

WKE PROJECT ID: 3773-01-70 COUNTY: WAUKESHA

MARCH 2019 INDEX OF SHEETS

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Sheet No.	Typical Sections and Details
Sheet No.	Estimate of Quantities
Sheet No.	Miscellaneous Quantities
Sheet No.	Right of Way Plat
Sheet No.	Plan and Profile
Sheet No.	Standard Detail Drawings
Sheet No.	Sign Plates
Sheet No.	Structure Plans
Sheet No.	Computer Earthwork Data
Sheet No.	Cross Sections

TOTAL SHEETS = 96



DESIGN DESIGNATION

A.A.D.T.	2019	=	1600
A.A.D.T.	2039	=	1900
D.H.V.	2029	=	1700
D.D.		=	59/41
T.		=	6.1
DESIGN SPEED		=	55
ESALS		=	155,855

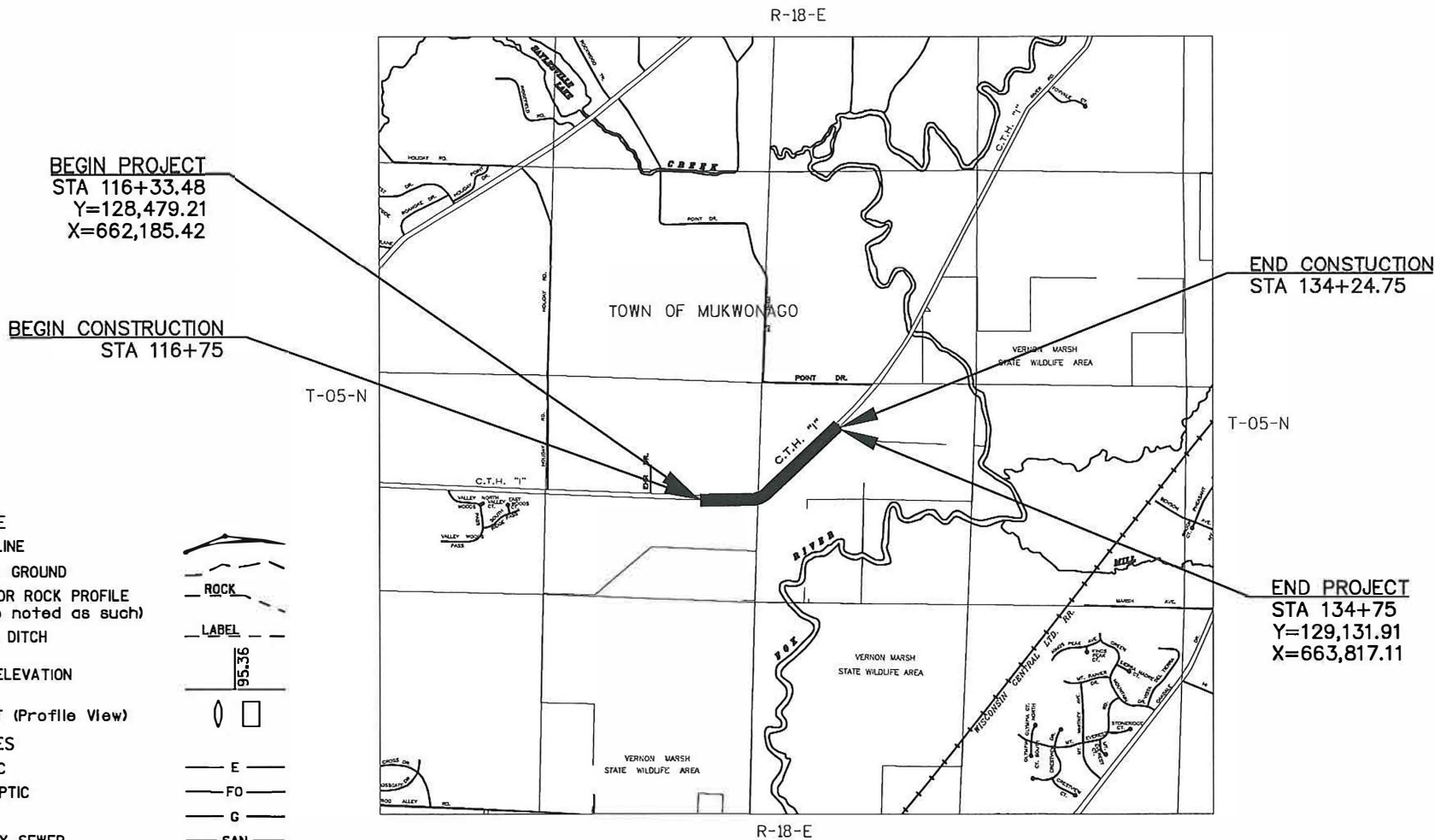
CONVENTIONAL SYMBOLS

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
CTH I (River Road)
EHR DR TO POINT DR
CTH I
WAUKESHA COUNTY

STATE PROJECT NUMBER
3773-01-70



HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUKESHA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL ELEVATIONS ON THIS PLAN ARE REFERENCED TO NAVD 88 (2012) USING THE WISCORS GEOID 12A IN US SURVEY FEET.

TOTAL NET LENGTH OF CENTERLINE = 0.331 MILES

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3773-01-70	WISC 2019161	1

APPROVED FOR
WAUKESHA COUNTY
DEPARTMENT OF PUBLIC WORKS

1-3-19
Date
Allison Busler
Director

1/3/19
Date
Corynna
Engineering Services Manager

ORIGINAL PLANS PREPARED BY

WISCONSIN
CAROLYNN GELLINGS
E-41104
MILWAUKEE WI
PROFESSIONAL ENGINEER

1
Date
Signature

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor WAUK. CO. DEPT. OF PUBLIC WORKS

Designer WAUK. CO. DEPT. OF PUBLIC WORKS

Project Manager KATHY KRAMER

Reginal Examiner

Reginal Supervisor ADETOYE ADENIJI

C.O Examiner

APPROVED FOR DISTRICT OFFICE

DATE: 1/3/19 K Kramer

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS, AS SHOWN ON THE PLANS, ARE APPROXIMATE. THERE MAY BE OTHER UTILITIES AND UTILITY INSTALLATIONS WITHIN THE PROJECT LIMITS THAT ARE NOT SHOWN.

EXCAVATION BELOW SUBGRADE (EBS) SHALL NOT BE USED TO BALANCE YARDAGE. EBS IS NOT SHOWN ON THE CROSS SECTIONS, BUT WILL BE MEASURED AND PAID FOR AS EXCAVATION COMMON. THE PRECISE LOCATION OF THE EBS WILL BE DETERMINED BY THE ENGINEER.

PAVEMENTS ARE TO BE SAWCUT, AS INDICATED ON THE PLANS, TO PROVIDE A BUTT JOINT AT THE PROJECT LIMITS AND AT ALL ASPHALTIC DRIVEWAYS.

ROCK BAGS FENCE SHALL BE INSTALLED AROUND ALL EXISTING CULVERT INLETS. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN PLACE UNTIL SUCH TIME AS THE ENGINEER DETERMINES THAT THEY ARE NO LONGER REQUIRED.

WHEN THE QUANTITY OF THE ITEMS OF BREAKER RUN, BASE AGGREGATE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE. THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

NEW PAVEMENT SHALL BE CONSTRUCTED WITH A 2-INCH OF HMA TYPE 5-LT PG58-28 S AS AN UPPER LAYER AND OF 4-INCH OF HMA TYPE 3-LT PG58-28 S LOWER LAYER.

THE CRUSHED AGGREGATE FOR SHOULDERS ADJACENT TO THE HMA PAVEMENT SHALL NOT BE PLACED UNTIL AFTER THE SURFACE LAYER OF THE HMA PAVEMENT HAS BEEN LAID.

ALL DISTURBED AREAS WITHIN THE RIGHT OF WAY SHALL BE COVERED WITH SALVAGED TOPSOIL OR TOPSOIL, AND HYDROSEED OR SODDED AS NOTED ON THE PLANS OR AS DETERMINED BY THE ENGINEER.

SEED QUANTITIES ARE BASED ON MIXTURE NO. 30.

SODDING SHALL CONSIST OF SOD EROSION CONTROL FOR ALL AREAS, EXCEPTING OCCUPIED RESIDENTIAL PROPERTIES AND ALL RIGHT OF WAY CONTIGUOUS TO SAID PROPERTIES, WHICH ARE TO USE SOD LAWN.

THE CONTRACTOR SHALL NOTIFY DIGGER’S HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK TO DETERMINE THE LATEST STATUS OF UTILITY RELOCATIONS. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF A ONE-CALL SYSTEM MUST BE CONTACTED SEPARATELY.

RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND MULCH/EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS OUTSIDE THE ROADBED (I.E. BETWEEN CURBS AND SIDEWALKS, OUTSIDE OF WALKS, ETC.) ARE LEFT EXPOSED FOR MORE THAN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED AND MULCH.

STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED AND MULCH.

EROSION CONTROL BMP’S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL BMP’S SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.

INDEX OF SECTION 2 DRAWINGS

- GENERAL NOTES AND PROJECT CONTACTS
- PROJECT OVERVIEW
- TYPICAL EXISTING SECTIONS
- TYPICAL FINISHED SECTIONS
- CONSTRUCTION DETAILS
- PAVING DETAILS
- EROSION CONTROL PLAN
- SIGN REMOVAL
- PERMANENT SIGNING
- PAVEMENT MARKING PLANS
- DETOUR PLAN
- ALIGNMENT DIAGRAM

STANDARD ABBREVIATIONS

A.D.T.	AVERAGE DAILY TRAFFIC	P.C.	POINT OF CURVATURE
AC.	ACRE(S)	P.I.	POINT OF INTERSECTION
ASPH.	ASPHALT	P.L.	PROPERTY LINE
BM	BENCH MARK	P.R.C.	POINT OF REVERSE CURVATURE
C & G	CURB & GUTTER	P.T.	POINT OF TANGENCY
CB	CATCH BASIN	PAV'T.	PAVEMENT
C.S.C.P.	CORRUGATED STEEL CULVERT PIPE	R	RADIUS
C.Y.	CUBIC YARDS	C.P.R.C.	CULVERT PIPE REINFORCED CONCRETE
CL	CENTERLINE	RHF	RIGHT HAND FORWARD
CO.	COUNTY	RT.	RIGHT
C.T.H.	COUNTY TRUNK HIGHWAY	R/W	RIGHT OF WAY
CWT.	HUNDREDWEIGHT	S	SOUTH
D	DEGREE OF CURVE	SAN	SANITARY
D.H.V.	DESIGN HOURLY VOLUME	S.B.	SOUTHBOUND
DISCH.	DISCHARGE	S.D.D.	STANDARD DETAIL DRAWING
E	EAST	S.F.	SQUARE FEET
EA.	EACH	S.S.P.R.C.	STORM SEWER PIPE REINFORCED CONCRETE
E.B.	EASTBOUND	STA.	STATION
ESALS	EQUIVALENT SINGLE AXLE LOADS	S.Y.	SQUARE YARDS
ESMT.	EASEMENT	T	TANGENT
F.E.	FIELD ENTRANCE	T	TELEPHONE
FT.	FOOT (FEET)	T.L.E.	TEMPORARY LIMITED EASEMENT
G	GAS	VAR.	VARIES
I.P.	IRON PIPE	V.P.C.	VERTICAL POINT OF CURVATURE
K	RATE OF VERTICAL CURVATURE	V.P.I.	VERTICAL POINT OF INTERSECTION
L	LENGTH	V.P.T.	VERTICAL POINT OF TANGENCY
LB.	POUND(S)	W	WATER MAIN
L.F.	LINEAR FEET	W	WEST
LHF	LEFT HAND FORWARD	W.B.	WESTBOUND
LS	LUMP SUM	WV	WATER VALVE
LT.	LEFT	YD.	YARDS
MH	MANHOLE		
N	NORTH		
N.B.	NORTHBOUND		
NO.	NUMBER		

UTILITIES CONTACTS

A.T. & T., INC.
MR. TOM CROWLEY
2005 PEWAUKEE ROAD
WAUKESHA, WI 53188
262.896.7427
tc1657@att.com

WE-ENERGIES (ELECTRIC)
MR. BRYAN STOEHR
500 S. 116TH STREET
WEST ALLIS, WI 53214
414.944.5516
bryan.stoehr@we-energies.com

CHARTER COMMUNICATIONS/TIME WARNER CABLE
MR. STEVE CRAMER, UTILITY COORDINATOR SUPERVISOR
1320 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212
414.908.4766
steve.cramer@twcable.com

WE-ENERGIES (GAS)
MR. JOE DABLE
500 S. 116TH STREET
WEST ALLIS, WI 53214
414.944.5543
joe.dable@we-energies.com

WDNR LIAISON

MR. CRAIG WEBSTER
ENVIRONMENTAL COORDINATOR – SOUTHEAST REGION
141 NW BARSTOW ROOM 180
WAUKESHA, WI 53188
262.574.2141


OTHER CONTACTS

MS. ALLISON BUSSLER, DIRECTOR
WAUKESHA COUNTY DPW
515 W. MORELAND BLVD.
WAUKESHA, WI 53188
262.548.7740

MS. CAROLYNN GELLINGS,
ENGINEERING SERVICE MANAGAER
WAUKESHA COUNTY DPW
515 W. MORELAND BLVD.
WAUKESHA, WI 53188
262.548.7740
cgellings@waukeshacounty.gov

MR. JAMES SOEHNER. PROJECT MANAGER
WAUKESHA COUNTY DPW
515 W. MORELAND BLVD.
WAUKESHA, WI 53188
262.548.7740
jsoehner@waukeshacounty.gov



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

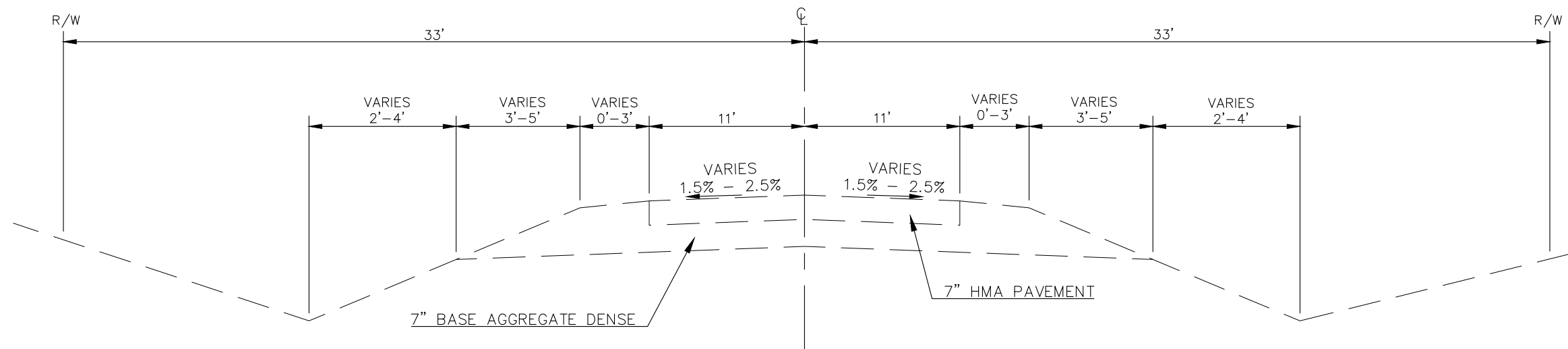
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PI	=	126+22.56
Y	=	128,455.439
X	=	663,174.218
DELTA	=	47°50'06"
D	=	03°41'47"
TAN	=	687.43'
LCH	=	1256.80'
LCB	=	N 67°27'37" E
ARC L	=	1294.06'
R	=	1550.00'
PC	=	119+35.13
PT	=	132+29.20

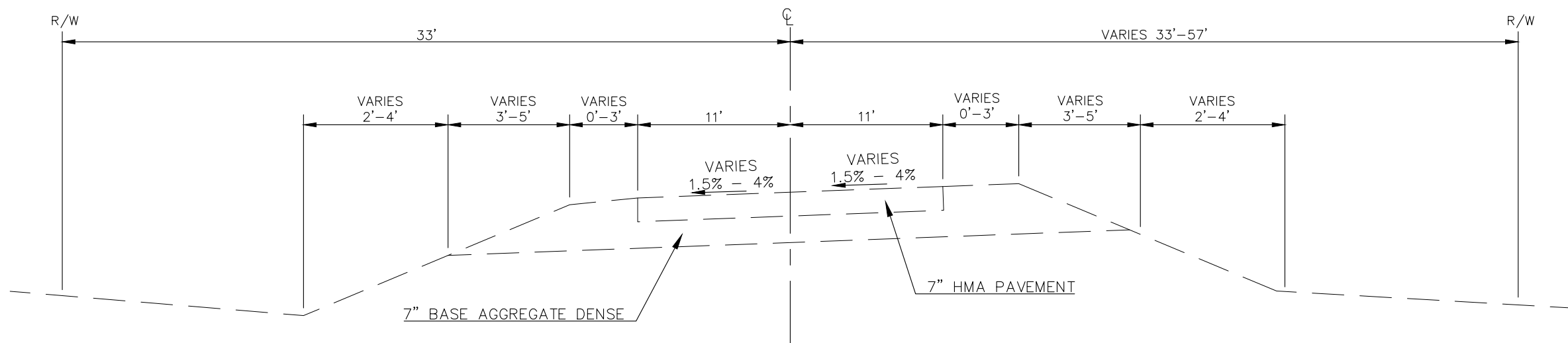
END CONSTRUCTION
STA 134+24.75
X=129095.49
Y=663782.50

BEGIN CONSTRUCTION
STA 116+75.00
X=128478.21
Y=662226.92

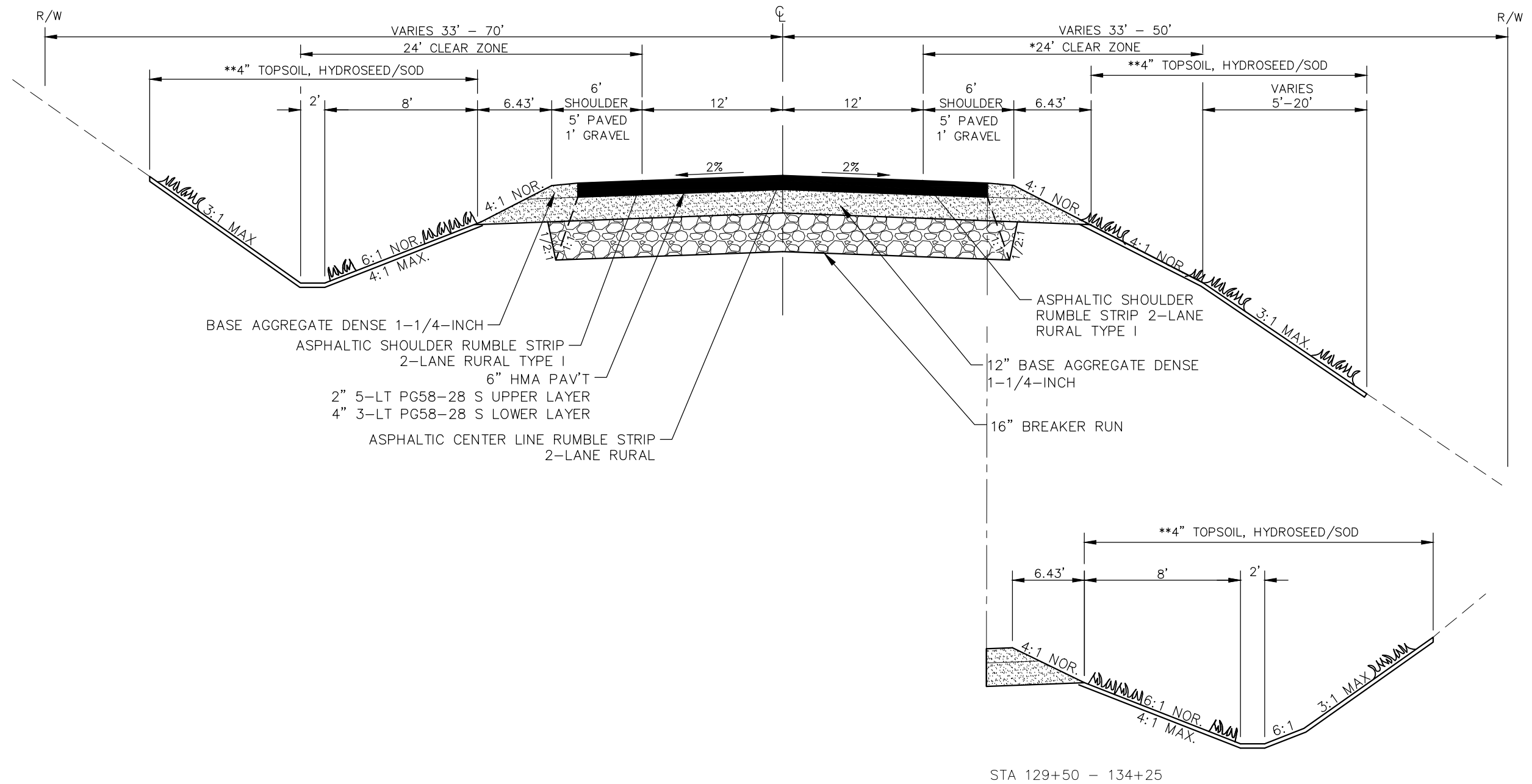
PLOT SCALE : 1"=120'



TYPICAL EXISTING SECTION
C.T.H. "I"
STA 116+33 - 124+50
STA 128+50 - 134+75

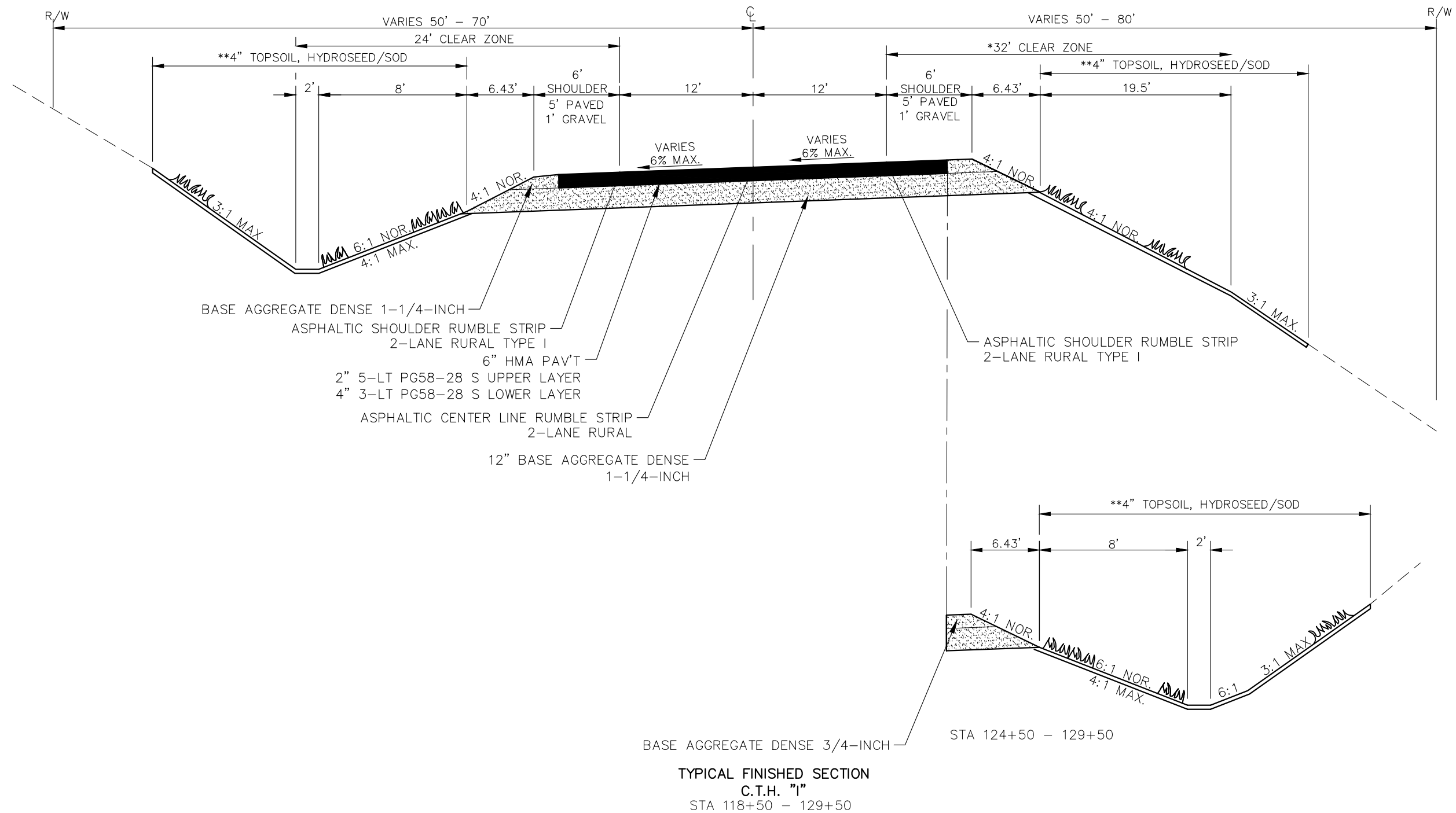


TYPICAL EXISTING SECTION
C.T.H. "I"
STA 124+50 - 128+50

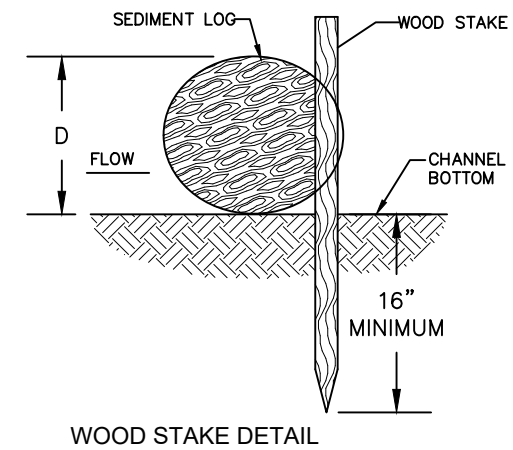
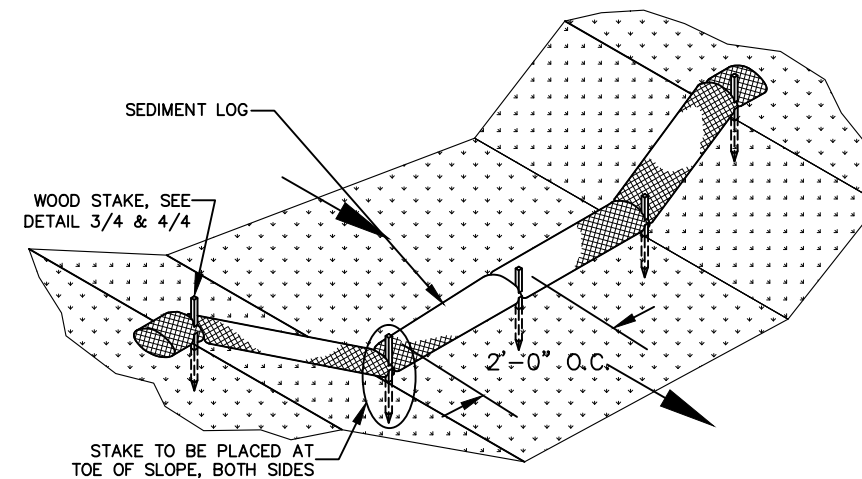
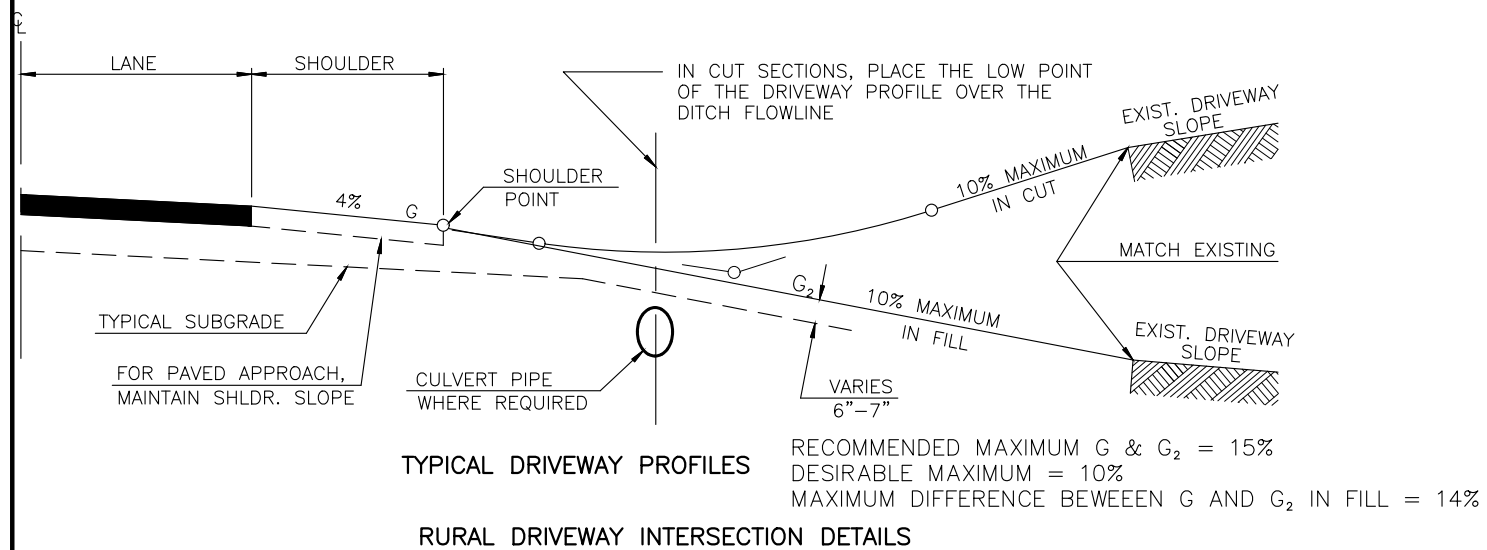
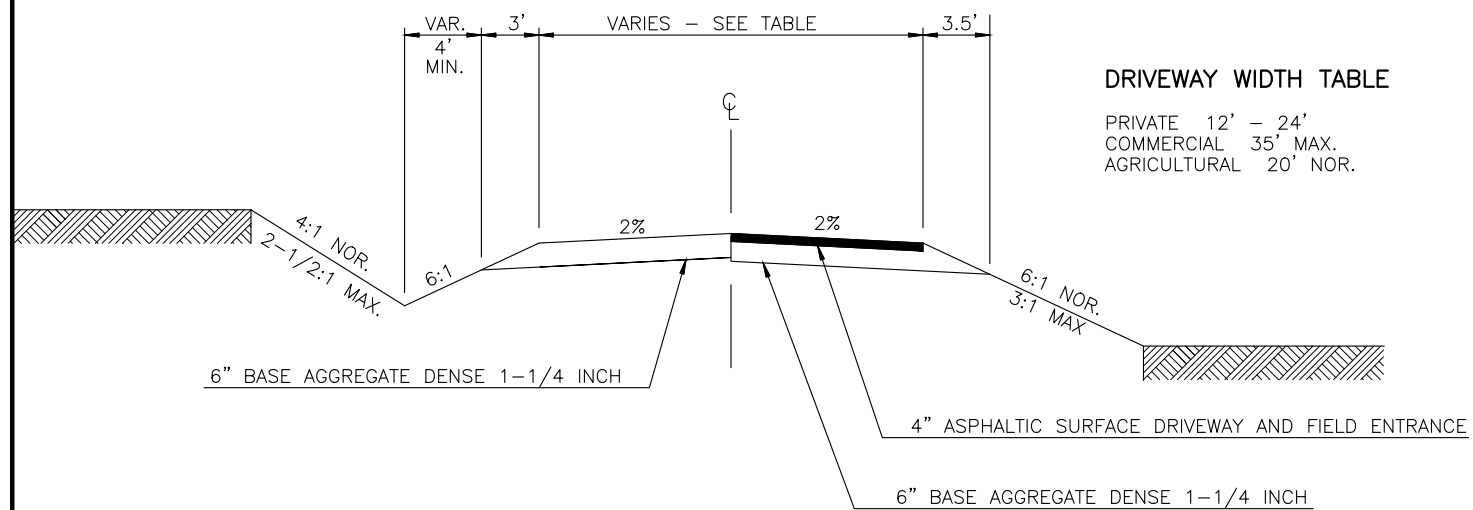
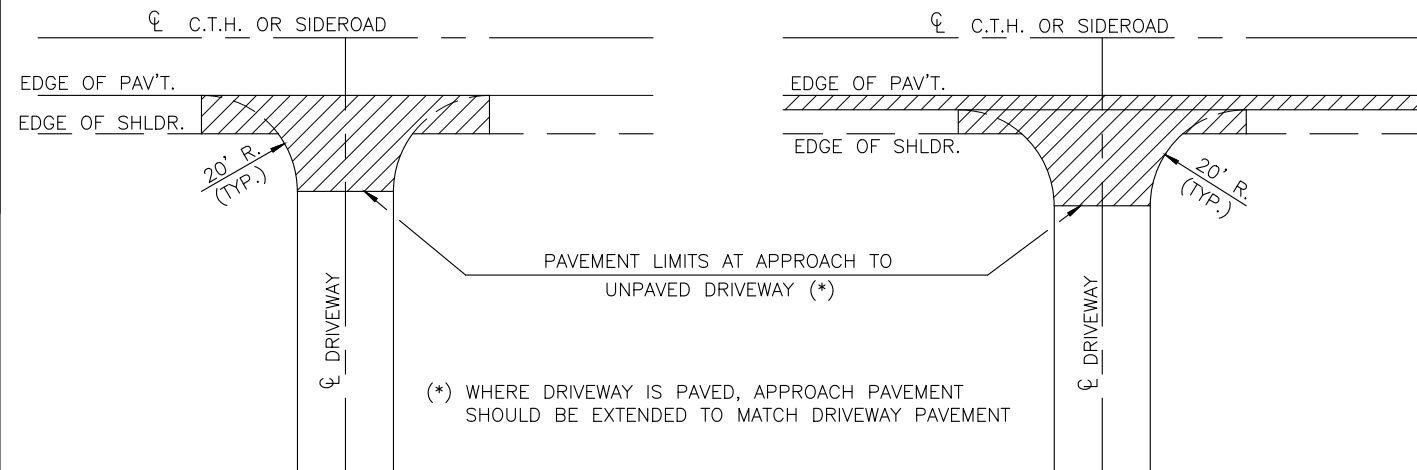


TYPICAL FINISHED SECTION
C.T.H. "I"
STA 116+75 - 118+50
STA 129+50 - 134+25

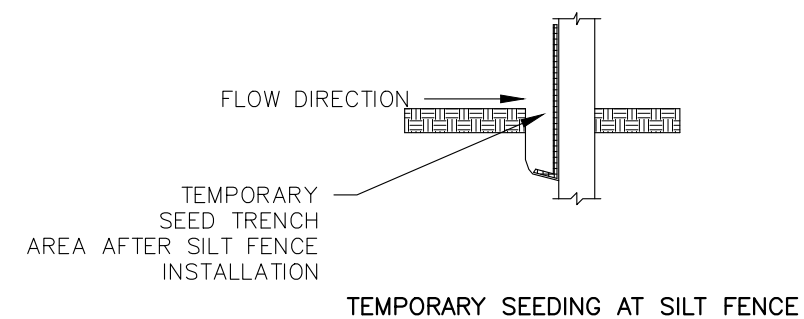
* CLEAR ZONE INCREASED TO 32' ON THE OUTSIDE OF CURVE (STA 119+33.51 to STA 131+88.04)
** SEE EROSION CONTROL PLAN FOR LOCATION OF SOD AND HYDROSEED AREAS

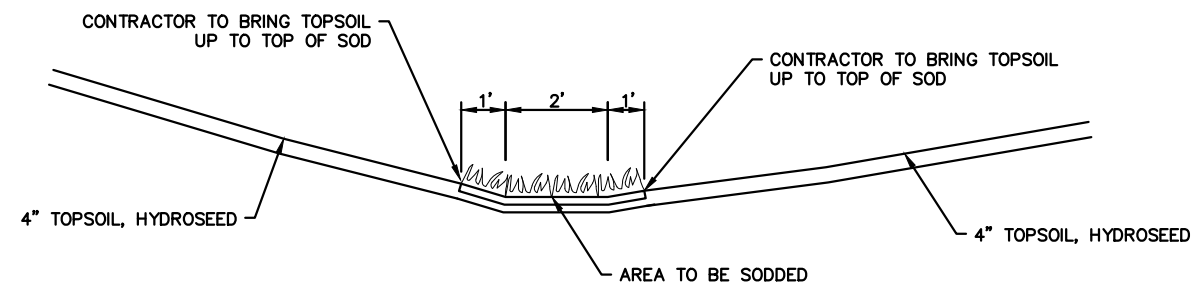


* CLEAR ZONE INCREASED TO 32' ON THE OUTSIDE OF CURVE (STA 119+33.51 to STA 131+88.04)
** SEE EROSION CONTROL PLAN FOR LOCATION OF SOD AND HYDROSEED AREAS

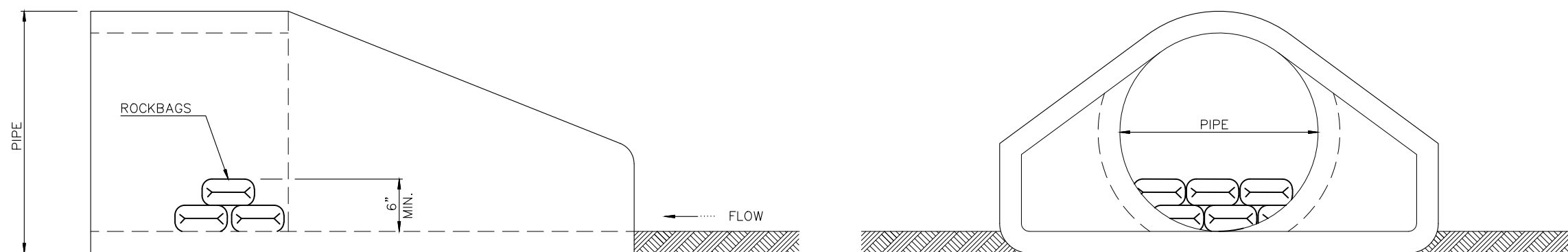


TEMPORARY DITCH CHECK

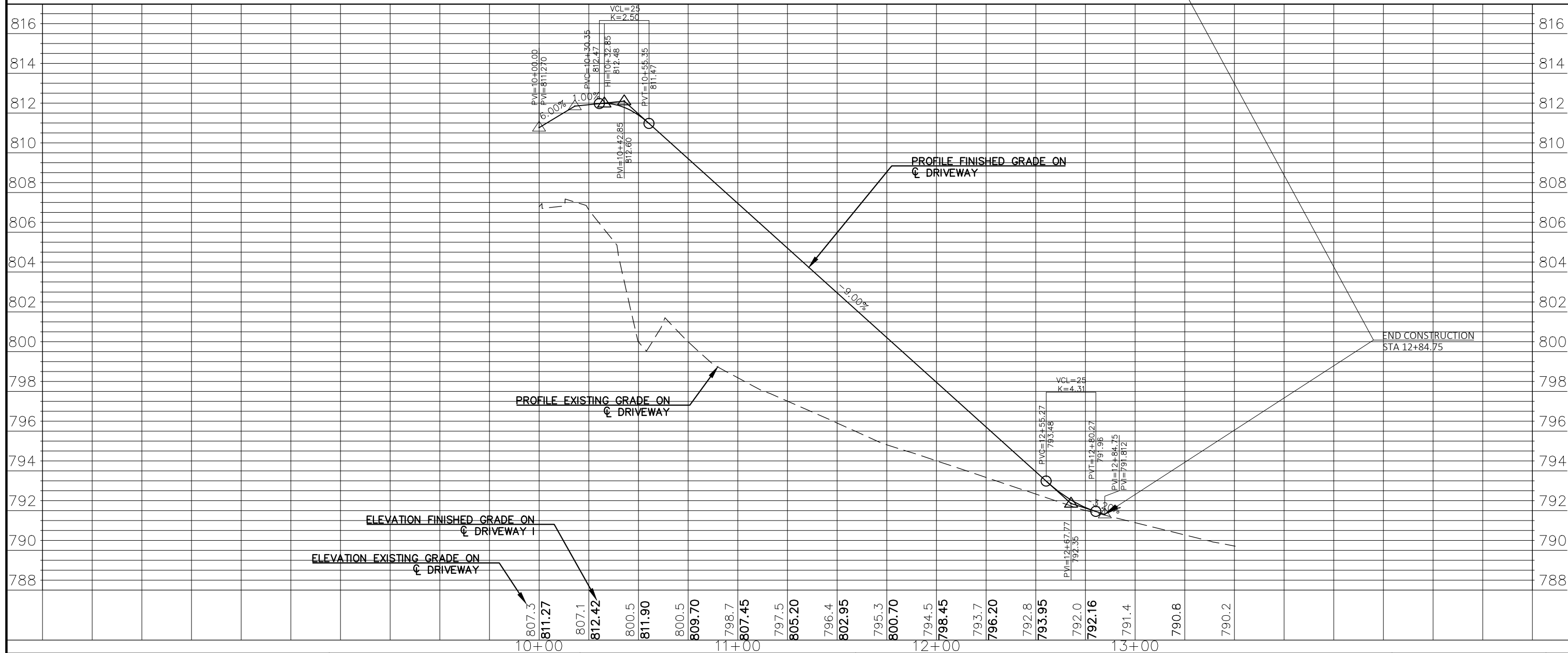
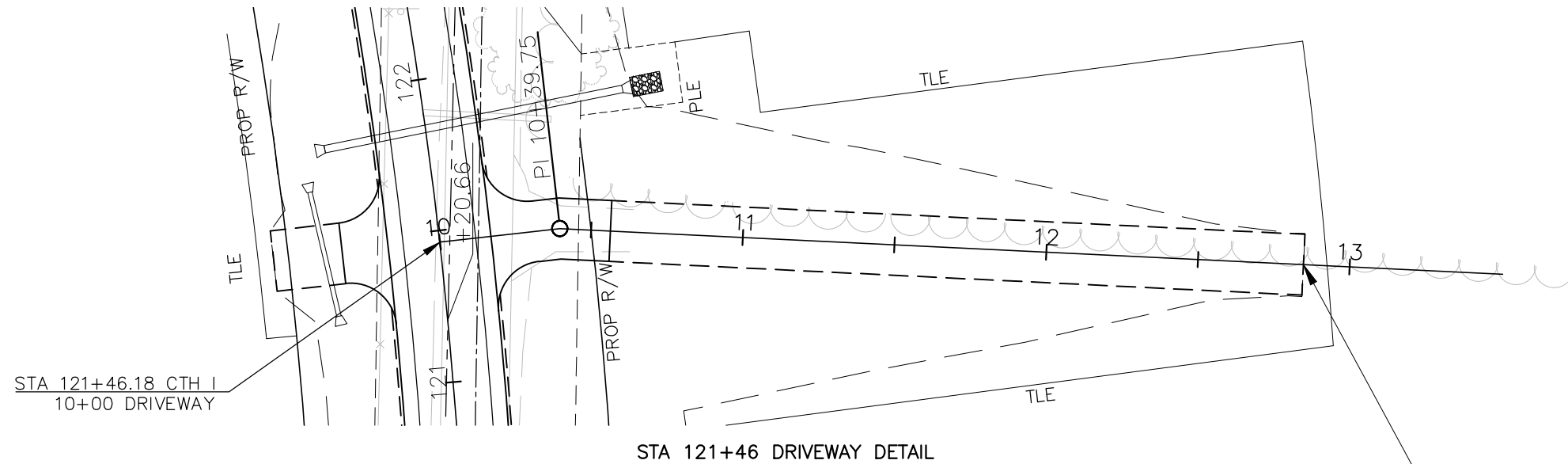




DITCH BOTTOM SOD DETAIL

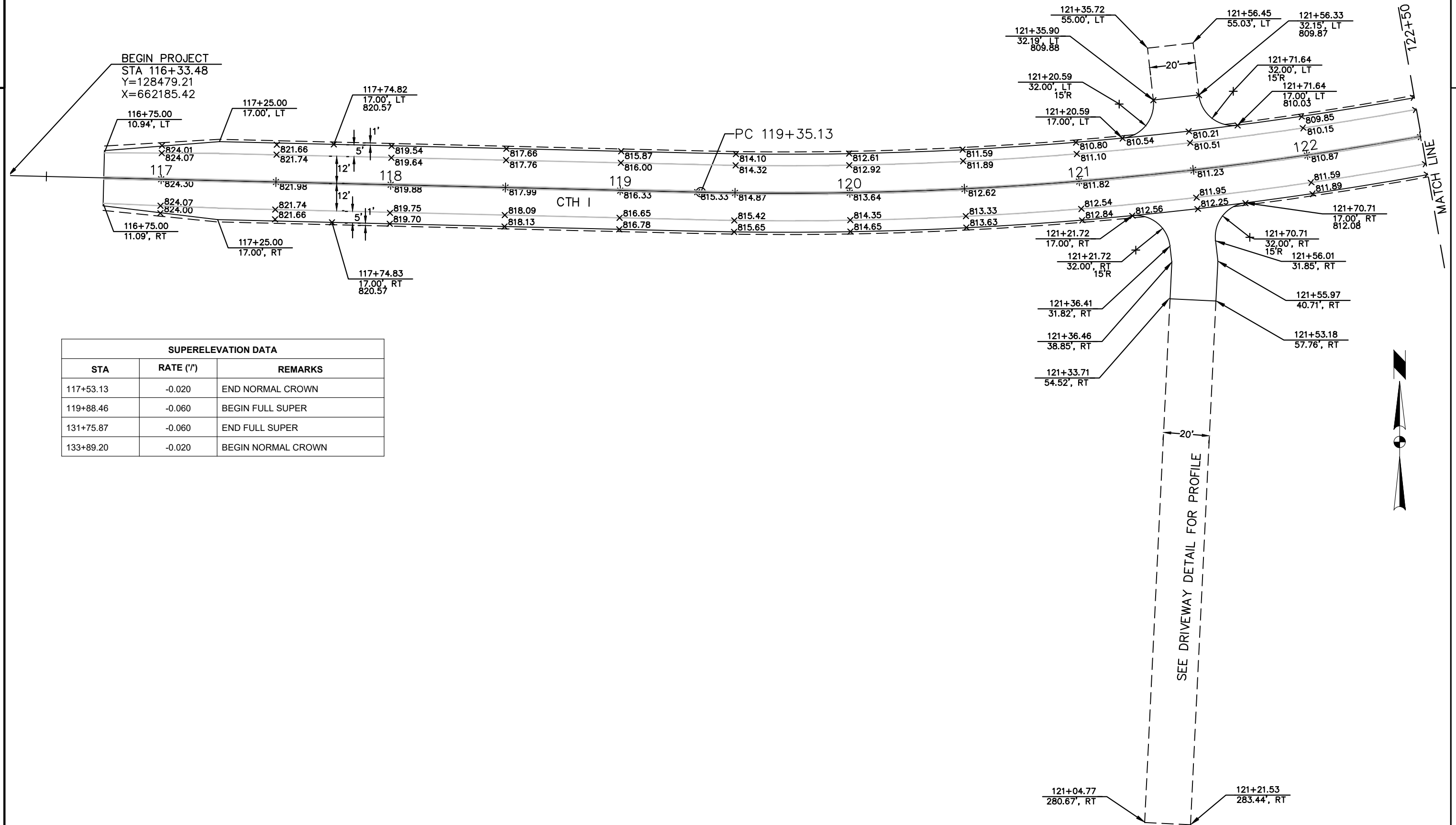


CULVERT PIPE CHECK DETAILS

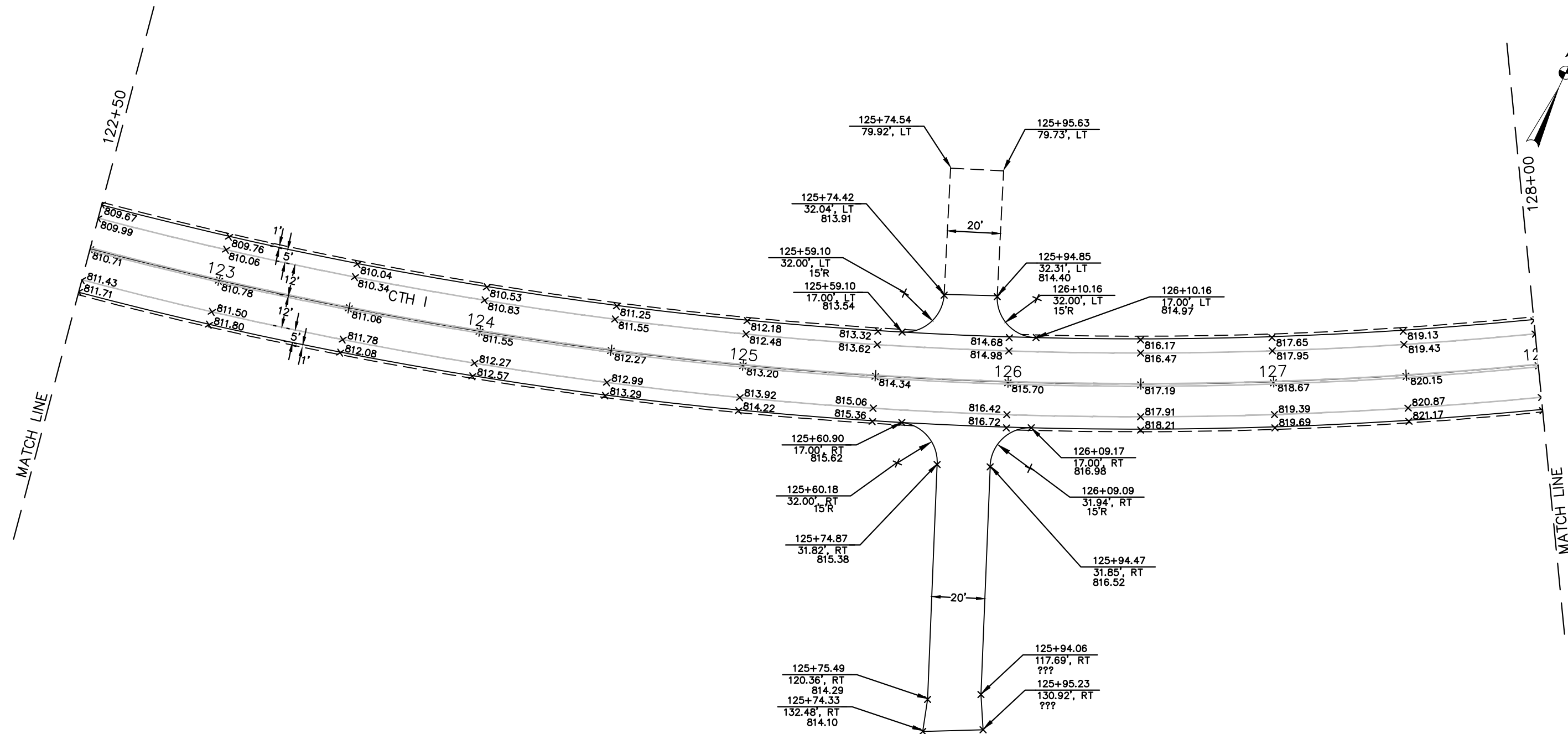


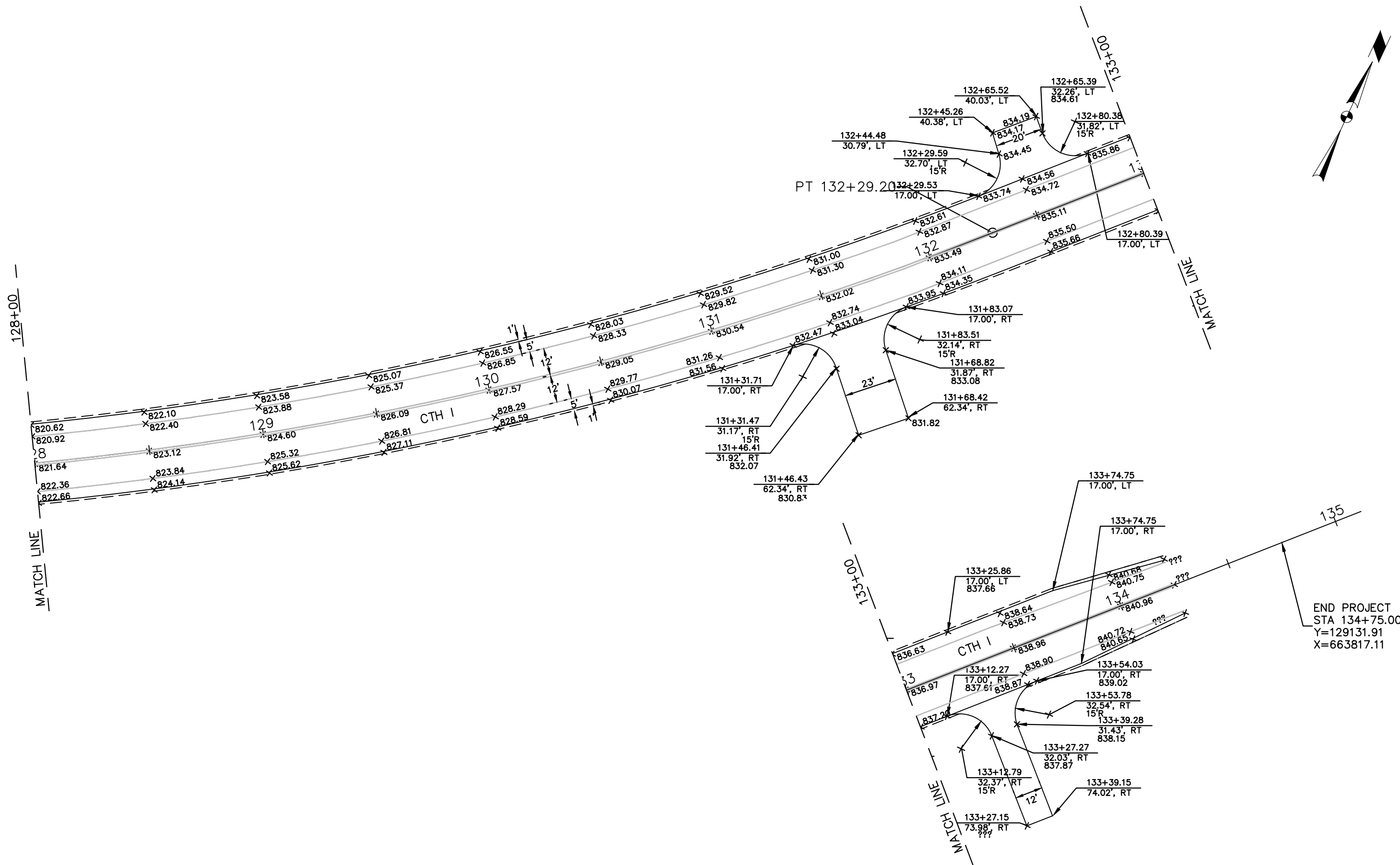
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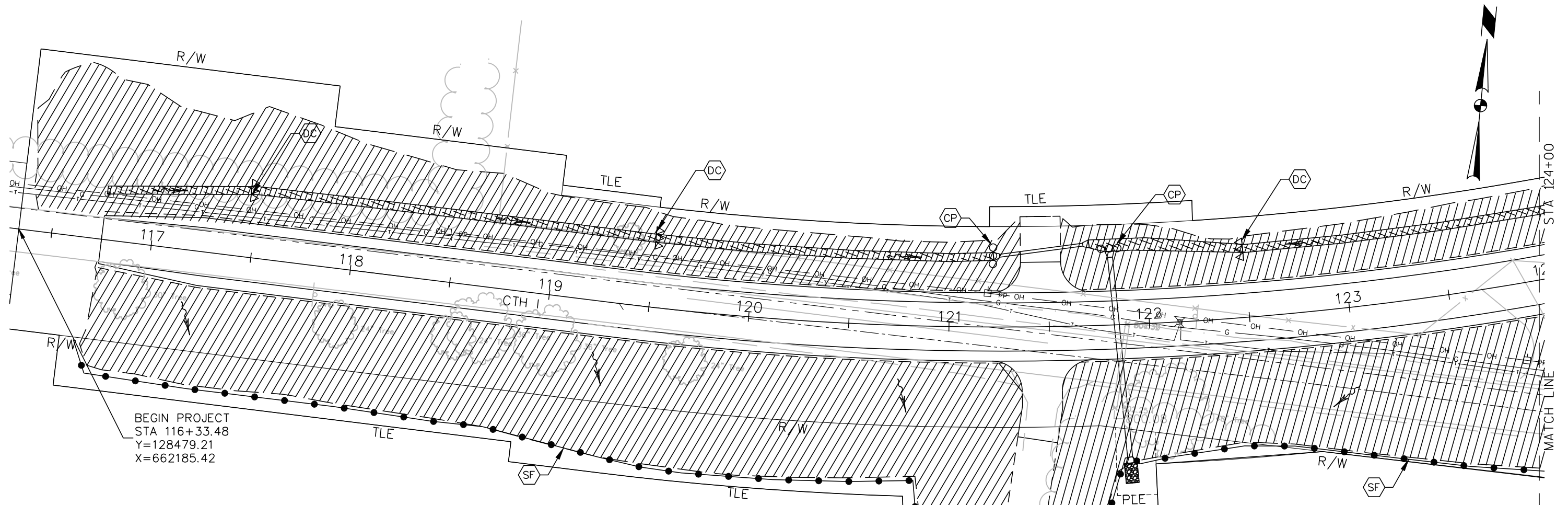
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SUPERELEVATION DATA		
STA	RATE (")	REMARKS
117+53.13	-0.020	END NORMAL CROWN
119+88.46	-0.060	BEGIN FULL SUPER
131+75.87	-0.060	END FULL SUPER
133+89.20	-0.020	BEGIN NORMAL CROWN







RUNOFF COEFFICIENT TABLE

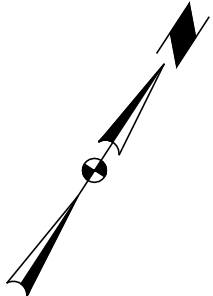
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.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 = 6.46 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 5.31 ACRES

LEGEND

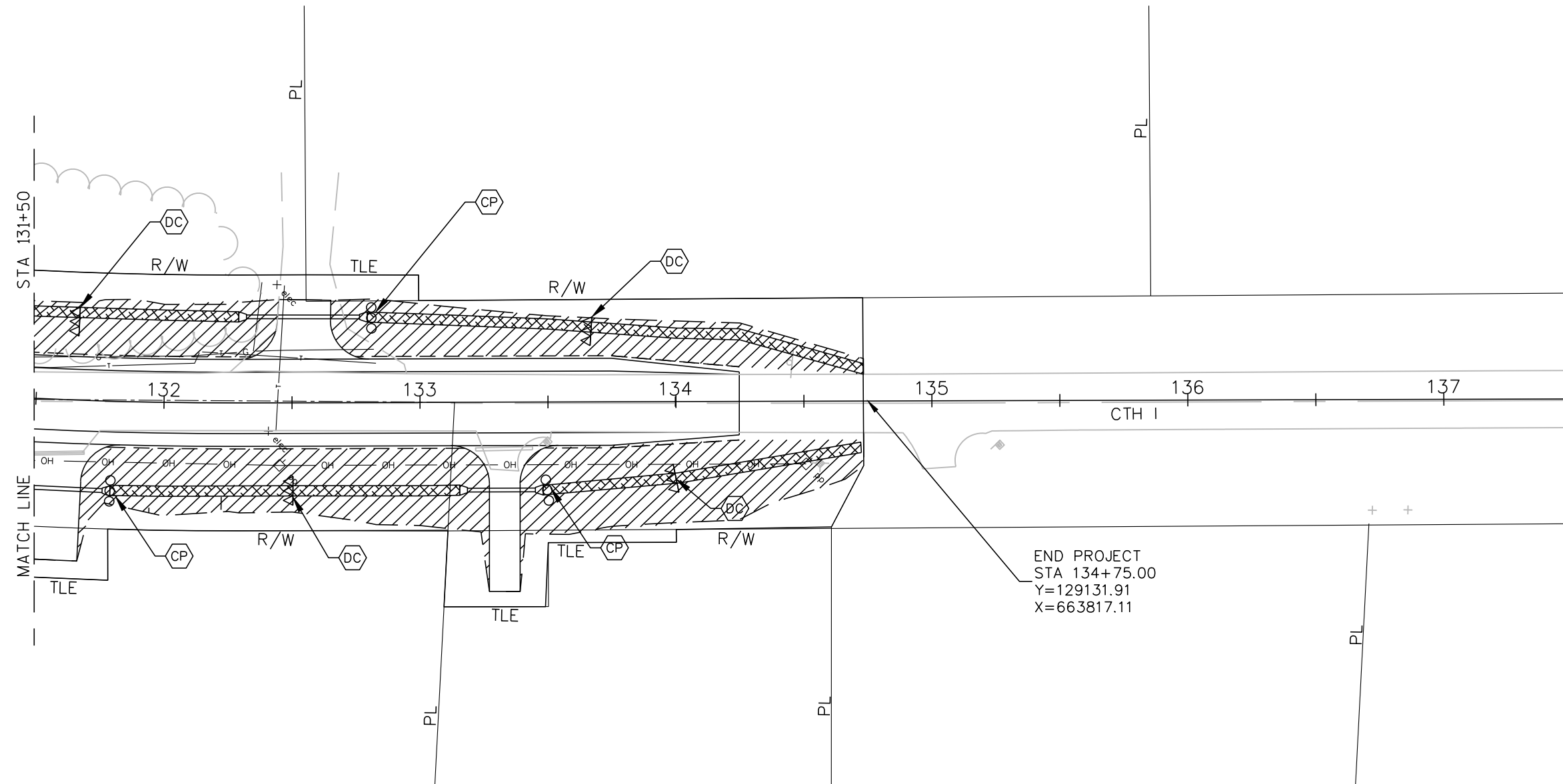
	SOD	
	HYDRO SEED	
	SILT FENCE	
	SLOPE INTERCEPT	
	TEMPORARY DITCH CHECK	
	CULVERT PIPE CHECK	
	SURFACE WATER FLOW	

ALL DISTURBED AREAS TO BE RESTORED WITH 4-INCH TOPSOIL, AND HYDROSEED UNLESS NOTED OTHERWISE.



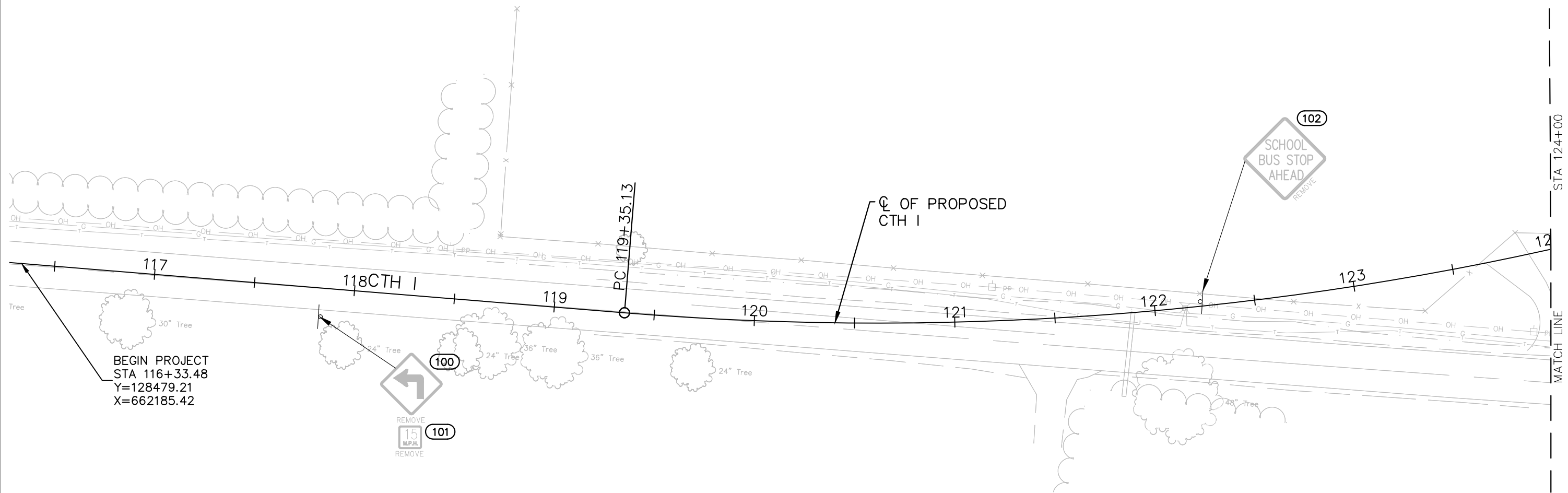
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PLOT SCALE : 1"=50'

**LEGEND**

	SOD	
	HYDRO SEED	
	SILT FENCE	
	SLOPE INTERCEPT	
	TEMPORARY DITCH CHECK	
	CULVERT PIPE DITCH CHECK	
	SURFACE WATER FLOW	

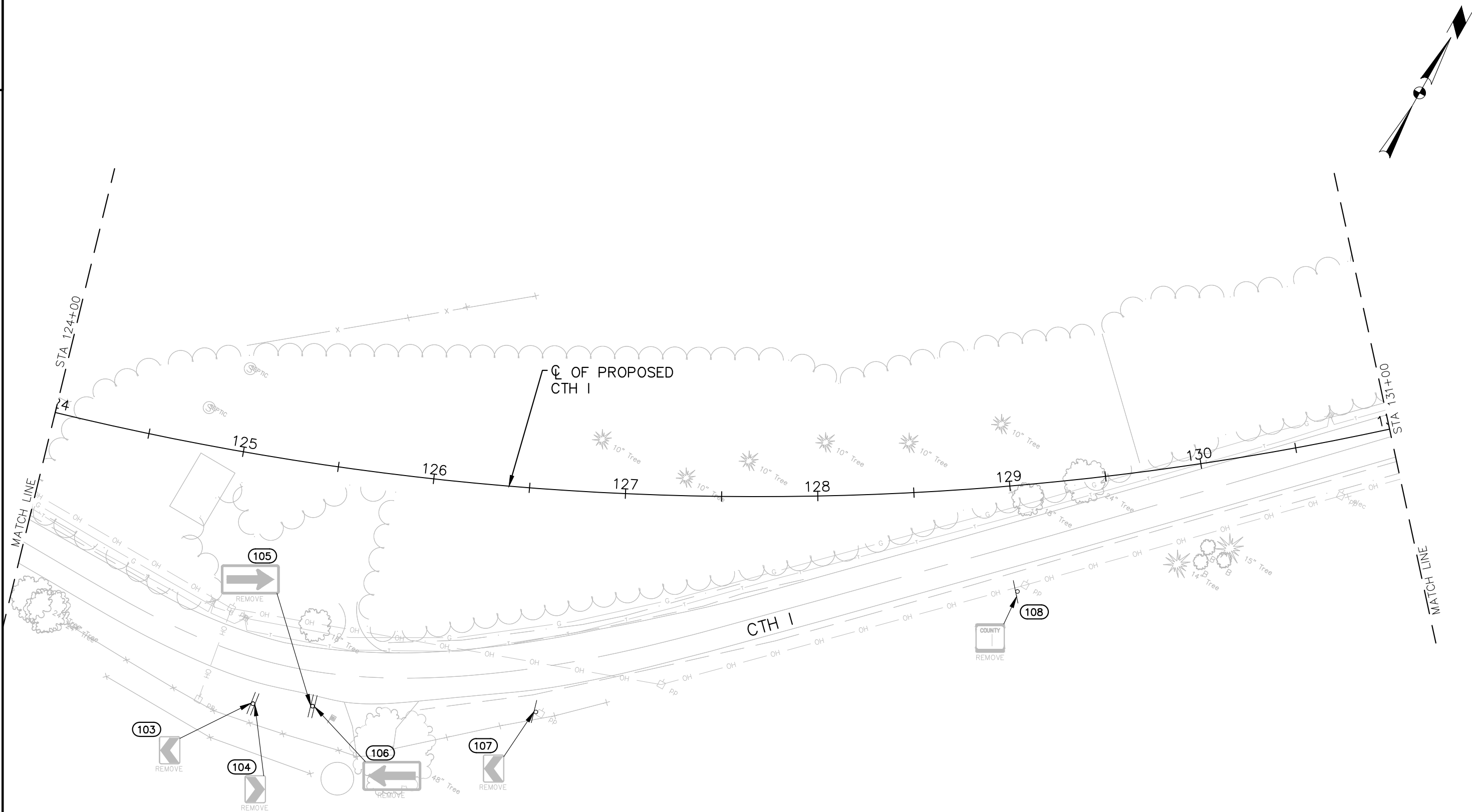
ALL DISTURBED AREAS TO BE RESTORED WITH 4-INCH
TOPSOIL AND HYDROSEED UNLESS NOTED OTHERWISE.




LEGEND	
	SIGN
	SIGN NUMBER


NOTE: ALL SIGNS AND POSTS TO BE RETURNED TO THE WAUKESHA COUNTY DEPT OF PUBLIC WORKS.

PROJECT NO:3773-01-70	HWY:CTH I	COUNTY:WAUKESHA	SIGN REMOVAL	SHEET	E
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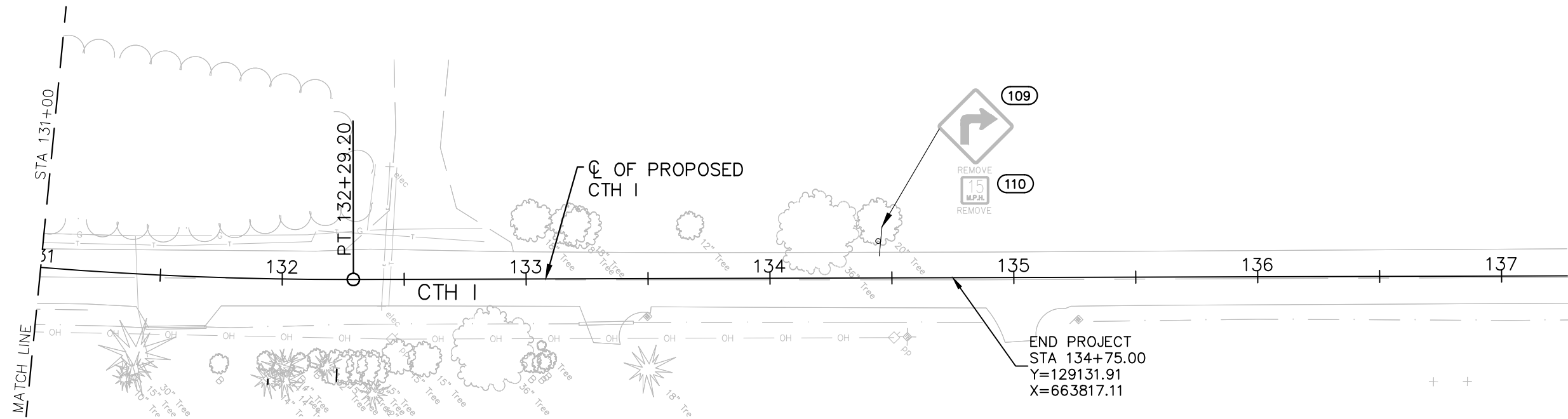
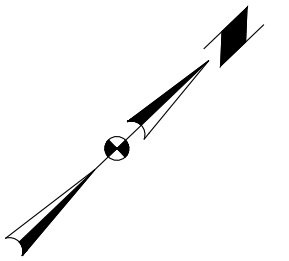


LEGEND

 SIGN

 SIGN NUMBER

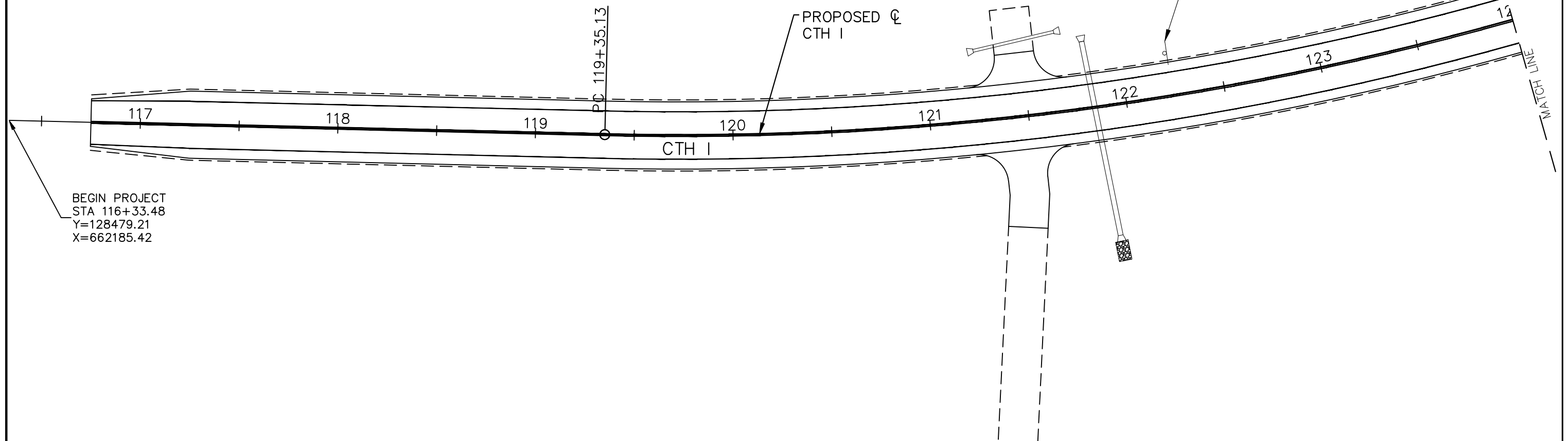
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LEGEND	
	SIGN
	SIGN NUMBER

NOTE: ALL SIGNS AND POSTS TO BE RETURNED TO THE WAUKESHA COUNTY DEPT OF PUBLIC WORKS.

PROJECT NO:3773-01-70	HWY: CTH I	COUNTY: WAUKESHA	SIGN REMOVAL	SHEET	E
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**LEGEND**

- ▬ TYPE II SIGN(S) MOUNTED ON 1.75"X1.75" TUBULAR STEEL POST(S)
WITH POST ANCHOR BASE

204 SIGN NUMBER

NOTES

THE ERECTION AND PLACEMENT OF ALL SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

ALL SIGNS SHALL BE DIAMOND GRADE SHEETING.

FINAL LOCATION OF SIGNS SHALL BE DETERMINED BY THE FIELD ENGINEER AND ADJUSTED TO AVOID UTILITY CONFLICTS.

PROJECT NO: 3773-01-70

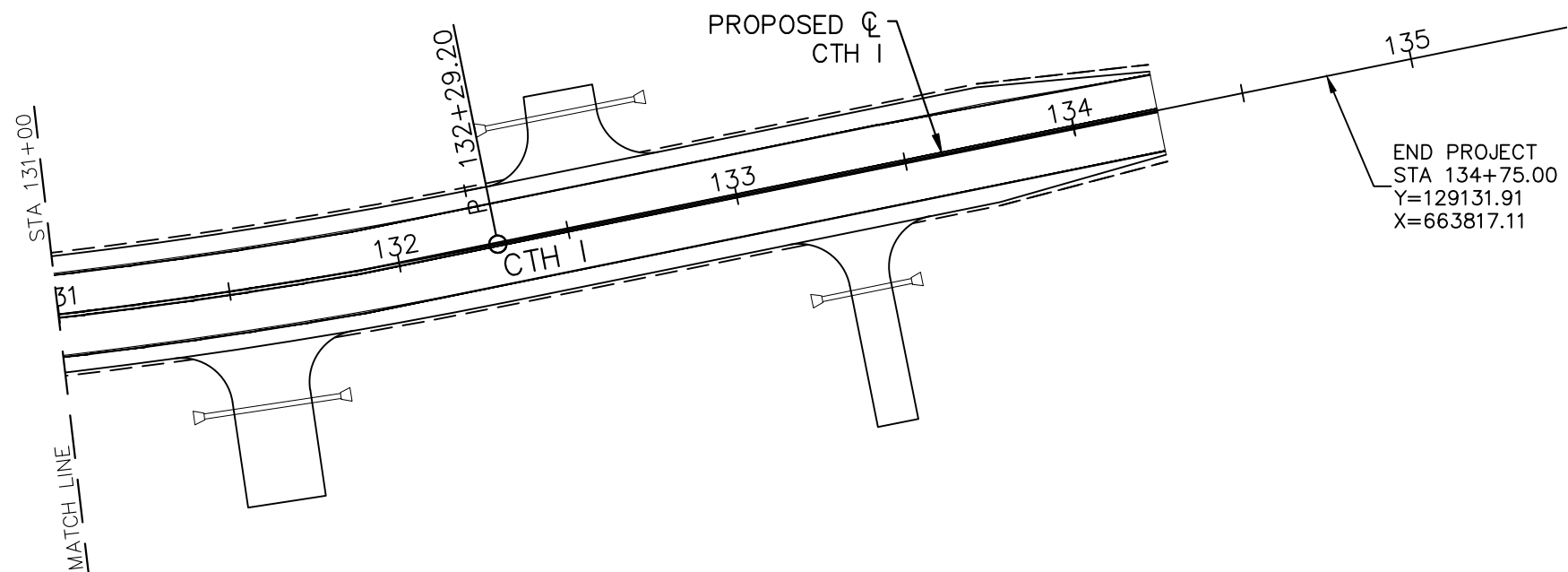
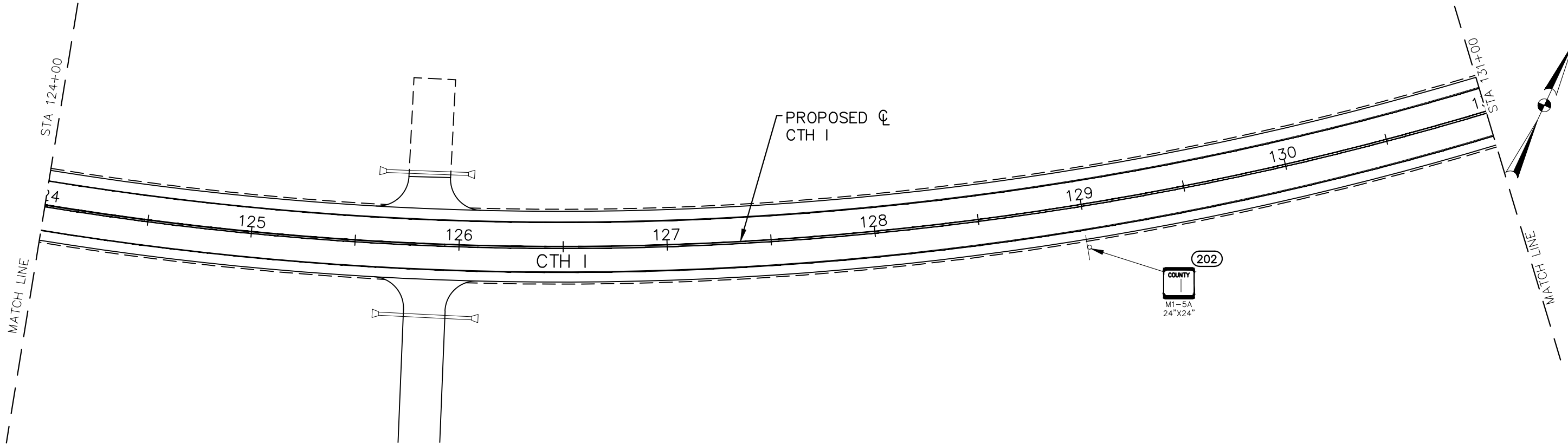
HWY: CTH I

COUNTY: WAUKESHA

PERMANENT SIGNING

SHEET

E

**LEGEND**

- ▬ TYPE II SIGN(S) MOUNTED ON 1.75\"X1.75\" TUBULAR STEEL POST(S)
WITH POST ANCHOR BASE

204 SIGN NUMBER

NOTES

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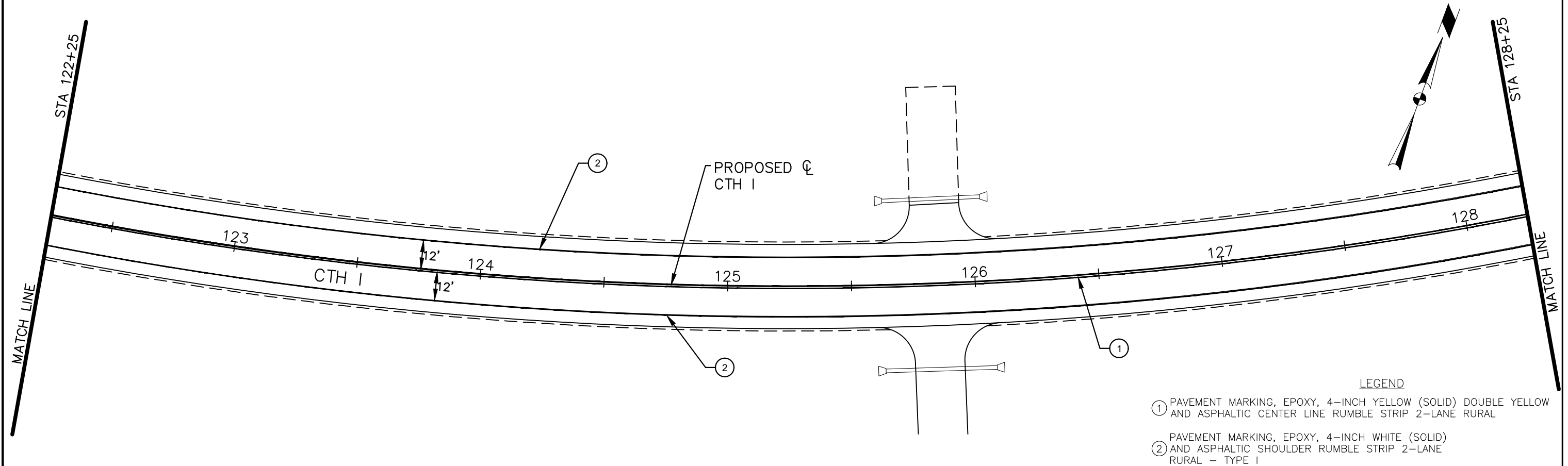
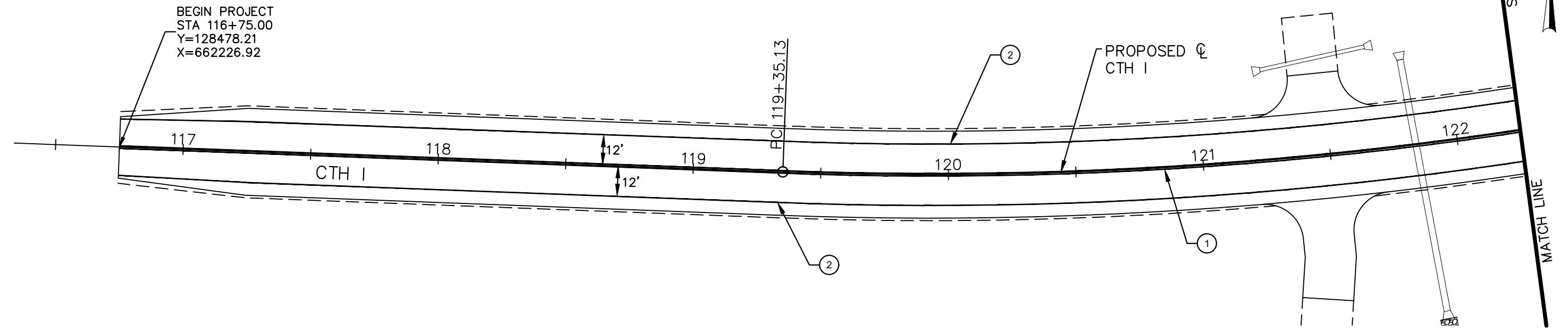
HWY: CTH I

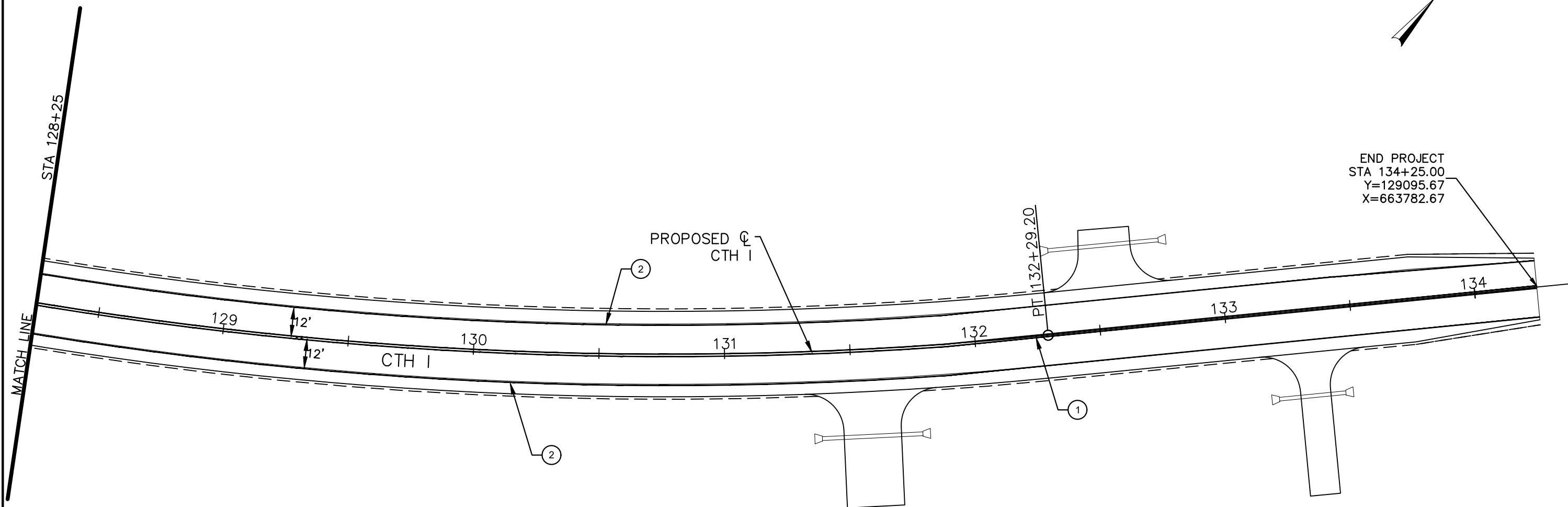
COUNTY: WAUKESHA

PERMANENT SIGNING

SHEET

E





LEGEND

- ① PAVEMENT MARKING, EPOXY, 4-INCH YELLOW (SOLID) DOUBLE YELLOW AND ASPHALTIC CENTER LINE RUMBLE STRIP 2-LANE RURAL
- ② PAVEMENT MARKING, EPOXY, 4-INCH WHITE (SOLID) AND ASPHALTIC SHOULDER RUMBLE STRIP 2-LANE RURAL - TYPE I

PROJECT NO: 3773-01-70

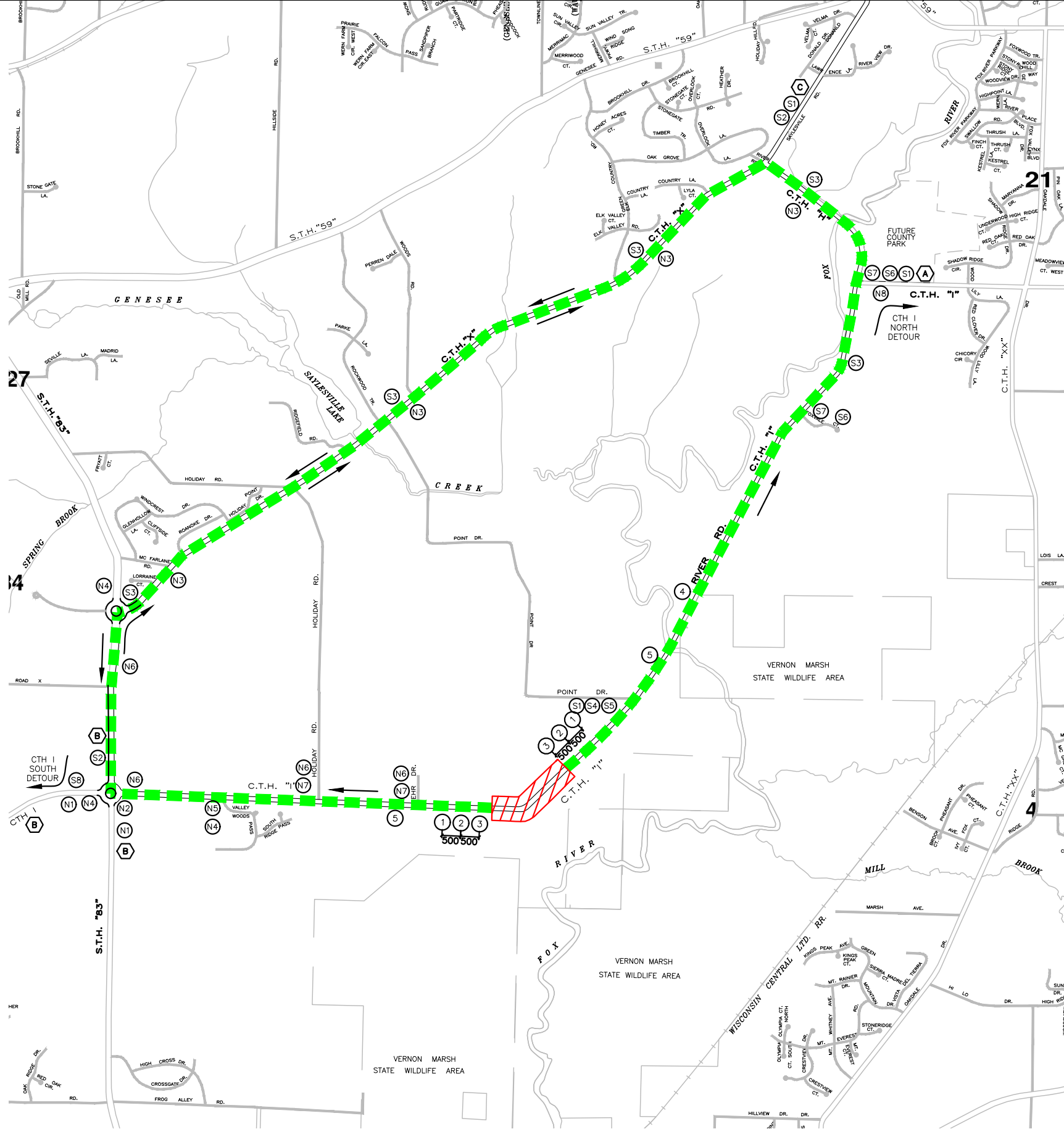
HWY: CTH I

COUNTY: WAUKESHA

PAVEMENT MARKING

SHEET

E



N1
NORTH
COUNTY
M3-1 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

N2
NORTH
COUNTY
M3-1 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

N3
NORTH
COUNTY
M3-1 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

N4
NORTH
COUNTY
M3-1 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

N5
NORTH
COUNTY
M3-1 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

N6
NORTH
COUNTY
M3-1 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

N7
NORTH
COUNTY
M3-1 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

N8
NORTH
COUNTY
M3-1 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

S1
SOUTH
COUNTY
M3-3 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

S2
SOUTH
COUNTY
M3-3 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

S3
SOUTH
COUNTY
M3-3 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

S4
SOUTH
COUNTY
M3-3 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

S5
SOUTH
COUNTY
M3-3 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

S6
SOUTH
COUNTY
M3-3 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

S7
SOUTH
COUNTY
M3-3 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

S8
SOUTH
COUNTY
M3-3 24"x12"
M1-5A 24"x24"

DETOUR AHEAD
W20-2-A

1
ROAD CLOSED
1000 FT
W20-2-C

2
ROAD CLOSED
500 FT
W20-2-D

3
ROAD CLOSED
TO THRU TRAFFIC
BARRICADE DETAIL

4
ROAD CLOSED
1 MILE AHEAD
BARRICADE DETAIL

5
ROAD CLOSED
1/2 MILE AHEAD
BARRICADE DETAIL

6
ROAD CLOSED
2 MILE
W20-2-E

DETOUR ROUTE

PROJECT AREA

LEGEND:

- DETOUR ROUTE
- PROJECT AREA

DETOUR PLAN NOTES:

VARIABLE MESSAGE SIGNS MUST BE PLACES ALONG NORTHBOUND/SOUTHBOUND CTH I APPROACHES TO PROJECT AREA 10 DAYS PRIOR TO DETOUR.

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

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

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

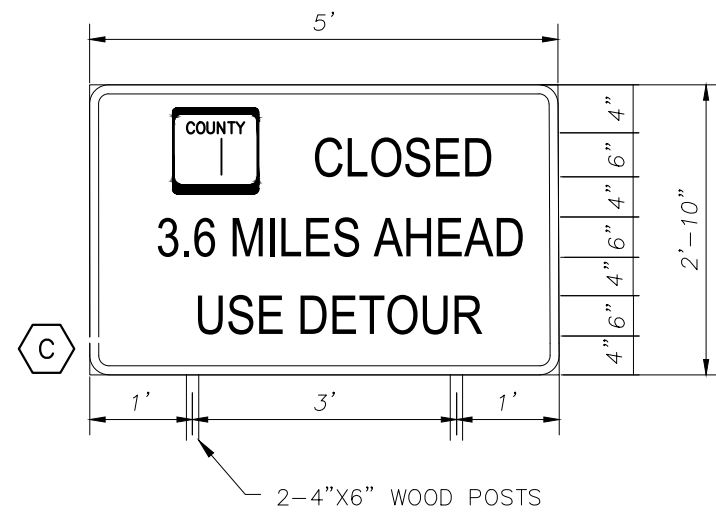
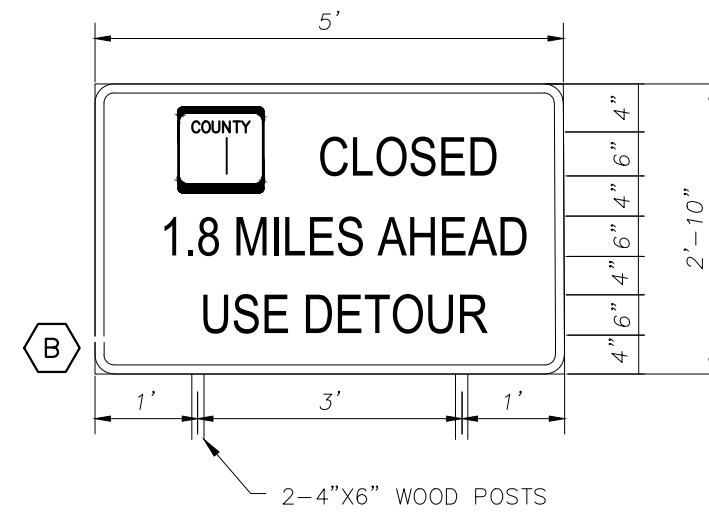
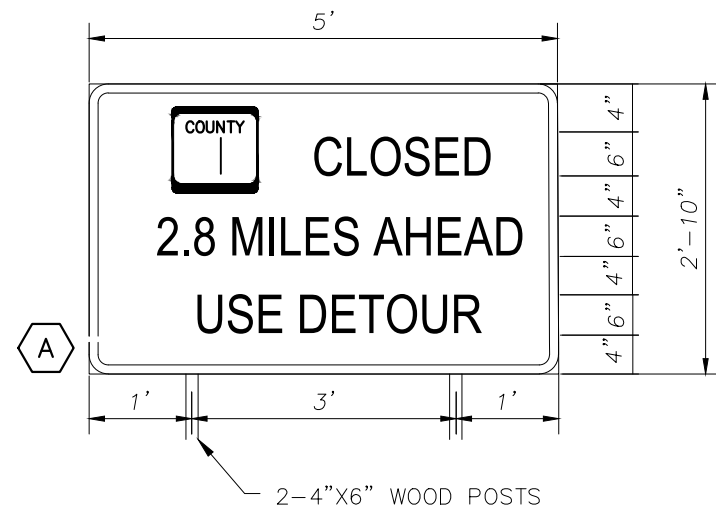
SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES" FOR SIGN SPACING AND LOCATIONS

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

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

PROJECT NO: 3773-01-70	HWY: CTH I	COUNTY: WAUKESHA	DETOUR PLAN	SHEET	E
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FILE NAME : N:\DPW\ENGINEER\PROJECTS\I CURVE HSIP 3773-01-00- EHR RD\ACAD\SHEETSPLAN\027001-DT.DWG PLOT DATE : 12/3/2018 2:19 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



Estimate Of Quantities

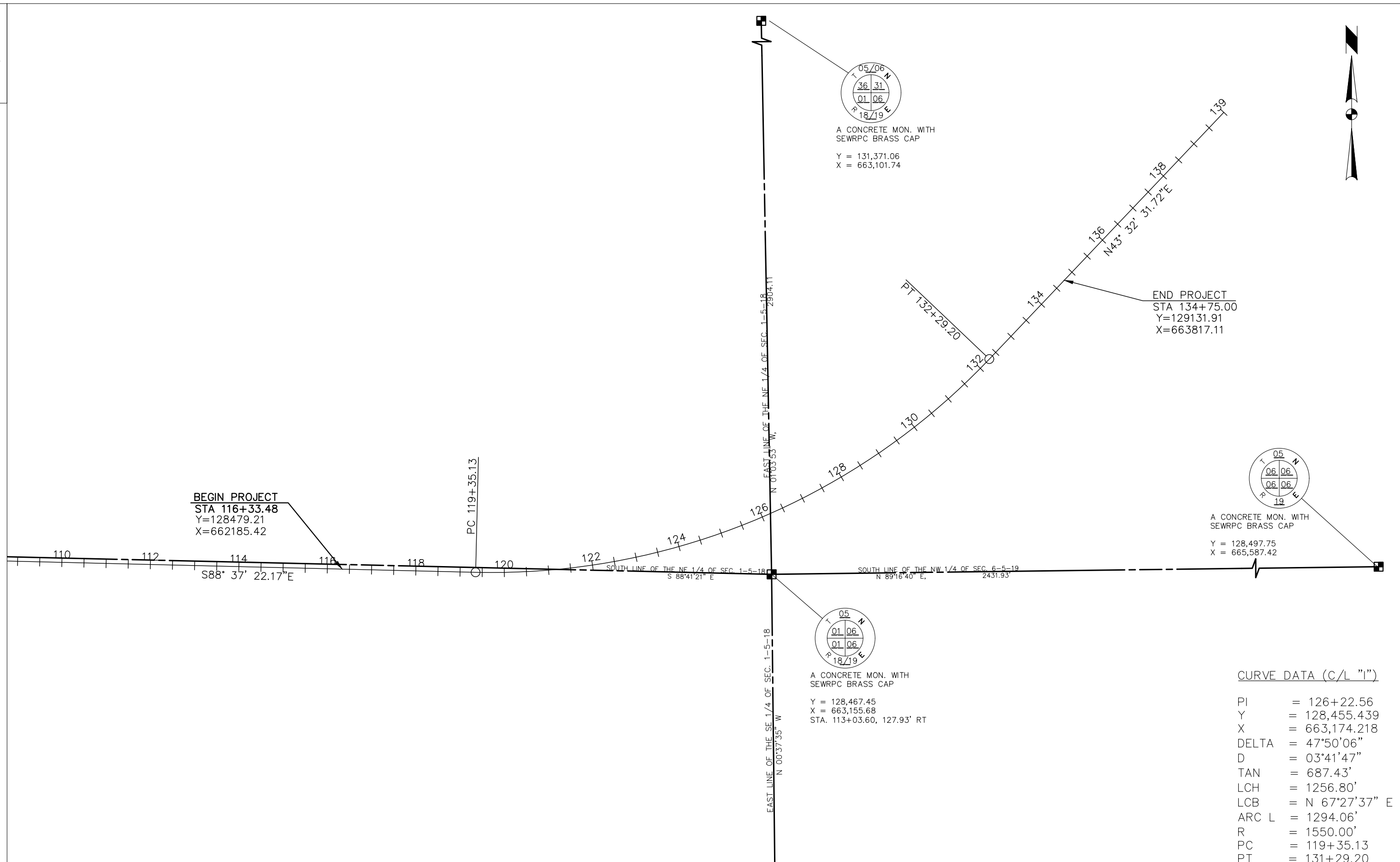
3773-01-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0110	Clearing	SY	6,253.000	6,253.000
0004	201.0120	Clearing	ID	425.000	425.000
0006	201.0210	Grubbing	SY	6,253.000	6,253.000
0008	201.0220	Grubbing	ID	425.000	425.000
0010	203.0100	Removing Small Pipe Culverts	EACH	3.000	3.000
0012	204.0170	Removing Fence	LF	653.000	653.000
0014	204.0225	Removing Septic Tanks	EACH	1.000	1.000
0016	205.0100	Excavation Common	CY	19,026.000	19,026.000
0018	213.0100	Finishing Roadway (project) 01. 3773-01-70	EACH	1.000	1.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	5,830.000	5,830.000
0022	311.0110	Breaker Run	TON	1,380.000	1,380.000
0024	455.0605	Tack Coat	GAL	687.000	687.000
0026	460.2000	Incentive Density HMA Pavement	DOL	1,530.000	1,530.000
0028	460.5223	HMA Pavement 3 LT 58-28 S	TON	1,593.000	1,593.000
0030	460.5225	HMA Pavement 5 LT 58-28 S	TON	797.000	797.000
0032	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	163.000	163.000
0034	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	3,500.000	3,500.000
0036	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	1,750.000	1,750.000
0038	521.1518	Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 18-Inch 6 to 1	EACH	10.000	10.000
0040	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	202.000	202.000
0042	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	95.000	95.000
0044	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0046	606.0200	Riprap Medium	CY	4.000	4.000
0048	618.0100	Maintenance And Repair of Haul Roads (project) 01. 3773-01-70	EACH	1.000	1.000
0050	619.1000	Mobilization	EACH	1.000	1.000
0052	621.0100	Landmark Reference Monuments	EACH	5.000	5.000
0054	625.0100	Topsoil	SY	500.000	500.000
0056	625.0500	Salvaged Topsoil	SY	7,654.000	7,654.000
0058	628.1504	Silt Fence	LF	1,644.000	1,644.000
0060	628.1520	Silt Fence Maintenance	LF	1,644.000	1,644.000
0062	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0064	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0066	628.7504	Temporary Ditch Checks	LF	158.000	158.000
0068	628.7555	Culvert Pipe Checks	EACH	7.000	7.000
0070	630.0200	Seeding Temporary	LB	15.000	15.000
0072	631.0300	Sod Water	MGAL	45.000	45.000
0074	631.1100	Sod Erosion Control	SY	1,075.000	1,075.000

Estimate Of Quantities

3773-01-70

Line	Item	Item Description	Unit	Total	Qty
0076	633.5200	Markers Culvert End	EACH	2.000	2.000
0078	637.2210	Signs Type II Reflective H	SF	13.000	13.000
0080	638.2602	Removing Signs Type II	EACH	11.000	11.000
0082	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0084	642.5201	Field Office Type C	EACH	1.000	1.000
0086	643.0300	Traffic Control Drums	DAY	1,900.000	1,900.000
0088	643.0420	Traffic Control Barricades Type III	DAY	1,000.000	1,000.000
0090	643.0900	Traffic Control Signs	DAY	3,700.000	3,700.000
0092	643.1000	Traffic Control Signs Fixed Message	SF	450.000	450.000
0094	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0096	643.5000	Traffic Control	EACH	1.000	1.000
0098	645.0120	Geotextile Type HR	SY	7.000	7.000
0100	646.1020	Marking Line Epoxy 4-Inch	LF	7,000.000	7,000.000
0102	650.4500	Construction Staking Subgrade	LF	1,750.000	1,750.000
0104	650.5000	Construction Staking Base	LF	1,750.000	1,750.000
0106	650.6000	Construction Staking Pipe Culverts	EACH	7.000	7.000
0108	650.9910	Construction Staking Supplemental Control (project) 01. 3773-01-70	LS	1.000	1.000
0110	650.9920	Construction Staking Slope Stakes	LF	1,750.000	1,750.000
0112	690.0150	Sawing Asphalt	LF	180.000	180.000
0114	740.0440	Incentive IRI Ride	DOL	1,330.000	1,330.000
0116	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0118	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1000.000	1000.000
0120	SPV.0060	Special .01 Moving Mailboxes	EACH	6.000	6.000
0122	SPV.0060	Special .02 Posts Tubular Steel 1-3/4"x1-3/4"x12'	EACH	1.000	1.000
0124	SPV.0060	Special .03 Posts Tubular Steel 1-3/4"x1-3/4"x14'	EACH	1.000	1.000
0126	SPV.0060	Special .04 Utility Line Opening (ULO)	EACH	4.000	4.000
0128	SPV.0180	Special .01 Hydroseeding	SY	7,654.000	7,654.000
0130	SPV.0180	Special .02 Resin Binder High Friction Surface Treatment	SY	6,560.000	6,560.000



3

3

<div>CLEARING AND GRUBBING</div> <table><tr><td></td><td>201.0110</td><td>201.0120</td><td>201.0210</td><td>201.0210</td></tr><tr><td></td><td>CLEARING</td><td>CLEARING</td><td>GRUBBING</td><td>GRUBBING</td></tr><tr><td>LOCATION</td><td>SY</td><td>ID</td><td>SY</td><td>ID</td></tr><tr><td>124+00 - 134+25</td><td>6253</td><td>425</td><td>6253</td><td>425</td></tr><tr><td>TOTAL</td><td>6253</td><td>425</td><td>6253</td><td>425</td></tr></table>						201.0110	201.0120	201.0210	201.0210		CLEARING	CLEARING	GRUBBING	GRUBBING	LOCATION	SY	ID	SY	ID	124+00 - 134+25	6253	425	6253	425	TOTAL	6253	425	6253	425	<div>ASPHALT ITEMS</div> <table><tr><td></td><td>455.0605</td><td>460.5223</td><td>460.5225</td><td>465.0120</td></tr><tr><td></td><td></td><td>HMA PAVEMENT</td><td>HMA PAVEMENT</td><td>ASPHALT</td></tr><tr><td></td><td></td><td>3 LT 58-28S</td><td>5 MT 58-28S</td><td>SURFACE DRIVEWAY</td></tr><tr><td></td><td>TACK COAT</td><td></td><td></td><td>AND FIELD ENTANCE</td></tr><tr><td>STA-STA</td><td>GAL</td><td>TON</td><td>TON</td><td>SY</td></tr><tr><td>116+75 - 122+50</td><td>223</td><td>518</td><td>259</td><td>31</td></tr><tr><td>122+50 - 128+00</td><td>220</td><td>510</td><td>255</td><td>71</td></tr><tr><td>128+00 - 134+25</td><td>244</td><td>565</td><td>283</td><td>61</td></tr><tr><td>TOTAL</td><td>687</td><td>1593</td><td>797</td><td>163</td></tr></table>						455.0605	460.5223	460.5225	465.0120			HMA PAVEMENT	HMA PAVEMENT	ASPHALT			3 LT 58-28S	5 MT 58-28S	SURFACE DRIVEWAY		TACK COAT			AND FIELD ENTANCE	STA-STA	GAL	TON	TON	SY	116+75 - 122+50	223	518	259	31	122+50 - 128+00	220	510	255	71	128+00 - 134+25	244	565	283	61	TOTAL	687	1593	797	163																																																																													
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TOTAL	687	1593	797	163																																																																																																																																																								
<div>REMOVING SMALL PIPE CULVERTS</div> <table><tr><td colspan="3">203.0100</td></tr><tr><td>STATION</td><td>SIZE</td><td>EACH</td></tr><tr><td>121+86.12</td><td>24"</td><td>1</td></tr><tr><td>131+57.56</td><td>15"</td><td>1</td></tr><tr><td>133+33.06</td><td>15"</td><td>1</td></tr><tr><td>TOTAL</td><td></td><td>3</td></tr></table>			203.0100			STATION	SIZE	EACH	121+86.12	24"	1	131+57.56	15"	1	133+33.06	15"	1	TOTAL		3	<div>FINISHING ROADWAY</div> <table><tr><td colspan="2">213.0100</td></tr><tr><td>PROJECT</td><td>EACH</td></tr><tr><td>2773-01-70</td><td>1</td></tr><tr><td>TOTAL</td><td>1</td></tr></table>			213.0100		PROJECT	EACH	2773-01-70	1	TOTAL	1																																																																																																																													
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<div>REMOVING FENCE</div> <table><tr><td colspan="2">204.0170</td></tr><tr><td>STATION</td><td>LF</td></tr><tr><td>116+75 - 123+50</td><td>514</td></tr><tr><td>123+50 - 131+00</td><td>139</td></tr><tr><td>TOTAL</td><td>653</td></tr></table>			204.0170		STATION	LF	116+75 - 123+50	514	123+50 - 131+00	139	TOTAL	653	<div>AGGREGATE</div> <table><tr><td>305.0120</td><td>311.0110</td></tr><tr><td>BASE AGGREGATE</td><td></td></tr><tr><td>DENSE 1 1/4"</td><td>BREAKER RUN</td></tr><tr><td>STA</td><td>TON</td><td>TON</td></tr><tr><td>116+75 - 122+50</td><td>1937</td><td>240</td></tr><tr><td>122+50 - 128+00</td><td>1874</td><td>0</td></tr><tr><td>128+00 - 134+25</td><td>2019</td><td>1140</td></tr><tr><td>TOTAL</td><td>5830</td><td>1380</td></tr></table>			305.0120	311.0110	BASE AGGREGATE		DENSE 1 1/4"	BREAKER RUN	STA	TON	TON	116+75 - 122+50	1937	240	122+50 - 128+00	1874	0	128+00 - 134+25	2019	1140	TOTAL	5830	1380																																																																																																																								
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<div>REMOVING SEPTIC TANK</div> <table><tr><td colspan="2">204.0225</td></tr><tr><td>STATION</td><td>EACH</td></tr><tr><td>124+87.67, 30.9' LT</td><td>1</td></tr><tr><td>TOTAL</td><td>1</td></tr></table>			204.0225		STATION	EACH	124+87.67, 30.9' LT	1	TOTAL	1	<div>MINOR SIDE ROAD, PRIVATE ENTRANCE, AND SLOPE DRAINS</div> <table><tr><td>521.0118**</td><td>521.1518</td><td>522.0124</td><td>522.1024</td><td>633.5200</td><td>645.0120</td></tr><tr><td>CULVERT PIPE</td><td>APRON ENDWALL</td><td>CULVERT PIPE</td><td>APRON ENDALL</td><td></td><td></td></tr><tr><td></td><td>FOR CULVERT PIPE</td><td>REINFORCED</td><td>FOR CULVERT PIPE</td><td></td><td></td></tr><tr><td>CORRUGATED STEEL</td><td>SLOPED SIDE DRAINS</td><td>CONCRETE</td><td>REINFORCED</td><td>MARKERS</td><td>GEOTEXTILE</td></tr><tr><td></td><td></td><td>CLASS III</td><td>CONCRETE</td><td></td><td>STEEL</td></tr><tr><td>18-INCH</td><td>STEEL 18-INCH 6 to 1</td><td>24-INCH</td><td>24-INCH</td><td>CULVERT END</td><td>TYPE HR</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>THICKNESS</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>***ELEVATIONS</td></tr><tr><td>STATION</td><td>LOCATION</td><td>LF</td><td>EACH</td><td>LF</td><td>EACH</td><td>EACH</td><td>SY</td><td>INCHS</td><td>INLET</td><td>OUTLET</td></tr><tr><td>121+46.63</td><td>33.5' LT</td><td>42</td><td>2</td><td>-</td><td>-</td><td>-</td><td>-</td><td>0.064</td><td>807.23</td><td>806.75</td></tr><tr><td>121+81.70</td><td>0 RT</td><td>-</td><td>-</td><td>95</td><td>2</td><td>2</td><td>7</td><td></td><td>806.75</td><td>799.79</td></tr><tr><td>125+85.05</td><td>34.4' RT</td><td>45</td><td>2</td><td>-</td><td>-</td><td>-</td><td>-</td><td>0.064</td><td>814.62</td><td>813.22</td></tr><tr><td>125+85.15</td><td>34.7' LT</td><td>40</td><td>2</td><td>-</td><td>-</td><td>-</td><td>-</td><td>0.064</td><td>811.61</td><td>810.28</td></tr><tr><td>132+56.28</td><td>33.6' LT</td><td>45</td><td>2</td><td>-</td><td>-</td><td>-</td><td>-</td><td>0.064</td><td>832.88</td><td>831.00</td></tr><tr><td>133+32.12</td><td>34.4' RT</td><td>30</td><td>2</td><td>-</td><td>-</td><td>-</td><td>-</td><td>0.064</td><td>834.57</td><td>835.65</td></tr><tr><td>TOTALS</td><td></td><td>202</td><td>10</td><td>95</td><td>2</td><td>2</td><td>7</td><td></td><td></td><td></td></tr></table> <div>*** PIPE INVERT: FOR INFORMATION ONLY. FIELD VERIFY</div>										521.0118**	521.1518	522.0124	522.1024	633.5200	645.0120	CULVERT PIPE	APRON ENDWALL	CULVERT PIPE	APRON ENDALL				FOR CULVERT PIPE	REINFORCED	FOR CULVERT PIPE			CORRUGATED STEEL	SLOPED SIDE DRAINS	CONCRETE	REINFORCED	MARKERS	GEOTEXTILE			CLASS III	CONCRETE		STEEL	18-INCH	STEEL 18-INCH 6 to 1	24-INCH	24-INCH	CULVERT END	TYPE HR						THICKNESS						***ELEVATIONS	STATION	LOCATION	LF	EACH	LF	EACH	EACH	SY	INCHS	INLET	OUTLET	121+46.63	33.5' LT	42	2	-	-	-	-	0.064	807.23	806.75	121+81.70	0 RT	-	-	95	2	2	7		806.75	799.79	125+85.05	34.4' RT	45	2	-	-	-	-	0.064	814.62	813.22	125+85.15	34.7' LT	40	2	-	-	-	-	0.064	811.61	810.28	132+56.28	33.6' LT	45	2	-	-	-	-	0.064	832.88	831.00	133+32.12	34.4' RT	30	2	-	-	-	-	0.064	834.57	835.65	TOTALS		202	10	95	2	2	7			
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TOTALS		202	10	95	2	2	7																																																																																																																																																					

EARTHWORKS SUMMARY																	
	From/To Station	Location	Common Excavation (1) (item # 205.0100)		Salvaged/Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6)	Reduced Marsh in Fill (8)	Reduced EBS in Fill (9)	Expanded Marsh Backfill (10)	Expanded EBS Backfill (11)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Borrow (item #208.0100)	Comment:
			Cut (2)	EBS Excavation (3)			(item #205.0500)	Factor	Factor	Factor	Factor		Factor				
							0.60	0.80	1.50	1.30	1.25						
1	116+75 - 134+25	CTH VV	18026	1000	0	18026	0	0	800	0	1300	5929	6411	11116	11116		
Subtotal			0	100	0	18026	0	0	0	0	0	0	0	11116	11116	0	
Grand Total			18026	1000	0	18026	0	0	800	0	1300	5929	6411	11116	11116	0	
Total Common Excavation			19026														

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- 2) Salvaged/Unsuable Pavement Material is included in Cut.
- 3) EBS Excavation to be backfilled with Borrow material
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusable Pavement Material
- 6) Marsh Excavation - to be backfilled with Borrow Material.
- 8) Reduced Marsh in Fill - Excavated Marsh material is usable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
- 9) Reduced EBS in Fill - Excavated EBS material is usable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
- 10) Expanded Marsh Backfill - This is to be filled with Borrow material. Marsh Backfill Factor = 1.5. Item number 208.0100
- 11) Expanded EBS Backfill - This is to be filled with Borrow material. EBS Backfill Factor = 1.3. Item number 208.0100
- 13) Expanded Fill. Factor = 1.25
- 14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
- 15) Mass Ordinate = Available Material + Reduced Marsh in Fill + Reduced EBS in Fill - Expanded Marsh Backfill - Expanded EBS Backfill - Expanded Fill
- 16) Waste = 15% Common Excavation

3

3

3

UTILITY LINE OPENING (ULO)	
SPV.0060.3	
LOCATION	EACH
UNDISTIBUTED	4
TOTAL	4

3

RESIN BINDER HIGH FRICTION SURFACE TREATMENT	
SPV.0180.02	
STA-STA	SY
116+75 - 134+25	6,560
TOTAL	6,560

SAWING ASPHALT	
690.0150	
STA-STA	LF
116+75 - 134+25	180
TOTAL	180

PROJECT NO: PROJECTNUMBER	HWY: HWY	COUNTY: WAUKESHA	SHEETNAME	SHEET	E
----------------------------------	-----------------	-------------------------	-----------	-------	----------

CONVENTIONAL SYMBOLS

SECTION LINE	---	SECTION CORNER		R/W MONUMENT	●
QUARTER LINE	---	NOTATION FOR COMBUSTIBLE FLUIDS		NON-MONUMENTED R/W POINT	○
SIXTEENTH LINE	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES		FOUND IRON PIN	IP
NEW REFERENCE LINE	---			VALVE (GAS, WATER, ETC.)	○ (TYPE)
NEW R/W LINE	---			SIGN	⊥ SIGN
EXISTING R/W LINE	---			OFF-PREMISE SIGN	
PROPERTY LINE	---				
LOT, TIE & OTHER MINOR LINES	---				
CORPORATE LIMITS	---				
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC.)	---	ELECTRIC POLE		COMPENSABLE	
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)	---	TELEPHONE POLE		NON-COMPENSABLE	
TEMPORARY LIMITED EASEMENT AREA	---	PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)			
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)	---				
TRANSMISSION STRUCTURES	---	ACCESS CONTROLLED BY ACQUISITION			
BUILDING	---	NO ACCESS (BY STATUTORY AUTHORITY)	-----		
NATIONAL GEODETIC SURVEY MONUMENT	---	ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)	-----		
SIXTEENTH CORNER MONUMENT	---				

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF COMPOUND CURVE	PCC
ACRES	AC	POINT OF INTERSECTION	PI
AHEAD	AH	PROPERTY LINE	PL
ALUMINUM	ALUM	RECORDED AS	(100')
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RIGHT	RT
CENTERLINE	C/L	RIGHT OF WAY	R/W
CERTIFIED SURVEY MAP	CSM	SECTION	SEC
CONCRETE	CONC	SEPTIC VENT	SEPV
COUNTY	CO	SQUARE FEET	SF
COUNTY TRUNK HIGHWAY	CTH	STATE TRUNK HIGHWAY	STH
DISTANCE	DIST	STATION	STA
CORNER	COR	SUBDIVISION	SUBD
DOCUMENT NUMBER	DOC	TANGENT	TAN
EASEMENT	EASE	TELEPHONE PEDESTAL	TP
EXISTING	EX	TEMPORARY LIMITED EASEMENT	TLE
GAS VALVE	GV		
GRID NORTH	GN	TRANSPORTATION PROJECT	TTP
HIGHWAY EASEMENT	HE	PLAT	
IDENTIFICATION	ID	UNITED STATES HIGHWAY	USH
LAND CONTRACT	LC	VOLUME	V
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED EASEMENT	PLE		
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		

CURVE DATA

LONG CHORD	LC
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	Δ
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

CONVENTIONAL UTILITY SYMBOLS

WATER	---
GAS	---
TELEPHONE	---
OVERHEAD	---
TRANSMISSION LINES	---
ELECTRIC	---
CABLE TELEVISION	---
FIBER OPTIC	---
SANITARY SEWER	---
STORM SEWER	---

NOTES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUKESHA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD

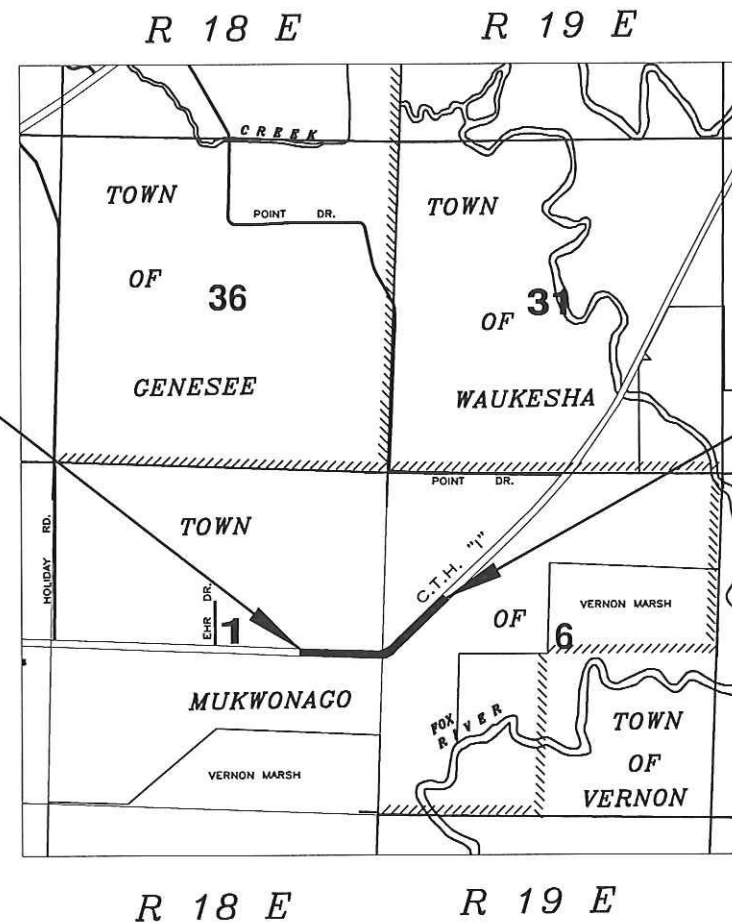
THE EXISTING HIGHWAY RIGHT OF WAY SHOWN HEREON IS BASED ON EXISTING CERTIFIED SURVEY MAPS, SUBDIVISION PLATS, AND OTHER SURVEYS OF PUBLIC RECORD.

DIMENSIONING TO THE NEW RIGHT OF WAY IS MEASURED ALONG AND PERPENDICULAR TO THE CENTERLINE OF CONSTRUCTION.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN. INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE. INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. ALL TLE'S EXPIRES AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

A PERMANENT LIMITED EASEMENT (PLE) IS A RIGHT FOR CONSTRUCTION AND MAINTENANCE PURPOSES, AS DEFINED HEREIN. INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE. INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. BUT WITHOUT PREJUDICE TO THE OWNERS RIGHT TO MAKE OR CONSTRUCT IMPROVEMENT ON SAID LANDS OR TO FLATTEN THE SLOPES, PROVIDING SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES.

R/W PROJECT NUMBER 3773-01-00	SHEET NUMBER 4.1	TOTAL SHEETS 4
PLAT OF RIGHT OF WAY REQUIRED FOR CTH 1 EHR DR. TO POINT DR. C.T.H. "1" WAUKESHA CO.		
CONSTRUCTION PROJECT NUMBER	3773-01-70	



BEGIN RELOCATION ORDER
PROJECT I.D. 3773-01-00
STA. 116+00.00
Y = 128,480.016
X = 662,151.946
12.57 FEET NORTH OF AND 1003.74
FEET WEST OF THE EAST 1/4
CORNER OF SEC. 1, T 5 N, R 18 E

END RELOCATION ORDER

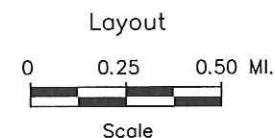
PROJECT I.D. 3773-01-00
STA. 136+00.00
Y = 129,222.341
X = 663,903.053
754.90 FEET NORTH OF AND 747.37
FEET EAST OF THE EAST 1/4 CORNER
OF SEC. 1, T 5 N, R 18 E



APPROVED FOR
WAUKESHA COUNTY
DEPARTMENT OF PUBLIC WORKS

DATE: 5-25-18 *Alison Basler* DIRECTOR
DATE: 5/22/18 *Carol M. Hoyer* ENGINEERING SERVICES MANAGER

REVISION DATE	STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
	APPROVED FOR THE DEPARTMENT DATE: N/A (Signature)



TOTAL NET LENGTH OF CENTERLINE = 0.379 MI. (RURAL)

SCHEDULE OF LANDS & INTERESTS REQUIRED

AREAS SHOWN IN THE TOTAL AREA MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

[illegible]

TOWN

OF

LOT 1, C.S.M. NO. 4554

②
WILLIAM & MARJORIE CANFIELD
R. 1200 I. 659, DOC. NO. 1591246
TAX KEY NO. MUKT.2038.999.005

①
RANDOLPH & BRENDA SCHUETT
R. 2508, I. 12, DOC. NO. 2247541
EX. VOL. 1198, P. 332, DOC. NO. 765053
TAX KEY NO. MUKT.1873.999.001

C-2
ARC LEN. = 683.89'
CH. LEN. = 677.98'
CH. BR. = N 78°18'57" E
RADIUS = 1500.00'

C-1
ARC LEN. = 56.21'
CH. LEN. = 56.02'
CH. BR. = S 54°25'56" W
RADIUS = 198.83'

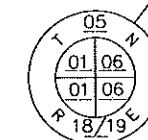
BEGIN RELOCATION ORDER
PROJECT I.D. 3773-01-00
STA. 116+00.00
Y = 128,480.016
X = 662,151.946
12.57 FEET NORTH OF AND
1003.74 FEET WEST OF THE
EAST 1/4 CORNER OF SEC.
1, T 5 N, R 18 E.

①
RANDOLPH & BRENDA SCHUETT
R. 2508, I. 12, DOC. NO. 2247541
EX. VOL. 1198, P. 332, DOC. NO. 765053
TAX KEY NO. MUKT.1873.999.001

C-3
ARC LEN. = 246.72'
CH. LEN. = 246.48'
CH. BR. = S 86°57'35" W
RADIUS = 1600.00'

CURVE DATA (C/L "I")

PI = 126+22.56
Y = 128,455.439
X = 663,174.218
DELTA = 47°50'06"
D = 03°41'47"
TAN = 687.43'
LCH = 1256.80'
LCB = N 67°27'37" E
ARC L = 1294.06'
R = 1550.00'
PC = 119+35.13
PT = 132+29.20



A CONCRETE MON.
WITH A SEWRPC
BRASS CAP

Y = 197879.761
X = 671806.652

ALBERT PIPKE ESTATE
DOC. NO. 4157988
TAX KEY NO. MUKT.2038.998.001

MUKWONAGO

REVISION DATE

DATE: 05/22/2018

HWY: C.T.H. I

CONSTRUCTION PROJECT NO.: 3773-01-70

COUNTY: WAUKESHA

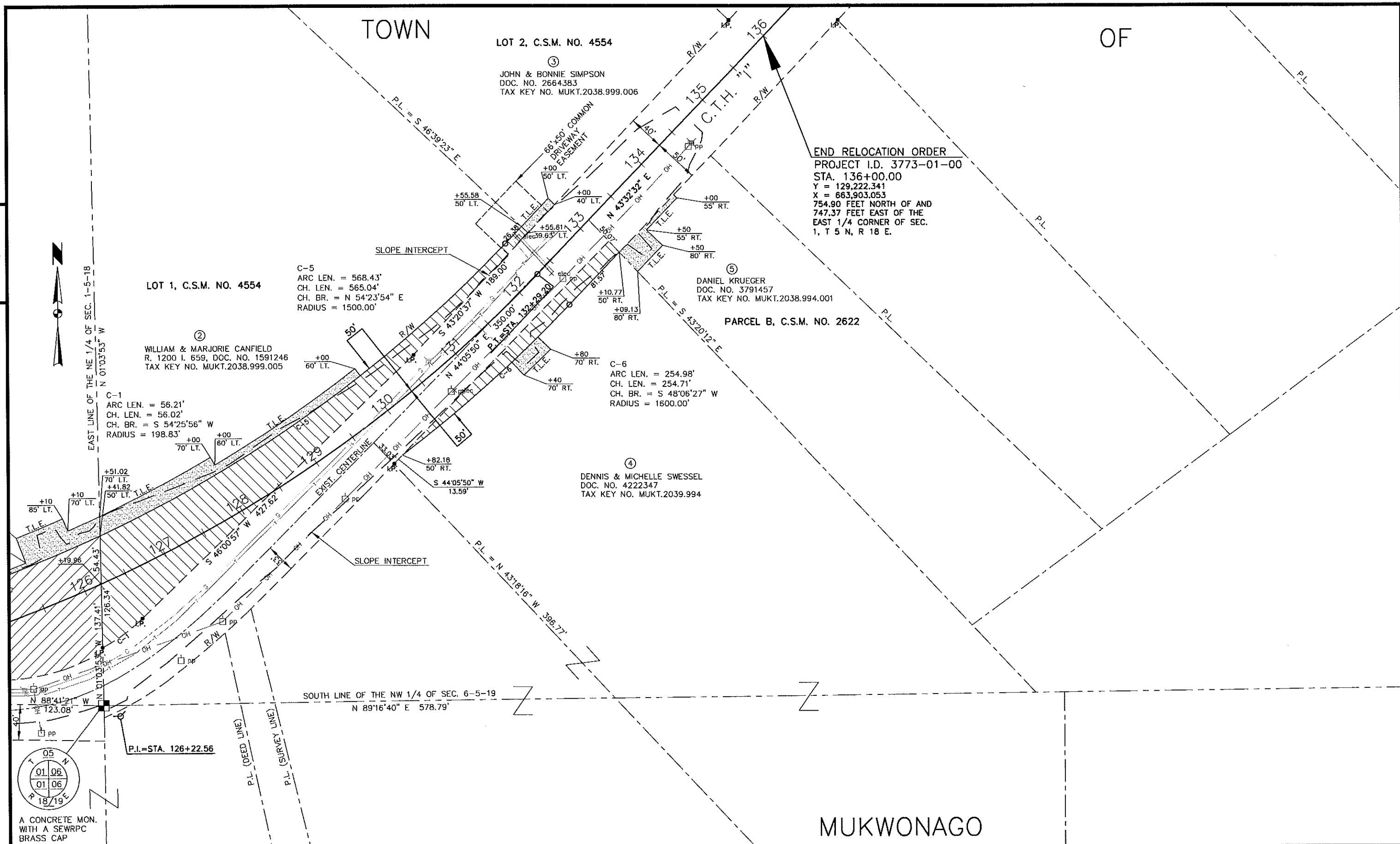
R/W PROJECT NO.: 3773-01-00

PLAT SHEET NO.: 4.3

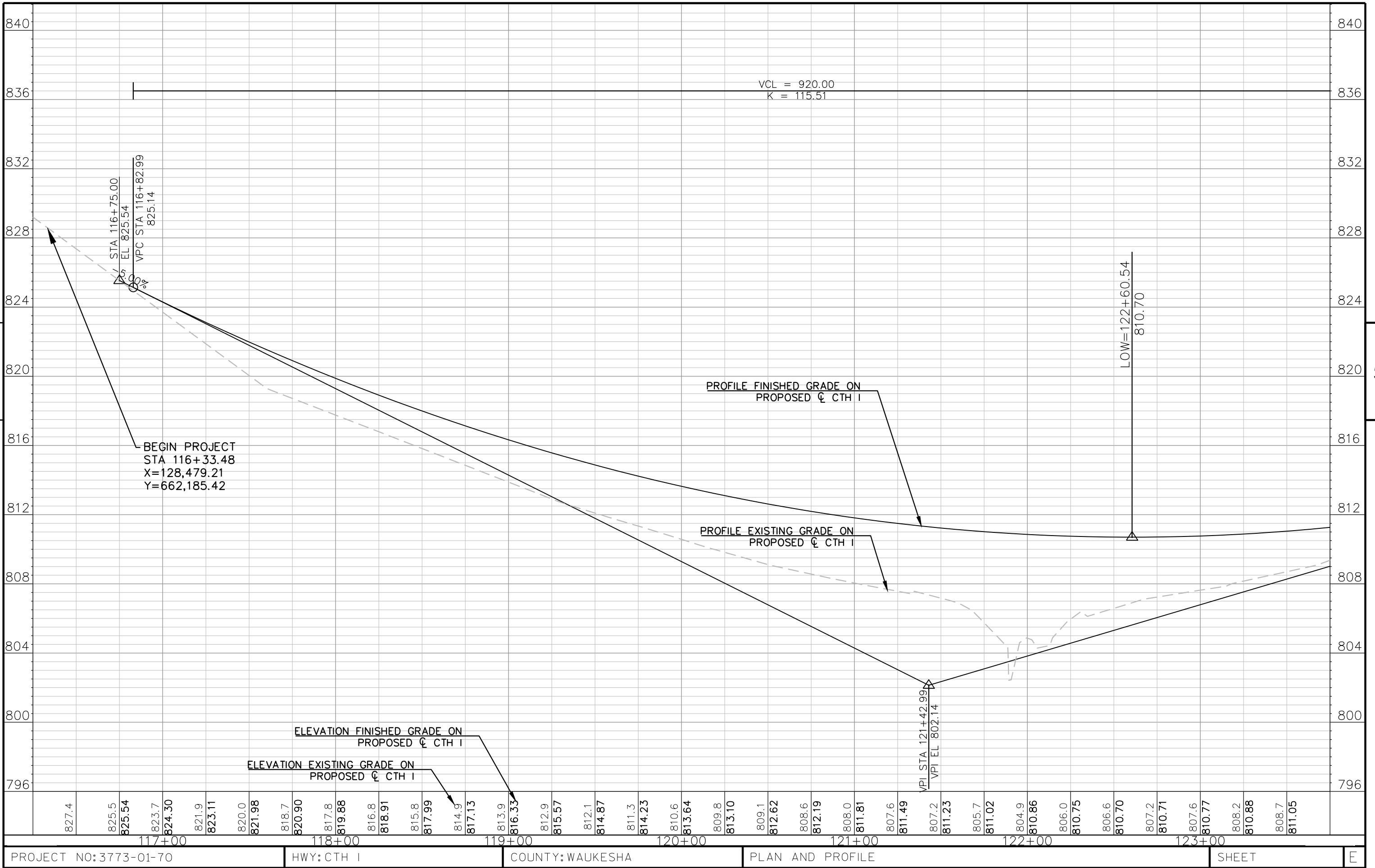
E

4

4

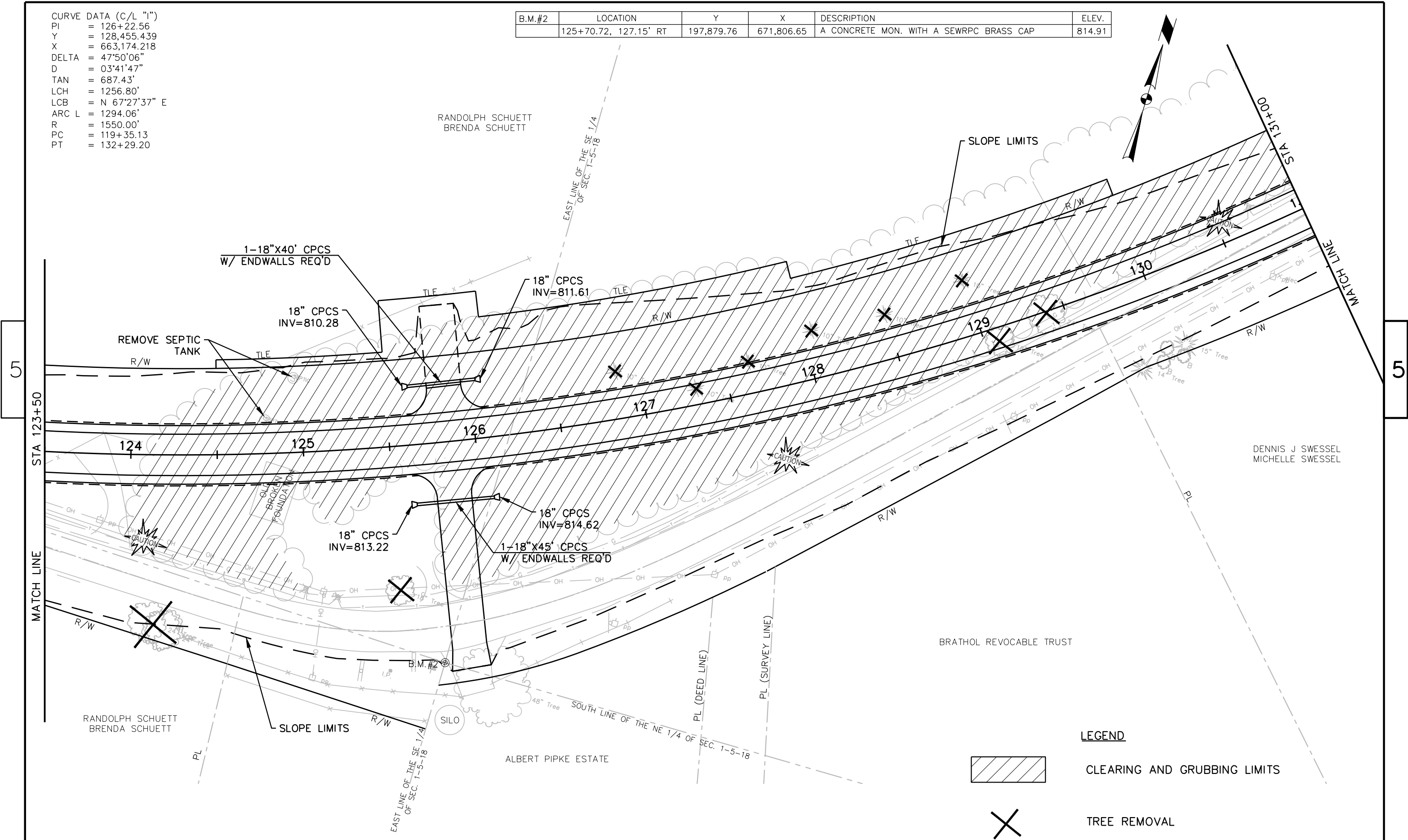


REVISION DATE	DATE: 05/22/2018		HWY: C.T.H. I	CONSTRUCTION PROJECT NO.: 3773-01-70			
			COUNTY: WAUKESHA	R/W PROJECT NO.: 3773-01-00		PLAT SHEET NO.: 4.4	E

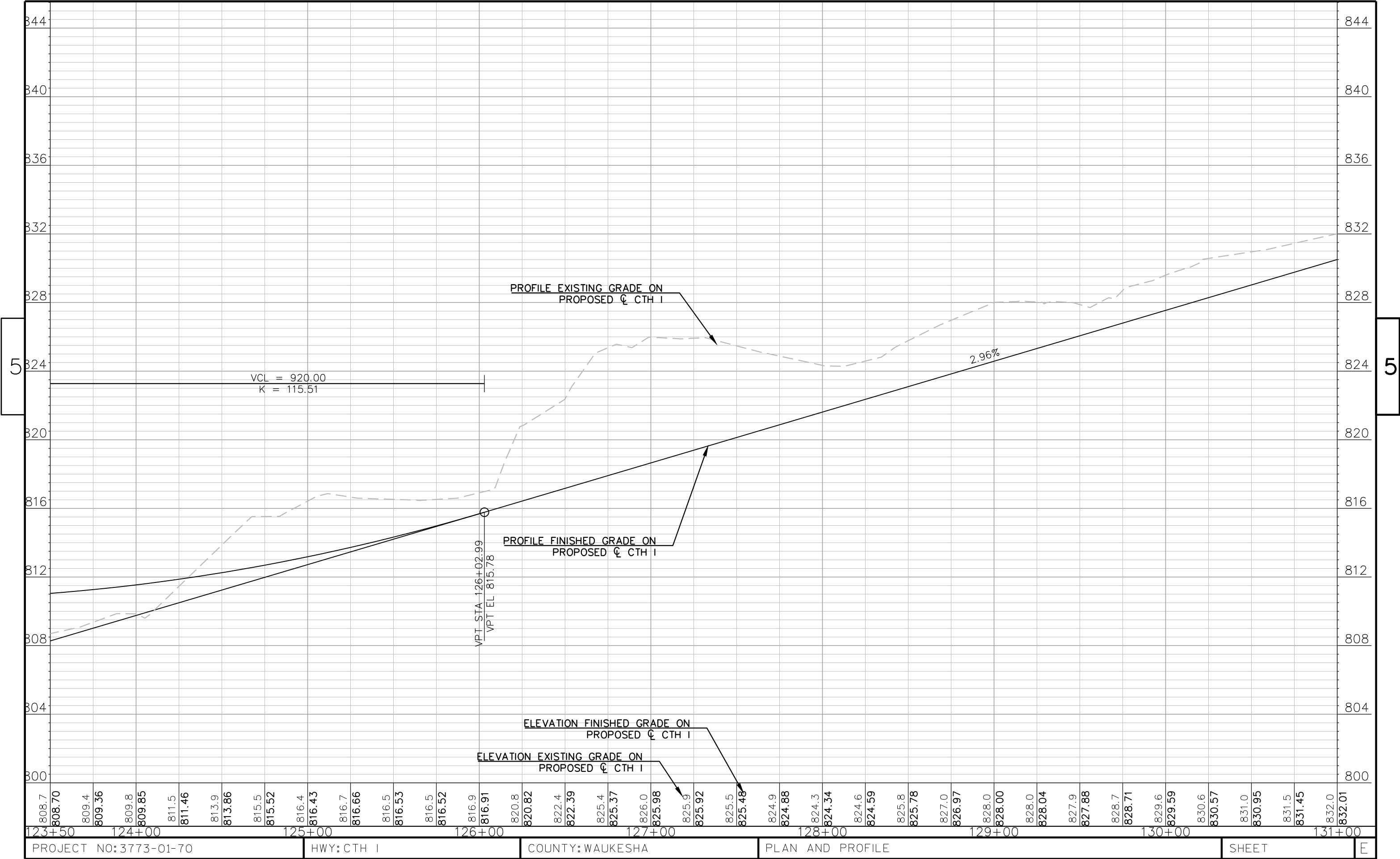


CURVE DATA (C/L "I")
PI = 126+22.56
Y = 128,455.439
X = 663,174.218
DELTA = 47°50'06"
D = 03°41'47"
TAN = 687.43'
LCH = 1256.80'
LCB = N 67°27'37" E
ARC L = 1294.06'
R = 1550.00'
PC = 119+35.13
PT = 132+29.20

B.M.#2	LOCATION	Y	X	DESCRIPTION	ELEV.
	125+70.72, 127.15' RT	197,879.76	671,806.65	A CONCRETE MON. WITH A SEWRPC BRASS CAP	814.91

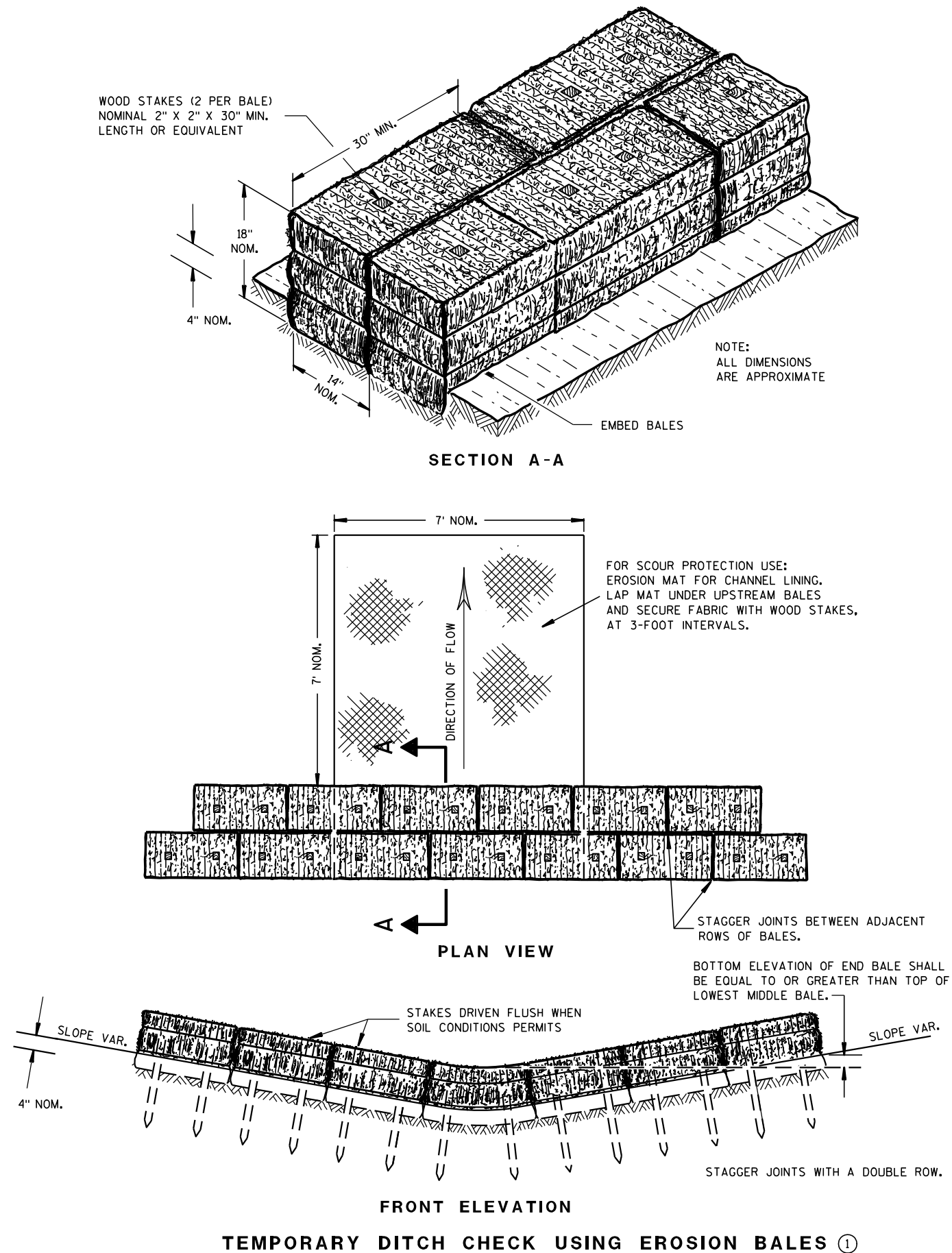


- LEGEND
- CLEARING AND GRUBBING LIMITS
 - TREE REMOVAL



Standard Detail Drawing List

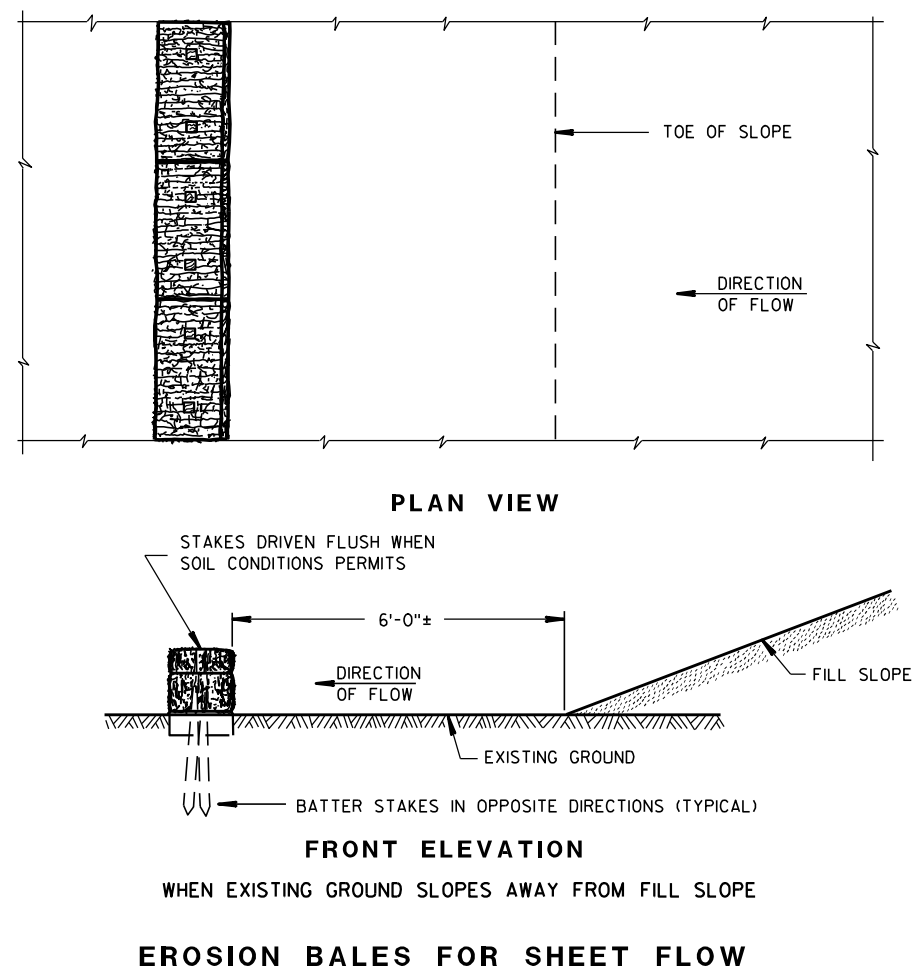
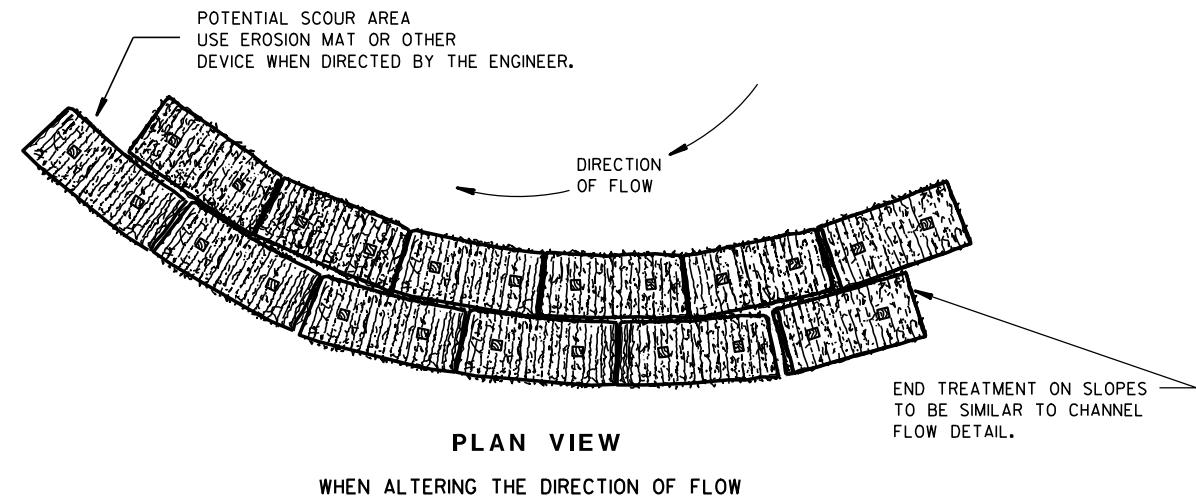
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A10-01A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01B	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02B	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C04-04	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
16A01-07	LANDMARK REFERENCE MONUMENTS AND COVERS



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

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



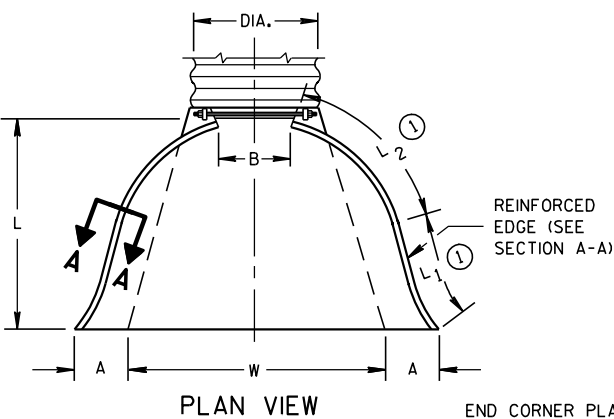
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



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

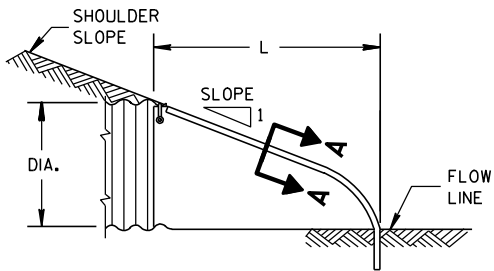
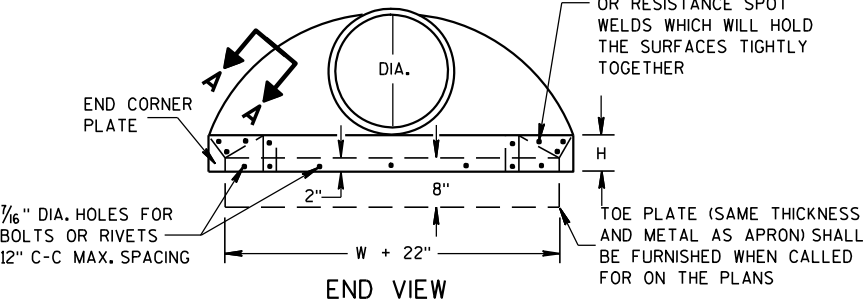
METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.	
18	.064	.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



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

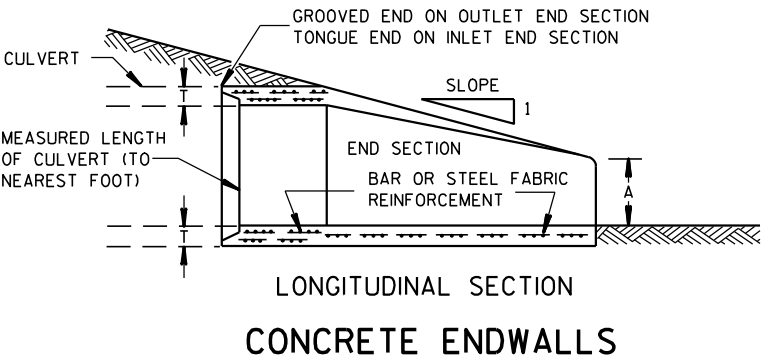
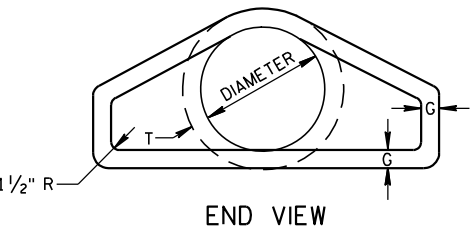
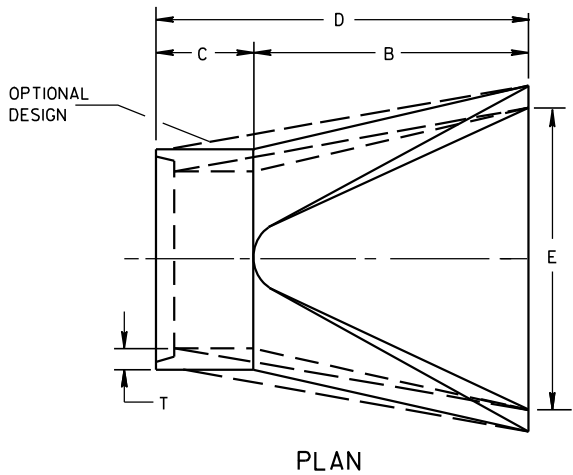
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

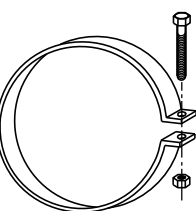
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 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

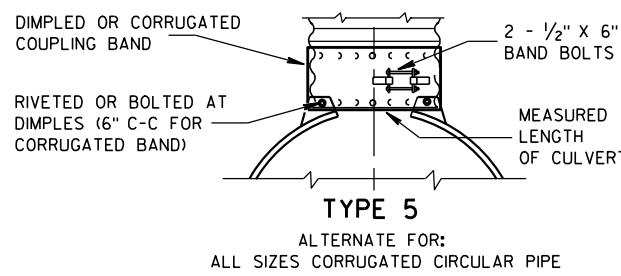
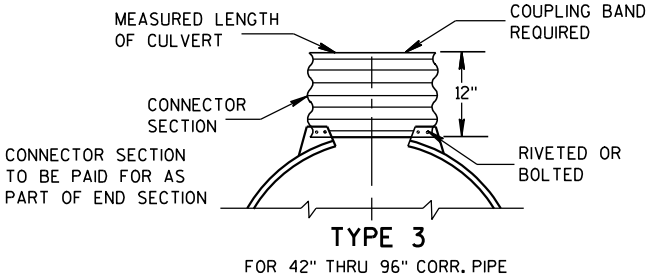
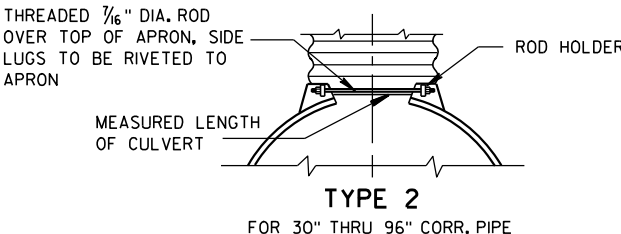
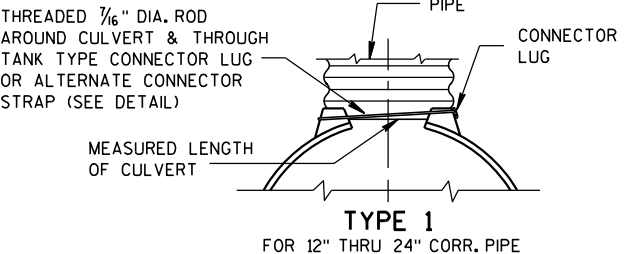


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



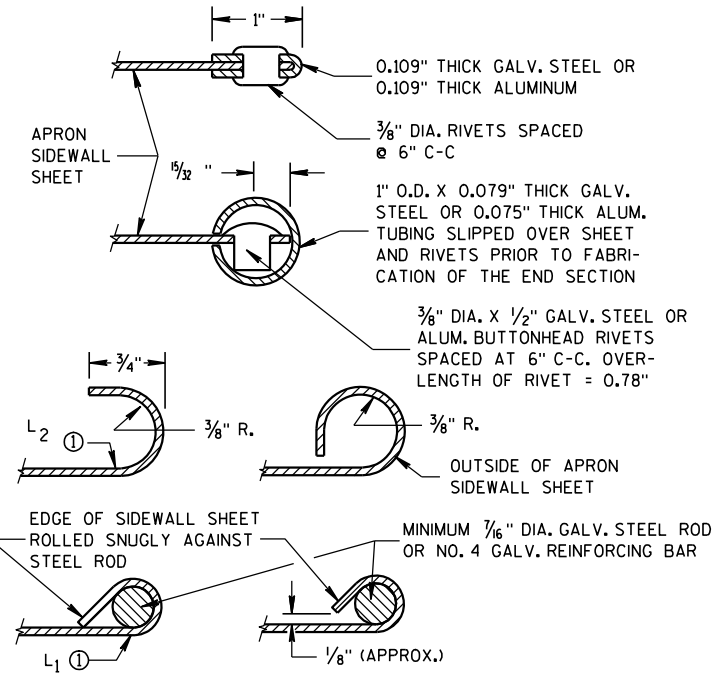
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

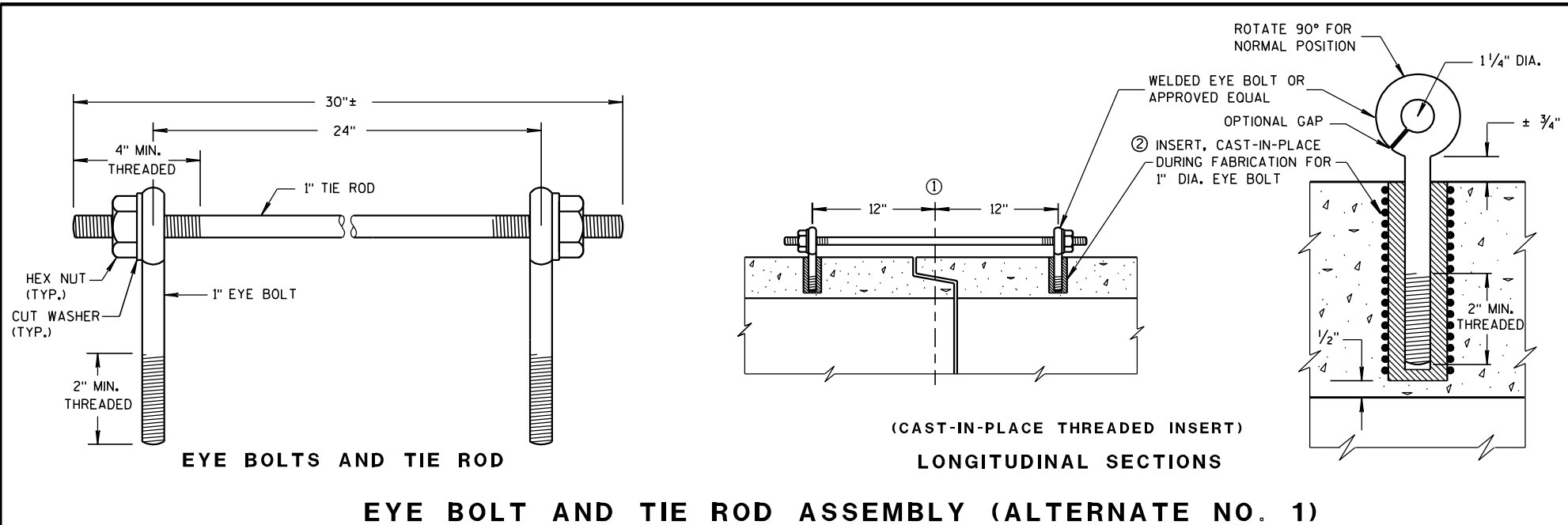
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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



GENERAL NOTES

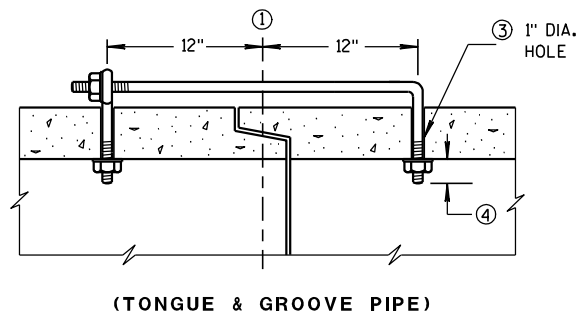
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

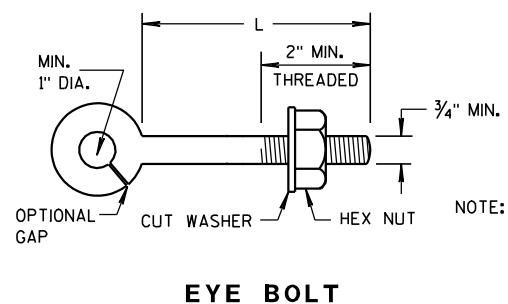
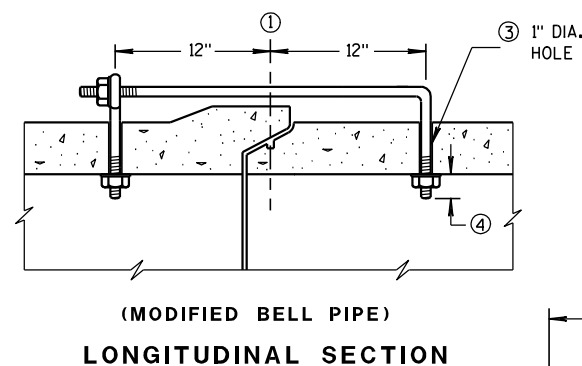
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- ① ϕ 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 12 INCHES FROM ϕ OF TONGUE AND GROOVE.
- 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.



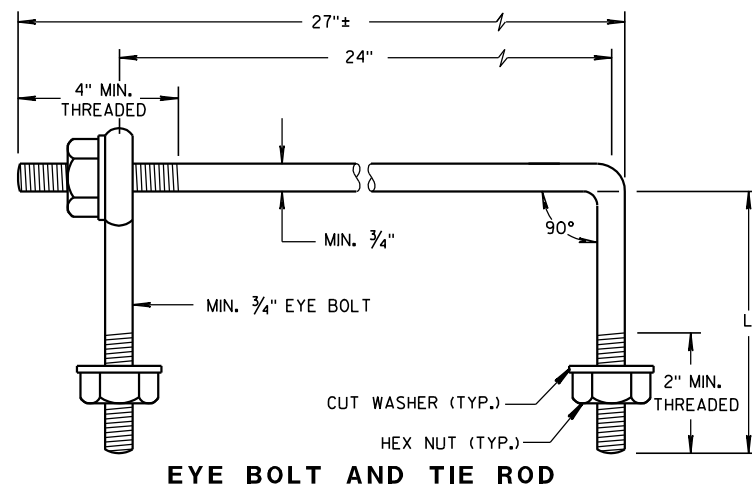
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

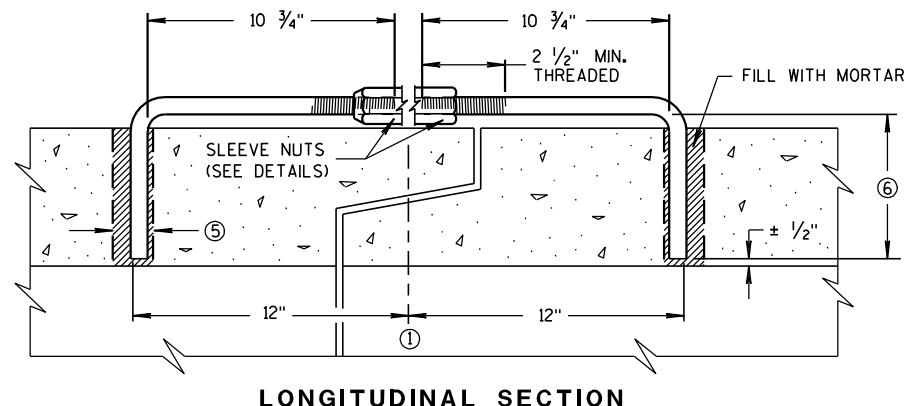
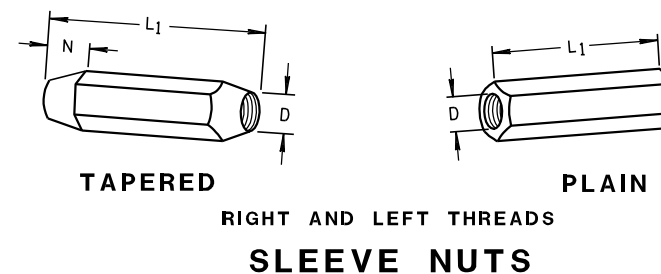
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)
EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



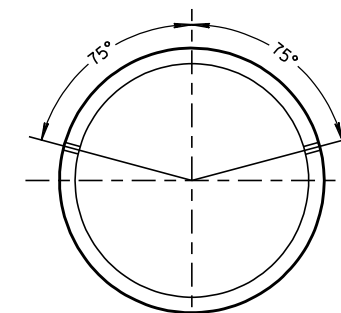
ADJUSTABLE TIE ROD TABLE

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
90-108	1	1	7	1 1/16

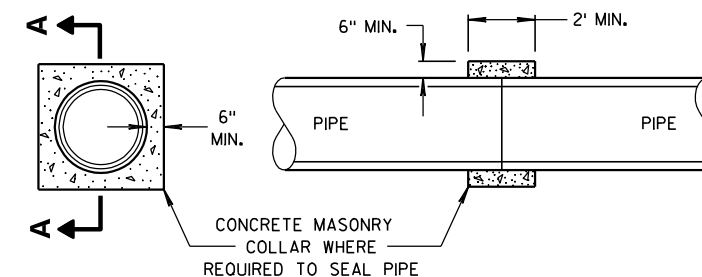
DIMENSIONS SHOWN ARE IN INCHES



(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



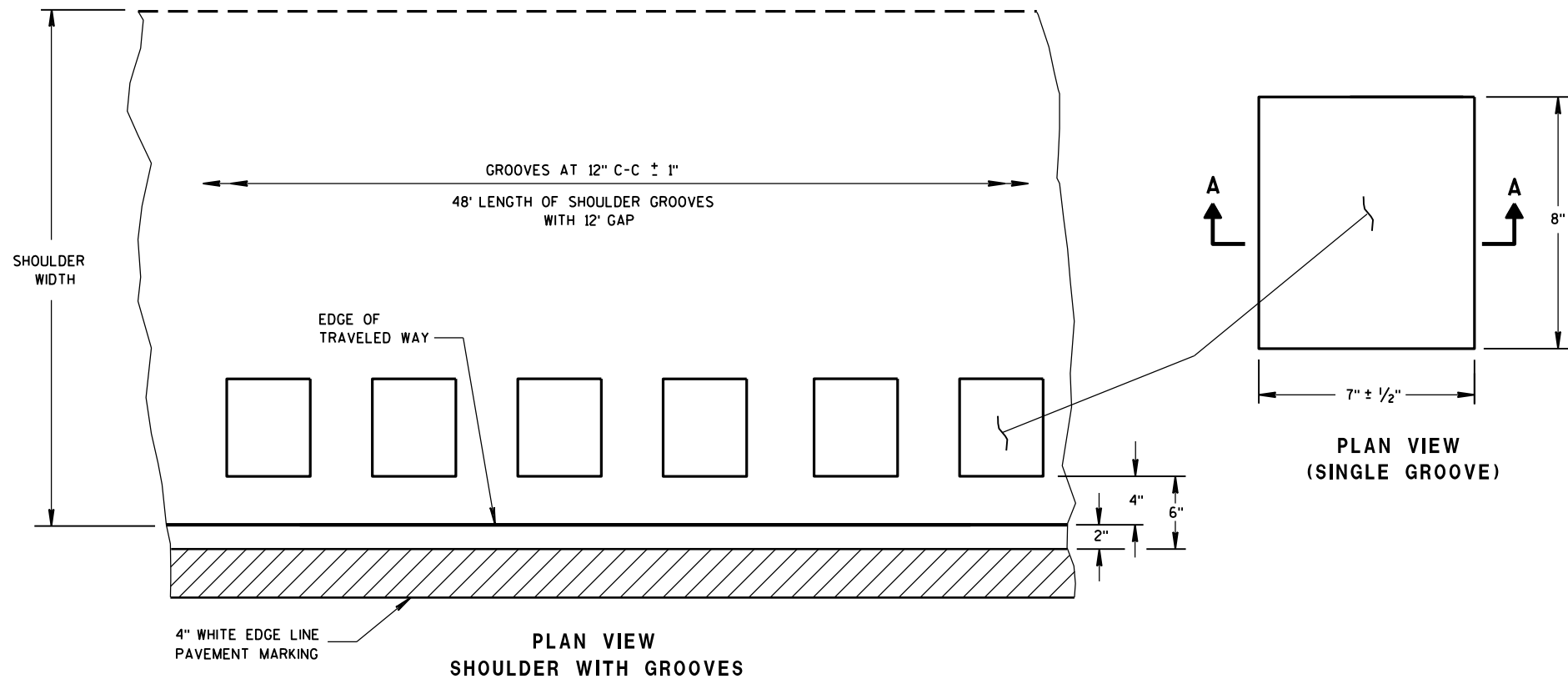
PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS



JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

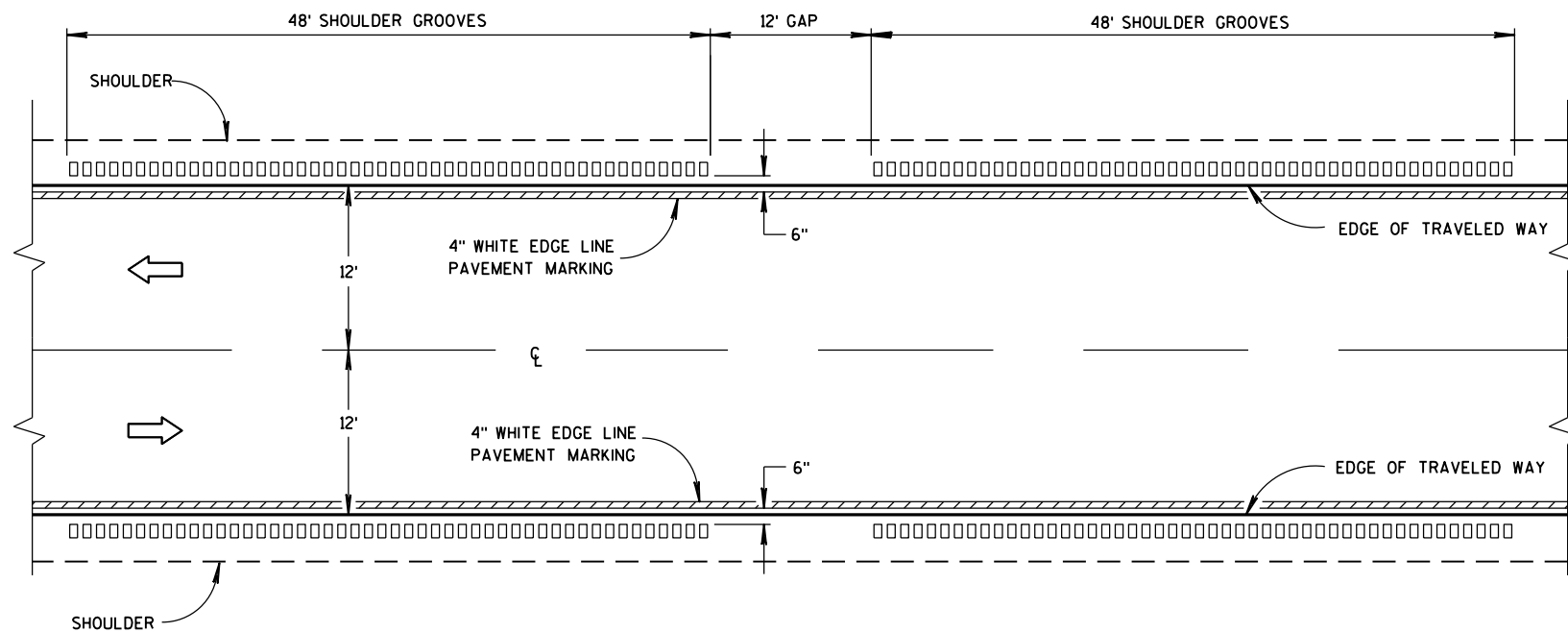
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



6

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



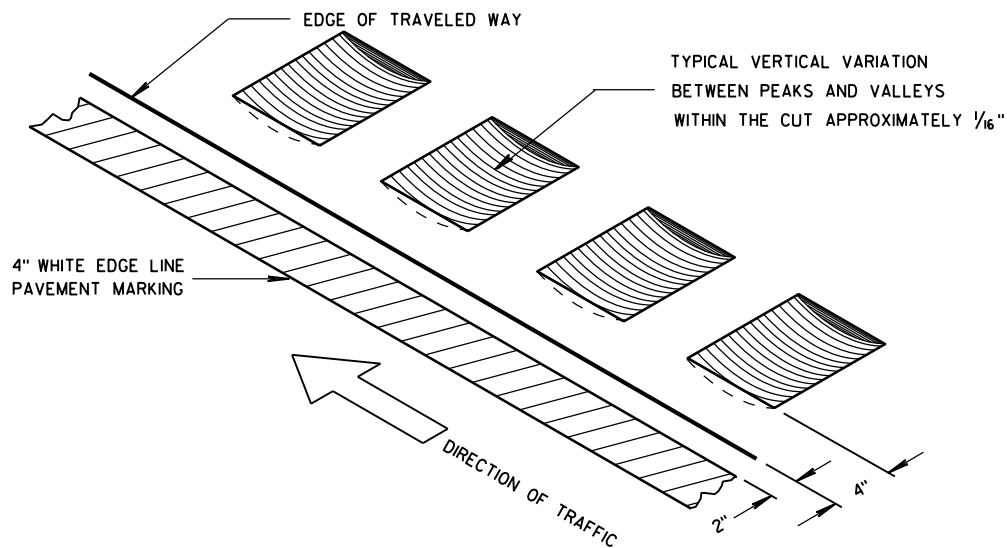
TYPE 1
2-LANE SHOULDER RUMBLE STRIP

GENERAL NOTES

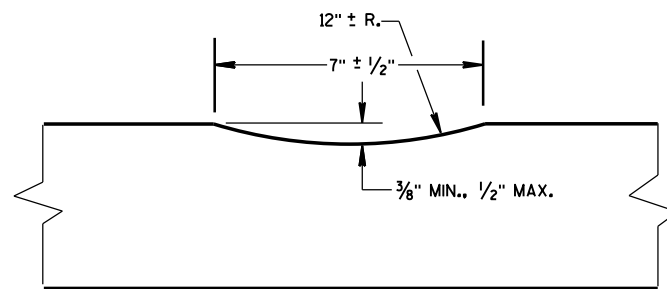
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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



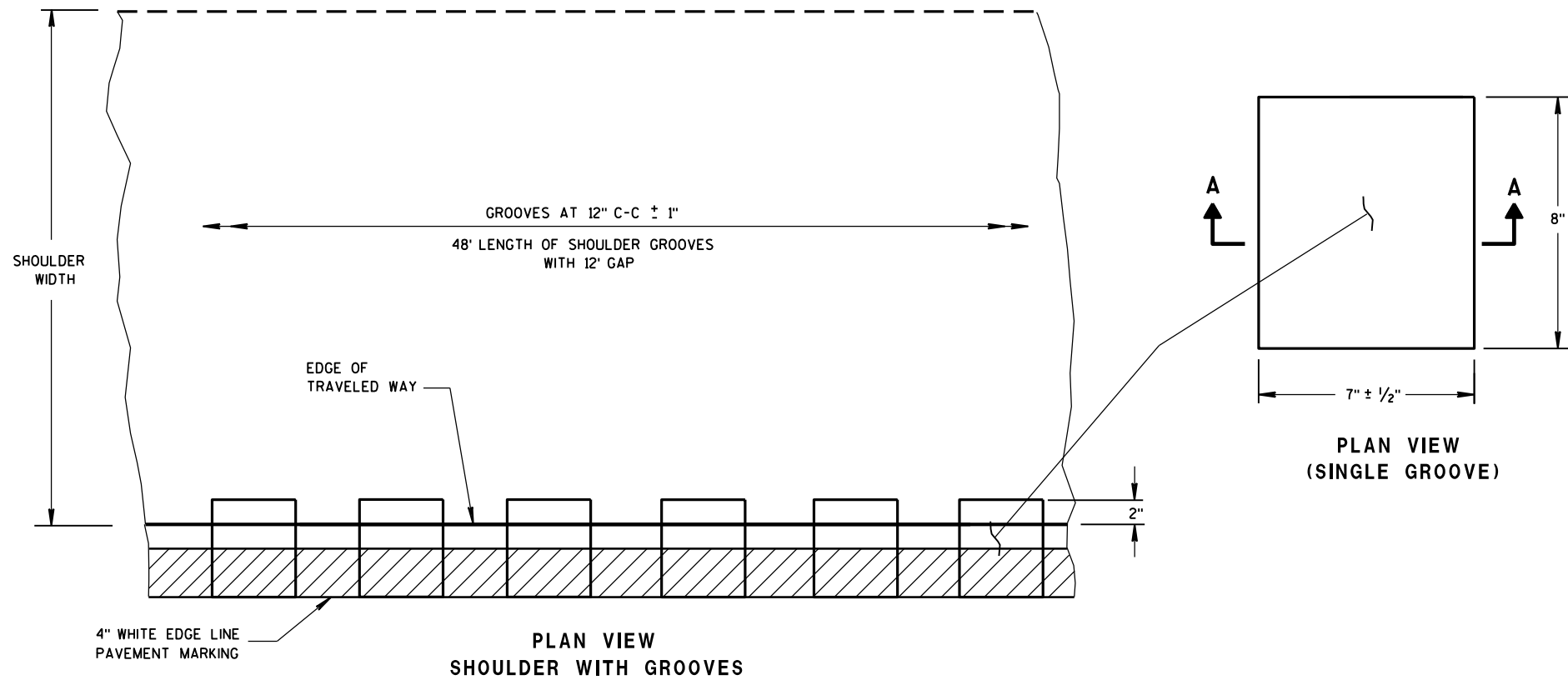
ISOMETRIC



SECTION A-A

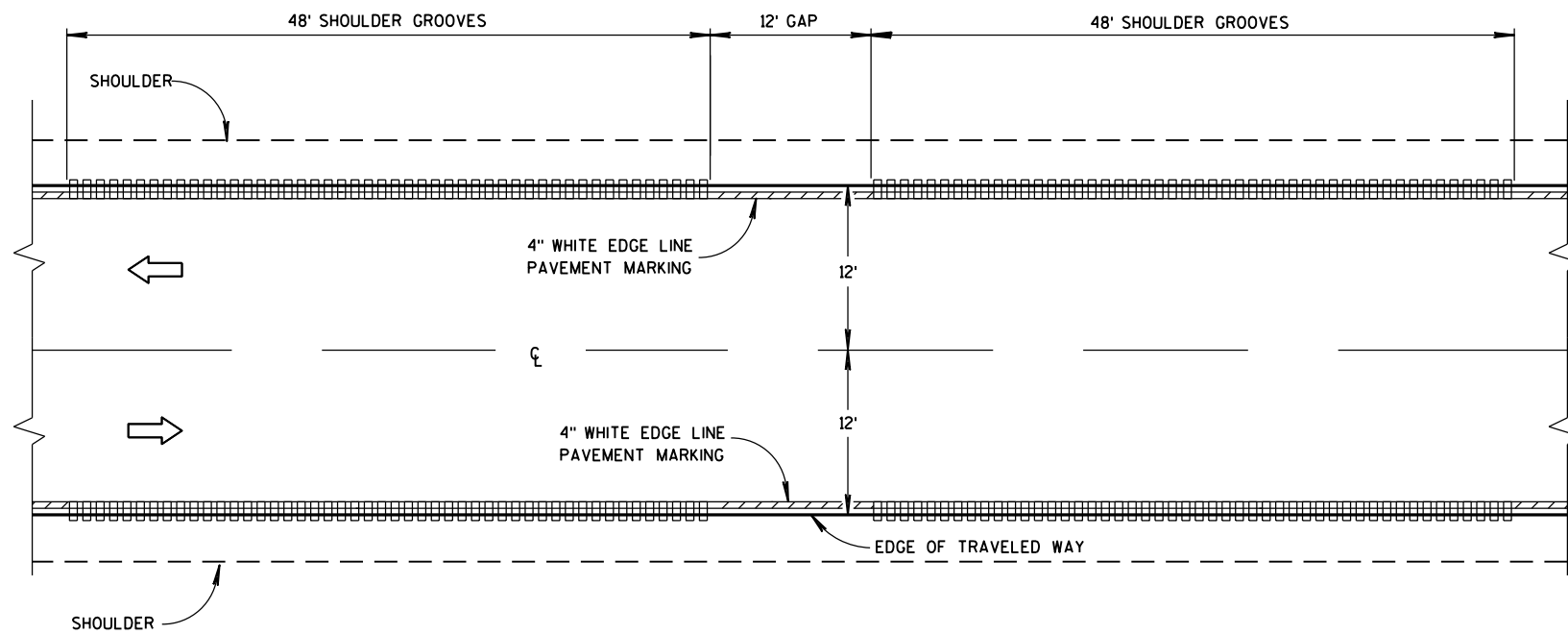
2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW
SHOULDER WITH GROOVES

6
PLACEMENT DETAIL FOR TYPE 2 MILLED RUMBLE STRIP

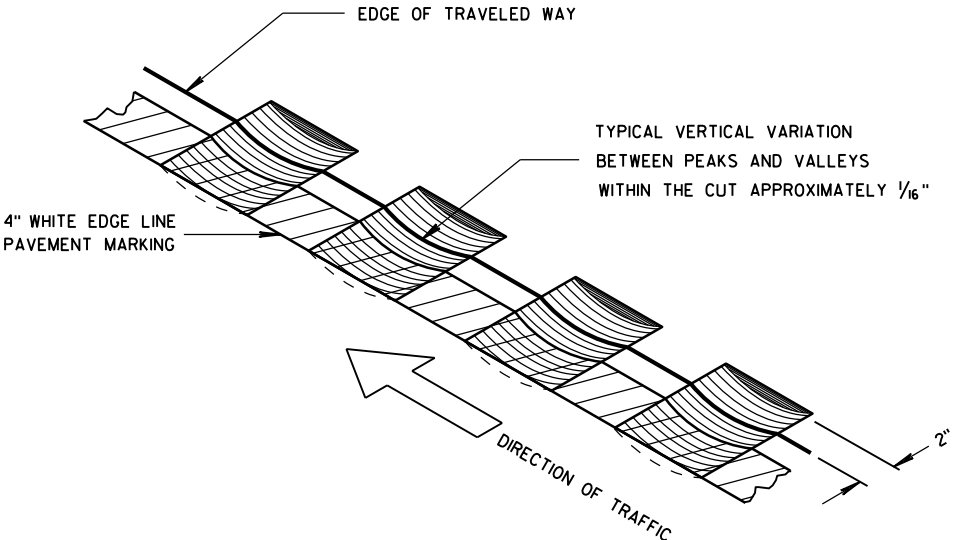


TYPE 2
2-LANE SHOULDER RUMBLE STRIP

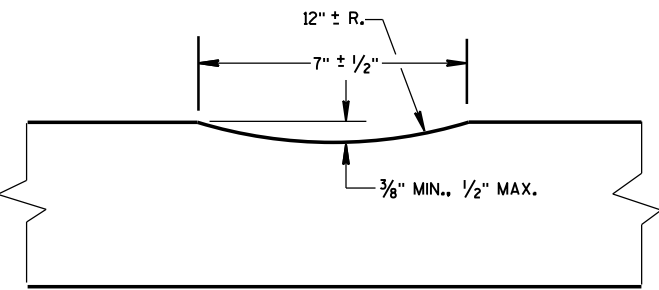
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

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

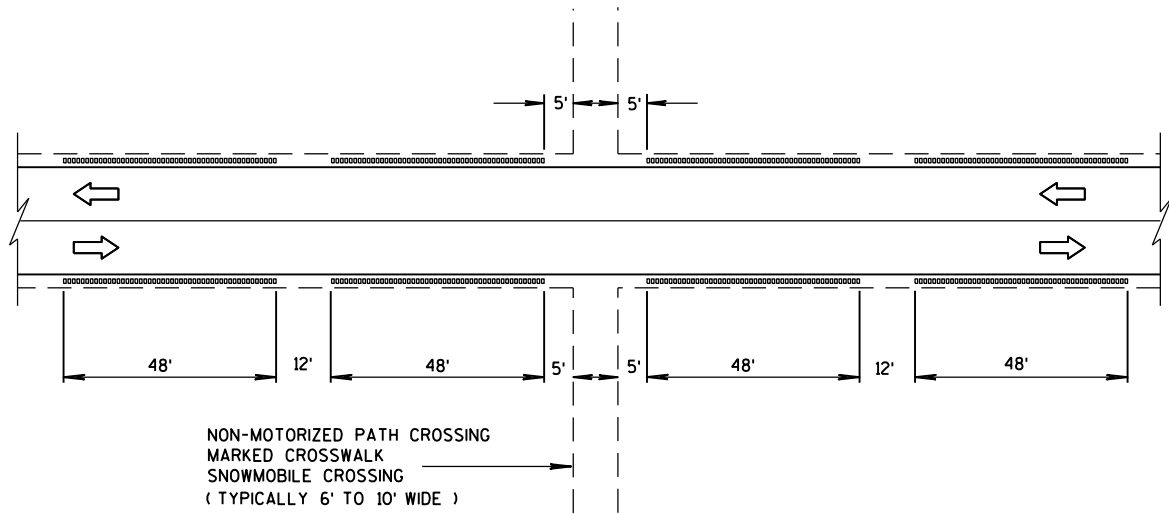


ISOMETRIC

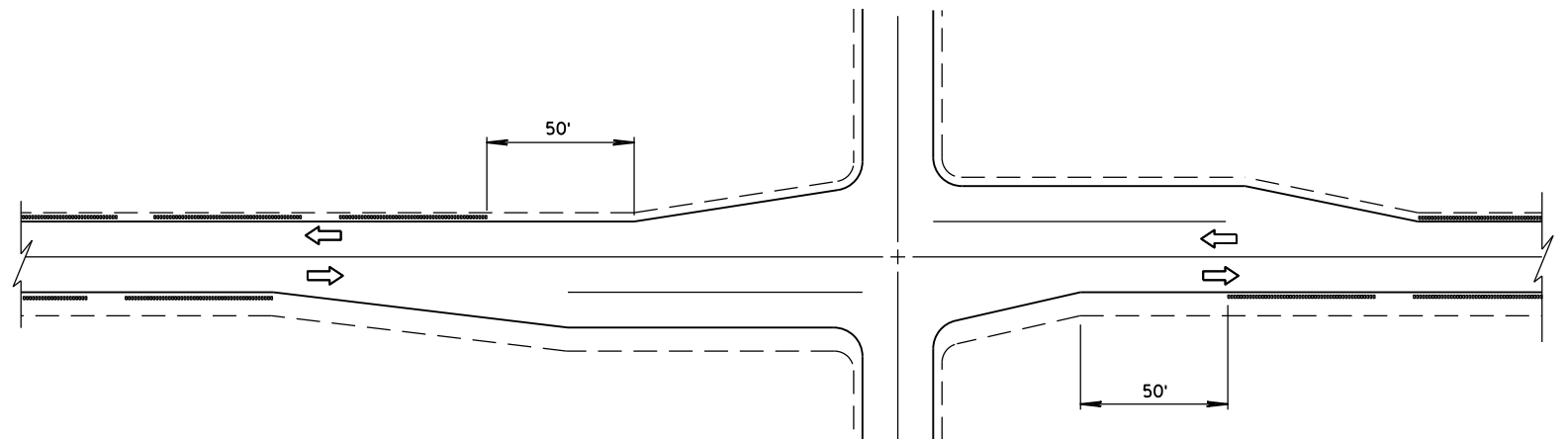


SECTION A-A

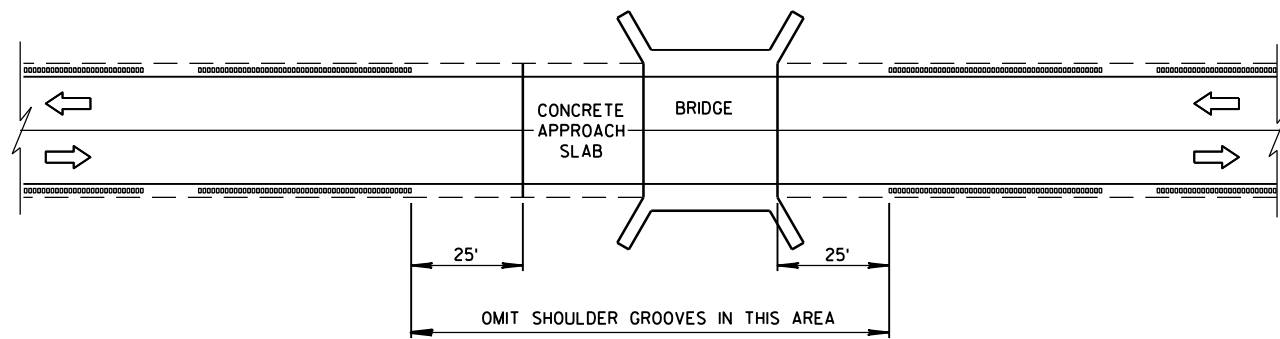
2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



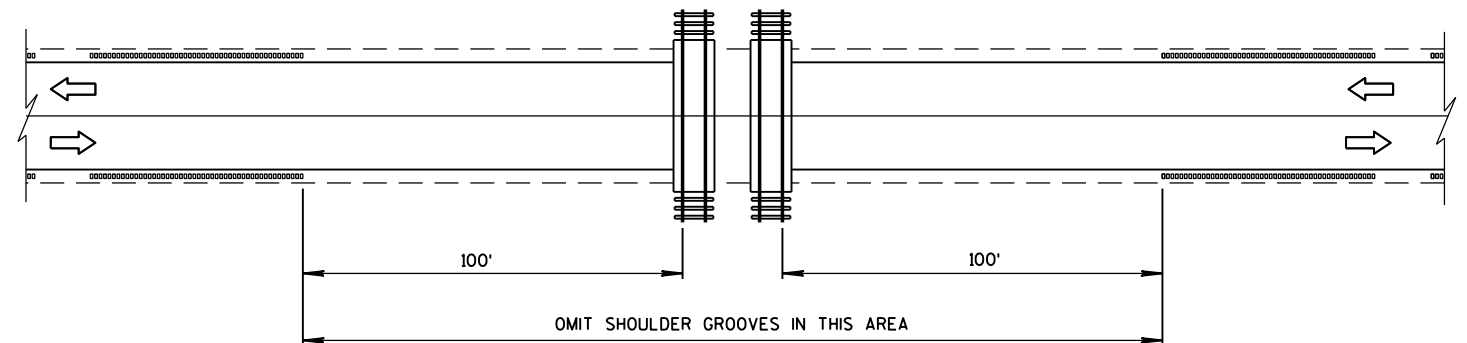
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



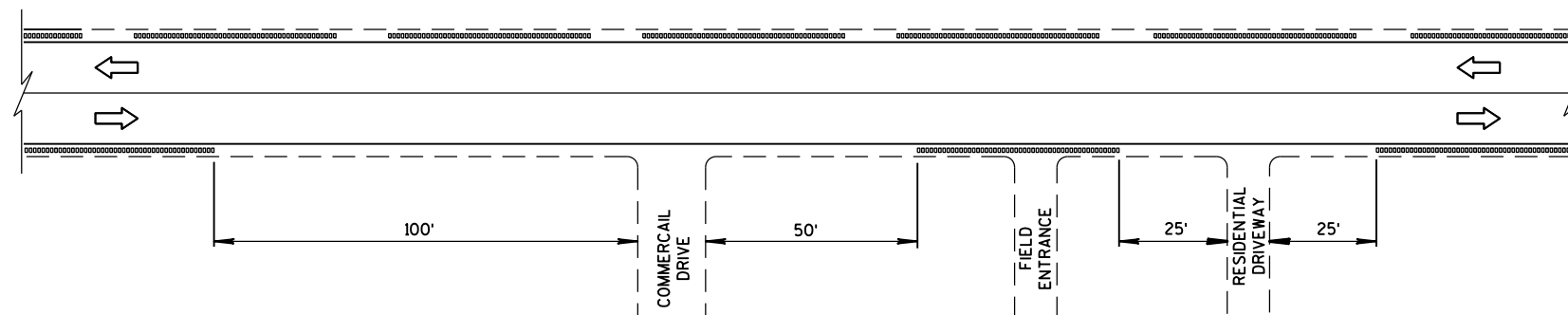
SHOULDER GROOVES AT INTERSECTIONS



SHOULDER GROOVES AT BRIDGES



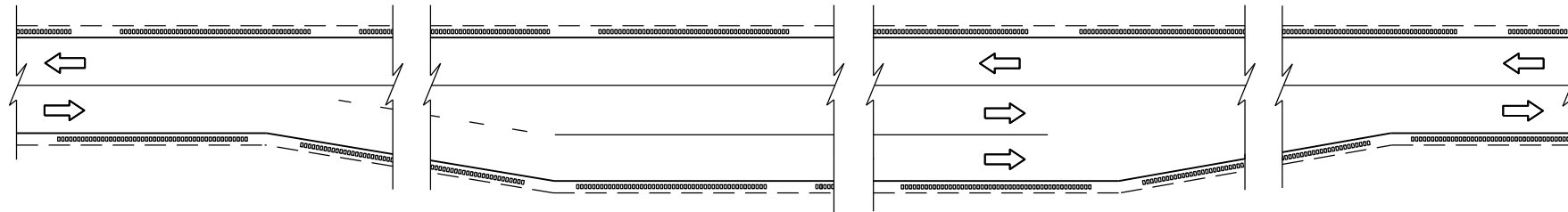
SHOULDER GROOVES AT RAILROADS



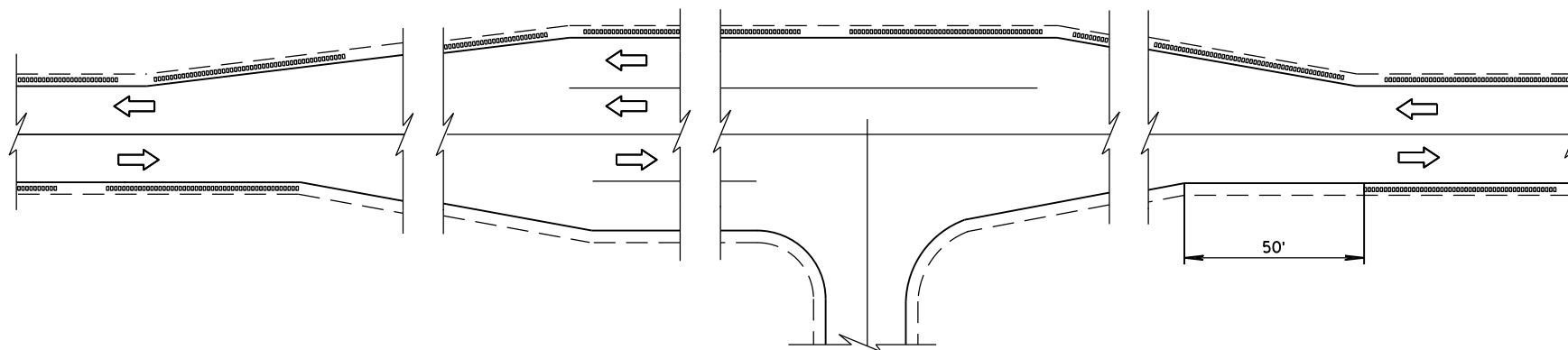
SHOULDER GROOVES AT DRIVEWAYS^①

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



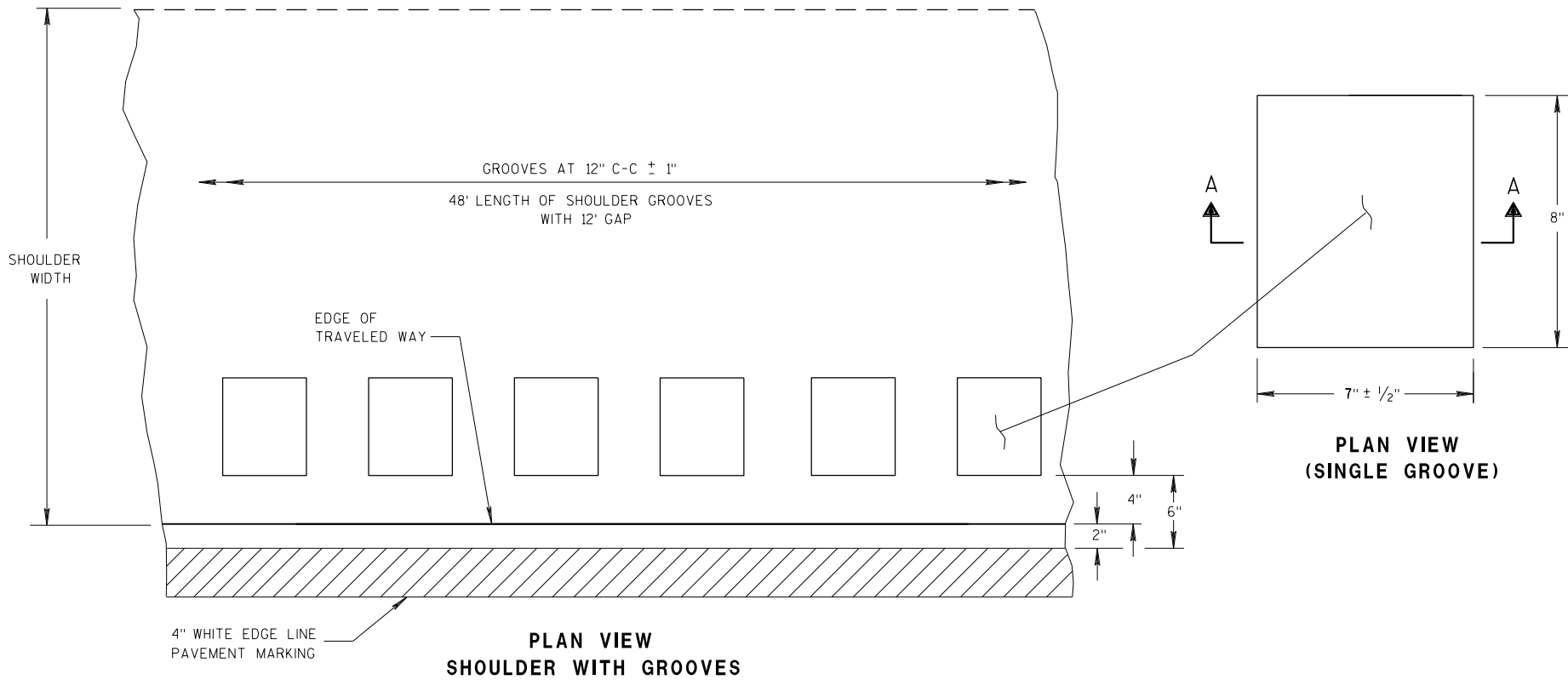
SHOULDER GROOVES AT BYPASS LANES

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/17/2012
DATE
FHWA

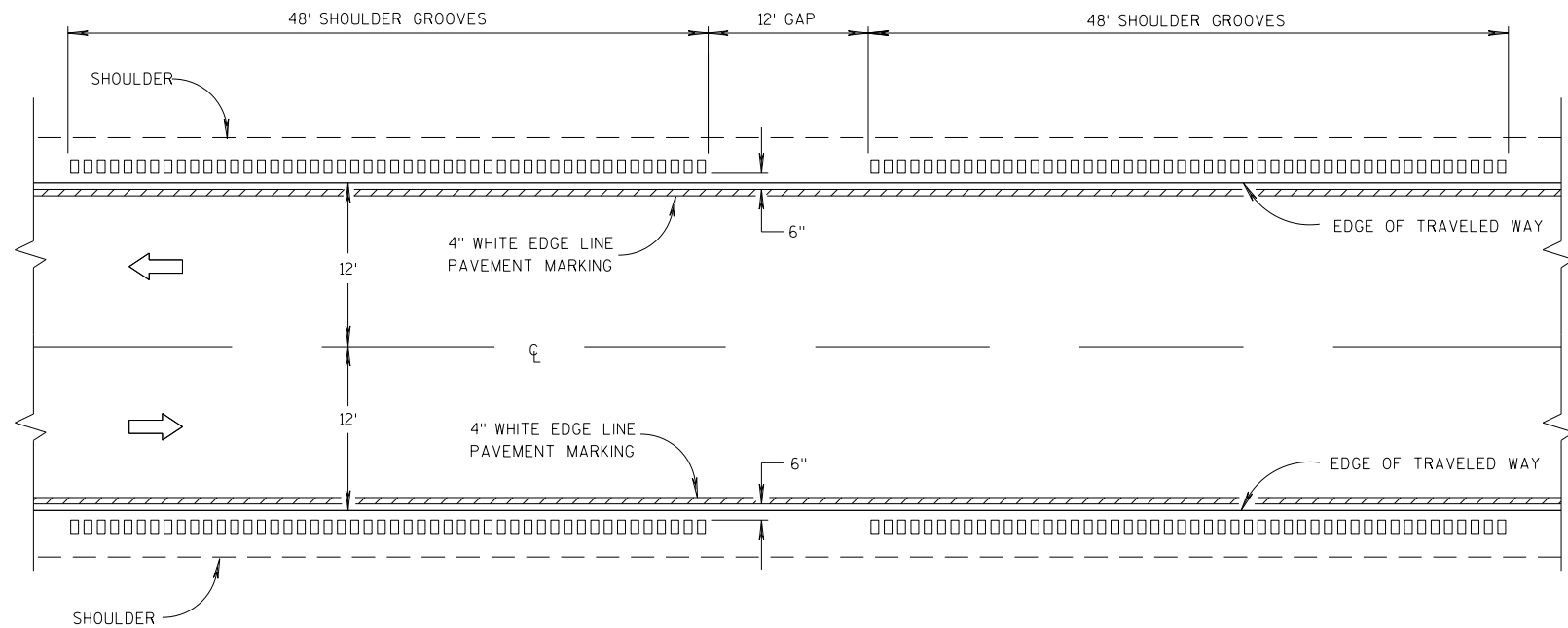
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



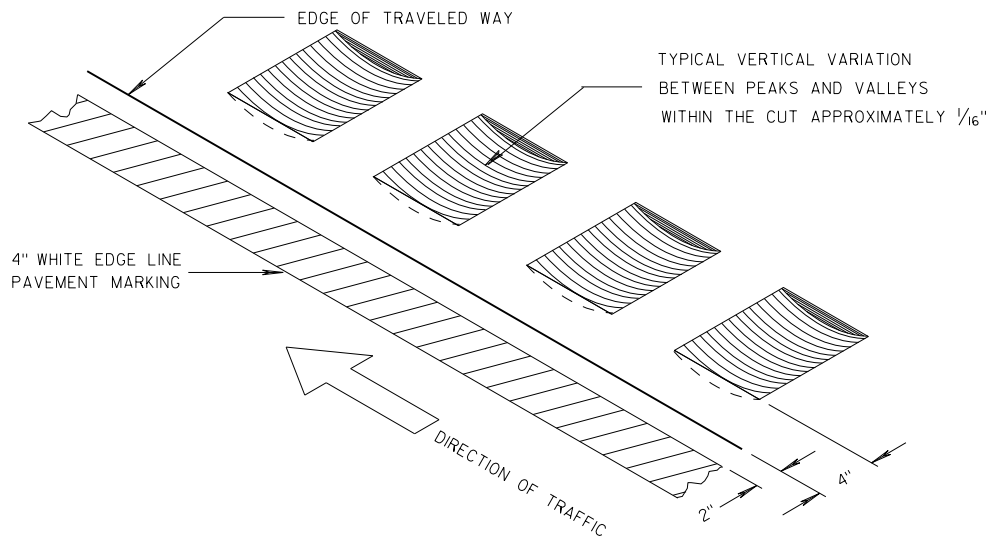
TYPE 1
2-LANE SHOULDER RUMBLE STRIP

GENERAL NOTES

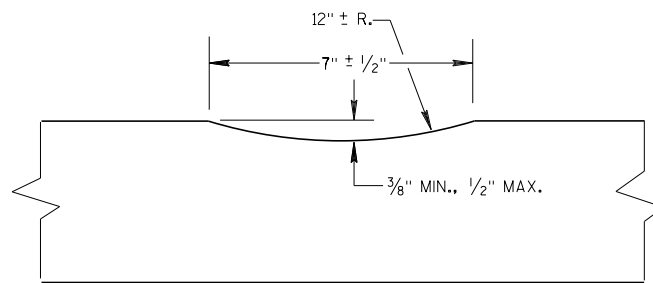
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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



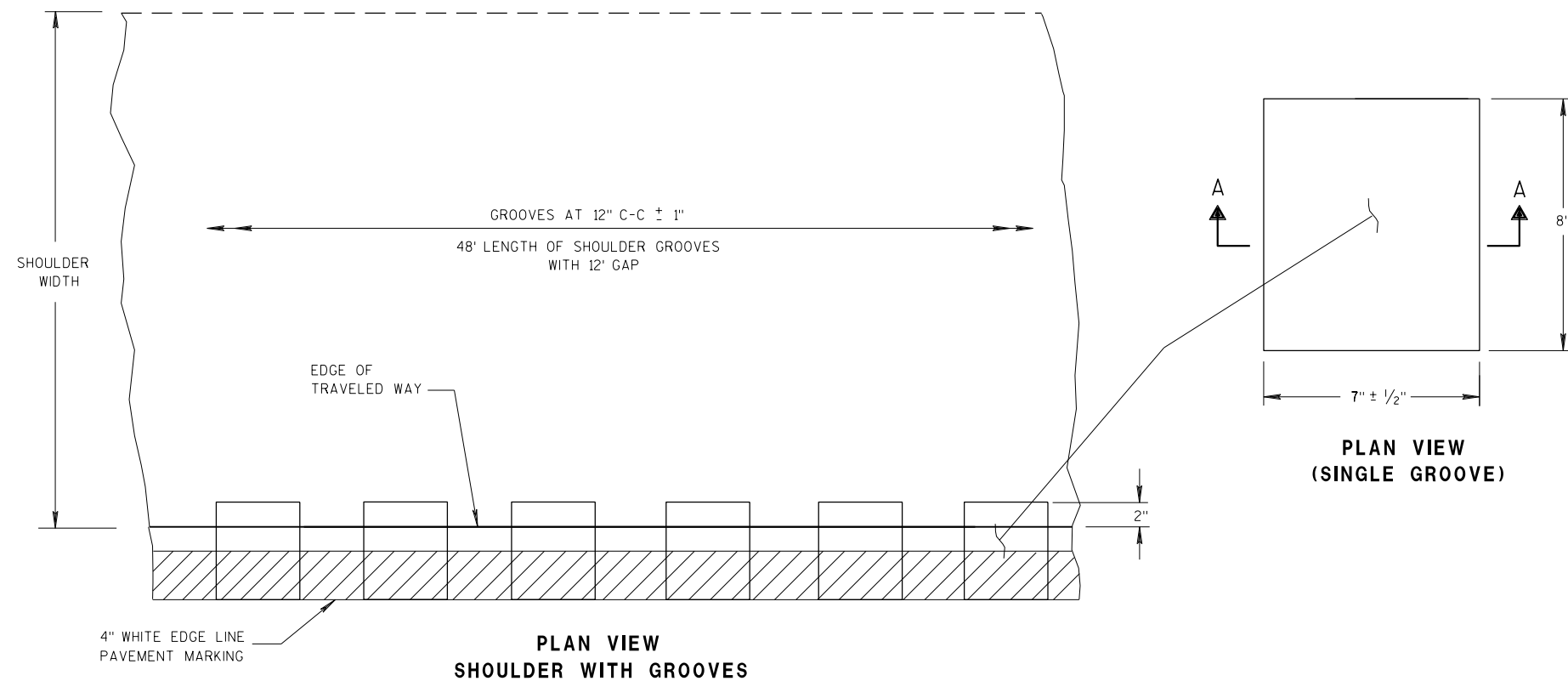
ISOMETRIC



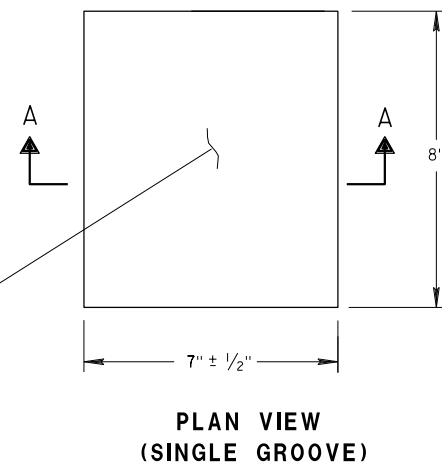
SECTION A-A

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW
SHOULDER WITH GROOVES



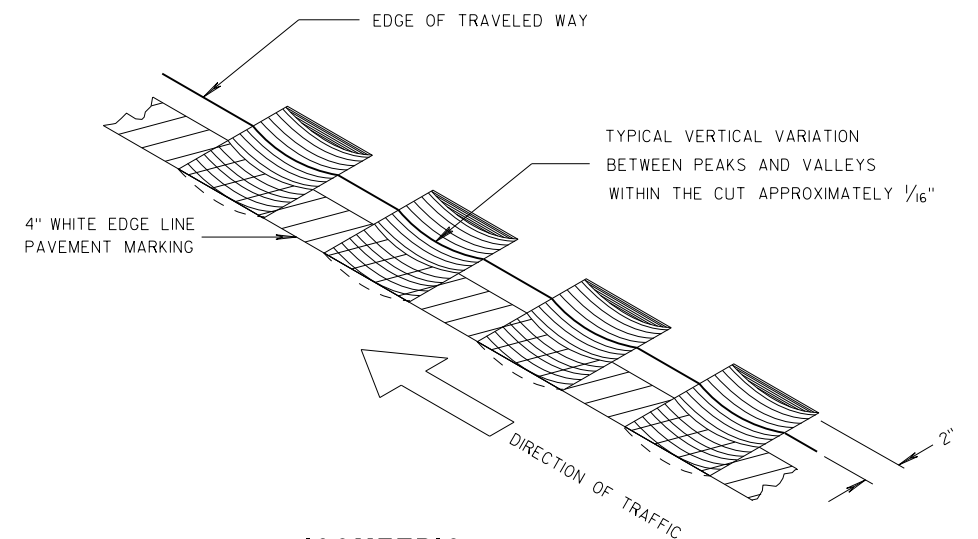
PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

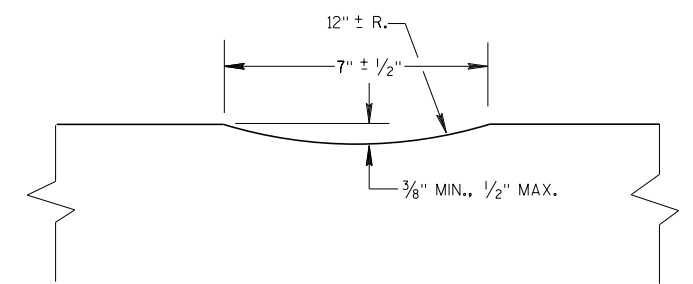
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

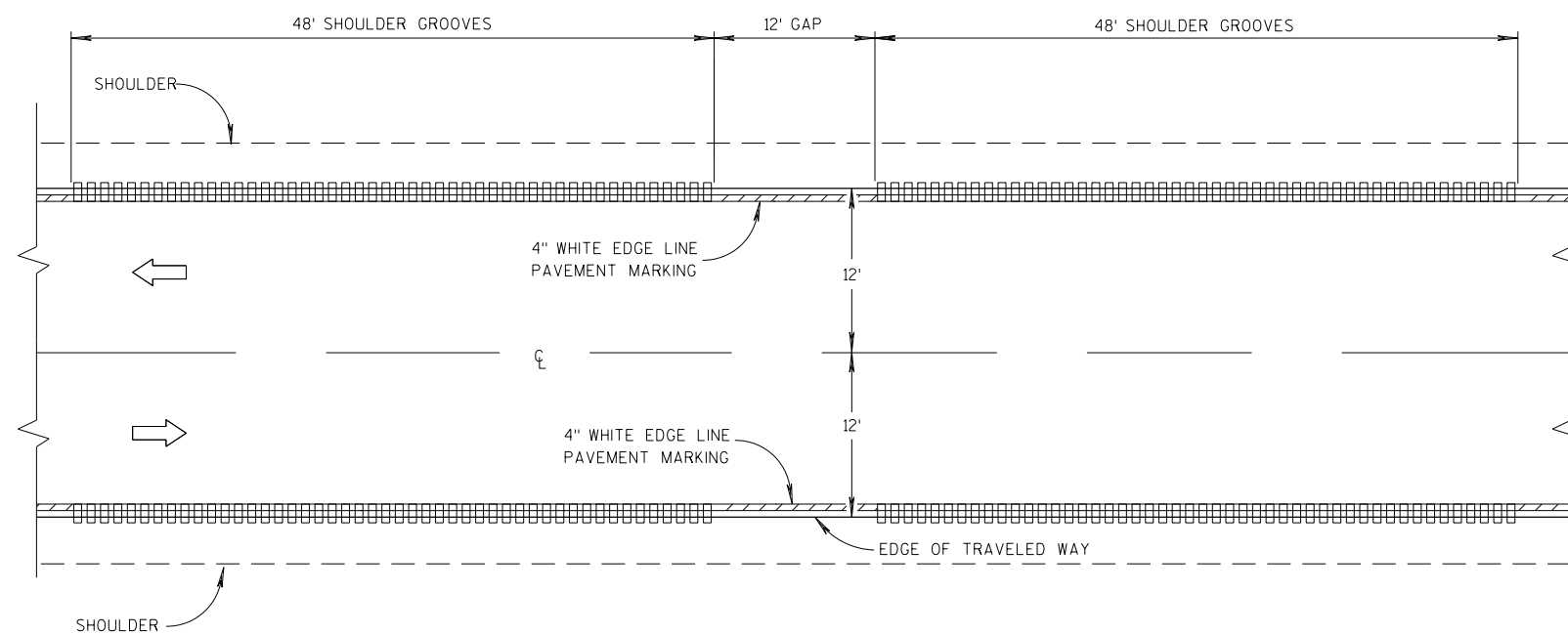
① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC



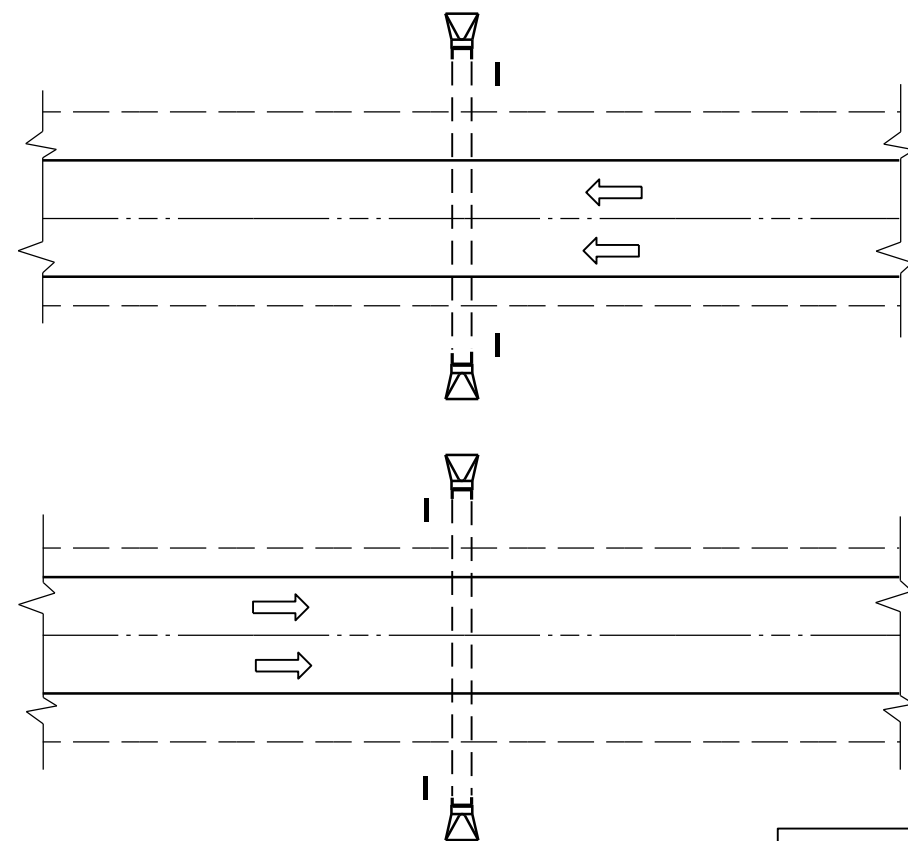
SECTION A-A



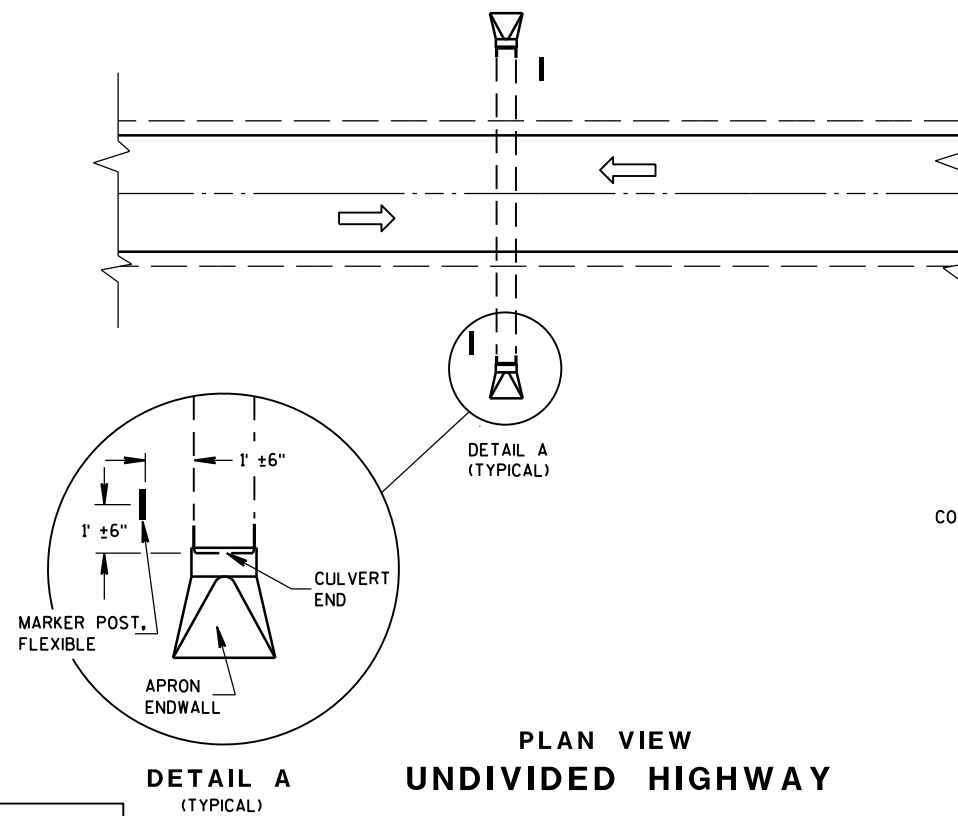
TYPE 2
2-LANE SHOULDER RUMBLE STRIP

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

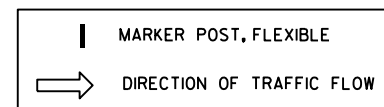
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW
DIVIDED HIGHWAY



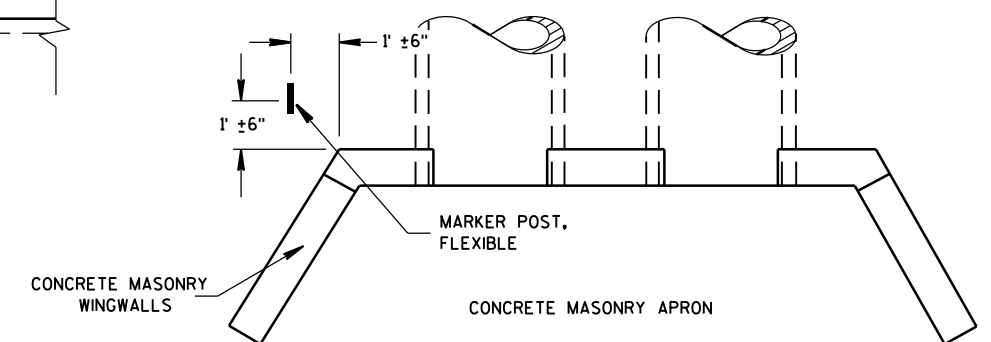
PLAN VIEW
UNDIVIDED HIGHWAY



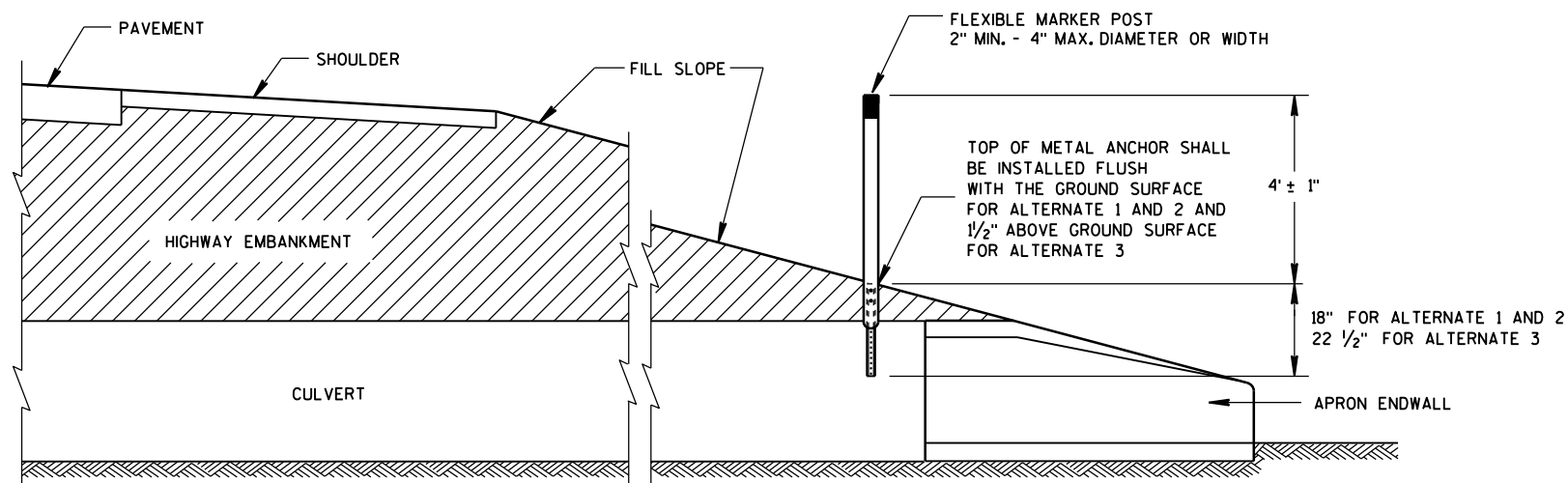
FLEXIBLE MARKER POST LOCATION

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.



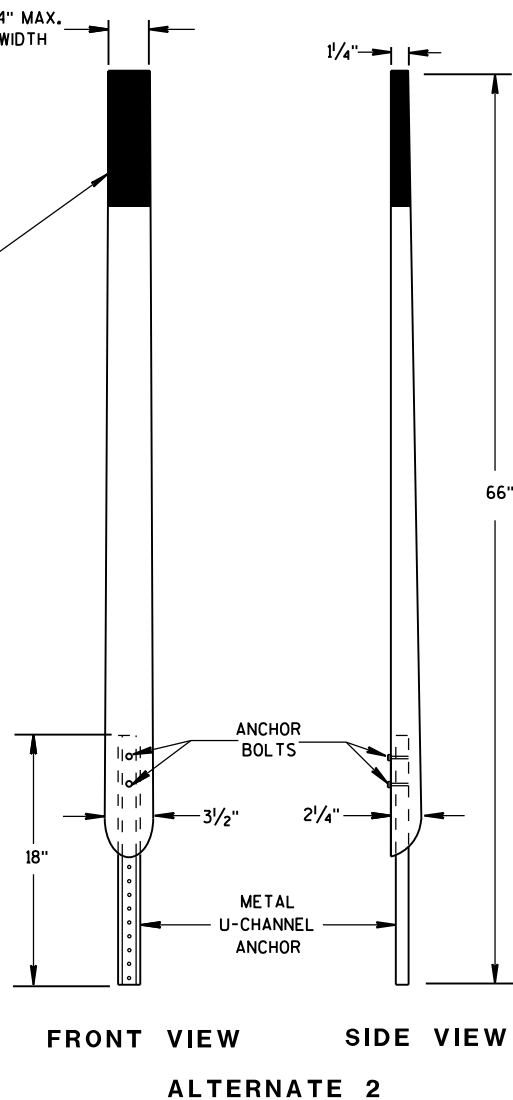
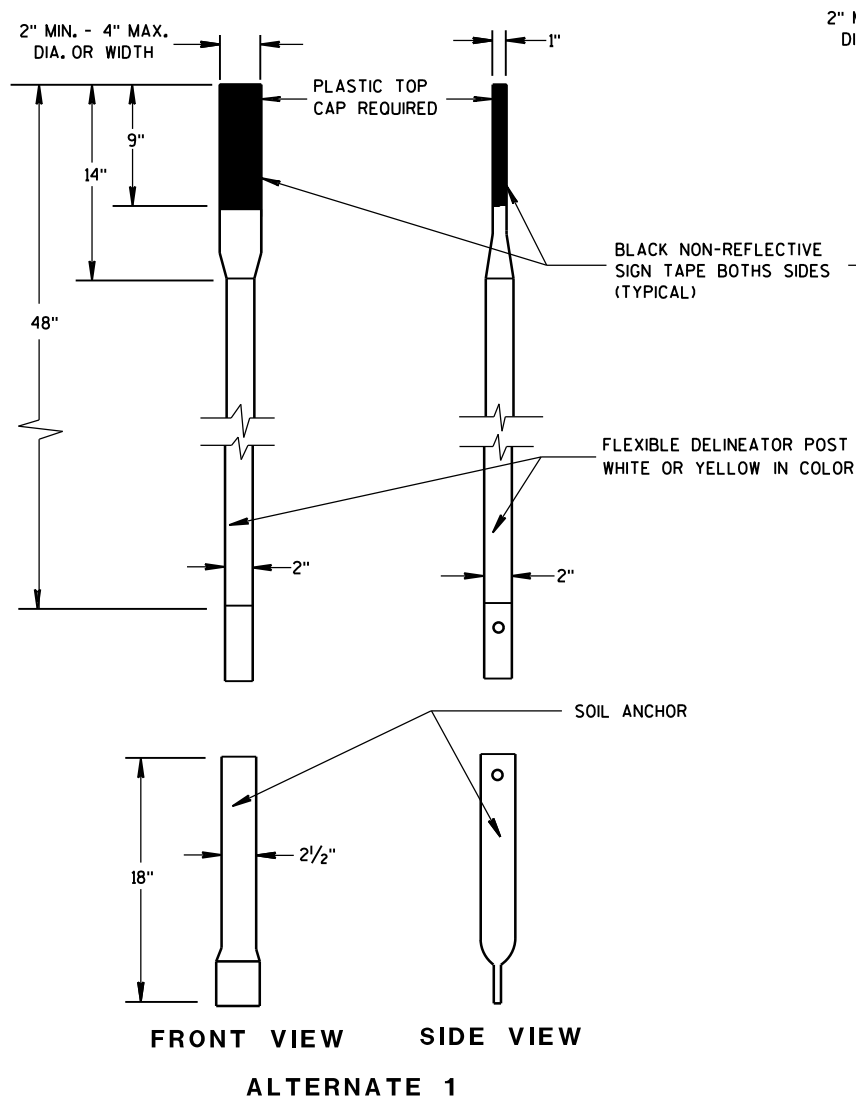
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



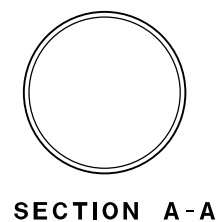
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

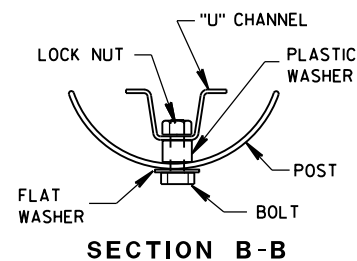
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



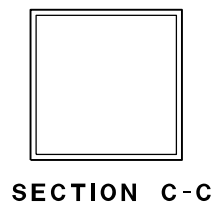
FLEXIBLE MARKER POSTS



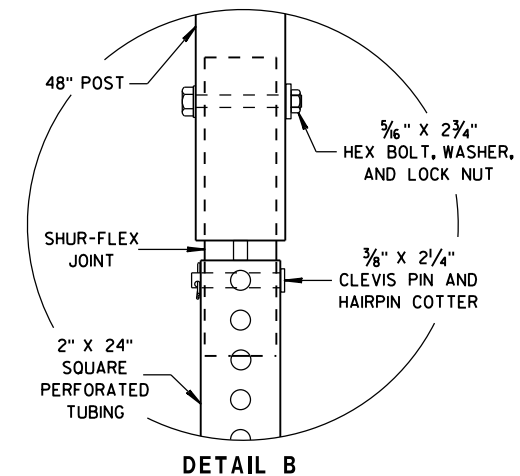
SECTION A-A



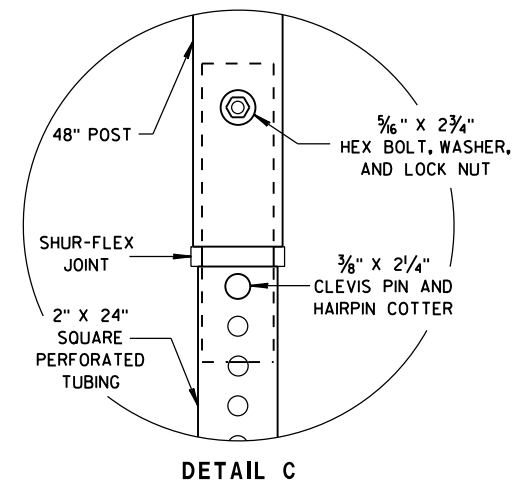
SECTION B-B



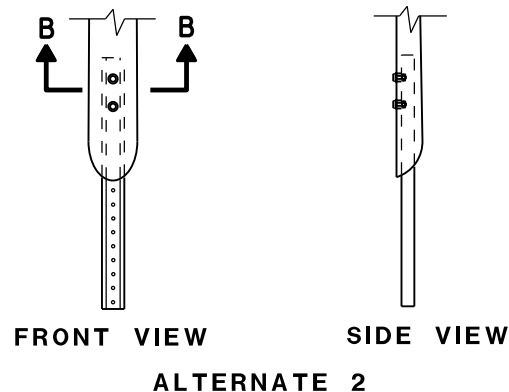
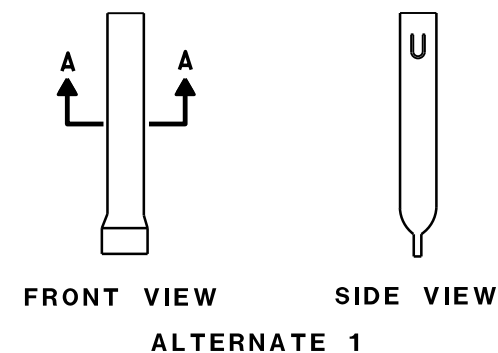
SECTION C-C



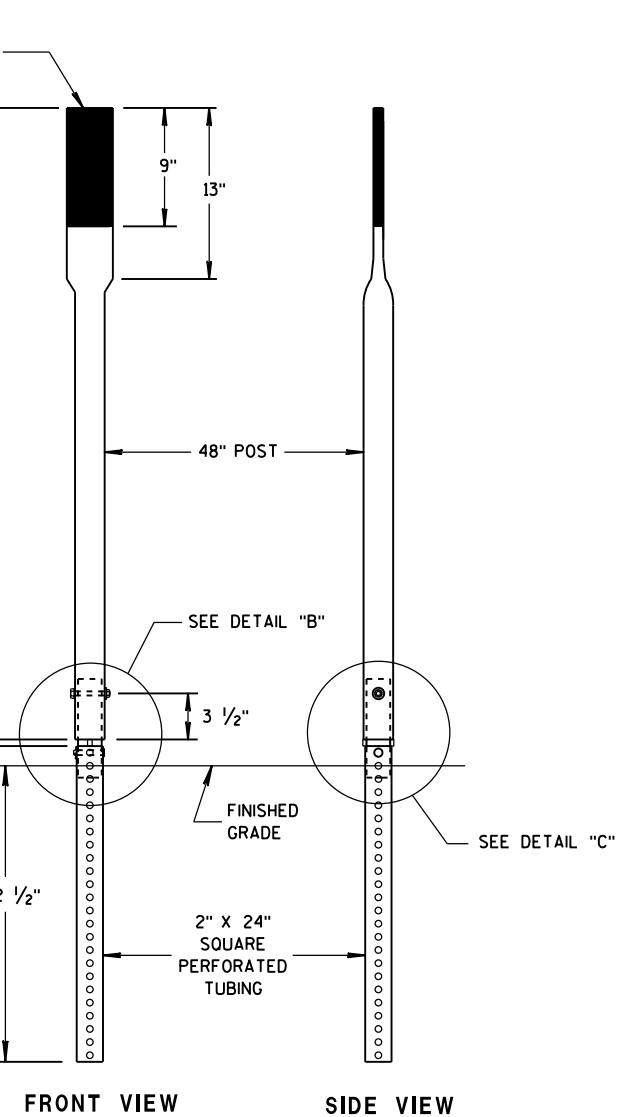
DETAIL B



DETAIL C

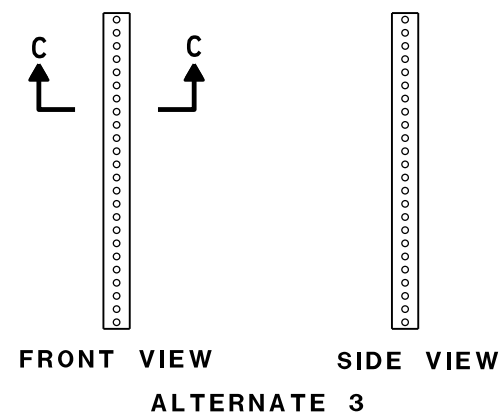


FLEXIBLE MARKER POST ANCHORS



FRONT VIEW SIDE VIEW

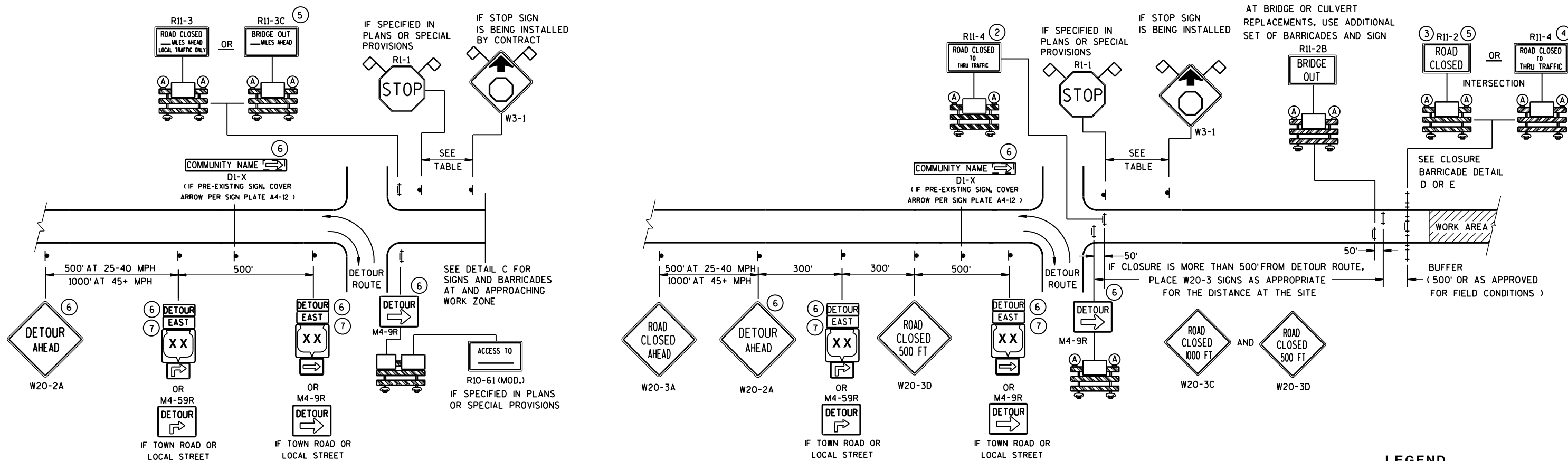
ALTERNATE 3



FRONT VIEW SIDE VIEW

ALTERNATE 3

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 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)

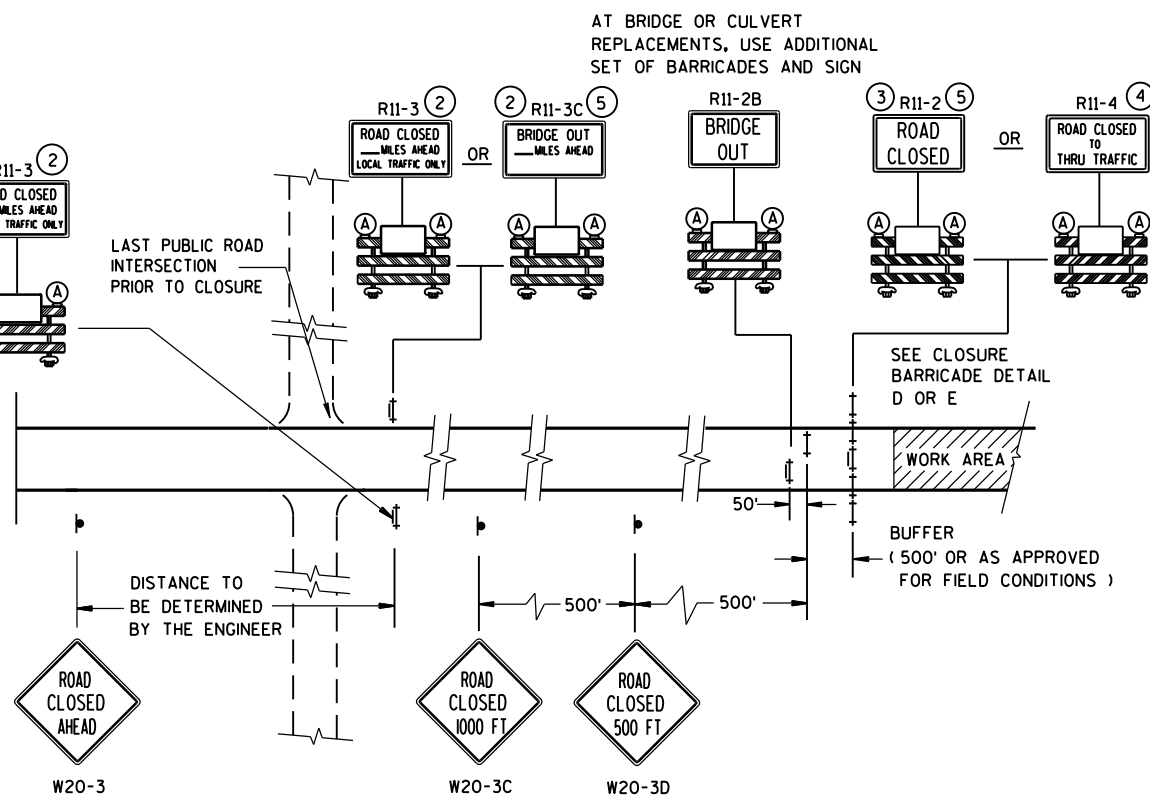
WORK AREA

DETOUR EAST M4-8
M3-X
XX OR COUNTY XX OR XX
M1-4 M1-5A M1-6

M05-1 OR M06-1

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



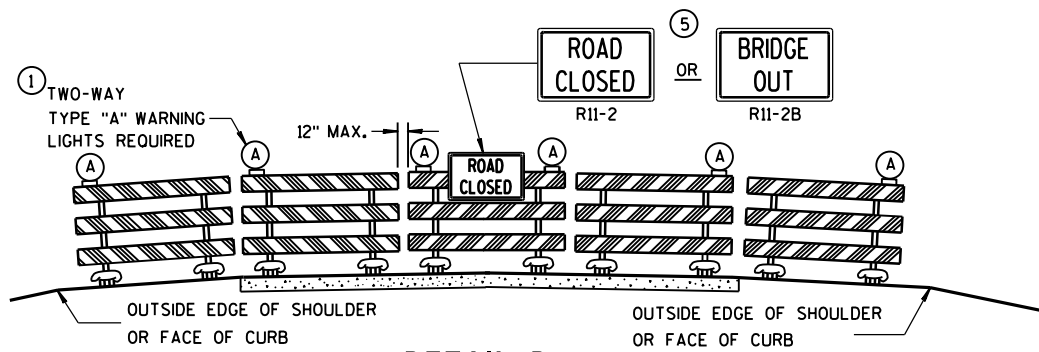
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

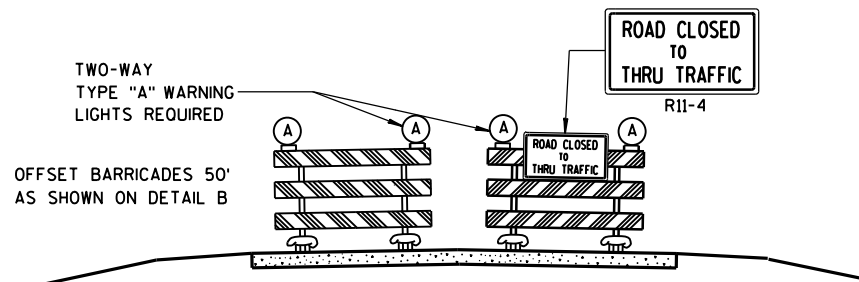
**BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE 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, 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". (30" X 15" 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.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

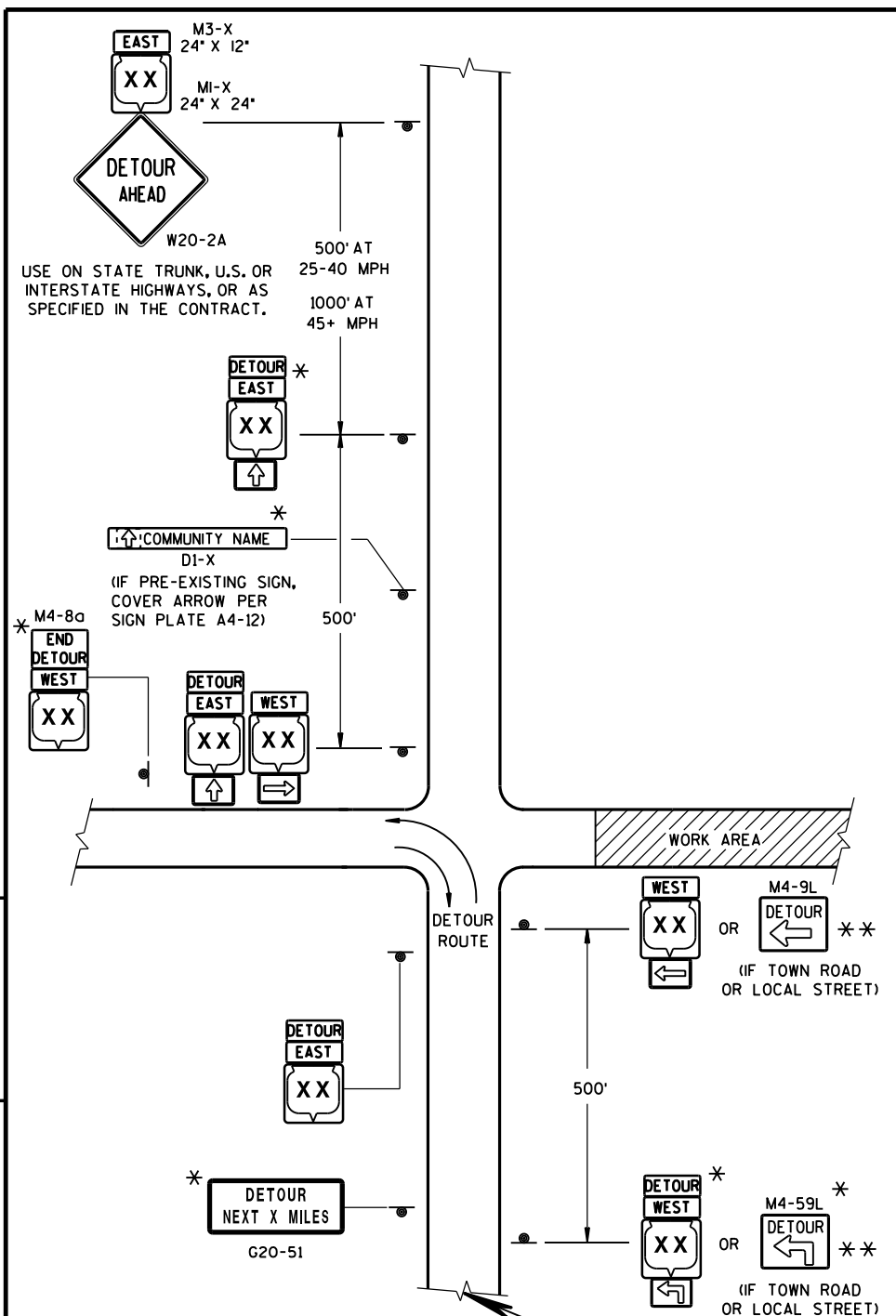
R1-1 SHALL BE 36" X 36".

- 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 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 LANE 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 MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



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

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.

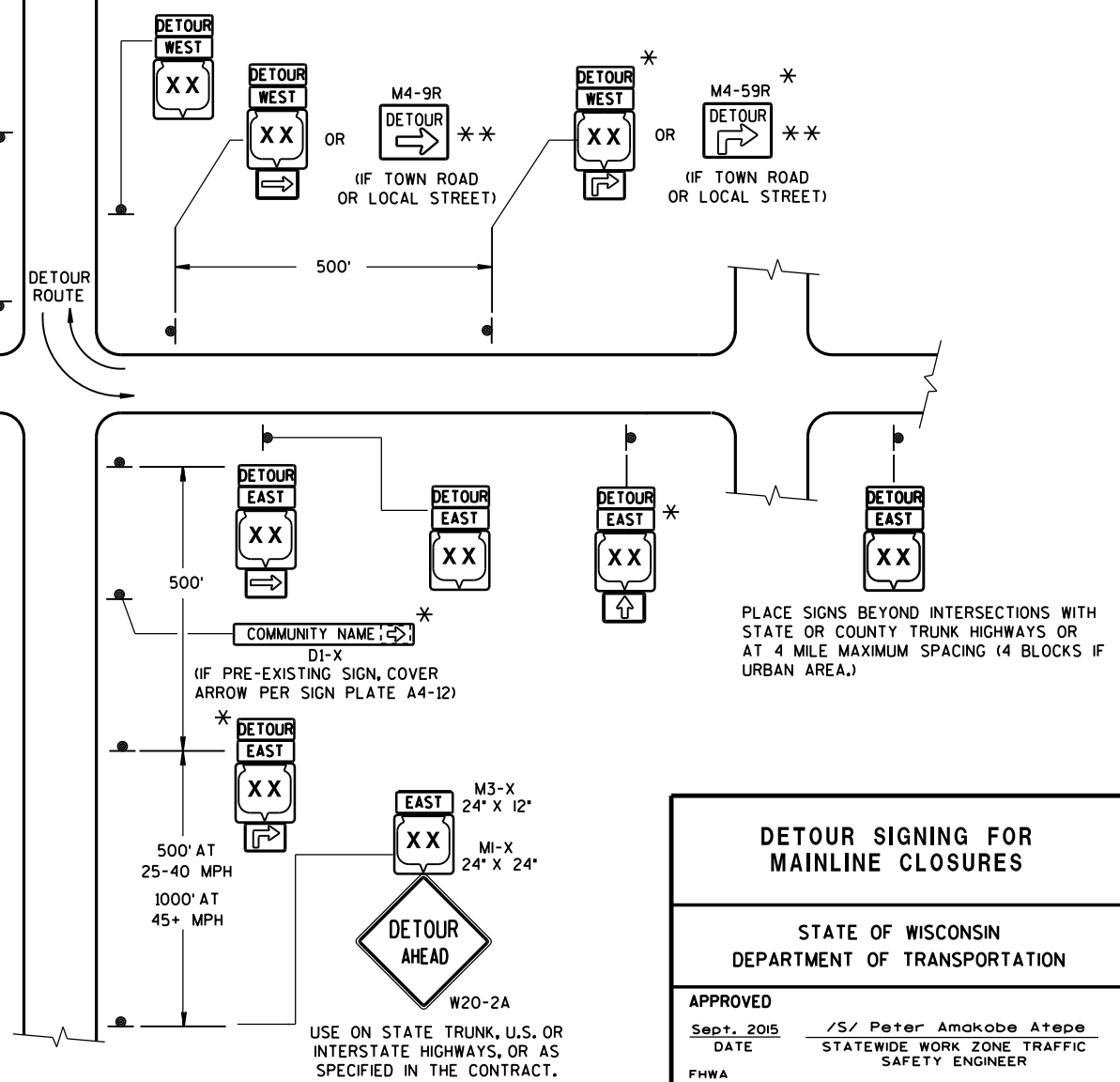
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

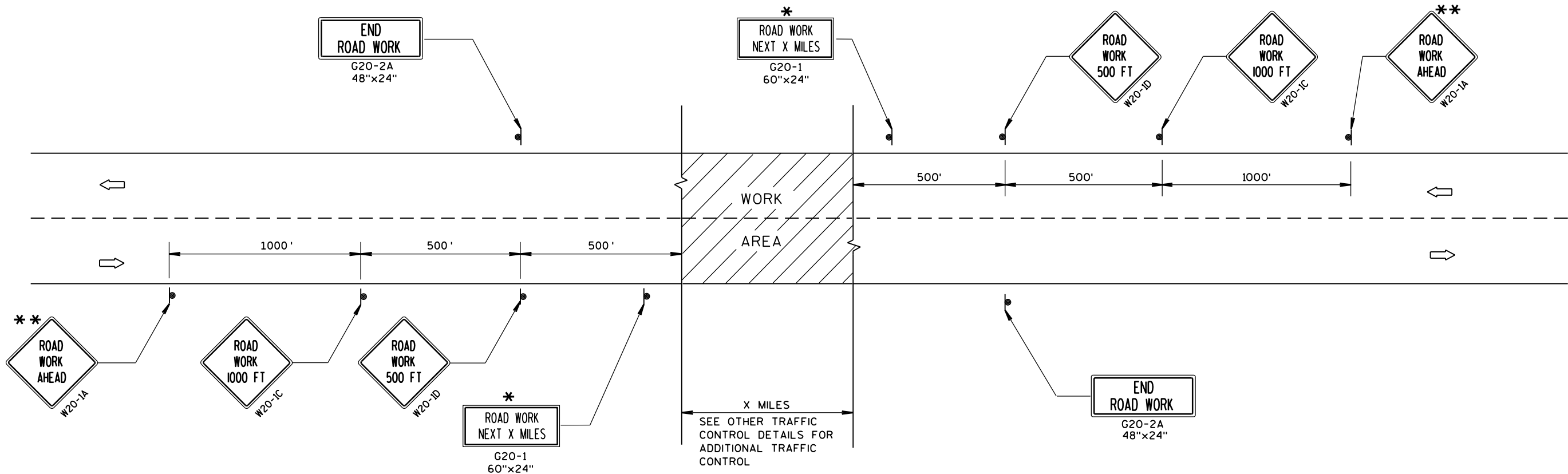
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 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.



DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

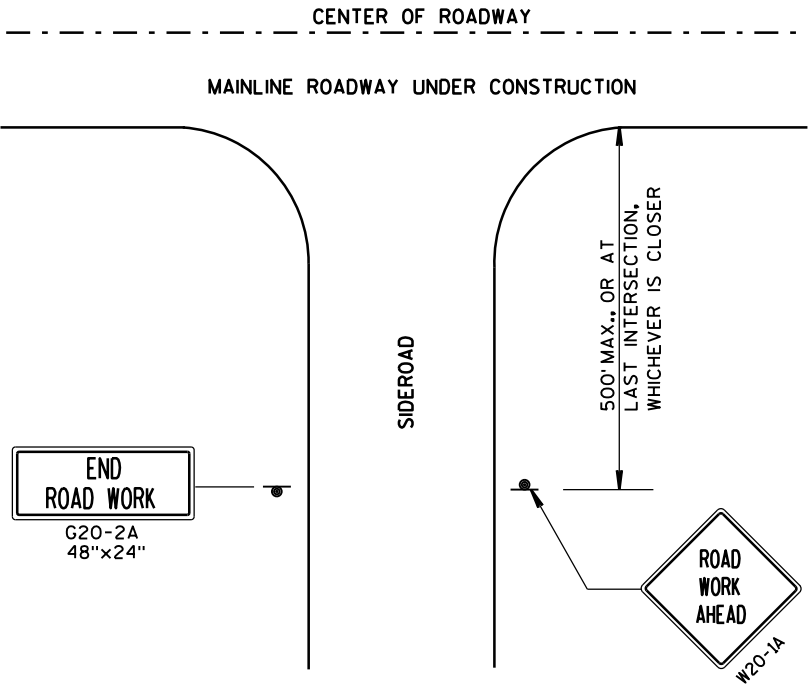
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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



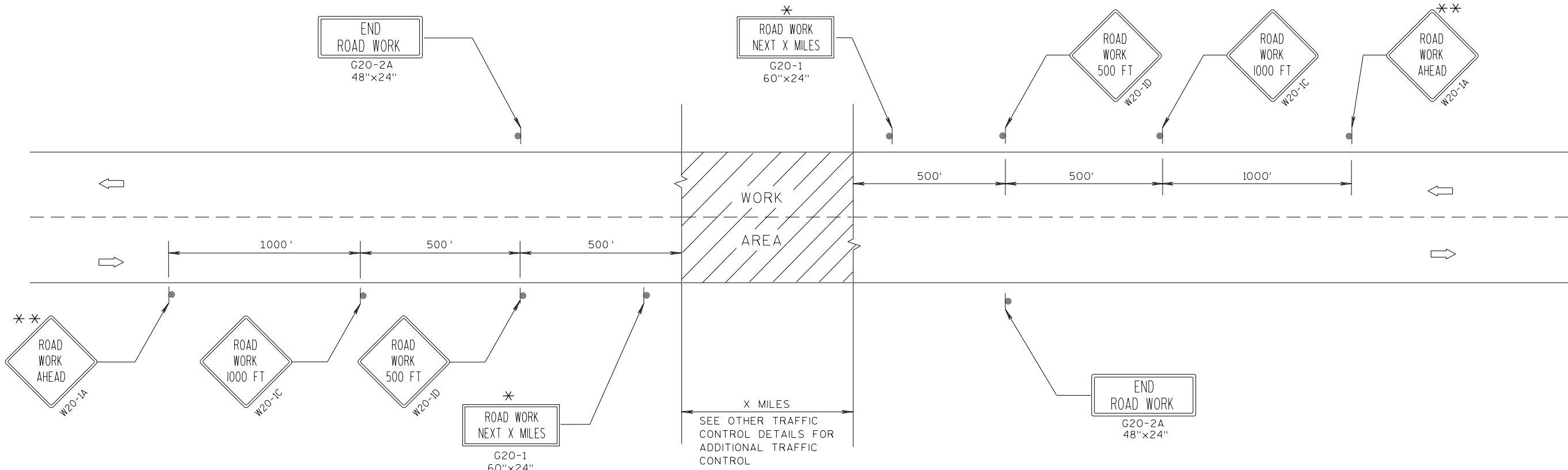
LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

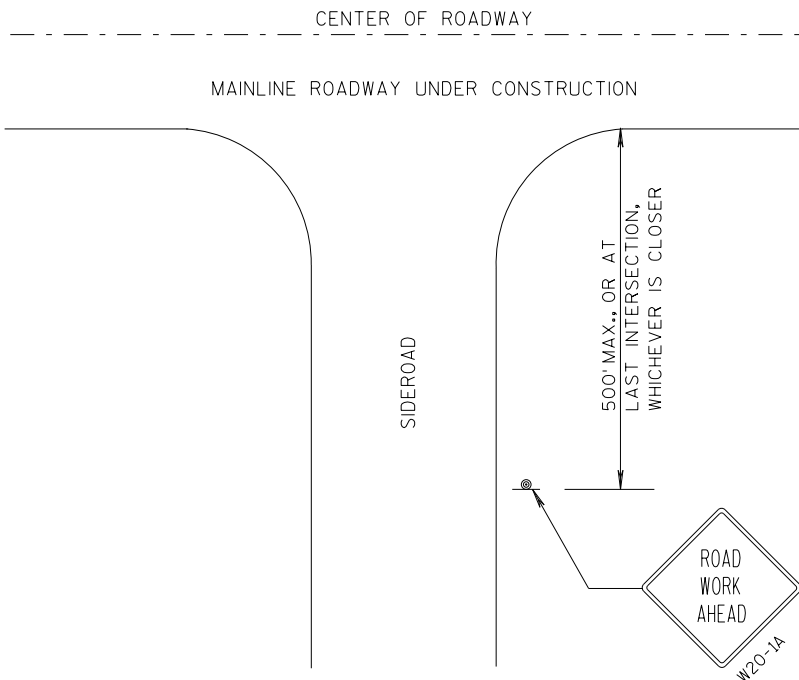
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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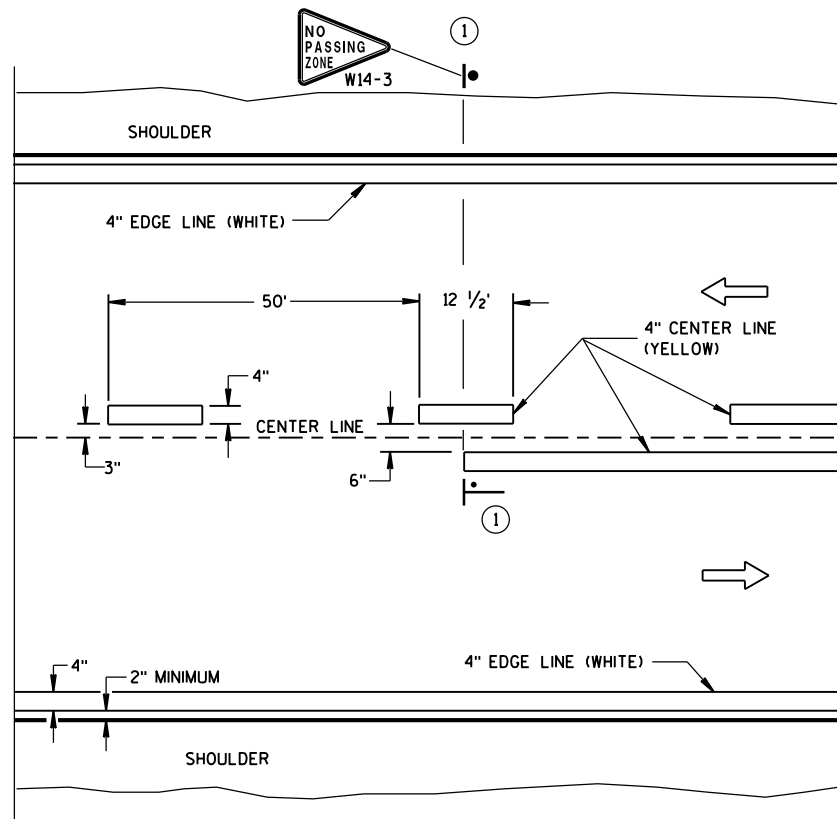
LEGEND

- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

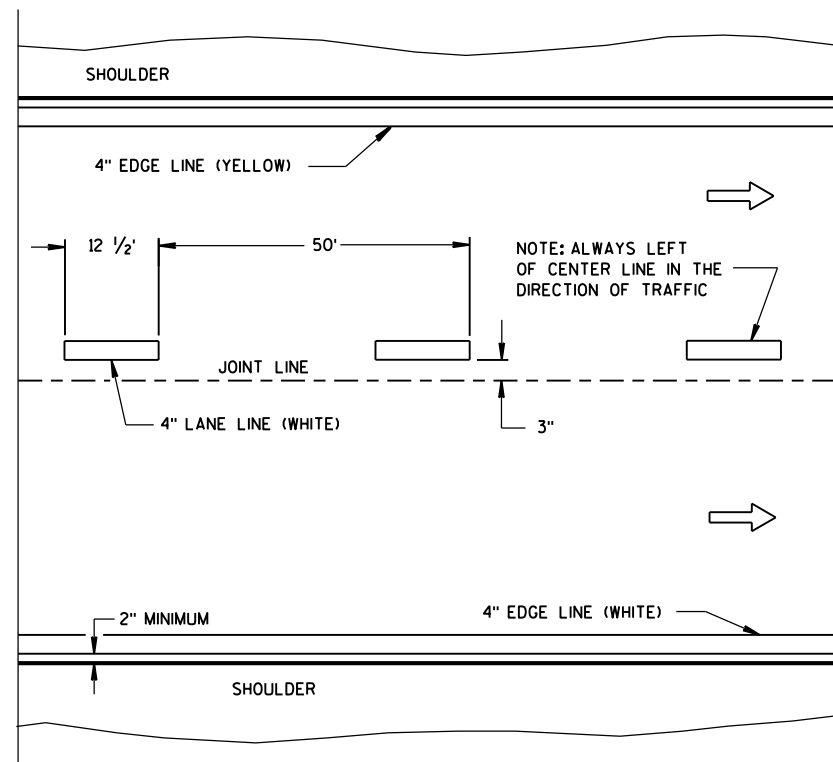
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

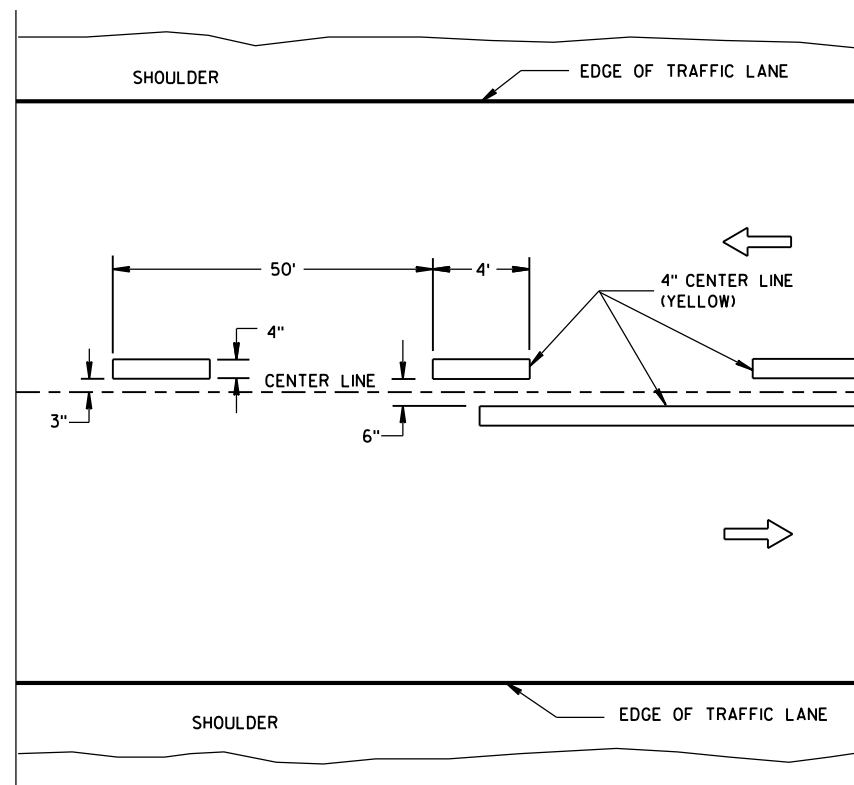


TWO WAY TRAFFIC

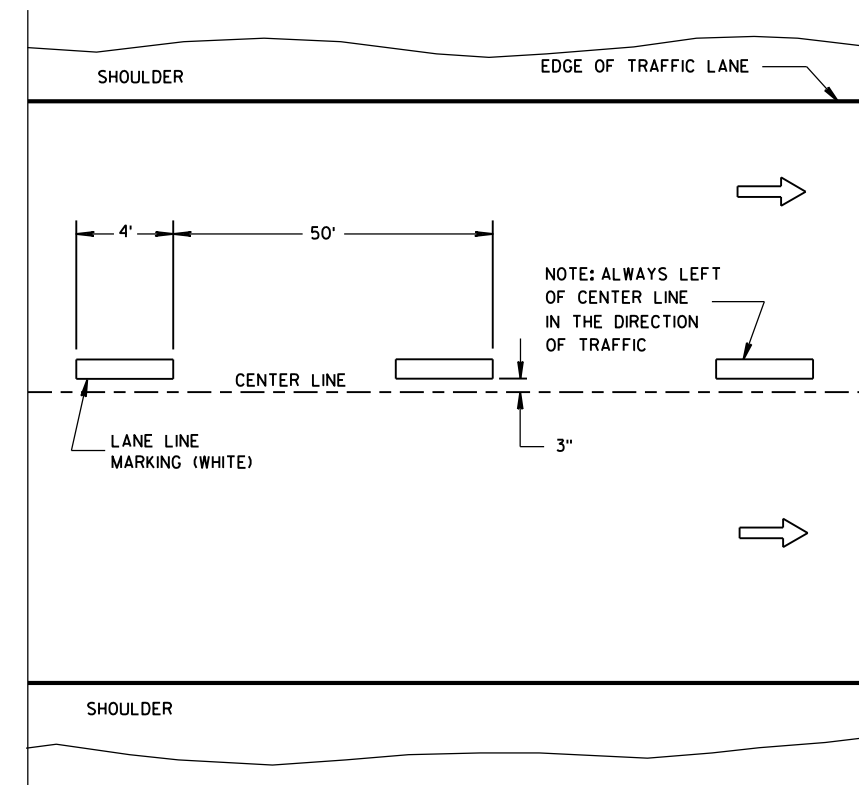


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

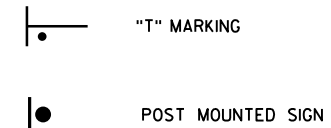
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

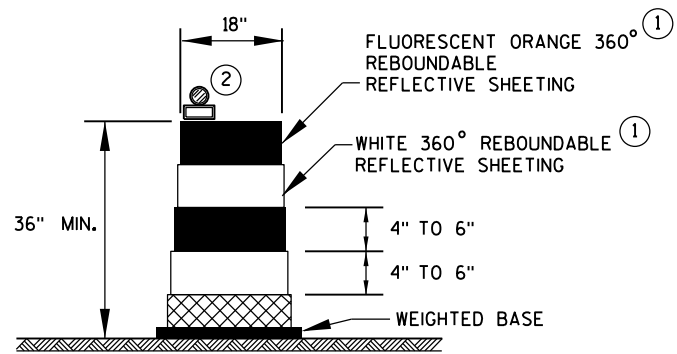
NOTE

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL

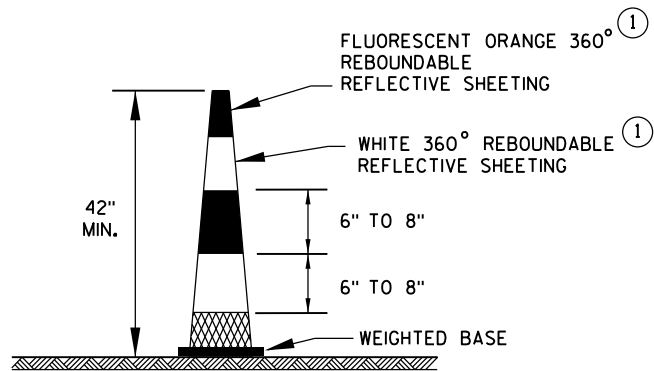
LEGEND



LONGITUDINAL MARKING (MAINLINE)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017	/s/ Matthew R. Rauch
DATE	STATE SIGNING AND MARKING ENGINEER
FHWA	



DRUM

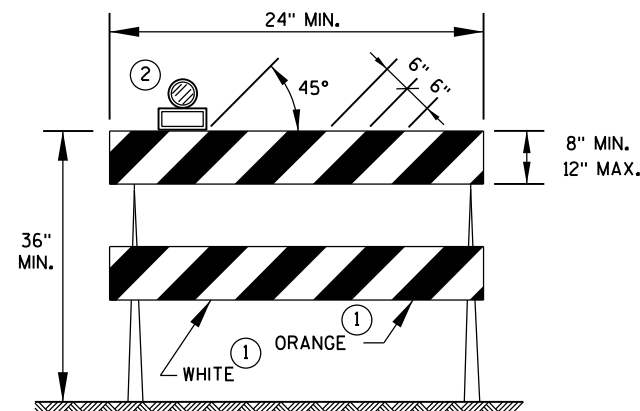


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

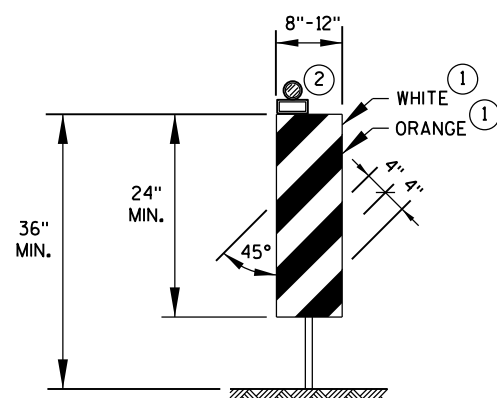
GENERAL NOTES

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



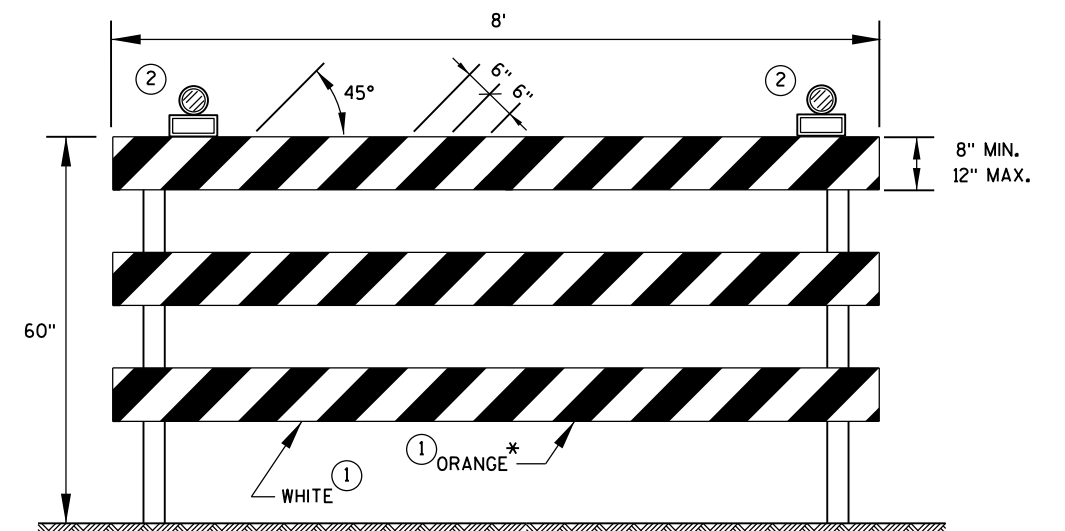
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 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

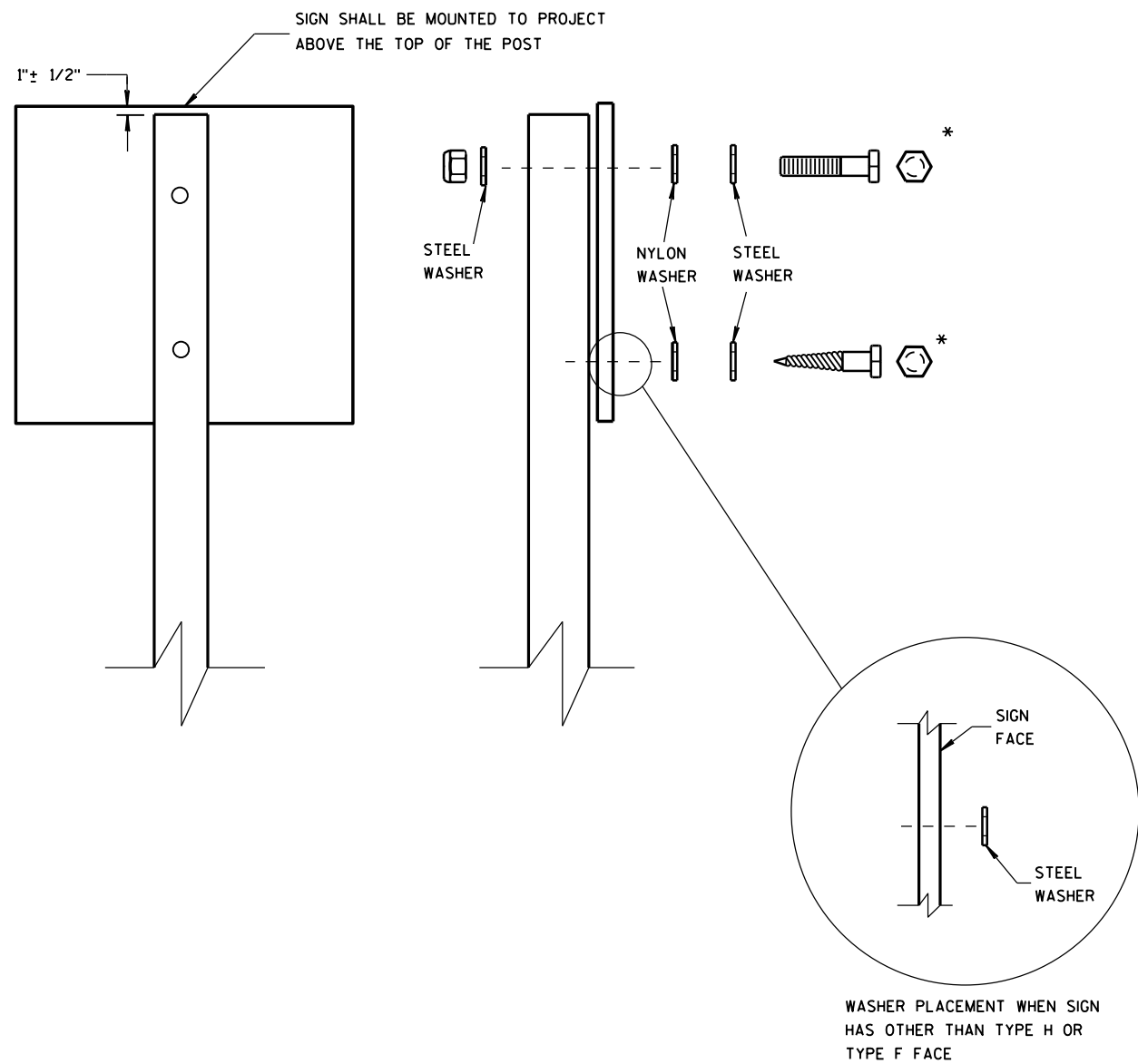
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

FHWA

/S/ Andrew Heidtke
WORK ZONE ENGINEER



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.

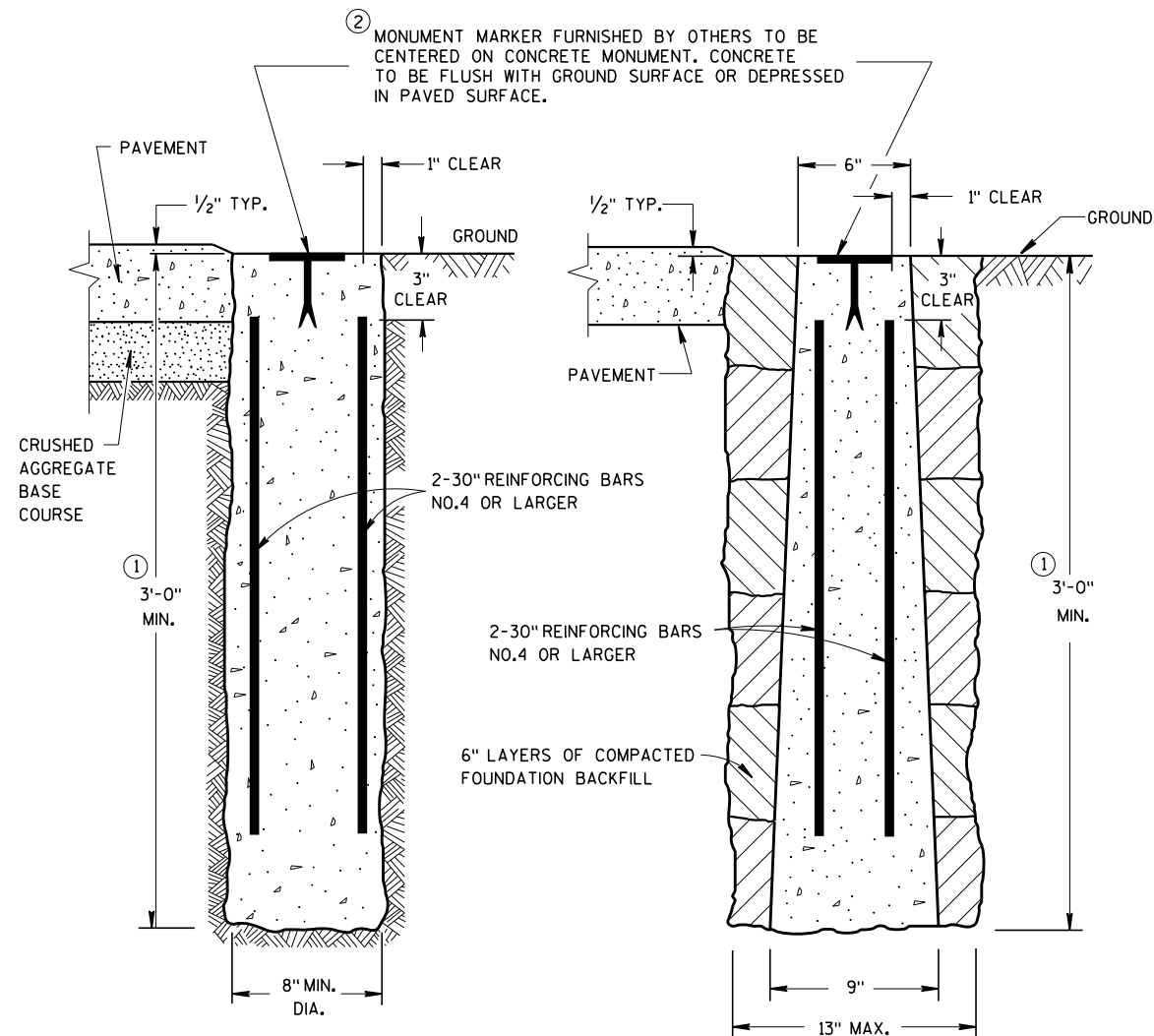
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - 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 FOR ALL TYPE H SIGNS

* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heldtke WORK ZONE ENGINEER
FHWA	

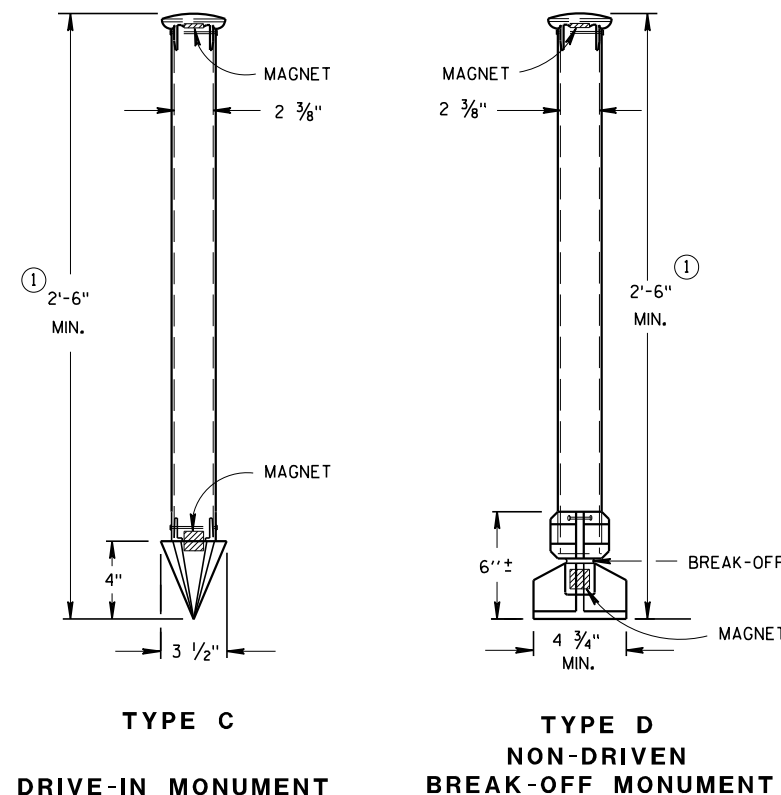


CAST-IN-PLACE

PRECAST

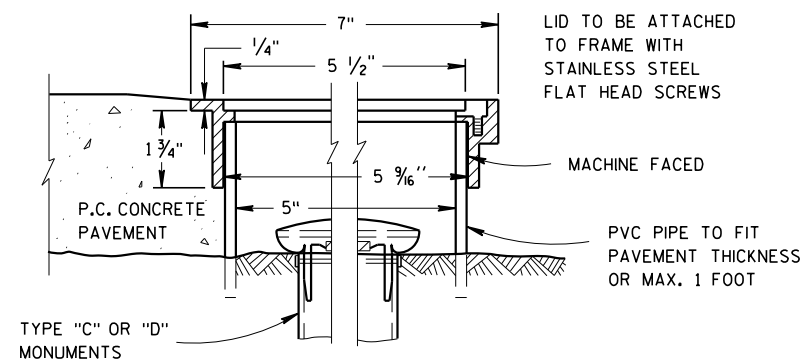
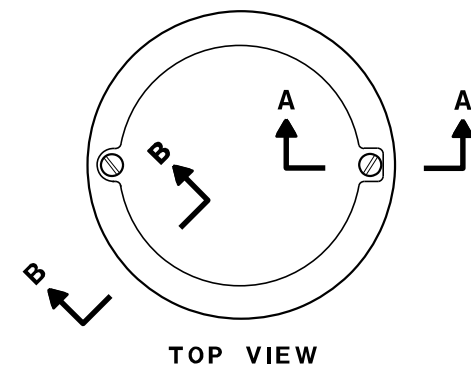
CONCRETE MONUMENTS

TYPE A



ALUMINUM MONUMENTS

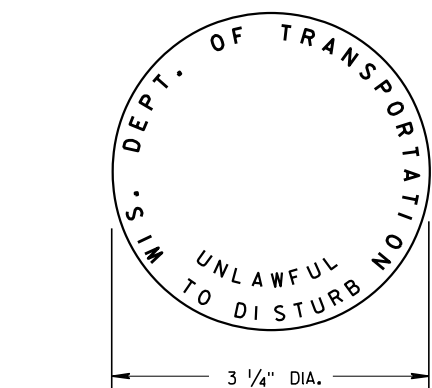
(INCLUDES MARKER)



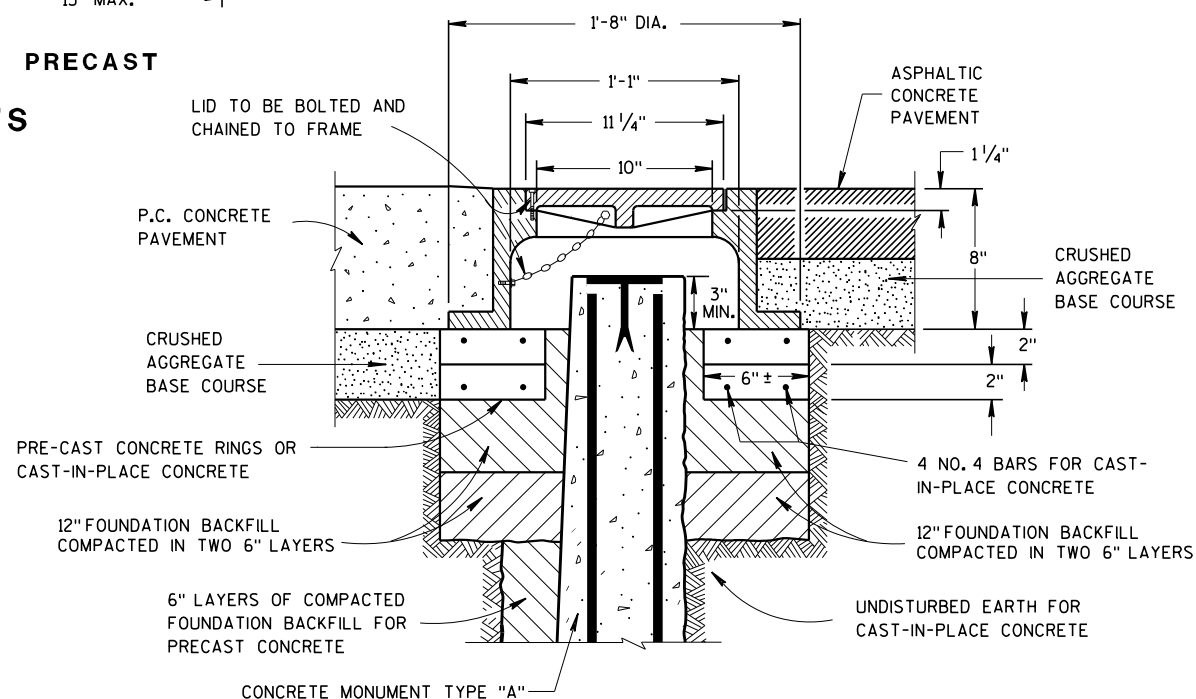
SECTION B-B

SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)

② WIS DOT MONUMENT MARKER LOGO
FOR TYPES "A", "C", & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT 95 LBS)

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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

PERMANENT MAGNETS SHALL BE INSERTED NEAR THE TOP AND BOTTOM OF ALL ALUMINUM MONUMENTS SO THE MONUMENT CAN EASILY BE DETECTED BY A METAL DETECTOR.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER

- ① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.

LANDMARK REFERENCE
MONUMENTS AND COVERSSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Raymond A. Kumapayi
DATE CHIEF SURVEYING AND MAPPING ENGINEER
FHWA

B.M.#3	LOCATION	Y	X	DESCRIPTION	ELEV.
135+13.95	19.36' LT	129,173.87	663,829.50	1" X 1" SURVEY MARKER	844.36

JAMES G.P. RESHEL
ROSE ANN RESHEL

JOHN SIMPSON
BONNIE SIMPSON

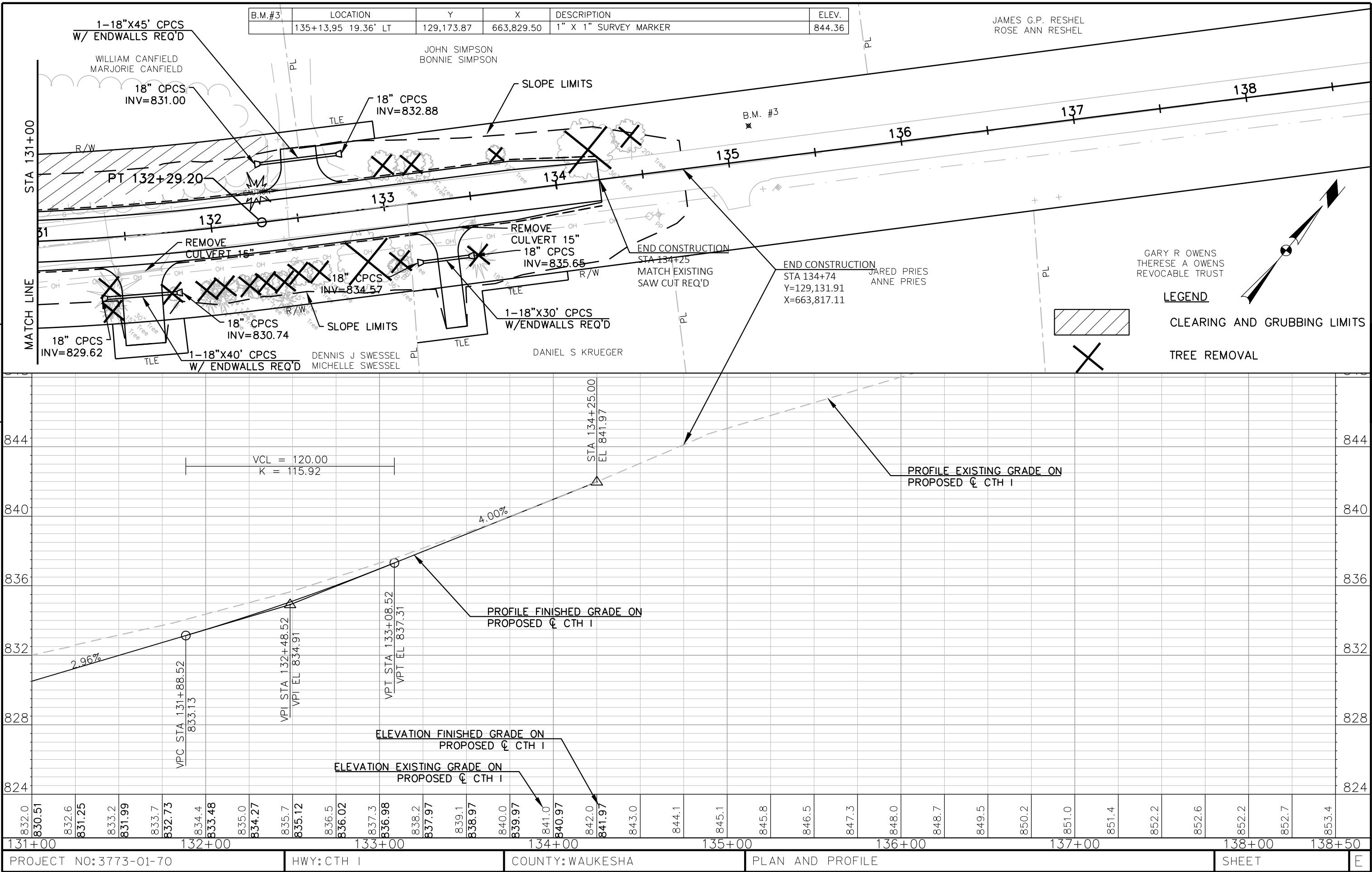
GARY R OWENS
THERESE A OWENS
REVOCABLE TRUST

JARED PRIES
ANNE PRIES

DENNIS J SWESSEL
MICHELLE SWESSEL

DANIEL S KRUEGER

LEGEND
CLEARING AND GRUBBING LIMITS
TREE REMOVAL



PROJECT NO: 3773-01-70

HWY: CTH I

COUNTY: WAUKESHA

PLAN AND PROFILE

SHEET

E



1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
 - Background - YELLOW-GREEN
 - Message - BLACK except as noted
 - Circles except PEDS- RED BACKGROUND
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



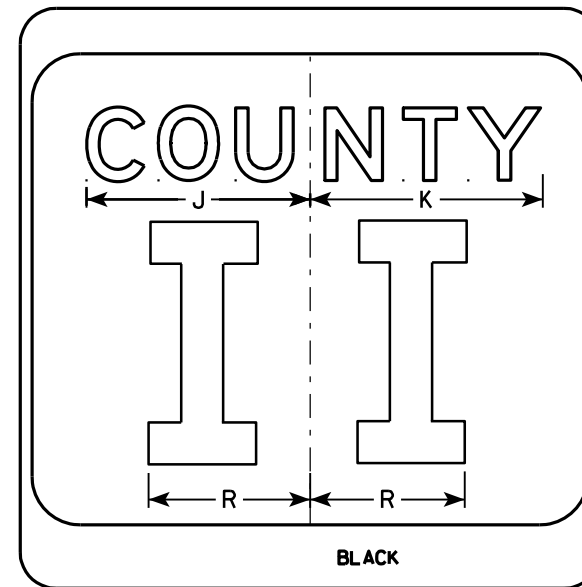
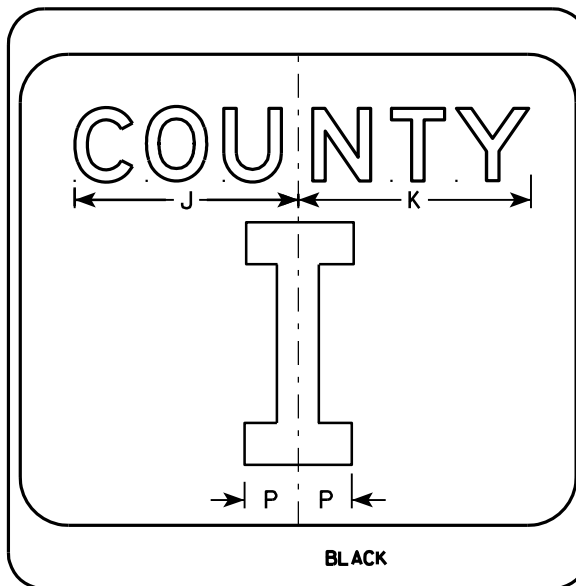
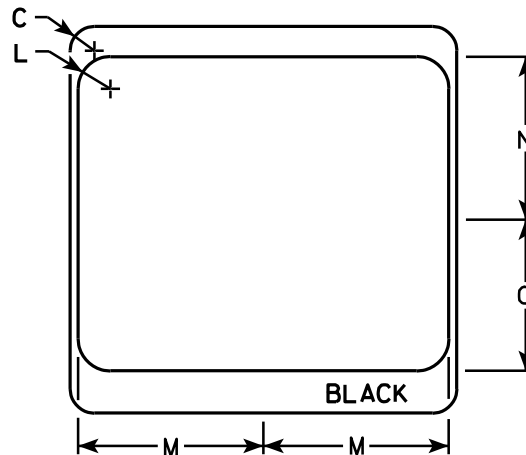
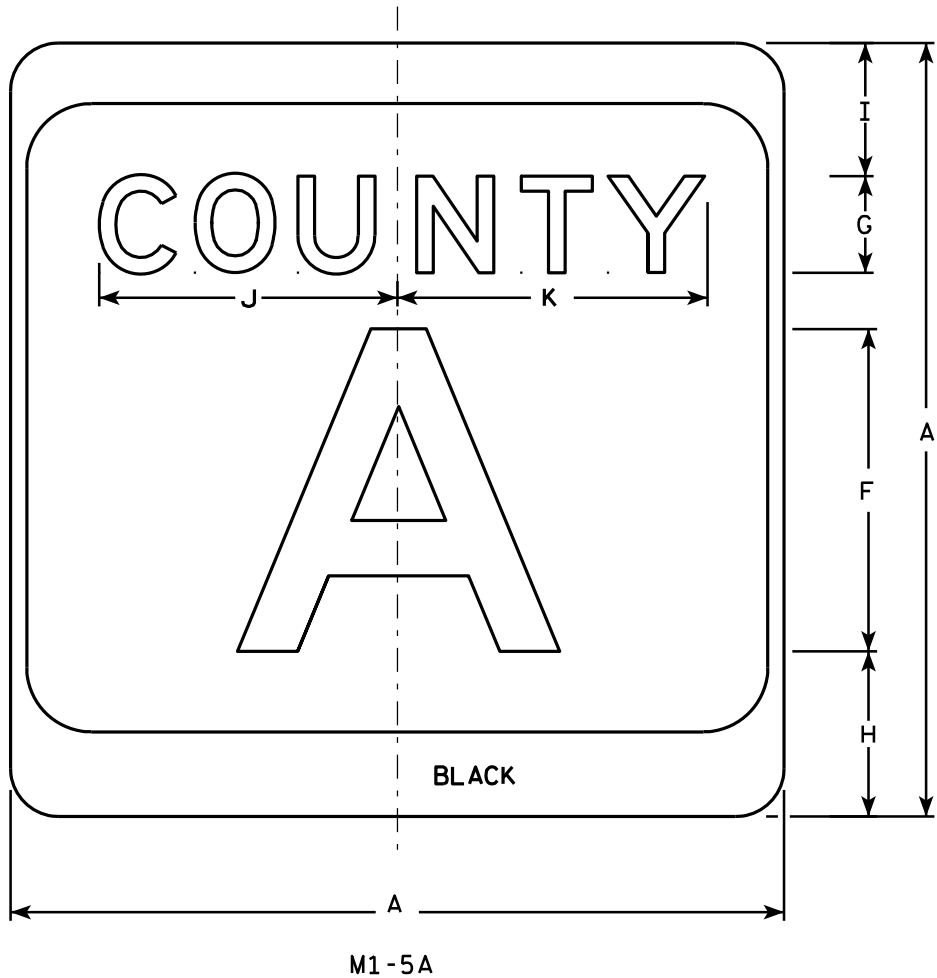
PROJECT NO:				SHEET NO:	E
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WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
for State Traffic Engineer

DATE 6/8/10 PLATE NO. S3-16

7



NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
Message - Black
3. Message Series - see Note 5
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. 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.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

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
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

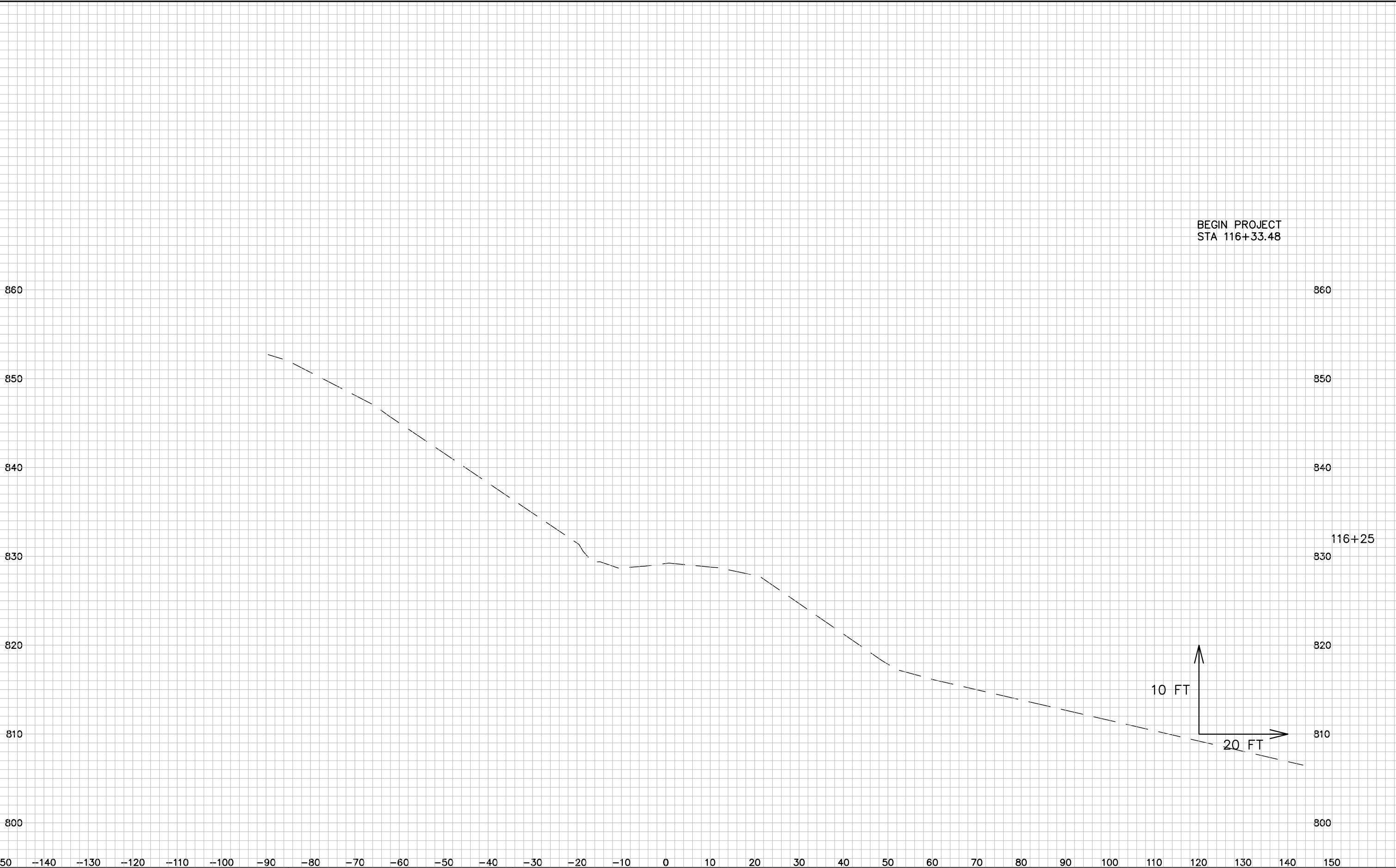
CTH MARKER	
M1-5A FOR ASSEMBLIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/27/11	PLATE NO. M1-5A.8

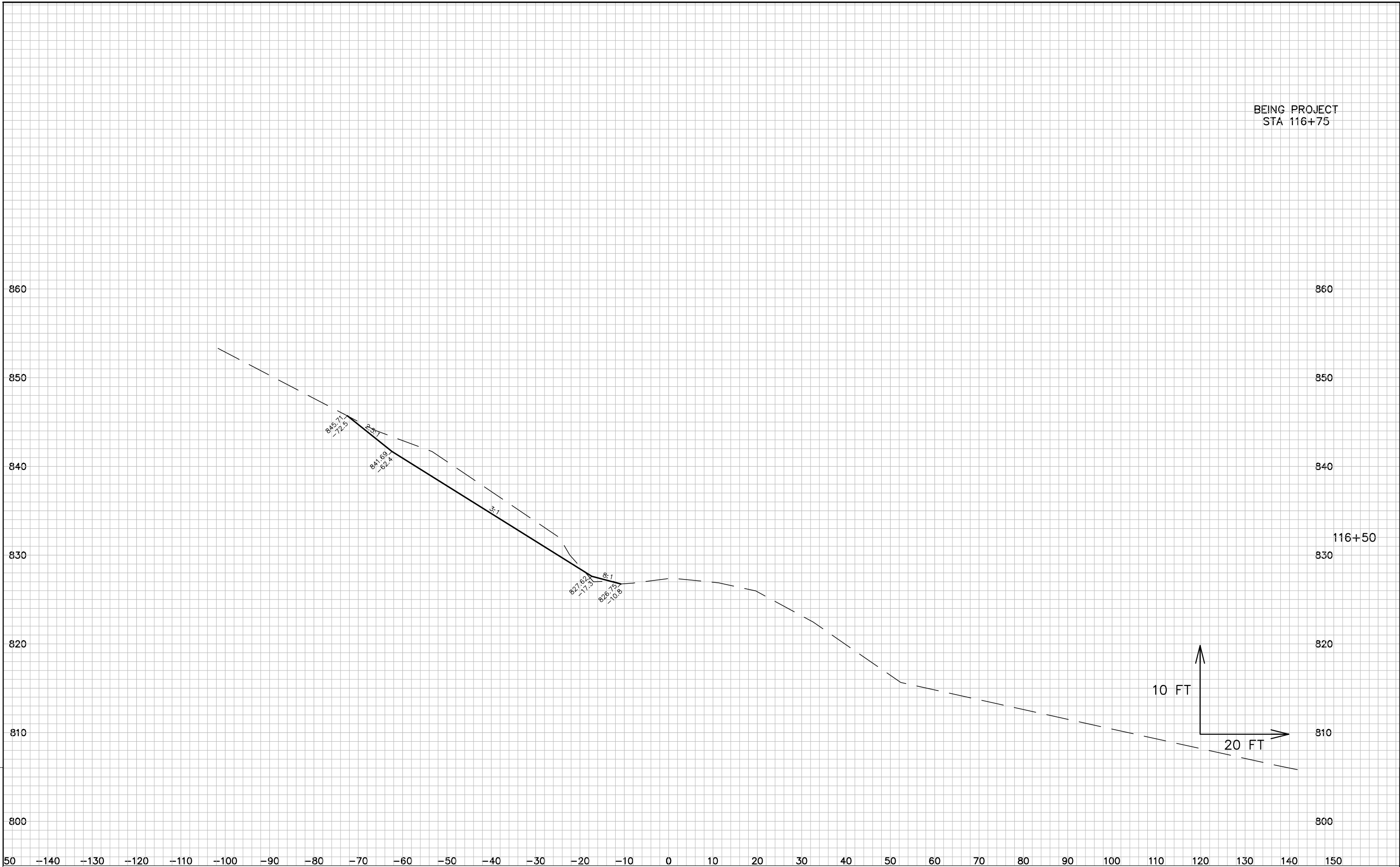
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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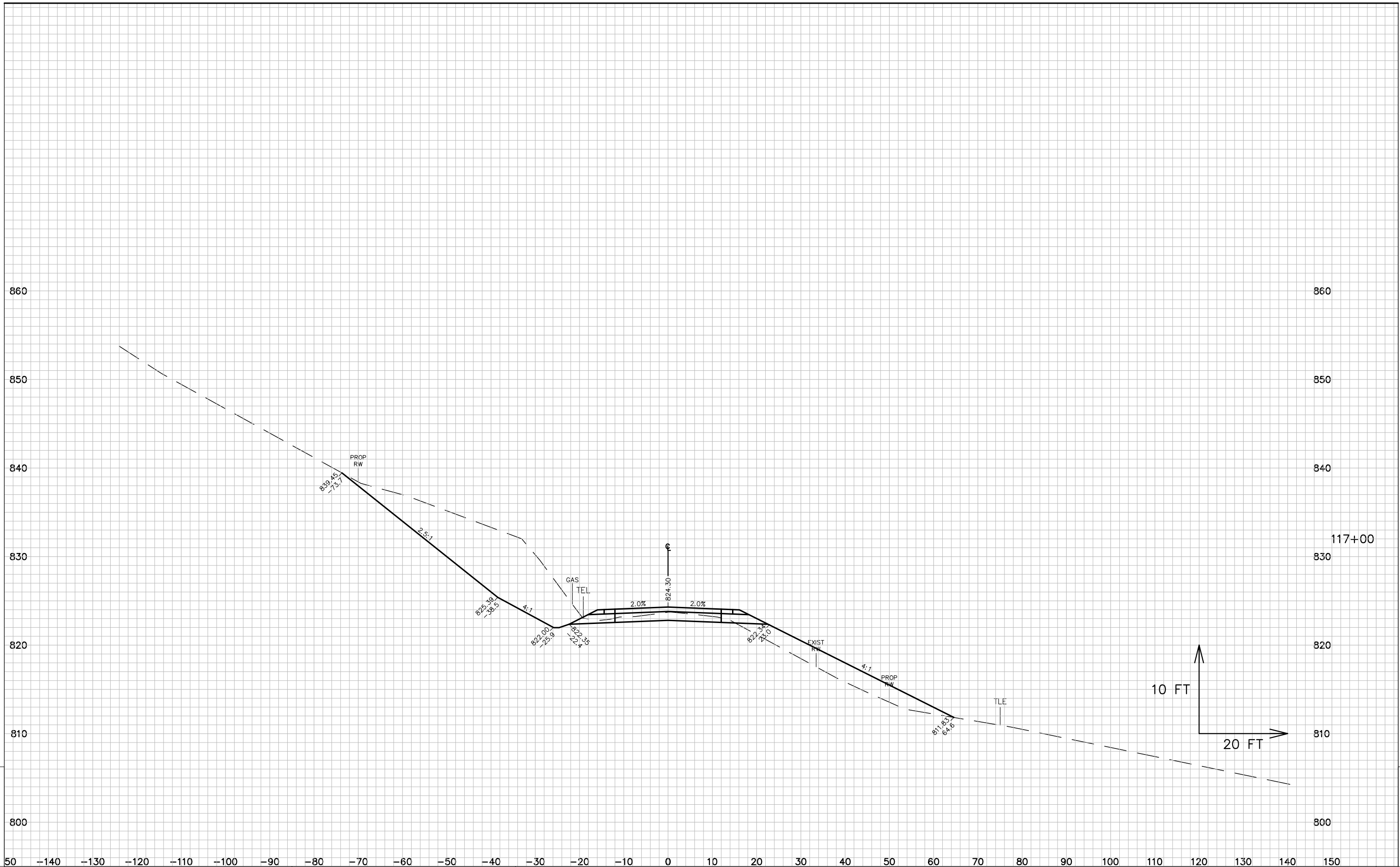
7

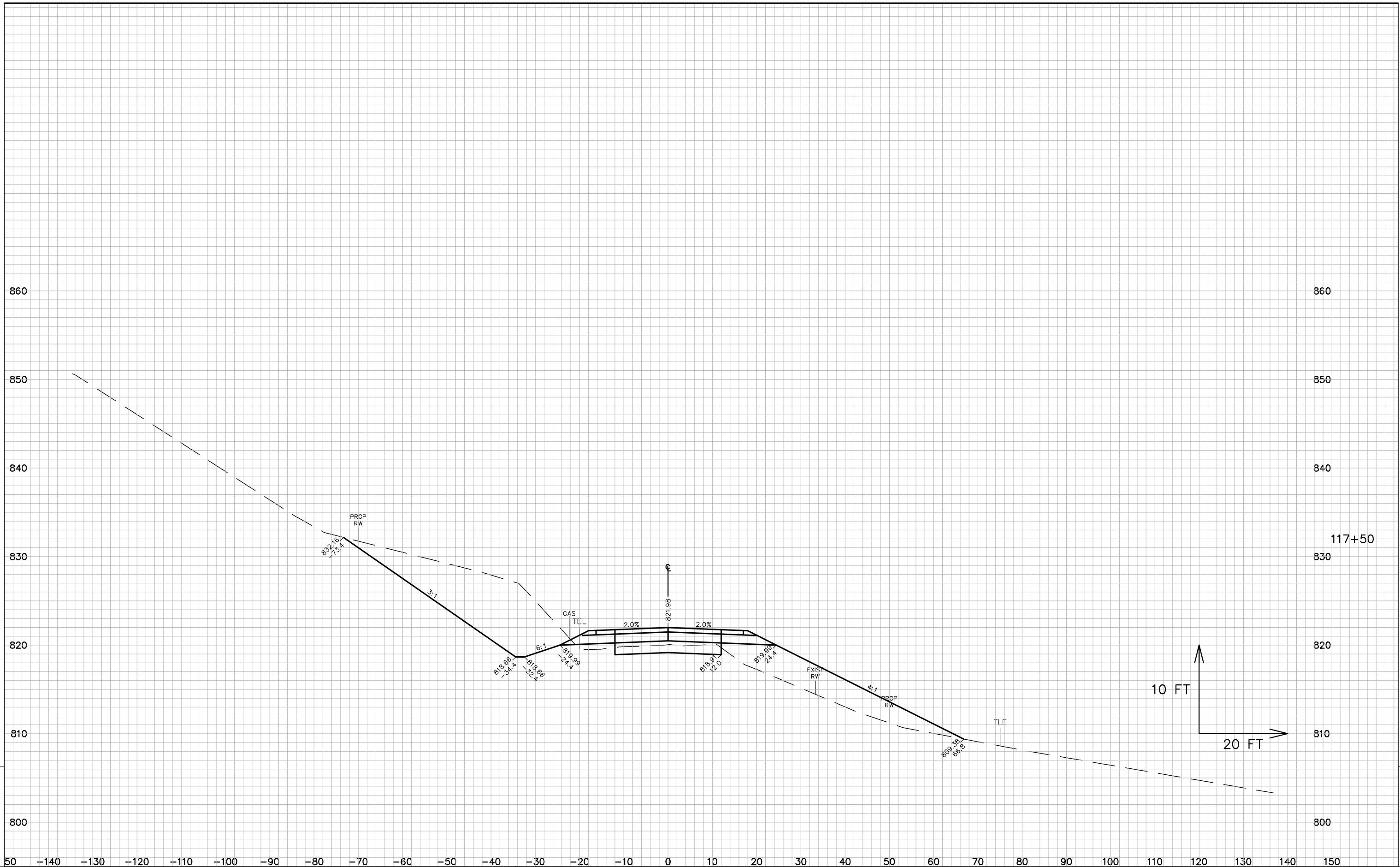
EARTHWORK TABLE FOR CTH I 3773-01-70																							
STATION	Real Station	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)								Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Expanded Marsh		Expanded EBS		Reduced Marsh	Reduced EBS			
															1.00	1.25	1.50	1.10	1.30	0.60	0.80		
Note 1	Note 2	Note 3	Note 1	Note 2	Note 3	Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	Note 8										
116+50	11650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	
117+00	11700	50	331	0	98	0	0	0	612	0	181	0	0	0	612	226	0	0	0	0	0	315	
117+50	11750	50	216	0	136	0	0	0	506	0	217	0	0	0	1118	497	0	0	0	0	0	-15	
118+00	11800	50	135	0	157	0	0	0	325	0	271	0	0	0	1443	836	0	0	0	0	0	-204	
118+50	11850	50	86	0	184	0	0	0	205	0	316	0	0	0	1648	1231	0	0	0	0	0	-587	
119+00	11900	50	62	0	265	0	0	0	138	0	416	0	0	0	1853	1751	0	0	0	0	0	-1199	
119+50	11950	50	26	0	334	0	0	0	81	0	555	0	0	0	1934	2445	0	0	0	0	0	-1989	
120+00	12000	50	20	0	385	0	0	0	42	0	666	0	0	0	1977	3277	0	0	0	0	0	-2820	
120+50	12050	50	15	0	361	0	0	0	33	0	691	0	0	0	2010	4141	0	0	0	0	0	-3615	
121+00	12100	50	13	0	349	0	0	0	26	0	657	0	0	0	2036	4962	0	0	0	0	0	-4271	
121+50	12150	50	11	0	236	0	0	0	22	0	542	0	0	0	2057	5640	0	0	0	0	0	-4807	
122+00	12200	50	8	0	242	0	0	0	18	0	443	0	0	0	2075	6194	0	0	0	0	0	-5222	
122+50	12250	50	19	0	138	0	0	0	25	0	352	0	0	0	2100	6634	0	0	0	0	0	-5454	
123+00	12300	50	47	0	114	0	0	0	61	0	234	0	0	0	2161	6926	0	0	0	0	0	-5543	
123+50	12350	50	103	0	82	0	0	0	139	0	182	0	0	0	2300	7154	0	0	0	0	0	-5526	
124+00	12400	50	99	0	65	0	0	0	187	0	136	0	0	0	2487	7324	0	0	0	0	0	-5119	
124+50	12450	50	422	0	0	0	0	0	743	0	60	0	0	0	3230	7400	0	0	0	0	0	-4154	
125+00	12500	50	619	0	0	0	0	0	964	0	0	0	0	0	4195	7400	0	0	0	0	0	-3117	
125+50	12550	50	501	0	0	0	0	0	1038	0	0	0	0	0	5232	7400	0	0	0	0	0	-1749	
126+00	12600	50	976	0	0	0	0	0	1368	0	0	0	0	0	6600	7400	0	0	0	0	0	6	
126+50	12650	50	919	0	0	0	0	0	1755	0	0	0	0	0	8354	7400	0	0	0	0	0	1890	
127+00	12700	50	1116	0	0	0	0	0	1885	0	0	0	0	0	10239	7400	0	0	0	0	0	3645	
127+50	12750	50	779	0	0	0	0	0	1755	0	0	0	0	0	11994	7400	0	0	0	0	0	4842	
128+00	12800	50	514	0	0	0	0	0	1197	0	0	0	0	0	13191	7400	0	0	0	0	0	5743	
128+50	12850	50	458	0	0	0	0	0	901	0	0	0	0	0	14092	7400	0	0	0	0	0	6572	
129+00	12900	50	437	0	0	0	0	0	829	0	0	0	0	0	14920	7400	0	0	0	0	0	7297	
129+50	12950	50	346	0	0	0	0	0	725	0	0	0	0	0	15645	7400	0	0	0	0	0	7830	
130+00	13000	50	230	0	0	0	0	0	248	0	0	0	0	0	15893	7400	0	0	0	0	0	8189	
130+50	13050	50	157	0	0	0	0	0	359	0	0	0	0	0	16252	7400	0	0	0	0	0	-13456	
131+00	13100	50	106	0	4	0	0	0	244	0	4	0	0	0	16496	29289	0	0	0	0	0	-35151	
131+50	13150	50	104	0	0	0	0	0	195	0	4	0	0	0	16690	51179	0	0	0	0	0	-34946	
132+00	13200	50	118	0	0	0	0	0	205	0	0	0	0	0	16895	51179	0	0	0	0	0	-34703	
132+50	13250	50	145	0	0	0	0	0	243	0	0	0	0	0	17139	51179	0	0	0	0	0	-36659	
133+00	13300	50	167	0	0	0	0	0	289	0	0	0	0	0	17428	53424	0	0	0	0	0	-38590	
133+50	13350	50	173	0	0	0	0	0	315	0	0	0	0	0	17743	55669	0	0	0	0	0	-38302	
134+00	13400	50	137	0	0	0	0	0	288	0	0	0	0	0	18030	55669	0	0	0	0	0	-38098	
134+25	13425	25	0	0	0	0	0	0	63	0	0	0	0	0	18094	55670	0	0	0	0	0		
			Column totals						18026	0	5929	0	0	0									

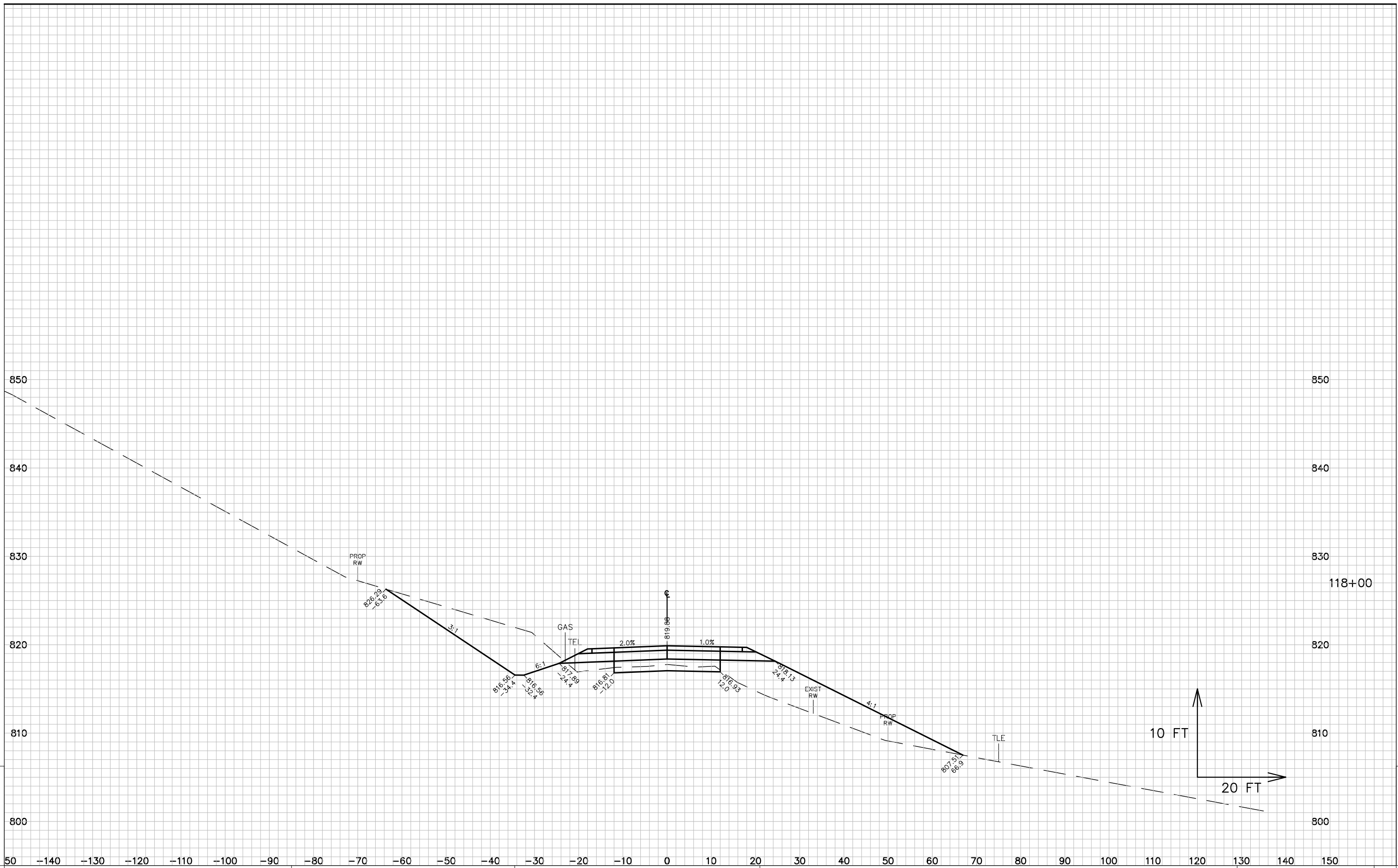
Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow)
5 - Expanded EBS	Will be backfilled with Granular Backfill (or Cut, or Borrow)
6 - Reduced Marsh in Fill	Reduced Marsh Excavation that can be used in Fill
7 - Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
8 - Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) - ((Fill - Reduced Marsh in Fill) - (Reduced EBS in Fill) - Expanded Rock) * Fill Factor)]

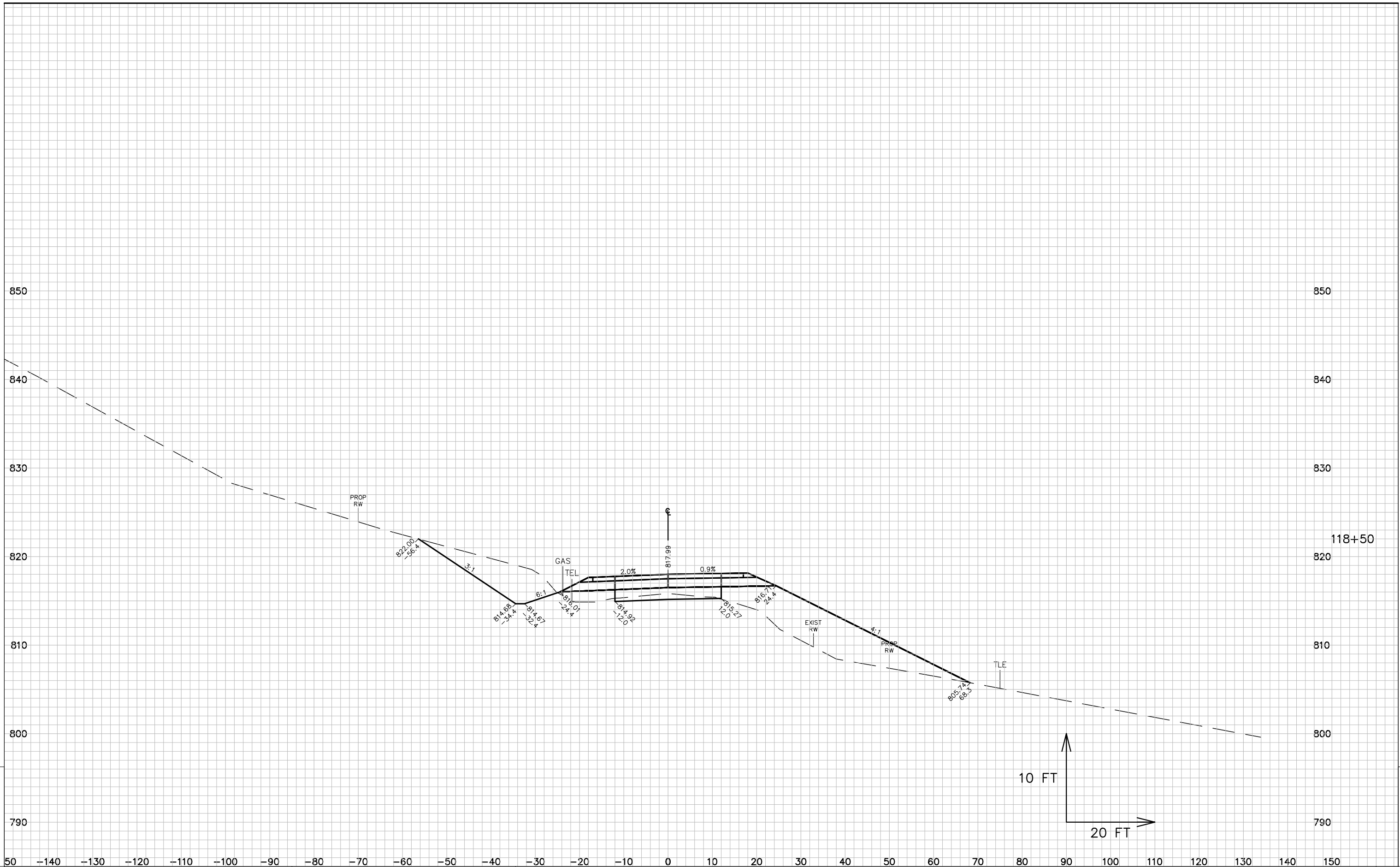


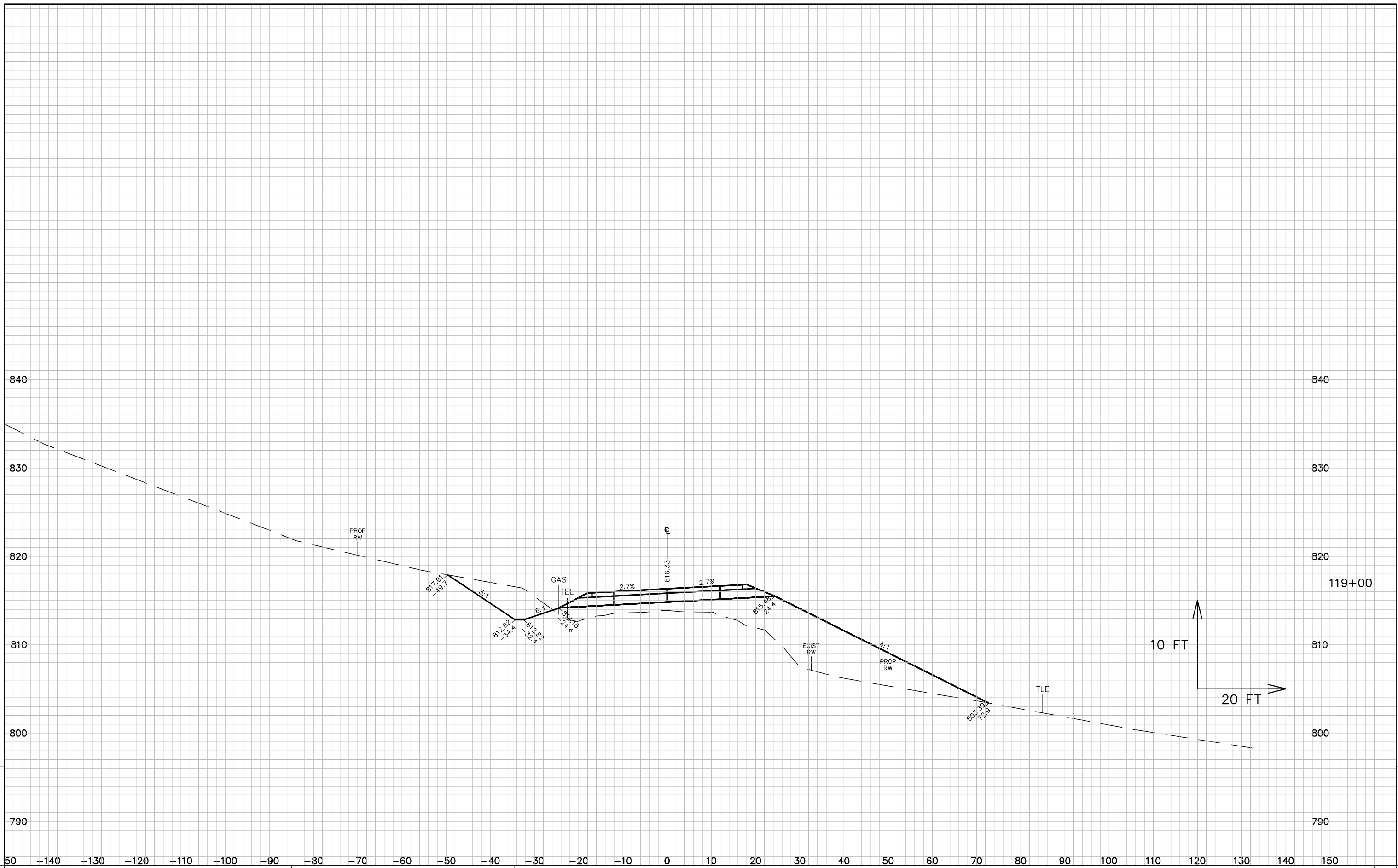


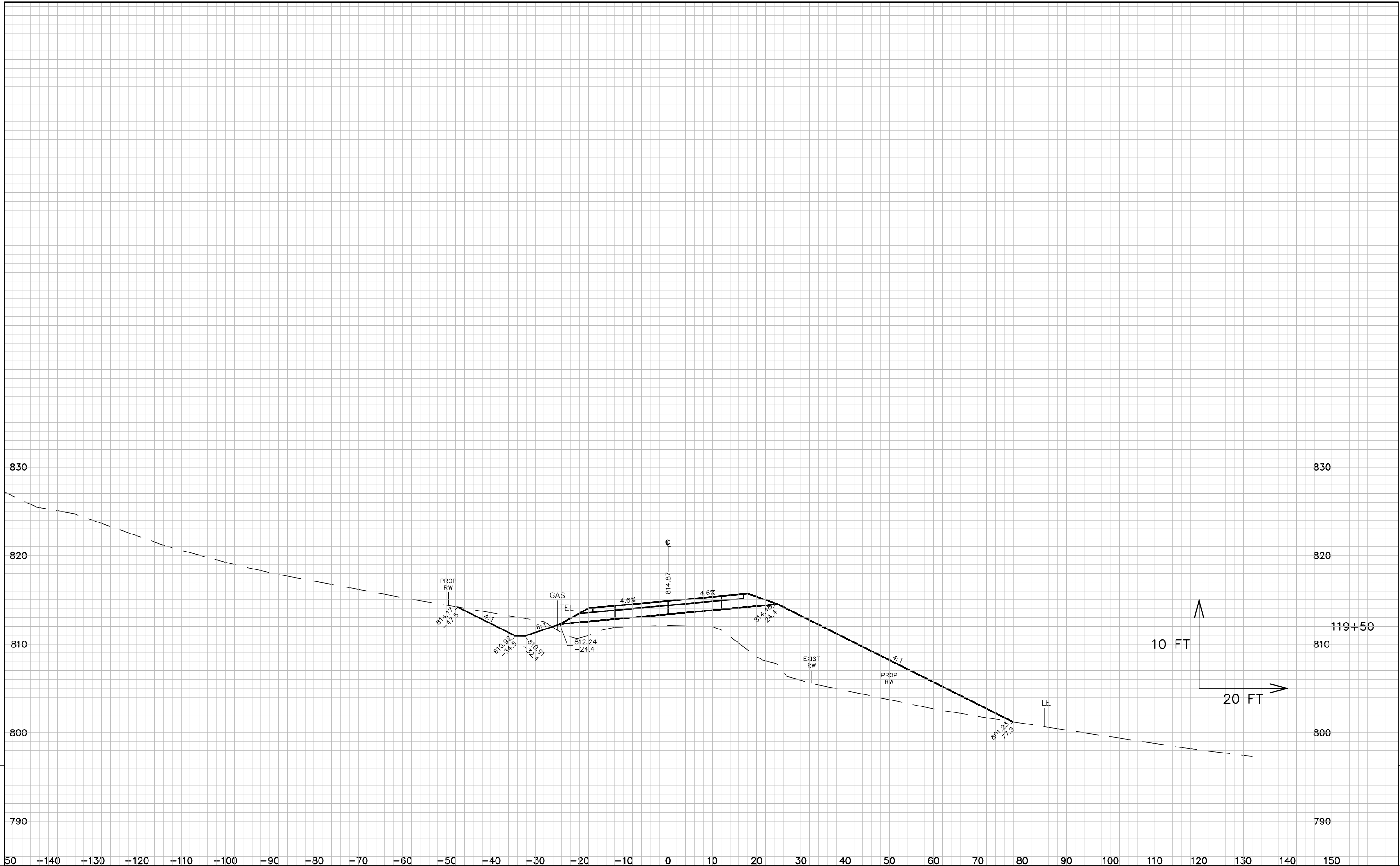


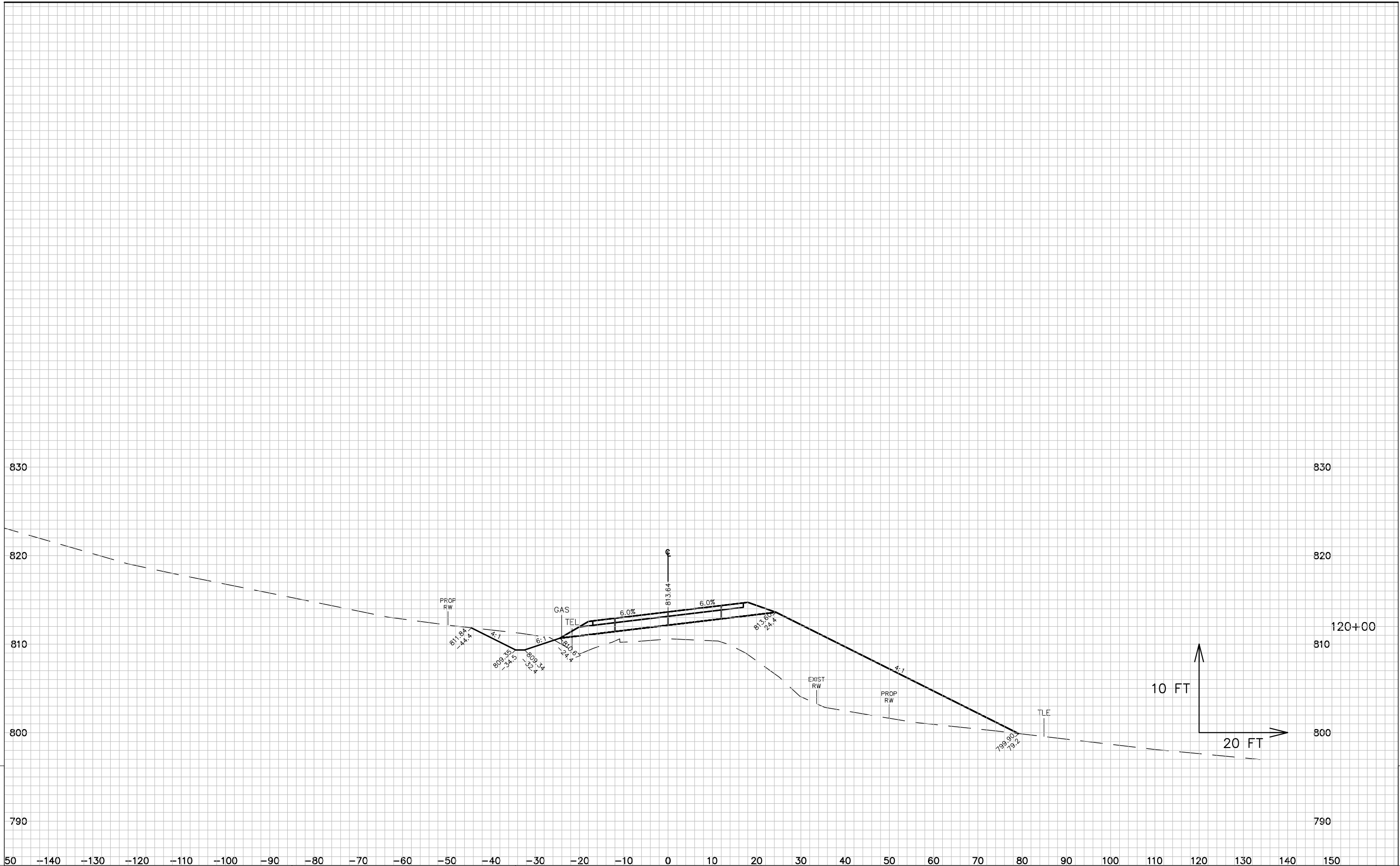


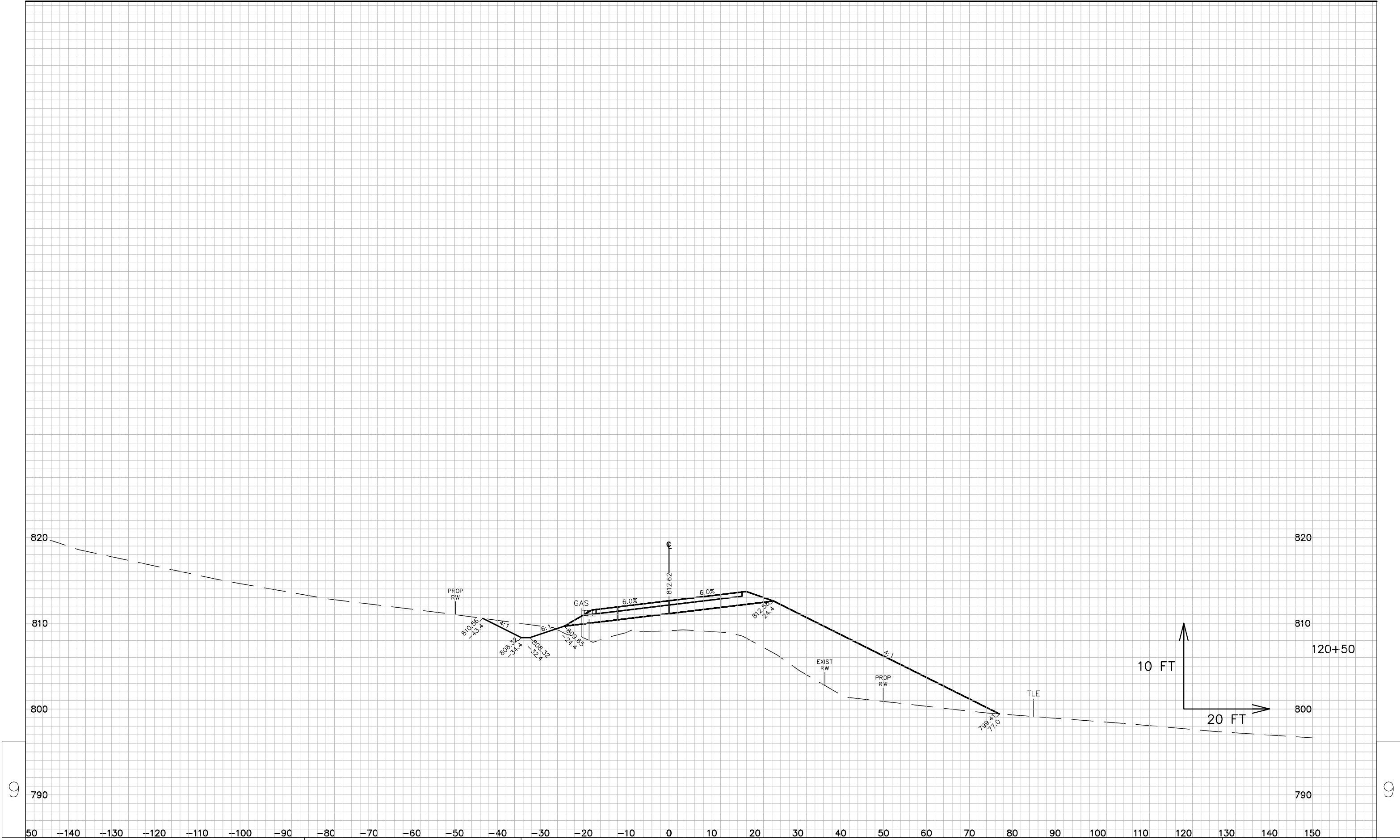


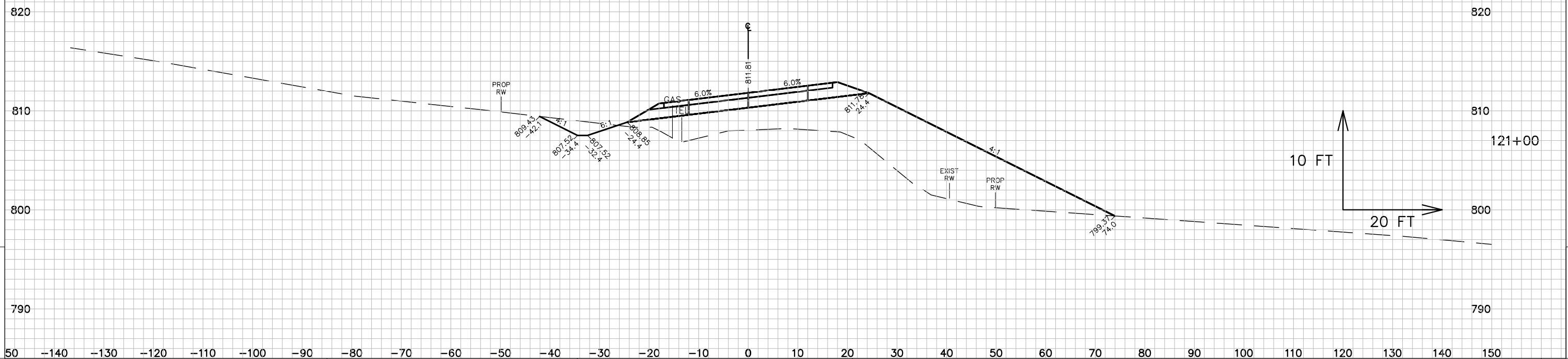












PROJECT NO: 3773-01-70

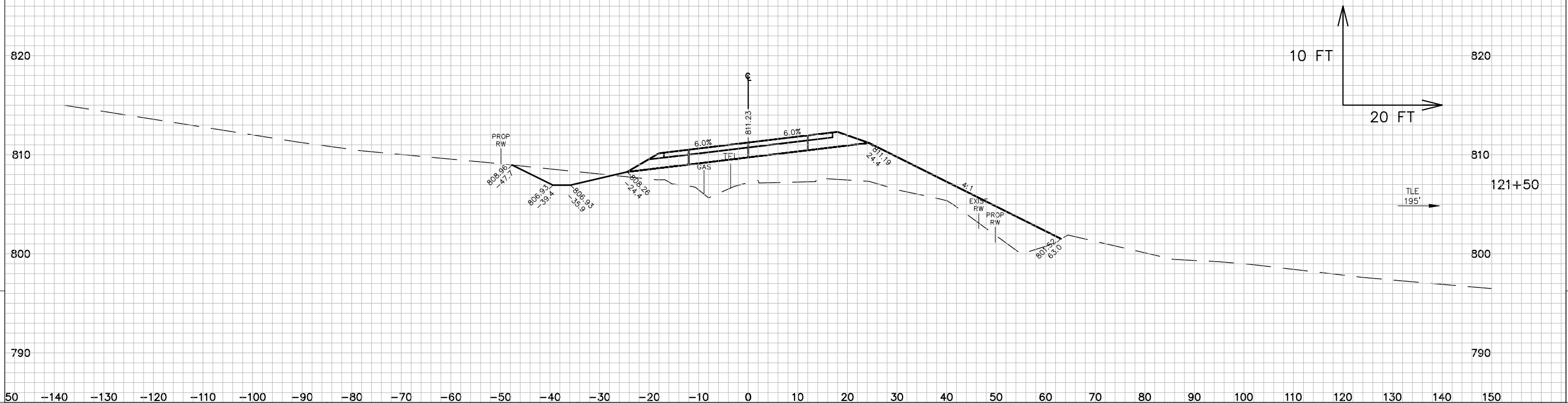
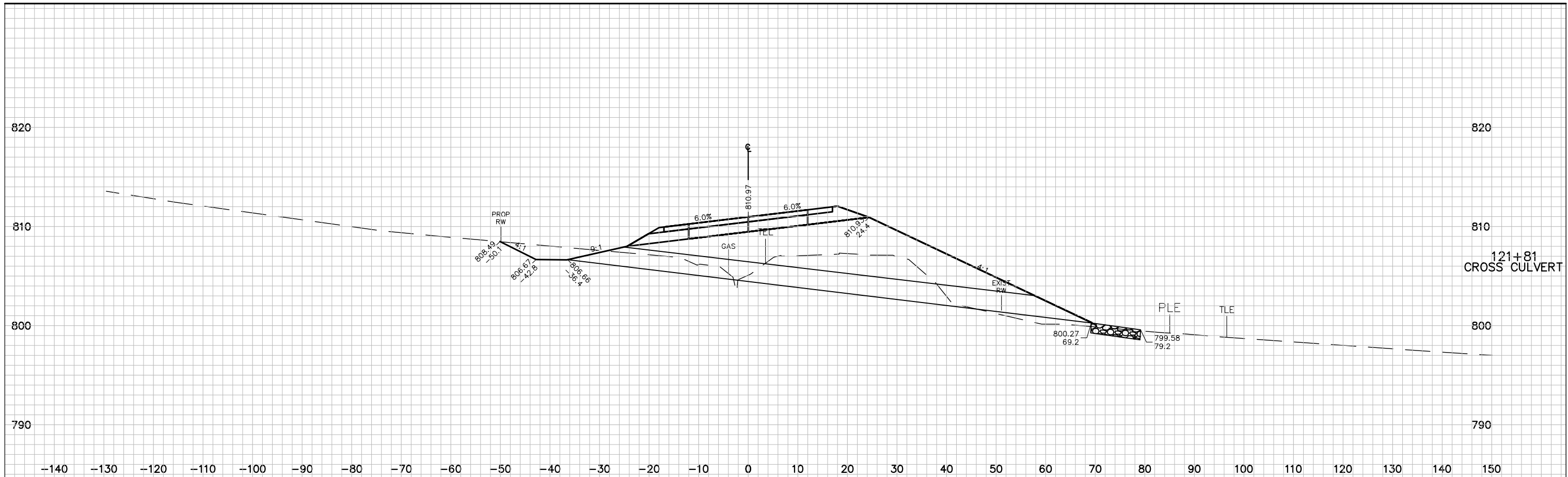
HWY: CTH I

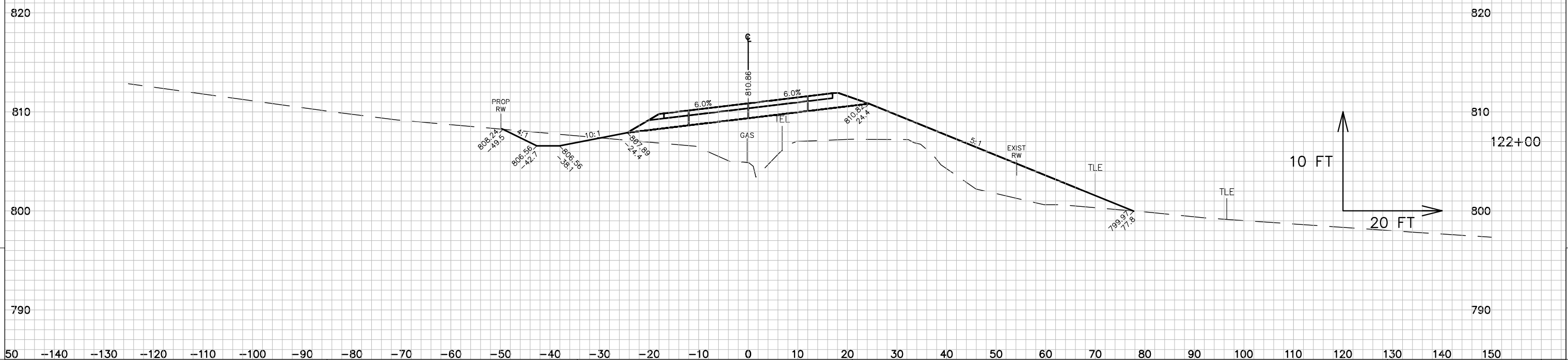
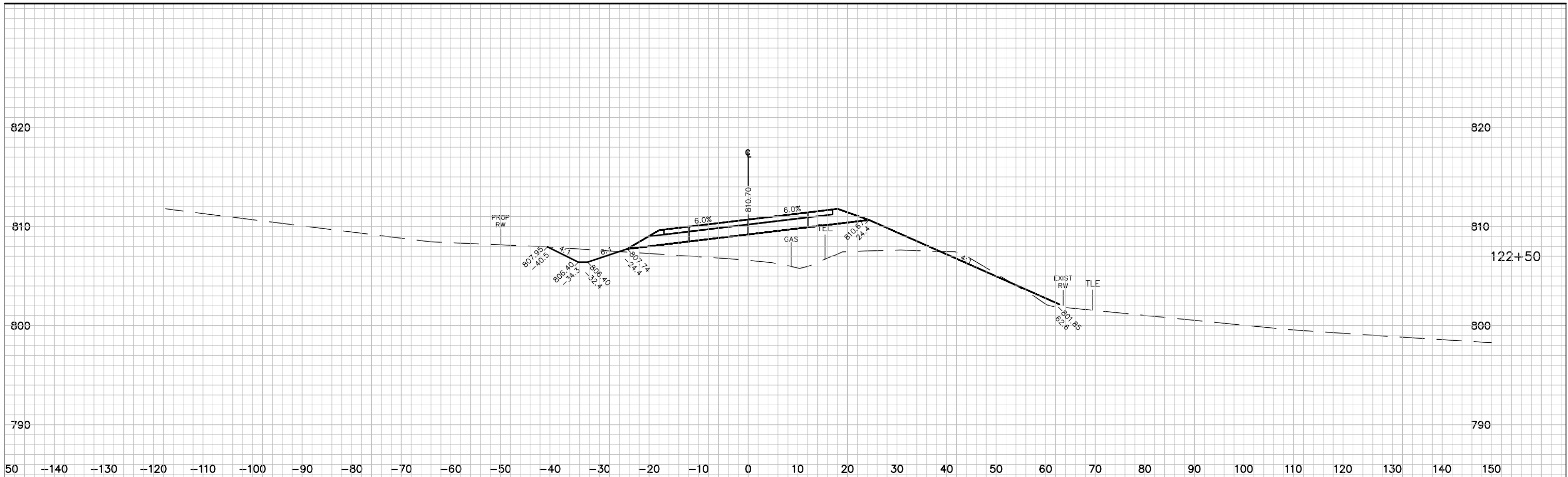
COUNTY: WAUKESHA

CROSS SECTIONS

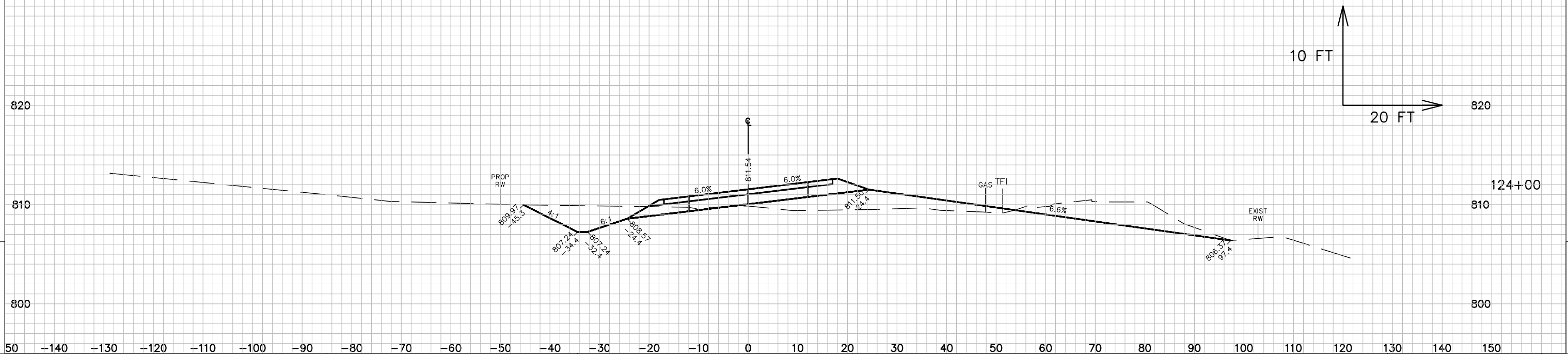
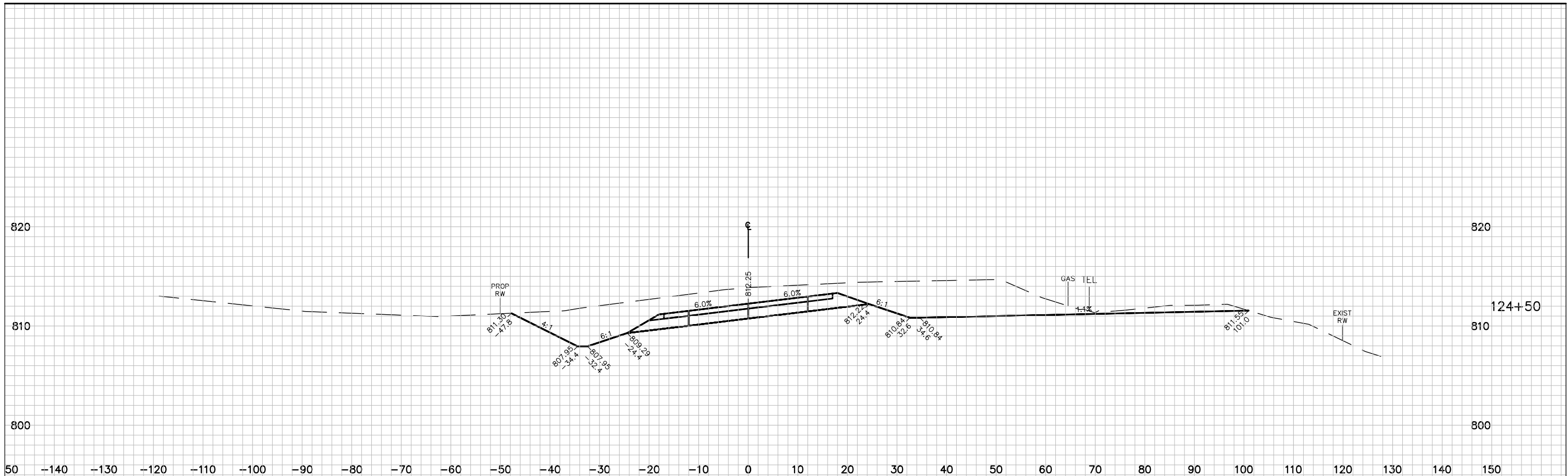
SHEET

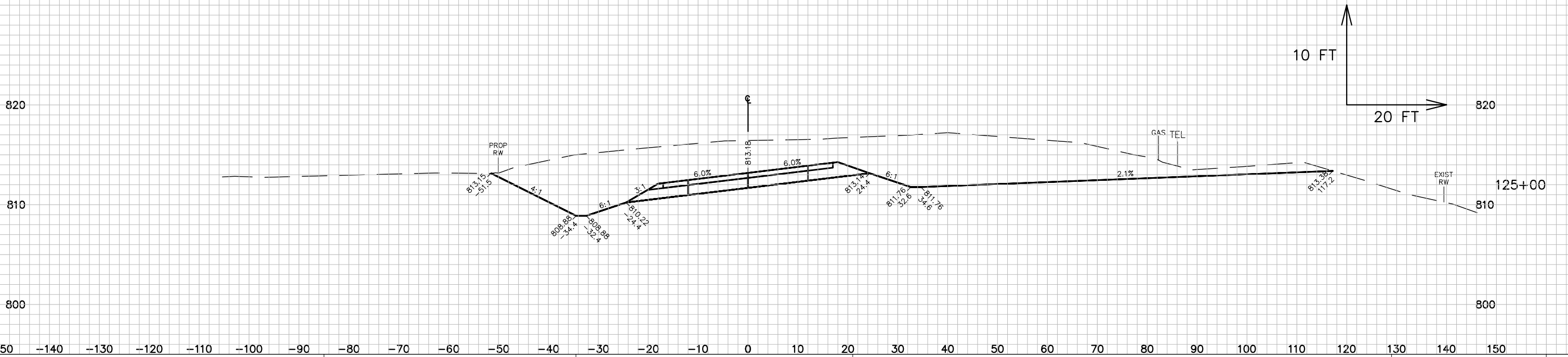
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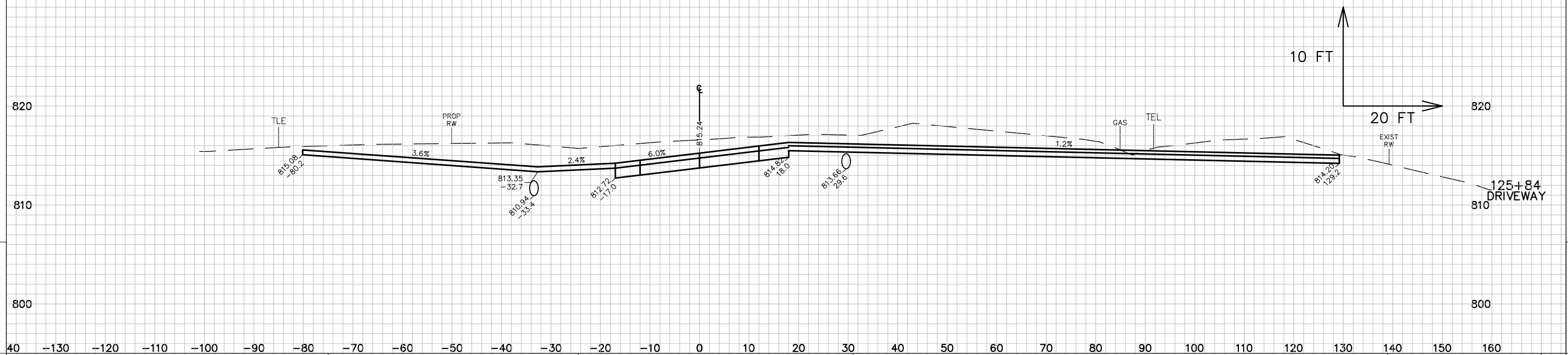
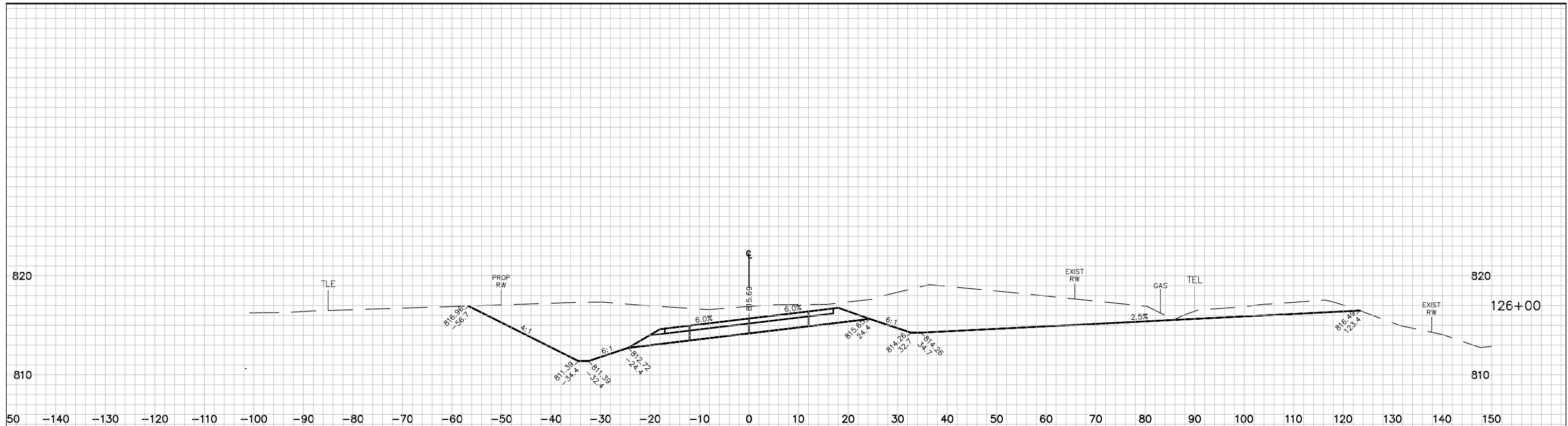


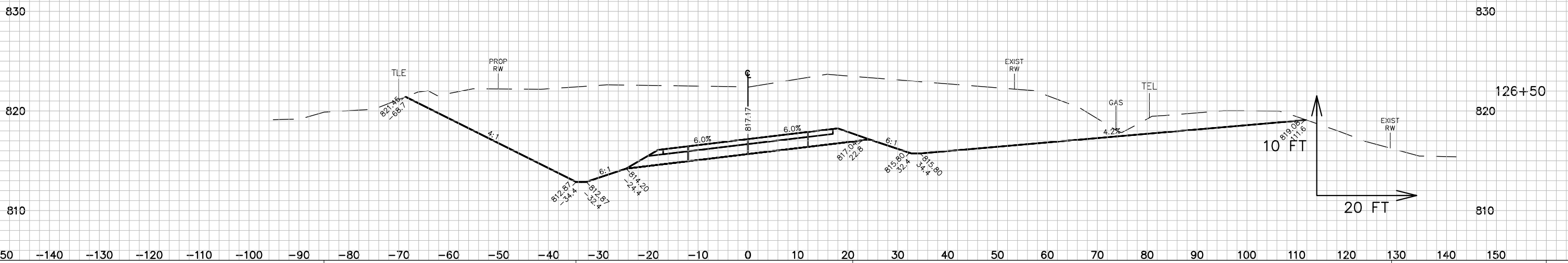


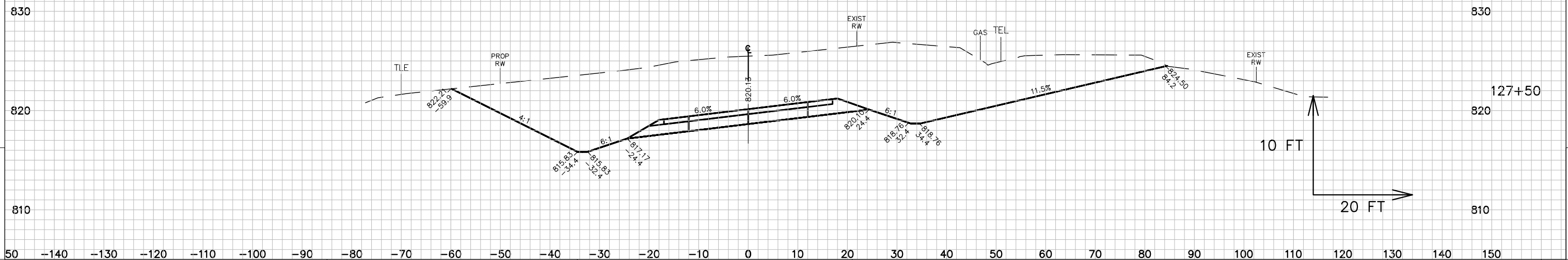
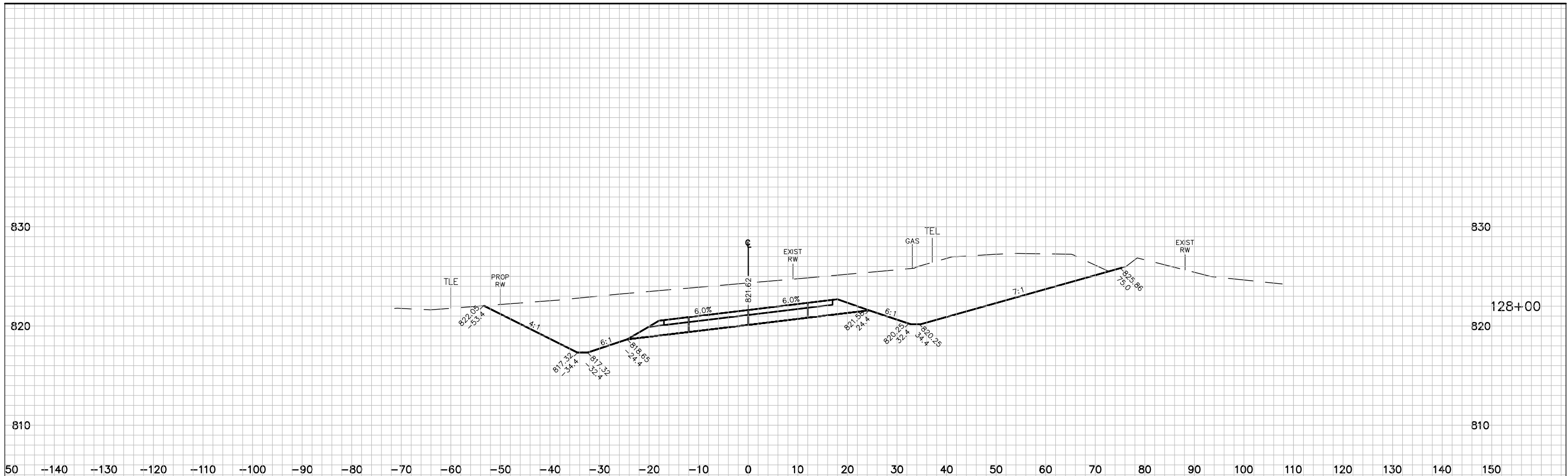


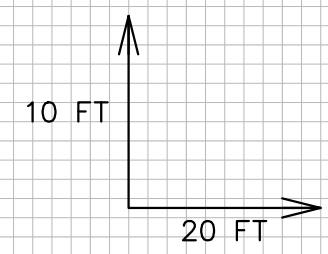
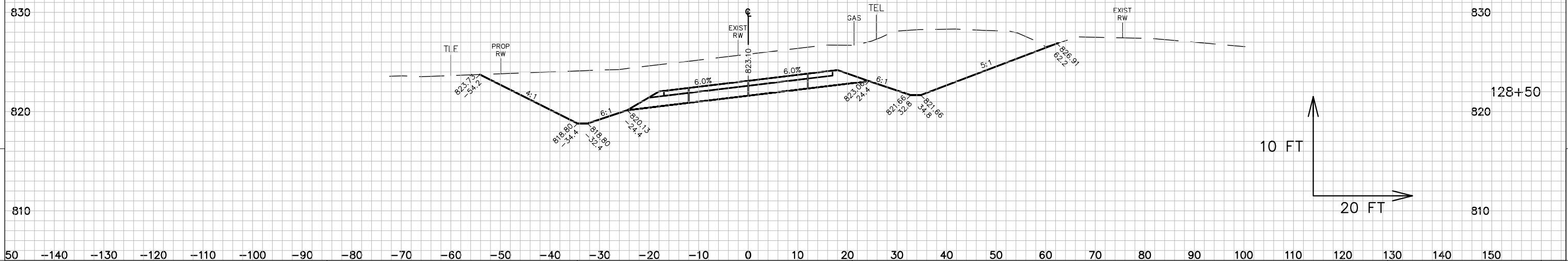
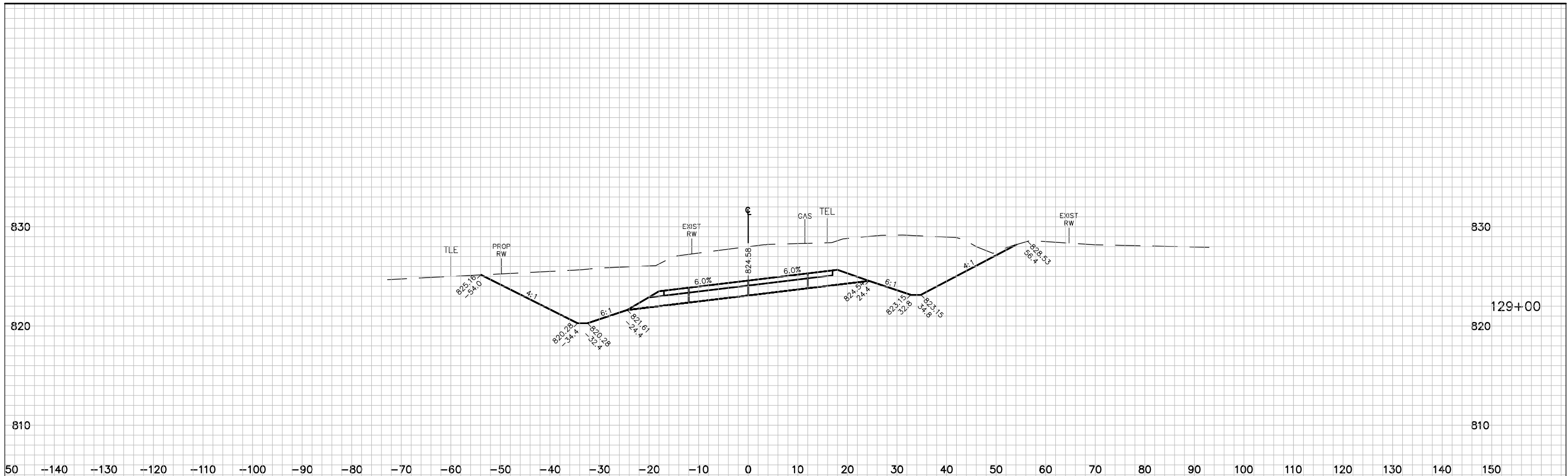


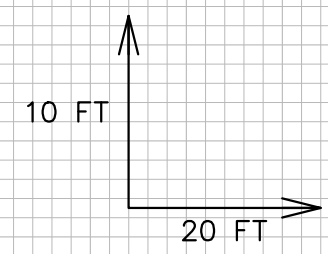
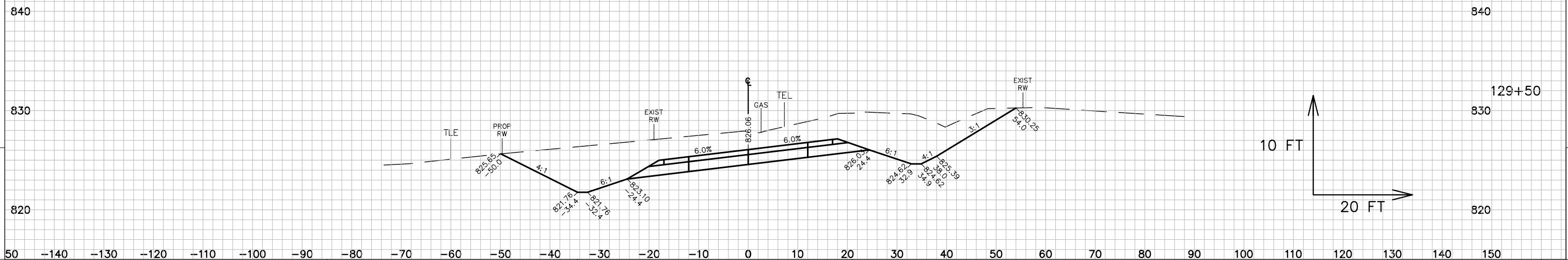
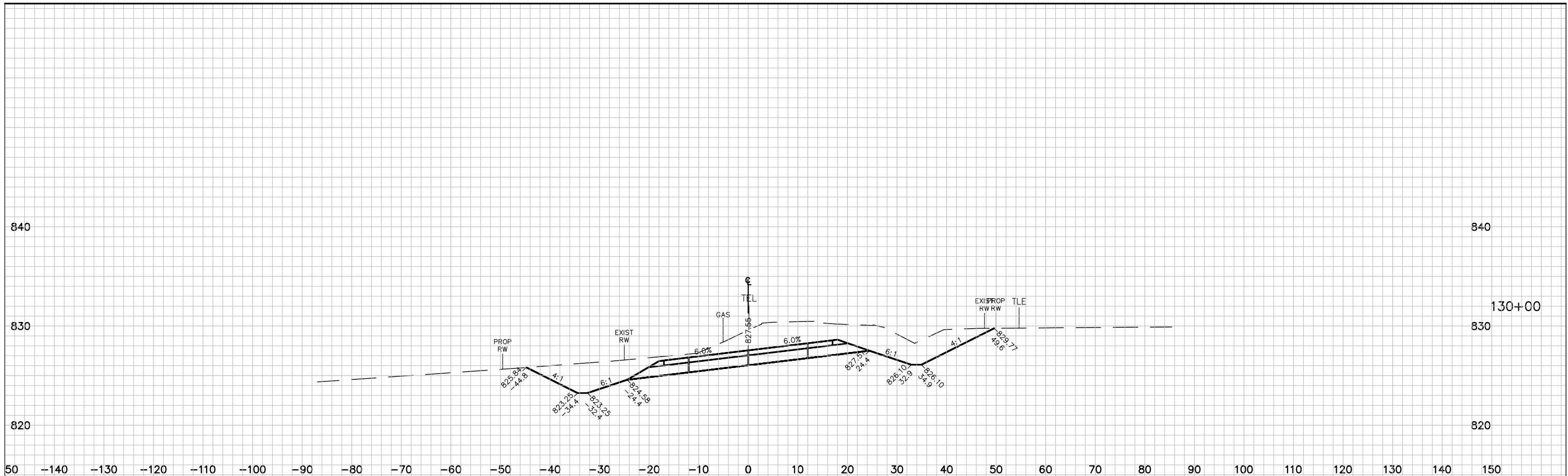


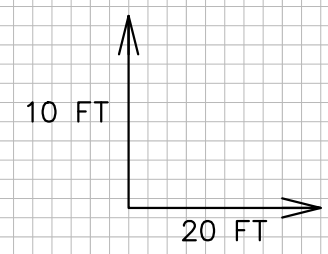
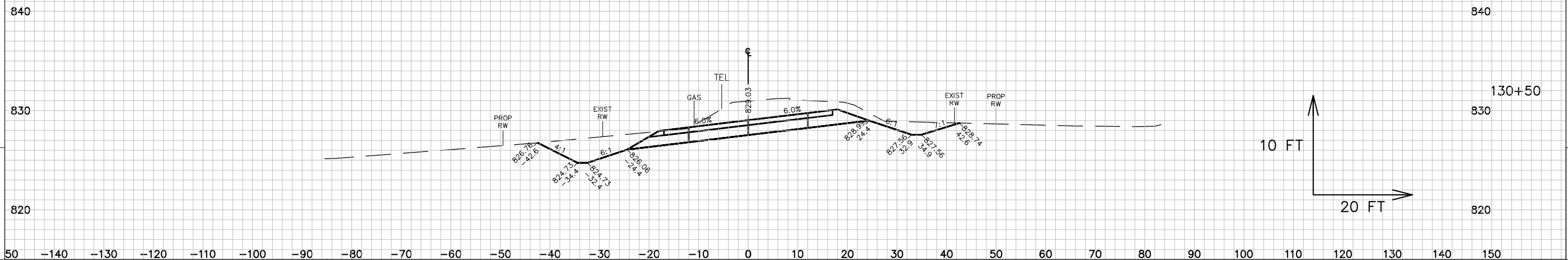
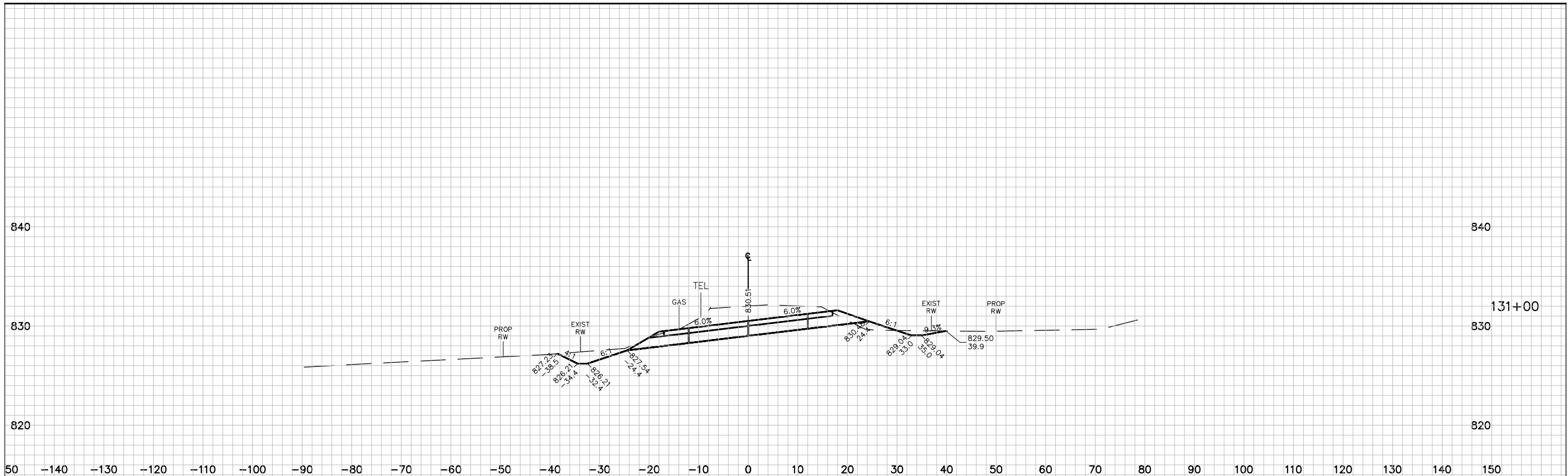


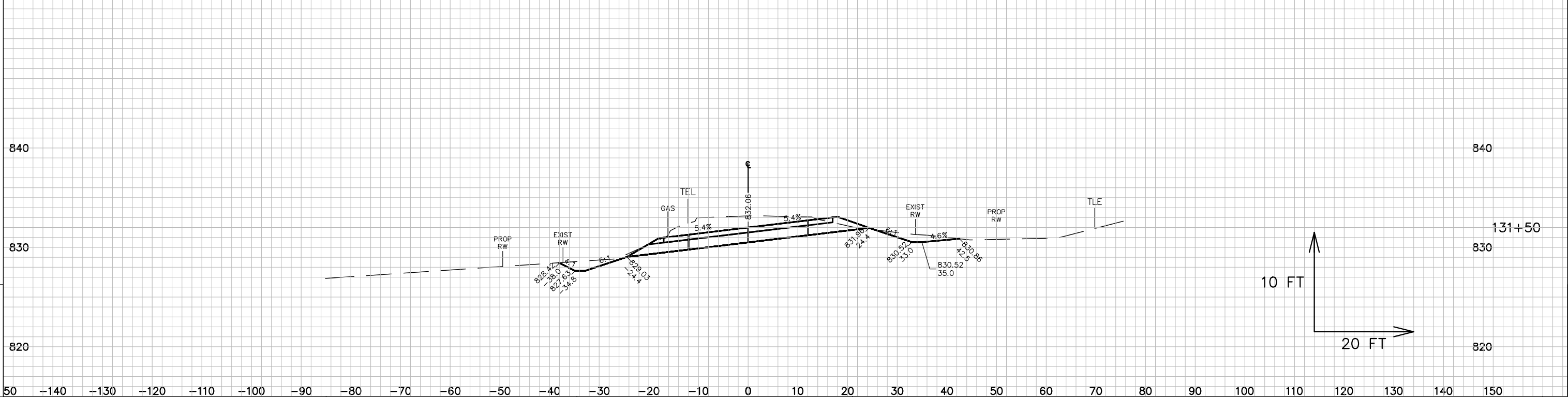
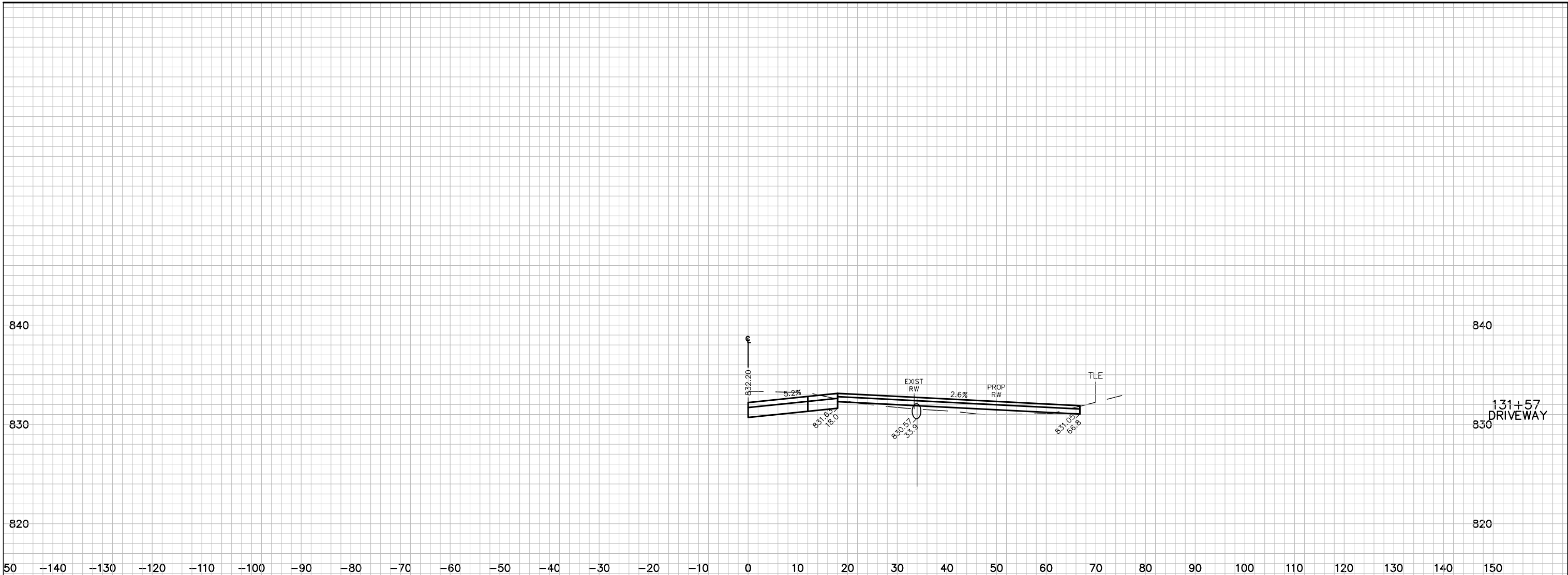


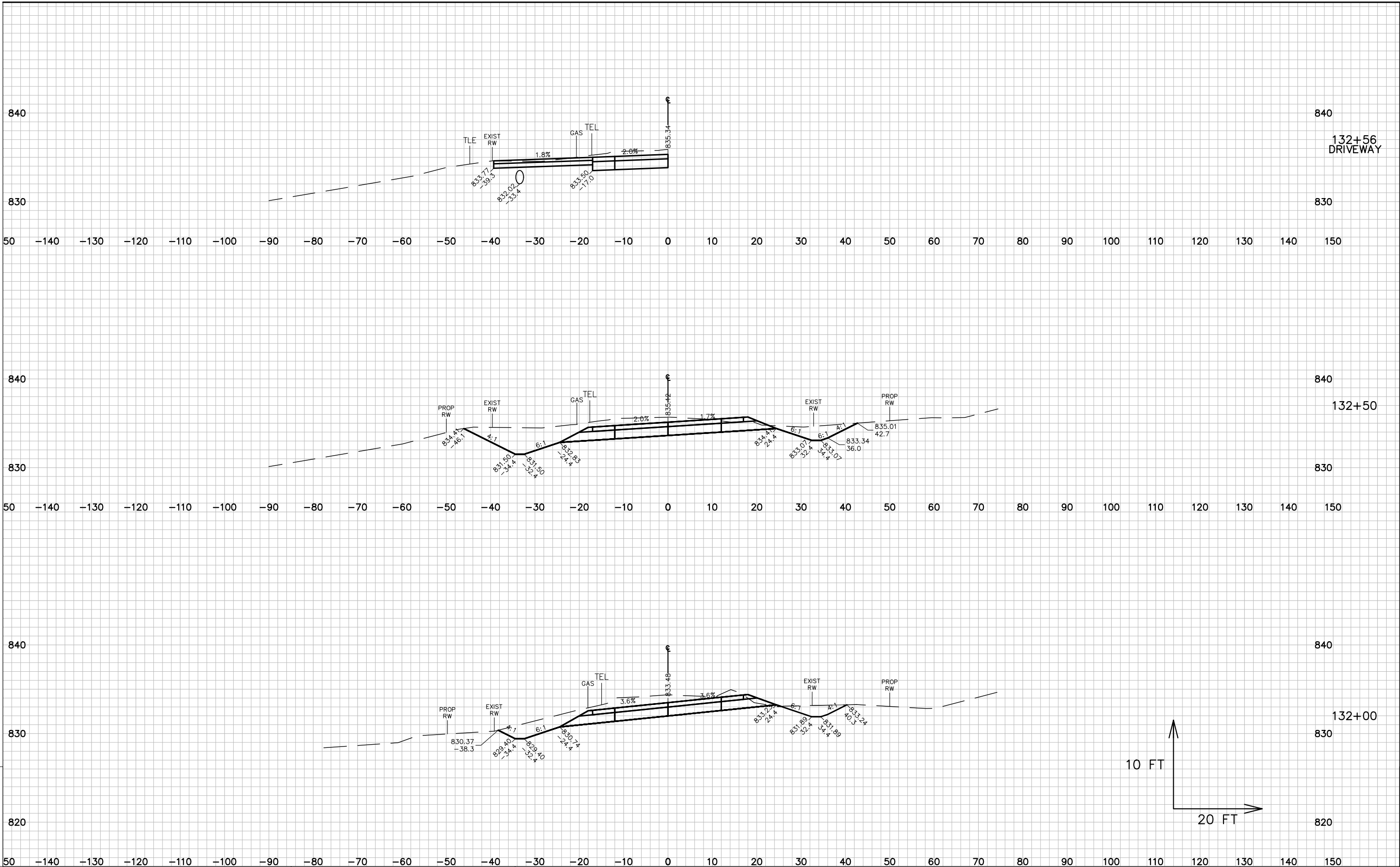


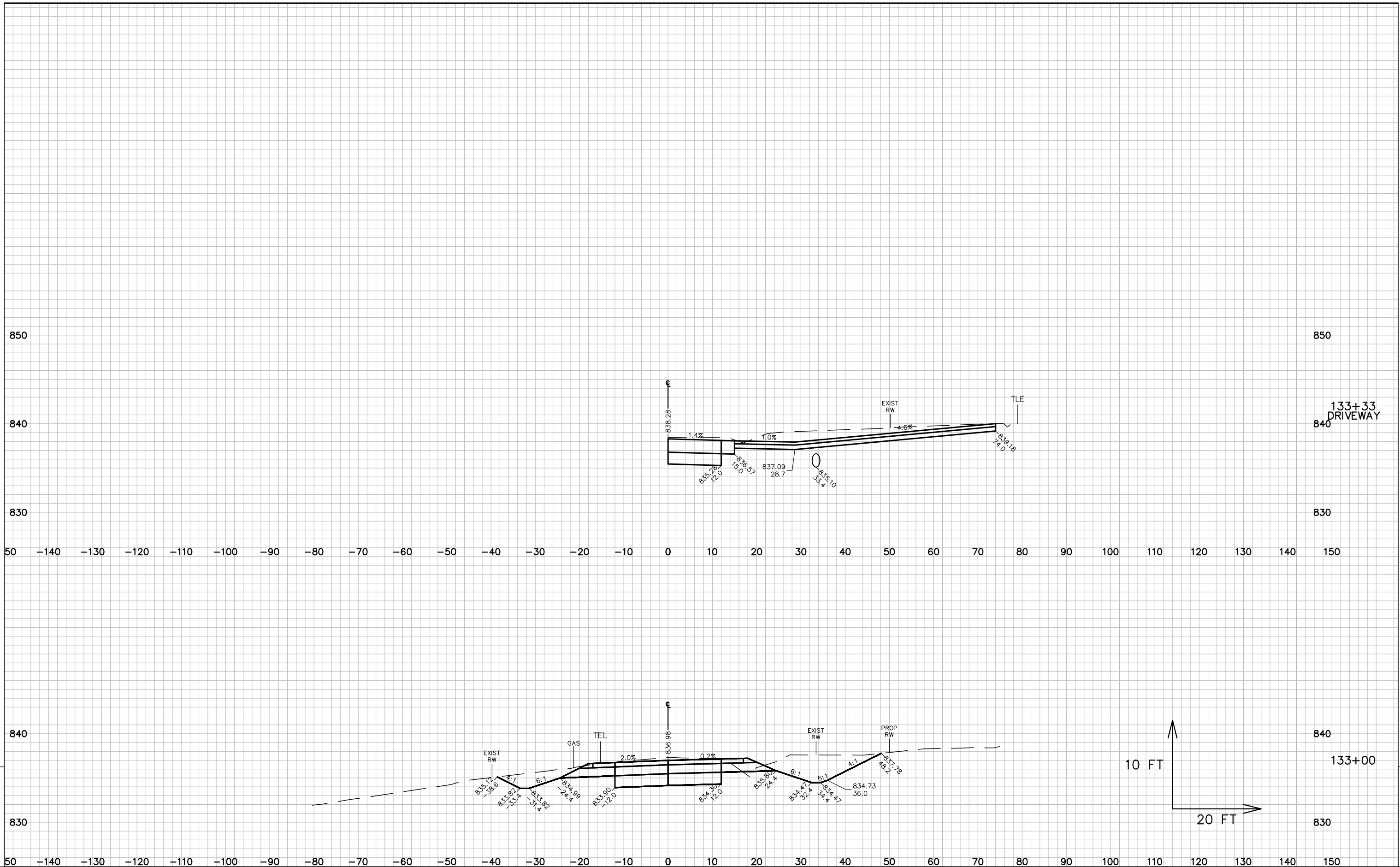


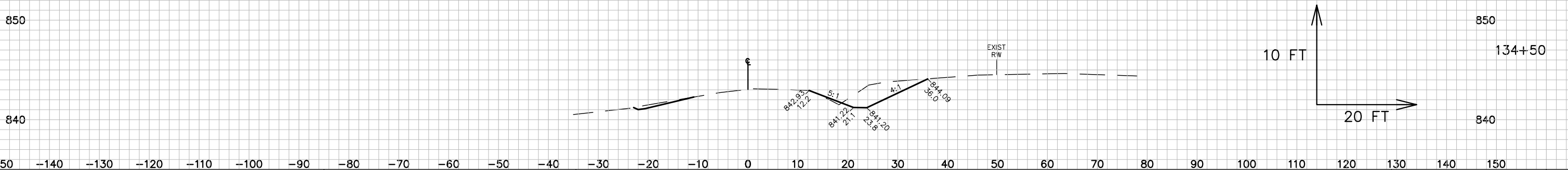


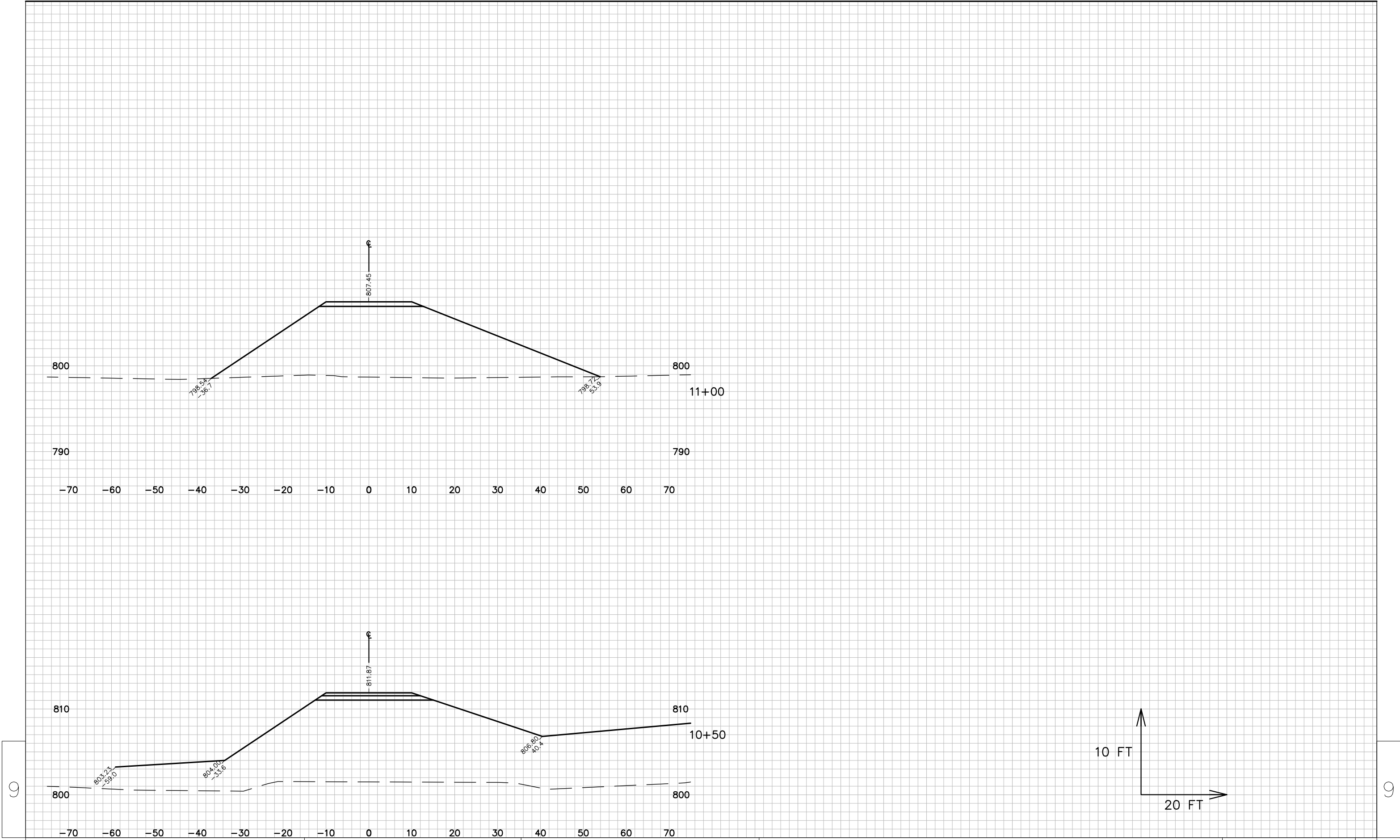


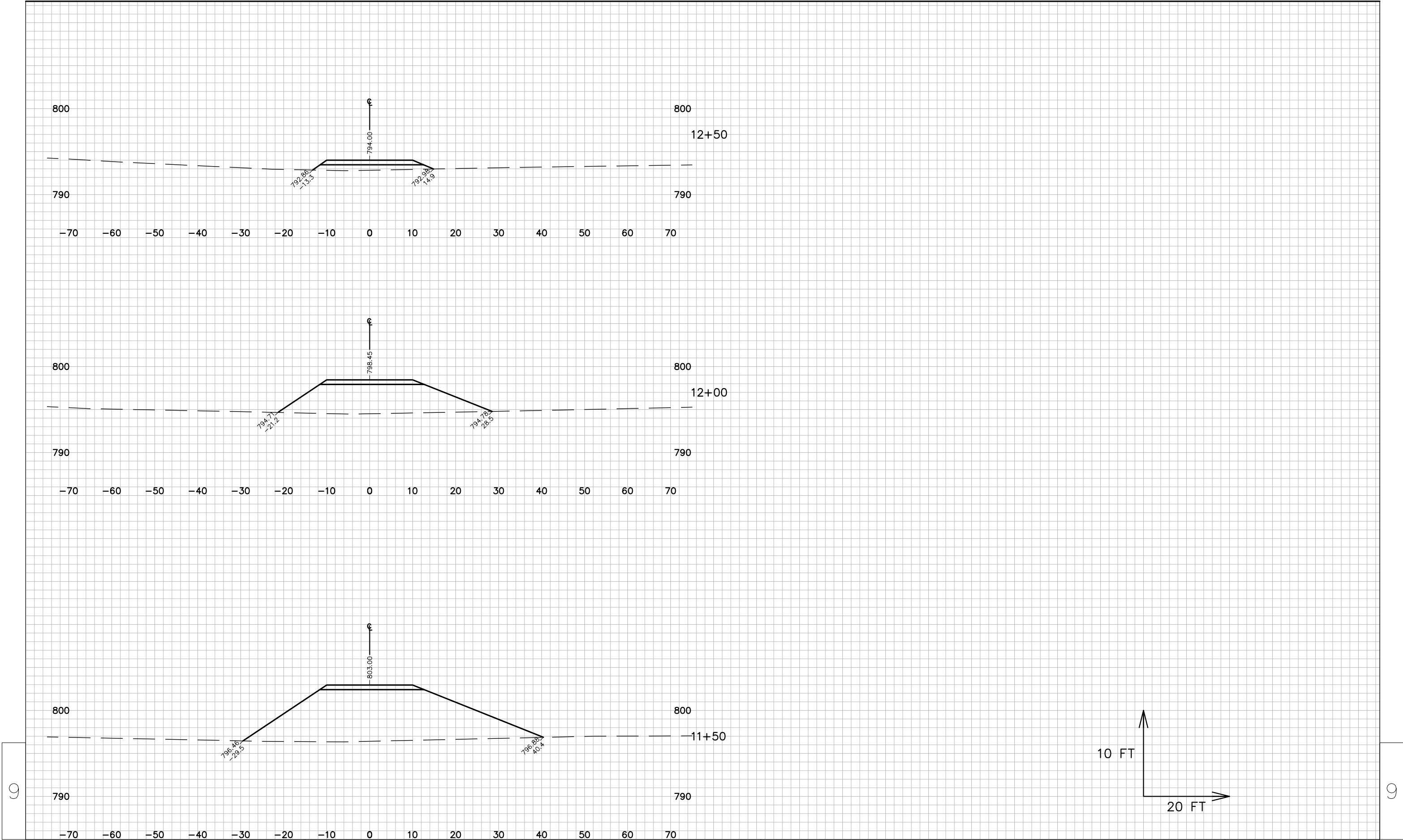






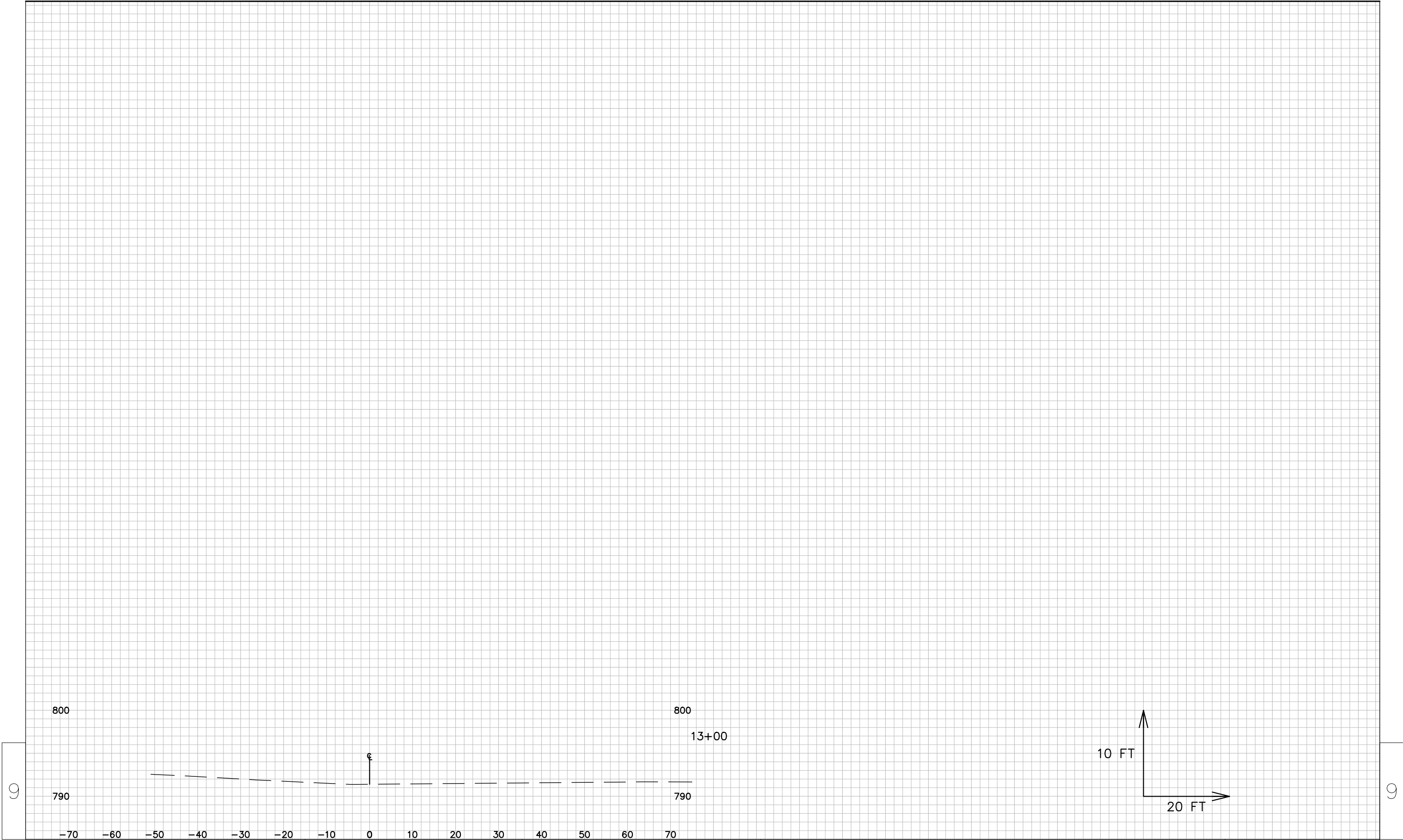






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