

GRE PROJECT ID: 4390-01-74 WITH: N/A COUNTY: KEWAUNEE

APRIL 2025

ORDER OF SHEETS

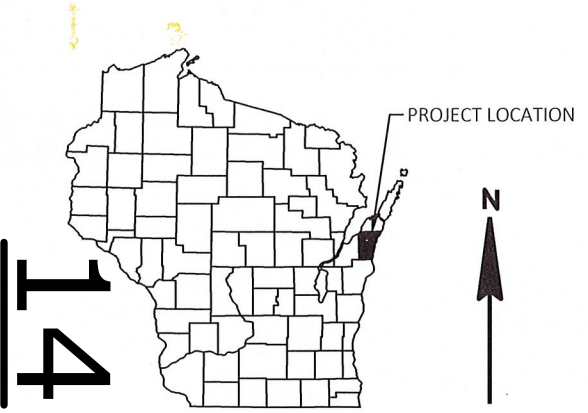
Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section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

TOTAL SHEETS = 122

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
KEWAUNEE CO, CTH C
CTH L TO CLYDE HILL ROAD
CTH C
KEWAUNEE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4390-01-74	WISC 2025421	1

STATE PROJECT NUMBER
4390-01-74



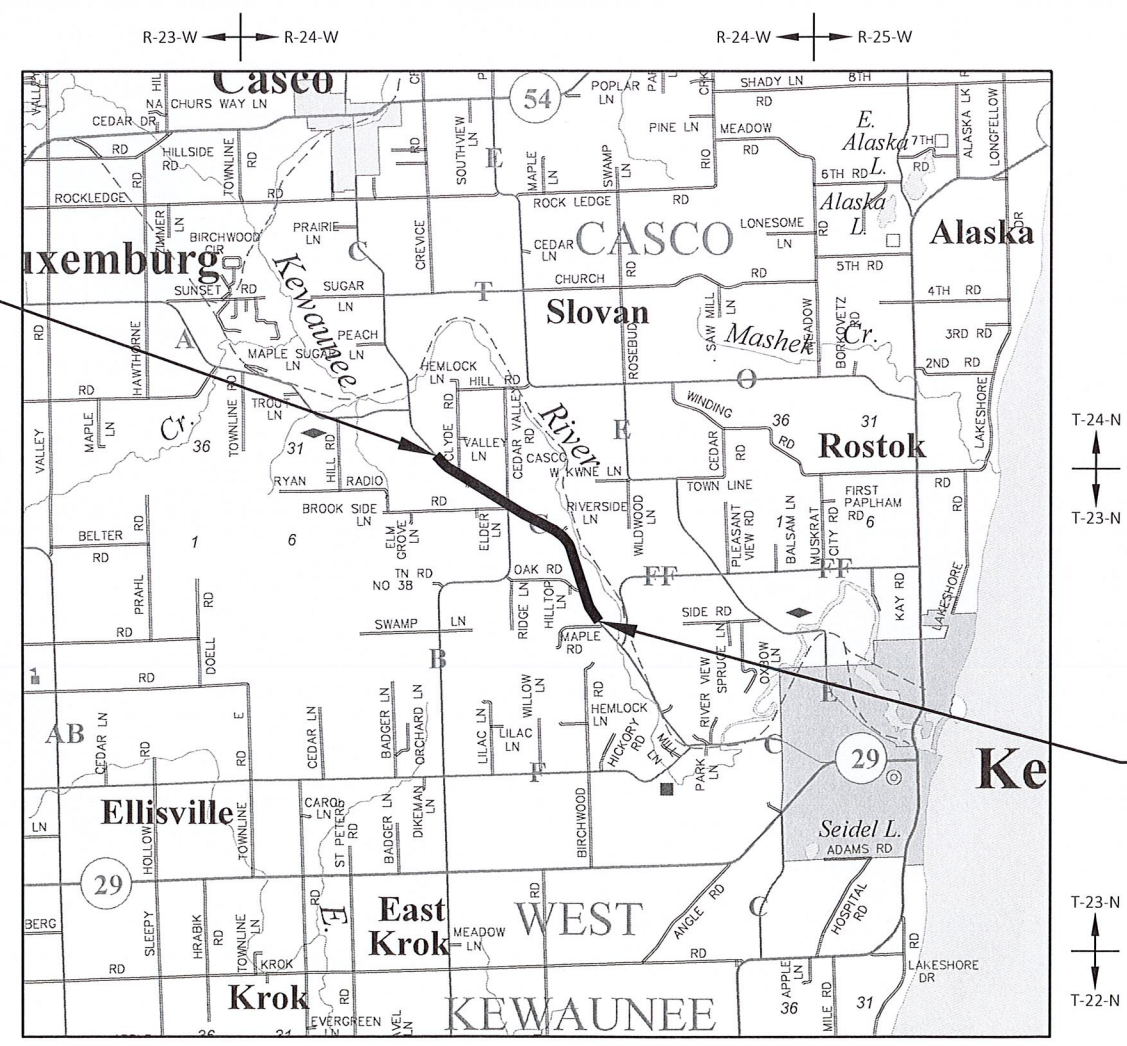
DESIGN DESIGNATION

A.A.D.T.	(2025)	=	1400
A.A.D.T.	(2045)	=	1500
D.H.V.		=	194
D.D.		=	50/50
T.		=	7.8%
DESIGN SPEED		=	55 MPH
ESALS		=	260,000

CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	////
PROPERTY LINE	----
LOT LINE	- - - -
LIMITED HIGHWAY EASEMENT	L - - - -
EXISTING RIGHT OF WAY	=====
PROPOSED OR NEW R/W LINE	=====
SLOPE INTERCEPT	- - - - -
REFERENCE LINE	----- 300' ES
EXISTING CULVERT	- - - - -
PROPOSED CULVERT (Box or Pipe)	=====
COMBUSTIBLE FLUIDS	CAUTION
MARSH AREA	~ ~ ~ ~
WOODED OR SHRUB AREA	~~~~~

PROFILE	
GRADE LINE	=====
ORIGINAL GROUND	- - - - -
MARSH OR ROCK PROFILE (To be noted as such)	=====
SPECIAL DITCH	=====
GRADE ELEVATION	95.36
CULVERT (Profile View)	=====
UTILITIES	
ELECTRIC	=====
FIBER OPTIC	=====
GAS	=====
SANITARY SEWER	=====
STORM SEWER	=====
TELEPHONE	=====
WATER	=====
UTILITY PEDESTAL	=====
POWER POLE	=====
TELEPHONE POLE	=====



BEGIN PROJECT
STA 47+12
Y = 442443.213
X = 257029.599

LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 2.517 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), KEWAUNEE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

ACCEPTED FOR
KEWAUNEE COUNTY

21 Oct 2024
DATE COUNTY HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY
AYRES

WISCONSIN
ANDREW A. ROWELL
E-38296
GREEN BAY WI
PROFESSIONAL ENGINEER
10/17/2024
(Date)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AYRES
Designer	AYRES
Project Manager	JODI JAROSINSKI
Regional Supervisor	KIMBERLY SLEZAK

APPROVED FOR THE DEPARTMENT

DATE: 10/28/2024 Jodi Jarosinski (Signature)

E

GENERAL NOTES

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

REFERENCE LINE REFERS TO ALIGNMENT AND STATIONING, CENTERLINE REFERS TO EXISTING ROADWAY CENTERLINE. REFERENCE LINE AND CENTERLINE ARE NOT COINCIDENTAL.

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

THE EXACT LOCATIONS OF EROSION CONTROL ITEMS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SUBGRADE SHOULDER POINTS, ARE TO BE RESTORED WITH FERTILIZER, SEED, AND EROSION MAT AS DIRECTED BY THE ENGINEER.

INLET AND DISCHARGE ELEVATIONS FOR CULVERTS SHOWN ON THE PLAN MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.

RADIUS POINTS, UNLESS OTHERWISE NOTED, ARE TO THE FLANGE OF CURB.

SAW CUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD. THE LINE OF SUCH SAW CUTS WILL BE NEATLY DELINEATED THROUGH THE ASPHALT WITHOUT ANY DAMAGE TO THE REMAINING PORTION OF THE EXISTING PAVEMENT.

PROPERTY LINES SHOWN ARE APPROXIMATE.

BEARINGS SHOWN ON THIS PLAN ARE TRUE BEARINGS TO THE NEAREST SECOND.

ALL TIES ON THIS PLAN ARE HORIZONTAL UNLESS DESCRIBED OTHERWISE.

PLACE EROSION CONTROL DEVICES IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER. EROSION CONTROL FEATURES ARE SHOWN AT APPROXIAMTE LOCATIONS, WITH EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

SOME LOCATIONS OF PIPE SPECIFIED IN THE PLAN REQUIRE PIPE LENGTHS OTHER THAN 8-FOOT SECTIONS.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

DNR LIAISON

MATT SCHAEVE
DNR NORTHEAST REGIONAL HEADQUARTERS
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
(920) 366-1544
matthew.schaeve@wisconsin.gov
COUNTY HIGHWAY COMMISSIONER

MARTY TREML
E 4280 COUNTY HIGHWAY F
KEWAUNEE, WI 54216
(920) 388-3707
treml.marty@kewauneeeco.org

DESIGN CONTACT

ANDREW ROWELL, P.E., PTOE
3376 PACKERLAND DRIVE
ASHWAUBENON, WI 54115
(920) 327-7846
rowella@ayresassociates.com

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAILS
- PLAN GRADES & OFFSETS
- EROSION CONTROL
- DETOUR

UTILITIES CONTACTS

ELECTRICITY

WPS
JUSTIN VEESER
2580 S. ASHLAND AVENUE
GREEN BAY, WI 54304
PHONE: (920) 493-1364
justin.veeser@wisconsinpublicservice.com

GAS / PETROLEUM

WPS
KASEY KAPPELMAN
800 COLUMBUS STREET
P.O. BOX 236
TWO RIVERS, WI 54241-0236
PHONE: (920) 657-1862
kasey.kappelman@wisconsinpublicservice.com

COMMUNICATIONS

AT&T
CHUCK BARTLET
70 E DIVISION ST
FOND DU LAC, WI 54935-4311
PHONE: (920) 929-1013
CB1461@att.com

BUG TUSSEL
DUSTIN TEAFF
KES EXCAVATING SERVICES, LLC
1262 CAMBER CT
DE PERE, WI 54115
PHONE: (920) 254-3539
dustin.teaff@KESexcavating.com

WATER

GREEN BAY WATER UTILITY
KRISTIN ROMANOWICZ OR JASON MAES
631 S. ADAMS STREET
GREEN BAY, WI 54301
PHONE: 920-448-3480
AFTER HOURS EMERGENCY: 920-448-3483
CELL: 920-680-2188
kristin.romanowicz@greenbaywi.gov
jason.maes@greenbaywi.gov

RUNOFF COEFFICIENT TABLE

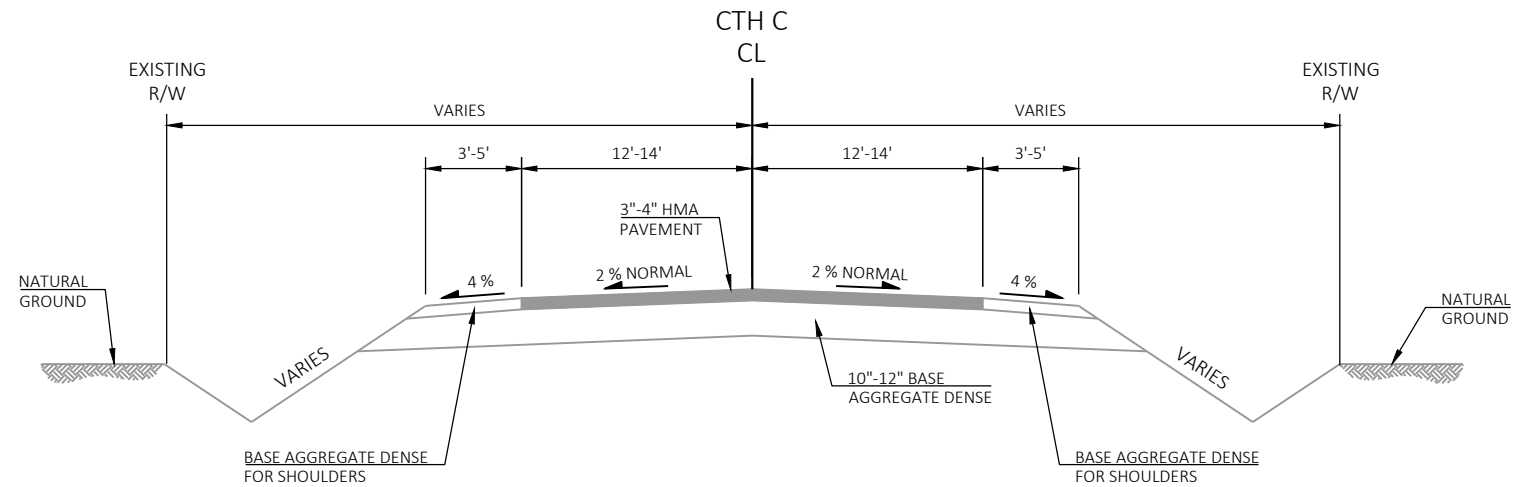
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.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 = 9.15 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.1 ACRES

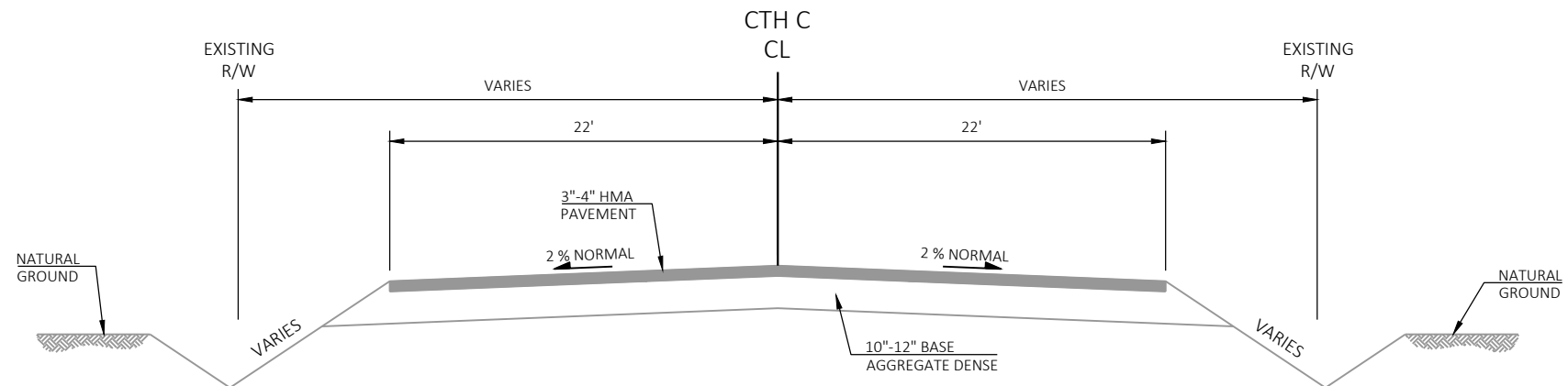
DIGGERSHOTLINE

Dial 811 or (800)242-8511

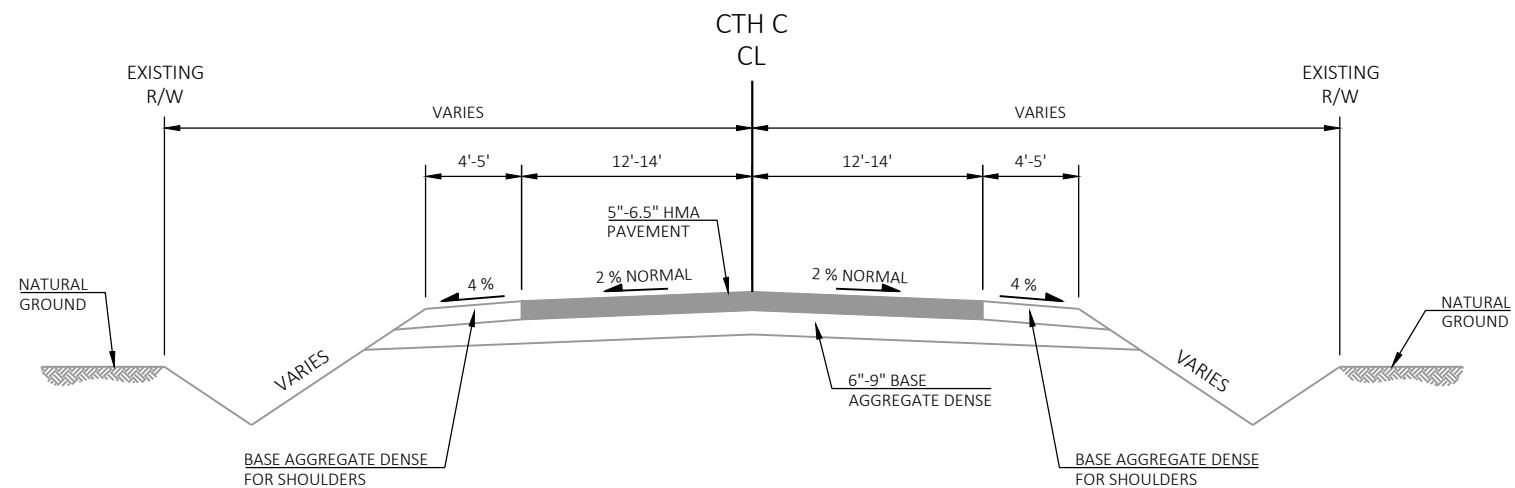
www.DiggersHotline.com



EXISTING TYPICAL SECTION FOR CTH C
STA 47+12 - STA 63+25



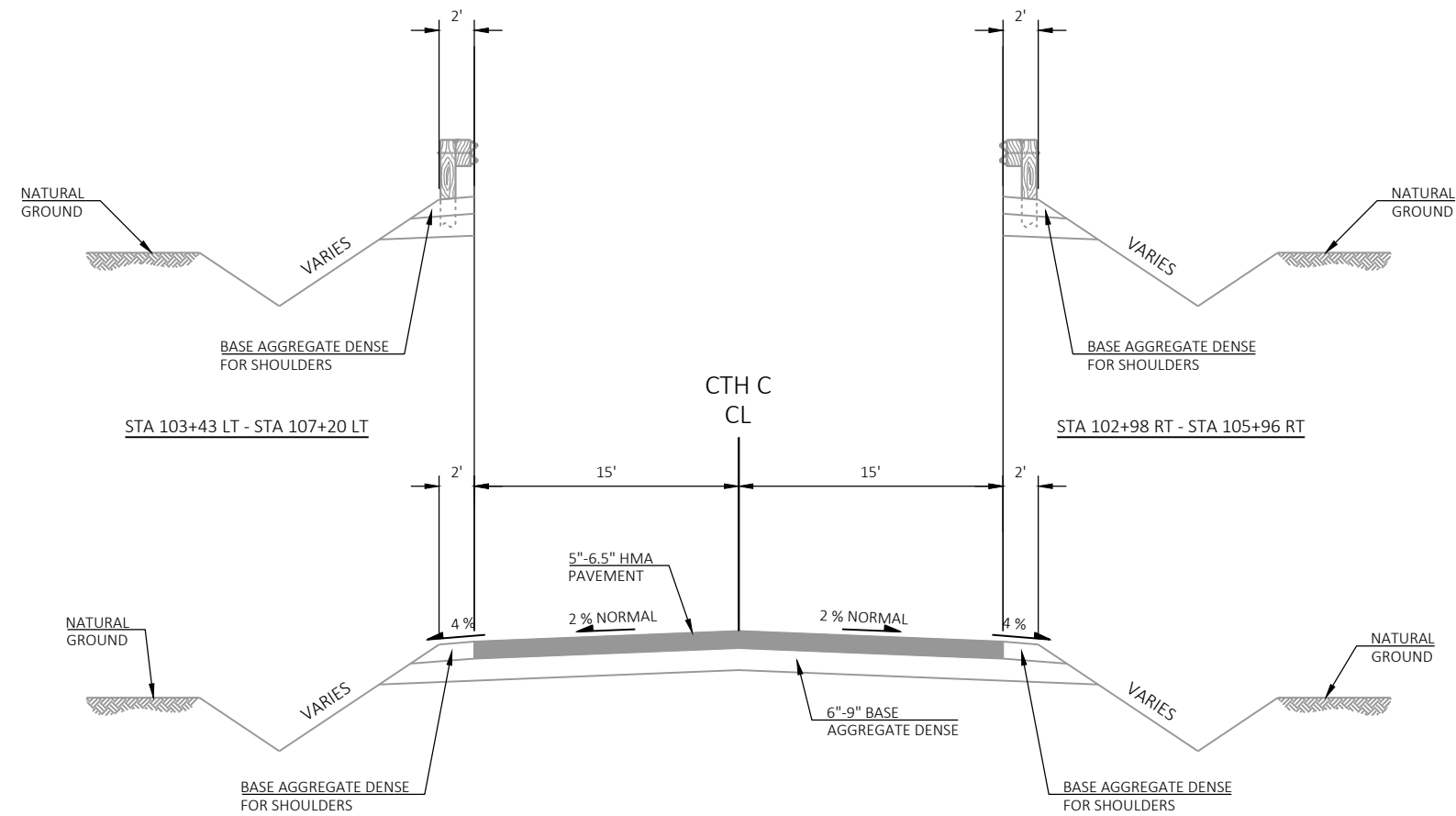
EXISTING TYPICAL SECTION FOR CTH C
STA 63+25 - STA 68+50



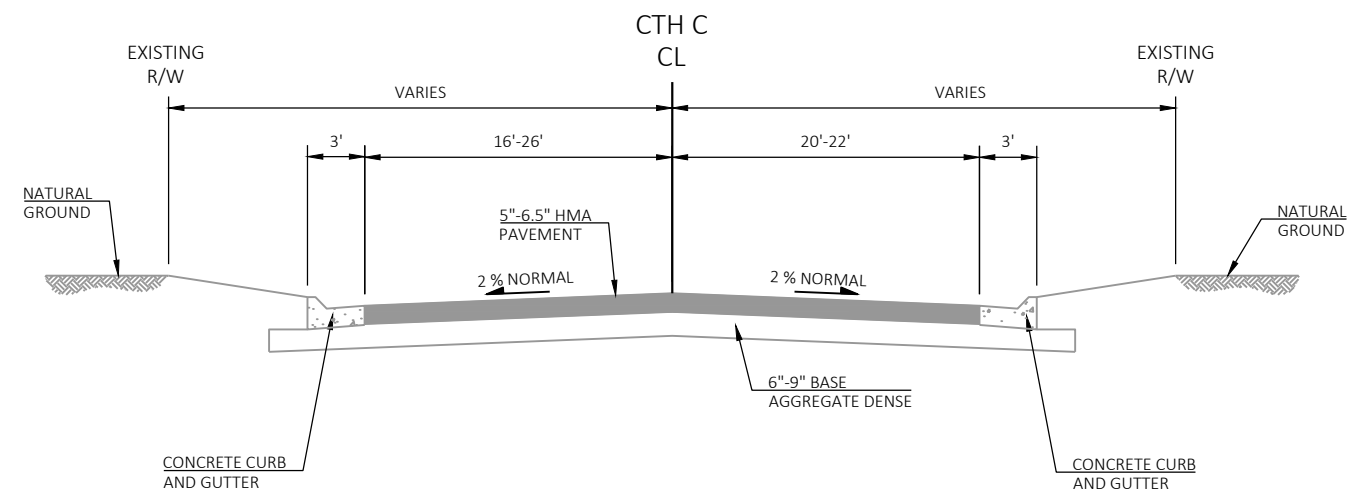
EXISTING TYPICAL SECTION FOR CTH C
STA 68+50 - STA 90+60
STA 108+00 - STA 130+00 LT
STA 108+00 - STA 133+00 RT

2

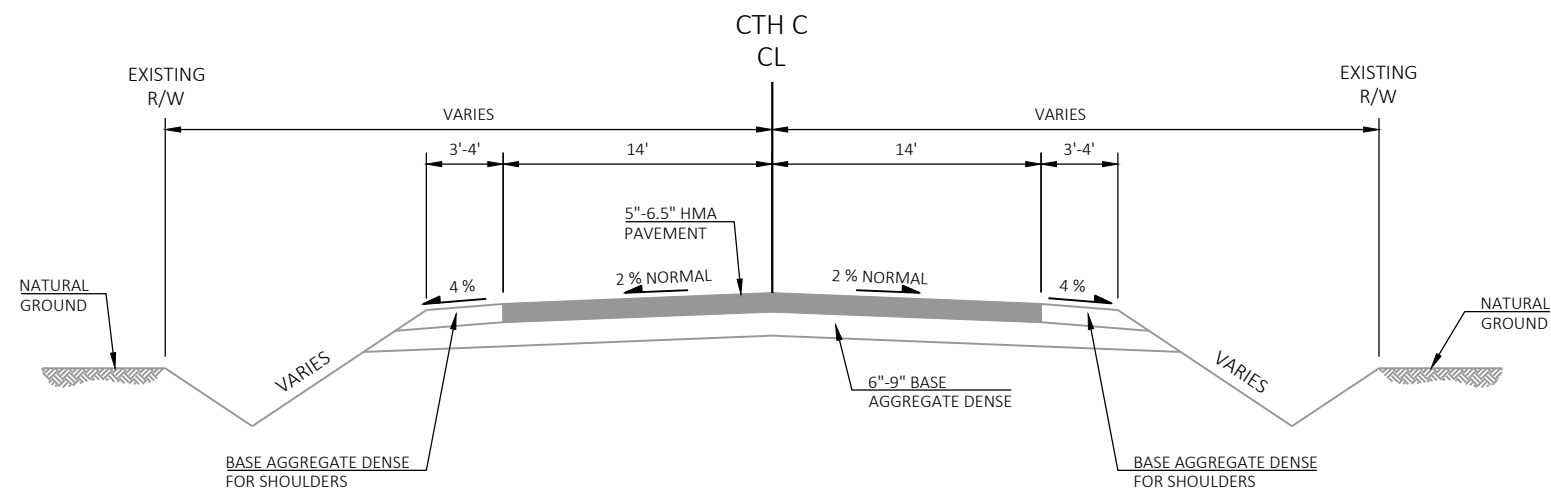
2 |



EXISTING TYPICAL SECTION FOR CTH C
STA 90+60 - STA 108+00

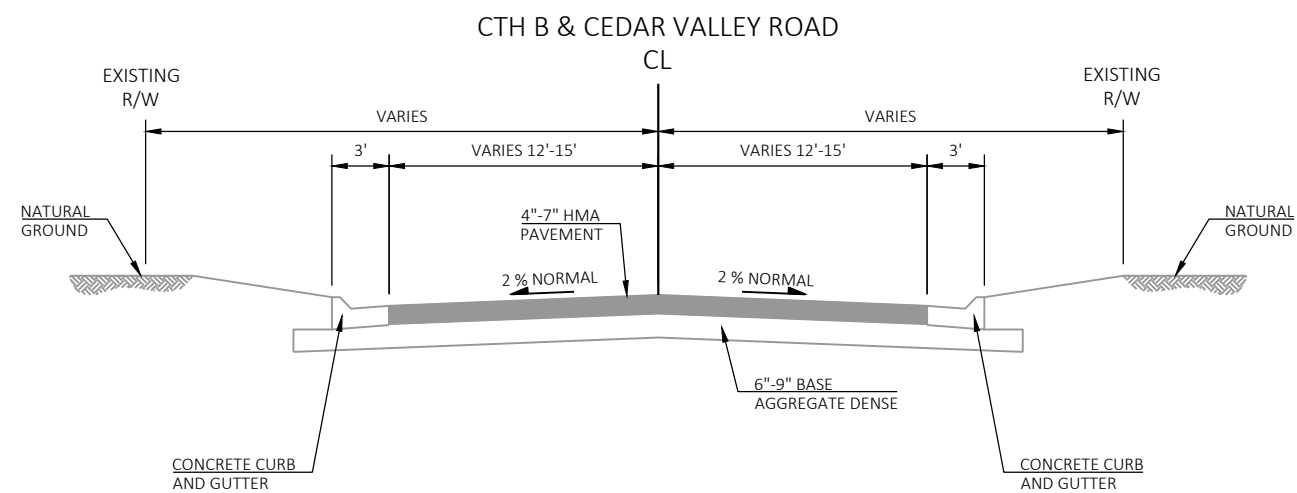


EXISTING TYPICAL SECTION FOR CTH C
STA 130+00 LT - STA 134+70 LT
STA 133+00 RT - STA 134+75 RT



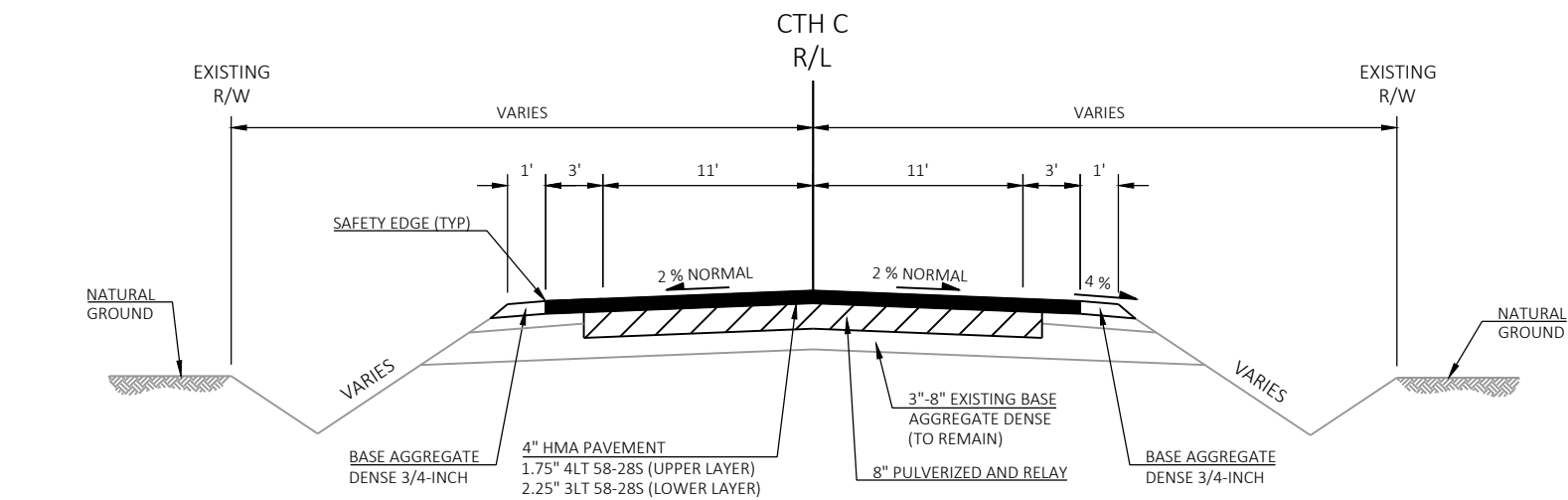
EXISTING TYPICAL SECTION FOR CTH C

STA 134+70 LT - STA 180+00
STA 134+75 RT - STA 180+00

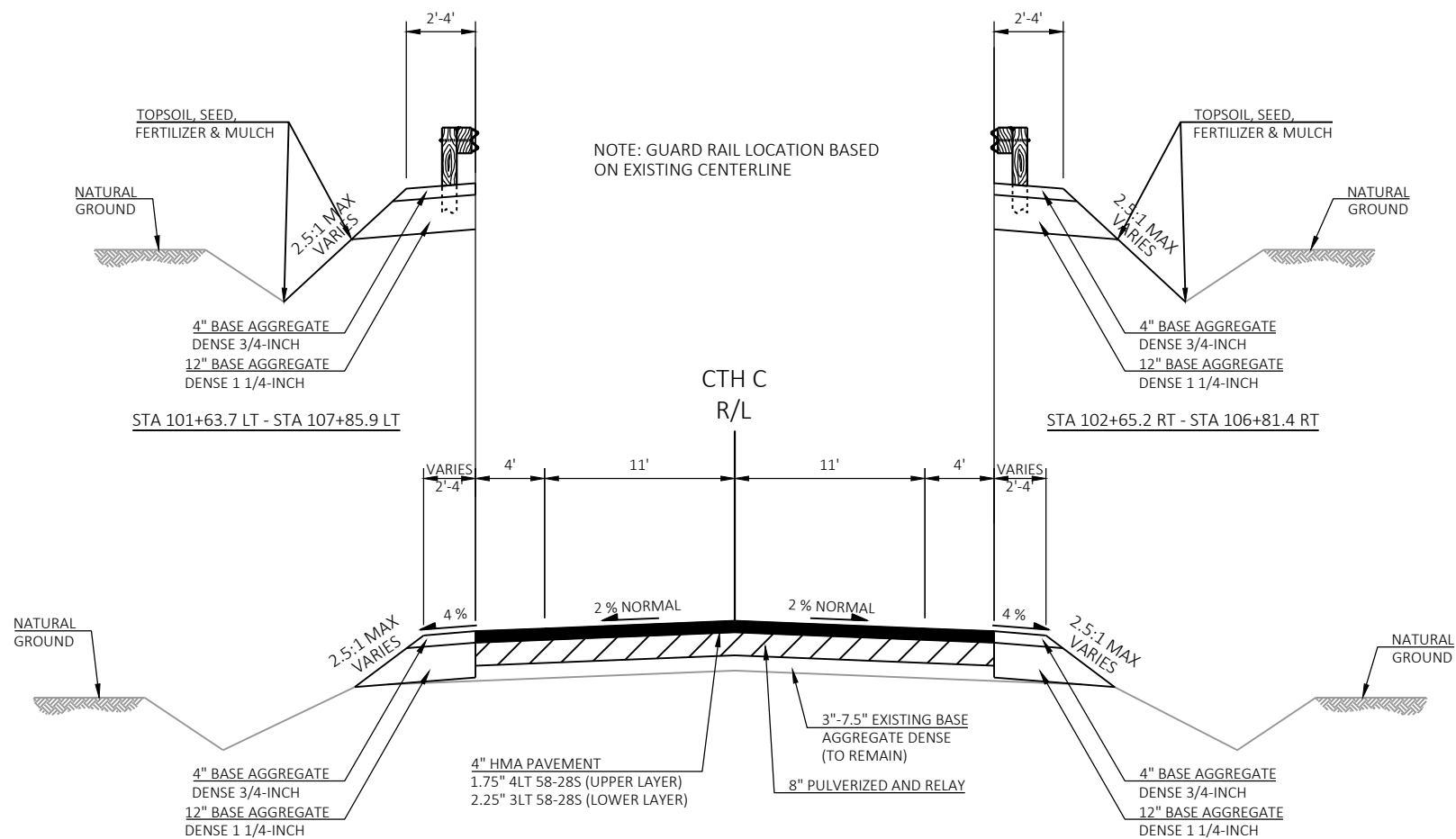


EXISTING TYPICAL SECTION

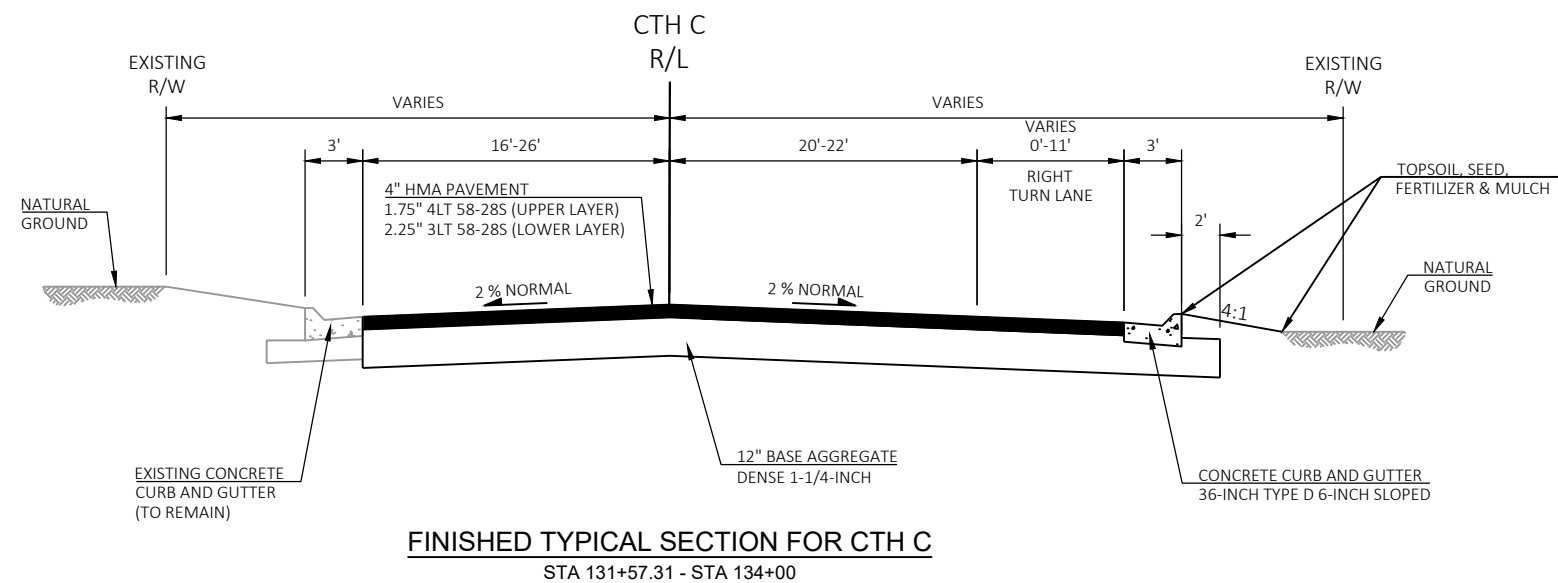
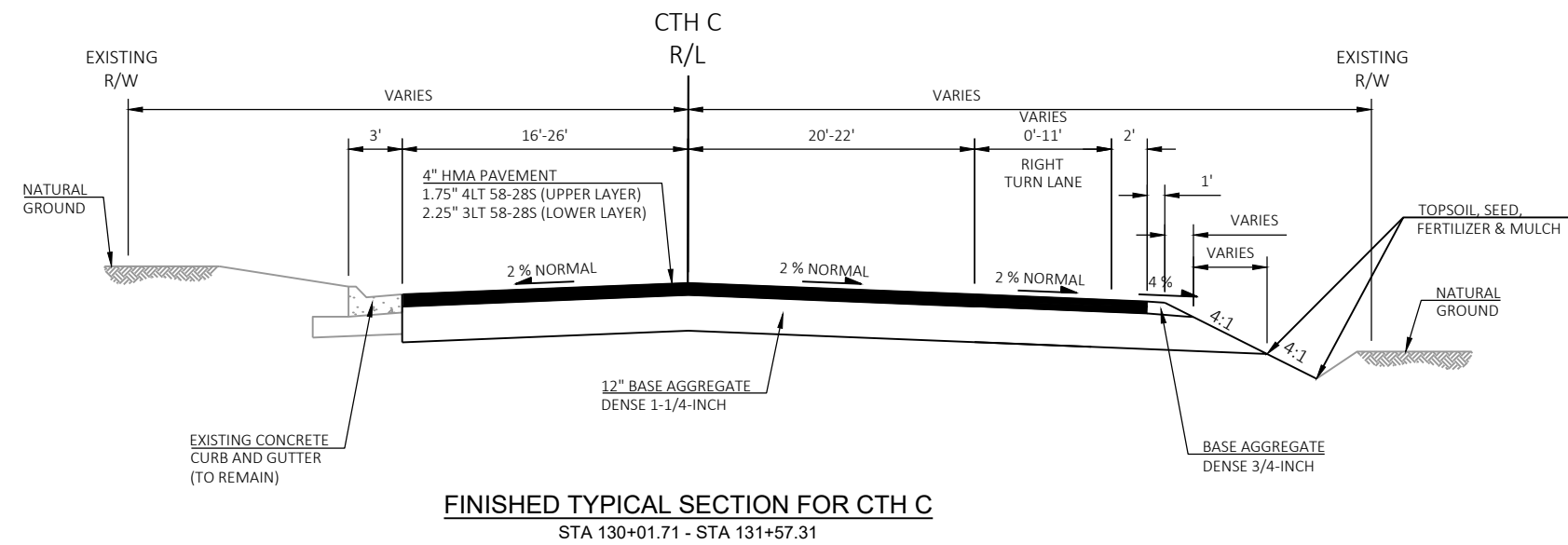
STA 49+00 - STA 50+00 CTH B
STA 60+00 - STA 60+78.89 CEDAR VALLEY ROAD

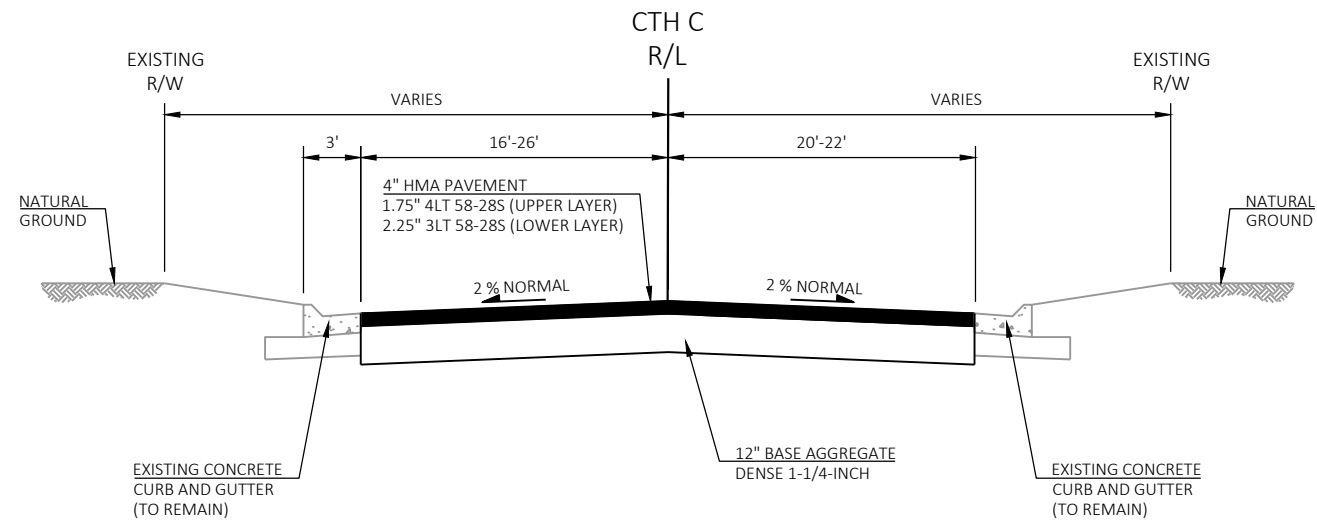
**FINISHED TYPICAL SECTION FOR CTH C**

STA 47+12 - STA 90+60
STA 108+00 - 127+75

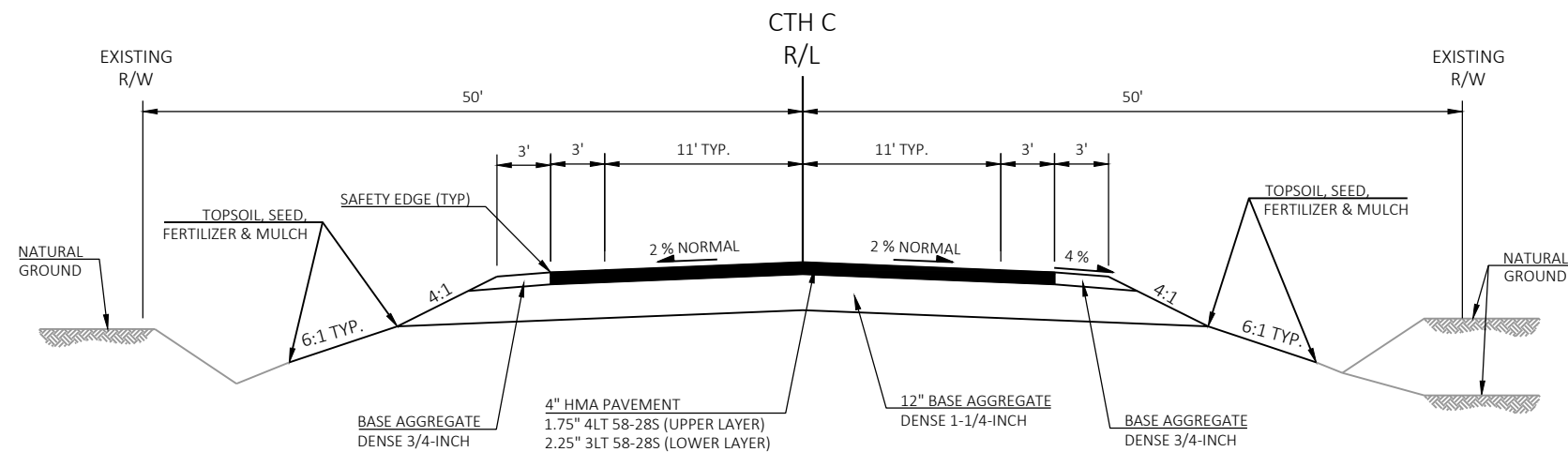
**FINISHED TYPICAL SECTION FOR CTH C**

STA 90+60 - STA 108+00

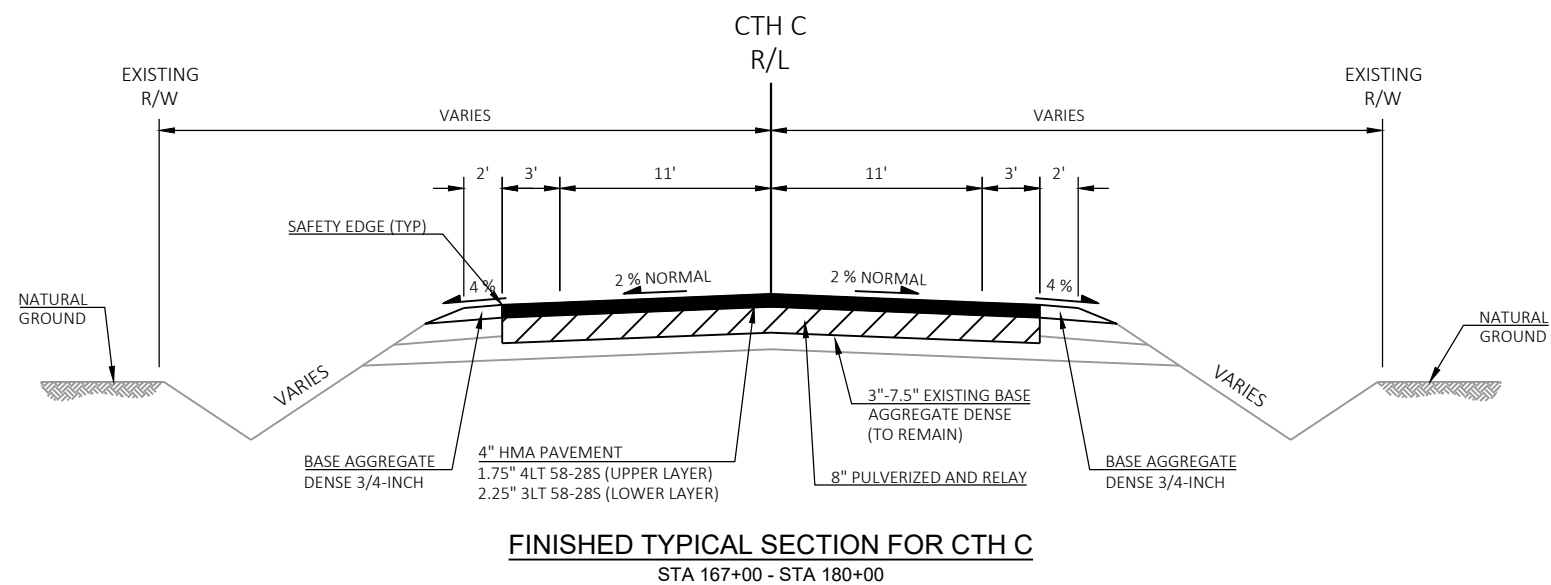
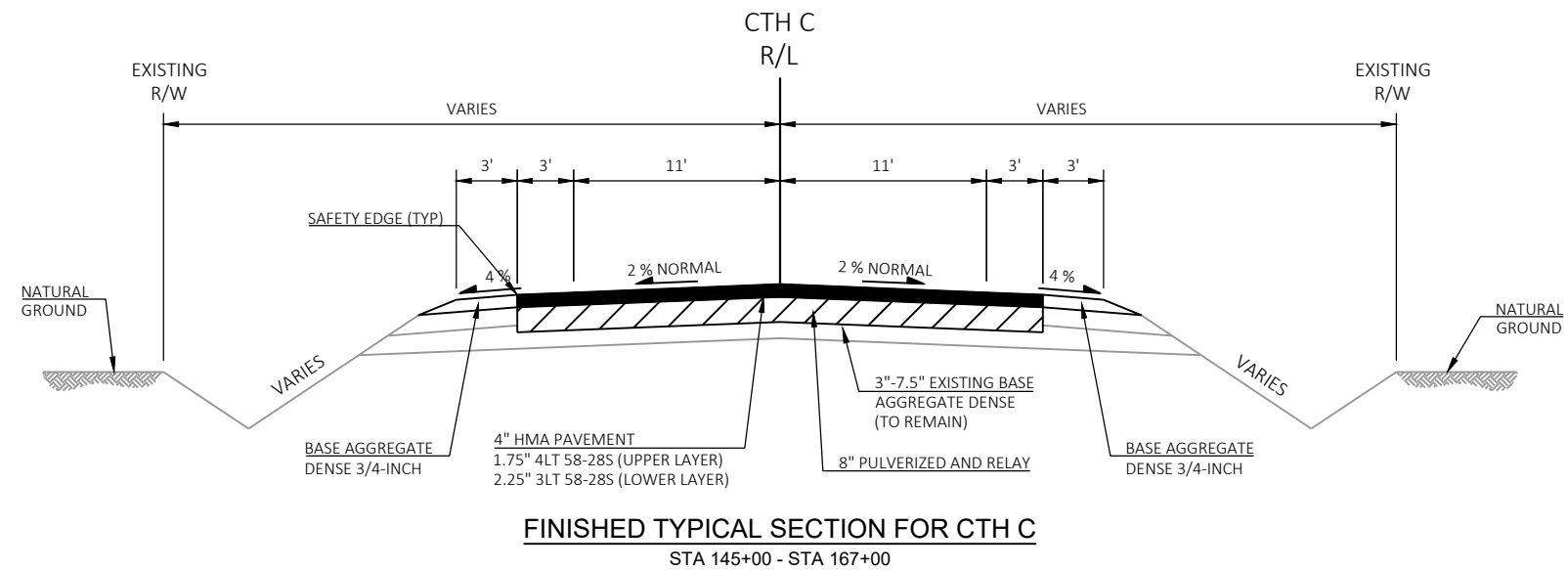


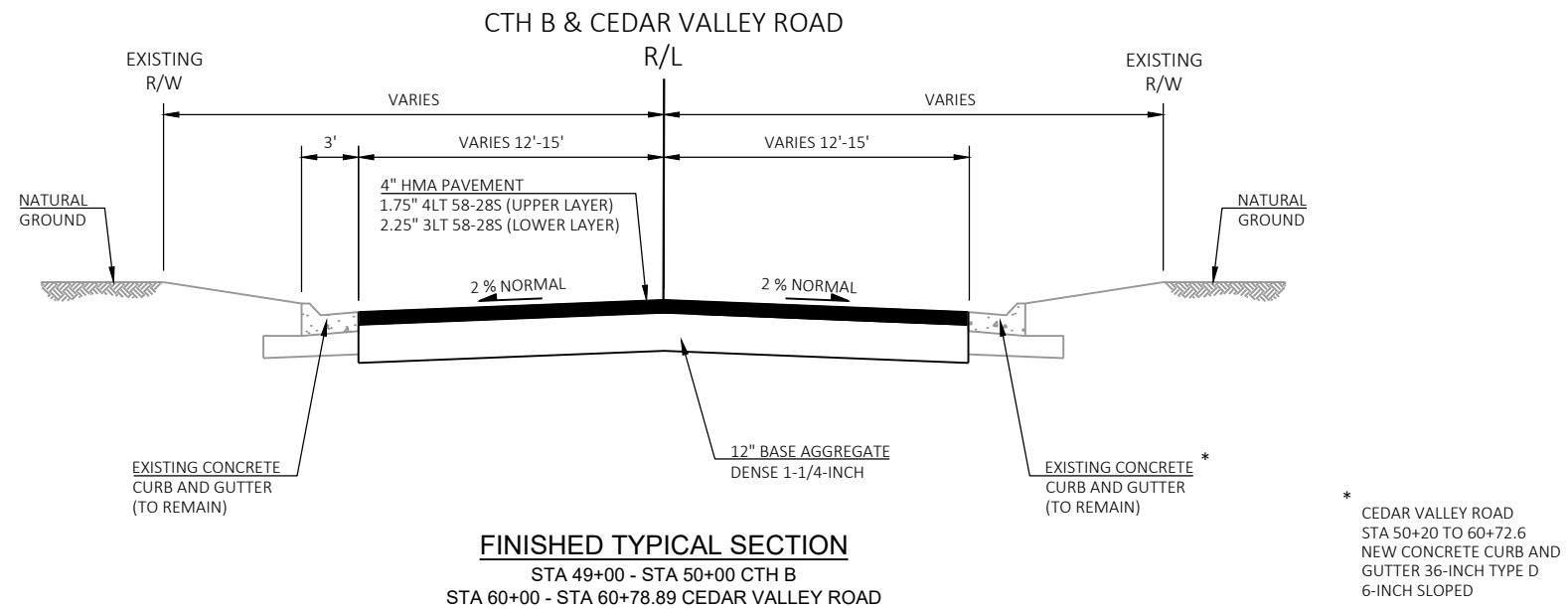
**FINISHED TYPICAL SECTION FOR CTH C**

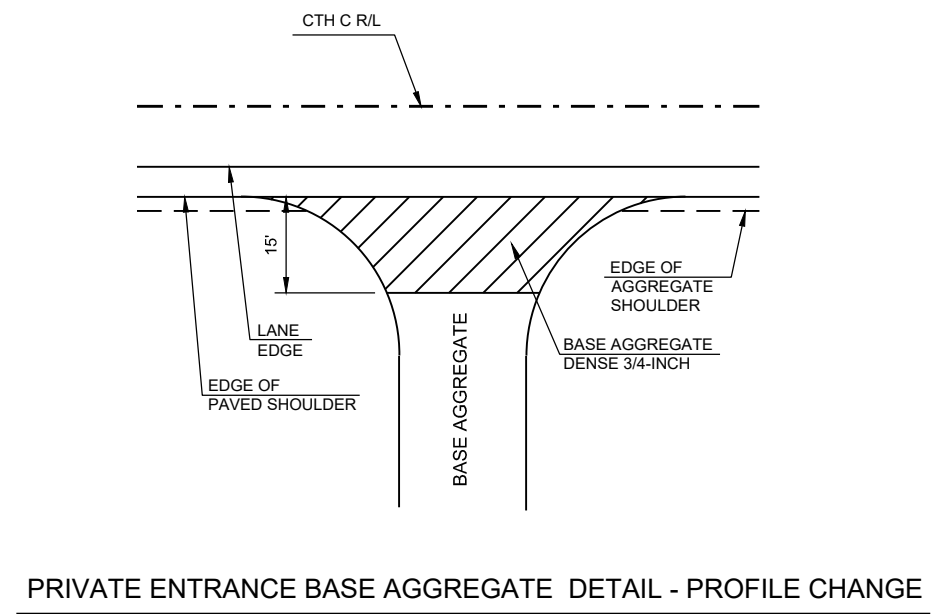
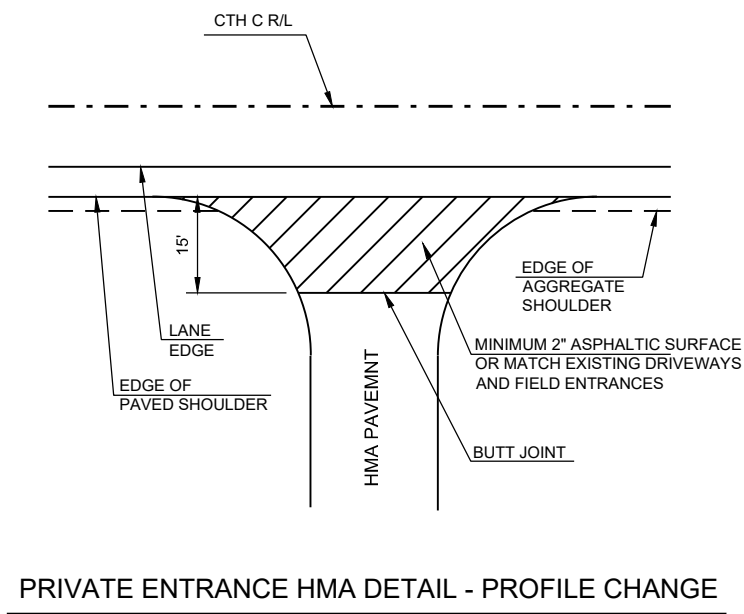
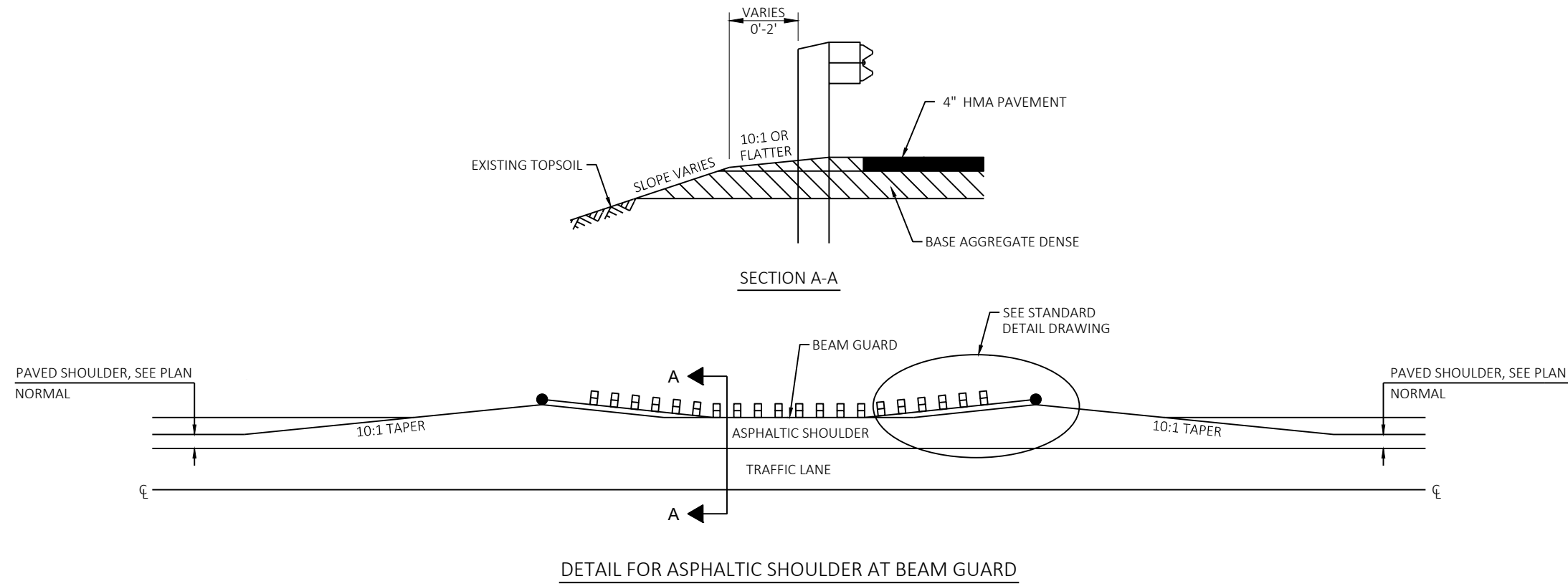
STA 134+00 - STA 134+58 LT
STA 134+00 - STA 134+80 RT

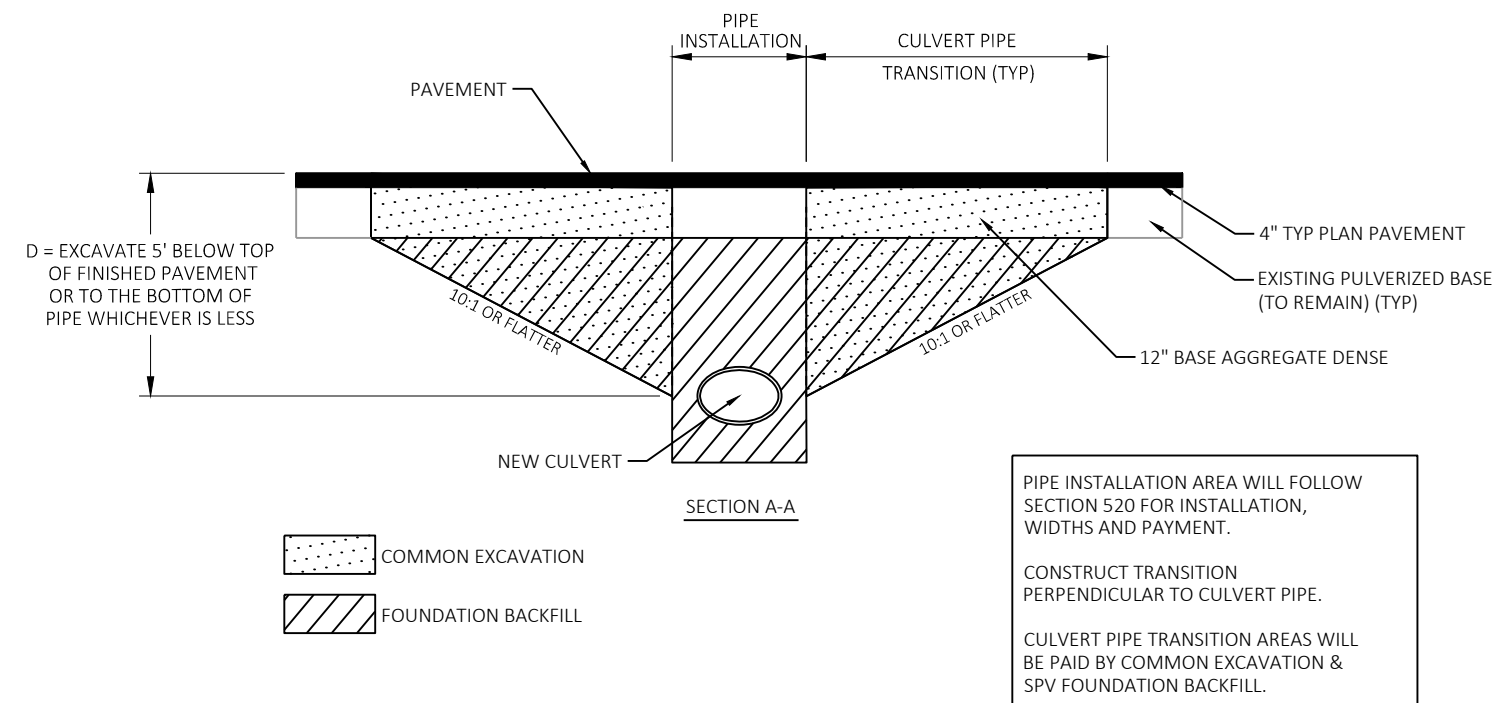
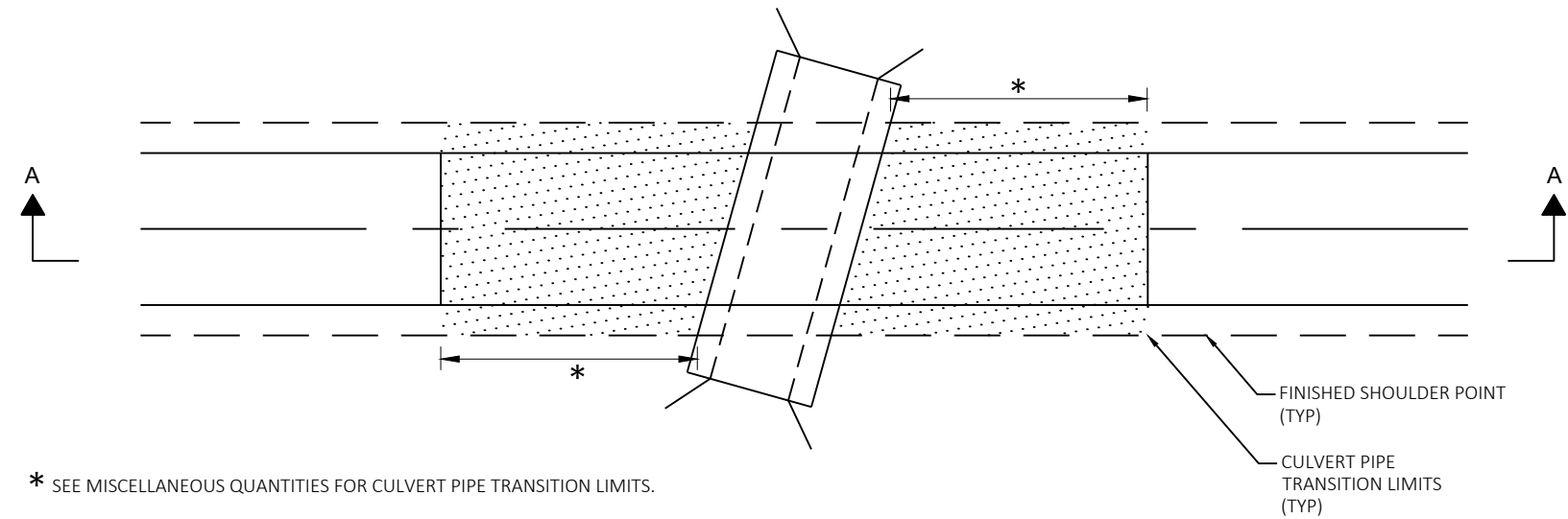
**FINISHED TYPICAL SECTION FOR CTH C**

STA 127+75 - STA 130+01.71
STA 134+58 LT - STA 145+00
STA 134+80 RT - STA 145+00

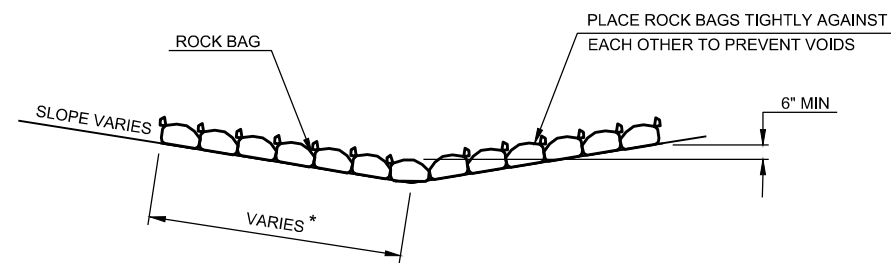




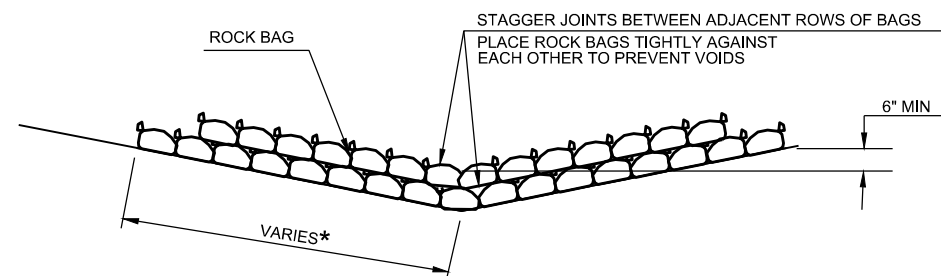




NEW CULVERT PIPES WITH TRANSITION



SIDE VIEW (SINGLE LAYER)

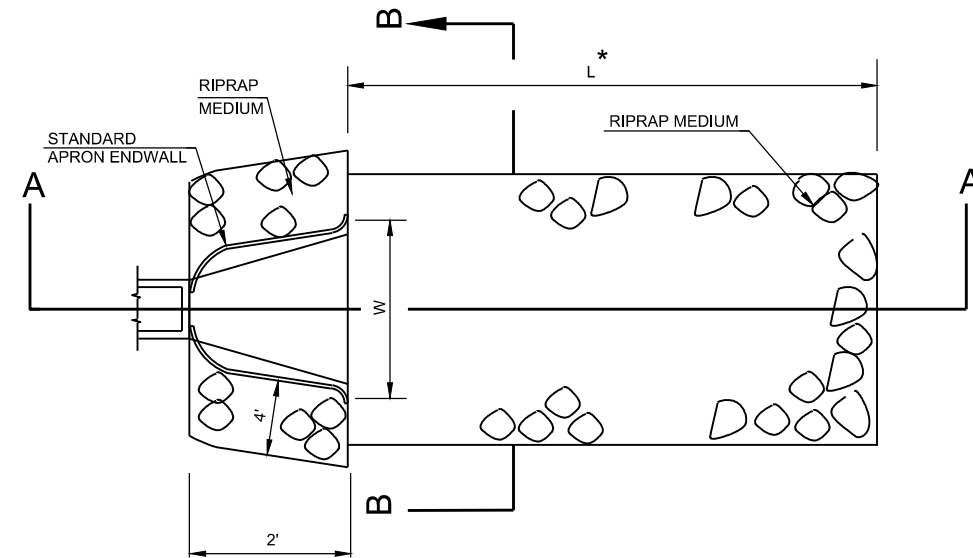


LENGTH AND NUMBER OF BAGS MAY VARY
* DEPENDING ON DESIRED DEPTH OF WATER POOL

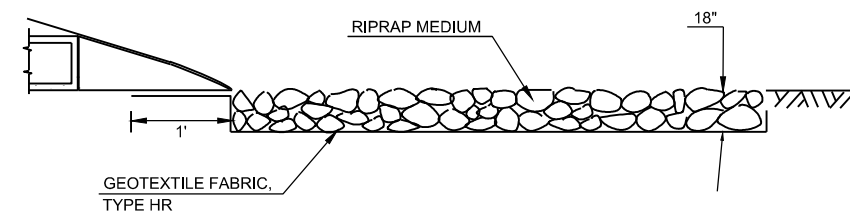
SIDE VIEW (MULTIPLE LAYER)

ROCK BAGS DITCH CHECK

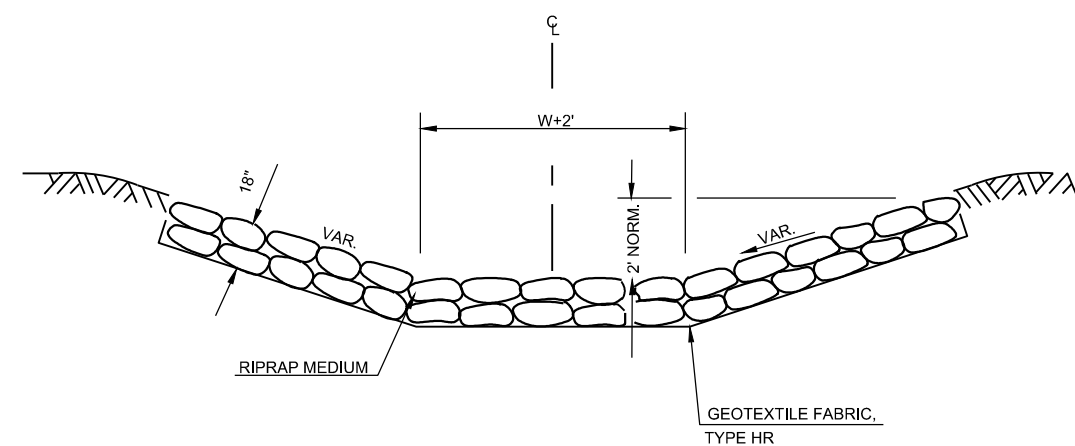
PAID AS ROCK BAGS
(SEE EROSION CONTROL PLANS FOR LOCATIONS)



* L = 3 TIMES DIAMETER (NORMAL) OR
10' MIN. OR AS DIRECTED BY THE
ENGINEER



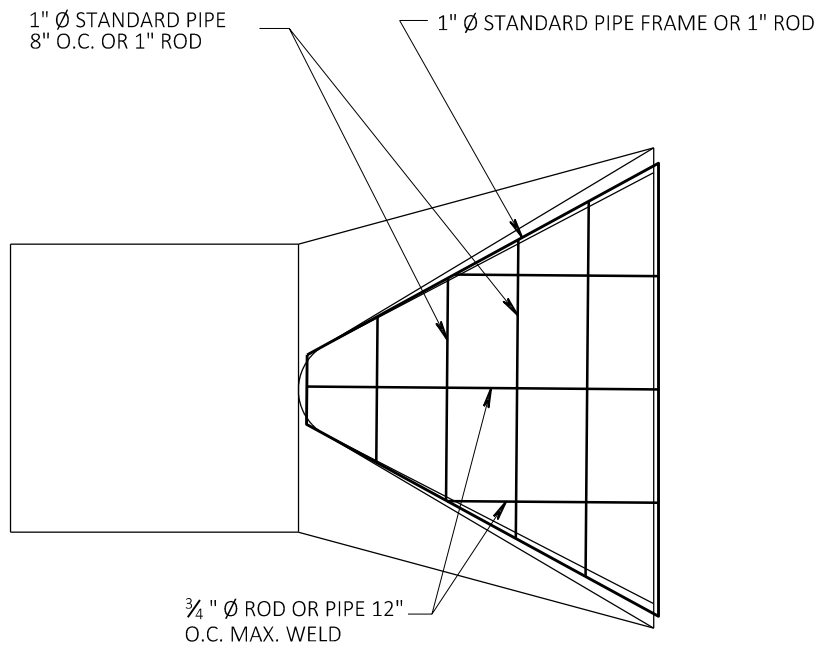
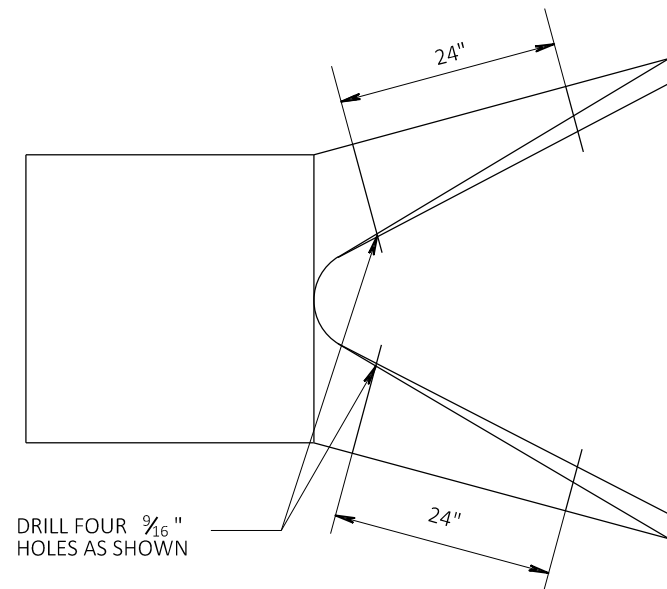
SECTION A-A



SECTION B-B

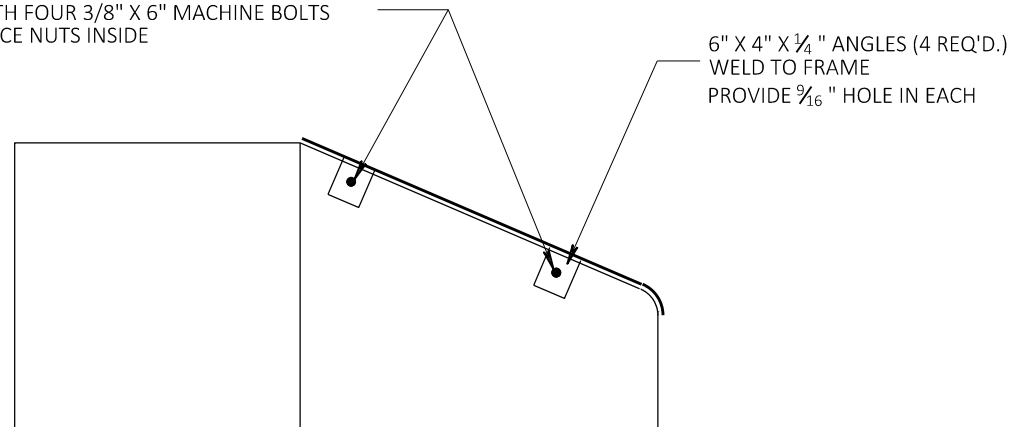
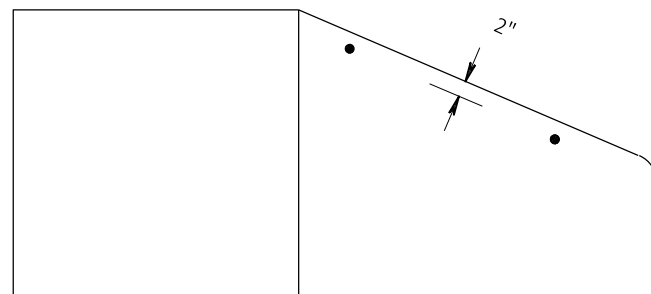
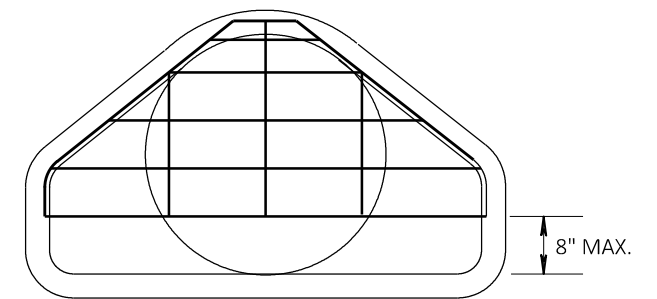
RIPRAP MEDIUM AND GEOTEXTILE FABRIC
DETAIL AT APRON ENDWALLS

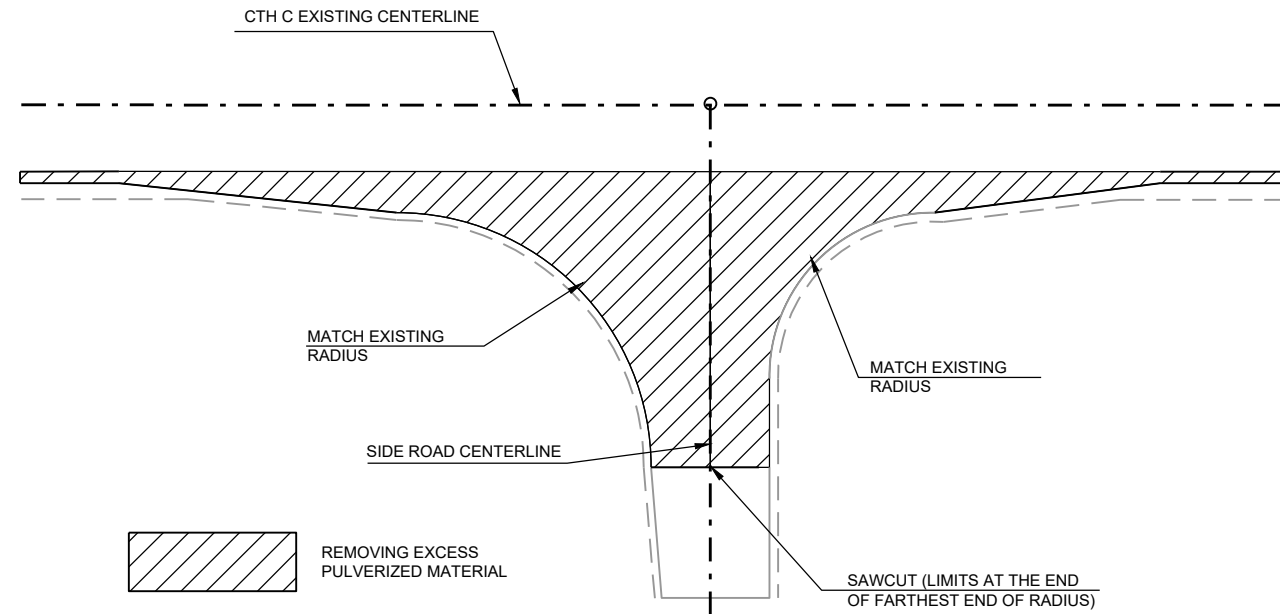
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)



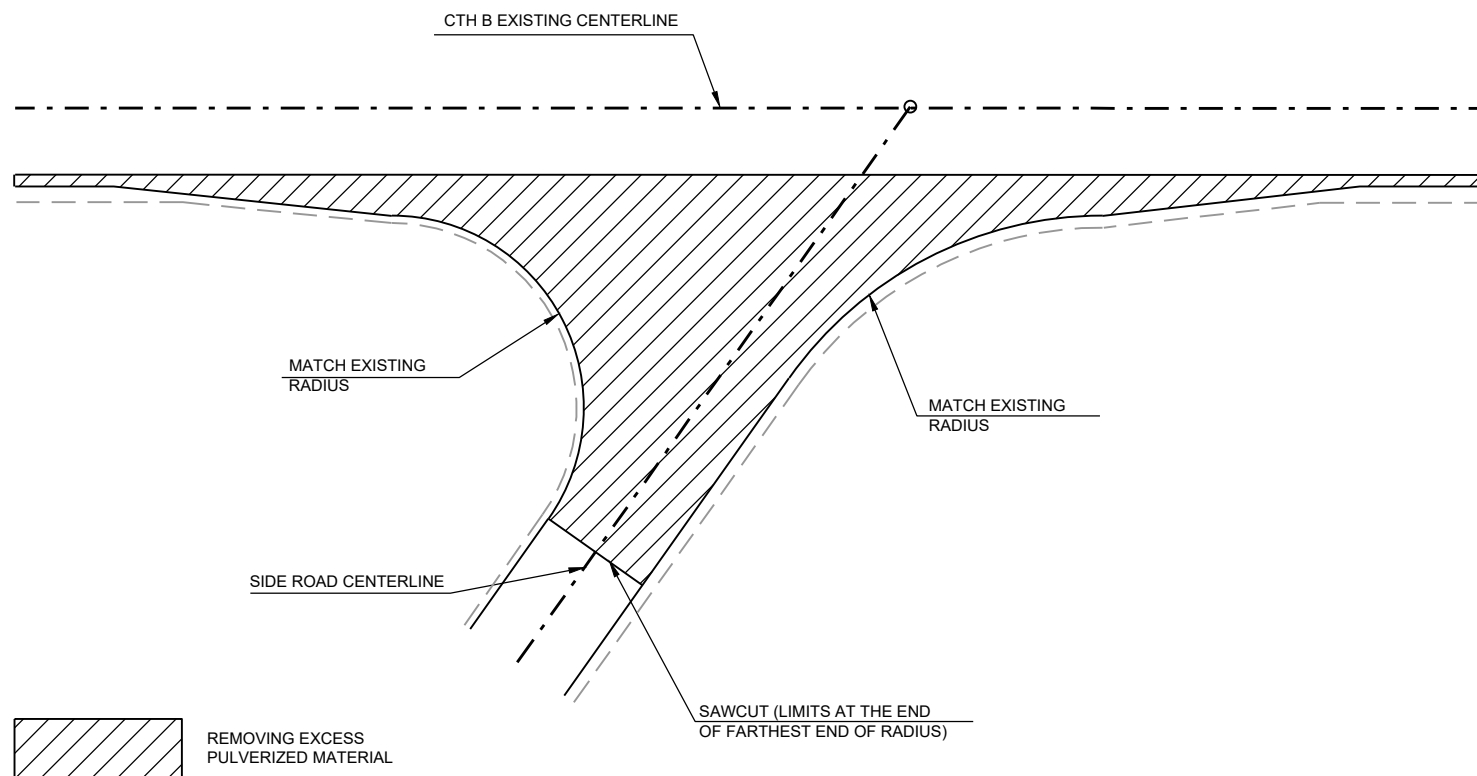
AT EACH PIPE

BOLT GRATE TO CONCRETE ENDWALL
WITH FOUR 3/8" X 6" MACHINE BOLTS
PLACE NUTS INSIDE

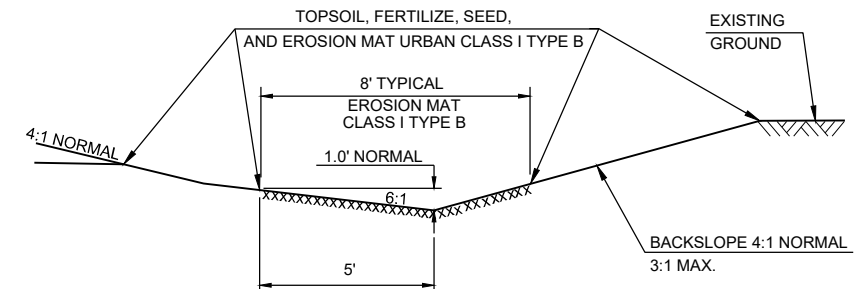
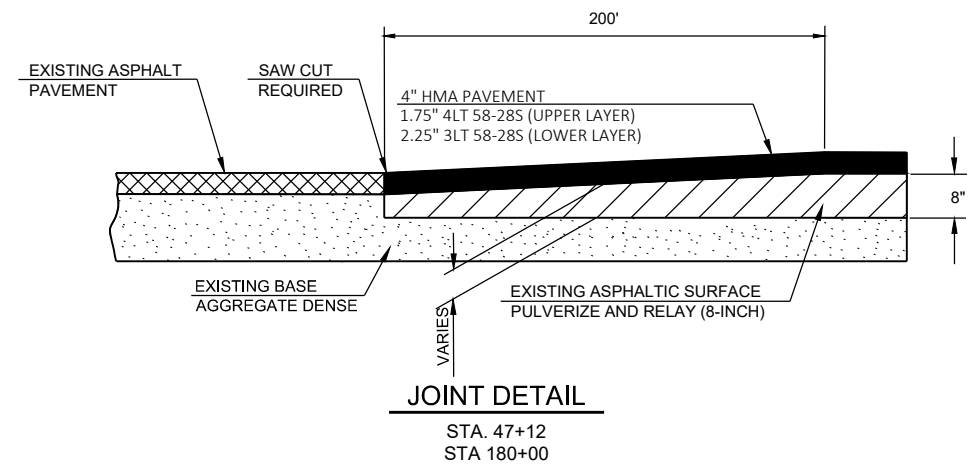
PIPE GRATE DETAIL



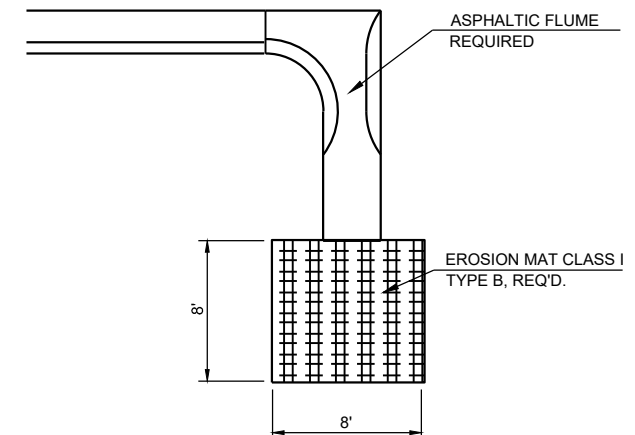
SIDE ROAD CONSTRUCTION LIMITS
INTERSECTION WITHOUT CONCRETE CURB AND GUTTER



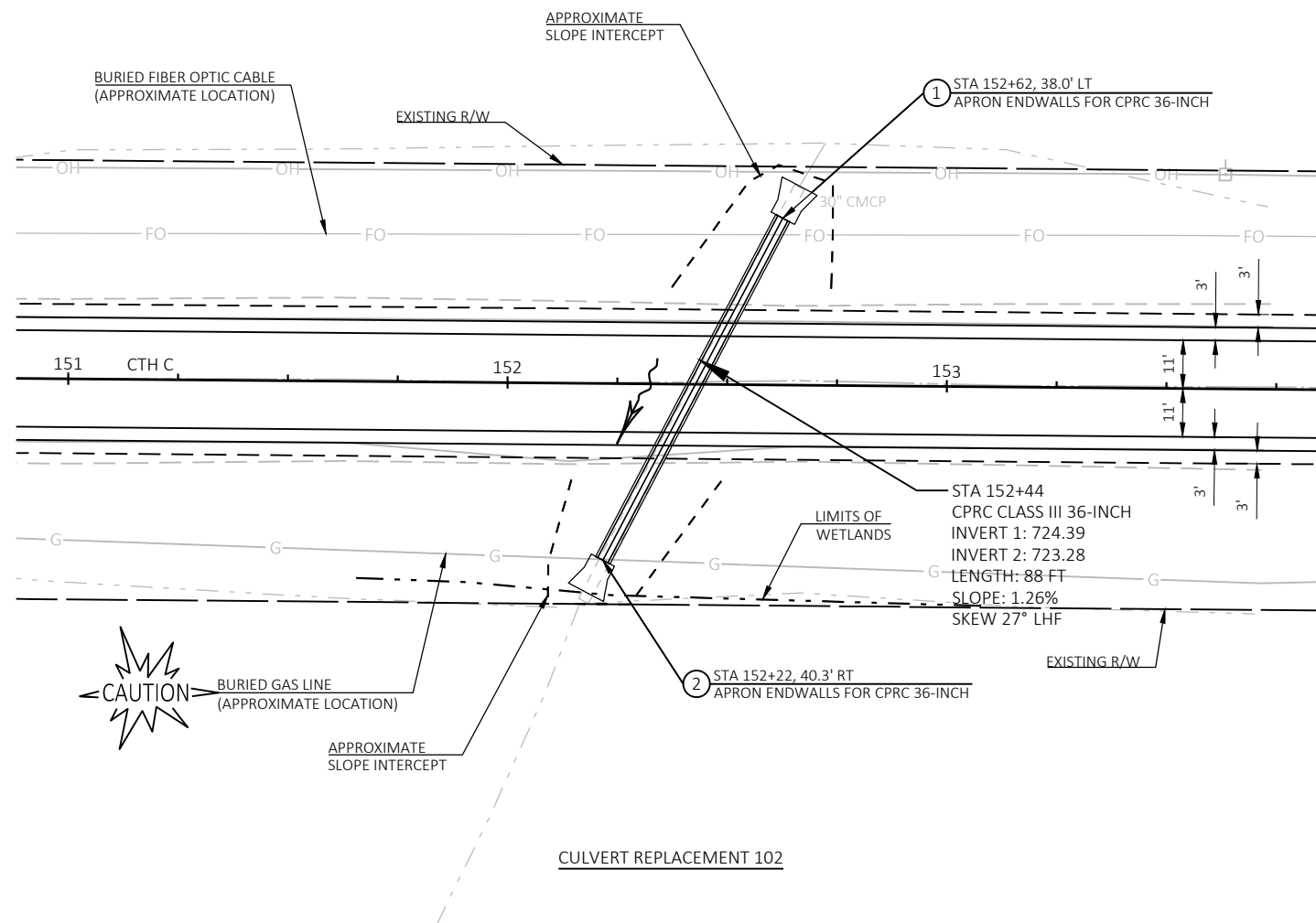
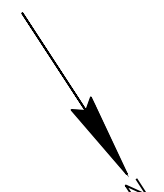
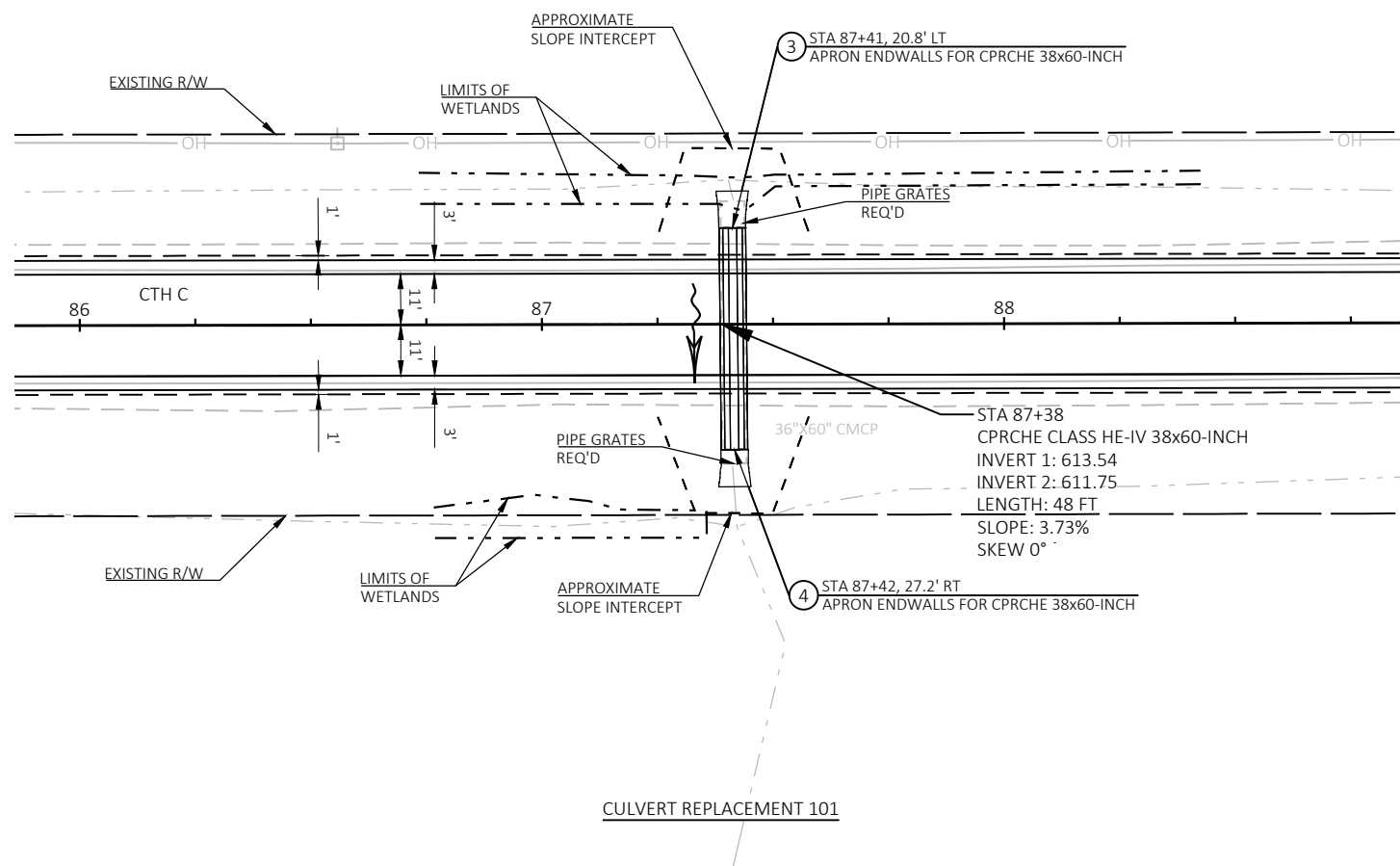
SIDE ROAD CONSTRUCTION LIMITS
SKEWED SIDE ROAD LOCATIONS



TYPICAL INSTALLATION FOR EROSION MAT
DITCH LINING
(SEE EROSION CONTROL PLANS FOR LOCATIONS)

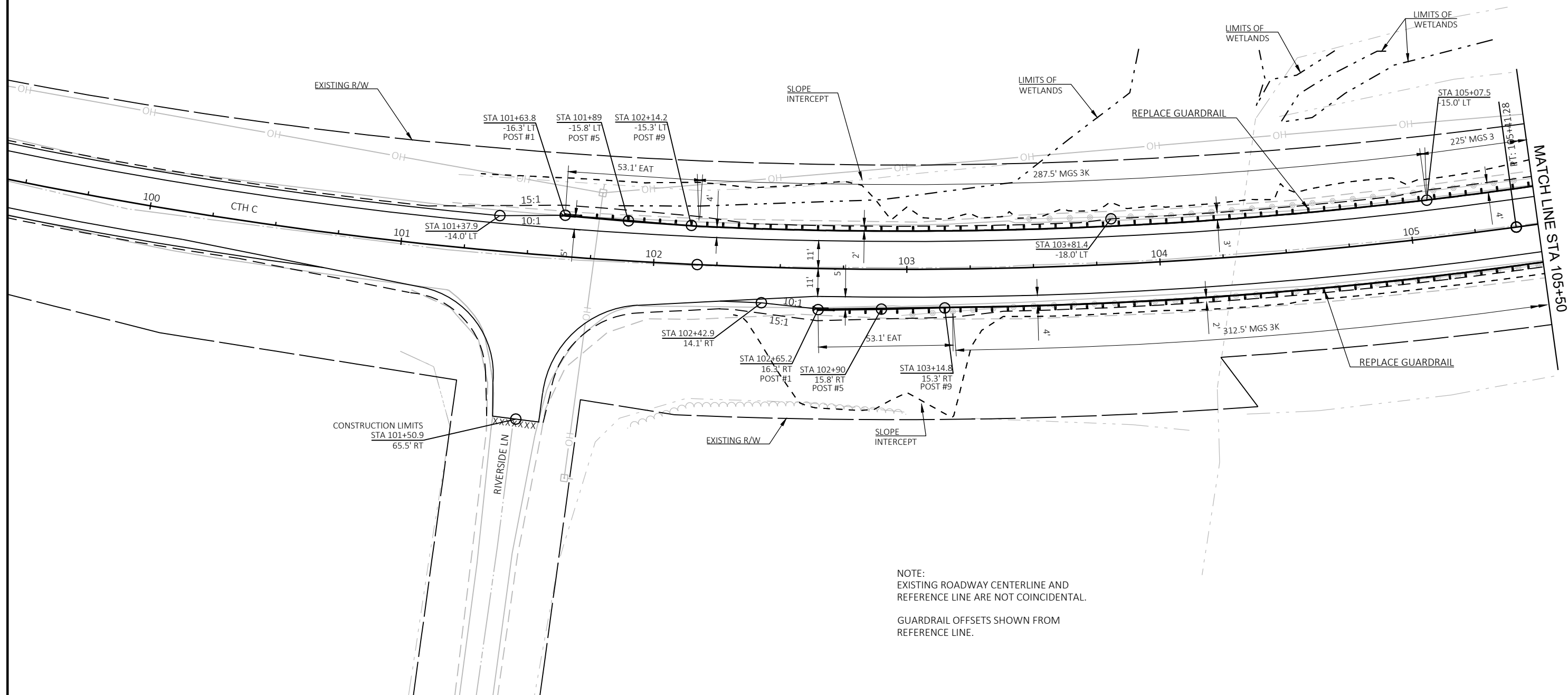


EROSION MAT AT ASPHALTIC FLUME



LEGEND

XXXXXX SAW CUT ASPHALT



PROJECT NO: 4390-01-74

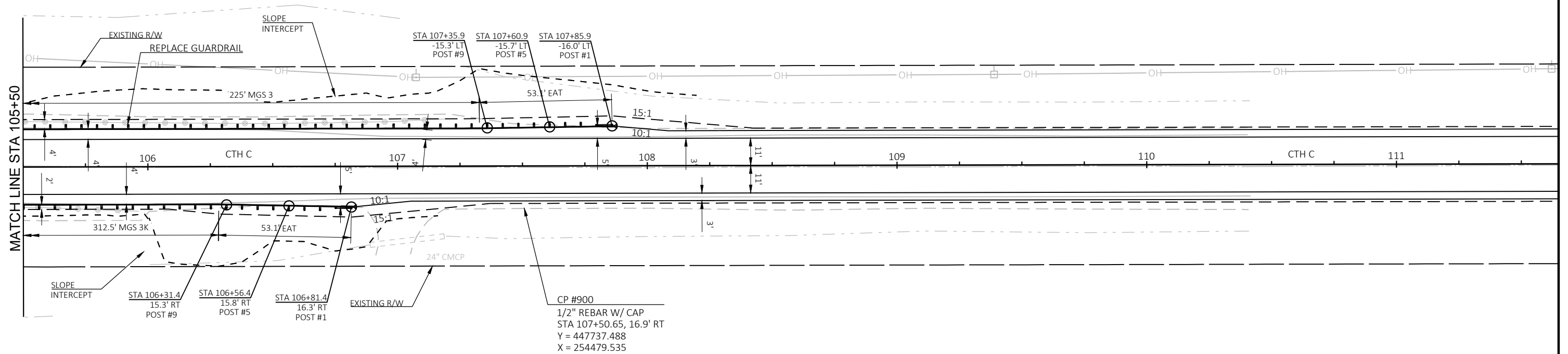
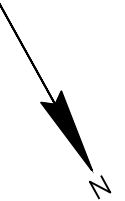
HWY: CTH C

COUNTY: KEWAUNEE

PLAN DETAILS

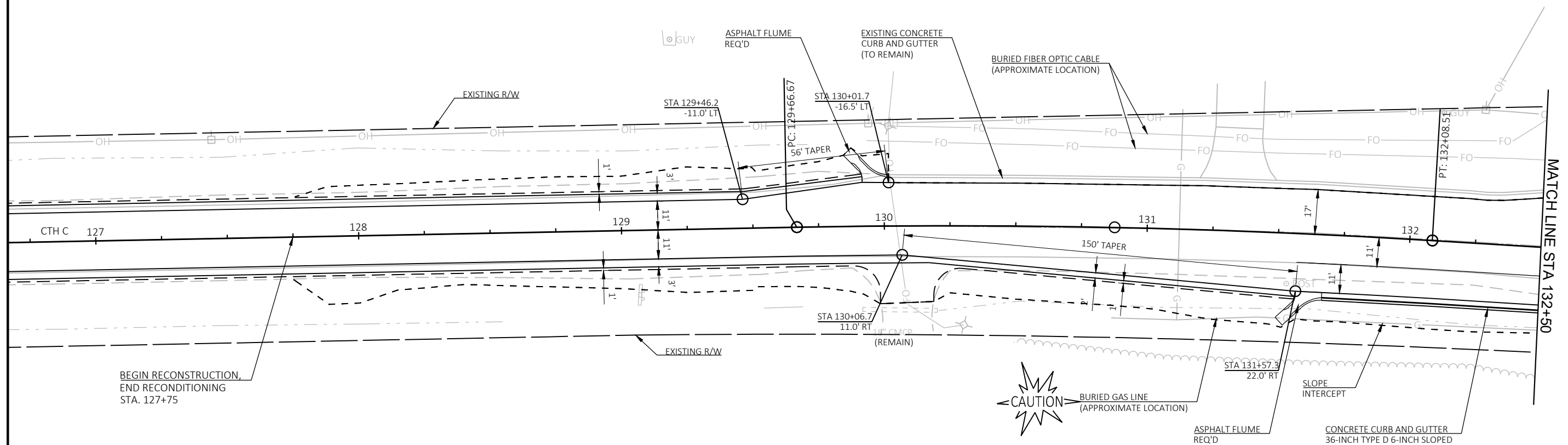
SHEET

E



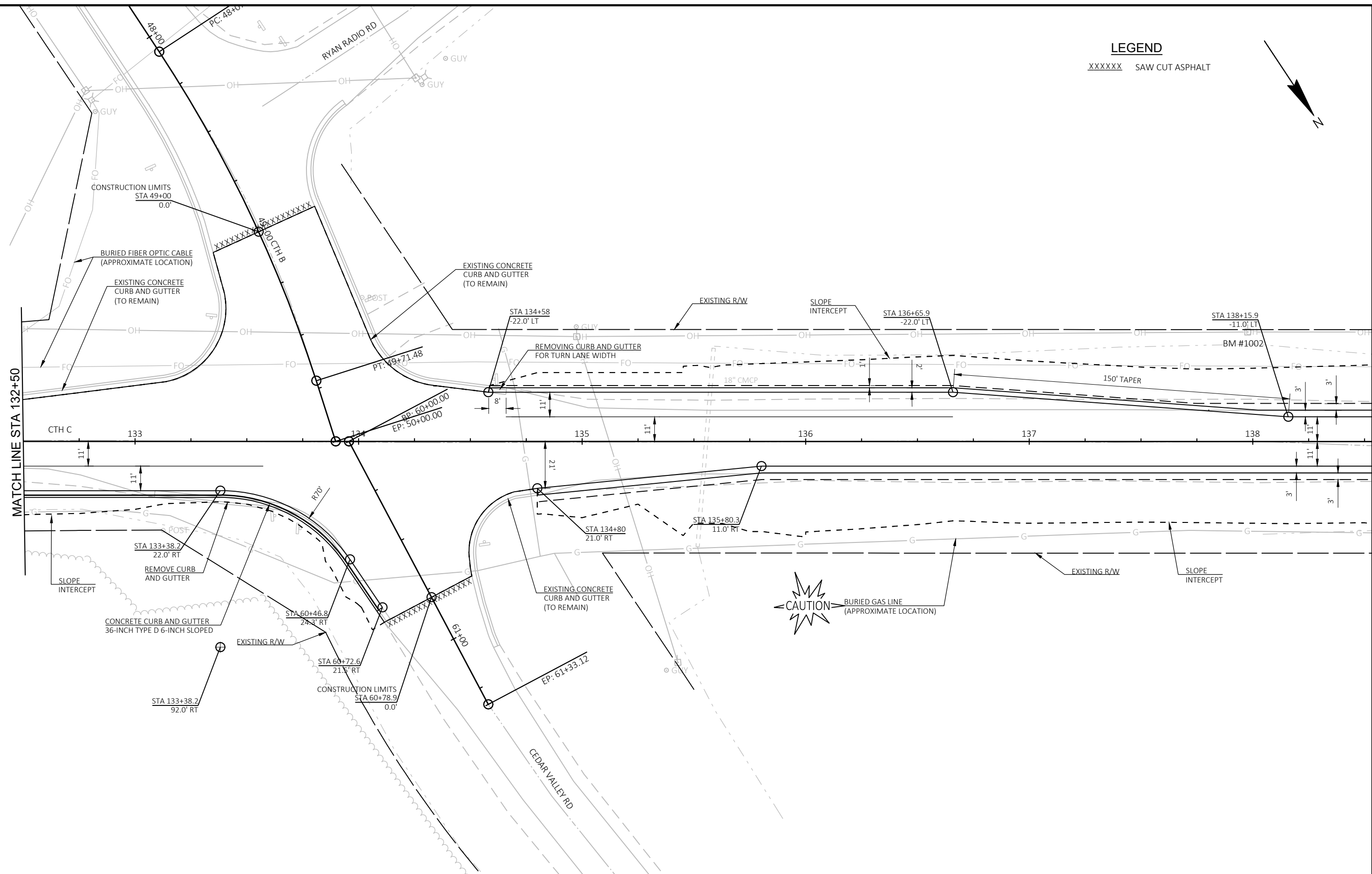
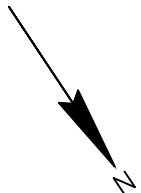
NOTE:
EXISTING ROADWAY CENTERLINE AND
REFERENCE LINE ARE NOT COINCIDENTAL.

GUARDRAIL OFFSETS SHOWN FROM
REFERENCE LINE.



LEGEND

XXXXXX SAW CUT ASPHALT



PROJECT NO: 4390-01-74

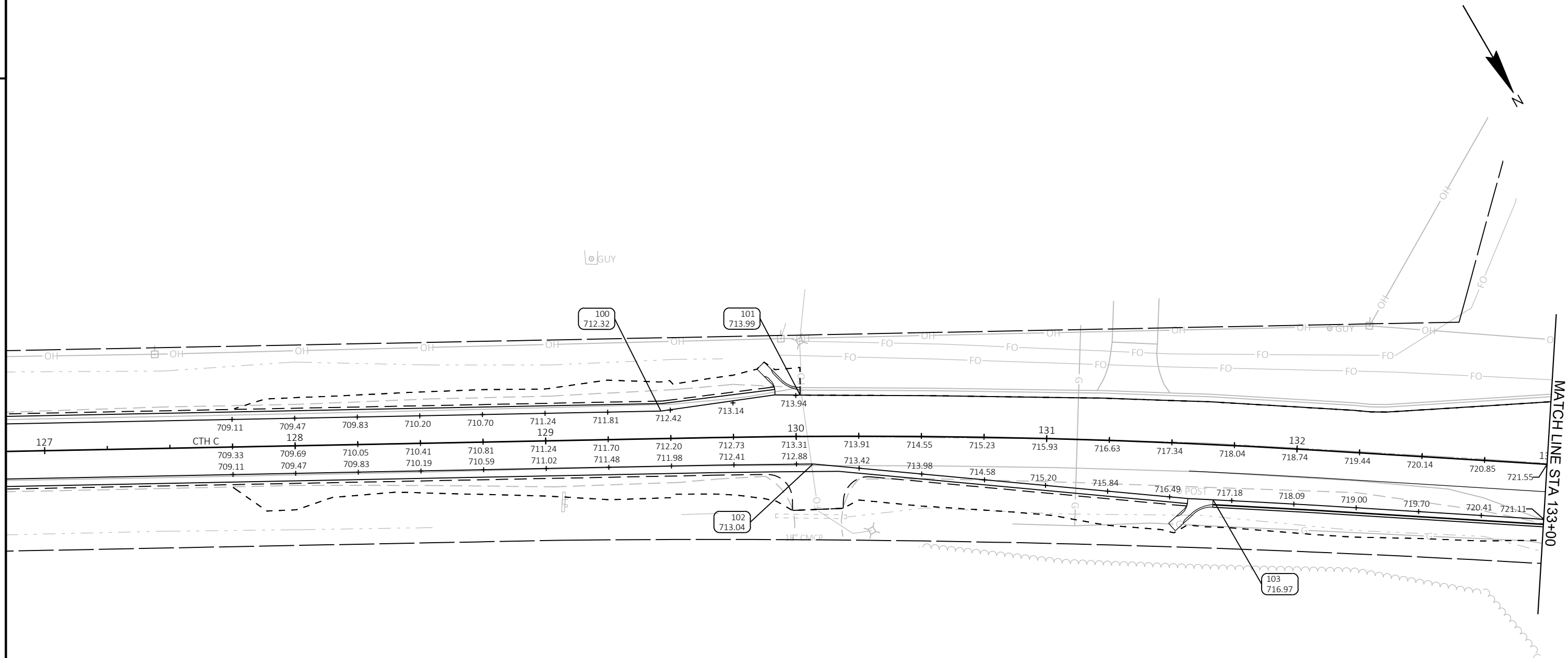
HWY: CTH C

COUNTY: KEWAUNEE

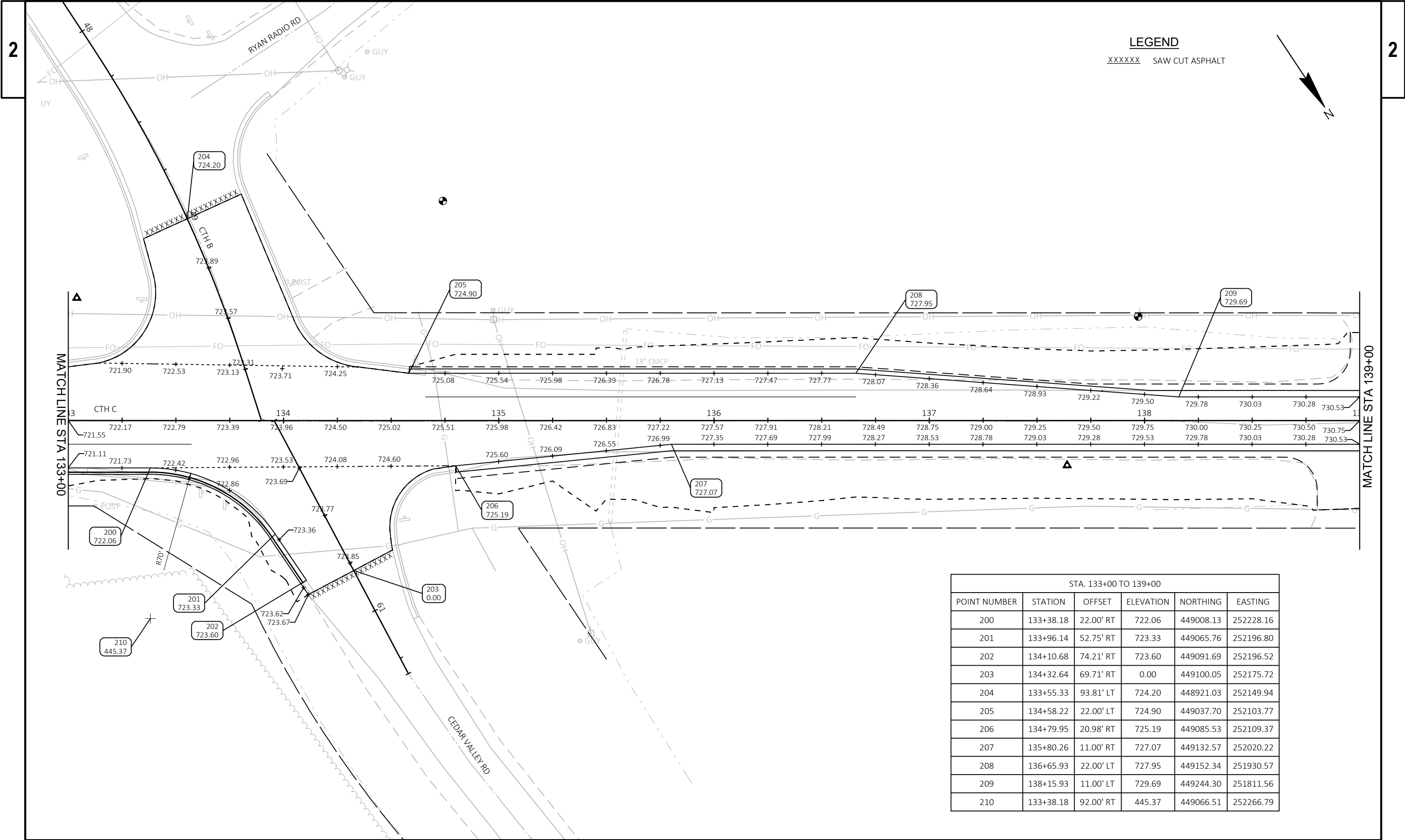
PLAN DETAILS

SHEET

E

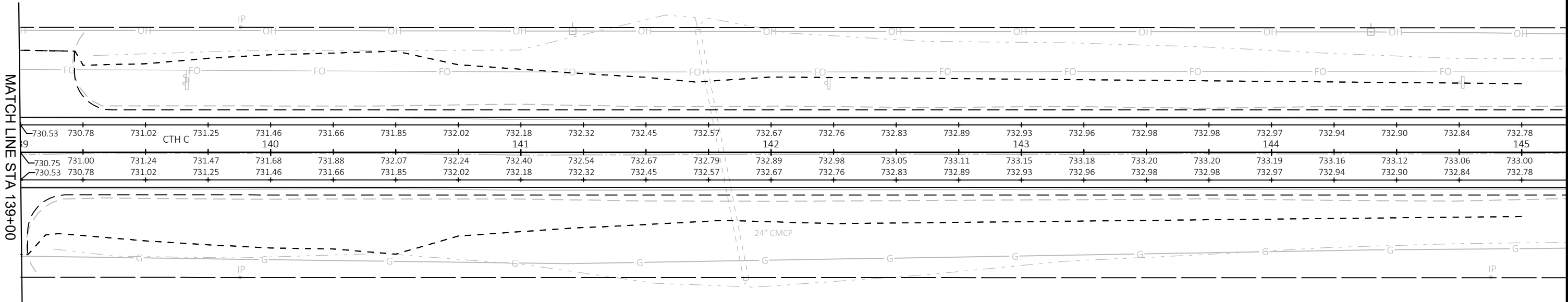
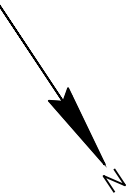


STA. 128+00 TO 133+00					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
100	129+46.23	11.00' LT	712.32	448773.50	252543.55
101	130+01.71	16.54' LT	713.99	448795.72	252492.23
102	130+06.70	11.00' RT	713.04	448822.13	252501.49
103	131+67.46	22.00' RT	716.97	448914.31	252370.42

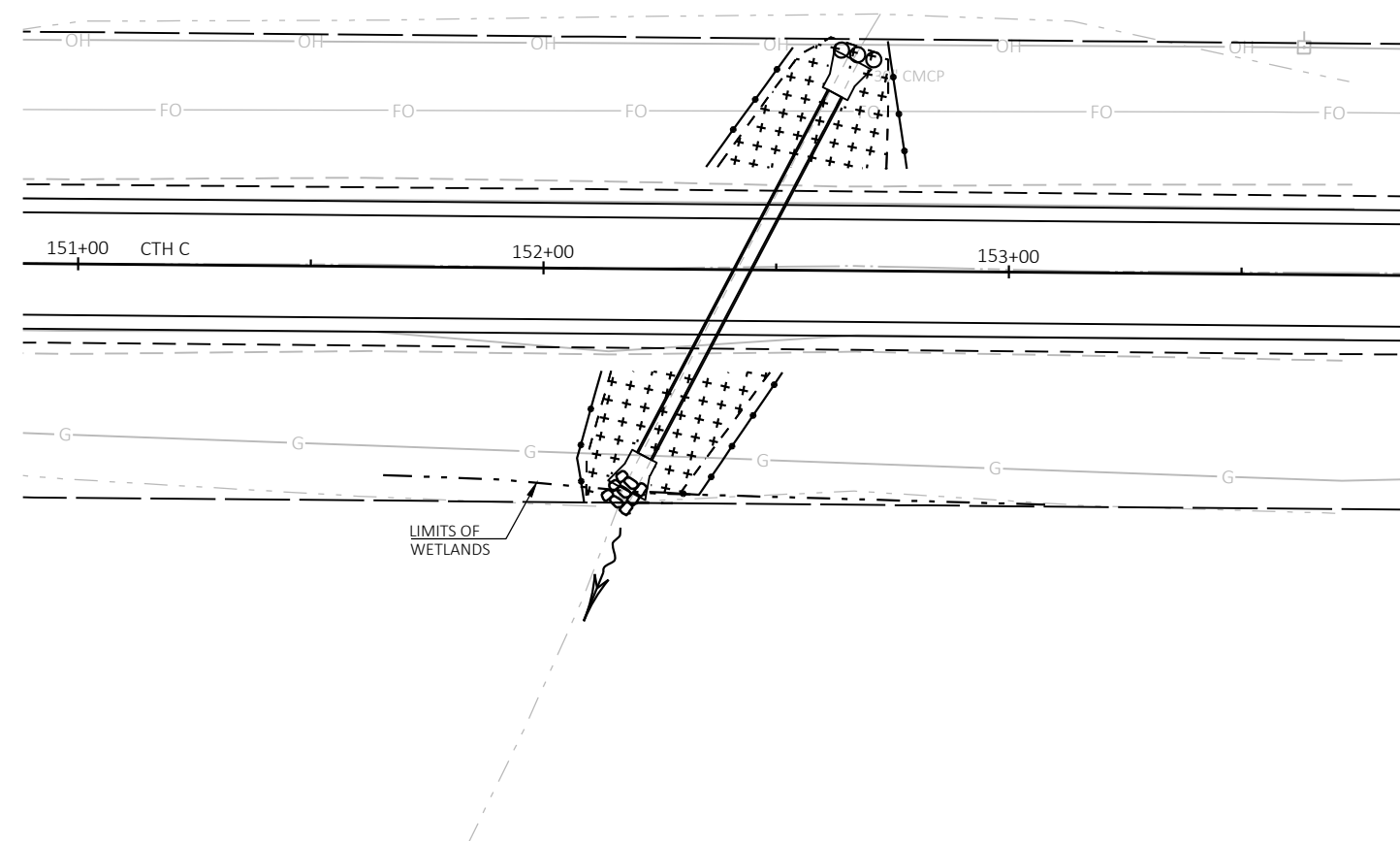
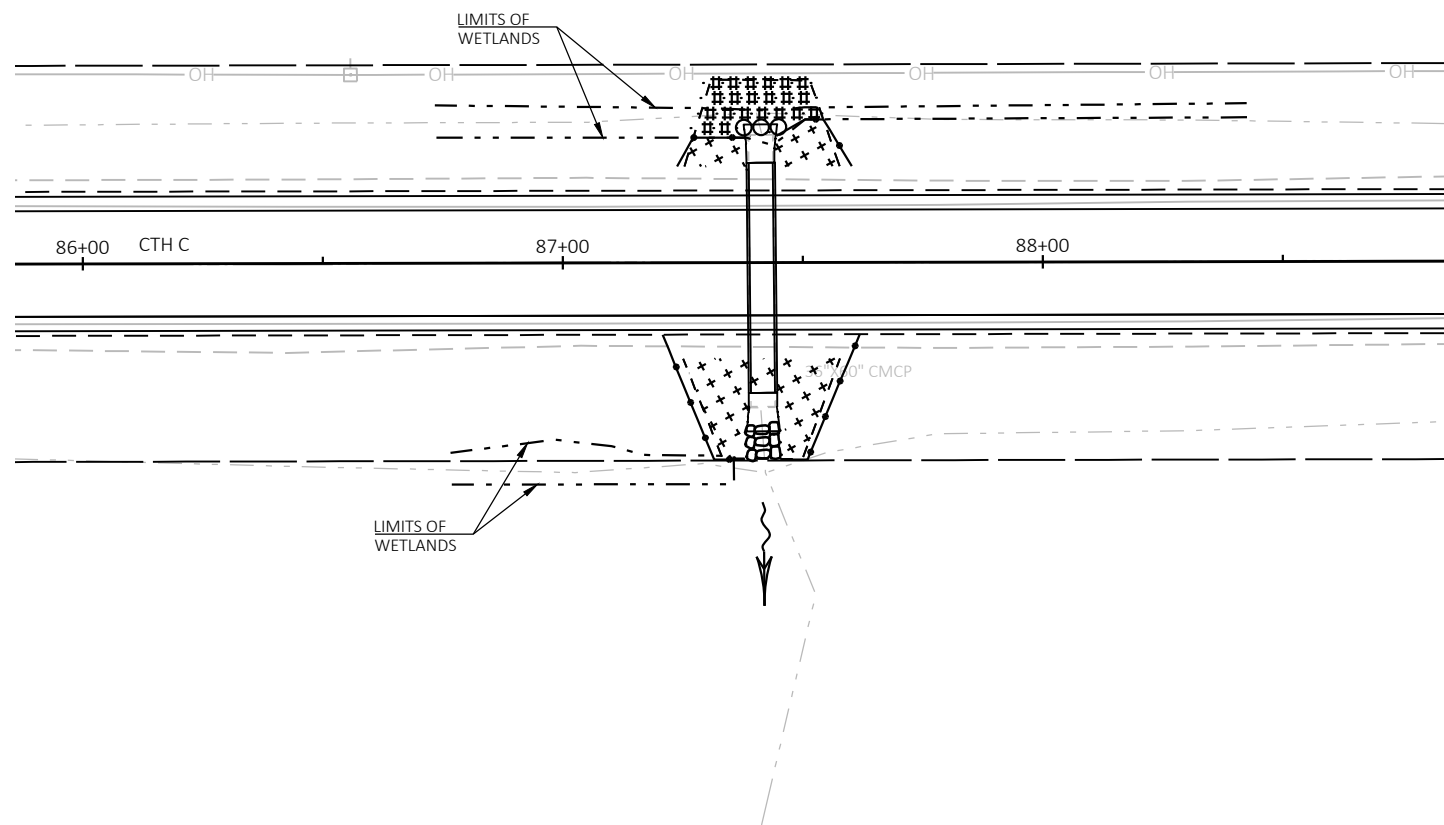


STA. 133+00 TO 139+00					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
200	133+38.18	22.00' RT	722.06	449008.13	252228.16
201	133+96.14	52.75' RT	723.33	449065.76	252196.80
202	134+10.68	74.21' RT	723.60	449091.69	252196.52
203	134+32.64	69.71' RT	0.00	449100.05	252175.72
204	133+55.33	93.81' LT	724.20	448921.03	252149.94
205	134+58.22	22.00' LT	724.90	449037.70	252103.77
206	134+79.95	20.98' RT	725.19	449085.53	252109.37
207	135+80.26	11.00' RT	727.07	449132.57	252020.22
208	136+65.93	22.00' LT	727.95	449152.34	251930.57
209	138+15.93	11.00' LT	729.69	449244.30	251811.56
210	133+38.18	92.00' RT	445.37	449066.51	252266.79

LEGEND
XXXXXX SAW CUT ASPHALT



- #####
- EROSION MAT CLASS I, TYPE B
- *****
- EROSION MAT URBAN CLASS I, TYPE B
-
- SILT FENCE
- ⌘
- RIP RAP MEDIUM
- - -
- SLOPE INTERCEPT
- [R]
- ROCK BAGS
- △△△
- TEMPORARY DITCH CHECK
-
- CULVERT PIPE CHECK
- ~>
- SURFACE WATER FLOW



EROSION MAT CLASS I, TYPE B

EROSION MAT URBAN CLASS I, TYPE B

SILT FENCE

RIP RAP MEDIUM

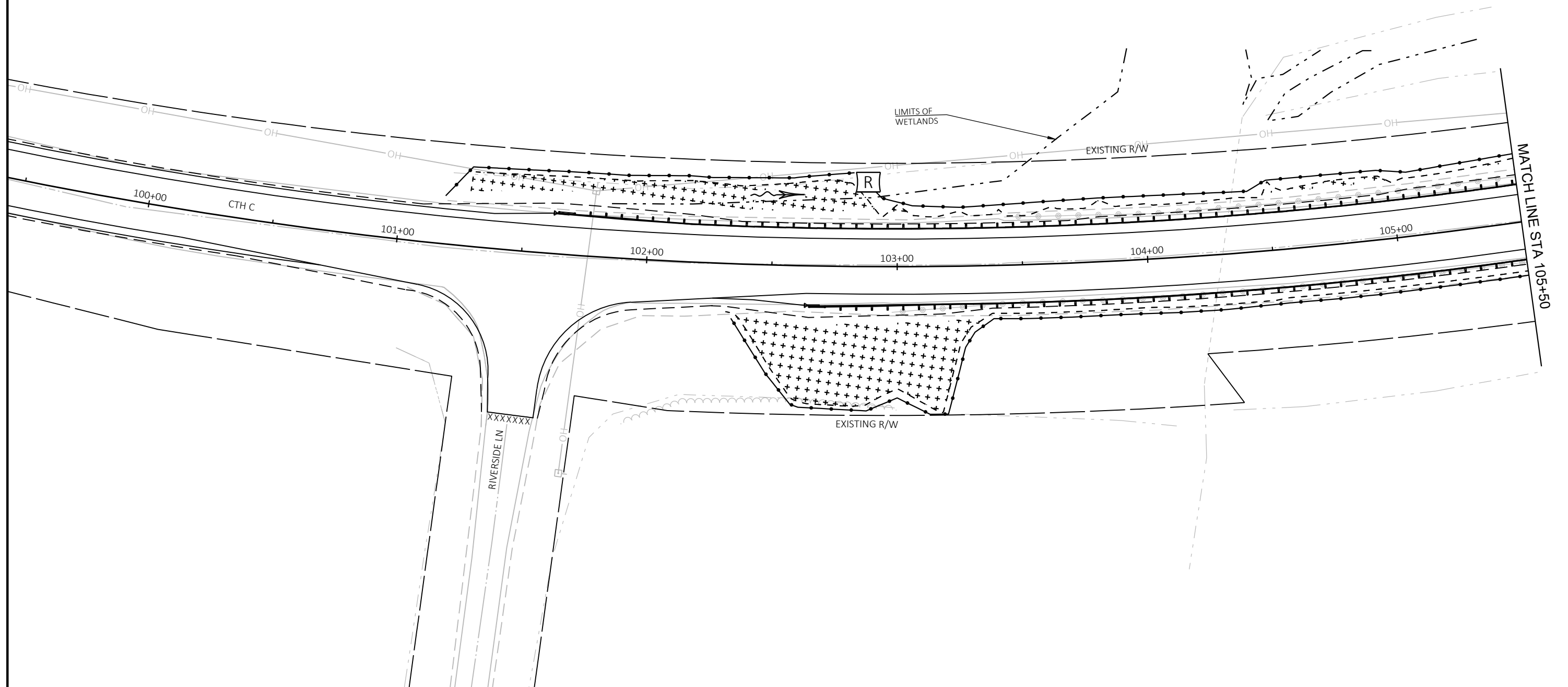
SLOPE INTERCEPT

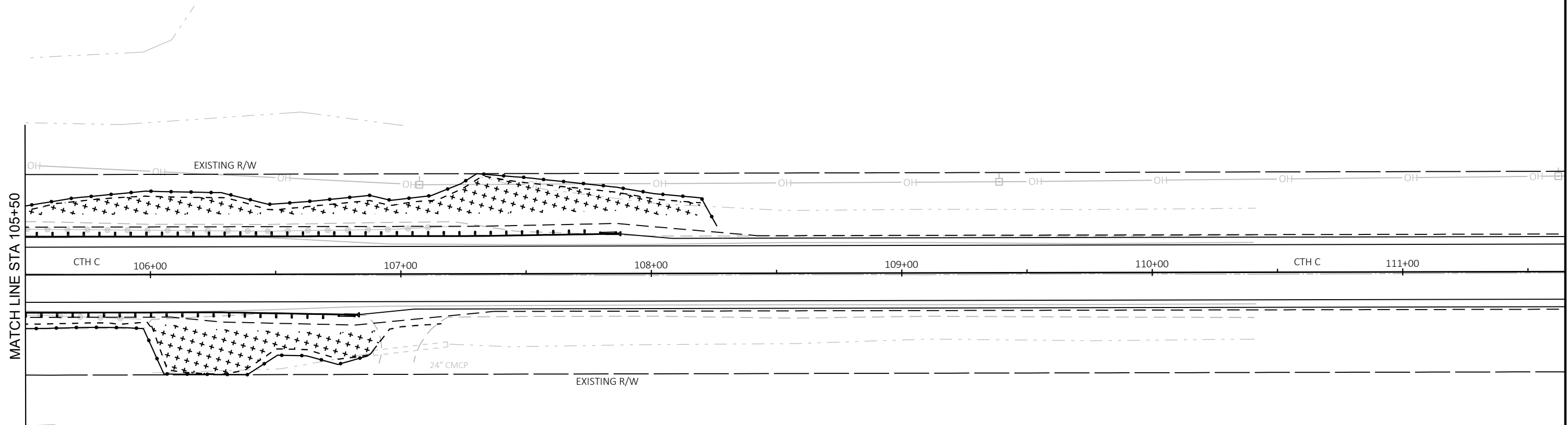
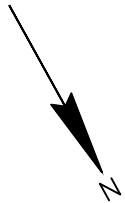
ROCK BAGS

TEMPORARY DITCH CHECK

CULVERT PIPE CHECK

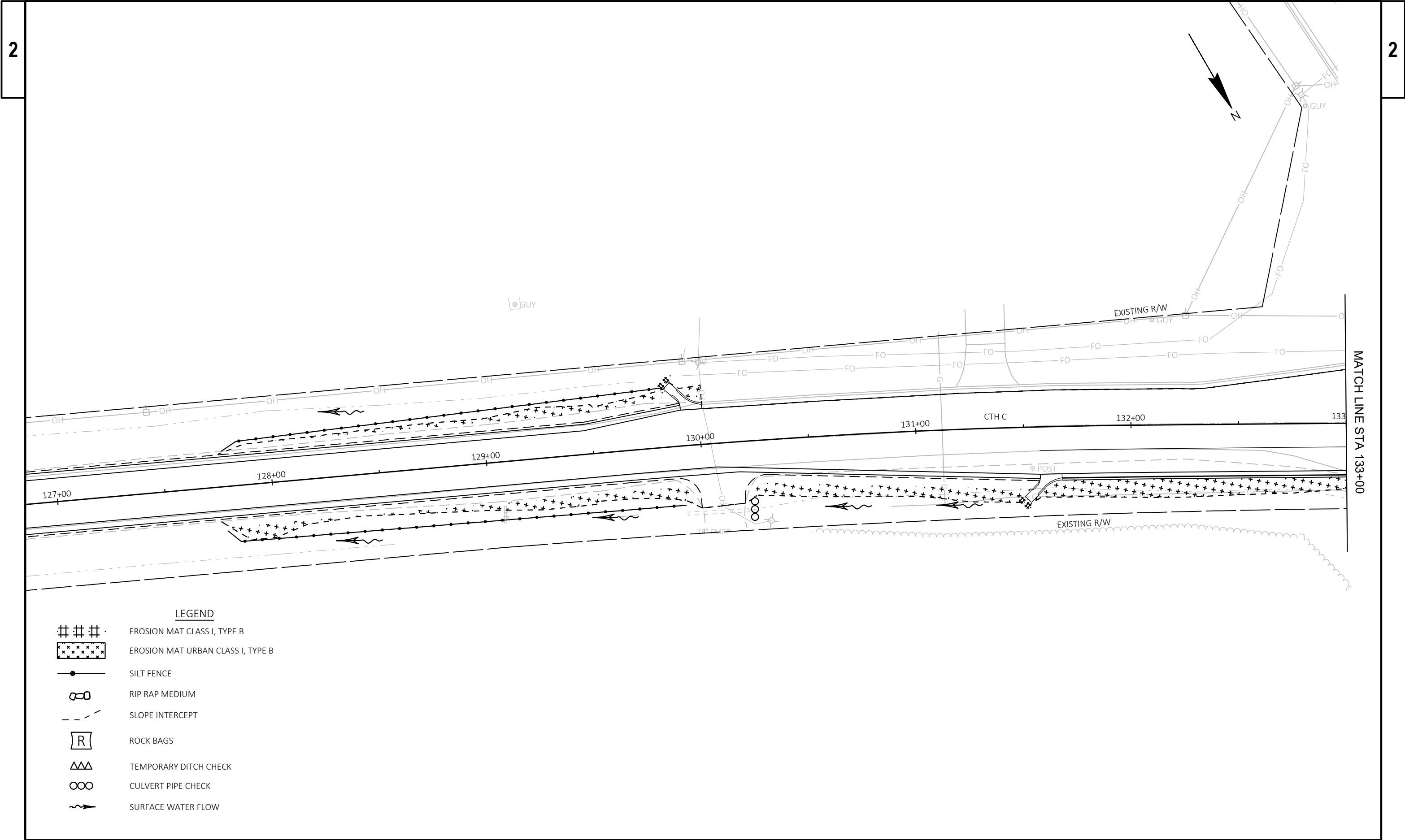
SURFACE WATER FLOW





LEGEND

- ### EROSION MAT CLASS I, TYPE B
- xxxxx EROSION MAT URBAN CLASS I, TYPE B
- SILT FENCE
- ⌞ RIP RAP MEDIUM
- - - SLOPE INTERCEPT
- [R] ROCK BAGS
- △△△ TEMPORARY DITCH CHECK
- ∞∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW



LEGEND

- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B
- SILT FENCE
- RIP RAP MEDIUM
- SLOPE INTERCEPT
- ROCK BAGS
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW

PROJECT NO: 4390-01-74

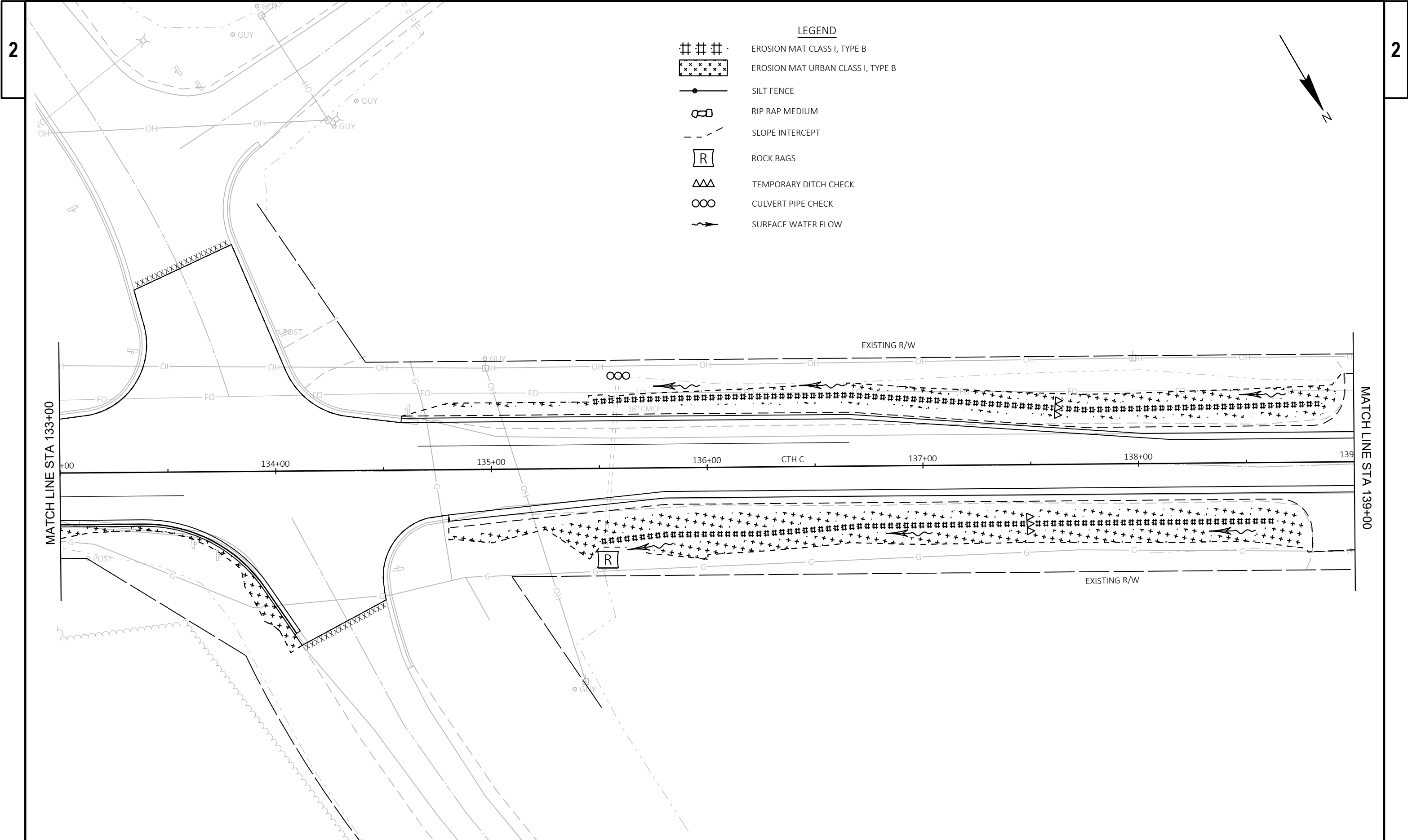
HWY: CTH C

COUNTY: KEWAUNEE

EROSION CONTROL

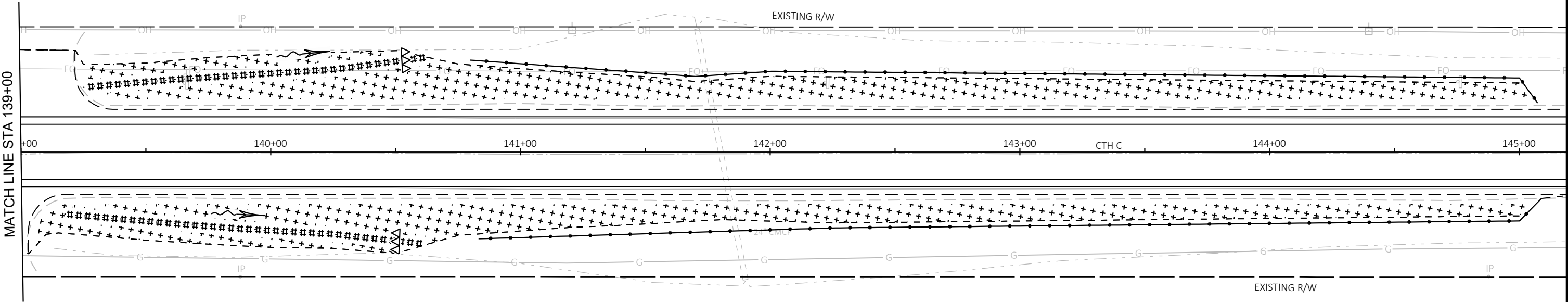
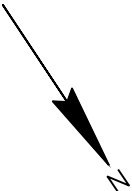
SHEET

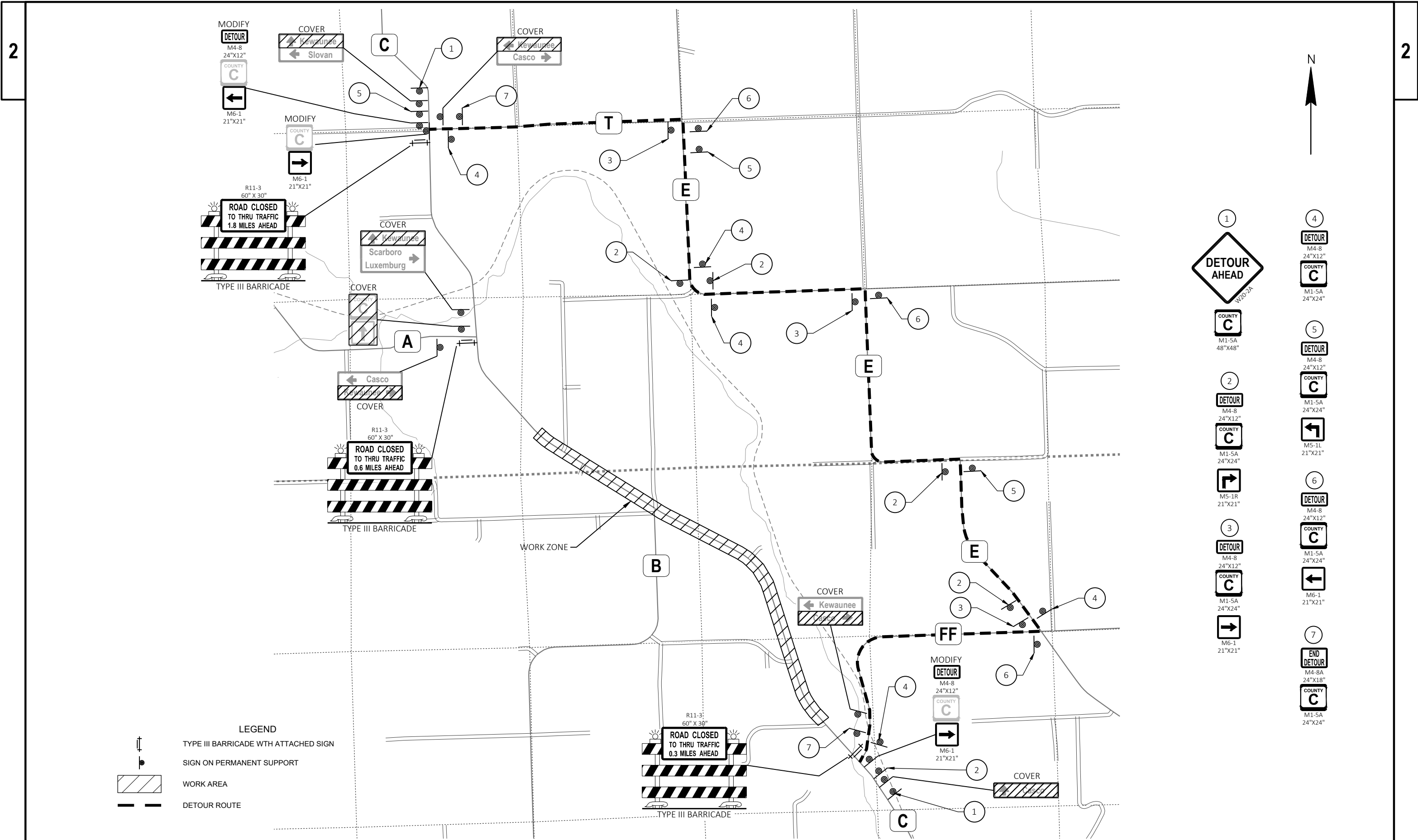
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LEGEND

- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B
- SILT FENCE
- RIP RAP MEDIUM
- SLOPE INTERCEPT
- ROCK BAGS
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW





Estimate Of Quantities

4390-01-74

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0004	204.0110	Removing Asphaltic Surface	SY	510.000	510.000
0006	204.0150	Removing Curb & Gutter	LF	135.000	135.000
0008	205.0100	Excavation Common	CY	7,800.000	7,800.000
0010	213.0100	Finishing Roadway (project) 01. 4390-01-74	EACH	1.000	1.000
0012	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,700.000	1,700.000
0014	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	6,950.000	6,950.000
0016	325.0100	Pulverize and Relay	SY	36,320.000	36,320.000
0018	455.0605	Tack Coat	GAL	2,705.000	2,705.000
0020	460.2000	Incentive Density HMA Pavement	DOL	6,540.000	6,540.000
0022	460.5223	HMA Pavement 3 LT 58-28 S	TON	5,760.000	5,760.000
0024	460.5224	HMA Pavement 4 LT 58-28 S	TON	4,490.000	4,490.000
0026	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	95.000	95.000
0028	465.0315	Asphaltic Flumes	SY	10.000	10.000
0030	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	88.000	88.000
0032	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	2.000	2.000
0034	522.2638	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 38x60-Inch	EACH	2.000	2.000
0036	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	270.000	270.000
0038	606.0200	Riprap Medium	CY	18.000	18.000
0040	611.9850.S	Pipe Grates (size) 01. 38x60-Inch	EACH	2.000	2.000
0042	614.0920	Salvaged Rail	LF	650.000	650.000
0044	614.2300	MGS Guardrail 3	LF	225.000	225.000
0046	614.2330	MGS Guardrail 3 K	LF	600.000	600.000
0048	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0050	619.1000	Mobilization	EACH	1.000	1.000
0052	624.0100	Water	MGAL	390.000	390.000
0054	625.0100	Topsoil	SY	5,100.000	5,100.000
0056	628.1504	Silt Fence	LF	2,600.000	2,600.000
0058	628.1520	Silt Fence Maintenance	LF	5,200.000	5,200.000
0060	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0062	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0064	628.2004	Erosion Mat Class I Type B	SY	1,070.000	1,070.000
0066	628.2008	Erosion Mat Urban Class I Type B	SY	4,030.000	4,030.000
0068	628.7504	Temporary Ditch Checks	LF	70.000	70.000
0070	628.7555	Culvert Pipe Checks	EACH	27.000	27.000
0072	628.7570	Rock Bags	EACH	45.000	45.000
0074	629.0210	Fertilizer Type B	CWT	4.000	4.000
0076	630.0120	Seeding Mixture No. 20	LB	155.000	155.000
0078	630.0140	Seeding Mixture No. 40	LB	70.000	70.000
0080	630.0500	Seed Water	MGAL	120.000	120.000
0082	633.5200	Markers Culvert End	EACH	14.000	14.000
0084	642.5001	Field Office Type B	EACH	1.000	1.000
0086	643.0300	Traffic Control Drums	DAY	200.000	200.000
0088	643.0420	Traffic Control Barricades Type III	DAY	2,800.000	2,800.000
0090	643.0705	Traffic Control Warning Lights Type A	DAY	5,600.000	5,600.000
0092	643.0900	Traffic Control Signs	DAY	8,000.000	8,000.000
0094	643.0920	Traffic Control Covering Signs Type II	EACH	10.000	10.000
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

4390-01-74

Line	Item	Item Description	Unit	Total	Qty
0100	645.0120	Geotextile Type HR	SY	50.000	50.000
0102	646.1020	Marking Line Epoxy 4-Inch	LF	42,670.000	42,670.000
0104	646.3020	Marking Line Epoxy 8-Inch	LF	400.000	400.000
0106	648.0100	Locating No-Passing Zones	MI	2.500	2.500
0108	650.4500	Construction Staking Subgrade	LF	1,725.000	1,725.000
0110	650.5000	Construction Staking Base	LF	1,725.000	1,725.000
0112	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0114	650.8000	Construction Staking Resurfacing Reference	LF	13,288.000	13,288.000
0116	650.9911	Construction Staking Supplemental Control (project) 01. 4390-01-74	EACH	1.000	1.000
0118	650.9920	Construction Staking Slope Stakes	LF	2,400.000	2,400.000
0120	690.0150	Sawing Asphalt	LF	490.000	490.000
0122	740.0440	Incentive IRI Ride	DOL	10,068.000	10,068.000
0124	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0126	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0128	SPV.0035	Special 01. Foundation Backfill	CY	400.000	400.000
0130	SPV.0090	Special 01. Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 38x60	LF	48.000	48.000
0132	SPV.0180	Special 01. Remove Excess Pulverized Material	SY	4,400.000	4,400.000

REMOVING SMALL PIPE CULVERTS

203.0100 REMOVING SMALL PIPE CULVERTS				
CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	87+39	CTH C	1	36"x60" CMCP
0010	152+45	CTH C	1	30" CMCP
TOTAL 0010			2	

REMOVING ASPHALTIC SURFACE

204.0110 REMOVING ASPHALTIC SURFACE				
CATEGORY	STATION	LOCATION	SY	REMARKS
0010	64+10	CTH C, LT	53	DRIVEWAY
0010	65+50	CTH C, LT	55	DRIVEWAY
0010	115+75	CTH C, LT	48	DRIVEWAY
0010	118+35	CTH C, RT	56	DRIVEWAY
0010	126+00	CTH C, RT	85	DRIVEWAY
0010	159+00	CTH C, LT	108	DRIVEWAY
0010	167+25	CTH C, LT	105	DRIVEWAY
TOTAL 0010			510	

REMOVING CURB & GUTTER

204.0150 REMOVING CURB & GUTTER					
CATEGORY	STATION	TO	STATION	LOCATION	LF
0010	133+08	-	134+14	CTH C, RT	127
0010	134+58	-	134+66	CTH C, LT	8
TOTAL 0010					135

EARTHWORK SUMMARY

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		UNEXPANDED FILL	EXPANDED FILL	MASS ORDINATE +/- (14)	FOUNDATION BACKFILL ITEM SPV.0035.01	WASTE
			CUT (2)	EBS EXCAVATION (3)		FACTOR 1.43			
DIVISION 1									
GUARD RAIL	101+27.77 TO 108+08.38	CTH C	186	0	145	207	-21	0	0
HILL CUT	127+75.00 TO 145+00.00	CTH C	6,641	0	25	26	6,605	0	6,605
CTH B	49+00.00 TO 49+50.00	CTH B	162	0	0	0	162	0	162
CEDAR VALLEY	60+50.00 TO 60+78.89	CEDAR VALLEY	89	0	0	0	89	0	89
CULVERT 101	87+00 TO 87+90	CTH C	260	0	-	-	-	170	260
CULVERT 102	151+90 TO 152+90	CTH C	350	0	-	-	-	230	350
	ENTIRE PROJECT	UNDISTRIBUTED	0	112	-	-	-	0	
DIVISION 1 SUBTOTAL			7,688	112	170	233	6,835	400	7,466
GRAND TOTAL			7,688	112	170	233	6,835	400	7,466
TOTAL COMMON EXC			7,800						

NOTES:

- (1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
- (2) SALVAGED/UNSUALE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- (3) EBS EXCAVATION TO BE BACKFILLED WITH BASE AGGREGATE DENSE 1 1/4-INCH, ITEM 305.0120.
- (14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL, MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

BASE AGGREGATE

					*			
					305.0110	305.0120	624.0100	
					BASE AGGREGATE	BASE AGGREGATE		
					DENSE 3/4-INCH	DENSE 1 1/4-INCH	WATER	
CATEGORY	STATION	TO	STATION	LOCATION	TON	TON	MGAL	REMARKS
0010	47+12	-	67+25	CTH C, LT	80	-	1.2	
0010	47+12	-	101+00	CTH C, RT	215	-	3.3	
0010	67+50	-	101+40	CTH C, LT	135	-	2.1	
0010	101+40	-	108+10	CTH C, LT	40	320	5.4	GUARDRAIL AREA
0010	101+90	-	107+10	CTH C, RT	35	250	4.3	GUARDRAIL AREA
0010	107+10	-	127+75	CTH C, RT	80	-	1.2	
0010	108+10	-	127+75	CTH C, LT	80	-	1.2	
0010	127+75	-	130+00	CTH C, LT	10	370	5.7	RECONSTRUCTION AREA
0010	127+75	-	130+00	CTH C, RT	10	370	5.7	RECONSTRUCTION AREA
0010	130+00	-	134+70	CTH C, LT	-	655	9.9	RECONSTRUCTION AREA
0010	130+00	-	134+70	CTH C, RT	5	810	12.3	RECONSTRUCTION AREA
0010	49+00	-	49+75	CTH B	-	305	4.6	RECONSTRUCTION AREA
0010	60+30	-	60+80	CEDAR VALLEY RD	-	175	2.7	RECONSTRUCTION AREA
0010	134+70	-	145+00	CTH C, LT	90	1,555	24.7	RECONSTRUCTION AREA
0010	134+75	-	145+00	CTH C, RT	90	1,655	26.2	RECONSTRUCTION AREA
0010	145+00	-	180+00	CTH C, LT	300	-	4.5	
0010	145+00	-	167+10	CTH C, RT	190	-	2.9	
0010	167+10	-	180+00	CTH C, RT	110	-	1.7	
0010	87+10	-	87+70	CTH C	-	165	2.5	CULVERT TRANSITION
0010	152+00	-	152+80	CTH C	-	205	3.1	CULVERT TRANSITION
GRAVEL DRIVEWAYS				CTH C	185	-	2.8	
UNDISTRUBUTED					45	115	2.0	
TOTAL 0010					1,700	6,950	130.0	

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PULVERIZE AND RELAY								
*								
325.0100 624.0100 SPV.0180.01 REMOVE EXCESS								
PULVERIZE AND PULVERIZED								
CATEGORY	STATION	TO	STATION	LOCATION	RELAY SY	WATER MGAL	MATERIAL SY	REMARKS
0010	47+12	-	49+12	CTH C	630	5	630	PAVEMENT TRANSITION BOP
0010	49+12	-	63+25	CTH C	4,400	31	-	
0010	63+25	-	68+60	CTH C	2,420	17	2,420	WIDE EXISTING PAVEMENT SECTION
0010				OAK RD	200	2	200	INTERSECTION APPROACH
0010	68+60	-	90+35	CTH C	5,930	42	-	
0010	90+35	-	101+00	CTH C	3,670	26	-	WIDER PAVEMENT IN CURVE
0010				RIVERSIDE LANE	190	2	190	INTERSECTION APPROACH
0010	101+00	-	108+00	CTH C	2,260	16	-	
0010	108+00	-	127+75	CTH C	5,380	38	-	
0010	145+00	-	168+00	CTH C	7,160	51	-	
0010				CLYDE HILL ROAD	320	3	320	INTERSECTION APPROACH
0010	168+00	-	178+00	CTH C	3,120	22	-	
0010	178+00	-	180+00	CTH C	640	5	640	PAVEMENT TRANSITION EOP
TOTAL 0010					36,320	260	4,400	

HMA PAVEMENT								
455.0605 460.5223 460.5224								
HMA PAVEMENT HMA PAVEMENT								
TACK COAT 3 LT 58-28 S 4 LT 58-28 S								
CATEGORY	STATION	TO	STATION	LOCATION	GAL	TON	TON	REMARKS
0010	47+12	-	68+60	CTH C	410	870	680	
0010				OAK RD	10	25	20	INTERSECTION APPROACH
0010	68+60	-	90+35	CTH C	410	880	690	
0010	90+35	-	101+10	CTH C	210	440	340	
0010				RIVERSIDE LANE	10	25	20	INTERSECTION APPROACH
0010	101+10	-	108+00	CTH C	150	310	240	GUARDRAIL AREA
0010	108+00	-	130+00	CTH C	420	890	690	
0010	130+00	-	134+75	CTH C	140	300	230	INCLUDES RIGHT TURN LANE AND CURBED AREA
0010	49+00	-	49+75	CTH B	30	65	50	INTERSECTION APPROACH
0010	60+30	-	60+80	CEDAR VALLEY RD	15	35	30	INTERSECTION APPROACH
0010	134+75	-	137+75	CTH C	80	160	130	INCLUDES RIGHT TURN LANE
0010	137+75	-	145+00	CTH C	140	300	230	RECONSTRUCTION AREA
0010	145+00	-	168+00	CTH C	430	930	730	
0010				CLYDE HILL ROAD	20	40	30	INTERSECTION APPROACH
0010	168+00	-	180+00	CTH C	230	490	380	
TOTAL 0010					2,705	5,760	4,490	

ASPHALTIC SURFACE				
465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES				
CATEGORY	STATION	LOCATION	TON	REMARKS
0010	64+10	CTH C, LT	6	
0010	65+50	CTH C, LT	7	
0010	115+75	CTH C, LT	6	
0010	118+35	CTH C, RT	7	
0010	126+00	CTH C, RT	20	4-INCH DEPTH
0010	159+00	CTH C, LT	25	4-INCH DEPTH
0010	167+25	CTH C, LT	24	4-INCH DEPTH
TOTAL 0010			95	

ASPHALTIC FLUMES			
465.0315 ASPHALTIC FLUMES			
CATEGORY	STATION	LOCATION	SY
0010	129+95	CTH C, LT	5
0010	131+60	CTH C, RT	5
TOTAL 0010			10

CURB & GUTTER					
601.0557 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D					
CATEGORY	STATION	TO	STATION	LOCATION	LF
0010	131+68	-	134+10	CTH C, RT	270
TOTAL 0010					270

					GUARDRAIL			
					614.2300	614.2330	614.2610	
					MGS	MGS	MGS	
					GUARDRAIL 3	GUARDRAIL 3 K	GUARDRAIL	
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	TERMINAL EAT	REMARKS
							EACH	
0010	102+14	-	107+36	CTH C, LT	225	287.5	-	
0010	103+18	-	106+32	CTH C, RT	-	312.5	-	
0010	101+63.72	-	102+14.20	CTH C, LT	-	-	1	
0010	102+65.23	-	103+14.78	CTH C, RT	-	-	1	
0010	106+31.42	-	106+81.41	CTH C, RT	-	-	1	
0010	107+35.89	-	107+85.89	CTH C, LT	-	-	1	
TOTAL 0010					225	600	4	

<u>SALVAGED RAIL</u>						
614.0920						
SALVAGED RAIL						
CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	103+40	-	107+10	CTH C, LT	350	
0010	103+00	-	106+00	CTH C, RT	300	
TOTAL 0010					650	

PROJECT NO: 4390-01-74	HWY: CTH C	COUNTY: KEWAUNEE	MISCELLANEOUS QUANTITIES	SHEET:	E
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SILT FENCE

					628.1504	628.1520
					SILT FENCE	SILT FENCE
CATEGORY	STATION	TO	STATION	LOCATION	LF	MAINTENANCE LF
0010	87+10	-	87+80	CTH C, LT	50	100
0010	87+10	-	87+80	CTH C, RT	70	140
0010	101+25	-	108+10	CTH C, LT	730	1,460
0010	102+25	-	107+00	CTH C, RT	520	1,040
0010	141+70	-	145+10	CTH C, LT	340	680
0010	141+90	-	145+10	CTH C, RT	320	640
0010	151+80	-	152+75	CTH C, LT	70	140
0010	151+80	-	152+75	CTH C, RT	80	160
0010	UNDISTRIBUTED				420	840
TOTAL 0010					2,600	5,200

EROSION CONTROL MOBILIZATIONS

					628.1905	628.1910
					MOBILIZATIONS	MOBILIZATIONS
					EROSION	EROSION
					CONTROL	CONTROL
CATEGORY	STATION	TO	STATION	LOCATION	EACH	EACH
0010	47+12	-	180+00	CTH C	4	3
TOTAL 0010					4	3

DITCH CHECKS

					628.7504	628.7555	628.7570
					TEMPORARY	CULVERT PIPE	ROCK BAGS
					DITCH	CHECKS	
					CHECKS	EACH	EACH
CATEGORY	STATION	TO	STATION	LOCATION	LF		
0010	87+10	-	87+80	CTH C	-	12	-
0010	101+25	-	108+10	CTH C, LT	-	-	15
0010	130+10	-	133+10	CTH C, RT	-	3	-
0010	134+70	-	145+00	CTH C, LT	35	7	15
0010	134+75	-	145+00	CTH C, RT	35	-	15
0010	151+80	-	153+00	CTH C	-	5	-
TOTAL 0010					70	27	45

MARKING

					646.1020			646.3020	648.0100	REMARKS
					MARKING LINE			MARKING LINE	LOCATING NO-	
					EPOXY 4-INCH	WHITE	YELLOW	EPOXY 8-INCH	PASSING ZONES	
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF	LF	MI	
0010	47+12	-	180+00	CTH C	-	-	-	-	2.5	PROJECT
0010	47+12	-	52+25	CTH C	1,025	640	-	-	-	
0010	52+25	-	55+50	CTH C	650	650	-	-	-	
0010	55+50	-	65+00	CTH C	1,900	1,190	-	-	-	
0010	65+00	-	85+00	CTH C	4,000	500	-	-	-	
0010	85+00	-	93+50	CTH C	1,700	1,065	-	-	-	
0010	93+50	-	115+00	CTH C	4,300	4,300	-	-	-	
0010	115+00	-	123+50	CTH C	1,700	1,065	-	-	-	
0010	123+50	-	132+00	CTH C	1,700	1,065	-	-	-	
0010	132+00	-	138+00	CTH C	1,200	1,200	400	-	-	CTH B / CEDAR VALLEY INTERSECTION
0010	138+00	-	146+50	CTH C	1,700	1,065	-	-	-	
0010	146+50	-	162+00	CTH C	3,100	390	-	-	-	
0010	162+00	-	170+50	CTH C	1,700	1,065	-	-	-	
0010	170+50	-	180+00	CTH C	1,900	1,900	-	-	-	
SUBTOTAL					26,575	16,095				
TOTAL 0010					42,670			400	2.5	

SAWING

					690.0150		
					SAWING		
					ASPHALT		
CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS	
0010	47+12			CTH C	28	BOP	
0010	180+00			CTH C	28	EOP	
0010				OAK RD	28		
0010				RIVERSIDE LN	20		
0010				CTH B	52		
0010				CEDAR VALLEY RD	40		
0010				CLYDE HILL RD	25		
0010	64+10			CTH C, LT	32	DRIVEWAY	
0010	65+50			CTH C, LT	38	DRIVEWAY	
0010	115+75			CTH C, LT	25	DRIVEWAY	
0010	118+30			CTH C, RT	24	DRIVEWAY	
0010	126+00			CTH C, RT	45	DRIVEWAY	
0010	159+00			CTH C, LT	50	DRIVEWAY	
0010	167+00			CTH C, LT	55	DRIVEWAY	
TOTAL 0010					490		

TRAFFIC CONTROL																	REMARKS	
CATEGORY	STATION	TO	STATION	LOCATION	APPROXIMATE SERVICE PERIOD DAYS	NO. IN SERVICE	TRAFFIC CONTROL DRUMS DAY	NO. IN SERVICE	643.0300 TRAFFIC CONTROL BARRICADES TYPE III DAY	NO. IN SERVICE	643.0420 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	NO. IN SERVICE	643.0705 TRAFFIC CONTROL SIGNS DAY	NO. IN SERVICE	643.0900 TRAFFIC CONTROL SIGNS PCMS DAY	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY		
ROAD CLOSURE MAINLINE. PCMS USED ONE WEEK IN ADVANCE																		
0010	47+12	-	180+00	CTH C	80	0	0	12	960	24	1,920	8	640	2	14	OF CLOSURE, MESSAGE: "ROAD TO CLOSE / DAY, DATE"		
0010	47+12	-	180+00	SIDE ROADS	80	0	0	16	1,280	32	2,560	18	1,440	0	0	SIDE ROAD CLOSURES / ROAD WORK AHEAD		
0010	47+12	-	180+00	CTH C	10	0	0	8	80	16	160	6	60	0	0	CULVERT REPLACEMENTS WITHIN ROAD CLOSURE		
0010	134+75	-	145+00	CTH C	20	0	0	4	80	8	160	4	80	0	0	ADDITIONAL ITEMS FOR RECONSTRUCTION AREA		
0010	101+00	-	108+00	GUARD RAIL	10	20	200	0	0	0	0	4	40	0	0	GUARDRAIL REPLACEMENTS		
UNDISTRIBUTED							0		160	0	320		380	0	0			
TOTAL 0010							200		2,560		5,120		2,640		14			

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

STAKING											
CATEGORY	STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. TBD) EACH	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	REMARKS
0010	47+12	-	180+00	CTH C	-	-	2	13,288	1	-	
0010	127+75	-	145+00	CTH C	1,725	1,725	-	-	-	1,725	RECONSTRUCTION AREA
0010	101+25	-	108+00	CTH C	-	-	-	-	-	675	SLOPE STAKING FOR GUARDRAIL EAT GRADING
TOTAL 0010					1,725	1,725	2	13,288	1	2,400	

TRAFFIC CONTROL DETOUR SIGN SUMMARY - PROJECT 4390-01-74

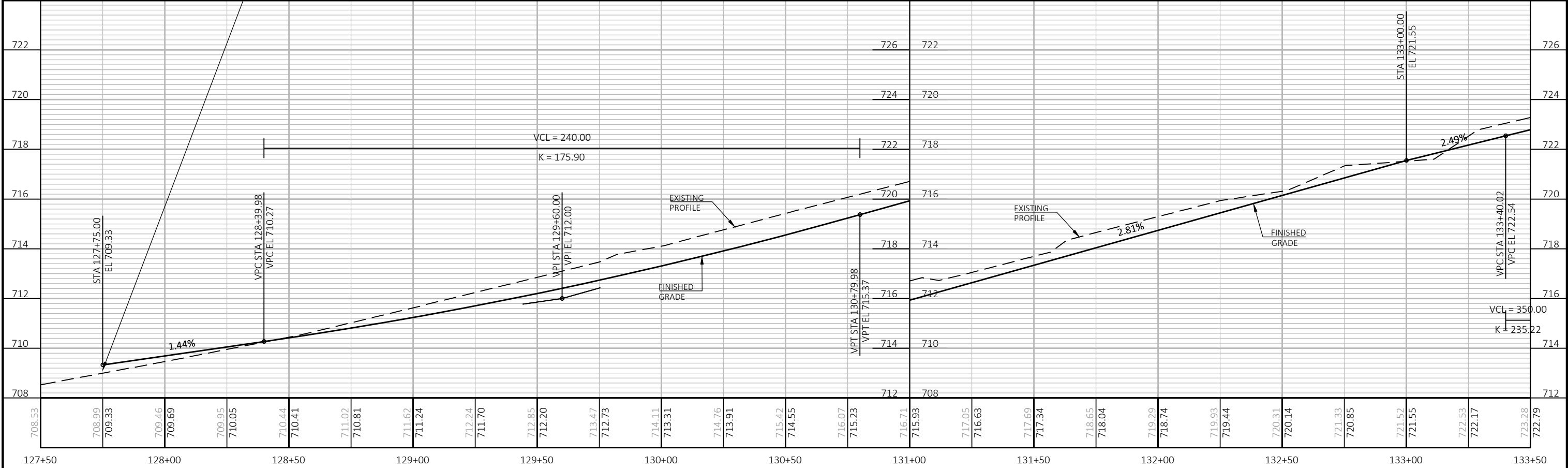
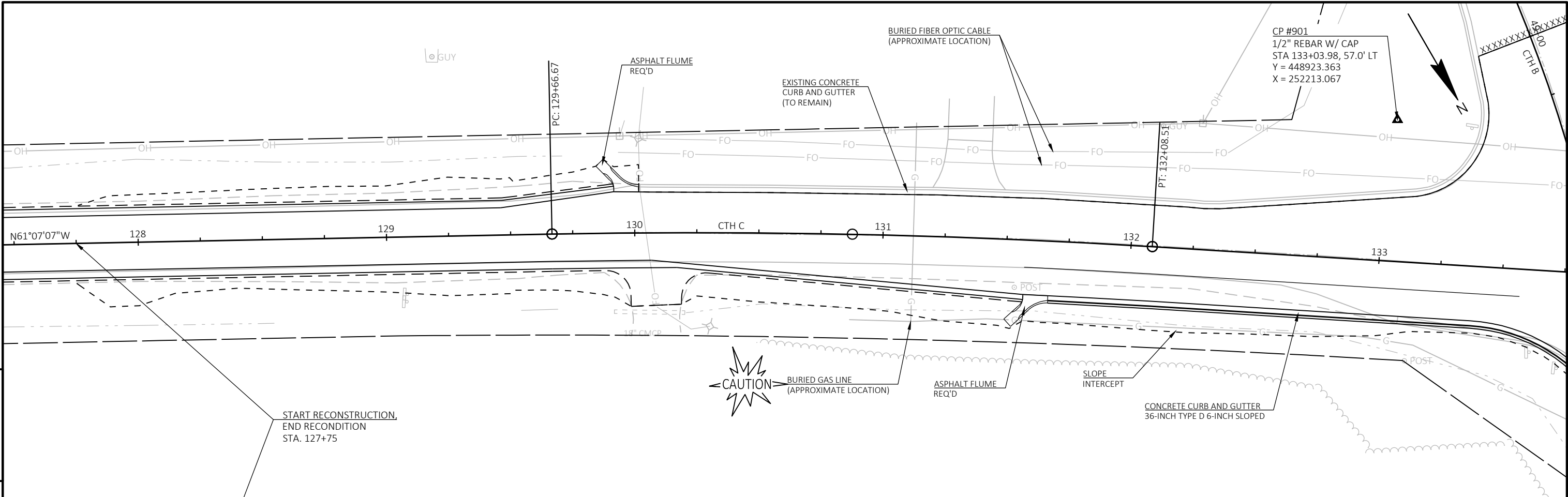
SIGN NO.	APPROXIMATE LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 80 DAYS	* 643.0900 SIGNS DAYS	* 643.0420 BARRICADES TYPE III DAYS	* 643.0705 WARNING LIGHTS TYPE A DAYS	NO OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
A	CTH C, 1500 FT SOUTH OF CTH FF	M 1-5A	24"x24"	1	80	80					C
	"	W 20-2A	48"x48"	1	80	80					
B	CTH C, 500 FEET SOUTH OF CTH FF								1	1	COVER "^ KEWAUNEE"
C	CTH C, 500 FT SOUTH OF CTH FF	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 5-1R	21"x21"	1	80	80					
D	CTH C, 50 FT SOUTH OF CTH FF	MO 4-8	24"x12"	1	80	80					
	CTH C, 50 FT SOUTH OF CTH FF, MODIFY EXISTING ROUTE MARKER	MO 6-1R	21"x21"	1	80	80			1	1	COVER AHEAD ARROW
E	CTH C, NORTH SIDE OF CTH FF INTERSECTION	R 11-3	60"x30"	1	80	80	80	160			0.3 MILES AHEAD
F	CTH FF, 250 FT NORTH OF CTH C, NORTHBOUND	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
G	CTH FF, 50 FT WEST OF CTH E	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 6-1L	21"x21"	1	80	80					
H	CTH E, 100 FT NORTH OF CTH FF, NORTHBOUND	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
I	CTH E, 500 FT SOUTH OF TOWNLINE ROAD	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 5-1L	21"x21"	1	80	80					
J	CTH E, 50 FT SOUTH OF CTH O	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 6-1L	21"x21"	1	80	80					
K	CTH E, 500 FT EAST OF CLYDE HILL ROAD	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 5-1R	21"x21"	1	80	80					
L	CTH E, 250 FT NORTH OF CLYDE HILL ROAD, NORTHBOUND	MO 4-8	24"x18"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
M	CTH E, 500 FT SOUTH OF CTH T	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 5-1L	21"x21"	1	80	80					
N	CTH E, 50 FT SOUTH OF CTH T	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 6-1L	21"x21"	1	80	80					
O	CTH E, 750 FT EAST OF CTH C, NORTHBOUND	MO 4-8A	24"x18"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
P	CTH C, 400 FEET EAST OF CTH C								1	1	COVER "<- KEWAUNEE"
Q	CTH T AT CTH C, WEST SIDE OF INTERSECTION, MODIFY EXISTING ROUTE MARKER	MO 6-1R	21"x21"	1	80	80			1	1	COVER LEFT ARROW
PAGE SUBTOTALS				35		2,800	80	160		4	

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

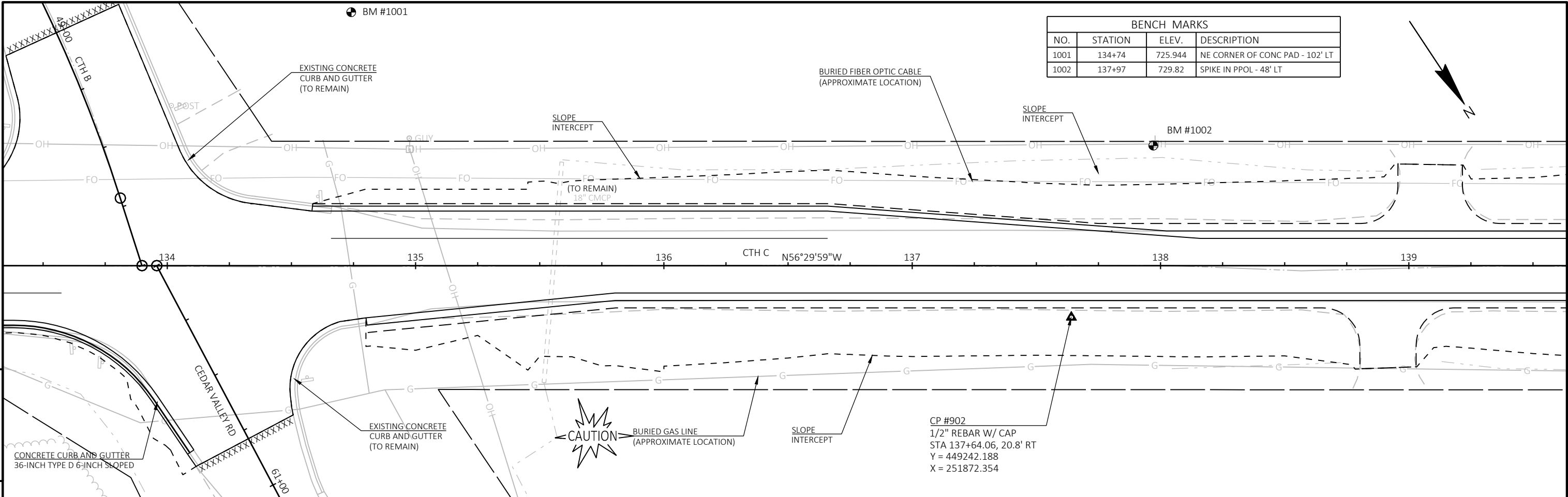
TRAFFIC CONTROL DETOUR SIGN SUMMARY - PROJECT 4390-01-74 CONTINUED

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 14 DAYS	* 643.0900 SIGNS DAYS	* 643.0420 BARRICADES TYPE III DAYS	* 643.0705 WARNING LIGHTS TYPE A DAYS	NO OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
AA	CTH C, 1500 FT NORTH OF CTH T	M 1-5A	24"x24"	1	80	80					C
	"	W 20-2A	48"x48"	1	80	80					
BB	CTH C, 600 FEET NORTH OF CTH T								1	1	COVER "^ KEWAUNEE"
CC	CTH C, 500 FT NORTH OF CTH T	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 5-1L	21"x21"	1	80	80					
DD	CTH C, 50 FT NORTH OF CTH T	MO 4-8	24"x12"	1	80	80					
	CTH C, 50 FT NORTH OF CTH T, MODIFY EXISTING ROUTE MARKER	MO 6-1L	21"x21"	1	80	80			1	1	COVER AHEAD ARROW
EE	CTH C, SOUTH SIDE OF CTH T INTERSECTION	R 11-3	60"x30"	1	80	80	80	160			1.8 MILES AHEAD
FF	CTH T, 250 FEET EAST OF CTH C, SOUTHBOUND	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"								
GG	CTH T, 50 FT WEST OF CTH E	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 6-1R	21"x21"	1	80	80					
HH	CTH E, 500 FT NORTH OF CLYDE HILL ROAD	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 5-1R	21"x21"	1	80	80					
II	CTH E, 250 FT EAST OF CLYDE HILL ROAD, SOUTHBOUND	MO 4-8	24"x18"	1	80	80					
JJ	CTH E, 50 FT WEST OF CTH O	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 6-1R	21"x21"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
KK	CTH E, 500 FT WEST OF TOWNLINE ROAD	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 5-1R	21"x21"	1	80	80					
LL	CTH E, 500 FT NORTH OF CTH FF	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 5-1R	21"x21"	1	80	80					
MM	CTH E, 50 FT NORTH OF CTH FF	MO 4-8	24"x12"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
	"	MO 6-1R	21"x21"	1	80	80					
OO	CTH FF, 750 FEET NORTH OF CTH C								1	1	COVER "CASCO ->"
PP	CTH FF, 600 FT NORTH OF CTH C, SOUTHBOUND	MO 4-8A	24"x18"	1	80	80					
	"	M 1-5A	24"x24"	1	80	80					C
AAA	CTH C, 500 FT NORTH OF CTH A, SOUTHBOUND								1	1	COVER "^ KEWAUNEE"
BBB	CTH C, 50 FT NORTH OF CTH A, SOUTHBOUND								1	1	COVER "C AND AHEAD ARROW" ASSEMBLY
CCC	CTH C, SOUTH SIDE OF CTH A INTERSECTION	R 11-3	60"x30"	1	80	80	80	160			0.6 MILES AHEAD
DDD	CTH A, 500 FT WEST OF CTH C								1	1	COVER "KEWAUNEE ->"
PAGE SUBTOTALS				32		2,560	160	320		6	
DETOUR 4390-01-74 TOTALS				67		5,360	240	480		10	

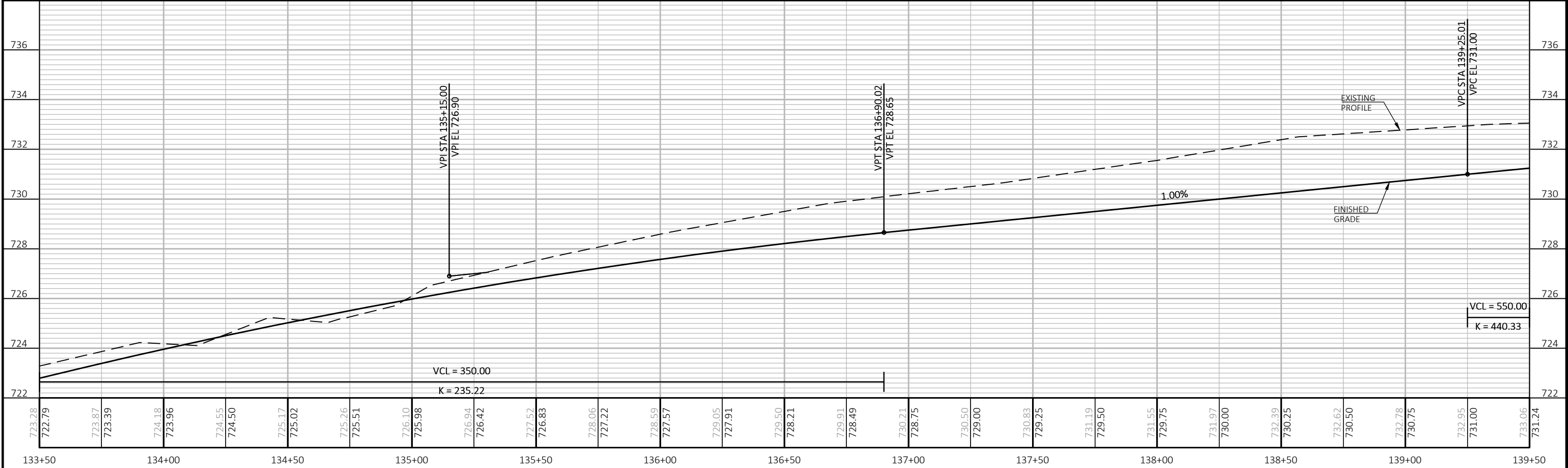
*ADDITIONAL QUANTITIES SHOWN ELSEWHERE



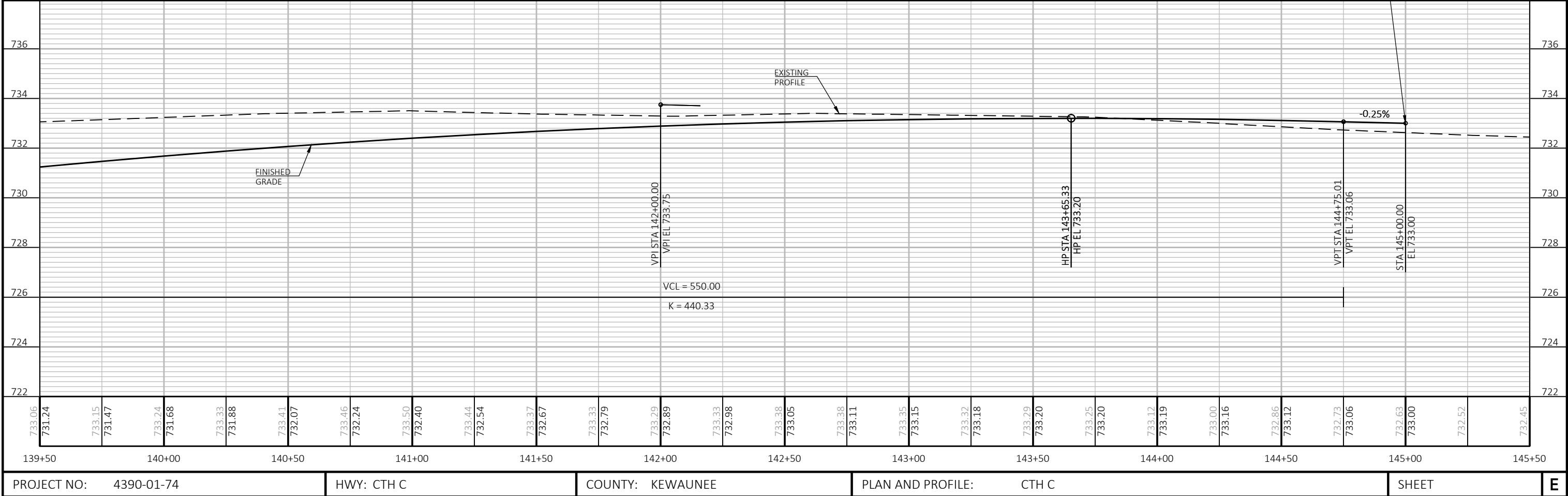
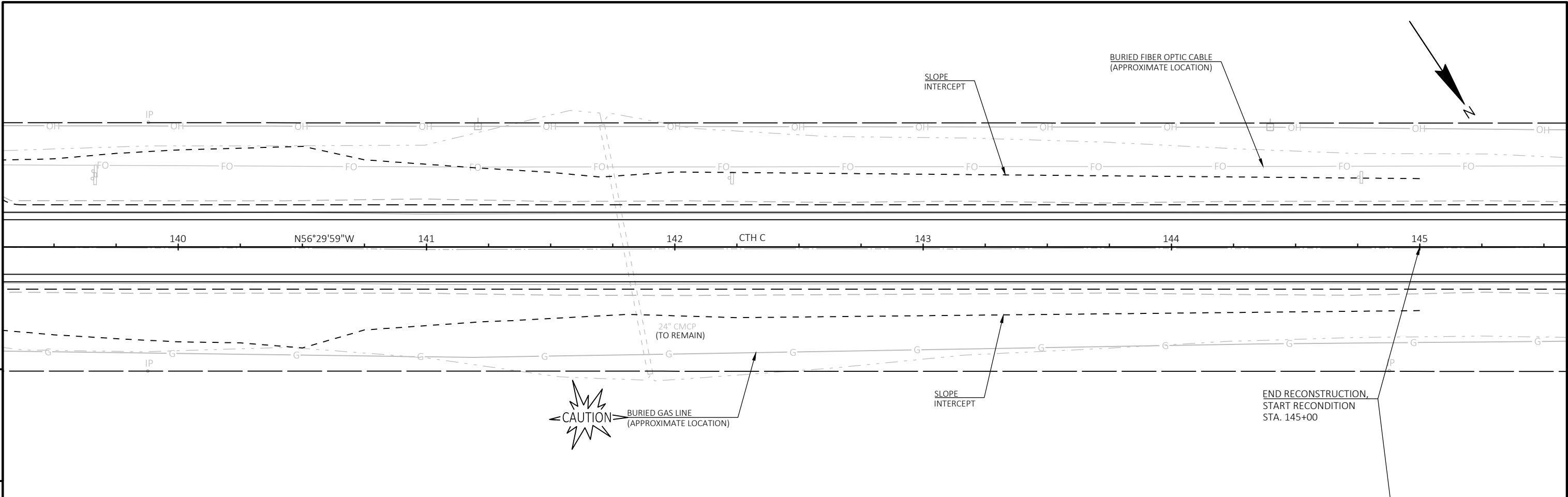
PROJECT NO:	4390-01-74	HWY:	CTH C	COUNTY:	KEWAUNEE	PLAN AND PROFILE:	CTH C	SHEET	E
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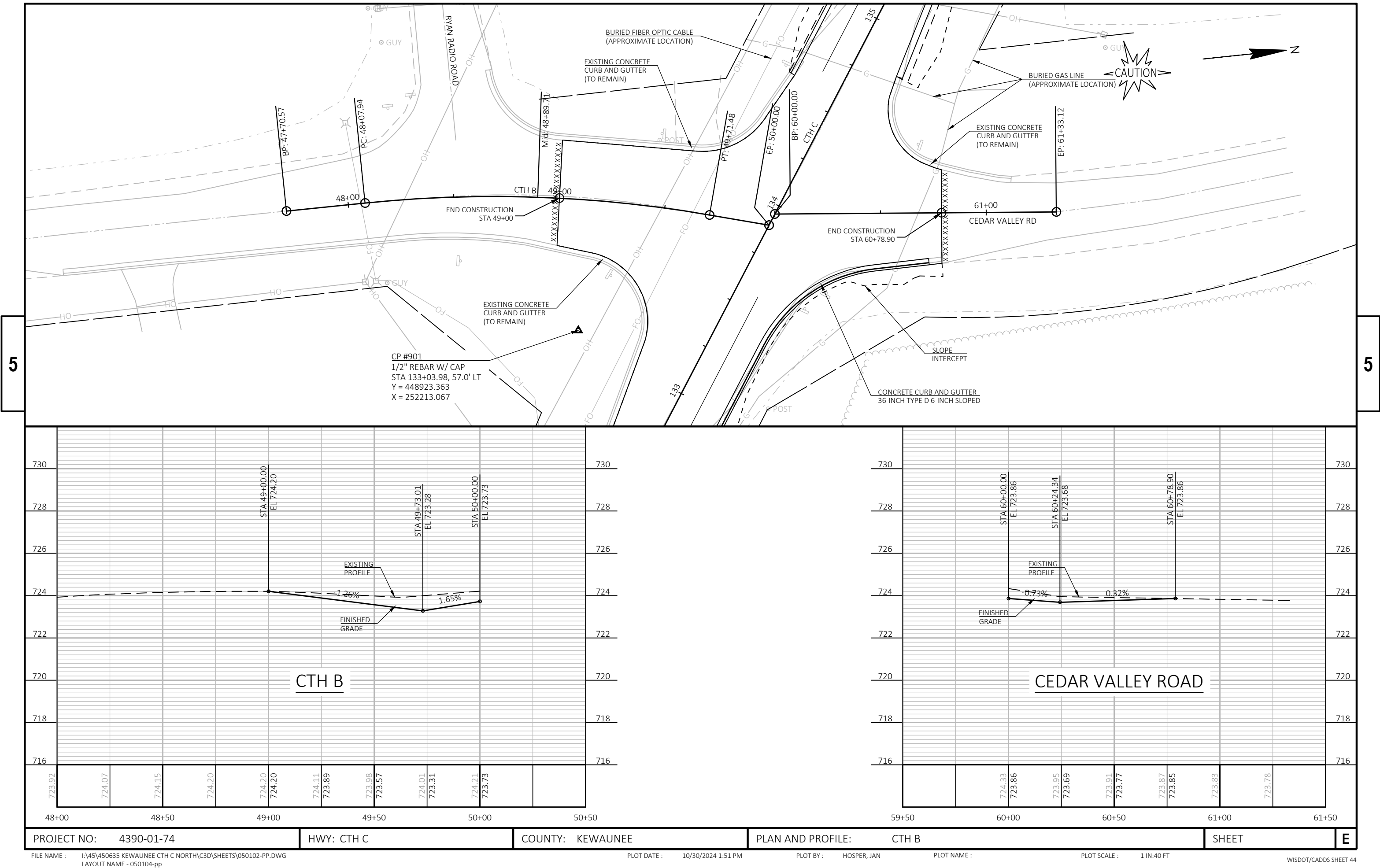


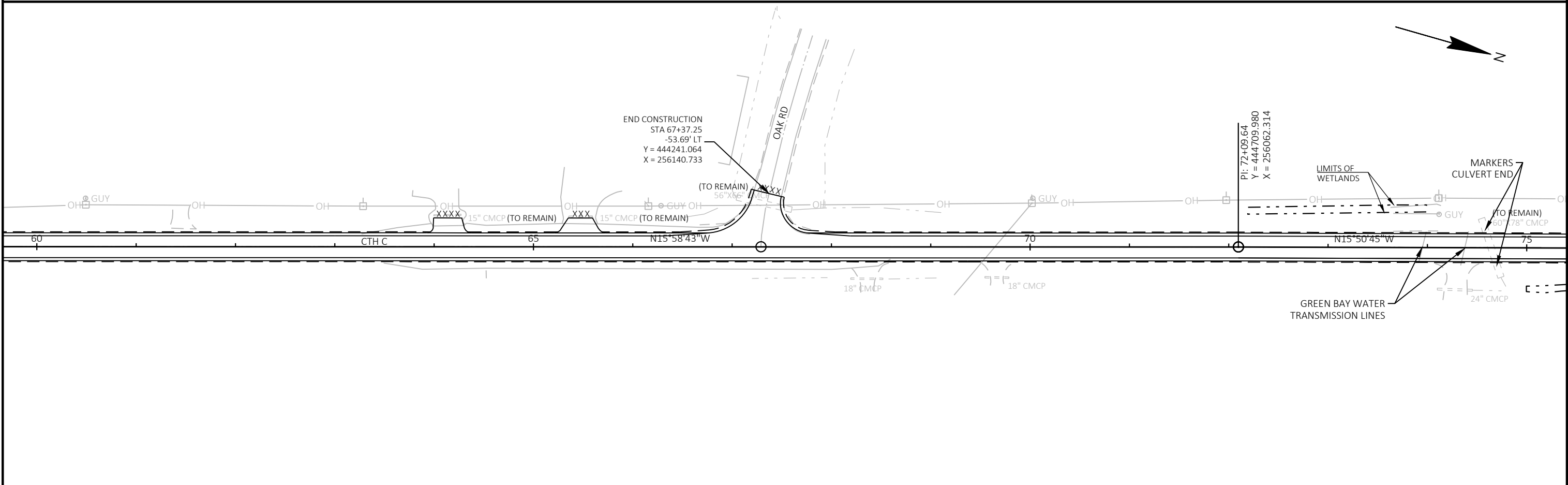
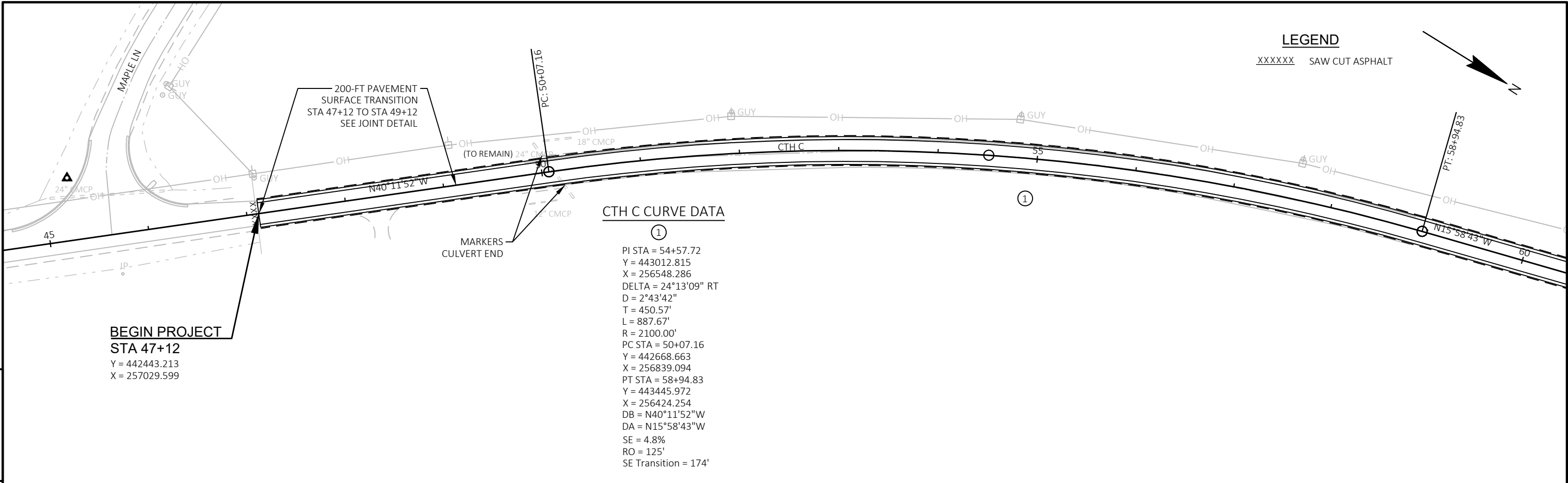
BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
1001	134+74	725.944	NE CORNER OF CONC PAD - 102' LT
1002	137+97	729.82	SPIKE IN PPOL - 48' LT



PROJECT NO: 4390-01-74	HWY: CTH C	COUNTY: KEWAUNEE	PLAN AND PROFILE: CTH C	SHEET	E
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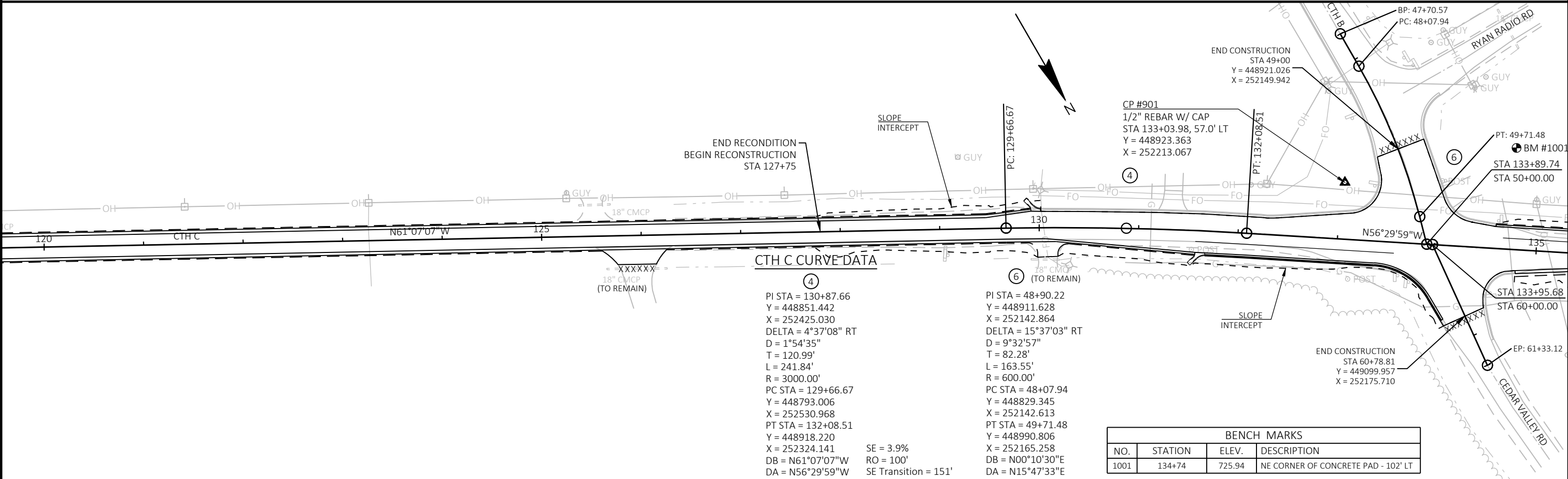
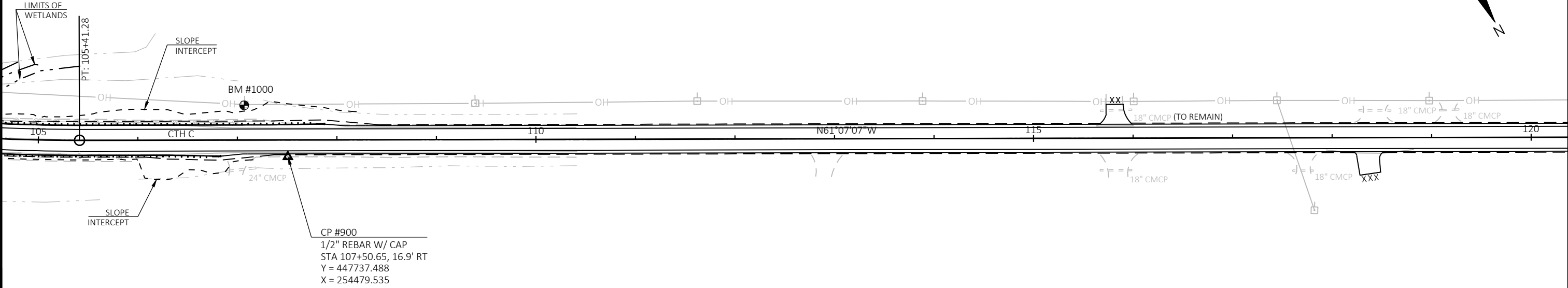


PROJECT NO: 4390-01-74	HWY: CTH C	COUNTY: KEWAUNEE	PLAN SHEETS	SHEET	E
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BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
1000	107+07	652.84	SPIKE IN PPOL - 35' LT

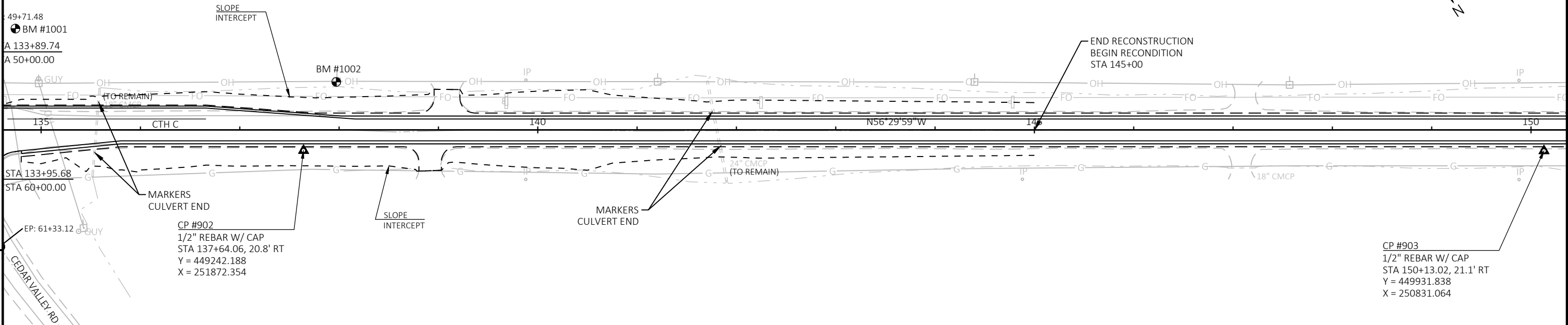
LEGEND

XXXXXX SAW CUT ASPHALT

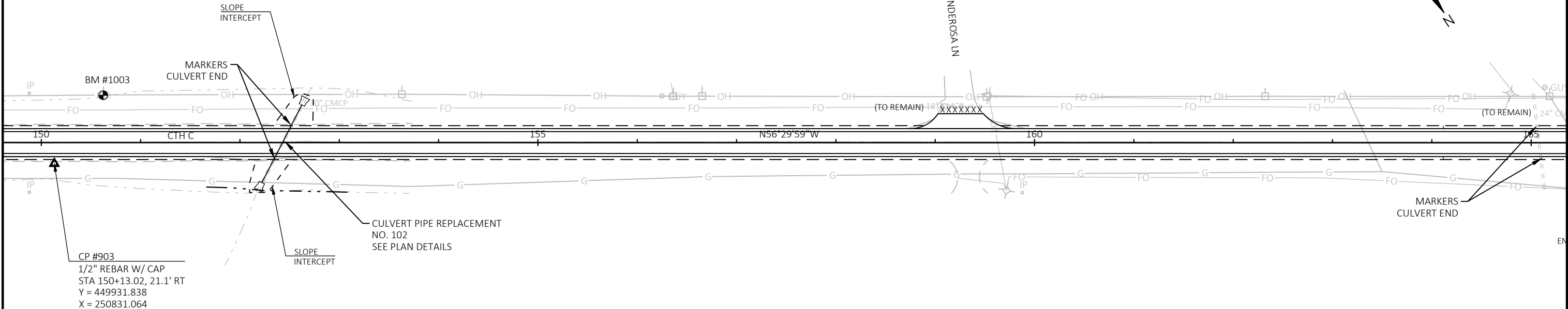


BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
1001	134+74	725.94	NE CORNER OF CONCRETE PAD - 102' LT
1002	137+97	729.82	SPIKE IN PPOL - 48' LT

LEGEND
XXXXXX SAW CUT ASPHALT

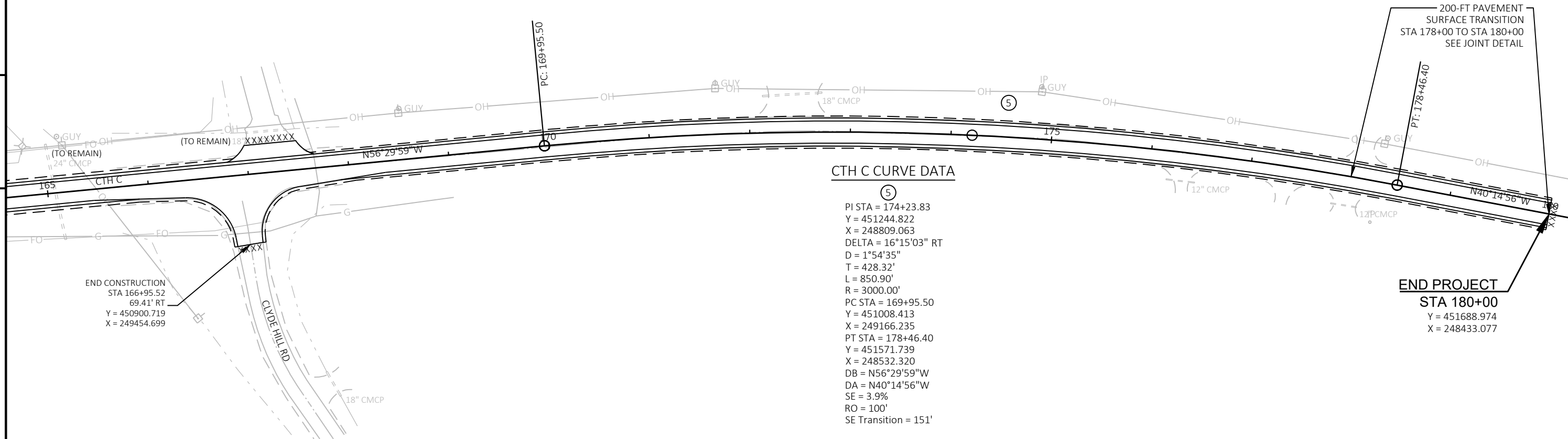
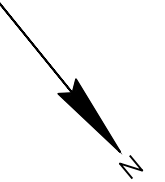


BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
1003	150+62	728.83	NAIL IN PPOL - 48' LT



PROJECT NO: 4390-01-74	HWY: CTH C	COUNTY: KEWAUNEE	PLAN SHEETS	SHEET	E
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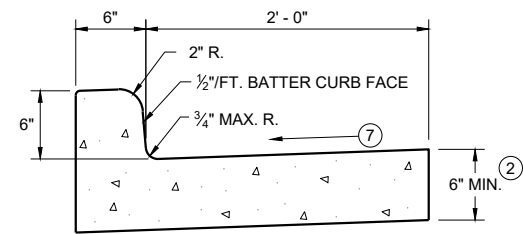
XXXXXX SAW CUT ASPHALT



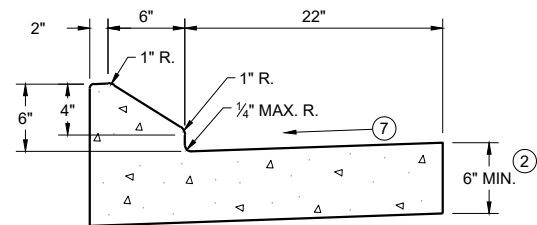
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Standard Detail Drawing List

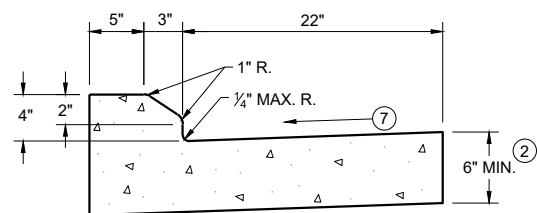
08D01-23A	CONCRETE CURB & GUTTER
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL



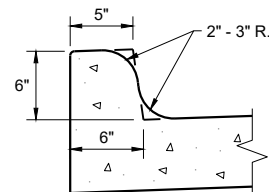
TYPES A^① & D



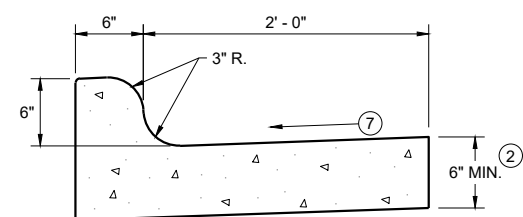
6" SLOPED CURB TYPES G ^① & J



4" SLOPED CURB TYPES G^① & J

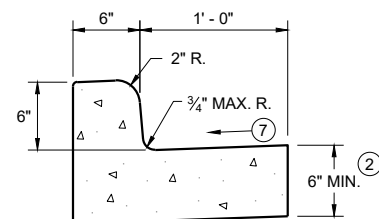


TYPES K^① & L
(OPTIONAL CURB SHAPE)



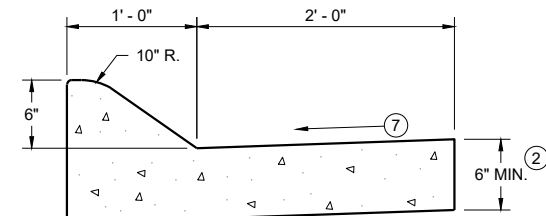
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

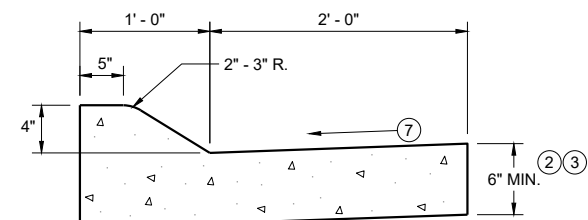


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

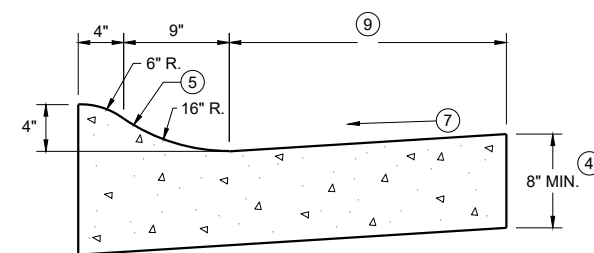


6" SLOPED CURB TYPES A^① & D



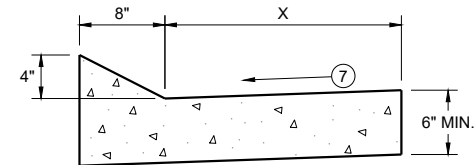
4" SLOPED CURB TYPES A ^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

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

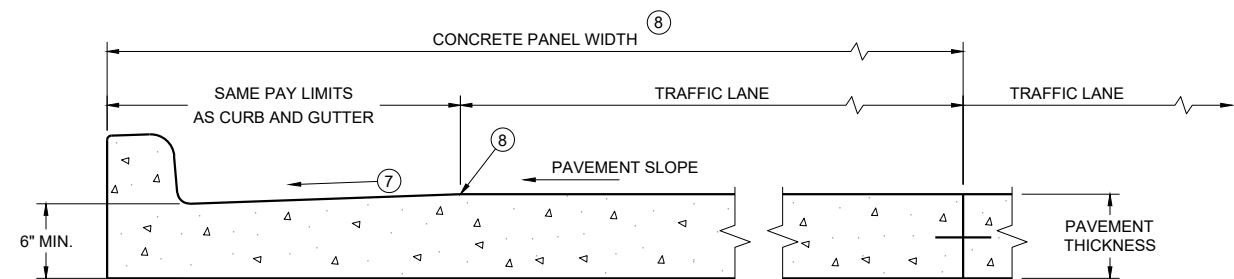


TYPES TBT & TBTT ^①

CONCRETE CURB AND GUTTER

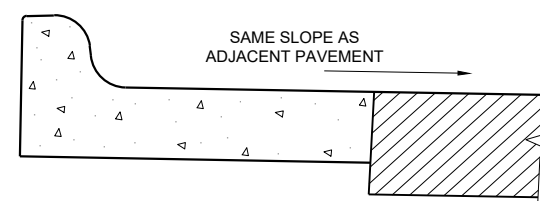
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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

(TYPICAL FOR ALL CURB & GUTTER TYPES)

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

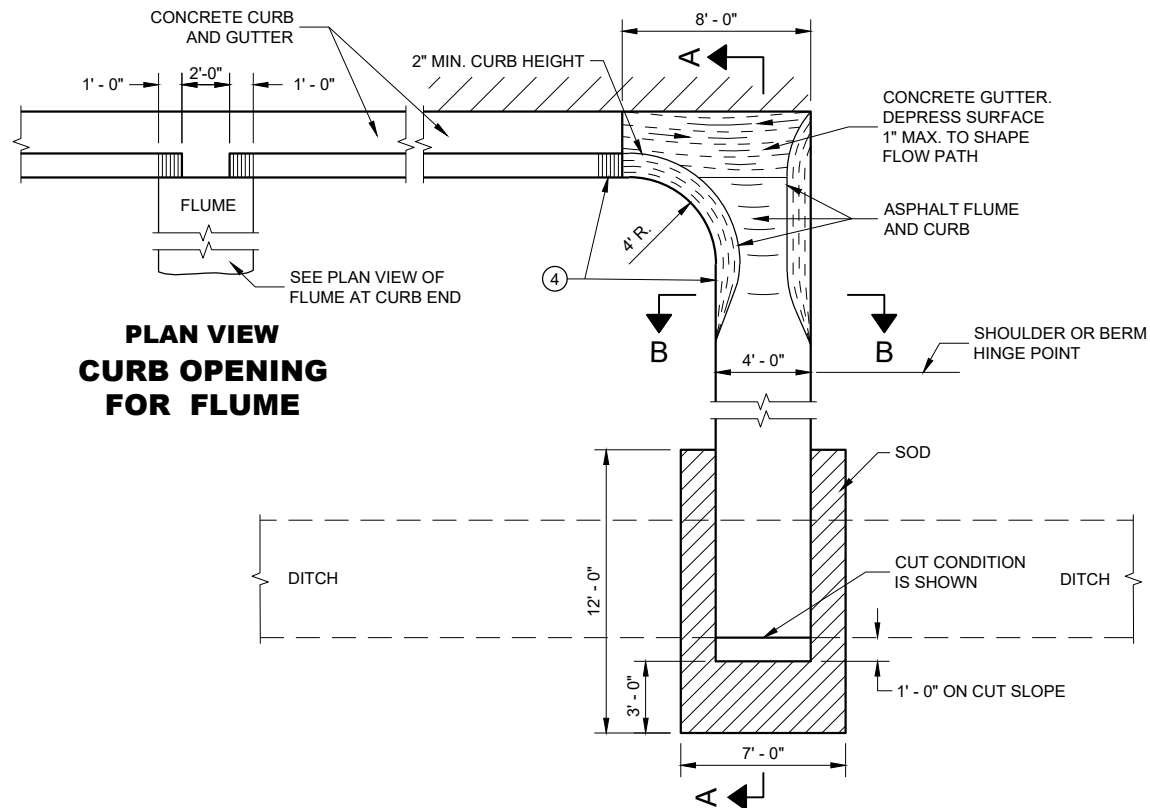
SDD 08D01-23a

6 |

SDD 08D01-23a

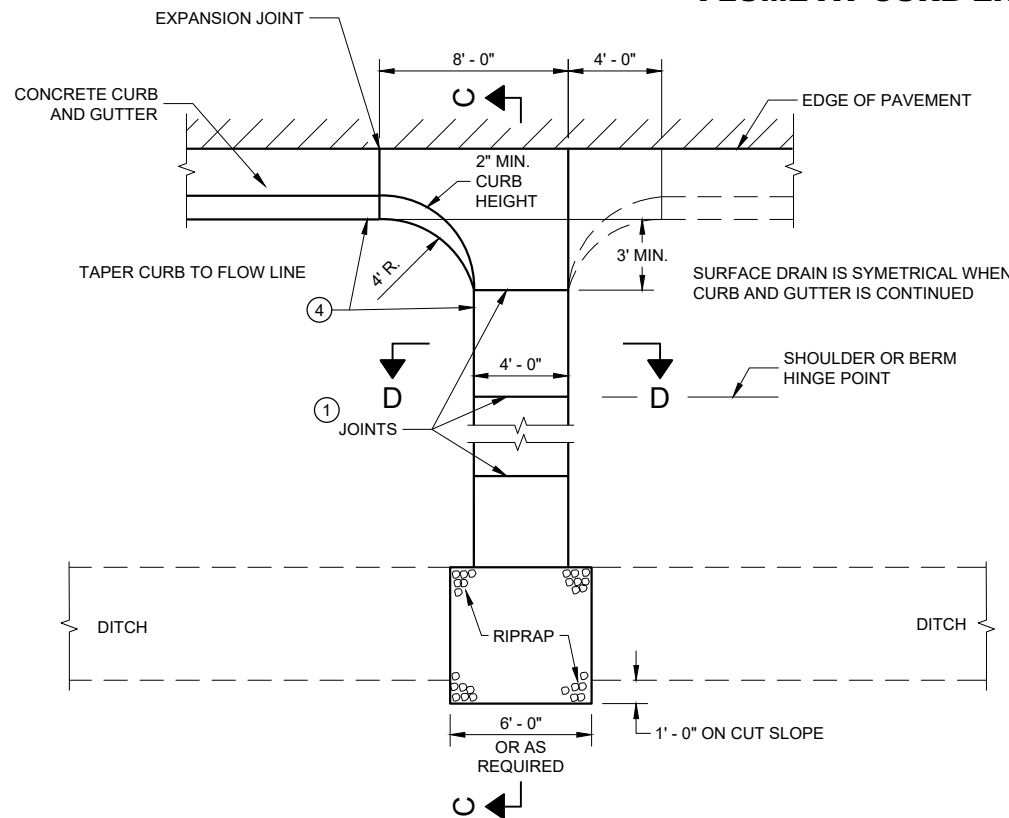
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING
FOR FLUME

PLAN VIEW
FLUME AT CURB END



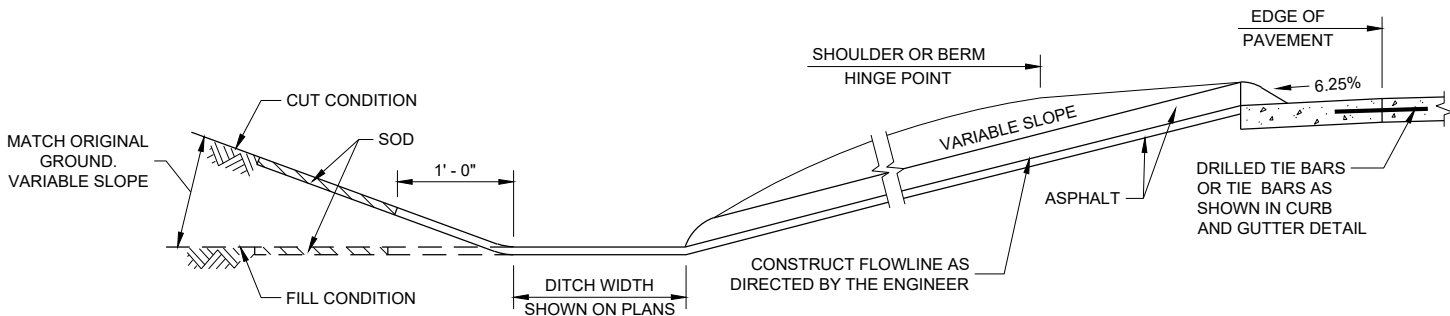
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

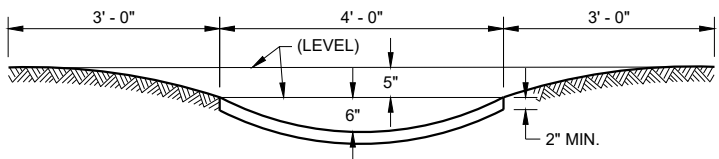
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

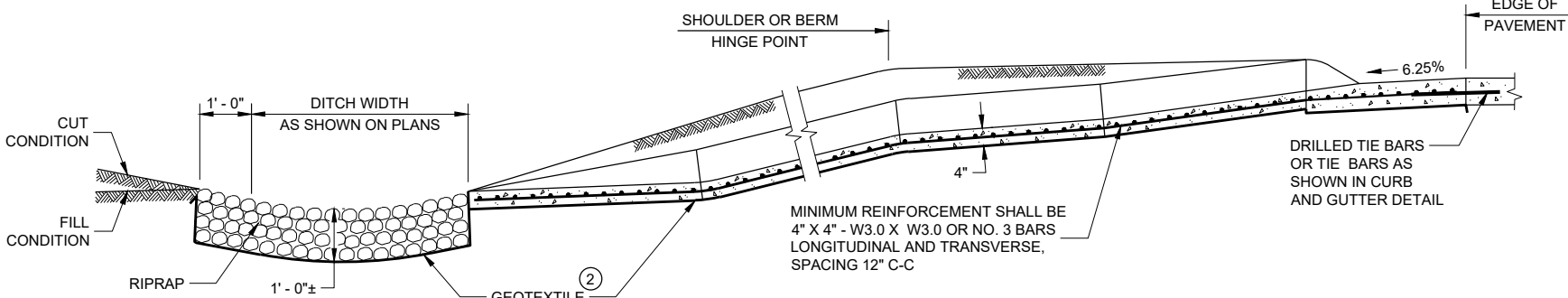
- JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- 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.



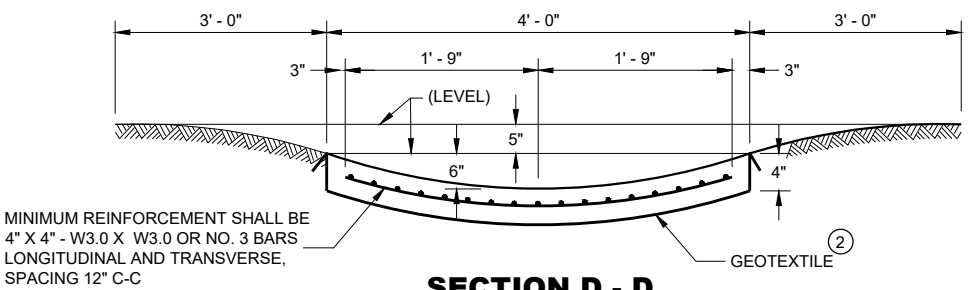
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

CONCRETE SURFACE
DRAINS AND
ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2023

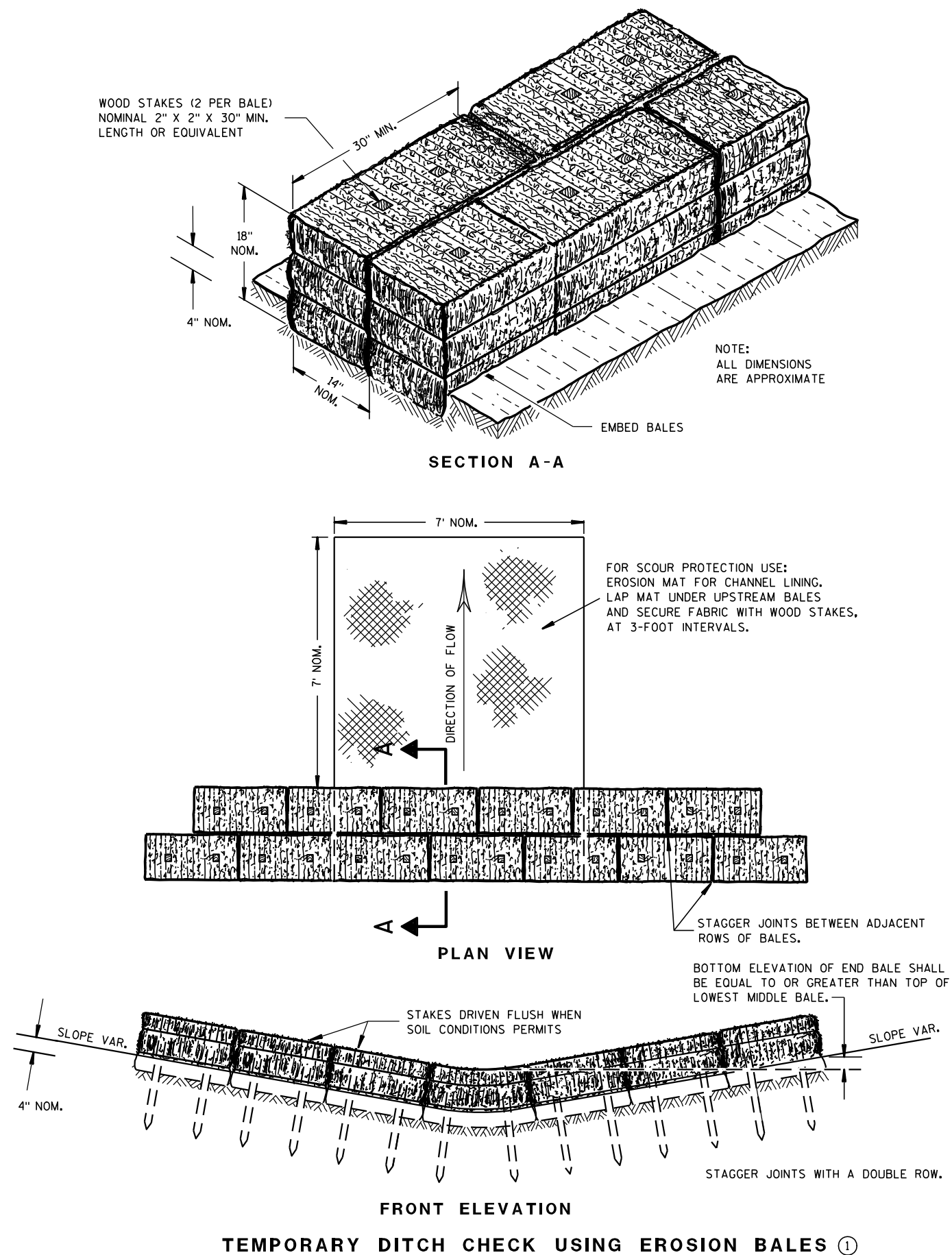
DATE

FHWA

/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

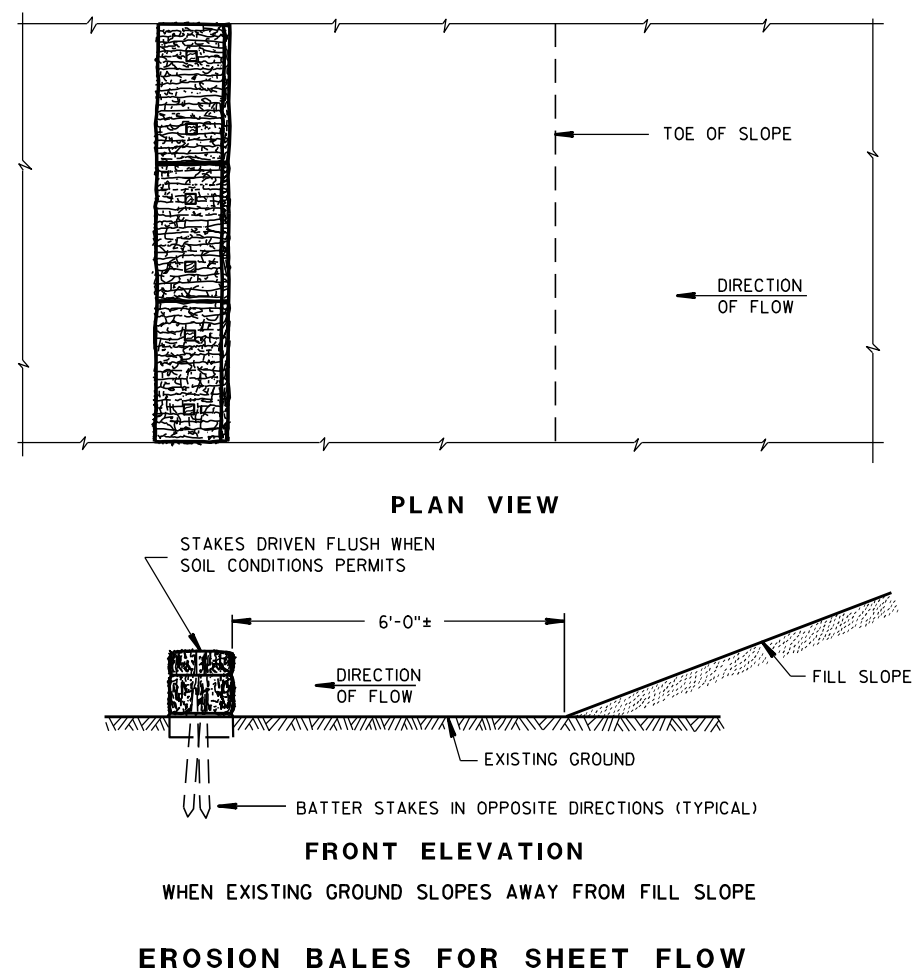
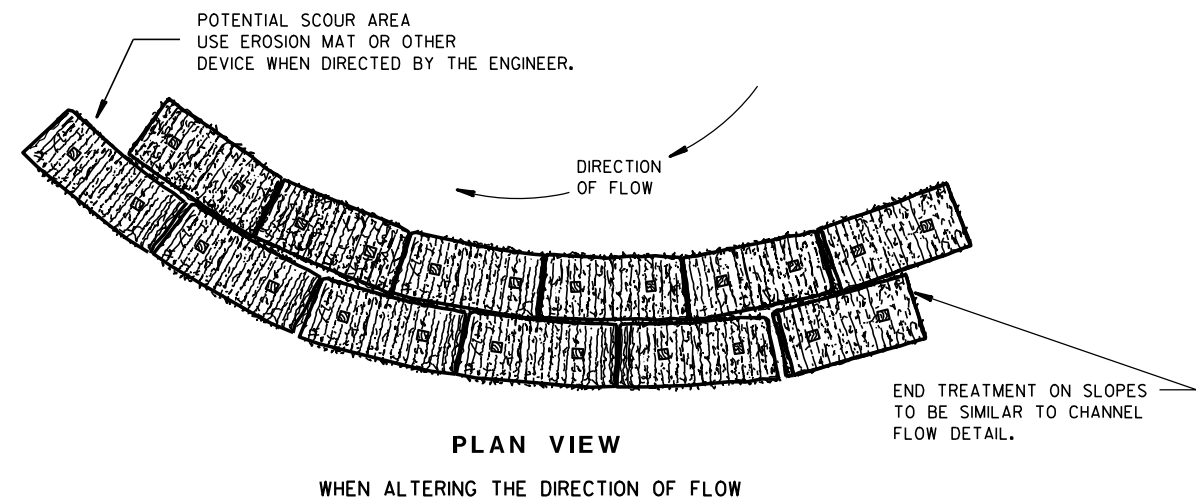
ENGINEER



GENERAL NOTES

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

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



TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

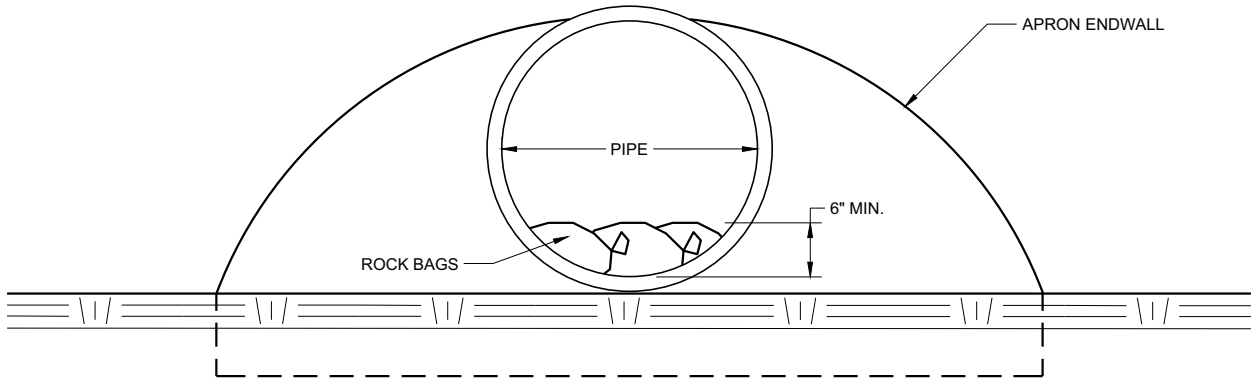
FHWA



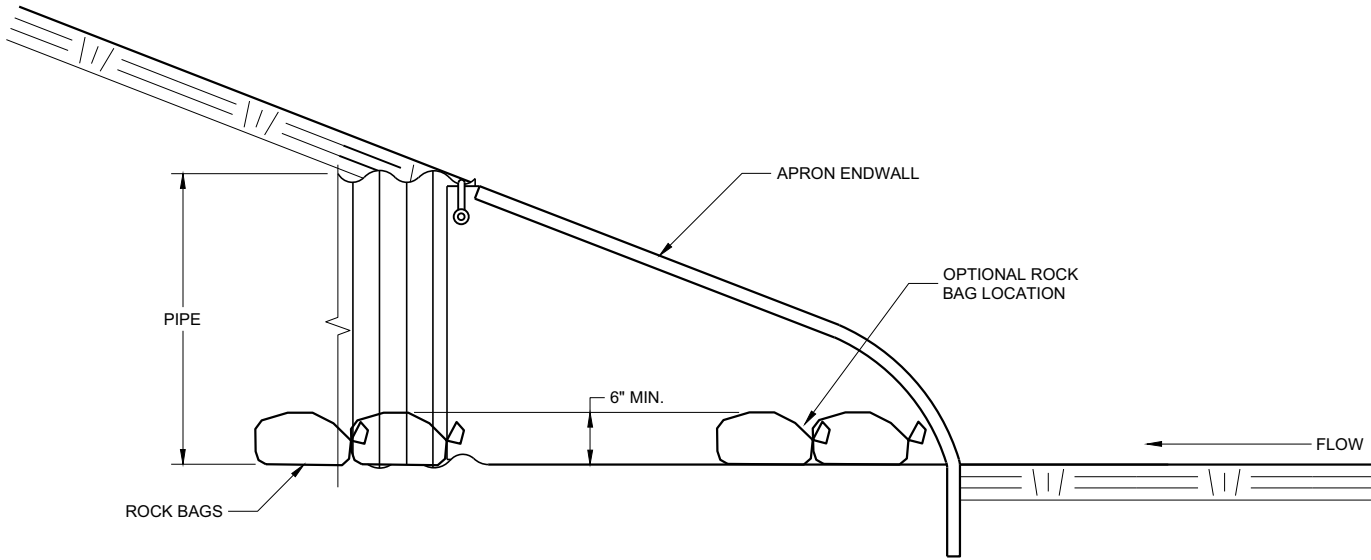
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



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



END VIEW



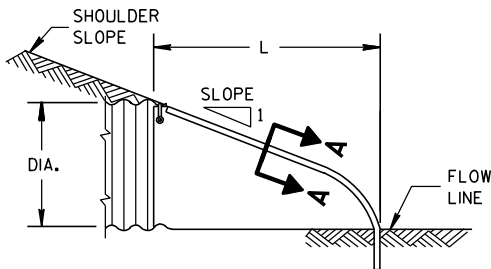
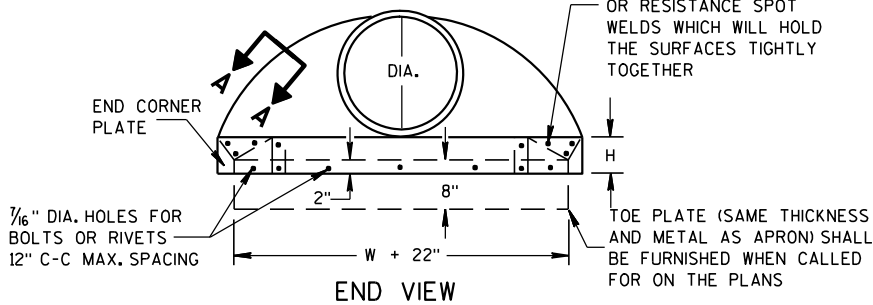
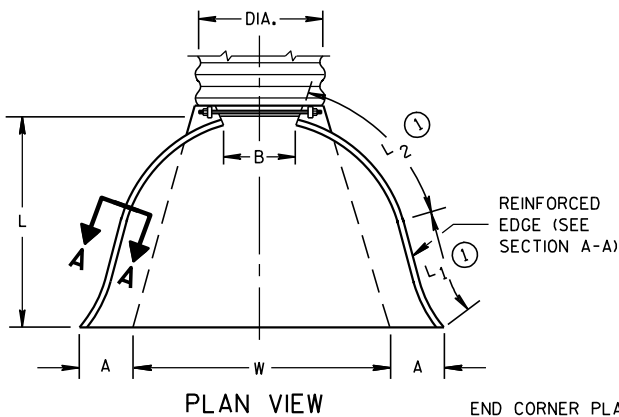
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGINEER
FHWA	

METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)						APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①			W (±2")
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

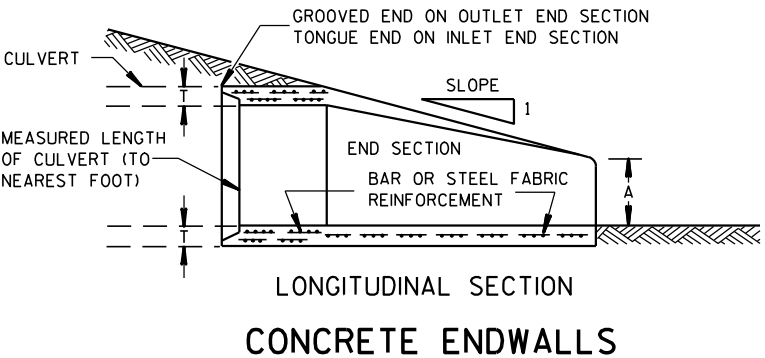
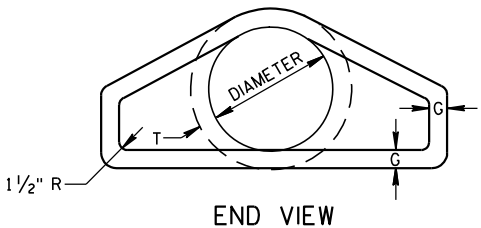
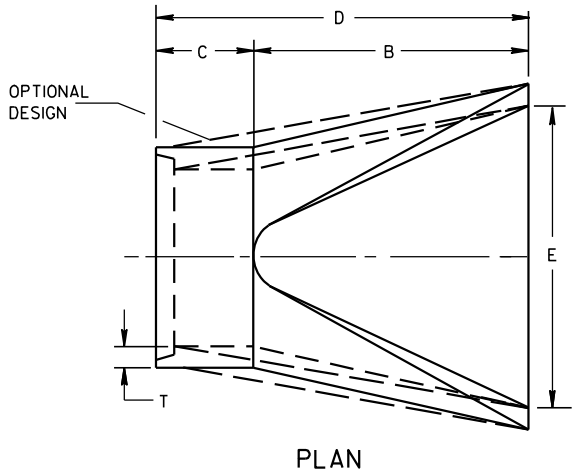
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

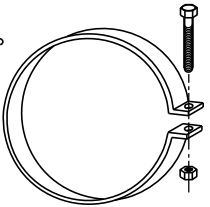
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	3 to 1
27	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	3 to 1
30	3 ¹ / ₂	12	54	19 ³ / ₄	73 ¹ / ₂	60	3 ¹ / ₂	3 to 1
36	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	3 to 1
42	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 ¹ / ₂	27	65	33 ¹ / ₄ -35	98 ¹ / ₄ -100	90	5 ¹ / ₂	2 ¹ / ₂ to 1
60	6	30-35	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	24-30	72-78	21-27	99	102	5 ¹ / ₂	2 to 1
72	7	24-36	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	24-36	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

*MINIMUM
**MAXIMUM

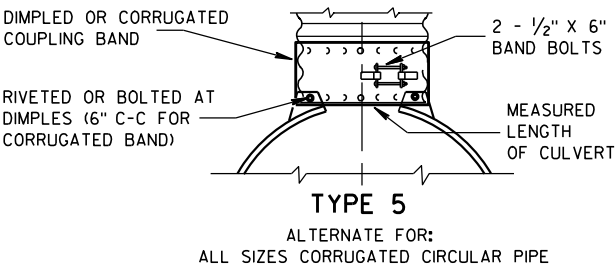
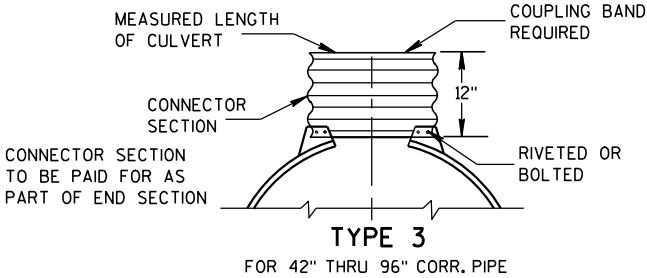
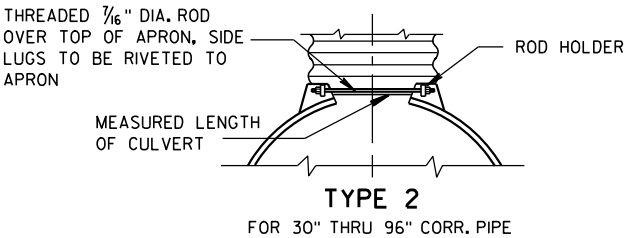
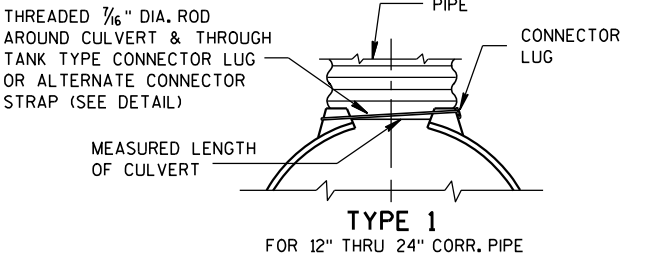


LONGITUDINAL SECTION
CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109"
THICK) GALVANIZED STRAP
WITH STANDARD 6" X 1/2"
BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



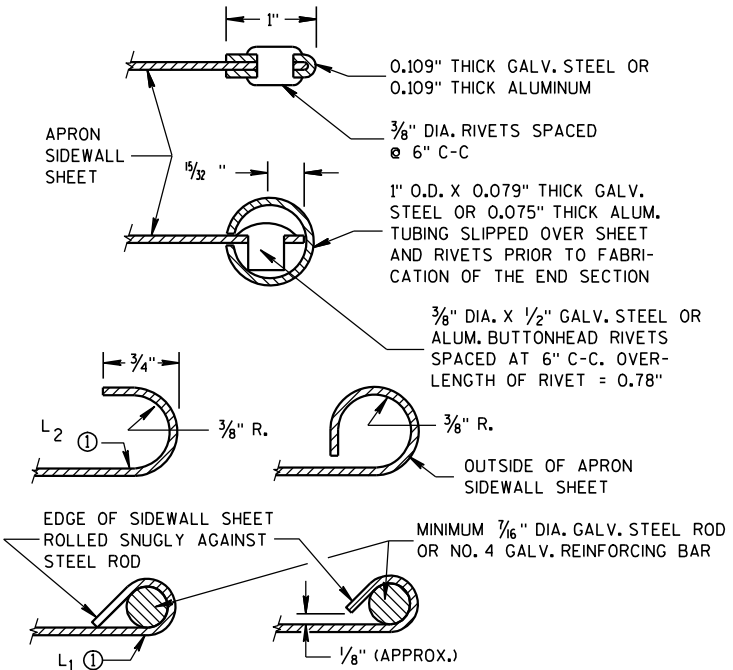
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE
ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5
AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL
CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO
CIRCUMFERENTIAL CORRUGATIONS AT EACH END
USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

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.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL
OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR
ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE
OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL
THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH
OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE
PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS
FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS.
FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED
EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH
GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE
ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM
NUTS AND BOLTS FOR ALUMINUM UNITS.

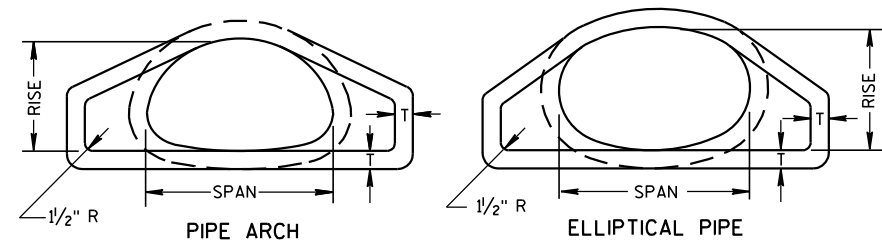
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED
INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

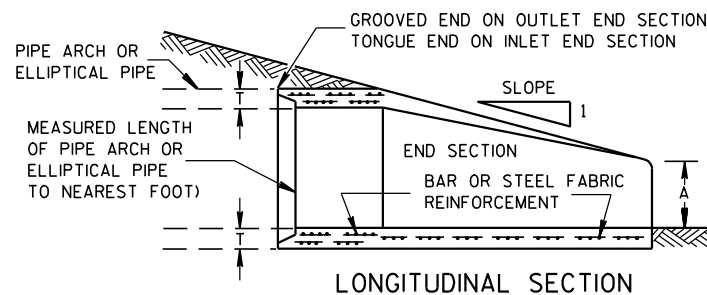
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

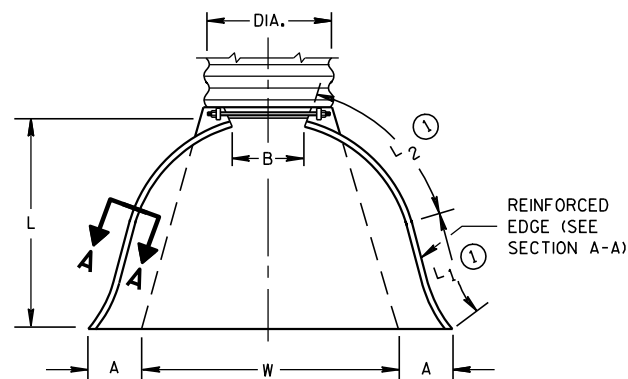


END VIEW



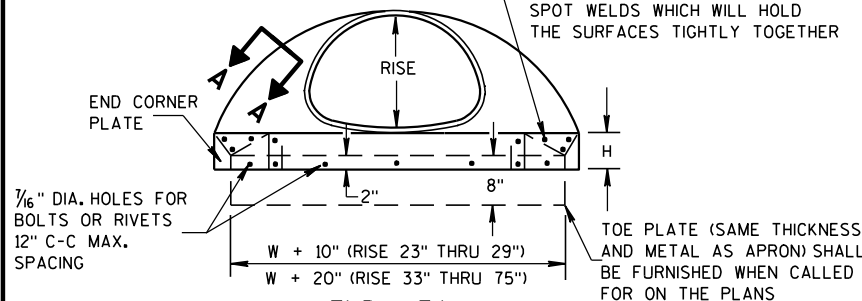
LONGITUDINAL SECTION

CONCRETE ENDWALLS

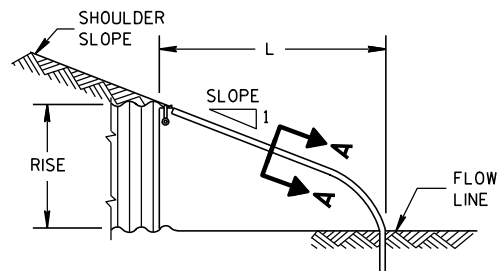


PLAN VIEW

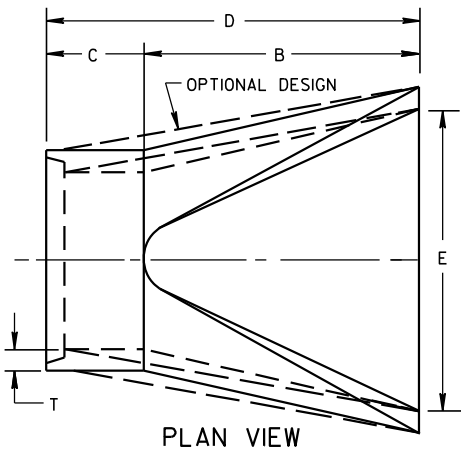
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



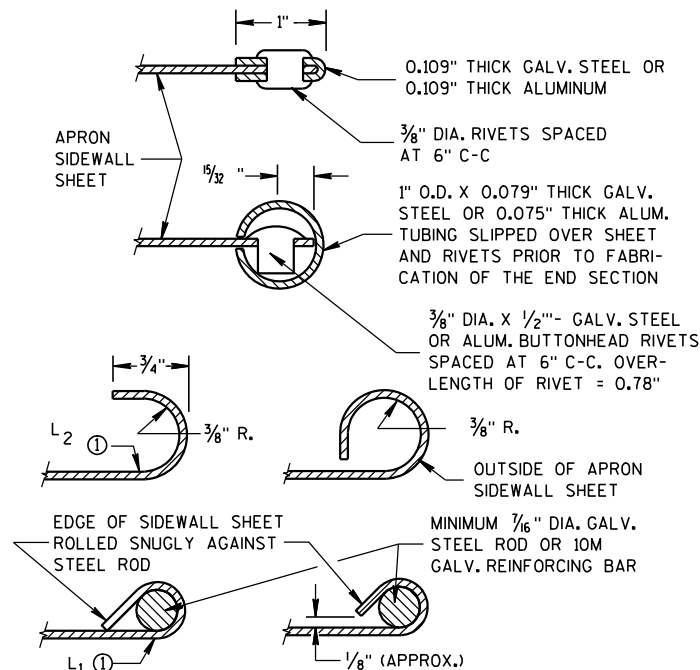
END VIEW



SIDE ELEVATION
METAL ENDWALLS



PLAN VIEW



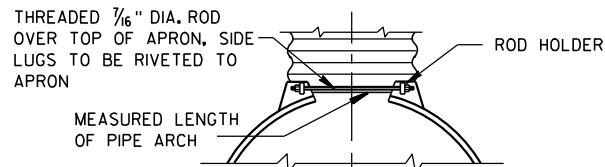
SECTION A-A

2- 2/3" X 1/2" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
					(±1")	(MAX.)	(±1")	(±1 1/2")	①	①	(±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
					(±1")	(MAX.)	(±1")	(±1 1/2")	①	①	(±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

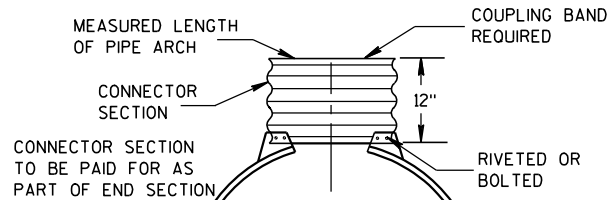
NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



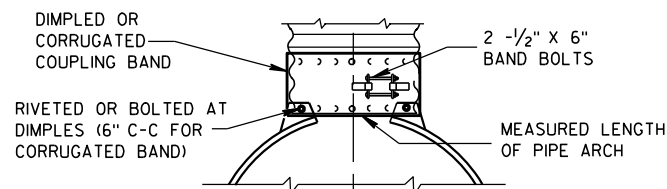
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)									APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E		
	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	
24	29	18	3	8 1/2	39	33	72	48	3 to 1	
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1	
36	44	27	4	11 1/8	60	36	96	72	3 to 1	
42	51	31	4 1/2	15 1/8	60	36	96	78	3 to 1	
48	58	36	5	21	60	36	96	84	3 to 1	
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1	
60	73	45	6	31	60	36	96	96	3 to 1	
72	88	54	7	31	60	39	99	120	2 to 1	
84	102	62	8	28 1/2	83	19	102	144	2 to 1	

REINFORCED CONCRETE ELLIPTICAL PIPE

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)									APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E		
	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1	
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1	
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1	
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1	
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1	
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1	
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1	

**NOMINAL SIZE

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.

CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPE

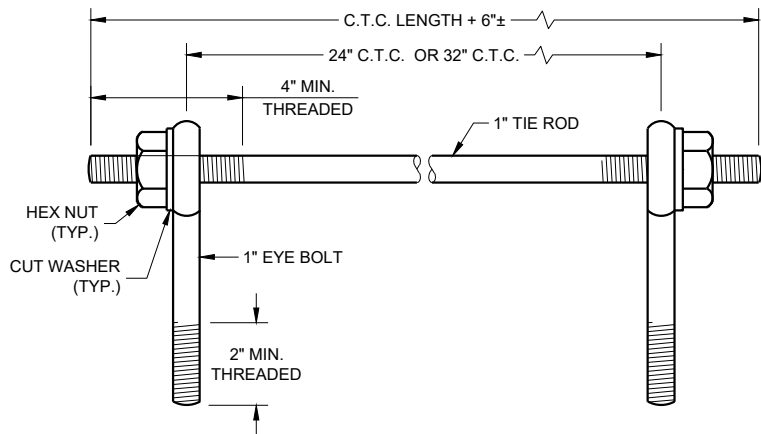
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94
DATE

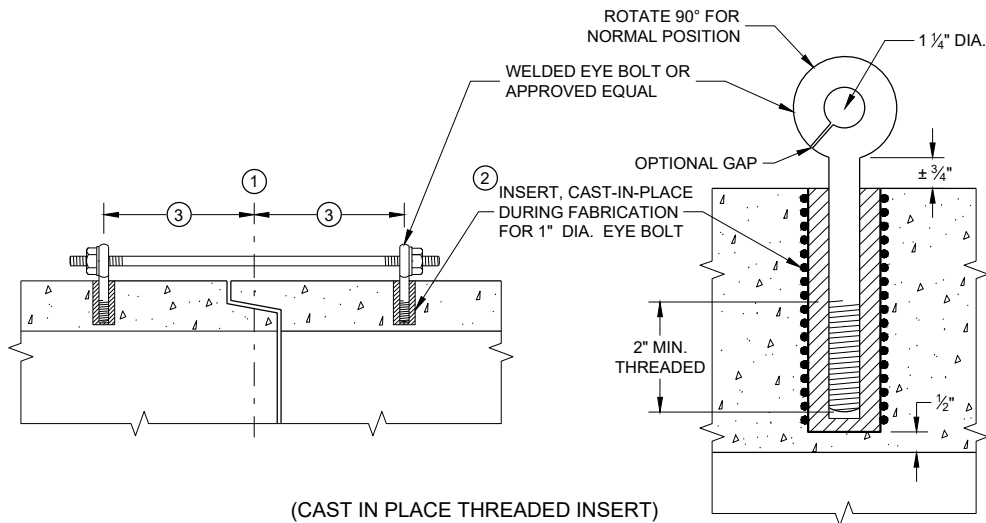
FHWA

/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER



EYE BOLTS AND TIE ROD

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

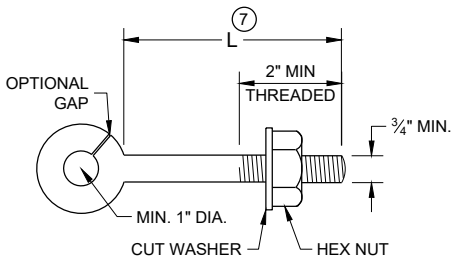
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

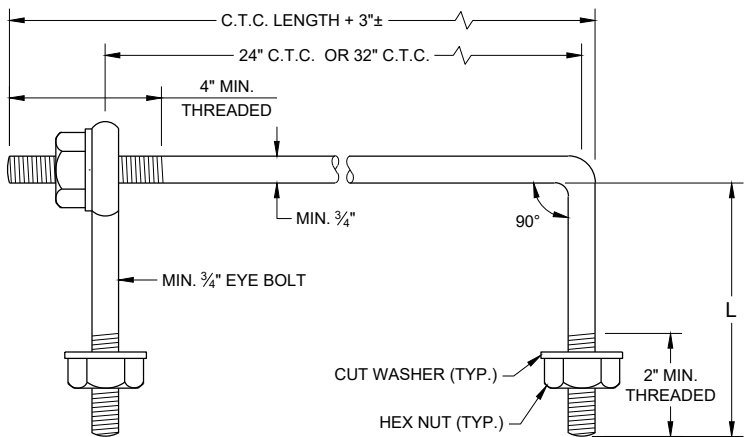
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 1 CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- 2 THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- 3 HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- 4 BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- 5 OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- 6 LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.
- 7 EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

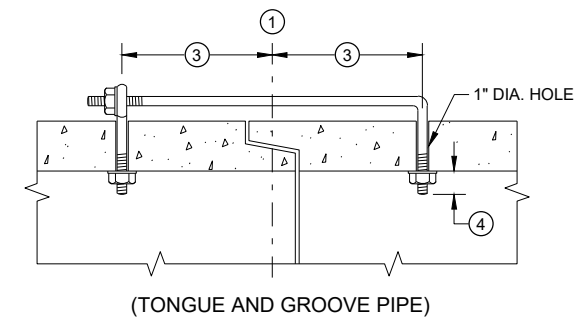


EYE BOLT 7

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



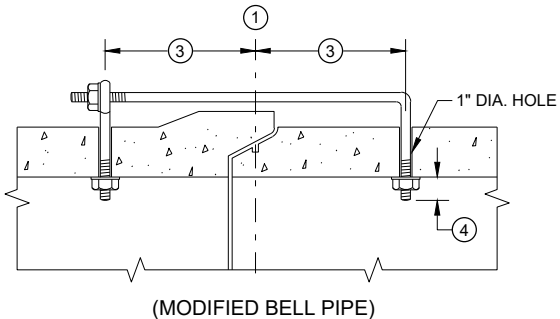
EYE BOLT AND TIE ROD



LONGITUDINAL SECTION

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

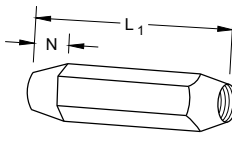


(MODIFIED BELL PIPE)

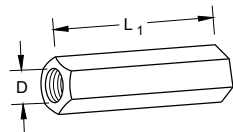
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12 - 60	5/8	5/8	5	1/2
66 - 84	3/4	3/4	5	1/2
90 - 144	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES

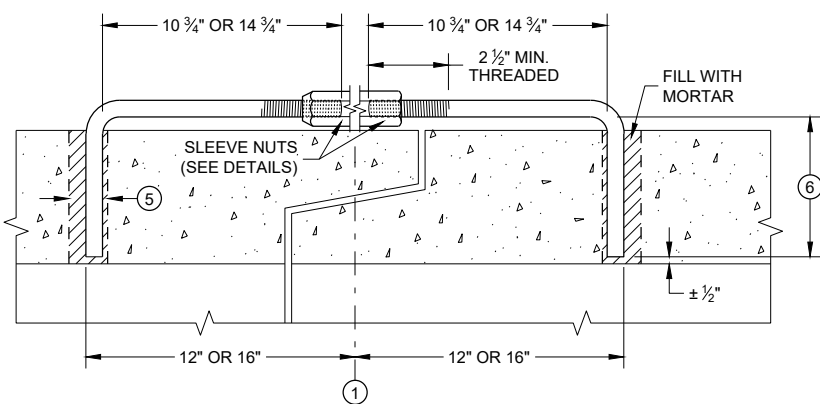


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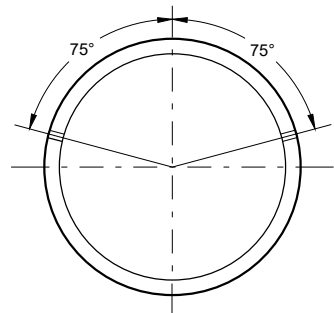
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



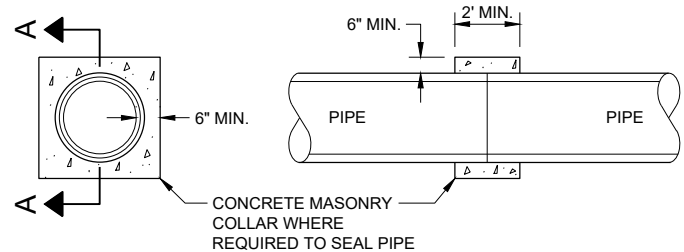
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A - A

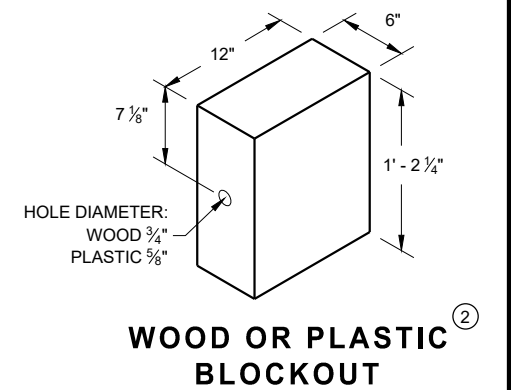
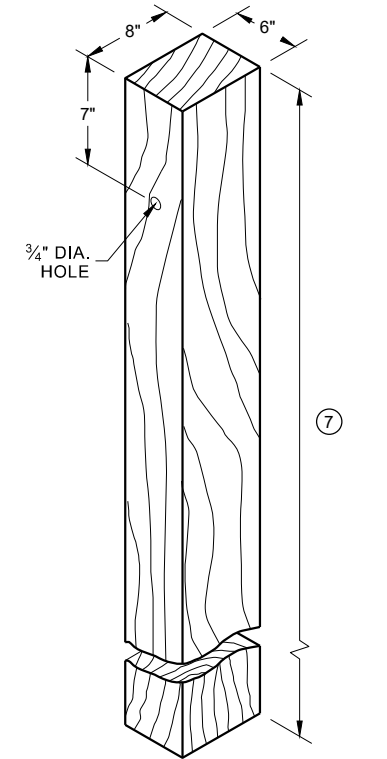
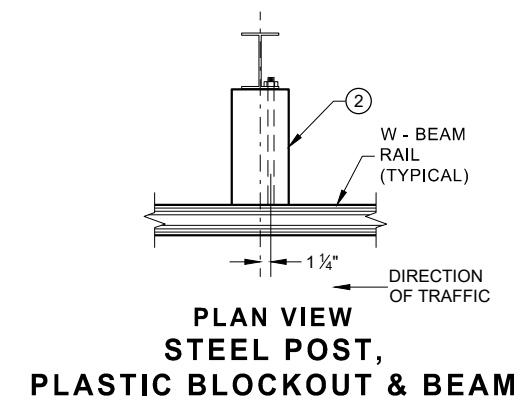
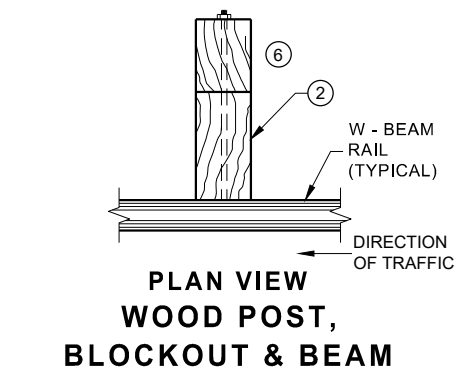
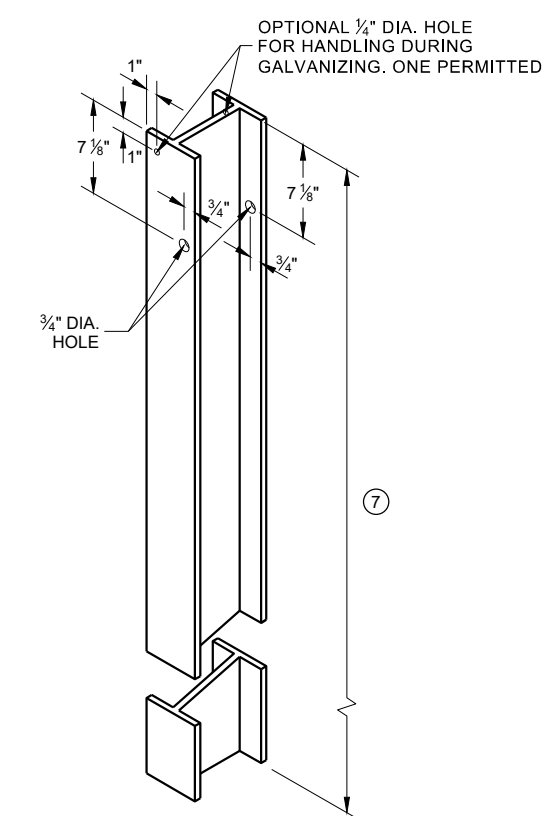
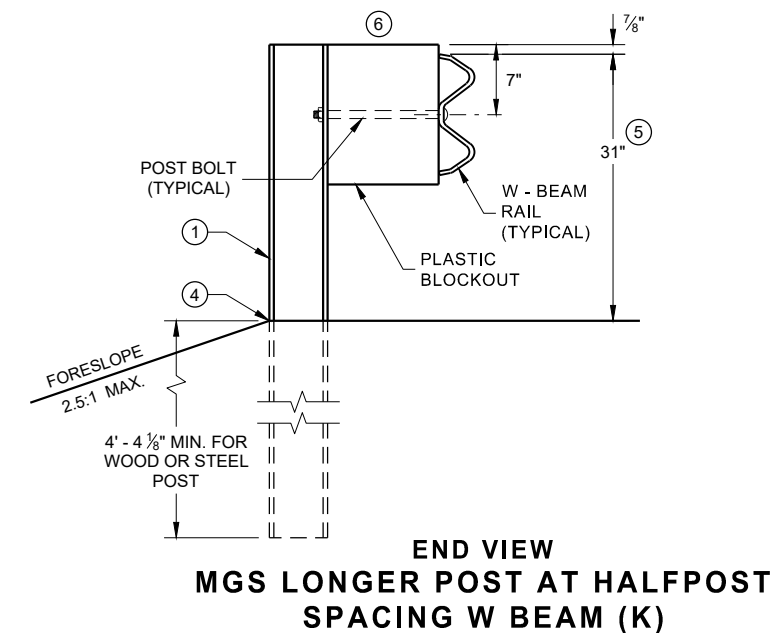
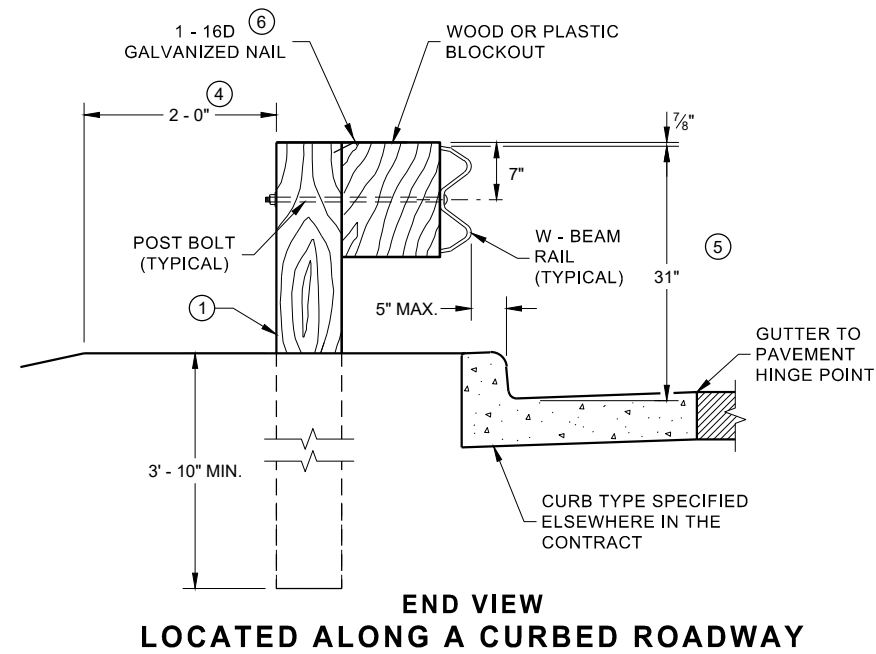
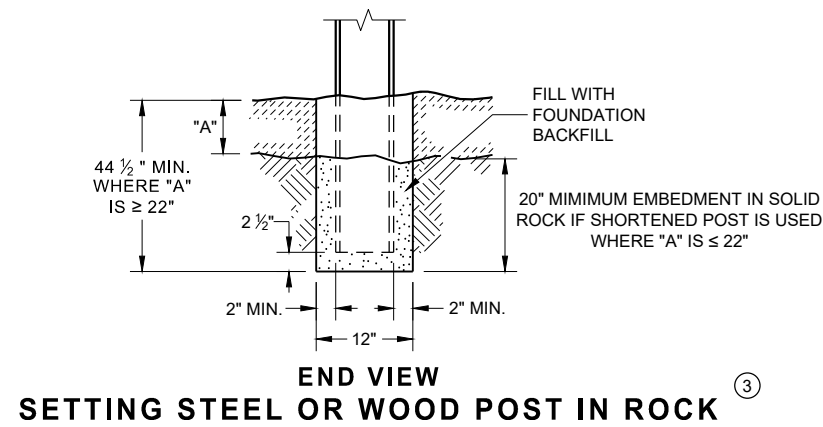
CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

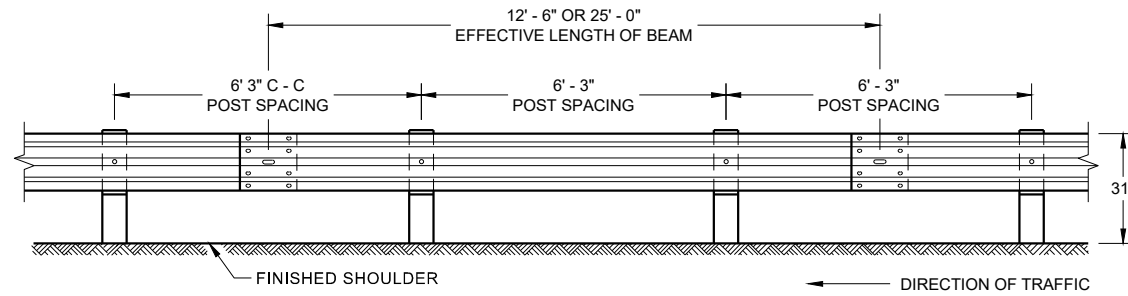
APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

- WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

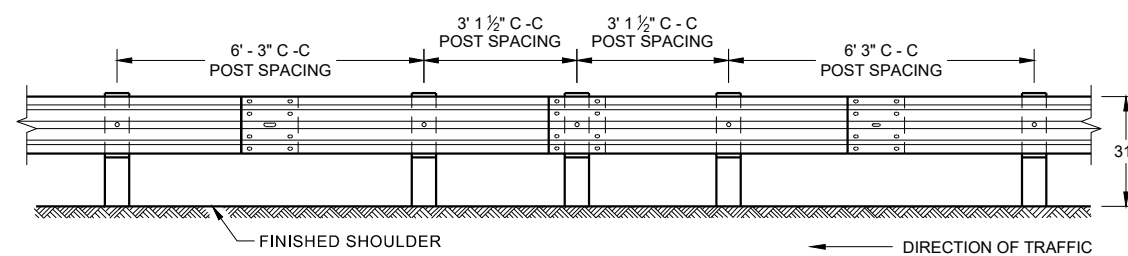


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

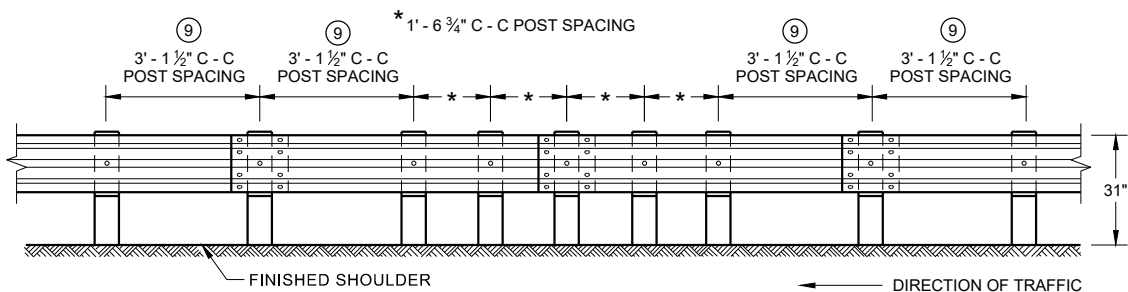
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



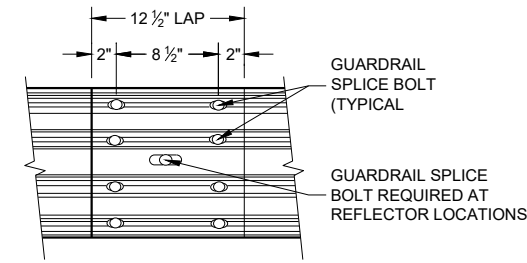
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



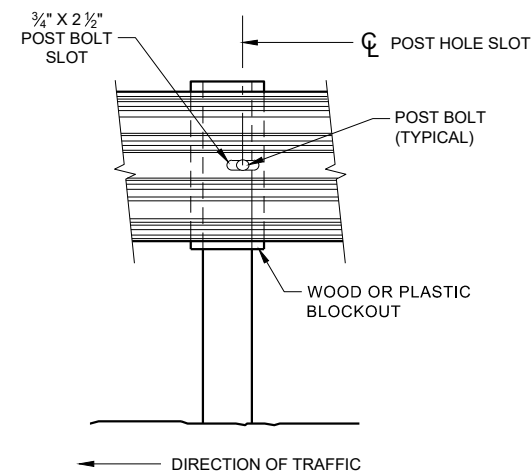
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



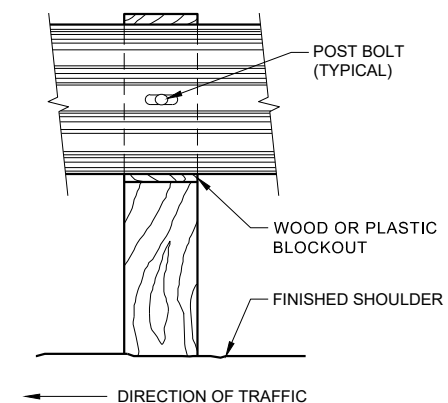
**FRONT VIEW
QUARTER POST SPACING (QS)**



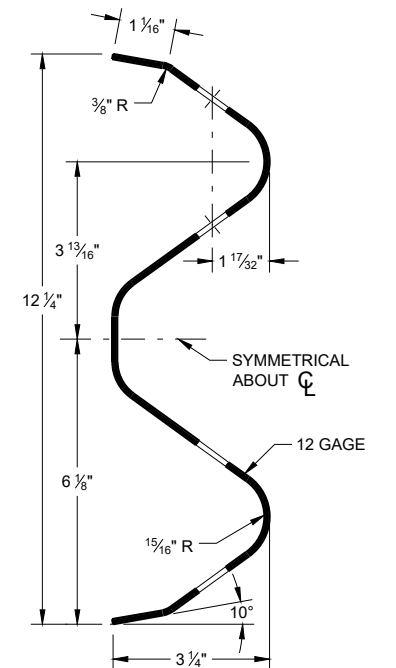
**FRONT VIEW
MID-SPAN BEAM SPLICE**



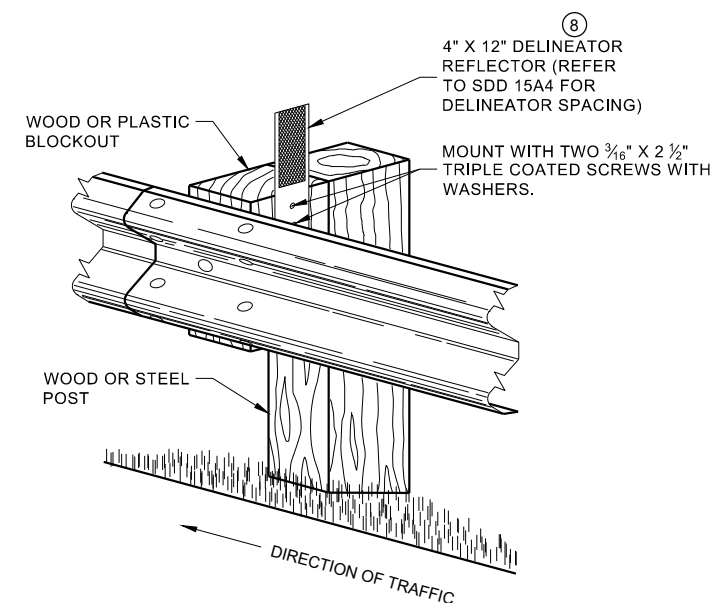
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

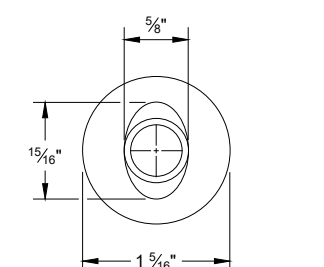


NOTE:

-

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



1" X $\frac{1}{16}$ " DEEP
RECESS BOTH SIDES

$\frac{5}{8}$ " - 11 MODIFIED
HEAVY HEX NUT

$\frac{1}{16}$ "

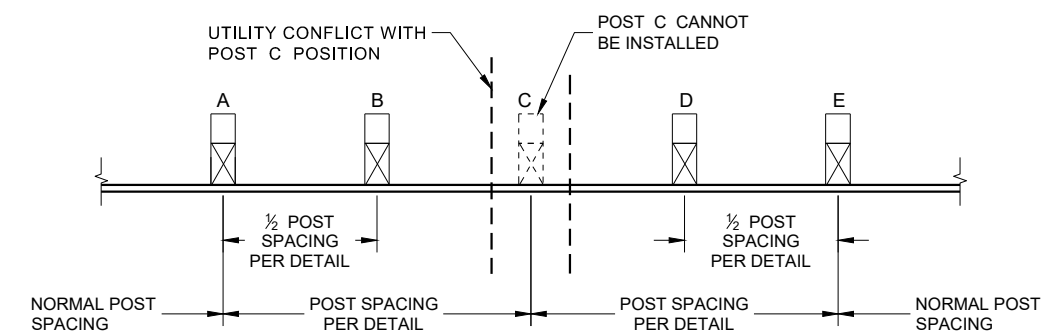
$1 \frac{5}{16}$ "

The drawing shows two views of a modified heavy hex nut. The left view is a side elevation showing a hexagonal nut with a central circular hole. A dashed rectangle indicates a recessed area on both the top and bottom faces. A dimension line at the bottom indicates a width of $\frac{1}{16}$ ". The right view is a top-down view of the hex nut. It shows the hexagonal outer profile, the central circular hole, and concentric circles representing the recessed area. A dimension line at the bottom indicates an outer diameter of $1 \frac{5}{16}$ ". Labels with leader lines point to the recessed area and the nut's specification.

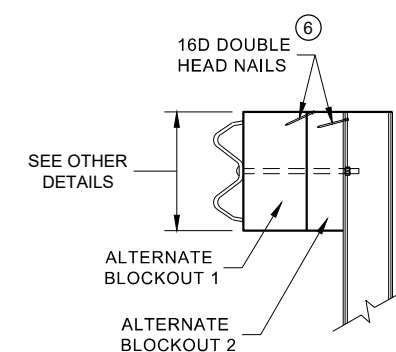
POST BOLT, SPLICE BOLT AND RECESS NUT

-
- A diagram showing a vehicle (represented by a rectangle) approaching an obstacle (represented by a rectangle labeled 'OBSTACLE') on a road. The road is indicated by a dashed line. An arrow points to the right, labeled 'DIRECTION OF TRAFFIC'. The vehicle is positioned to the left of the obstacle, and the road surface is shown as a series of connected line segments.

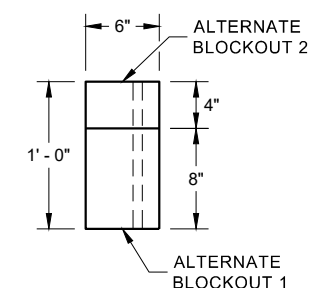
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

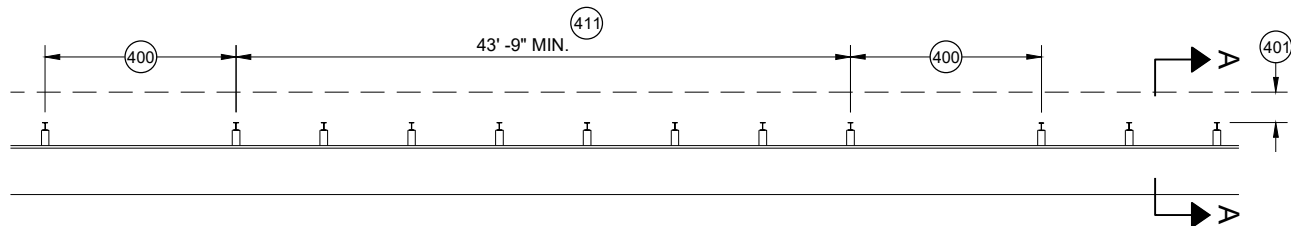


PLAN VIEW

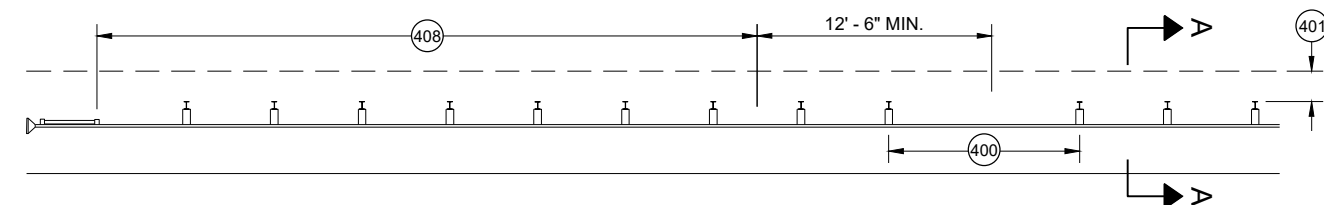
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

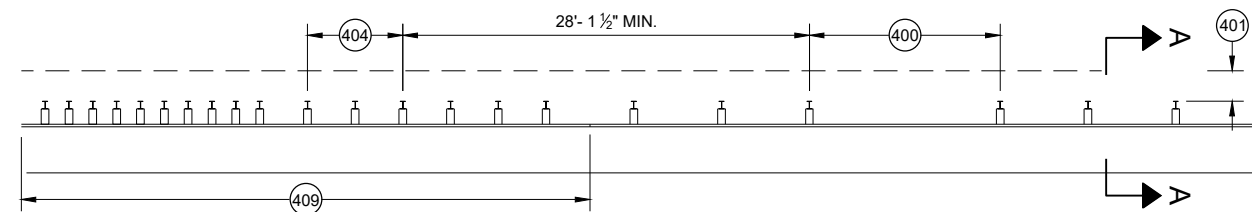
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



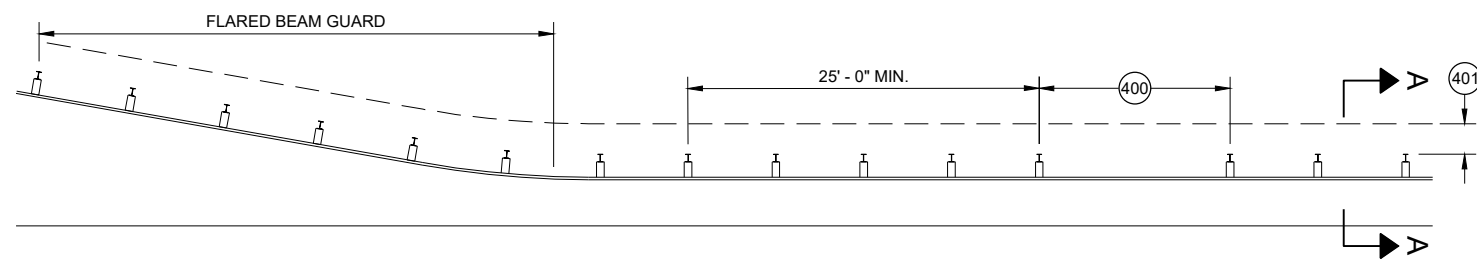
MISSING POST IN MGS GUARDRAIL



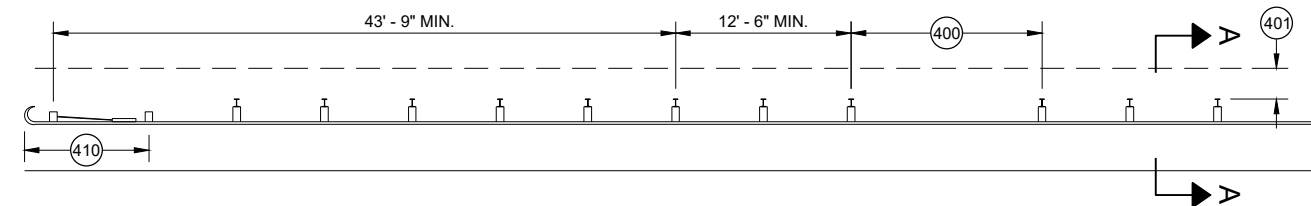
MISSING POST IN MGS GUARDRAIL NEAR EAT



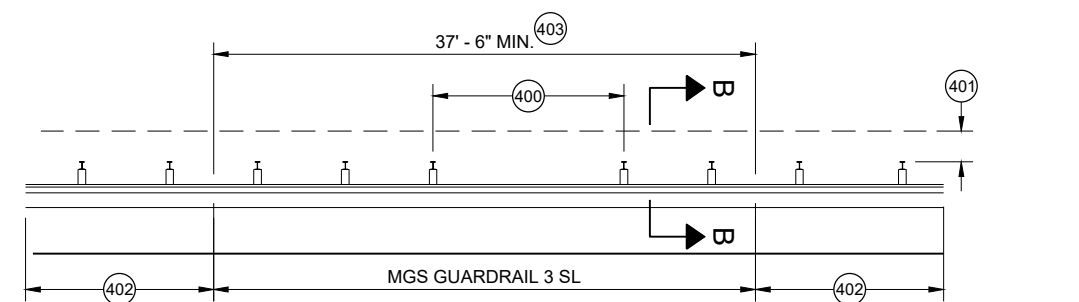
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

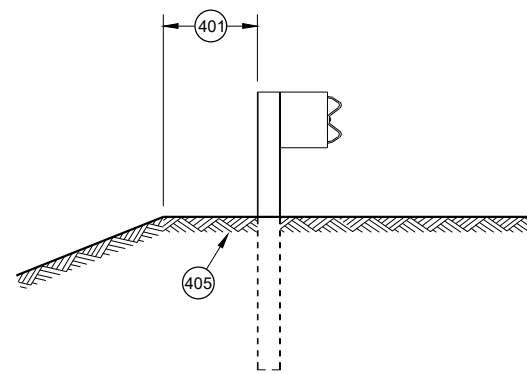


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

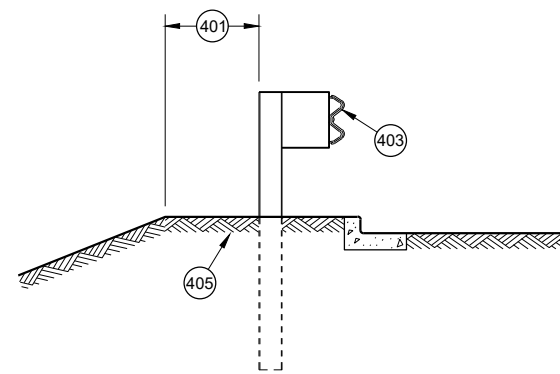


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

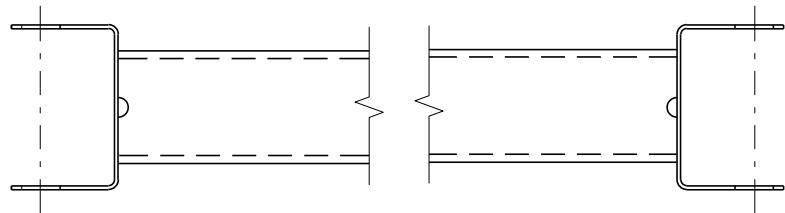
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

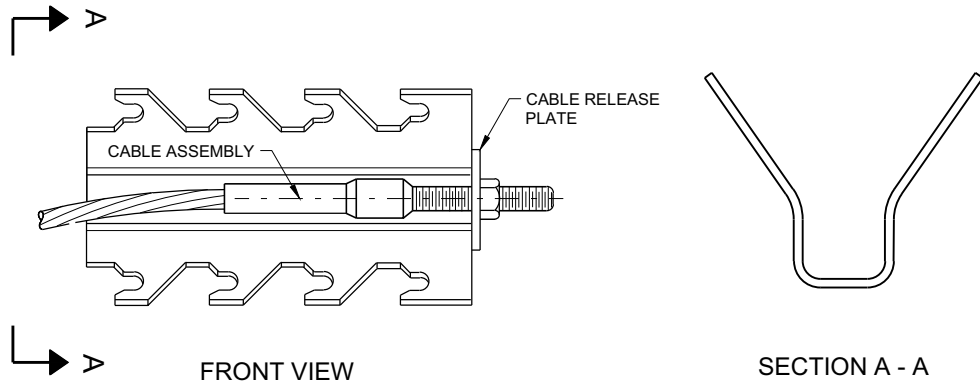


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

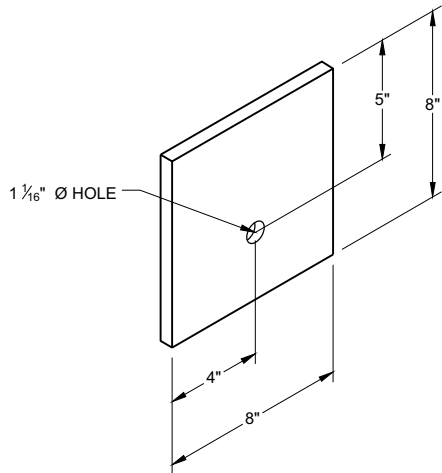


GENERIC GROUND STRUT^⑨ [Ⓔ]

BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



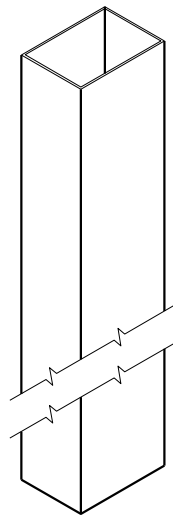
GENERIC ANCHOR CABLE BOX^⑨ [Ⓔ]



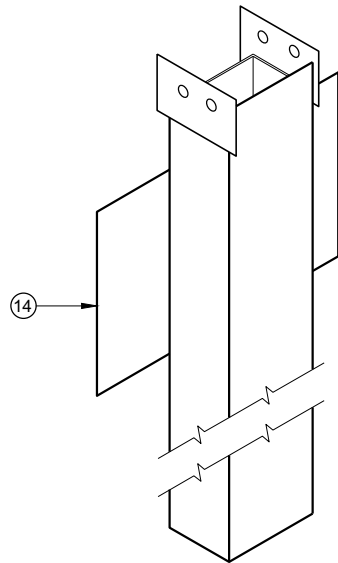
BEARING PLATE^⑥ [Ⓔ]

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

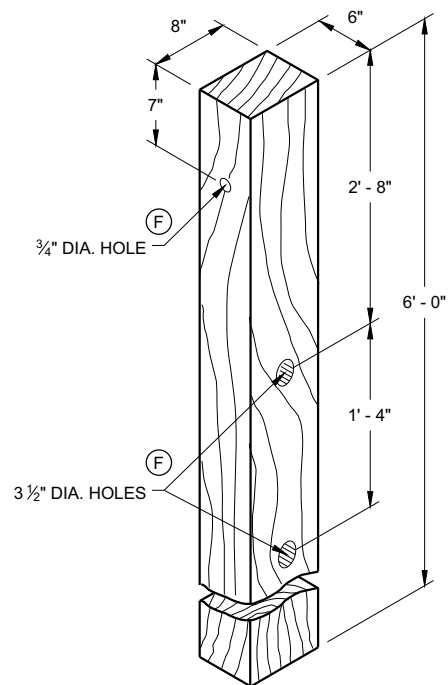
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



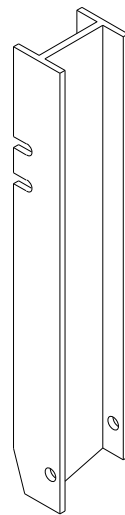
UPPER POST NO. 1 ⁽¹⁾ (E)



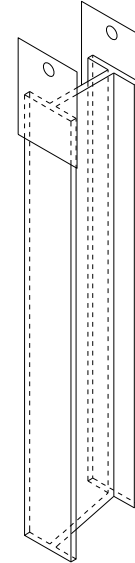
LOWER POST NO. 1 ⁽²⁾ (E)



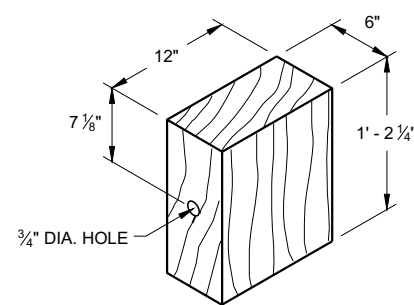
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



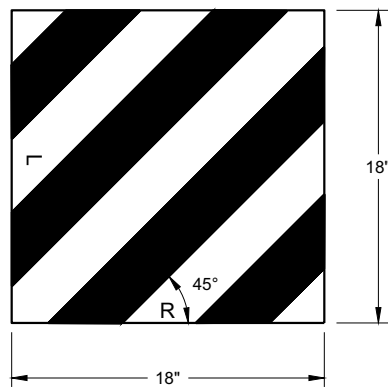
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



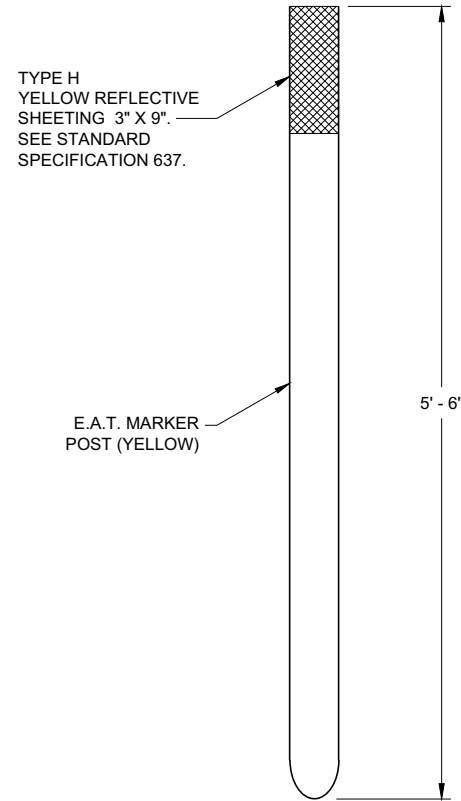
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



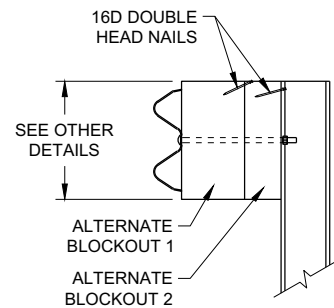
REFLECTIVE SHEETING DETAIL ^(E)



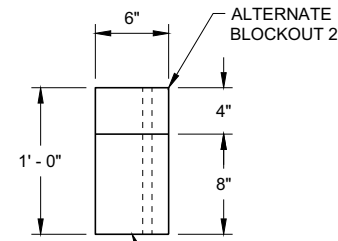
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



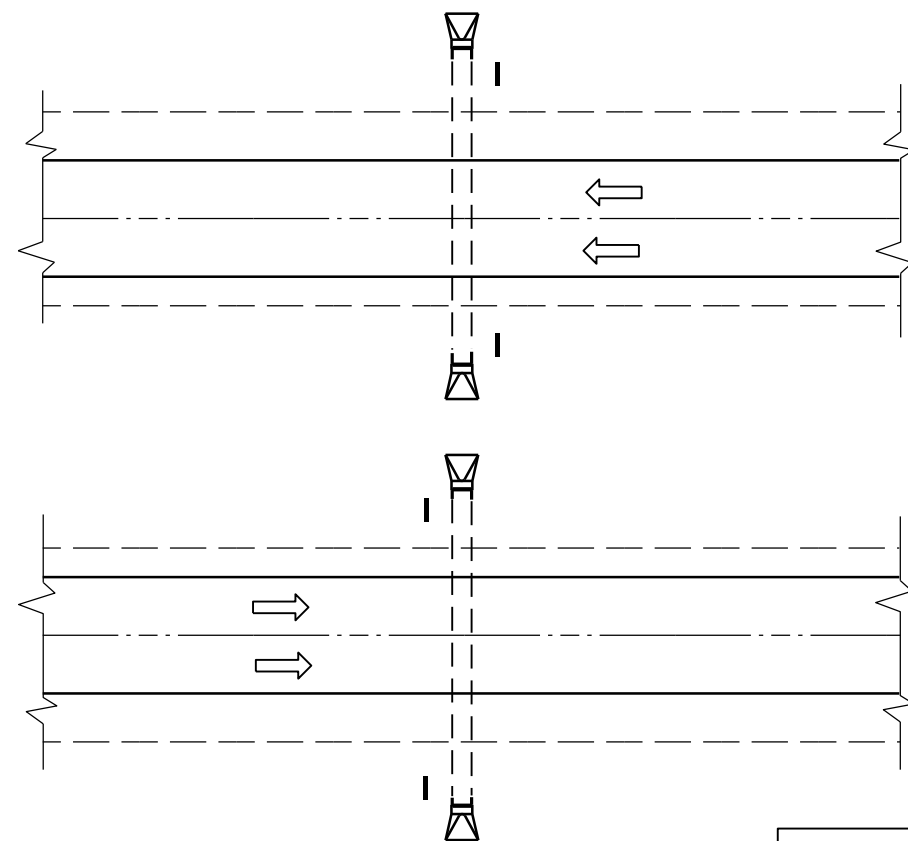
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

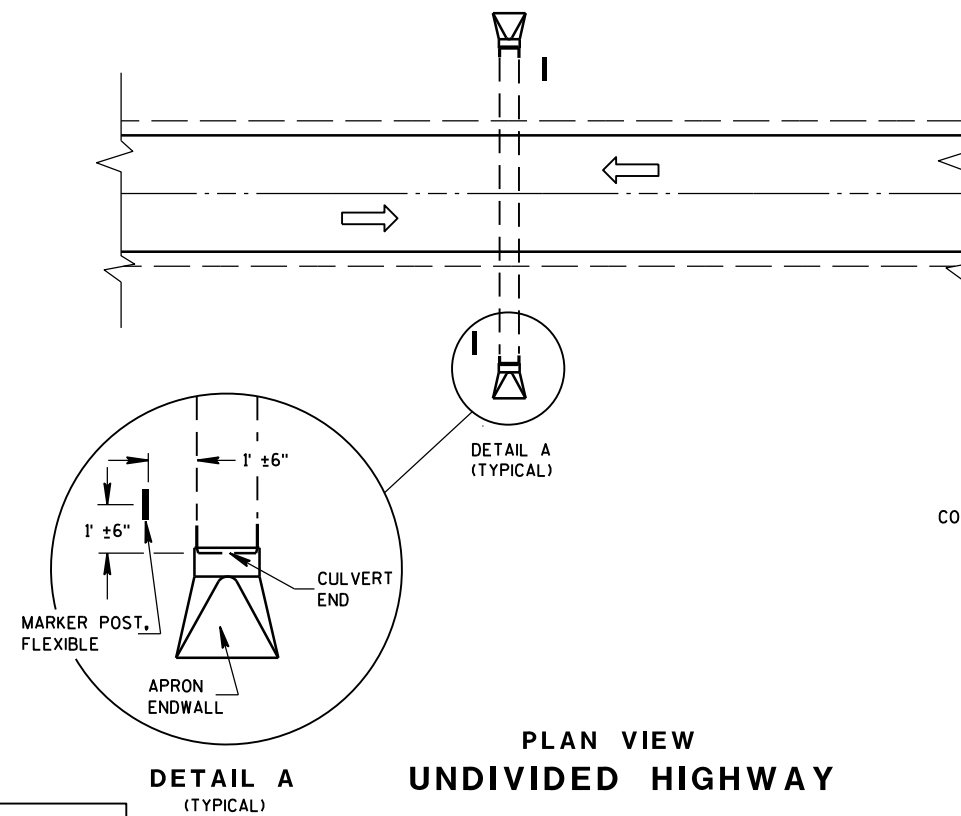
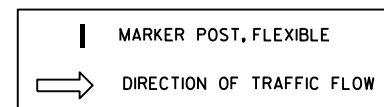
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
DIVIDED HIGHWAY

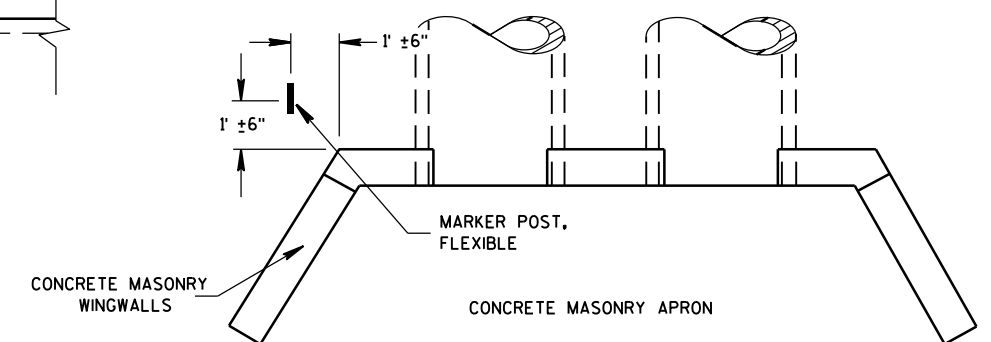


PLAN VIEW
UNDIVIDED HIGHWAY

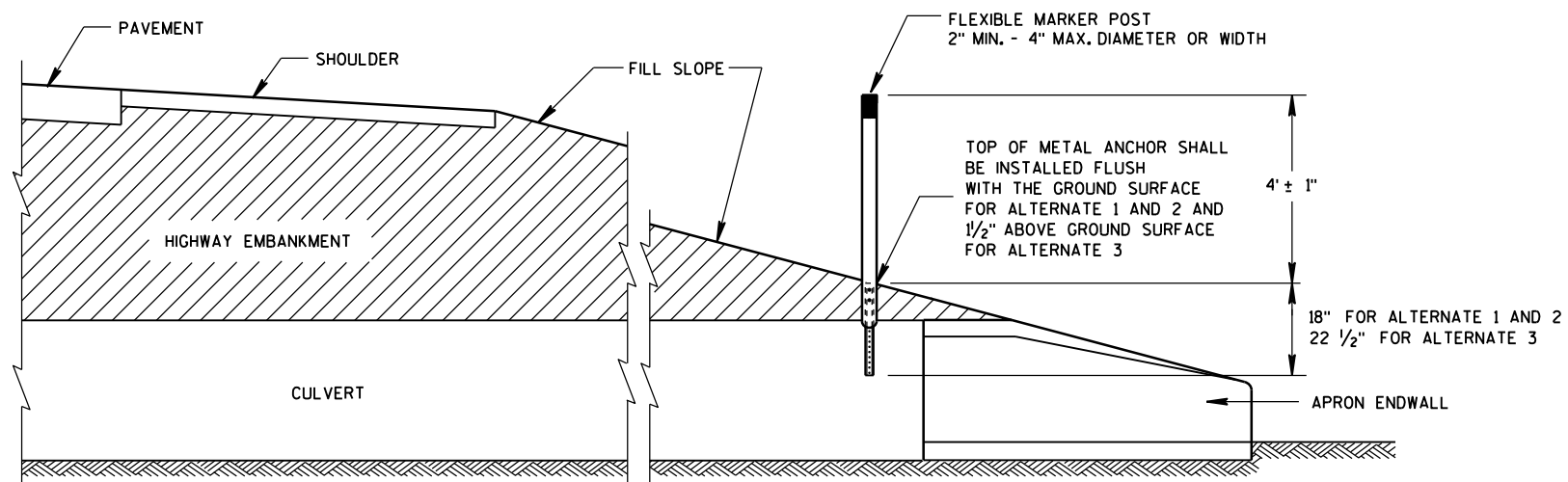
FLEXIBLE MARKER POST LOCATION

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.



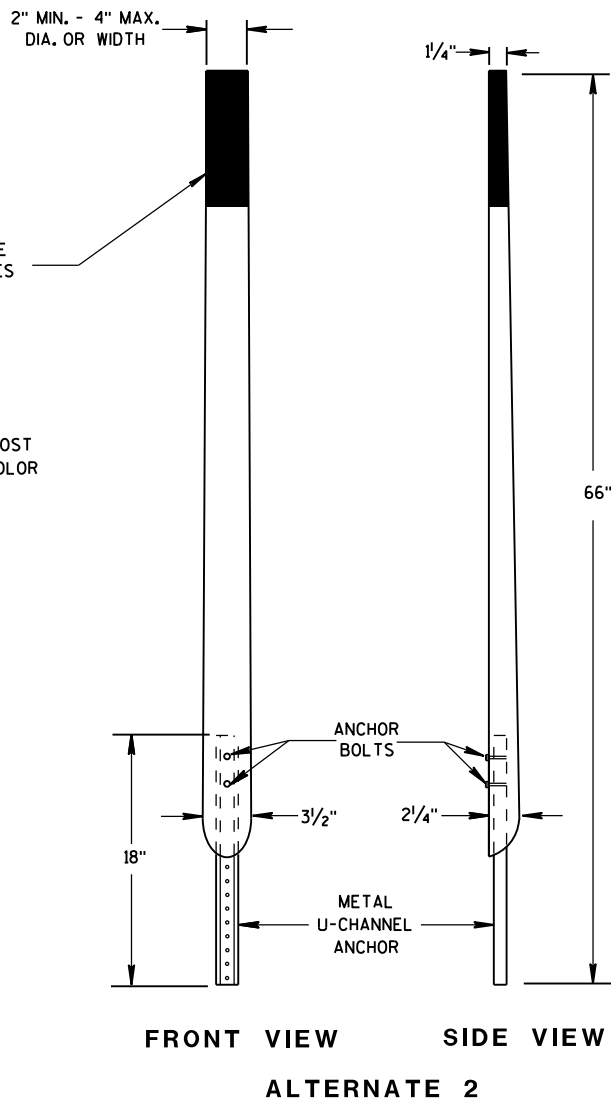
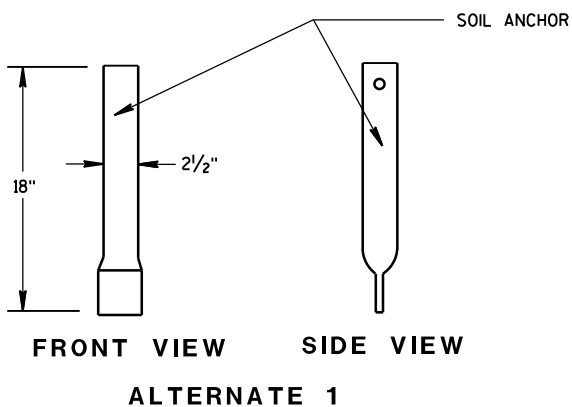
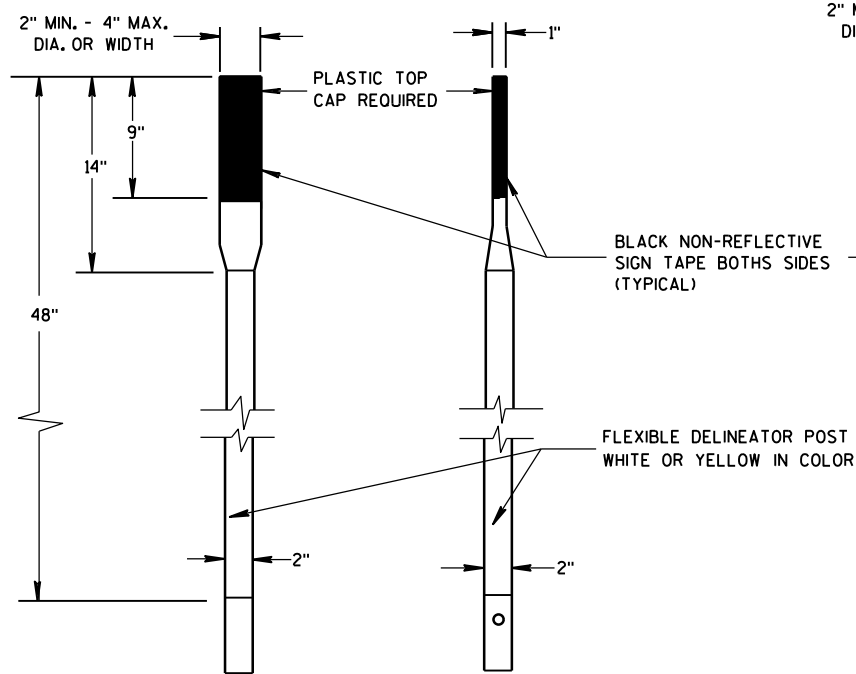
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



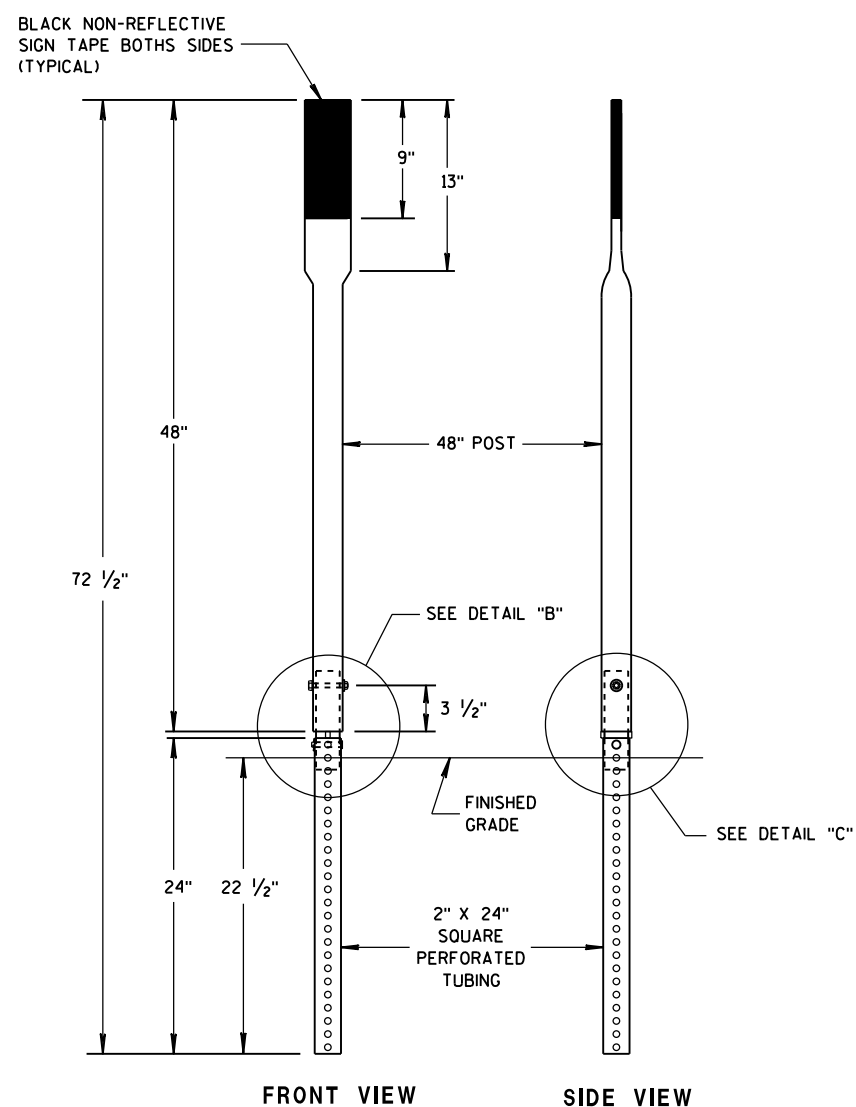
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

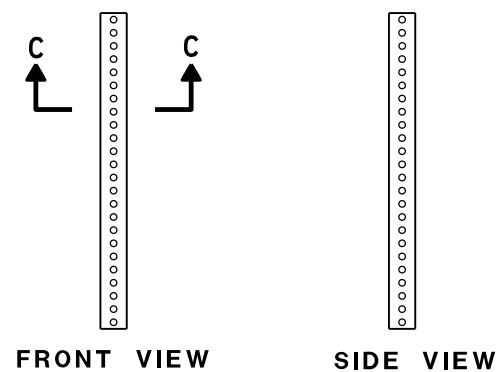
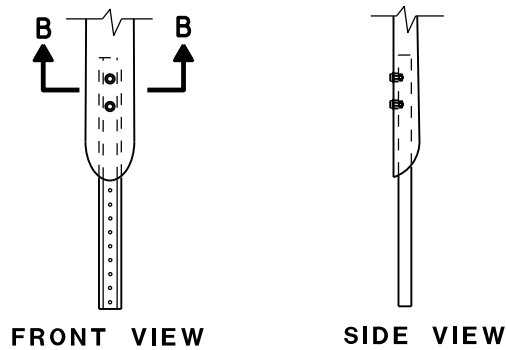
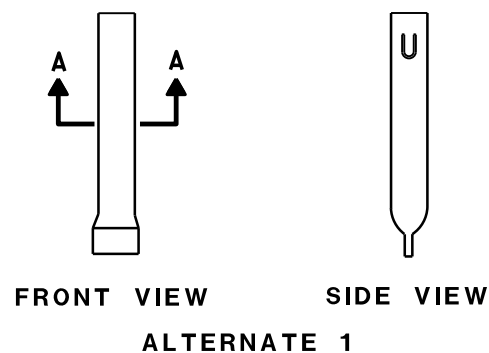
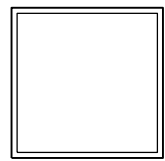
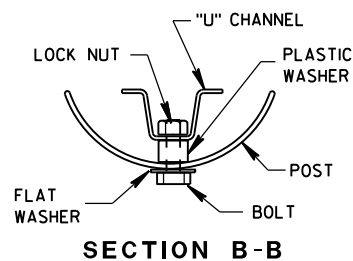
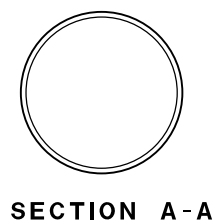
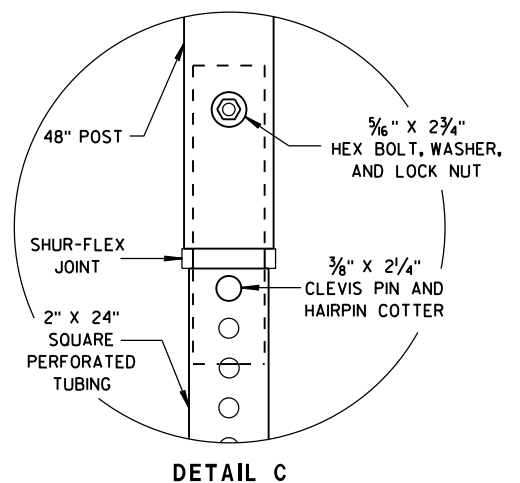
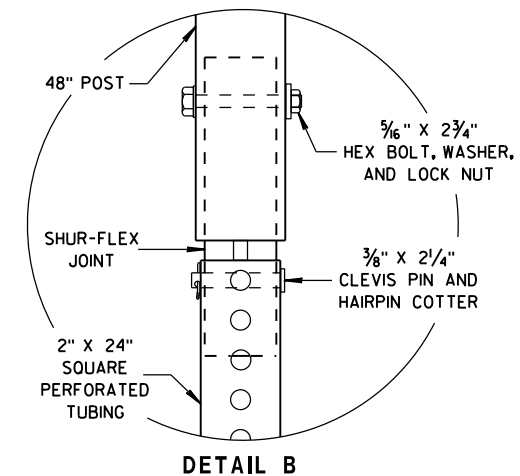
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



FLEXIBLE MARKER POSTS

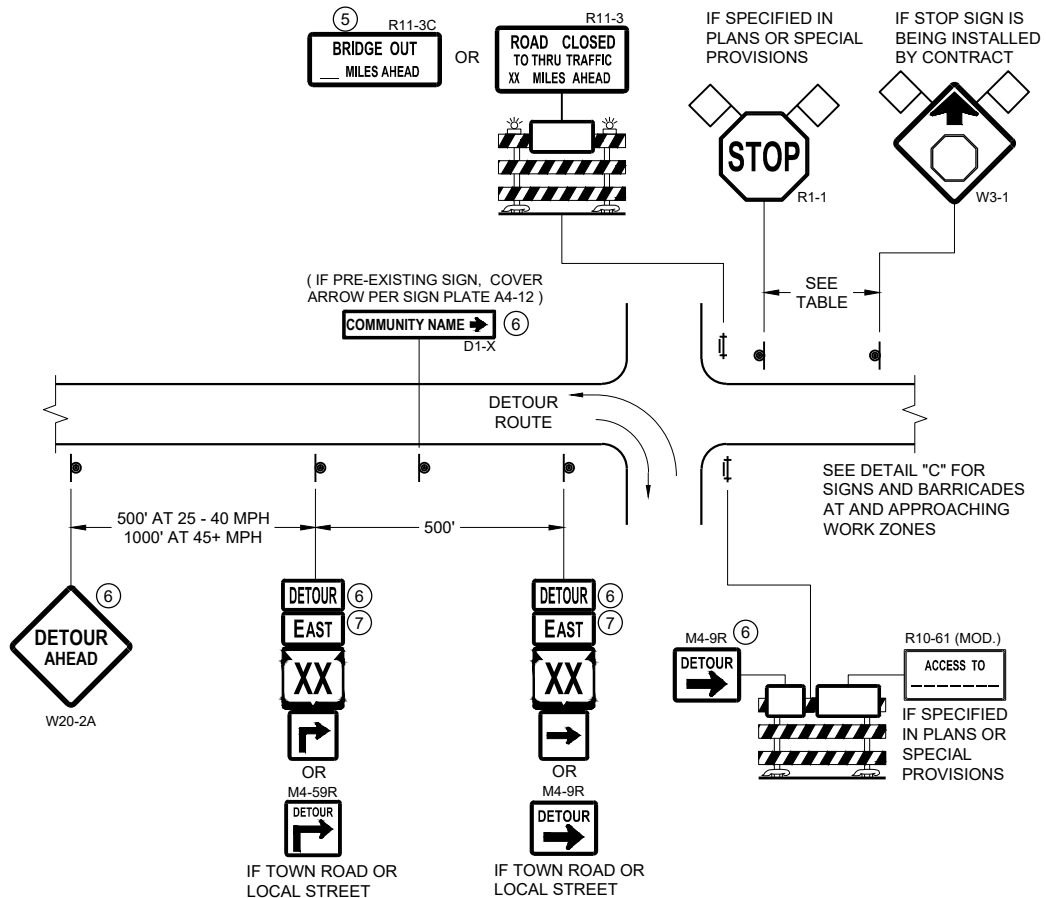


SECTION C-C

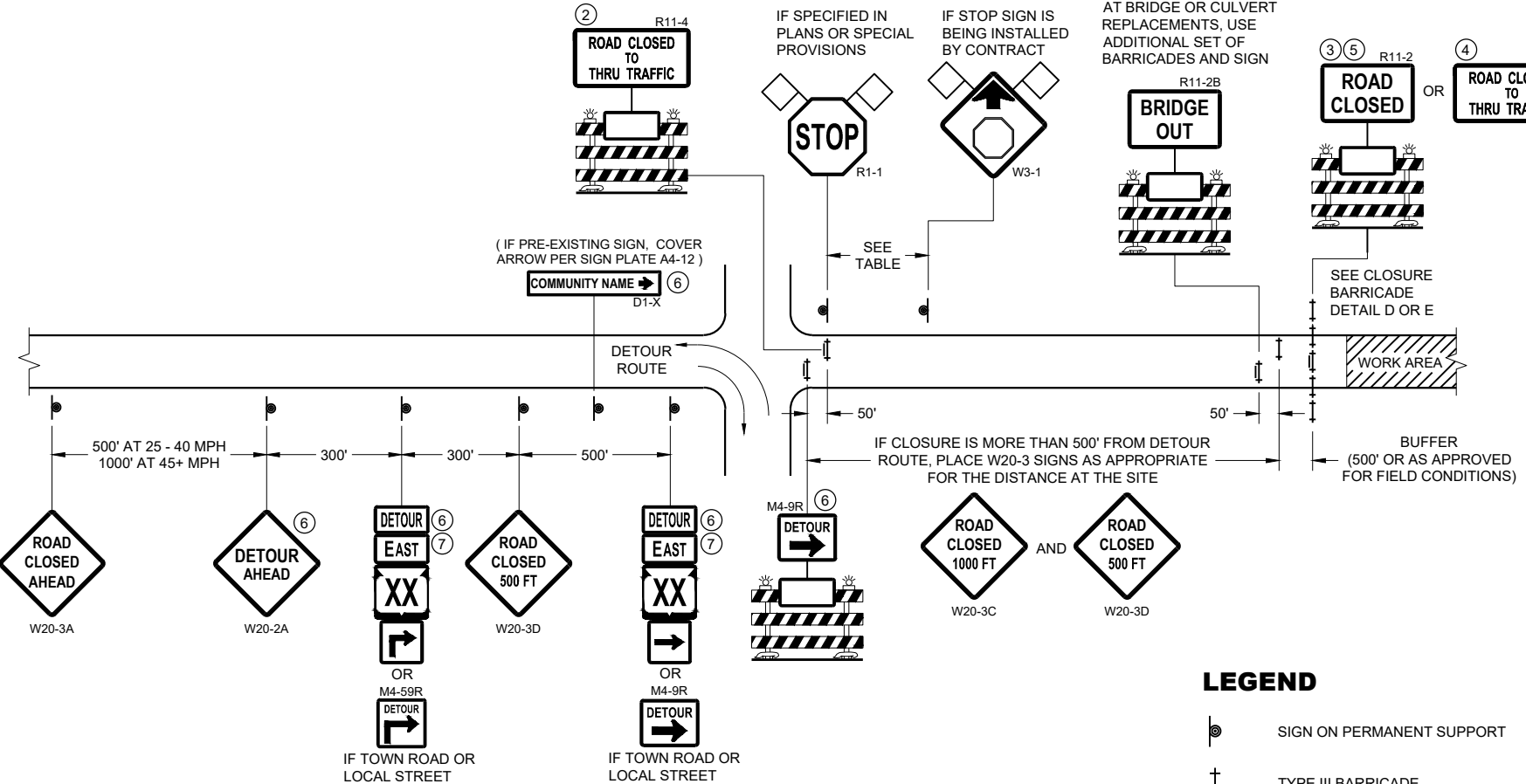


FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



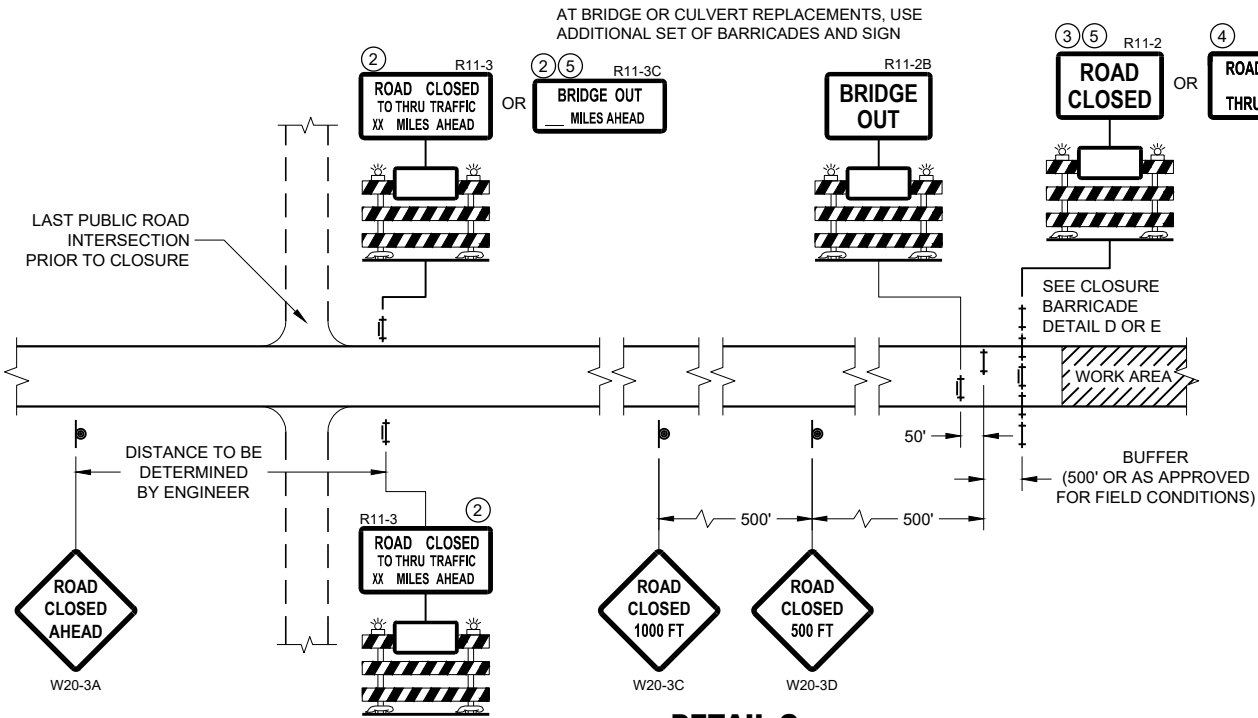
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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

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



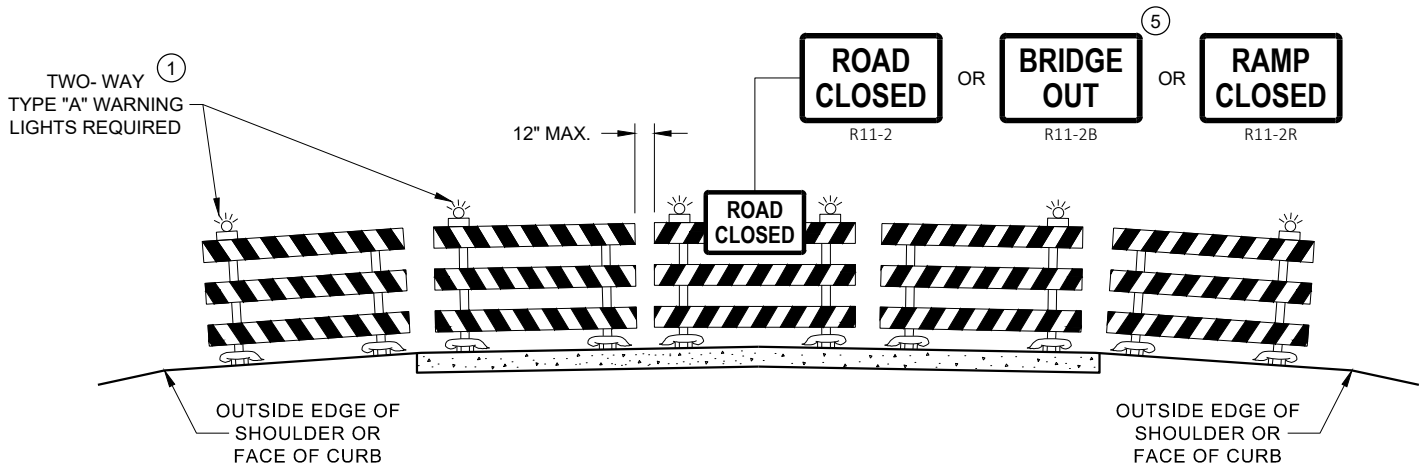
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

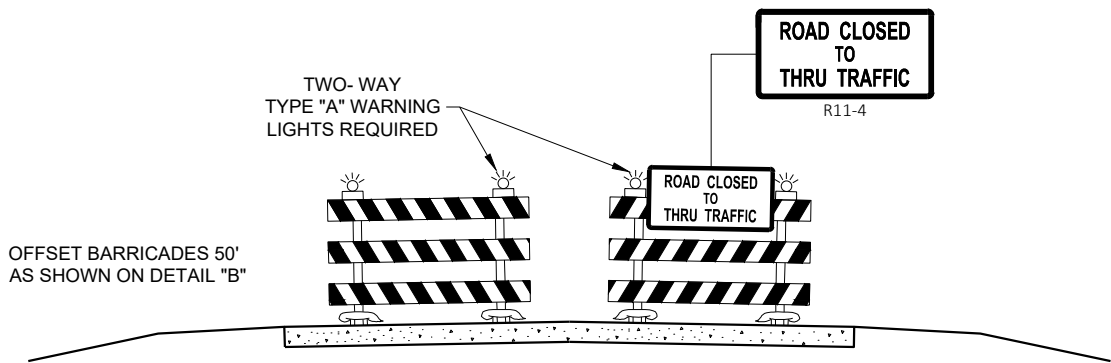
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

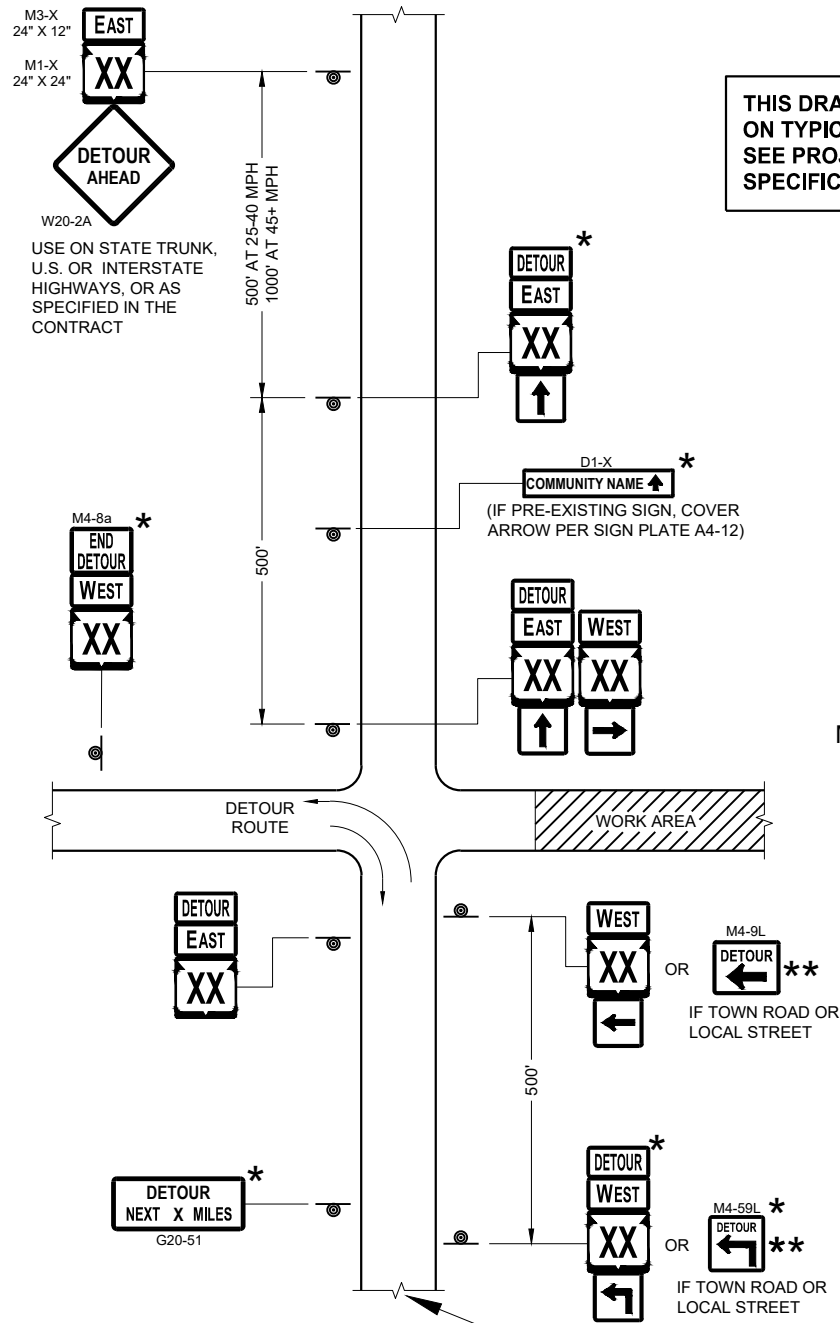
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

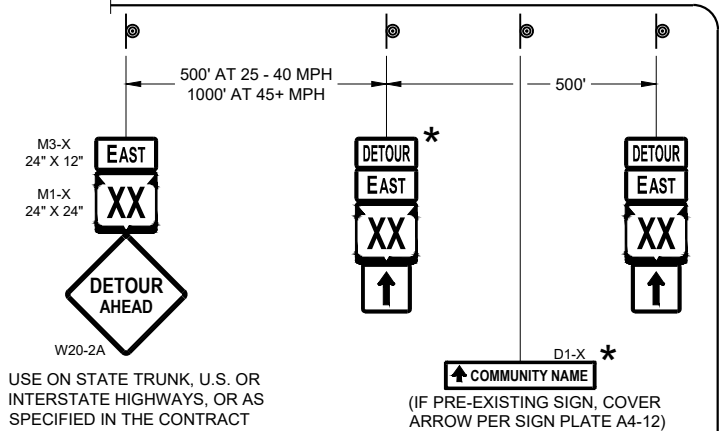
FHWA



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

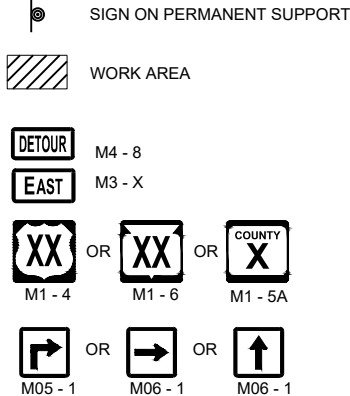
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



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.

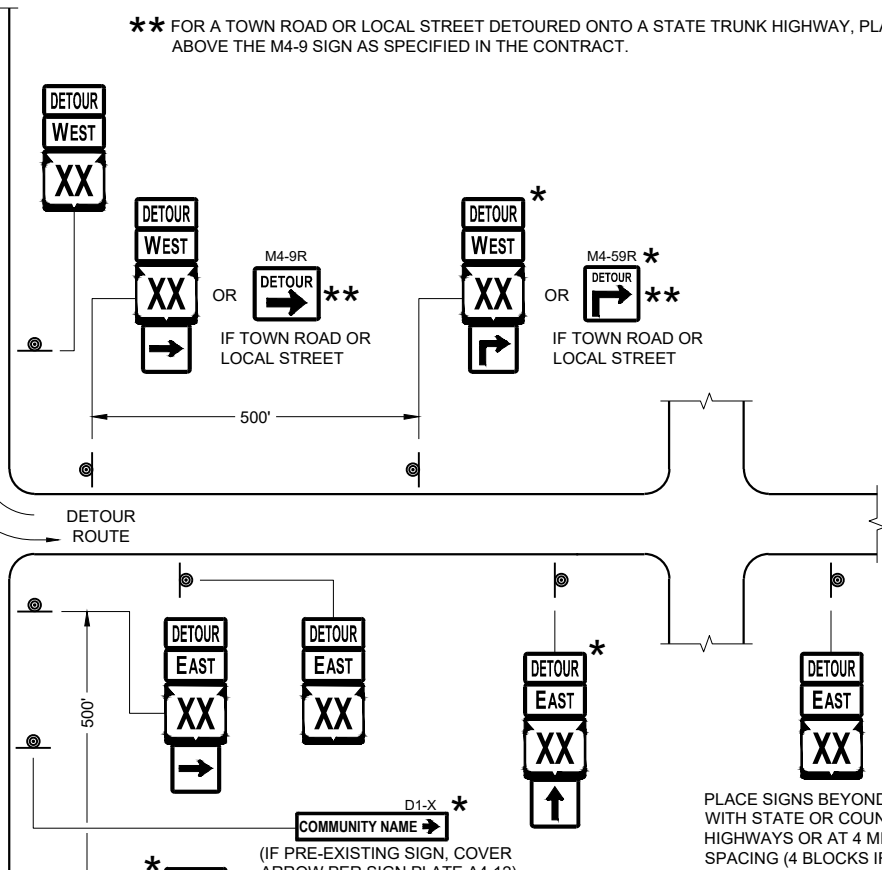
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

"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.



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

DETOUR SIGNING
FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

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" X 48" UNLESS OTHERWISE NOTED.

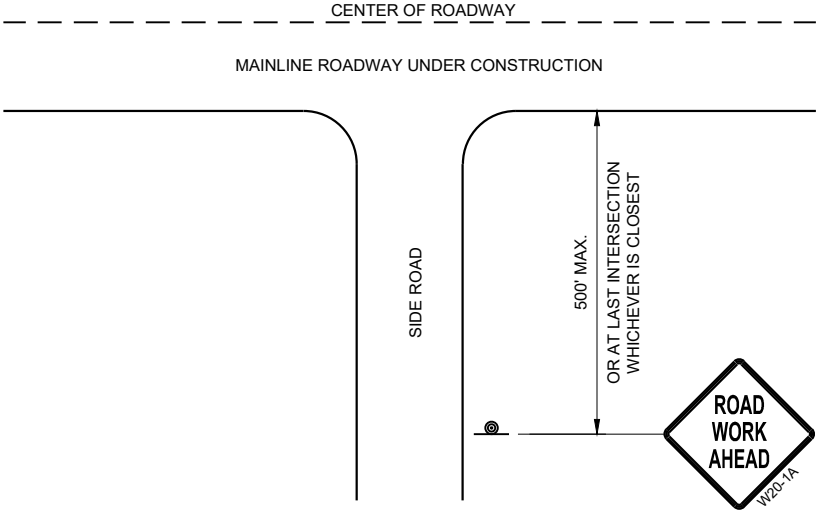
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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 REESTABLISHED.

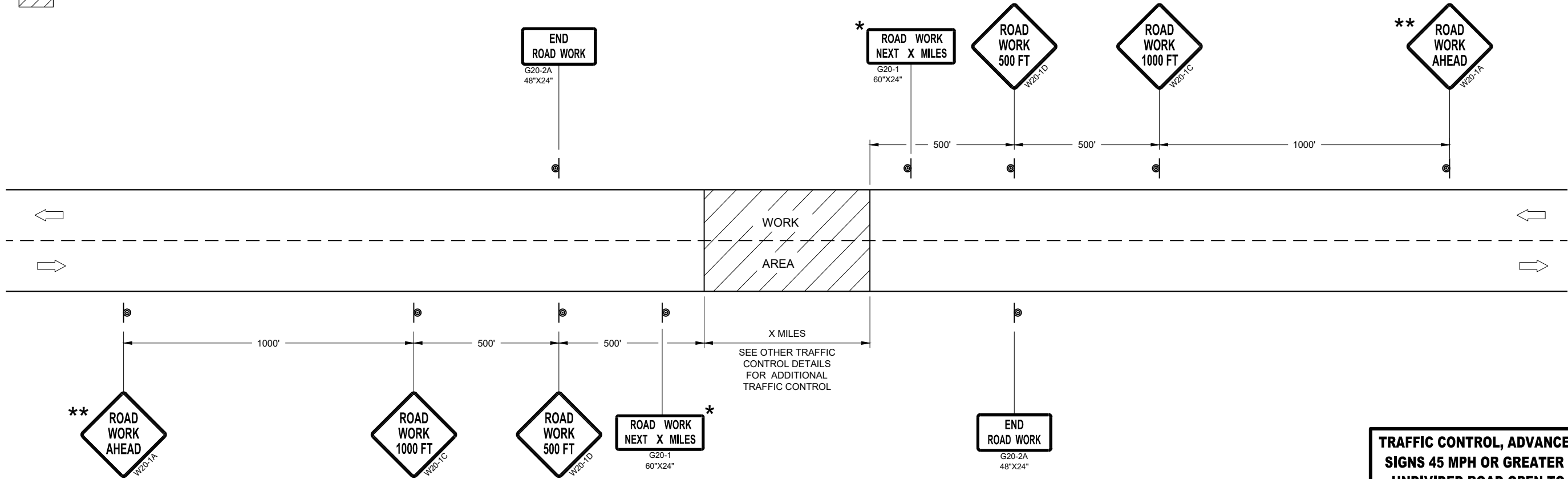
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

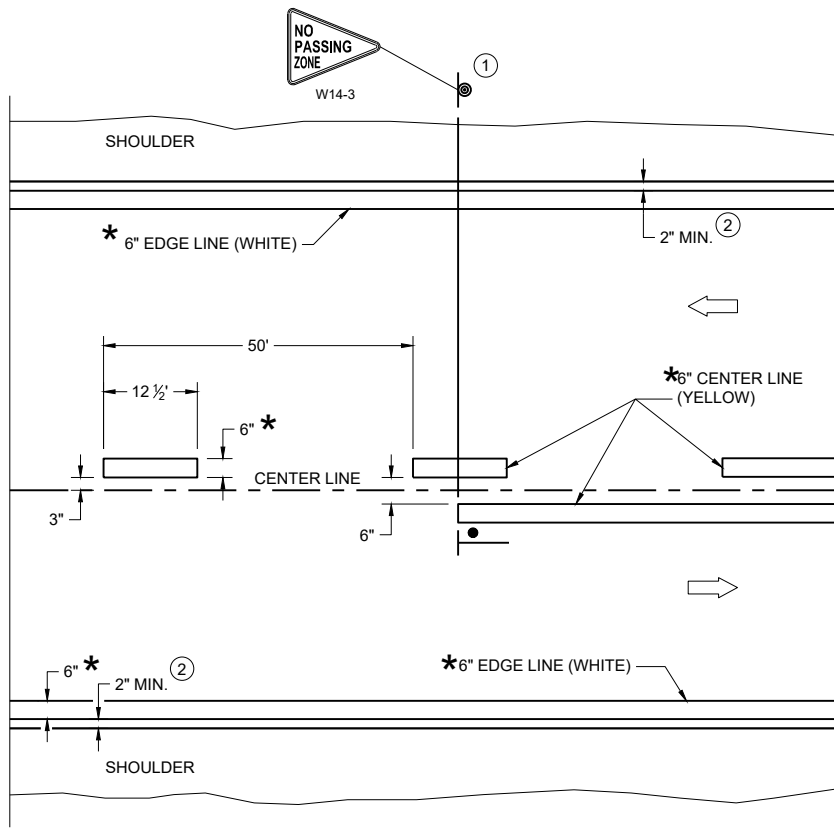


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

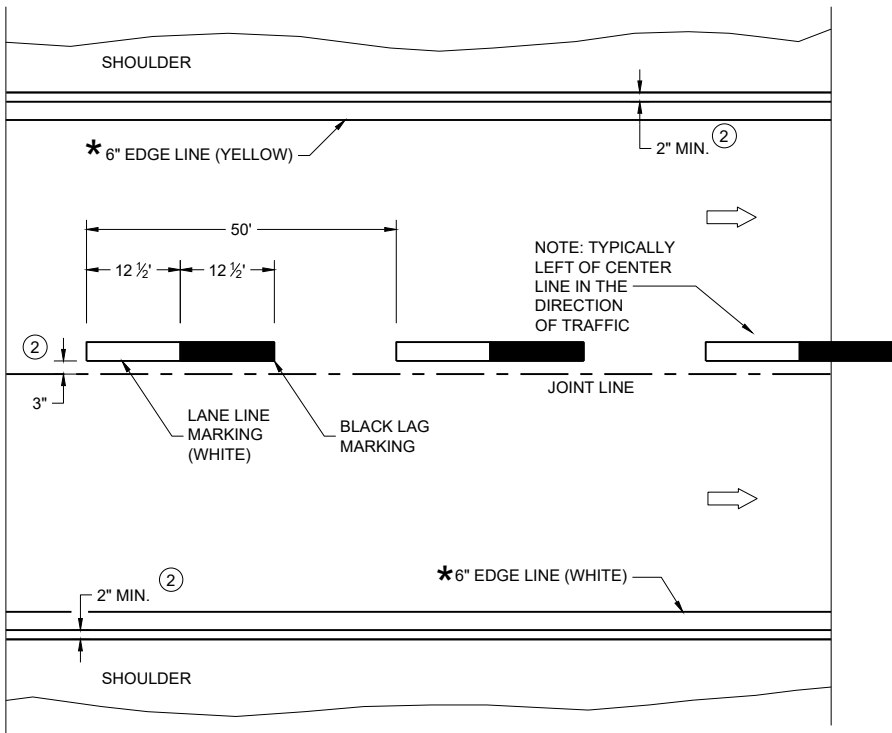
TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 45 MPH OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

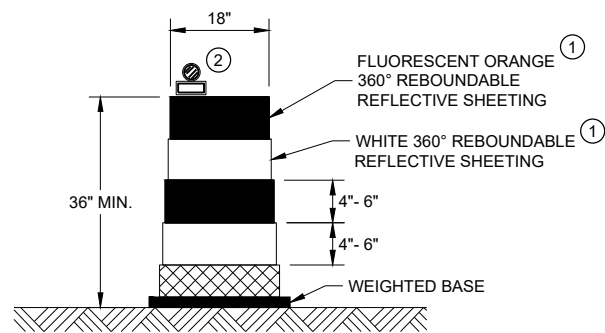
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- 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

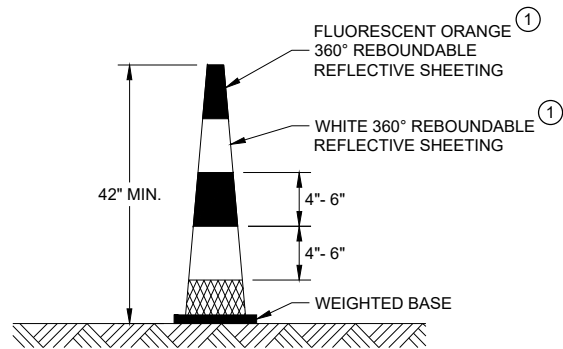
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	



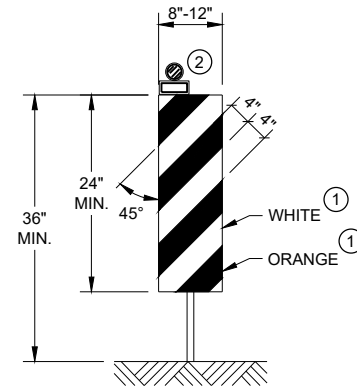
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



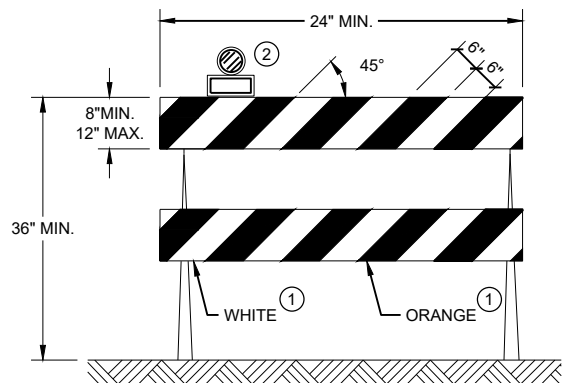
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



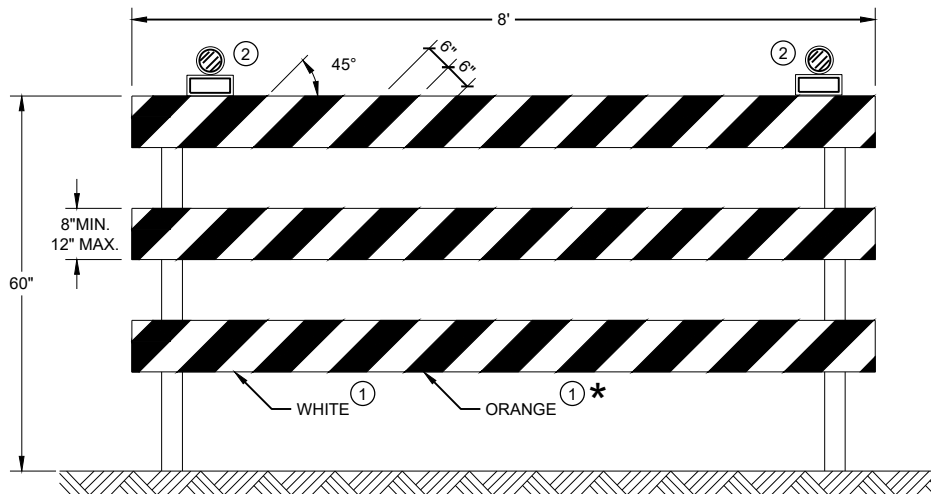
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

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.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

FLAGGING

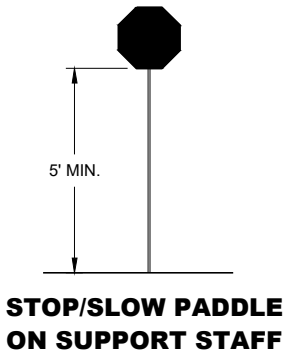
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' 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.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

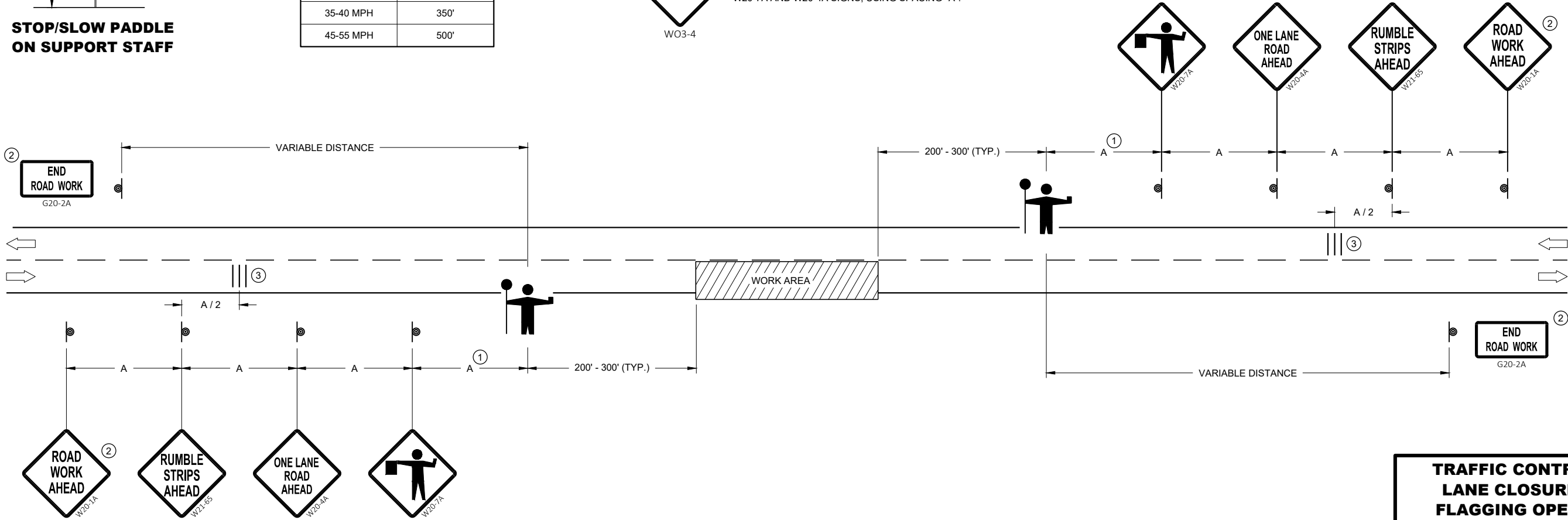


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".

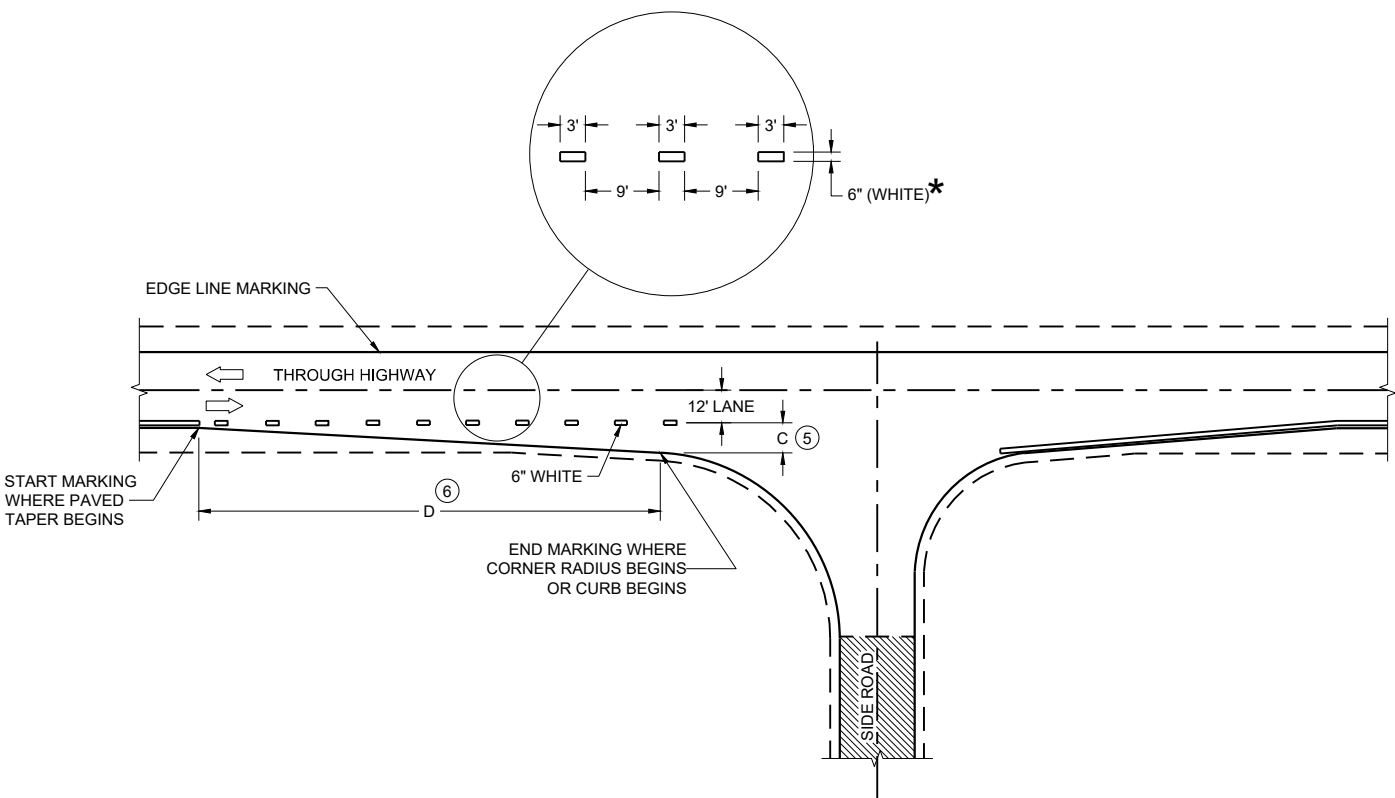


**TRAFFIC CONTROL FOR
LANE CLOSURE WITH
FLAGGING OPERATION**

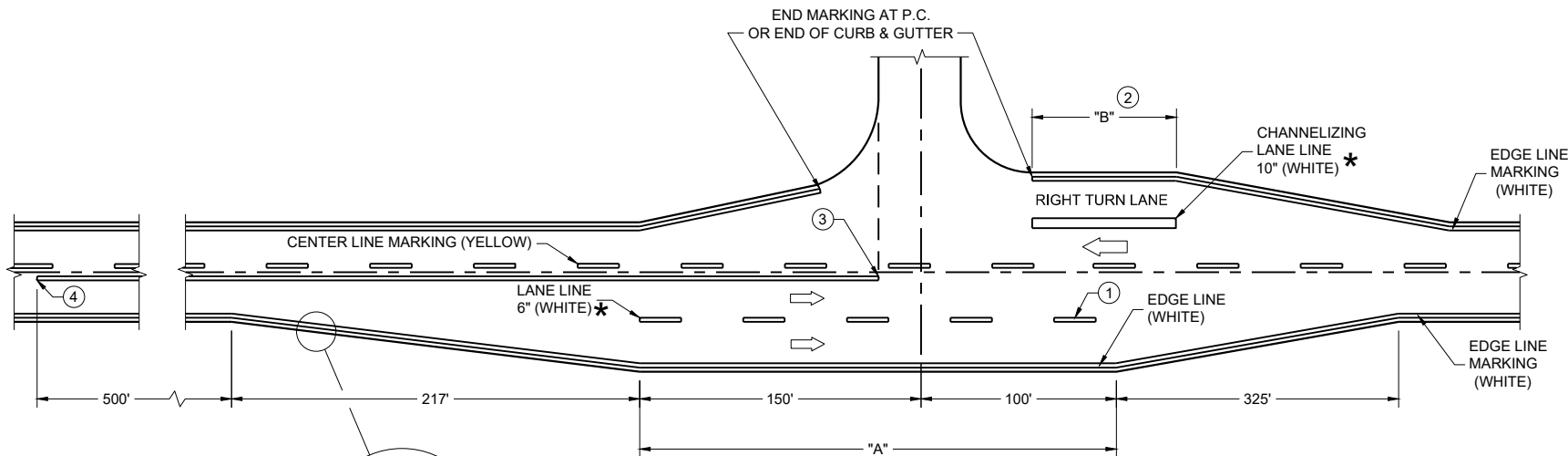
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



MINOR INTERSECTION



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

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

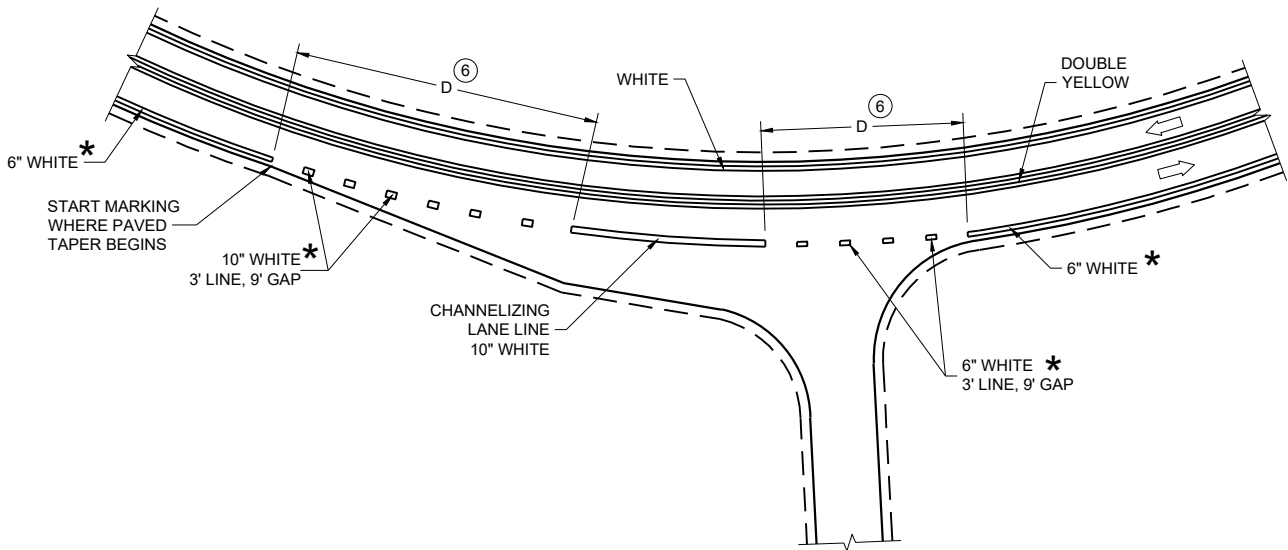
GENERAL NOTES

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



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

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

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

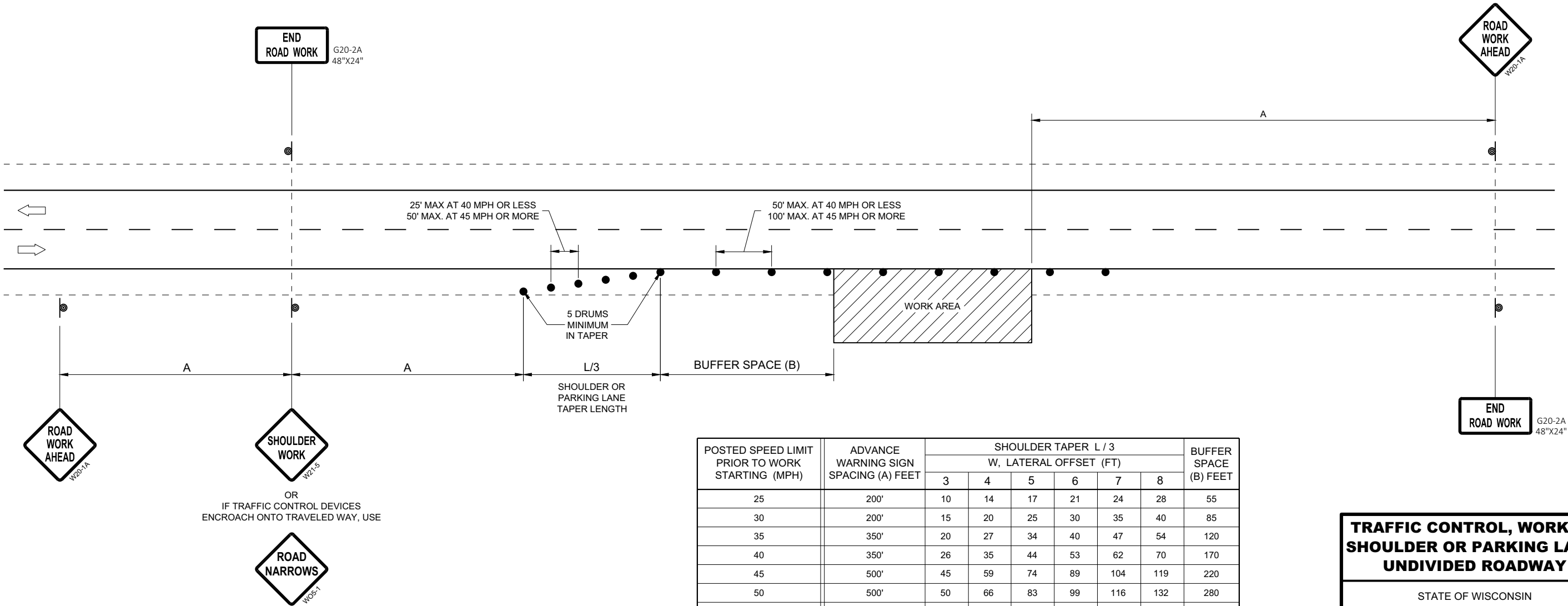
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

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



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER

FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

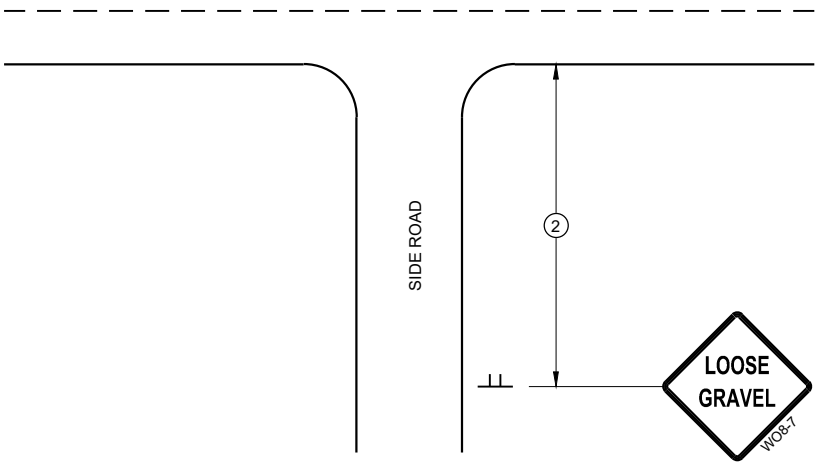
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

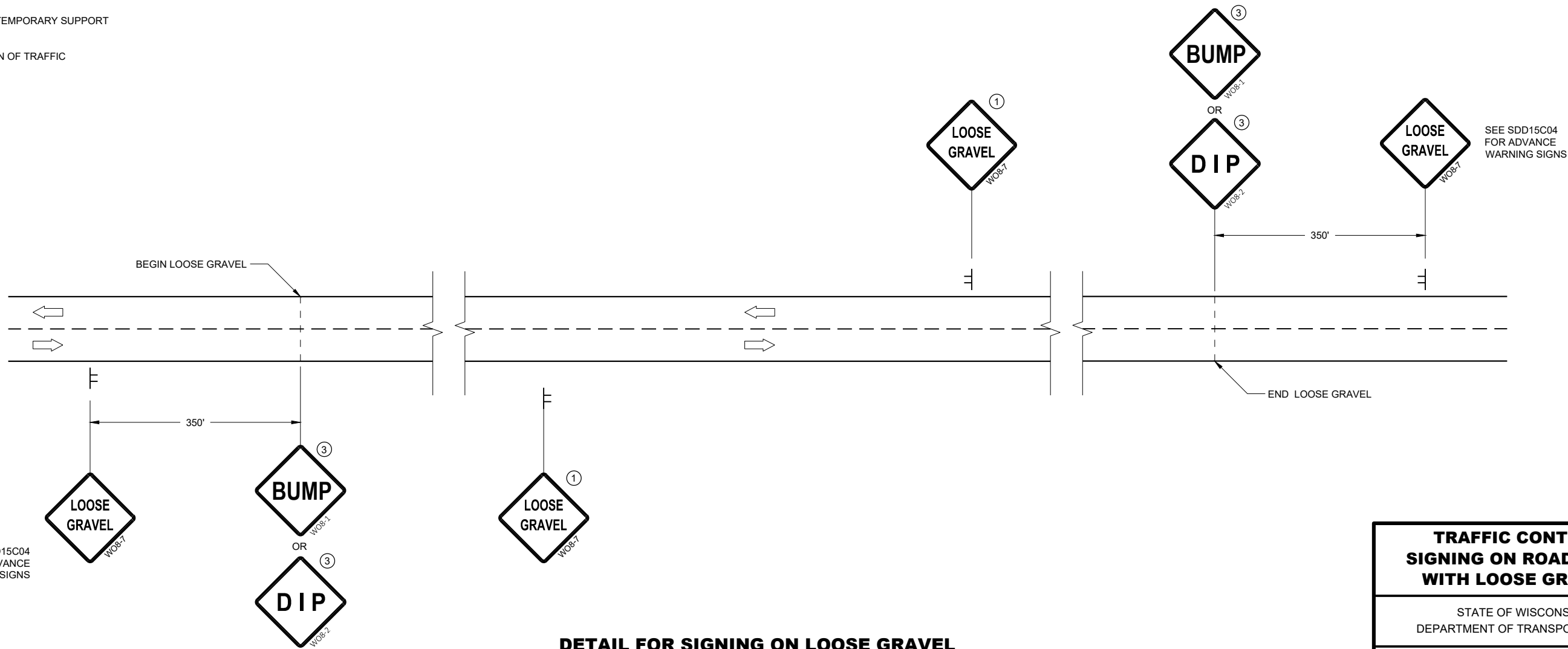
- 1 PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- 2 PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.
- 3 ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



DETAIL FOR SIGNING ON LOOSE GRAVEL
OR CHIP SEALED SURFACES

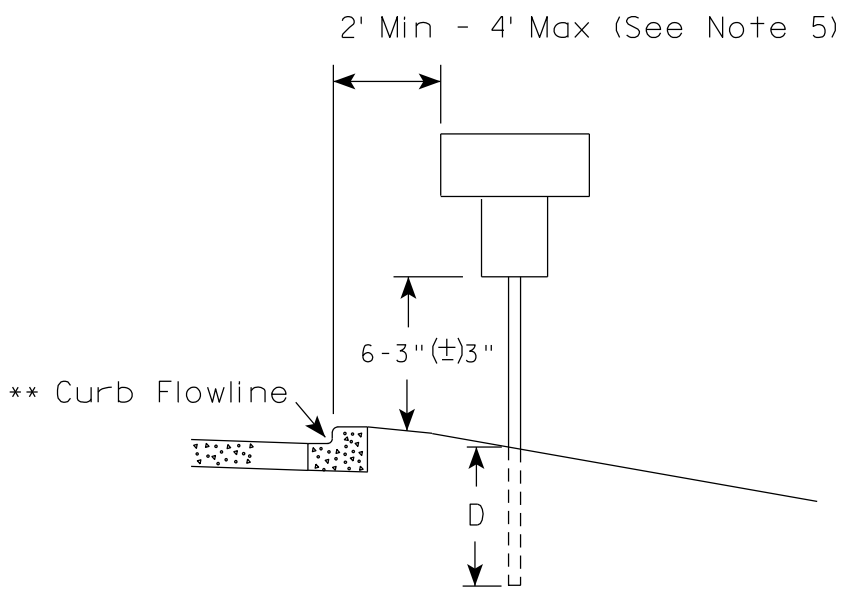
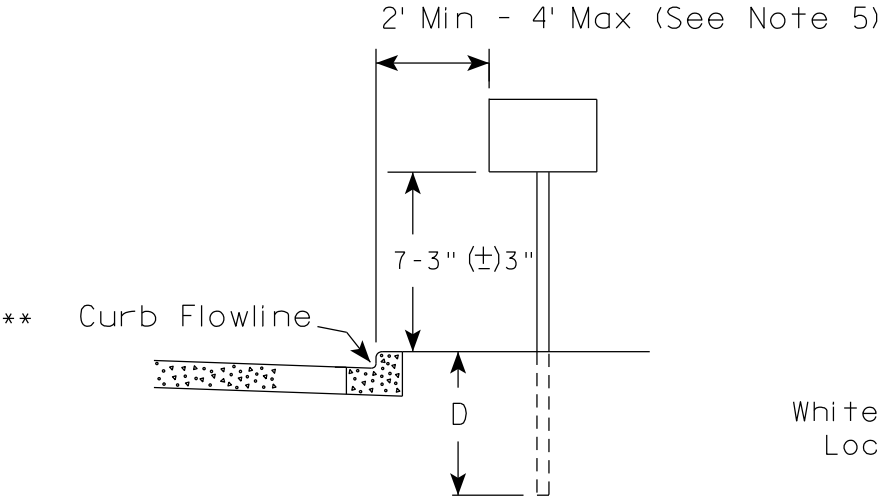
TRAFFIC CONTROL
SIGNING ON ROADWAYS
WITH LOOSE GRAVEL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

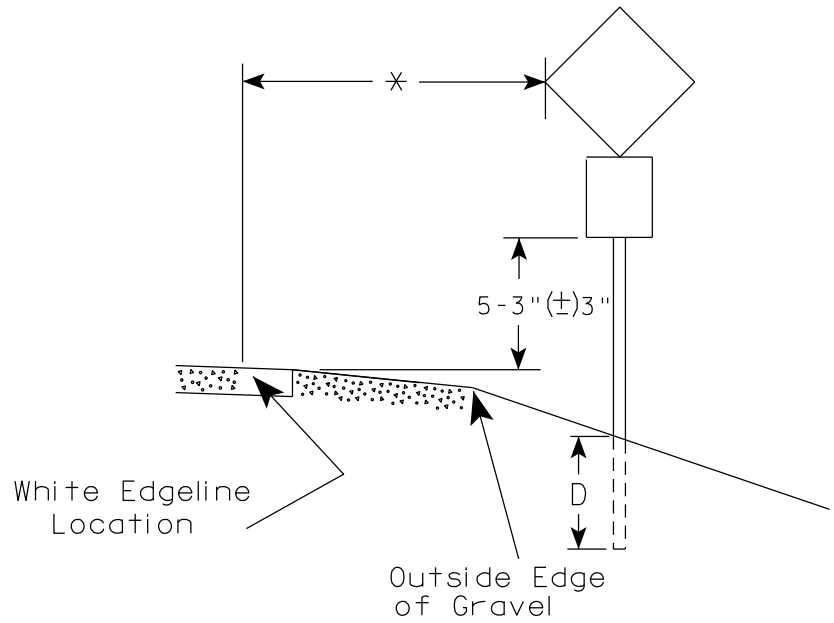
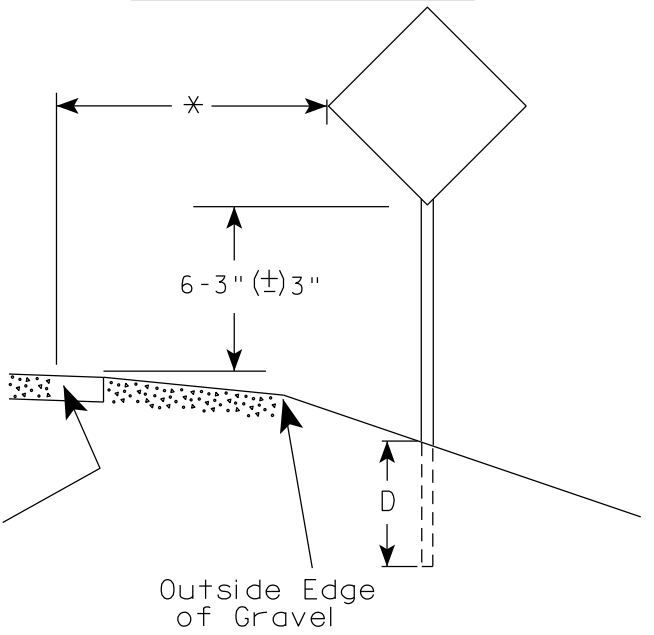
APPROVED
February 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 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" (±) 3".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

POST EMBEDMENT DEPTH

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

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

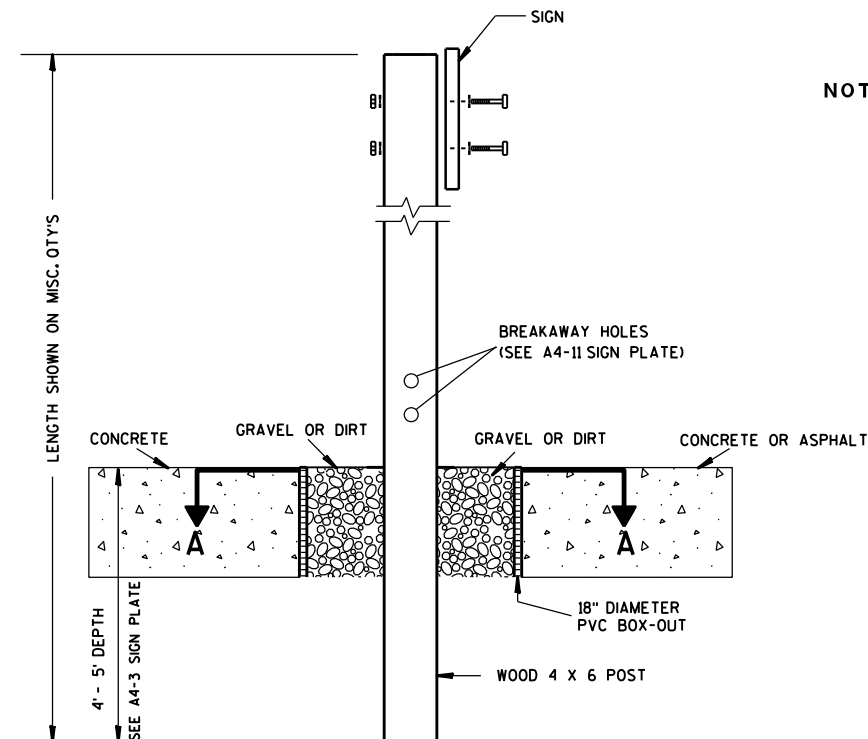
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

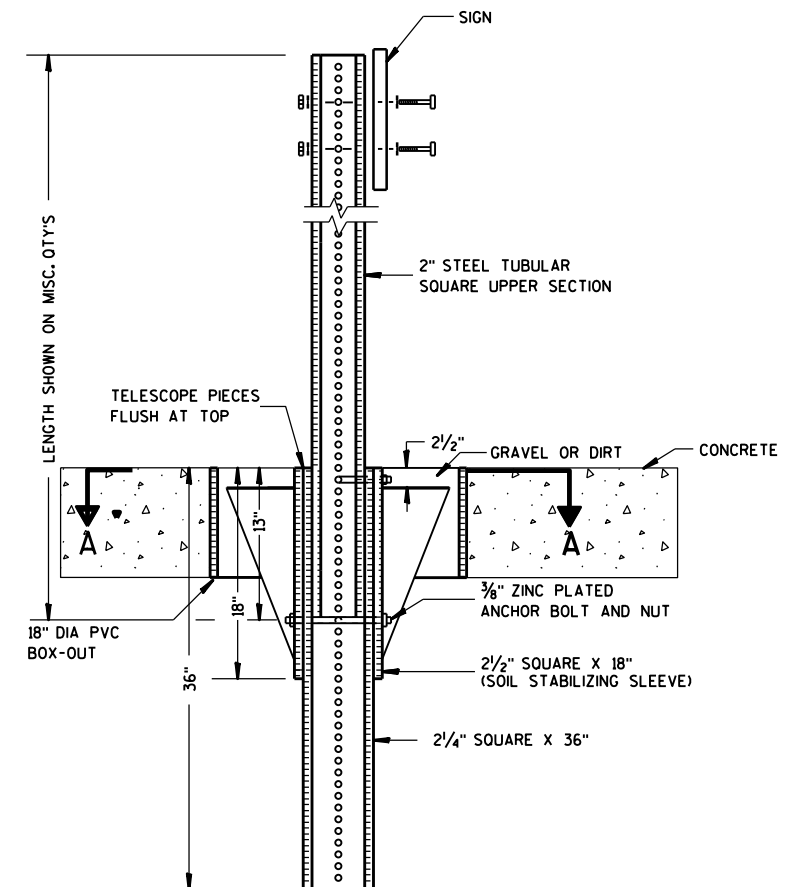
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

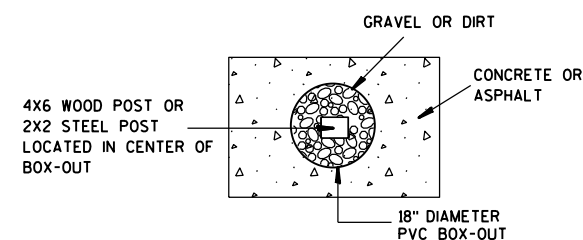
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

PROJECT NO:

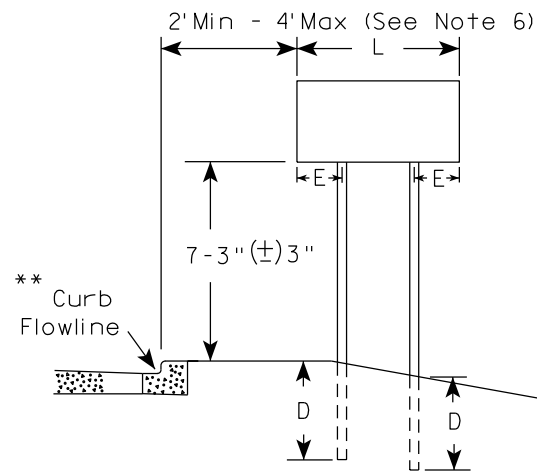
HWY:

COUNTY:

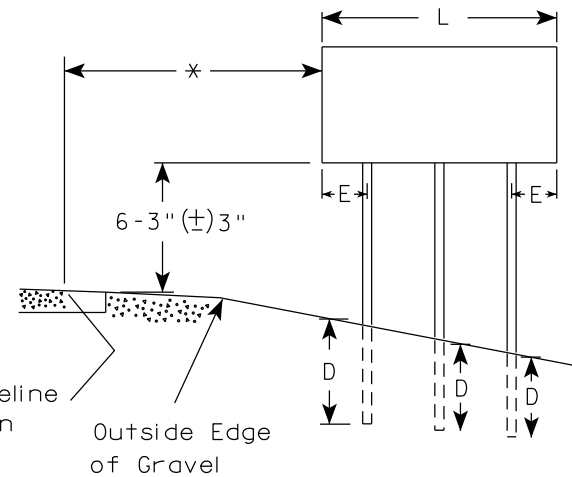
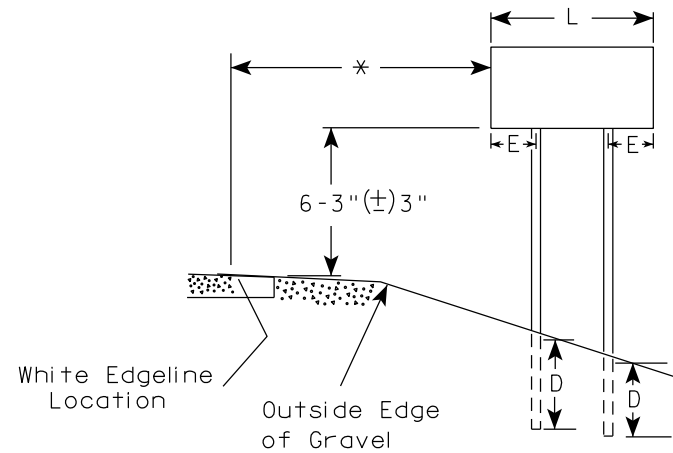
SHEET NO:

E

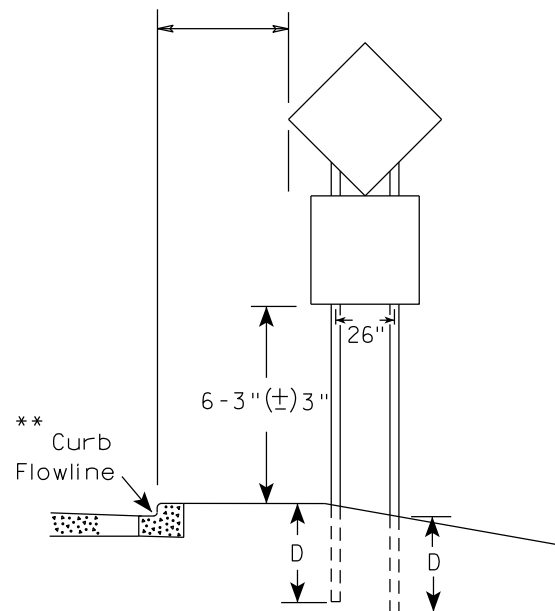
URBAN AREA



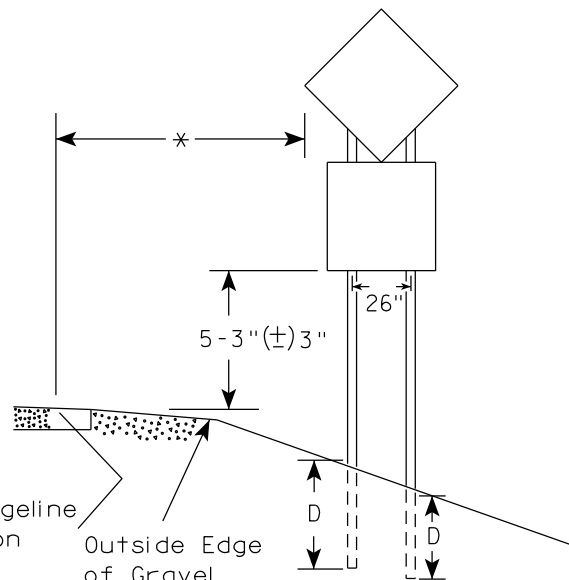
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

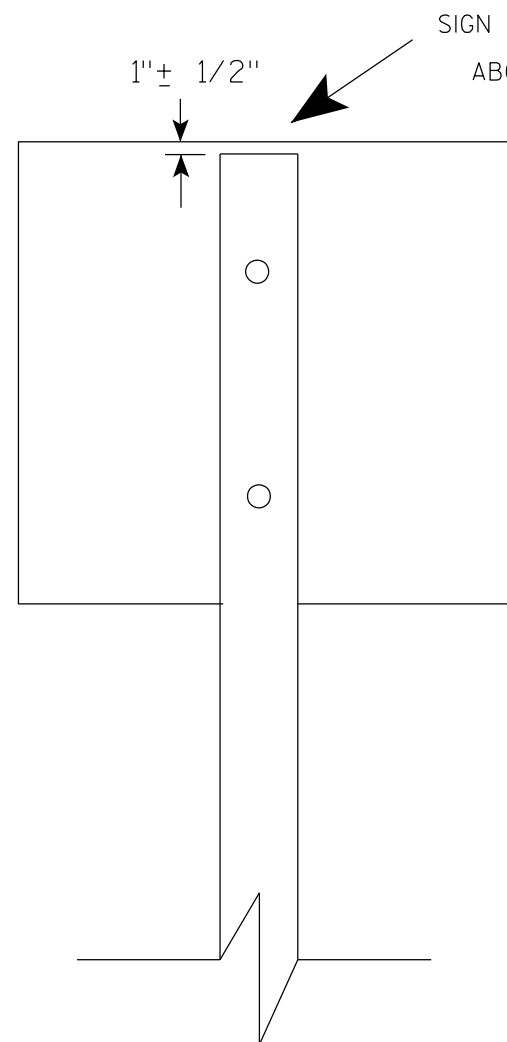
PROJECT NO:

HWY:

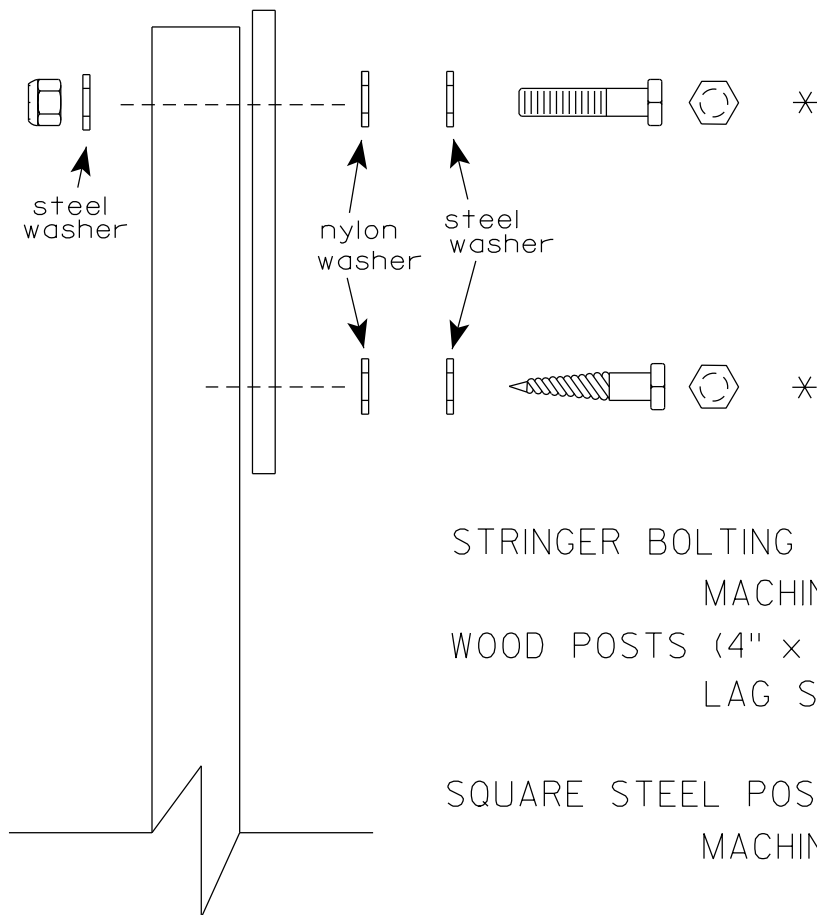
COUNTY:

SHEET NO:

E



SIGN SHALL BE MOUNTED TO PROJECT
ABOVE THE TOP OF THE POST



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

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

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

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

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

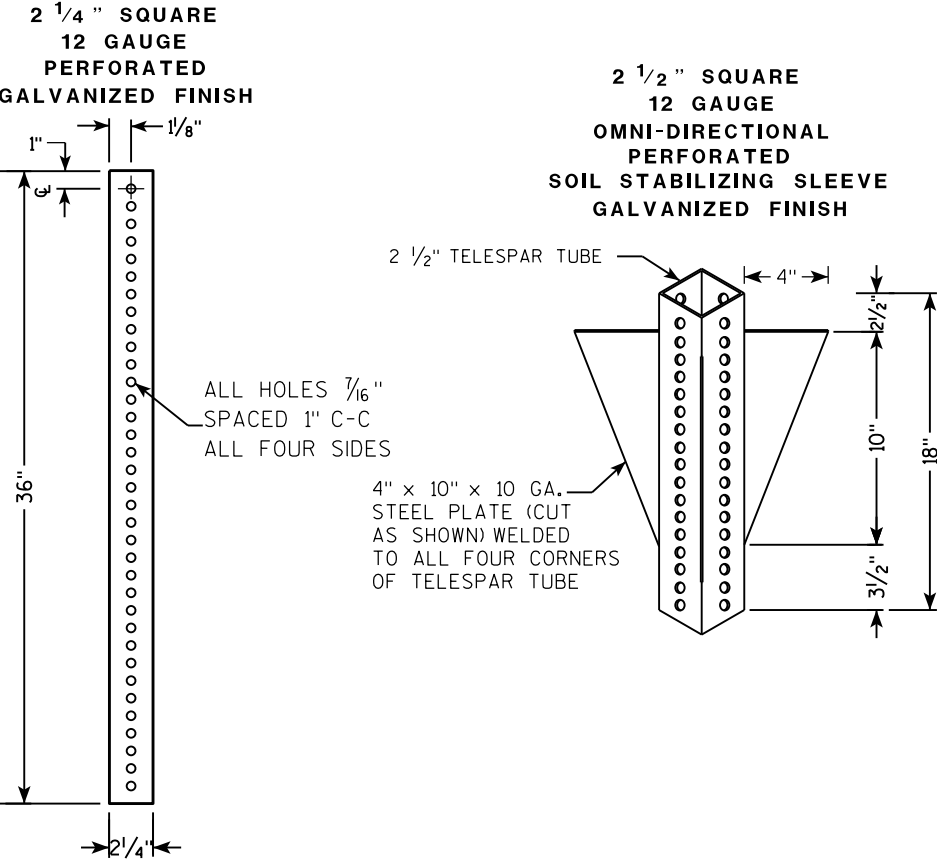
ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

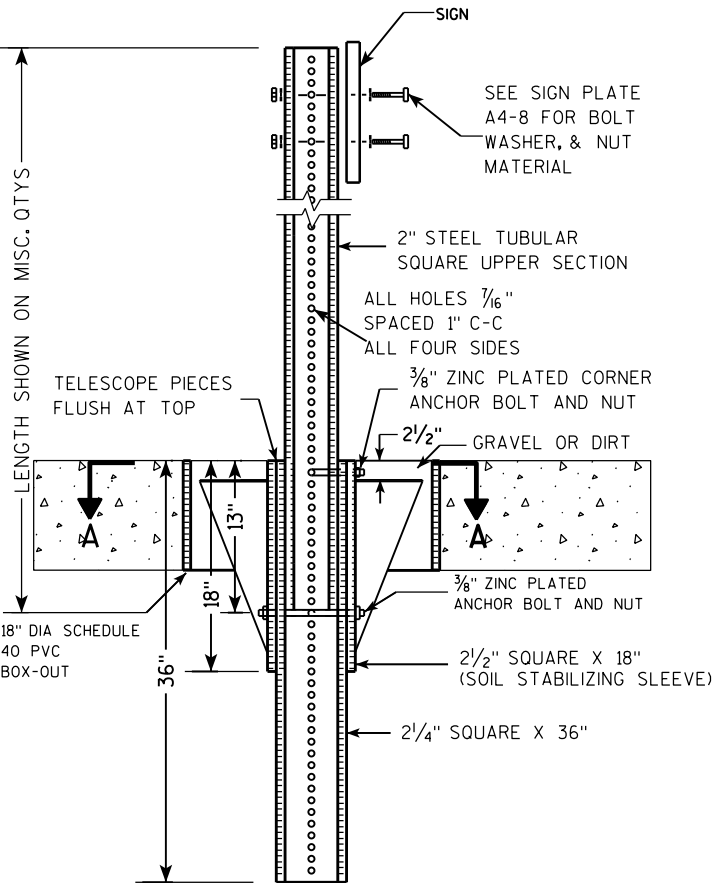
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/1/2020 PLATE NO. A4-8.9

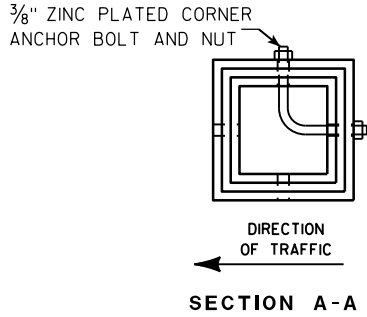
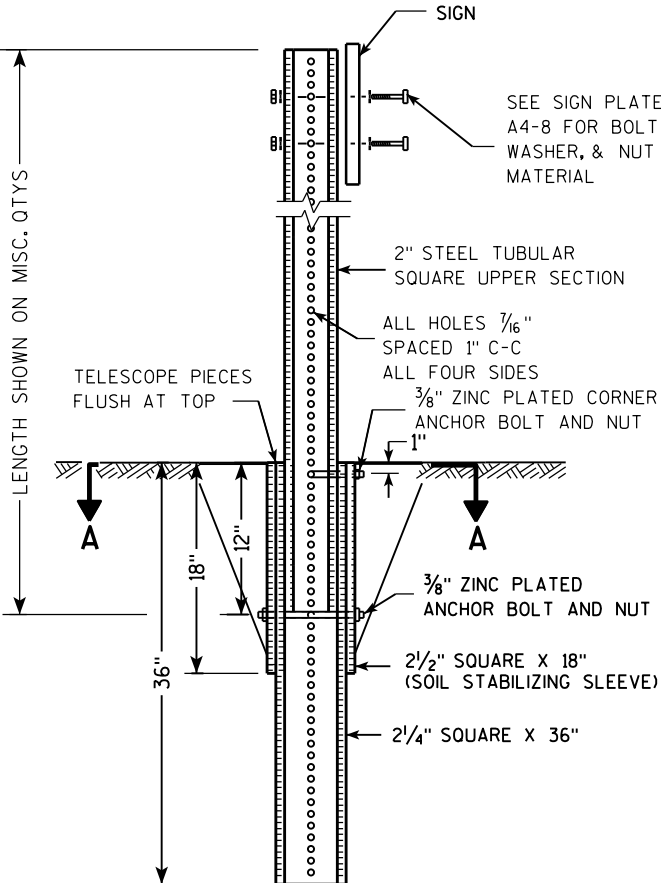
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

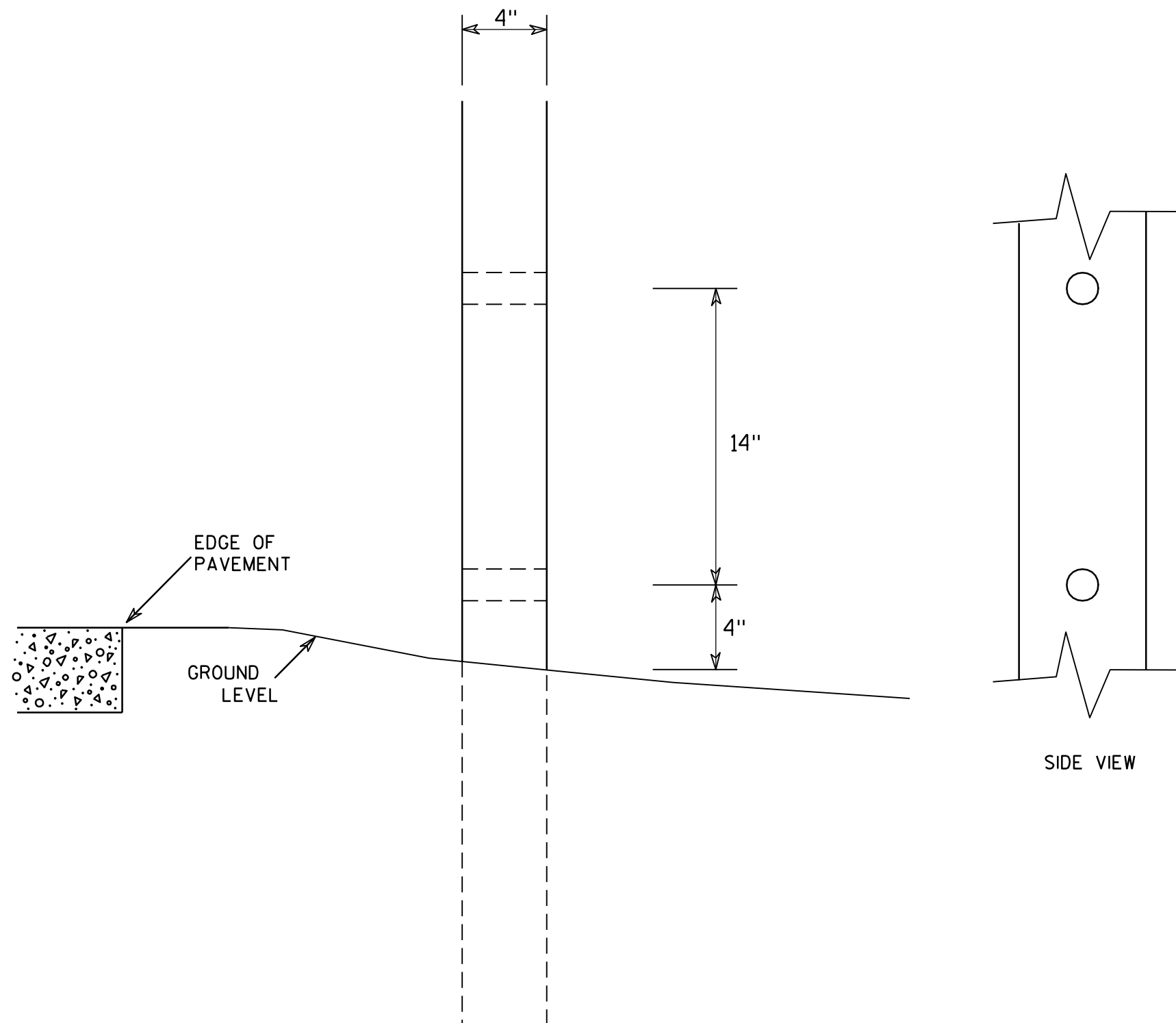
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

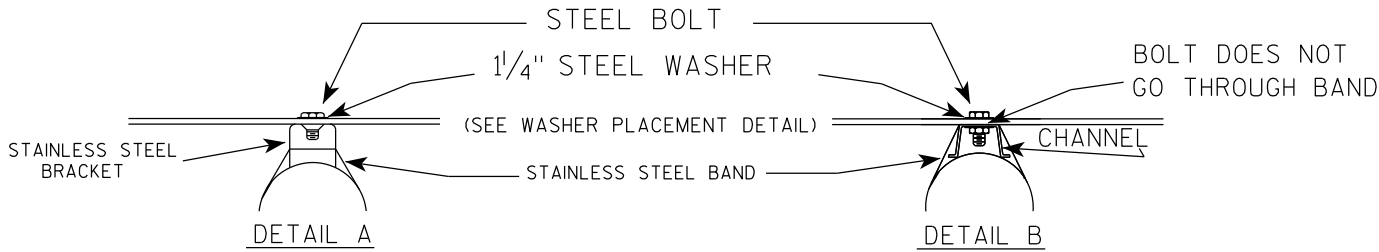
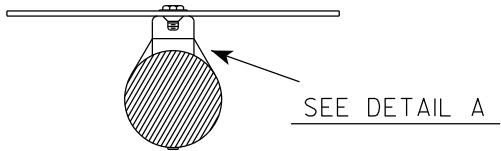
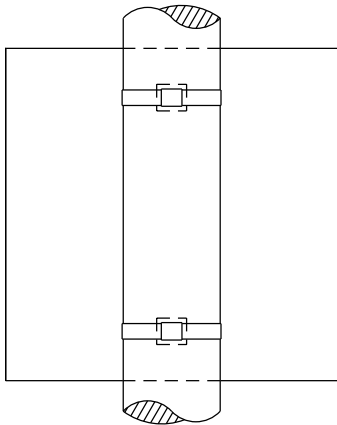
COUNTY:

SHEET NO:

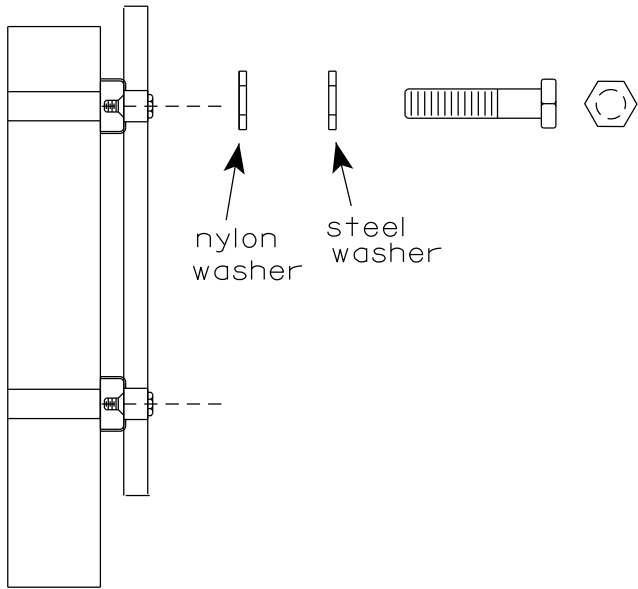
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

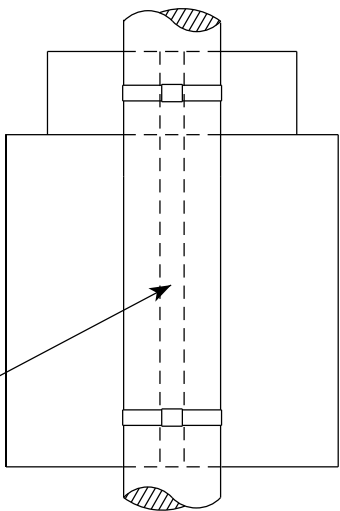


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

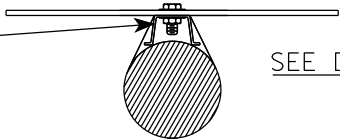
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



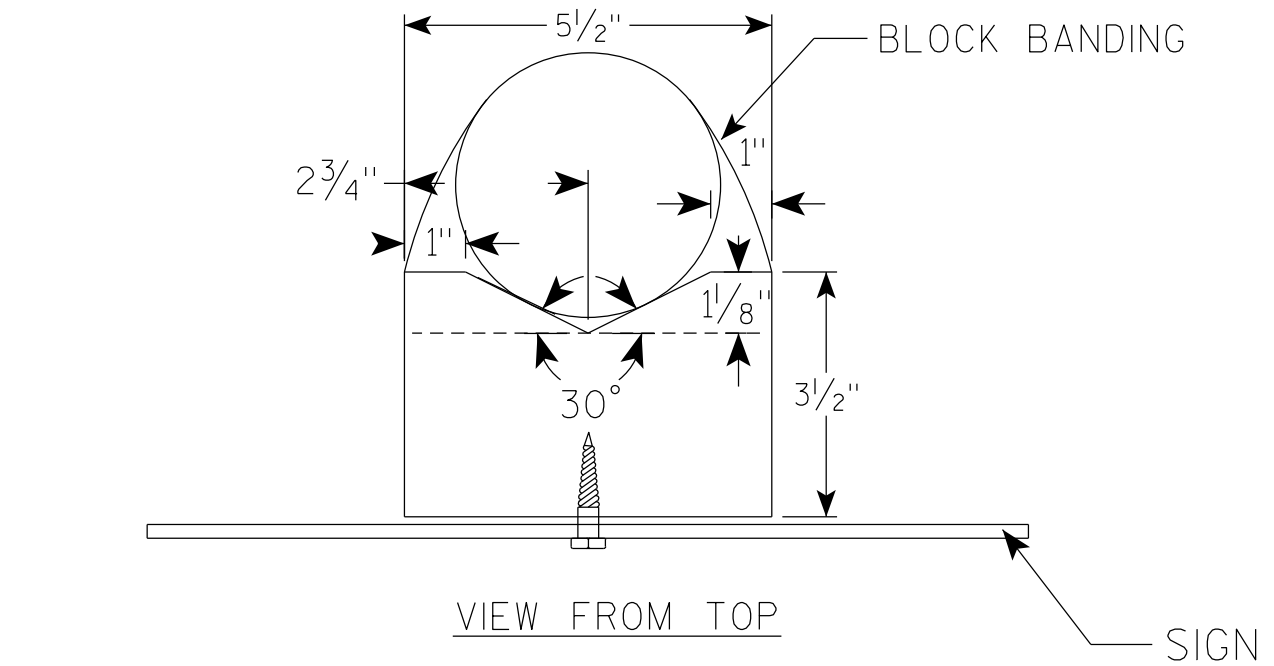
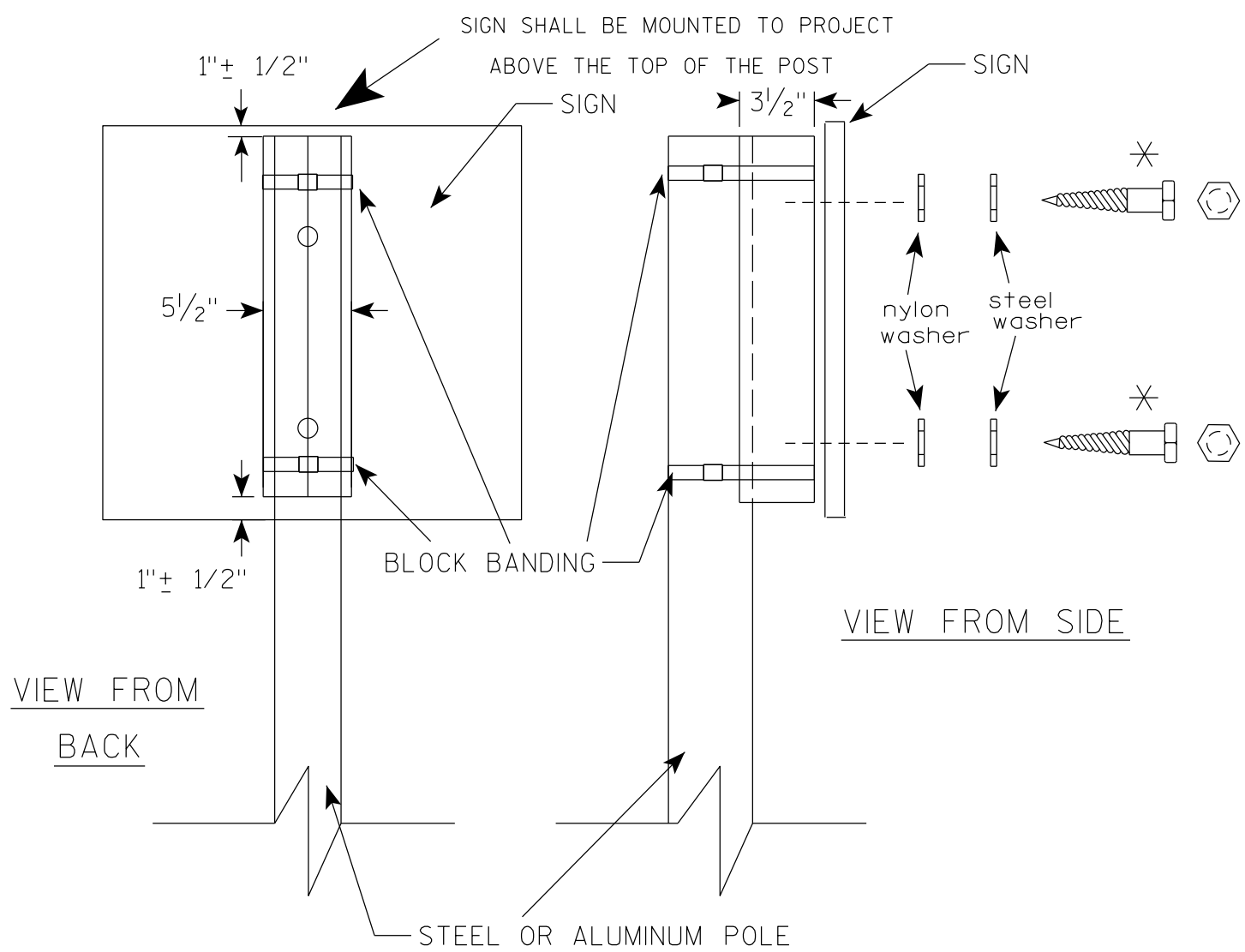
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



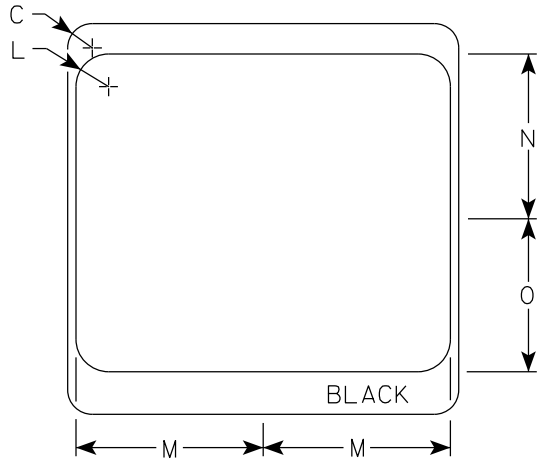
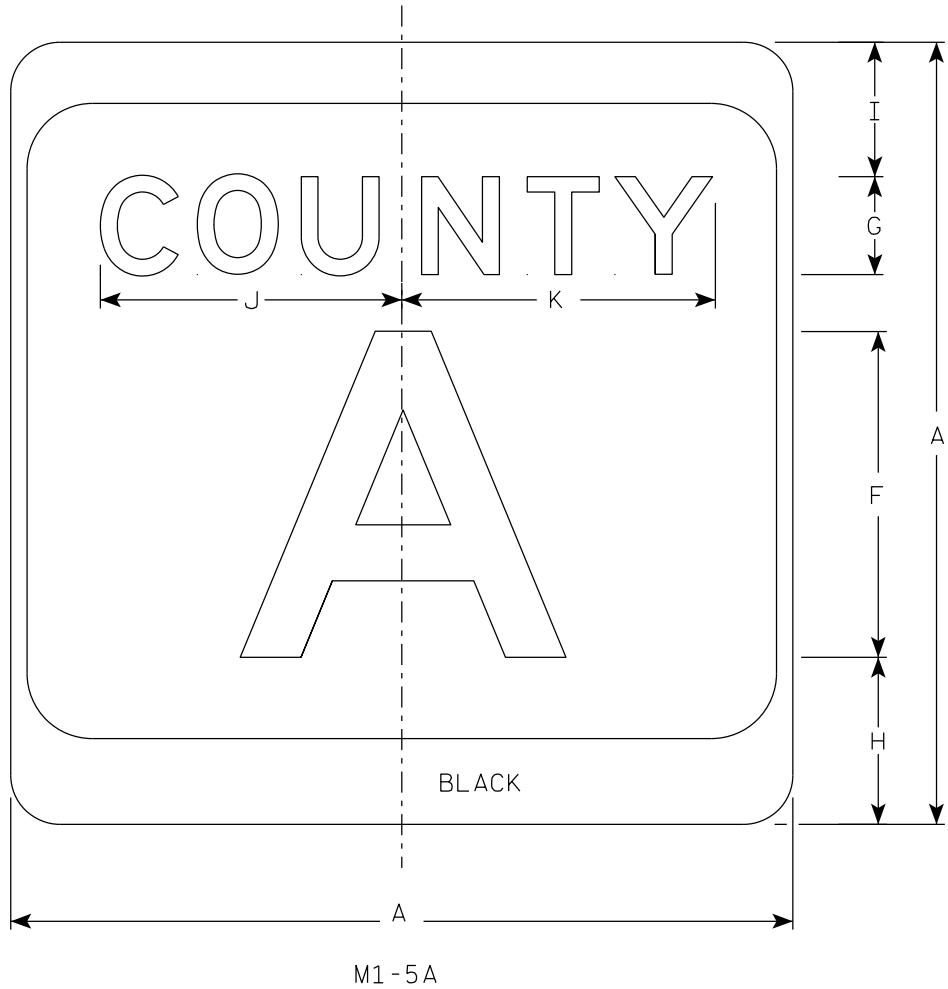
GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

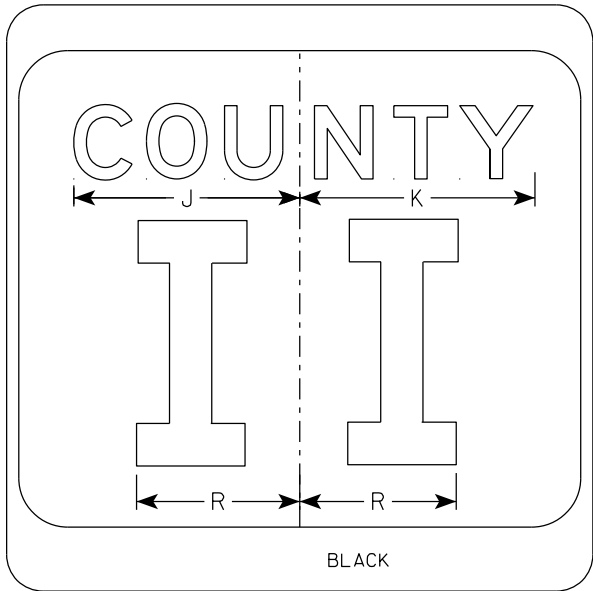
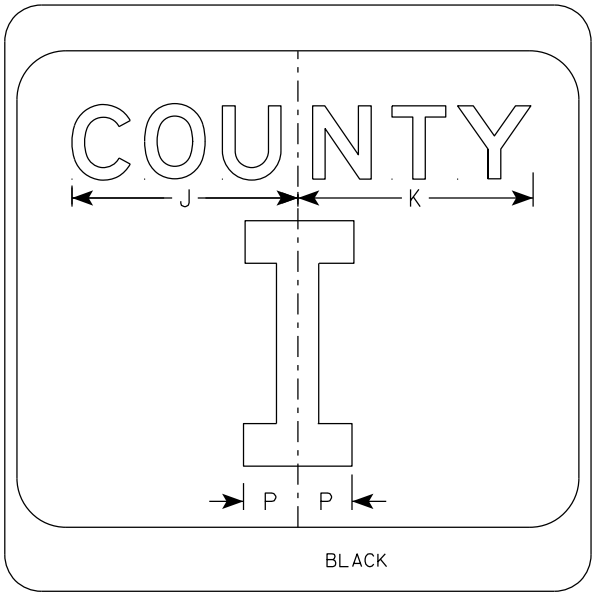
BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/19/2022	PLATE NO. A5-10.3

7



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White & Black
Message - Black
3. Message Series - see Note 4
4. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
5. Substitute appropriate letters & optically center to achieve proper balance.



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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
2M	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/8/2022 PLATE NO. M1-5A.9

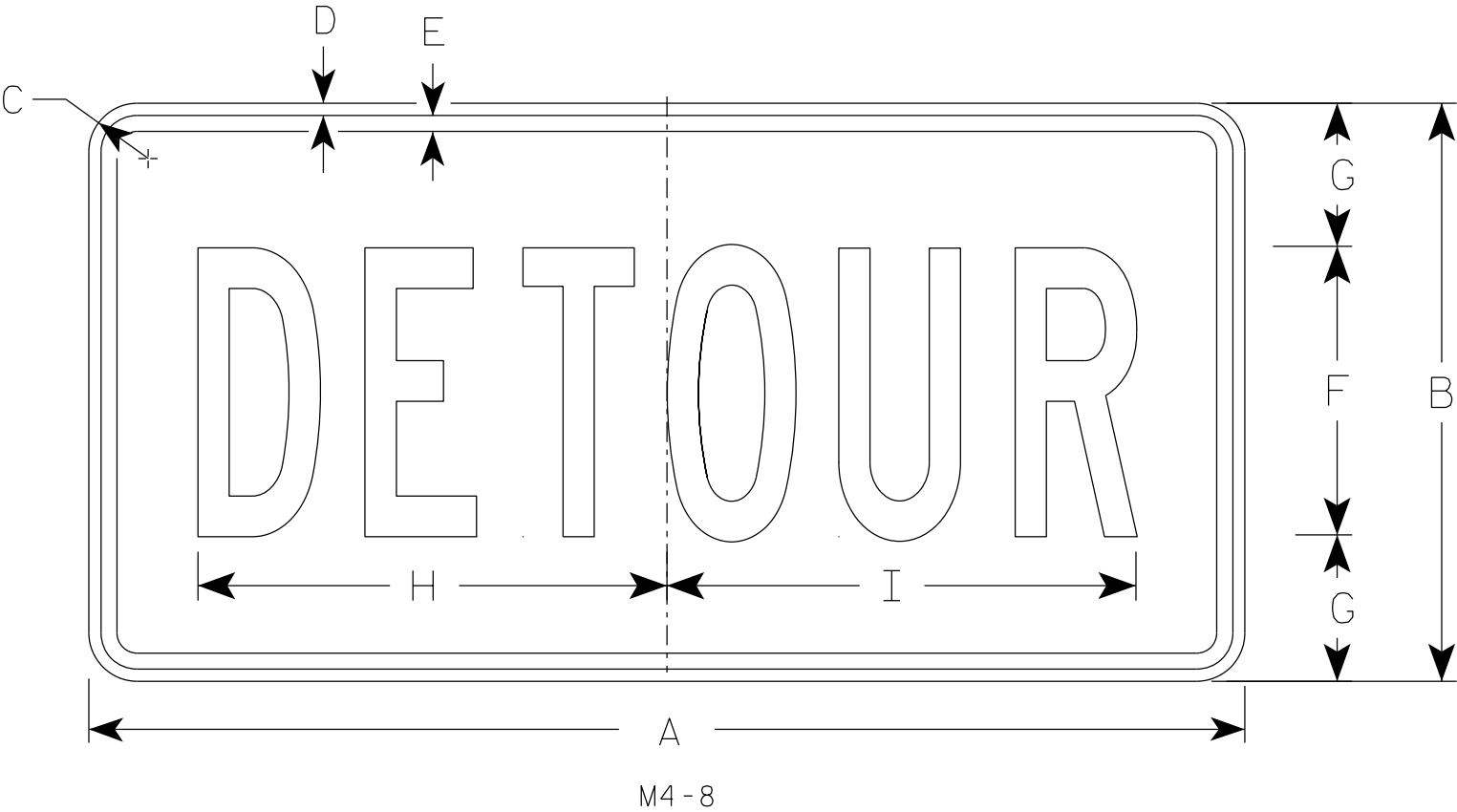
7

7

7

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - B
- 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.



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																											
2	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
2M	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
5	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5

STANDARD SIGN

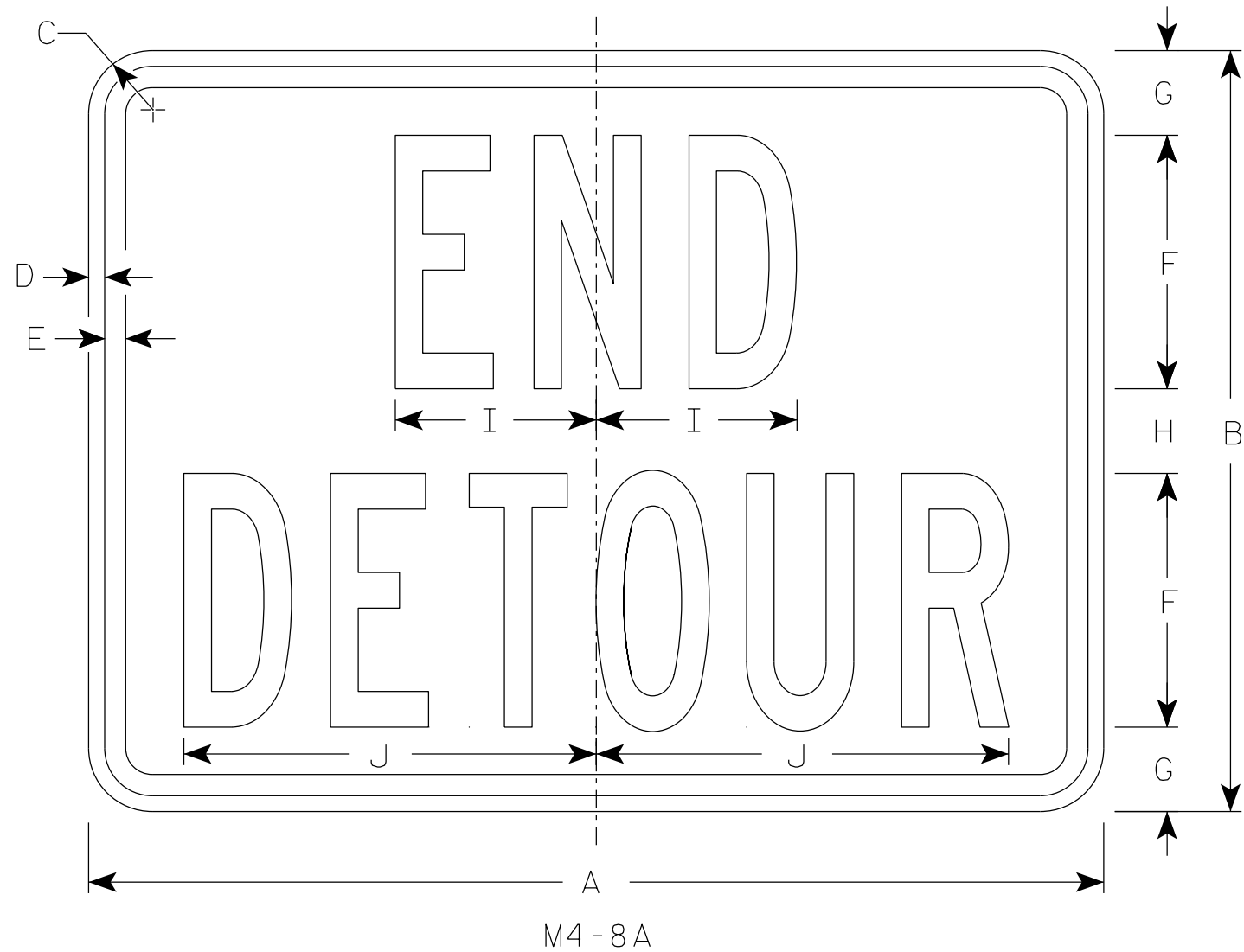
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8.4

7



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - B
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.

7

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																											
2	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
2M	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
5	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0

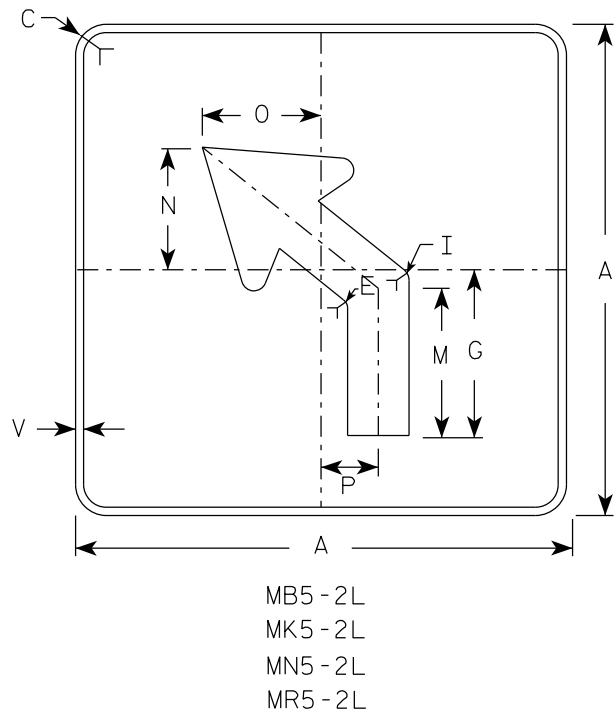
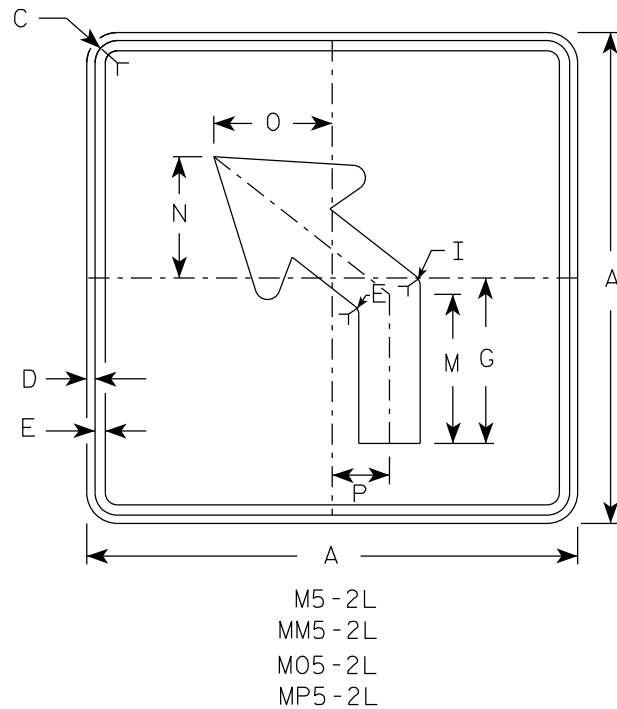
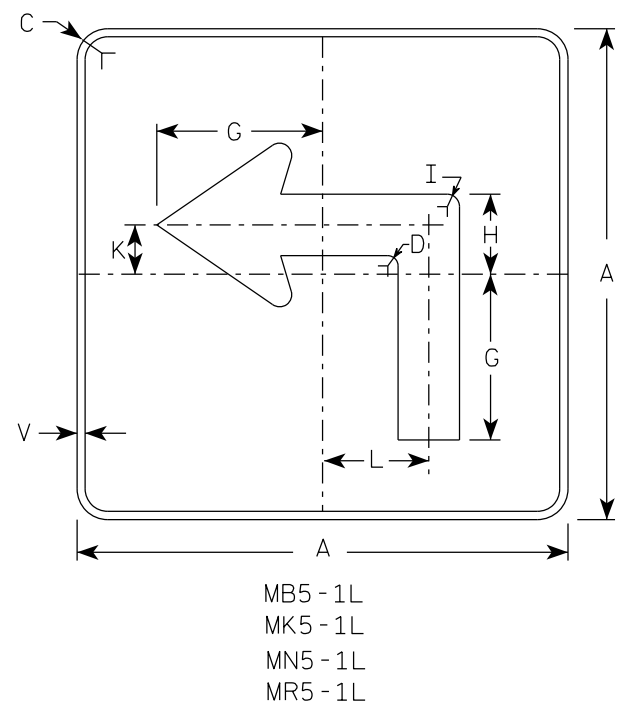
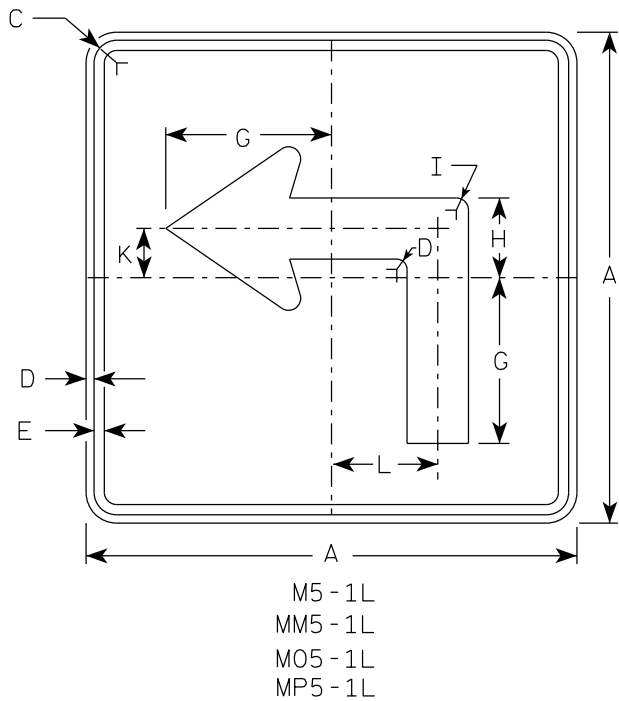
STANDARD SIGN

M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

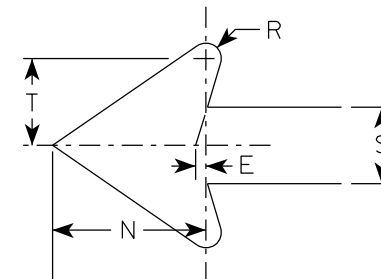
DATE 2/9/2023 PLATE NO. M4-8A.4



NOTES

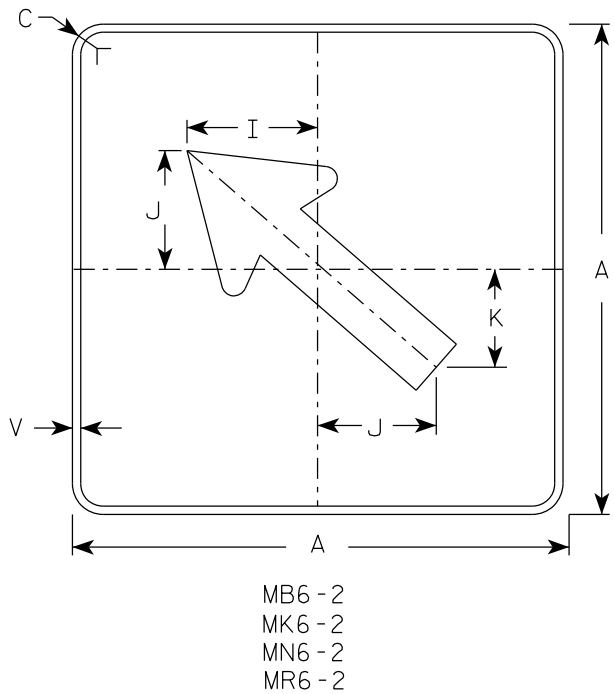
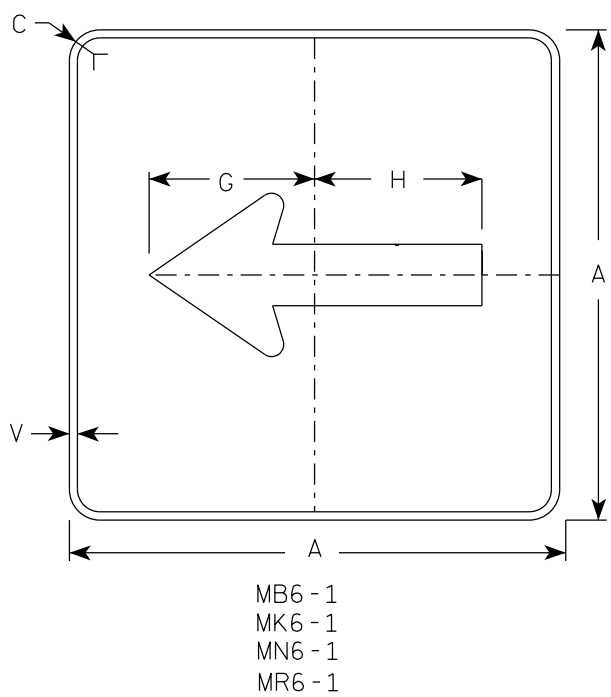
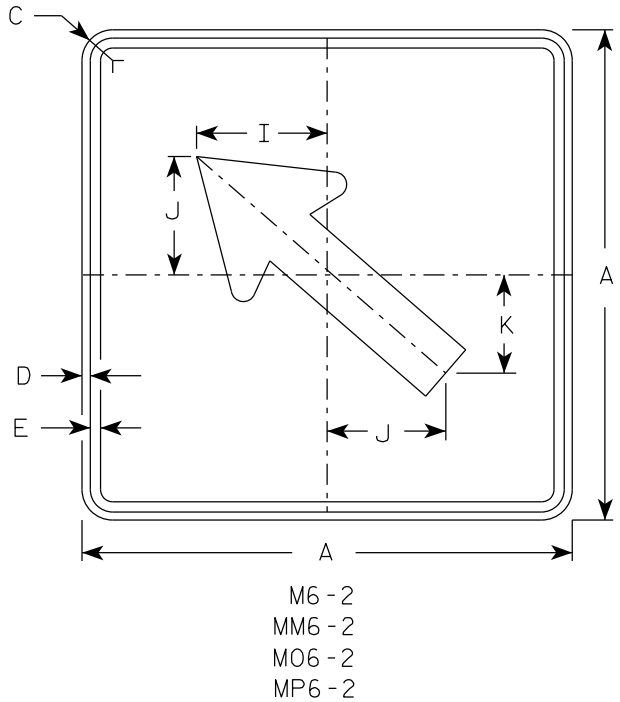
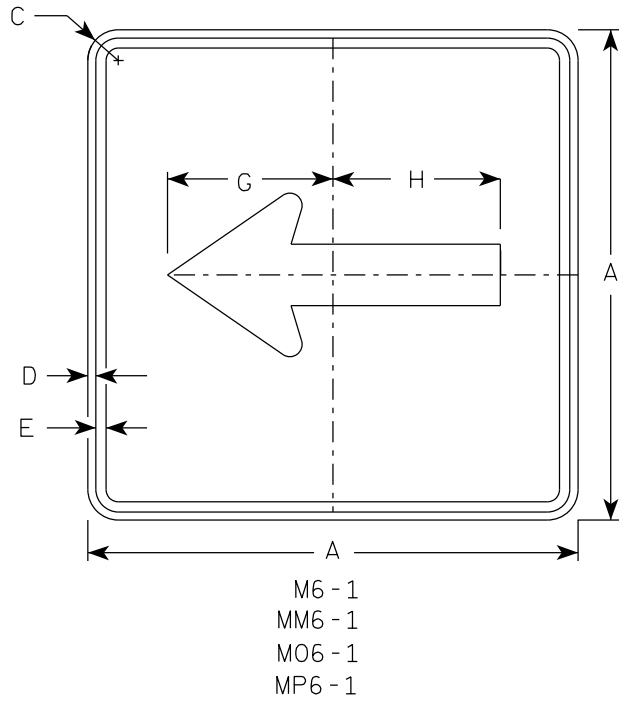
- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | | |
|-----------|-------|---|
| M5-1 and | M5-2 | Background - White |
| | | Message - Black |
| MB5-1 and | MB5-2 | Background - Blue |
| | | Message - White |
| MK5-1 and | MK5-2 | Background - Green |
| | | Message - White |
| MM5-1 and | MM5-2 | Background - White |
| | | Message - Green |
| MN5-1 and | MN5-2 | Background - Brown |
| | | Message - White |
| M05-1 and | M05-2 | Background - Orange - Type F Reflective |
| | | Message - Black |
| MP5-1 and | MP5-2 | Background - White |
| | | Message - Blue |
| MR5-1 and | MR5-2 | Background - Brown |
| | | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

ARROW DETAIL

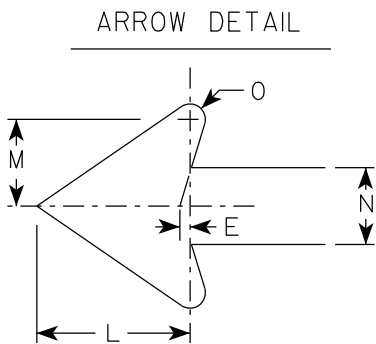


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
4	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
5	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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- NOTES**
- Signs are Type II - Type H Reflective except as Shown
 - Color:
Background - See note 4
Message - See note 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.
 - M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow



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																												
2S	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2						3.06
2M	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2						3.06
3	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2						6.25
4	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2						6.25
5	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2						6.25

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

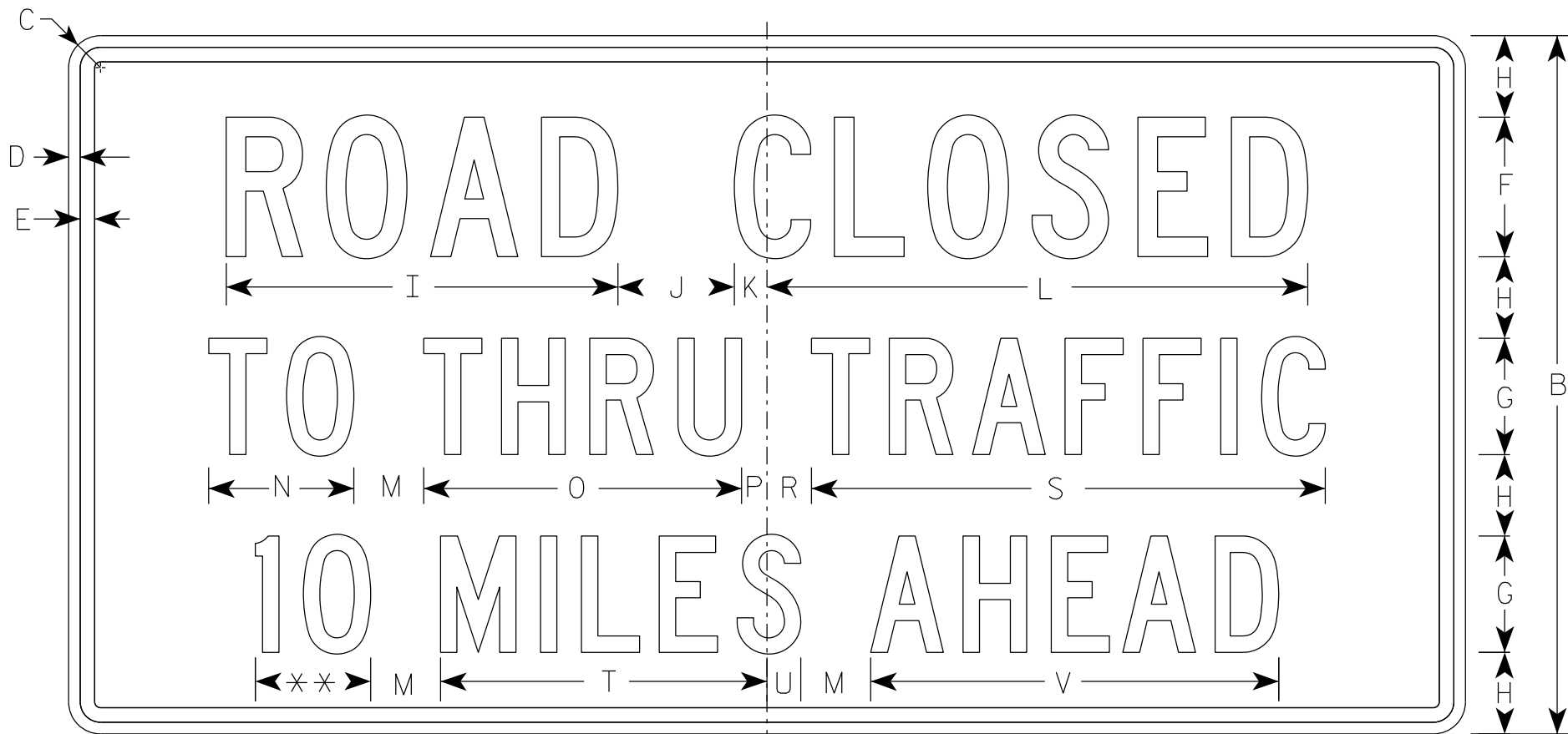
STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

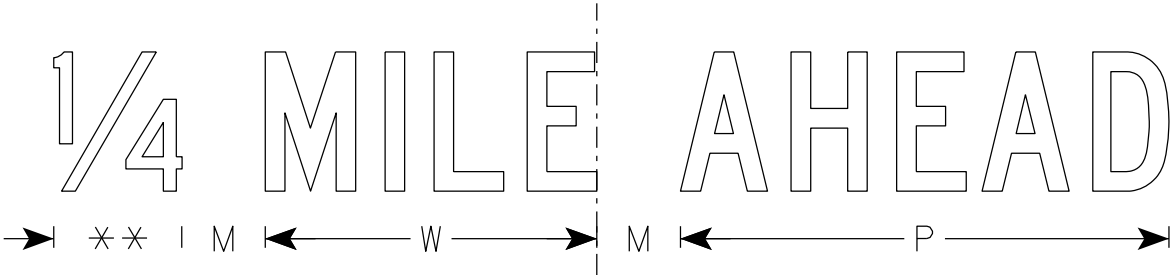
DATE 2/13/2023 PLATE NO. M6-1.16

7



R11-3

** See Note 5



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - C
- 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 to nearest quarter mile and optically adjust spacing to achieve proper balance.

7

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	36	18	1 1/2	3/8	3/8	4	3	2	11 1/4	3	1 1/8	15 3/8	2	3 3/4	8 1/4	5/8		1 3/8	13 1/4	8 3/8	7/8	10 1/2	7 1/8				4.5
2S	60	30	1 7/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5
2M	60	30	1 7/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5
3																											
4																											
5																											

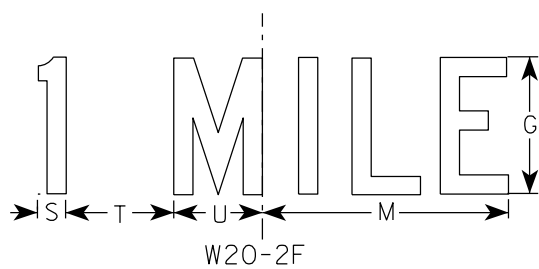
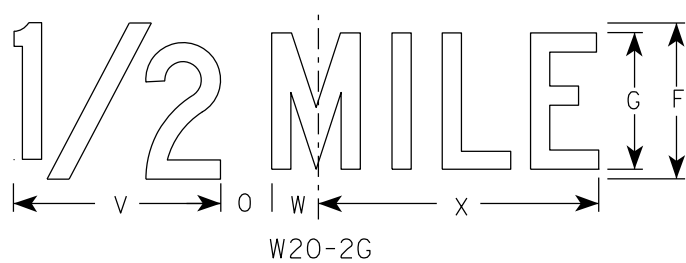
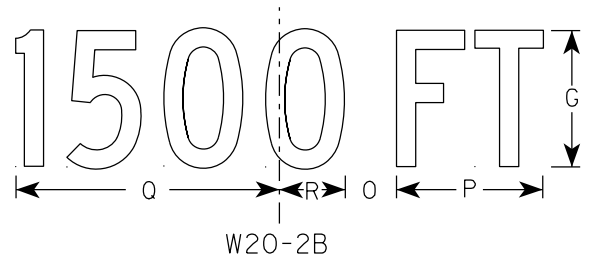
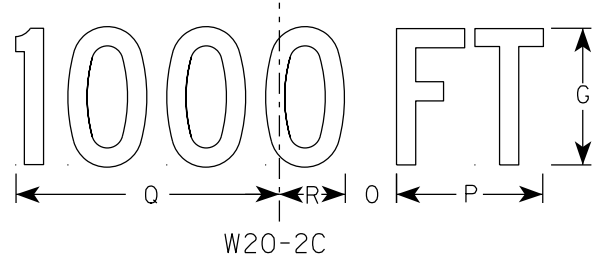
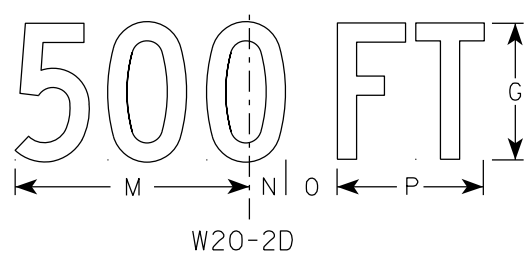
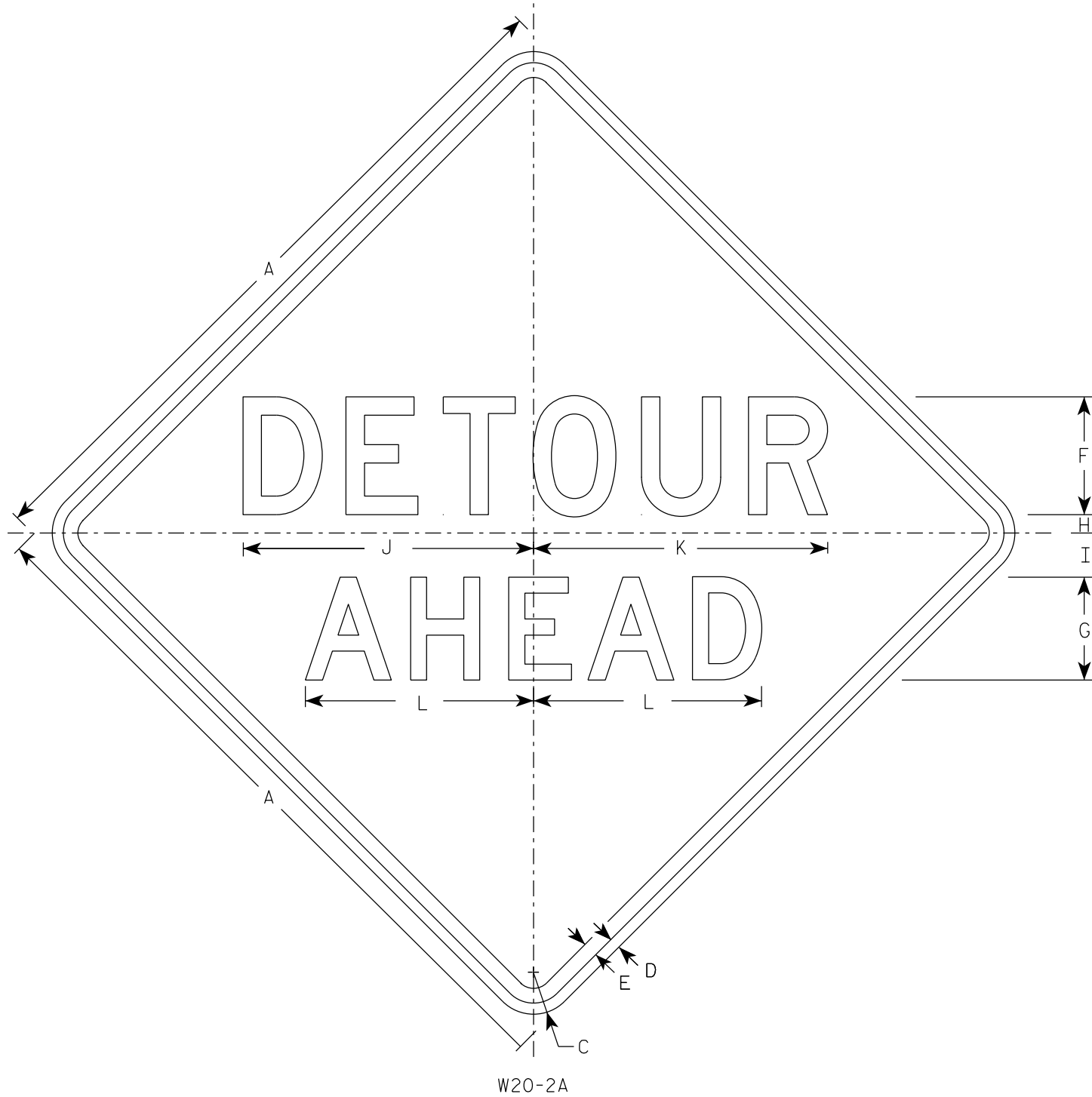
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

- Sign is Type II - Type F Reflective
- Color:
Background - Orange
Message - Black
- Message Series - See note 5
- 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.
- Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

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	36		2 1/4	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN W20-2A,B,C,D,F & G	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 1/10/2024	PLATE NO. W20-2.7

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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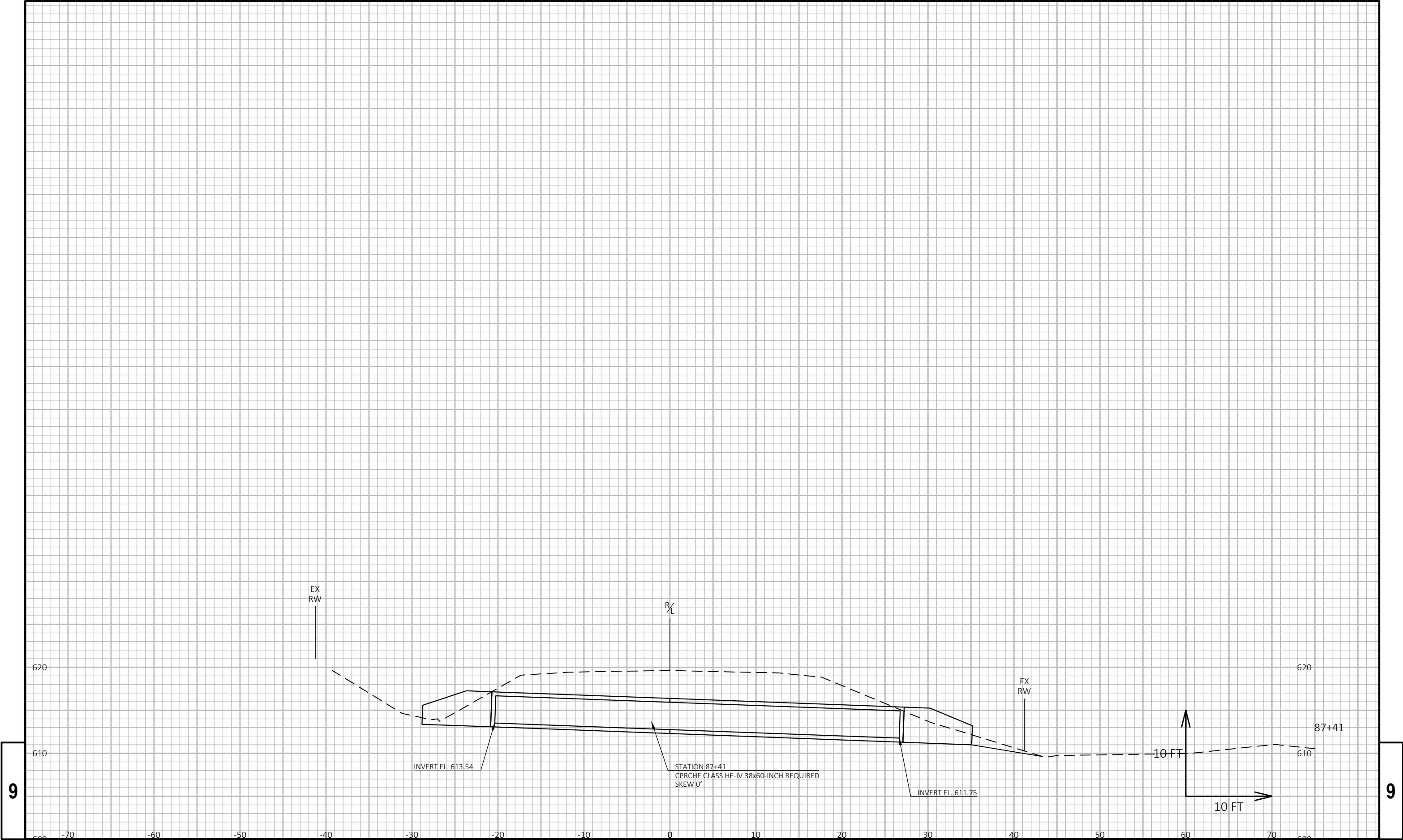
DIVISION 1 - CTH C - GUARD RAIL							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
	CUT	FILL	CUT	FILL	CUT 1.00 NOTE 1	EXPANDED FILL 1.25 NOTE 1	MASS ORDNATE NOTE 8
101+27.77	4.04	6.36	0	0	0	0	0
101+50.00	4.04	9.76	3	7	3	9	-6
102+00.00	4.32	13.34	8	21	11	35	-24
102+32.17	7.86	6.42	7	12	18	50	-32
102+50.00	7.48	11.57	5	6	23	58	-35
103+00.00	8.64	11.99	15	22	38	85	-47
103+50.00	7.93	0.06	15	11	53	99	-46
104+00.00	8.95	0.11	16	0	69	99	-30
104+50.00	8.58	0.17	16	0	85	99	-14
105+00.00	11.11	0.11	18	0	103	99	4
105+50.00	7.58	0.96	17	1	120	100	20
106+00.00	11.58	3.21	18	4	138	105	33
106+50.00	7.36	5.91	18	8	156	115	41
107+00.00	7.47	4.46	14	10	170	128	43
107+16.13	7.25	4.92	4	3	174	131	43
107+50.00	3.03	15.04	6	13	180	148	33
108+00.00	2.64	11.38	5	24	185	178	8
108+08.38	2.70	9.02	1	3	186	181	5

DIVISION 1 - CEDAR VALLEY ROAD							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
	CUT	FILL	CUT	FILL	CUT 1.00 NOTE 1	EXPANDED FILL 1.25 NOTE 1	MASS ORDNATE NOTE 8
60+50.00	107.69	0.42	0	0	0	0	0
60+75.00	65.05	0.00	80	0	80	0	80
60+78.89	60.34	0.00	9	0	89	0	89

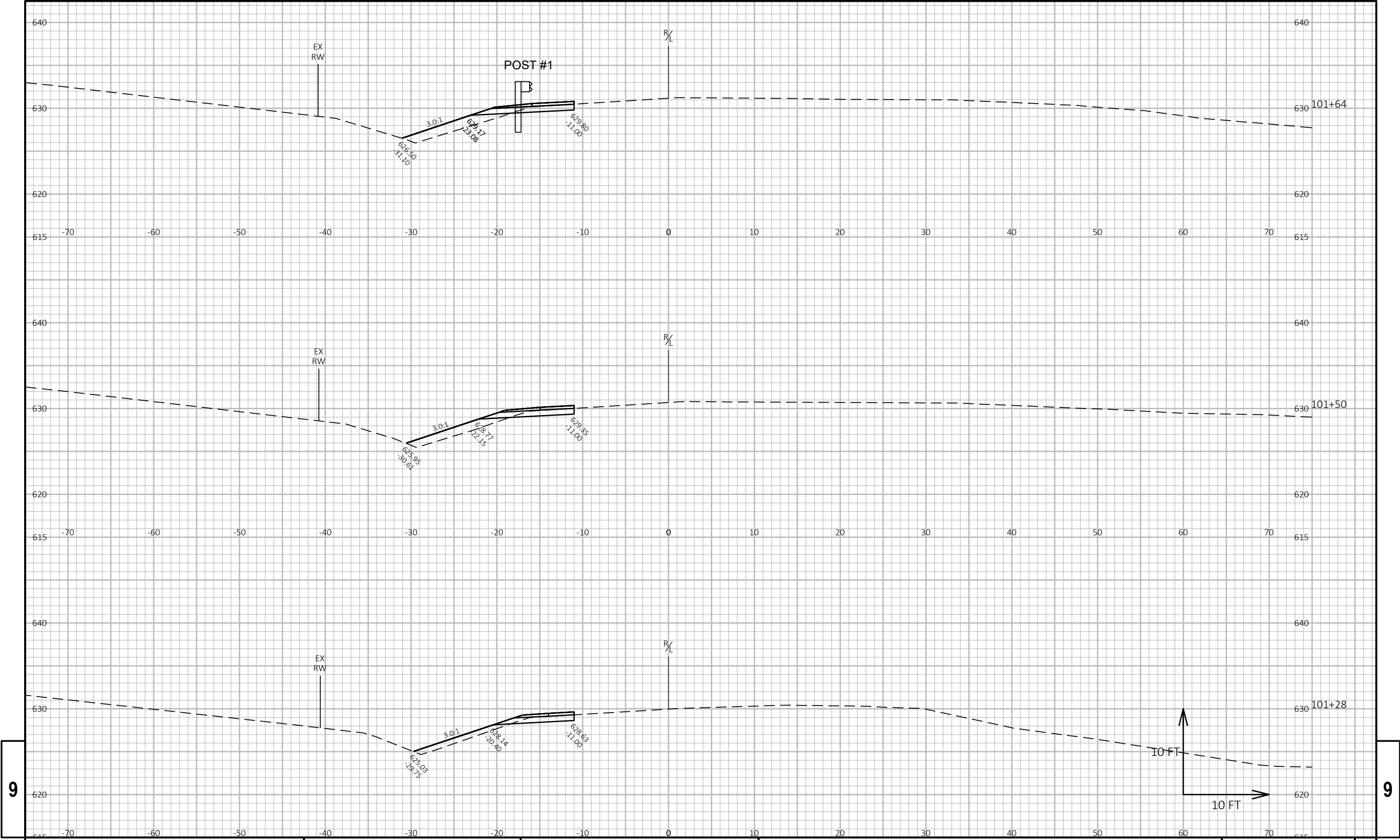
DIVISION 1 - CTH B							
STATION	AREA (SF)		ENTAL VOL (CY) (UNAD		CUMULATIVE VOL (CY)		
	CUT	FILL	CUT	FILL	CUT 1.00 NOTE 1	EXPANDED FILL 1.25 NOTE 1	MASS ORDNATE NOTE 8
49+00.00	65.41	0.00	0	0	0	0	0
49+25.00	79.27	0.00	67	0	67	0	67
49+50.00	125.70	0.00	95	0	162	0	162

DIVISION 1 - CTH C							
STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
	CUT	FILL	CUT	FILL	CUT 1.00 NOTE 1	EXPANDED FILL 1.25 NOTE 1	MASS ORDNATE NOTE 8
127+75.00	21.25	0.00	0	0	0	0	0
128+00.00	34.93	0.67	26	0	26	0	26
128+50.00	44.24	0.00	73	1	99	1	98
129+00.00	54.97	0.00	92	0	191	1	190
129+50.00	67.43	0.00	113	0	304	1	303
130+00.00	88.04	0.00	144	0	448	1	447
130+50.00	82.22	0.00	158	0	606	1	605
131+00.00	78.98	0.00	149	0	755	1	754
131+50.00	70.12	0.02	138	0	893	1	892
132+00.00	68.26	4.66	128	4	1021	6	1015
132+50.00	65.22	3.72	124	8	1145	16	1129
133+00.00	75.33	0.65	130	4	1275	21	1254
133+50.00	120.09	0.00	181	1	1456	23	1434
134+00.00	172.96	0.00	271	0	1727	23	1705
134+50.00	75.88	0.00	230	0	1957	23	1935
135+00.00	93.56	0.00	157	0	2114	23	2092
135+50.00	102.49	0.00	182	0	2296	23	2274
136+00.00	128.52	0.00	214	0	2510	23	2488
136+50.00	149.40	0.00	257	0	2767	23	2745
137+00.00	160.01	0.00	286	0	3053	23	3031
137+50.00	166.03	0.00	302	0	3355	23	3333
138+00.00	178.30	0.00	319	0	3674	23	3652
138+50.00	197.51	0.00	348	0	4022	23	4000
139+00.00	208.11	0.00	376	0	4398	23	4376
139+50.00	187.08	0.00	366	0	4764	23	4742
140+00.00	188.89	0.00	348	0	5112	23	5090
140+50.00	148.83	0.00	313	0	5425	23	5403
141+00.00	117.87	0.00	247	0	5672	23	5650
141+50.00	92.82	0.00	195	0	5867	23	5845
142+00.00	72.50	0.00	153	0	6020	23	5998
142+50.00	68.03	0.11	130	0	6150	23	6128
143+00.00	61.90	0.61	120	1	6270	24	6246
143+50.00	57.09	1.01	110	2	6380	26	6354
144+00.00	51.27	0.63	100	2	6480	29	6451
144+50.00	42.94	0.47	87	1	6567	30	6537
145+00.00	37.35	0.87	74	1	6641	31	6610

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDNATE	CUT - FILL * FILL FACTOR



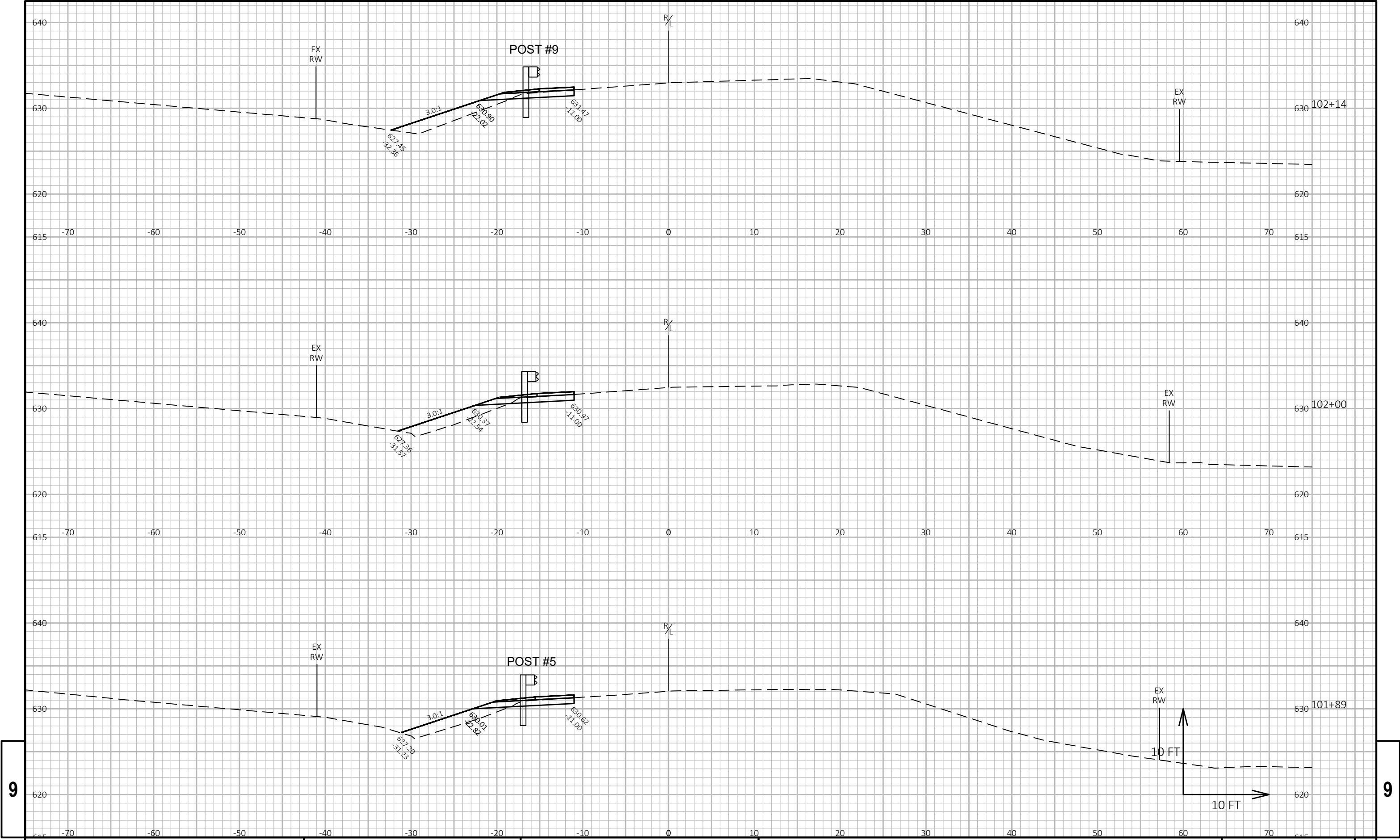
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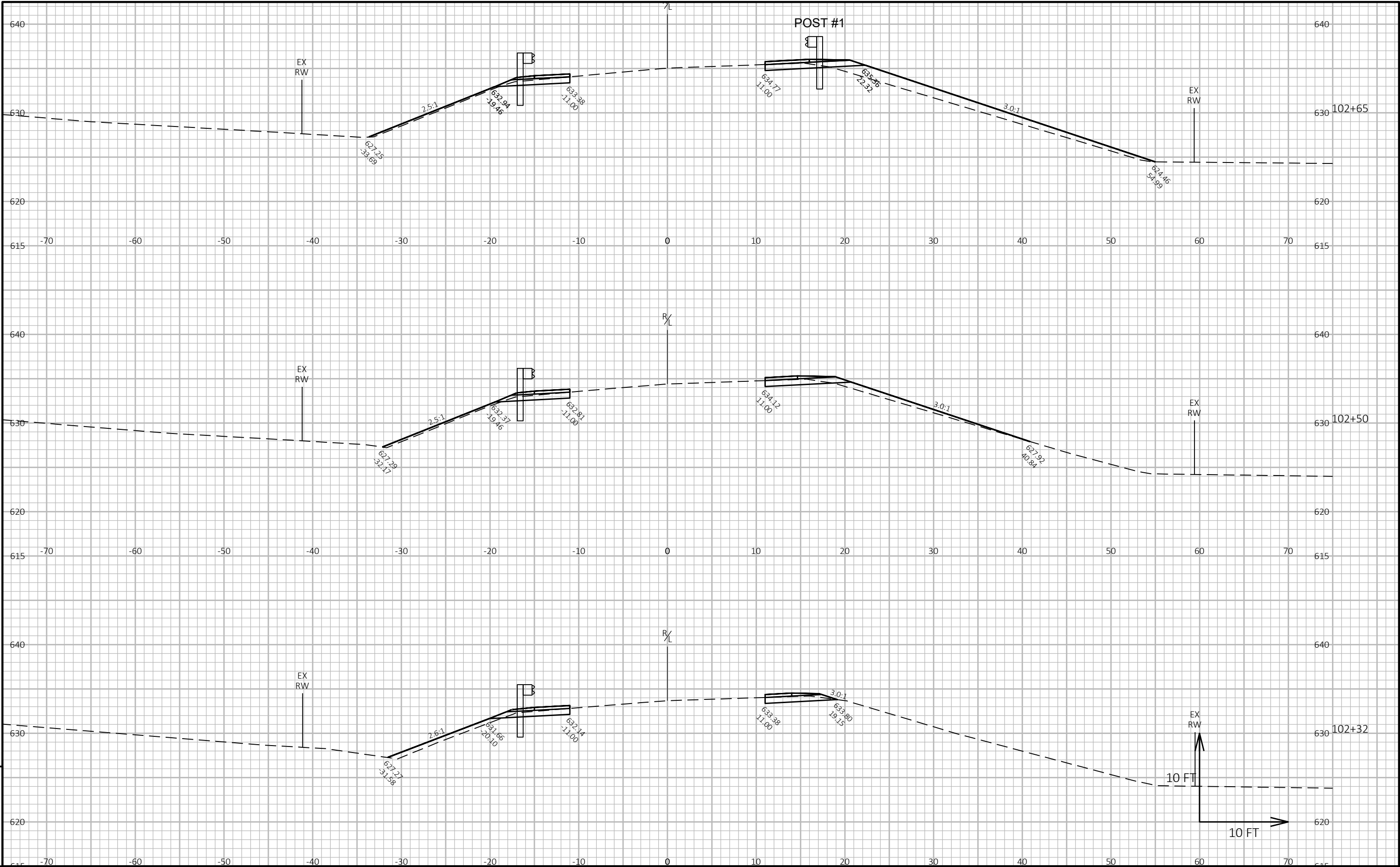
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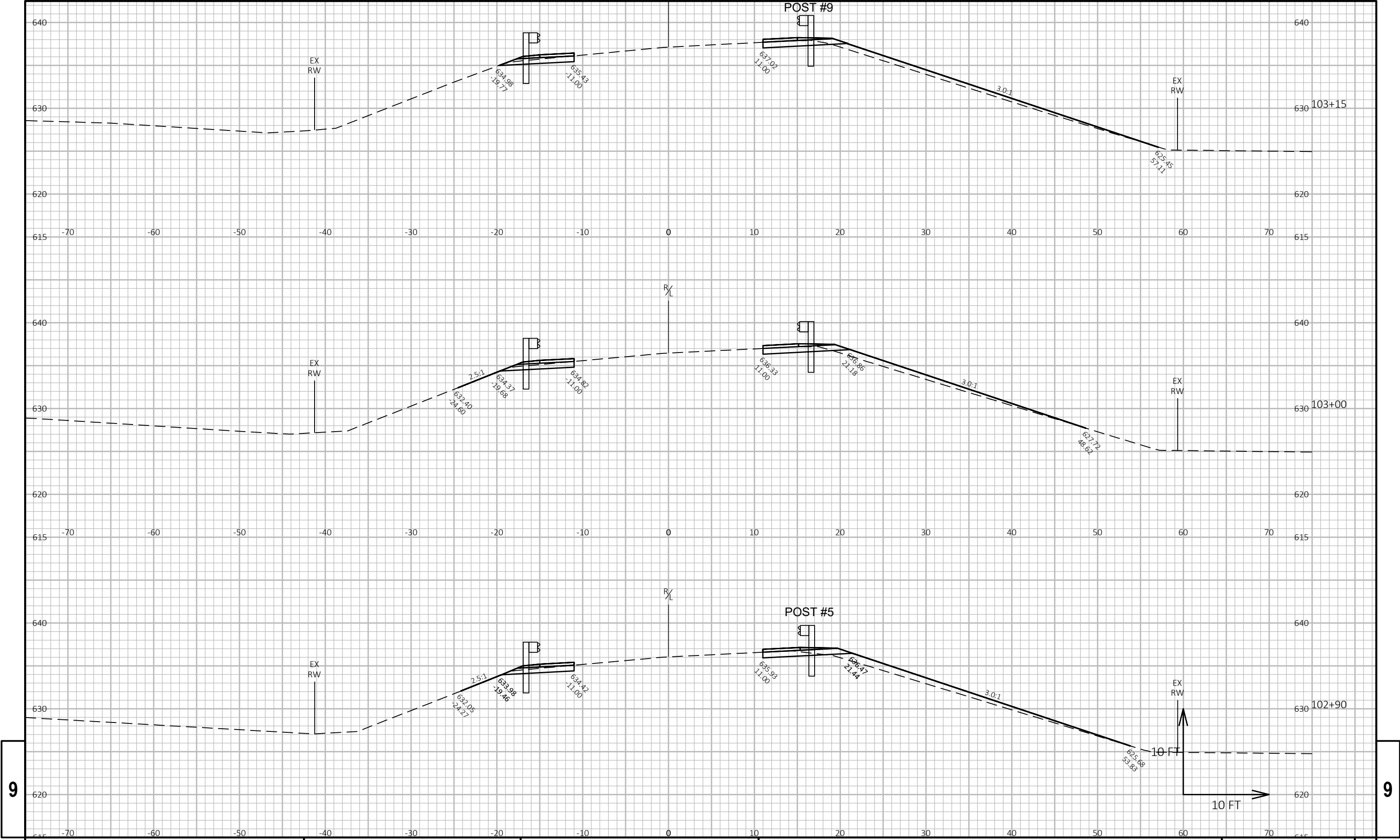


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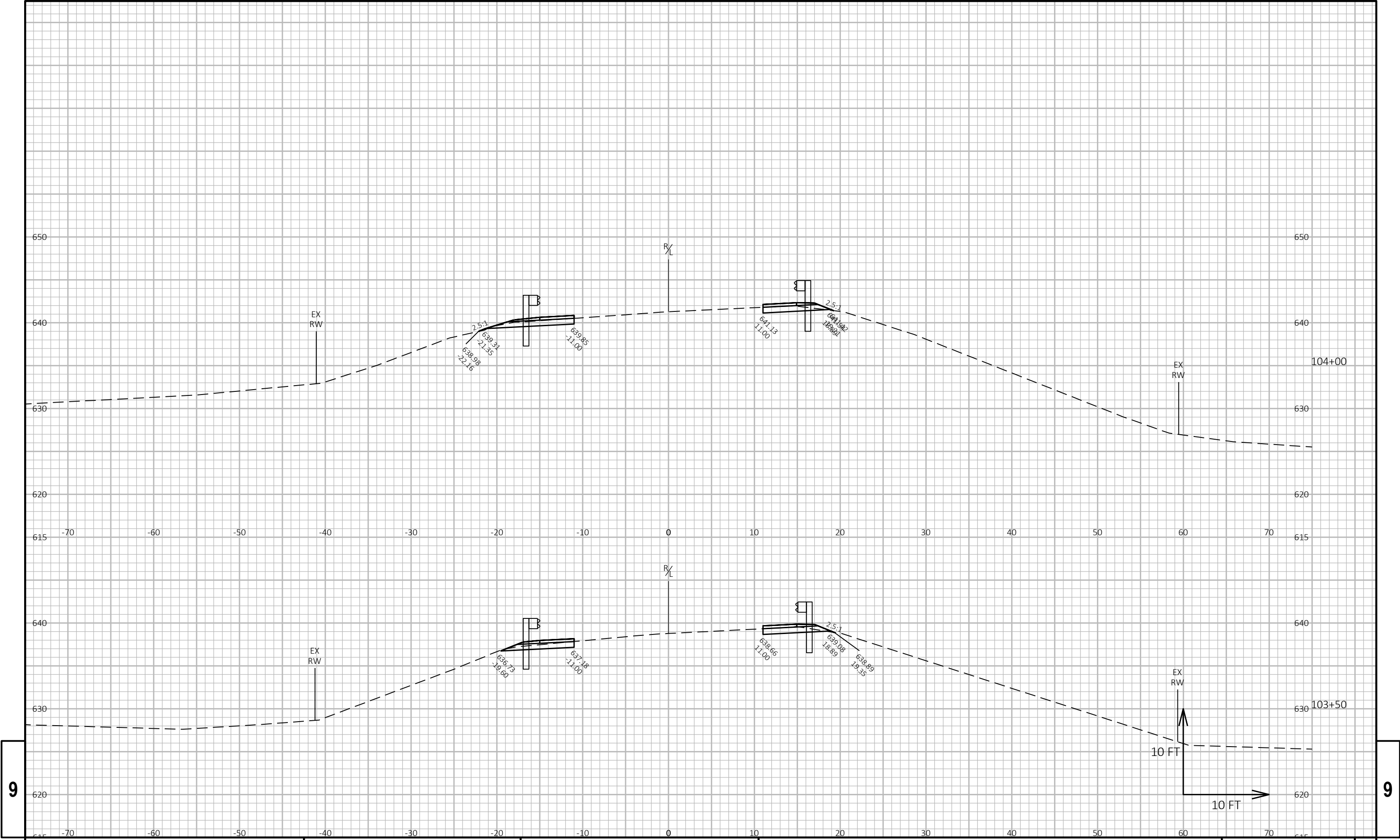




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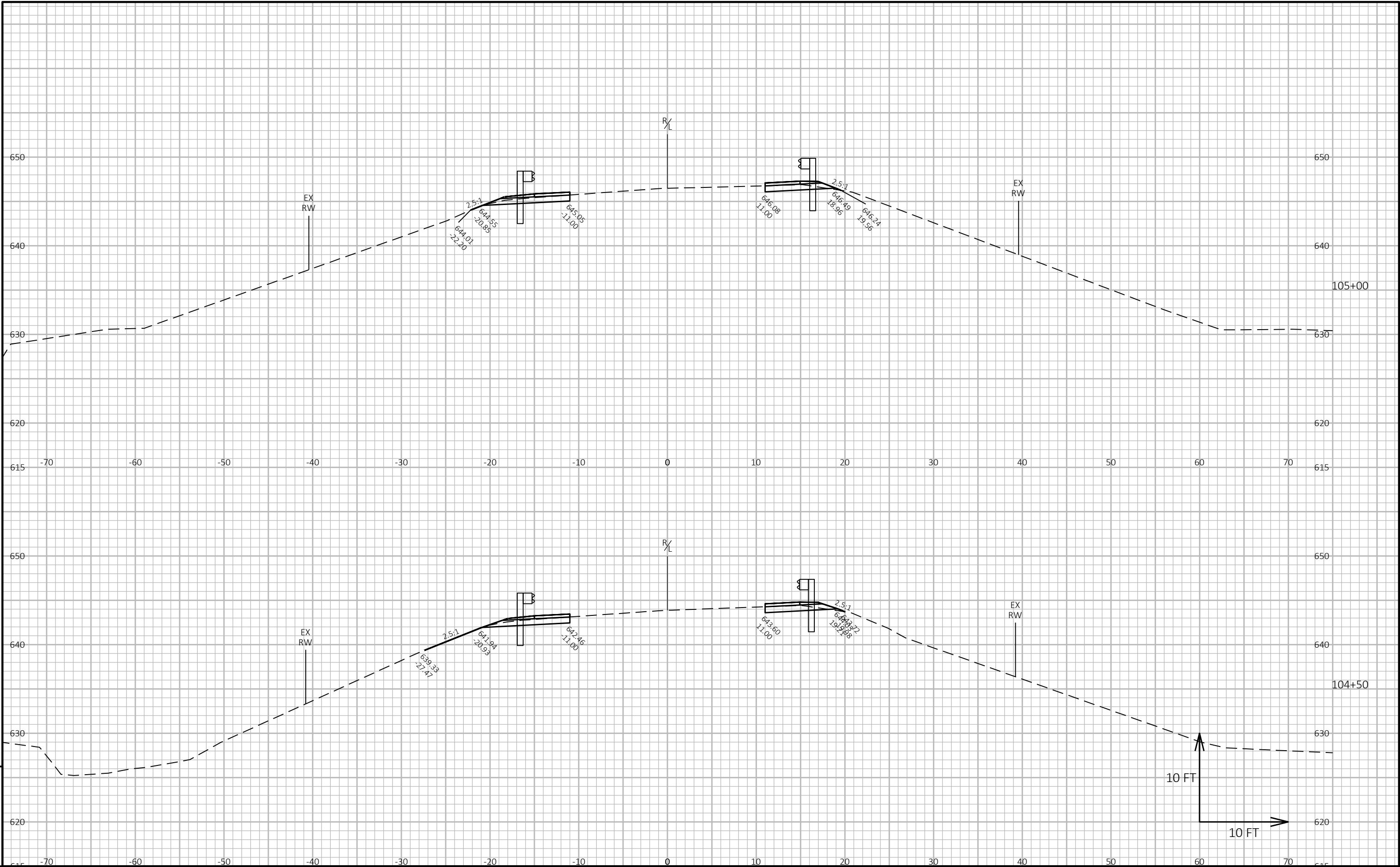
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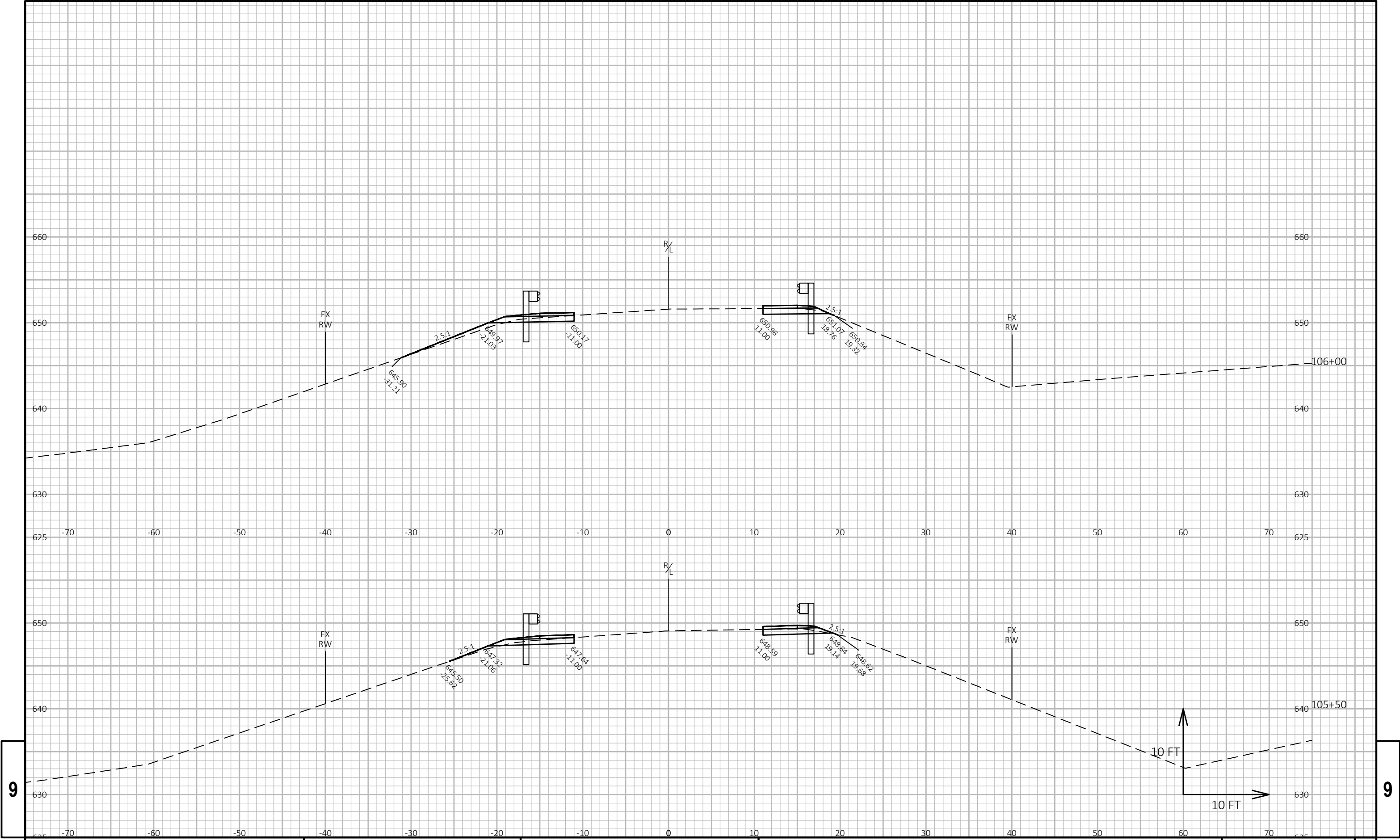
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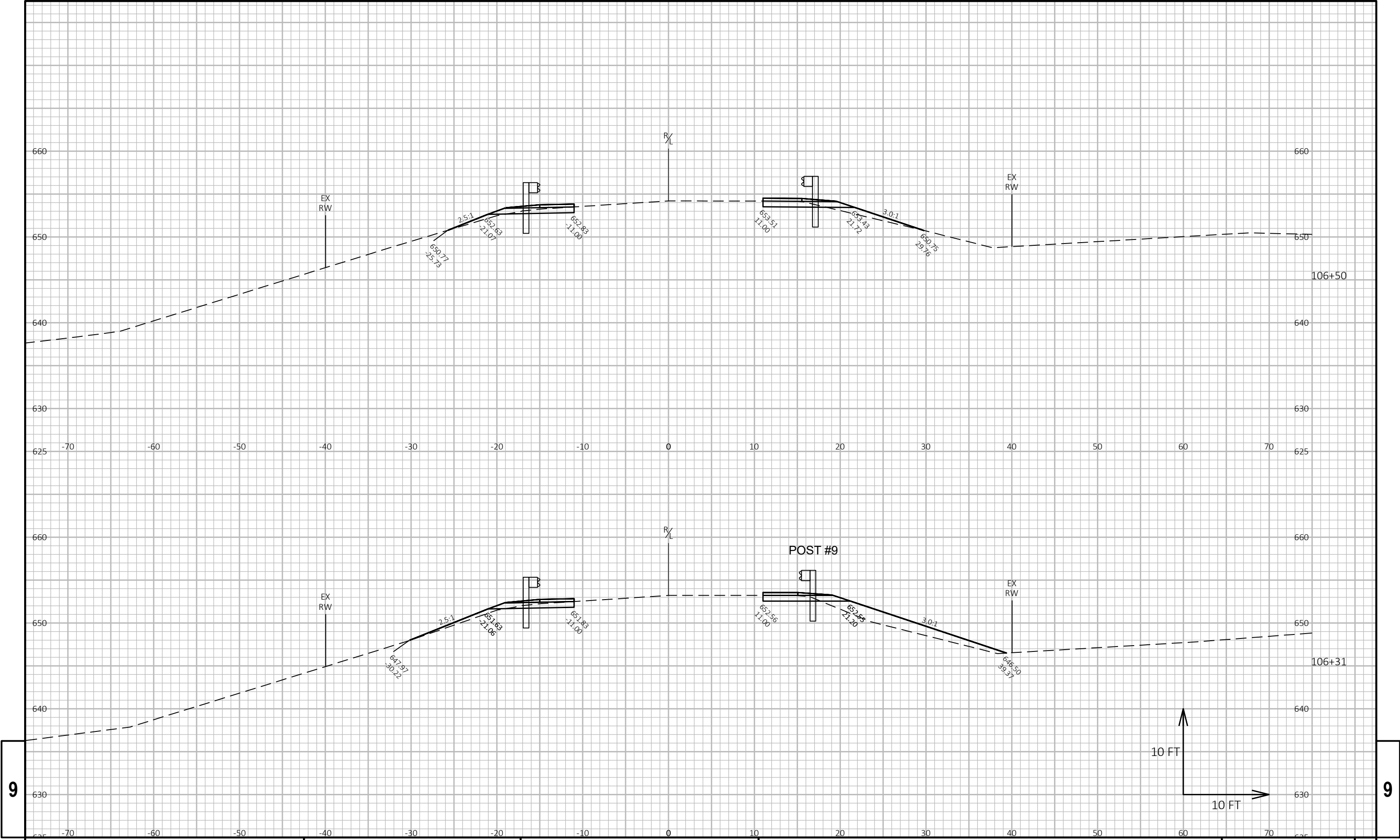
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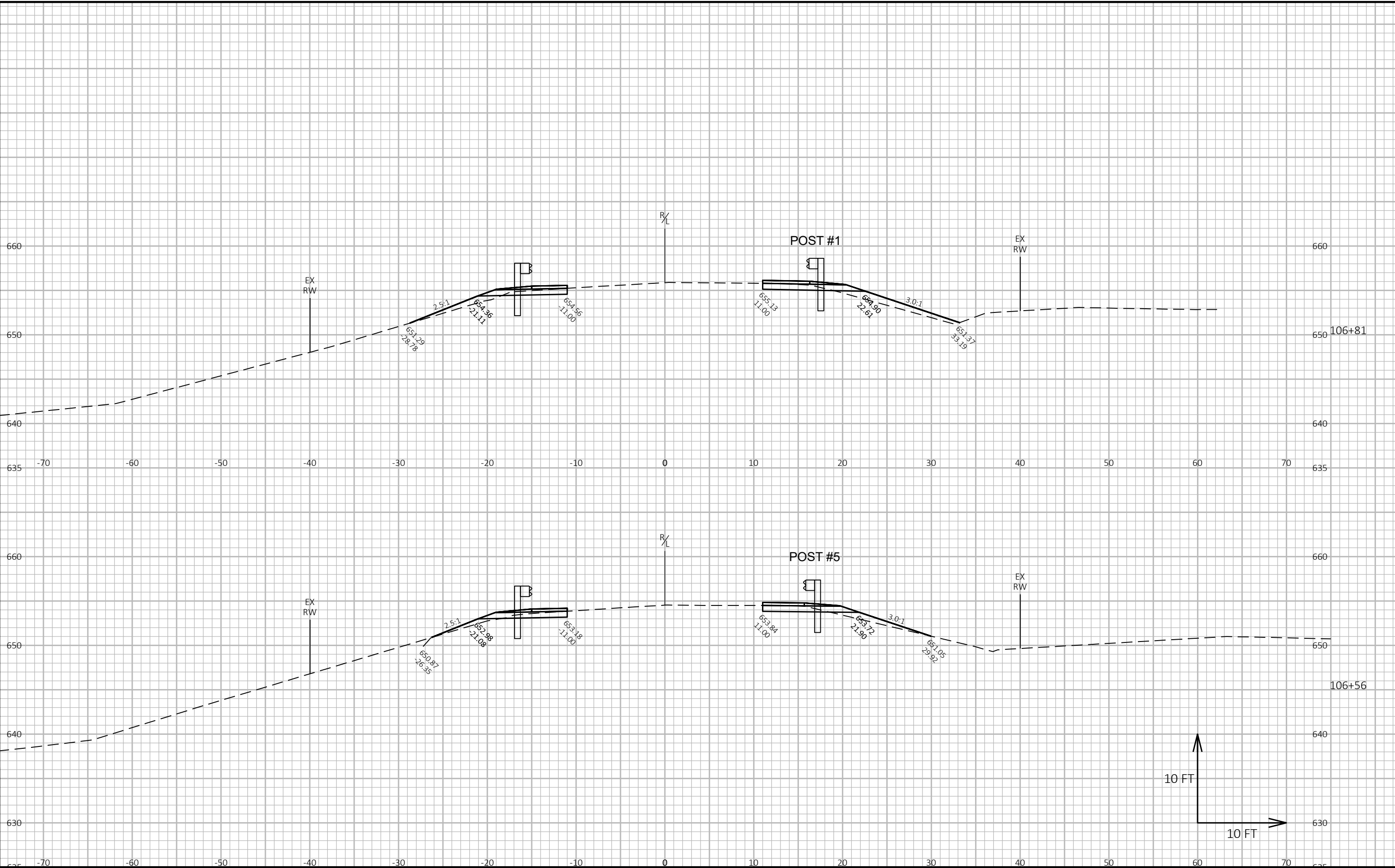
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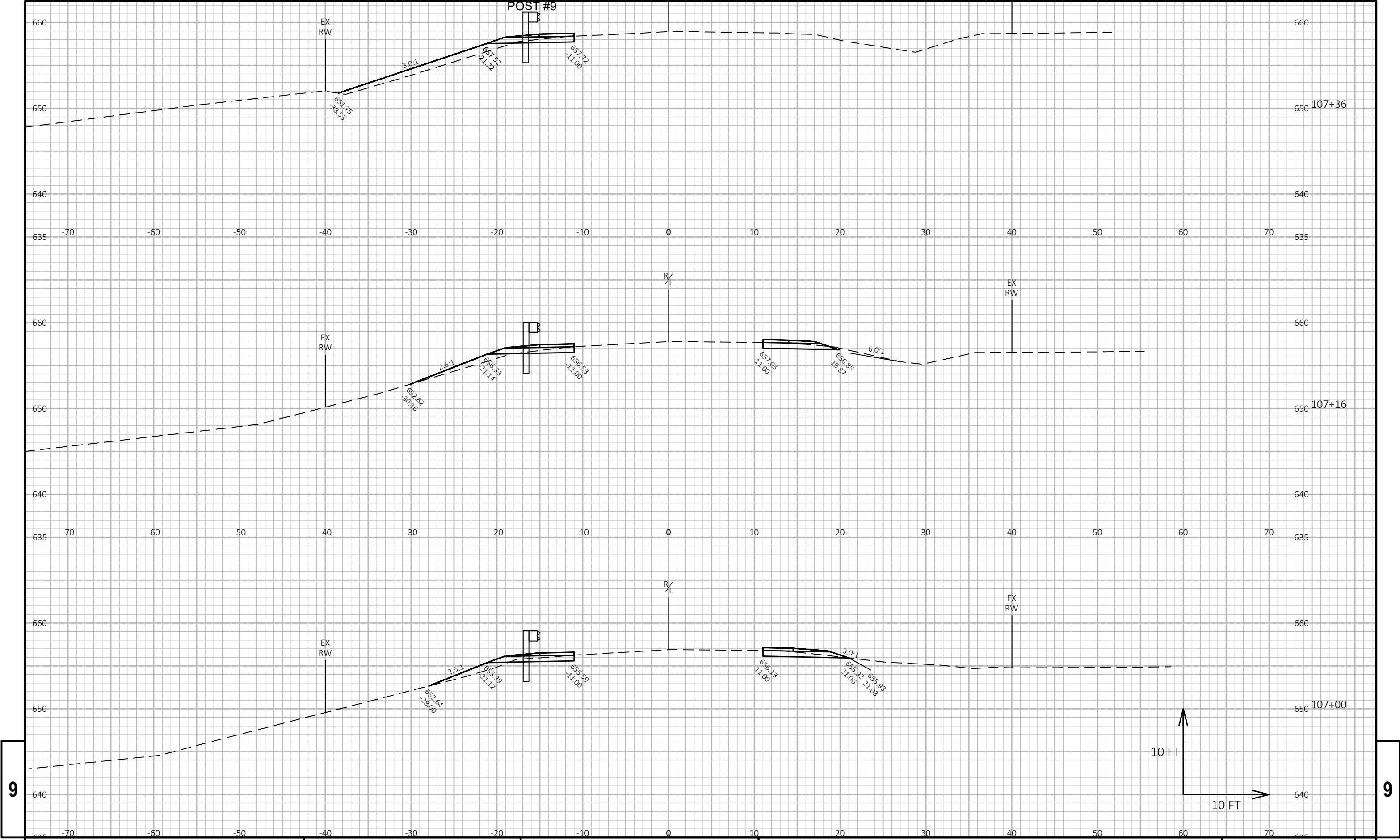




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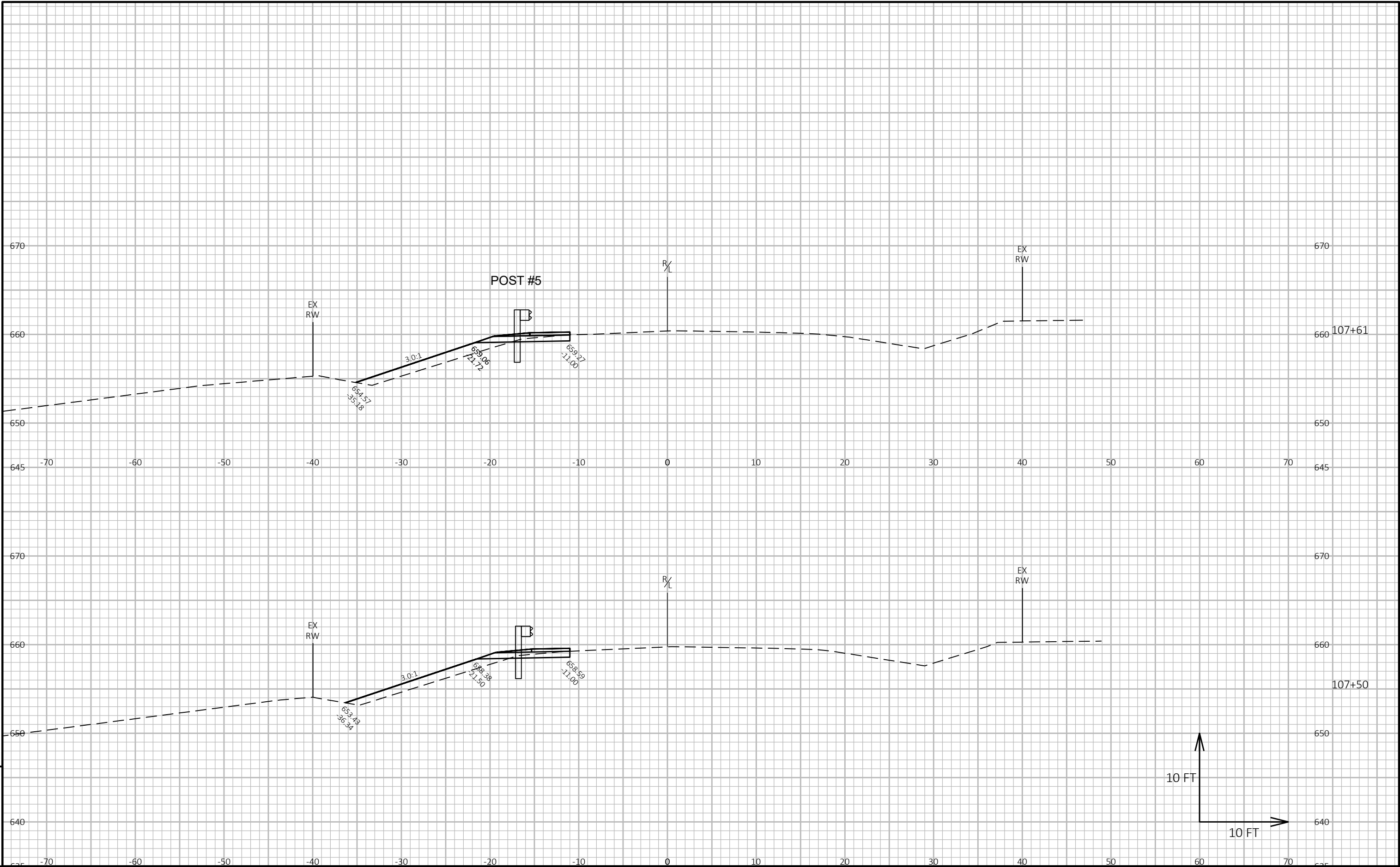
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PROJECT NO: 4390-01-74	HWY: CTH C	COUNTY: KEWAUNEE	CROSS SECTIONS: CTH C	SHEET	E
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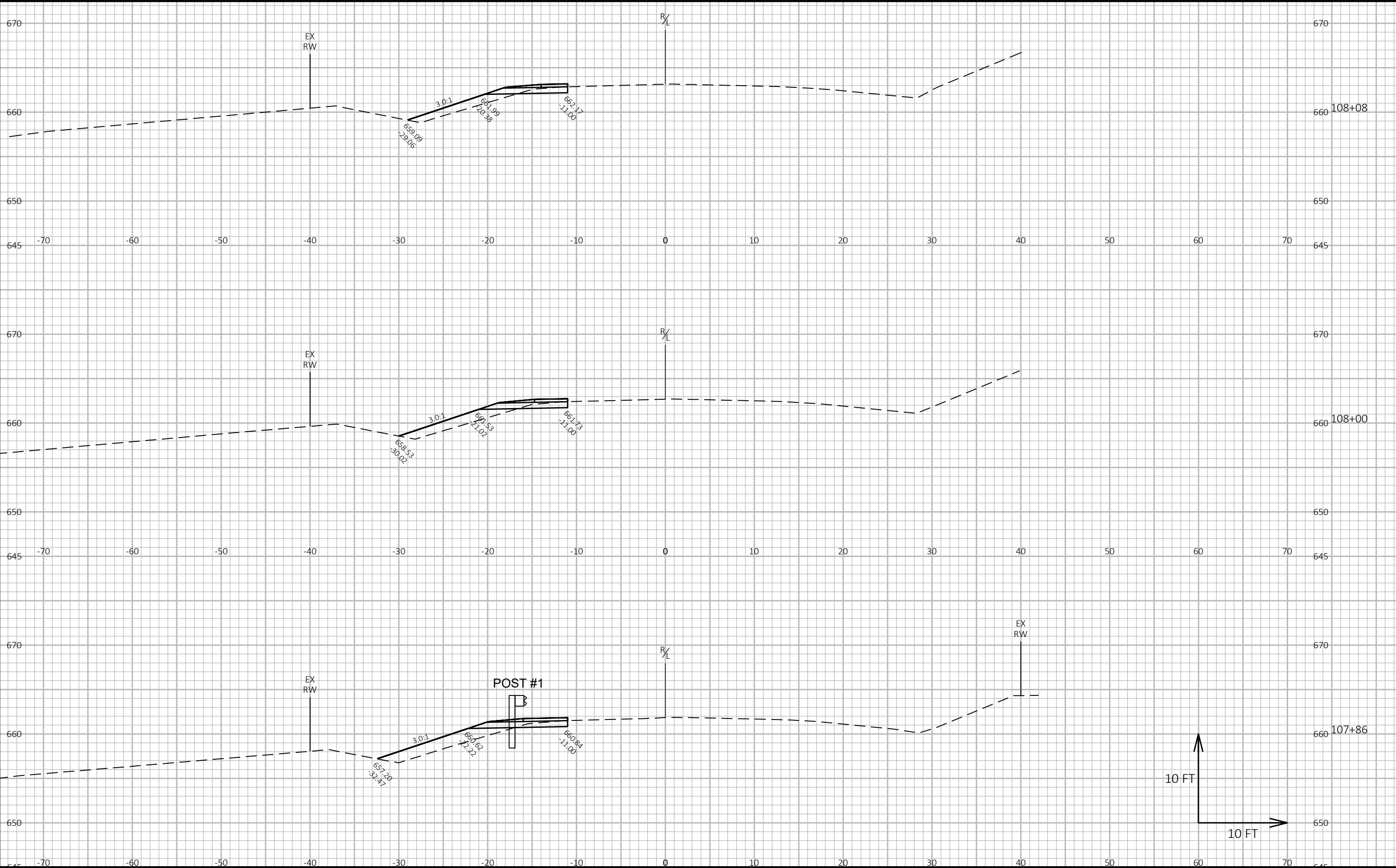
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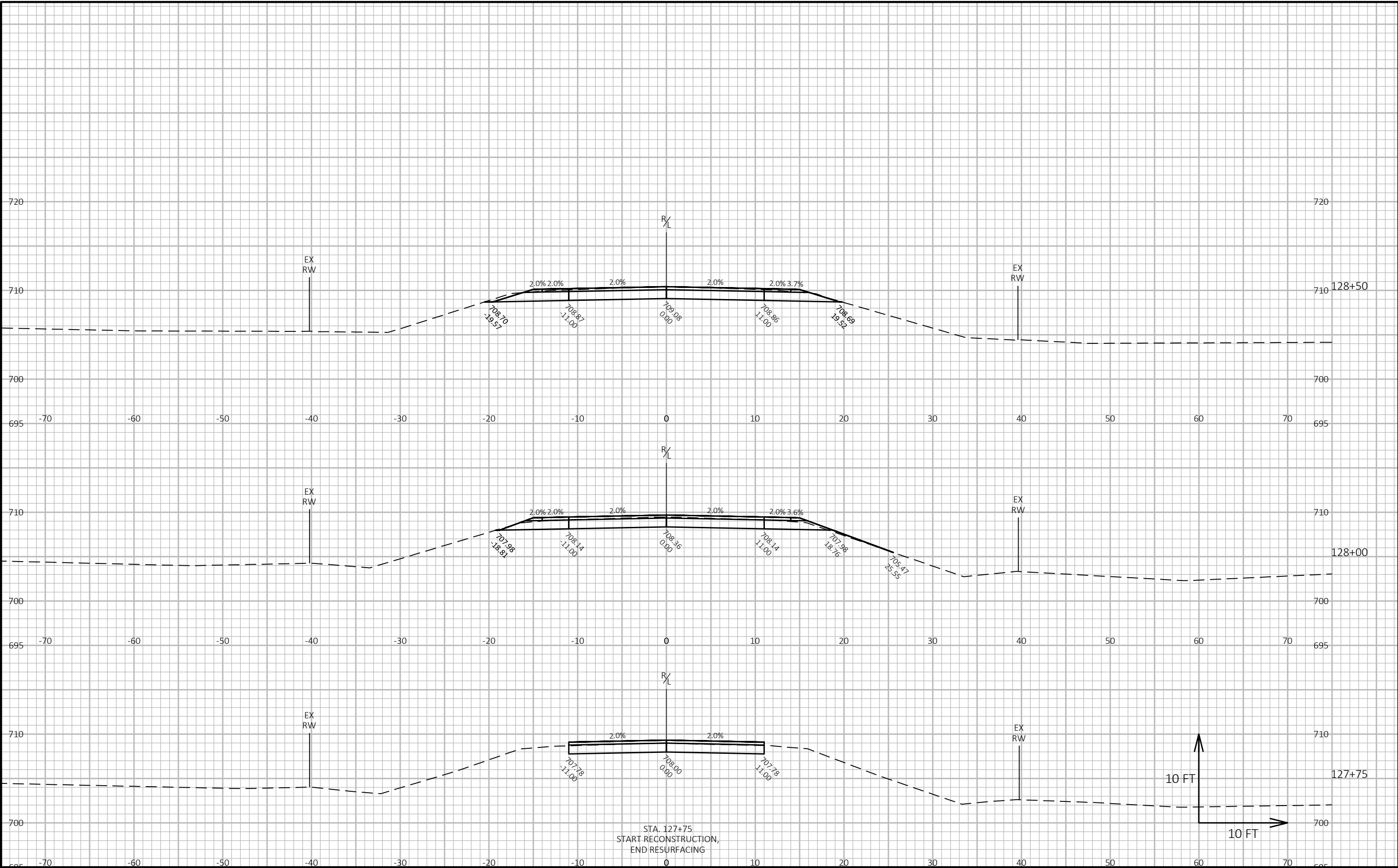


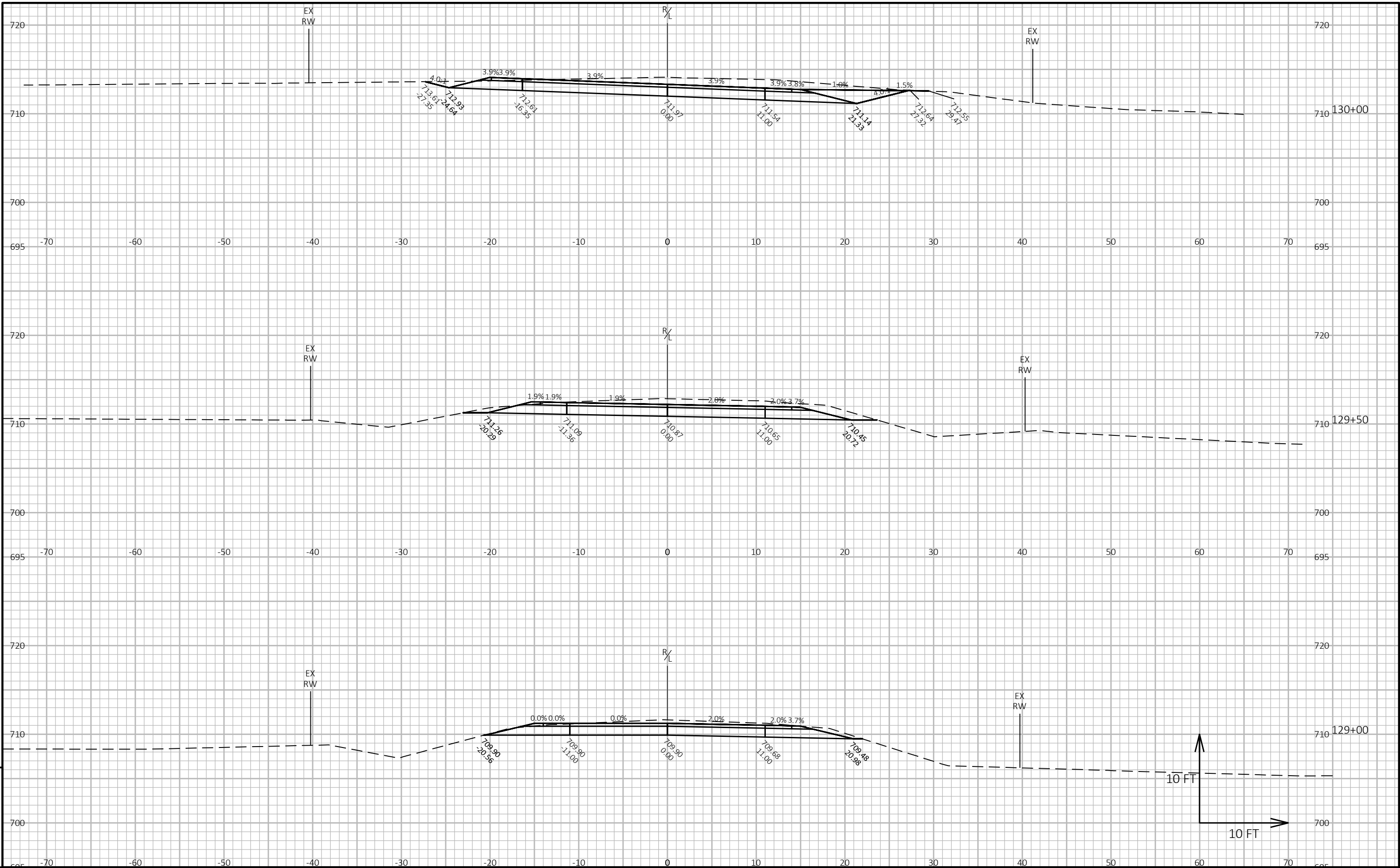
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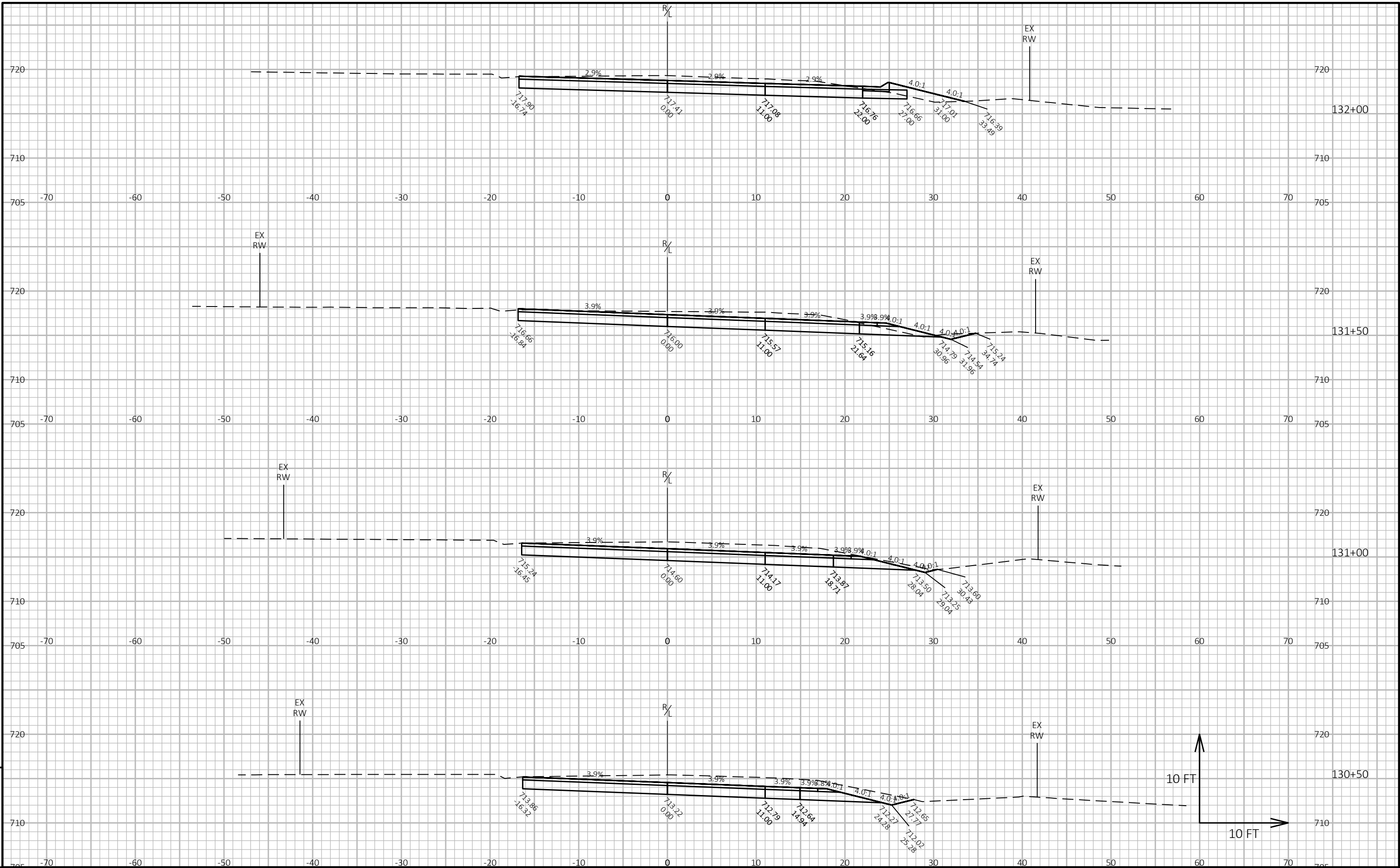
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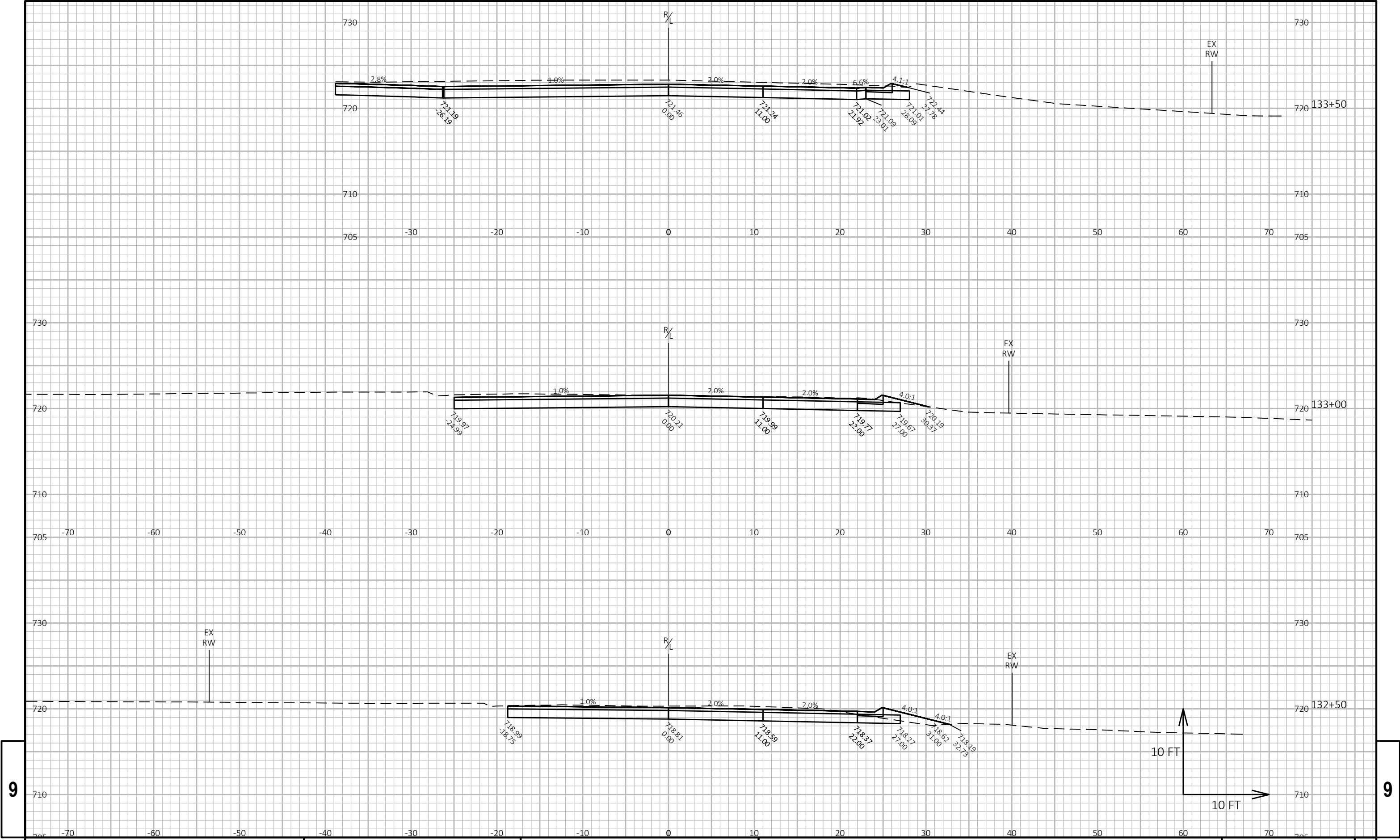
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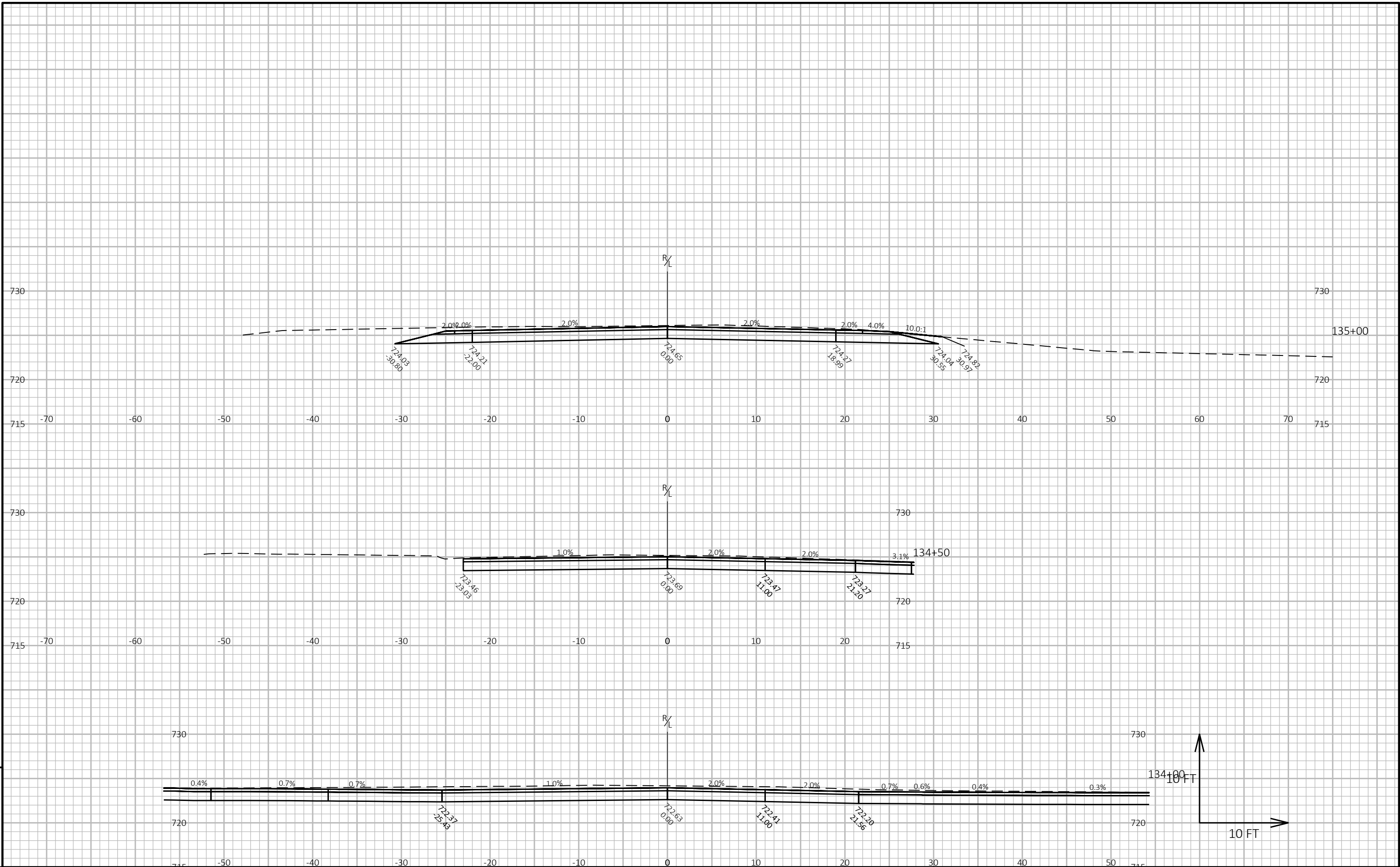


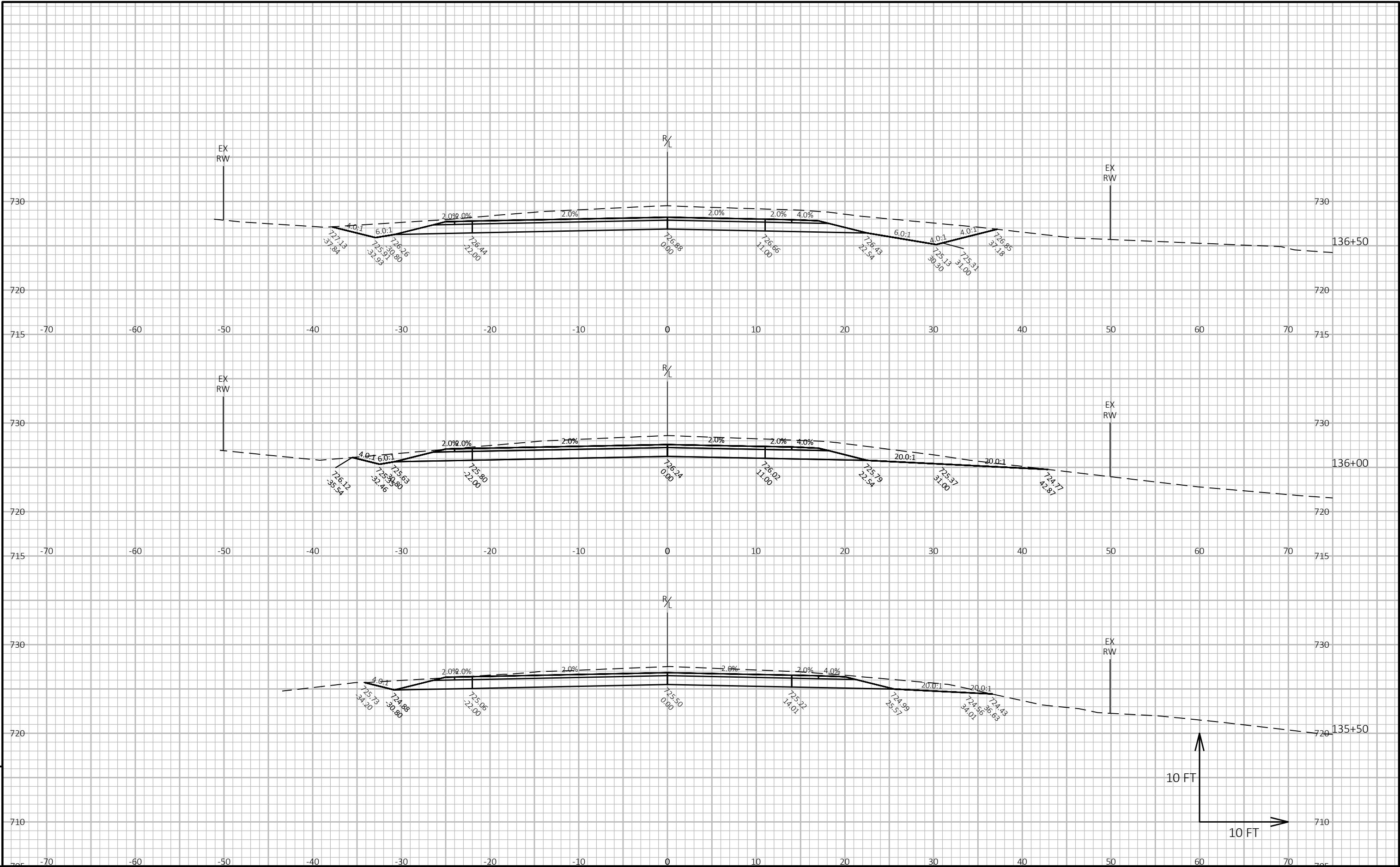


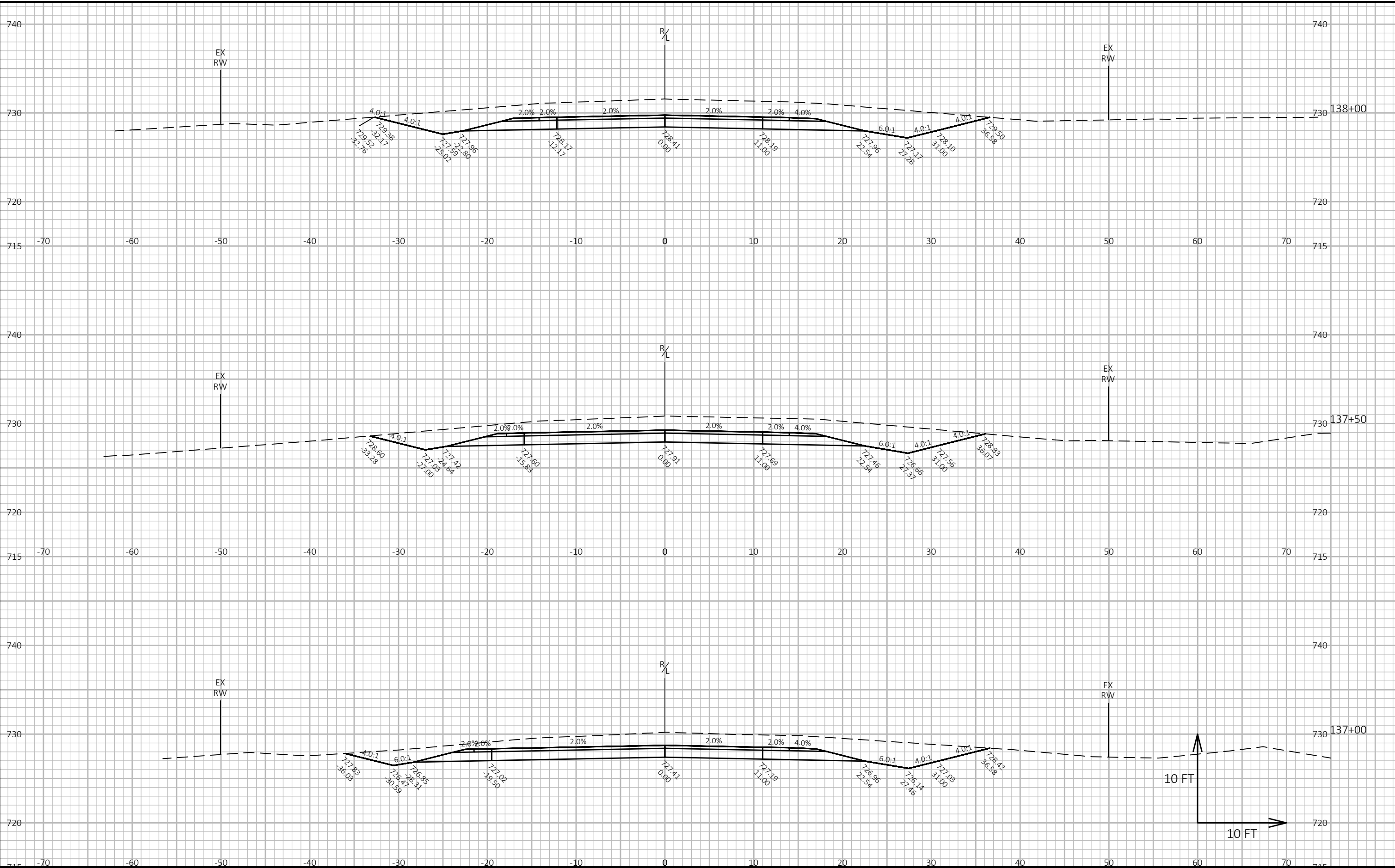
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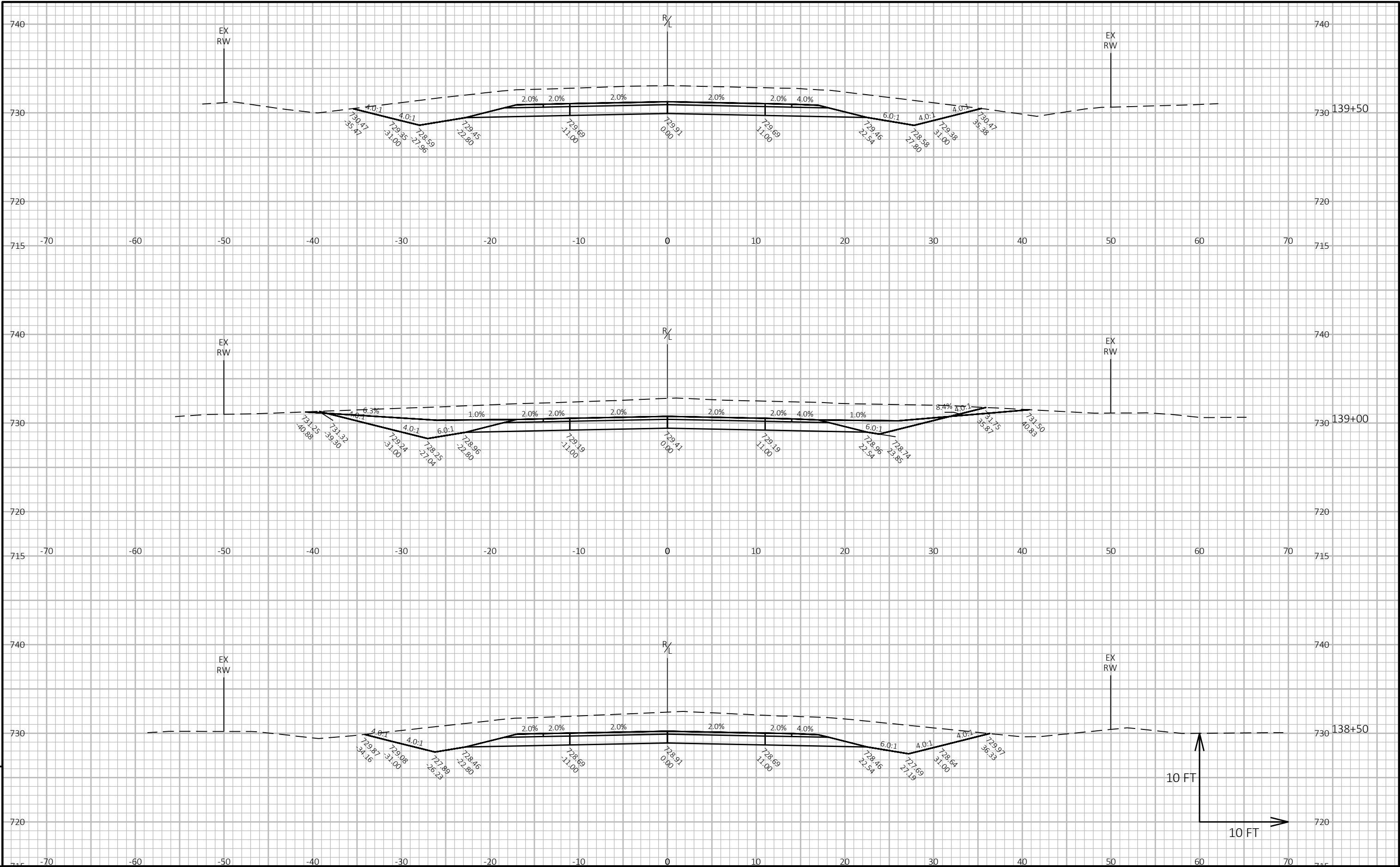
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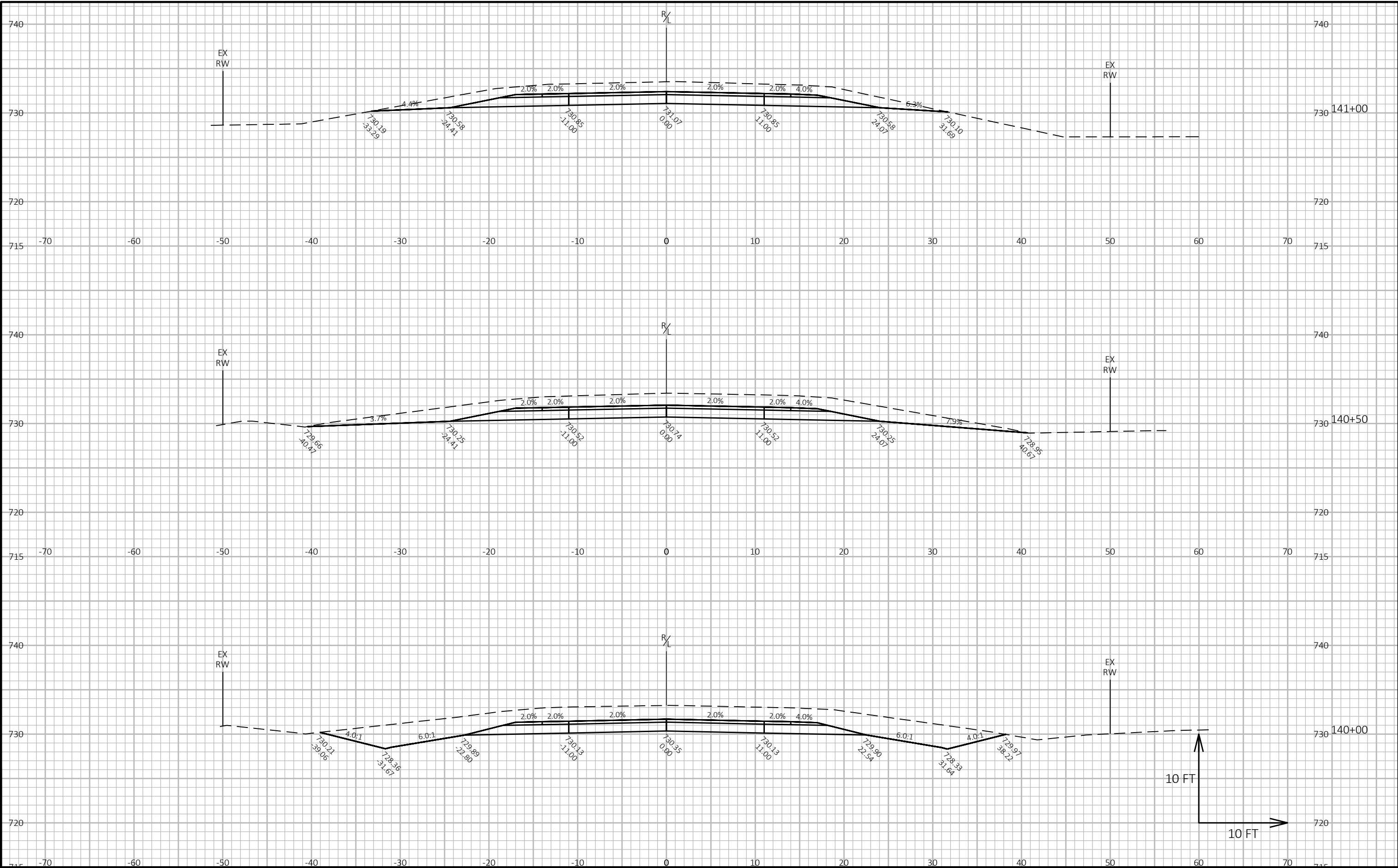
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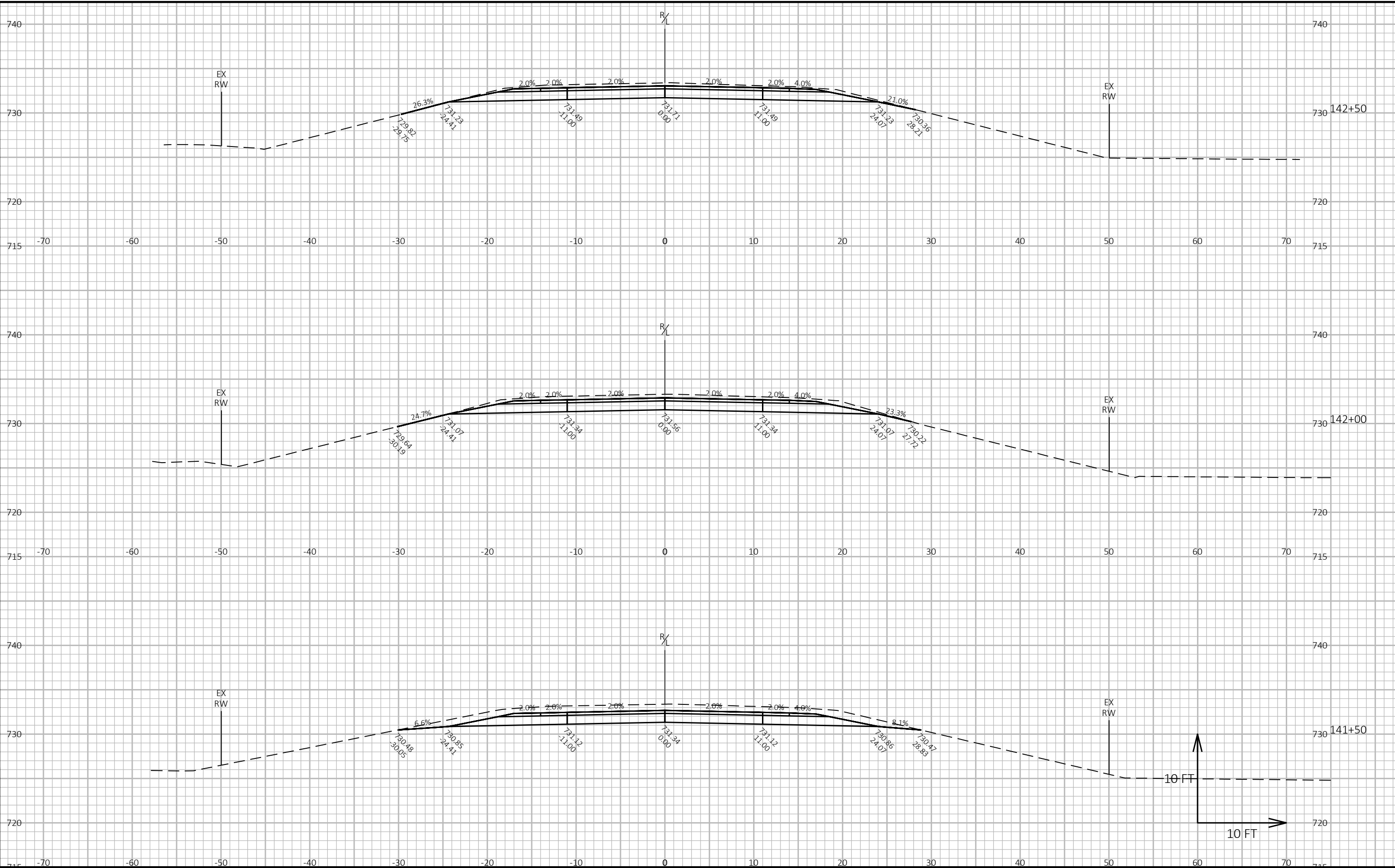


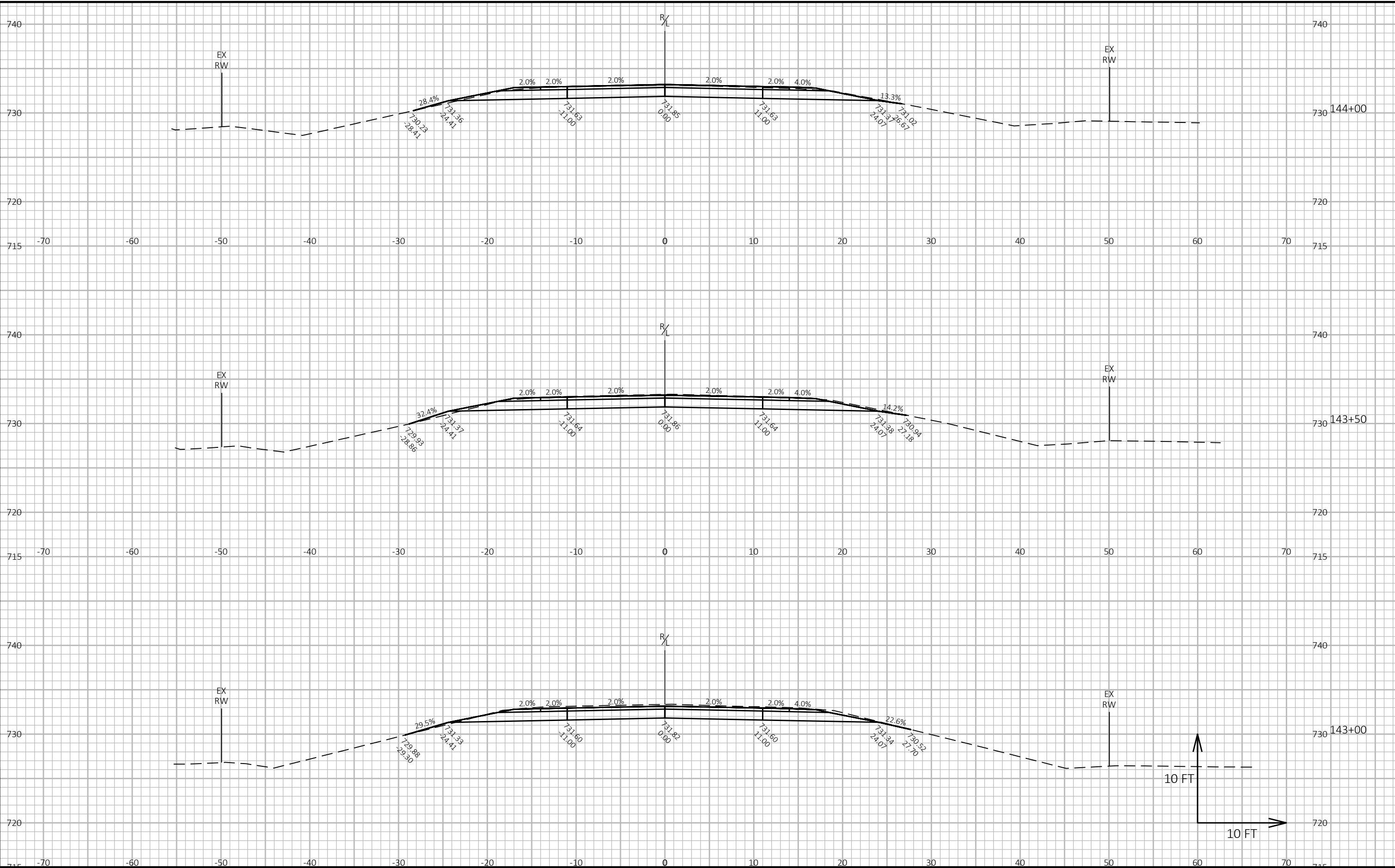








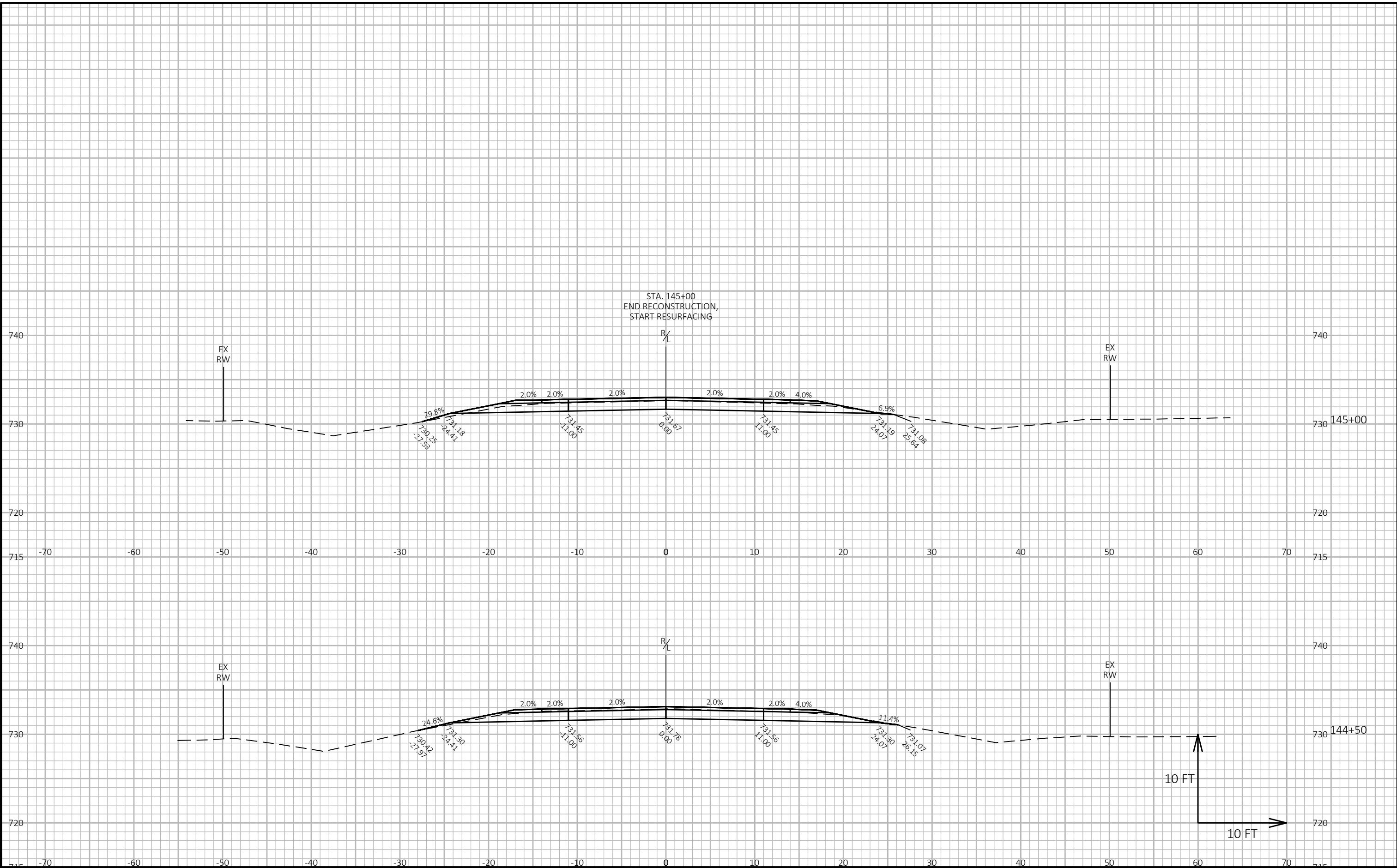


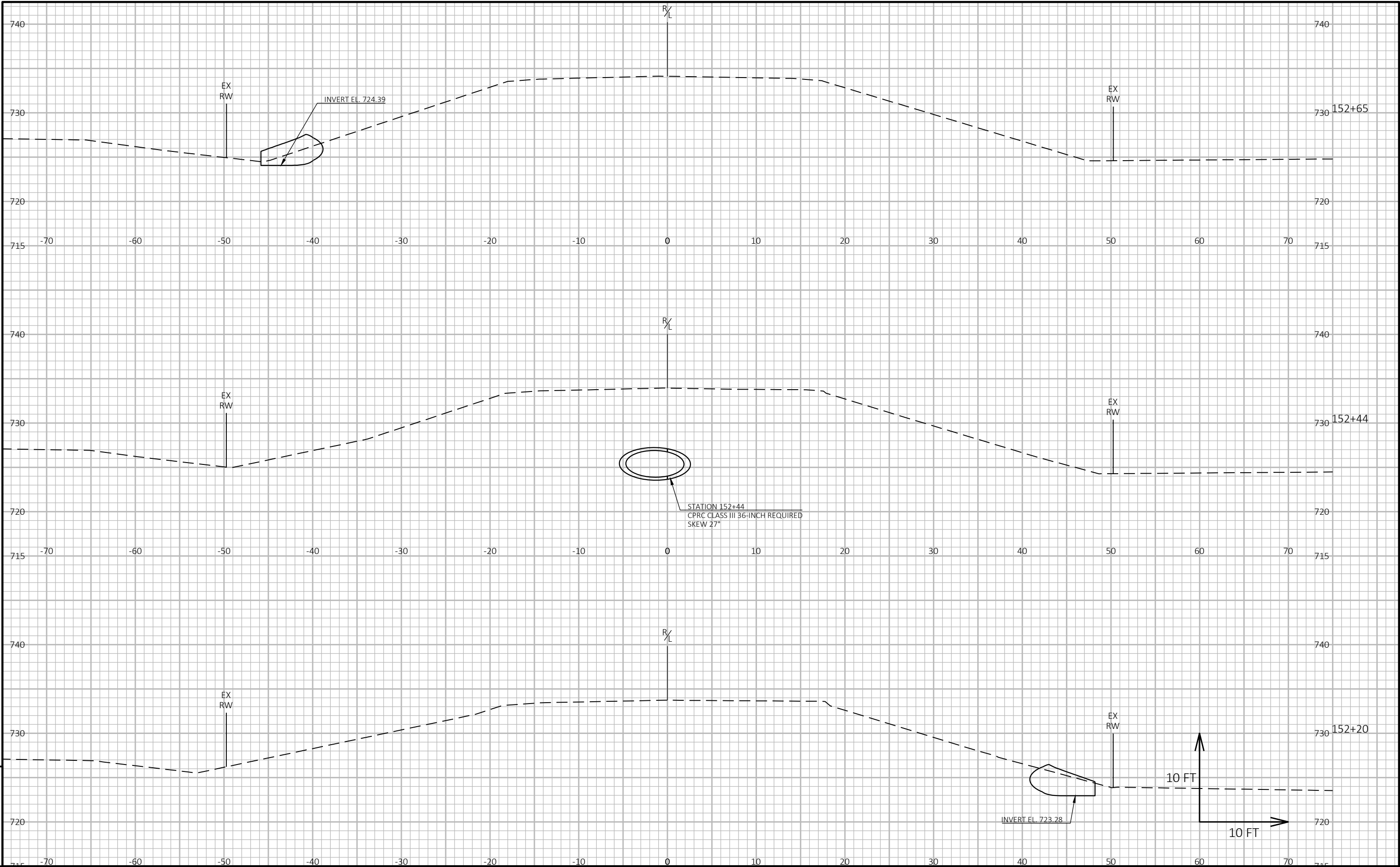


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PROJECT NO: 4390-01-74	HWY: CTH C	COUNTY: KEWAUNEE	CROSS SECTIONS: CTH C	SHEET E
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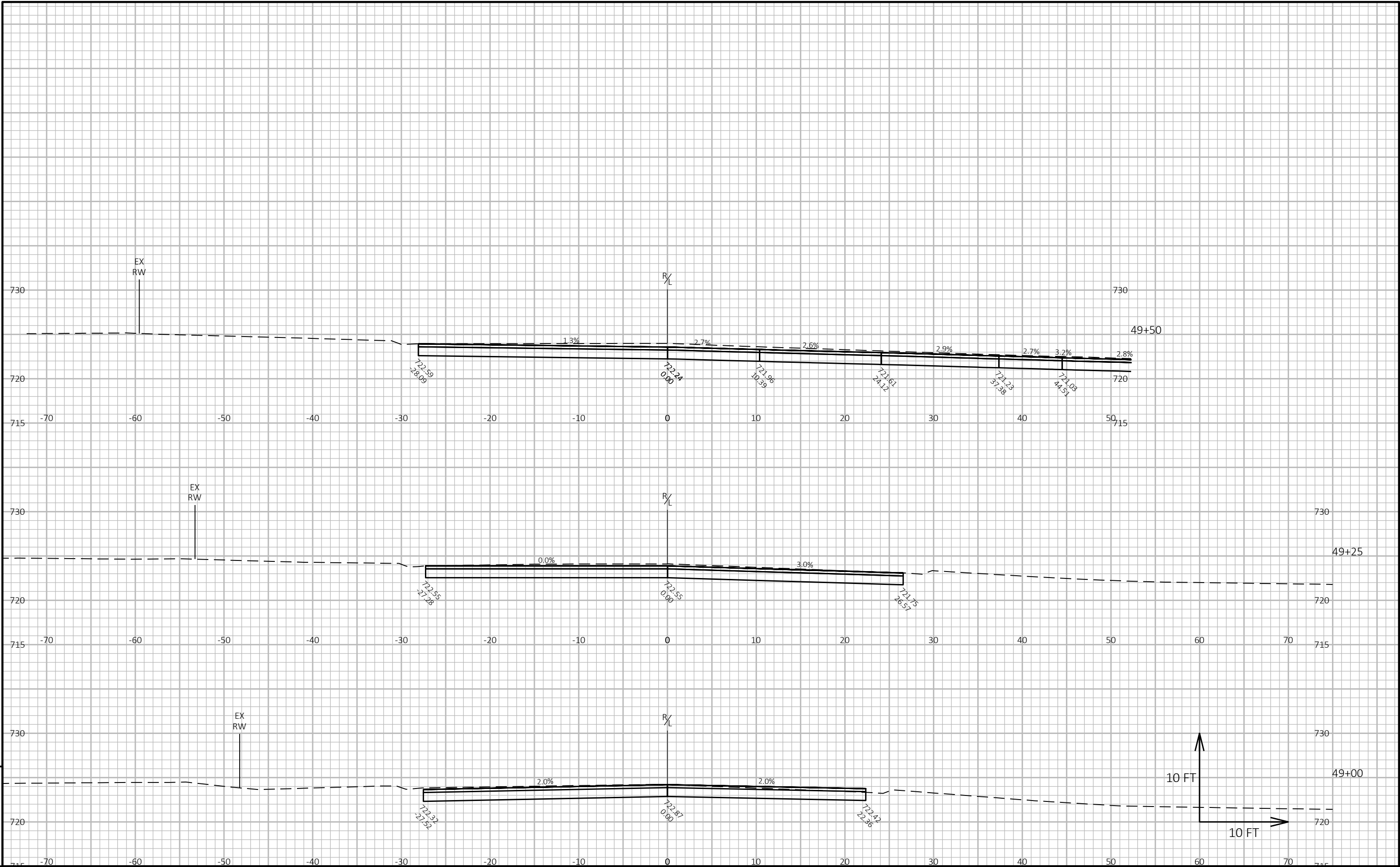


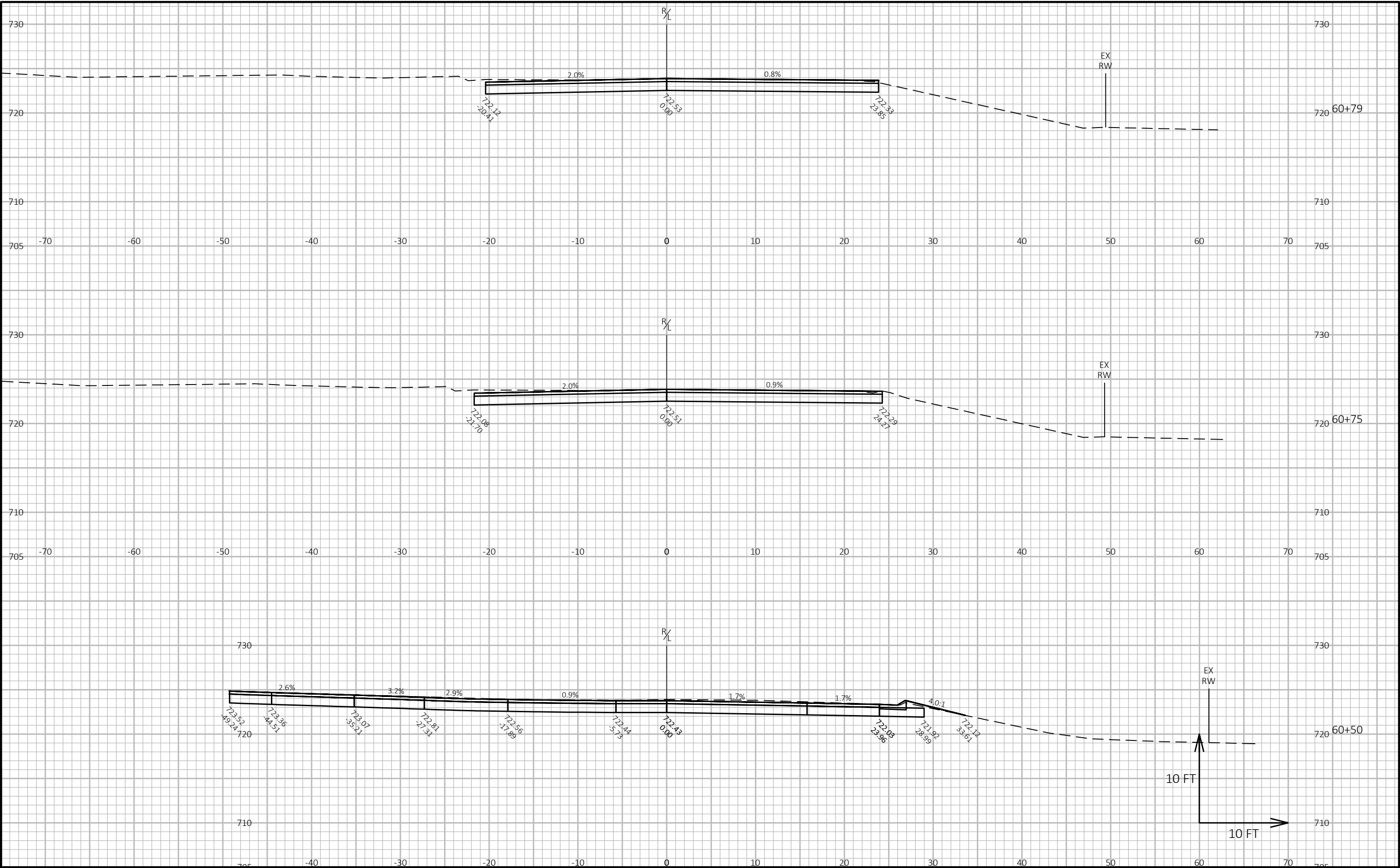


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PROJECT NO: 4390-01-74	HWY: CTH C	COUNTY: KEWAUNEE	CROSS SECTIONS: CTH C CULVERTS	SHEET E
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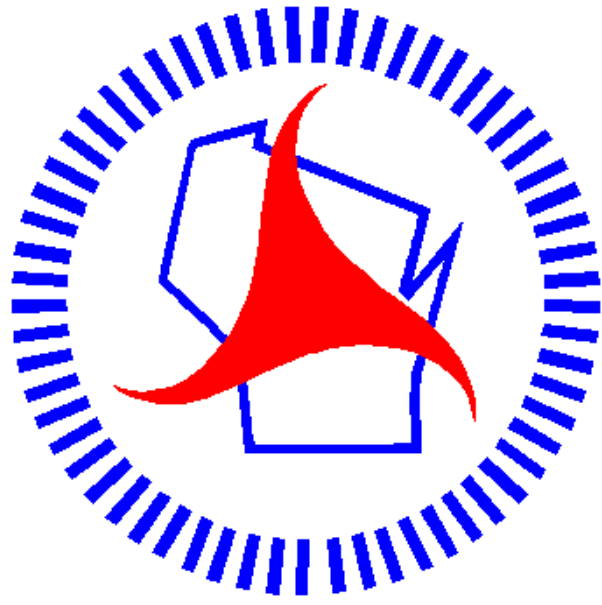




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Notes



Wisconsin Department of Transportation

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