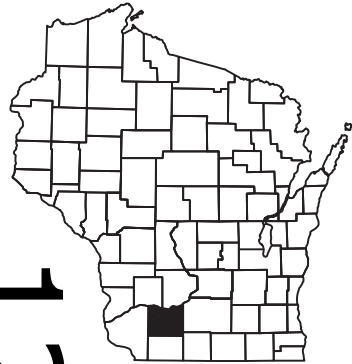


ORDER OF SHEETS

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 = 52



DESIGN DESIGNATION

A.A.D.T. (2023)	=	990
A.A.D.T. (2043)	=	1070
D.H.V.	=	210
D.D.	=	60/40
T.	=	7.7%
DESIGN SPEED	=	60
ESALS	=	170,000

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

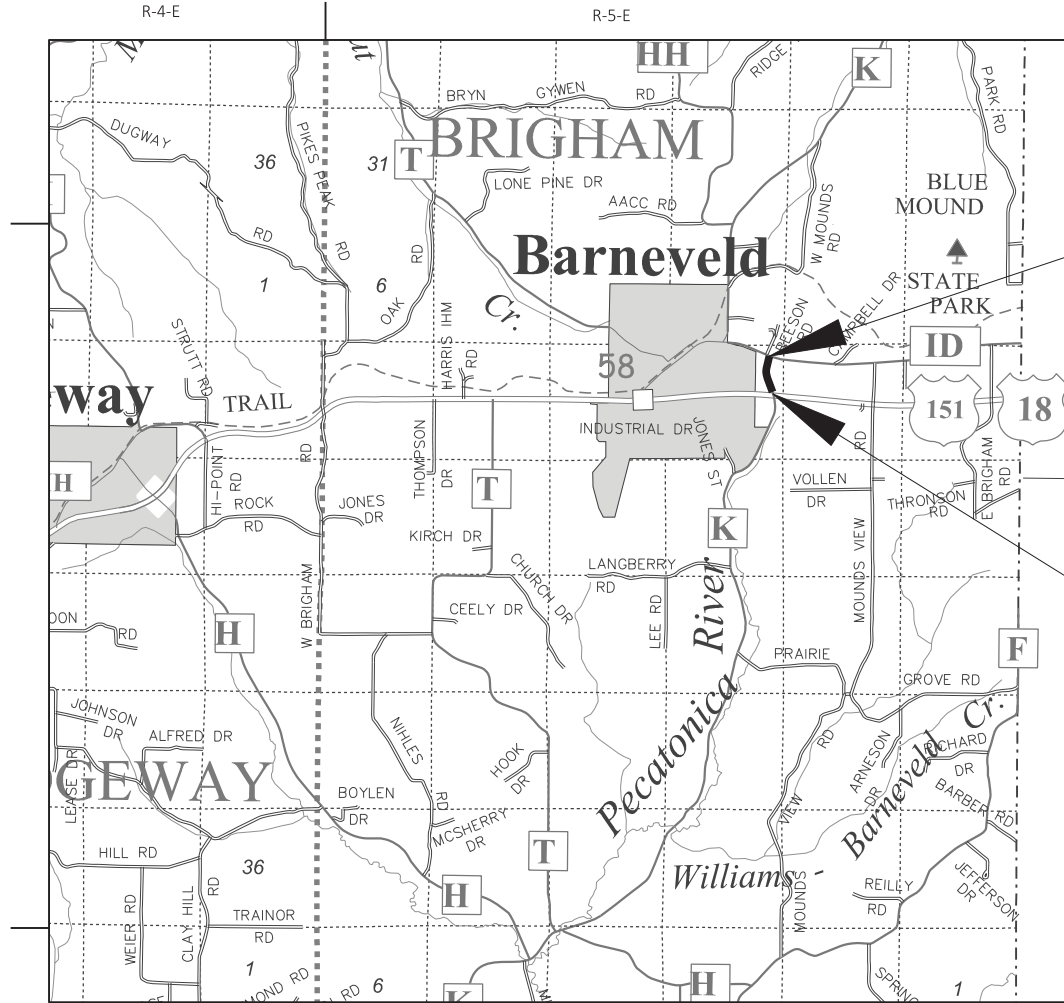
USH 18 - CTH ID

USH 18 TO CTH ID

CTH K

IOWA

STATE PROJECT NUMBER
5679-00-78



END PROJECT
STA 27+61
Y = 173 736.909
X = 445 959.338

BEGIN PROJECT
STA 11+00
Y = 172 137.617
X = 446 112.479

LAYOUT
SCALE 0 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.3146

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), IOWA 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 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
PROJECT ID		
5679-00-78	WISC 2023020	1

ACCEPTED FOR
IOWA COUNTY
7/21/22 *Valerie Guider*
Date Signature and Title (Official)

ORIGINAL PLANS PREPARED BY
WESTBROOK
Associated Engineers, Inc.
619 EAST HOXIE STREET
P.O. BOX 429
SPRING GREEN, WISCONSIN 53588
PHONE (608) 588-7866
FAX (608) 588-7954

WISCONSIN
PROFESSIONAL ENGINEER
AARON B. PALMER
E-35695
RICHLAND CENTER, WI
DATE: *7/20/22* *Aaron Palmer*
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor WESTBROOK ASSOCIATED ENGINEERS, INC.
Designer WESTBROOK ASSOCIATED ENGINEERS, INC.
Project Manager VALERIE GUIDER, P.E.
Regional Examiner SW REGION
Regional Supervisor KYLE HEMP, P.E.

APPROVED FOR THE DEPARTMENT
DATE: **7/21/2022** Valerie Guider, P.E.
Digitally signed by Valerie Guider, P.E.
Date: 2022.07.21 15:43:57-0500
(Signature)

E

GENERAL NOTES

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

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. MAINTAIN EROSION CONTROL ITEMS UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY. WETLANDS AND OTHER WATERWAYS ARE PRESENT WITHIN THE PROJECT LIMITS.

DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEED MIX NO. 30), SEEDING TEMPORARY, AND E-MATTED WITH EROSION MAT URBAN CLASS I TYPE B AS DIRECTED BY THE ENGINEER.

WHEN THE QUANTITY OF THE ITEM OF BASE AGGREGATE DENSE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER IN THE FIELD.

PRIOR TO THE PLACEMENT OF GUARDRAIL, THE SHOULDERS SHALL BE PLACED, SHAPED, AND COMPACTED.

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A VERTICAL SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD. SAWCUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD.

HMA PAVEMENT QUANTITIES WERE CALCULATED USING 112 LB/SY/IN.

4-INCHES OF HMA PAVEMENT SHALL BE CONSTRUCTED USING A 1 3/4-INCH UPPER LAYER AND A 2 1/4-INCH LOWER LAYER OF HMA PAVEMENT 4 MT 58-28 S.

APPLY TACK COAT BETWEEN LAYERS OF HMA PAVEMENT AT A RATE OF 0.07 GAL/SY.

3-INCHES OF VIRGIN BASE AGGREGATE DENSE 1 1/4-INCH SHALL BE PLACED ON TOP OF EXISTING PAVEMENT PRIOR TO PULVERIZING 6-INCHES OF HMA AND BASE AGGREGATE DENSE.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, OR PASSING LANE.

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

THE LOCATION OF STOP LINES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ADJUST DITCH GRADING AS NECESSARY TO FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER IN THE FIELD.

THERE MAY BE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO "DIGGERS HOTLINE" AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), IOWA COUNTY, HORIZONTAL DATUM NAD83 (2011), ELEVATION DATUM NAVD88 (2012).

UTILITIES

ELECTRICITY

ALLIANT ENERGY
ATTN: MARY MONTGOMERY
200 FIRST STREET
CEDAR RAPIDS, IA 52401
PHONE: (319) 786-4768
EMAIL: marymontgomery@alliantenergy.com

COMMUNICATION LINE

FRONTIER COMMUNICATIONS
ATTN: JIM WIAND
521 NORTH 4TH STREET
WAUSAU, WI 54403
PHONE: (515) 419-9700
EMAIL: jwiand@mscon.com

COMMUNICATION LINE

MOUNT HOREB TELEPHONE COMPANY
ATTN: KEVIN MAYNE
200 EAST MAIN STREET
MOUNT HOREB, WI 53573
PHONE: (608) 437-5551
EMAIL: kevin.mayne@mhtcinc.com

COMMUNICATION LINE

CCI SYSTEMS INC.
ATTN: ANDY HEIGL
105 KENT STREET
IRON MOUNTAIN, MI 49801
PHONE: (800) 236-8434
EMAIL: andy.heigl@astreaconnect.com



Dial 811 or (800)242-8511

www.DiggersHotline.com

CONTACTS

CONSULTANT LIAISON

WESTBROOK ASSOCIATED ENGINEERS, INC.
619 EAST HOXIE STREET
SPRING GREEN, WI 53588

ATTN: AARON PALMER, P.E.
PH: (608) 588-7866
FAX: (608) 588-7954
apalmer@westbrookeng.com

COUNTY LIAISON

IOWA COUNTY HIGHWAY DEPARTMENT
1215 BEQUETTE STREET
DODGEVILLE, WI 53533

ATTN: CRAIG HARDY
PH: (608) 574-2935
Craig.Hardy@iowacounty.org

WDNR LIAISON

DNR SOUTH CENTRAL REGION HEADQUARTERS
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711

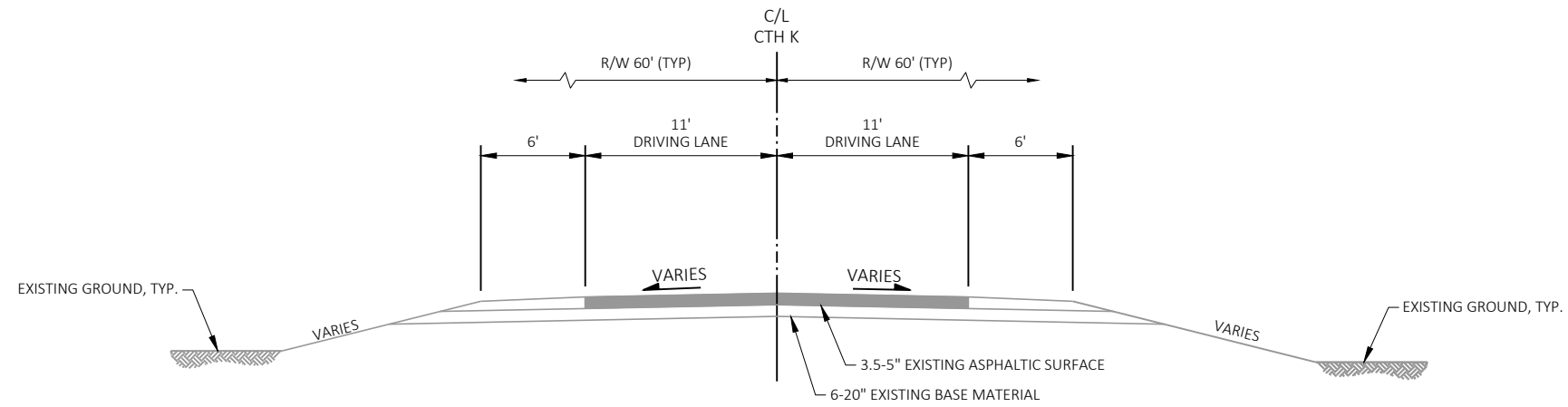
ATTN: ERIC HEGGELUND
PH: (608) 288-7927
Eric.Heggelund@wisconsin.gov

ORDER OF SHEETS

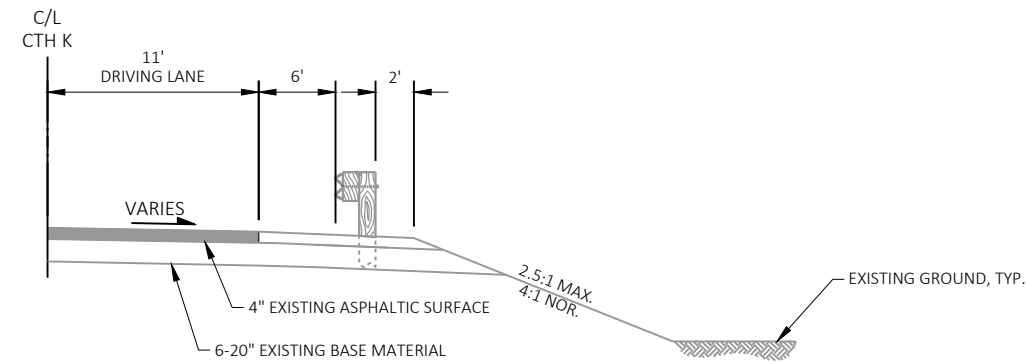
- GENERAL NOTES
- TYPICAL SECTIONS
- BEAM GUARD DETAILS
- CONSTRUCTION DETAILS
- TRAFFIC CONTROL PLAN

STANDARD ABBREVIATIONS

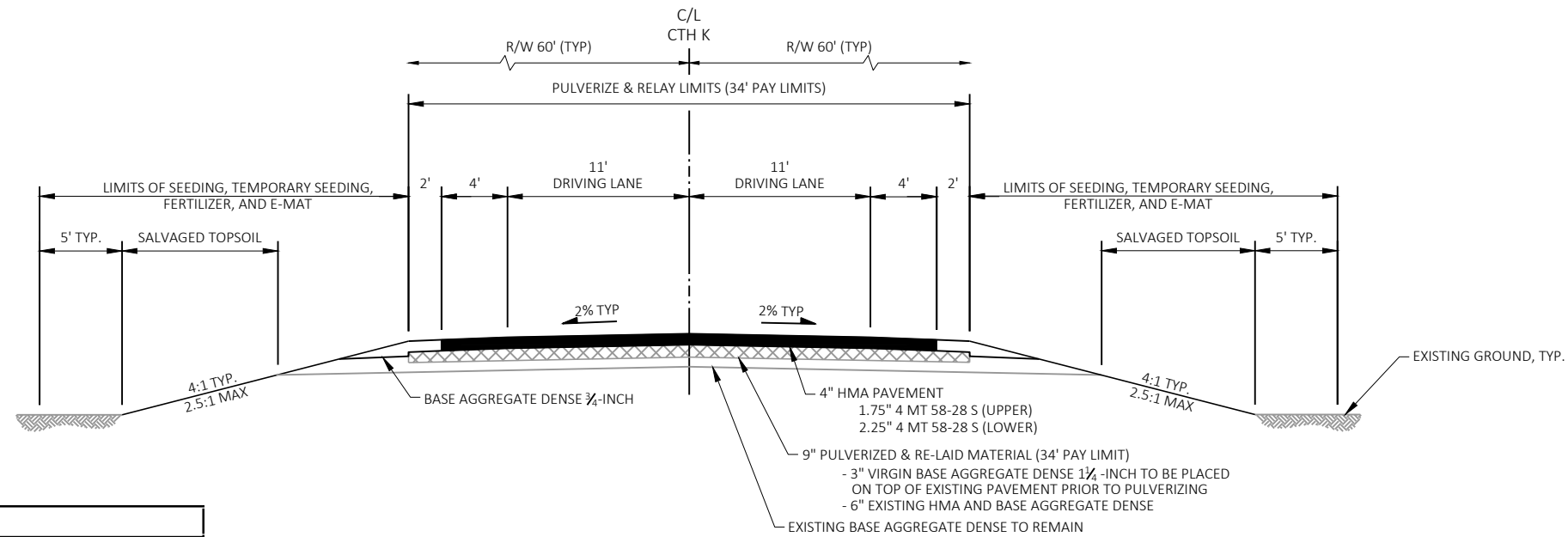
ABUT.	Abutment	JT	Joint	SEC	Section
AC	Acre	JCT	Junction	SHLDR	Shoulder
AGG.	Aggregate	LHF	Left-Hand Forward	SHR	SHRINKAGE
AH	Ahead	L	Length of Curve	SW	Sidewalk
<	Angle	LIN FT OR LF	Linear Foot	S	South
ASPH	Asphaltic	LC	Long Chord of Curve	SQ	Square
AVG.	Average	MH	Manhole	SF OR SQ FT	Square Feet
A.D.T	Average Daily Traffic	MB	Mailbox	SY OR SQ YD	Square Yard
BAD	Base Aggregate Dense	ML OR M/L	Match Line	STD	Standard
BK	Back	N	North	SDD	Standard Detail Drawings
BF	Back Face	Y	North Grid Coordinate	STH	State Trunk Highway
B.M.	Bench Mark	OD	Outside Diameter	STA	Station
BR.	Bridge	PLE	Permanent Limited Easement	SS	Storm Sewer
C/L	Center Line	PT	Point	SG	Subgrade
CC	Center to Center	PC	Point of Curvature	SE	Superelevation
CTH	County Trunk Highway	PI	Point of Intersection	SL or S/L	Survey Line
CR.	Creek	PRC	Point of Reverse Curvature	SV	Septic Vent
CY or CU YD	Cubic Yard	PT	Point of Tangency	T	Tangent
CP	Culvert Pipe	POC	Point on Curve	TEL	Telephone
C & G	Curb and Gutter	PVC	Polyvinyl Chloride	TEMP	Temporary
D	Degree of Curve	PCC	Portland Cement Concrete	TI	Temporary Interest
DHV	Design Hour Volume	LB	Pound	t	Ton
DIA	Diameter	PSI	Pounds Per Square Inch	T or TN	Town
E	East	PE	Private Entrance	TRANS	Transition
X	East Grid Coordinate	R	Radius	TL OR T/L	Transit Line
ELEC	Electric	RR	Railroad	T	Trucks (percent of)
EL OR ELEV	Elevation	RL OR R/L	Reference Line	TYP	Typical
ESALS	Equivalent Single Axle Loads	RP	Reference Point	UNCL	Unclassified
EBS	Excavation Below Subgrade	RCCP	Reinforced Concrete Culvert Pipe	UG	Underground Cable
FF	Face to Face	REQD	Required	USH	United States Highway
FE	Field Entrance	RES	Residence or Residential	VAR	Variable
F	Fill	RW	Retaining Wall	V	Velocity or Design Speed
FG	Finished Grade	RT	Right	VERT	Vertical
FL or F/L	Flow Line	RHF	Right-Hand Forward	VC	Vertical Curve
FT	Foot	R/W	Right-of-Way	VOL	Volume
FTG	Footing	R	River	WM	Water Main
GN	Grid North	RD	Road	WV	Water Valve
HT	Height	RDWY	Roadway	W	West
CWT	Hundredweight	SALV	Salvaged	WB	Westbound
HYD	Hydrant	SAN S	Sanitary Sewer	YD	Yard
INL	Inlet	ID	Inside Diameter	INV	Invert
IP	Iron Pipe or Pin	IRS	Iron Rod Set		



EXISTING TYPICAL SECTION
 STA 11+00 - 27+61

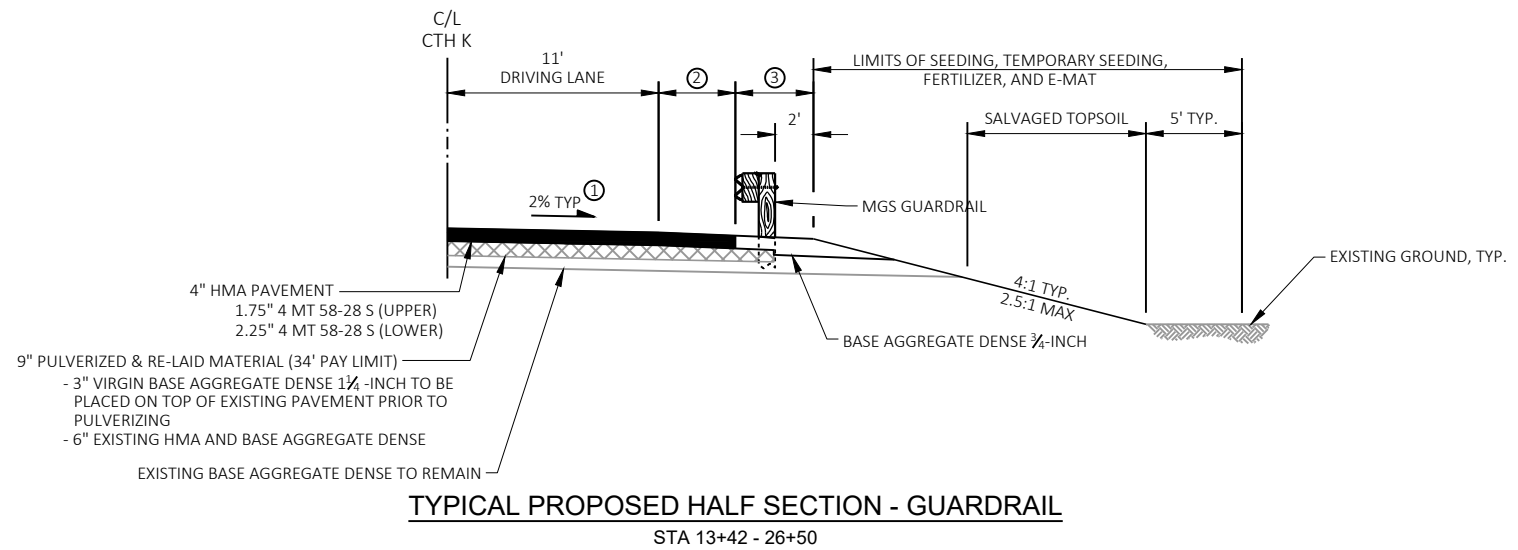


TYPICAL EXISTING HALF SECTION - GUARDRAIL
 STA 13+33 - 27+61



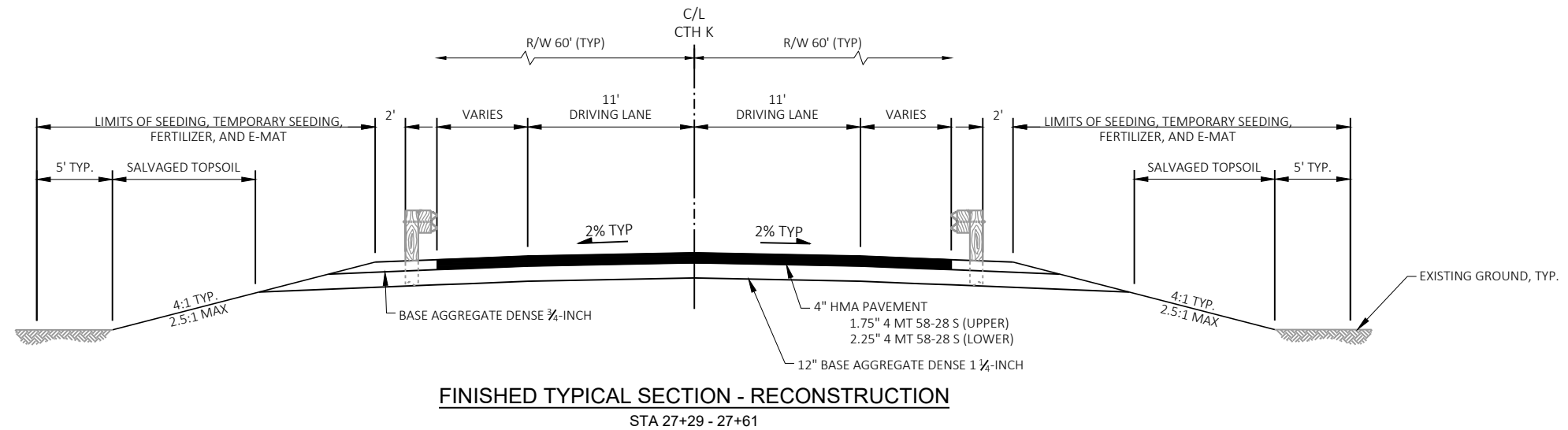
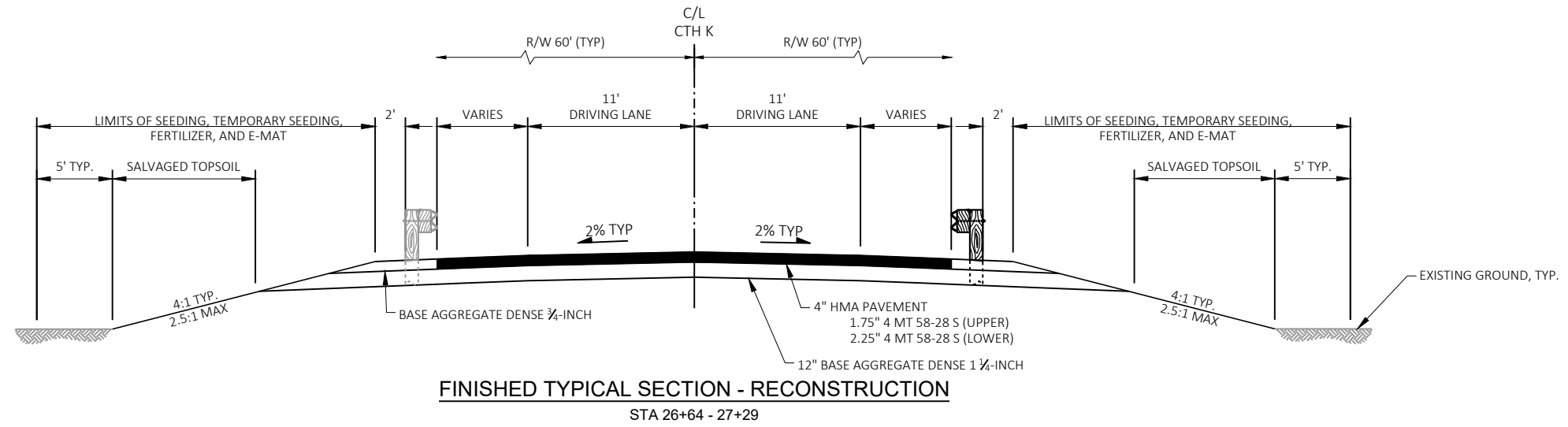
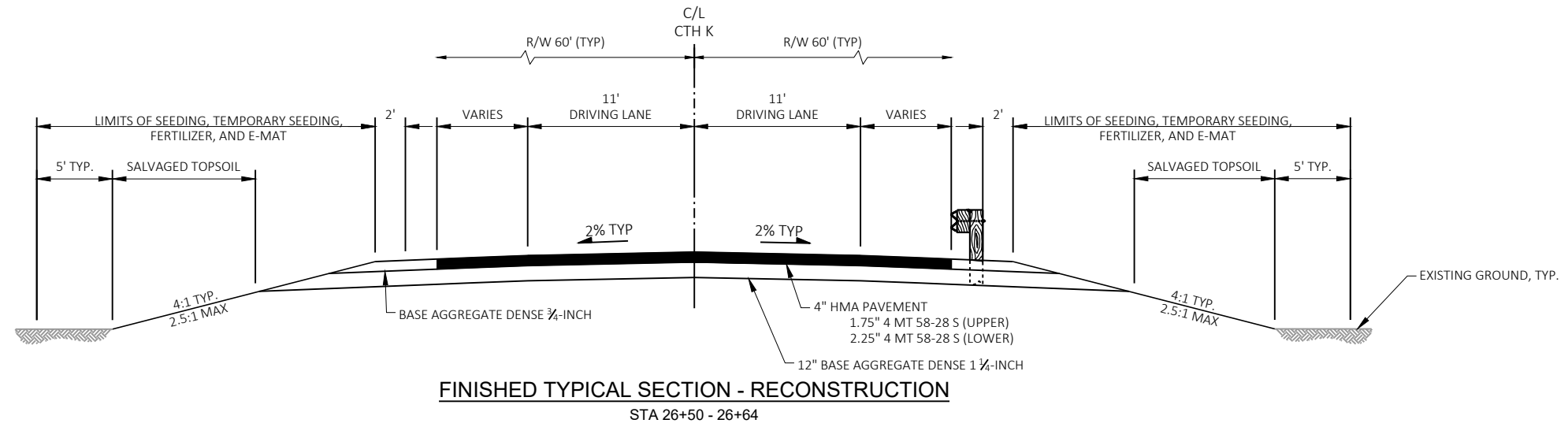
FINISHED TYPICAL SECTION - PULVERIZE & RELAY
STA 11+00 - 26+50

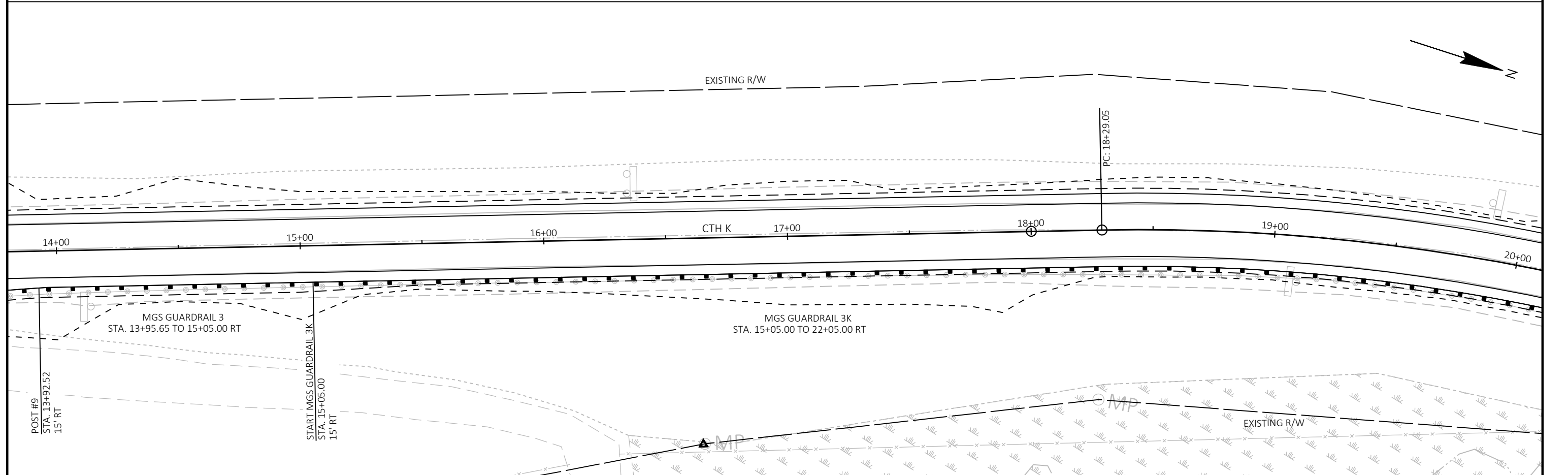
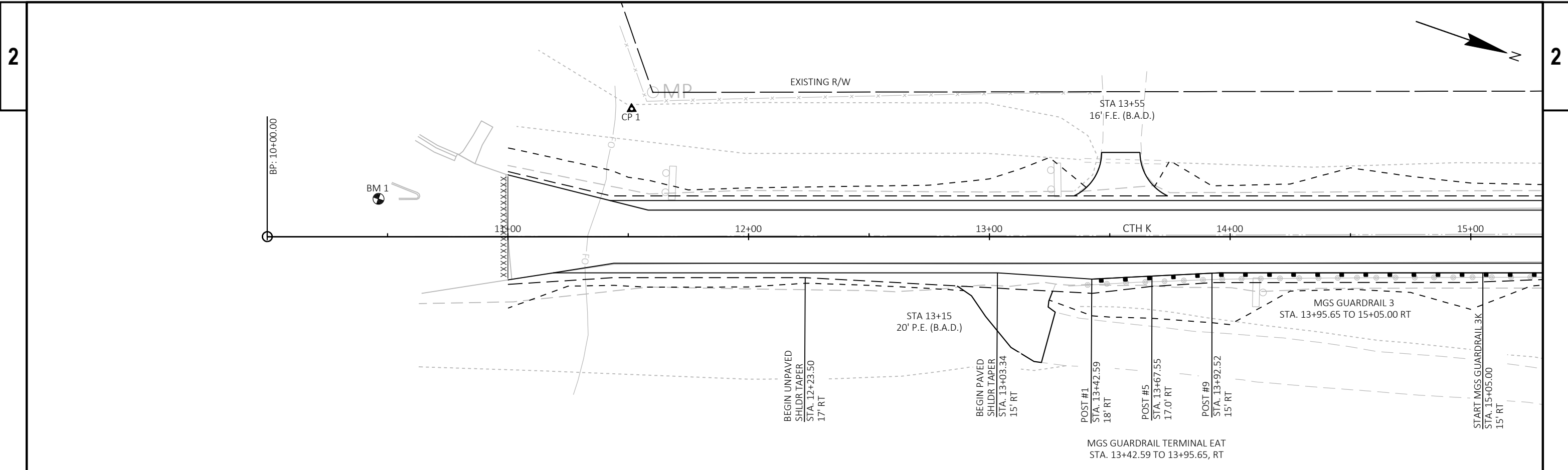
SUPERELEVATION TABLE: P.I. STA.=20+73.64							
STATION	REMARK	LEFT				RIGHT	
		UNPAVED SHOULDER	PAVED SHOULDER	LANE	LANE	PAVED SHOULDER	UNPAVED SHOULDER
16+54.08	END NORMAL SHOULDER	-4.0%	-2.0%	-2.0%	-2.0%	-2.0%	-4.0%
16+98.56	END NORMAL CROWN	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-4.0%
17+00.00		-1.0%	-1.0%	-1.0%	-2.0%	-2.0%	-4.0%
17+43.04	LEVE. CROWN	0.0%	0.0%	0.0%	-2.0%	-2.0%	-4.0%
17+50.00		0.3%	0.3%	0.3%	-2.0%	-2.0%	-4.0%
17+87.52	REVERSE CROWN	2.0%	2.0%	2.0%	-2.0%	-2.0%	-4.0%
18+00.00		2.6%	2.6%	2.6%	-2.6%	-2.6%	-4.0%
18+29.05	BEG \ CURVE						
18+32.01	LOW SHOULDER MATCH	4.0%	4.0%	4.0%	-4.0%	-4.0%	-4.0%
18+50.00		4.8%	4.8%	4.8%	-4.8%	-4.8%	-4.8%
18+72.04	BEG N FULL SUPER	5.8%	5.8%	5.8%	-5.8%	-5.8%	-5.8%
19+00.00		5.8%	5.8%	5.8%	-5.8%	-5.8%	-5.8%
19+50.00		5.8%	5.8%	5.8%	-5.8%	-5.8%	-5.8%
20+00.00		5.8%	5.8%	5.8%	-5.8%	-5.8%	-5.8%
20+50.00		5.8%	5.8%	5.8%	-5.8%	-5.8%	-5.8%
21+00.00		5.8%	5.8%	5.8%	-5.8%	-5.8%	-5.8%
21+50.00		5.8%	5.8%	5.8%	-5.8%	-5.8%	-5.8%
22+00.00		5.8%	5.8%	5.8%	-5.8%	-5.8%	-5.8%
22+50.00		5.8%	5.8%	5.8%	-5.8%	-5.8%	-5.8%
22+61.40	END FULL SUPER	5.8%	5.8%	5.8%	-5.8%	-5.8%	-5.8%
23+00.00		4.1%	4.1%	4.1%	4.1%	4.1%	4.1%
23+01.44	LOW SHOULDER MATCH	4.0%	4.0%	4.0%	-4.0%	-4.0%	-4.0%
23+04.40	END CURVE	---	---	---	---	---	---
23+45.92	REVERSE CROWN	2.0%	2.0%	2.0%	-2.0%	-2.0%	-4.0%
23+50.00		1.8%	1.8%	1.8%	-2.0%	-2.0%	-4.0%
23+90.40	LEVE. CROWN	0.0%	0.0%	0.0%	-2.0%	-2.0%	-4.0%
24+00.00		-0.2%	-0.2%	-0.2%	-2.0%	-2.0%	-4.0%
24+50.00		-1.3%	-1.3%	-1.3%	-2.0%	-2.0%	-4.0%
24+79.37	BEGIN NORMAL CROWN	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-4.0%
25+23.85	BEGIN NORMAL SHOULDER	-4.0%	-2.0%	-2.0%	-2.0%	-2.0%	-4.0%



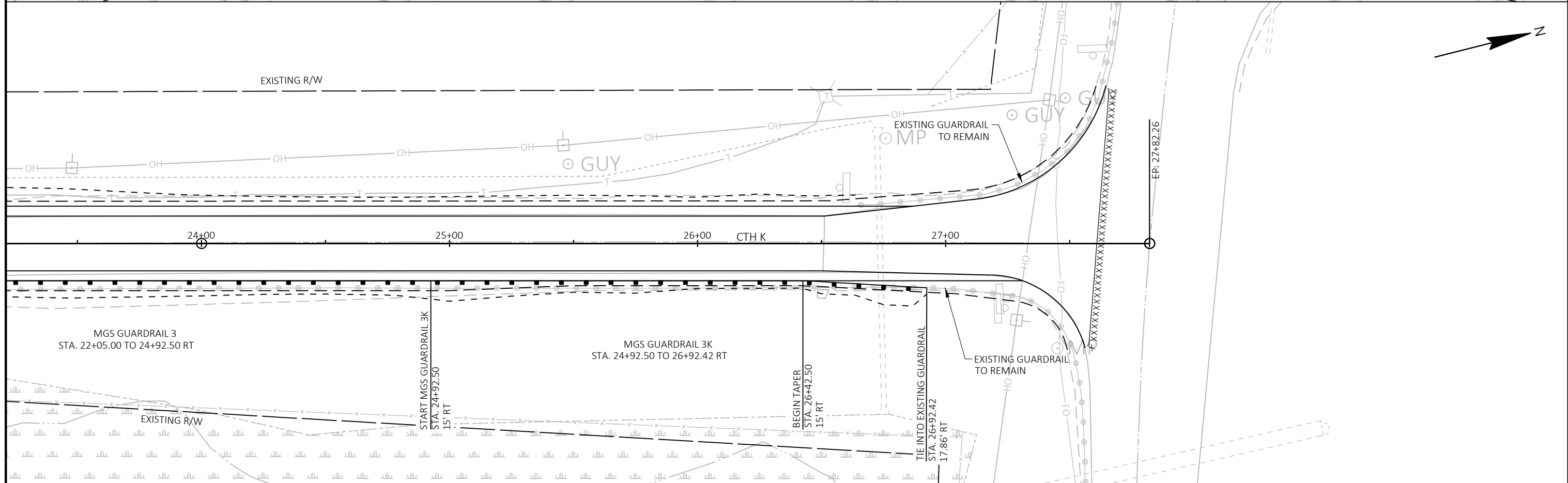
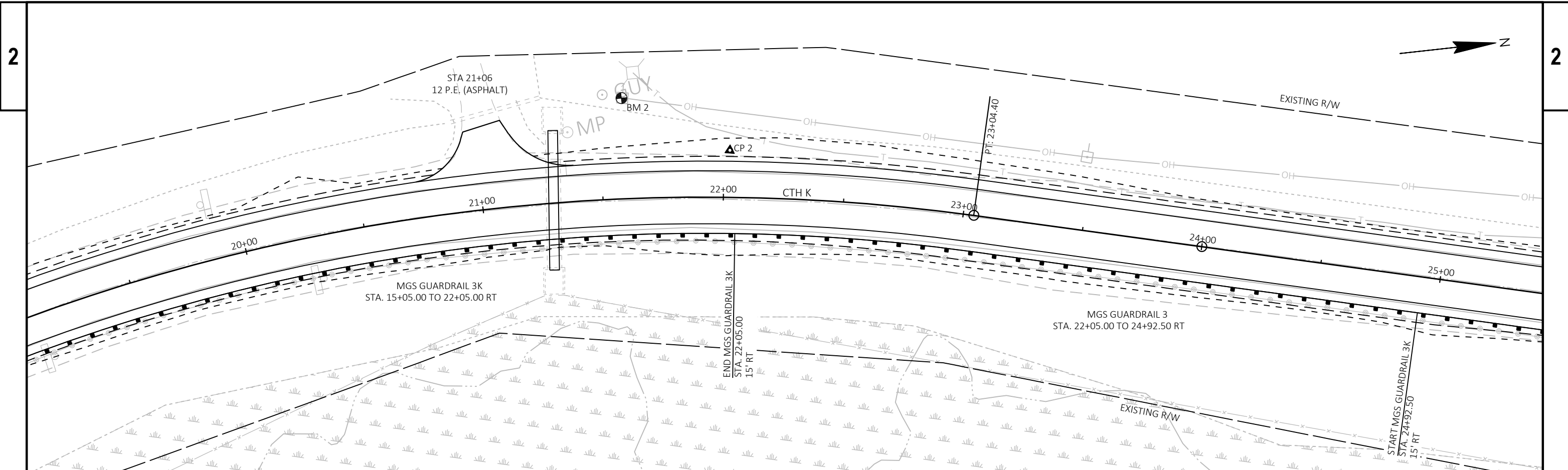
TYPICAL PROPOSED HALF SECTION - GUARDRAIL
STA 13+42 - 26+50

- ① SEE SUPER ELEVATION TABLE.
- ② TAPER PAVEMENT TO FACE OF GUARDRAIL. WIDTH VARIES AT GUARDRAIL FLARES AS WELL AS TO MATCH TO EXISTING AT BEGIN AND END OF PROJECT.
- ③ VARIES FROM POST 9 TO POST 1. SEE CROSS SECTIONS AND SDD 14B44-04a.

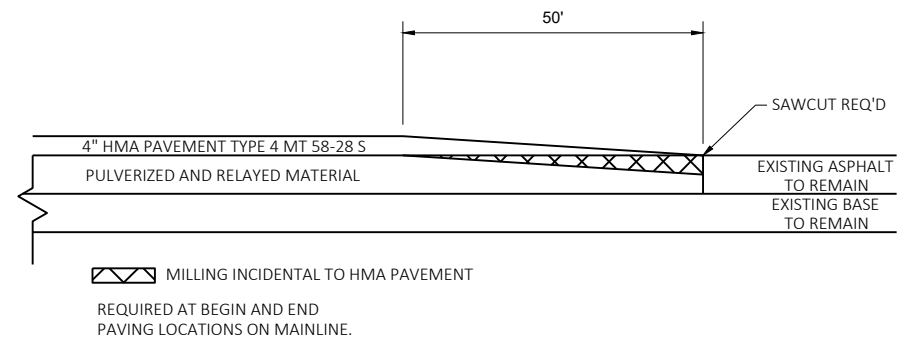




PROJECT NO: 5679-00-78	HWY: CTH K	COUNTY: IOWA	BEAM GUARD DETAILS	SHEET	E
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PROJECT NO: 5679-00-78	HWY: CTH K	COUNTY: IOWA	BEAM GUARD DETAILS	SHEET	E
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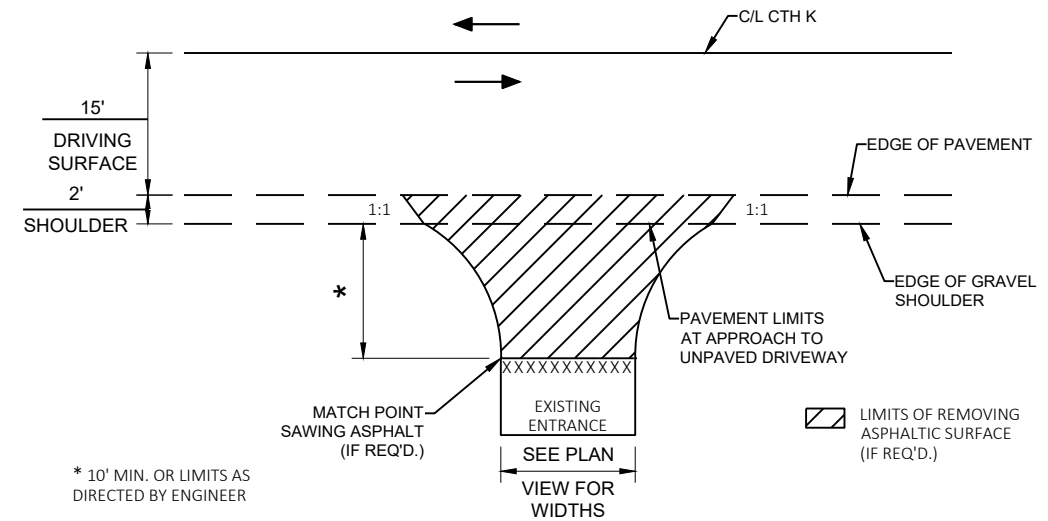


BUTT JOINT
NOT TO SCALE

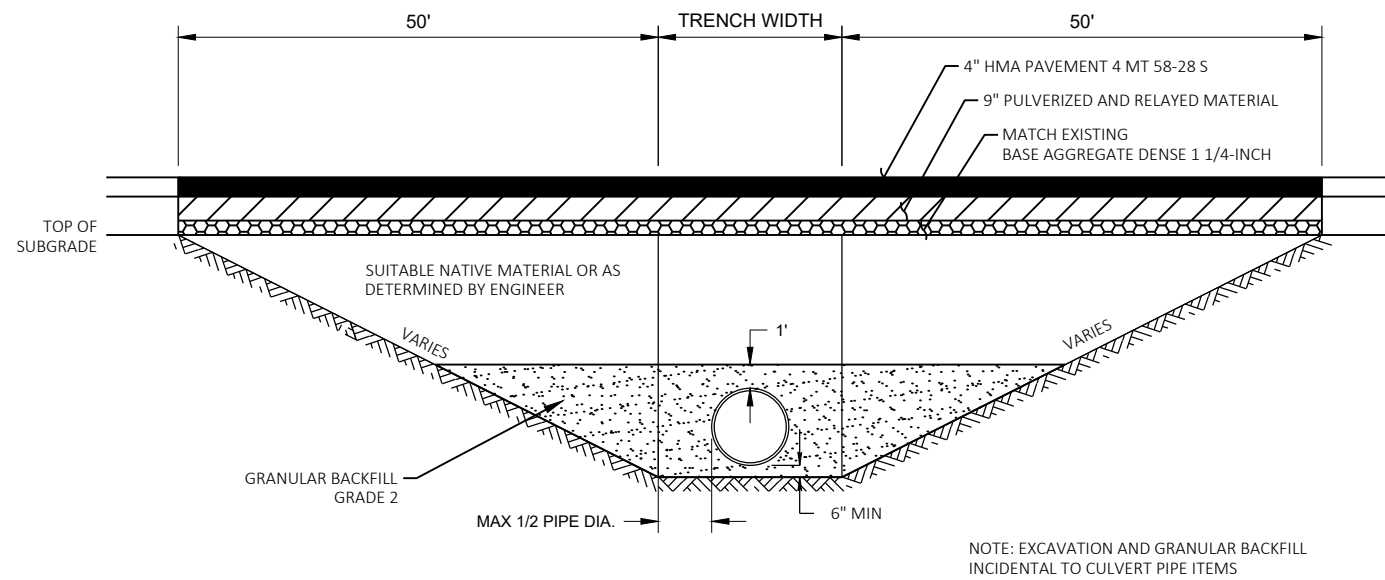
RUNOFF COEFFICIENT TABLE

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

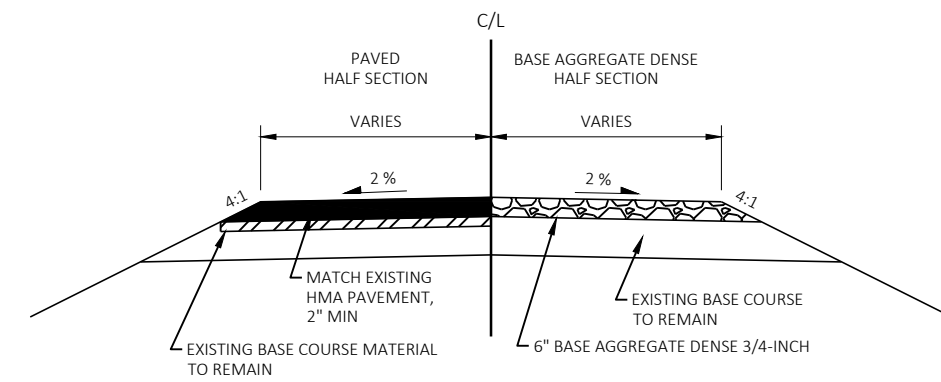
TOTAL PROJECT AREA = 5.65 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.20 ACRES



TYPICAL PRIVATE AND FIELD ENTRANCE
DETAILS

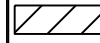

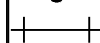



CULVERT REPLACEMENT DETAIL



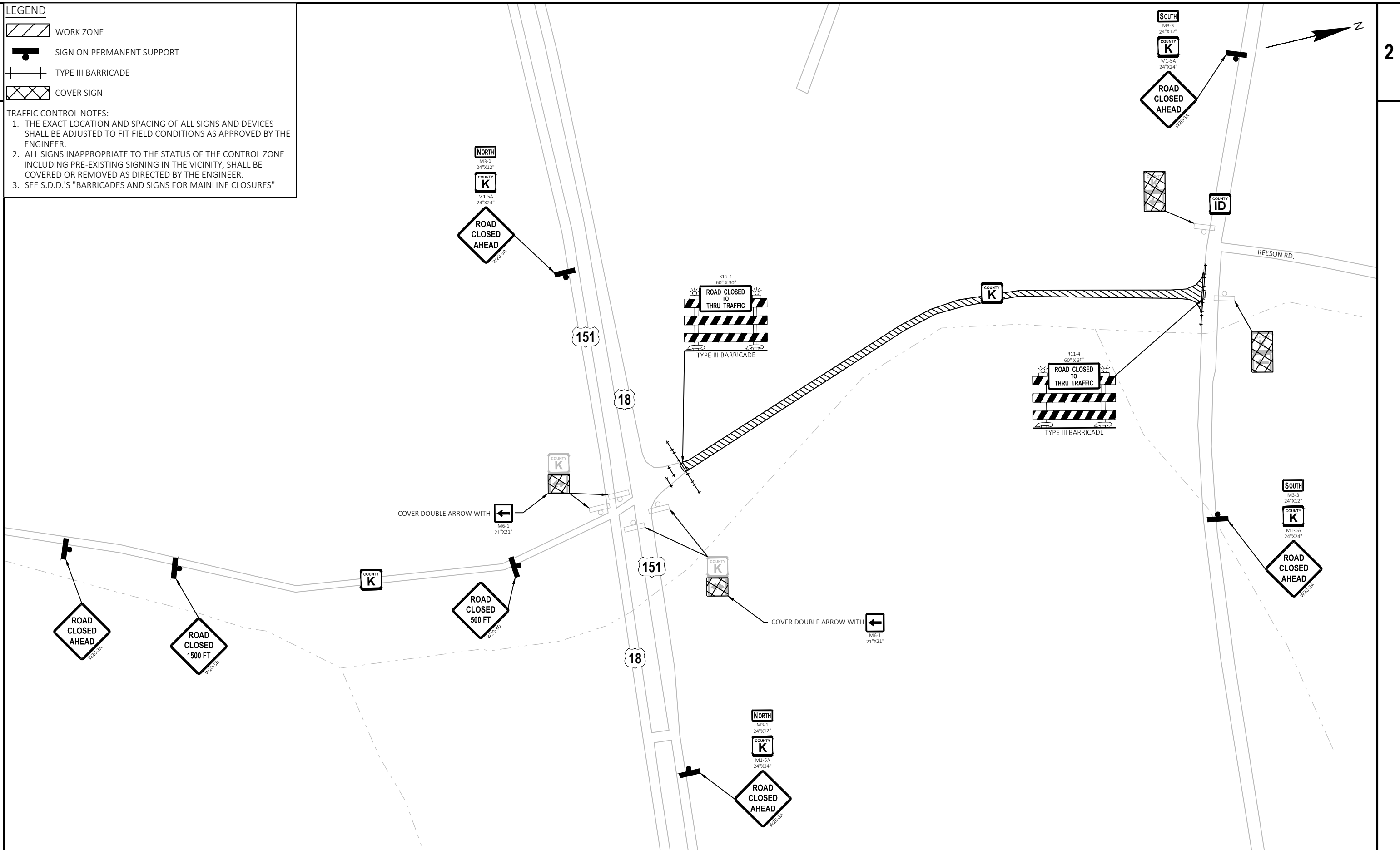
TYPICAL CROSS SECTION FOR
PRIVATE AND FIELD ENTRANCES

LEGEND

-  WORK ZONE
-  SIGN ON PERMANENT SUPPORT
-  TYPE III BARRICADE
-  COVER SIGN

TRAFFIC CONTROL NOTES:

1. THE EXACT LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
2. ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE INCLUDING PRE-EXISTING SIGNING IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.
3. SEE S.D.D.'S "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"



Estimate Of Quantities

5679-00-78

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0004	204.0110	Removing Asphaltic Surface	SY	69.000	69.000
0006	204.0165	Removing Guardrail	LF	1,350.000	1,350.000
0008	205.0100	Excavation Common	CY	337.000	337.000
0010	213.0100	Finishing Roadway (project) 01. 5679-00-78	EACH	1.000	1.000
0012	305.0110	Base Aggregate Dense 3/4-Inch	TON	279.000	279.000
0014	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,126.000	1,126.000
0016	325.0100	Pulverize and Relay	SY	5,860.000	5,860.000
0018	374.1020.S	QMP Pulverize and Relay Compaction	SY	5,860.000	5,860.000
0020	455.0605	Tack Coat	GAL	400.000	400.000
0022	460.2000	Incentive Density HMA Pavement	DOL	820.000	820.000
0024	460.6224	HMA Pavement 4 MT 58-28 S	TON	1,280.000	1,280.000
0026	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	16.000	16.000
0028	520.4148	Culvert Pipe Class IV 48-Inch	LF	58.000	58.000
0030	520.8000	Concrete Collars for Pipe	EACH	2.000	2.000
0032	614.2300	MGS Guardrail 3	LF	396.850	396.850
0034	614.2330	MGS Guardrail 3 K	LF	900.000	900.000
0036	614.2610	MGS Guardrail Terminal EAT	EACH	1.000	1.000
0038	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5679-00-78	EACH	1.000	1.000
0040	619.1000	Mobilization	EACH	1.000	1.000
0042	624.0100	Water	MGAL	14.100	14.100
0044	625.0500	Salvaged Topsoil	SY	1,300.000	1,300.000
0046	628.1504	Silt Fence	LF	1,650.000	1,650.000
0048	628.1520	Silt Fence Maintenance	LF	1,355.000	1,355.000
0050	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0052	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0054	628.2008	Erosion Mat Urban Class I Type B	SY	4,022.000	4,022.000
0056	629.0210	Fertilizer Type B	CWT	3.000	3.000
0058	630.0130	Seeding Mixture No. 30	LB	63.000	63.000
0060	630.0170	Seeding Mixture No. 70	LB	3.000	3.000
0062	630.0200	Seeding Temporary	LB	110.000	110.000
0064	630.0400	Seeding Nurse Crop	LB	6.000	6.000
0066	630.0500	Seed Water	MGAL	0.500	0.500
0068	633.5200	Markers Culvert End	EACH	2.000	2.000
0070	642.5001	Field Office Type B	EACH	1.000	1.000
0072	643.0420	Traffic Control Barricades Type III	DAY	1,026.000	1,026.000
0074	643.0705	Traffic Control Warning Lights Type A	DAY	2,052.000	2,052.000
0076	643.0900	Traffic Control Signs	DAY	1,425.000	1,425.000
0078	643.0920	Traffic Control Covering Signs Type II	EACH	8.000	8.000
0080	643.5000	Traffic Control	EACH	1.000	1.000
0082	646.1020	Marking Line Epoxy 4-Inch	LF	6,617.000	6,617.000
0084	646.6120	Marking Stop Line Epoxy 18-Inch	LF	14.000	14.000
0086	650.4500	Construction Staking Subgrade	LF	111.000	111.000
0088	650.5000	Construction Staking Base	LF	111.000	111.000
0090	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000
0092	650.8000	Construction Staking Resurfacing Reference	LF	1,550.000	1,550.000
0094	650.9911	Construction Staking Supplemental Control (project) 01. 5679-00-78	EACH	1.000	1.000
0096	690.0150	Sawing Asphalt	LF	168.000	168.000
0098	740.0440	Incentive IRI Ride	DOL	620.000	620.000

Estimate Of Quantities

5679-00-78

Line	Item	Item Description	Unit	Total	Qty
0100	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	200.000	200.000
0102	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	200.000	200.000

NOTE:
ALL ITEMS CATEGORY 0010
UNLESS OTHERWISE NOTED.

CULVERT PIPE

STATION	LOCATION	203.0100	520.4148	520.8000	633.5200
		REMOVING SMALL PIPE CULVERTS (EACH)	CLASS IV 48-INCH (LF)	CONCRETE COLLARS FOR PIPE (EACH)	MARKERS CULVERT END (EACH)
21+30	MAINLINE	1	58	2	2
TOTAL		1	58	2	2

REMOVING ASPHALTIC SURFACE

STATION	LOCATION	204.0110 (SY)
21+06	DRIVEWAY, LT	69
TOTAL		69

REMOVING GUARDRAIL

STATION - STATION	LOCATION	204.0165 (LF)
13+32 - 26+92	MAINLINE	1350
TOTAL		1350

EARTHWORK SUMMARY

STATION - STATION	LOCATION	COMMON EXCAVATION (1) (ITEM # 205.0100)	SALVAGED / UNUSABLE PAVEMENT MATERIAL (3)	AVAILABLE MATERIAL (4)	UNEXPANDED FILL	EXPANDED FILL (5) FACTOR 1.25	MASS ORDINATE +/- (6)	COMMENT:
		CUT (2)						
11+00 - 27+61	CTH K	337	100	237	154	193	45	
21+28 - 21+31	CULVERT REPLACEMENT	0	0	0	35	44	-44	
TOTALS		337	100	237	189	236	1	

- 1) COMMON EXCAVATION IS THE CUT. ITEM # 205.0100.
- 2) SALVAGED/UNUSABLE MATERIAL IS INCLUDED IN CUT.
- 3) SALVAGED/UNUSABLE MATERIAL INCLUDES ASPHALTIC PAVEMENT WITHIN RECONSTRUCTED PORTIONS OF THE PROJECT.
- 4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE MATERIAL
- 5) EXPANDED FILL FACTOR = 1.25: EXPANDED FILL = (UNEXPANDED FILL)*1.25
- 6) THE MASS ORDINATE + OR - CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL IN THE DIVISION.

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110	305.0120	624.0100
		3/4-INCH BASE (TON)	1 1/4-INCH BASE (TON)	WATER (MGAL)
11+00 - 27+61	MAINLINE	250	1126	13.8
	UNPAVED DRIVEWAYS	29	-	0.3
TOTALS		279	1126	14.1

PULVERIZE AND RELAY

STATION - STATION	LOCATION	325.0100 (SY)
11+00 - 26+50	MAINLINE	5860
TOTAL		5860

ASPHALTIC ITEMS

STATION - STATION	LOCATION	455.0605	460.6224
		TACK COAT (GAL)	HMA PAVEMENT 4 MT 58-28 S (TON)
11+00 - 27+61	MAINLINE	400	1280
TOTALS		400	1280

**ASPHALTIC SURFACE DRIVEWAYS
AND FIELD ENTRANCES**

STATION	LOCATION	465.0120 (TON)
21+06	DRIVEWAY, LT	16
TOTALS		16

GUARDRAIL

STATION - STATION	LOCATION	614.2300	614.233	614.2610
		MGS GUARDRAIL 3 (LF)	MGS GUARDRAIL 3K (LF)	MGS GUARDRAIL TERMINAL EAT (EACH)
13+43	RT	-	-	1
13+96 - 15+05	RT	109.35	-	-
15+05 - 22+05	RT	-	700	-
22+05 - 24+92.50	RT	287.5	-	-
24+92.50 - 26+92.42	RT	-	200	-
TOTALS		396.85	900	1

PROJECT NO: 5679-00-78

HWY: CTH K

COUNTY: IOWA

MISCELLANEOUS QUANTITIES

SHEET

E

NOTE:
ALL ITEMS CATEGORY 0010
UNLESS OTHERWISE NOTED.

FINISHING ITEMS

STATION	-	STATION	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0130 SEEDING MIX NO. 30 (LB)	630.0170 SEEDING MIX NO. 70 (LB)	630.0200 SEEDING TEMPORARY (LB)	630.0400 SEEDING NURSE CROP (LB)	630.0500 SEED WATER (MGAL)
11+00	-	24+00	MAINLINE, LT	508	1.0	25	---	38	---	0.1
11+00	-	24+00	MAINLINE, RT	519	1.0	25	---	38	---	0.1
24+00	-	26+44	MAINLINE, LT	21	0.2	---	1	6	2	0.1
24+00	-	26+93	MAINLINE, RT	48	0.2	---	1	7	2	0.1
			UNDISTRIBUTED	204	0.6	13	1	21	2	0.1
TOTALS				1300	3.0	63	3	110	6	0.5

SILT FENCE

STATION - STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)
13+26 - 21+25	RT	795	795
21+30 - 26+92	RT	560	560
	UNDISTRIBUTED	295	---
TOTALS		1650	1355

MOBILIZATIONS EROSION CONTROL

LOCATION	626.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)
ID 5679-00-78	2	1
TOTALS	2	1

EROSION MAT URBAN CLASS I TYPE B

STATION	-	STATION	LOCATION	628.2008 (SY)
11+00	-	24+00	MAINLINE, LT	1385
11+00	-	24+00	MAINLINE, RT	1378
24+00	-	26+44	MAINLINE, LT	205
24+00	-	26+92	MAINLINE	250
			UNDISTRIBUTED	804
TOTAL				4022

TRAFFIC CONTROL

LOCATION	DURATION	643.0420 TRAFFIC CONTROL BARRICADES TYPE III (NO.)	(DAY)	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A (NO.)	(DAY)	643.0900 TRAFFIC CONTROL SIGNS (NO.)	(DAY)	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II (CYCLES) (EACH)	643.5000 TRAFFIC CONTROL (EACH)
ADVANCED WARNING	57	---	0	---	0	15	855	1	8
CLOSURE	57	14	798	28	1596	2	114	---	---
UNDISTRIBUTED	57	4	228	8	456	8	456	---	1
TOTAL		18	1026	36	2052	25	1425	---	8

PLACE TRAFFIC CONTROL IN ACCORDANCE WITH SDD 15C02 "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" AND "BARRICADES AND SIGN FOR VARIOUS CLOSURES".
UNDISTRIBUTED QUANTITY INCLUDES SIGNS FOR LOOSE GRAVEL AND UNEVEN LANES AS NEEDED
FINAL PLACEMENT SUBJECT TO ENGINEER APPROVAL.

MARKING LINE EPOXY 4-INCH

STATION	-	STATION	LOCATION	646.1020 (LF)	REMARK
11+00	-	27+61	LEFT EDGE	1695	SOLID WHITE
11+00	-	27+61	RIGHT EDGE	1664	SOLID WHITE
11+00	-	27+29	CENTER	3258	DOUBLE YELLOW
TOTAL				6617	

MARKING STOP LINE EPOXY 18-INCH

STATION	LOCATION	646.6120 (LF)	REMARK
24+29	MAINLINE	14	SOLID WHITE
TOTAL		14	

CONSTRUCTION STAKING

STATION - STATION	LOCATION	650.4500 SUBGRADE (LF)	650.5000 BASE (LF)	650.6000 PIPE CULVERTS (EACH)	650.8000 RESURFACING REFERENCE (LF)	650.9911 SUPPLEMENTAL CONTROL (EACH)
11+00 - 26+50	MAINLINE	-	-	-	1550	-
26+50 - 27+61	MAINLINE	111	111	-	-	-
21+29.52	MAINLINE PROJECT	- -	- -	1 -	- -	- 1
TOTALS		111	111	1	1550	1

SAWING ASPHALT

STATION	LOCATION	690.0150 (LF)
11+00	MAINLINE	44
21+06	DRIVEWAY, LT	16
27+61	MAINLINE	108
TOTAL		168

PROJECT NO: 5679-00-78

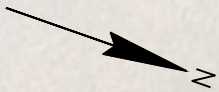
HWY: CTH K

COUNTY: IOWA

MISCELLANEOUS QUANTITIES

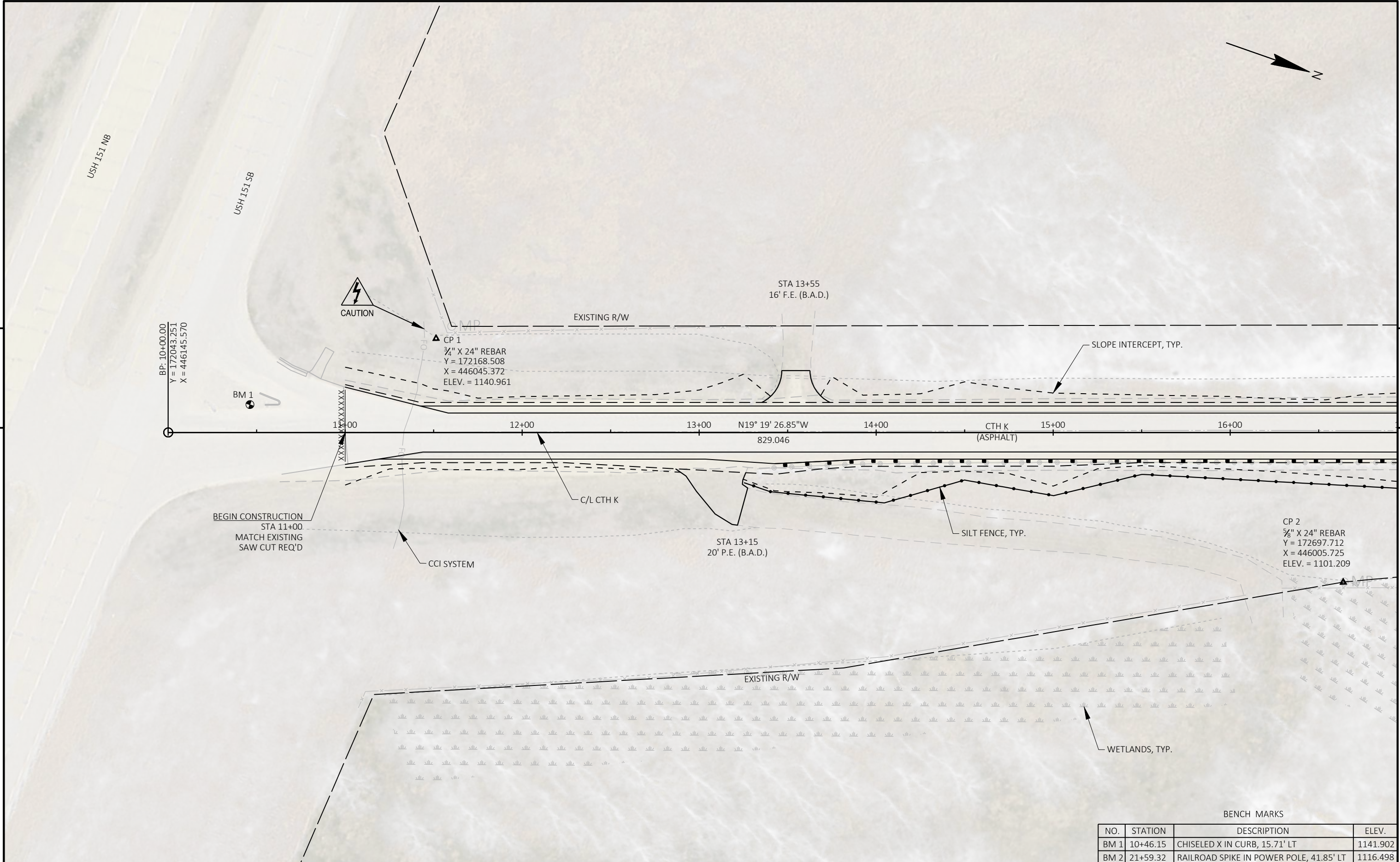
SHEET

E



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BP: 10+00.00
Y = 172043.251
X = 446145.570

BM 1

CP 1
3/4" X 24" REBAR
Y = 172168.508
X = 446045.372
ELEV. = 1140.961

STA 13+55
16' F.E. (B.A.D.)

SLOPE INTERCEPT, TYP.

N19° 19' 26.85"W
829.046

CTH K
(ASPHALT)

BEGIN CONSTRUCTION
STA 11+00
MATCH EXISTING
SAW CUT REQ'D

CCI SYSTEM

C/L CTH K

STA 13+15
20' P.E. (B.A.D.)

SILT FENCE, TYP.

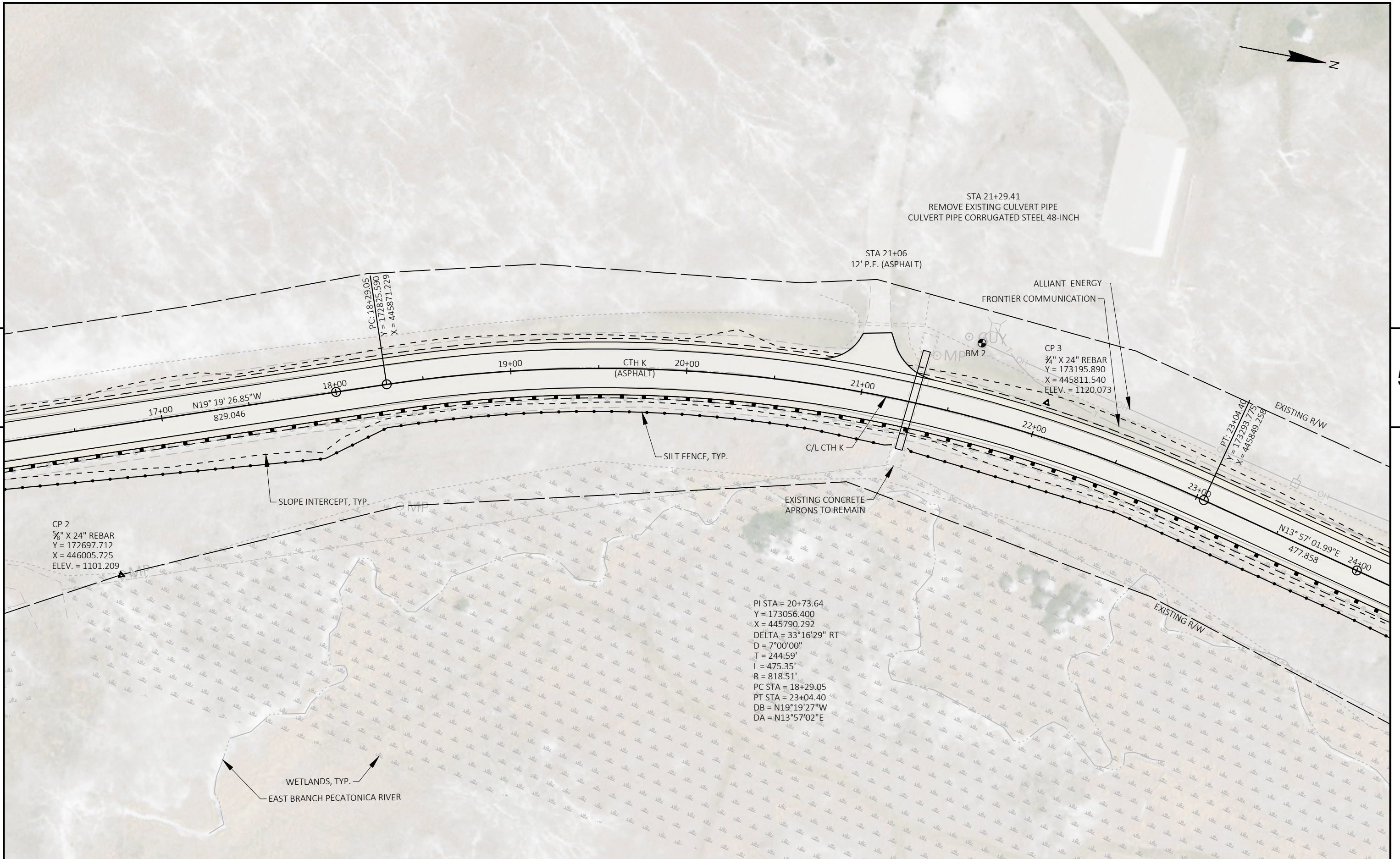
CP 2
3/8" X 24" REBAR
Y = 172697.712
X = 446005.725
ELEV. = 1101.209

EXISTING R/W

WETLANDS, TYP.

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
BM 1	10+46.15	CHISELED X IN CURB, 15.71' LT	1141.902
BM 2	21+59.32	RAILROAD SPIKE IN POWER POLE, 41.85' LT	1116.498



PROJECT NO: 5679-00-78

HWY: CTH K

COUNTY: IOWA

PLAN VIEW

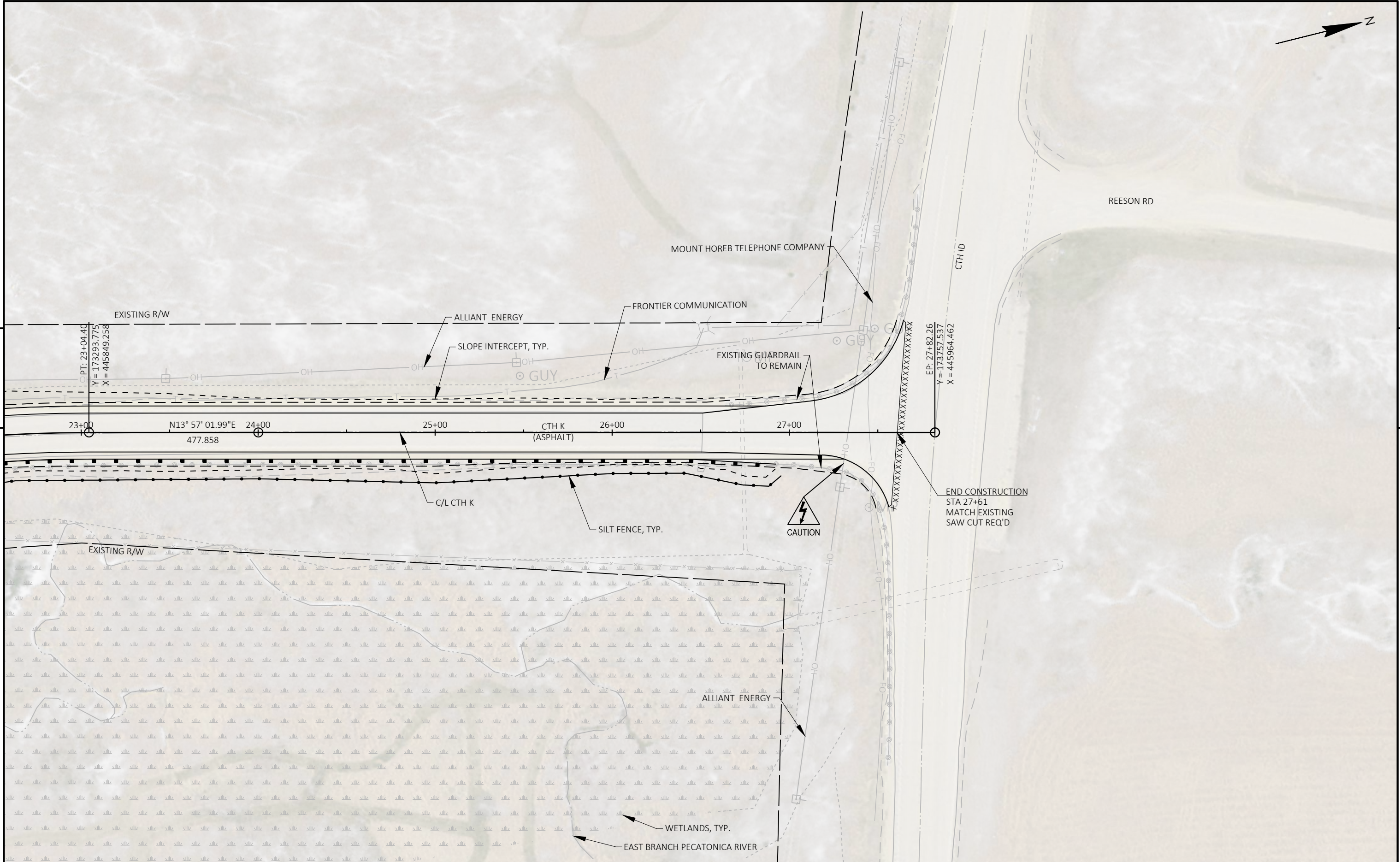
SHEET

E



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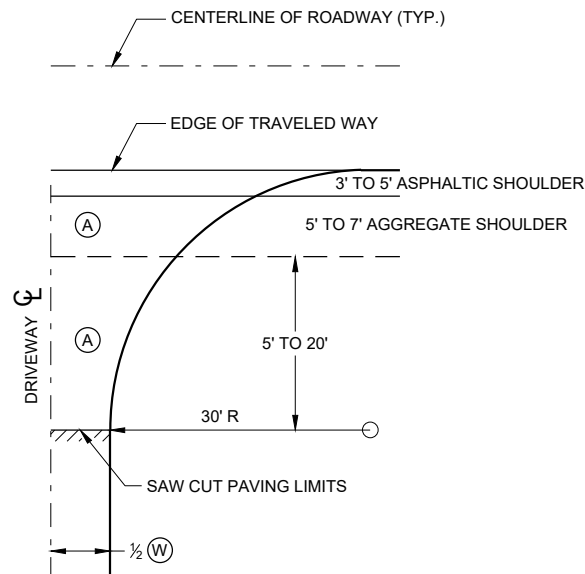
PROJECT NO: 5679-00-78	HWY: CTH K	COUNTY: IOWA	PLAN VIEW	SHEET	E
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Standard Detail Drawing List

08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E09-06	SILT FENCE
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
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C08-21A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING

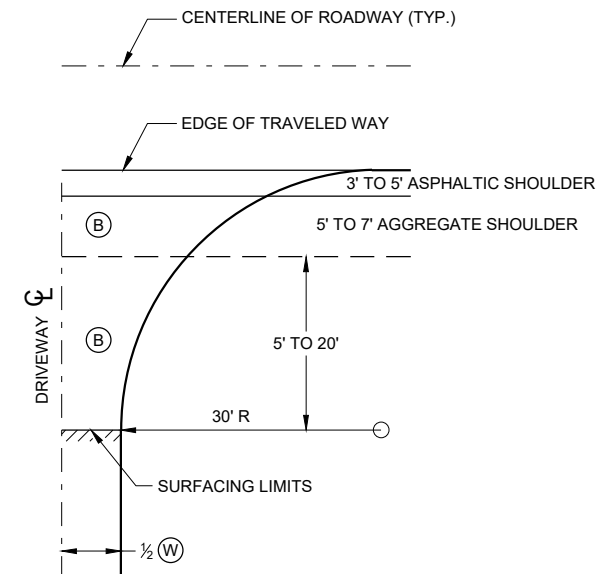
GENERAL NOTES

- ① DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.

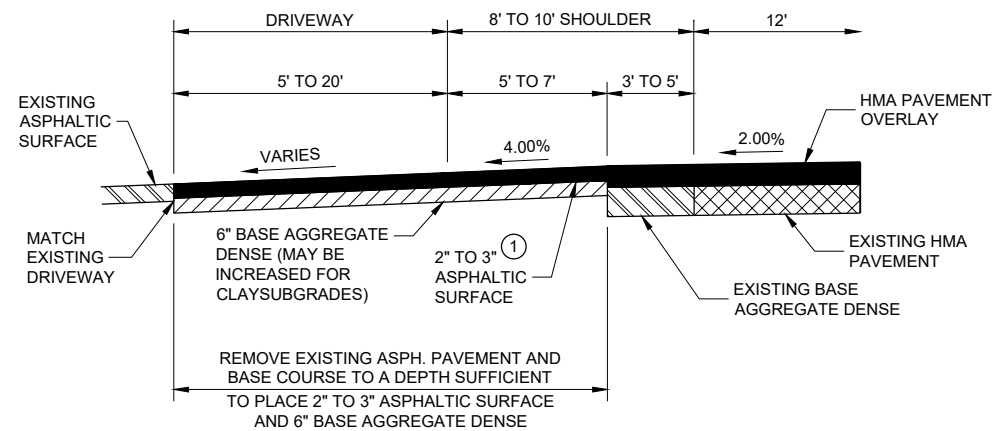


- Ⓐ : PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES. (TON)
- Ⓑ : PAID FOR AS BASE AGGREGATE DENSE 1 1/4" (TON)
- ⒲ : DRIVEWAY WIDTH 16' MIN. - 24' MAX.

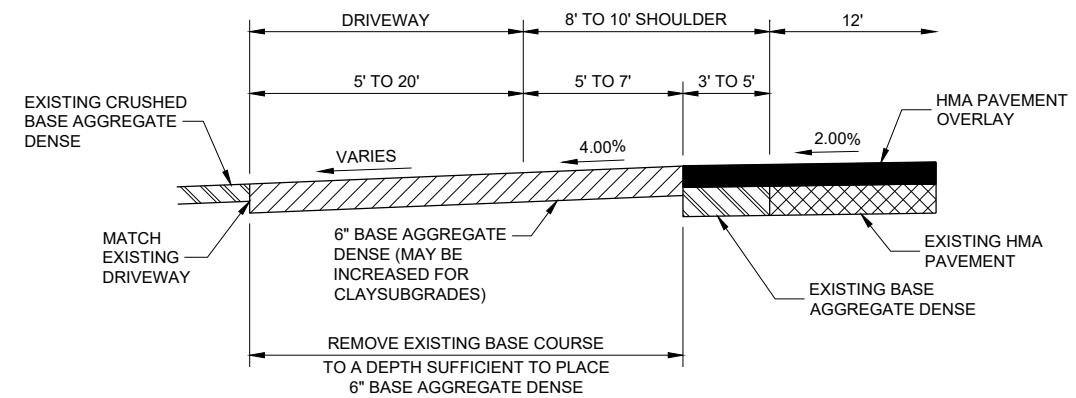
**PLAN VIEW
HALF SECTION**



**PLAN VIEW
HALF SECTION**



**PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS**



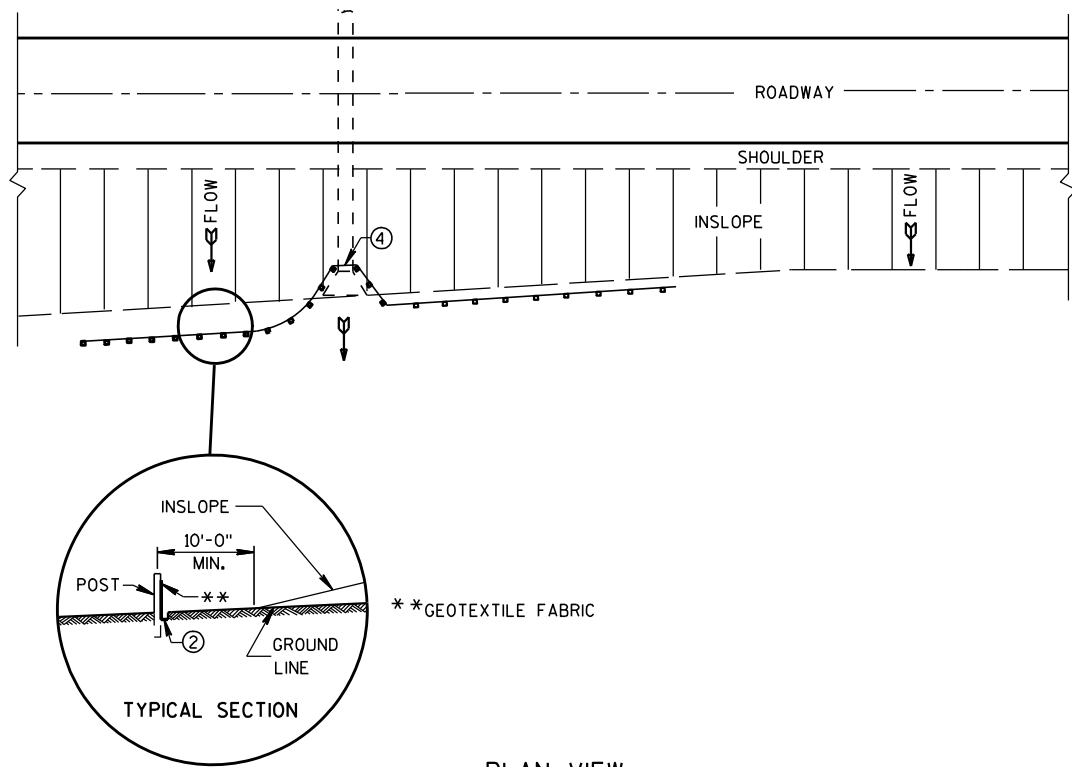
**PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS**

**DRIVEWAYS WITHOUT CURB
AND GUTTER RESURFACING
PROJECTS RURAL**

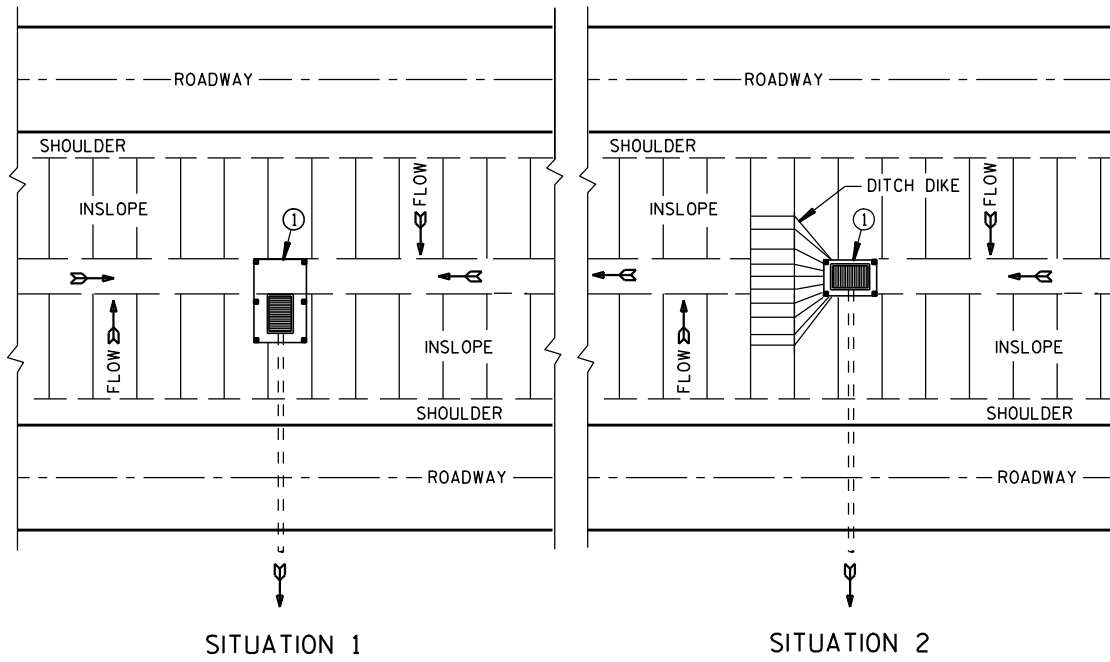
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

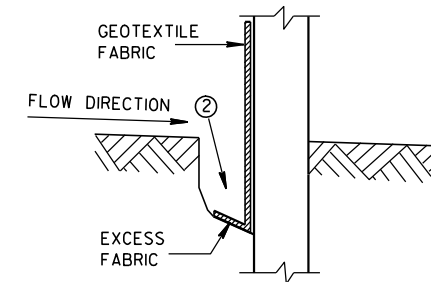


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

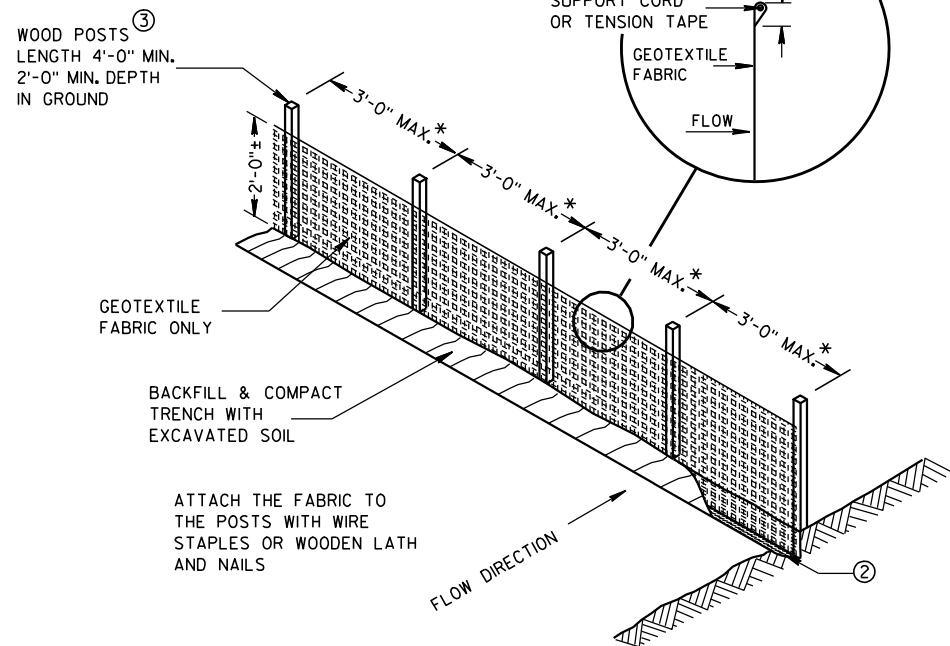
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



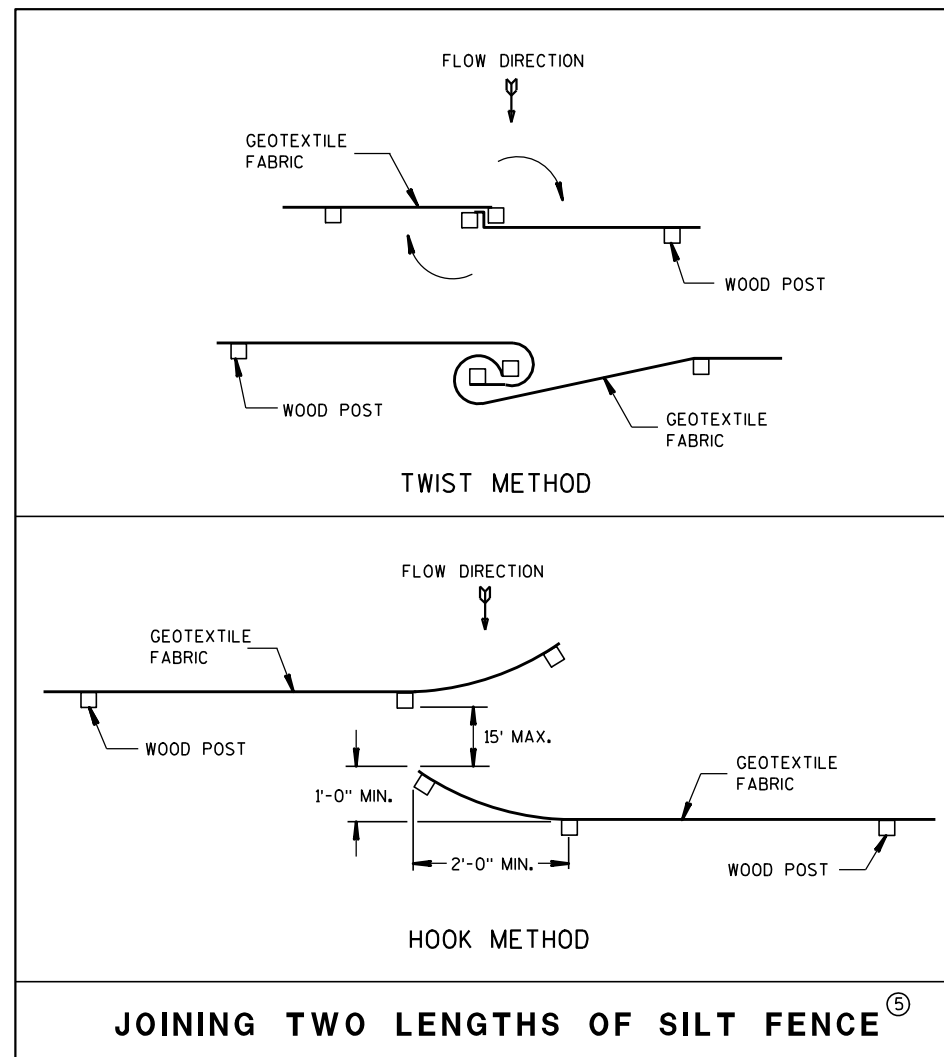
TRENCH DETAIL

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

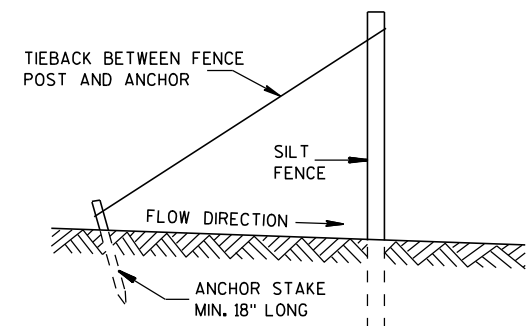


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE

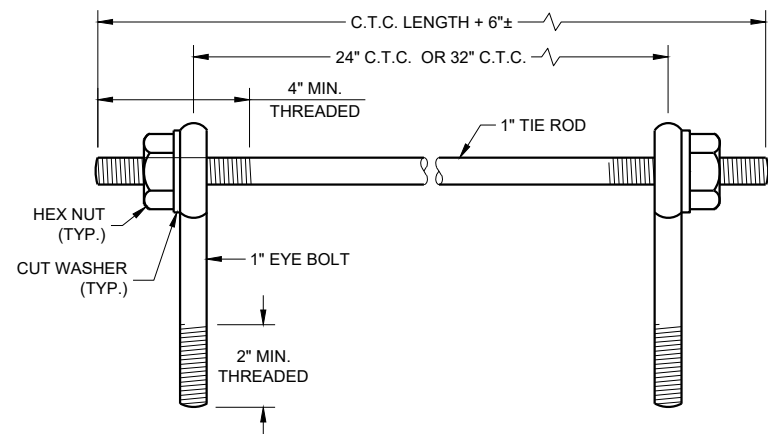


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

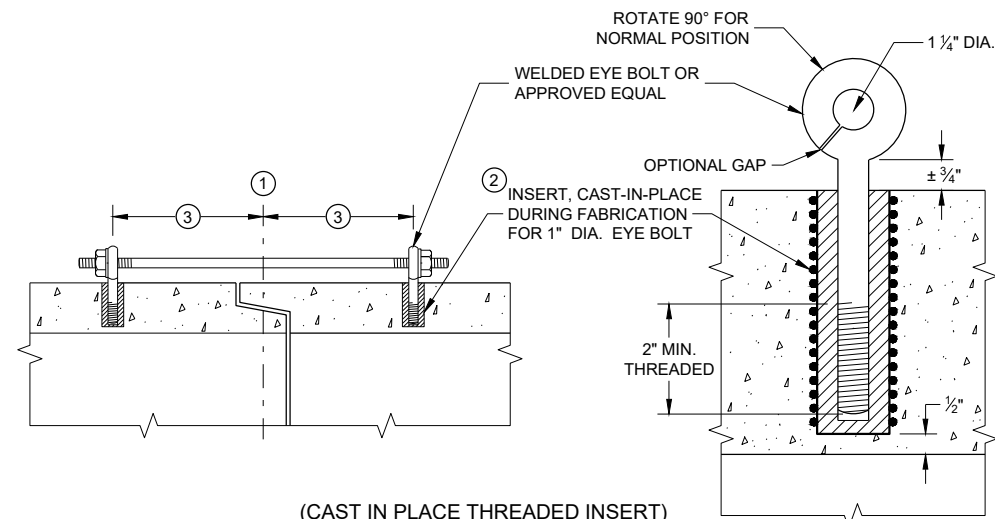
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

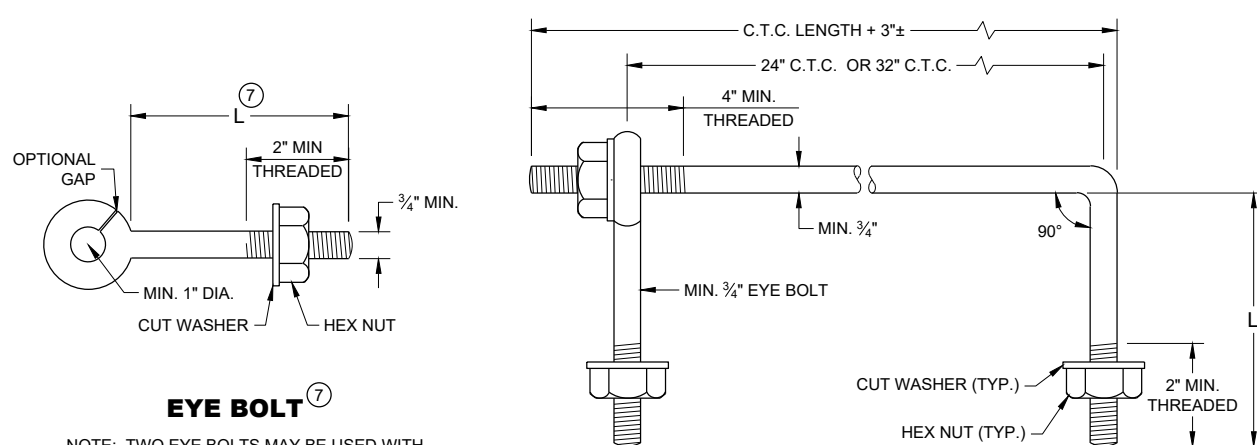
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

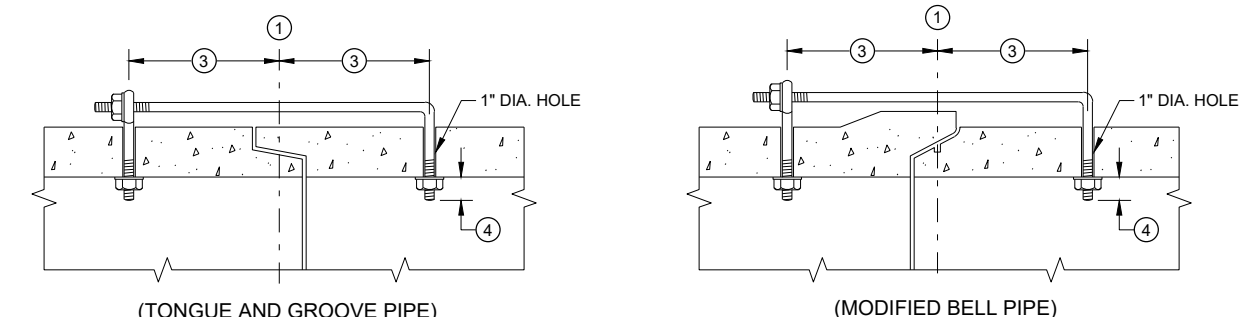
- ① CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- ④ BOLT PROJECTION 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 AND TIE ROD

EYE BOLT ⑦

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30\"/>



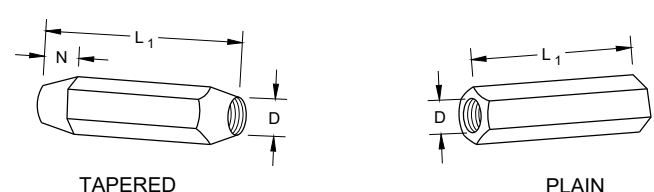
LONGITUDINAL SECTION
(JOINT TIES FOR 18\"/>

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

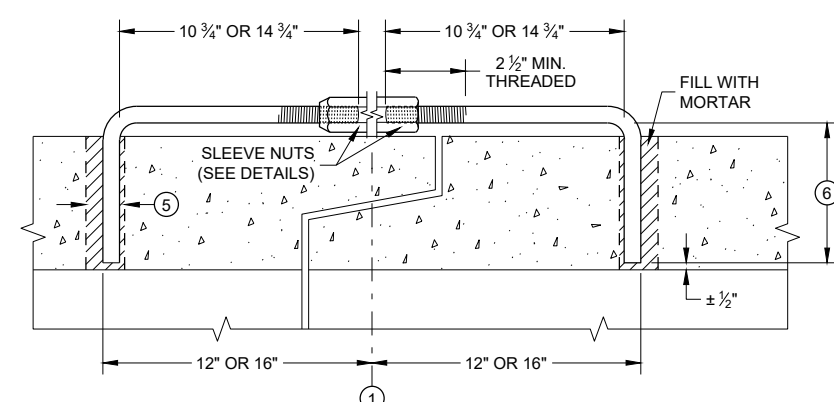
ADJUSTABLE TIE ROD TABLE

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

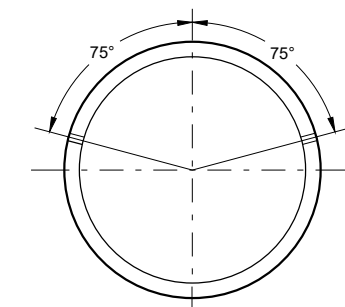
DIMENSIONS SHOWN ARE IN INCHES



RIGHT AND LEFT THREADS SLEEVE NUTS

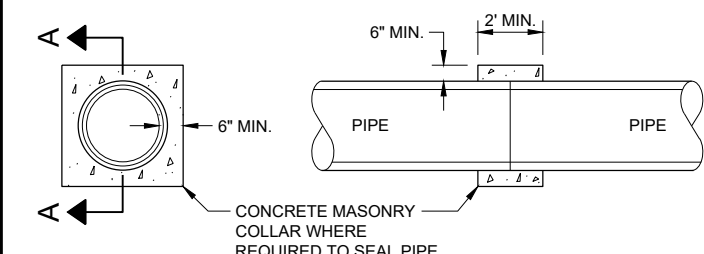


LONGITUDINAL SECTION
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



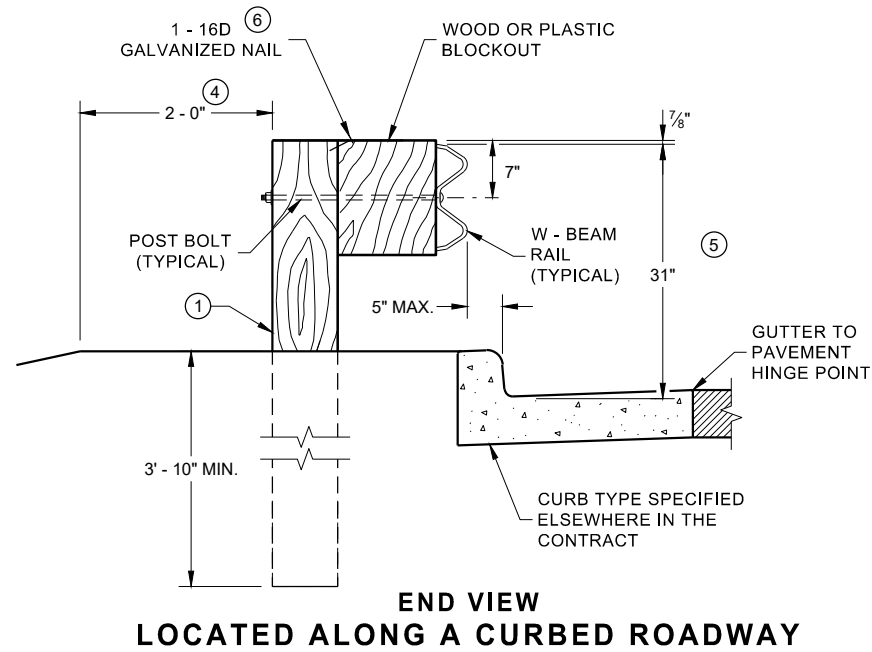
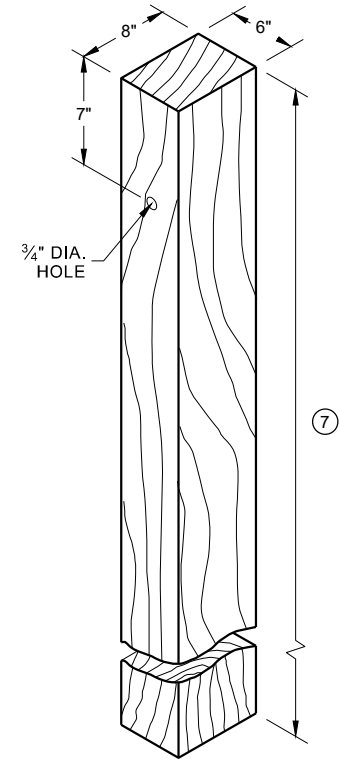
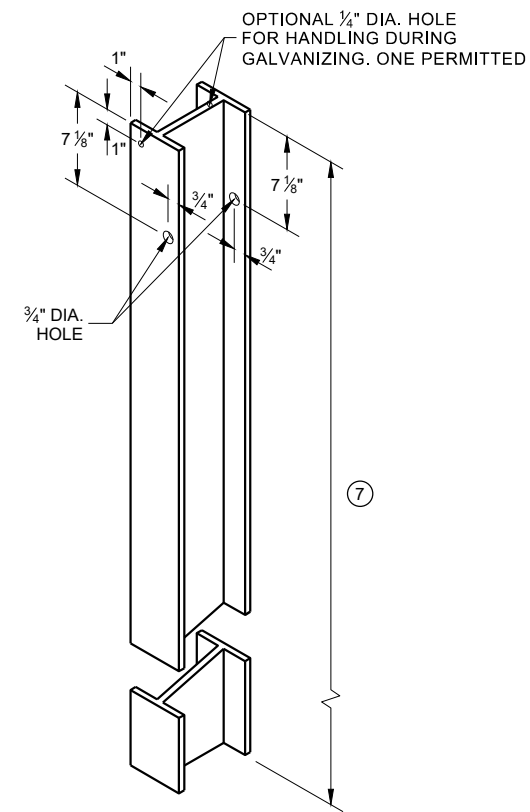
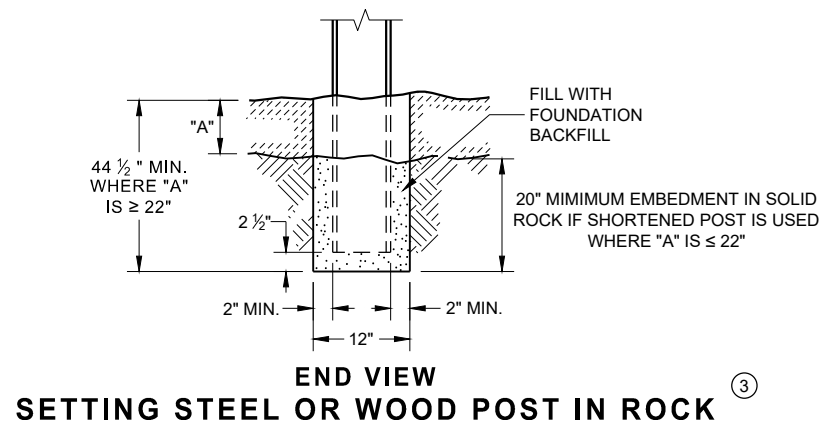
SECTION A - A
CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

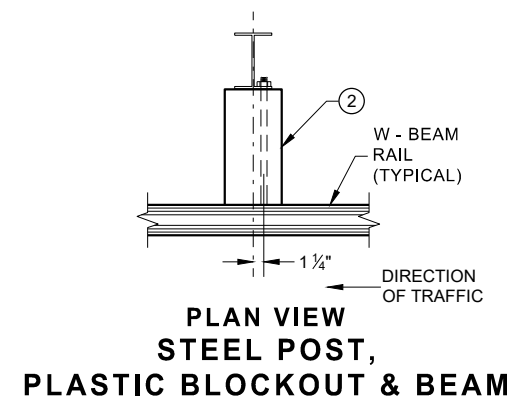
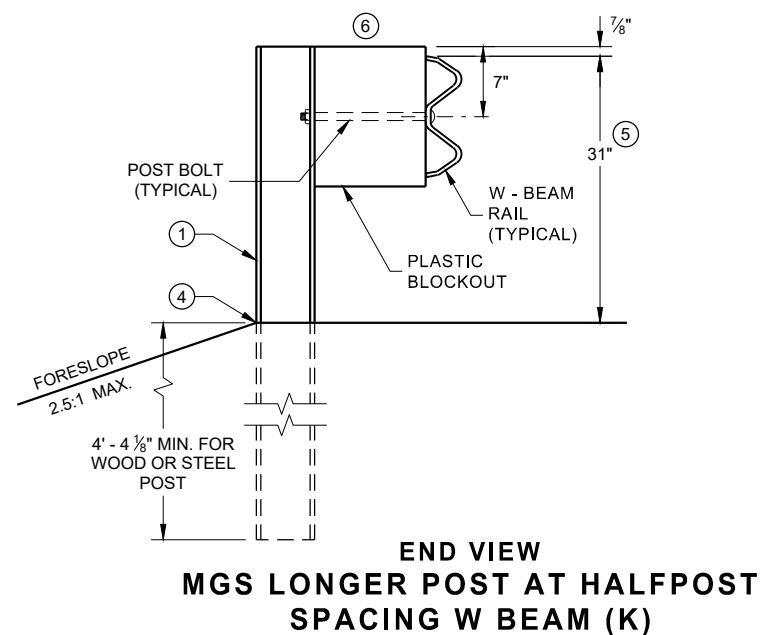
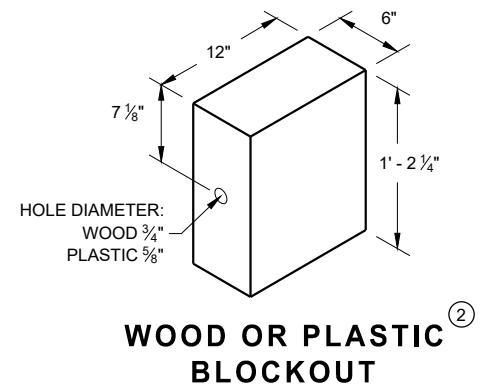
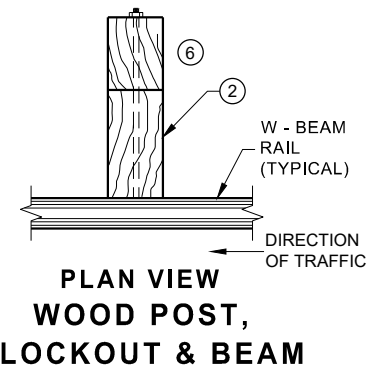
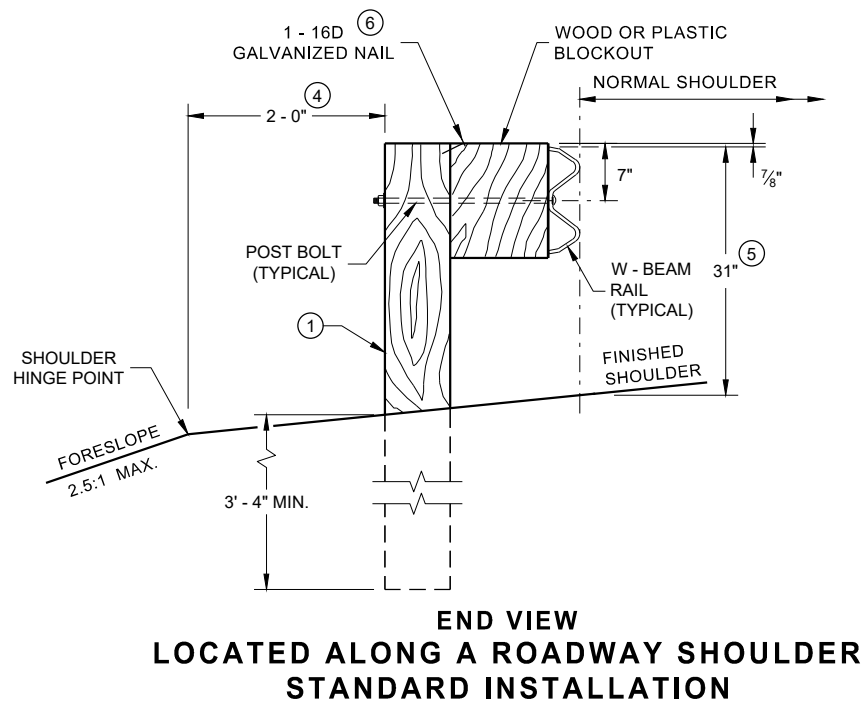
APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

- ① 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.
- ② 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.
- ③ 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 AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ 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".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



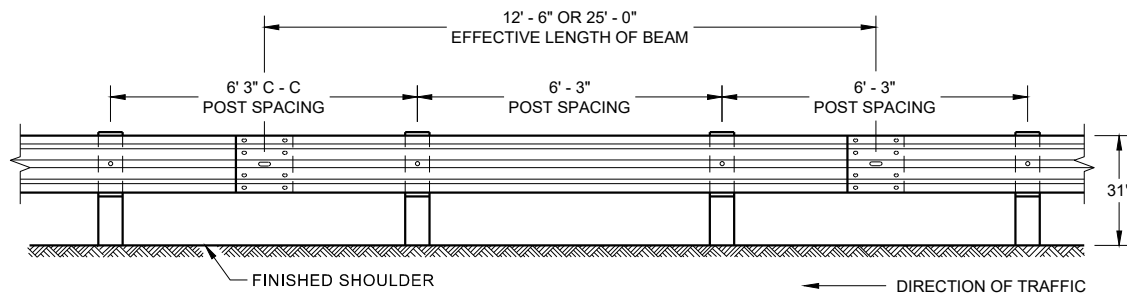
**STEEL POST & HOLE PUNCHING DETAIL
(W 6 X 9)** ①

**WOOD POST
(6" X 8") NOMINAL** ①

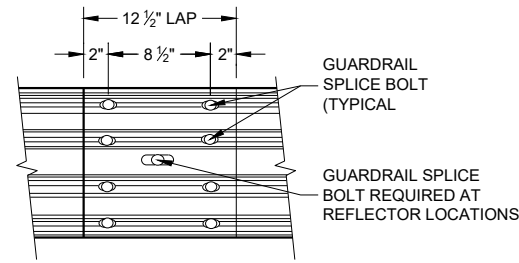


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



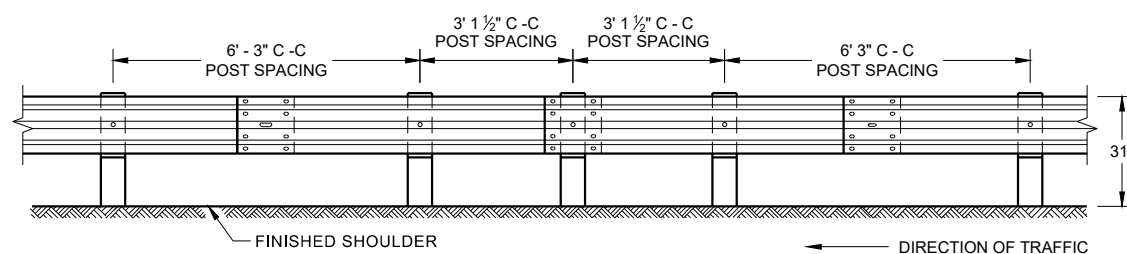
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



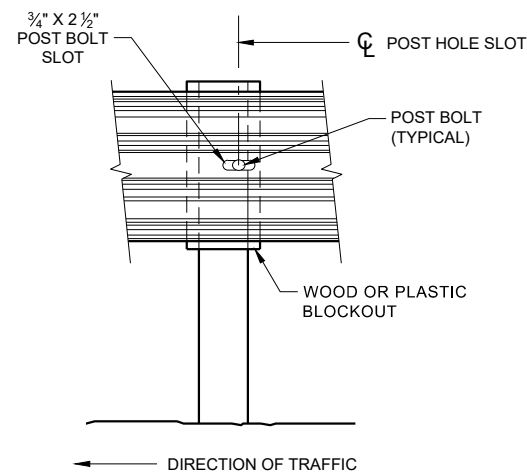
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

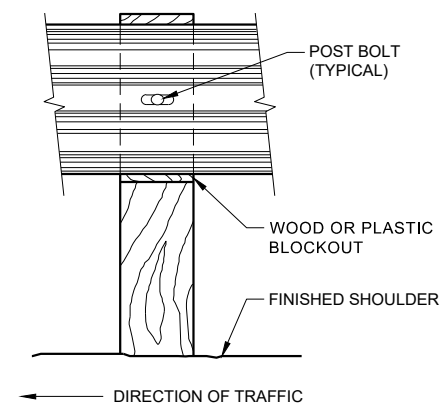
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER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



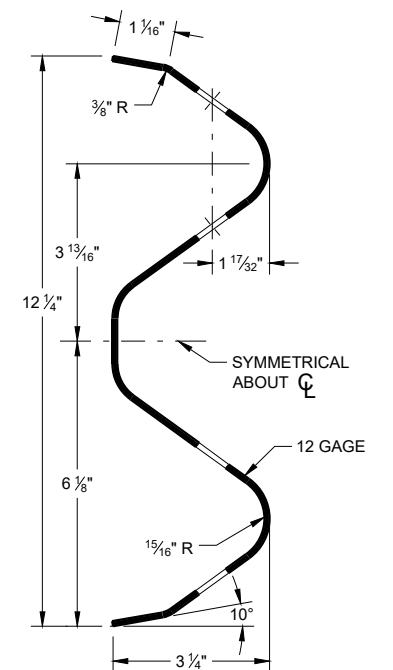
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



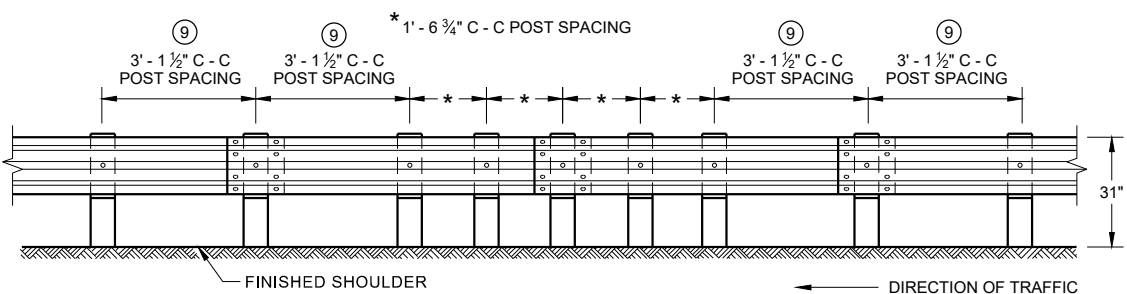
FRONT VIEW AT STEEL POST



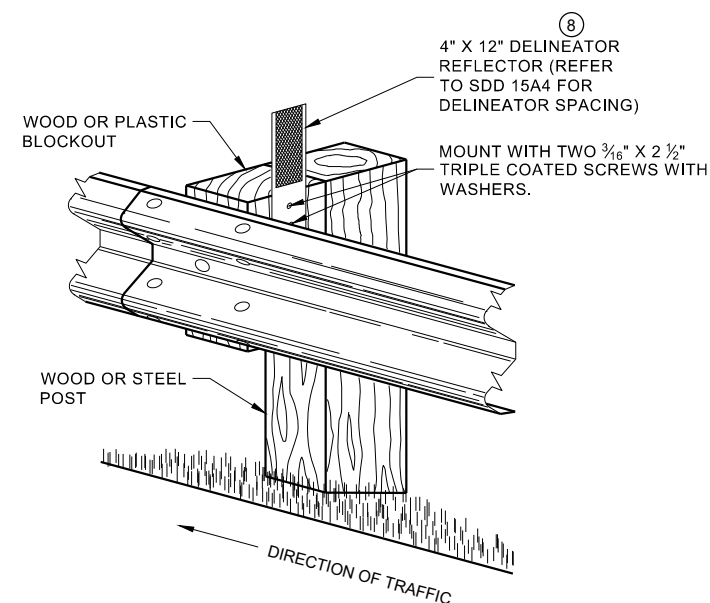
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

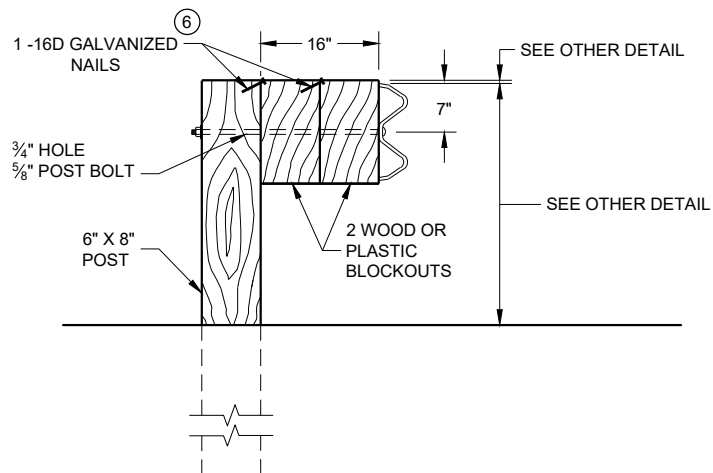
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

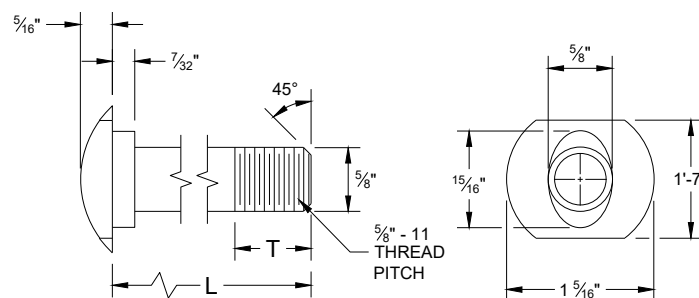


DETAIL FOR 16" BLOCKOUT DEPTH

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

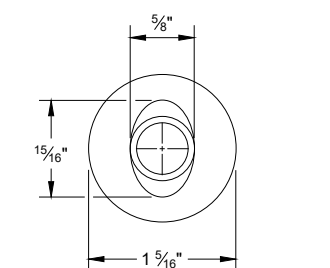
NOTE:

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

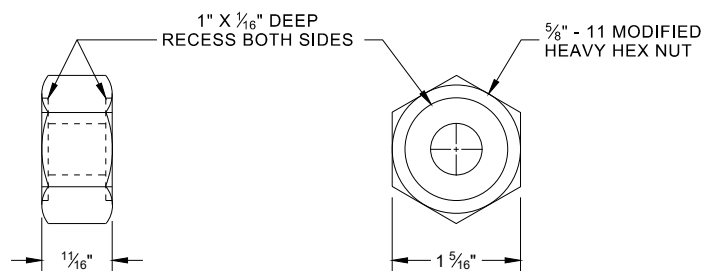


POST BOLT TABLE

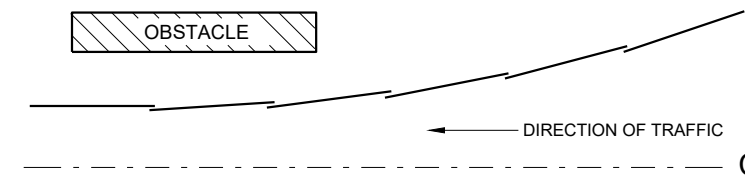
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



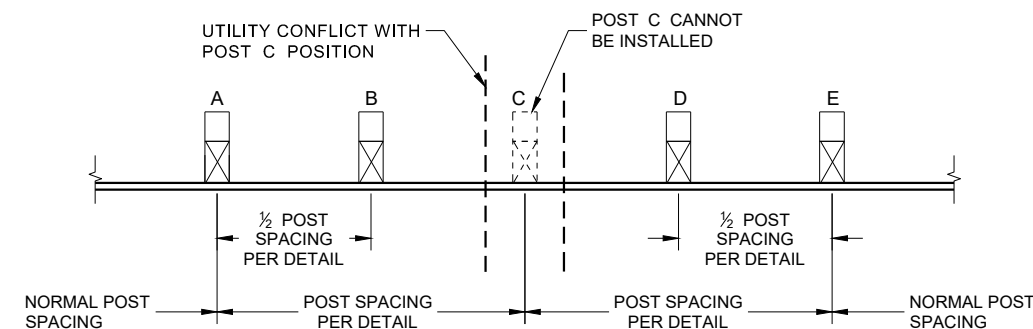
ALTERNATE BOLT HEAD



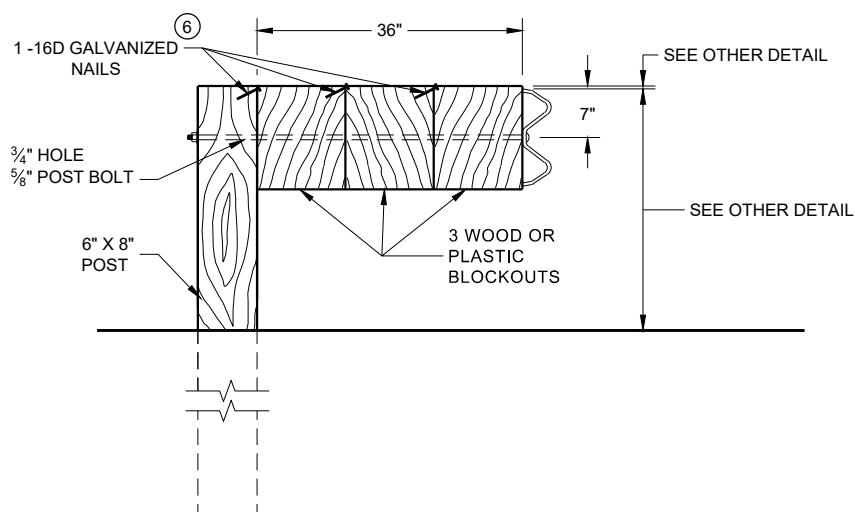
POST BOLT, SPLICE BOLT AND RECESS NUT



PLAN VIEW BEAM LAPPING DETAIL

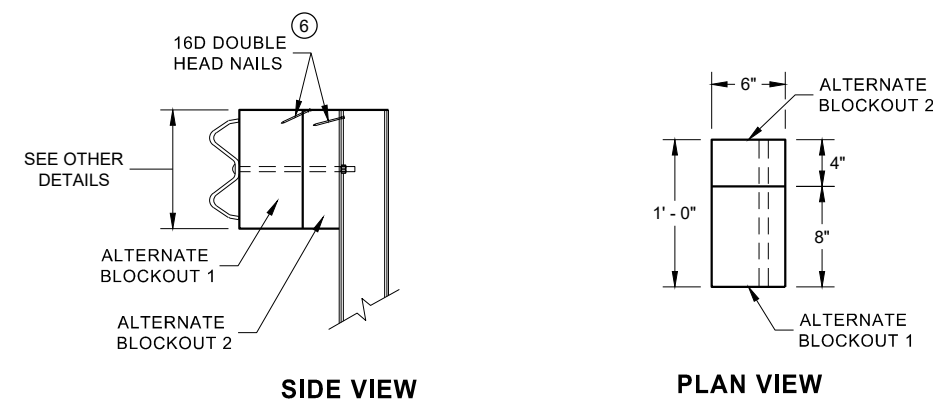


POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



DETAIL FOR 36" BLOCKOUT DEPTH

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

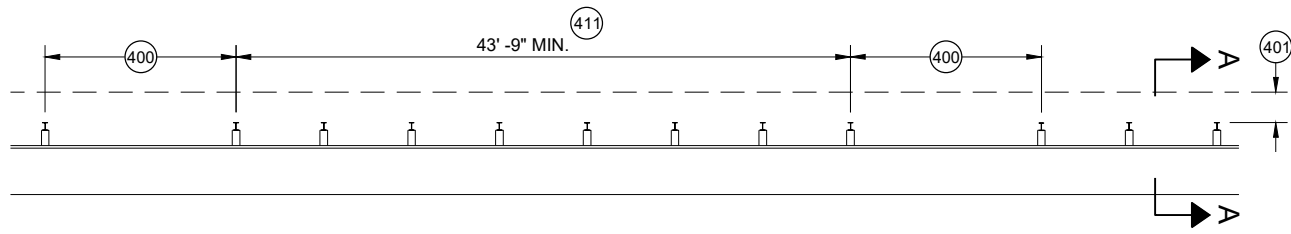


ALTERNATE WOOD BLOCKOUT DETAIL

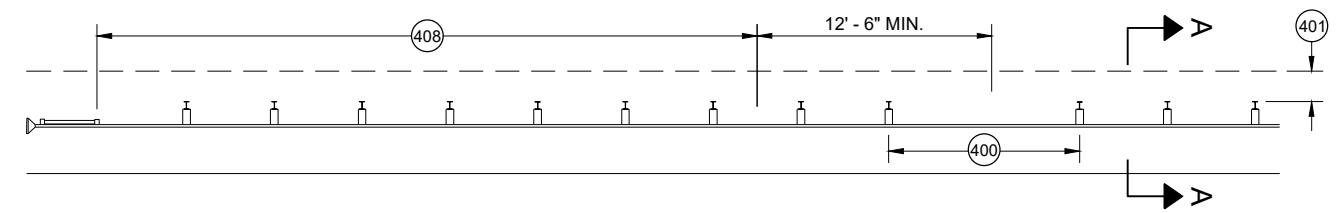
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

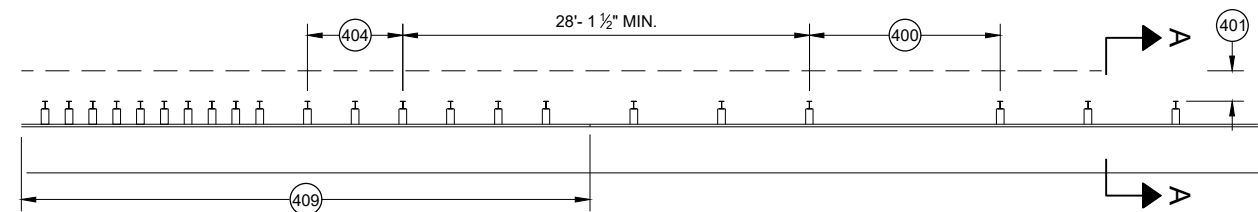
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



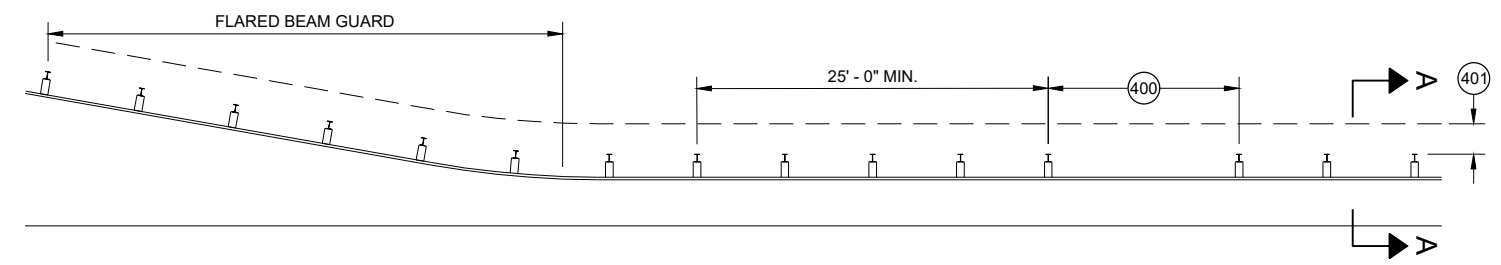
MISSING POST IN MGS GUARDRAIL



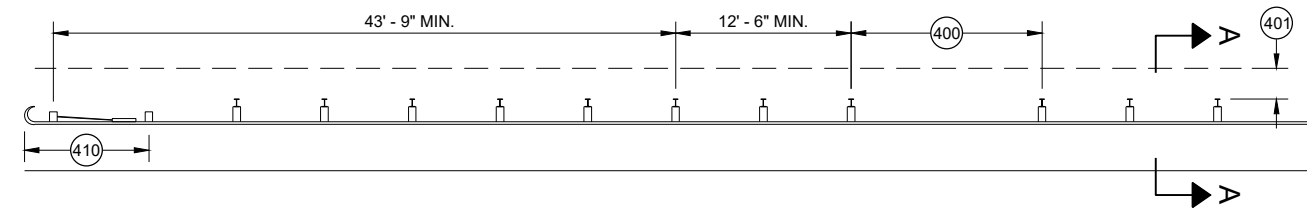
MISSING POST IN MGS GUARDRAIL NEAR EAT



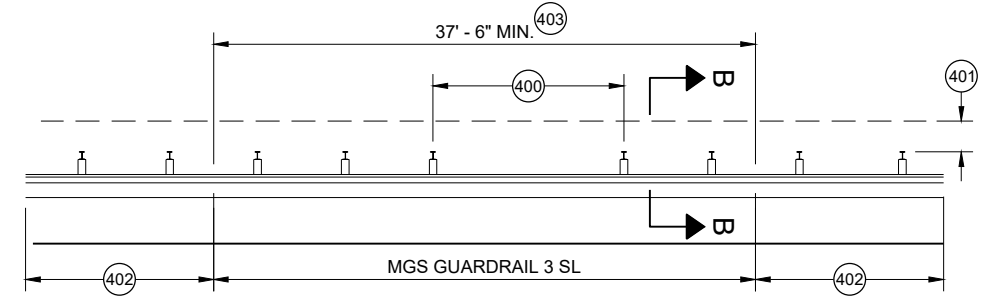
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

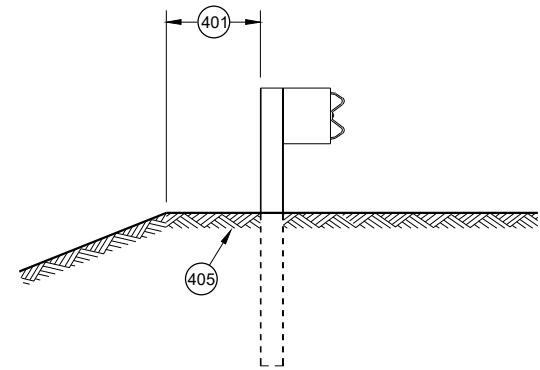


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

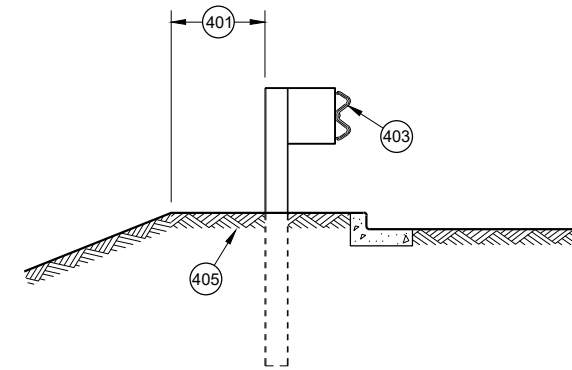


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

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

GENERAL NOTES

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

SEE SDD 14B42 FOR MORE INFORMATION.

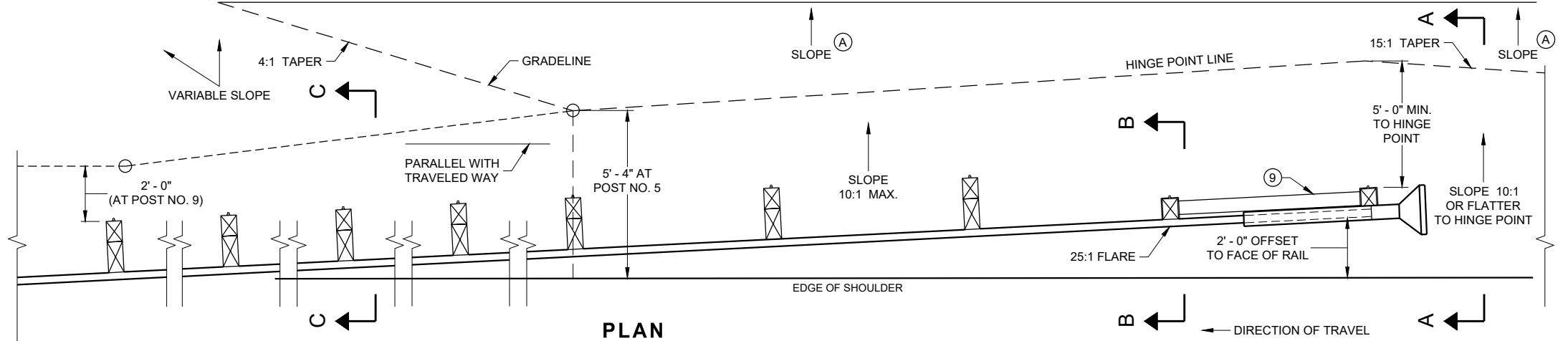
* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

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

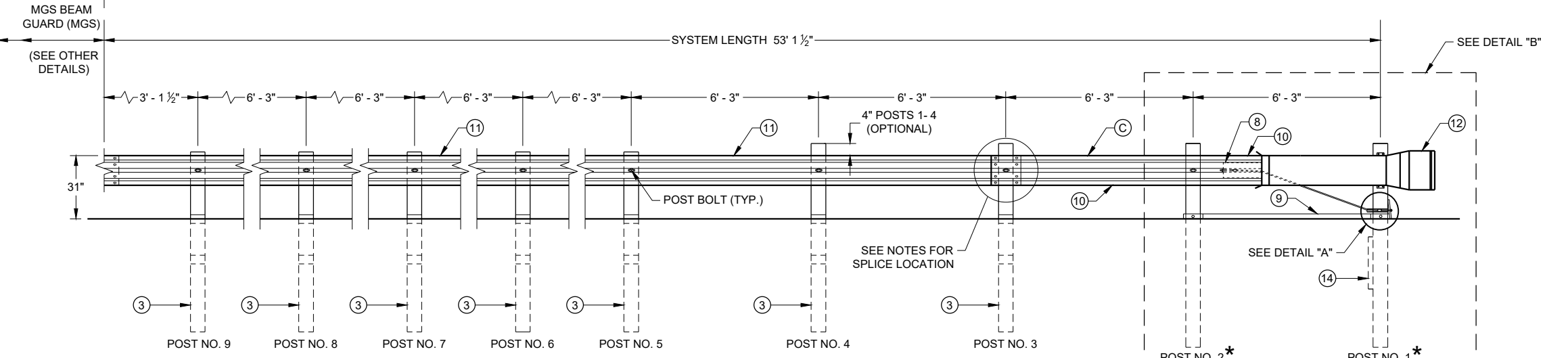
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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

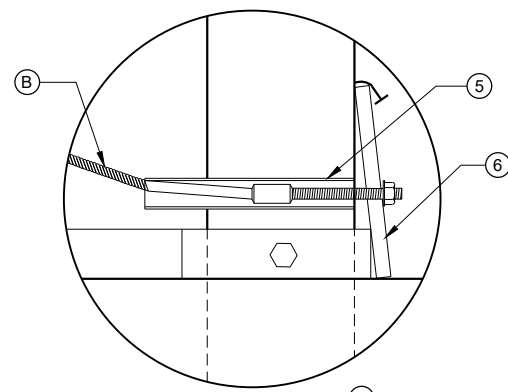
CLEAR ZONE LIMITS, EITHER AS SHOWN ELSEWHERE IN THE PLANS OR, IF NOT SHOWN ELSEWHERE IN THE PLANS, 15 FEET BEYOND THE HINGE POINT LINE



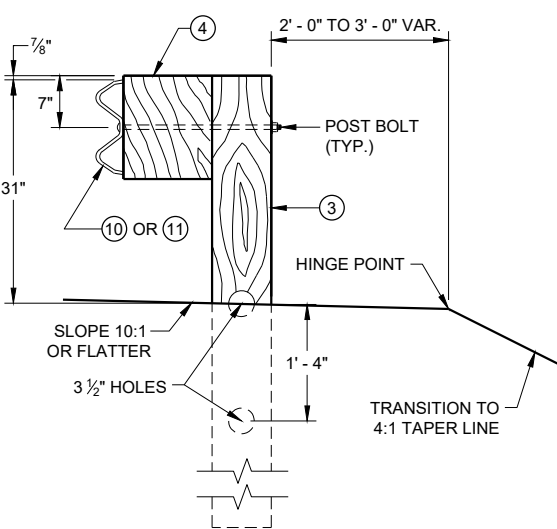
PLAN



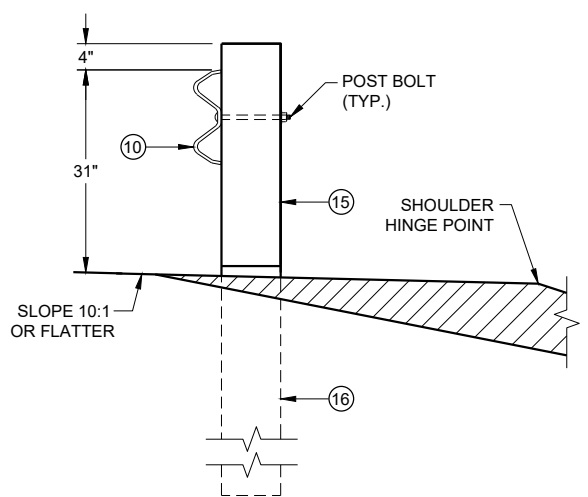
ELEVATION



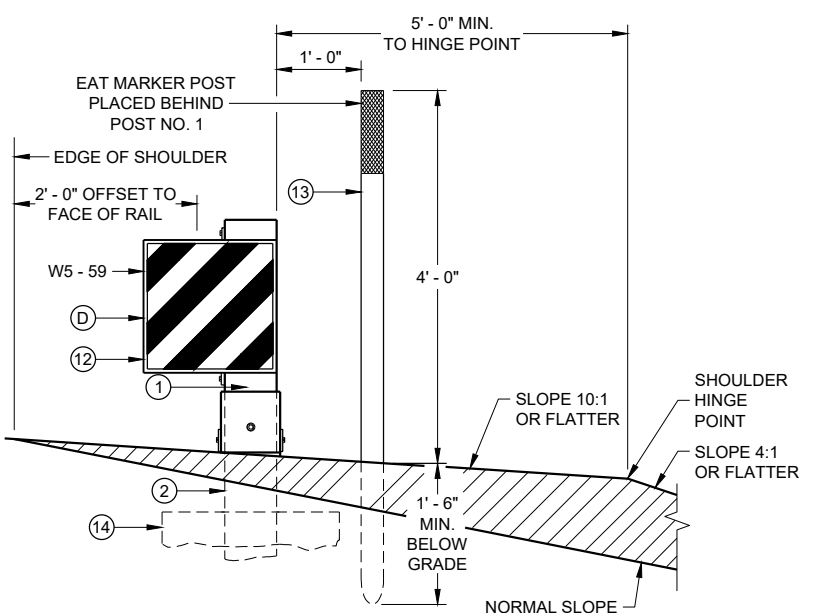
DETAIL "A"



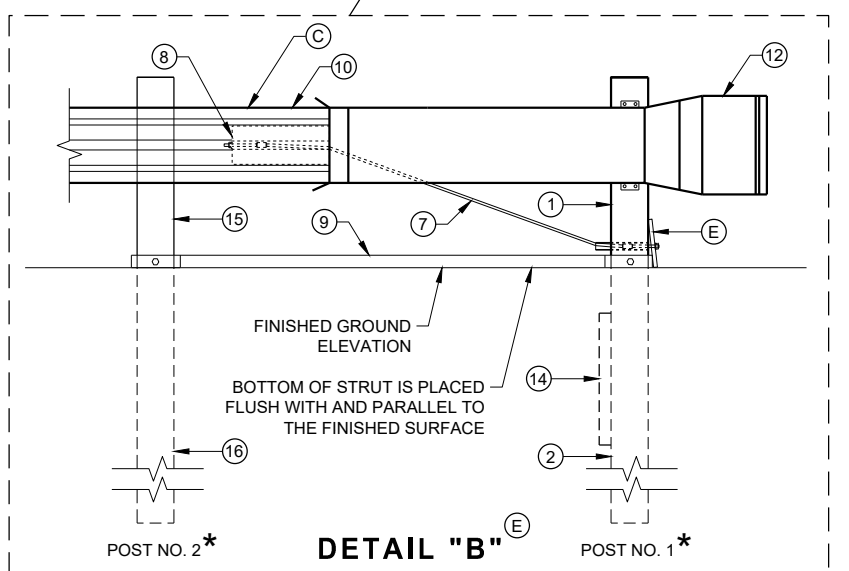
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



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



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



DETAIL "B"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

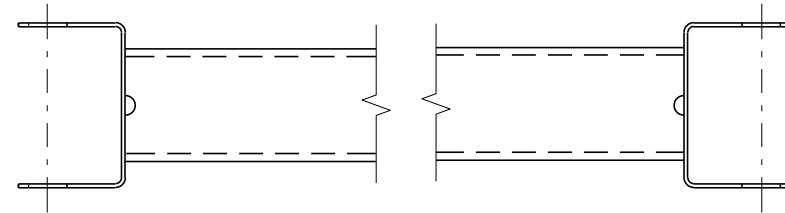
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SDD 14B44 - 04a

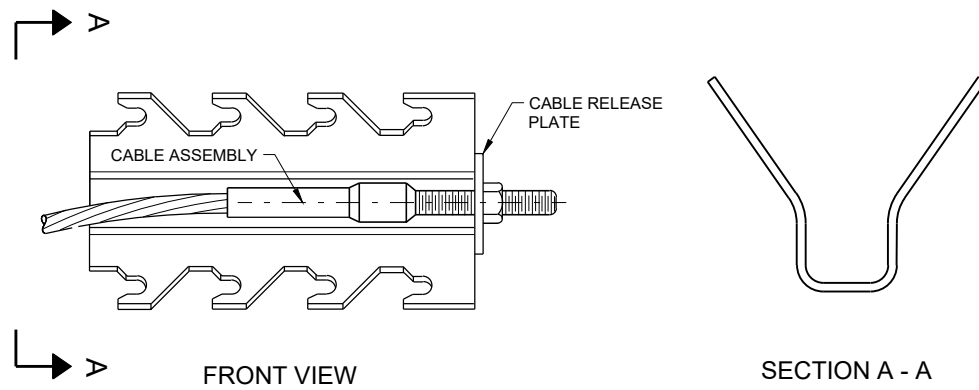
SDD 14B44 - 04a

BILL OF MATERIALS

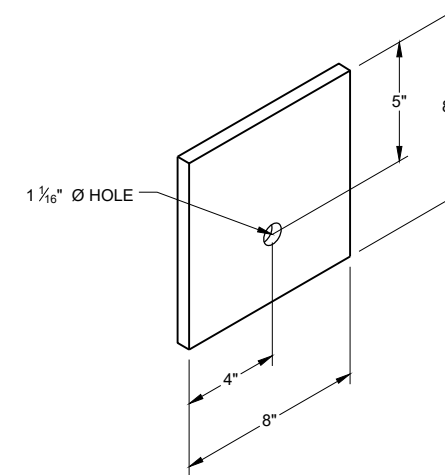
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



GENERIC GROUND STRUT ⑨ ⑤



GENERIC ANCHOR CABLE BOX ⑨ ⑤



BEARING PLATE ⑥ ⑤

6

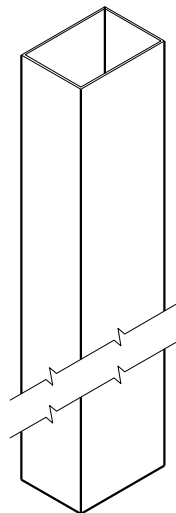
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SDD 14B44 - 04b

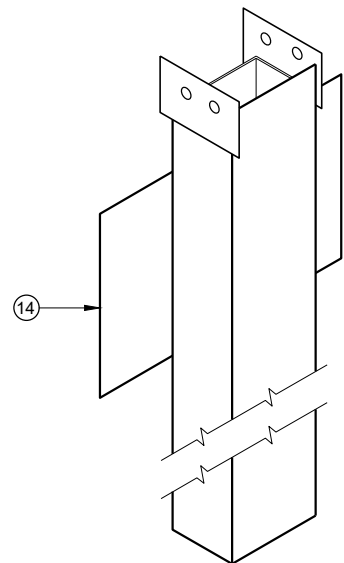
SDD 14B44 - 04b

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

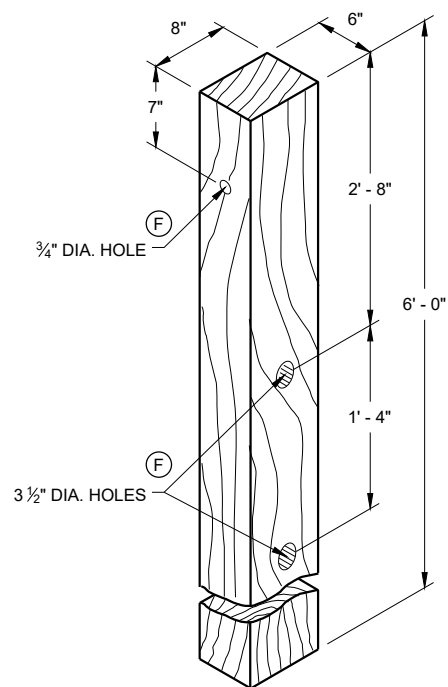
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



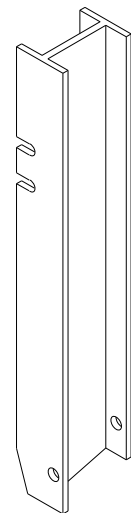
UPPER POST NO. 1 ⁽¹⁾ (E)



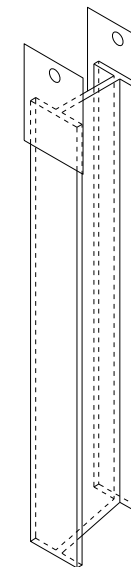
LOWER POST NO. 1 ⁽²⁾ (E)



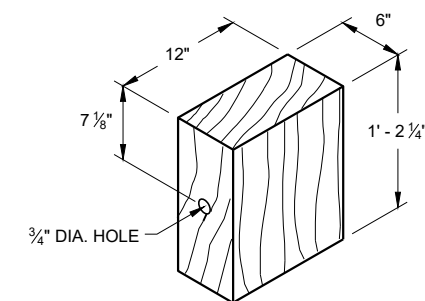
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

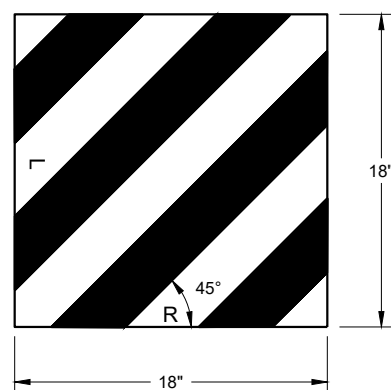


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

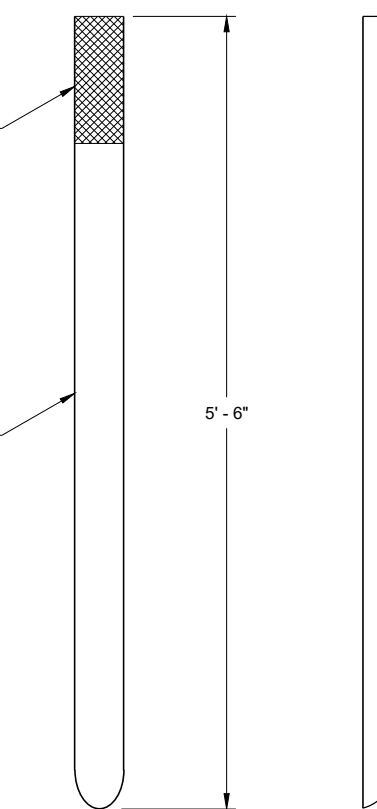
6



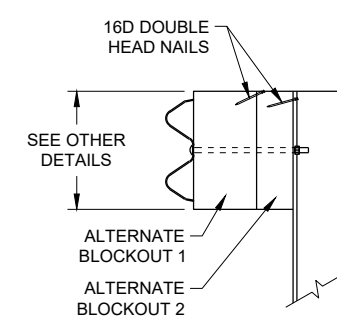
REFLECTIVE SHEETING DETAIL ^(E)

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

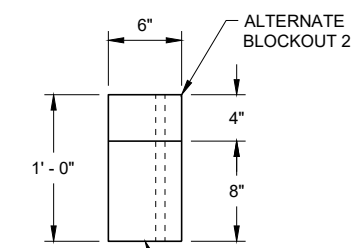
E.A.T. MARKER
POST (YELLOW)



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



SIDE VIEW



TOP VIEW

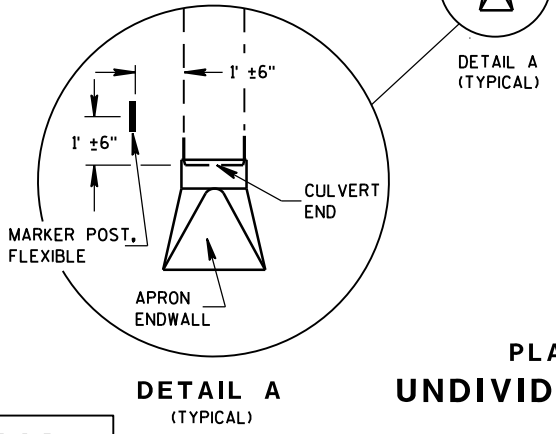
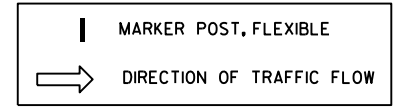
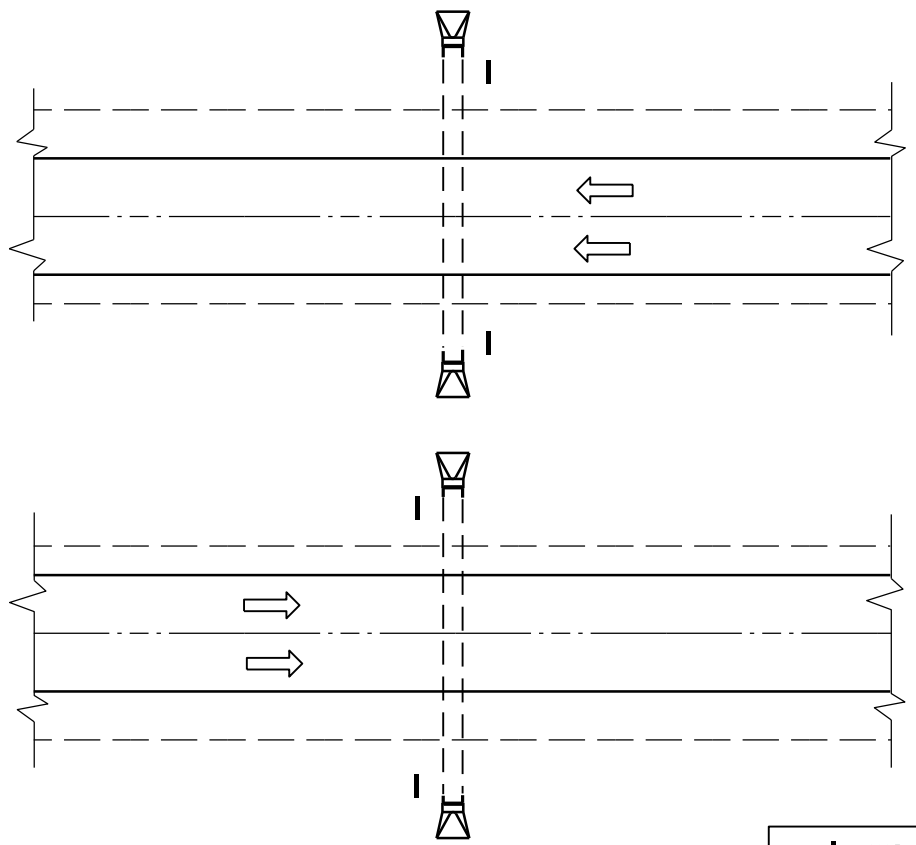
ALTERNATE WOOD
BLOCKOUT DETAIL

6

**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

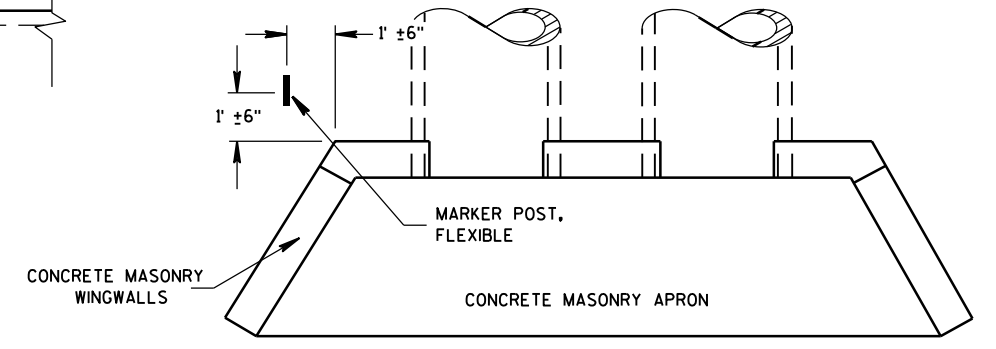


PLAN VIEW UNDIVIDED HIGHWAY

FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

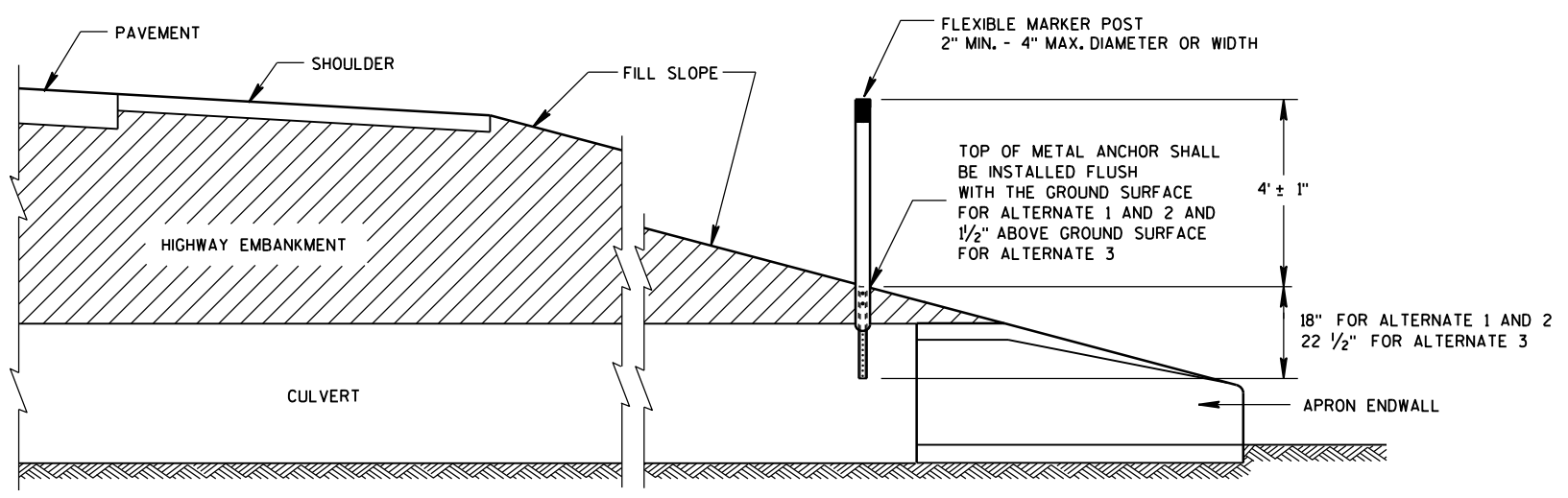
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

6

6



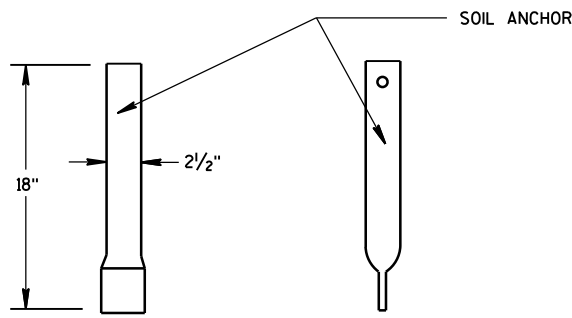
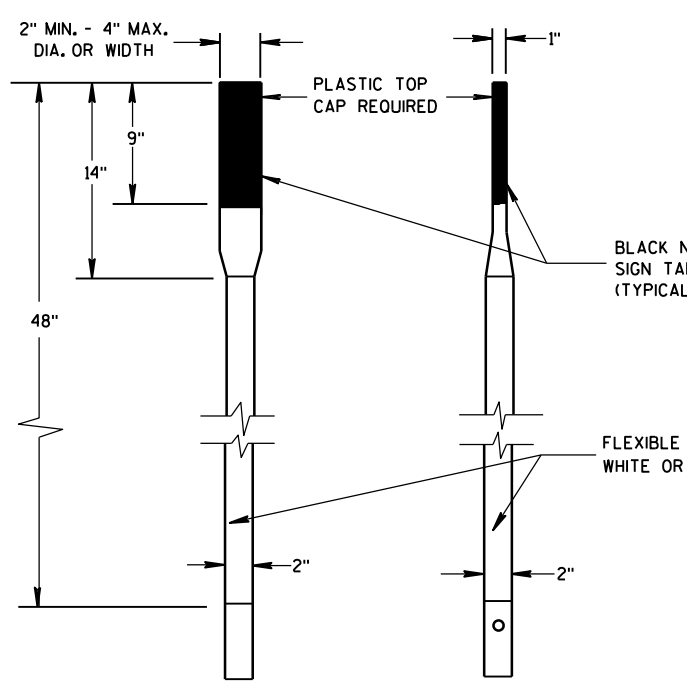
CROSS SECTION FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

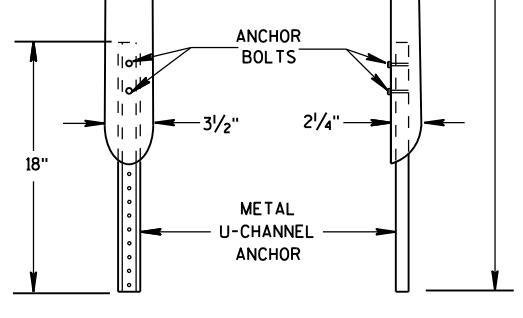
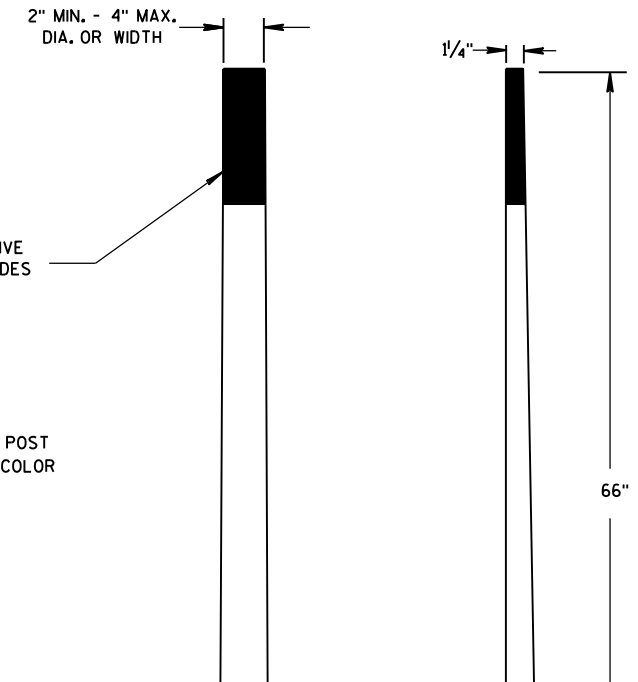
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

S.D.D. 15 A 3-2a

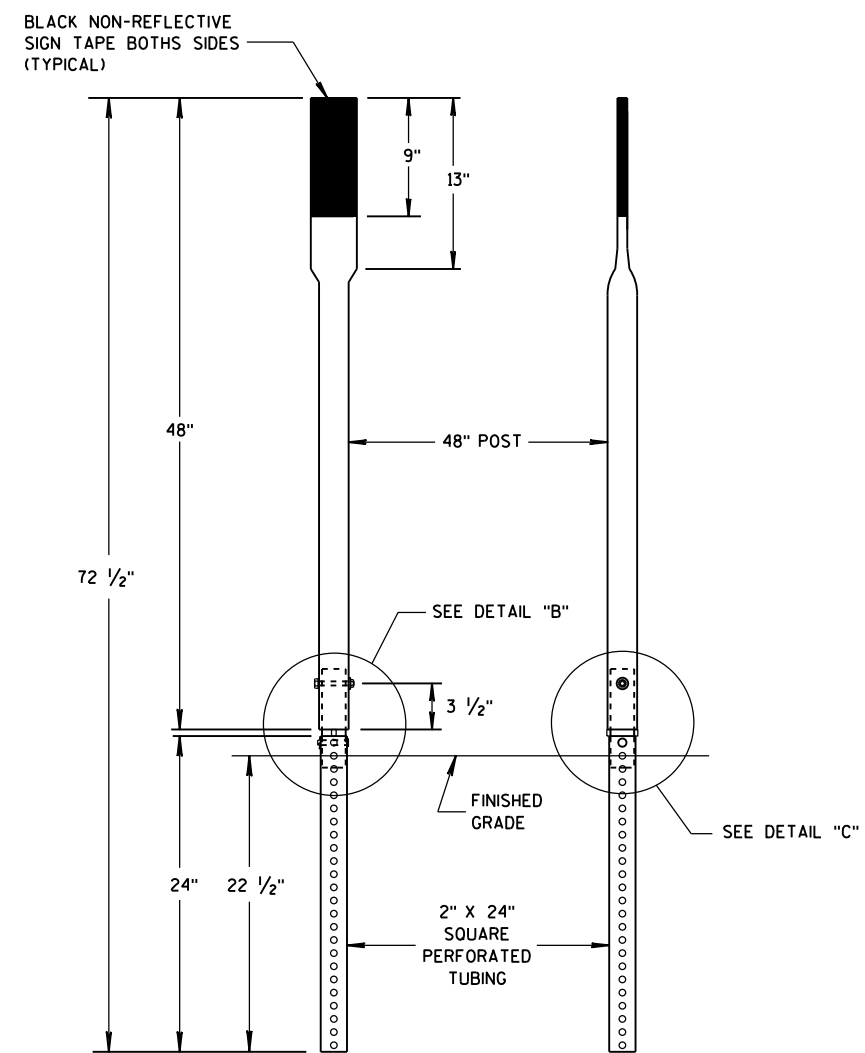
S.D.D. 15 A 3-2a



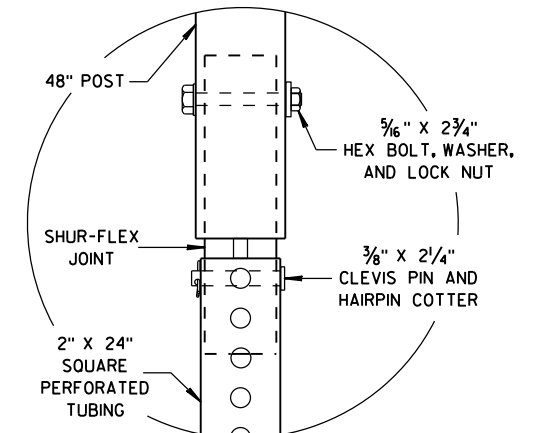
FRONT VIEW SIDE VIEW
ALTERNATE 1



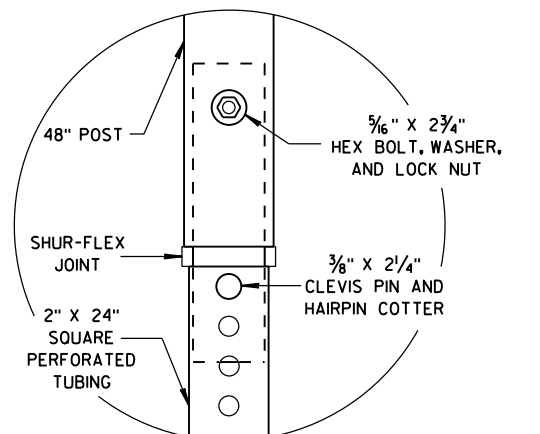
FRONT VIEW SIDE VIEW
ALTERNATE 2



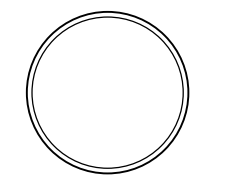
FRONT VIEW SIDE VIEW
ALTERNATE 3



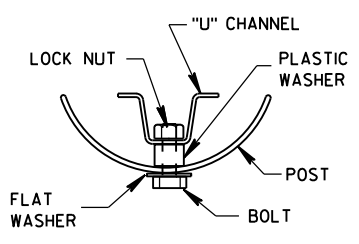
DETAIL B



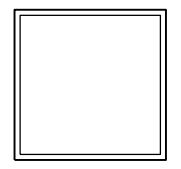
DETAIL C



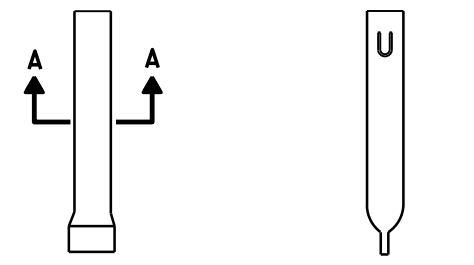
SECTION A-A



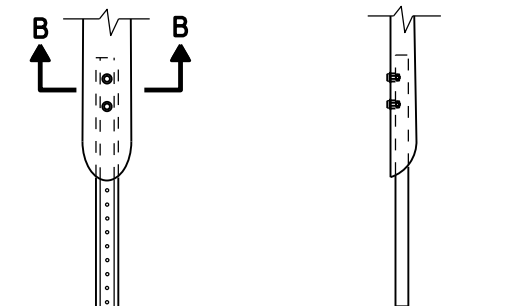
SECTION B-B



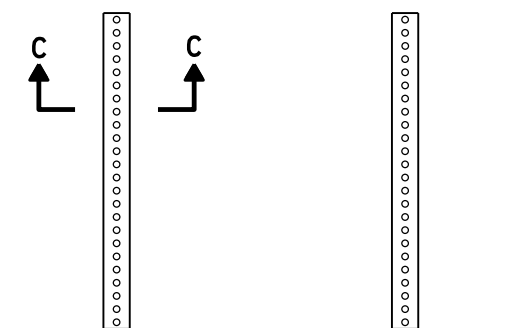
SECTION C-C



FRONT VIEW SIDE VIEW
ALTERNATE 1



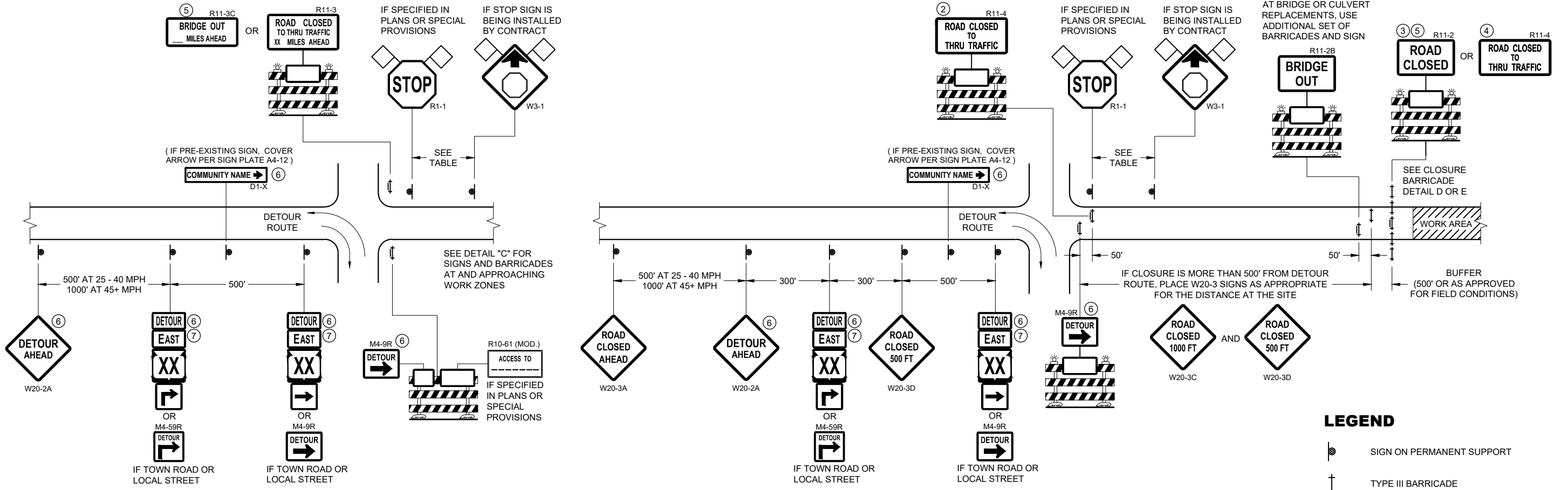
FRONT VIEW SIDE VIEW
ALTERNATE 2



FRONT VIEW SIDE VIEW
ALTERNATE 3

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 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

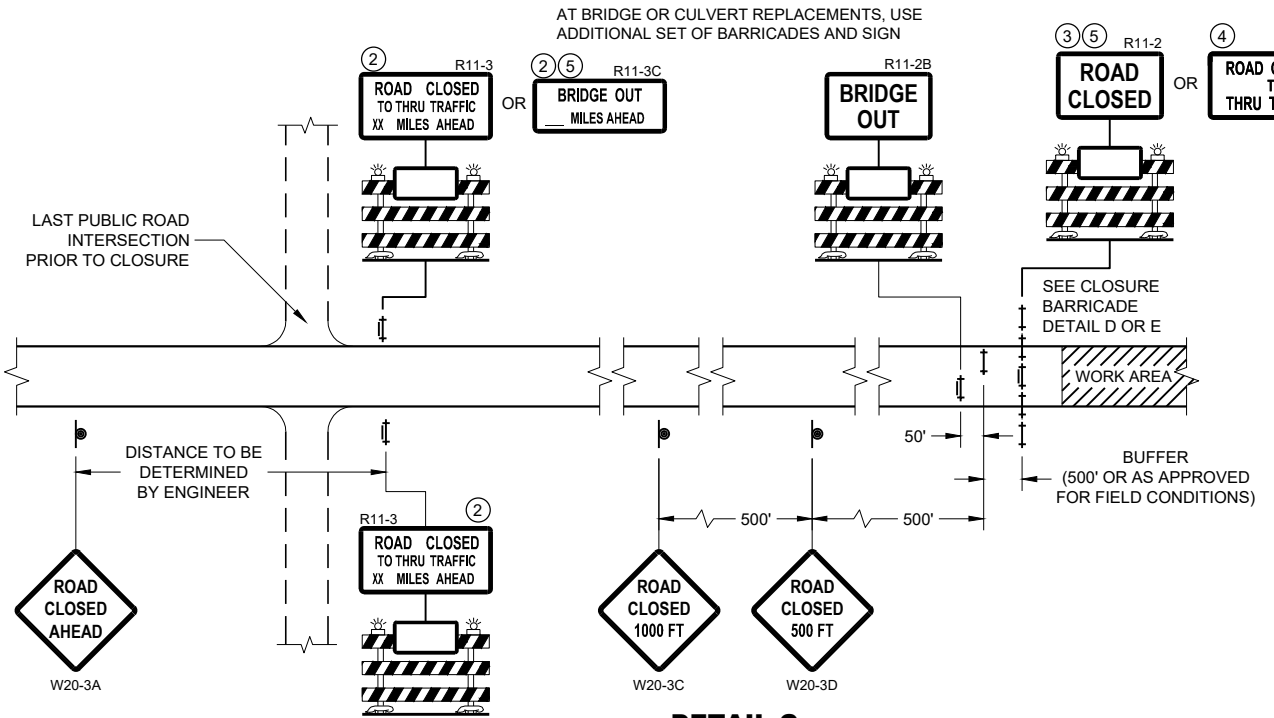
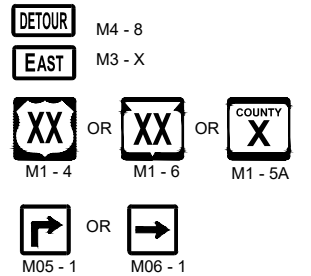
**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

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

LEGEND

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

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



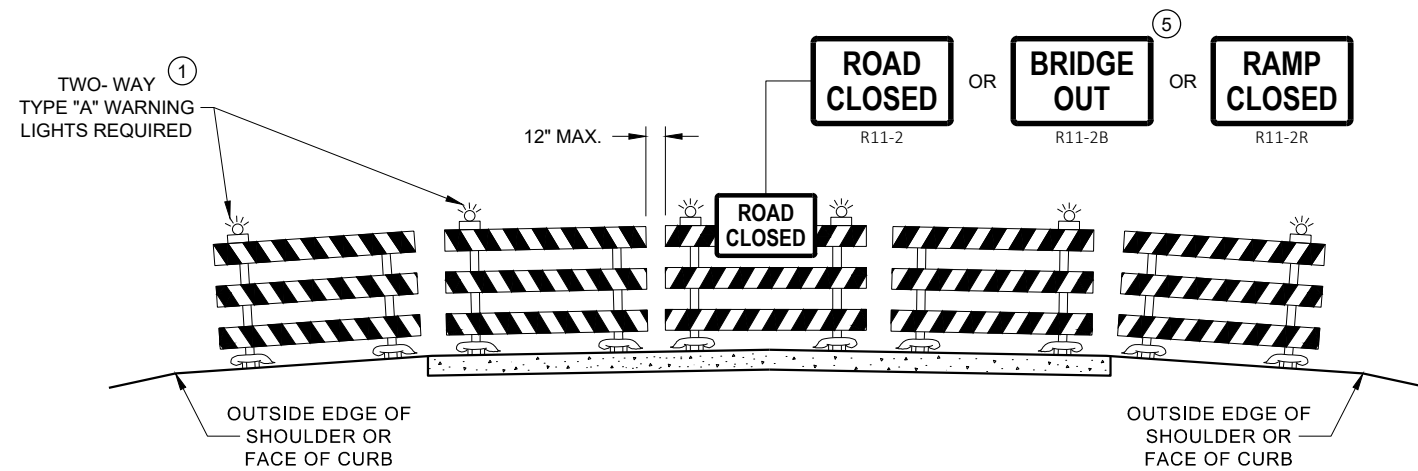
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

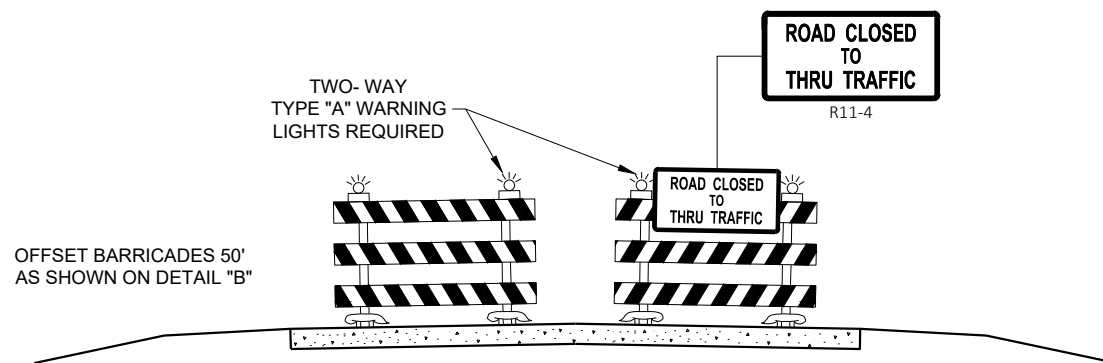
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION




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

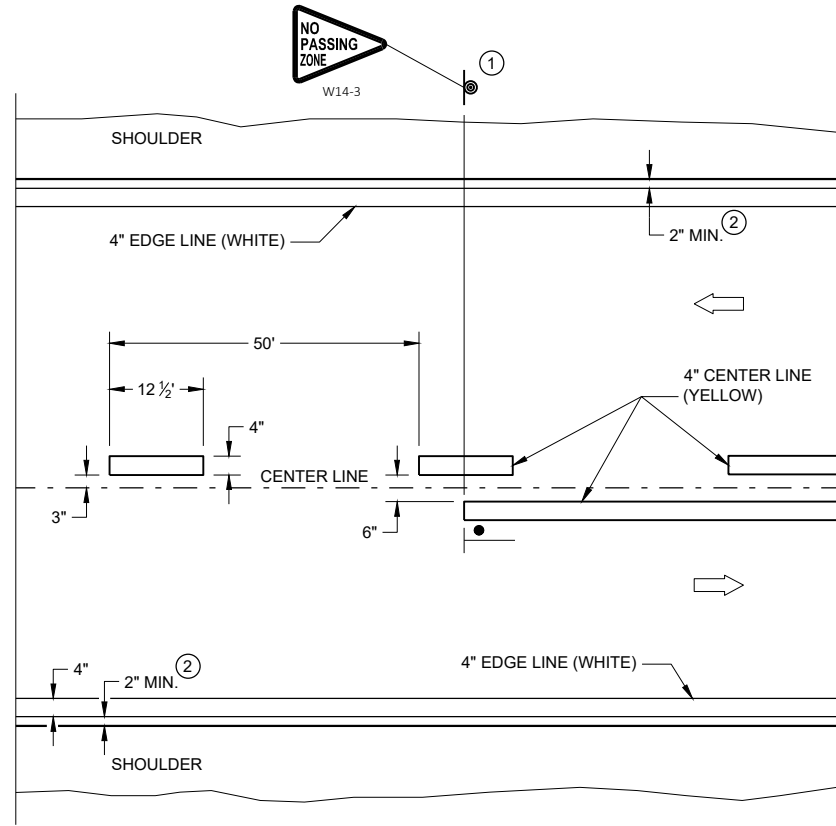
GENERAL NOTES

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

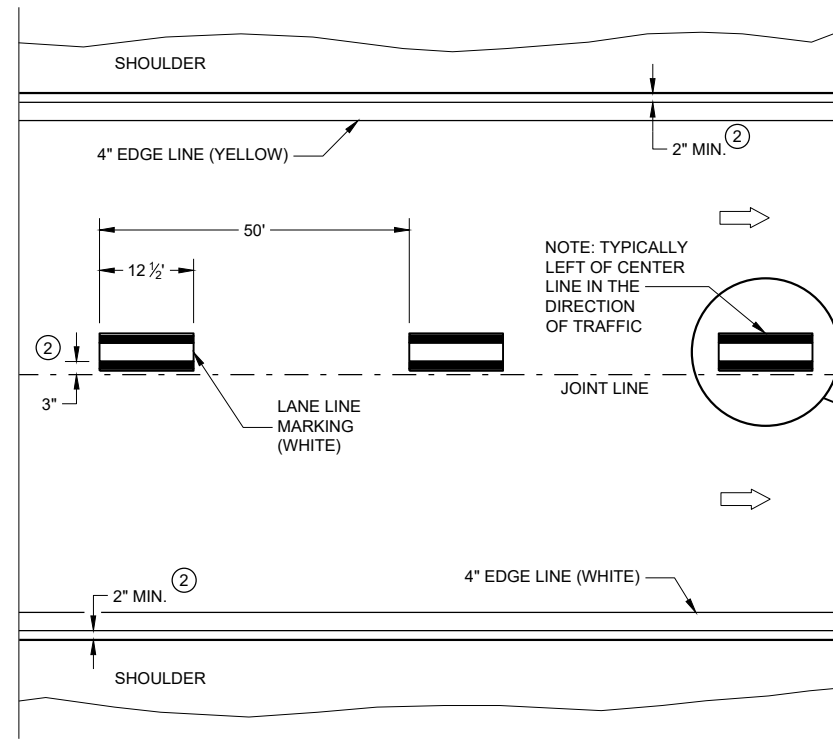
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

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

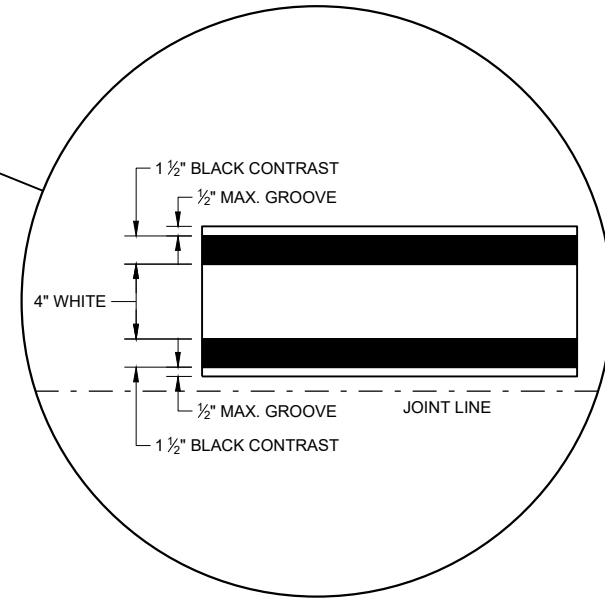


TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



6

6

SDD 15C08 - 21a

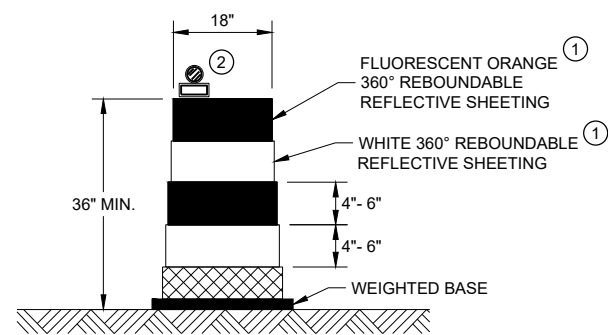
SDD 15C08 - 21a

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

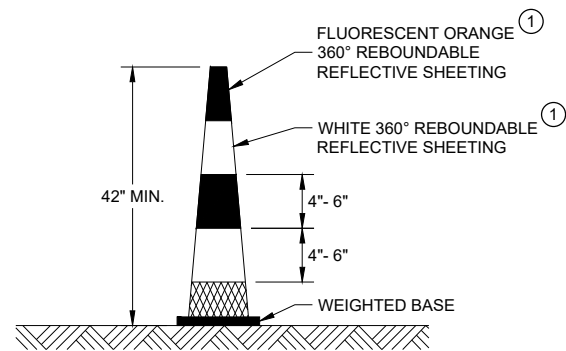
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



DRUM

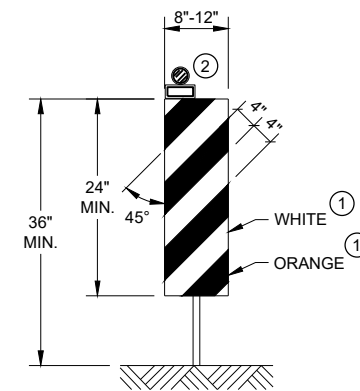


42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS

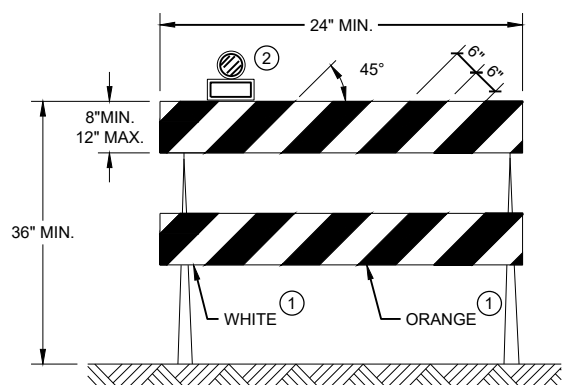
GENERAL NOTES

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



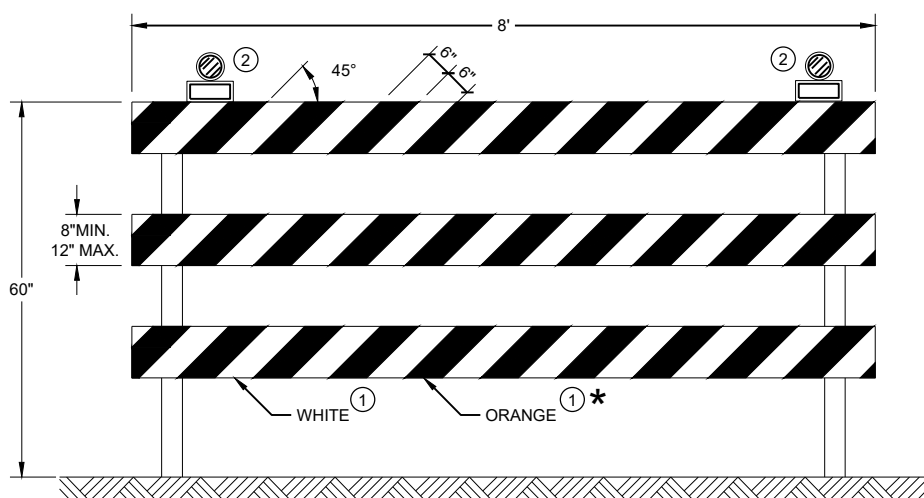
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

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

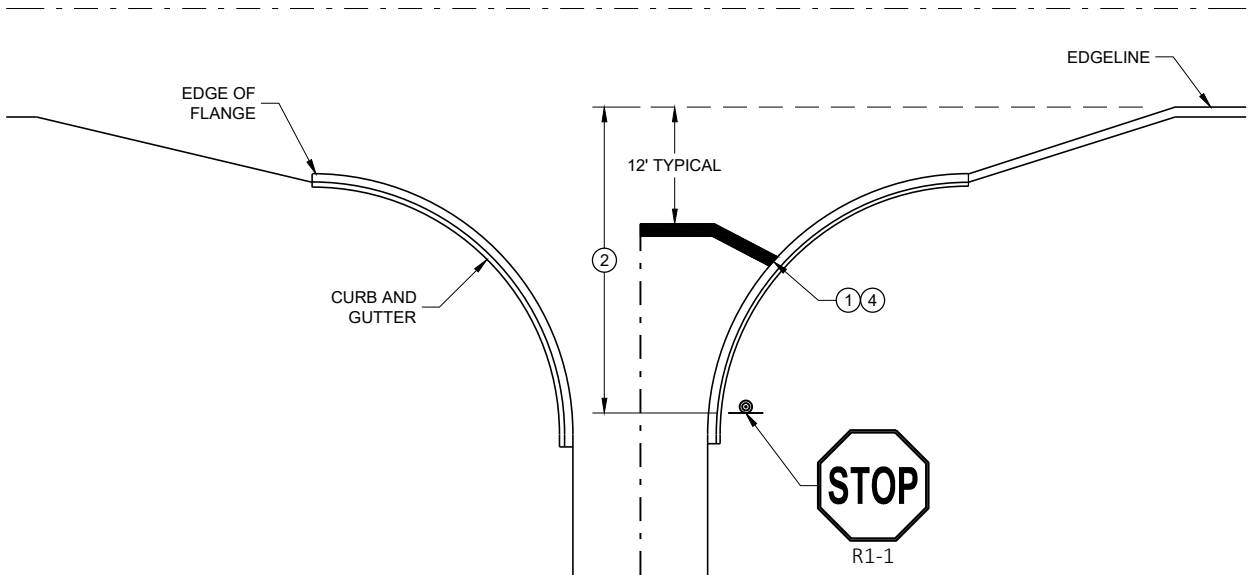
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

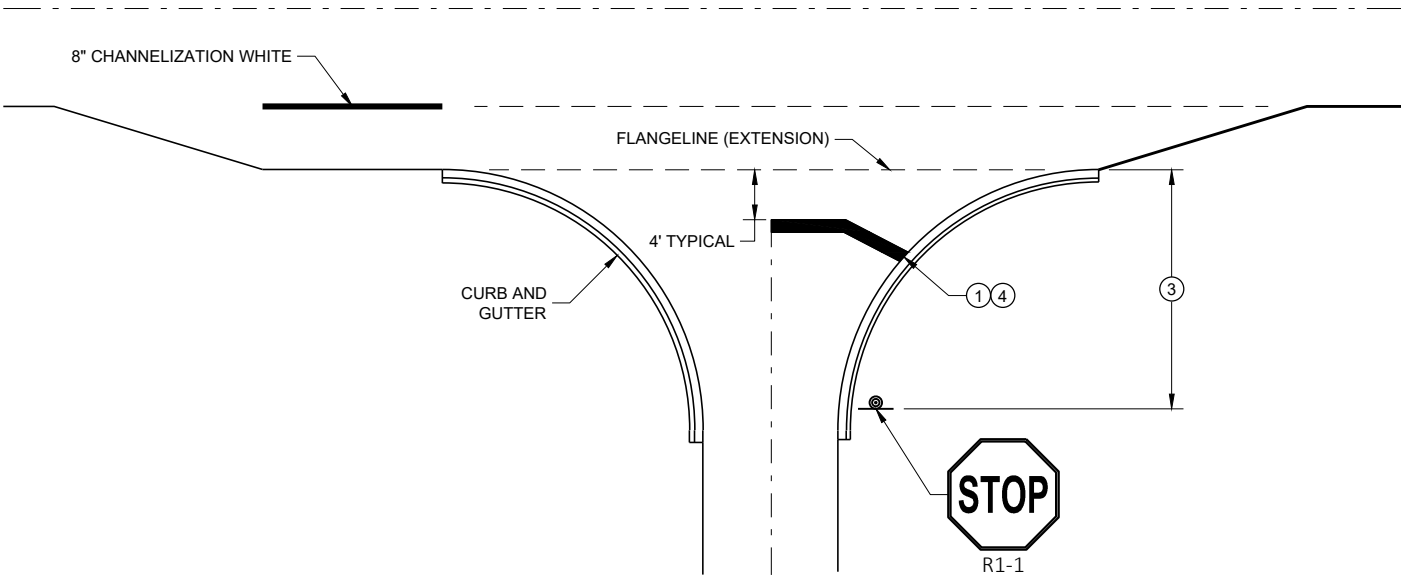
GENERAL NOTES

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

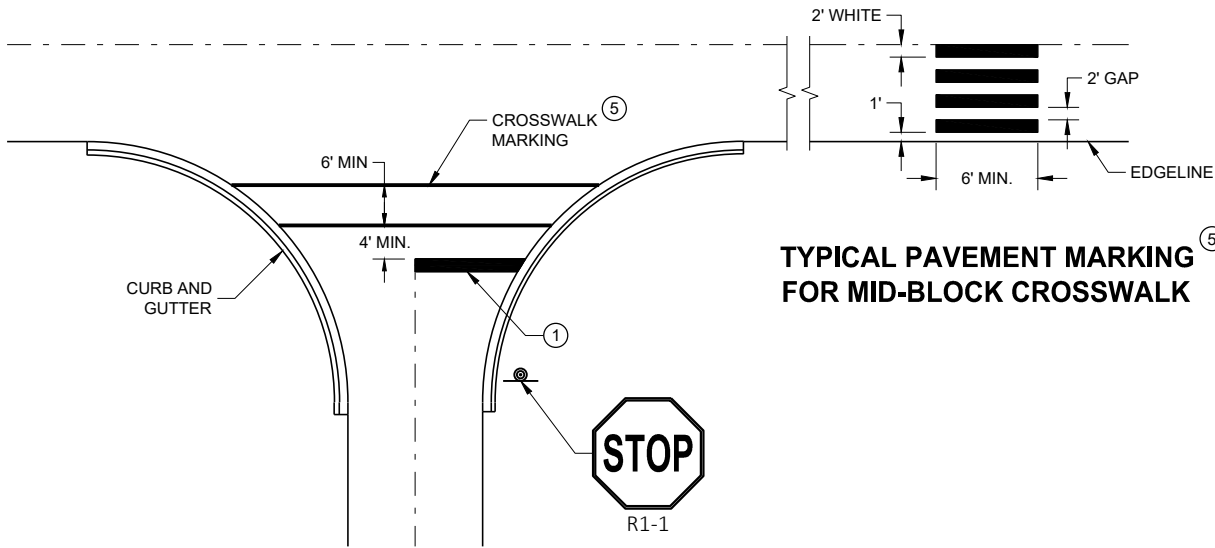
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE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



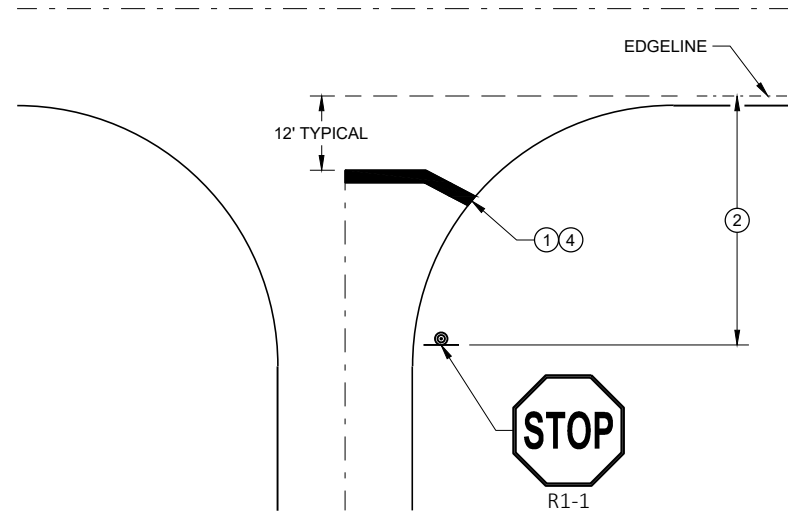
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

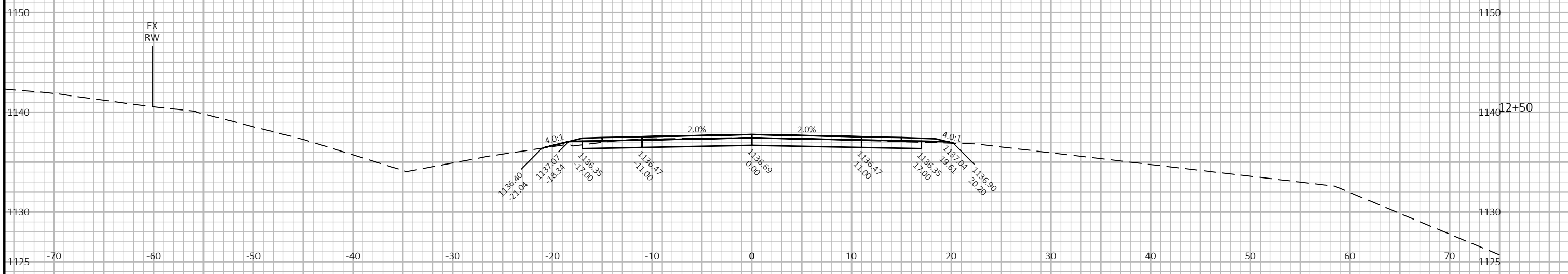
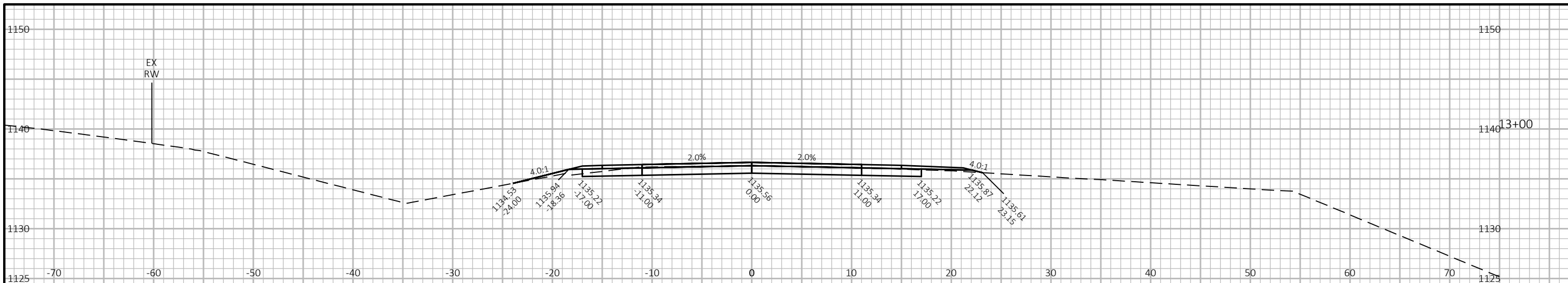
FHWA

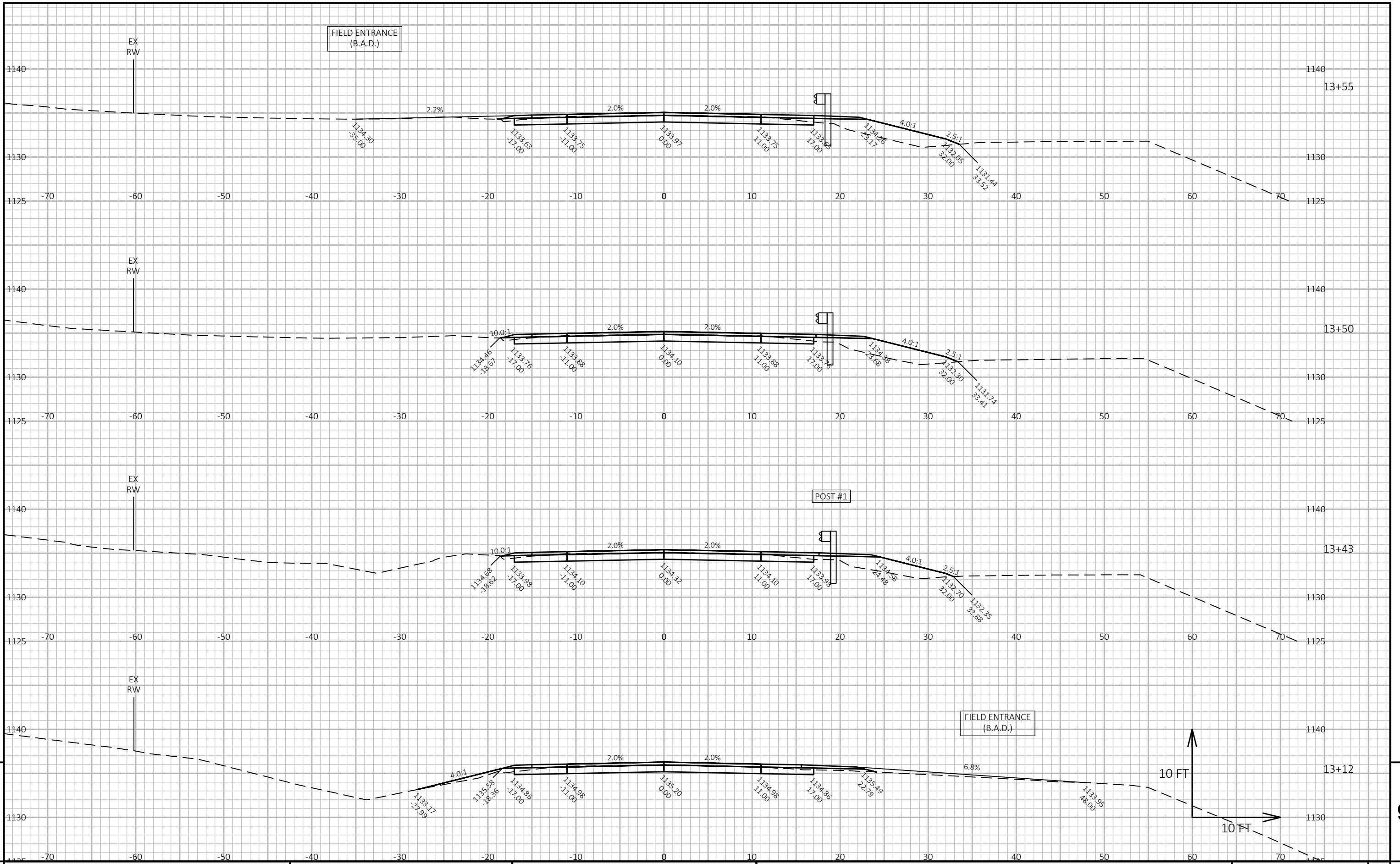
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	EXPANDED		MASS ORDINATE
								1.00	1.25	
NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 4						
11+00	0.00	5.24	0.00	0.00	0	0	0	0	0	0
11+50	50.00	2.42	0.00	0.92	7	0	1	7	1	6
12+00	50.00	0.00	0.00	1.72	2	0	2	9	4	5
12+24	24.00	0.00	0.00	1.04	0	0	1	9	5	4
12+50	26.00	0.00	0.00	1.25	0	0	1	9	6	3
13+00	50.00	0.00	0.00	2.40	0	0	3	9	10	-1
13+12	12.00	0.00	0.00	4.47	0	0	2	9	13	-4
13+43	31.00	0.00	0.00	16.66	0	0	12	9	28	19
13+50	7.00	0.00	0.00	20.09	0	0	5	9	34	-25
13+55	5.00	0.00	0.00	20.32	0	0	4	9	39	-30
13+68	13.00	0.00	0.00	18.33	0	0	9	9	50	41
13+93	25.00	0.00	0.00	15.85	0	0	16	9	70	-61
14+00	7.00	0.00	0.00	15.82	0	0	4	9	75	-66
14+50	50.00	0.00	0.00	4.18	0	0	19	9	99	-90
15+00	50.00	0.00	0.00	3.20	0	0	7	9	108	-99
15+50	50.00	0.00	0.00	0.96	0	0	4	9	113	-104
16+00	50.00	0.00	0.00	1.05	0	0	2	9	115	-106
16+50	50.00	0.00	0.00	1.09	0	0	2	9	118	-109
17+00	50.00	0.32	0.00	2.43	0	0	3	9	121	-112
17+50	50.00	0.00	0.00	2.94	0	0	5	9	128	-119
18+00	50.00	0.00	0.00	1.38	0	0	4	9	133	-124
18+50	50.00	0.00	0.00	1.56	0	0	3	9	136	127
19+00	50.00	0.00	0.00	1.55	0	0	3	9	140	-131
19+50	50.00	0.00	0.00	0.84	0	0	2	9	143	-134
20+00	50.00	0.00	0.00	0.27	0	0	1	9	144	-135
20+50	50.00	0.00	0.00	0.47	0	0	1	9	145	-136
21+00	50.00	0.00	0.00	1.08	0	0	1	9	146	-137
21+06	6.00	0.00	0.00	1.12	0	0	0	9	146	137
21+28	22.00	0.00	0.00	0.98	0	0	1	9	148	-139
21+31	3.00	0.00	0.00	0.86	0	0	0	9	148	-139
21+50	19.00	0.00	0.00	1.48	0	0	1	9	149	-140
22+00	50.00	0.00	0.00	4.68	0	0	6	9	156	-147
22+50	50.00	0.00	0.00	4.68	0	0	9	9	168	-159
23+00	50.00	0.00	0.00	2.73	0	0	7	9	176	-167
23+50	50.00	0.00	0.00	3.19	0	0	5	9	183	-174
24+00	50.00	0.00	0.00	0.84	0	0	4	9	188	-179
24+50	50.00	0.00	0.00	0.06	0	0	1	9	189	-180
25+00	50.00	0.00	0.00	0.81	0	0	1	9	190	-181
25+50	50.00	0.00	0.00	0.76	0	0	1	9	191	182
26+00	50.00	0.01	0.00	0.08	0	0	1	9	193	-184
26+50	50.00	44.27	12.50	0.19	41	12	0	50	193	-155
26+92	42.00	49.91	15.79	0.00	73	22	0	123	193	-104
27+00	8.00	51.30	16.17	0.00	15	5	0	138	193	-94
27+50	50.00	107.70	34.17	0.00	147	47	0	285	193	7
27+61	11.00	150.00	36.87	0.00	52	14	0	337	193	45

Notes:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDINATE	{CUT} {FILL*FILL FACTOR} {SALVAGED/UNUSABLE PAVEMENT MATERIAL}

9

9





PROJECT NO: 5679-00-78

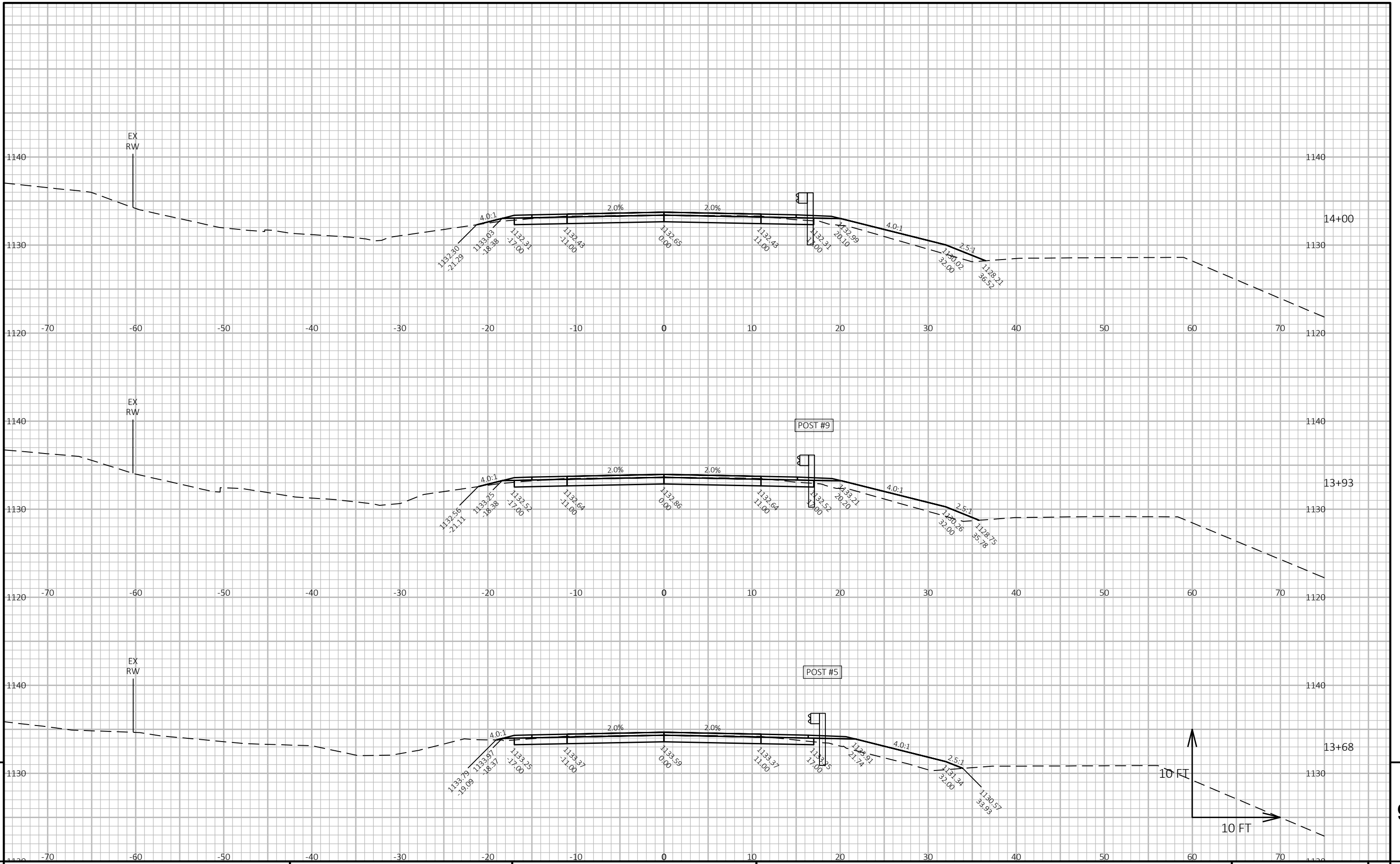
HWY: CTH K

COUNTY: IOWA

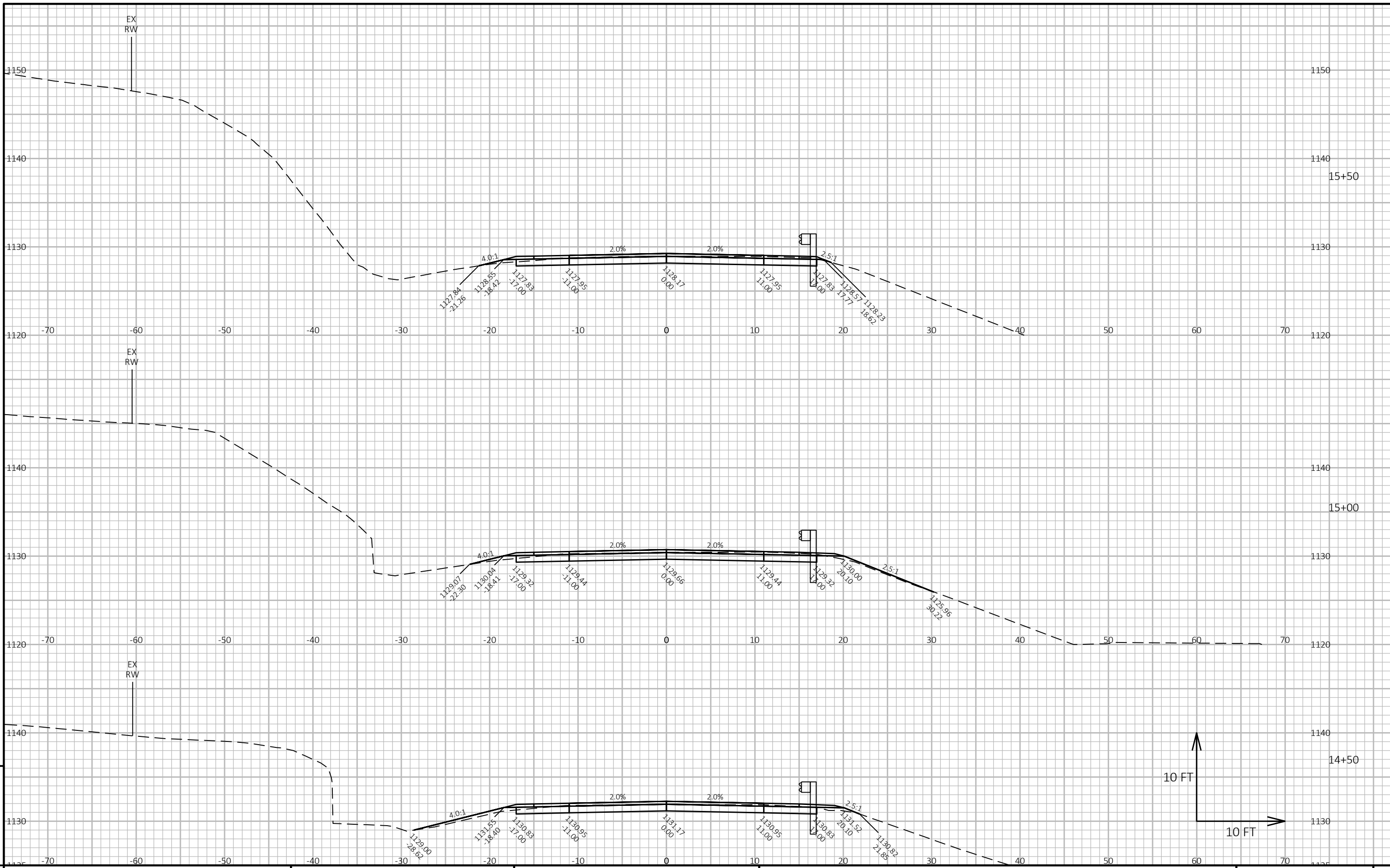
CROSS SECTIONS: MAINLINE

SHEET

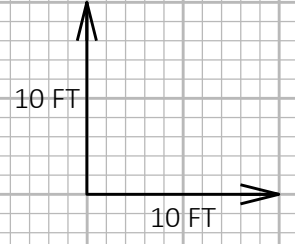
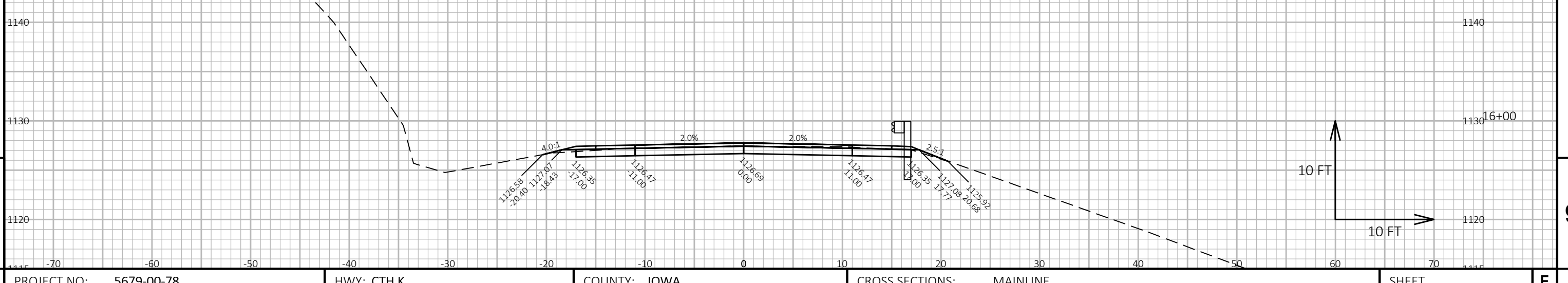
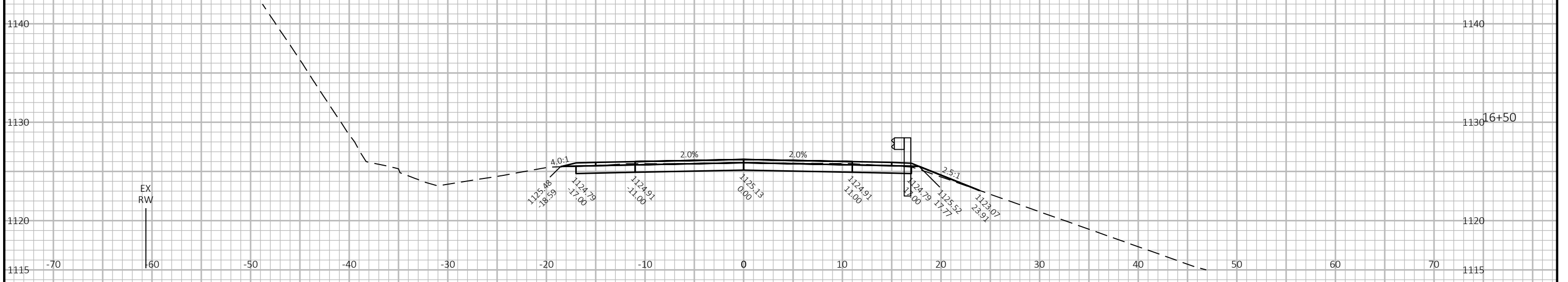
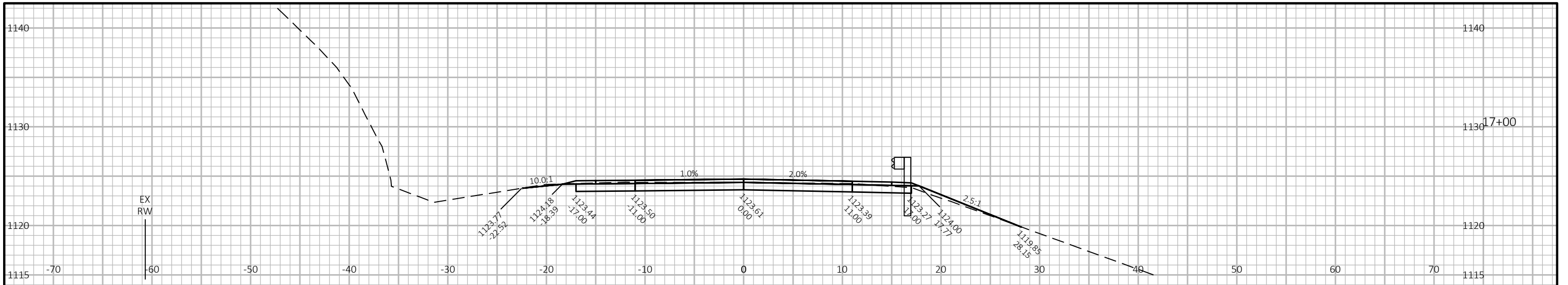
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PROJECT NO: 5679-00-78 HWY: CTH K COUNTY: IOWA CROSS SECTIONS: MAINLINE SHEET E



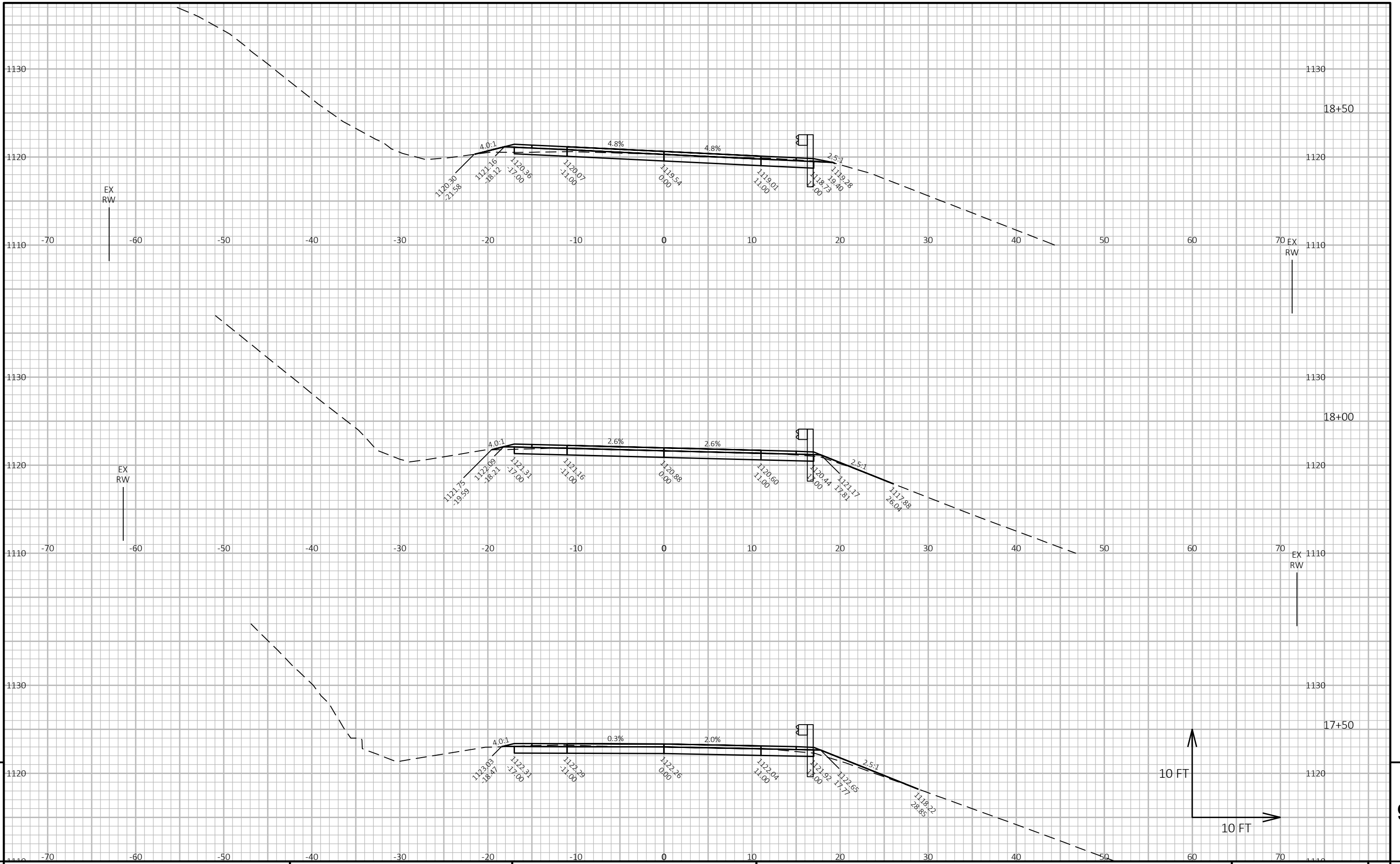
PROJECT NO: 5679-00-78 HWY: CTH K COUNTY: IOWA CROSS SECTIONS: MAINLINE SHEET 9



9

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PROJECT NO: 5679-00-78 HWY: CTH K COUNTY: IOWA CROSS SECTIONS: MAINLINE SHEET E



PROJECT NO: 5679-00-78

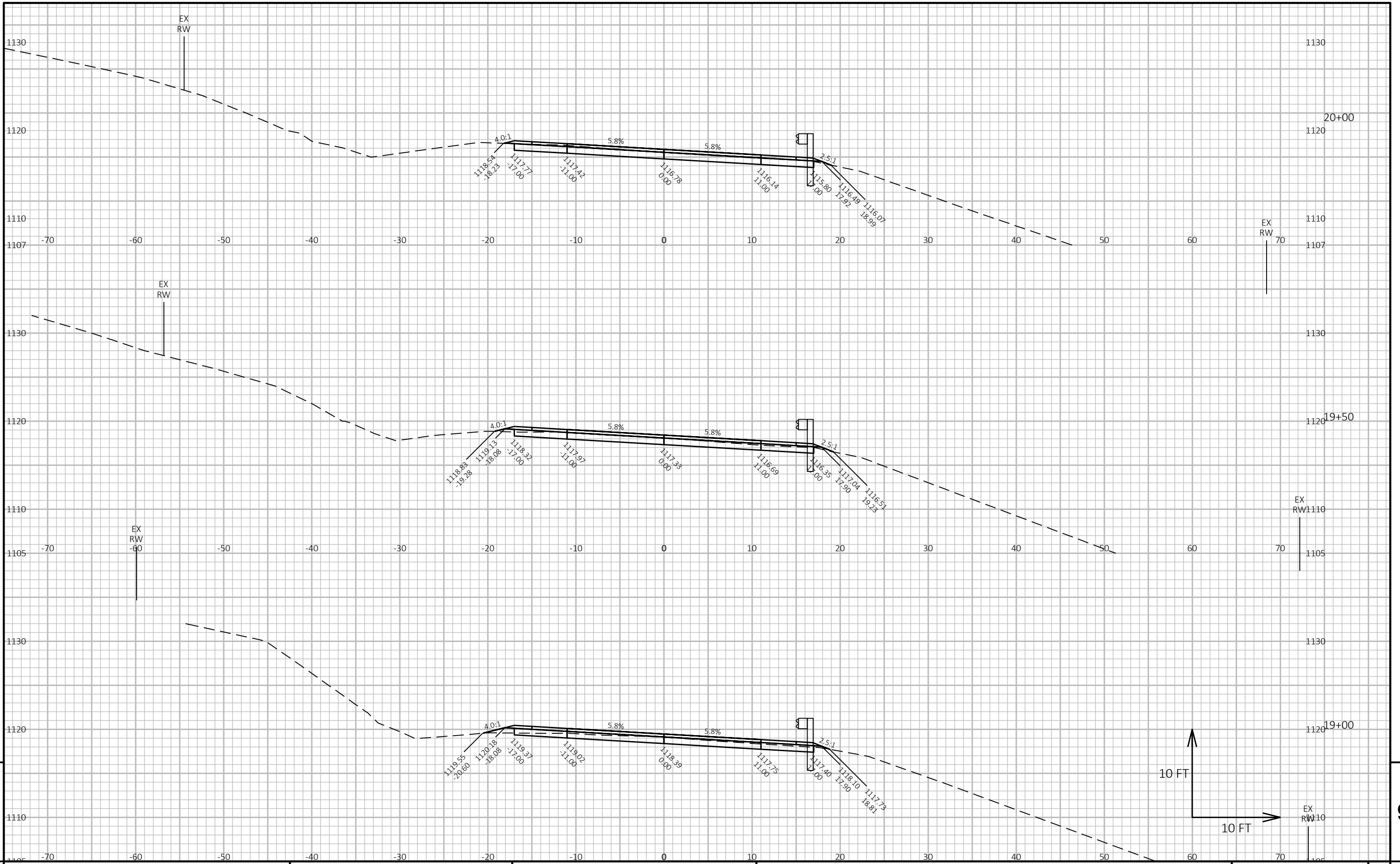
HWY: CTH K

COUNTY: IOWA

CROSS SECTIONS: MAINLINE

SHEET

E



PROJECT NO: 5679-00-78

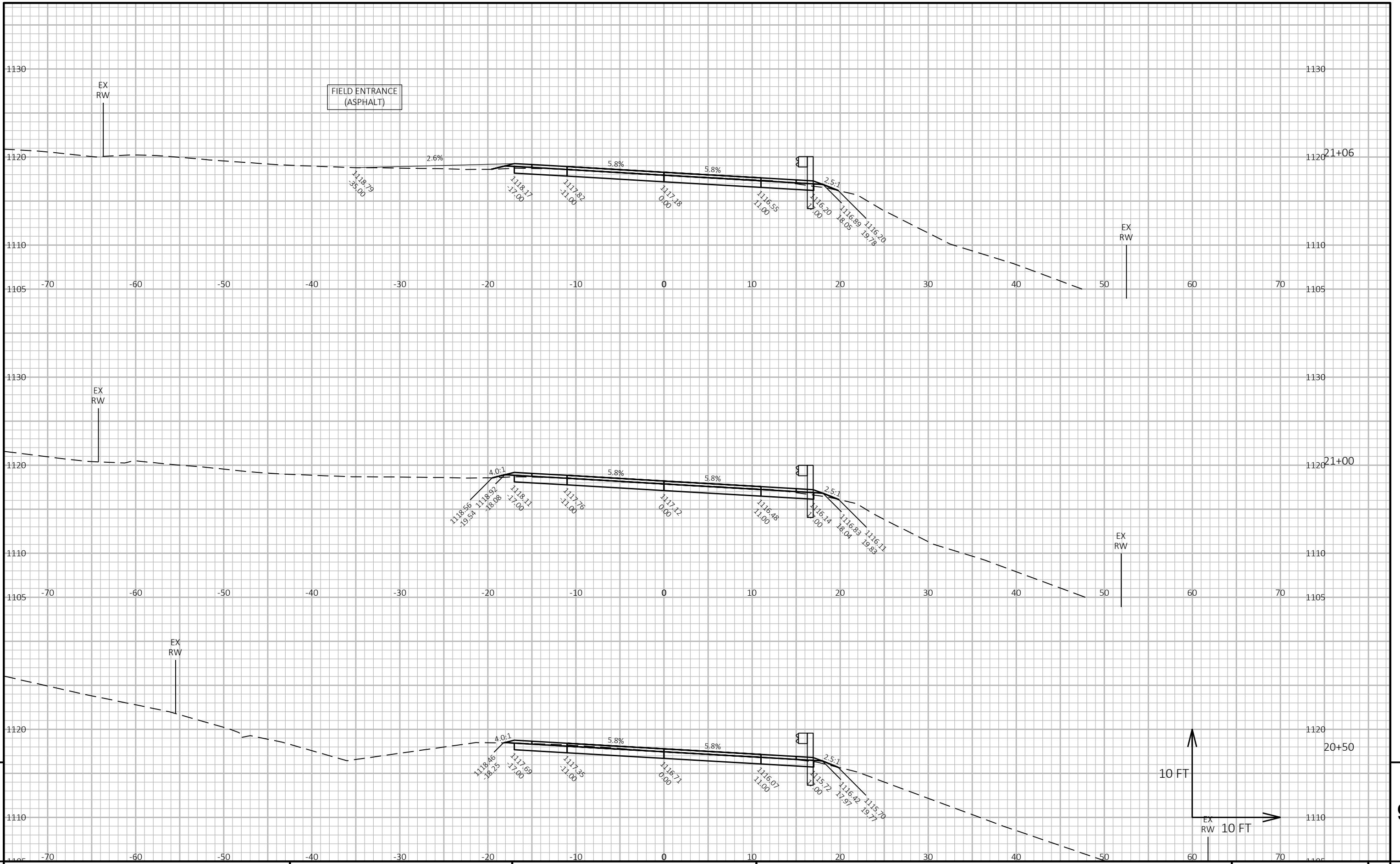
HWY: CTH K

COUNTY: IOWA

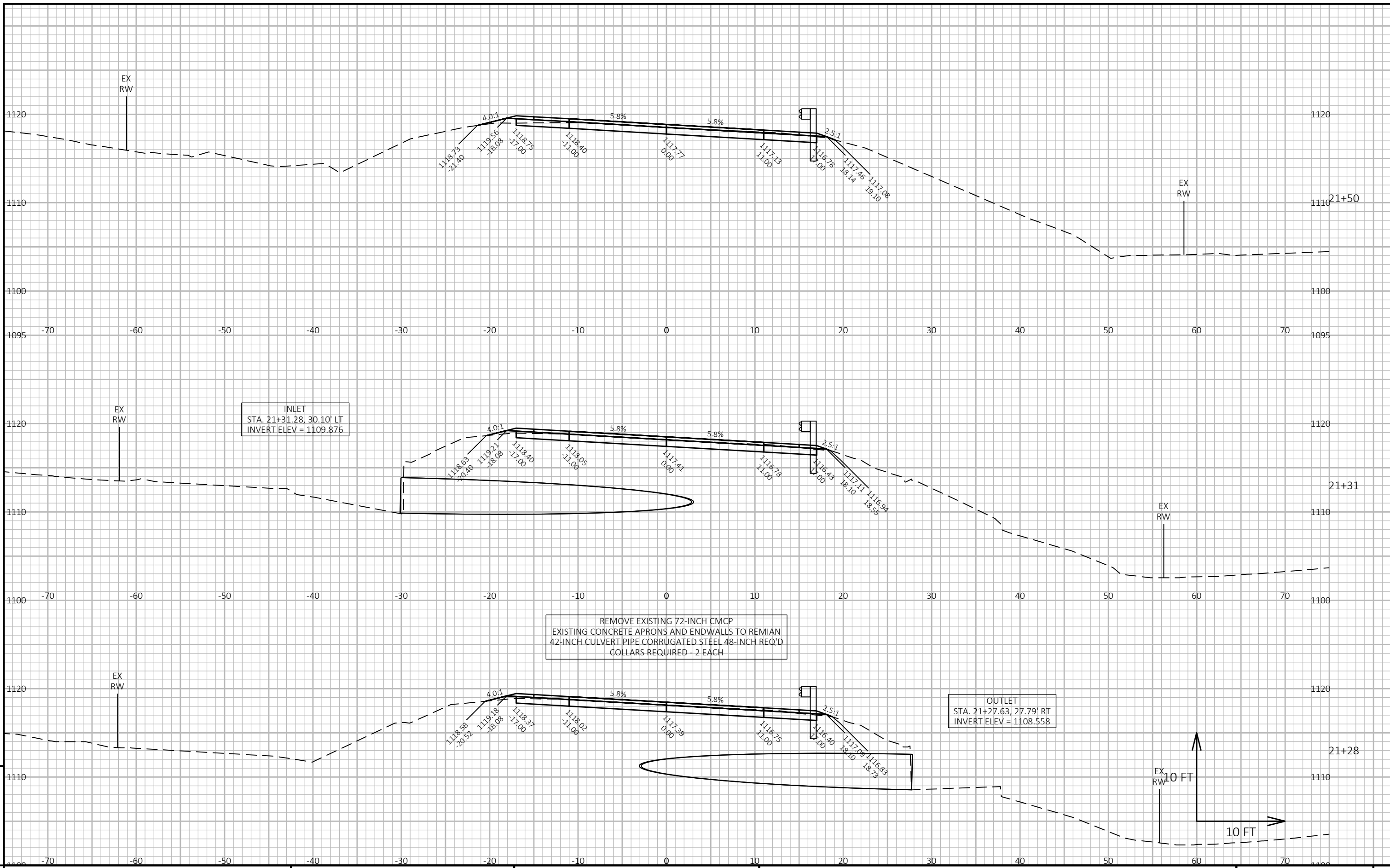
CROSS SECTIONS: MAINLINE

SHEET

E



PROJECT NO: 5679-00-78	HWY: CTH K	COUNTY: IOWA	CROSS SECTIONS: MAINLINE	SHEET	E
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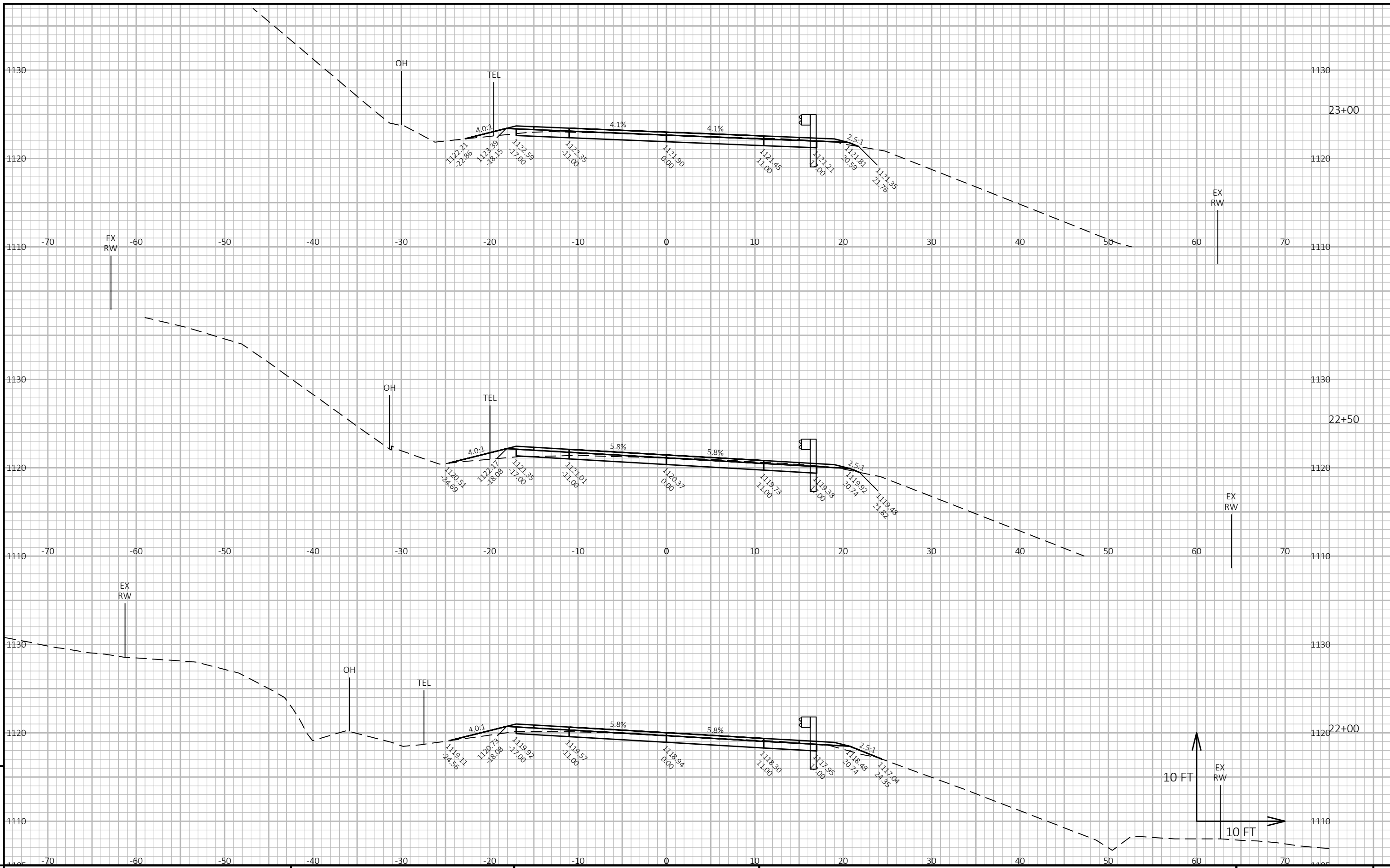
INLET
 STA. 21+31.28, 30.10' LT
 INVERT ELEV = 1109.876

REMOVE EXISTING 72-INCH CMCP
 EXISTING CONCRETE APRONS AND ENDWALLS TO REMIAN
 42-INCH CULVERT PIPE CORRUGATED STEEL 48-INCH REQ'D
 COLLARS REQUIRED - 2 EACH

OUTLET
 STA. 21+27.63, 27.79' RT
 INVERT ELEV = 1108.558

9

9



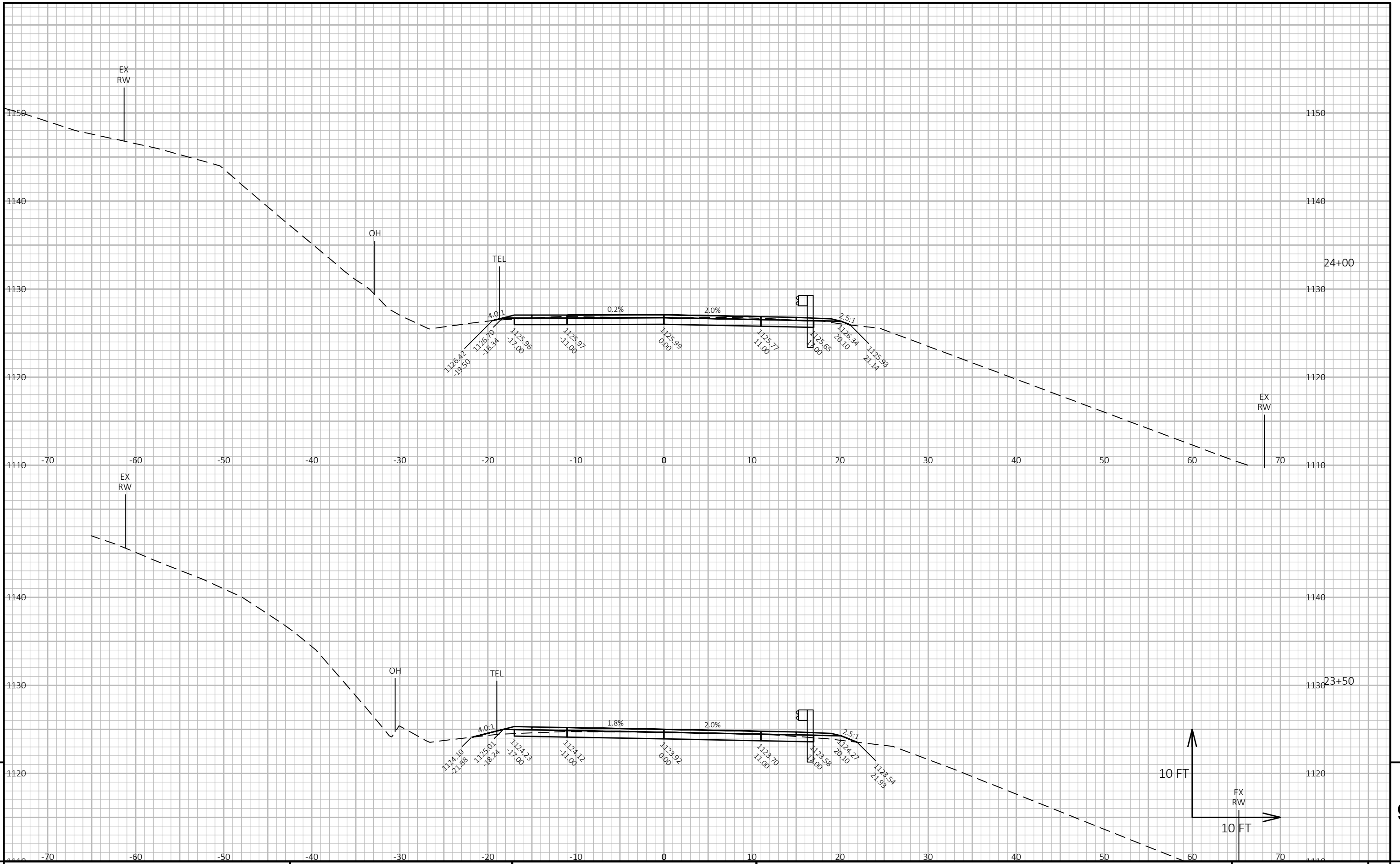
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PROJECT NO: 5679-00-78 HWY: CTH K COUNTY: IOWA CROSS SECTIONS: MAINLINE SHEET E

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LAYOUT NAME - 11



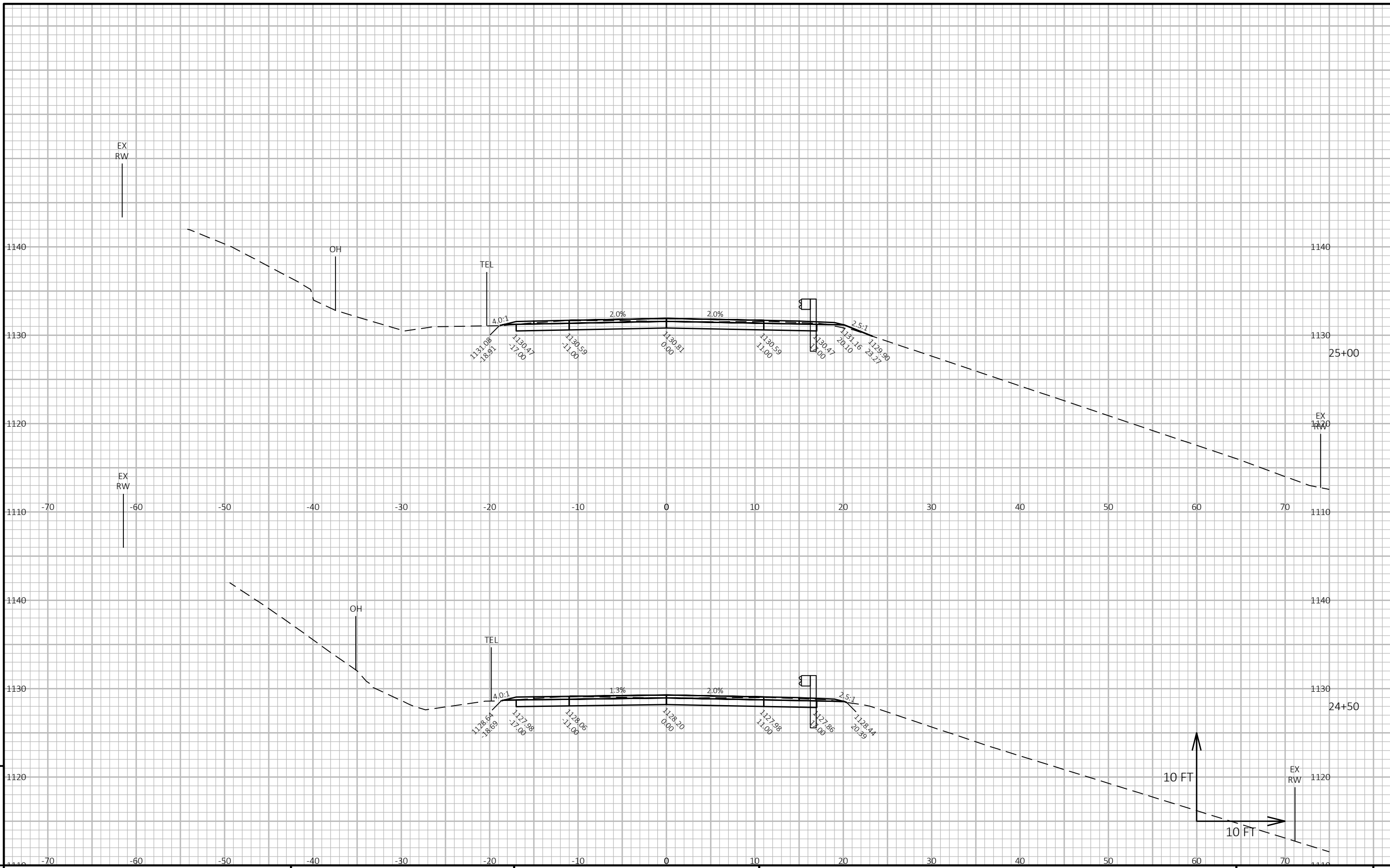
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PROJECT NO: 5679-00-78 HWY: CTH K COUNTY: IOWA CROSS SECTIONS: MAINLINE SHEET E

FILE NAME : G:\00-PROJECT FILES\2022\22052 CTH K - BARNEVELD, WI 5679-00-78\0-CAD\SHEETS\090201_XS.DWG PLOT DATE : 7/20/2022 4:02 PM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 12



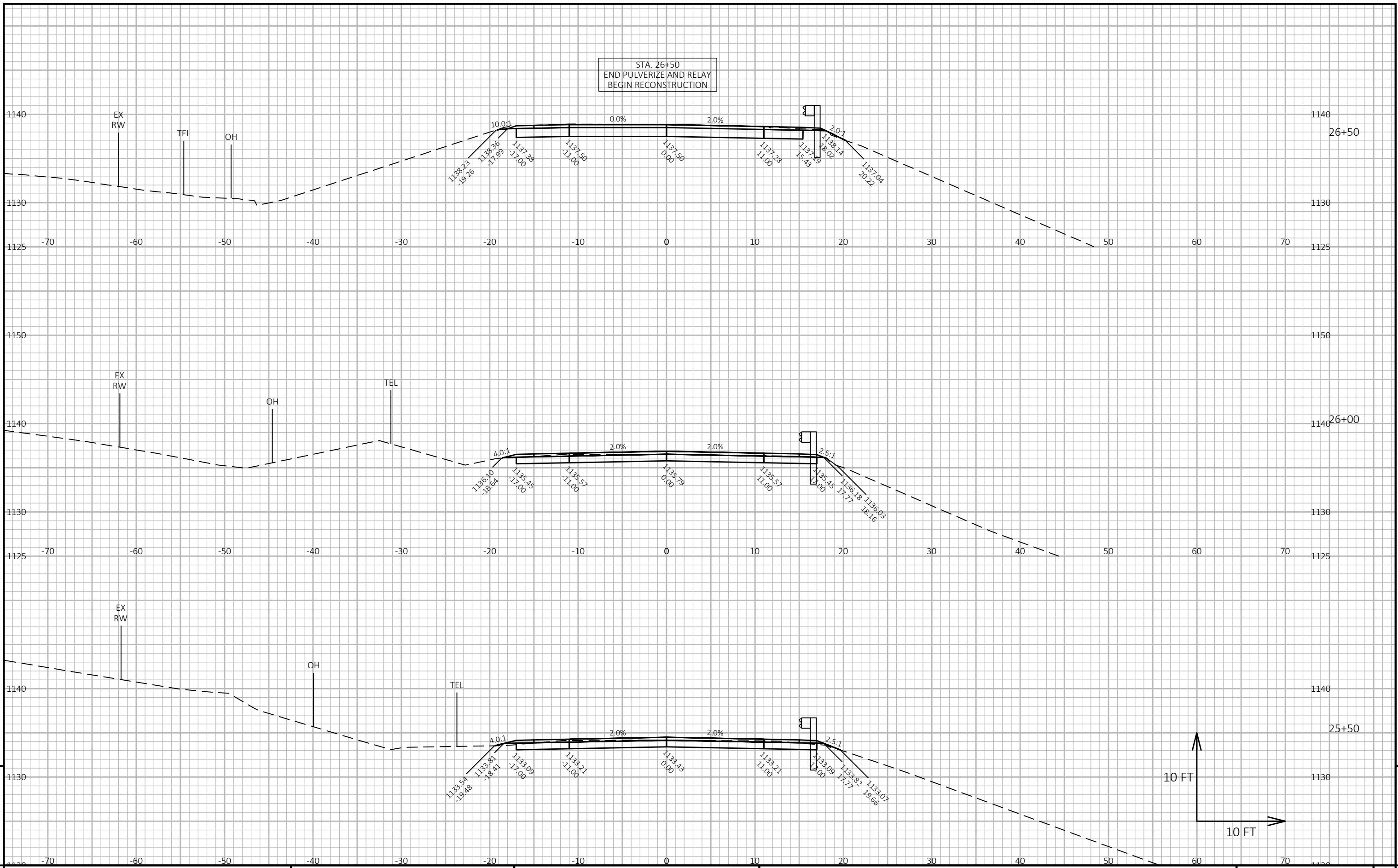
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PROJECT NO: 5679-00-78 HWY: CTH K COUNTY: IOWA CROSS SECTIONS: MAINLINE SHEET E

FILE NAME: G:\00-PROJECT FILES\2022\22052 CTH K - BARNEVELD, WI 5679-00-78\0-CAD\SHEETS\090201_XS.DWG PLOT DATE: 7/20/2022 4:02 PM PLOT BY: ERIK MEYER PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 13



PROJECT NO: 5679-00-78

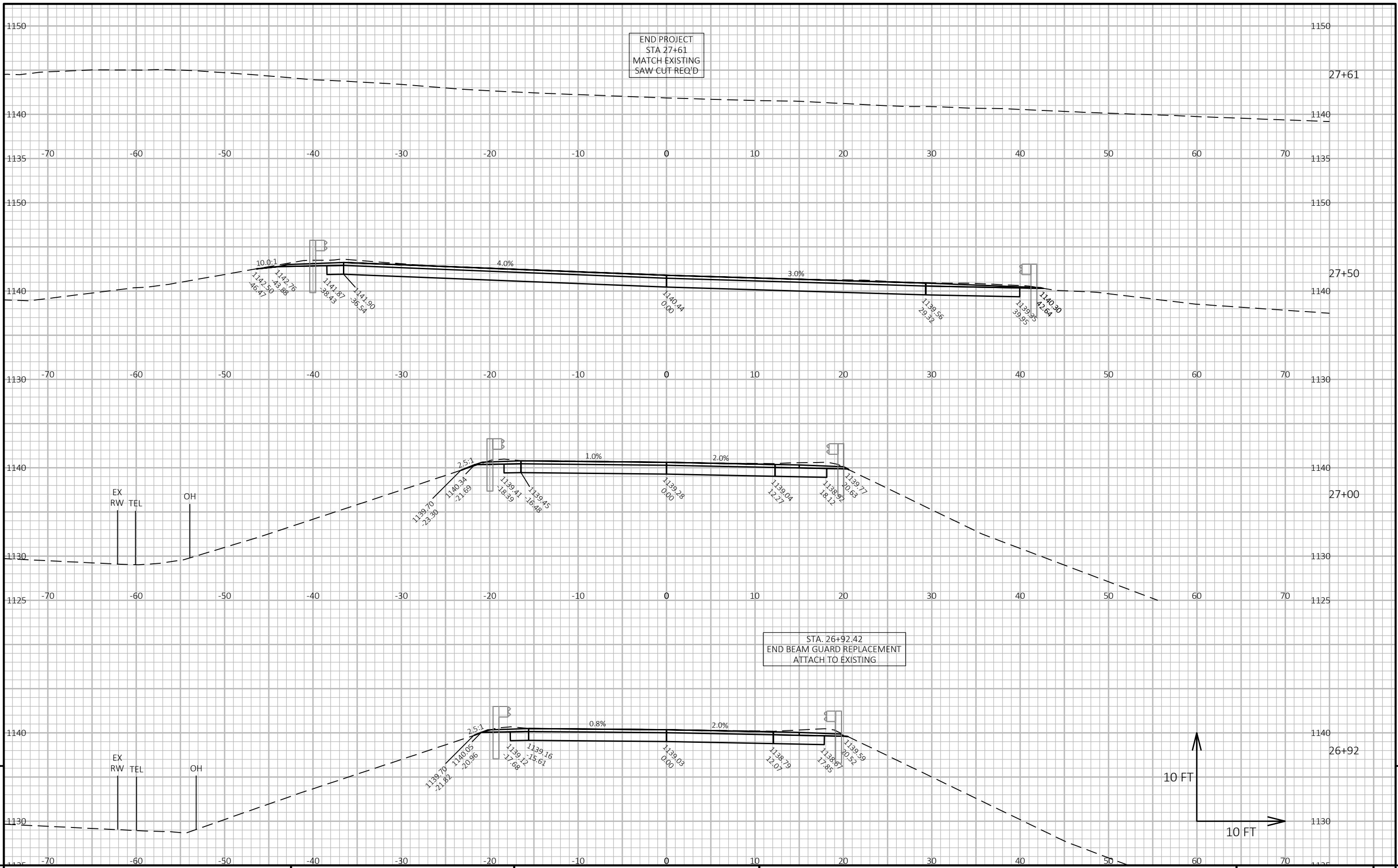
HWY: CTH K

COUNTY: IOWA

CROSS SECTIONS: MAINLINE

SHEET

E



PROJECT NO: 5679-00-78 HWY: CTH K COUNTY: IOWA CROSS SECTIONS: MAINLINE SHEET 9

Notes



Wisconsin Department of Transportation

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