

GRE

Jan 10, 2023

# STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4323-08-72	WISC 2023152	1

PLAN OF PROPOSED IMPROVEMENT

## MAPLE GROVE - NORTH COUNTY LINE

TAUS ROAD - MANCAL ROAD

CTH W

MANITOWOC COUNTY

STATE PROJECT NUMBER <b>4323-08-72</b>
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R-21-E ← R-22-E

PROJECT ID: 4323-08-72

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
<del>Section No. 4</del>	<del>Right of Way Plat</del>
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
<del>Section No. 7</del>	<del>Sign Plates</del>
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 192



# 19

DESIGN DESIGNATION

A.A.D.T. 2021	=	1,420
A.A.D.T. 2041	=	1,730
D.H.V.	=	208
D.D.	=	50 / 50
T.	=	6.4%
DESIGN SPEED	=	55 MPH
ESALS	=	310,000

CONVENTIONAL SYMBOLS

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

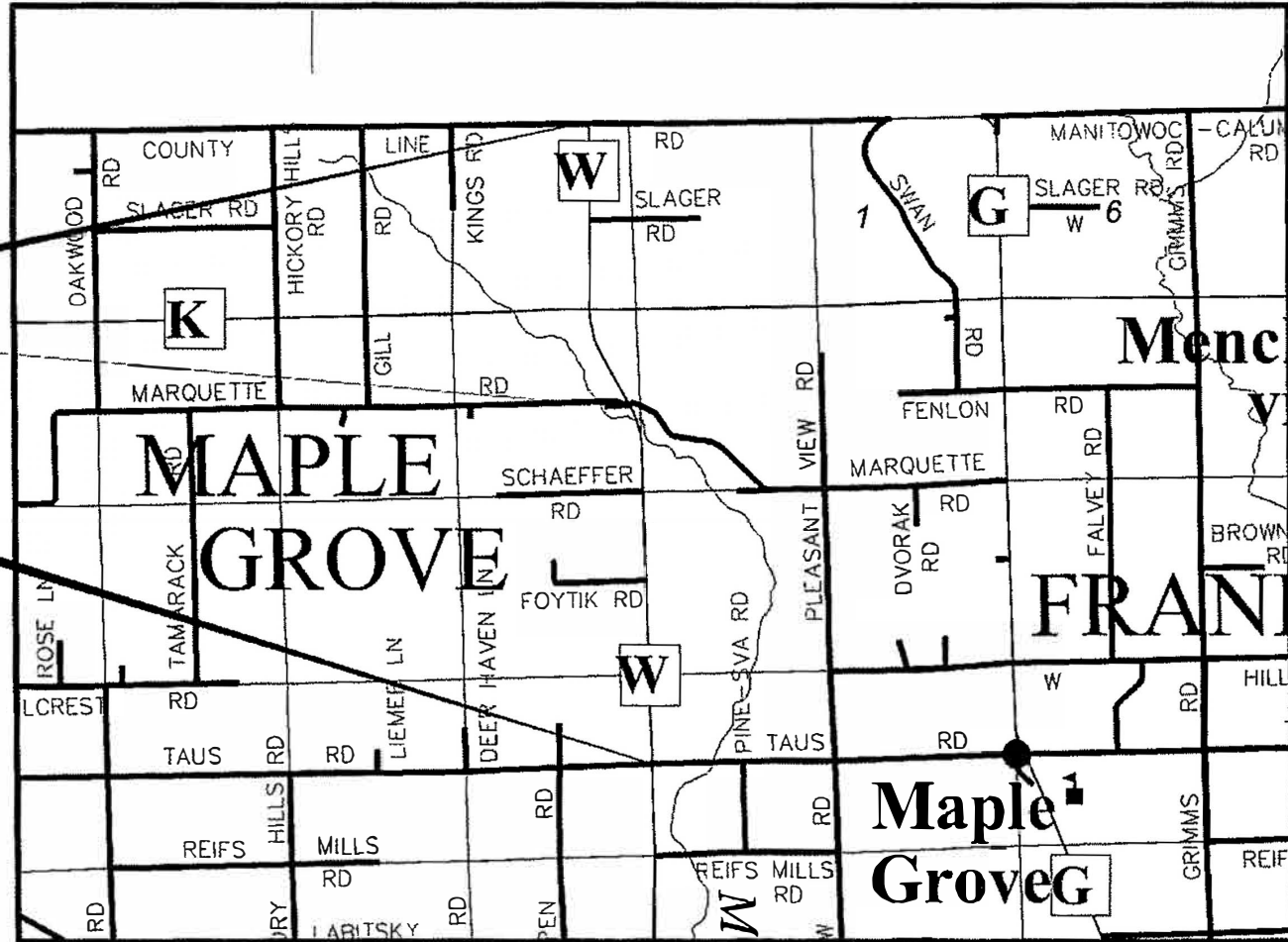
PROFILE	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

END PROJECT 4323-08-72  
STA 421+64.82

EQUATION STA 335+78.07 BK=  
STA 335+88.59 AHD

BEGIN PROJECT 4323-08-72  
STA 233+30.36

Y= 336,838.17  
X= 153,308.83



LAYOUT  
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 3.567 MI.

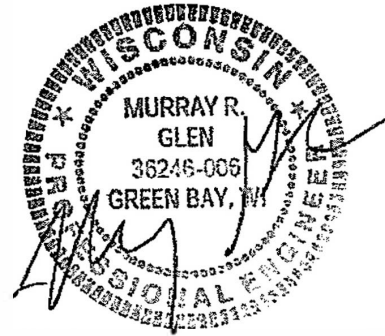
COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MANITOWOC COUNTY, NAD83 (2011).

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NATIONAL AMERICAN VERTICAL DATUM OF 1988, NAVD88 (2012) ADJUSTMENT.

ACCEPTED FOR  
THE COUNTY OF MANITOWOC

DATE: 8-1-22   
Highway Commissioner  
Title of Official

ENGINEERING, INC



STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	JT ENGINEERING, INC.
Designer	JT ENGINEERING, INC.
Project Manager	DOUG KRSTI, PE
Regional Examiner	MSDOT
Regional Supervisor	BRIAN EDWARDS, PE
C.O. Examiner	MSDOT

APPROVED FOR THE DEPARTMENT  
DATE: 7/29/22   
(Signature)

E



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

**UTILITY CONTACTS**

**FRONTIER COMMUNICATIONS OF WI LLC – COMMUNICATIONS LINE**  
 RUSS RYAN  
 100 COMMUNICATIONS DRIVE  
 SUN PRAIRIE, WI 53590  
 TEL: (920) 893-7212  
 Email: RUSSELL.W.RYAN@FTR.COM

**WISCONSIN PUBLIC SERVICE – ELECTRIC**  
 LORI BUTRY  
 700 N ADAMS STREET  
 P.O. BOX 19001  
 GREEN BAY, WI 54307-9001  
 TEL: (920) 433-1360  
 EMAIL: LABUTRY@INTEGRYSGROUP.COM

**CHARTER COMMUNICATION – COMMUNICATION LINE**  
 VINCE ALBIN  
 3520 E DESTINATION DR  
 APPLETON, WI 54915  
 TEL: (920) 831-9227  
 EMAIL: VINCE.ALBIN@CHARTER.COM

**AGENCY/PROJECT CONTACT**

**WISCONSIN DNR LIAISON**  
 MR. MATT SCHAEVE  
 NORTHEAST REGION  
 2984 SHAWANO AVENUE  
 GREEN BAY, WI 54313  
 TEL: (920) 366-1544  
 EMAIL: MATTHEW.SCHAEVE@WISCONSIN.GOV

**SEQUENCE OF PLANS AND DETAILS IN SECTION 2**

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL
- TRAFFIC CONTROL
- INTERSECTION DETAILS

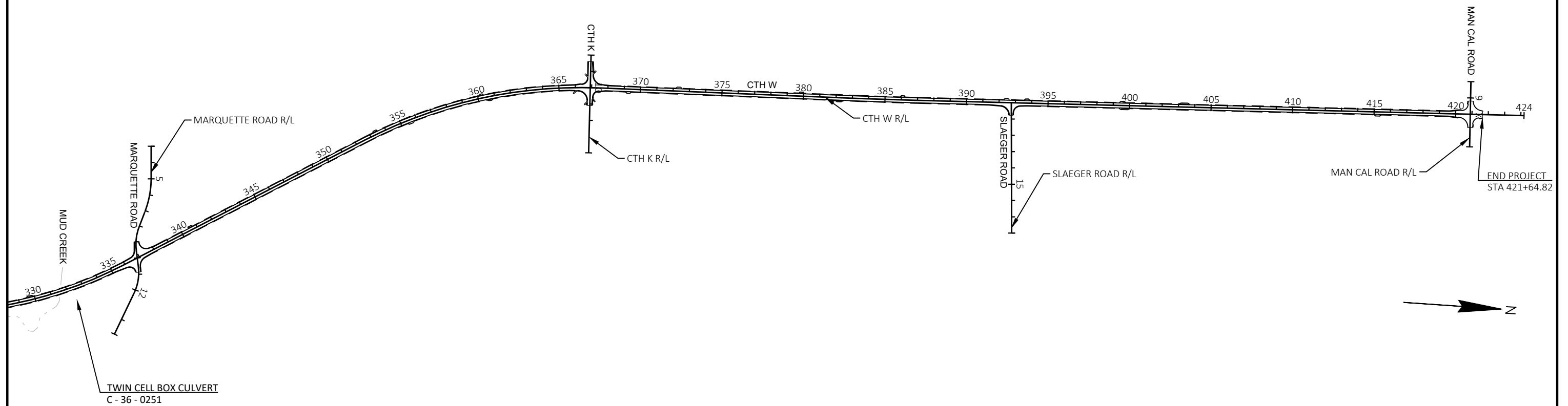
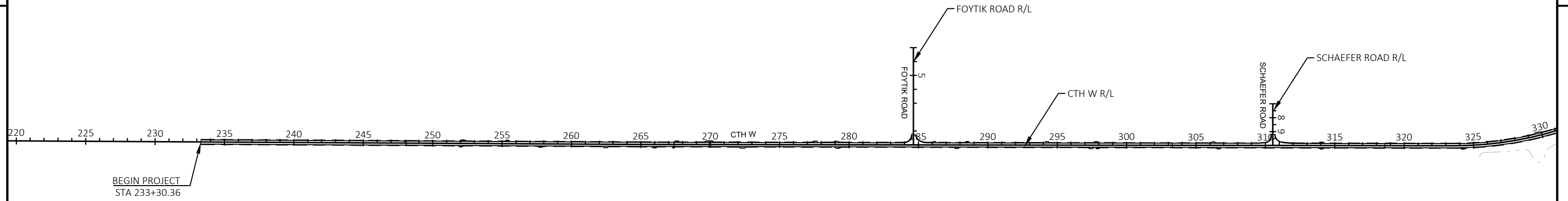
**GENERAL NOTES**

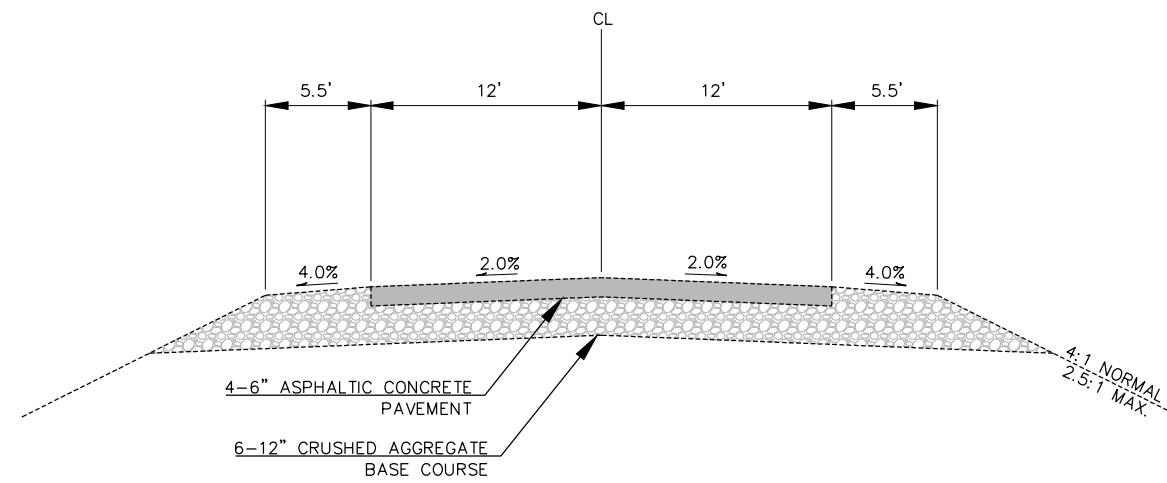
1. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES WITH DIGGER HOTLINE AND DIRECT CALLS TO UTILITIES THAT ARE NOT MEMBERS OF DIGGERS HOTLINE THAT HAVE FACILITIES IN THE AREA.
2. WETLANDS ARE PRESENT IN AREAS WITHIN THE PROJECT LIMITS. DO NOT OPERATE EQUIPMENT OUTSIDE OF THE SLOPE INTERCEPTS IN WETLAND AREAS UNLESS DIRECTED BY THE ENGINEER.
3. DISTURBED AREAS WITHIN THE RIGHT-OF-WAY ARE TO BE COVERED WITH TOPSOIL, FERTILIZER, SEED, MULCH AND EROSION MAT, AS DIRECTED BY THE ENGINEER.

**RUNOFF COEFFICIENT TABLE**

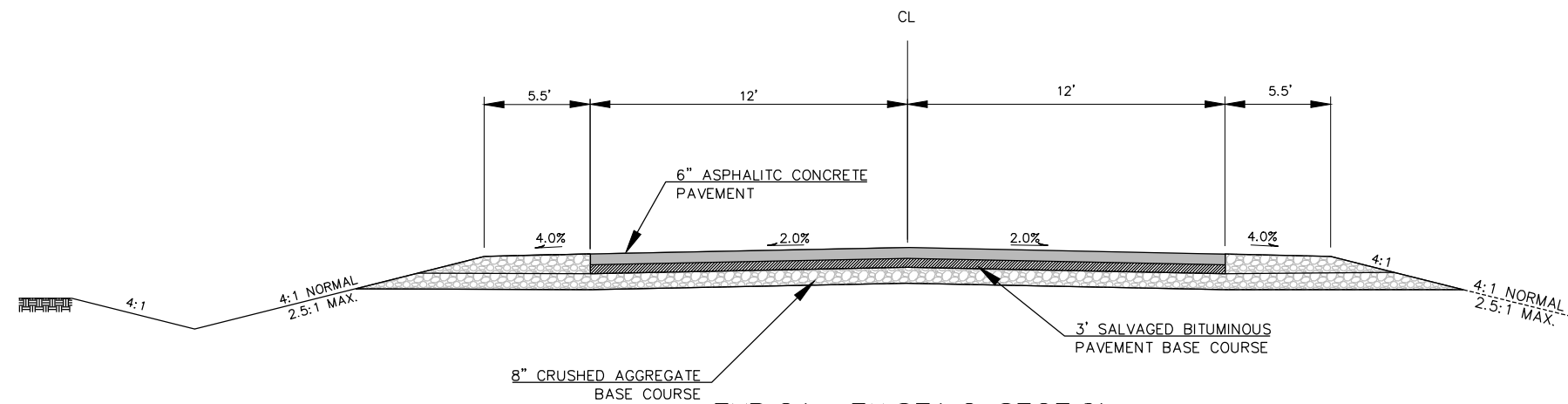
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34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

TOTAL PROJECT AREA = 56.513 ACRES  
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.672 ACRES



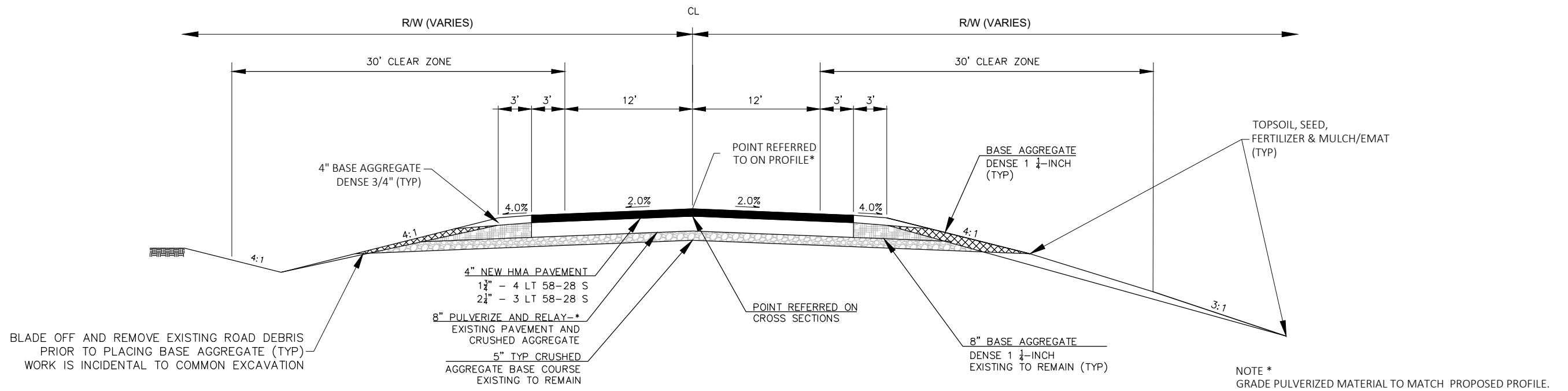


**TYPICAL EXISTING SECTION**  
 CTH W  
 STA. 233+30.36 - STA. 421+64.82



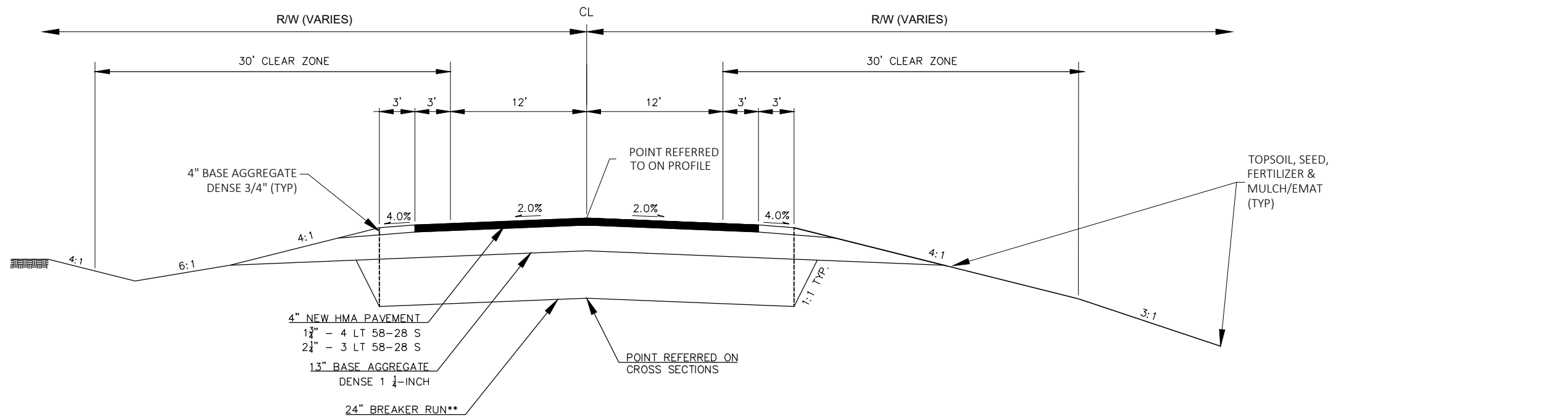
**TYPICAL EXISTING SECTION**  
 CTH K  
 STA. 8+38 - STA. 11+09





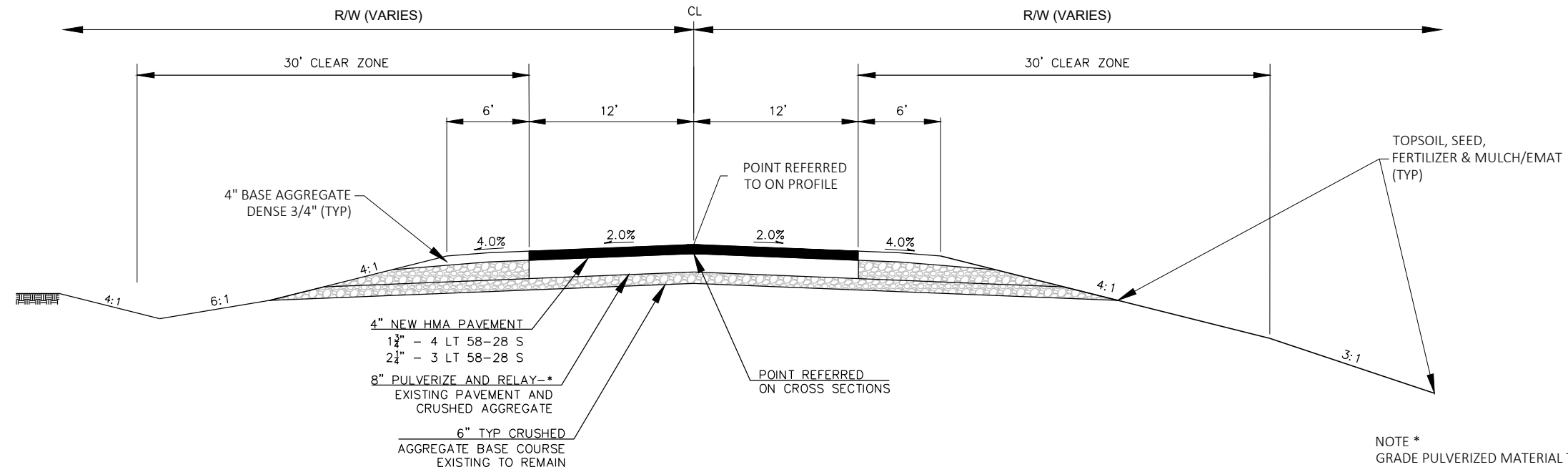
**TYPICAL PROPOSED SECTION**

CTH W  
STA. 233+30.36 - STA. 247+10  
STA. 268+40 - STA. 302+30  
STA. 319+60 - STA. 421+64.82



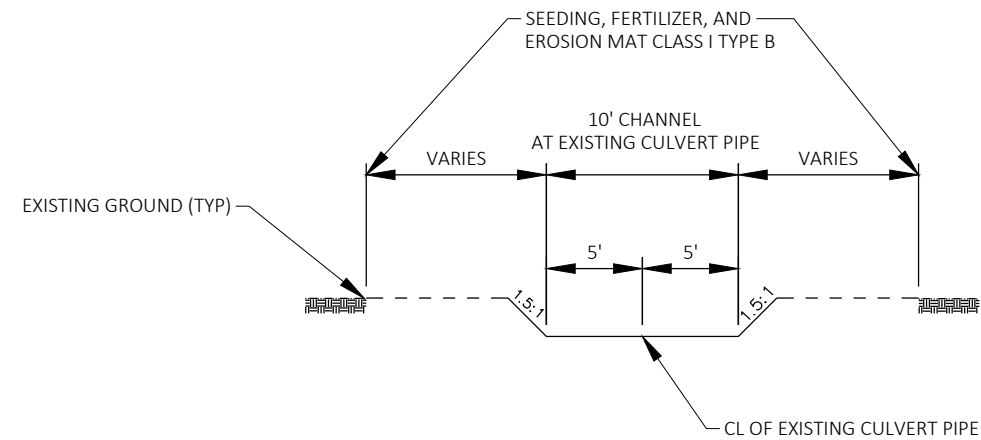
**TYPICAL PROPOSED SECTION**

CTH W  
STA. 247+10 - STA. 268+40  
STA. 302+30 - STA. 319+60



TYPICAL PROPOSED SECTION

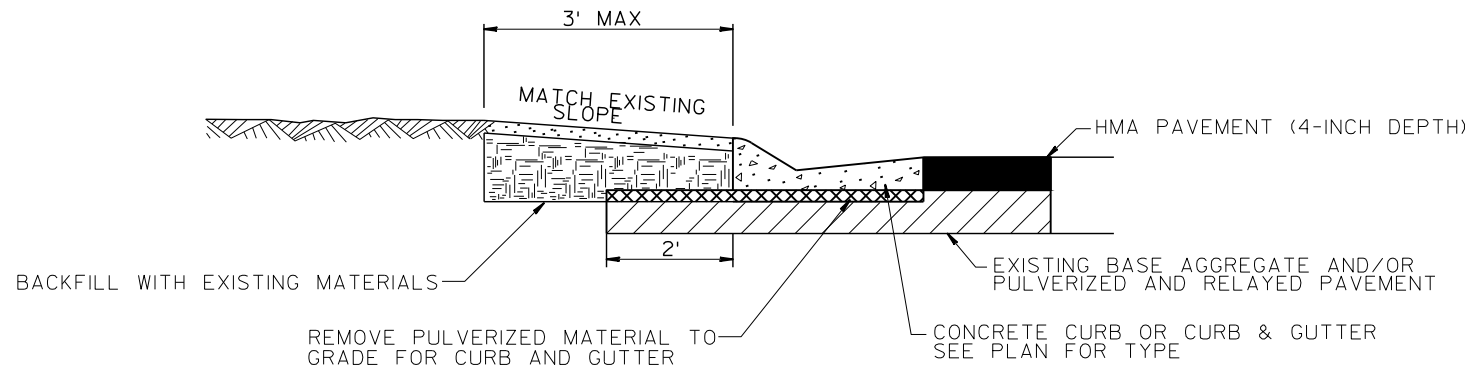
CTH K  
STA. 8+38 - STA. 11+09



TEMPORARY STREAM  
DIVERSION CHANNEL SECTION

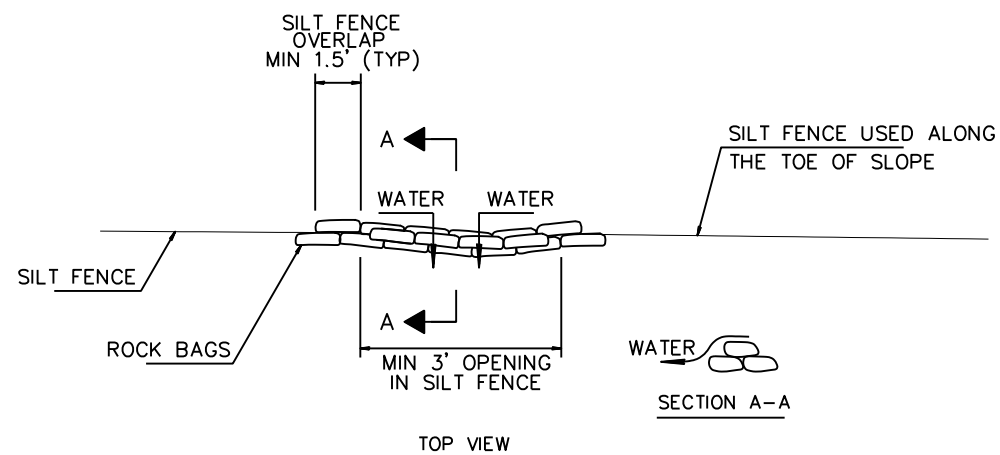
MUD CREEK WILL NEED TO BE TEMPORARILY DIVERTED THROUGH THE NORTHERN CULVERT FOR CONSTRUCTION OF THE NEW BOX CULVERT. AFTER THE BOX CULVERT IS CONSTRUCTED DIVERSION WILL BE REMOVED AND FLOW SHALL BE ESTABLISHED TO THE ORIGINAL FLOW THROUGH THE NEW BOX CULVERT. SEE TEMPORARY DRAINAGE AT CULVERT DETAILS

### DETAIL FOR CURB & GUTTER

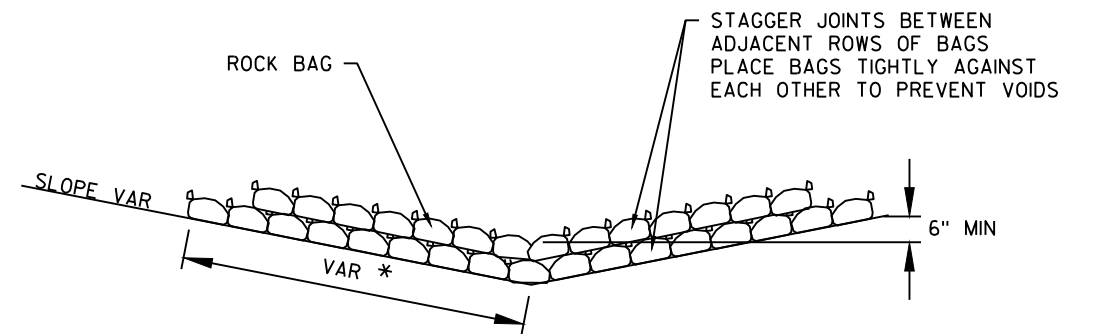
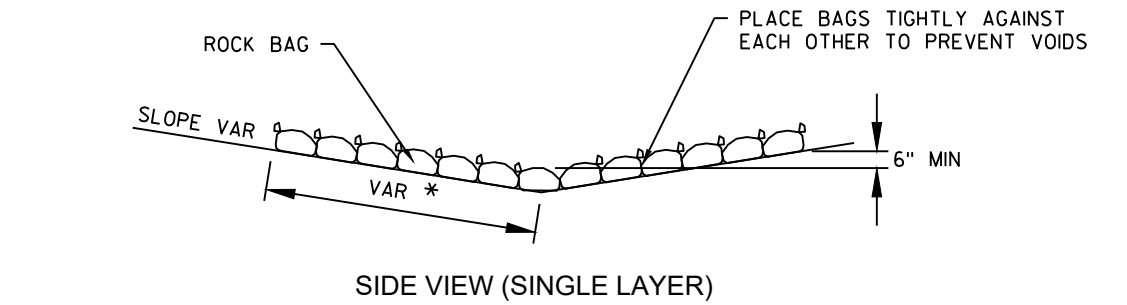


NOTES:  
 SEE MISCELLANEOUS QUANTITIES FOR FINISHING AND EROSION CONTROL ITEMS  
 ADDITIONAL EXCAVATION AND BASE AGGREGATE WILL BE NEEDED FOR CURB AND GUTTER IN NORTHWEST QUADRANT OF CTH W AND CTH K

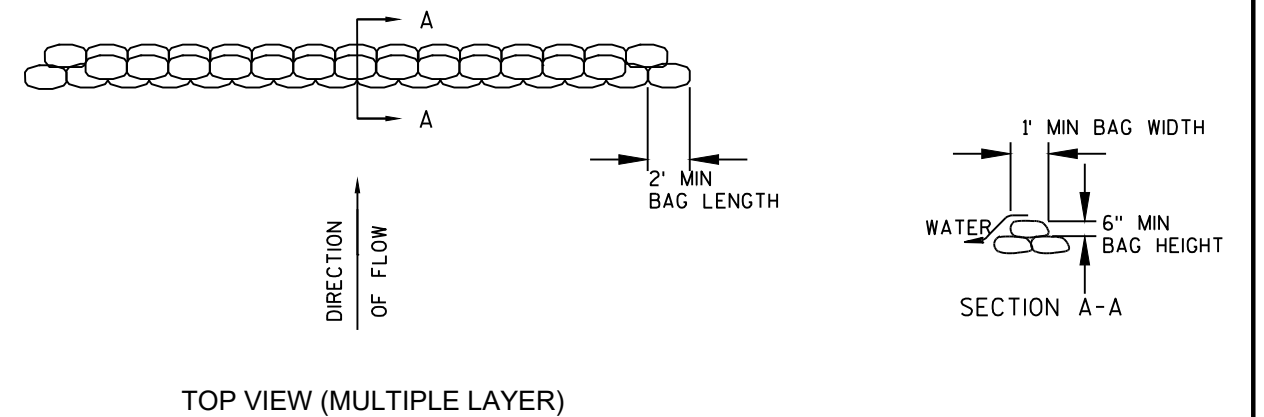
### DETAIL FOR ROCK BAGS USED AS SILT FENCE RELIEF (PAID AS ROCK BAGS)



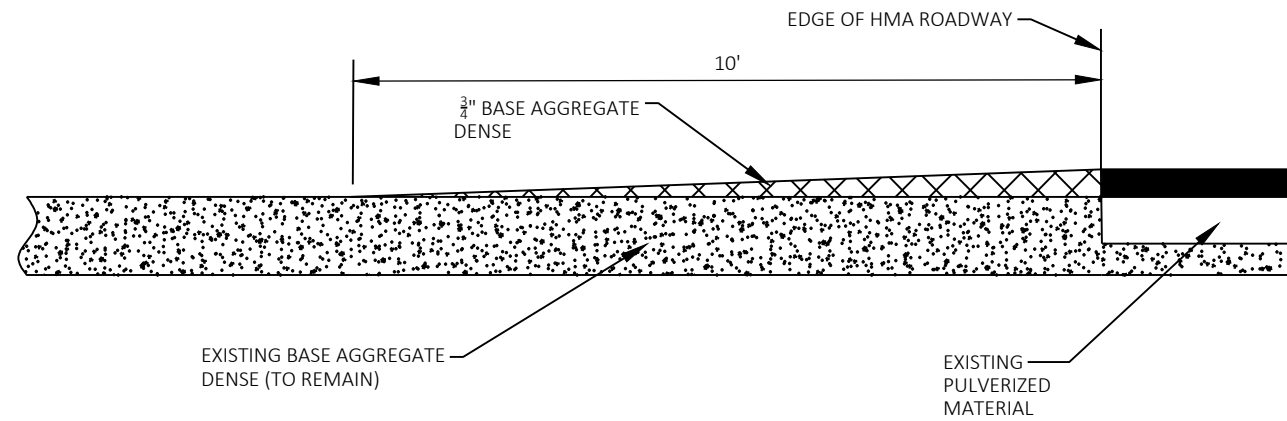
### ROCK BAGS USED FOR DITCH CHECKS



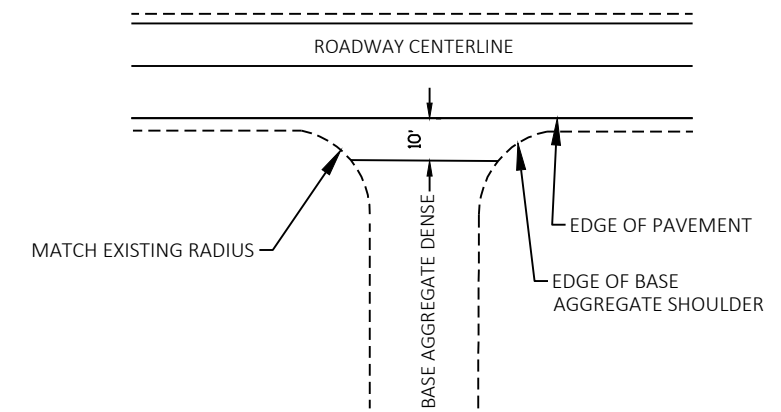
\* LENGTH AND NUMBER OF BAGS MAY VARY DEPENDING ON DESIRED DEPTH OF WATER POOL



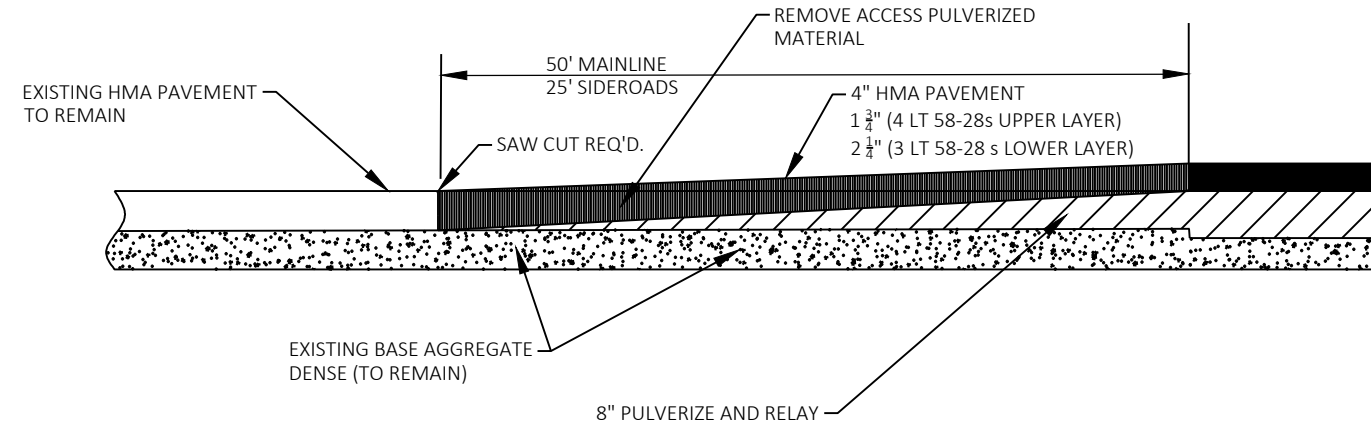
### DETAIL FOR BASE AGGREGATE DENSE PRIVATE ENTRANCES



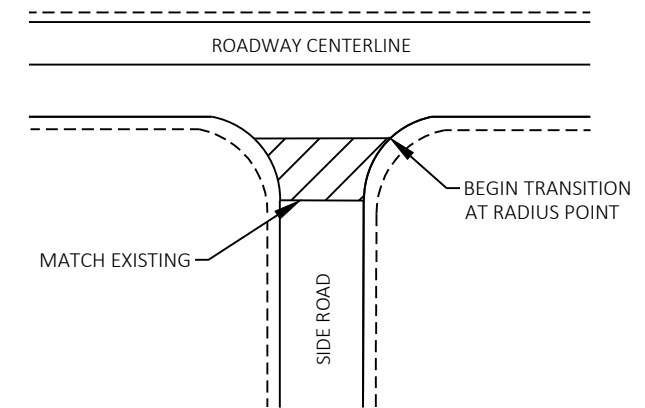
### PRIVATE ENTRANCE AND FIELD ENTRANCE BASE AGGREGATE DENSE DETAIL



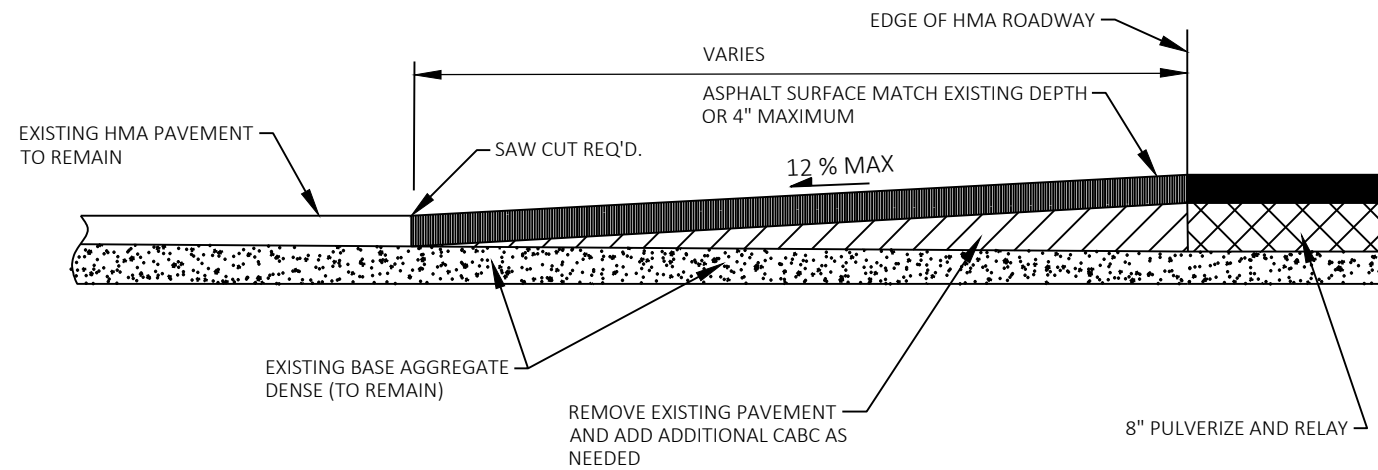
### ROADWAY JOINT TRANSITION



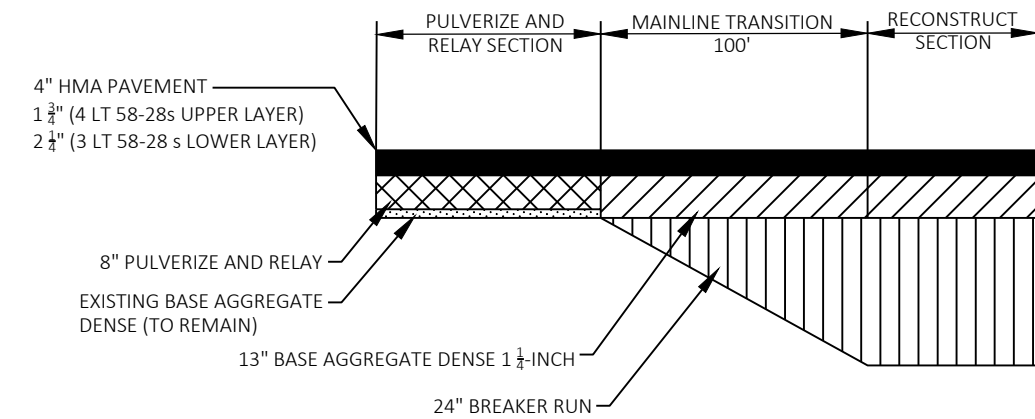
### PAVEMENT TRANSITION

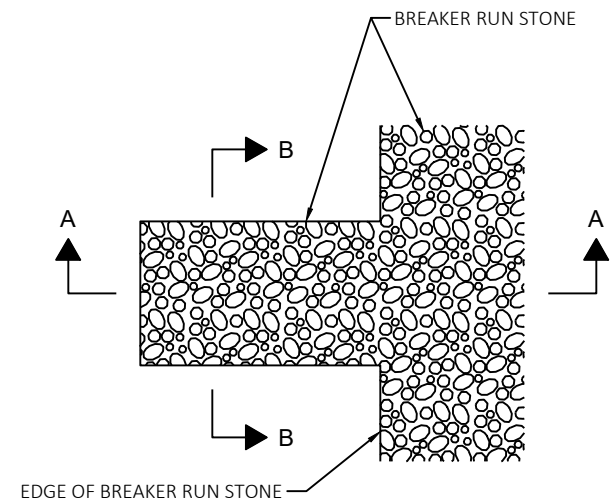
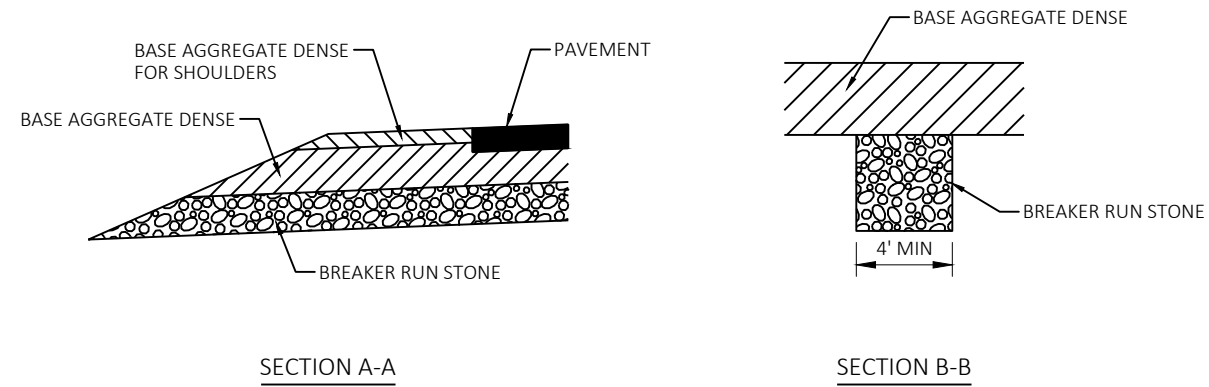


### PRIVATE ENTRANCE HMA PAVEMENT DETAIL



### MAINLINE TRANSITION DETAIL





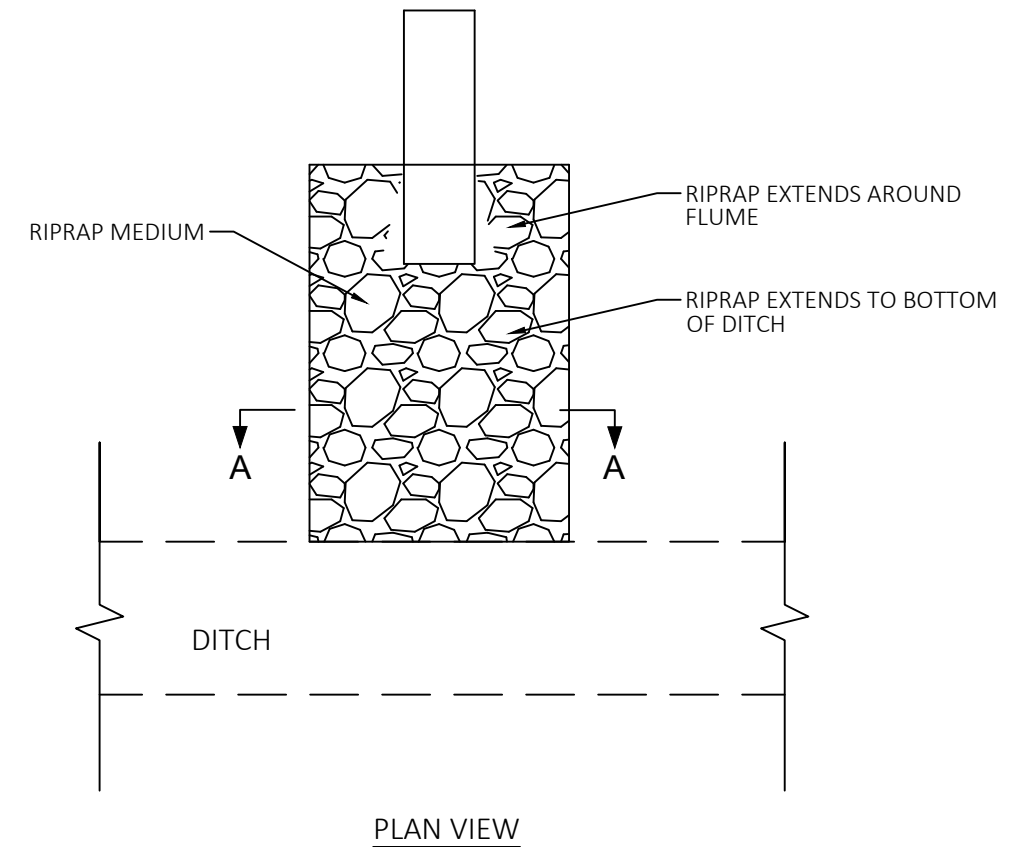
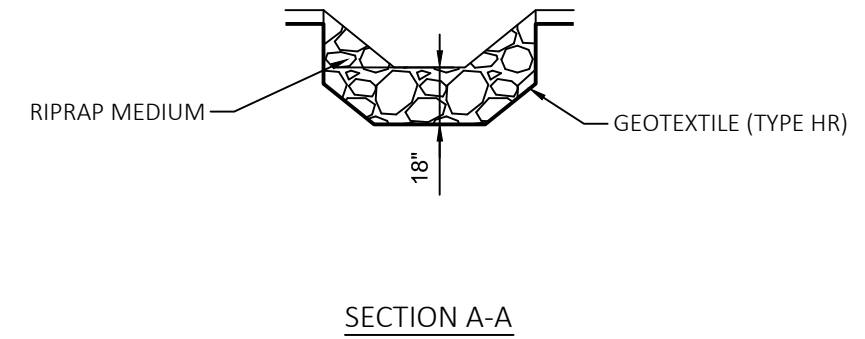
DETAIL FOR FRENCH DRAINS

DRAINS ARE PROPOSED AT THE FOLLOWING LOCATIONS:

- 248+10 LT/RT
- 252+00 LT/RT
- 256+00 LT/RT
- 260+00 LT/RT
- 264+00 LT/RT
- 267+40 LT/RT
- 303+30 LT/RT
- 308+40 LT/RT
- 313+50 LT/RT
- 318+60 LT/RT

FINAL LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

EXCAVATION REQUIRED TO CONSTRUCT FRENCH DRAINS SHALL BE CONSIDERED INCIDENTAL TO THE ITEM BREAKER RUN STONE.



RIPRAP TREATMENT AT FLUME

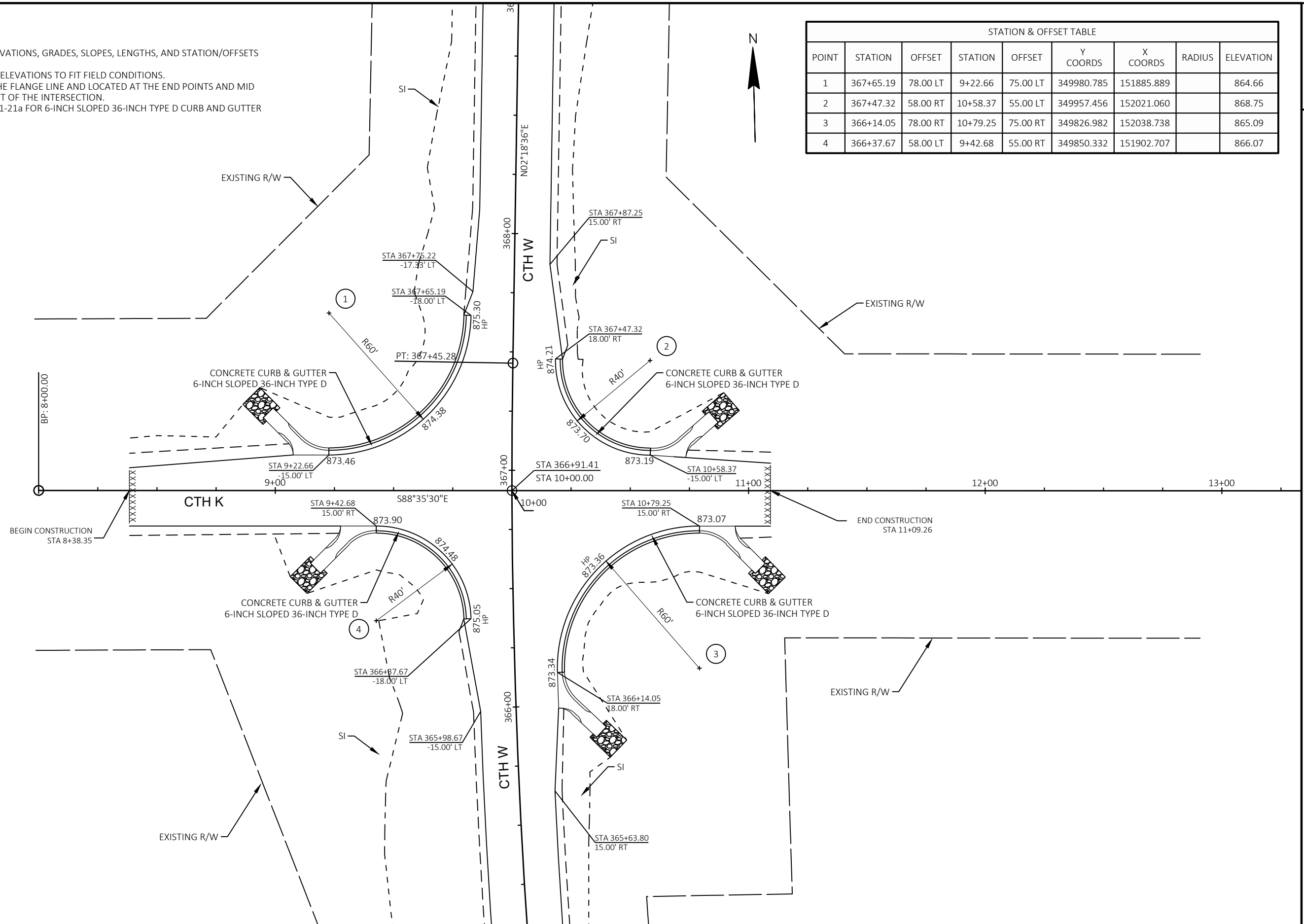


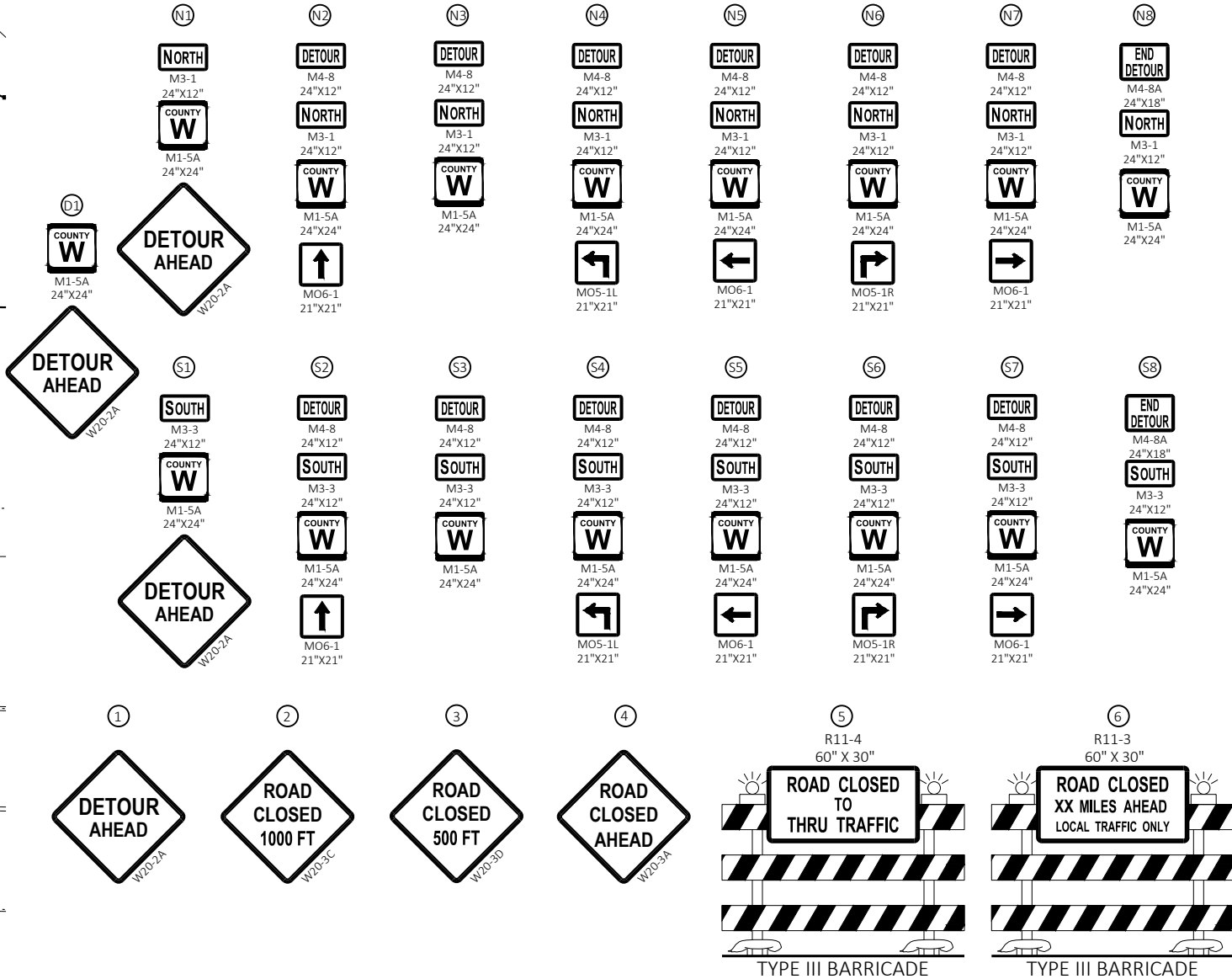
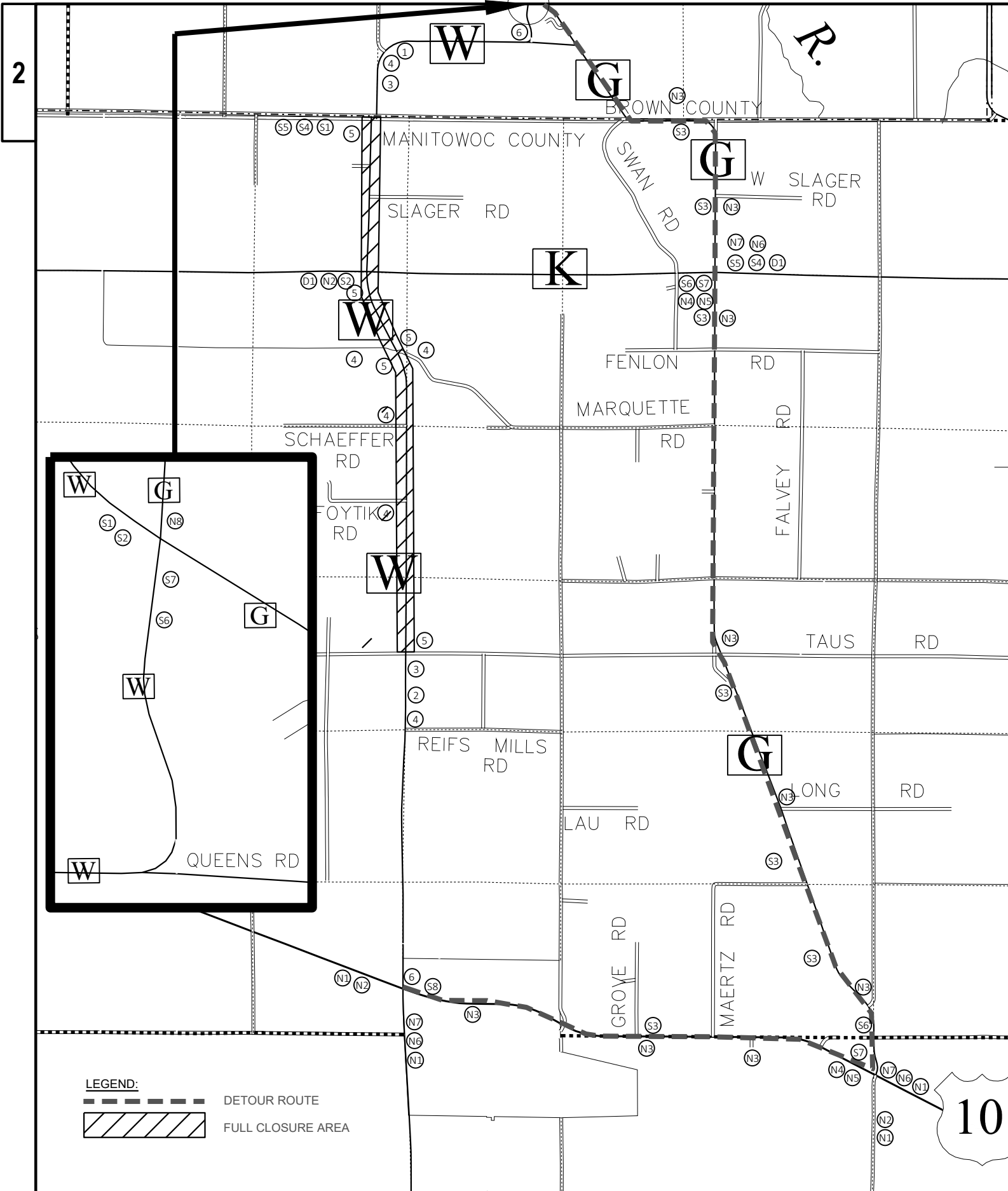
- NOTES:
1. CONTRACTOR TO VERIFY ELEVATIONS, GRADES, SLOPES, LENGTHS, AND STATION/OFFSETS PRIOR TO CONSTRUCTION.
  2. THE ENGINEER MAY ADJUST ELEVATIONS TO FIT FIELD CONDITIONS.
  3. CURB ELEVATIONS ARE AT THE FLANGE LINE AND LOCATED AT THE END POINTS AND MID POINTS FOR EACH QUADRANT OF THE INTERSECTION.
  4. SEE STANDARD DETAIL 08D01-21a FOR 6-INCH SLOPED 36-INCH TYPE D CURB AND GUTTER FOR CURB REQUIREMENTS

LEGEND:

(X) POINT NUMBER

STATION & OFFSET TABLE								
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS	ELEVATION
1	367+65.19	78.00 LT	9+22.66	75.00 LT	349980.785	151885.889		864.66
2	367+47.32	58.00 RT	10+58.37	55.00 LT	349957.456	152021.060		868.75
3	366+14.05	78.00 RT	10+79.25	75.00 RT	349826.982	152038.738		865.09
4	366+37.67	58.00 LT	9+42.68	55.00 RT	349850.332	151902.707		866.07





**DETOUR PLAN NOTES:**  
 PORTABLE CHANGEABLE MESSAGE BOARDS MUST BE PLACED ALONG NORTHBOUND/SOUTHBOUND CTH W APPROACHES TO CLOSURE AREA 7 DAYS PRIOR TO DETOUR. USE THE FOLLOWING MESSAGE.

1ST FRAME ROAD TO CLOSE  
 2ND FRAME BEGINNING TO CLOSE  
 TO <DATE>

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATIONS OF THE DETOUR SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES.

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.

ALL EXISTING SIGN MESSAGES THAT CONFLICT WITH TRAFFIC CONTROL DETOUR SIGNS SHALL BE COVERED OR REMOVED.

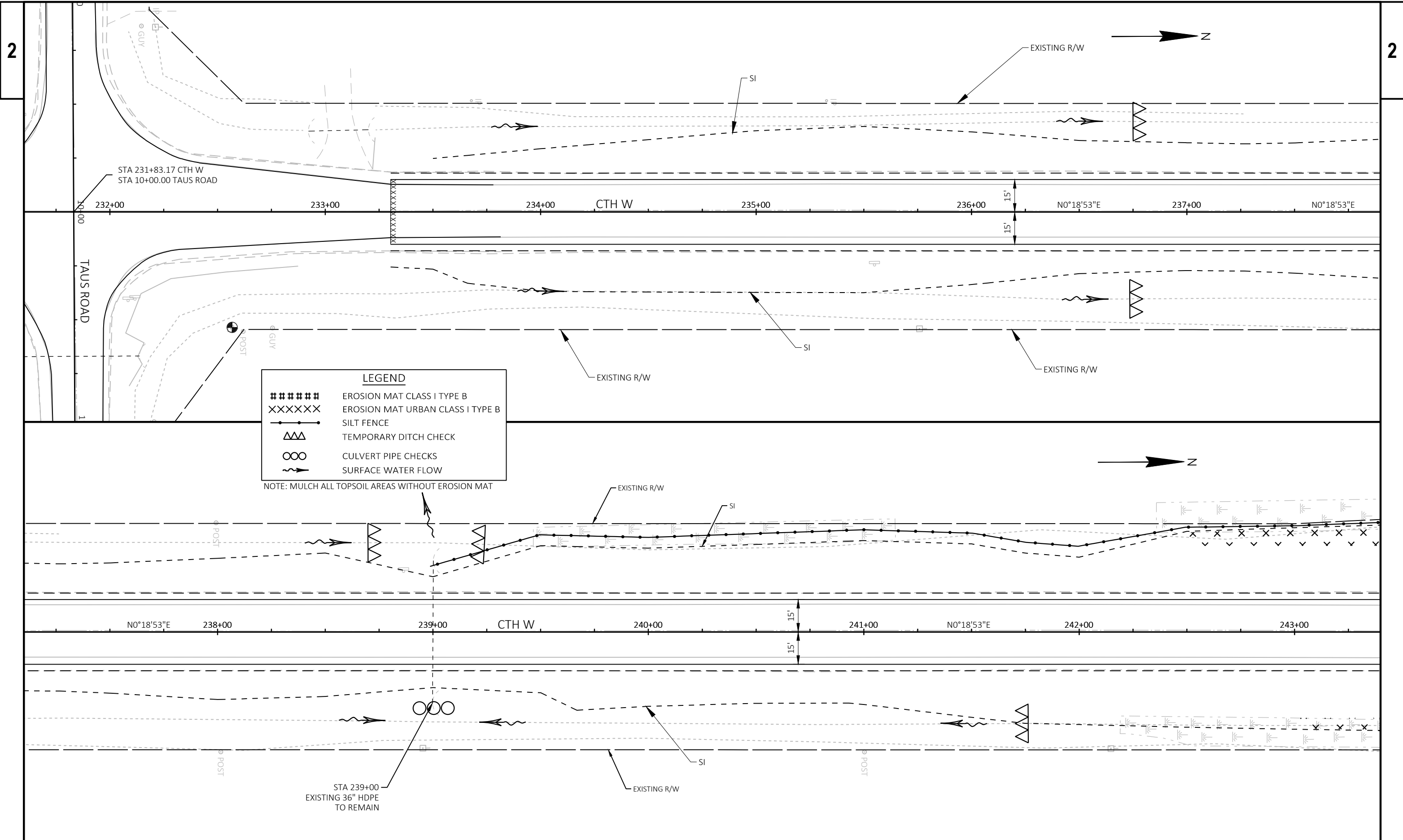
SEE SDD 15-C-2 "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" & "DETOUR SIGNING FOR MAINLINE CLOSURES" FOR SIGN SPACING AND LOCATIONS

SEE SDD'S "15-C-3, 15-C-4 & 15-C-5" FOR REQUIRED SIDE ROAD AND ADVANCED WARNING SIGNAGE

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

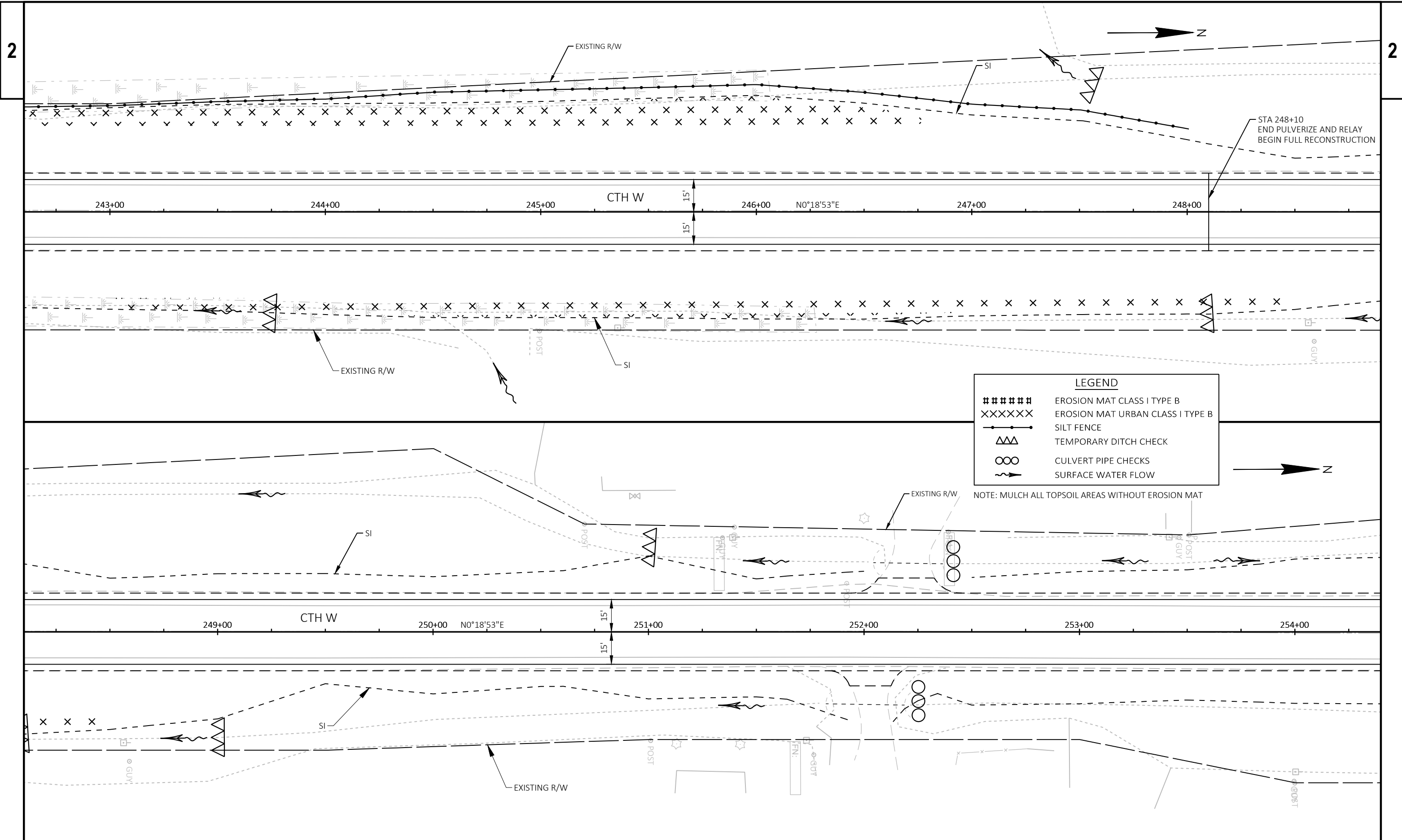
ALL M3 SERIES SIGNS WHICH ARE PART OF THE DETOUR ROUTE MARKING SIGNING ASSEMBLY OR ATTACHED TO ANY WARNING SIGN SHALL BE BLACK LETTERING ON A WHITE BACKGROUND

ALL SIGNS TO BE 48" X 48" UNLESS OTHERWISE NOTED



PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      EROSION CONTROL      SHEET      E

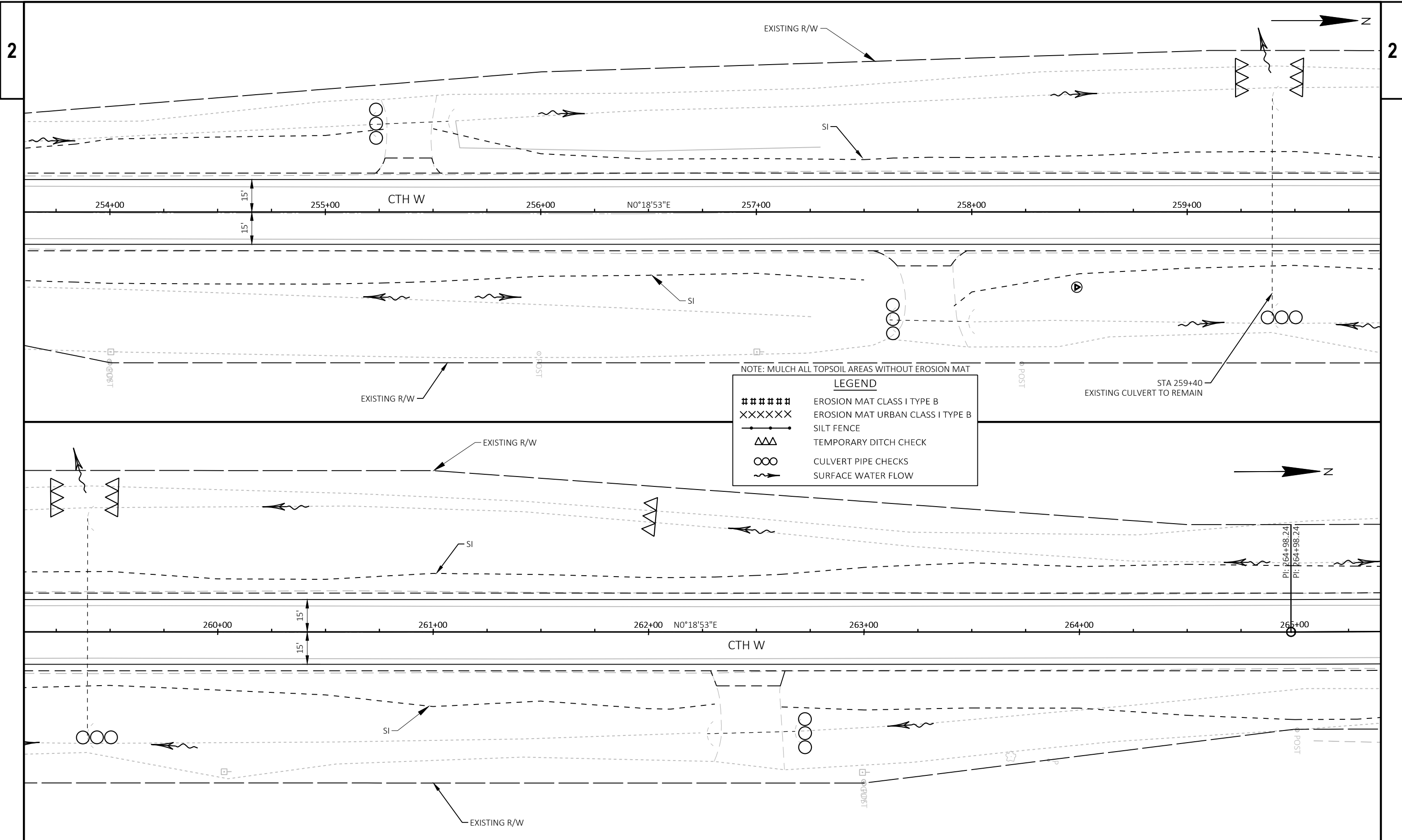
FILE NAME : X:\PROJECTS\MANITOWOC\190003 4323-08-00 CTH W\DESIGN\C3D\SHEETS\PLAN\022001-EC.DWG      PLOT DATE : 10/28/2022 11:06 AM      PLOT BY : JEFF ZLATOHLAVEK      PLOT NAME :      PLOT SCALE : 1 IN=40 FT      WISDOT/CADD SHEET 44



2

2

PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	EROSION CONTROL	SHEET E
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NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT

LEGEND	
#####	EROSION MAT CLASS I TYPE B
XXXXXX	EROSION MAT URBAN CLASS I TYPE B
—●—●—●—●—	SILT FENCE
△△	TEMPORARY DITCH CHECK
○○	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW



EXISTING R/W

STA 267+40  
END FULL RECONSTRUCTION  
BEGIN PULVERIZE AND RELAY

PI: 264+98.24  
PI: 264+98.24

265+00

15'  
15'

266+00

267+00

N0°05'56"E

268+00

CTH W

269+00

270+00

**LEGEND**

- ##### EROSION MAT CLASS I TYPE B
- XXXXXXXX EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- △△ TEMPORARY DITCH CHECK
- CULVERT PIPE CHECKS
- ~> SURFACE WATER FLOW

NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT

EXISTING R/W

EXISTING R/W

271+00

15'  
15'

272+00

N0°05'56"E

273+00

CTH W

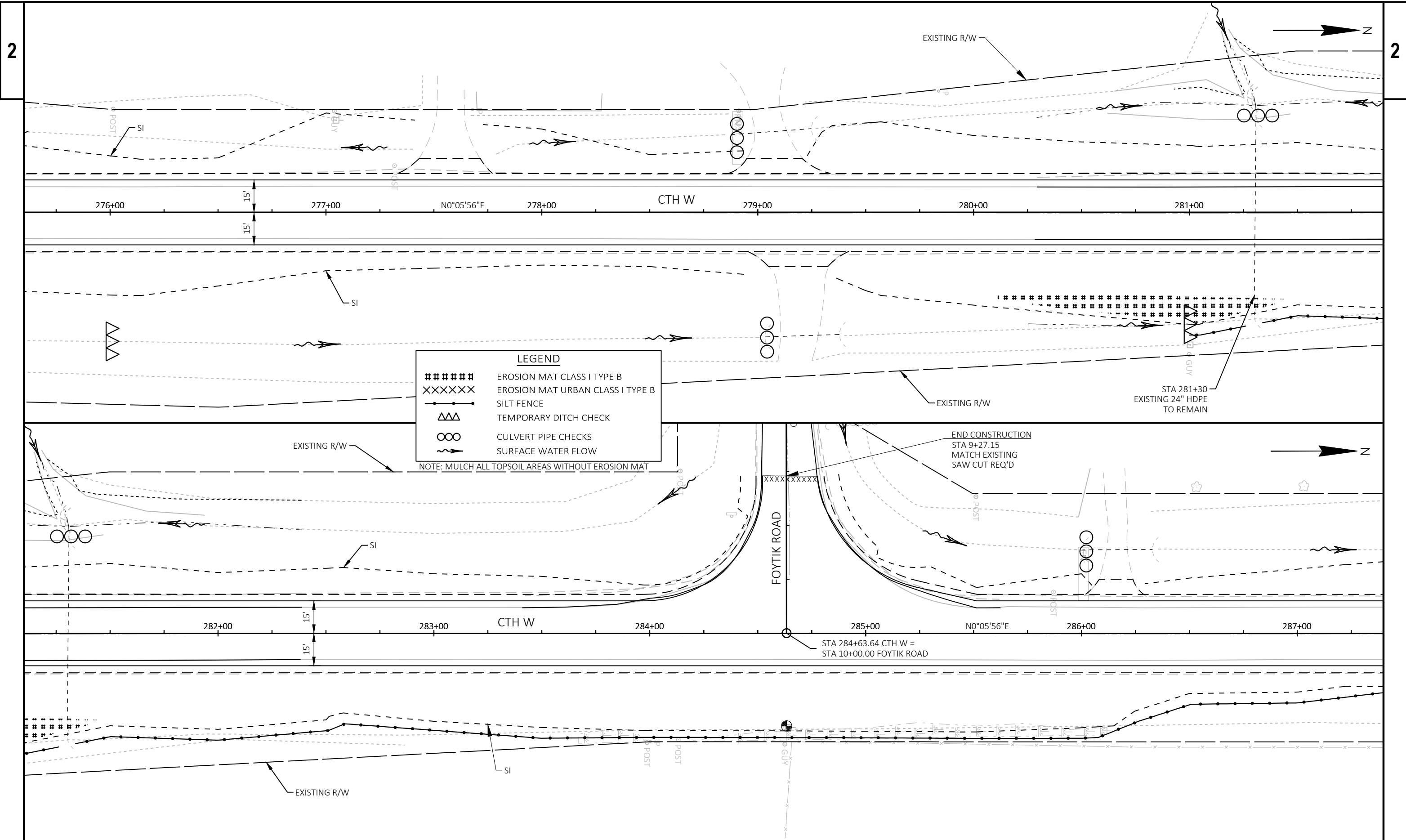
274+00

275+00

276+00

STA 274+94  
EXISTING 24" HDPE TO REMAIN

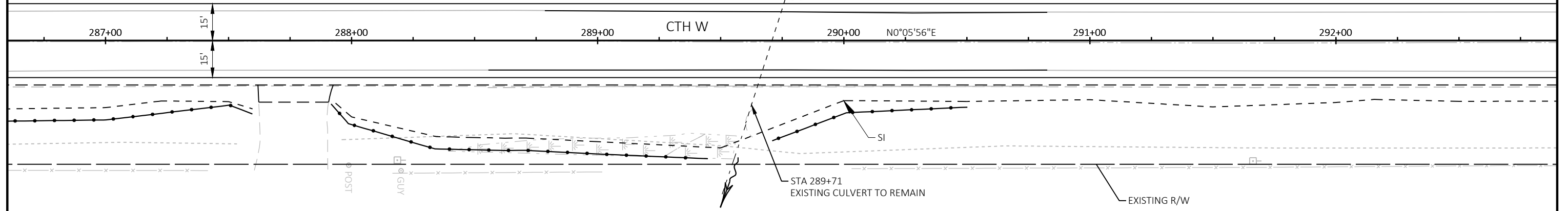
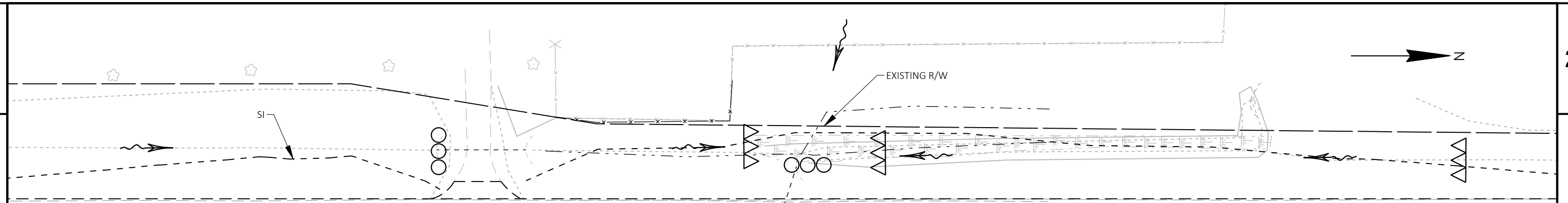
EXISTING R/W



**LEGEND**

- ##### EROSION MAT CLASS I TYPE B
- XXXXXX EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- △△△ TEMPORARY DITCH CHECK
- CULVERT PIPE CHECKS
- ~> SURFACE WATER FLOW

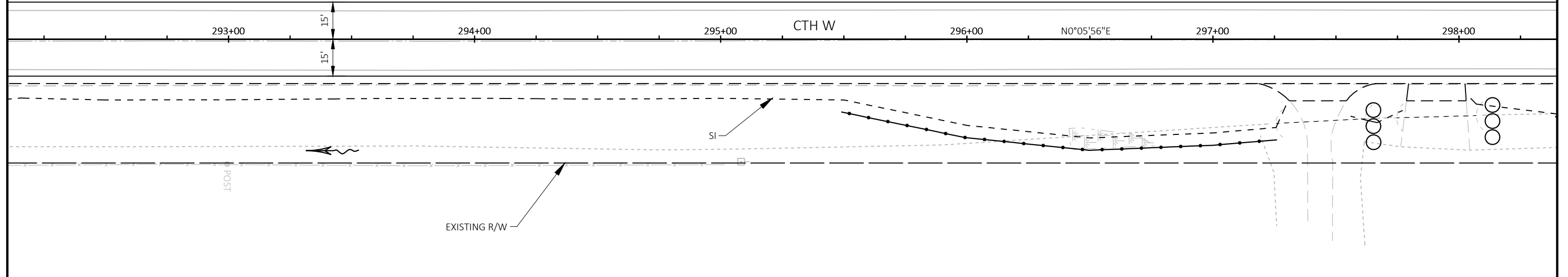
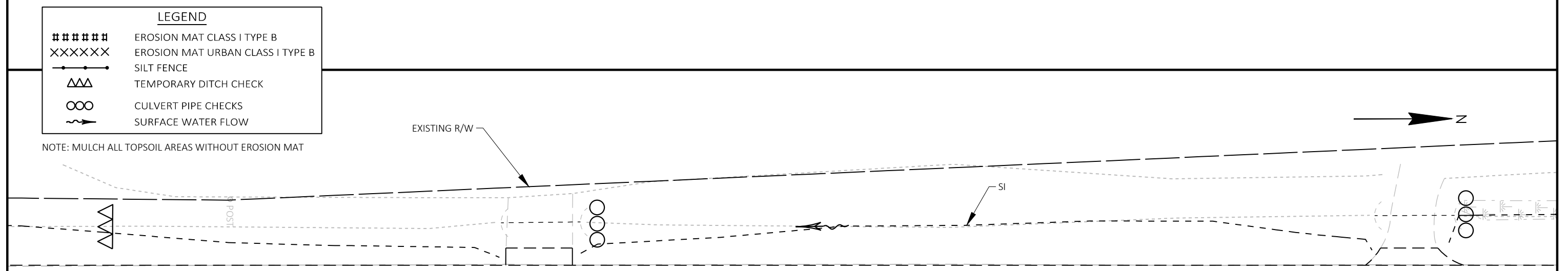
NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT



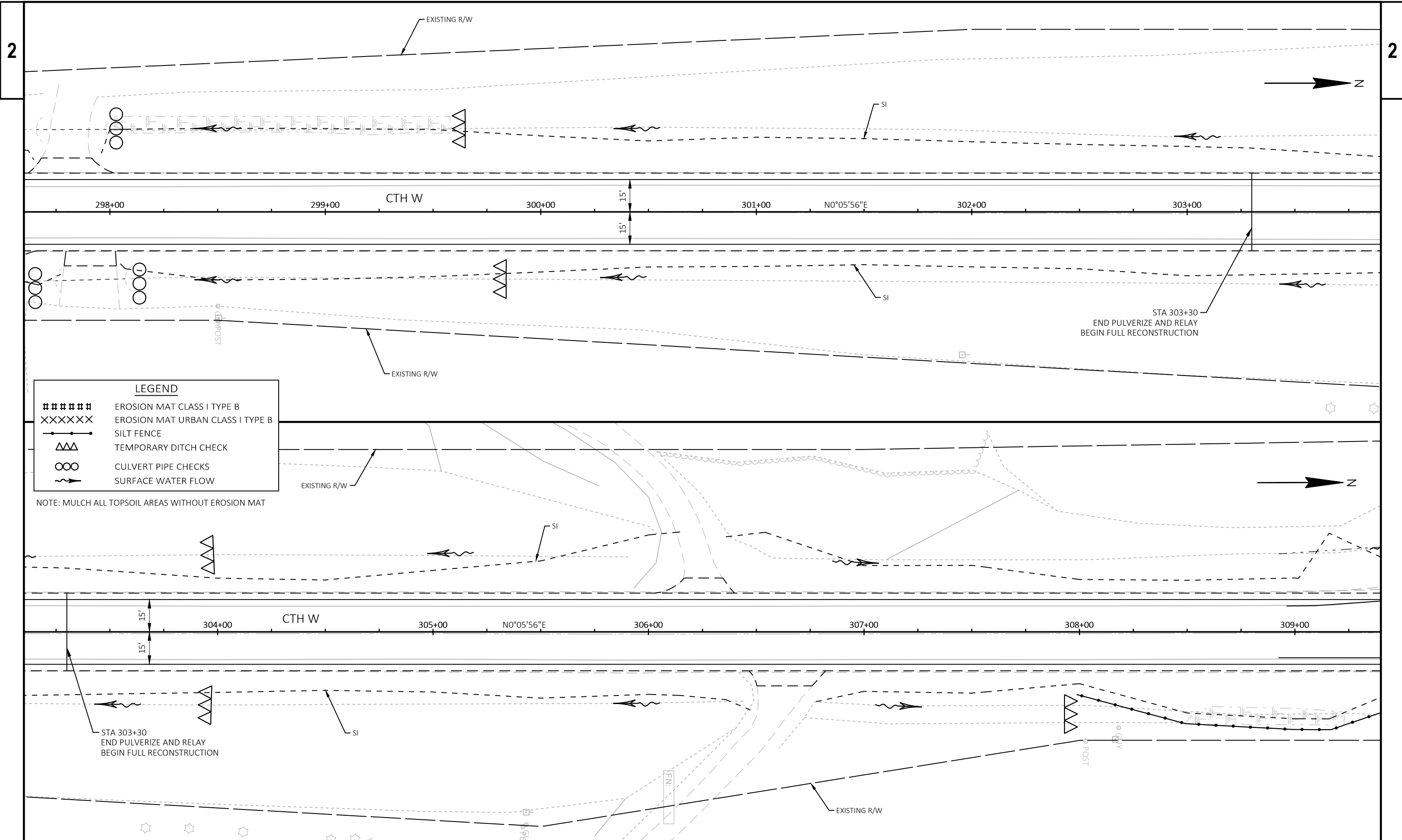
**LEGEND**

- ##### EROSION MAT CLASS I TYPE B
- XXXXXX EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- ▲▲▲ TEMPORARY DITCH CHECK
- CULVERT PIPE CHECKS
- ~> SURFACE WATER FLOW

NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT



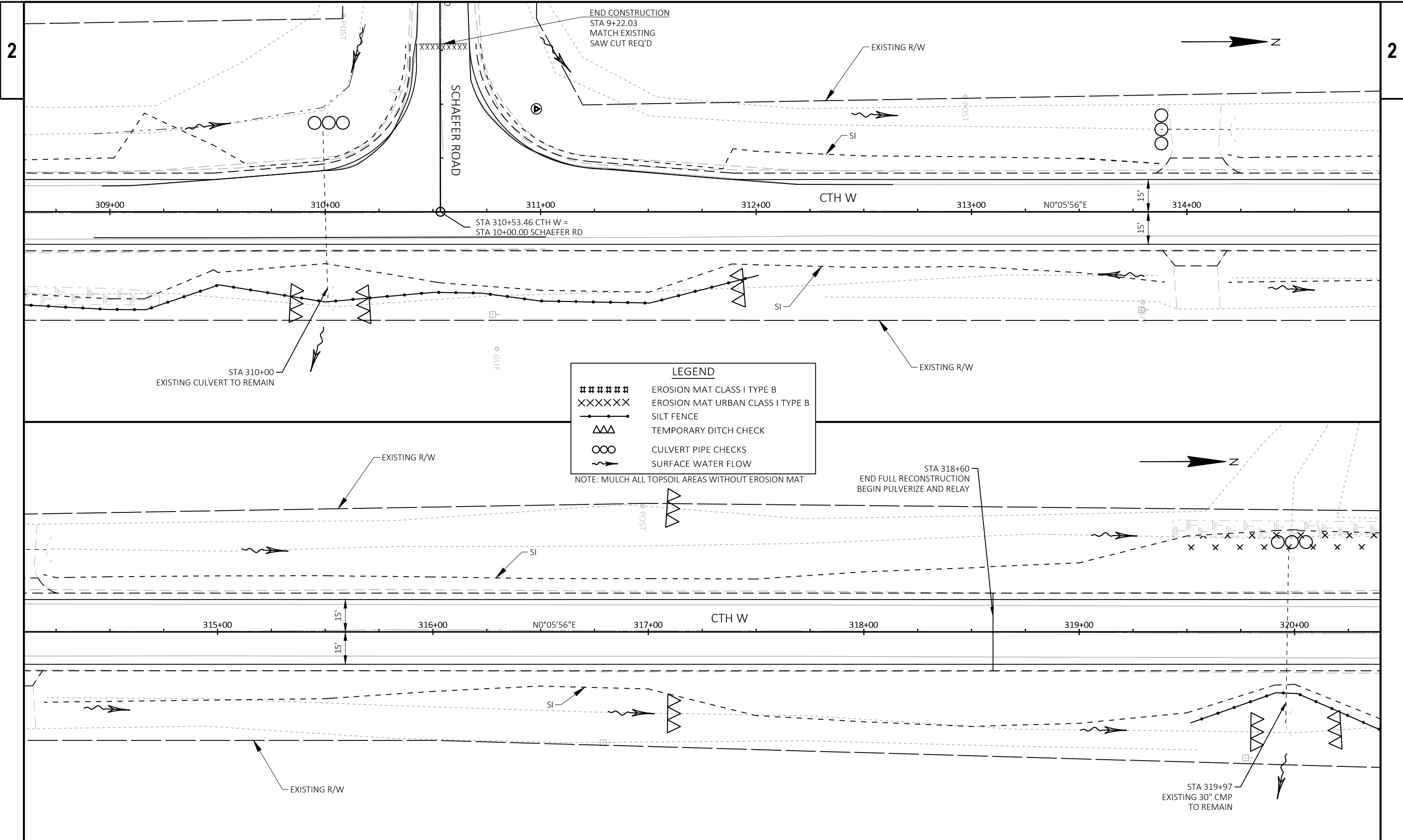
PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	EROSION CONTROL	SHEET	<b>E</b>
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**LEGEND**

#####	EROSION MAT CLASS I TYPE B
XXXXXX	EROSION MAT URBAN CLASS I TYPE B
—●—●—●—●—	SILT FENCE
△△△	TEMPORARY DITCH CHECK
○○○	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW

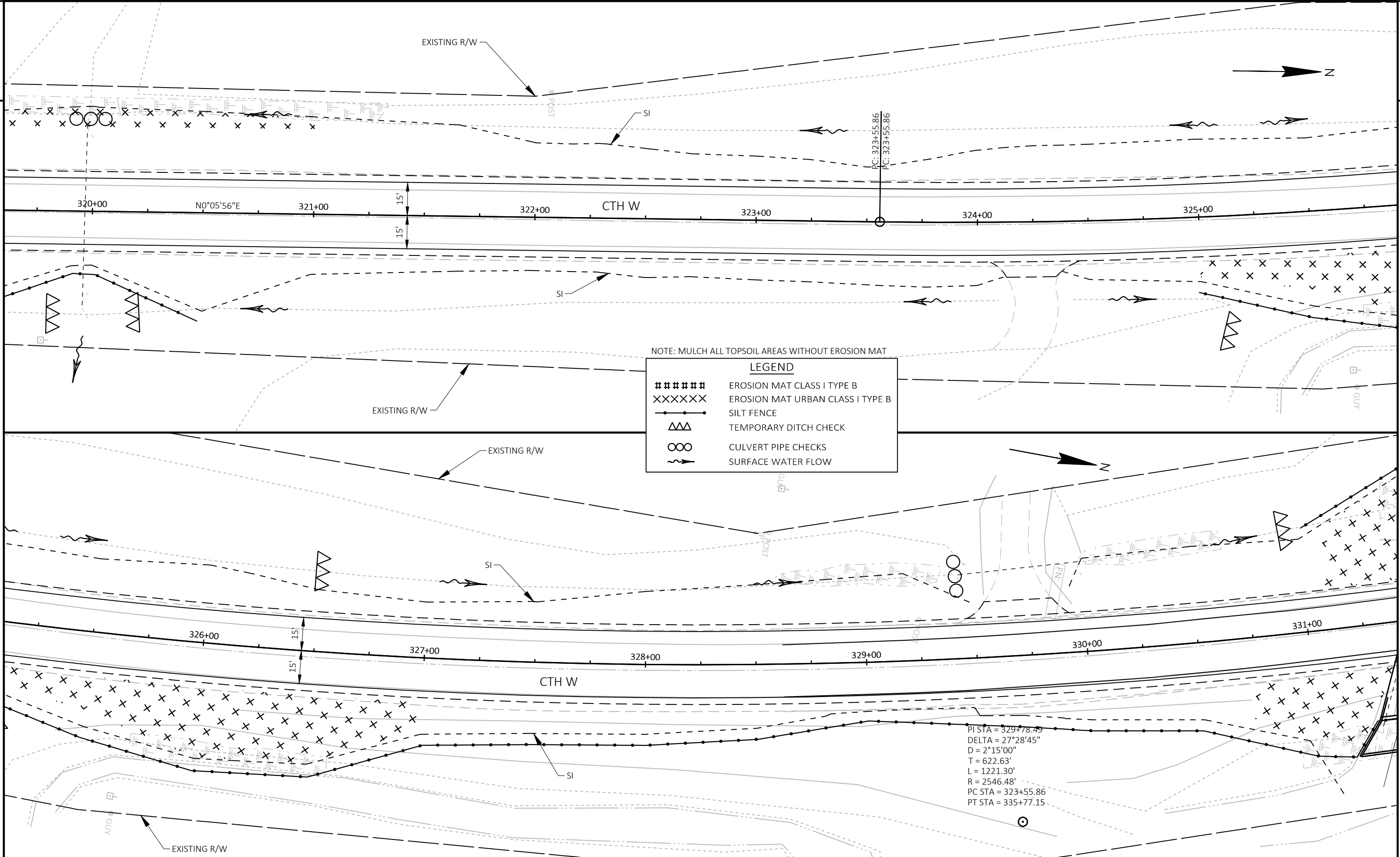
NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT



PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	EROSION CONTROL	SHEET	E
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EXISTING R/W



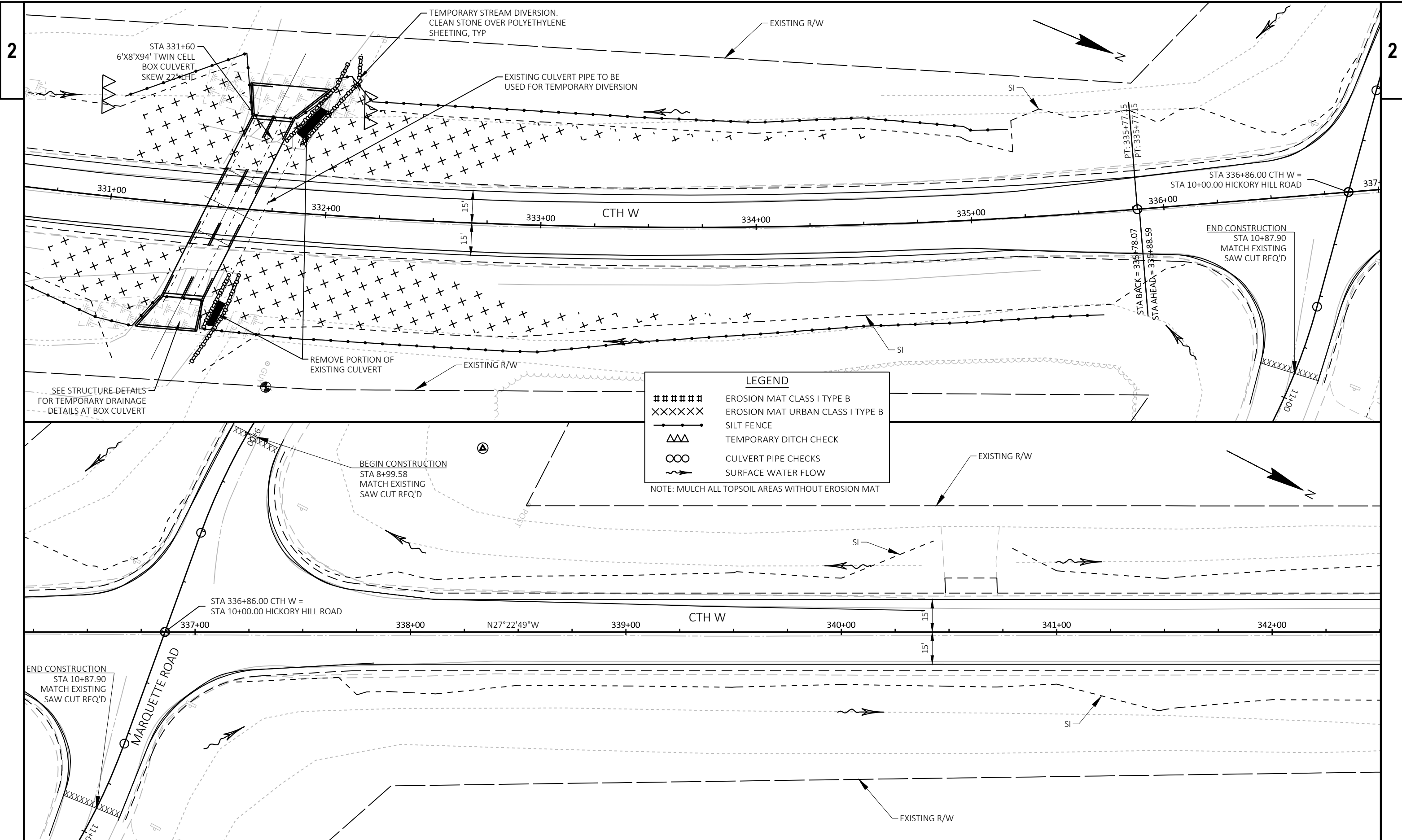
NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT

**LEGEND**

- ##### EROSION MAT CLASS I TYPE B
- XXXXXX EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- △△△△ TEMPORARY DITCH CHECK
- CULVERT PIPE CHECKS
- ~~~~~> SURFACE WATER FLOW

PI STA = 329+78.49  
 DELTA = 27°28'45"  
 D = 2°15'00"  
 T = 622.63'  
 L = 1221.30'  
 R = 2546.48'  
 PC STA = 323+55.86  
 PT STA = 335+77.15

PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	EROSION CONTROL	SHEET	<b>E</b>
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PROJECT NO: 4323-08-72

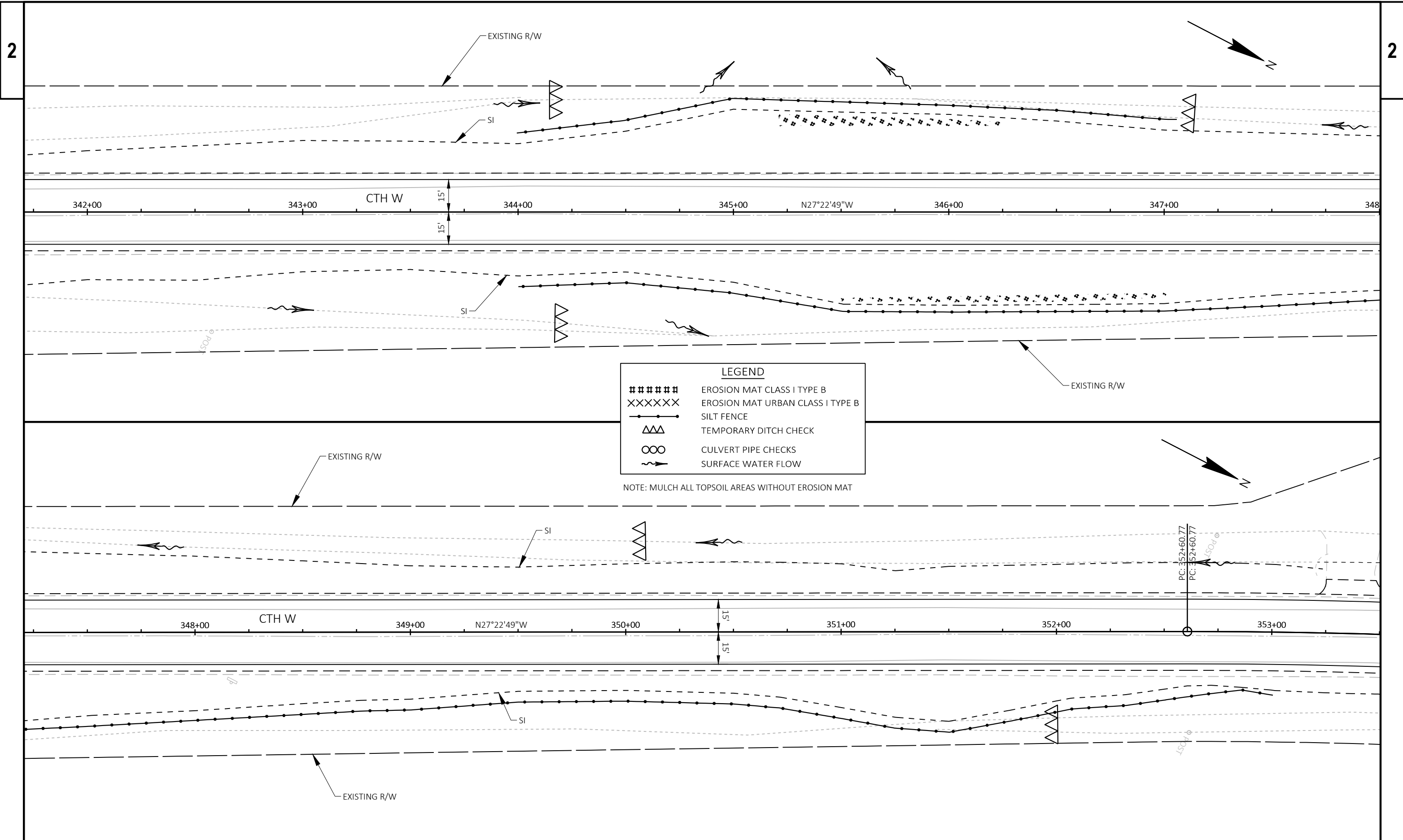
HWY: CTH W

COUNTY: MANITOWOC

EROSION CONTROL

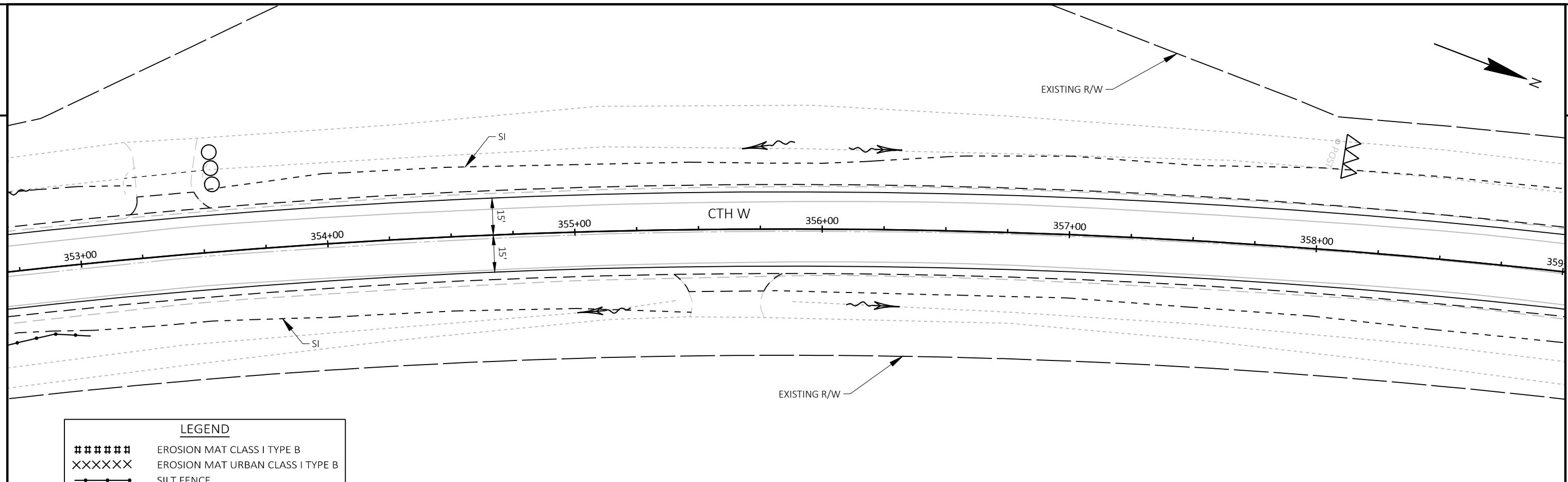
SHEET

E



LEGEND	
#####	EROSION MAT CLASS I TYPE B
XXXXXXXX	EROSION MAT URBAN CLASS I TYPE B
—●—●—●—	SILT FENCE
△△△	TEMPORARY DITCH CHECK
○○	CULVERT PIPE CHECKS
~	SURFACE WATER FLOW

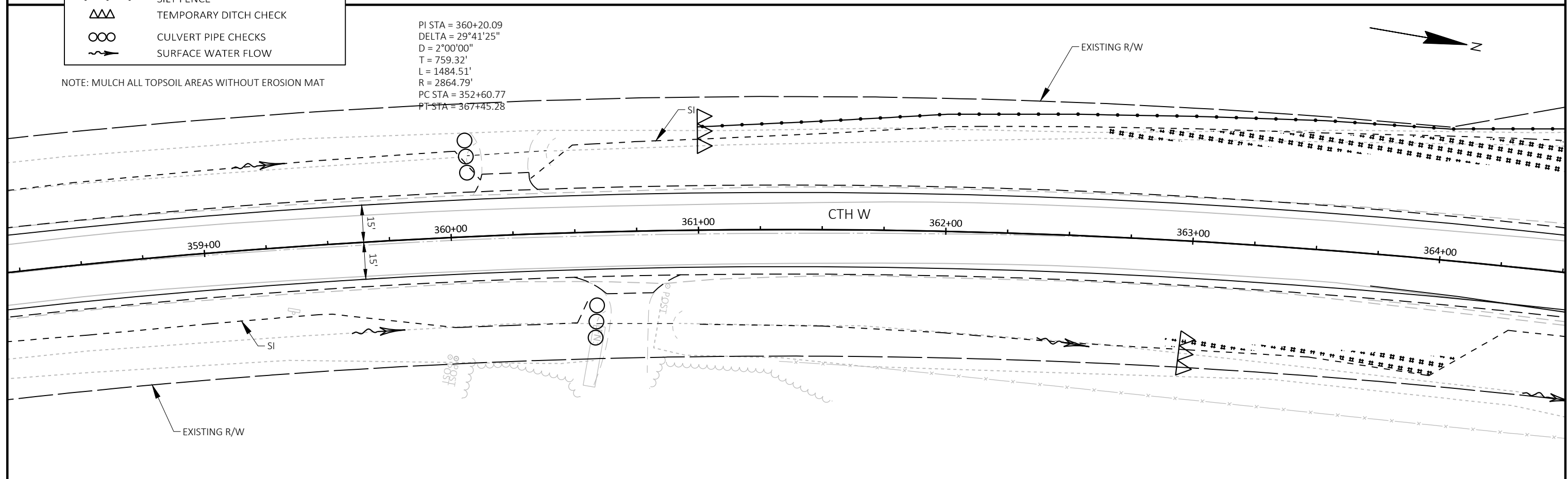
NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT

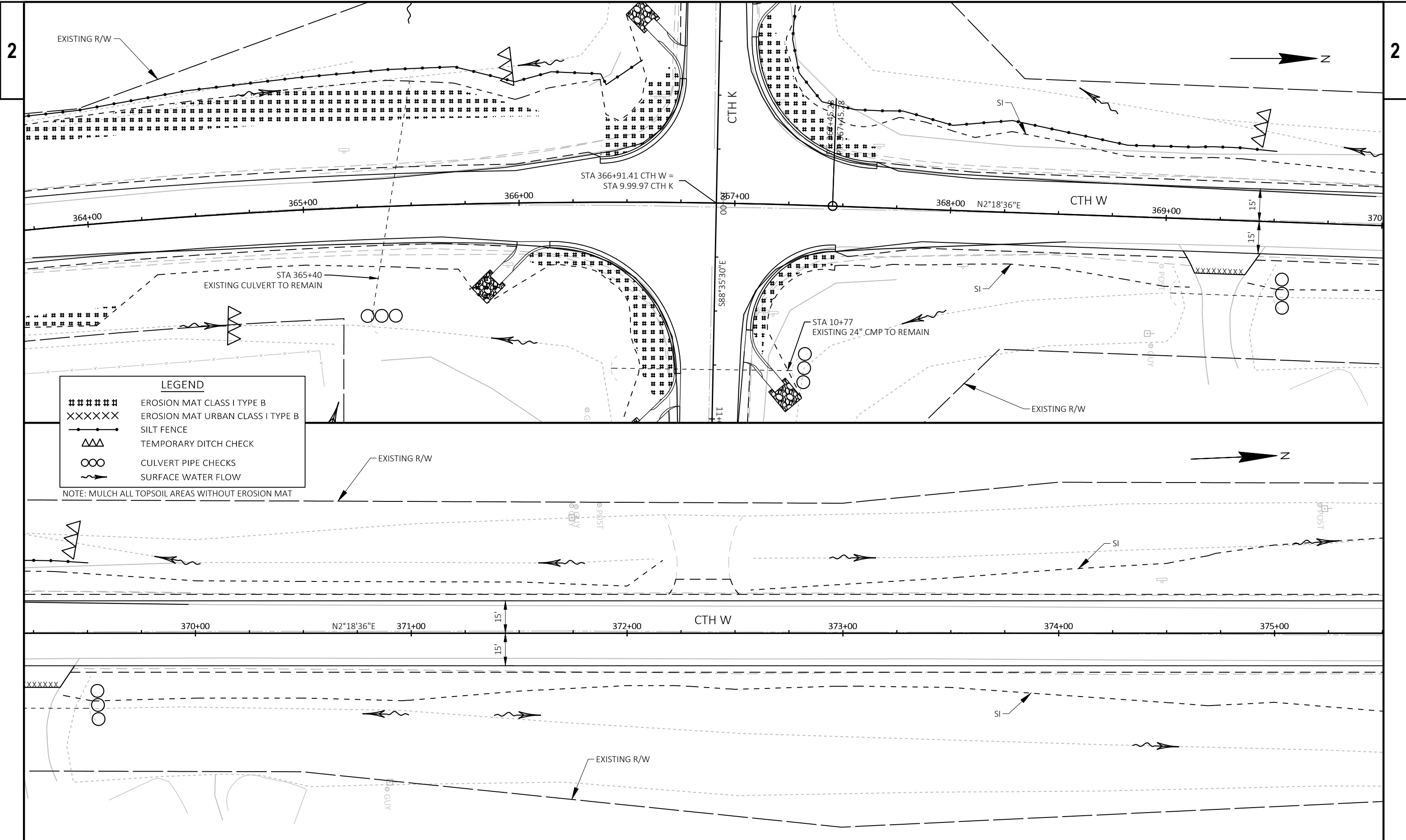


LEGEND	
#####	EROSION MAT CLASS I TYPE B
XXXXXX	EROSION MAT URBAN CLASS I TYPE B
—•—•—•	SILT FENCE
△△	TEMPORARY DITCH CHECK
○○	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW

NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT

PI STA = 360+20.09  
 DELTA = 29°41'25"  
 D = 2°00'00"  
 T = 759.32'  
 L = 1484.51'  
 R = 2864.79'  
 PC STA = 352+60.77  
 PT STA = 367+45.28





PROJECT NO: 4323-08-72

HWY: CTH W

COUNTY: MANITOWOC

EROSION CONTROL

SHEET

E

FILE NAME : X:\PROJECTS\MANITOWOC\190003 4323-08-00 CTH W\DESIGN\C3D\SHEETSPLAN\022001-EC.DWG  
LAYOUT NAME - 022013

PLOT DATE : 10/28/2022 11:14 AM

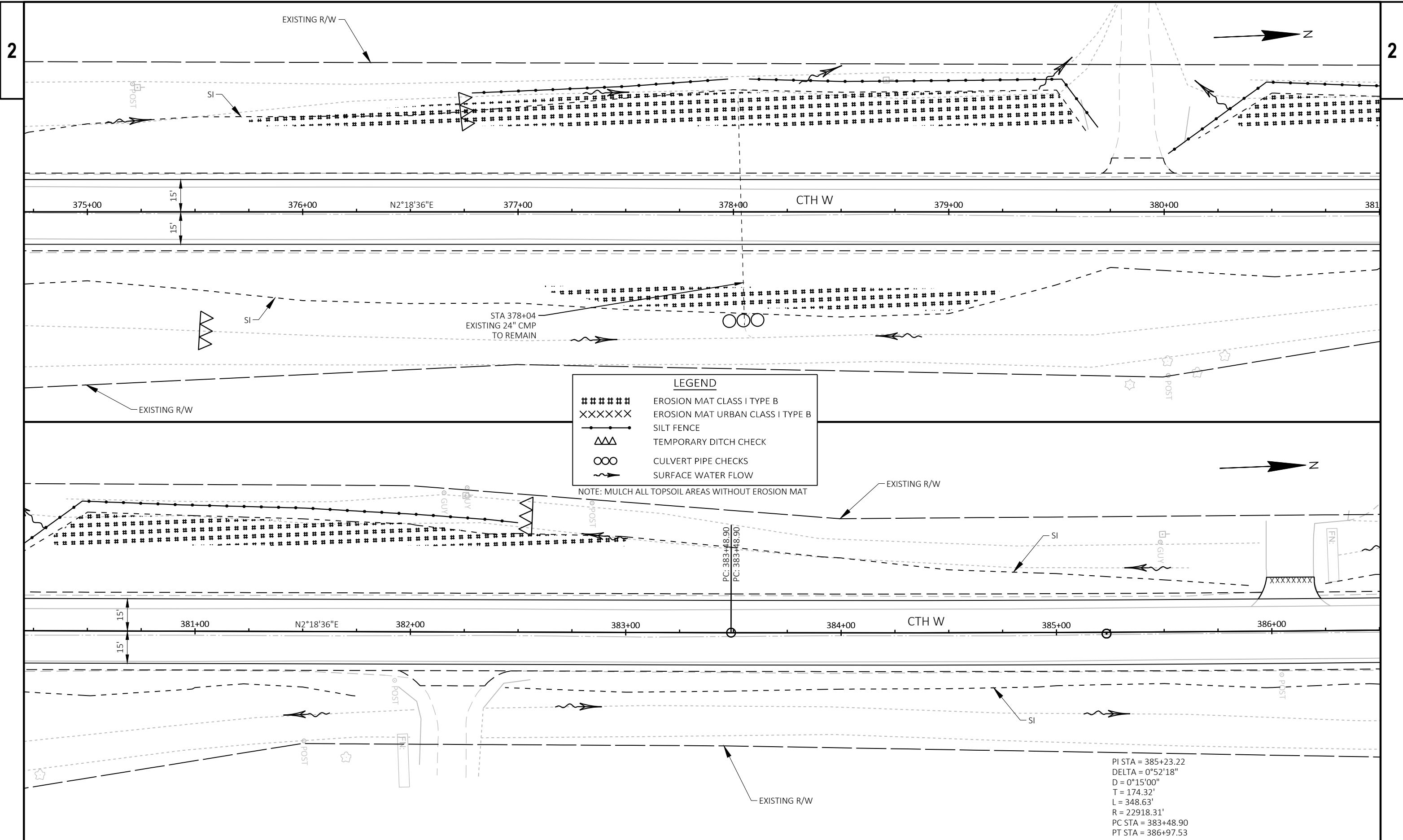
PLOT BY : JEFF ZLATOHLAVEK

PLOT NAME :

PLOT SCALE : 1 IN=40 FT

WISDOT/CADD SHEET 44

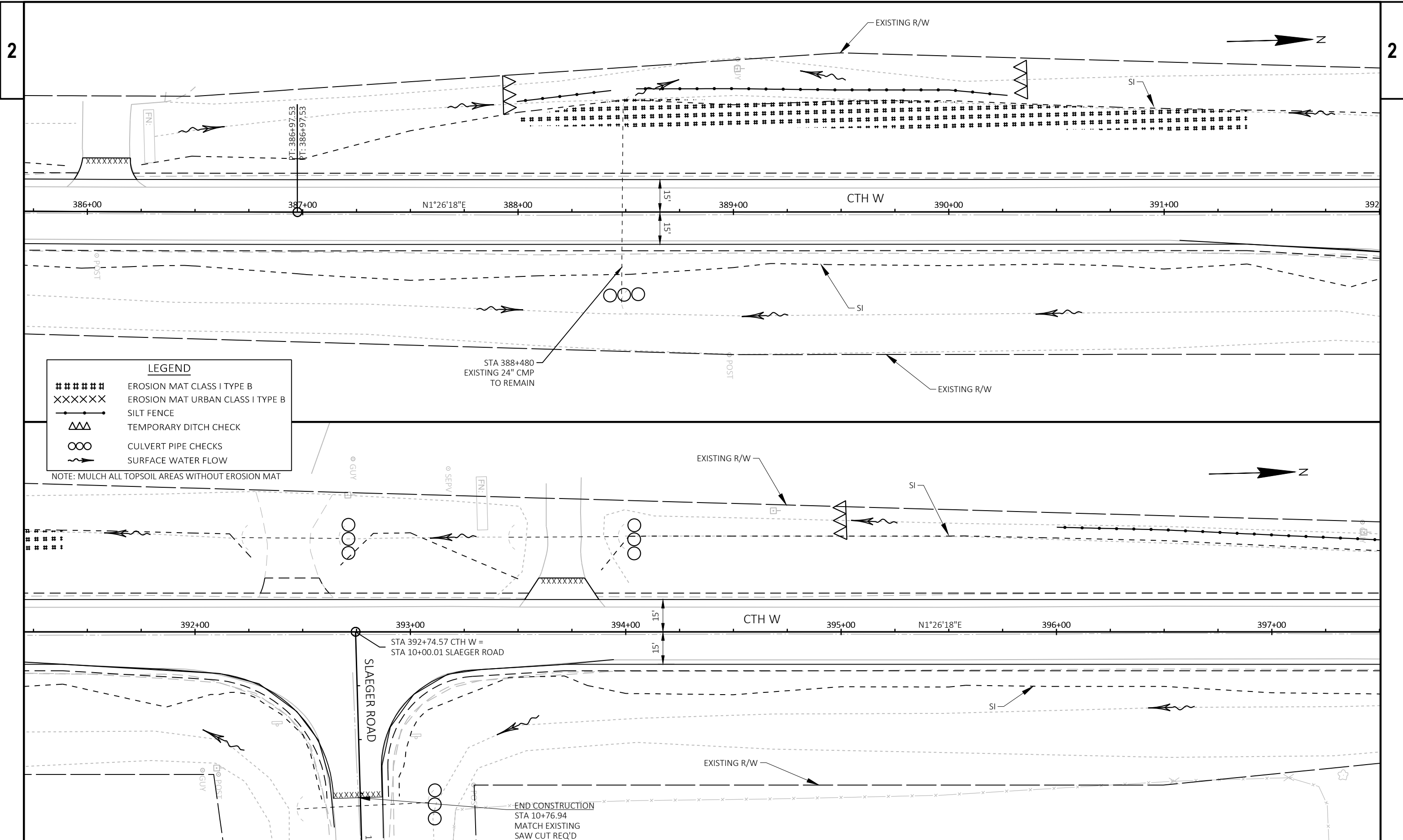




**LEGEND**

#####	EROSION MAT CLASS I TYPE B
XXXXXXXX	EROSION MAT URBAN CLASS I TYPE B
—●—●—●—	SILT FENCE
△△△	TEMPORARY DITCH CHECK
○○○	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW

NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT

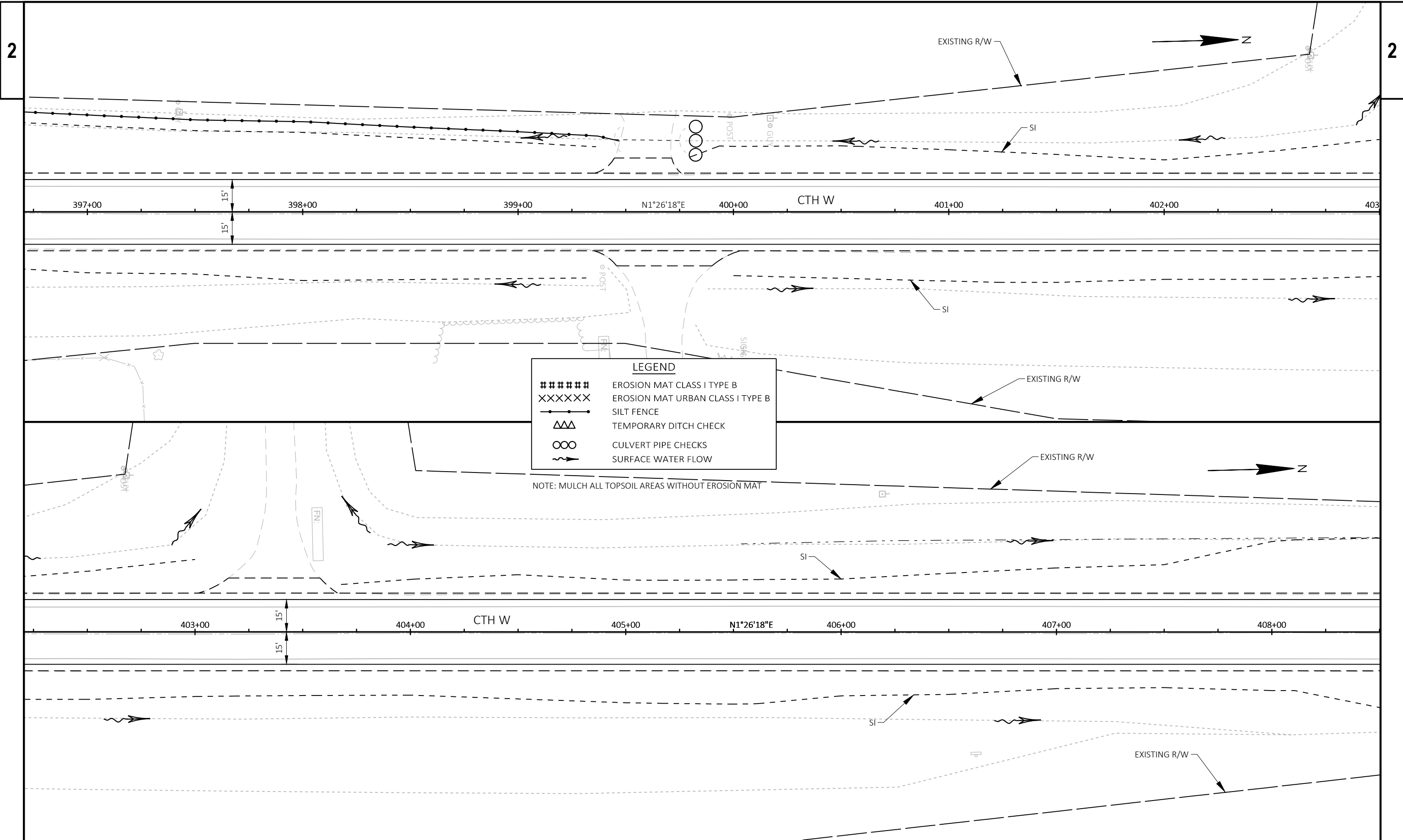


**LEGEND**

- ##### EROSION MAT CLASS I TYPE B
- XXXXXXX EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- ▲▲▲ TEMPORARY DITCH CHECK
- CULVERT PIPE CHECKS
- ~ SURFACE WATER FLOW

NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT

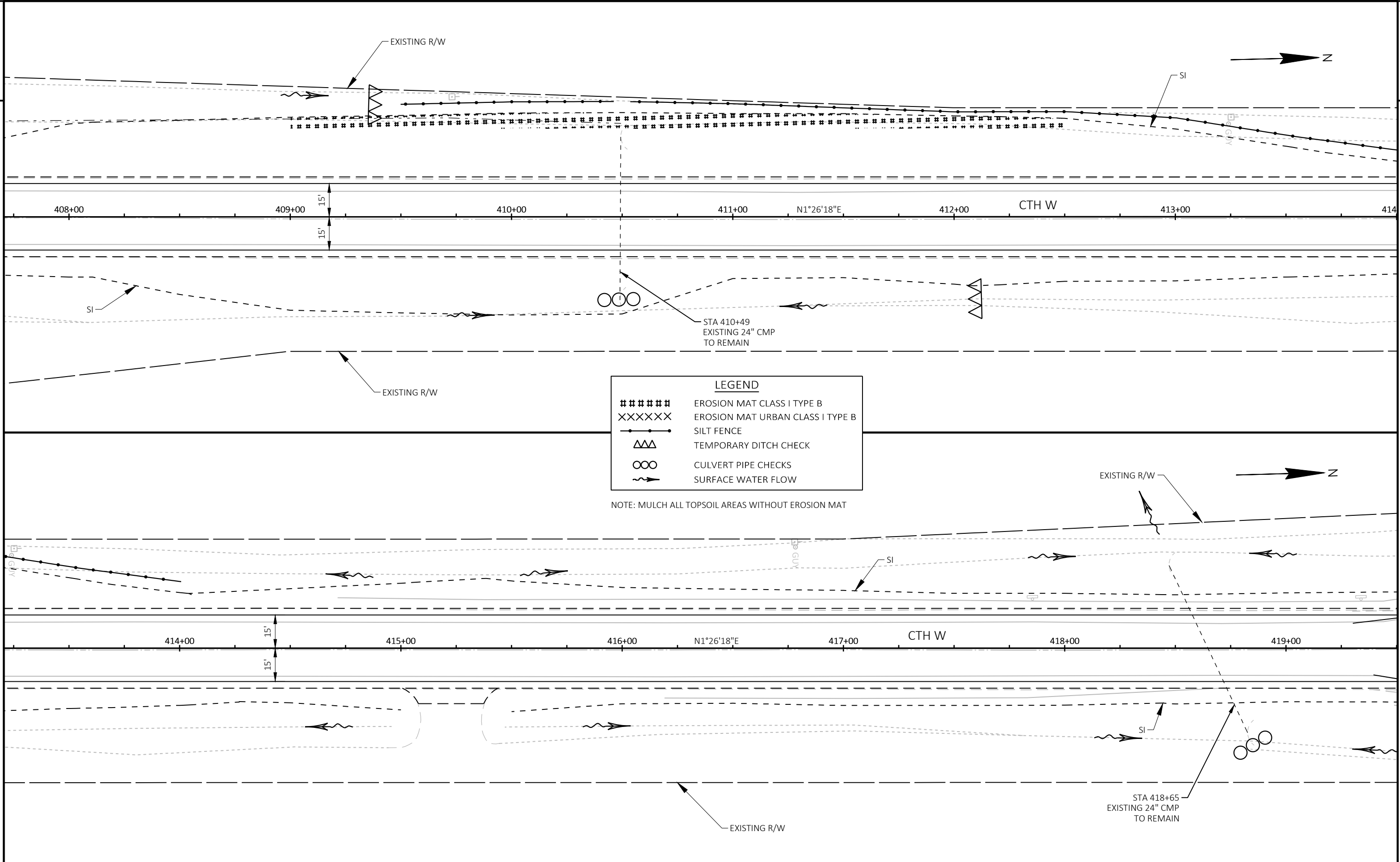
PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      EROSION CONTROL      SHEET      E



**LEGEND**

#####	EROSION MAT CLASS I TYPE B
XXXXXX	EROSION MAT URBAN CLASS I TYPE B
—●—	SILT FENCE
△△△	TEMPORARY DITCH CHECK
○X○	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW

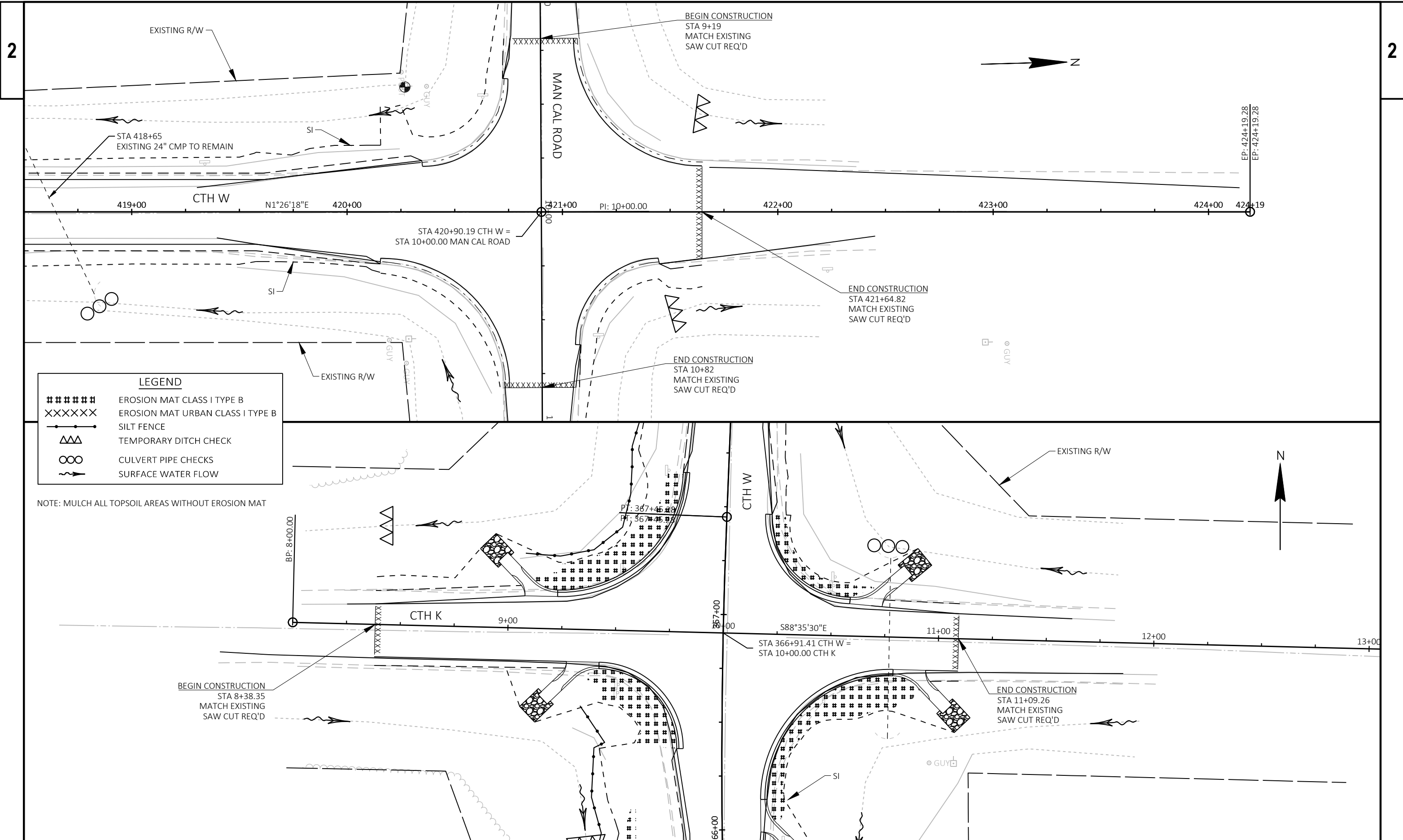
NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT



**LEGEND**

#####	EROSION MAT CLASS I TYPE B
XXXXXXXX	EROSION MAT URBAN CLASS I TYPE B
—●—●—●—	SILT FENCE
△△	TEMPORARY DITCH CHECK
○○	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW

NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT



**LEGEND**

#####	EROSION MAT CLASS I TYPE B
XXXXXX	EROSION MAT URBAN CLASS I TYPE B
—●—	SILT FENCE
△△△	TEMPORARY DITCH CHECK
∞∞	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW

NOTE: MULCH ALL TOPSOIL AREAS WITHOUT EROSION MAT

Estimate Of Quantities

4323-08-72

Line	Item	Item Description	Unit	Total	Qty
0002	204.0110	Removing Asphaltic Surface	SY	135.000	135.000
0004	204.0245	Removing Storm Sewer (size) 01. 84-INCH	LF	296.000	296.000
0006	205.0100	Excavation Common	CY	18,976.000	18,976.000
0008	206.2001	Excavation for Structures Culverts (structure) 01. C-36-251	EACH	1.000	1.000
0010	210.2500	Backfill Structure Type B	TON	1,515.000	1,515.000
0012	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 4323-08-72	EACH	1.000	1.000
0014	213.0100	Finishing Roadway (project) 01. 4323-08-72	EACH	1.000	1.000
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	4,290.000	4,290.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	20,360.000	20,360.000
0020	311.0110	Breaker Run	TON	20,670.000	20,670.000
0022	325.0100	Pulverize and Relay	SY	53,744.000	53,744.000
0024	374.1020.S	QMP Pulverize and Relay Compaction	SY	53,744.000	53,744.000
0026	455.0605	Tack Coat	GAL	6,805.000	6,805.000
0028	460.2000	Incentive Density HMA Pavement	DOL	9,610.000	9,610.000
0030	460.5223	HMA Pavement 3 LT 58-28 S	TON	8,450.000	8,450.000
0032	460.5224	HMA Pavement 4 LT 58-28 S	TON	6,570.000	6,570.000
0034	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	55.000	55.000
0036	465.0315	Asphaltic Flumes	SY	100.000	100.000
0038	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	16,560.000	16,560.000
0040	504.0100	Concrete Masonry Culverts	CY	223.000	223.000
0042	505.0400	Bar Steel Reinforcement HS Structures	LB	27,210.000	27,210.000
0044	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	2,310.000	2,310.000
0046	516.0500	Rubberized Membrane Waterproofing	SY	30.000	30.000
0048	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	345.000	345.000
0050	606.0200	Riprap Medium	CY	195.000	195.000
0052	619.1000	Mobilization	EACH	1.000	1.000
0054	624.0100	Water	MGAL	1,032.000	1,032.000
0056	625.0100	Topsoil	SY	70,305.000	70,305.000
0058	627.0200	Mulching	SY	66,930.000	66,930.000
0060	628.1504	Silt Fence	LF	9,975.000	9,975.000
0062	628.1520	Silt Fence Maintenance	LF	19,950.000	19,950.000
0064	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0066	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	6.000
0068	628.2004	Erosion Mat Class I Type B	SY	3,375.000	3,375.000
0070	628.2008	Erosion Mat Urban Class I Type B	SY	2,150.000	2,150.000
0072	628.7504	Temporary Ditch Checks	LF	615.000	615.000
0074	628.7555	Culvert Pipe Checks	EACH	115.000	115.000
0076	628.7570	Rock Bags	EACH	300.000	300.000
0078	629.0210	Fertilizer Type B	CWT	44.000	44.000
0080	630.0130	Seeding Mixture No. 30	LB	1,271.000	1,271.000
0082	630.0200	Seeding Temporary	LB	2,000.000	2,000.000
0084	630.0500	Seed Water	MGAL	1,582.000	1,582.000
0086	642.5201	Field Office Type C	EACH	1.000	1.000
0088	643.0420	Traffic Control Barricades Type III	DAY	3,738.000	3,738.000
0090	643.0705	Traffic Control Warning Lights Type A	DAY	5,794.000	5,794.000
0092	643.0900	Traffic Control Signs	DAY	37,754.000	37,754.000
0094	643.0920	Traffic Control Covering Signs Type II	EACH	5.000	5.000
0096	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0098	643.5000	Traffic Control	EACH	1.000	1.000

Estimate Of Quantities

4323-08-72

Line	Item	Item Description	Unit	Total	Qty
0100	645.0105	Geotextile Type C	SY	450.000	450.000
0102	645.0120	Geotextile Type HR	SY	395.000	395.000
0104	646.1020	Marking Line Epoxy 4-Inch	LF	53,330.000	53,330.000
0106	646.6120	Marking Stop Line Epoxy 18-Inch	LF	285.000	285.000
0108	648.0100	Locating No-Passing Zones	MI	3.500	3.500
0110	650.4500	Construction Staking Subgrade	LF	3,860.000	3,860.000
0112	650.5000	Construction Staking Base	LF	19,588.000	19,588.000
0114	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	345.000	345.000
0116	650.6501	Construction Staking Structure Layout (structure) 01. C-36-251	EACH	1.000	1.000
0118	650.8000	Construction Staking Resurfacing Reference	LF	16,072.000	16,072.000
0120	650.9911	Construction Staking Supplemental Control (project) 01. 4323-08-72	EACH	1.000	1.000
0122	650.9920	Construction Staking Slope Stakes	LF	19,588.000	19,588.000
0124	690.0150	Sawing Asphalt	LF	402.000	402.000
0126	715.0502	Incentive Strength Concrete Structures	DOL	1,338.000	1,338.000
0128	740.0440	Incentive IRI Ride	DOL	7,300.000	7,300.000
0130	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	600.000	600.000
0132	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,200.000	1,200.000
0134	SPV.0060	Special 01. TEMPORARY DRAINAGE AT CULVERT	EACH	1.000	1.000
0136	SPV.0180	Special 01. Removing Excess Pulverized Material	SY	53,744.000	53,744.000

**REMOVING ASPHALTIC SURFACE**

204.0110  
REMOVING ASPHALTIC  
SURFACE

CATEGORY	LOCATON		SY
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0010	DRIVEWAYS	CTH W	135
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**TOTAL 135**

**REMOVING STORM SEWER**

204.0245  
REMOVING STORM  
SEWER (84-INCH)

CATEGORY	STA	LOCATON	LF	NOTES
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0010	331+58	CTH W	296	3 CULVERTS TOTAL
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**TOTAL 296**

**PREPARE FOUNDATION FOR ASPHALTIC PAVING**

211.0101

CATEGORY	LOCATION	EACH
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0010	CTH W	1
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**TOTAL 1**

**BASE AGGREGATE SUMMARY**

305.0110	305.0120	311.0110	624.0100 *
BASE	BASE	BREAKER	WATER
AGGREGATE	AGGREGATE	RUN	MGAL
DENSE	DENSE		
3/4-INCH	1 1/4-INCH		

CATEGORY	STATION	STATION	LOCATION	TON	TON	TON	MGAL
0010	233+30	-	247+10	CTH W, LT/RT	260	740	--
0010	247+10	-	268+40	CTH W, LT/RT	380	6,730	10,295
0010	268+40	-	302+30	CTH W, LT/RT	624	1,150	--
0010	302+30	-	319+60	CTH W, LT/RT	312	5,410	8,275
0010	319+60	-	336+00	CTH W, LT/RT	307	980	--
0010	337+75	-	366+50	CTH W, LT/RT	535	1,707	--
0010	367+40	-	420+35	CTH W, LT/RT	973	1,421	--
0010	9+27	-	9+88	FOYTIK RD	18	10	--
0010	9+22	-	9+78	SCHAEFER RD	16	293	--
0010	9+00	-	9+98	HICKORY HILL RD	23	10	--
0010	10+01	-	10+87	MARQUETTE RD	21	10	--
0010	8+38	-	9+88	CTH K	18	25	--
0010	10+12	-	11+10	CTH K	5	25	--
0010	10+12	-	10+77	SLAEGER RD	19	10	--
0010	8+90	-	9+40	MANCAL RD	5	20	--
0010	10+20	-	11+10	MANCAL RD	6	20	--
0010	DRIVEWAYS, LT/RT			200	--	--	4.0
0010	UNDISTRIBUTED			568	1,799	1,750	64.0

**TOTALS 4,290 20,360 20,320 702.0**

\*QUANTITIES SHOWN ELSEWHERE IN PLAN



EXCAVATION COMMON

DIVISION	FROM/TO STATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (6)	MASS ORDINATE +/- (7)
		CUT (2)	EBS EXCAVATION				FACTOR	
							1.25	
CTH W	233+30 -247+10	2	0	0	2	976	1,220	-1,218
CTH W	247+10 -268+40	10,321	0	957	9,364	87	109	9,255
CTH W	268+40 -302+30	91	0	0	91	691	864	-773
CTH W	302+30 -319+60	8,141	0	847	7,294	78	98	7,196
CTH W	319+60 -421+65	118	0	0	118	4,614	5,768	-5,650
FOYTIK		21	0	0	21	0	0	21
SCHAEFER		31	0	0	31	0	0	31
HICKORY		21	0	0	21	0	0	21
MARQUETTE		36	0	0	36	0	0	36
CTH K		102	0	0	102	56	70	32
SLAGER		21	0	0	21	0	0	21
MANCAL		71	0	0	71	0	0	71
GRAND TOTAL		18,976	0	1,804	17,172	6,503	8,129	9,043
	TOTAL COMMON EXC	18,976						

Notes:

- (1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS, ITEM NUMBER 205.0100
- (2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT. REMOVAL OF PULVERIZED MATERIAL QUANTITY IS NOT INCLUDED IN CUT.
- (4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (5) AVAILABLE MATERIAL=CUT-SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (6) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.
- (7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

REMOVING EXCESS PULVERIZED MATERIAL

CATEGORY	STA	-	STA	LOCATION	SPV.0180.01	VOLUME
					SY	CY
0010	233+30	-	247+10	CTH W	4,600	61
0010	268+40	-	302+30	CTH W	11,300	190
0010	319+60	-	421+65	CTH W	34,017	702
0010	9+27	-	9+88	FOYTIK RD	352	74
0010	9+00	-	9+88	MARQUETTE RD	441	93
0010	10+12	-	10+87	MARQUETTE RD	442	93
0010	8+38	-	9+88	CTH K	646	136
0010	10+12	-	11+10	CTH K	489	103
0010	10+12	-	10+77	SLAGER RD	346	73
0010	8+90	-	9+88	MAN CAL RD	561	118
0010	10+12	-	11+10	MAN CAL RD	550	116
<b>TOTALS</b>					<b>53,744</b>	<b>1,757 (A)</b>

(A) VOLUME SHOWN FOR INFORMATION ONLY, QUANTITY SHOWN REMOVED FROM COMMON EXCAVATION QUANTITY IN EARTHWORK CALCULATIONS.

PULVERIZE AND RELAY

325.0100  
PULVERIZE 624.0100 \*  
AND  
RELAY WATER  
SY MGAL

CATEGORY	STATION	STATION	LOCATION	SY	MGAL	
0010	233+30	-	247+10	CTH W	4,600	30
0010	268+40	-	302+30	CTH W	11,300	72
0010	319+60	-	421+65	CTH W	34,017	206
0010	9+27	-	9+88	FOYTIK RD	352	2
0010	9+00	-	9+88	MARQUETTE RD	441	3
0010	10+12	-	10+87	MARQUETTE RD	442	3
0010	8+38	-	9+88	CTH K	646	4
0010	10+12	-	11+10	CTH K	489	3
0010	10+12	-	10+77	SLAGER RD	346	2
0010	8+90	-	9+88	MAN CAL RD	561	3
0010	10+12	-	11+10	MAN CAL RD	550	2
<b>TOTALS</b>				<b>53,744</b>	<b>330</b>	

\*QUANTITIES SHOWN ELSEWHERE IN PLAN

ASPHALTIC SURFACE

465.0120  
DRIVEWAYS &  
FIELD ENTRANCES  
465.0315  
FLUMES

CATEGORY	STA	STA	LOCATION	TON	TON
0010	8+38	-	9+88	CTH K	40
0010	10+12	-	11+10	CTH K	60
0010	DRIVEWAYS			55	---
<b>TOTALS</b>				<b>55</b>	<b>100</b>

RUMBLE STRIPS

465.0475  
ASPHALTIC  
CENTERLINE  
2-LANE RURAL

CATEGORY	STATION	STATION	LF	
0010	233+30	-	282+63	4,935
0010	286+63	-	308+53	2,190
0010	312+53	-	334+85	2,230
0010	338+85	-	364+91	2,605
0010	368+91	-	390+75	2,185
0010	394+75	-	418+90	2,415
<b>TOTALS</b>			<b>16,560</b>	

HMA PAVEMENT SUMMARY

455.0605  
TACK\*  
COAT  
460.5223  
HMA PAVEMENT  
3 LT 58-28 S  
460.5224  
HMA PAVEMENT  
4 LT 58-28 S

CATEGORY	STA	STA	LOCATION	GAL	TON	TON	
0010	233+30	-	421+65	CTH W	6,283	7,912	6,153
0010	9+27	-	9+88	FOYTIK RD	50	45	35
0010	9+22	-	9+78	SCHAEFER RD	28	51	40
0010	9+00	-	9+98	MARQUETTE RD	62	56	44
0010	10+01	-	10+87	MARQUETTE RD	62	56	44
0010	8+38	-	9+88	CTH K	42	82	64
0010	10+12	-	11+10	CTH K	70	62	48
0010	10+12	-	10+77	SLAGER RD	50	44	34
0010	8+90	-	9+40	MAN CAL RD	80	71	54
0010	10+20	-	11+10	MAN CAL RD	78	71	54
<b>TOTALS</b>				<b>6,805</b>	<b>8,450</b>	<b>6,570</b>	

\*NOTE: TACK PULVERIZED MATERIAL PRIOR TO PLACING LOWER LAYER OF HMA PAVEMENT

**EROSION CONTROL SUMMARY**

CATEGORY	STATION	STATION	LOCATION	628.1504	628.152	628.1905	628.191	628.7504	628.7555	628.757	
				SILT FENCE	SILT FENCE MAINTENANCE	EROSION CONTROL	EROSION CONTROL EMERGENCY	TEMPORARY DITCH CHECKS	PIPE CHECKS	ROCK BAGS	
				LF	LF	EACH	EACH	LF	EACH	EACH	
0010	23600	-	24950	CTH W, LT/RT	907	1,814	---	---	90	6	---
0010	25100	-	28775	CTH W, LT/RT	932	1,864	---	---	60	35	30
0010	28790	-	31500	CTH W, RT	855	1,710	---	---	110	16	60
0010	31700	-	33600	CTH W, RT	1,213	2,426	---	---	70	7	25
0010	33000		37000	CTH W, LT/RT	2,483	4,966	---	---	120	16	---
0010	37500	-	39500	CTH W, LT/RT	789	1,578	---	---	50	15	60
0010	39600	-	41950	CTH W, LT	800	1,600	---	---	60	10	25
0010	UNDISTRIBUTED				1,996	3,992	6	6	55	10	100
<b>TOTALS</b>					<b>9,975</b>	<b>19,950</b>	<b>6</b>	<b>6</b>	<b>615</b>	<b>115</b>	<b>300</b>

**LANDSCAPING SUMMARY**

CATEGORY	STATION	STATION	LOCATION	625.0100	627.0200	628.2004	628.2008	629.0210	630.0120	630.0200	630.0500	
				TOPSOIL	MULCHING	EROSION MAT CLASS I TYPE B	EROSION MAT URBAN CLASS I TYPE B	FERTILIZER TYPE B	SEEDING MIXTURE NO. 30	SEEDING TEMPORARY	SEED WATER	
				SY	SY	SY	SY	CWT	LB	LB	MGAL	
0010	230+20	-	336+42	CTH W, LT/RT	33,828	33,700	128	2,150	22	609	950	760
0010	336+42	-	366+91	CTH W, LT/RT	11,046	9,500	1,546	---	7	199	325	248
0010	366+91	-	420+82	CTH W, LT/RT	16,461	15,000	1,461	---	11	296	470	370
0010	UNDISTRIBUTED				8,970	8,730	240	---	4	167	255	204
<b>TOTALS</b>					<b>70,305</b>	<b>66,930</b>	<b>3,375</b>	<b>2,150</b>	<b>44</b>	<b>1,271</b>	<b>2,000</b>	<b>1,582</b>

**CONCRETE CURB AND GUTTER**

CATEGORY	STATION	STATION	LOCATION	601.0557	
				6-INCH SLOPED 36-INCH TYPE D LF	
0010	9+22	-	9+82	CTH K, LT	99
0010	9+42	-	9+82	CTH K, RT	67
0010	10+17	-	10+58	CTH K, LT	69
0010	10+19	-	10+78	CTH K, RT	110
<b>TOTALS</b>					<b>345</b>

**TRAFFIC CONTROL DEVICES**

CATEGORY	LOCATION	#OF DAYS	643.0420	643.0705	643.0900	643.0920	643.1050	643.5000		
			BARRICADES TYPE III (DAYS)	WARNING LIGHTS TYPE A (DAYS)	SIGNS (DAYS)	COVERING SIGNS TYPE II (EACH)	SIGNS PCMS (DAYS)	TRAFFIC CONTROL (EACH)		
0010	ENTIRE PROJECT	128	3,560	5,518	35,956	5	1	5	14	1
0010	UNDISTRIBUTED	---	178	276	1,798	-	-	-	-	-
<b>TOTALS</b>			<b>3,738</b>	<b>5,794</b>	<b>37,754</b>	<b>5</b>	<b>14</b>	<b>1</b>		



**PAVEMENT MARKING SUMMARY**

CATEGORY	STA	STA	LOCATION	646.1020		646.6120
				LF YELLOW	LF WHITE	MARKING STOP LINE
						690.0150
						ASPHALT
0010	233+30	- 318+75	CTH W	2,150	16,810	--
0010	318+75	- 328+43	CTH W	1,218	1,936	--
0010	328+43	- 331+21	CTH W	556	556	--
0010	331+21	- 341+31	CTH W	1,273	1,791	--
0010	341+31	- 343+88	CTH W	75	514	--
0010	343+88	- 358+87	CTH W	1,875	2,998	--
0010	358+87	- 370+40	CTH W	2,306	2,046	--
0010	370+40	- 374+50	CTH W	515	820	--
0010	374+50	- 419+60	CTH W	1,140	8,640	--
0010		FOYTIK RD		120	10	32
0010		SCHAEFER RD		130	23	34
0010		HICKORY HILL		170	13	20
0010		MARQUETTE RD		137	25	24
0010		CTH K		450	---	60
0010		SLAEGER RD		100	23	30
0010		MAN CAL RD		335	20	70
0010		UNDISTRIBUTED		2,745	1,810	15

TOTALS 15,295 38,035 285  
53,330

**RIP RAP**

CATEGORY	LOCATION	606.0200		645.0120	
		MEDIUM	CY	TYPE	HR
0010	CTH K, NE		4		9
0010	CTH K, SE		5		11
0010	CTH K, SE		11		23
0010	CTH K, SW		8		17
0010	CTH K, NW		7		15

TOTALS 35 75

**SAWING SUMMARY**

CATEGORY	STATION	STATION	LOCATION	LF
0010	233+40	- 233+40	CTH W, LT/RT	24
0010	269+66	- 270+18	CTH W, LT	49
0010	284+51	- 284+79	CTH W, LT	25
0010	310+42	- 310+67	CTH W, LT	25
0010	336+39	- 336+64	CTH W, RT	28
0010	337+17	- 337+41	CTH W, LT	24
0010	366+74	- 367+03	CTH W, RT	27
0010	366+77	- 367+01	CTH W, LT	25
0010	369+12	- 369+38	CTH W, RT	23
0010	385+97	- 386+20	CTH W, LT	22
0010	392+64	- 392+88	CTH W, RT	23
0010	393+58	- 393+82	CTH W, LT	22
0010	420+75	- 421+01	CTH W, RT	31
0010	420+77	- 421+04	CTH W, LT	30
0010	421+65	- 421+64	CTH W, LT/RT	24

TOTALS 402

**LOCATING NO-PASSING ZONES**

CATEGORY	LOCATION	MI
0010	ENTIRE PROJECT	3.50

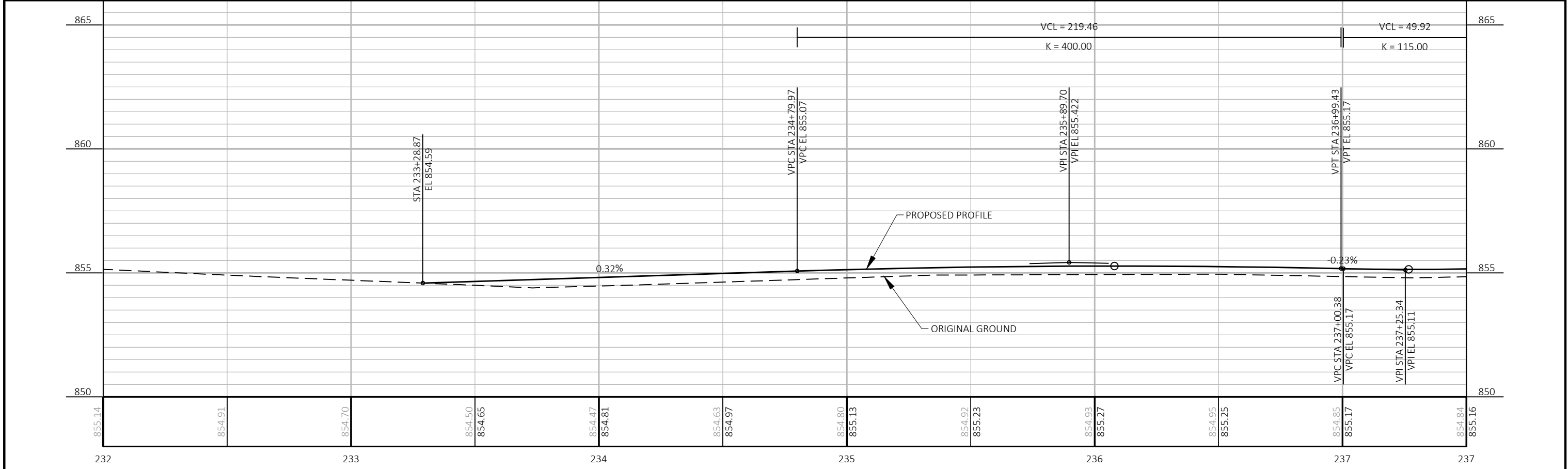
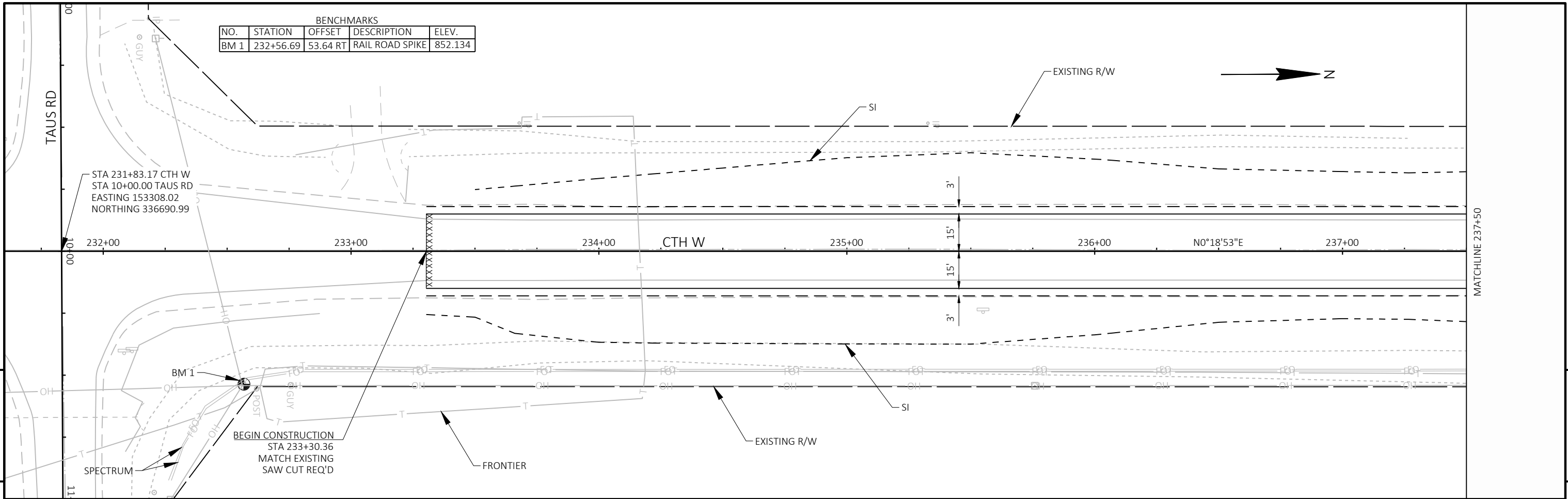
TOTAL 3.50

**CONSTRUCTION STAKING SUMMARY**

CATEGORY	LOCATION	650.4500	650.5000	650.5500	650.6501	650.8000	650.9911	650.9920
		SUBGRADE	BASE	CURB & GUTTER	STRUCTURE LAYOUT	RESURFACING	SUPPLEMENTAL	SLOPE STAKES
		LF	LF	LF	EACH	LF	EACH	LF
0010	CTH W	3,860	19,588	345	1	16,072	1	19,588

TOTALS 3,860 19,588 345 1 16,072 1 19,588

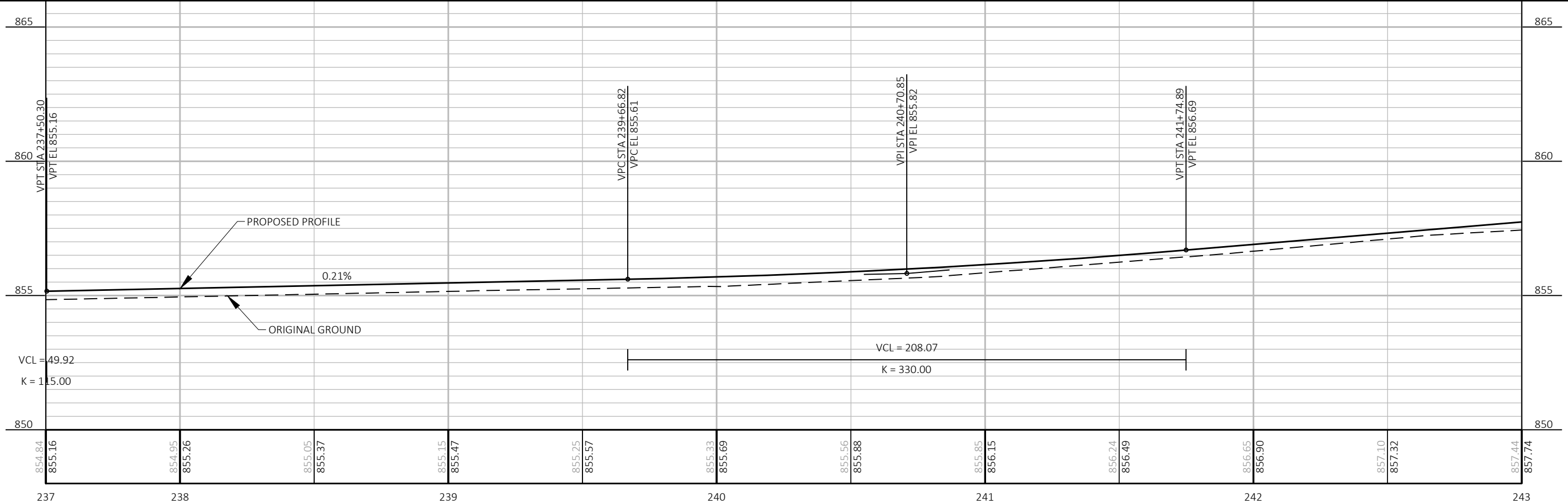
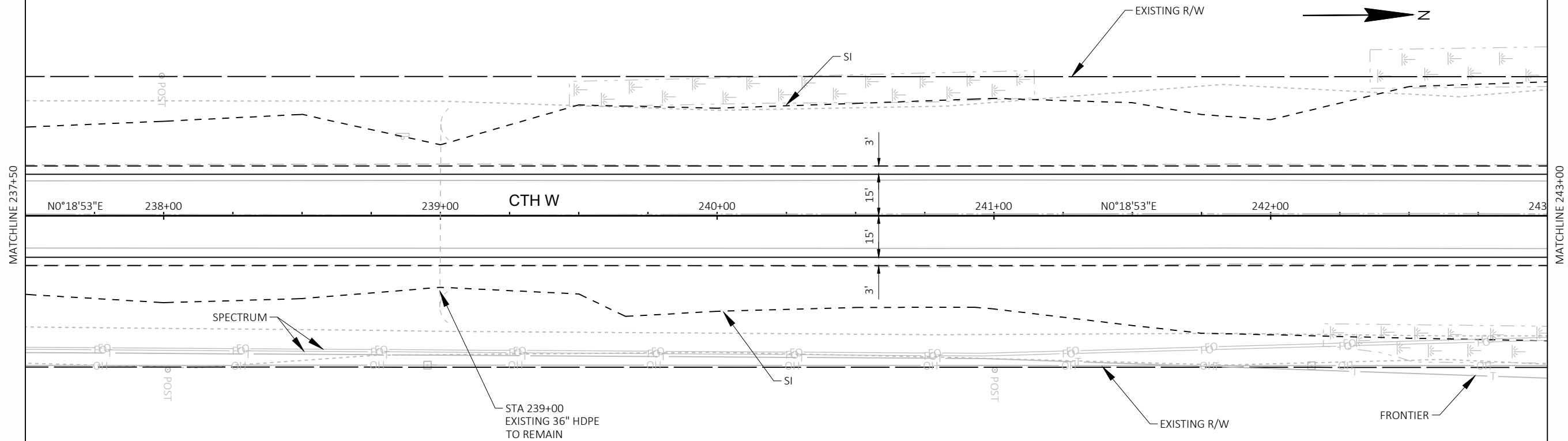
BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
BM 1	232+56.69	53.64 RT	RAIL ROAD SPIKE	852.134



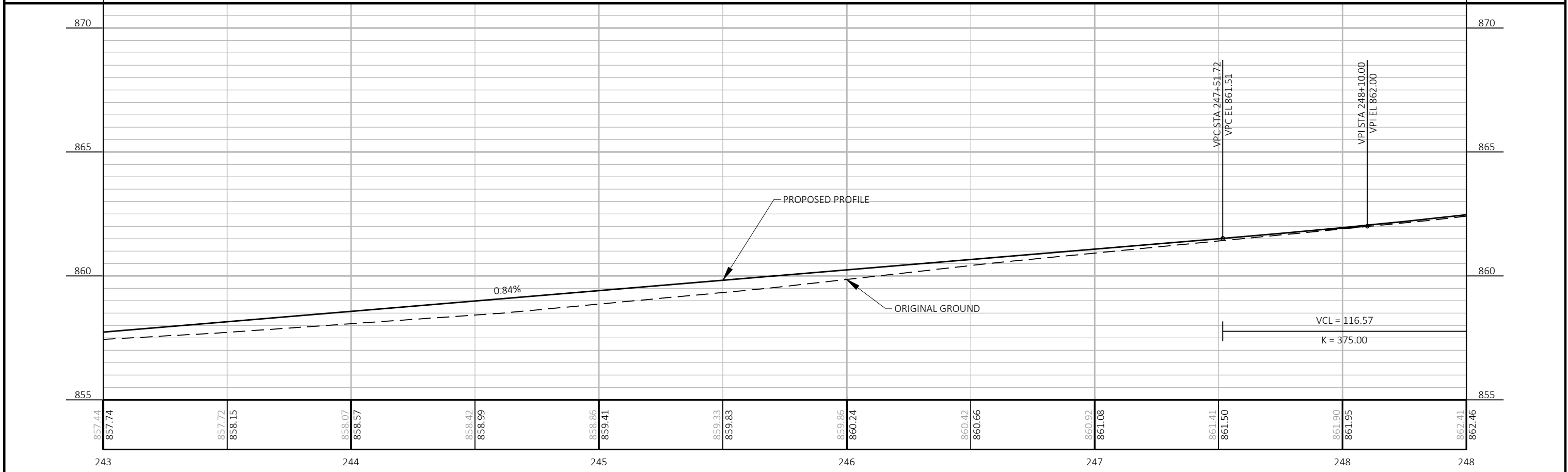
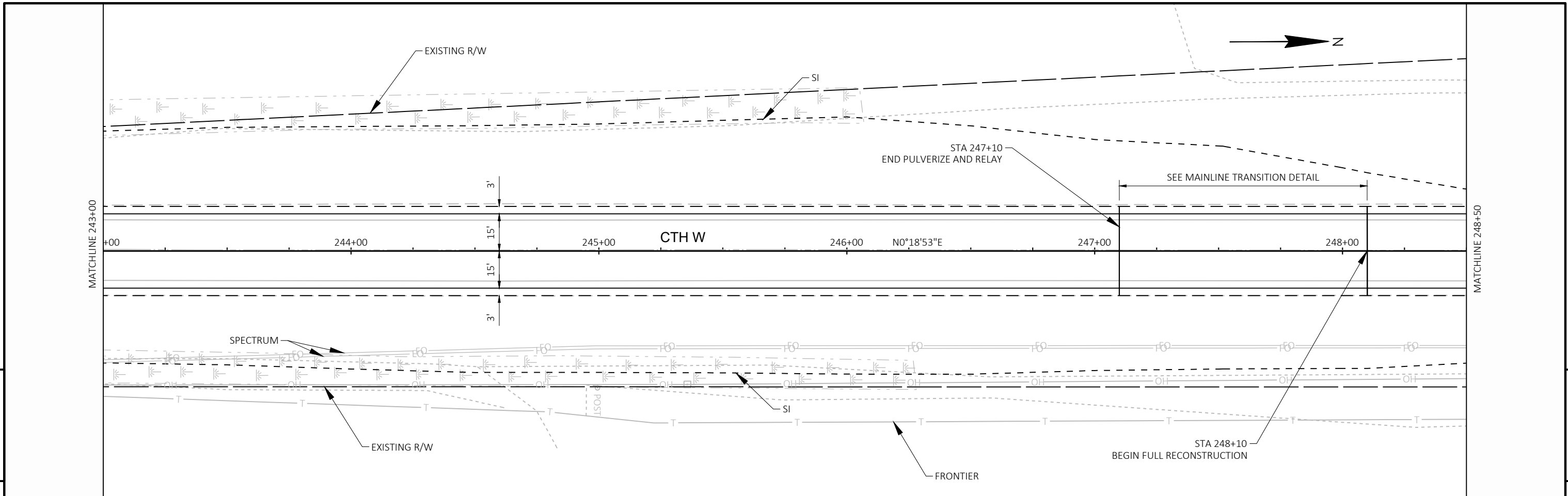
PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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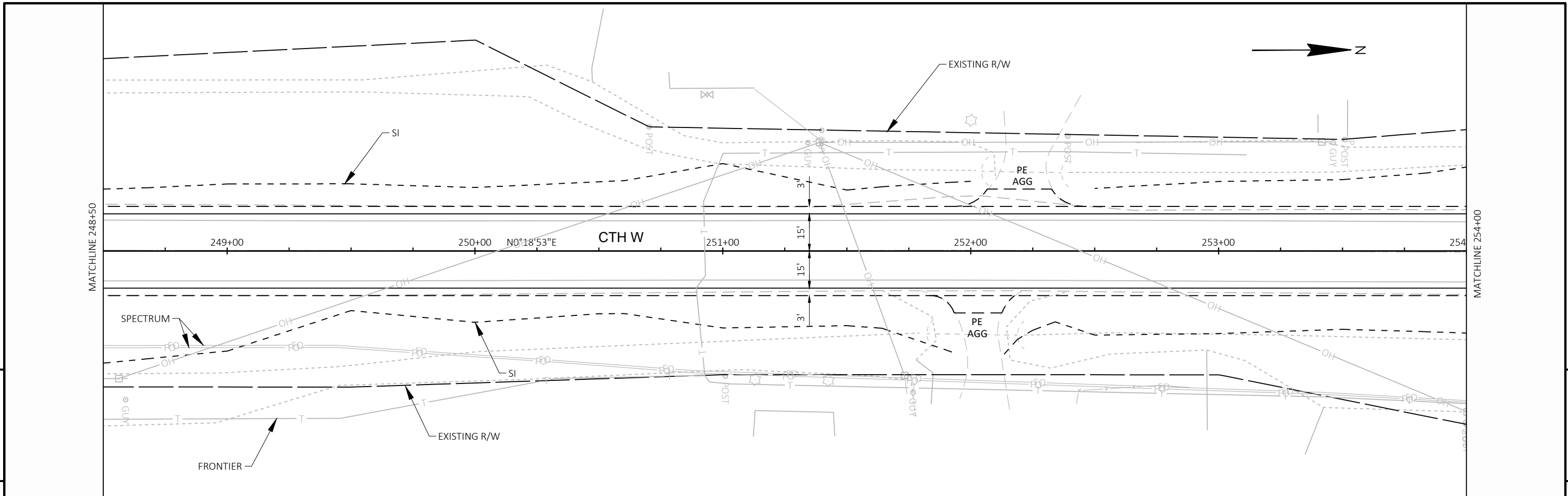
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PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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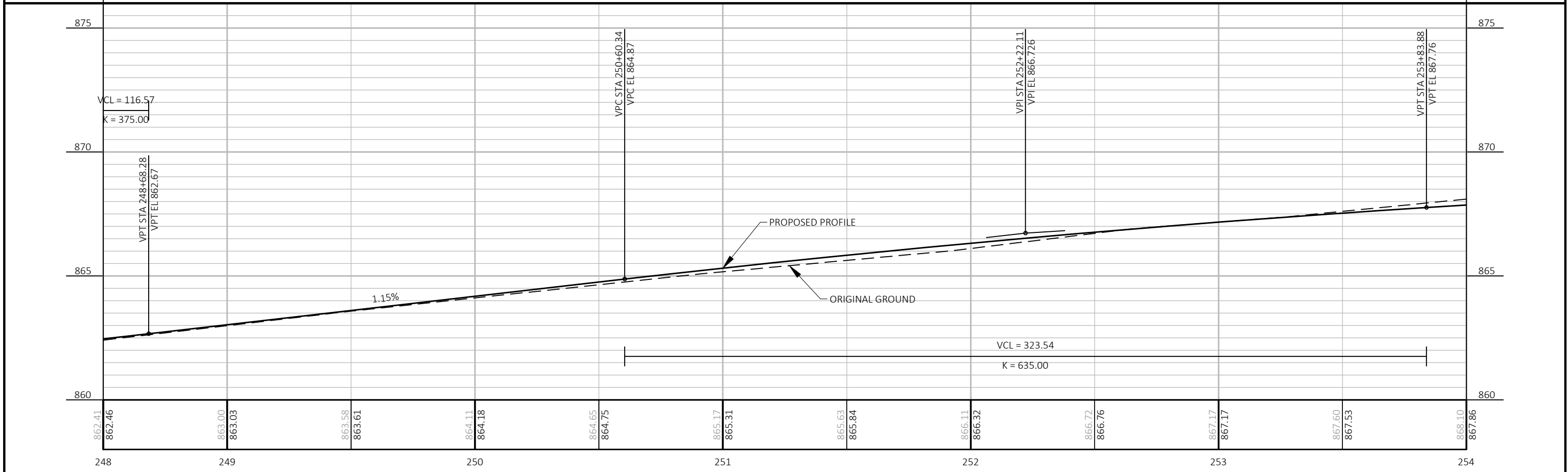


PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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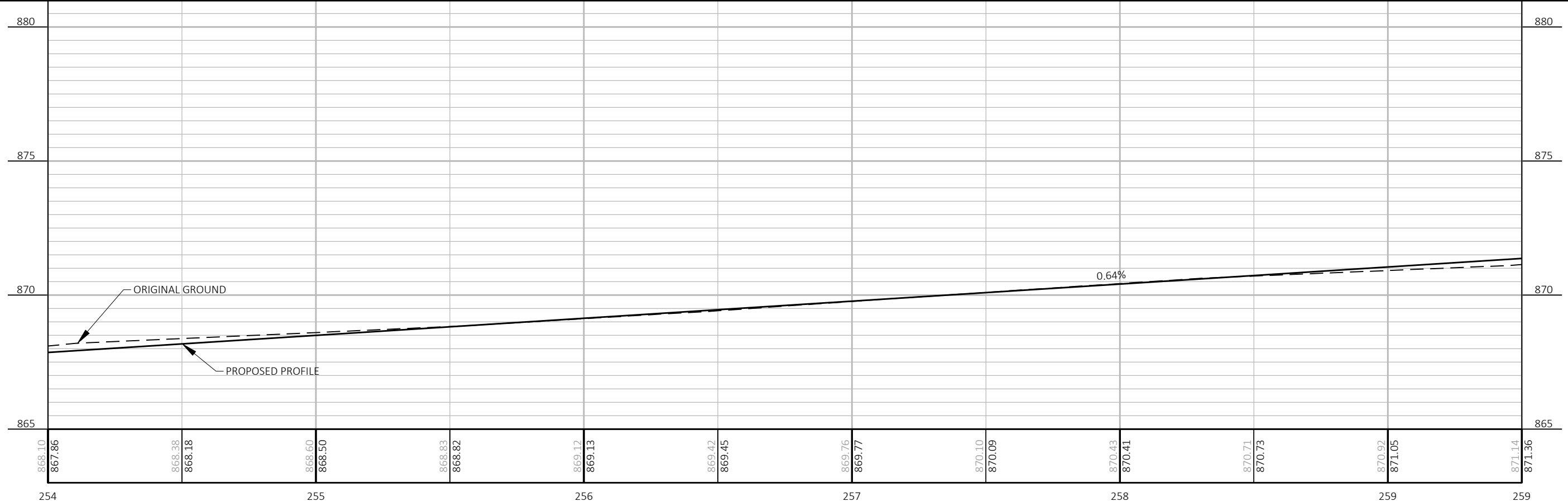
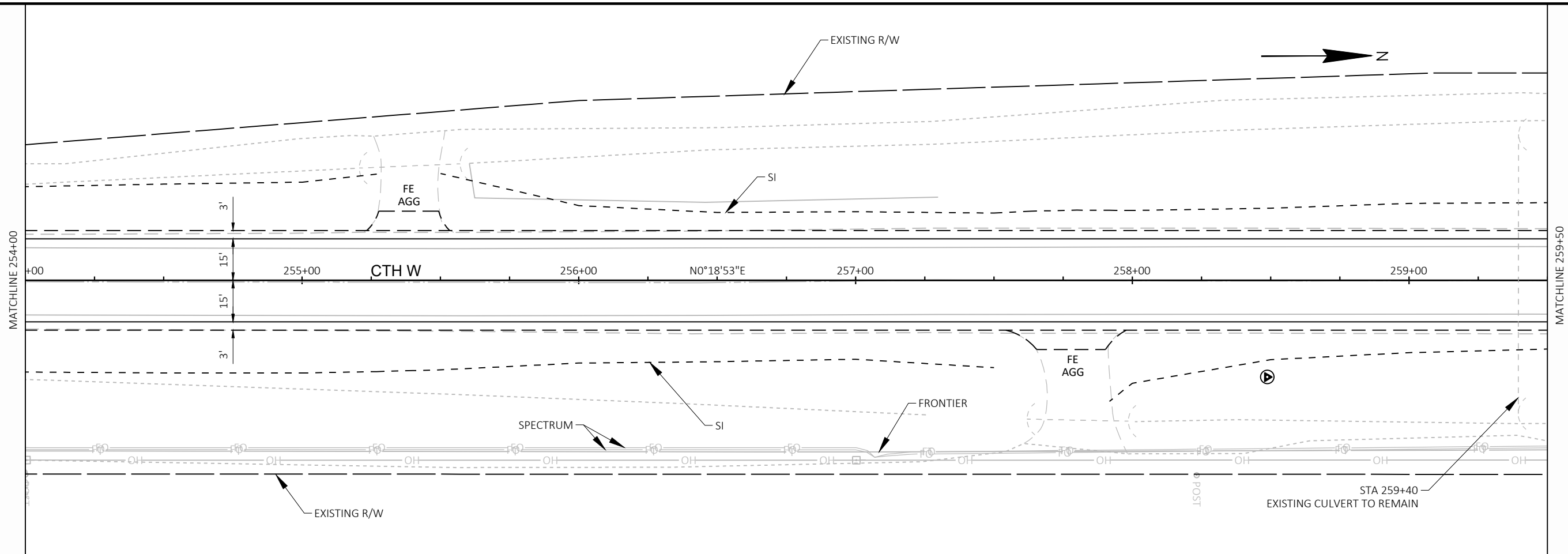


PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      PLAN AND PROFILE: CTH W      SHEET: E

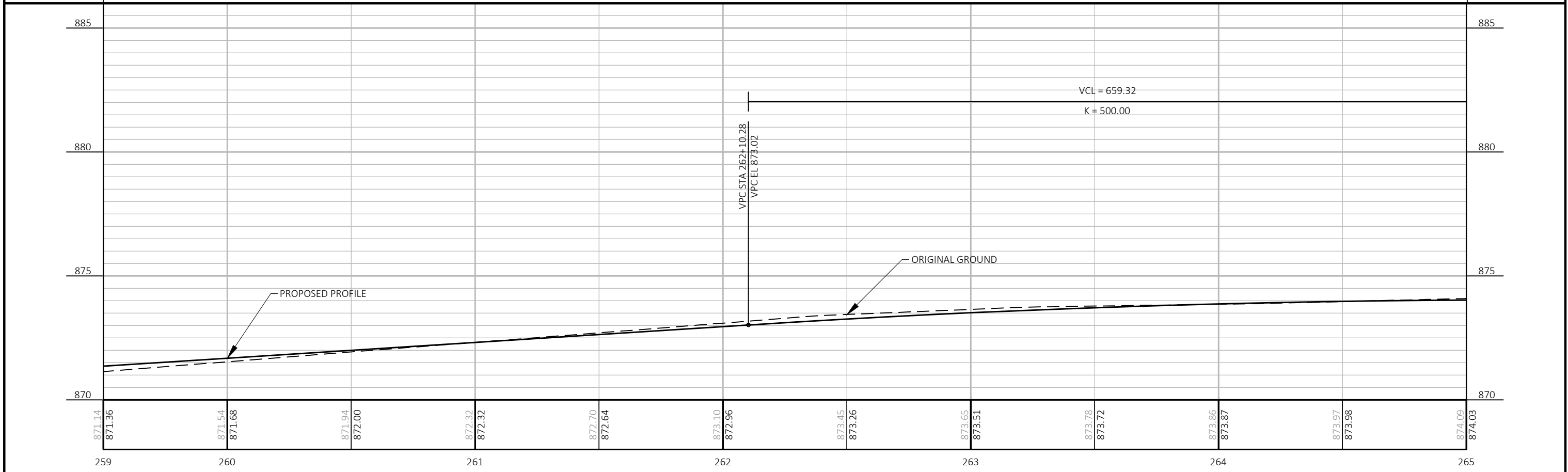
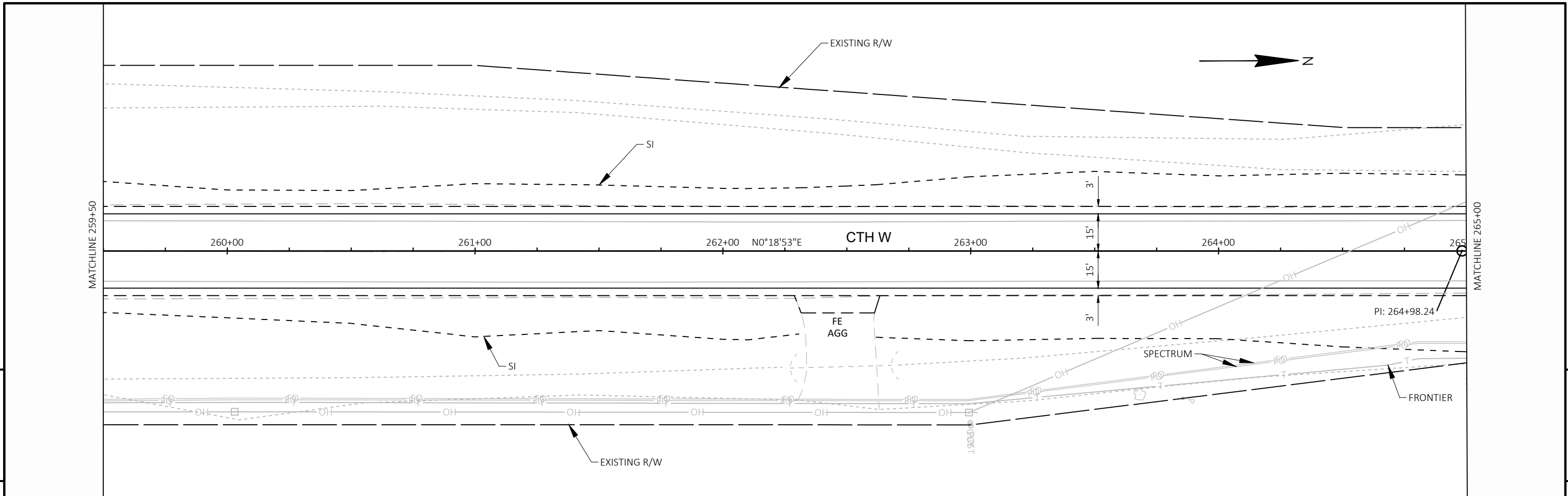


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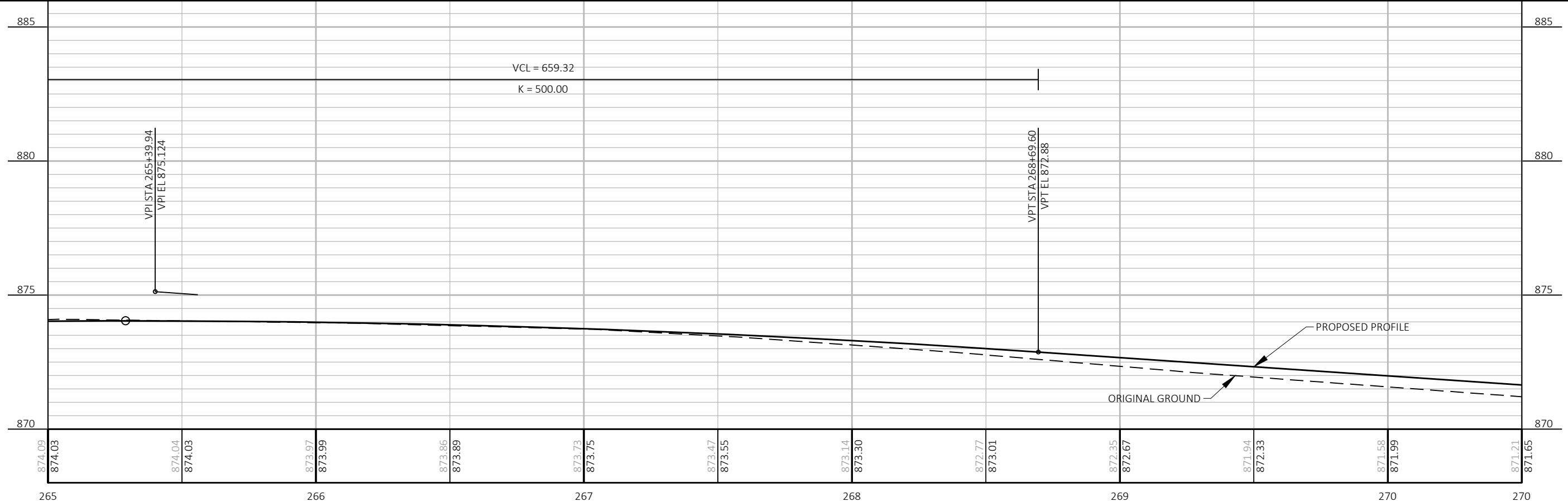
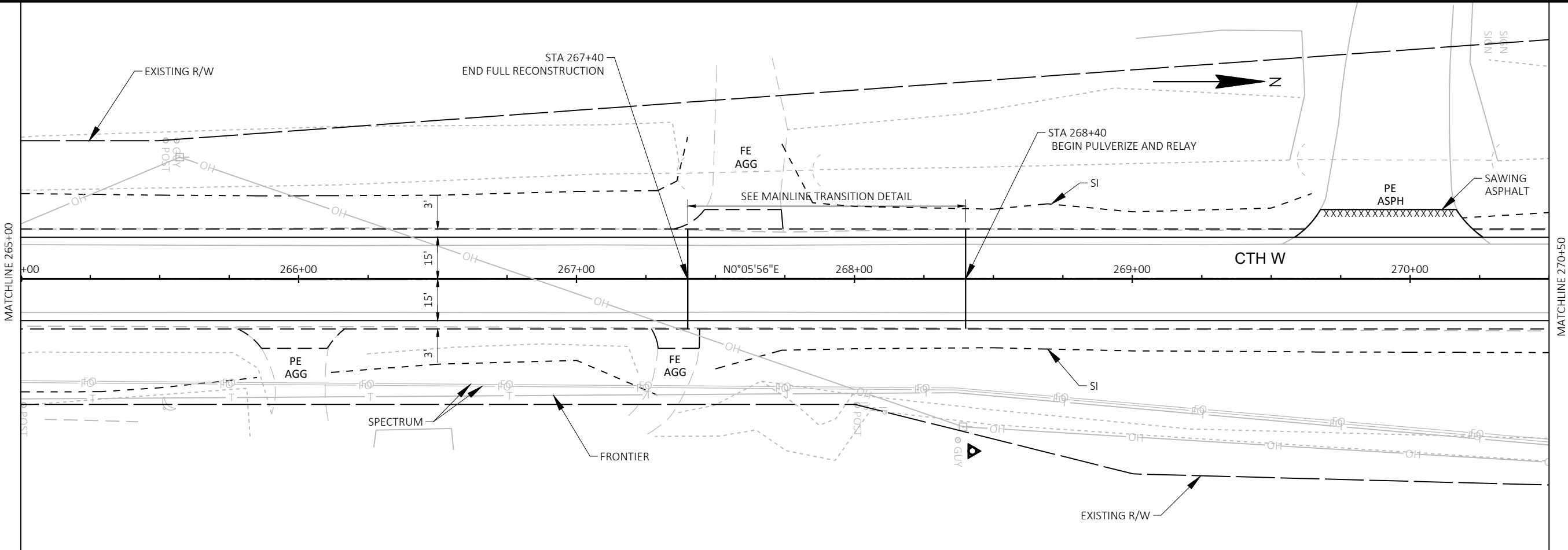
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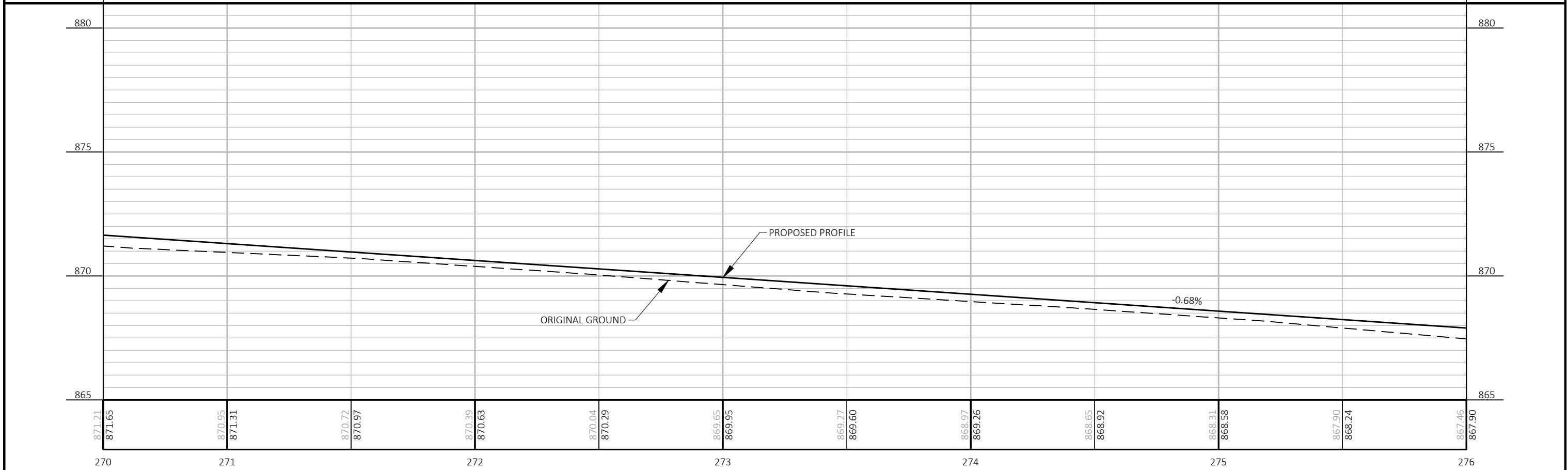
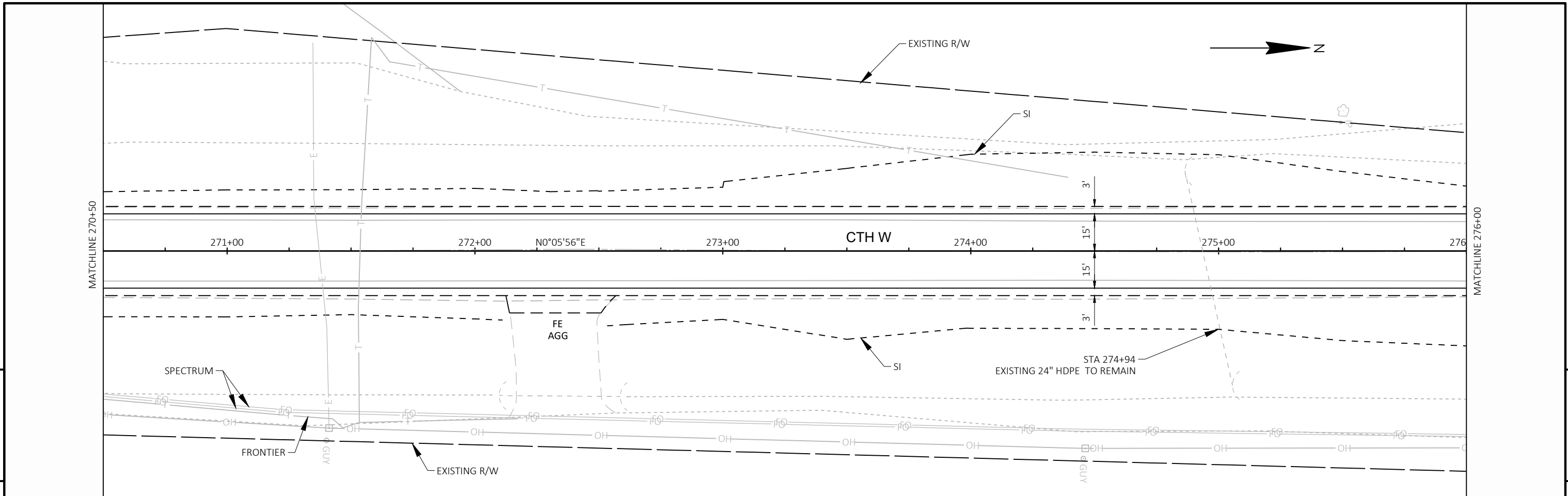
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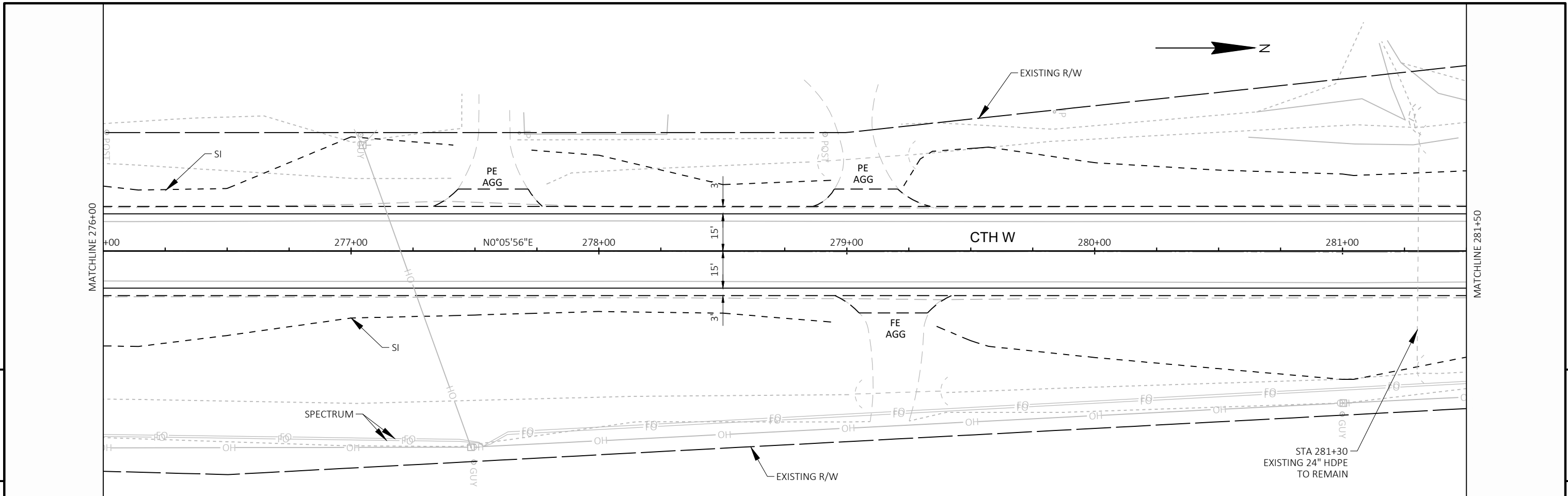
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PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET E
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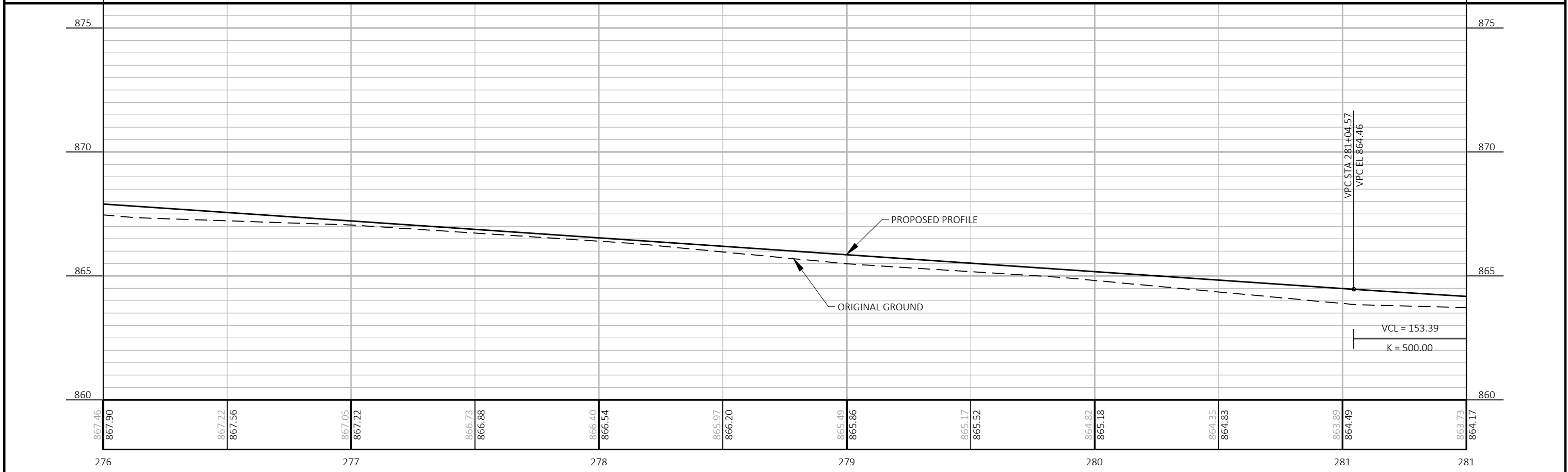


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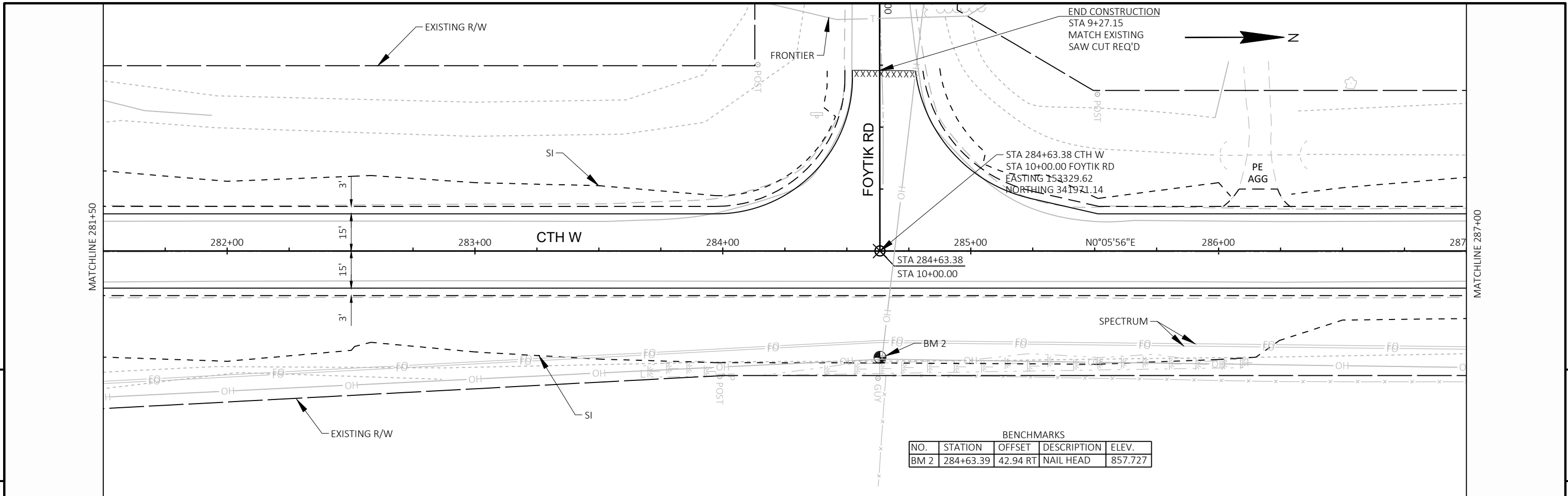


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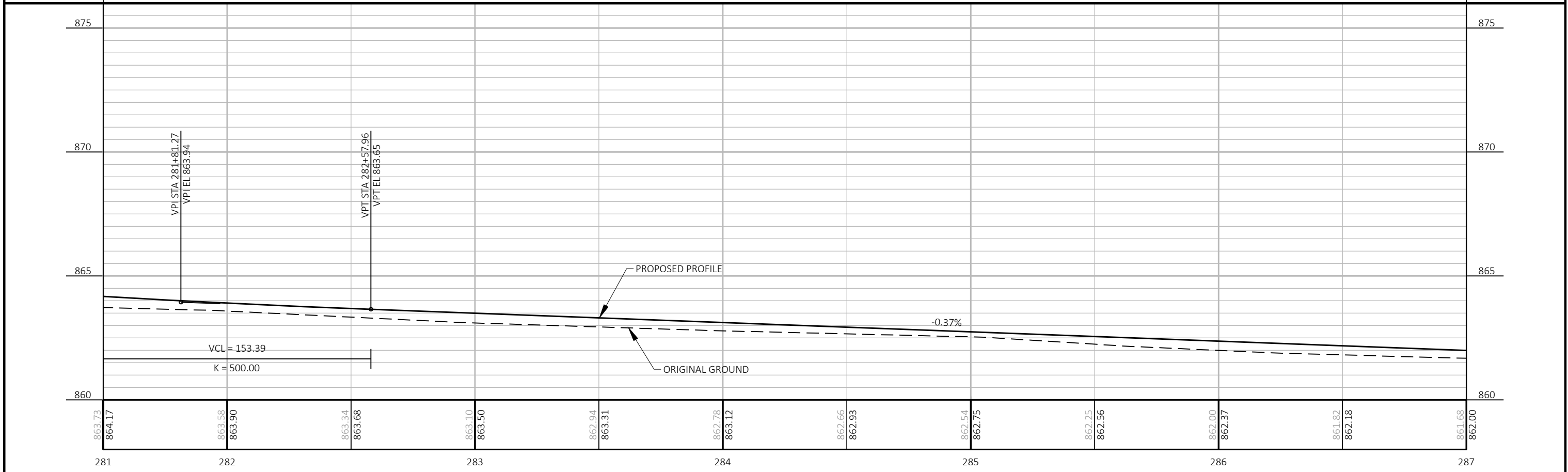


PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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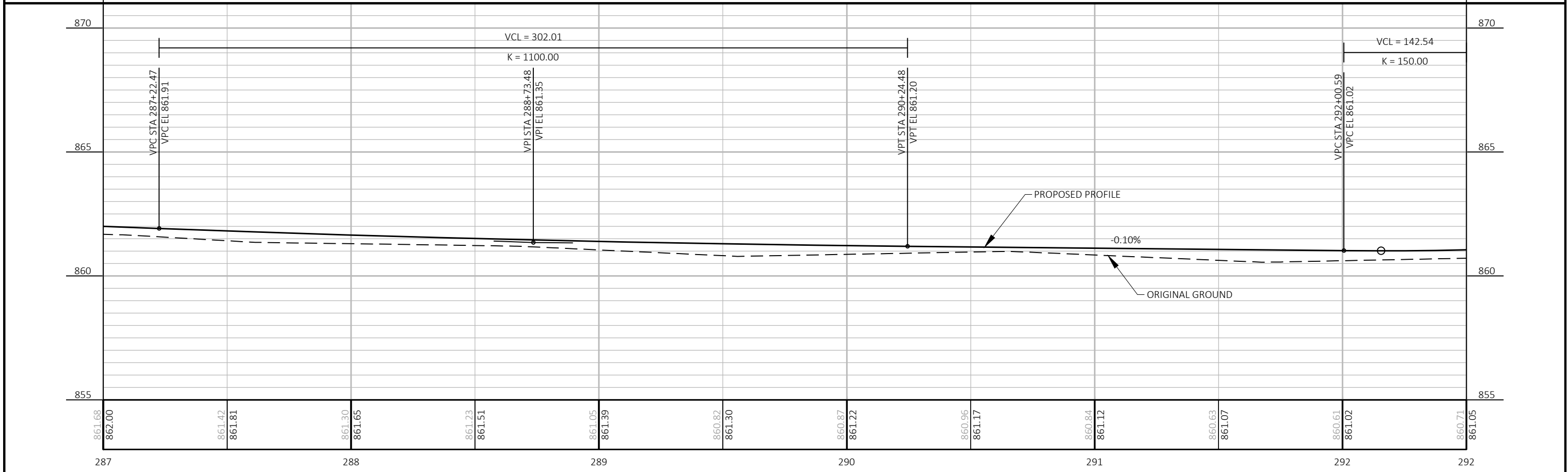
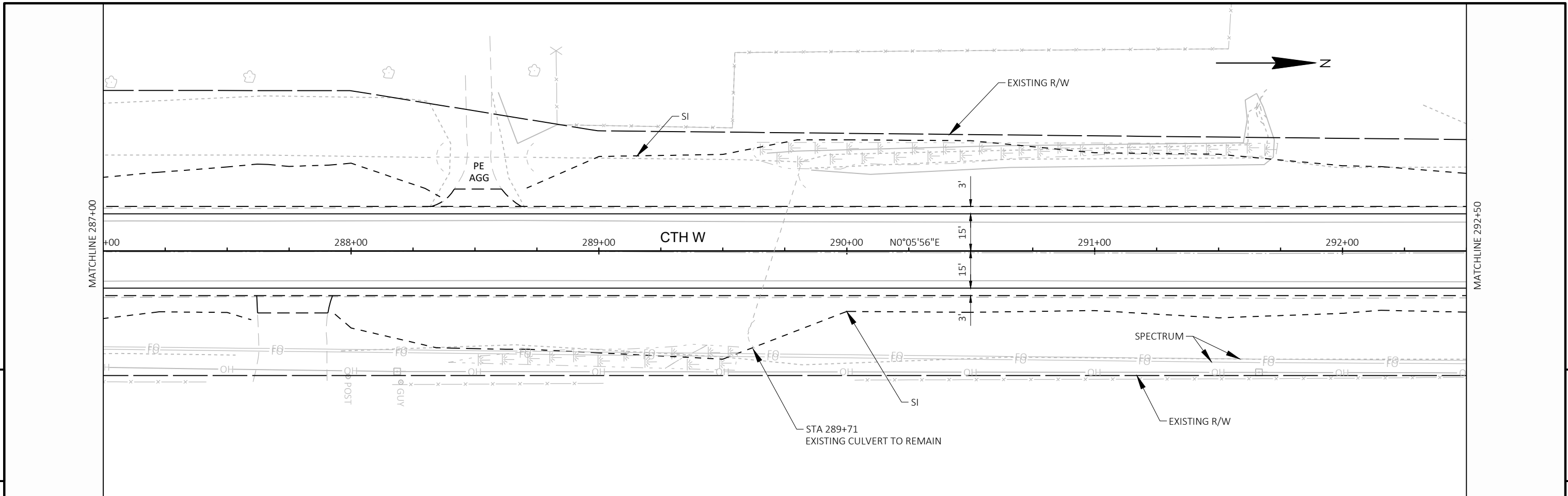


BENCHMARKS

NO.	STATION	OFFSET	DESCRIPTION	ELEV.
BM 2	284+63.39	42.94 RT	NAIL HEAD	857.727



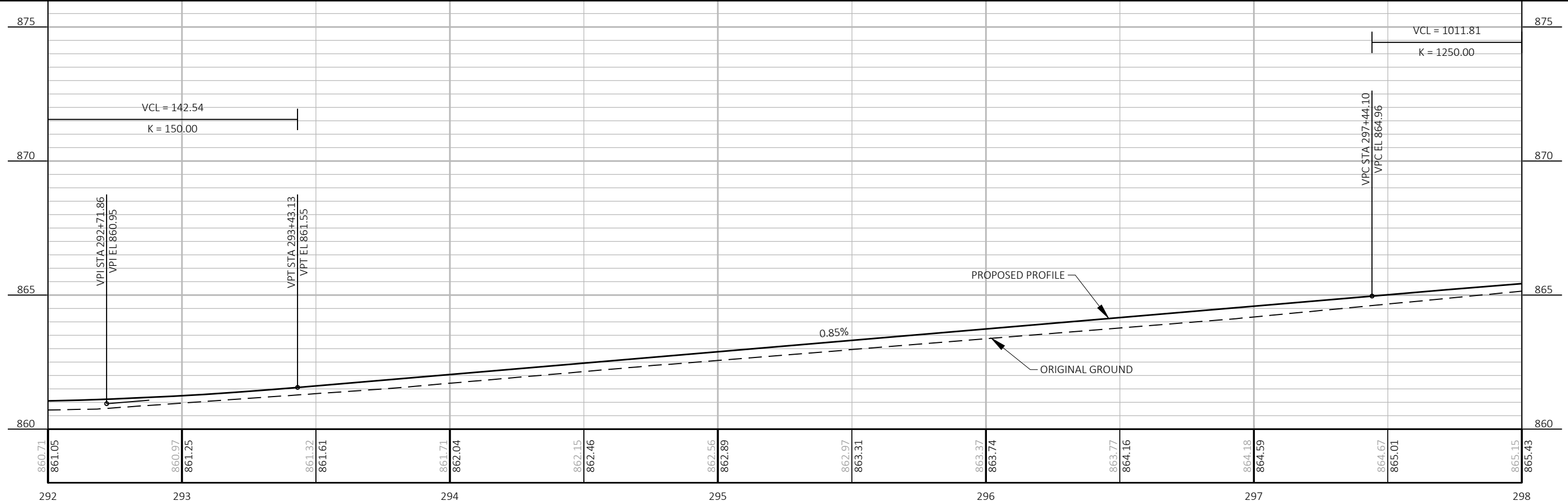
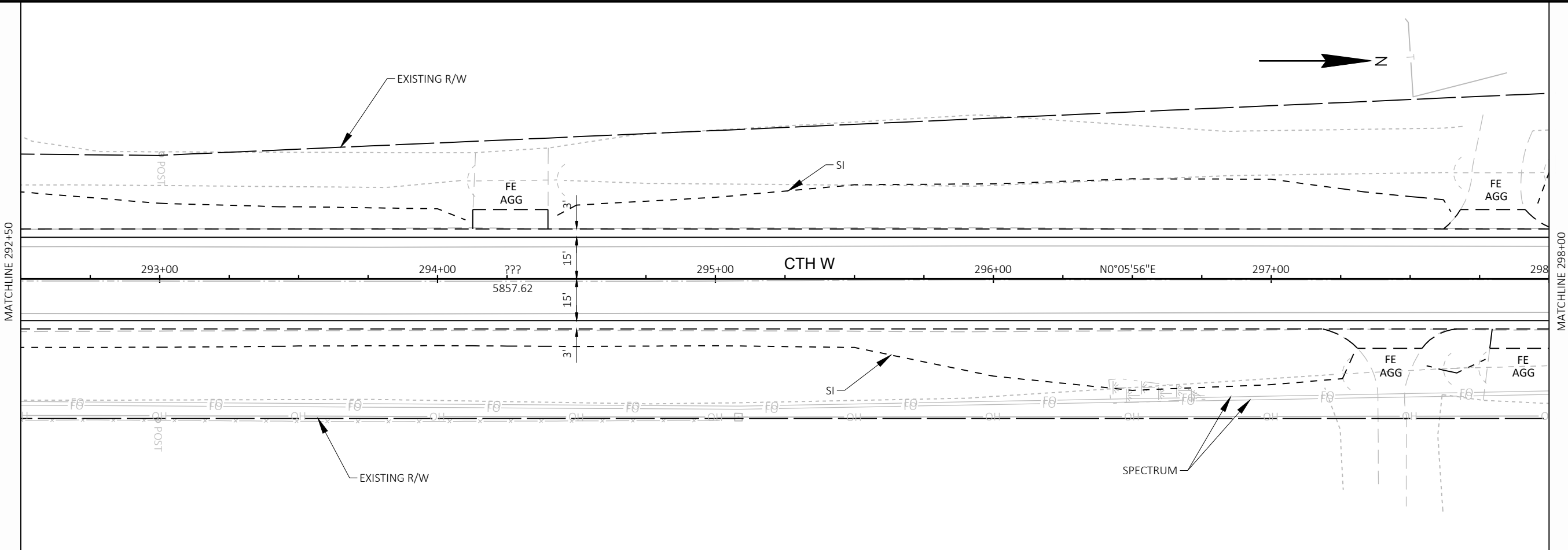
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      PLAN AND PROFILE: CTH W      SHEET: 5

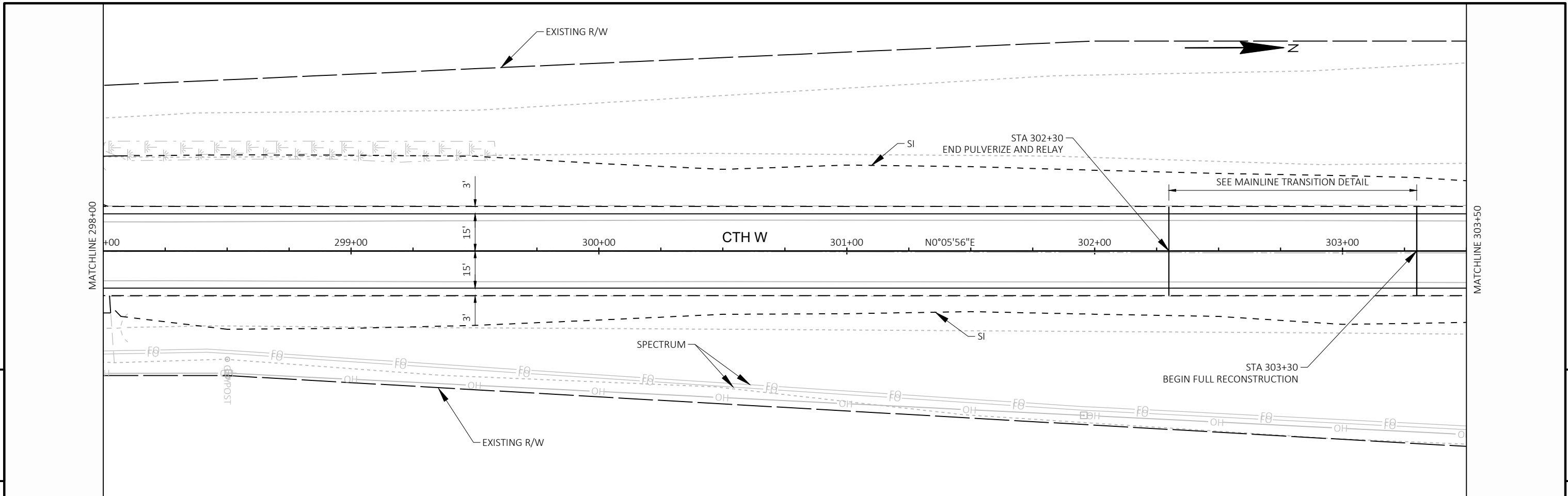
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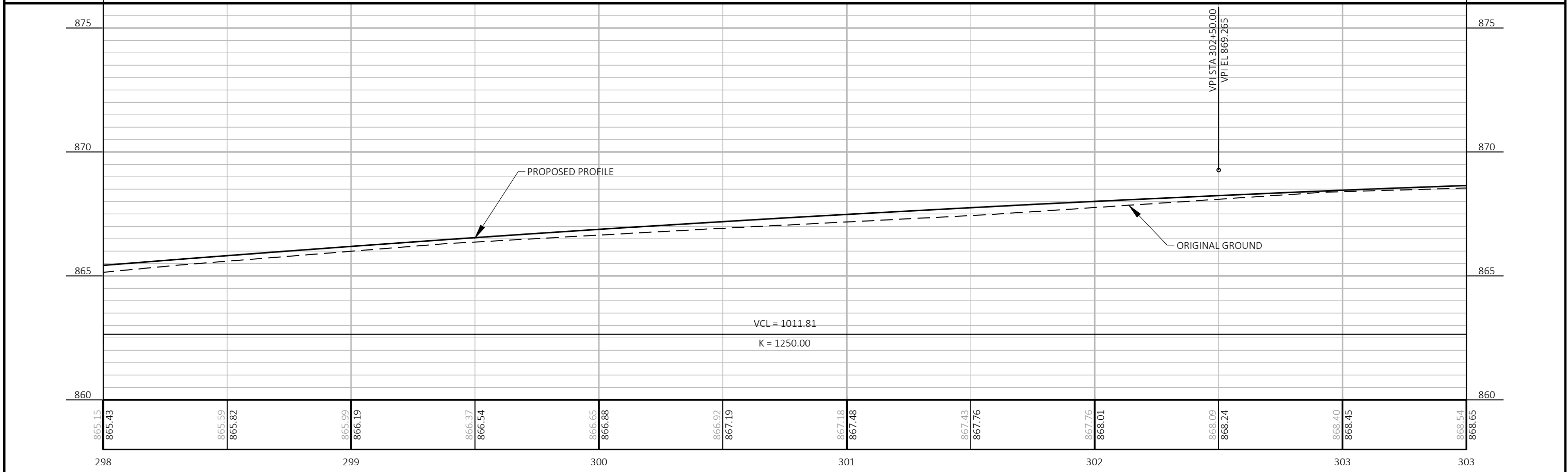
PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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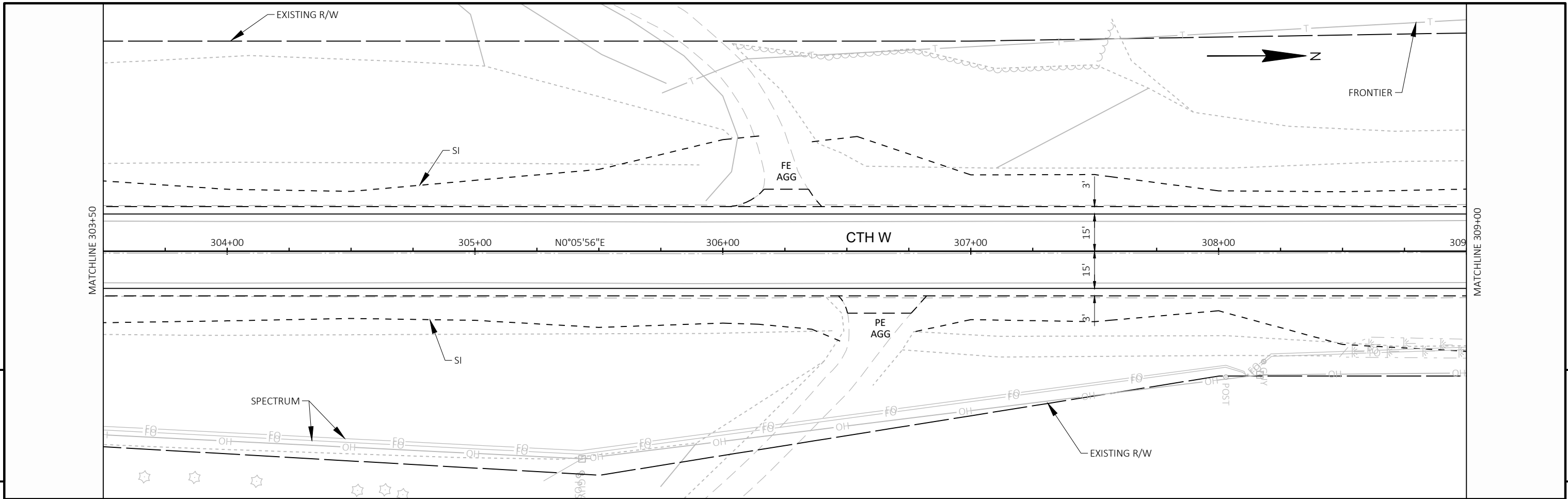


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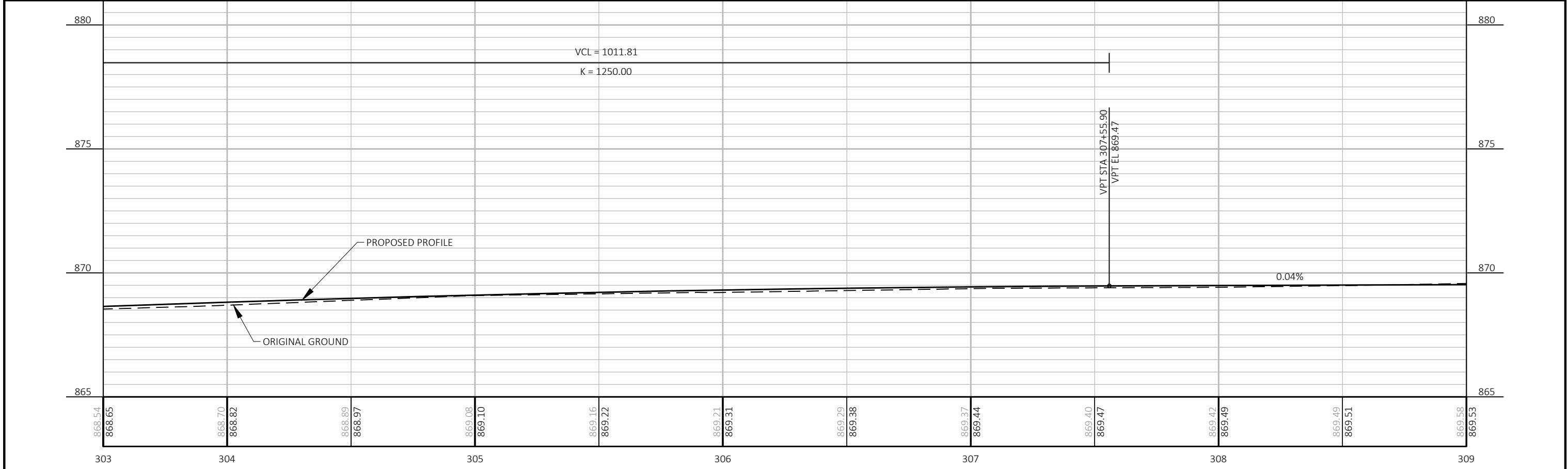


PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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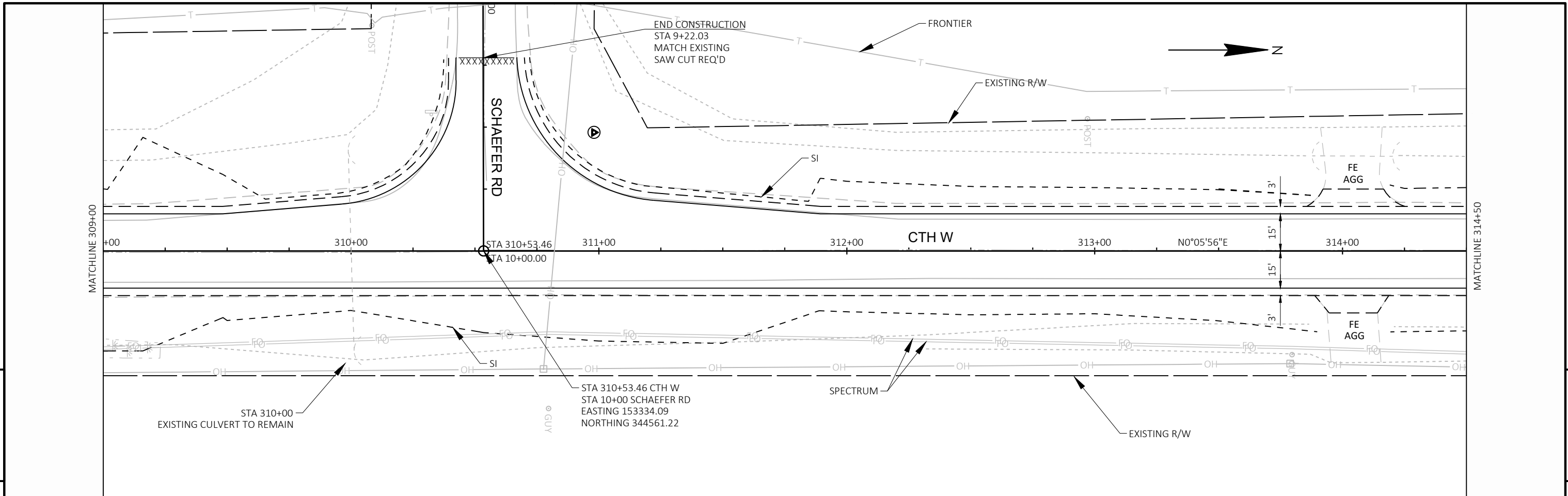


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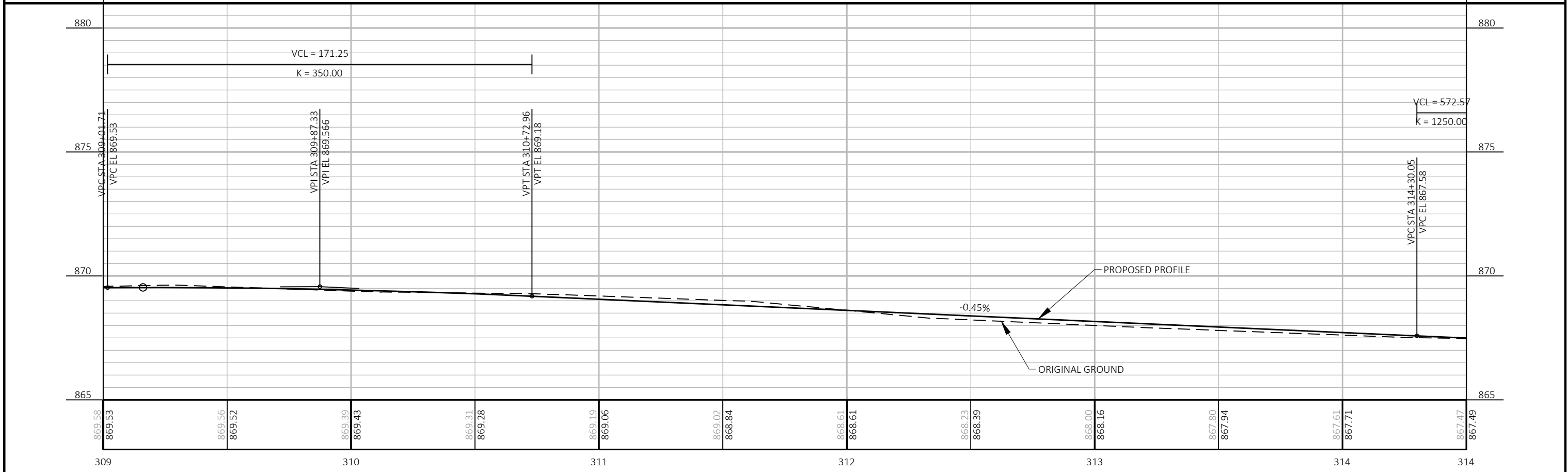


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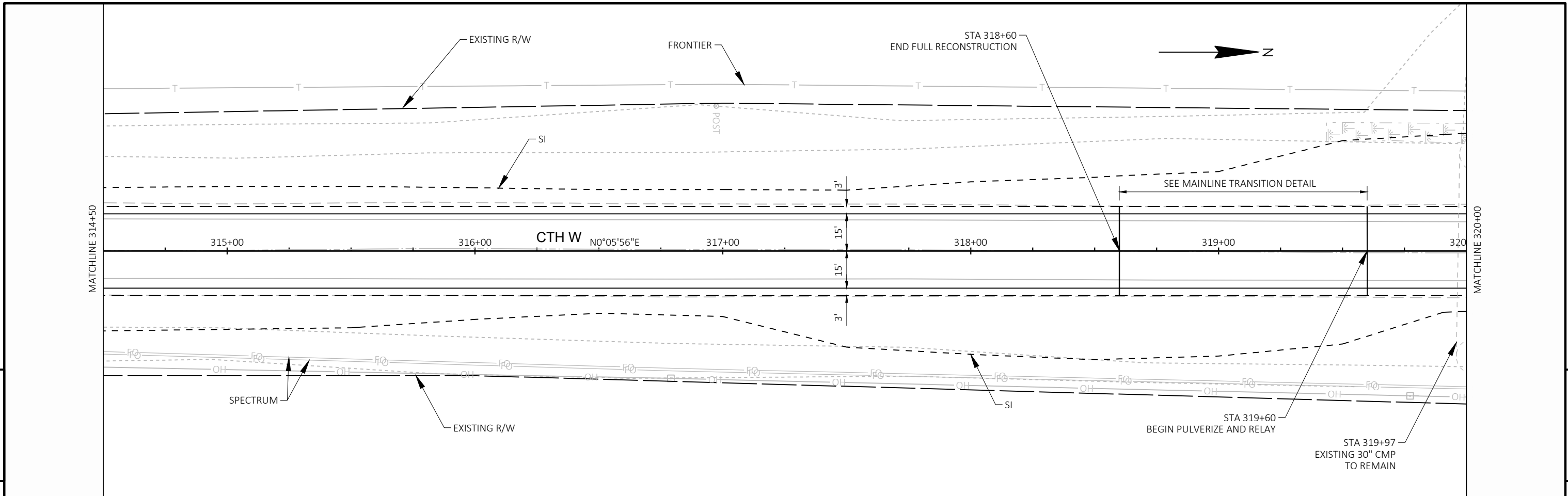


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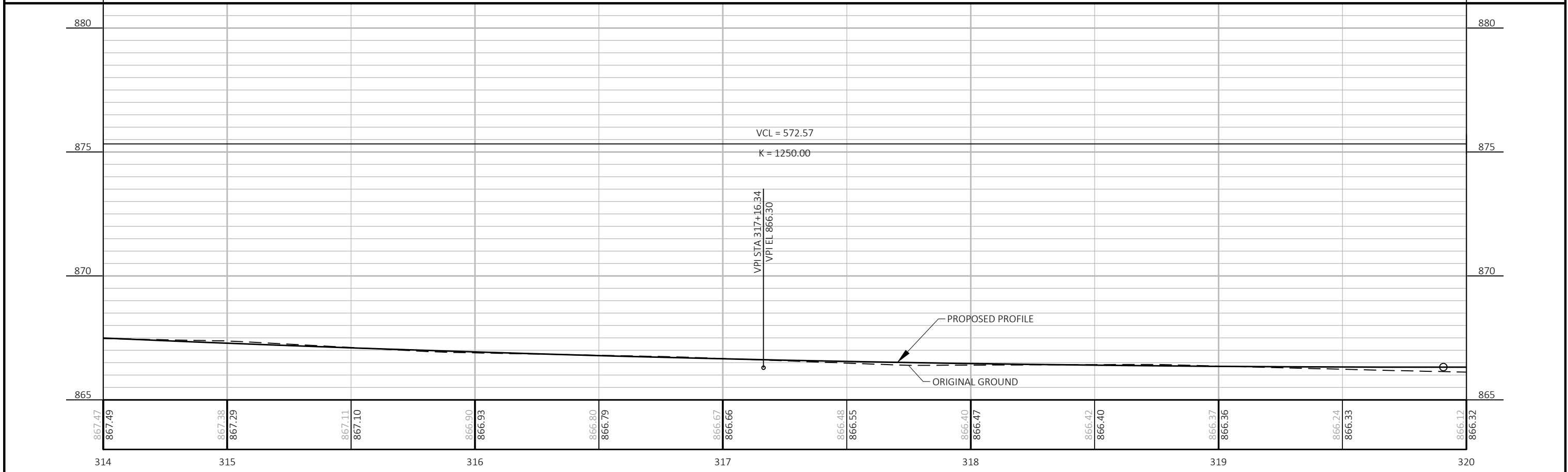


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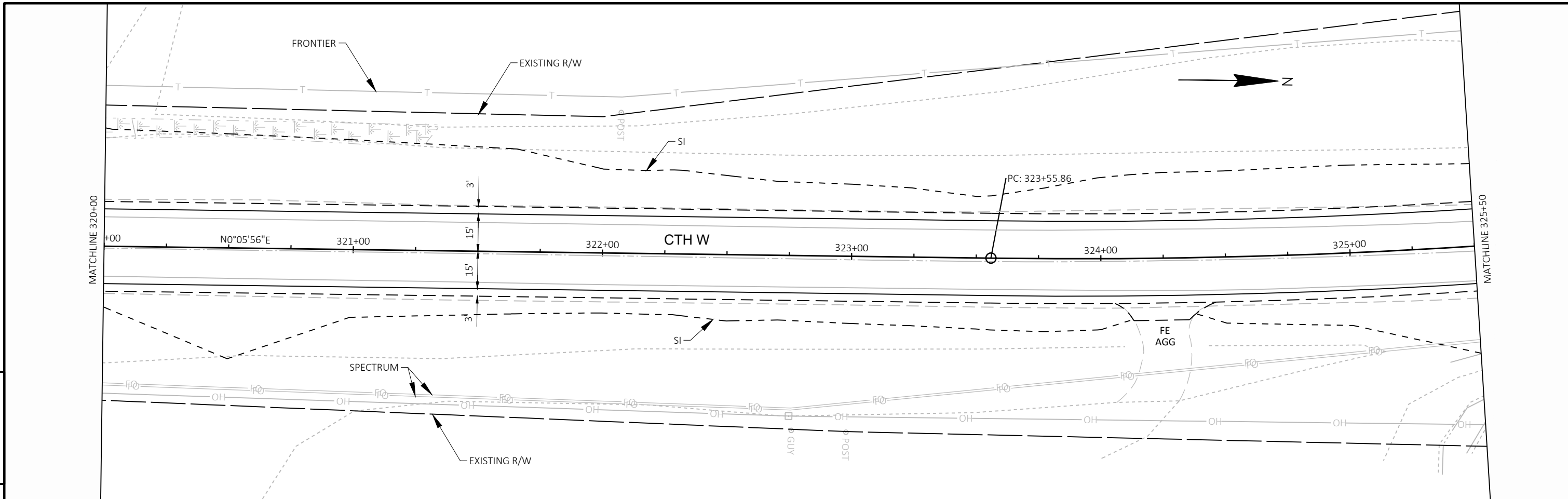


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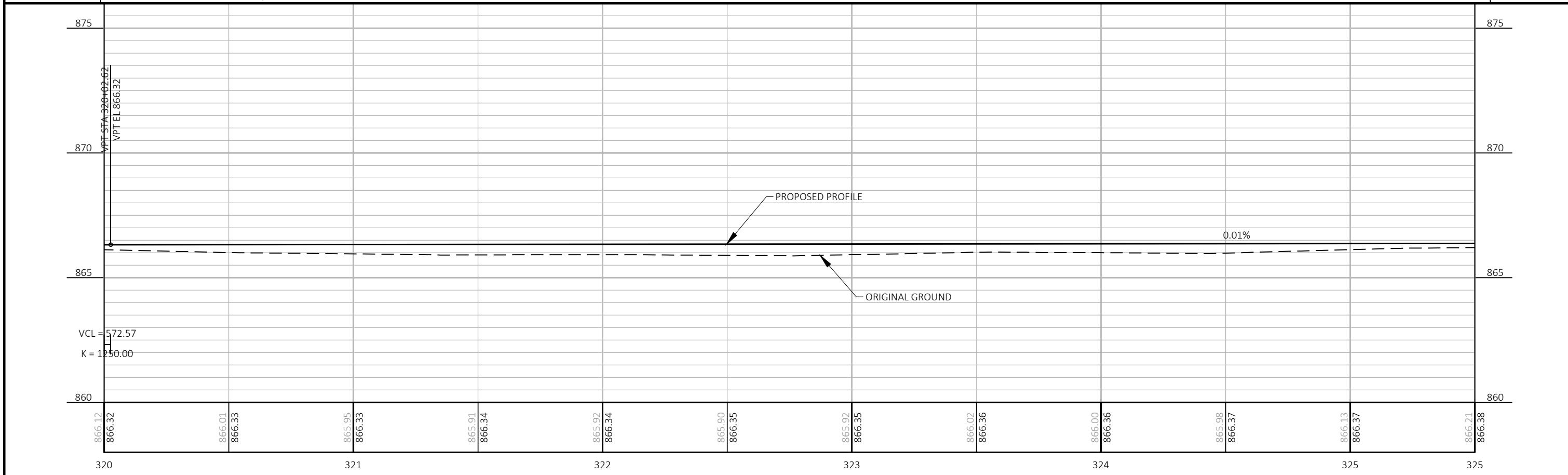


PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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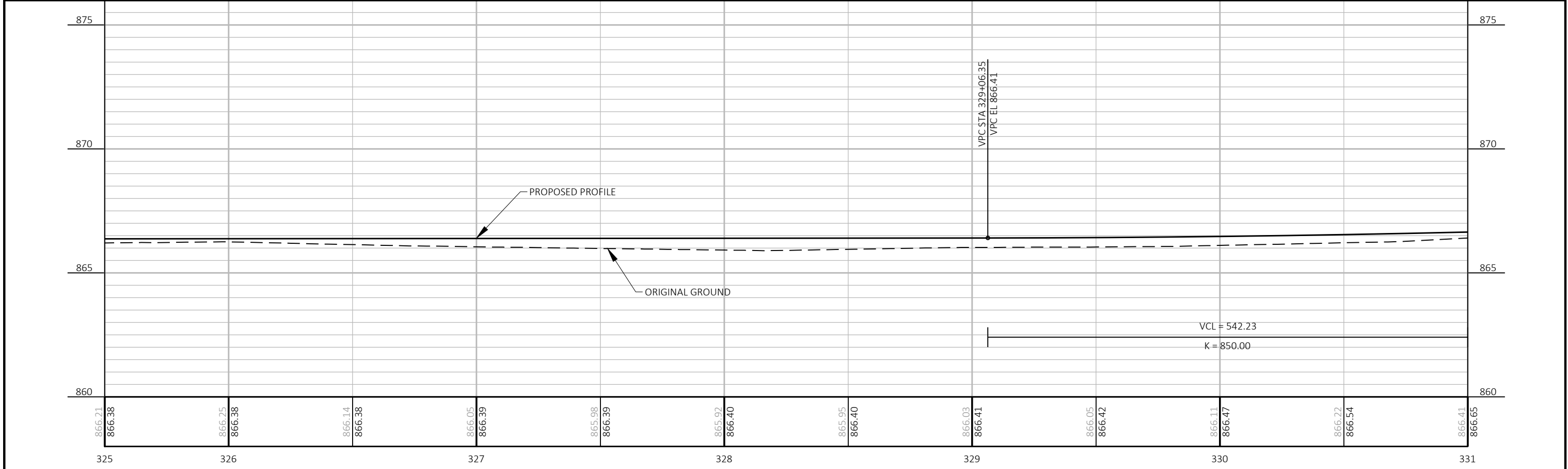
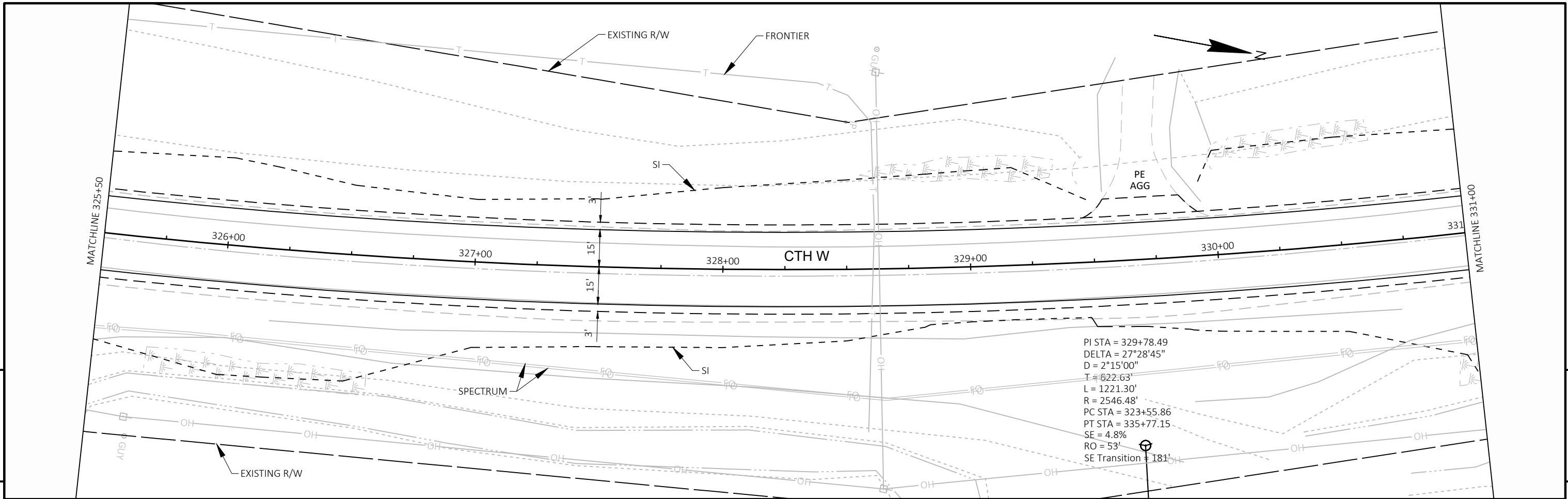


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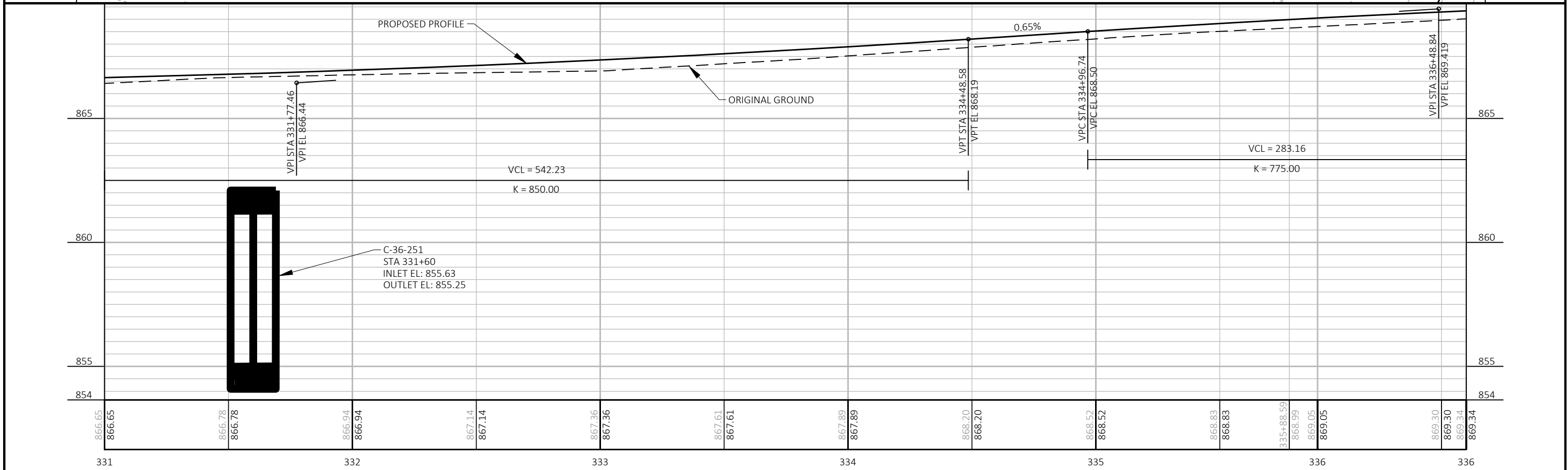
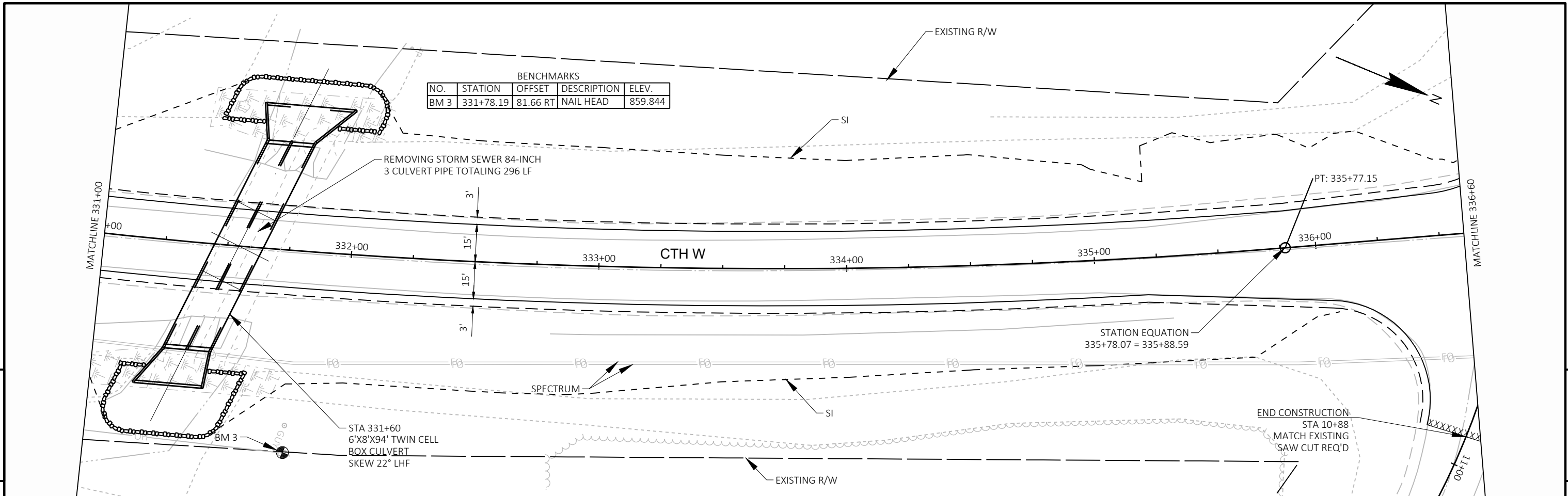
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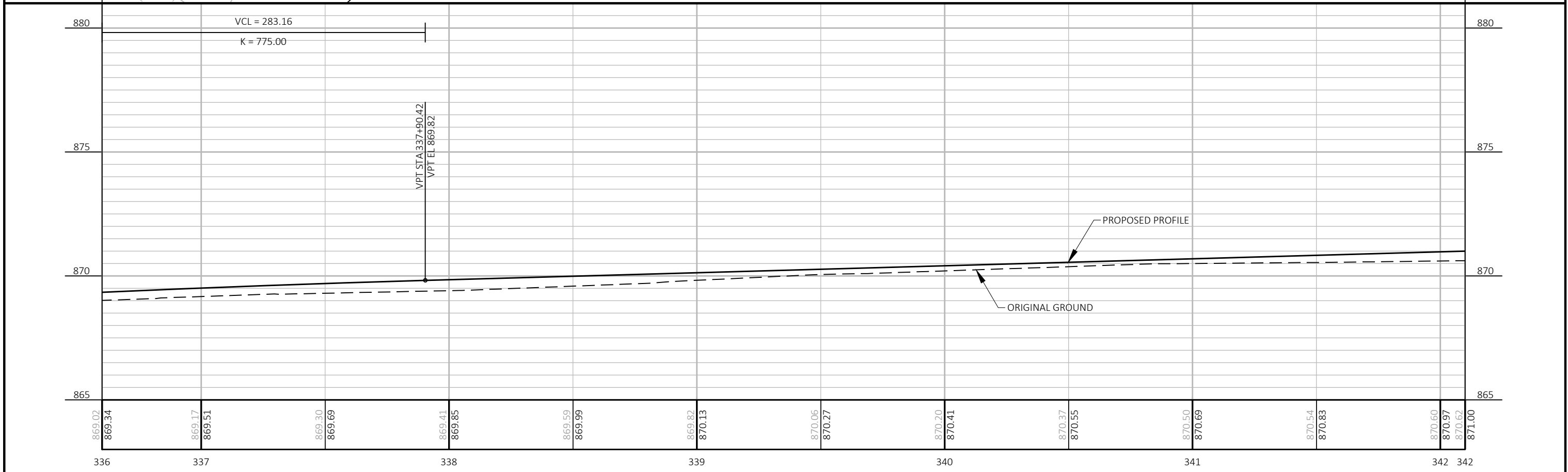
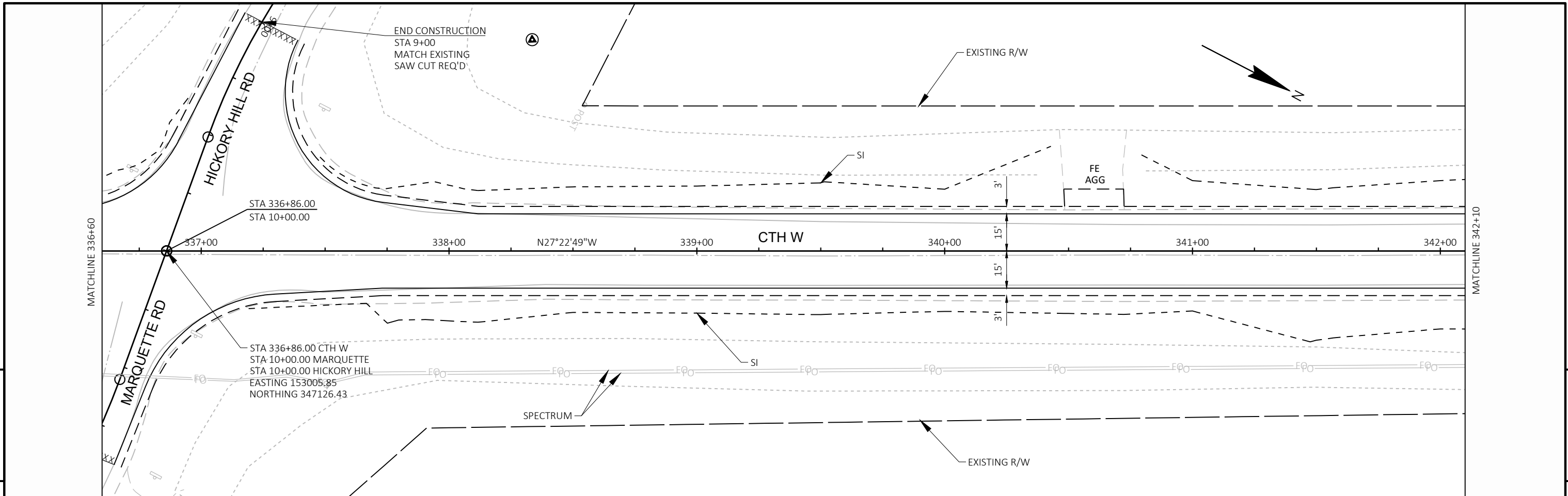
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PROJECT NO: 4323-08-72 HWY: CTH W COUNTY: MANITOWOC PLAN AND PROFILE: CTH W SHEET E



PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	E
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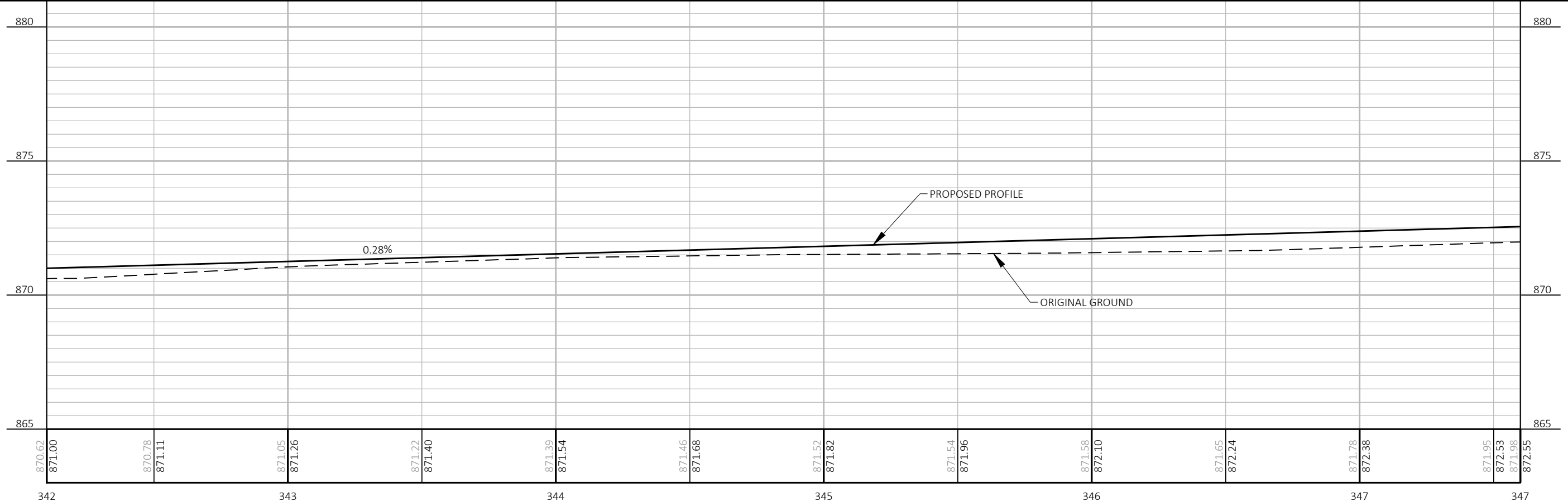
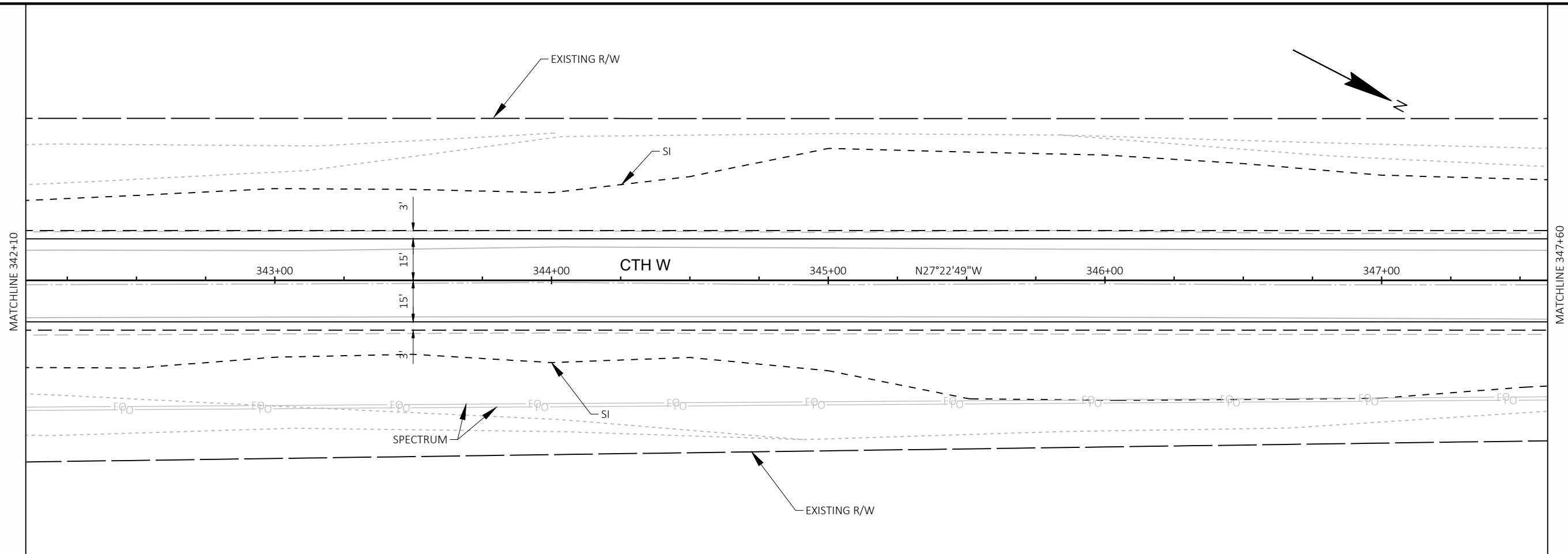


PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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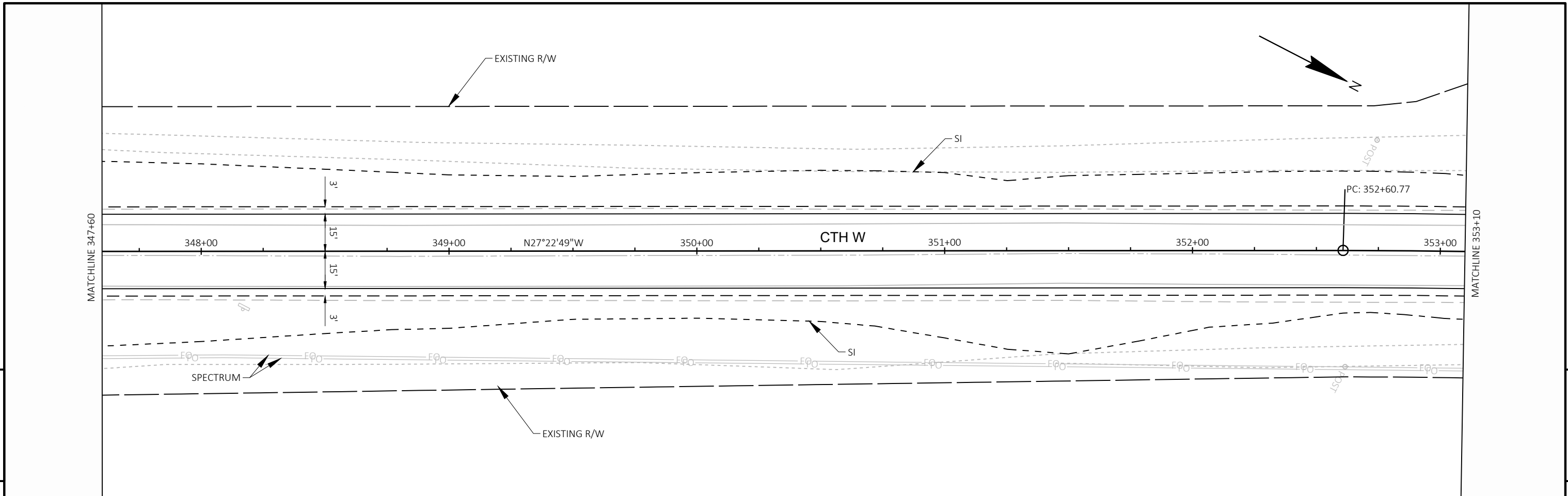


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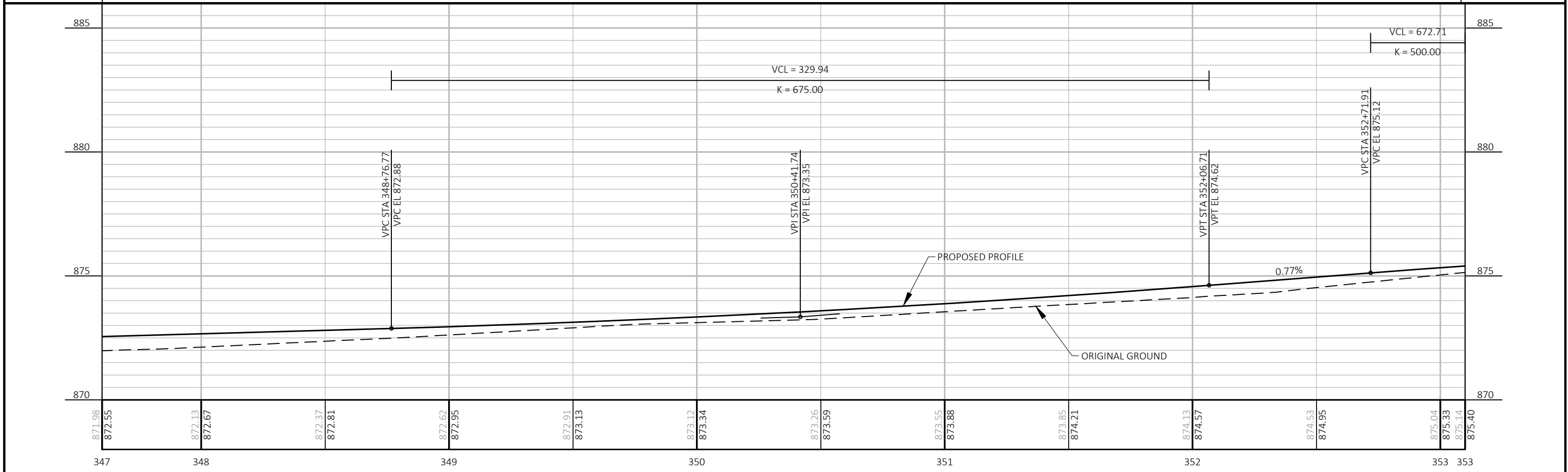


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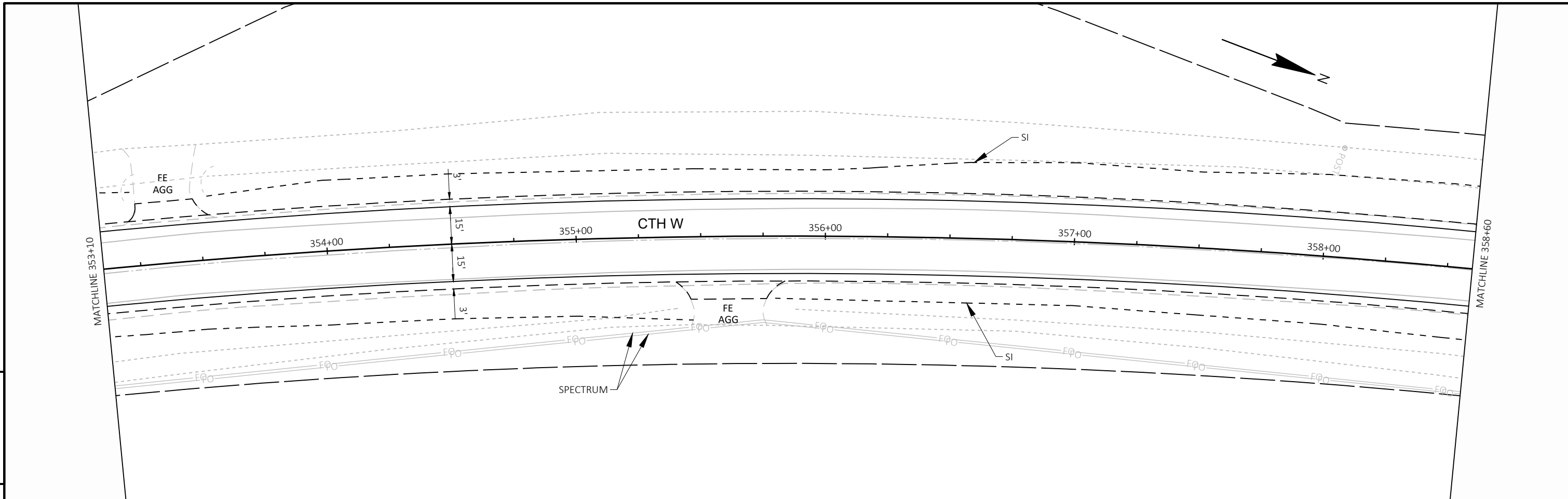


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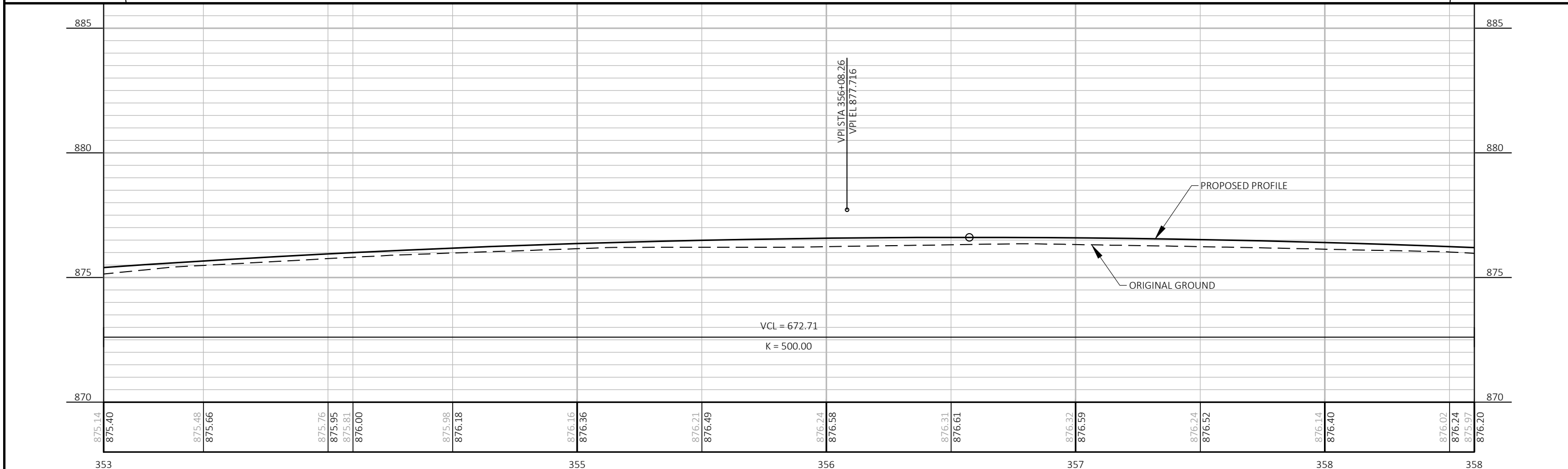


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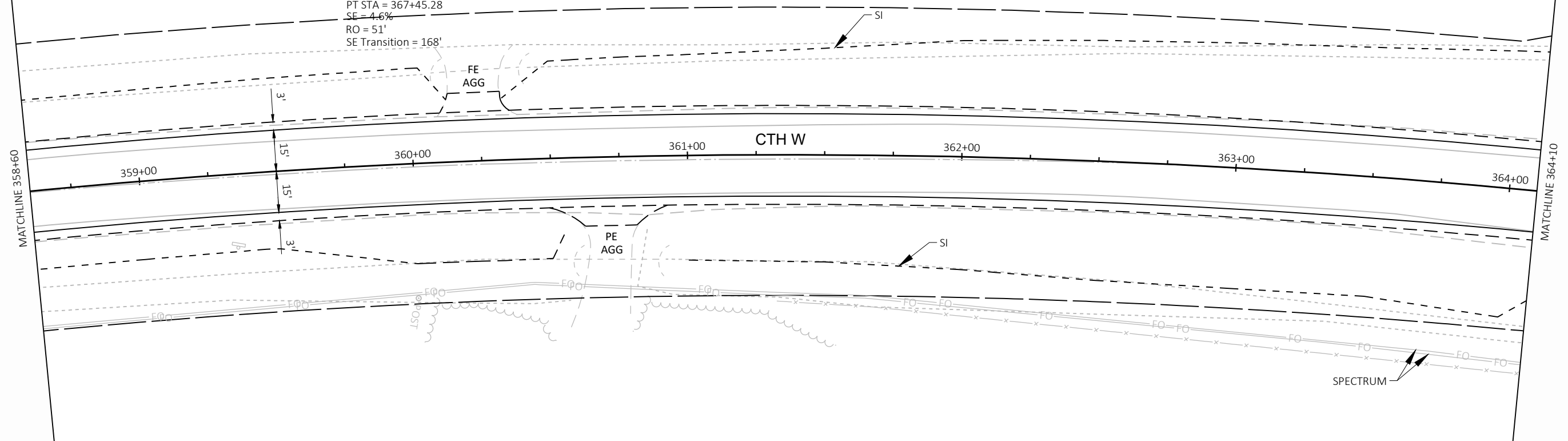
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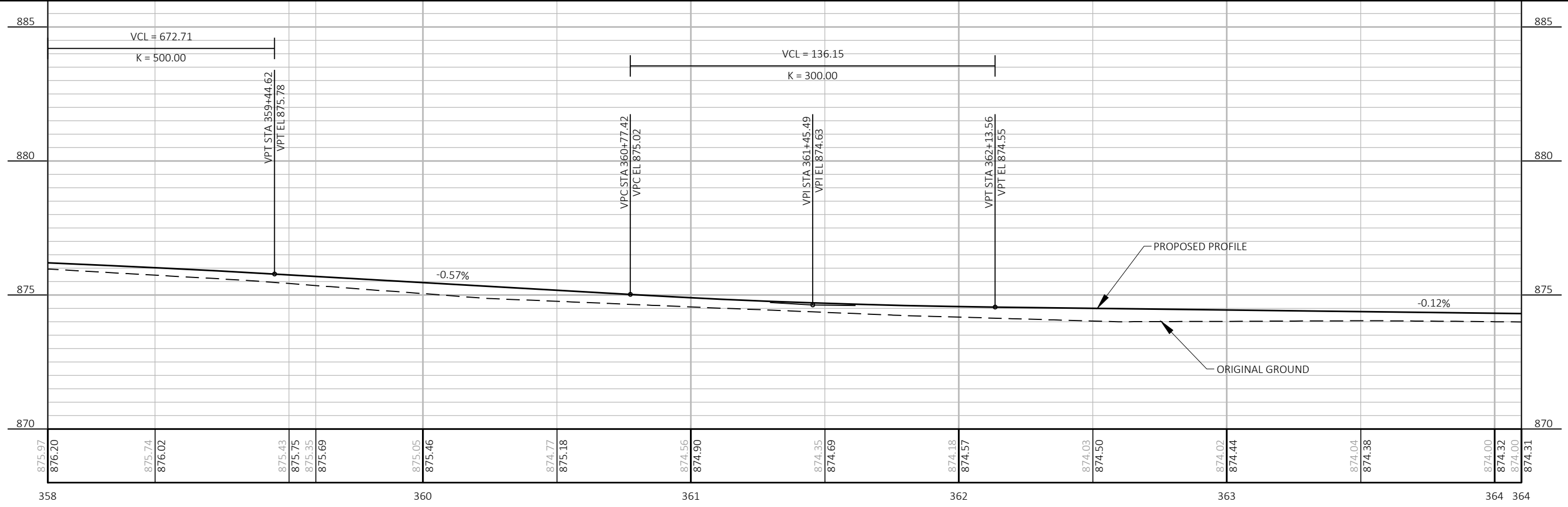
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PI STA = 360+20.09  
 DELTA = 29°41'25"  
 D = 2°00'00"  
 T = 759.32'  
 L = 1484.51'  
 R = 2864.79'  
 PC STA = 352+60.77  
 PT STA = 367+45.28  
 SE = 4.6%  
 RO = 51'  
 SE Transition = 168'

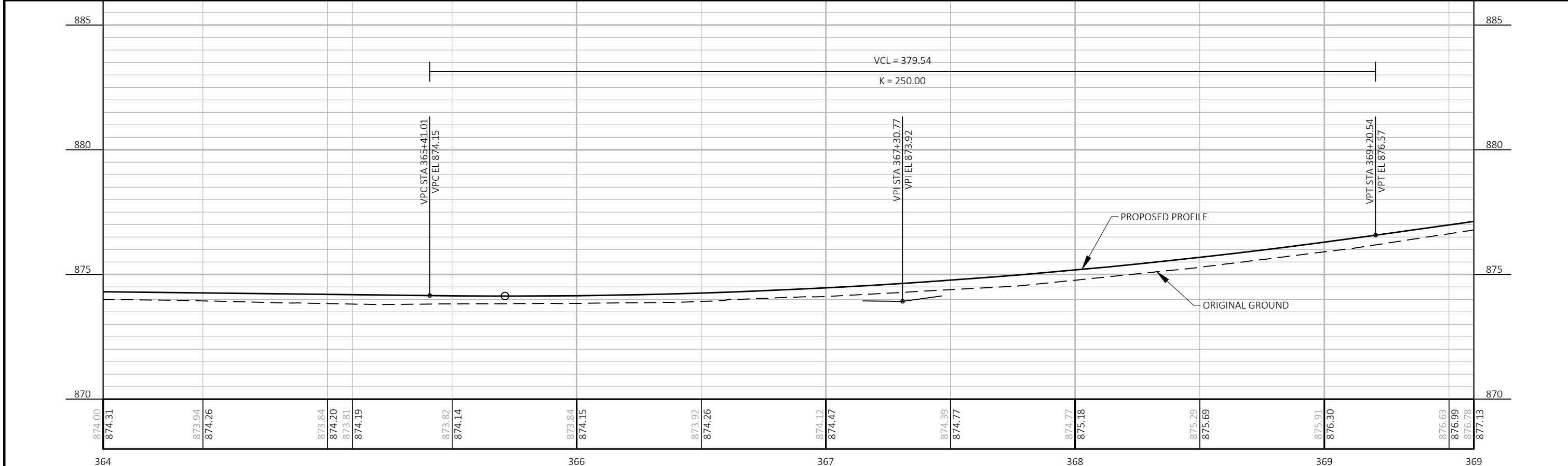
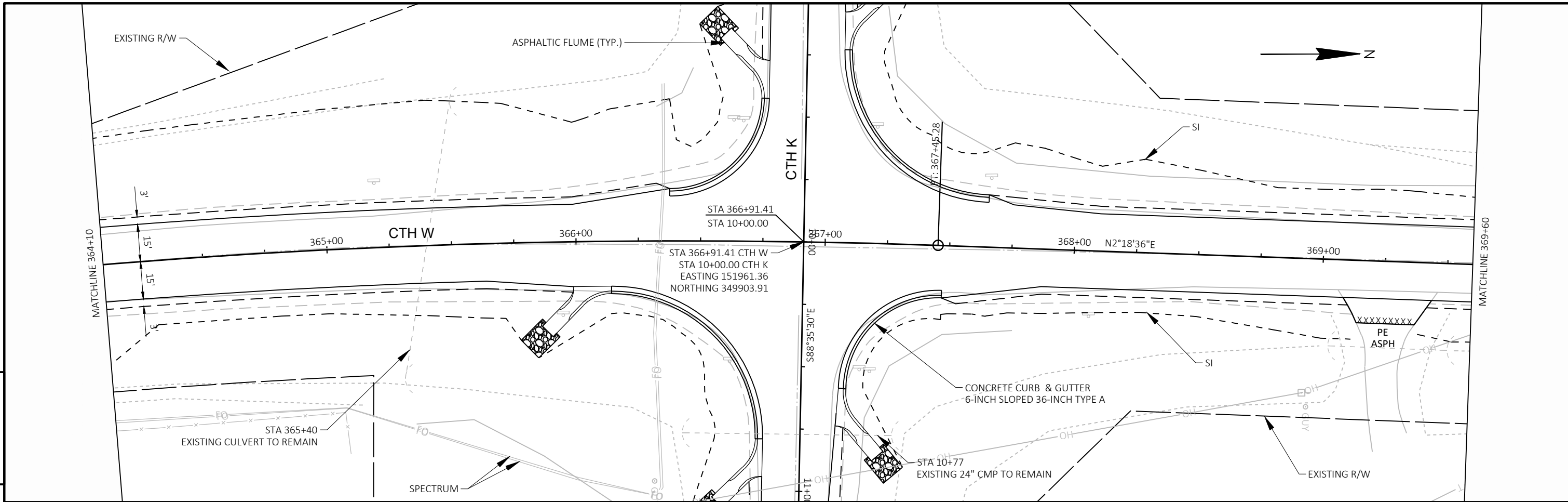


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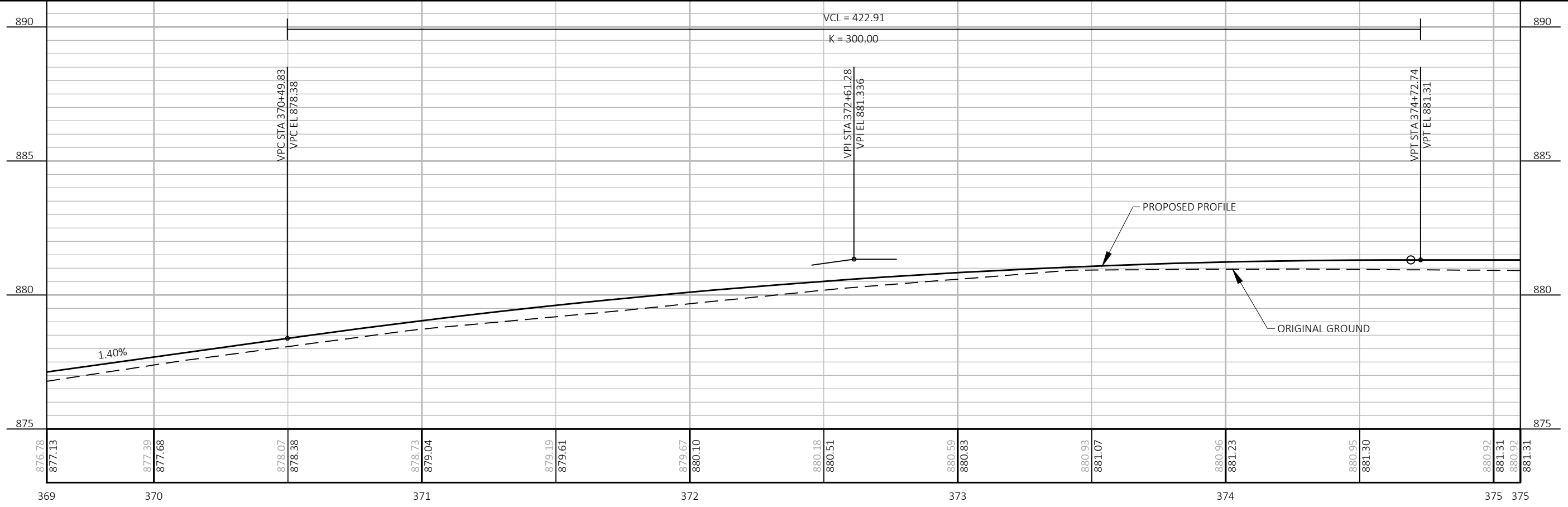
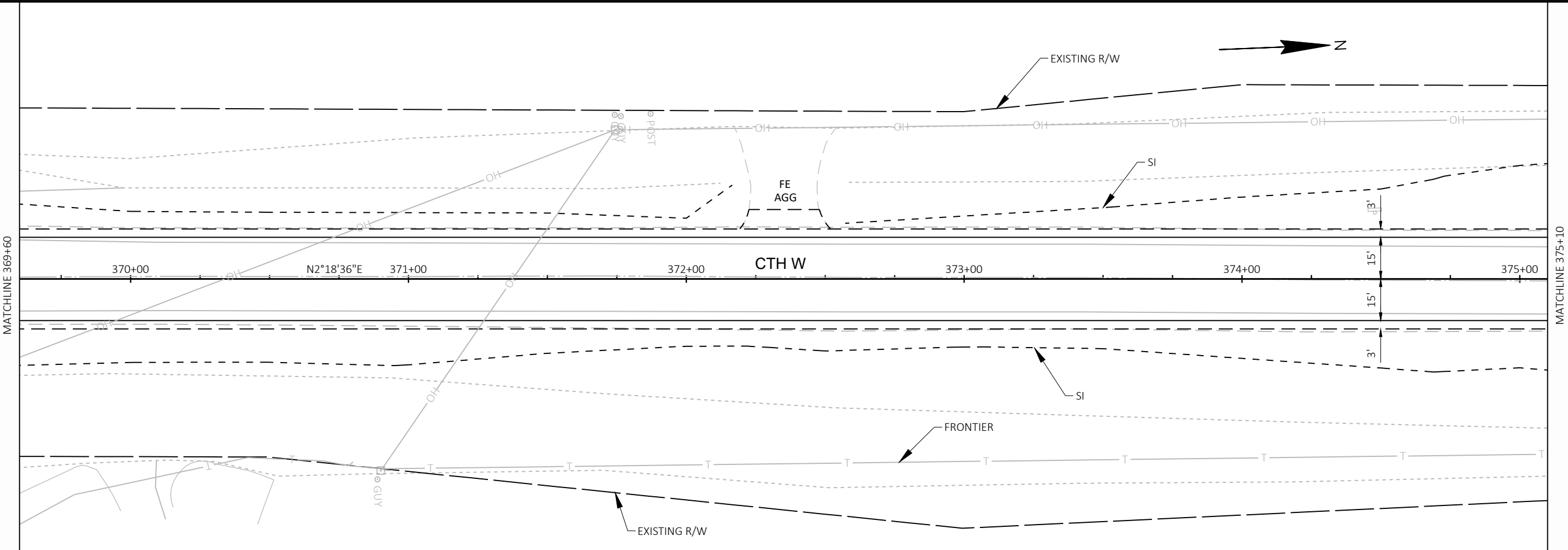
PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      PLAN AND PROFILE: CTH W      SHEET: E



PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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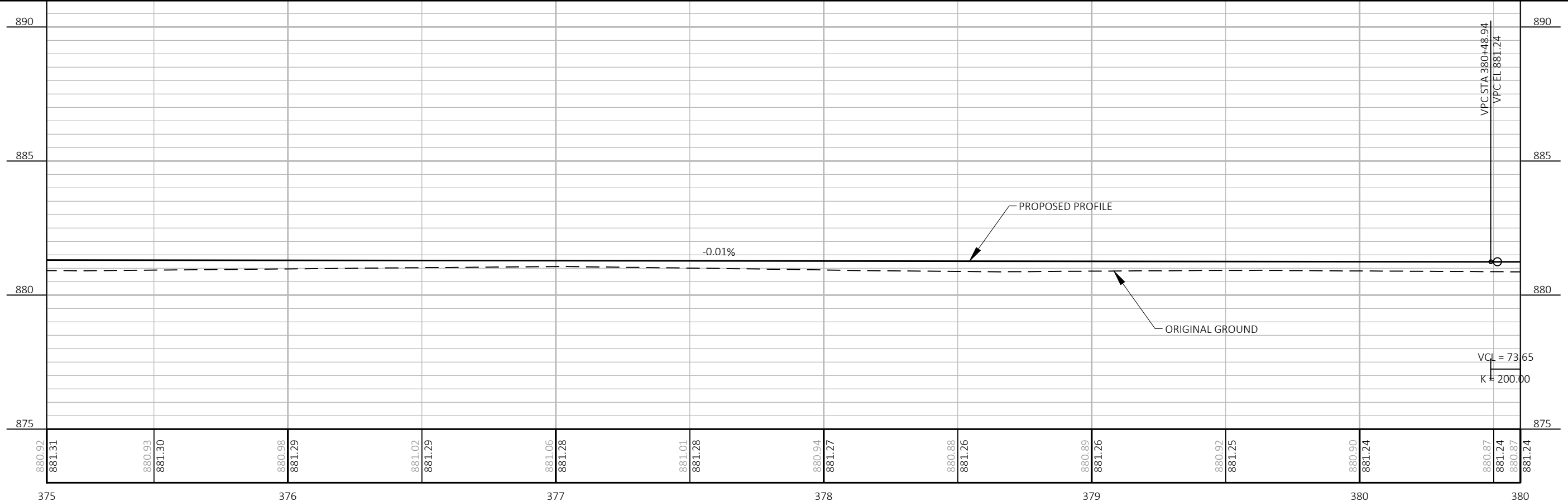
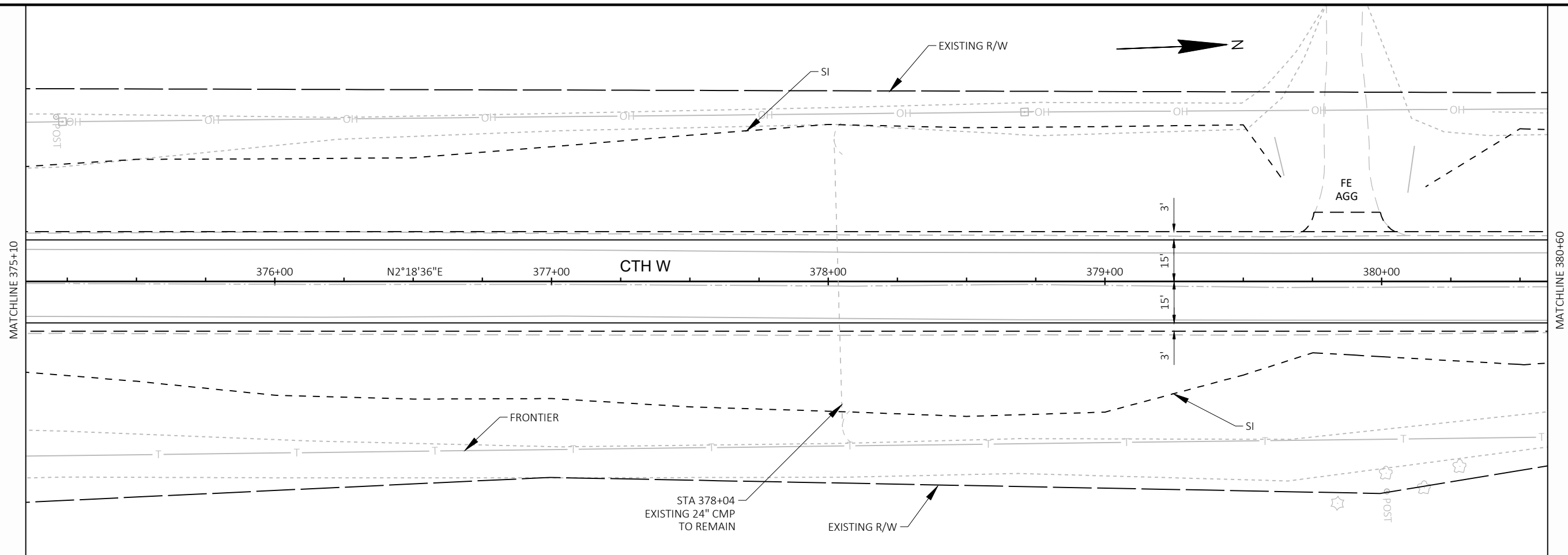
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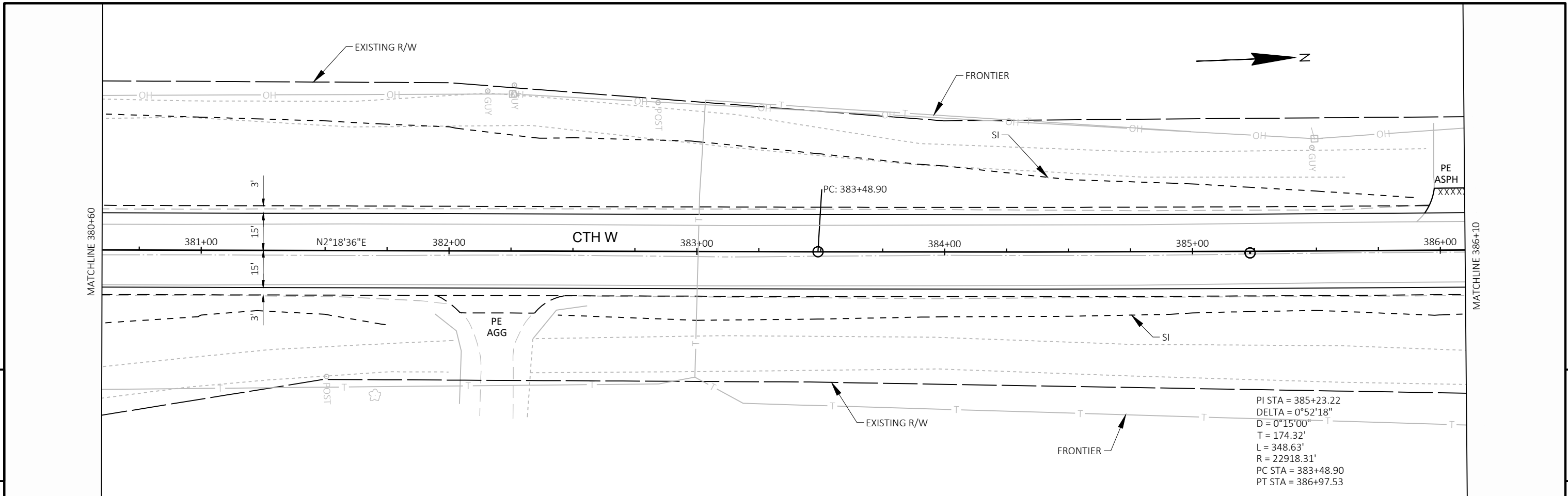
PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      PLAN AND PROFILE: CTH W      SHEET: E

5

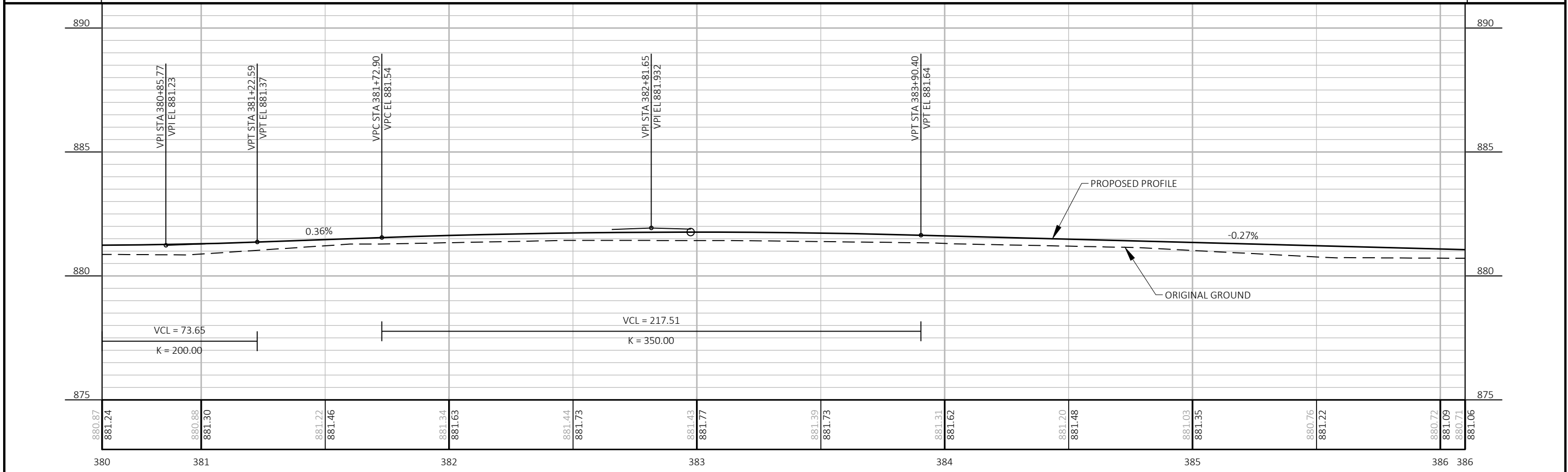
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PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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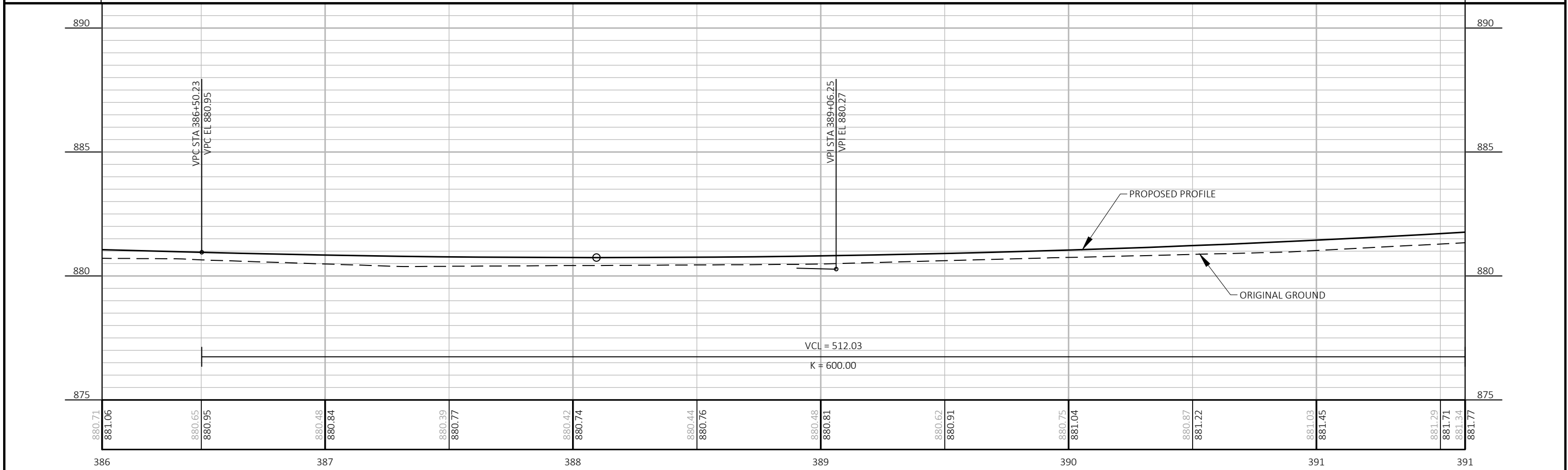
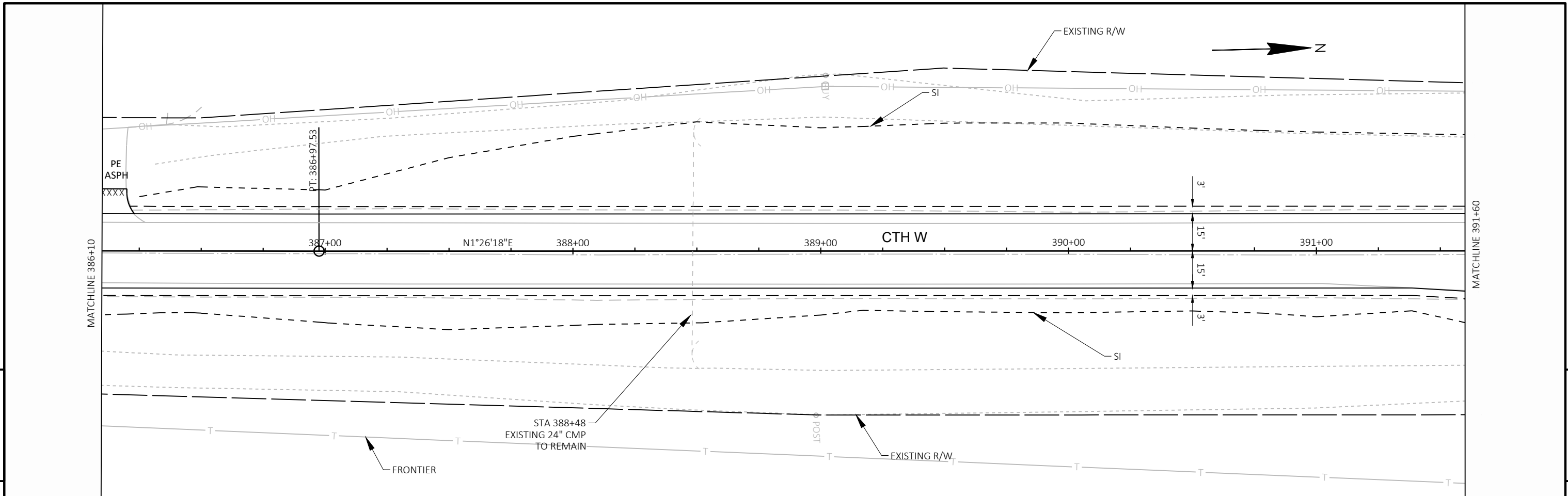


PI STA = 385+23.22  
 DELTA = 0°52'18"  
 D = 0°15'00"  
 T = 174.32'  
 L = 348.63'  
 R = 22918.31'  
 PC STA = 383+48.90  
 PT STA = 386+97.53

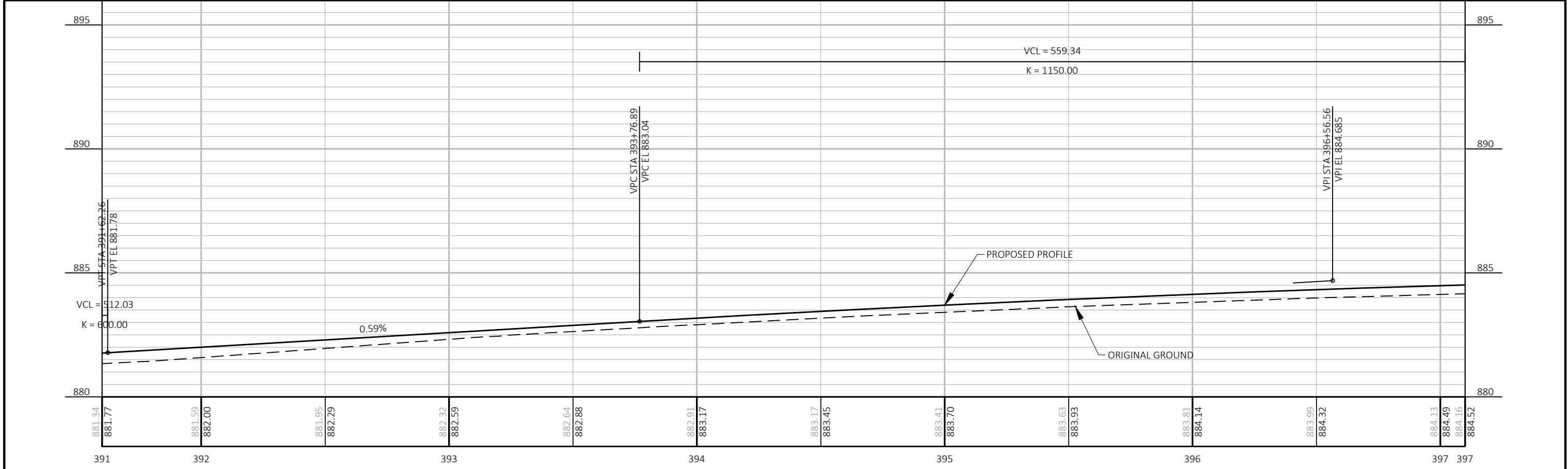
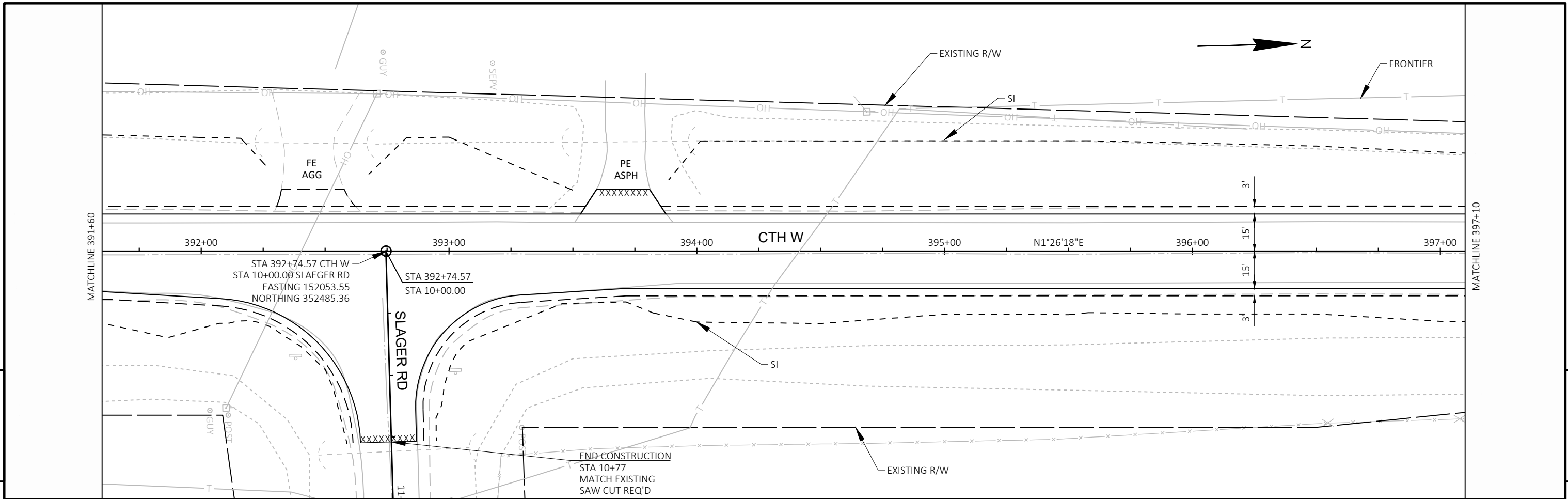


PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	E
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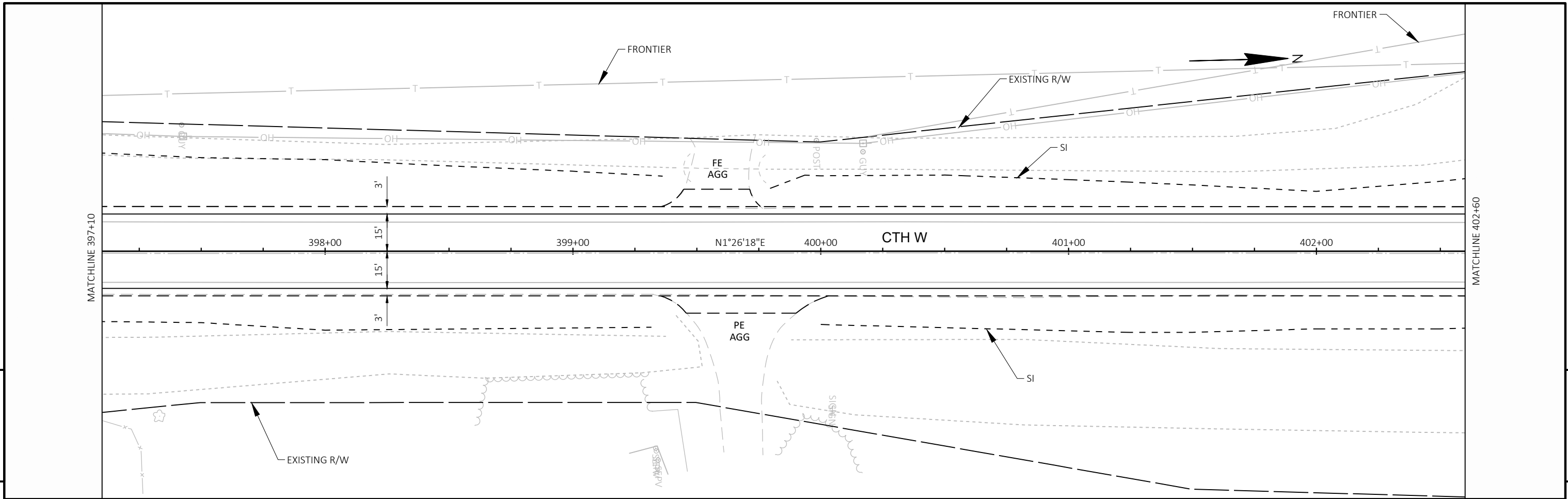




PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      PLAN AND PROFILE: CTH W      SHEET: E

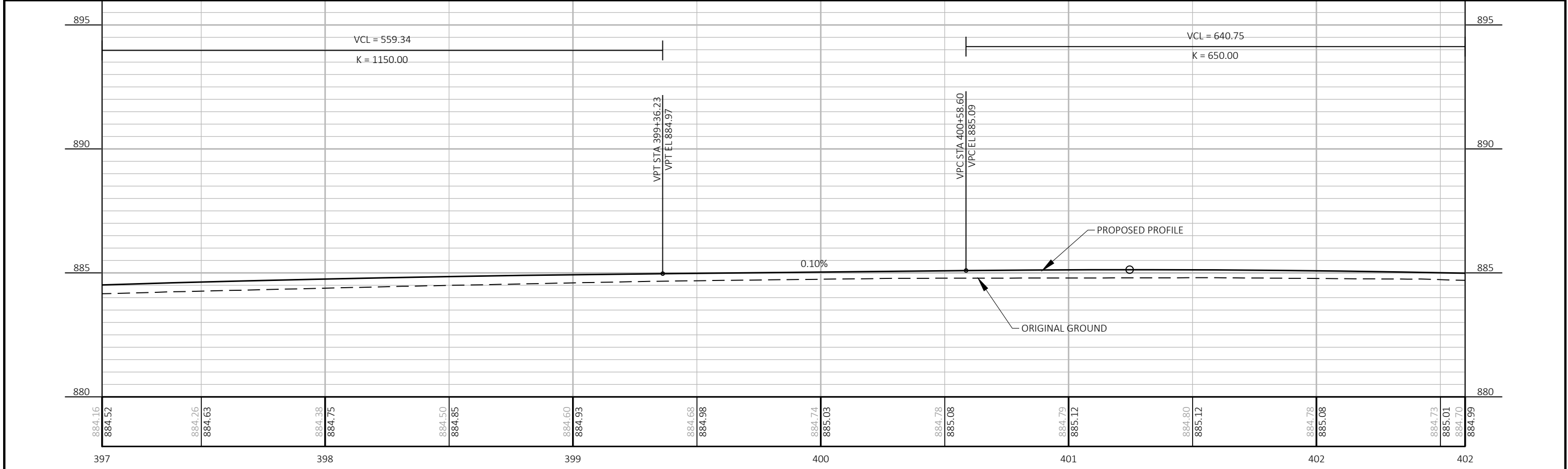


PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      PLAN AND PROFILE: CTH W      SHEET: E



5

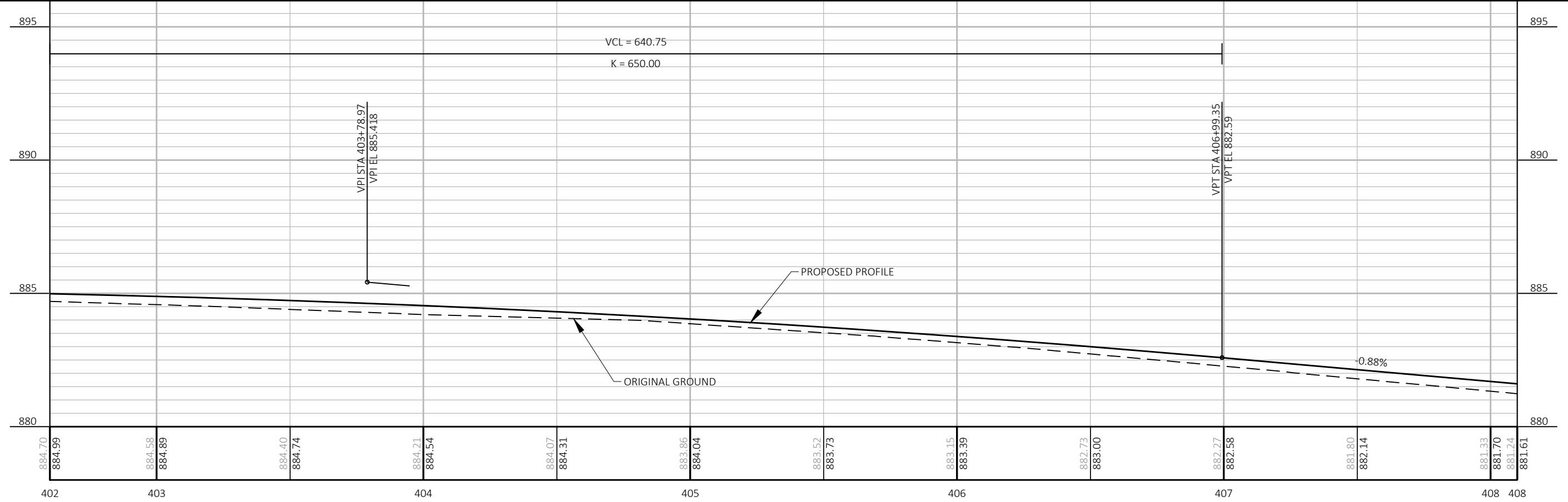
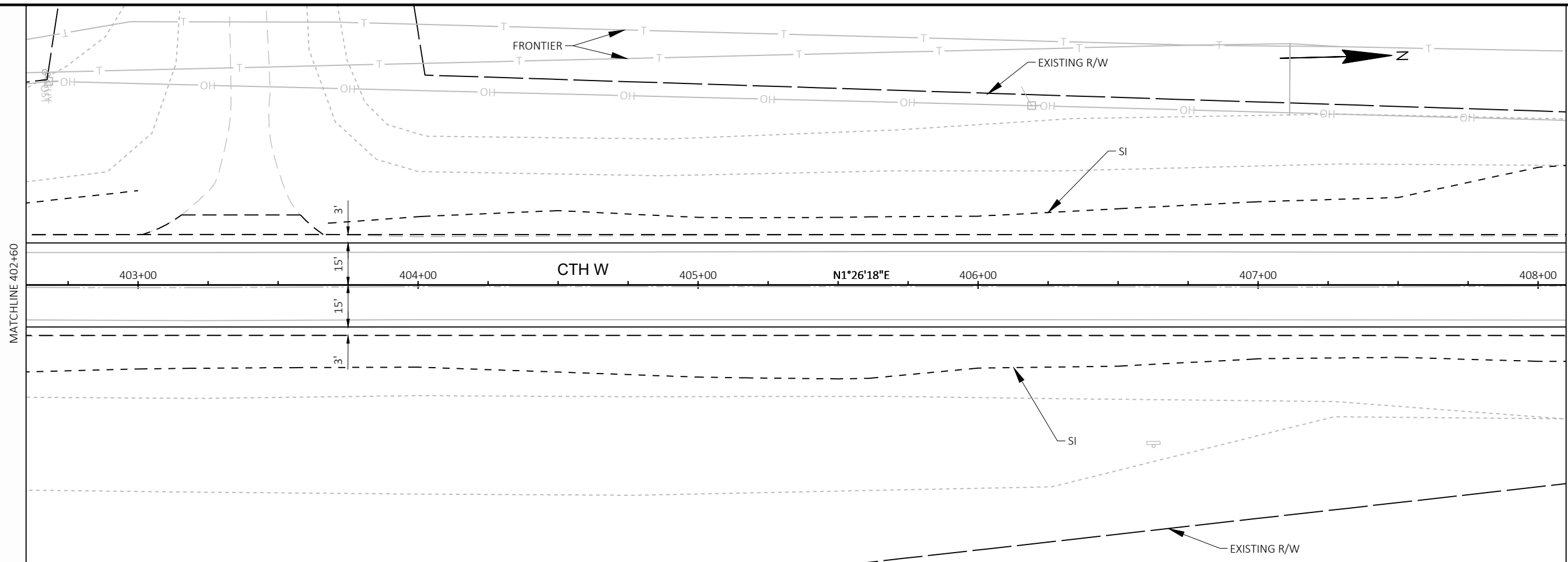
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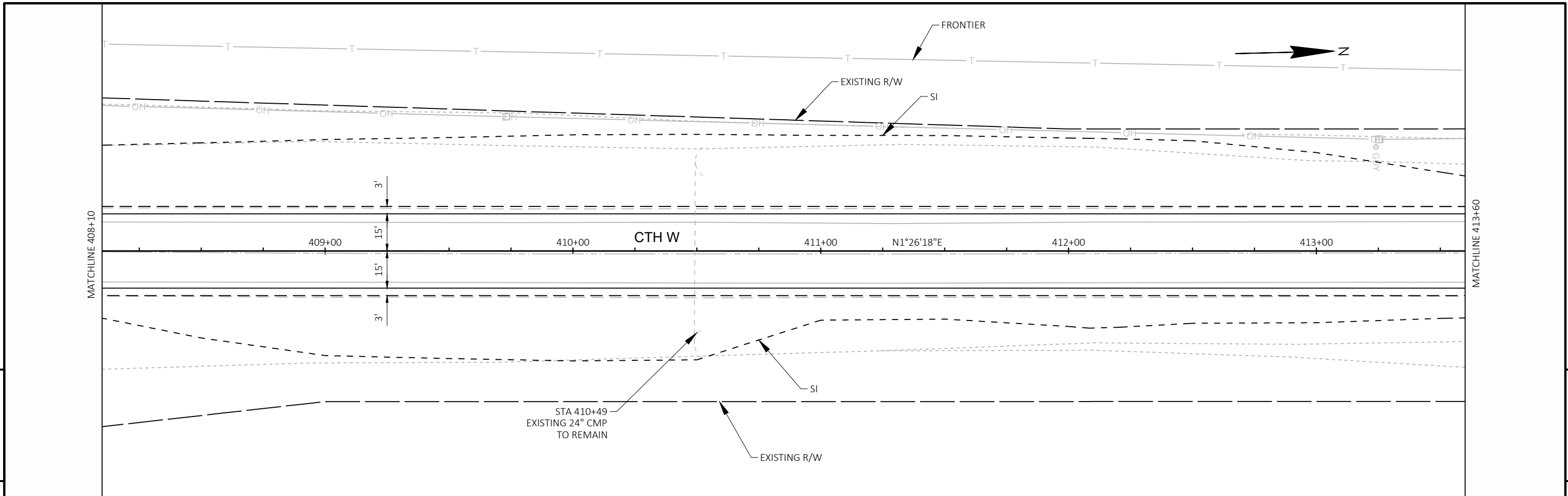
PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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5

5

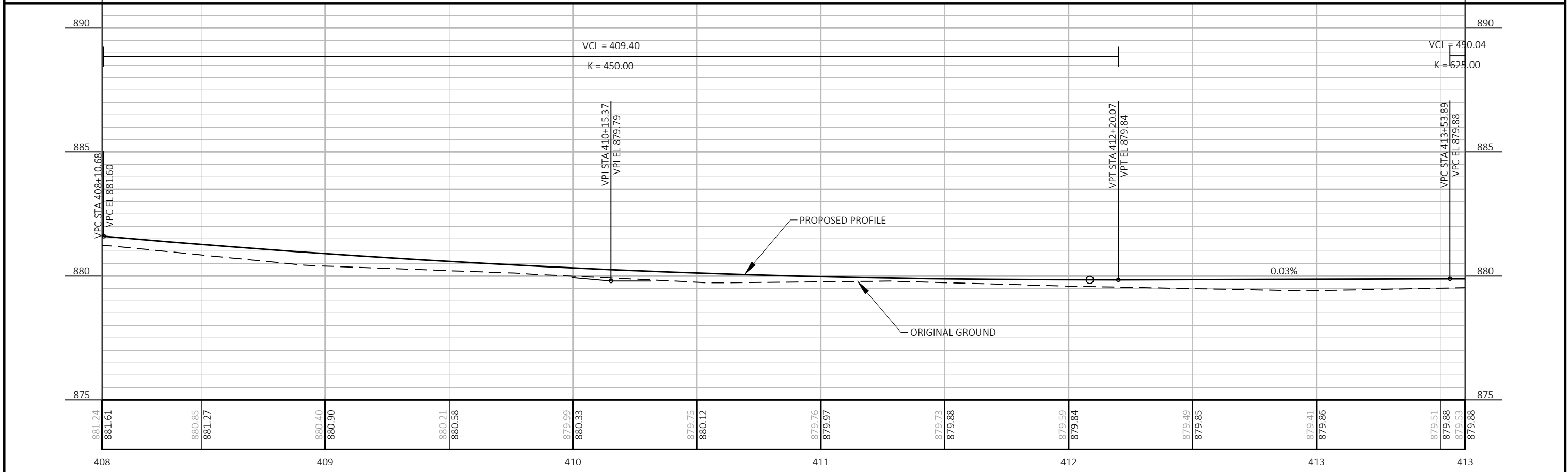


PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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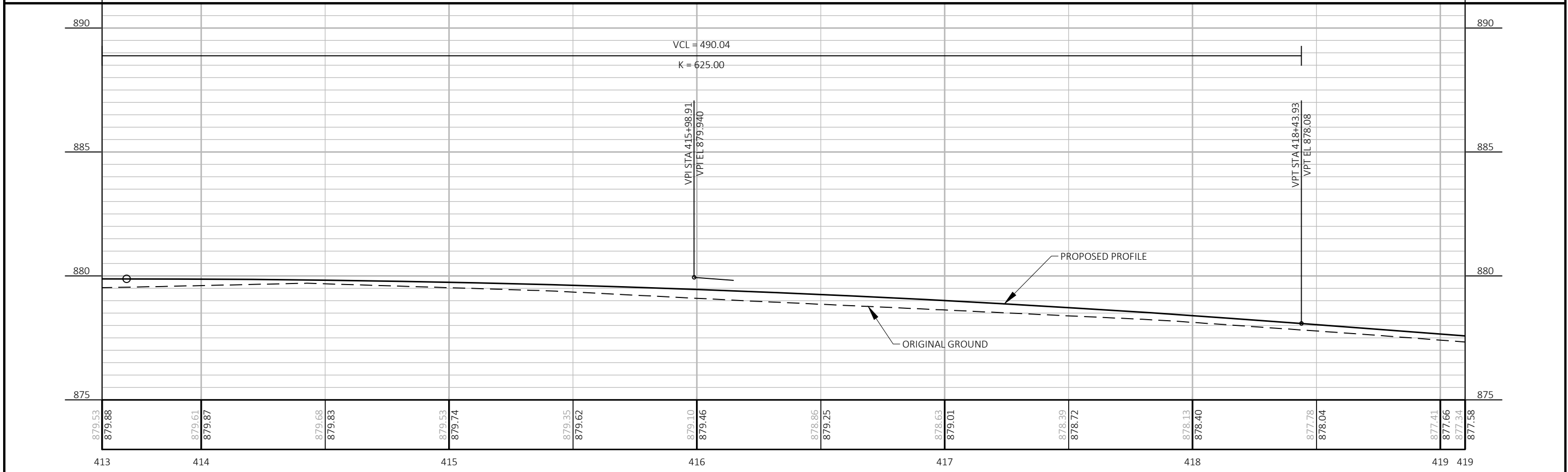
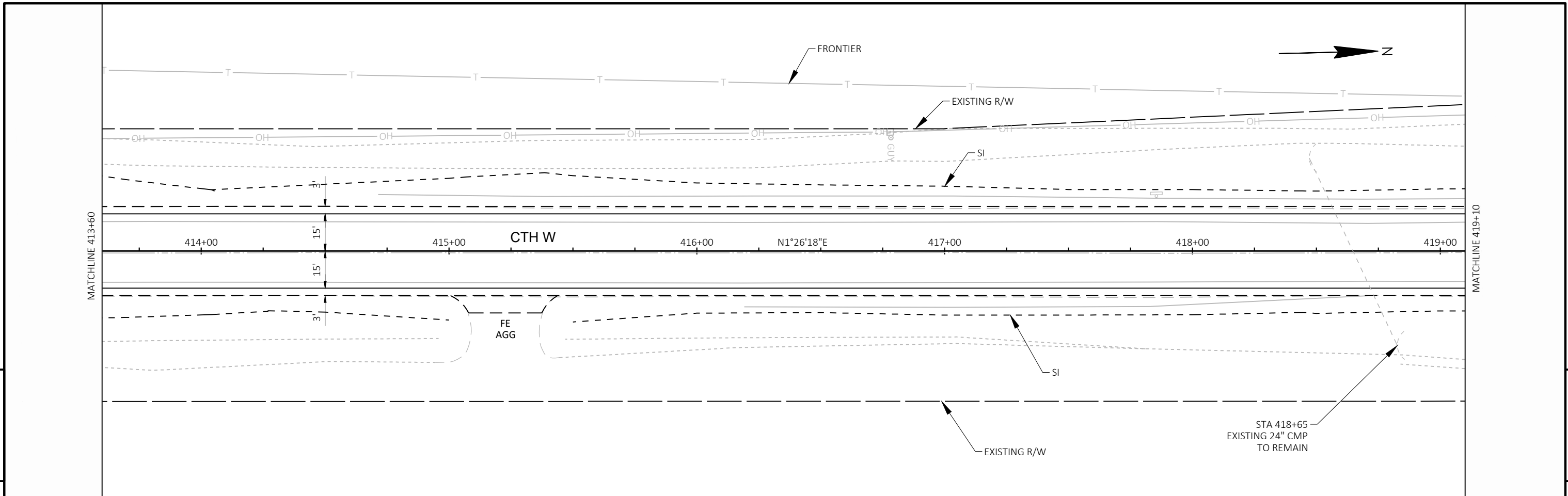


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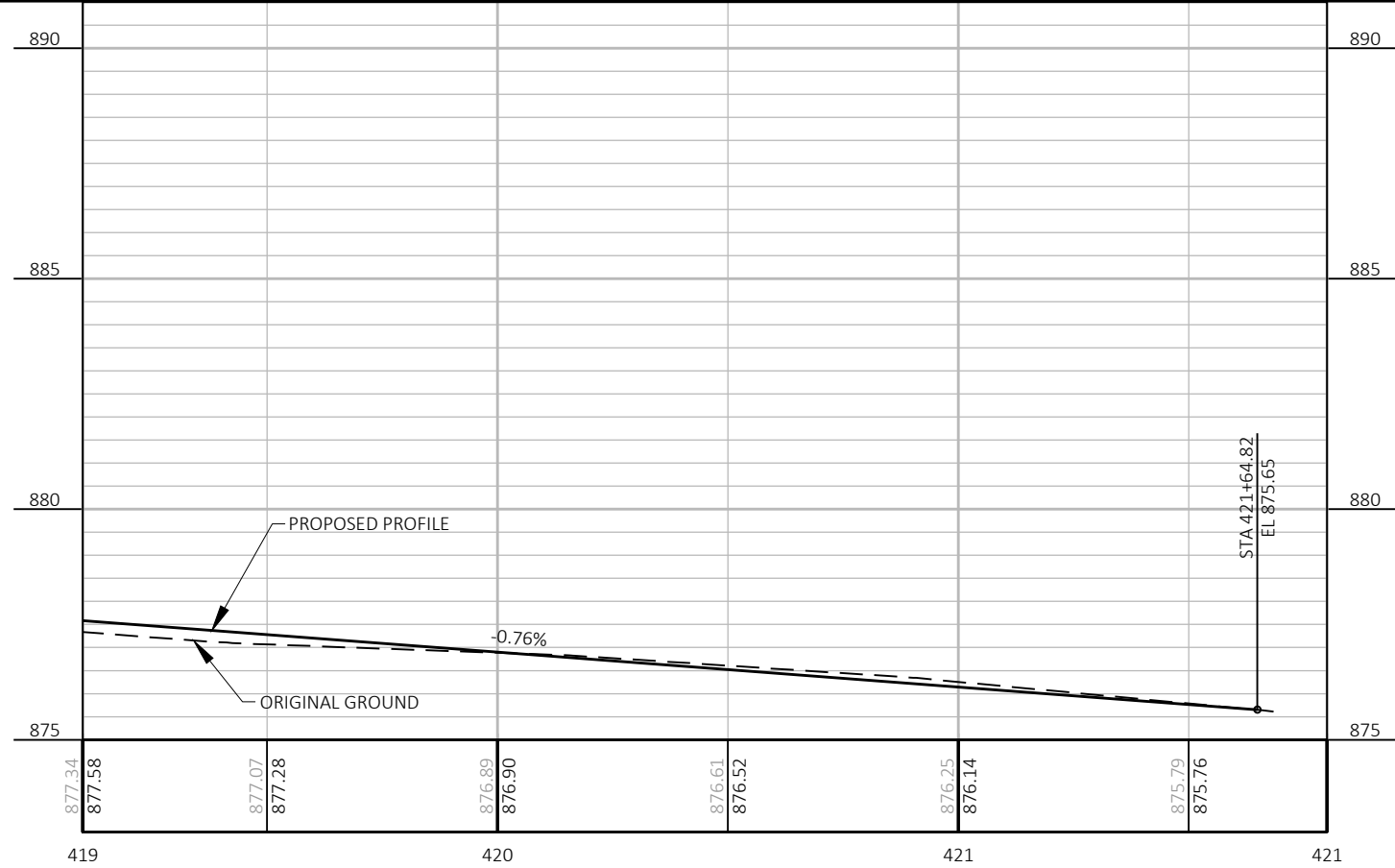
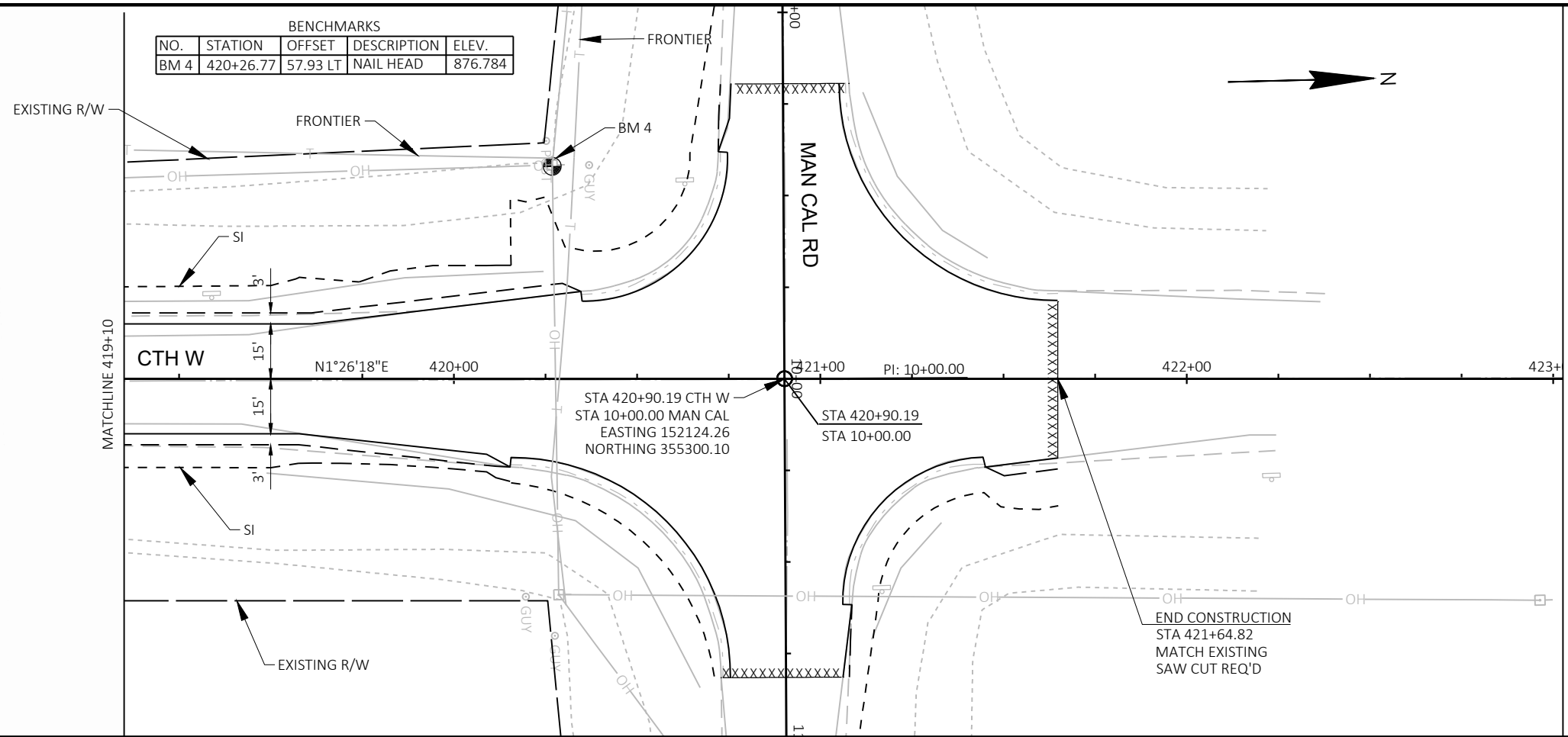


PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	PLAN AND PROFILE: CTH W	SHEET	<b>E</b>
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BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
BM 4	420+26.77	57.93 LT	NAIL HEAD	876.784



PROJECT NO: 4323-08-72

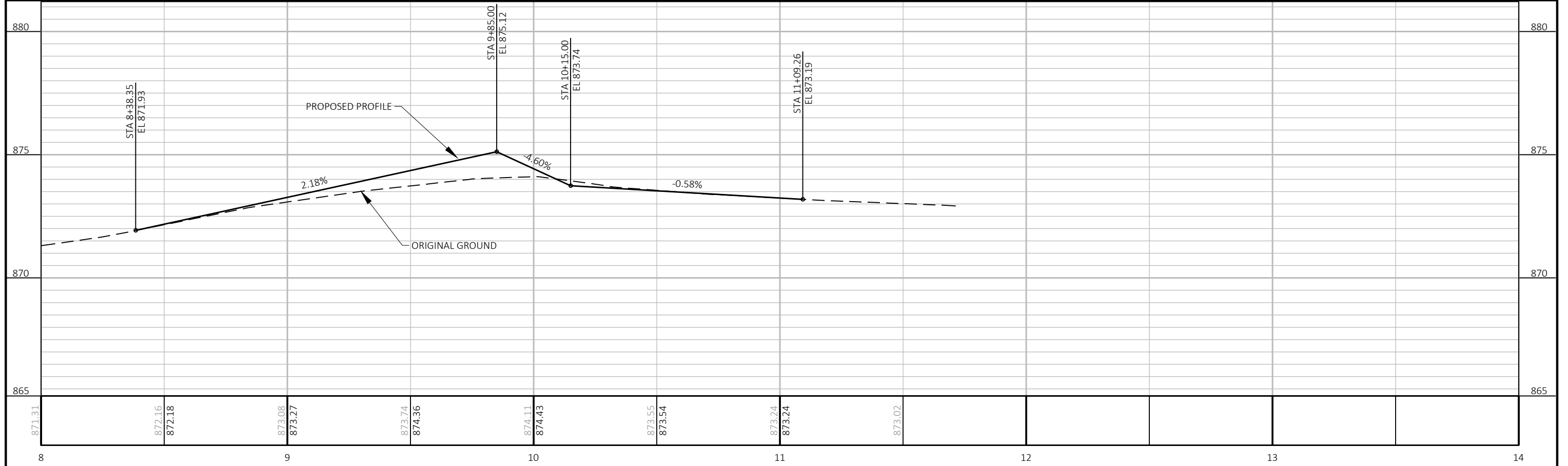
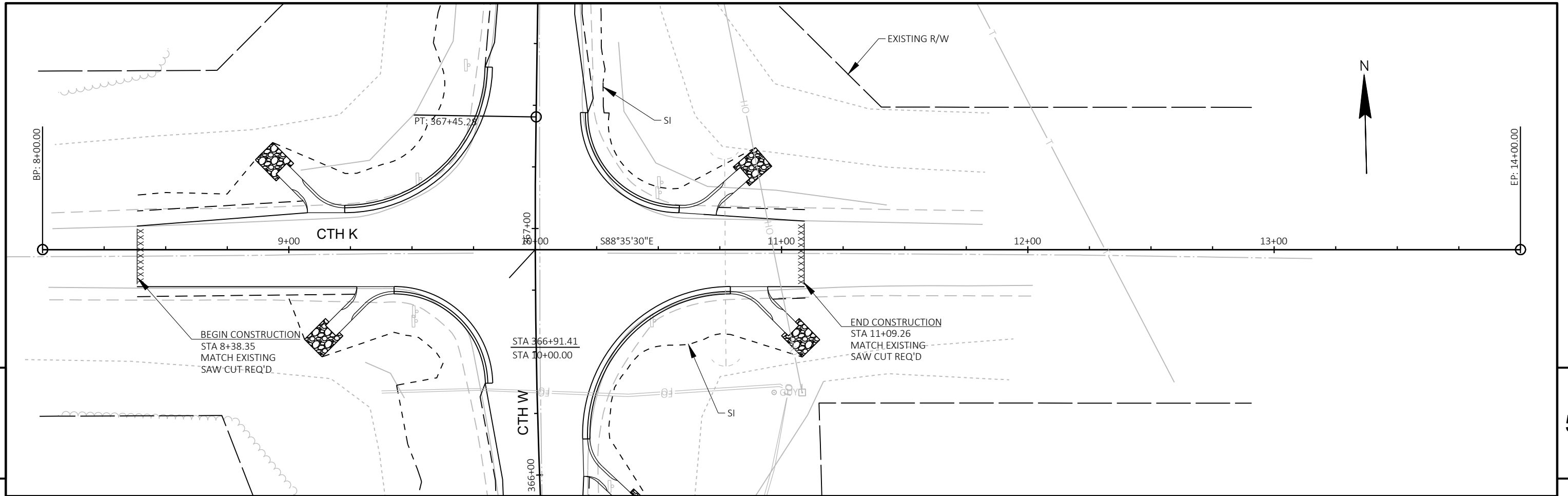
HWY: CTH W

COUNTY: MANITOWOC

PLAN AND PROFILE: CTH W

SHEET

E



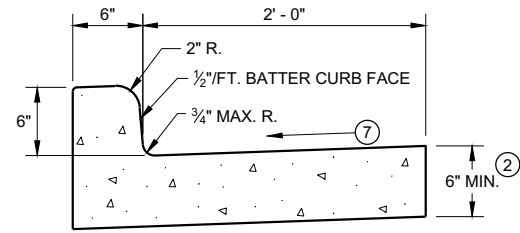
8	9	10	11	12	13	14
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      PLAN AND PROFILE: CTH K      SHEET: **E**

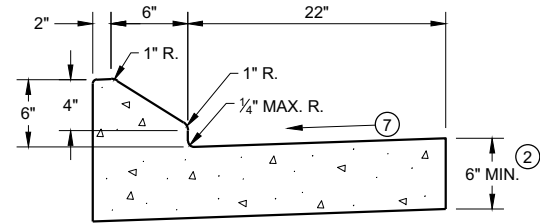


## Standard Detail Drawing List

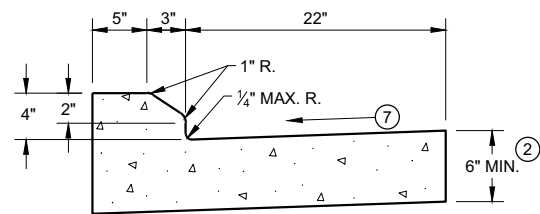
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-06	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
12A03-10	NAME PLATE (STRUCTURES)
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-22A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-05A	PAVEMENT MARKING (INTERSECTIONS)



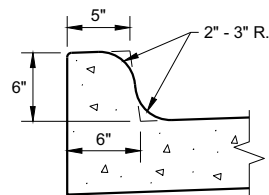
TYPES A<sup>①</sup> & D



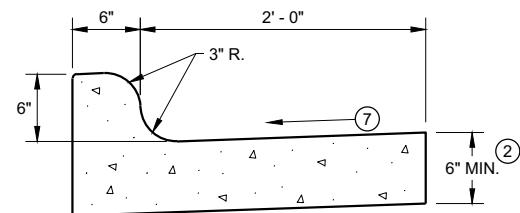
6" SLOPED CURB TYPES G<sup>①</sup> & J



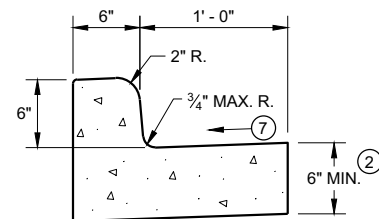
4" SLOPED CURB TYPES G<sup>①</sup> & J



TYPES K<sup>①</sup> & L  
(OPTIONAL CURB SHAPE)

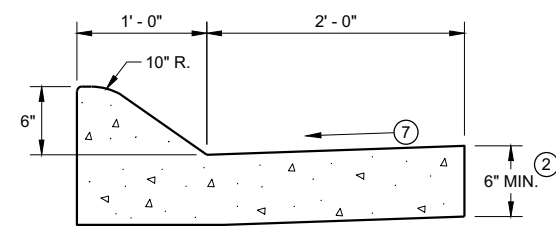


TYPES K<sup>①</sup> & L  
CONCRETE CURB AND GUTTER 30"

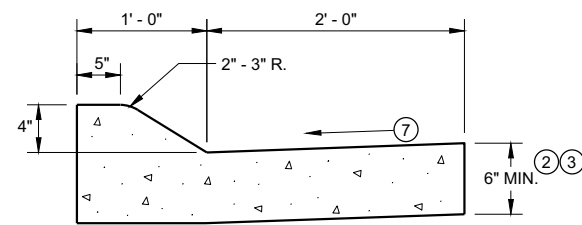


TYPES A<sup>①</sup> & D

CONCRETE CURB AND GUTTER 18"

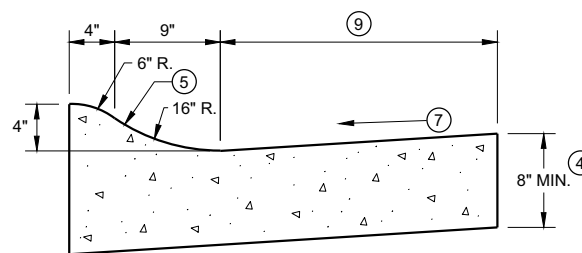


6" SLOPED CURB TYPES A<sup>①</sup> & D



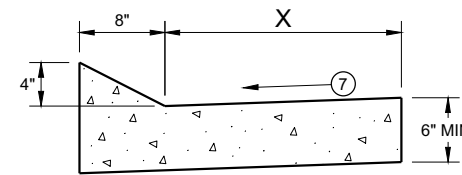
4" SLOPED CURB TYPES A<sup>①</sup> & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R<sup>①</sup> & T

TBT & TBTT	X
30"	22"
36"	28"

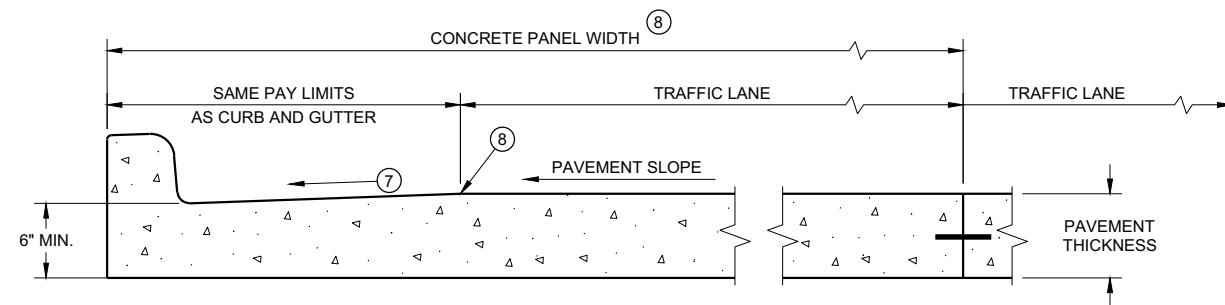


TYPES TBT & TBTT<sup>①</sup>

CONCRETE CURB AND GUTTER

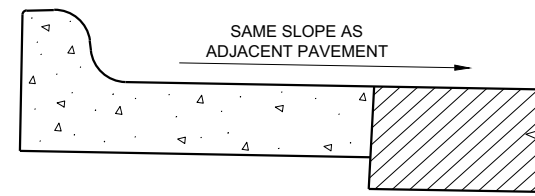
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT \*  
WITH INTEGRAL CURB AND GUTTER

\* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER<sup>⑥</sup>  
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

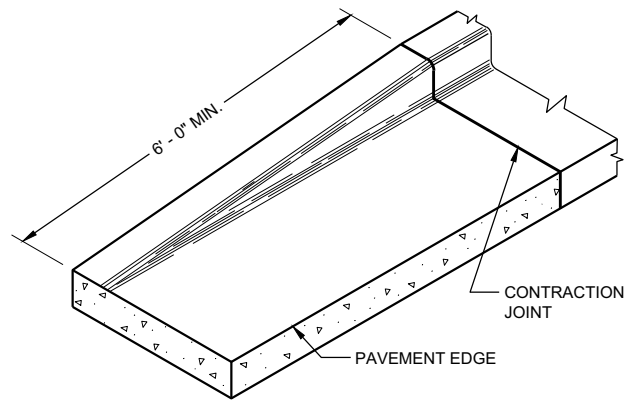
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

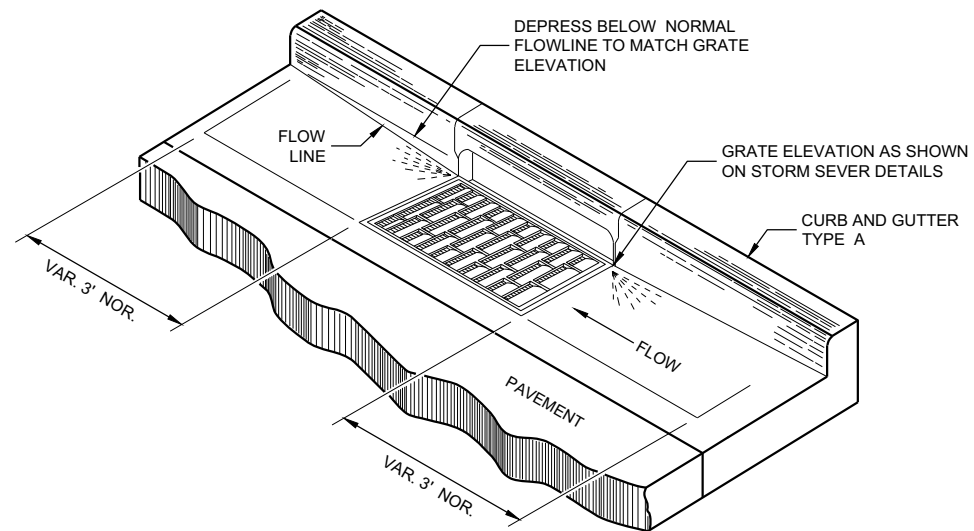
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES  
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES



**END SECTION CURB AND GUTTER**



**DETAIL OF CURB AND GUTTER AT INLETS**  
(TYPICAL H INLET COVER SHOWN)

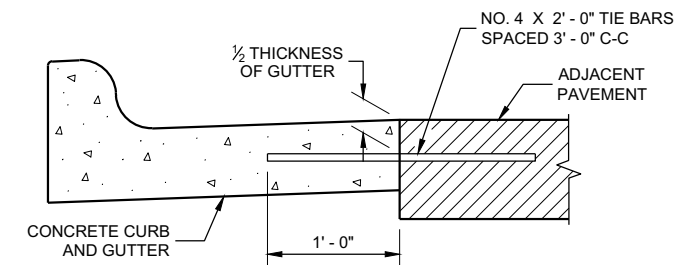
**GENERAL NOTES**

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

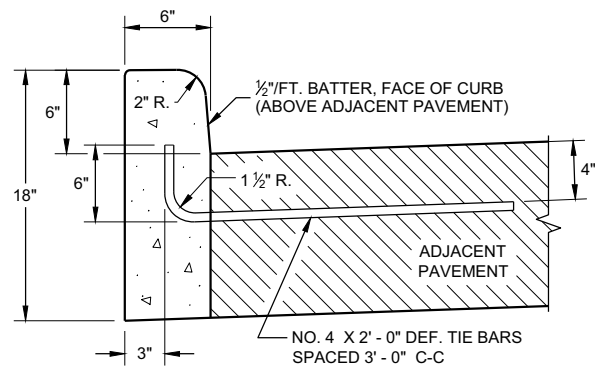
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

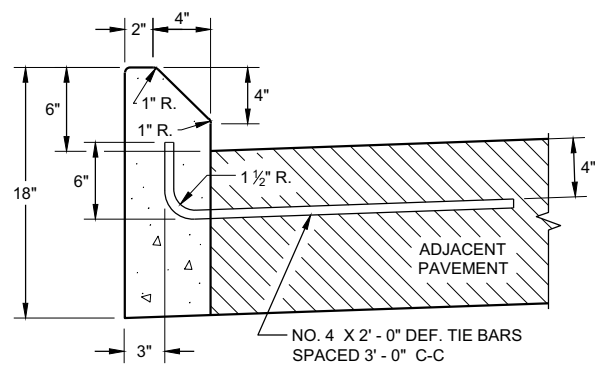
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



**TYPICAL TIE BAR LOCATION** ①

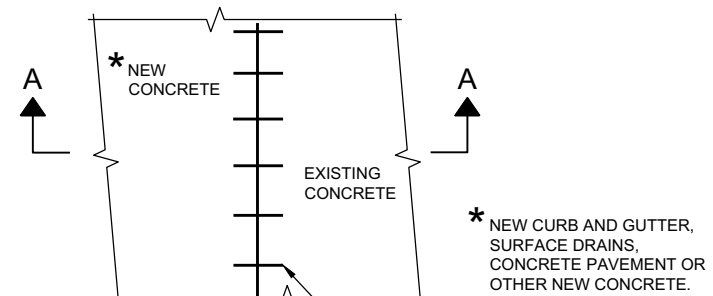


**TYPES A ① & D**

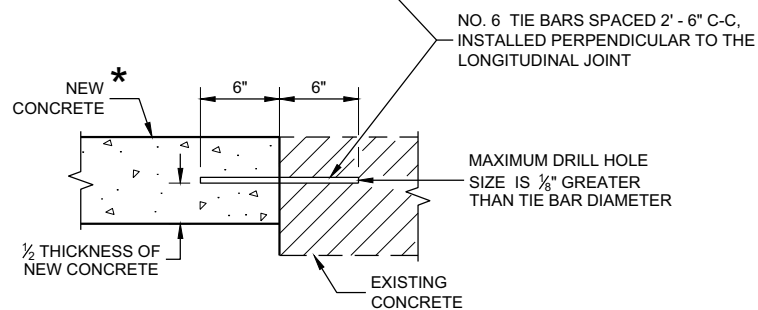


**TYPES G ① & J**

**CONCRETE CURB**

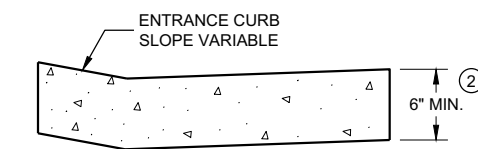


**PLAN VIEW**



**SECTION A - A**

**TIE BARS DRILLED INTO EXISTING PAVEMENT**



**DRIVEWAY ENTRANCE CURB** ⑨  
(WHEN DIRECTED BY THE ENGINEER)

**CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS**

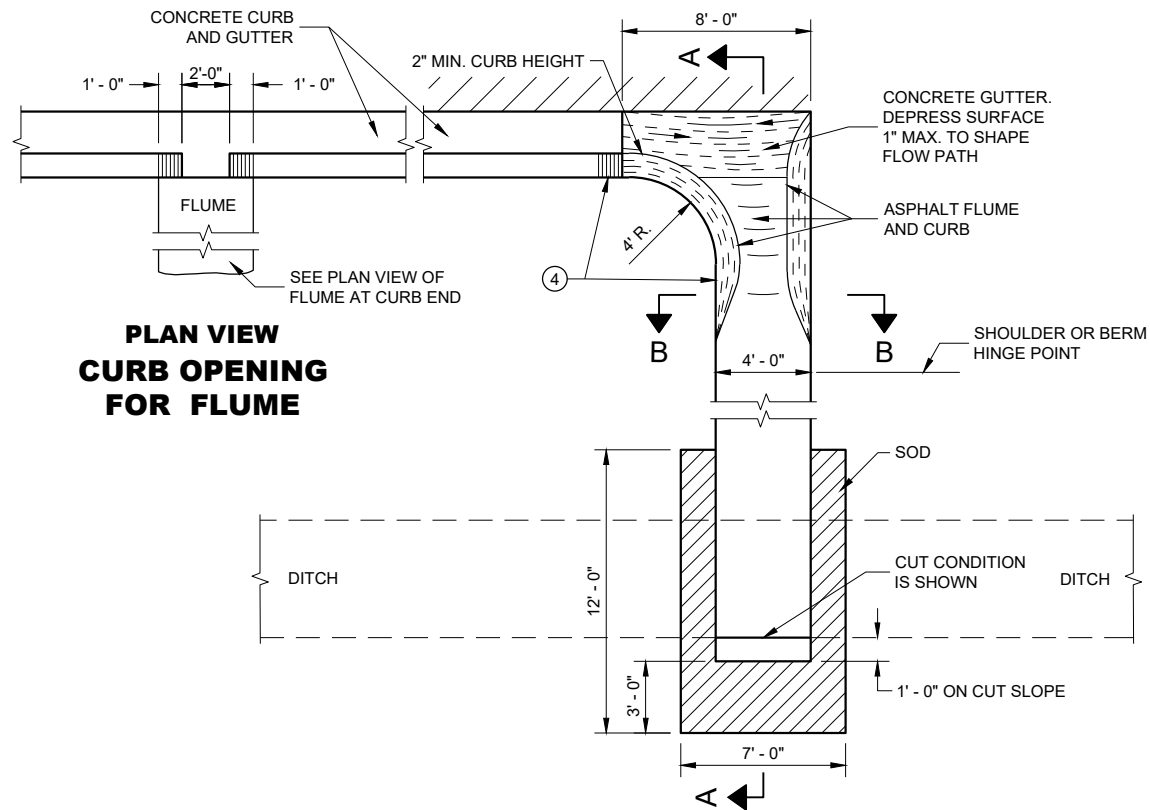
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2021 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

### ASPHALTIC FLUME



**PLAN VIEW  
CURB OPENING  
FOR FLUME**

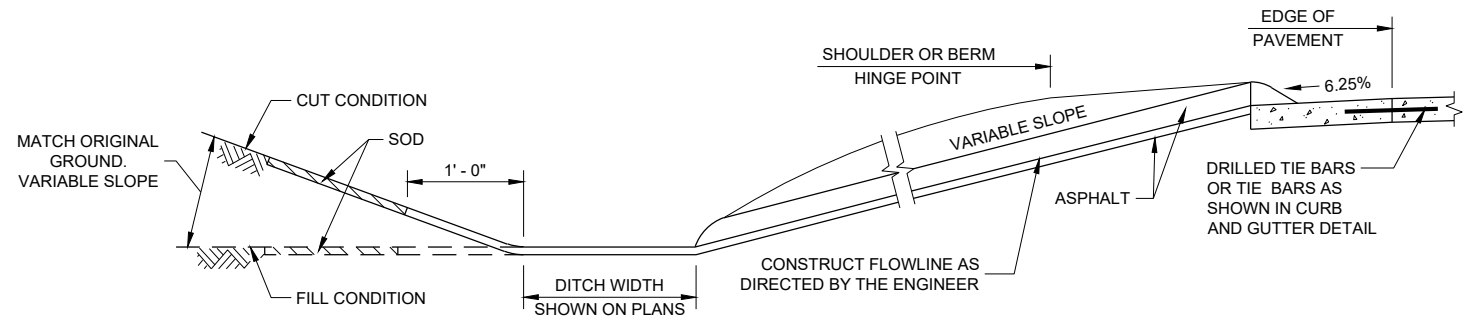
**PLAN VIEW  
FLUME AT CURB END**

### GENERAL NOTES

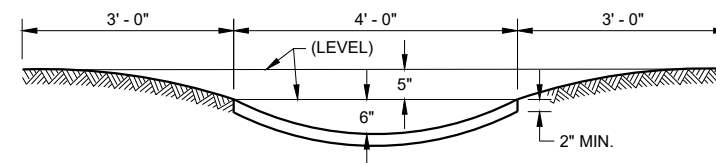
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

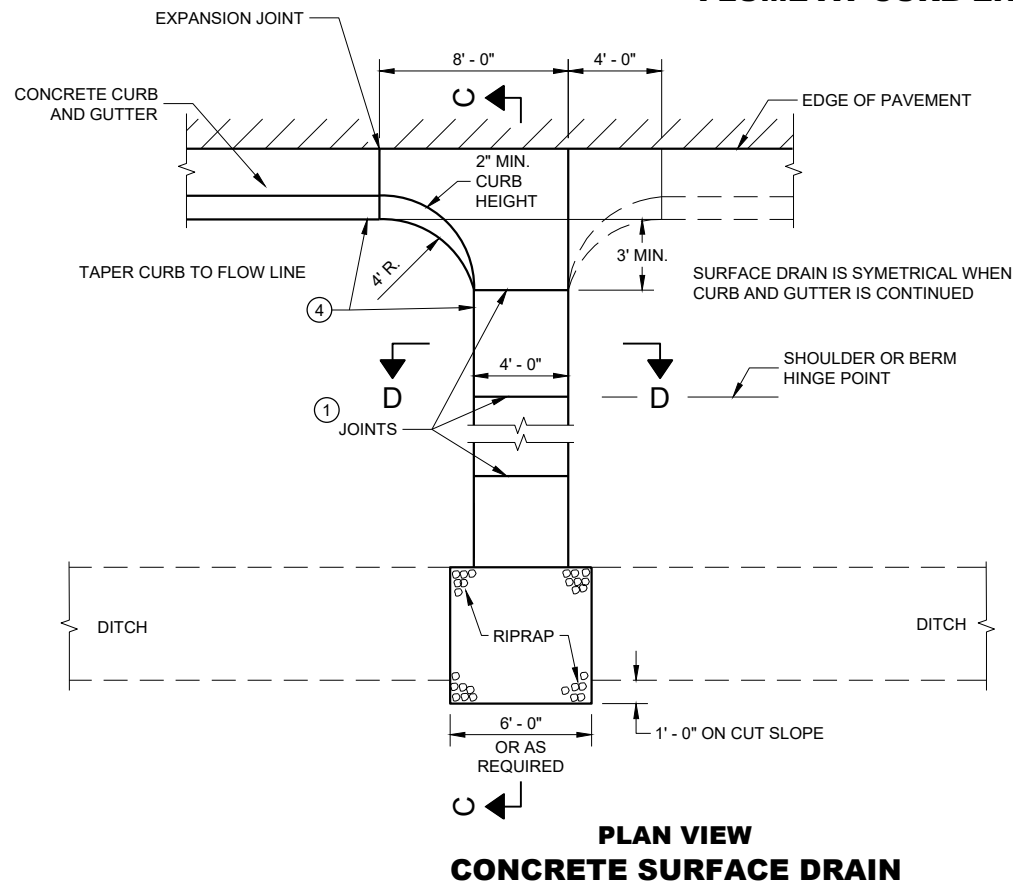
- ① JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ④ ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



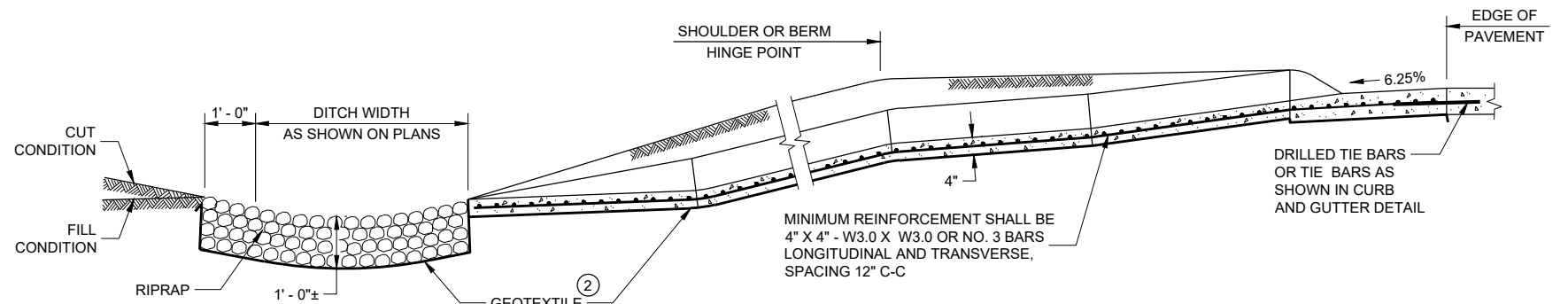
**SECTION A - A**



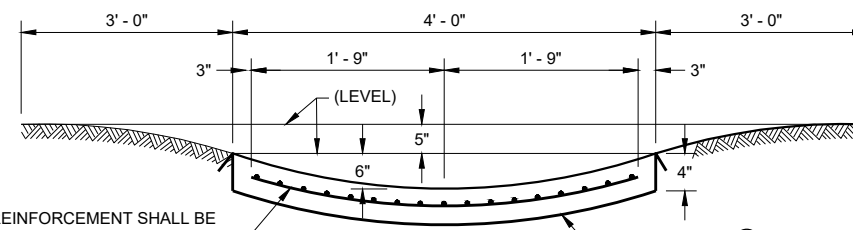
**SECTION B - B**



**PLAN VIEW  
CONCRETE SURFACE DRAIN**



**SECTION C - C**



**SECTION D - D**

MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE, SPACING 12" C-C

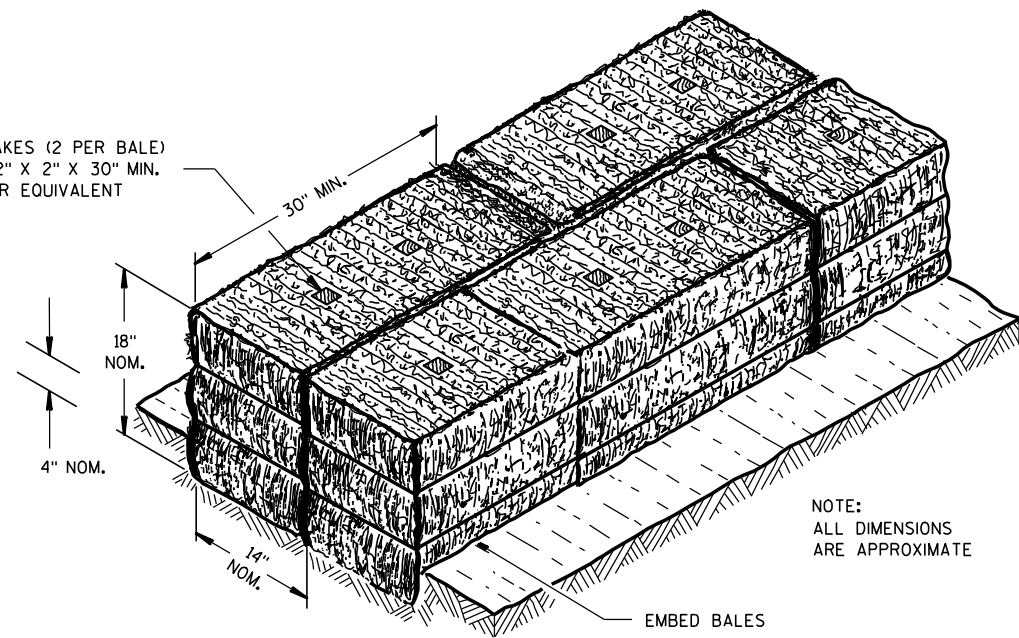
### CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

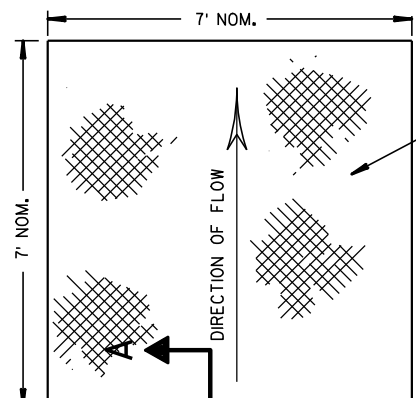
WOOD STAKES (2 PER BALE)  
NOMINAL 2" X 2" X 30" MIN.  
LENGTH OR EQUIVALENT



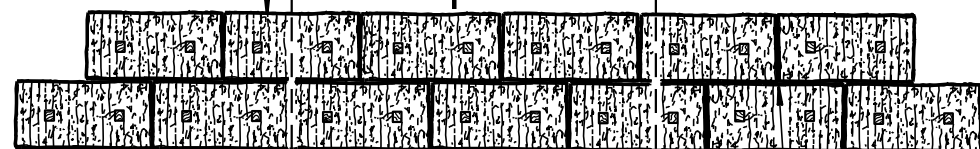
NOTE:  
ALL DIMENSIONS  
ARE APPROXIMATE

EMBED BALES

SECTION A-A



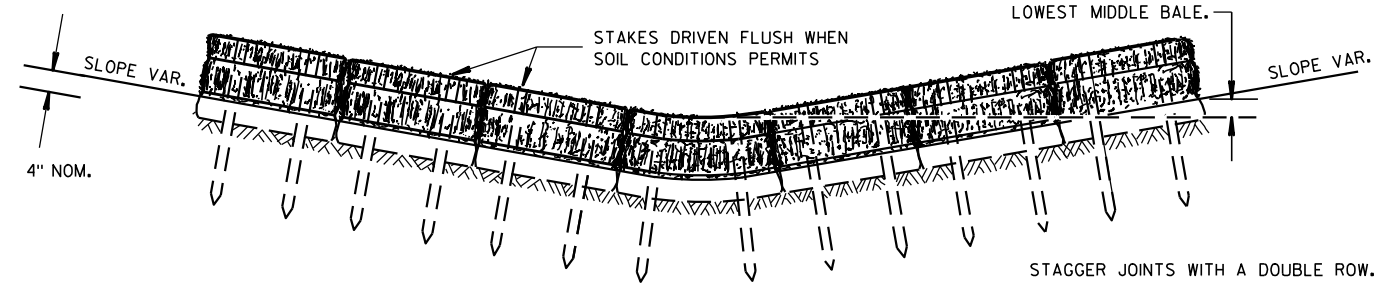
FOR SCOUR PROTECTION USE:  
EROSION MAT FOR CHANNEL LINING.  
LAP MAT UNDER UPSTREAM BALES  
AND SECURE FABRIC WITH WOOD STAKES,  
AT 3-FOOT INTERVALS.



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.



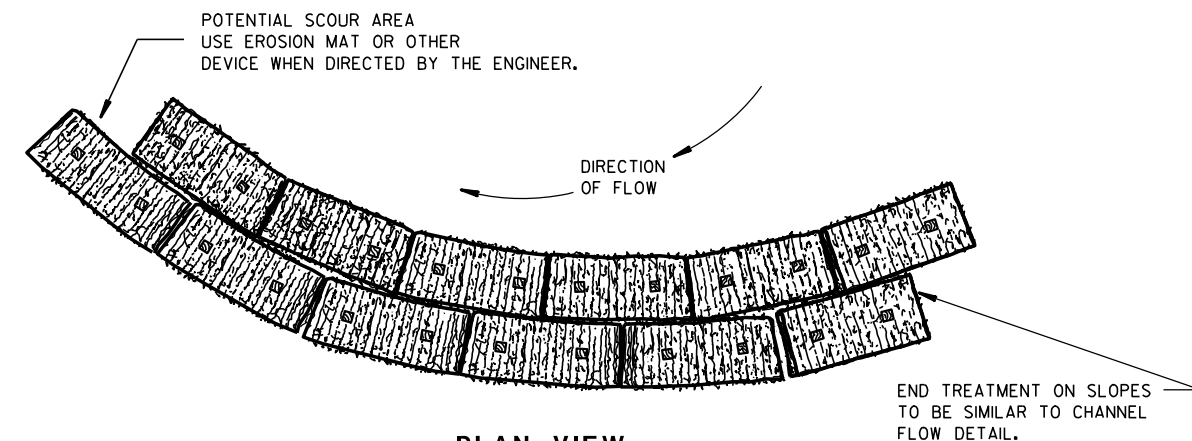
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

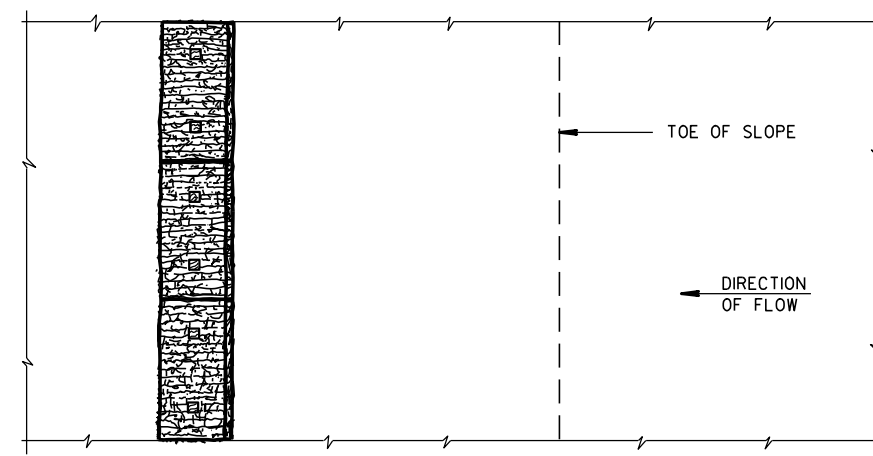
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

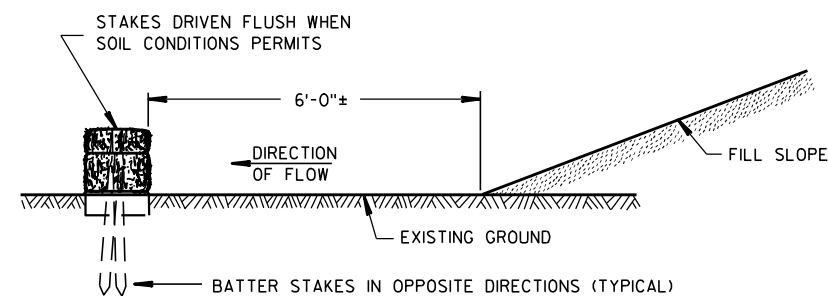


PLAN VIEW

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

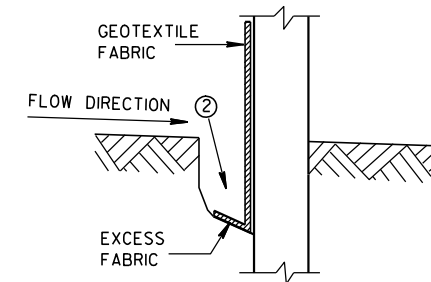


SITUATION 1 SITUATION 2  
PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

**GENERAL NOTES**

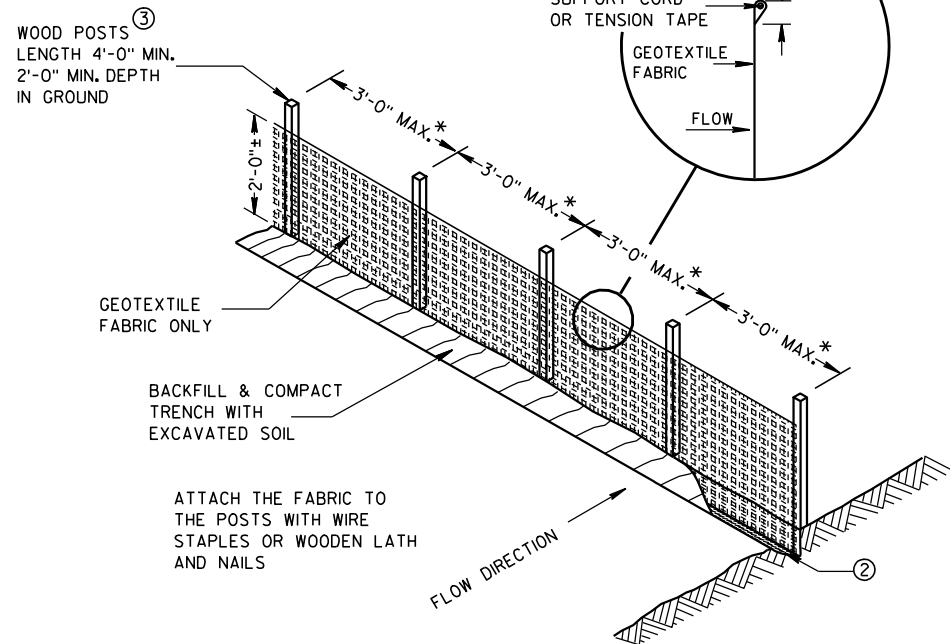
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.



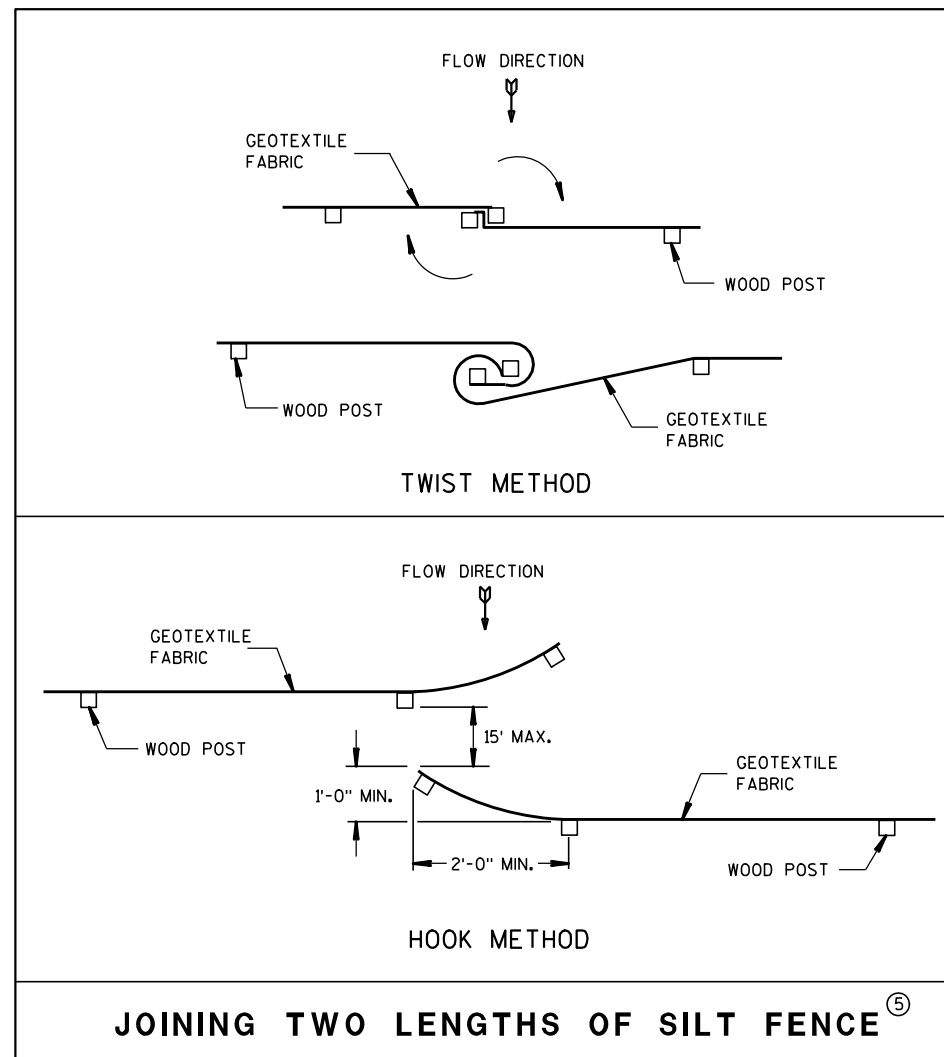
TRENCH DETAIL

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

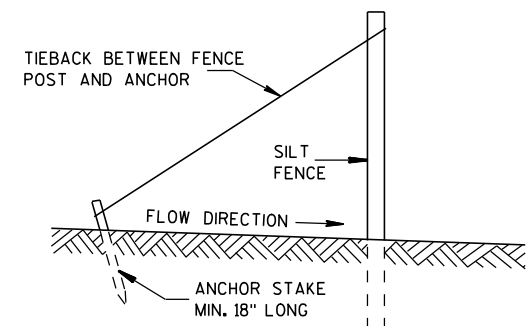


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤

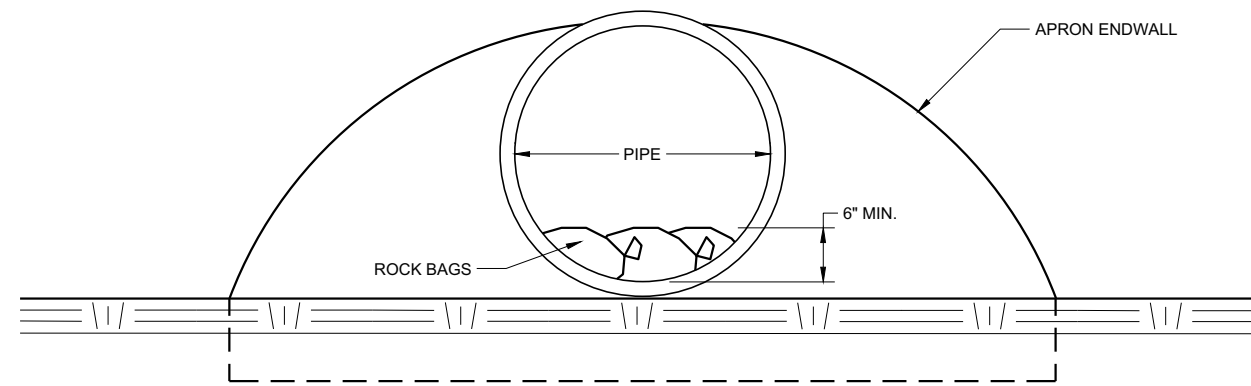


SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

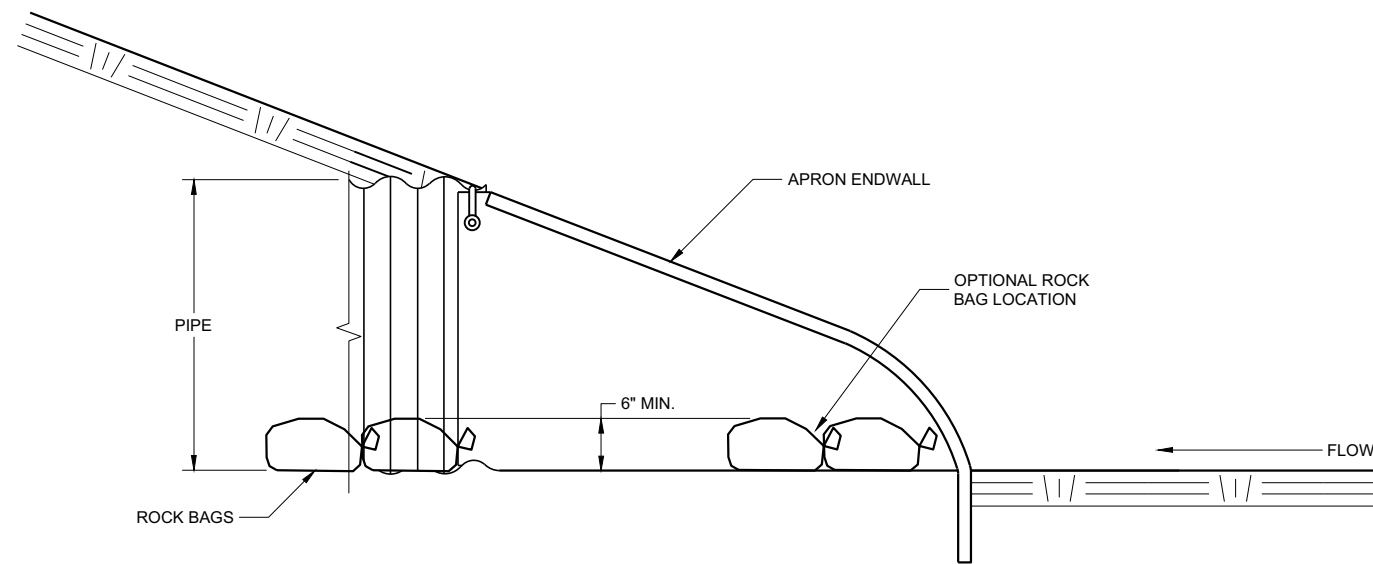
**SILT FENCE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



**END VIEW**



**SIDE VIEW**

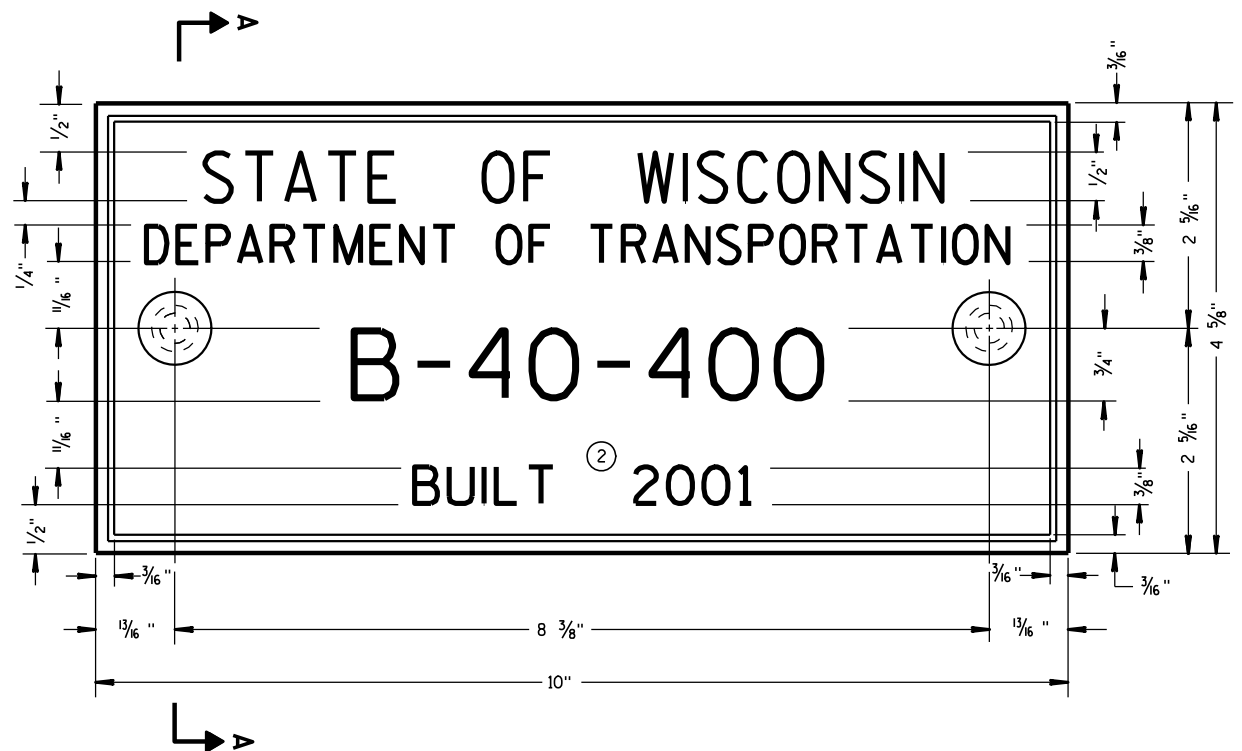
**CULVERT PIPE CHECK**  
(INSTALL ON INLET END ONLY)

**CULVERT PIPE CHECK**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



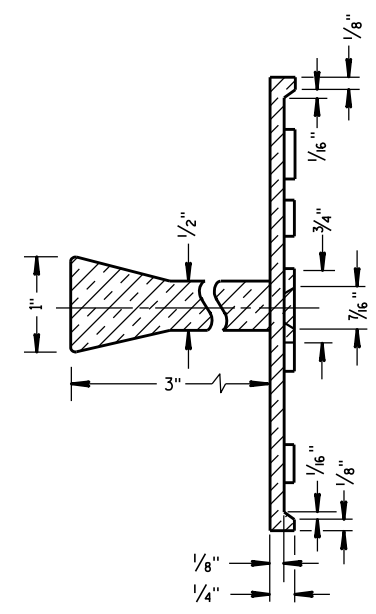
**TYPICAL NAME PLATE**  
(BRIDGES, CULVERTS, AND RETAINING WALLS)

**GENERAL NOTES**

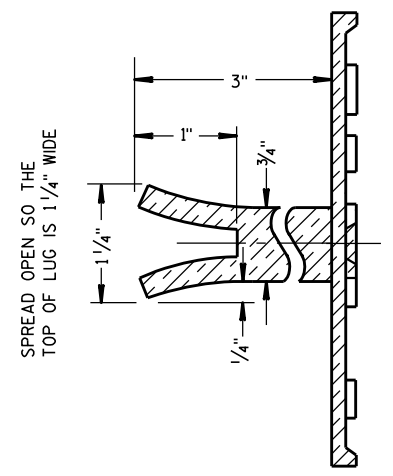
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



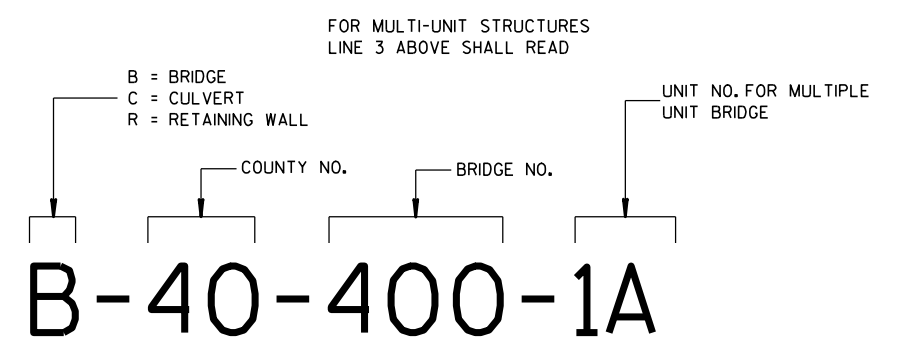
**SECTION A-A**



**ALTERNATE LUG**

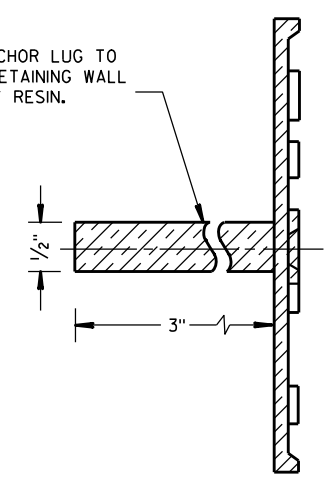
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**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



**ALTERNATE LUG**  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

<b>NAME PLATE (STRUCTURES)</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



**GENERAL NOTES**

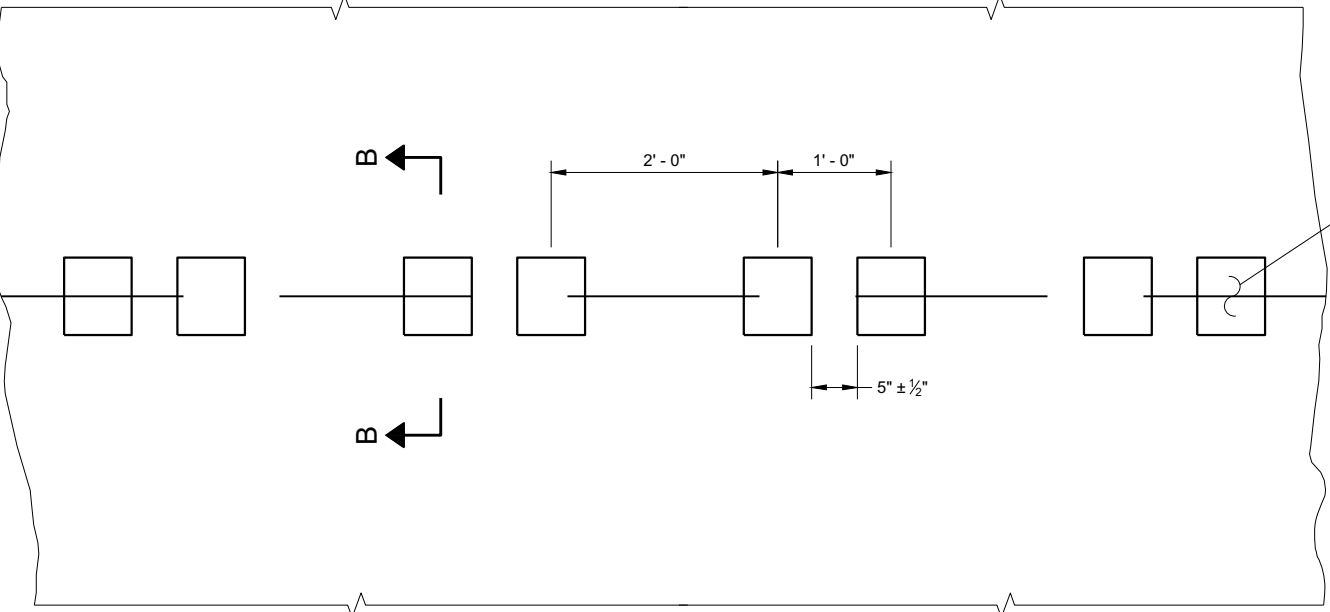
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

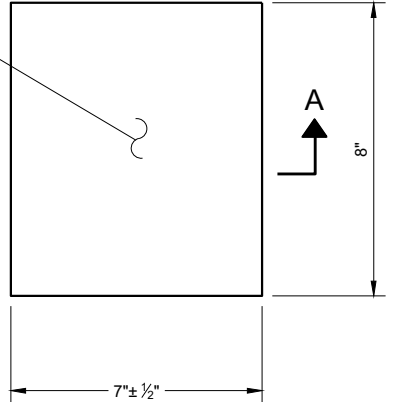
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

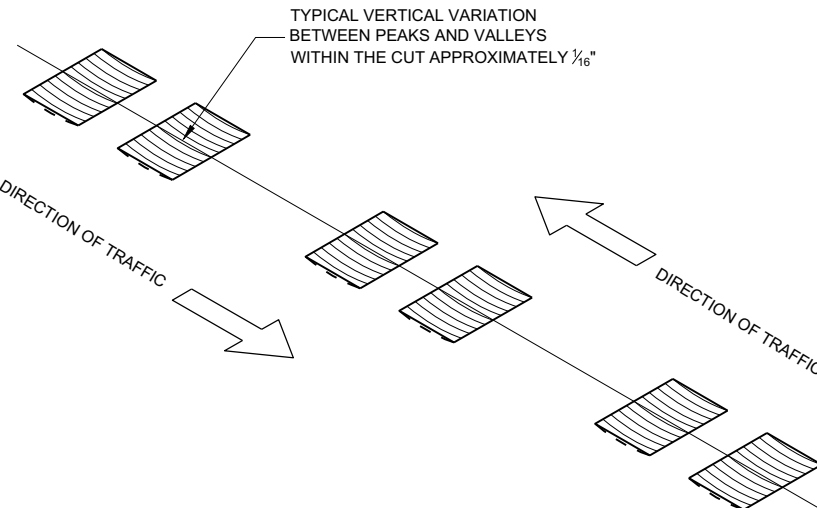
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



**PLAN VIEW  
SHOULDER WITH GROOVES**

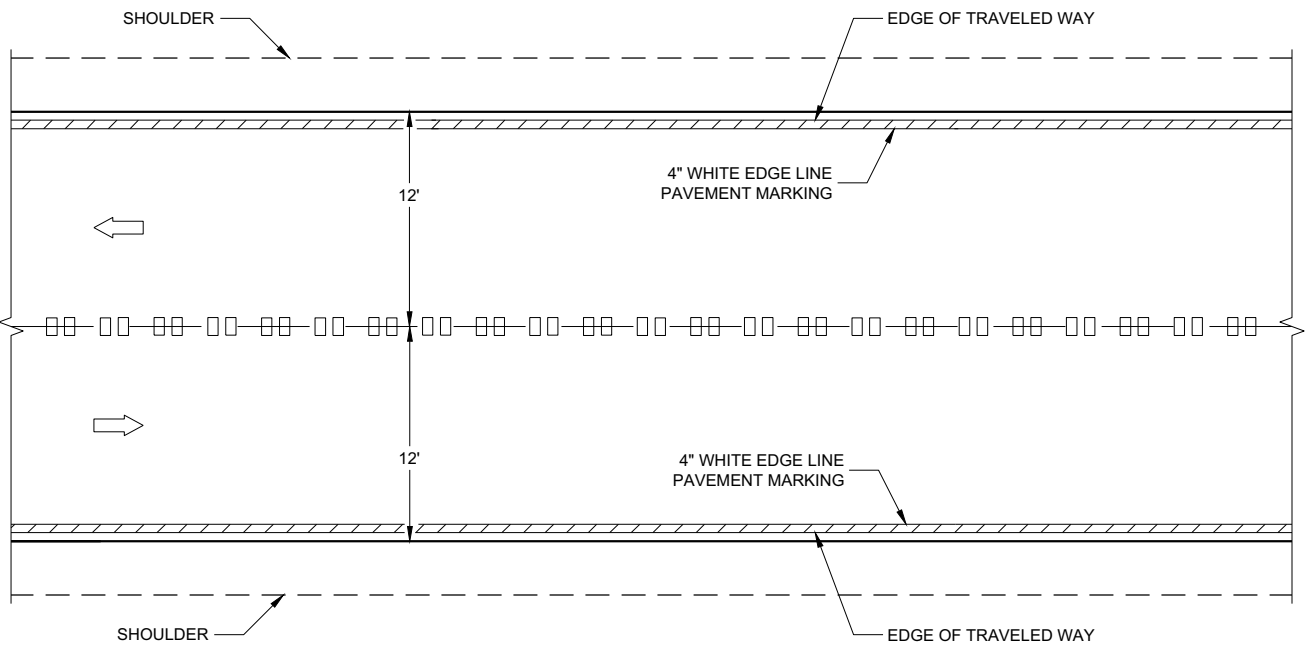


**PLAN VIEW  
(SINGLE GROOVE)**

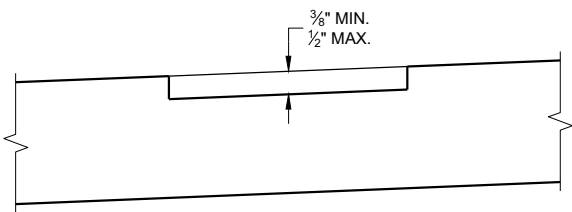


**ISOMETRIC**

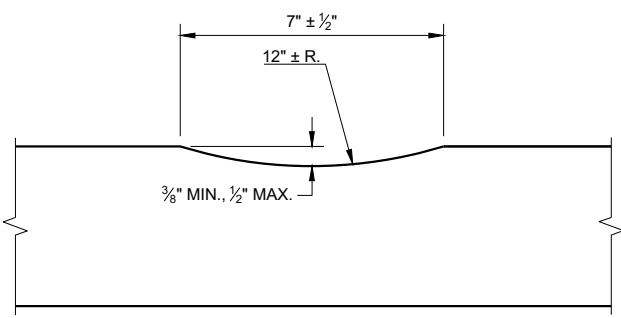
**PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP**



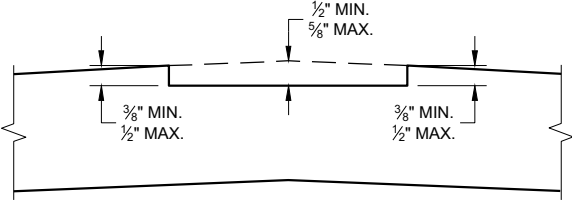
**CENTERLINE GROOVES ON TWO-WAY ROADWAYS**



**SECTION B - B  
SUPERELEVATED ROADWAY**

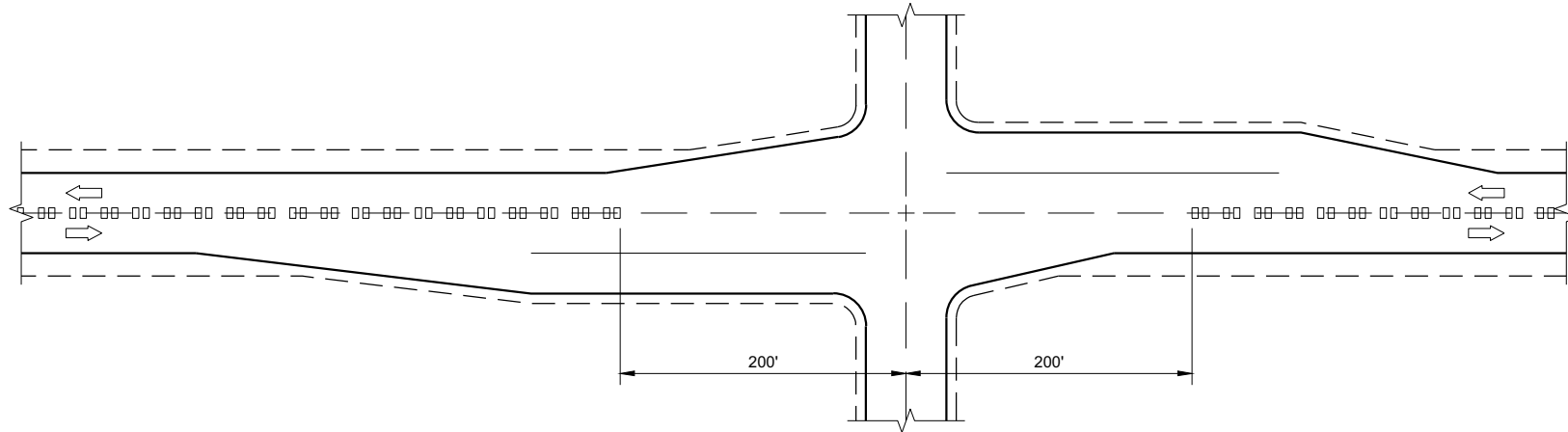


**SECTION A - A**

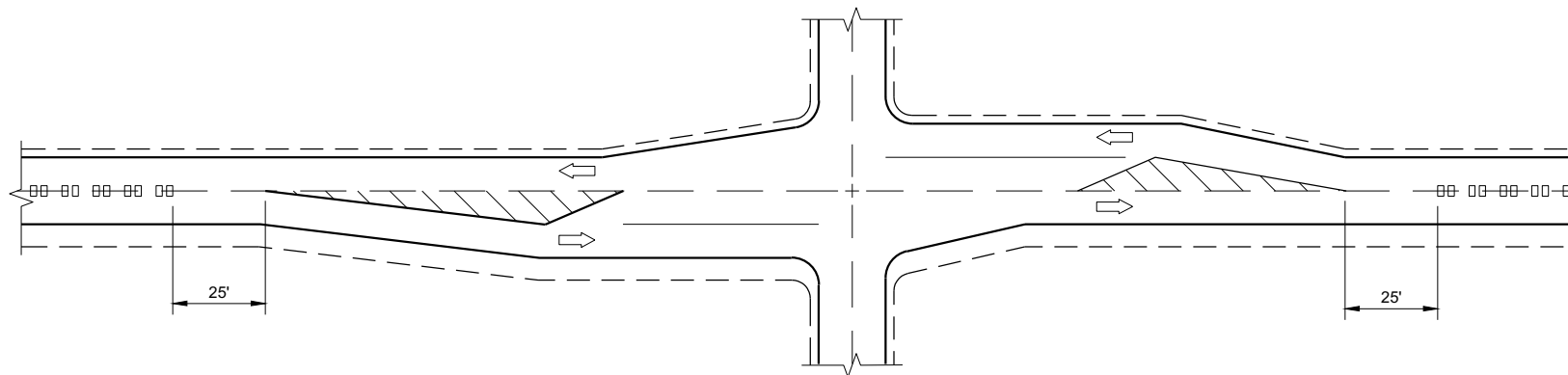


**SECTION B - B  
CROWNED ROADWAY**

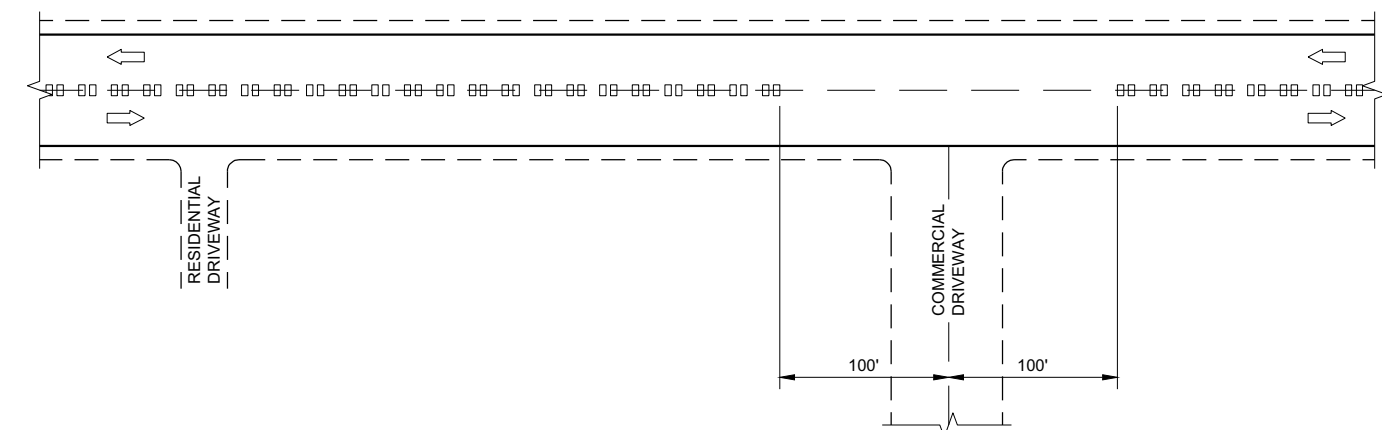
<p><b>2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING</b></p>
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>



**CENTERLINE GROOVES AT INTERSECTIONS**



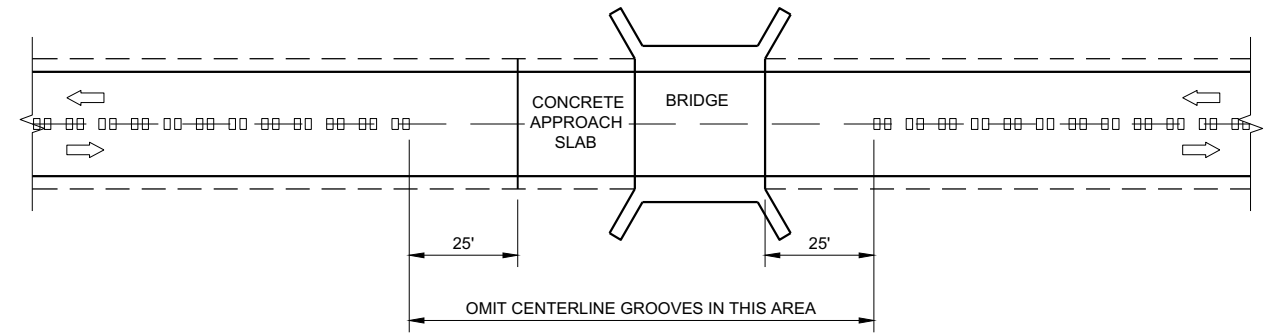
**CENTERLINE GROOVES AT INTERSECTIONS  
(WITH LEFT TURN LANES)**



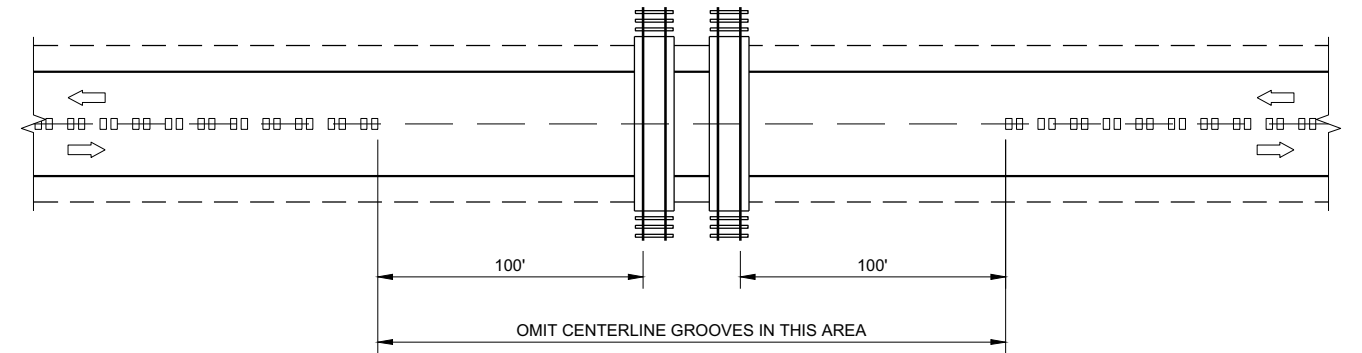
**CENTERLINE GROOVES AT DRIVEWAYS<sup>①</sup>**

**GENERAL NOTES**

- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



**CENTERLINE GROOVES AT BRIDGES**



**CENTERLINE GROOVES AT RAILROADS**

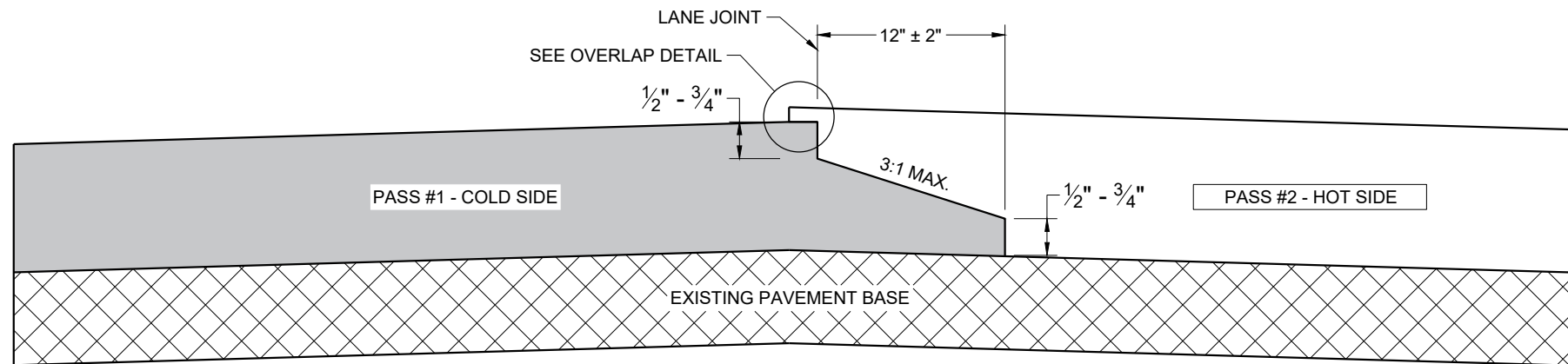
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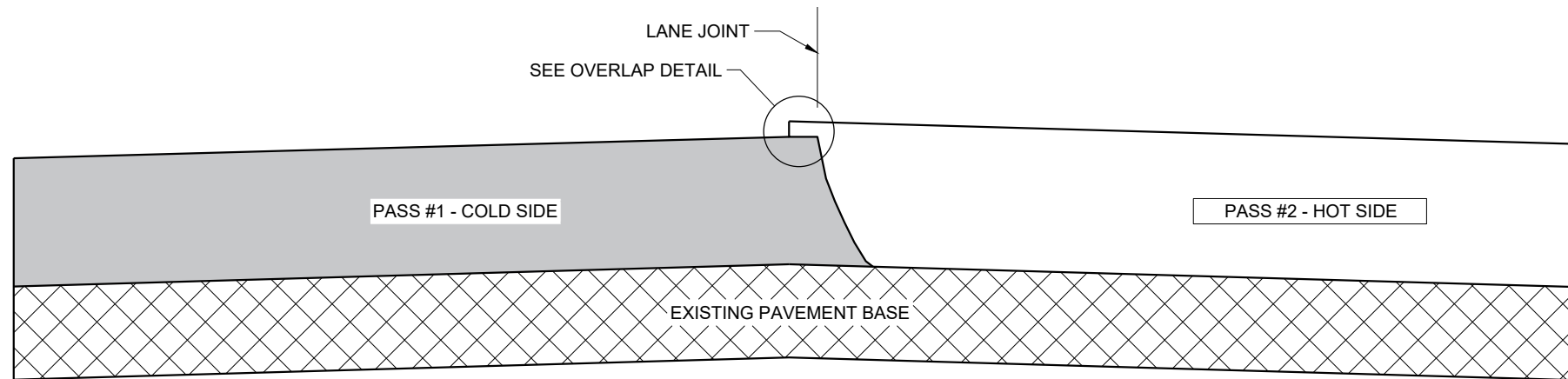
SDD 13A11 - 03b

SDD 13A11 - 03b

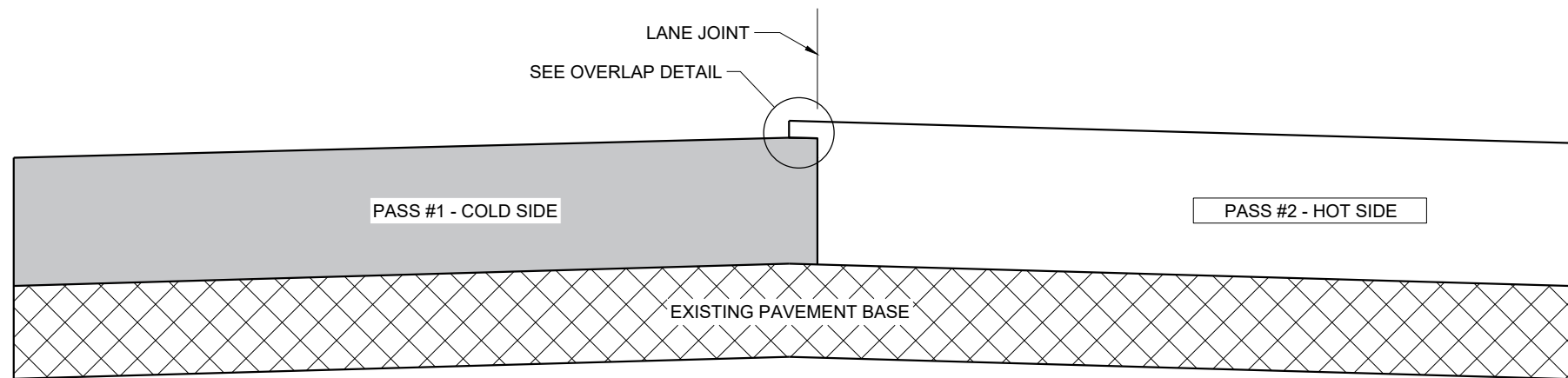
<b>2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 7/2018	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



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

**GENERAL NOTES**

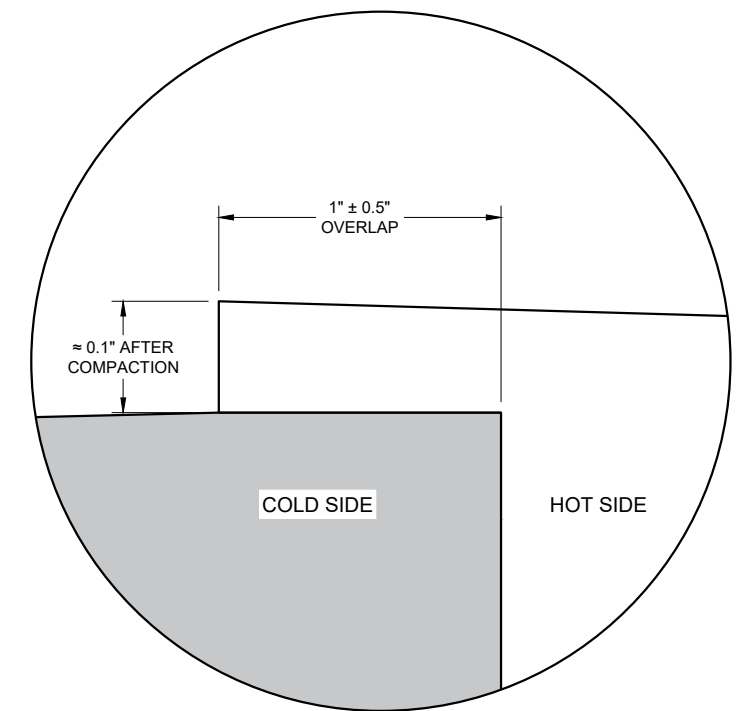
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



**OVERLAP DETAIL (TYPICAL)**

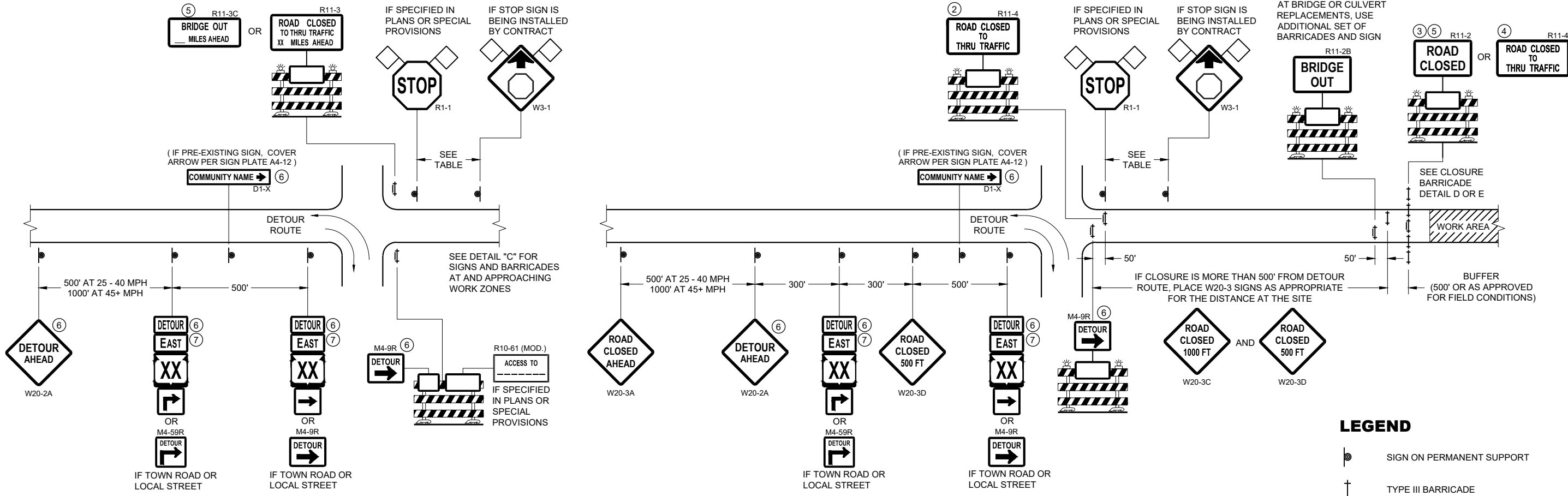
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SDD 13C19 - 03

SDD 13C19 - 03

<b>HMA LONGITUDINAL JOINTS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER
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**

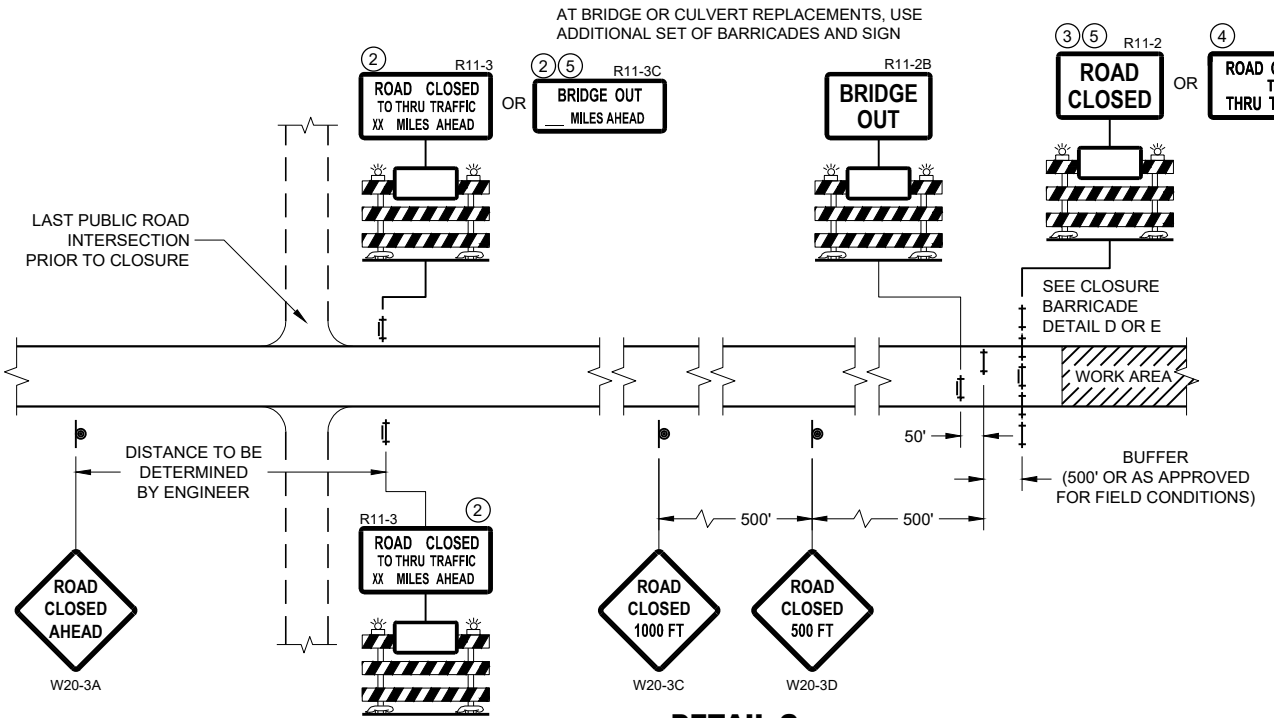
WORK ZONE LESS THAN 1/2 MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

**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
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



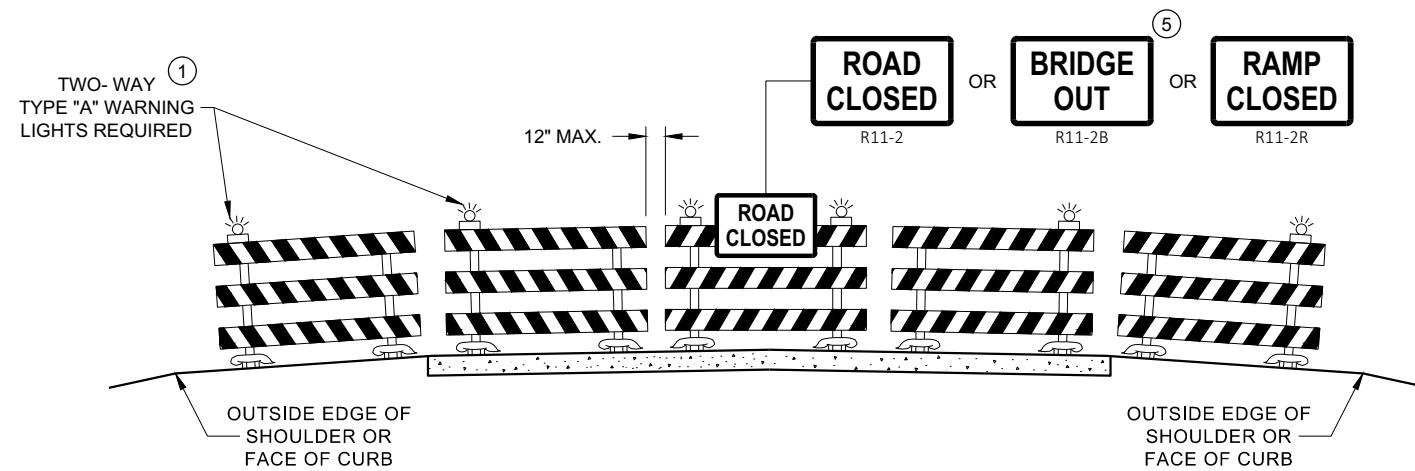
**DETAIL C  
MAINLINE CLOSURE, NO POSTED DETOUR**

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

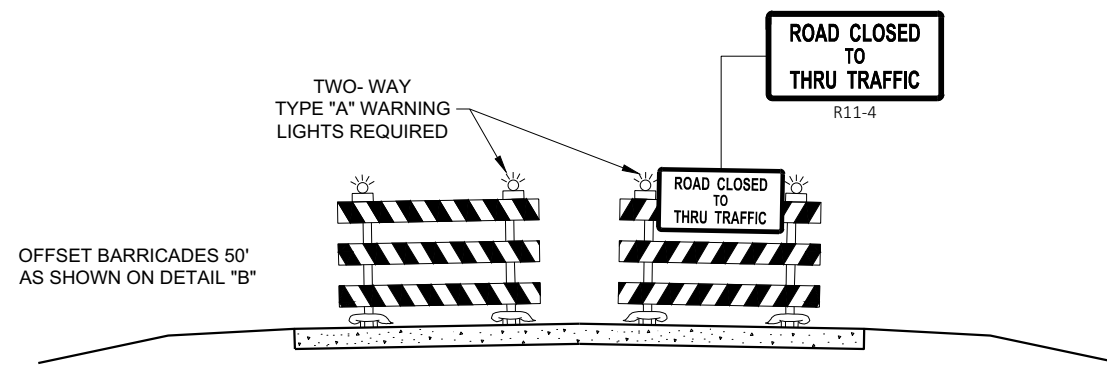
**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



**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"

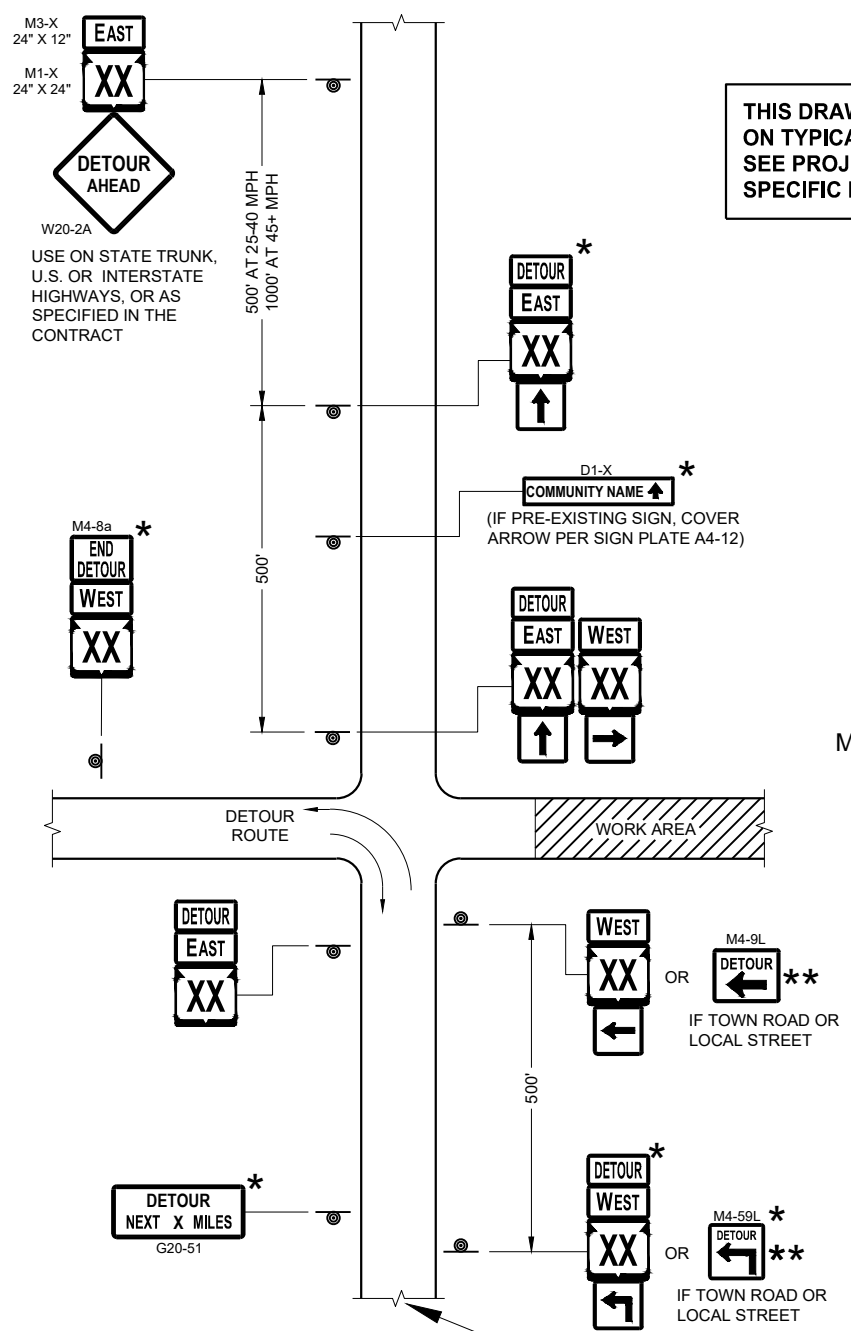
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS 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

FHWA



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.

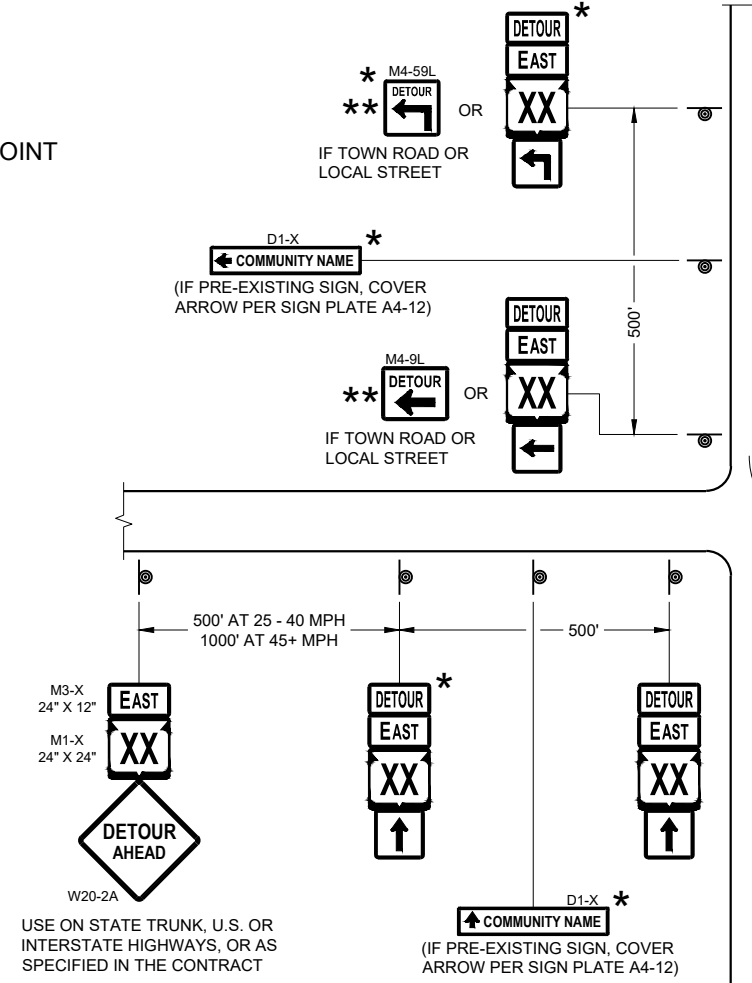
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

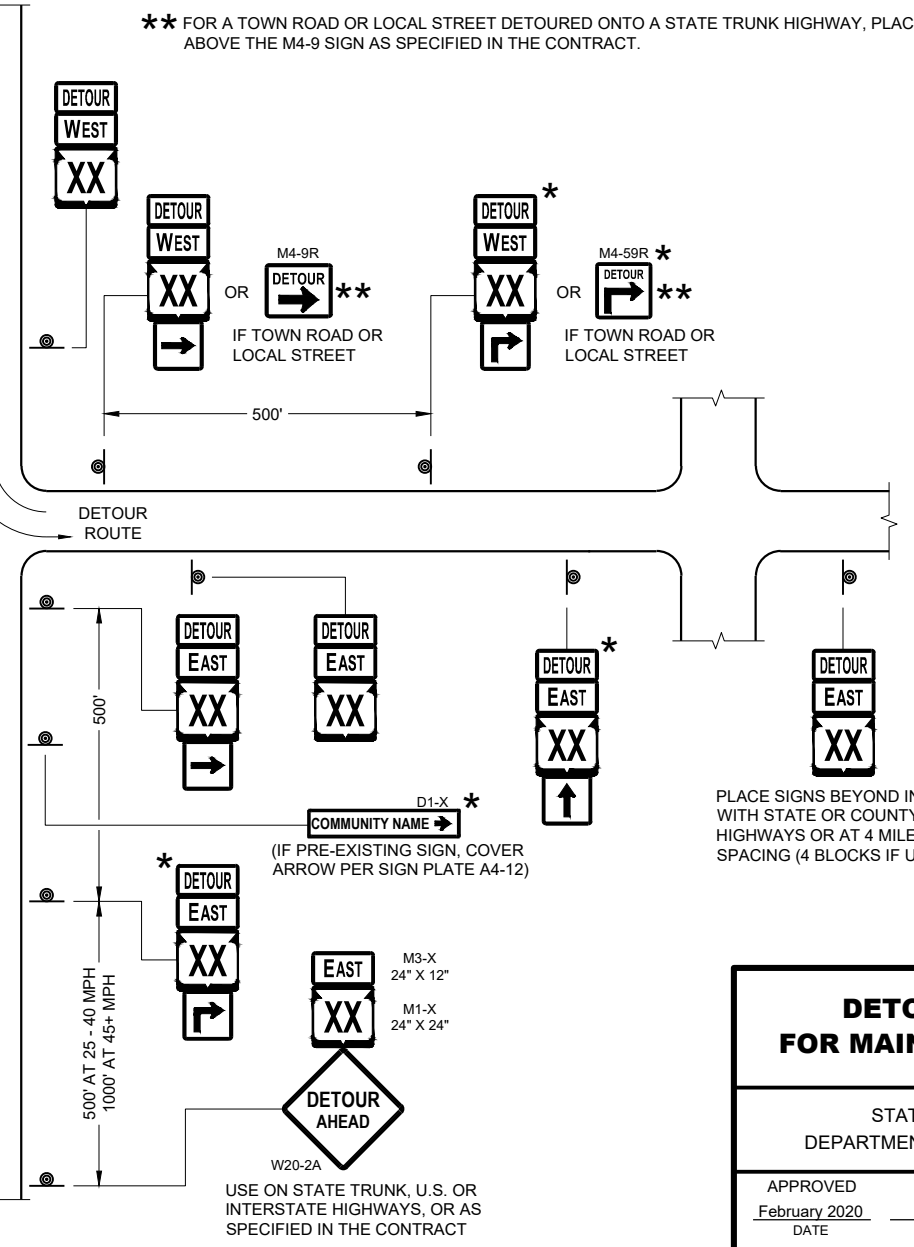
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING 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**



**DETOUR SIGNING  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

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




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

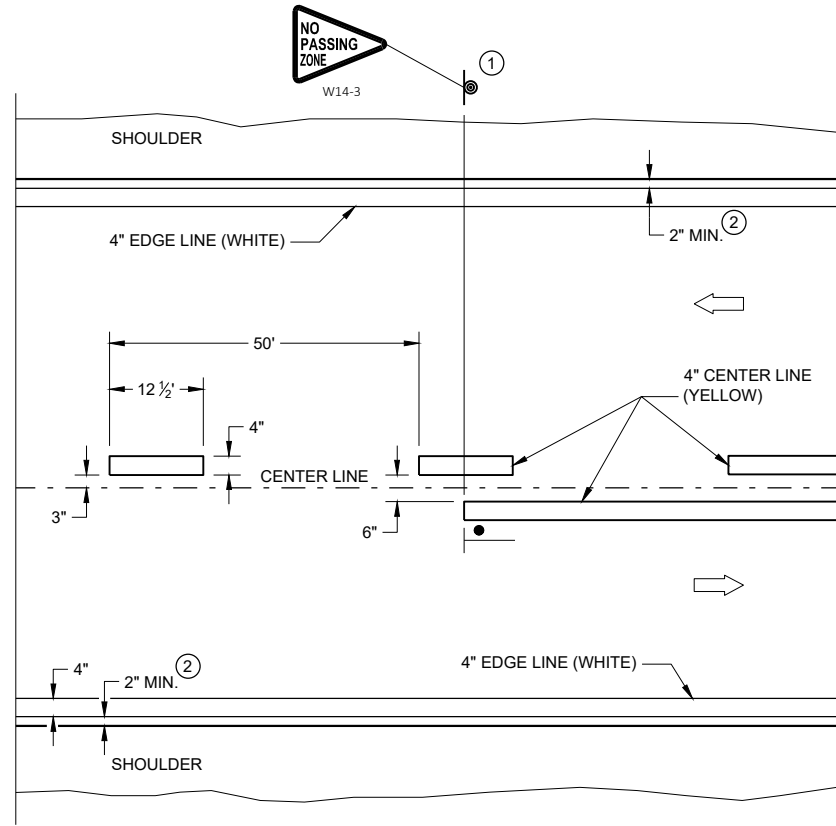
**GENERAL NOTES**

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

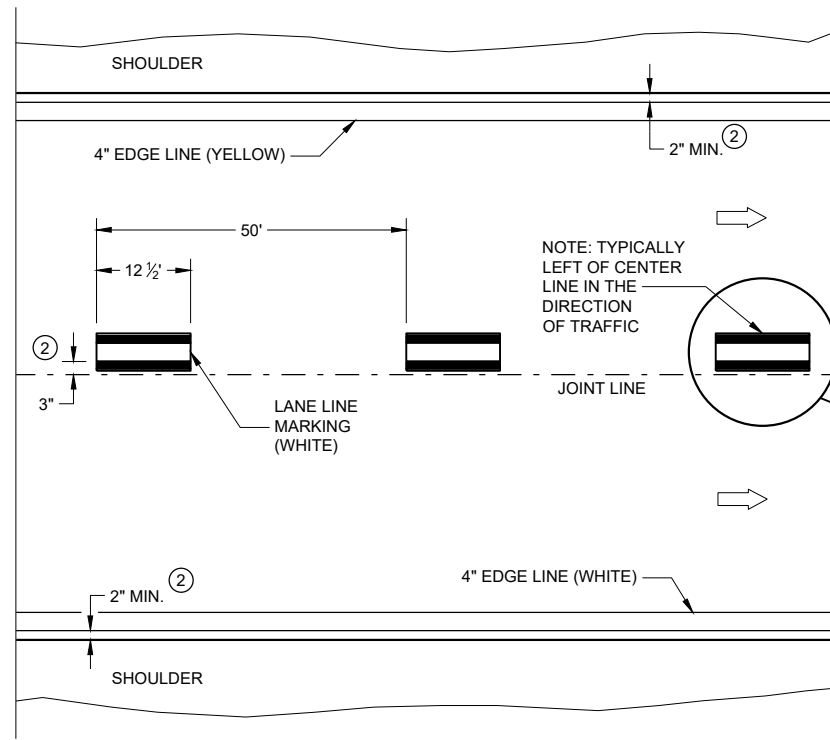
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

**LEGEND**

-  "T" MARKING
-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC

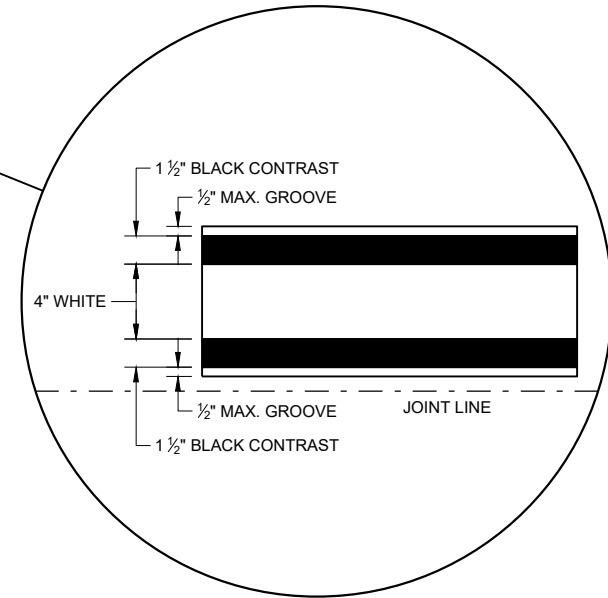


**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

**PERMANENT PAVEMENT MARKING**



6

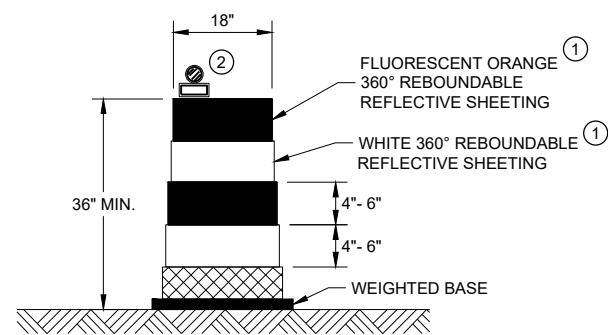
6

**PERMANENT LONGITUDINAL PAVEMENT MARKINGS**

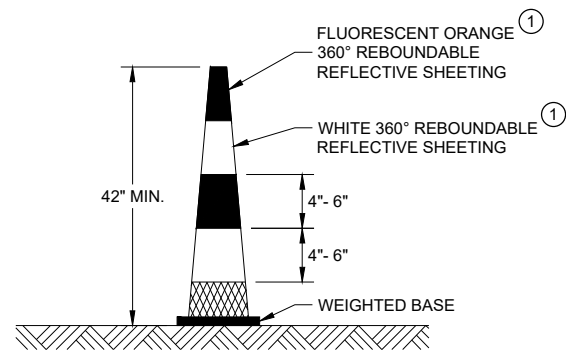
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE: May 2022 /S/ Jeannie Silver  
STATEWIDE SIGNING AND MARKING ENGINEER

FHWA

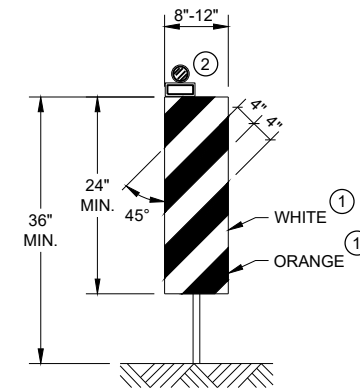


**DRUM**



**42" CONE**

DO NOT USE IN TAPERS  
1/2 SPACING OF DRUMS

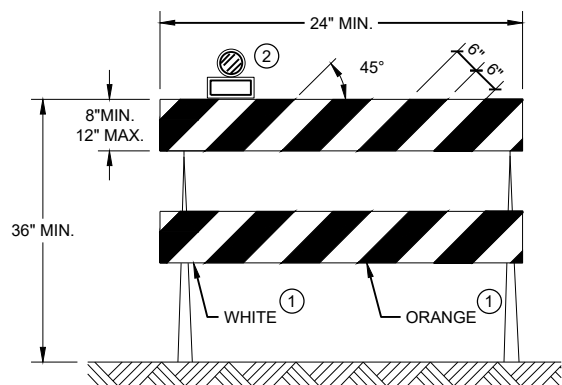


**VERTICAL PANEL**

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

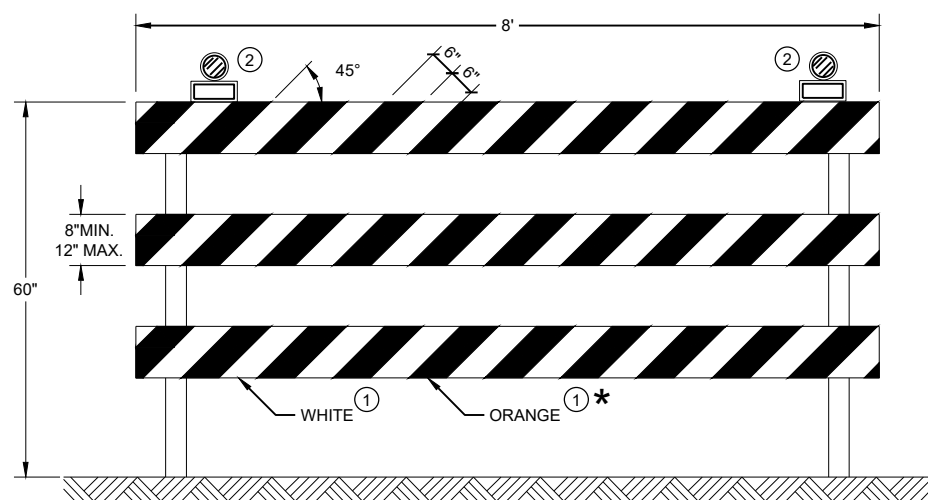
**GENERAL NOTES**

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



**TYPE 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.

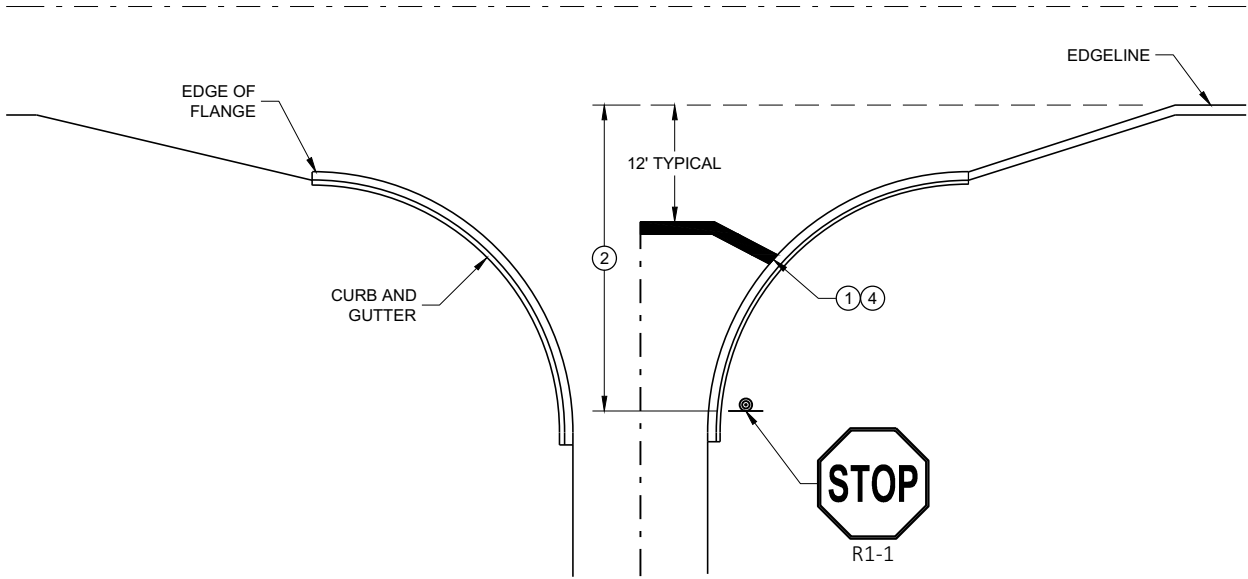
<b>CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	



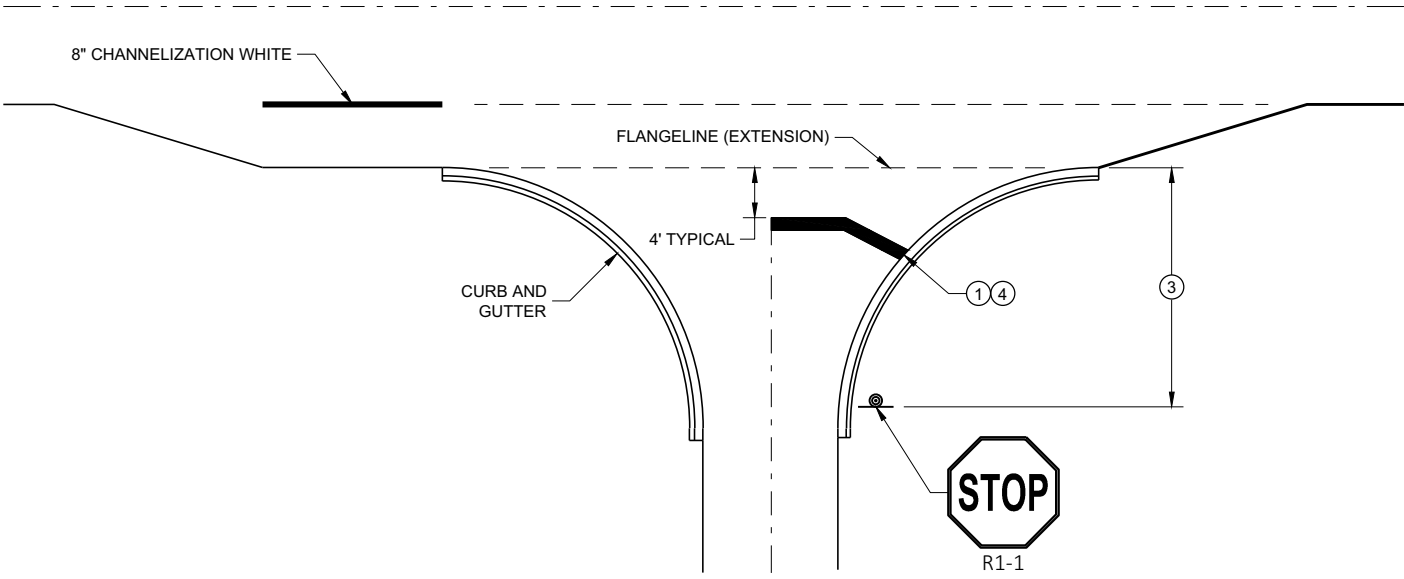
**GENERAL NOTES**

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

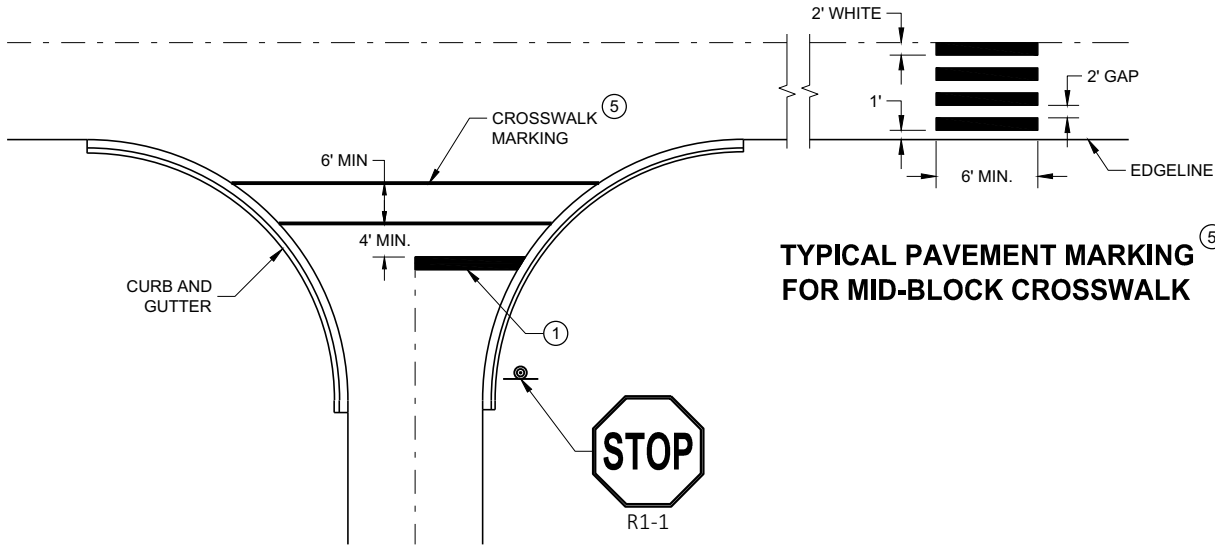
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.



**TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER**

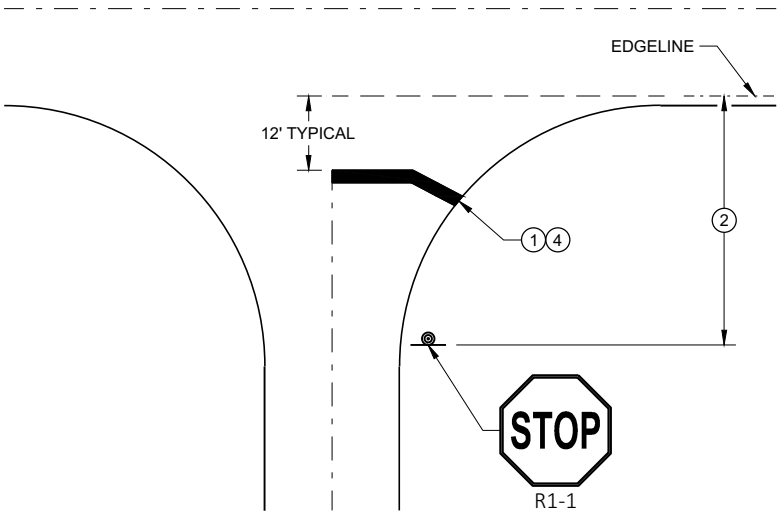


**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE**



**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING**

**TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK**



**TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER**

**STOP LINE AND CROSSWALK PAVEMENT MARKING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2019 /S/ Matthew Rauch  
DATE STATE SIGNING AND MARKING ENGINEER

FHWA

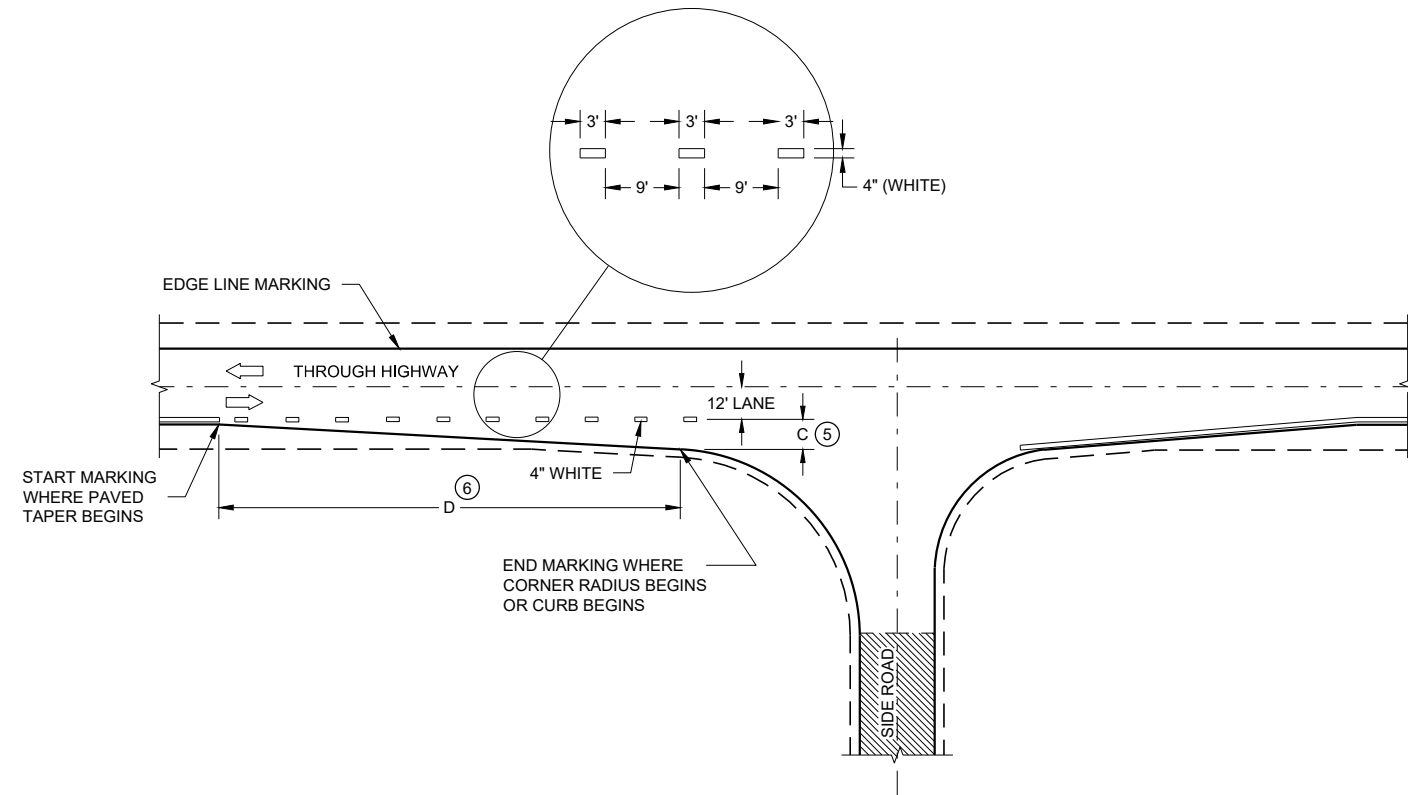
**GENERAL NOTES**

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

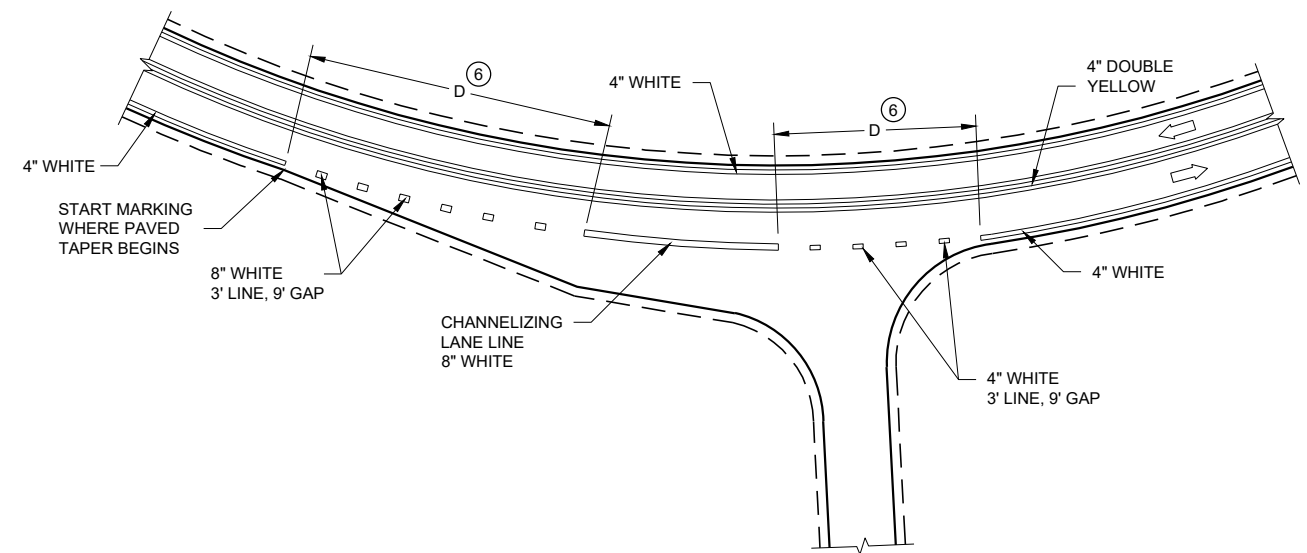
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

**LEGEND**

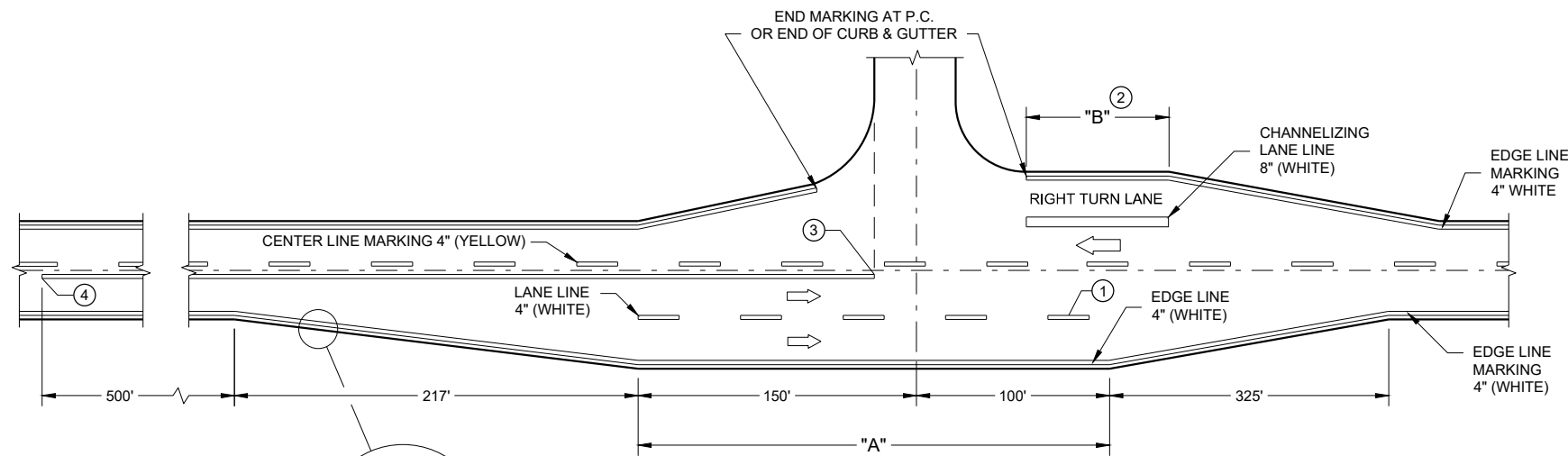
➡ DIRECTION OF TRAVEL



**MINOR INTERSECTION**

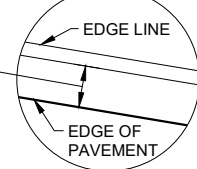


**INTERSECTION ON OUTSIDE OF CURVE**



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

BYPASS LANE PAVED SHOULDER WIDTH (AS SHOWN ELSEWHERE IN PLANS) - PLUS 2 INCHES



**PAVEMENT MARKING  
(INTERSECTIONS)**

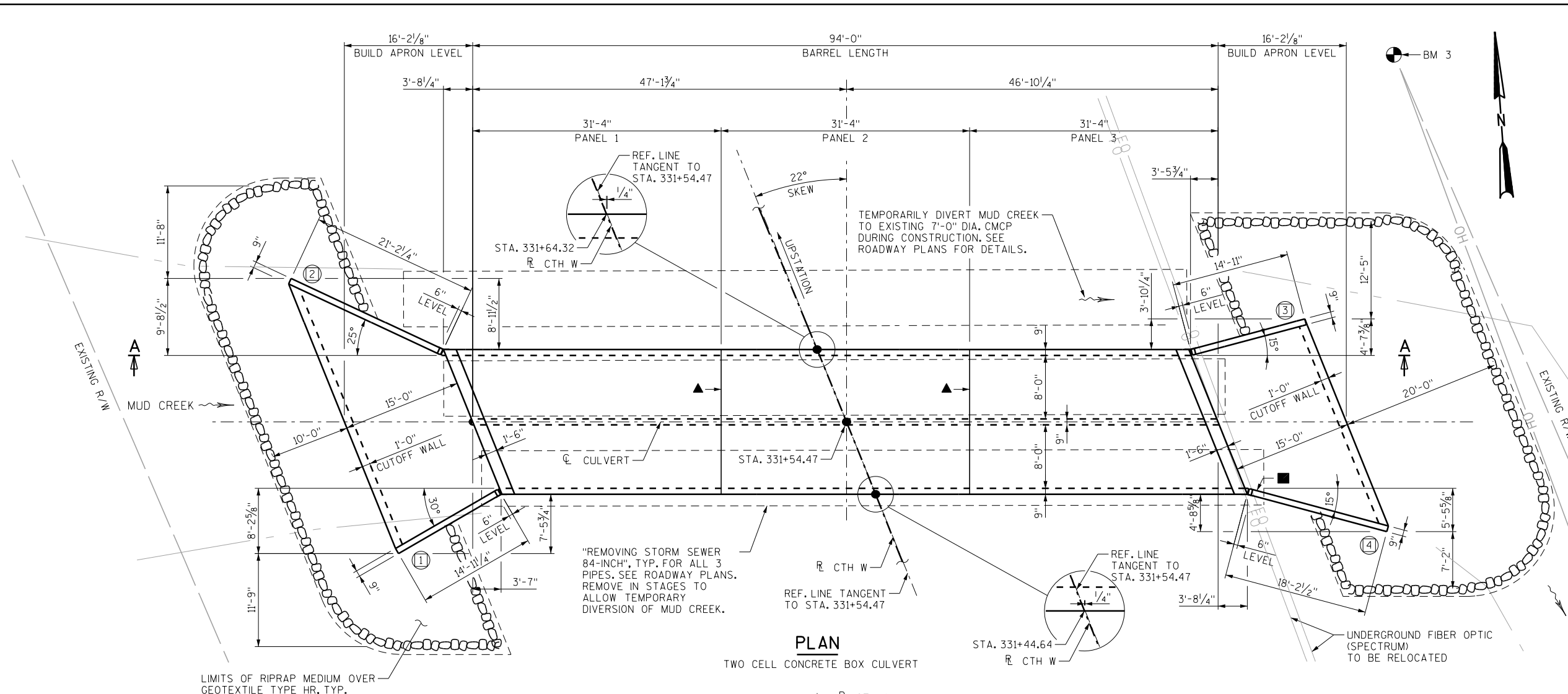
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**LEGEND**

- (X) INDICATES WING WALL NUMBER
- ▲ VERTICAL CONSTRUCTION JOINT.
- NAME PLATE LOCATION.

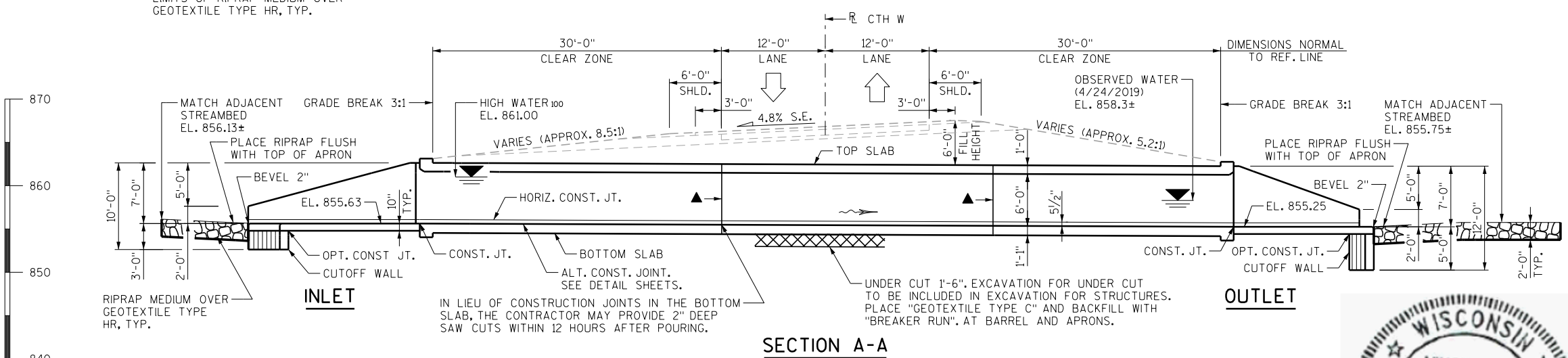
**'CTH W' CURVE DATA**

PISTA. = 329+78.49  
 Y = 346,486.24  
 X = 153,337.42  
 Δ = 27°28'45"  
 D = 2°15'00"  
 T = 622.63'  
 L = 1,221.30'  
 R = 2,546.48'  
 PC STA. = 323+55.86  
 PT STA. = 335+77.15



**PLAN**

TWO CELL CONCRETE BOX CULVERT



**SECTION A-A**

**HYDRAULIC DATA**

**100 YEAR FREQUENCY**  
 Q<sub>100</sub> = 375 C.F.S.  
 VEL. = 5.70 F.P.S.  
 HW<sub>100</sub> = EL. 861.00  
 WATERWAY AREA = 66 SQ. FT.  
 DRAINAGE AREA = 6.90 SQ. MI.  
 ROADWAY OVERTOPPING = N/A  
 SCOUR CRITICAL CODE = 8

**2 YEAR FREQUENCY**  
 Q<sub>2</sub> = 120 C.F.S.  
 VEL. = 2.62 F.P.S.  
 HW<sub>2</sub> = EL. 859.15

**LIST OF DRAWINGS**

1. GENERAL PLAN
2. CROSS SECTION AND NOTES
3. SUBSURFACE EXPLORATION
4. BARREL REINFORCEMENT 1
5. BARREL REINFORCEMENT 2
6. BARREL DETAILS
7. INLET APRON AND WINGWALLS
8. OUTLET APRON AND WINGWALLS
9. APRON DETAILS

**DESIGN DATA**

**LIVE LOAD:**  
 DESIGN LOAD: HL-93  
 INVENTORY RATING FACTOR = 1.05  
 OPERATING RATING FACTOR = 1.35  
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 255 KIPS

**EARTH LOAD:**  
 DESIGNED FOR FILL HEIGHT RANGE OF 3.0 TO 6.0 FEET.

**MATERIAL PROPERTIES:**  
 CONCRETE MASONRY:.....f'c = 3,500 PSI  
 HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60.....fy = 60,000 PSI

**TRAFFIC DATA**

CTH W  
 A.D.T. = 1,420 (2022)  
 A.D.T. = 1,730 (2042)  
 R.D.S. = 55 MPH

**BENCH MARK**

NO.	STATION	DESCRIPTION	ELEVATION
BM 3	STA. 331+78.19, 81.66' RT.	PK NAIL IN POWER POLE	859.84



**STRUCTURES DESIGN CONTACTS**  
 BRIDGE OFFICE:  
 AARON BONK, P.E. (608) 261-0261

CONSULTANT:  
 VINCENT DIFRANCES, P.E. (920) 468-4771

NO.	DATE	REVISION	BY

**ENGINEERING, INC**  
 Consultant Services

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

ACCEPTED: *[Signature]* SDR 08/16/22  
 CHIEF STRUCTURES DESIGN ENGINEER DATE

**STRUCTURE C-36-251**  
 CTH W OVER MUD CREEK

COUNTY: MANITOWOC TOWN: MAPLE GROVE

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

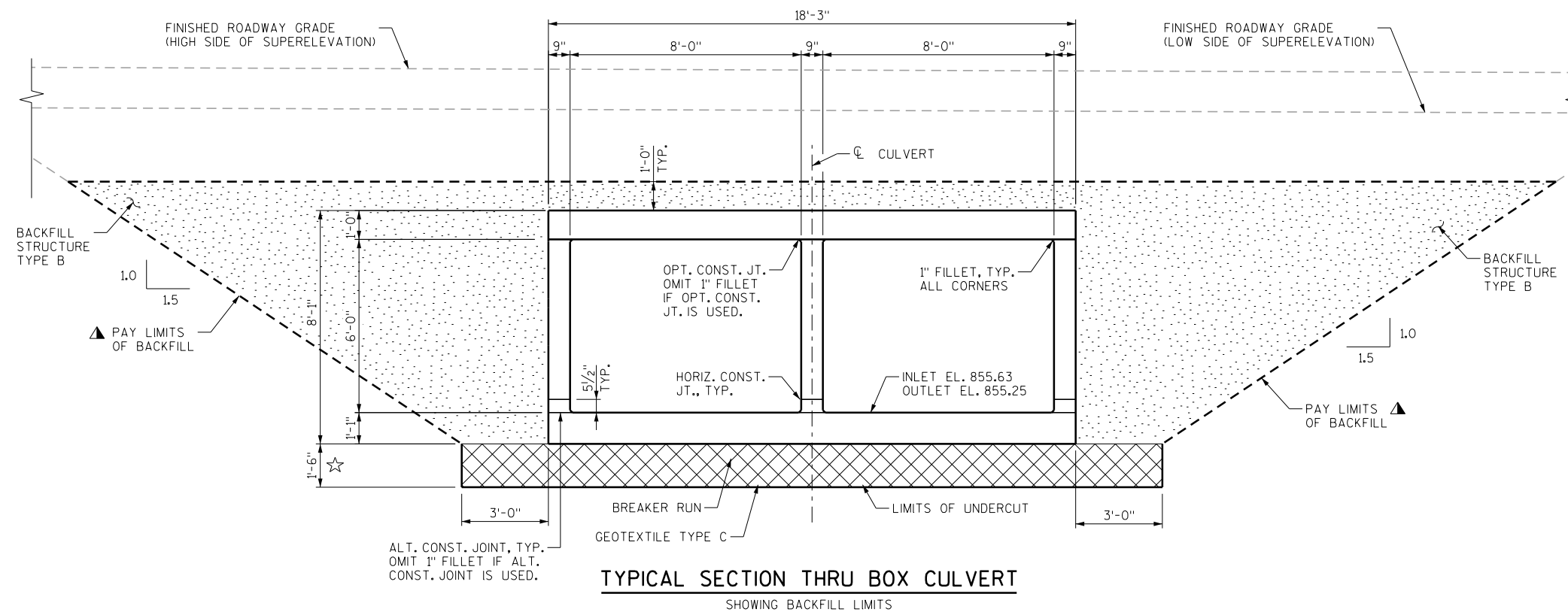
DESIGNED BY: VJD DESIGN CKD: CJM DRAWN BY: VJD PLANS CKD: CJM

**GENERAL PLAN**

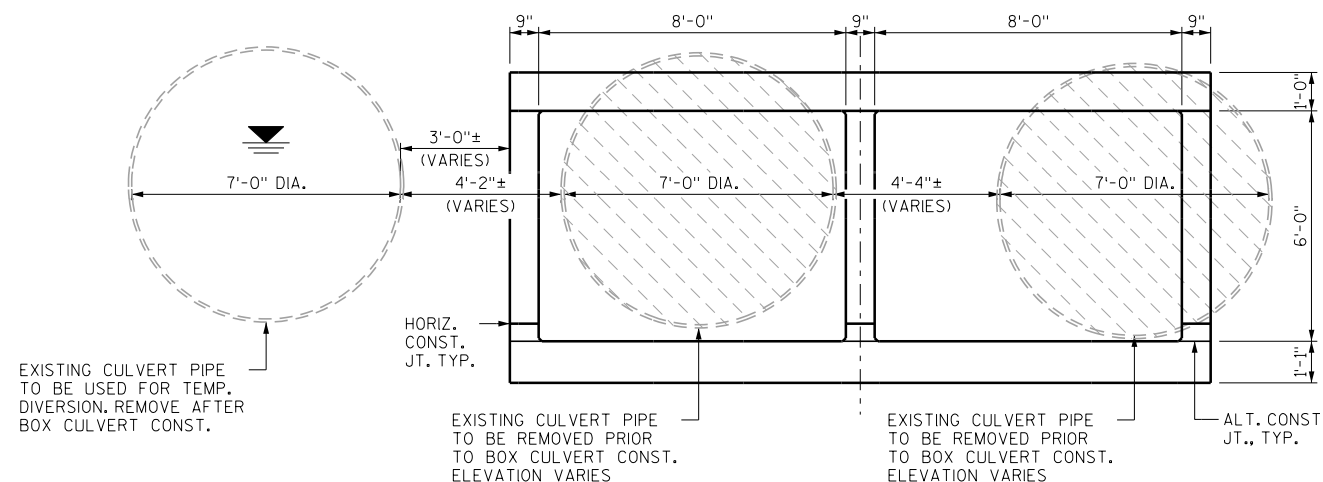
SHEET 1 OF 9

8

8



TYPICAL SECTION THRU BOX CULVERT  
SHOWING BACKFILL LIMITS

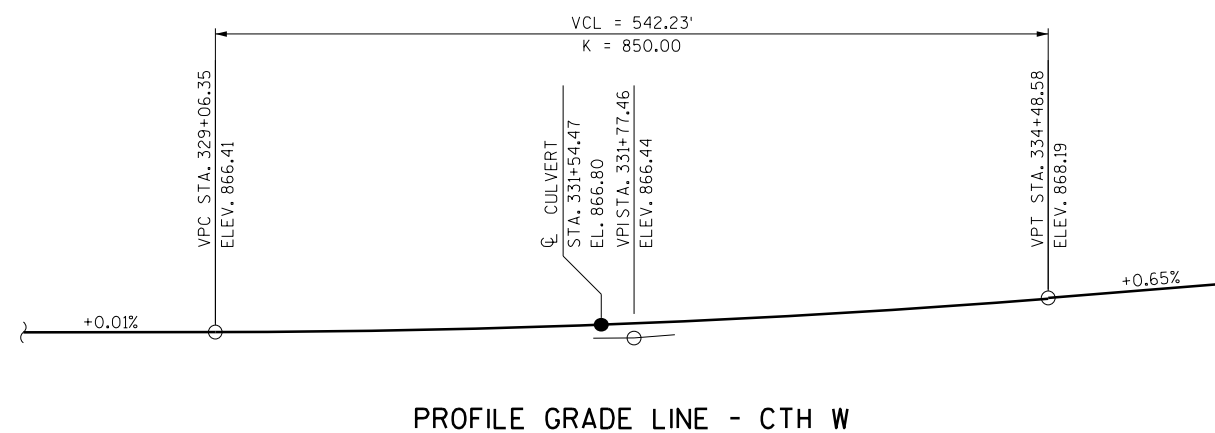


TEMPORARY SECTION THRU BOX CULVERT  
LOOKING EAST  
SHOWING EXISTING PIPE CULVERT

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
206.2001	EXCAVATION FOR STRUCTURES CULVERTS C-36-251	EACH	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	1,515
311.0110	BREAKER RUN	TON	350
504.0100	CONCRETE MASONRY CULVERTS	CY	223
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	27,210
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,310
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	30
606.0200	RIPRAP MEDIUM	CY	160
645.0105	GEOTEXTILE TYPE C	SY	450
645.0120	GEOTEXTILE TYPE HR	SY	320
NON-BID ITEMS			
	NAME PLATE	EACH	1
	PREFORMED FILLER	SIZE	1/2" & 3/4"

ALL C-36-251 BID ITEMS ARE CATEGORY 0020



PROFILE GRADE LINE - CTH W

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
- BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
- THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-36-251" SHALL BE THE EXISTING GROUNDLINE.
- REMOVAL OF THE EXISTING PIPE CULVERTS SHALL BE INCLUDED IN ROADWAY BID ITEM "REMOVING STORM SEWER 84-INCH". SEE ROADWAY PLANS FOR ESTIMATED QUANTITIES.
- ALL VOLUME WHICH CANNOT BE PLACED BEFORE CULVERT CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL WITHIN THE LENGTH OF THE CULVERT INCLUDING THE APRON WING WALLS.
- THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE B" IS REQUIRED ON THE BOX CULVERT SIDES AND BEHIND APRON WING WALLS.
- THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.
- THE ALTERNATE CUT OFF WALL ON DETAIL SHOWN ON SHEET 9 MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONCRETE CUT OFF WALLS. PAYMENT SHALL BE BASED ON CONCRETE CUT OFF WALLS.
- PLACE 18" MIN. WIDE SHEET OF "RUBBERIZED MEMBRANE WATERPROOFING" ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.
- PREFORMED FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O DESIGNATION M153, TYPES I, II, OR III OR M213.
- THE CONTRACTOR MAY FURNISH A PRECAST BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES MAINTENANCE SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS IN CHAPTER 36 STANDARDS OF THE CURRENT WISCONSIN DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".
- THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.
- STREAM DIVERSION DURING CONSTRUCTION TO BE PAID UNDER ROADWAY BID ITEM "TEMPORARY STREAM DIVERSION CULVERT C-36-251". SEE SPECIAL PROVISIONS AND ROADWAY PLANS FOR DIVERSION DETAILS.
- PLACE RIPRAP MEDIUM AND GEOTEXTILE TYPE HR TO THE EXTENTS SHOWN ON SHEET 1. ENSURE GEOTEXTILE TYPE HR IS COMPLETELY BURIED BENEATH RIPRAP AND TRIM LOOSE EDGES FLUSH WITH ADJACENT SURFACES.

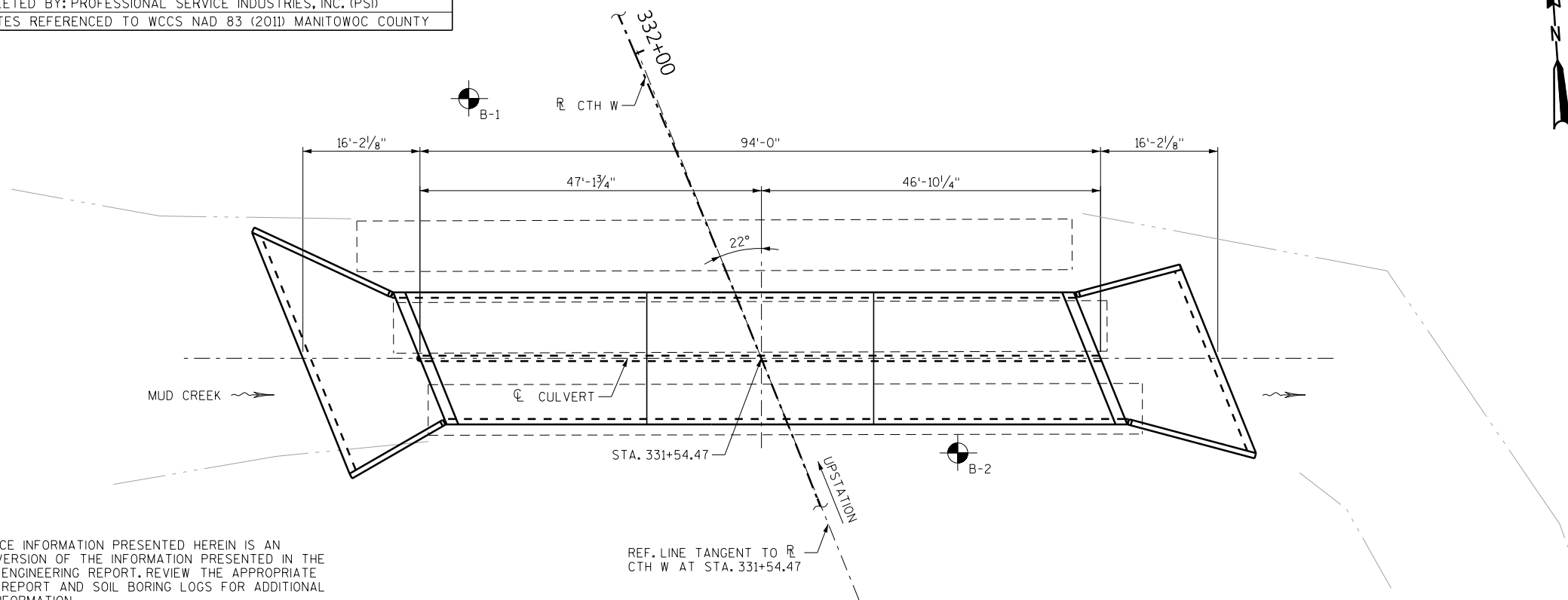
LEGEND

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ☆ IN LIEU OF USING BREAKER RUN FOR THE BOX CONSTRUCTION PLATFORM, THE CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL, OR OTHER GRANULAR MATERIAL AS APPROVED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-36-251			
		DRAWN BY VJD	PLANS CK'D. CJM
CROSS SECTION AND NOTES			SHEET 2 OF 9

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	DECEMBER 18, 2020	346688.131	153175.786
2	DECEMBER 18, 2020	346634.411	153239.616

BORINGS COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)  
 REPORT COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)  
 ALL COORDINATES REFERENCED TO WCCS NAD 83 (2011) MANITOWOC COUNTY

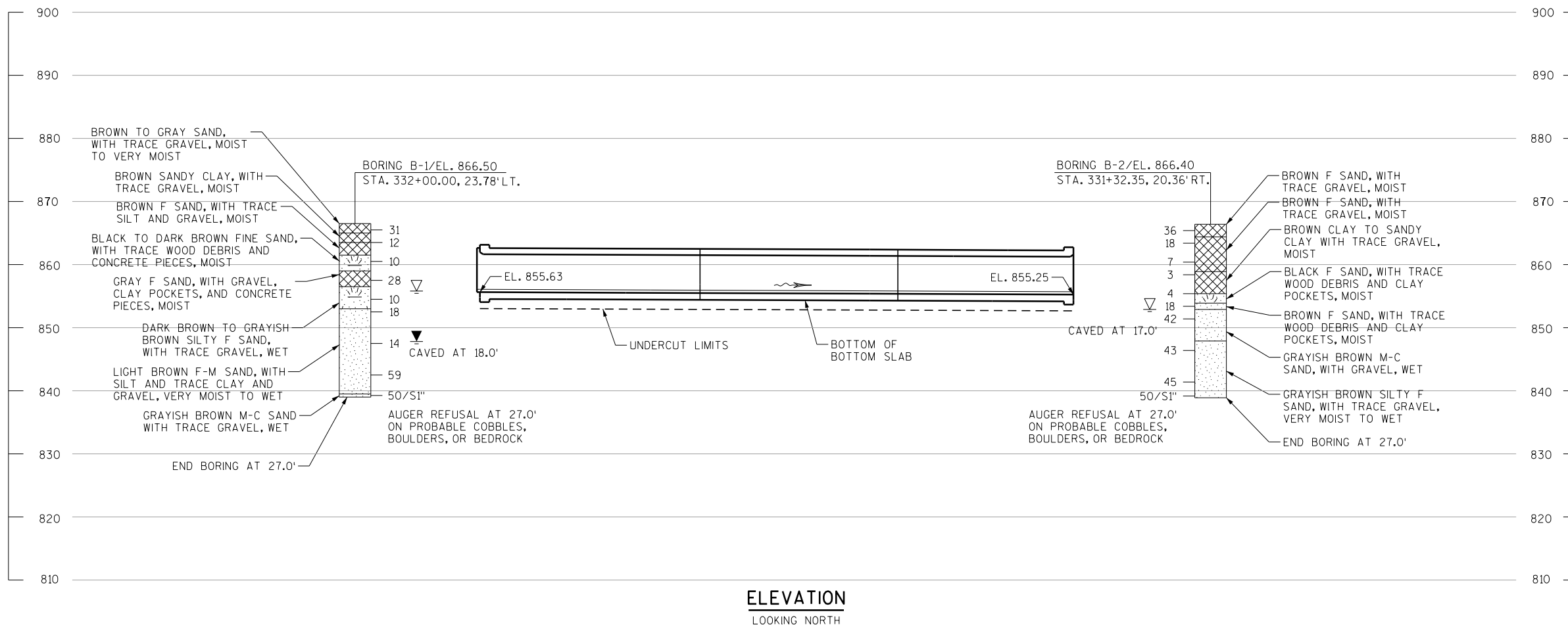


**NOTE**

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORING STATIONS AND OFFSETS ARE BASED ON R CTH W.

**PLAN**



**ELEVATION**  
LOOKING NORTH

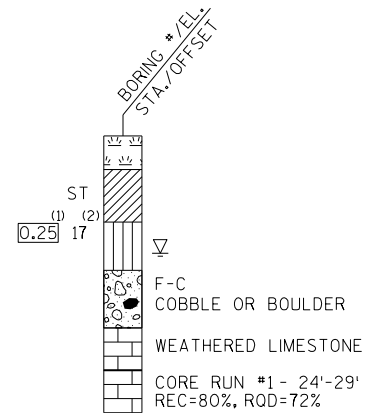
STATE PROJECT NUMBER

**4323-08-72**

**MATERIAL SYMBOLS**

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

**LEGEND OF BORING**



<sup>(1)</sup> UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

<sup>(2)</sup> UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

**GROUND WATER ELEVATION**

- ▽ AT TIME OF DRILLING
- ▽ END OF DRILLING
- ▽ AFTER DRILLING

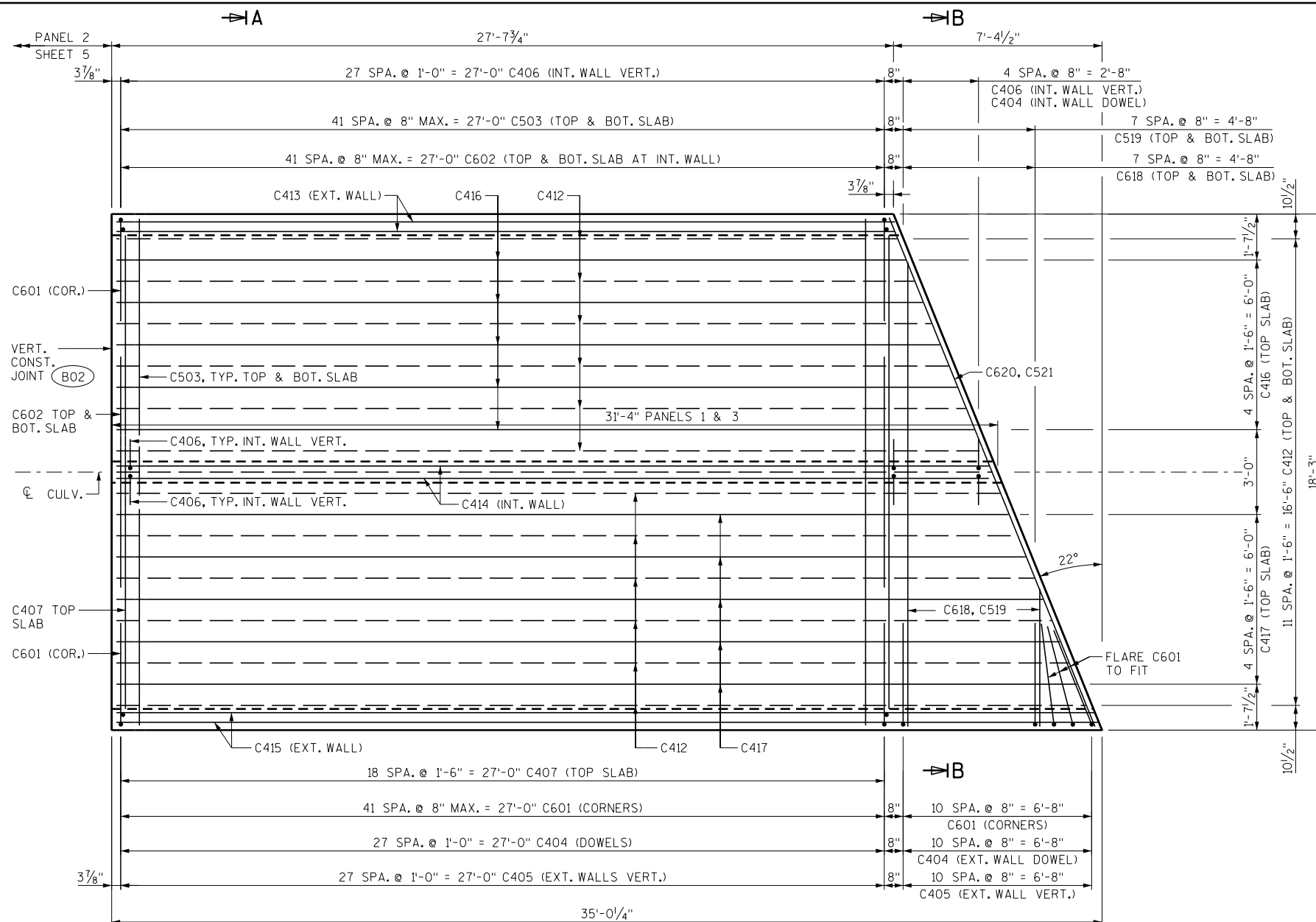
**ABBREVIATIONS**

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

**SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION**

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE C-36-251</b>			
DRAWN BY VJD		PLANS CKD. CJM	
<b>SUBSURFACE EXPLORATION</b>			SHEET 3 OF 9

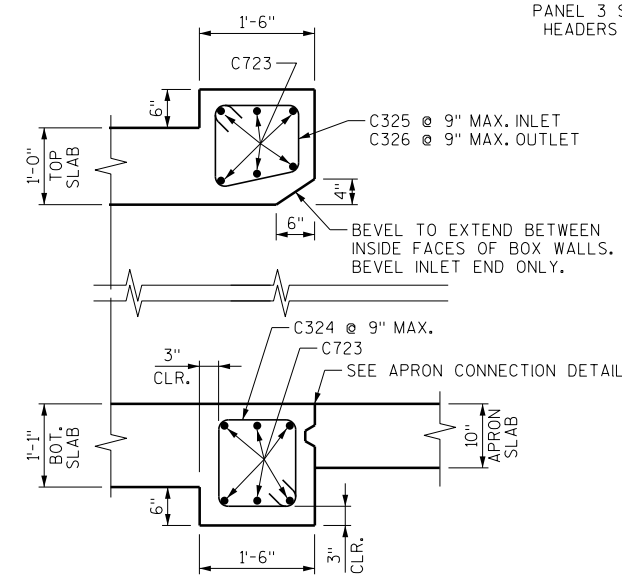


**REINFORCEMENT PLAN - PANELS 1 & 3**

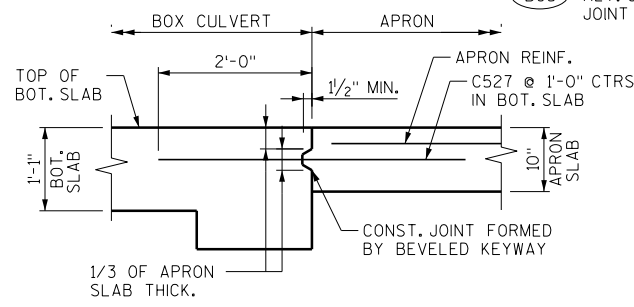
EXTERIOR PANELS  
PANEL 3 SHOWN, PANEL 1 SIMILAR, OPPOSITE HAND  
HEADERS AND APRON NOT SHOWN FOR CLARITY

**LEGEND**

- (B01) HORIZONTAL CONSTRUCTION JOINT.
- (B02) 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING (RMW) UP WALLS AND ACROSS TOP OF SLAB AT VERTICAL CONST. JOINTS. EXTEND RMW 6" MIN BELOW THE TOP OF BOT. SLAB.
- (B03) OPTIONAL CONSTRUCTION JOINT. OMIT 1" FILLET IF OPTIONAL CONSTRUCTION JOINT IS USED, TYP.
- (B04) CONTRACTOR MAY UTILIZE ADHESIVE ANCHORS NO. 5 BAR. EMBED 6" IN CONCRETE. NO. 5 BAR AND MASONRY ADHESIVE INCIDENTAL TO "BAR STEEL REINFORCEMENT HS STRUCTURES".
- (B05) ALT. CONST. JOINT. OMIT 1" FILLET IF ALT. CONST. JOINT IS USED.

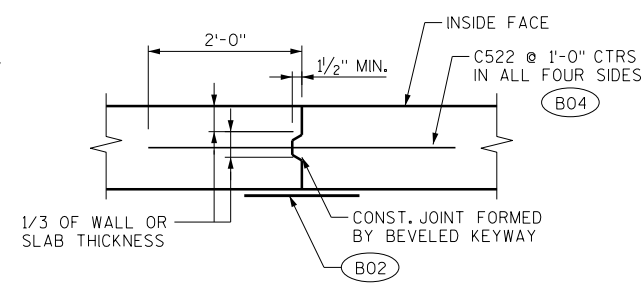


**SECTION THRU TOP & BOTTOM SLAB HEADER**



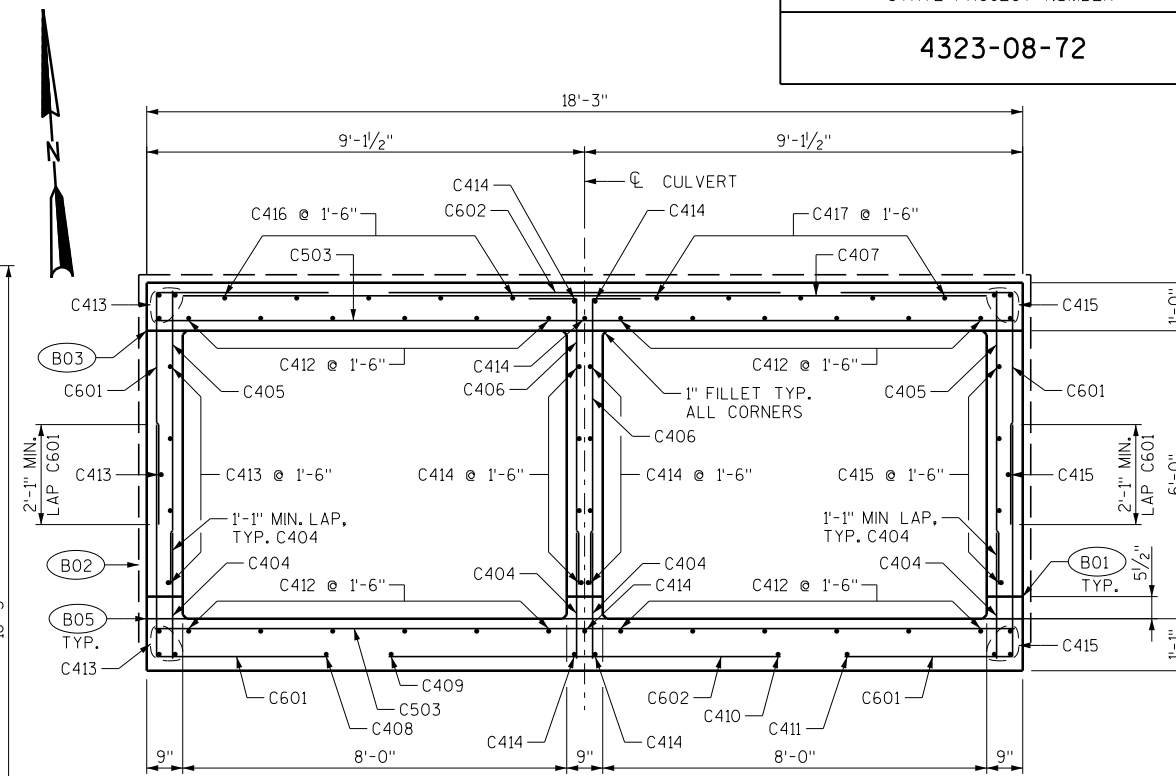
**APRON CONNECTION DETAIL**

2" DEEP SAWCUT WITHIN 12 HOURS AFTER POURING  
MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB

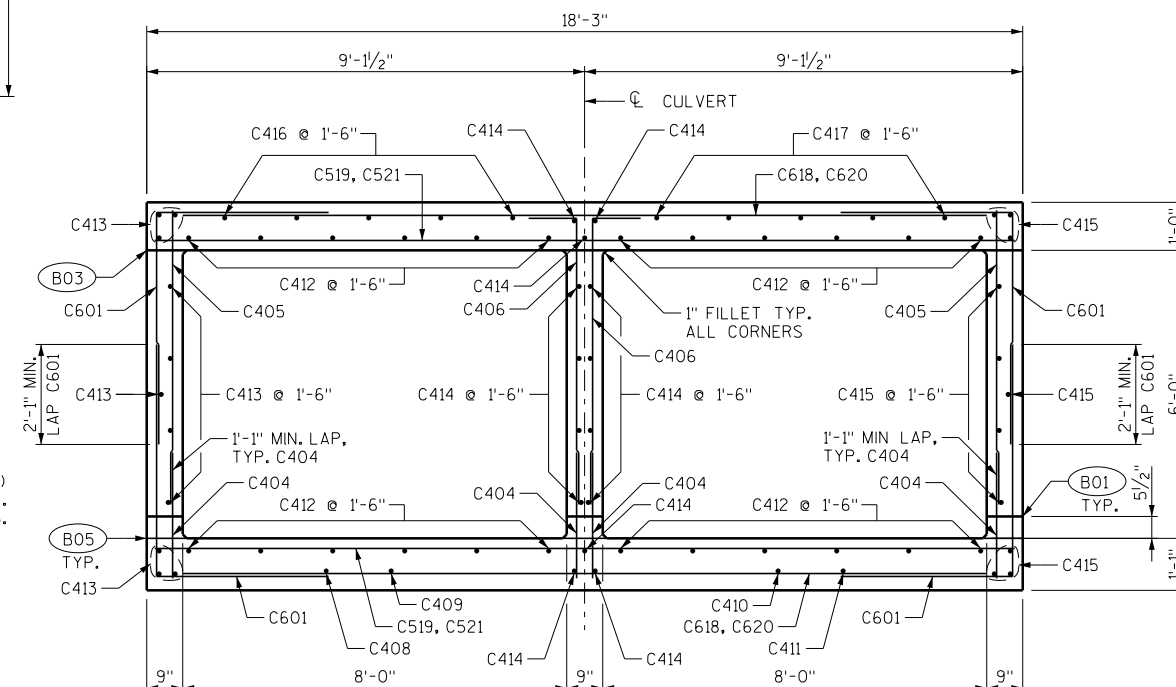


**VERTICAL CONSTRUCTION JOINT**

2" DEEP SAWCUT WITHIN 12 HOURS AFTER POURING  
MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB



**SECTION A-A**  
LOOKING EAST  
SHOWING BARREL REINFORCEMENT

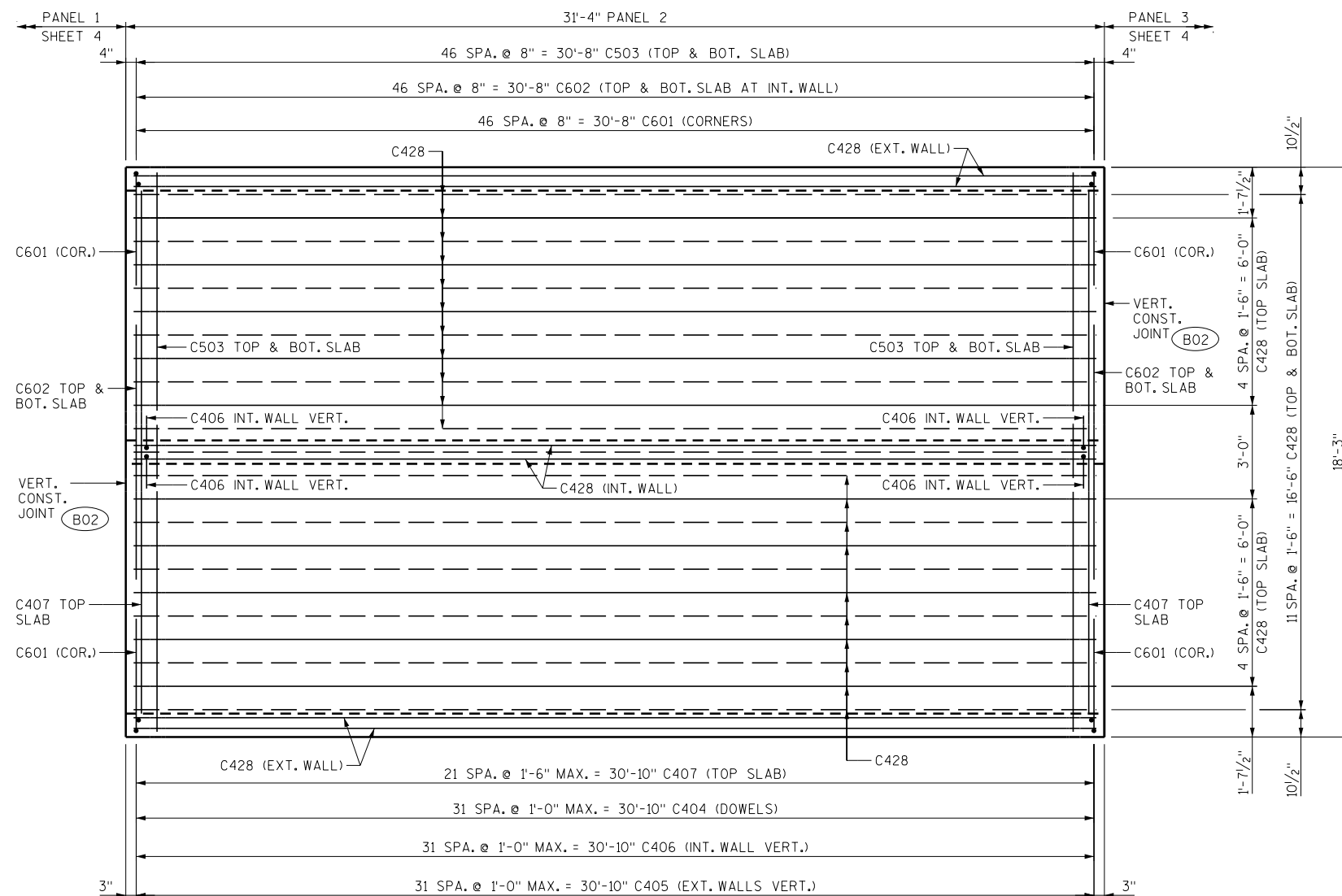


**SECTION B-B**  
LOOKING EAST  
SHOWING BARREL REINFORCEMENT

**NOTES**

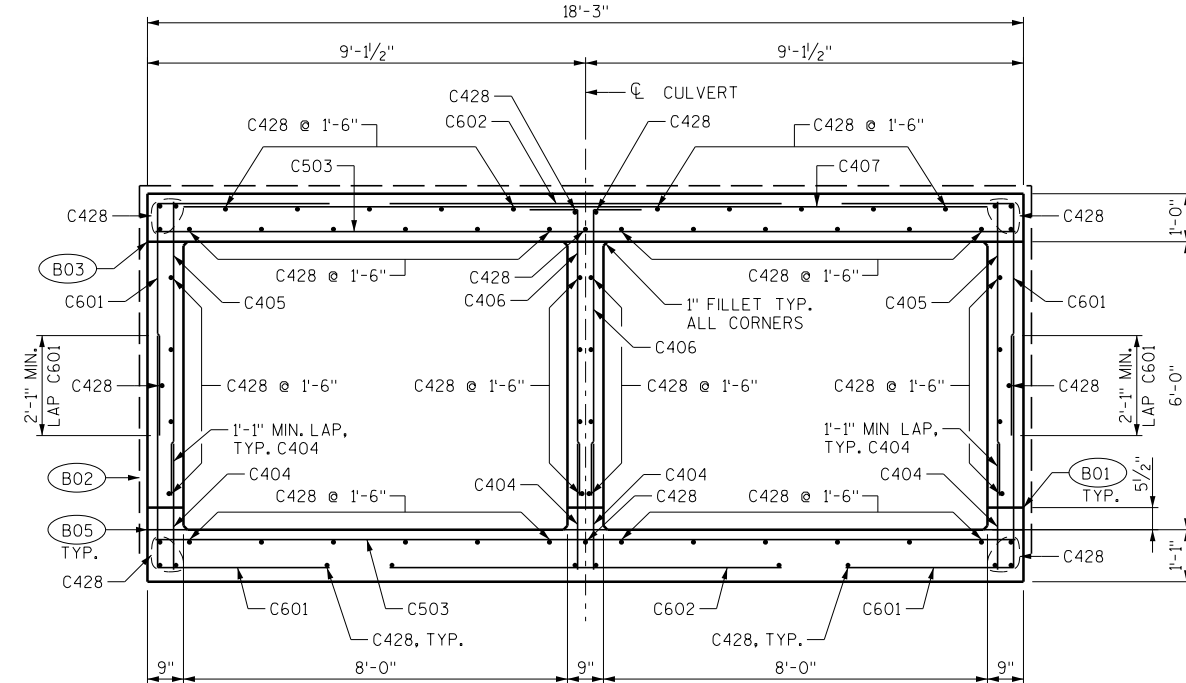
- FOR BILL OF BARS, SEE BARREL DETAILS ON SHEET 6.
- FOR REINFORCEMENT LAYOUT AT VERTICAL CONSTRUCTION JOINTS, SEE SECTION ON SHEET 5.
- FOR CORNER AND INLET NOSE DETAILS, SEE APRON DETAILS ON SHEET 9.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE C-36-251</b>			
DRAWN BY: VJD		PLANS CKD: CJM	
<b>BARREL REINFORCEMENT 1</b>			SHEET 4 OF 9



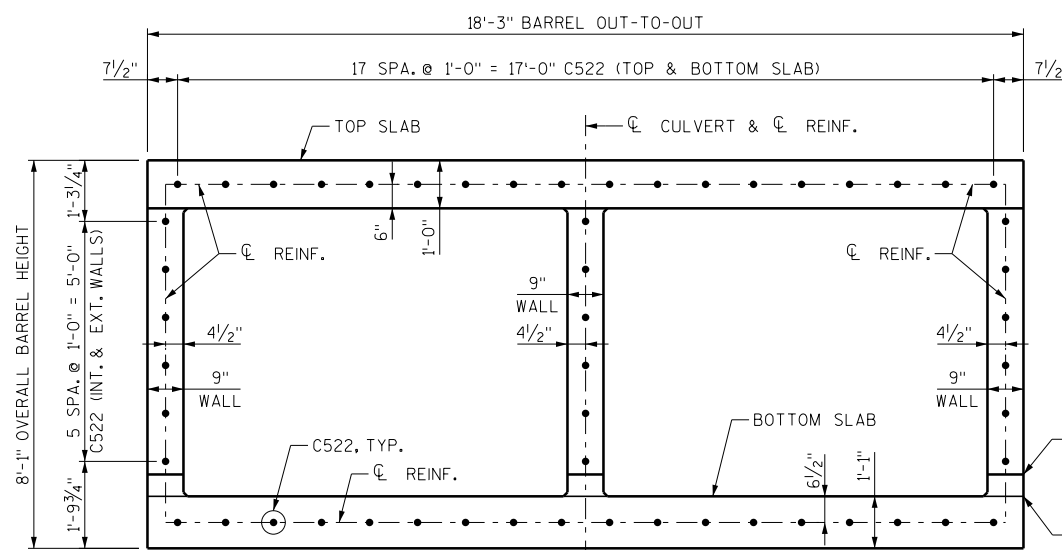
**REINFORCEMENT PLAN - PANEL 2**

INTERIOR PANEL



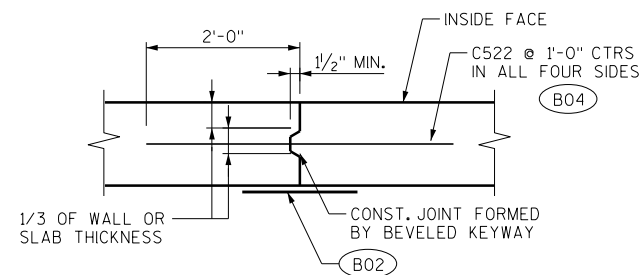
**SECTION THRU BARREL**

LOOKING EAST  
SHOWING BARREL REINFORCEMENT



**SECTION THRU CONSTRUCTION JOINT**

SHOWING REINFORCEMENT LAYOUT  
RMW NOT SHOWN



**VERTICAL CONSTRUCTION JOINT**

2" DEEP SAWCUT WITHIN 12 HOURS AFTER POURING  
MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB

**NOTE**

FOR BILL OF BARS, SEE BARREL DETAILS ON SHEET 6.

**LEGEND**

- (B01) HORIZONTAL CONSTRUCTION JOINT.
- (B02) 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING (RMW) UP WALLS AND ACROSS TOP OF SLAB AT VERTICAL CONST. JOINTS. EXTEND RMW 6" MIN BELOW THE TOP OF BOT. SLAB.
- (B03) OPTIONAL CONSTRUCTION JOINT. OMIT 1" FILLET IF OPTIONAL CONSTRUCTION JOINT IS USED, TYP.
- (B04) CONTRACTOR MAY UTILIZE ADHESIVE ANCHORS NO. 5 BAR. EMBED 6" IN CONCRETE, NO. 5 BAR AND MASONRY ADHESIVE INCIDENTAL TO "BAR STEEL REINFORCEMENT HS STRUCTURES".
- (B05) ALT. CONST. JOINT. OMIT 1" FILLET IF ALT. CONST. JOINT IS USED.

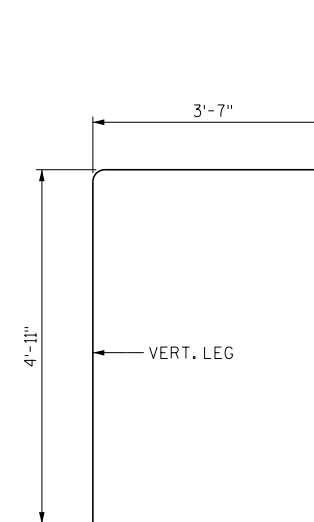
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-36-251			
DRAWN BY VJD		PLANS CKD. CJM	
BARREL REINFORCEMENT 2			SHEET 5 OF 9



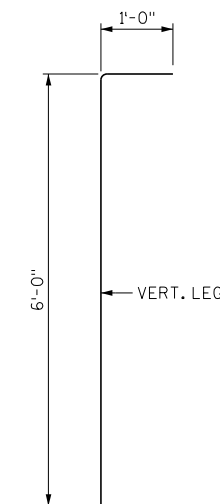
BILL OF BARS - CULVERT BARREL						COATED: 0 LBS
						UNCOATED: 25,820 LBS
BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
C601		568	8'-4"	X		BARREL - ALL CORNERS
C602		262	8'-6"			BARREL - TOP & BOT. SLAB - TRANS.
C503		262	17'-10"			BARREL - TOP & BOT. SLAB - TRANS.
C404		394	2'-8"			BARREL - BOT. SLAB - VERT. DOWELS
C405		198	6'-2"			BARREL - EXT. WALL - VERT.
C406		196	6'-11"	X		BARREL - INT. WALL - VERT.
C407		60	16'-9"			BARREL - TOP SLAB - TRANS.
C408		2	28'-8"			BARREL - BOT. SLAB - LONGIT. SPA. - PANELS 1/3
C409		2	29'-2"			BARREL - BOT. SLAB - LONGIT. SPA. - PANELS 1/3
C410		2	32'-5"			BARREL - BOT. SLAB - LONGIT. SPA. - PANELS 1/3
C411		2	33'-0"			BARREL - BOT. SLAB - LONGIT. SPA. - PANELS 1/3
△ C412		48	30'-11"		X	BARREL - TOP & BOT. SLAB - LONGIT. - PANELS 1/3
C413		22	27'-6"			BARREL - EXT. WALL - LONGIT. - PANELS 1/3
C414		28	30'-10"			BARREL - INT. WALL - LONGIT. - PANELS 1/3
C415		22	34'-8"			BARREL - EXT. WALL - LONGIT. - PANELS 1/3
△ C416		10	29'-1"		X	BARREL - TOP SLAB - LONGIT. - PANELS 1/3
△ C417		10	32'-9"		X	BARREL - TOP SLAB - LONGIT. - PANELS 1/3
△ C618		32	10'-7"		X	BARREL - TOP & BOT. SLAB - TRANS. AT ENDS
△ C519		32	10'-7"		X	BARREL - TOP & BOT. SLAB - TRANS. AT ENDS
C620		4	19'-5"			BARREL - TOP & BOT. SLAB - TRANS. AT ENDS
C521		4	19'-5"			BARREL - TOP & BOT. SLAB - TRANS. AT ENDS
C522		108	4'-0"			BARREL - LONGIT. - CONST. JOINT DOWELS
C723		24	19'-4"			BARREL - TOP & BOT. HEADER - HORIZ.
C324		54	4'-9"	X		BARREL - BOT. HEADER - VERT.
C325		27	4'-6"	X		BARREL - TOP HEADER - INLET - VERT.
C326		27	4'-9"	X		BARREL - TOP HEADER - OUTLET - VERT.
C527		36	4'-0"			BARREL - BOT. SLAB - APRON DOWELS
C428		74	30'-10"			BARREL - LONGIT. - PANEL 2 - ALL

BAR SERIES TABLE		
BAR MARK	NO. REQ'D	LENGTH
C412	4 SERIES OF 12	27'-7" TO 34'-3"
C416	2 SERIES OF 5	27'-10" TO 30'-4"
C417	2 SERIES OF 5	31'-6" TO 33'-11"
C618	4 SERIES OF 8	4'-10" TO 16'-5"
C519	4 SERIES OF 8	4'-10" TO 16'-5"

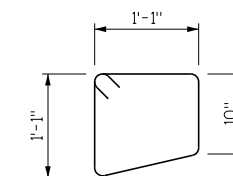
BUNDLE AND TAG EACH SERIES SEPARATELY



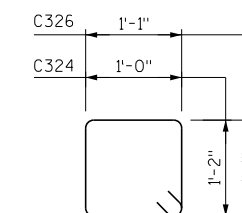
C601



C406



C325

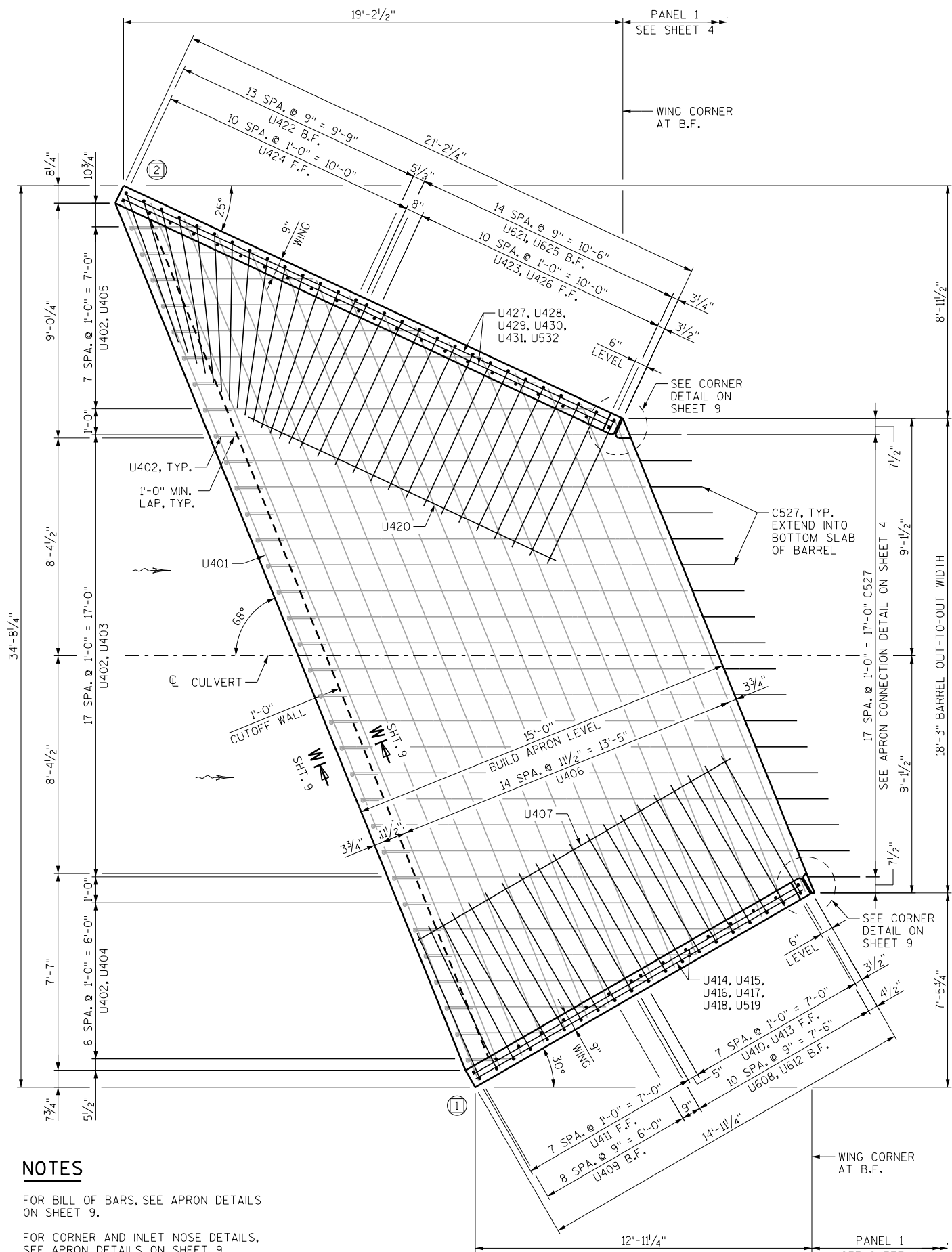


C324, C326

△ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

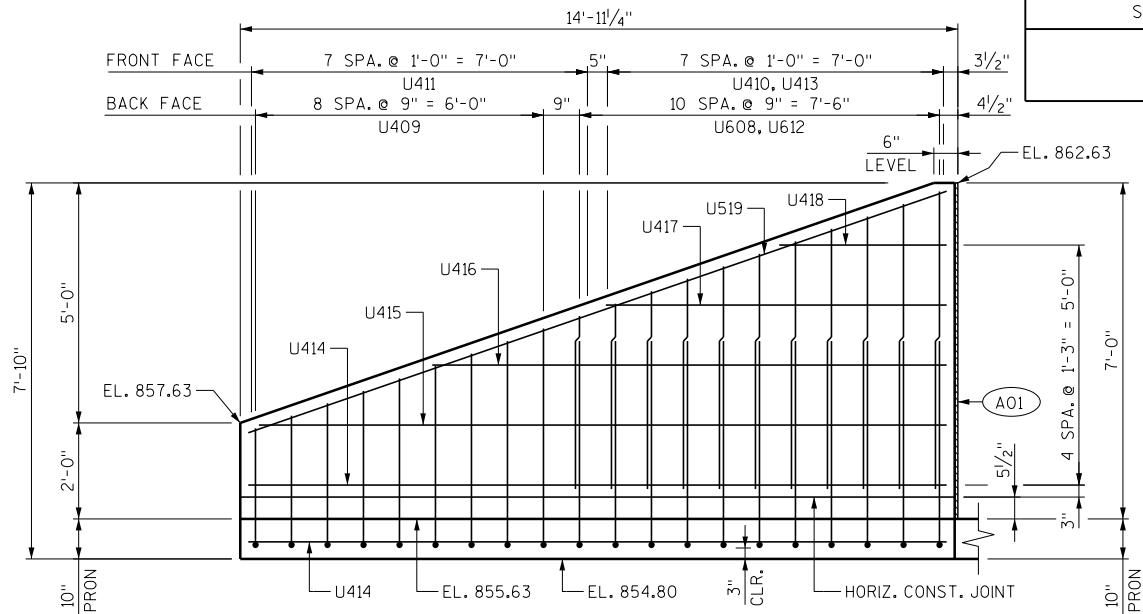
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-36-251			
DRAWN BY VJD		PLANS CK'D. CJM	
BARREL DETAILS			SHEET 6 OF 9





INLET APRON PLAN

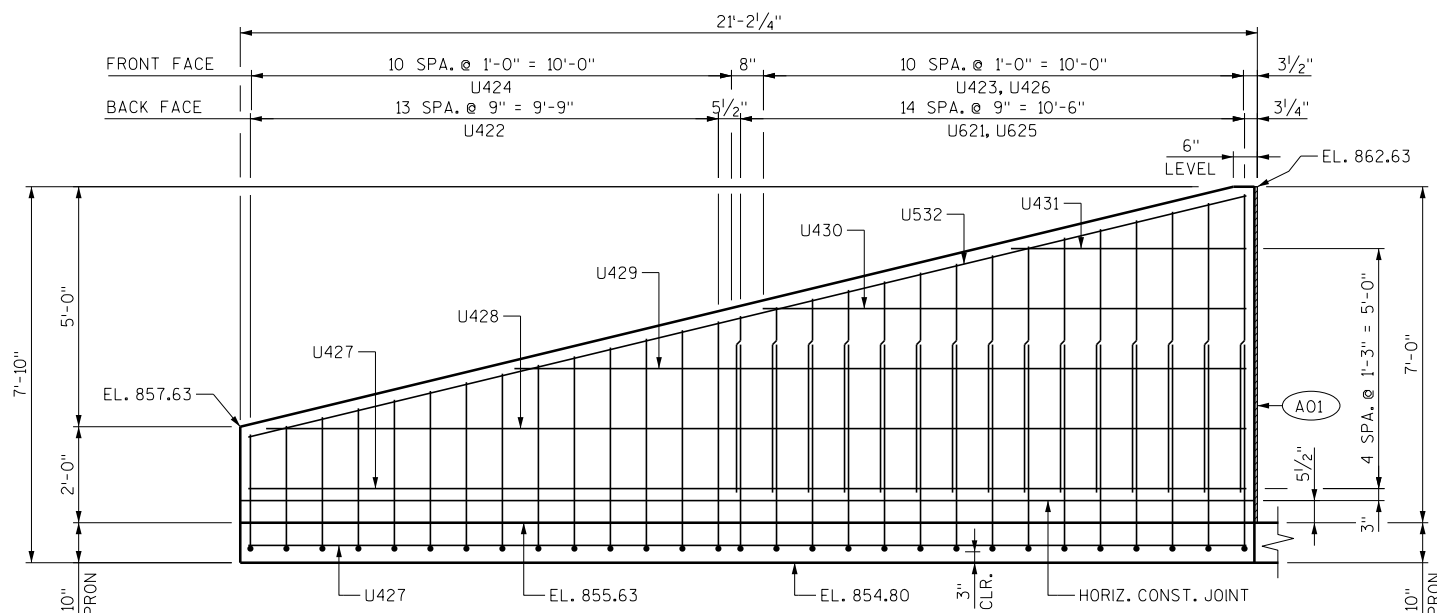
**NOTES**  
 FOR BILL OF BARS, SEE APRON DETAILS ON SHEET 9.  
 FOR CORNER AND INLET NOSE DETAILS, SEE APRON DETAILS ON SHEET 9.  
 FOR SECTION THRU CUTOFF WALLS, SEE APRON DETAILS ON SHEET 9.



WING 1 ELEVATION

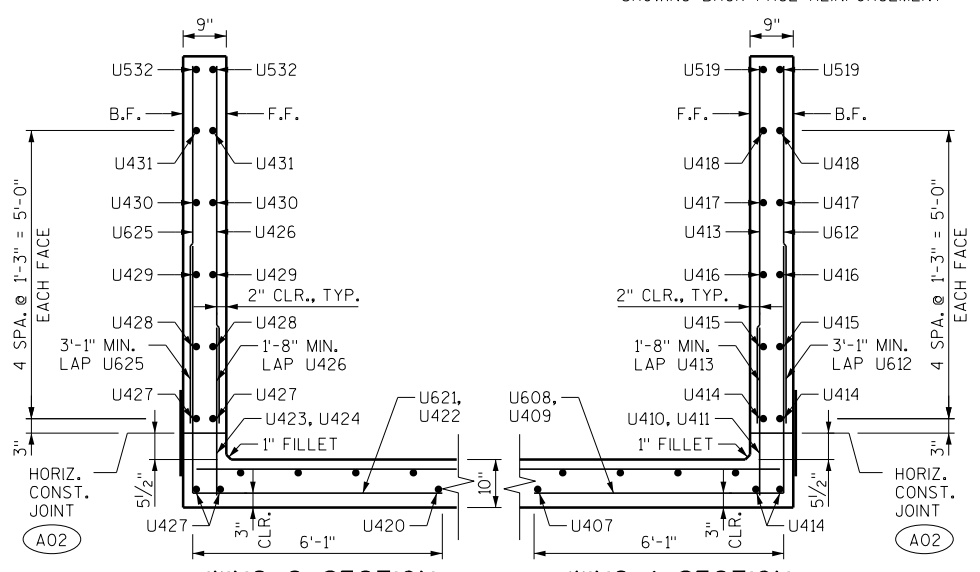
LOOKING AT BACK FACE  
 SHOWING BACK FACE REINFORCEMENT

NOTE: DO NOT EXTEND REINFORCEMENT THRU JOINT FILLER.



WING 2 ELEVATION

LOOKING AT FRONT FACE  
 SHOWING BACK FACE REINFORCEMENT



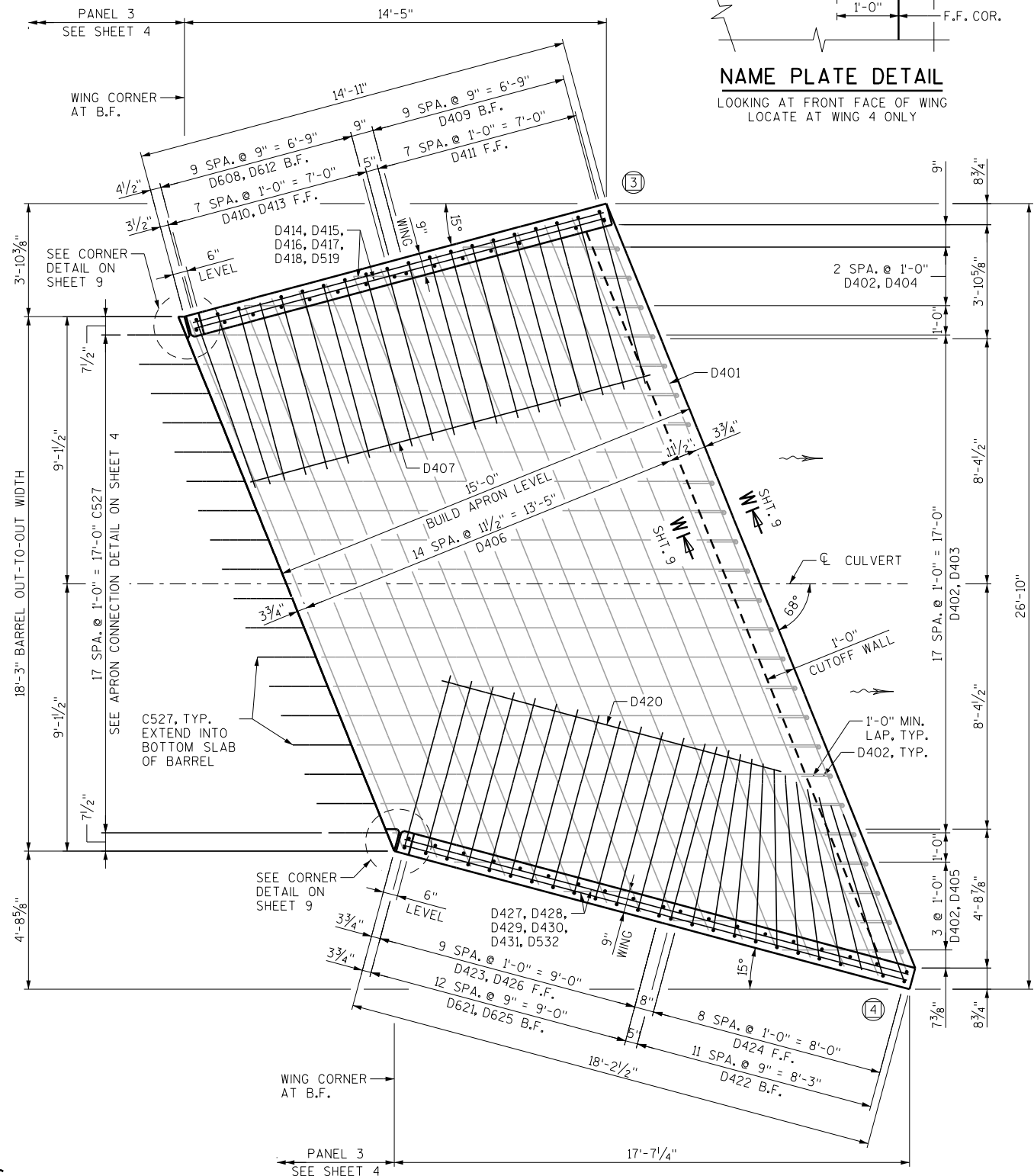
WING 2 SECTION

WING 1 SECTION

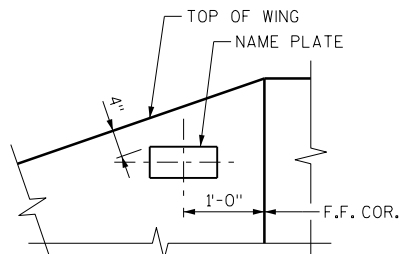
**LEGEND**

- (A01) 3/4" FILLER TO EXTEND FROM HORIZONTAL CONSTRUCTION JOINT TO TOP OF WING. FILLER IS INCLUDED IN WING LENGTH.
- (A02) 18" MIN. RUBBERIZED MEMBRANE WATER-PROOFING (RMW) FLUSH WITH FACE OF CONCRETE. EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WALL.
- (X) INDICATES WING WALL NUMBER
- F.F. = FRONT FACE
- B.F. = BACK FACE

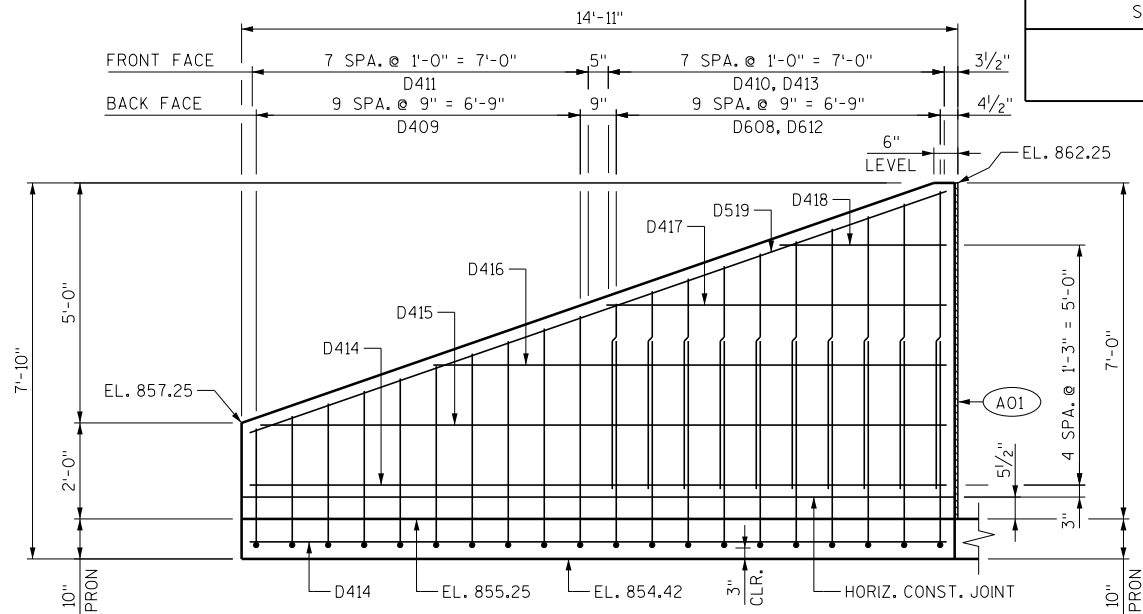
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-36-251			
DRAWN BY VJD		PLANS CKD. CJM	
INLET APRON AND WINGWALLS			SHEET 7 OF 9



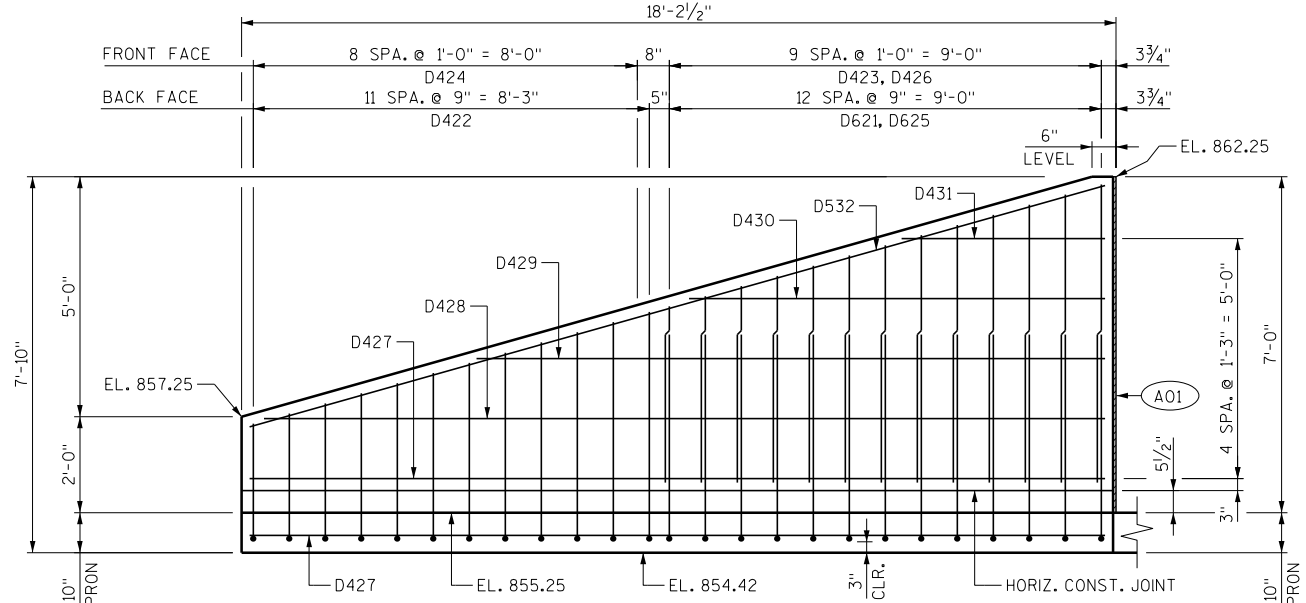
OUTLET APRON PLAN



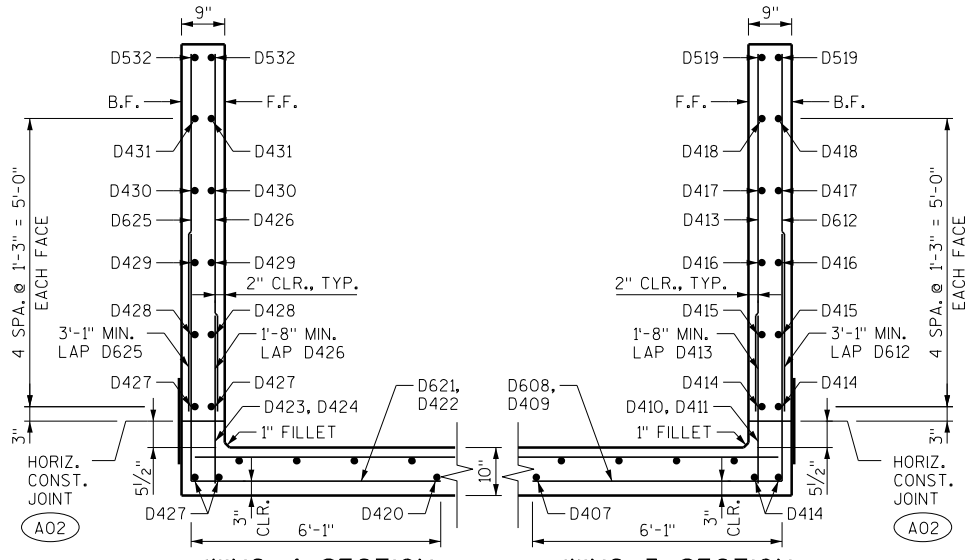
NAME PLATE DETAIL  
LOOKING AT FRONT FACE OF WING  
LOCATE AT WING 4 ONLY



WING 3 ELEVATION  
LOOKING AT BACK FACE  
SHOWING BACK FACE REINFORCEMENT



WING 4 ELEVATION  
LOOKING AT FRONT FACE  
SHOWING BACK FACE REINFORCEMENT



WING 4 SECTION

WING 3 SECTION

NOTE: DO NOT EXTEND REINFORCEMENT THRU JOINT FILLER.

LEGEND

- (A01) 3/4" FILLER TO EXTEND FROM HORIZONTAL CONSTRUCTION JOINT TO TOP OF WING. FILLER IS INCLUDED IN WING LENGTH.
- (A02) 18" MIN. RUBBERZIED MEMBRANE WATER-PROOFING (RMW) FLUSH WITH FACE OF CONCRETE. EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WALL.
- (X) INDICATES WING WALL NUMBER
- F.F. = FRONT FACE
- B.F. = BACK FACE

NOTES

- FOR BILL OF BARS, SEE APRON DETAILS ON SHEET 9.
- FOR CORNER DETAILS, SEE APRON DETAILS ON SHEET 9.
- FOR SECTION THRU CUTOFF WALLS, SEE APRON DETAILS ON SHEET 9.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-36-251			
DRAWN BY: VJD		PLANS CKD: CJM	
OUTLET APRON AND WINGWALLS			SHEET 8 OF 9

**BILL OF BARS - INLET APRON**

COATED: 1,210 LBS  
UNCOATED: 710 LBS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
U401		3	36'-6"			INLET APRON - HORIZ. - CUTOFF WALL
U402		33	3'-8"	X		INLET APRON - VERT. - CUTOFF WALL
U403		18	15'-9"			INLET APRON - SLAB - LONGIT.
U404		7	8'-4"		X	INLET APRON - SLAB - LONGIT. - AT WING 1
U405		8	8'-10"		X	INLET APRON - SLAB - LONGIT. - AT WING 2
U406		15	27'-8"		X	INLET APRON - SLAB - TRANS.
U407	X	1	13'-11"			INLET APRON - SLAB - WING 1 BAR SPACER
U608	X	11	10'-2"	X		WING 1 - VERT. - BACK FACE DOWEL
U409	X	9	9'-4"	X	X	WING 1 - VERT. - BACK FACE DOWEL
U410	X	8	3'-0"			WING 1 - VERT. - FRONT FACE DOWEL
U411	X	8	3'-7"		X	WING 1 - VERT. - FRONT FACE DOWEL
U612	X	11	4'-11"		X	WING 1 - VERT. - BACK FACE
U413	X	8	4'-11"		X	WING 1 - VERT. - FRONT FACE
U414	X	4	14'-6"			WING 1 - HORIZ. - EACH FACE
U415	X	2	14'-4"			WING 1 - HORIZ. - EACH FACE
U416	X	2	10'-8"			WING 1 - HORIZ. - EACH FACE
U417	X	2	7'-1"			WING 1 - HORIZ. - EACH FACE
U418	X	2	3'-6"			WING 1 - HORIZ. - EACH FACE
U519	X	2	15'-4"			WING 1 - HORIZ. - EACH FACE
U420	X	1	14'-0"			INLET APRON - SLAB - WING 2 BAR SPACER
U621	X	15	10'-2"	X		WING 2 - VERT. - BACK FACE DOWEL
U422	X	14	9'-7"	X	X	WING 2 - VERT. - BACK FACE DOWEL
U423	X	11	3'-0"			WING 2 - VERT. - FRONT FACE DOWEL
U424	X	11	3'-7"		X	WING 2 - VERT. - FRONT FACE DOWEL
U625	X	15	4'-11"		X	WING 2 - VERT. - BACK FACE
U426	X	11	4'-12"		X	WING 2 - VERT. - FRONT FACE
U427	X	4	20'-9"			WING 2 - HORIZ. - EACH FACE
U428	X	2	20'-5"			WING 2 - HORIZ. - EACH FACE
U429	X	2	15'-3"			WING 2 - HORIZ. - EACH FACE
U430	X	2	10'-1"			WING 2 - HORIZ. - EACH FACE
U431	X	2	4'-10"			WING 2 - HORIZ. - EACH FACE
U532	X	2	21'-4"			WING 2 - HORIZ. - EACH FACE

△ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

**BILL OF BARS - OUTLET APRON**

COATED: 1,100 LBS  
UNCOATED: 680 LBS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
D401		6	28'-1"			OUTLET APRON - HORIZ. - CUTOFF WALL
D402		25	5'-8"	X		OUTLET APRON - VERT. - CUTOFF WALL
D403		18	15'-9"			OUTLET APRON - SLAB - LONGIT.
D404		3	9'-5"		X	OUTLET APRON - SLAB - LONGIT. - AT WING 3
D405		4	9'-1"		X	OUTLET APRON - SLAB - LONGIT. - AT WING 4
D406		15	23'-8"		X	OUTLET APRON - SLAB - TRANS.
D407	X	1	14'-2"			OUTLET APRON - SLAB - WING 3 SPACER
D608	X	10	10'-2"	X		WING 3 - VERT. - BACK FACE DOWEL
D409	X	10	9'-7"	X	X	WING 3 - VERT. - BACK FACE DOWEL
D410	X	8	3'-0"			WING 3 - VERT. - FRONT FACE DOWEL
D411	X	8	3'-8"		X	WING 3 - VERT. - FRONT FACE DOWEL
D612	X	10	5'-0"		X	WING 3 - VERT. - BACK FACE
D413	X	8	4'-11"		X	WING 3 - VERT. - FRONT FACE
D414	X	4	14'-6"			WING 3 - HORIZ. - EACH FACE
D415	X	2	14'-3"			WING 3 - HORIZ. - EACH FACE
D416	X	2	10'-8"			WING 3 - HORIZ. - EACH FACE
D417	X	2	7'-0"			WING 3 - HORIZ. - EACH FACE
D418	X	2	3'-5"			WING 3 - HORIZ. - EACH FACE
D519	X	2	15'-4"			WING 3 - HORIZ. - EACH FACE
D420	X	1	15'-0"			OUTLET APRON - SLAB - WING 4 SPACER
D621	X	13	10'-2"	X		WING 4 - VERT. - BACK FACE DOWEL
D422	X	12	9'-7"	X	X	WING 4 - VERT. - BACK FACE DOWEL
D423	X	10	3'-0"			WING 4 - VERT. - FRONT FACE DOWEL
D424	X	9	3'-7"		X	WING 4 - VERT. - FRONT FACE DOWEL
D625	X	13	4'-11"		X	WING 4 - VERT. - BACK FACE
D426	X	10	4'-11"		X	WING 4 - VERT. - FRONT FACE
D427	X	4	17'-9"			WING 4 - HORIZ. - EACH FACE
D428	X	2	17'-6"			WING 4 - HORIZ. - EACH FACE
D429	X	2	13'-1"			WING 4 - HORIZ. - EACH FACE
D430	X	2	8'-8"			WING 4 - HORIZ. - EACH FACE
D431	X	2	4'-2"			WING 4 - HORIZ. - EACH FACE
D532	X	2	18'-6"			WING 4 - HORIZ. - EACH FACE

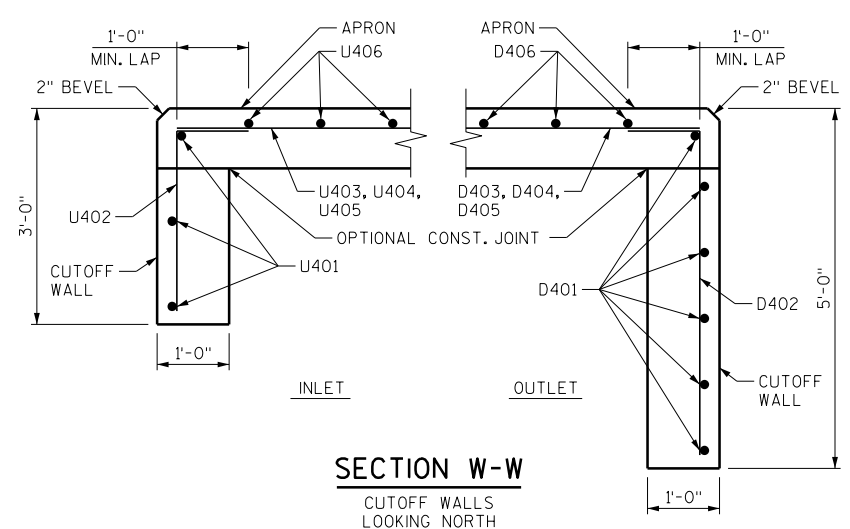
**BAR SERIES TABLE**

BAR MARK	NO. REQ'D	LENGTH
U404	1 SERIES OF 7	1'-11" TO 14'-9"
U405	1 SERIES OF 8	2'-9" TO 14'-11"
U406	1 SERIES OF 15	19'-7" TO 35'-10"
U409	1 SERIES OF 9	8'-4" TO 10'-5"
U411	1 SERIES OF 8	2'-5" TO 4'-10"
U612	1 SERIES OF 11	3'-7" TO 6'-2"
U413	1 SERIES OF 8	3'-10" TO 6'-1"
U422	1 SERIES OF 14	8'-5" TO 10'-9"
U424	1 SERIES OF 11	2'-5" TO 4'-10"
U625	1 SERIES OF 15	3'-8" TO 6'-2"
U426	1 SERIES OF 11	3'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY

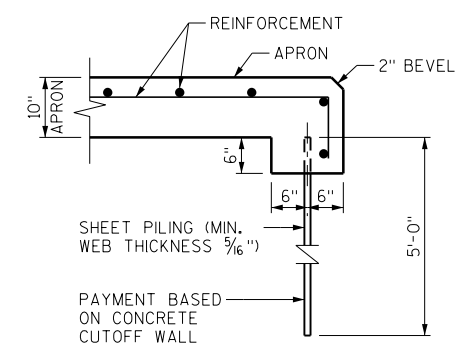
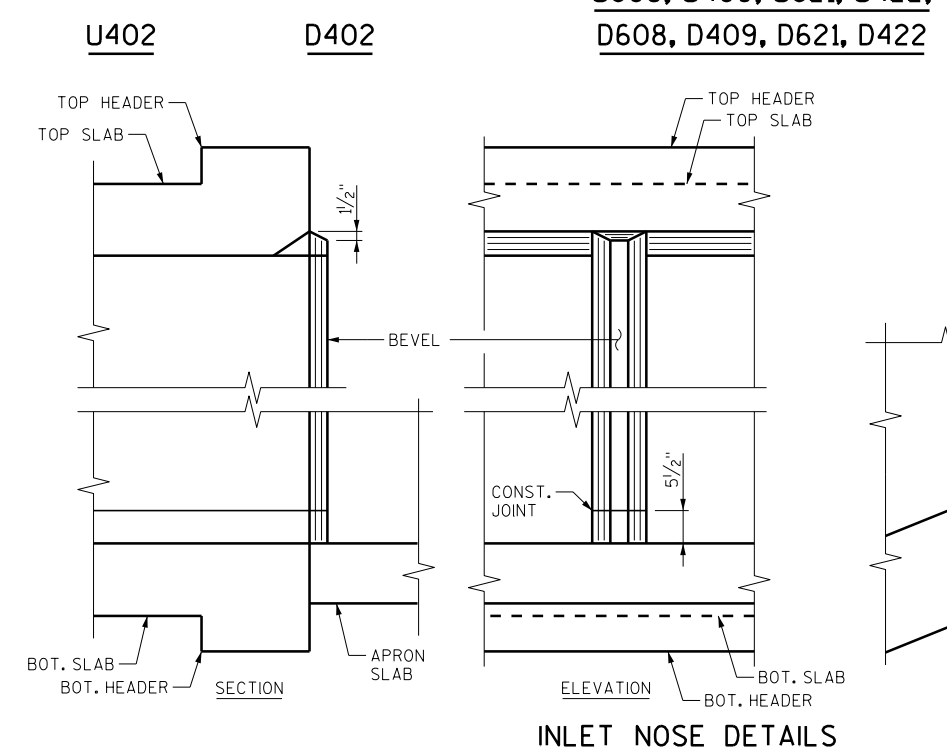
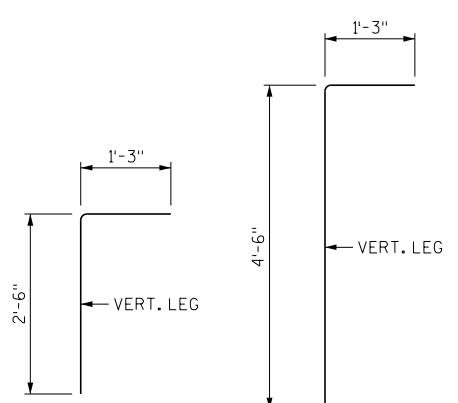
**BAR SERIES TABLE**

BAR MARK	NO. REQ'D	LENGTH
D404	1 SERIES OF 3	5'-3" TO 13'-7"
D405	1 SERIES OF 4	4'-1" TO 14'-1"
D406	1 SERIES OF 15	19'-5" TO 27'-11"
D409	1 SERIES OF 10	8'-5" TO 10'-9"
D411	1 SERIES OF 8	2'-5" TO 4'-10"
D612	1 SERIES OF 10	3'-10" TO 6'-2"
D413	1 SERIES OF 8	3'-9" TO 6'-1"
D422	1 SERIES OF 12	8'-5" TO 10'-9"
D424	1 SERIES OF 9	2'-5" TO 4'-8"
D625	1 SERIES OF 13	3'-8" TO 6'-2"
D426	1 SERIES OF 10	3'-8" TO 6'-2"

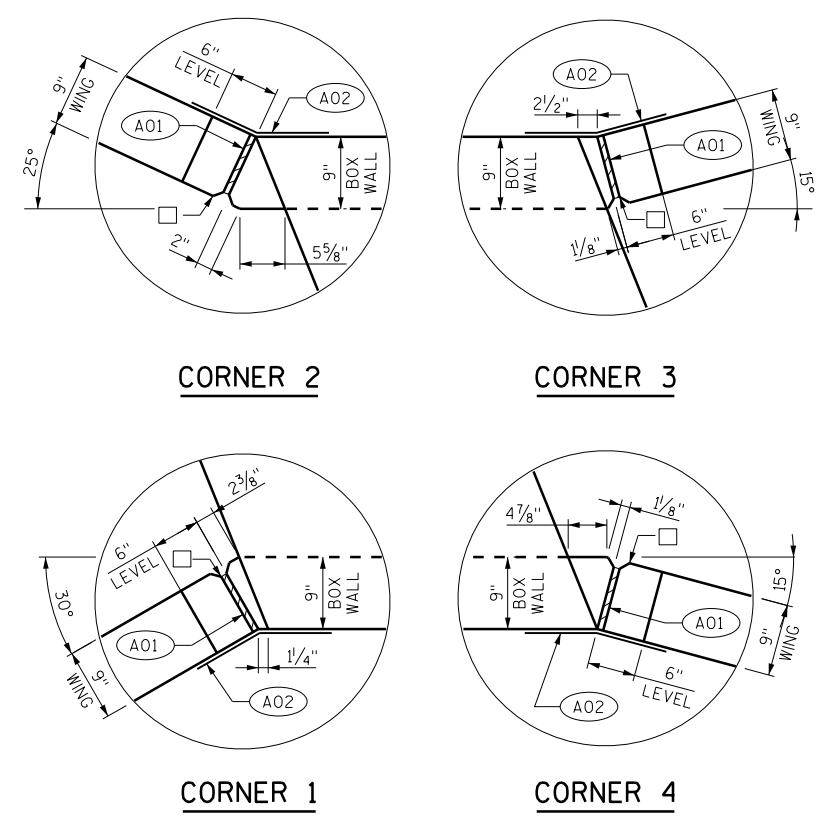


**LEGEND**

- A01 3/4" FILLER TO EXTEND FROM HORIZONTAL CONSTRUCTION JOINT TO TOP OF WING. FILLER IS INCLUDED IN WING LENGTH.
- A02 18" MIN. RUBBERIZED MEMBRANE WATERPROOFING (RMW) FLUSH WITH FACE OF CONCRETE. EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WALL.
- 1" BEVEL.



**ALTERNATIVE CUTOFF WALL**  
THE ABOVE ALTERNATIVE MAY BE USED IN LIEU OF CAST-IN-PLACE CONCRETE CUTOFF WALLS. PAYMENT WILL BE BASED ON THE CONCRETE CUTOFF WALLS



**CORNER DETAILS**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-36-251			
DRAWN BY VJD		PLANS CKD. CJM	
APRON DETAILS			SHEET 9 OF 9

8

8

DIVISION--ALIGNMENT - CTH W							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	
					1.00	1.25	
233+30.33	1.58	8.54	0	0	0	0	0
233+50	0.18	8.21	1	6	1	8	-7
234+00	0.00	2.75	0	10	1	20	-19
234+50	0.00	6.24	0	8	1	30	-29
235+00	0.00	8.17	0	13	1	46	-45
235+50	0.00	7.36	0	14	1	64	-63
236+00	0.00	6.45	0	13	1	80	-79
236+50	0.00	2.80	0	9	1	91	-90
237+00	0.00	2.18	0	5	1	98	-97
237+50	0.00	2.48	0	4	1	103	-102
238+00	0.03	3.80	0	6	1	110	-109
238+50	0.20	3.59	0	7	1	119	-118
239+00	0.40	0.30	1	4	2	124	-122
239+50	0.00	9.81	0	9	2	135	-133
240+00	0.00	9.11	0	18	2	158	-156
240+50	0.00	10.63	0	18	2	180	-178
241+00	0.00	13.00	0	22	2	208	-206
241+50	0.00	9.07	0	20	2	233	-231
242+00	0.00	9.44	0	17	2	254	-252
242+50	0.00	26.37	0	33	2	295	-293
243+00	0.00	41.30	0	63	2	374	-372
243+50	0.00	37.84	0	73	2	465	-463
244+00	0.00	46.10	0	78	2	563	-561
244+50	0.00	52.37	0	91	2	676	-674
245+00	0.00	57.28	0	102	2	804	-802
245+50	0.00	59.59	0	108	2	939	-937
246+00	0.00	48.45	0	100	2	1,064	-1,062
246+50	0.00	30.33	0	73	2	1,155	-1,153
247+00	0.00	17.74	0	45	2	1,211	-1,209
247+10	0.00	17.74	0	7	2	1,220	-1,218
247+10	48.38	14.02	0	0	0	0	0
247+50	79.07	12.95	118	25	118	31	87
248+00	119.96	9.85	184	21	302	58	245
248+50	129.33	5.58	231	14	533	75	458
249+00	130.49	1.94	241	7	774	84	690
249+50	132.13	0.00	243	2	1,017	86	931
250+00	130.72	0.05	243	0	1,260	86	1,174
250+50	128.42	0.30	240	0	1,500	86	1,414
251+00	128.16	1.73	238	2	1,738	89	1,649
251+50	129.96	0.00	239	2	1,977	91	1,886
252+00	122.21	0.00	233	0	2,210	91	2,119
252+50	128.71	5.27	232	5	2,442	98	2,345
253+00	138.51	0.00	247	5	2,689	104	2,585
253+50	141.58	0.00	259	0	2,948	104	2,844
254+00	149.79	0.00	270	0	3,218	104	3,114
254+50	149.09	0.00	277	0	3,495	104	3,391
255+00	145.30	0.00	273	0	3,768	104	3,664

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PROJECT NO: 4323-08-72

HWY: CTH W

COUNTY: MANITOWOC

EARTHWORK DATA

SHEET

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DIVISION - ALIGNMENT - CTH W							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	
					1.00	1.25	
255+50	130.18	0.00	255	0	4,023	104	3,919
256+00	136.72	0.00	247	0	4,270	104	4,166
256+50	134.69	0.00	251	0	4,521	104	4,417
257+00	133.99	0.00	249	0	4,770	104	4,666
257+50	132.60	0.00	247	0	5,017	104	4,913
258+00	139.08	0.06	252	0	5,269	104	5,165
258+50	126.47	0.72	246	1	5,515	105	5,410
259+00	123.68	0.66	232	1	5,747	106	5,641
259+50	121.54	0.57	227	1	5,974	108	5,867
260+00	125.64	0.03	229	1	6,203	109	6,094
260+50	129.58	0.00	236	0	6,439	109	6,330
261+00	134.15	0.00	244	0	6,683	109	6,574
261+50	135.99	0.00	250	0	6,933	109	6,824
262+00	140.04	0.00	256	0	7,189	109	7,080
262+50	129.01	0.00	249	0	7,438	109	7,329
263+00	144.71	0.00	253	0	7,691	109	7,582
263+50	143.02	0.00	266	0	7,957	109	7,848
264+00	138.91	0.00	261	0	8,218	109	8,109
264+50	144.72	0.00	263	0	8,481	109	8,372
265+00	154.59	0.00	277	0	8,758	109	8,649
265+50	152.78	0.00	285	0	9,043	109	8,934
266+00	128.50	0.00	260	0	9,303	109	9,194
266+50	138.16	0.00	247	0	9,550	109	9,441
267+00	136.49	0.00	254	0	9,804	109	9,695
267+40	115.85	0.00	187	0	9,991	109	9,882
267+50	127.85	0.00	45	0	10,036	109	9,927
268+00	79.43	0.00	192	0	10,228	109	10,119
268+40	46.19	0.04	93	0	10,321	109	10,212
268+40	0.00	0.04	0	0	0	0	0
268+50	0.00	0.54	0	0	0	0	0
269+00	0.00	1.40	0	2	0	3	-3
269+50	0.00	0.64	0	2	0	5	-5
270+00	1.25	0.36	1	1	1	6	-5
270+50	0.00	0.39	1	1	2	8	-6
271+00	0.00	0.41	0	1	2	9	-7
271+50	0.00	0.21	0	1	2	10	-8
272+00	0.13	0.09	0	0	2	10	-8
272+50	1.89	0.00	2	0	4	10	-6
273+00	0.00	0.94	2	1	6	11	-5
273+50	0.00	5.88	0	6	6	19	-13
274+00	0.00	9.54	0	14	6	36	-30
274+50	0.00	13.76	0	22	6	64	-58
275+00	0.00	13.59	0	25	6	95	-89
275+50	0.00	6.20	0	18	6	118	-112
276+00	0.00	5.55	0	11	6	131	-125
276+50	0.00	3.02	0	8	6	141	-135
277+00	23.21	0.26	21	3	27	145	-118
277+50	2.33	0.10	24	0	51	145	-94
278+00	15.34	0.01	16	0	67	145	-78

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DIVISION -- ALIGNMENT - CTH W							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	
					1.00	1.25	
278+50	0.00	0.58	14	1	81	146	-65
279+00	1.25	0.00	1	1	82	148	-66
279+50	0.00	5.04	1	5	83	154	-71
280+00	0.00	5.07	0	9	83	165	-82
280+50	0.00	12.38	0	16	83	185	-102
281+00	0.00	18.66	0	29	83	221	-138
281+50	0.00	5.99	0	23	83	250	-167
282+00	0.00	5.42	0	11	83	264	-181
282+50	0.00	2.81	0	8	83	274	-191
283+00	0.00	3.61	0	6	83	281	-198
283+50	0.00	6.52	0	9	83	293	-210
283+97.288	0.00	7.64	0	12	83	308	-225
284+00	0.00	7.69	0	1	83	309	-226
284+05	0.00	7.79	0	1	83	310	-227
284+10	0.00	8.01	0	1	83	311	-228
284+15	0.00	8.24	0	2	83	314	-231
284+20	0.00	8.46	0	2	83	316	-233
284+25	0.00	8.67	0	2	83	319	-236
284+30	0.00	8.86	0	2	83	321	-238
284+35	0.00	9.05	0	2	83	324	-241
284+40	0.00	9.22	0	2	83	326	-243
284+45	0.00	9.38	0	2	83	329	-246
284+50	0.00	9.54	0	2	83	331	-248
284+55	0.00	9.68	0	2	83	334	-251
284+60	0.00	9.80	0	2	83	336	-253
284+65	0.00	9.92	0	2	83	339	-256
284+70	0.00	10.03	0	2	83	341	-258
284+75	0.00	10.12	0	2	83	344	-261
284+80	0.00	10.20	0	2	83	346	-263
284+85	0.00	10.28	0	2	83	349	-266
284+90	0.00	10.34	0	2	83	351	-268
284+95	0.00	10.38	0	2	83	354	-271
285+00	0.00	10.43	0	2	83	356	-273
285+05	0.00	10.55	0	2	83	359	-276
285+10	0.00	11.07	0	2	83	361	-278
285+15	0.00	11.59	0	2	83	364	-281
285+20	0.00	12.07	0	2	83	366	-283
285+25	0.00	12.52	0	2	83	369	-286
285+30	0.00	13.15	0	2	83	371	-288
285+35	0.00	13.22	0	2	83	374	-291
285+40	0.00	13.41	0	2	83	376	-293
285+45	0.00	13.61	0	3	83	380	-297
285+50	0.00	13.75	0	3	83	384	-301
285+51.362	0.00	13.78	0	1	83	385	-302
286+00	0.29	4.26	0	16	83	405	-322
286+50	0.22	0.31	0	4	83	410	-327
287+00	0.02	0.97	0	1	83	411	-328
287+50	0.00	1.69	0	2	83	414	-331
288+00	0.02	2.95	0	4	83	419	-336
288+50	1.88	2.61	2	5	85	425	-340
289+00	0.24	8.57	2	10	87	438	-351

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PROJECT NO: 4323-08-72

HWY: CTH W

COUNTY: MANITOWOC

EARTHWORK DATA

SHEET

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DIVISION -- ALIGNMENT - CTH W							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	
					1.00	1.25	
289+50	0.00	16.83	0	24	87	468	-381
290+00	0.23	22.89	0	37	87	514	-427
290+50	0.10	15.16	0	35	87	558	-471
291+00	0.00	13.35	0	26	87	590	-503
291+50	0.00	6.59	0	18	87	613	-526
292+00	0.00	3.95	0	10	87	625	-538
292+50	0.05	4.70	0	8	87	635	-548
293+00	0.22	3.66	0	8	87	645	-558
293+50	0.06	4.62	0	8	87	655	-568
294+00	0.02	4.83	0	9	87	666	-579
294+50	0.12	3.90	0	8	87	676	-589
295+00	0.02	5.96	0	9	87	688	-601
295+50	0.00	1.91	0	7	87	696	-609
296+00	0.00	4.98	0	6	87	704	-617
296+50	0.00	7.59	0	12	87	719	-632
297+00	0.00	12.51	0	19	87	743	-656
297+50	1.22	0.61	1	12	88	758	-670
298+00	1.09	1.97	2	2	90	760	-670
298+50	0.00	11.10	1	12	91	775	-684
299+00	0.00	8.20	0	18	91	798	-707
299+50	0.01	3.48	0	11	91	811	-720
300+00	0.00	3.41	0	6	91	819	-728
300+50	0.00	2.03	0	5	91	825	-734
301+00	0.00	4.37	0	6	91	833	-742
301+50	0.00	6.33	0	10	91	845	-754
302+00	0.02	4.14	0	10	91	858	-767
302+30	0.00	5.74	0	5	91	864	-773
302+30	43.66	5.74	0	0	0	0	0
302+50	62.14	2.21	39	3	39	4	35
303+00	104.54	1.50	154	3	193	8	186
303+30	127.68	1.39	129	2	322	10	312
303+50	127.37	0.94	94	1	416	11	405
304+00	127.30	0.07	236	1	652	13	640
304+50	129.16	0.00	237	0	889	13	877
305+00	133.83	0.00	244	0	1,133	13	1,121
305+50	137.74	0.00	251	0	1,384	13	1,372
306+00	154.23	0.00	270	0	1,654	13	1,642
306+50	135.03	0.00	268	0	1,922	13	1,910
307+00	133.22	0.00	248	0	2,170	13	2,158
307+50	131.49	0.00	245	0	2,415	13	2,403
308+00	127.64	0.00	240	0	2,655	13	2,643
308+50	128.44	4.17	237	4	2,892	18	2,875
309+00	131.40	7.04	241	10	3,133	30	3,103
309+50	123.99	0.00	236	7	3,369	39	3,330
309+96.419	125.23	0.00	214	0	3,583	39	3,544
310+00	125.60	0.00	17	0	3,600	39	3,561
310+25	149.01	0.28	127	0	3,727	39	3,688
310+50	120.82	0.79	125	0	3,852	39	3,813
310+75	146.35	0.50	124	1	3,976	40	3,936
311+00	148.46	1.01	136	1	4,112	41	4,071

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DIVISION -- ALIGNMENT - CTH W							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	
					1.00	1.25	
311+22.04	137.85	1.58	117	1	4,229	43	4,187
311+50	133.55	1.79	141	2	4,370	45	4,325
312+00	134.66	0.01	248	2	4,618	48	4,571
312+50	127.99	0.07	243	0	4,861	48	4,814
313+00	128.49	0.00	237	0	5,098	48	5,051
313+50	132.97	0.00	242	0	5,340	48	5,293
314+00	116.81	0.00	231	0	5,571	48	5,524
314+50	135.98	0.00	234	0	5,805	48	5,758
315+00	136.10	0.00	252	0	6,057	48	6,010
315+50	136.54	0.00	252	0	6,309	48	6,262
316+00	134.03	0.00	251	0	6,560	48	6,513
316+50	133.21	0.00	247	0	6,807	48	6,760
317+00	130.88	0.18	245	0	7,052	48	7,005
317+50	127.77	4.24	239	4	7,291	53	7,239
318+00	127.30	5.25	236	9	7,527	64	7,463
318+50	129.38	3.62	238	8	7,765	74	7,691
318+60	129.63	3.49	48	1	7,813	75	7,738
319+00	97.01	2.35	168	4	7,981	80	7,901
319+50	55.39	8.10	141	10	8,122	93	8,030
319+60	46.24	14.23	19	4	8,141	98	8,044
319+60	0.00	14.23	0	0	0	0	0
320+00	2.94	12.94	2	20	2	25	23
320+50	0.00	19.54	3	30	5	63	58
321+00	0.01	10.03	0	27	5	96	91
321+50	0.00	9.24	0	18	5	119	114
322+00	0.00	3.84	0	12	5	134	129
322+50	0.00	3.90	0	7	5	143	138
323+00	0.00	2.90	0	6	5	150	145
323+50	0.00	2.72	0	5	5	156	151
324+00	0.24	4.80	0	7	5	165	160
324+50	0.42	1.89	1	6	6	173	167
325+00	0.75	2.49	1	4	7	178	171
325+50	0.44	4.25	1	6	8	185	177
326+00	0.23	19.72	1	22	9	213	204
326+50	0.05	10.00	0	28	9	248	239
327+00	0.00	3.65	0	13	9	264	255
327+50	0.06	2.20	0	5	9	270	261
328+00	0.00	5.37	0	7	9	279	270
328+50	0.00	7.89	0	12	9	294	285
329+00	0.00	11.18	0	18	9	316	307
329+50	0.25	0.35	0	11	9	330	321
330+00	0.00	8.87	0	9	9	341	332
330+50	0.00	11.51	0	19	9	365	356
331+00	0.00	20.34	0	29	9	401	392
331+50	0.00	77.79	0	91	9	515	506
332+00	0.00	61.77	0	129	9	676	667
332+50	0.00	49.09	0	103	9	805	796
333+00	0.00	46.04	0	88	9	915	906
333+50	0.00	28.52	0	69	9	1,001	992
334+00	0.00	24.21	0	49	9	1,063	1,054

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DIVISION -- ALIGNMENT - CTH W							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	
					1.00	1.25	
334+50	0.00	21.50	0	42	9	1,115	1,106
335+00	0.00	13.77	0	33	9	1,156	1,147
335+50	0.00	14.14	0	26	9	1,189	1,180
336+00	0.00	2.42	0	12	9	1,204	1,195
336+13.946	0.00	5.66	0	2	9	1,206	1,197
336+15	0.00	5.90	0	0	9	1,206	1,197
336+20	0.00	6.34	0	1	9	1,208	1,199
336+25	0.00	5.79	0	1	9	1,209	1,200
336+30	0.00	4.82	0	1	9	1,210	1,201
336+35	0.00	3.74	0	1	9	1,211	1,202
336+40	0.00	2.72	0	1	9	1,213	1,204
336+45	0.00	1.78	0	0	9	1,213	1,204
336+50	0.00	1.05	0	0	9	1,213	1,204
336+55	0.00	0.58	0	0	9	1,213	1,204
336+60	0.00	0.16	0	0	9	1,213	1,204
336+65	0.00	0.07	0	0	9	1,213	1,204
336+70	0.00	0.00	0	0	9	1,213	1,204
336+75	0.00	0.00	0	0	9	1,213	1,204
336+80	0.00	0.00	0	0	9	1,213	1,204
336+85	0.00	0.00	0	0	9	1,213	1,204
336+90	0.00	0.00	0	0	9	1,213	1,204
336+95	0.00	0.00	0	0	9	1,213	1,204
337+00	0.00	0.00	0	0	9	1,213	1,204
337+05	0.00	0.00	0	0	9	1,213	1,204
337+10	0.00	0.00	0	0	9	1,213	1,204
337+15	0.00	0.00	0	0	9	1,213	1,204
337+20	0.00	0.00	0	0	9	1,213	1,204
337+25	0.00	0.00	0	0	9	1,213	1,204
337+30	0.00	0.00	0	0	9	1,213	1,204
337+35	0.00	0.00	0	0	9	1,213	1,204
337+40	0.00	0.00	0	0	9	1,213	1,204
337+45	0.00	0.00	0	0	9	1,213	1,204
337+50	0.00	0.00	0	0	9	1,213	1,204
337+55	0.00	0.00	0	0	9	1,213	1,204
337+60	0.00	0.00	0	0	9	1,213	1,204
337+65	0.00	0.00	0	0	9	1,213	1,204
337+66.443	0.00	0.00	0	0	9	1,213	1,204
338+00	0.00	0.26	0	0	9	1,213	1,204
338+50	0.00	0.47	0	1	9	1,214	1,205
339+00	0.00	0.57	0	1	9	1,215	1,206
339+50	0.03	0.72	0	1	9	1,216	1,207
340+00	0.13	2.59	0	3	9	1,220	1,211
340+50	1.78	0.58	2	3	11	1,224	1,213
341+00	0.07	2.27	2	3	13	1,228	1,215
341+50	0.08	0.84	0	3	13	1,231	1,218
342+00	0.00	1.61	0	2	13	1,234	1,221
342+50	0.00	2.62	0	4	13	1,239	1,226
343+00	0.00	2.43	0	5	13	1,245	1,232
343+50	0.03	2.17	0	4	13	1,250	1,237
344+00	0.11	1.86	0	4	13	1,255	1,242
344+50	0.00	4.13	0	6	13	1,263	1,250

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PROJECT NO: 4323-08-72

HWY: CTH W

COUNTY: MANITOWOC

EARTHWORK DATA

SHEET

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DIVISION - ALIGNMENT - CTH W							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS ORDINATE
					1.00	1.25	
345+00	0.00	17.83	0	20	13	1,288	1,275
345+50	0.00	20.05	0	35	13	1,331	1,318
346+00	0.00	17.61	0	35	13	1,375	1,362
346+50	0.00	18.95	0	34	13	1,418	1,405
347+00	0.00	13.64	0	30	13	1,455	1,442
347+50	0.00	10.43	0	22	13	1,483	1,470
348+00	0.00	8.15	0	17	13	1,504	1,491
348+50	0.00	5.53	0	13	13	1,520	1,507
349+00	0.00	3.16	0	8	13	1,530	1,517
349+50	0.00	1.51	0	4	13	1,535	1,522
350+00	0.00	2.20	0	3	13	1,539	1,526
350+50	0.00	3.74	0	5	13	1,545	1,532
351+00	0.00	3.65	0	7	13	1,554	1,541
351+50	0.00	7.01	0	10	13	1,566	1,553
352+00	0.00	5.90	0	12	13	1,581	1,568
352+50	0.00	6.07	0	11	13	1,595	1,582
353+00	0.01	8.80	0	14	13	1,613	1,600
353+50	0.04	1.94	0	10	13	1,625	1,612
354+00	0.09	3.96	0	5	13	1,631	1,618
354+50	0.11	4.11	0	7	13	1,640	1,627
355+00	0.13	3.45	0	7	13	1,649	1,636
355+50	1.52	3.57	2	7	15	1,658	1,643
356+00	0.00	3.26	1	6	16	1,665	1,649
356+50	0.00	5.84	0	8	16	1,675	1,659
357+00	0.00	5.72	0	11	16	1,689	1,673
357+50	0.00	4.34	0	9	16	1,700	1,684
358+00	0.00	5.78	0	9	16	1,711	1,695
358+50	0.01	8.73	0	13	16	1,728	1,712
359+00	0.01	12.66	0	20	16	1,753	1,737
359+50	0.00	14.25	0	25	16	1,784	1,768
360+00	0.00	18.65	0	30	16	1,821	1,805
360+50	0.00	18.67	0	35	16	1,865	1,849
361+00	1.59	20.53	1	36	17	1,910	1,893
361+50	0.00	26.81	1	44	18	1,965	1,947
362+00	0.00	35.04	0	57	18	2,036	2,018
362+50	0.00	45.59	0	75	18	2,130	2,112
363+00	0.00	43.97	0	83	18	2,234	2,216
363+50	0.00	39.04	0	77	18	2,330	2,312
364+00	0.01	43.95	0	77	18	2,426	2,408
364+50	0.03	68.21	0	104	18	2,556	2,538
365+00	0.57	69.25	1	127	19	2,715	2,696
365+50	1.06	38.60	2	100	21	2,840	2,819
366+00	3.03	14.08	4	49	25	2,901	2,876
366+14.594	0.00	26.40	1	11	26	2,915	2,889
366+15	0.00	26.81	0	0	26	2,915	2,889
366+20	0.00	32.15	0	5	26	2,921	2,895
366+25	0.00	37.84	0	6	26	2,929	2,903
366+30	0.00	42.11	0	7	26	2,938	2,912
366+35	0.00	43.39	0	8	26	2,948	2,922
366+40	0.00	36.34	0	7	26	2,956	2,930
366+45	0.00	29.10	0	6	26	2,964	2,938

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PROJECT NO: 4323-08-72

HWY: CTH W

COUNTY: MANITOWOC

EARTHWORK DATA

SHEET

E

DIVISION -- ALIGNMENT - CTH W							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS ORDINATE
					1.00	1.25	
366+50	0.00	30.53	0	6	26	2,971	2,945
366+55	0.00	26.22	0	5	26	2,978	2,952
366+60	0.00	14.49	0	4	26	2,983	2,957
366+65	0.00	1.26	0	1	26	2,984	2,958
366+70	0.00	0.67	0	0	26	2,984	2,958
366+75	0.00	0.87	0	0	26	2,984	2,958
366+80	0.00	0.01	0	0	26	2,984	2,958
366+85	0.00	0.00	0	0	26	2,984	2,958
366+90	0.00	0.00	0	0	26	2,984	2,958
366+95	0.00	0.00	0	0	26	2,984	2,958
367+00	0.00	0.00	0	0	26	2,984	2,958
367+05	0.00	0.00	0	0	26	2,984	2,958
367+10	0.00	0.00	0	0	26	2,984	2,958
367+15	0.00	0.00	0	0	26	2,984	2,958
367+20	0.00	2.61	0	0	26	2,984	2,958
367+25	0.00	6.87	0	1	26	2,985	2,959
367+30	0.00	21.68	0	3	26	2,989	2,963
367+35	0.00	29.38	0	5	26	2,995	2,969
367+40	0.00	30.55	0	6	26	3,003	2,977
367+45	0.00	29.77	0	6	26	3,010	2,984
367+50	0.00	23.50	0	5	26	3,016	2,990
367+55	0.00	23.76	0	4	26	3,021	2,995
367+60	0.00	26.59	0	5	26	3,028	3,002
367+65	0.00	33.35	0	6	26	3,035	3,009
367+65.47	0.00	29.70	0	1	26	3,036	3,010
368+00	0.00	3.02	0	21	26	3,063	3,037
368+50	0.00	3.44	0	6	26	3,070	3,044
369+00	1.38	0.39	1	4	27	3,075	3,048
369+50	4.38	0.59	5	1	32	3,076	3,044
370+00	0.01	0.14	4	1	36	3,078	3,042
370+50	0.00	0.13	0	0	36	3,078	3,042
371+00	0.00	1.96	0	2	36	3,080	3,044
371+50	0.00	1.71	0	3	36	3,084	3,048
372+00	0.00	0.34	0	2	36	3,086	3,050
372+50	3.31	0.97	3	1	39	3,088	3,049
373+00	0.00	1.78	3	3	42	3,091	3,049
373+50	0.00	0.19	0	2	42	3,094	3,052
374+00	0.00	1.67	0	2	42	3,096	3,054
374+50	0.00	3.96	0	5	42	3,103	3,061
375+00	0.00	6.48	0	10	42	3,115	3,073
375+50	0.00	10.82	0	16	42	3,135	3,093
376+00	0.00	11.63	0	21	42	3,161	3,119
376+50	0.00	11.01	0	21	42	3,188	3,146
377+00	0.00	14.41	0	24	42	3,218	3,176
377+50	0.00	27.64	0	39	42	3,266	3,224
378+00	0.00	35.28	0	58	42	3,339	3,297
378+50	0.00	48.09	0	77	42	3,435	3,393
379+00	0.00	45.74	0	87	42	3,544	3,502
379+50	0.00	35.94	0	76	42	3,639	3,597
380+00	5.37	0.32	5	34	47	3,681	3,634
380+50	0.00	35.08	5	33	52	3,723	3,671

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PROJECT NO: XXXX-XX-XX

HWY: XXX

COUNTY: XXX

EARTHWORK DATA

SHEET

E

FILE NAME : X:\PROJECTS\MANITOWOC\190003 4323-08-00 CTH W\DESIGN\C3D\SHEETSPLAN\090101\_EW.DWG  
LAYOUT NAME - 08

PLOT DATE : 11/11/2022 10:03 AM

PLOT BY : JEFF ZLATOHLAVEK

PLOT NAME :

PLOT SCALE : 1" = 1'

WISDOT/CADD SHEET 49

DIVISION - ALIGNMENT - CTH W							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS ORDINATE
					1.00	1.25	
381+00	0.00	26.23	0	57	52	3,794	3,742
381+50	0.01	48.16	0	69	52	3,880	3,828
382+00	3.18	31.65	3	74	55	3,973	3,918
382+50	1.65	28.31	4	56	59	4,043	3,984
383+00	0.16	26.65	2	51	61	4,106	4,045
383+50	0.00	18.36	0	42	61	4,159	4,098
384+00	0.00	11.69	0	28	61	4,194	4,133
384+50	0.20	6.73	0	17	61	4,215	4,154
385+00	0.14	4.69	0	11	61	4,229	4,168
385+50	0.00	2.30	0	6	61	4,236	4,175
386+00	1.77	0.11	2	2	63	4,239	4,176
386+50	0.06	1.08	2	1	65	4,240	4,175
387+00	0.00	3.91	0	5	65	4,246	4,181
387+50	0.00	6.73	0	10	65	4,259	4,194
388+00	0.00	14.53	0	20	65	4,284	4,219
388+50	0.00	21.20	0	33	65	4,325	4,260
389+00	0.00	16.08	0	35	65	4,369	4,304
389+50	0.01	24.83	0	38	65	4,416	4,351
390+00	0.00	29.48	0	50	65	4,479	4,414
390+50	0.00	27.07	0	52	65	4,544	4,479
391+00	0.00	20.49	0	44	65	4,599	4,534
391+50	0.00	19.71	0	37	65	4,645	4,580
392+00	0.00	21.13	0	38	65	4,693	4,628
392+07.319	0.00	20.84	0	6	65	4,700	4,635
392+10	0.00	20.84	0	2	65	4,703	4,638
392+15	0.00	20.87	0	4	65	4,708	4,643
392+20	0.00	17.60	0	4	65	4,713	4,648
392+25	0.00	9.96	0	3	65	4,716	4,651
392+30	0.00	0.02	0	1	65	4,718	4,653
392+35	0.00	0.00	0	0	65	4,718	4,653
392+40	0.00	0.00	0	0	65	4,718	4,653
392+45	0.00	0.00	0	0	65	4,718	4,653
392+50	0.00	0.00	0	0	65	4,718	4,653
392+55	0.00	0.00	0	0	65	4,718	4,653
392+60	0.00	0.00	0	0	65	4,718	4,653
392+65	0.00	6.52	0	1	65	4,719	4,654
392+70	0.00	18.70	0	2	65	4,721	4,656
392+75	0.00	18.86	0	3	65	4,725	4,660
392+80	0.00	18.79	0	3	65	4,729	4,664
392+85	0.00	18.61	0	3	65	4,733	4,668
392+90	0.00	18.31	0	3	65	4,736	4,671
392+95	0.00	17.90	0	3	65	4,740	4,675
393+00	0.00	17.37	0	3	65	4,744	4,679
393+05	0.00	19.72	0	3	65	4,748	4,683
393+10	0.00	21.41	0	4	65	4,753	4,688
393+15	0.00	20.64	0	4	65	4,758	4,693
393+20	0.00	19.32	0	4	65	4,763	4,698
393+25	0.00	17.25	0	3	65	4,766	4,701
393+50	0.00	1.13	0	1	65	4,768	4,703
394+00	0.00	5.88	0	6	65	4,775	4,710
394+50	0.00	9.99	0	15	65	4,794	4,729

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PROJECT NO: XXXX-XX-XX

HWY: XXX

COUNTY: XXX

EARTHWORK DATA

SHEET

E

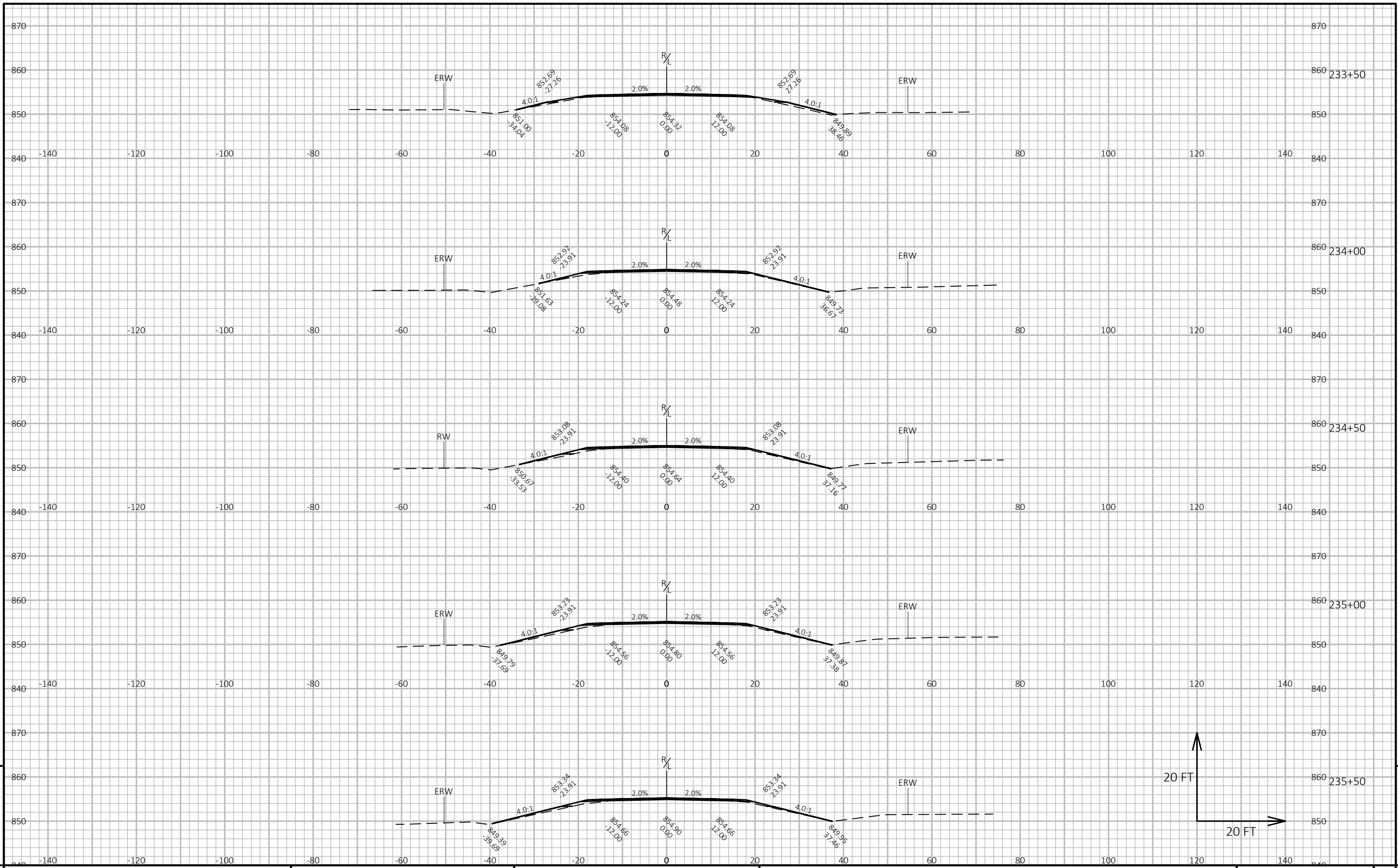


DIVISION -- ALIGNMENT - CTH W							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	
					1.00	1.25	
395+00	0.00	9.54	0	18	65	4,816	4,751
395+50	0.00	9.65	0	18	65	4,839	4,774
396+00	0.00	10.75	0	19	65	4,863	4,798
396+50	0.00	9.82	0	19	65	4,886	4,821
397+00	0.00	7.07	0	16	65	4,906	4,841
397+50	0.00	4.77	0	11	65	4,920	4,855
398+00	0.00	4.68	0	9	65	4,931	4,866
398+50	0.62	2.73	1	7	66	4,940	4,874
399+00	3.80	1.32	4	4	70	4,945	4,875
399+50	3.40	0.00	7	1	77	4,946	4,869
400+00	7.22	1.26	10	1	87	4,948	4,861
400+50	1.40	1.58	8	3	95	4,951	4,856
401+00	0.41	1.91	2	3	97	4,955	4,858
401+50	0.32	0.80	1	3	98	4,959	4,861
402+00	0.26	0.01	1	1	99	4,960	4,861
402+50	0.31	0.01	1	0	100	4,960	4,860
403+00	1.05	0.07	1	0	101	4,960	4,859
403+50	1.16	0.13	2	0	103	4,960	4,857
404+00	0.00	1.14	1	1	104	4,961	4,857
404+50	0.48	0.35	0	1	104	4,963	4,859
405+00	1.29	2.76	2	3	106	4,966	4,860
405+50	0.64	0.00	2	3	108	4,970	4,862
406+00	0.17	0.11	1	0	109	4,970	4,861
406+50	0.00	0.61	0	1	109	4,971	4,862
407+00	0.00	4.52	0	5	109	4,978	4,869
407+50	0.00	2.09	0	6	109	4,985	4,876
408+00	0.00	5.90	0	7	109	4,994	4,885
408+50	0.00	13.18	0	18	109	5,016	4,907
409+00	0.00	18.66	0	29	109	5,053	4,944
409+50	0.00	27.96	0	43	109	5,106	4,997
410+00	0.00	43.44	0	66	109	5,189	5,080
410+50	0.00	47.84	0	85	109	5,295	5,186
411+00	0.00	31.94	0	74	109	5,388	5,279
411+50	0.00	24.65	0	52	109	5,453	5,344
412+00	0.00	20.17	0	41	109	5,504	5,395
412+50	0.00	18.80	0	36	109	5,549	5,440
413+00	0.00	12.39	0	29	109	5,585	5,476
413+50	0.00	3.07	0	14	109	5,603	5,494
414+00	0.00	0.24	0	3	109	5,606	5,497
414+50	0.40	1.76	0	2	109	5,609	5,500
415+00	0.16	0.03	1	2	110	5,611	5,501
415+50	0.71	0.00	1	0	111	5,611	5,500
416+00	0.04	1.48	1	1	112	5,613	5,501
416+50	0.00	3.74	0	5	112	5,619	5,507
417+00	0.00	4.31	0	7	112	5,628	5,516
417+50	0.23	9.89	0	13	112	5,644	5,532
418+00	0.54	13.08	1	21	113	5,670	5,557
418+50	0.02	19.90	1	31	114	5,709	5,595
419+00	0.14	10.22	0	28	114	5,744	5,630
419+50	1.73	4.25	2	13	116	5,760	5,644
420+00	0.00	1.75	2	6	118	5,768	5,650

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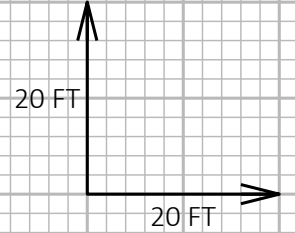
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DIVISION -- ALIGNMENT - CTH W							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	
					1.00	1.25	
420+40	0.00	0.00	0	0	118	5,768	5,650
420+45	0.00	0.00	0	0	118	5,768	5,650
420+50	0.00	0.00	0	0	118	5,768	5,650
420+55	0.00	0.00	0	0	118	5,768	5,650
420+60	0.00	0.00	0	0	118	5,768	5,650
420+65	0.00	0.00	0	0	118	5,768	5,650
420+70	0.00	0.00	0	0	118	5,768	5,650
420+75	0.00	0.00	0	0	118	5,768	5,650
420+80	0.00	0.00	0	0	118	5,768	5,650
420+85	0.00	0.00	0	0	118	5,768	5,650
420+90	0.00	0.00	0	0	118	5,768	5,650
420+95	0.00	0.00	0	0	118	5,768	5,650
421+00	0.00	0.00	0	0	118	5,768	5,650
421+05	0.00	0.00	0	0	118	5,768	5,650
421+10	0.00	0.00	0	0	118	5,768	5,650
421+15	0.00	0.00	0	0	118	5,768	5,650
421+20	0.00	0.00	0	0	118	5,768	5,650
421+25	0.00	0.00	0	0	118	5,768	5,650
421+30	0.00	0.00	0	0	118	5,768	5,650
421+35	0.00	0.00	0	0	118	5,768	5,650
421+40	0.00	0.00	0	0	118	5,768	5,650
421+45	0.00	0.00	0	0	118	5,768	5,650
421+50	0.00	0.00	0	0	118	5,768	5,650
421+55	0.00	0.92	0	0	118	5,768	5,650
421+60	0.00	1.35	0	0	118	5,768	5,650
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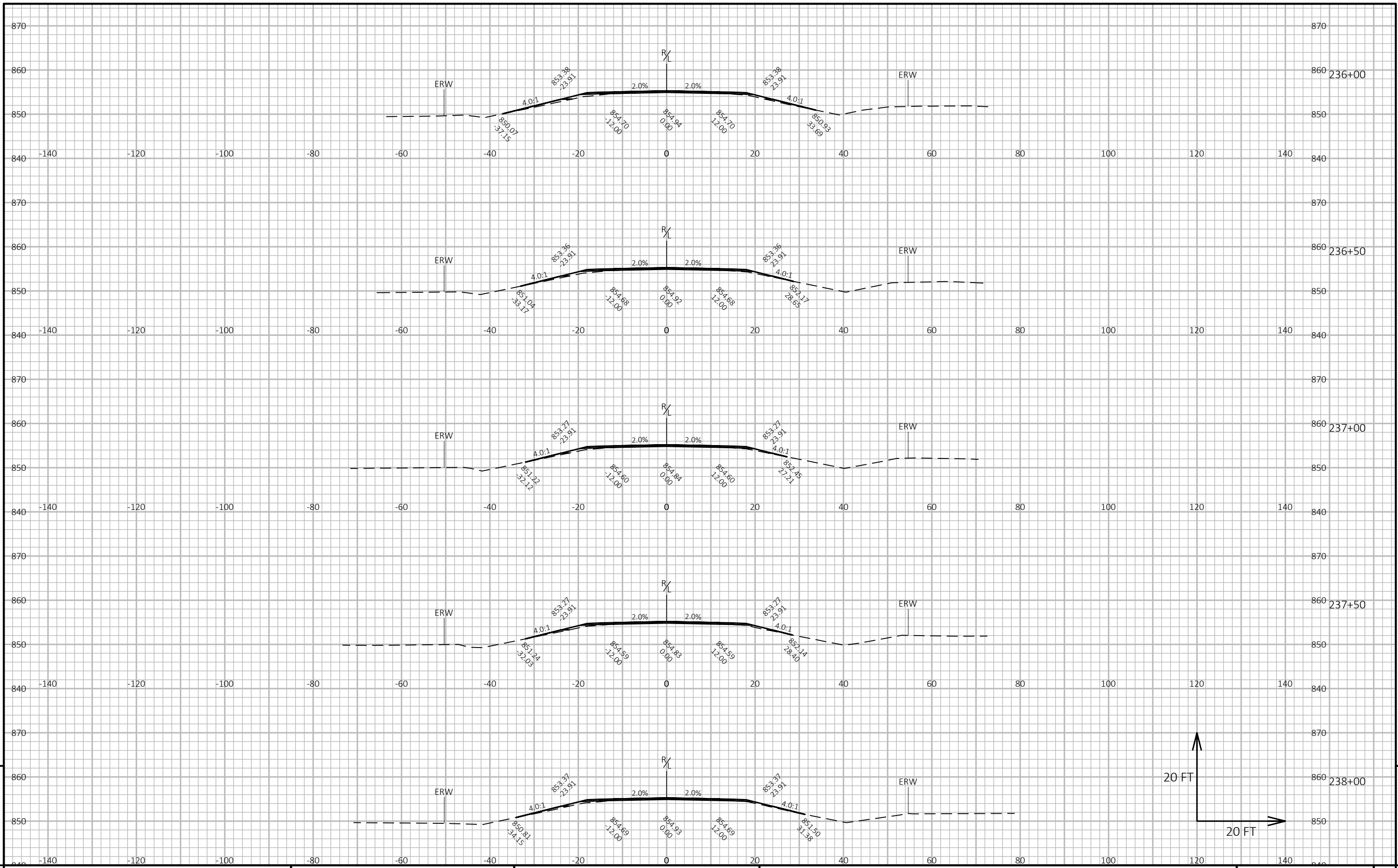
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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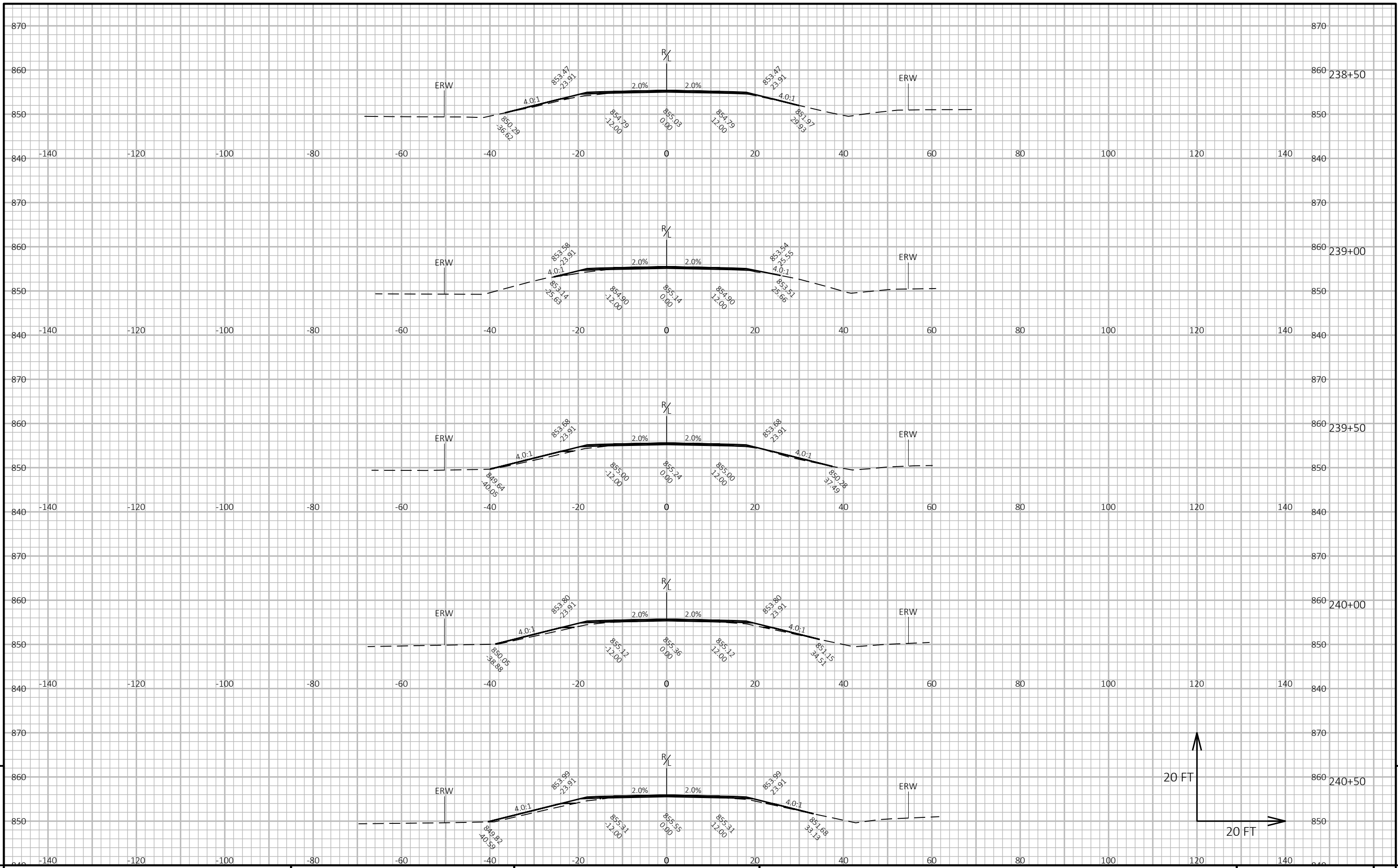
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

FILE NAME : X:\PROJECTS\MANITOWOC\190003 4323-08-00 CTH W\DESIGN\C3D\SHEETSPLAN\090101\_XS\_EXPLODE2.DWG      PLOT DATE : 11/11/2022 12:43 AM      PLOT BY : JAKE NEERDAELS      PLOT NAME :      PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.      WISDOT/CADD SHEET 49



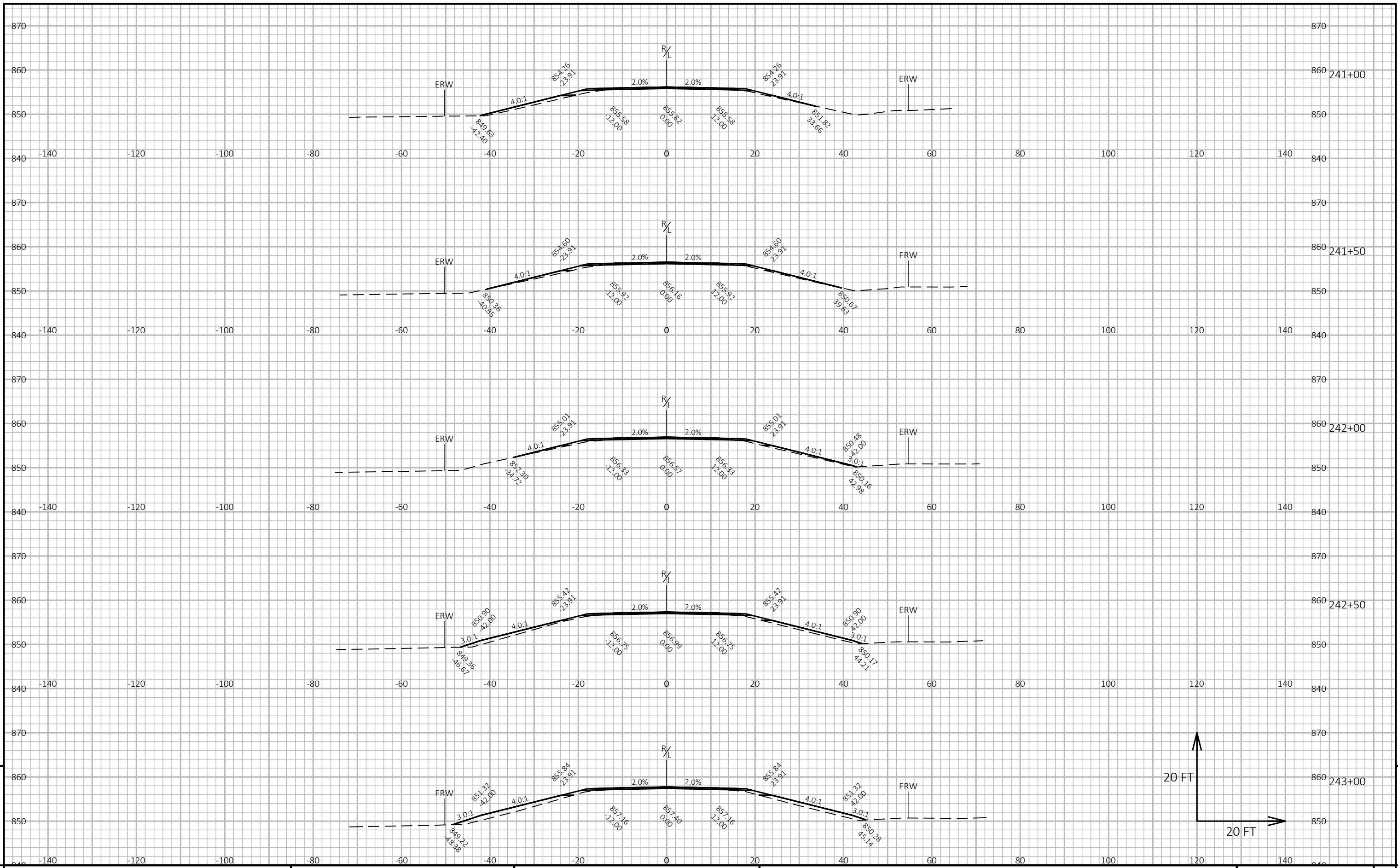


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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

FILE NAME : X:\PROJECTS\MANITOWOC\190003 4323-08-00 CTH W\DESIGN\C3D\SHEETSPLAN\090101\_XS\_EXPLODE2.DWG      PLOT DATE : 11/11/2022 12:43 AM      PLOT BY : JAKE NEERDAELS      PLOT NAME :      PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.      WISDOT/CADD SHEET 49

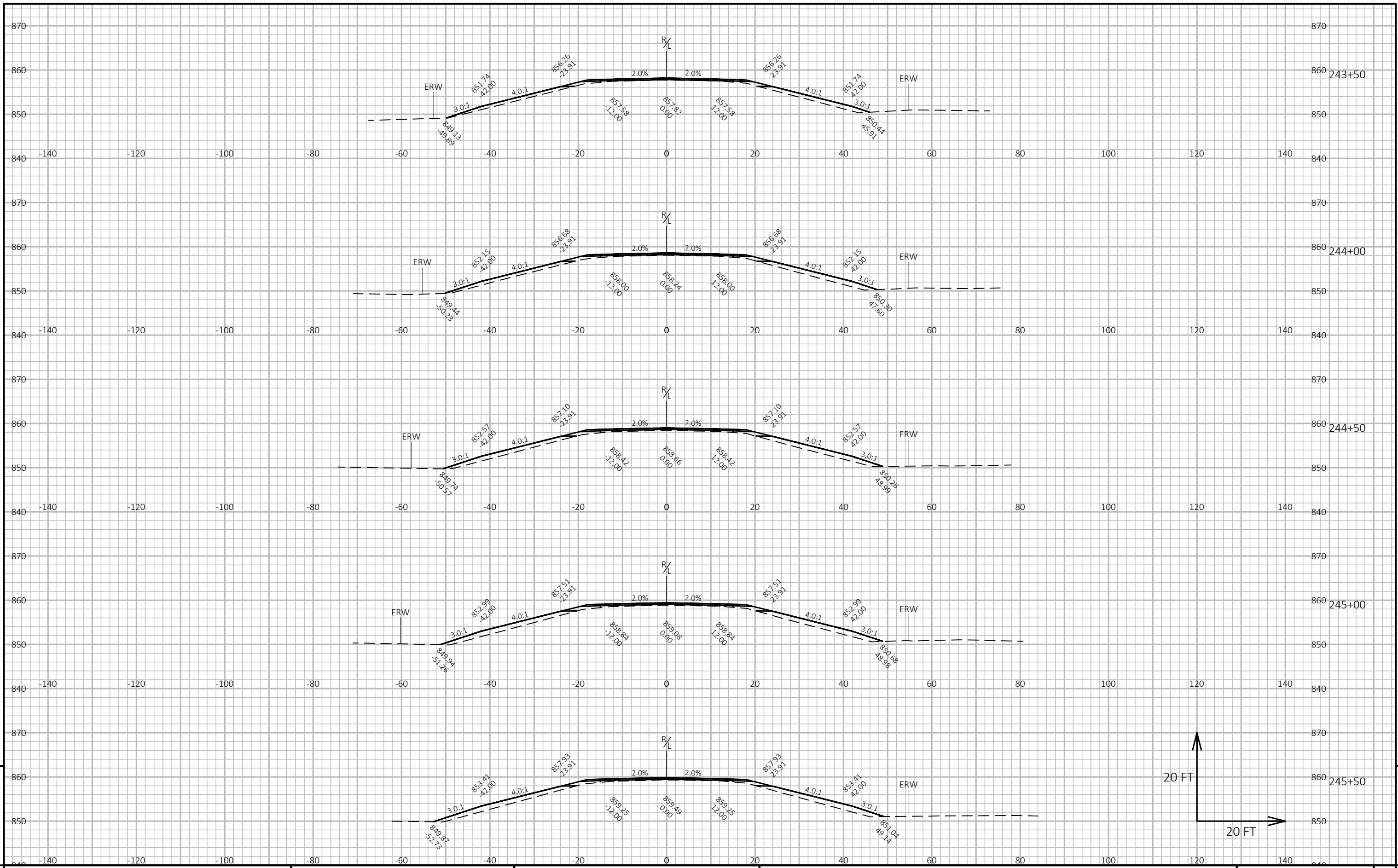


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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

FILE NAME: X:\PROJECTS\MANITOWOC\190003 4323-08-00 CTH W\DESIGN\C3D\SHEETSPLAN\090101\_XS\_EXPLODE2.DWG      PLOT DATE: 11/11/2022 12:44 AM      PLOT BY: JAKE NEERDAELS      PLOT NAME:      PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.      WISDOT/CADD SHEET 49

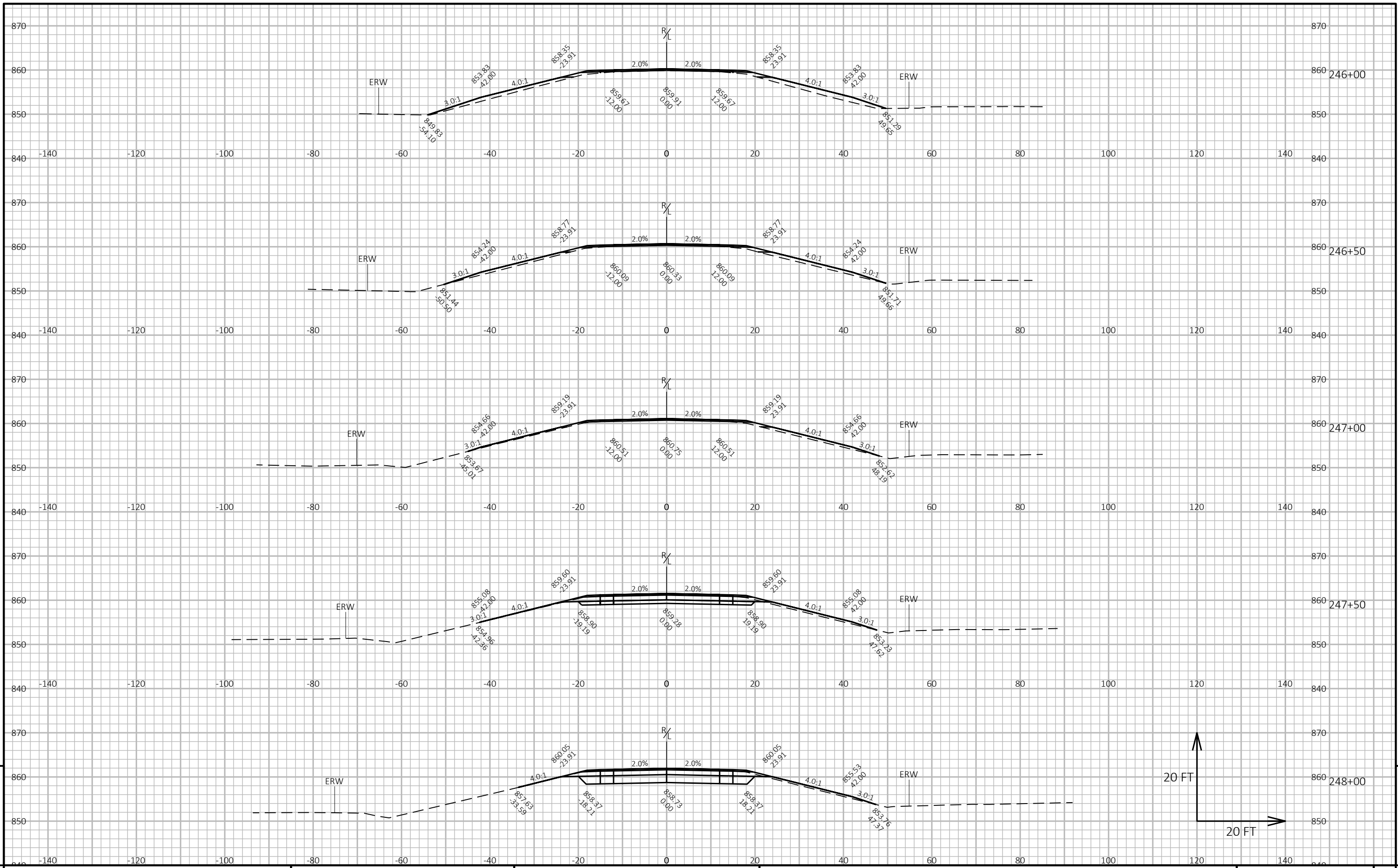


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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

FILE NAME: X:\PROJECTS\MANITOWOC\190003 4323-08-00 CTH W\DESIGN\C3D\SHEETSPLAN\090101\_XS\_EXPLODE2.DWG      PLOT DATE: 11/11/2022 12:44 AM      PLOT BY: JAKE NEERDAELS      PLOT NAME:      PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.      WISDOT/CADD SHEET 49

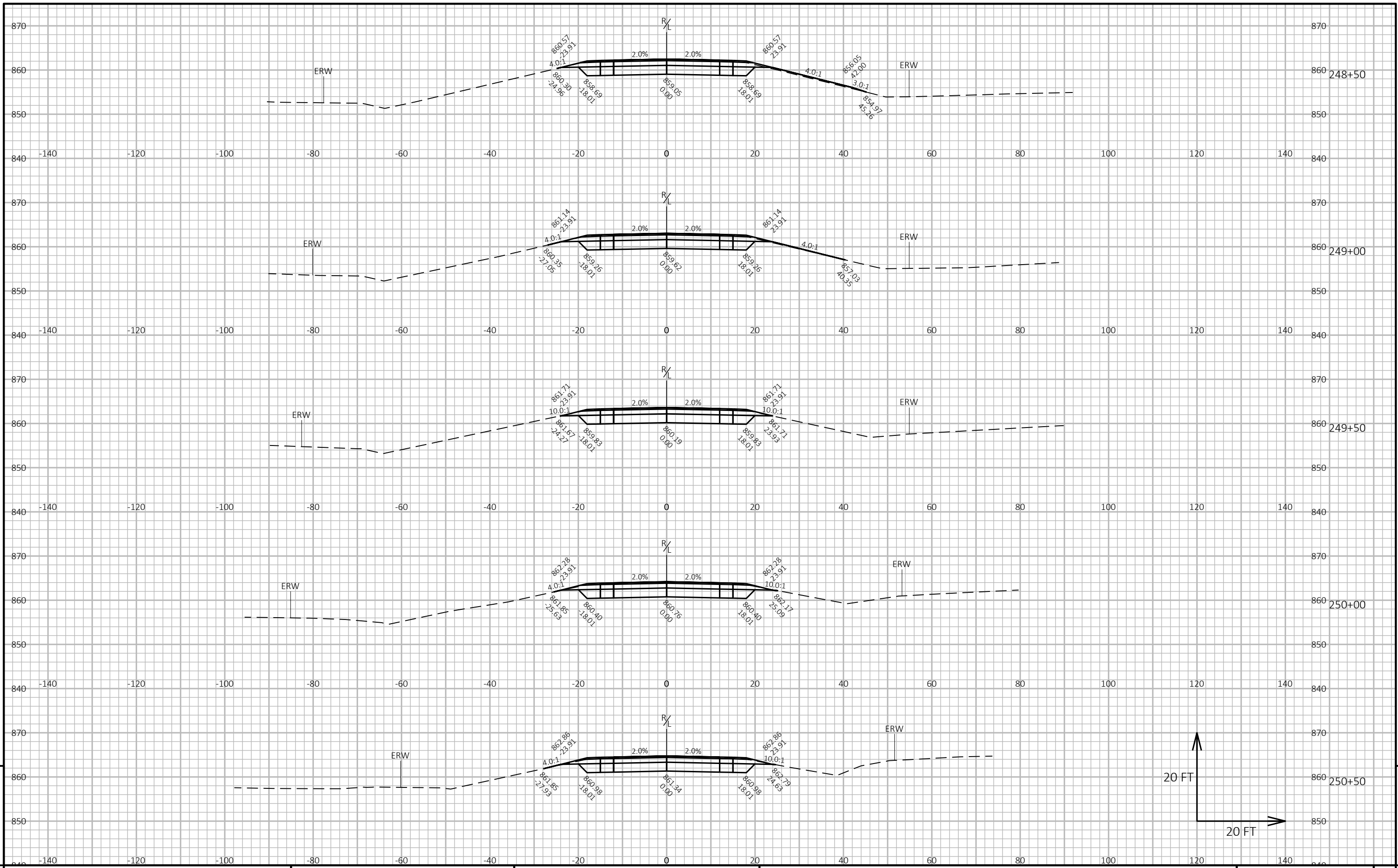


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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

FILE NAME : X:\PROJECTS\MANITOWOC\190003 4323-08-00 CTH W\DESIGN\C3D\SHEETSPLAN\090101\_XS\_EXPLODE2.DWG      PLOT DATE : 11/11/2022 12:44 AM      PLOT BY : JAKE NEERDAELS      PLOT NAME :      PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.      WISDOT/CADD SHEET 49

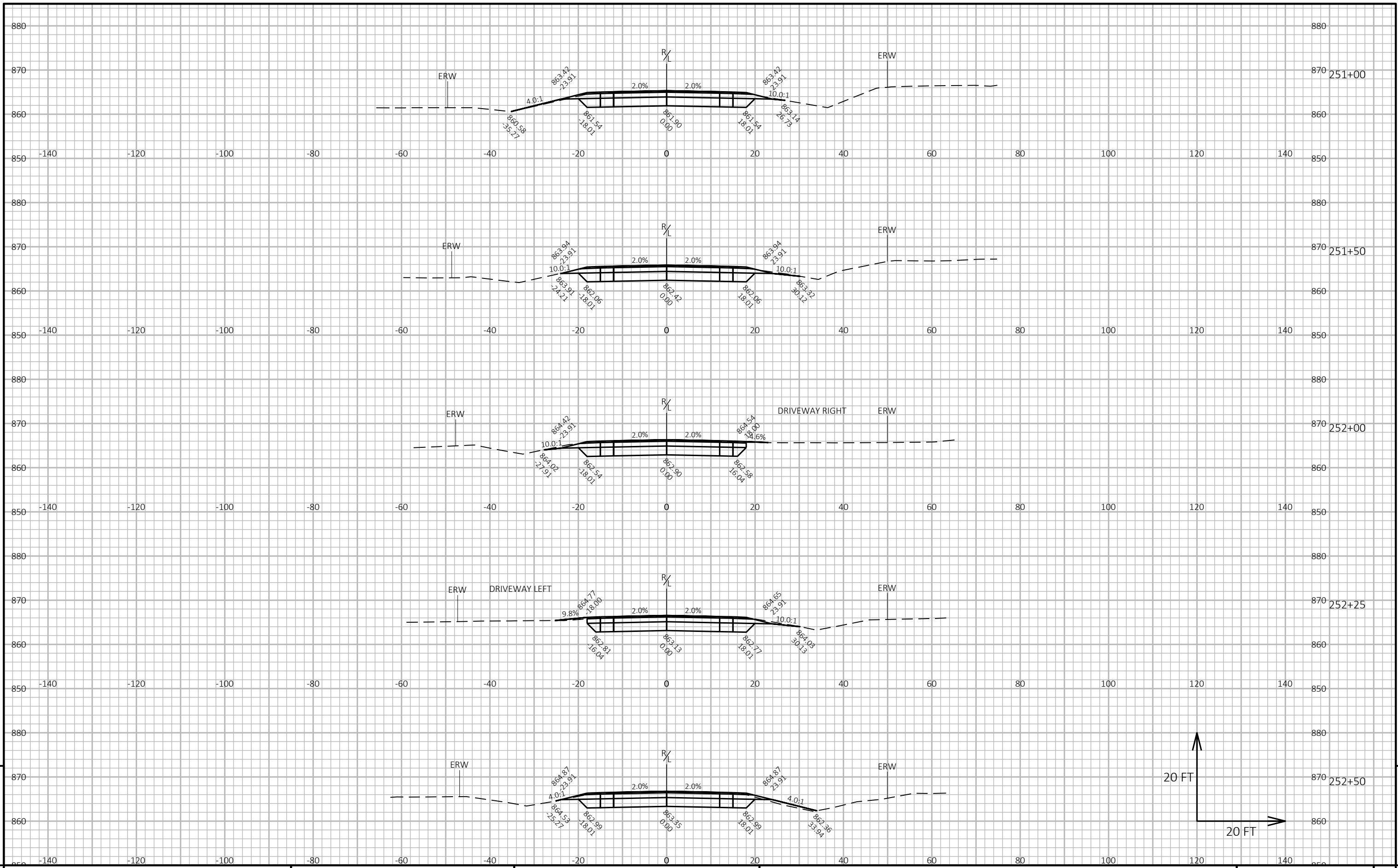


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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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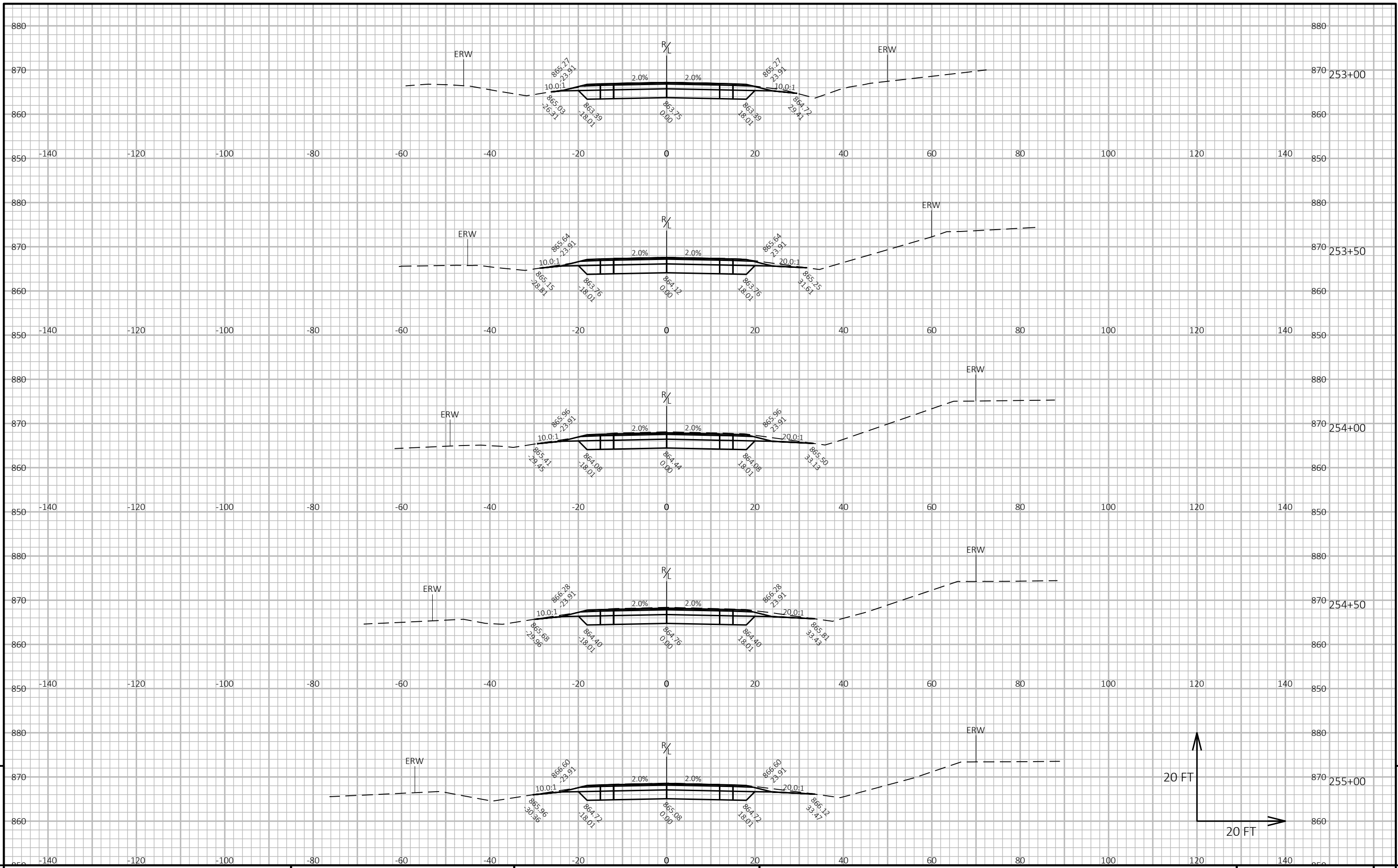


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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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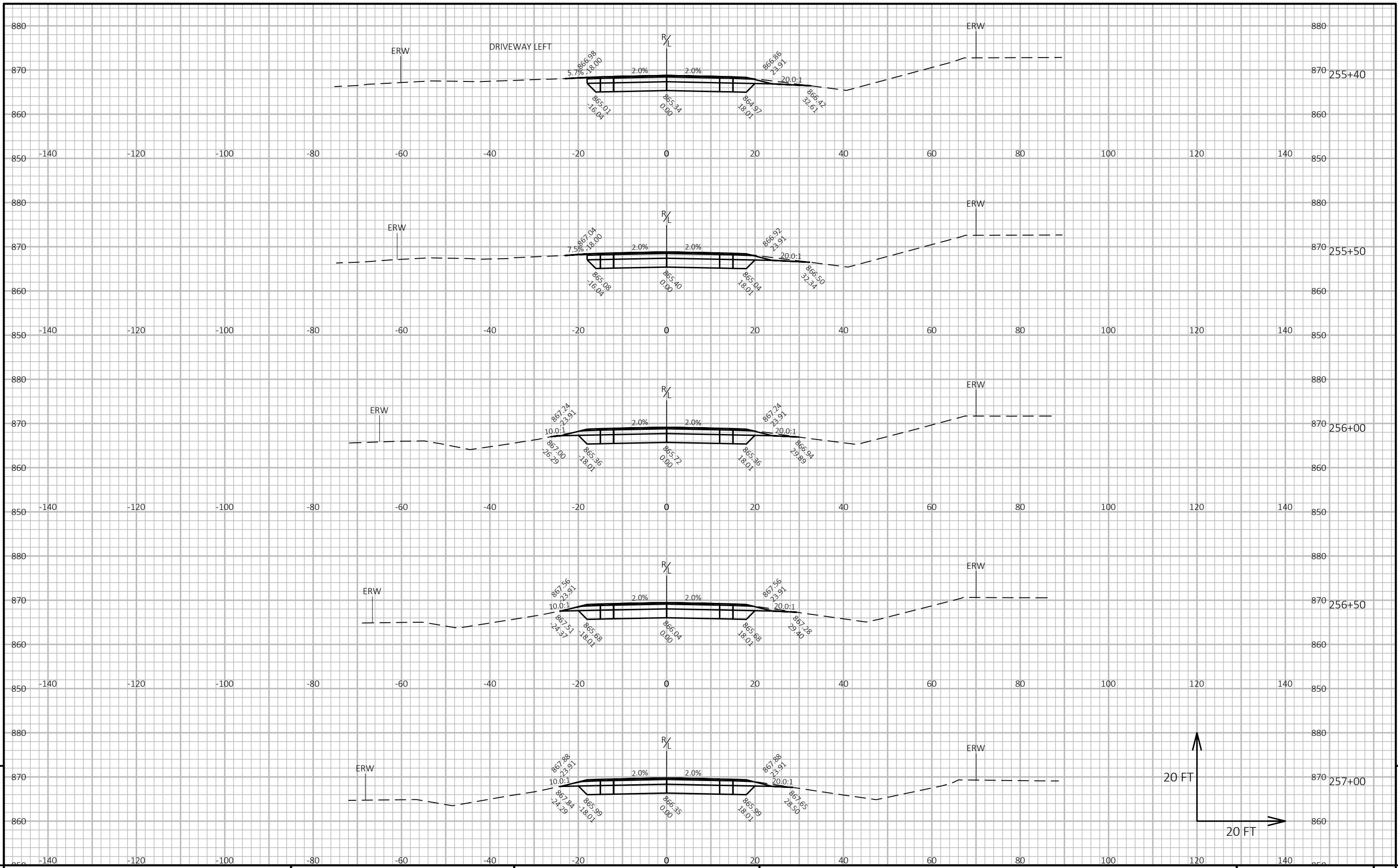


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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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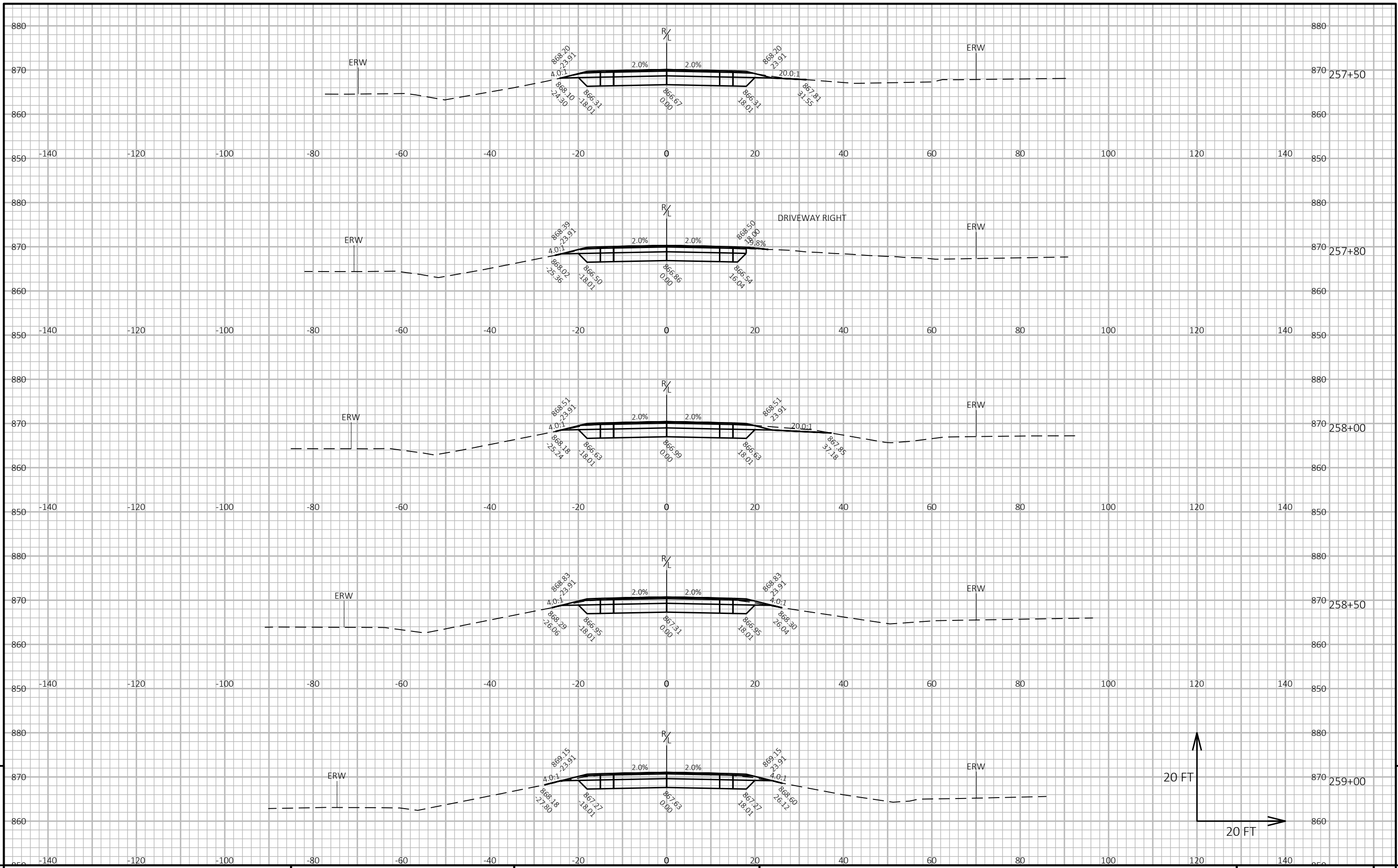


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PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	CROSS SECTIONS: CTH W	SHEET	E
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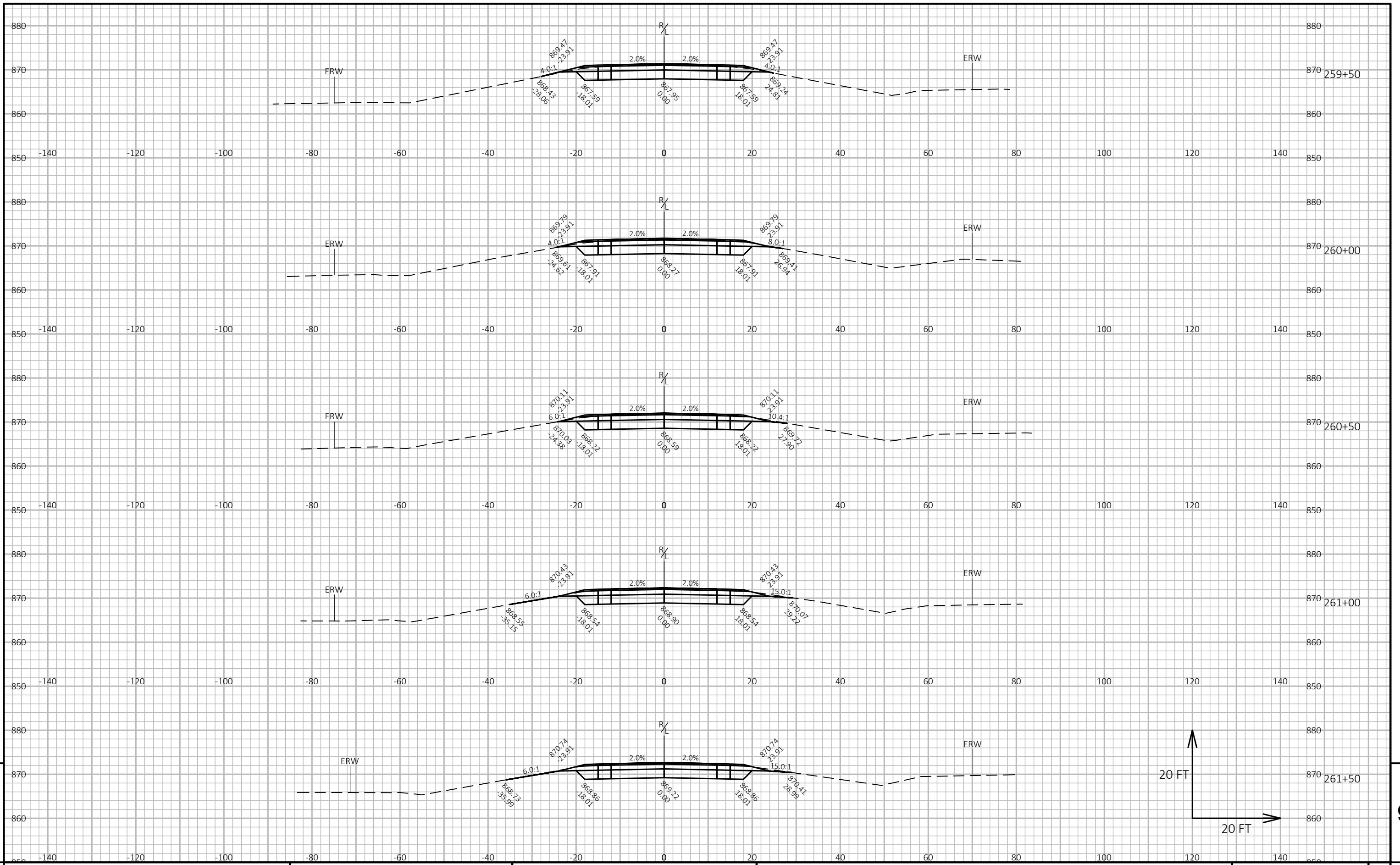


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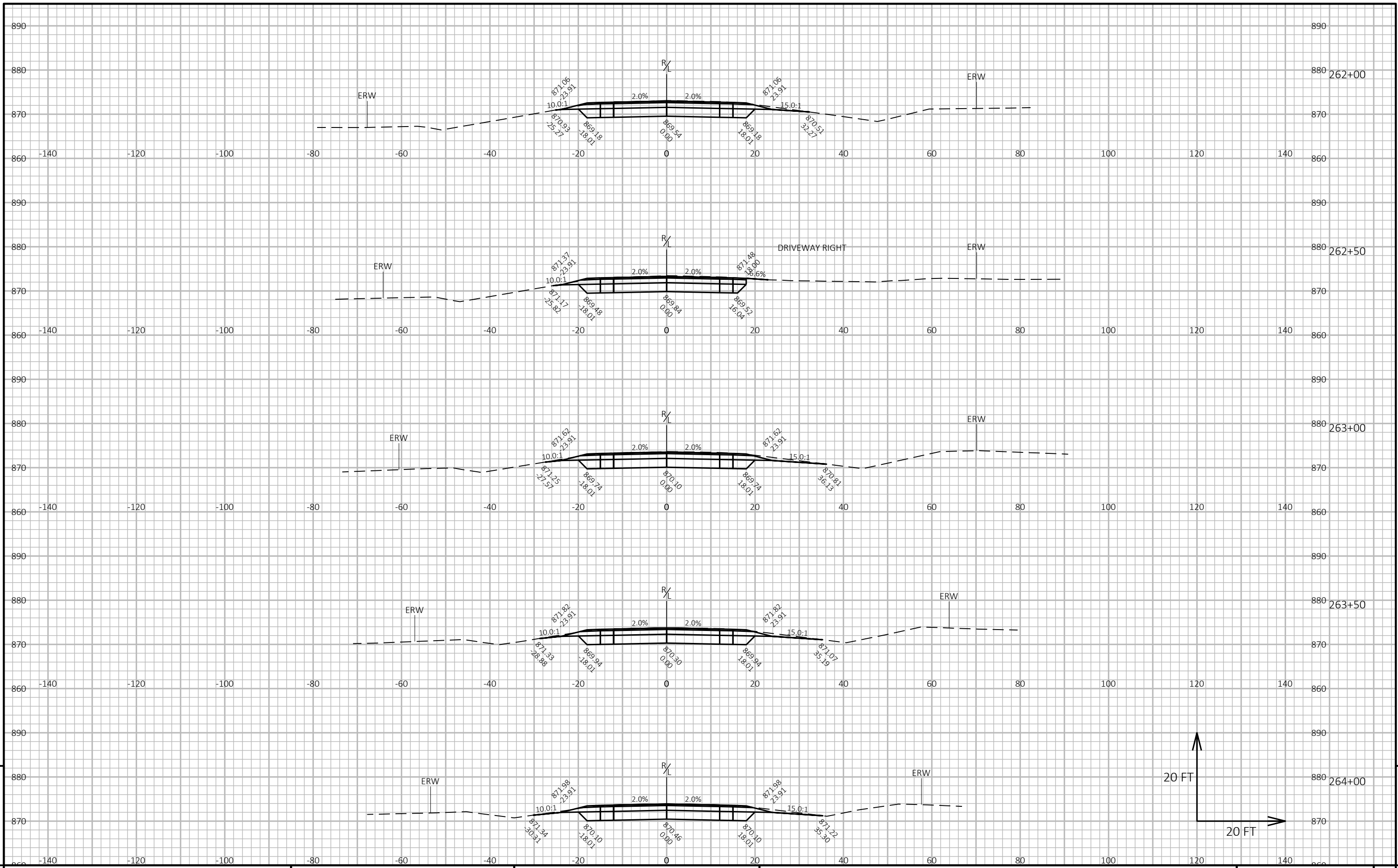


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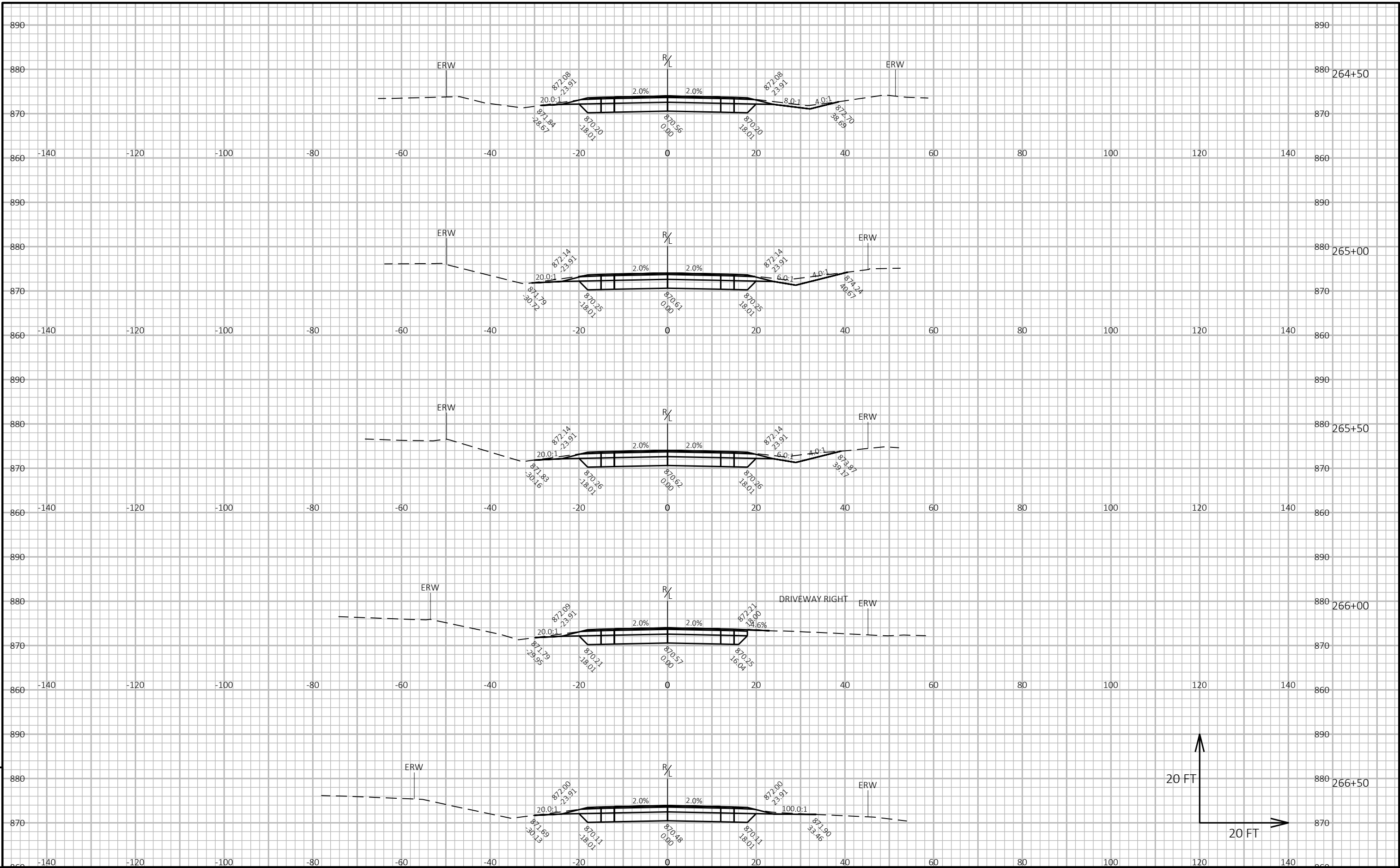
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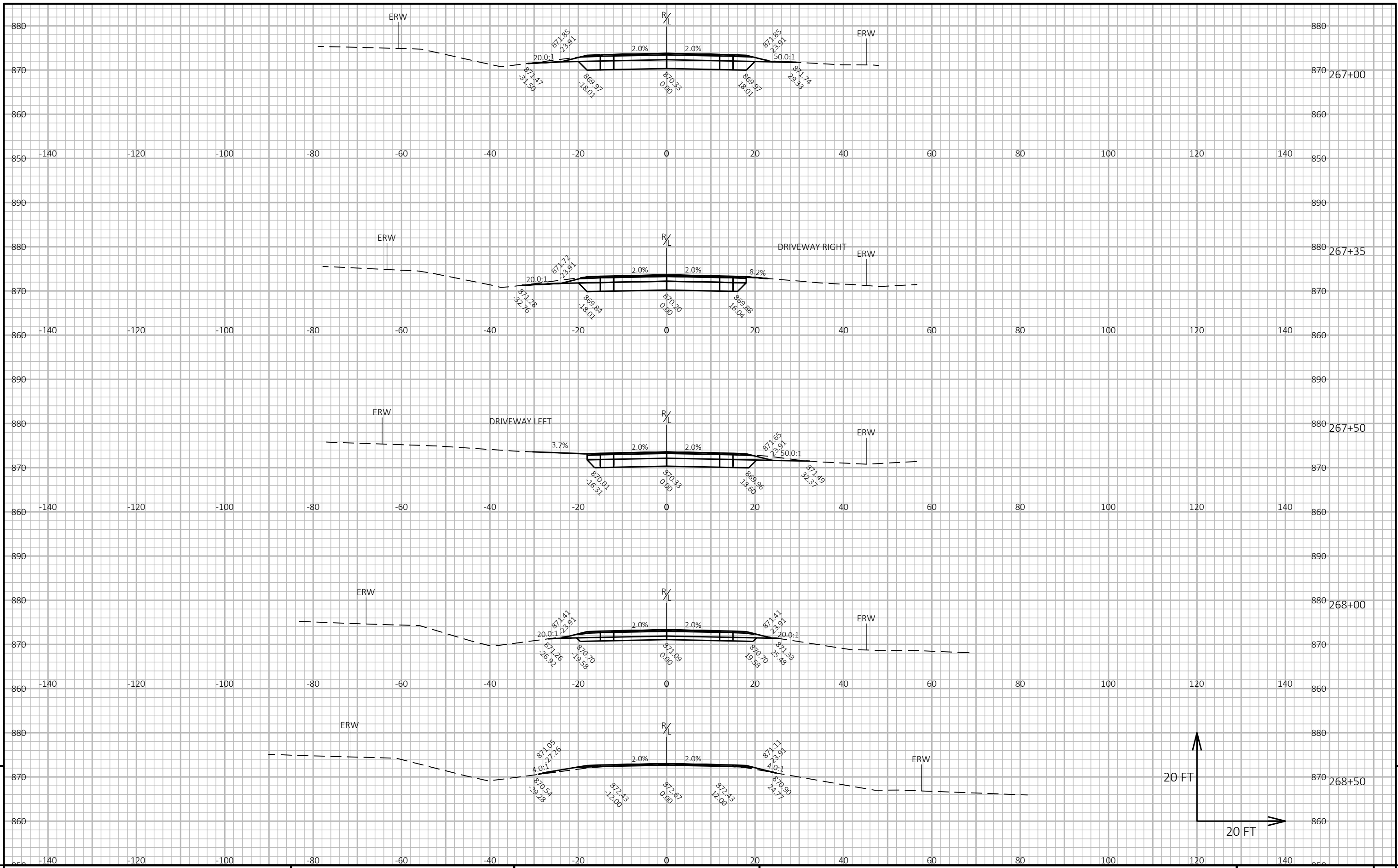
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E



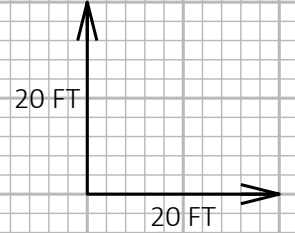


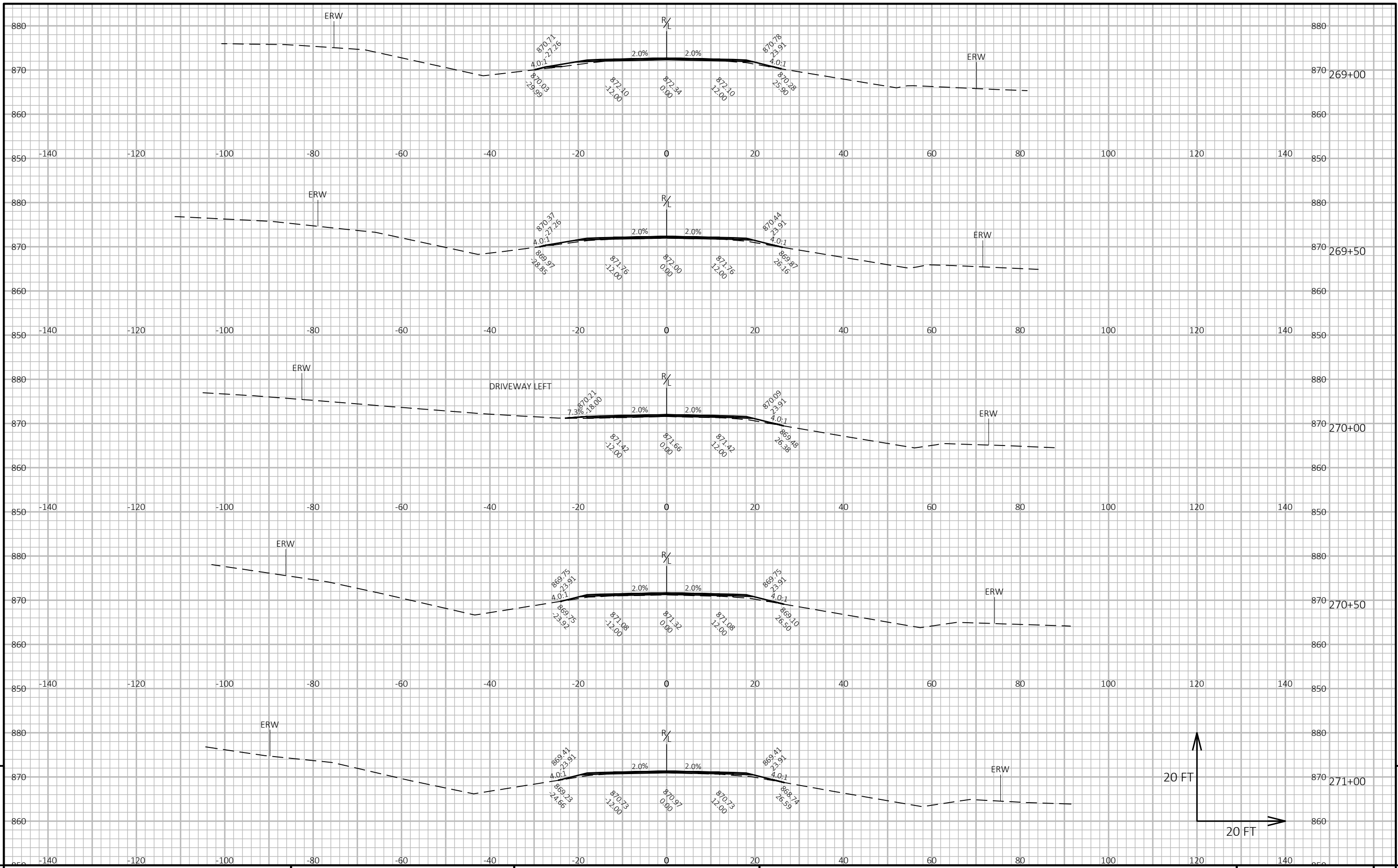
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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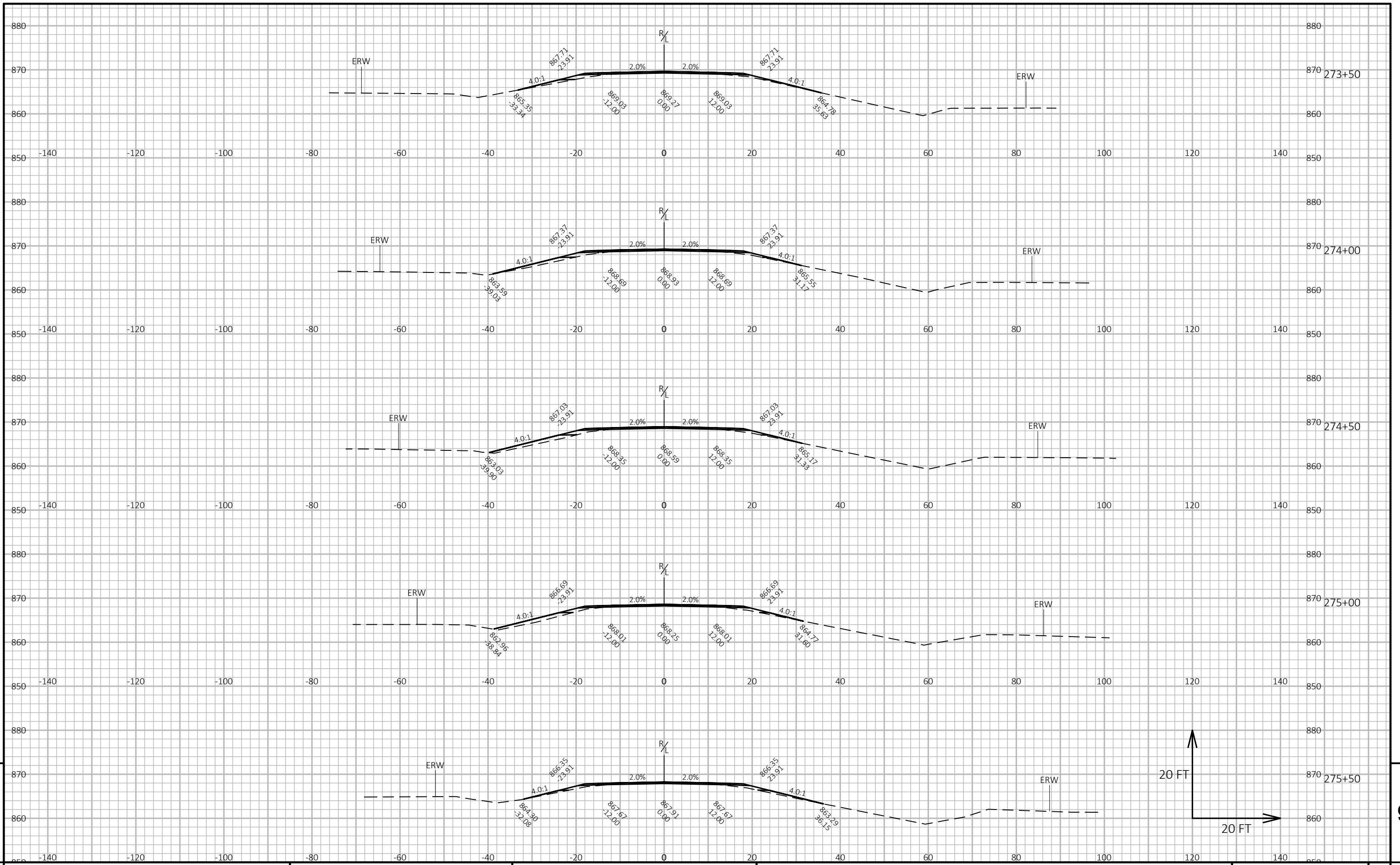


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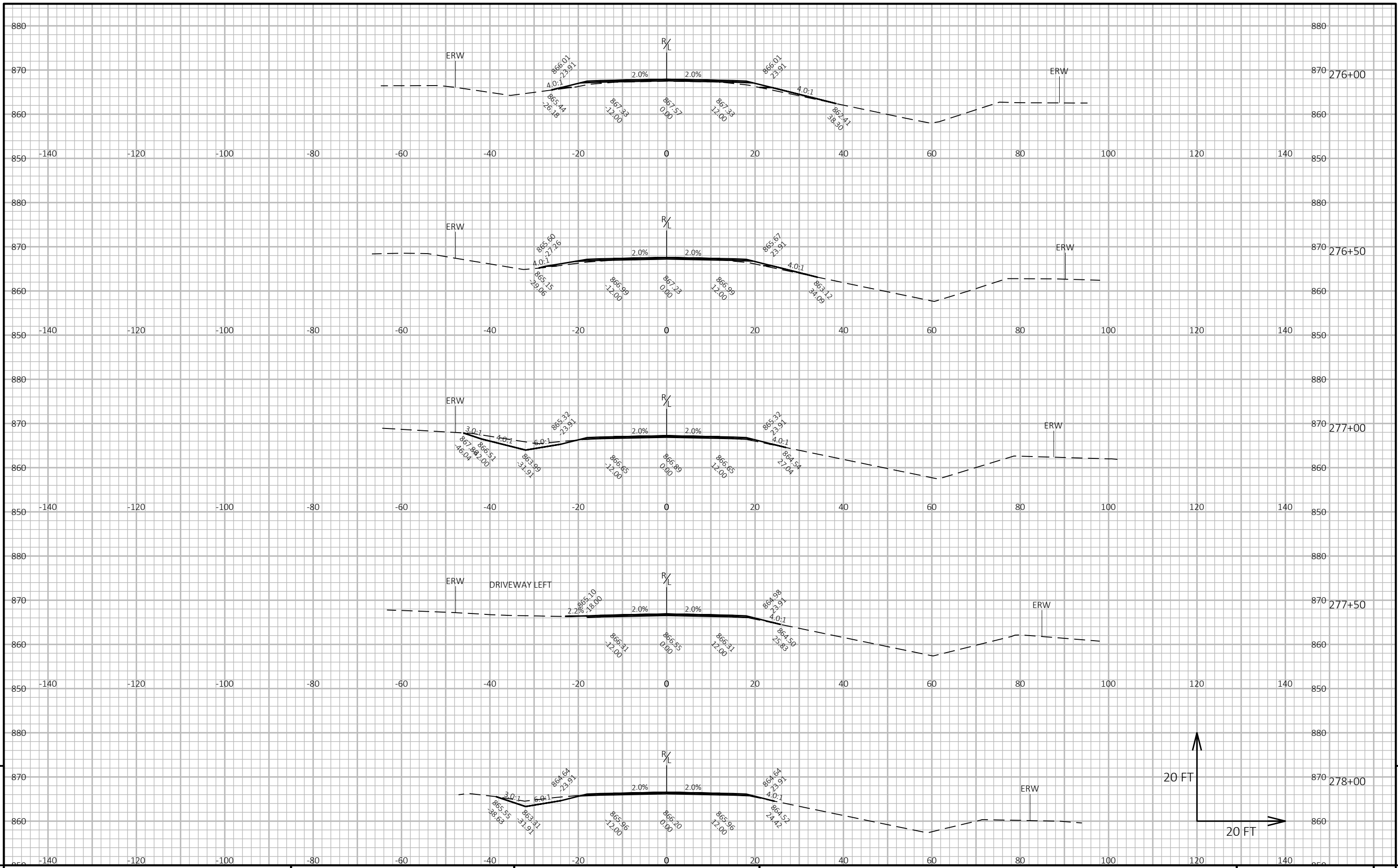
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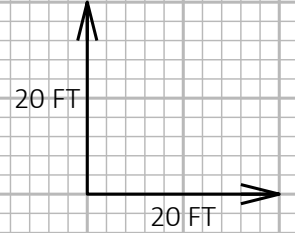


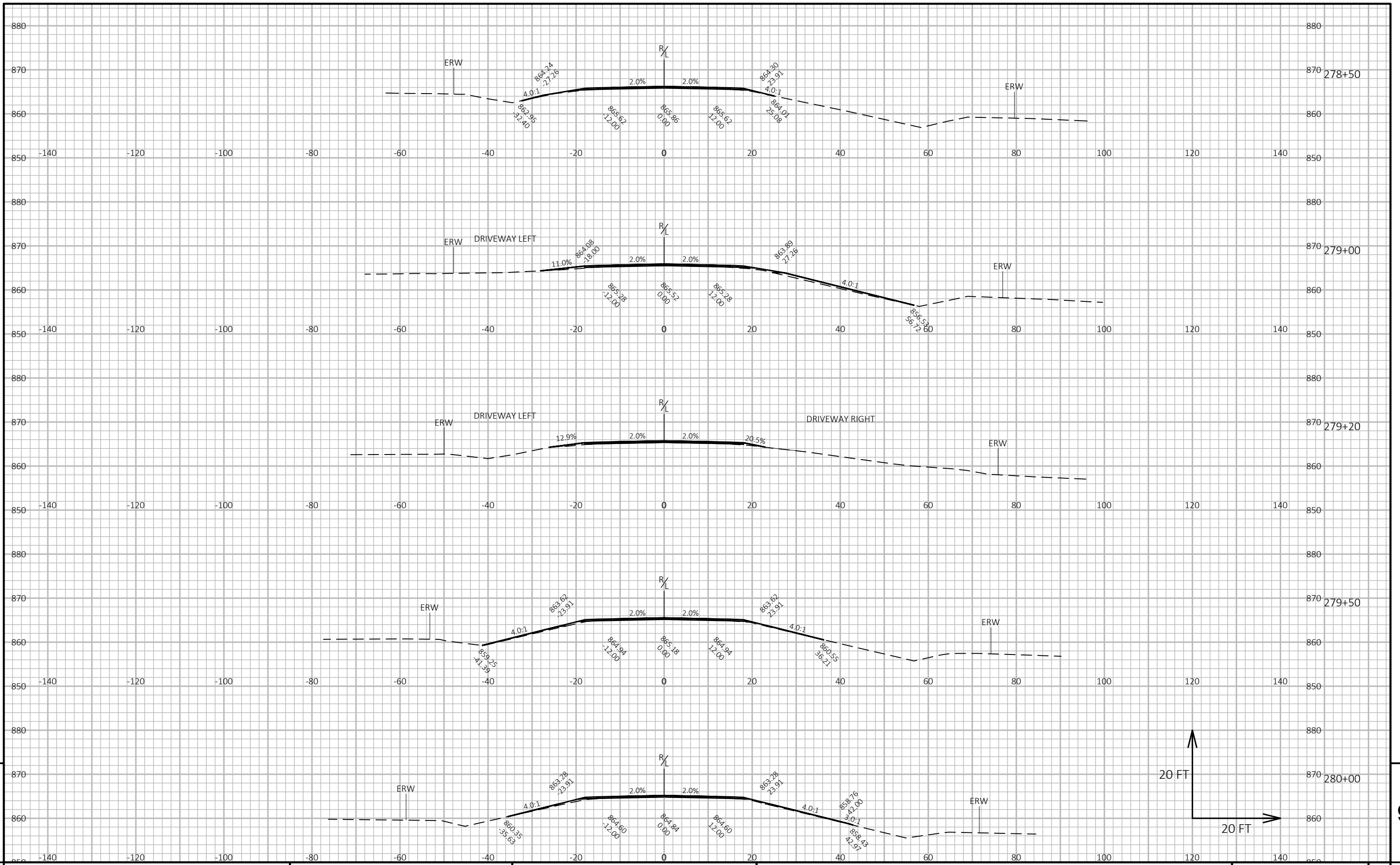
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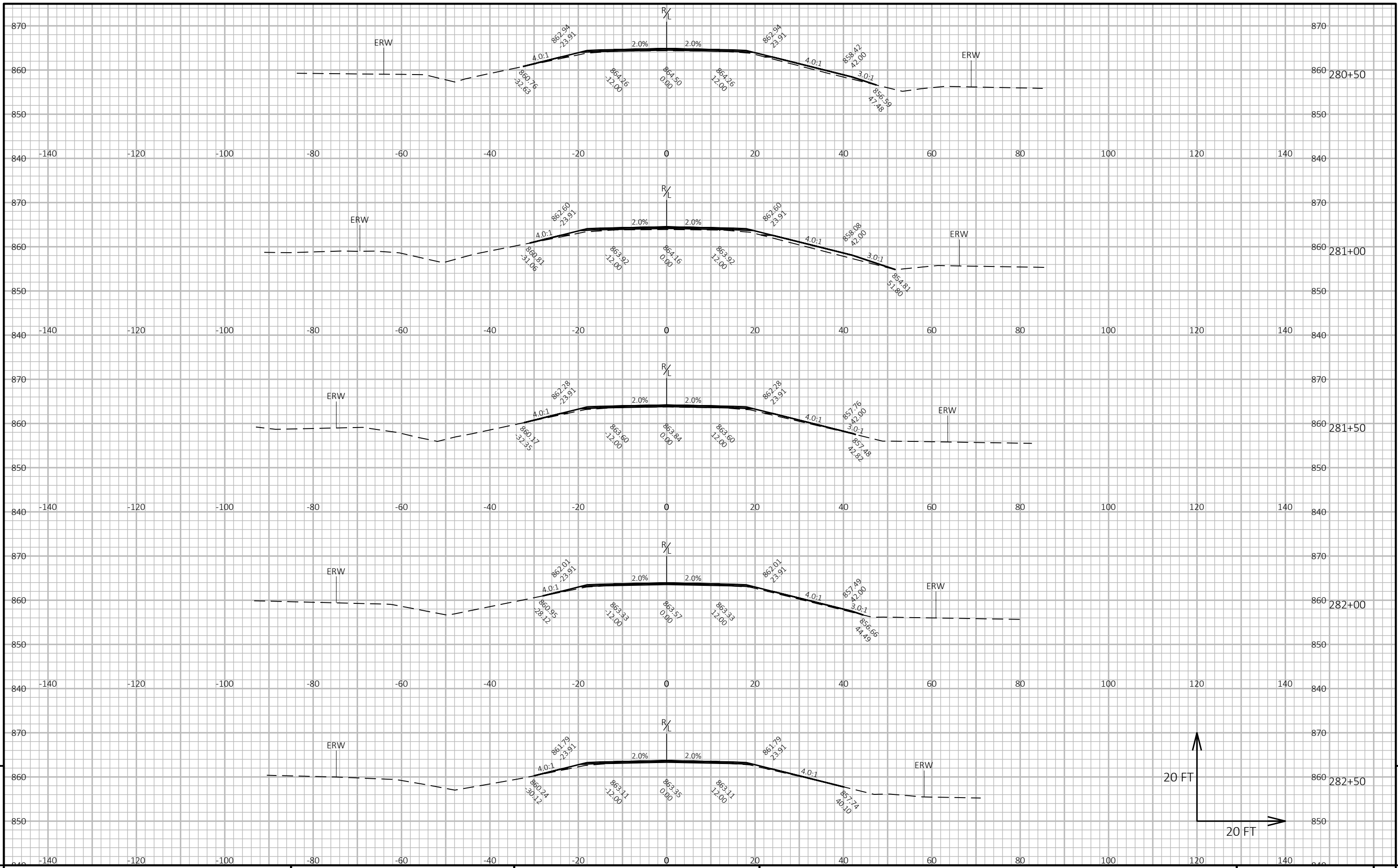




PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	CROSS SECTIONS: CTH W	SHEET
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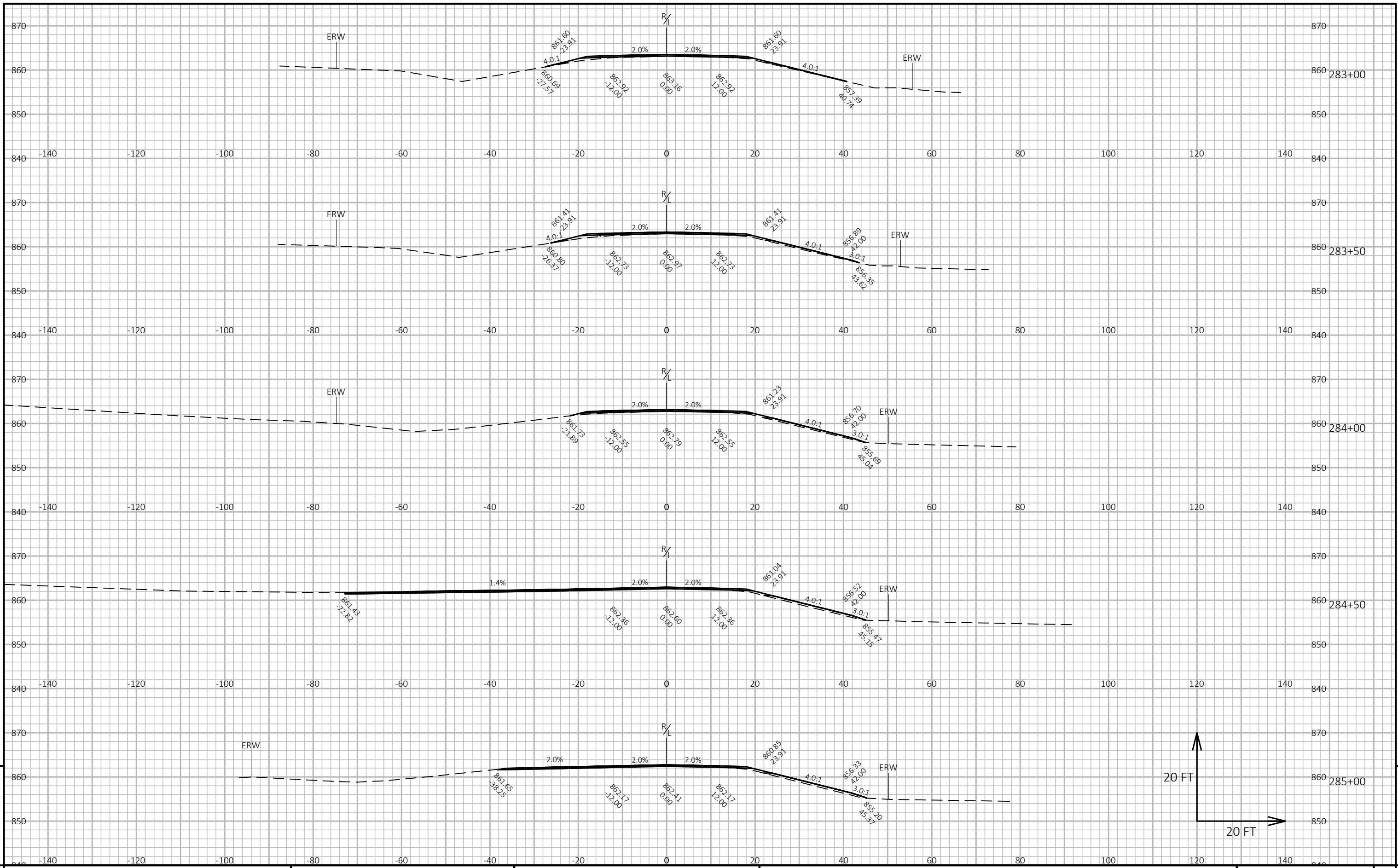


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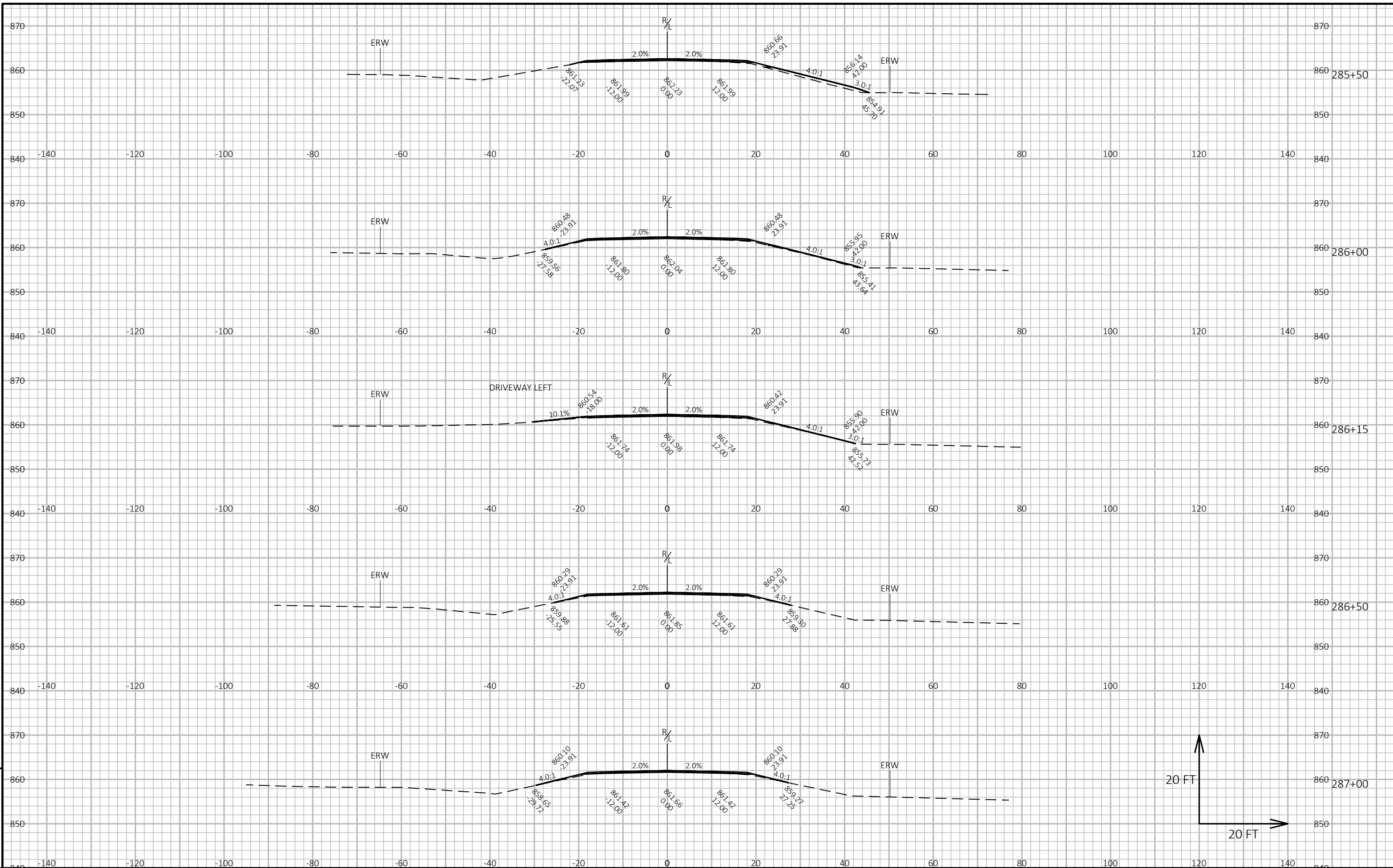


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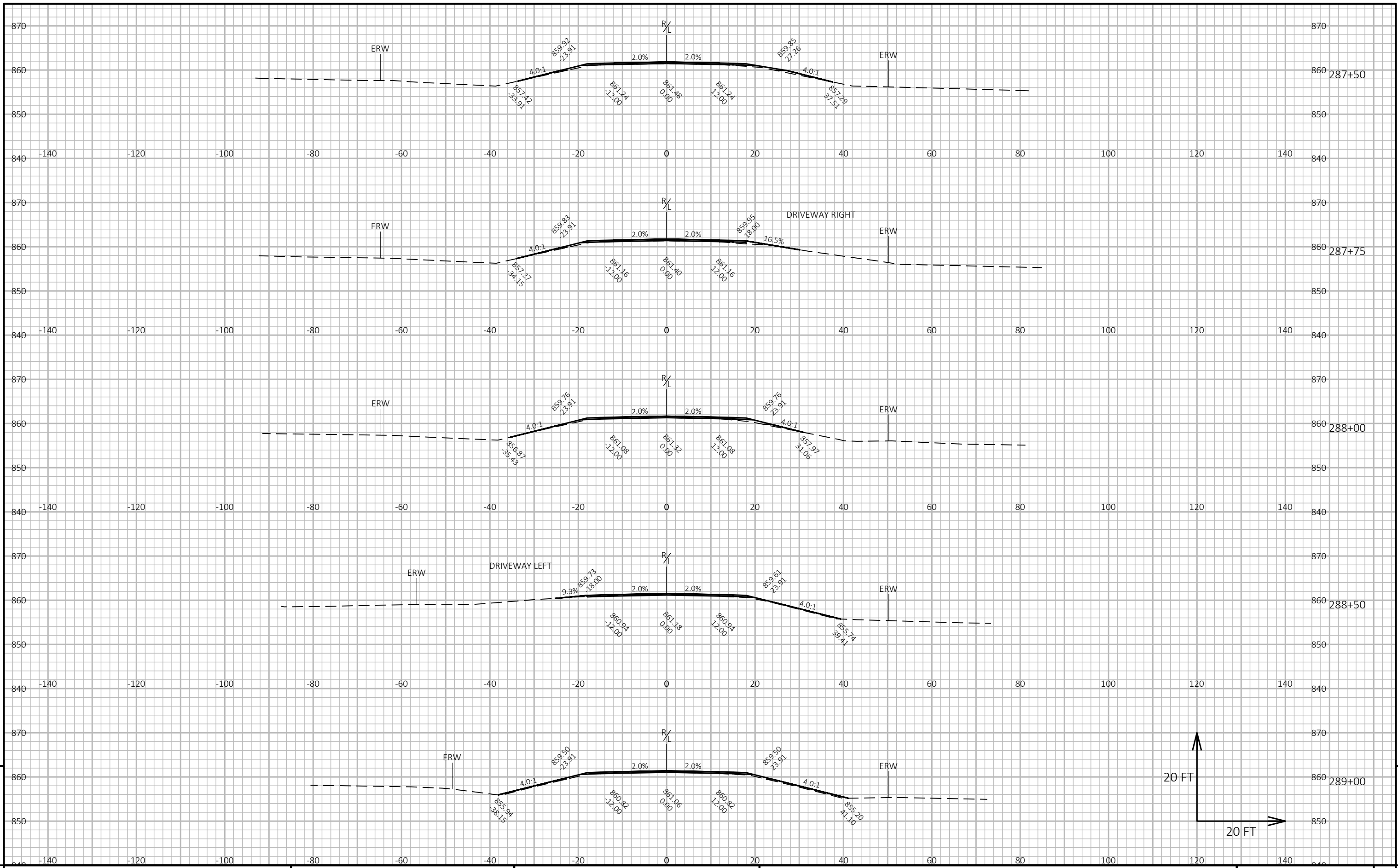
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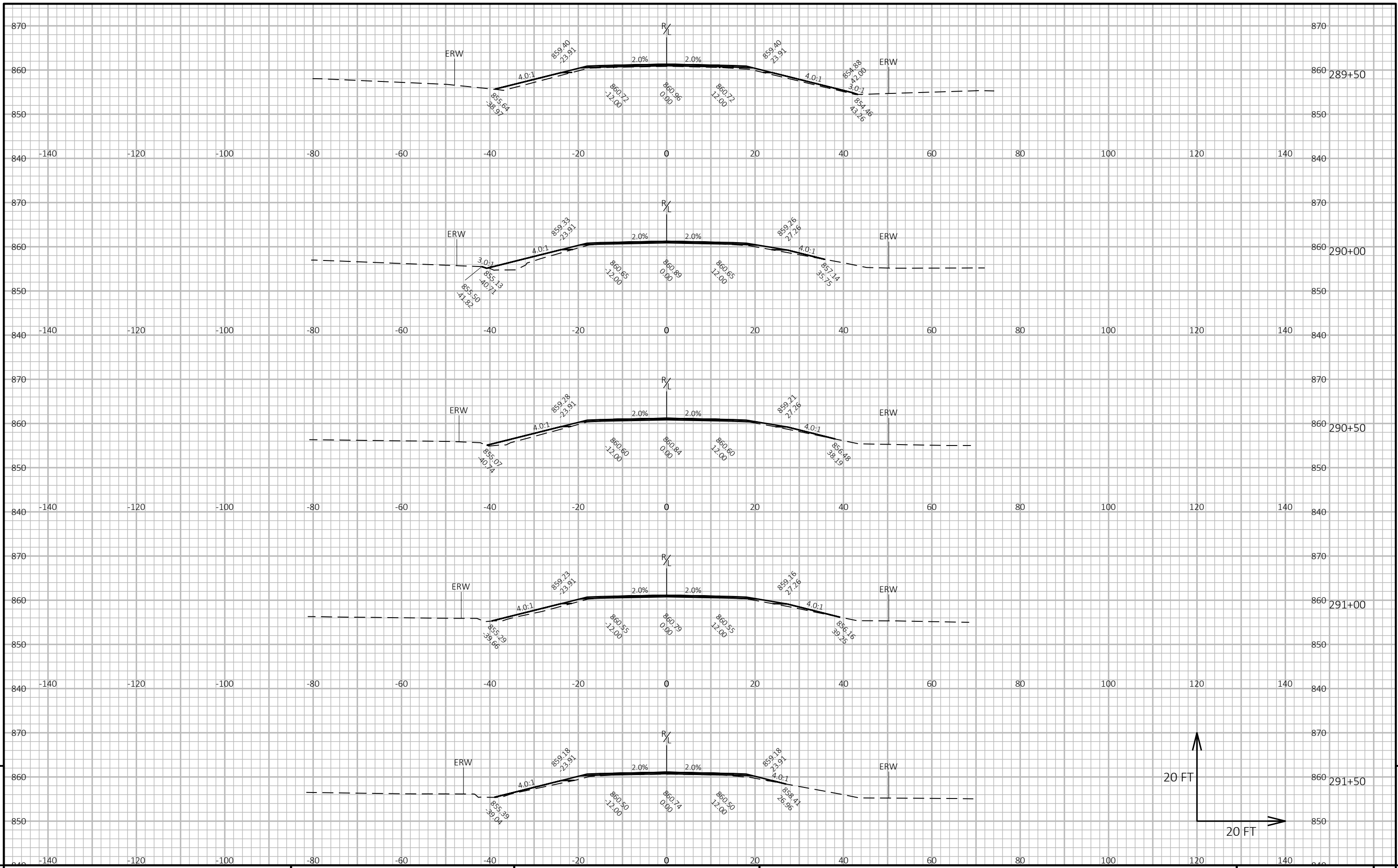


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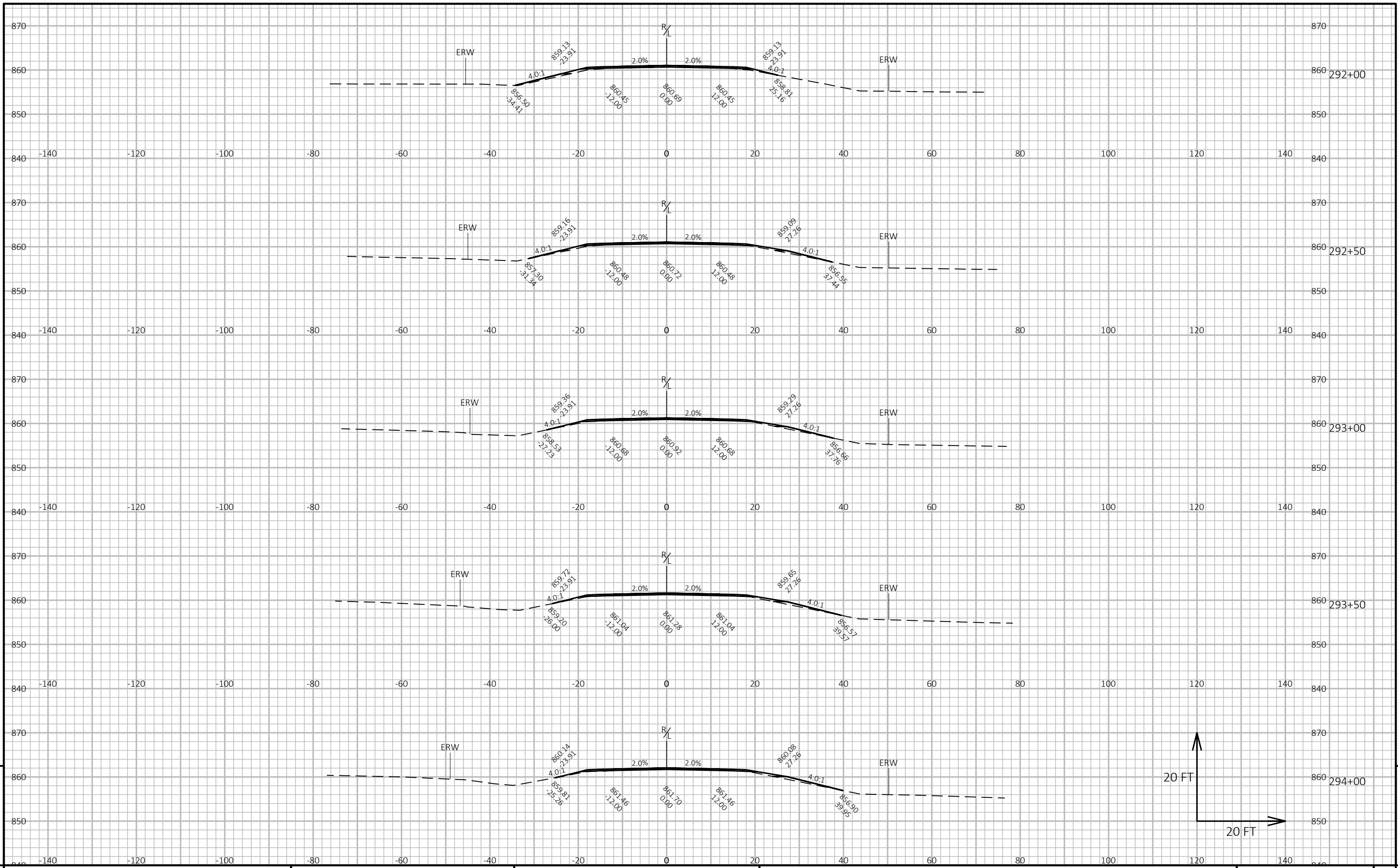


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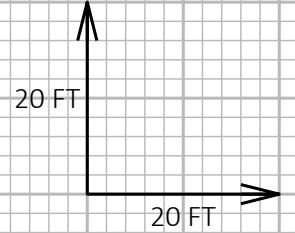


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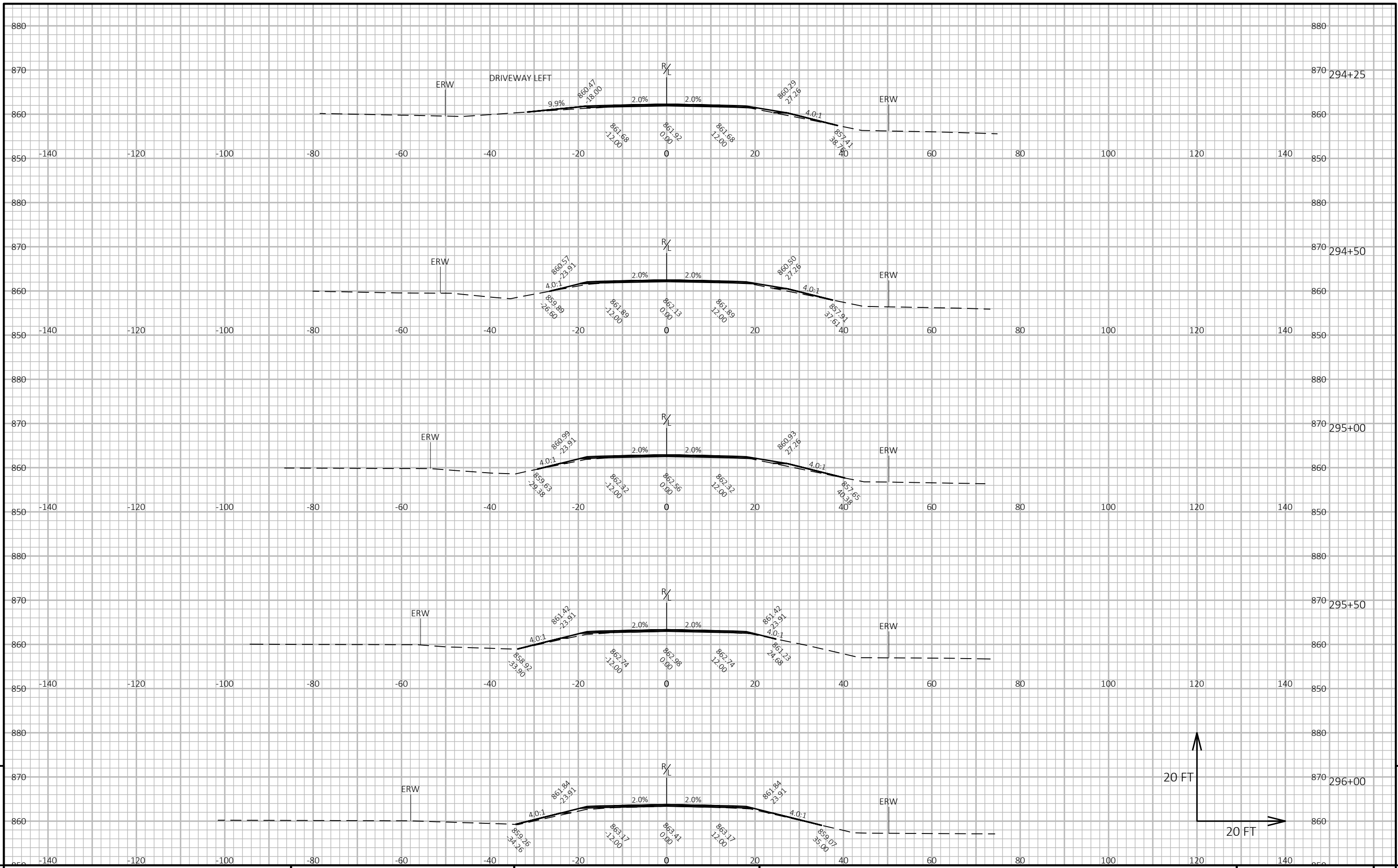
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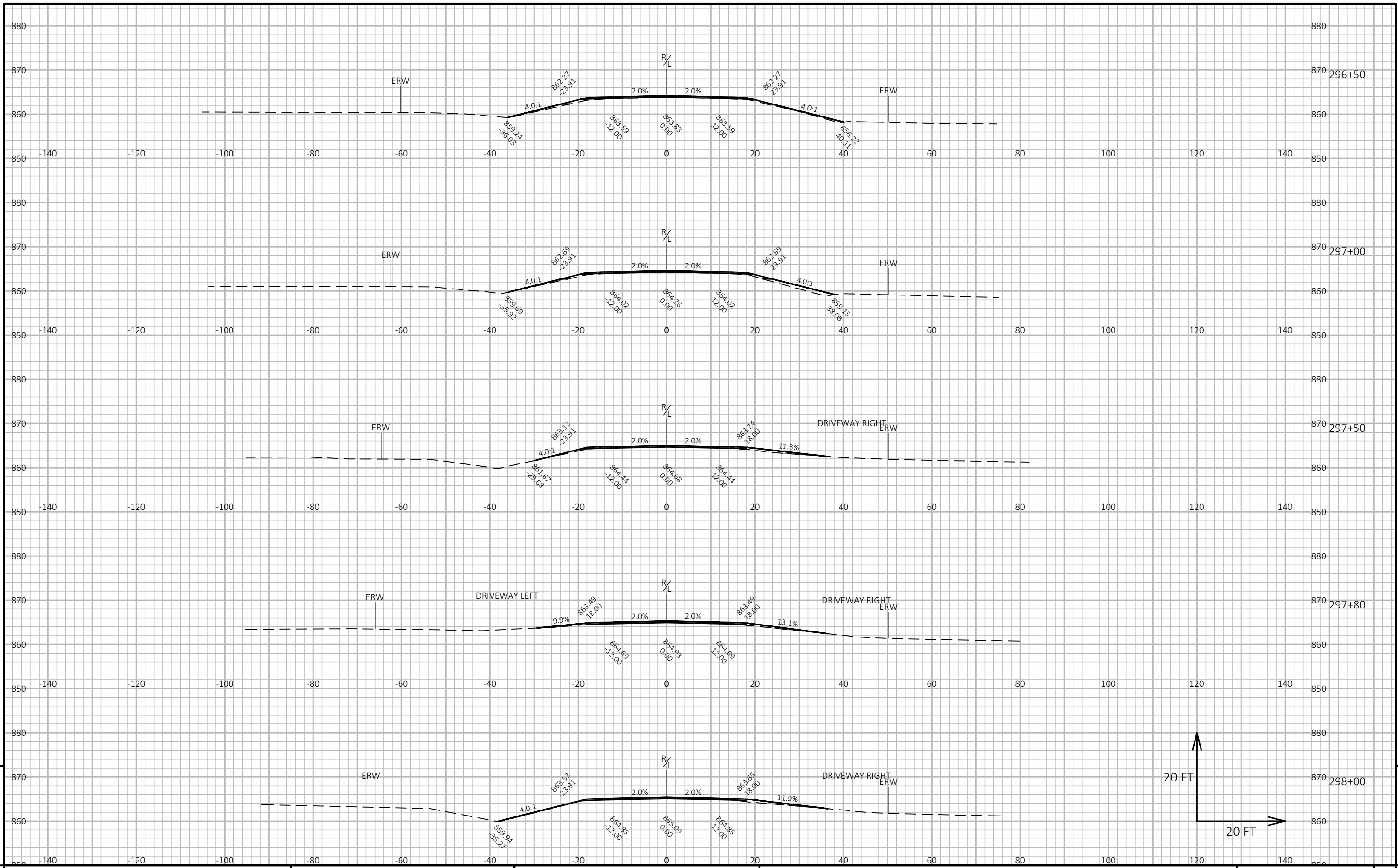
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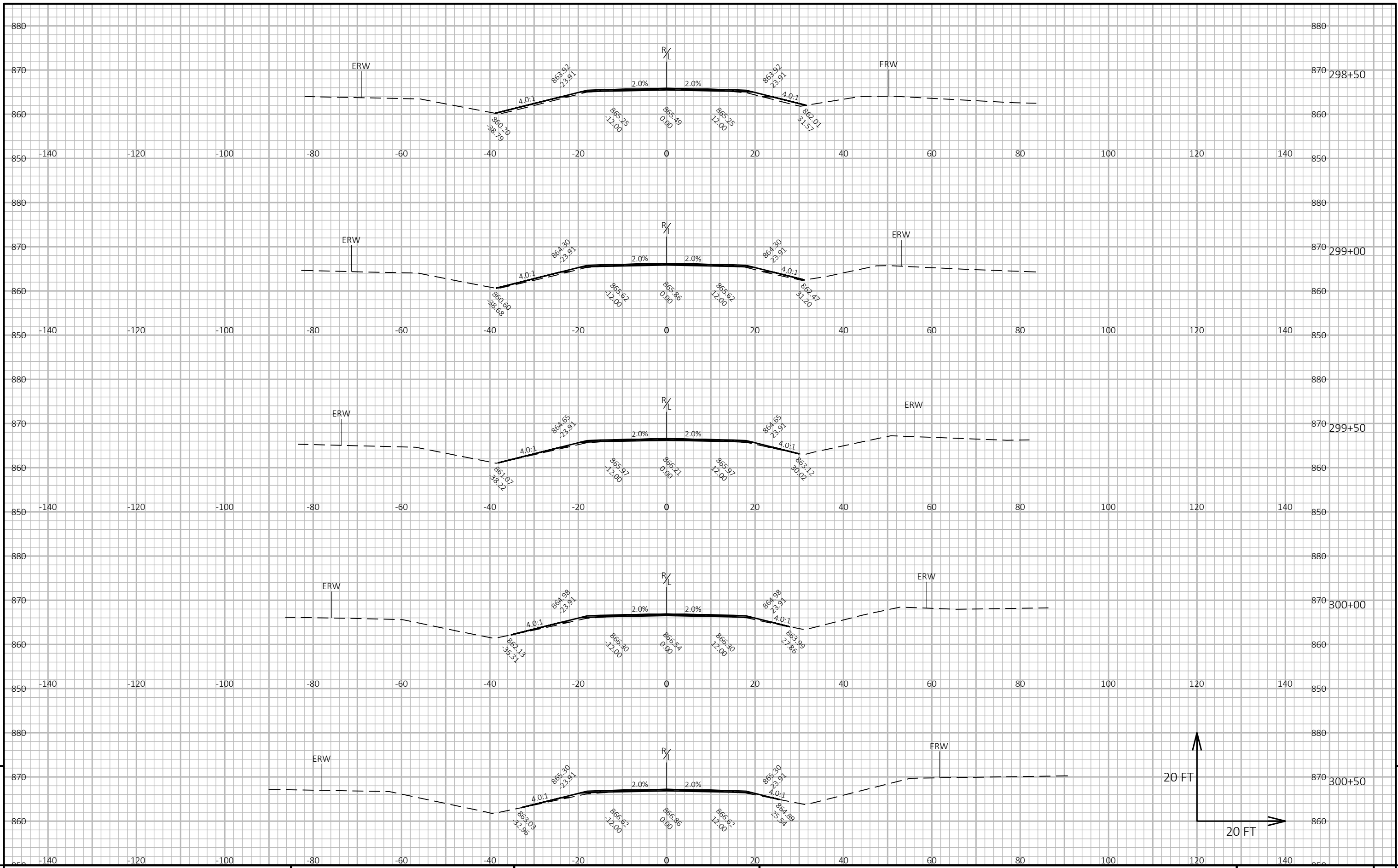




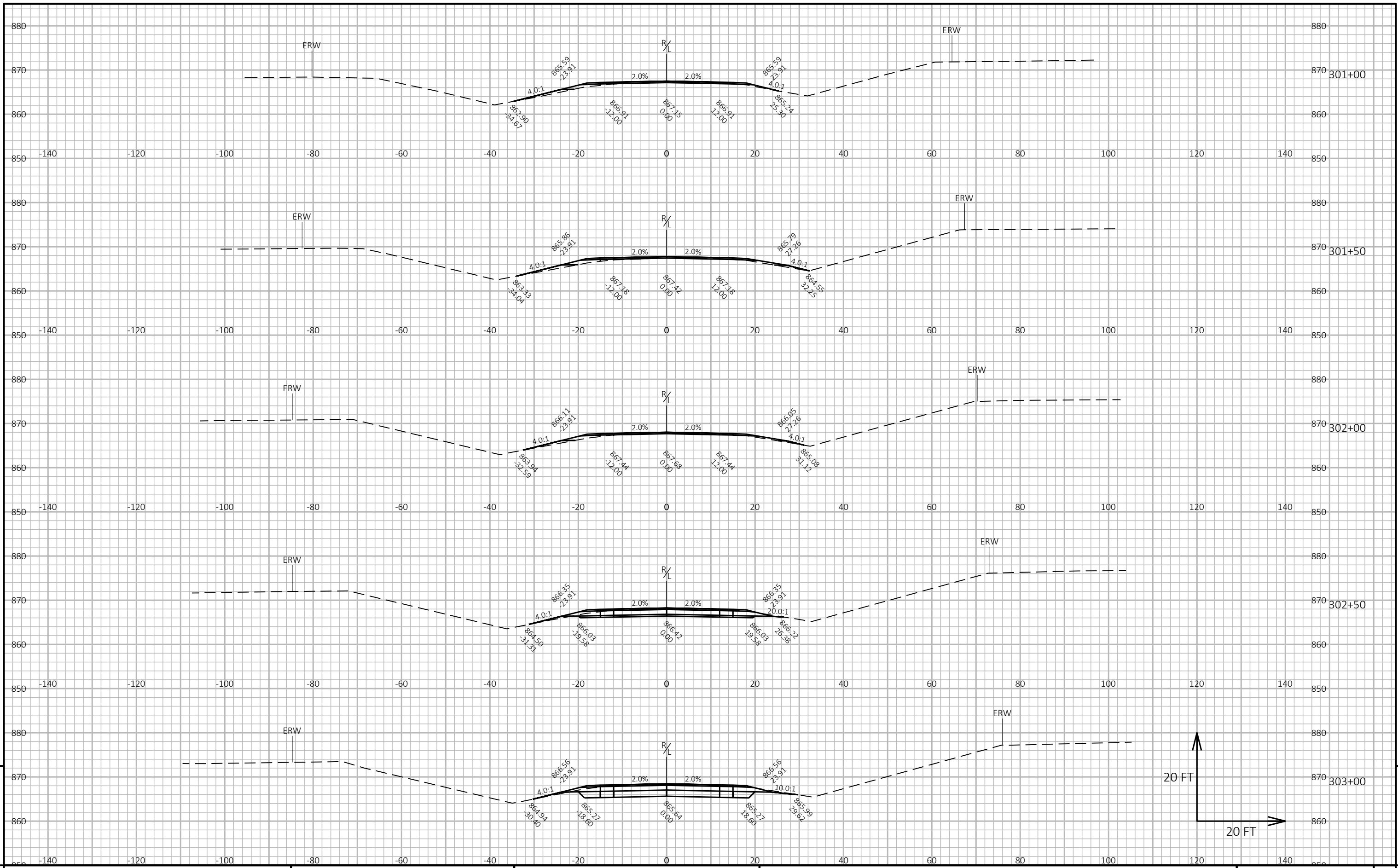
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E



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PROJECT NO: 4323-08-72
HWY: CTH W
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CROSS SECTIONS: CTH W
SHEET
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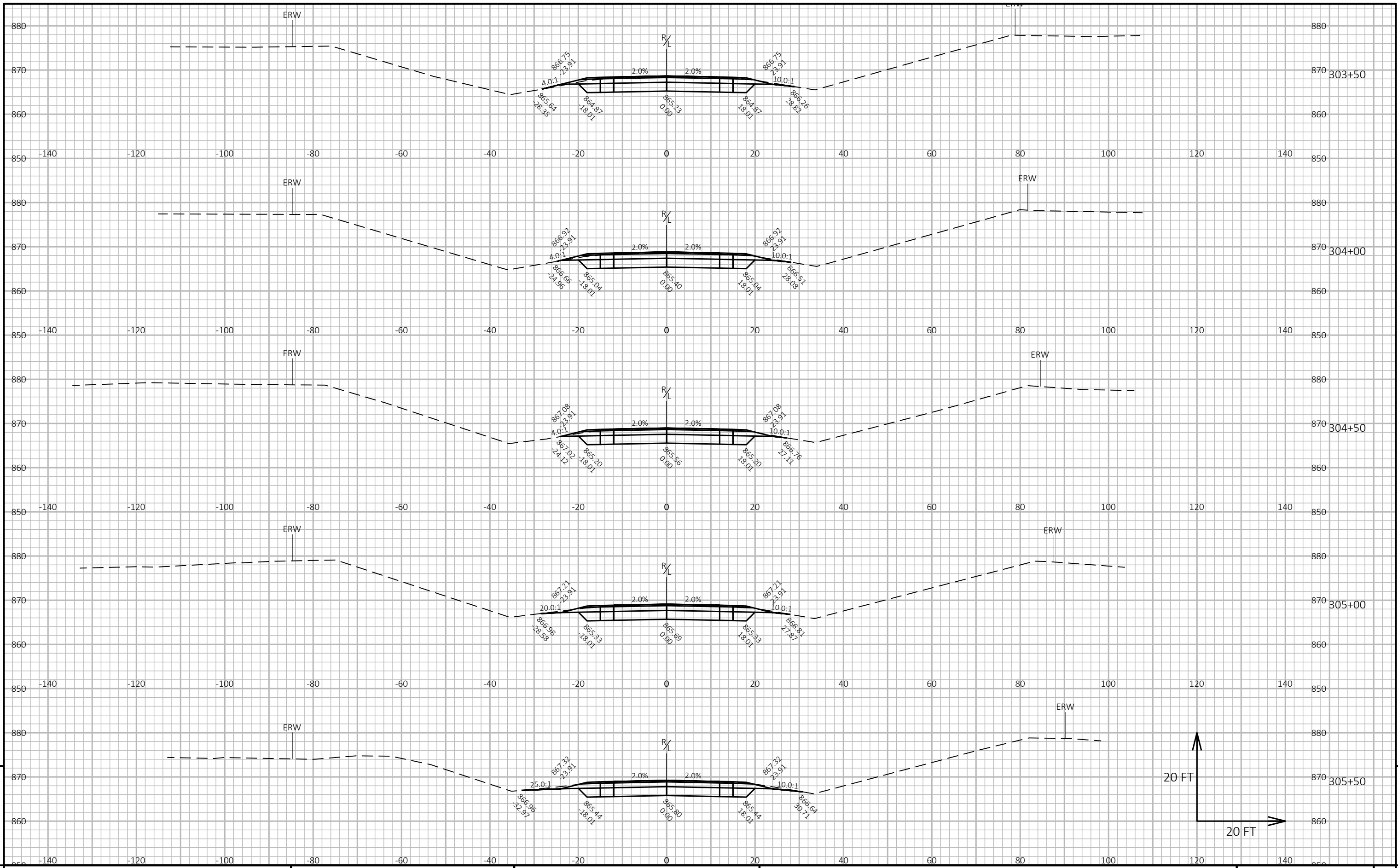


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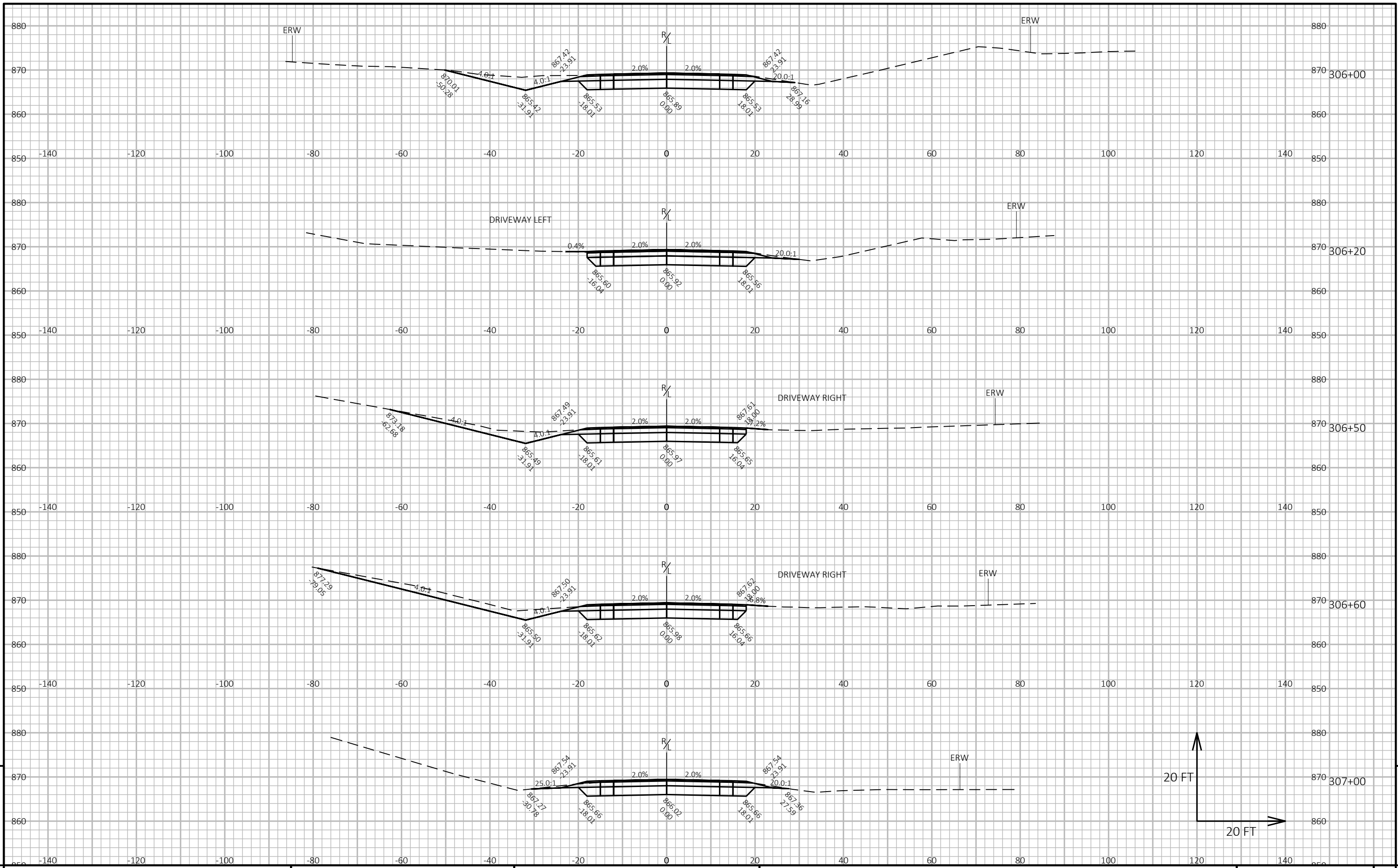


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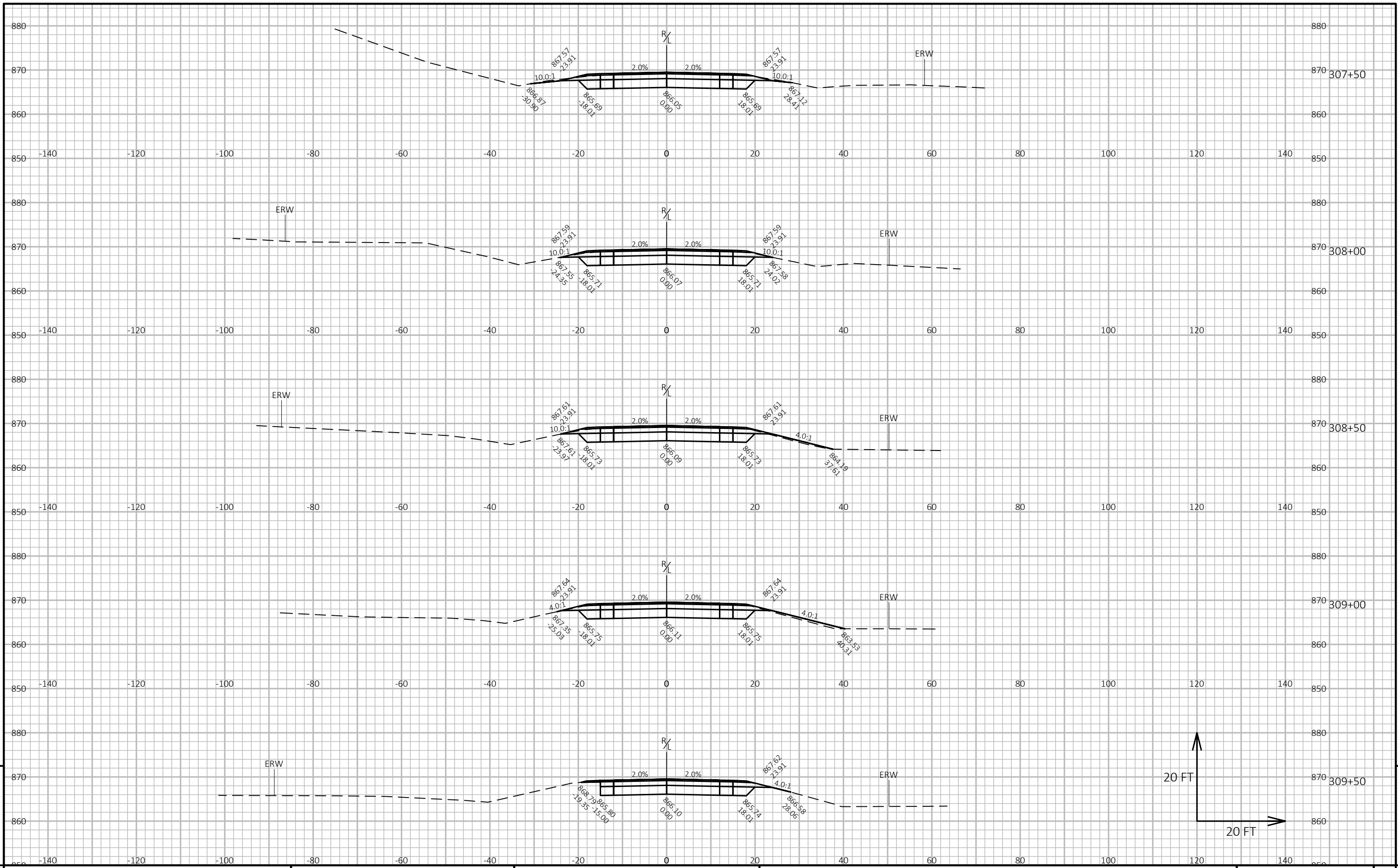


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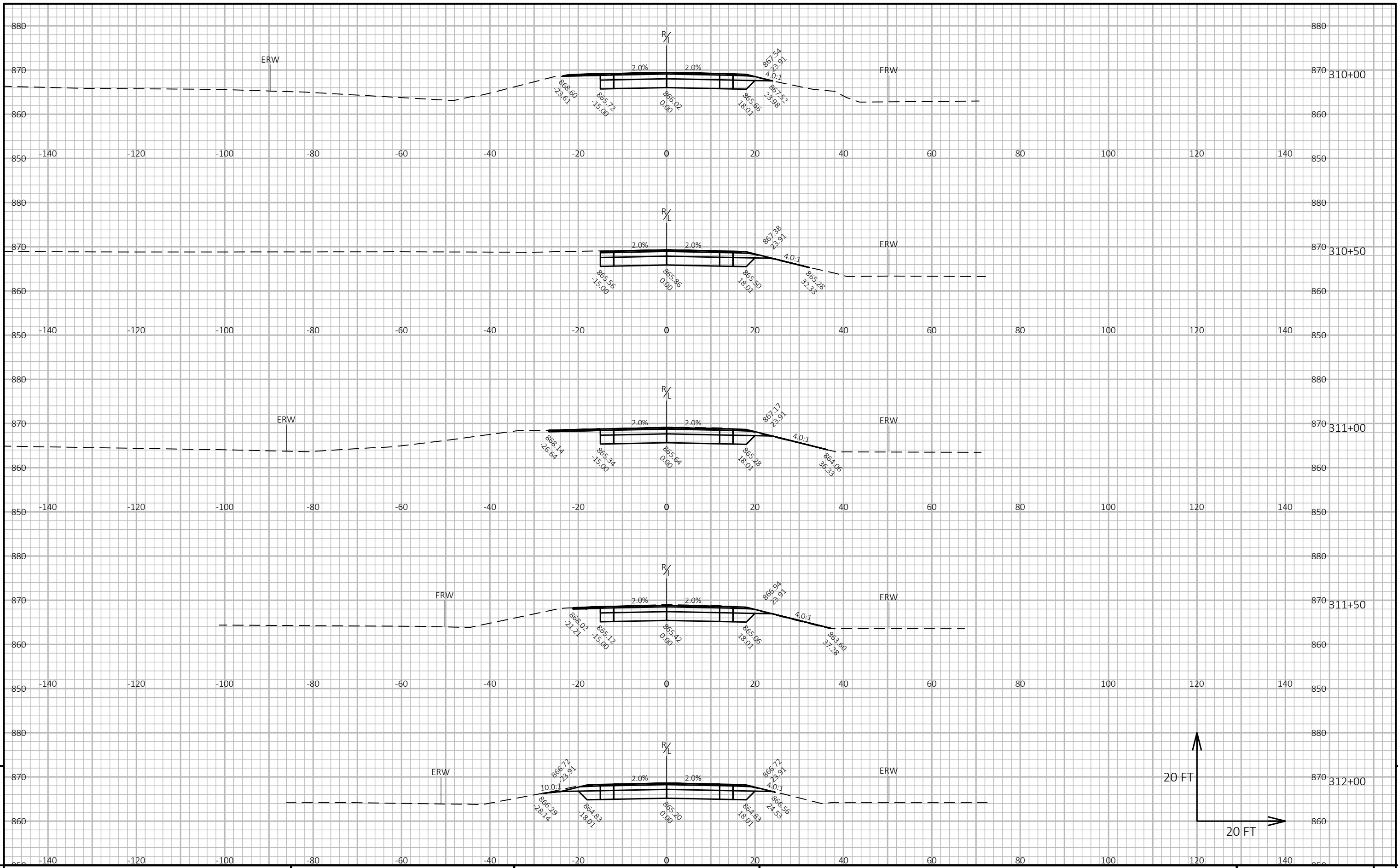
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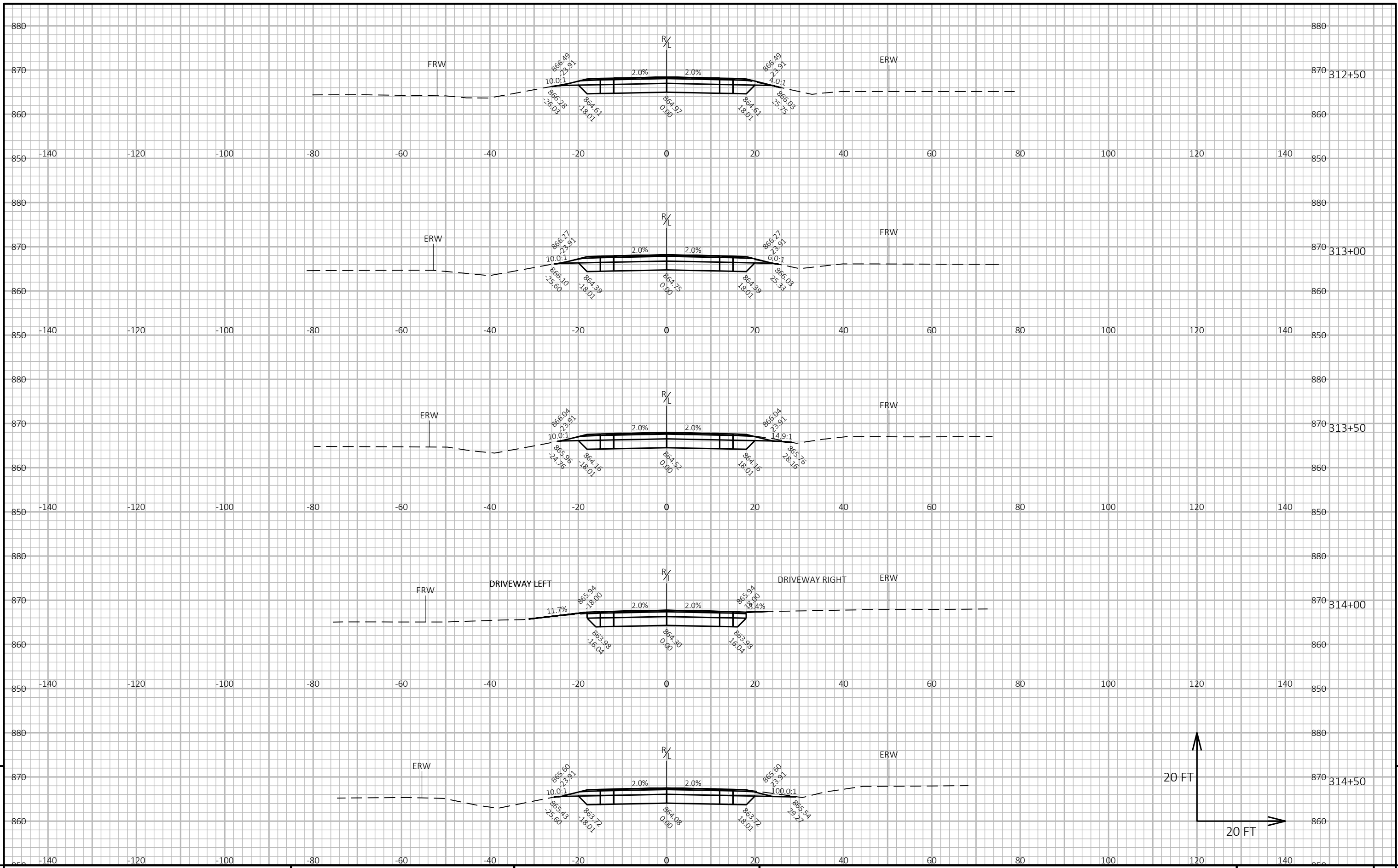
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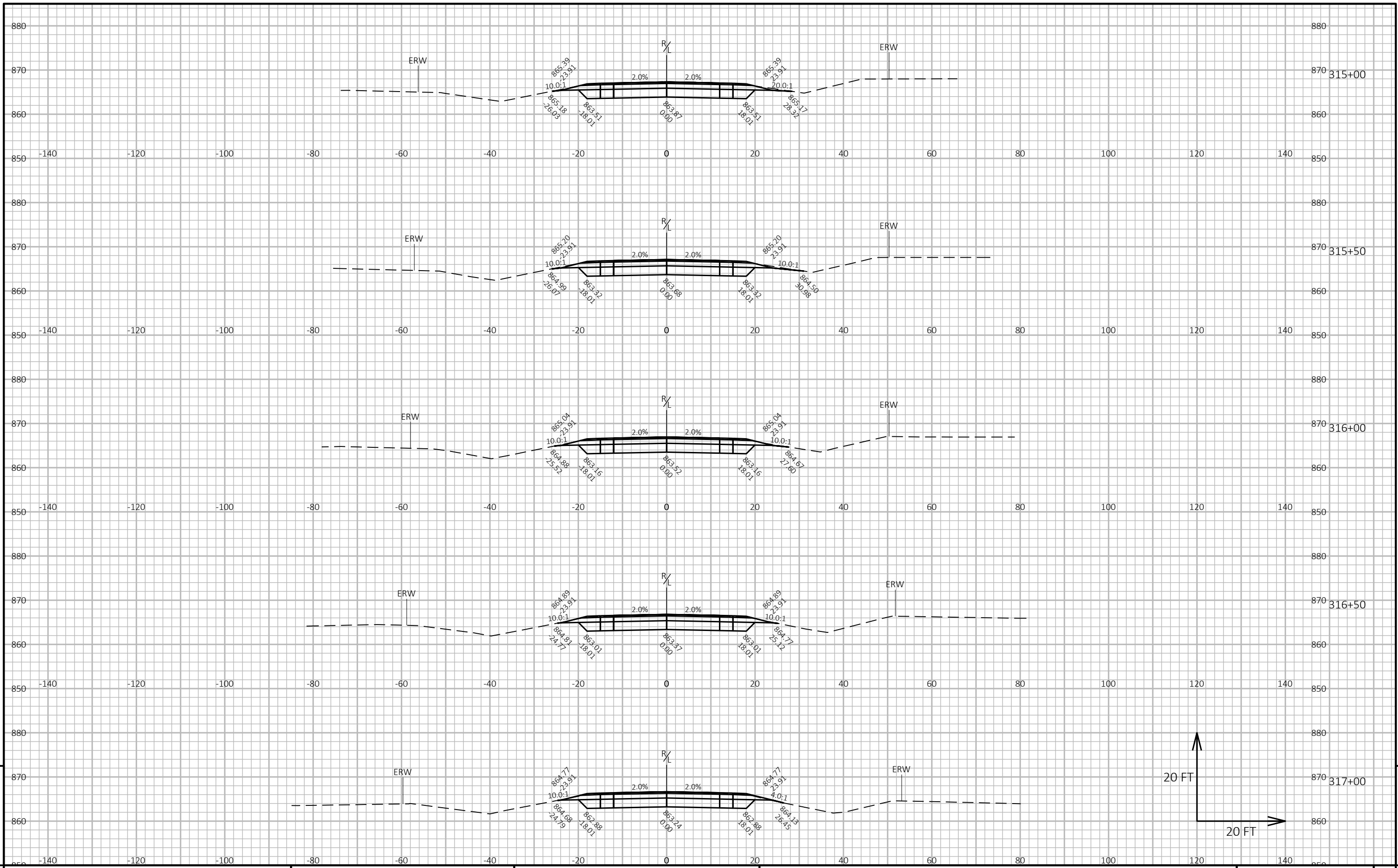


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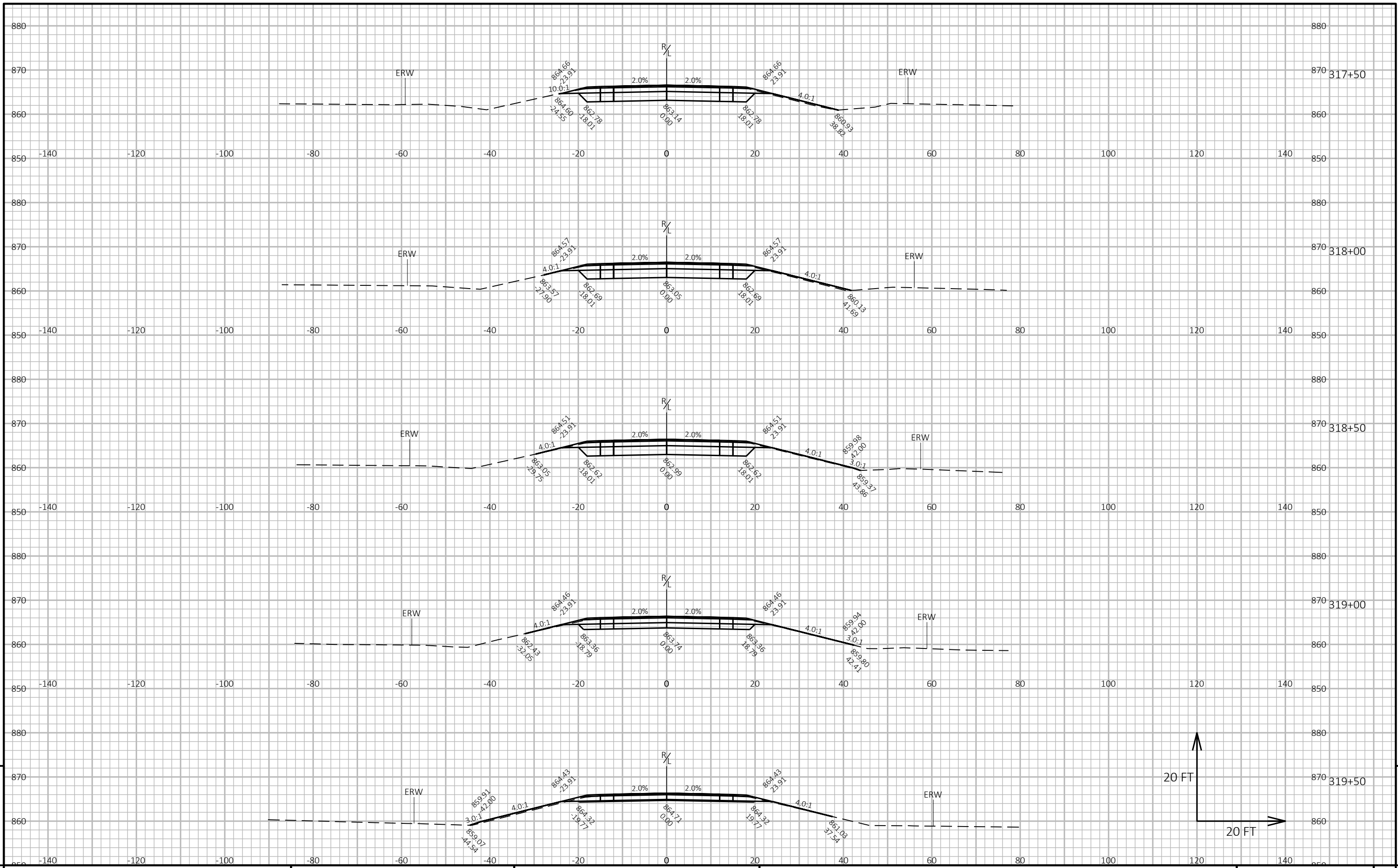


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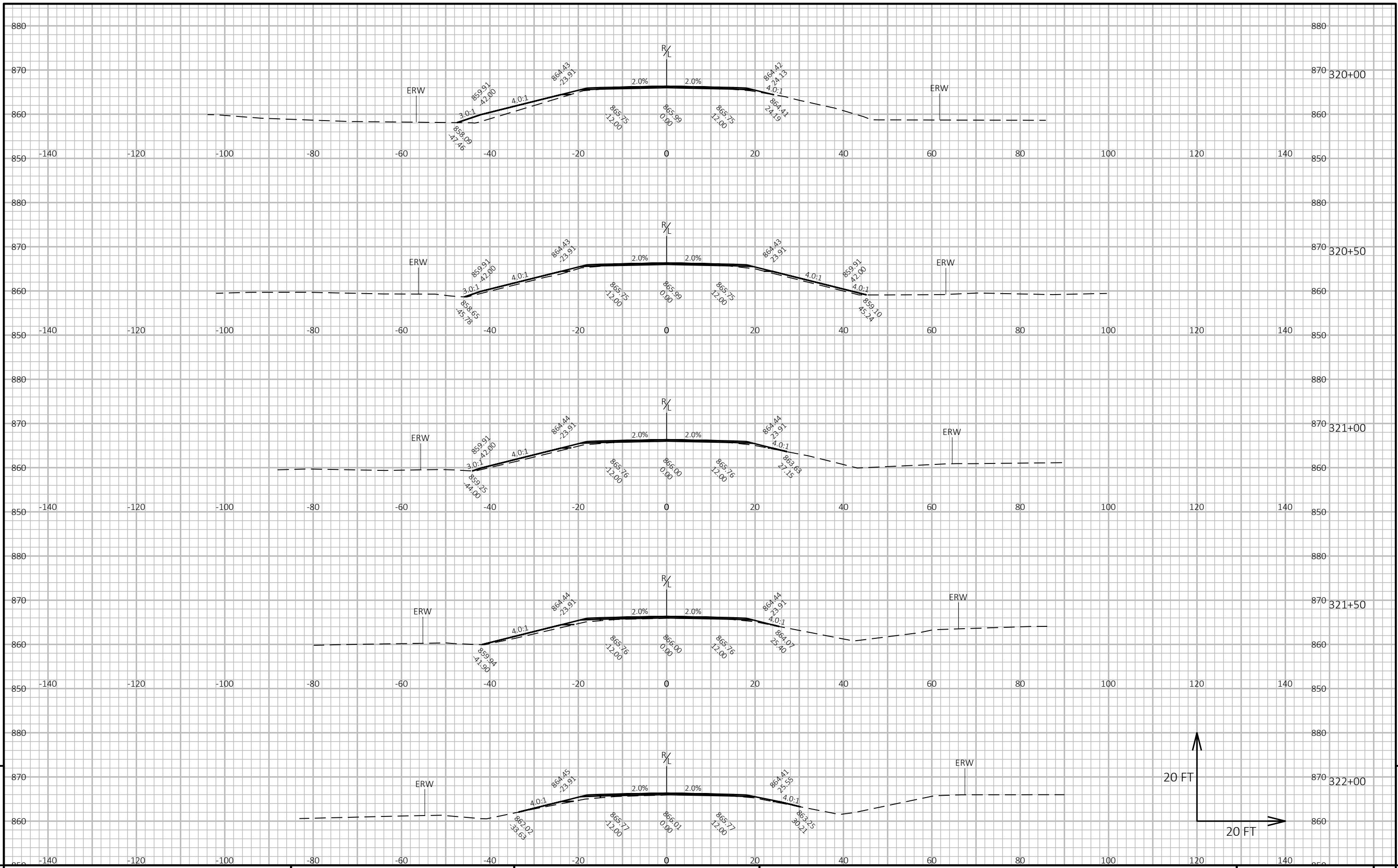


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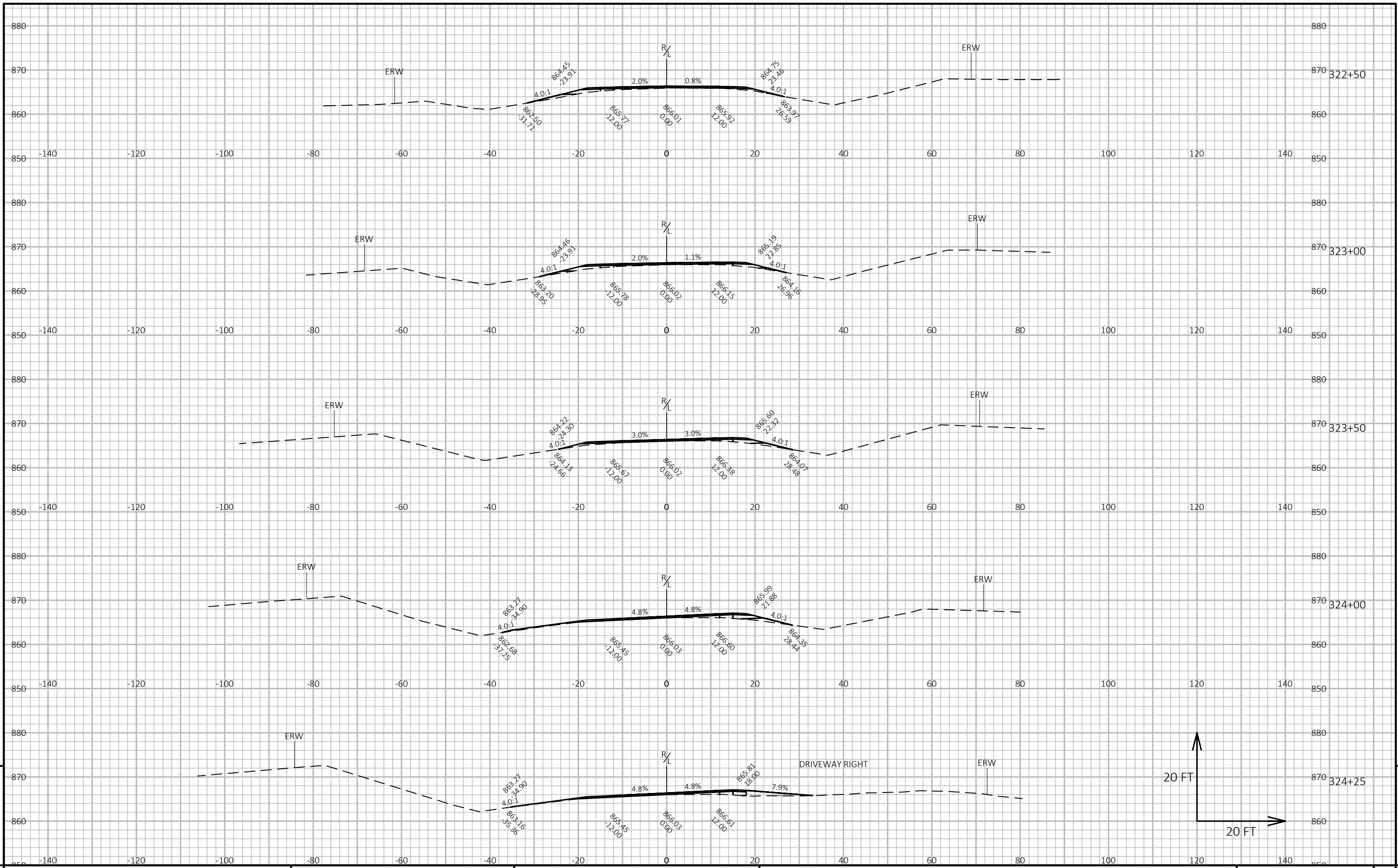
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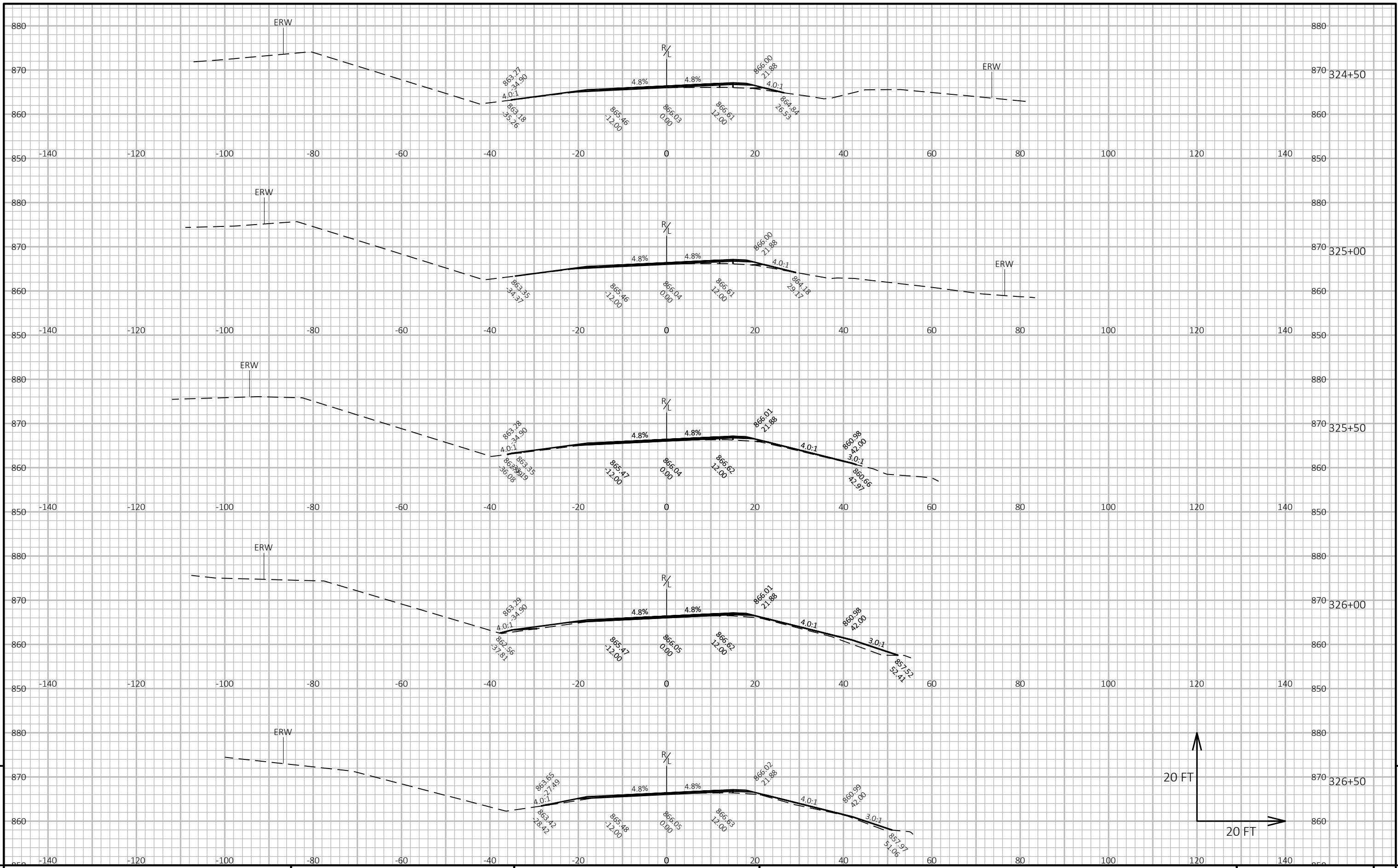


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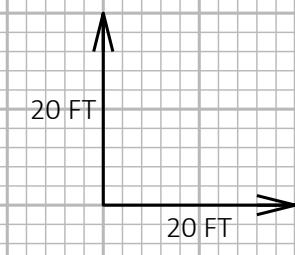
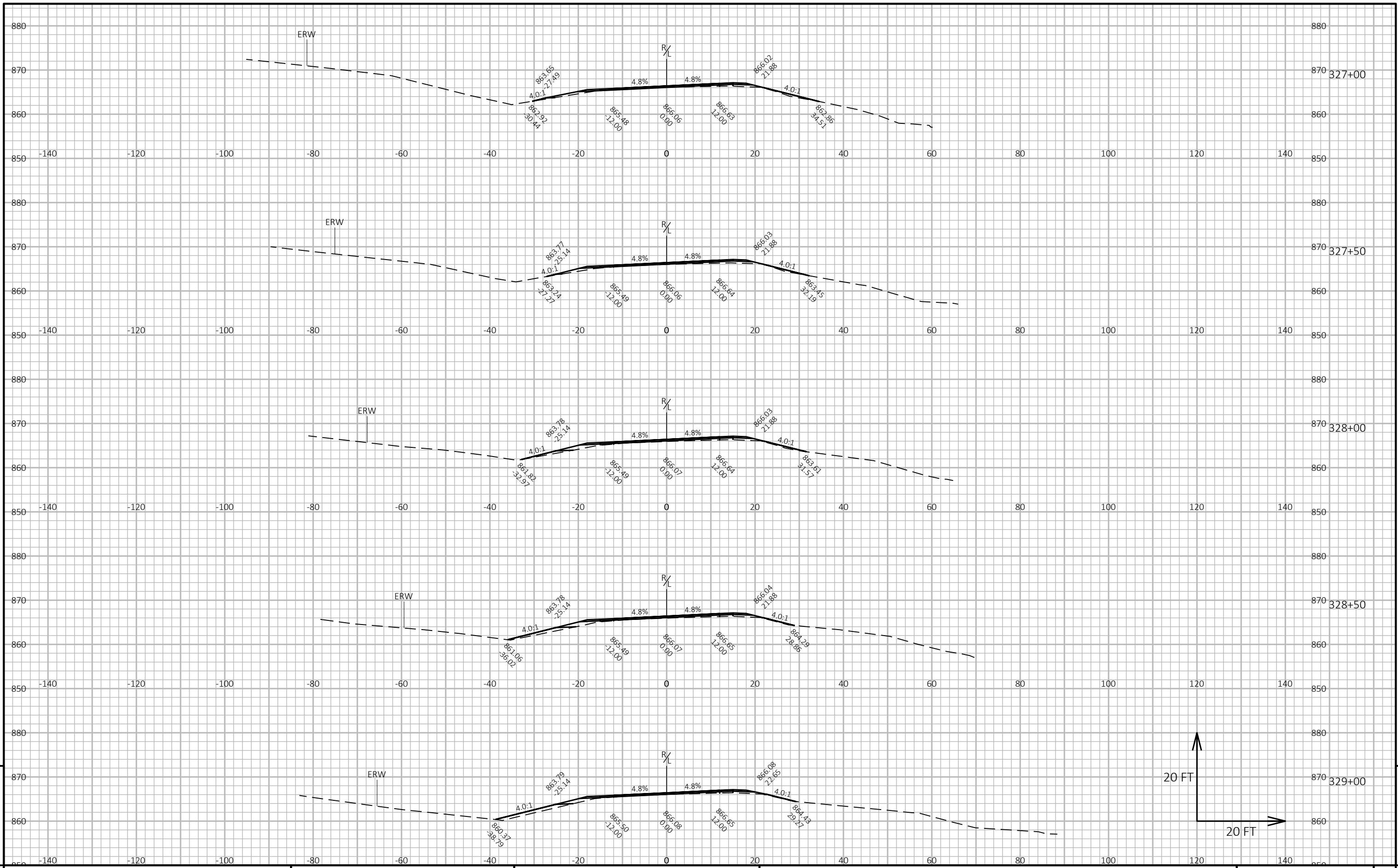


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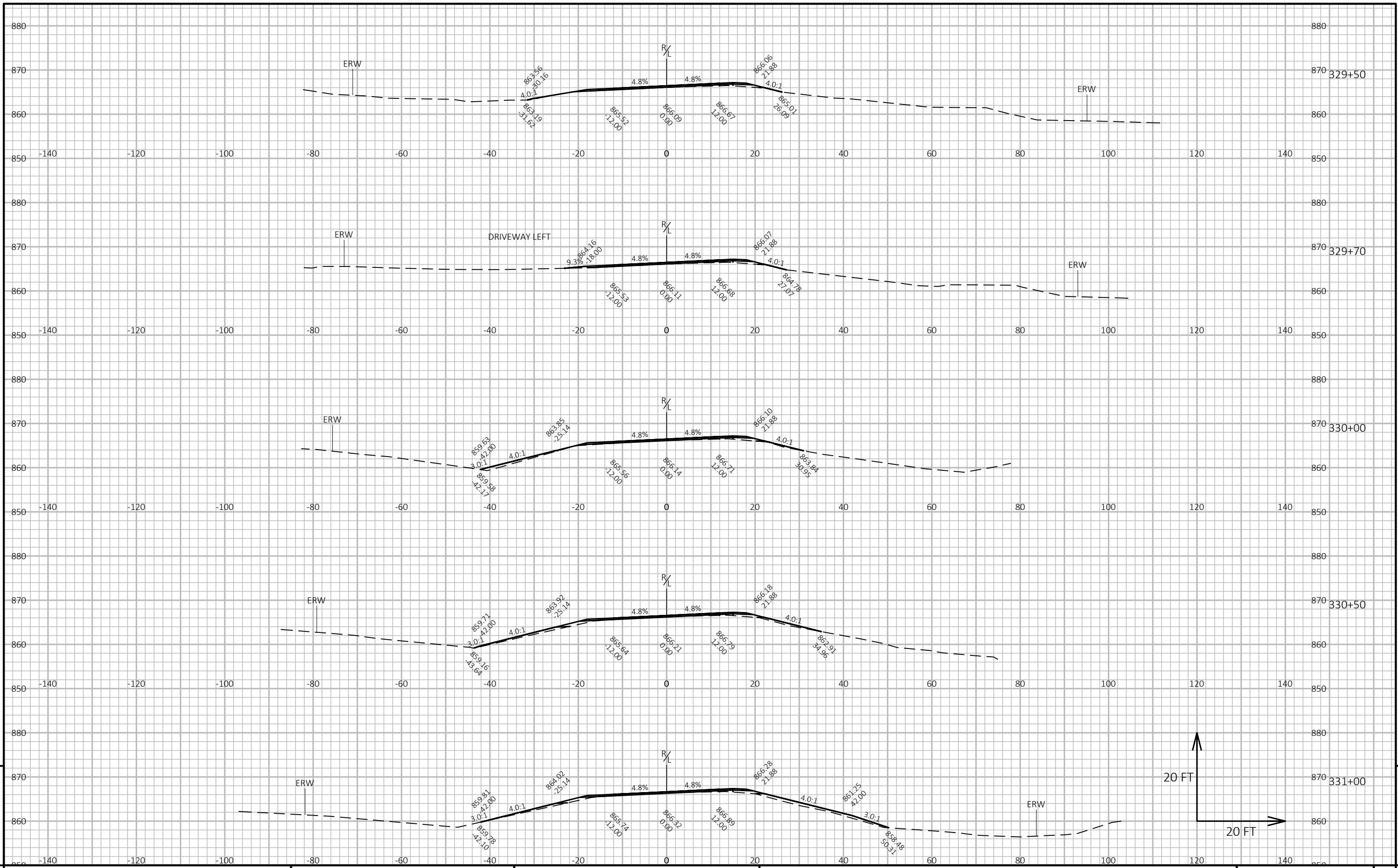
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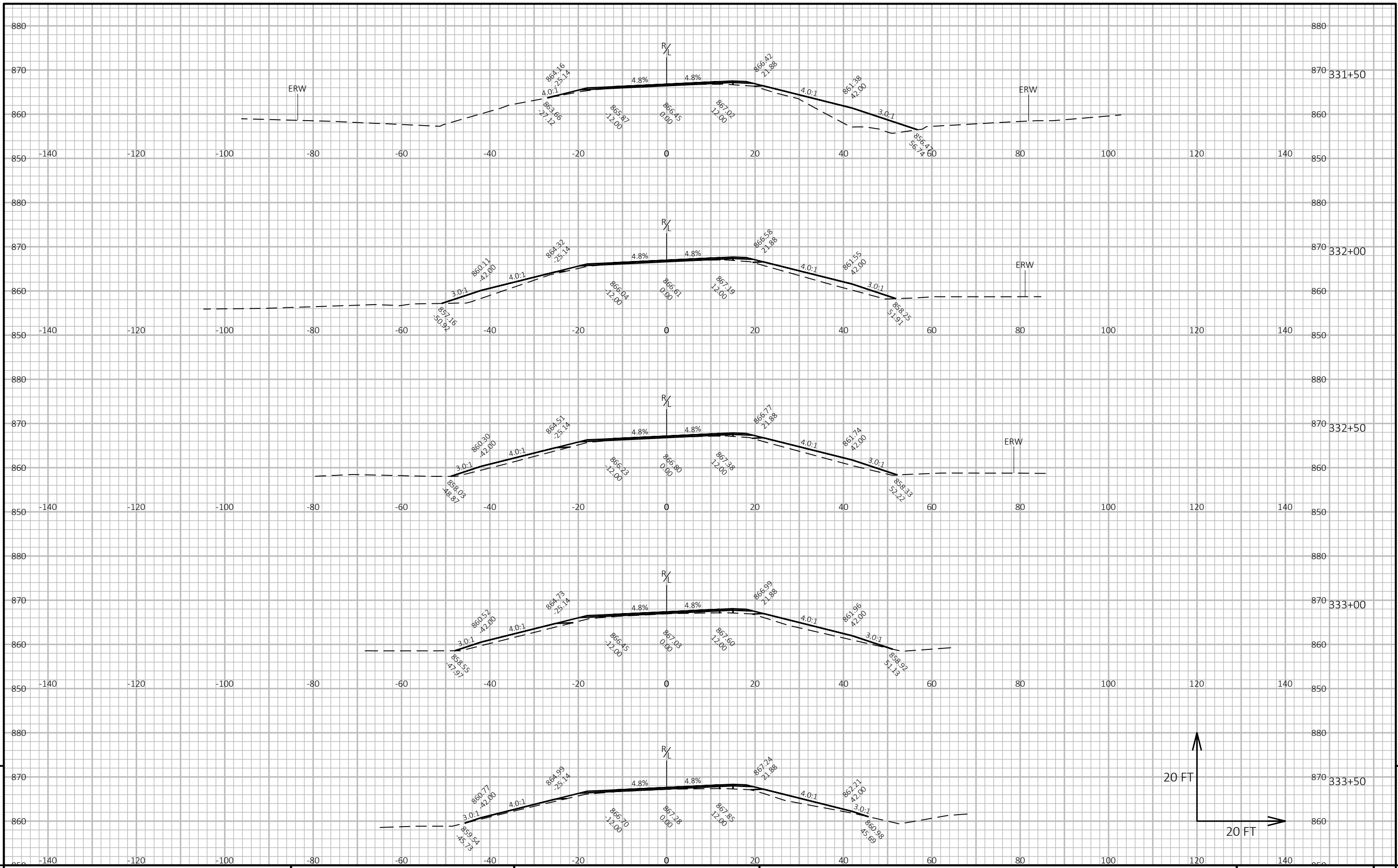


PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	CROSS SECTIONS: CTH W	SHEET
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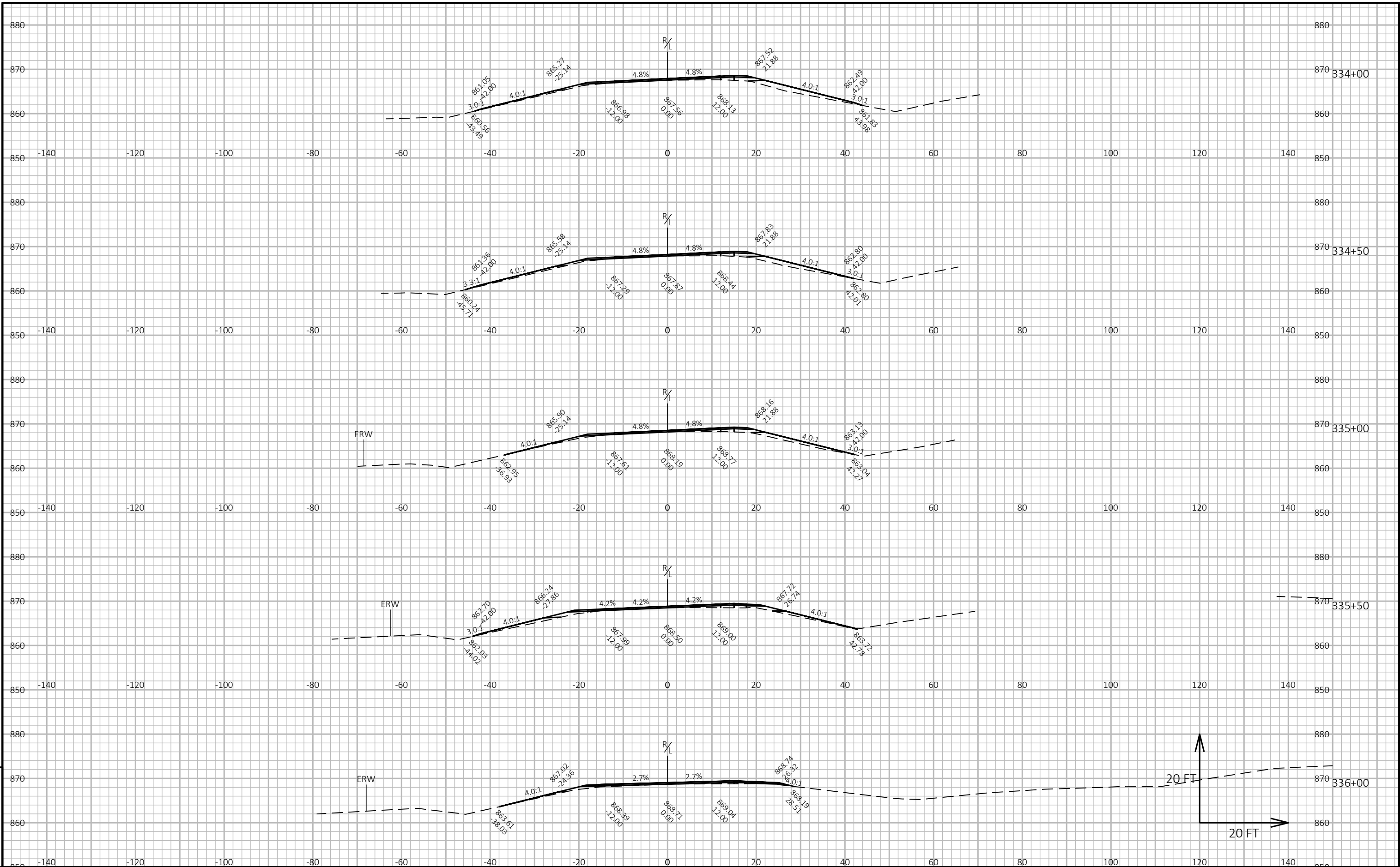
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PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	CROSS SECTIONS: CTH W	SHEET	<b>9</b>
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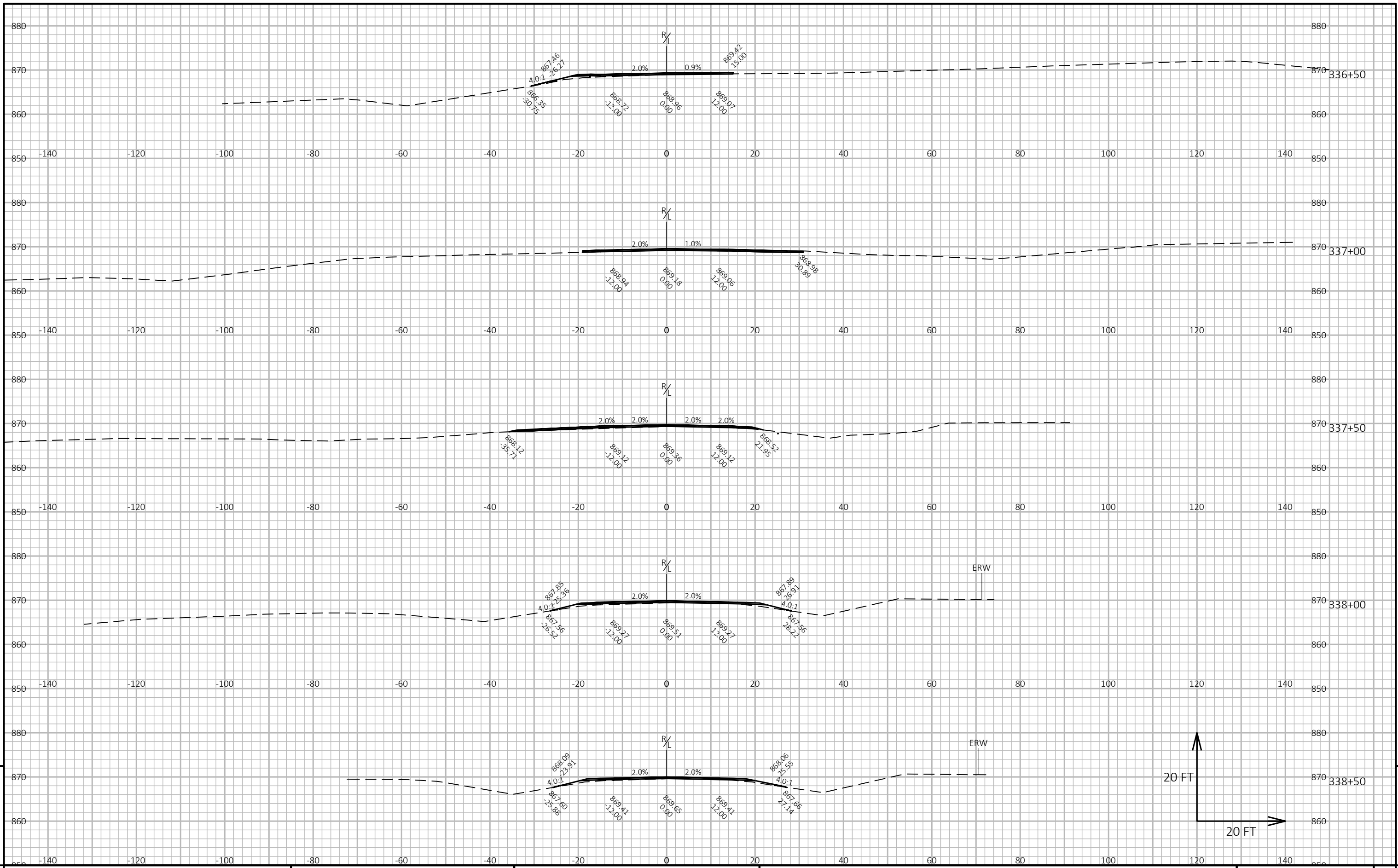


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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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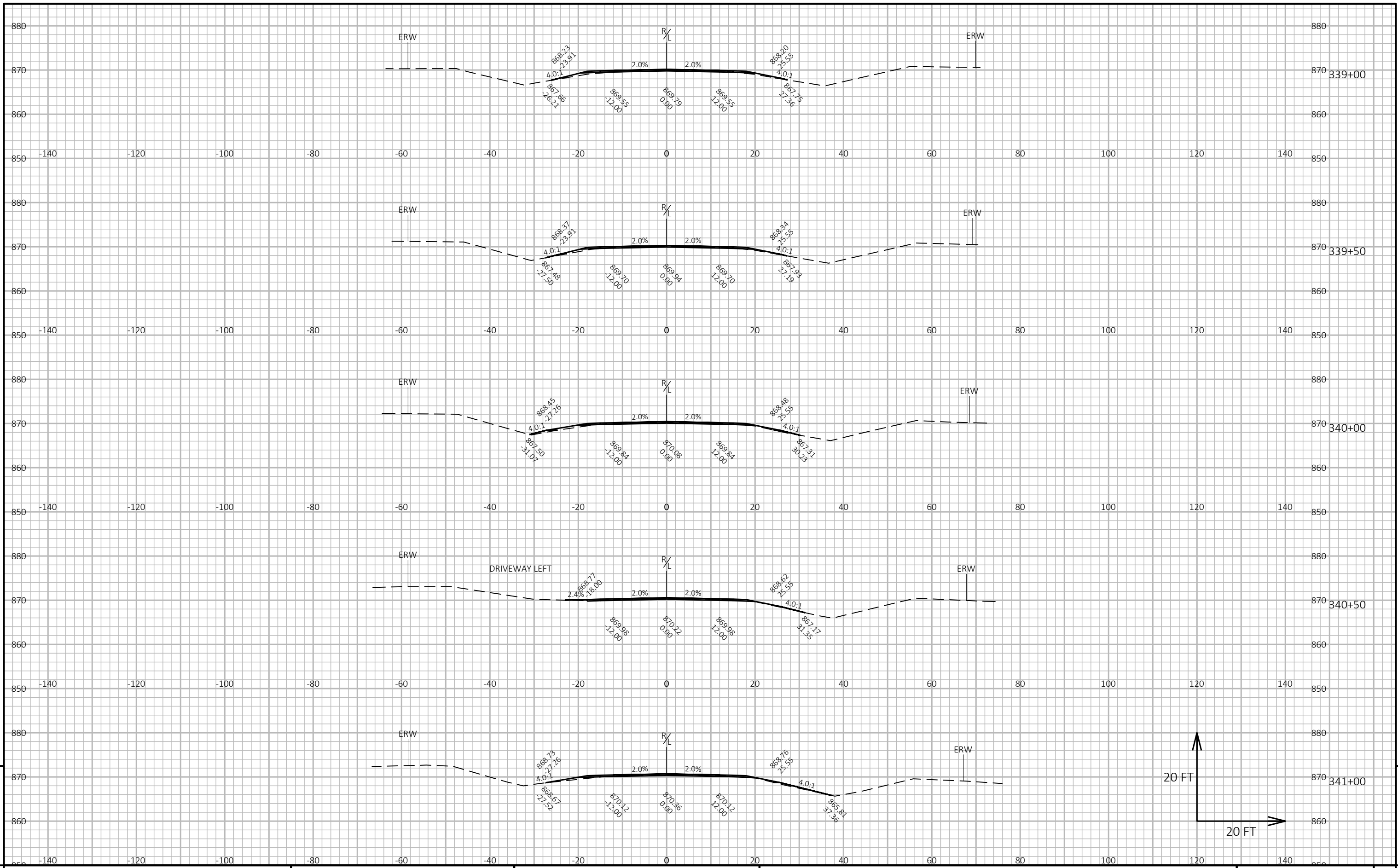


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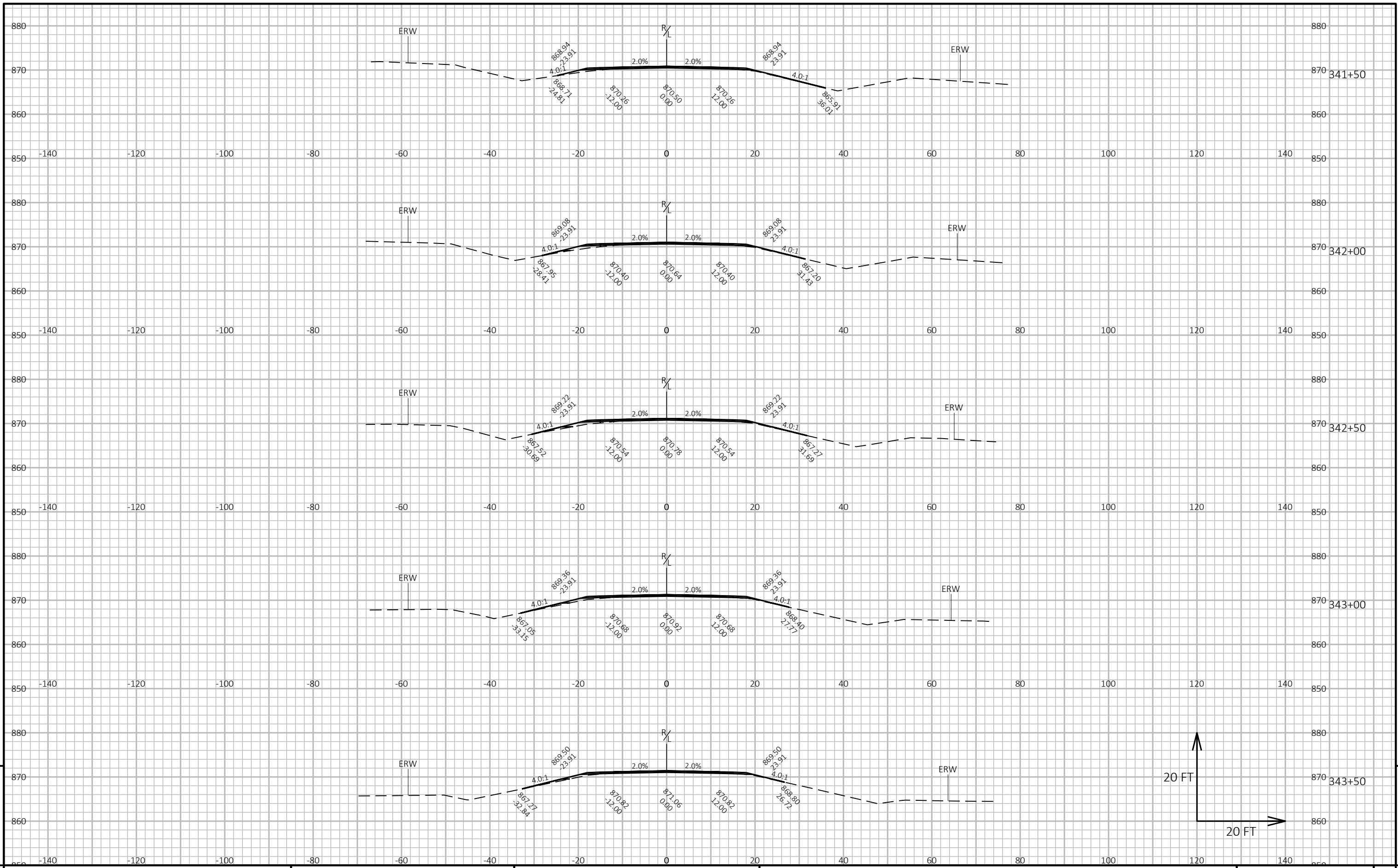


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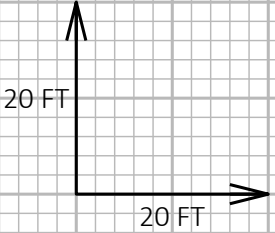
PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

FILE NAME : X:\PROJECTS\MANITOWOC\190003 4323-08-00 CTH W\DESIGN\C3D\SHEETSPLAN\090101\_XS\_EXPLODE2.DWG      PLOT DATE : 11/11/2022 12:51 AM      PLOT BY : JAKE NEERDAELS      PLOT NAME :      PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.      WISDOT/CADD SHEET 49



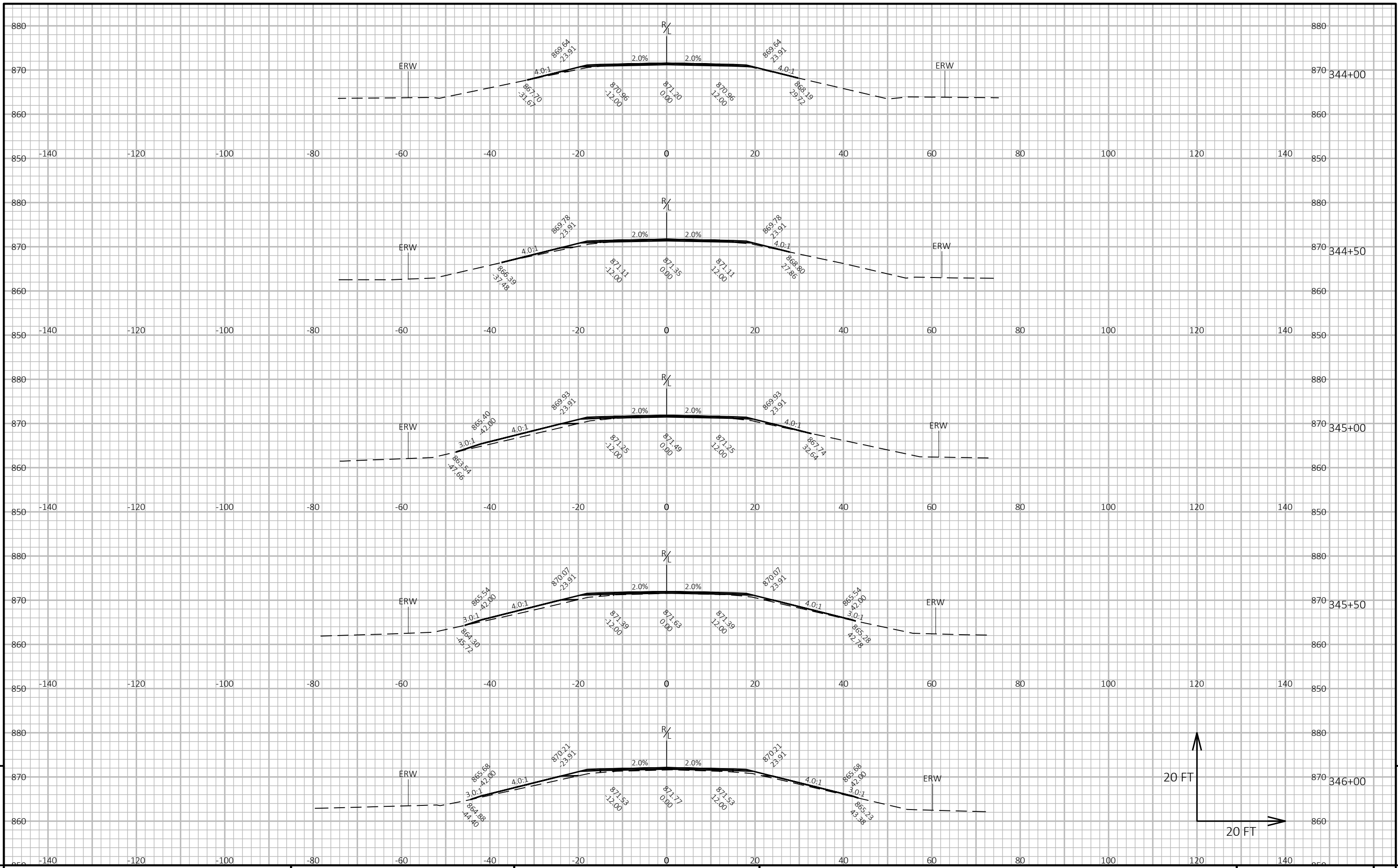
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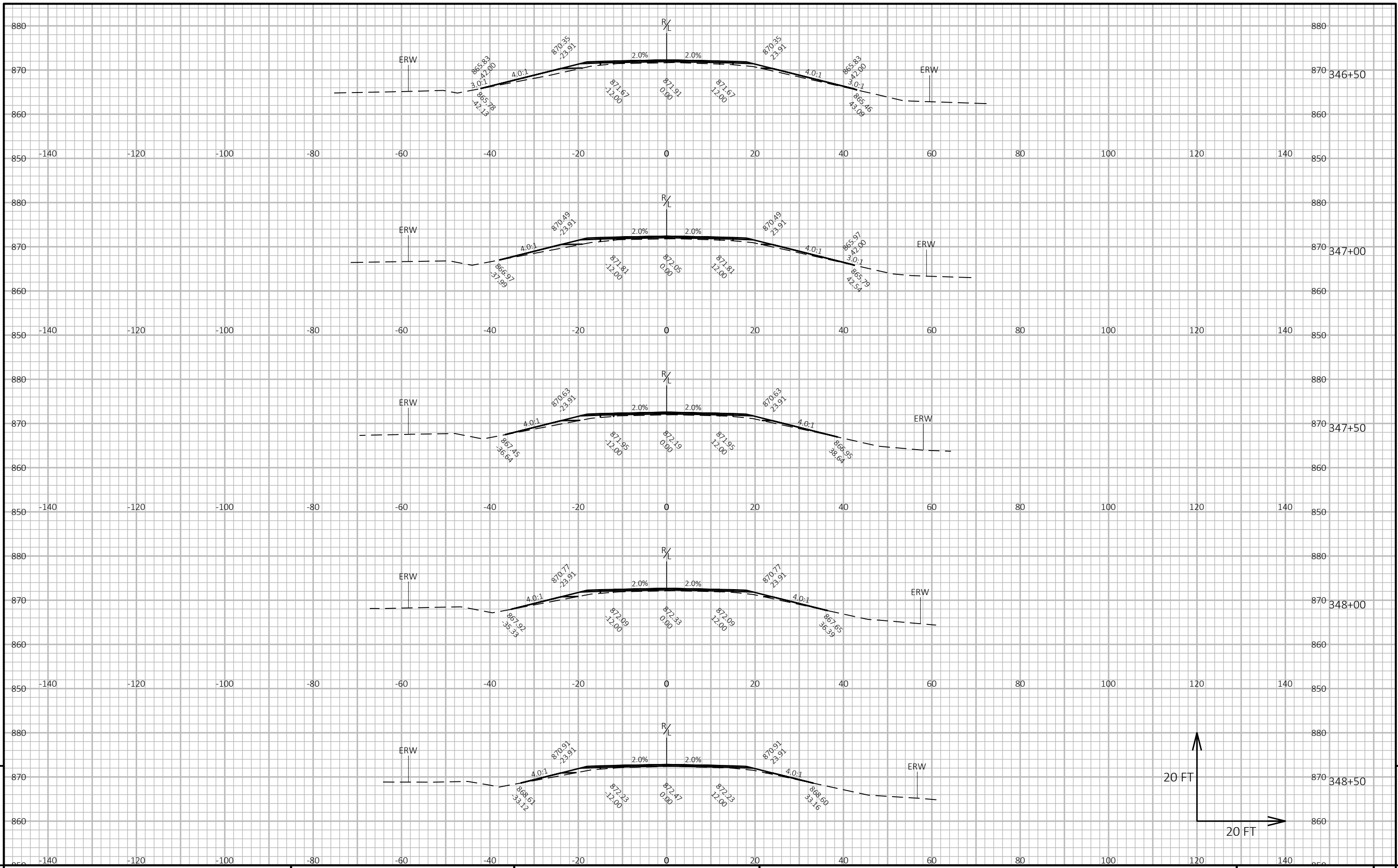


PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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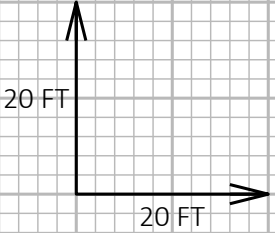


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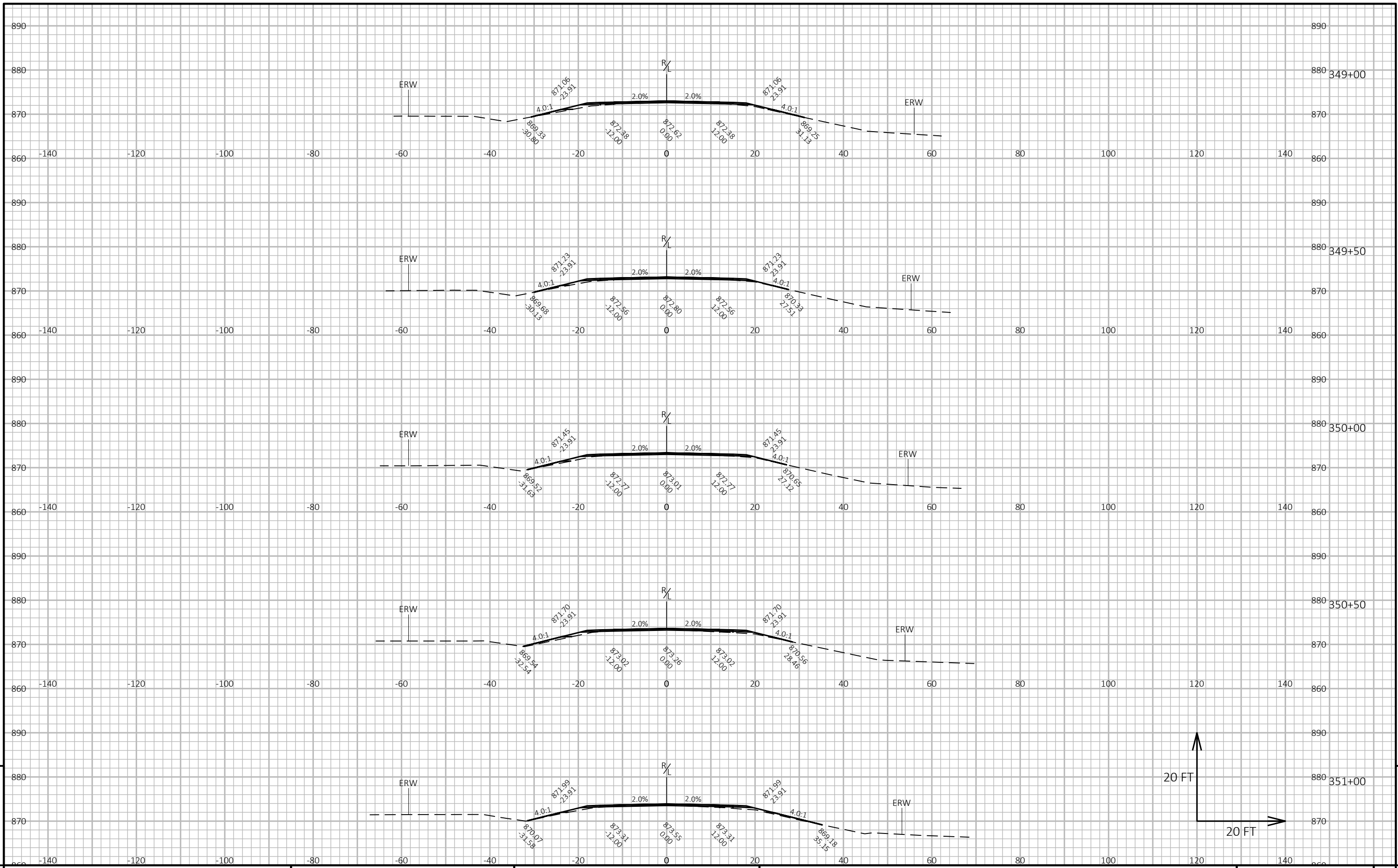
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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LAYOUT NAME - 090249



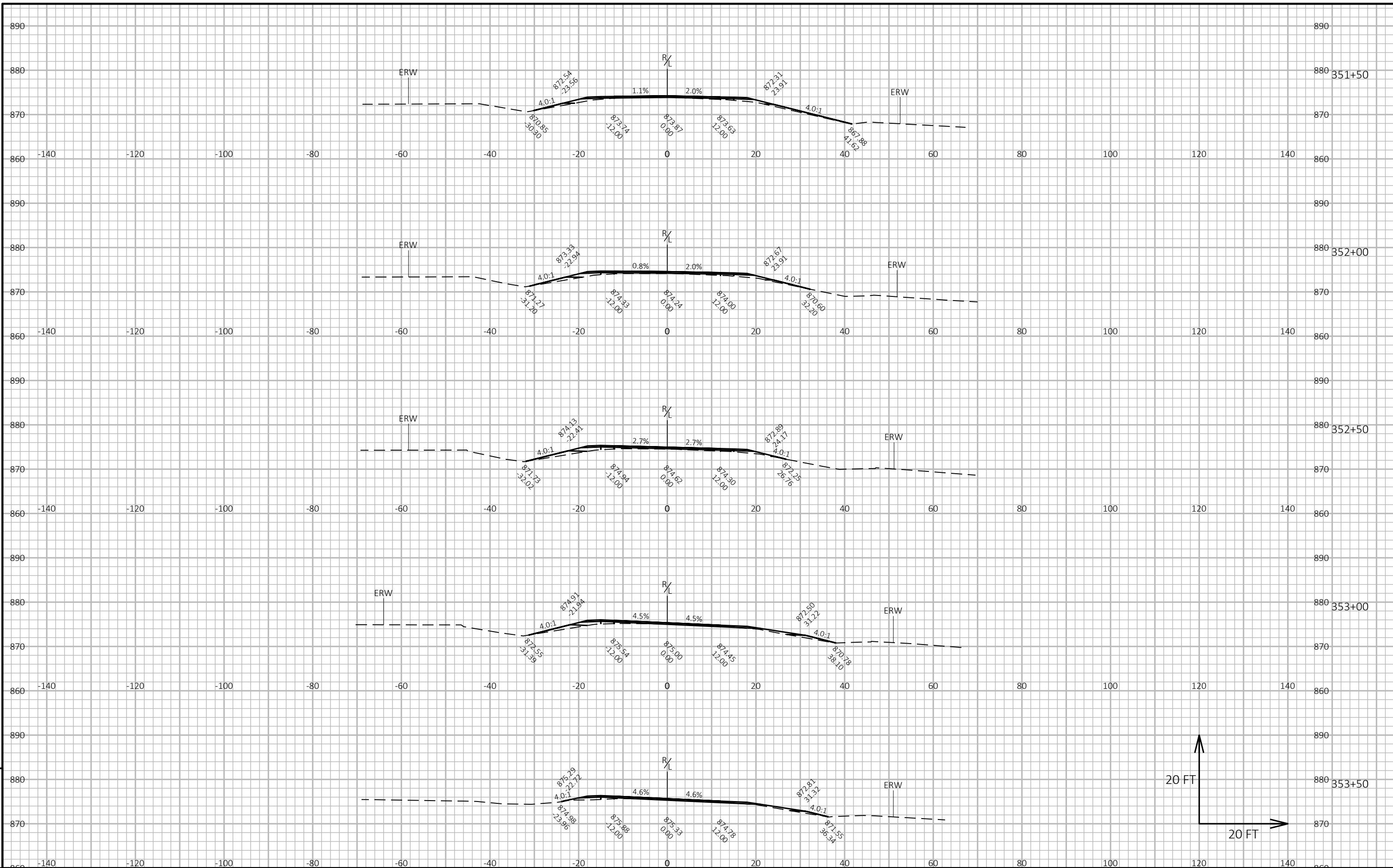
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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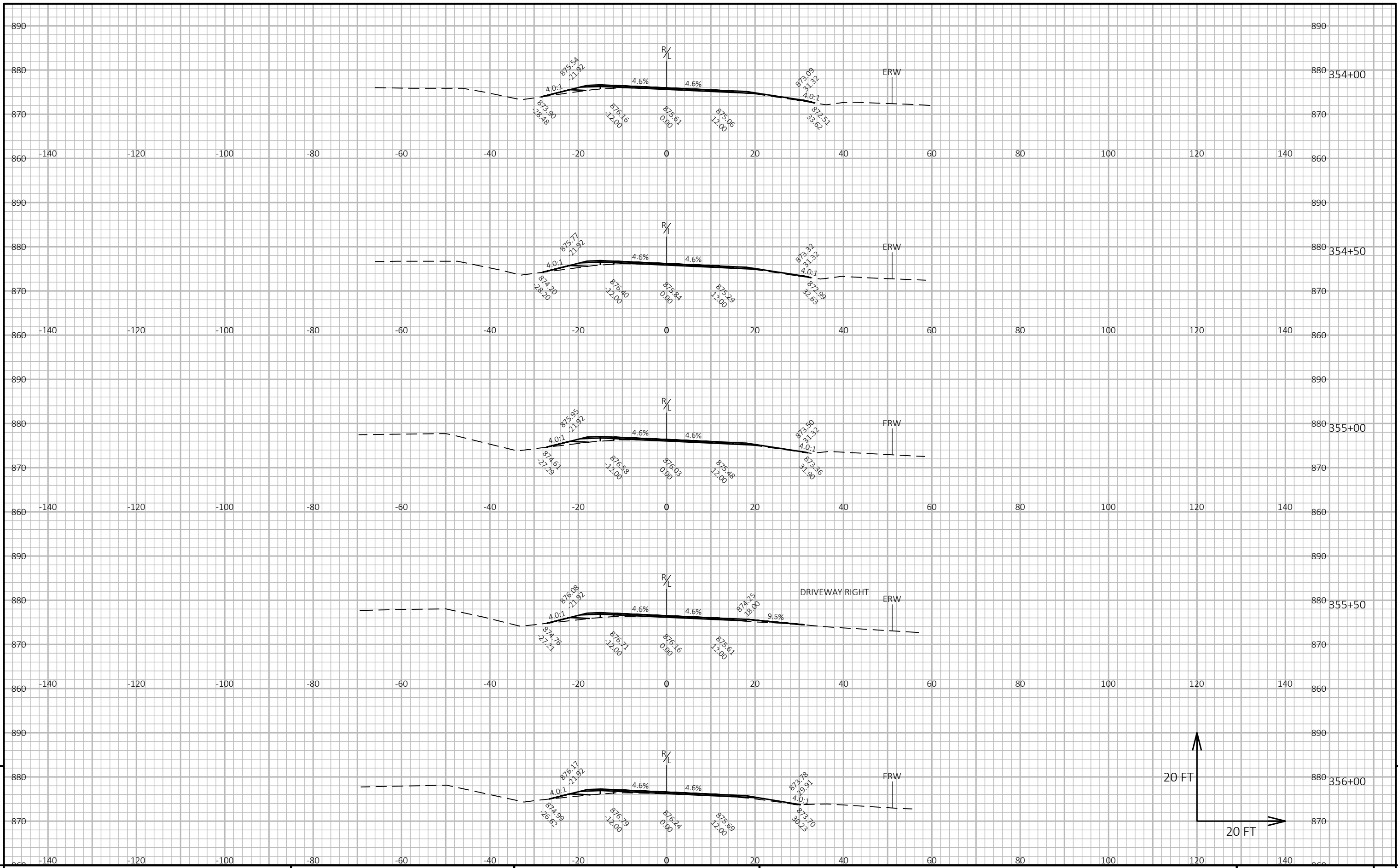


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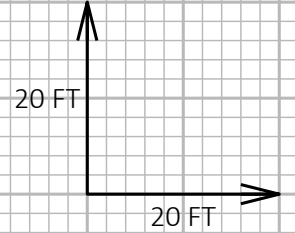
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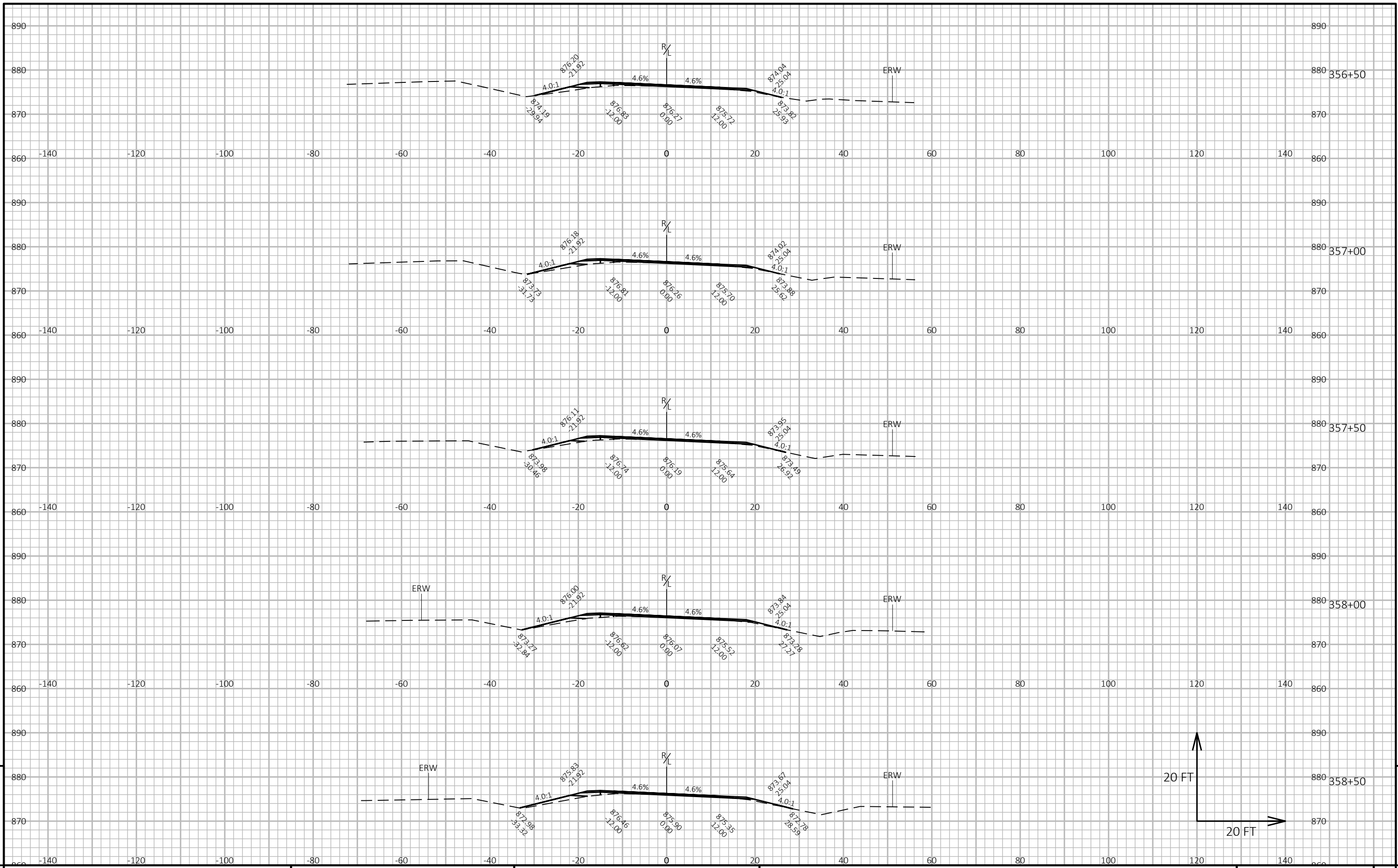
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PROJECT NO: 4323-08-72    HWY: CTH W    COUNTY: MANITOWOC    CROSS SECTIONS: CTH W    SHEET    E

FILE NAME : X:\PROJECTS\MANITOWOC\190003 4323-08-00 CTH W\DESIGN\C3D\SHEETSPLAN\090101\_XS\_EXPLODE2.DWG    PLOT DATE : 11/11/2022 12:52 AM    PLOT BY : JAKE NEERDAELS    PLOT NAME :    PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.    WISDOT/CADD SHEET 49

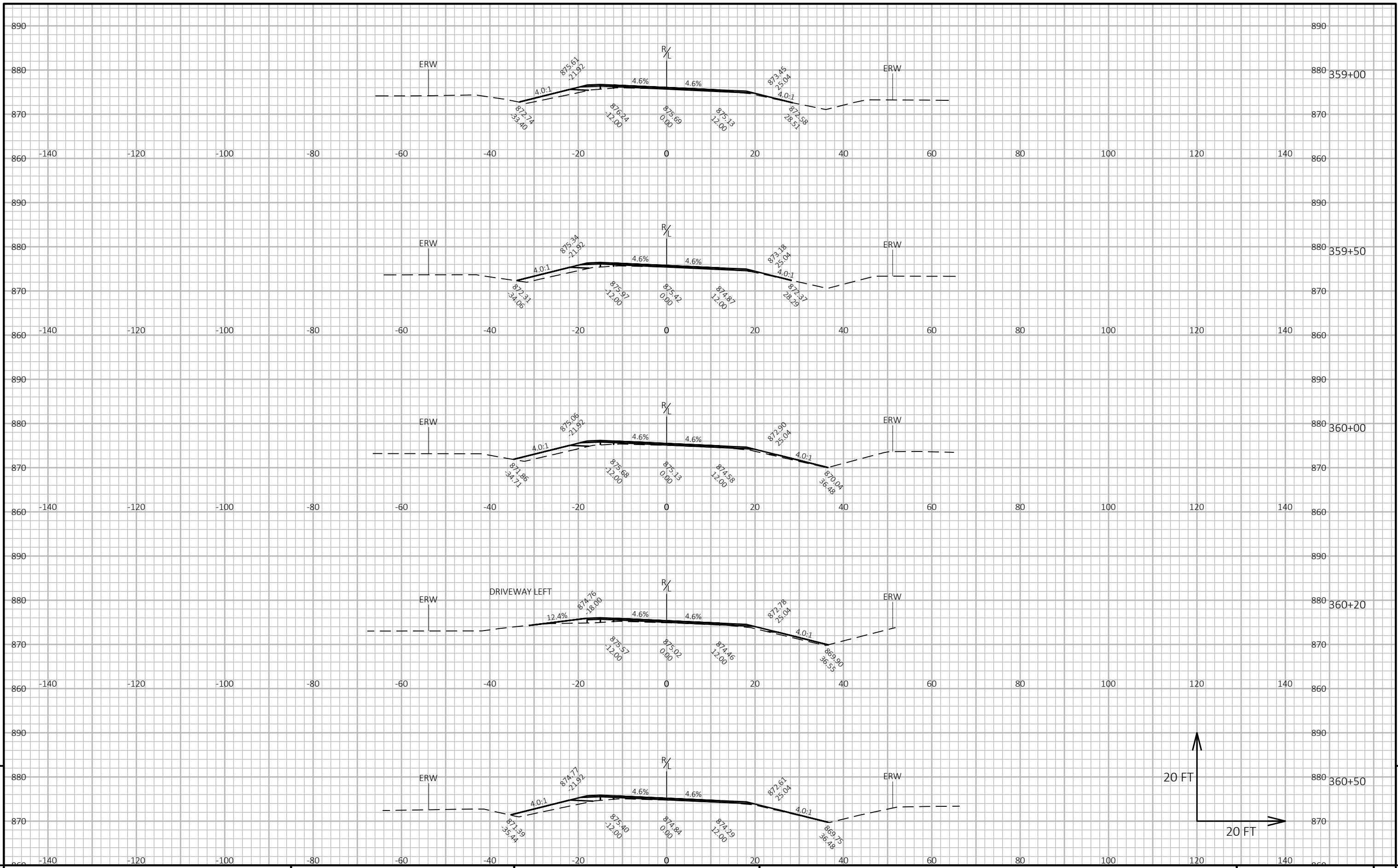


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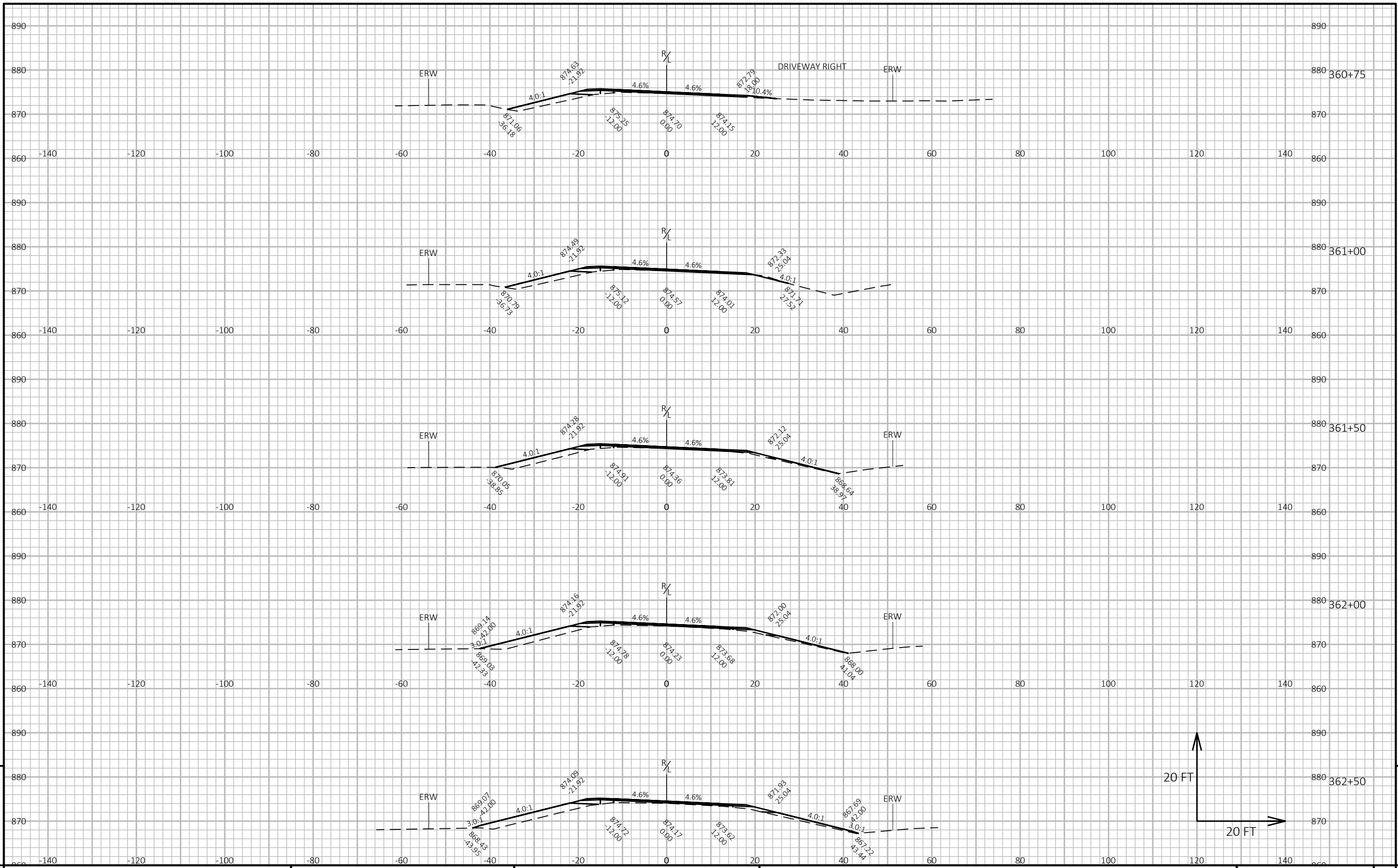
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

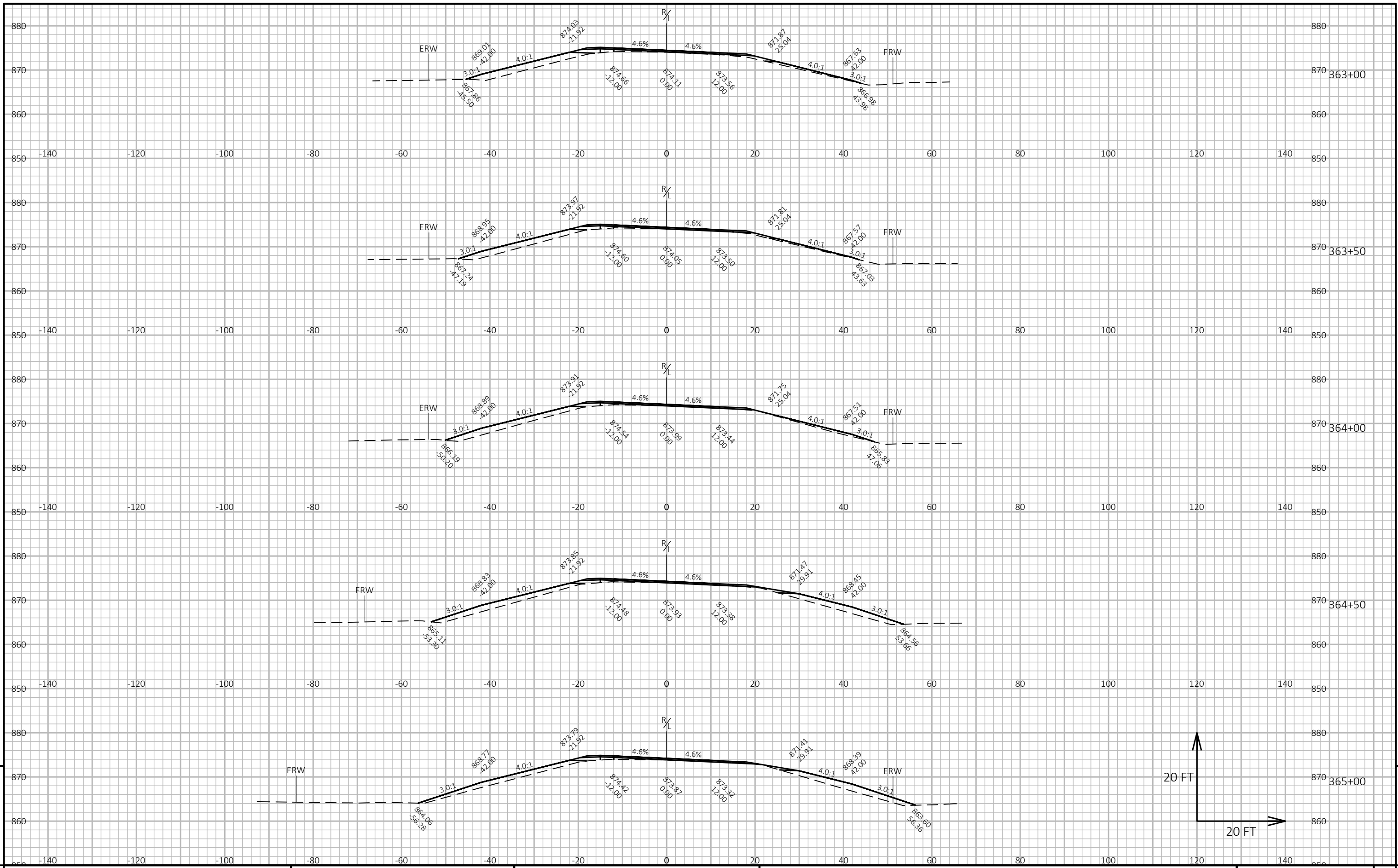
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E



PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E



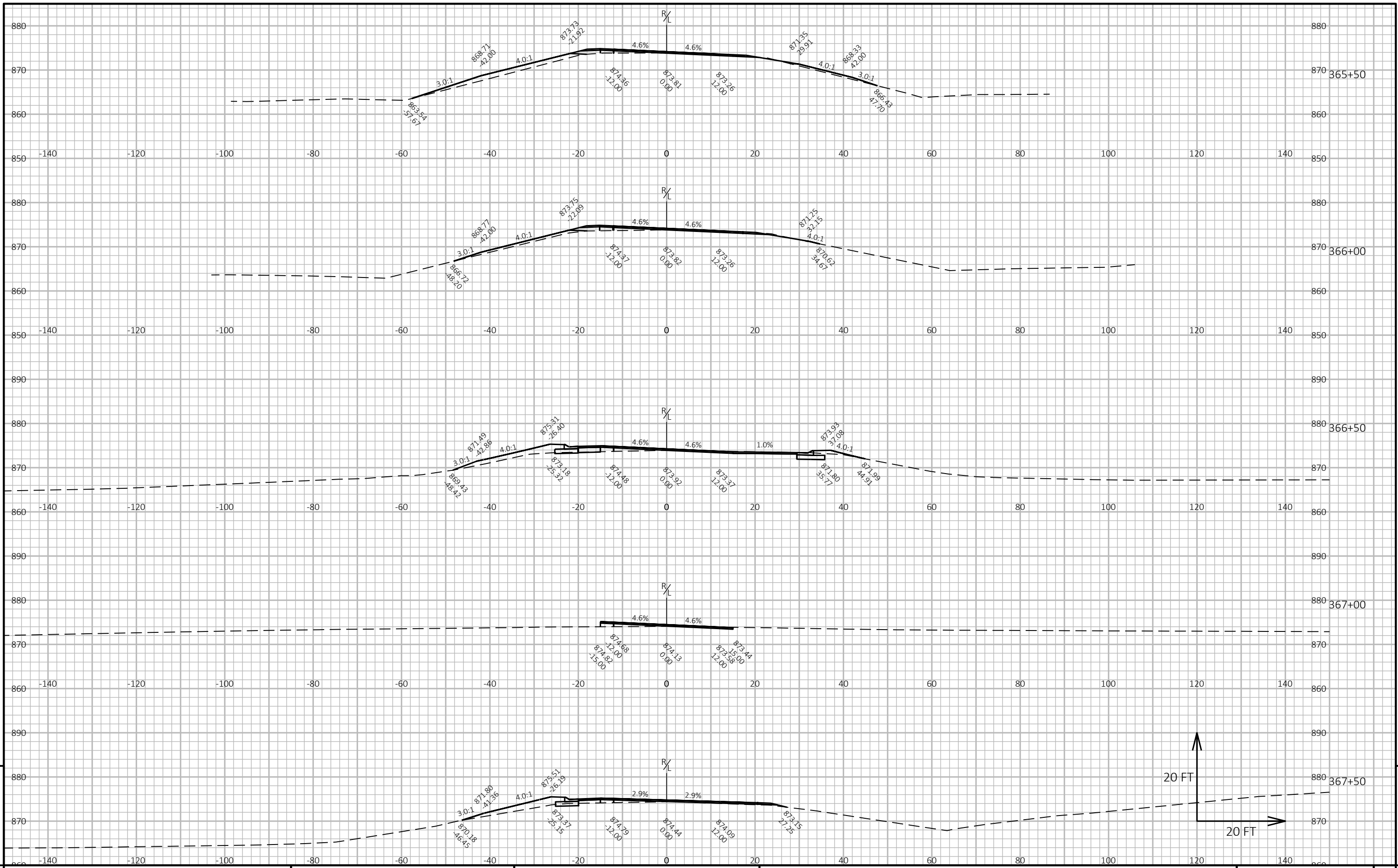
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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LAYOUT NAME - 090256



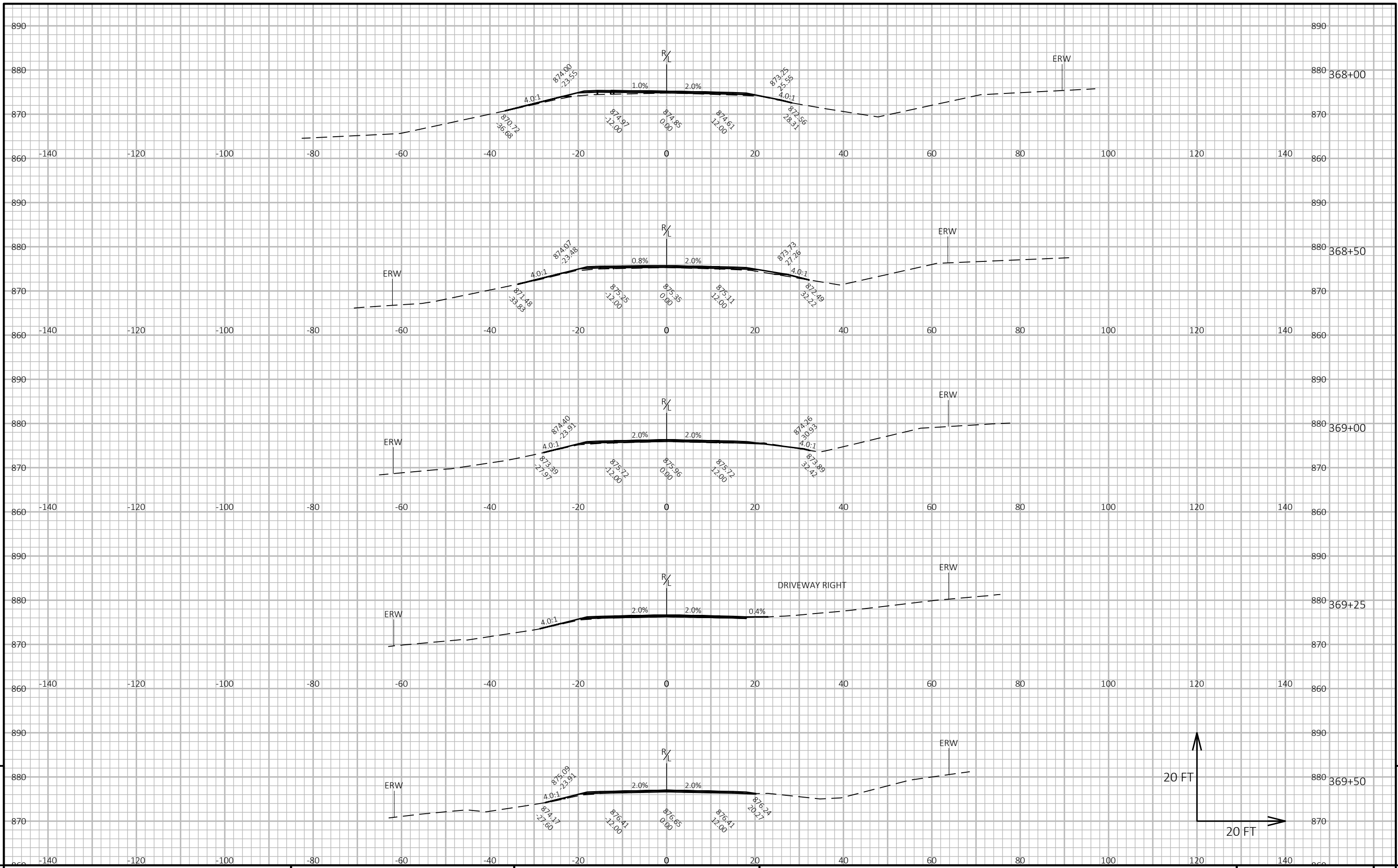
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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LAYOUT NAME - 090257

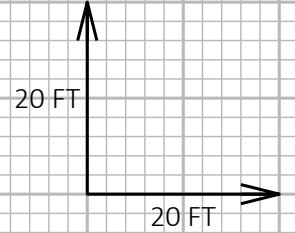


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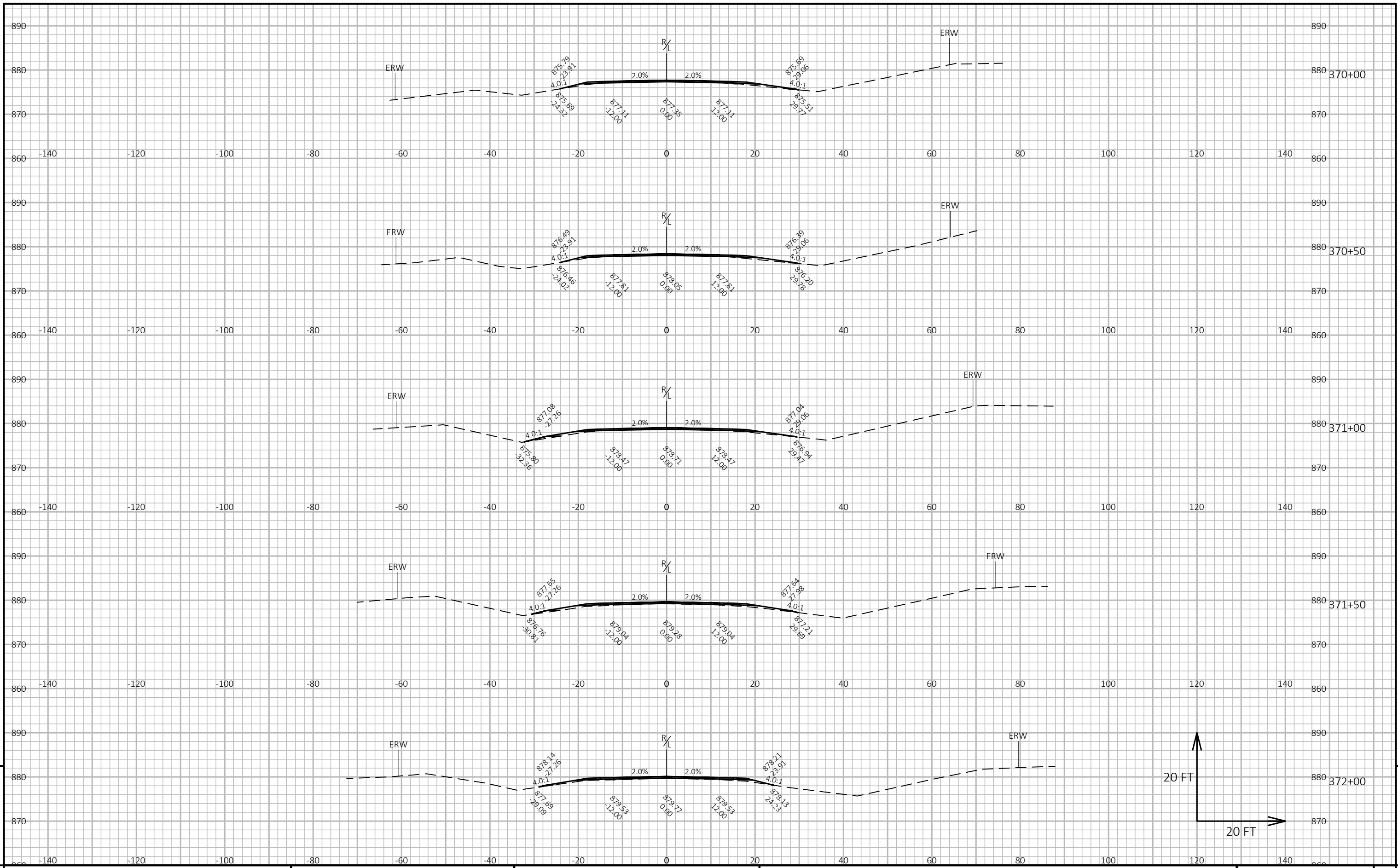
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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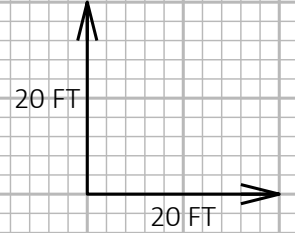


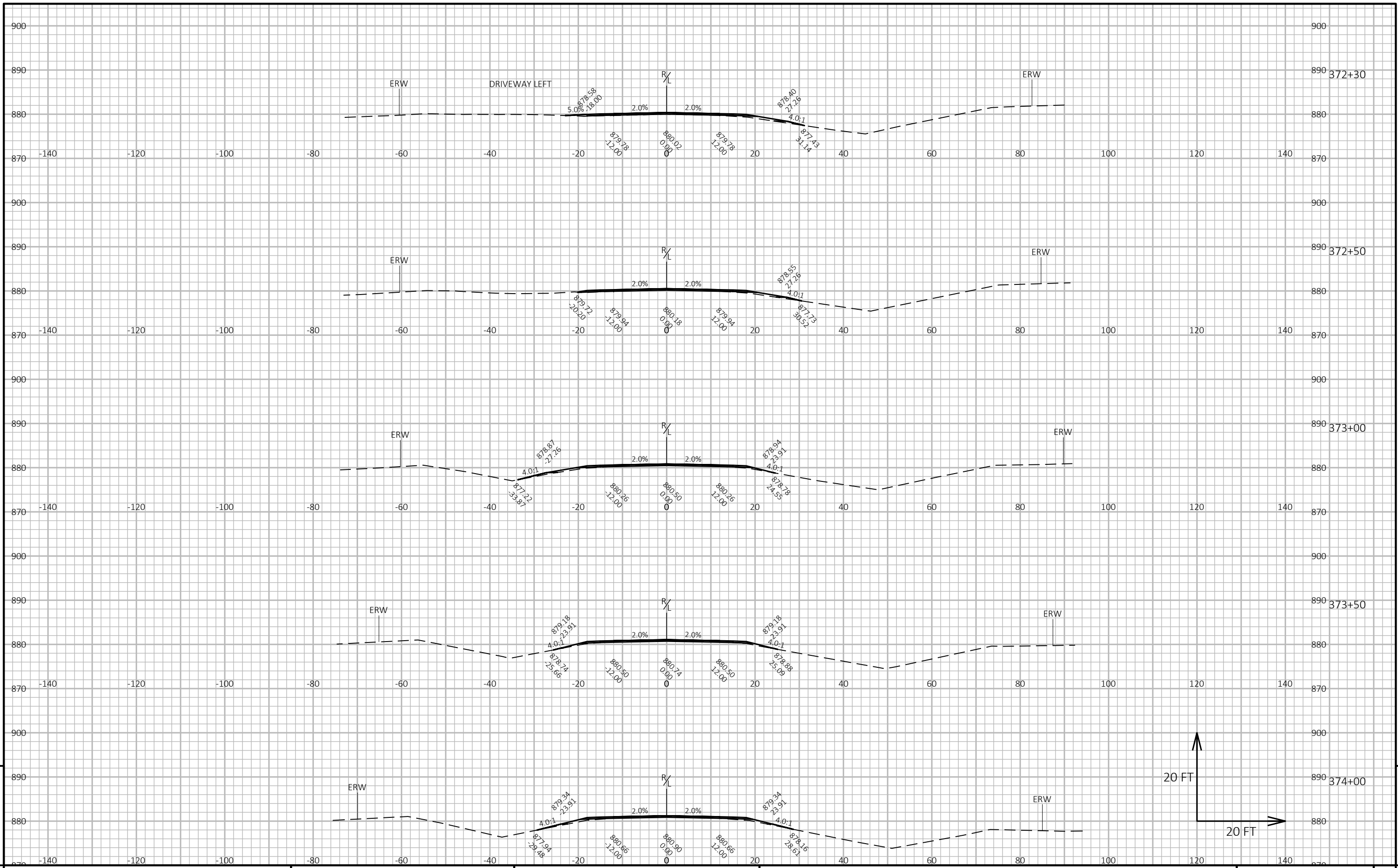
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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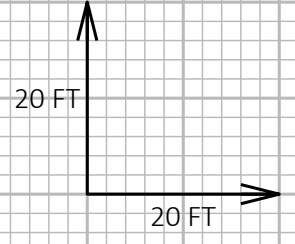


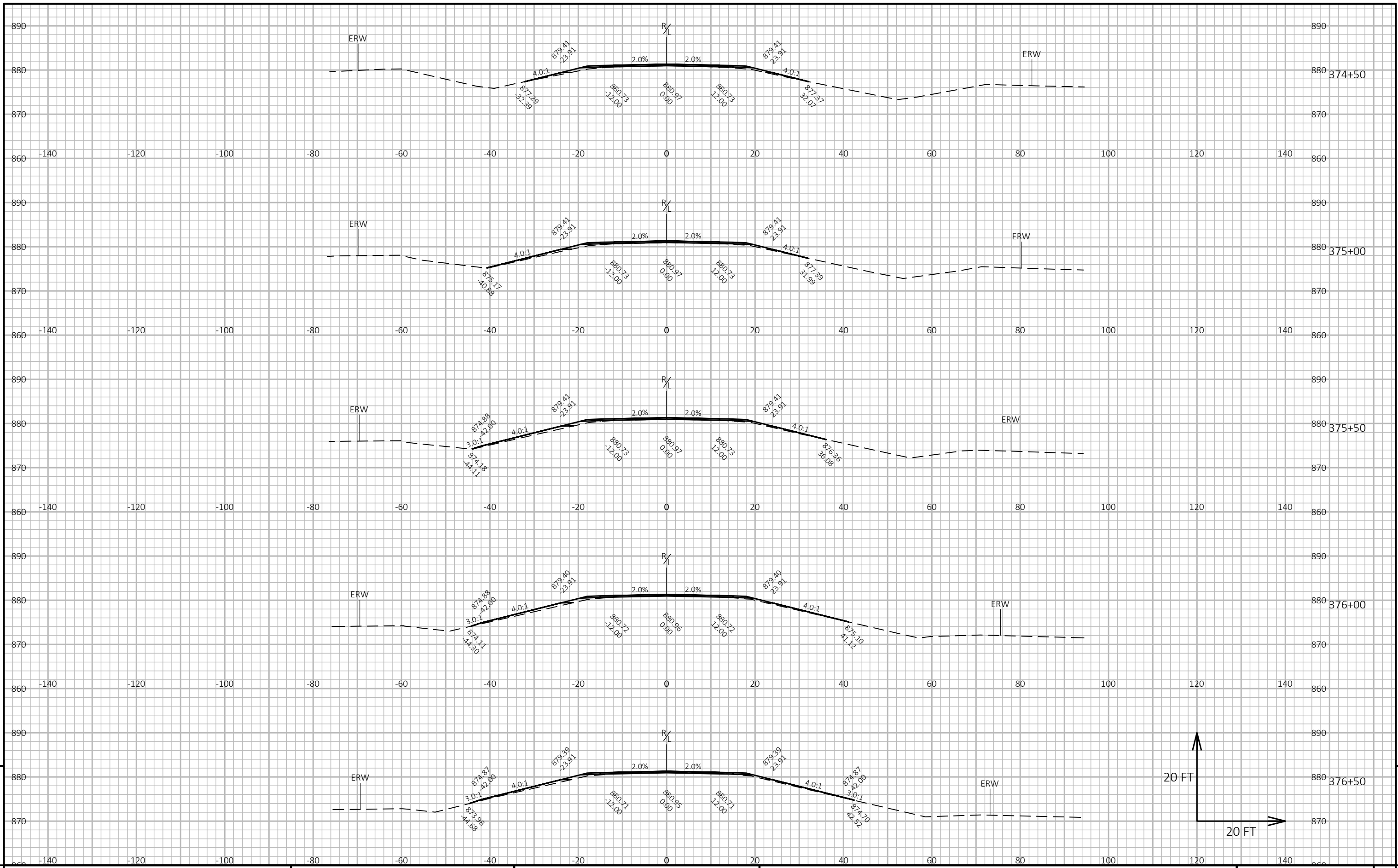
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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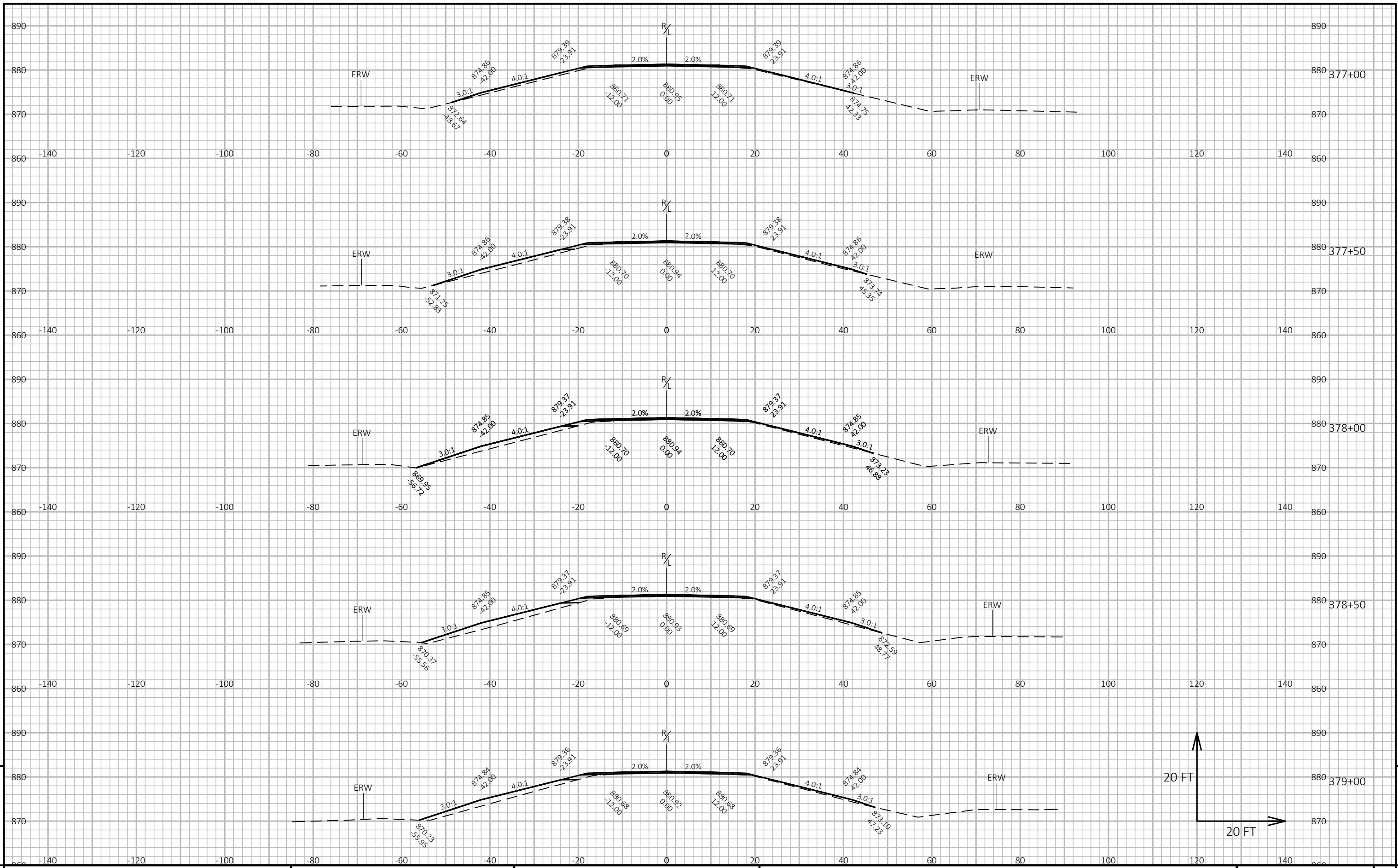


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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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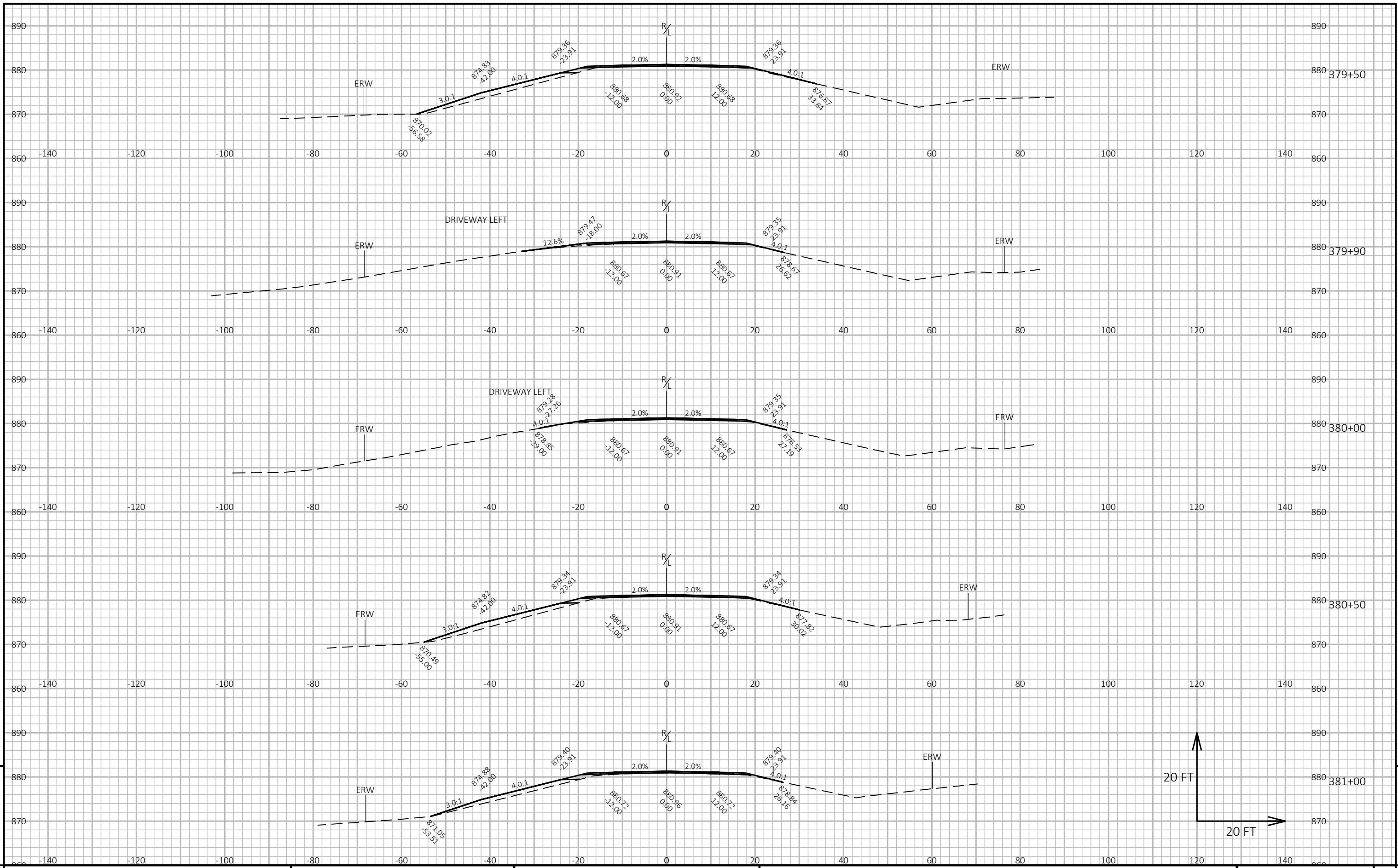


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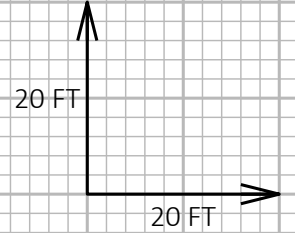
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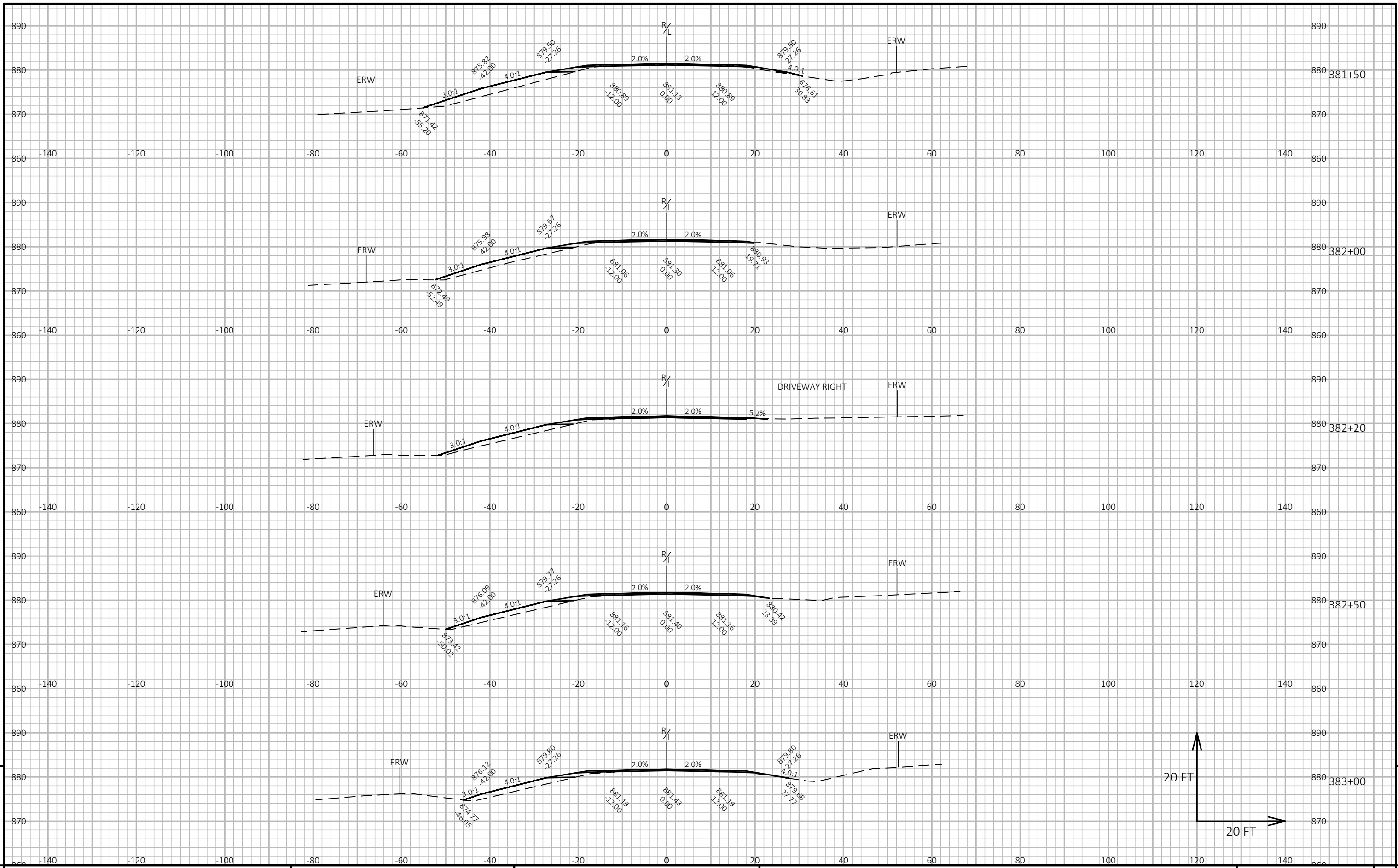
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

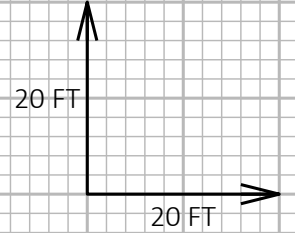
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LAYOUT NAME - 090263



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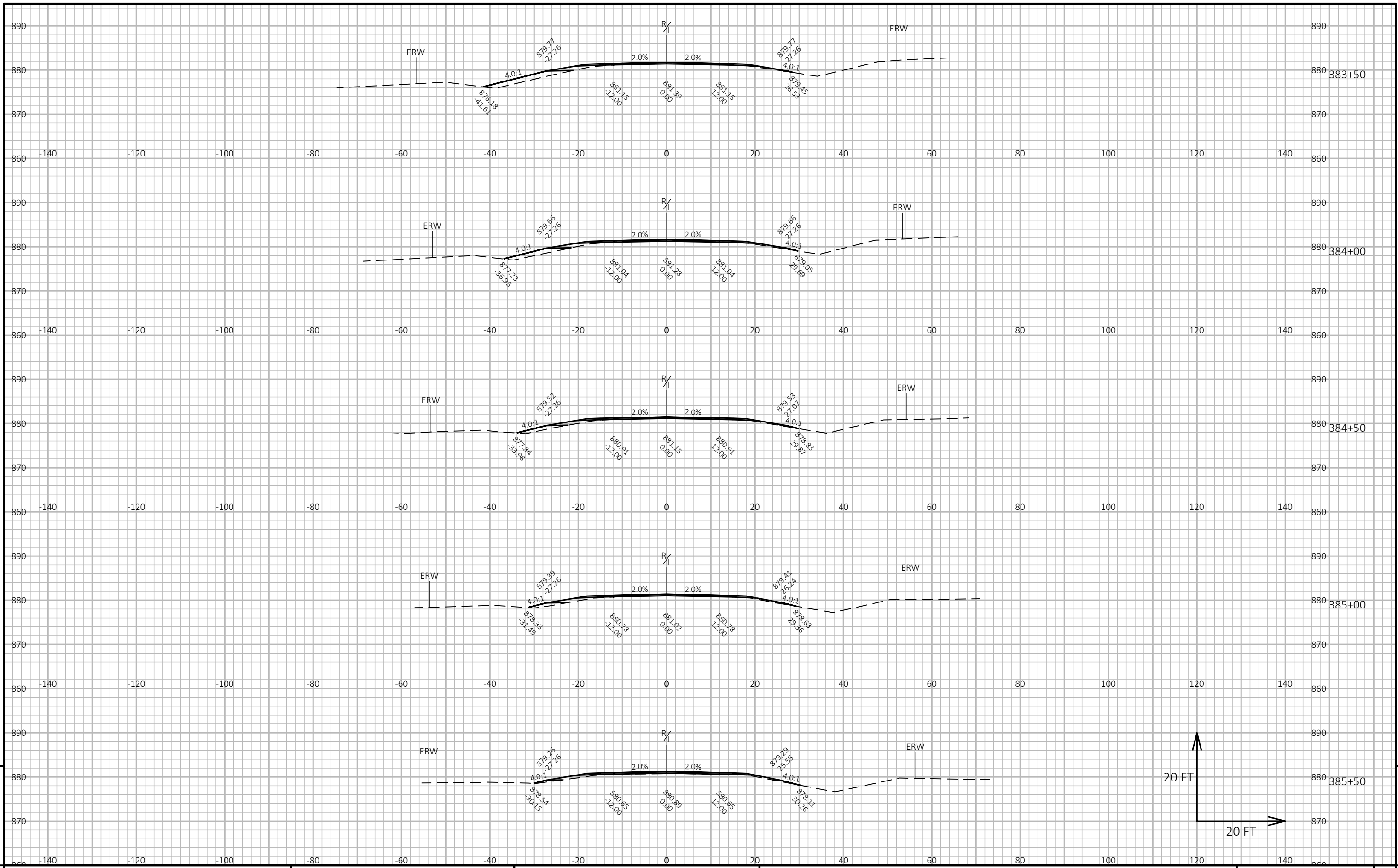
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

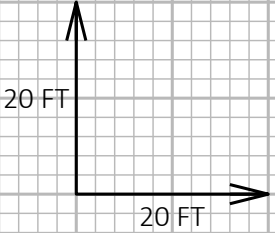
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LAYOUT NAME - 090264



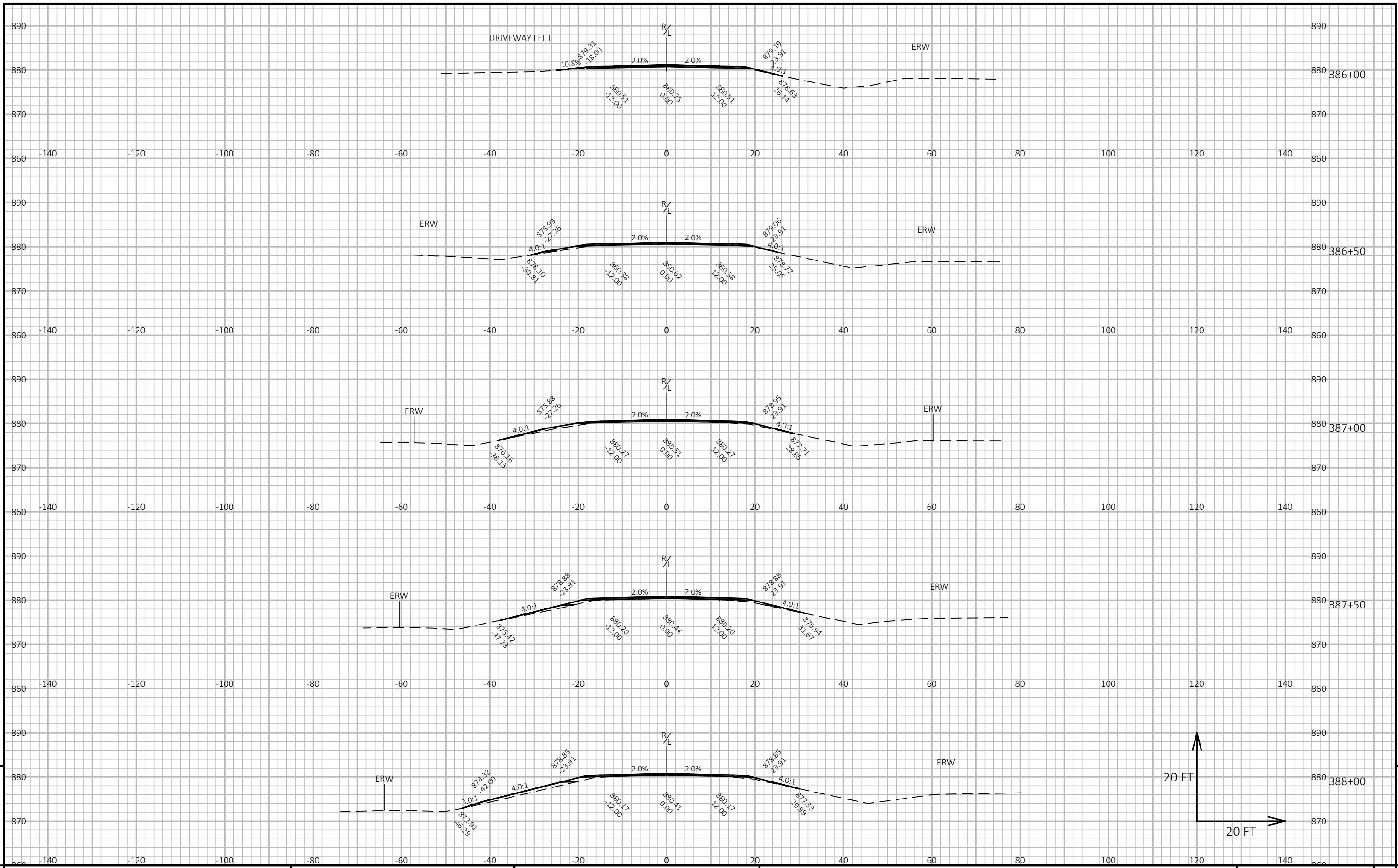
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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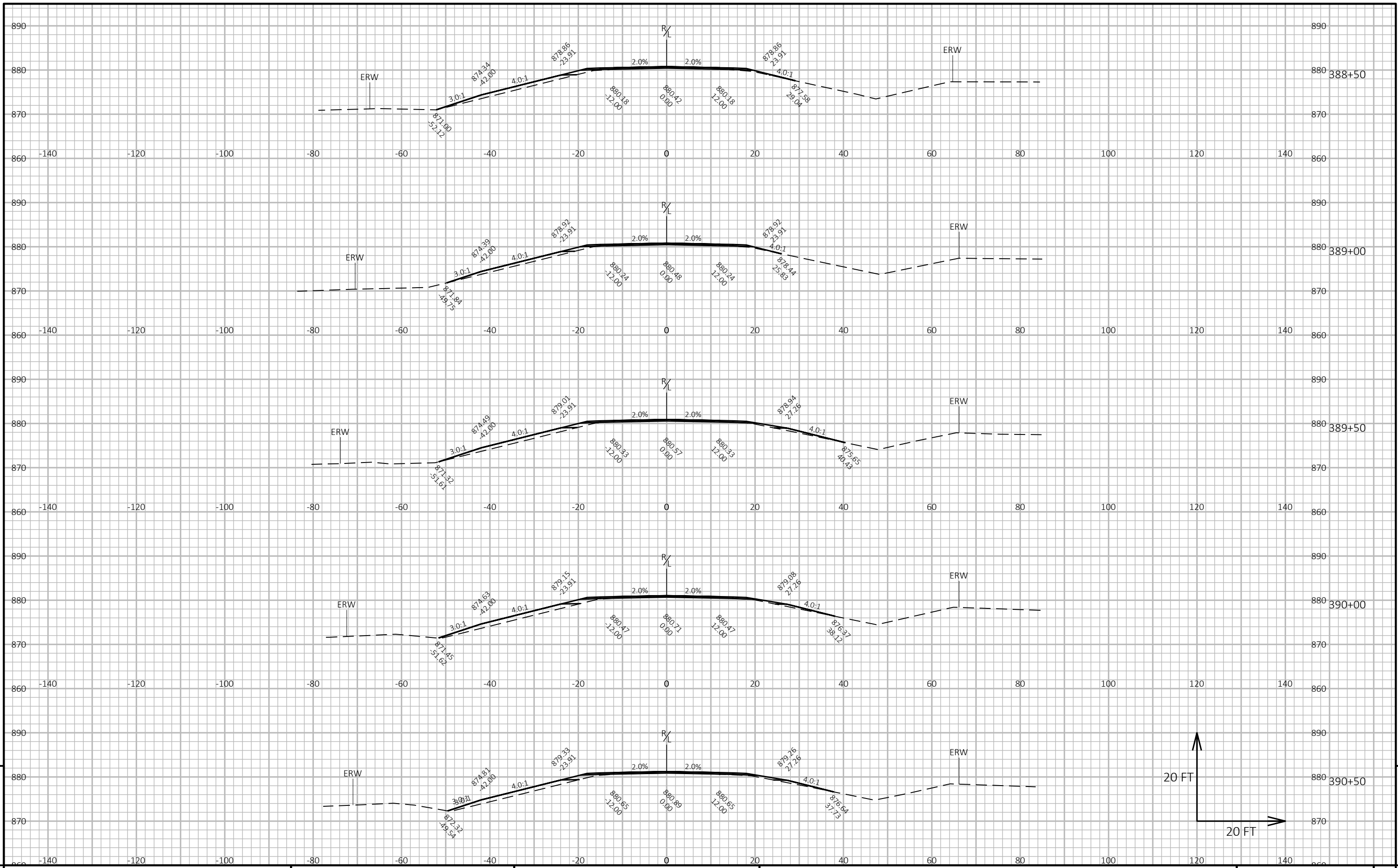
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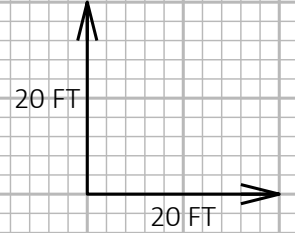


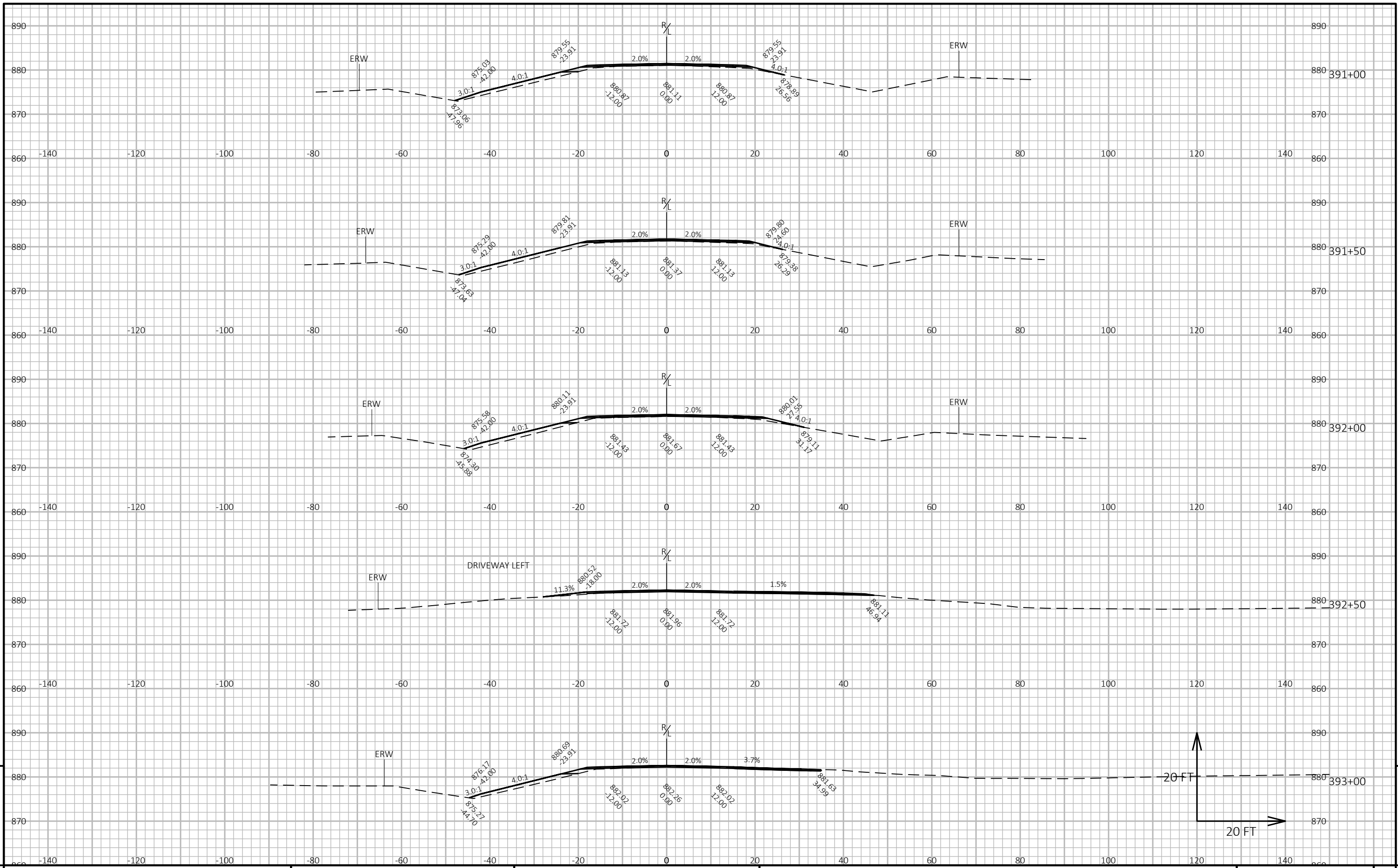
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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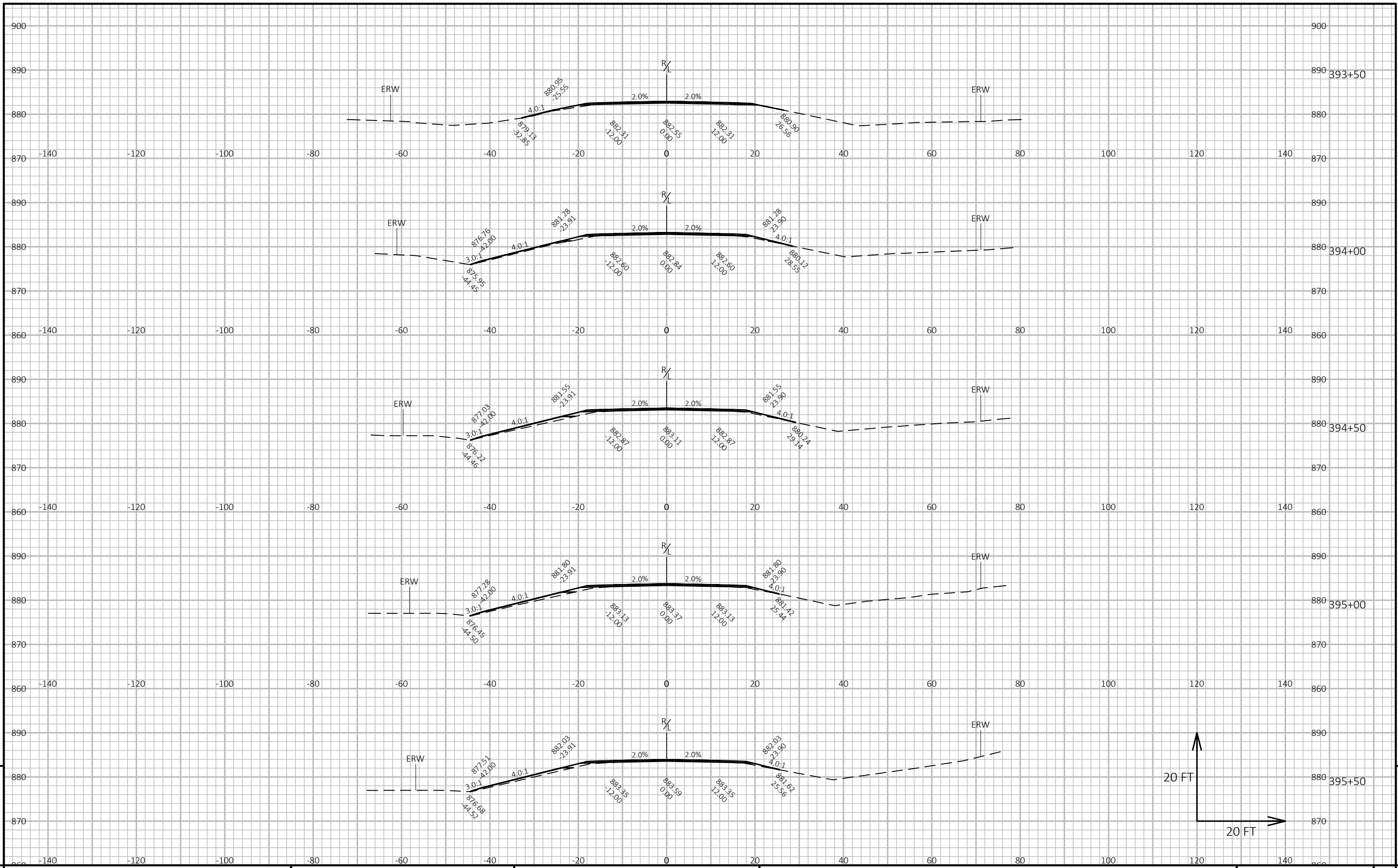


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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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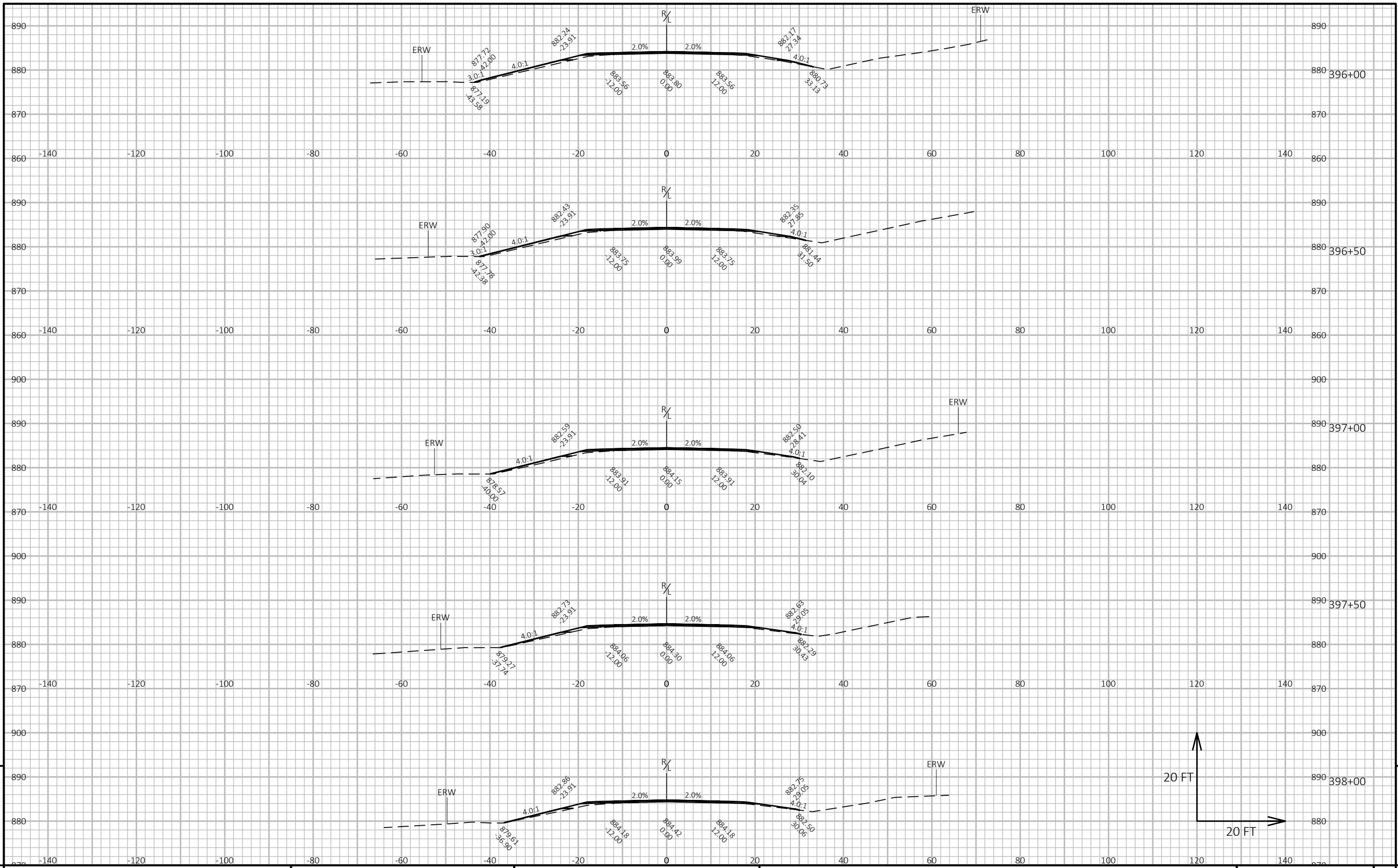
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LAYOUT NAME - 090269

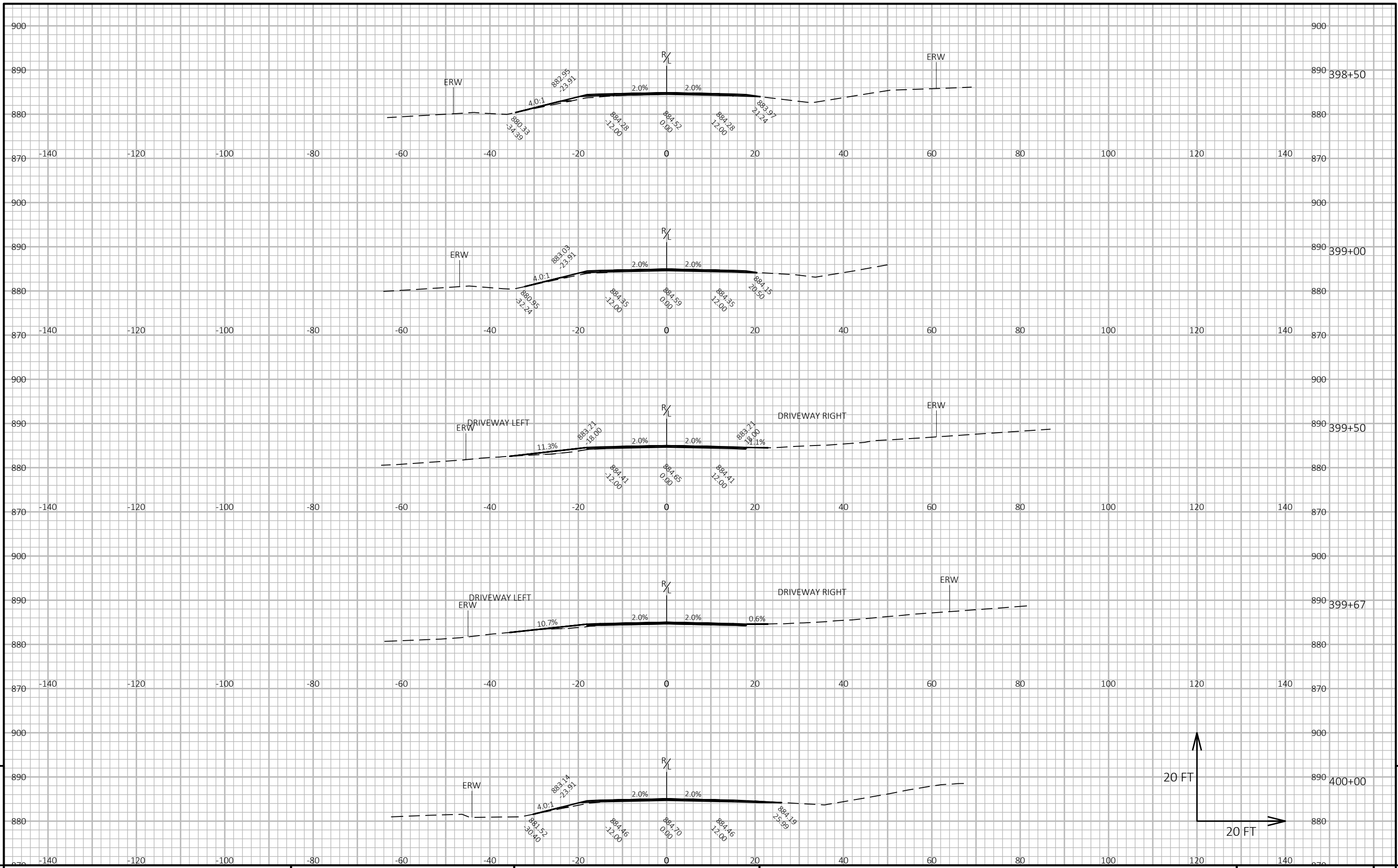


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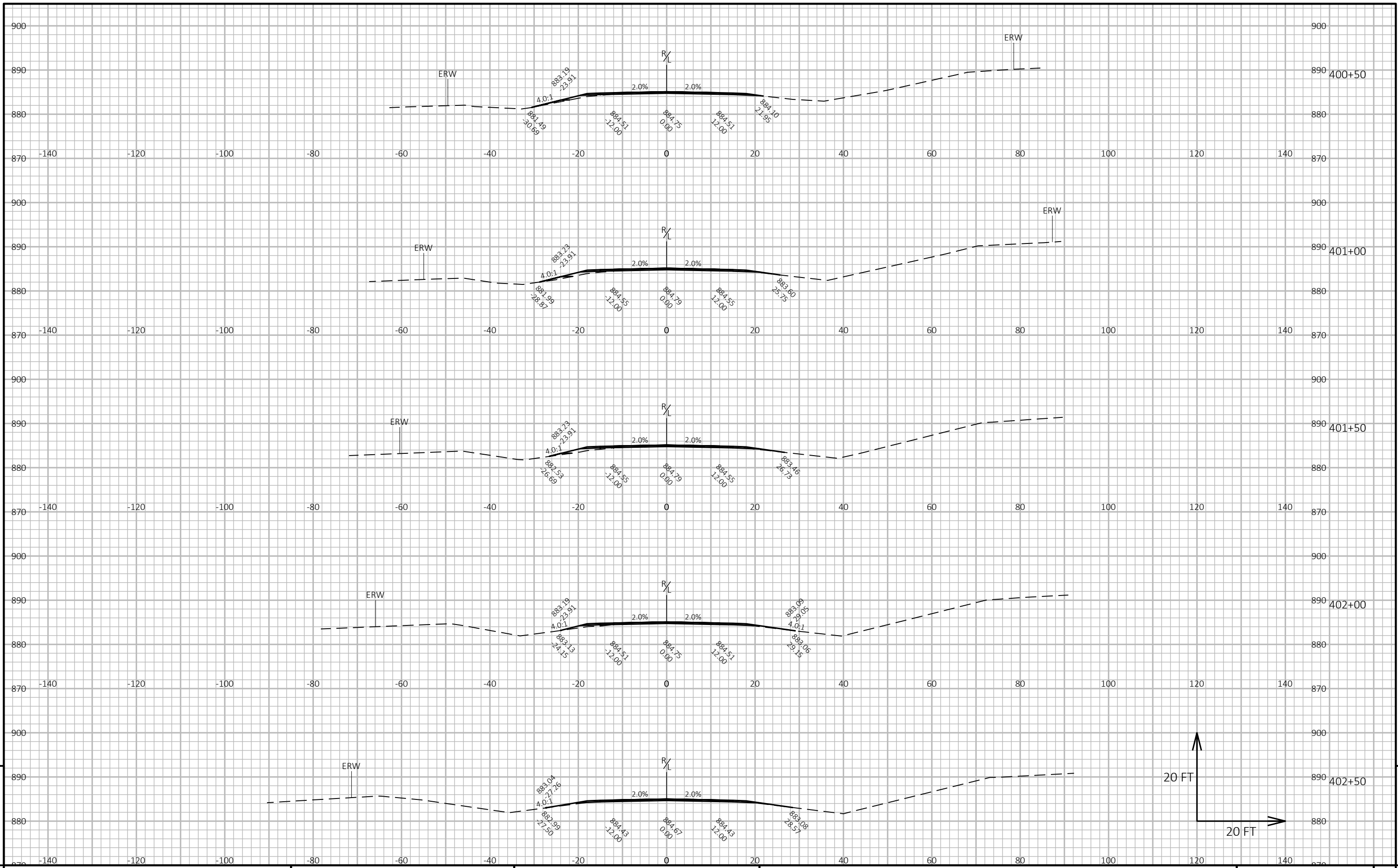
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

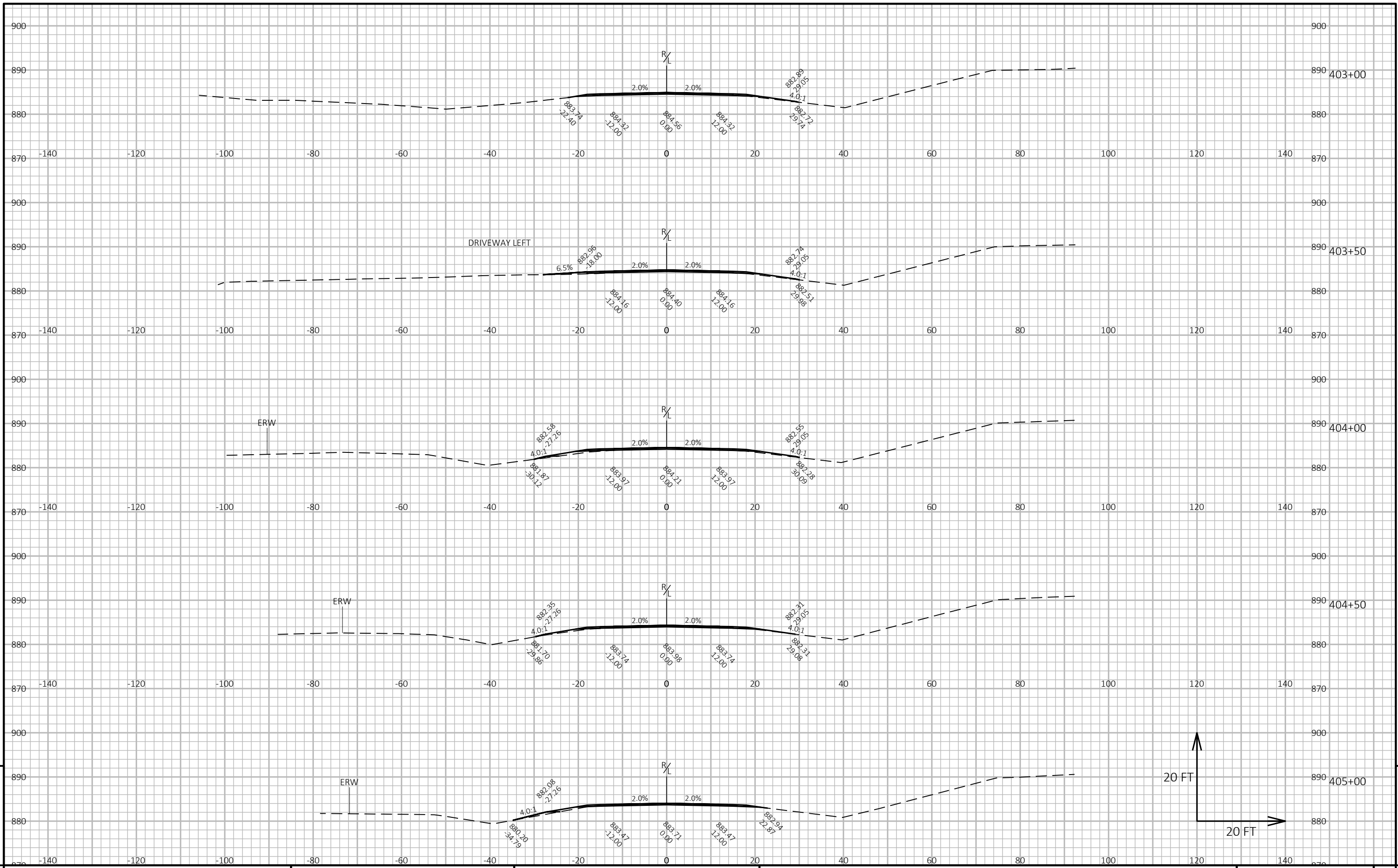


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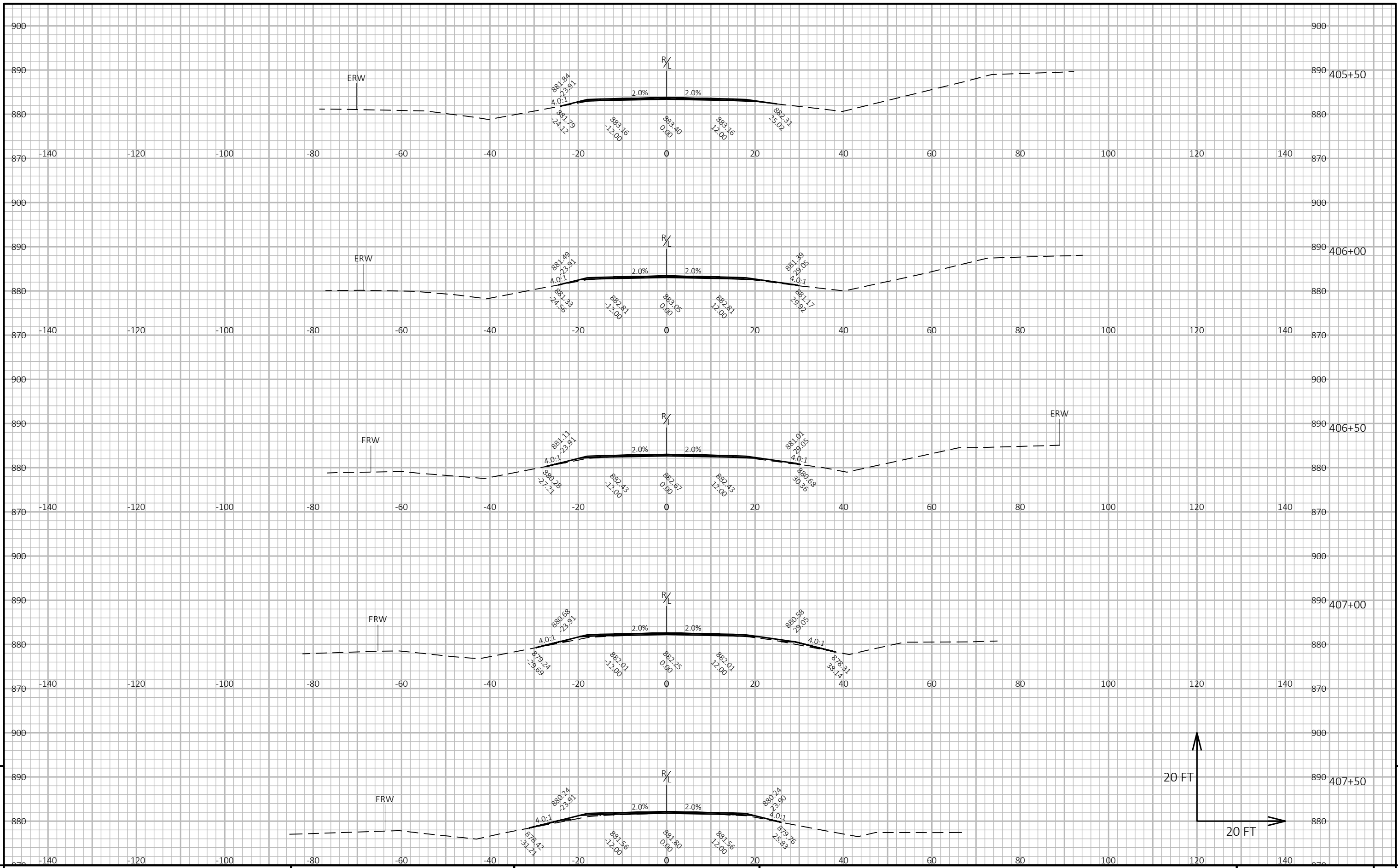
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      9

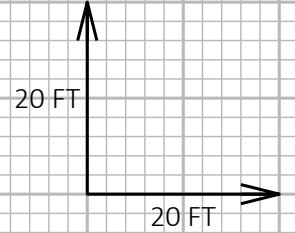


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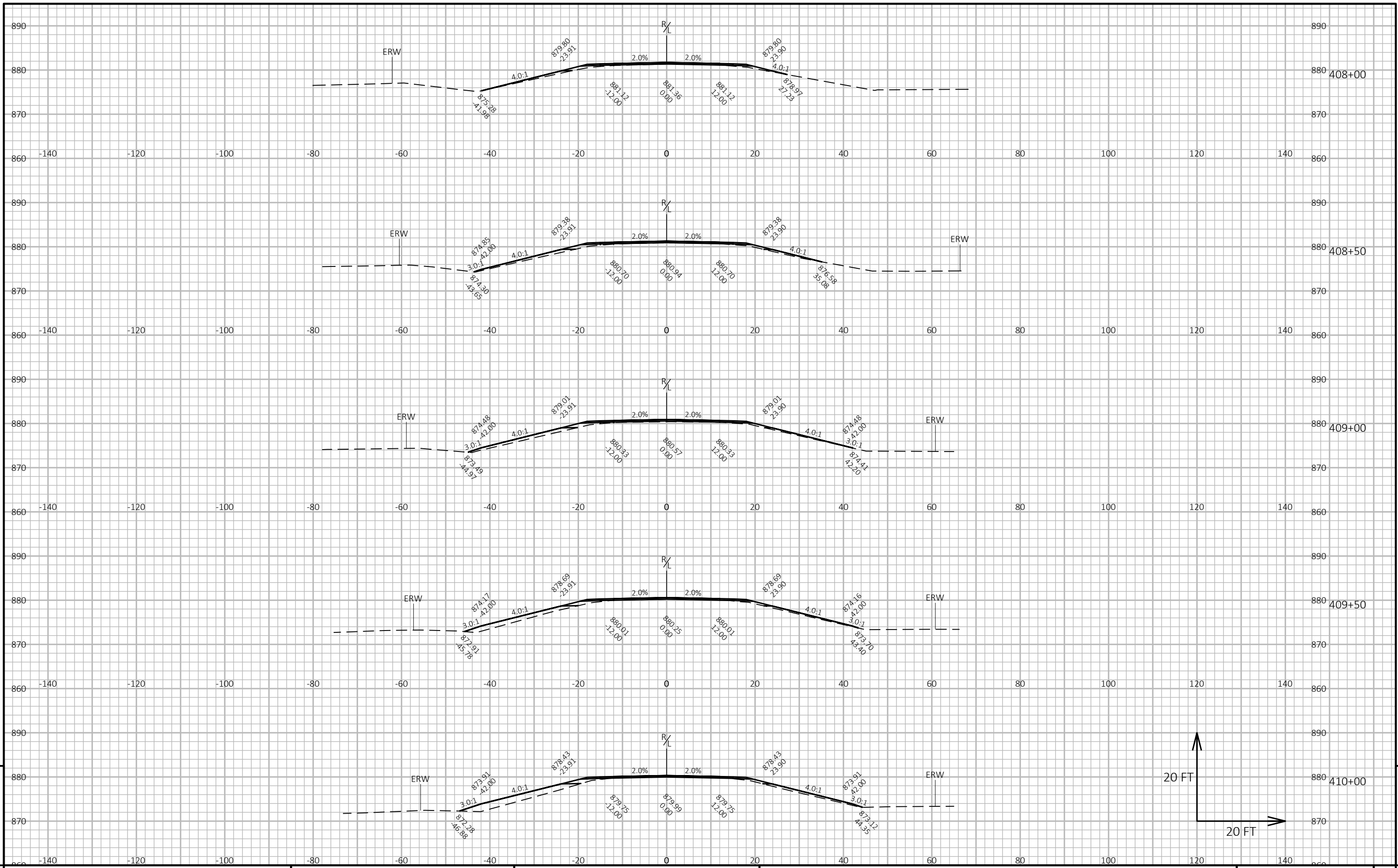
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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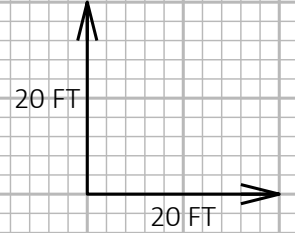


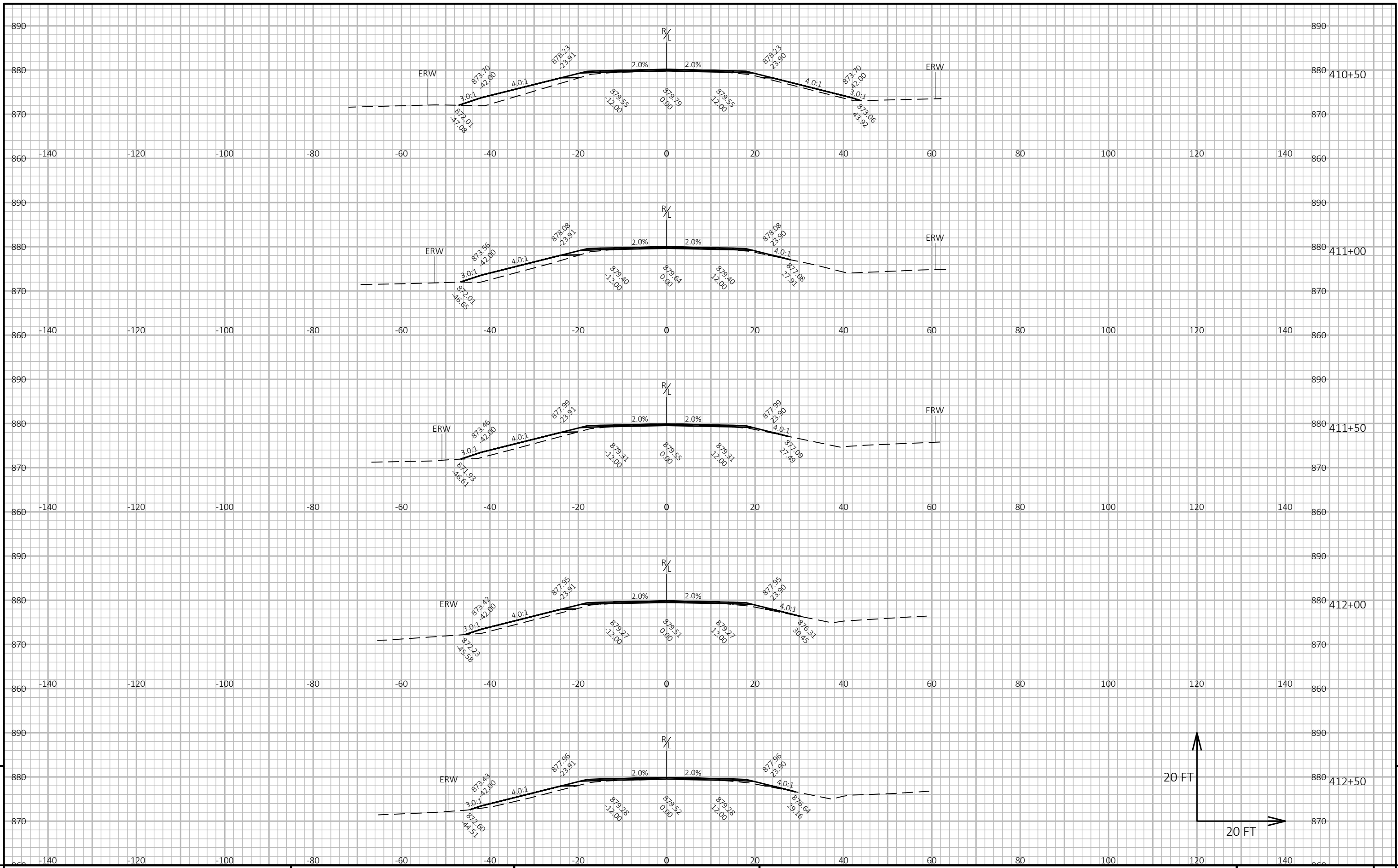
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

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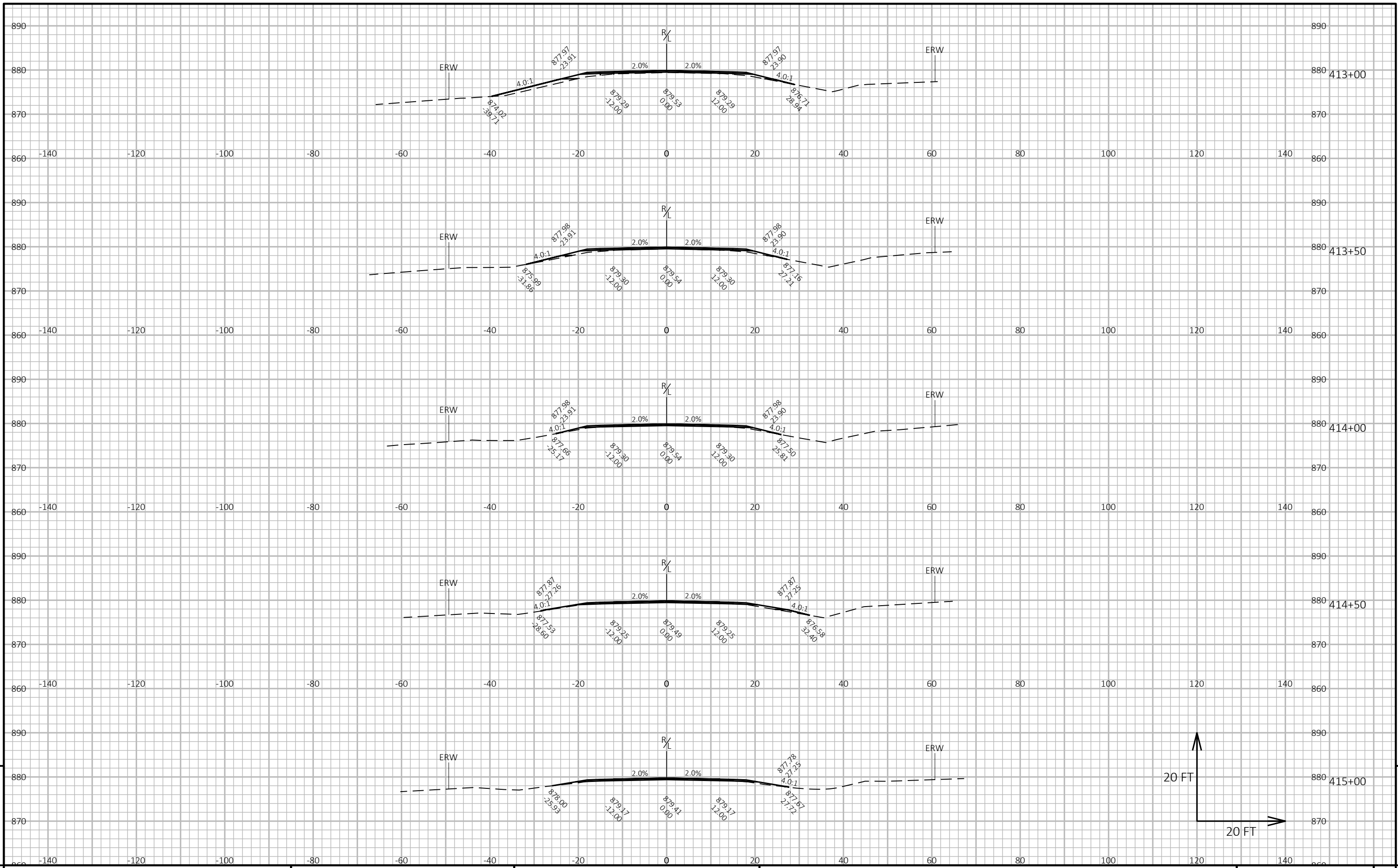
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LAYOUT NAME - 090276

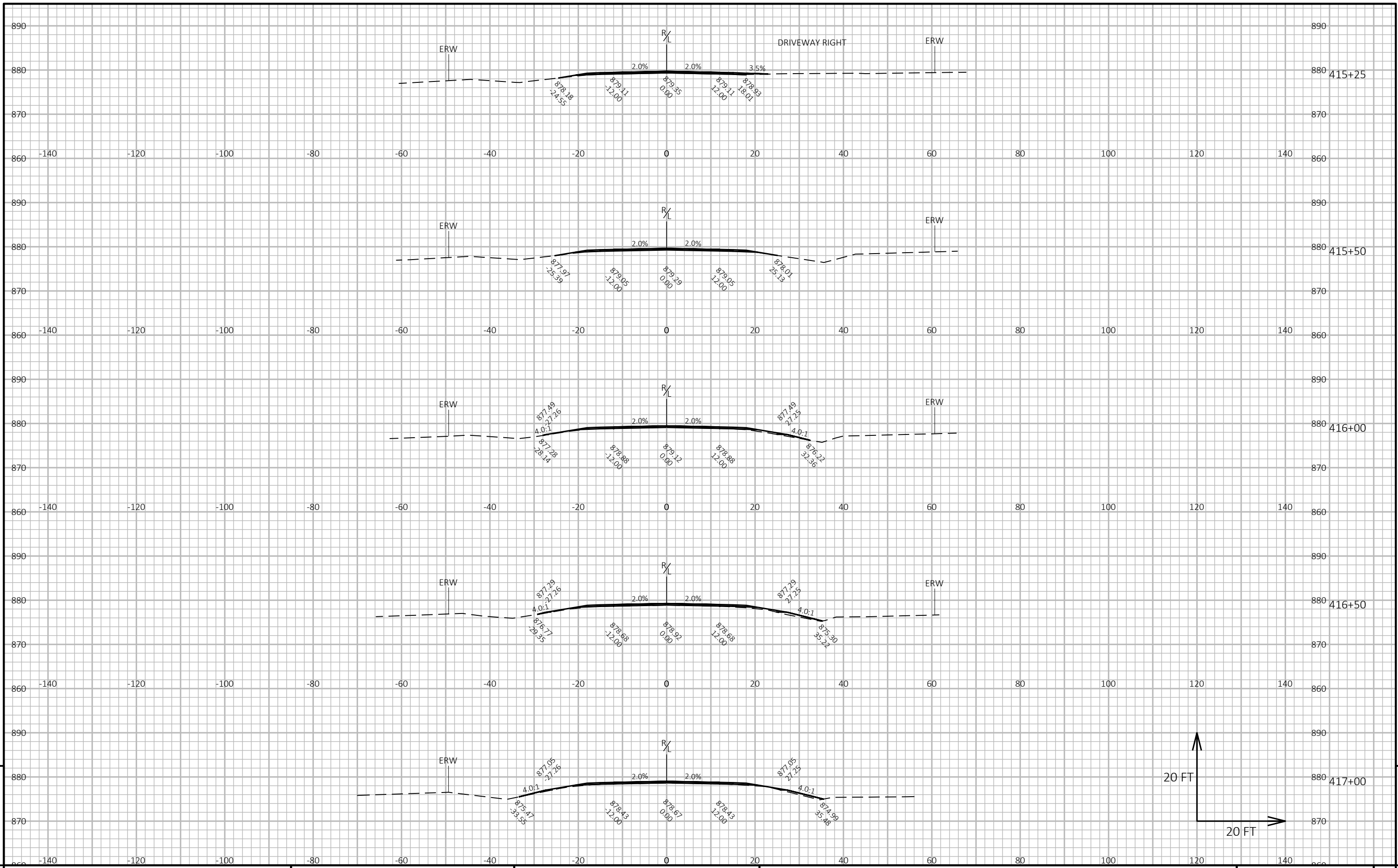


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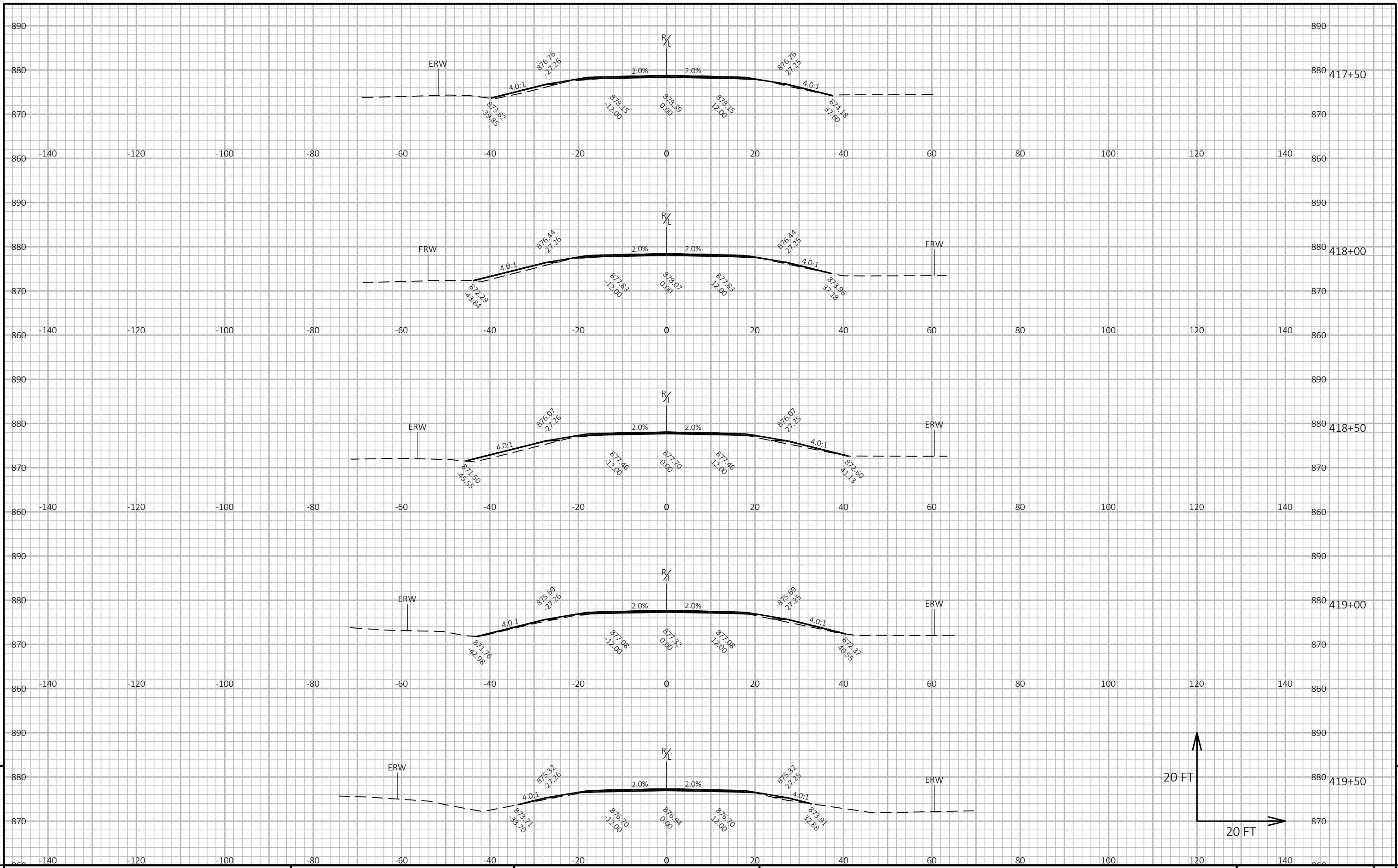
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PROJECT NO: 4323-08-72      HWY: CTH W      COUNTY: MANITOWOC      CROSS SECTIONS: CTH W      SHEET      E

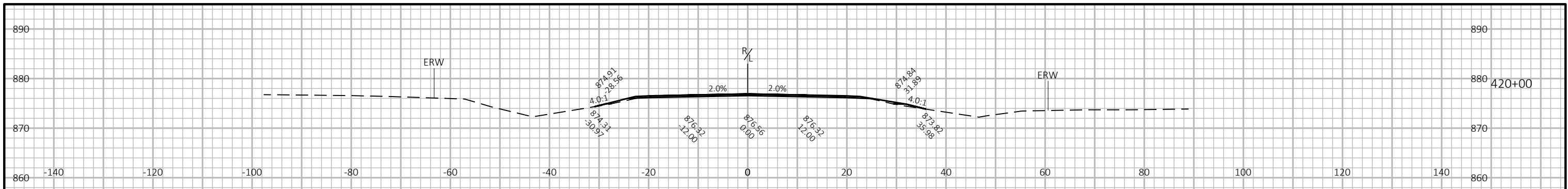


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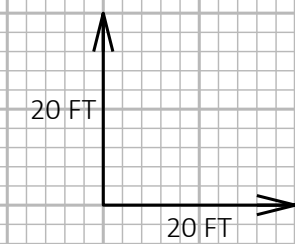
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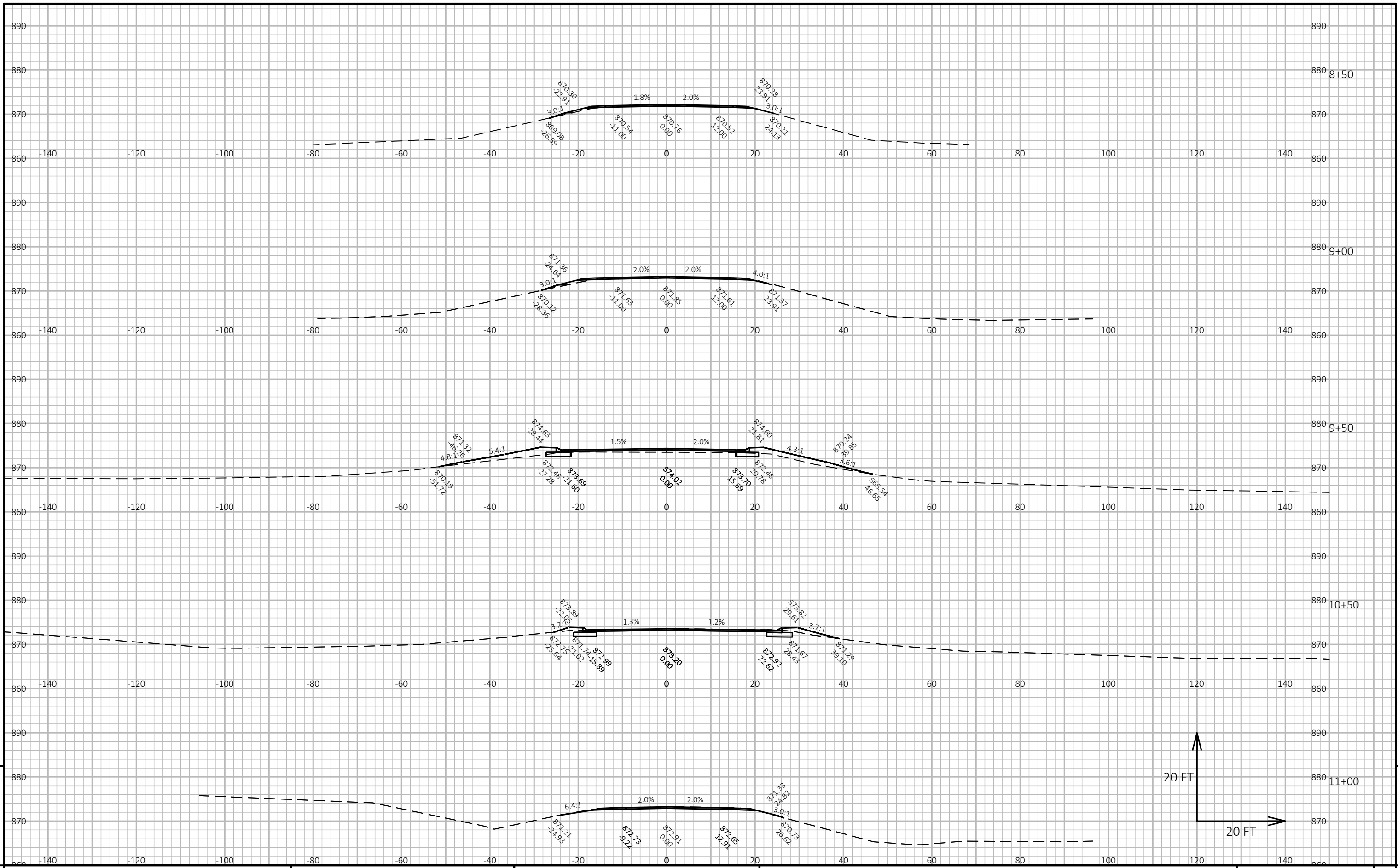


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PROJECT NO: 4323-08-72	HWY: CTH W	COUNTY: MANITOWOC	CROSS SECTIONS: CTH W	SHEET	E
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PROJECT NO: 4323-08-72
HWY: CTH W
COUNTY: MANITOWOC
CROSS SECTIONS: CTH K
SHEET
E



## ***Wisconsin Department of Transportation***

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