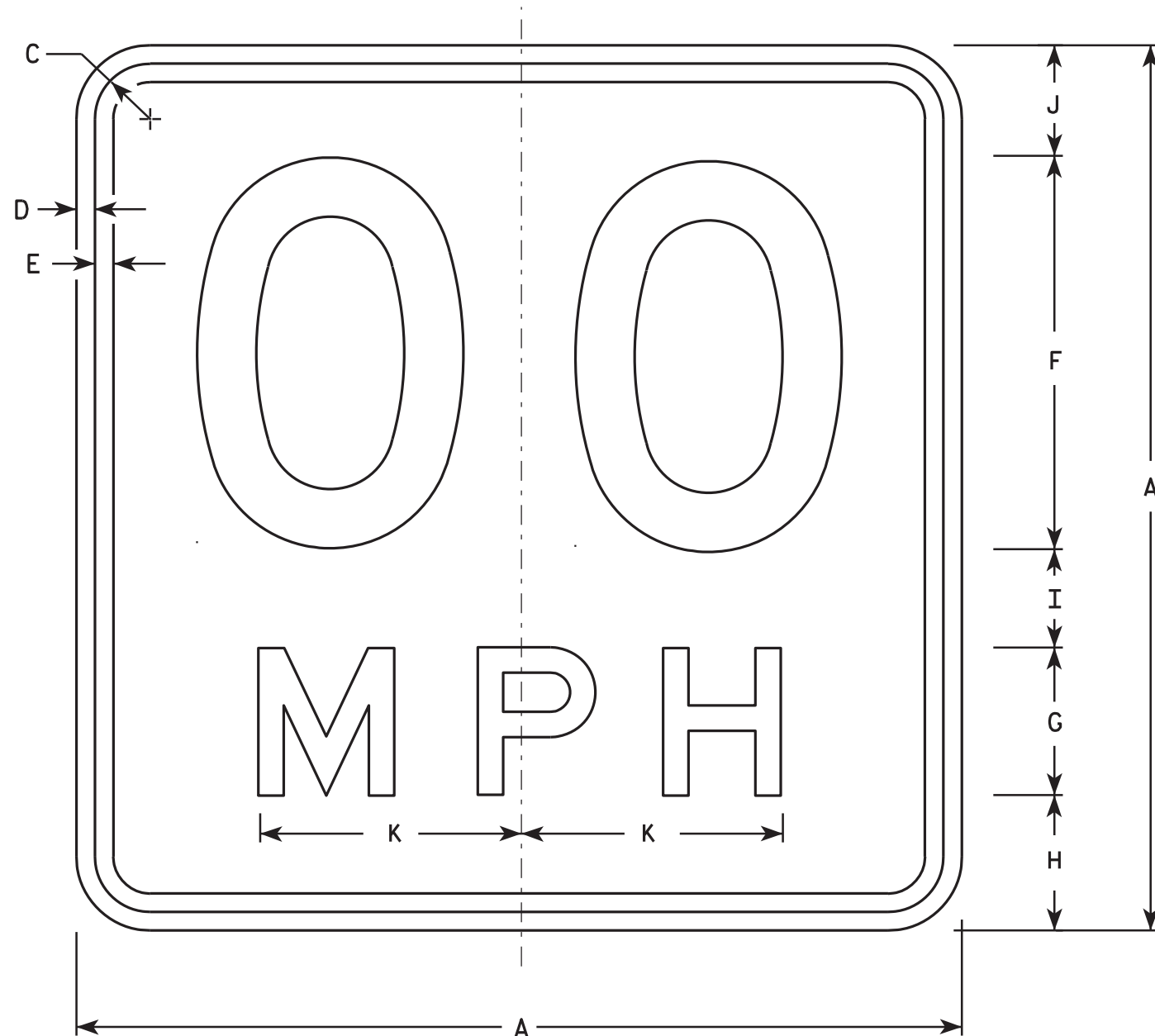
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-8.6

PROJECT NO:

SHEET NO:

E



NOTES

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

W13-1

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area Sq. Ft.
* * * * * *	1	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
	2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
	2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
	3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8															4.00
	4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8															9.00
	5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8															9.00

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

EARTHWORK DATA - CTH I SOUTH

STATION	AREA (SF)		INCR. VOL (CY)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	CUT 1.00	EXP. FILL 1.30	

117+75.000	4.29	0.02	0.00	0.00	0.00	0.00	0.00
118+00.000	3.84	0.14	3.78	0.08	3.78	0.10	3.68
118+50.000	5.59	0.85	8.78	0.94	12.56	1.33	11.23
119+00.000	2.98	36.45	7.96	35.20	20.53	47.09	-26.56
119+25.000	2.99	65.86	2.76	47.37	23.29	108.67	-85.38
119+50.000	2.75	10.88	2.66	35.53	25.95	154.86	-128.91
119+75.000	3.44	2.25	2.86	6.08	28.81	162.76	-133.95
121+50.000	2.21	1.43	18.40	12.20	47.22	178.62	-131.40
122+00.000	3.39	2.87	5.21	4.04	52.42	183.87	-131.45
122+50.000	2.87	6.46	5.84	9.00	58.26	195.57	-137.31
123+00.000	3.56	7.74	5.98	13.34	64.24	212.91	-148.67
123+50.000	3.67	6.95	6.72	13.82	70.96	230.88	-159.92
124+00.000	4.28	1.38	7.36	7.72	78.32	240.92	-162.60
124+50.000	4.86	1.58	8.51	2.79	86.82	244.54	-157.72
125+00.000	3.92	2.19	8.17	3.55	94.99	249.16	-154.17
125+50.000	3.58	2.51	6.97	4.39	101.96	254.87	-152.91
126+00.000	3.28	1.92	6.36	4.10	108.32	260.20	-151.88
126+50.000	2.49	6.11	5.35	7.43	113.67	269.85	-156.18
127+00.000	2.11	11.78	4.26	16.57	117.93	291.40	-173.47
127+50.000	2.17	14.04	3.96	23.92	121.89	322.49	-200.60
127+72.000	2.05	18.62	1.72	13.31	123.61	339.79	-216.18
128+00.000	1.73	42.46	1.96	31.67	125.57	380.97	-255.40
128+50.000	1.36	30.67	2.86	67.72	128.42	469.00	-340.58
128+80.000	3.44	26.26	2.67	31.63	131.09	510.12	-379.03
129+05.000	1.96	47.43	2.50	34.11	133.59	554.46	-420.87
129+30.000	1.73	81.51	1.71	59.69	135.30	632.06	-496.76
129+50.000	1.63	69.86	1.24	56.06	136.54	704.94	-568.40
130+00.000	1.87	43.02	3.24	104.51	139.78	840.80	-701.02
130+50.000	1.87	3.34	3.46	42.93	143.24	896.61	-753.37

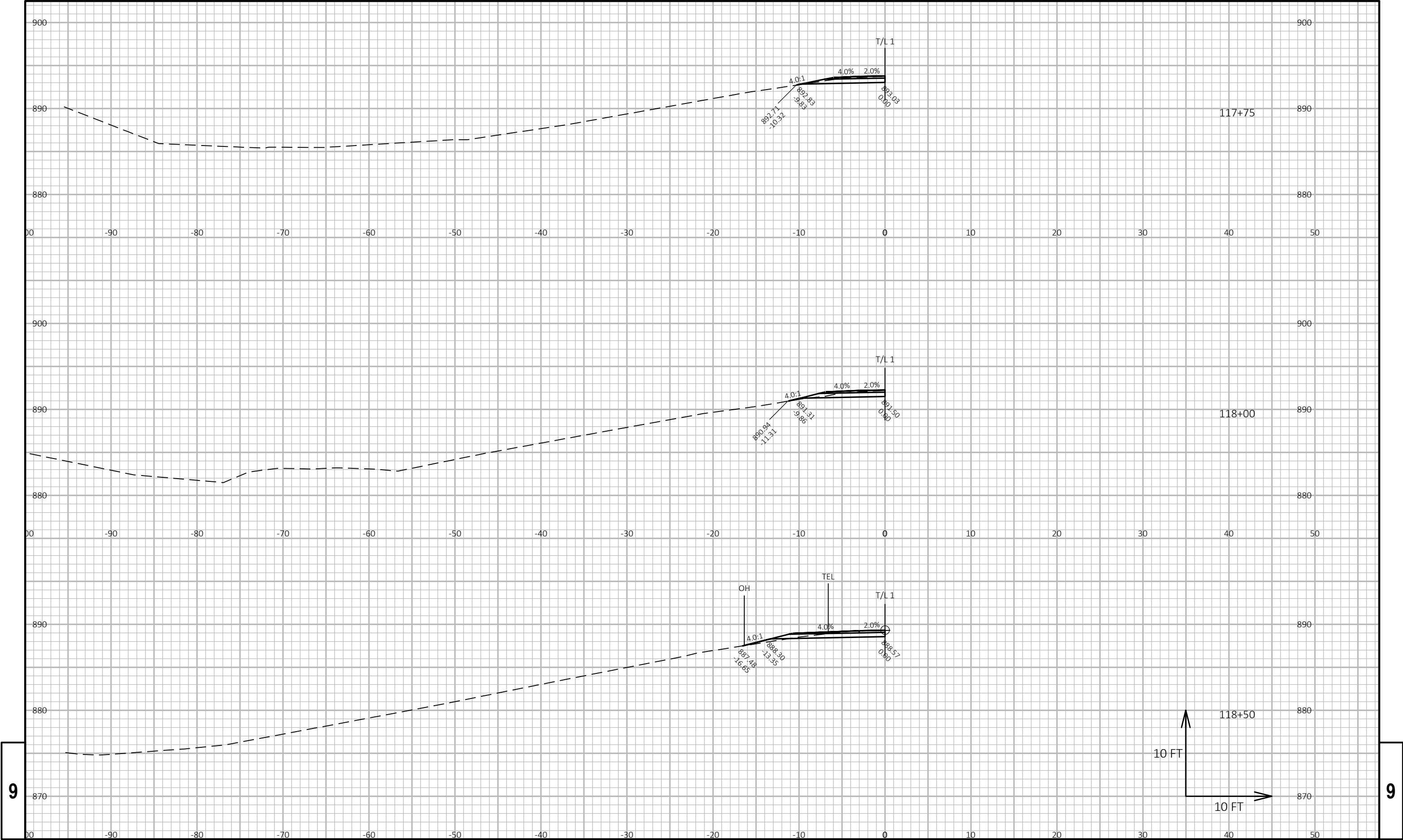
EARTHWORK DATA - CTH I NORTH LEFT

STATION	AREA (SF)		INCR. VOL (CY)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	CUT 1.00	EXP. FILL 1.30	

15+25.000	3.01	0.66	0.00	0.00	0.00	0.00	0.00
15+50.000	3.37	0.16	2.95	0.38	2.95	0.50	2.46
16+00.000	3.08	3.39	5.97	3.29	8.92	4.77	4.15
16+50.000	2.68	5.12	5.33	7.88	14.25	15.02	-0.77
16+75.000	1.25	7.24	1.82	5.72	16.07	22.46	-6.40
17+00.000	1.07	6.64	1.07	6.43	17.14	30.82	-13.68
17+25.000	1.52	6.18	1.20	5.94	18.34	38.54	-20.20
18+87.500	2.08	9.18	10.83	46.23	29.16	98.64	-69.48
19+00.000	2.01	12.02	0.95	4.91	30.11	105.02	-74.91
19+50.000	3.07	22.46	4.70	31.93	34.81	146.52	-111.71
19+87.500	2.27	16.03	3.70	26.73	38.52	181.27	-142.76
20+12.500	2.55	24.34	2.23	18.69	40.75	205.57	-164.82
20+37.500	1.78	25.58	2.01	23.11	42.75	235.61	-192.86
21+12.500	3.57	1.00	7.43	36.91	50.18	283.60	-233.42
21+37.500	3.03	0.08	3.05	0.50	53.23	284.25	-231.02
21+62.500	2.26	0.28	2.45	0.17	55.68	284.47	-228.79
22+00.000	2.82	5.77	3.53	4.20	59.21	289.94	-230.73
22+49.000	2.17	13.90	4.53	17.85	63.74	313.14	-249.40
24+25.000	2.34	3.68	14.70	57.29	78.44	387.63	-309.19
24+50.000	1.68	5.80	1.86	4.39	80.30	393.33	-313.03
25+00.000	3.14	0.04	4.47	5.41	84.77	400.37	-315.60
25+50.000	3.09	0.23	5.78	0.25	90.55	400.69	-310.14
25+75.000	1.94	0.00	2.33	0.10	92.88	400.82	-307.95
26+00.000	14.58	0.00	7.65	0.00	100.53	400.83	-300.30
26+15.000	0.63	0.00	4.23	0.00	104.75	400.83	-296.07

EARTHWORK DATA - CTH I NORTH RIGHT

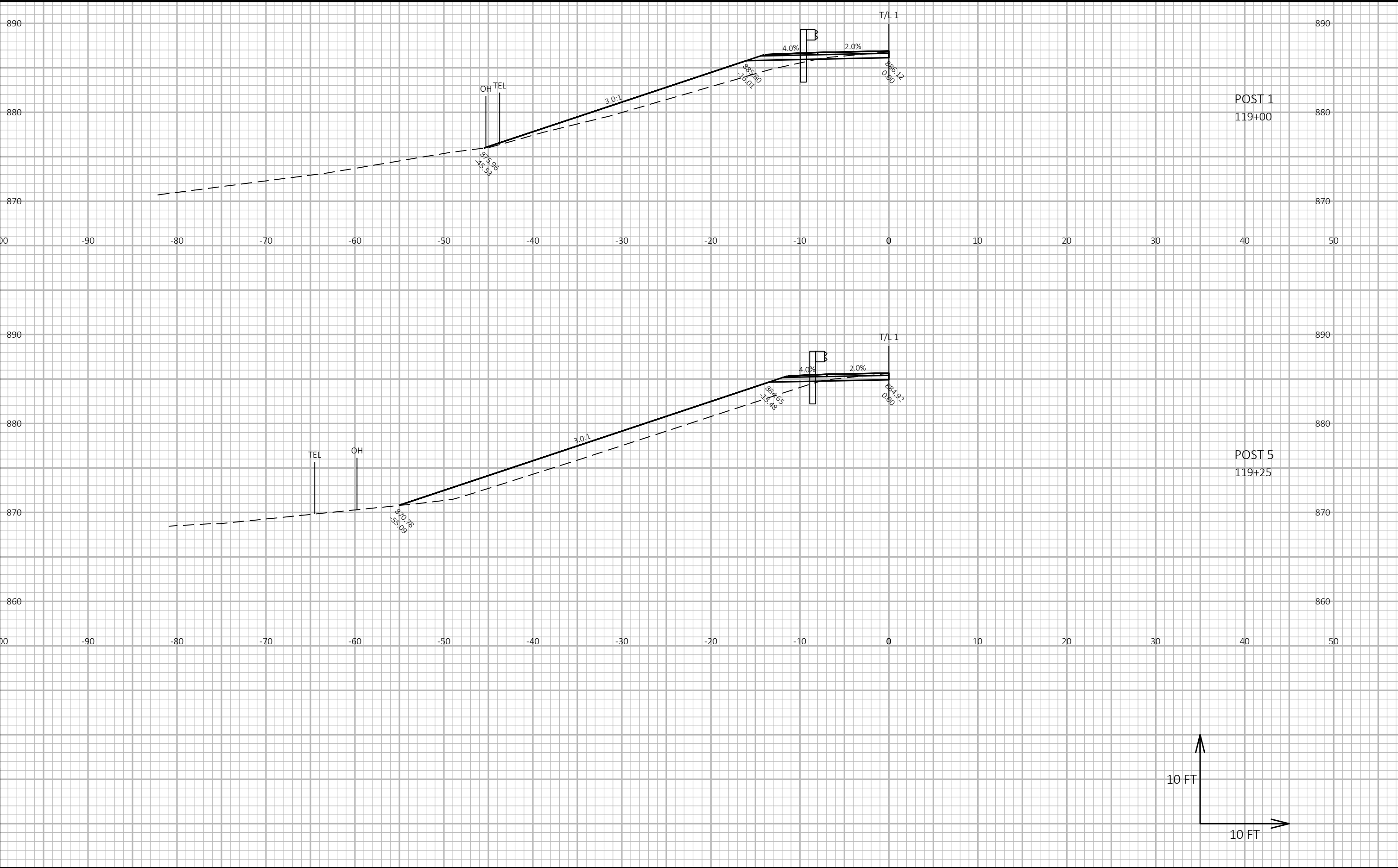
STATION	AREA (SF)		INCR. VOL (CY)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	CUT 1.00	EXP. FILL 1.30	
19+00.000	2.43	0.00	0.00	0.00	0.00	0.00	0.00
19+50.000	1.33	3.47	3.49	3.21	3.49	4.18	-0.69
20+00.000	2.34	0.60	3.40	3.77	6.88	9.08	-2.20
20+50.000	2.75	4.59	4.71	4.80	11.59	15.32	-3.73
20+75.000	2.66	19.58	2.50	11.19	14.09	29.87	-15.78
21+00.000	2.65	32.58	2.46	24.15	16.55	61.26	-44.71
22+00.000	1.97	7.06	8.55	73.41	25.10	156.69	-131.59
22+25.000	1.59	9.10	1.65	7.48	26.75	166.42	-139.67
22+50.000	1.91	4.31	1.62	6.21	28.37	174.49	-146.12
22+75.000	1.49	4.61	1.58	4.13	29.95	179.85	-149.91
26+25.000	2.03	0.58	22.81	33.59	52.75	223.52	-170.77
26+50.000	2.41	0.99	2.05	0.72	54.81	224.46	-169.65
26+75.000	4.62	1.23	3.26	1.02	58.07	225.79	-167.73
27+00.000	5.88	0.31	4.86	0.71	62.93	226.71	-163.79
27+50.000	5.55	0.01	10.58	0.29	73.51	227.09	-153.59
28+00.000	5.29	0.00	10.03	0.01	83.54	227.11	-143.57

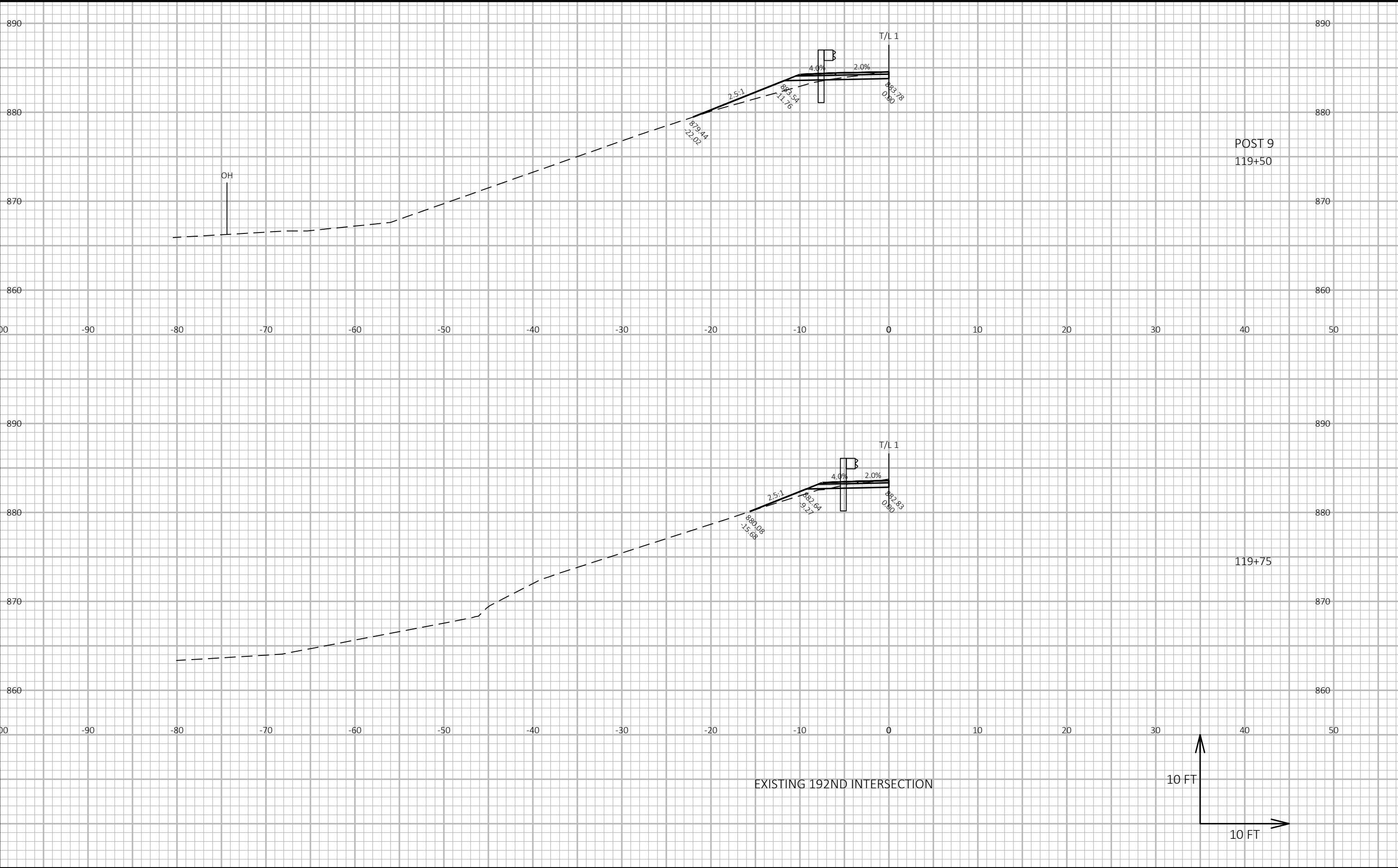


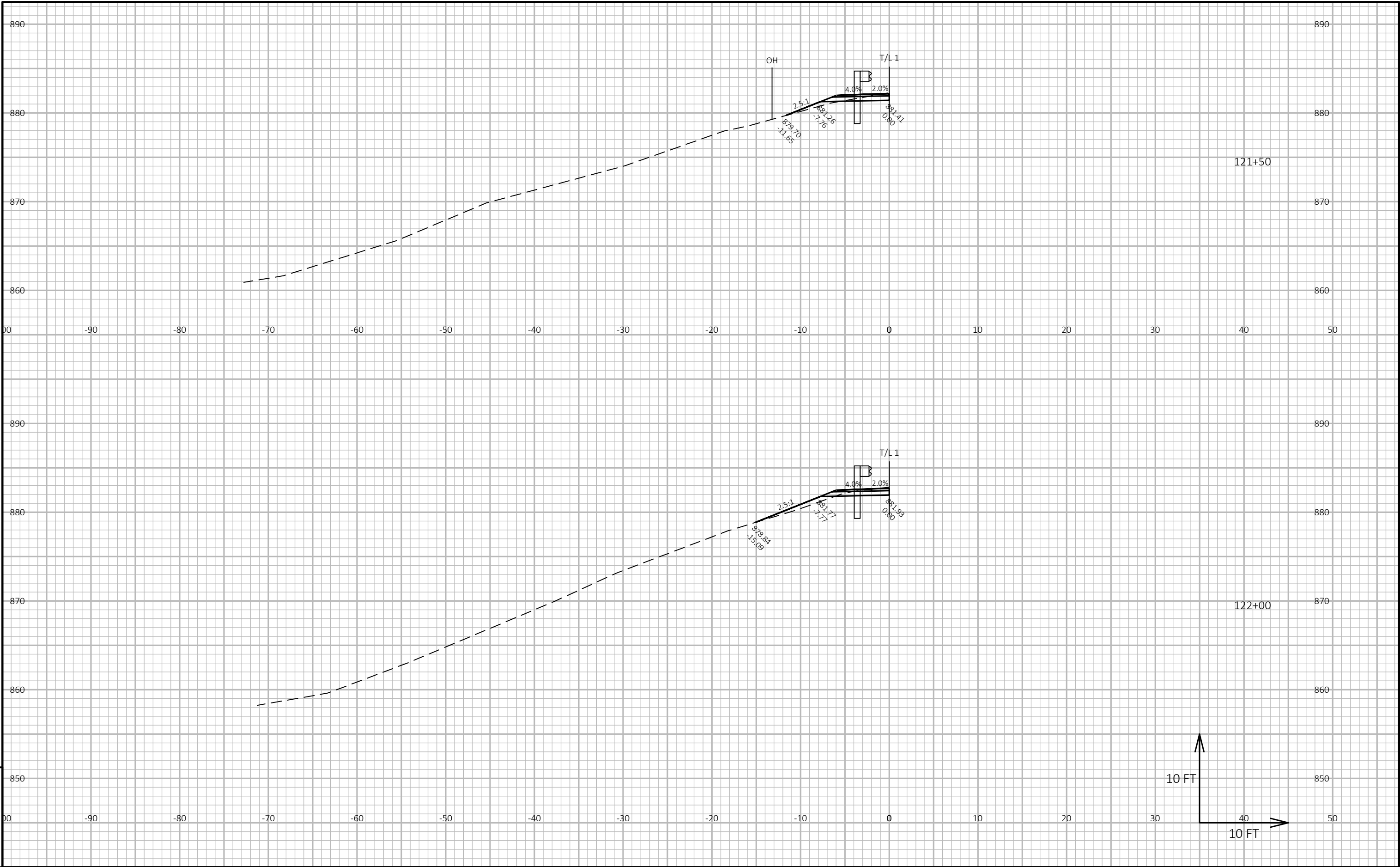
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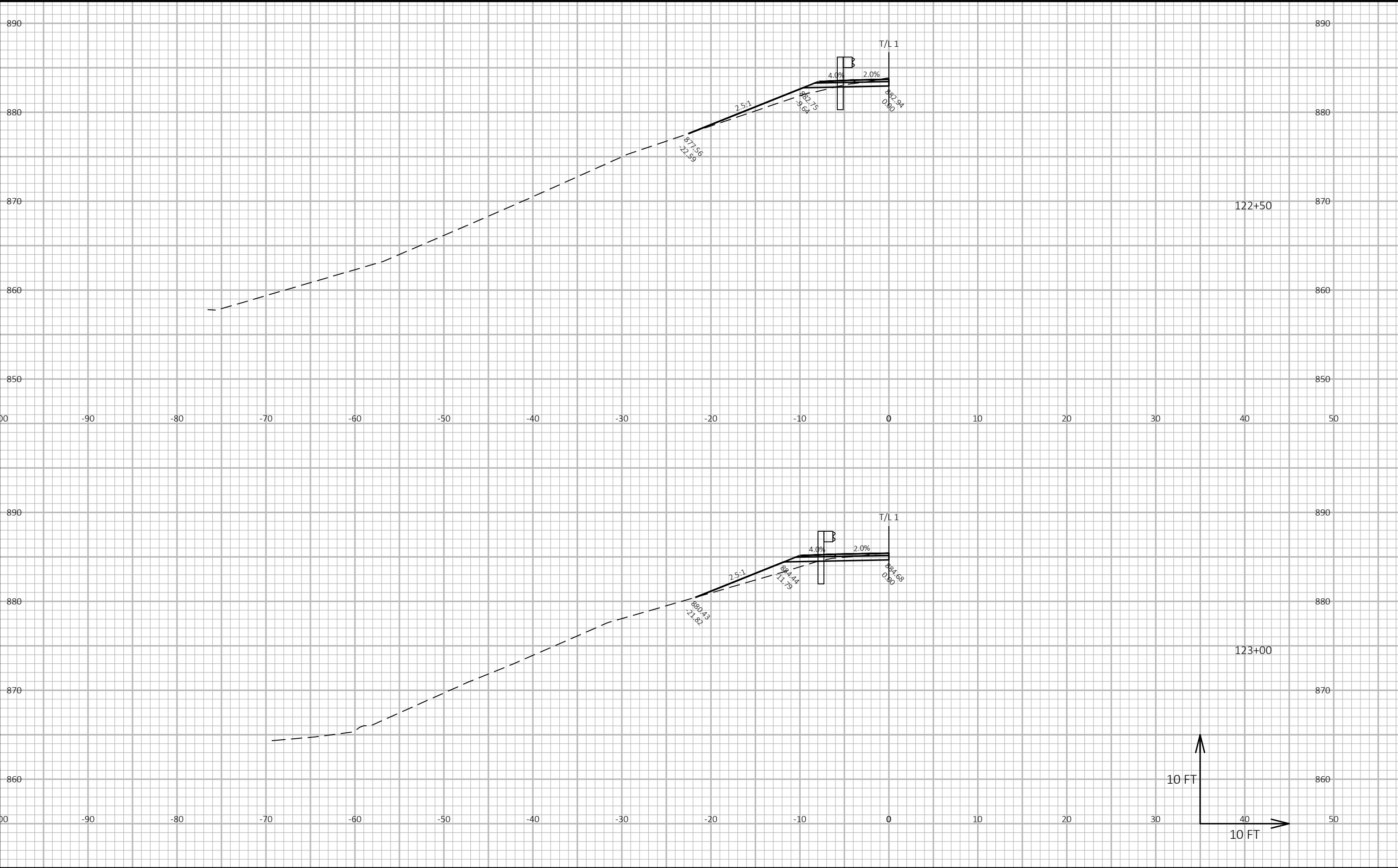
PROJECT NO: 8938-01-72	HWY: CTH I	COUNTY: ST CROIX	CROSS SECTIONS:	SHEET E
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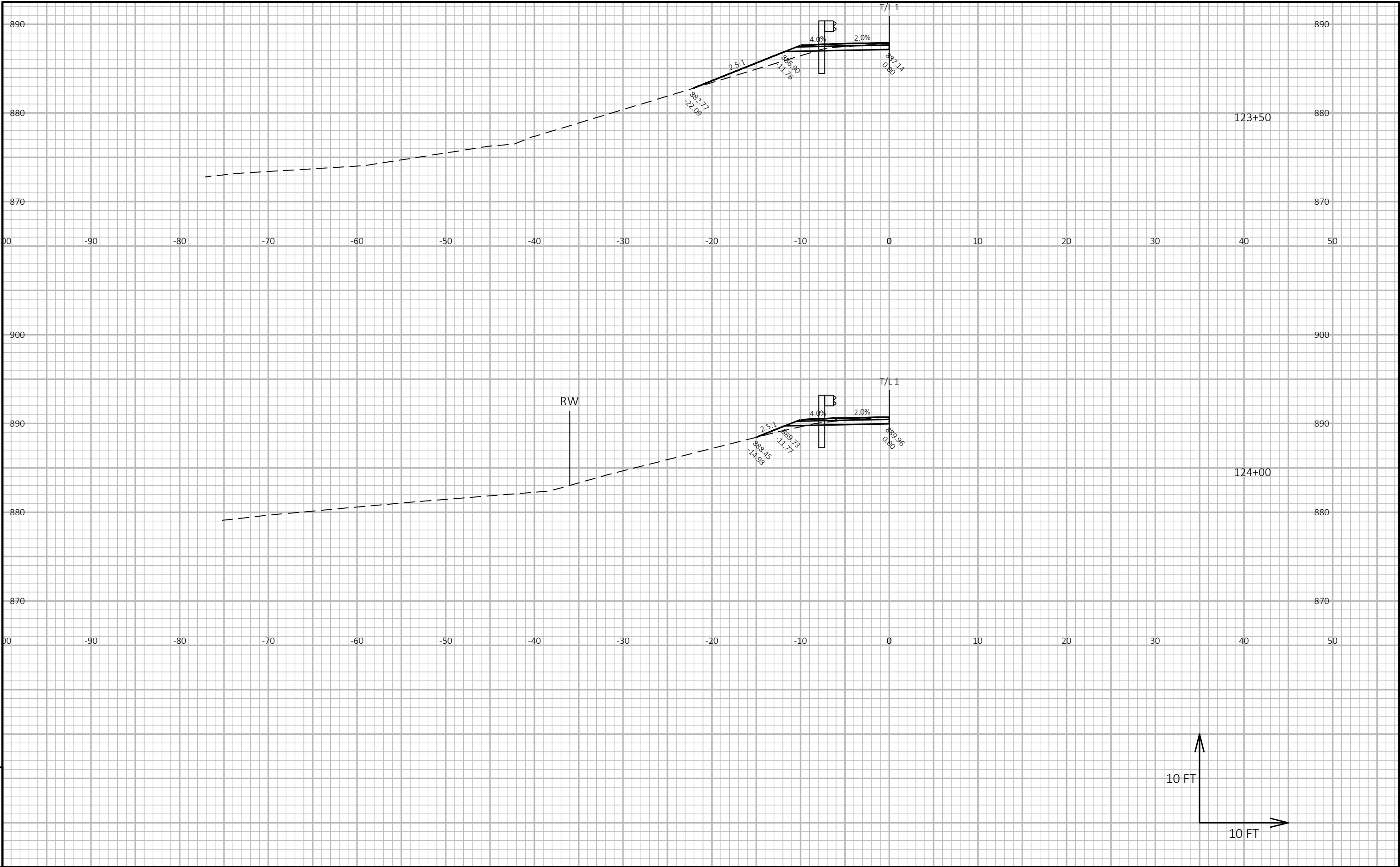


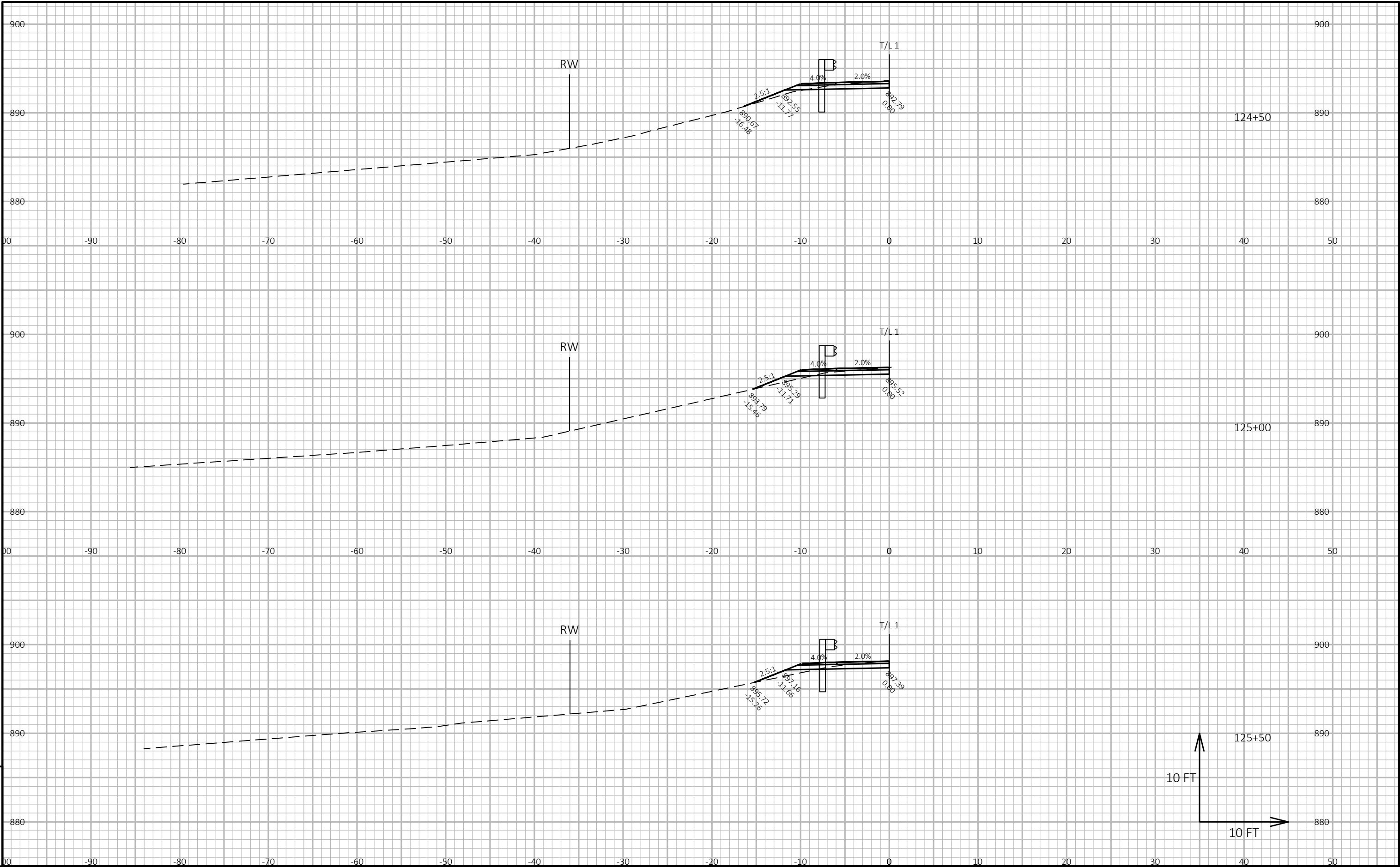




PROJECT NO: 8938-01-72	HWY: CTH I	COUNTY: ST CROIX	CROSS SECTIONS:	SHEET	E
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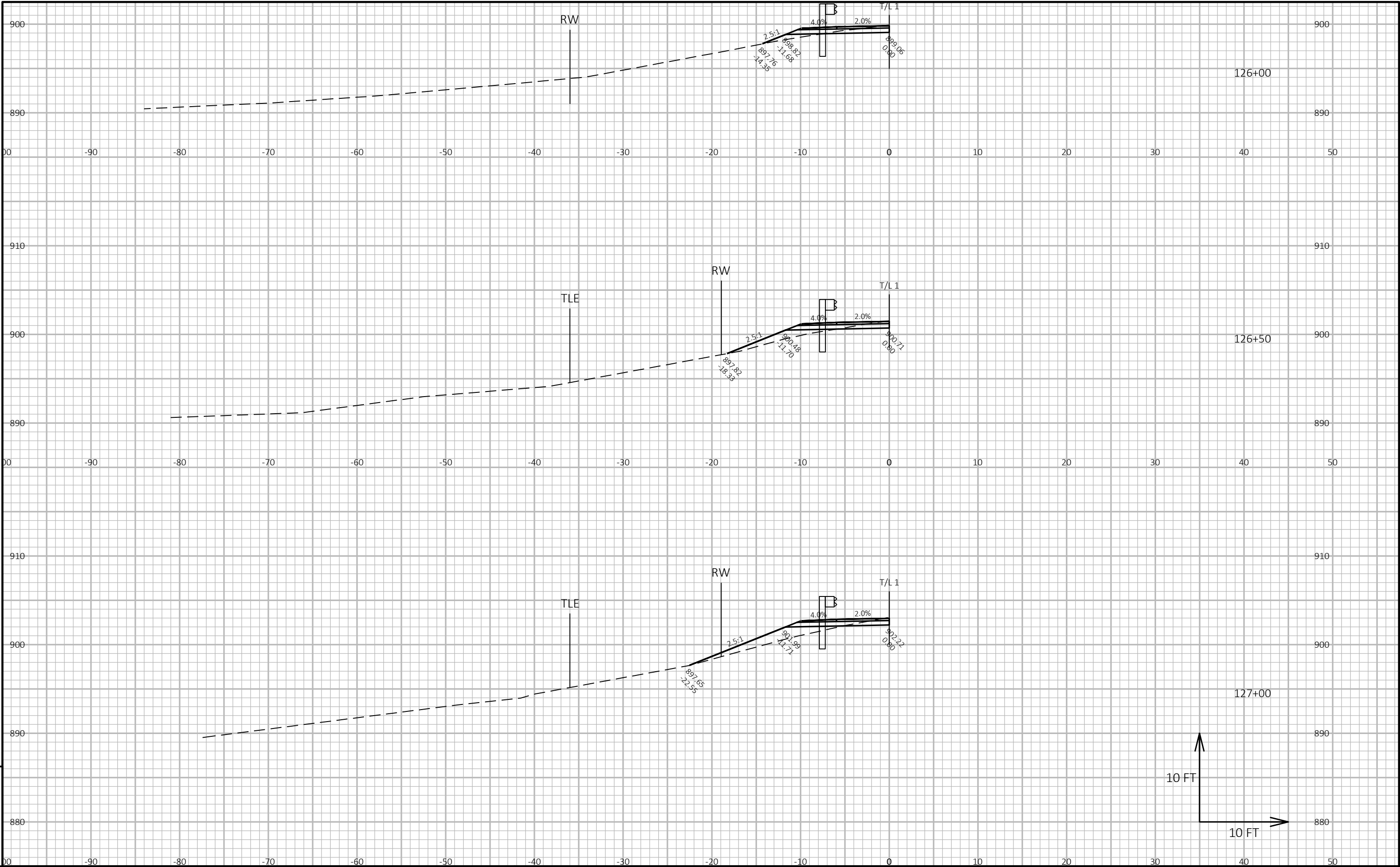


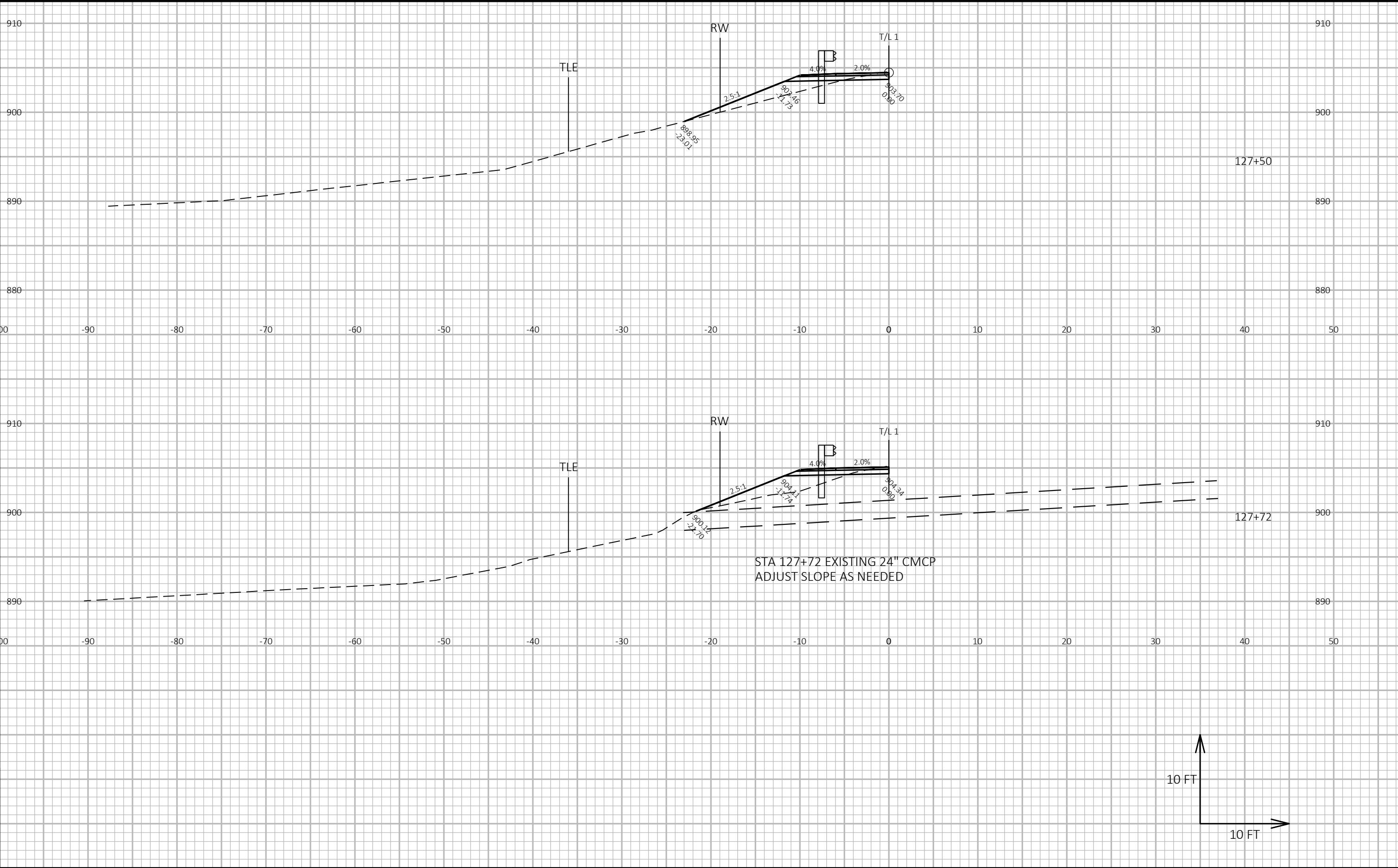


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PROJECT NO: 8938-01-72	HWY: CTH I	COUNTY: ST CROIX	CROSS SECTIONS:	SHEET	E
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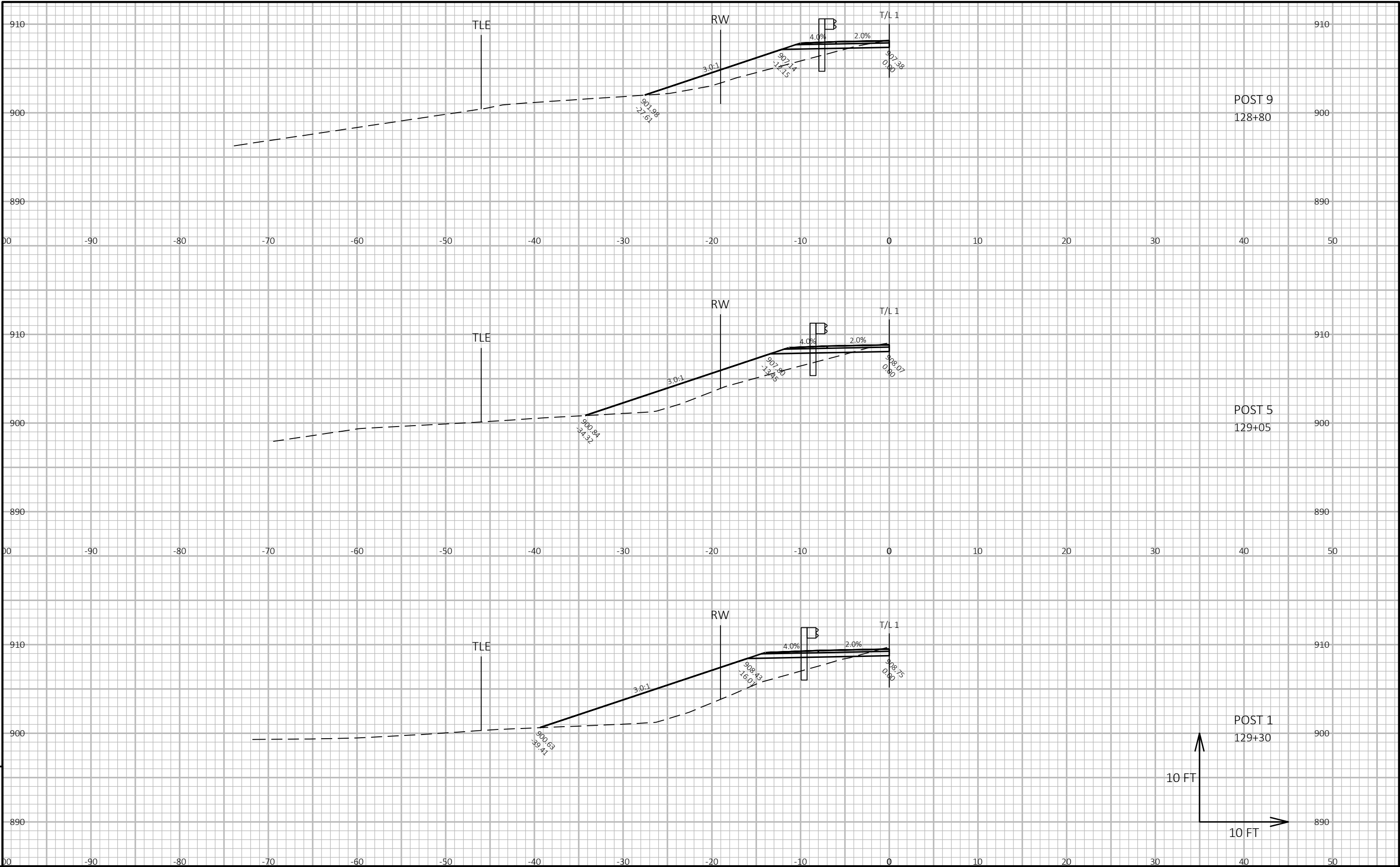


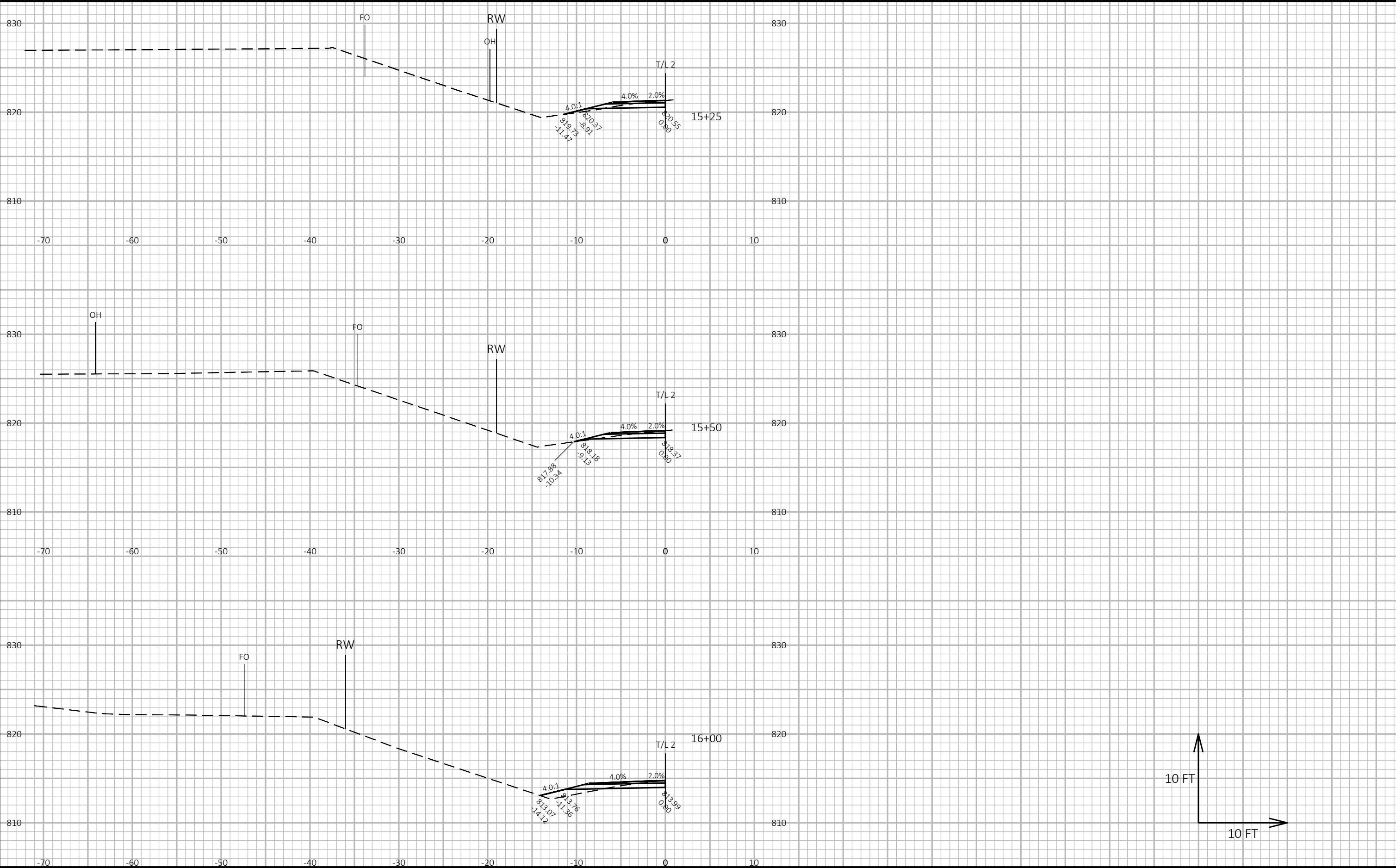


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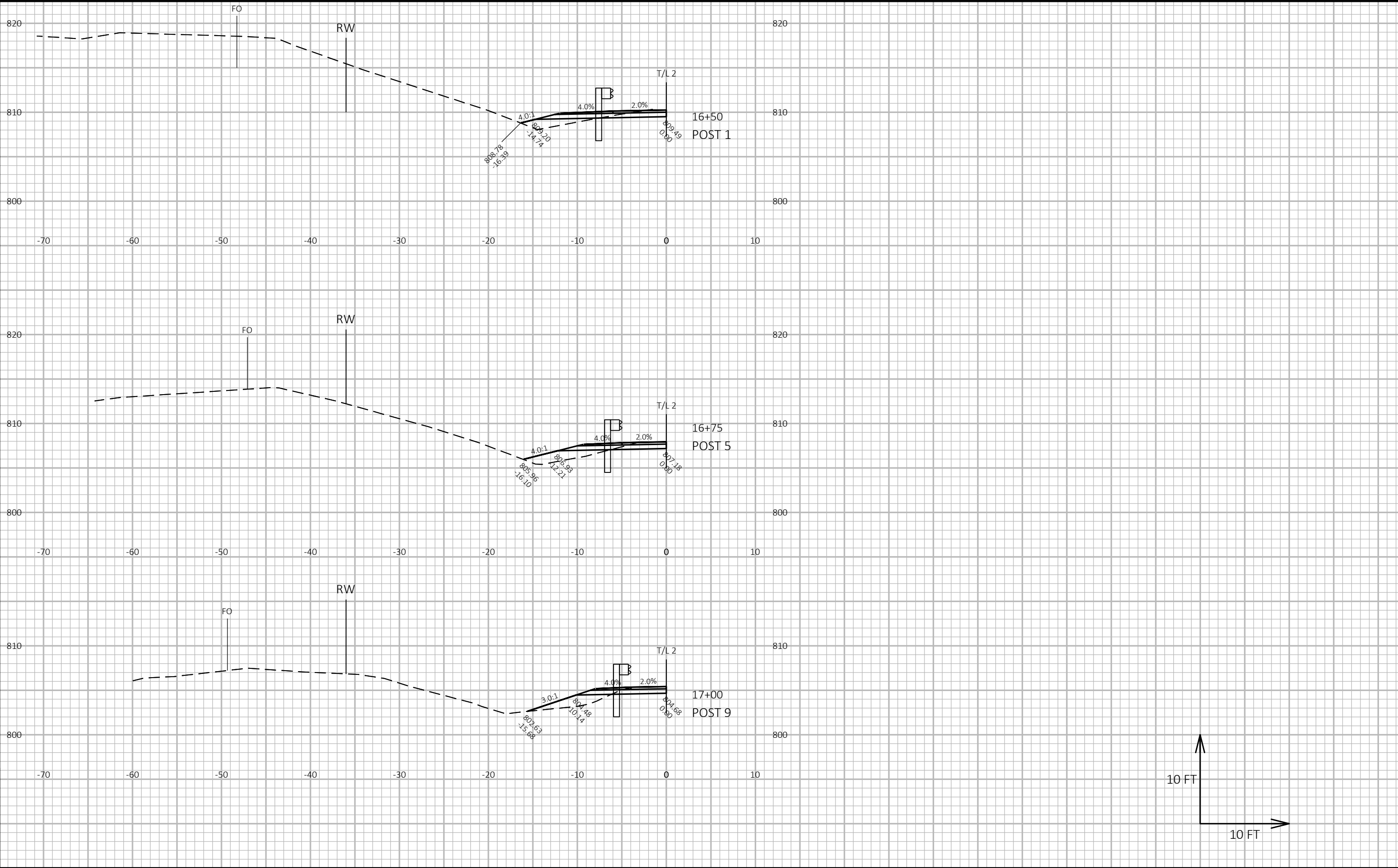


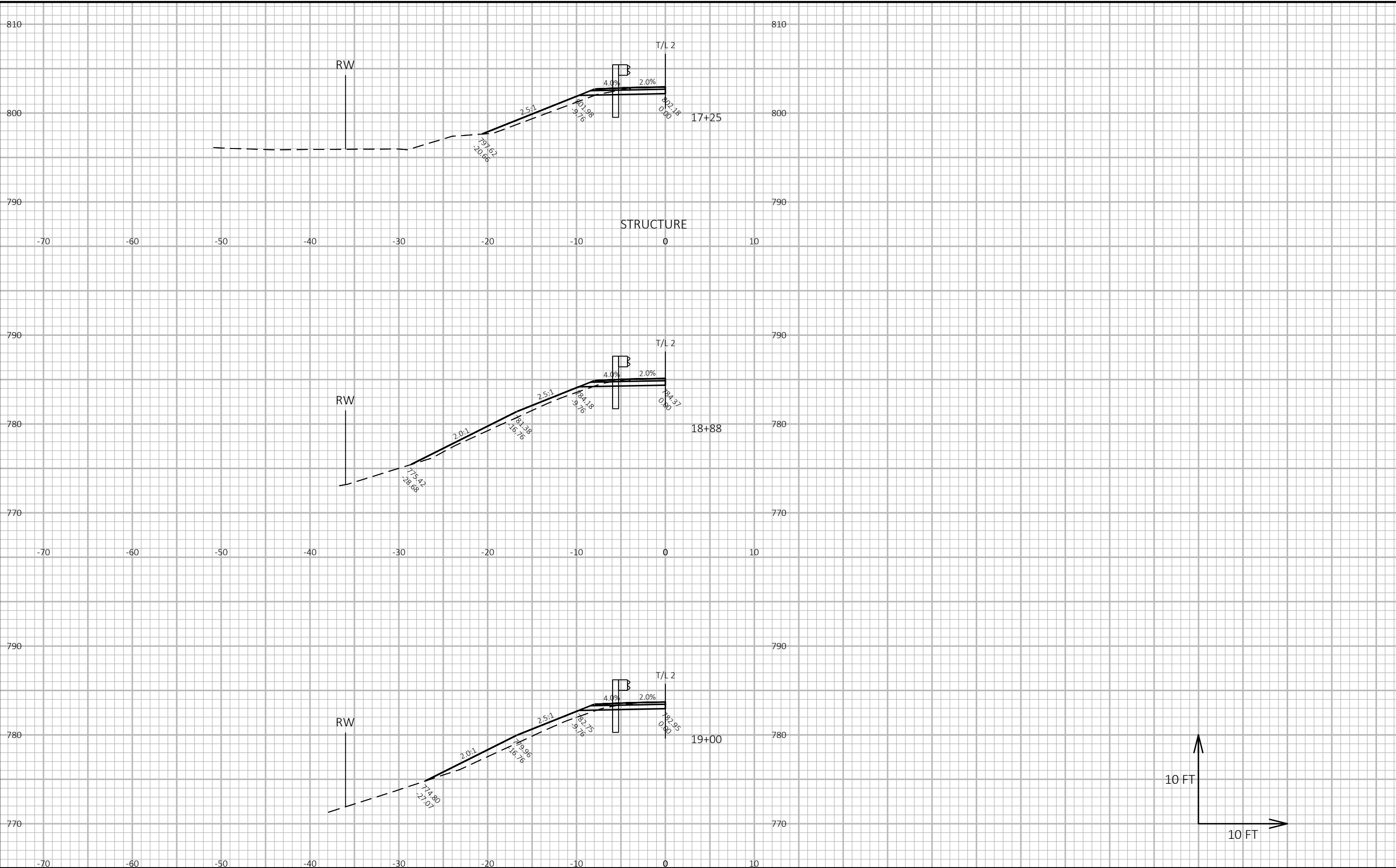


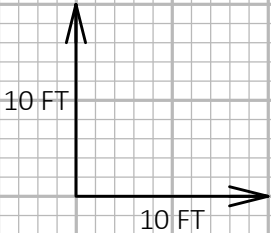
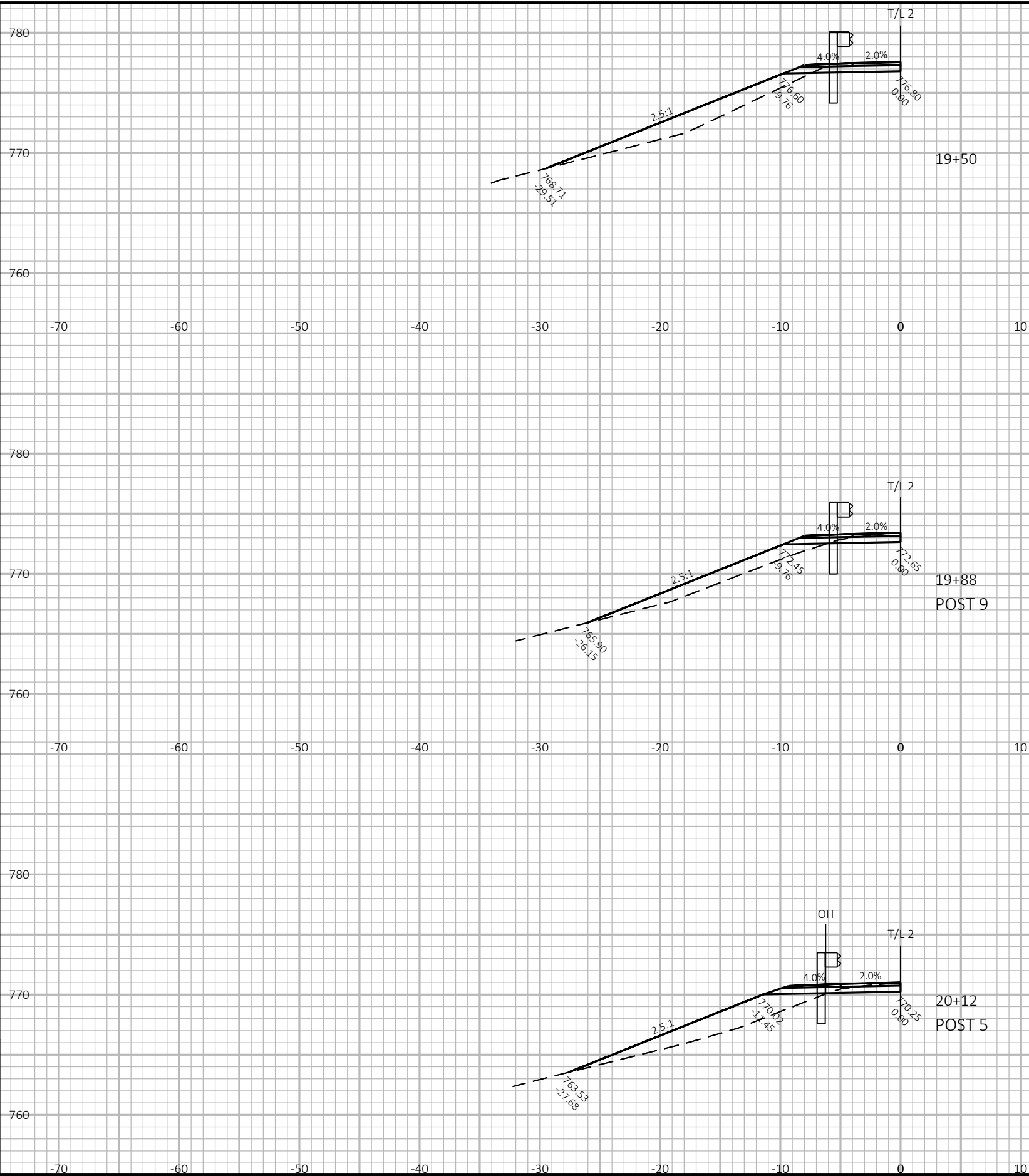
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PROJECT NO: 8938-01-72	HWY: CTH I	COUNTY: ST CROIX	CROSS SECTIONS:	SHEET	E
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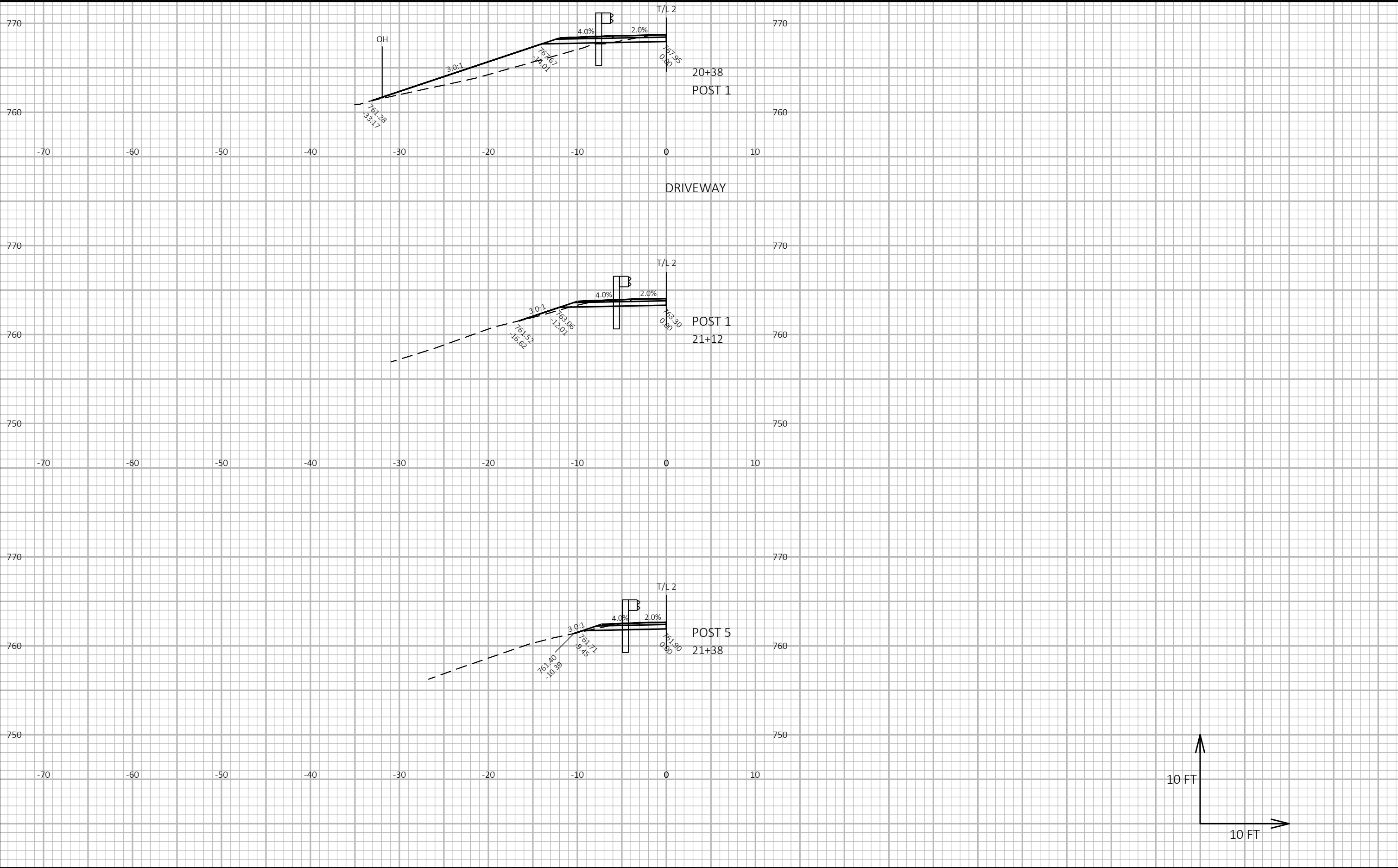


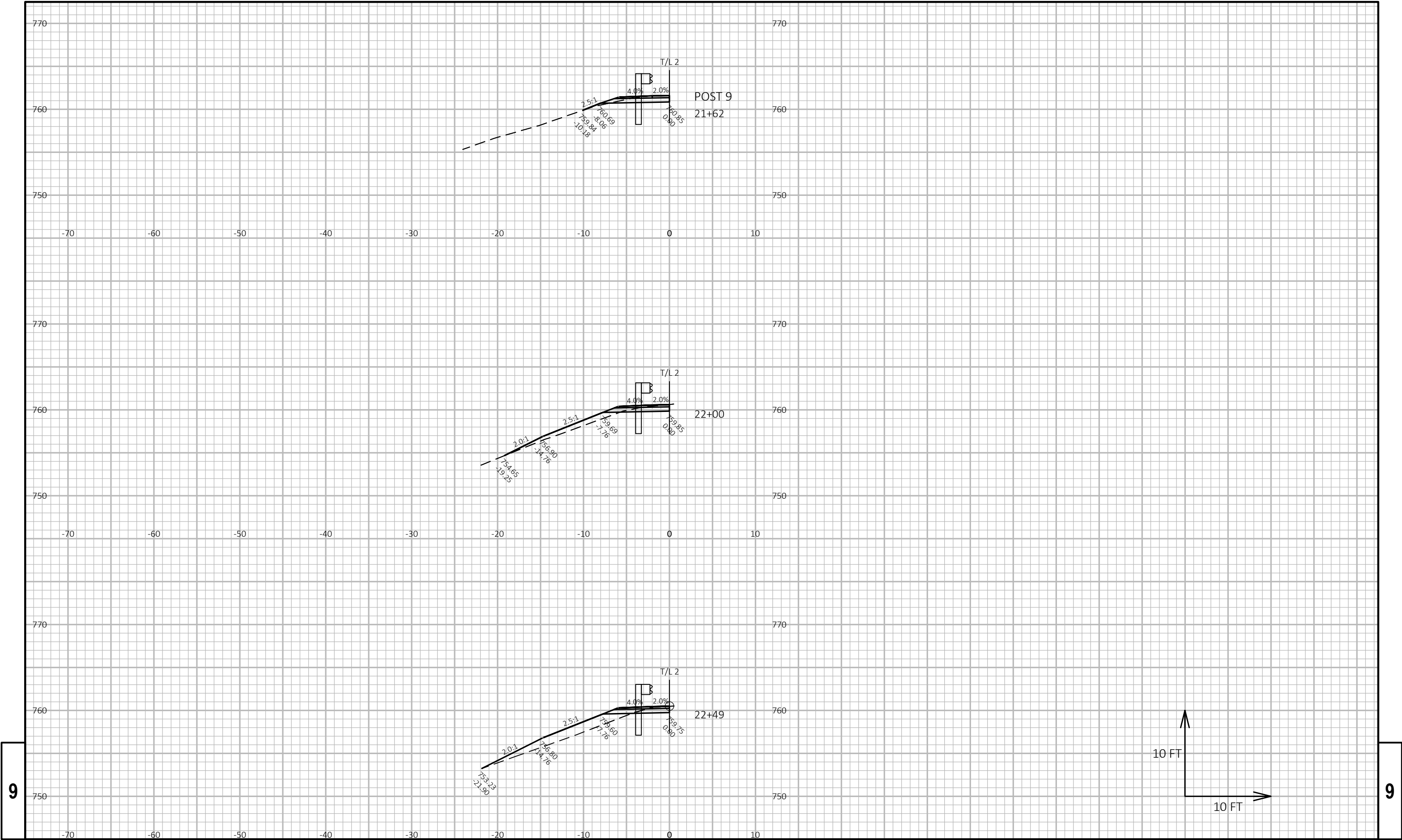


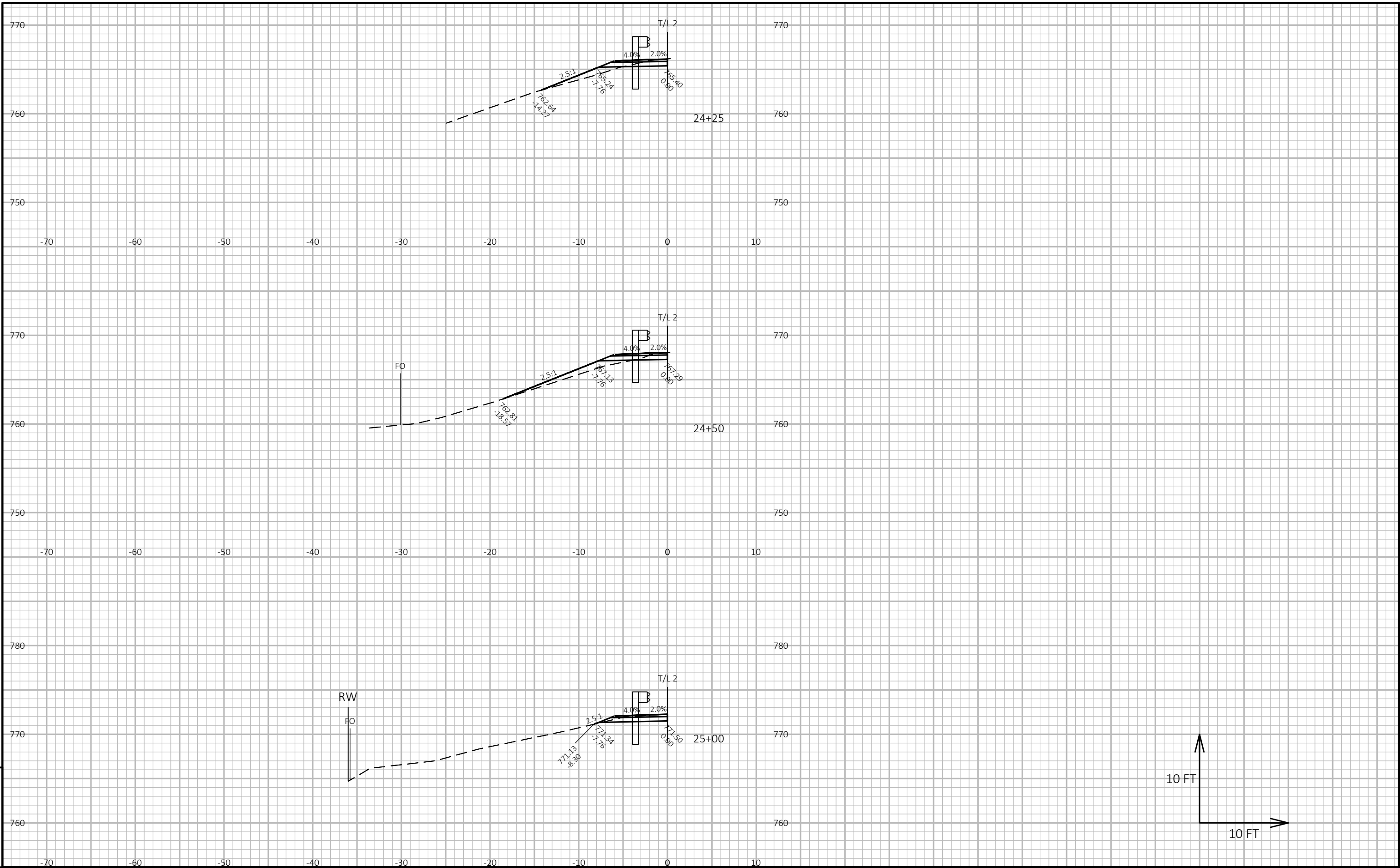
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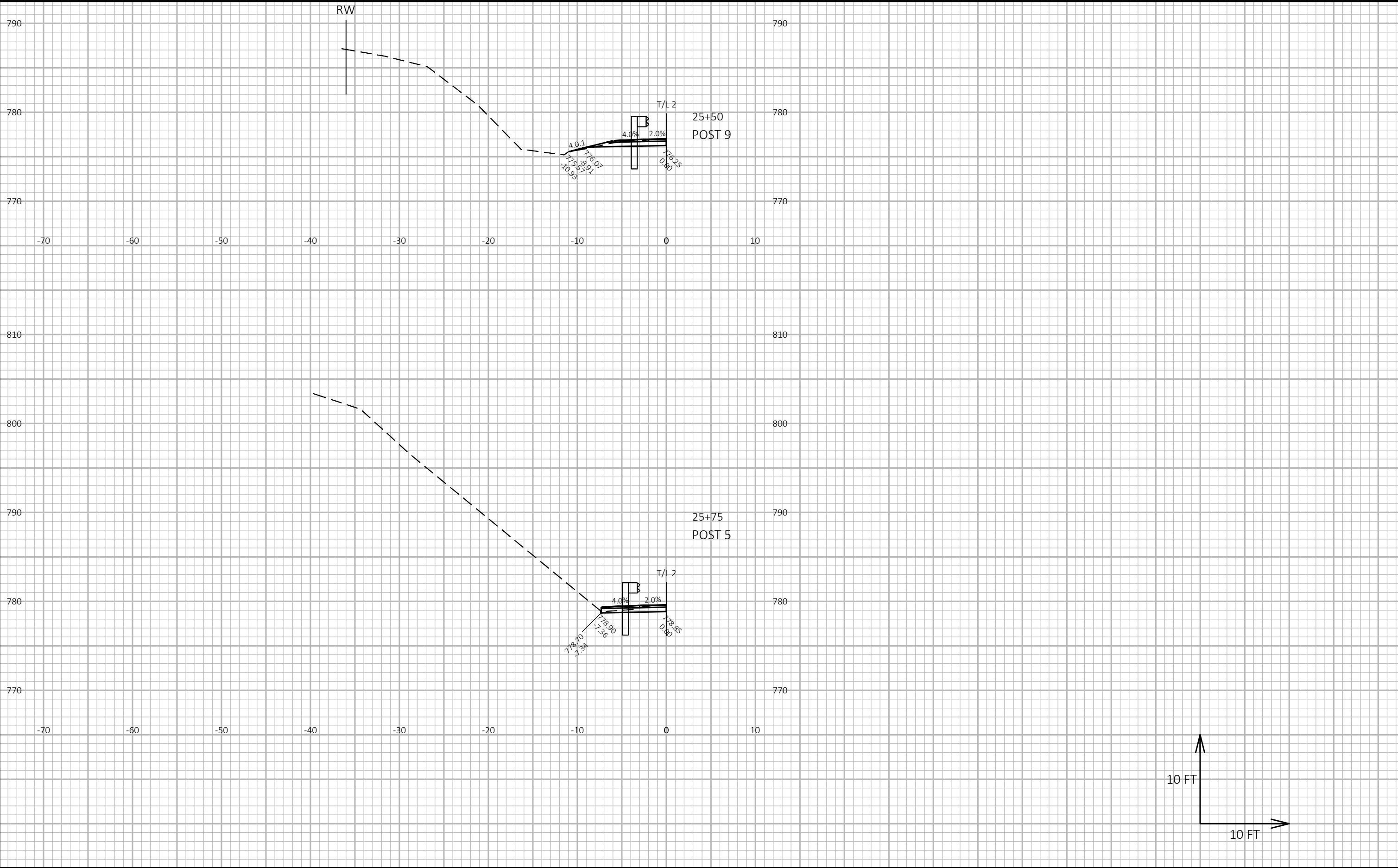
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PROJECT NO: 8938-01-72	HWY: CTH I	COUNTY: ST CROIX	CROSS SECTIONS:	SHEET	E
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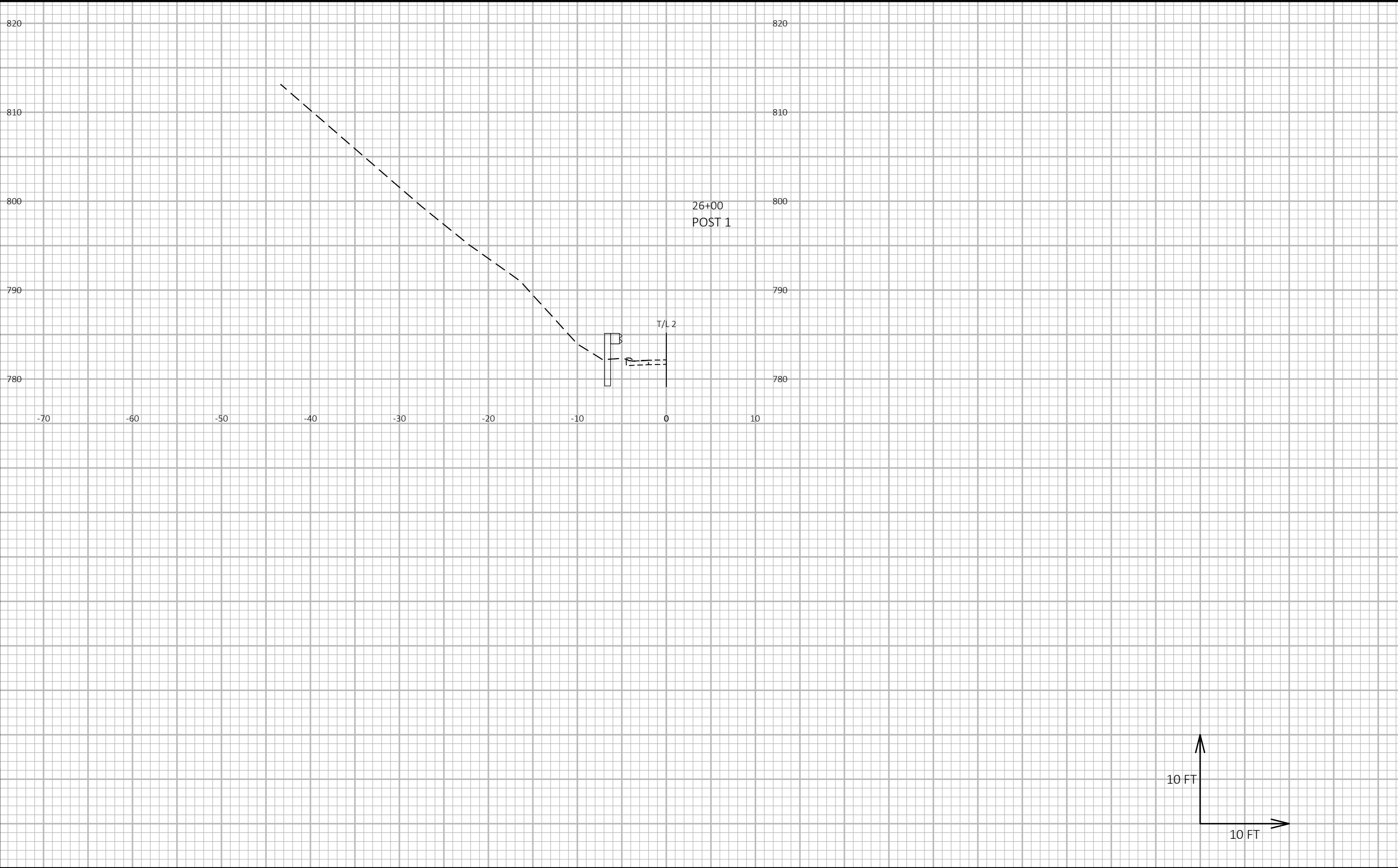




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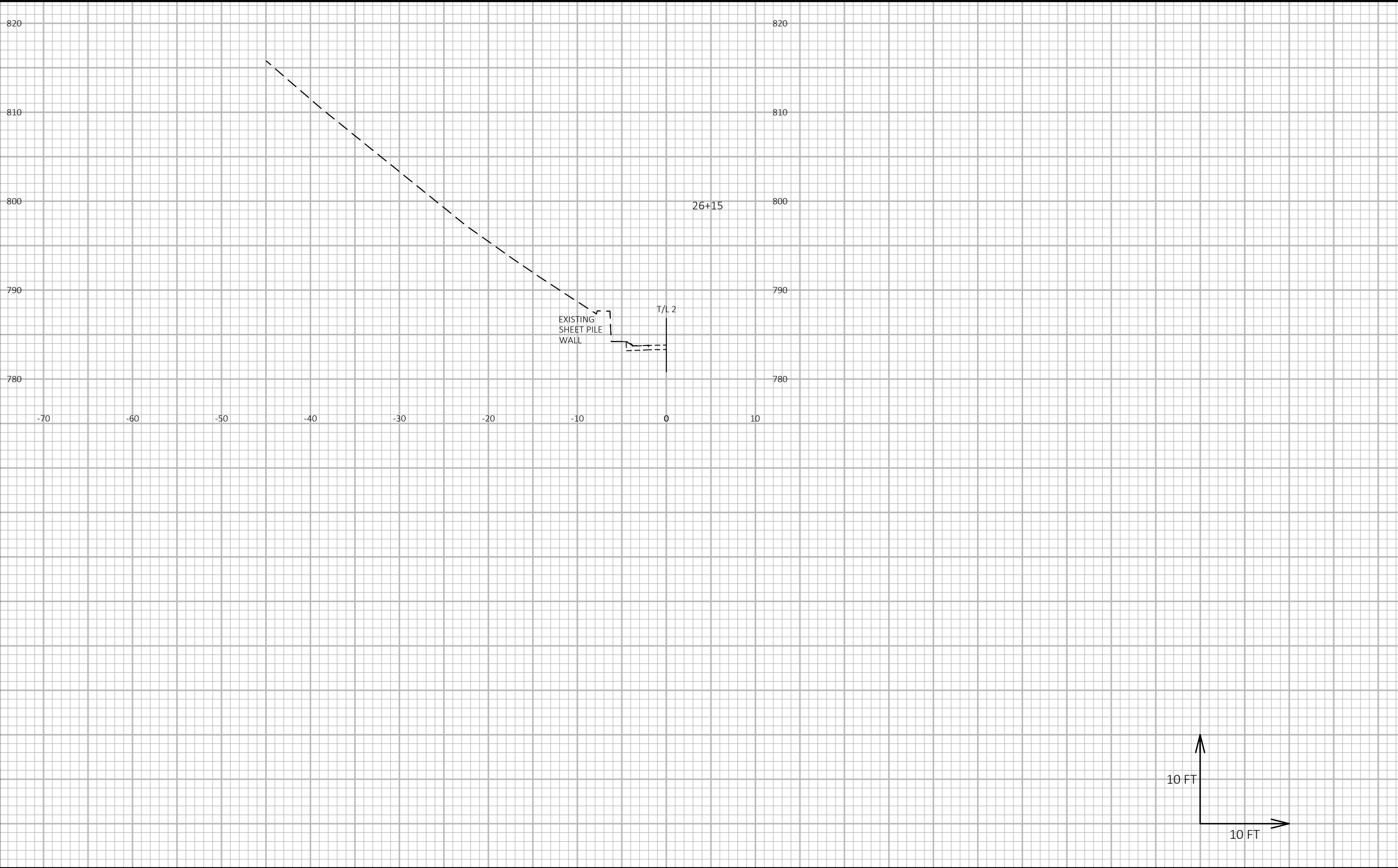
PROJECT NO: 8938-01-72	HWY: CTH I	COUNTY: ST CROIX	CROSS SECTIONS:	SHEET	E
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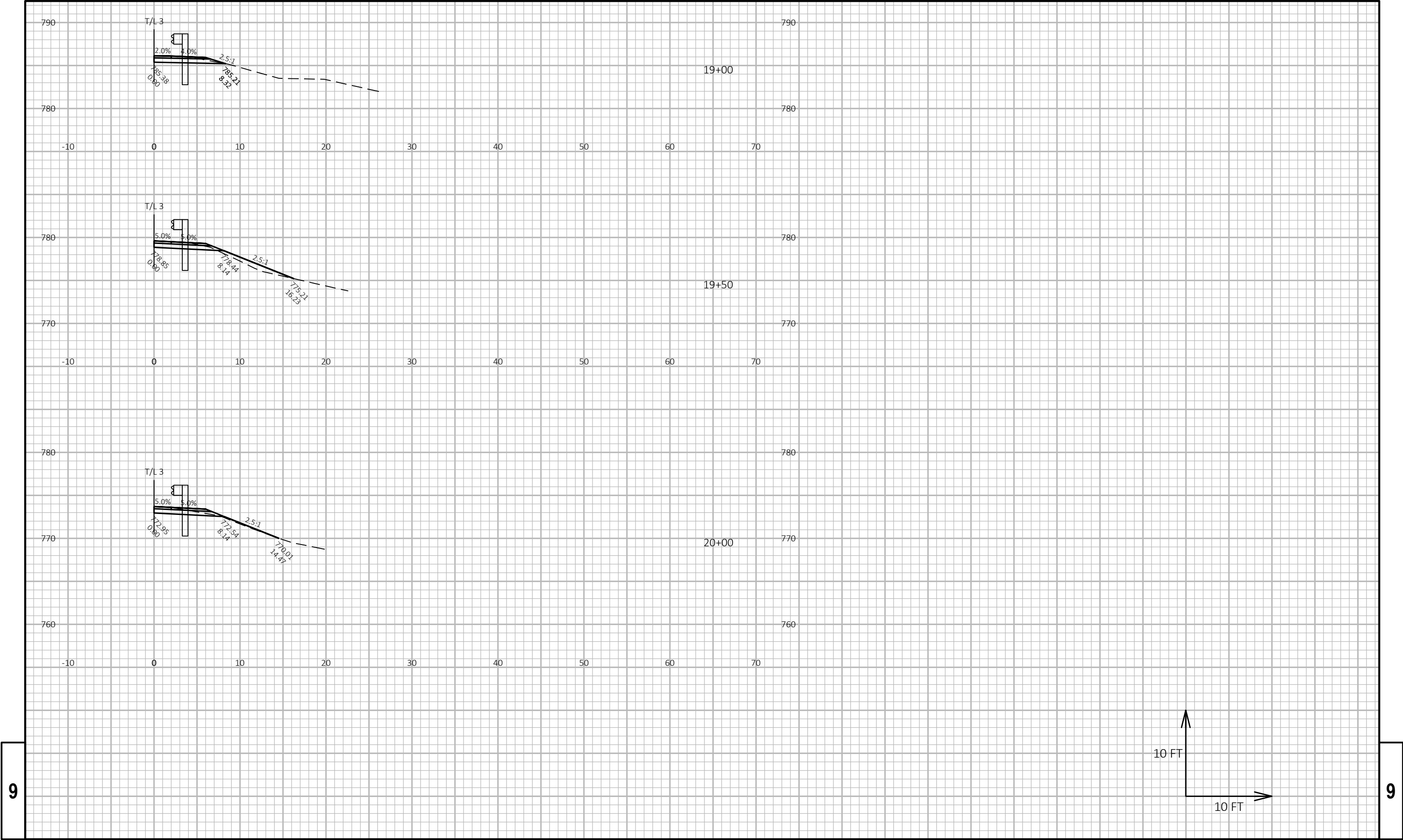
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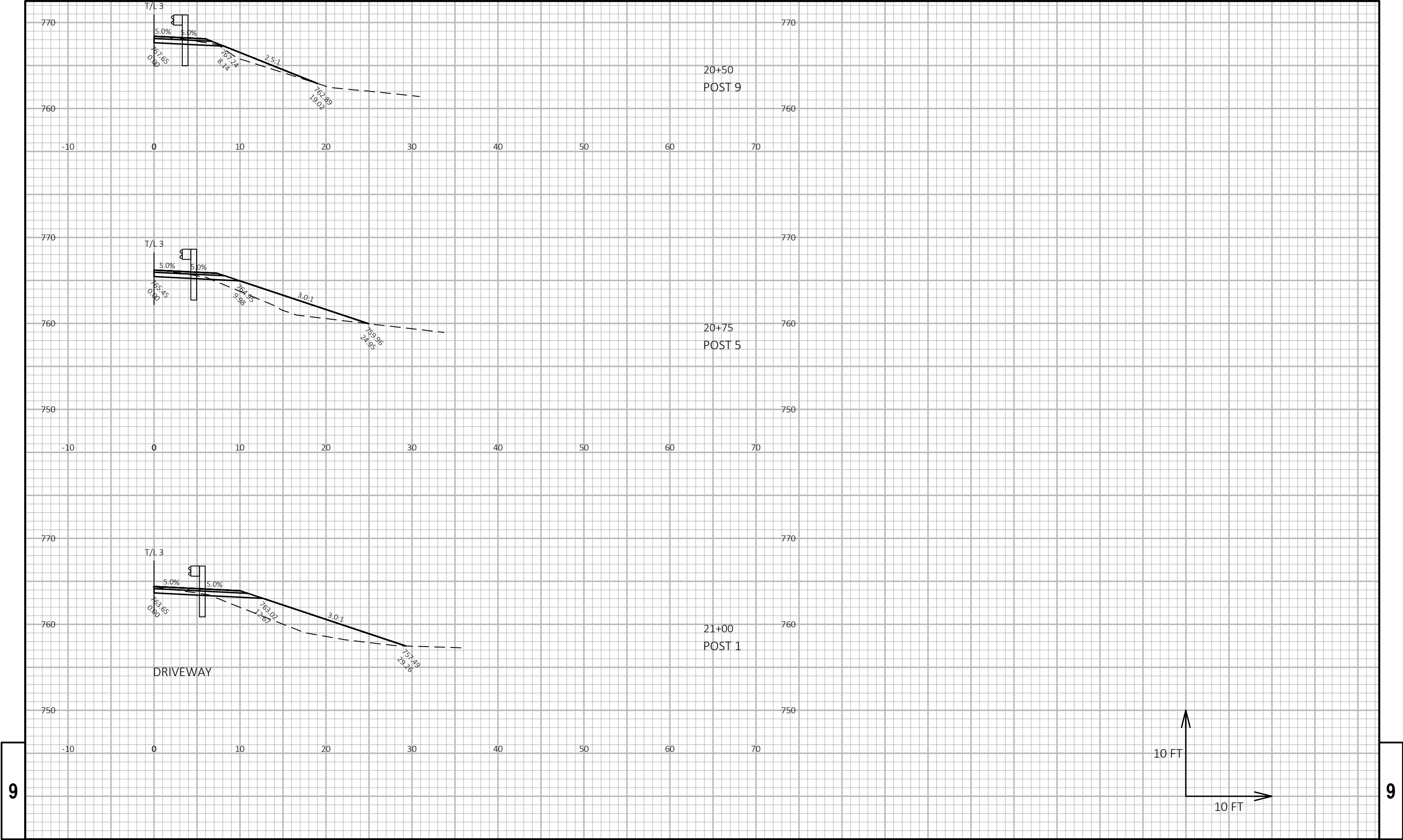
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PROJECT NO: 8938-01-72	HWY: CTH I	COUNTY: ST CROIX	CROSS SECTIONS:	SHEET	E
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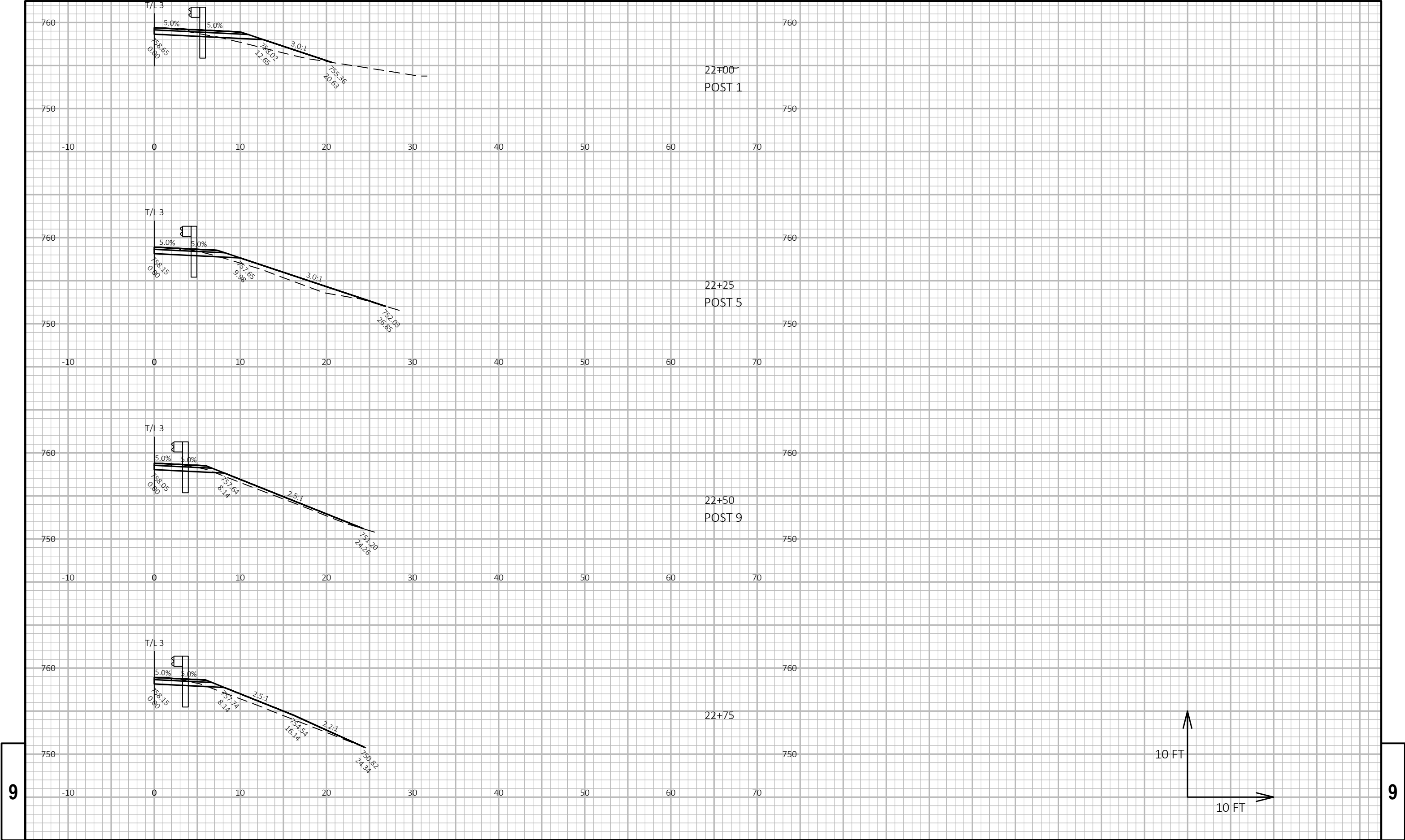
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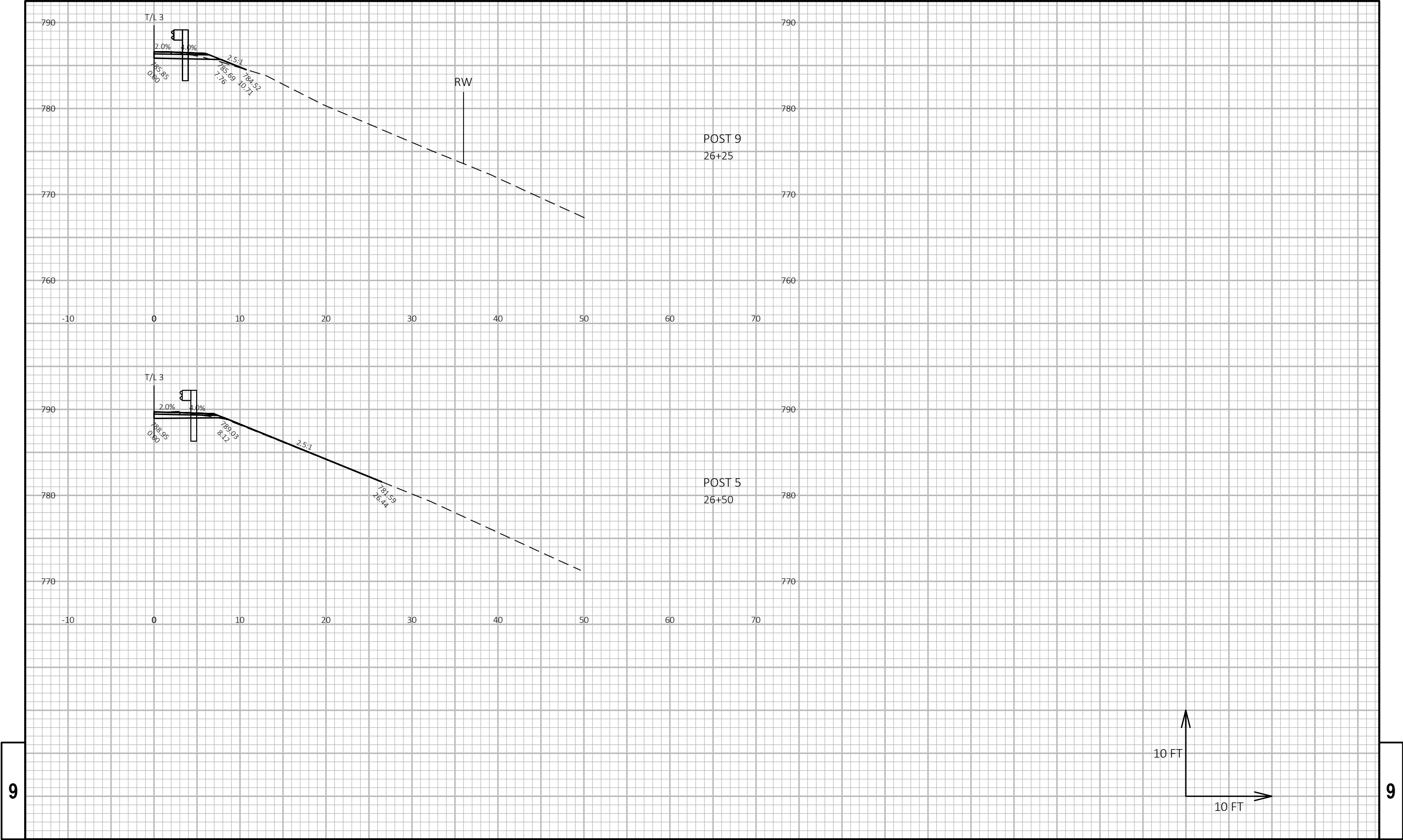
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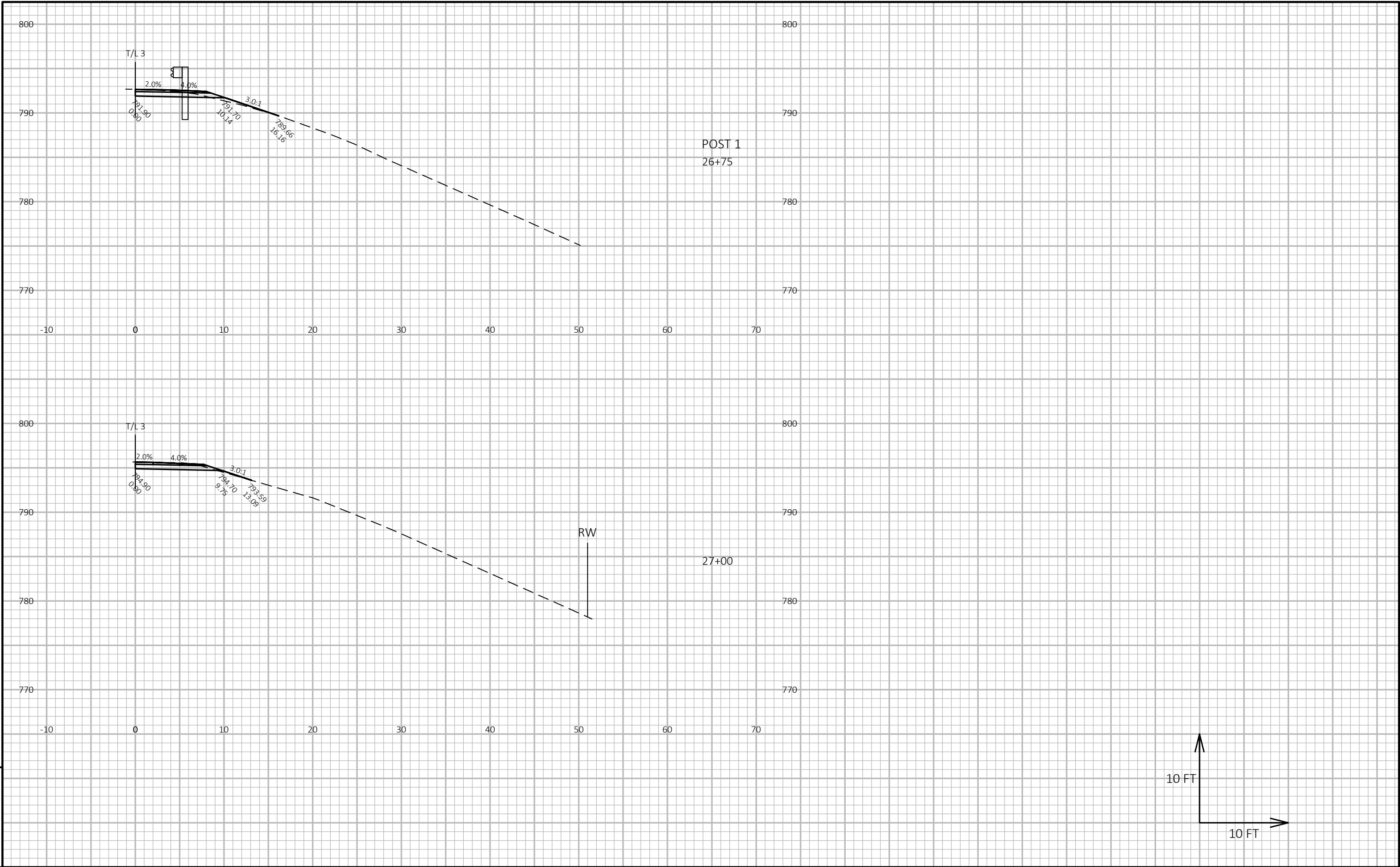
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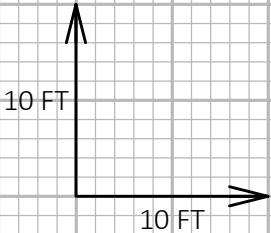
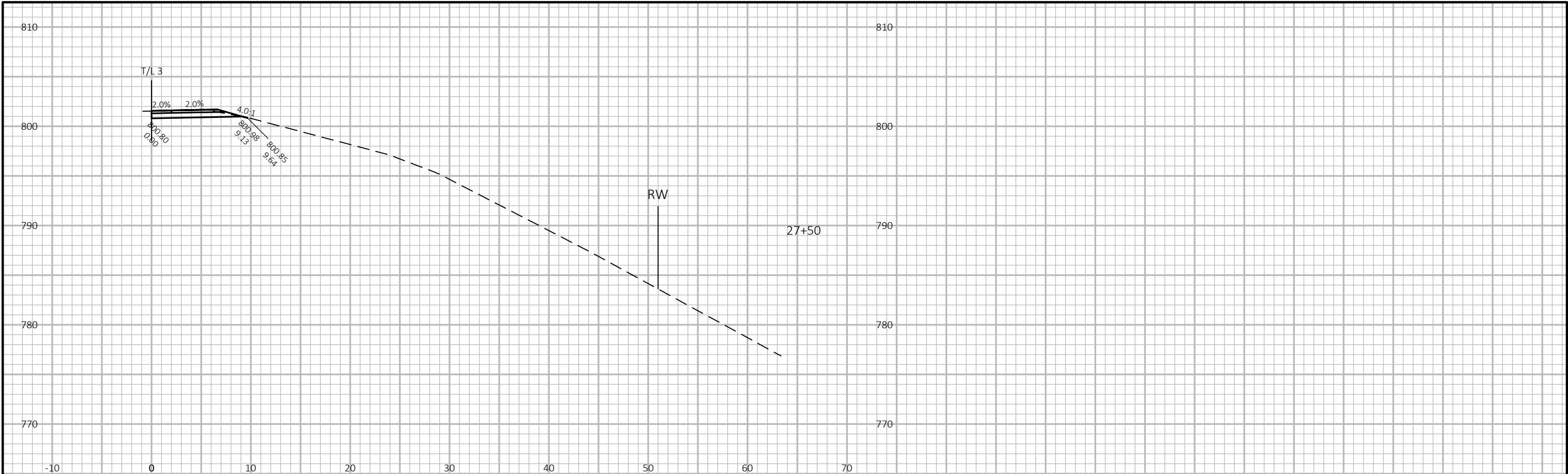
PROJECT NO: 8938-01-72	HWY: CTH I	COUNTY: ST CROIX	CROSS SECTIONS:	SHEET	E
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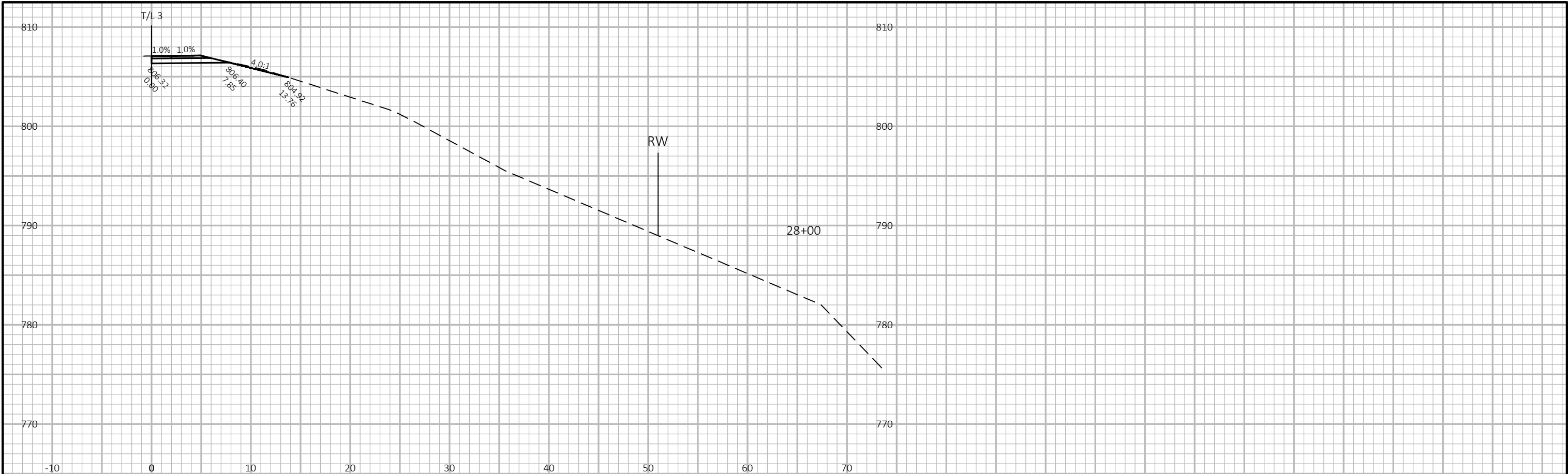




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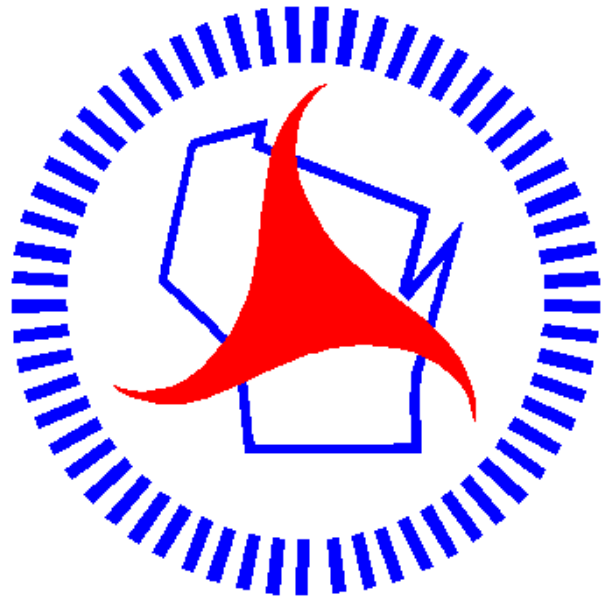
PROJECT NO: 8938-01-72	HWY: CTH I	COUNTY: ST CROIX	CROSS SECTIONS:	SHEET	E
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PROJECT NO: 8938-01-72	HWY: CTH I	COUNTY: ST CROIX	CROSS SECTIONS:	SHEET	E
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Wisconsin Department of Transportation

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