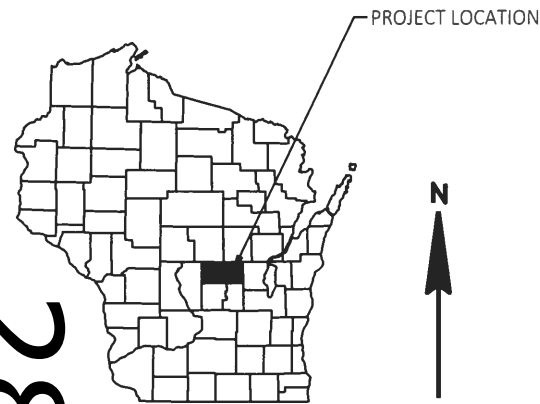


ORDER OF SHEETS

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

TOTAL SHEETS = 74

28



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH M - WAUPACA COUNTY LINE

CTH E - CTH AE

CTH E

WAUSHARA COUNTY

STATE PROJECT NUMBER
6987-00-73

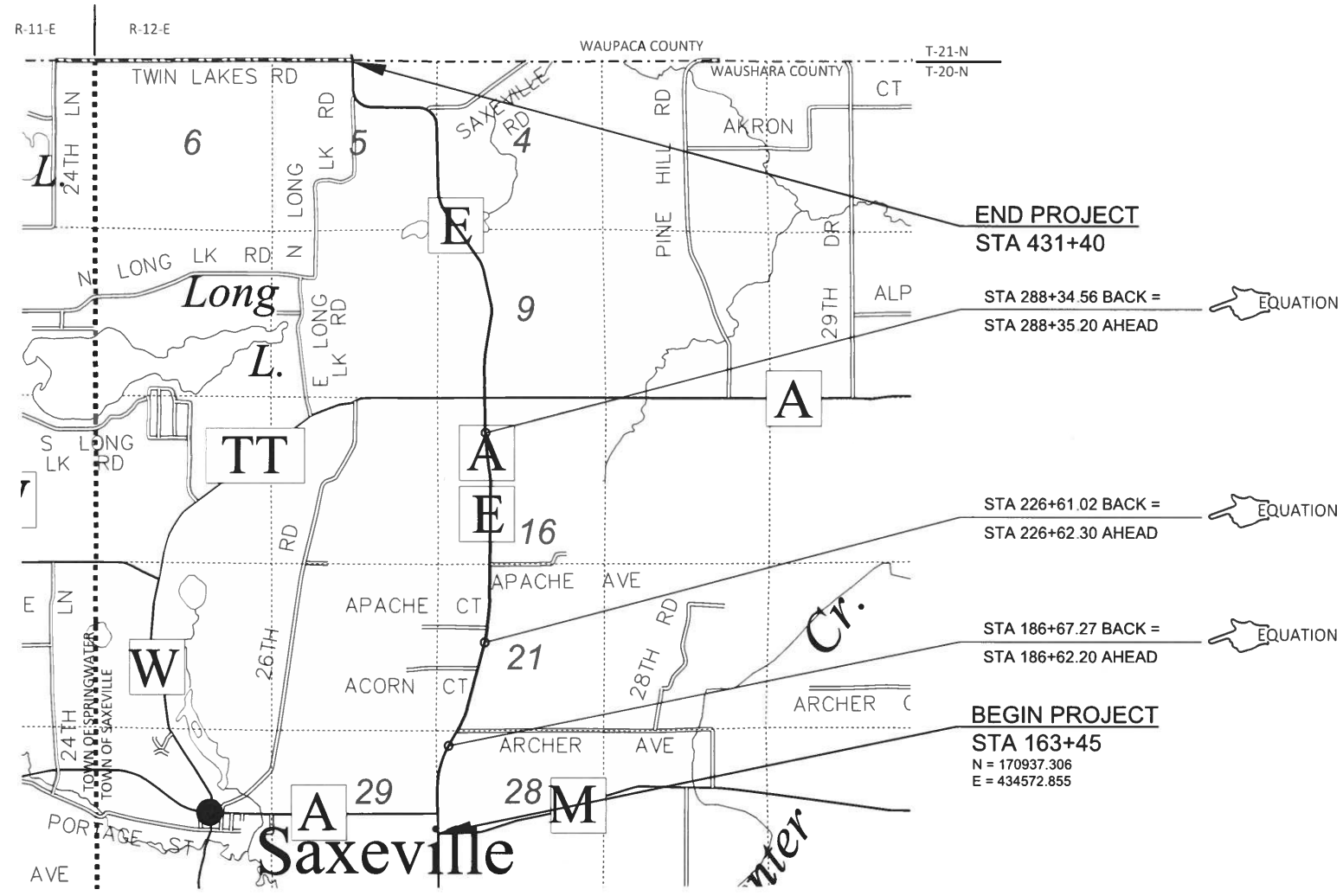
STATE PROJECT		FEDERAL PROJECT	
6987-00-73		PROJECT	CONTRACT
		WISC 2022407	1

DESIGN DESIGNATION

A.A.D.T.	2022	=	1235
A.A.D.T.	2042	=	1480
D.H.V.		=	207
D.D.		=	52/48
T.		=	4.8%
DESIGN SPEED		=	55 mph
ESALS		=	

CONVENTIONAL SYMBOLS

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



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

ACCEPTED FOR
COUNTY OF WAUSHARA

12/21/2021 *Ben Sun*
(Date) (Signature)
Highway Commissioner
(Title of Official)

ORIGINAL PLANS PREPARED BY
Westwood

DAVID S. GALE
E-26283
Luxemburg, Wis.

PROFESSIONAL ENGINEER
David S. Gale
12/21/21

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WESTWOOD
Designer	WESTWOOD
Project Manager	DAVID GALE, P.E.
Regional Examiner	JASON SCHAEFFER
Regional Supervisor	Dan Erva, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 1/20/2022 *Will*
(Signature)

GENERAL NOTES

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

A BUTT JOINT SHALL BE PLACED AT ALL LOCATIONS WHERE NEW PAVEMENT IS TO MATCH EXISTING PAVEMENT. ALL BUT JOINTS SHALL BE SAWCUT OR REMOVED AS APPROVED BY THE ENGINEER TO PROVIDE A VERTICAL FACE.

PAVEMENT AT ALL SIDE ROAD INTERSECTIONS SHALL BE REMOVED AND REPAVED TO THE LIMITS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

THE EXACT LOCATIONS AND LIMITS OF PRIVATE ENTRANCES, FIELD ENTRANCES, AND COMMERCIAL ENTRANCES SHALL BE DETERMINED BY THE ENGINEER.

DRIVEWAYS SHALL BE REPLACED IN KIND AND IN ACCORDANCE WITH THE CONSTRUCTION DETAILS

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	0.08	0.16	0.22	0.12	0.20	0.27	0.15	0.24	0.33	0.19	0.28	0.38
MEDIAN STRIP -	0.22	0.30	0.38	0.26	0.34	0.44	0.30	0.37	0.50	0.34	0.41	0.56
TURF	0.19	0.20	0.24	0.19	0.22	0.26	0.20	0.23	0.30	0.20	0.25	0.30
SIDE SLOPE -			0.25			0.27			0.28			0.30
TURF			0.32			0.34			0.36			0.38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA = 40 AC
TOTAL DISTURBED AREA = 19 AC

ORDER OF "SECTION 2" SHEETS

SHEET TITLE

- .PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL
- TRAFFIC CONTROL
- DETOUR PLAN

BORING NUMBER	STATION, OFFSET	ASPHALT THICKNESS (INCHES)	BASE COURSE THICKNESS (INCHES)
B01	171+08, 8' RIGHT	3.6	9.6
B02	186+23, 7' RIGHT	4.8	9.6
B03	208+42, 9' RIGHT	4.8	8.4
B04	230+64, 10' RIGHT	3.6	8.4
B05	251+20, 6' RIGHT	4.8	9.6
B06	271+63, 8' RIGHT	3.6	12.0
B07	290+82, 7' RIGHT	2.4	10.8
B08	307+87, 8' RIGHT	3.6	9.6
B09	330+79, 9' RIGHT	2.4	12.0
B10	355+57, 7' RIGHT	4.8	SEE NOTE 1
B11	351+57, 7' RIGHT	2.4	SEE NOTE 1
B12	381+99, 7' RIGHT	3.6	10.8
B13	405+57, 9' RIGHT	2.4	9.6
B14	424+07, 7' RIGHT	2.4	9.6

NOTE 1: BASE COURSE THICKNESS NOT OBTAINED

UTILITIES

- ELECTRIC ADAMS-COLUMBIA ELECTRIC CO-OP
DUANE MOORE
401 E. LAKE ST.
FRIENDSHIP, WI 53934
(800) 831-8629
DMOORE@ACECWI.COM
- COMMUNICATIONS AT&T WISCONSIN
CHARLES BARTELT
70 E. DIVISION ST.
FOND DU LAC, WI 54935
(920) 410-5104 CELL
CB1461@ATT.COM
- COMMUNICATIONS LUMEN (CENTURYLINK)
SCOTT HEINZELMAN
144 N PEARL ST
BERLIN, WI 54923
(920) 757-4802
RELOCATIONS@LUMEN.COM
- ELECTRIC WE ENERGIES
KRISTEN RONGHOLT
PSBA-A299
231 WEST MICHIGAN ST
MILWAUKEE, WI 53203
(414) 221-2738
WE-UTILITY-RELOCATIONS@WE-ENERGY.COM

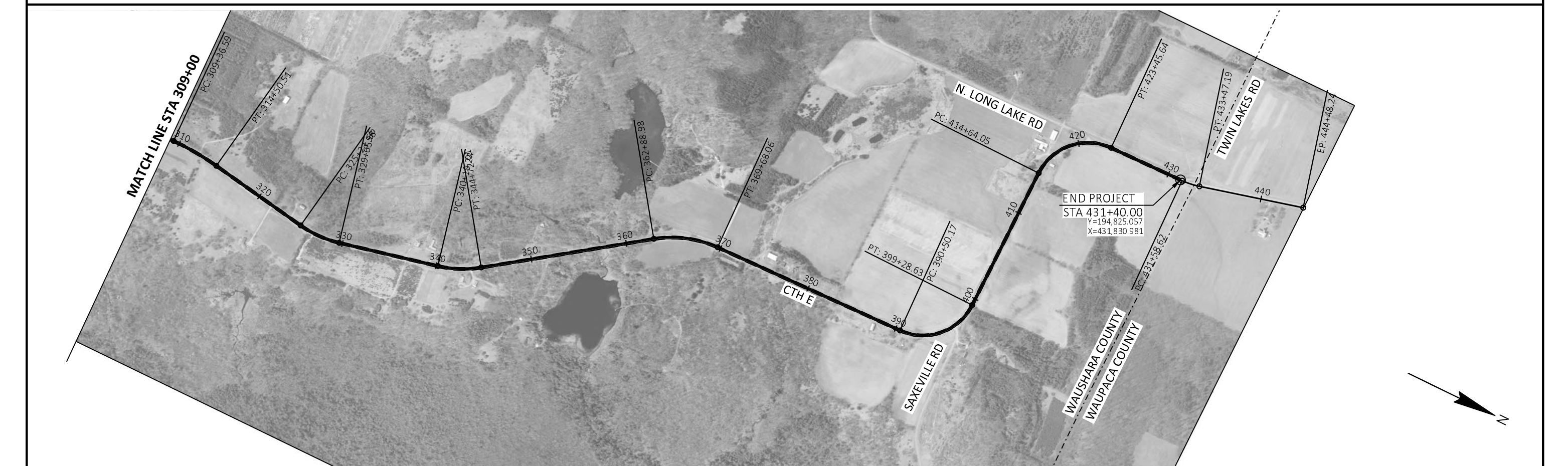
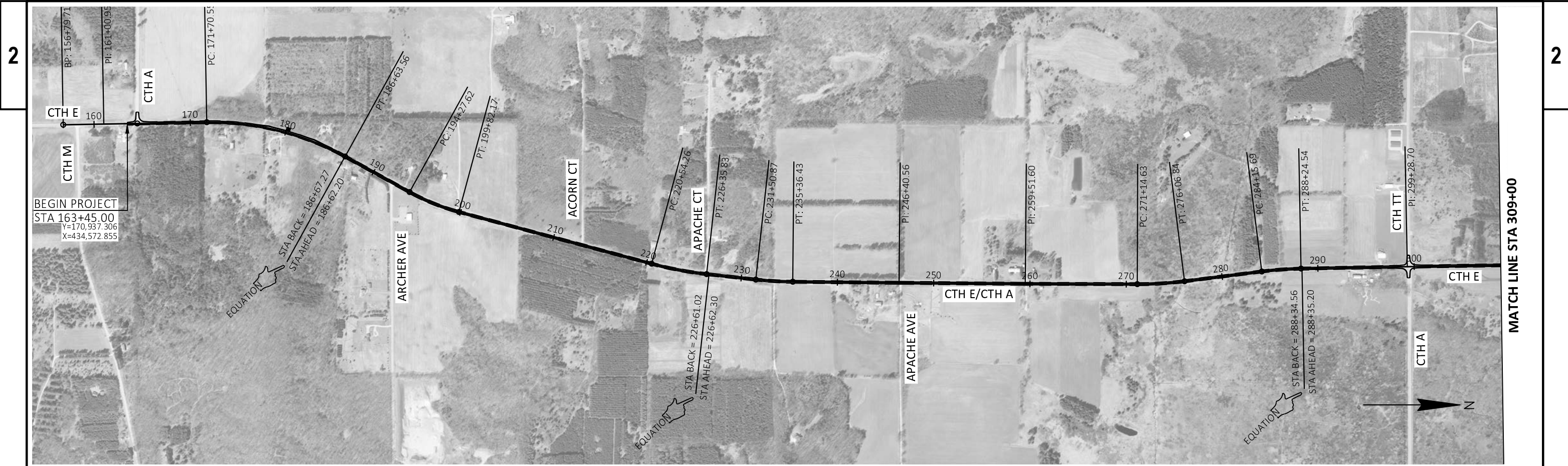
OTHER CONTACTS

- DNR LIAISON CASEY JONES
625 E. CTY. RD. Y SUITE 700
OSHKOSH, WI 54901
(715) 213-6571
CASEY.JONES@WISCONSIN.GOV
- HIGHWAY COMMISSIONER WAUSHARA COUNTY HWY DEPARTMENT
1001 E. MAIN STREET
WAUTOMA, WI 54982
ATTN: BRIAN FREIMARK
(920) 787-3327
BRIAN.FREIMARK@CO.WAUSHARA.WI.US
- DESIGN CONSULTANT WESTWOOD
1 SYSTEMS DRIVE
APPLETON, WI 54914-1654
ATTN: DAVID GALE, P.E.
920-735-6900
- OTHER SEWARDS DAIRY
SCOTT SEWARD
N101 PINE HILL RD.
PINE RIVER, WI 54965
(715) 572-9102 CELL
SEWARDSDAIRY@YAHOO.COM

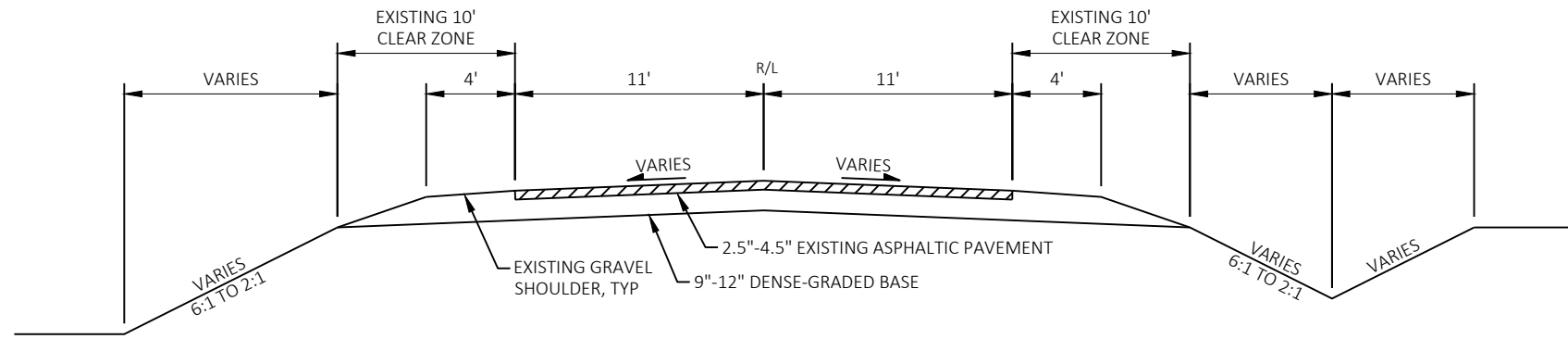


Dial **811** or (800)242-8511

www.DiggersHotline.com

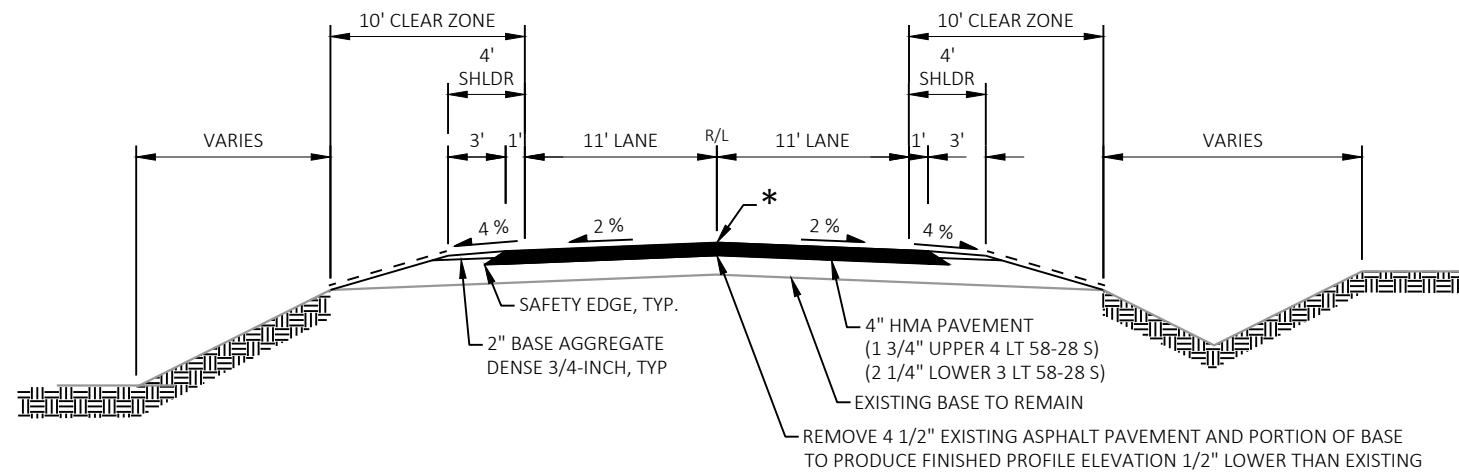


PROJECT NO: 6987-00-73	HWY: CTH E	COUNTY: WAUSHARA	PROJECT OVERVIEW	SHEET	E
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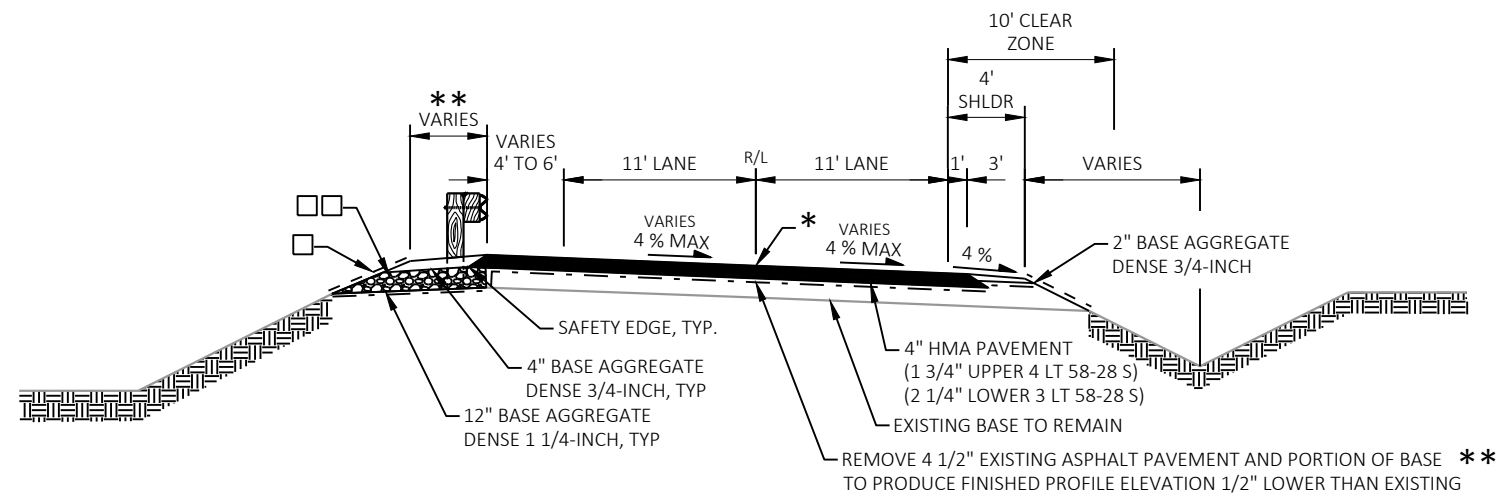
TYPICAL EXISTING SECTION FOR CTH E

STA 163+45 TO STA 431+40



TYPICAL FINISHED SECTION - CTH E

STA 163+45 TO STA 170+69
STA 187+66 TO STA 355+00
STA 358+50 TO STA 431+40



TYPICAL FINISHED SECTION - CTH E

STA 170+69 TO STA 187+66

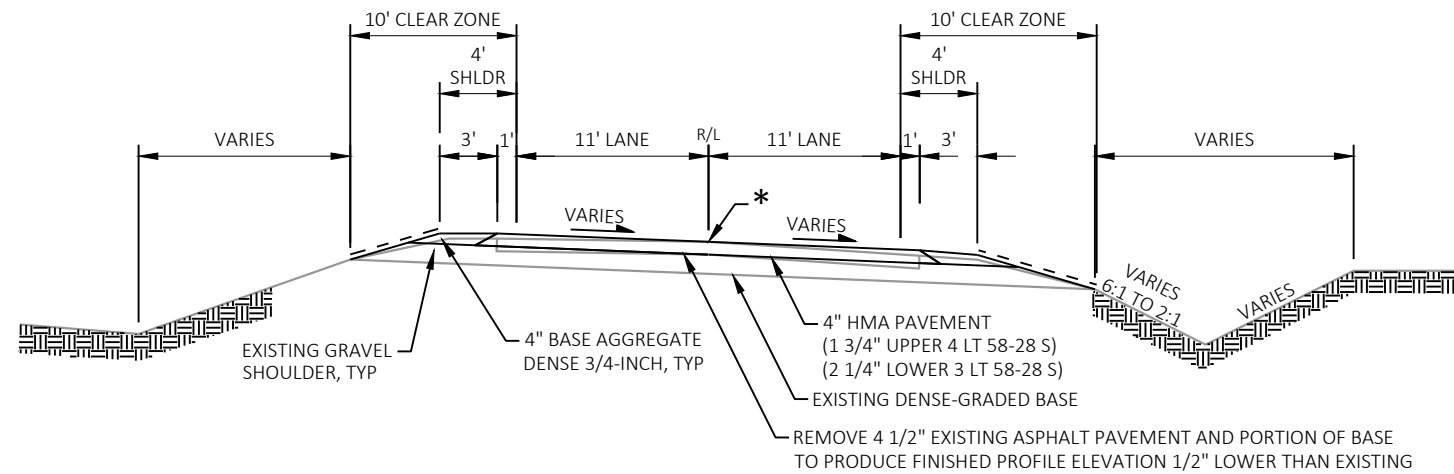
NOTES

- * FINISHED PROFILE ELEVATION ESTIMATED TO BE 1/2" LOWER THAN EXISTING. EXCESS BASE AGGREGATE GENERATED SHOULD BE USED FOR SLOPE CORRECTION. IF A DEFICIENCY OF BASE AGGREGATE EXISTS, NOTIFY ENGINEER AND USE UNDISTRIBUTED BASE AGGREGATE DENSE AS APPROVED. SEE CROSS SECTIONS FOR ADDITIONAL DETAILS AND LIMITS OF EXPECTED CONSTRUCTION IN CURVES WHERE SIDE SLOPE GRADING IS REQUIRED.
- ** GRAVEL SHOULDER VARIES IN WIDTH FROM 4' TO 6' AT EAT POST 1
- *** REMOVING EXISTING ASPHALTIC PAVEMENT, AND PORTION OF EXISTING BASE INCLUDED UNDER THE ITEM EXCAVATION COMMON. EXCESS MATERIAL SHALL BE USED AS FILL, AND SUPPLEMENTED BY EXCESS FILL MATERIAL FROM OTHER DIVISIONS AS INDICATED IN THE CROSS SECTIONS.

- FOR SIDE SLOPES SEE CROSS-SECTIONS FOR DETAILS
- ADDITIONAL SHOULDER WORK STA 177+50 TO STA 184+50; SEE CROSS SECTIONS.

LEGEND

- - - FERTILIZE AND SEED
- - - EXCAVATION LIMITS

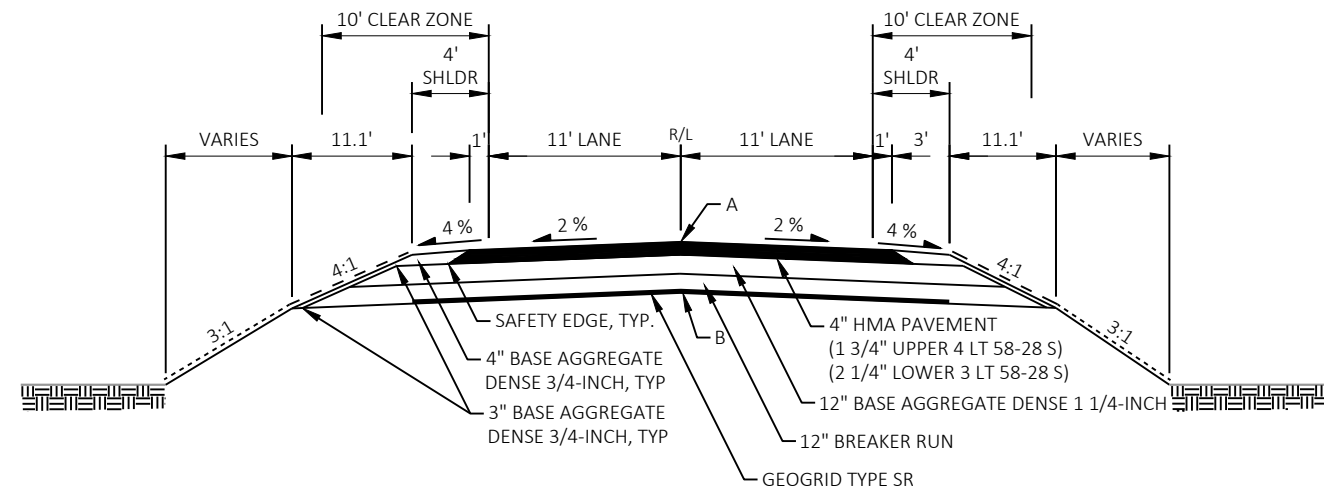


TYPICAL SECTION FOR CROSS SLOPE CORRECTION CTH E

*** STA 170+69 TO STA 187+66	MAX SE 4%
Δ STA 192+99 TO STA 201+11	MAX SE 4.6%
Δ STA 219+47 TO STA 227+44	MAX SE 3.3%
Δ STA 230+44 TO STA 236+43	MAX SE 3.3%
Δ STA 270+07 TO STA 277+14	MATCH EXISTING SE
Δ STA 283+09 TO STA 289+32	MATCH EXISTING SE
*** STA 308+18 TO STA 315+70	MAX SE 4.0%
Δ STA 323+72 TO STA 331+18	MAX SE 6.0%
Δ STA 338+66 TO STA 346+26	MAX SE 6.0%
Δ STA 361+37 TO STA 371+22	MAX SE 6.0%
Δ STA 388+97 TO STA 400+81	MAX SE 5.9%
*** STA 413+11 TO STA 424+99	MAX SE 5.9%

NOTES

- * FINISHED PROFILE ELEVATION ESTIMATED TO BE 1/2" LOWER THAN EXISTING. EXCESS BASE AGGREGATE GENERATED SHOULD BE USED FOR SLOPE CORRECTION. IF A DEFICIENCY OF BASE AGGREGATE EXISTS, NOTIFY ENGINEER AND USE UNDISTRIBUTED BASE AGGREGATE DENSE AS APPROVED. SEE CROSS SECTIONS FOR ADDITIONAL DETAILS AND LIMITS OF EXPECTED CONSTRUCTION IN CURVES WHERE SIDE SLOPE GRADING IS REQUIRED.
- Δ REMOVING 4 1/2" EXISTING ASPHALT PAVEMENT, PORTION OF EXISTING BASE, AND MINOR GRADING INCLUDED IN THE ITEM REMOVING ASPHALTIC SURFACE.
- *** REMOVING EXISTING ASPHALTIC PAVEMENT, AND PORTION OF EXISTING BASE INCLUDED UNDER THE ITEM EXCAVATION COMMON. EXCESS MATERIAL SHALL BE USED AS FILL, AND SUPPLEMENTED BY EXCESS FILL MATERIAL FROM OTHER DIVISIONS AS INDICATED IN THE CROSS SECTIONS.



TYPICAL FINISHED SECTION - CTH E

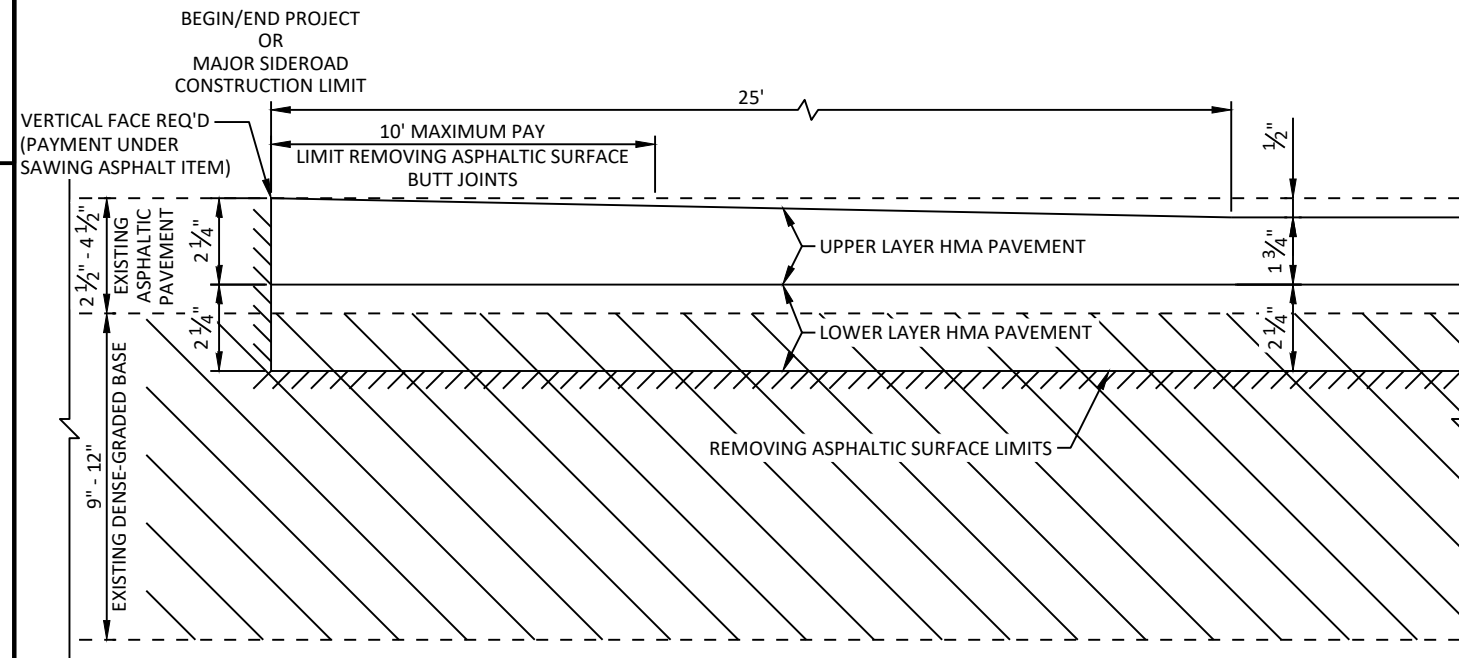
*** STA 355+00 TO STA 358+50

NOTES:

- A POINT REFERRED TO ON PROFILE
- B POINT REFERRED TO ON CROSS SECTION

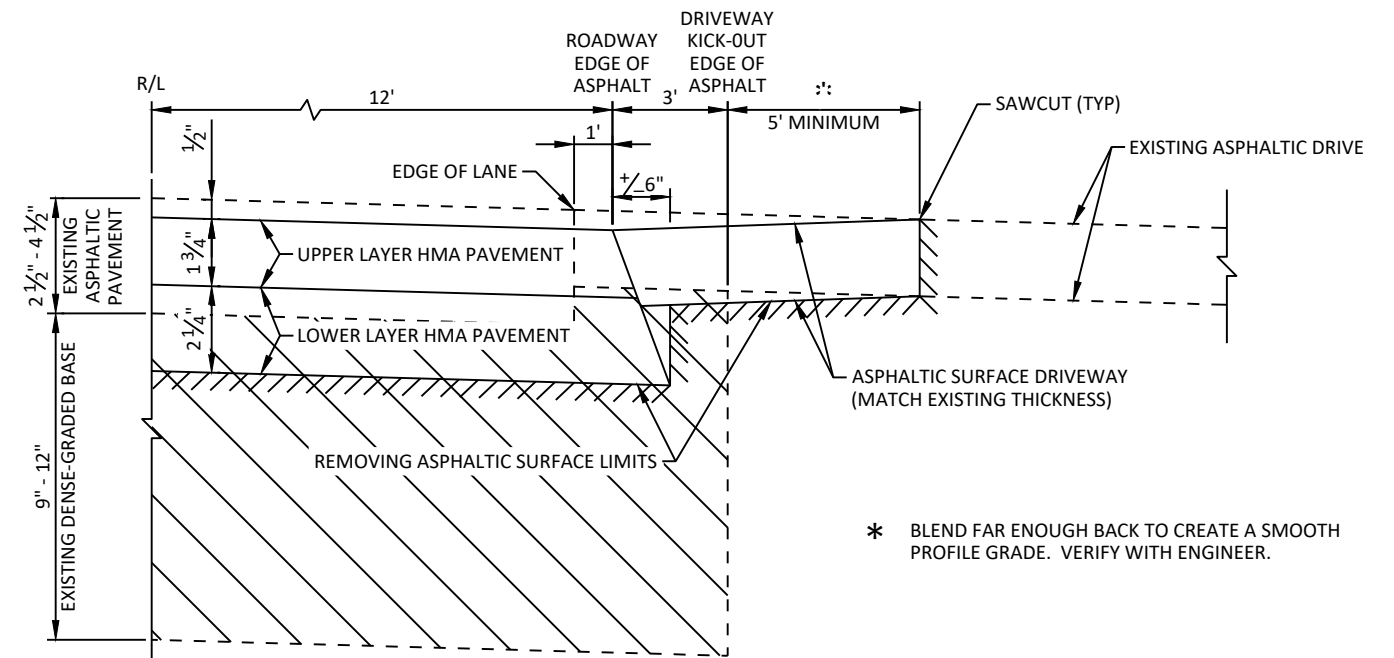
LEGEND

- - - FERTILIZE AND SEED
- TOPSOIL, FERTILIZE, SEED, & EROSION MAT



MAINLINE AND MAJOR SIDEROAD BUTT JOINT DETAIL N.T.S.

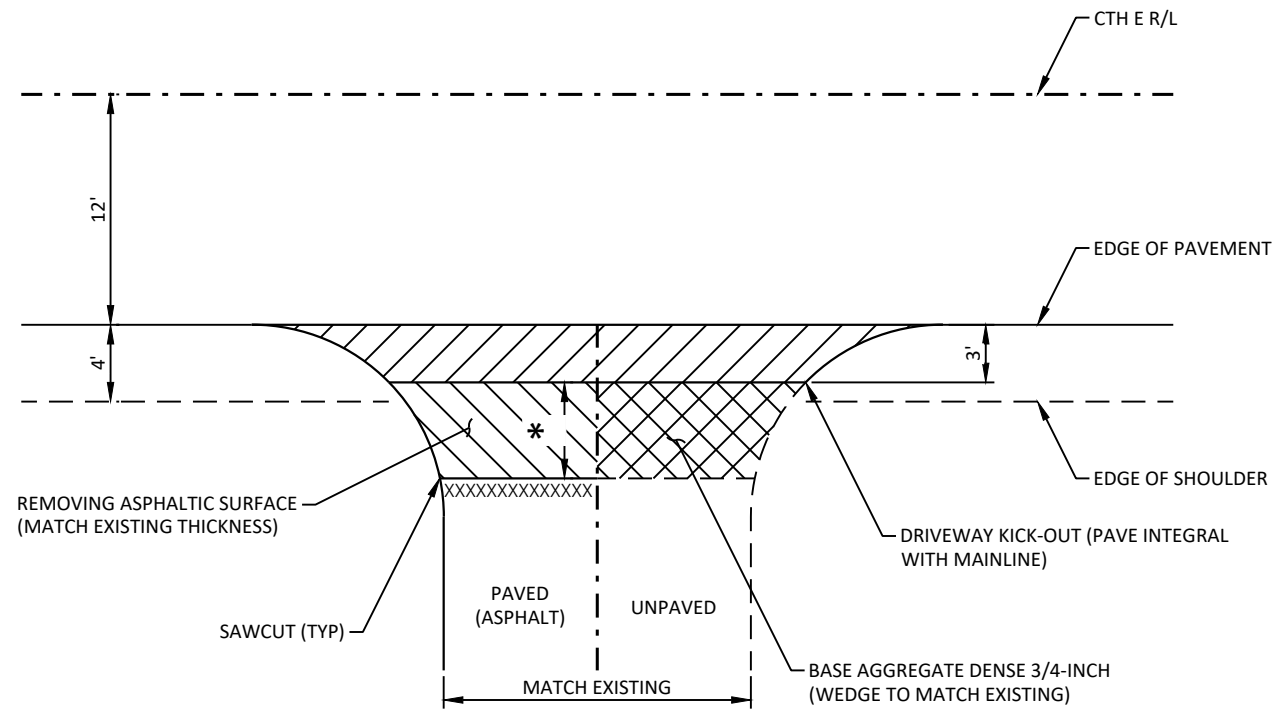
CTH E	STA 163+45
CTH E	STA 431+40
CTH A WEST	STA 10+78
CTH TT	STA 20+50
CTH A EAST	STA 22+83



MINOR SIDEROAD AND ASPHALT DRIVE EDGE JOINT DETAIL N.T.S.

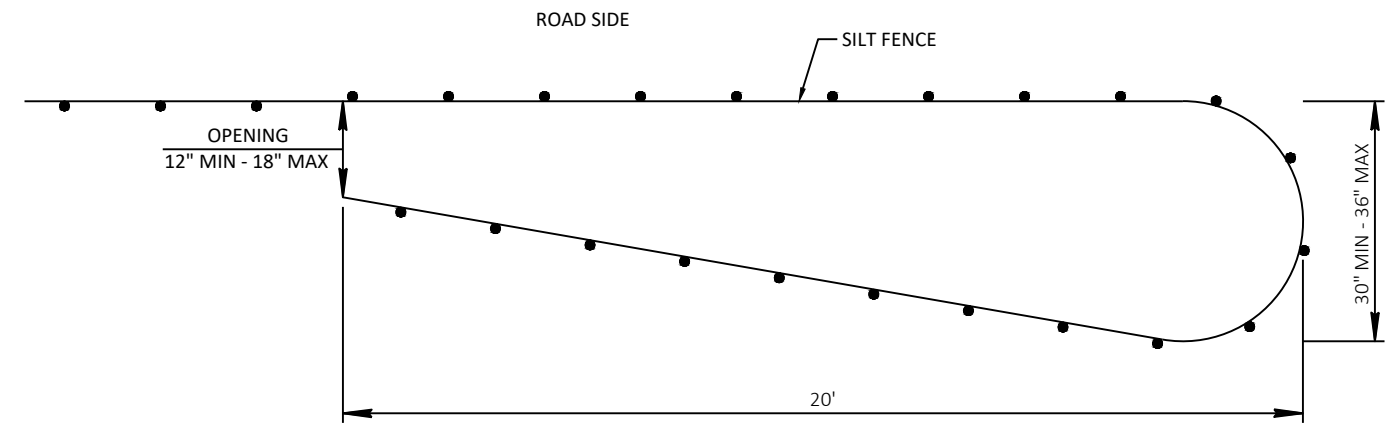
ARCHER AVE
SAXEVILLE RD
N. LONG LAKE RD
ASPHALT DRIVES

* BLEND FAR ENOUGH BACK TO CREATE A SMOOTH PROFILE GRADE. VERIFY WITH ENGINEER.



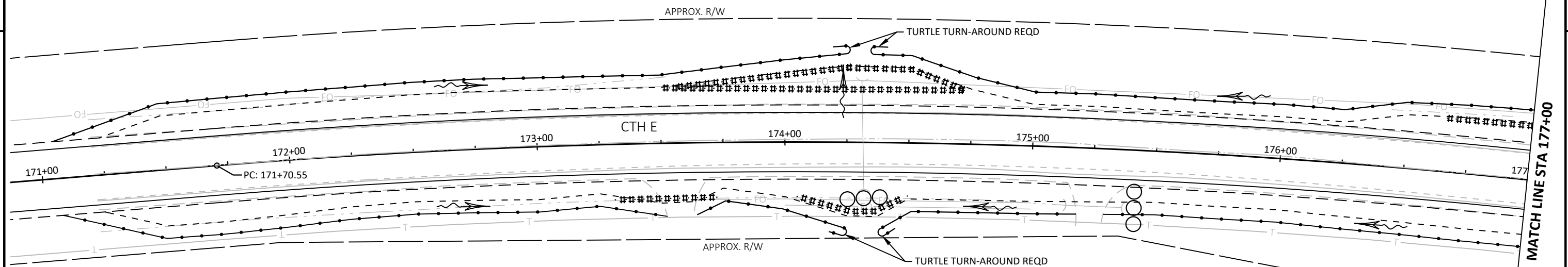
RURAL DRIVEWAY AND MINOR SIDEROAD INTERSECTION DETAIL

* 5' MINIMUM (BLEND BACK FAR ENOUGH TO CREATE A SMOOTH PROFILE GRADE. VERIFY WITH ENGINEER)



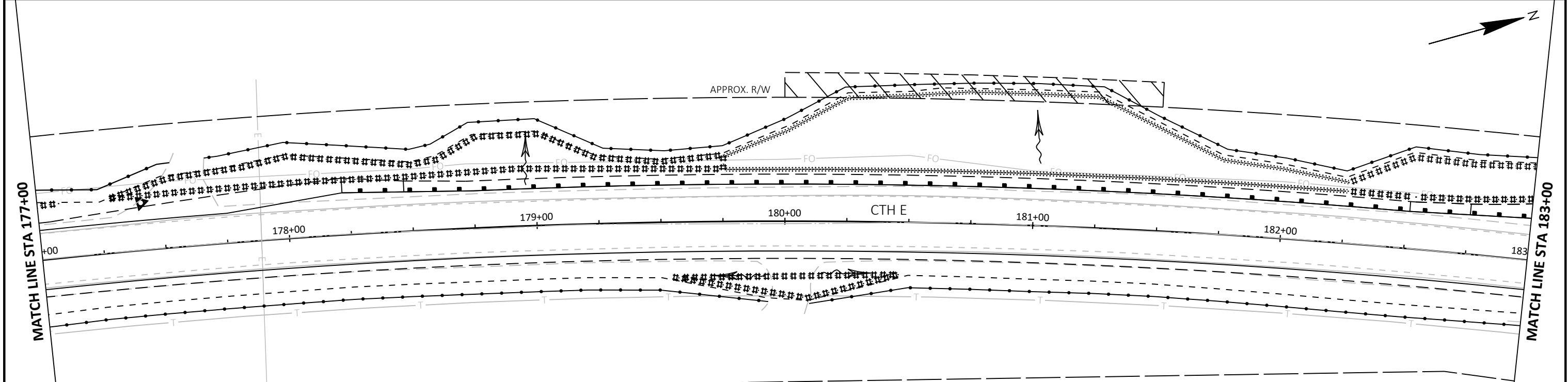
SILT FENCE TURTLE TURN-AROUND DETAIL

- NOTE:
1. SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND.
 2. TIE IN TO PHYSICAL BARRIERS WHENEVER POSSIBLE (I.E. STRUCTURES, CULVERT ENDWALLS, ASPHALT DRIVES, ETC.)

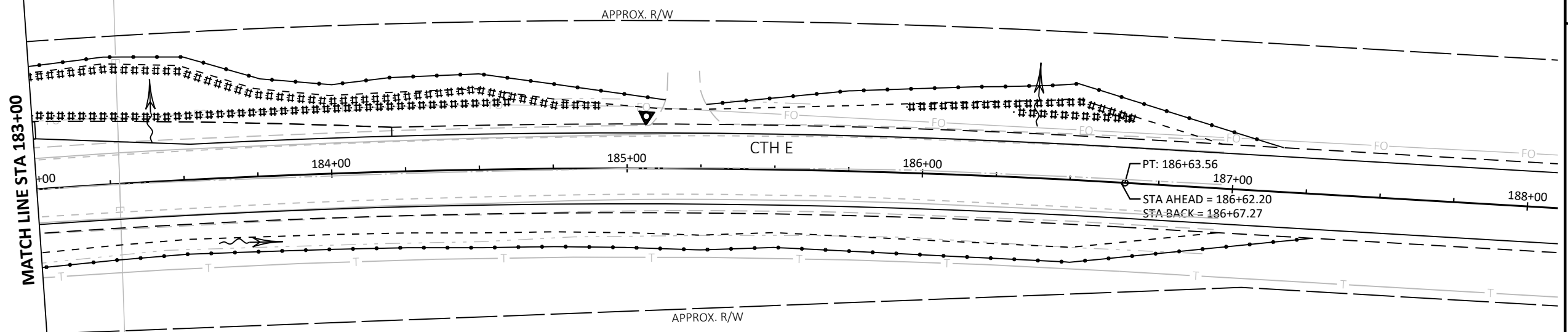
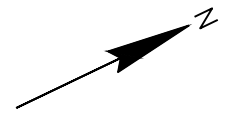


LEGEND

- ##### EROSION MAT CLASS I, TYPE B
- ##### EROSION MAT CLASS II, TYPE B
- SILT FENCE
- - - SLOPE INTERCEPT
- ∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW

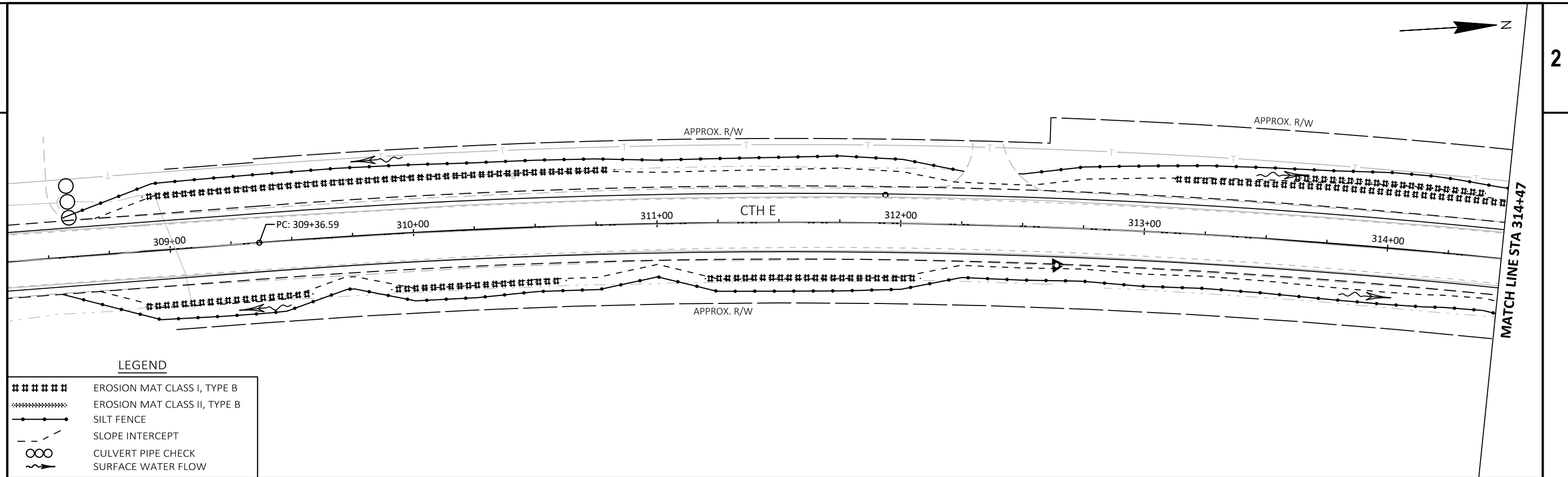


PROJECT NO: 6987-00-73	HWY: CTH E	COUNTY: WAUSHARA	EROSION CONTROL	SHEET	E
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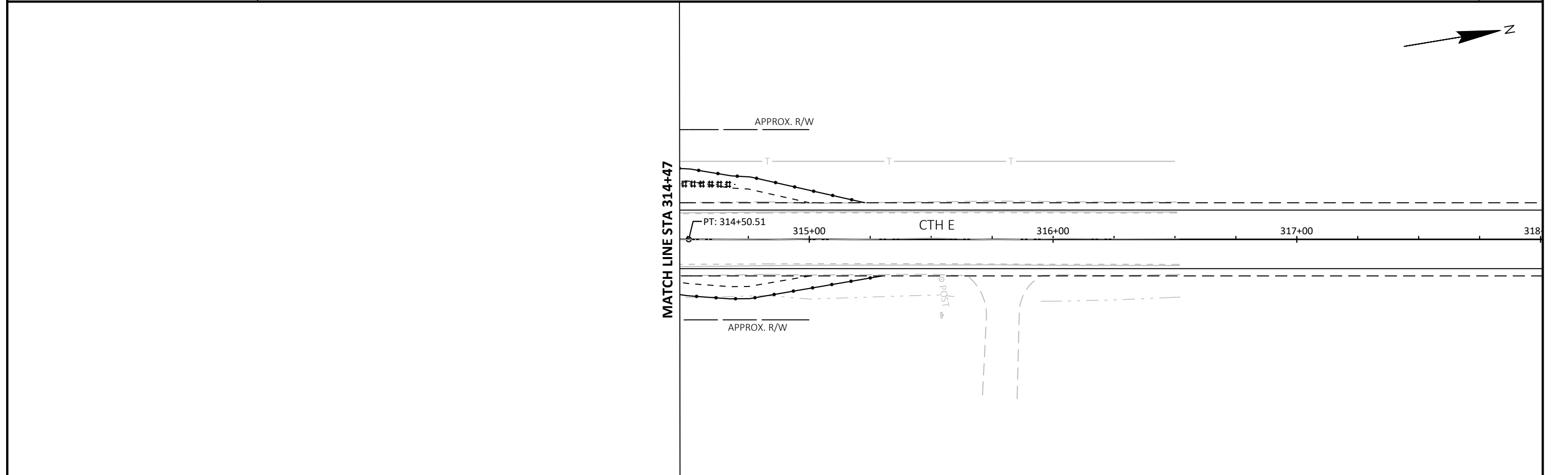
LEGEND

- ##### EROSION MAT CLASS I, TYPE B
- EROSION MAT CLASS II, TYPE B
- .-.-.- SILT FENCE
- - - - SLOPE INTERCEPT
- ∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW

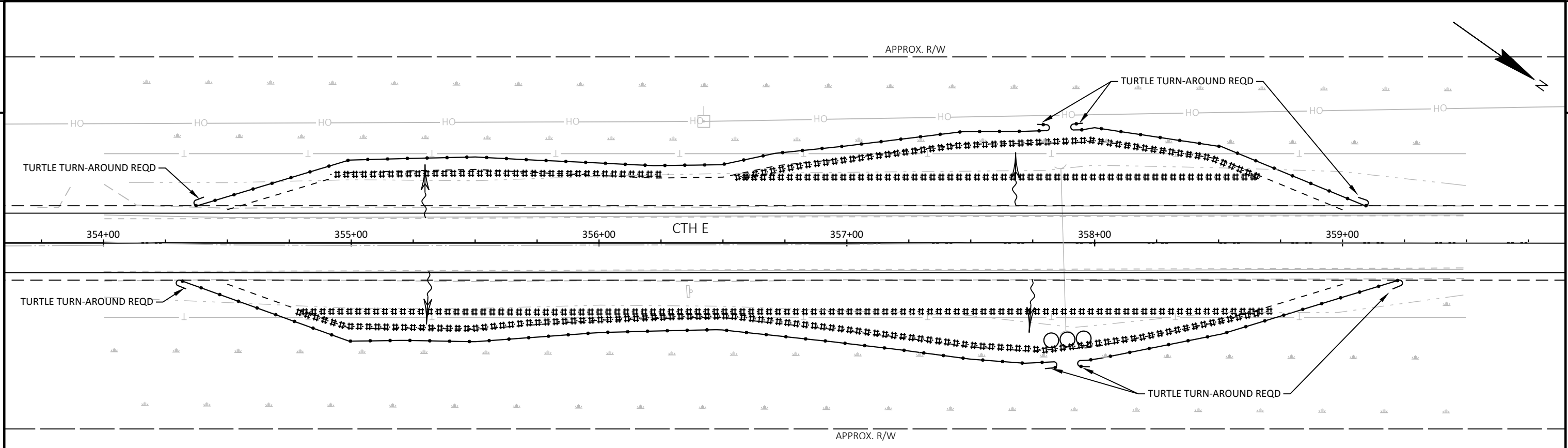


LEGEND

- ##### EROSION MAT CLASS I, TYPE B
- ##### EROSION MAT CLASS II, TYPE B
- SILT FENCE
- - - SLOPE INTERCEPT
- ∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW

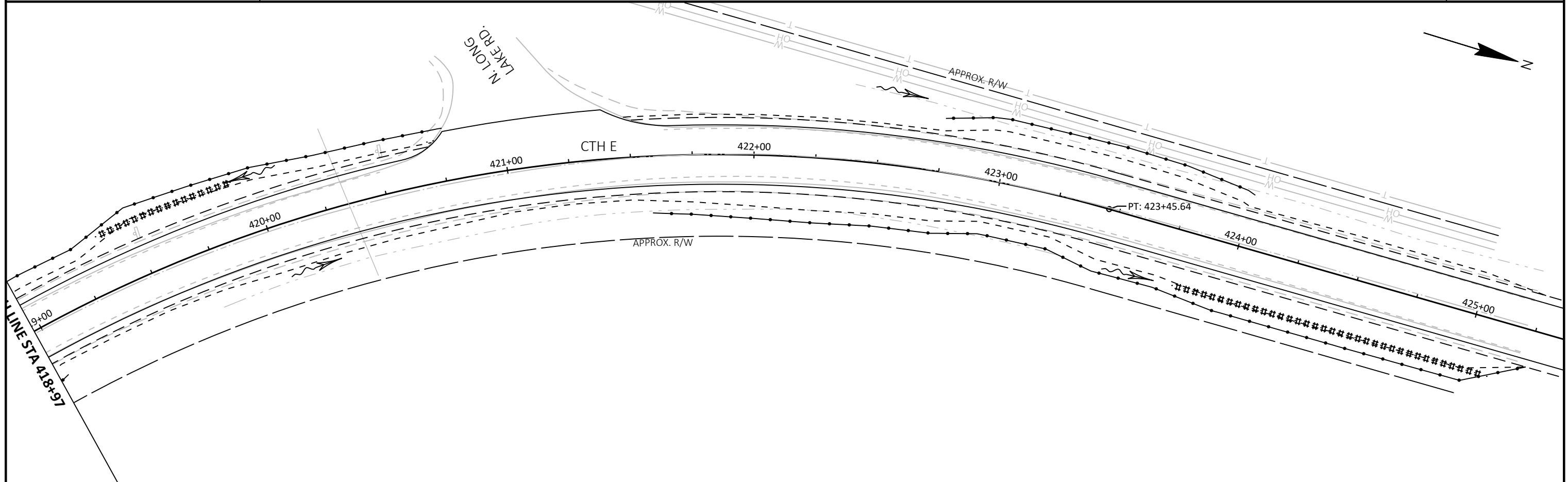
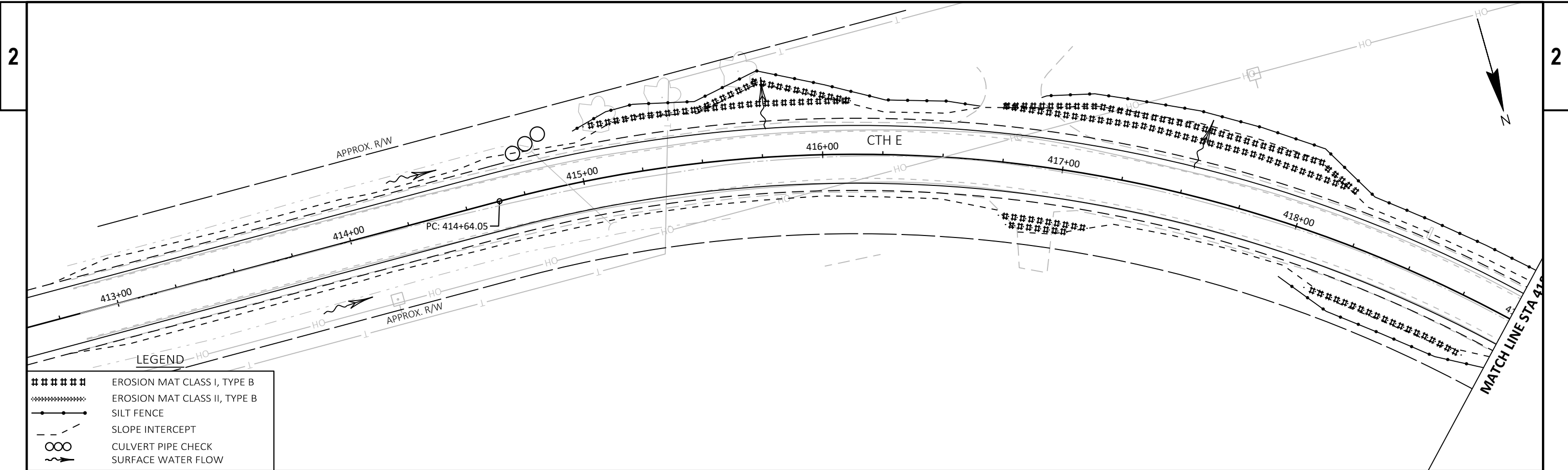


PROJECT NO: 6987-00-73	HWY: CTH E	COUNTY: WAUSHARA	EROSION CONTROL	SHEET	E
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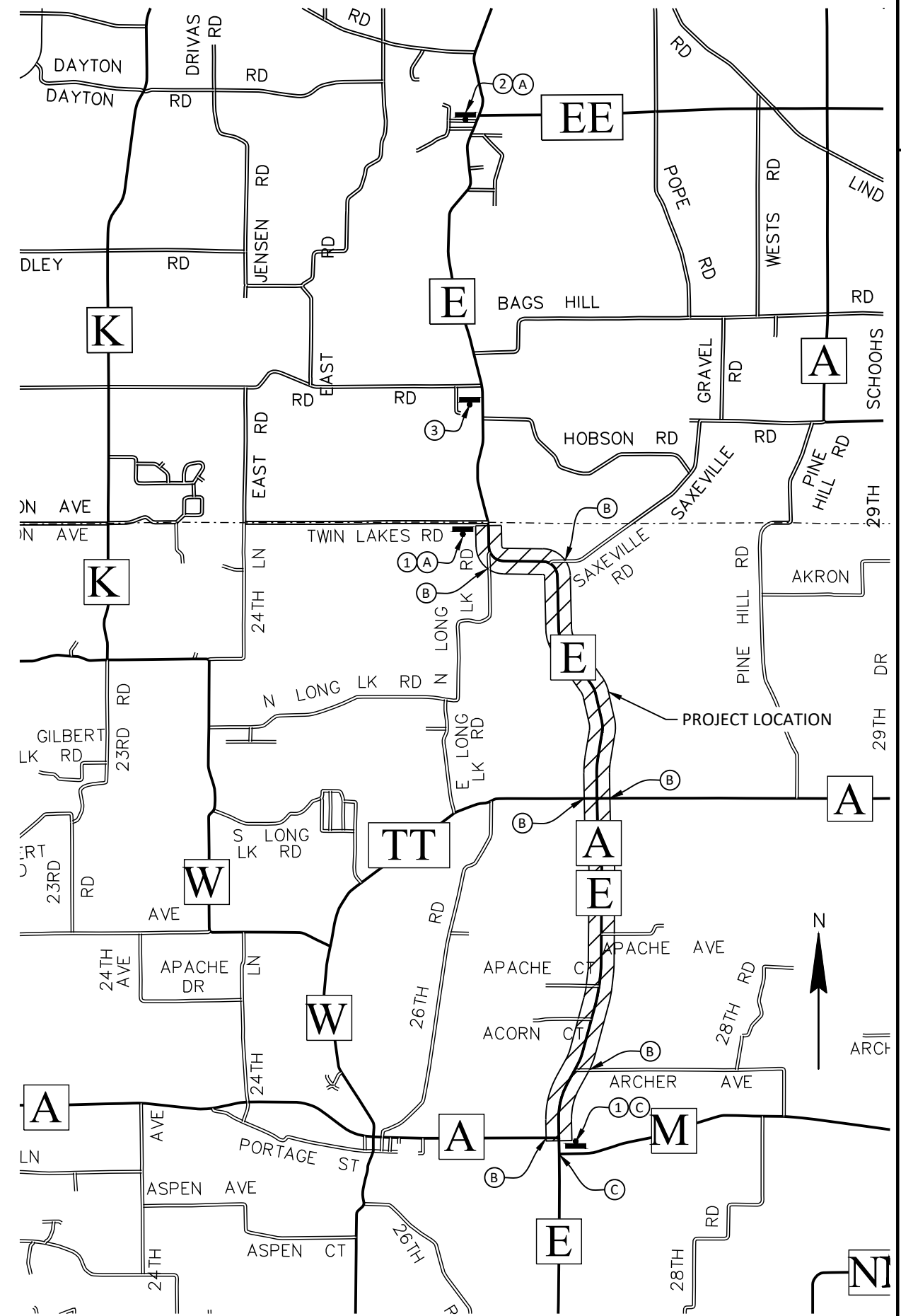


LEGEND

- ##### EROSION MAT CLASS I, TYPE B
- ***** EROSION MAT CLASS II, TYPE B
- SILT FENCE
- - - SLOPE INTERCEPT
- OO CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW



PROJECT NO: 6987-00-73	HWY: CTH E	COUNTY: WAUSHARA	EROSION CONTROL	SHEET	E
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**HWY A
ROAD WORK
BEGINS XXX-XX**

G20-57
72"x36"

①

**ROAD CLOSED
3 MILES AHEAD
LOCAL TRAFFIC ONLY**

R11-3
60"x30"

②

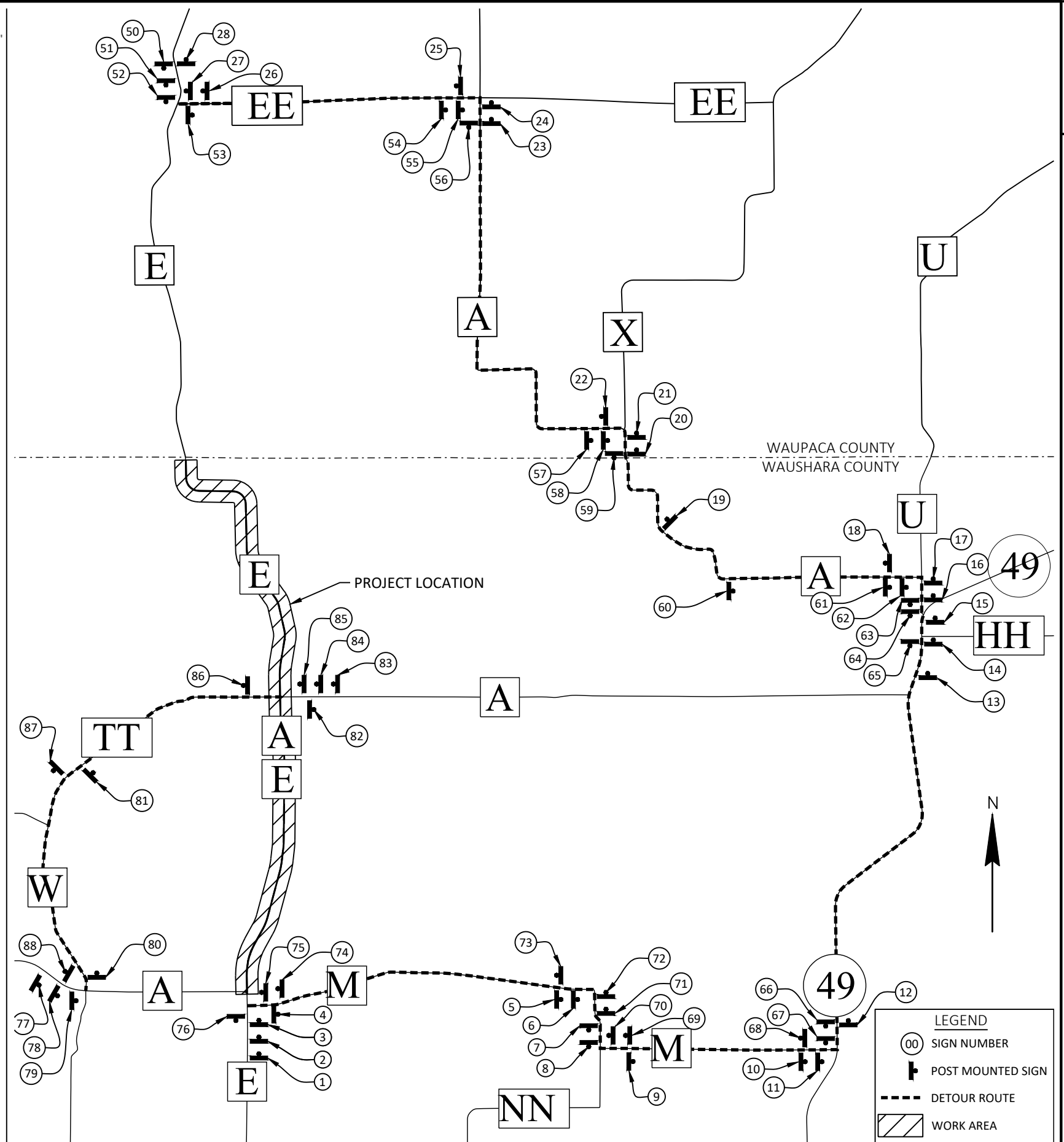
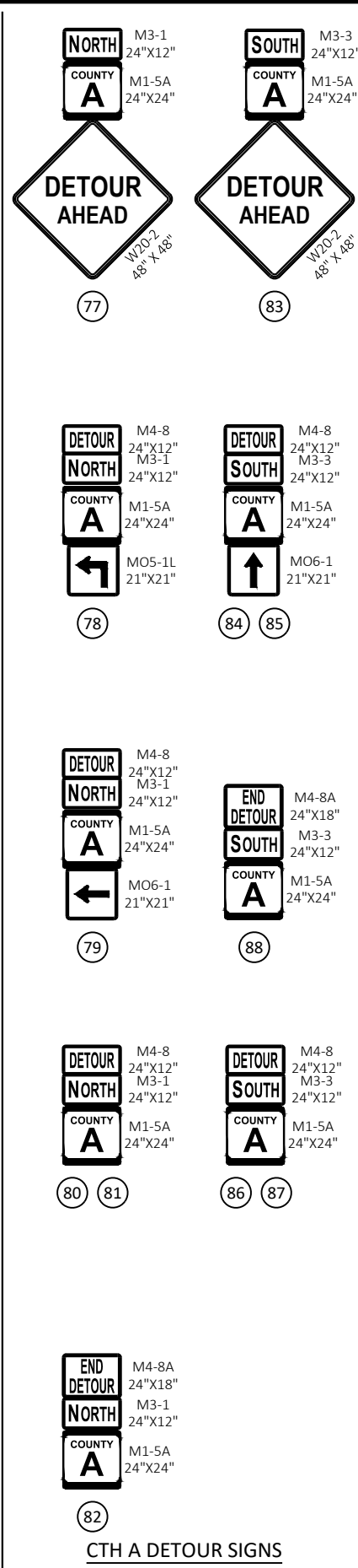
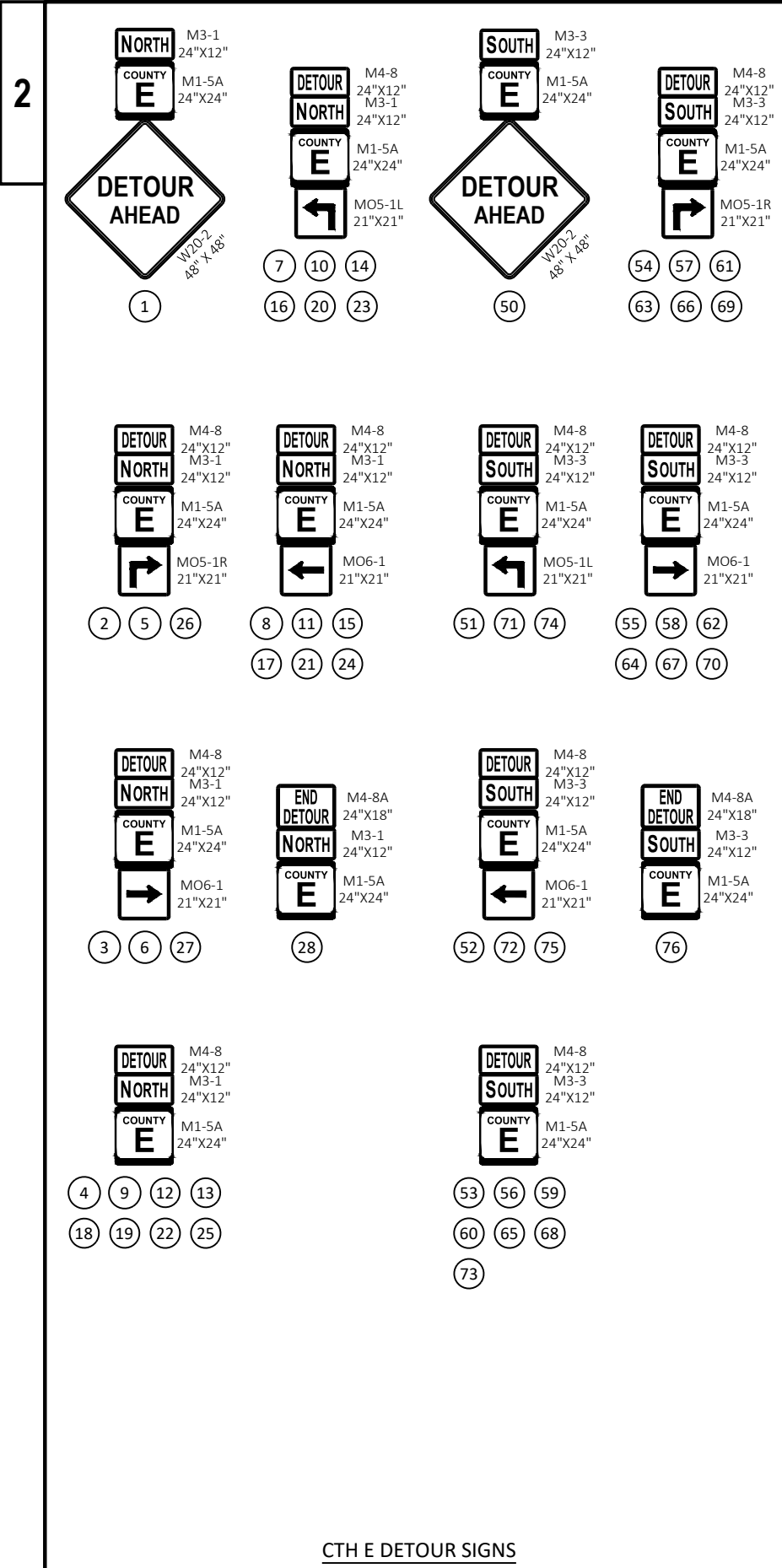
**ROAD CLOSED
1 MILES AHEAD
LOCAL TRAFFIC ONLY**

R11-3
60"x30"

③

NOTES:

- (A) USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAILS A, C AND E.
- (B) USE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" DETAILS 4.
- (C) USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAILS B, C AND E.



Estimate Of Quantities

6987-00-73

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	5.000	5.000
0004	201.0205	Grubbing	STA	5.000	5.000
0006	204.0110	Removing Asphaltic Surface	SY	57,660.000	57,660.000
0008	204.0115	Removing Asphaltic Surface Butt Joints	SY	128.000	128.000
0010	205.0100	Excavation Common	CY	3,674.000	3,674.000
0012	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 6987-00-73	LS	1.000	1.000
0014	213.0100	Finishing Roadway (project) 01. 6987-00-73	EACH	1.000	1.000
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	3,030.000	3,030.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,020.000	1,020.000
0020	311.0110	Breaker Run	TON	2,360.000	2,360.000
0022	455.0605	Tack Coat	GAL	4,393.000	4,393.000
0024	460.2000	Incentive Density HMA Pavement	DOL	11,030.000	11,030.000
0026	460.5223	HMA Pavement 3 LT 58-28 S	TON	9,759.000	9,759.000
0028	460.5224	HMA Pavement 4 LT 58-28 S	TON	7,435.000	7,435.000
0030	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	20.000	20.000
0032	614.2330	MGS Guardrail 3 K	LF	375.000	375.000
0034	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0036	618.0100	Maintenance And Repair of Haul Roads (project) 01. 6987-00-73	EACH	1.000	1.000
0038	619.1000	Mobilization	EACH	1.000	1.000
0040	624.0100	Water	MGAL	25.000	25.000
0042	625.0100	Topsoil	SY	4,400.000	4,400.000
0044	628.1504	Silt Fence	LF	7,970.000	7,970.000
0046	628.1520	Silt Fence Maintenance	LF	7,970.000	7,970.000
0048	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0050	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0052	628.2004	Erosion Mat Class I Type B	SY	3,650.000	3,650.000
0054	628.2023	Erosion Mat Class II Type B	SY	750.000	750.000
0056	628.7504	Temporary Ditch Checks	LF	100.000	100.000
0058	628.7555	Culvert Pipe Checks	EACH	30.000	30.000
0060	628.7570	Rock Bags	EACH	20.000	20.000
0062	629.0210	Fertilizer Type B	CWT	12.100	12.100
0064	630.0130	Seeding Mixture No. 30	LB	351.000	351.000
0066	630.0500	Seed Water	MGAL	333.000	333.000
0068	638.2102	Moving Signs Type II	EACH	6.000	6.000
0070	642.5001	Field Office Type B	EACH	1.000	1.000
0072	643.0420	Traffic Control Barricades Type III	DAY	900.000	900.000
0074	643.0705	Traffic Control Warning Lights Type A	DAY	1,100.000	1,100.000
0076	643.0900	Traffic Control Signs	DAY	13,300.000	13,300.000
0078	643.1000	Traffic Control Signs Fixed Message	SF	36.000	36.000
0080	643.5000	Traffic Control	EACH	1.000	1.000
0082	645.0135	Geotextile Type SR	SY	1,170.000	1,170.000
0084	646.1020	Marking Line Epoxy 4-Inch	LF	94,920.000	94,920.000
0086	648.0100	Locating No-Passing Zones	MI	5.070	5.070
0088	650.4500	Construction Staking Subgrade	LF	350.000	350.000
0090	650.5000	Construction Staking Base	LF	3,987.000	3,987.000
0092	650.8000	Construction Staking Resurfacing Reference	LF	27,112.000	27,112.000
0094	650.9910	Construction Staking Supplemental Control (project) 01. 6987-00-73	LS	1.000	1.000
0096	650.9920	Construction Staking Slope Stakes	LF	3,987.000	3,987.000
0098	690.0150	Sawing Asphalt	LF	470.000	470.000

Estimate Of Quantities

6987-00-73

Line	Item	Item Description	Unit	Total	Qty
0100	740.0440	Incentive IRI Ride	DOL	20,299.000	20,299.000
0102	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0104	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

EARTHWORK												
LOCATION	STATION	TO	STATION	205.0100 EXCAVATION COMMON (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL FACTOR 1.25	MASS ORDINATE +/- (14)	WASTE (15)	COMMENT
				CUT (2)	EBS EXCAVATION							
CTH E	170+69	-	187+66	691	0	445	246	515	644	-398	-398	
CTH E	308+18	-	315+70	211	0	182	29	75	94	-65	-65	
CTH E	354+50	-	359+00	1,464	0	125	1,339	482	603	737	737	
CTH E	413+11	-	424+99	408	0	331	77	52	65	12	12	
UNDISTRIBUTED				900	0	900	0	0	0	0	0	YIELDING SURBGRADE AREA
GRAND TOTAL				3,674	0	1,983	1,691	1,124	1,405	286	286	
TOTAL COMMON EXC				3,674								

NOTES:

- (1) EXCAVATION COMMON IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
- (2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- (5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
- (15) ASSUMES AVAILABLE MATERIAL FROM DIVISIONS WITH EXCESS MATERIAL IS USED IN DIVISIONS WITH A SHORTAGE OF MATERIAL.

CLEARING AND GRUBBING

STATION TO STATION	DIR	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
178+00 - 183+00	LT	CTH E	5	5
PROJECT TOTALS			5	5

REMOVING ASPHALTIC SURFACE

STATION	-	STATION	LOCATION	204.0110 SY
CATEGORY 0010				
163+45	-	170+69	CTH E	1,770
187+66	-	308+18	CTH E	29,630
315+70	-	355+00	CTH E	9,610
358+50	-	413+11	CTH E	13,350
424+99	-	431+40	CTH E	1,570
10+78	-	11+84	CTH A	520
20+50	-	21+55	CTH TT	540
21+77	-	22+83	CTH TT	540
DRIVEWAYS				130
PROJECT TOTAL				57,660

REMOVING ASPHALTIC SURFACE BUTT JOINTS

STATION	ROADWAY	LOCATION	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY
CATEGORY 0010			
163+45	CTH E	BEGIN OF PROJECT	26
431+30	CTH E	END OF PROJECT	27
10+78	CTH A	CTH A	25
20+50	CTH TT	CTH TT	25
22+83	CTH TT	CTH TT	25
PROJECT TOTAL			128

3

BASE COURSE

STATION TO STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	311.0110 BREAKER RUN TON	624.0100 WATER MGAL	REMARKS
CATEGORY 0010						
163+45 - 170+69	CTH E	60	---	---	0.4	
170+69 - 187+66	CTH E	310	---	---	1.9	
187+66 - 308+18	CTH E	1,070	---	---	6.4	
308+18 - 315+70	CTH E	70	---	---	0.4	
315+70 - 355+00	CTH E	360	---	---	2.2	
355+00 - 358+50	CTH E	210	1,000	1,240	7.3	
358+50 - 413+11	CTH E	490	---	---	2.9	
413+11 - 424+99	CTH E	110	---	---	0.7	
424+99 - 431+40	CTH E	60	---	---	0.4	
10+78 - 11+84	CTH A	20	---	---	0.1	
20+50 - 21+55	CTH TT	20	---	---	0.1	
21+77 - 22+83	CTH TT	20	---	---	0.1	
DRIVEWAYS		210	---	---	1.3	
UNDISTRIBUTED		20	20	1,120	0.9	BREAKER RUN FOR YIELDING SUBGRADE AREAS
PROJECT TOTALS		3,030	1,020	2,360	25.0	

ASPHALTIC SURFACE DRIVEWAYS & FIELD ENTERANCES

	465.0120
	TONS
CATEGORY 0010	
DRIVEWAYS	20
PROJECT TOTALS	20

3

ASPHALTIC ITEMS

STATION	TO	STATION	ROADWAY	AREA	PAVEMENT SECTION	455.0605 TACK COAT GAL	460.5223 HMA PAVEMENT 3 LT 58-28 S TON	460.5224 HMA PAVEMENT 4 LT 58-28 S TON
CATEGORY 0010								
163+45	-	170+69	CTH E	LT SHLD & LANE	OVERLAY	62	137	104
				RT SHLD & LANE		62	138	105
170+69	-	187+66	CTH E	LT SHLD & LANE	SLOPE CORRECTION	138	307	234
				RT SHLD & LANE		126	281	213
187+66	-	308+18	CTH E	LT SHLD & LANE	OVERLAY	969	2,154	1,641
				RT SHLD & LANE		970	2,156	1,642
308+18	-	315+70	CTH E	LT SHLD & LANE	SLOPE CORRECTION	60	134	102
				RT SHLD & LANE		60	134	102
315+70	-	355+00	CTH E	LT SHLD & LANE	OVERLAY	314	698	532
				RT SHLD & LANE		315	700	533
355+00	-	358+50	CTH E	LT SHLD & LANE	RECONSTRUCTION	28	62	47
				RT SHLD & LANE		28	62	47
358+50	-	413+11	CTH E	LT SHLD & LANE	OVERLAY	436	970	739
				RT SHLD & LANE		437	972	740
413+11	-	424+99	CTH E	LT SHLD & LANE	SLOPE CORRECTION	96	213	162
				RT SHLD & LANE		94	210	160
424+99	-	431+40	CTH E	LT SHLD & LANE	OVERLAY	51	114	87
				RT SHLD & LANE		51	114	87
10+78	-	11+84	CTH A	INTERSECTION	OVERLAY	32	70	54
20+50	-	21+55	CTH TT	INTERSECTION	OVERLAY	31	68	52
21+77	-	22+83	CTH TT	INTERSECTION	OVERLAY	31	67	52
PROJECT TOTALS						4,393	9,759	7,435

BEAM GUARD

STATION	TO	STATION	LOCATION	614.2330 MGS GUARDRAIL 3K LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
CATEGORY 0010					
178+22	-	183+03	CTH E	375	2
TOTAL				375	2

RESTORATION

STATION TO STATION	ROADWAY	630.0500 SEED WATER MGAL	625.0100 TOPSOIL SY	628.2004 EROSION MAT CLASS I TYPE B SY	628.2023 EROSION MAT CLASS II TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE #30 LB		
CATEGORY 0010									
163+45	-	171+25	CTH E	8	0	0	0.2	6	
171+25	-	186+75	CTH E	17	1,720	1,100	1.6	45	
186+75	-	308+75	CTH E	121	0	0	3.4	98	
308+75	-	315+00	CTH E	5	510	510	0	13	
315+00	-	354+50	CTH E	39	0	0	1.1	32	
354+50	-	359+00	CTH E	19	830	830	0	30	
359+00	-	412+75	CTH E	54	0	0	1.5	43	
412+75	-	425+25	CTH E	9	510	510	0	17	
425+25	-	431+40	CTH E	6	0	0	0.2	5	
UNDISTRIBUTED				55	830	700	130	1.9	62
PROJECT TOTALS				333	4,400	3,650	750	12.1	351

EROSION CONTROL

LOCATION	ROADWAY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EA	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EA	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EA	628.7570 ROCK BAGS EA		
CATEGORY 0010										
171+25	-	186+75	CTH E	3,100	3,100	---	---	---		
308+50	-	315+25	CTH E	1,250	1,250	---	---	---		
354+25	-	359+25	CTH E	900	900	---	10	---		
415+25	-	425+25	CTH E	1,220	1,220	---	---	---		
UNDISTRIBUTED				1,500	1,500	2	1	100	20	20
PROJECT TOTALS				7,970	7,970	2	1	100	30	20

3

MOVING SIGNS TYPE II

SIGN NO.	FROM STATION	TO STATION	LOCATION	DESCRIPTION	638.2102 MOVING SIGNS TYPE II EACH
CATEGORY 0010					
M100	310+40 LT	310+40 LT	CTH E	JCT A / JCT TT	1
M101	356+38 RT	356+38 RT	CTH E	W1-2R (CURVE ARROW)	1
M102	418+20 LT	418+20 LT	CTH E	W1-8 (CHEVRON)	1
M103	419+42 LT	419+42 LT	CTH E	W1-8 (CHEVRON)	1
M104	420+46 LT	420+46 LT	CTH E	W1-8 (CHEVRON)	1
M105	423+08 LT	423+08 LT	CTH E	W1-8 (CHEVRON)	1
PROJECT TOTALS					6

PROJECT TOTALS 6

TRAFFIC CONTROL

LOCATION	EST. SERVICE PERIOD DAYS	643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0900 SIGNS		643.1000 SIGNS FIXED MESSAGE SF
		NO	DAYS	NO	DAYS	NO	DAYS	
CATEGORY 0010								
CTH E	50	18	900	22	1,100	25	1,250	36
DETOUR	50	--	--	--	--	241	12,050	--
PROJECT TOTALS		900		1,100		13,300		36

PROJECT TOTALS

GEOTEXTILE

STATION TO STATION	LOCATION	645.0135 GEOTEXTILE TYPE SR SY
CATEGORY 0010		
355+00 - 358+50	CTH E	1,170
PROJECT TOTAL		1,170

PROJECT TOTAL 1,170

MARKING LINE

STATION - STATION	LOCATION	646.1020 EPOXY 4-INCH		648.0100 LOCATE NO-PASSING ZONES MI
		(WHITE) LF	(YELLOW) LF	
CATEGORY 0010				
163+45 - 431+40	STH 107	53,993	40,927	5.07
PROJECT TOTALS		94,920		5.07

PROJECT TOTALS

SAW CUTTING

STATION TO STATION	DIR	ROADWAY	LOCATION	690.0150 SAWING ASPHALT LF
CATEGORY 0010				
163+45	R/L	CTH E	BEGIN OF PROJECT	22
164+05 - 164+25	RT	CTH E	DWY	25
191+85 - 192+60	LT	CTH E	ARCHER AVE	54
230+42 - 230+70	LT	CTH E	DWY	28
241+91 - 242+11	RT	CTH E	DWY	20
244+43 - 244+70	RT	CTH E	DWY	28
294+75 - 295+00	RT	CTH E	DWY	30
308+50 - 308+75	LT	CTH E	DWY	22
396+08 - 396+68	RT	CTH E	SAXEVILLE ROAD	60
420+75 - 421+45	LT	CTH E	N. LONG LAKE ROAD	63
431+40	R/L	CTH E	END OF PROJECT	24
10+78	R/L	CTH A	CTH A	22
20+50	R/L	CTH TT	CTH TT	22
22+83	R/L	CTH TT	CTH TT	22
UNDISTRIBUTED				28
PROJECT TOTALS				470

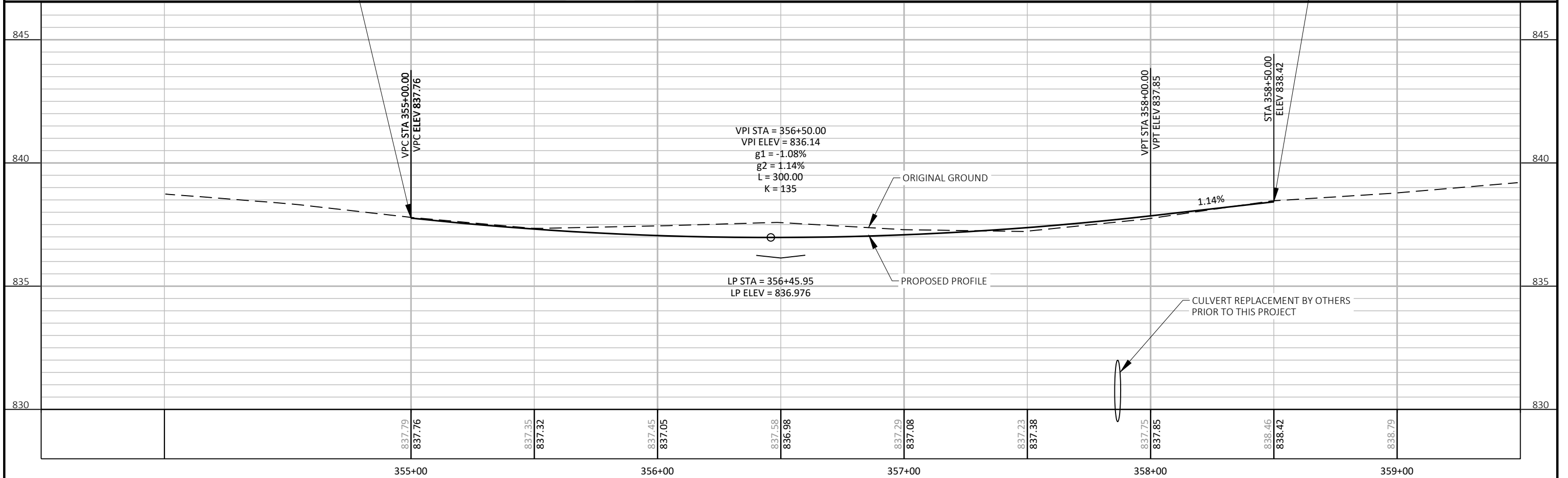
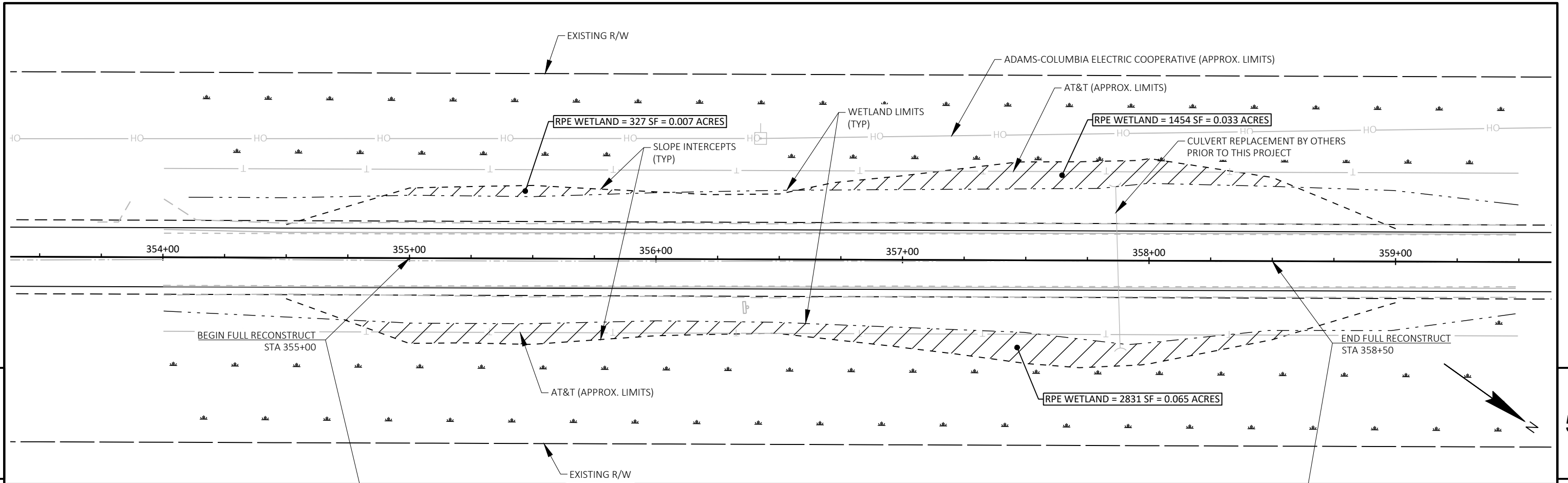
PROJECT TOTALS

CONSTRUCTION STAKING

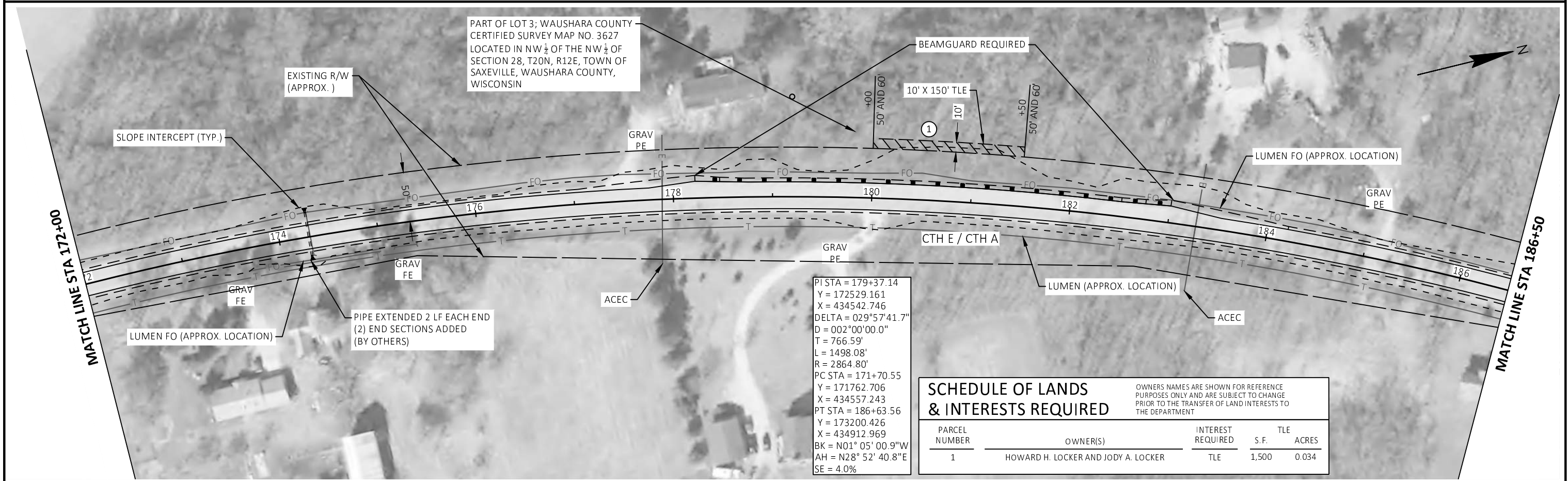
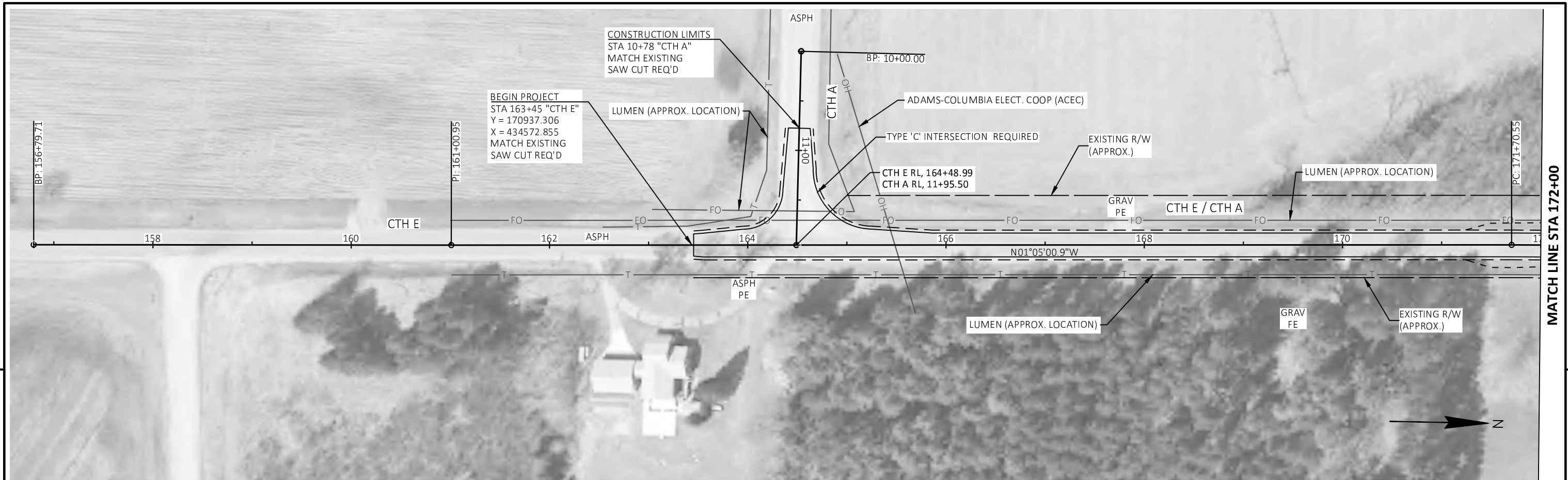
STATION TO STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
CATEGORY 0010						
163+45 - 170+69	CTH E	---	---	724	---	---
170+69 - 187+66	CTH E	---	1697	1697	---	1697
187+66 - 308+18	CTH E	---	---	12052	---	---
308+18 - 315+70	CTH E	---	752	752	---	752
315+70 - 355+00	CTH E	---	---	3930	---	---
355+00 - 358+50	CTH E	350	350	350	---	350
358+50 - 413+11	CTH E	---	---	5461	---	---
413+11 - 424+99	CTH E	---	1188	1188	---	1188
424+99 - 431+40	CTH E	---	---	641	---	---
10+78 - 11+84	CTH A	---	---	106	---	---
20+50 - 21+55	CTH TT	---	---	105	---	---
21+77 - 22+83	CTH TT	---	---	106	---	---
UNDISTRIBUTED		---	---	---	1	---
PROJECT TOTAL		350	3,987	27,112	1	3,987

PROJECT TOTAL

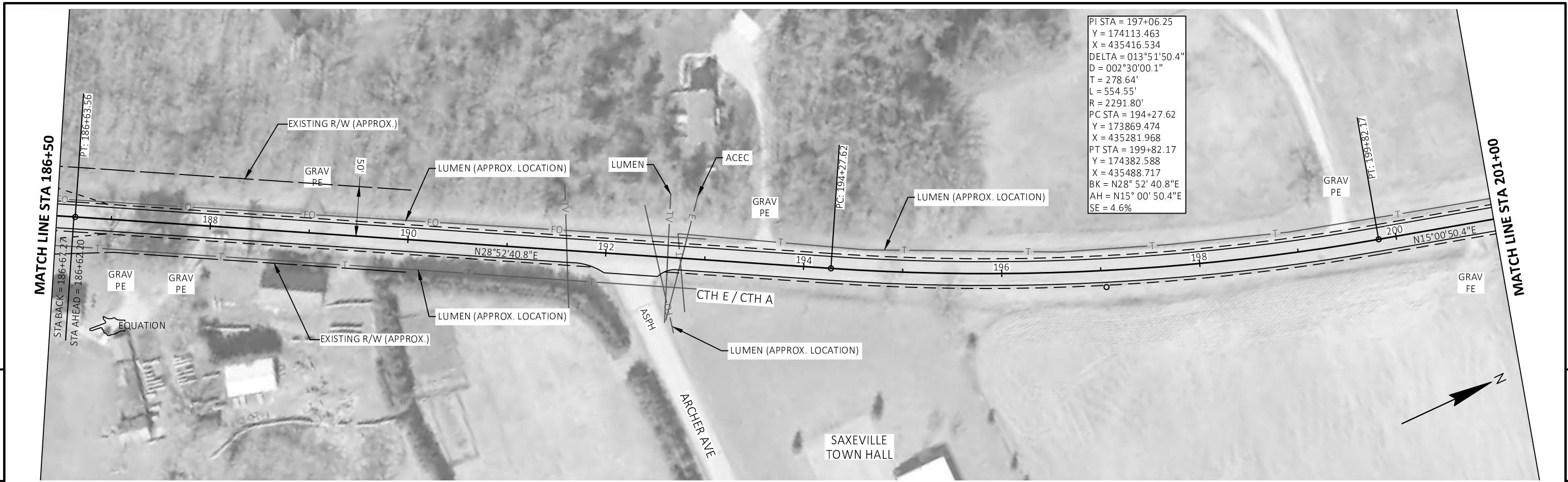
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PROJECT NO: 6987-00-73	HWY: CTH E	COUNTY: WAUSHARA	PLAN & PROFILE: CTH E RECONSTRUCTION AREA	SHEET 5
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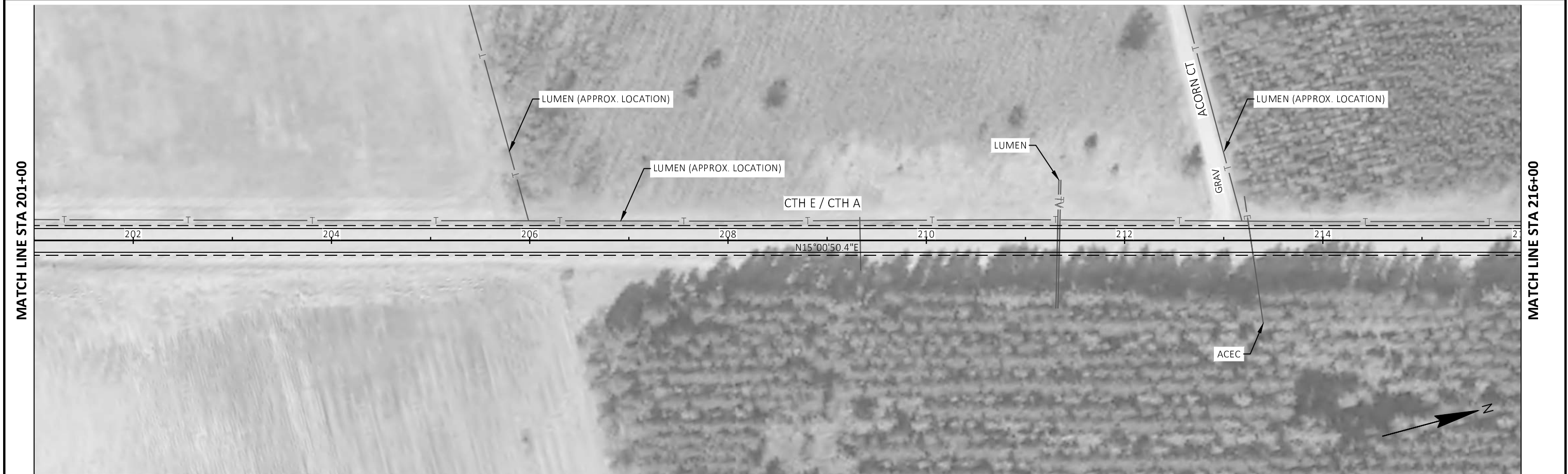


PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA PLAN: CTH E SHEET: 5



5

5



MATCH LINE STA 201+00

MATCH LINE STA 216+00

PROJECT NO: 6987-00-73	HWY: CTH E	COUNTY: WAUSHARA	PLAN: CTH E	SHEET	E
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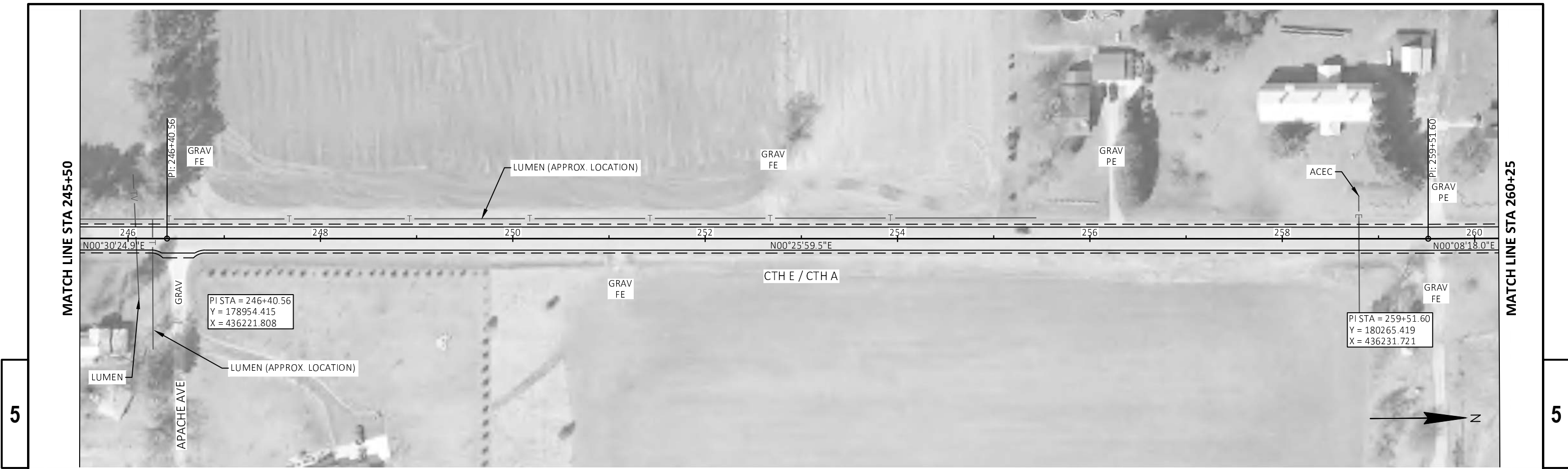


PI STA = 223+45.61
 Y = 176665.347
 X = 436100.978
 DELTA = 008°43'24.9"
 D = 001°30'00.0"
 T = 291.35'
 L = 581.57'
 R = 3819.70'
 PC STA = 220+54.26
 Y = 176383.945
 X = 436025.503
 PT STA = 226+35.83
 Y = 176954.940
 X = 436132.900
 BK = N15°00'50.4"E
 AH = N06°17'25.5"E
 SE = 3.3%

PI STA = 233+43.81
 Y = 177657.391
 X = 436210.333
 DELTA = 005°47'00.7"
 D = 001°30'00.0"
 T = 192.95'
 L = 385.57'
 R = 3819.70'
 PC STA = 231+50.87
 Y = 177465.606
 X = 436189.192
 PT STA = 235+36.43
 Y = 177850.331
 X = 436212.040
 BK = N06°17'25.5"E
 AH = N00°30'24.9"E
 SE = 3.3%



PROJECT NO: 6987-00-73	HWY: CTH E	COUNTY: WAUSHARA	PLAN: CTH E	SHEET	E
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PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA PLAN: CTH E SHEET: 5

MATCH LINE STA 275+00

MATCH LINE STA 289+75

5

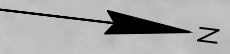
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PI STA = 286+20.31
 Y = 182924.746
 X = 436076.236
 DELTA = 006°07'58.2"
 D = 001°30'00.0"
 T = 204.62'
 L = 408.85'
 R = 3819.70'
 PC STA = 284+15.69
 Y = 182721.758
 X = 436102.040
 PT STA = 288+24.54
 Y = 183129.329
 X = 436072.264
 BK = N07° 14' 41.6"W
 AH = N01° 06' 43.4"W
 SE = MATCH EXISTING

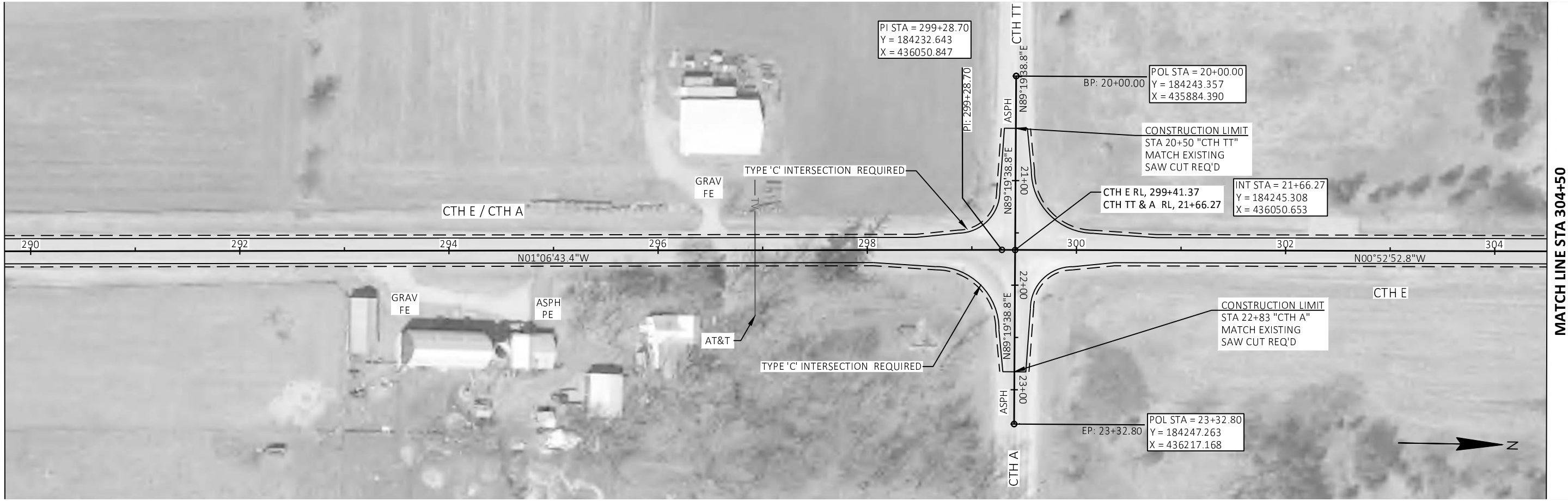
STA BACK = 288+34.56
 STA AHEAD = 288+35.20

EQUATION



MATCH LINE STA 289+75

MATCH LINE STA 304+50



PI STA = 299+28.70
 Y = 184232.643
 X = 436050.847

POL STA = 20+00.00
 Y = 184243.357
 X = 435884.390

CONSTRUCTION LIMIT
 STA 20+50 "CTH TT"
 MATCH EXISTING
 SAW CUT REQ'D

INT STA = 21+66.27
 Y = 184245.308
 X = 436050.653

CONSTRUCTION LIMIT
 STA 22+83 "CTH A"
 MATCH EXISTING
 SAW CUT REQ'D

POL STA = 23+32.80
 Y = 184247.263
 X = 436217.168

TYPE 'C' INTERSECTION REQUIRED

TYPE 'C' INTERSECTION REQUIRED



PROJECT NO: 6987-00-73

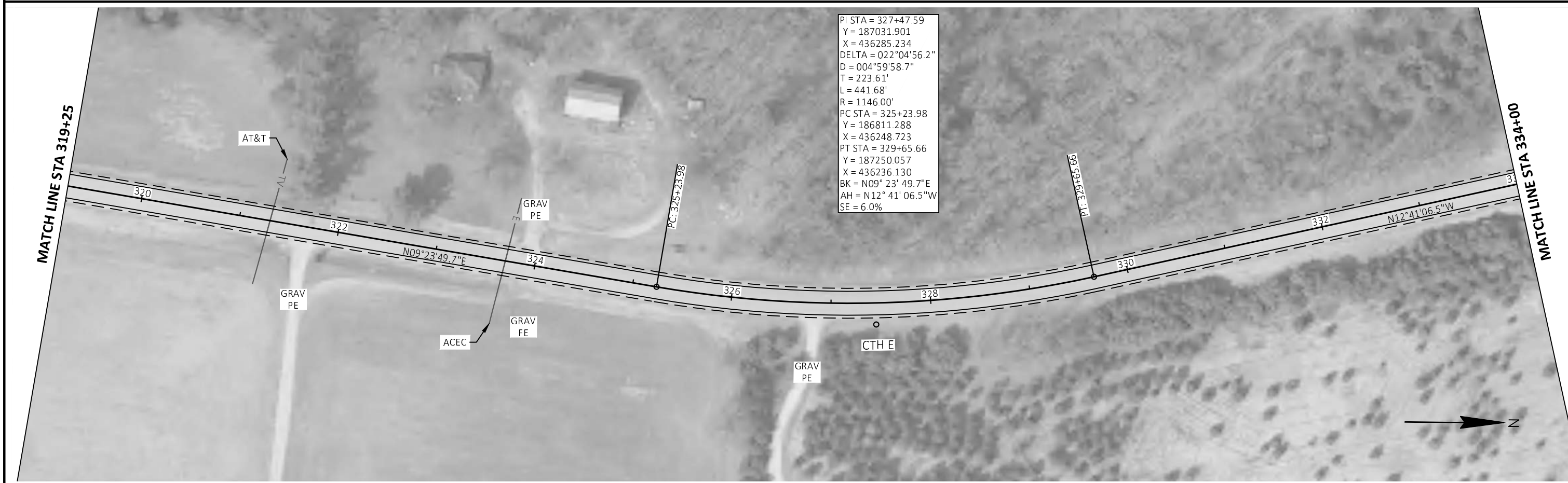
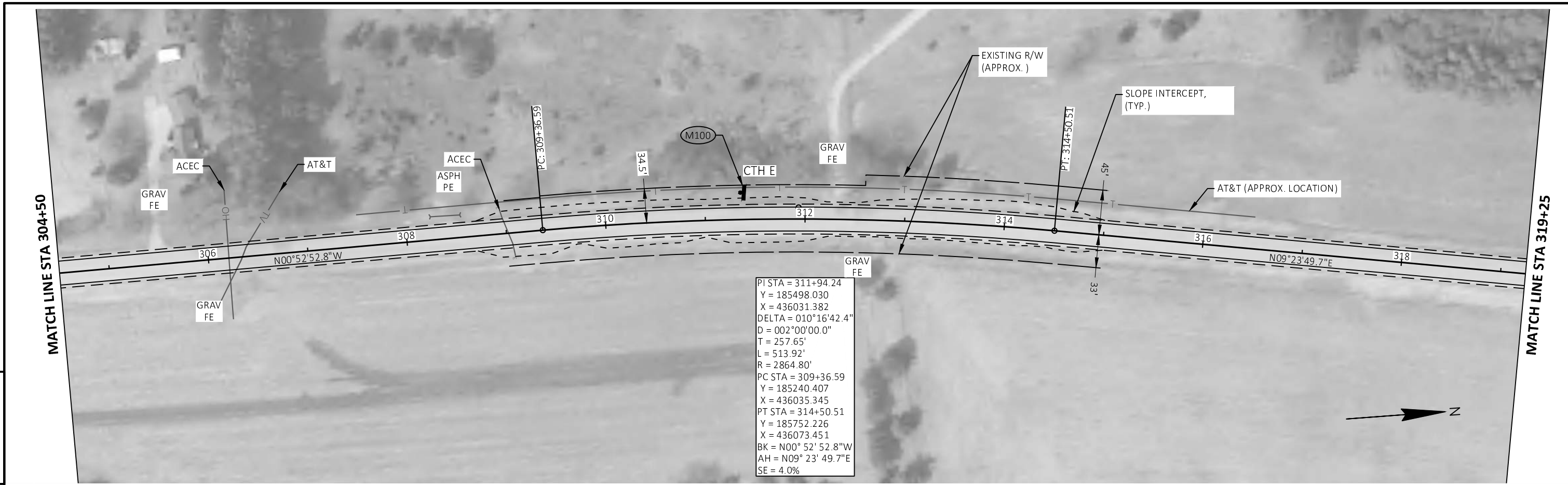
HWY: CTH E

COUNTY: WAUSHARA

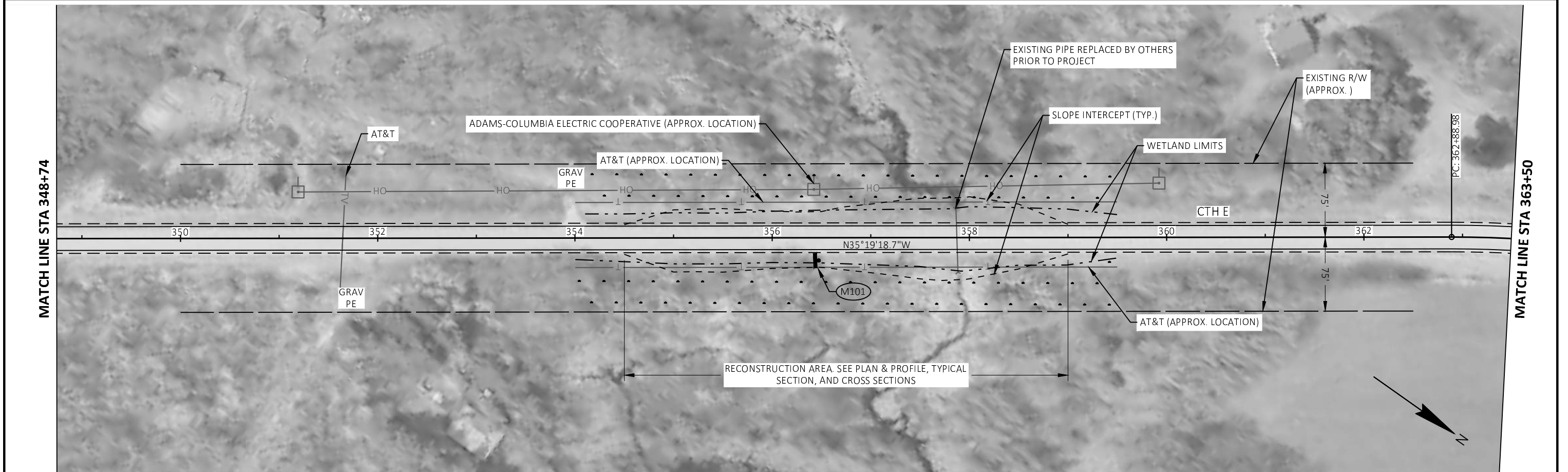
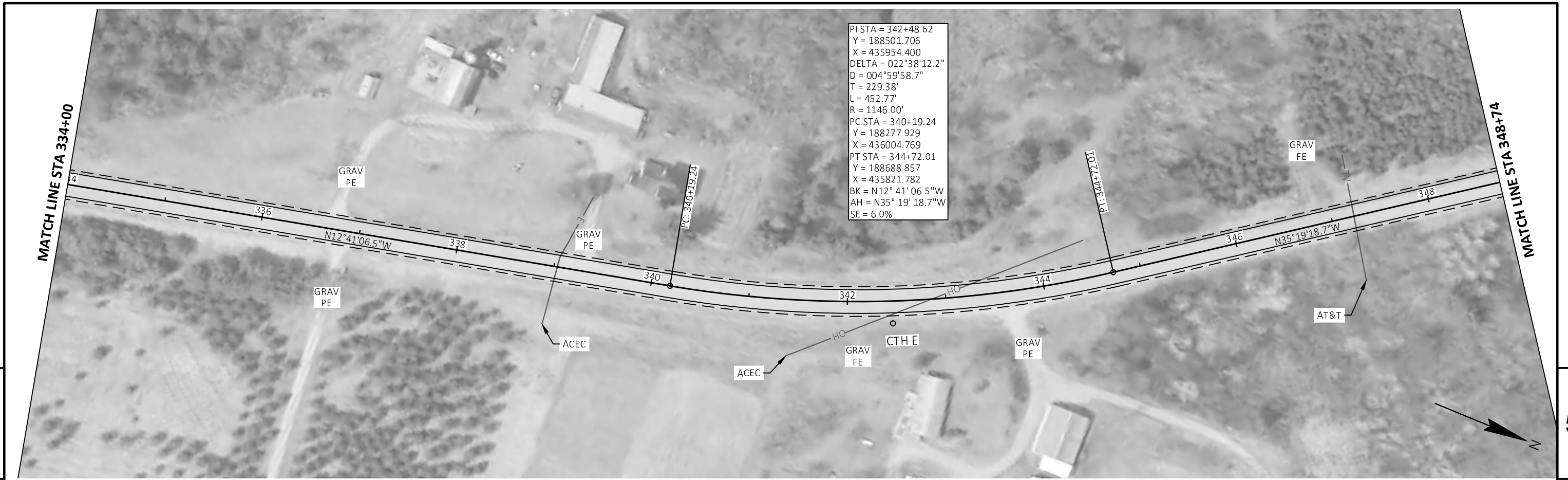
PLAN: CTH E

SHEET

E



PROJECT NO: 6987-00-73	HWY: CTH E	COUNTY: WAUSHARA	PLAN: CTH E	SHEET: E
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PROJECT NO: 6987-00-73	HWY: CTH E	COUNTY: WAUSHARA	PLAN: CTH E	SHEET	E
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PI STA = 366+38.82
 Y = 190456.793
 X = 434569.001
 DELTA = 033°57'05.7"
 D = 004°59'58.7"
 T = 349.84'
 L = 679.08'
 R = 1146.00'
 PC STA = 362+88.98
 Y = 190171.354
 X = 434771.266
 PT STA = 369+68.06
 Y = 190806.531
 X = 434560.635
 BK = N35° 19' 18.7"W
 AH = N01° 22' 13.0"W
 SE = 6.0%

PI STA = 396+01.97
 Y = 193439.679
 X = 434497.649
 DELTA = 087°50'22.7"
 D = 009°59'57.3"
 T = 551.79'
 L = 878.46'
 R = 573.00'
 PC STA = 390+50.17
 Y = 192888.045
 X = 434510.844
 PT STA = 399+28.63
 Y = 193447.288
 X = 433945.909
 BK = N01° 22' 13.0"W
 AH = N89° 12' 35.7"W
 SE = 5.9%



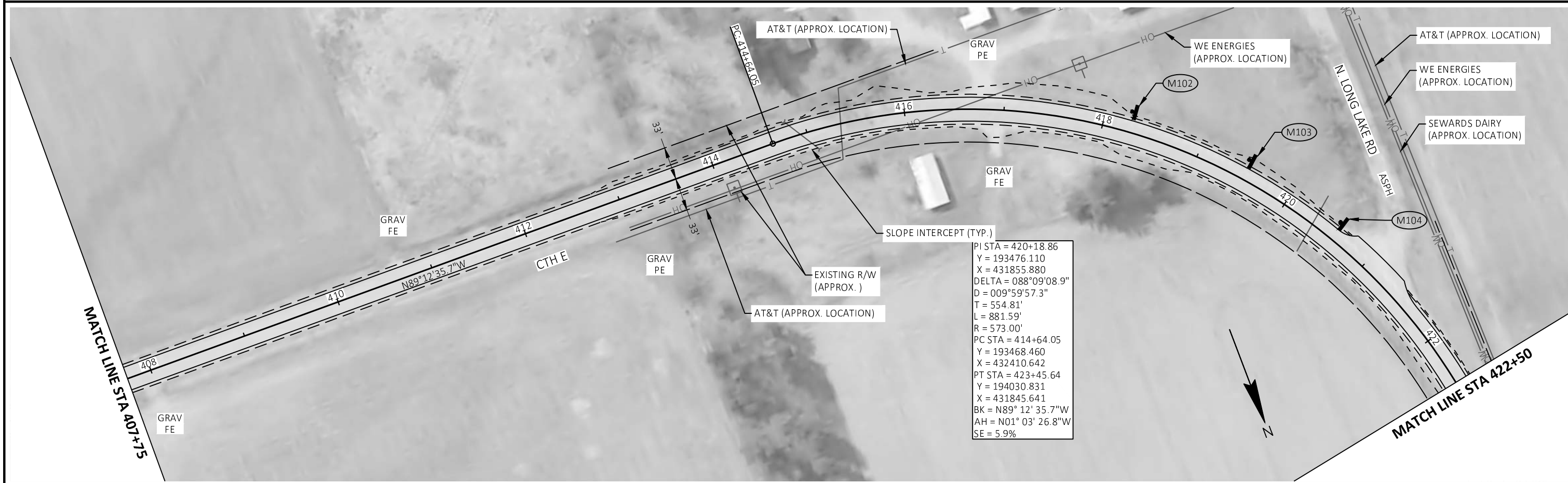
PROJECT NO: 6987-00-73	HWY: CTH E	COUNTY: WAUSHARA	PLAN: CTH E	SHEET	E
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PI STA = 396+01.97
 Y = 193439.679
 X = 434497.649
 DELTA = 087°50'22.7"
 D = 009°59'57.3"
 T = 551.79'
 L = 878.46'
 R = 573.00'
 PC STA = 390+50.17
 Y = 192888.045
 X = 434510.844
 PT STA = 399+28.63
 Y = 193447.288
 X = 433945.909
 BK = N01° 22' 13.0"W
 AH = N89° 12' 35.7"W
 SE = 5.9%

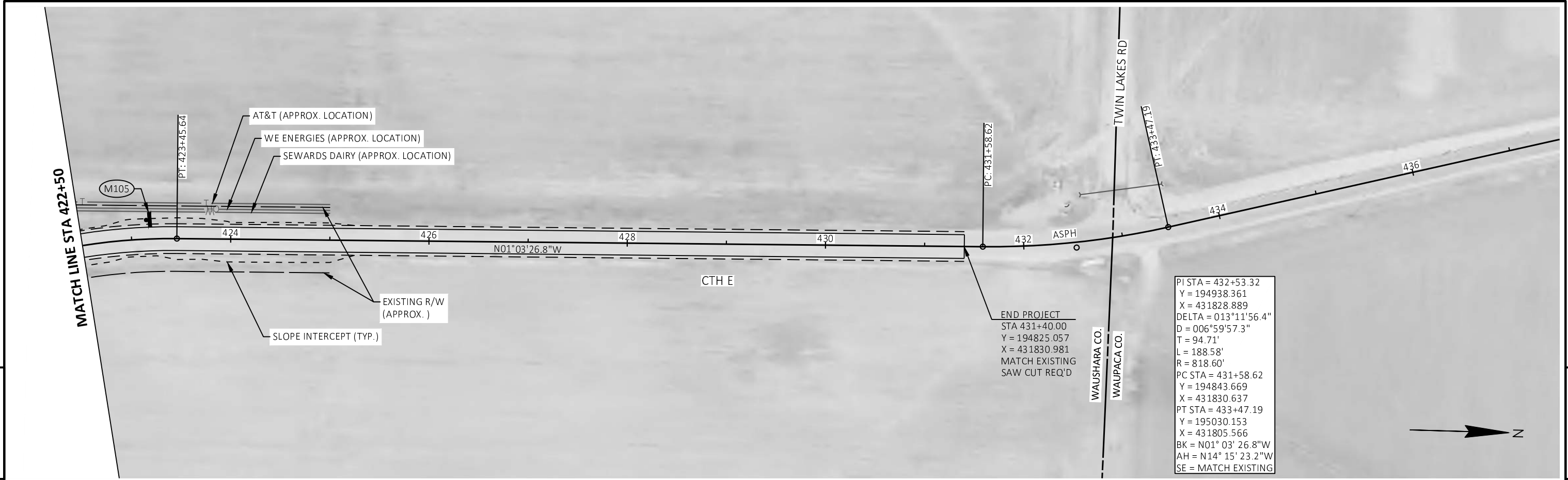
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PI STA = 420+18.86
 Y = 193476.110
 X = 431855.880
 DELTA = 088°09'08.9"
 D = 009°59'57.3"
 T = 554.81'
 L = 881.59'
 R = 573.00'
 PC STA = 414+64.05
 Y = 193468.460
 X = 432410.642
 PT STA = 423+45.64
 Y = 194030.831
 X = 431845.641
 BK = N89° 12' 35.7"W
 AH = N01° 03' 26.8"W
 SE = 5.9%

PROJECT NO: 6987-00-73	HWY: CTH E	COUNTY: WAUSHARA	PLAN: CTH E	SHEET	E
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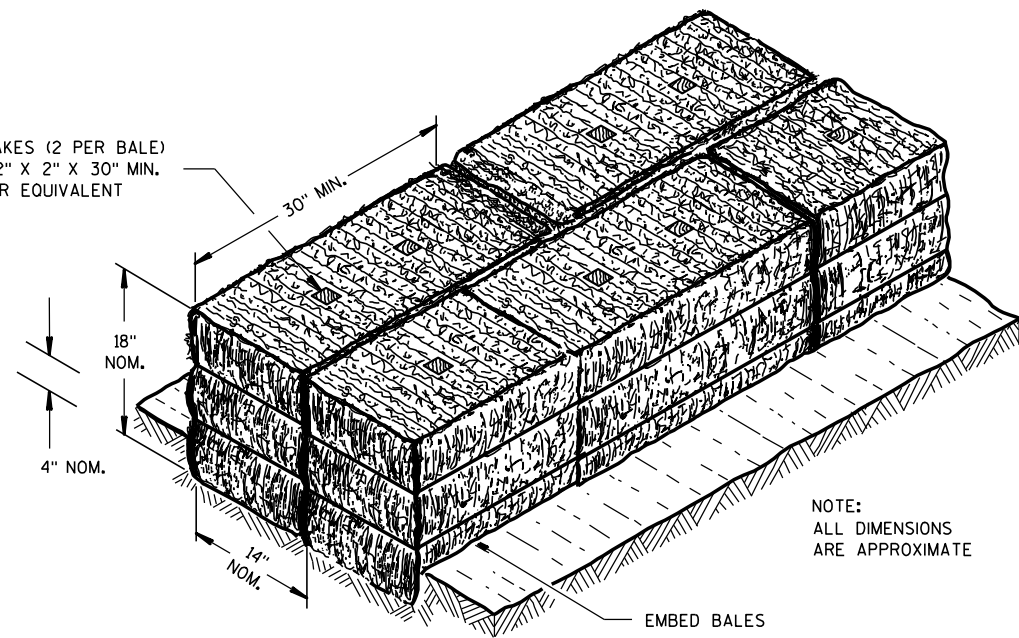
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Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)

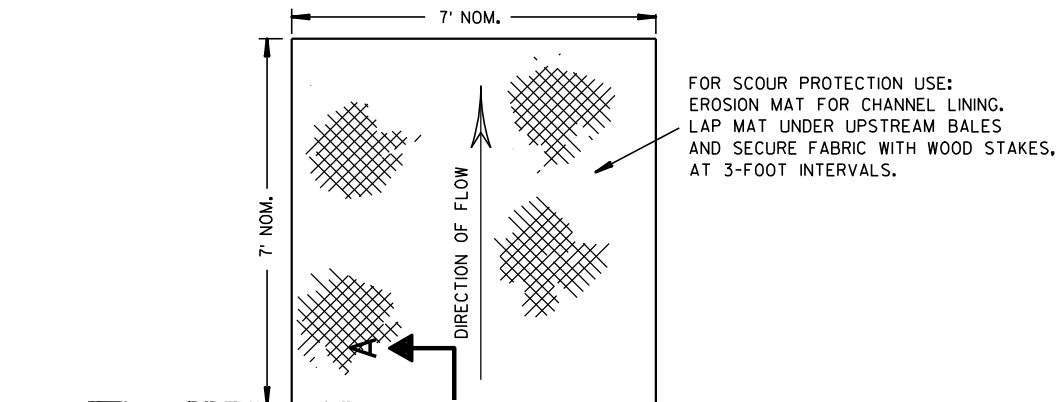
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



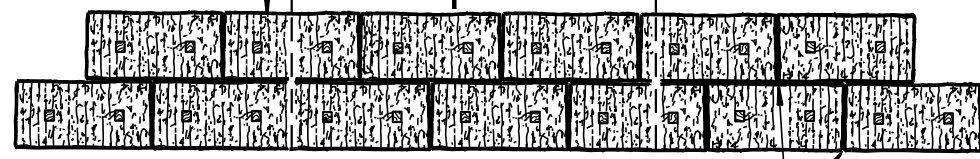
NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

SECTION A-A



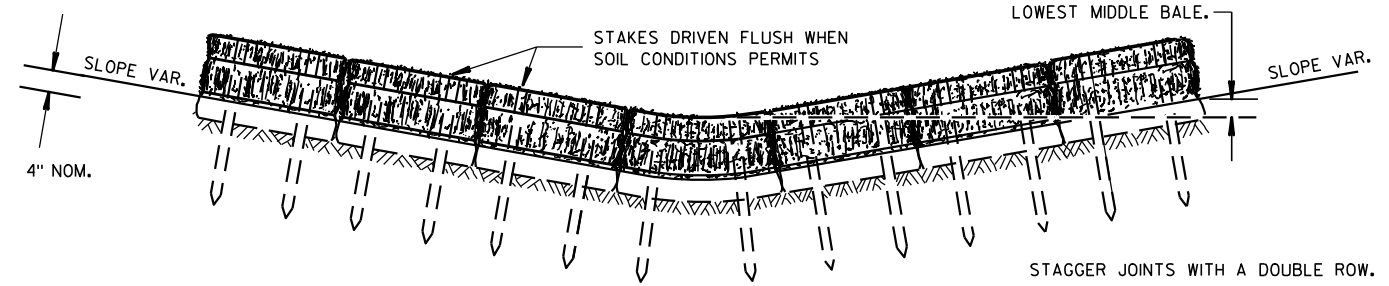
FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.



STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

PLAN VIEW

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



FRONT ELEVATION

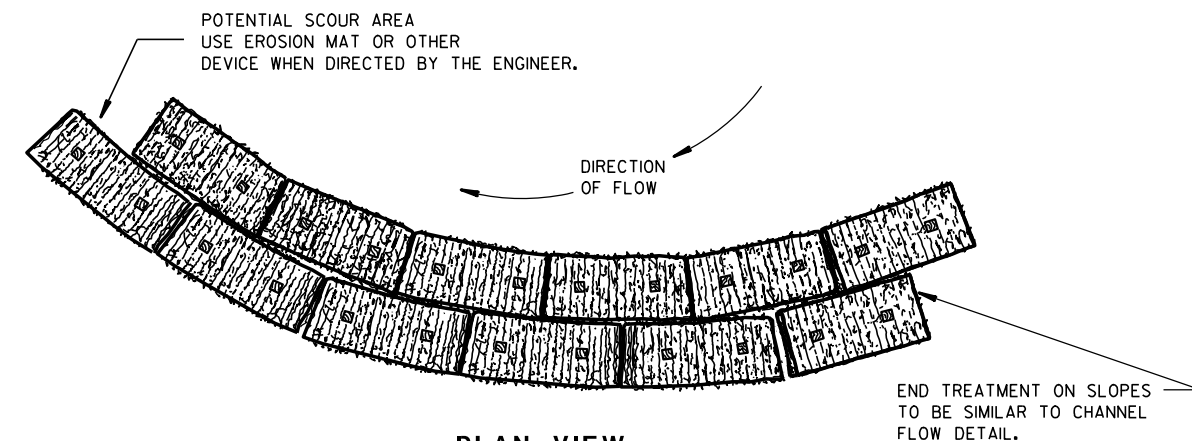
STAGGER JOINTS WITH A DOUBLE ROW.

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

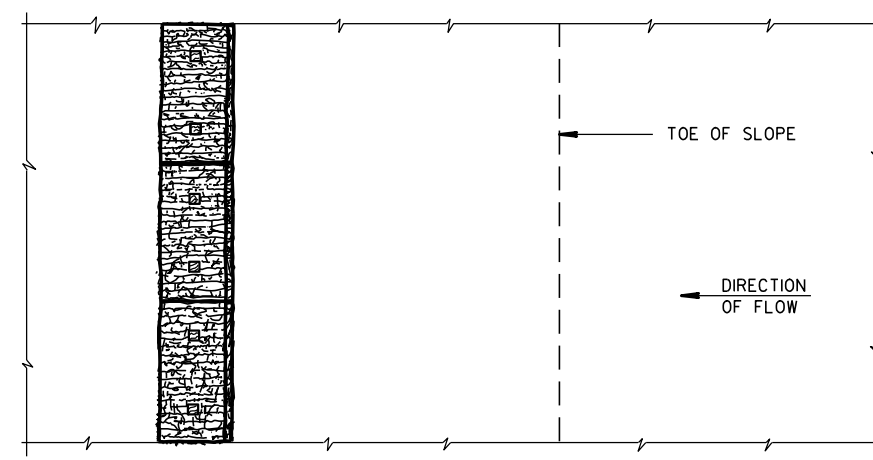
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

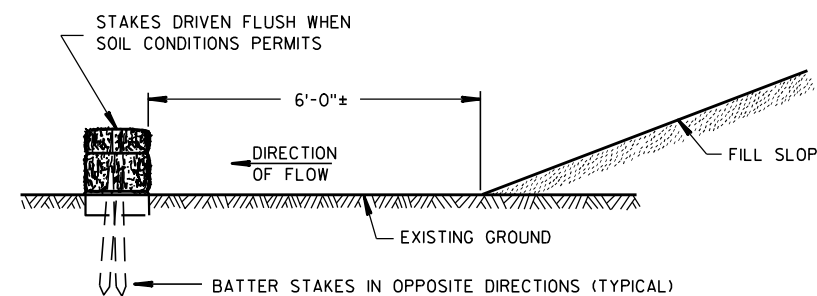


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

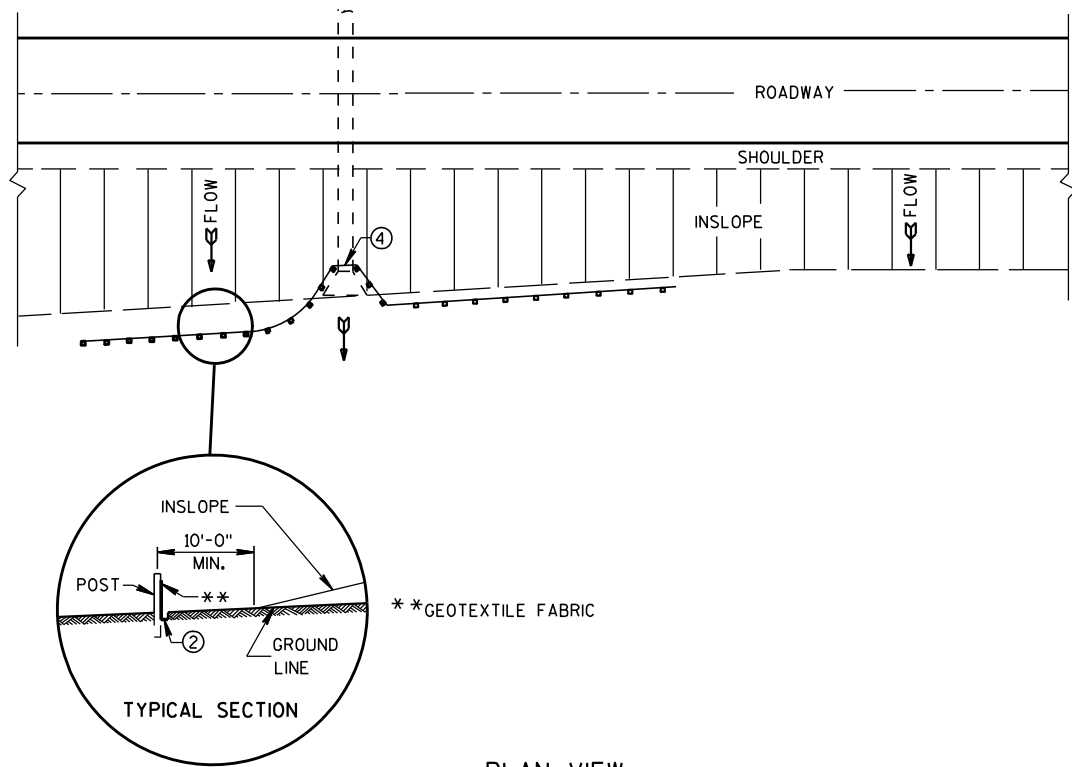
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

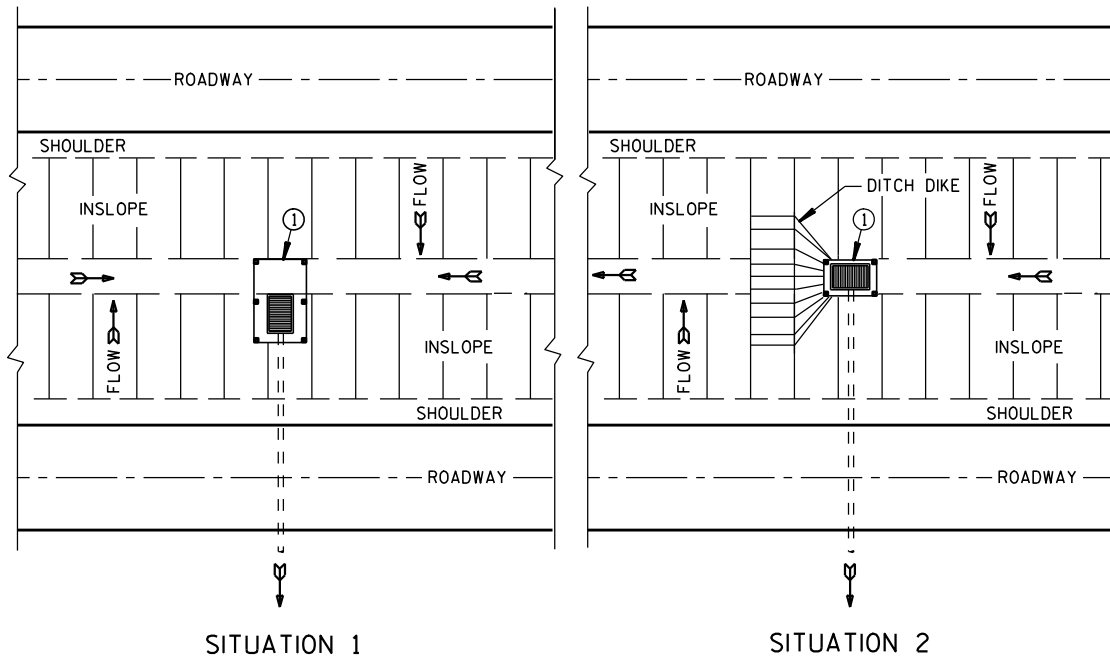
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

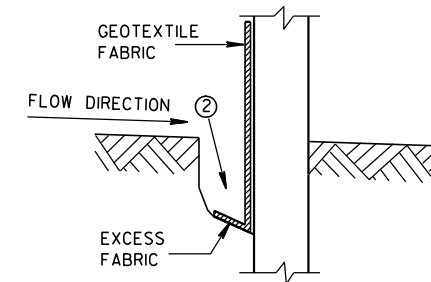


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

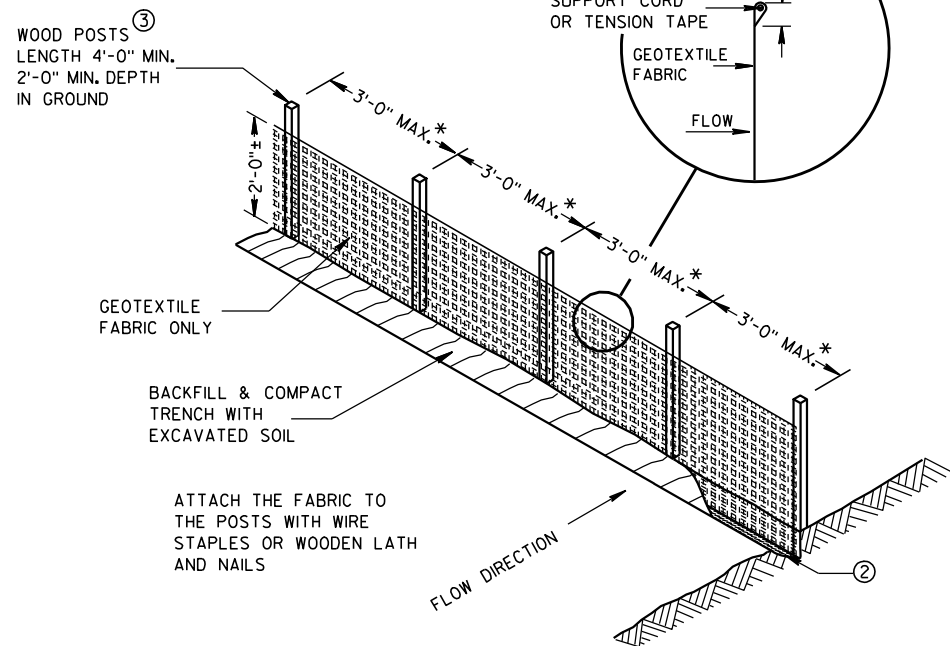
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



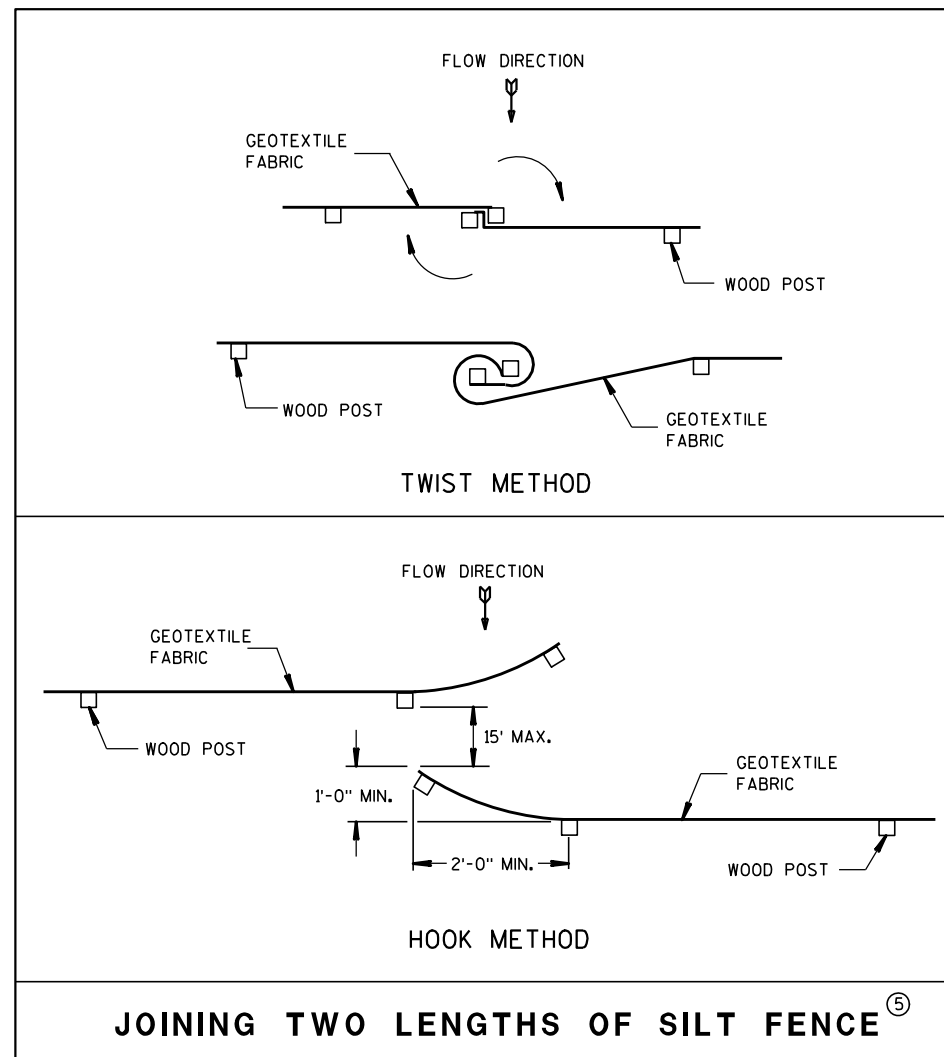
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

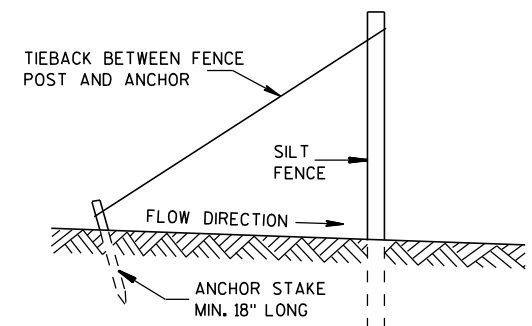


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

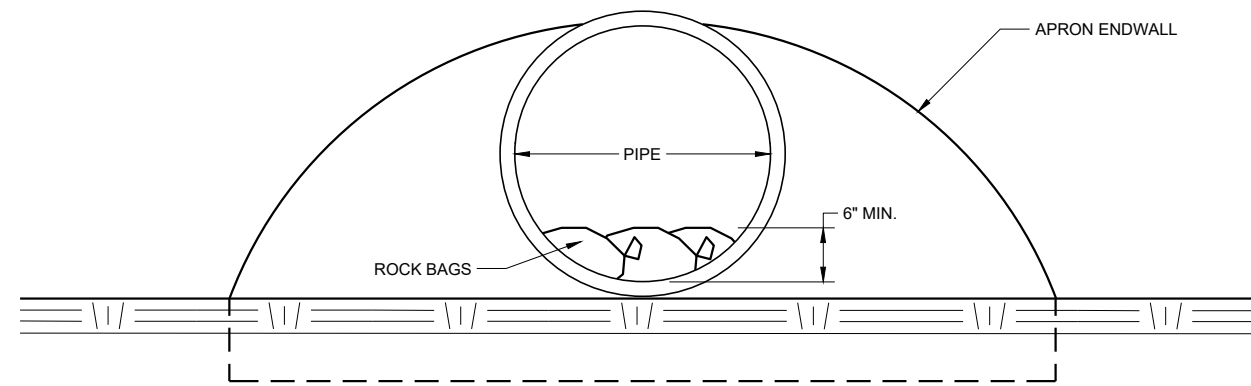
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

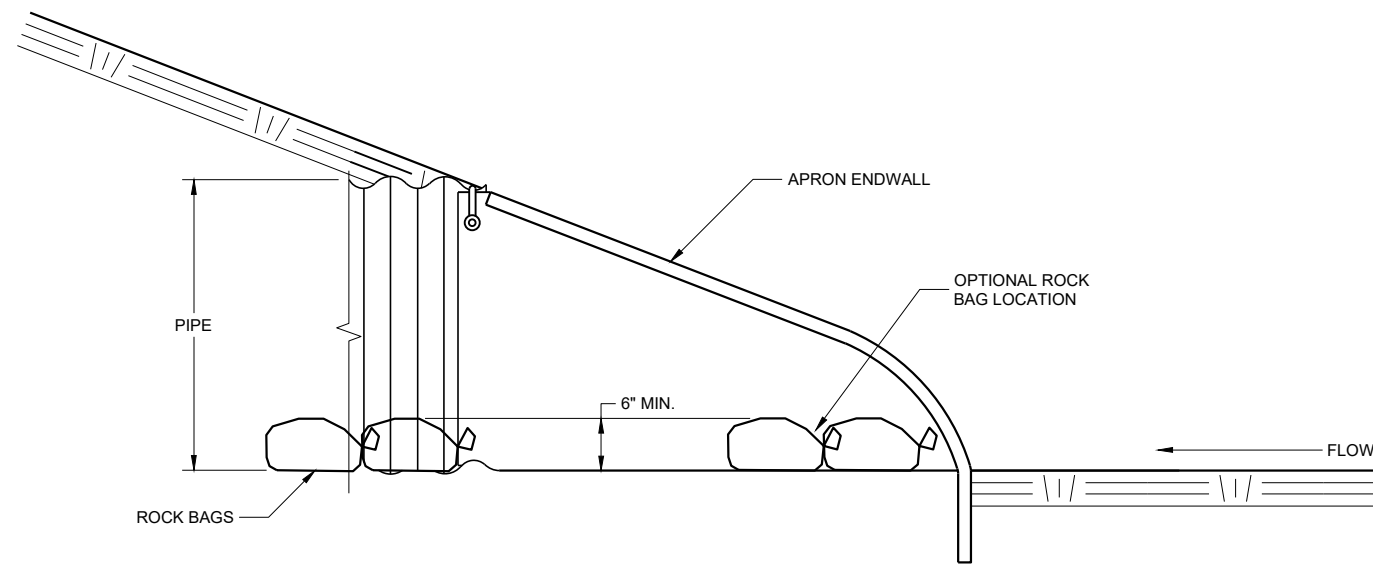
4-29-05
DATE

FHWA

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



SIDE VIEW

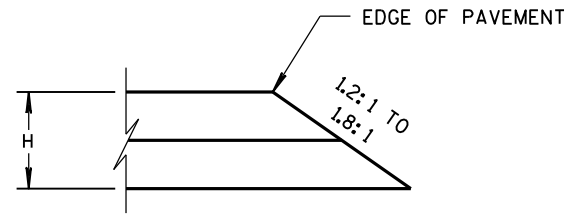
CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK

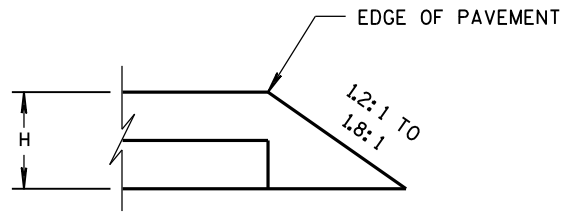
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

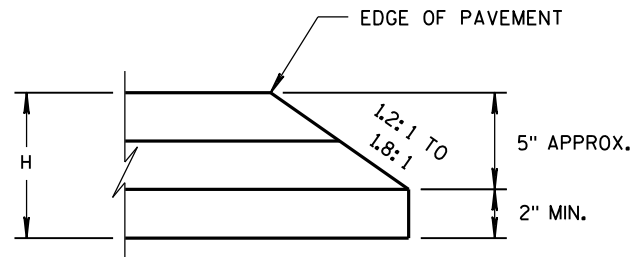
FHWA



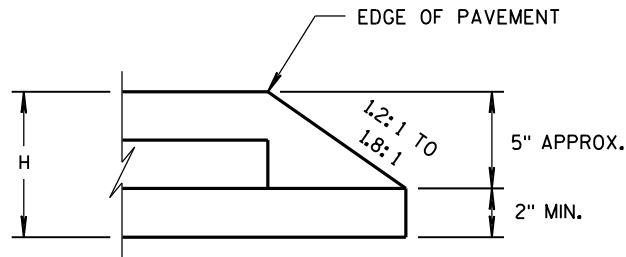
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

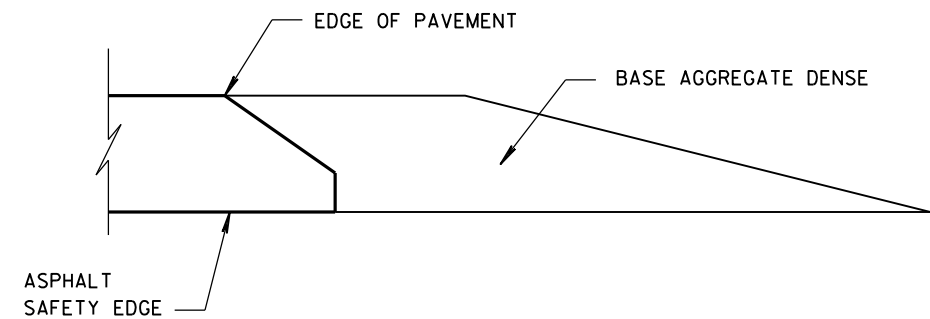


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

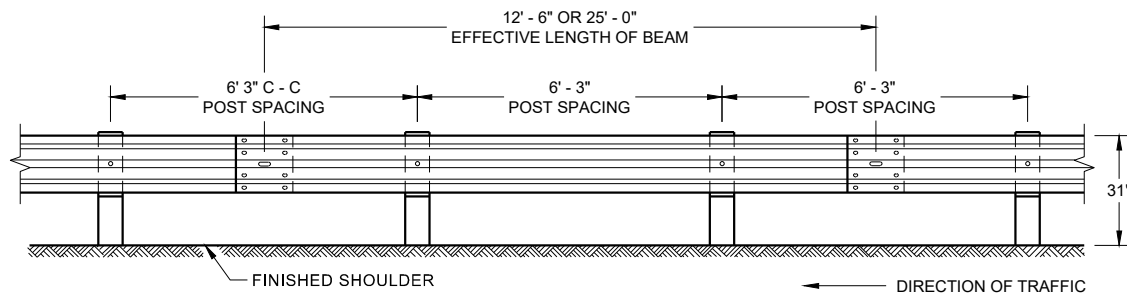
6

6

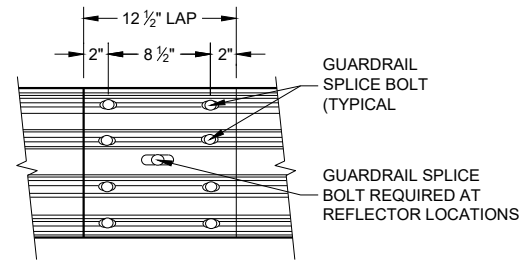
S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

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



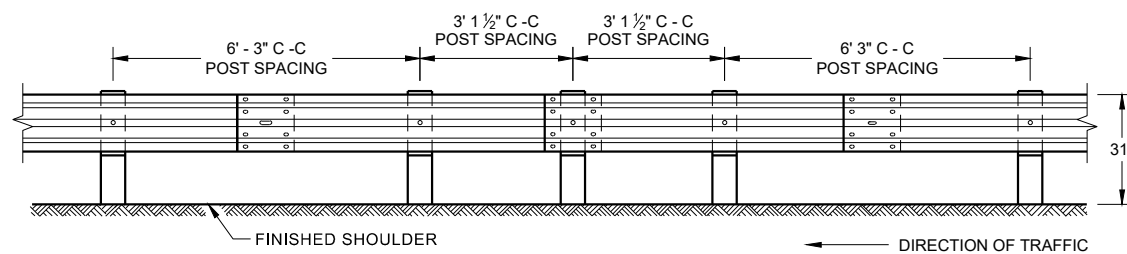
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



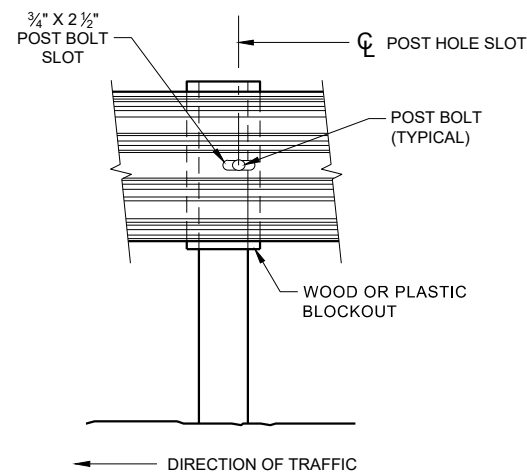
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

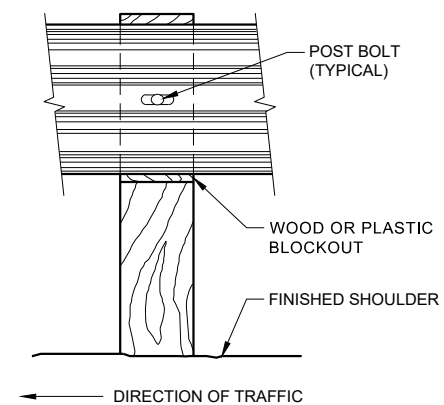
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER 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 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



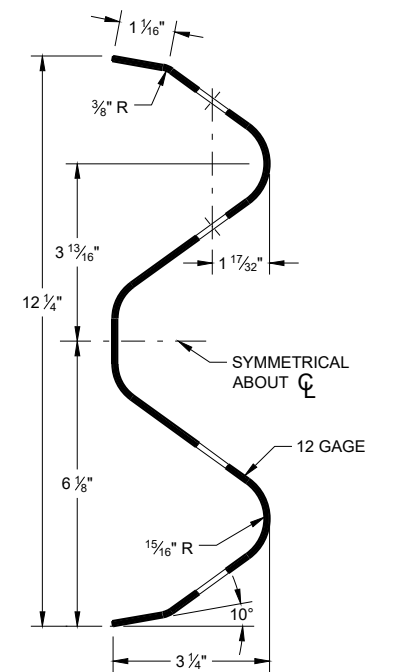
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



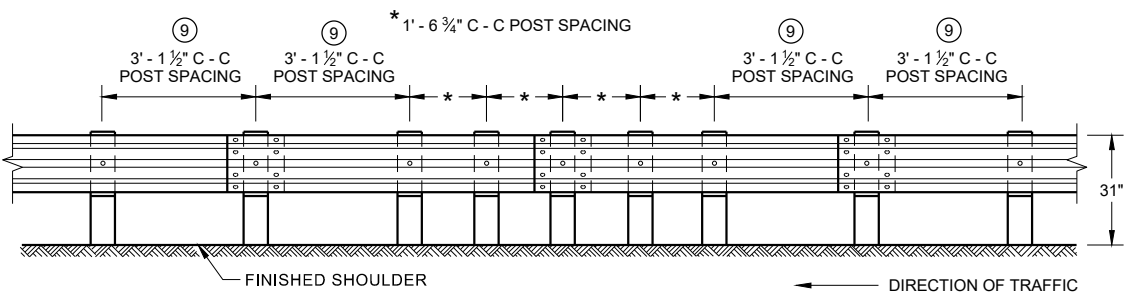
FRONT VIEW AT STEEL POST



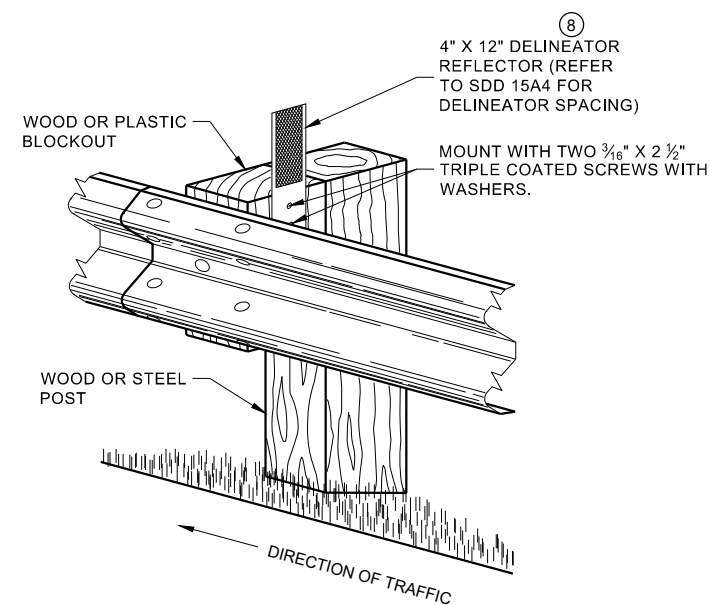
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



**FRONT VIEW
QUARTER POST SPACING (QS)**



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

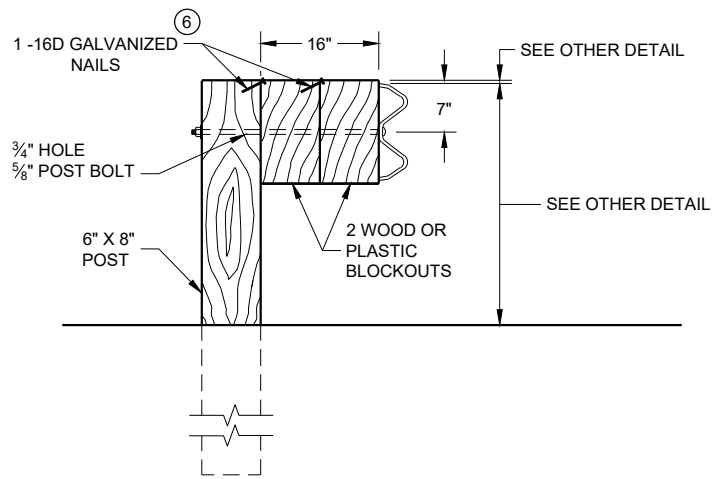
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

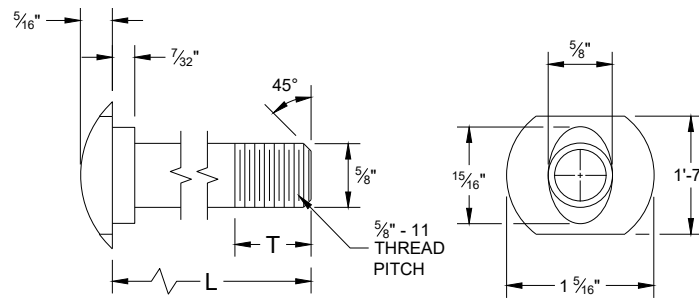


DETAIL FOR 16" BLOCKOUT DEPTH

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

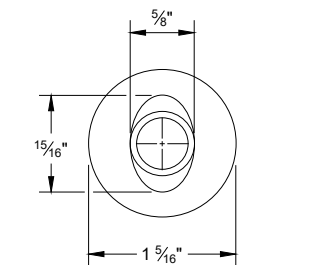
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

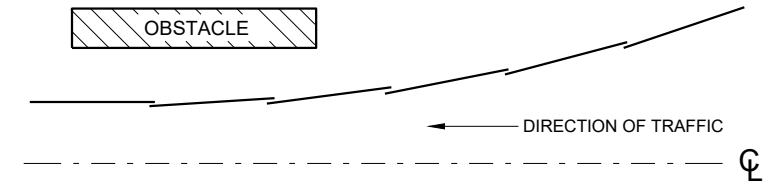


POST BOLT TABLE

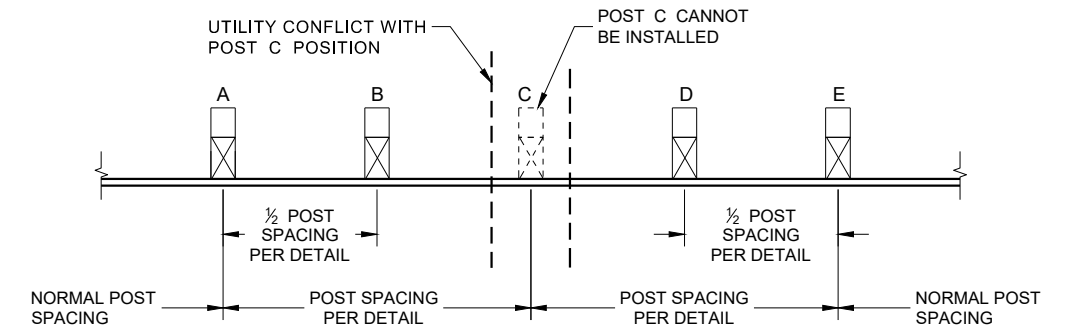
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



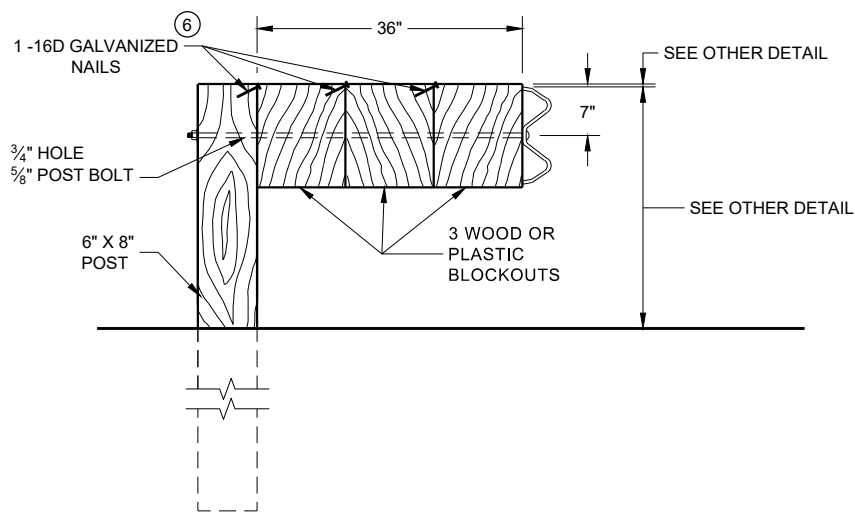
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

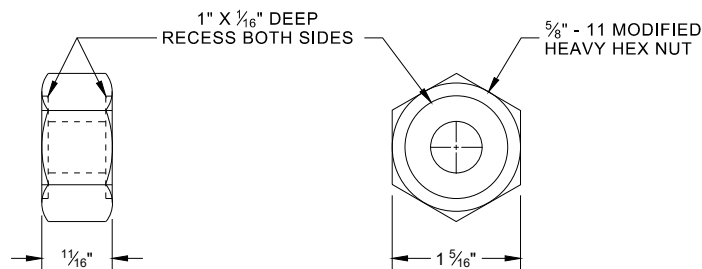


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

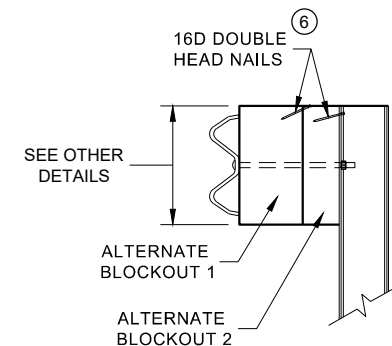


DETAIL FOR 36" BLOCKOUT DEPTH

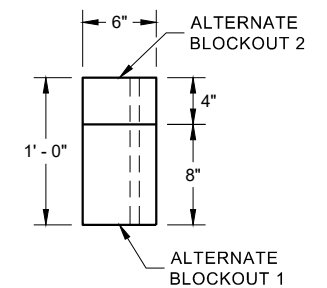
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



**POST BOLT, SPLICE BOLT
AND RECESS NUT**



SIDE VIEW



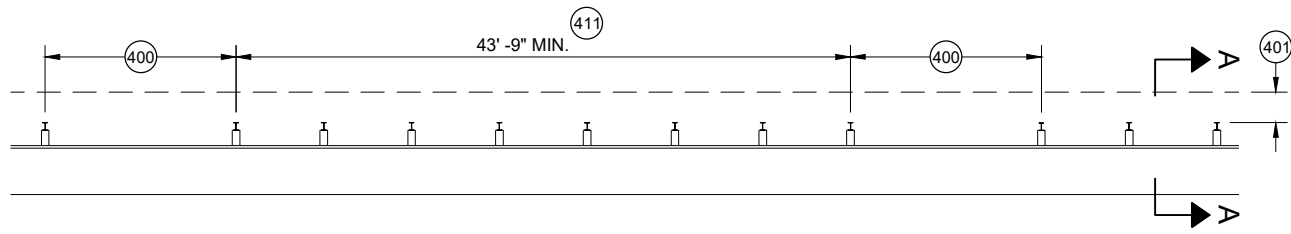
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

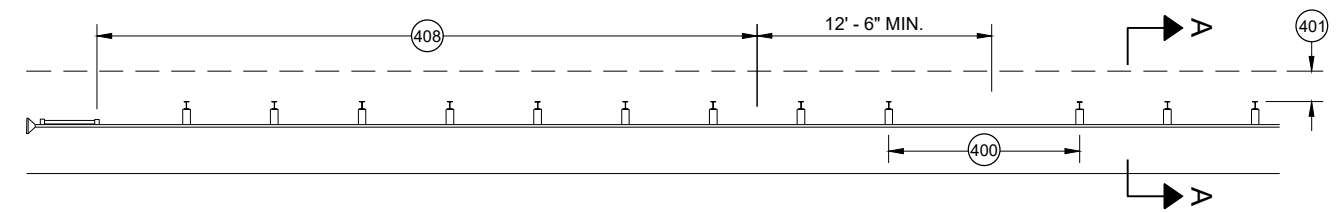
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

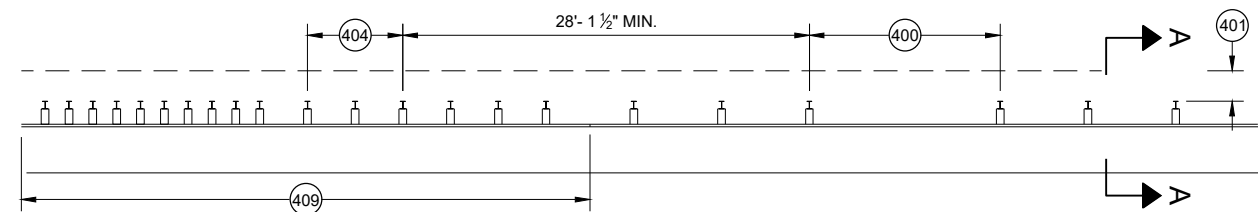
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



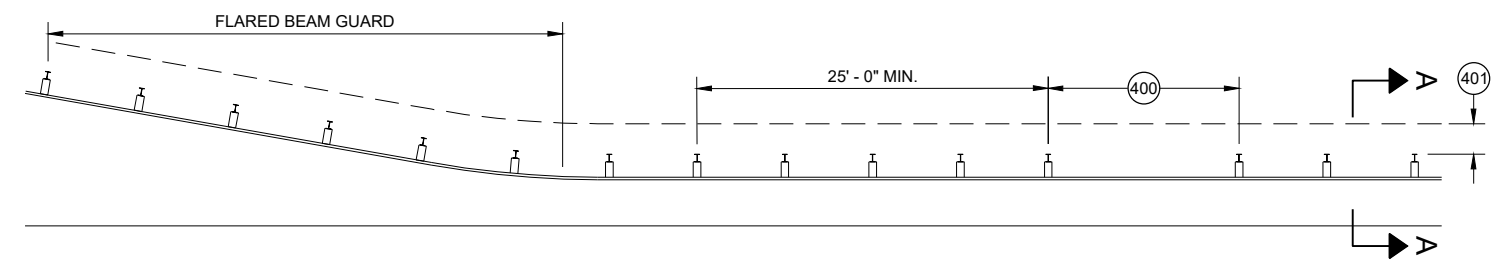
MISSING POST IN MGS GUARDRAIL



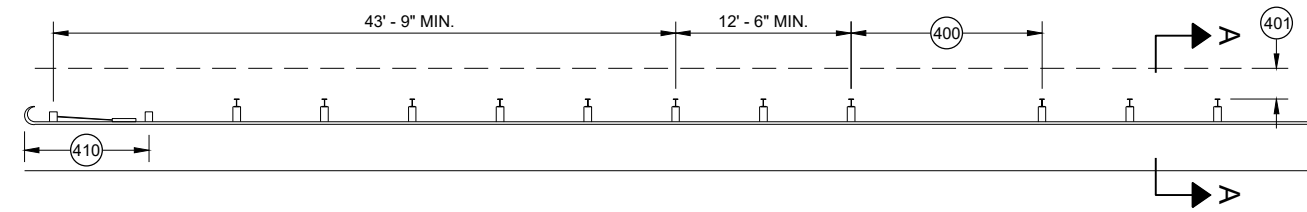
MISSING POST IN MGS GUARDRAIL NEAR EAT



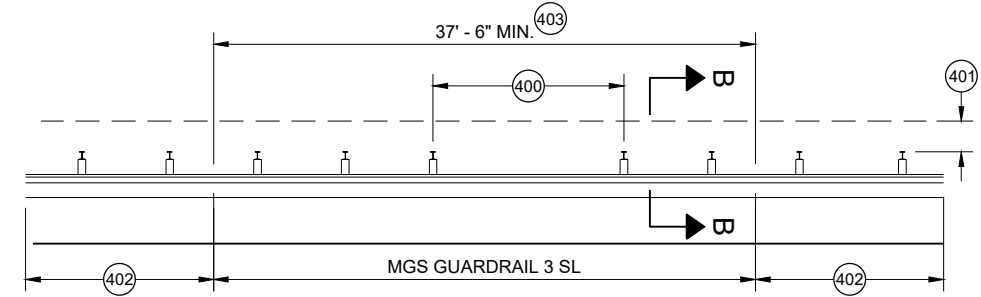
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

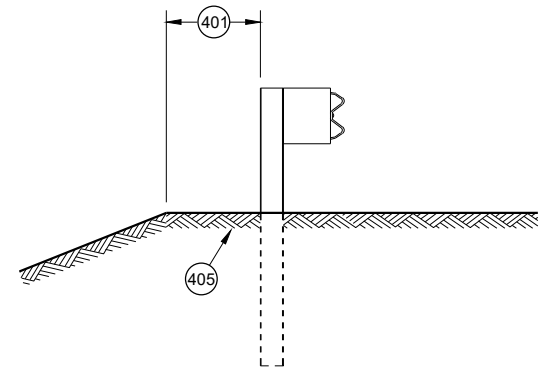


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

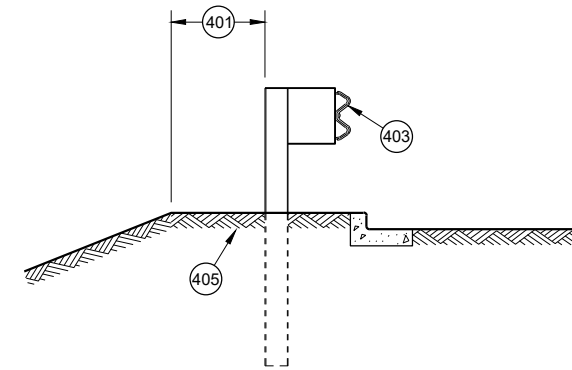


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- 400 MAX SPAN 12' - 6"
- 401 2' MIN.
- 402 MGS GUARDRAIL 3
- 403 NESTING BEAM GUARD
- 404 ASYMMETRIC TRANSITION
- 405 SOIL WELL DRAINED AND COMPACTED
- 406 SEE OTHER DRAWINGS IN THIS SDD
- 407 SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- 408 SEE SDD 14B44
- 409 SEE SDD 14B45
- 410 SEE SDD 14B47
- 411 MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
<small>FHWA</small>	

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
 - (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
 - (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
 - (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
 - (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.
- DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

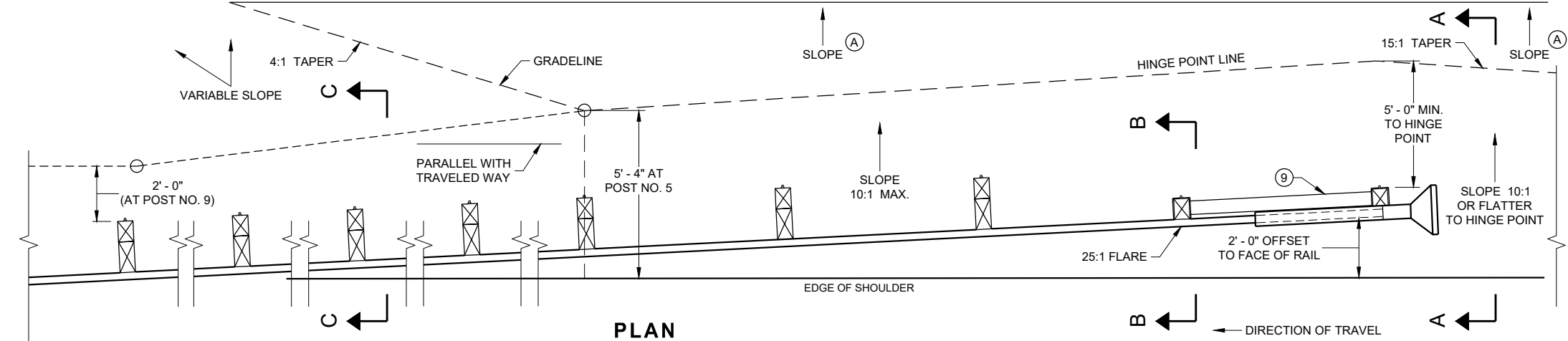
* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

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

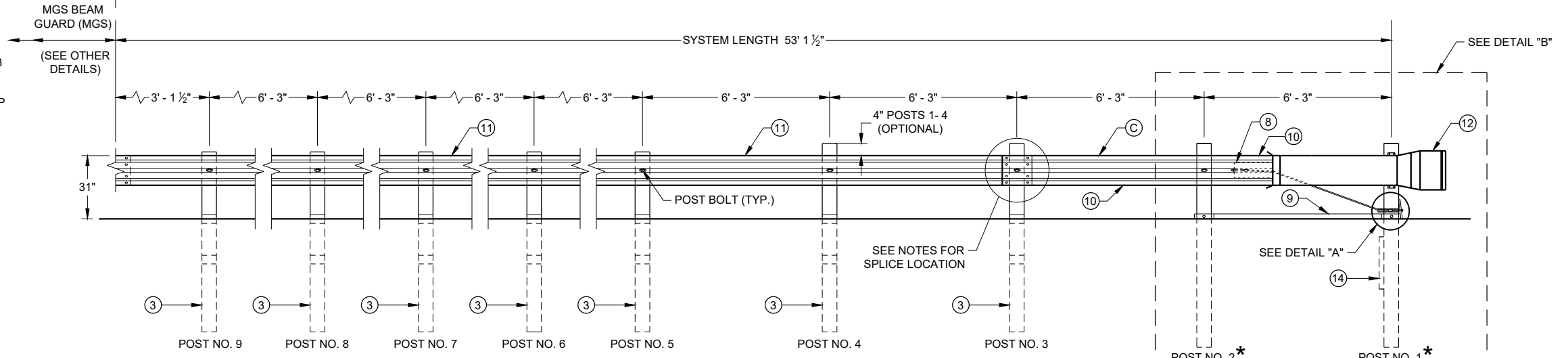
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

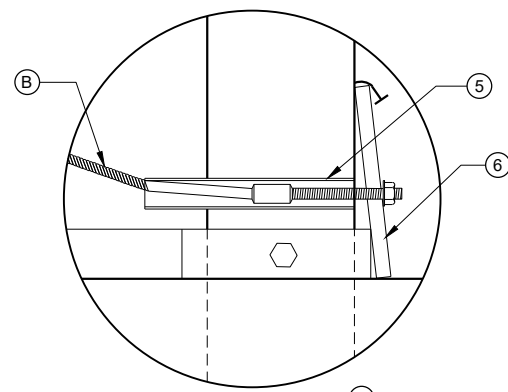
CLEAR ZONE LIMITS, EITHER AS SHOWN ELSEWHERE IN THE PLANS OR, IF NOT SHOWN ELSEWHERE IN THE PLANS, 15 FEET BEYOND THE HINGE POINT LINE



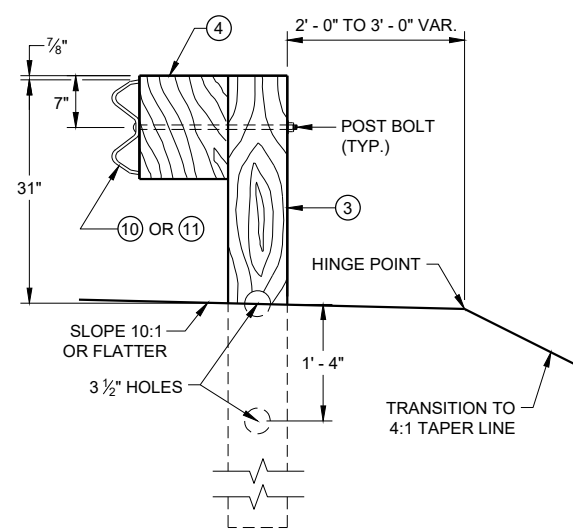
PLAN



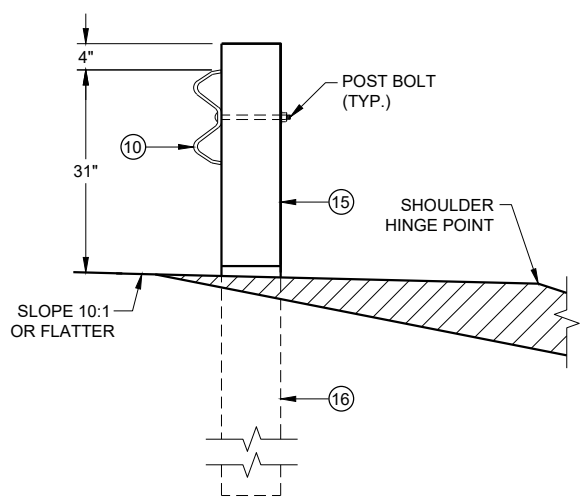
ELEVATION



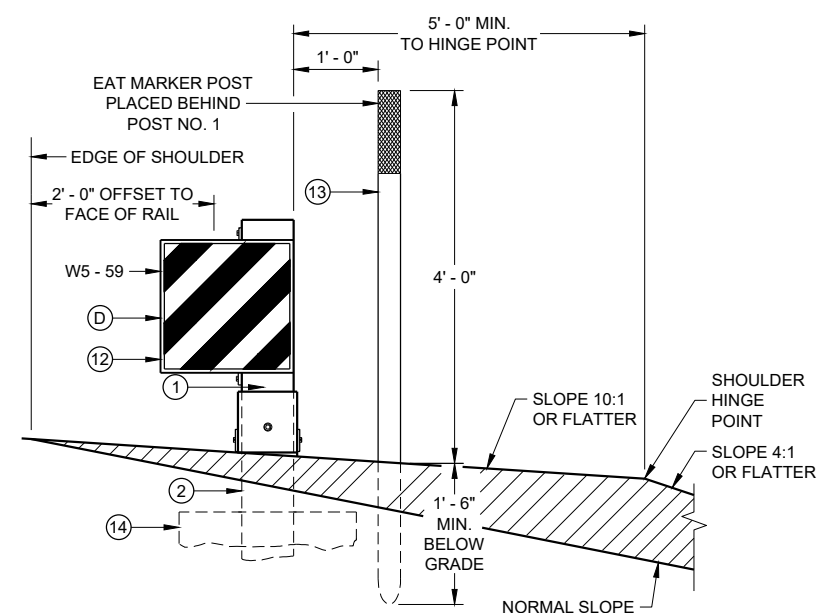
DETAIL "A"



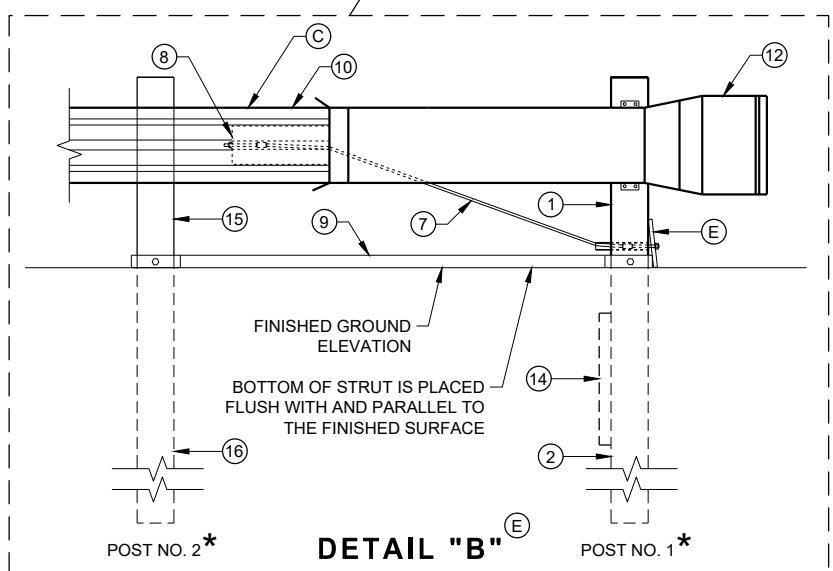
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B
TYPICAL AT POST NO. 2***



**SECTION A - A
TYPICAL AT POST NO. 1***



DETAIL "B"

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

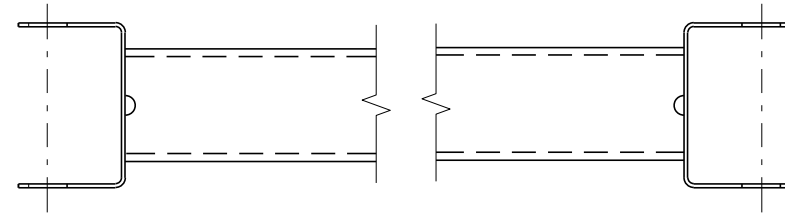
6

SDD 14B44 - 04a

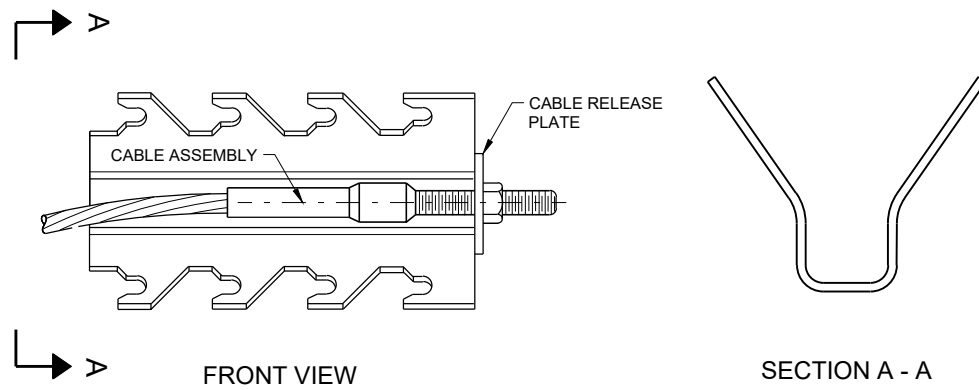
SDD 14B44 - 04a

BILL OF MATERIALS

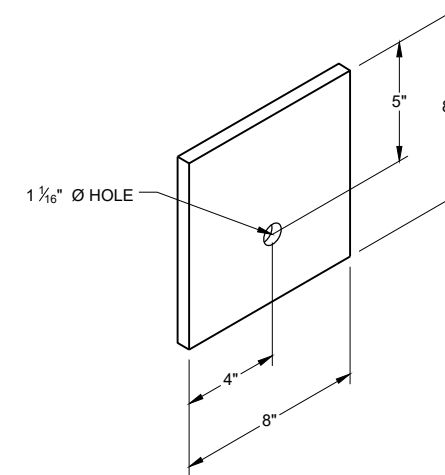
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL 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



GENERIC GROUND STRUT ⑨ ⑤



GENERIC ANCHOR CABLE BOX ⑨ ⑤



BEARING PLATE ⑥ ⑤

6

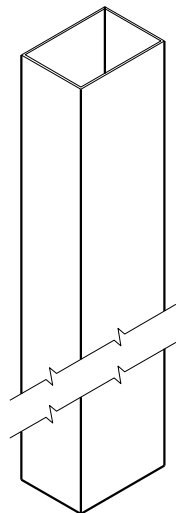
6

SDD 14B44 - 04b

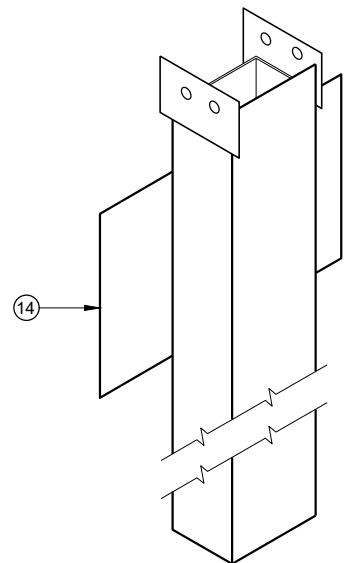
SDD 14B44 - 04b

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

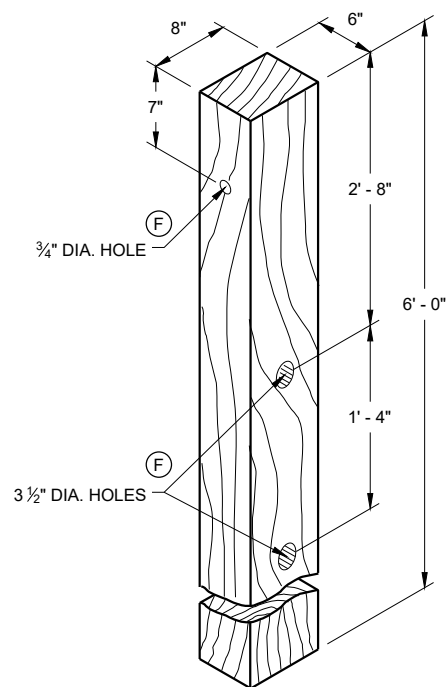
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



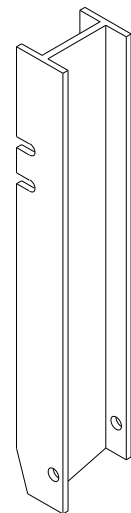
UPPER POST NO. 1 ⁽¹⁾ (E)



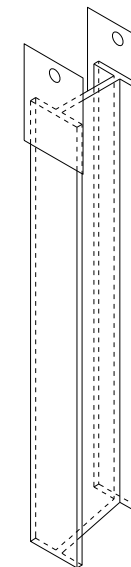
LOWER POST NO. 1 ⁽²⁾ (E)



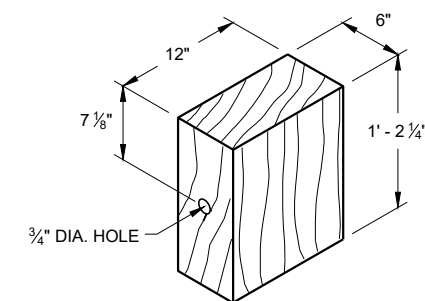
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

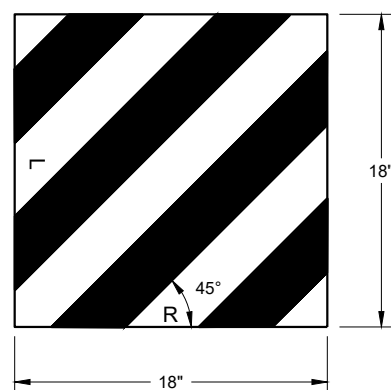


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

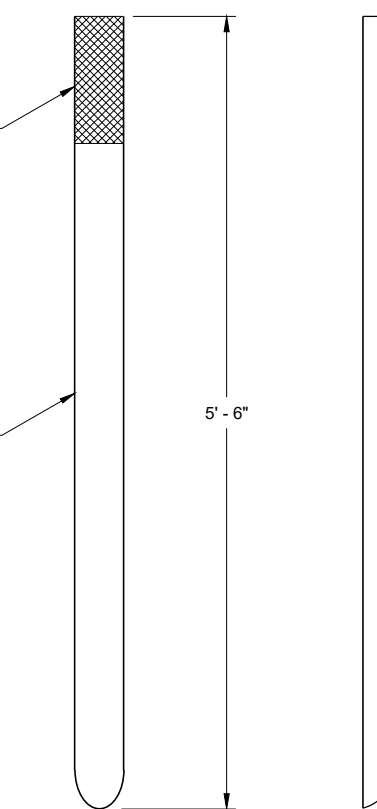
6



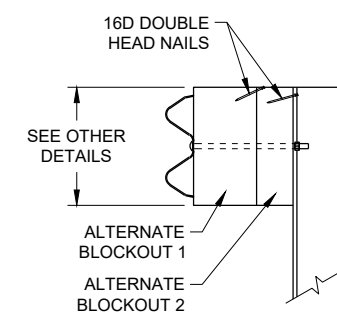
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

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

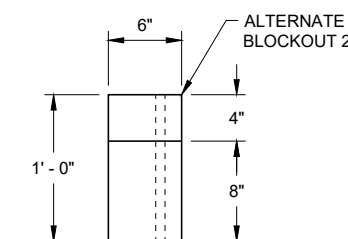
E.A.T. MARKER
POST (YELLOW)



FRONT VIEW SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

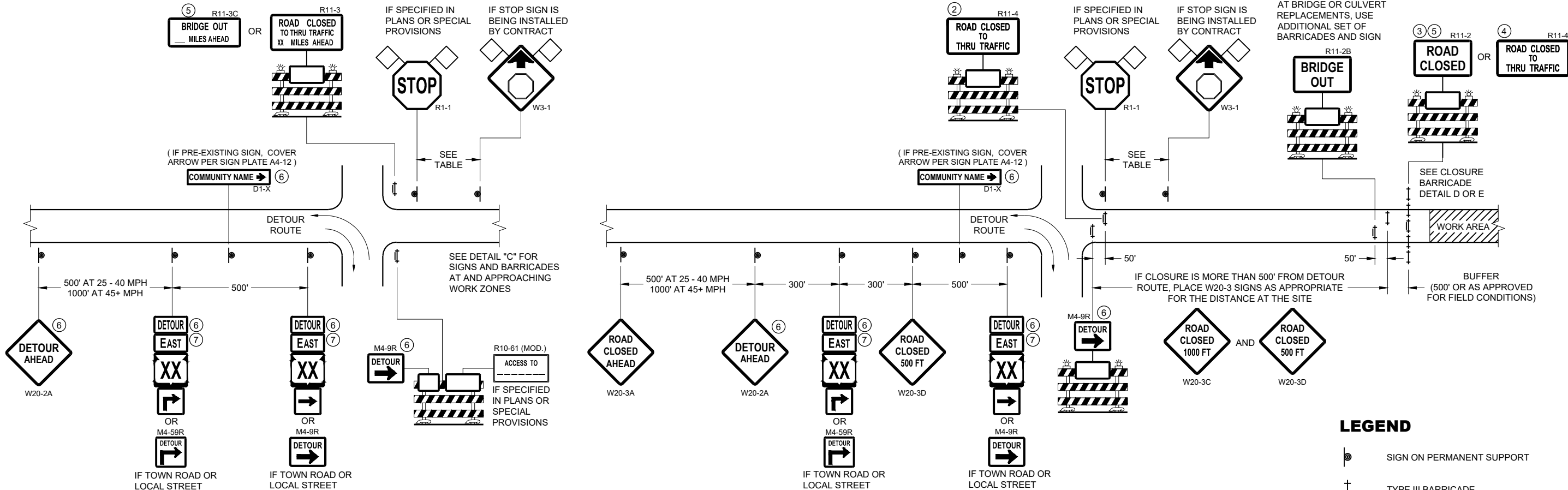
SDD 14B44 - 04c

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

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

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

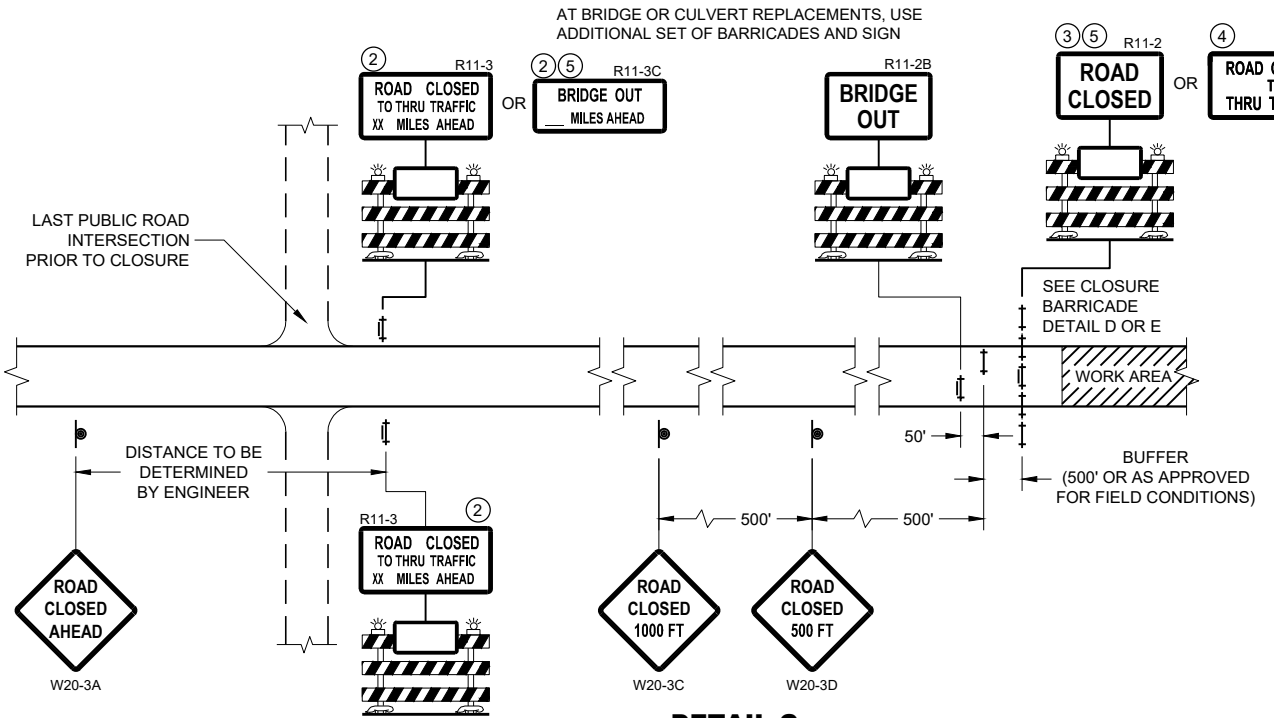
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

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

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

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



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

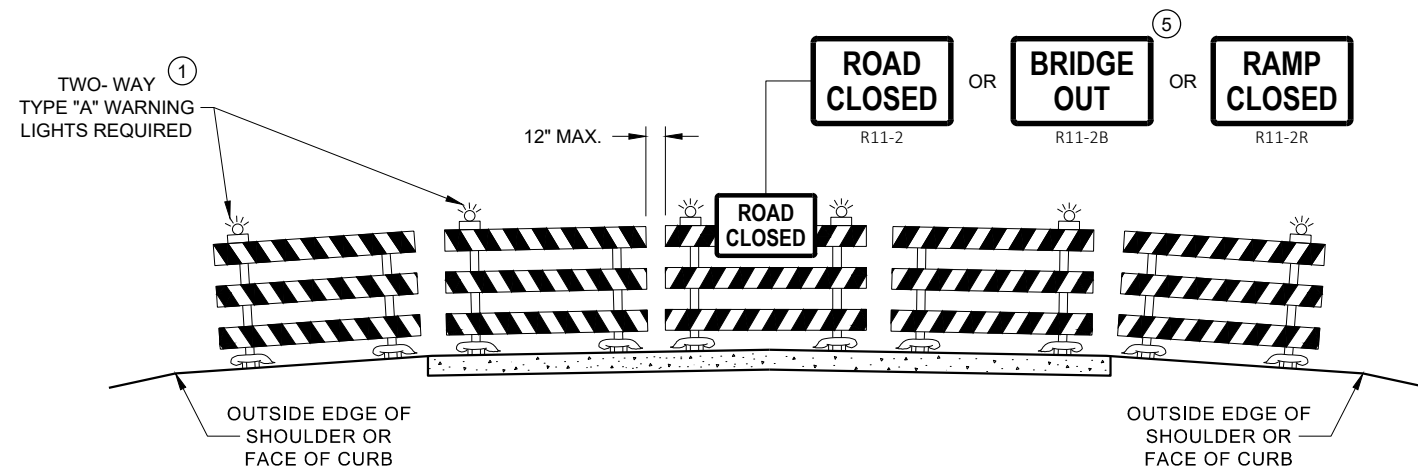
SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

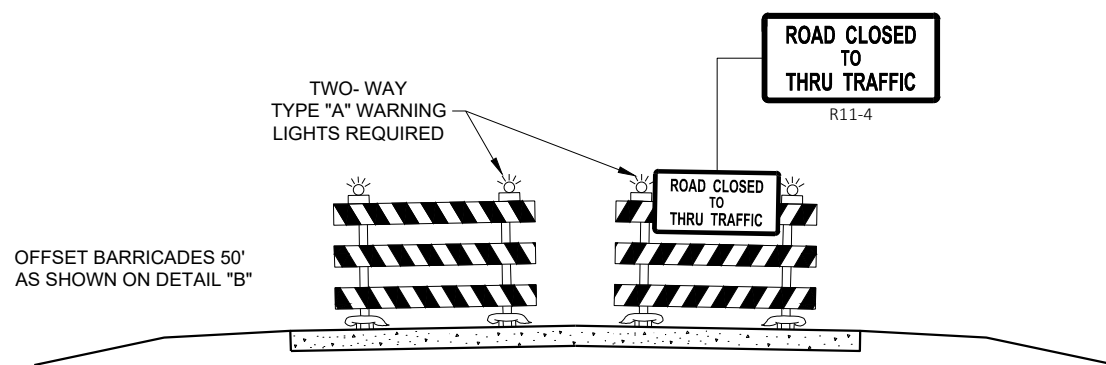
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

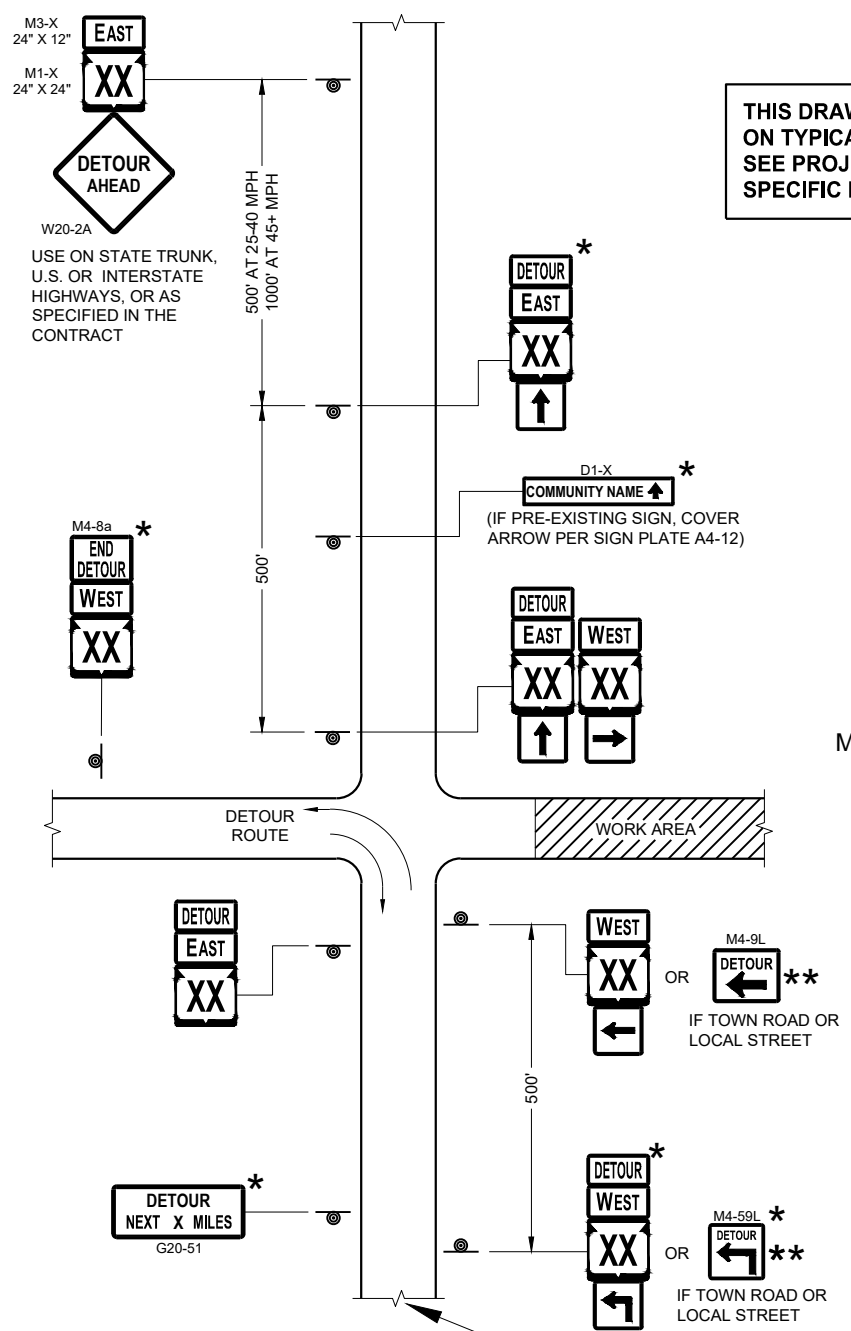
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24"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

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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

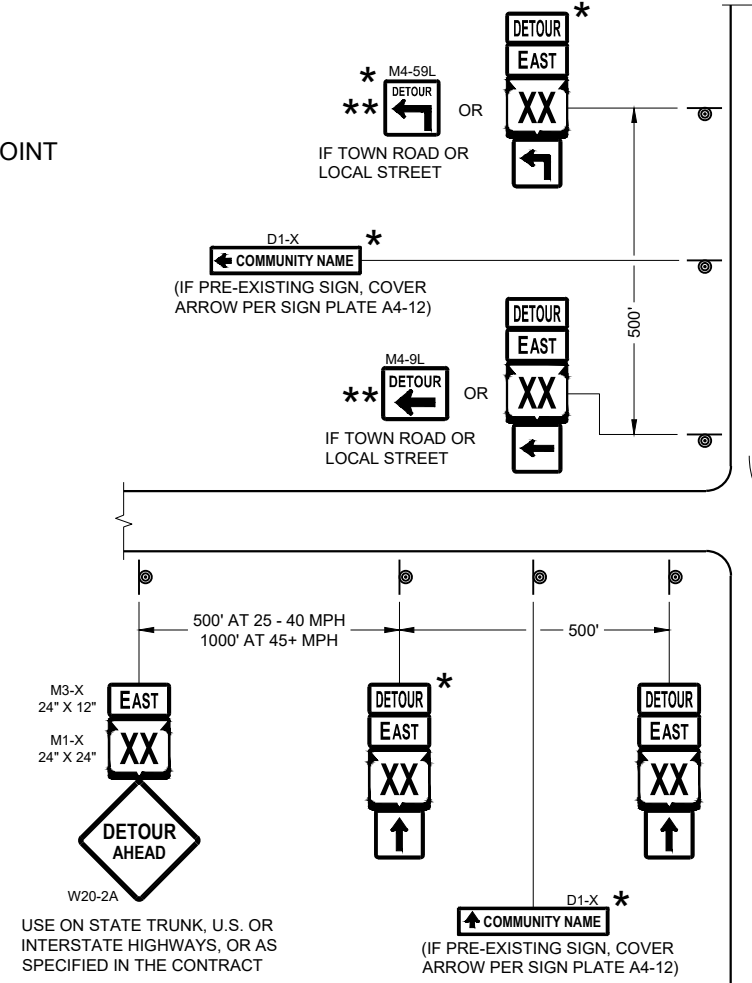
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

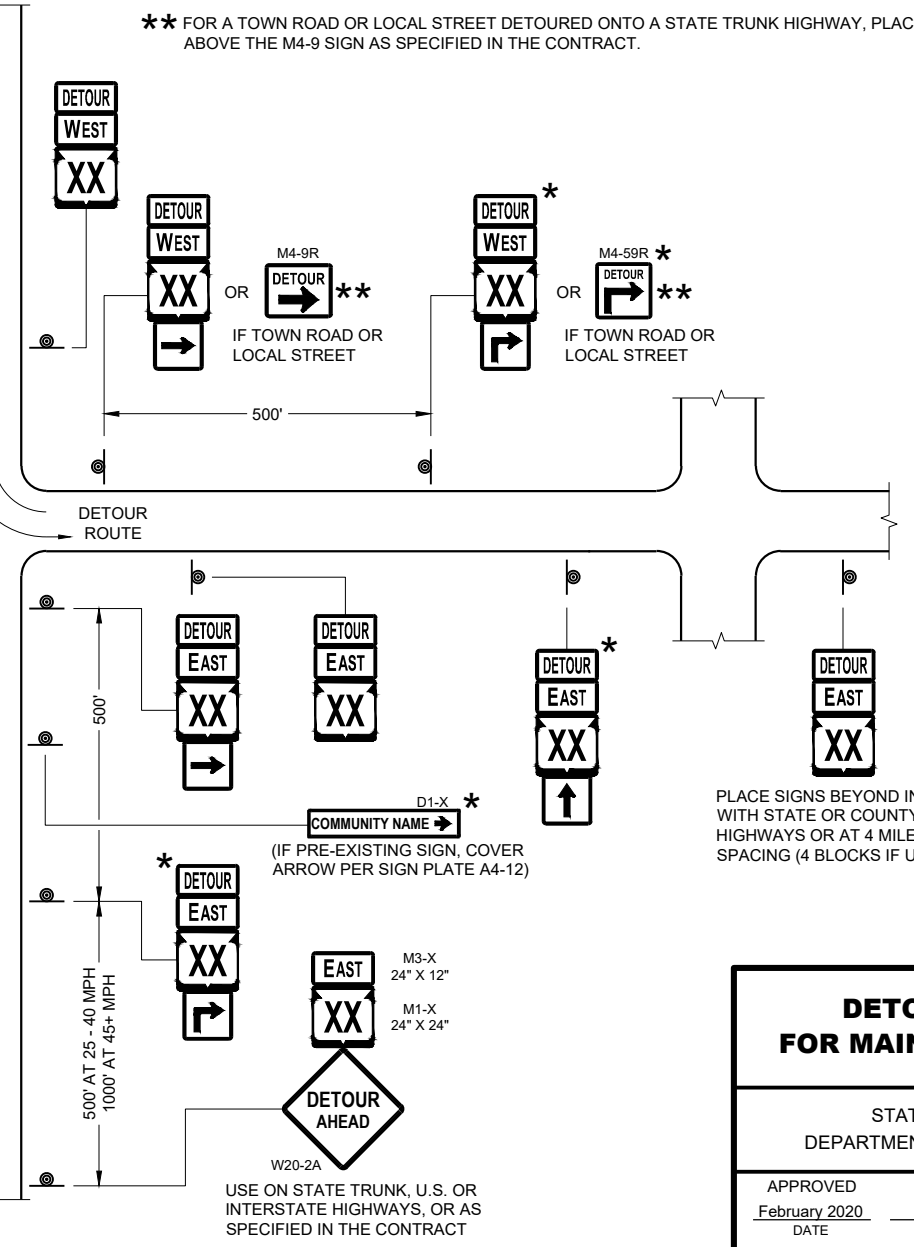
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

MATCH POINT



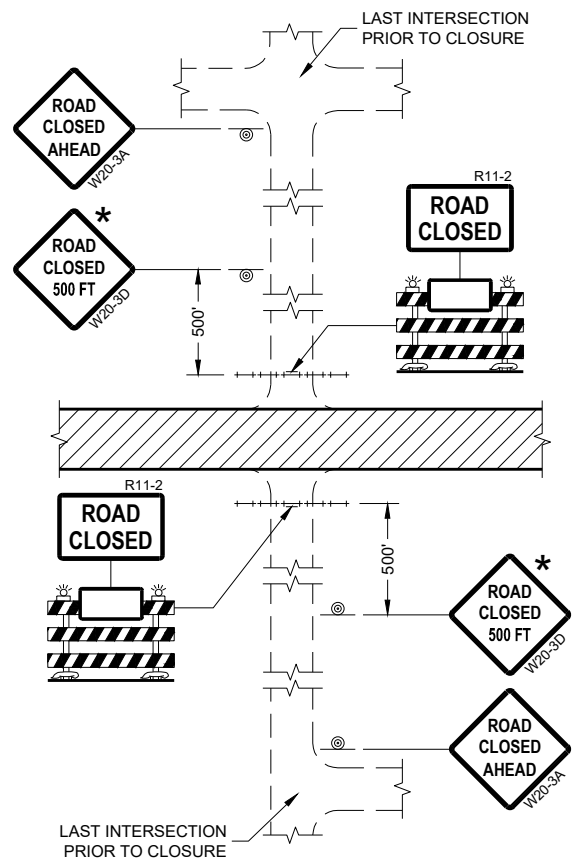
**DETAIL F
DETOUR SIGNING**



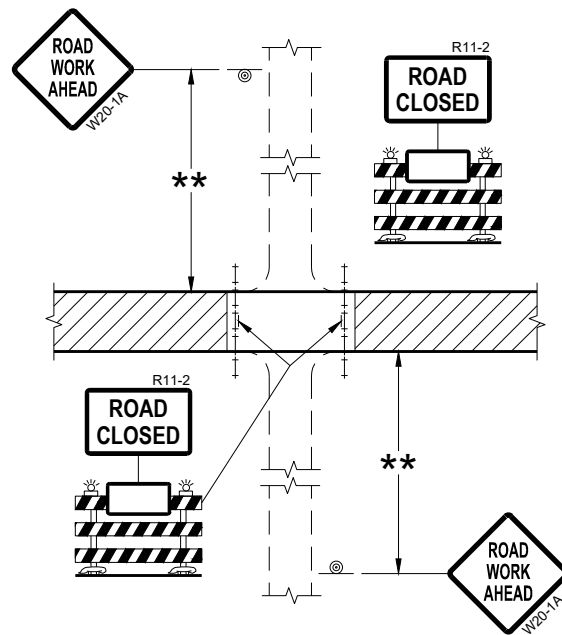
PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA)

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

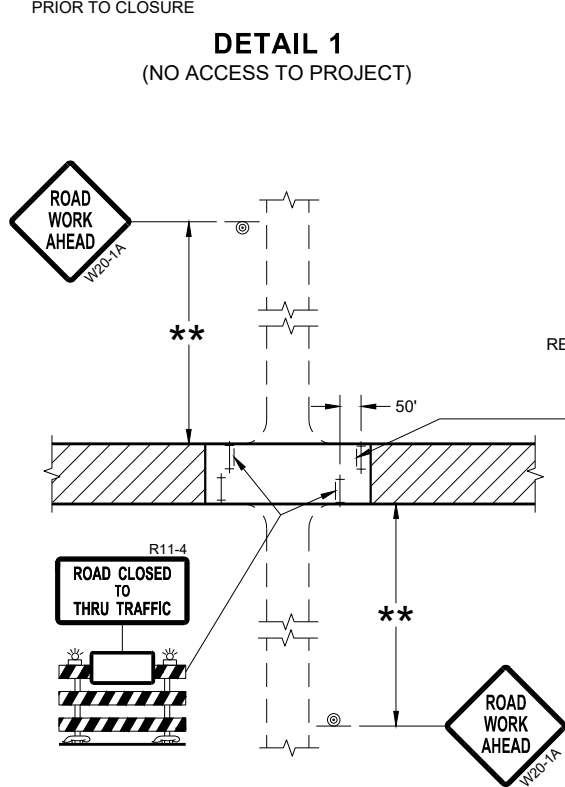
DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	



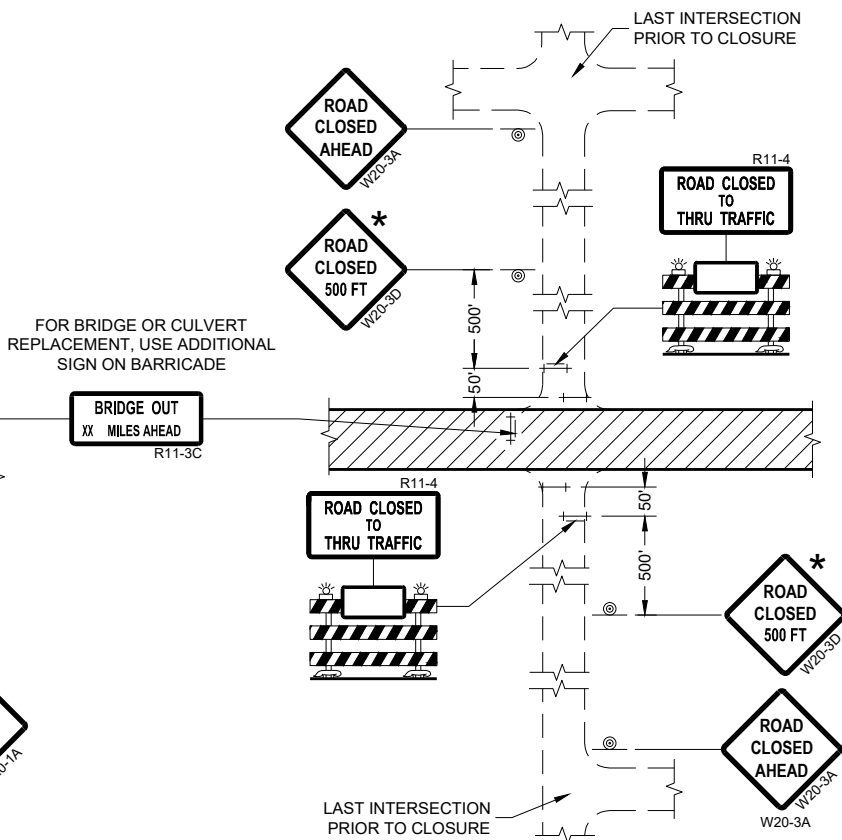
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

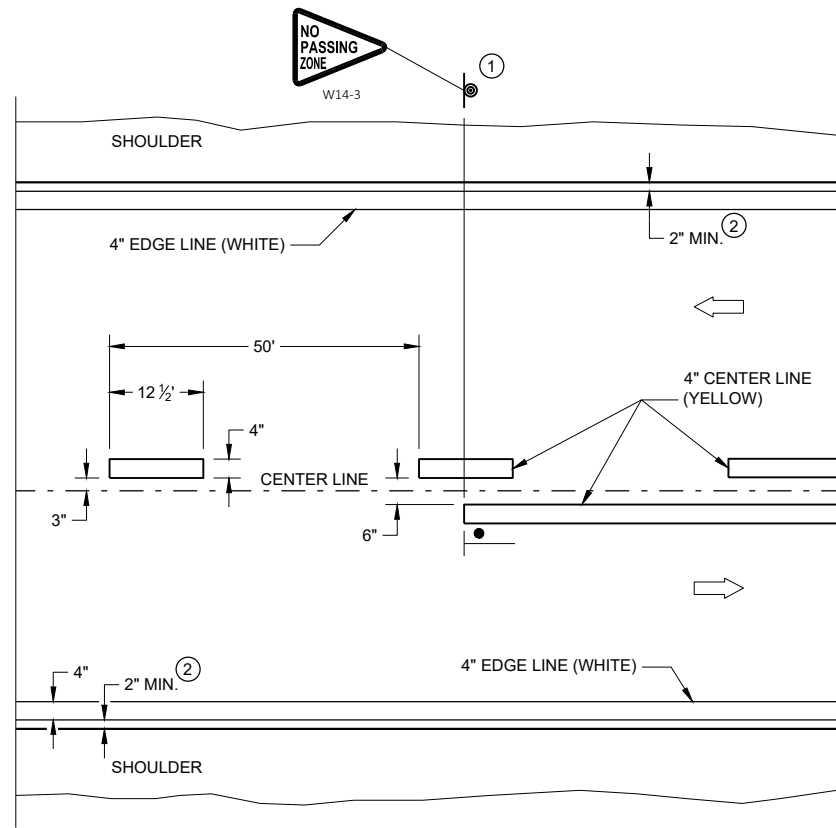
ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

- * OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.
- ** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

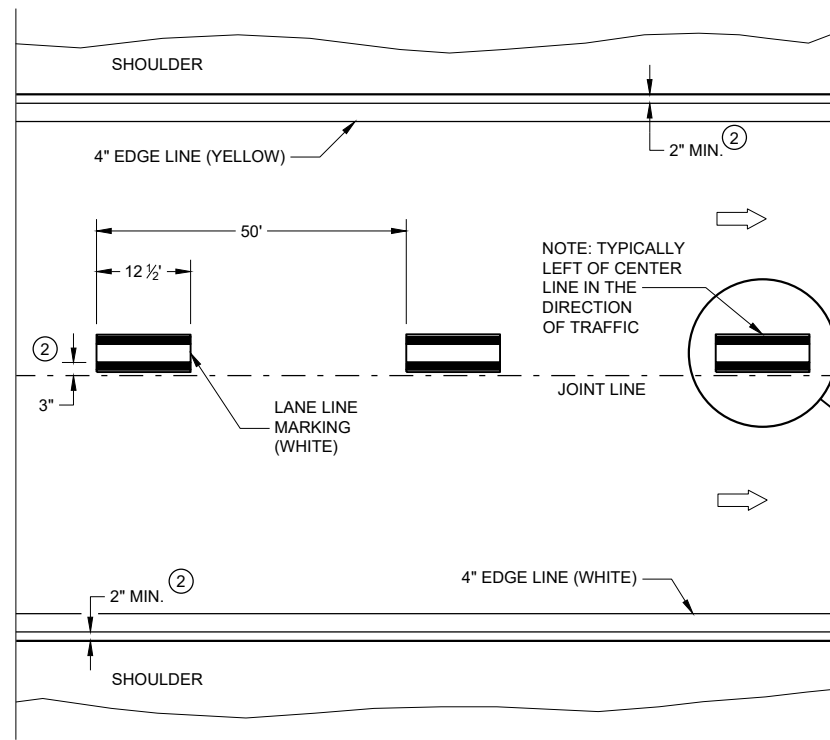
LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 2018 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	

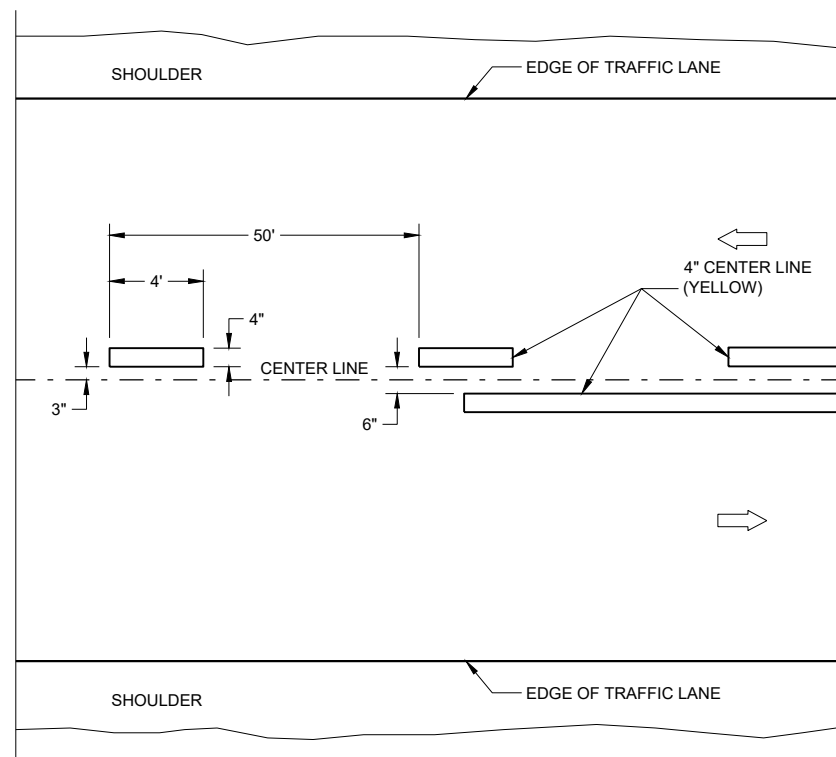


TWO WAY TRAFFIC

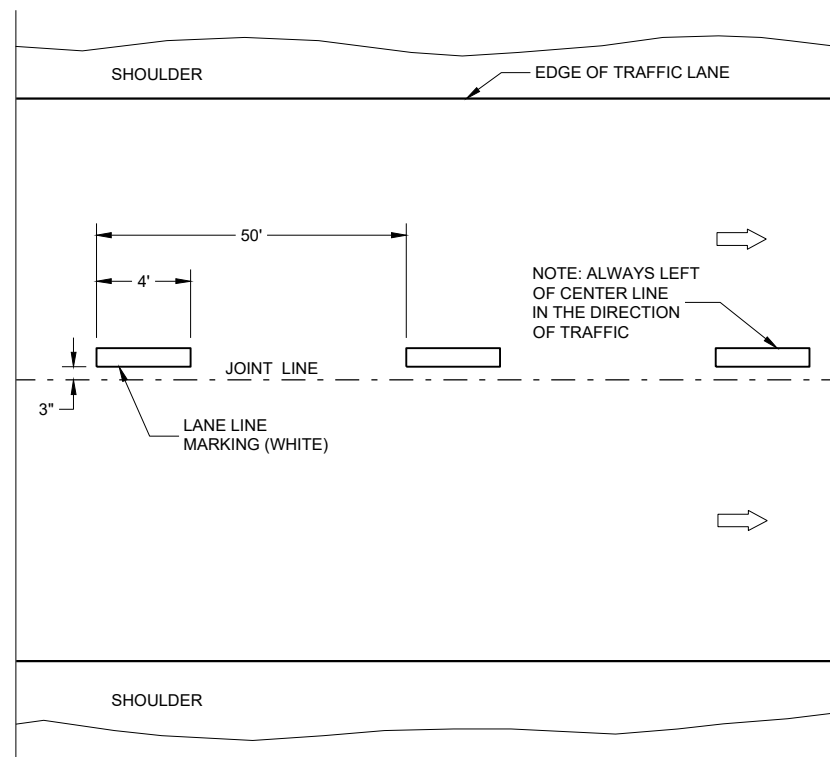


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

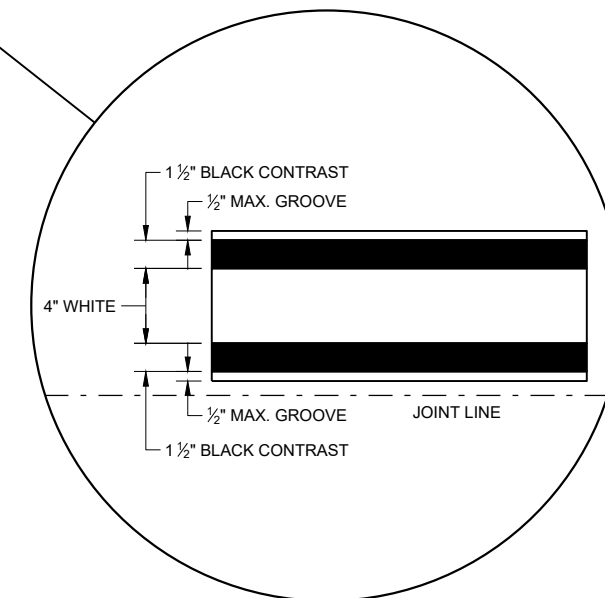
GENERAL NOTES

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

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

LEGEND

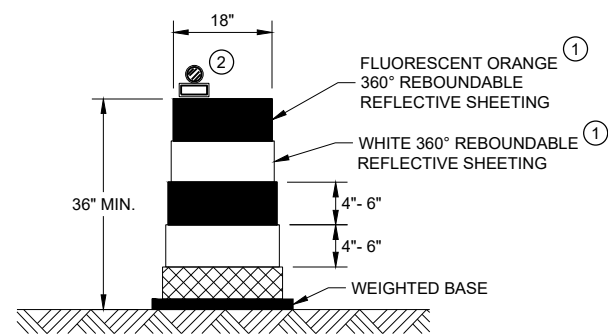
- |• "T" MARKING
- ⊙ SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



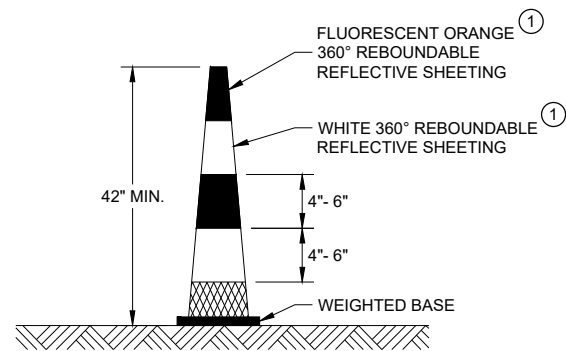
**LONGITUDINAL MARKING
(MAINLINE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



DRUM

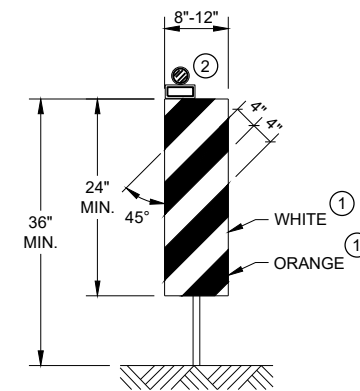


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

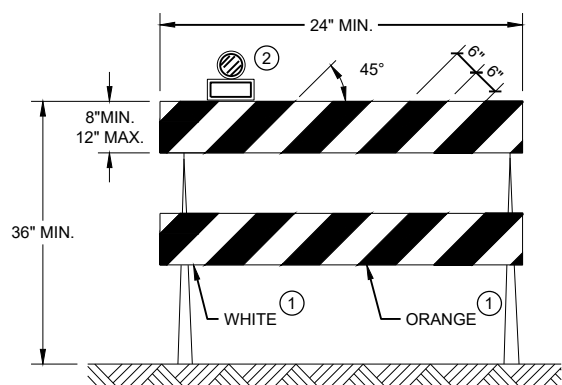
GENERAL NOTES

- 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.



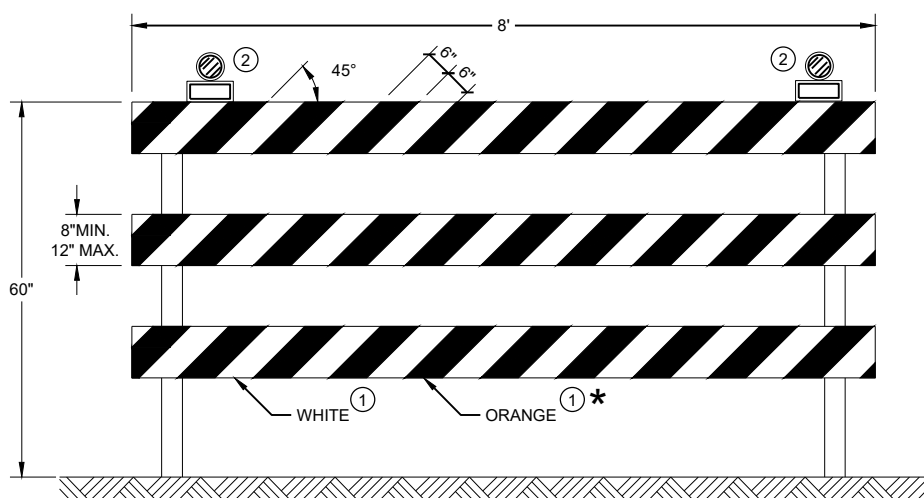
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

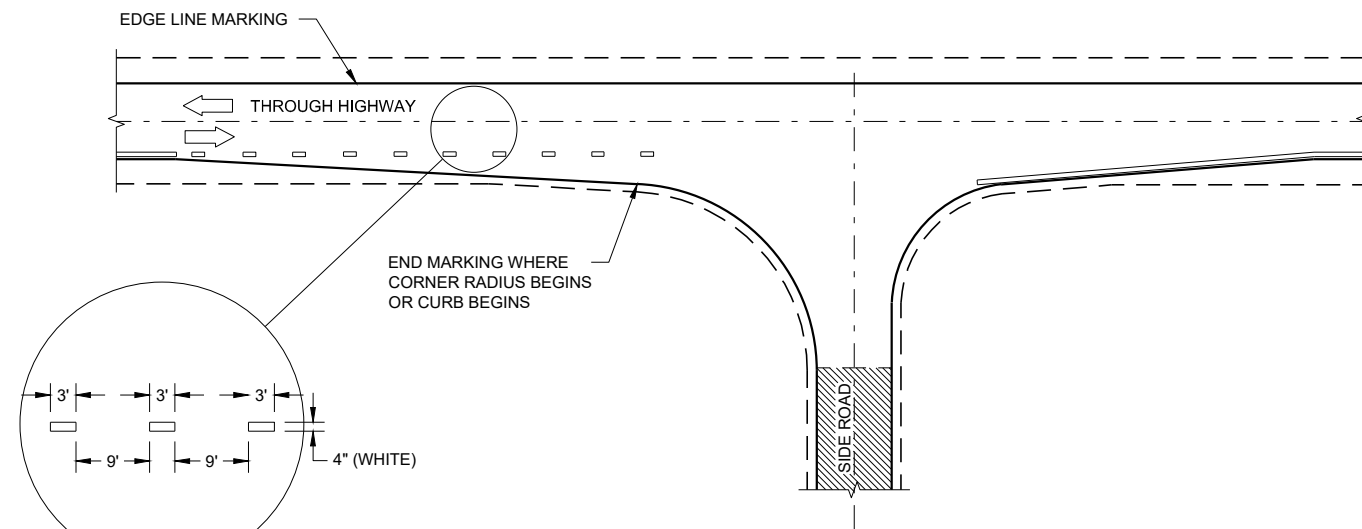
GENERAL NOTES

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

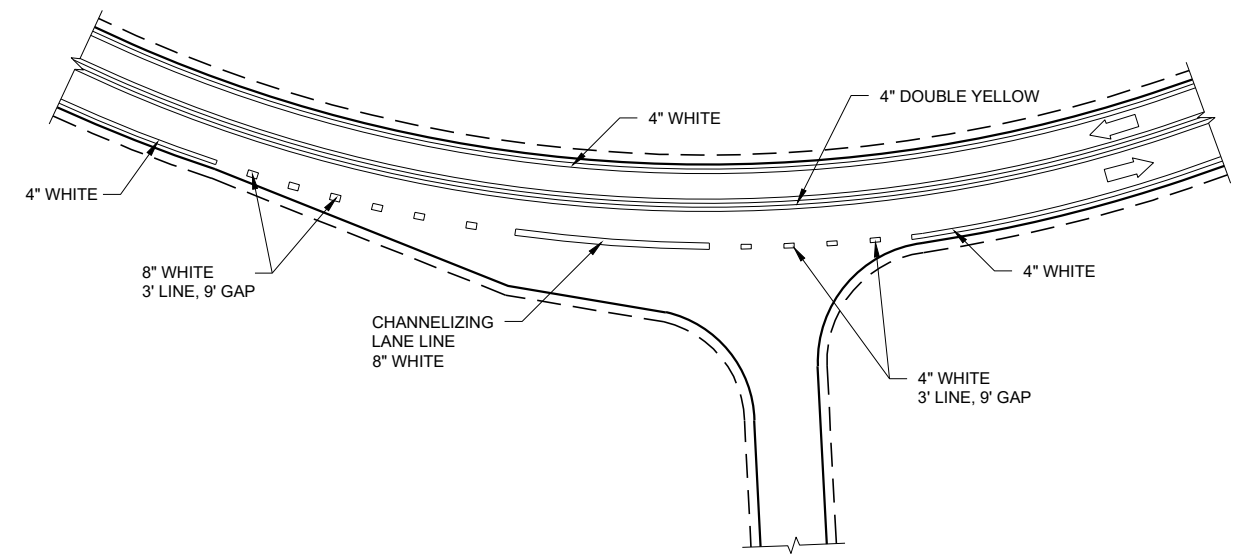
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

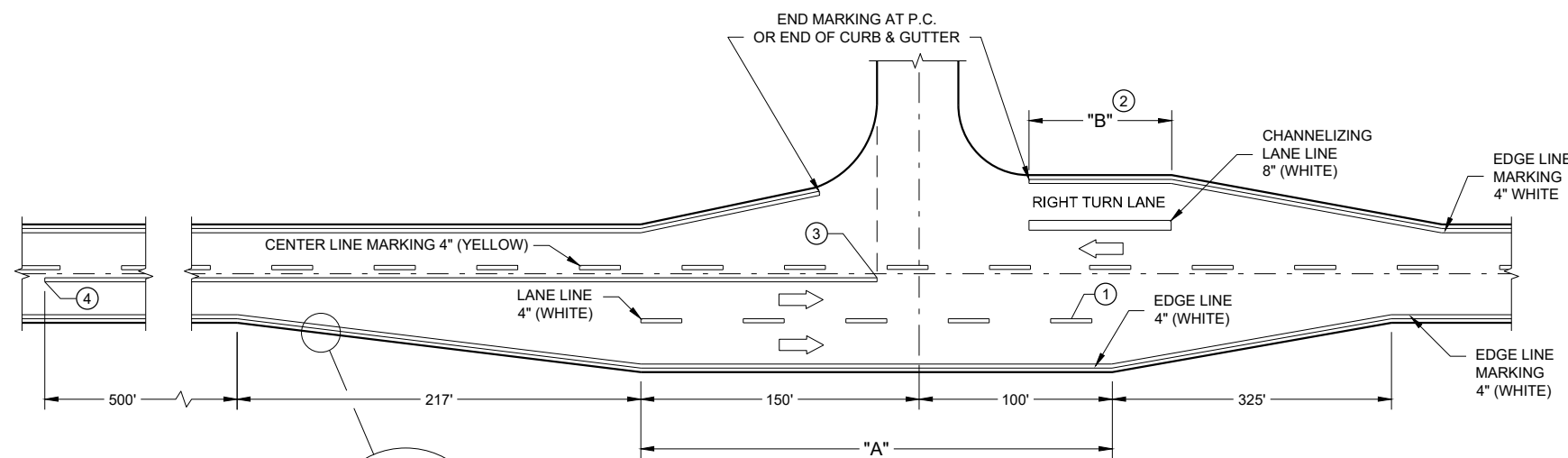
➡ DIRECTION OF TRAVEL



MINOR INTERSECTION



INTERSECTION ON OUTSIDE OF CURVE



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

**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

EARTHWORK - STA 170+69 - 187+66

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 8
170+69	0.00	0.00	0.00	0	0	0	0	0	0
171+50	10.36	7.33	3.84	16	11	6	16	8	-3
172+00	7.00	7.33	4.24	16	14	7	32	16	-9
172+50	8.59	7.33	4.42	14	14	8	46	26	-19
173+00	8.37	7.33	4.26	16	14	8	62	36	-27
173+50	13.95	7.33	1.42	21	14	5	83	43	-27
174+00	9.06	7.33	4.49	21	14	5	104	49	-26
174+30	14.77	7.33	7.56	13	8	7	117	58	-30
174+50	9.12	7.33	7.43	9	5	6	126	65	-33
175+00	9.91	7.33	3.15	18	14	10	144	78	-42
175+50	9.25	7.33	1.54	18	14	4	162	83	-43
176+00	9.66	7.33	1.46	18	14	3	180	86	-42
176+50	9.43	7.33	3.71	18	14	5	198	93	-45
177+00	8.39	7.33	5.26	17	14	8	215	103	-52
177+50	22.30	7.33	2.07	28	14	7	243	111	-46
178+00	20.53	7.33	1.17	40	14	3	283	115	-24
178+22.207	19.45	7.33	0.91	16	6	1	299	116	-15
178+47.022	16.61	7.33	3.10	17	7	2	316	119	-8
178+71.891	14.10	7.33	12.29	14	7	7	330	128	-10
179+00	13.35	7.33	15.14	14	8	14	344	145	-21
179+50	13.71	7.33	2.67	25	14	16	369	165	-30
180+00	13.79	7.33	10.68	25	14	12	394	180	-34
180+50	12.15	7.33	42.16	24	14	49	418	241	-85
181+00	12.95	7.33	34.54	23	14	71	441	330	-165
181+50	12.88	7.33	14.22	24	14	45	465	386	-211
182+00	13.05	7.33	6.20	24	14	19	489	410	-225
182+51.155	13.05	7.33	14.82	25	14	20	514	435	-239
182+75.461	12.91	7.33	17.11	12	7	14	526	453	-252
183+00.839	13.10	7.33	24.62	12	7	20	538	478	-272
183+50	13.05	7.33	22.83	24	13	43	562	531	-314
184+00	12.85	7.33	5.48	24	14	26	586	564	-337
184+50	11.57	7.33	6.25	23	14	11	609	578	-342
185+00	8.48	7.33	1.72	19	14	7	628	586	-345
185+50	8.75	7.33	1.68	16	14	3	644	590	-347
186+00	8.43	7.33	4.40	16	14	6	660	598	-353
186+50	7.45	7.33	10.82	15	14	14	675	615	-369
187+66	0.00	0.00	0.00	16	16	23	691	644	-398

Notes:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

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EARTHWORK - STA 308+18 - 315+70

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDI NATE NOTE 8
308+18	0.00	0.00	0.00	0	0	0	0	0	0
309+00	8.18	7.33	4.94	13	12	8	13	10	-9
309+50	7.92	7.33	5.21	15	14	9	28	21	-19
310+00	8.56	7.33	3.65	15	14	8	43	31	-28
310+50	8.47	7.33	3.79	16	14	7	59	40	-35
311+00	9.22	7.33	1.30	16	14	5	75	46	-39
311+50	8.67	7.33	2.57	17	14	4	92	51	-41
312+00	8.17	7.33	2.50	16	14	5	108	58	-46
312+50	10.11	7.33	0.00	17	14	2	125	60	-45
313+00	9.54	7.33	2.08	18	14	2	143	63	-44
313+50	8.73	7.33	4.38	17	14	6	160	70	-48
314+00	9.22	7.33	5.10	17	14	9	177	81	-56
314+50	8.14	7.33	1.90	16	14	6	193	89	-62
315+70	0.00	0.00	0.00	18	16	4	211	94	-65

EARTHWORK - STA 354+50 - 359+00

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDI NATE NOTE 8
354+50	0.00	7.33	0.00	0	0	0	0	0	0
355+00	92.50	7.33	15.97	171	14	30	171	38	120
355+50	88.62	7.33	18.84	178	14	34	349	80	241
356+00	107.36	7.33	6.40	181	14	23	530	109	379
356+50	117.87	7.33	3.76	209	14	9	739	120	563
357+00	93.42	7.33	23.66	196	14	25	935	151	714
357+50	76.27	7.33	64.04	157	14	81	1,092	253	756
358+00	82.74	7.33	70.30	147	14	124	1,239	408	734
358+50	85.60	7.33	53.44	146	13	107	1,385	541	733
359+00	0.00	7.33	0.00	79	14	49	1,464	603	737

Notes:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

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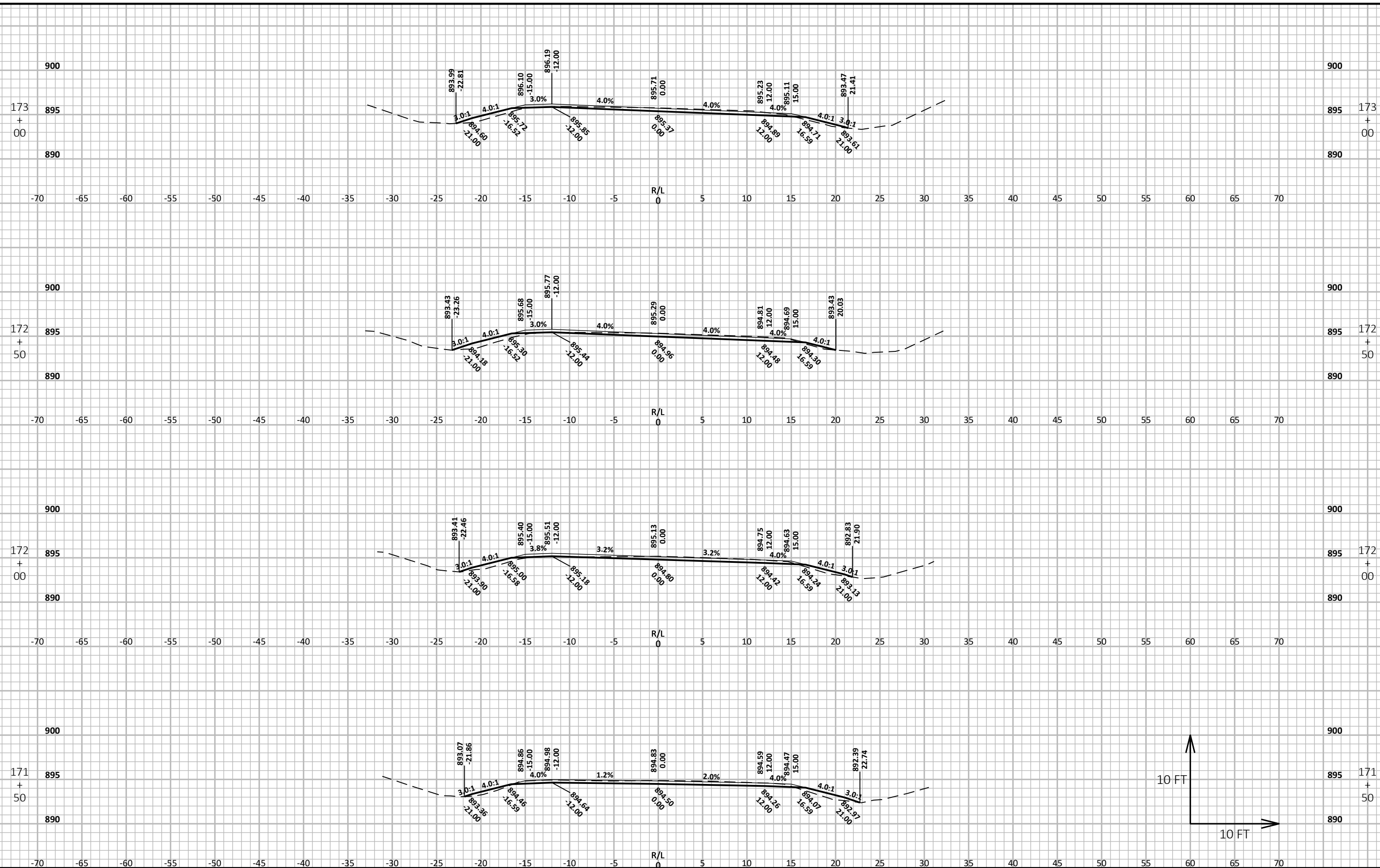
EARTHWORK - STA 413+11 - 424+99

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 8
413+11	0.00	7.33	0.00	0	0	0	0	0	0
413+50	11.77	7.33	0.04	9	11	0	9	0	-2
414+00	9.20	7.33	0.11	19	14	0	28	0	3
414+50	10.60	7.33	0.01	18	14	0	46	0	7
415+00	10.17	7.33	0.00	19	14	0	65	0	12
415+50	10.96	7.33	0.83	20	14	1	85	1	17
416+00	8.73	7.33	0.63	18	14	1	103	3	20
416+50	8.79	7.33	0.00	16	14	1	119	4	20
417+00	9.12	7.33	2.33	17	14	2	136	6	21
417+50	10.33	7.33	11.76	18	14	13	154	23	9
418+00	9.40	7.33	1.66	18	14	12	172	38	-3
418+50	8.75	7.33	1.39	17	14	3	189	41	-3
419+00	10.54	7.33	0.00	18	14	1	207	43	-1
419+50	9.42	7.33	0.44	18	14	0	225	43	4
420+00	9.27	7.33	0.62	17	14	1	242	44	5
420+50	9.21	7.33	0.00	17	14	1	259	45	7
421+00	8.76	7.33	0.00	17	14	0	276	45	10
421+50	8.34	7.33	0.13	16	14	0	292	45	12
422+00	9.01	7.33	0.62	16	14	1	308	46	13
422+50	7.73	7.33	0.56	16	14	1	324	48	14
423+00	7.98	7.33	1.41	15	14	2	339	50	12
423+50	8.64	7.33	1.48	15	14	3	354	54	9
424+00	9.26	7.33	1.38	17	14	3	371	58	9
424+50	10.18	7.33	2.13	18	14	3	389	61	9
424+99	11.70	7.33	1.21	19	12	3	408	65	12

Notes:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

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PROJECT NO: 6987-00-73

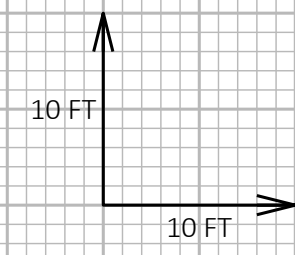
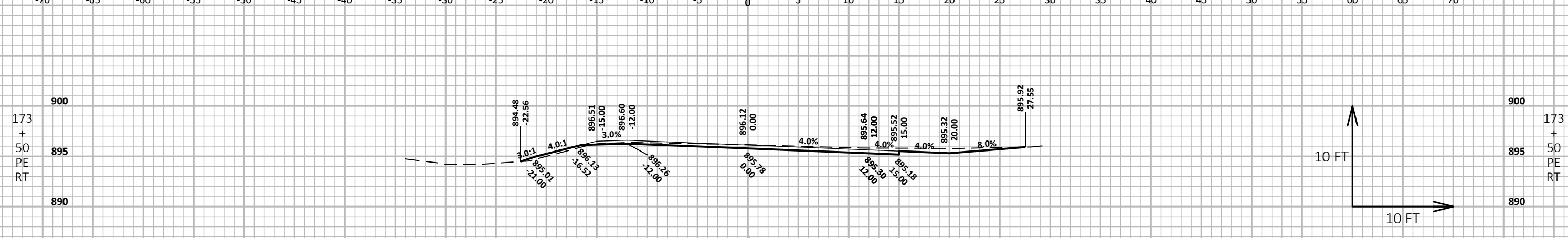
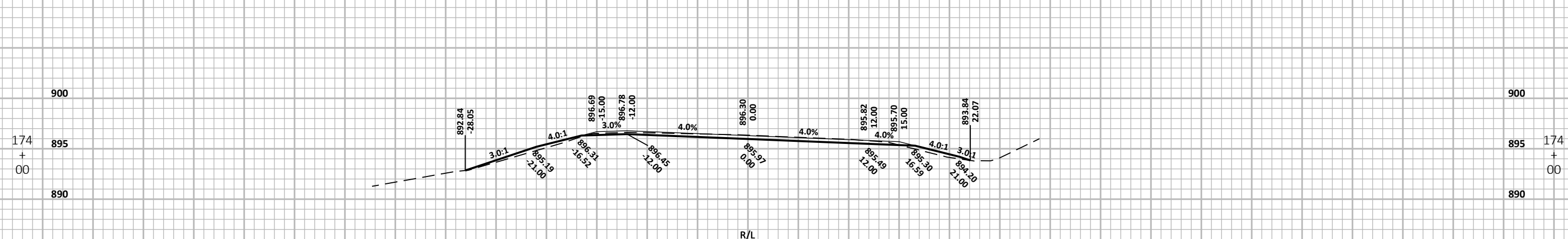
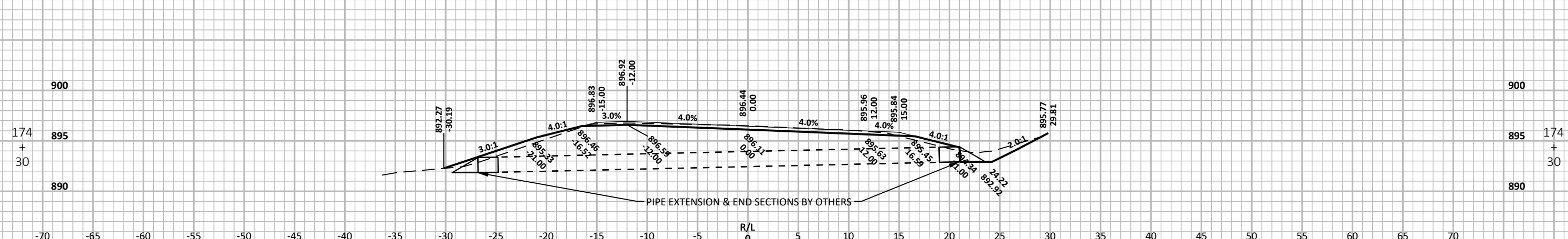
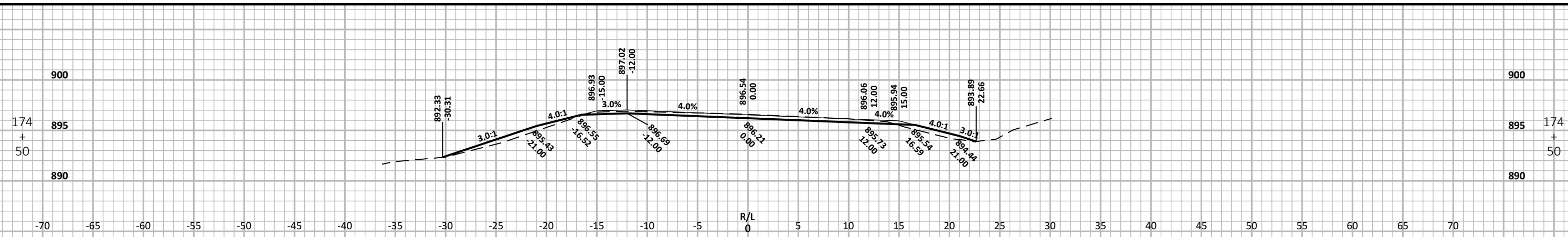
HWY: CTH E

COUNTY: WAUSHARA

CROSS-SECTIONS: CTH E

SHEET

E



PROJECT NO: 6987-00-73

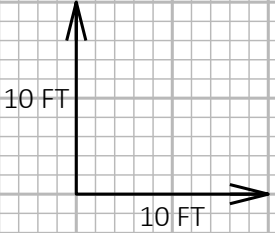
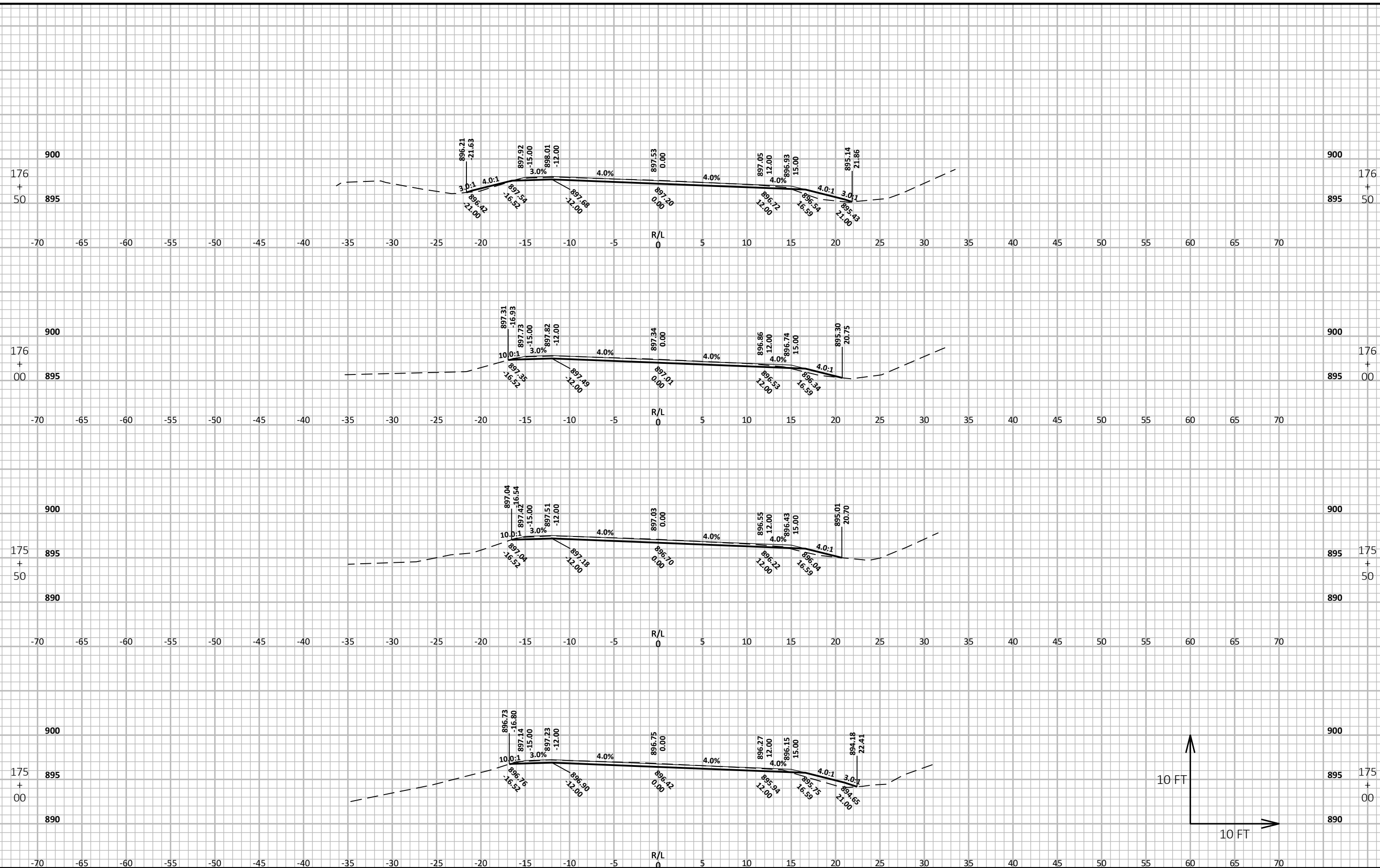
HWY: CTH E

COUNTY: WAUSHARA

CROSS-SECTIONS: CTH E

SHEET

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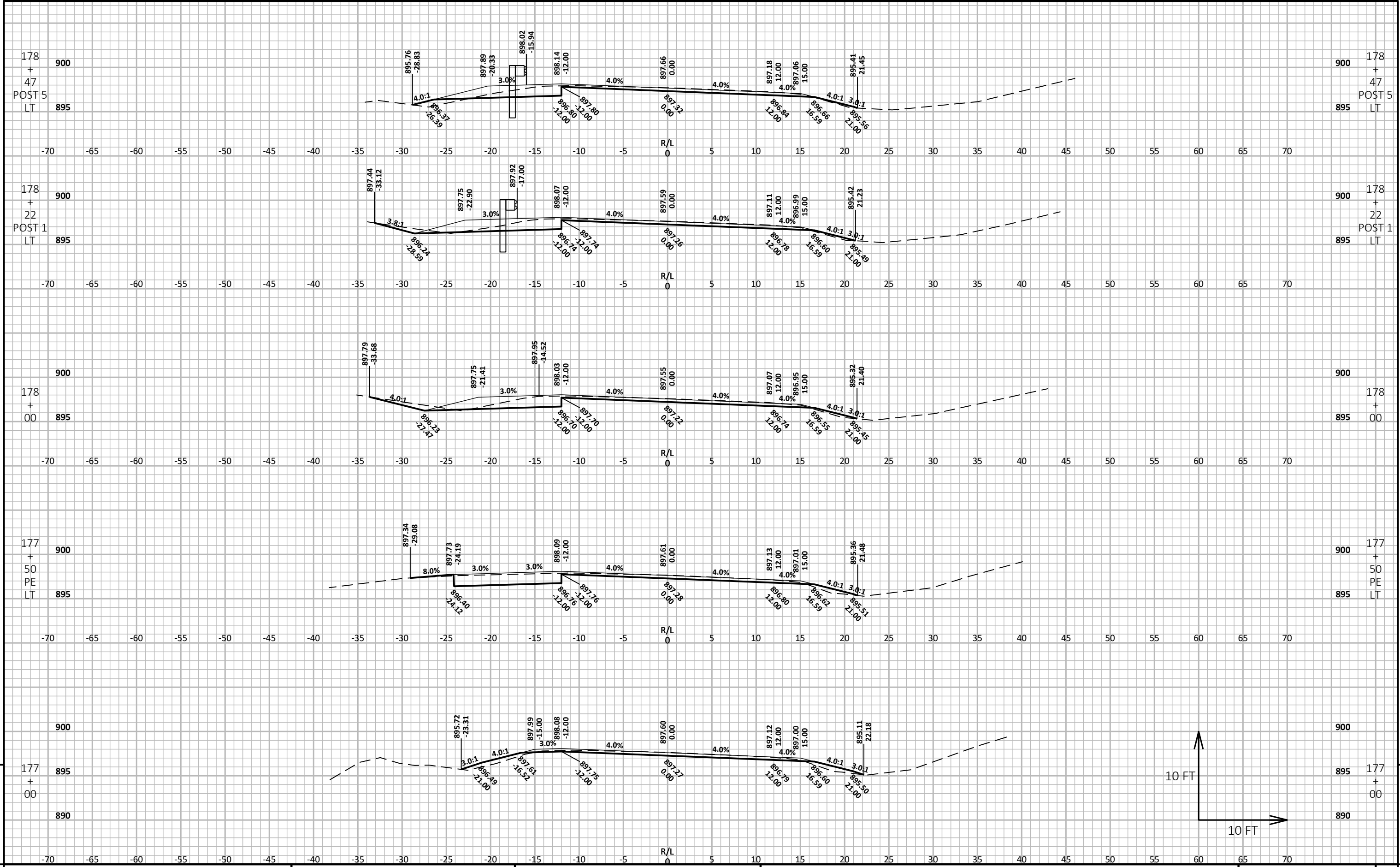


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PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET E

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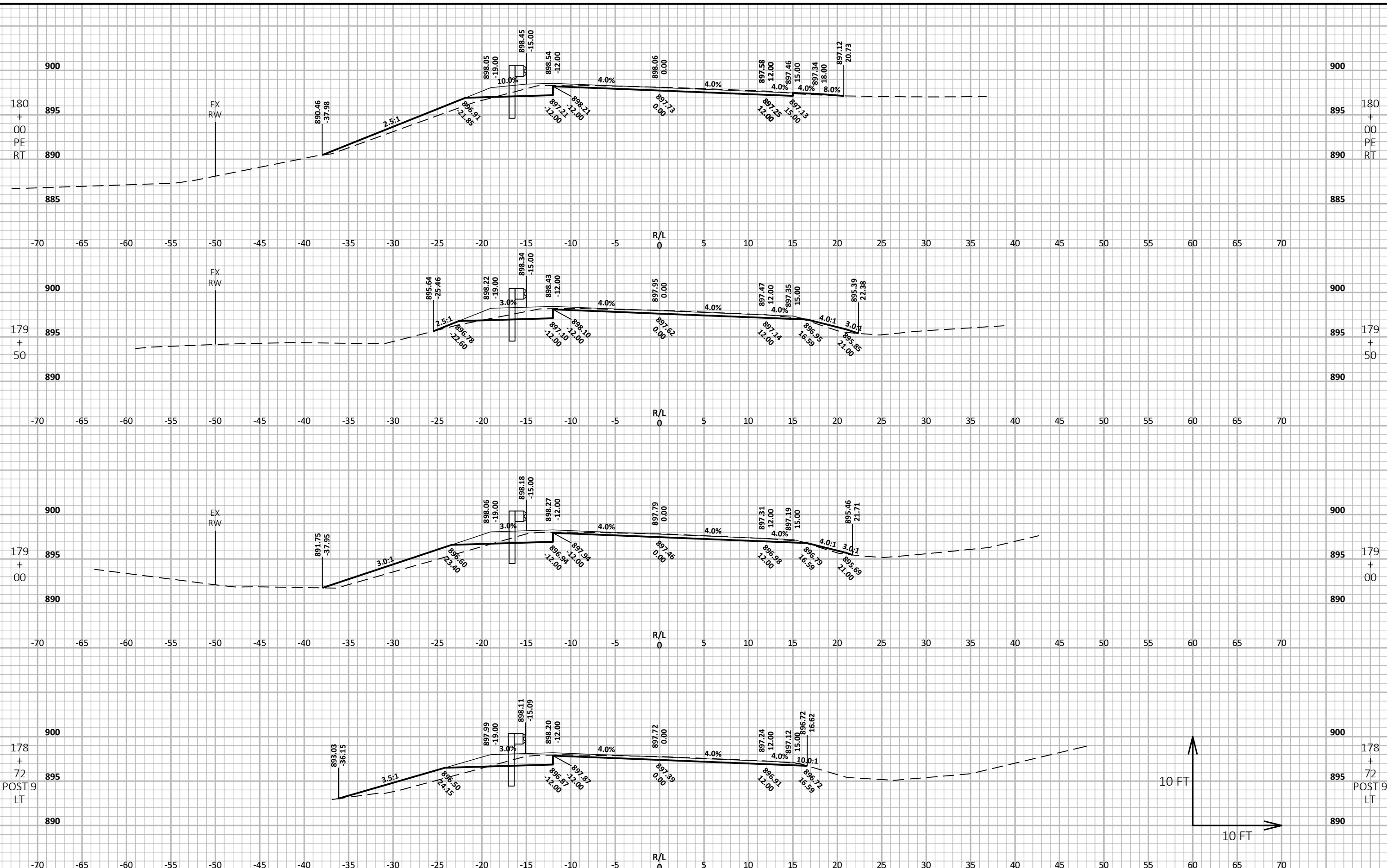


PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET E

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PROJECT NO: 6987-00-73

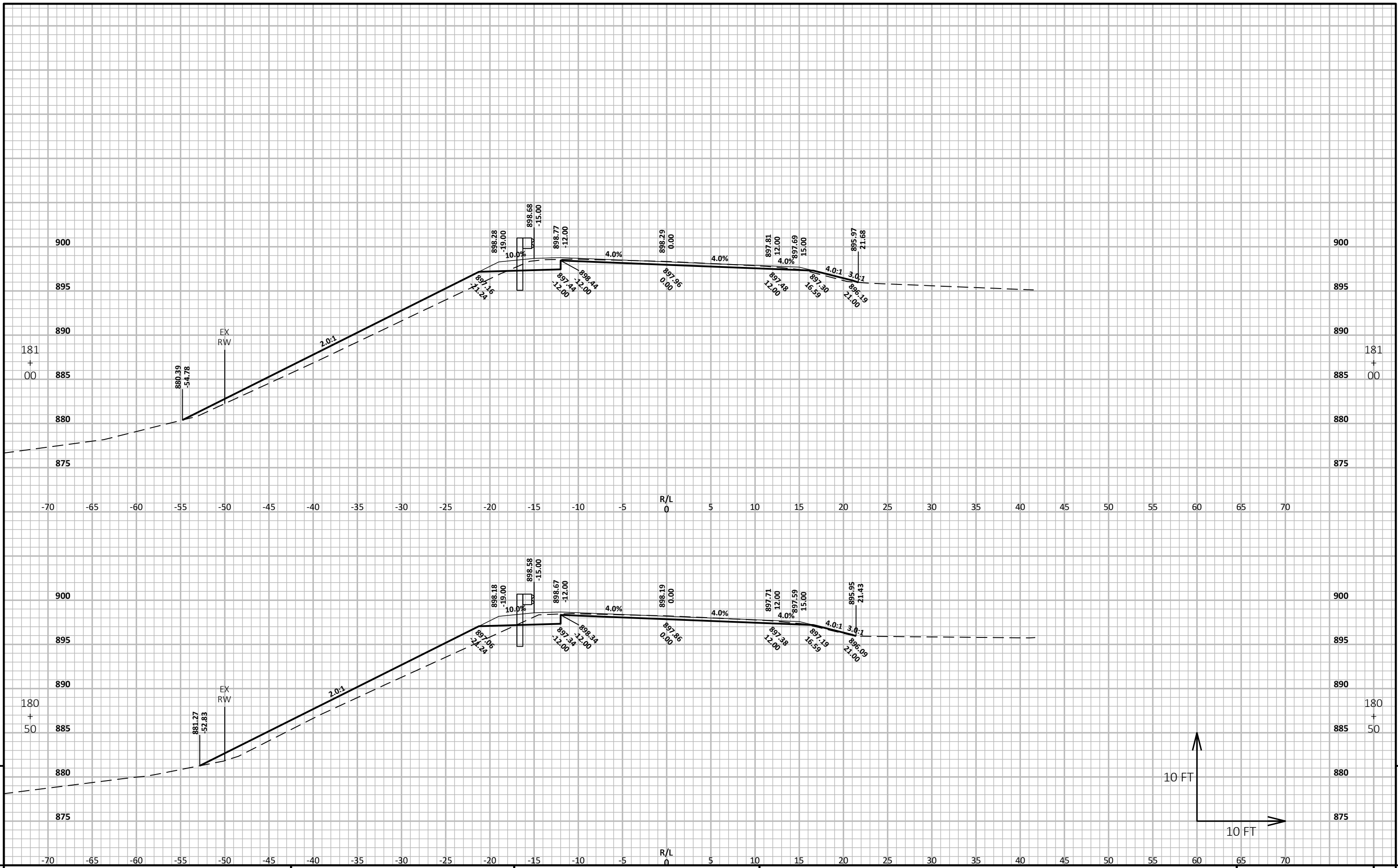
HWY: CTH E

COUNTY: WAUSHARA

CROSS-SECTIONS: CTH E

SHEET

E



PROJECT NO: 6987-00-73

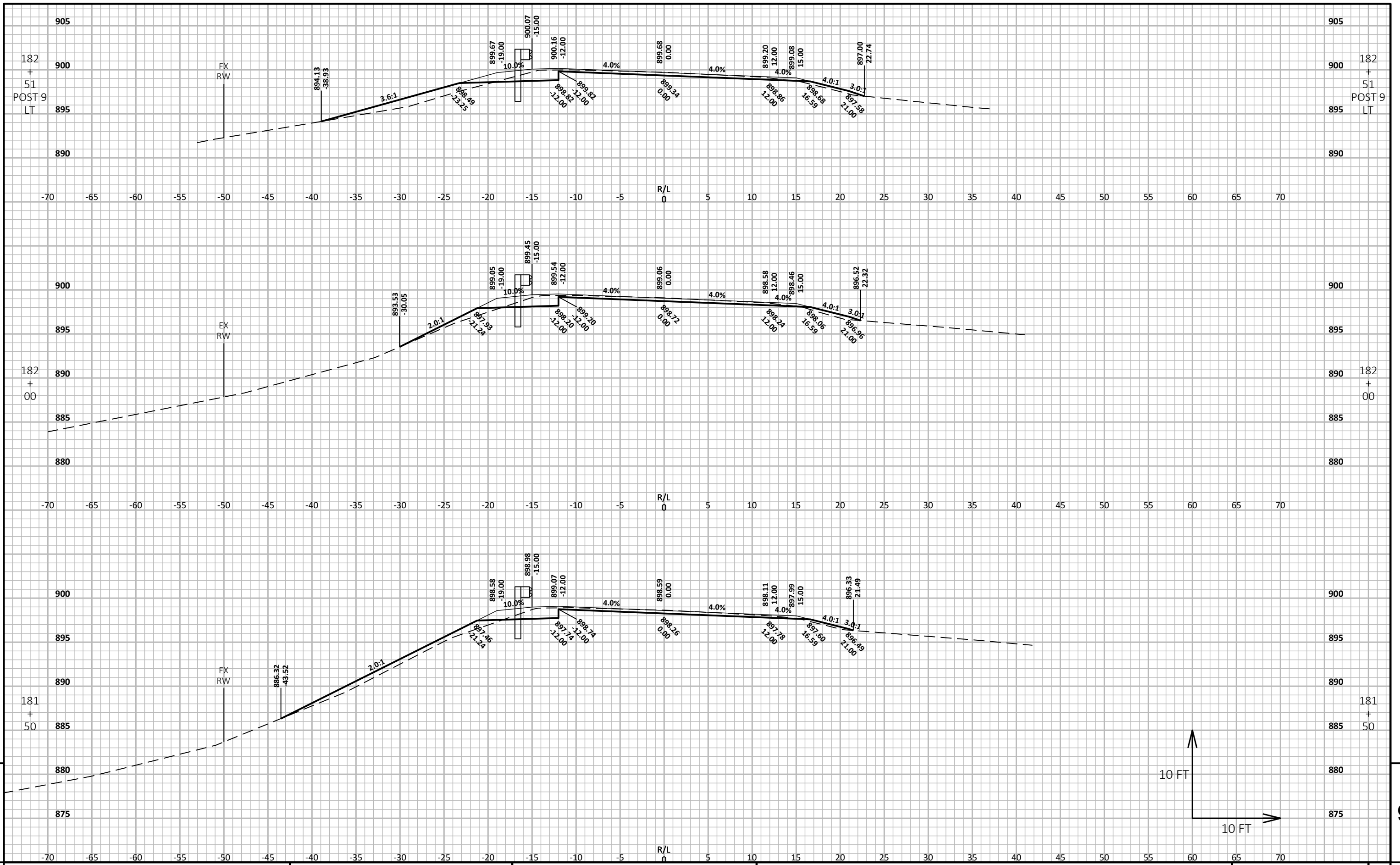
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COUNTY: WAUSHARA

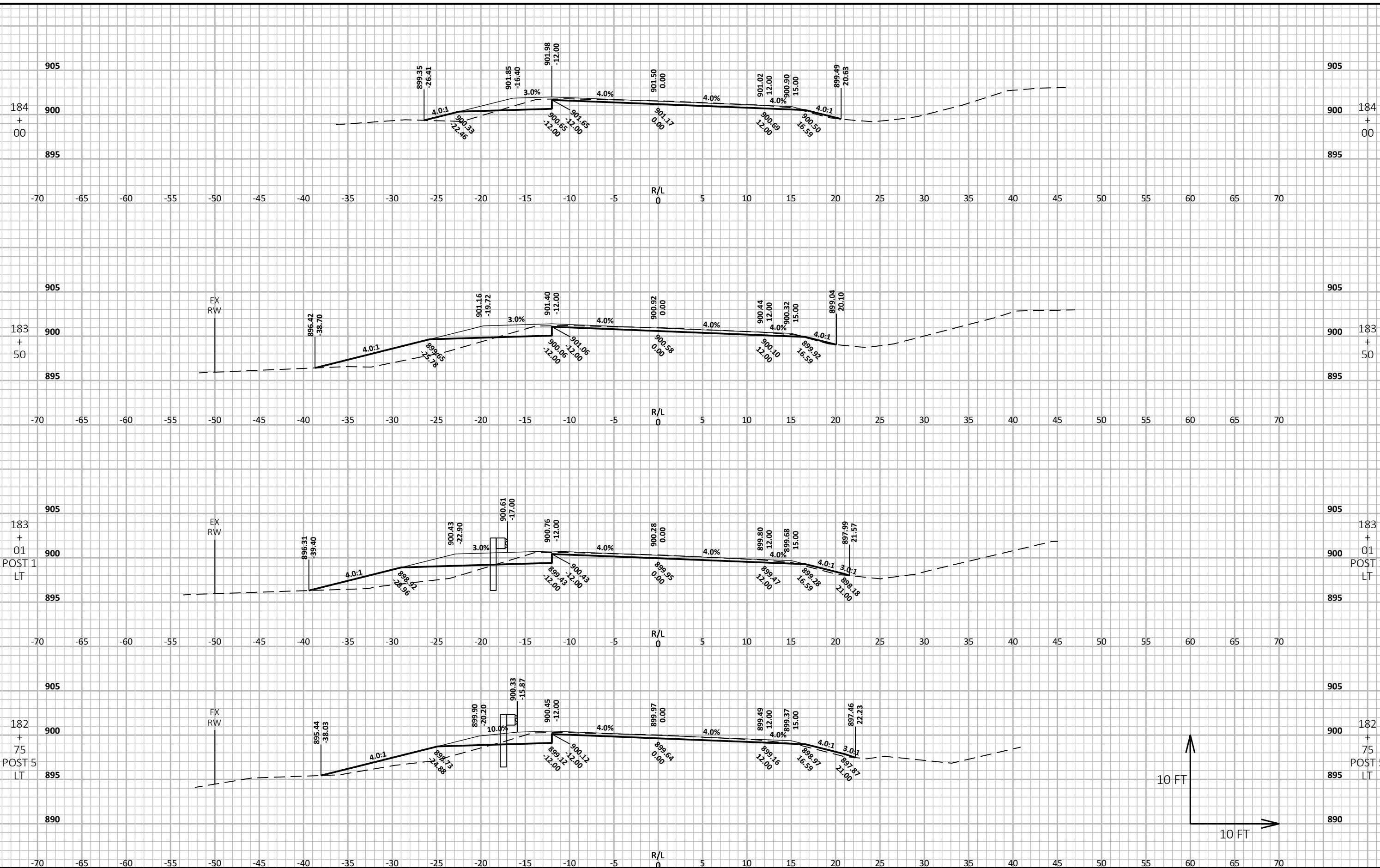
CROSS-SECTIONS: CTH E

SHEET

E



PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET 9



PROJECT NO: 6987-00-73

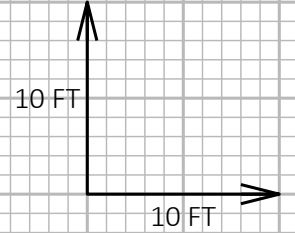
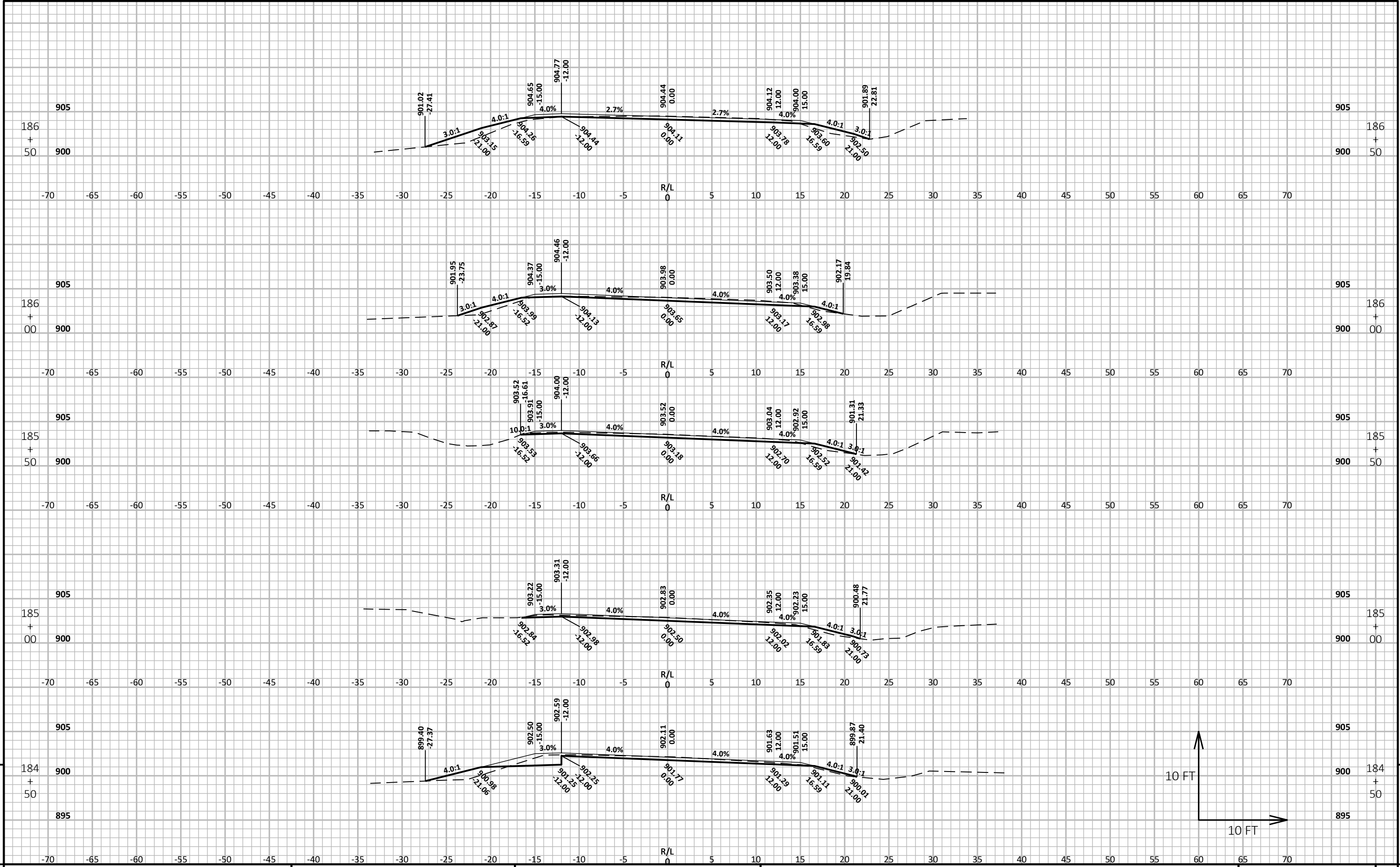
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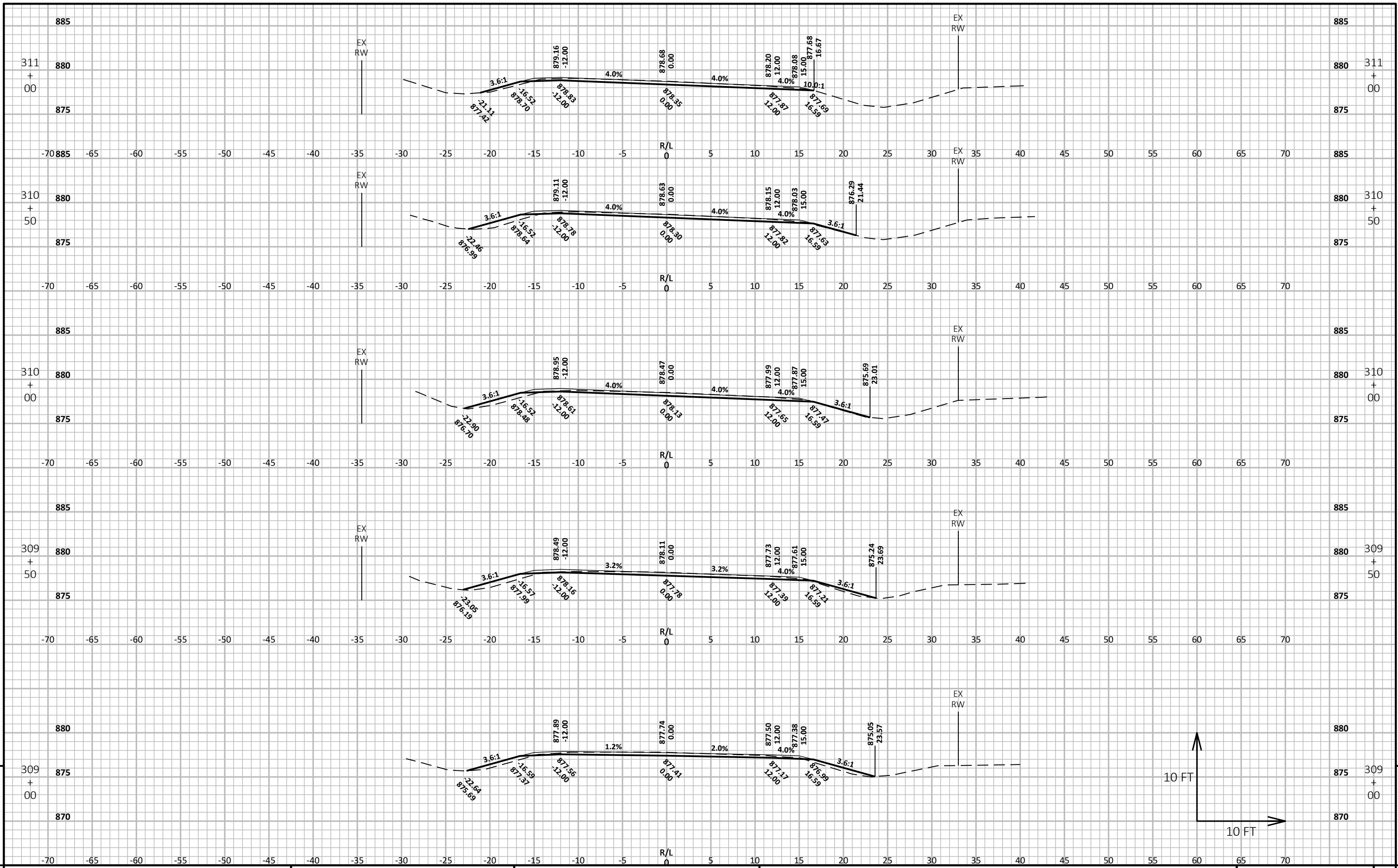
COUNTY: WAUSHARA

CROSS-SECTIONS: CTH E

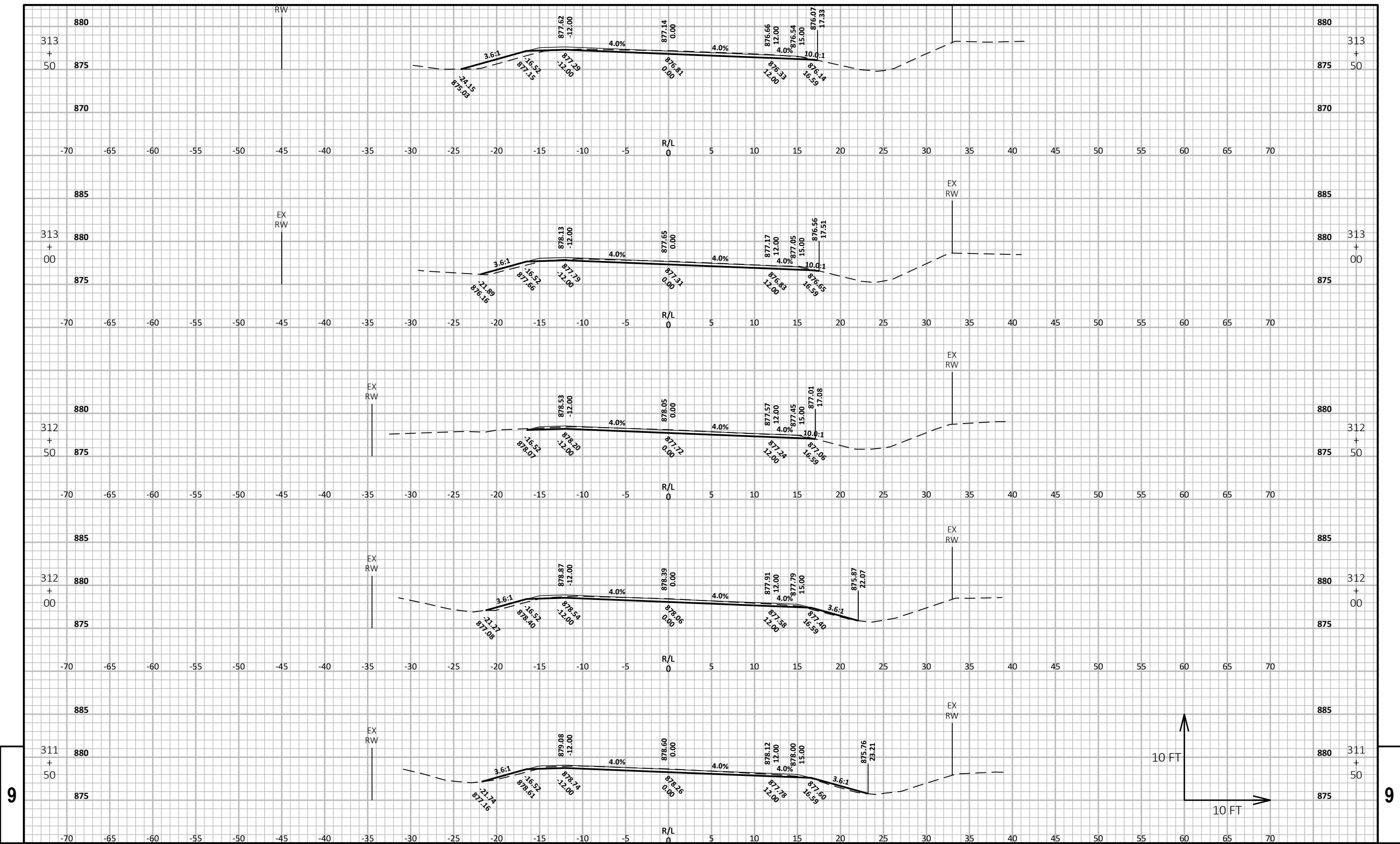
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PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET 9



PROJECT NO: 6987-00-73

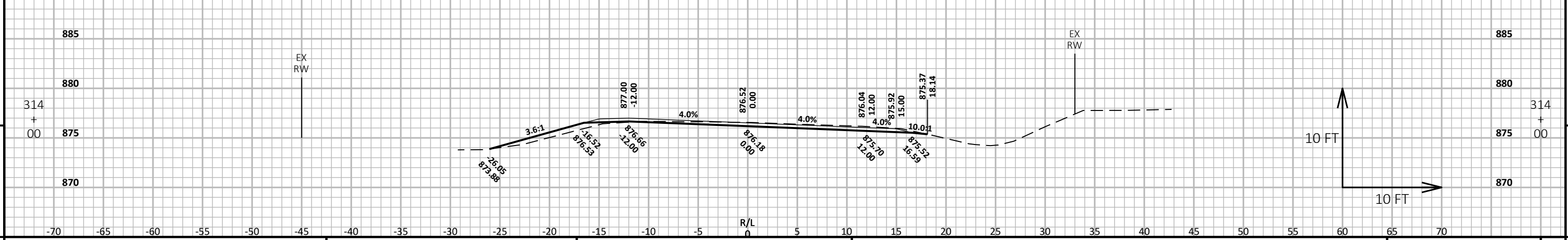
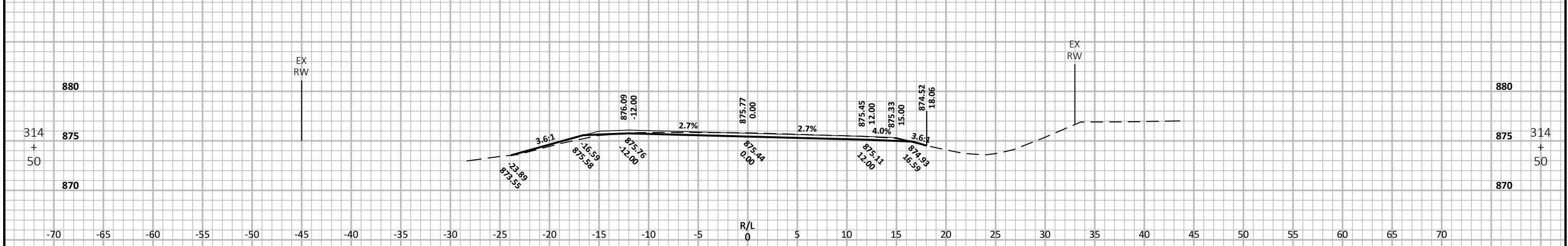
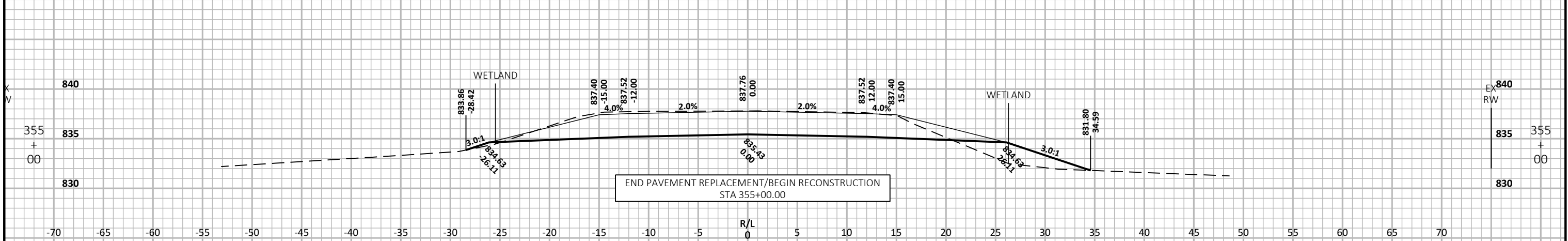
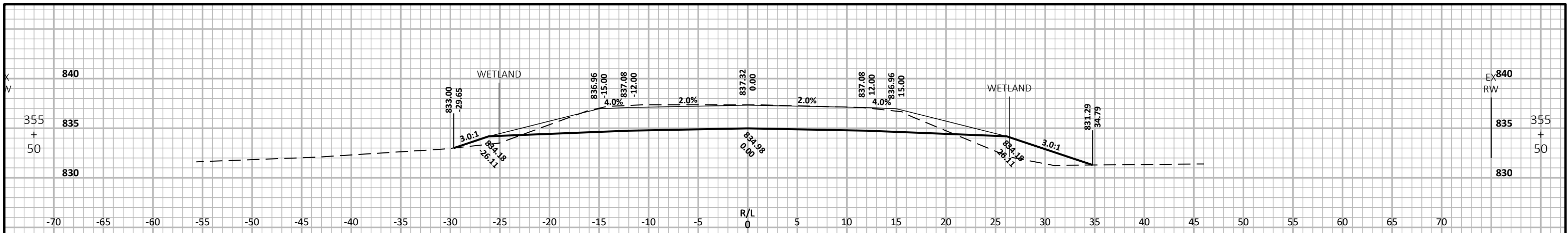
HWY: CTH E

COUNTY: WAUSHARA

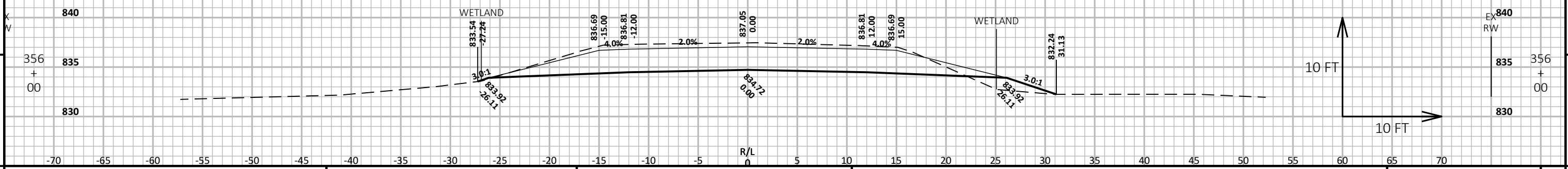
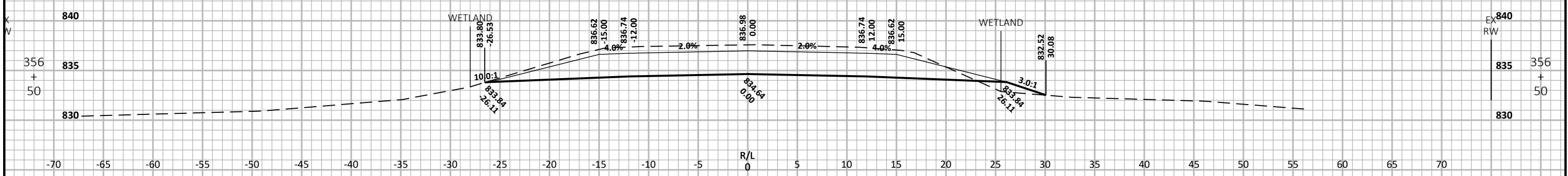
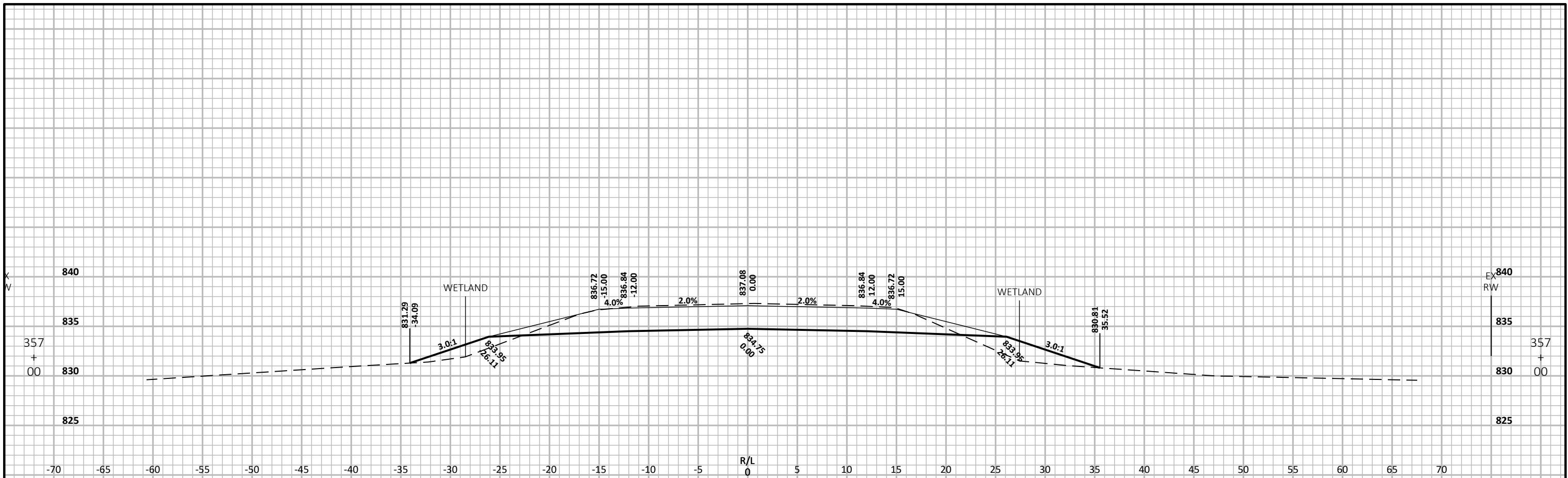
CROSS-SECTIONS: CTH E

SHEET

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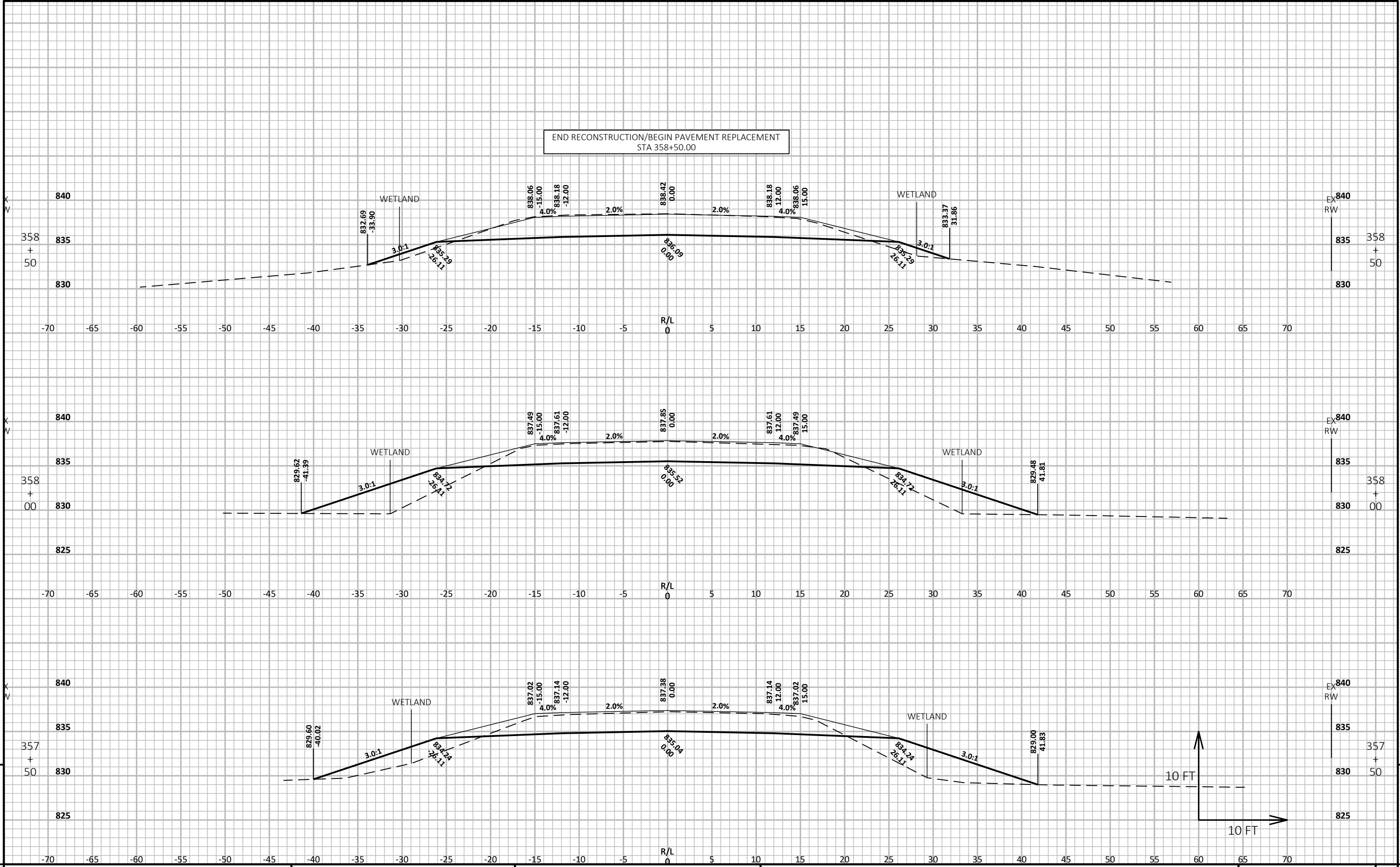


PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET 9



PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET 9

END RECONSTRUCTION/BEGIN PAVEMENT REPLACEMENT
STA 358+50.00

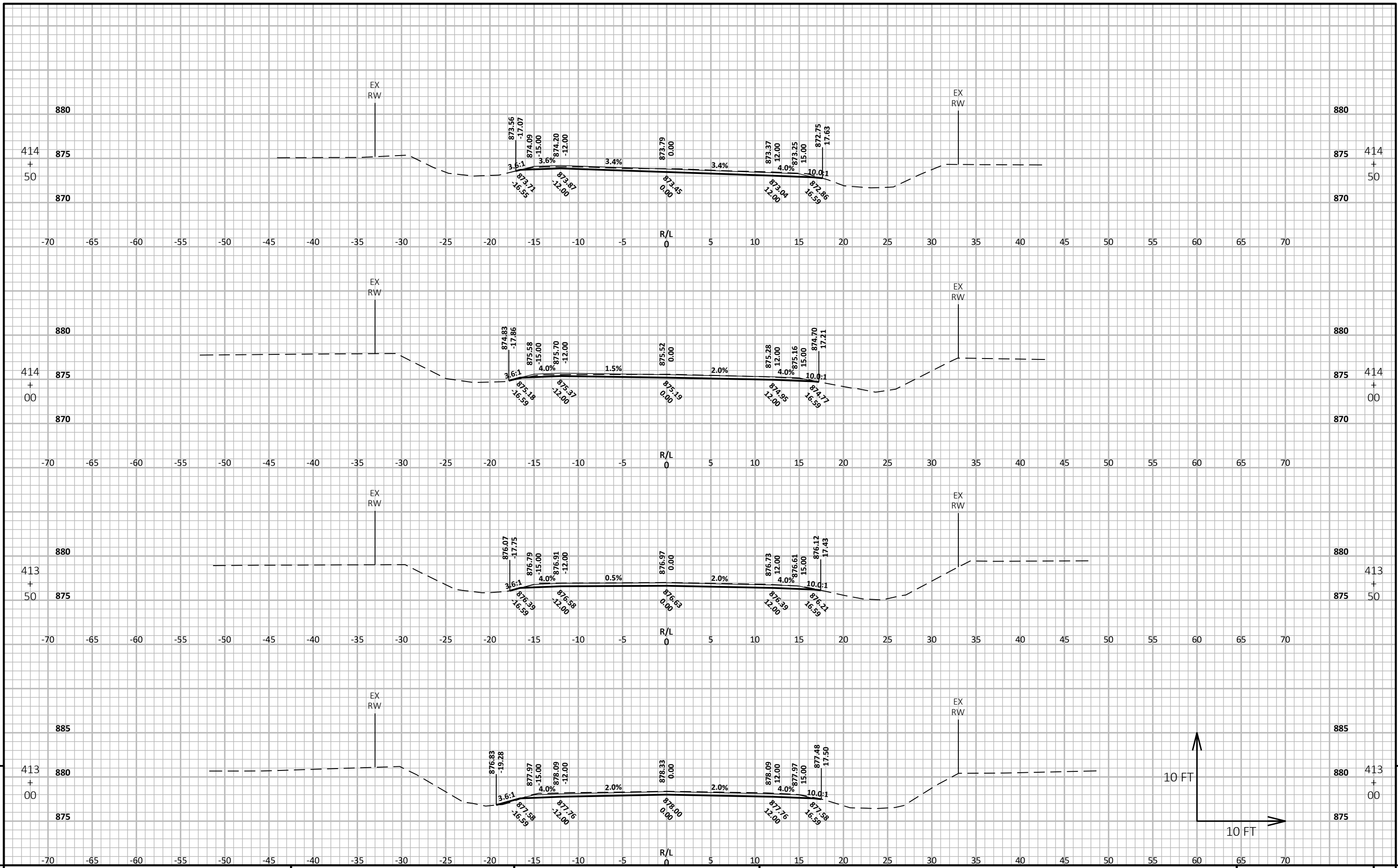


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PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET E

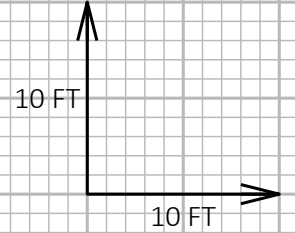
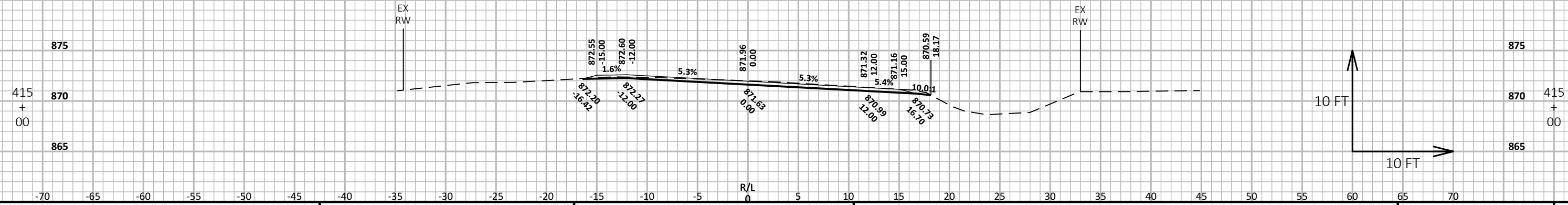
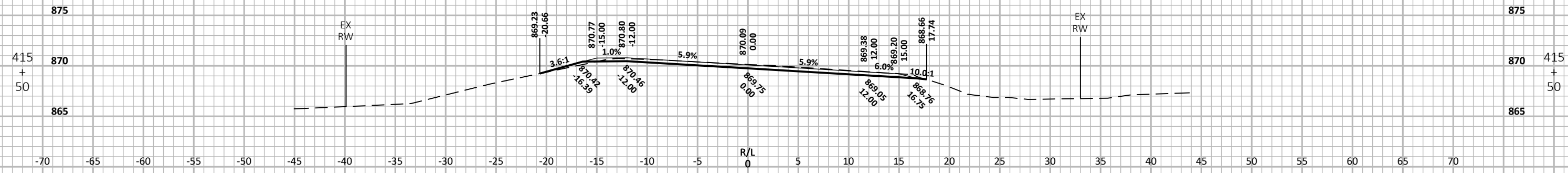
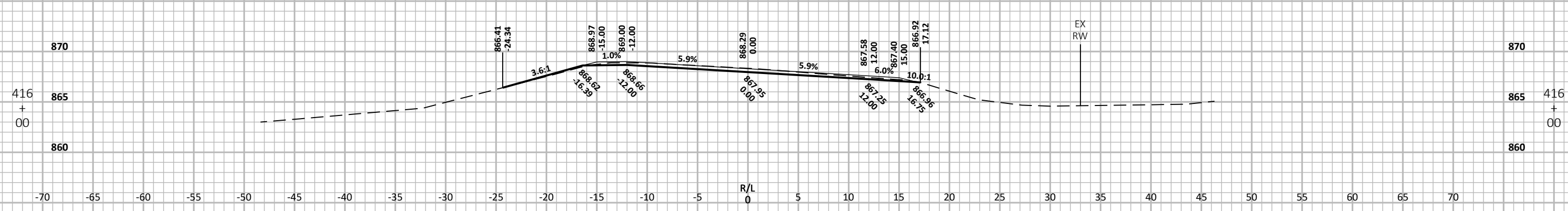
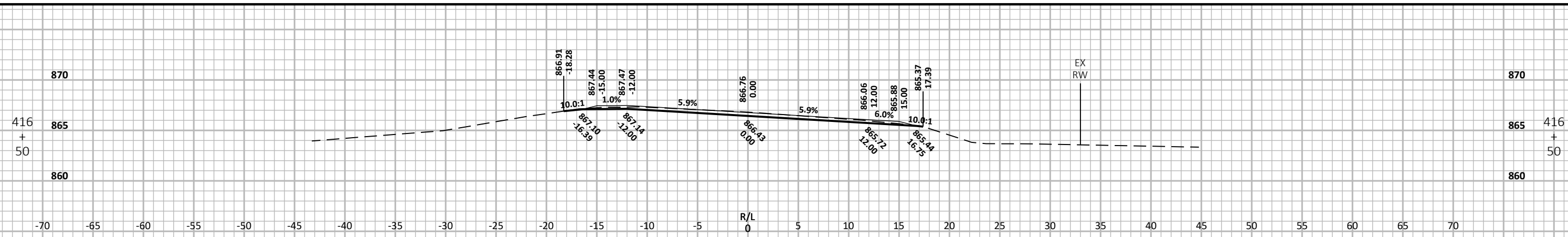
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PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET 9

FILE NAME: N:\3001111\00\CIVIL 3D\SHEETS\PLAN\698700_090201-XS.DWG PLOT DATE: 3/2/2022 10:47 AM PLOT BY: ANDY WESTBROOK PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME: 697800_090215_xs



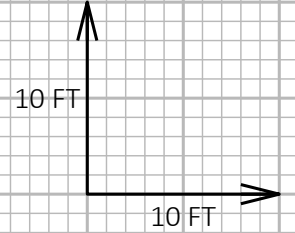
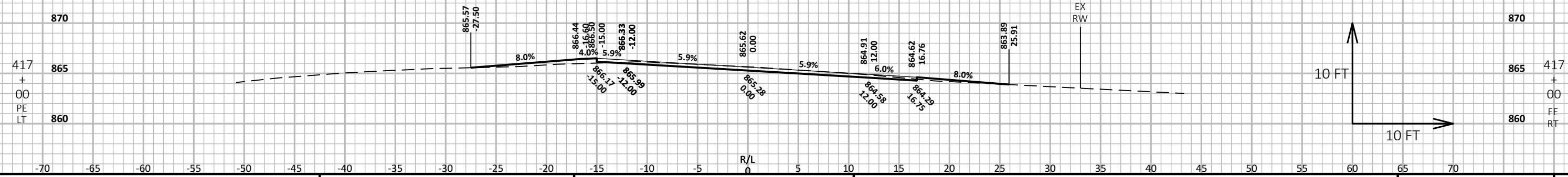
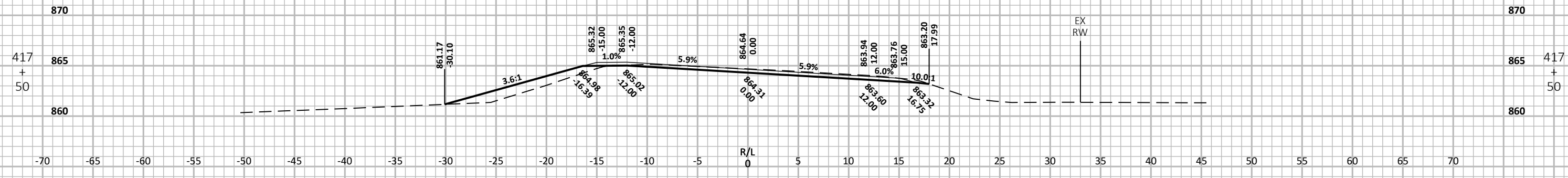
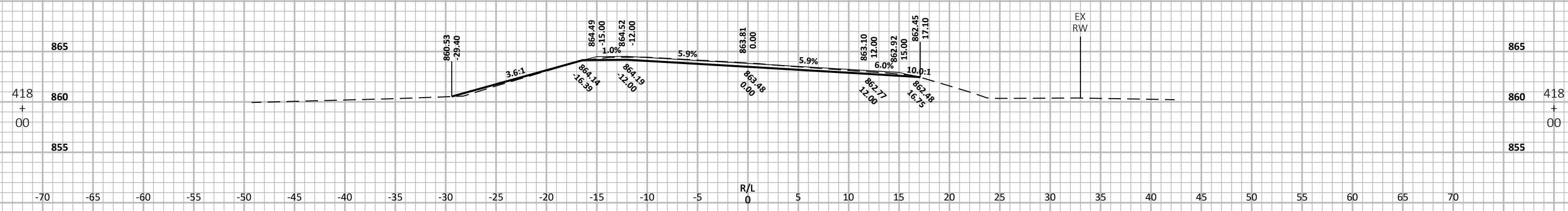
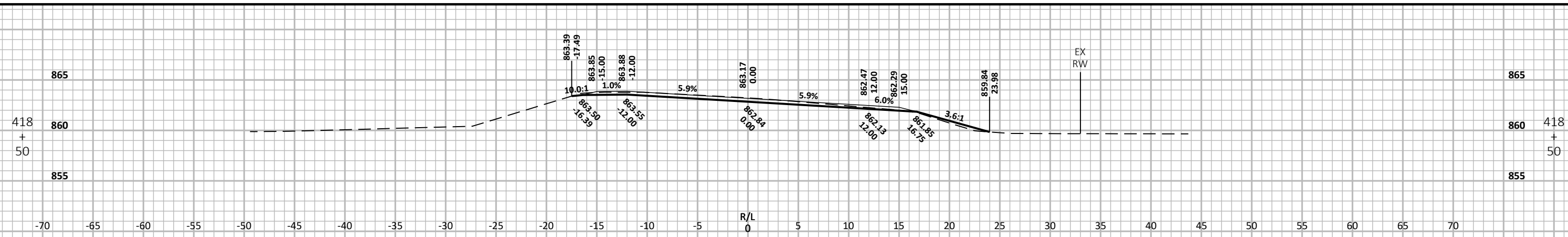
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PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET E

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LAYOUT NAME - 697800_090216_xs



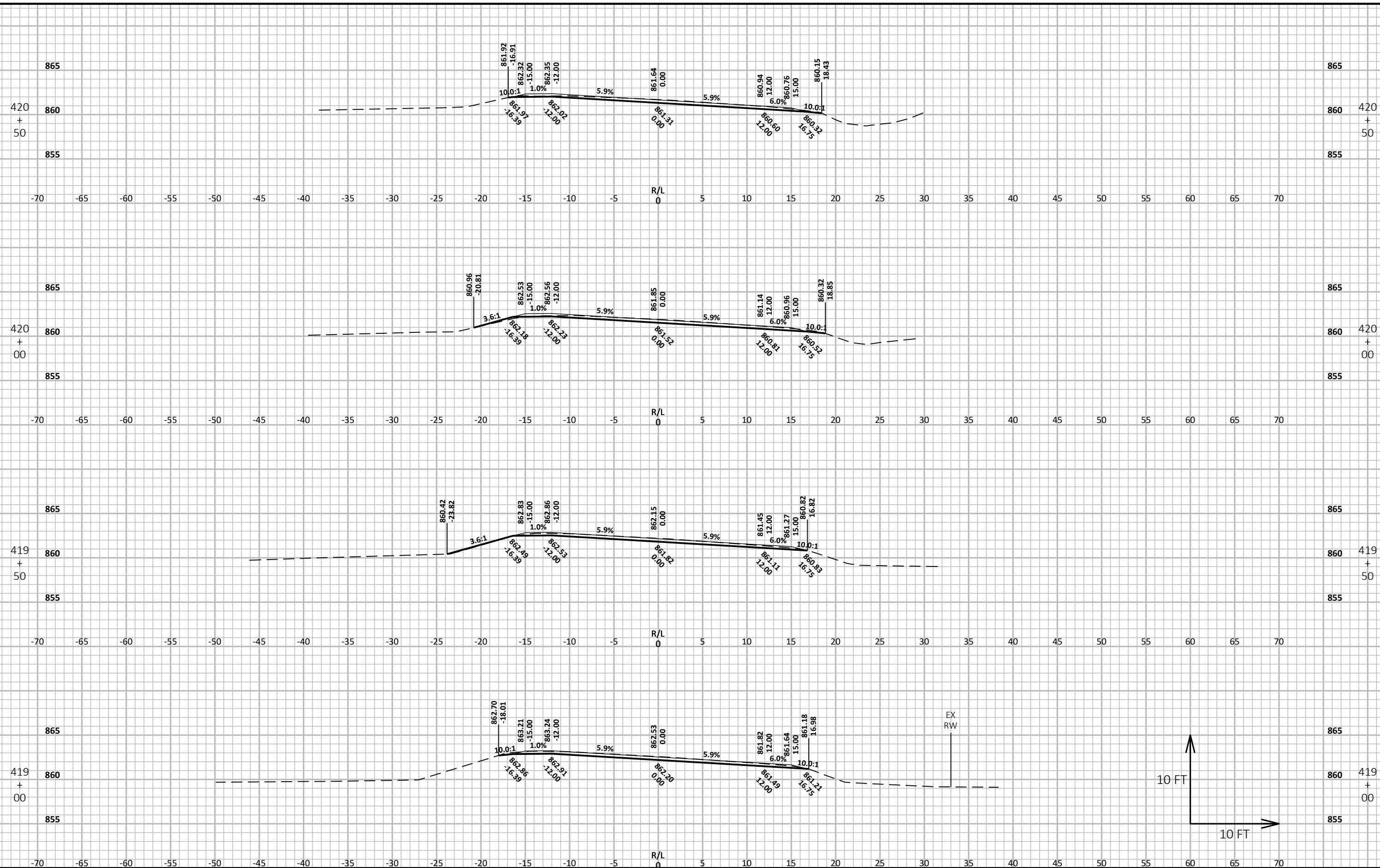
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PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET E

FILE NAME : N:\3001111.00\CIVIL 3D\SHEETS\PLAN\698700_090201-XS.DWG PLOT DATE : 3/2/2022 10:47 AM PLOT BY : ANDY WESTBROOK PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 697800_090217_xs



PROJECT NO: 6987-00-73

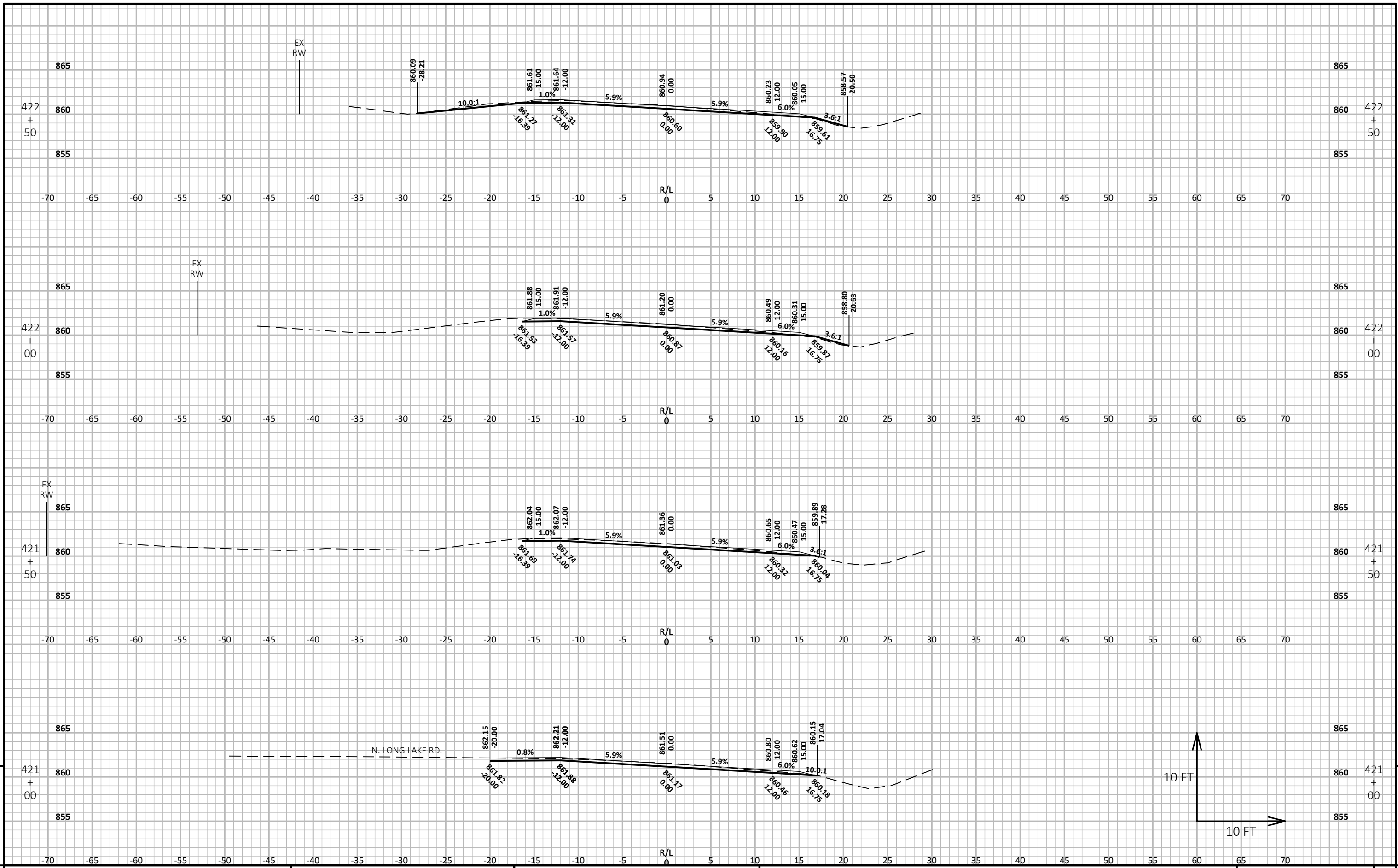
HWY: CTH E

COUNTY: WAUSHARA

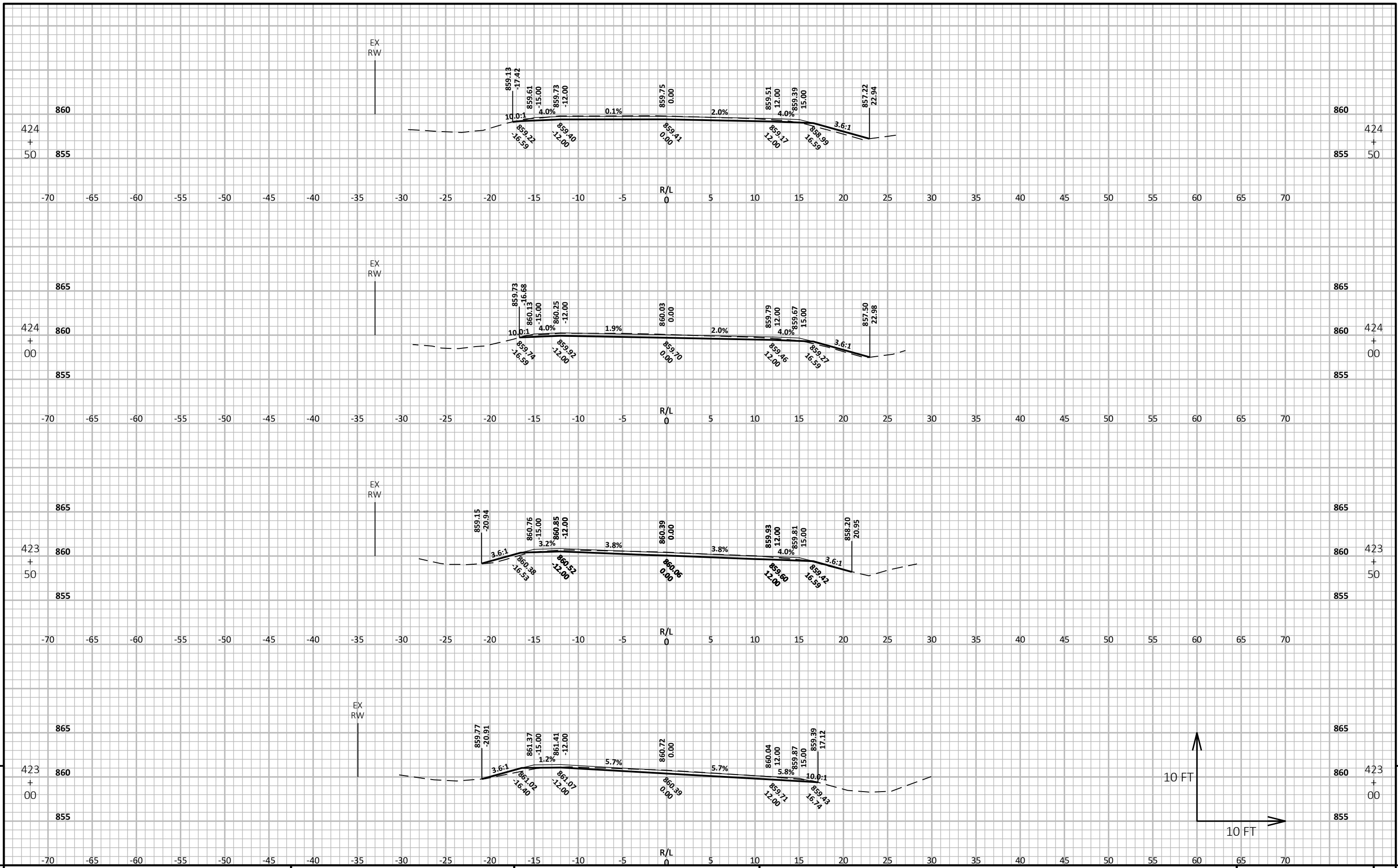
CROSS-SECTIONS: CTH E

SHEET

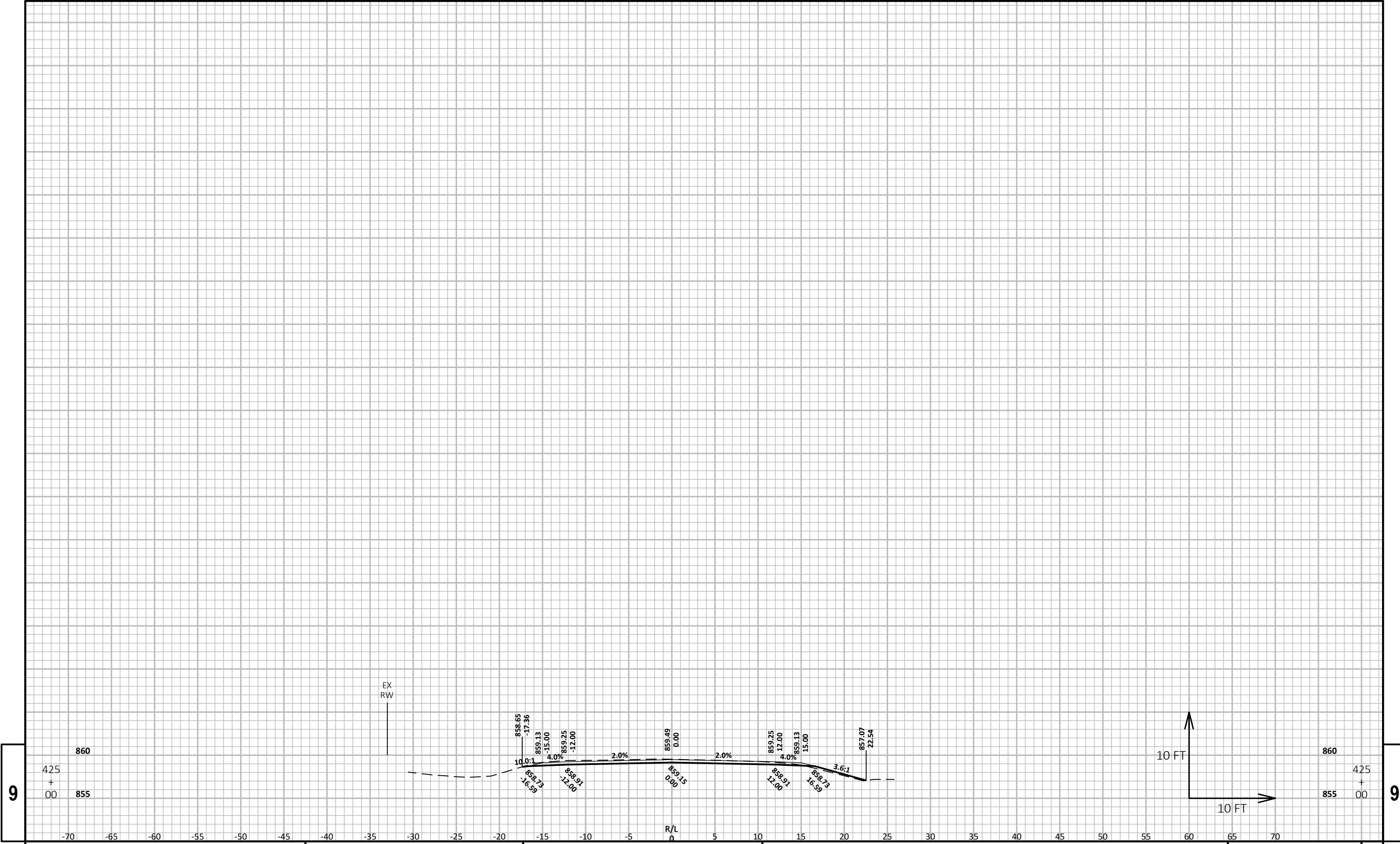
E



PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET 9



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PROJECT NO: 6987-00-73 HWY: CTH E COUNTY: WAUSHARA CROSS-SECTIONS: CTH E SHEET E

FILE NAME : N:\3001111.00\CIVIL 3D\SHEETSPLAN\698700_090201-XS.DWG
LAYOUT NAME - 697800_090221_xs

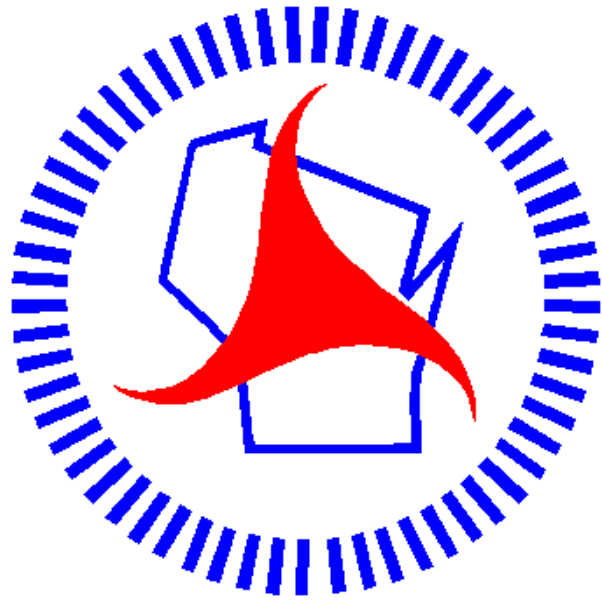
PLOT DATE : 3/2/2022 10:47 AM

PLOT BY : ANDY WESTBROOK

PLOT NAME :

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

WISDOT/CADD SHEET 49



Wisconsin Department of Transportation

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