

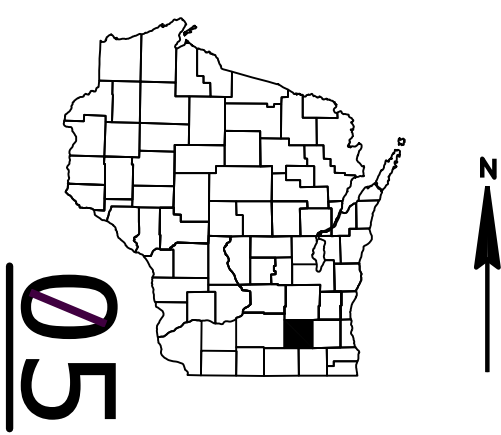
MAD
PROJECT ID:
WITH:
3576-01-70
COUNTY:
JEFFERSON

MAY 2021

ORDER OF SHEETS

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

TOTAL SHEETS = 112

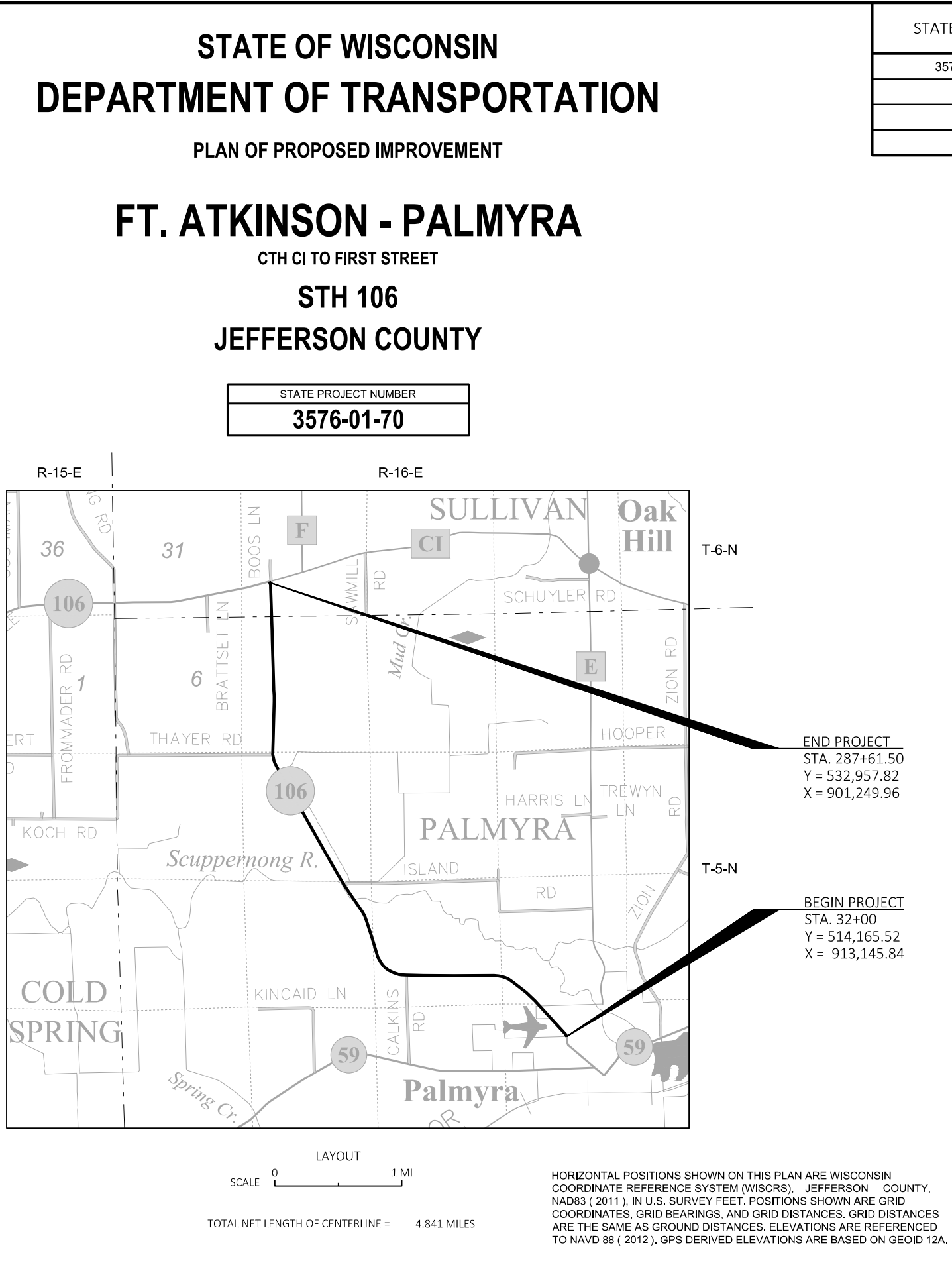


DESIGN DESIGNATION 3576-01-70

A.A.D.T.	2021	=	1170
A.A.D.T.	2041	=	1350
D.H.V.		=	11.7
D.D.		=	60/40
T.		=	10.4%
DESIGN SPEED		=	35 MPH (STA. 32+00 - STA. 39+03.55)
ESALS		=	60 MPH (STA. 39+03.55 - STA. 288+00)
		=	210,000

CONVENTIONAL SYMBOLS

<u>PLAN</u>	<u>PROFILE</u>
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
	STORM SEWER
	TELEPHONE
MARSH AREA	WATER
	UTILITY PEDESTAL
	POWER POLE
WOODED OR SHRUB AREA	TELEPHONE POLE



STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3576-01-70	WISC 2021317	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	JSD PROFESSIONAL SERVICES
Designer	TJULER DEYMARCOS
Project Manager	JEREMY HALL
Regional Examiner	SW REGION
Regional Supervisor	JAMES OETTINGER

APPROVED FOR THE DEPARTMENT

Digitally signed by Jeremy Hall
DN: c=US, E=jeremy.hall@dot.wis.gov,
O=WisDOT, OU=SW Region, CN=Jeremy Hall
Reason: I am approving this document
Date: 2021.02.09 09:19:30-06'00'

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STANDARD ABBREVIATIONS

AC	ACRE	MIN.	MINIMUM
AGG.	AGGREGATE	N.C.	NORMAL CROWN OR NO CHANGE
AH	AHEAD	N	NORTH
AE	APRON ENDWALL	NO.	NUMBER
APPROX.	APPROXIMATE	PAV'T	PAVEMENT
ASPH.	ASPHALT	P.L.E.	PERMANENT LIMITED EASEMENT
A.D.T.	AVERAGE DAILY TRAFFIC	P.C.	POINT OF CURVATURE
B.F.	BACK FACE	P.I.	POINT OF INTERSECTION
BK.	BACK	P.T.	POINT OF TANGENCY
B.M.	BENCH MARK	V.P.C.	VERTICAL POINT OF CURVATURE
C/L	CENTER LINE	V.P.I.	VERTICAL POINT OF INTERSECTION
CSCP	CORRUGATED STEEL CULVERT PIPE	V.P.T.	VERTICAL POINT OF TANGENCY
CO.	COUNTY	P.E.	PRIVATE ENTRANCE
CTH	COUNTY TRUNK HIGHWAY	P.L	PROPERTY LINE
CR.	CREEK	R	RADIUS
C.A.B.C.	CRUSHED AGGREGATE BASE COURSE	R/L	REFERENCE LINE
C.Y.	CUBIC YARD	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
C.P.	CULVERT PIPE	RT	RIGHT
C&G	CURB AND GUTTER	REQ'D	REQUIRED
D	DEGREE OF CURVATURE	R/W	RIGHT OF WAY
D.	DELTA	R.	RIVER
D.H.V.	DESIGN HOURLY VOLUME	RD.	ROAD
EA	EACH	SHLD.	SHOULDER(S)
E	EAST	SHR.	SHRINKAGE
ELEC.	ELECTRIC(AL) CABLE	S	SOUTH
EL, ELEV.	ELEVATION	S.F.	SQUARE FEET
EXC.	EXCAVATION	SDD	STANDARD DETAIL DRAWING
FERT.	FERTILIZER	STH	STATE TRUNK HIGHWAY
F.E.	FIELD ENTRANCE	STA.	STATION
F/L	FLOWLINE	S.E.	SUPERELEVATION
CWT	HUNDRED WEIGHT	S/L	SURVEY LINE
INT	INTERSECTION	T	TANGENT
JT.	JOINT	TEL.	TELEPHONE
LT	LEFT	TEMP.	TEMPORARY
L	LENGTH OF CURVE	T.L.E.	TEMPORARY LIMITED EASEMENT
L.F.	LENGTH FEET	T.	TRUCK PERCENTAGE
LS	LUMP SUM	TYP.	TYPICAL
M.P.	MARKER POST	U.G.	UNDERGROUND
MAX.	MAXIMUM	V.C.	VERTICAL CURVE
MGAL	1000 GALLONS	W	WEST



SECTION 2 ORDER OF SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL
- PERMANENT SIGNING
- DETOUR & TRAFFIC CONTROL

JEFFERSON COUNTY CONTACTS

HIGHWAY OPERATIONS MANAGER
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VILLAGE OF PALMYRA CONTACTS

VILLAGE CLERK
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NORTH PRAIRIE, WI 53153
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kevin.zickert@centurylink.com

GUARDIAN PIPELINE -
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ADAM THEIS
128 M B LN.
CHILTON, WI 53014
(920) 464-1200
adam.theis@oneok.com

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GENERAL NOTES

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

DIMENSIONS GIVEN FOR EXISTING FEATURES SHALL BE CONSIDERED APPROXIMATE AND MEASURED IN THE FIELD FOR MATCHING PURPOSES.

PLACE ONE PCMS BOARD ON EACH END OF THE PROJECT ONE WEEK BEFORE CONSTRUCTION BEGINS.

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

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

MILL AND REMOVE 1 ¾" TYP. OF EXISTING BITUMINOUS PAVEMENT (TO BE PAID FOR AS REMOVING ASPHALTIC SURFACE MILLING). MILL AND REMOVE AN ADDITIONAL APPROX. 2" OF EXISTING BITUMINOUS PAVEMENT IN AREAS WHERE THE MILLED SURFACE EXHIBITS PAVEMENT WEAKNESS AND/OR EDGE BREAKUP, AS THE PLANS SHOW OR AS THE FIELD ENGINEER DIRECTS (TO BE PAID FOR AS REMOVING DISTRESSED PAVEMENT MILLING).

PREPARE THE EXISTING AGGREGATE SHOULDER IN THE PROPOSED PAVED SHOULDER LOCATIONS USING THE "PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS" BID ITEM.

HMA PAVEMENT SHALL BE CONSTRUCTED IN TWO LAYERS (EXCEPT BETWEEN STA. 153+00 AND STA. 158+00 AND BETWEEN STA. 287+25 AND STA. 287+62). PAVE A 1 ¾-INCH LOWER LAYER OF HMA PAVEMENT 4 LT 58-28 S, AND A 1 ¾-INCH UPPER LAYER OF HMA PAVEMENT 4 LT 58-28 S. IN THE AREAS LOCATED BETWEEN STA. 153+00 AND STA. 158+00 AND BETWEEN STA. 287+25 AND STA. 287+62, CONSTRUCT A SINGLE 1 ¾-INCH LAYER OF HMA PAVEMENT 4 LT 58-28 S. PAVE 2 INCHES OF ASPHALTIC SURFACE IN AREAS WHERE REMOVING DISTRESSED PAVEMENT MILLING IS REQUIRED, AT CULVERT REPLACEMENT LOCATIONS, AND ON EXISTING CURB & GUTTER TYPE J, AS SHOWN IN THE PLANS.

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

THE EXACT HMA PAVEMENT LIMITS AT INTERSECTIONS ARE TO BE DETERMINED BY THE FIELD ENGINEER.

APPLY TACK COAT AT A RATE OF 0.07 GAL/SY TO THE MILLED SURFACE AND EXISTING CONCRETE CURB & GUTTER TYPE J. APPLY TACK COAT AT A RATE OF 0.05 GAL/SY BETWEEN HMA LAYERS.

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

PLACE BASE AGGREGATE DENSE ¾-INCH ON UNPAVED PORTIONS OF THE SHOULDERS, DRIVEWAYS, AND FIELD ENTRANCES. EXISTING SHOULDER AGGREGATE SHALL BE INCORPORATED INTO THE NEW SHOULDERS UNLESS OTHERWISE DIRECTED BY THE FIELD ENGINEER.

SHOULDERS SHALL BE PLACED, SHAPED, AND COMPACTED PRIOR TO PLACING GUARDRAIL.

MAINTAIN EROSION CONTROL ITEMS UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY. WETLANDS AND OTHER WATERWAYS ARE PRESENT WITHIN THE PROJECT LIMITS.

DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY AND OUTSIDE THE WETLAND AREAS, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO HAVE EROSION MAT URBAN CLASS I TYPE B, SALVAGED TOPSOIL, SEEDING MIXTURE NO. 10, AND TEMPORARY SEEDING AS DIRECTED BY THE FIELD ENGINEER.

DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY AND WITHIN THE WETLAND AREAS, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO HAVE EROSION MAT URBAN CLASS I TYPE B, SALVAGED TOPSOIL - WETLANDS, SEEDING MIXTURE NO. 60, AND TEMPORARY SEEDING AS DIRECTED BY THE FIELD ENGINEER. EXTEND THE EROSION MAT APPROX. 5' BEYOND THE SLOPE INTERCEPT AND INSTALL SILT FENCE APPROX. 7' BEYOND THE SLOPE INTERCEPT IN THE WETLAND AREAS, OR AS DIRECTED BY THE ENGINEER.

USE EROSION BALES AT SILT FENCE RELIEF POINTS, IF NEEDED. PLACE 3 BALES INSIDE AND 2 BALES OUTSIDE (5 BALES TOTAL PER RELIEF POINT). SEE SDD 8E8-3 FOR INSTALLATION INSTRUCTIONS.

SILT FENCE SHOULD BE INSTALLED WITH TURN-AROUNDS AT THE ENDS TO REDIRECT ANIMALS AWAY FROM THE CONSTRUCTION SITE. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

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

EXCEPT WHERE THE EXISTING BEAM GUARD IS TO BE REPLACED, IF THERE ARE CONFLICTS WITH SIGNS OR OTHER WORK UNDER THIS PROJECT, THE CONTRACTOR WILL WORK AROUND THE FACILITIES.

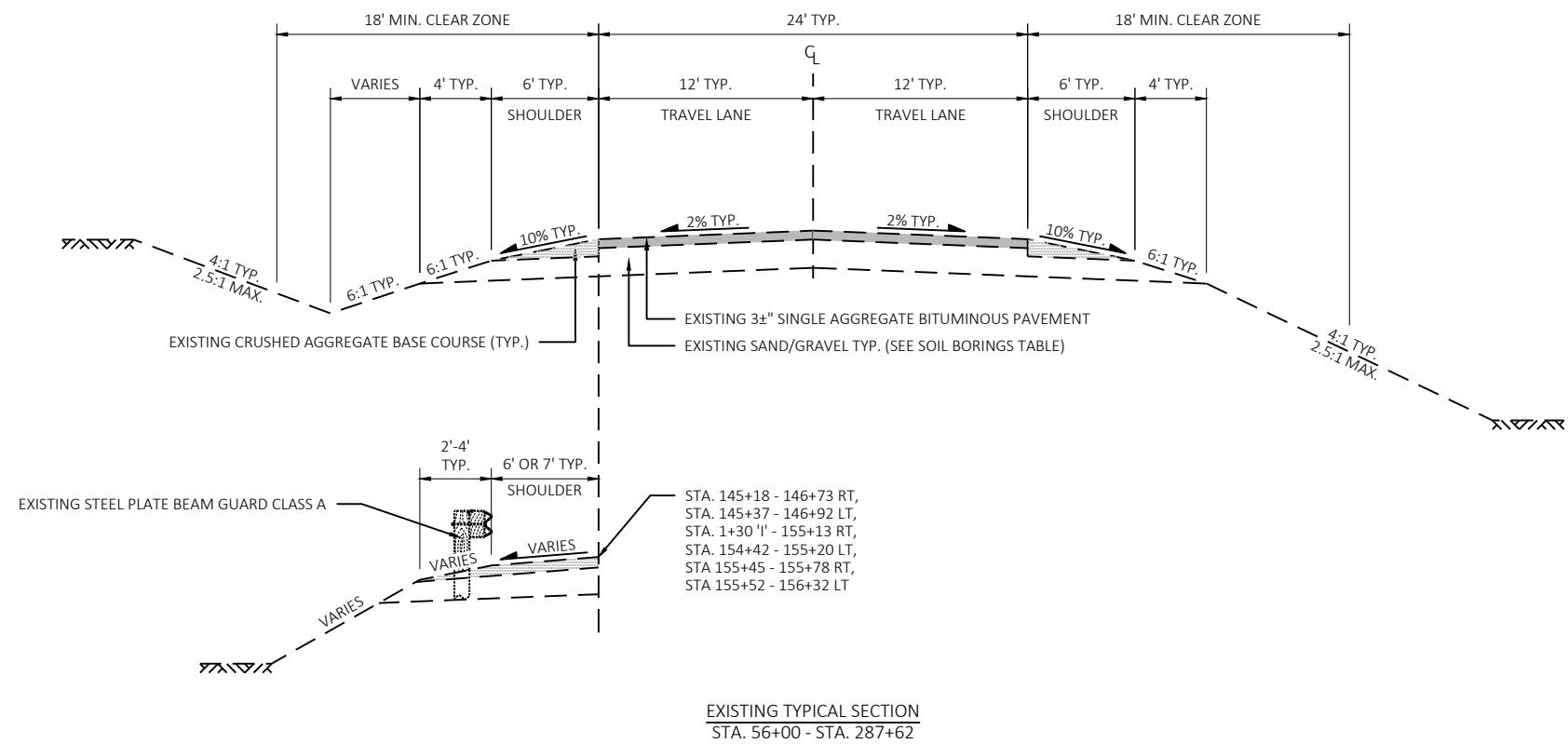
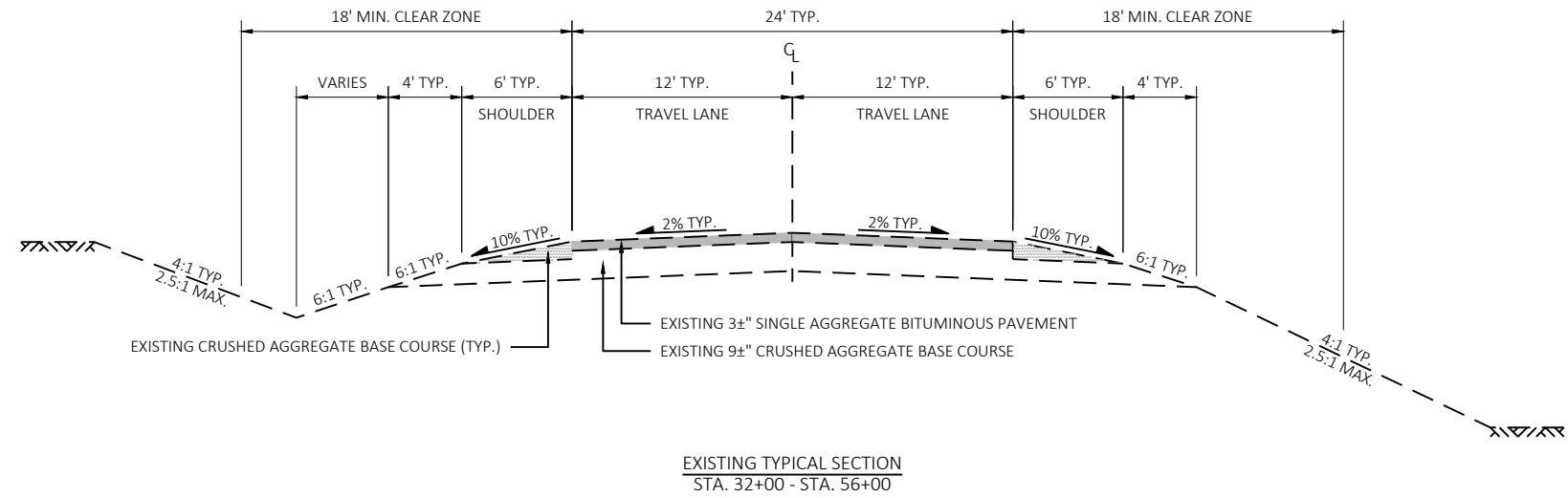
LOCATE NO PASSING ZONES AND MOVE W14-3 SIGNS WHERE APPLICABLE.

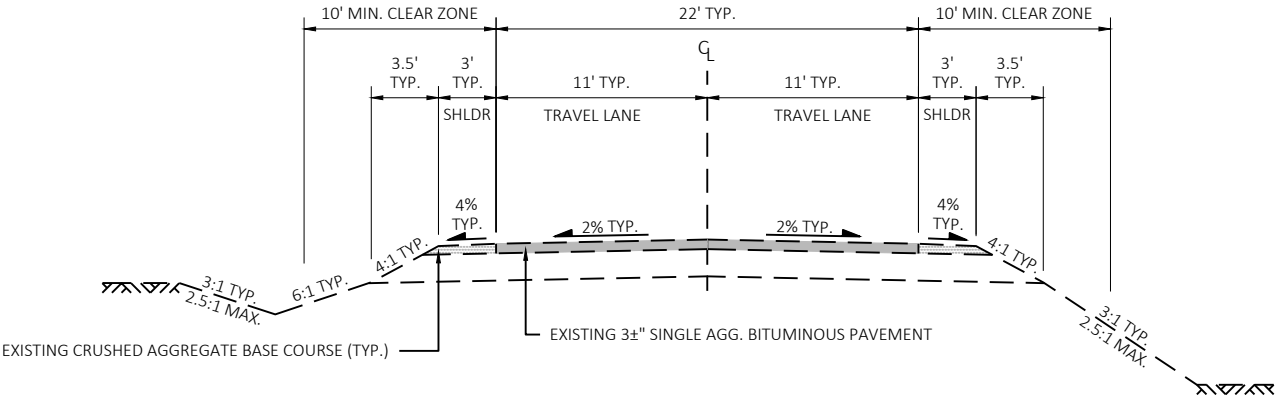
SEE SDD 15C8 "PAVEMENT MARKING - MAINLINE, TURN LANES," 15C33 "STOP LINE AND CROSSWALK PAVEMENT MARKING," AND 15C35 "PAVEMENT MARKING (INTERSECTIONS)" FOR PERMANENT PAVEMENT MARKING DETAILS.



2

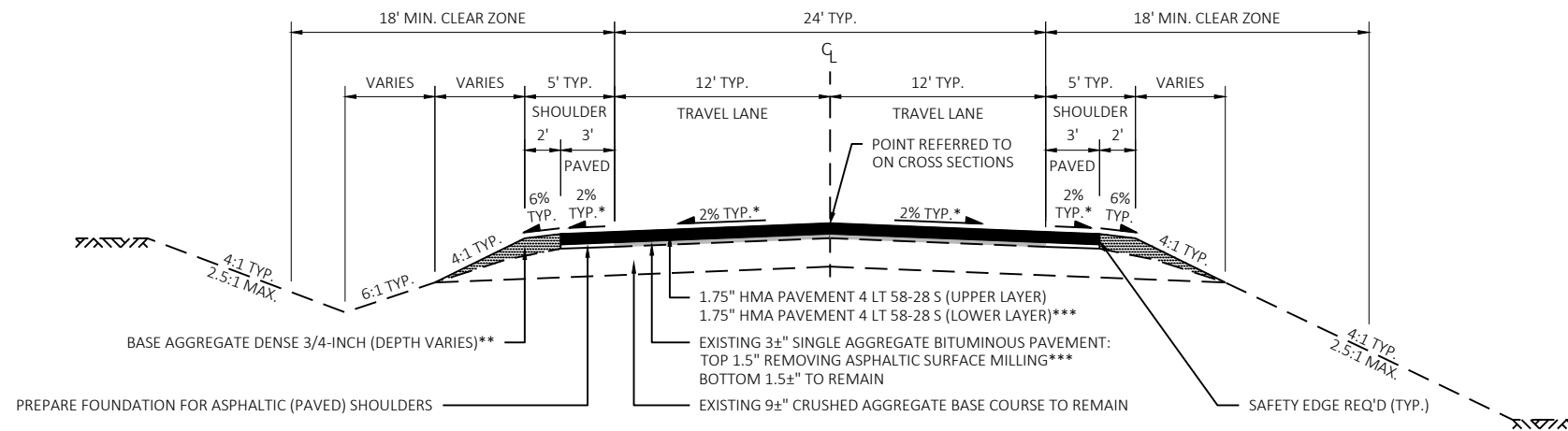
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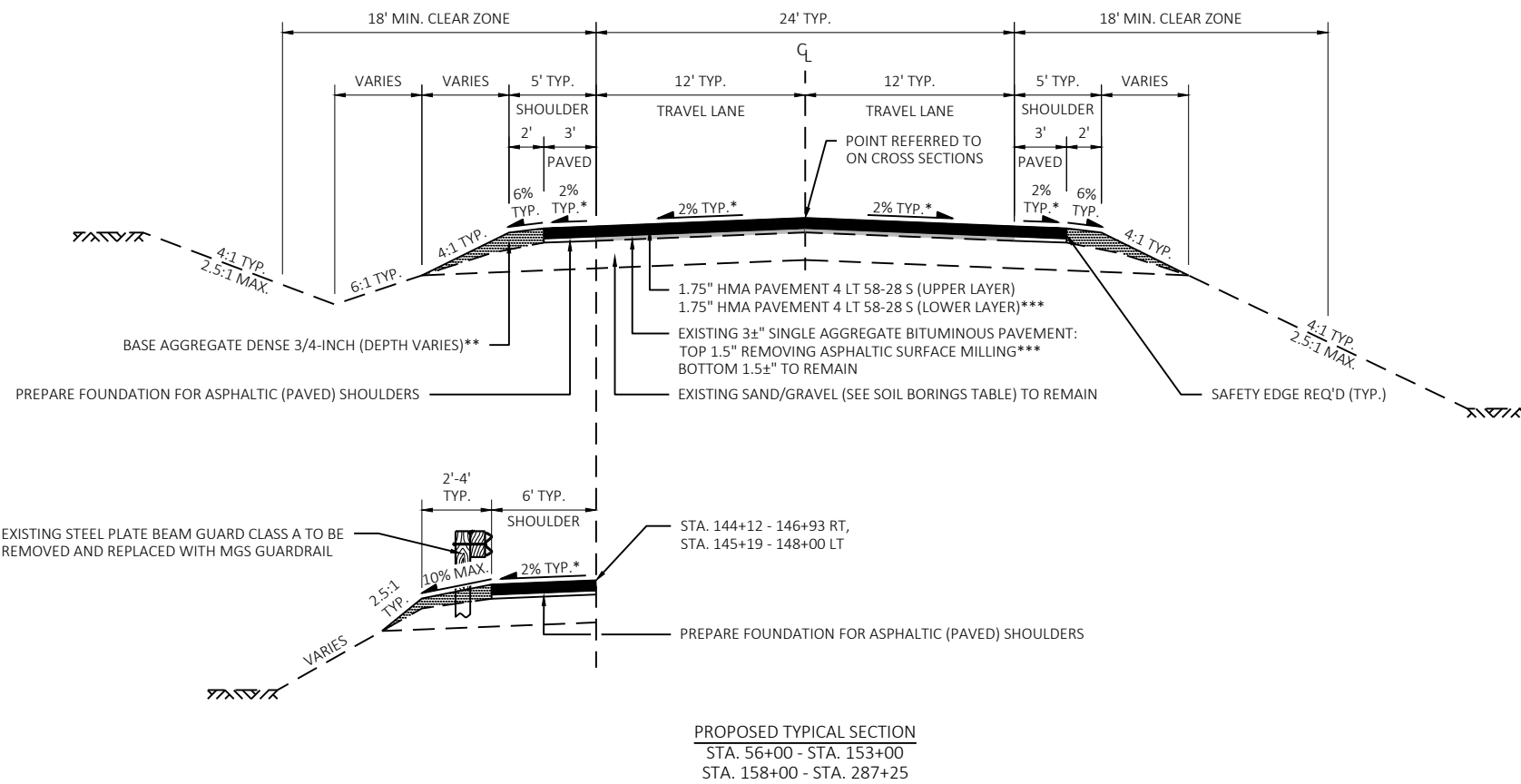


EXISTING TYPICAL SIDEROAD SECTION
CALKINS ROAD
ISLAND ROAD
THAYER ROAD

SOIL BORINGS TABLE					
BORING #	STATION	OFFSET	HMA DEPTH	BASE DEPTH	UNDERLYING MATERIAL
1	29+50	7' RT	4.0"	9.0"	23.0" TOPSOIL
2	29+50	4' LT	4.5"	9.0"	23.0" TOPSOIL
3	40+06	9' RT	3.0"	9.0"	4.0' SAND
4	42+70	6' RT	3.0"	10.0"	4.0' SAND
5	56+00	8' LT	4.5"	9.5"	2.0' SAND/GRAVEL
6	82+30	6' LT	3.0"	-	3.2' SAND/GRAVEL
7	92+86	10' RT	2.5"	-	1.8' SAND/GRAVEL OVER 3' ORGANIC SILT
8	108+70	5' LT	3.0"	-	3.7' SAND/GRAVEL OVER 1' ORGANIC SILT
9	129+82	8' RT	3.5"	-	3.2' SAND/GRAVEL OVER 1.5' ORGANIC SILT
10	145+66	6' LT	3.0"	-	4.2' SAND/GRAVEL
11	161+50	11' RT, SHLDR	0.5"	-	4.0' SAND/GRAVEL OVER 1.0' BOULDERS
12	177+34	9' RT	3.0"	-	4.7' SAND/GRAVEL
13	177+34	5' RT	2.5"	-	4.8' SAND/GRAVEL
14	198+46	16' LT, SHLDR	4.0"	10.0"	4.0" PCC OVER 3.5' SAND
15	198+46	8' LT	4.5"	-	3.1' SAND/GRAVEL OVER 1' CLAYEY SAND
16	214+30	6' RT	4.5"	-	4.6' CLAYEY SAND/GRAVEL
17	240+70	9' LT	3.0"	-	4.7' SAND/GRAVEL
18	256+54	6' RT	3.5"	9.5"	3.9' SAND/GRAVEL
19	256+54	8' LT	3.0"	-	4.7' SAND/GRAVEL
20	272+38	4' LT	5.5"	-	4.5' SAND/GRAVEL
21	272+38	7' LT	5.0"	-	4.5' SAND/GRAVEL



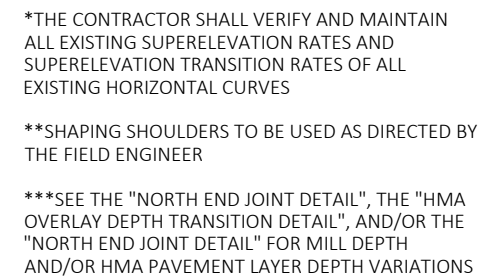
PROPOSED TYPICAL SECTION
STA. 32+00 - STA. 56+00



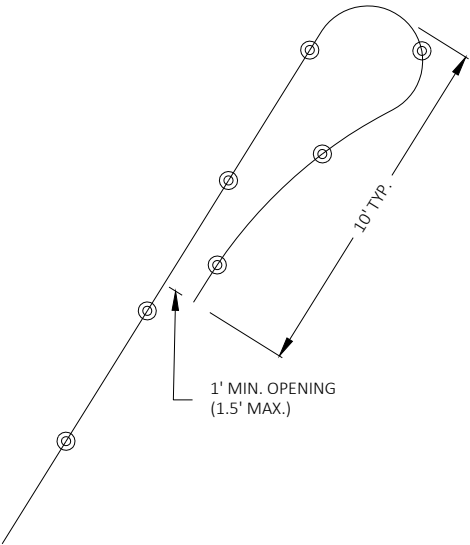
*THE CONTRACTOR SHALL VERIFY AND MAINTAIN ALL EXISTING SUPERELEVATION RATES AND SUPERELEVATION TRANSITION RATES OF ALL EXISTING HORIZONTAL CURVES

**SHAPING SHOULDERS TO BE USED AS DIRECTED BY THE FIELD ENGINEER

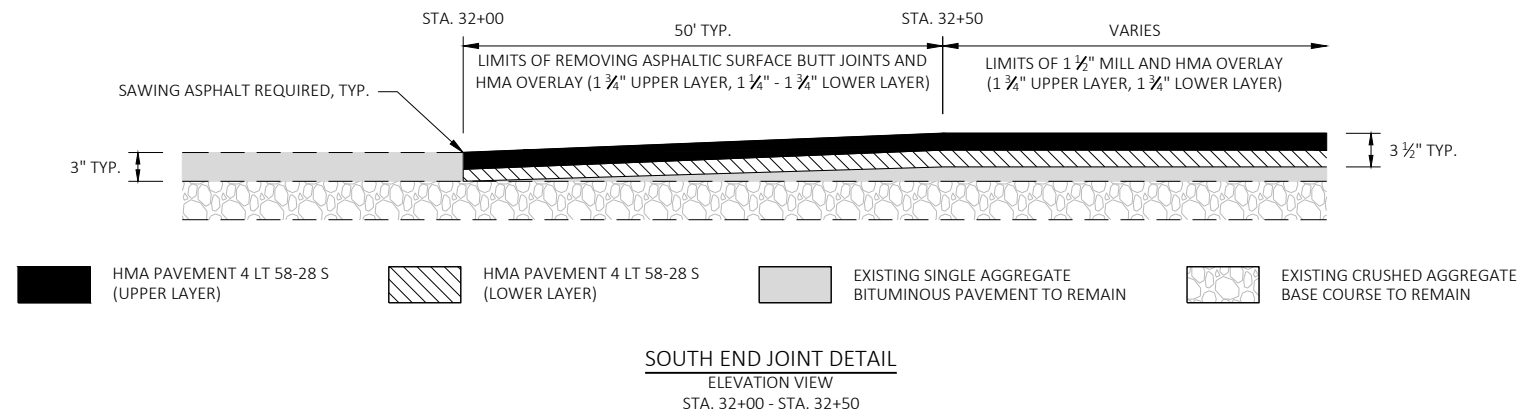
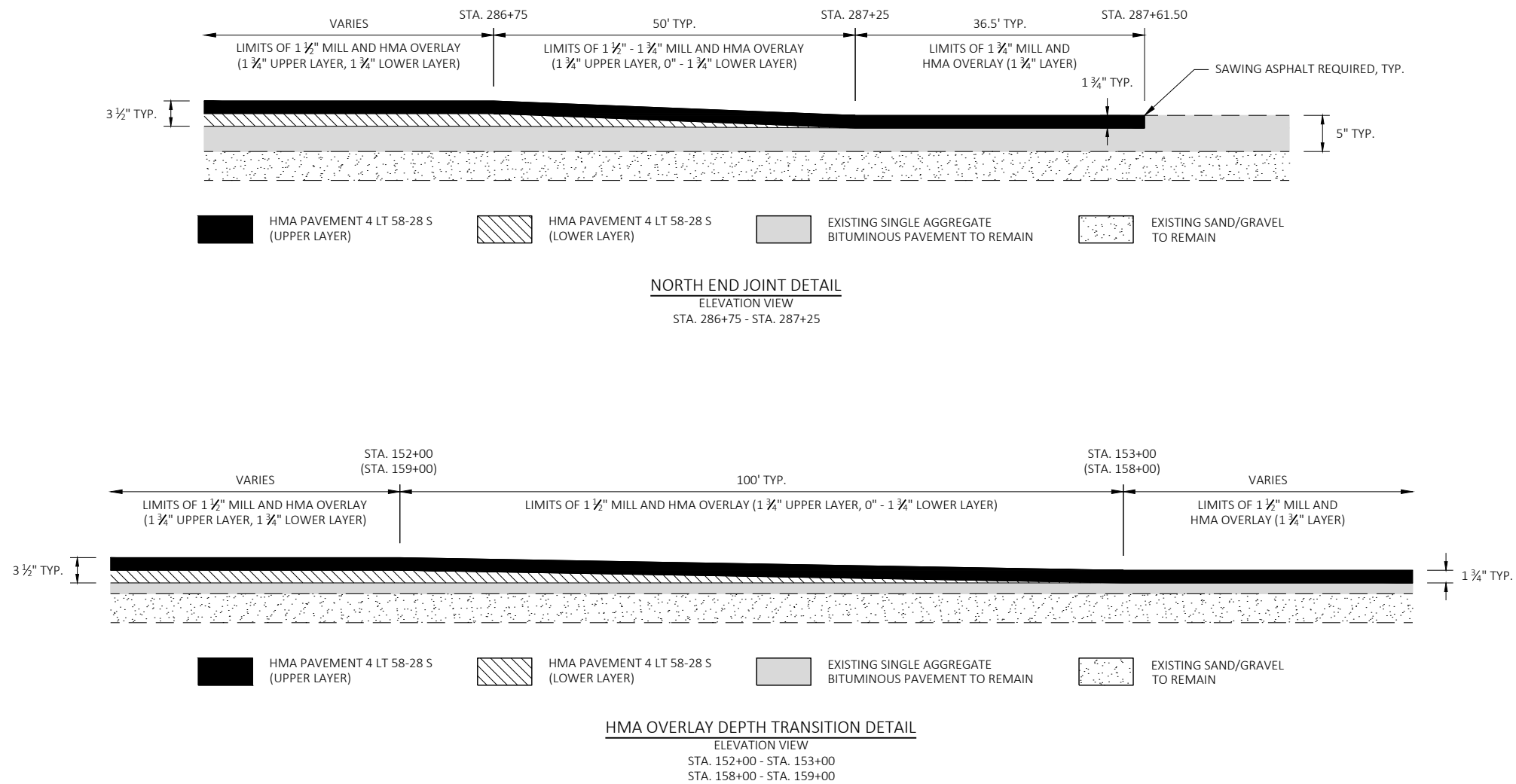
***SEE THE "NORTH END JOINT DETAIL", THE "HMA OVERLAY DEPTH TRANSITION DETAIL", AND/OR THE "NORTH END JOINT DETAIL" FOR MILL DEPTH AND/OR HMA PAVEMENT LAYER DEPTH VARIATIONS

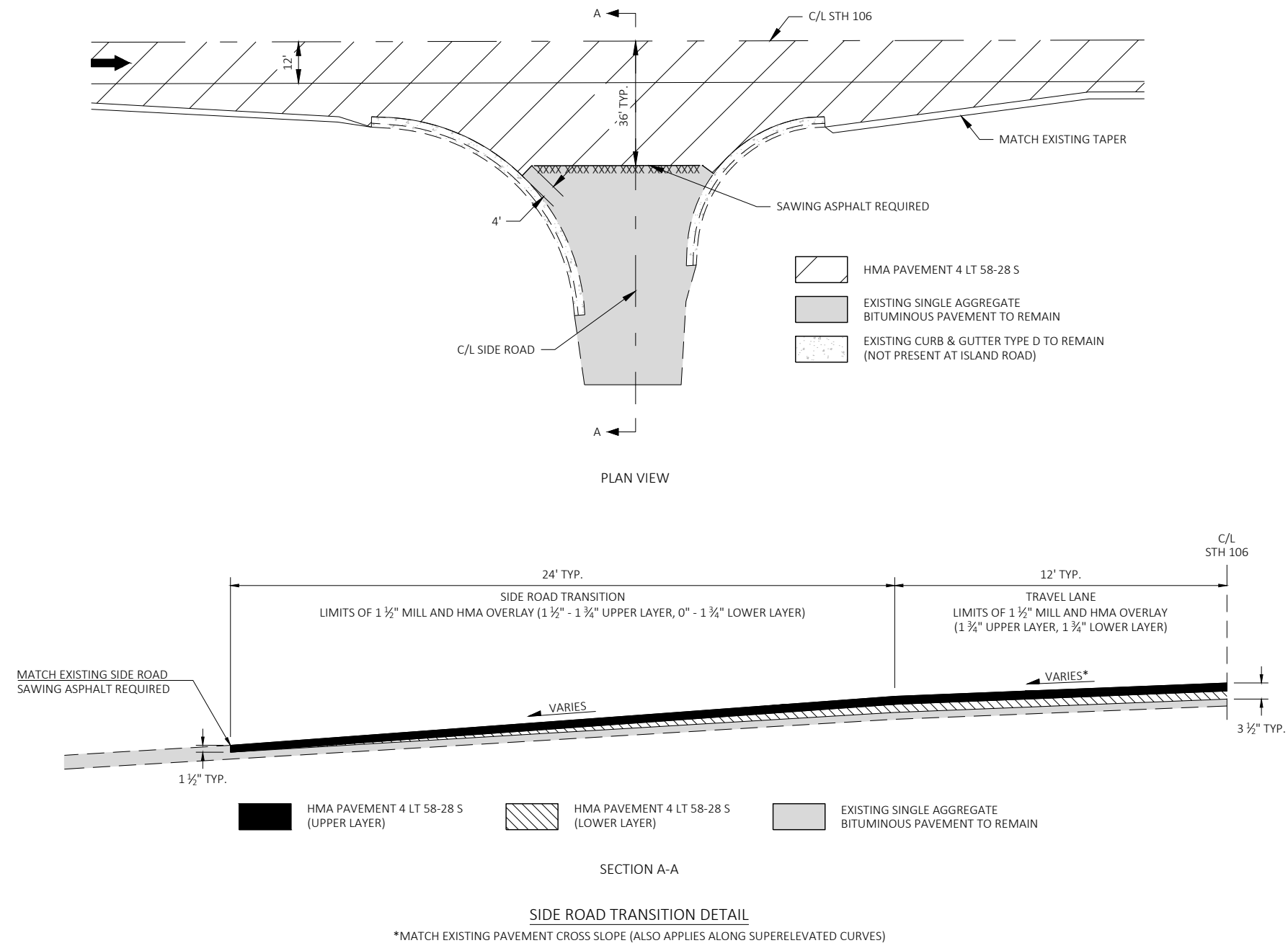


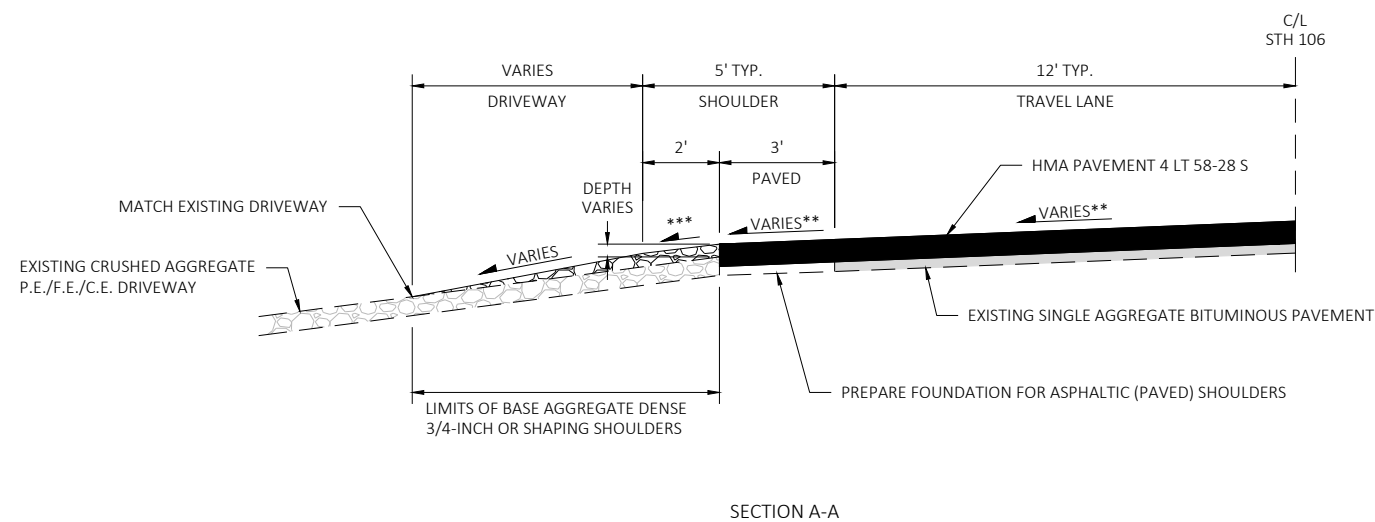
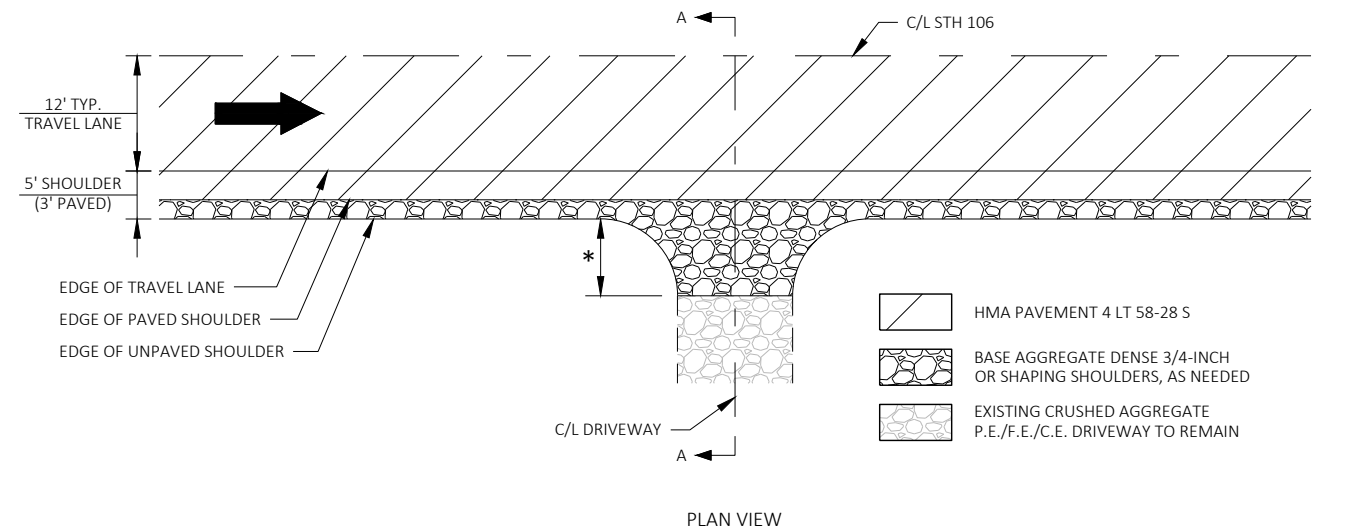
BENCHMARKS/CONTROL POINTS						
NO.	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
BM/CP 900	514,020.55	913,231.87	844.45	3031.07	29.6' LT	2" ALUMINUM FENO MONUMENT
BM/CP 901	516,522.14	908,713.04	809.15	8579.85	29.5' LT	2" ALUMINUM FENO MONUMENT
BM/CP 902	519,376.06	904,855.15	789.86	14222.83	30.2' RT	2" ALUMINUM FENO MONUMENT
BM/CP 903	523,705.48	902,269.28	783.60	19269.93	38.5' LT	2" ALUMINUM FENO MONUMENT
BM/CP 904	528,739.94	901,372.76	906.31	24538.18	34.8' RT	2" ALUMINUM FENO MONUMENT
BM/CP 905	532,965.64	901,325.55	870.32	28748.95	75.0' RT	2" ALUMINUM FENO MONUMENT
BM/CP 907	520,432.63	904,186.91	786.97	15474.64	65.2' RT	2" ALUMINUM FENO MONUMENT
BM/CP 908	519,742.23	904,604.04	788.63	14666.200	28.5' RT	2" ALUMINUM FENO MONUMENT
BM/CP 909	520,929.61	903,791.18	785.68	16104.12	33.4' LT	2" ALUMINUM FENO MONUMENT
BM/CP 910	524,208.40	902,006.50	786.12	19837.33	26.4' LT	2" ALUMINUM FENO MONUMENT
BM/CP 911	524,650.50	901,756.19	786.47	20345.33	32.2' LT	2" ALUMINUM FENO MONUMENT
BM/CP 912	520,479.05	904,010.47	786.58	15605.84	61.6' LT	2" ALUMINUM FENO MONUMENT
BM/CP 913	525,176.81	901,465.52	789.15	20946.58	32.7' LT	2" ALUMINUM FENO MONUMENT



SILT FENCE TURN-AROUND ENDS DETAIL
PLAN VIEW





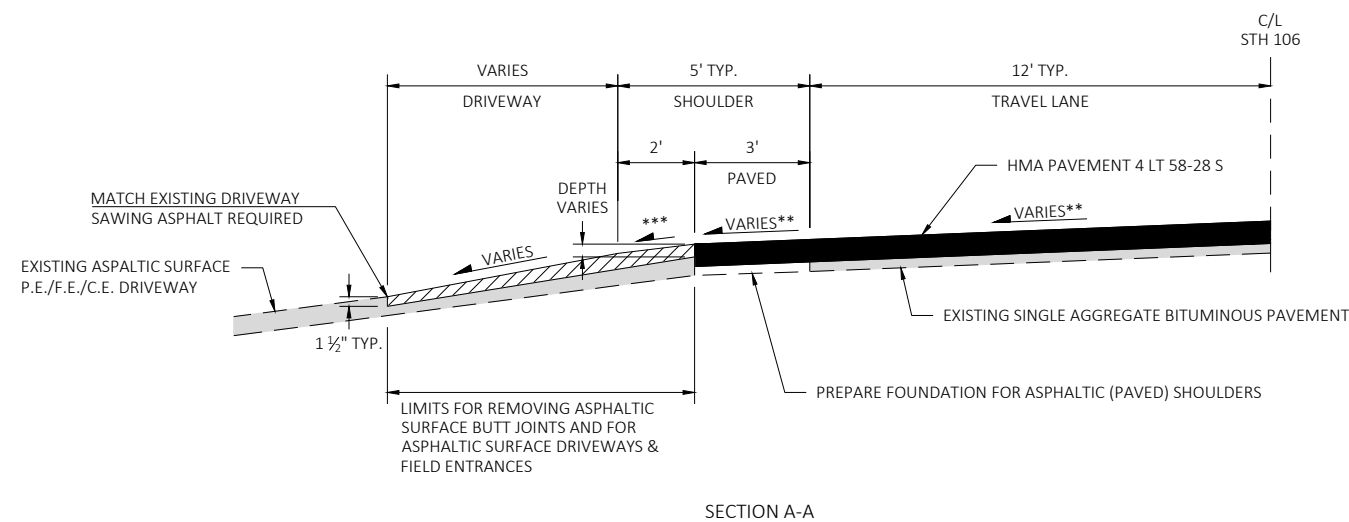
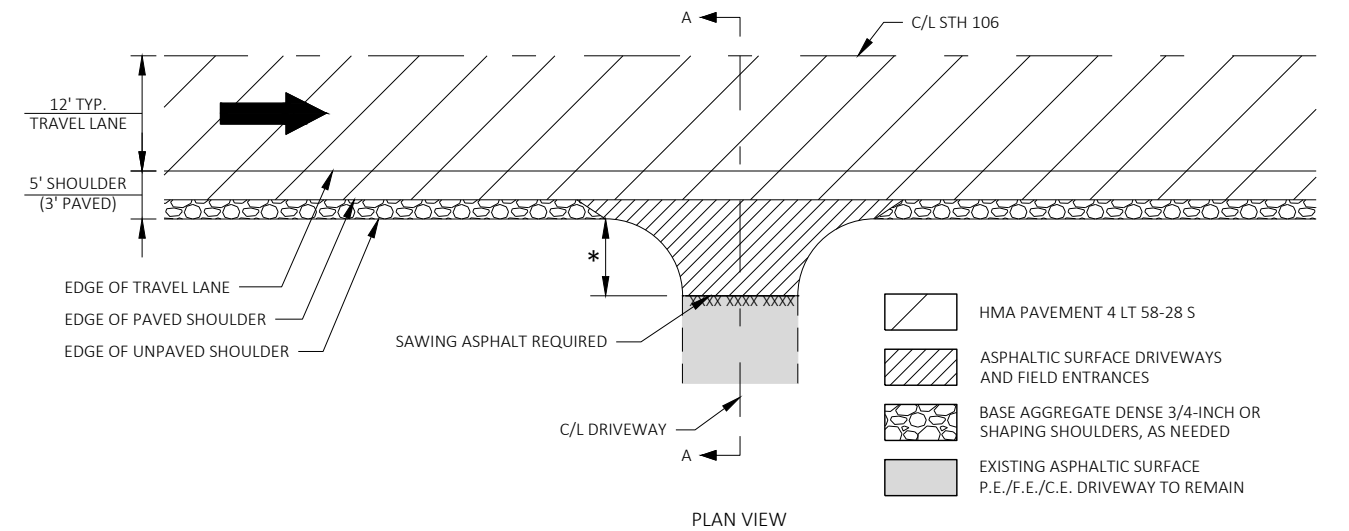


P.E./F.E./C.E. DRIVEWAY DETAIL - EXISTING CRUSHED AGGREGATE

*REPLACE TO THE DRIVEWAY RADIUS POINTS OR AS DIRECTED BY THE FIELD ENGINEER

**MATCH EXISTING PAVEMENT CROSS SLOPE

***6% TYPICAL; MATCH S.E. SLOPE AT LOW END OF S.E. CURVE; 8% MAX. ROLLOVER RATE AT HIGH END OF S.E. CURVE

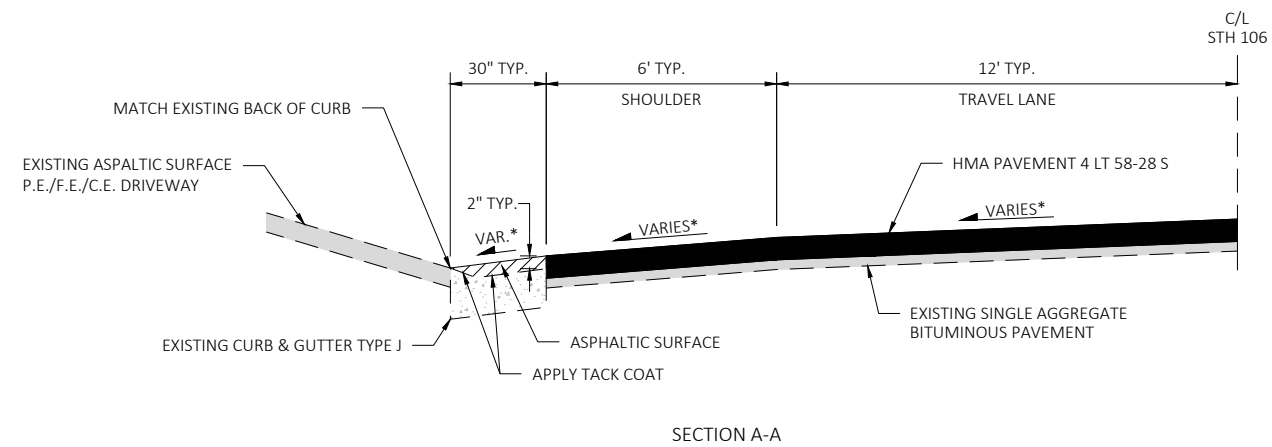
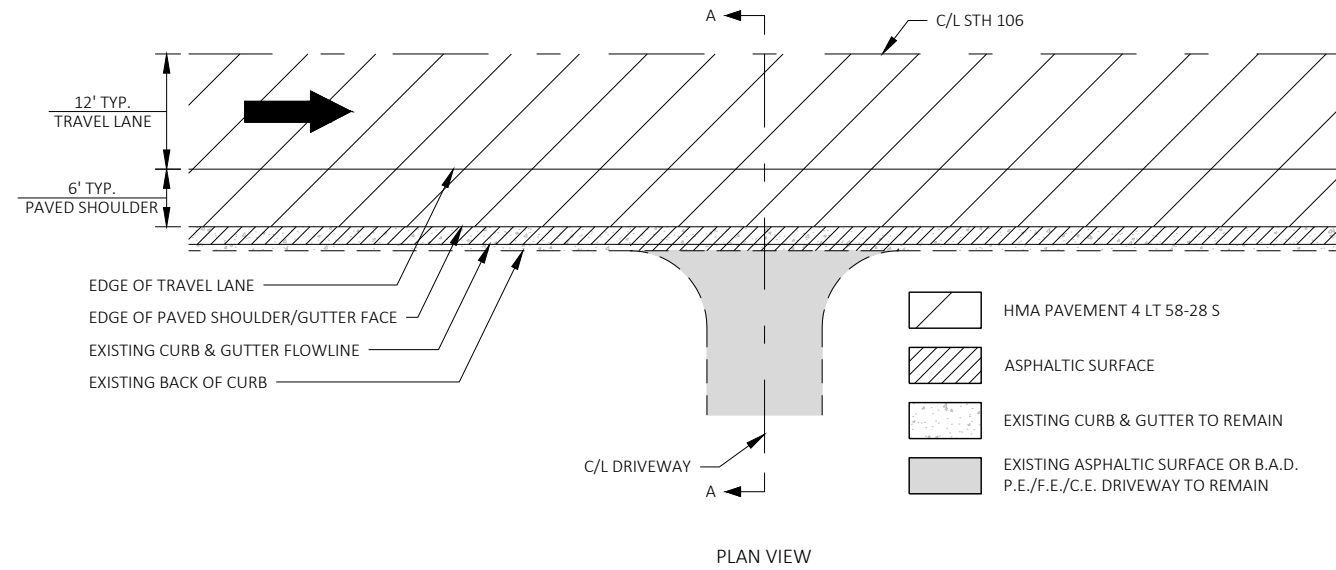


P.E./F.E./C.E. DRIVEWAY DETAIL - EXISTING ASPHALT

*REPLACE TO THE EXISTING PAVEMENT JOINT OR AS DIRECTED BY THE FIELD ENGINEER

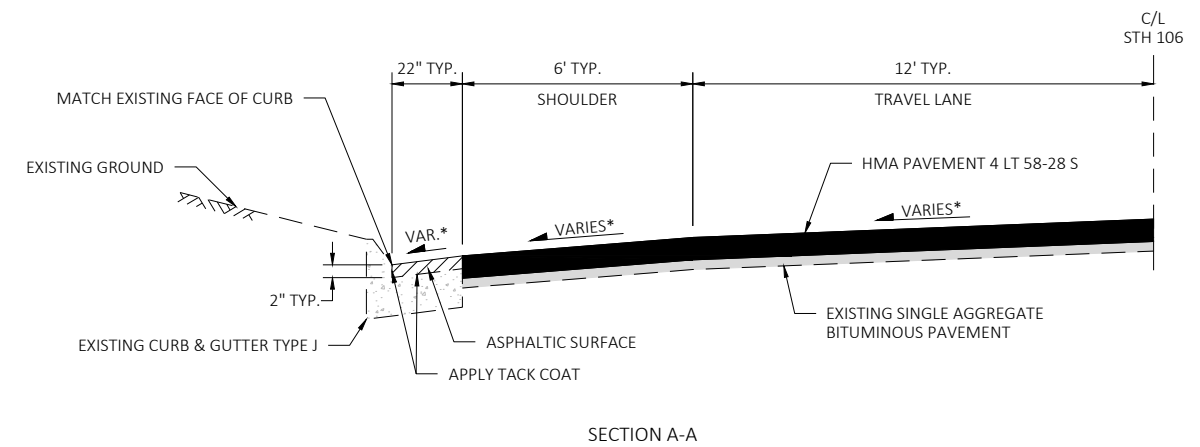
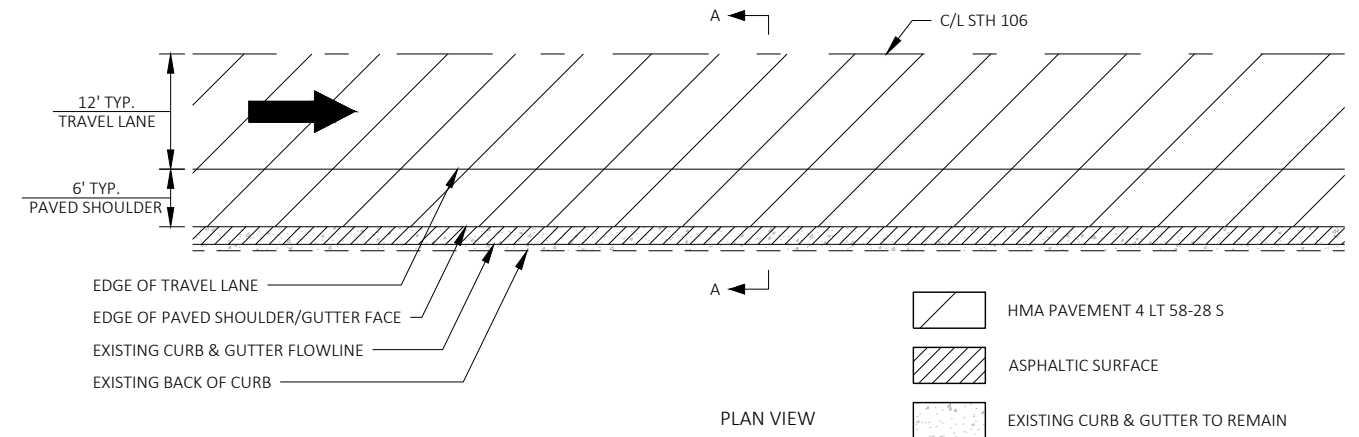
**MATCH EXISTING PAVEMENT CROSS SLOPE

***6% TYPICAL; MATCH S.E. SLOPE AT LOW END OF S.E. CURVE; 8% MAX. ROLLOVER RATE AT HIGH END OF S.E. CURVE



P.E./F.E./C.E. DRIVEWAY DETAIL - EXISTING CURB & GUTTER

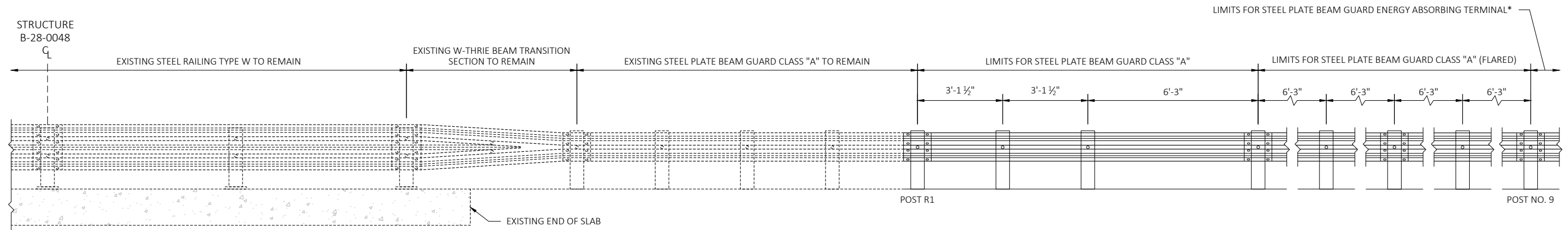
*MATCH EXISTING PAVEMENT CROSS SLOPE



GUTTER OVERLAY DETAIL

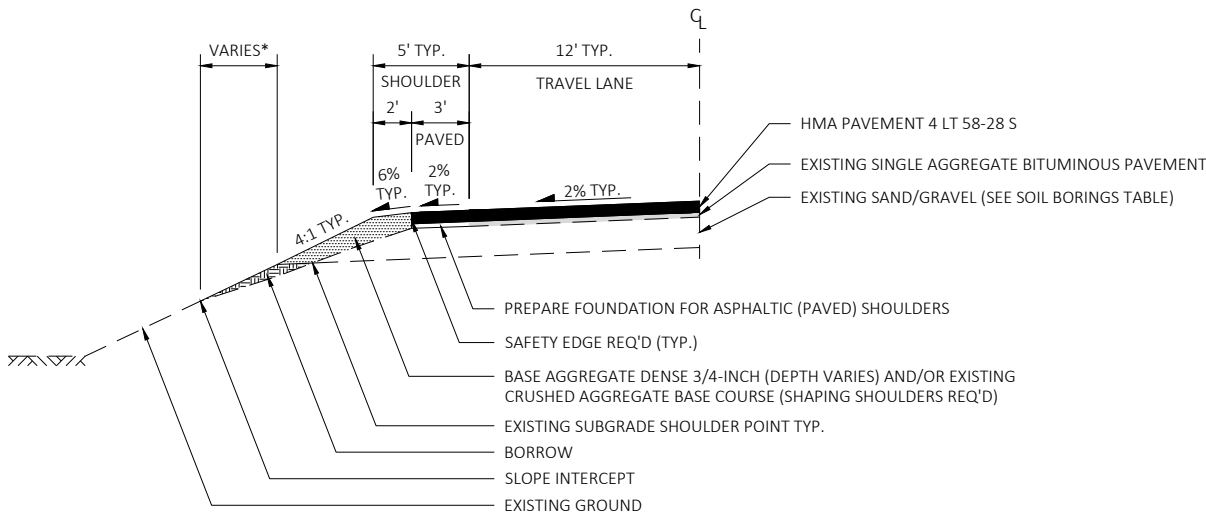
STA 38+90 - 45+10 LT

*MATCH EXISTING PAVEMENT CROSS SLOPE



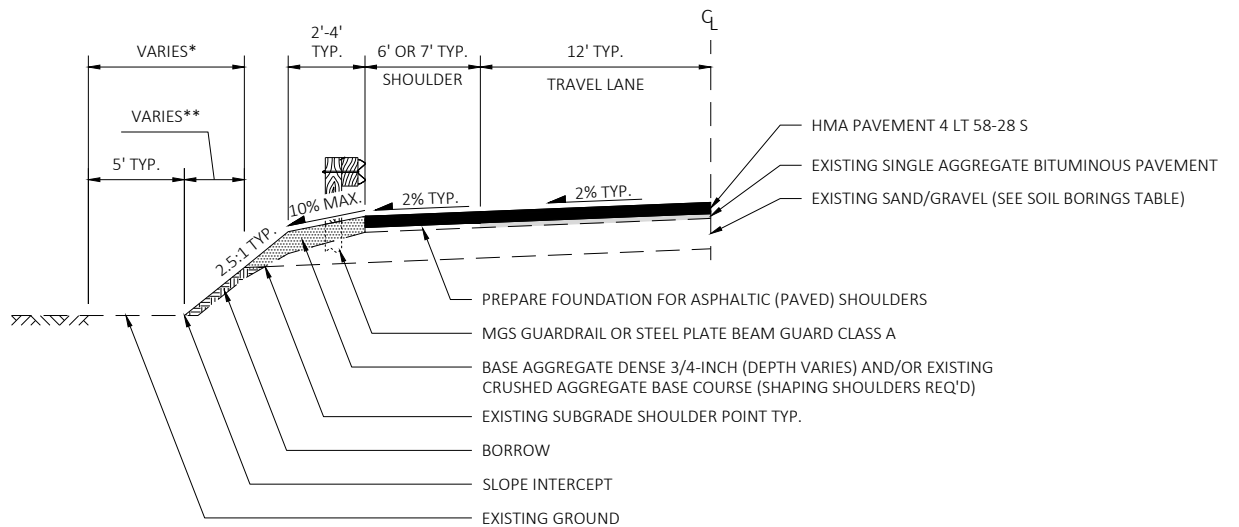
STEEL PLATE BEAM GUARD (SPBG) CLASS "A" REPLACEMENT DETAIL

ELEVATION VIEW
*SEE SDD 14B24-A



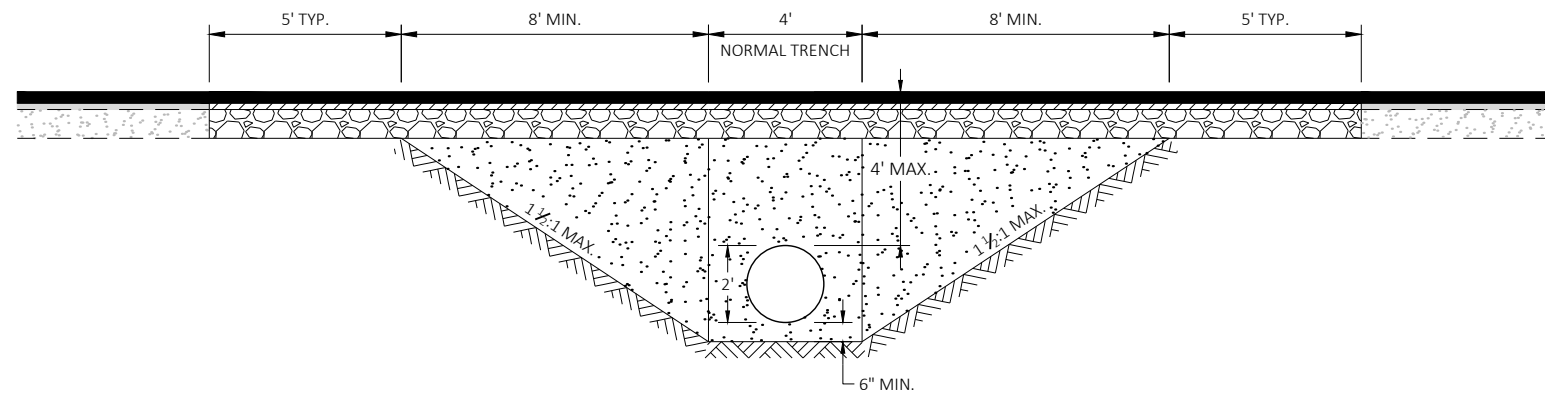
CROSS SECTION WITH BORROW MATERIAL DETAIL

*LIMITS FOR EROSION MAT CLASS I TYPE B, SALVAGED TOPSOIL, SEEDING MIXTURE NO. 10, & TEMPORARY SEEDING

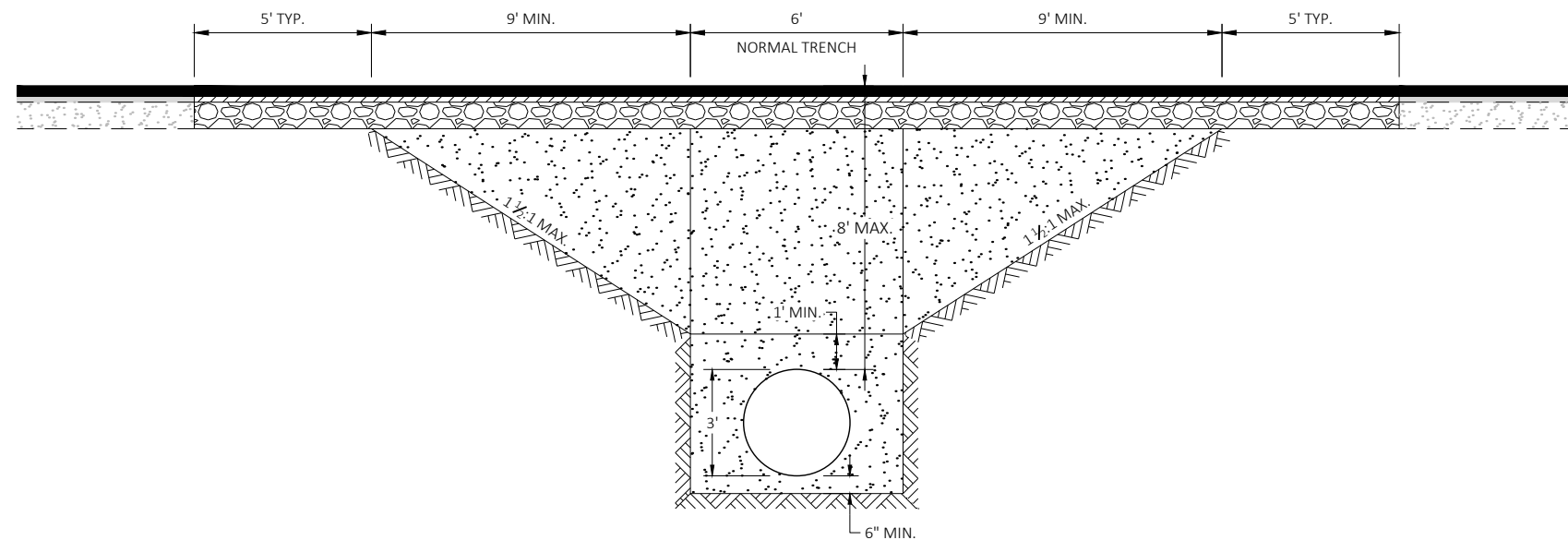
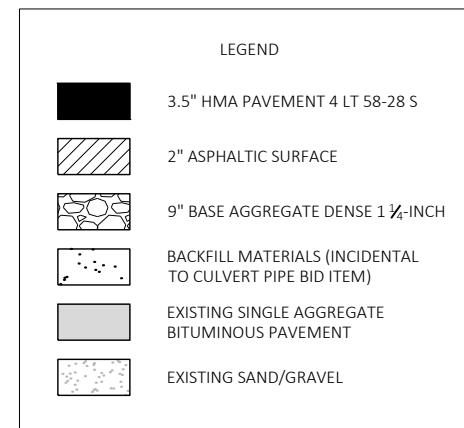


CROSS SECTION WITH BORROW MATERIAL & GUARDRAIL DETAIL

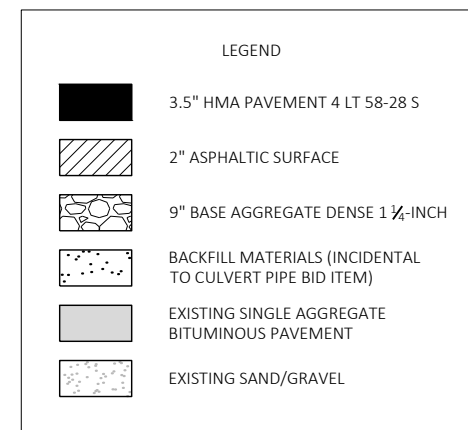
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**LIMITS FOR SALVAGED TOPSOIL - WETLANDS

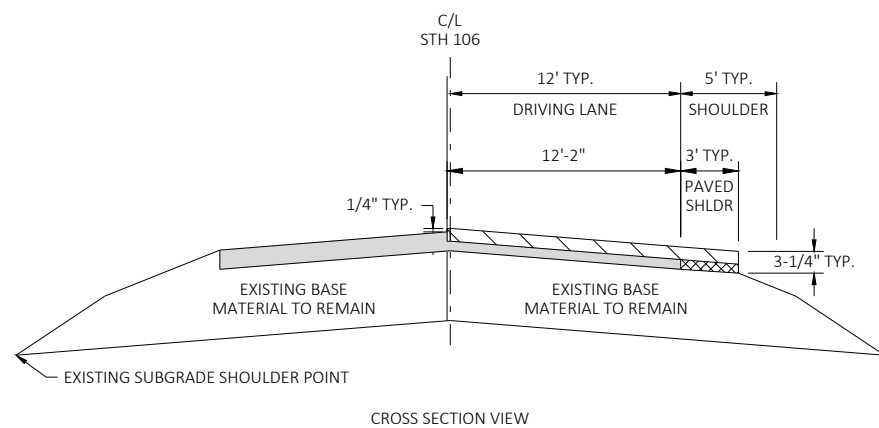
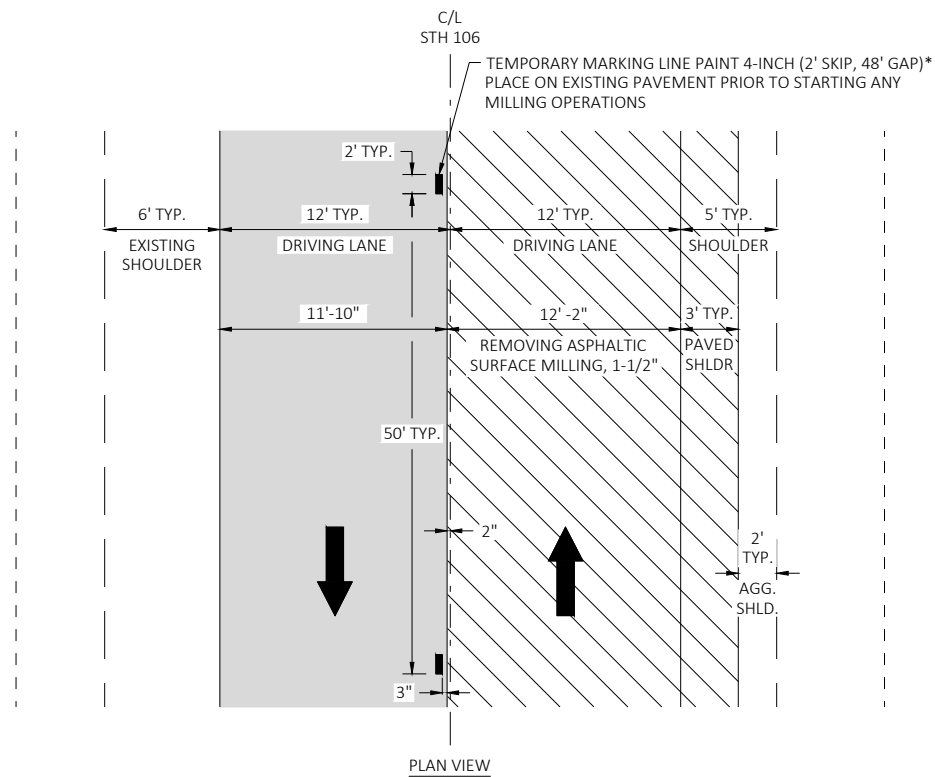


CROSS DRAIN INSTALLATION DETAIL (STA. 136+90)
END ELEVATION VIEW



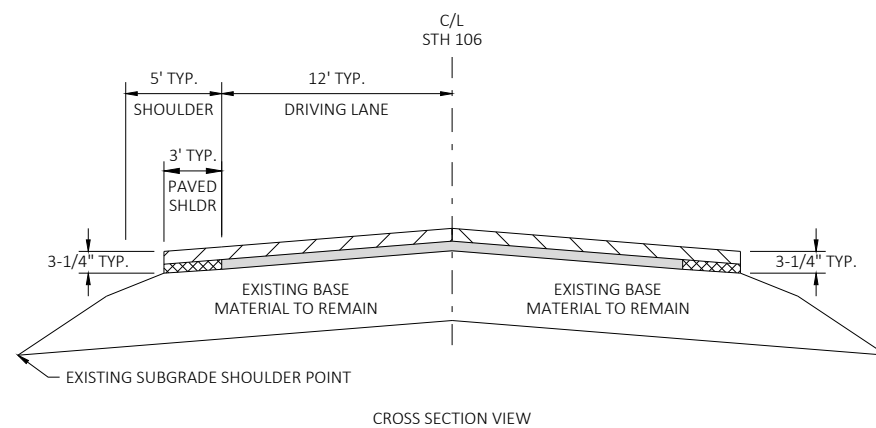
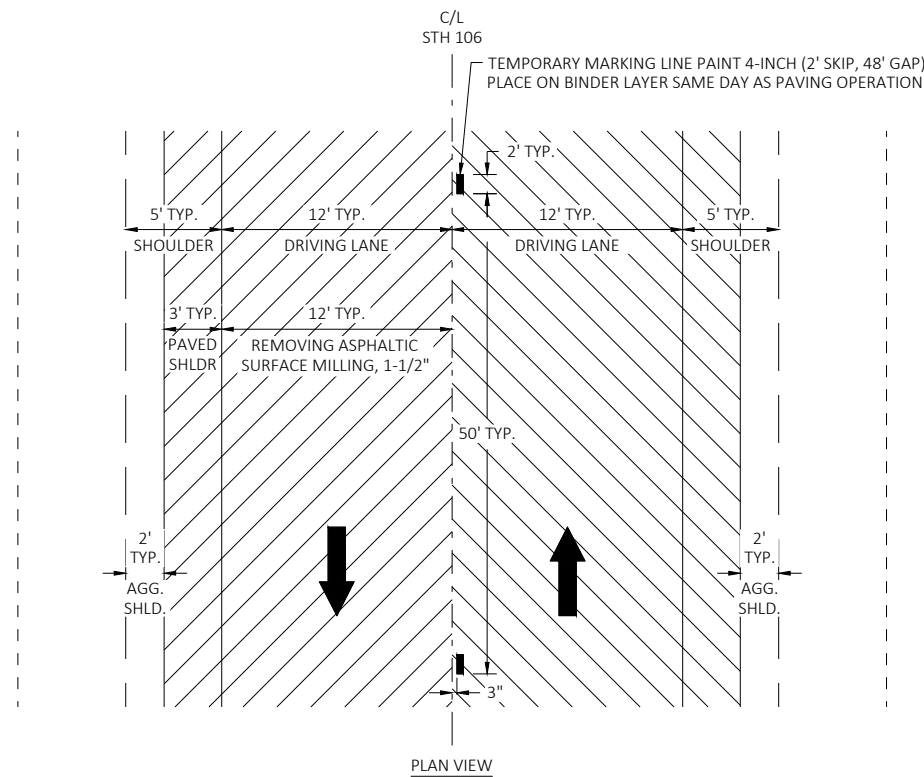
CROSS DRAIN INSTALLATION DETAIL (STA. 211+17, SKEWED 26° LHF)
END ELEVATION VIEW





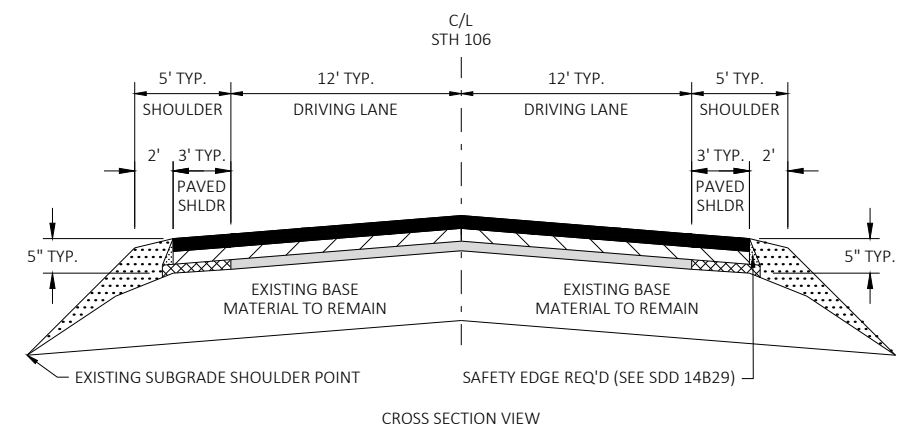
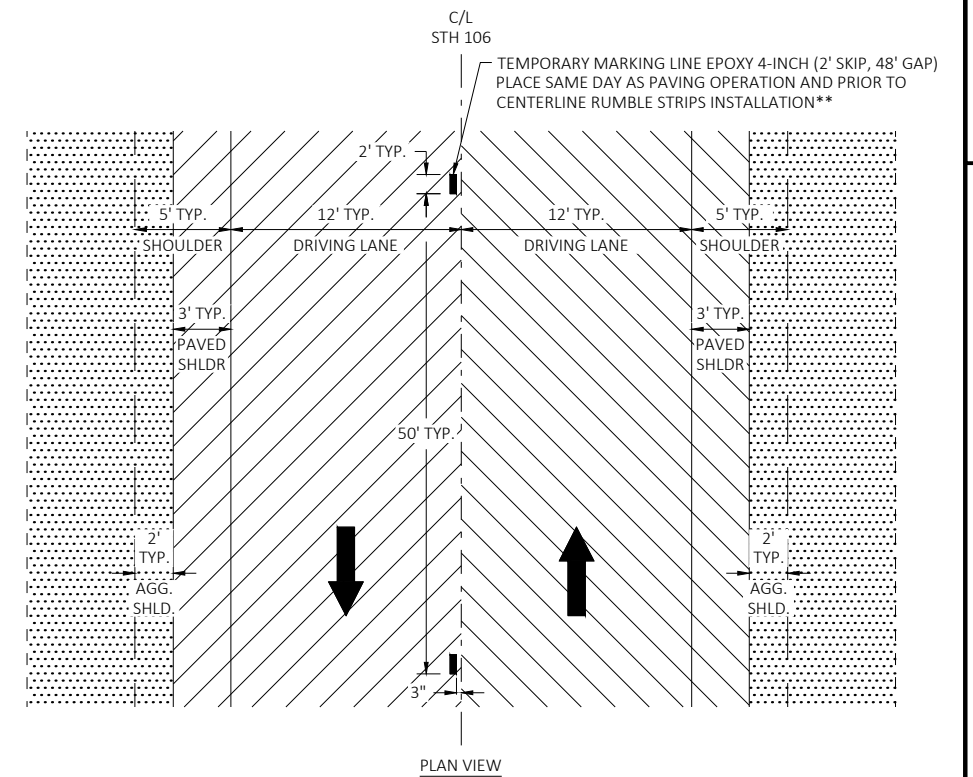
LONGITUDINAL PAVEMENT JOINT DETAIL - FIRST PASS

STA. 32+00 - STA. 287+62



LONGITUDINAL PAVEMENT JOINT DETAIL - SECOND PASS

STA. 32+00 - STA. 287+62



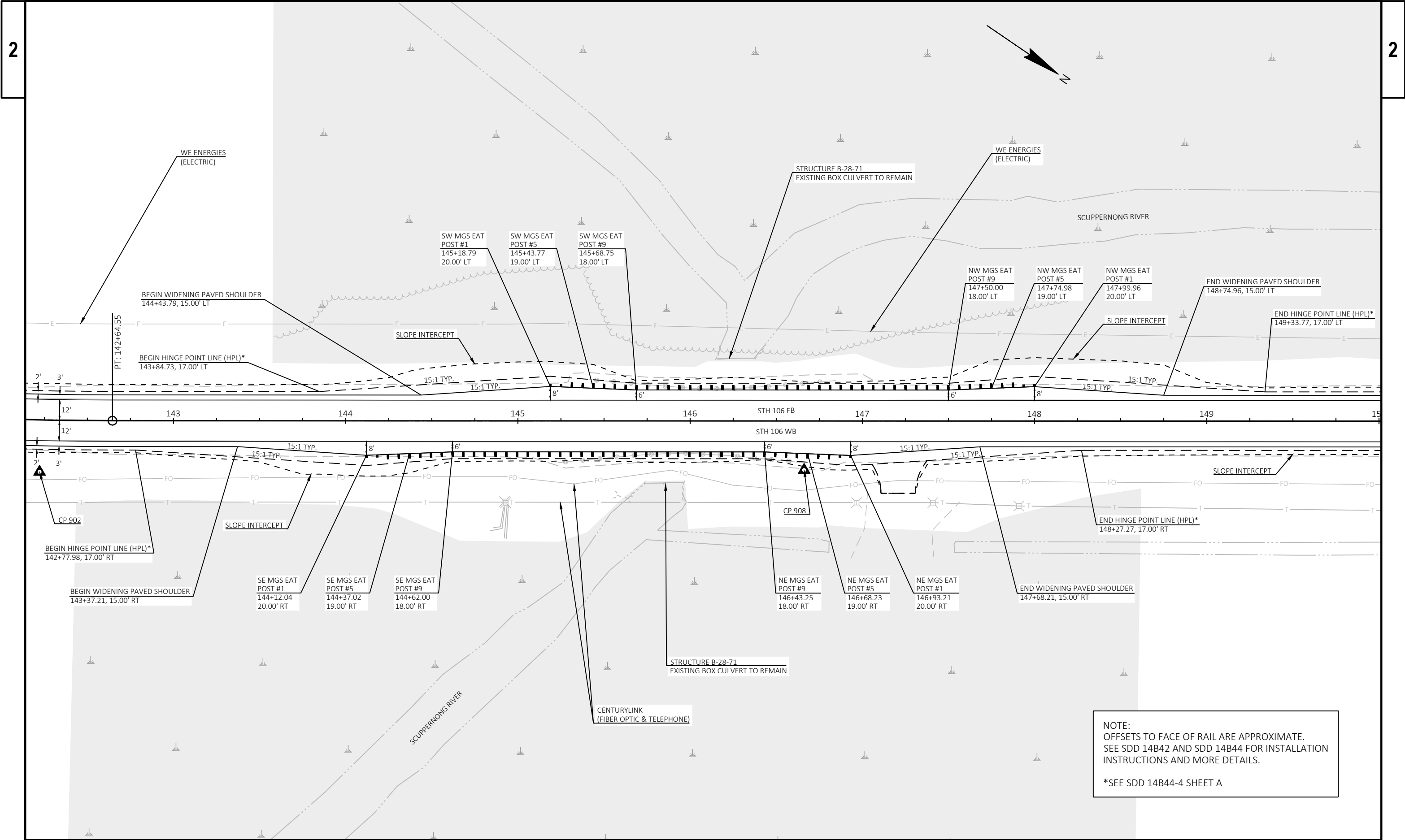
LONGITUDINAL PAVEMENT JOINT DETAIL - THIRD PASS

STA. 32+00 - STA. 287+62

EXISTING SINGLE AGGREGATE
BITUMINOUS PAVEMENT TO REMAINFIRST PASS 1-3/4" HMA PAVEMENT
4 LT 58-28 S PAVING LIMITSSECOND PASS 1-3/4" HMA PAVEMENT
4 LT 58-28 S PAVING LIMITSTHIRD PASS 1-3/4" HMA PAVEMENT
4 LT 58-28 S PAVING LIMITS5" TYP. BASE AGGREGATE
DENSE 3/4-INCHPREPARE FOUNDATION FOR
ASPHALTIC SHOULDERS

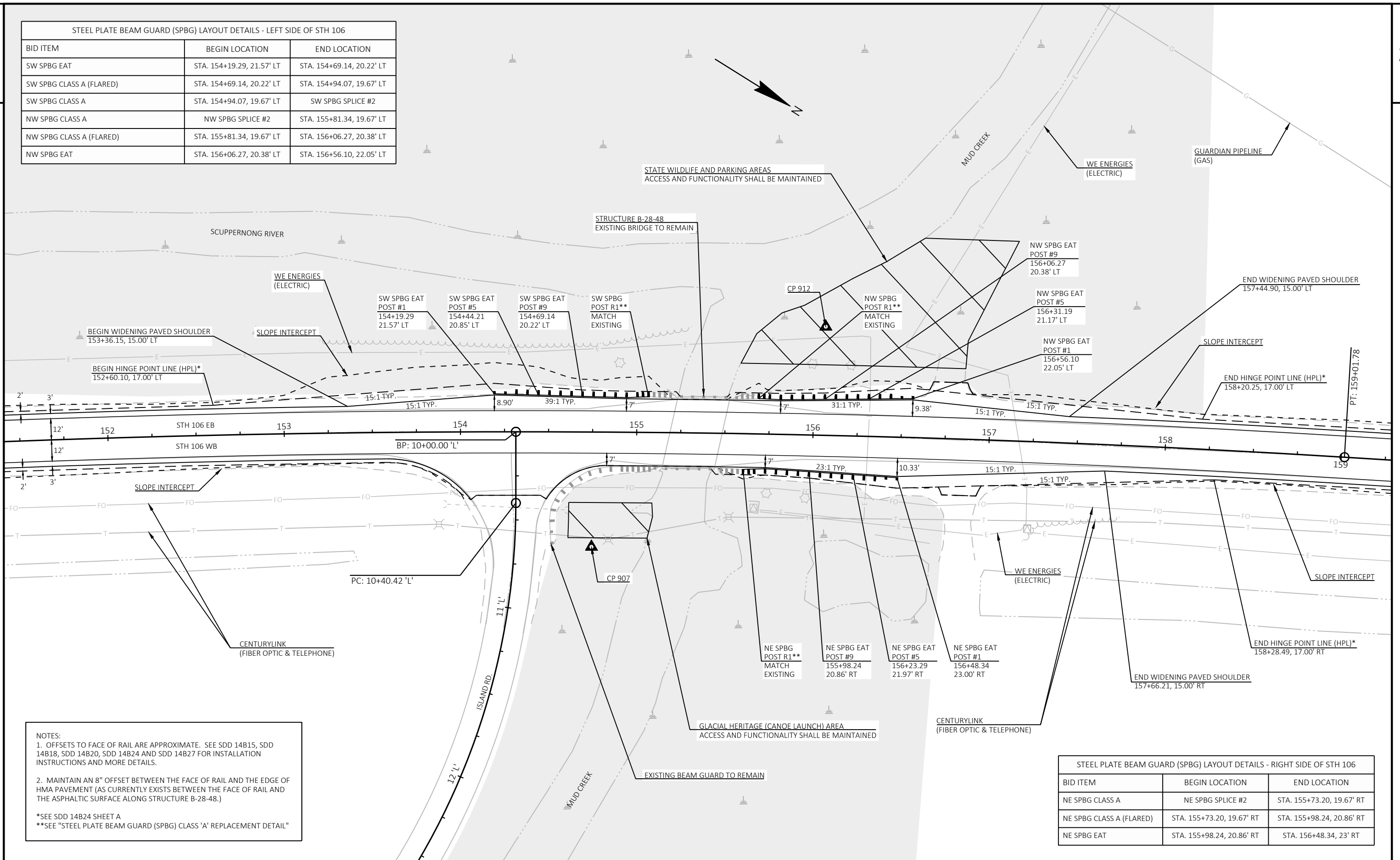
CROSS SECTION VIEW

BINDER LAYER MUST BE PAVED PRIOR TO MILLING ADJACENT
TRAVELED LANE.NORTHBOUND LANE TO BE MILLED AND BINDER PAVED PRIOR
TO MILLING SOUTHBOUND LANE.DIFFERING HEIGHT GREATER THAN 2" BETWEEN ADJACENT
TRAVELED LANES WILL NOT BE PERMITTED OVERNIGHT.SEE STANDARD DETAIL DRAWING 15C8 PAVEMENT MARKING,
MAINLINE AND TURN LANES AND 15C33 STOP LINE AND
CROSSWALK PAVEMENT MARKING FOR PERMANENT
PAVEMENT MARKING DETAILS.*REQUIRED ONLY IN LOCATIONS WHERE EXISTING
PAVEMENT MARKING WILL NOT BE VISIBLE FOR
MORE THAN 50' AFTER MILLING.**LOCATING NO PASSING ZONES REQUIRED
PRIOR TO PLACEMENT OF TEMPORARY MARKING
LINE EPOXY 4-INCH. MARKING LINE EPOXY 4-INCH
REQUIRED AFTER INSTALLING CENTERLINE
RUMBLE STRIPS.R4-1 SIGNS SHALL BE INSTALLED AT THE BEGINNING
OF EXISTING NO PASSING ZONES (OPPOSITE SIDE OF
W14-3 SIGNS). ADDITIONAL R4-1 SIGNS SHALL BE
INSTALLED AT ONE MILE INTERVALS WITHIN THE NO
PASSING ZONE IF APPLICABLE.W8-12 SIGNS SHALL BE PLACED AT THE START OF THE
ROADWAY SEGMENT THAT HAS NO MARKING.
ADDITIONAL W8-12 SIGNS SHALL BE PLACED AT TWO
MILE INTERVALS IF APPLICABLE.



NOTE:
OFFSETS TO FACE OF RAIL ARE APPROXIMATE.
SEE SDD 14B42 AND SDD 14B44 FOR INSTALLATION
INSTRUCTIONS AND MORE DETAILS.

*SEE SDD 14B44-4 SHEET A



PROJECT NO: 3576-01-70

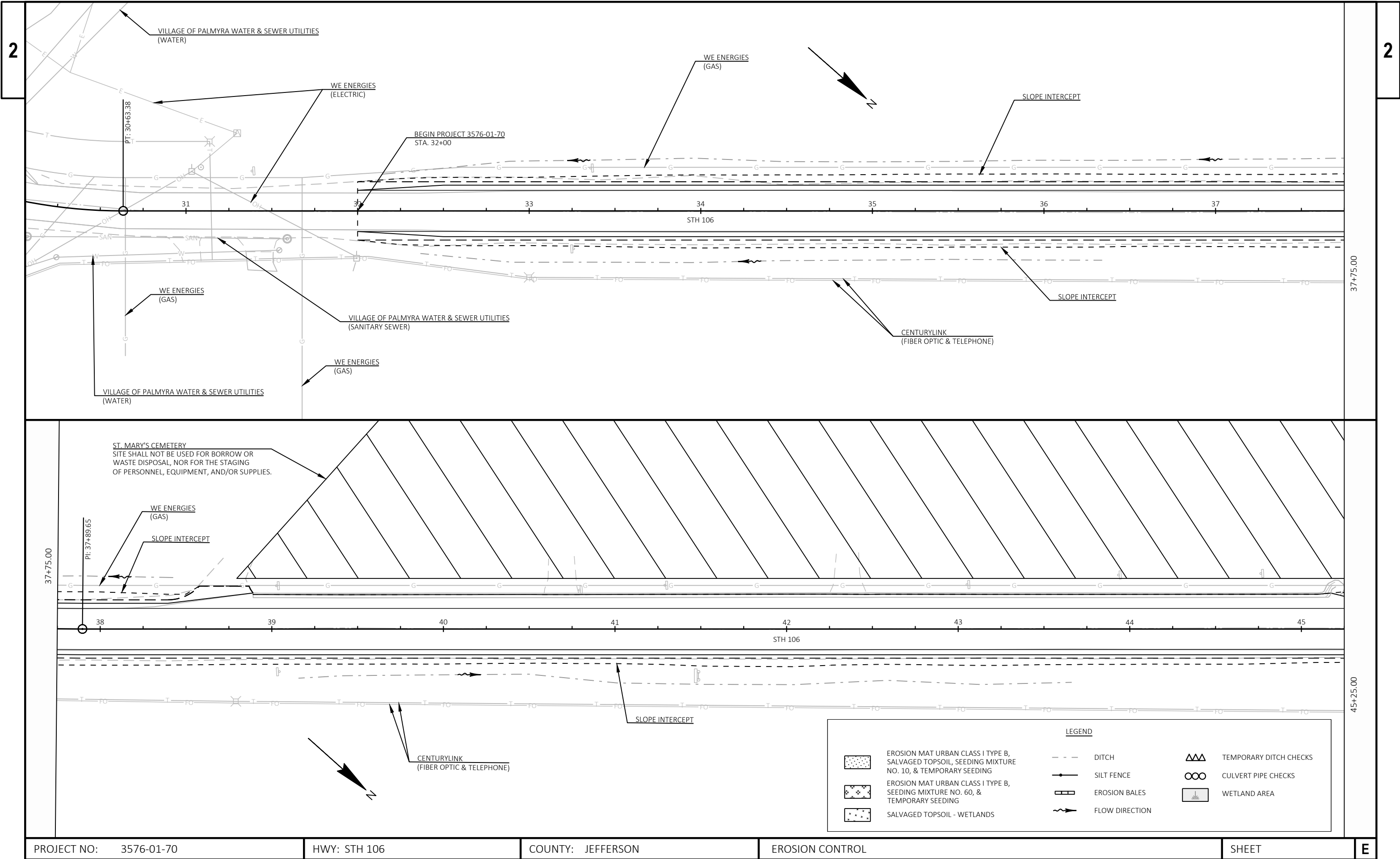
HWY: STH 106

COUNTY: JEFFERSON

CONSTRUCTION DETAILS - STEEL PLATE BEAM GUARD LAYOUT

SHEET

E



PROJECT NO: 3576-01-70

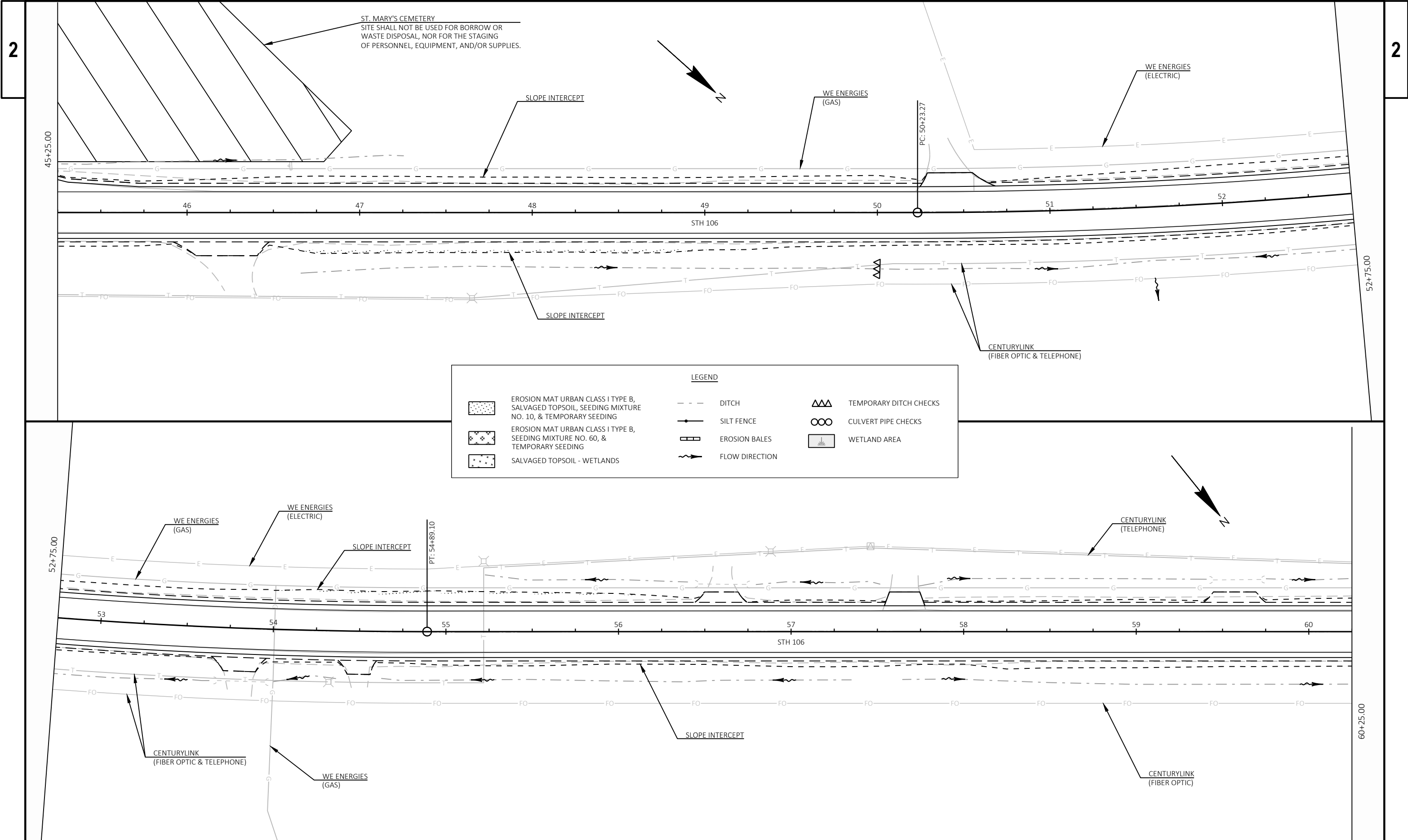
HWY: STH 106

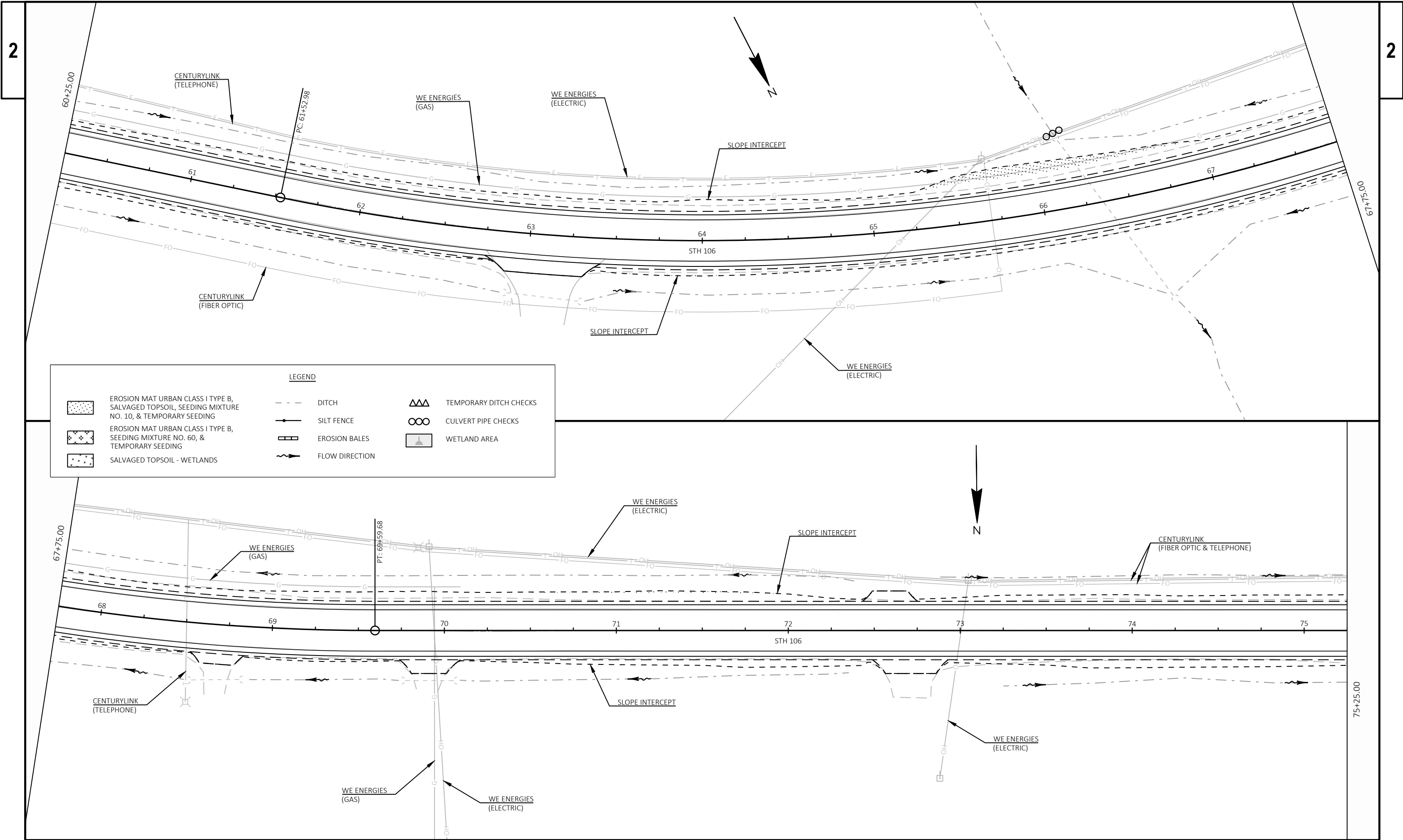
COUNTY: JEFFERSON

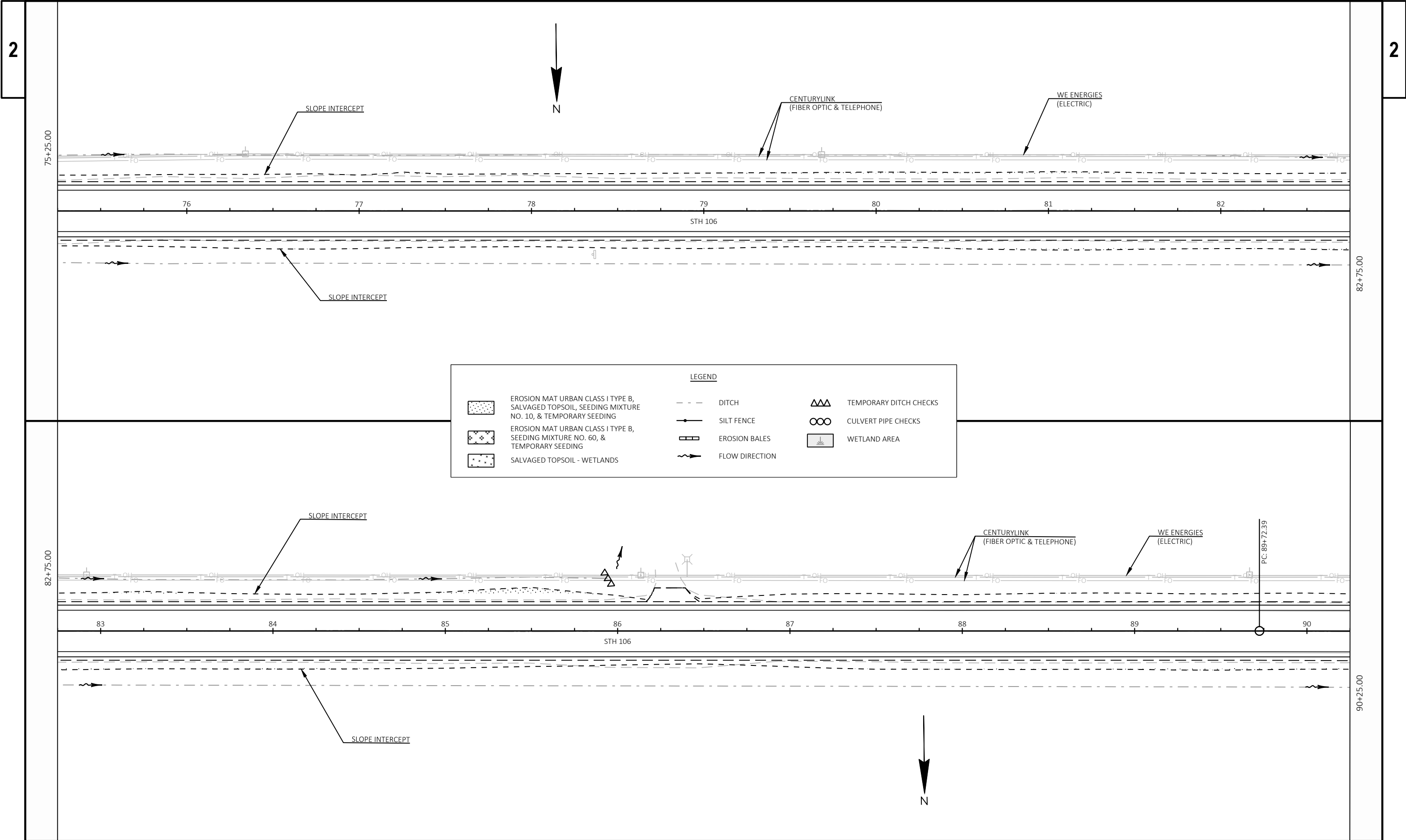
EROSION CONTROL

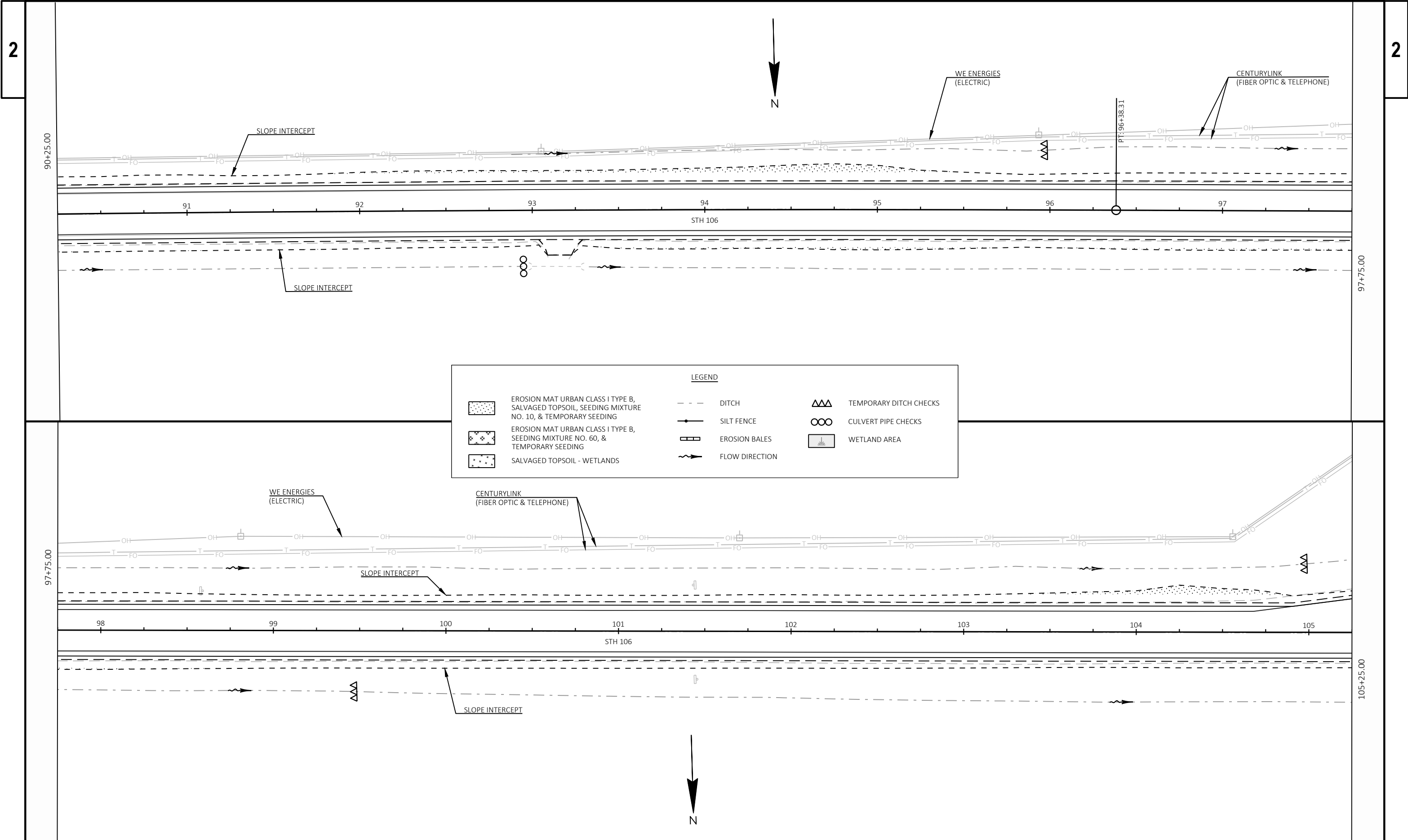
SHEET

E









LEGEND

EROSION MAT URBAN CLASS I TYPE B,
SALVAGED TOPSOIL, SEEDING MIXTURE
NO. 10, & TEMPORARY SEEDING

EROSION MAT URBAN CLASS I TYPE B,
SEEDING MIXTURE NO. 60, &
TEMPORARY SEEDING

SALVAGED TOPSOIL - WETLANDS

DITCH

SILT FENCE

EROSION BALES

FLOW DIRECTION

TEMPORARY DITCH CHECKS

CULVERT PIPE CHECKS

WETLAND AREA

PROJECT NO: 3576-01-70

HWY: STH 106

COUNTY: JEFFERSON

EROSION CONTROL

SHEET

E

FILE NAME : N:\PDS\C3D\35760100\SHEETSPLAN\022001_EC - EROSION CONTROL\022001_EC.DWG
LAYOUT NAME - 05

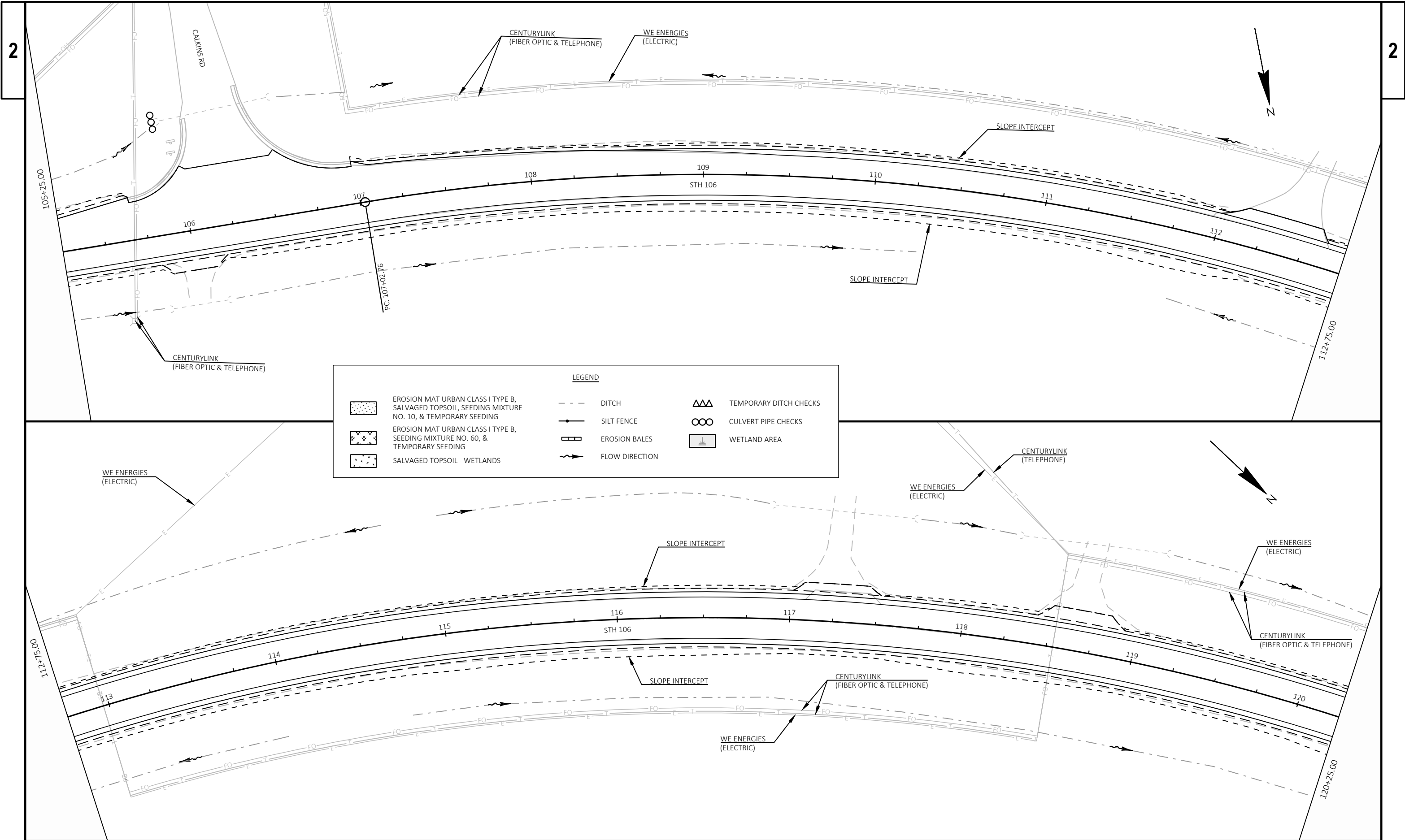
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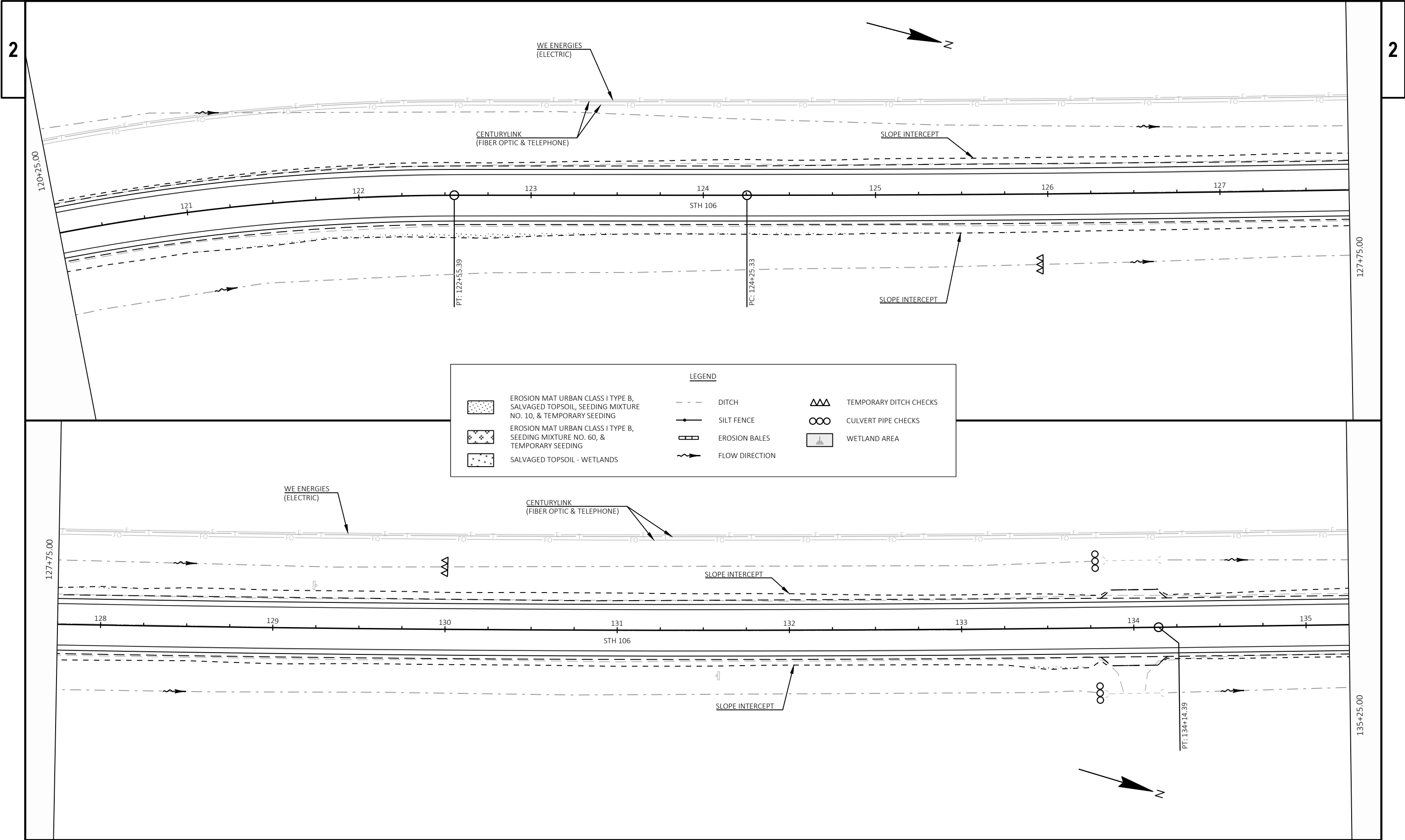
PLOT BY : DEYMARCOS, TIJLER JO

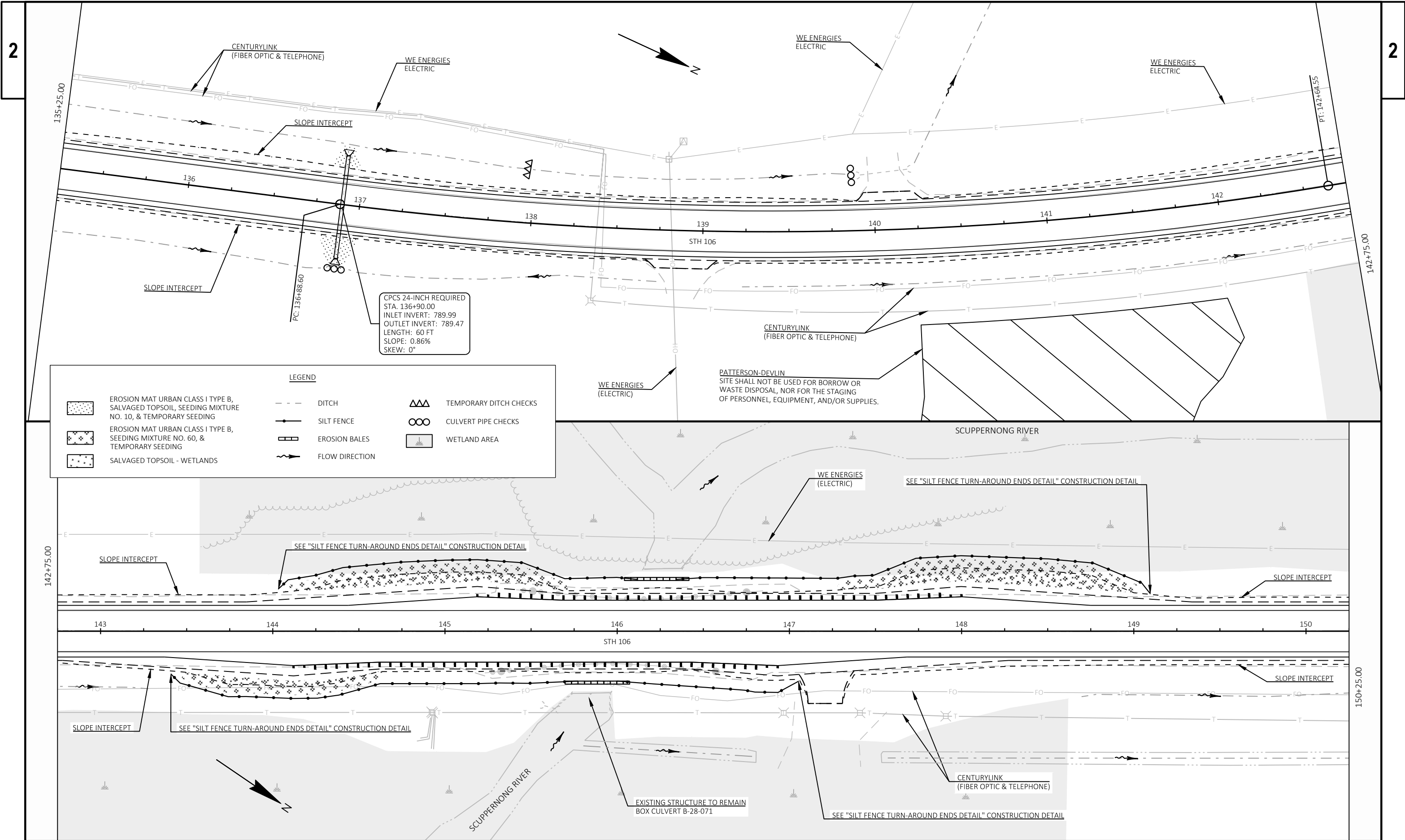
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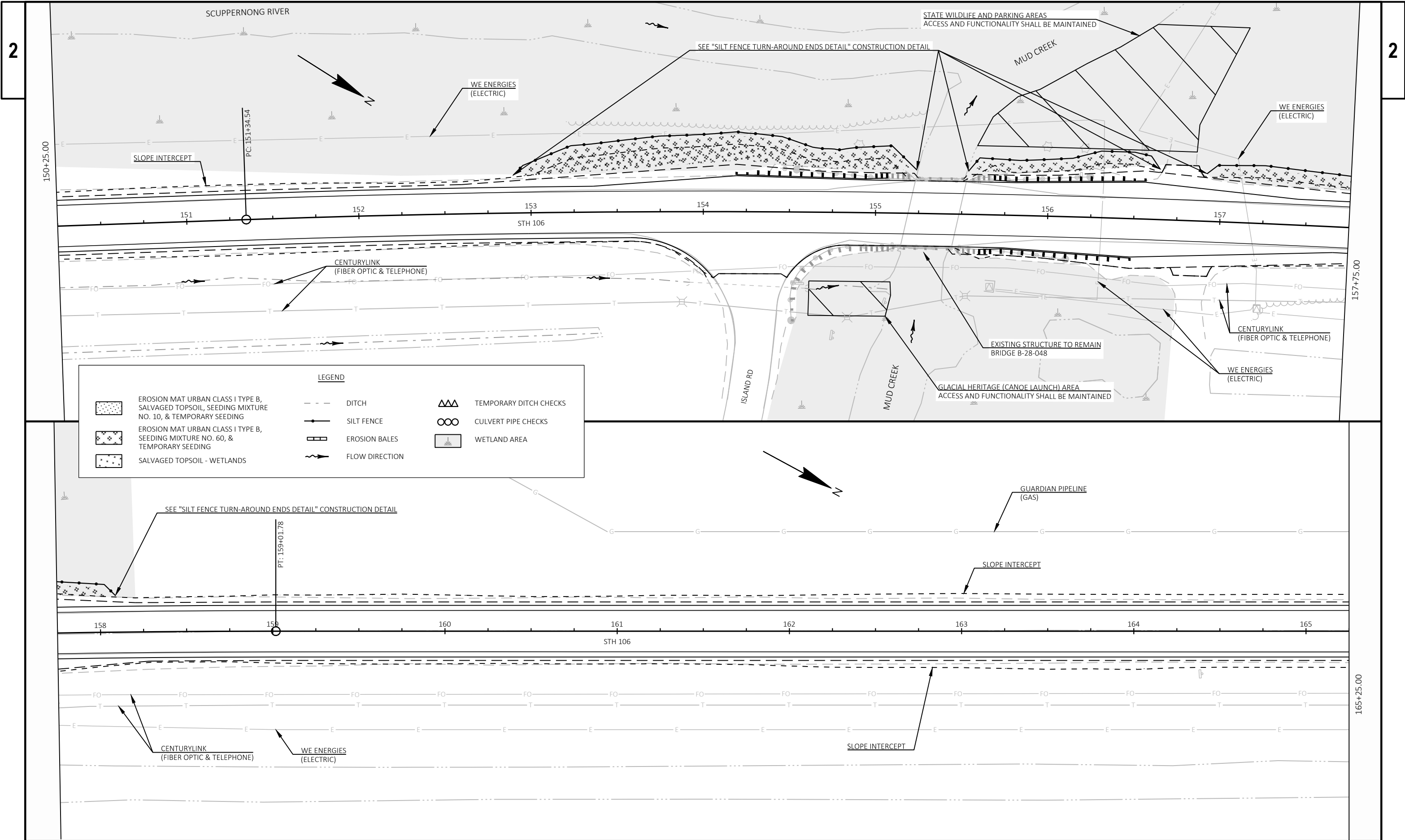
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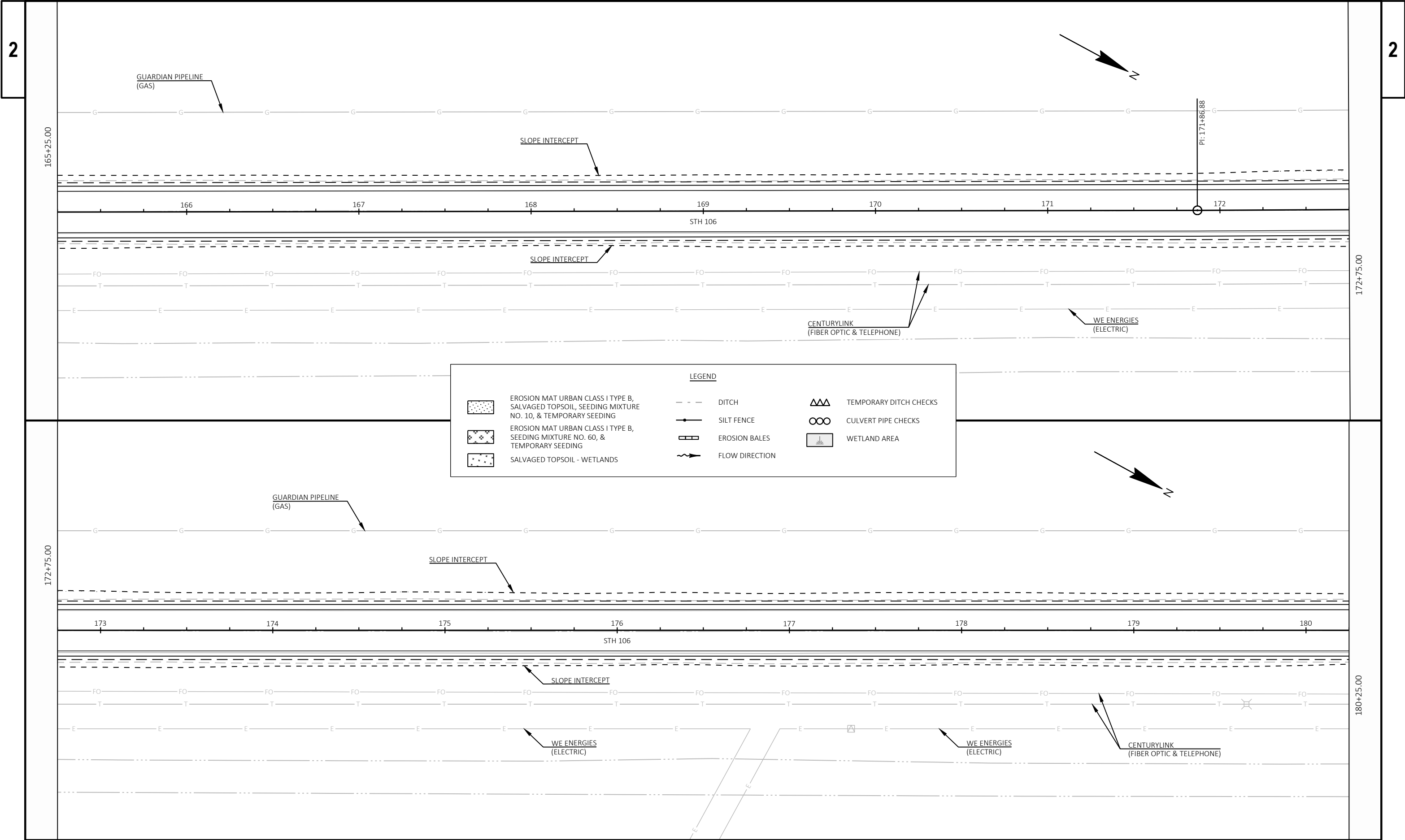
WISDOT/CADDs SHEET 44

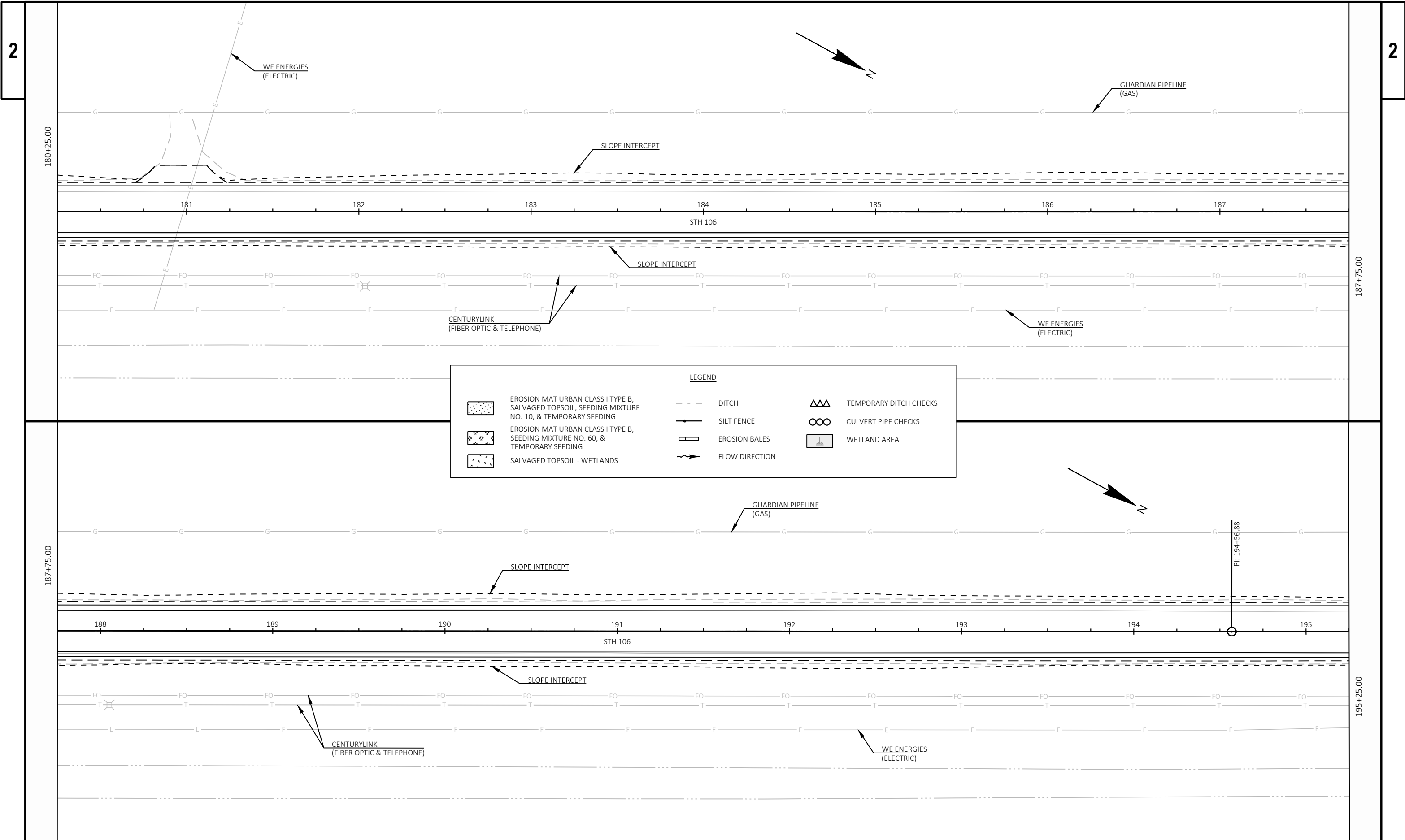


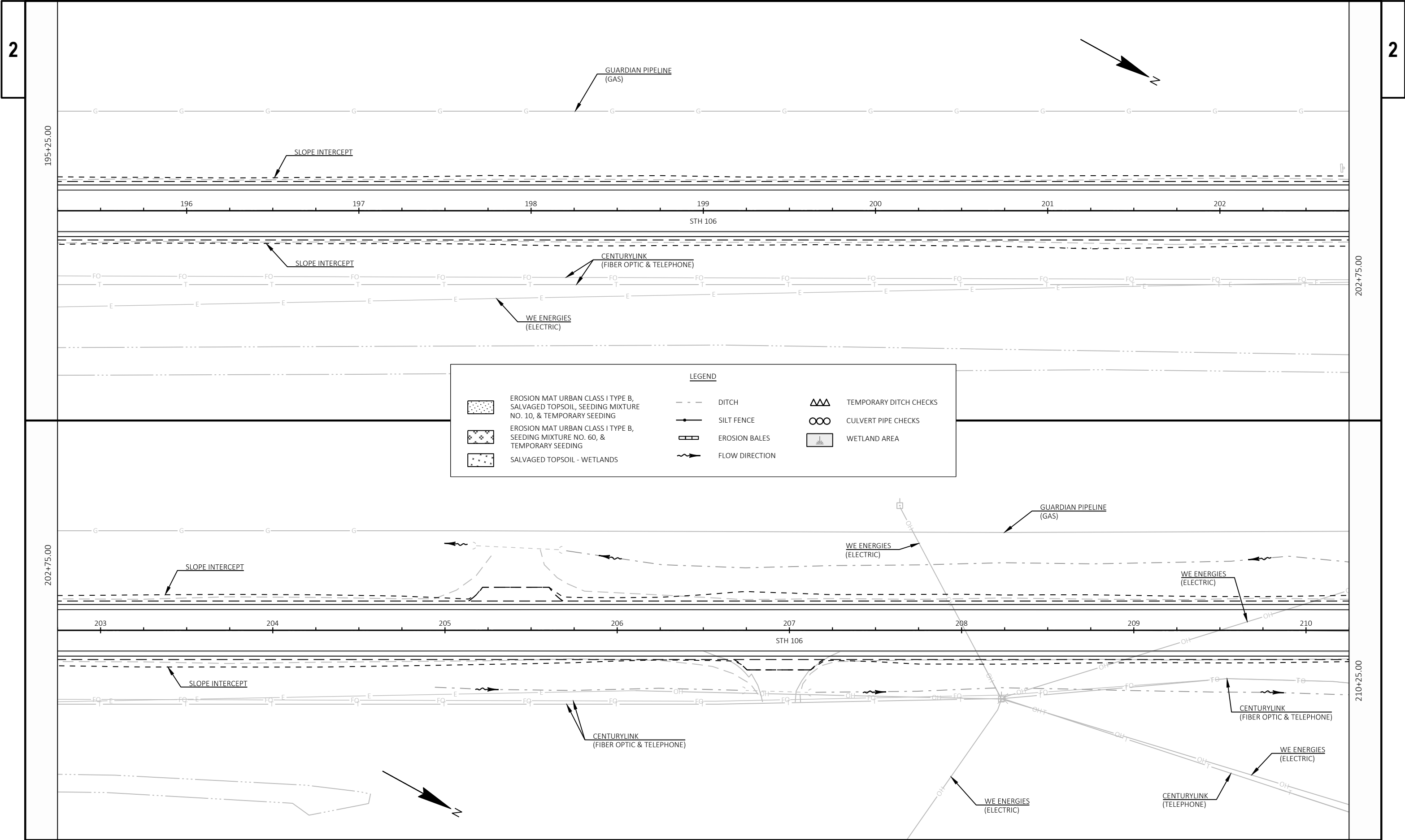












LEGEND

EROSION MAT URBAN CLASS I TYPE B,
SALVAGED TOPSOIL, SEEDING MIXTURE
NO. 10, & TEMPORARY SEEDING

EROSION MAT URBAN CLASS I TYPE B,
SEEDING MIXTURE NO. 60, &
TEMPORARY SEEDING

SALVAGED TOPSOIL - WETLANDS

DITCH

SILT FENCE

EROSION BALES

FLOW DIRECTION

TEMPORARY DITCH CHECKS

CULVERT PIPE CHECKS

WETLAND AREA

PROJECT NO: 3576-01-70

HWY: STH 106

COUNTY: JEFFERSON

EROSION CONTROL

SHEET

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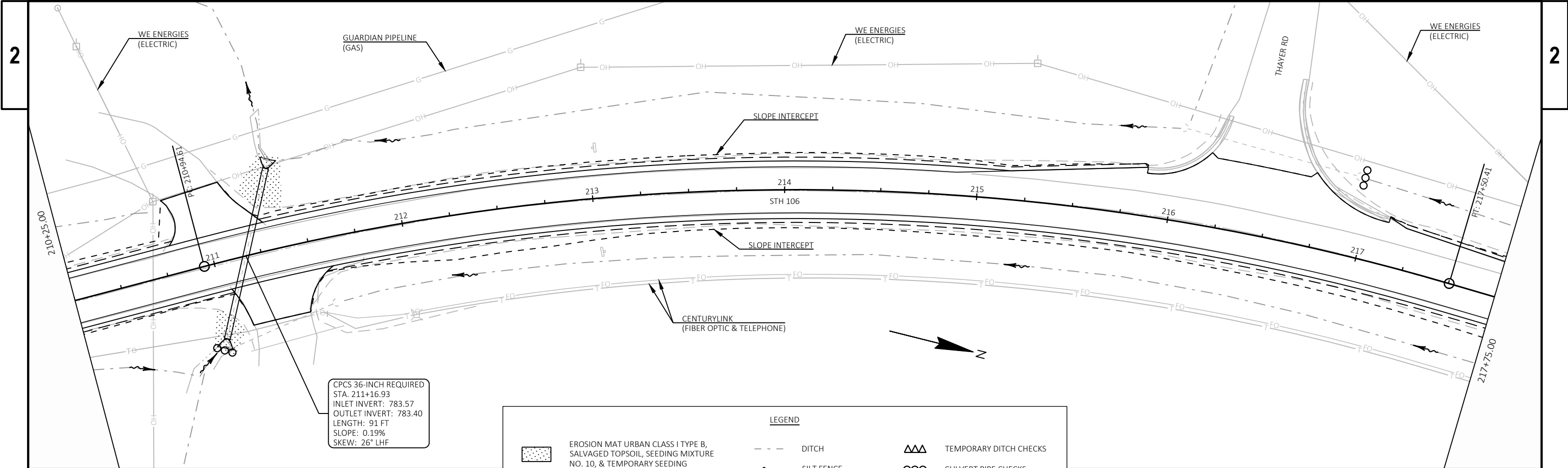
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PLOT NAME :

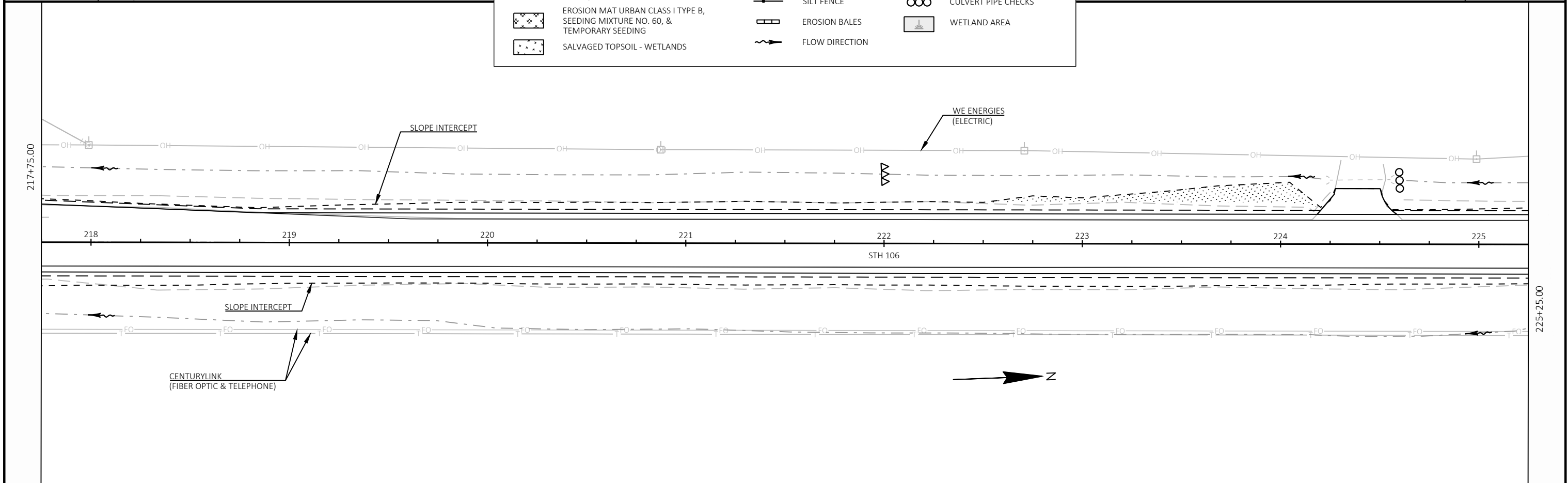
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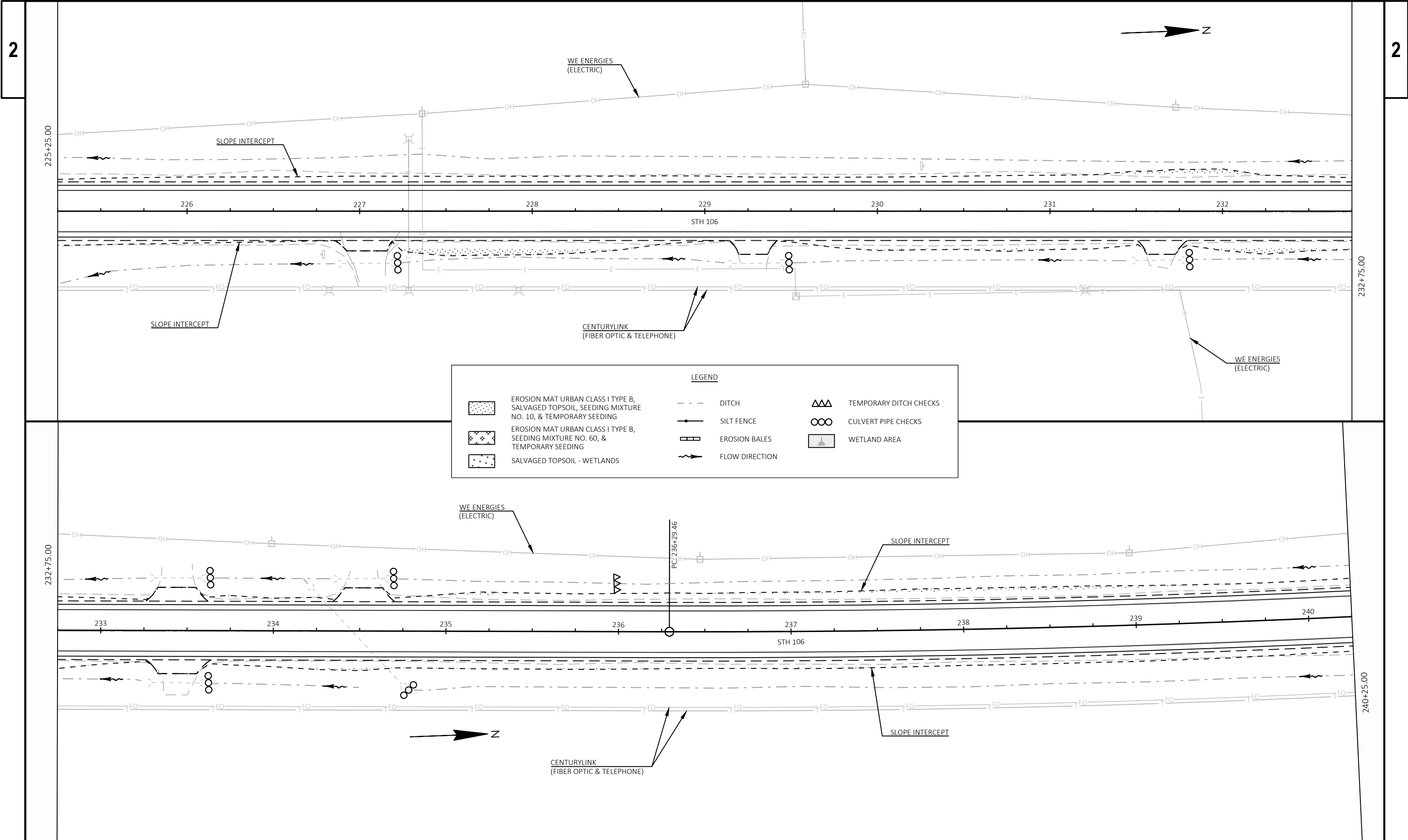
LAYOUT NAME - 12

WISDOT/CADDs SHEET 44



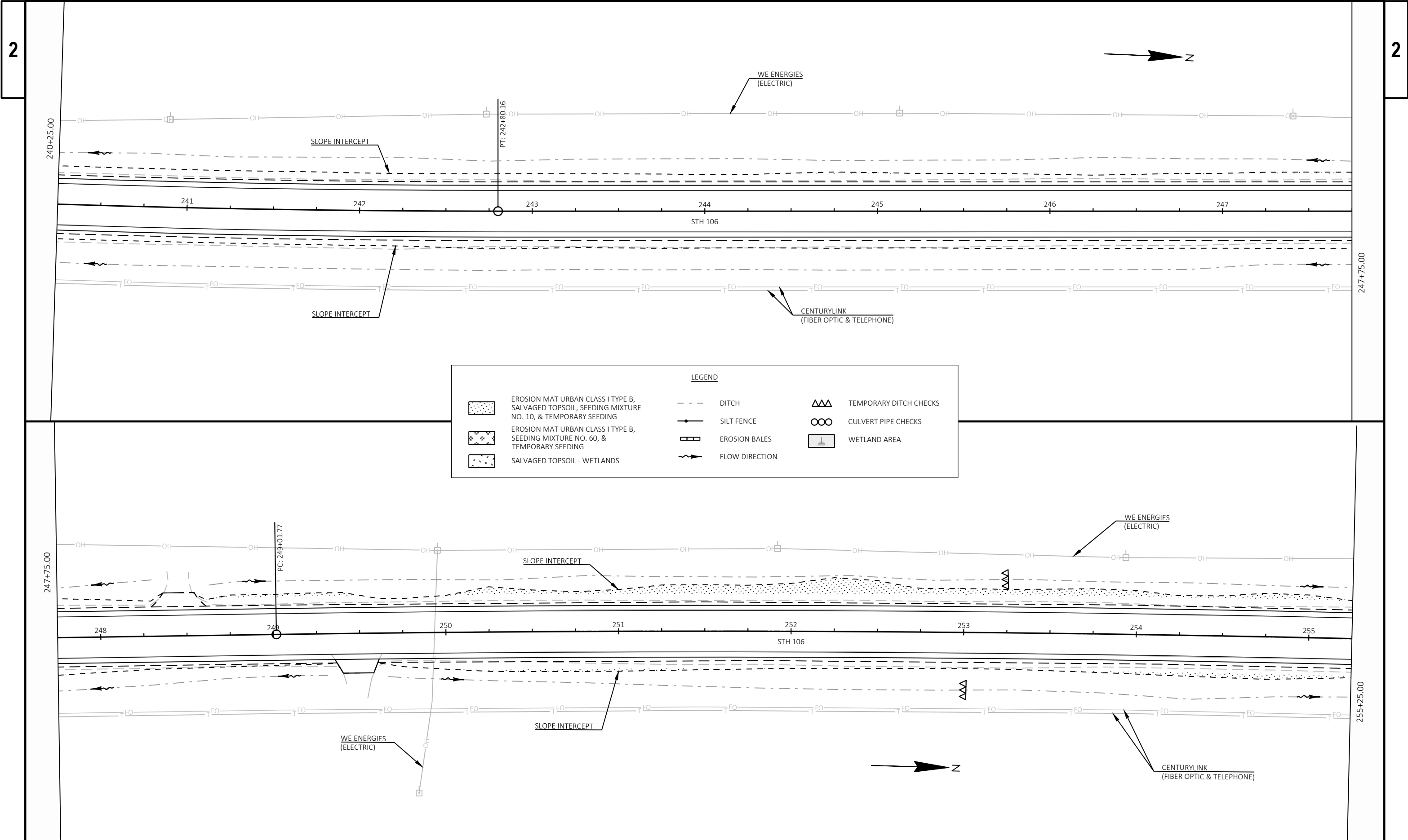
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	EROSION MAT URBAN CLASS I TYPE B, SALVAGED TOPSOIL, SEEDING MIXTURE NO. 10, & TEMPORARY SEEDING		DITCH		TEMPORARY DITCH CHECKS
	EROSION MAT URBAN CLASS I TYPE B, SEEDING MIXTURE NO. 60, & TEMPORARY SEEDING		SILT FENCE		CULVERT PIPE CHECKS
	SALVAGED TOPSOIL - WETLANDS		EROSION BALES		WETLAND AREA
			FLOW DIRECTION		

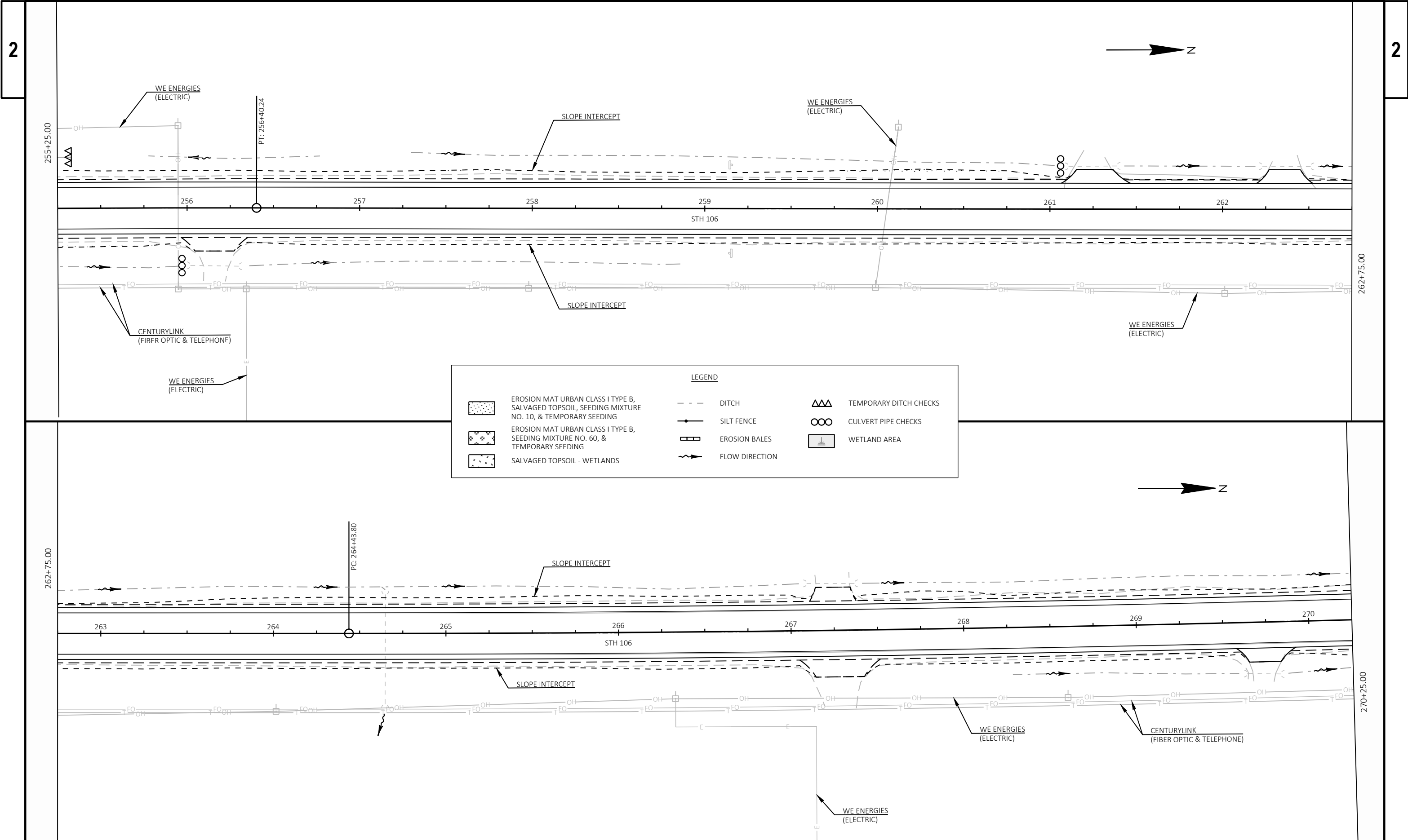




LEGEND

	EROSION MAT URBAN CLASS I TYPE B, SALVAGED TOPSOIL, SEEDING MIXTURE NO. 10, & TEMPORARY SEEDING		DITCH		TEMPORARY DITCH CHECKS
	EROSION MAT URBAN CLASS I TYPE B, SEEDING MIXTURE NO. 60, & TEMPORARY SEEDING		SILT FENCE		CULVERT PIPE CHECKS
	SALVAGED TOPSOIL - WETLANDS		EROSION BALES		WETLAND AREA
			FLOW DIRECTION		





LEGEND

EROSION MAT URBAN CLASS I TYPE B,
SALVAGED TOPSOIL, SEEDING MIXTURE
NO. 10, & TEMPORARY SEEDING

EROSION MAT URBAN CLASS I TYPE B,
SEEDING MIXTURE NO. 60, &
TEMPORARY SEEDING

SALVAGED TOPSOIL - WETLANDS

DITCH

SILT FENCE

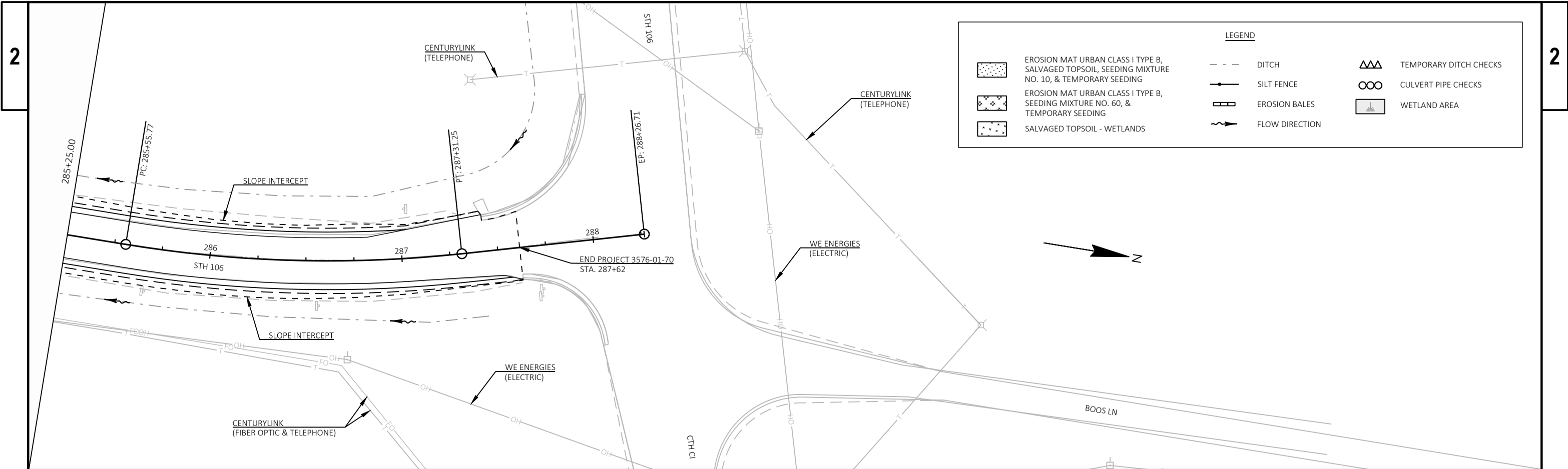
EROSION BALES

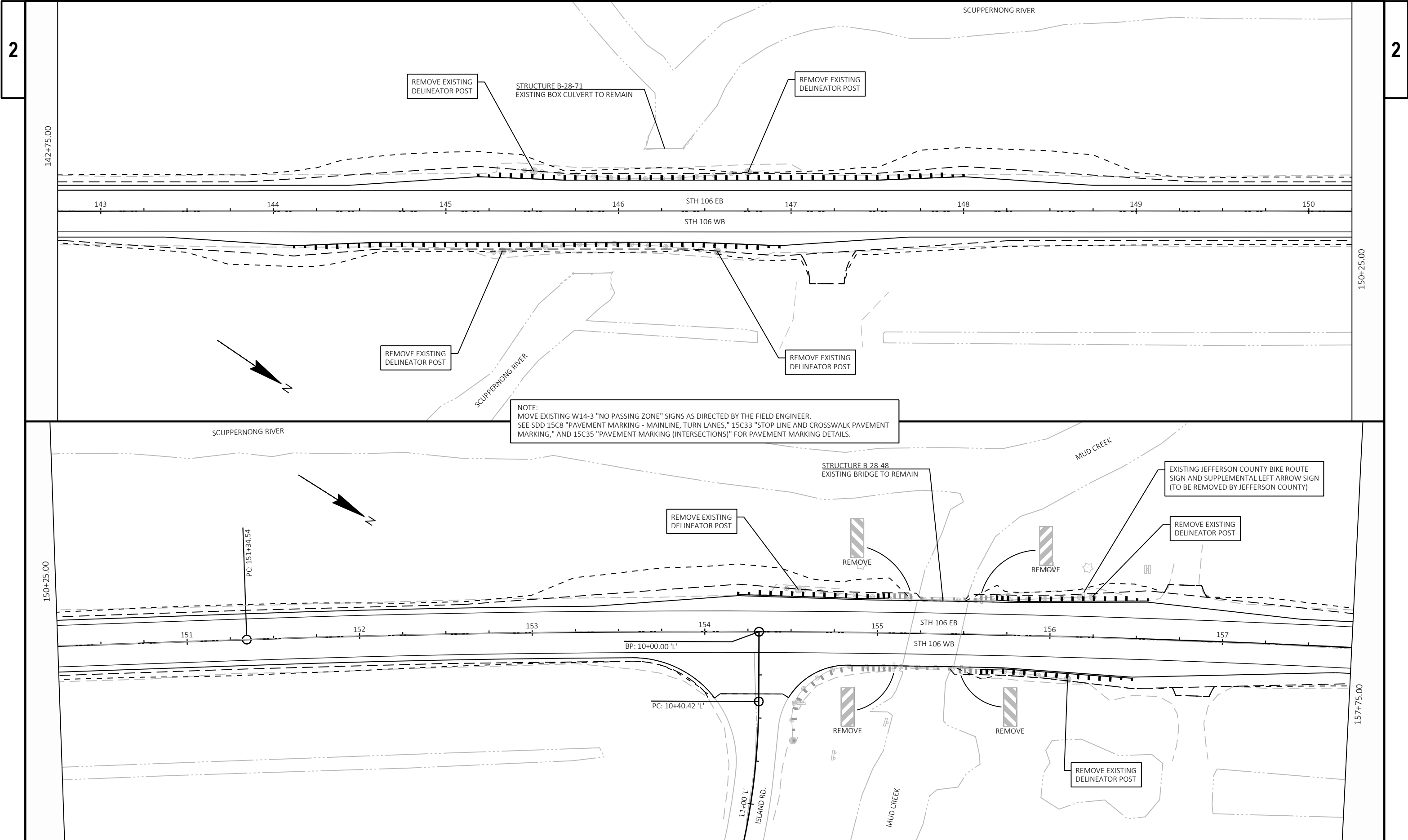
FLOW DIRECTION

TEMPORARY DITCH CHECKS

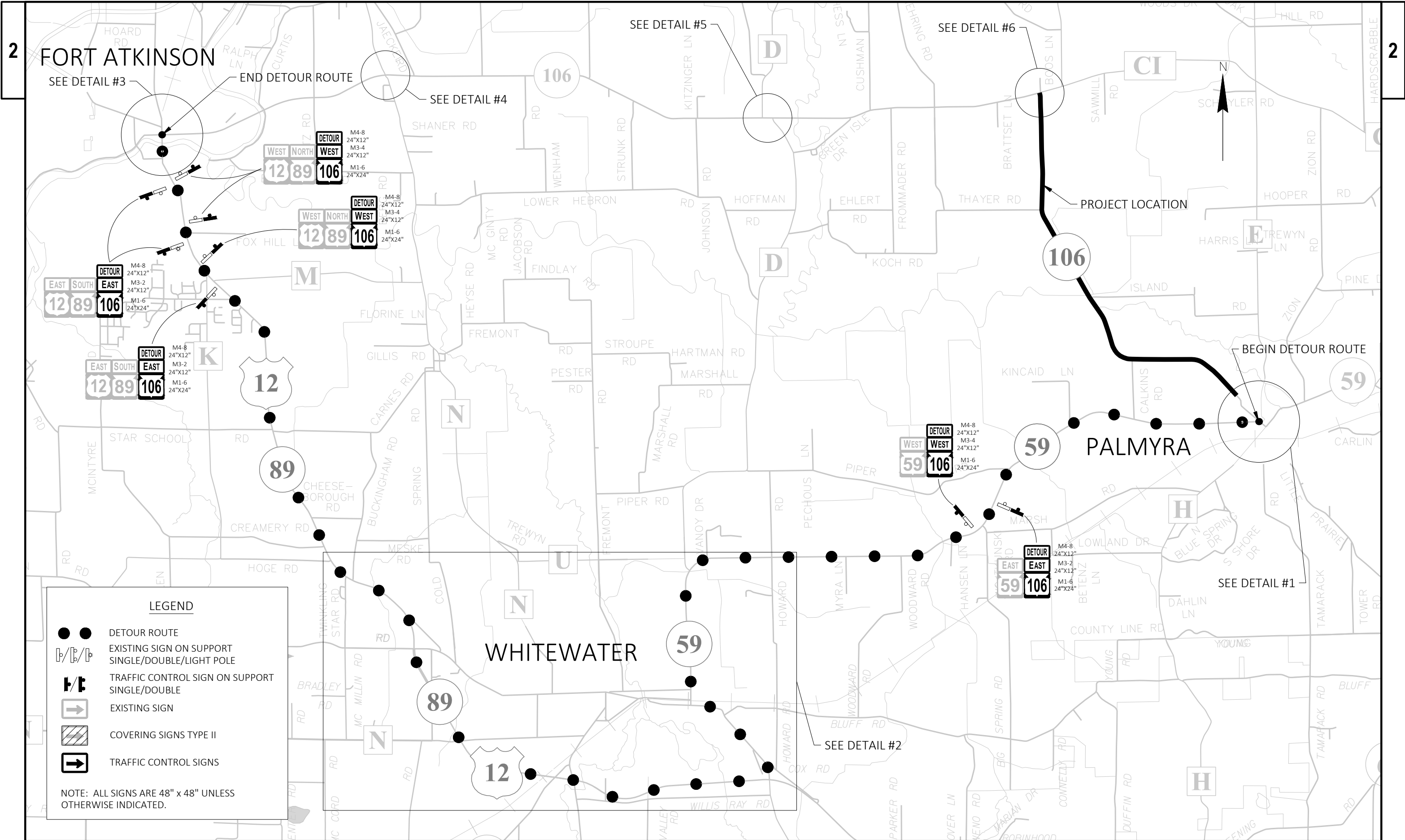
CULVERT PIPE CHECKS

WETLAND AREA





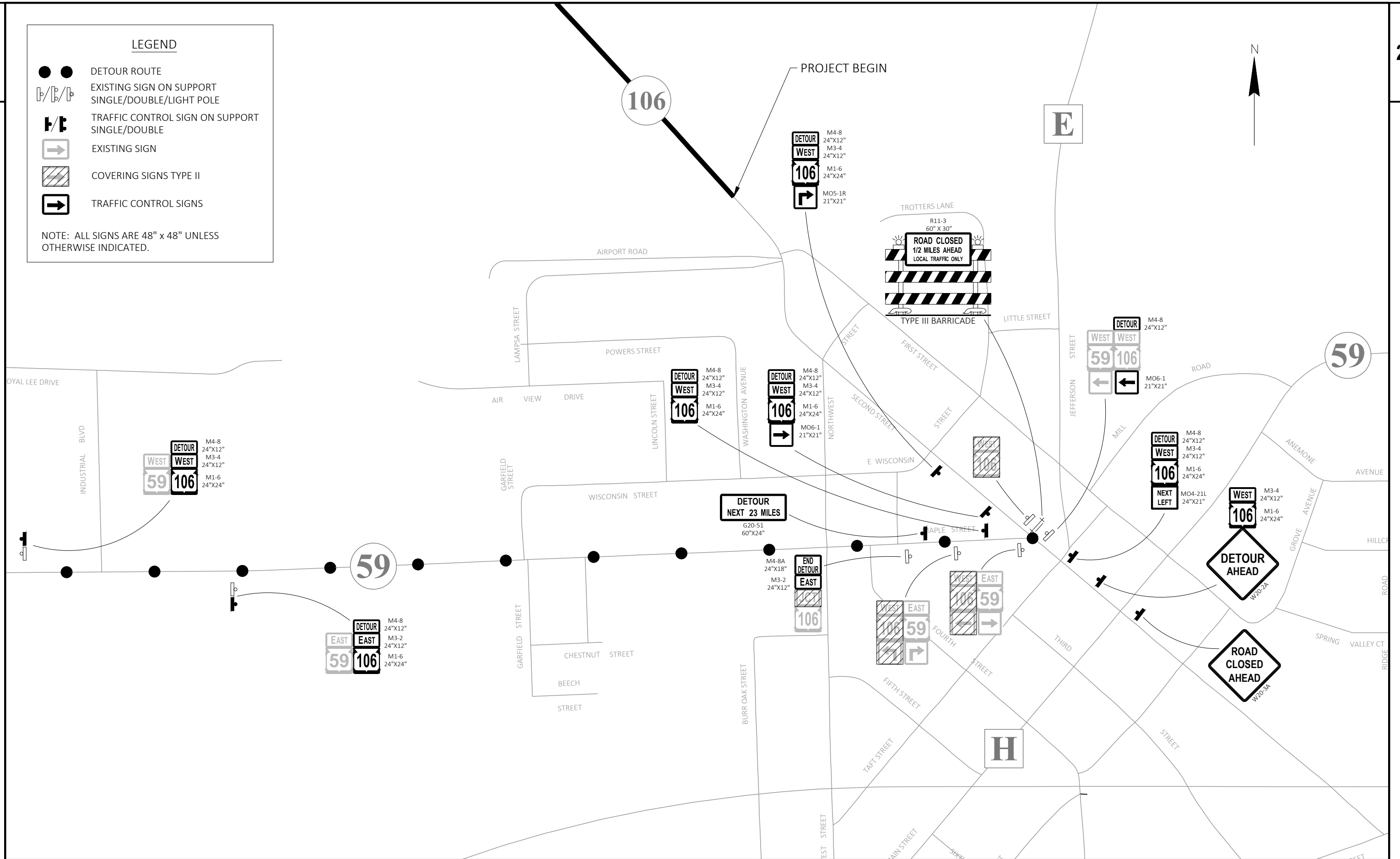
PROJECT NO: 3576-01-70	HWY: STH 106	COUNTY: JEFFERSON	PERMANENT SIGNING	SHEET	E
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LEGEND

- ● DETOUR ROUTE
- ▮/▮/▮ EXISTING SIGN ON SUPPORT SINGLE/DOUBLE/LIGHT POLE
- ⚡/⚡ TRAFFIC CONTROL SIGN ON SUPPORT SINGLE/DOUBLE
- ➡ EXISTING SIGN
- ▨ COVERING SIGNS TYPE II
- ➡ TRAFFIC CONTROL SIGNS

NOTE: ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE INDICATED.



PROJECT NO: 3576-01-70

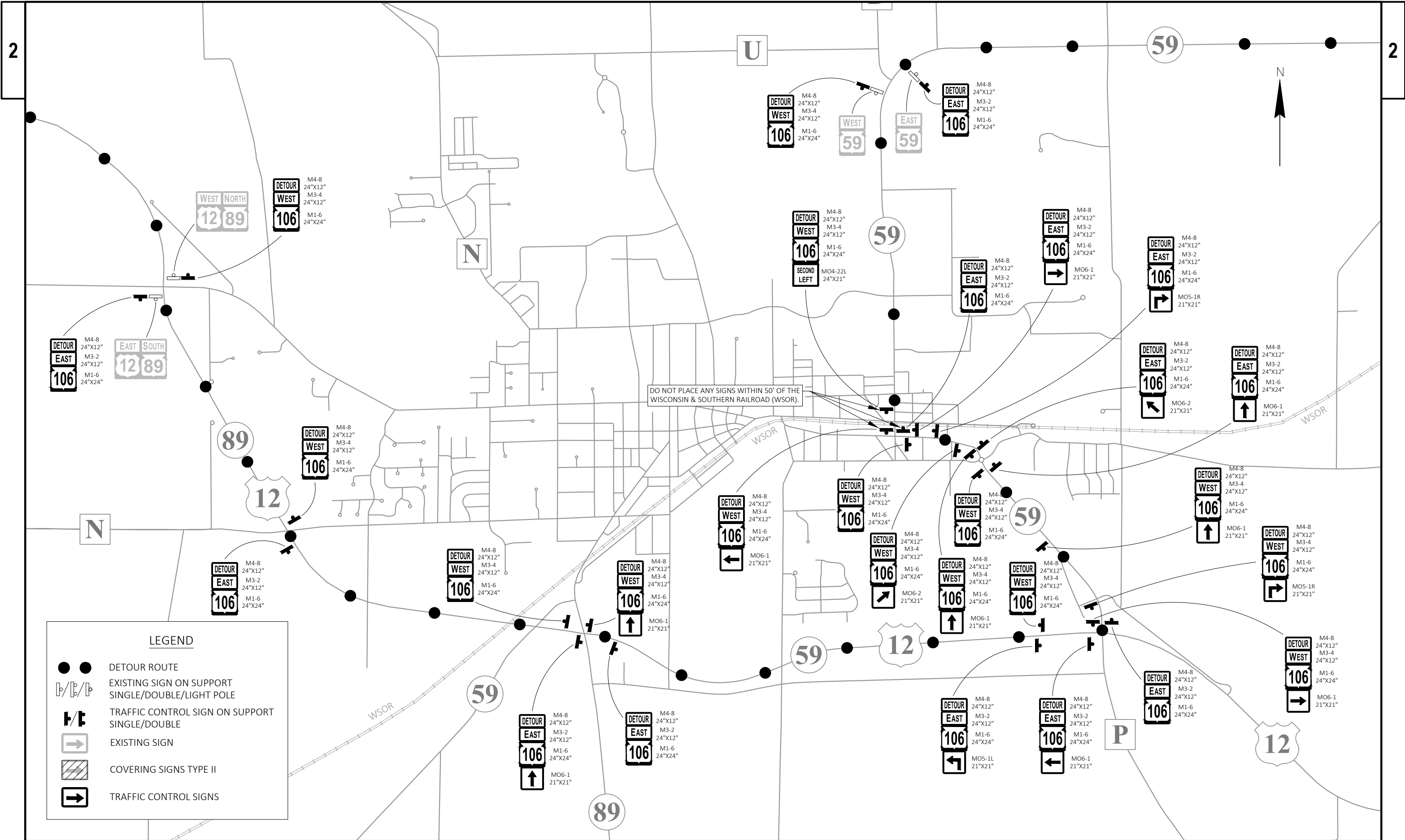
HWY: STH 106

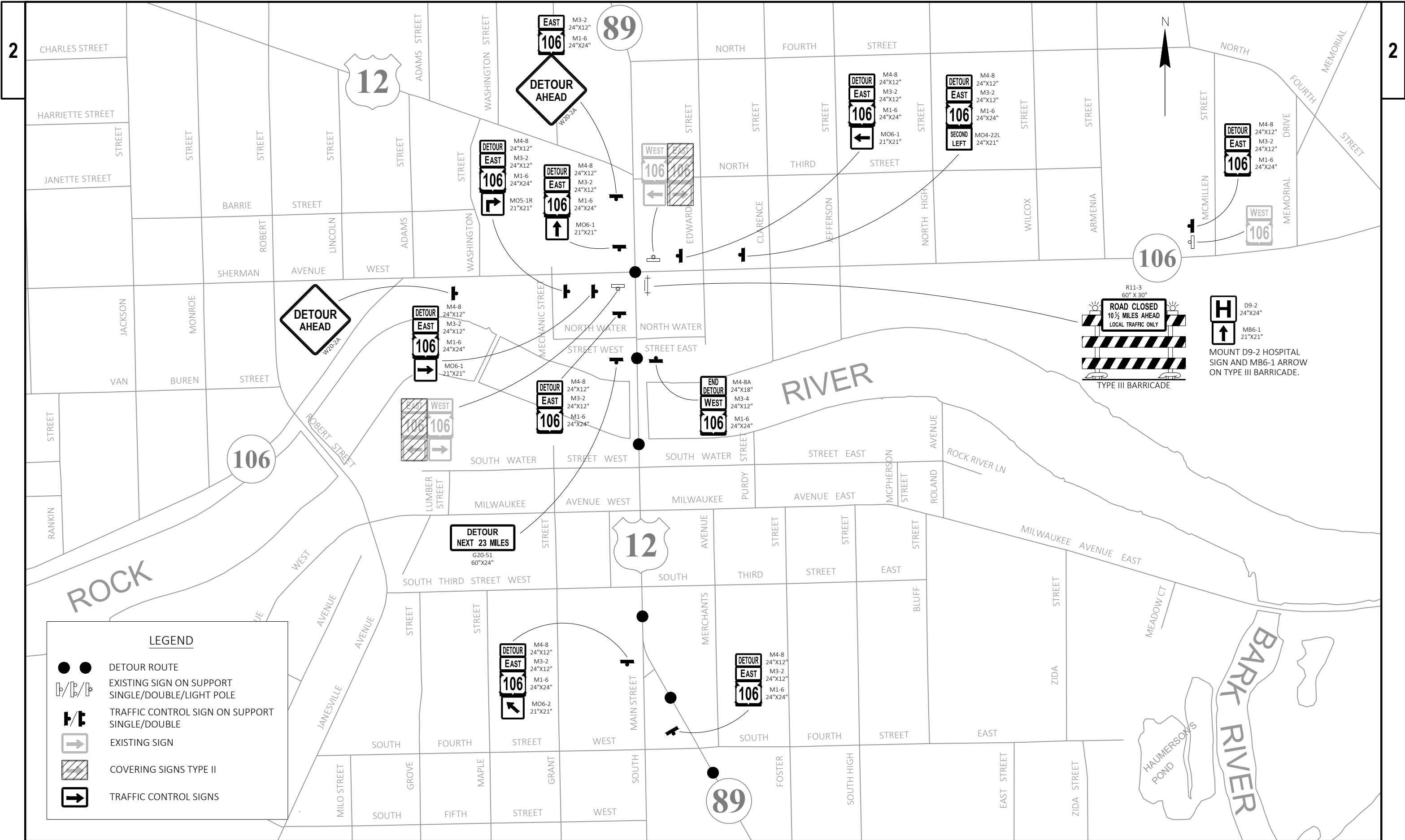
COUNTY: JEFFERSON

DETOUR - DETAIL #1

SHEET

E





PROJECT NO: 3576-01-70

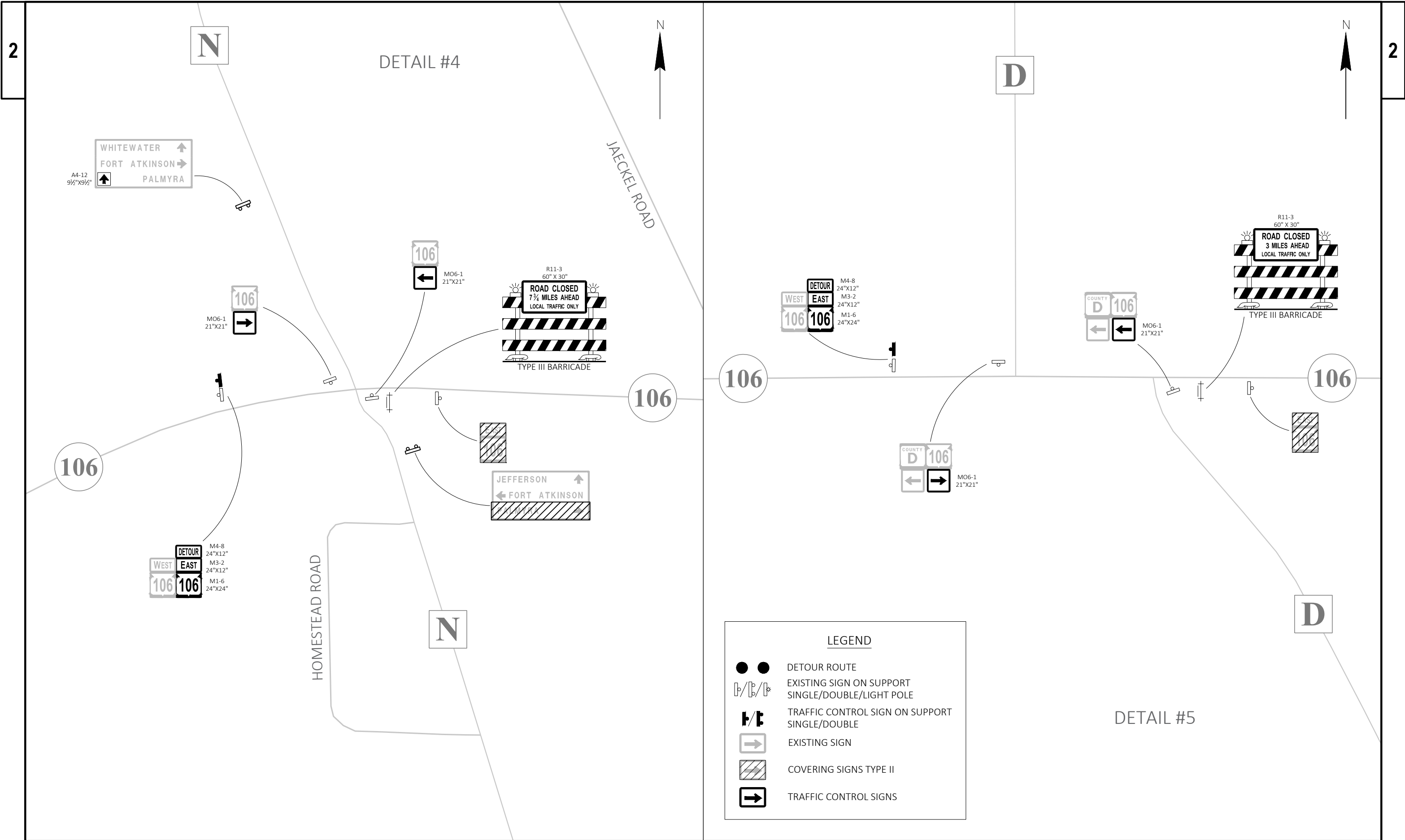
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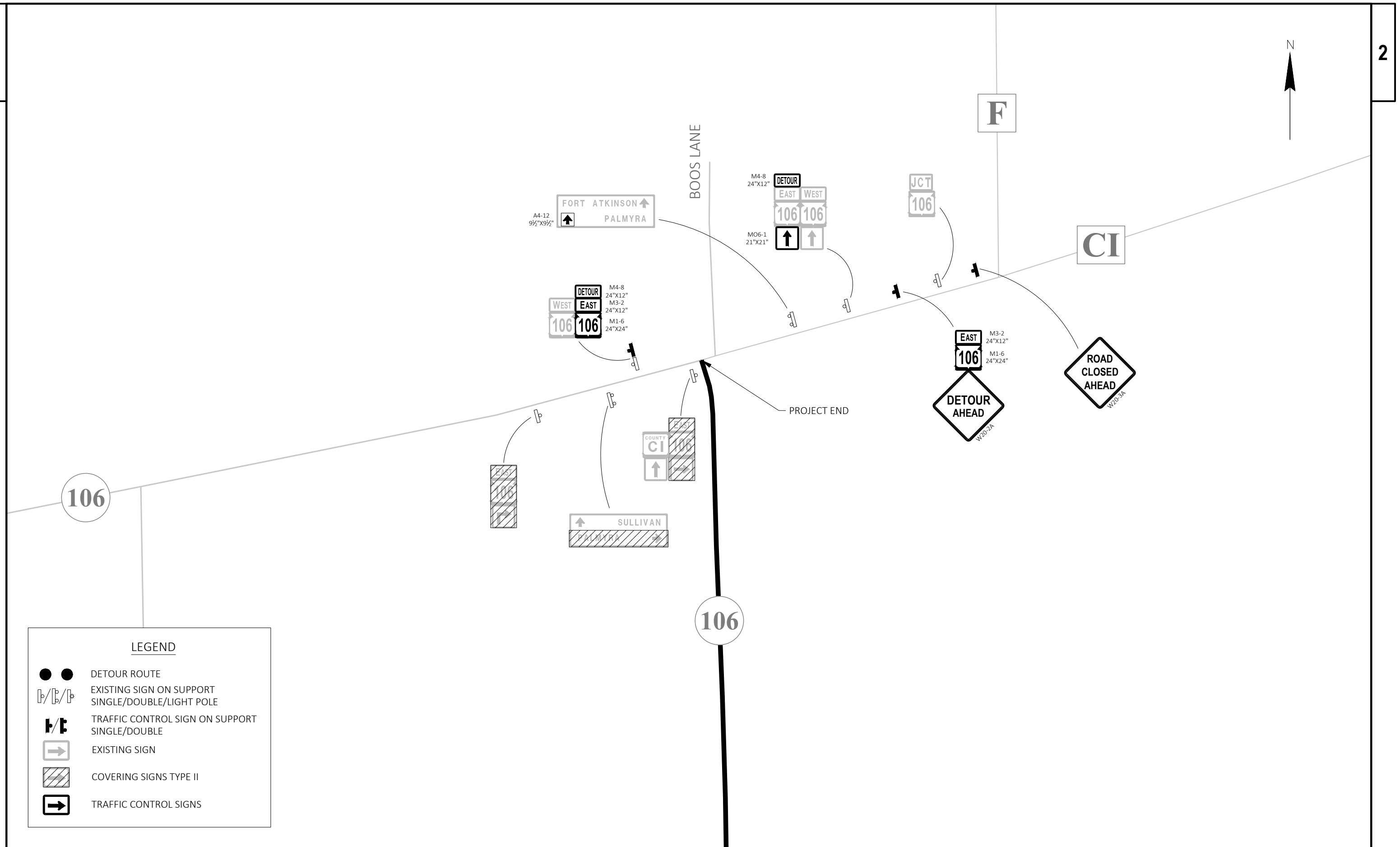
COUNTY: JEFFERSON

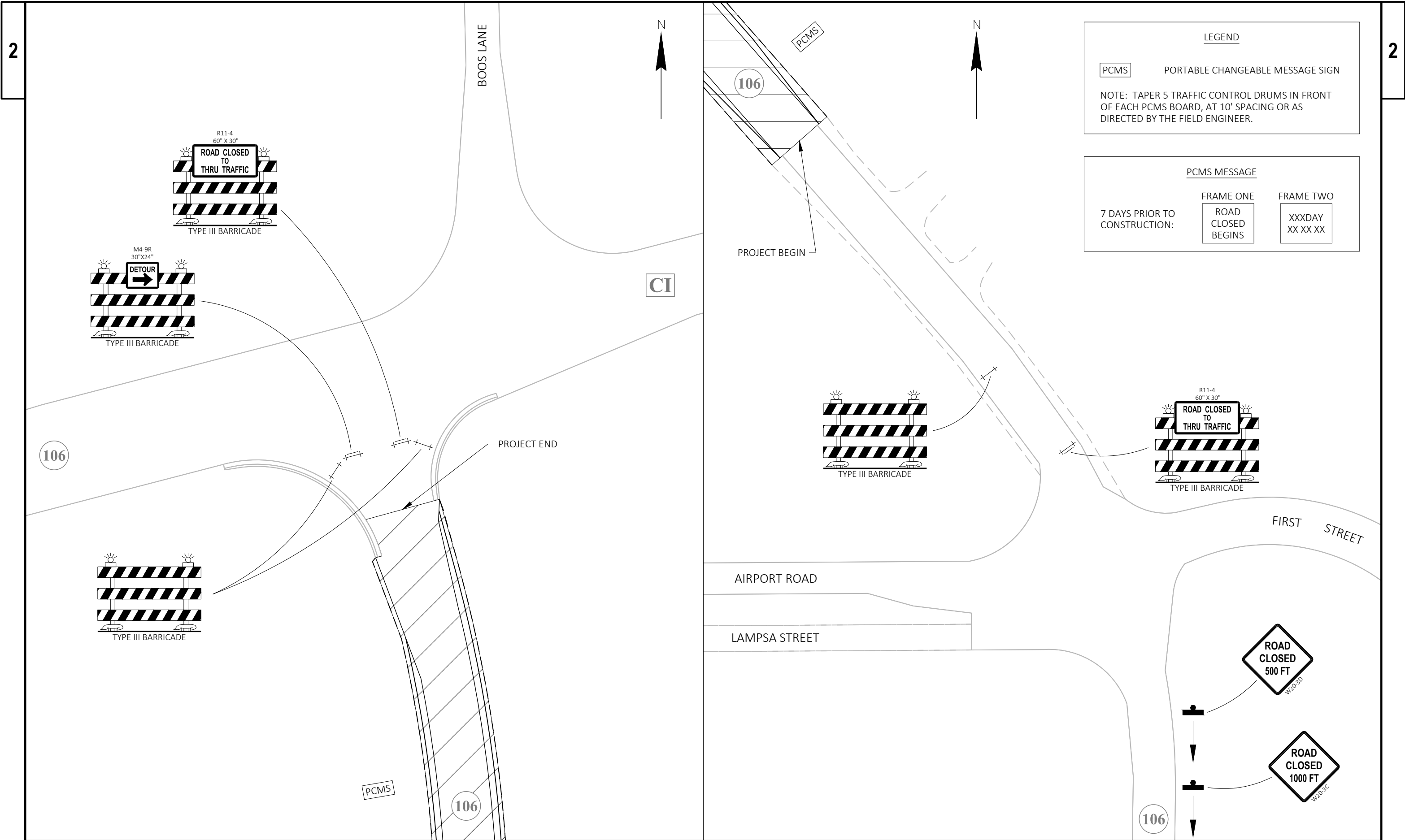
DETOUR - DETAIL #3

SHEET

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LEGEND

PCMS

PORTABLE CHANGEABLE MESSAGE SIGN

NOTE: TAPER 5 TRAFFIC CONTROL DRUMS IN FRONT OF EACH PCMS BOARD, AT 10' SPACING OR AS DIRECTED BY THE FIELD ENGINEER.

PCMS MESSAGE

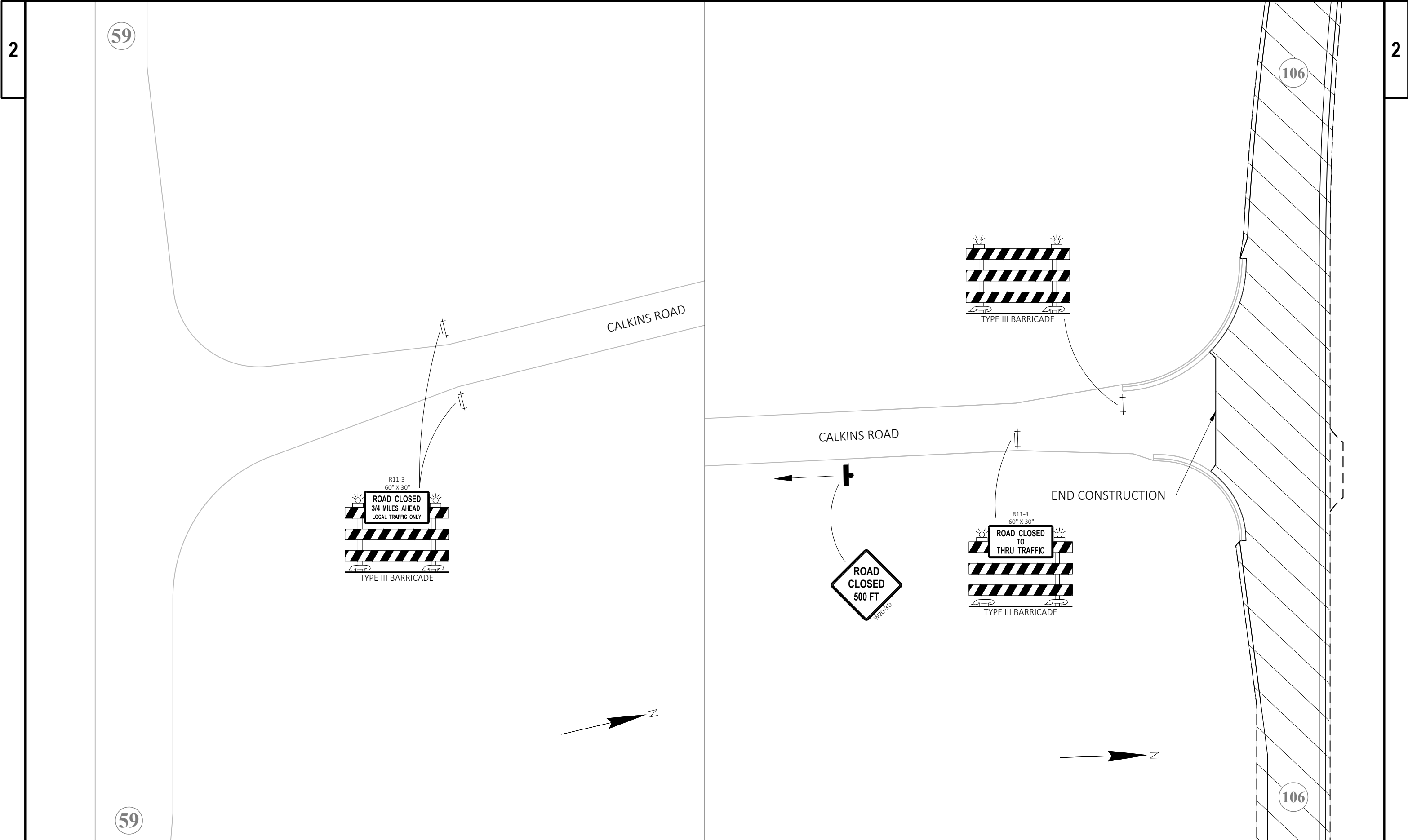
7 DAYS PRIOR TO CONSTRUCTION:

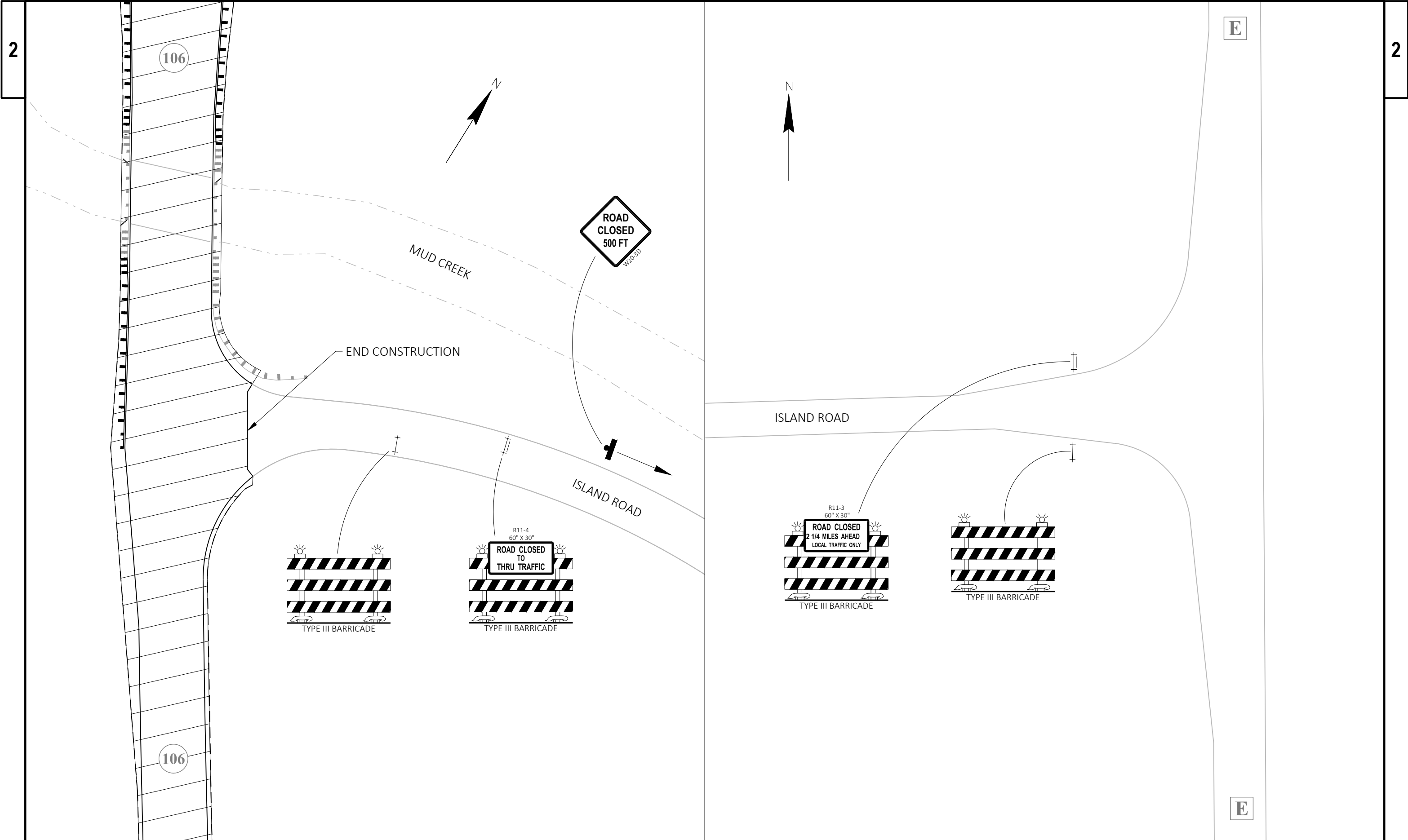
FRAME ONE

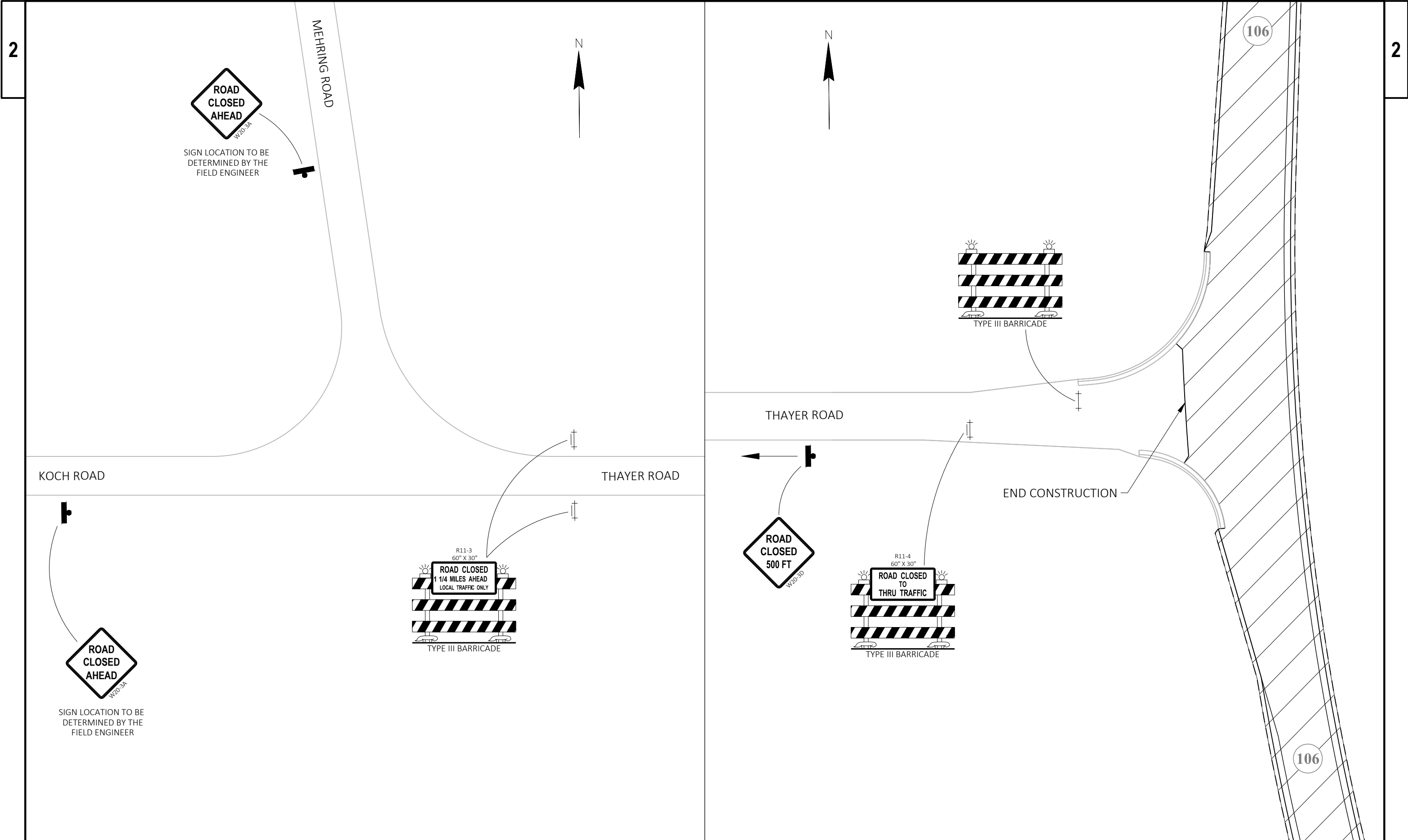
FRAME TWO

ROAD CLOSED BEGINS

XXDAY
XX XX XX







Estimate Of Quantities

3576-01-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0004	204.0115	Removing Asphaltic Surface Butt Joints	SY	674.000	674.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	70,526.000	70,526.000
0008	204.0165	Removing Guardrail	LF	503.000	503.000
0010	204.0180	Removing Delineators and Markers	EACH	11.000	11.000
0012	208.0100	Borrow	CY	173.000	173.000
0014	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	500.000	500.000
0016	213.0100	Finishing Roadway (project) 01. 3576-01-70	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	9,125.000	9,125.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	160.000	160.000
0022	305.0500	Shaping Shoulders	STA	512.000	512.000
0024	455.0605	Tack Coat	GAL	9,179.000	9,179.000
0026	460.2000	Incentive Density HMA Pavement	DOL	8,470.000	8,470.000
0028	460.5224	HMA Pavement 4 LT 58-28 S	TON	17,406.000	17,406.000
0030	465.0105	Asphaltic Surface	TON	2,743.000	2,743.000
0032	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	80.000	80.000
0034	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	22,732.000	22,732.000
0036	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	2.000	2.000
0038	521.1036	Apron Endwalls for Culvert Pipe Steel 36-Inch	EACH	2.000	2.000
0040	521.3124	Culvert Pipe Corrugated Steel 24-Inch	LF	60.000	60.000
0042	521.3136	Culvert Pipe Corrugated Steel 36-Inch	LF	92.000	92.000
0044	614.0010	Barrier System Grading Shaping Finishing	EACH	5.000	5.000
0046	614.0305	Steel Plate Beam Guard Class A	LF	112.500	112.500
0048	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	3.000	3.000
0050	614.2300	MGS Guardrail 3	LF	350.000	350.000
0052	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0054	618.0100	Maintenance And Repair of Haul Roads (project) 01. 3570-01-70	EACH	1.000	1.000
0056	619.1000	Mobilization	EACH	1.000	1.000
0058	624.0100	Water	MGAL	93.000	93.000
0060	625.0500	Salvaged Topsoil	SY	1,433.000	1,433.000
0062	628.1104	Erosion Bales	EACH	40.000	40.000
0064	628.1504	Silt Fence	LF	2,002.000	2,002.000
0066	628.1520	Silt Fence Maintenance	LF	2,002.000	2,002.000
0068	628.1905	Mobilizations Erosion Control	EACH	10.000	10.000
0070	628.1910	Mobilizations Emergency Erosion Control	EACH	7.000	7.000
0072	628.2008	Erosion Mat Urban Class I Type B	SY	2,730.000	2,730.000
0074	628.7504	Temporary Ditch Checks	LF	226.000	226.000
0076	628.7555	Culvert Pipe Checks	EACH	62.000	62.000
0078	628.7570	Rock Bags	EACH	31.000	31.000

Estimate Of Quantities

3576-01-70

Line	Item	Item Description	Unit	Total	Qty
0080	630.0110	Seeding Mixture No. 10	LB	23.000	23.000
0082	630.0160	Seeding Mixture No. 60	LB	18.000	18.000
0084	630.0200	Seeding Temporary	LB	75.000	75.000
0086	630.0500	Seed Water	MGAL	63.800	63.800
0088	633.5200	Markers Culvert End	EACH	4.000	4.000
0090	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	11.000	11.000
0092	638.2102	Moving Signs Type II	EACH	11.000	11.000
0094	638.2602	Removing Signs Type II	EACH	4.000	4.000
0096	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0098	642.5001	Field Office Type B	EACH	1.000	1.000
0100	643.0300	Traffic Control Drums	DAY	70.000	70.000
0102	643.0420	Traffic Control Barricades Type III	DAY	1,100.000	1,100.000
0104	643.0705	Traffic Control Warning Lights Type A	DAY	2,200.000	2,200.000
0106	643.0900	Traffic Control Signs	DAY	12,350.000	12,350.000
0108	643.0920	Traffic Control Covering Signs Type II	EACH	12.000	12.000
0110	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0112	643.5000	Traffic Control	EACH	1.000	1.000
0114	646.1020	Marking Line Epoxy 4-Inch	LF	31,050.000	31,050.000
0116	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	50,355.000	50,355.000
0118	646.6120	Marking Stop Line Epoxy 18-Inch	LF	28.000	28.000
0120	648.0100	Locating No-Passing Zones	MI	4.840	4.840
0122	649.0105	Temporary Marking Line Paint 4-Inch	LF	2,048.000	2,048.000
0124	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	1,024.000	1,024.000
0126	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0128	650.8000	Construction Staking Resurfacing Reference	LF	25,562.000	25,562.000
0130	650.9910	Construction Staking Supplemental Control (project) 01. 3576-01-70	LS	1.000	1.000
0132	650.9920	Construction Staking Slope Stakes	LF	1,920.000	1,920.000
0134	690.0150	Sawing Asphalt	LF	729.000	729.000
0136	740.0440	Incentive IRI Ride	DOL	19,365.000	19,365.000
0138	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0140	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0142	SPV.0060	Special 01. Verify Landmark Reference Monuments	EACH	1.000	1.000
0144	SPV.0060	Special 02. Landmark Reference Monuments Special	EACH	1.000	1.000
0146	SPV.0180	Special 01. Salvaged Topsoil - Wetlands	SY	502.000	502.000
0148	SPV.0180	Special 02. Removing Distressed Pavement Milling	SY	24,131.000	24,131.000

BORROW

208.0100

CATEGORY	STATION	TO	STATION	OFFSET	LOCATION	CY
0010	32+00	-	287+62	LT	STH 106	150
0010	32+00	-	287+62	RT	STH 106	23
TOTAL 0010						173

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

211.0400

CATEGORY	STATION	TO	STATION	LOCATION	STA
0010	32+00	-	287+62	STH 106 - LT	246
0010	32+00	-	287+62	STH 106 - RT	254
TOTAL 0010					500

BASE AGGREGATE ITEMS

305.0110

305.0120

305.0500

624.0100

BASE

BASE

SHAPING

WATER

AGGREGATE

AGGREGATE

SHOULDERS

DENSE

DENSE

3/4-INCH

1 1/4-INCH

CATEGORY	STATION	TO	STATION	OFFSET	LOCATION	TON	TON	STA	MGAL
0010	32+00	-	287+62	LT	STH 106	4,225	72	256	43.0
0010	32+00	-	287+62	RT	STH 106	4,070	73	256	41.5
		-			UNDISTRIBUTED	830	15	-	8.5
TOTAL 0010						9,125	160	512	93.0

ASPHALT CENTERLINE RUMBLE STRIPS 2-LANE RURAL

465.0475

CATEGORY	STATION	TO	STATION	LOCATION	LF
0010	32+00	-	106+26	STH 106	6,467
0010	106+26	-	154+31	STH 106	4,396
0010	154+31	-	216+35	STH 106	5,087
0010	216+35	-	287+62	STH 106	6,782
TOTAL 0010					22,732

ASPHALT ITEMS												
						204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS	204.0120 REMOVING ASPHALTIC SURFACE MILLING	455.0605 TACK COAT	460.5224 HMA PAVEMENT 4 LT 58-28 S	465.0105 ASPHALTIC SURFACE	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	SPV.0180.02 REMOVING DISTRESSED PAVEMENT MILLING
CATEGORY	STATION	TO	STATION	OFFSET	LOCATION	SY	SY	GAL	TON	TON	TON	SY
0010	32+00	-	106+26	LT	STH 106	108	10,593	1,389	2,540	409	7	3,520
0010	106+26	-	154+31	LT	STH 106	42	6,760	880	1,646	195	6	1,686
0010	154+31	-	216+35	LT	STH 106	101	8,439	1,084	2,042	468	15	4,122
0010	216+35	-	287+62	LT	STH 106	111	9,899	1,294	2,402	583	16	5,205
SUBTOTAL 0010						362	35,691	4,647	8,630	1,655	44	14,533
0010	32+00	-	106+26	RT	STH 106	111	9,919	1,314	2,559	237	7	2,114
0010	106+26	-	154+31	RT	STH 106	-	6,539	854	1,670	117	-	994
0010	154+31	-	216+35	RT	STH 106	133	8,830	1,104	2,097	396	19	3,472
0010	216+35	-	287+62	RT	STH 106	68	9,547	1,260	2,450	338	10	3,018
SUBTOTAL 0010						312	34,835	4,532	8,776	1,088	36	9,598
TOTAL 0010						674	70,526	9,179	17,406	2,743	80	24,131

HMA QMP MIXTURE USE TABLE:

LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED:	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12 FT DRIVING LANES	32+00 TO 287+62	UPPER LAYER	HMA PAVEMENT 4 LT 58-28 S	HMA PAVEMENT 4 LT 58-28 S	6,680	1.75"	QMP AS PER SS 460	ITEM 460.2000 INCENTIVE DENSITY HMA PAVEMENT
SHOULDERS, TURN LANES, INTERSECTIONS	32+00 TO 287+62	UPPER LAYER	HMA PAVEMENT 4 LT 58-28 S	HMA PAVEMENT 4 LT 58-28 S	2,269	1.75"	QMP AS PER SS 460	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
12 FT DRIVING LANES	32+00 TO 287+62	LOWER LAYER	EXISTING RECYCLED ASPHALTIC SURFACE	HMA PAVEMENT 4 LT 58-28 S	6,540	1.75"	QMP AS PER SS 460	ITEM 460.2000 INCENTIVE DENSITY HMA PAVEMENT
SHOULDERS, TURN LANES, INTERSECTIONS	32+00 TO 287+62	LOWER LAYER	EXISTING RECYCLED ASPHALTIC SURFACE	HMA PAVEMENT 4 LT 58-28 S	1,917	1.75"	QMP AS PER SS 460	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE

CULVERT ITEMS

			*	**								
			203.0100 REMOVING SMALL PIPE CULVERTS (STEEL)	204.0180 REMOVING DELINEATORS AND MARKERS	521.1024 APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH	521.1036 APRON ENDWALLS FOR CULVERT PIPE STEEL 36-INCH	521.3124 CULVERT PIPE CORRUGATED STEEL 24-INCH (0.064 THICK)	521.3136 CULVERT PIPE CORRUGATED STEEL 36-INCH (0.079 THICK)	633.5200 MARKERS CULVERT END	650.6000 CONSTRUCTION STAKING PIPE CULVERTS		
CATEGORY	STATION	LOCATION	EACH	EACH	EACH	EACH	LF	LF	EACH	EACH	REMARKS	
0010	136+90	STH 106	1	2	2	-	60	-	2	1	*60' X 24-INCH	
0010	211+17	STH 106	1	2	-	2	-	92	2	1	*92' X 36-INCH	
TOTAL 0010			2	4	2	2	60	92	4	2		

**QUANTITIES SHOWN ELSEWHERE IN PLAN.

GUARDRAIL ITEMS

*
204.0165 204.0180 614.0010 614.0305 614.0370 614.2300 614.2610 650.9920
REMOVING REMOVING BARRIER STEEL STEEL PLATE MGS MGS CONSTRUCTION
GUARDRAIL DELINEATORS SYSTEM PLATE BEAM GUARDRAIL GUARDRAIL STAKING
AND GRADING BEAM GUARD 3 TERMINAL SLOPE
MARKERS SHAPING GUARD ENERGY EAT STAKES
FINISHING CLASS A ABSORBING
TERMINAL

CATEGORY	STATION	TO	STATION	LOCATION	LF	EACH	EACH	LF	EACH	LF	EACH	LF	REMARKS
0010	145+00	-	147+00	STH 106 - LT	154	2	1	-	-	175	2	549	B-28-0071
0010	145+00	-	147+00	STH 106 - RT	154	2	1	-	-	175	2	549	B-28-0071
0010	154+00	-	155+50	STH 106 - LT	65	1	1	37.5	1	-	-	265	B-28-0048
0010	155+50	-	157+00	STH 106 - LT	65	1	1	37.5	1	-	-	270	B-28-0048
0010	155+50	-	157+00	STH 106 - RT	65	1	1	37.5	1	-	-	287	B-28-0048
TOTAL 0010					503	7	5	112.5	3	350	4	1,920	

*QUANTITIES SHOWN ELSEWHERE IN PLAN.

MOBILIZATIONS

619.1000 628.1905 628.1910
MOBILIZATION MOBILIZATIONS MOBILIZATIONS
EROSION EMERGENCY
CONTROL EROSION
CONTROL

CATEGORY	LOCATION	EACH	EACH	EACH
0010	PROJECT	1	10	7
TOTAL 0010		1	10	7

EROSION CONTROL ITEMS

625.0500 628.1104 628.1504 628.1520 628.2008 628.7504 628.7555 628.7570 630.0110 630.0160 630.0200 630.0500 SPV.0180.01
SALVAGED EROSION SILT SILT EROSION MAT TEMPORARY CULVERT ROCK SEEDING SEEDING SEEDING SEED SALVAGED
TOPSOIL BALES FENCE FENCE URBAN DITCH PIPE BAGS MIXTURE MIXTURE TEMPORARY WATER TOPSOIL -
MAINTENANCE CLASS I TYPE B CHECKS CHECKS NO. 10 NO. 60 WETLANDS

CATEGORY	STATION	TO	STATION	OFFSET	LOCATION	SY	EACH	LF	LF	SY	LF	EACH	EACH	LB	LB	LB	MGAL	SY
0010	32+00	-	287+62	LT	STH 106	790	10	986	986	1,627	113	35	-	11	12	44	41.2	406
0010	32+00	-	287+62	RT	STH 106	456	10	349	349	557	75	27	-	7	2	16	17.7	35
0010	-				UNDISTRIBUTED	187	20	667	667	546	38	-	31	5	4	15	4.9	61
TOTAL 0010						1,433	40	2,002	2,002	2,730	226	62	31	23	18	75	63.8	502

LOCATING NO-PASSING ZONES

CATEGORY	STATION	TO	STATION	LOCATION	648.0100 MI
0010	32+00	-	287+62	STH 106	4.84
TOTAL 0010					4.84

PERMANENT SIGNING

634.0616 638.2102 638.2602 638.3000
POSTS MOVING REMOVING REMOVING
WOOD SIGNS SIGNS SMALL SIGN
4X6-INCH TYPE II TYPE II SUPPORTS
X 16-FT

CATEGORY	STATION	TO	STATION	LOCATION	EACH	EACH	EACH	EACH	REMARKS
0010	32+00	-	287+62	STH 106	-	-	4	4	EXISTING BRIDGE HASH MARKS SIGNS
0010	32+00	-	287+62	STH 106	11	11	-	-	EXISTING NO PASSING ZONE SIGNS
TOTAL 0010					11	11	4	4	

TRAFFIC CONTROL - PCMS

643.0300 643.1050
TRAFFIC TRAFFIC
CONTROL CONTROL
DRUMS SIGNS PCMS

CATEGORY	LOCATION	DAYS*	EACH*	DAY	EACH*	DAY
0010	SOUTH END OF PROJECT	7	5	35	1	7
0010	NORTH END OF PROJECT	7	5	35	1	7
TOTAL 0010				70	14	

*INFORMATIONAL PURPOSES ONLY

TRAFFIC CONTROL											
										**	
		643.0420	643.0705	643.0900	643.0920						
		TRAFFIC	TRAFFIC	TRAFFIC	TRAFFIC						
		CONTROL	CONTROL	CONTROL	CONTROL						
		BARRICADES	WARNING	SIGNS	COVERING						
		TYPE III	LIGHTS		SIGNS						
			TYPE A		TYPE II						
CATEGORY	LOCATION	DAYS*	EACH*	DAY	EACH*	DAY	EACH*	DAY	EACH	REMARKS	
0010	CONSTRUCTION DETAILS	50	-	-	-	-	11	550	-	R4-1	
0010	CONSTRUCTION DETAILS	50	-	-	-	-	3	150	-	W8-12	
0010	DETOUR OVERVIEW	50	-	-	-	-	18	900	-		
0010	DETOUR - DETAIL #1	50	1	50	2	100	31	1550	4		
0010	DETOUR - DETAIL #2	50	-	-	-	-	99	4950	-		
0010	DETOUR - DETAIL #3	50	1	50	2	100	44	2200	2		
0010	DETOUR - DETAIL #4	50	1	50	2	100	7	350	2		
0010	DETOUR - DETAIL #5	50	1	50	2	100	6	300	1		
0010	DETOUR - DETAIL #6	50	-	-	-	-	10	500	3		
0010	TRAFFIC CONTROL - MAINLINE	50	6	300	12	600	5	250	-		
0010	TRAFFIC CONTROL - CALKINS ROAD	50	4	200	8	400	4	200	-		
0010	TRAFFIC CONTROL - ISLAND ROAD	50	4	200	8	400	3	150	-		
0010	TRAFFIC CONTROL - THAYER ROAD	50	4	200	8	400	6	300	-		
TOTAL 0010				1,100			2,200			12,350	12
*INFORMATIONAL PURPOSES ONLY.											
**ONE CYCLE FOR ALL TRAFFIC CONTROL COVERING SIGNS TYPE II											

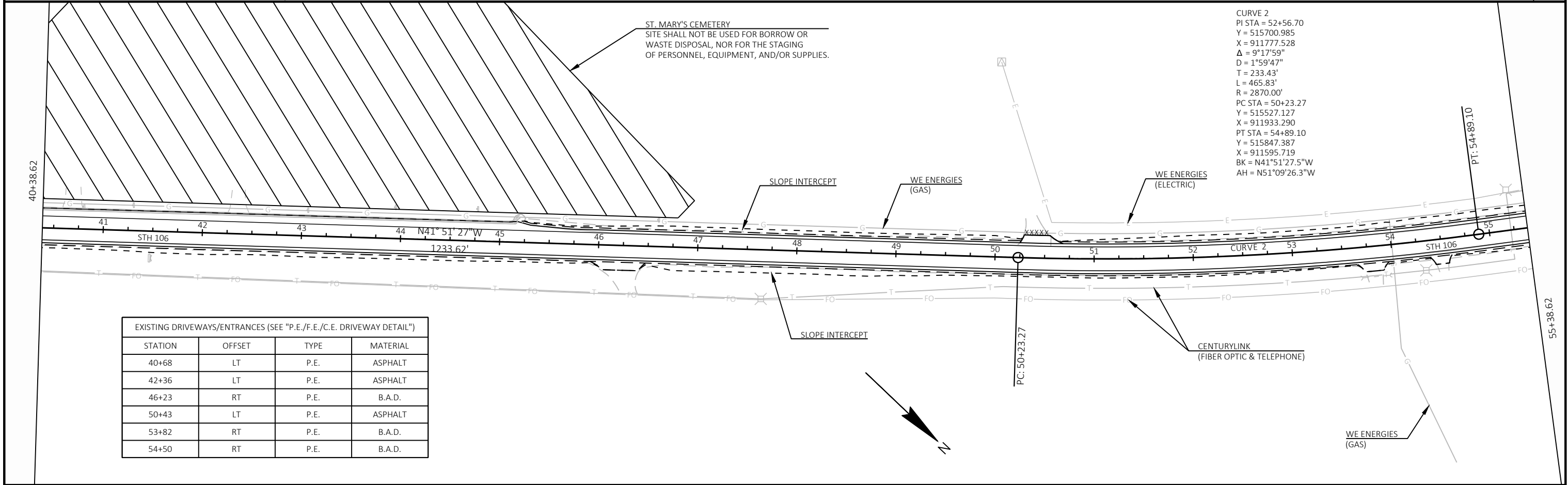
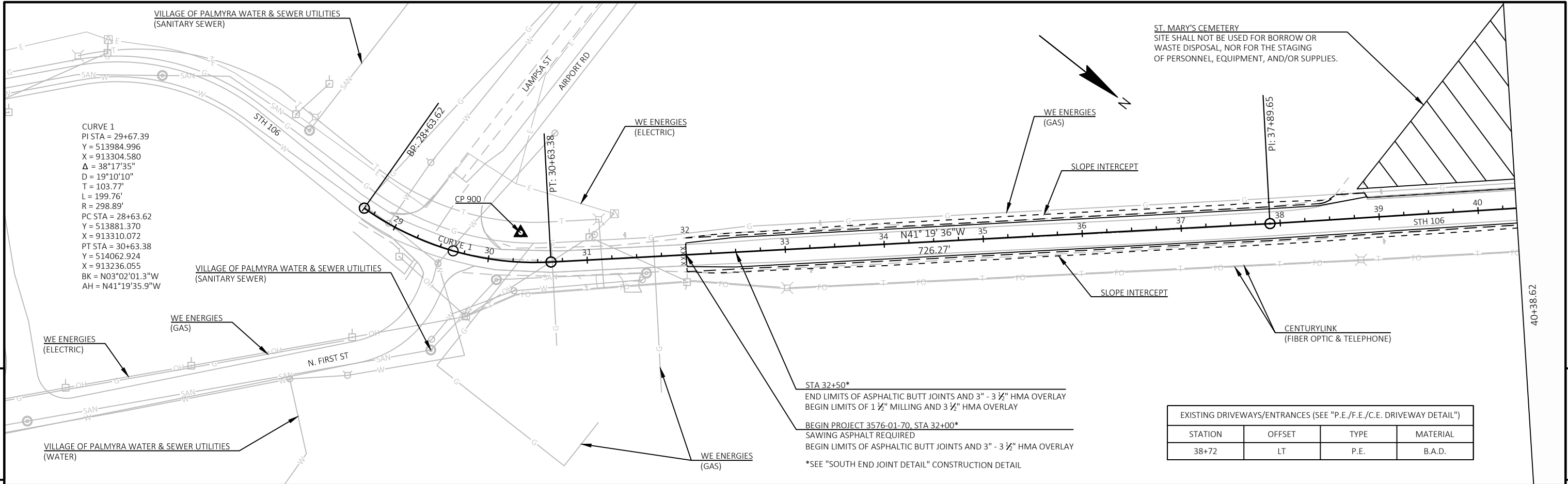
CONSTRUCTION STAKING ITEMS						
				650.8000	650.9910.01	
				CONSTRUCTION	CONSTRUCTION	
				STAKING	STAKING	
				RESURFACING	SUPPLEMENTAL	
				REFERENCE	CONTROL	
				(01. 3576-01-70)		
CATEGORY	STATION	TO	STATION	LOCATION	LF	LS
0010	32+00	-	287+62	STH 106	25,562	1
TOTAL 0010					25,562	1

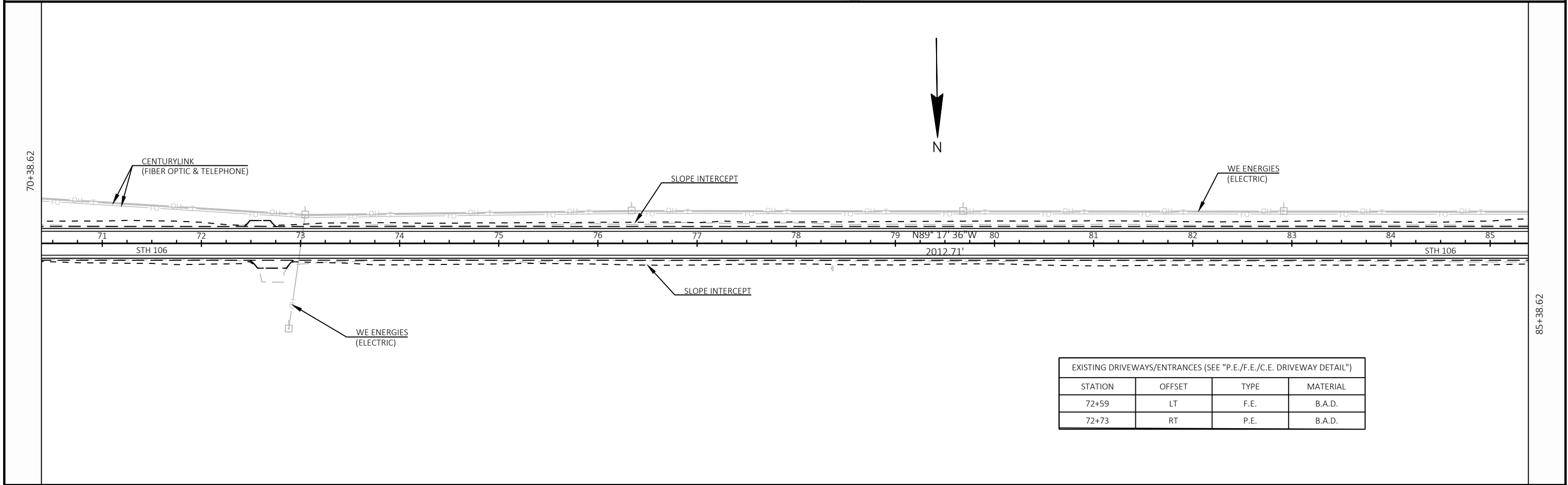
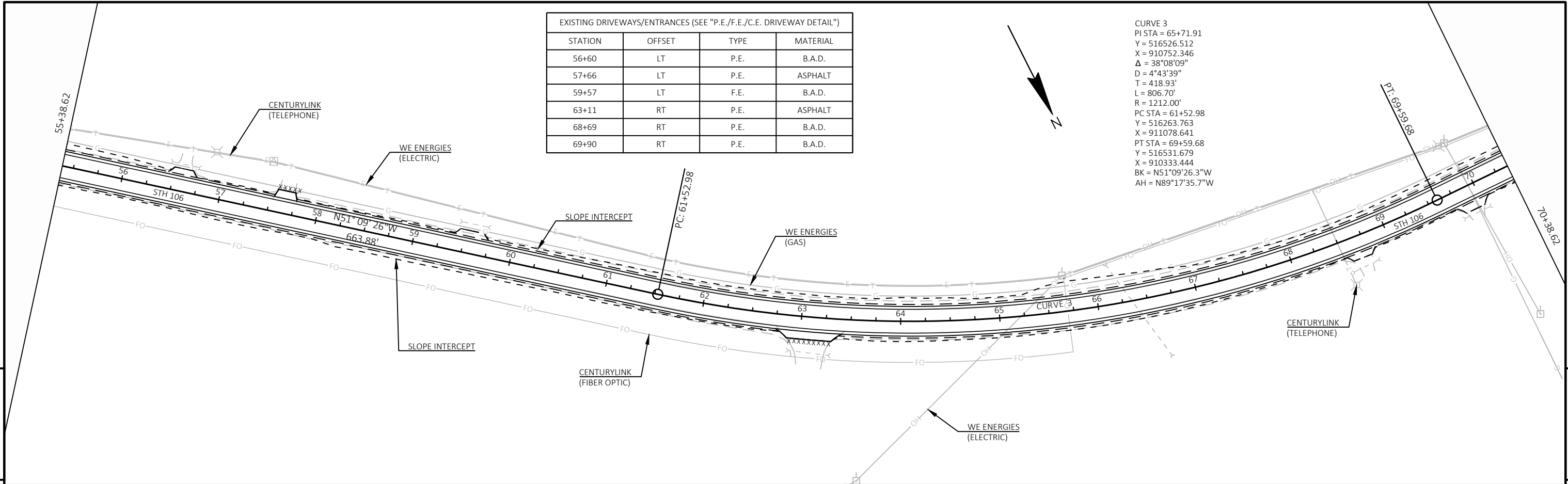
REFERENCE MONUMENT ITEMS						
				SPV.0060.01	SPV.0060.02	
				VERIFY	LANDMARK	
				LANDMARK	REFERENCE	
				REFERENCE	MONUMENTS	
				MONUMENTS	SPECIAL	
CATEGORY	STATION	OFFSET	LOCATION	EACH	EACH	REMARKS
0010	126+42	36'	STH 106 - LT	1	1	SEC 1715
TOTAL 0010				1	1	

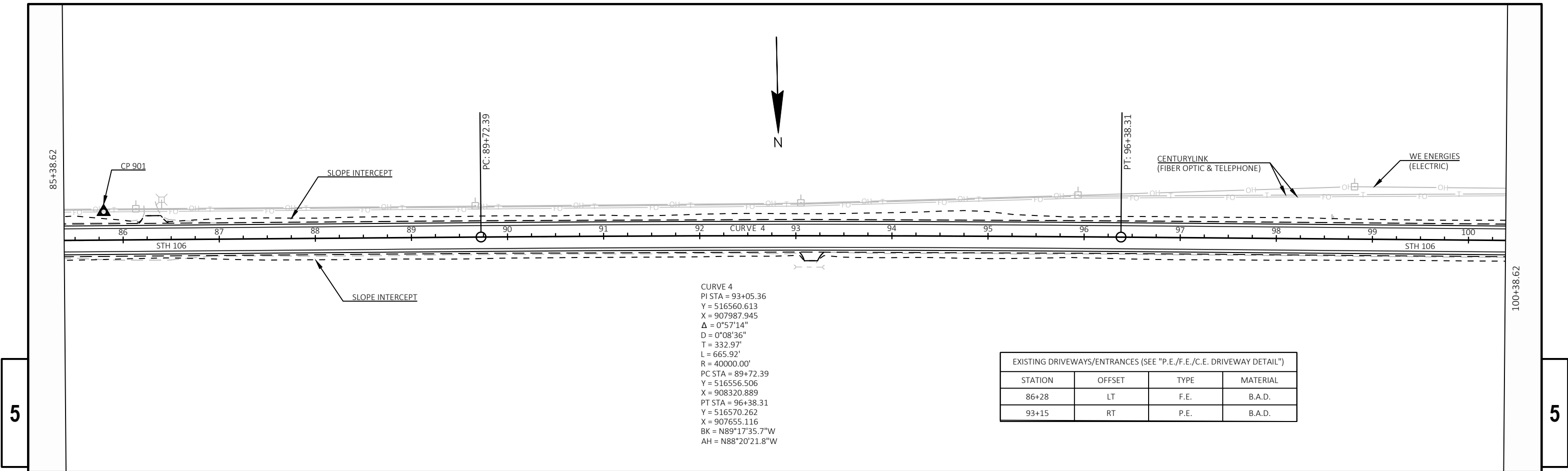
PAVEMENT MARKING											
646.1020 646.1040 646.6120 649.0105 649.0120											
MARKING MARKING LINE MARKING TEMPORARY TEMPORARY											
LINE GROOVED WET STOP LINE MARKING MARKING											
EPOXY REF EPOXY EPOXY LINE PAINT MARKING											
4-INCH 4-INCH 18-INCH 4-INCH 4-INCH											
YELLOW YELLOW WHITE WHITE WHITE YELLOW YELLOW											
SOLID 12.5'SKIP SOLID 3'SKIP SOLID 2'SKIP 2'SKIP											
CATEGORY	STATION	TO	STATION	OFFSET	LOCATION	LF	LF	LF	LF	LF	LF
0010	32+00	-	106+26	LT	STH 106	4637	698	7359	-	297	297
0010	106+26	-	154+31	LT	STH 106	2950	417	4496	63	192	192
0010	154+31	-	216+35	LT	STH 106	292	1479	6162	-	248	248
0010	216+35	-	287+98	LT	STH 106	4703	475	6779	63	287	287
0010	32+00	-	106+26	RT	STH 106	4280	282	7436	-	297	-
0010	106+26	-	154+31	RT	STH 106	2078	540	4721	-	192	-
0010	154+31	-	216+35	RT	STH 106	1173	48	6147	-	248	-
0010	216+35	-	287+98	RT	STH 106	2835	995	7129	-	287	-
0010	-		UNDISTRIBUTED*			3168	-	-	-	-	-
SUBTOTAL 0010						26,116	4,934	50,229	126	2,048	1,024
TOTAL 0010						31,050		50,355	28	2,048	1,024

*ADDITIONAL QUANTITY FOR POSSIBLE CLOSING OF EXISITNG PASSING ZONES (USE ONLY IF REQUIRED).

SAWING ASPHALT				
690.0150				
CATEGORY	STATION	LOCATION	LF	REMARKS
0010	32+00	STH 106	21	PROJECT BEGIN
0010	50+43	STH 106 - LT	26	P.E.
0010	57+66	STH 106 - LT	18	P.E.
0010	63+11	STH 106 - RT	45	P.E.
0010	106+26	STH 106 - LT	149	CALKINS ROAD
0010	112+40	STH 106 - LT	45	P.E.
0010	154+31	STH 106 - RT	44	ISLAND ROAD
0010	210+98	STH 106 - LT	31	P.E.
0010	211+28	STH 106 - RT	30	C.E.
0010	216+35	STH 106 - LT	147	THAYER ROAD
0010	224+39	STH 106 - LT	23	P.E.
0010	249+48	STH 106 - RT	18	P.E.
0010	261+25	STH 106 - LT	21	P.E.
0010	262+36	STH 106 - LT	18	P.E.
0010	269+73	STH 106 - RT	18	P.E.
0010	272+37	STH 106 - LT	18	P.E.
0010	287+62	STH 106	57	PROJECT END
TOTAL 0010			729	

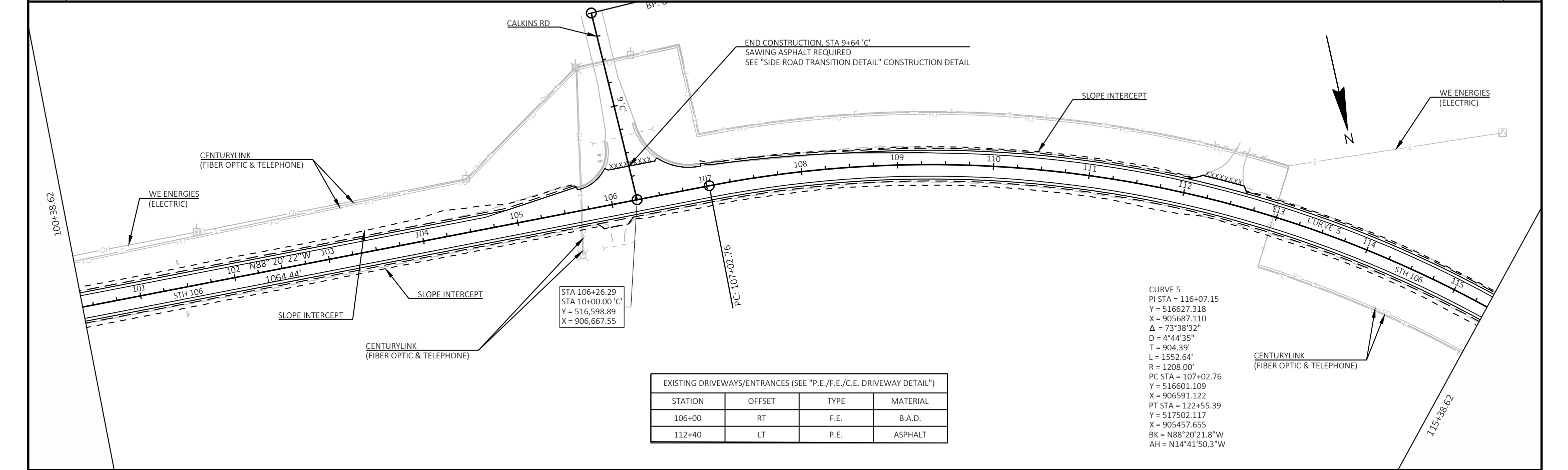






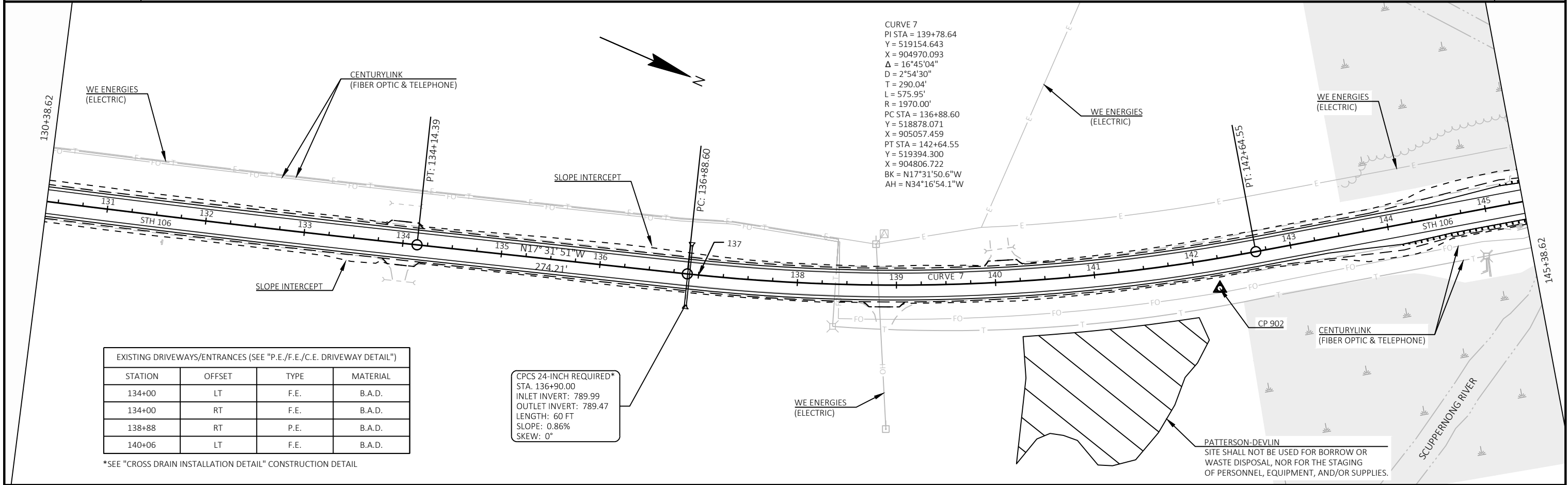
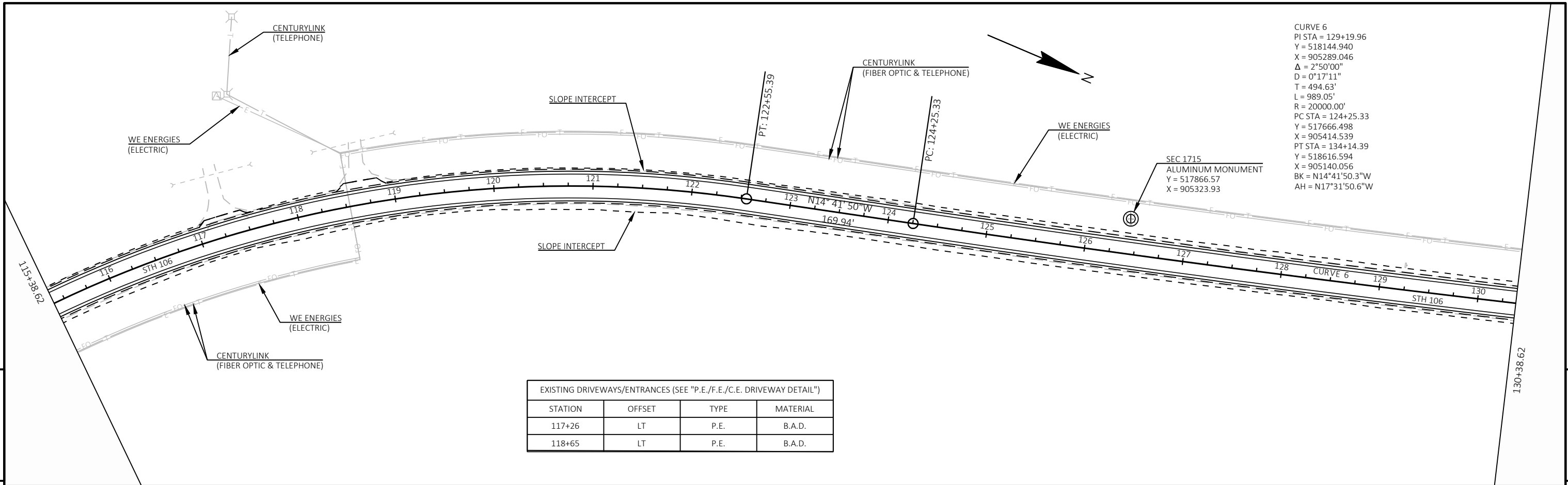
CURVE 4
PI STA = 93+05.36
Y = 516560.613
X = 907987.945
Δ = 0°57'14"
D = 0°08'36"
T = 332.97"
L = 665.92'
R = 40000.00'
PC STA = 89+72.39
Y = 516556.506
X = 908320.889
PT STA = 96+38.31
Y = 516570.262
X = 907655.116
BK = N89°17'35.7"W
AH = N88°20'21.8"W

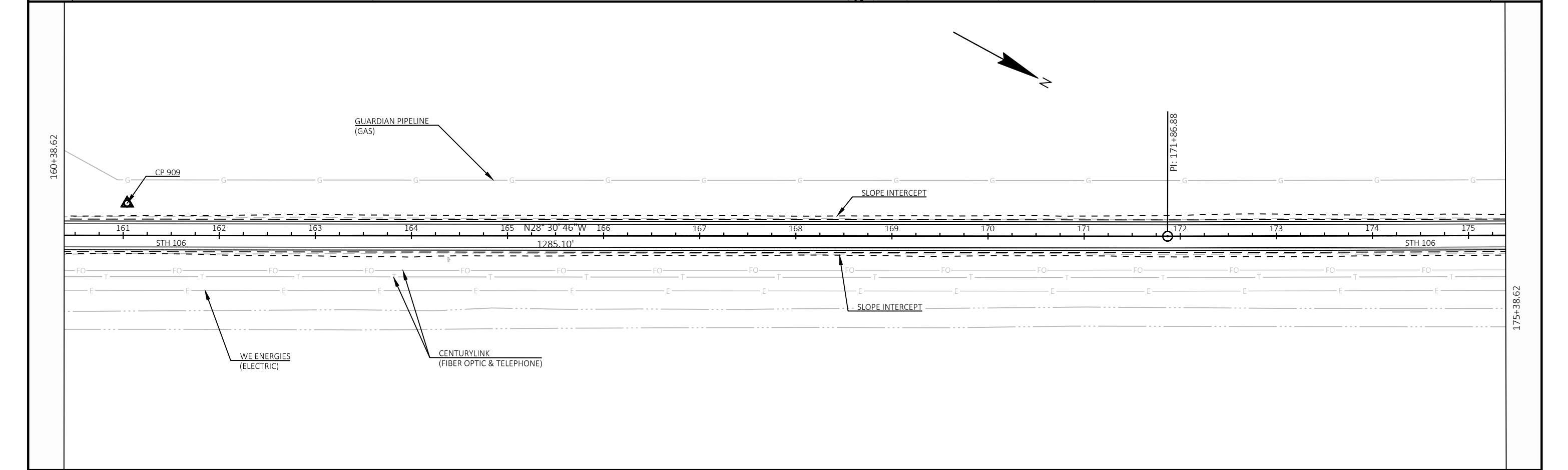
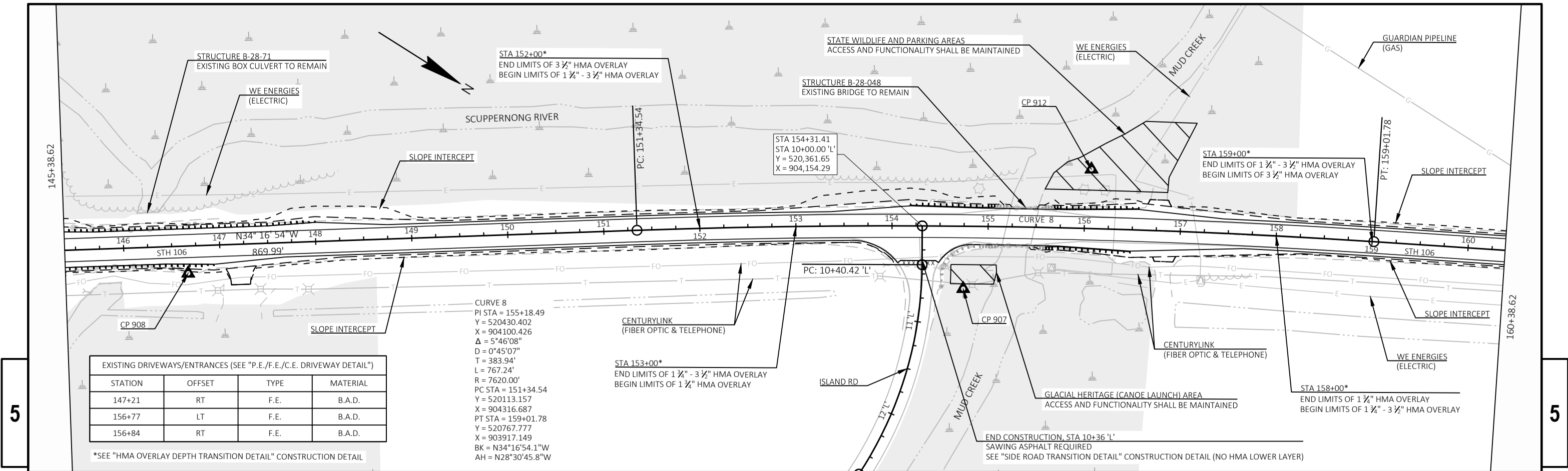
EXISTING DRIVEWAYS/ENTRANCES (SEE "P.E./F.E./C.E. DRIVEWAY DETAIL")			
STATION	OFFSET	TYPE	MATERIAL
86+28	LT	F.E.	B.A.D.
93+15	RT	P.E.	B.A.D.

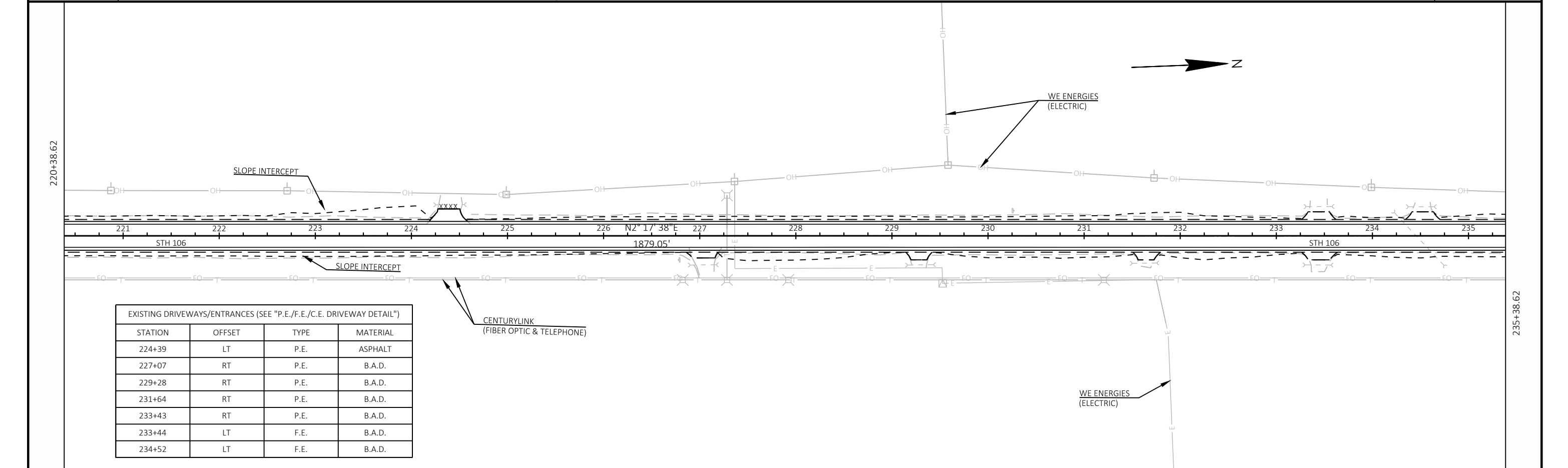
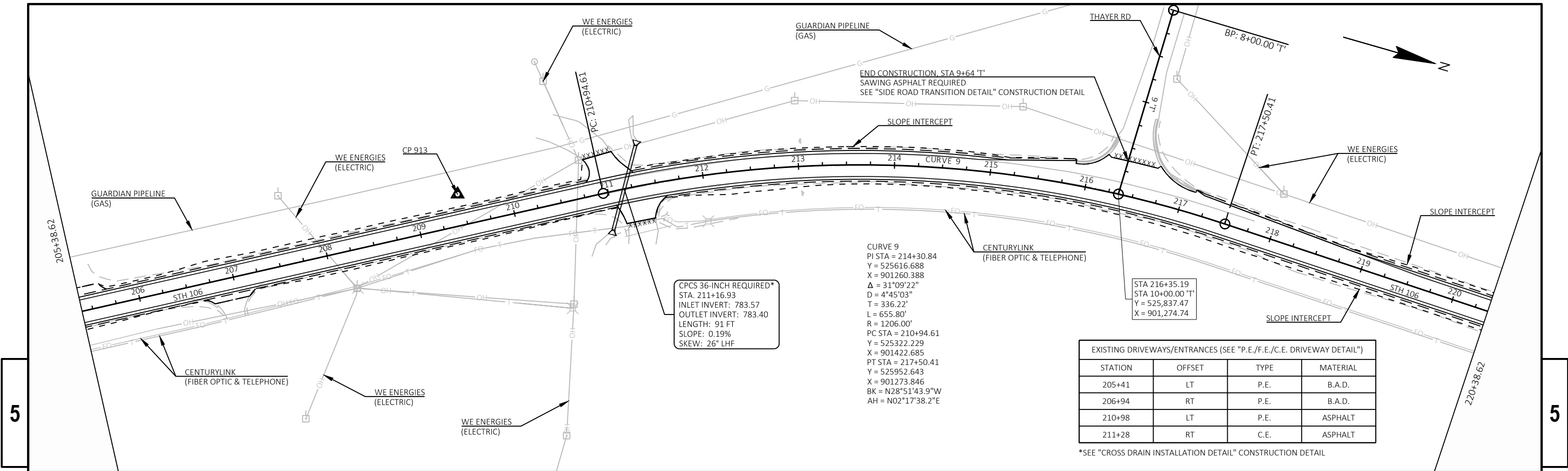


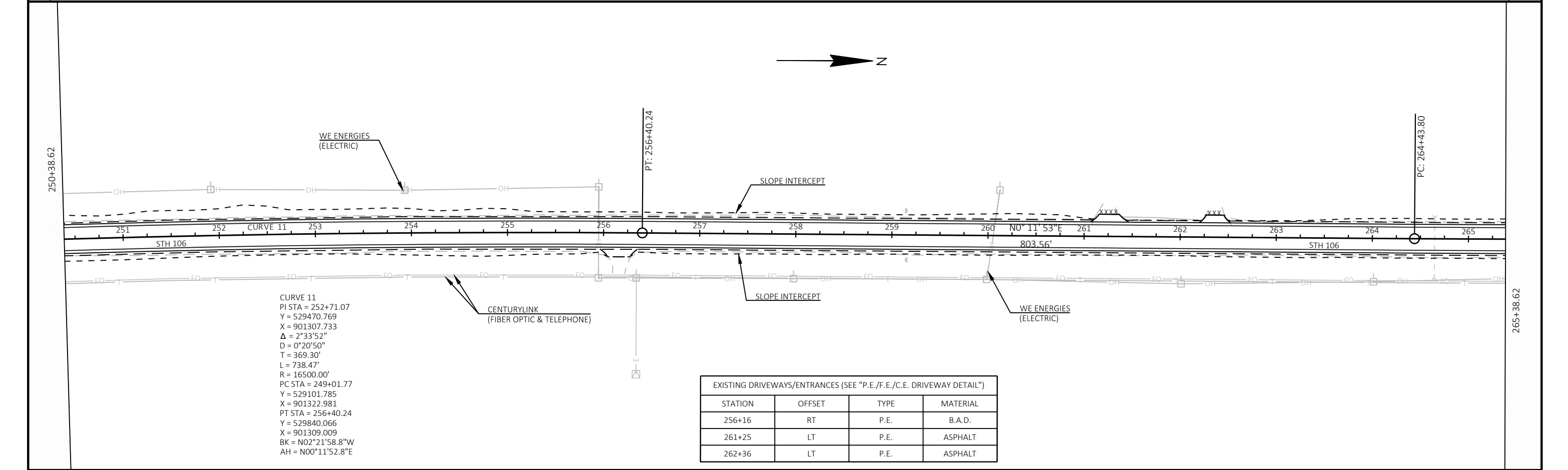
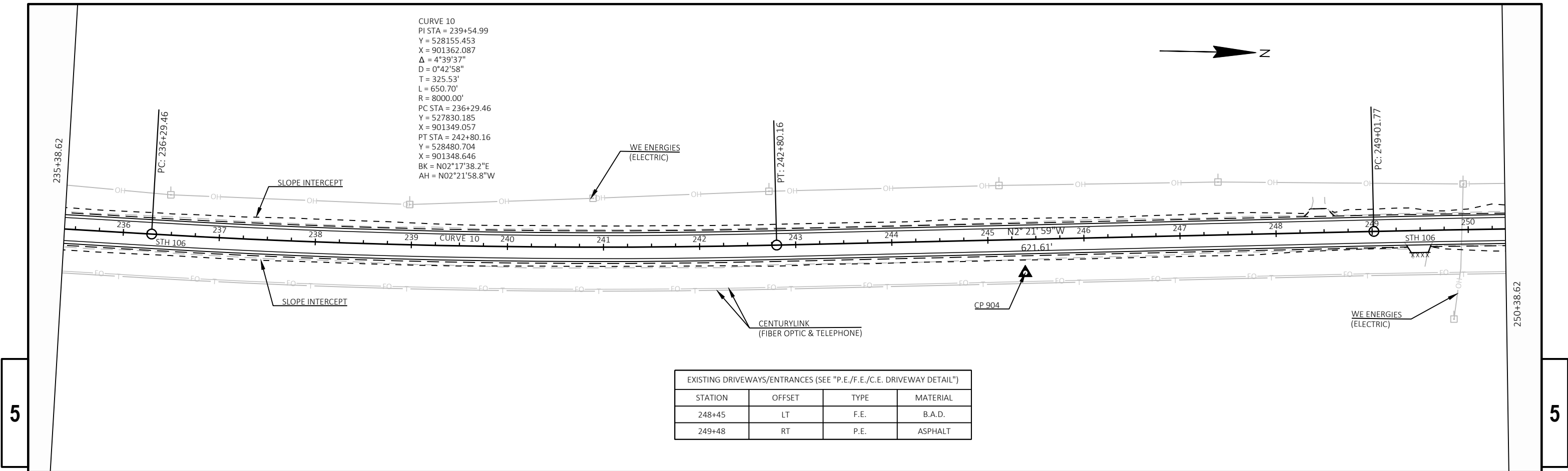
EXISTING DRIVEWAYS/ENTRANCES (SEE "P.E./F.E./C.E. DRIVEWAY DETAIL")			
STATION	OFFSET	TYPE	MATERIAL
106+00	RT	F.E.	B.A.D.
112+40	LT	P.E.	ASPHALT

CURVE 5
PI STA = 116+07.15
Y = 516627.318
X = 905687.110
Δ = 73°38'32"
D = 4°44'35"
T = 904.39'
L = 1552.64'
R = 1208.00'
PC STA = 107+02.76
Y = 516601.109
X = 906591.122
PT STA = 122+55.39
Y = 517502.117
X = 905457.655
BK = N88°20'21.8"W
AH = N14°41'50.3"W





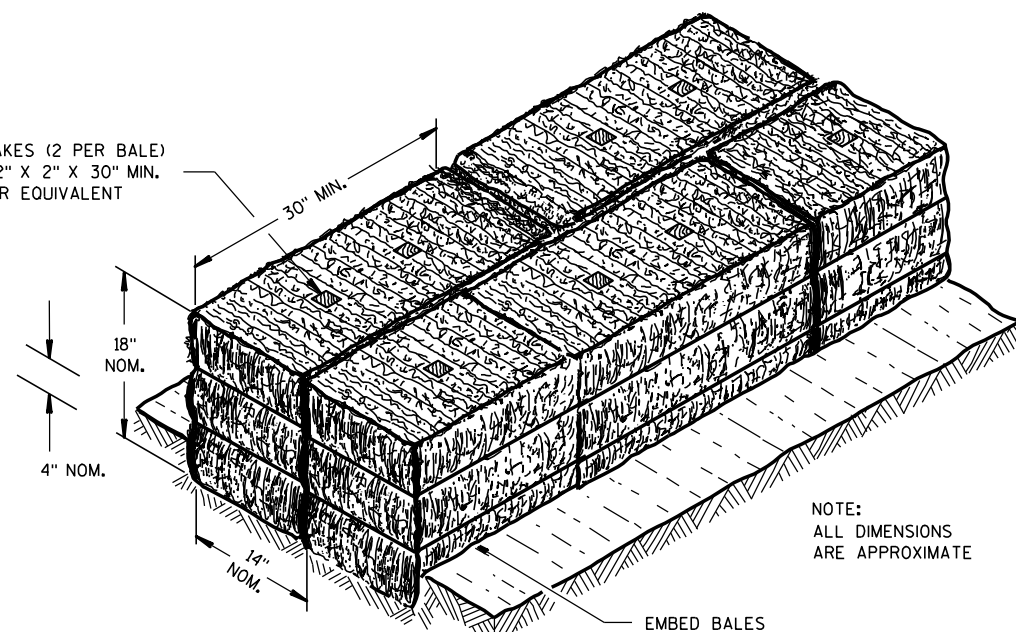




Standard Detail Drawing List

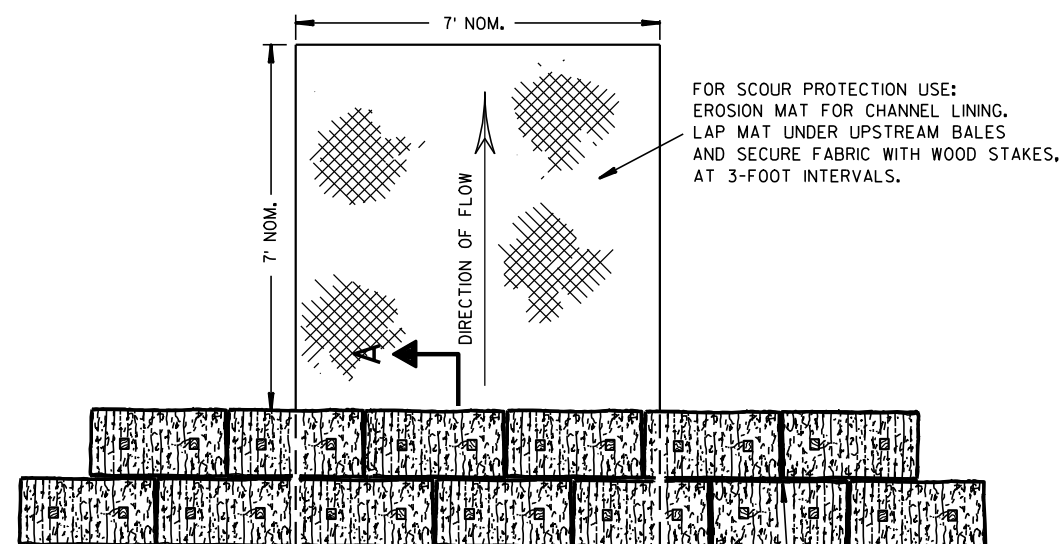
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B18-06B	STEEL PLATE BEAM GUARD, CLASS "A" AT MEDIAN APPROACH TO BRIDGES
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B29-01	SAFETY EDGE
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C08-20B	PAVEMENT MARKING (TURN LANES)
15C08-20C	PAVEMENT MARKING (TURN LANES)
15C11-08A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-08B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

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



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

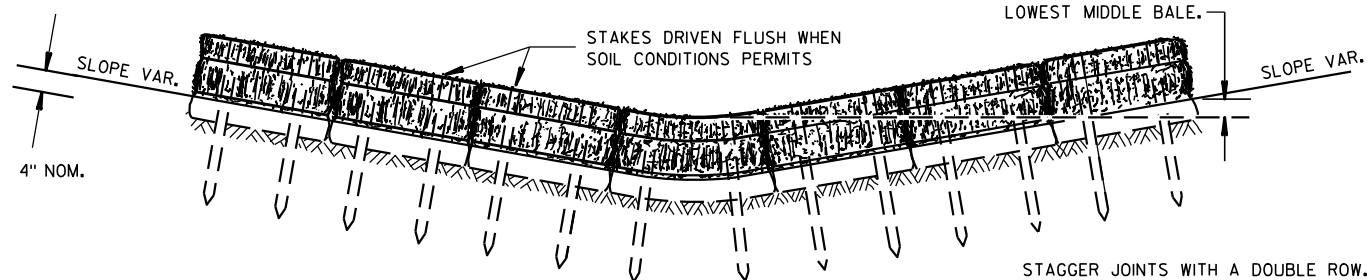
SECTION A-A



PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



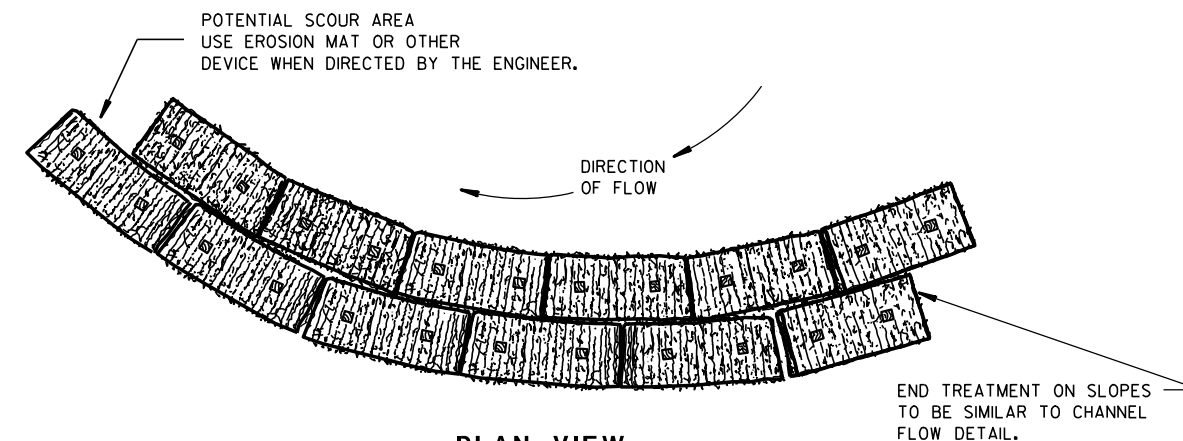
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

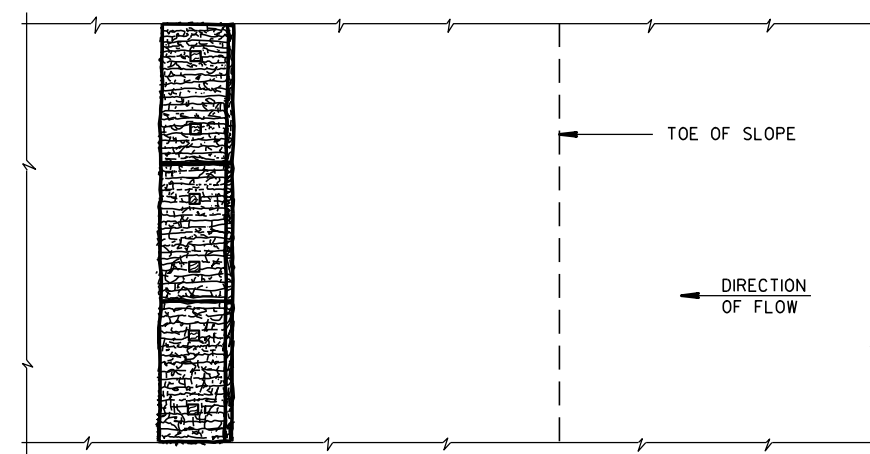
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

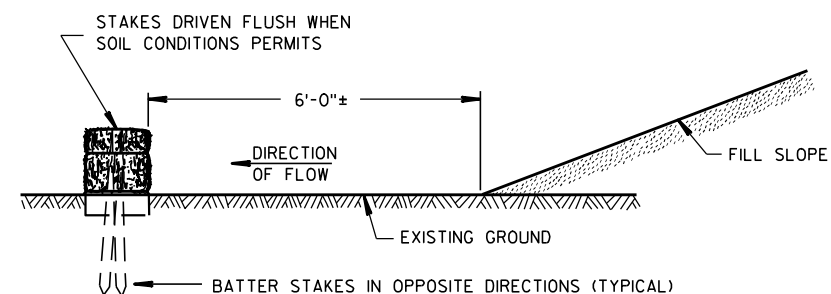


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

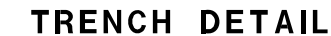
6/04/02
DATE

FHWA

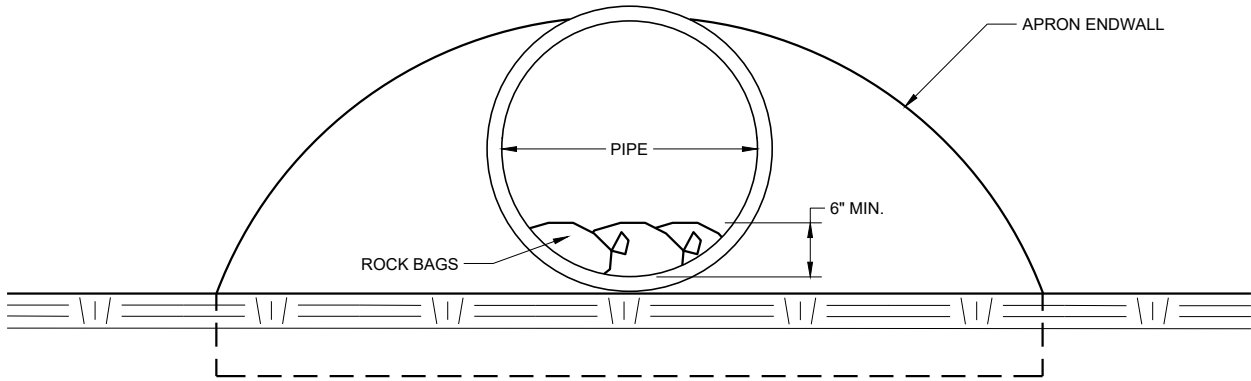
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



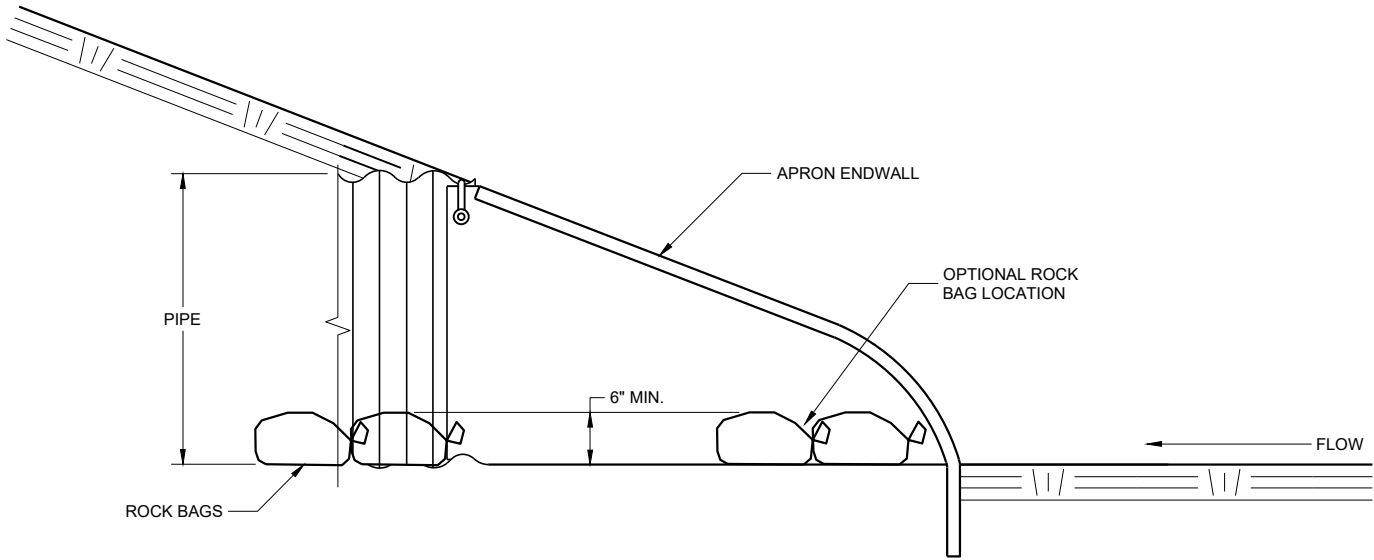
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 _____ DATE	 /S/ Beth Canestra _____ CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



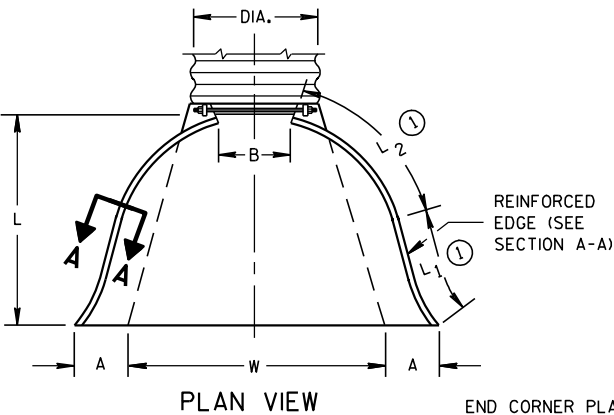
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

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

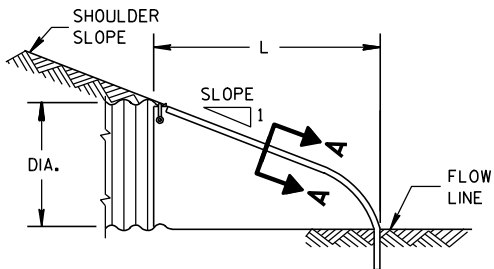
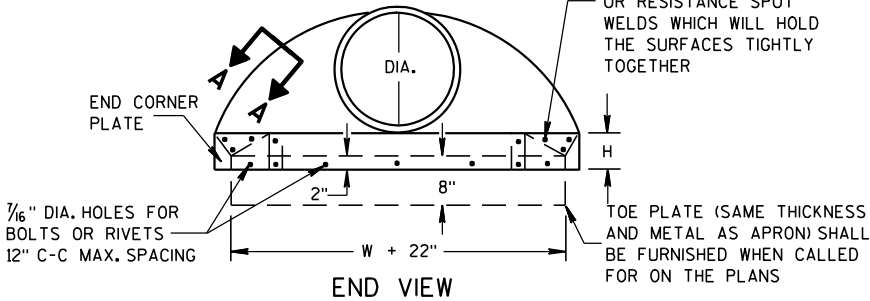
METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	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

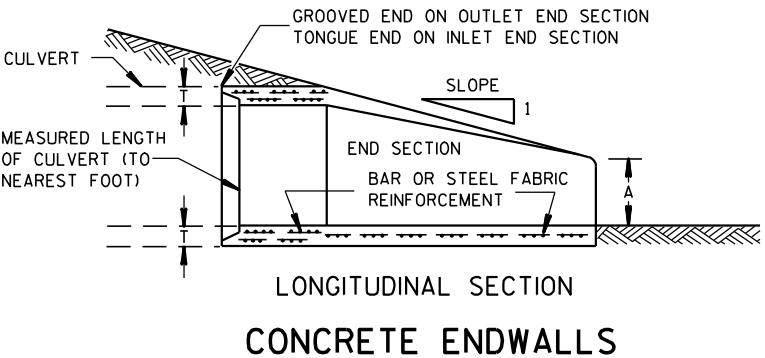
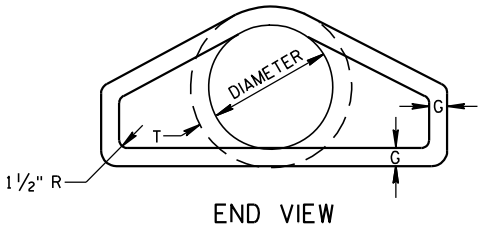
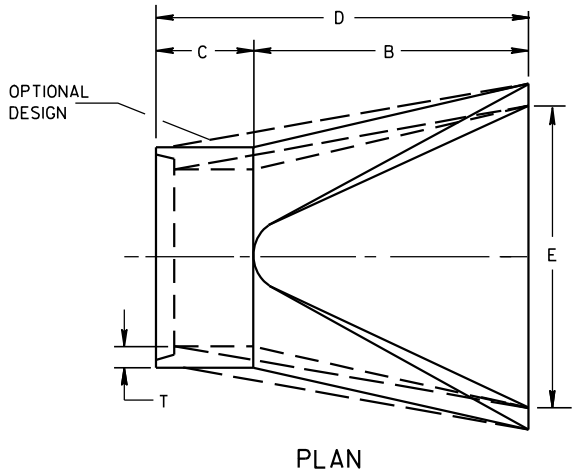
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

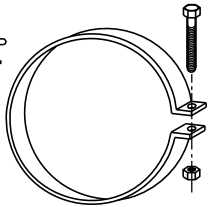
REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1			
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1			
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1			
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1			
24	3	9 1/2	43 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 2/5 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

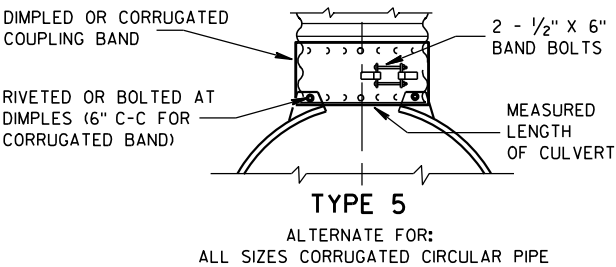
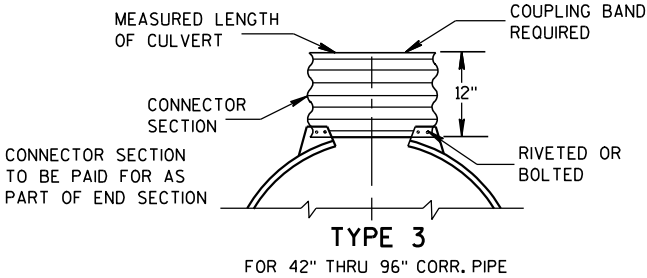
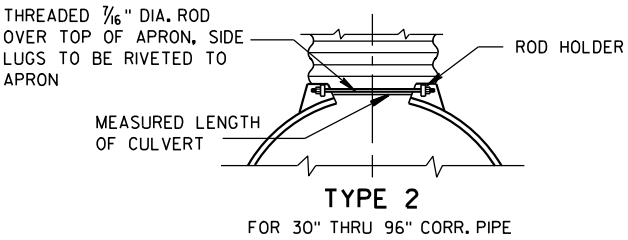
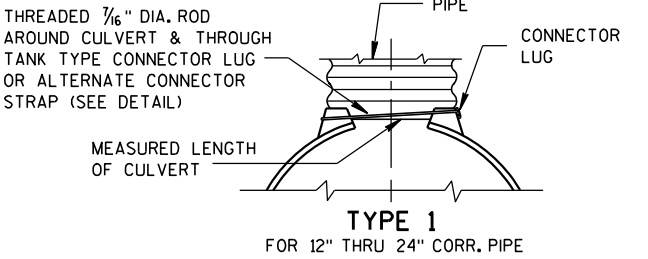


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



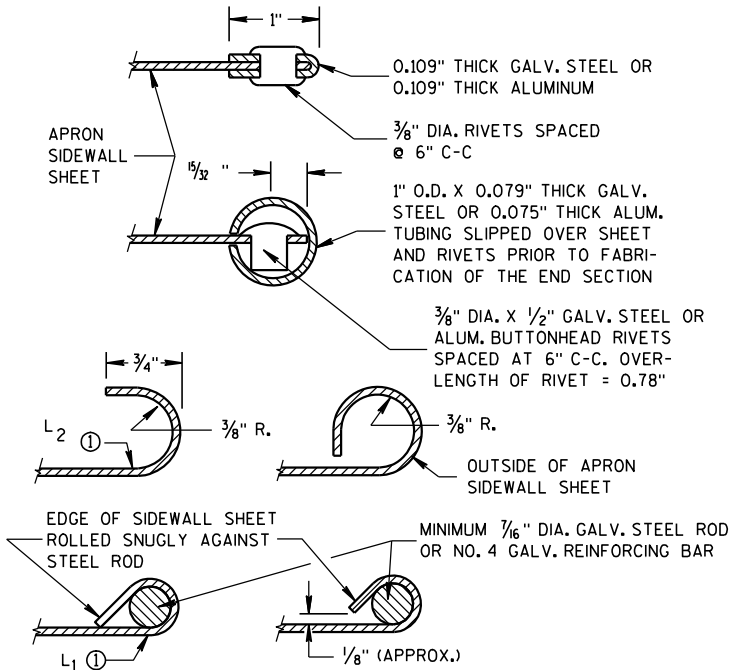
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

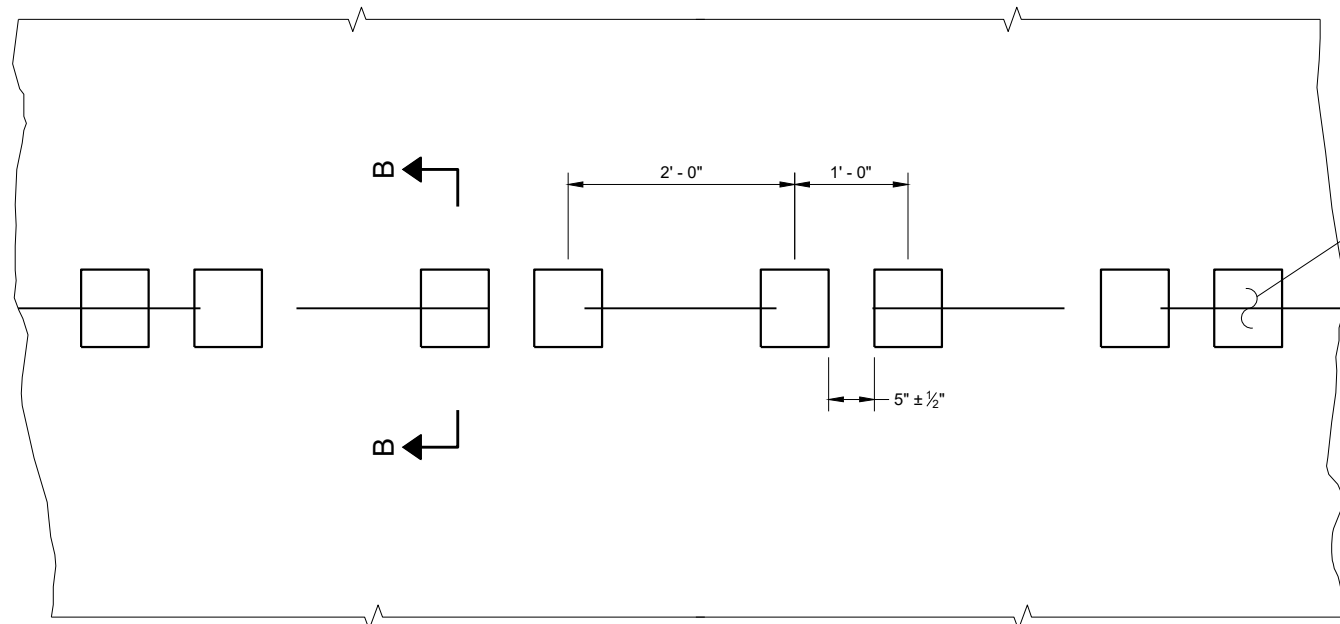
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

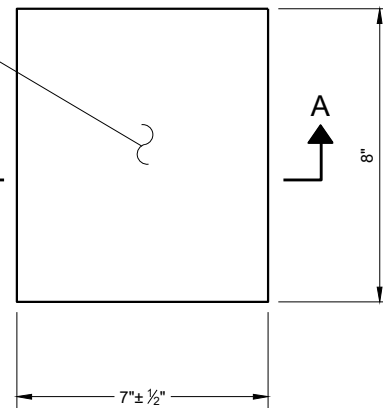
APPROVED
11/30/94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



PLAN VIEW
SHOULDER WITH GROOVES

6

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

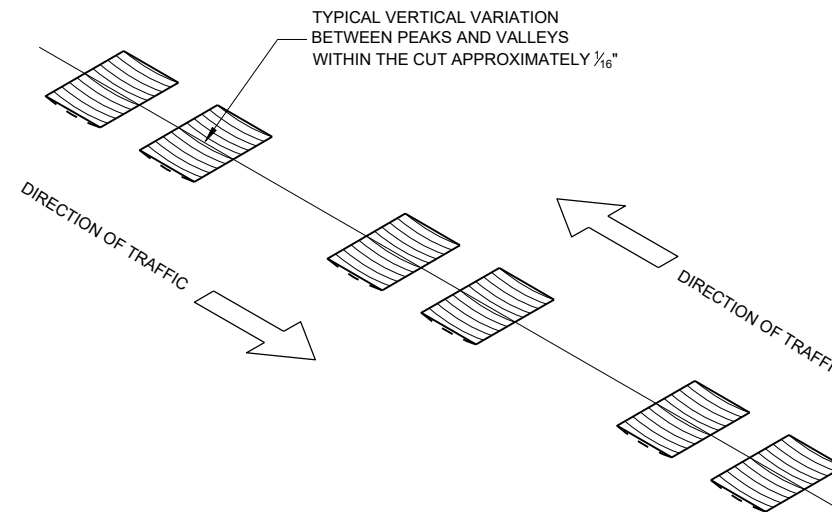
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

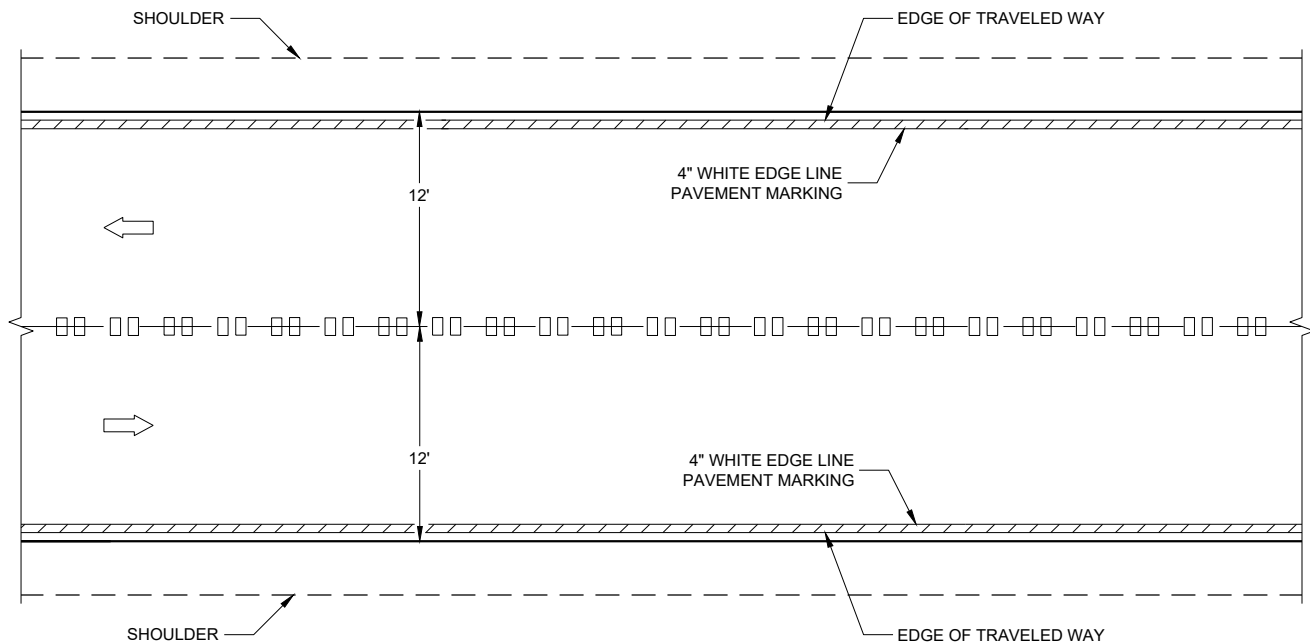
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

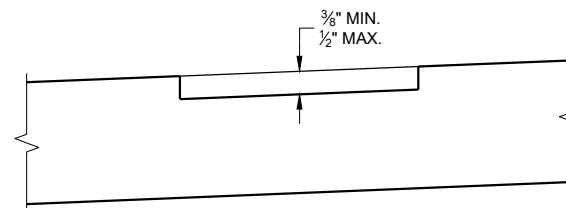
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



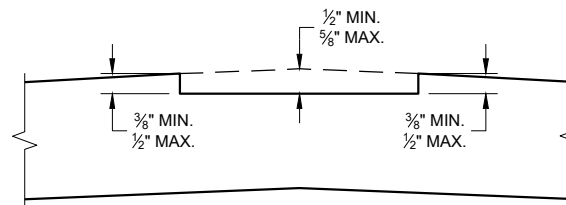
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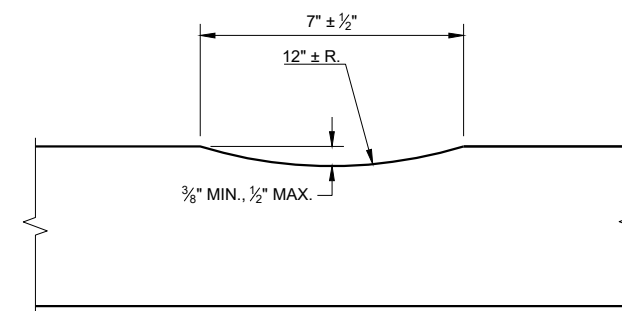
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



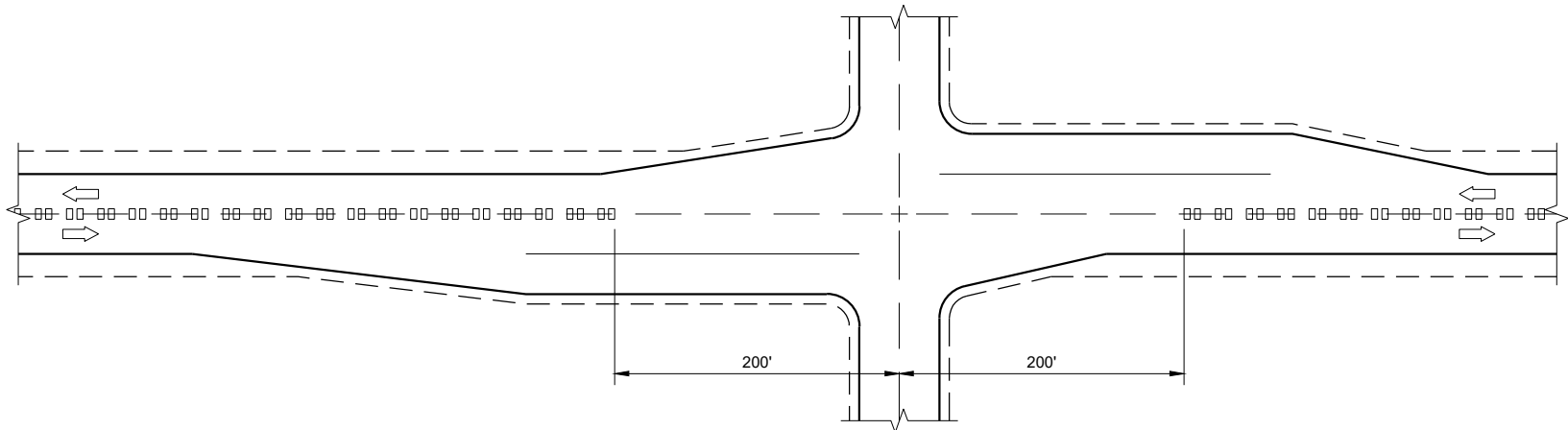
SECTION B - B
CROWNED ROADWAY



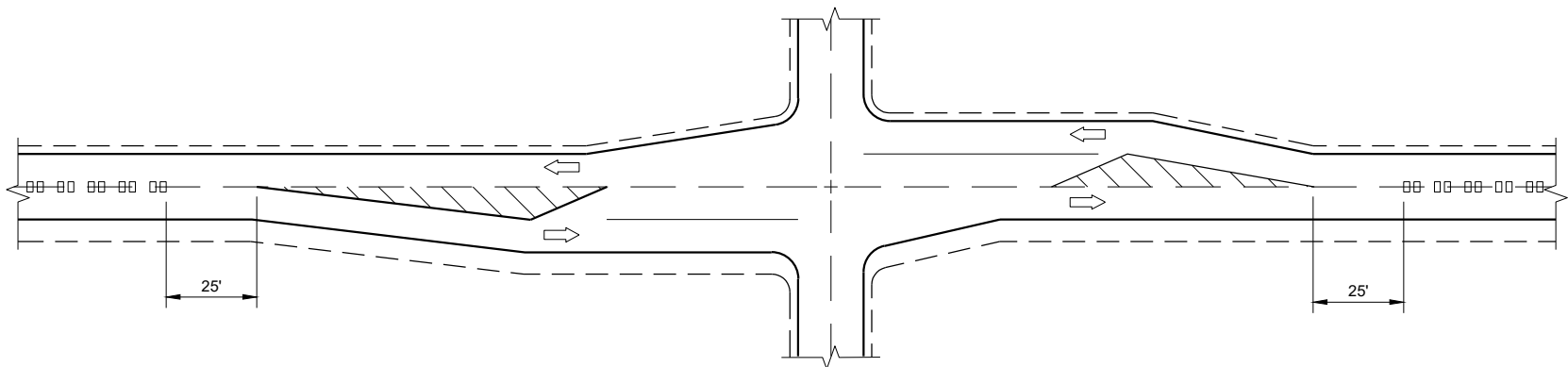
SECTION A - A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

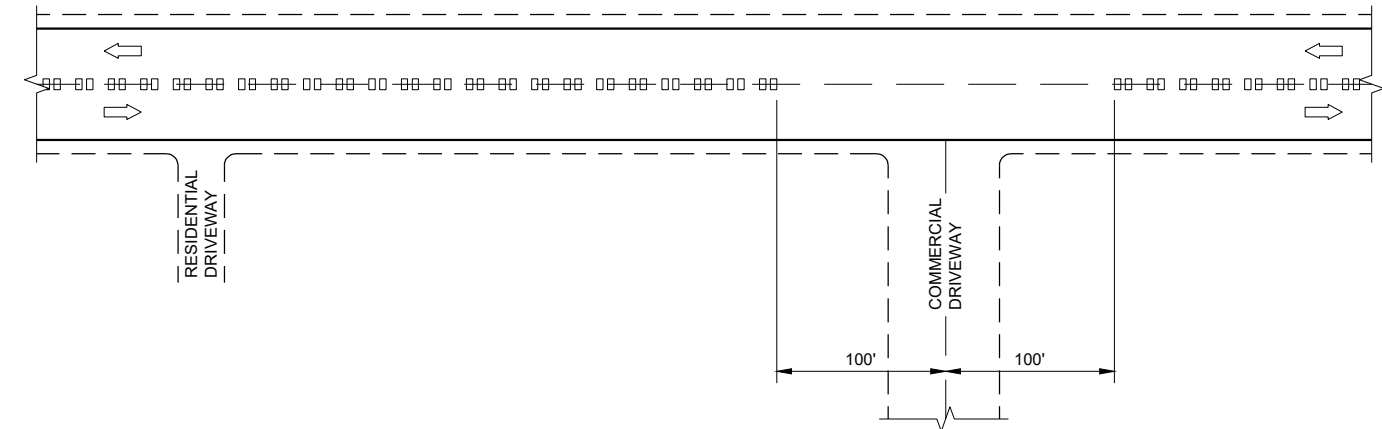
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



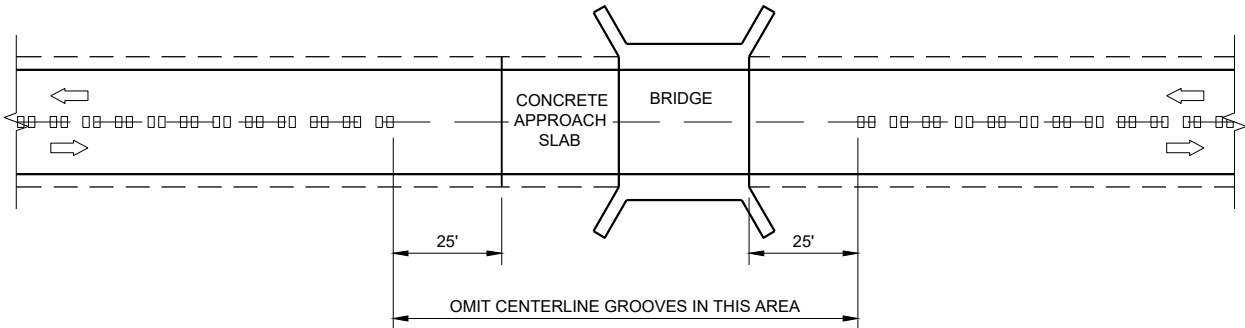
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



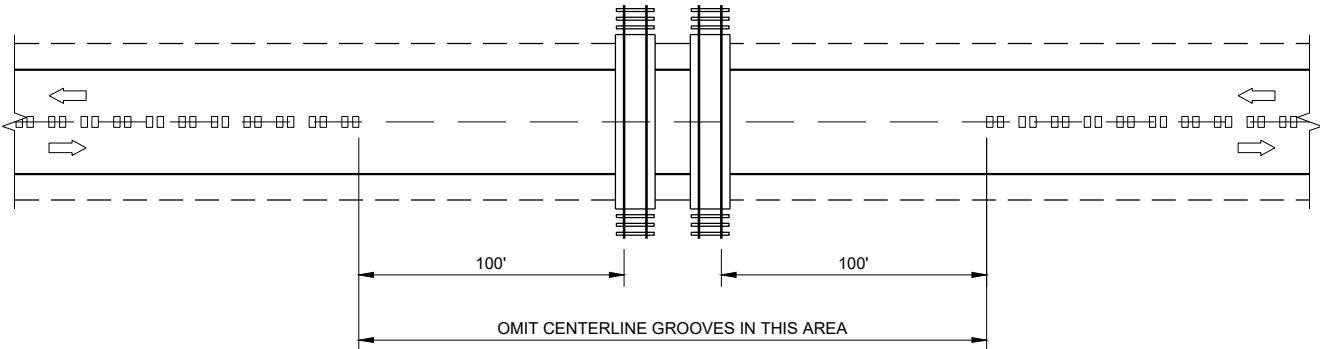
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

2-LANE RURAL
CENTERLINE RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018

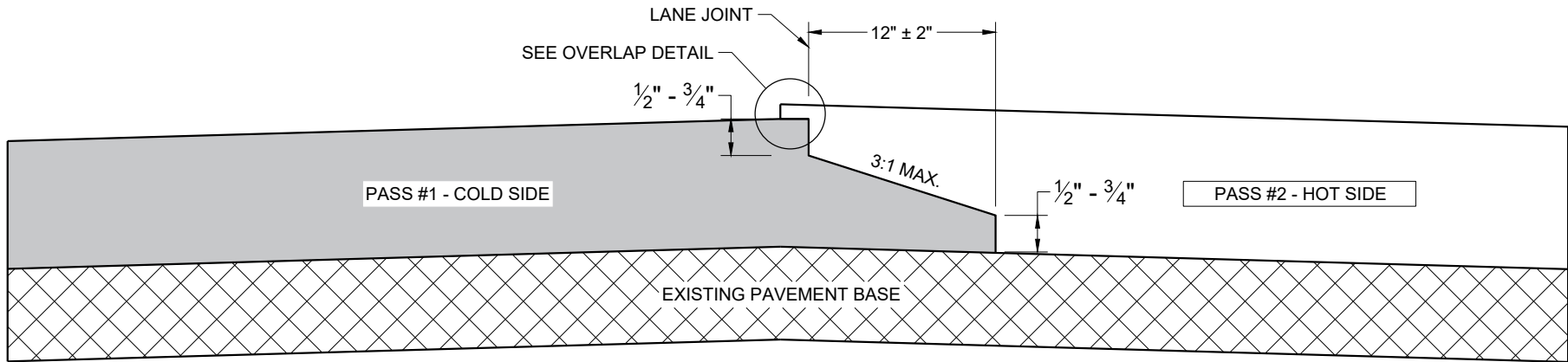
DATE

FHWA

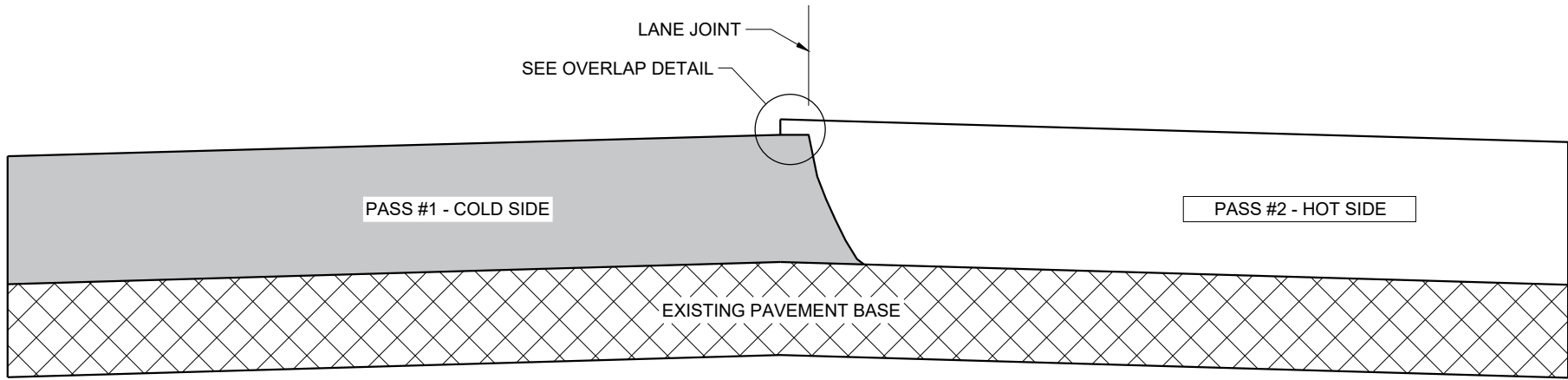
/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

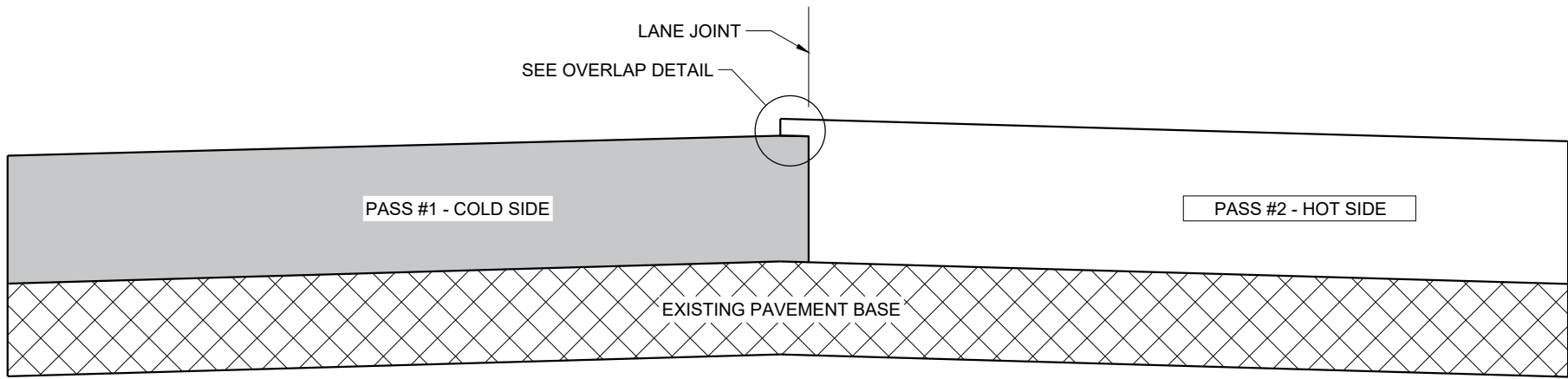
ENGINEER



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



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

GENERAL NOTES

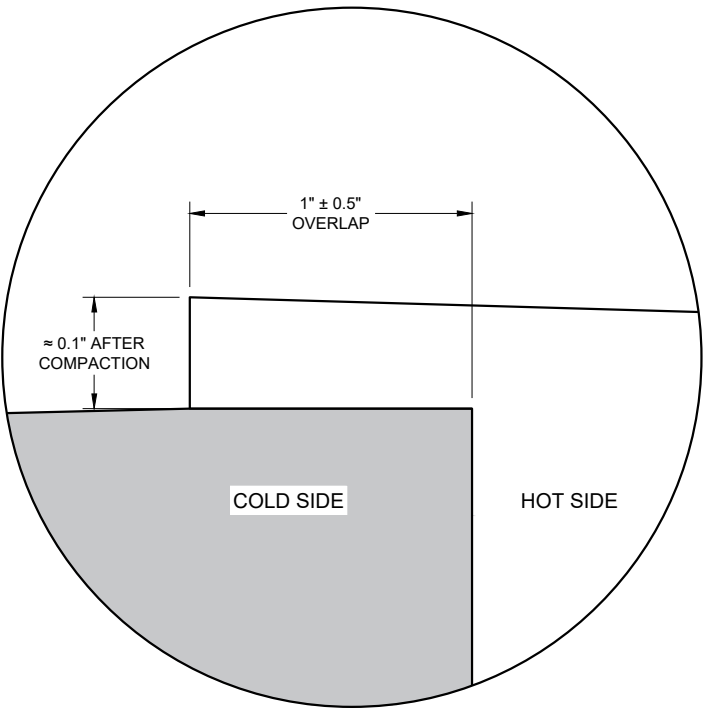
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER
FHWA

6

- S.D.D. 14 B 15-11a**

S.D.D. 14 B 15-11a



6



S.D.D. 14 B 15-11a



6



6



S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a



6

6



6



6



6



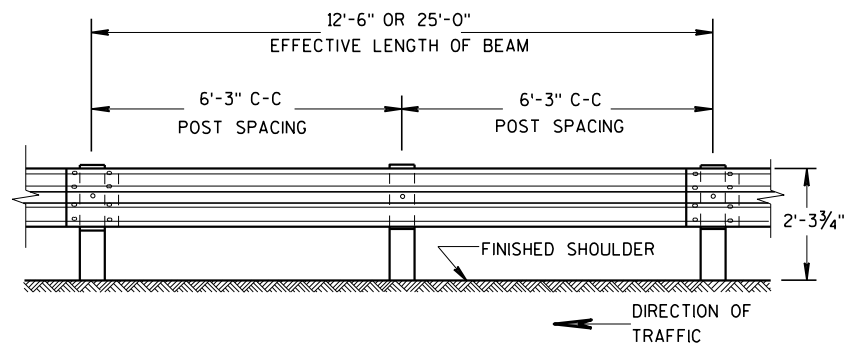
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6

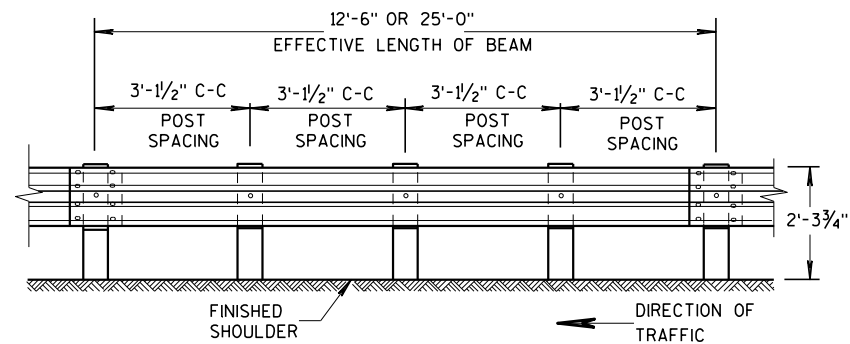
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6

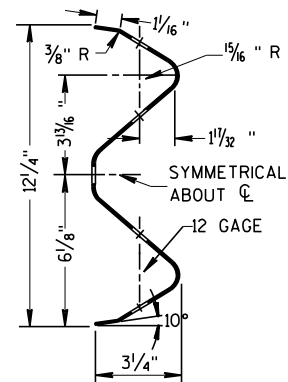


FRONT VIEW

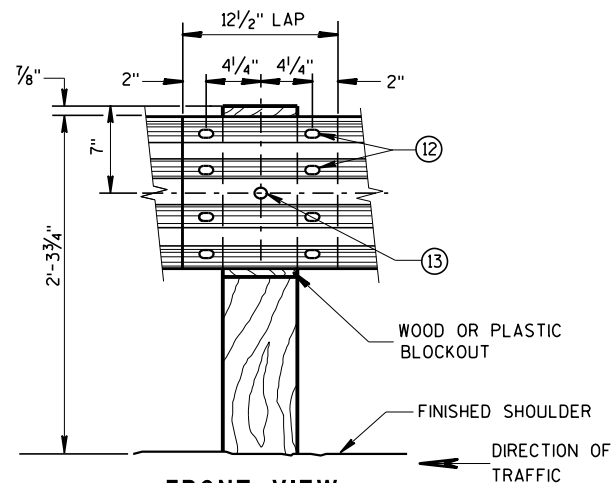
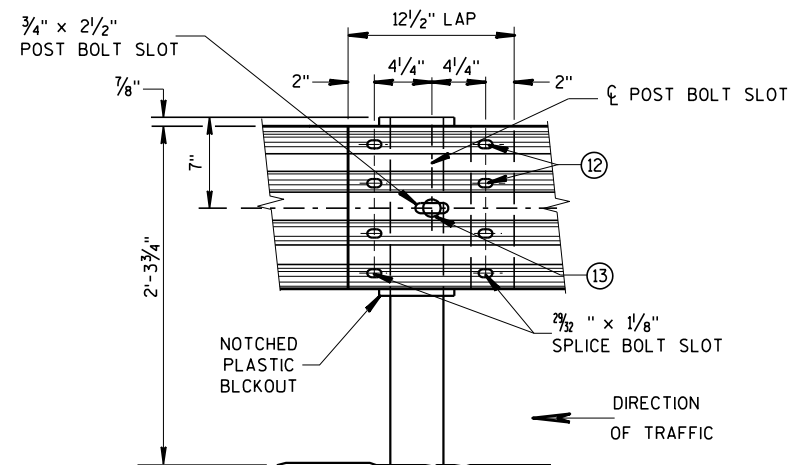
POST SPACING STANDARD INSTALLATION



FRONT VIEW

POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)

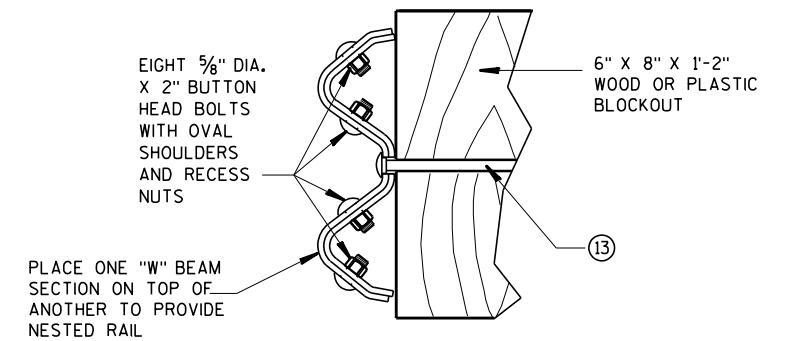
SECTION THRU W BEAM

FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAILFRONT VIEW
BEAM SPLICE AT STEEL POSTTYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

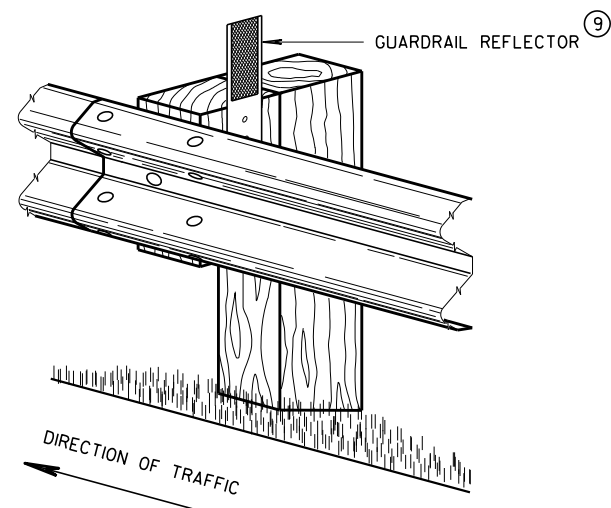
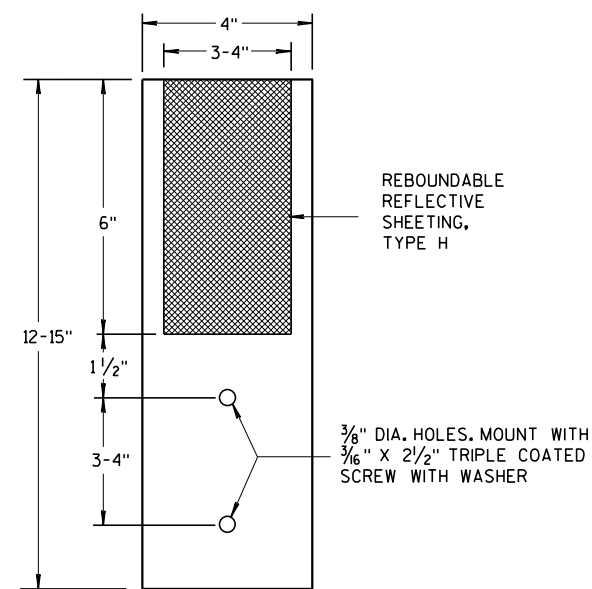
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



NESTED W BEAM (NW)

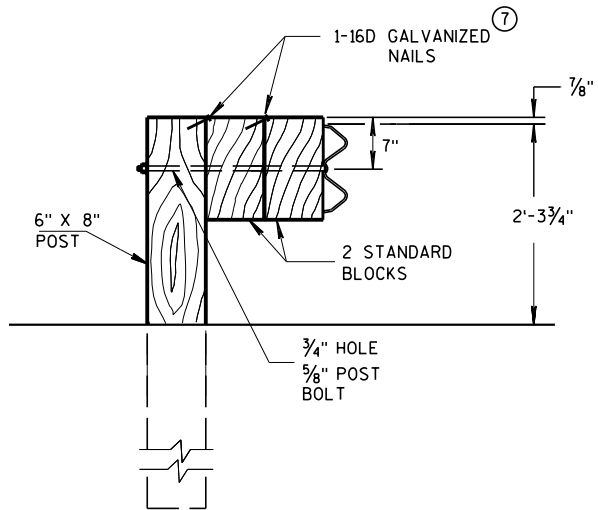
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUARDRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.

4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *

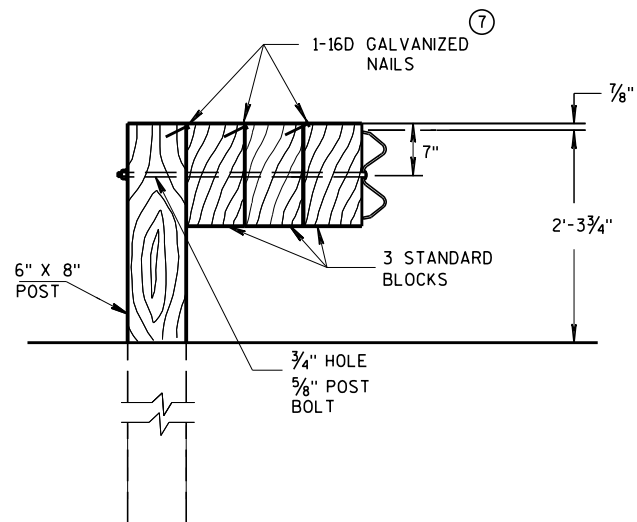
4"x 12" GUARDRAIL REFLECTOR

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTSSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS
WITHIN A BARRIER RUN IS UNLIMITED

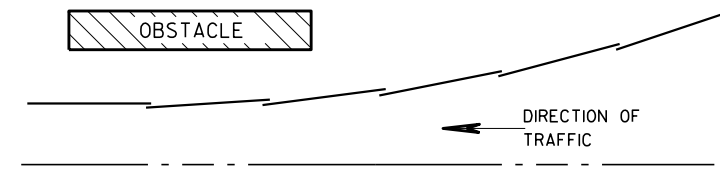


DETAIL FOR TRIPLE BLOCKS

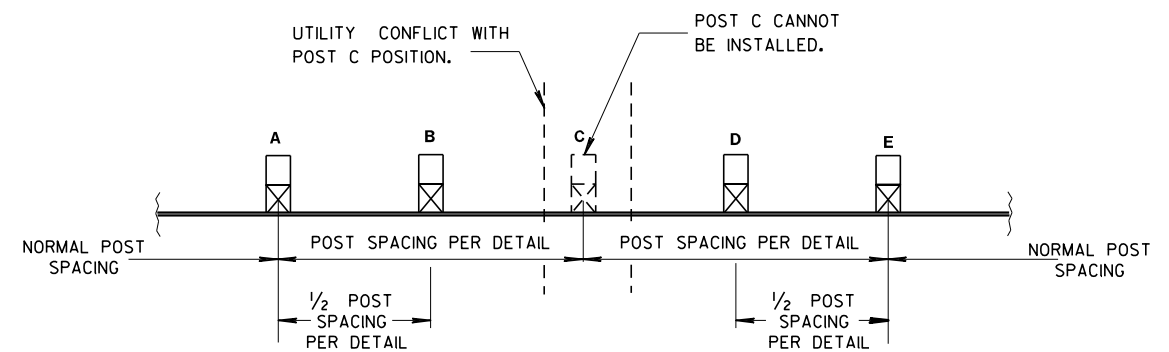
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES
PREVENT THE POST FROM BEING INSTALLED.

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



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017

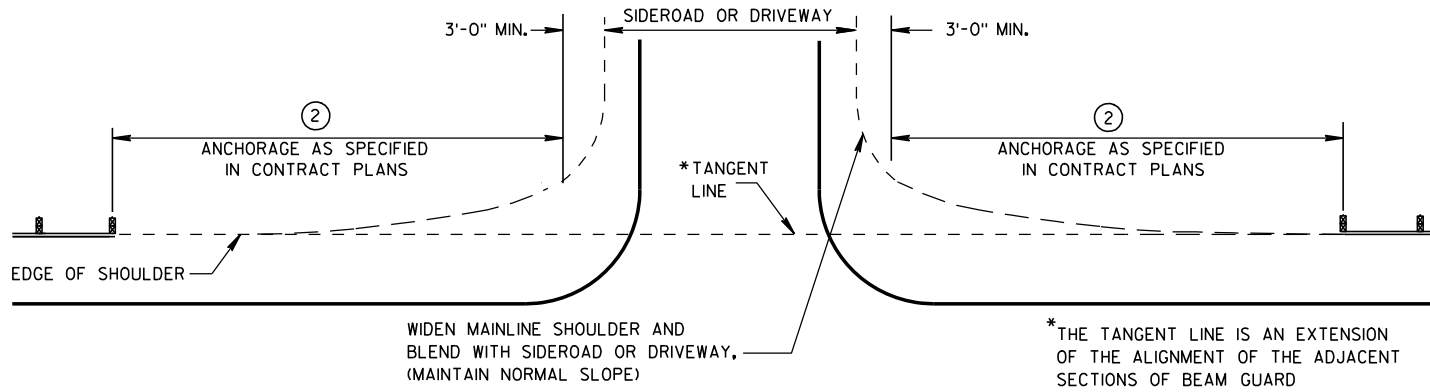
DATE

FHWA

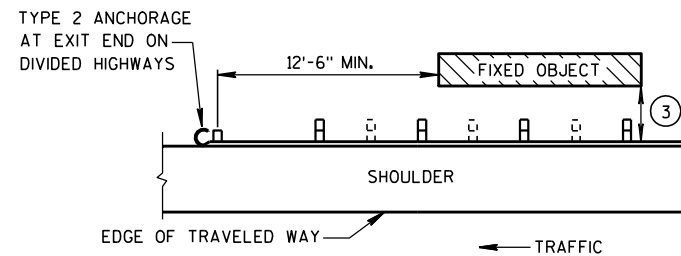
/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

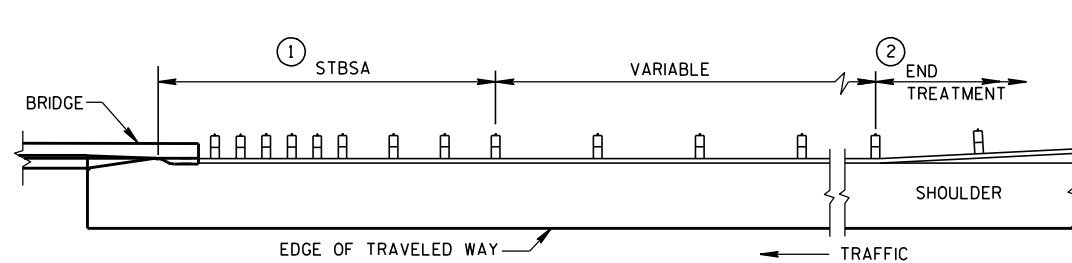
UNIT SUPERVISOR



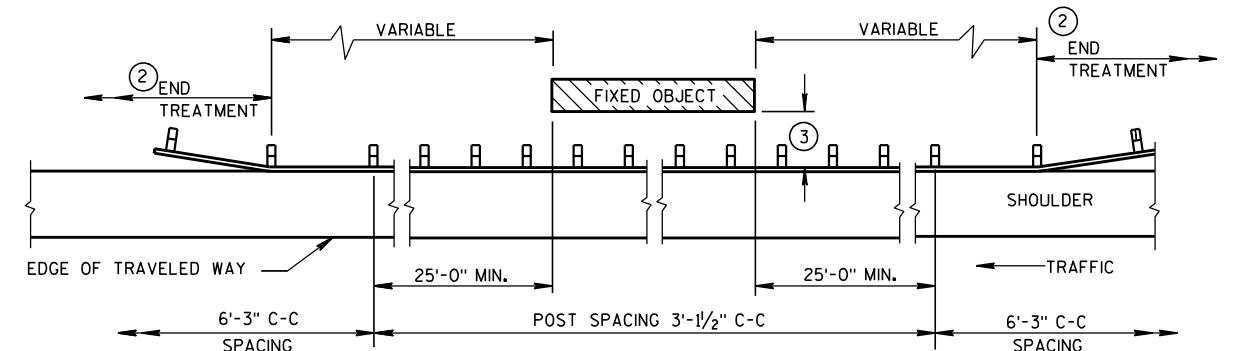
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES

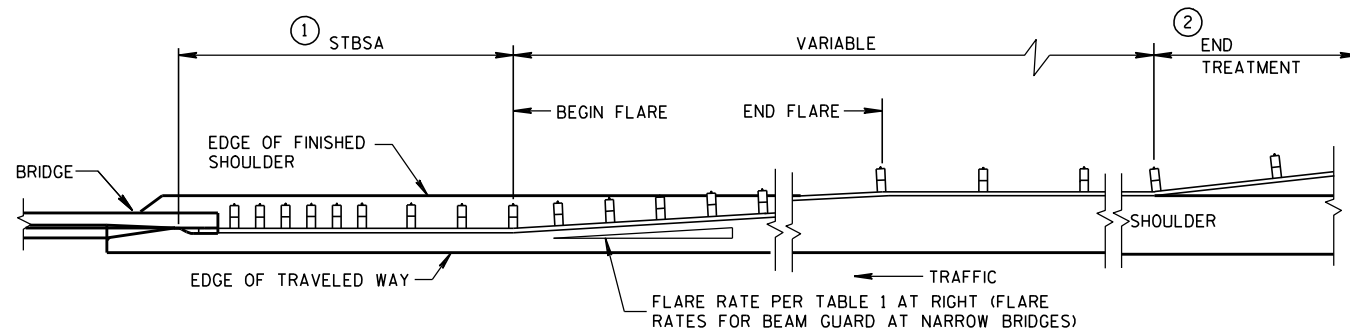


BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1



BEAM GUARD AT NARROW BRIDGES (FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

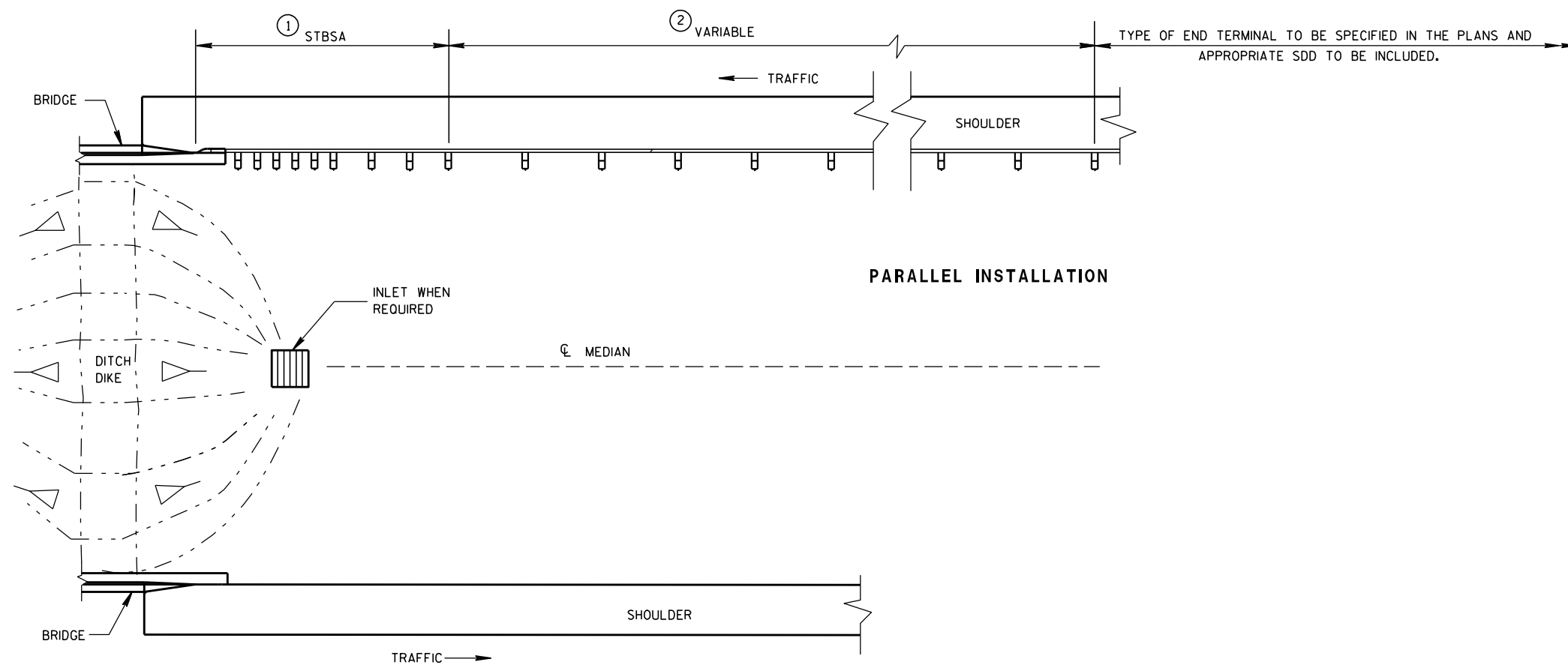
- STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1 1/2"
4'-6"	6' - 3"

STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



STEEL PLATE BEAM GUARD
CLASS "A" AT
MEDIAN APPROACH TO BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-21-07

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6½"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

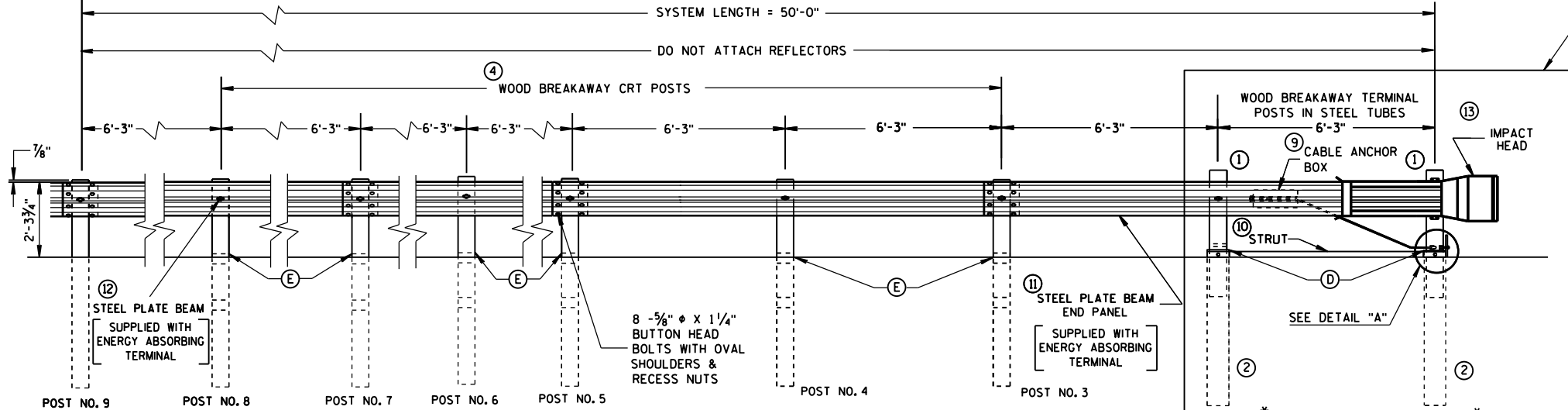
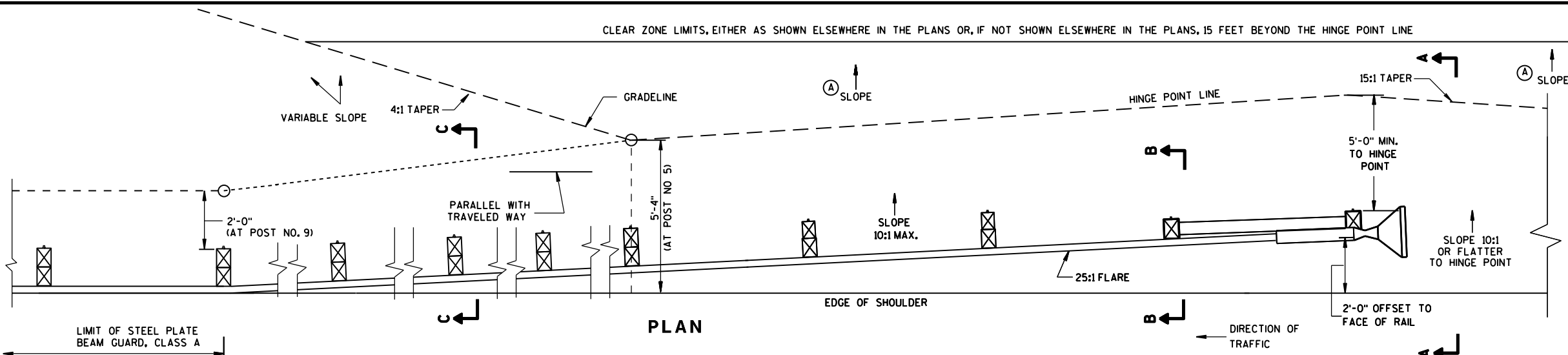
FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.
- (F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

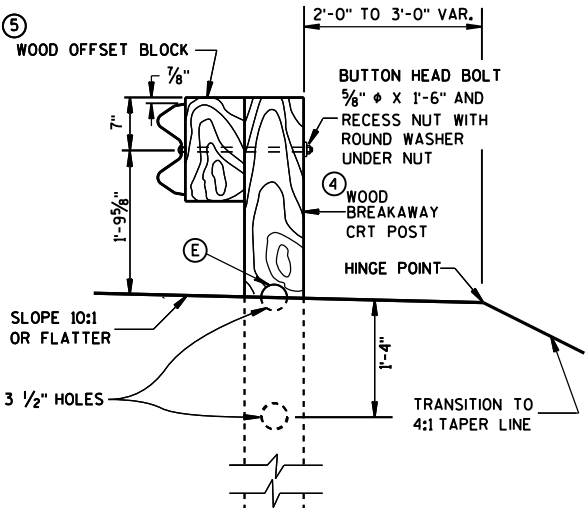
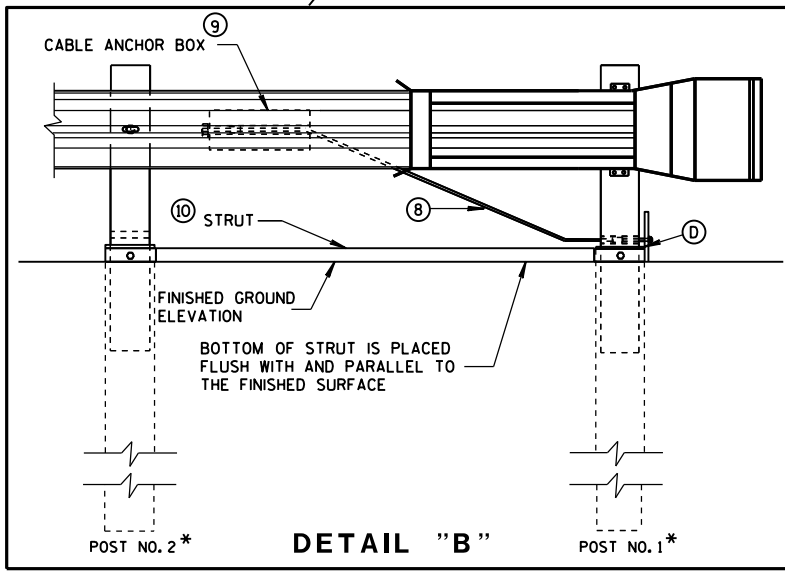
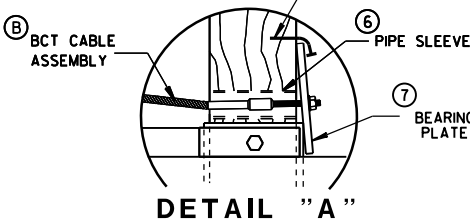
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

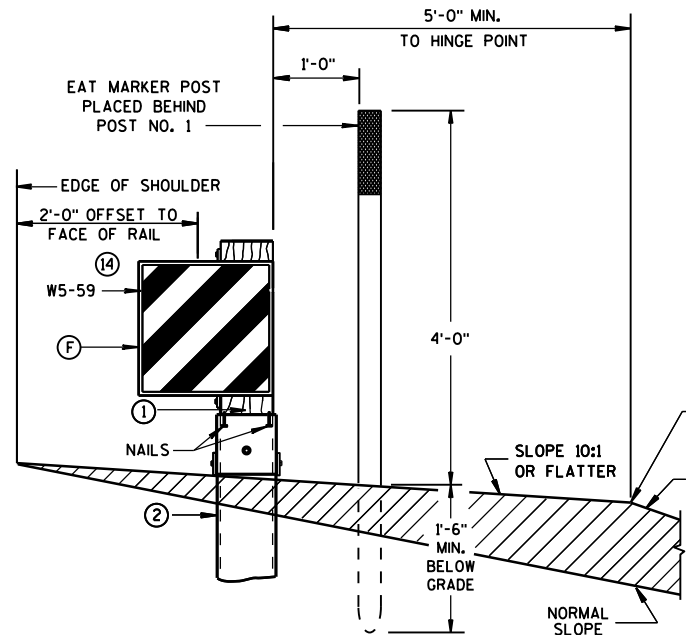
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.



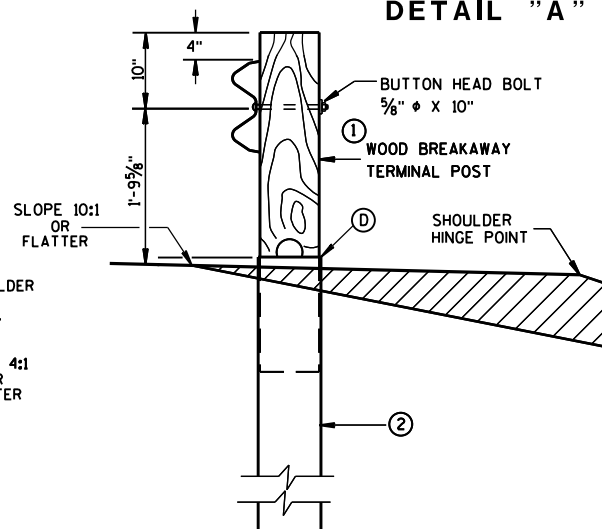
ELEVATION



SECTION C-C
TYPICAL AT POST NOS. 6, 8



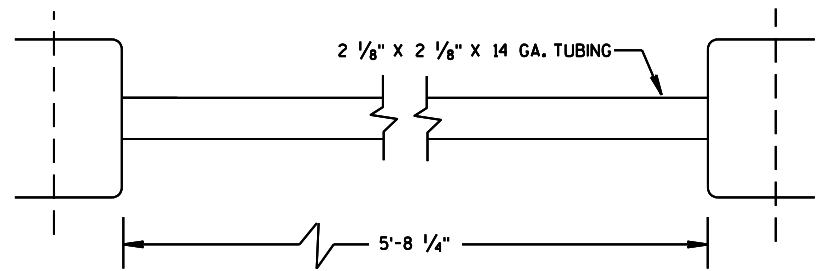
SECTION A-A
TYPICAL AT POST NO. 1*



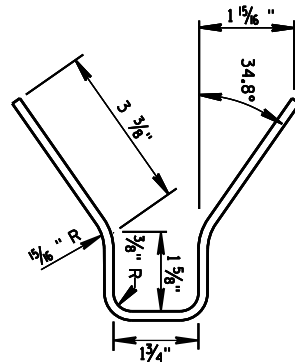
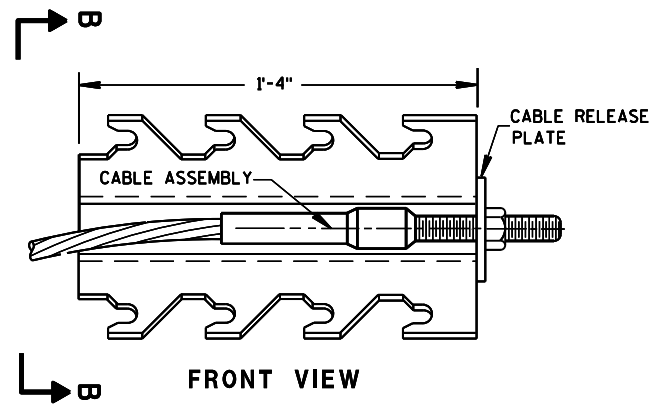
SECTION B-B
TYPICAL AT POST NO. 2*

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

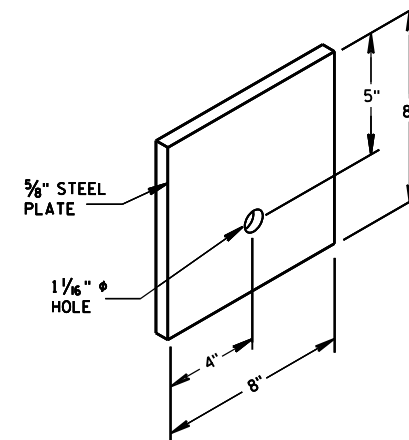
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



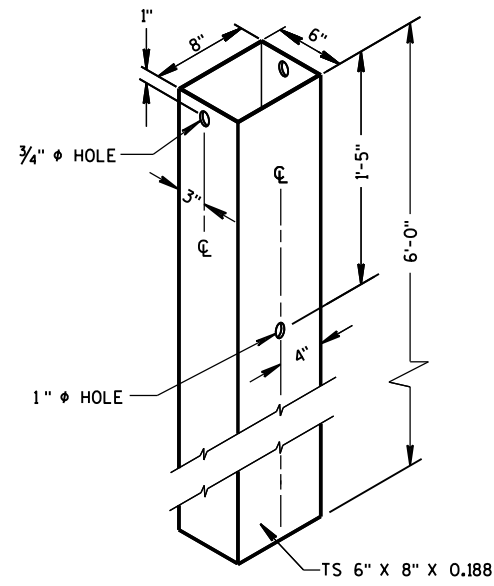
⑩ STRUT DETAIL



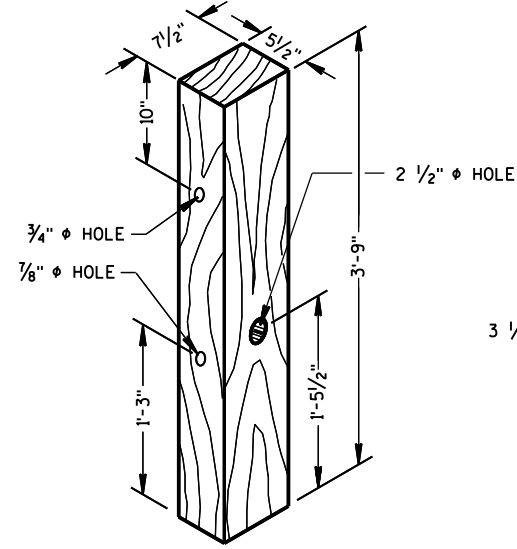
⑨ CABLE ANCHOR BOX



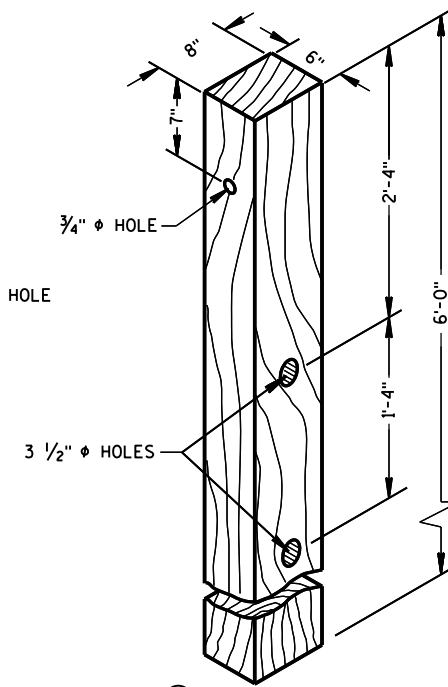
⑦ STEEL BEARING PLATE



② **72" STEEL TUBE**
(POSTS NO. 1-2)



① **TERMINAL POST**

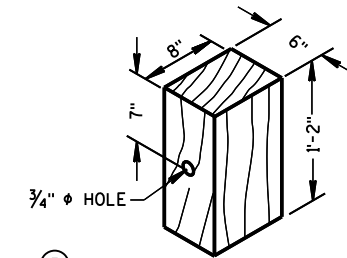


④ **CRT POST**
(POSTS NO'S 5-8)

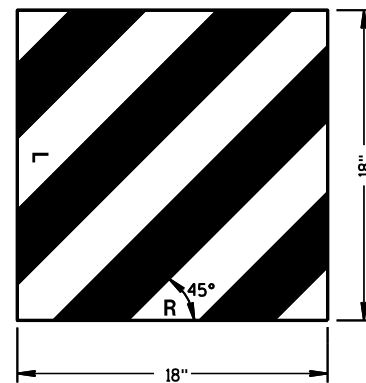
WOOD BREAKAWAY POSTS

GENERAL NOTES

WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



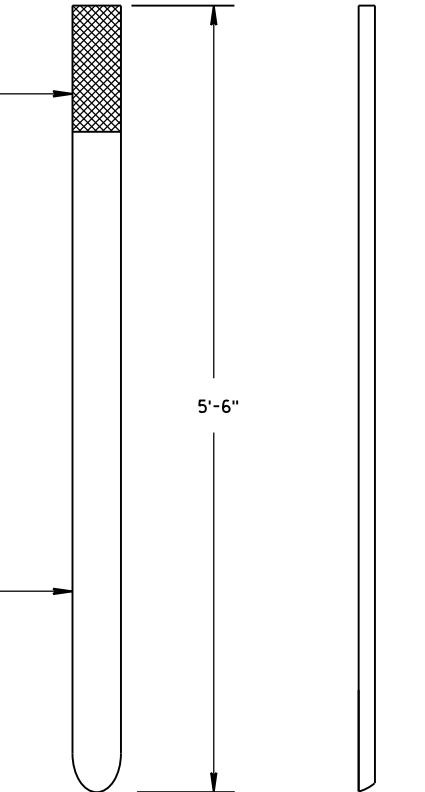
⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



⑭ **REFLECTIVE SHEETING DETAILS**

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

E.A.T. MARKER
POST (YELLOW)
SEE APPROVED
PRODUCTS LIST

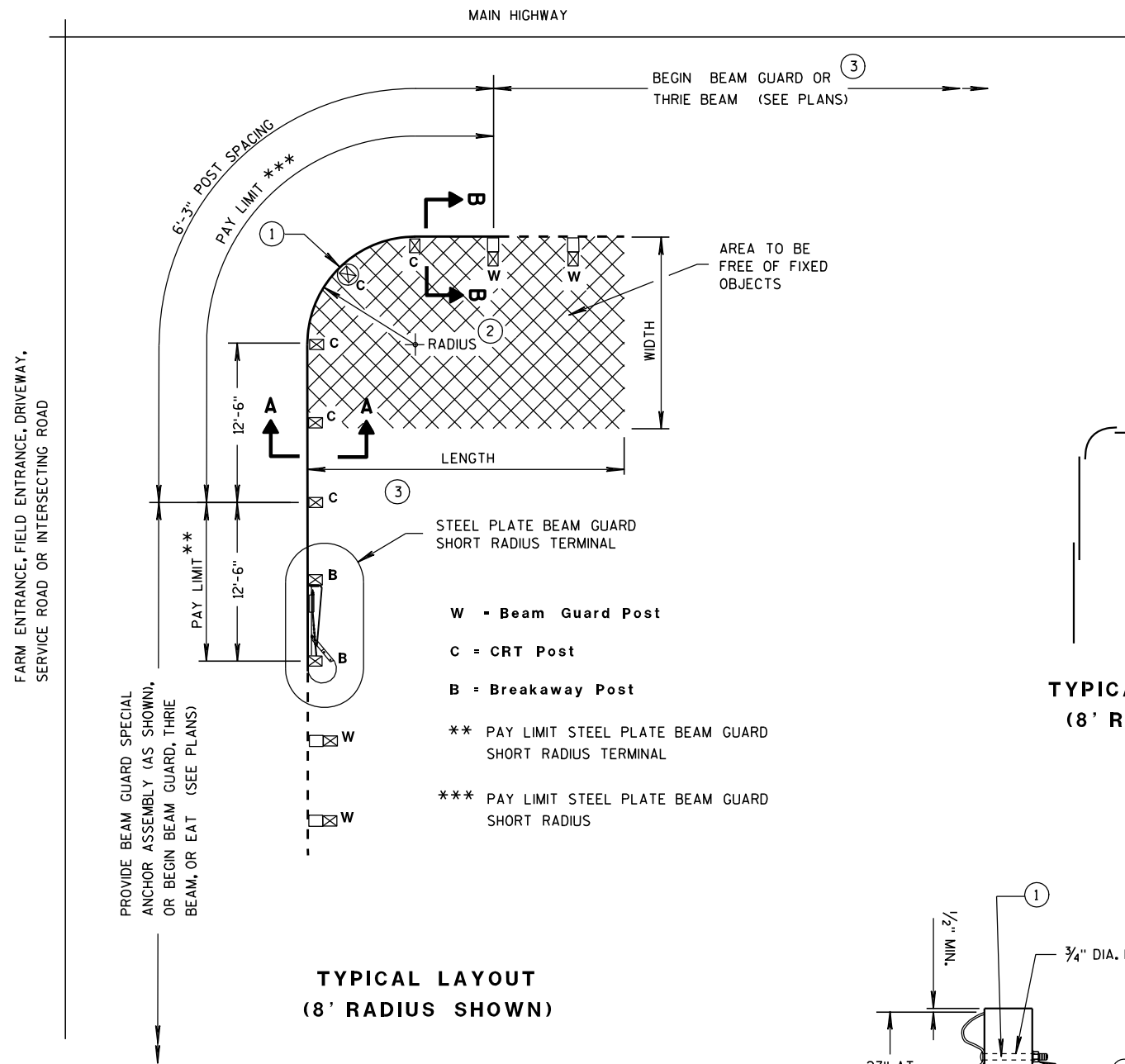


FRONT VIEW SIDE VIEW
E.A.T. MARKER POST

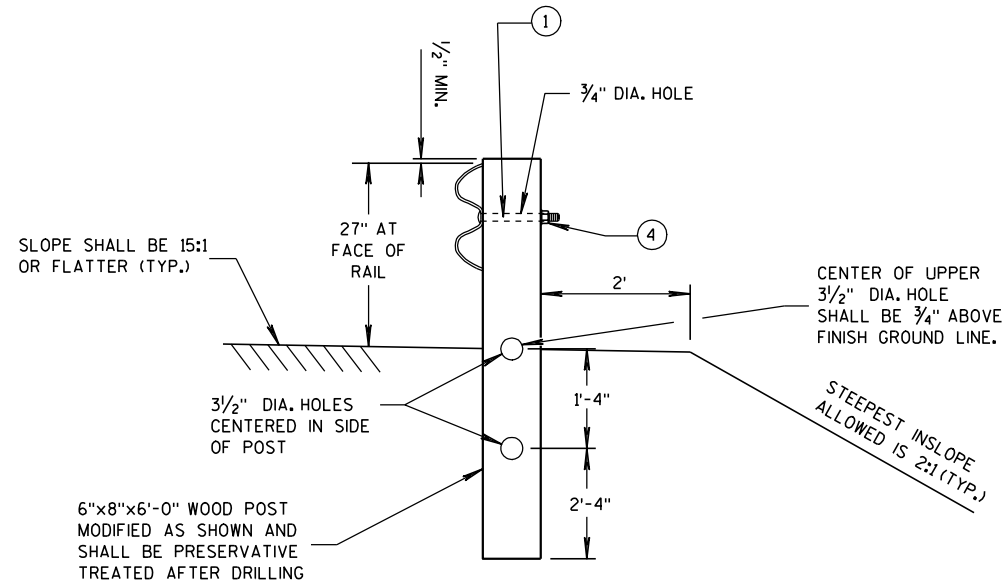
**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



TYPICAL LAYOUT
(8' RADIUS SHOWN)



SECTION A-A
(CRT POST)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2, UNLESS NOTED OTHERWISE.

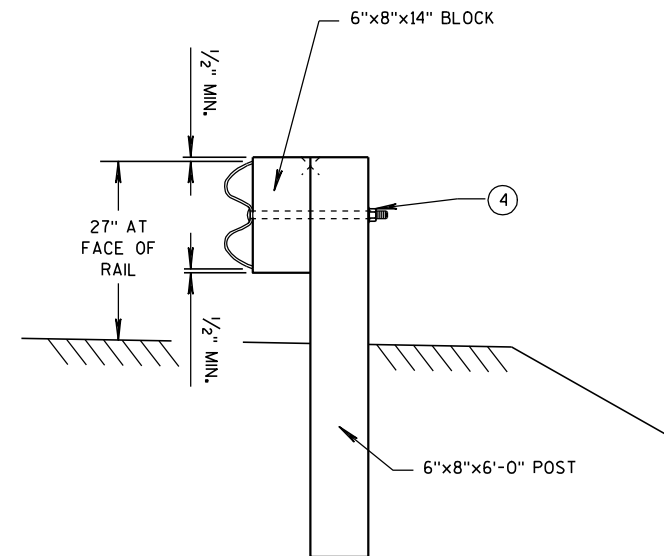
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

- 1 ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- 2 RADIUS FROM 8' - 36'. SEE PLAN.
- 3 HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- 4 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

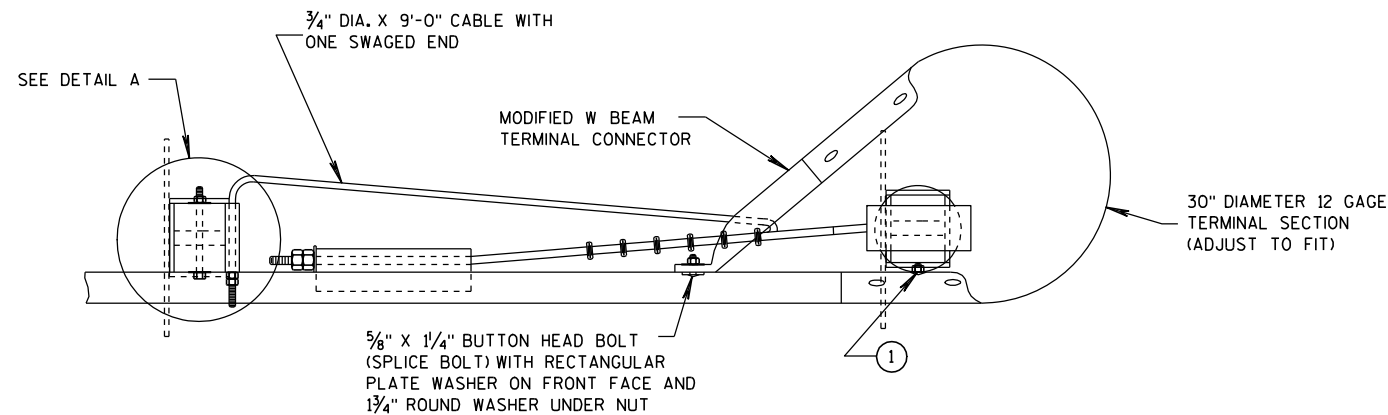
* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



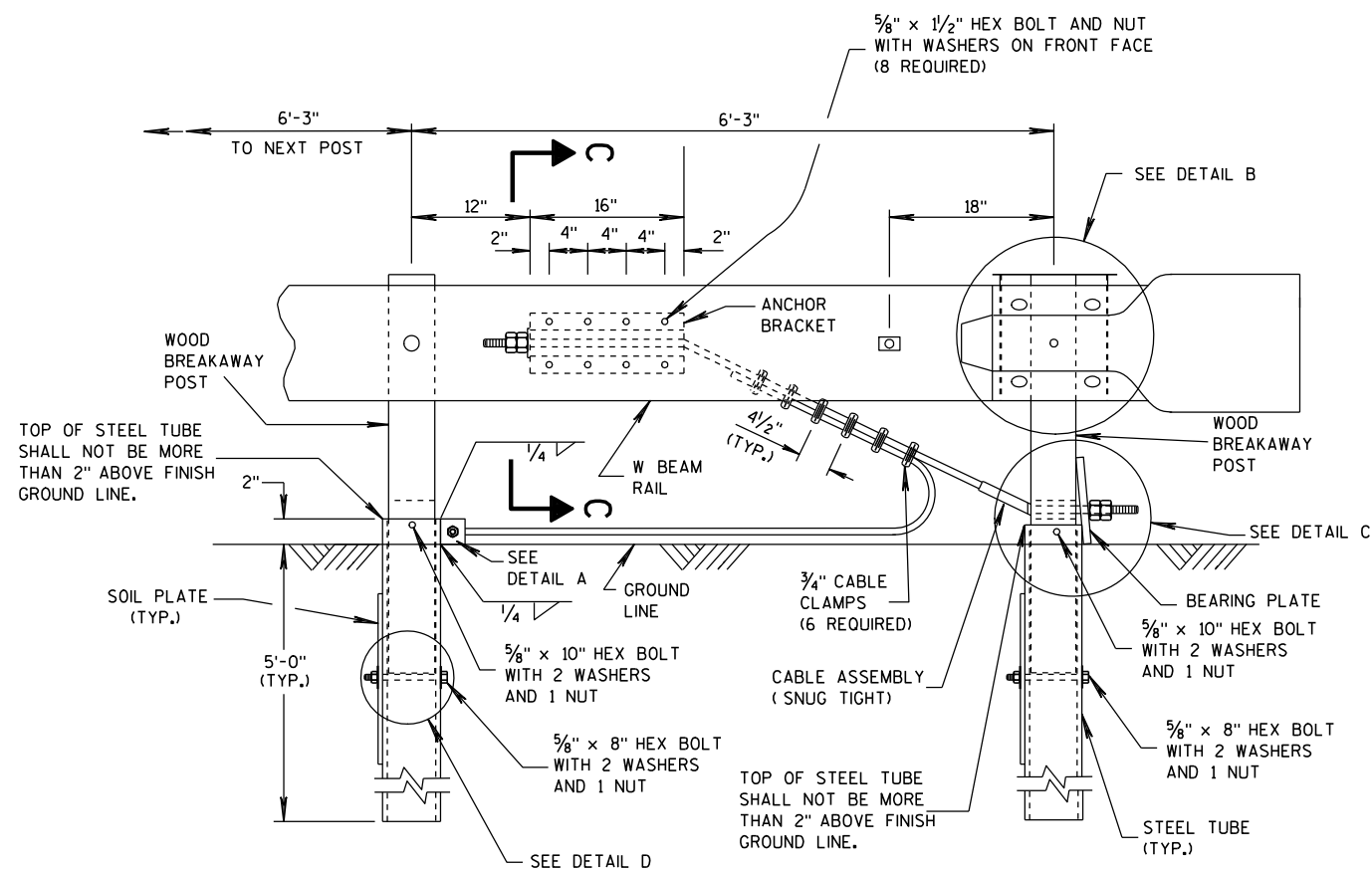
SECTION B-B
(BEAM GUARD POST)

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

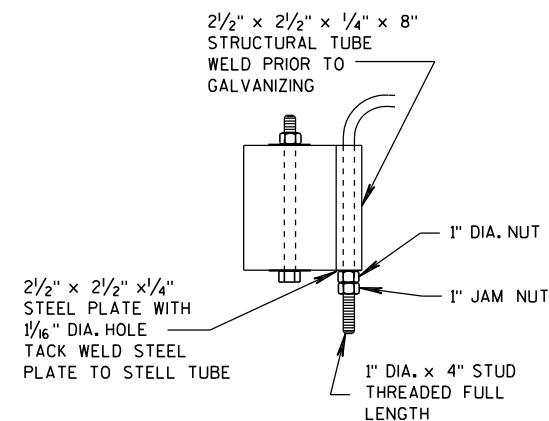


ELEVATION VIEW

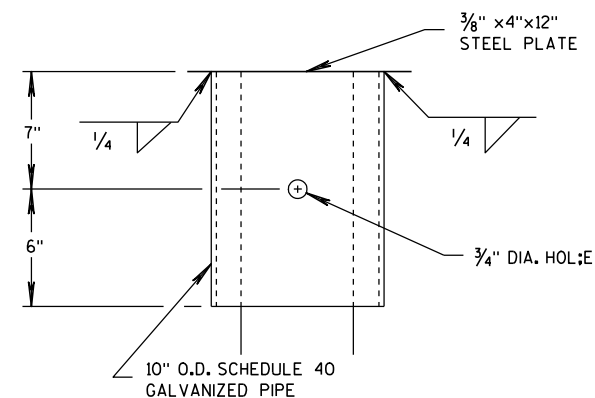
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

- 1 ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A 5/8" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.
- INSTALL GALVANIZED 3/4" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A



DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



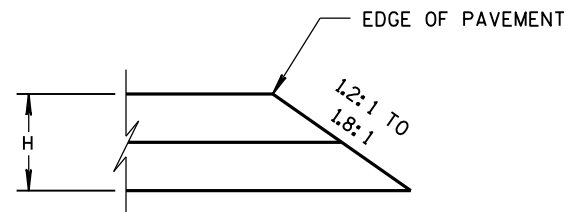
STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

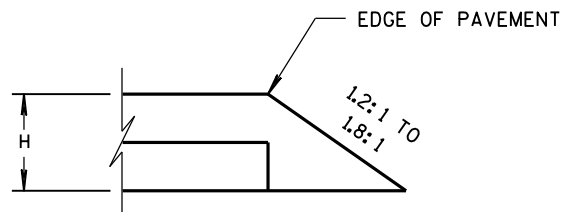
APPROVED
12/18/08
DATE

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

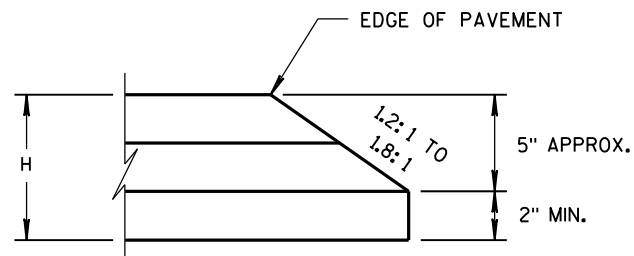
FHWA



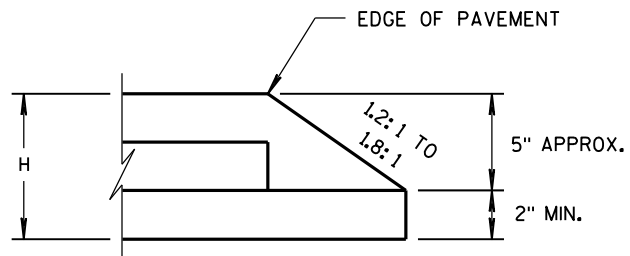
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

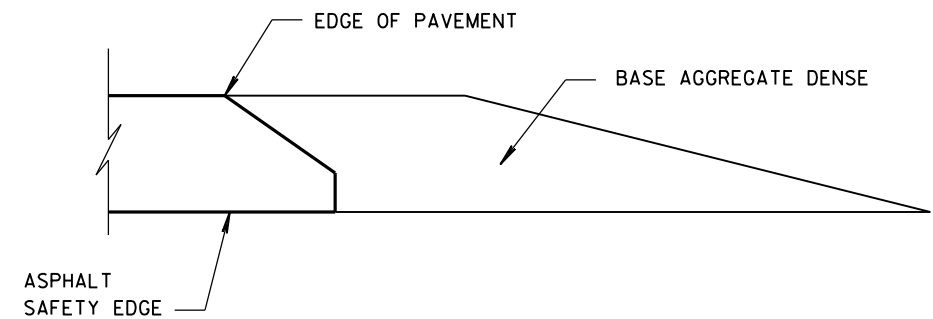


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

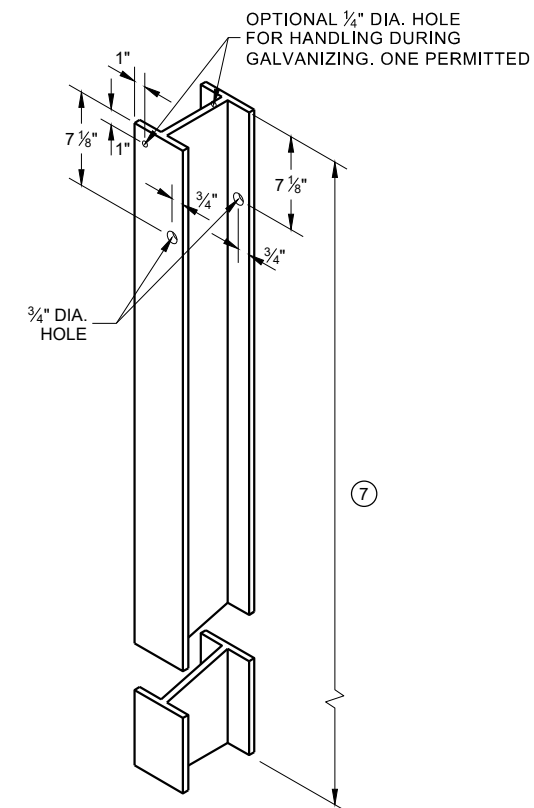
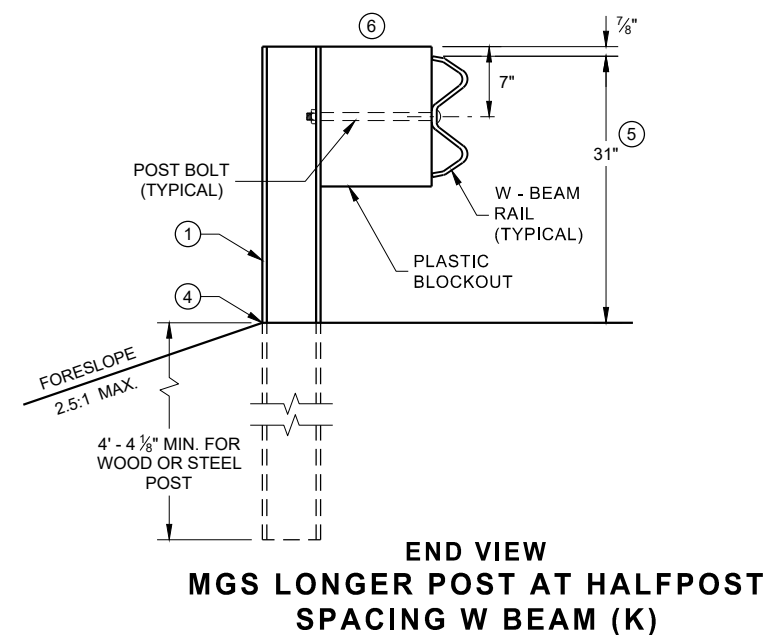
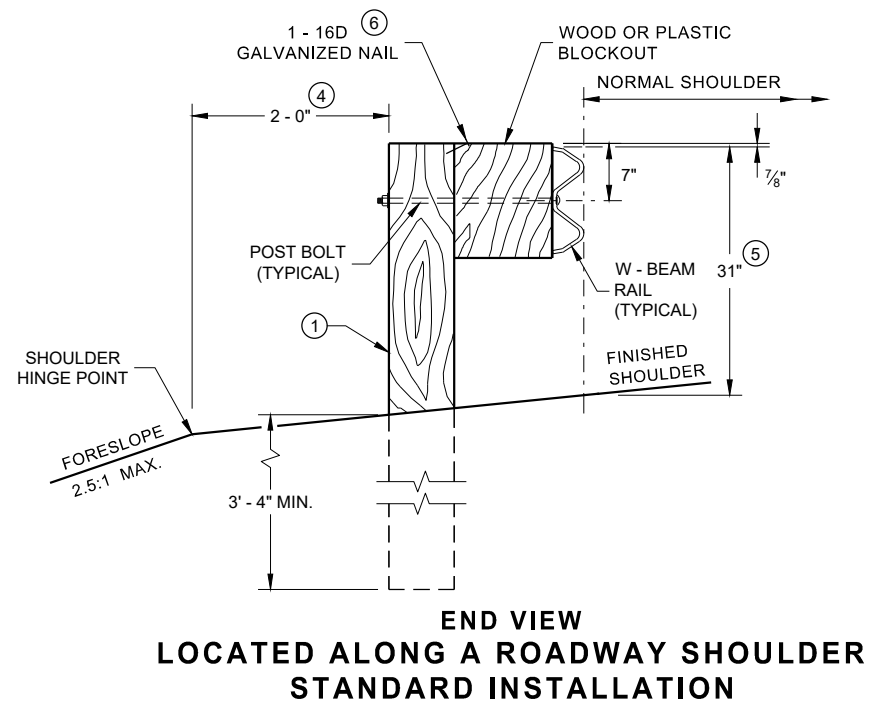
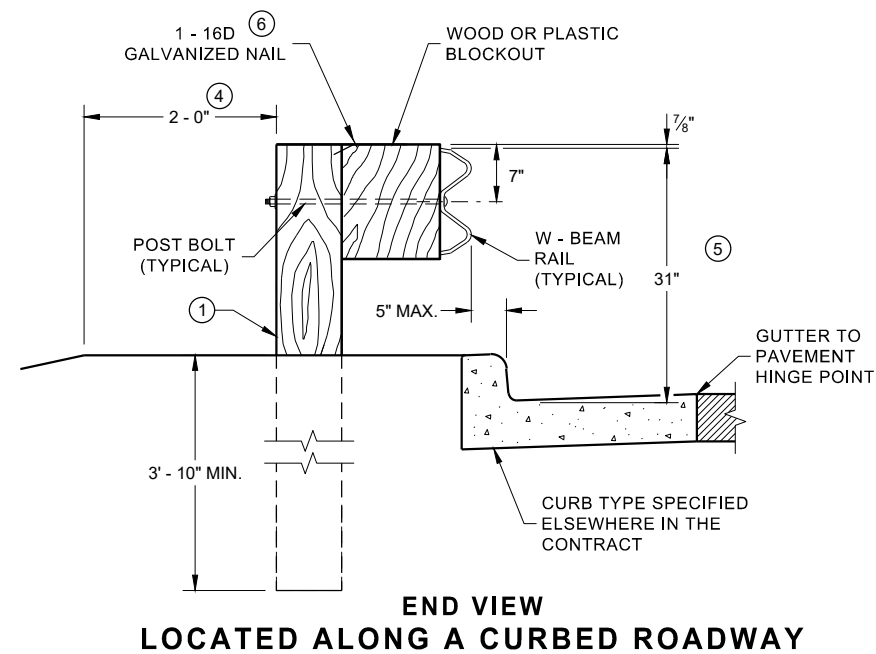
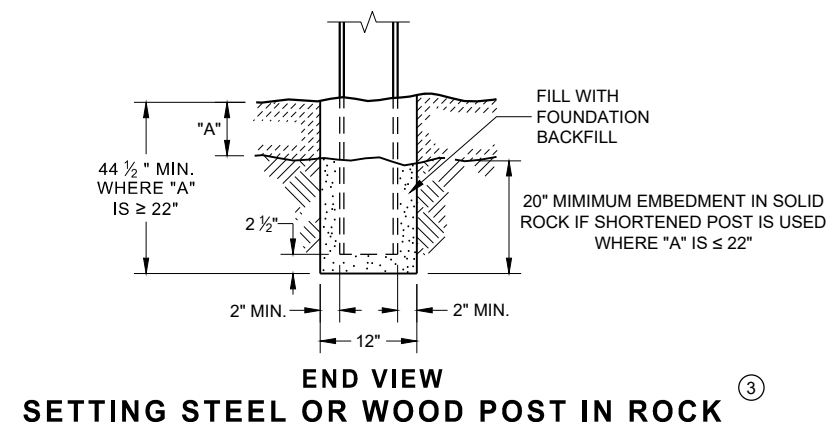
SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

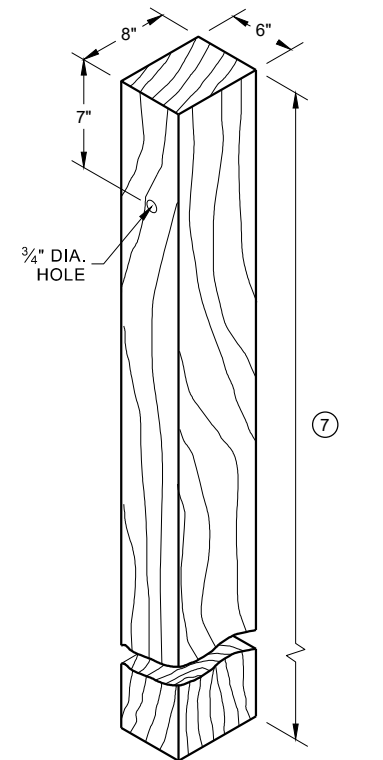
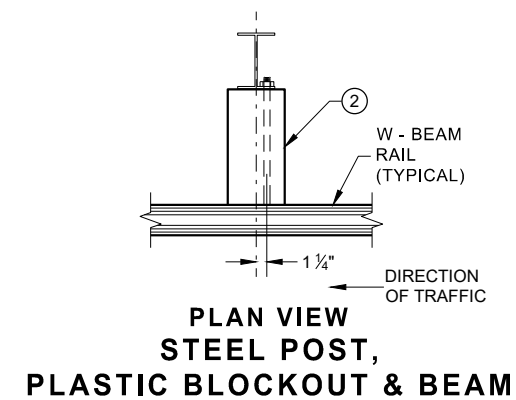
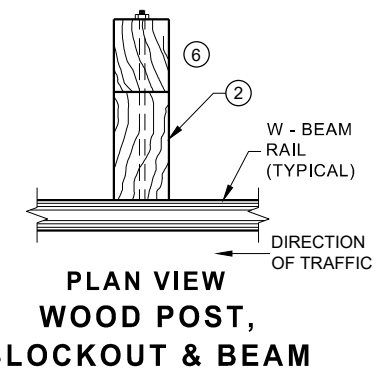
APPROVED
11/30/2012
DATE
FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

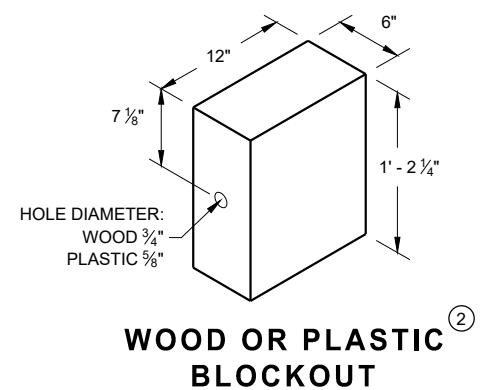
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL.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

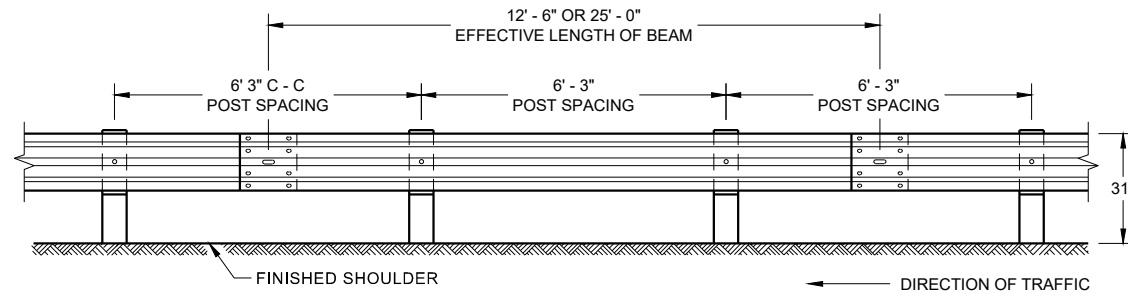


**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**

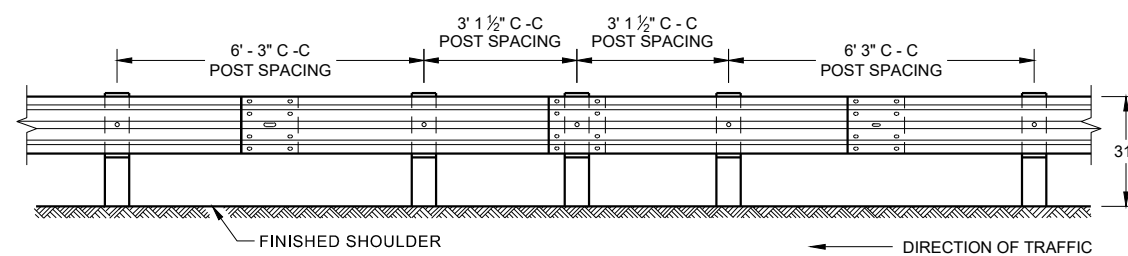


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

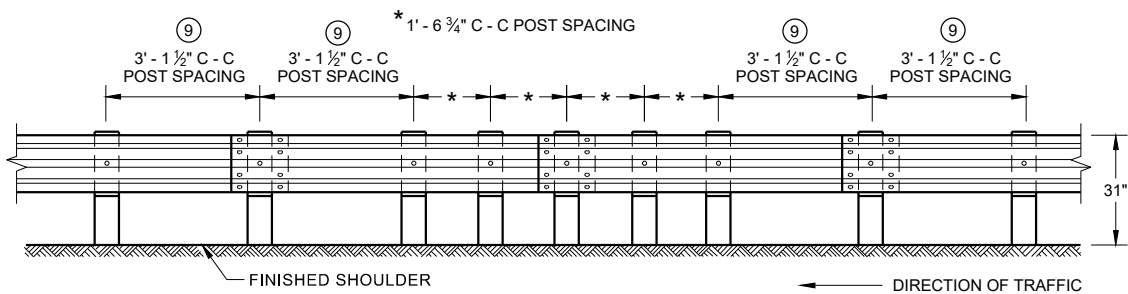




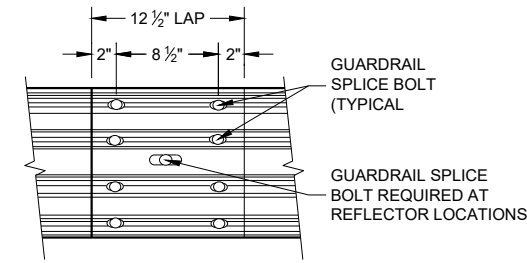
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



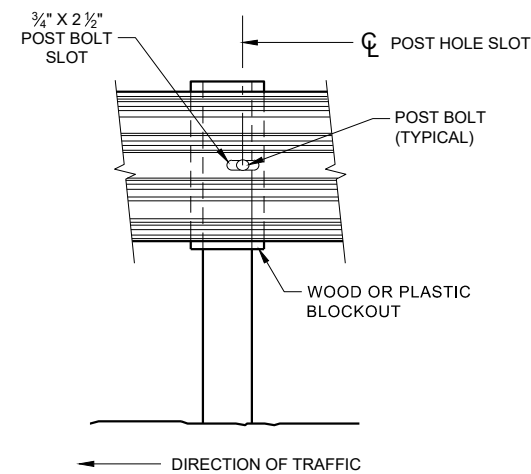
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



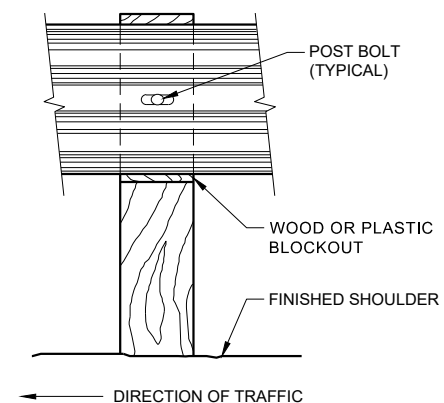
**FRONT VIEW
QUARTER POST SPACING (QS)**



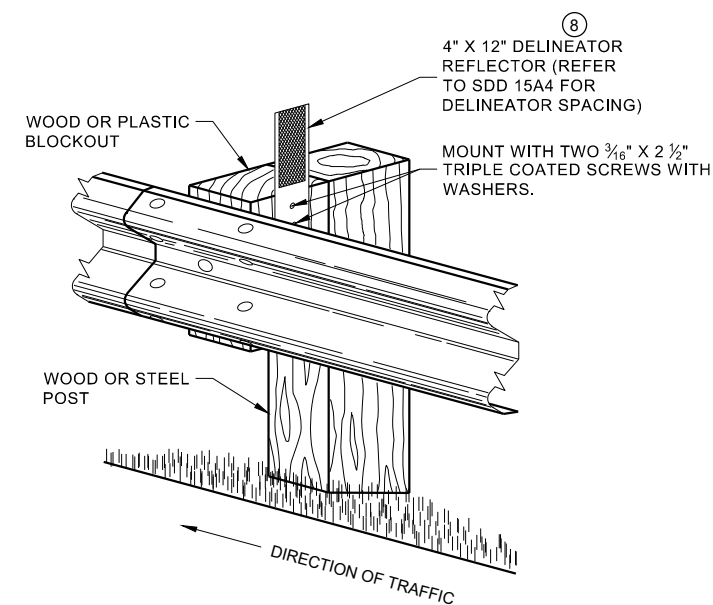
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



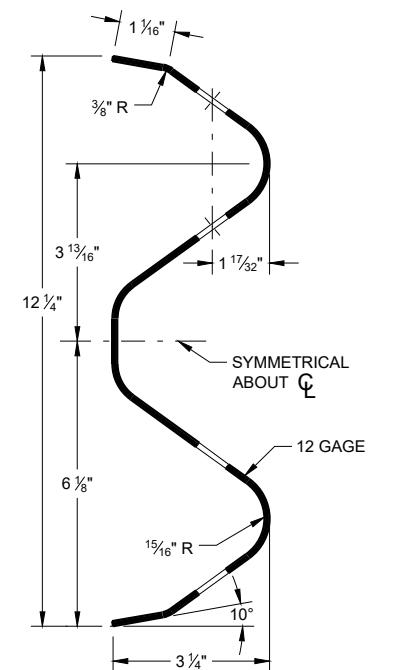
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

POST BOLTS ARE A 3/4" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

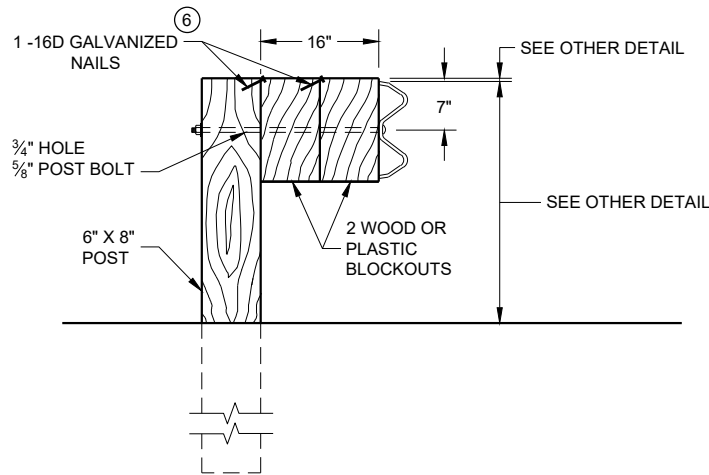
GUARD RAIL SPLICE BOLTS ARE A 3/4" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

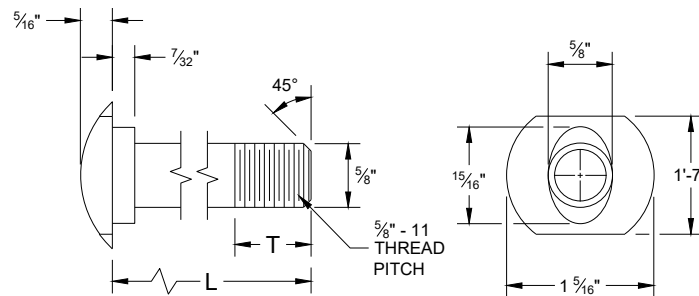
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

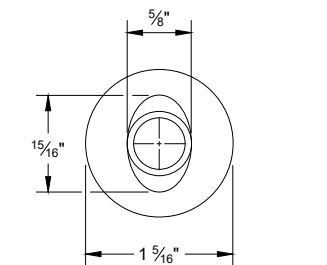
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

- NOTE:
1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{3}{16}$ ".
 2. IF THE BOLT EXTENDS MORE THAN $\frac{1}{4}$ " FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

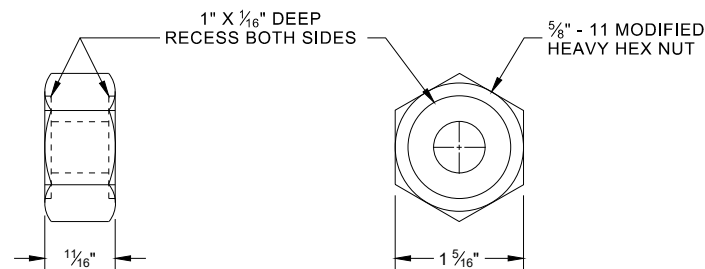


POST BOLT TABLE

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

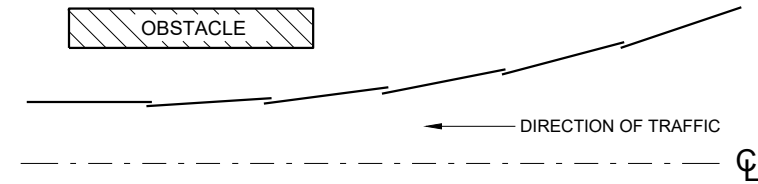


ALTERNATE BOLT HEAD

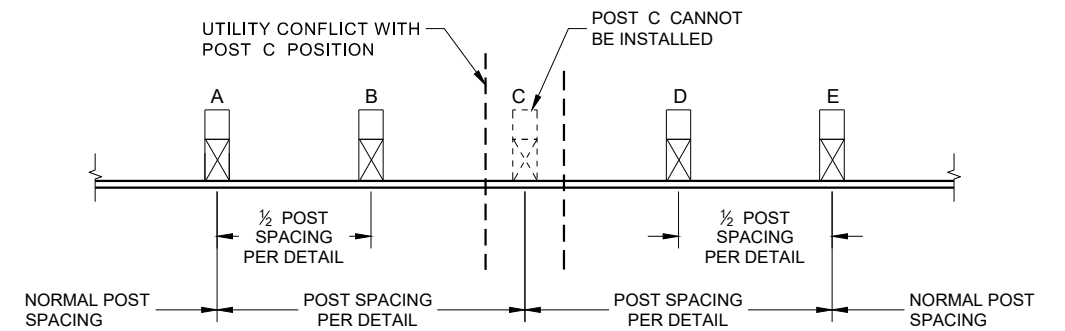


POST BOLT, SPLICE BOLT
AND RECESS NUT

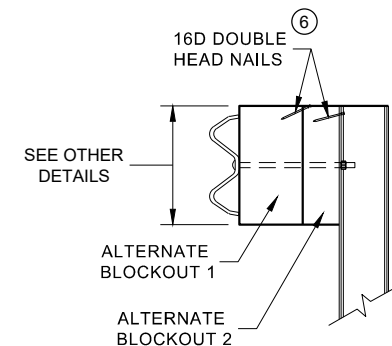
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



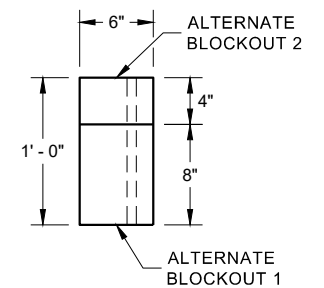
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



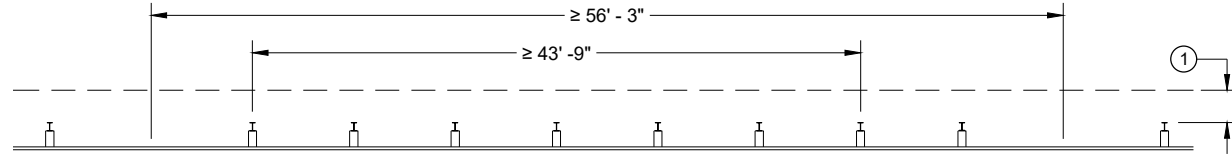
PLAN VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

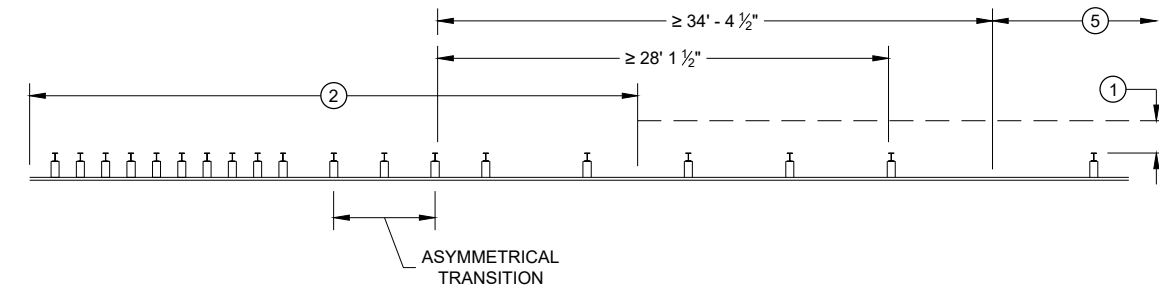
- NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
- DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE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

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

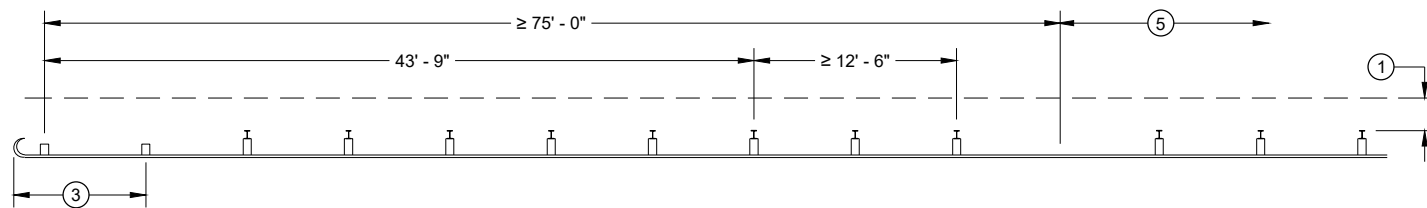
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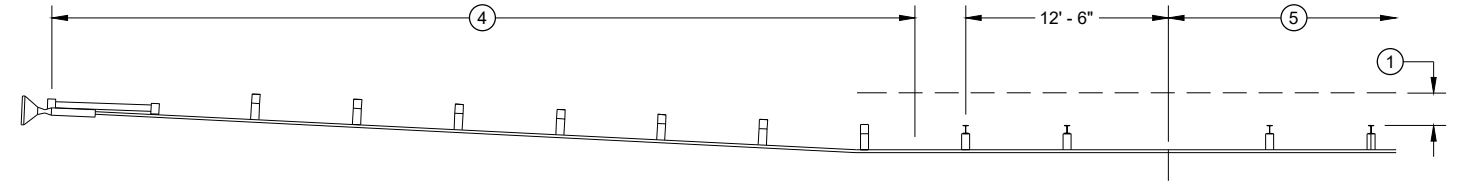
MISSING POST IN NORMAL BEAM GUARD RUN



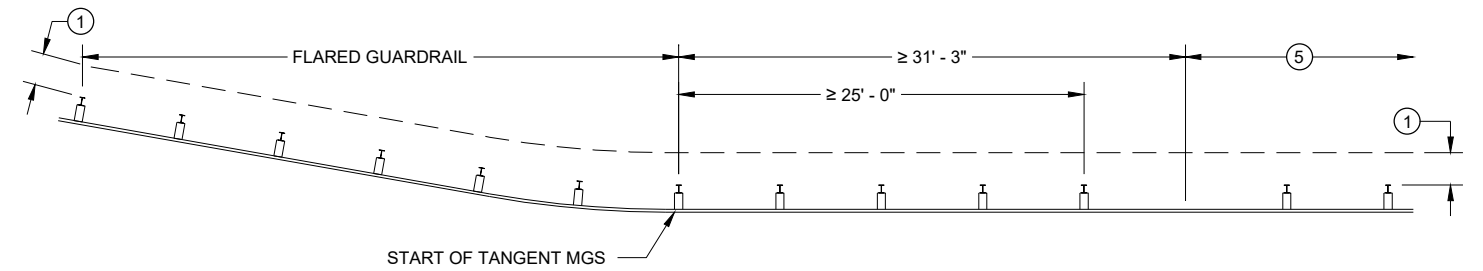
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



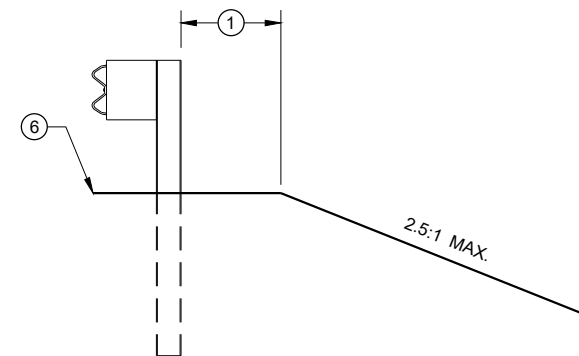
MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

- (1) MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- (2) SEE SDD 14B45 FOR MORE DETAILS.
- (3) SEE SDD 14B47 FOR MORE DETAILS.
- (4) SEE SDD 14B44 FOR MORE DETAILS.
- (5) SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- (6) SEE PLAN FOR SHOULDER DESIGN.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

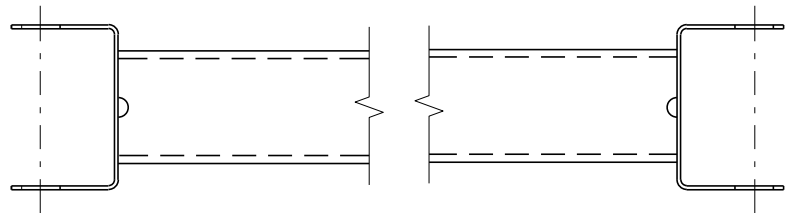
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

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

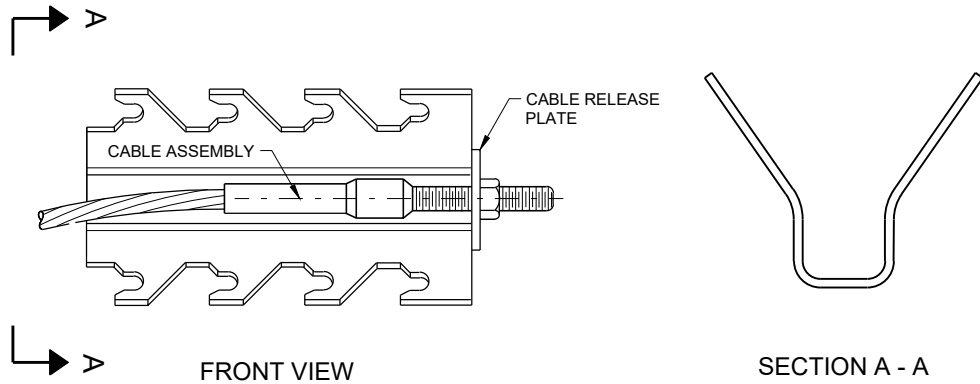


STATE OF WISCONSIN
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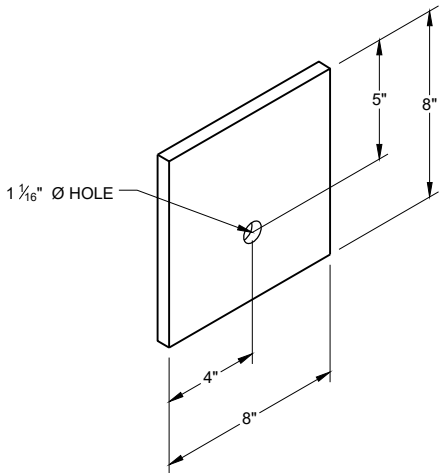


GENERIC GROUND STRUT⁹ ^E

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



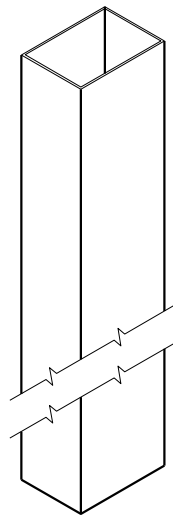
GENERIC ANCHOR CABLE BOX⁹ ^E



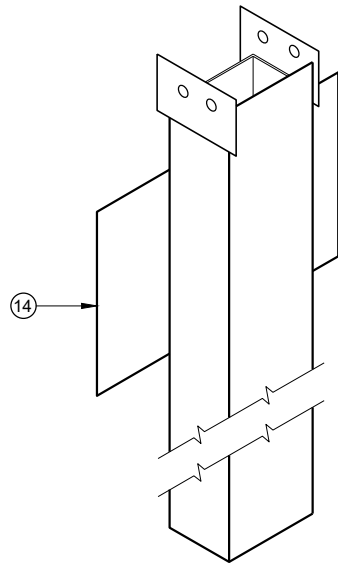
BEARING PLATE⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

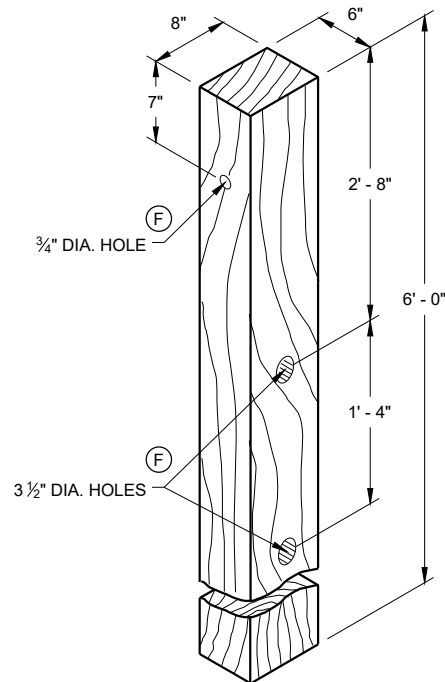
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



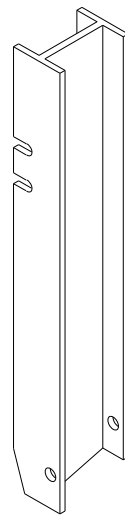
UPPER POST NO. 1 ⁽¹⁾ (E)



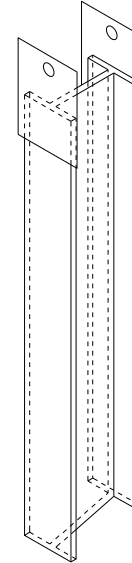
LOWER POST NO. 1 ⁽²⁾ (E)



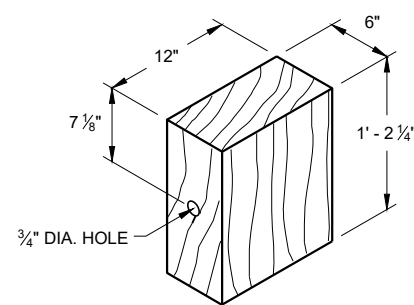
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



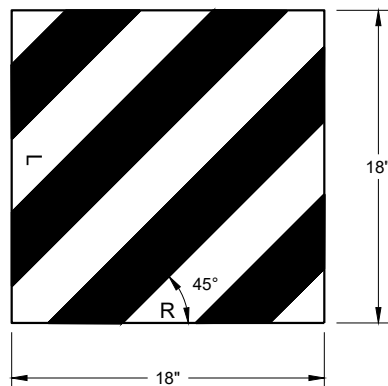
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



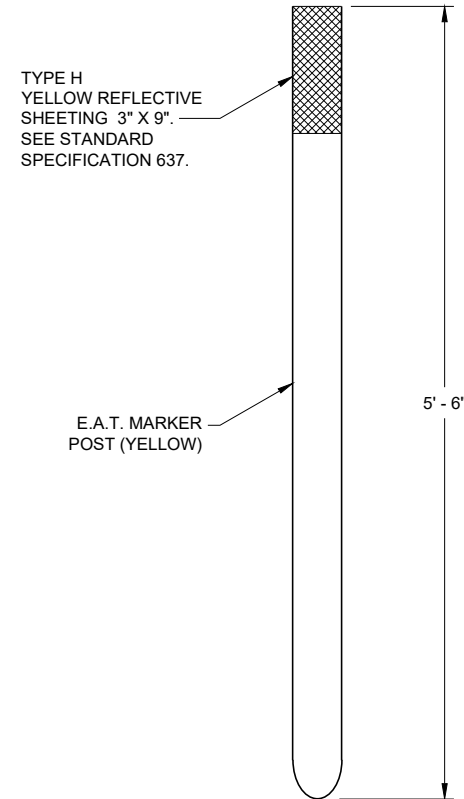
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



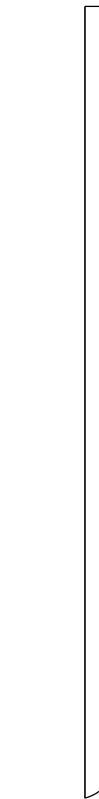
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



REFLECTIVE SHEETING DETAIL ^(E)

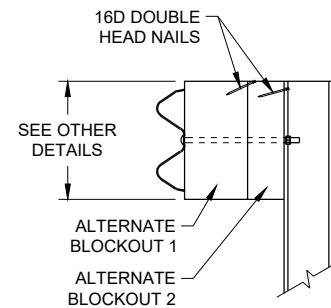


FRONT VIEW

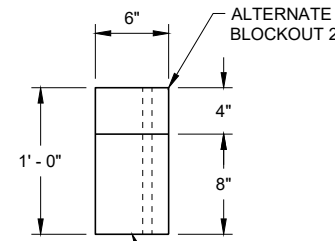


SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



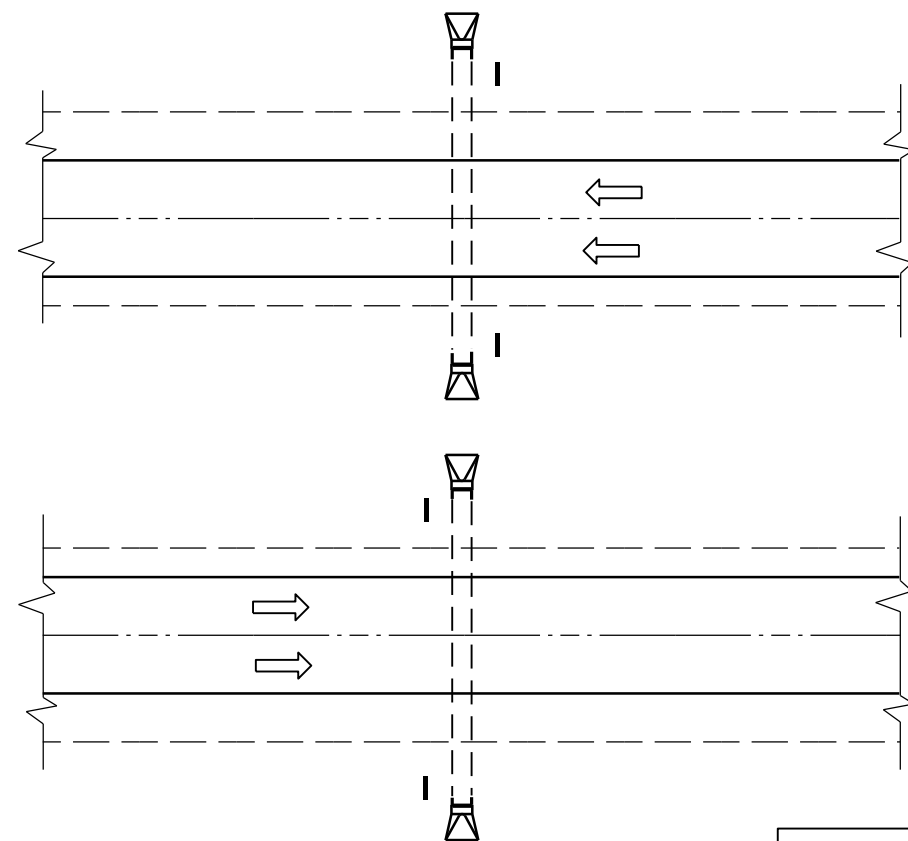
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

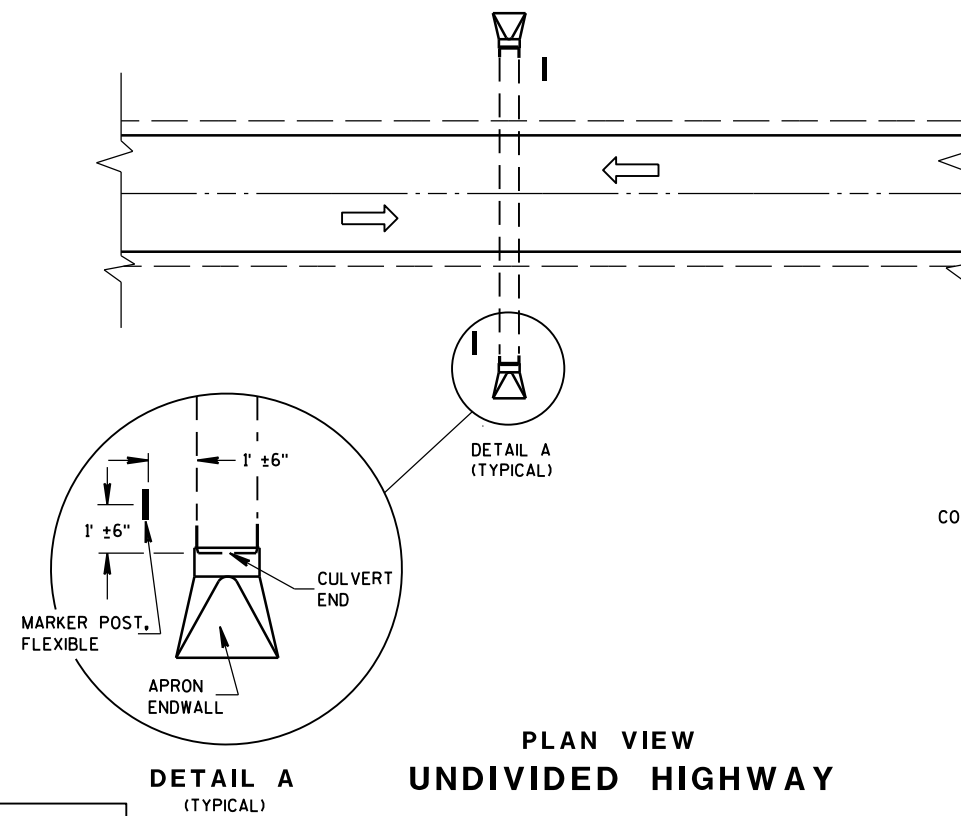
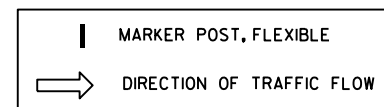
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
DIVIDED HIGHWAY

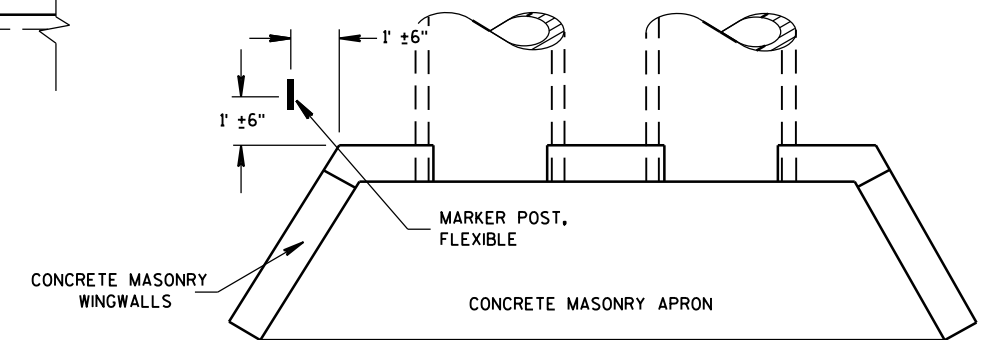


PLAN VIEW
UNDIVIDED HIGHWAY

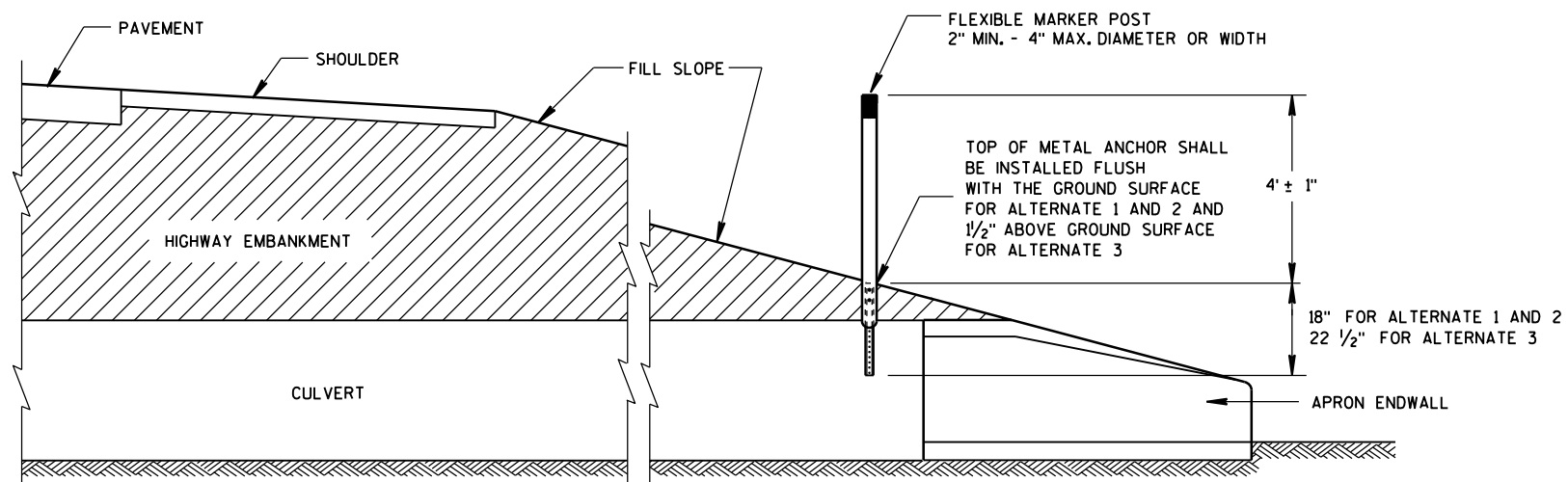
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



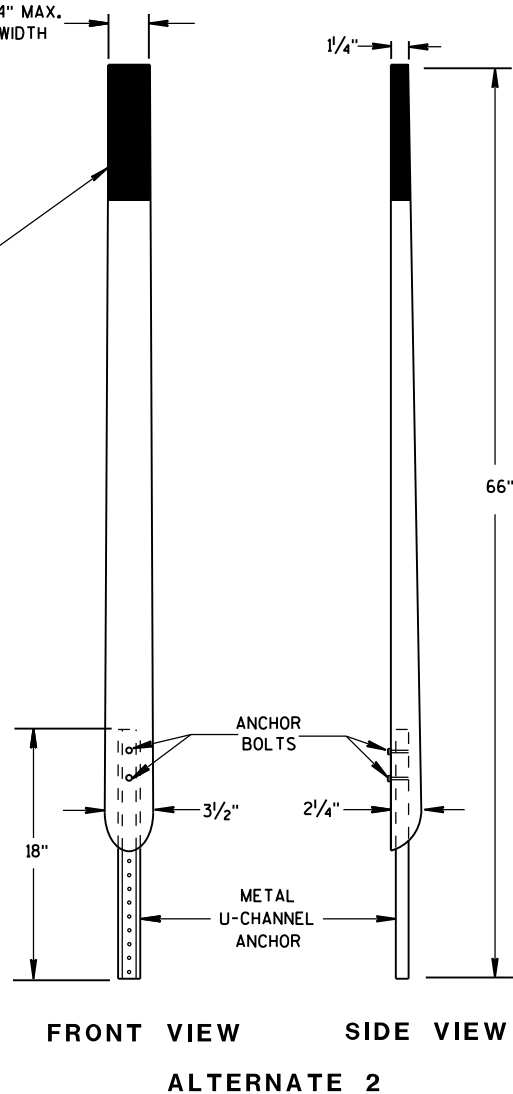
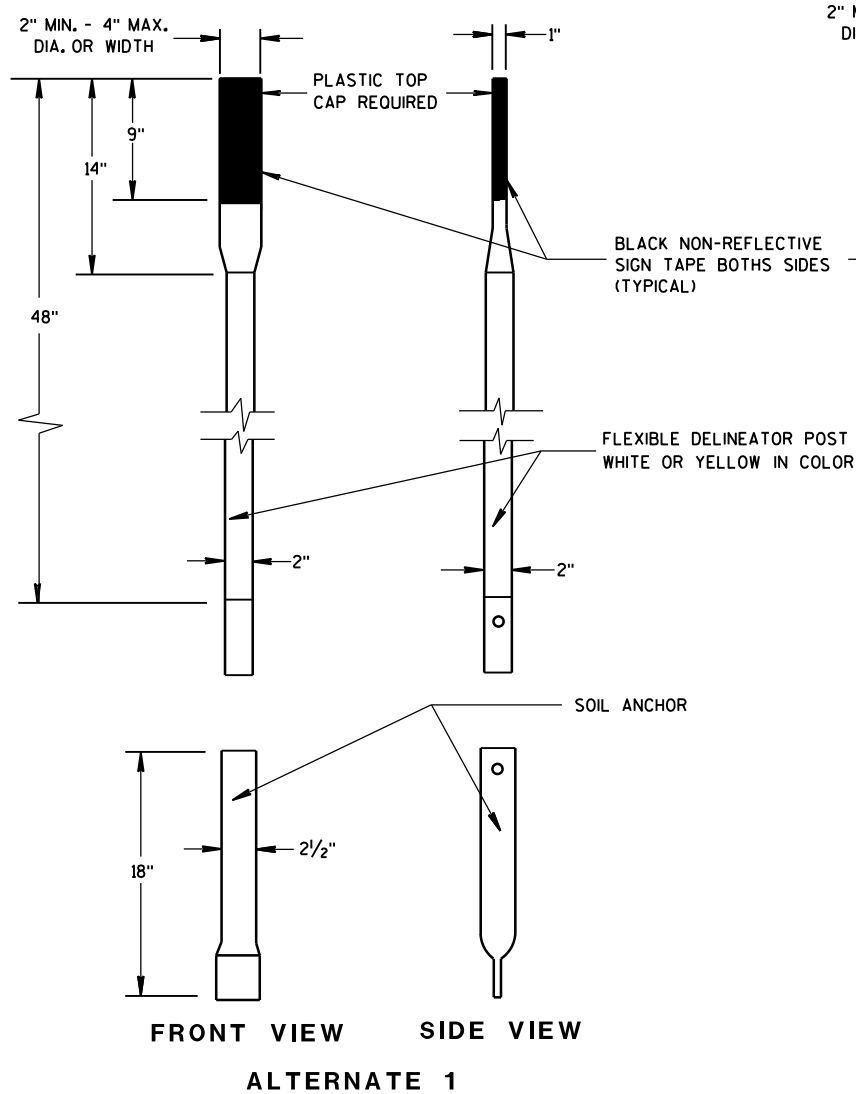
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



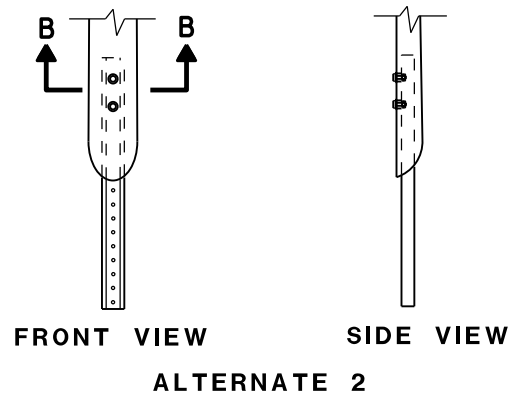
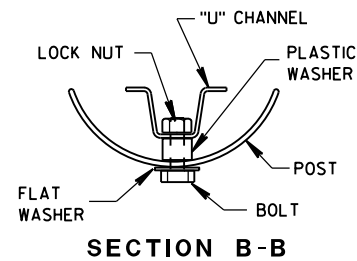
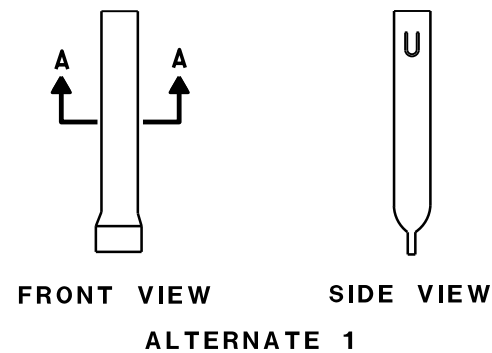
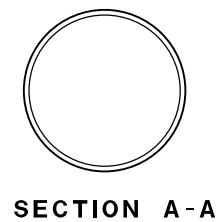
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

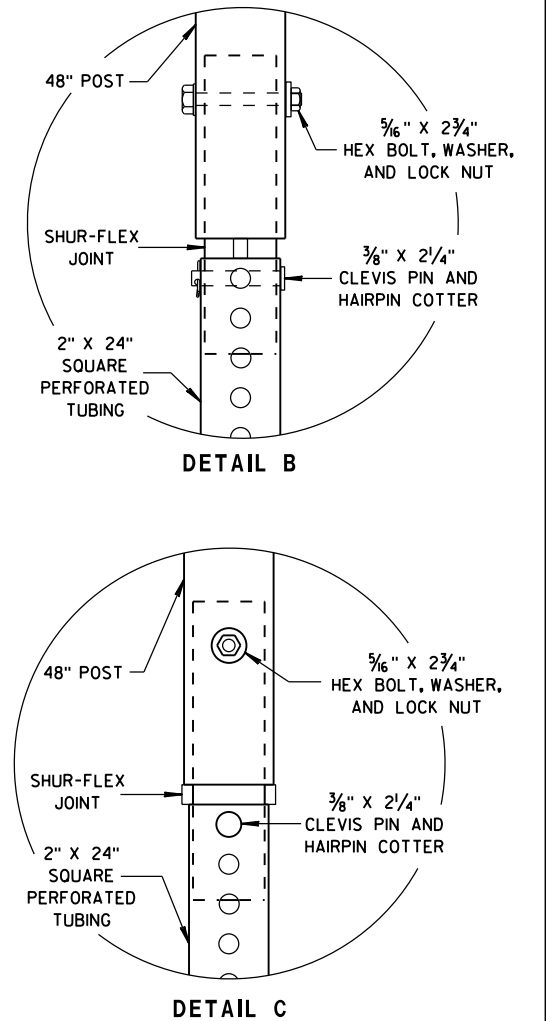
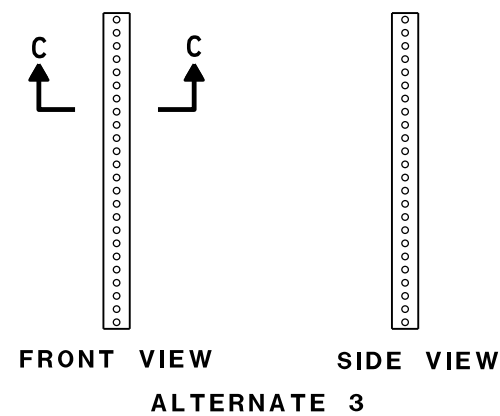
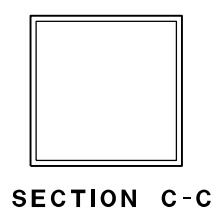
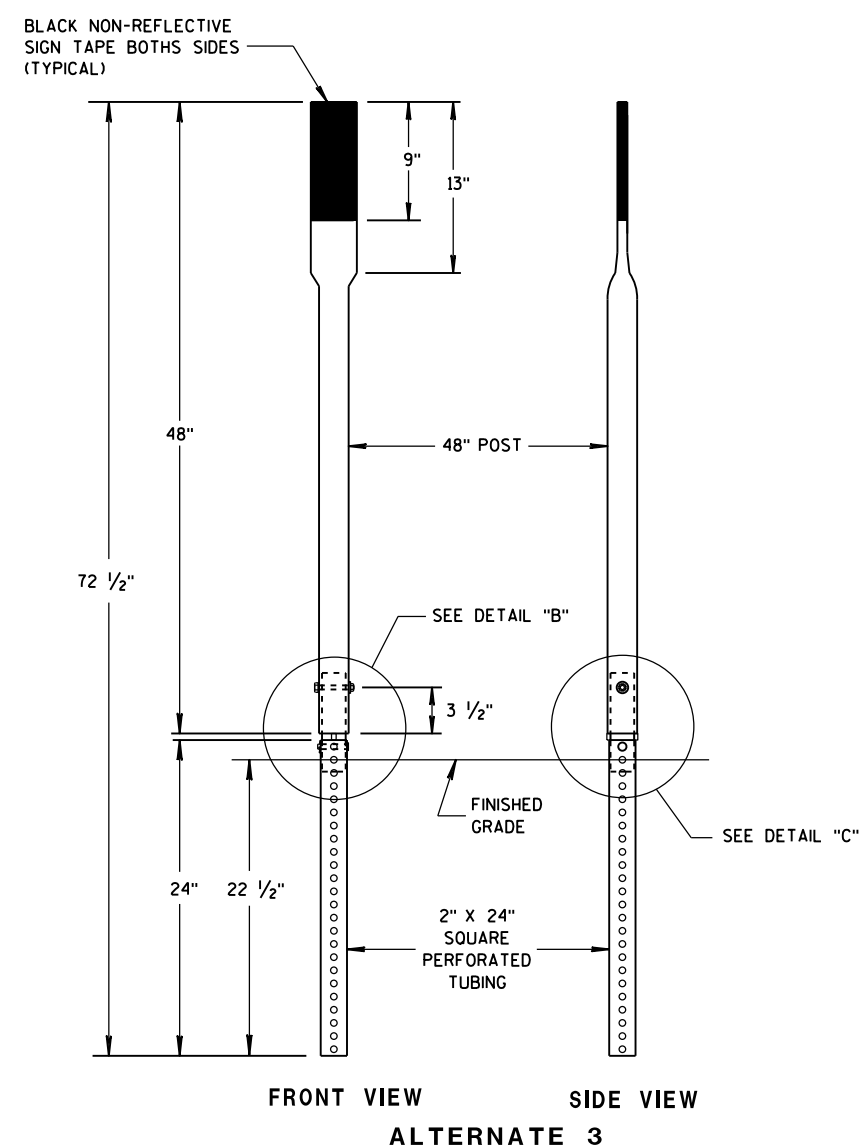
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



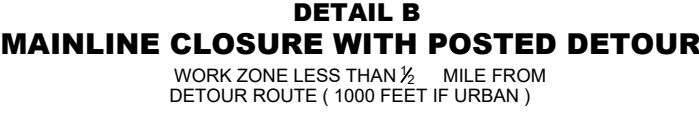
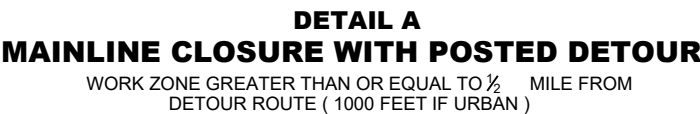
FLEXIBLE MARKER POSTS



FLEXIBLE MARKER POST ANCHORS



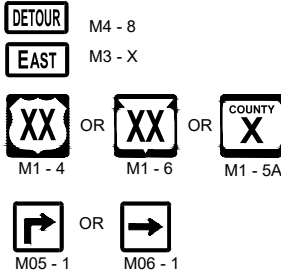
FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



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



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



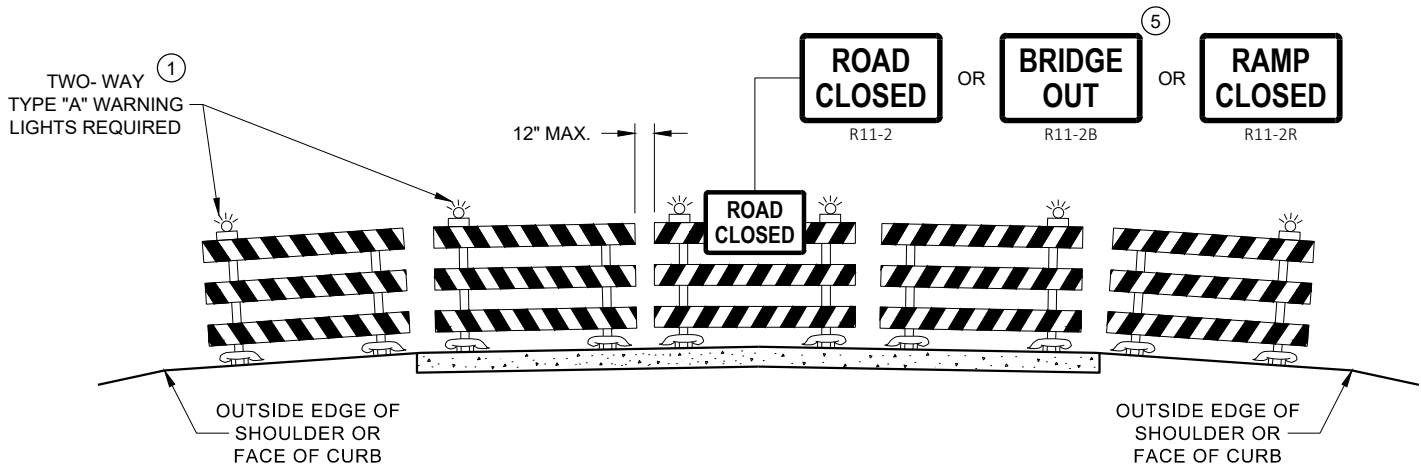
SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

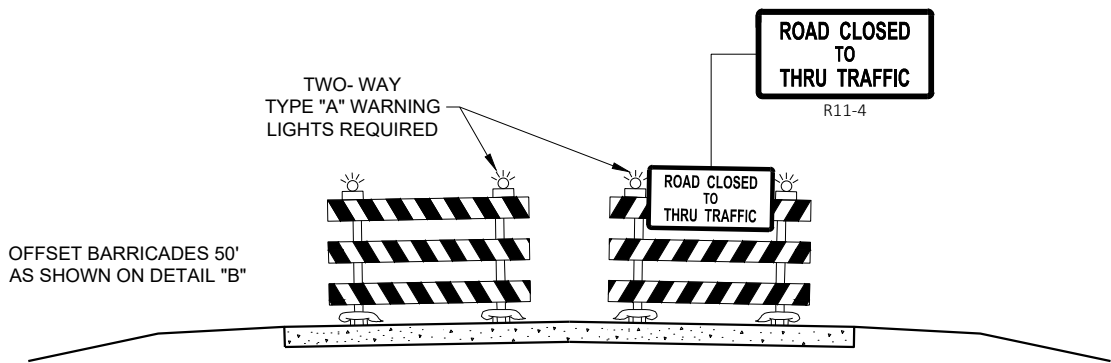
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

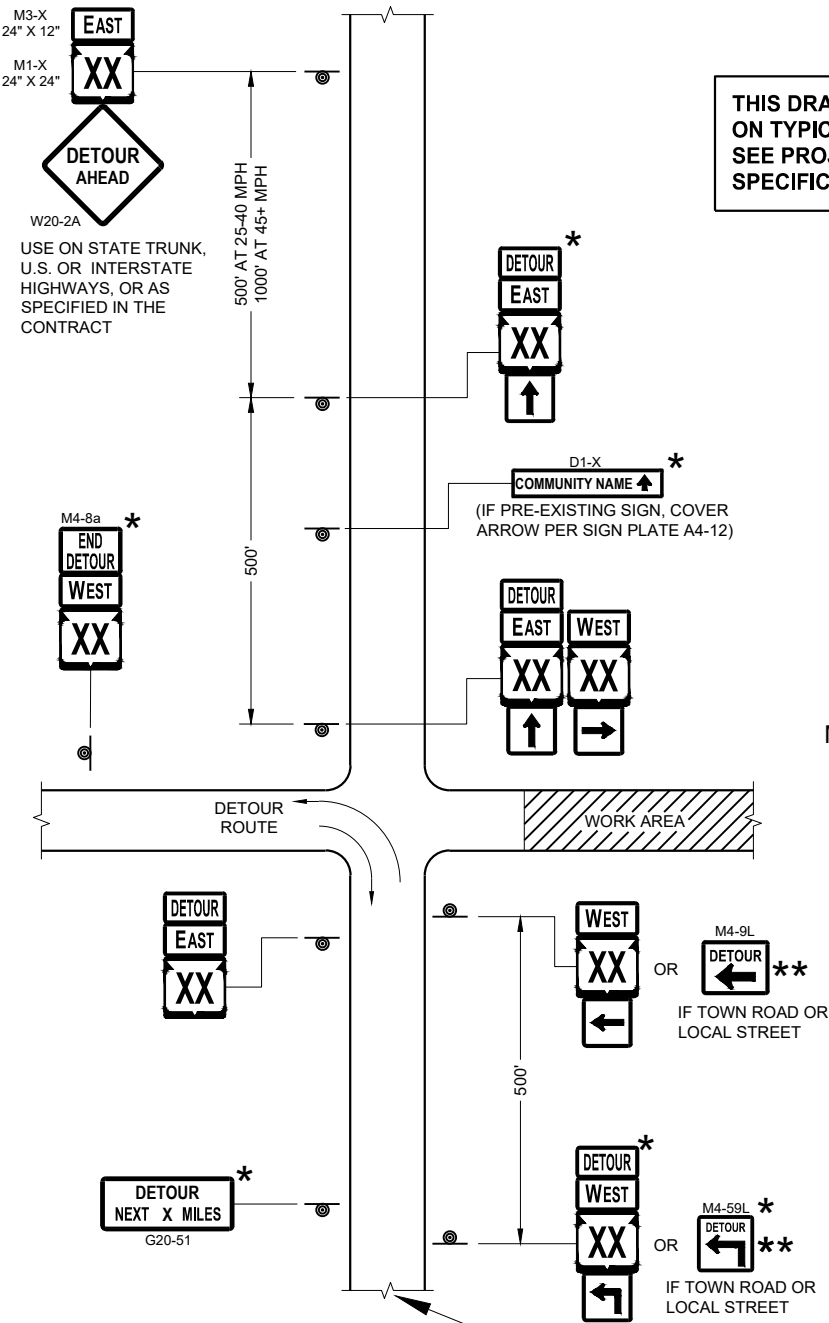
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

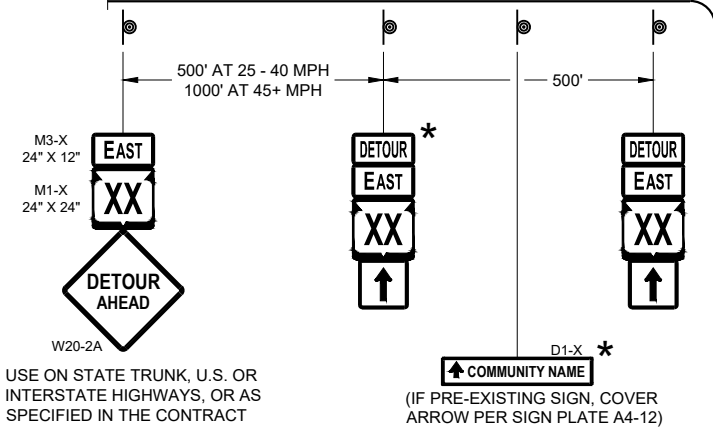
FHWA



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

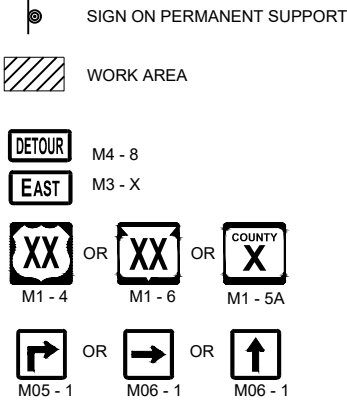
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

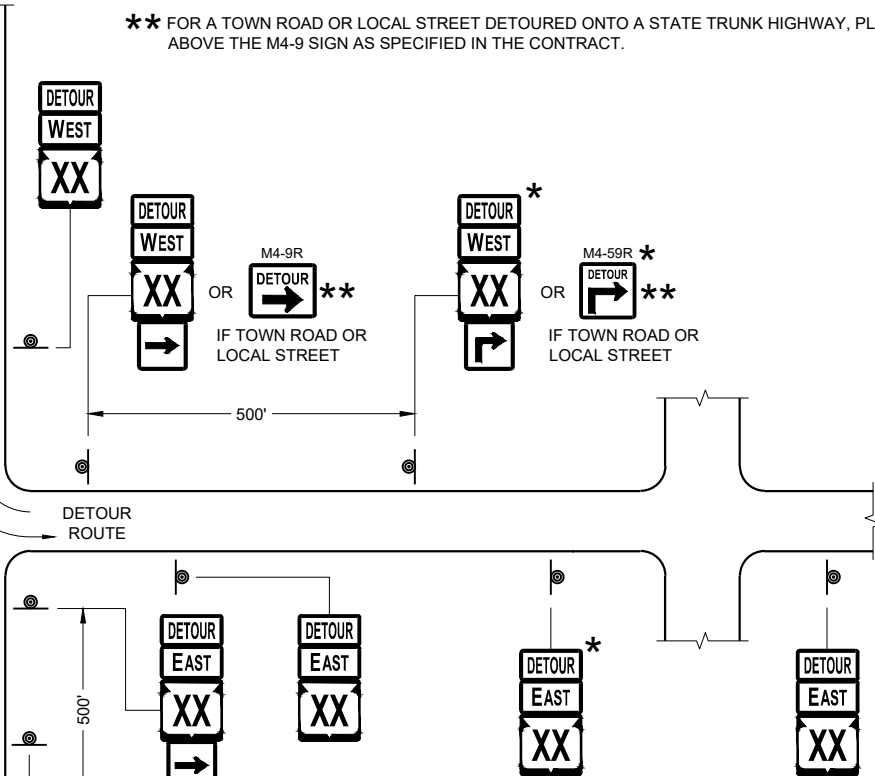
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



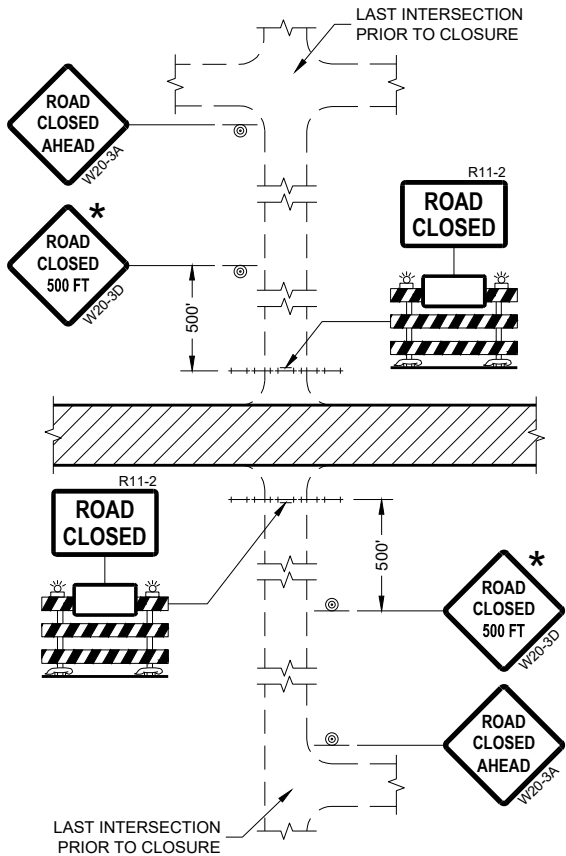
PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING
FOR MAINLINE CLOSURES

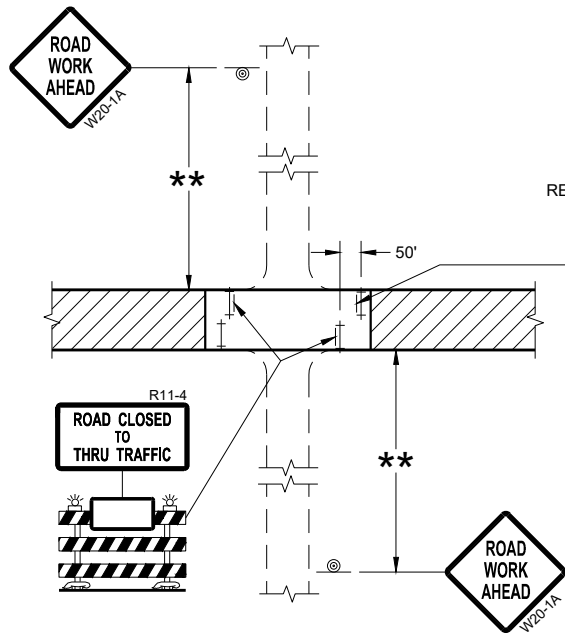
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

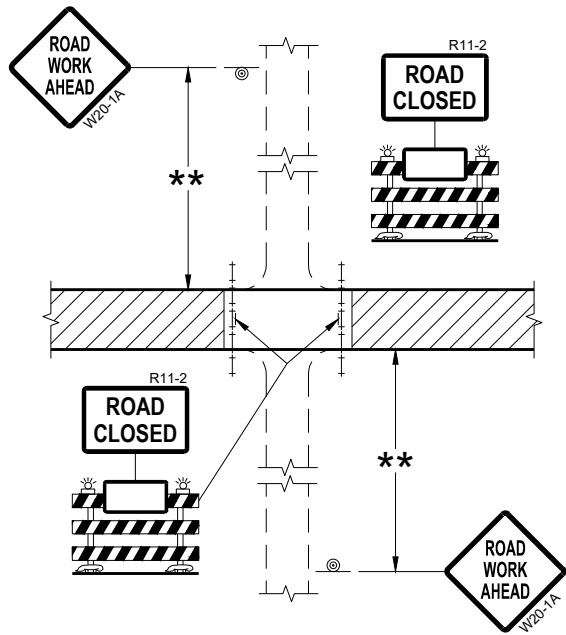
FHWA



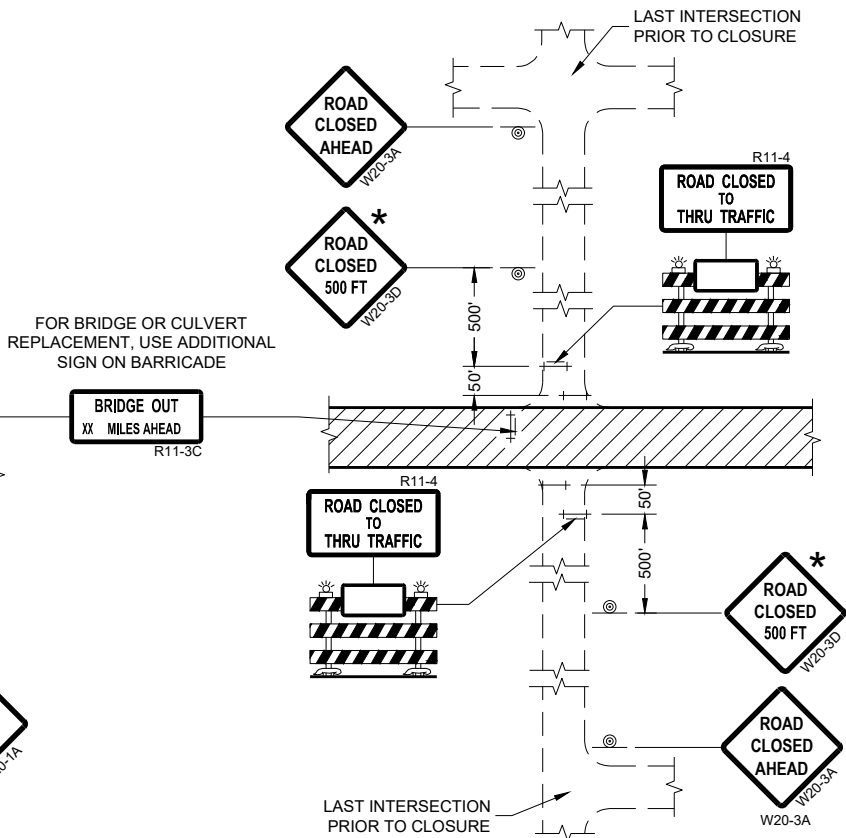
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

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 (500 FEET DESIRABLE) TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN 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, AND R11-4 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.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

- * OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.
- ** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

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

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

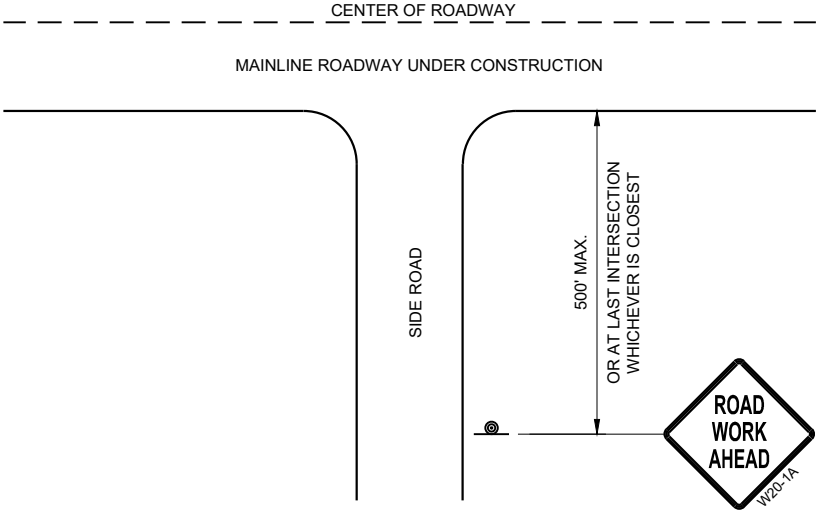
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

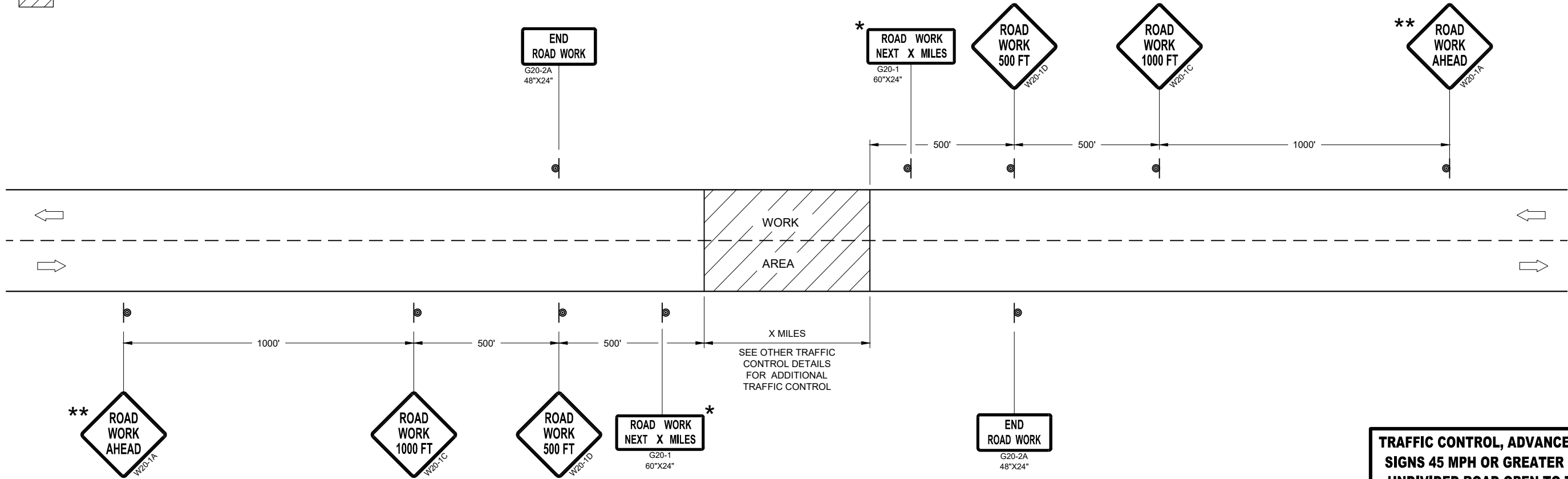
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

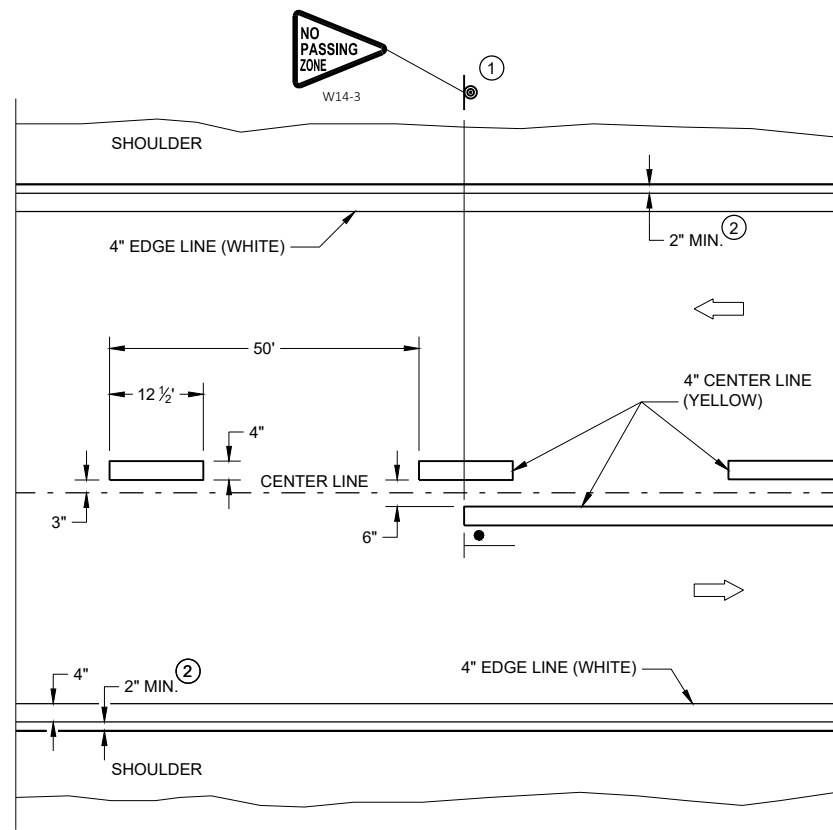


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

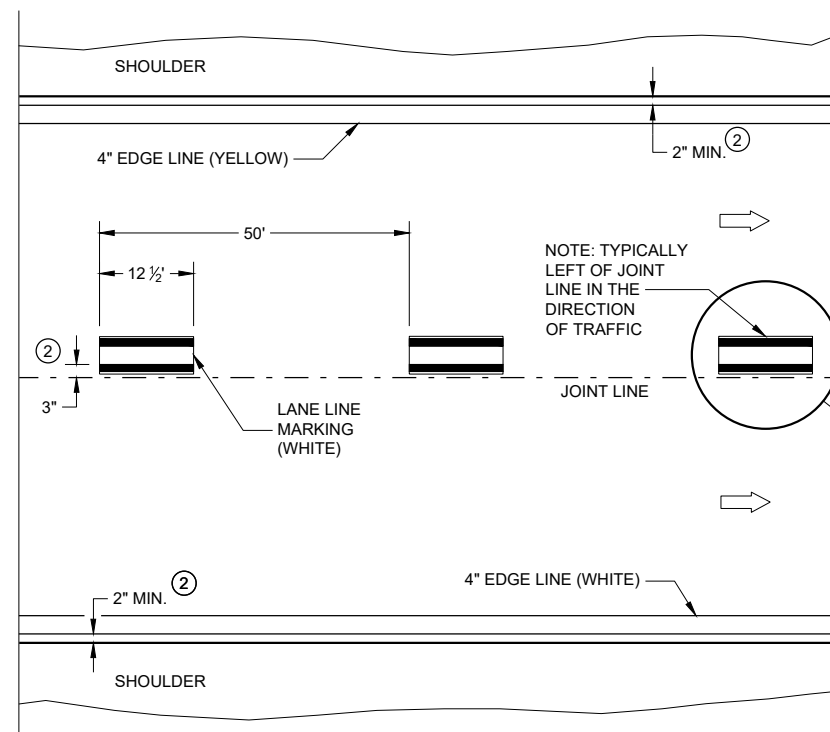
TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 45 MPH OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

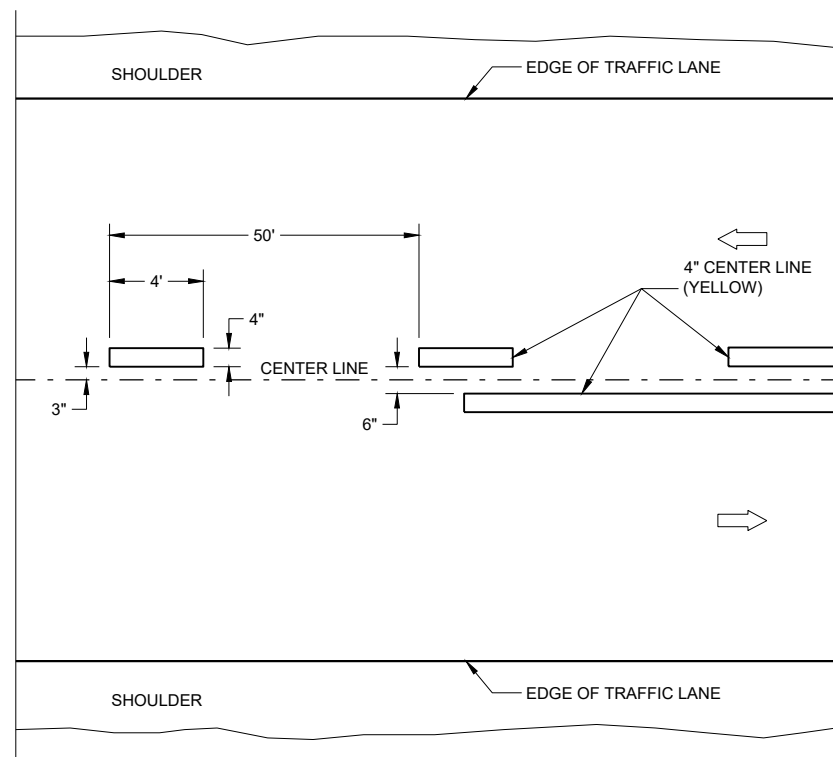


TWO WAY TRAFFIC

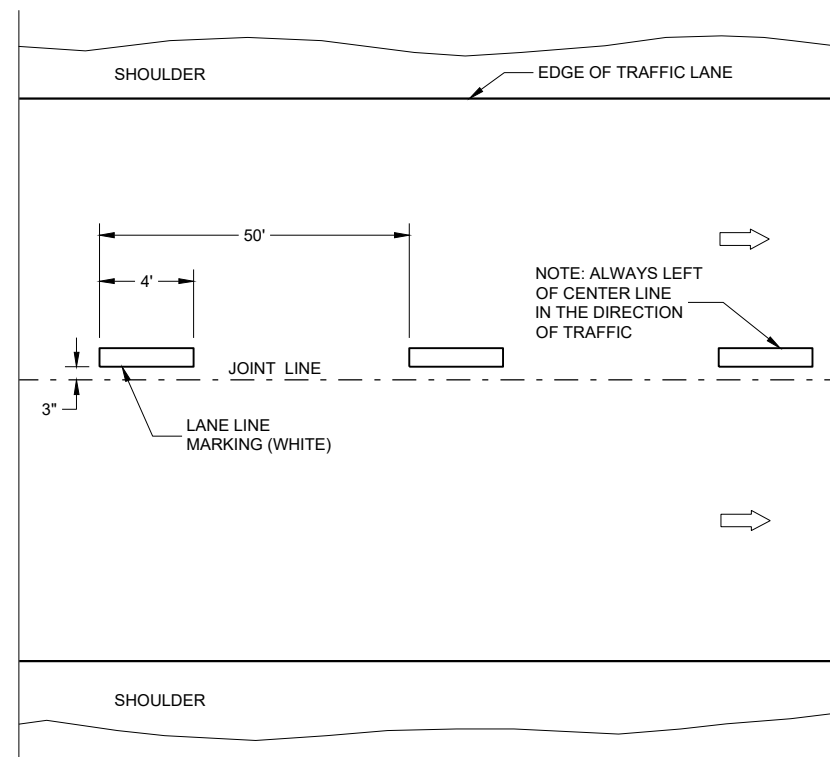


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

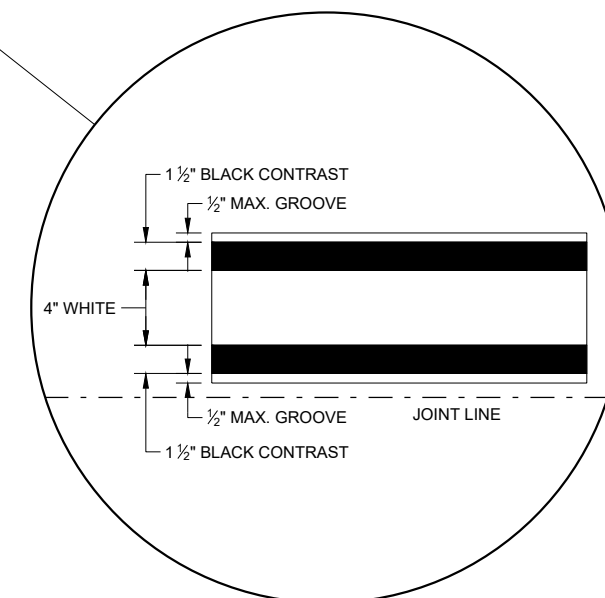
GENERAL NOTES

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 WITH 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

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

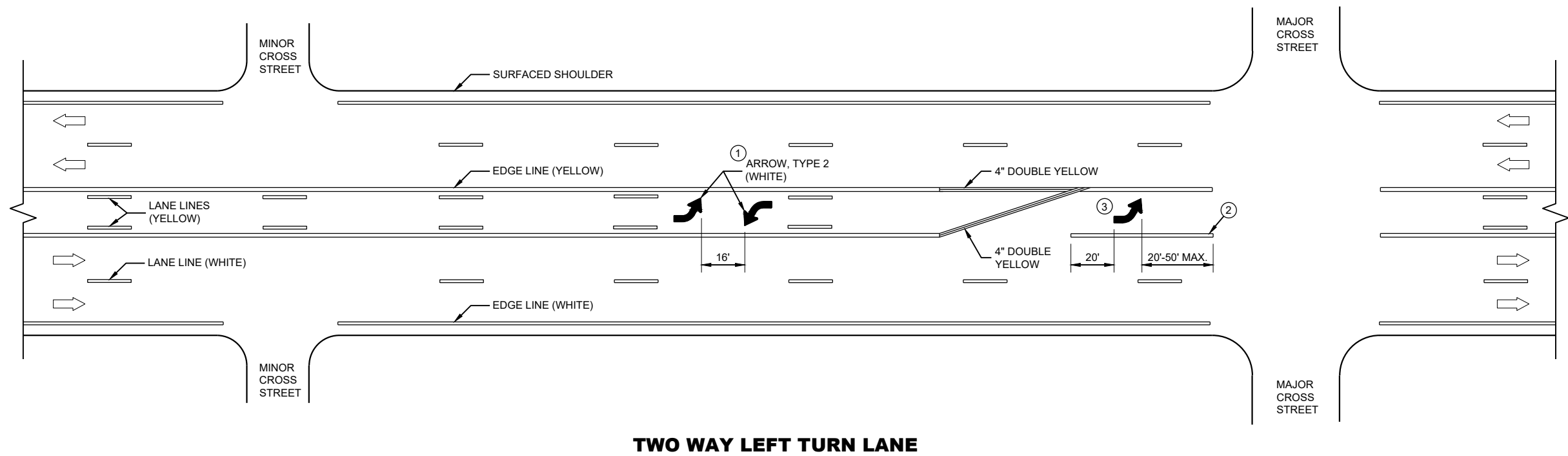


LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Matthew Rauch
STATEWIDE SIGNING AND MARKING
ENGINEER



GENERAL NOTES

- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 8" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

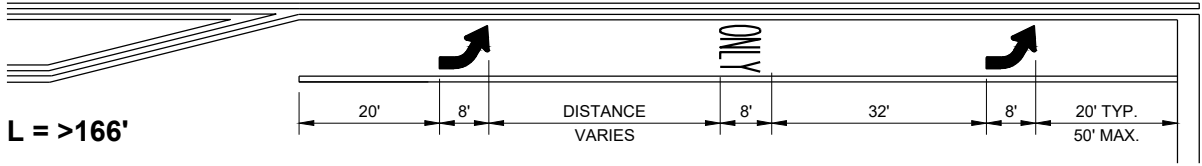
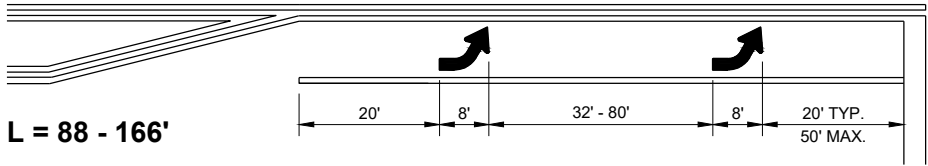
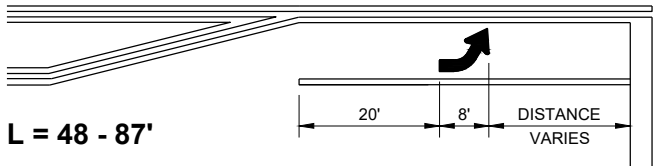
➡ DIRECTION OF TRAFFIC

**PAVEMENT MARKING
(TURN LANES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

TURN LANE OPTIONS

LENGTH OF TURN BAY (L) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



*(SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

GENERAL NOTES

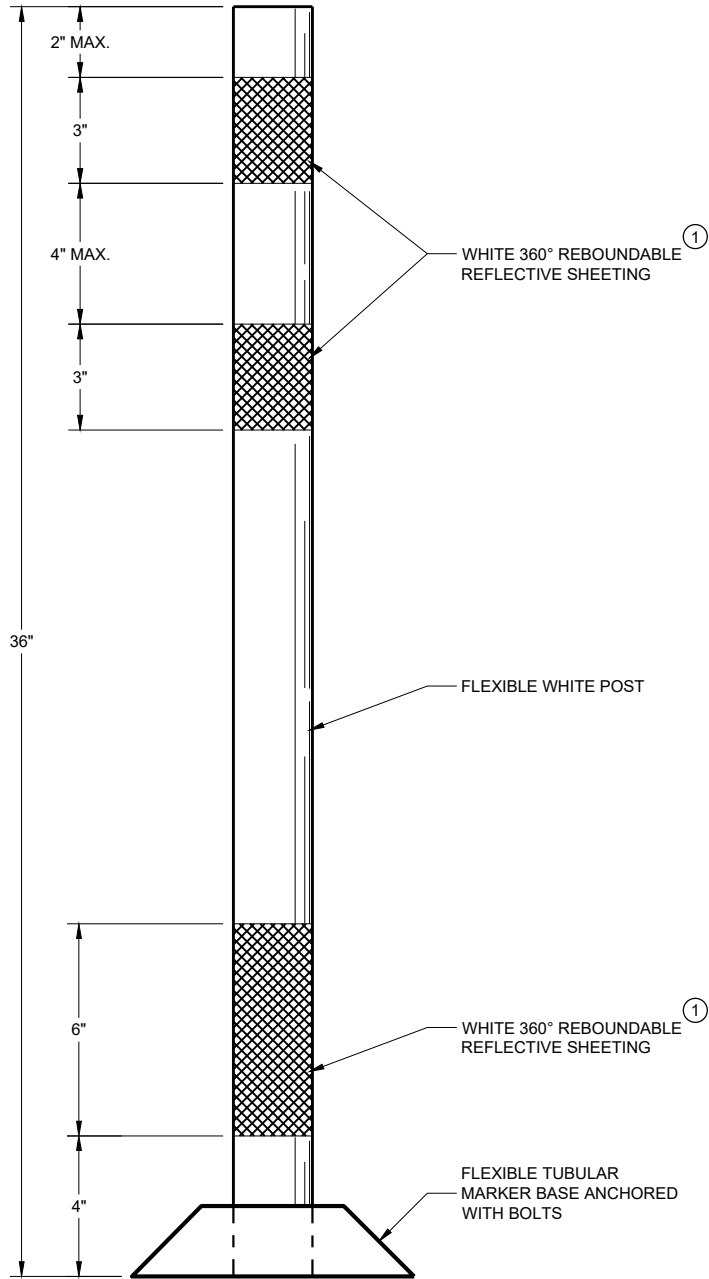
- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

➡ DIRECTION OF TRAFFIC

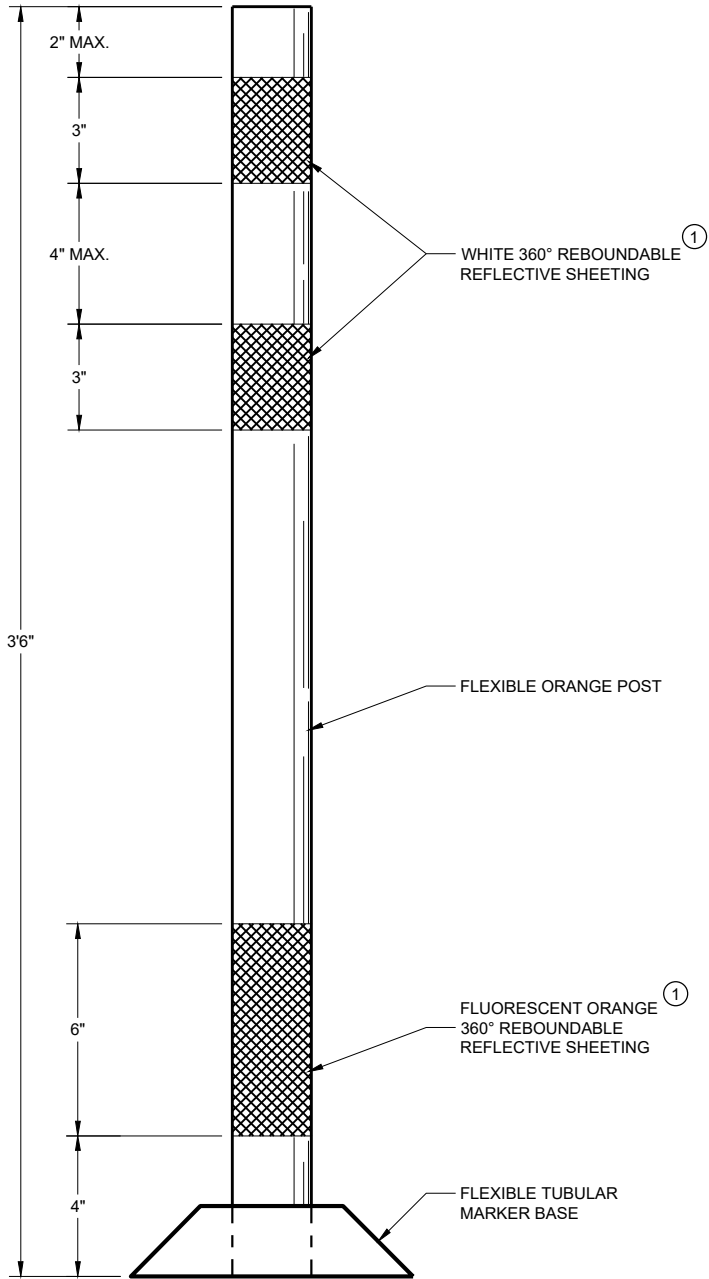
L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



FLEXIBLE TUBULAR
MARKER POST
PERMANENT CROSSOVER



FLEXIBLE TUBULAR
MARKER POST
WORK ZONE

GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

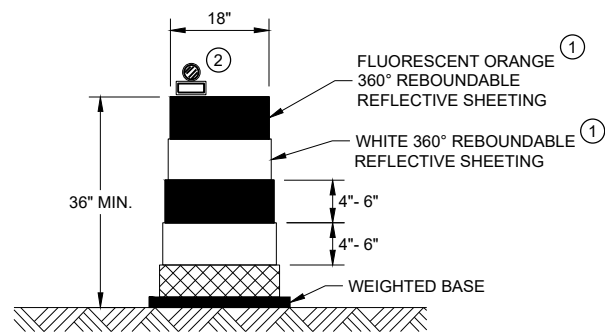
① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

CHANNELIZING DEVICES
FLEXIBLE TUBULAR
MARKER POST

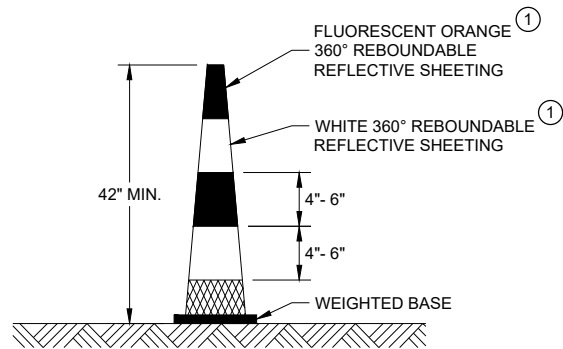
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

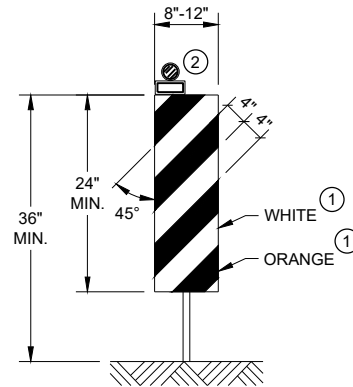


DRUM



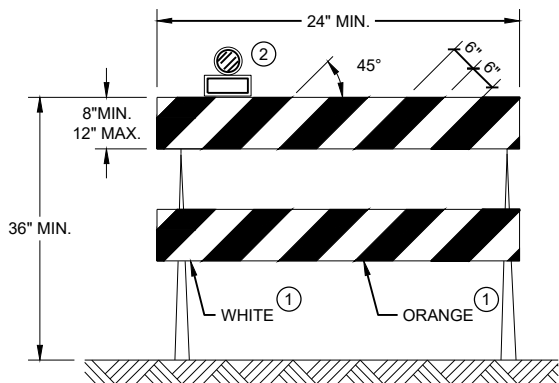
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



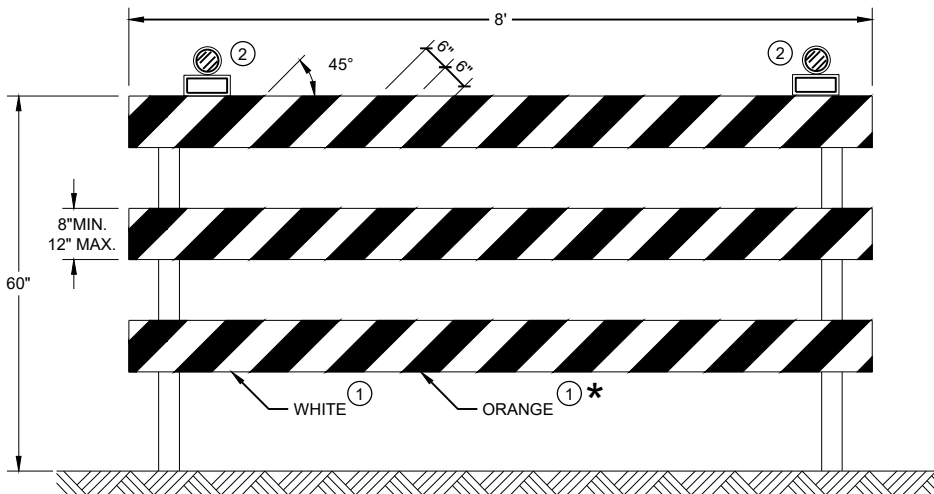
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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LEGEND

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

GENERAL NOTES

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

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

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

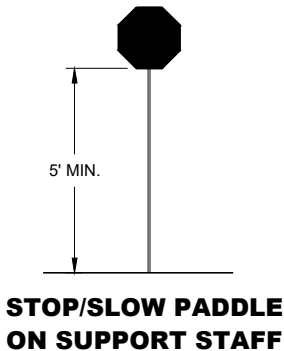
THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND LOCATION OF ALL FLAGGERS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

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

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

FLAGGING

- FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.
- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
 - ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.
- TEMPORARY PORTABLE RUMBLE STRIPS**
- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

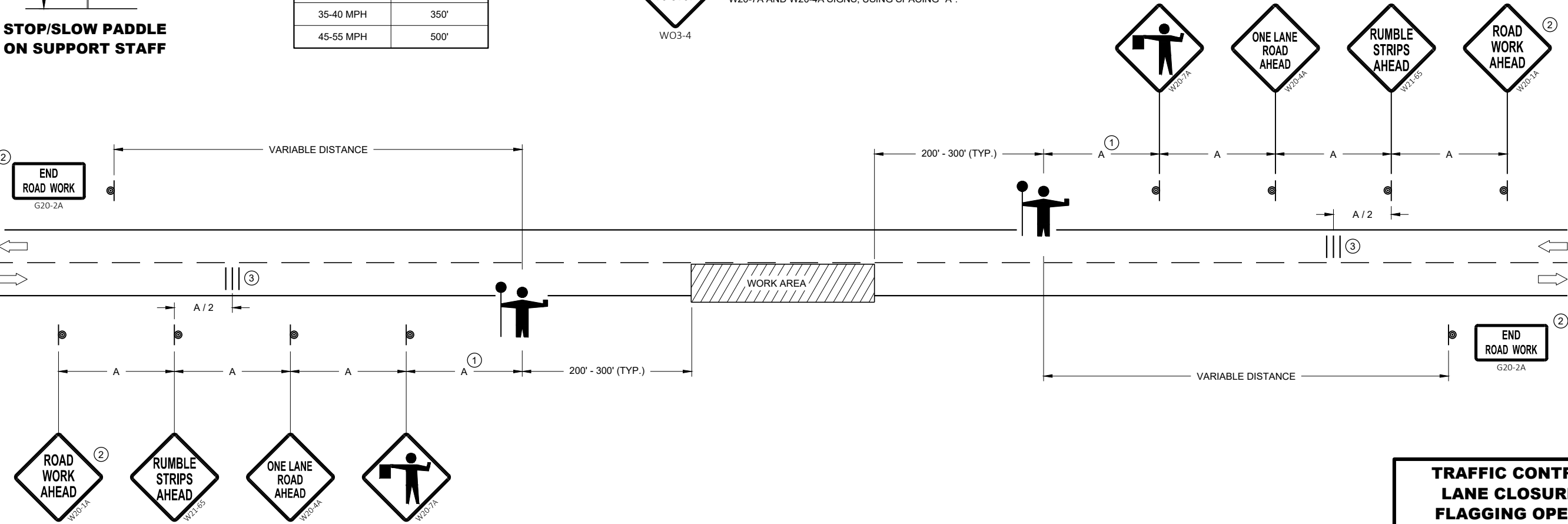


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



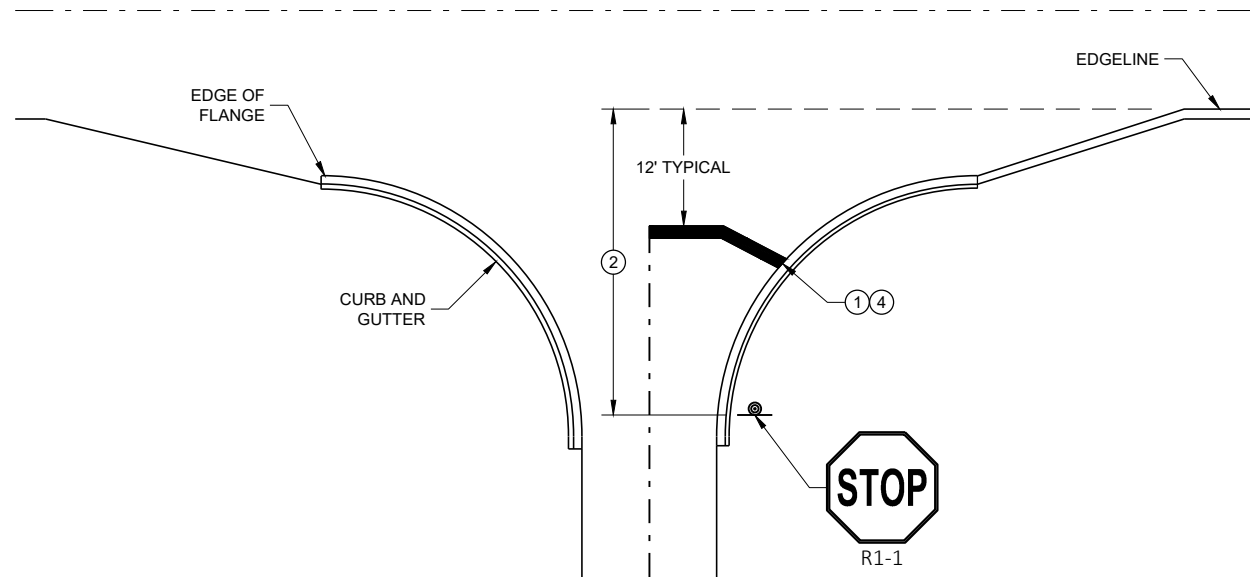
TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

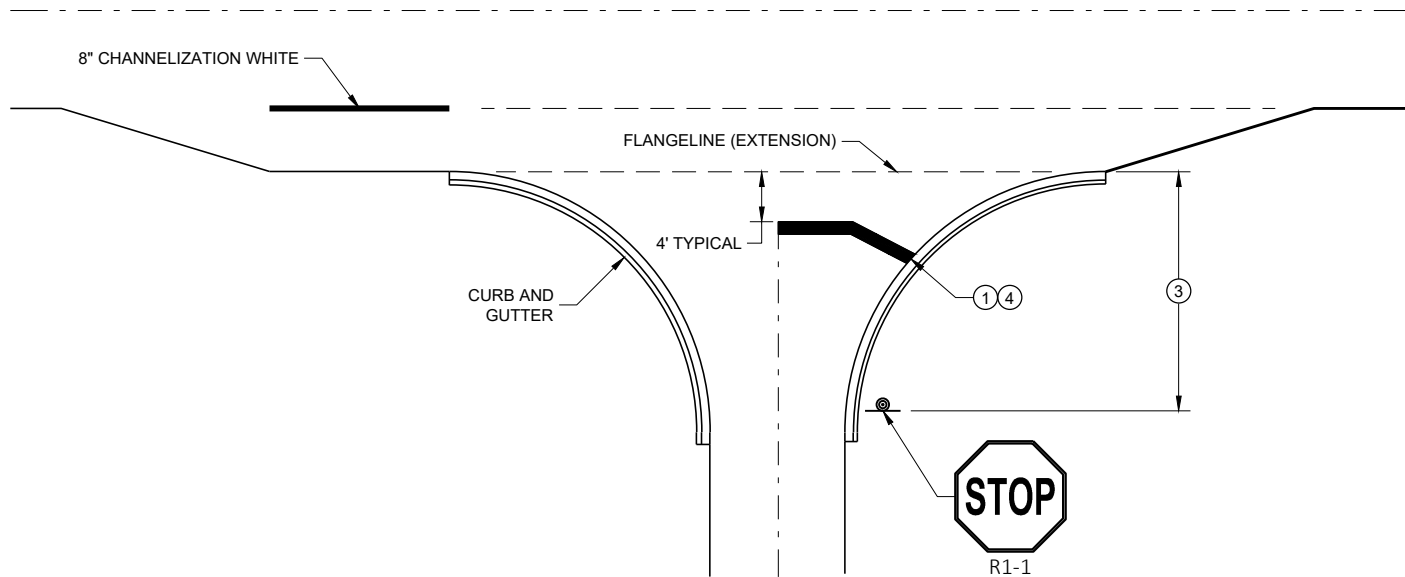
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

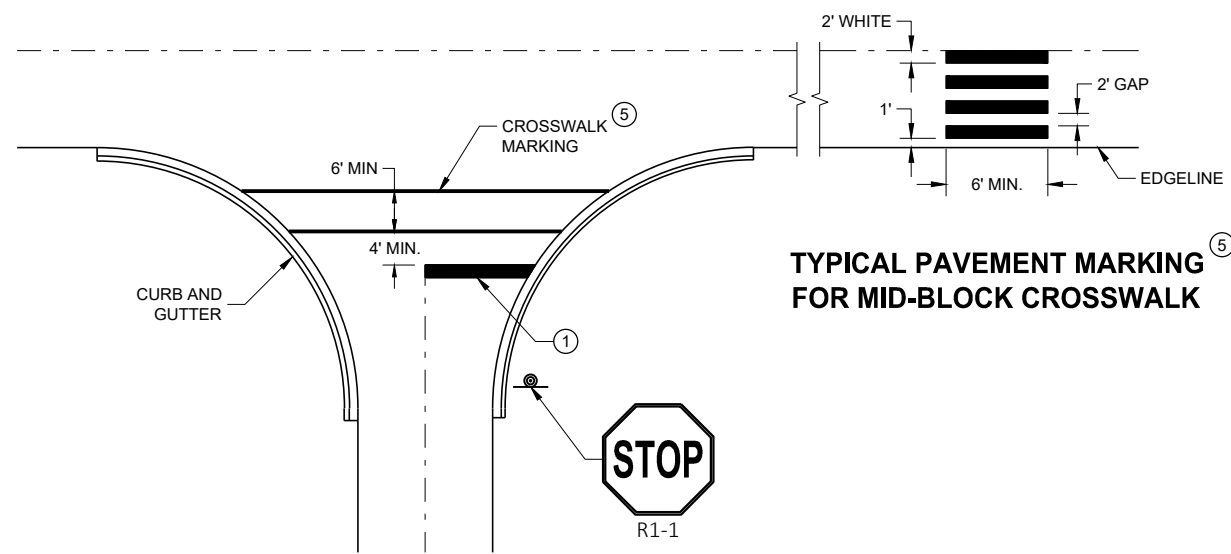
FHWA



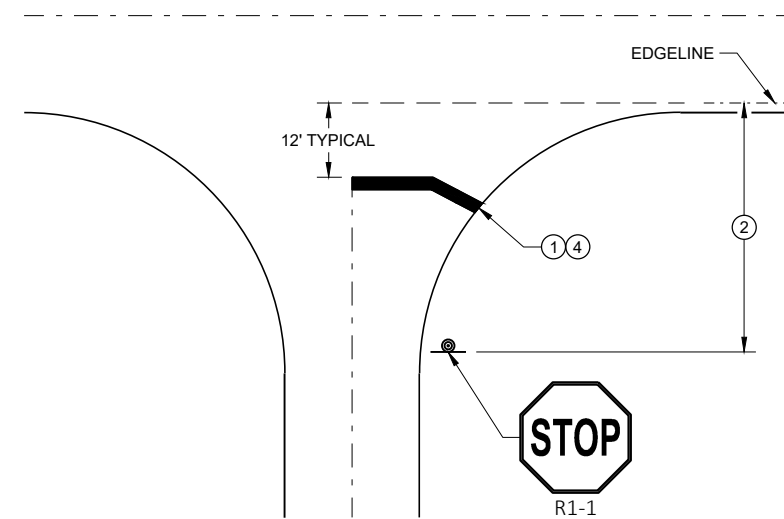
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR
SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

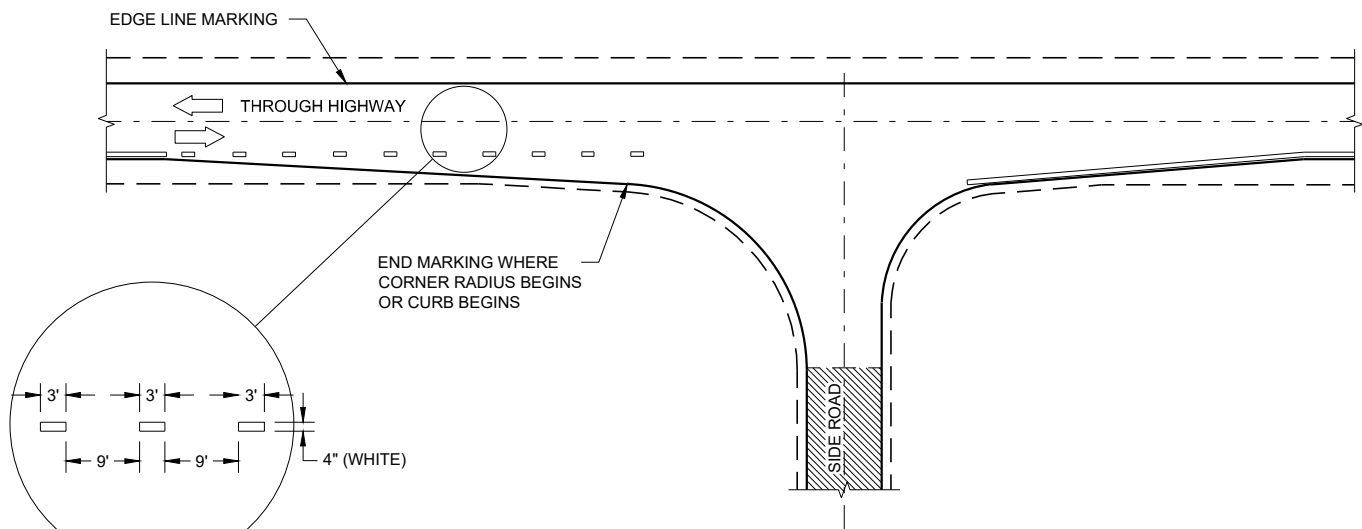
STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

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

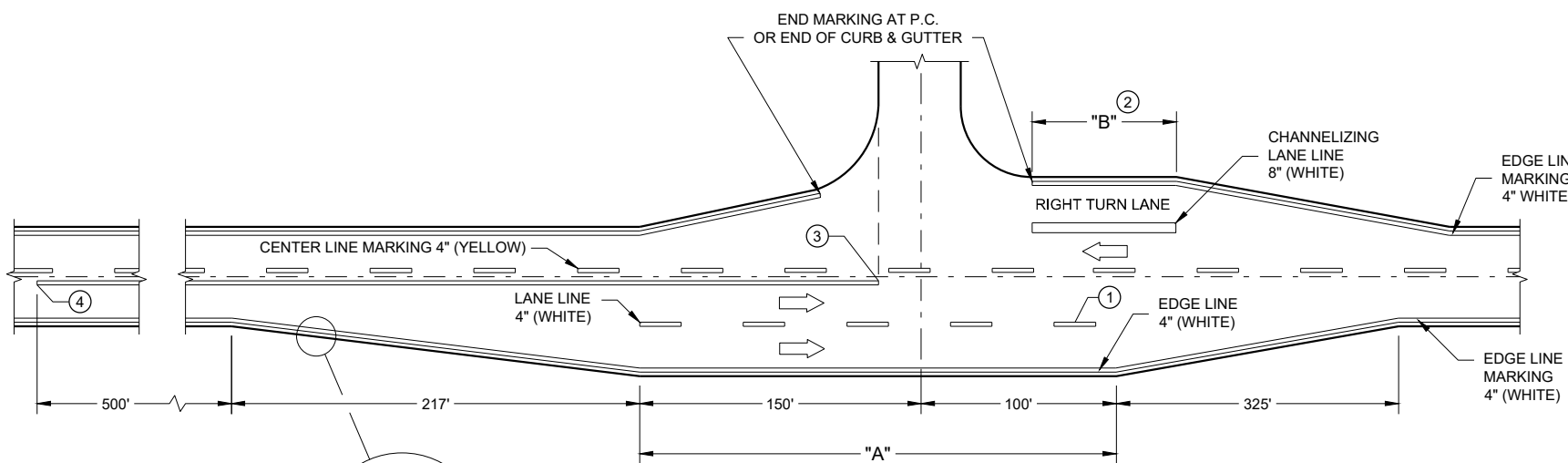
STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



MINOR INTERSECTION



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

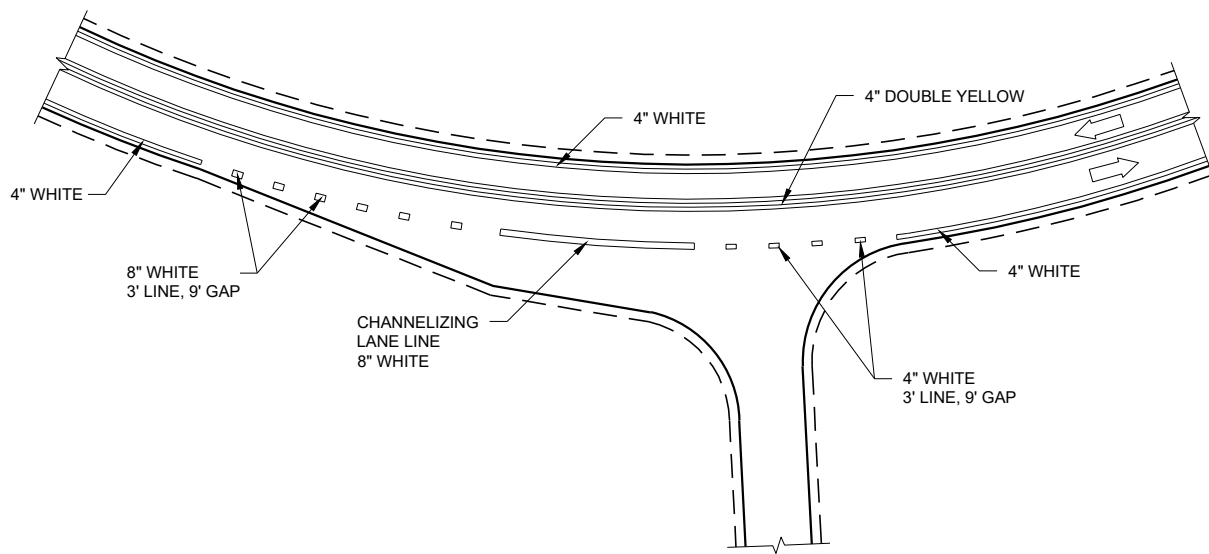
GENERAL NOTES

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

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

LEGEND

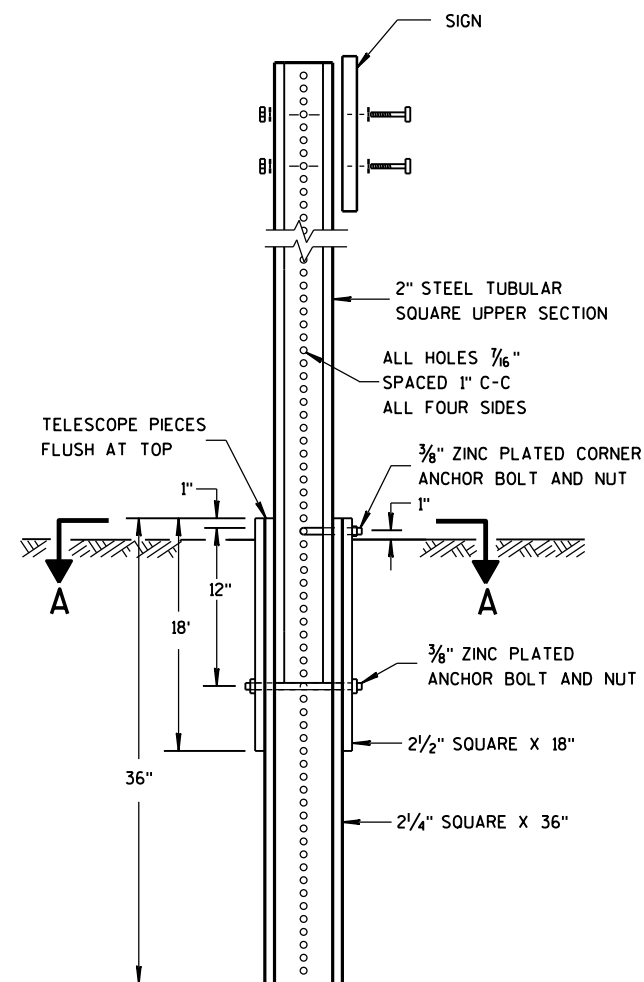
➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

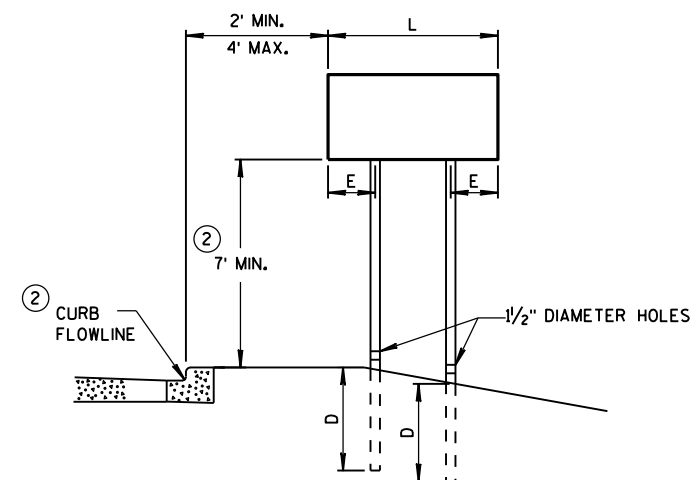
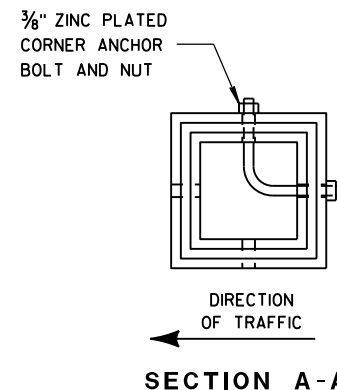


DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

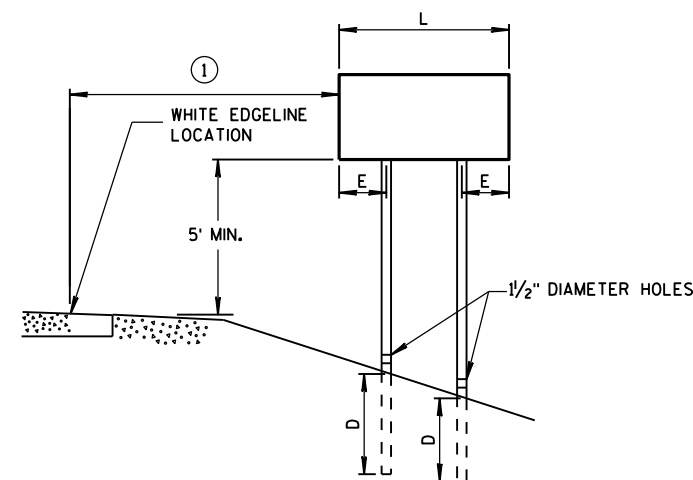
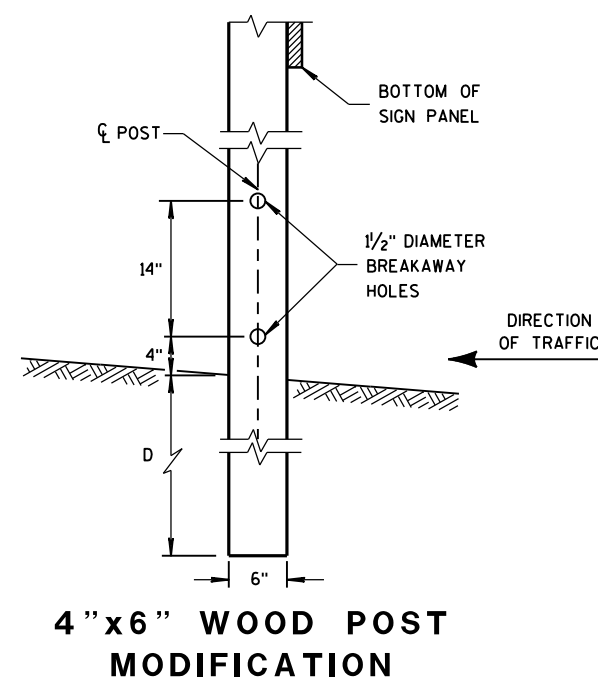
SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED
ON TUBULAR STEEL POSTS.



URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST EMBEDMENT DEPTH	
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



RURAL AREA

4" X 6" WOOD POST		NUMBER OF WOOD POSTS REQUIRED
POST SPACING REQUIREMENTS		
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

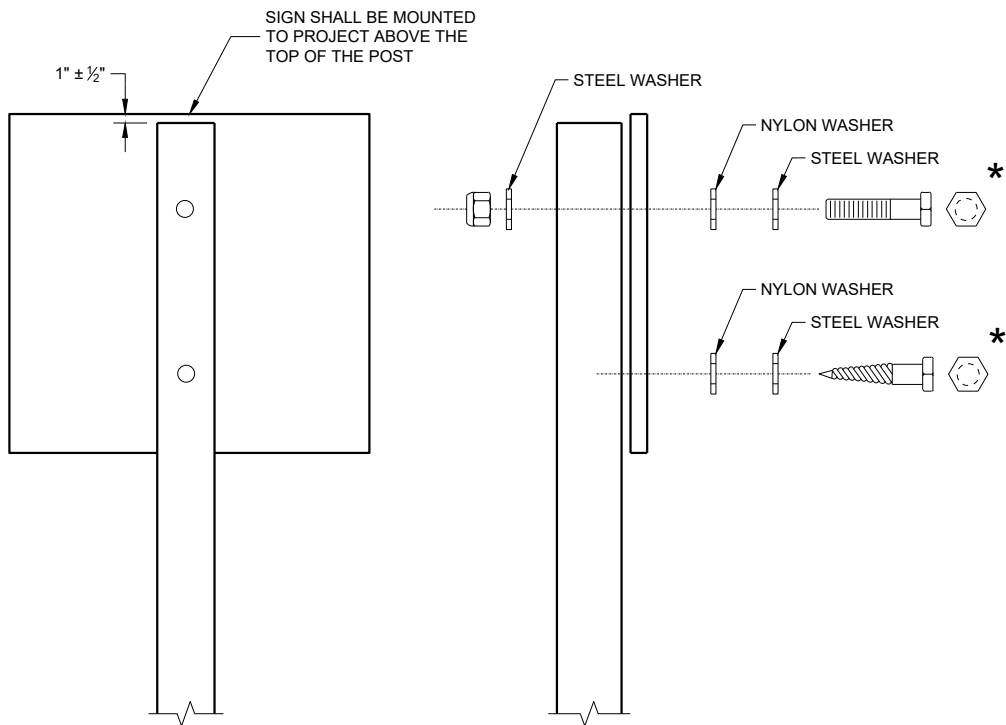
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS
RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 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 0.080 NYLON

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION
PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM
SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH
THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER
THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

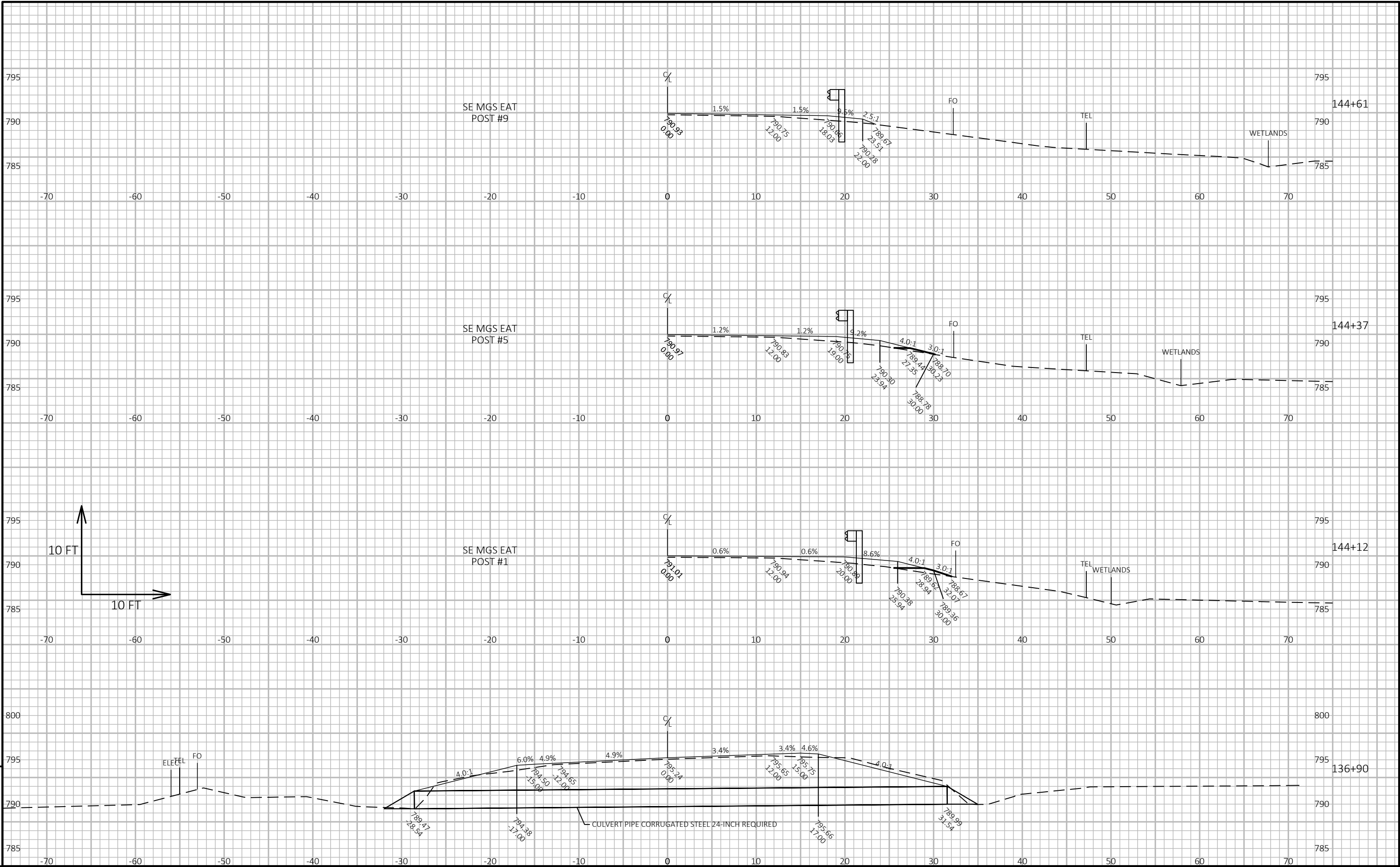
**ATTACHMENT OF SIGNS
TO POSTS**

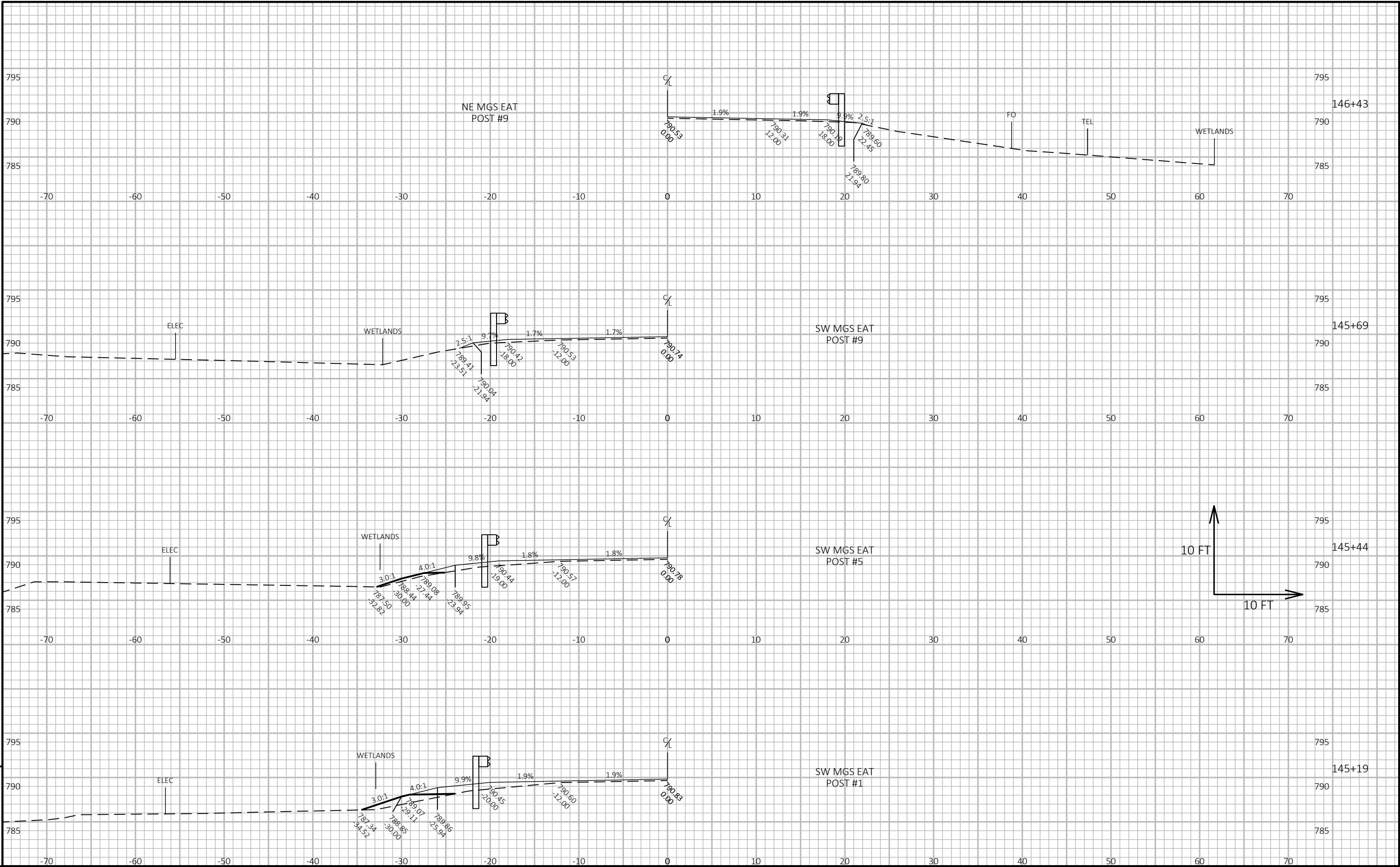
STATE OF WISCONSIN
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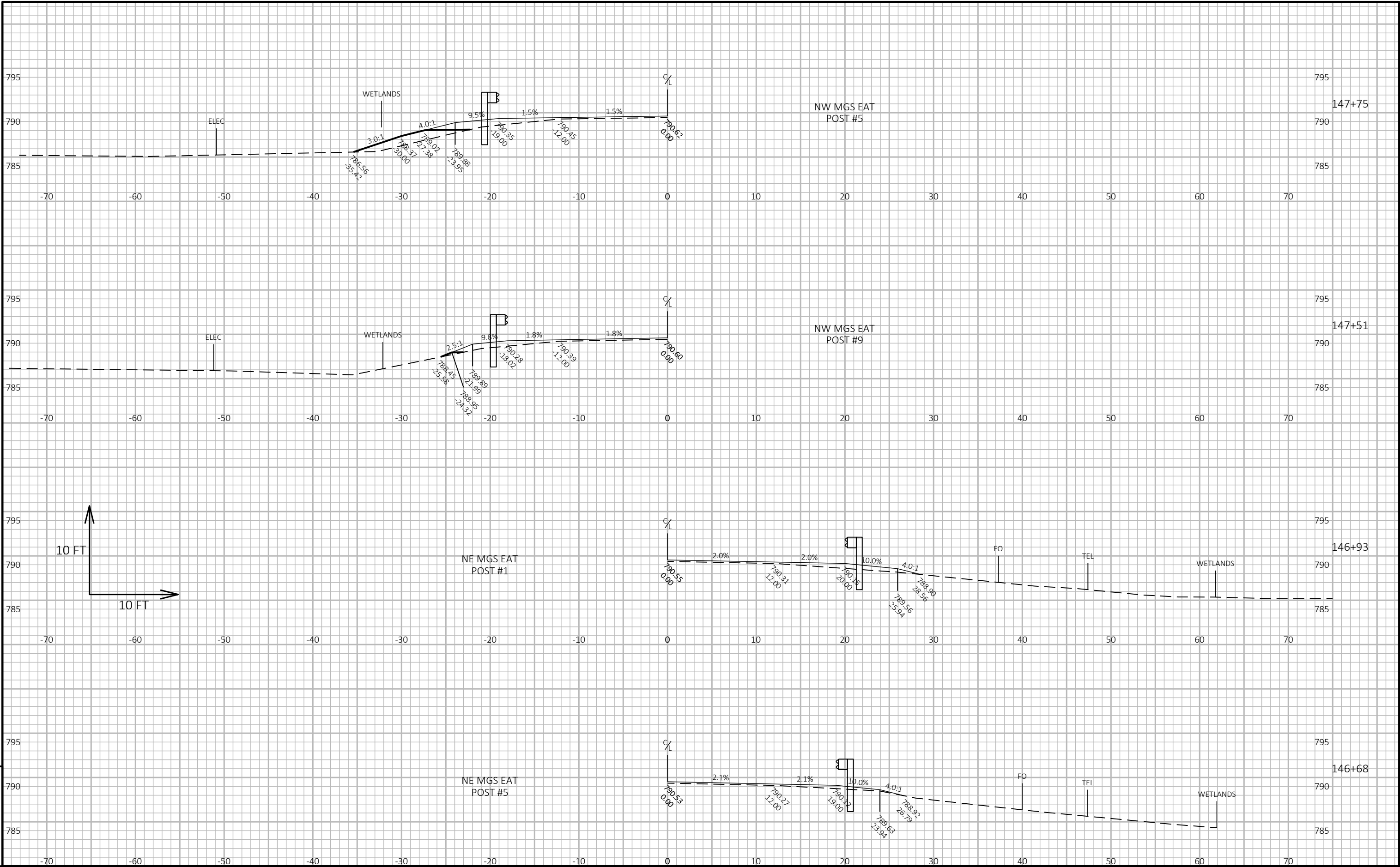
APPROVED
June 2017
DATE

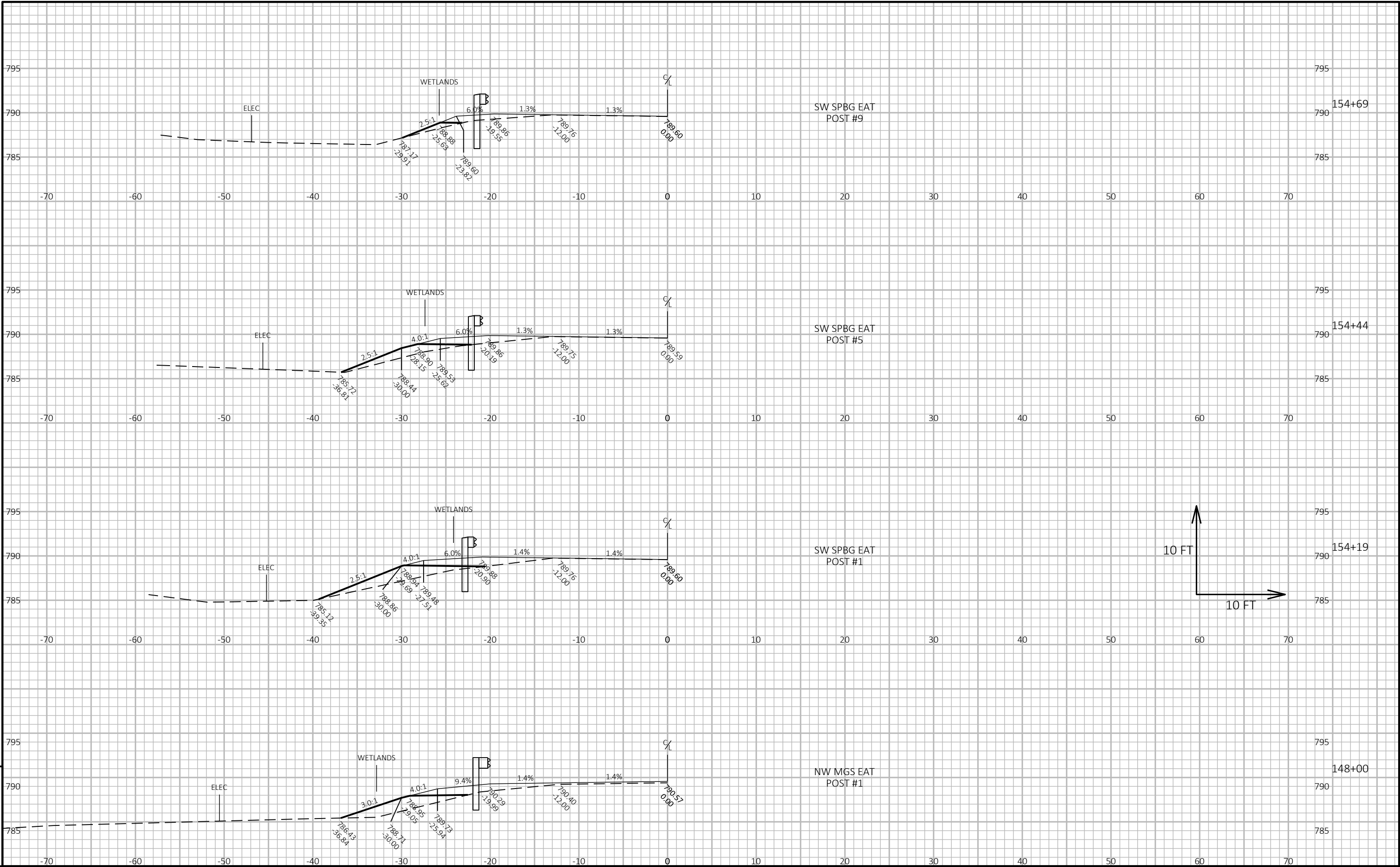
/S/ Andrew Heidtke
WORK ZONE ENGINEER

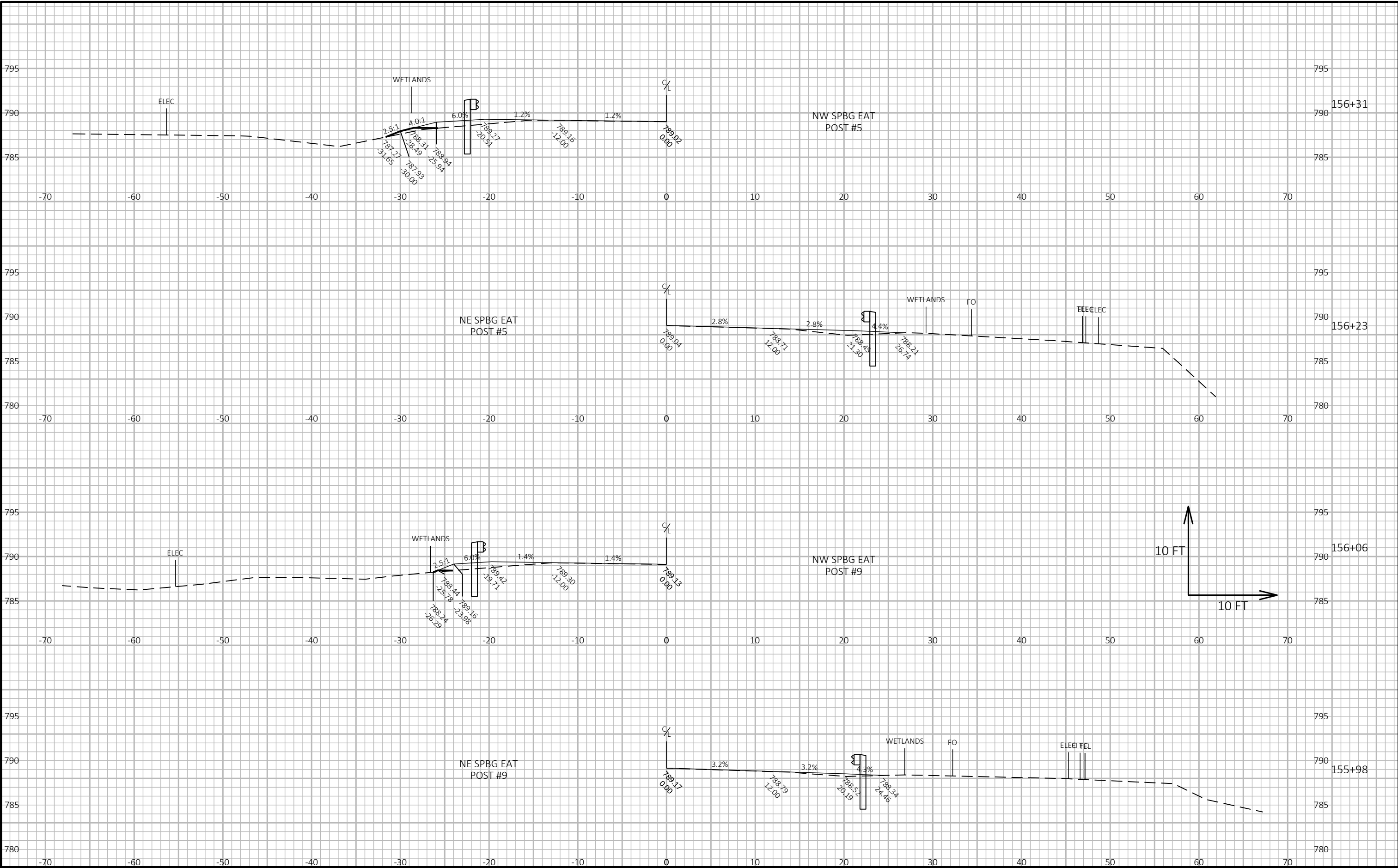
FHWA

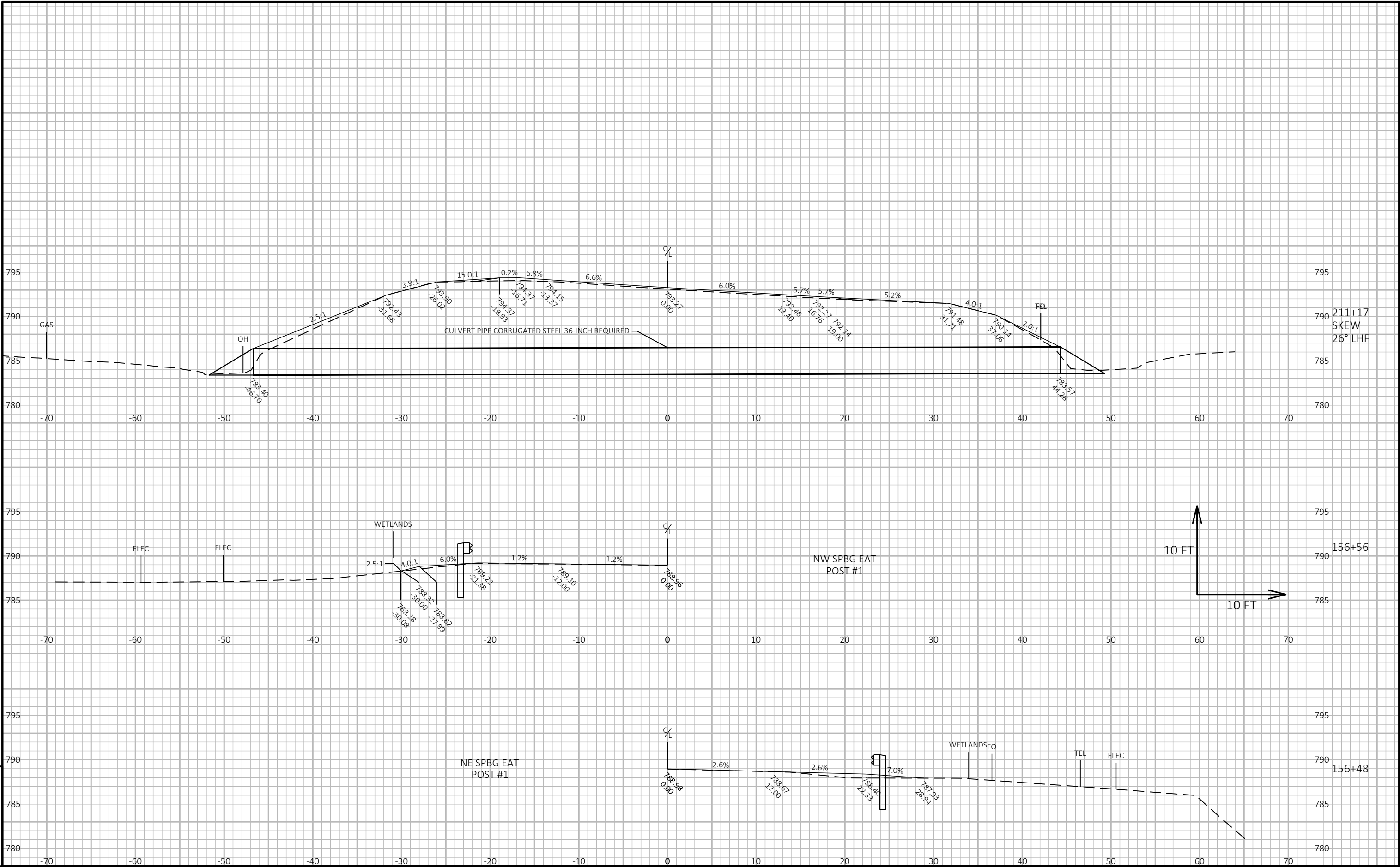


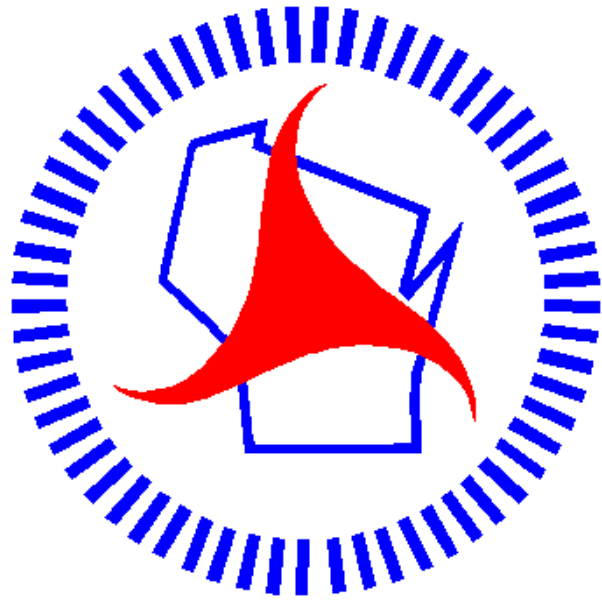












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