

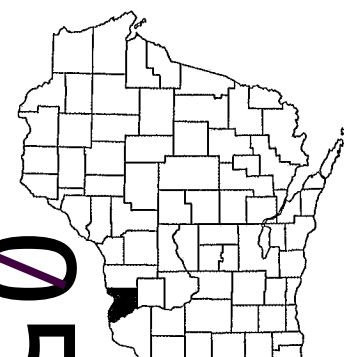
SWL

DEC 2015

ORDER OF SHEETS

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

TOTAL SHEETS = 96



DESIGN DESIGNATION

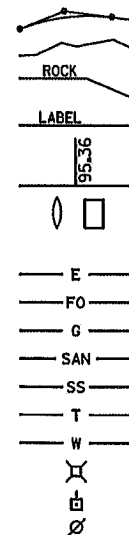
- A.A.D.T. 2016 = 830
A.A.D.T. 2036 = 930
D.H.V. = 149
D.D. = 60/40
T. = 7%
DESIGN SPEED = 55 MPH
ESALS = NA

CONVENTIONAL SYMBOLS

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



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



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

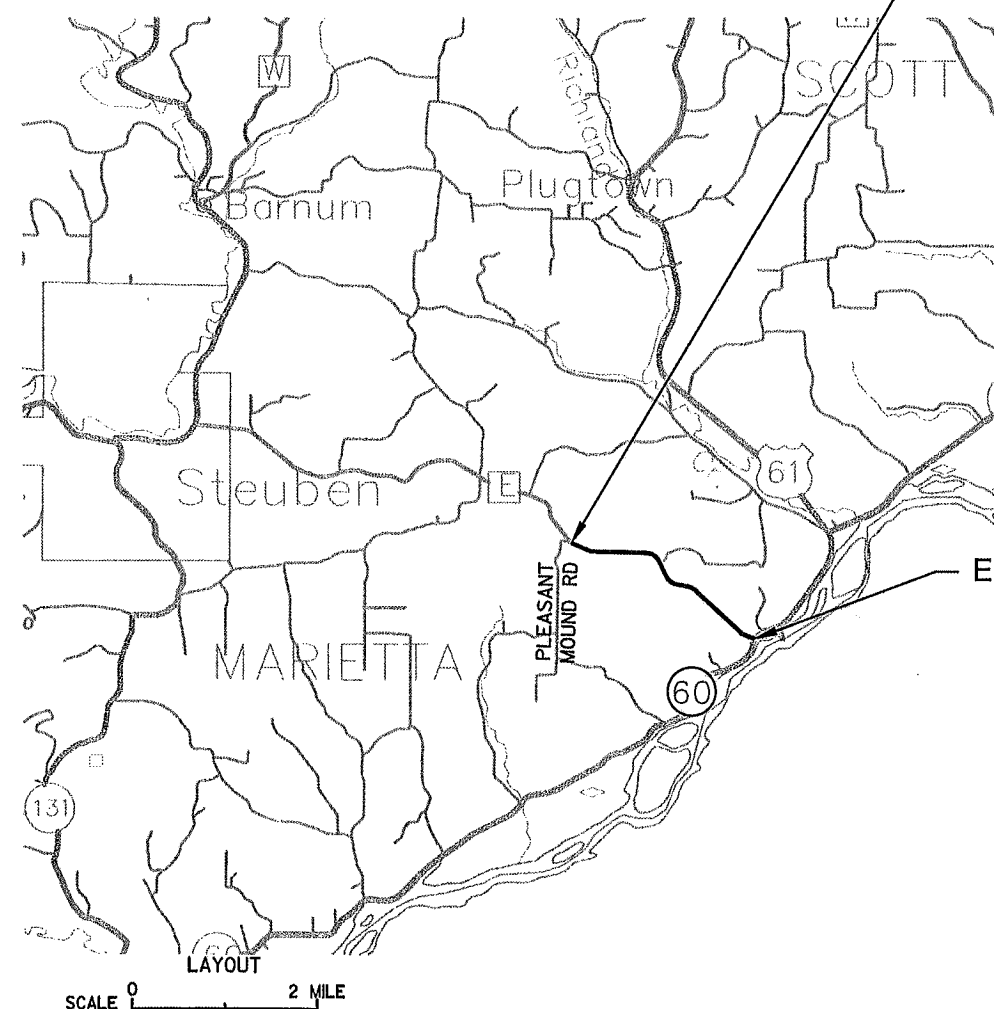
PLAN OF PROPOSED IMPROVEMENT

STEUBEN - BOSCOBEL

PLEASANT MOUND ROAD TO STH 60

CTH E
CRAWFORD COUNTY

STATE PROJECT NUMBER
5002-01-73



BEGIN PROJECT
STA 166+00
Y: 164,271
X: 420,069

END PROJECT
STA 299+75
Y: 158,434
X: 431,146

TOTAL NET LENGTH OF CENTERLINE = 2.533 MILES

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

STATE PROJECT

5002-01-73

FEDERAL PROJECT

PROJECT

WISC 2015634

CONTRACT

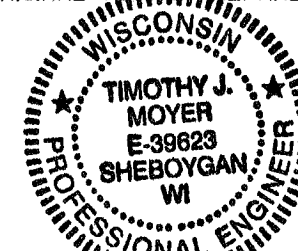
1

ACCEPTED FOR
CRAWFORD COUNTY

15 July 2015
(Date)

Commissioner
(Title of Official)

ORIGINAL PLAN PREPARED BY



7/23/15
(Date)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor RIVER VALLEY LAND SURVEYING
Designer DONOHUE & ASSOCIATES, INC.
Management Consultant KJOHNSON ENGINEERS, INC.

APPROVED FOR THE DEPARTMENT
DATE: 7/30/15
(Management Consultant Signature)

E

UTILITY CONTACTS

FACILITY TYPE: ELECTRIC
CITY OF BOSCOBEL
DEPARTMENT OF PUBLIC WORKS
MICHAEL B. REYNOLDS
CITY ENGINEER / DIRECTOR OF PUBLIC WORKS
1006 WISCONSIN AVENUE
BOSCOBEL, WI 53805
PHONE: 608-375-5030
EMAIL: MREYNOLDS@WPPIENERGY.ORG

FACILITY TYPE: COMMUNICATIONS
CENTURYLINK
STEVE NELSON
333 N FRONT STREET
PO BOX 4800
LACROSSE, WI 54602
PHONE: 608-796-7033
EMAIL: STEVE.NELSON@CENTURYLINK.COM

FACILITY TYPE: ELECTIRC
SCENIC RIVERS ENERGY COOPERATIVE
ANDY KILCOYNE
231 N SHERIDAN STREET
LANCASTER, WI 53813-1342
PHONE: 608-723-2121 EXT. 568
EMAIL: AKILCOYNE@SREC.NET

*** DENOTES UTILITIES THAT ARE NOT DIGGER'S HOTLINE MEMBERS.

GENERAL NOTES:

THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. CONTACT DIGGERS HOTLINE PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ANY OTHER UTILITIES.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

THE ENGINEER WILL DETERMINE ANY DETAILS OF CONSTRUCTION NOT SHOWN ON THE PLAN.

EROSION CONTROL IS SHOWN ON THE PLAN SHEETS AND IN THE SUMMARY OF MISCELLANEOUS QUANTITIES.

RESTORE ALL DISTURBED AREAS WITH TOPSOIL, SEED, FERTILIZER AND MULCH.

ALL POSTS FOR MGS GUARDRAIL SHALL BE STEEL EXCEPT FOR WITHIN THE LIMITS OF THE ENERGY ABSORBING TERMINAL.

DO NOT PLACE PERMANENT PAVEMENT MARKINGS FOR A MINIMUM OF 5 WORKING DAYS AFTER SEAL COAT HAS BEEN PLACED.

PLACE 3 1/2-INCH ASPHALTIC SURFACE FOR PAVED SHOULDERS IN TWO LIFTS WITH TACK COAT BETWEEN. EACH LIFT SHALL BE 1 3/4-INCH.

PROJECT CONTACT INFORMATION:

DNR CONTACT

KAREN KALVELAGE
LACROSSE SERVICE CENTER
3550 MORMON COULEE ROAD
LACROSEE, WI 54601
(608) 785-9115
KAREN.KALVELAGE@WISCONSIN.GOV


CRAWFORD COUNTY CONTACT

DENNIS PELOCK
CRAWFORD COUNTY HIGHWAY COMMISSIONER
21515 STATE HIGHWAY 27, PO BOX 39
SENECA, WI 54654
(608) 734-9500
CCOMMISH@CENTURYTEL.NET

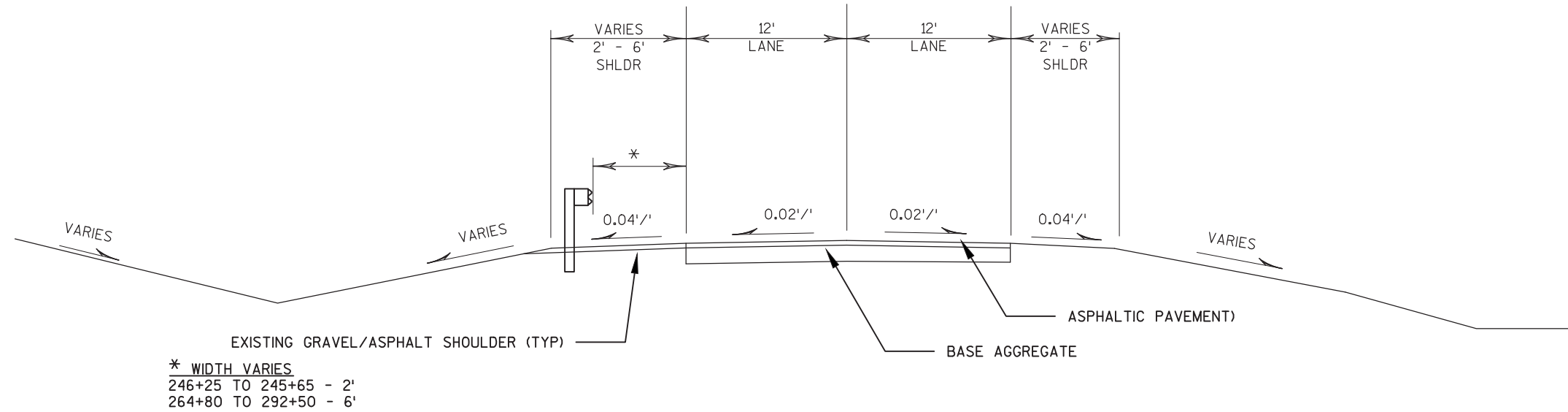
DESIGNER CONTACT

TIMOTHY MOYER, PE
DONOHUE & ASSOCIATES, INC
3311 WEEDEN CREEK ROAD
SHEBOYGAN, WI 53081
(920) 803-7380
TMOYER@DONOHUE-ASSOCIATES.COM



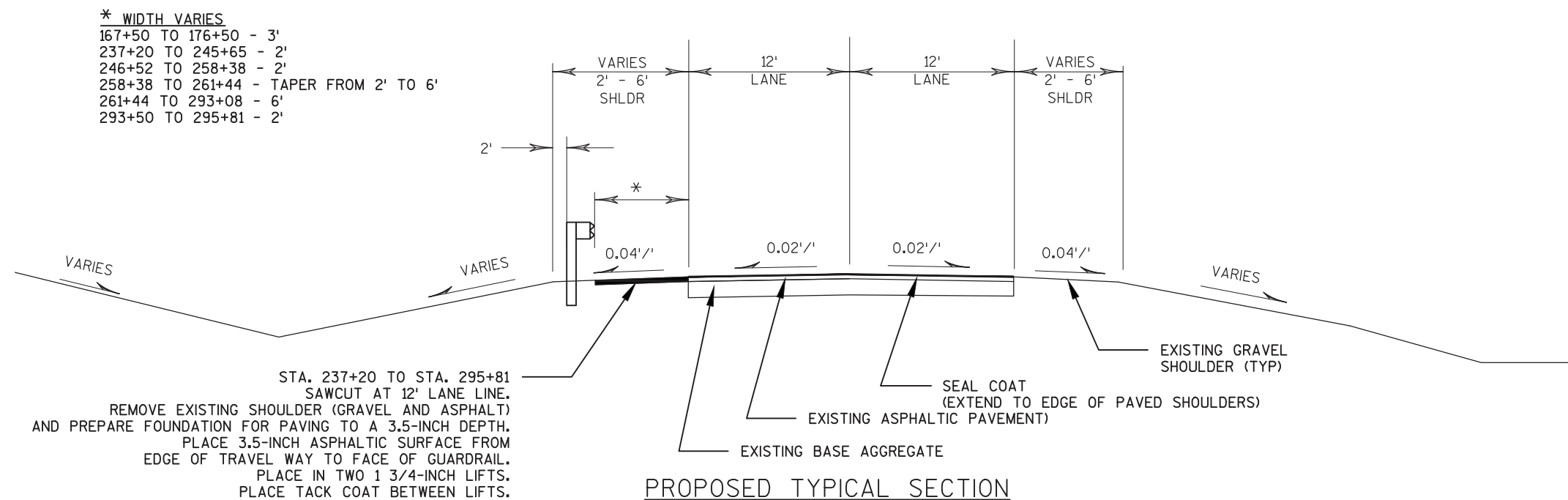
Dial  or (800)242-8511

www.DiggersHotline.com



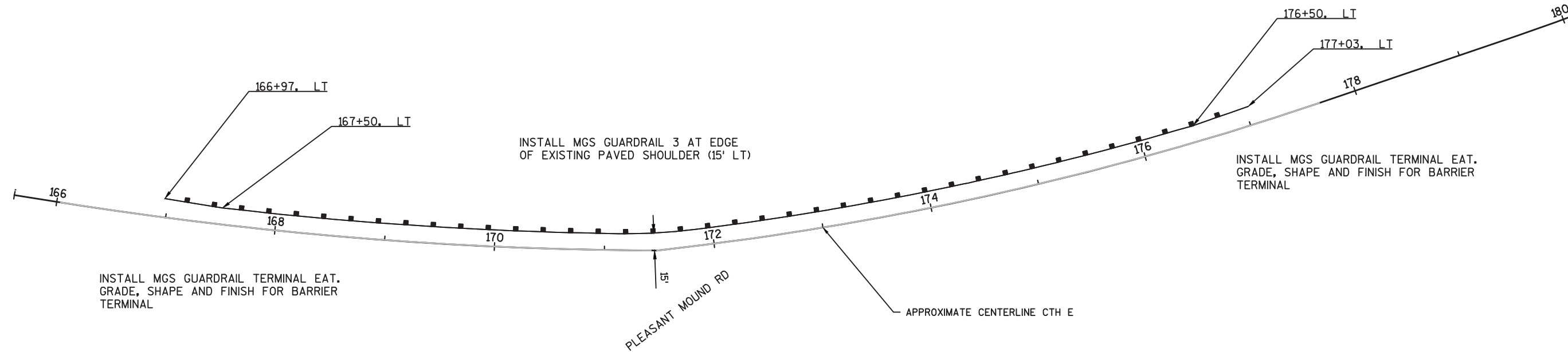
EXISTING TYPICAL SECTION

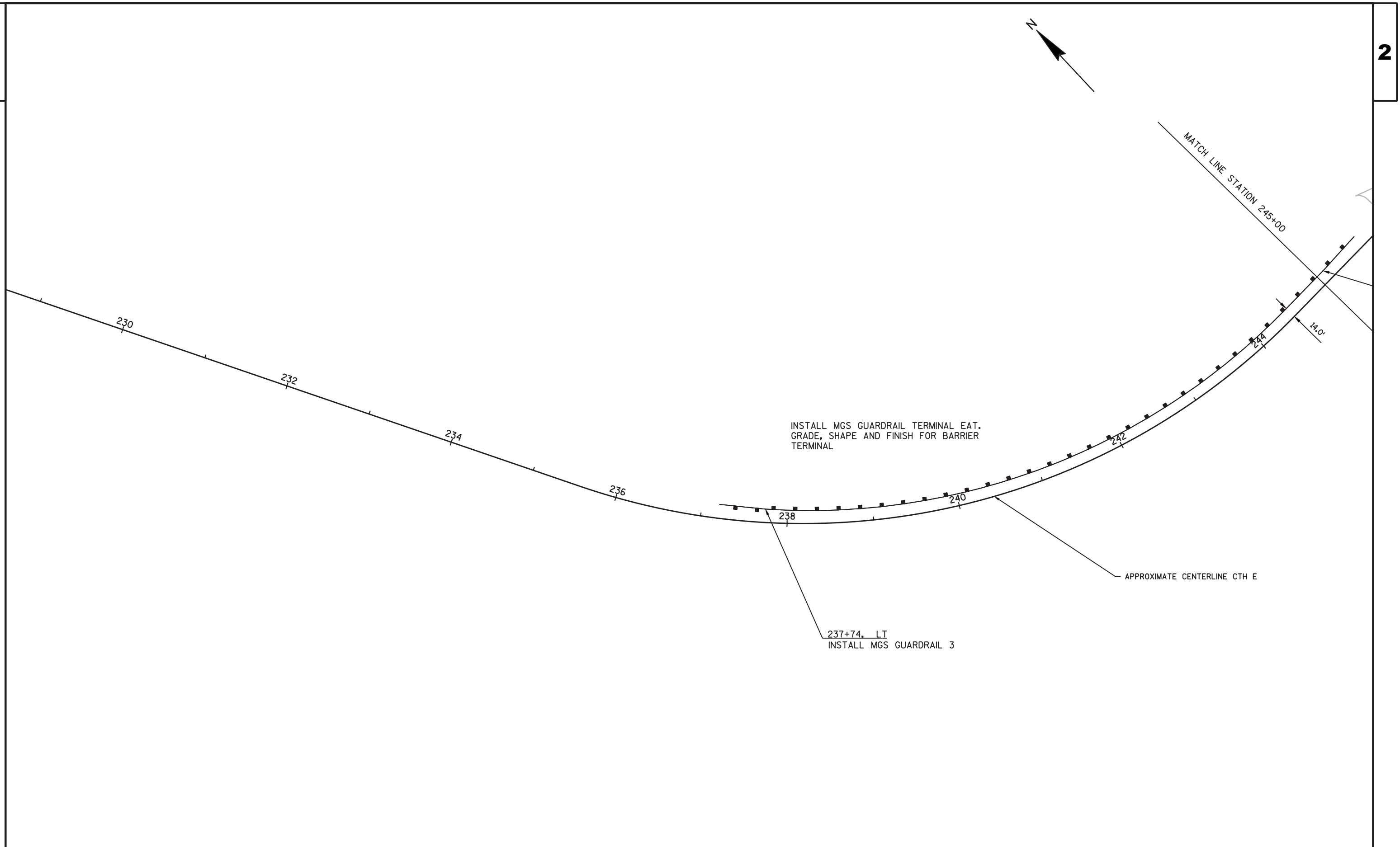
STA 166+00 TO STA 299+75



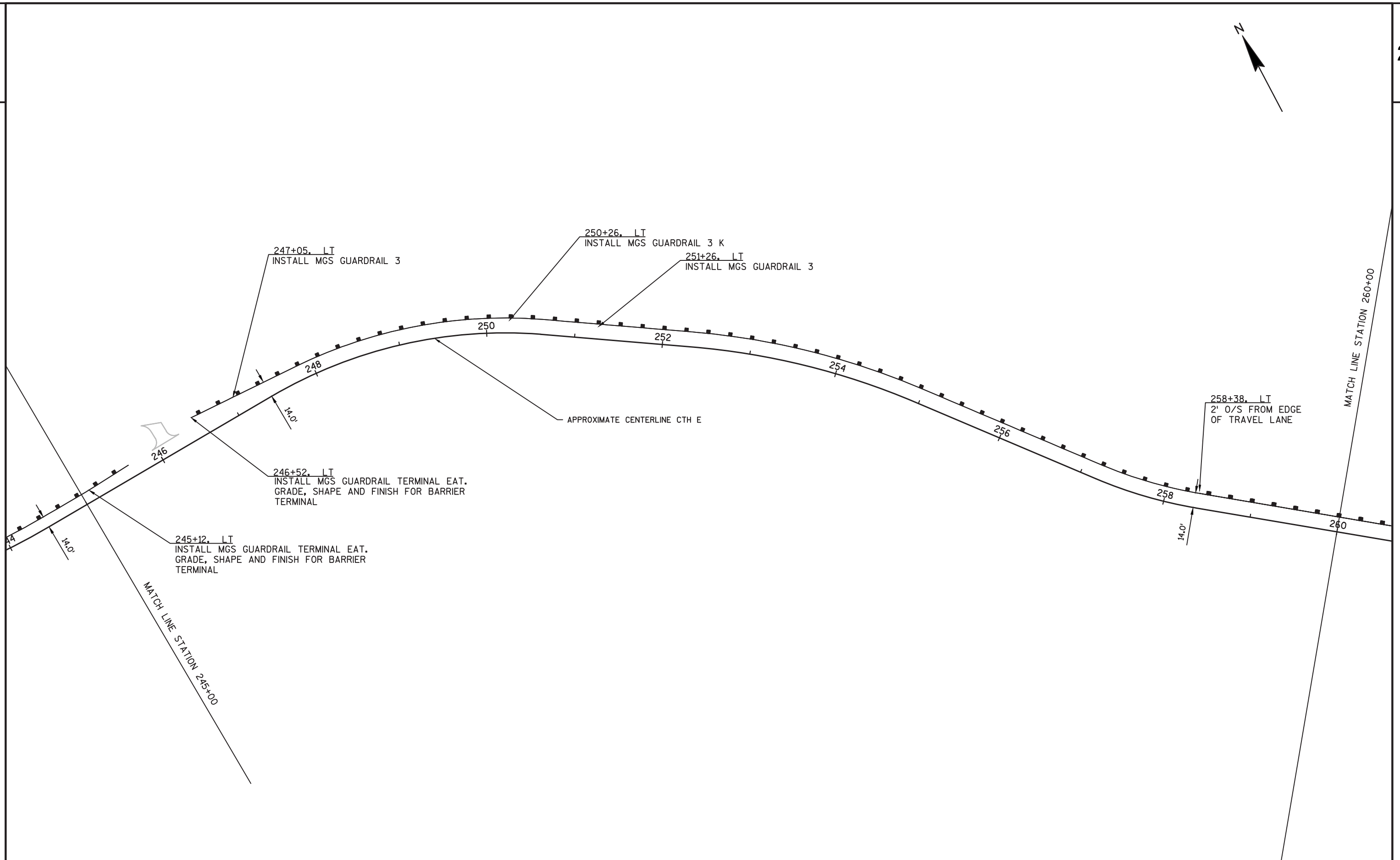
PROPOSED TYPICAL SECTION

STA 166+00 TO STA 299+75

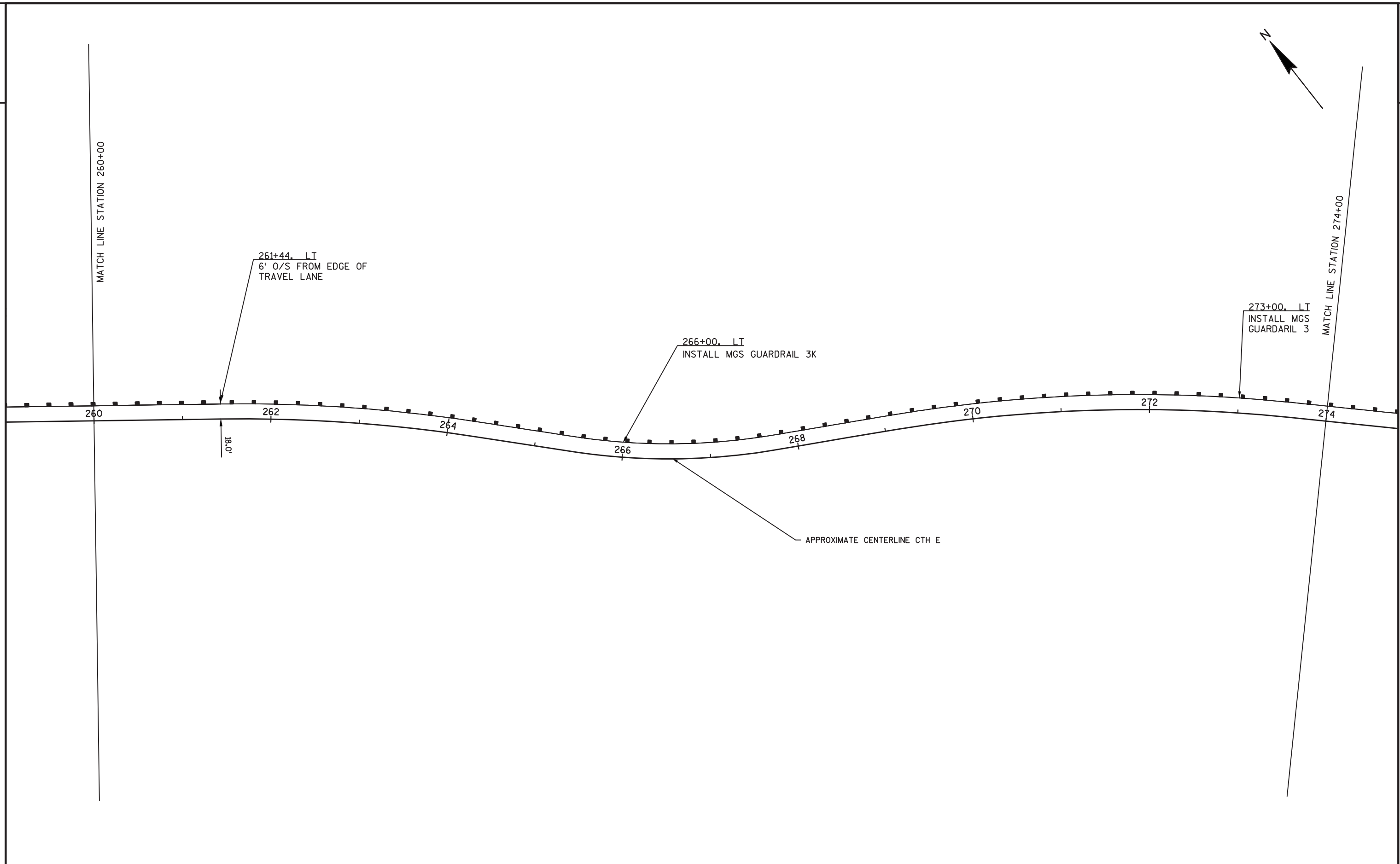




PROJECT NO: 5002-01-73	HWY: CTH E	COUNTY: CRAWFORD	GUARDRAIL DETAIL	SHEET	E
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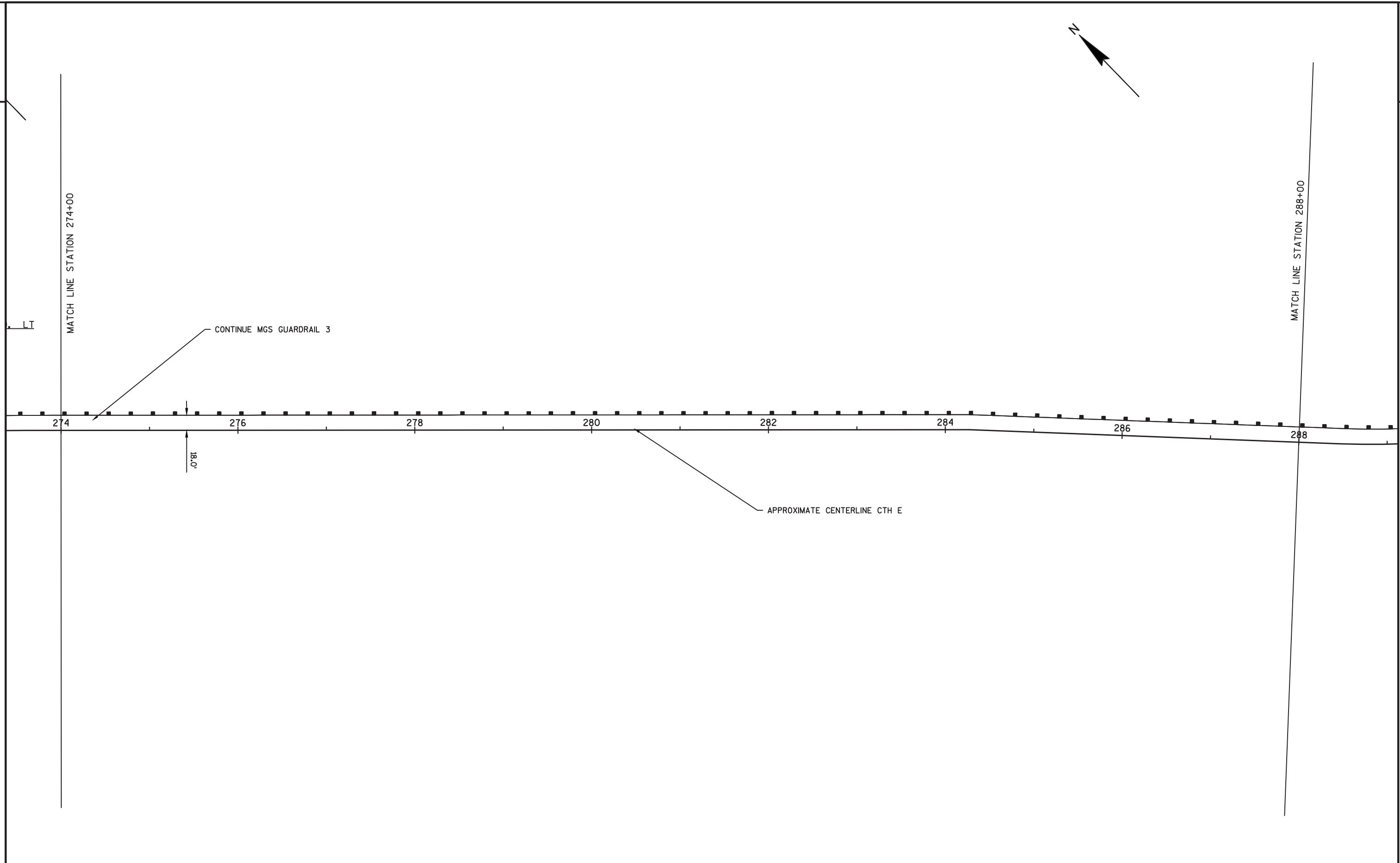
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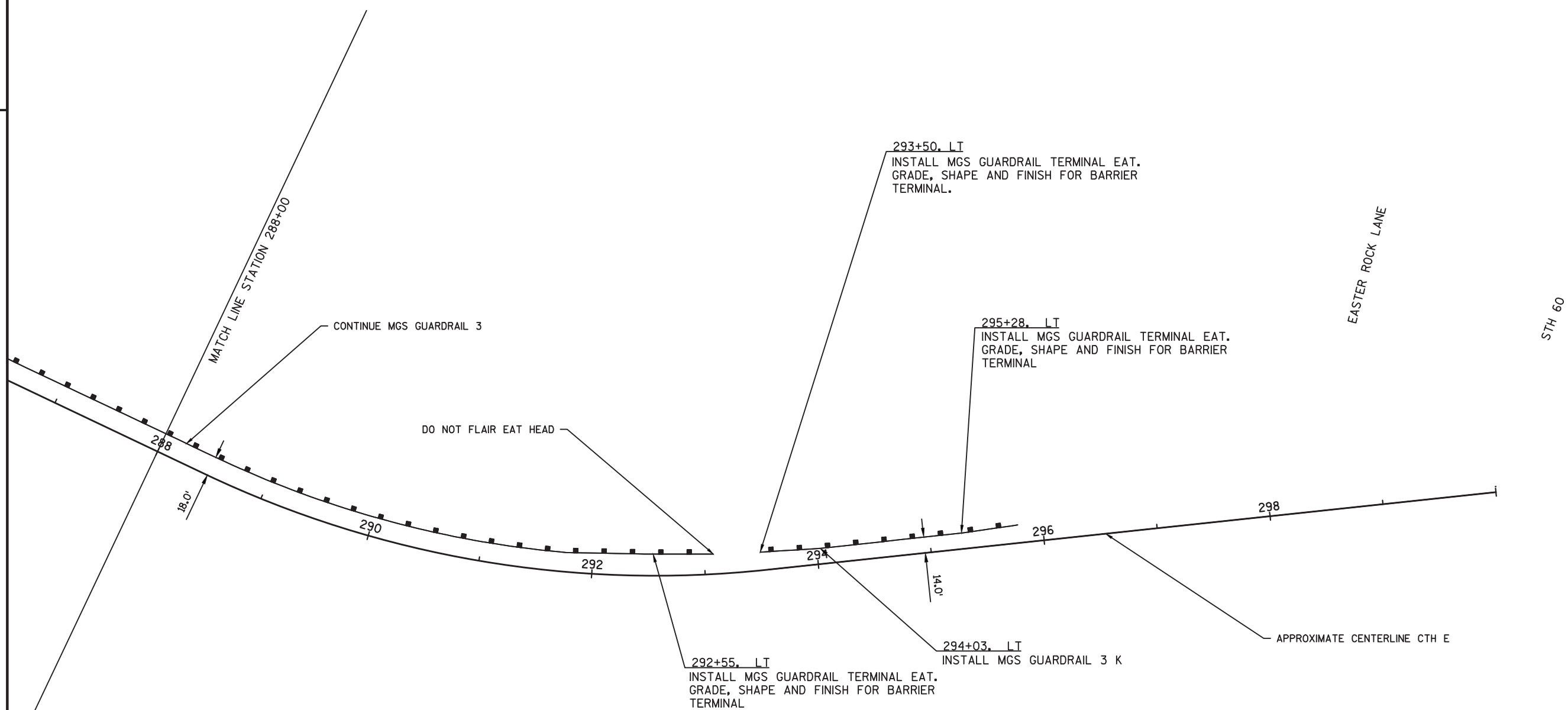
PROJECT NO: 5002-01-73	HWY: CTH E	COUNTY: CRAWFORD	GUARDRAIL DETAIL	SHEET	E
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2

2



PROJECT NO: 5002-01-73	HWY: CTH E	COUNTY: CRAWFORD	GUARDRAIL DETAIL	SHEET	E
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DATE 08OCT15		E S T I M A T E O F Q U A N T I T I E S			
LINE					5002-01-73
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	205.0100	Excavation Common **P**	CY	21.000	21.000
0020	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	59.000	59.000
0030	213.0100	Finishing Roadway (project) 01. 5002-01-73	EACH	1.000	1.000
0040	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	20.000	20.000
0050	305.0500	Shaping Shoulders	STA	59.000	59.000
0060	455.0505	Asphaltic Material Seal Coat	GAL	14,270.000	14,270.000
0070	455.0605	Tack Coat	GAL	100.000	100.000
0080	465.0105	Asphaltic Surface	TON	555.000	555.000
0090	475.0105	Seal Coat	TON	700.000	700.000
0100	614.0010	Barrier System Grading Shaping Finishing	EACH	8.000	8.000
0110	614.0920	Salvaged Rail	LF	3,100.000	3,100.000
0120	614.0925	Salvaged Guardrail End Treatments	EACH	4.000	4.000
0130	614.2300	MGS Guardrail 3	LF	5,388.000	5,388.000
0140	614.2330	MGS Guardrail 3 K	LF	925.000	925.000
0150	614.2610	MGS Guardrail Terminal EAT	EACH	8.000	8.000
0160	619.1000	Mobilization	EACH	1.000	1.000
0170	624.0100	Water	MGAL	55.000	55.000
0180	625.0100	Topsoil **P**	SY	45.000	45.000
0190	627.0200	Mulching **P**	SY	45.000	45.000
0200	628.1504	Silt Fence	LF	1,200.000	1,200.000
0210	628.1520	Silt Fence Maintenance	LF	1,200.000	1,200.000
0220	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0230	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0240	629.0210	Fertilizer Type B **P**	CWT	0.100	0.100
0250	630.0120	Seeding Mixture No. 20 **P**	LB	2.000	2.000
0260	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	8.000	8.000
0270	637.2230	Signs Type II Reflective F	SF	68.000	68.000
0280	638.2602	Removing Signs Type II	EACH	12.000	12.000
0290	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0300	642.5001	Field Office Type B	EACH	1.000	1.000
0310	643.0100	Traffic Control (project) 01. 5002-01-73	EACH	1.000	1.000
0320	646.0106	Pavement Marking Epoxy 4-Inch	LF	53,550.000	53,550.000
0330	647.0556	Pavement Marking Stop Line Epoxy 12-Inch	LF	110.000	110.000
0340	649.0402	Temporary Pavement Marking Paint 4-Inch	LF	2,136.000	2,136.000
0350	649.2100	Temporary Raised Pavement Markers	EACH	132.000	132.000
0360	650.8000	Construction Staking Resurfacing Reference	LF	13,375.000	13,375.000
0370	650.9910	Construction Staking Supplemental Control (project) 01. 5002-01-73	LS	1.000	1.000
0380	690.0150	Sawing Asphalt	LF	5,903.000	5,903.000
0390	SPV.0125	Special 01. Prepare Existing Pavement for Asphaltic Seal Coat with Crack Filling	MI	2.420	2.420
0400	SPV.0125	Special 02. Prepare Existing Pavement for Asphaltic Seal Coat with Rout and Seal	MI	2.420	2.420

From/To Station	Location	Common Excavation (1)	* (Item # 205.0100)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Borrow	Comment:
		Cut (2)	EBS Excavation (3)				Factor 1.25				
246+12	Driveway	21	0	5	16	4	6	11	10	0	
		21	0	5	16	4	6	11	10	0	
Total Common Exc		21									

- 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.
- 3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusable Pavement Material
- 13) Expanded Fill. Factor = 1.25
- Depending on selections:
- Or

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor

Or

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor

Or

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor

Or

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor
- 14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BASE AGGREGATE, SHAPING SHOULDERS, PREPARATION OF FOUNDATION FOR ASPHALTIC SHOULDER AND ASPHALTIC SURFACE

		211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH	305.0500 SHAPING SHOULDERS	455.0605 TACK COAT	465.0105 ASPHALTIC SURFACE	624.0100 WATER		
STATION		STA	TONS	STA	GAL	TONS	MGAL	REMARKS	
237+20 - 260+00		23	---	23	18	100	20	SHOULDER	
260+00 - 293+00		33	---	33	78	424	30	SHOULDER	
293+00 - 296+00		3	---	3	4	20	2	SHOULDER	
246+12		---	20	---	---	11	3	DRIVEWAY	
TOTALS		59	20	59	100	555	55		

SEAL COAT SUMMARY

						455.0505 ASPHALTIC MATERIAL SEAL COAT	475.0105 SEAL COAT		
STATION	STATION	LOCATION	WIDTH	LENGTH		GAL	TONS	REMARKS	
166+00	- 297+70	MAINLINE	22	13170		12233	595	CTH E	
237+20	- 296+00	SHOULDER	VARIES	5880		1373	74		
297+70	- 299+75	WIDENING	VARIES	205		348	16	CTH E	
172+00	SIDE ROAD INTERSECTION		---	---		178	9	PLEASANT MOUNT ROAD	
298+60	SIDE ROAD INTERSECTION		---	---		138	6	EAST ROCK LANE	
TOTALS						14270	700		

BARRIER SYSTEM GRADING, SHAPING & FINISHING

		614.0010 BARRIER SYSTEM GRADING, SHAPING & EACH	** BORROW CY	** TOPSOIL SY	** MULCHING SY	** FERTILIZER TYPE B CWT	** SEEDING NO 20 LB
STATION	LOCATION						
167+50	LT	1	10	80	80	0.009	0.37
176+50	LT	1	10	80	80	0.009	0.37
237+20	LT	1	10	125	125	0.009	0.37
245+12	LT	1	10	160	160	0.012	0.48
246+52	LT	1	10	80	80	0.006	0.24
292+55	LT	1	10	40	40	0.003	0.12
293+50	LT	1	10	40	40	0.003	0.11
294+03	LT	1	10	35	35	0.002	0.11
TOTALS		8	80	640	640	0.053	2.17

** FOR INFORMATION ONLY

SALVAGED BEAM GUARD ITEMS

				614.0920 SALVAGED RAIL LF	614.0925 SALVAGED GUARDRAIL END TREATMENTS LF
STATION	LOCATION				
240+21	243+45	LT		325	2
265+03	292+82	LT		2775	2
TOTALS				3100	4

BEAM GUARD ITEMS

				614.2300 MGS GUARDRAIL 3 LF	614.2330 MGS GUARDRAIL 3K LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
STATION	LOCATION					
166+97	167+50	LT		---	---	1
167+50	176+50	LT		900	---	---
176+50	177+03	LT		---	---	1
237+20	237+74	LT		---	---	1
237+74	245+12	LT		738	---	---
245+12	245+65	LT		---	---	1
246+52	247+05	LT		---	---	1
247+05	250+26	LT		325	---	---
250+26	251+26	LT		---	100	---
251+26	266+00	LT		1475	---	---
266+00	273+00	LT		---	700	---
273+00	293+08	LT		1950	---	1
293+50	294+03	LT		---	---	1
294+03	295+28	LT		---	125	---
295+28	295+81	LT		---	---	1
TOTALS				5388	925	8

* = PAY PLAN QUANTITY ITEM.

RESTORATION ITEMS

	625.0100 TOPSOILS	627.0200 MULCH	629.0210 FERTILIZER TYPE B	630.0120 SEED MIXTURE NO. 20 LBS	REMARKS
STATION	SY	SY	CWT		
246+12	45	45	0.1	2	DRIVEWAY
TOTALS	45 *	45 *	0.1 *	2 *	

EROSION CONTROL ITEMS

		628.1504 SILT FENCE	628.1520 SILT FENCE MAINTENANCE	
STATION	LOCATION	LF	LF	REMARKS
166+50	LT	150	150	BARRIER SYSTEM GRADING, SHAPING & FINISHING
179+50	LT	150	150	BARRIER SYSTEM GRADING, SHAPING & FINISHING
237+20	LT	150	150	BARRIER SYSTEM GRADING, SHAPING & FINISHING
245+12	LT	150	150	BARRIER SYSTEM GRADING, SHAPING & FINISHING
246+52	LT	150	150	BARRIER SYSTEM GRADING, SHAPING & FINISHING
292+55	LT	150	150	BARRIER SYSTEM GRADING, SHAPING & FINISHING
293+50	LT	150	150	BARRIER SYSTEM GRADING, SHAPING & FINISHING
295+28	LT	150	150	BARRIER SYSTEM GRADING, SHAPING & FINISHING
TOTALS		1200	1200	

REMOVING SIGNS AND SMALL SIGN SUPPORTS AND PERMANENT SIGNING AND WOOD POSTS

STATION	LT/RT	CODE	DESCRIPTION	ITEM NO. 638.2602 REMOVING SIGNS TYPE II EACH	ITEM NO. 638.3000 REMOVING SMALL SIGN SUPPORTS EACH	SIZE			ITEM NO. 637.2230 SIGNS TYPE II REFLECTIVE F S.F.	ITEM NO. 634.0616 WOOD POSTS 4X6-INCH 16-FT EACH	REMARKS
						WIDTH IN	X	HEIGHT IN			
166+00	RT	W1-2L W13-1	45 MPH	2	1	30 18	X X	30 18	6.25 2.25	1 ---	MOUNT MUNDER W1-2L
192+25	LT	W1-2R W13-1	45 MPH	2	1	30 18	X X	30 18	6.25 2.25	1 ---	MOUNT MUNDER W1-2R
208+00	RT	W1-2R W13-1	40 MPH	---	---	30 18	X X	30 18	6.25 2.25	1 ---	MOUNT UNDER W1-2R
228+50	LT	W1-2L W13-1	40 MPH	2	1	30 18	X X	30 18	6.25 2.25	1 ---	MOUNT UNDER W1-2L
231+50	RT			2	1				---	---	
244+00	RT	W1-5L W13-1	35 MPH	---	---	30 18	X X	30 18	6.25 2.25	1 ---	MOUNT UNDER W1-5L
259+75	RT	W1-2L W13-1	25 MPH	2	1	30 18	X X	30 18	6.25 2.25	1 ---	MOUNT UNDER W1-2L
261+00	LT	W1-5R W13-1	35	---	---	30 18	X X	30 18	6.25 2.25	1 ---	MOUNT UNDER W1-5R
270+00	LT	W1-2R W13-1	25	---	---	30 18	X X	30 18	6.25 2.25	1 ---	MOUNT UNDER W1-5R
275+00	LT			2	1				0.00	0	MOUNT UNDER W1-5R
				12	6				68.00	8.00	

PAVEMENT MARKING ITEMS

		646.0106 PAVEMENT MARKING EPOXY 4-INCH	647.0566 PAVEMENT MARKING STOP LINE EPOXY 12-INCH	649.0110 TEMPORARY PAVEMENT MARKING 4-INCH PAINT	649.2100 TEMPORARY RAISED PAVEMENT MARKERS	
STATION		YELLOW LF	WHITE LF	LF	EACH	REMARKS
166+00	299+50	26700	26700	---	2136	132 CTH E
299+50		---	---	110	---	CTH E @ STH 60
298+60		150	---	---	---	EAST ROCK LANE
TOTALS		26850	26700	110	2136	132
		53550				

CONSTRUCTION STAKING

ITEM NO.	ITEM NAME	QUANTITY
650.8000	CONSTRUCTION STAKING RESURFACING REFERENCE	13,375 LF
650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL PROJECT ID 5002-01-73	1 EACH

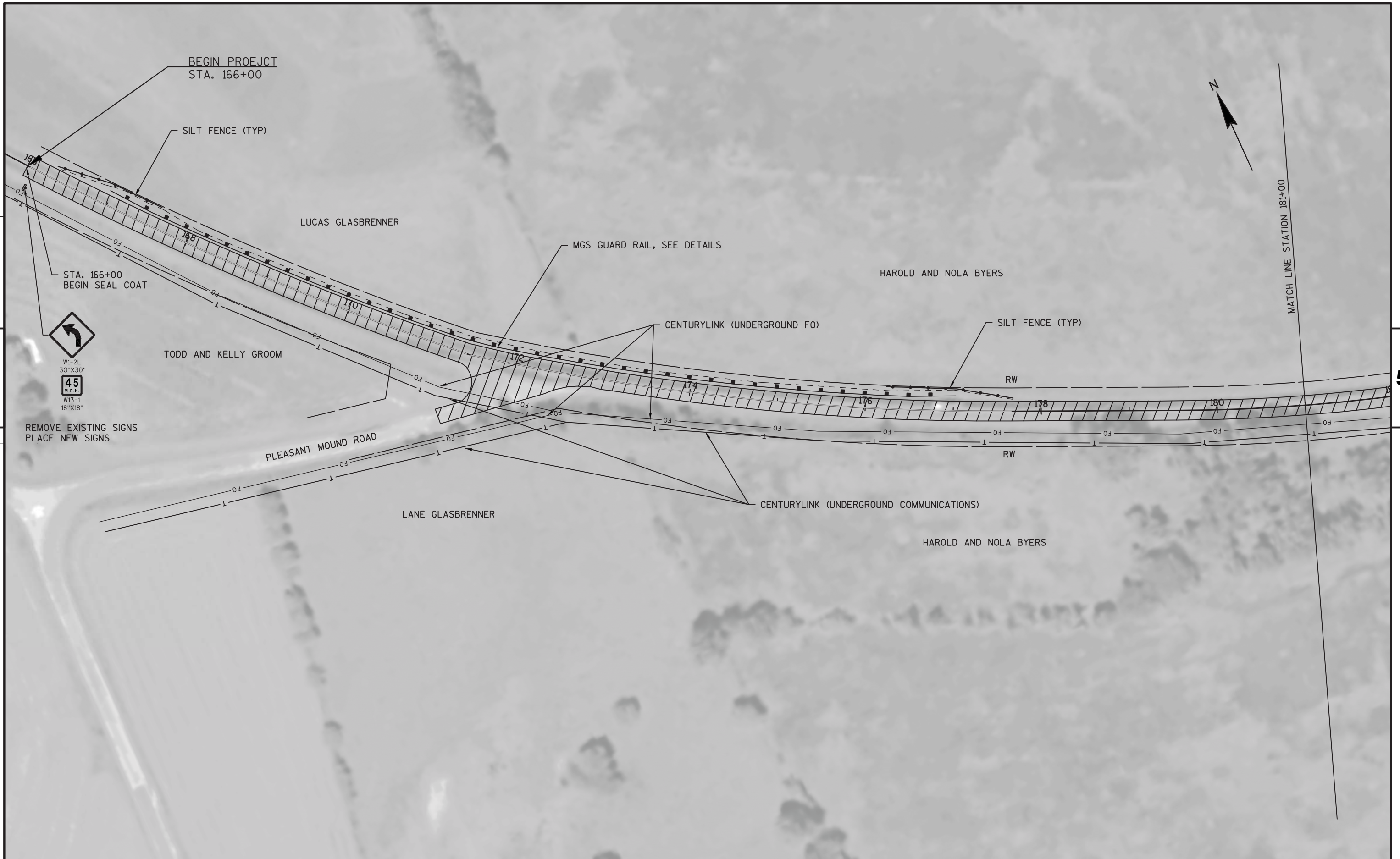
SAVING ASPHALT - 690.0150

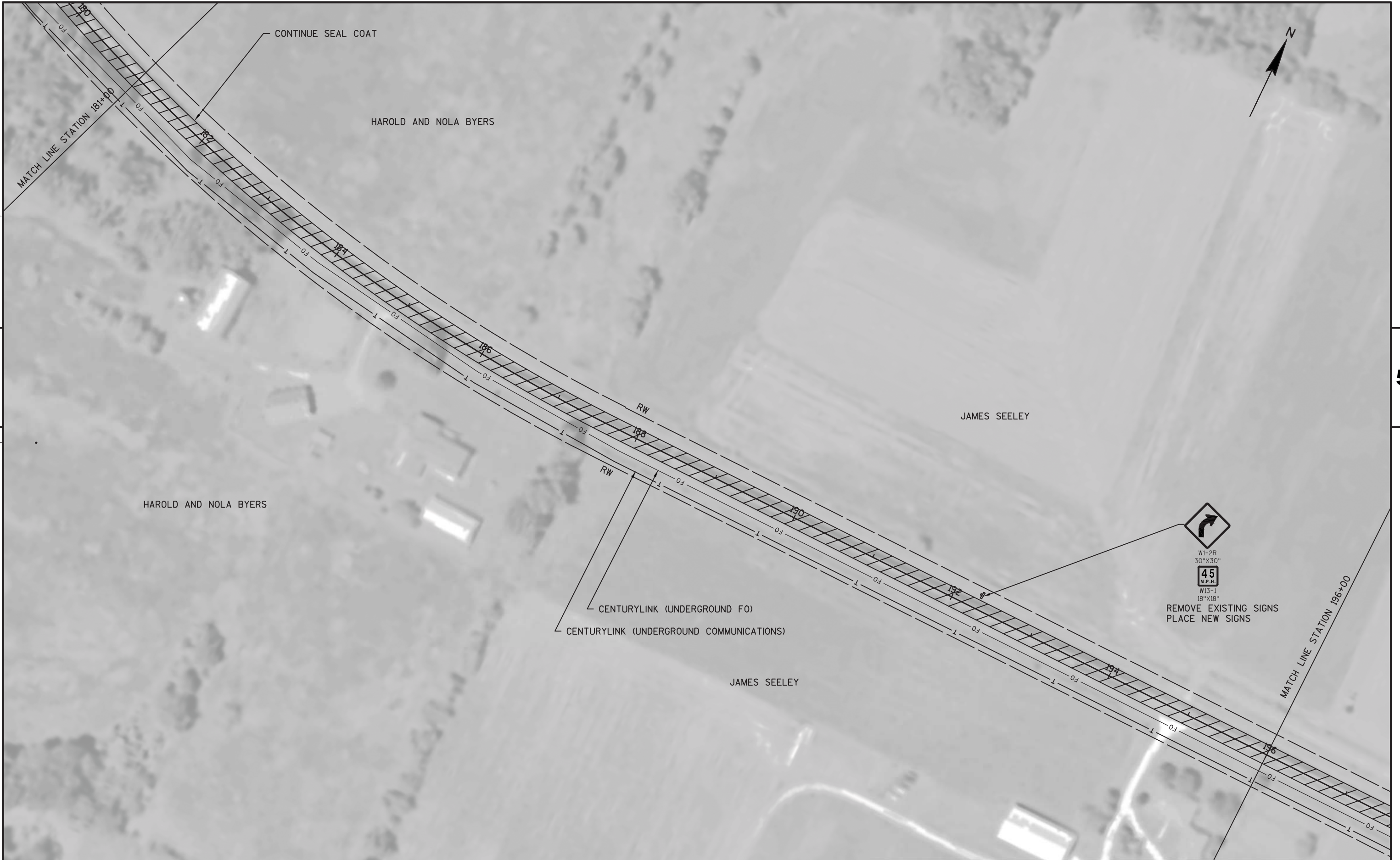
STATION	LF	REMARKS
237+20 - 296+00	5880	LANE EDGE
246+12	23	DRIVEWAY
TOTALS	5903	

PREPARE EXISTING PAVEMENT FOR ASPHALTIC SEAL COAT WITH CRACK FILLING, ITEM SPV.0125.01 AND PREPARE EXISTING PAVEMENT FOR ASPHALTIC SEAL COAT WITH ROUT AND SEAL, ITEM SPV.01250.02

ITEM NO.	ITEM NAME	LOCATION	MILES
SPV.0125.01	PREPARE EXISTING PAVEMENT FOR ASPHALTIC SEAL COAT WITH CRACK FILLING	CTH E MAINLINE	2.42
SPV.0125.02	PREPARE EXISTING PAVEMENT FOR ASPHALTIC SEAL COAT WITH ROUT AND SEAL	CTH E MAINLINE	2.42

* = PAY PLAN QUANTITY ITEM.





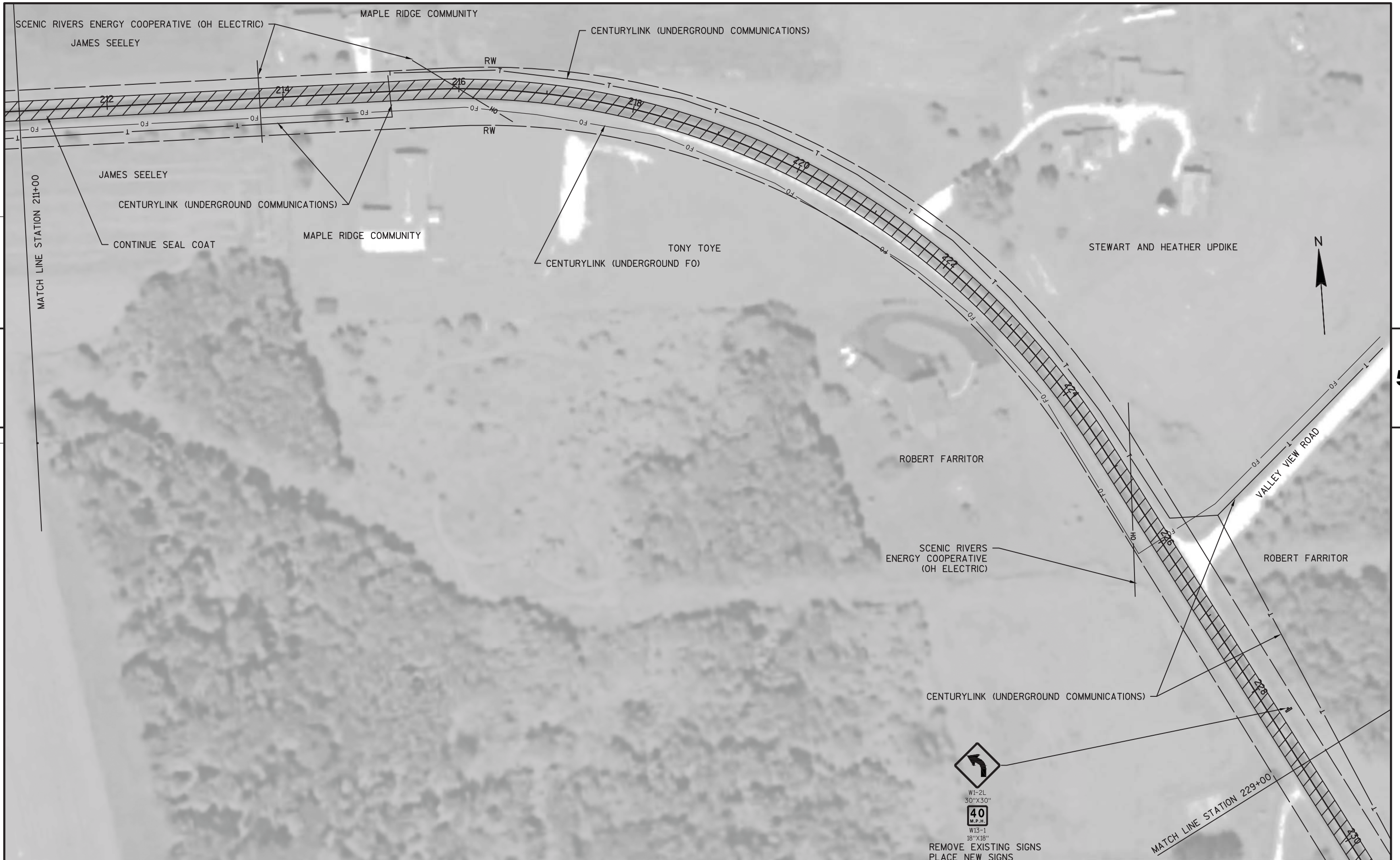
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PROJECT NO: 5002-01-73	HWY: CTH E	COUNTY: CRAWFORD	PLAN	SHEET	E
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PROJECT NO: 5002-01-73	HWY: CTH E	COUNTY: CRAWFORD	PLAN	SHEET	E
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PROJECT NO: 5002-01-73	HWY: CTH E	COUNTY: CRAWFORD	PLAN	SHEET	E
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FILE NAME : L:\PROJECTS\12737\DWG\50020103\SHEETSPLAN\050101_PP.DWG
LAYOUT NAME - SHEET - (4)

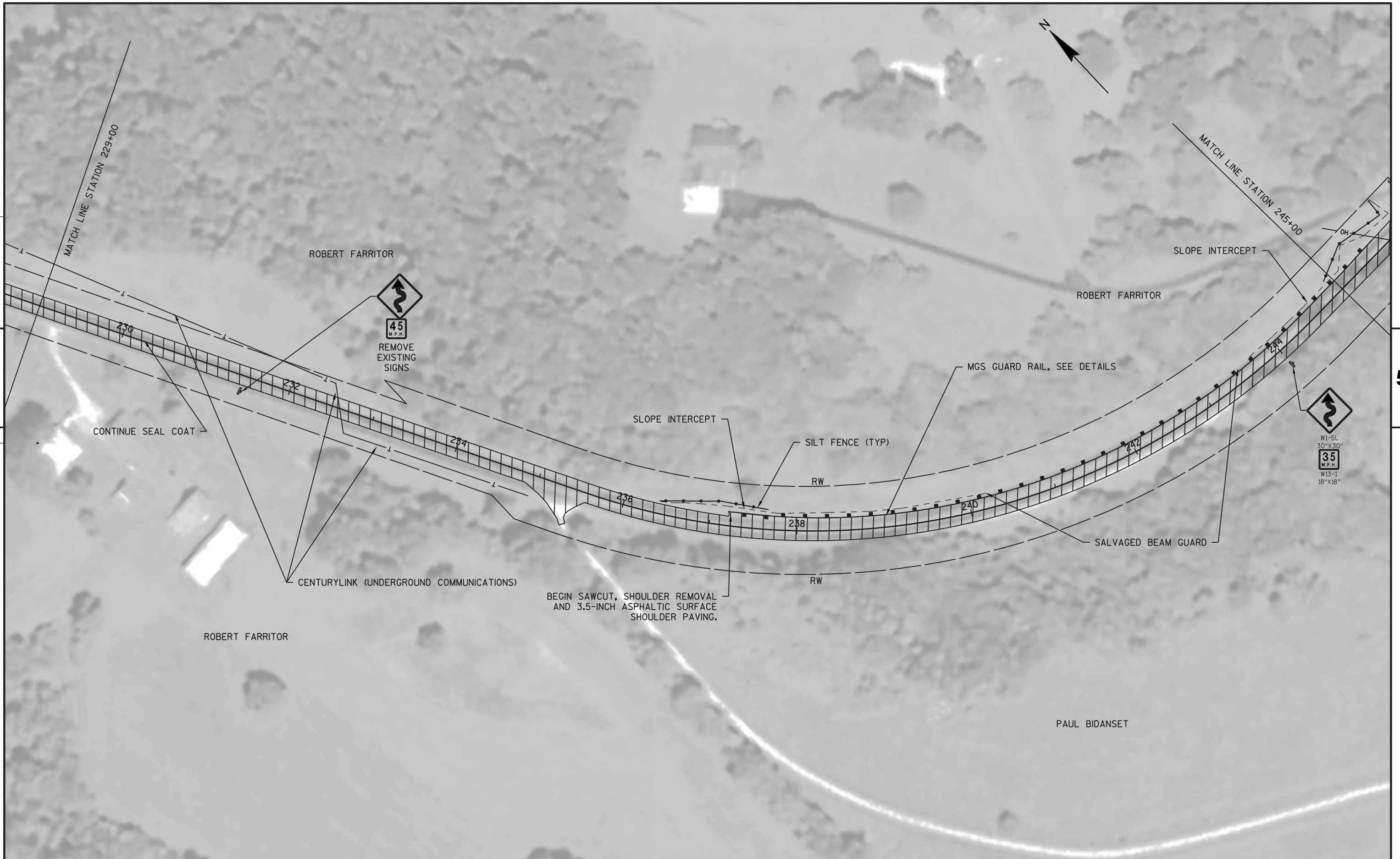
PLOT DATE : 7/29/2015 1:39 PM

PLOT BY : MOYER, TIM

PLOT NAME :

PLOT SCALE : 1:100_XREF

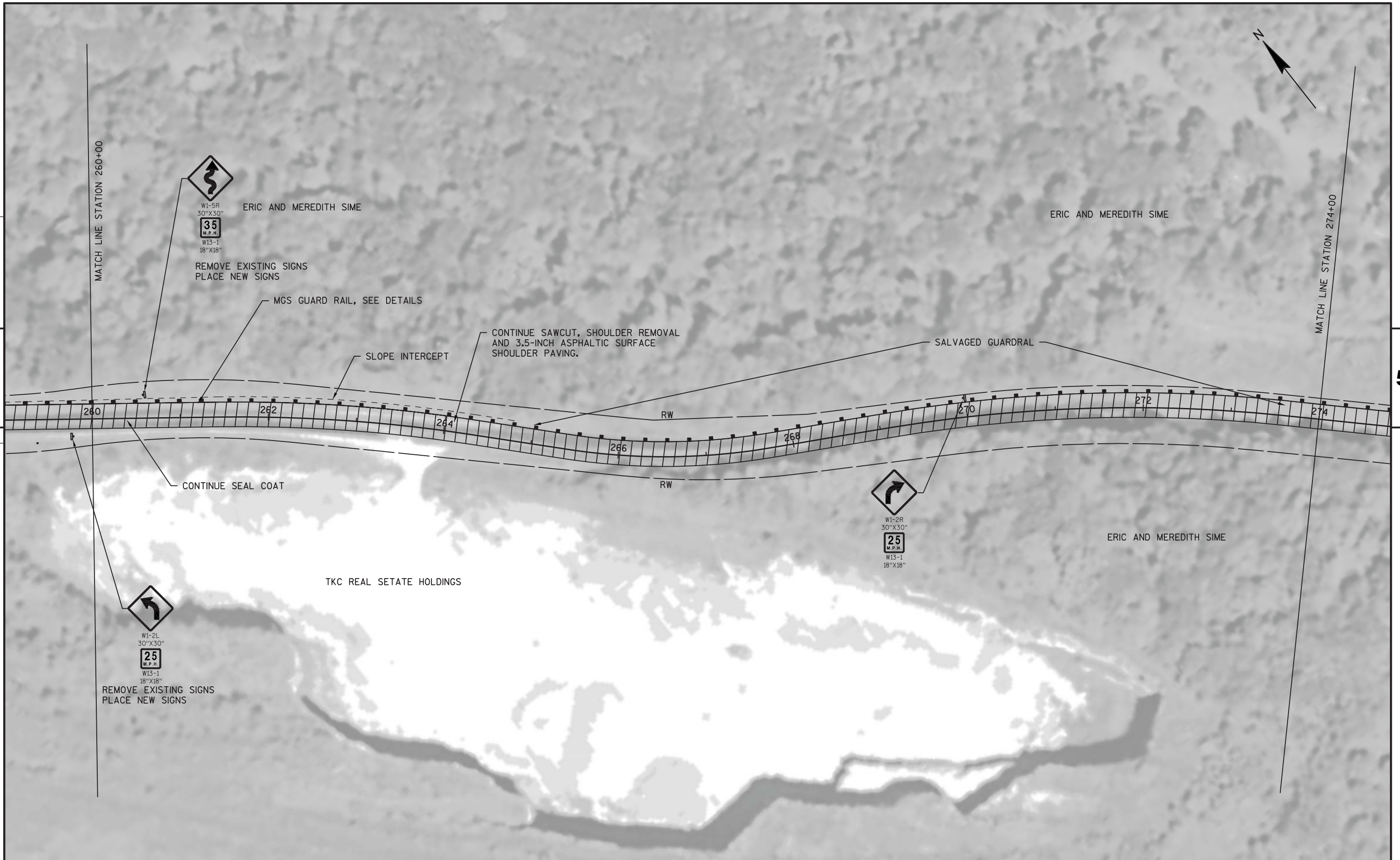
WISDOT/CADDs SHEET 44



PROJECT NO: 5002-01-73	HWY: CTH E	COUNTY: CRAWFORD	PLAN	SHEET	E
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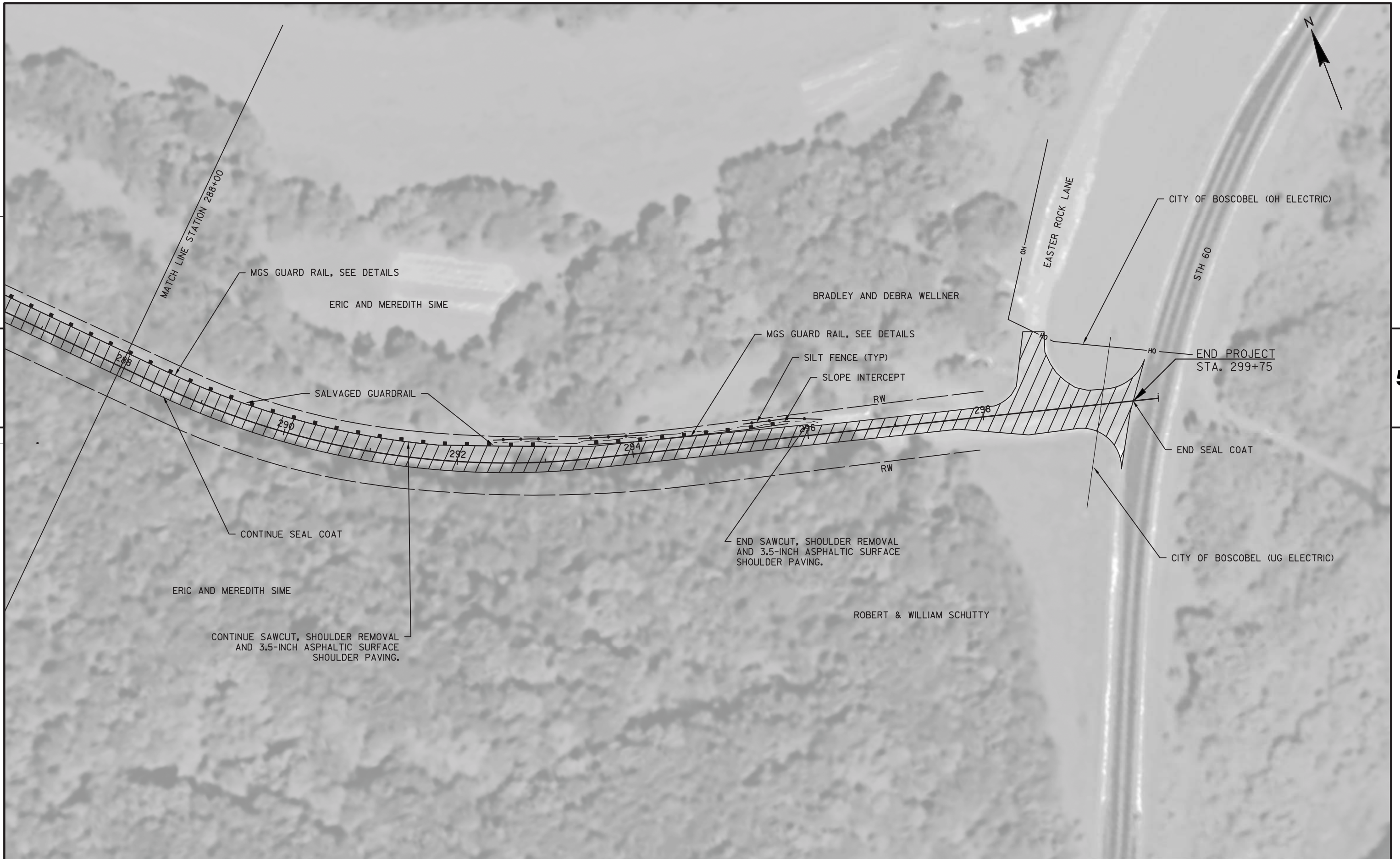
PROJECT NO: 5002-01-73	HWY: CTH E	COUNTY: CRAWFORD	PLAN	SHEET	E
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PROJECT NO: 5002-01-73	HWY: CTH E	COUNTY: CRAWFORD	PLAN	SHEET	E
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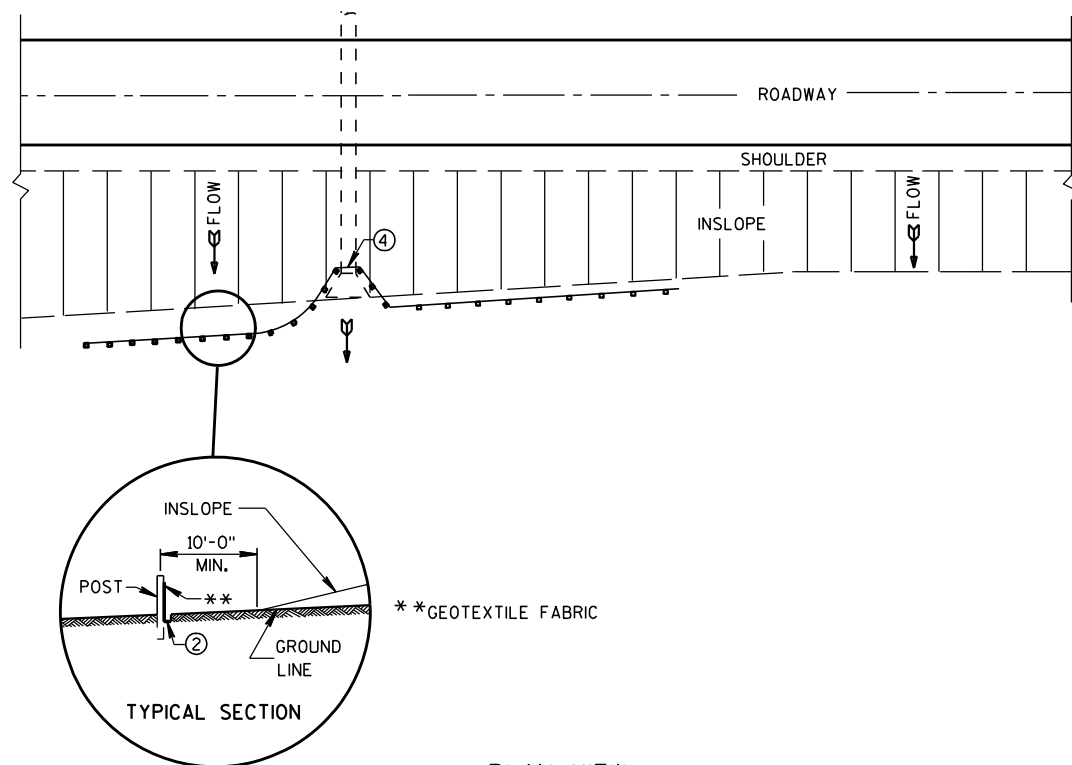
PROJECT NO: 5002-01-73	HWY: CTH E	COUNTY: CRAWFORD	PLAN	SHEET	E
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PROJECT NO: 5002-01-73	HWY: CTH E	COUNTY: CRAWFORD	PLAN	SHEET	E
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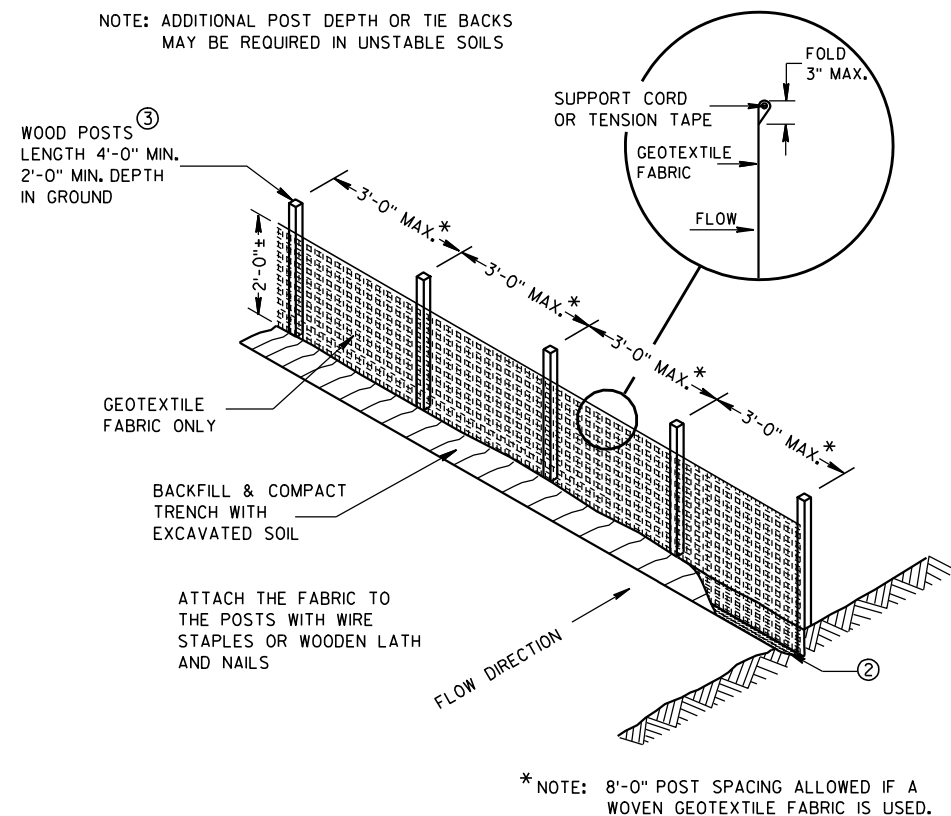
Standard Detail Drawing List

08E09-06	SILT FENCE
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-02A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING

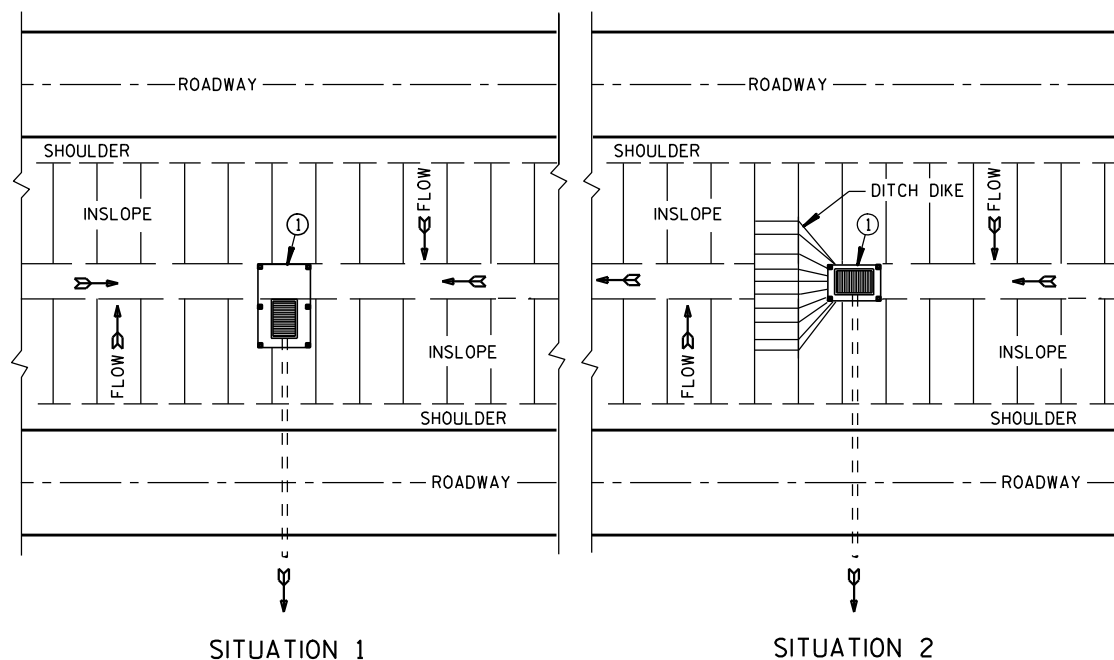


TYPICAL APPLICATION OF SILT FENCE

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

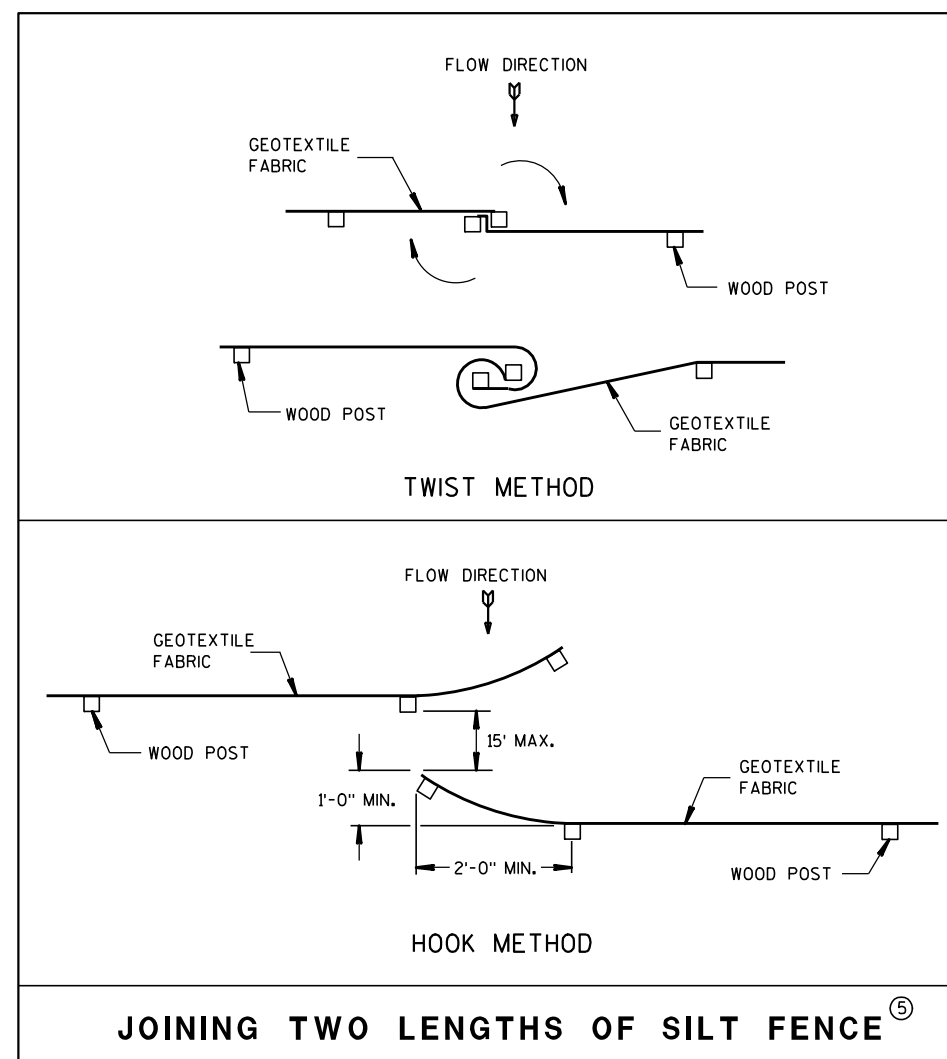


SILT FENCE



PLAN VIEW

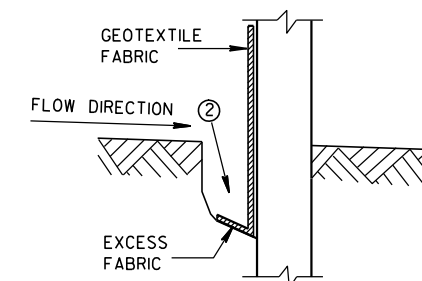
SILT FENCE AT MEDIAN SURFACE DRAINS



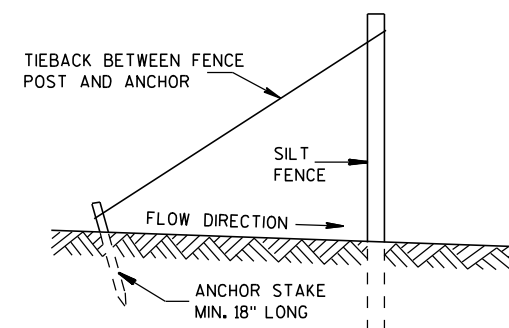
GENERAL NOTES

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

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 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



SILT FENCE TIE BACK (WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05
DATE

FHWA

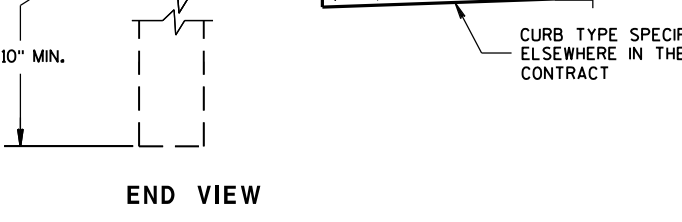
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

6

- S.D.D. 14 B 42-3a**



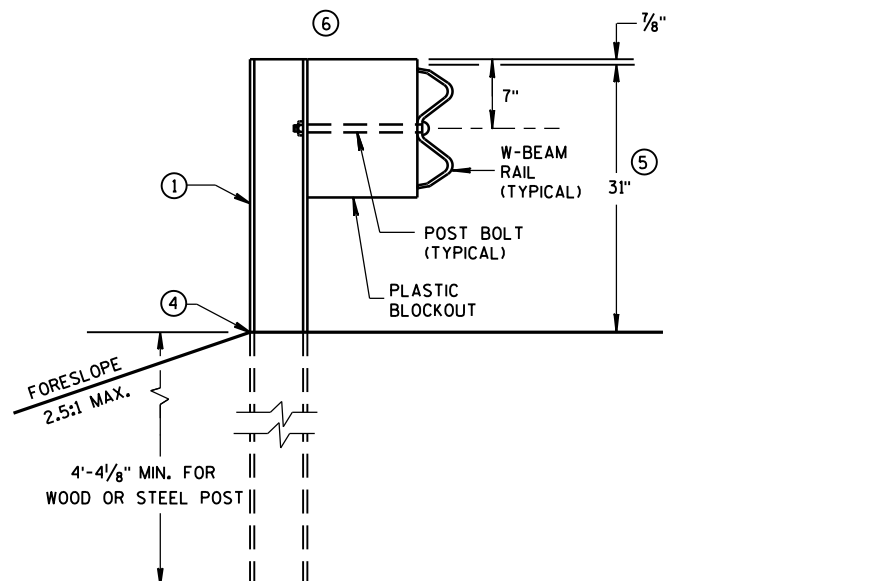
S.D.D. 14 B 42-3a



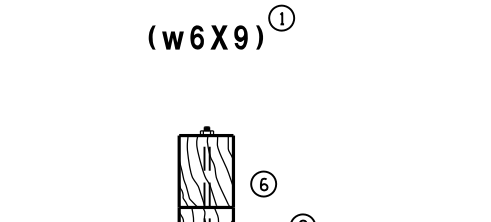
10" MIN.

CURB TYPE SPECIFIED ELSEWHERE IN THE CONTRACT

END VIEW



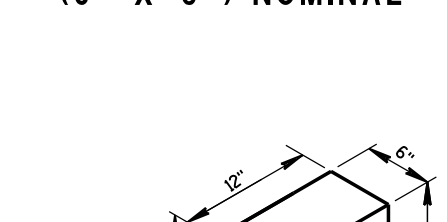
END VIEW



(TYPICAL)

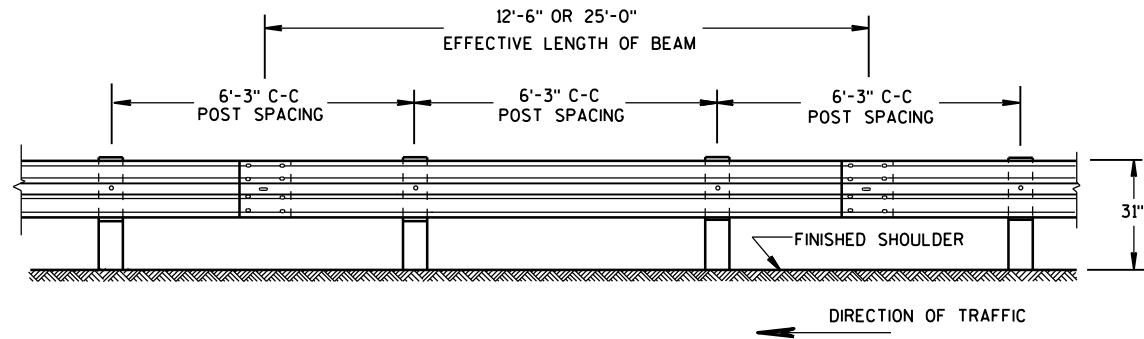


T



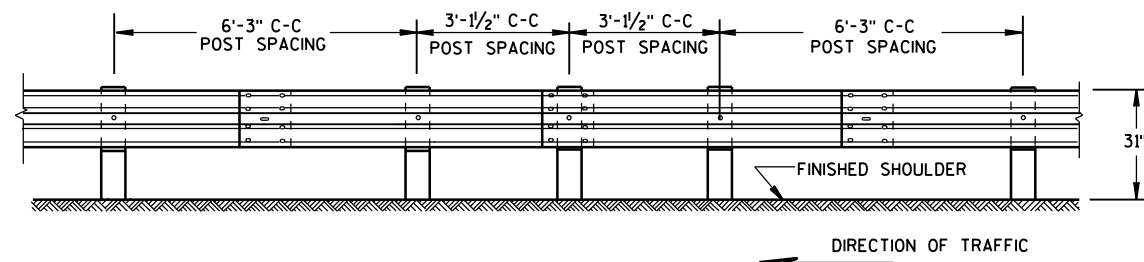
MIDWEST GUARDRAIL
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



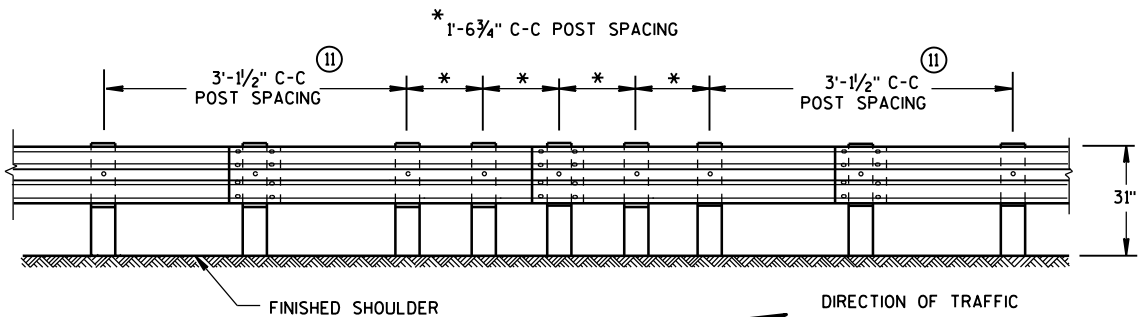
FRONT VIEW

POST SPACING STANDARD INSTALLATION



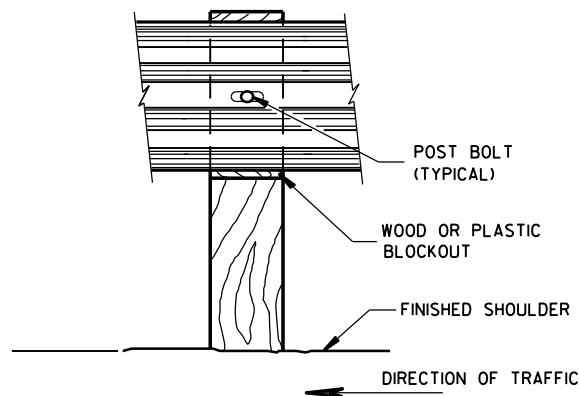
FRONT VIEW

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

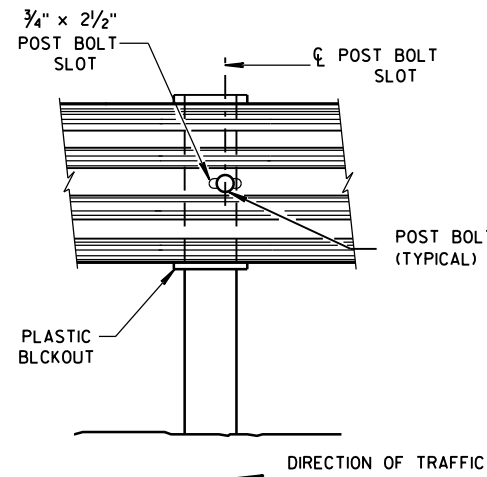


FRONT VIEW

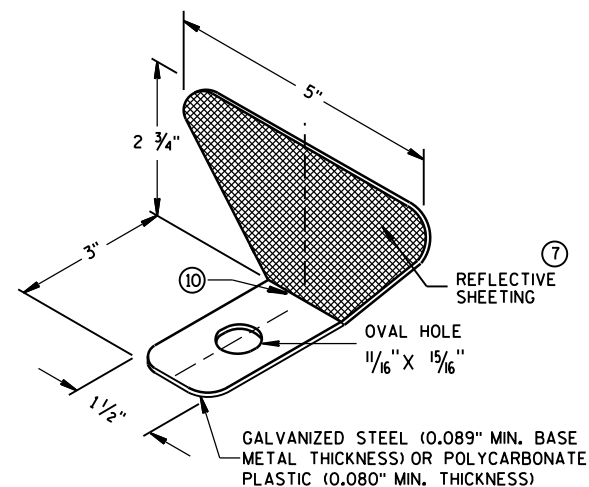
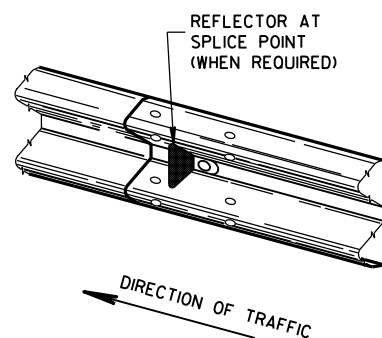
QUARTER POST SPACING (QS)



FRONT VIEW AT WOOD POST



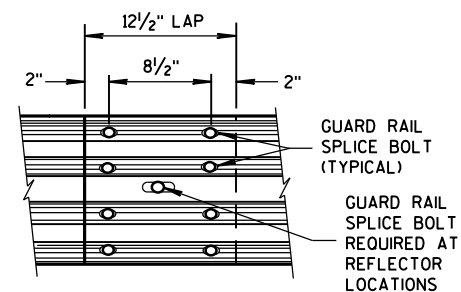
FRONT VIEW AT STEEL POST



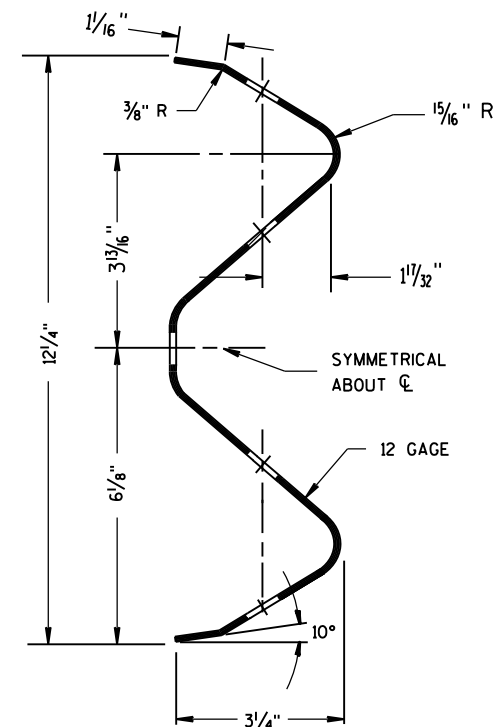
ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
 - ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
 - ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



FRONT VIEW
MID-SPAN BEAM SPLICE



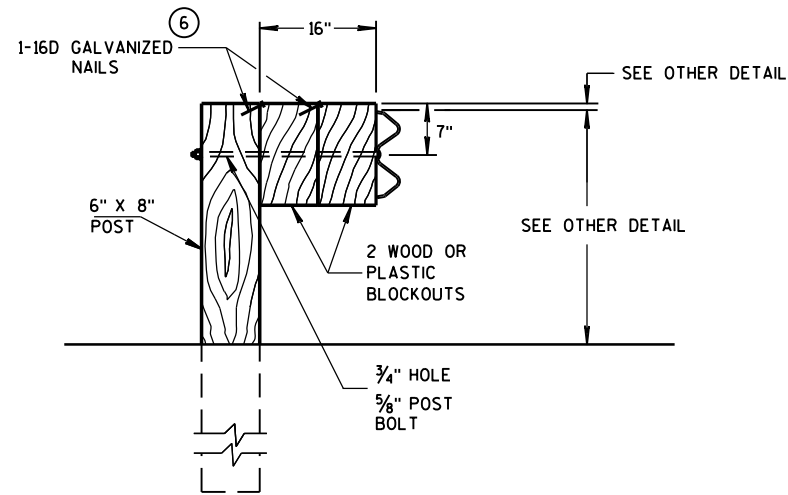
SECTION THRU W-BEAM RAIL

REFLECTOR SPACING

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑩	3
	> 200'	100' C-C	2	

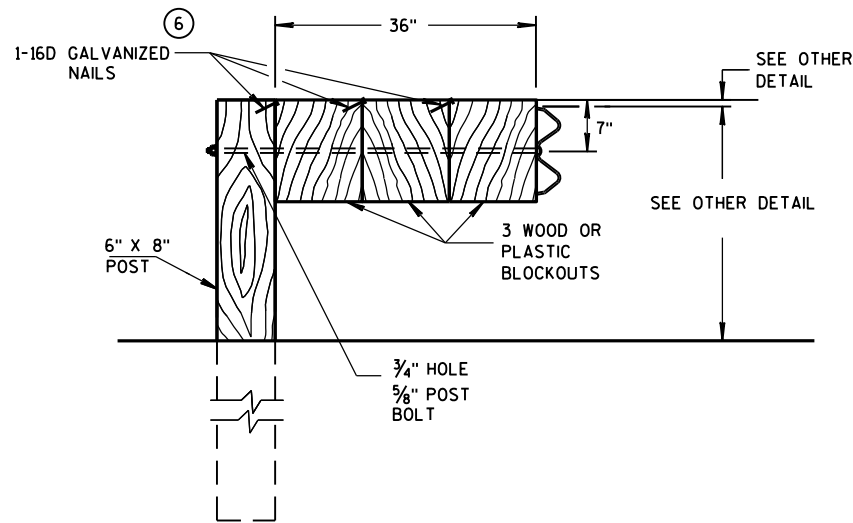
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

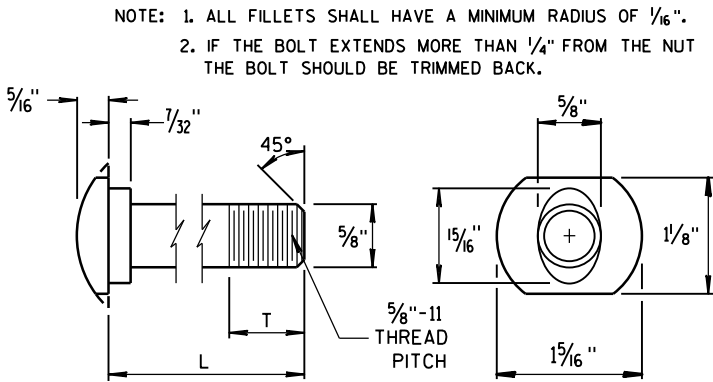
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

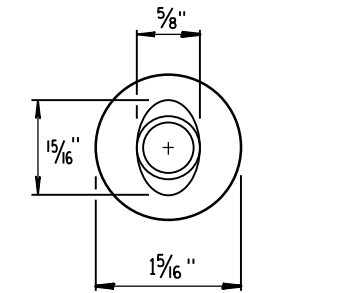
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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

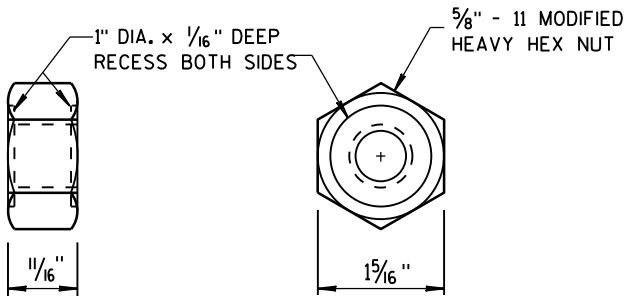


POST BOLT TABLE

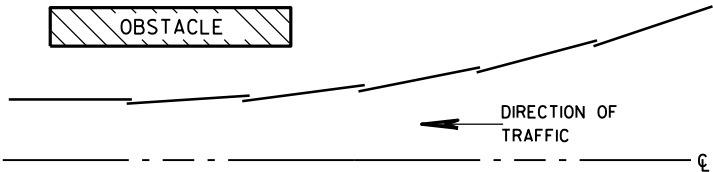
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



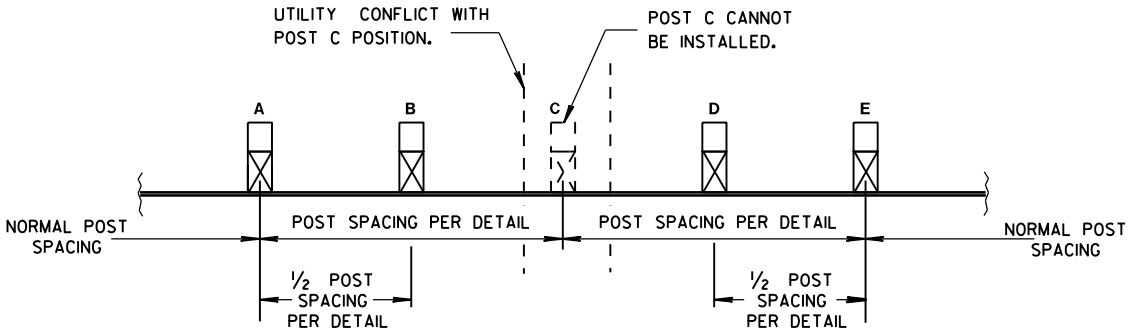
ALTERNATE BOLT HEAD



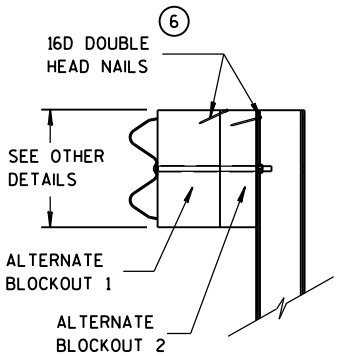
POST BOLT
AND RECESS NUT



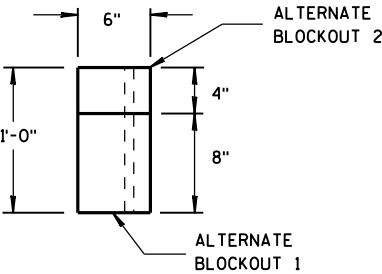
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

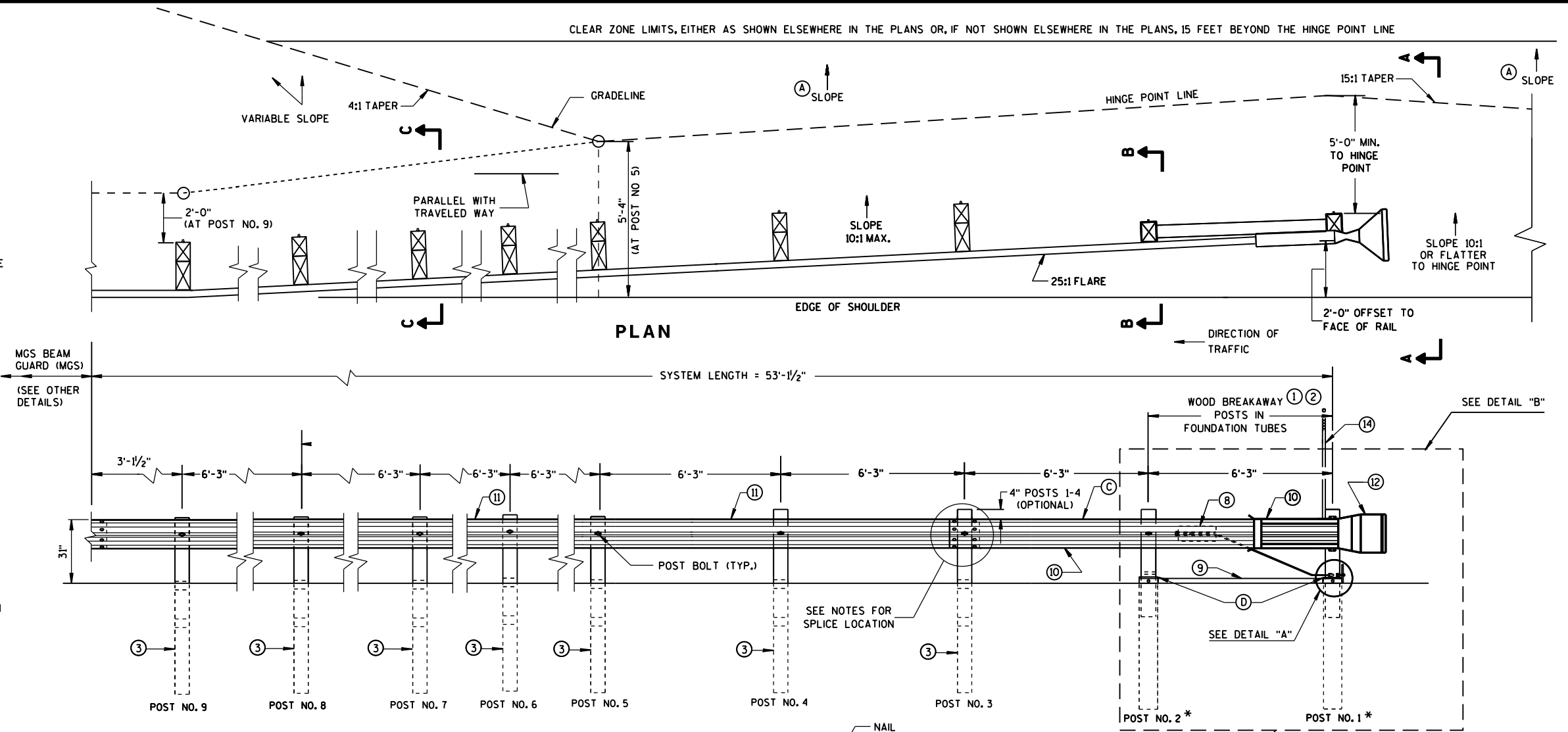
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

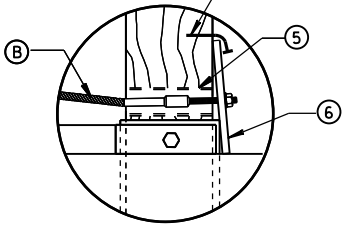
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

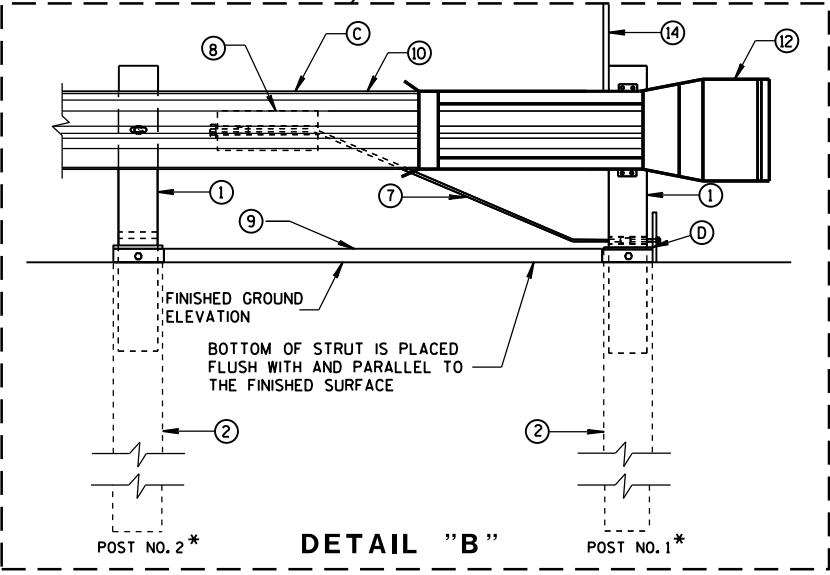
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



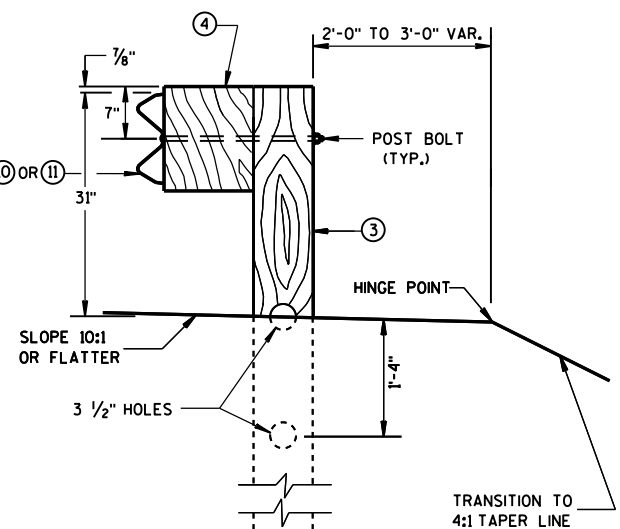
ELEVATION



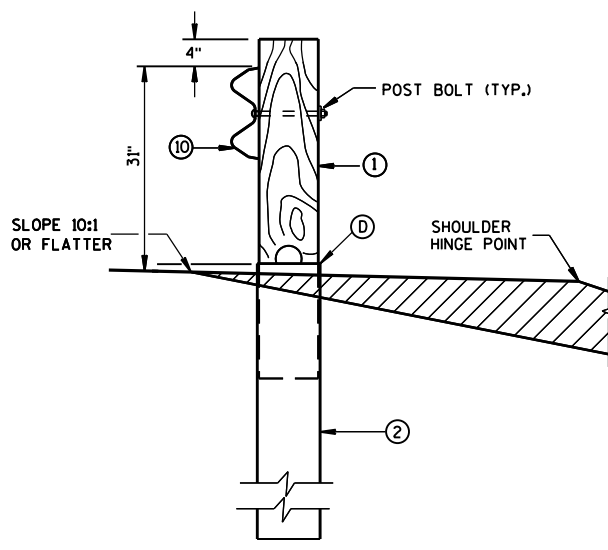
DETAIL "A"



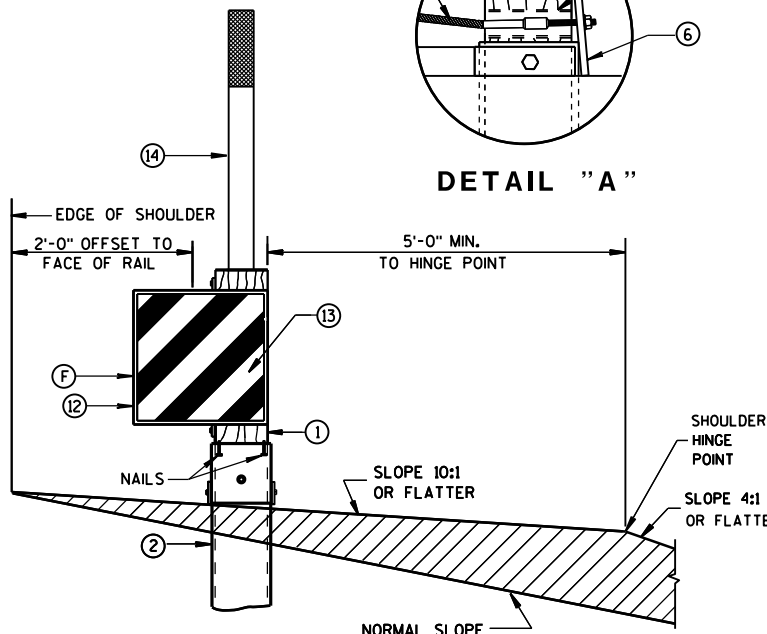
DETAIL "B"



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



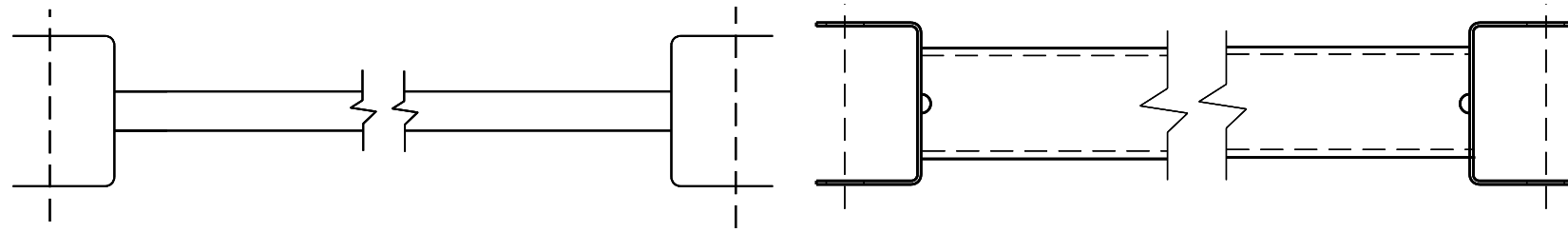
SECTION B-B
TYPICAL AT POST NO. 2*



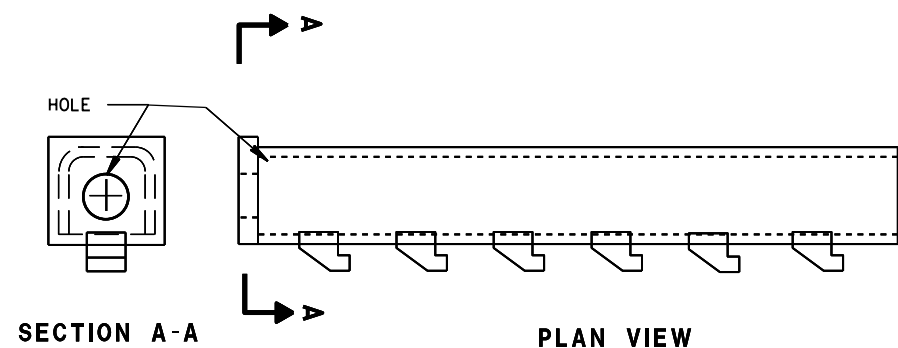
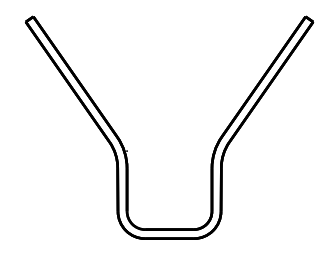
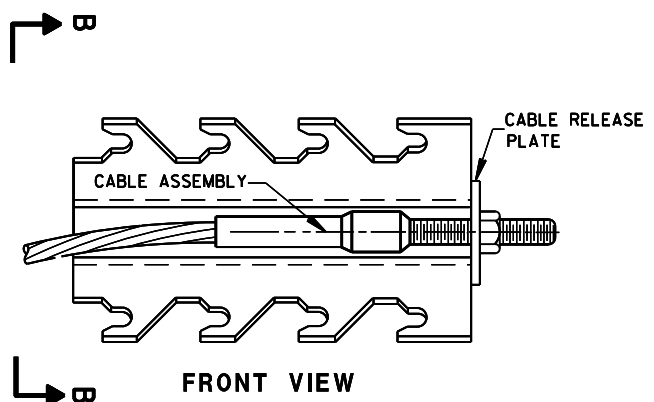
SECTION A-A
TYPICAL AT POST NO. 1*

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



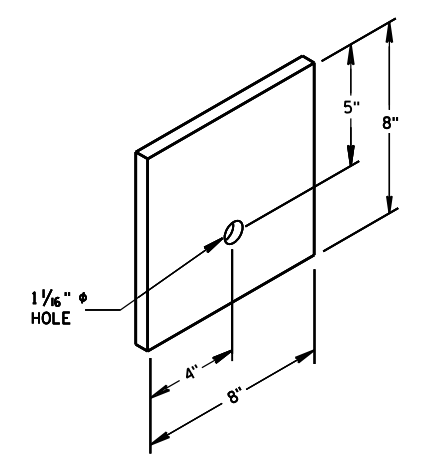
9 H
GENERIC GROUND STRUT



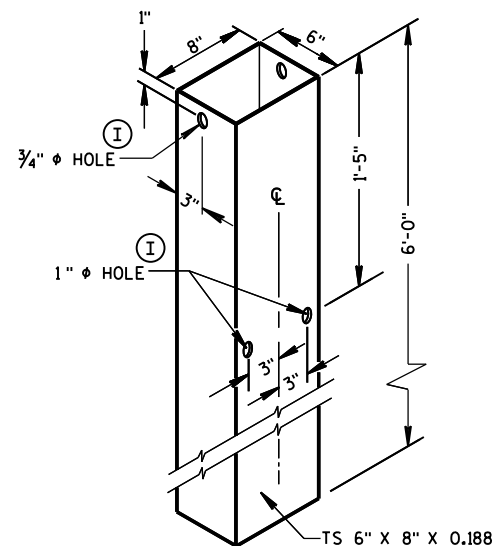
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

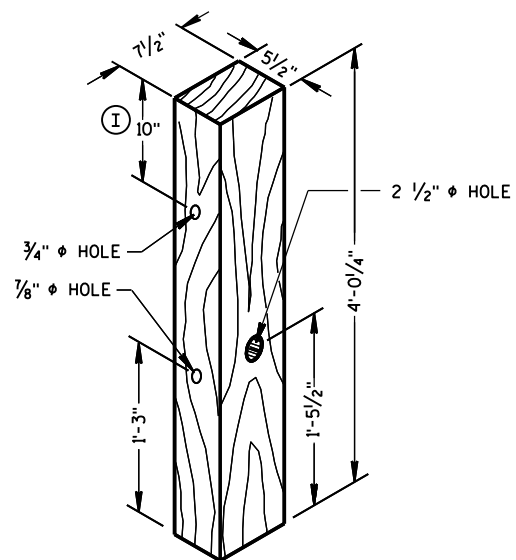
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



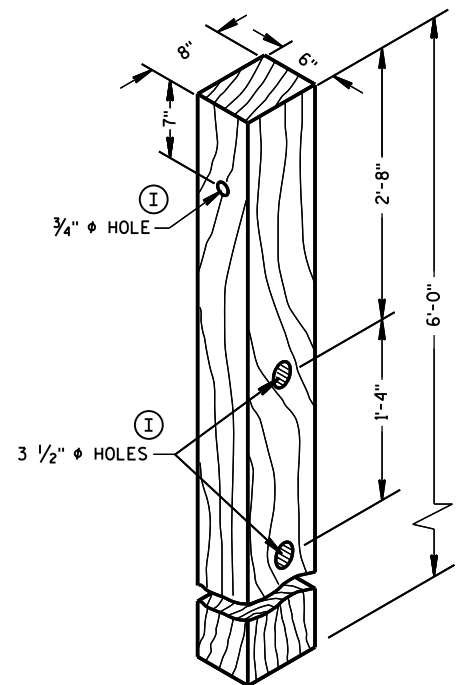
⑥
BEARING PLATE



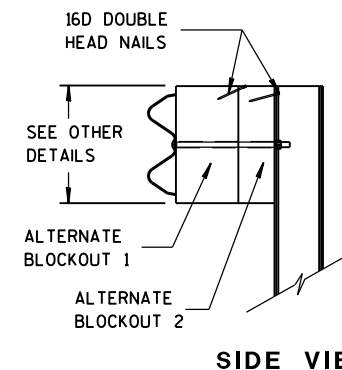
FOUNDATION TUBE ②



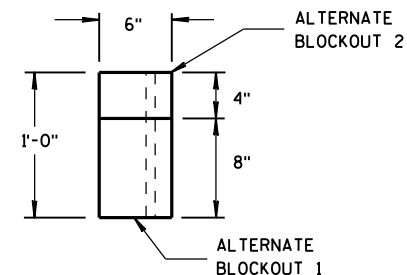
POSTS NUMBER 1 AND 2
WOOD BREAKAWAY POST ①



POSTS NUMBER 3-9
WOOD CRT POST ③

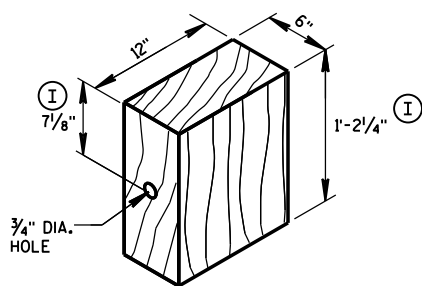


SIDE VIEW



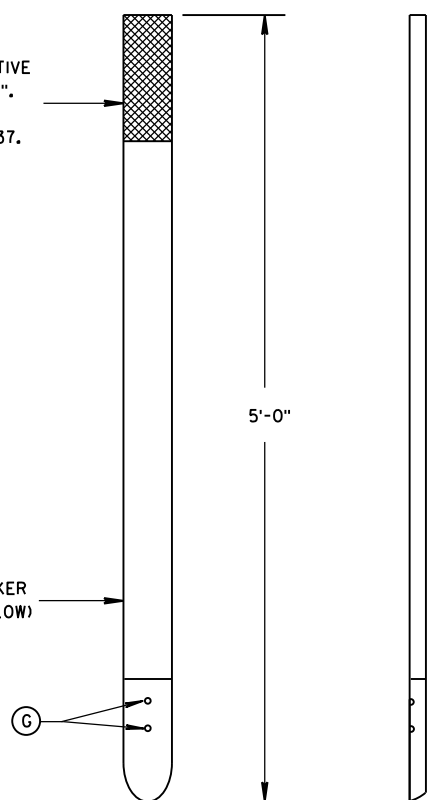
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL



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

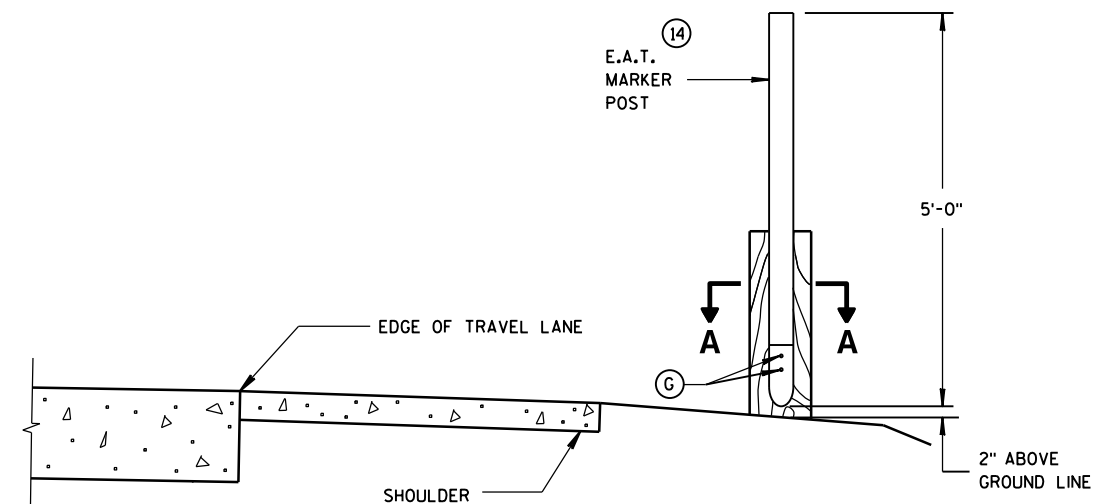
TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.



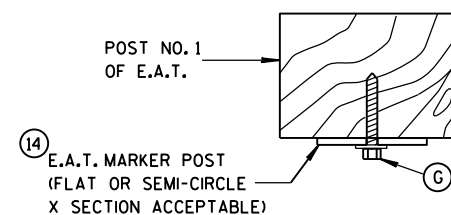
FRONT VIEW

SIDE VIEW

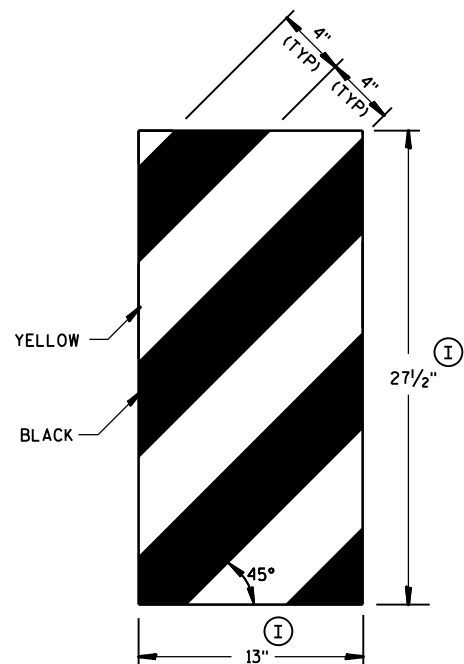
E.A.T. MARKER POST ⑭



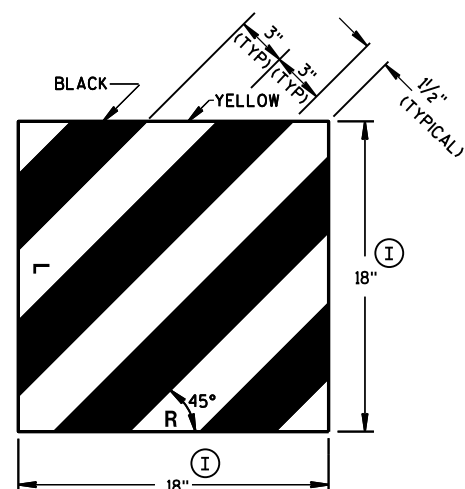
TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A



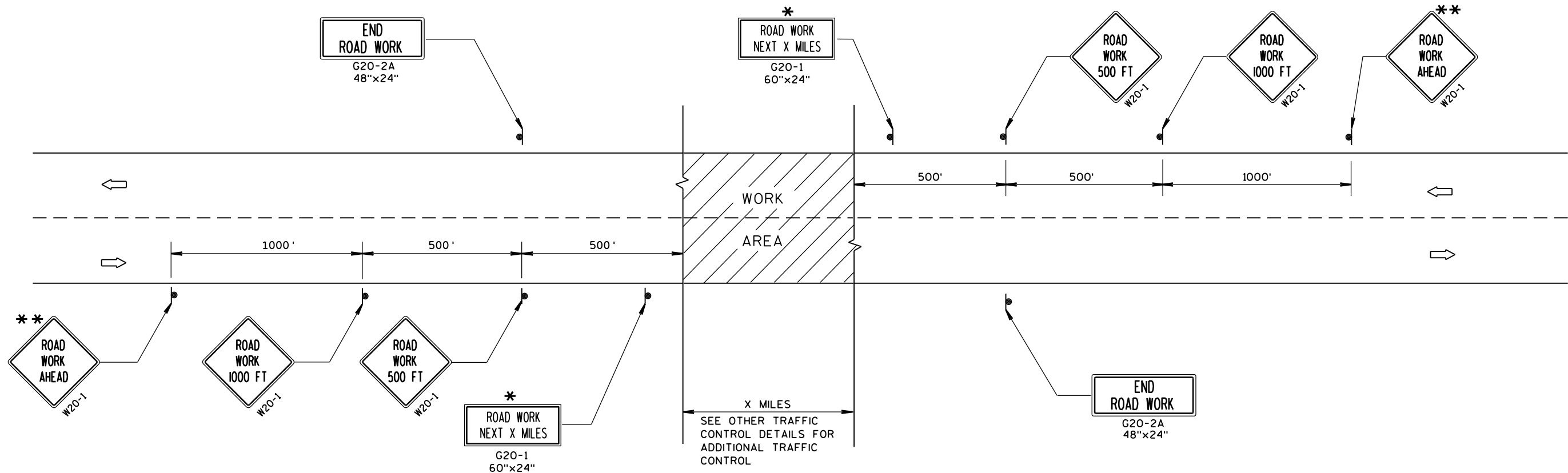
GENERIC REFLECTIVE SHEETING ⑬ ①



MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

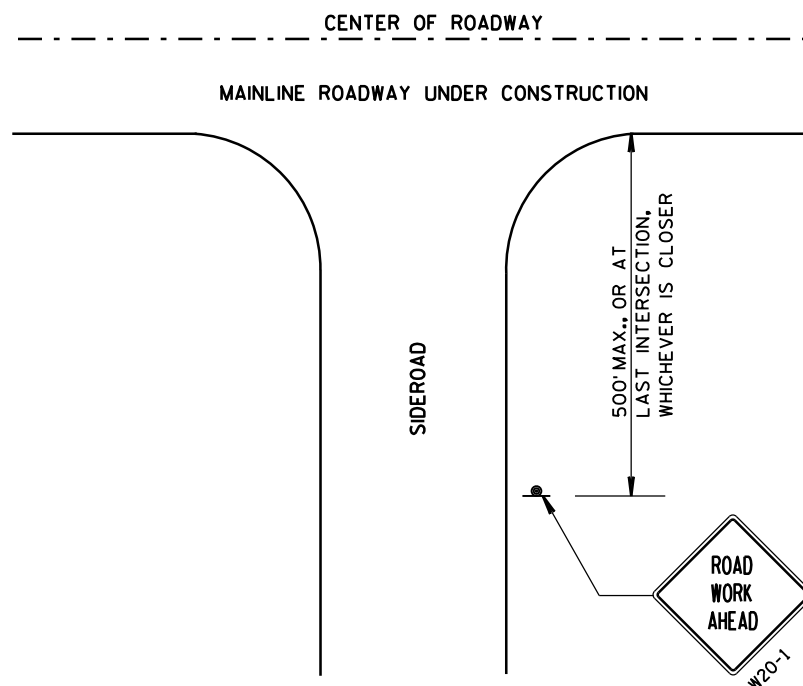
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

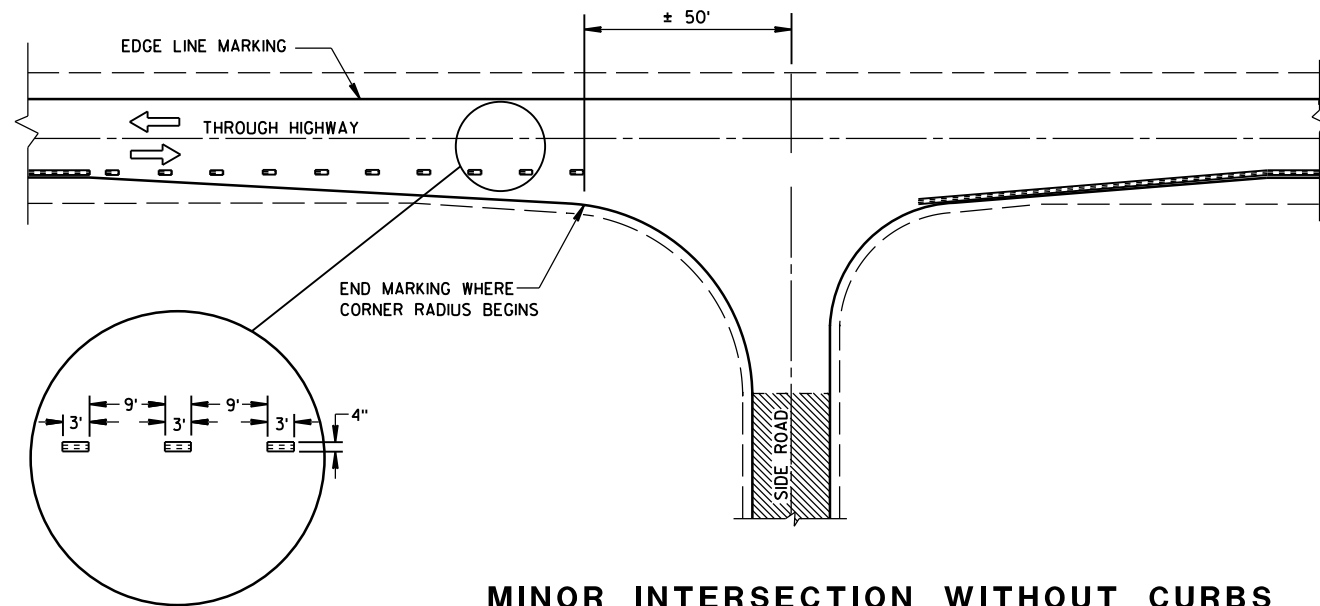
APPROVED

8/2013

DATE

FHWA

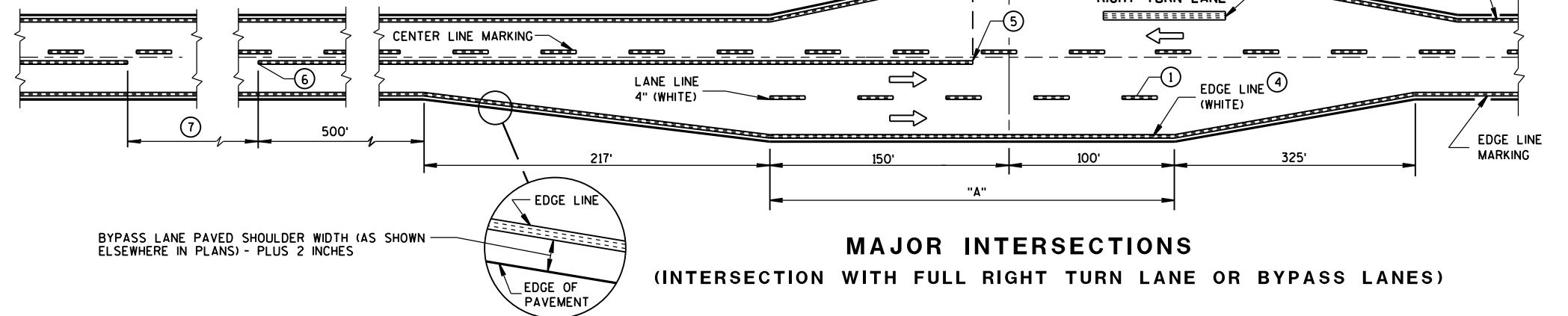
/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN



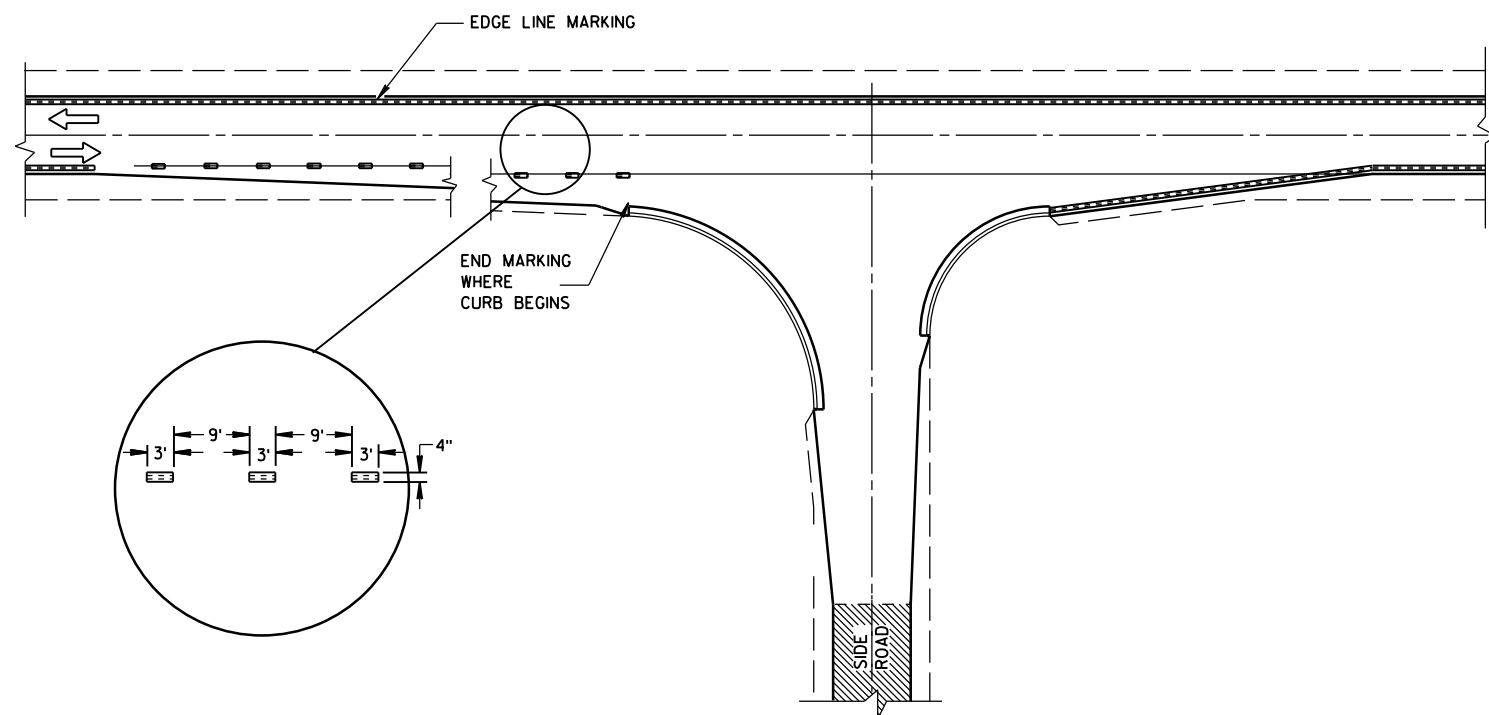
MINOR INTERSECTION WITHOUT CURBS

⑦

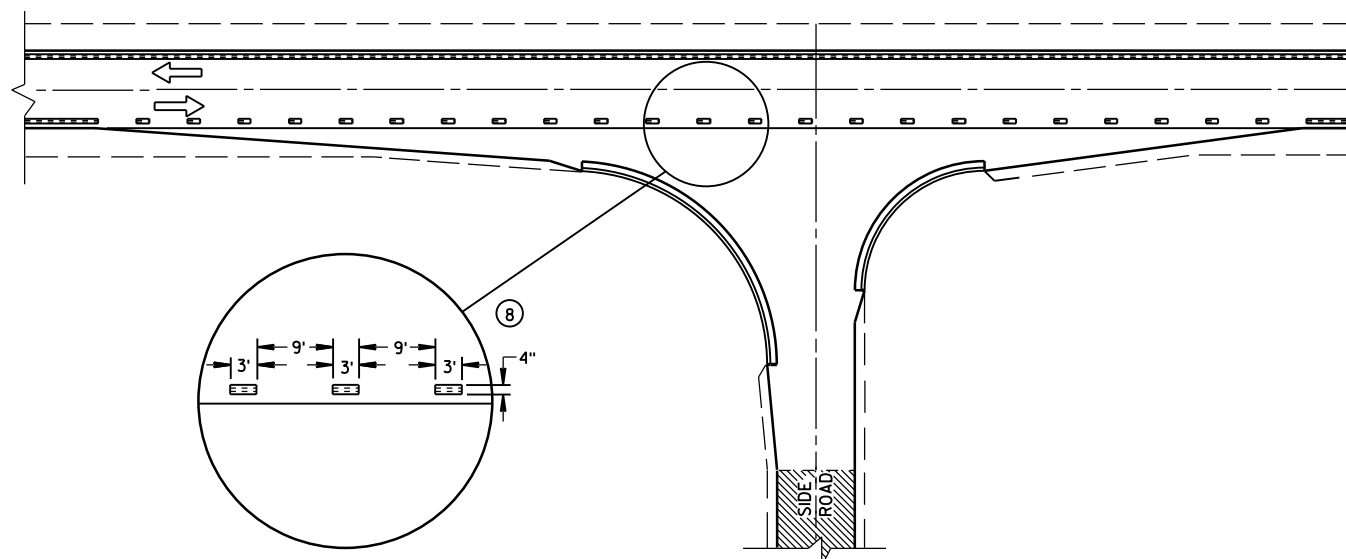
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



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



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

GENERAL NOTES

- EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED 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 ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
 - ④ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
 - ⑤ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
 - ⑥ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
 - ⑦ IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
 - ⑧ 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

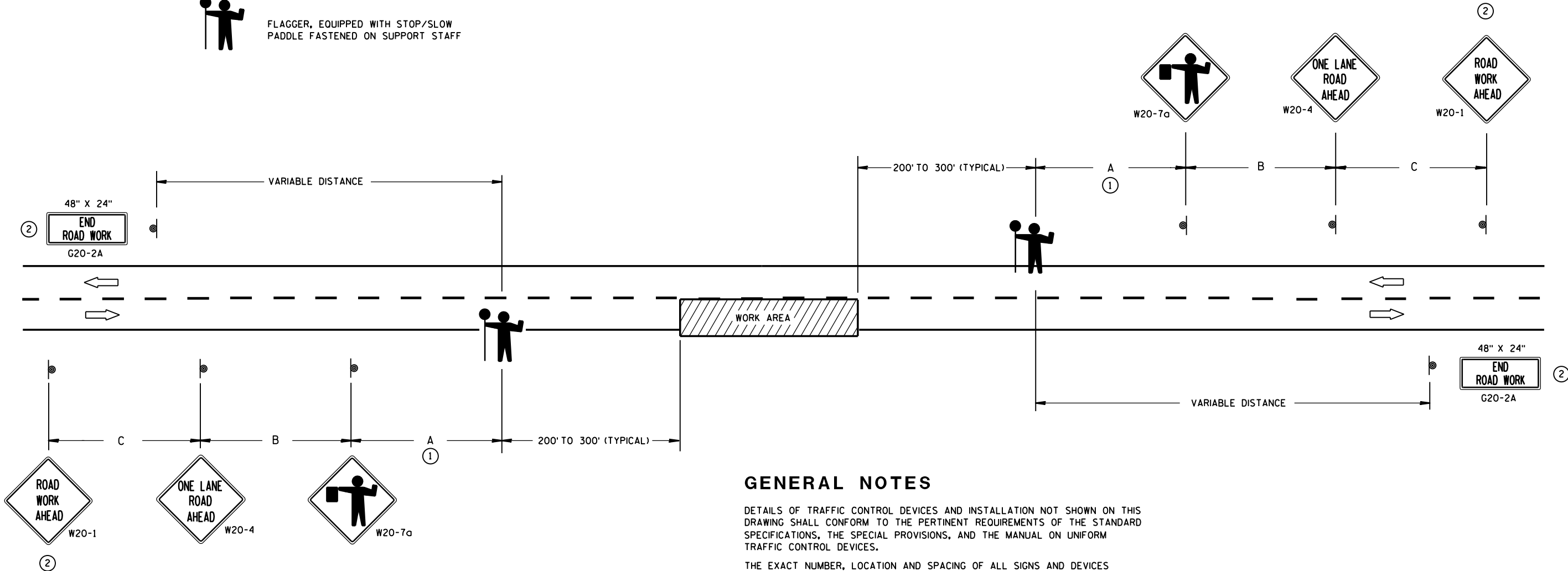
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



GENERAL NOTES

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

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

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

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

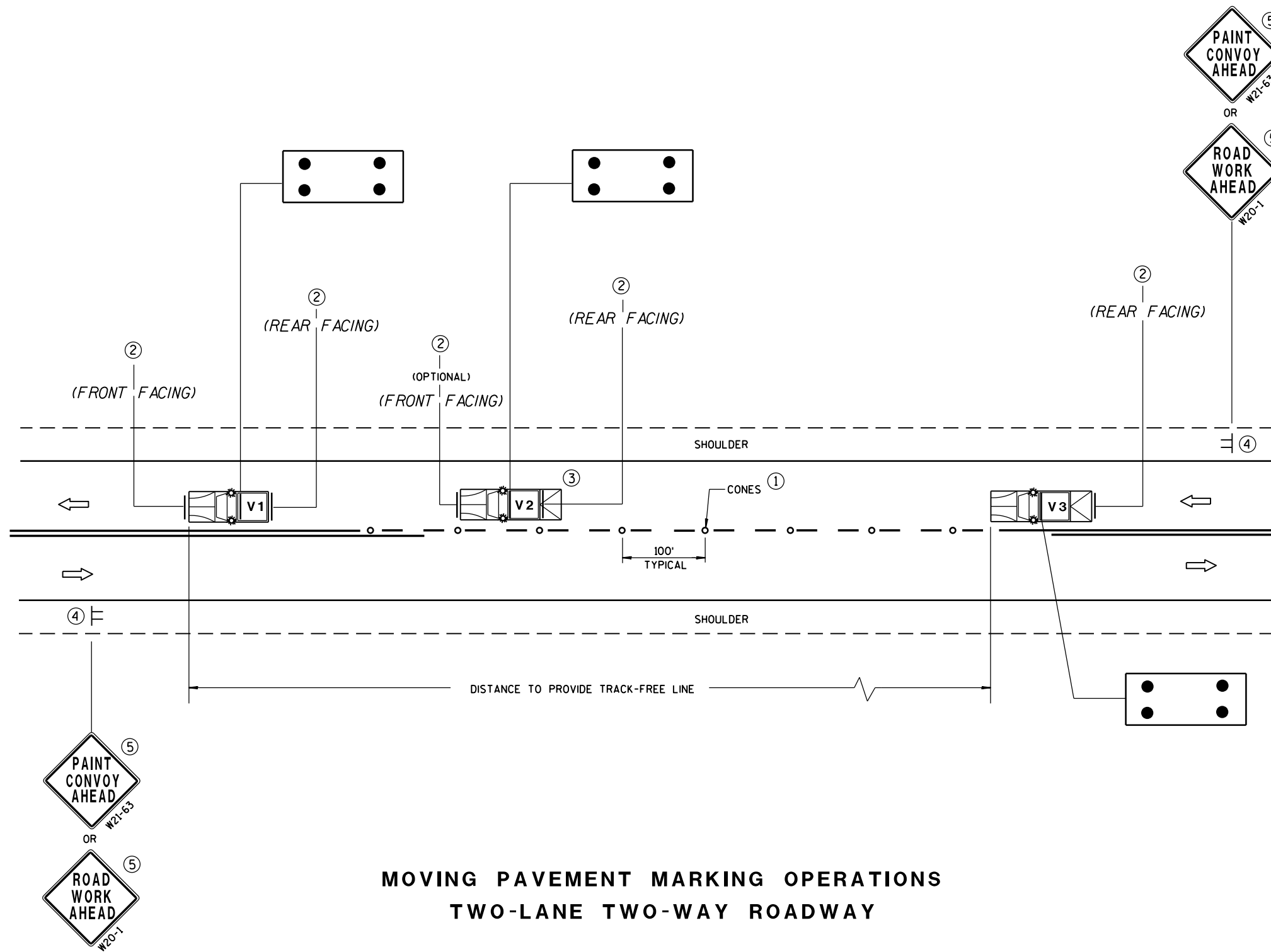
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



MOVING PAVEMENT MARKING OPERATIONS TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

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

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

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

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

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

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

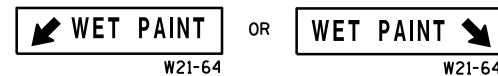
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

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

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

② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.



③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.

④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

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

LEGEND

V1 LEAD VEHICLE

V2 SHADOW VEHICLE

V3 TRAIL VEHICLE WITH TMA

TMA TRUCK-MOUNTED ATTENUATOR

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

CONES

FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

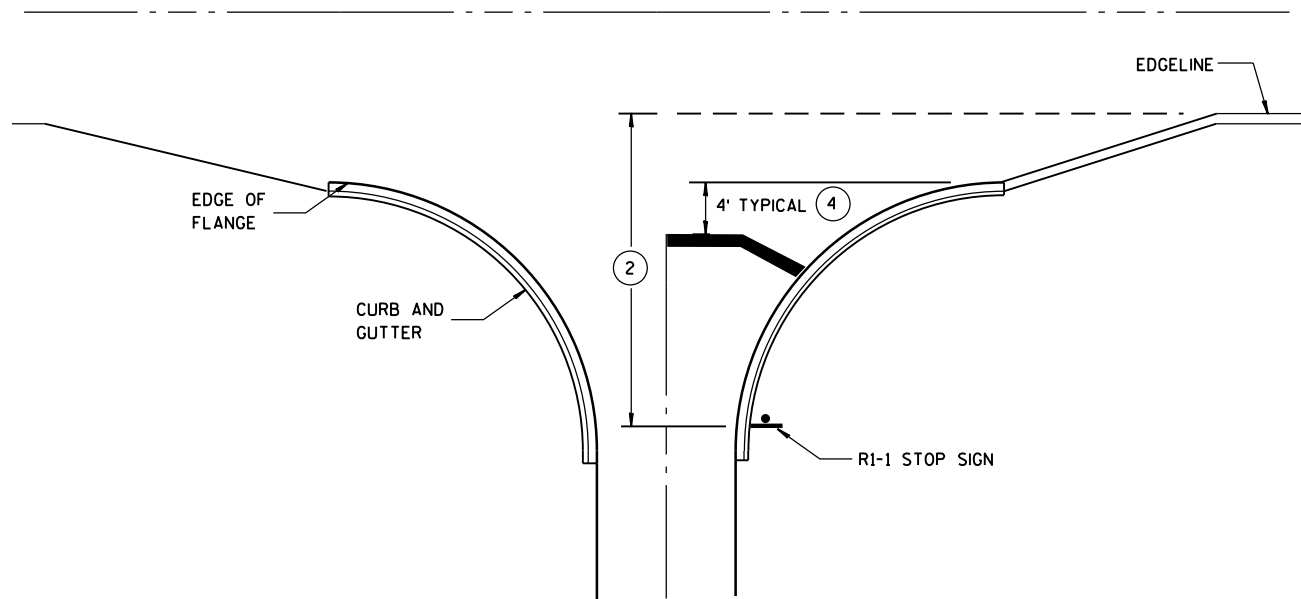
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

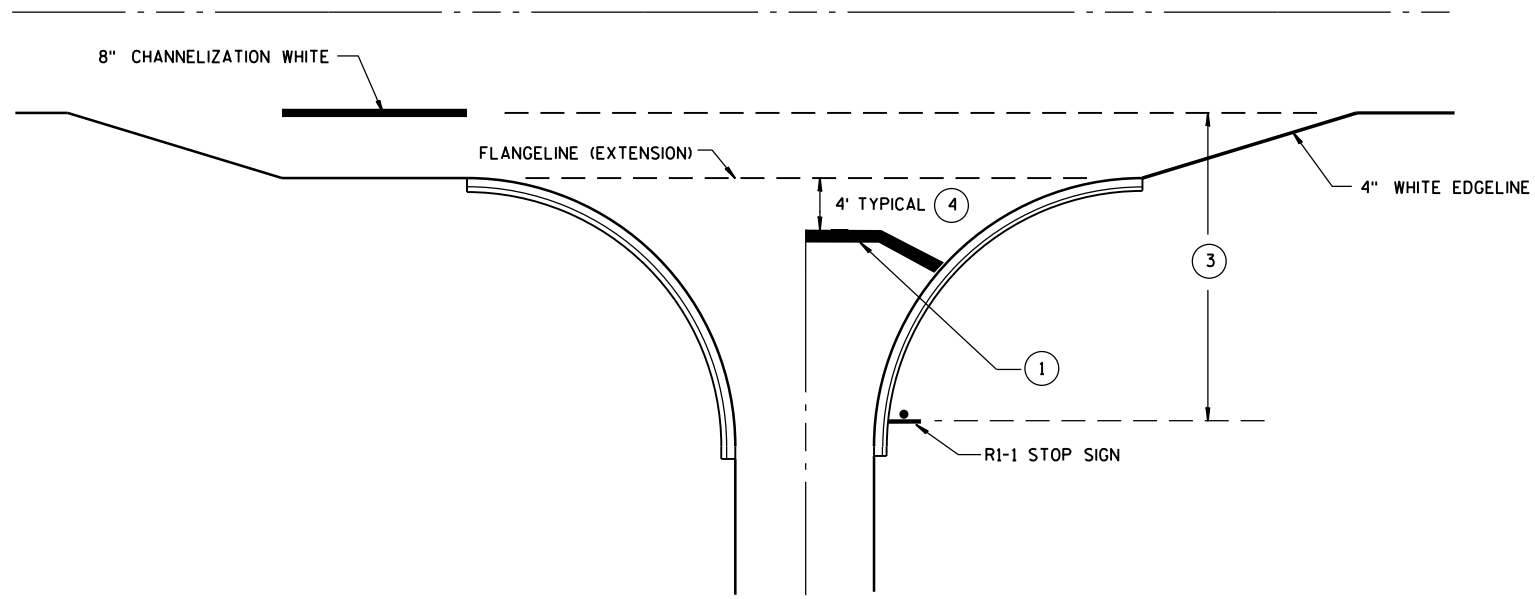
5/3/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

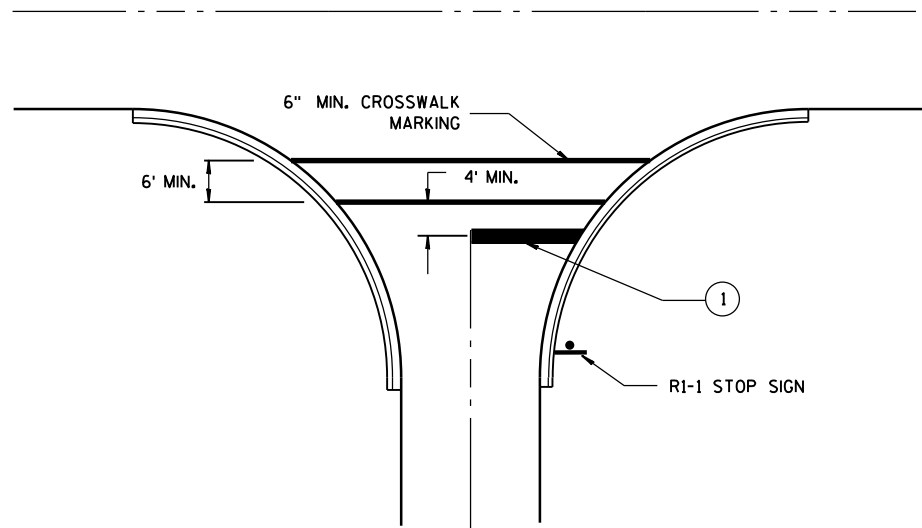
FHWA



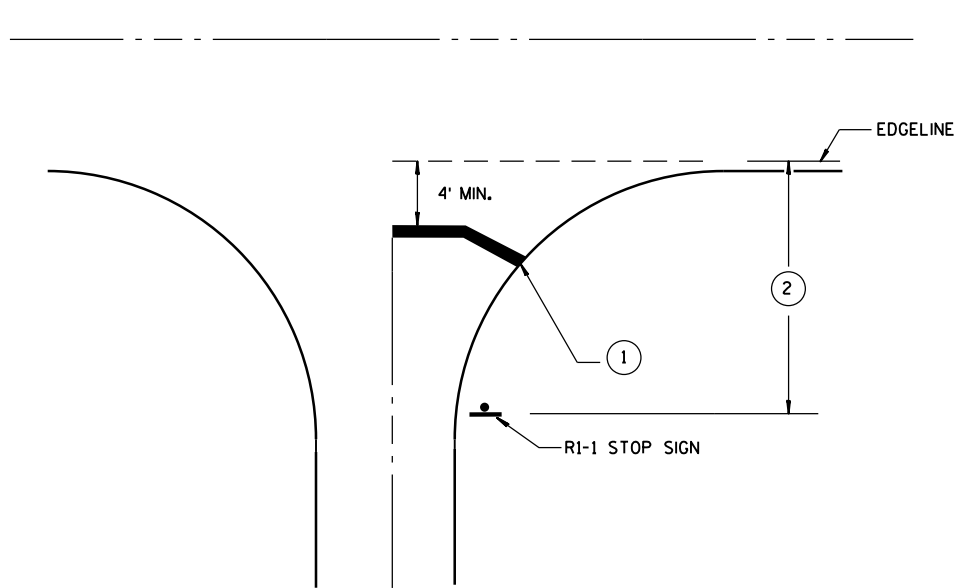
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH CROSSWALK MARKING



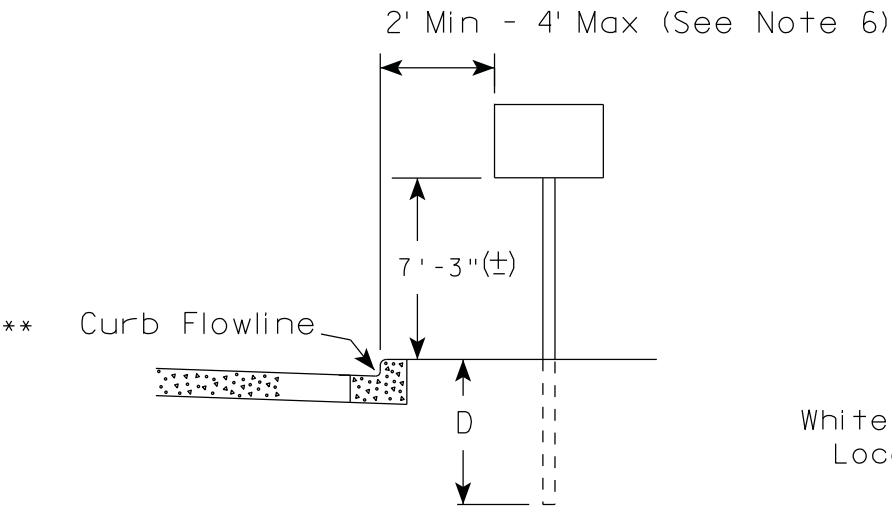
TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

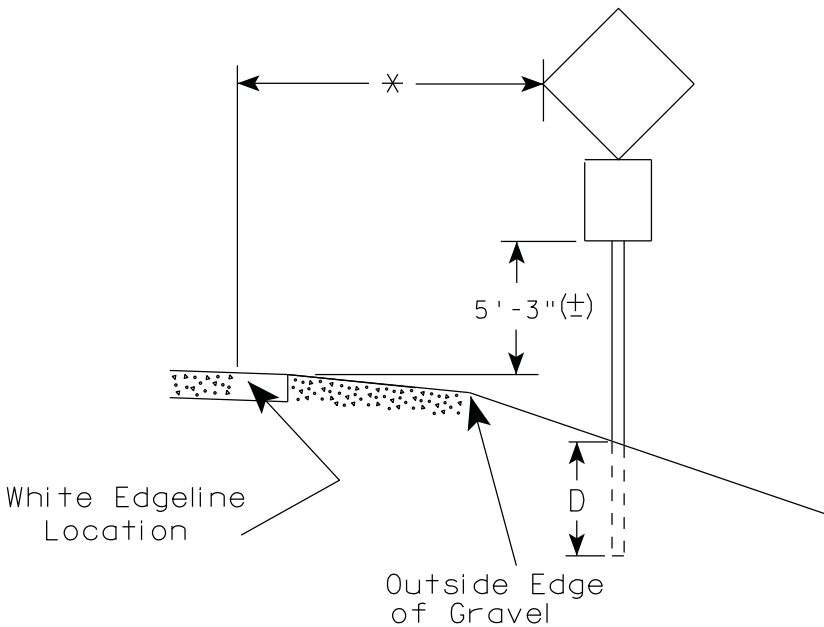
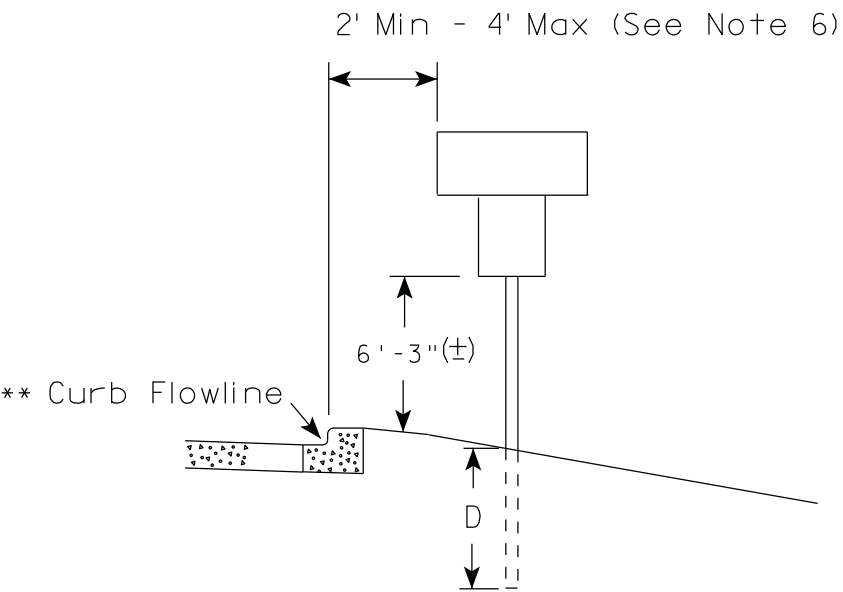
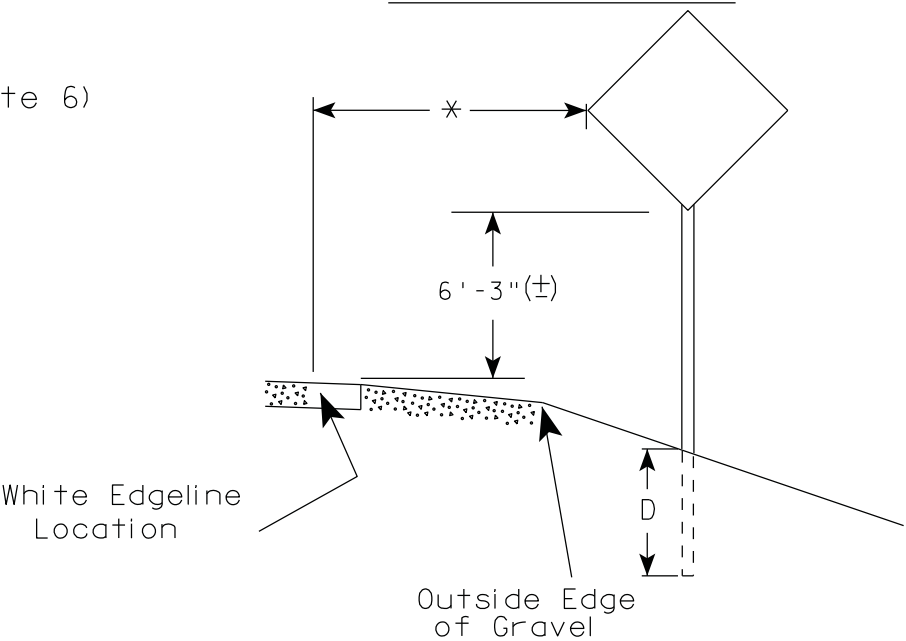
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE THAN NO STOP LINE IS REQUIRED.
- ③ IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
- ④ MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES.

STOP LINE AND CROSSWALK PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4/30/2013 DATE	/S/ Travis Feltz STATE TRAFFIC ENGINEER
FHWA	

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

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

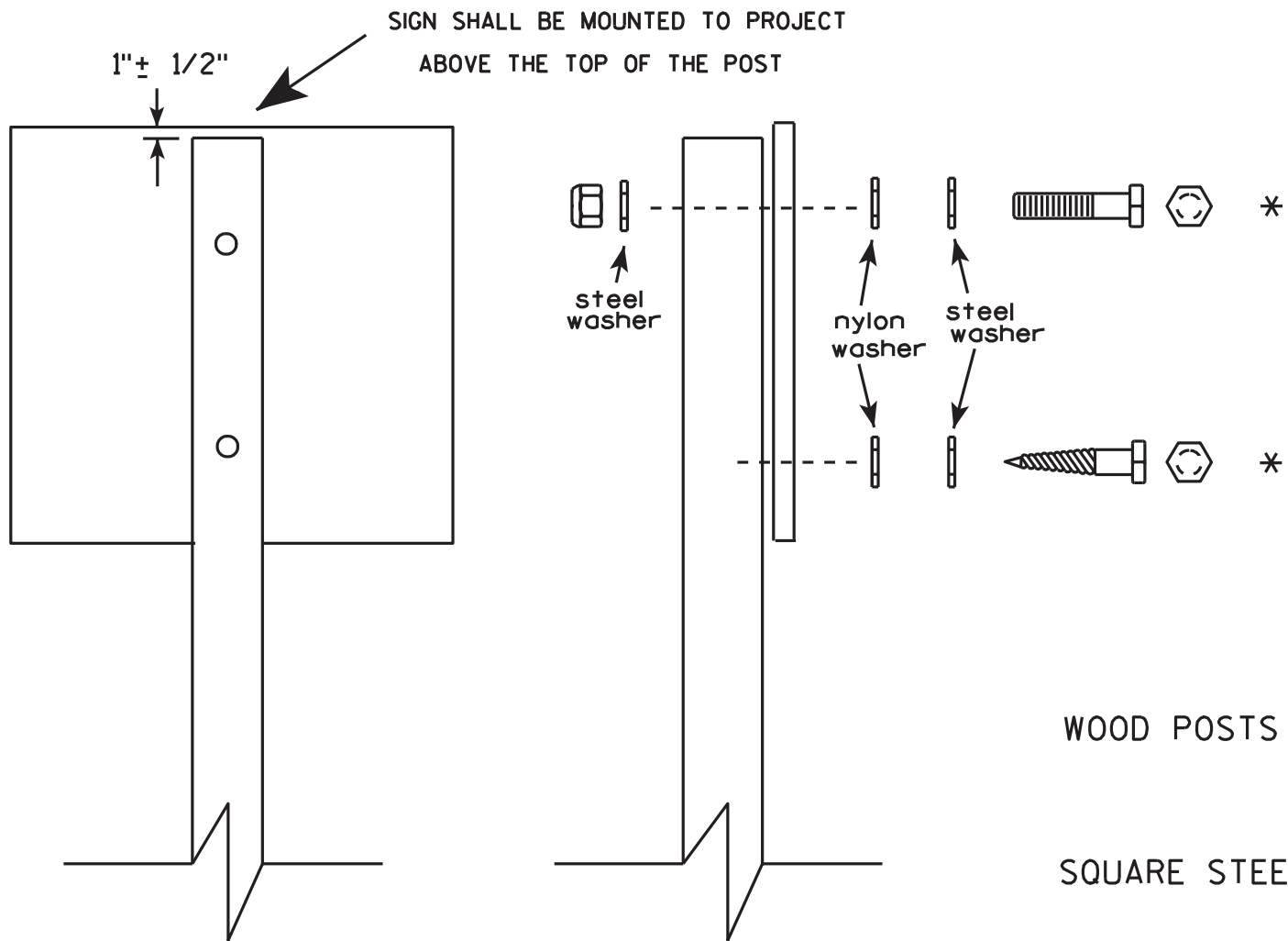
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

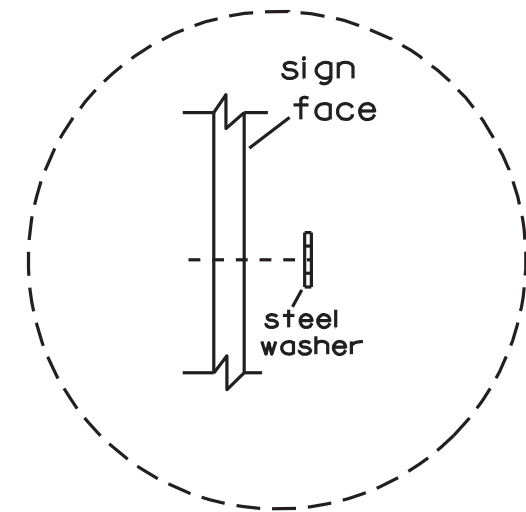
DATE 11/12/14 PLATE NO. A4-3.19



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

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

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



Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS
TO POSTS

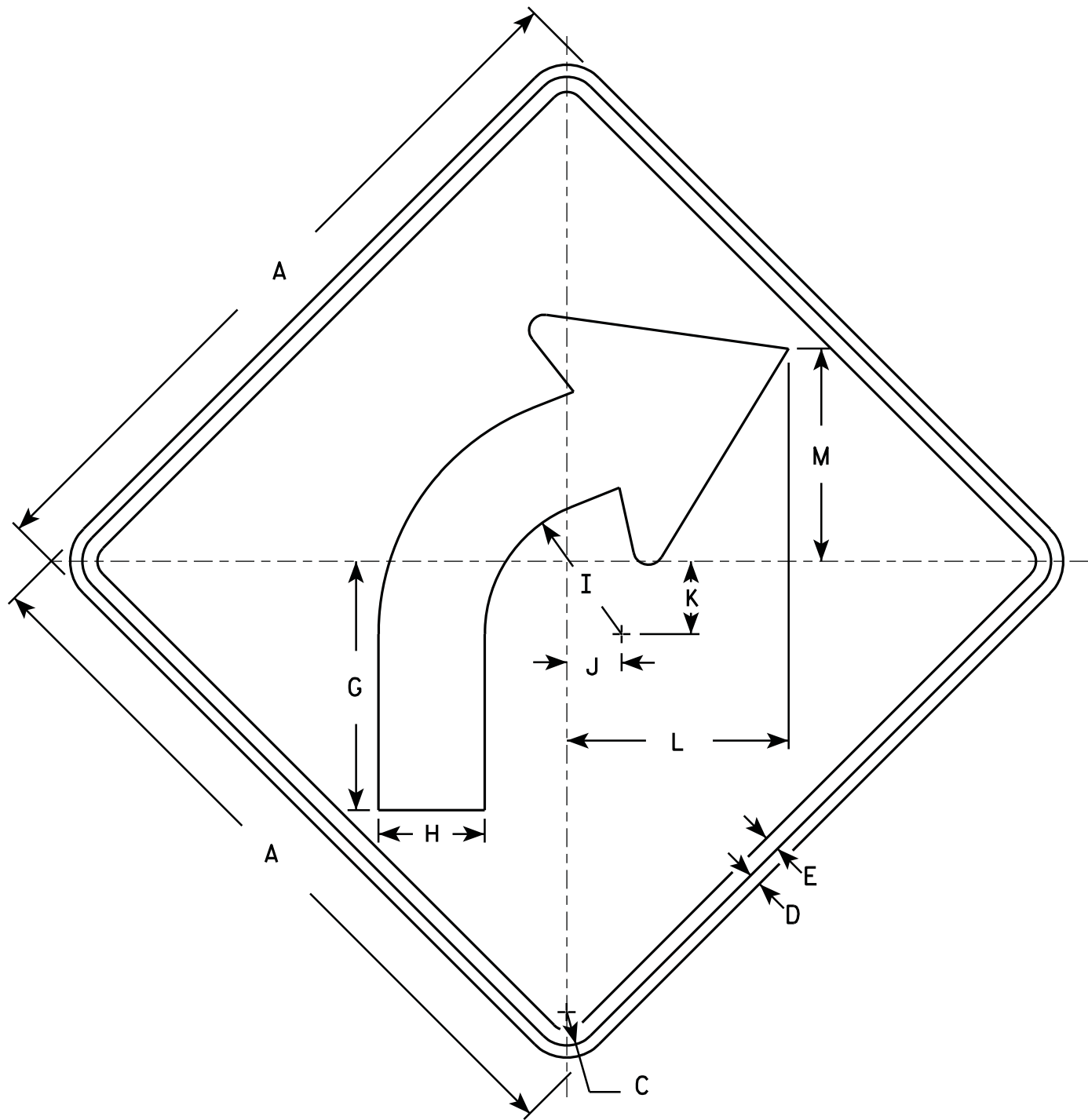
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

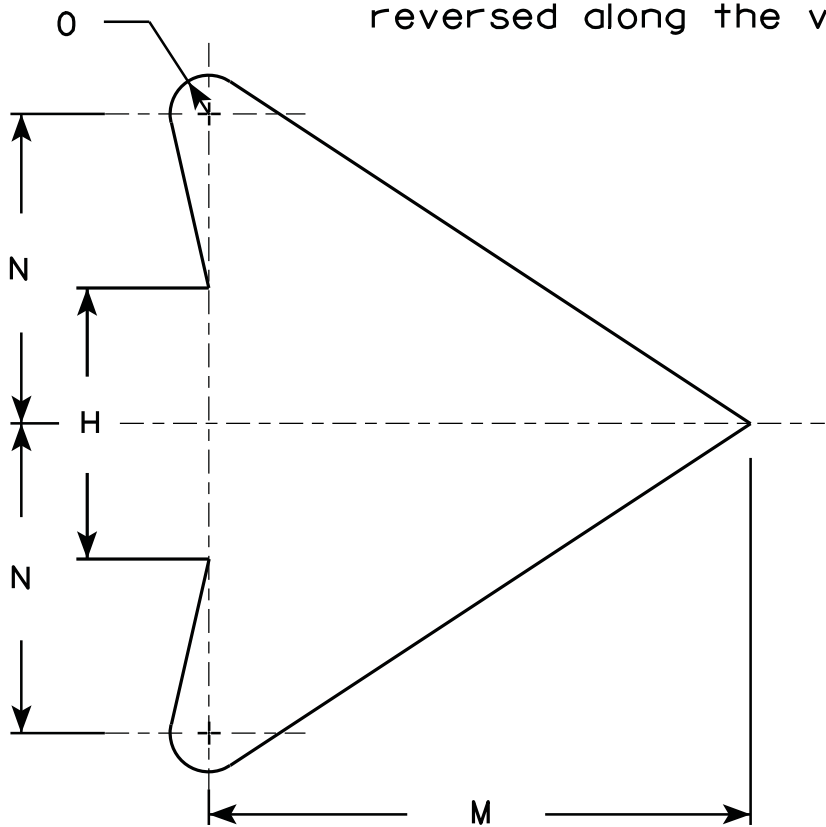
DATE 3/23/10 PLATE NO. A4-8.7

NOTES

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



W1-2R



ARROW DETAIL

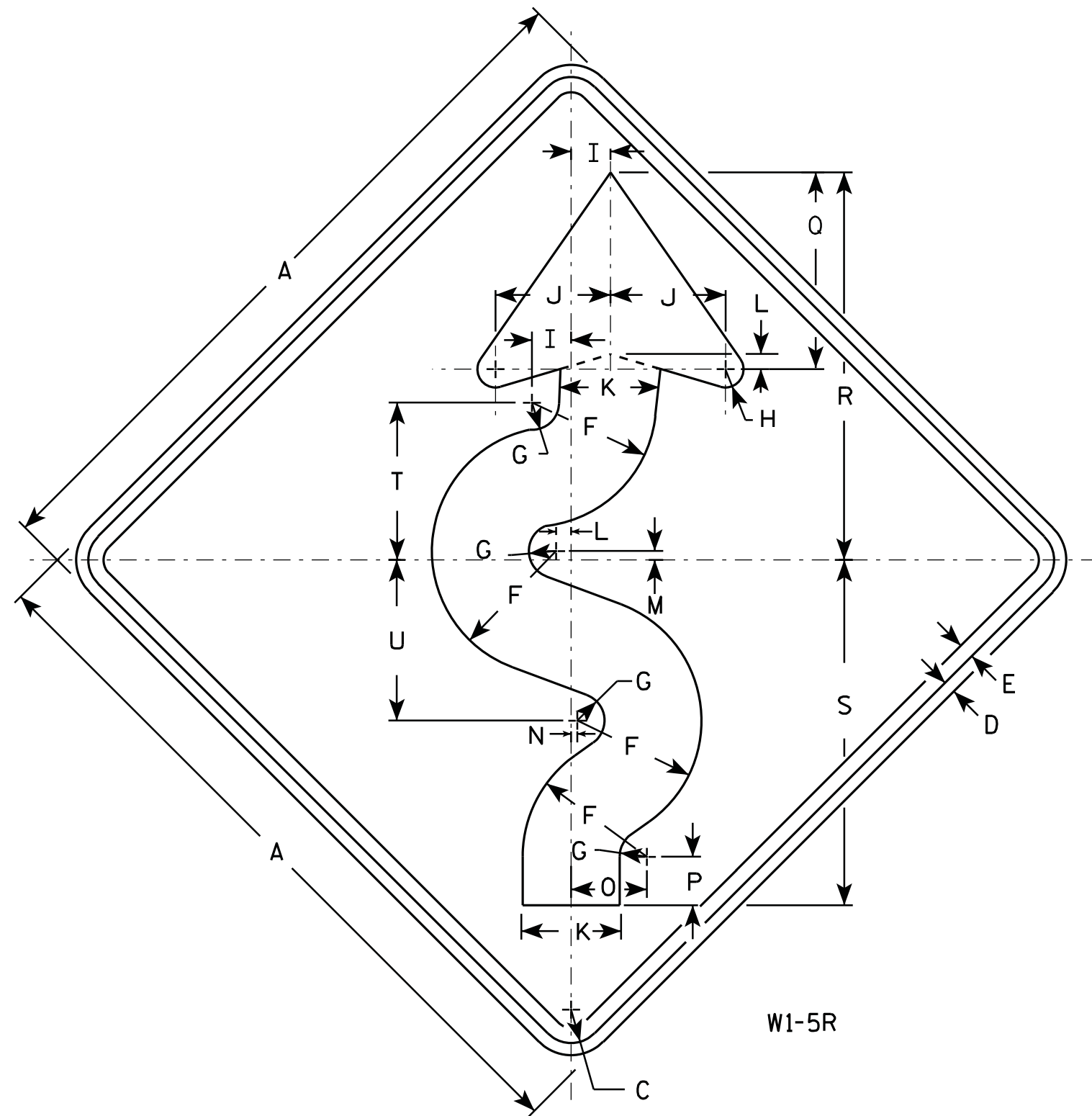
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		8 1/4	3 1/2	4 1/2	1 3/4	2 3/8	7 1/4	7	4	1/2												4.0
2S	30		1 3/8	1/2	5/8		10 1/4	4 3/8	5 5/8	2 1/4	3	9 1/8	8 3/4	5	5/8												6.25
2M	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
3	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
4	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
5	48		2 1/4	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0

STANDARD SIGN
W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-2.10



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-5L is the same as W1-5R except the arrow is reversed along the vertical centerline.

W1-5R

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	4 1/8	7/8	5/8	1 1/4	3 3/4	3 1/4	1/2	1/4	1/8	2 1/2	1 5/8	6 1/2	12 3/4	11 3/8	5 1/4	5 1/4						4.0
2S	30		1 3/8	1/2	5/8	5 1/8	1 1/8	3/4	1 5/8	4 3/4	4 1/8	5/8	3/8	1/4	3 1/8	2	8 1/8	16	14 1/4	6 1/2	6 5/8						6.25
2M	36		1 5/8	5/8	3/4	6 1/4	1 3/8	1	1 7/8	5 5/8	4 7/8	3/4	3/8	1/4	3 3/4	2 7/8	9 3/4	19 1/8	17 1/8	7 3/4	7 7/8						9.0
3	36		1 5/8	5/8	3/4	6 1/4	1 3/8	1	1 7/8	5 5/8	4 7/8	3/4	3/8	1/4	3 3/4	2 7/8	9 3/4	19 1/8	17 1/8	7 3/4	7 7/8						9.0
4	36		1 5/8	5/8	3/4	6 1/4	1 3/8	1	1 7/8	5 5/8	4 7/8	3/4	3/8	1/4	3 3/4	2 7/8	9 3/4	19 1/8	17 1/8	7 3/4	7 7/8						9.0
5	48		2 1/4	3/4	1	8 1/4	1 3/4	1 1/4	2 1/2	7 1/2	6 1/2	1	1/2	3/8	5	3 1/4	13	25 1/2	22 3/4	10 3/8	10 1/2						16.0

STANDARD SIGN W1-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 5/18/12

PLATE NO. W1-5.8

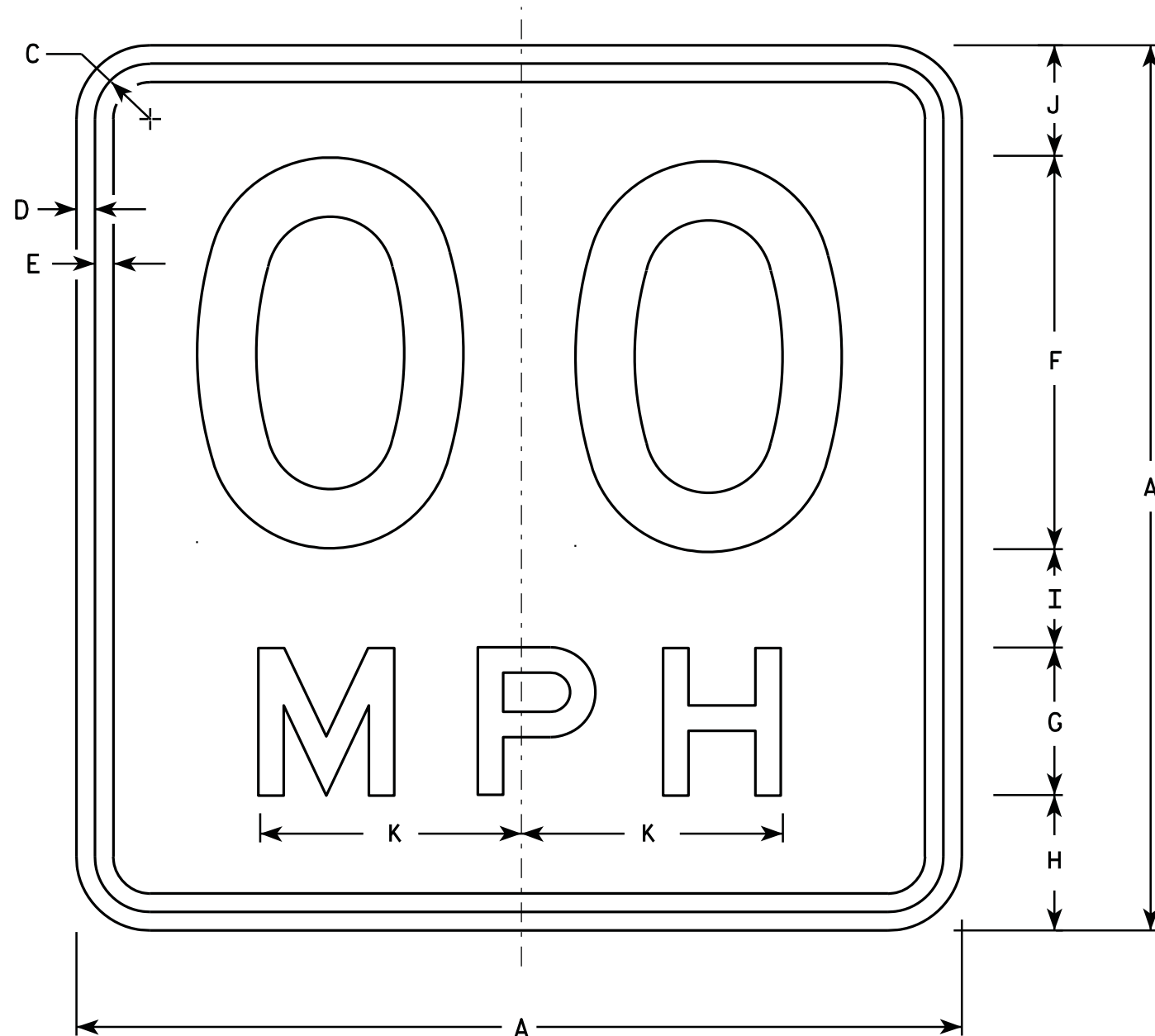
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

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

W13-1

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

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

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

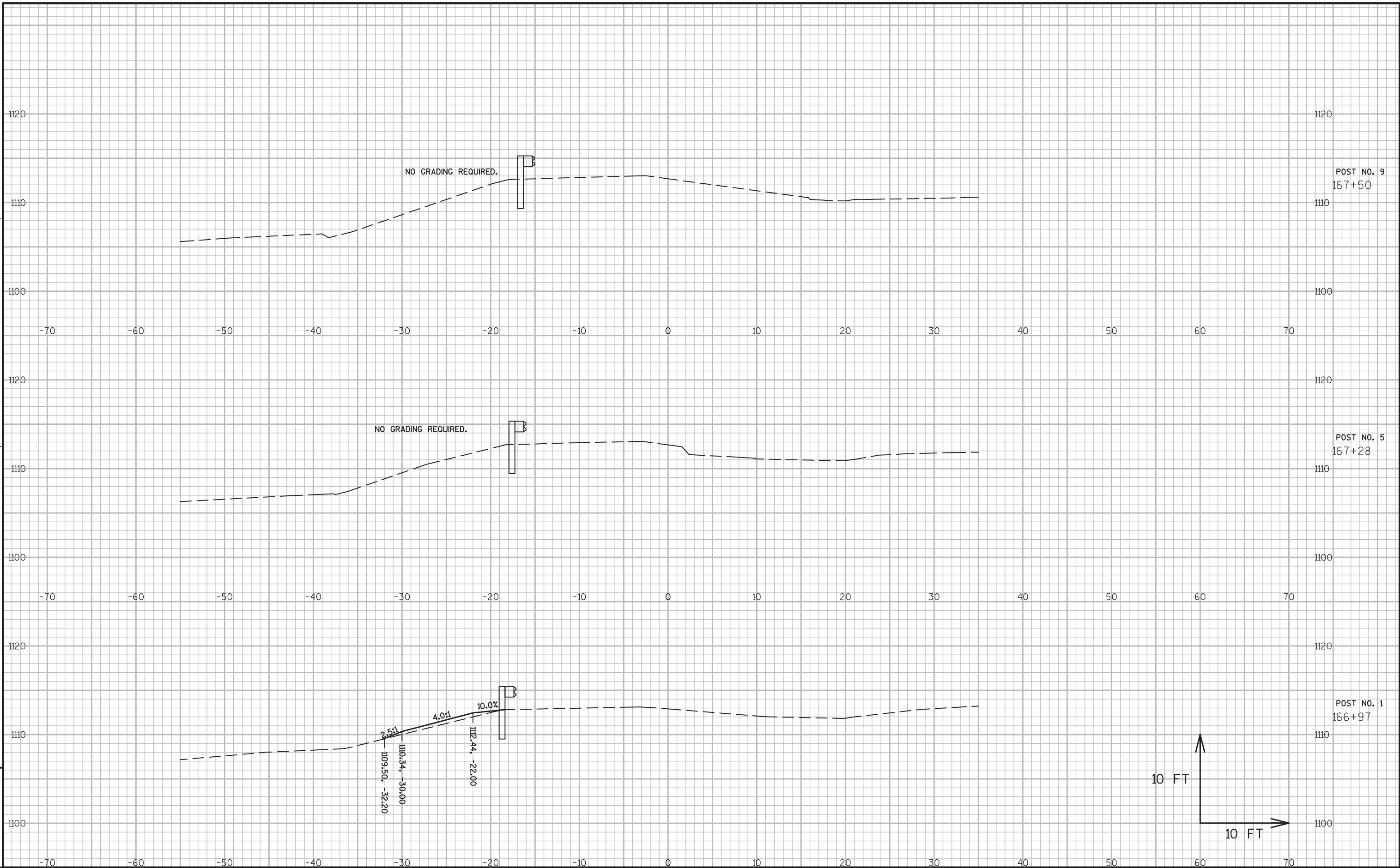
PROJECT NO:

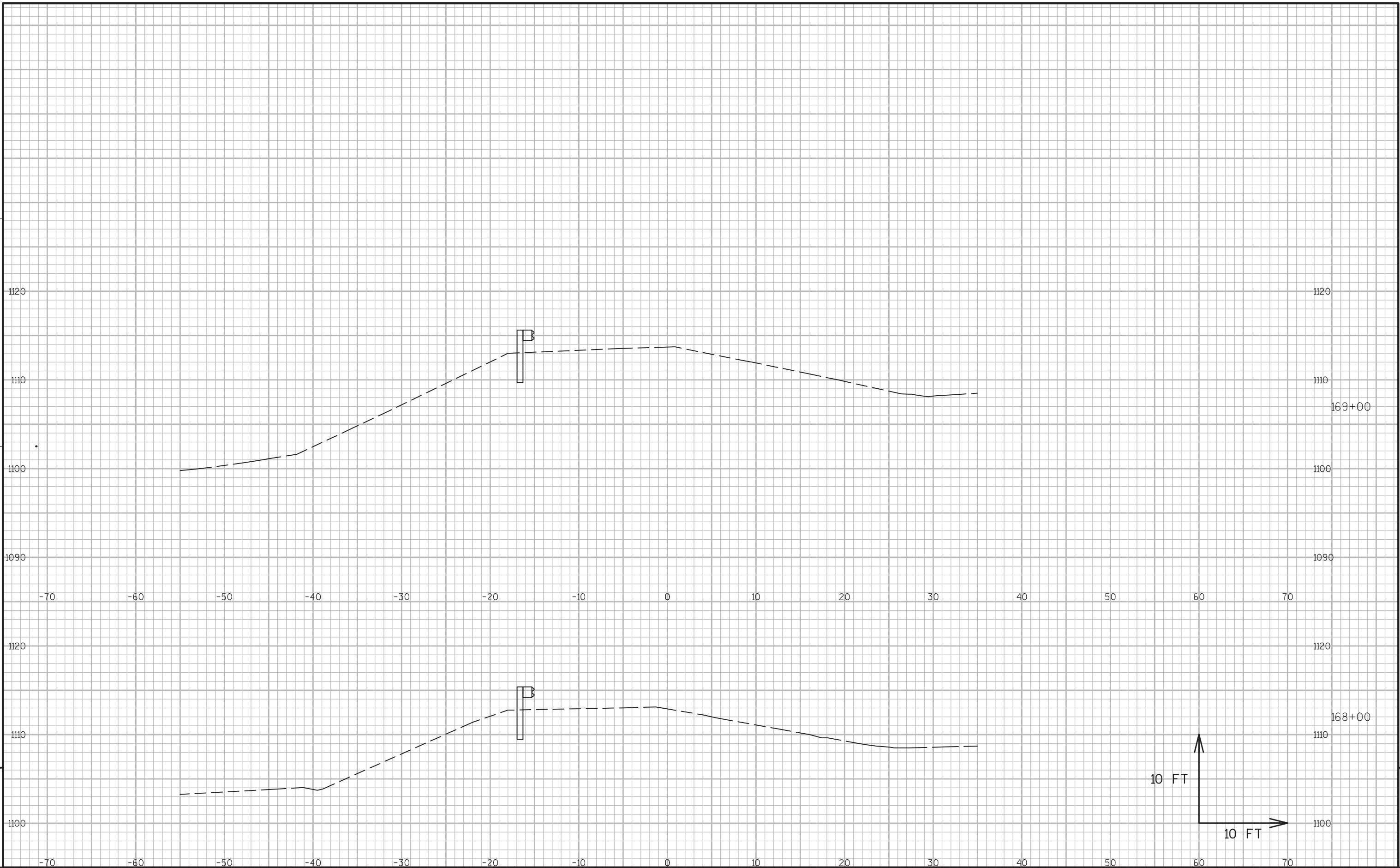
HWY:

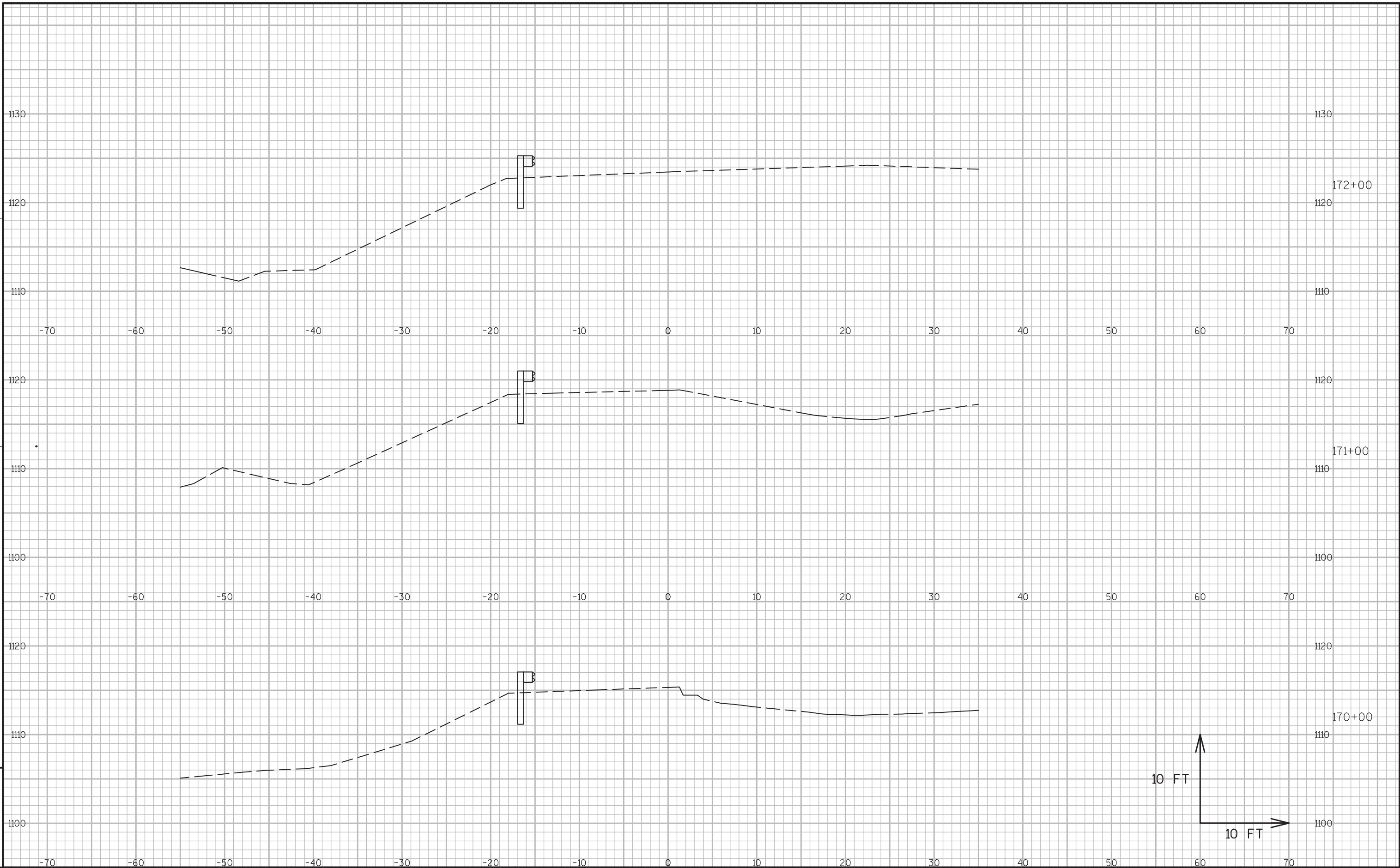
COUNTY:

SHEET NO:

E

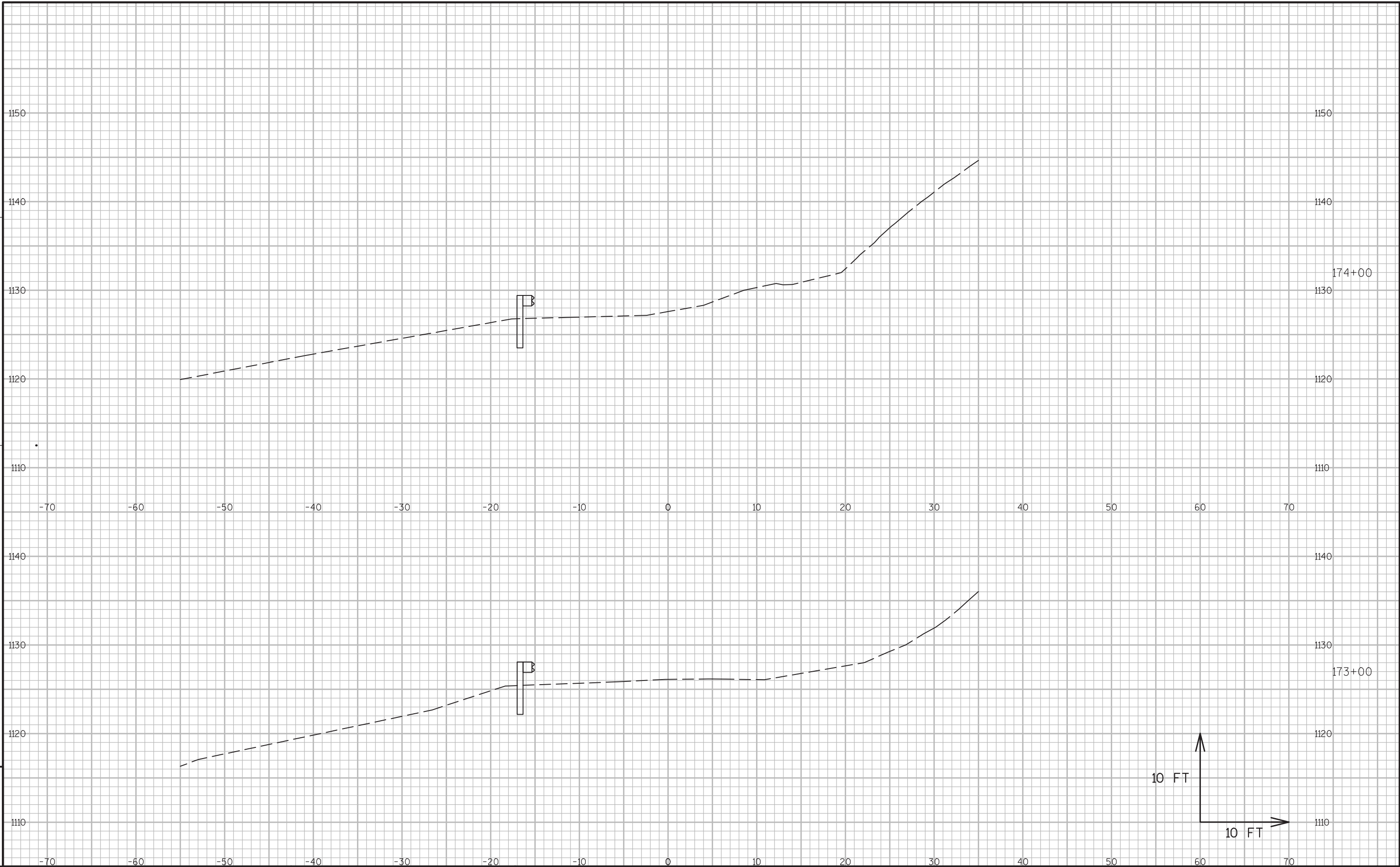


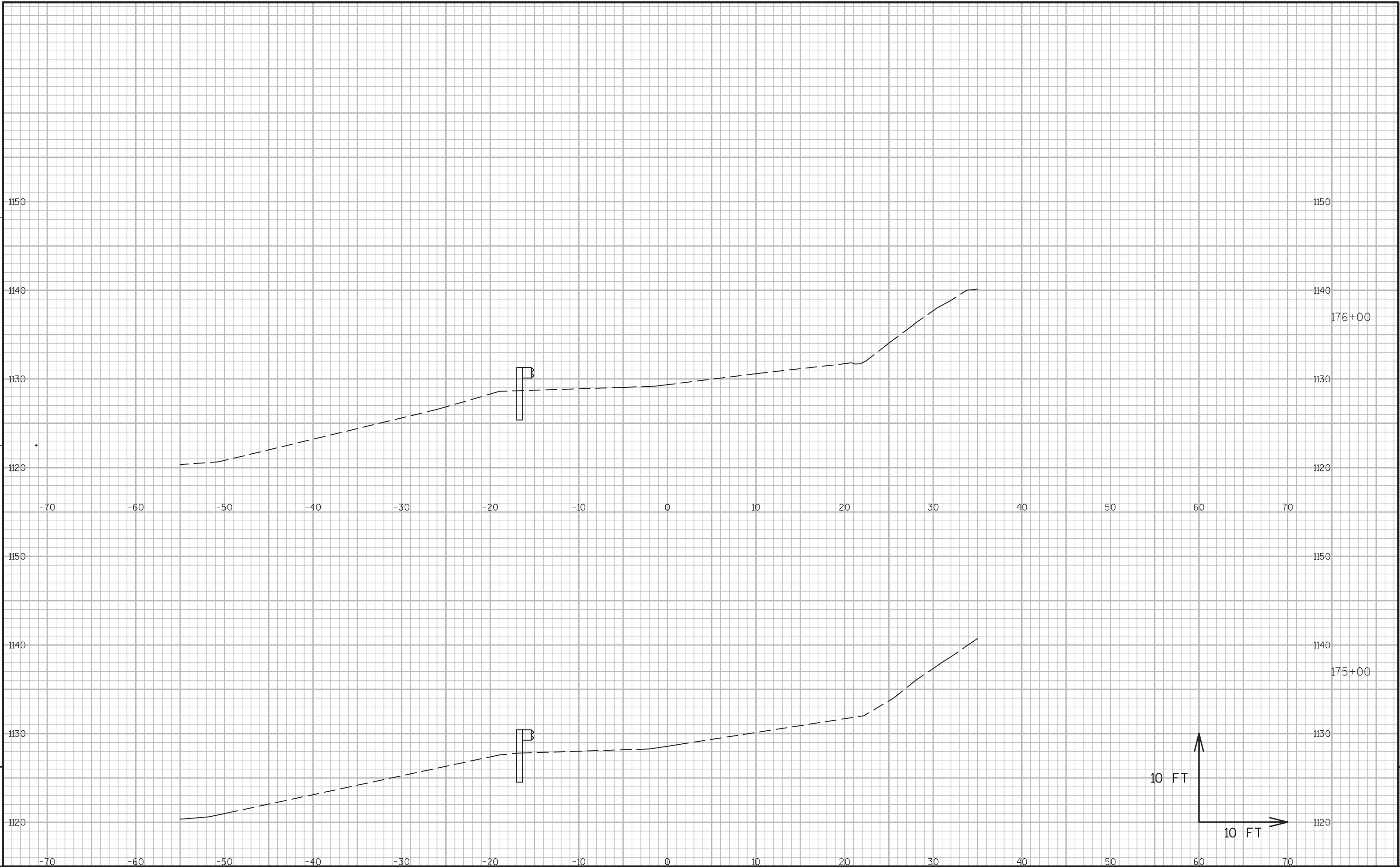


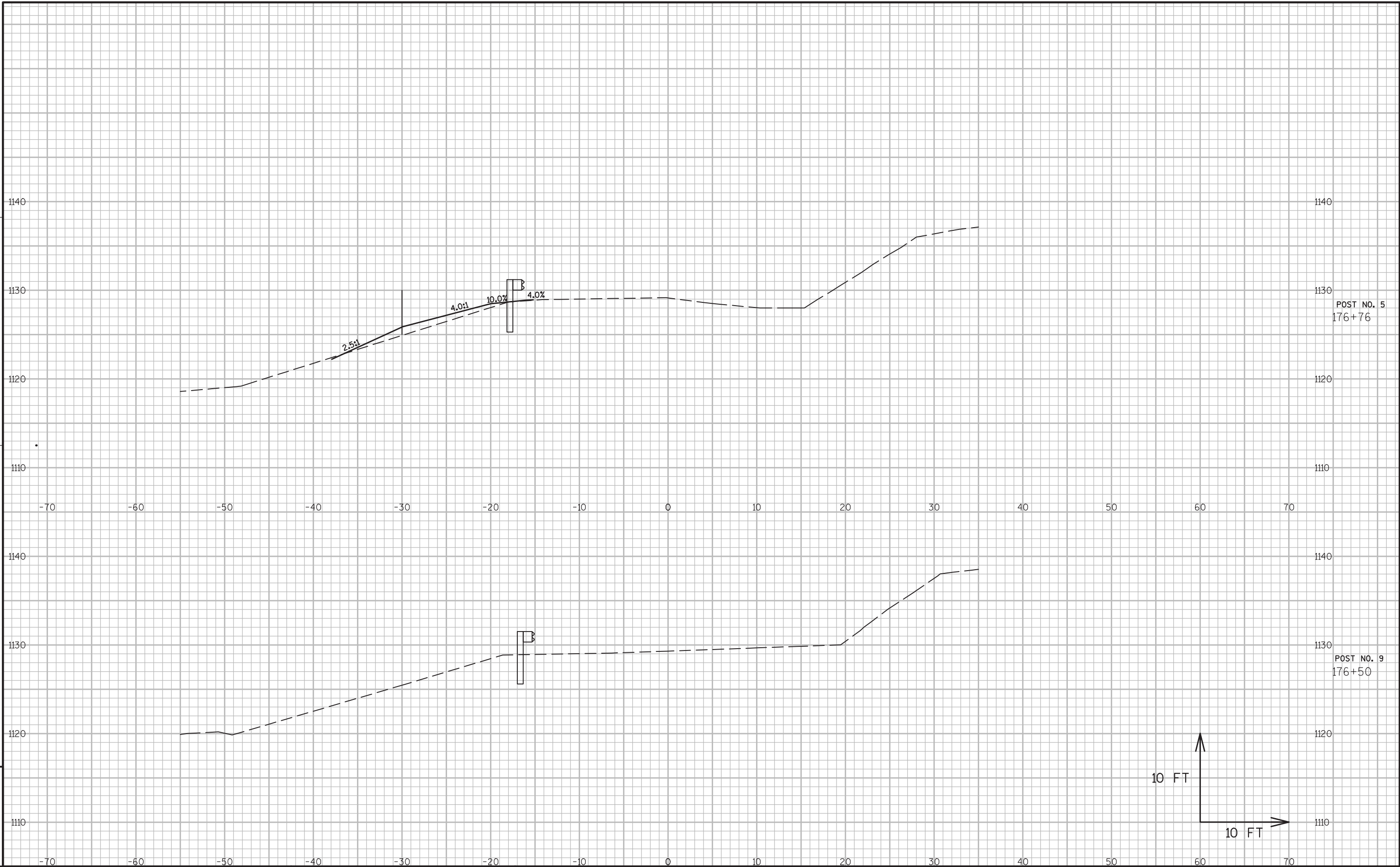


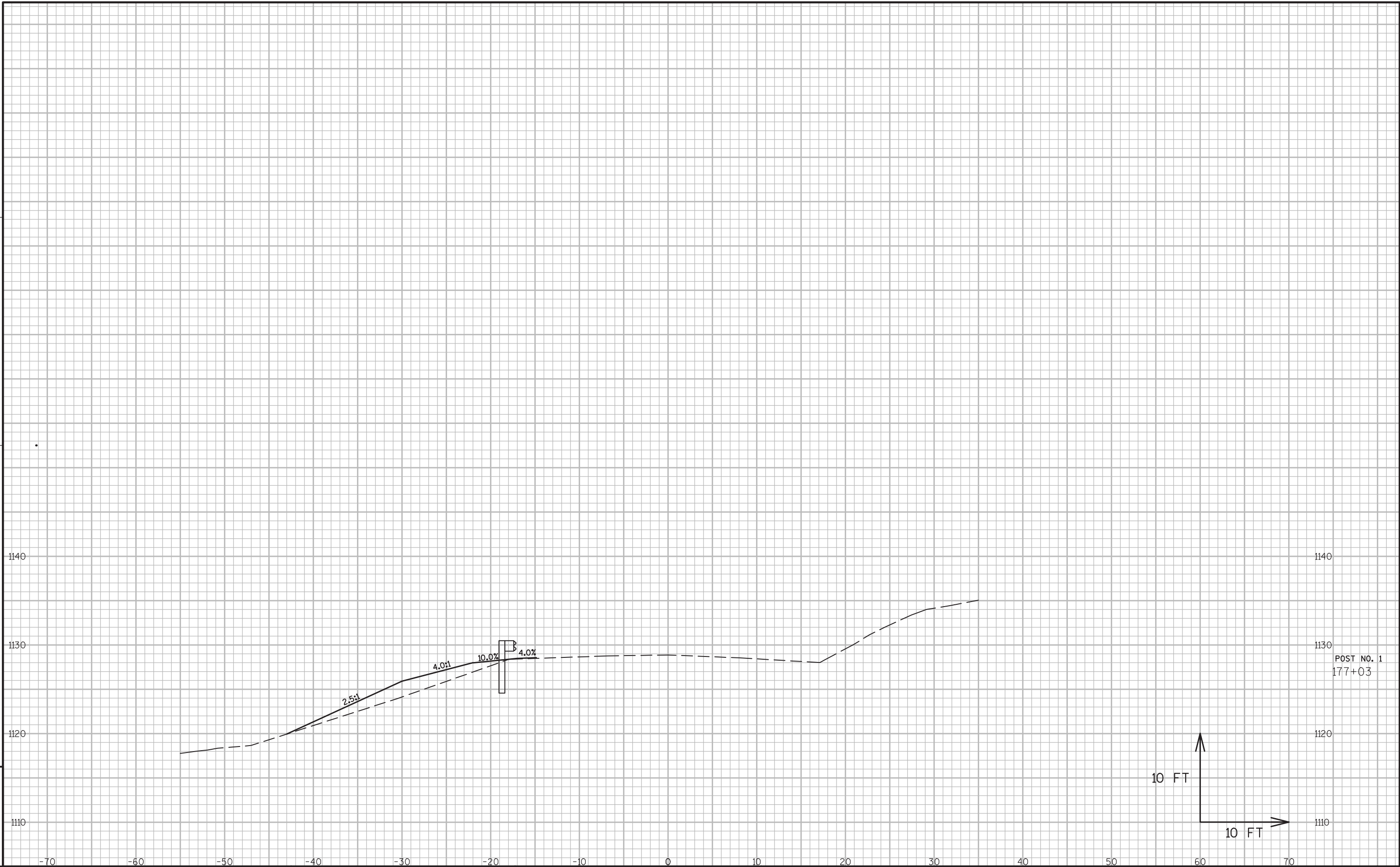
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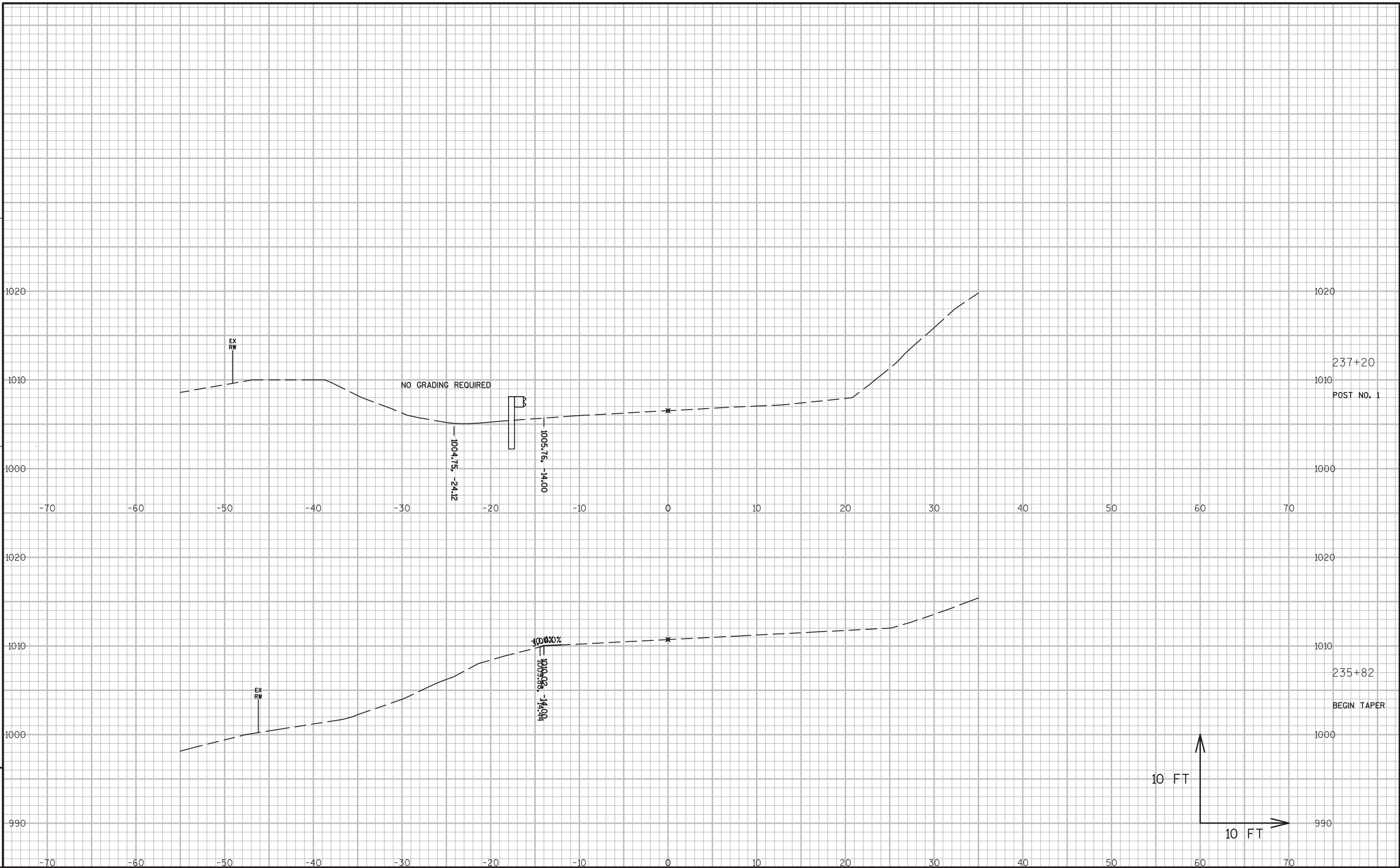
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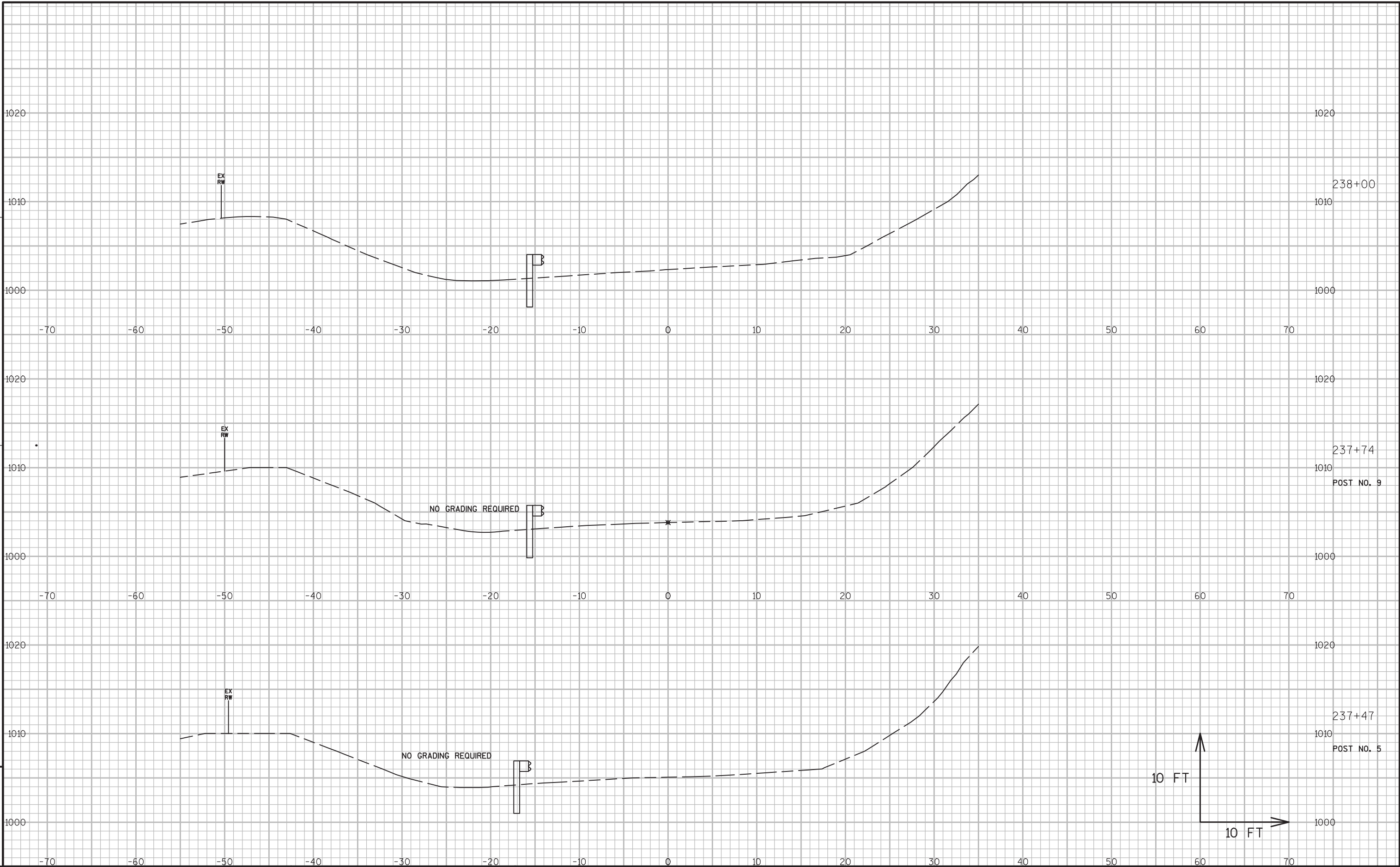


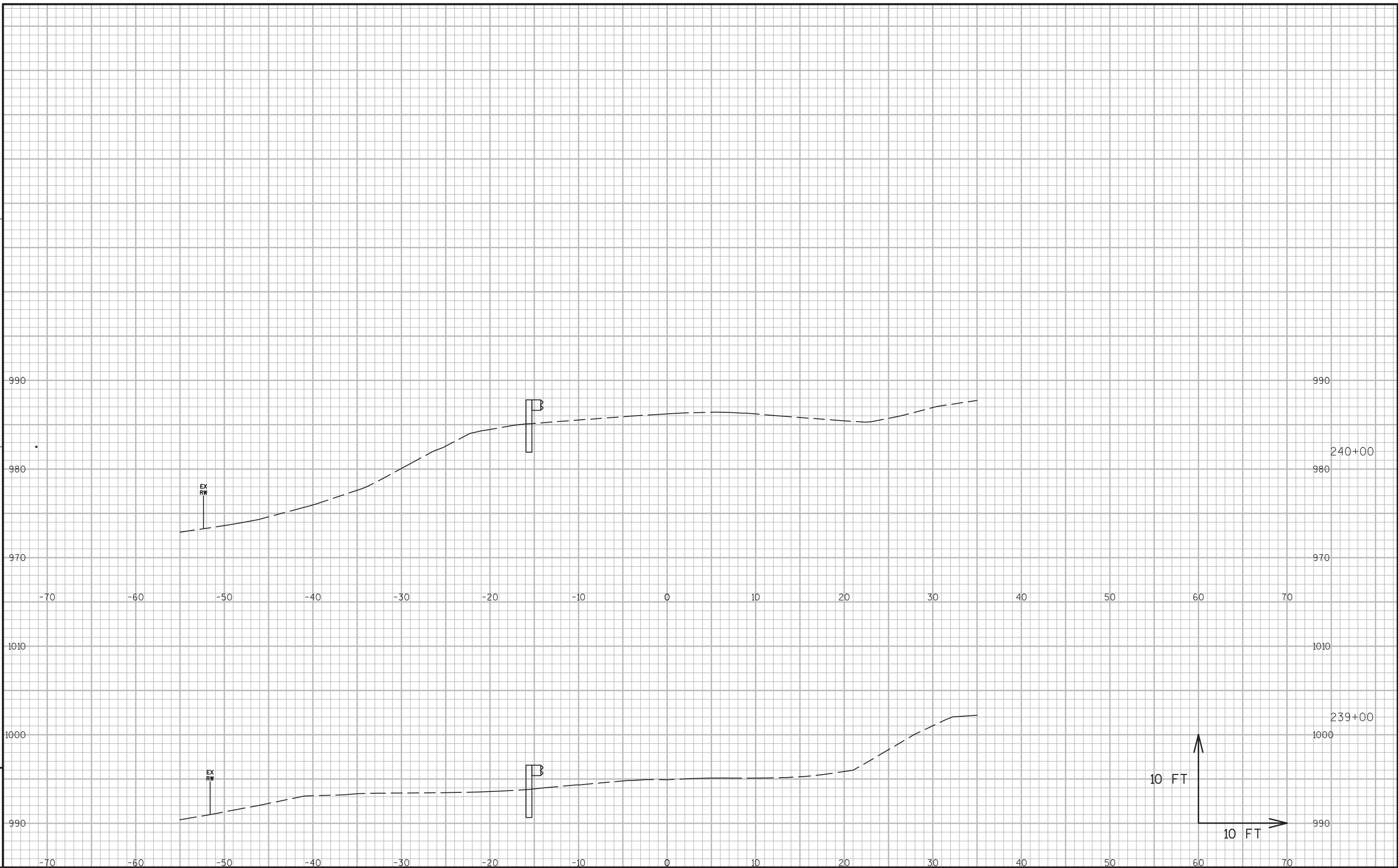


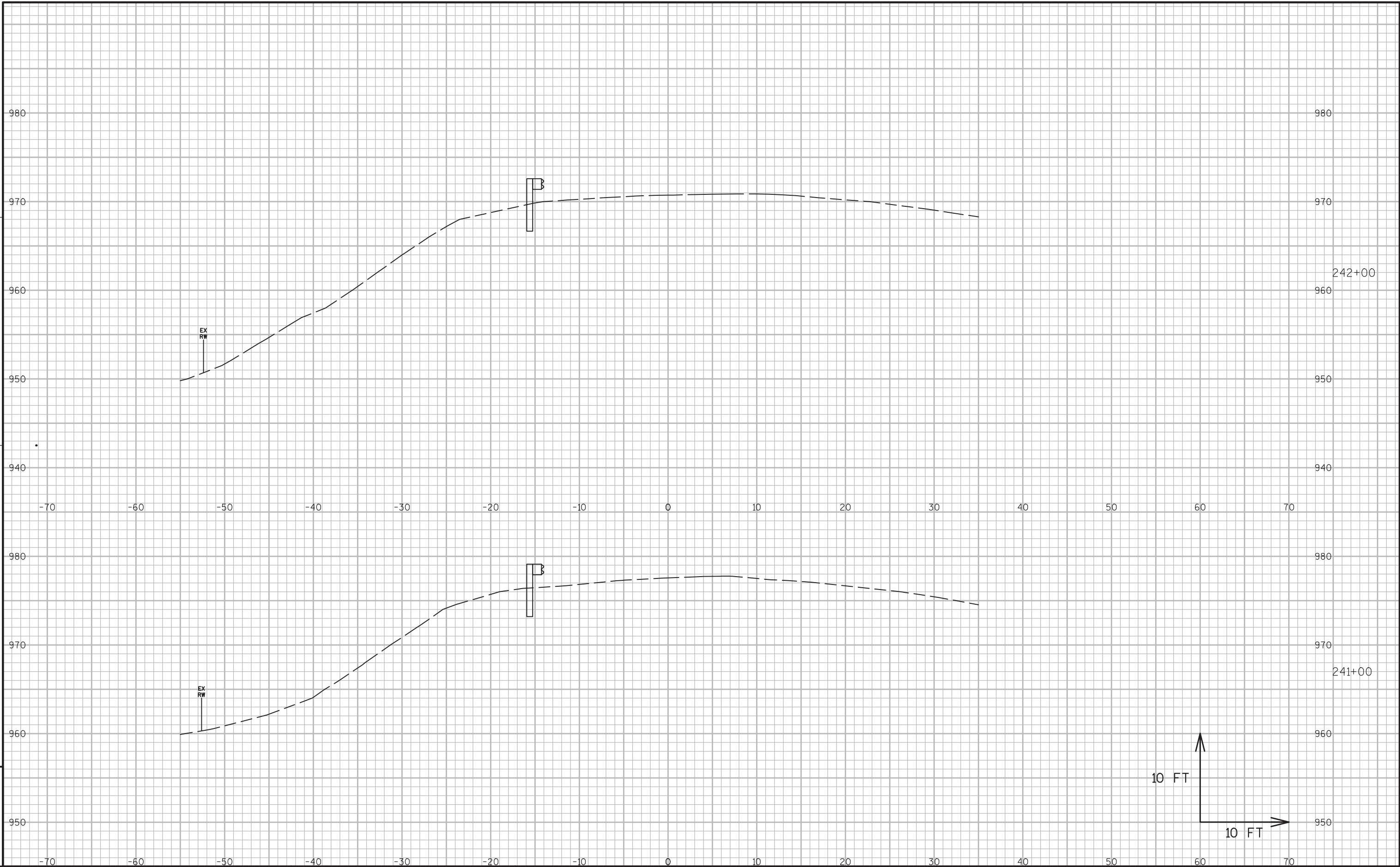


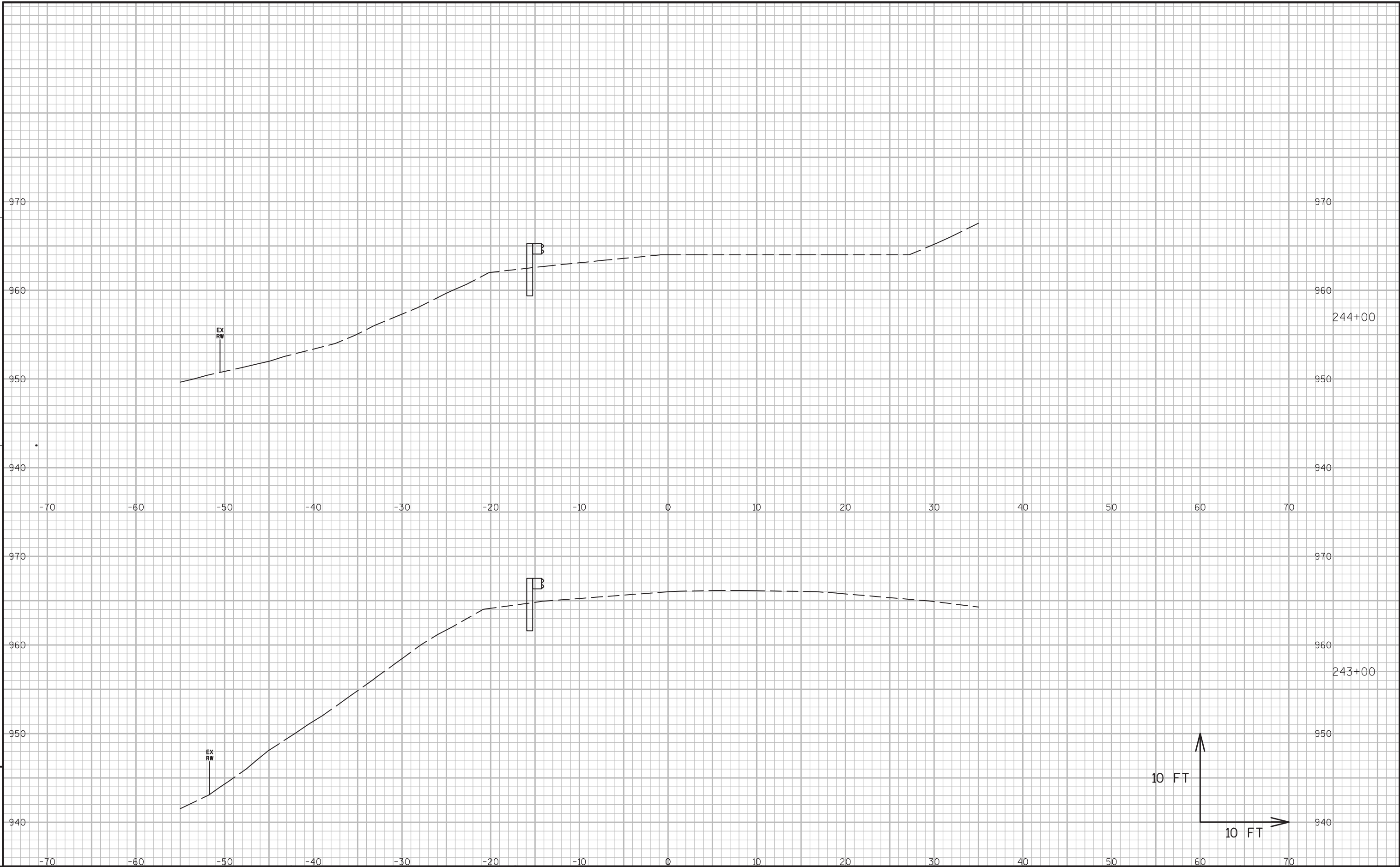


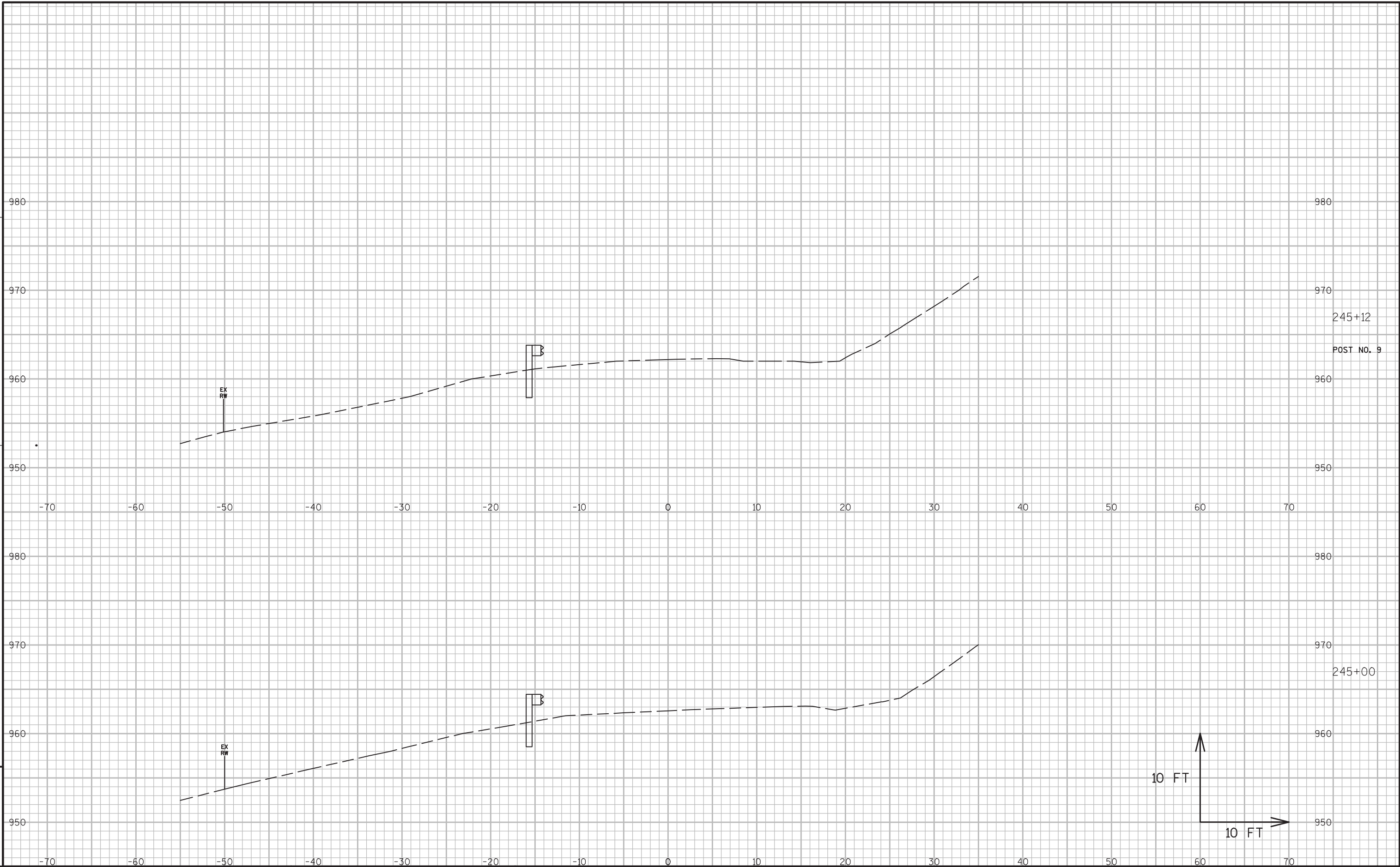


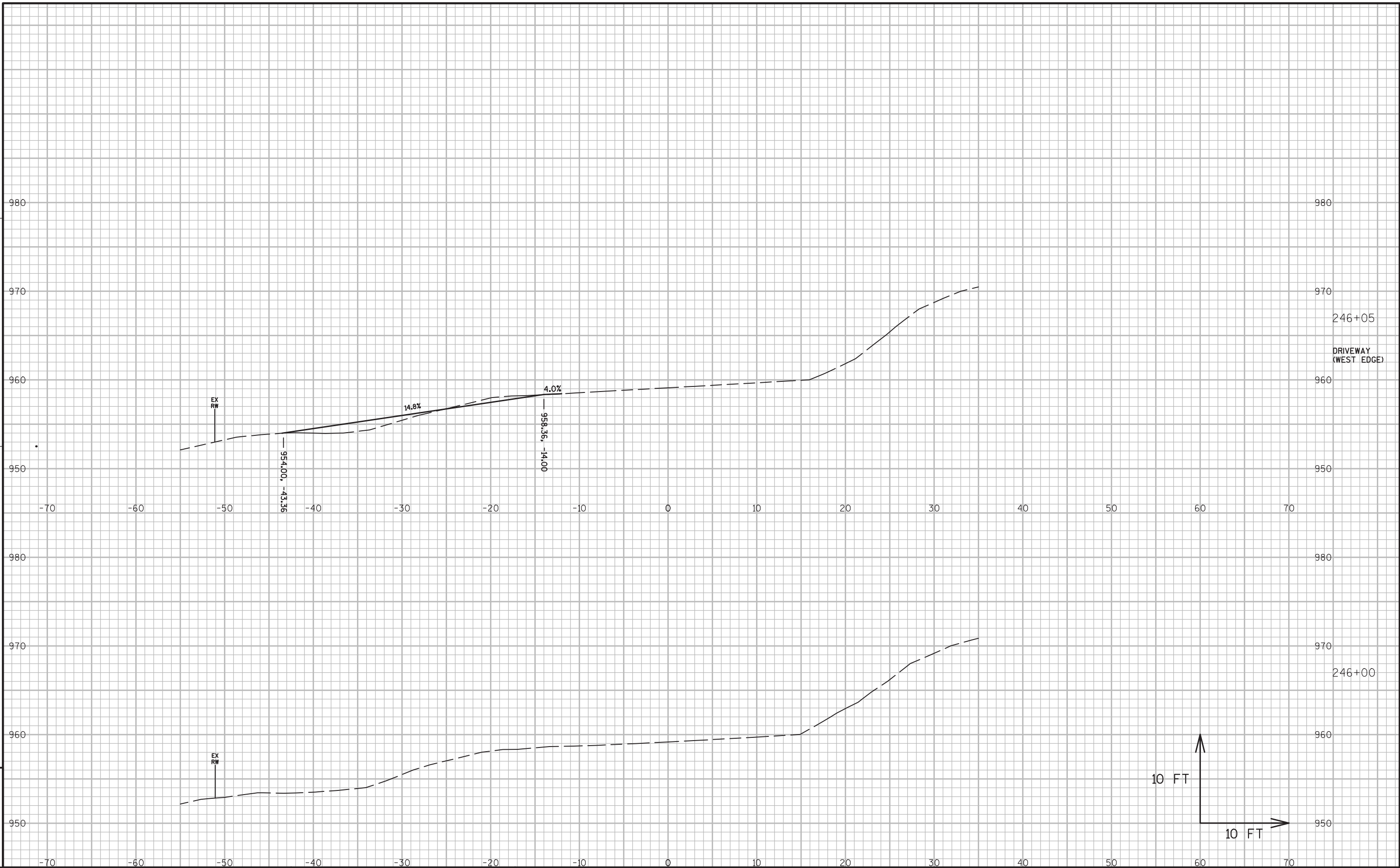


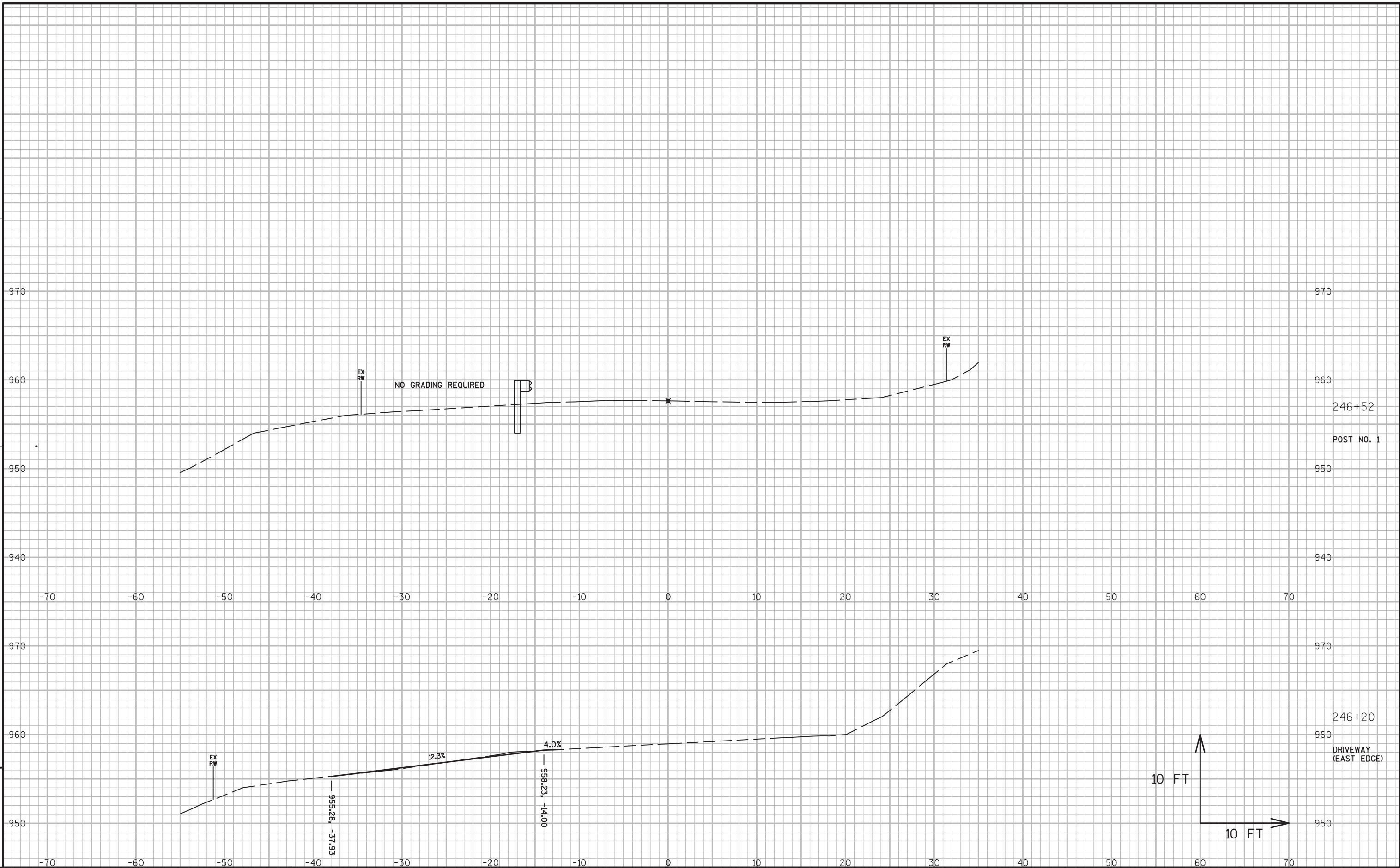


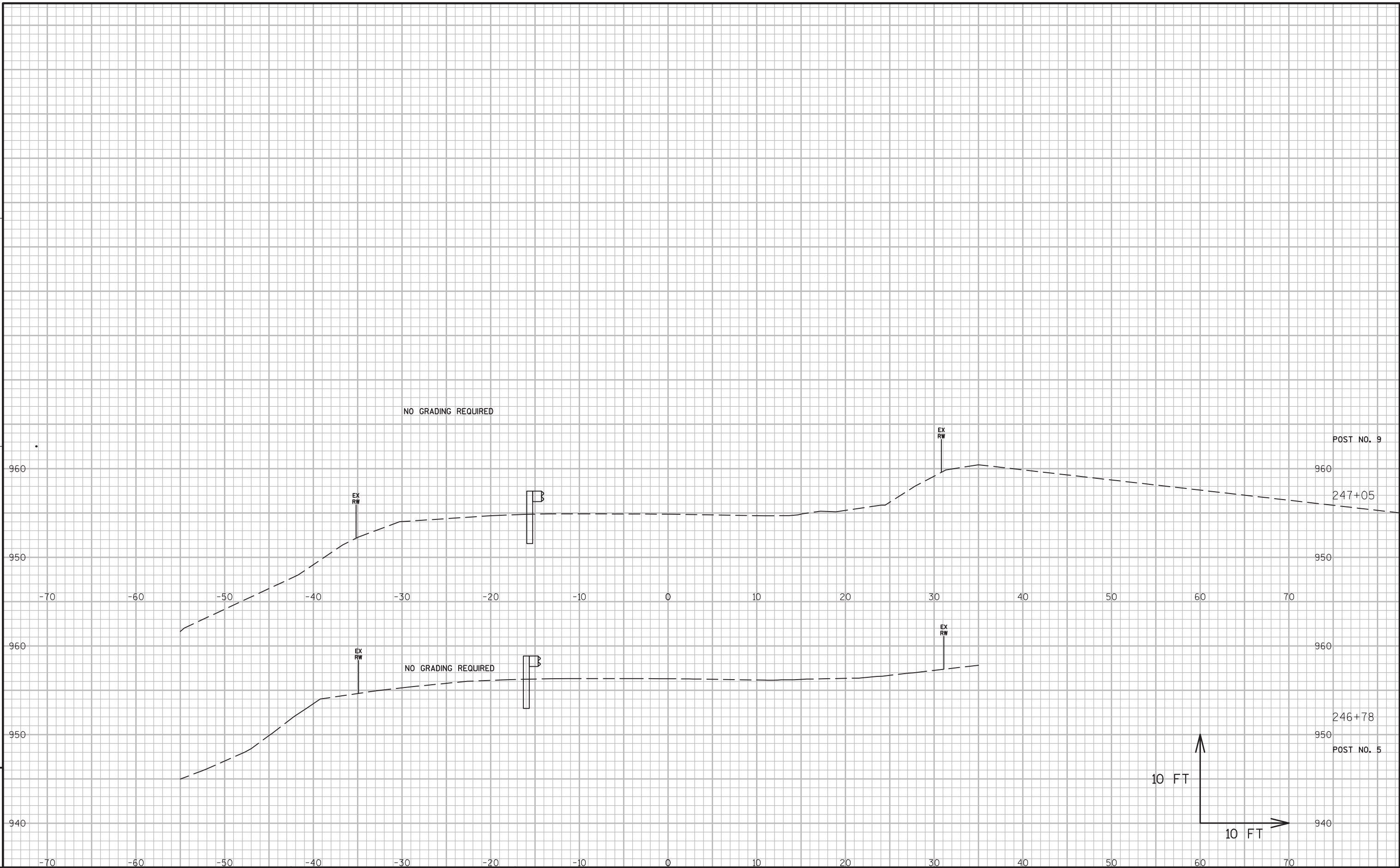


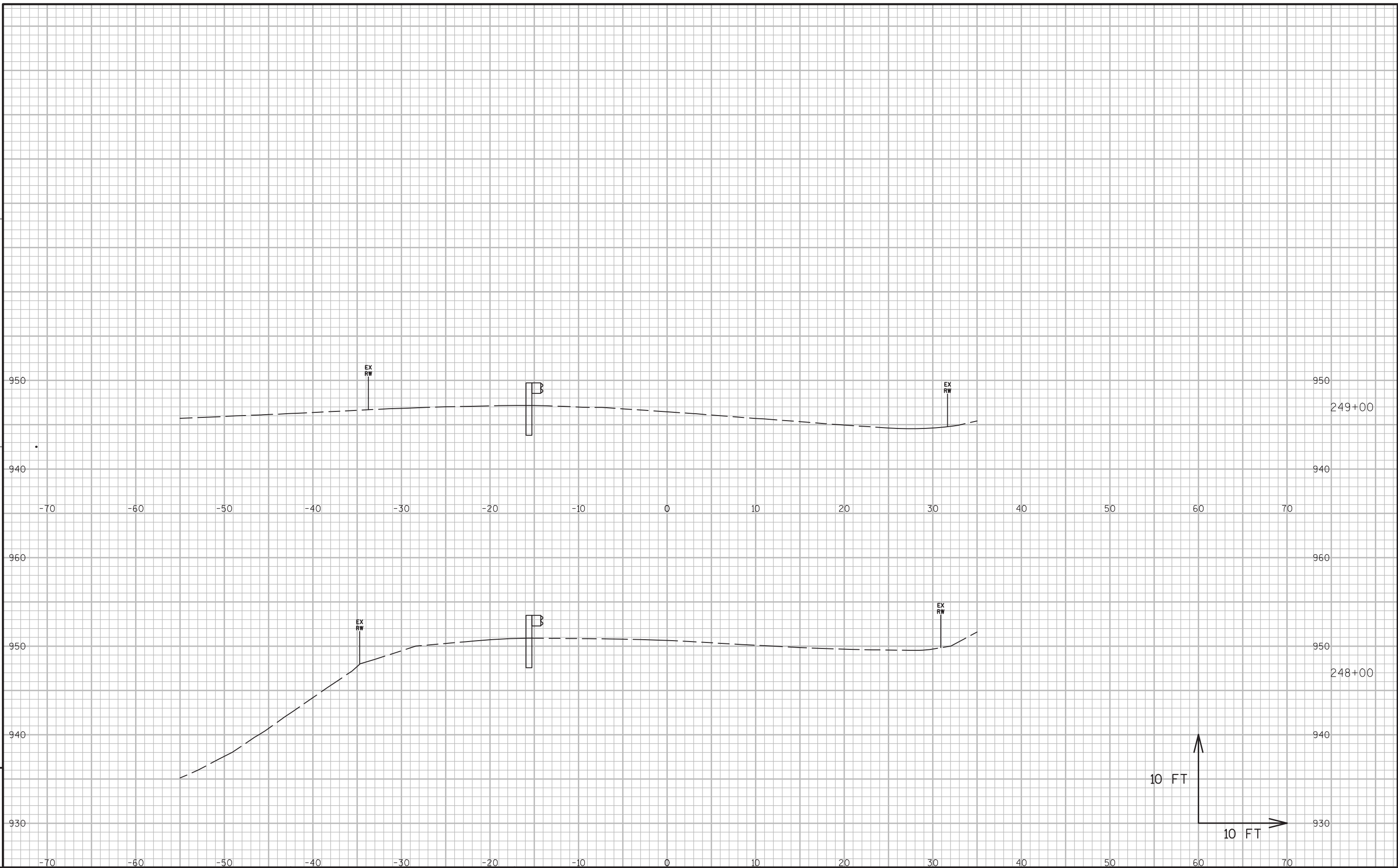


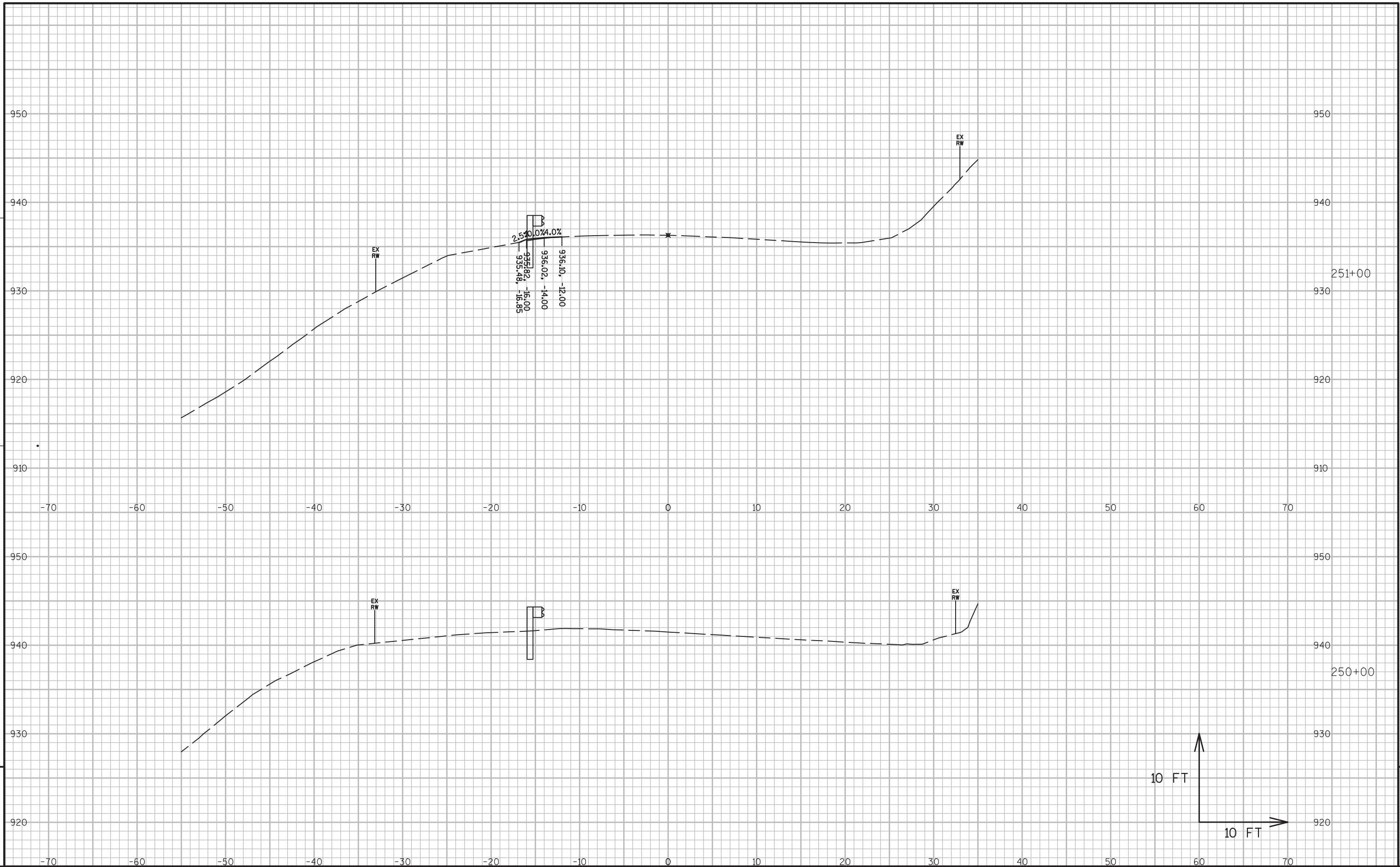


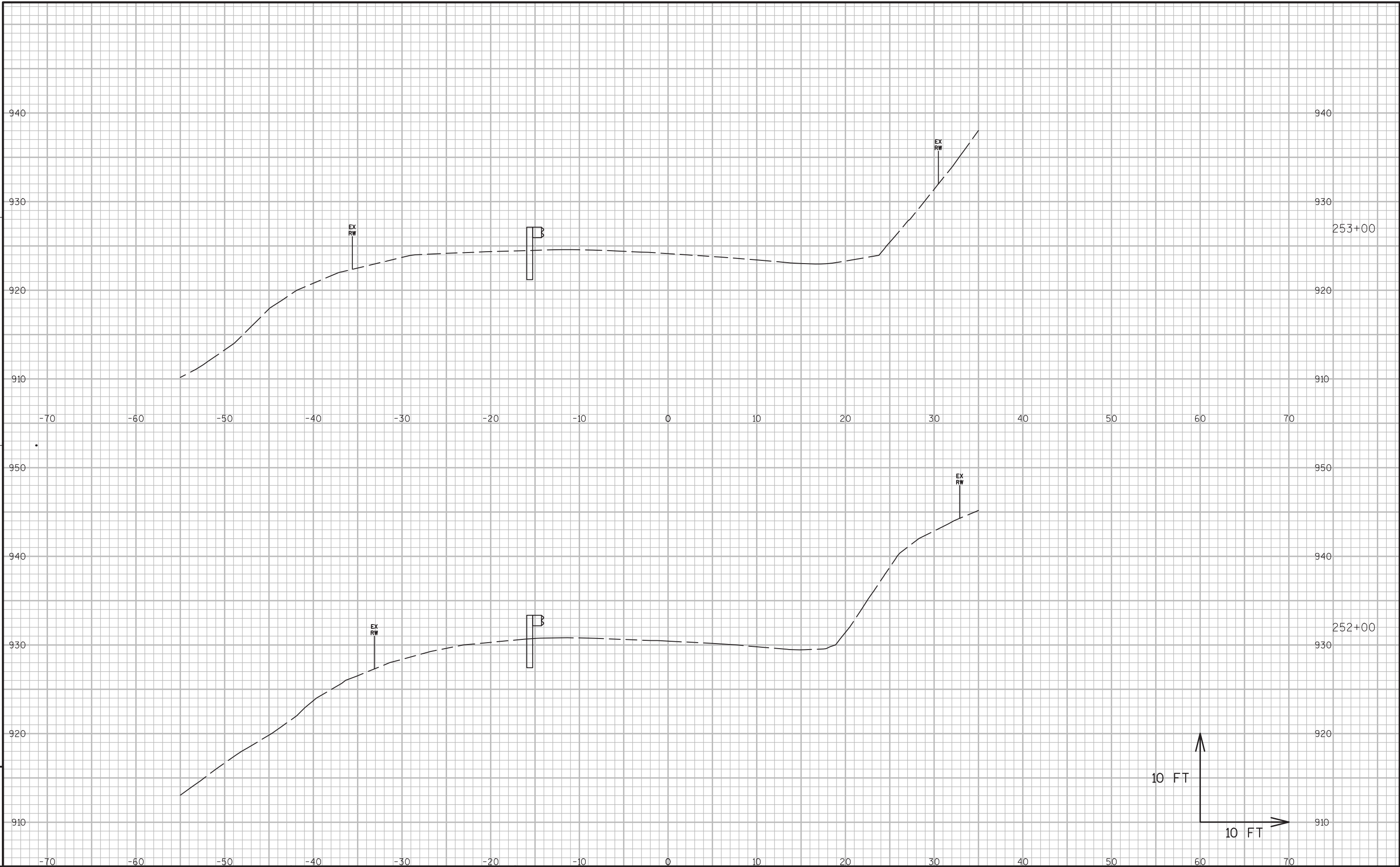


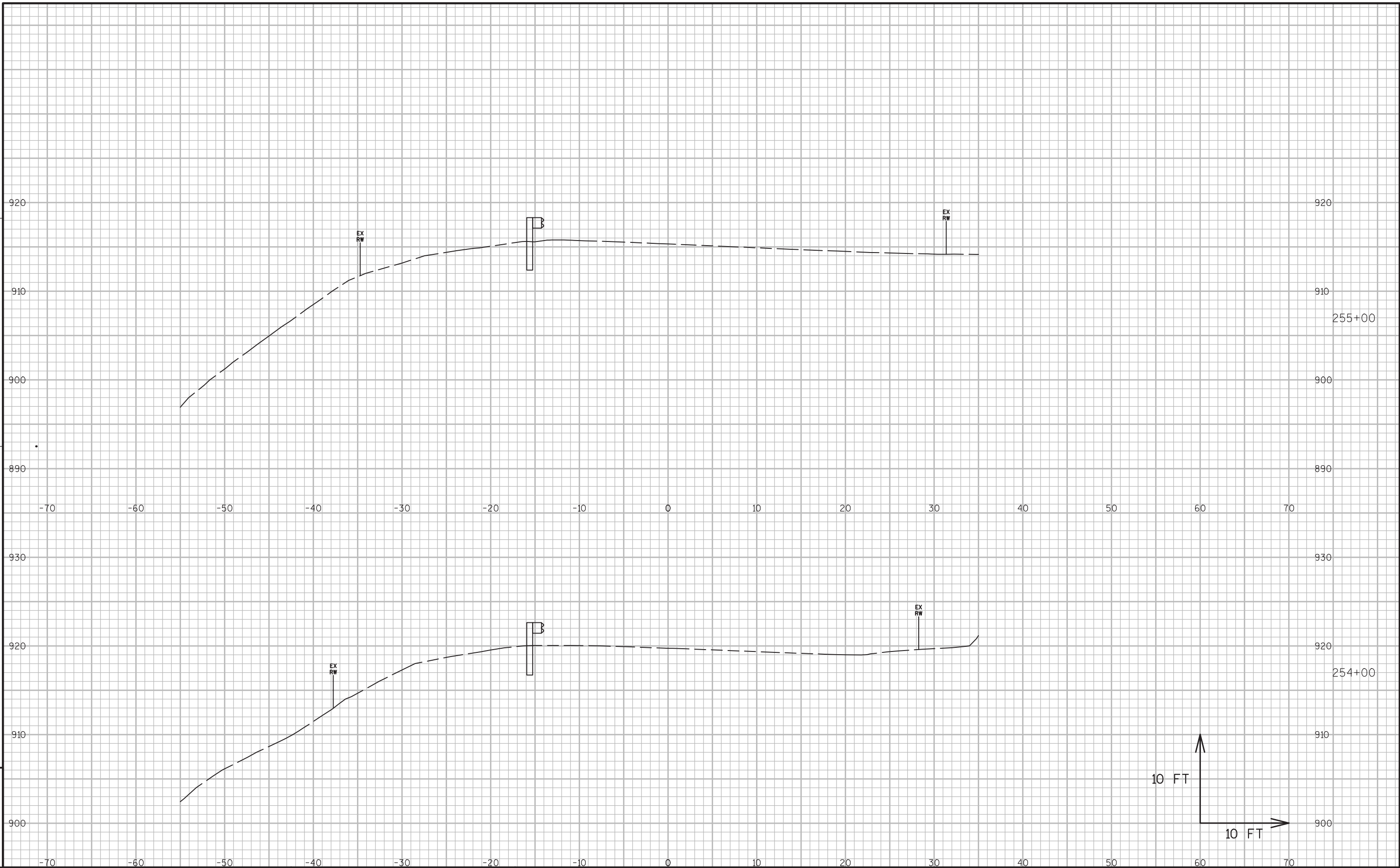


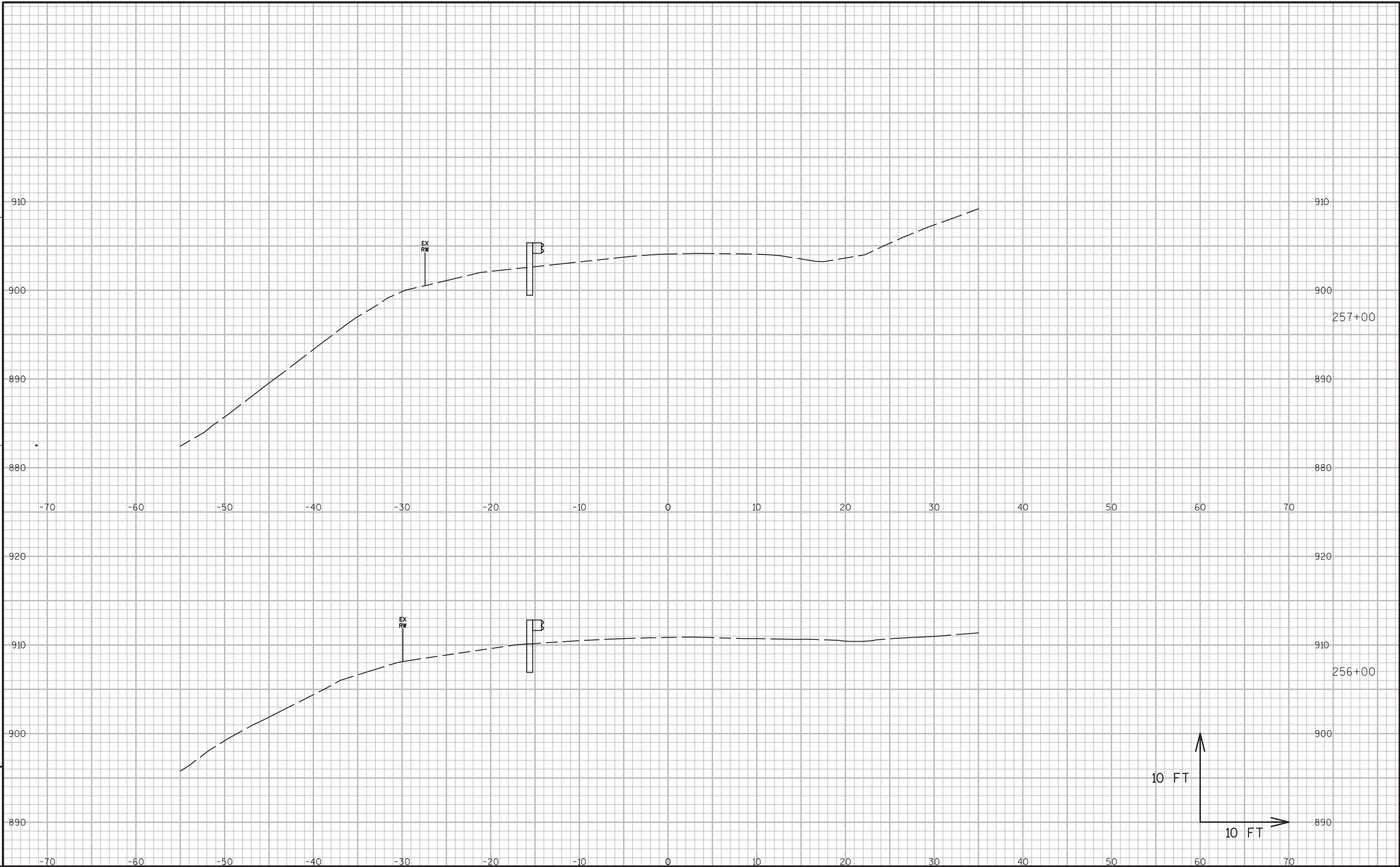


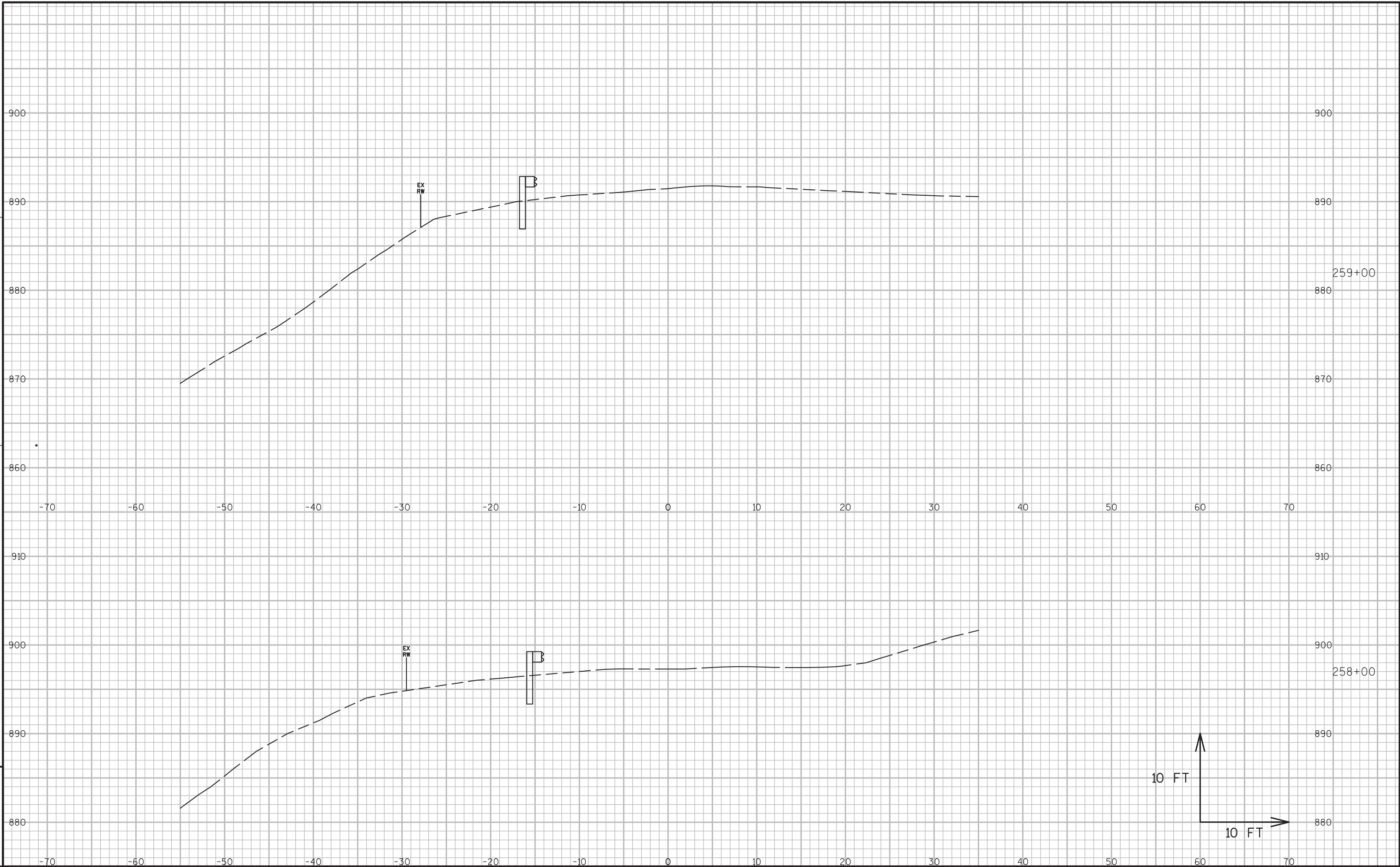


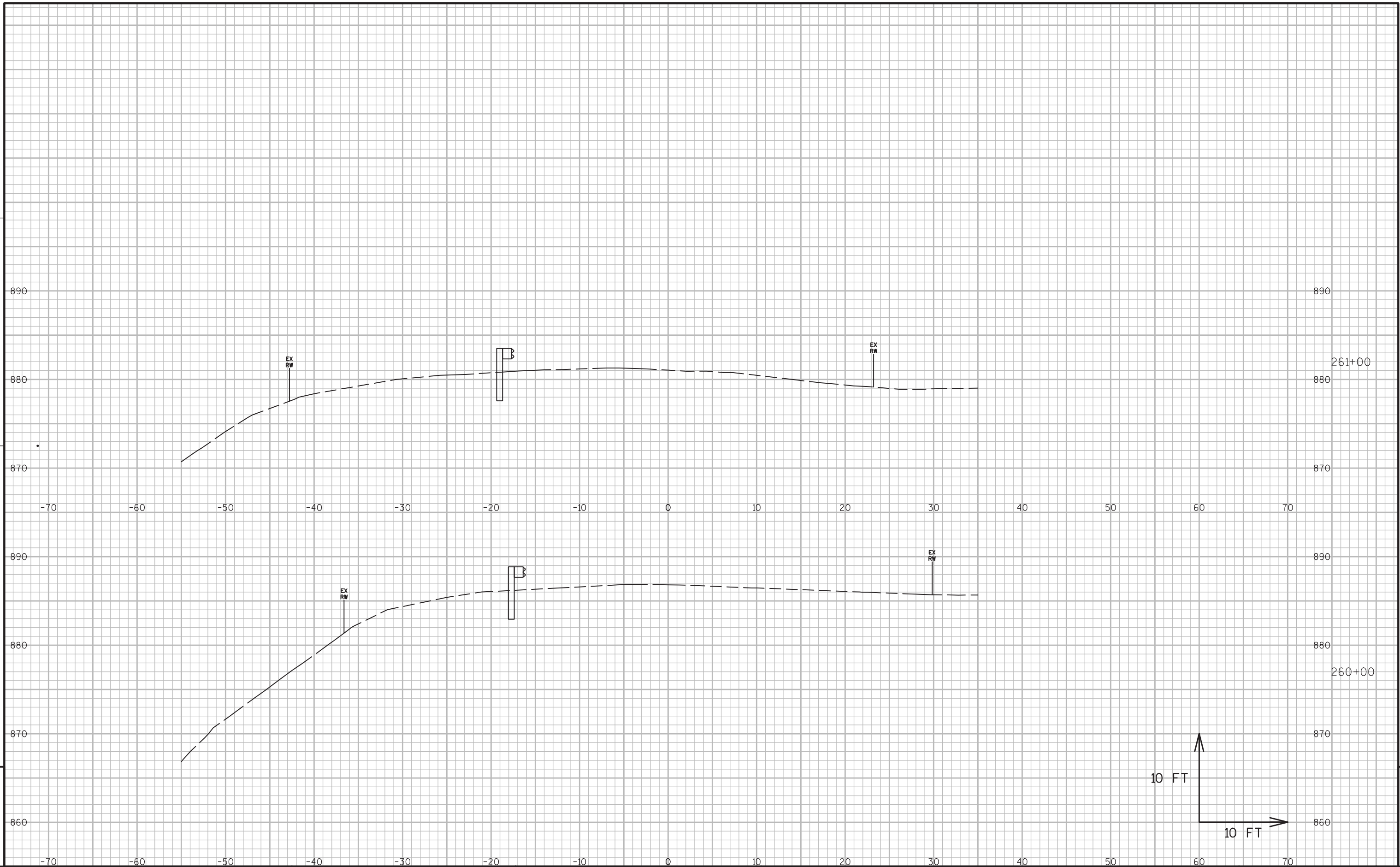


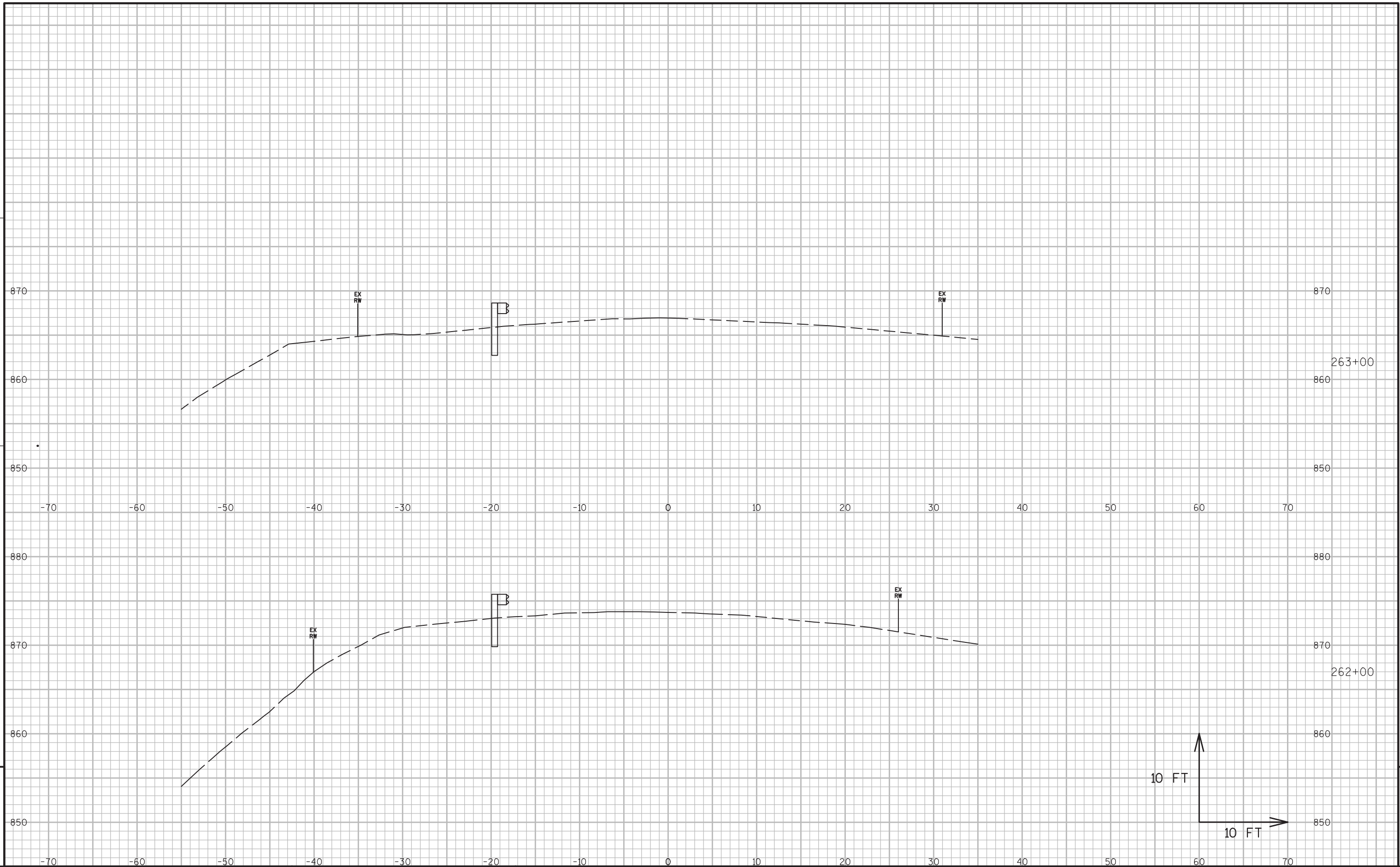


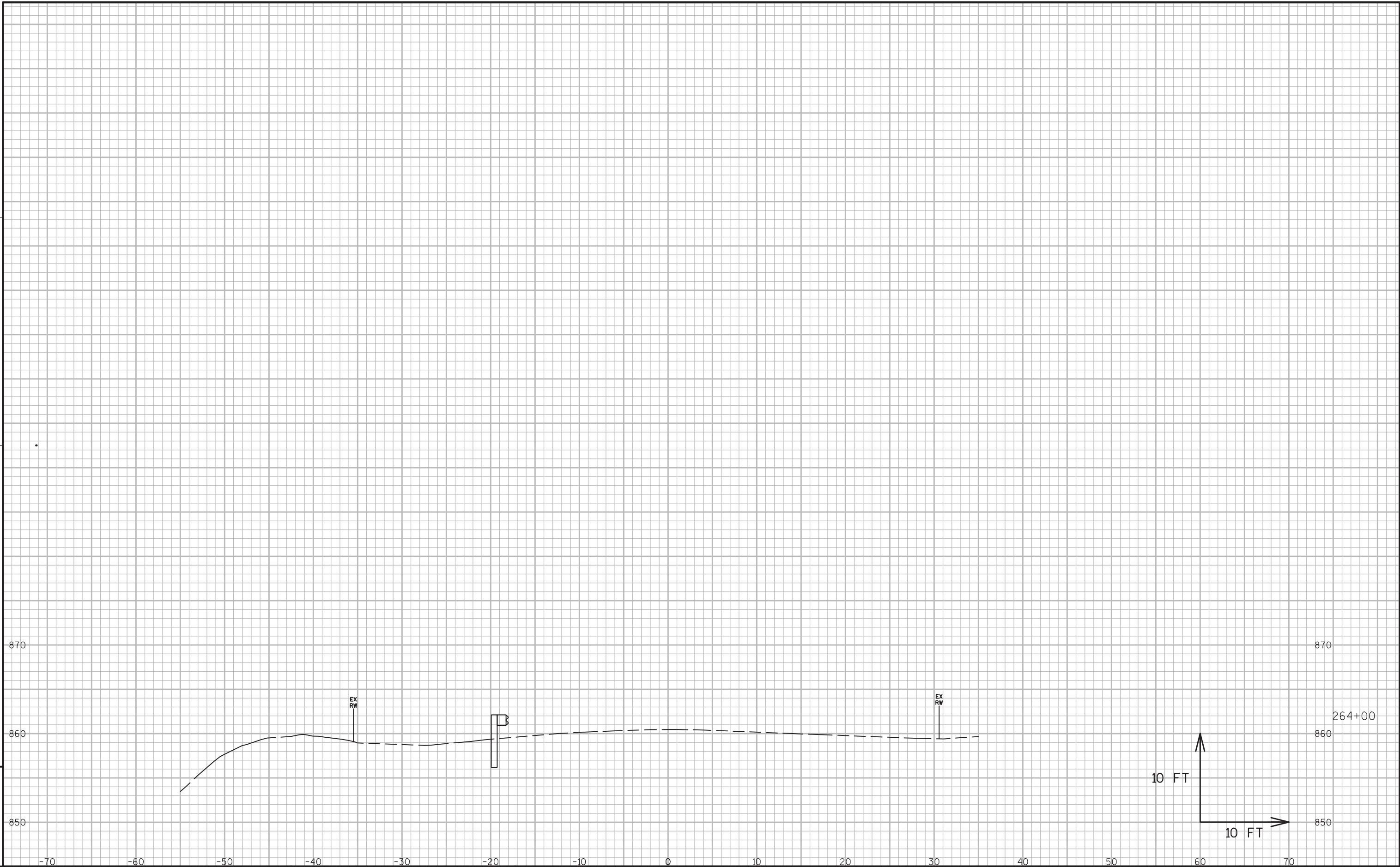


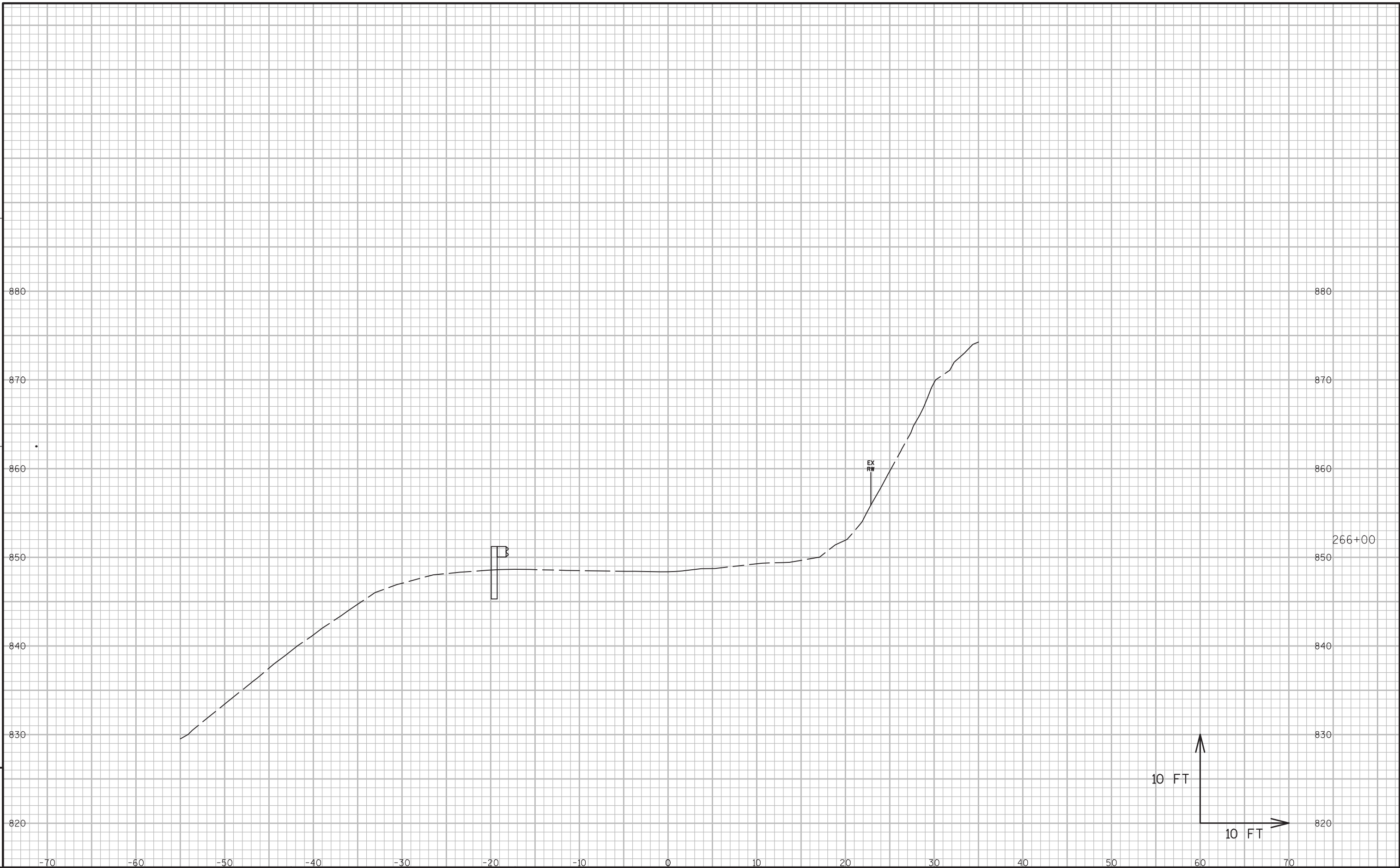






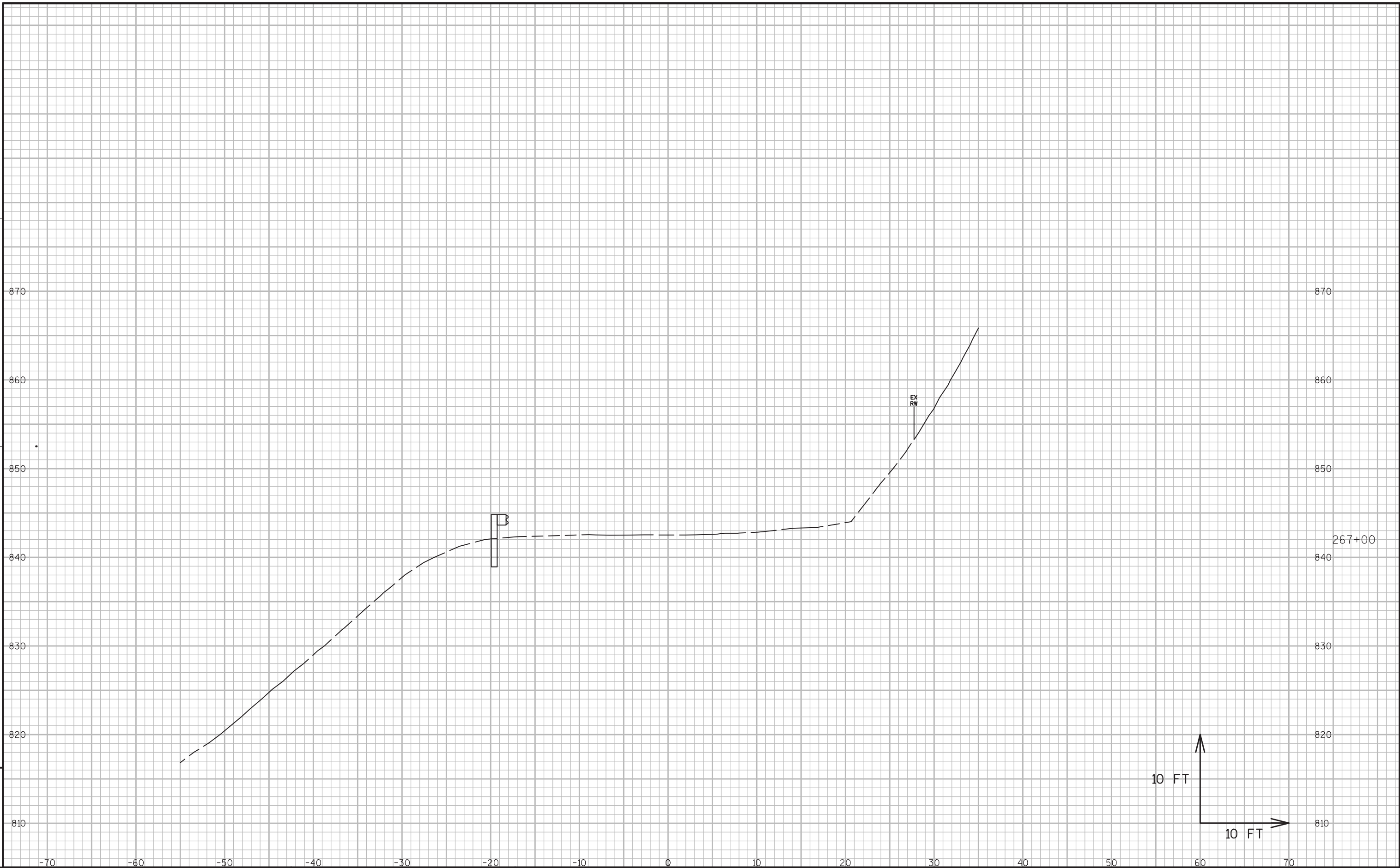






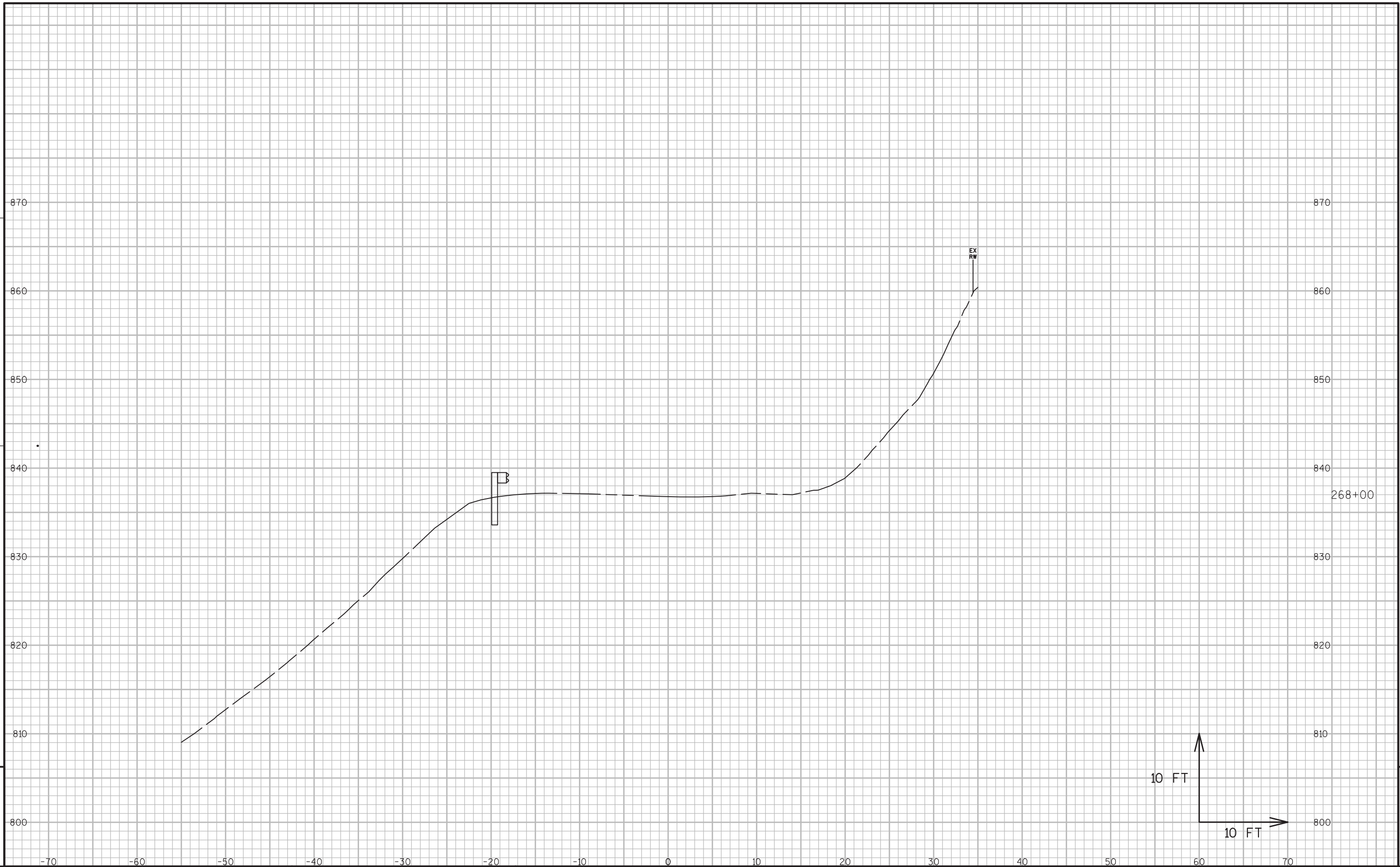
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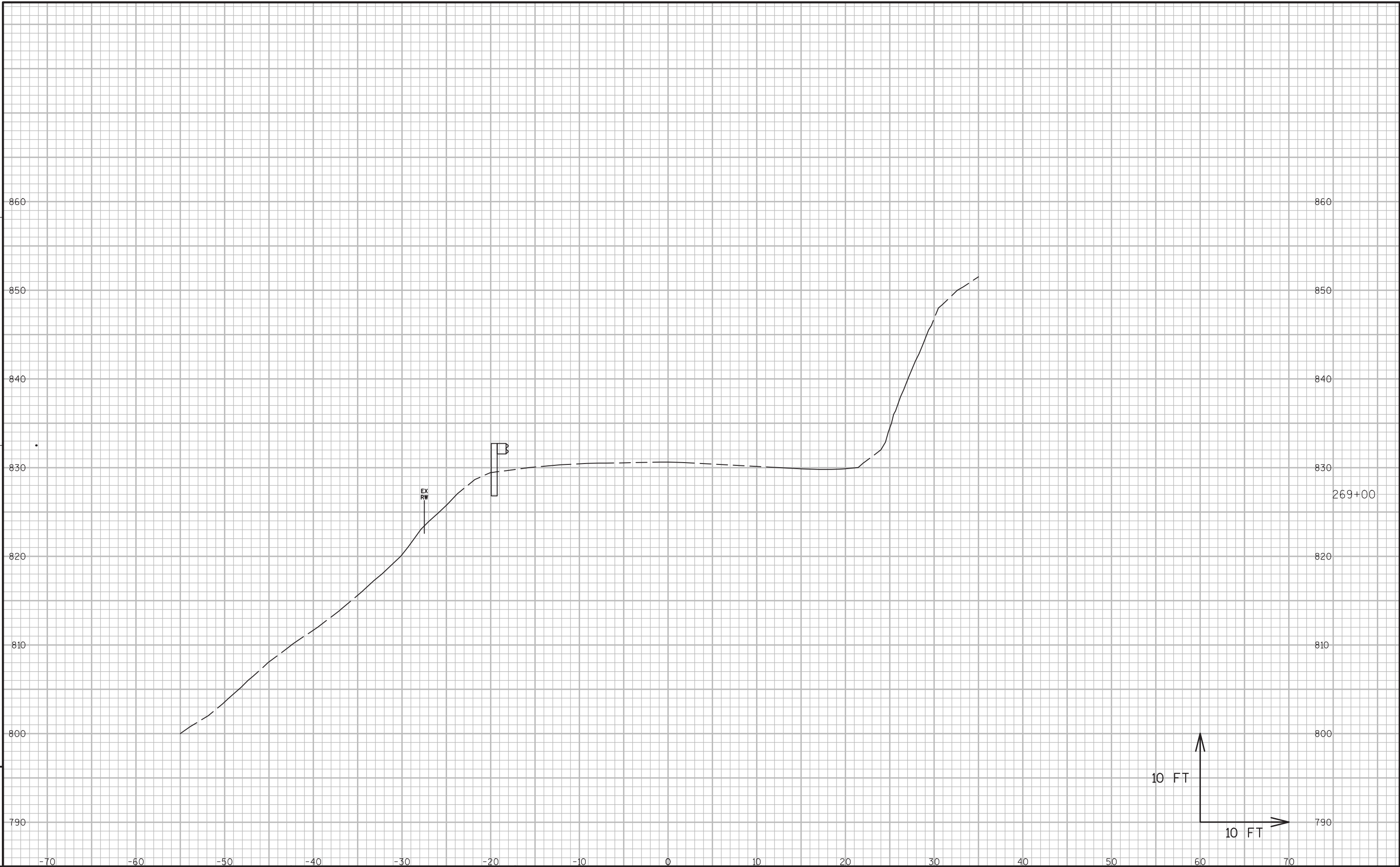
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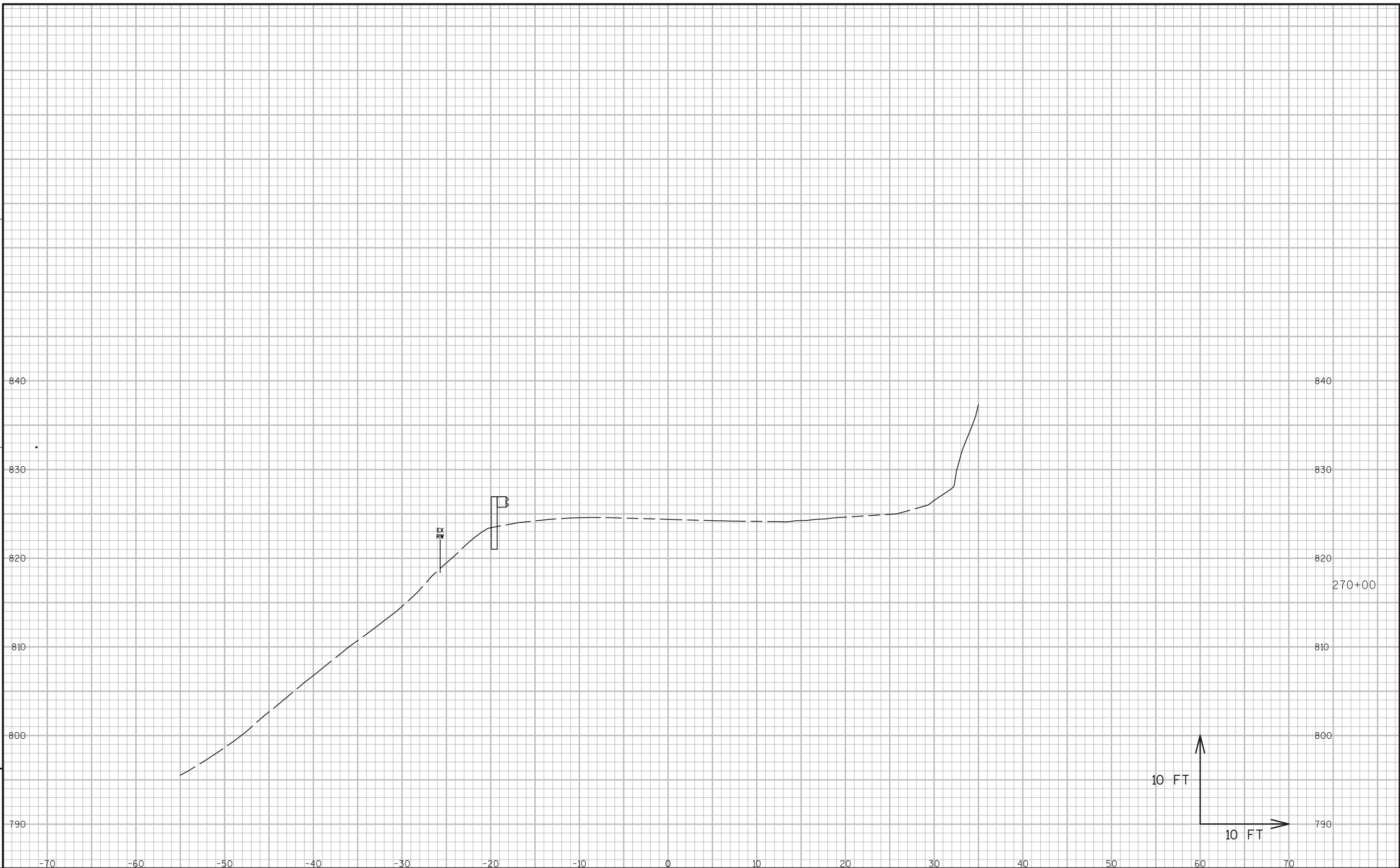
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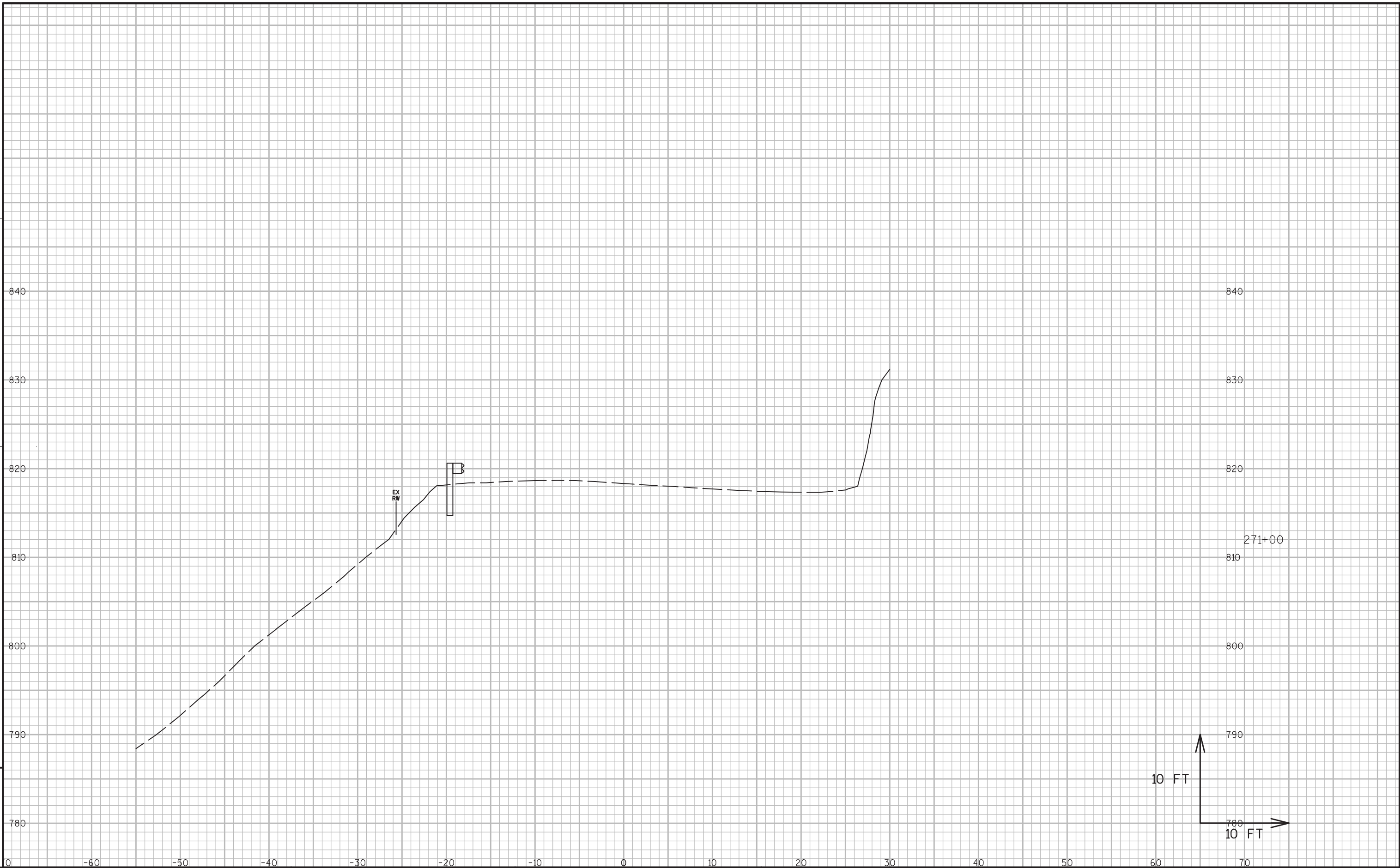


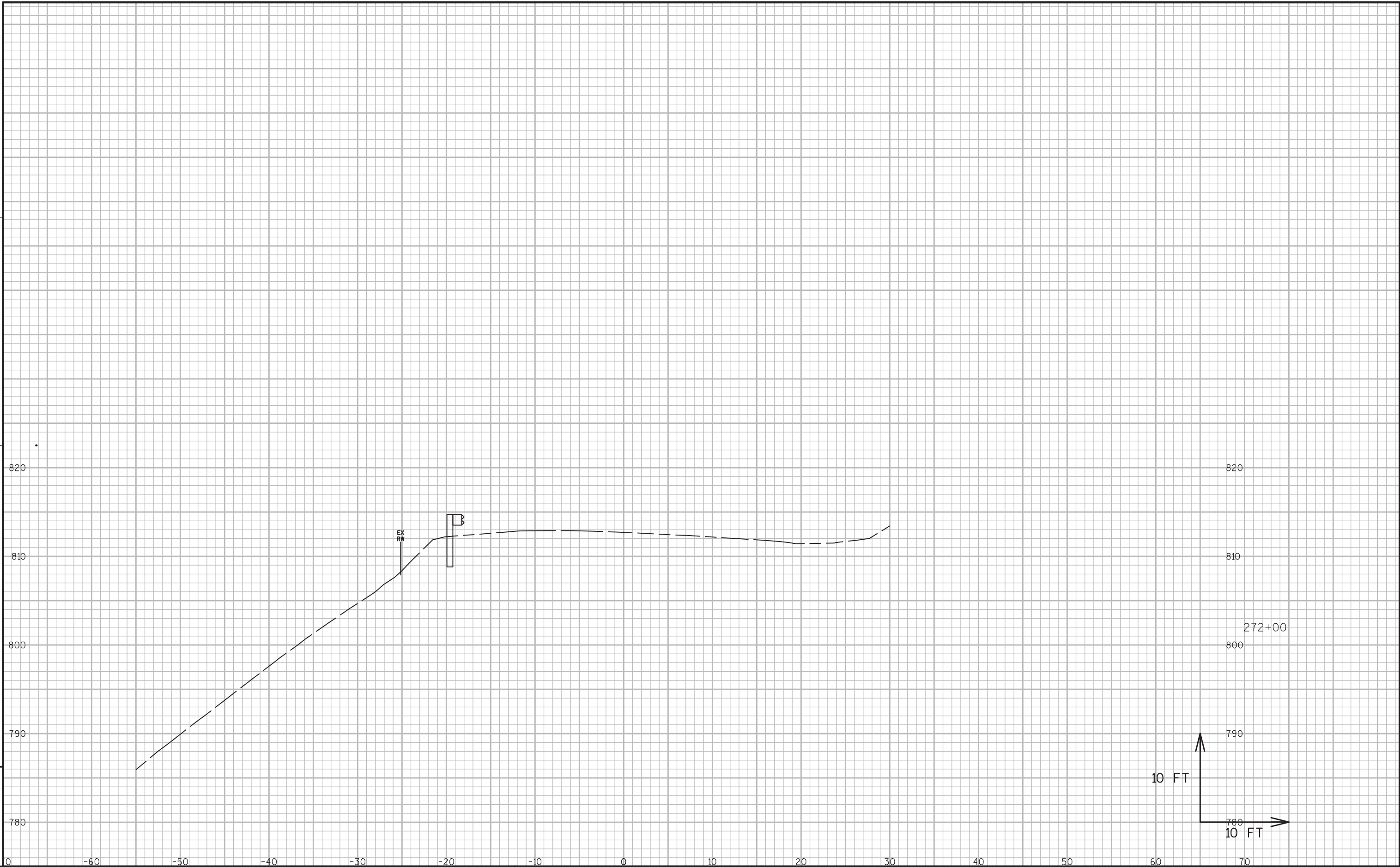


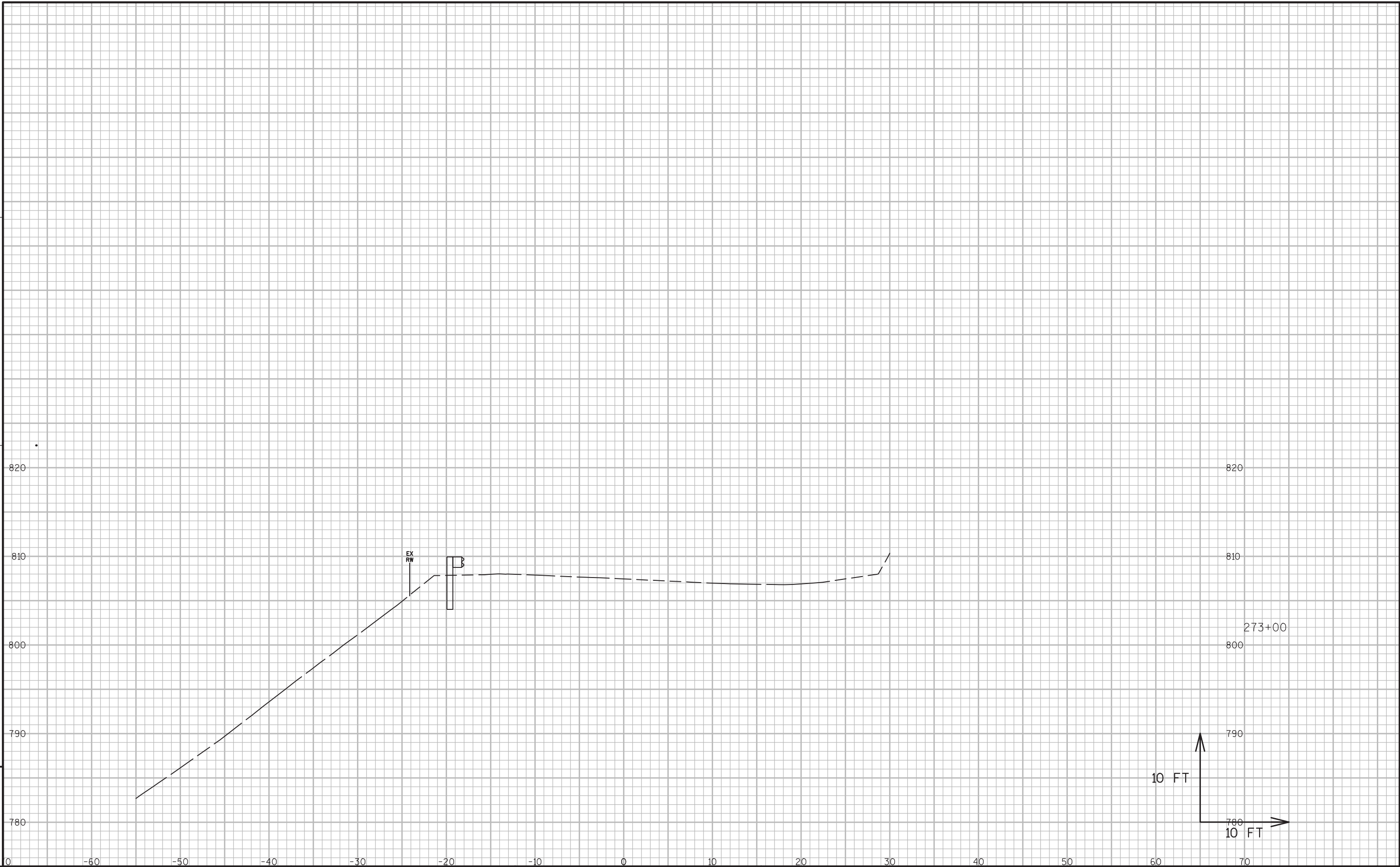
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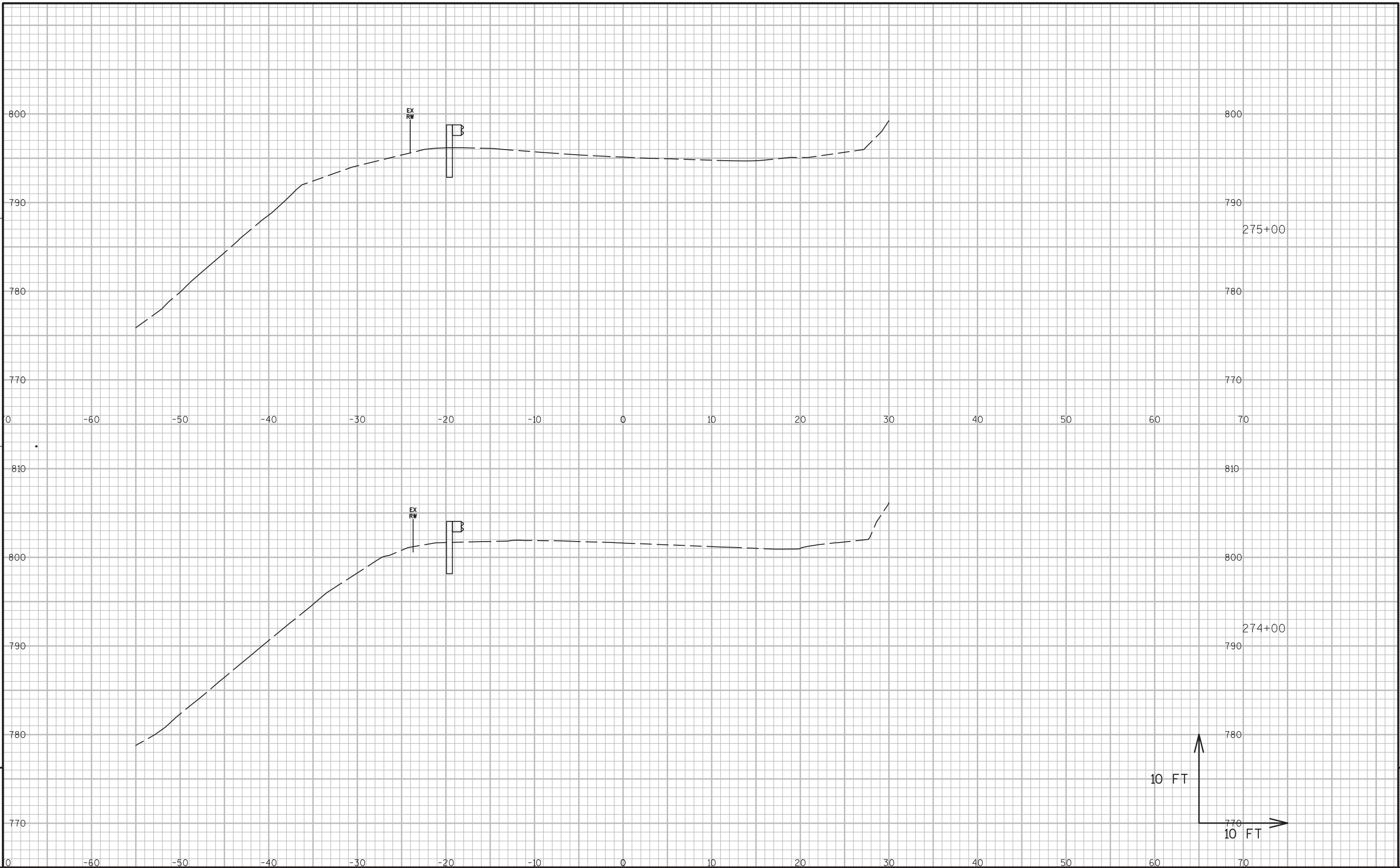
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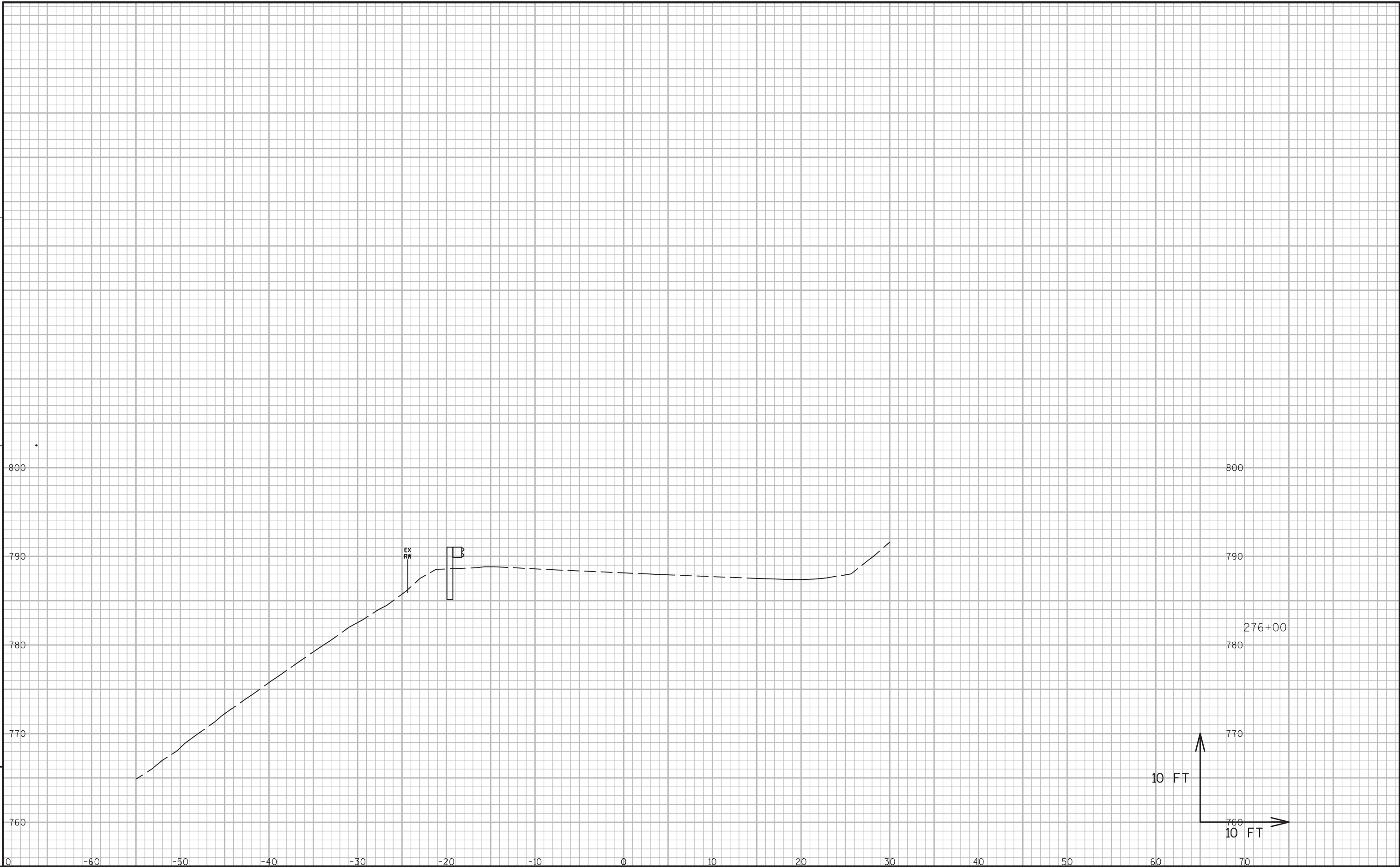




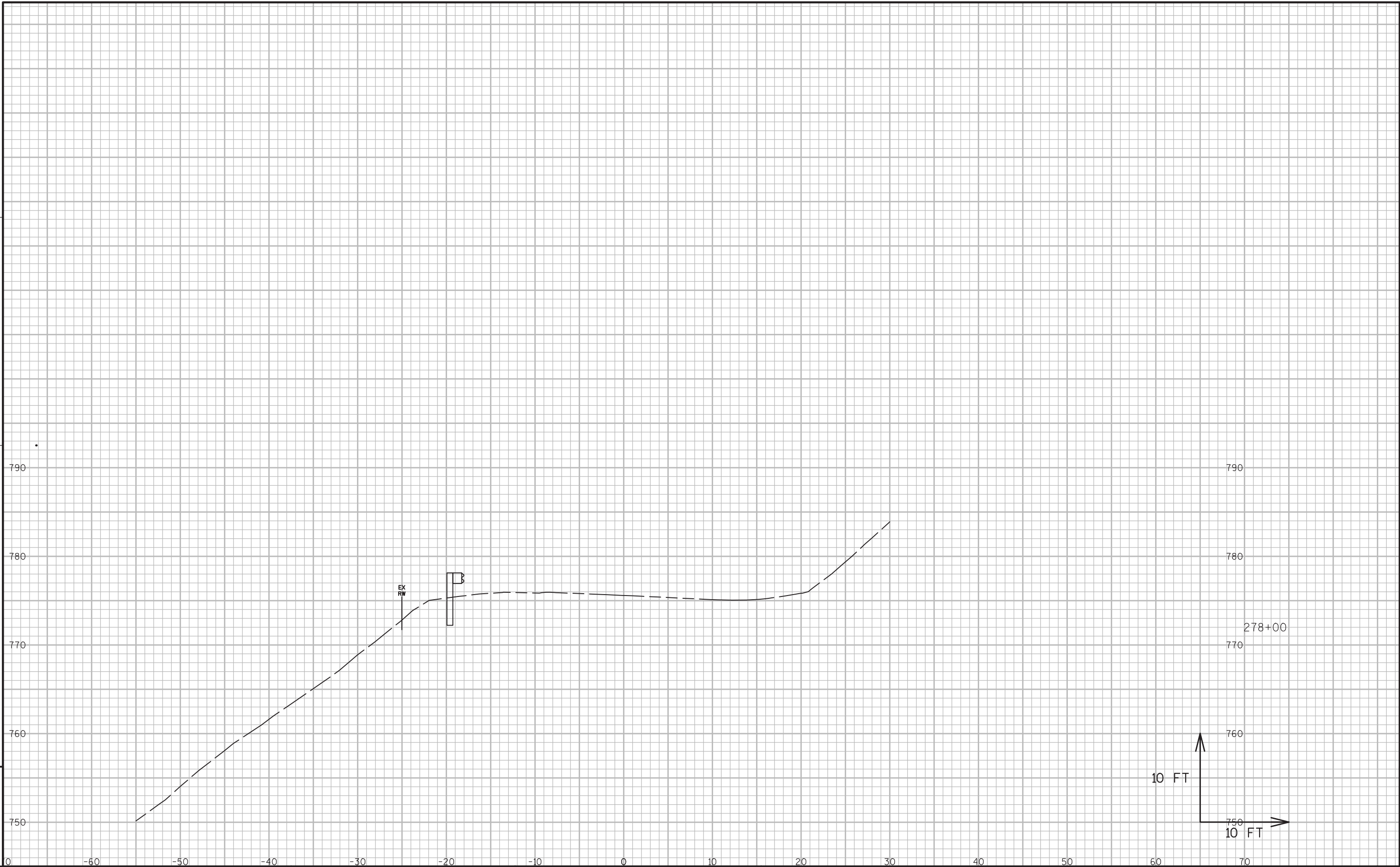


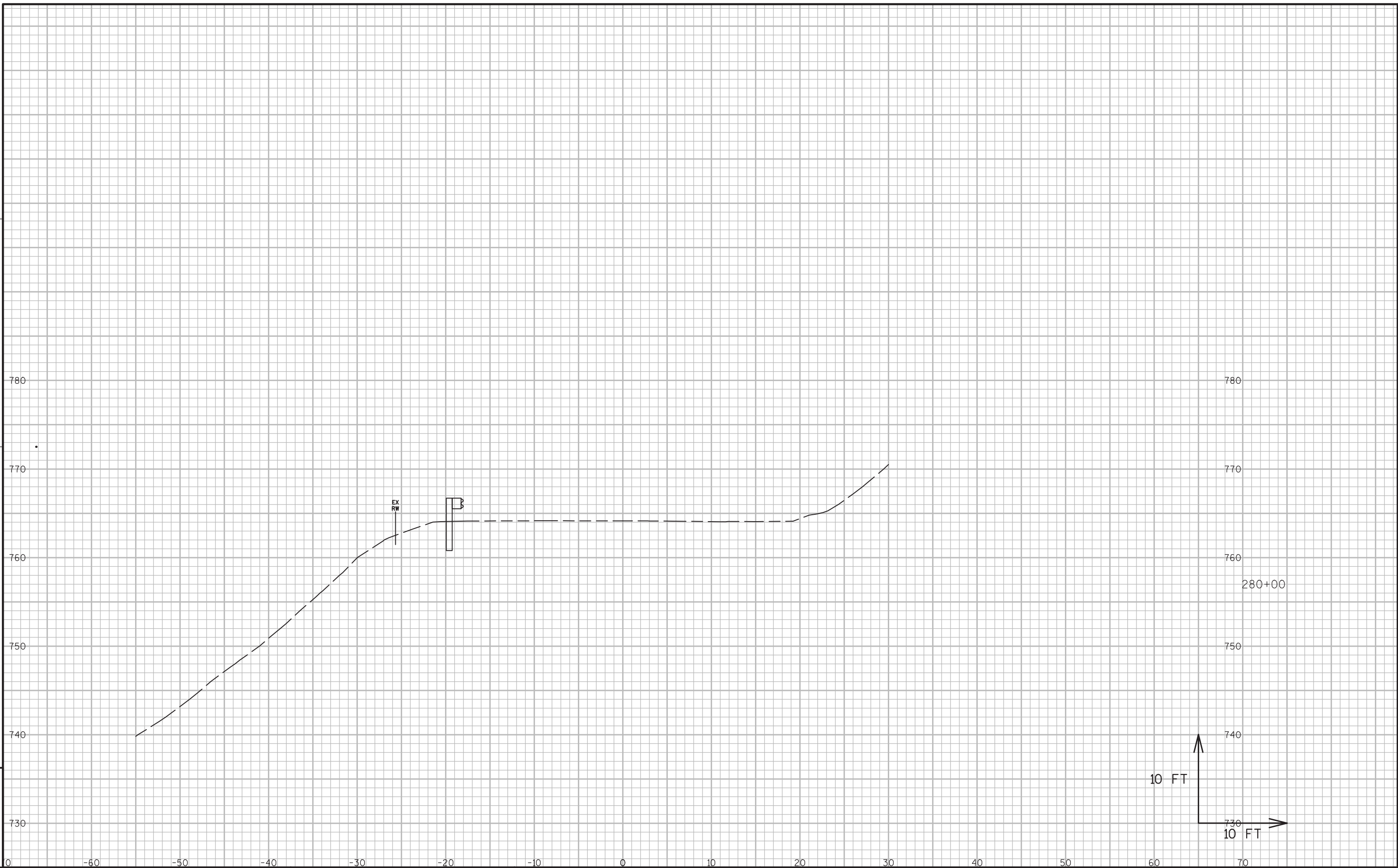


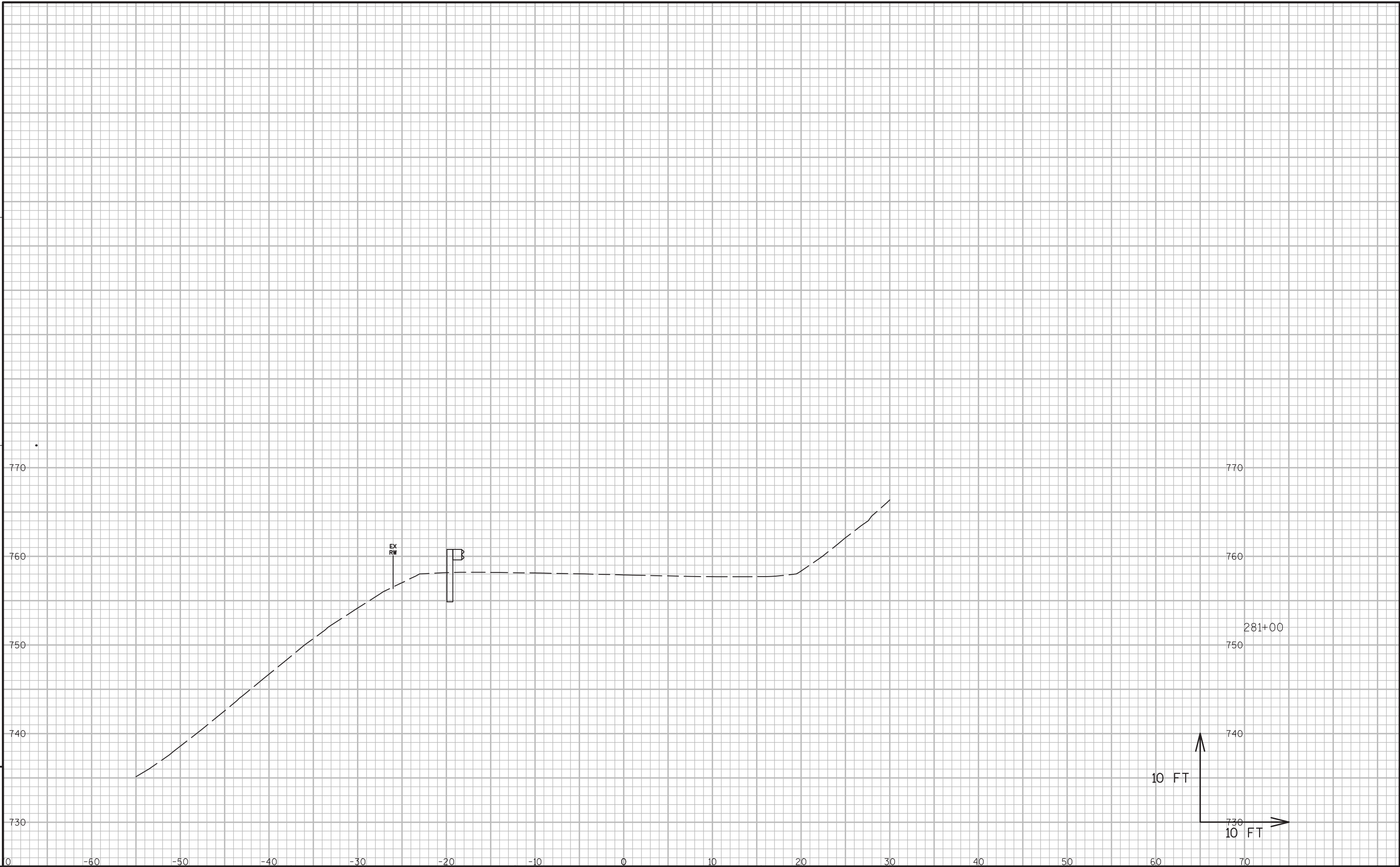


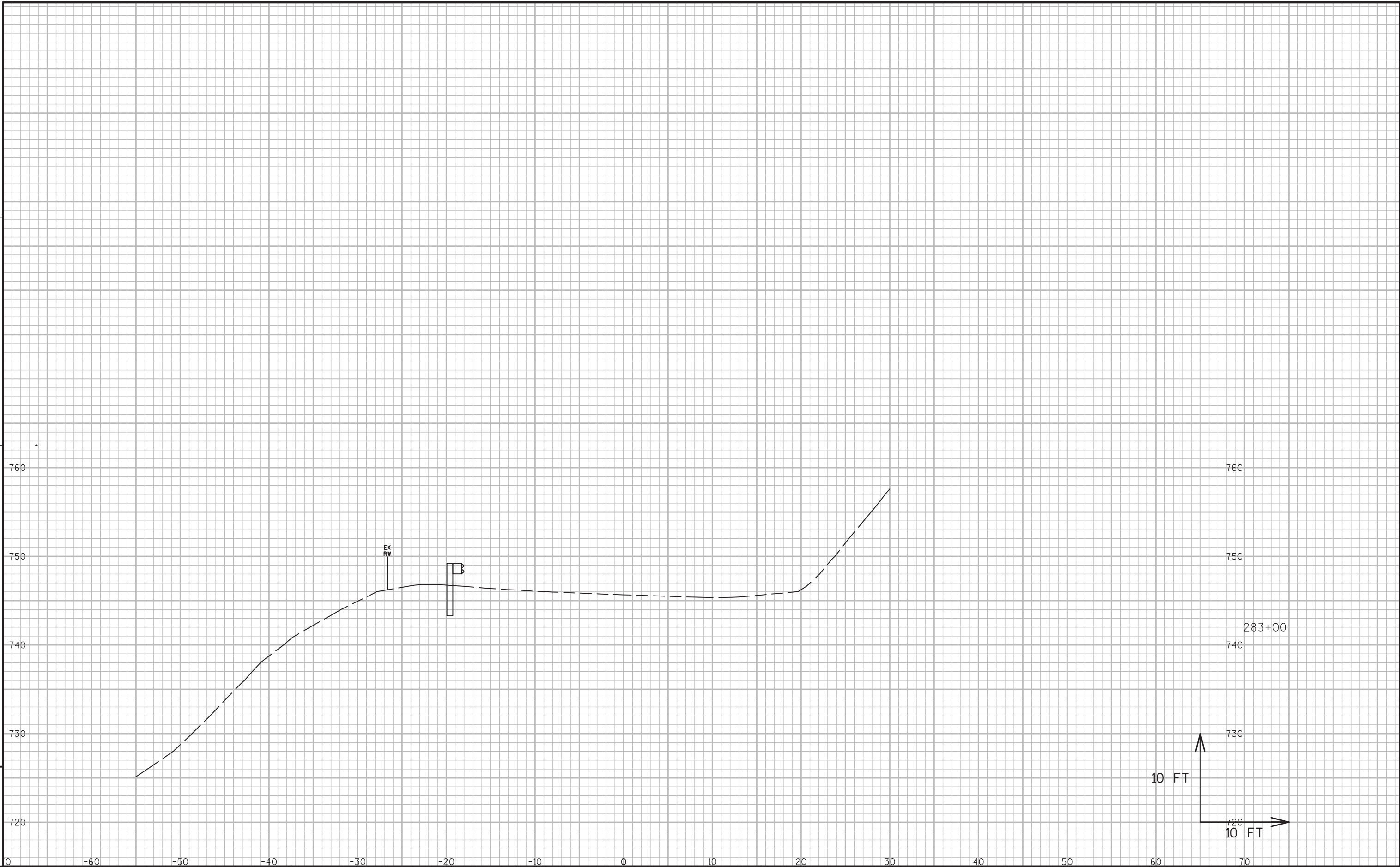










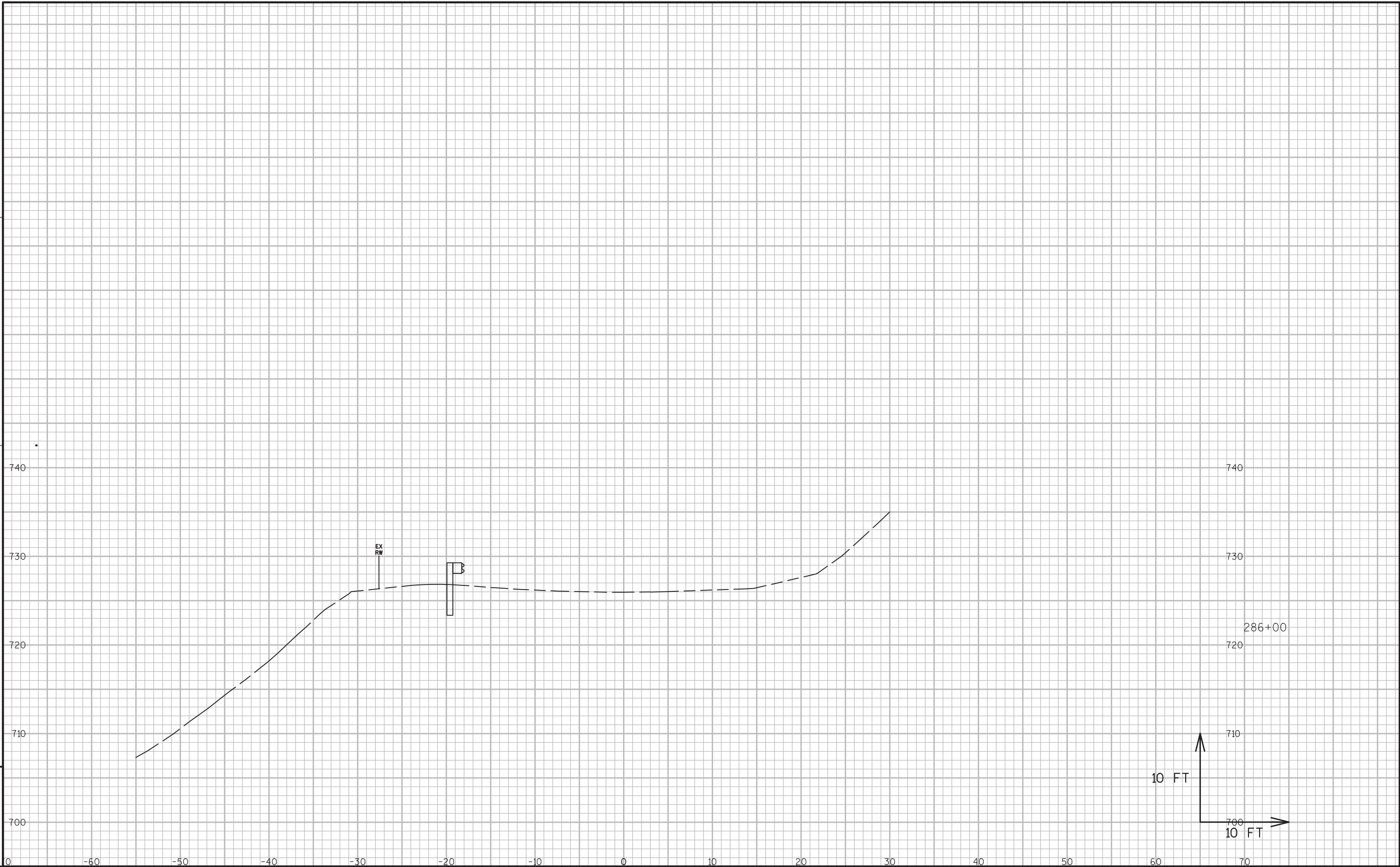




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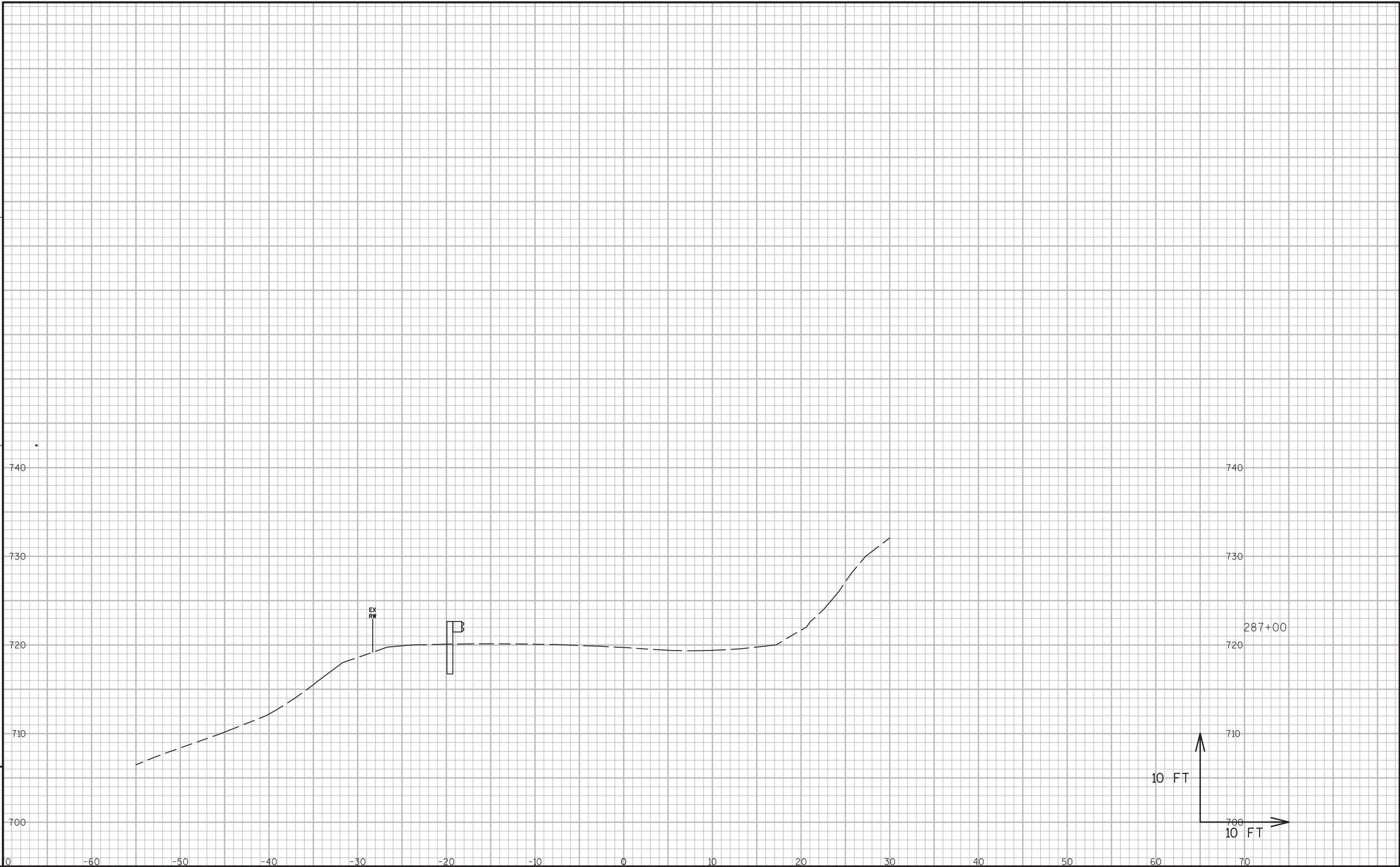
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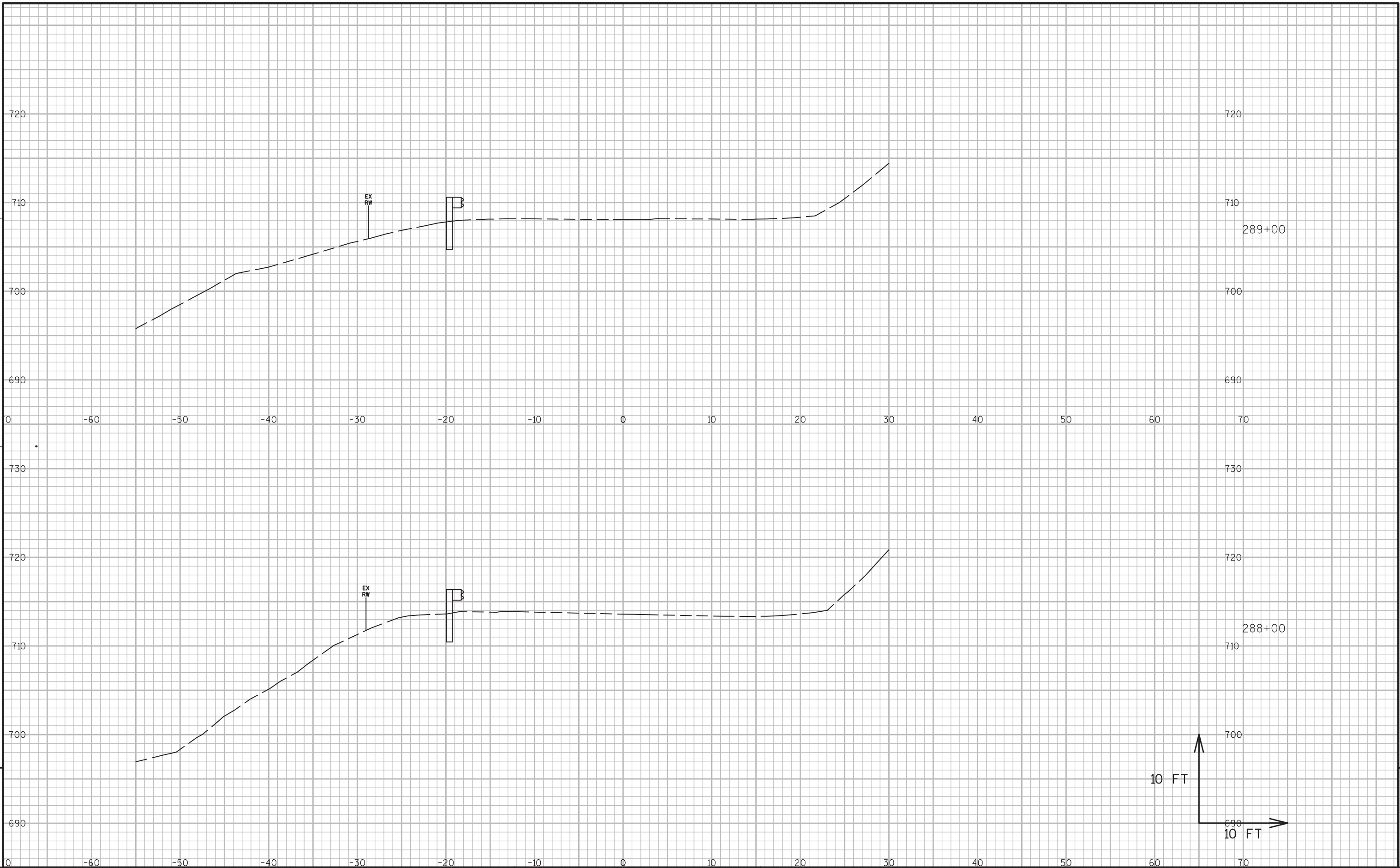
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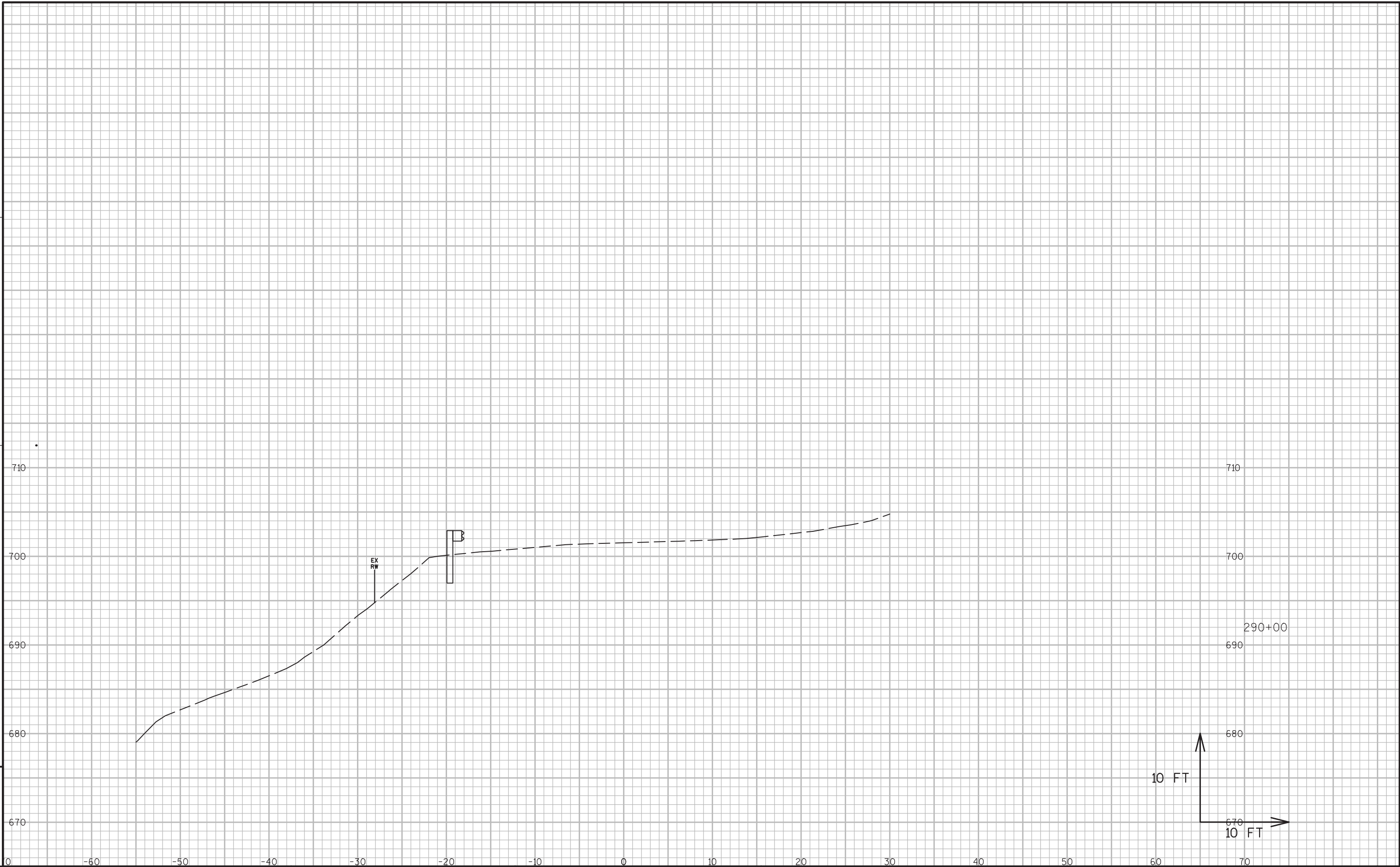
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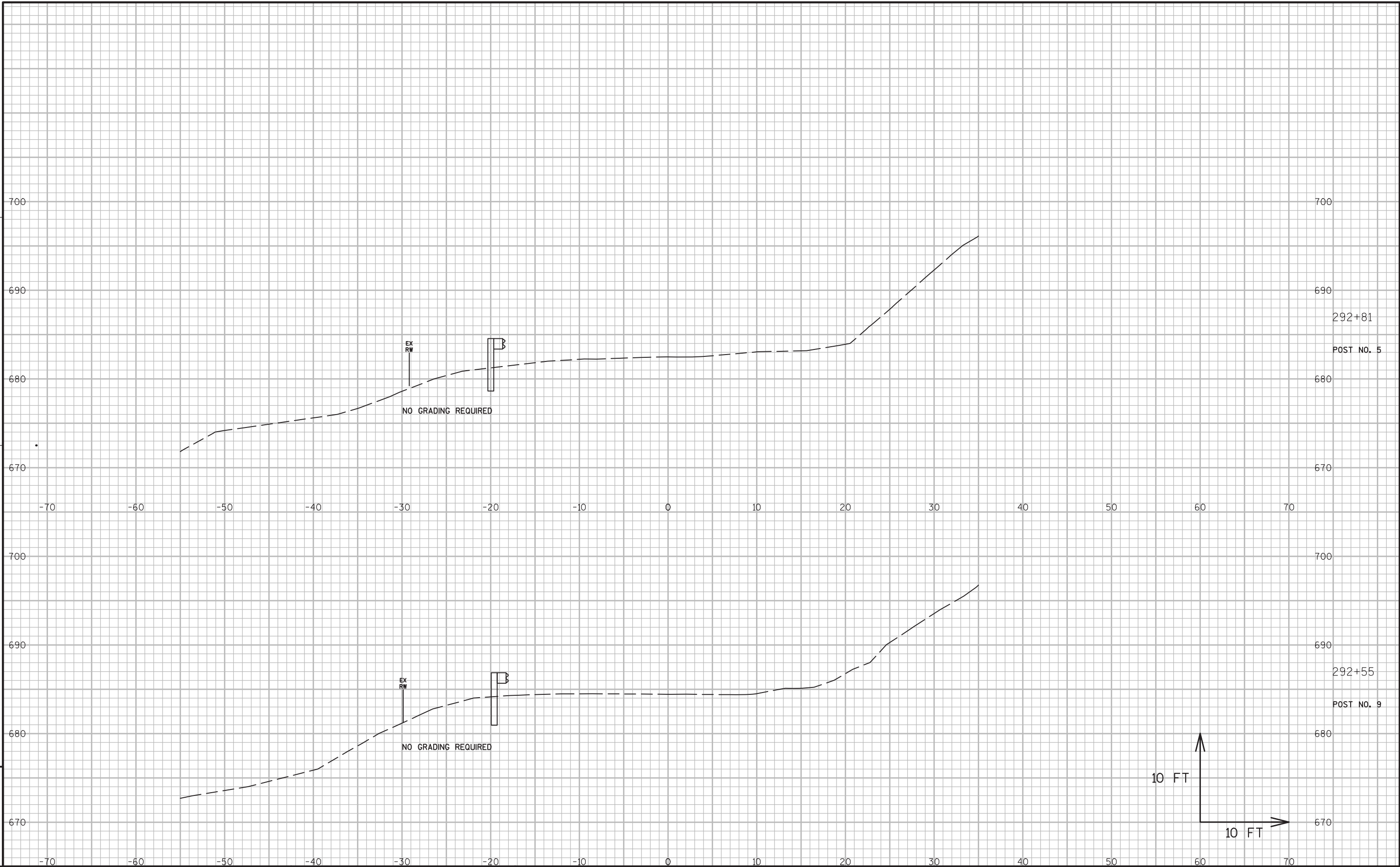
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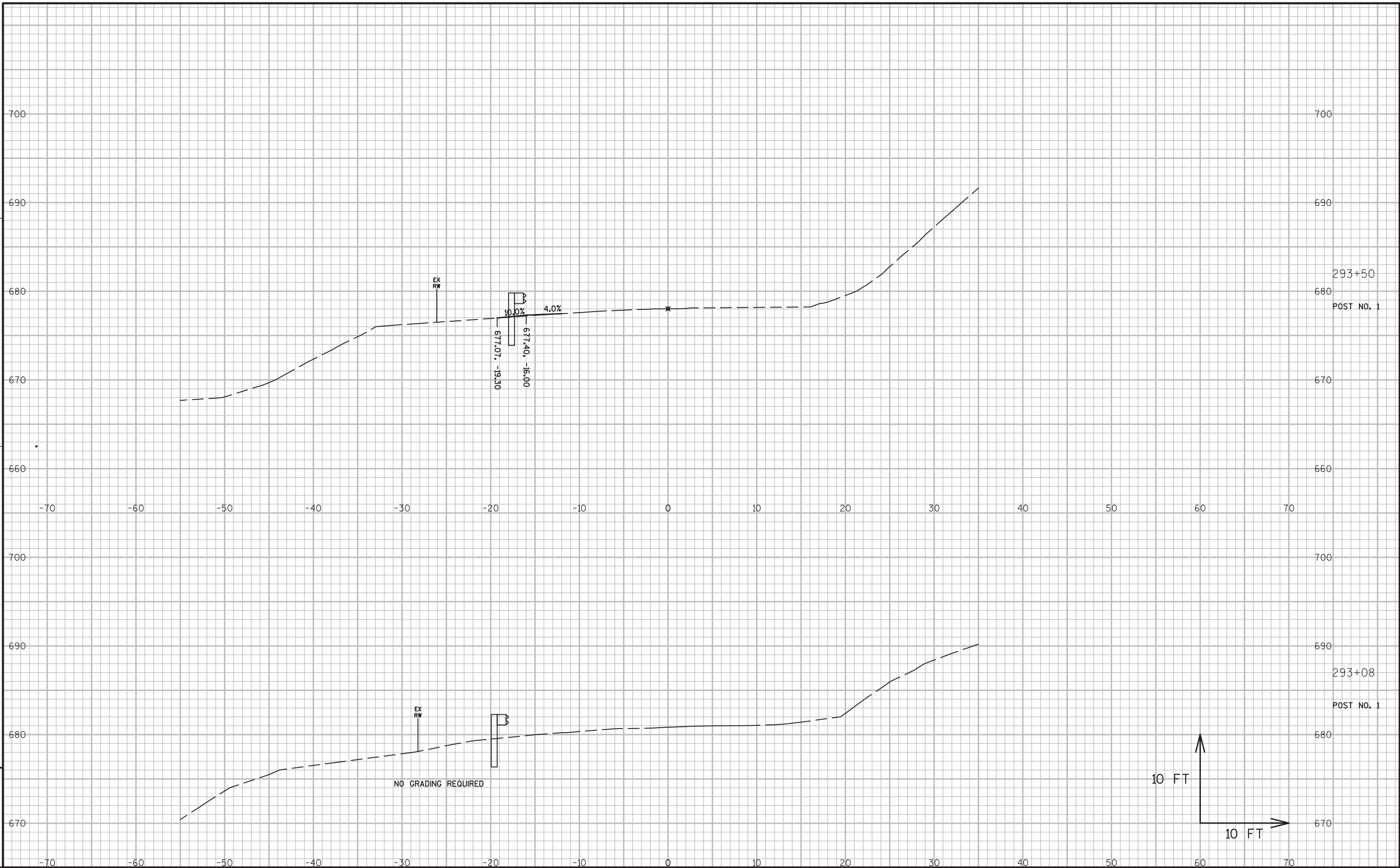


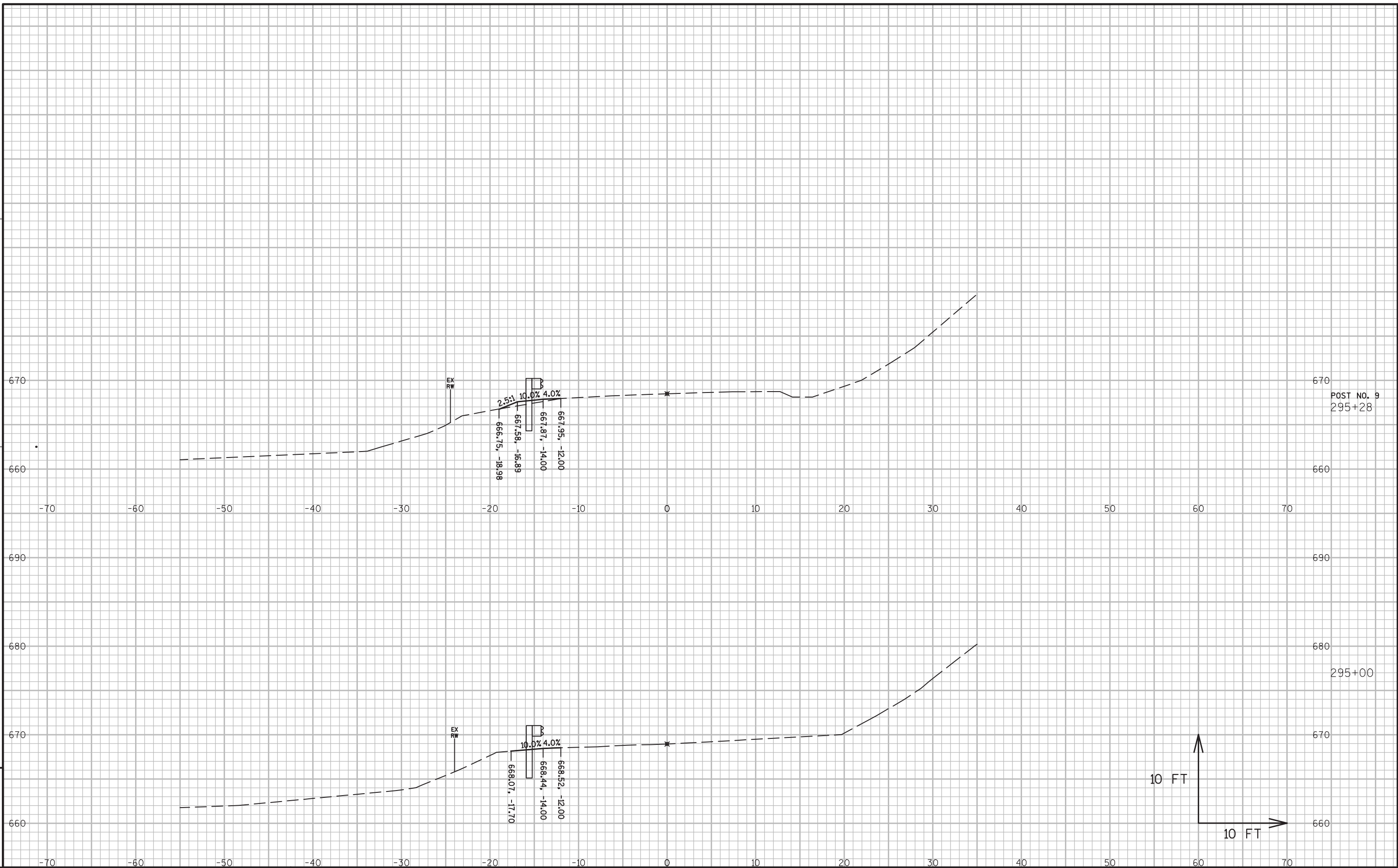
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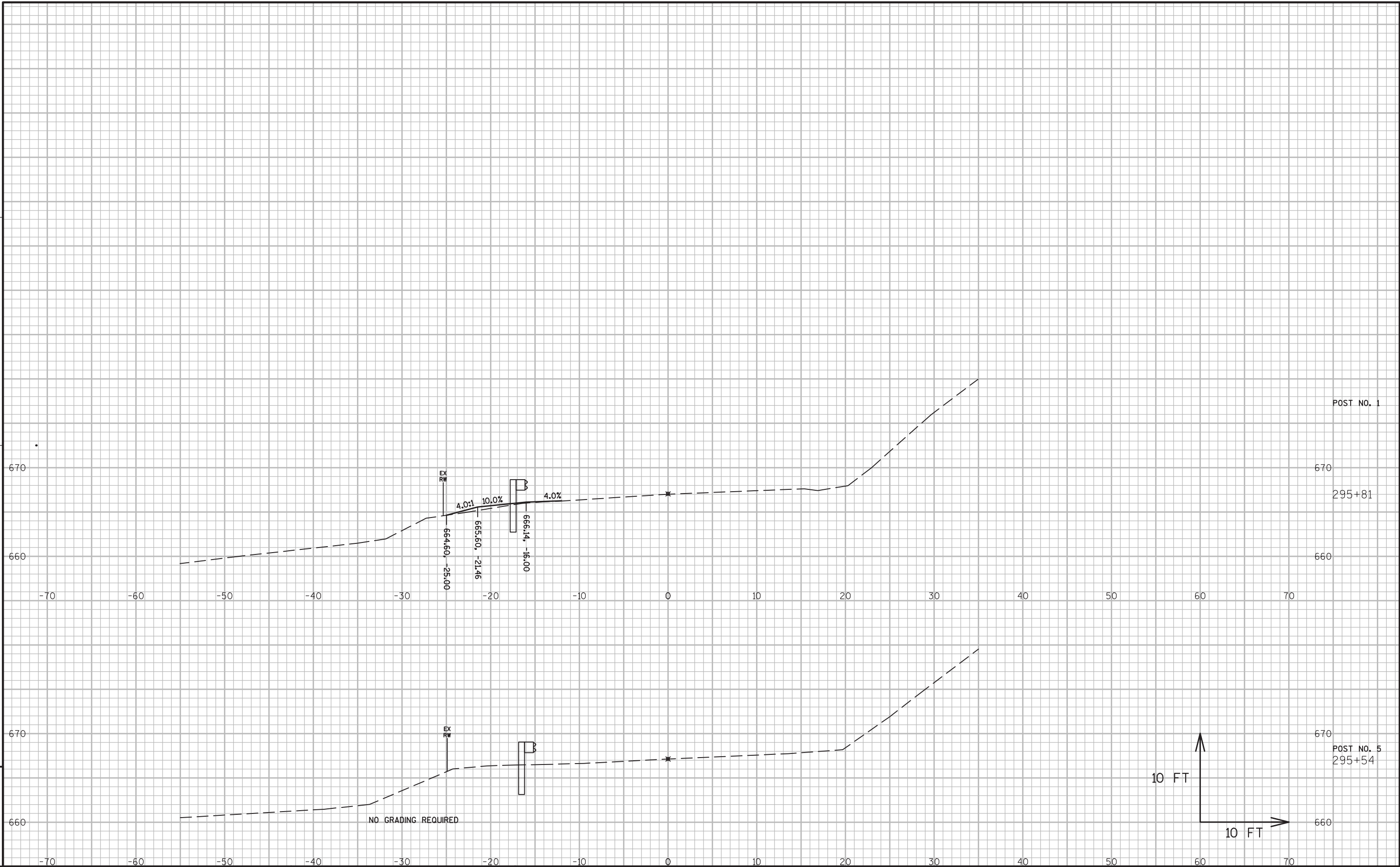
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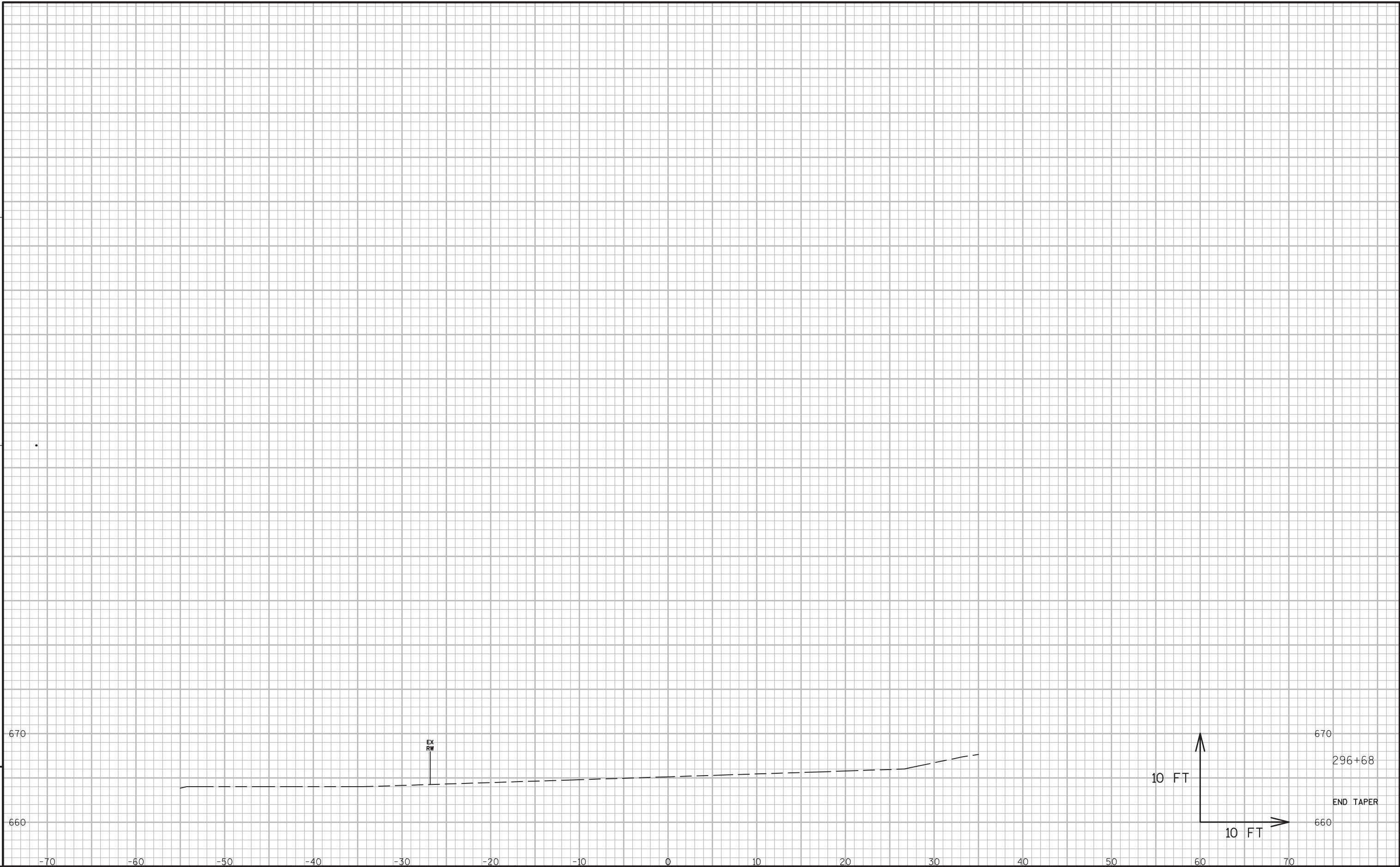












Notes



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