

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8510-03-72		

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CORNUCOPIA - SUPERIOR

BARK POINT ROAD TO CTH H

STH 13

BAYFIELD & DOUGLAS COUNTY

STATE PROJECT NUMBER
8510-03-72

END PROJECT
STA 396+60(6)
X: 722217.48
Y: 546825.24

PROJECT ID: 8510-03-72

COUNTY: BAYFIELD

ORDER OF SHEETS

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

TOTAL SHEETS = 90



18

DESIGN DESIGNATION

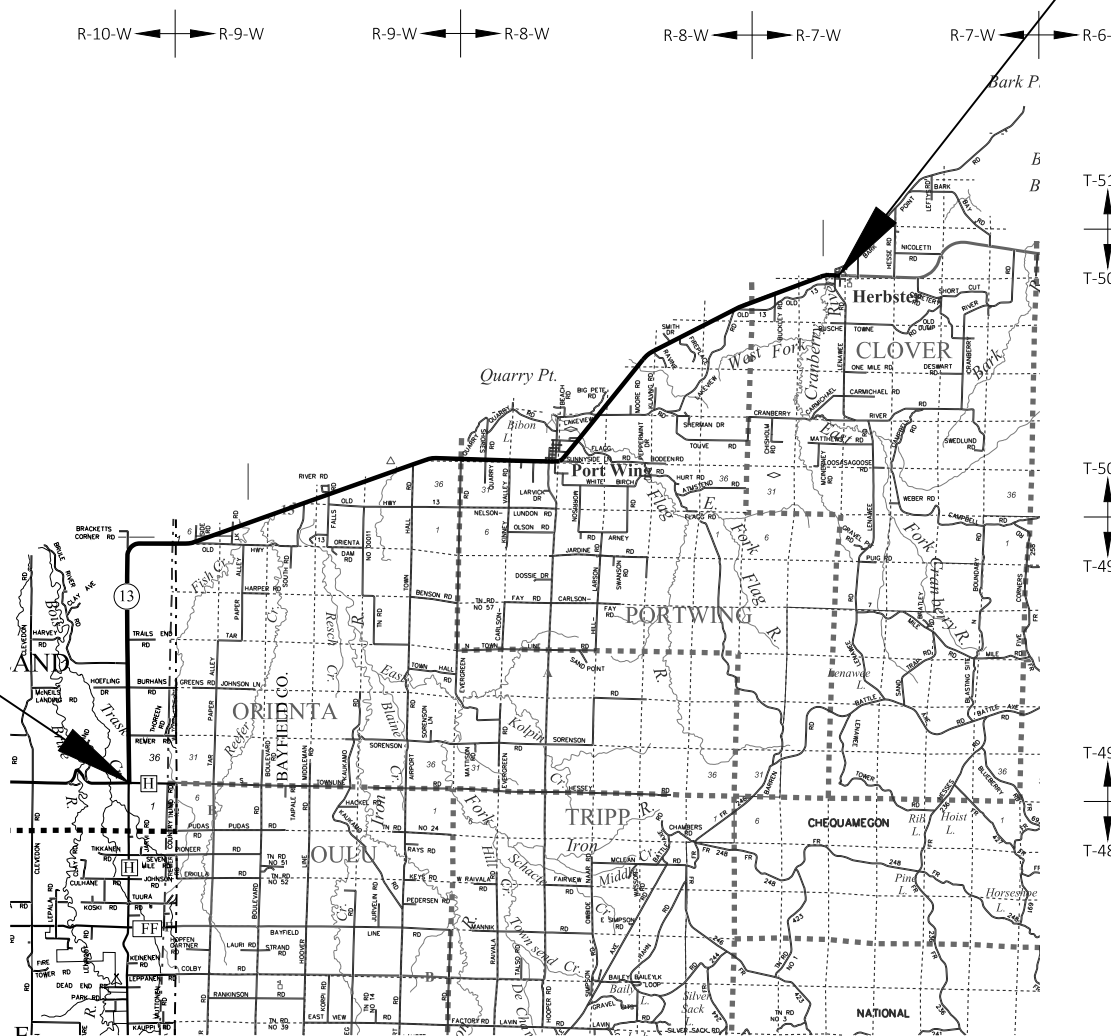
A.A.D.T. 2024	=	890
A.A.D.T. 2044	=	1010
D.H.V.	=	
D.D.	=	61/39
T.	=	14.6
DESIGN SPEED	=	60 MPH
ESALS	=	280,000

BEGIN PROJECT
STA 10+00(1)
X: 644469.87
Y: 490017.29

CONVENTIONAL SYMBOLS

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

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



LAYOUT
SCALE 0 4 MI
TOTAL NET LENGTH OF CENTERLINE = 23.75 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), BAYFIELD COUNTY, NAD83 HYEAR, IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (YEAR). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	_____ SURVEYOR
Designer	_____ MITCHELL FINNEGAN
Project Manager	_____ PHILIP KEPPERS
Regional Examiner	_____ TOU YANG
Regional Supervisor	_____ JEFF OLSON

APPROVED FOR THE DEPARTMENT
DATE: 7/22/2022 *Philip Keppers*
(Signature)

E

GENERAL NOTES

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

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT FOR AREAS WITHIN FINISHED SHOULDER POINT, SHALL BE FERTILIZED, SEEDED, AND COVERED IN E-MAT.

THE EXACT LOCATION OF EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

OTHER WETLANDS MAY EXIST IN LOCATIONS THAT ARE NOT SHOWN ON THE PLANS. NO EQUIPMENT OR MATERIALS SHALL BE STORED IN WETLAND AREAS.

MAINLINE HMA PATCHES SHALL CONSIST OF A 7-INCHES OF ASPHALTIC SURFACE FROM START OF PROJECT AT CTH H TO CTH A IN PORTWING. A 3-INCH 4MT58-34S LOWER LIFT AND TWO 2-INCH 4MT58-34S UPPER LIFTS SHOULD BE USED.

MAINLINE PATCHES SHALL CONSIST OF A 5-INCHES OF ASPHALTIC SURFACE FROM CTH A IN PORTWING TO END OF PROJECT IN HERBSTER. A 3-INCH 4MT58-34S LOWER LIFT AND A 2-INCH 4MT58-34S UPPER LIFT SHOULD BE USED .

PAVEMENT QUANTITIES ARE BASED ON 112 LBS/SY COMPACTED 1-INCH THICK.

UTILITY CONTACTS

BAYFIELD ELECTRIC COOPERATIVE
ROBERT LAHTI
68460 DISTRICT ST
P.O BOX 68
IRON RIVER, WI 54847
715-292-7678 (MOBILE)
715-372-4287 (OFFICE)
BOB.LAHTI@BAYFIELDELECTRIC.COM

CLOVER SANITARY DISTRICT #1 - SEWER
BRAD BALOG
15640 BARK RIVER RD
HERBSTER, WI 54844
715-641-1434 (MOBILE)
TNCLOVER@CHEQNET.NET

XCEL ENERGY - ELECTRICITY
TIM BLODGETT
2400 FARM RD
ASHLAND, WI 54806
715-307-2979 (MOBILE)
TIMOTHY.BLODGETT@XCELENERGY.COM

PORTWING, TN OF SANITARY DIST (SEWER)
TROY KAVAJECZ
P.O. BOX 146
PORT WING, WI 54865
715-774-3695 (OFFICE)
PORTWINGTROY@CHEQNET.NET

DAHLBERG LIGHT AND POWER COMPANY - ELECTRICITY
JAMES DAHLBERG
9221 E MAIN
P.O. BOX 300
SOLON SPRINGS, WI 54873-0300
715-378-2205 (MOBILE)
JIMDAHLBERG@DAHLBERGLIGHTANDPOWER.COM

PORTWING, TN OF SANITARY DIST (WATER)
TROY KAVAJECZ
P.O. BOX 146
PORT WING, WI 54865
715-774-3695 (OFFICE)
PORTWINGTROY@CHEQNET.NET

XCEL ENERGY - ELECTRICITY - TRANSMISSION
MITCHELL DIENGER
414 NICOLLET MALL 5TH FLOOR
MINNEAPOLIS, MN 55401
612-321-3109 (OFFICE)
MITCHELL.A.DIENGER@XCELENERGY.COM

NORVADO
GUY FOLSOM
43705 USH 63
P.O. BOX 67
CABLE, WI 54821 - 0067
715-798-7123 (OFFICE)
715-580-8123 (MOBILE)
GFOLSOM@NORVADO.COM

WISCONSIN DNR-LIASON

SHAWN HASELEU
810 W. MAPLE STREET
SPOONER, WI 54801
PHONE: (715) 416-0478
EMAIL: shawn.haseleu@wisconsin.gov

DESIGN CONTACT

PHILIP KEPPERS - DESIGN PROJECT MANAGER
1701 N. 4TH ST
SUPERIOR, WI 54880
PHONE: (715)395-3027
EMAIL: Philip.Keppers@dot.wi.gov

MITCHELL FINNEGAN - DESIGN PROJECT LEADER
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SUPERIOR, WI 54880
PHONE: (715)395-3028
EMAIL: Mitchell.Finnegan@dot.wi.gov

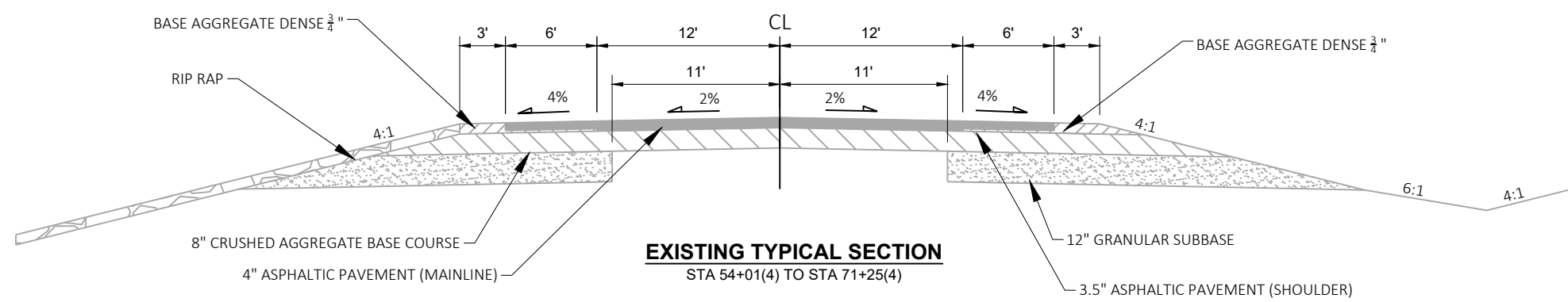
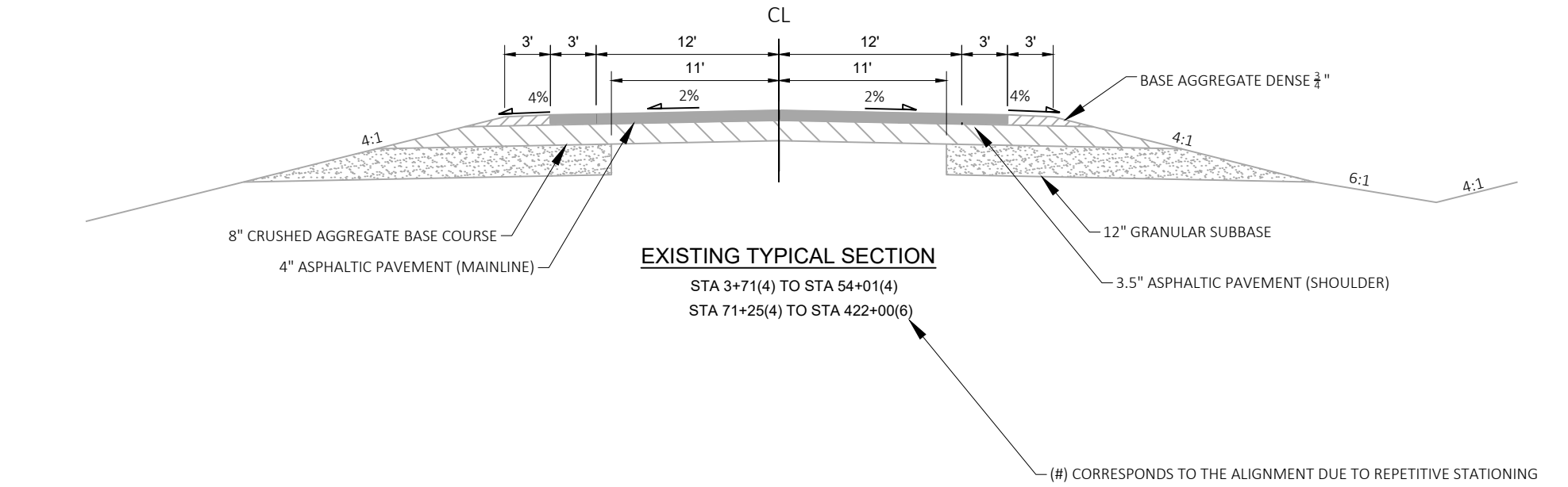
CONVENTIONAL ABBREVIATIONS

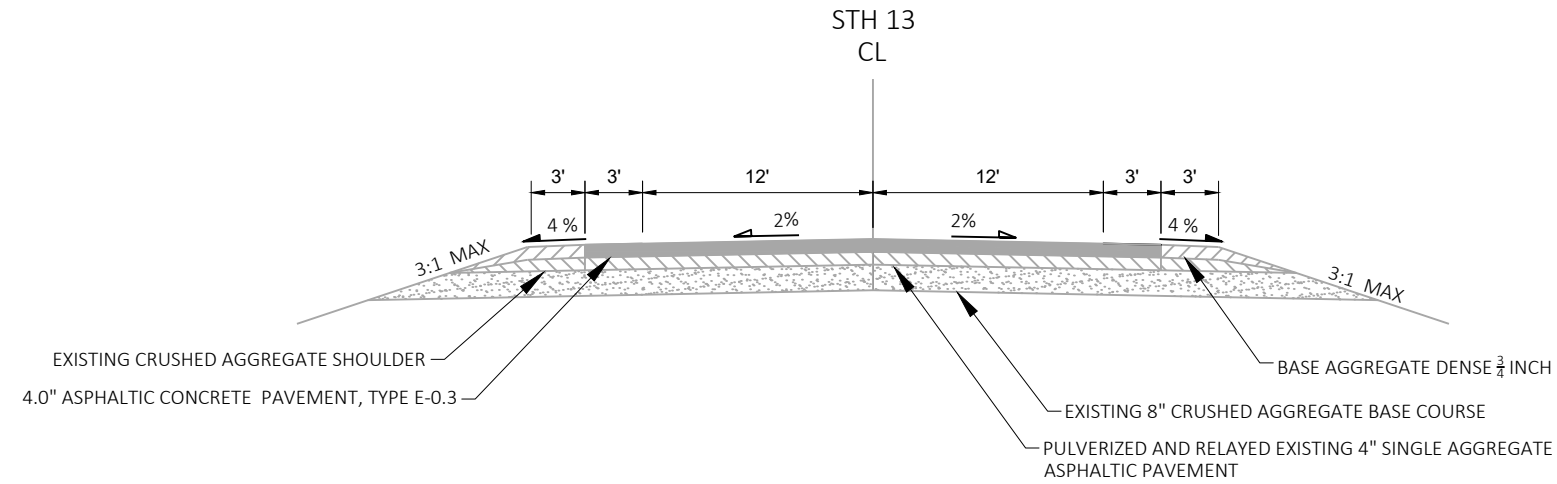
Table with 4 columns: Abbreviation, Description, Abbreviation, Description. Includes terms like ACCESS POINT/ DRIVEWAY CONNECTION, ACCESS RIGHTS, ACRES, AND OTHERS, CENTERLINE, CERTIFIED SURVEY MAP, CORNER, DOCUMENT, EASEMENT, HIGHWAY EASEMENT, LAND CONTRACT, MONUMENT, PAGE, PERMANENT LIMITED EASEMENT, PROPERTY LINE, RECORDED AS, REFERENCE LINE.



Dial 811 or (800)242-8511

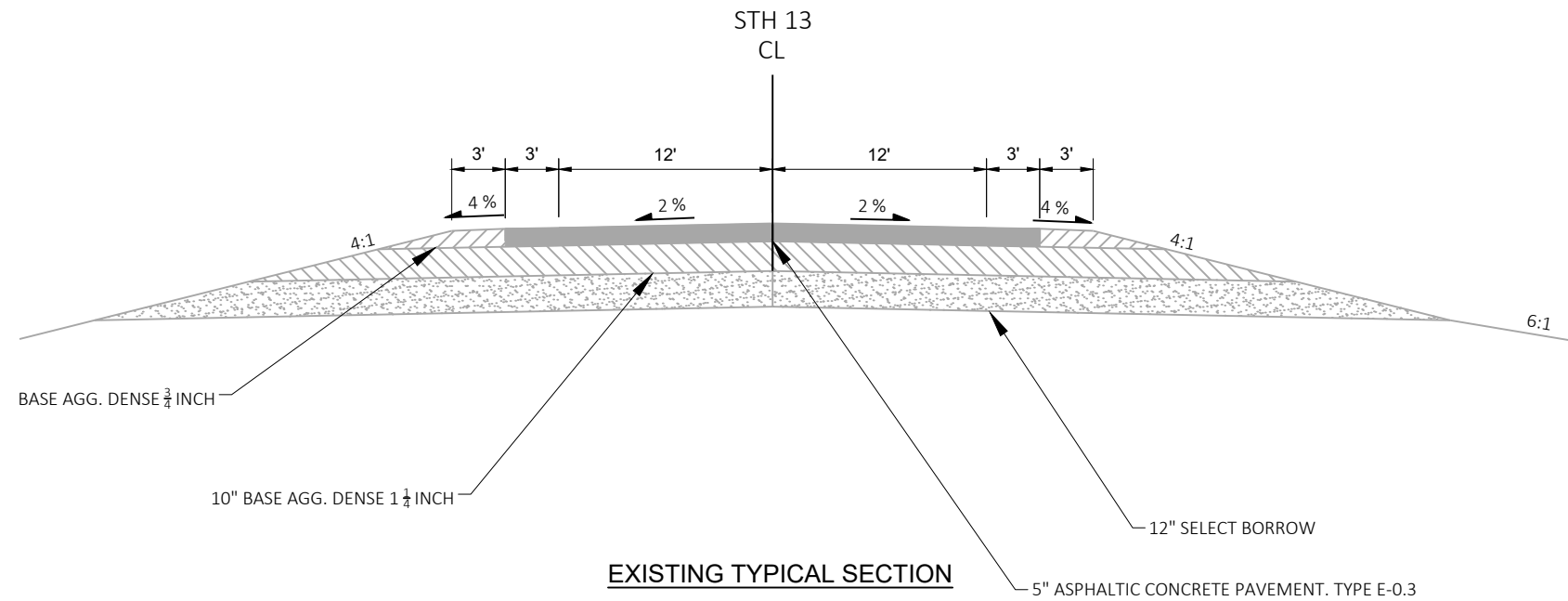
www.DiggersHotline.com





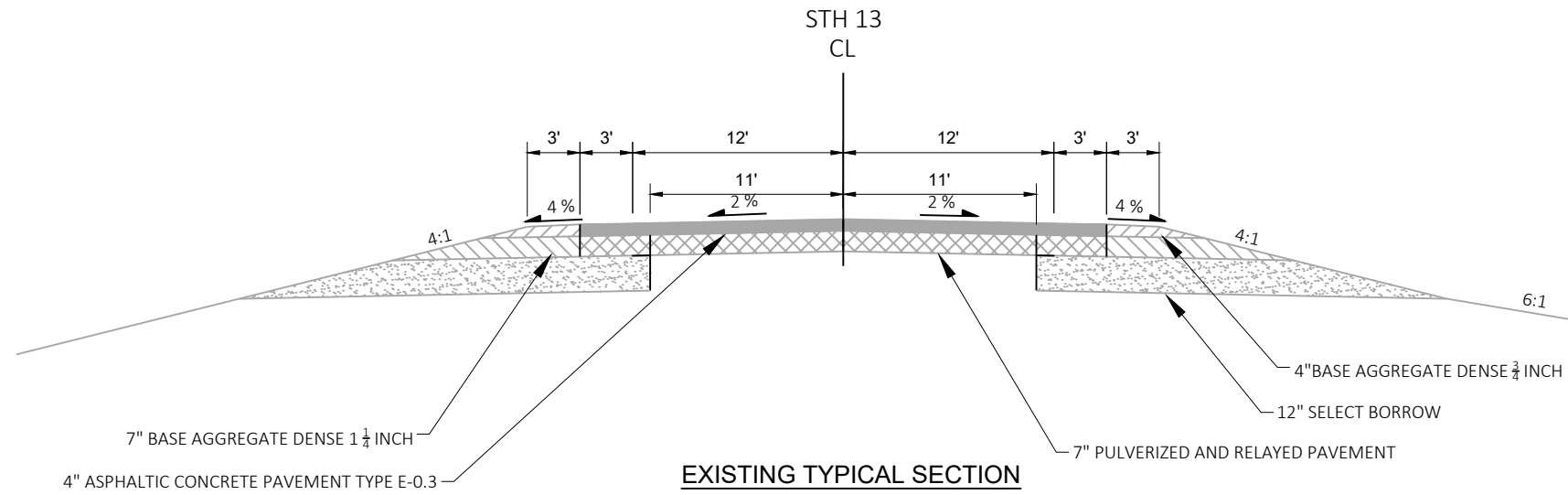
EXISTING TYPICAL SECTION

STA 10+00(1) TO STA 330+30(2)



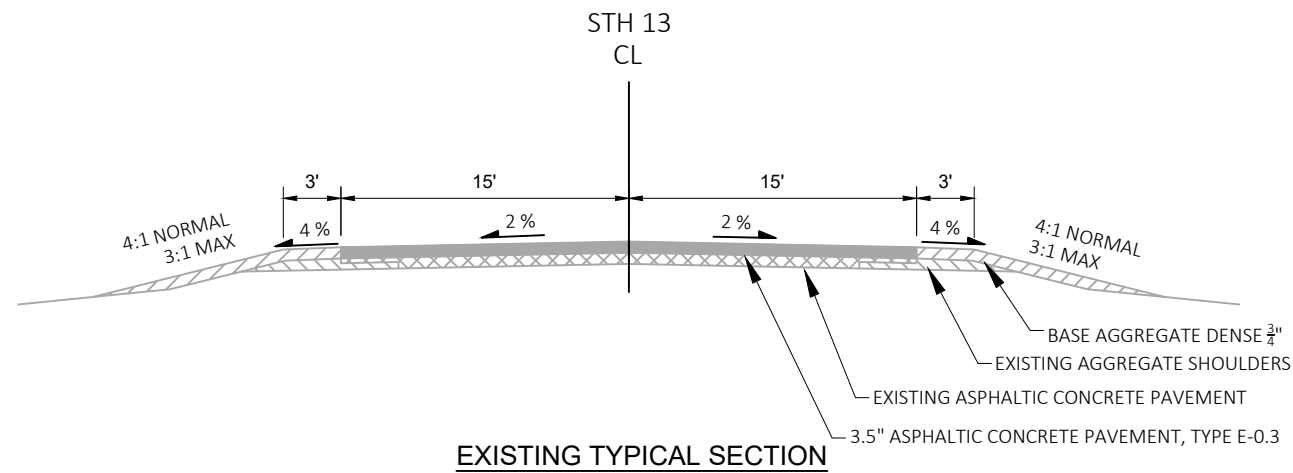
EXISTING TYPICAL SECTION

STA. 196+50(3) TO STA 201+30(3)
STA 286+81(3) TO STA 289+43(3)
STA 468+41(3) TO STA 481+00(3)
STA 486+50(3) TO STA 487+50(3)
STA 488+43(3) TO STA 491+50(3)

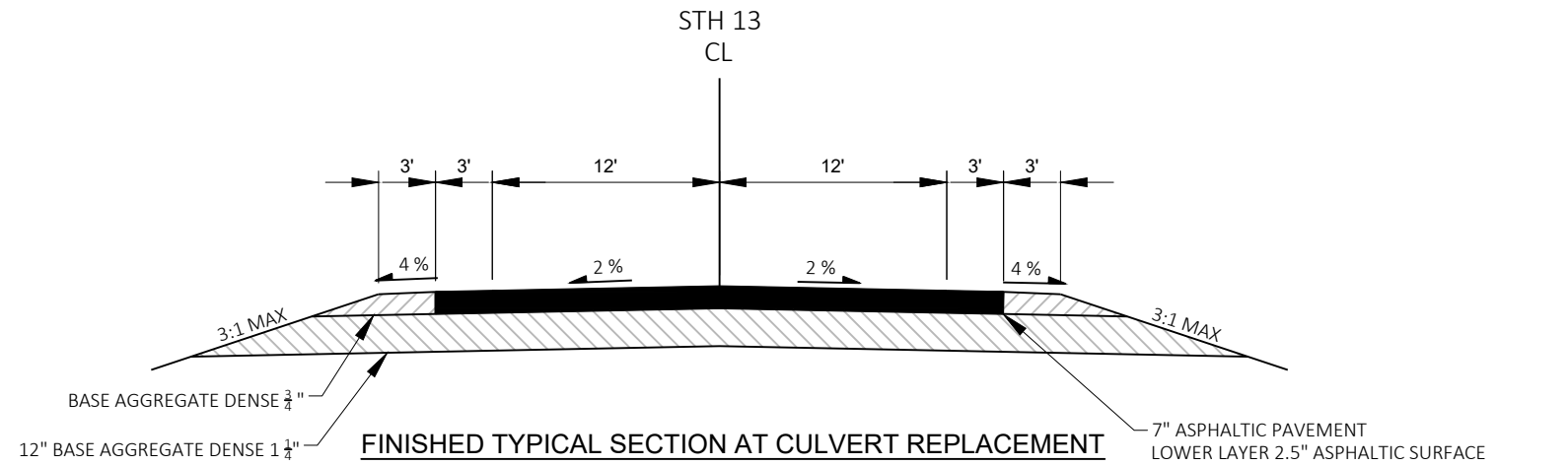


STA 81+50(3) TO STA 150+75(3)
 STA 157+90(3) TO STA 190+75(3)
 STA 201+30(3) TO STA 240+70(3)
 STA 251+85(3) TO STA 286+81(3)
 STA 289+43(3) TO STA 467+69(3)
 STA 481+00(3) TO STA 486+50(3)
 STA 491+50(3) TO STA 501+87(3)

BASE AGG. SHOULDER IS WIDENED TO 5' TO ACCOMMODATE BEAM GUARD



STA 150+75(3) TO STA 152+59(3)
 STA 153+62(3) TO STA 157+90(3)
 STA 190+75(3) TO STA 192+74(3)
 STA 193+96(3) TO STA 196+50(3)
 STA 240+70(3) TO STA 247+36(3)
 STA 249+82(3) TO STA 251+85(3)

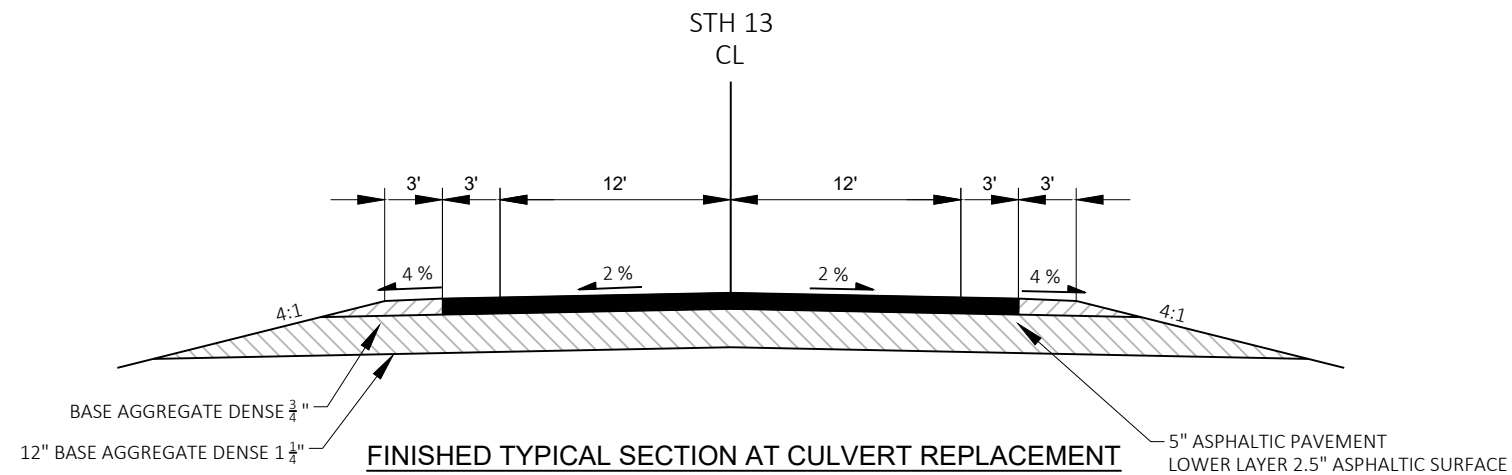


① Gravel shoulder width and side slopes may vary through project. Match existing conditions at culvert location.

STA 10+00(1) TO STA 5+92(4) ①

CULVERT PIPE LOCATIONS

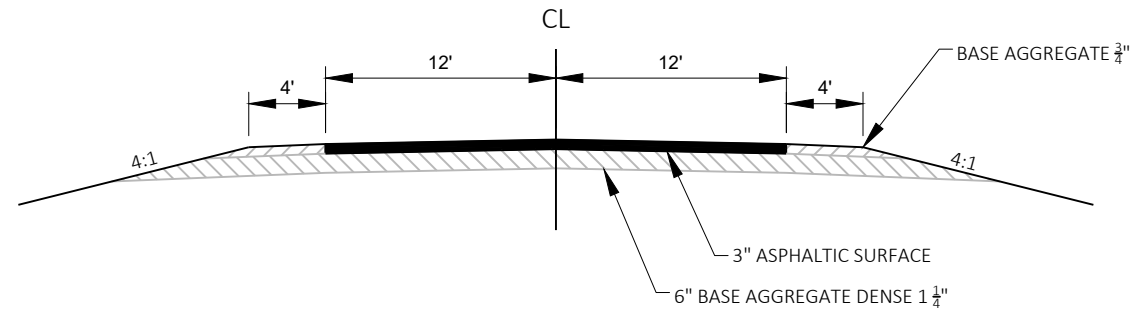
- STA 62+00 (1)
- STA 85+23 (1)
- STA 97+70 (1)
- STA 114+57 (1)
- STA 130+43 (1)
- STA 136+07 (1)
- STA 177+99 (1)
- STA 213+70 (1)
- STA 315+92 (2)
- STA 200+27 (3)
- STA 459+50 (3)



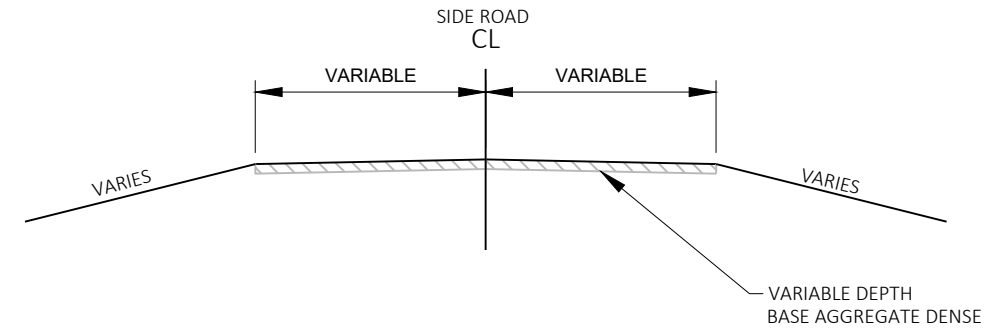
STA 5+92(4) TO STA 422+00(6) ①

CULVERT PIPE LOCATIONS

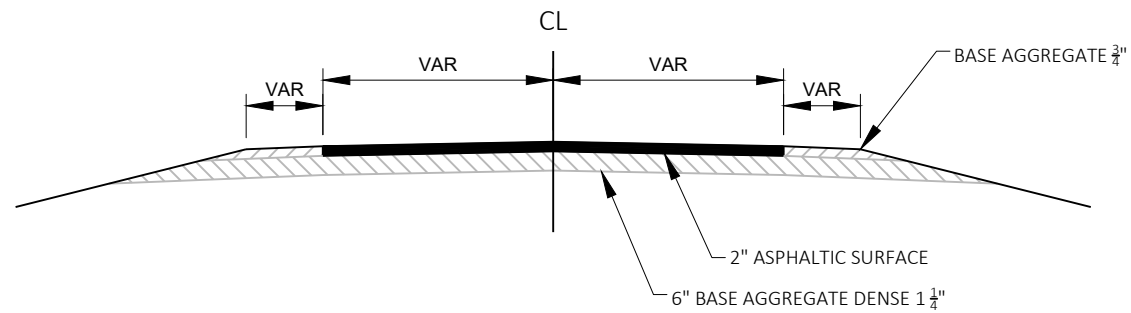
- STA 13+30 (4)
- STA 42+14 (4)
- STA 110+90 (4)
- STA 232+00 (5)
- STA 234+45 (5)
- STA 246+50 (5)
- STA 287+68 (5)
- STA 295+80 (5)
- STA 374+00 (6)



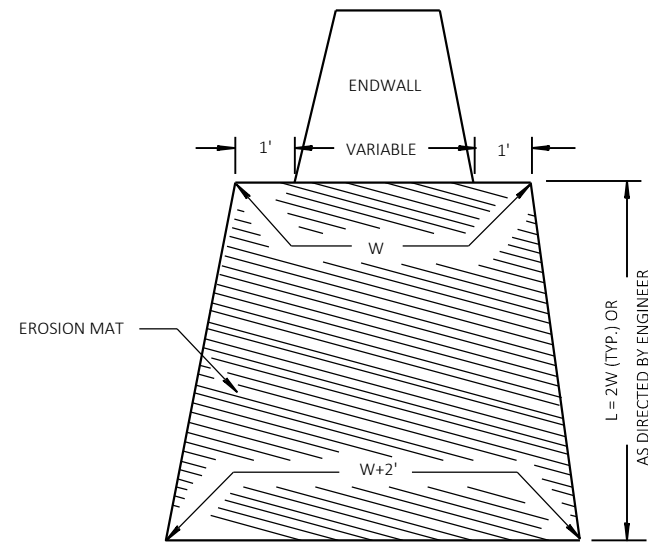
PROPOSED TYPICAL SECTION FOR SIDE ROADS



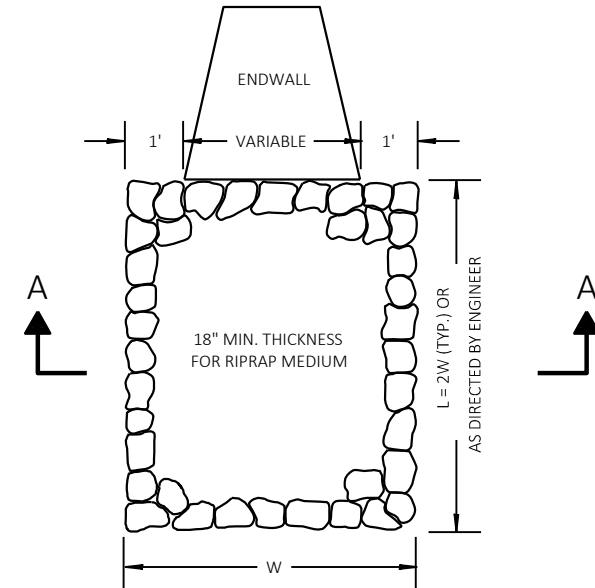
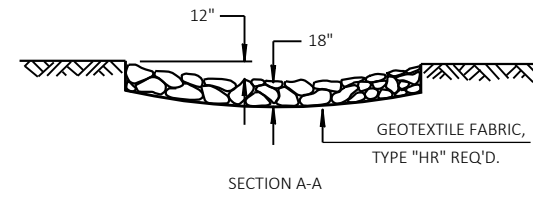
PROPOSED TYPICAL SECTION FOR UNPAVED SIDE ROAD



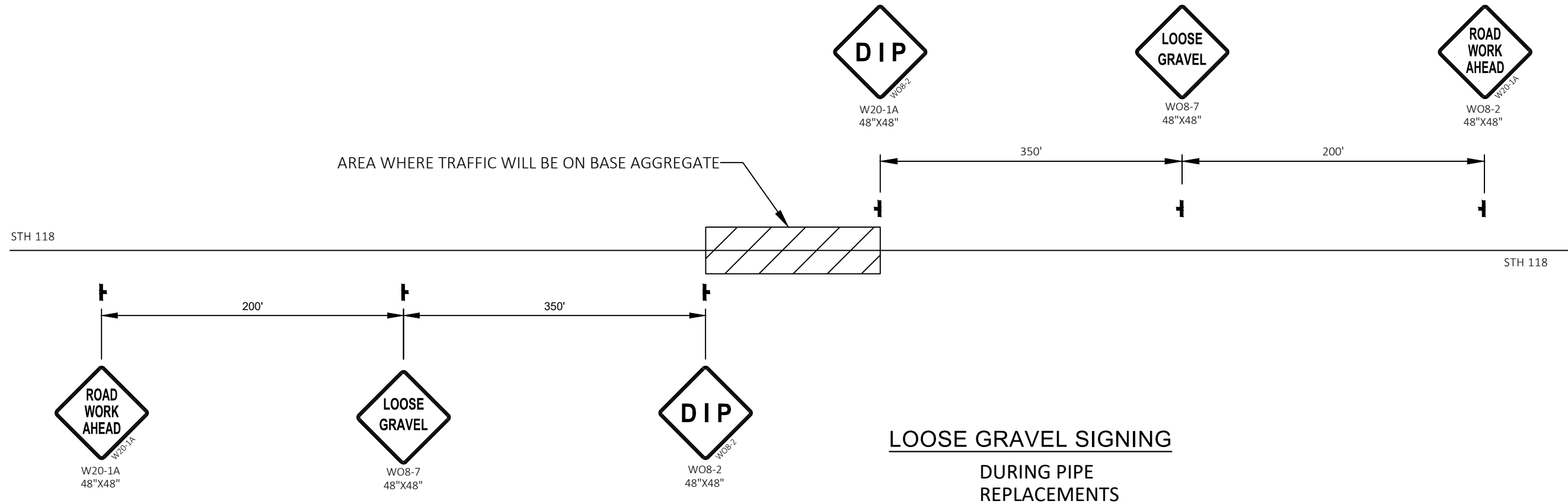
PROPOSED TYPICAL SECTION FOR VILLAGE STREETS



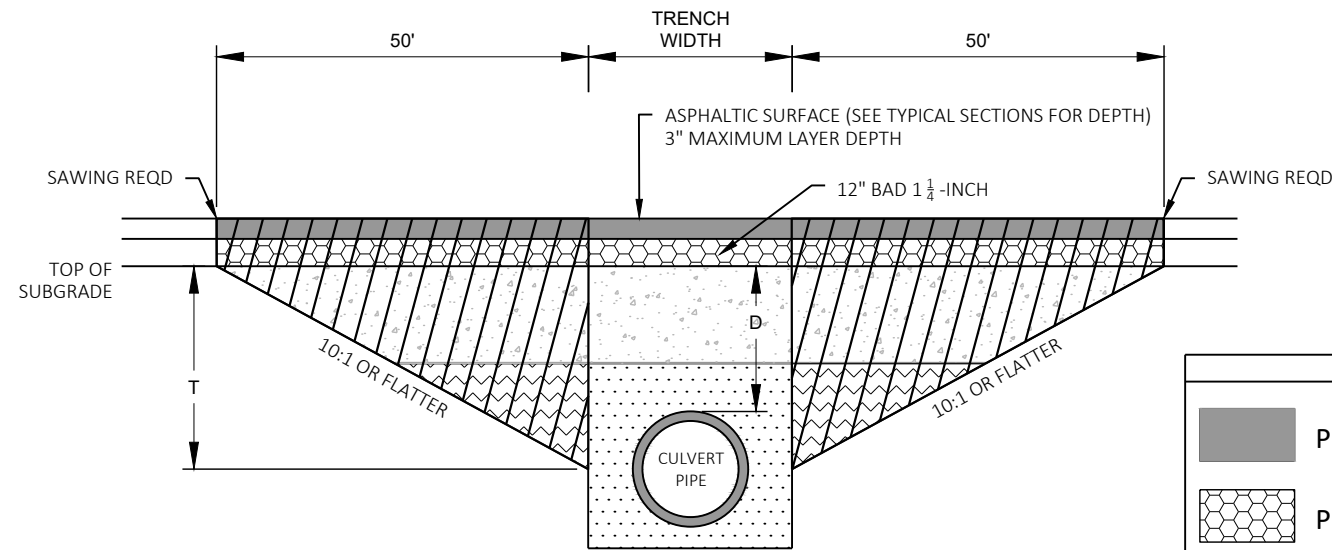
EROSION MAT TREATMENT AT CULVERTS



RIPRAP MEDIUM TREATMENT AT CULVERTS

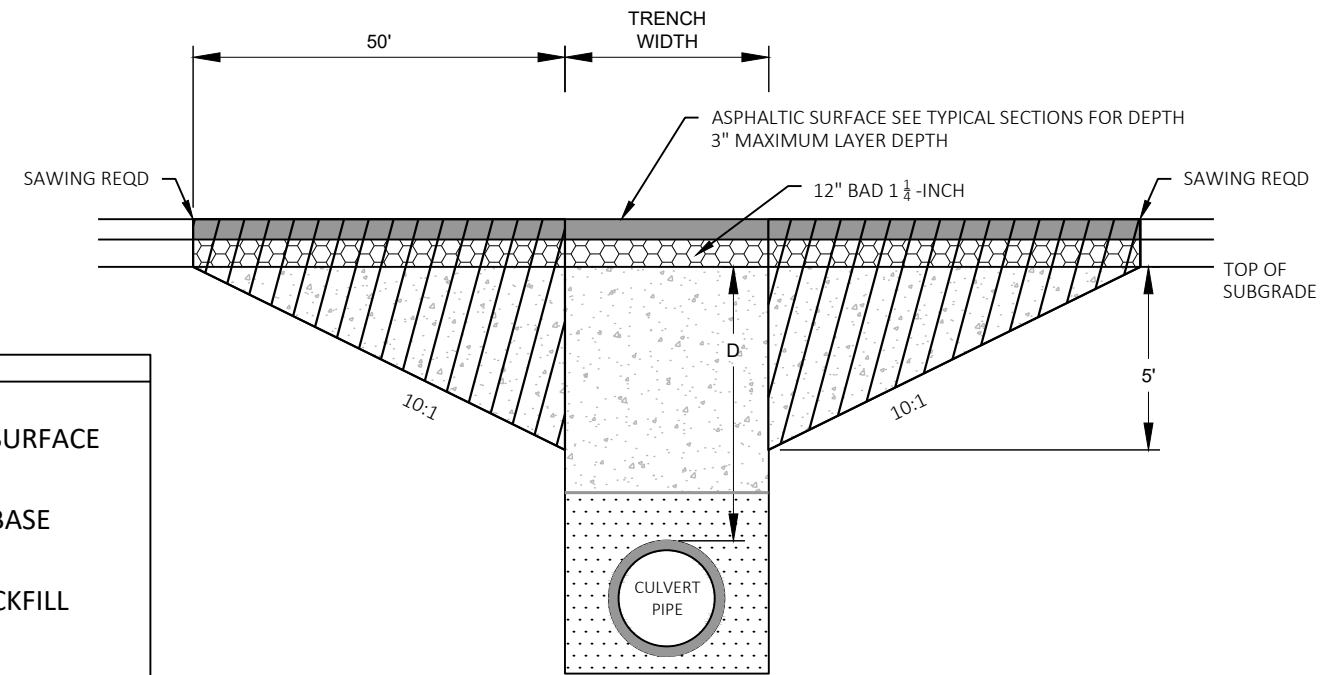


LOOSE GRAVEL SIGNING
DURING PIPE REPLACEMENTS



TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.

DEPTH D < 6 FT



DEPTH D ≥ 6 FT

KEY	
	PROPOSED SURFACE
	PROPOSED BASE
	TRENCH BACKFILL
	TRENCH OR FOUNDATION BACKFILL
	FOUNDATION BACKFILL
	TRANSITION CUT

CULVERT PIPE TRANSITION

NOTES

TRANSITION CUT IS PAID AS EXCAVATION COMMON.
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
BACKFILL TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
STH 13	62+00 (1)	2.3'	24	REPLACEMENT
STH 13	85+23 (1)	2.6'	24	REPLACEMENT
STH 13	97+70 (1)	4.9'	24	REPLACEMENT
STH 13	114+57 (1)	1'	24	REPLACEMENT
STH 13	130+43 (1)	1'	28 X 20	REPLACEMENT
STH 13	136+07 (1)	1.3'	24	REPLACEMENT
STH 13	177+99 (1)	1'	28 X 20	REPLACEMENT
STH 13	213+70 (1)	2'	28 X 20	REPLACEMENT
STH 13	315+92 (2)	3'	84	REPLACEMENT
STH 13	200+27 (3)	5'	36	REPLACEMENT
STH 13	459+50 (3)	1.5'	49 X 33	REPLACEMENT
STH 13	13+30 (4)	1	24	REPLACEMENT
STH 13	42+14 (4)	1'	24	REPLACEMENT
STH 13	110+90 (4)	2.5'	24	REPLACEMENT
STH 13	232+00 (5)	1.7'	24	REPLACEMENT
STH 13	234+45 (5)	3.7'	24	REPLACEMENT
STH 13	246+50 (5)	4.7'	24	REPLACEMENT
STH 13	287+68 (5)	1.3'	24	REPLACEMENT
STH 13	295+80 (5)	2.1'	24	REPLACEMENT
STH 13	374+00 (6)	2'	24	REPLACEMENT

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN

13 PROPOSED SIGN

13 EXISTING SIGN

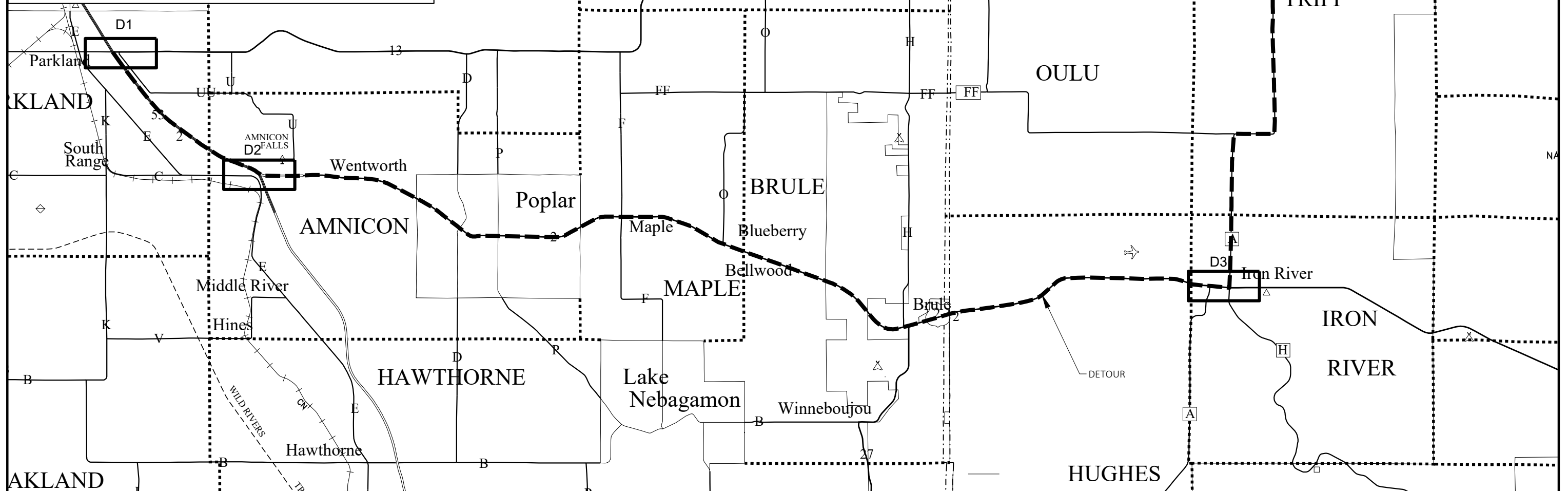
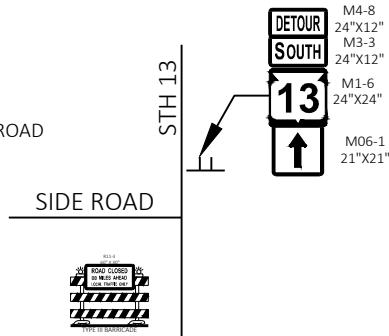
D1: LOCATION 1

REASSURANCES TO BE PLACED AT THE FOLLOWING INTERSECTIONS

- CTH U
- CTH D
- CTH P
- CTH F
- CTH O

ROAD NAME, DISTANCE TO CLOSED ROAD

- CTH U, 24 MILES AHEAD
- CTH D, 18 MILES AHEAD
- CTH P, 17.2 MILES AHEAD
- CTH F, 14.3 MILES AHEAD
- CTH O, 9 MILES AHEAD



PROJECT NO: 8510-03-72

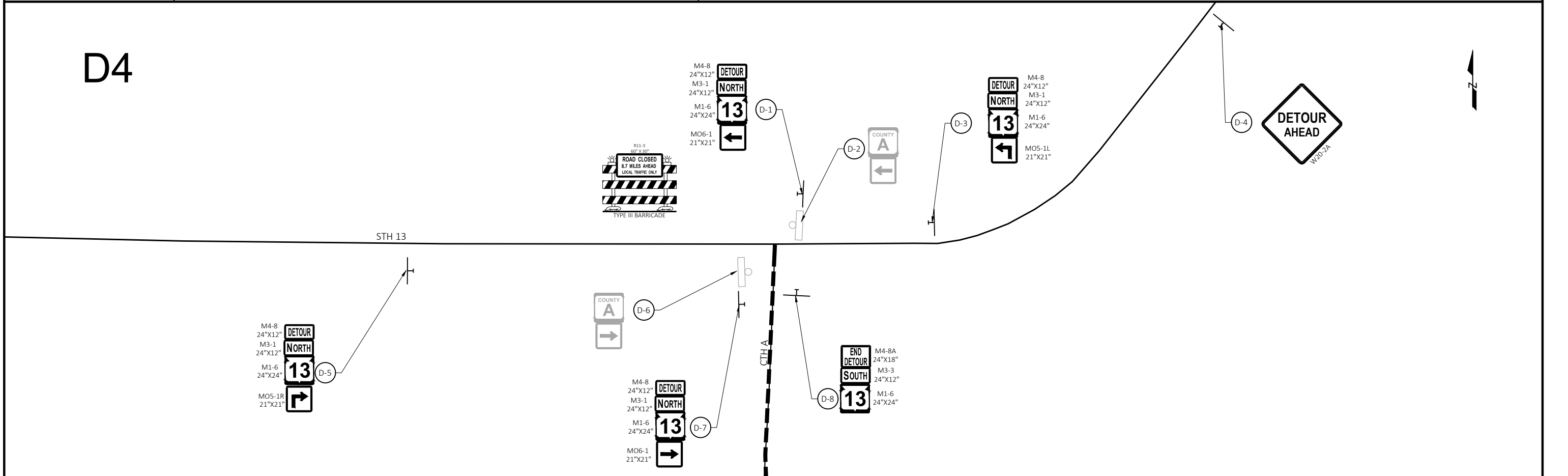
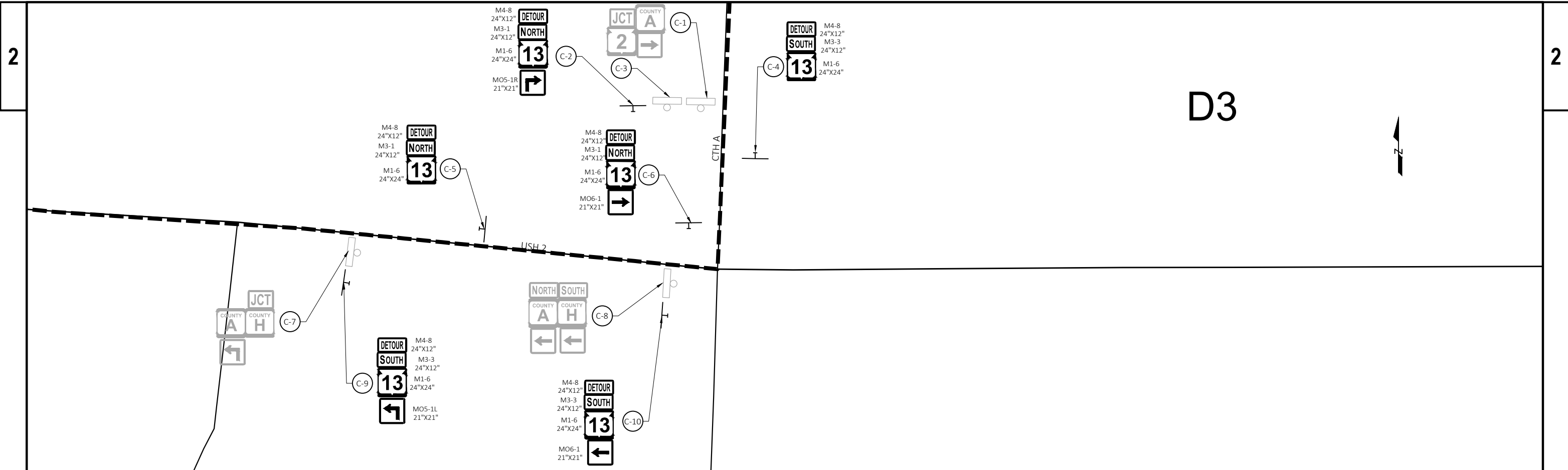
HWY: 13

COUNTY: BAYFIELD & DOUGLAS

DETOUR

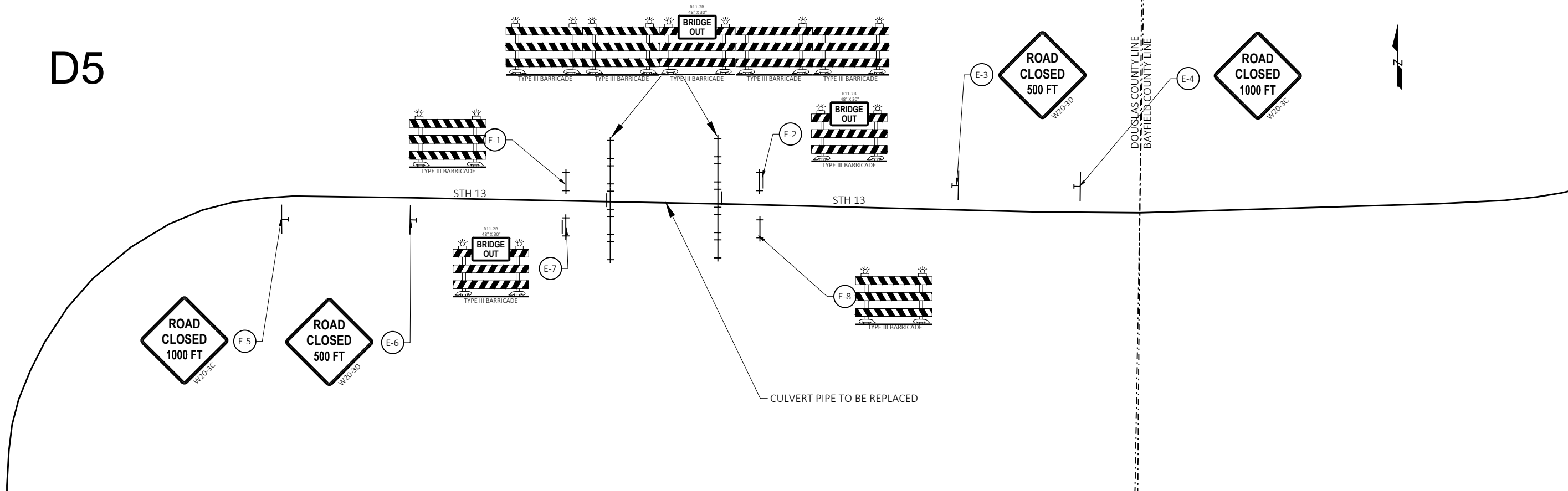
SHEET

E

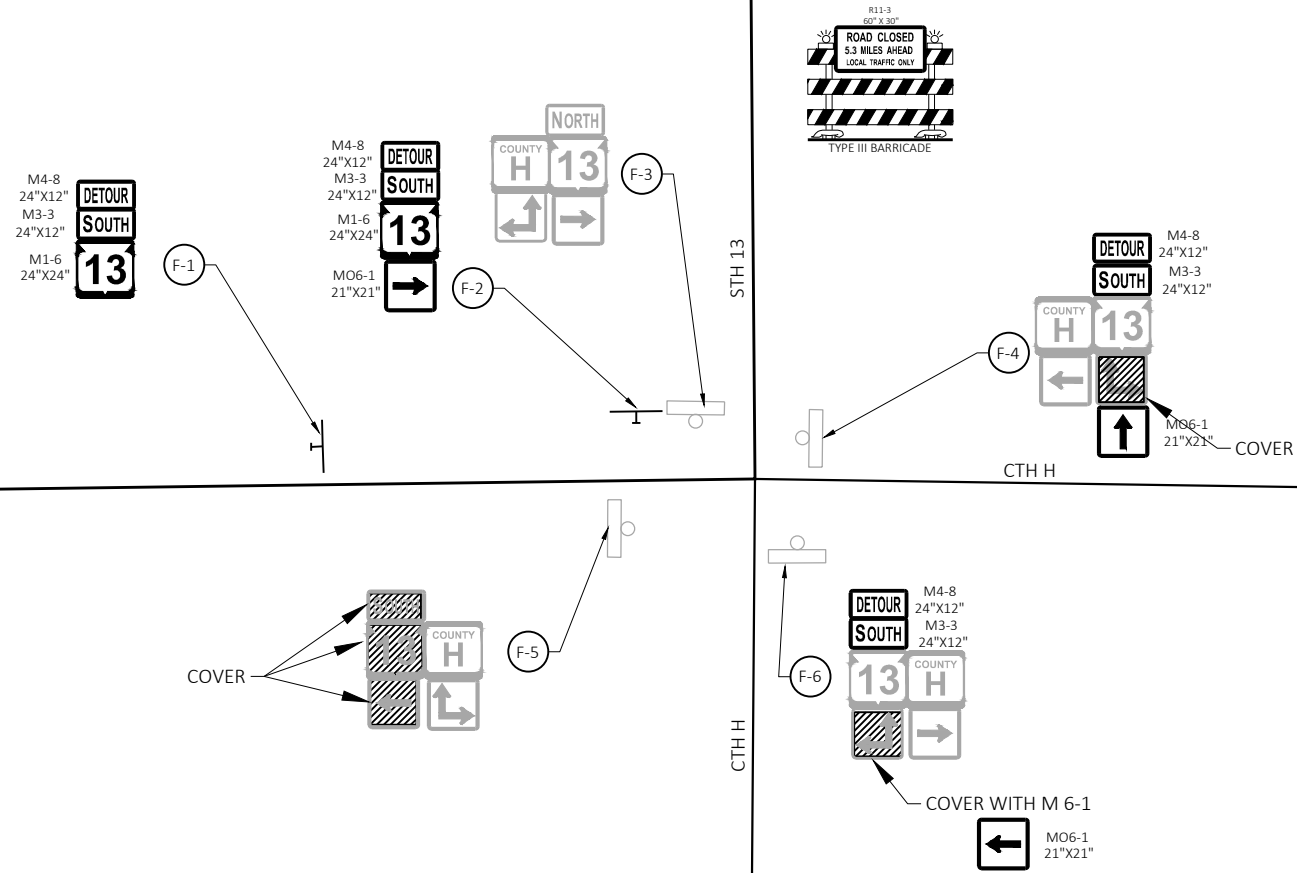


PROJECT NO: 8510-03-72	HWY: 13	COUNTY: BAYFIELD & DOUGLAS	DETOUR	SHEET	E
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D5



D6



Estimate Of Quantities

8510-03-72

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	19.000	19.000
0004	203.0220	Removing Structure (structure) 01. Station 315+92 (2)	EACH	1.000	1.000
0006	205.0100	Excavation Common	CY	4,464.000	4,464.000
0008	208.1500.S	Temporary Lane Shift During Culvert Work	EACH	19.000	19.000
0010	209.2500	Backfill Granular Grade 2	TON	500.000	500.000
0012	213.0100	Finishing Roadway (project) 01. 8510-03-72	EACH	1.000	1.000
0014	305.0110	Base Aggregate Dense 3/4-Inch	TON	566.000	566.000
0016	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	3,011.000	3,011.000
0018	455.0605	Tack Coat	GAL	496.000	496.000
0020	465.0105	Asphaltic Surface	TON	1,391.000	1,391.000
0022	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	24.000	24.000
0024	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	3.000	3.000
0026	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	8.000	8.000
0028	520.1048	Apron Endwalls for Culvert Pipe 48-Inch	EACH	4.000	4.000
0030	520.1084	Apron Endwalls for Culvert Pipe 84-Inch	EACH	2.000	2.000
0032	520.3424	Culvert Pipe Class III-A Non-metal 24-Inch	LF	552.000	552.000
0034	520.3436	Culvert Pipe Class III-A Non-metal 36-Inch	LF	104.000	104.000
0036	520.8700	Cleaning Culvert Pipes	EACH	7.000	7.000
0038	520.9700.S	Culvert Pipe Liners (size) 01. 32 Inch	LF	636.000	636.000
0040	520.9750.S	Cleaning Culvert Pipes for Liner Verification	EACH	3.000	3.000
0042	521.1228	Apron Endwalls for Pipe Arch Steel 28x20-Inch	EACH	2.000	2.000
0044	521.6184	Culvert Pipe Corrugated Steel Aluminum Coated 84-Inch	LF	86.000	86.000
0046	521.6728	Pipe Arch Corrugated Steel Aluminum Coated 28x20-Inch	LF	64.000	64.000
0048	522.0424	Culvert Pipe Reinforced Concrete Class IV 24-Inch	LF	454.000	454.000
0050	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	16.000	16.000
0052	522.2429	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 29x45-Inch	LF	50.000	50.000
0054	522.2629	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 29x45-Inch	EACH	2.000	2.000
0056	525.0336	Apron Endwalls for Culvert Pipe Aluminum 36-Inch	EACH	4.000	4.000
0058	606.0200	Riprap Medium	CY	58.000	58.000
0060	616.0700.S	Fence Safety	LF	325.000	325.000
0062	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8510-03-72	EACH	1.000	1.000
0064	619.1000	Mobilization	EACH	1.000	1.000
0066	624.0100	Water	MGAL	452.000	452.000
0068	625.0100	Topsoil	SY	220.000	220.000
0070	625.0500	Salvaged Topsoil	SY	5,225.000	5,225.000
0072	628.1504	Silt Fence	LF	1,910.000	1,910.000
0074	628.1520	Silt Fence Maintenance	LF	1,910.000	1,910.000
0076	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0078	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0080	628.2004	Erosion Mat Class I Type B	SY	5,158.000	5,158.000
0082	628.2008	Erosion Mat Urban Class I Type B	SY	86.000	86.000
0084	628.7555	Culvert Pipe Checks	EACH	51.000	51.000
0086	629.0210	Fertilizer Type B	CWT	3.300	3.300
0088	630.0120	Seeding Mixture No. 20	LB	139.000	139.000
0090	630.0140	Seeding Mixture No. 40	LB	2.000	2.000
0092	630.0170	Seeding Mixture No. 70	LB	12.000	12.000
0094	630.0500	Seed Water	MGAL	5.900	5.900
0096	633.5200	Markers Culvert End	EACH	44.000	44.000
0098	642.5001	Field Office Type B	EACH	1.000	1.000

Estimate Of Quantities

8510-03-72

Line	Item	Item Description	Unit	Total	Qty
0100	643.0300	Traffic Control Drums	DAY	615.000	615.000
0102	643.0420	Traffic Control Barricades Type III	DAY	114.000	114.000
0104	643.0715	Traffic Control Warning Lights Type C	DAY	228.000	228.000
0106	643.0900	Traffic Control Signs	DAY	1,220.000	1,220.000
0108	643.0910	Traffic Control Covering Signs Type I	EACH	5.000	5.000
0110	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0112	643.5000	Traffic Control	EACH	1.000	1.000
0114	645.0120	Geotextile Type HR	SY	115.000	115.000
0116	646.1020	Marking Line Epoxy 4-Inch	LF	3,698.000	3,698.000
0118	650.4500	Construction Staking Subgrade	LF	1,408.000	1,408.000
0120	650.5000	Construction Staking Base	LF	1,408.000	1,408.000
0122	650.6000	Construction Staking Pipe Culverts	EACH	20.000	20.000
0124	650.9911	Construction Staking Supplemental Control (project) 01. 8510-03-72	EACH	1.000	1.000
0126	690.0150	Sawing Asphalt	LF	1,310.000	1,310.000
0128	SPV.0060	Special 01. Grading and Shaping Pipe Ends	EACH	1.000	1.000

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STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS EACH
62+00(1)	LT&RT	1
85+23(1)	LT&RT	1
97+70(1)	LT&RT	1
114+57(1)	LT&RT	1
130+43(1)	LT&RT	1
136+07(1)	LT&RT	1
177+99(1)	LT&RT	1
213+70(1)	LT&RT	1
200+27(3)	LT&RT	1
459+50(3)	LT&RT	1
13+30(4)	LT&RT	1
42+14(4)	LT&RT	1
110+90(4)	LT&RT	1
232+00(5)	LT&RT	1
234+45(5)	LT&RT	1
246+50(5)	LT&RT	1
287+68(5)	LT&RT	1
295+80(5)	LT&RT	1
374+00(6)	LT&RT	1
	TOTAL 0010	19

STATION	LOCATION	203.0220.01 REMOVING STRUCTURE (STA 315+92) EACH
315+92 (2)	CULVERT	1
	TOTAL 0010	1

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STATION	LOCATION	205.0100 EXCAVATION COMMON CY	209.2500 BACKFILL GRANULAR GRADE 2 TON
62+00(1)	CULVERT	211	-
85+23(1)	CULVERT	245	-
97+70(1)	CULVERT	582	-
114+57(1)	CULVERT	93	-
130+43(1)	CULVERT	84	-
136+07(1)	CULVERT	117	-
177+99(1)	CULVERT	84	-
213+70(1)	CULVERT	168	-
315+92(2)	CULVERT	433	-
200+27(3)	CULVERT	433	-
459+50(3)	CULVERT	133	-
13+30 (4)	CULVERT	93	-
42+14 (4)	CULVERT	93	-
110+90 (4)	CULVERT	233	-
232+00 (5)	CULVERT	151	-
234+45 (5)	CULVERT	389	-
246+50 (5)	CULVERT	433	-
287+68 (5)	CULVERT	117	-
295+80 (5)	CULVERT	190	-
374+00(6)	CULVERT	180	-
	UNDISTRIBUTED		500
	TOTAL 0010	4,464	500

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STATION	TO	STATION	LOCATION	305.0110	305.0120	624.0100	STATION	TO	STATION	LOCATION	455.0605	465.0105
				BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	WATER MGAL					TACK COAT GAL	ASPHALTIC SURFACE TON
61+75(1)		62+35 (1)	RT<	27	154	23	61+75(1)	-	62+35 (1)	RT<	16.3	91.5
84+85 (1)		85+61 (1)	RT<	29	168	25	84+85 (1)	-	85+61 (1)	RT<	17.7	99.3
97+09 (1)		98+31 (1)	RT<	46	275	41	97+09 (1)	-	98+31 (1)	RT<	28.5	159.4
114+25 (1)		114+79 (1)	RT<	17	93	14	114+25 (1)	-	114+79 (1)	RT<	10.3	57.5
130+22 (1)		130+64 (1)	RT<	16	88	13	130+22 (1)	-	130+64 (1)	RT<	9.7	54.2
135+83 (1)		136+32 (1)	RT<	19	107	16	135+83 (1)	-	136+32 (1)	RT<	11.7	65.3
177+78 (1)		178+20 (1)	RT<	16	88	13	177+78 (1)	-	178+20 (1)	RT<	9.7	54.2
213+39 (1)		214+01 (1)	RT<	23	134	20	213+39 (1)	-	214+01 (1)	RT<	14.4	80.4
315+37 (2)		316+47 (2)	RT<	42	233	35	315+37 (2)	-	316+47 (2)	RT<	25.7	143.7
199+74 (3)		200+80 (3)	RT<	40	233	35	199+74 (3)	-	200+80 (3)	RT<	138.5	13.1
459++22 (3)		459+78 (3)	RT<	21	117	18	459++22 (3)	-	459+78 (3)	RT<	73.2	10.3
13+08 (4)		13+52 (4)	RT<	14	93	14	13+08 (4)	-	13+52 (4)	RT<	10.3	41.1
41+92 (4)		42+36 (4)	RT<	14	93	14	41+92 (4)	-	42+36 (4)	RT<	10.3	41.1
110+53 (4)		111+27 (4)	RT<	24	163	24	110+53 (4)	-	111+27 (4)	RT<	17.3	69.1
231+71 (5)		232+29(5)	RT<	19	126	19	231+71 (5)	-	232+29(5)	RT<	13.5	54.1
233+96 (5)		234+94 (5)	RT<	32	219	33	233+96 (5)	-	234+94 (5)	RT<	22.9	91.5
245+98 (5)		247+02 (5)	RT<	34	233	35	245+98 (5)	-	247+02 (5)	RT<	24.3	97.1
287+43 (5)		287+93 (5)	RT<	16	107	16	287+43 (5)	-	287+93 (5)	RT<	11.7	46.7
295+47 (5)		296+13 (5)	RT<	22	145	22	295+47 (5)	-	296+13 (5)	RT<	15.4	61.6
373+68 (6)		374+32 (6)	RT<	21	140	21	373+68 (6)	-	374+32 (6)	RT<	14.9	59.7
		UNDISTRIBUTED		75								
		TOTAL 0010		566	3,011	452			TOTAL 0010		496	1,391

460.9000.S.01

MATERIAL
TRANSFER VEHICLE
(8510-02-77)

LOCATION	EACH
PROJECT	1
TOTAL 0010	1

STATION	LOCATION	208.1500.S 520.3424 520.3436 521.6184 521.6728 522.0424 522.2429						
		TEMPORARY LANE SHIFT DURING CULVERT WORK EACH	CULVERT PIPE CLASS III-A NON- METAL 24-INCH LF	CULVERT PIPE CLASS III-A NON- METAL 36-INCH LF	CULVERT PIPE CORRUGATED STEEL ALUMINUM COATED 84-INCH LF	PIPE ARCH CORRUGATED STEEL ALUMINUM COATED 28X20- INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 29X45-INCH LF
62+00(1)		1	70	-	-	-	-	-
85+23(1)		1	68	-	-	-	-	-
97+70(1)		1	60	-	-	-	-	-
114+57(1)		1	-	-	-	-	64	-
130+43(1)		1	-	-	-	-	56	-
136+07(1)		1	-	-	-	-	54	-
177+99(1)		1	-	-	-	-	58	-
213+70(1)		1	-	-	-	64	-	-
315+96(2)		-	-	-	86	-	-	-
200+27(3)		1	-	104	-	-	-	-
459+50(3)		1	-	-	-	-	-	50
13+30(4)		1	-	-	-	-	38	-
42+14(4)		1	-	-	-	-	52	-
110+90(4)		1	60	-	-	-	-	-
232+00(5)		1	-	-	-	-	74	-
234+45(5)		1	76	-	-	-	-	-
246+50(5)		1	102	-	-	-	-	-
287+68(5)		1	-	-	-	-	58	-
295+80(5)		1	60	-	-	-	-	-
374+00(6)		1	56	-	-	-	-	-
TOTAL 0010		19	552	104	86	64	454	50

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520.1024 520.1030 520.1036 520.1048 520.1084 520.8700 521.1228 522.1024 522.2629 525.0336 633.5200

STATION	LOCATION	APRON ENDWALLS FOR CULVERT PIPE				APRON ENDWALLS FOR CULVERT PIPE 84-INCH EACH	CLEANING CULVERT PIPES EACH	APRON ENDWALLS FOR PIPE ARCH STEEL 28X20-INCH EACH	APRON ENDWALLS REINFORCED CONCRETE 24-INCH EACH	APRON ENDWALLS REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 29X45-INCH EACH	APRON ENDWALLS FOR CULVERT PIPE ALUMINUM 36-INCH EACH	MARKERS CULVERT END EACH	REMARKS
		24-INCH EACH	30-INCH EACH	36-INCH EACH	48-INCH EACH								
51+20(1)	LT&RT	-	-	-	-	-	-	-	-	-	2		
62+00(1)	LT&RT	2	-	-	-	-	-	-	-	-	2		
85+23(1)	LT&RT	2	-	-	-	-	-	-	-	-	2		
97+70(1)	LT&RT	2	-	-	-	-	-	-	-	-	2		
114+57(1)	LT&RT	-	-	-	-	-	-	2	-	-	2		
130+43(1)	LT&RT	-	-	-	-	-	-	2	-	-	2		
136+07(1)	LT&RT	-	-	-	-	-	-	2	-	-	2		
148+76(1)	LT&RT	2	-	-	-	-	-	-	-	-	2		
177+99(1)	LT&RT	-	-	-	-	-	-	2	-	-	2		
213+70(1)	LT&RT	-	-	-	-	-	2	-	-	-	2		
233+30(1)	LT&RT	-	-	-	-	-	-	-	-	-	2		
263+00(1)	RT	1	-	-	-	-	-	-	-	-	-		
292+93(1)	LT&RT	-	-	-	-	-	-	-	-	2	-		
299+28(2)	LT&RT	-	-	-	-	-	-	-	-	2	-		
315+96(2)	LT&RT	-	-	-	-	2	-	-	-	-	2		
82+34(3)	LT&RT	-	-	2	-	-	-	-	-	-	-		
98+20(3)	LT	1	-	-	-	-	1	-	-	-	-		
103+98(3)	LT	1	-	-	-	-	-	-	-	-	-		
129+39(3)	RT	-	-	1	-	-	1	-	-	-	-		
200+27(3)	LT&RT	-	-	2	-	-	-	-	-	-	2		
206+19(3)	RT	-	-	1	-	-	-	-	-	-	-		
226+85(3)	LT&RT	-	-	-	-	-	1	-	-	-	-		
231+80(3)	LT	1	-	-	-	-	1	-	-	-	-		
303+57(3)	LT&RT	-	-	2	-	-	-	-	-	-	-		
310+04(3)	LT	2	-	-	-	-	-	-	-	-	-	REPLACE AEW ON LT FOR BOTH PIPES	
363+20(3)	RT	-	-	-	1	-	-	-	-	-	-		
373+15(3)	RT	-	-	-	1	-	-	-	-	-	-		
377+48(3)	RT	-	1	-	-	-	-	-	-	-	-		
392+35(3)	LT	-	1	-	-	-	-	-	-	-	-		
421+50(3)	LT&RT	-	-	-	-	-	1	-	-	-	-		
452+00(3)	LT&RT	-	-	-	-	-	1	-	-	-	-		
459+50(3)	LT&RT	-	-	-	-	-	-	-	2	-	-		
13+30(4)	LT&RT	-	-	-	-	-	-	2	-	-	2		
36+56(4)	LT&RT	-	-	-	2	-	-	-	-	-	-		
42+14(4)	LT&RT	-	-	-	-	-	-	2	-	-	2		
110+90(4)	LT&RT	2	-	-	-	-	-	-	-	-	2		
130+60(4)	RT	-	1	-	-	-	-	-	-	-	-		
153+50(4)	LT&RT	-	-	-	-	-	1	-	-	-	-		
232+00(5)	LT&RT	-	-	-	-	-	-	2	-	-	2		
234+45(5)	LT&RT	2	-	-	-	-	-	-	-	-	2		
246+50(5)	LT&RT	2	-	-	-	-	-	-	-	-	2		
287+68(5)	LT&RT	-	-	-	-	-	-	2	-	-	2		
295+80(5)	LT&RT	2	-	-	-	-	-	-	-	-	2		
374+00(6)	LT&RT	2	-	-	-	-	-	-	-	-	2		
TOTAL 0010		24	3	8	4	2	7	2	16	2	4	44	

PROJECT NO: 8510-03-72

HWY: 13

COUNTY: BAYFIELD

MISCELLANEOUS QUANTITIES

SHEET

E

STATION	LOCATION	520.9700.S.01 CULVERT PIPE LINERS (32") LF	520.9750.S CLEANING CULVERT PIPES FOR LINER VERIFICATION EACH
303+95 (6)	CULVERT	236	1
323+02 (6)	CULVERT	158	1
330+35 (6)	CULVERT	242	1
TOTAL 0010		636	3

LOCATION	642.5001 FIELD OFFICE TYPE B EACH	213.0100.01 FINISHING ROADWAY (8510- 03-72) EACH	618.0100.01 MAINTENANCE AND REPAIR OF HAUL 8510-03-72) EACH	619.1000 MOBILIZATION EACH
PROJECT	1.0	1	1	1.0
TOTAL 0010	1.0	1	1	1.0

STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE TYPE HR SY
77+04 (1)	RT	27	54
119+01 (4)	LT	8	17
121+00 (4)	LT	22	44
TOTAL 0010		58	115

STATION	TO	STATION	LOCATION	616.0700.S FENCE SAFETY LF	REMARKS
130+00 (1)	-	130+75 (1)	LT	75	PROTECT SWEET COLTS FOOT
134+80 (1)	-	135+55 (1)	LT	75	PROTECT SWEET COLTS FOOT
135+05 (1)	-	135+55 (1)	RT	50	PROTECT SWEET COLTS FOOT
148+10 (1)	-	148+85 (1)	LT	75	PROTECT SWEET COLTS FOOT
148+40 (1)	-	148+90 (1)	RT	50	PROTECT SWEET COLTS FOOT
TOTAL 0010				325	

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STATION	TO	STATION	LOCATION	625.0100	625.0500	628.1504	628.1520	628.1905	628.1910	628.2004	628.2008	628.7555	629.0210	630.0120	630.0140	630.0170	630.0500
				TOPSOIL SY	SALVAGED TOPSOIL SY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	EROSION MAT CLASS I TYPE B SY	EROSION MAT URBAN CLASS I TYPE B SY	CULVERT PIPE CHECKS EACH	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEEDING MIXTURE NO. 40 LB	SEEDING MIXTURE NO. 70 LB	SEED WATER MGAL
			PROJECT	-	-	-	-	3	3	-	-	-	-	-	-	-	-
61+58 (1)		62+29 (1)	RT<	-	201	165	165	-	-	201	-	2	0.13	5	-	-	0.22
84+79 (1)		85+63 (1)	RT<	-	232	90	90	-	-	232	-	2	0.15	6	-	-	0.26
97+04 (1)		98+25 (1)	RT<	-	331	125	125	-	-	331	-	2	0.21	9	-	-	0.37
114+18 (1)		114+91 (1)	RT<	-	111	60	60	-	-	111	-	2	0.07	3	-	-	0.12
130+15 (1)		130+56 (1)	RT<	-	117	120	120	-	-	117	-	2	0.07	3	-	-	0.13
134+75 (1)		135+28 (1)	RT<	-	141	125	125	-	-	141	-	2	0.09	4	-	-	0.16
148+38 (1)		148+61 (1)	RT<	-	83	90	90	-	-	83	-	2	0.05	2	-	-	0.09
177+68(1)		178+09 (1)	RT<	-	149	70	70	-	-	149	-	2	0.09	4	-	-	0.17
213+37 (1)		213+98 (1)	RT<	-	201	165	165	-	-	201	-	2	0.13	5	-	-	0.22
262+92 (1)		263+07 (1)	RT	-	36	-	-	-	-	36	-	-	0.02	1	-	-	0.04
292+06 (2)		292+32 (2)	RT<	-	97	-	-	-	-	97	-	-	0.06	3	-	-	0.11
299+08 (2)		299+33 (2)	RT<	-	92	60	60	-	-	92	-	-	0.06	2	-	-	0.10
315+35 (2)		316+35 (2)	RT<	-	562	270	270	-	-	562	-	7	0.35	15	-	-	0.62
82+12 (3)		82+12 (3)	RT<	-	92	-	-	-	-	92	-	-	0.06	2	-	-	0.10
98+04 (3)		98+36 (3)	LT	-	46	-	-	-	-	46	-	-	0.03	1	-	-	0.05
103+98 (3)		104+20 (3)	LT	-	18	60	60	-	-	18	-	-	0.01	0	-	-	0.02
129+04 (3)		129+40 (3)	RT	-	46	-	-	-	-	46	-	-	0.03	1	-	-	0.05
199+74 (3)		200+80 (3)	RT<	-	500	-	-	-	-	500	-	3	0.32	14	-	-	0.56
205+86 (3)		206+23 (3)	RT	-	46	-	-	-	-	46	-	-	0.03	1	-	-	0.05
231+78 (3)		232+02 (3)	LT	-	38	50	50	-	-	38	-	-	0.02	1	-	-	0.04
303+18 (3)		304+31 (3)	RT<	-	44	-	-	-	-	44	-	-	0.03	1	-	-	0.05
310+01 (3)		310+27 (3)	LT	-	22	-	-	-	-	22	-	-	0.01	1	-	-	0.02
363+10 (3)		363+41 (3)	RT	-	46	-	-	-	-	46	-	-	0.03	1	-	-	0.05
373+37 (3)		373+69 (3)	LT	-	22	-	-	-	-	22	-	-	0.01	1	-	-	0.02
377+48 (3)		377+68 (3)	RT	-	22	-	-	-	-	22	-	-	0.01	1	-	-	0.02
392+32 (3)		392+53 (3)	LT	-	22	40	40	-	-	22	-	-	0.01	1	-	-	0.02
459+22 (3)		459+78 (3)	RT<	-	121	-	-	-	-	121	-	5	0.08	3	-	-	0.13
9+03 (4)		9+08 (4)	RT& LT	20	15	-	-	-	-	-	35	-	0.01	-	1	-	0.10
13+08 (4)		13+52 (4)	RT<	-	51	-	-	-	-	-	51	2	0.03	0	1	-	0.02
41+92 (4)		42+36 (4)	RT<	-	96	40	40	-	-	96	-	2	0.06	3	-	-	0.11
110+53 (4)		111+27 (4)	RT<	-	174	-	-	-	-	174	-	2	0.11	5	-	-	0.19
231+71 (5)		232+29(5)	RT<	-	187	-	-	-	-	187	-	2	0.12	5	-	-	0.21
233+96 (5)		234+94 (5)	RT<	-	320	70	70	-	-	320	-	2	0.20	9	-	-	0.36
245+98 (5)		247+02 (5)	RT<	-	460	200	200	-	-	460	-	2	0.29	12	-	-	0.51
287+43 (5)		287+93 (5)	RT<	-	147	-	-	-	-	147	-	2	0.09	4	-	-	0.16
295+47 (5)		296+13 (5)	RT<	-	176	60	60	-	-	176	-	2	0.11	5	-	-	0.20
373+68 (6)		374+32 (6)	RT<	-	160	50	50	-	-	160	-	2	0.10	4	-	-	0.18
			Wetland Areas UNDISTRIBUTED	200	-	-	-	-	-	-	-	-	-	-	-	12.00	-
			TOTAL 0010	220	5,225	1,910	1,910	3	3	5,158	86	51	3.3	139	2	12.0	5.9

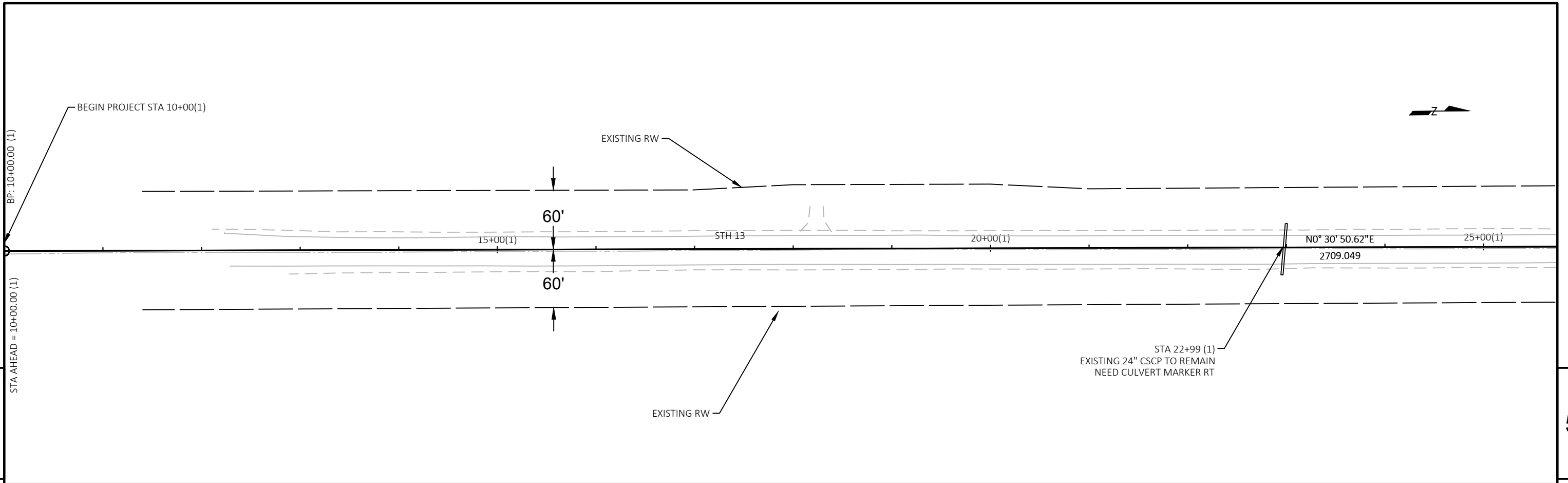
LOCATION	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	643.5000 TRAFFIC CONTROL EACH	REMARKS
PROJECT	-	-	-	-	-	-	1.0	
CULVERT REPLACEMENTS	540	-	-	-	-	-	-	
DETOUR	-	114	228	770	5	-	-	TRAFFIC CONTROL COVERING SIGNS TYPE I: 1 STAGE
ADVANCED WARNIG	-	-	-	400	-	-	-	
UNDISTRIBUTED	75	-	-	50	-	-	-	
STA 315+92	-	-	-	-	-	14.0	-	STH 13 CLOSED STARTING "DATE"
TOTAL 0010	615	114	228	1,220	5	14.0	1.0	

STATION	TO	STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH LF
61+75(1)	-	62+35 (1)	RT & LT	165
84+85 (1)	-	85+61 (1)	RT & LT	177
97+09 (1)	-	98+31 (1)	RT & LT	282
114+25 (1)	-	114+79 (1)	RT & LT	101
130+22 (1)	-	130+64 (1)	RT & LT	96
135+83 (1)	-	136+32 (1)	RT & LT	113
148+56 (1)	-	148+96 (1)	RT & LT	93
177+78 (1)	-	178+20 (1)	RT & LT	96
213+39 (1)	-	214+01 (1)	RT & LT	148
315+37 (2)	-	316+47 (2)	RT & LT	245
199+77 (3)	-	200+77 (3)	RT & LT	200
459+25 (3)	-	459+75 (3)	RT & LT	100
13+08 (4)	-	13+52 (4)	RT & LT	176
41+92 (4)	-	42+36 (4)	RT & LT	145
110+53 (4)	-	111+27 (4)	RT & LT	173
231+71 (5)	-	232+29(5)	RT & LT	199
233+96 (5)	-	234+94 (5)	RT & LT	319
245+98 (5)	-	247+02 (5)	RT & LT	337
287+43 (5)	-	287+93 (5)	RT & LT	163
295+47 (6)	-	296+13 (6)	RT & LT	157
373+68 (6)	-	374+32 (6)	RT & LT	217
TOTAL 0010				3,698

STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.9000 CONSTRUCTION STAKING CURB RAMPS EACH	650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. TBD) LS
9+10 (4)	PROJECT RT & LT CULVERTS	- - 1408	- - 1408	- - 20	- 3 -	1 - -
	TOTAL 0010	1,408	1,408	20	3	1

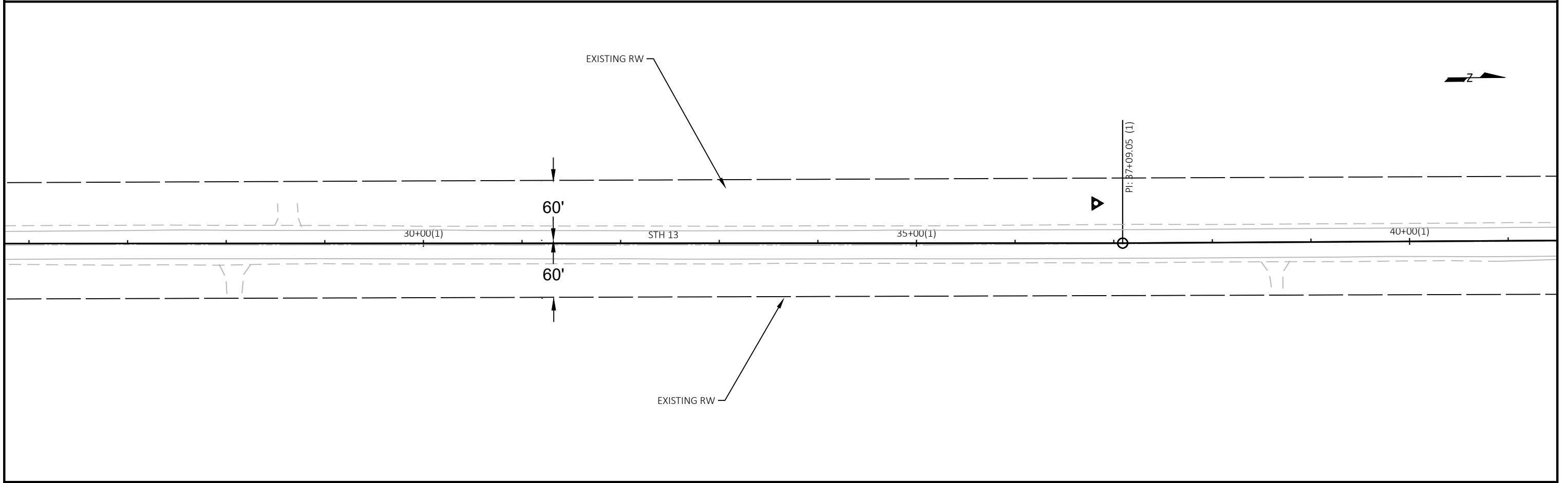
LOCATION	690.0150 SAWING ASPHALT LF
CULVERT REPLACEMENTS	1,310
TOTAL 0010	1,310

STATION	LOCATION	SPV.0060.01 GRADING AND SHAPING PIPE ENDS EACH
459+50 (3)	LT	1
	TOTAL 0010	1



5

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






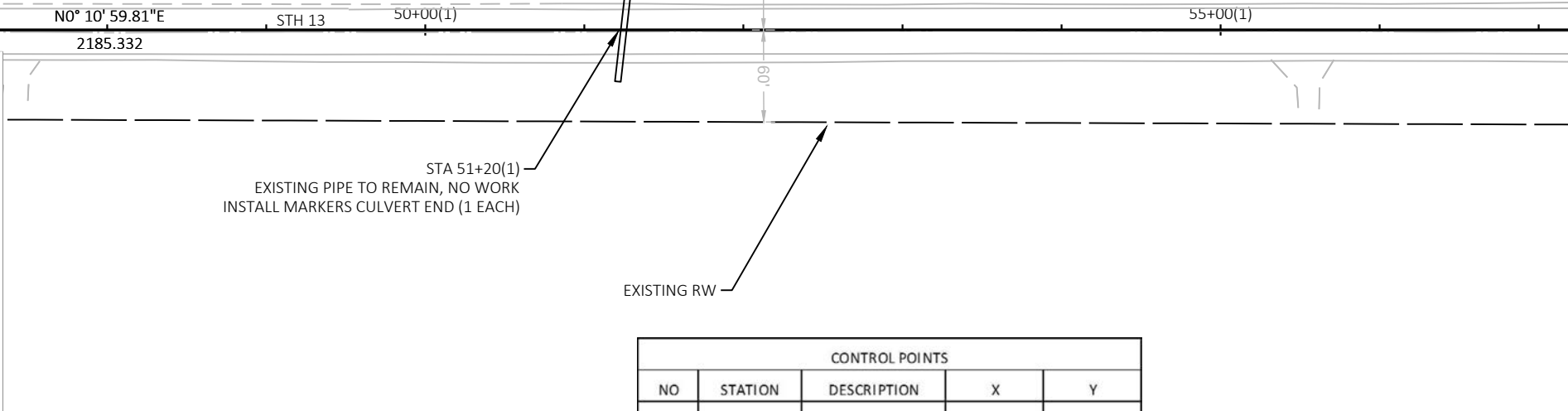
PROJECT NO: 8510-03-72	HWY: 13	COUNTY: BAYFIELD	PLAN	SHEET	E
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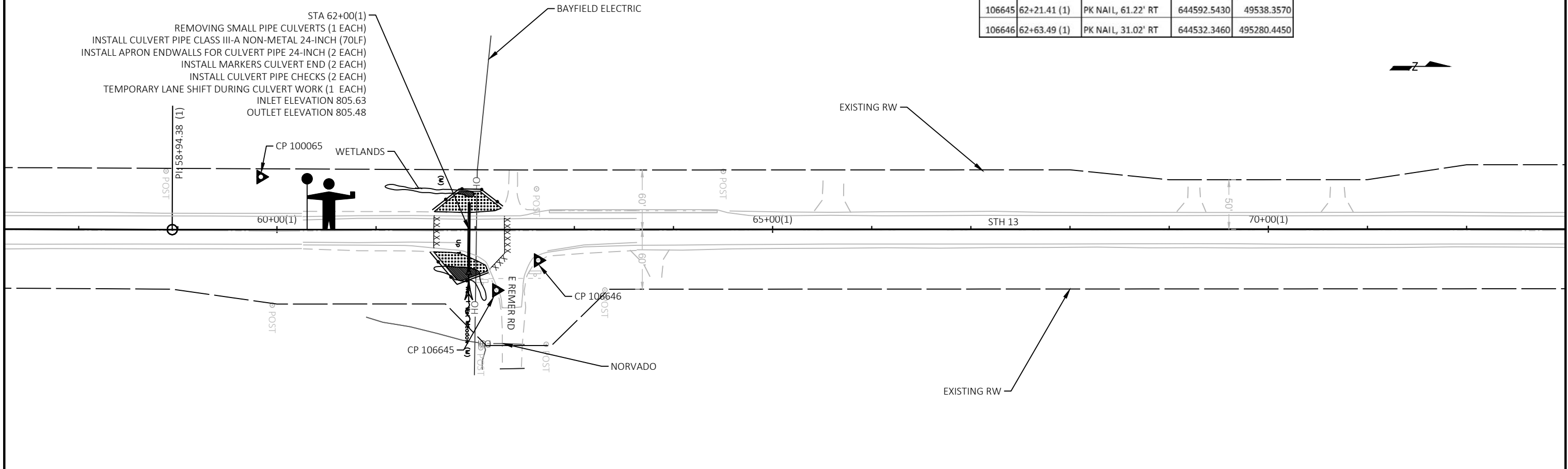
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LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
-  SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW



CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
100065	59+83.75 (1)	PK NAIL, 53.13' LT	644448.1480	495000.7160
106645	62+21.41 (1)	PK NAIL, 61.22' RT	644592.5430	49538.3570
106646	62+63.49 (1)	PK NAIL, 31.02' RT	644532.3460	495280.4450

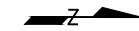


STA 77+20(1)
EXISTING 48" CACP TO REMAIN, NO WORK

WETLANDS

EXISTING RW

STA 85+23(1)
REMOVING SMALL PIPE CULVERT (1 EACH)
INSTALL CULVERT PIPE CLASS III-A NON-METAL 24-INCH (68 LF)
INSTALL APRON ENDWALLS FOR CULVERT PIPE 24-INCH (2 EACH)
INSTALL MARKERS CULVERT END (2 EACH)
INSTALL CULVERT PIPE CHECKS (2 EACH)
TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
INLET ELEVATION 793.09
OUTLET ELEVATION 792.83



75+00(1)

80+00(1)

STH 13

CP 112204

NO° 00' 33.83"E

5411.427

CP 112205

WETLANDS

NORVADO

MEDIUM RIPRAP

WETLANDS

NORVADO

EXISTING RW

LEGEND



WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B



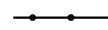
SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B

XXXXXXXXXX

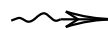
SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)



TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"



SILT FENCE



SURFACE WATER FLOW

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
112332	77+04.47 (1)	PK NAIL, 17.53' LT	644484.0330	496721.4330
112467	77+35.42 (1)	PK NAIL, 19.38' RT	644520.9470	496752.3760
112204	85+12.15 (1)	PK NAIL, 18.43' LT	644483.2640	497529.1130
112205	85+27.32 (1)	PK NAIL, 20.52' RT	644522.2200	497544.2740
100066	91+35.05 (1)	PK NAIL, 46.19' RT	644547.9900	498152.0000
111969	97+61.33 (1)	PK NAIL, 19.84' RT	644521.7350	498778.2830
111968	97+68.19 (1)	PK NAIL, 18.94' LT	644482.9580	498785.1480

STA 97+70(1)
REMOVING SMALL PIPE CULVERT (1 EACH)
INSTALL CULVERT PIPE CLASS III-A NON-METAL 24-INCH (60 LF)
INSTALL APRON ENDWALLS FOR CULVERT PIPE 24-INCH (2 EACH)
INSTALL MARKERS CULVERT END (2 EACH)
INSTALL CULVERT PIPE CHECKS (2 EACH)
TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
INLET ELEVATION 786.52
OUTLET ELEVATION 785.04

WETLANDS

EXISTING RW



90+00(1)

STH 13

95+00(1)

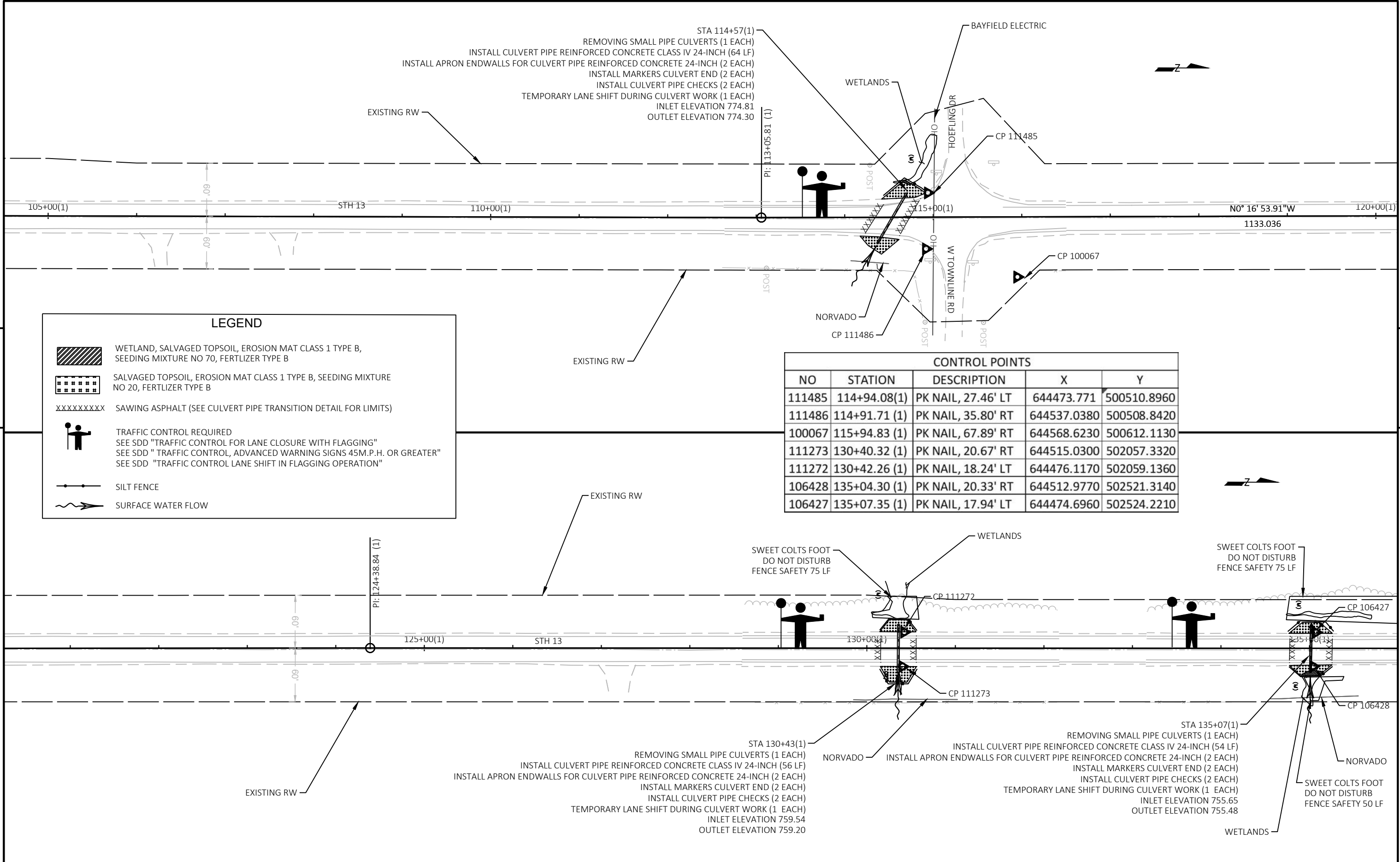
100+00(1)

CP 111968

CP 111969

NORVADO

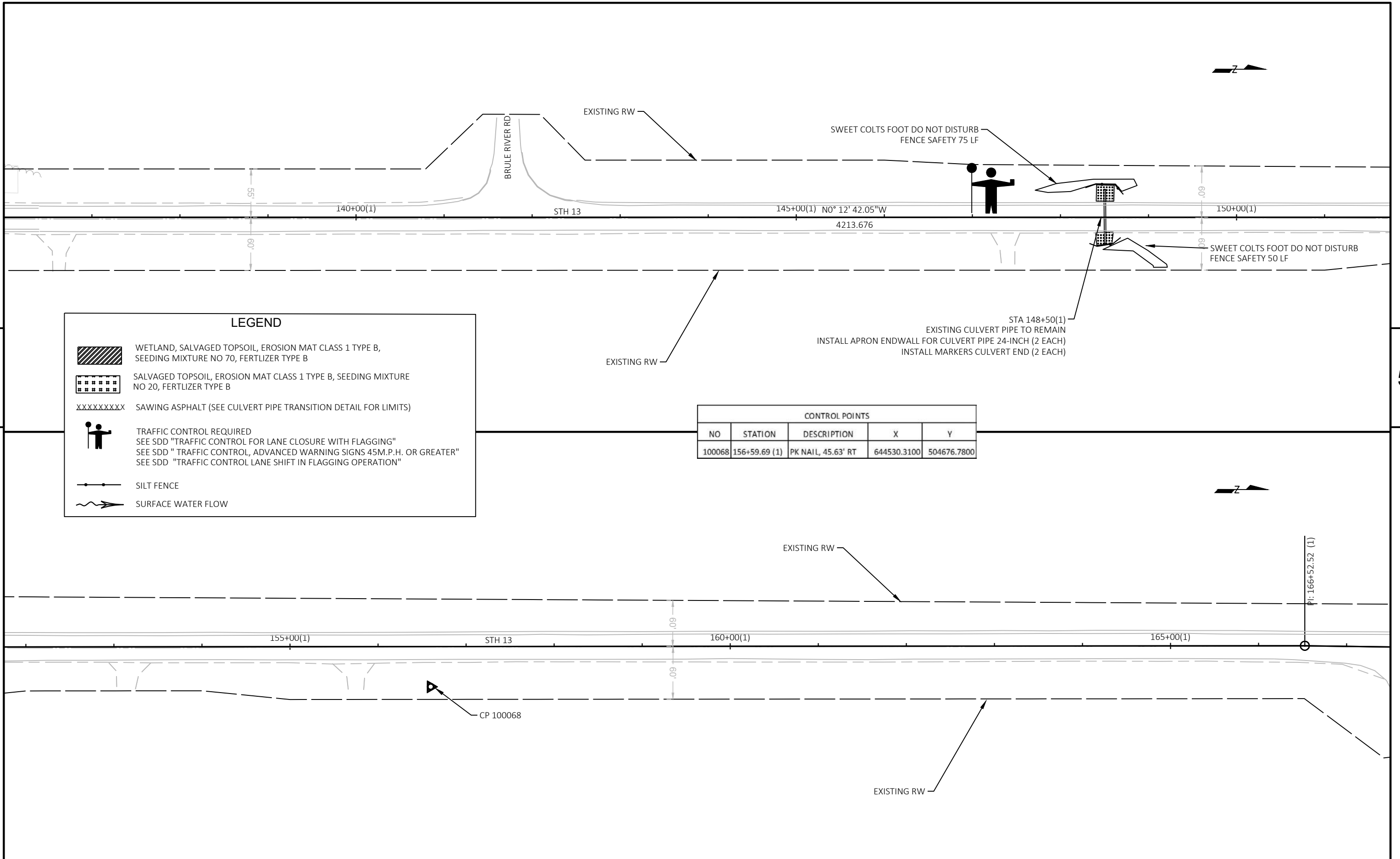
EXISTING RW








LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
111485	114+94.08(1)	PK NAIL, 27.46' LT	644473.771	500510.8960
111486	114+91.71 (1)	PK NAIL, 35.80' RT	644537.0380	500508.8420
100067	115+94.83 (1)	PK NAIL, 67.89' RT	644568.6230	500612.1130
111273	130+40.32 (1)	PK NAIL, 20.67' RT	644515.0300	502057.3320
111272	130+42.26 (1)	PK NAIL, 18.24' LT	644476.1170	502059.1360
106428	135+04.30 (1)	PK NAIL, 20.33' RT	644512.9770	502521.3140
106427	135+07.35 (1)	PK NAIL, 17.94' LT	644474.6960	502524.2210



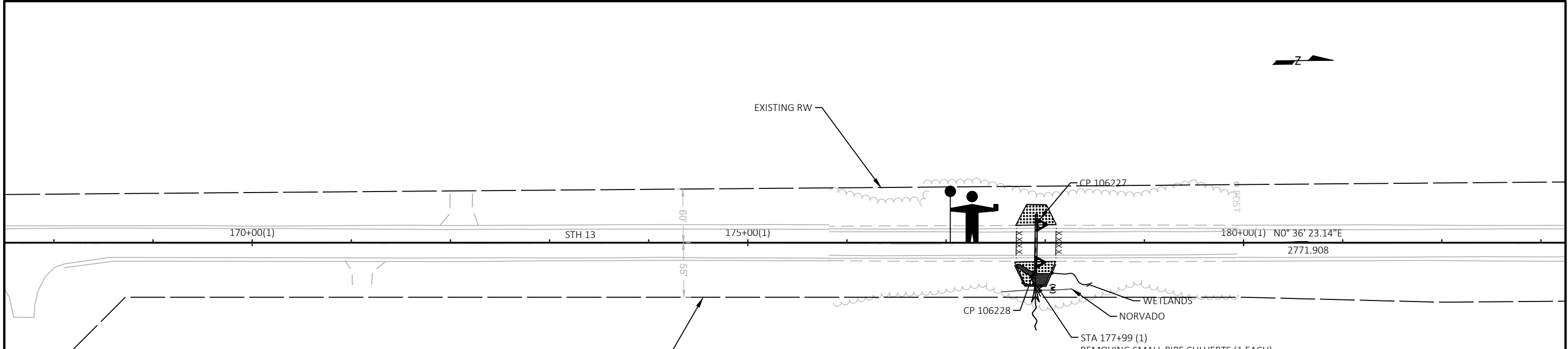
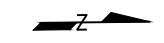
LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
100068	156+59.69 (1)	PK NAIL, 45.63' RT	644530.3100	504676.7800


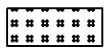

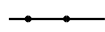
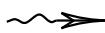
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- STA 177+99 (1)
- REMOVING SMALL PIPE CULVERTS (1 EACH)
- INSTALL CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH (58 LF)
- INSTALL APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH (2 EACH)
- INSTALL MARKERS CULVERT END (2 EACH)
- INSTALL CULVERT PIPE CHECKS (2 EACH)
- TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
- INLET ELEVATION 717.95
- OUTLET ELEVATION 717.71

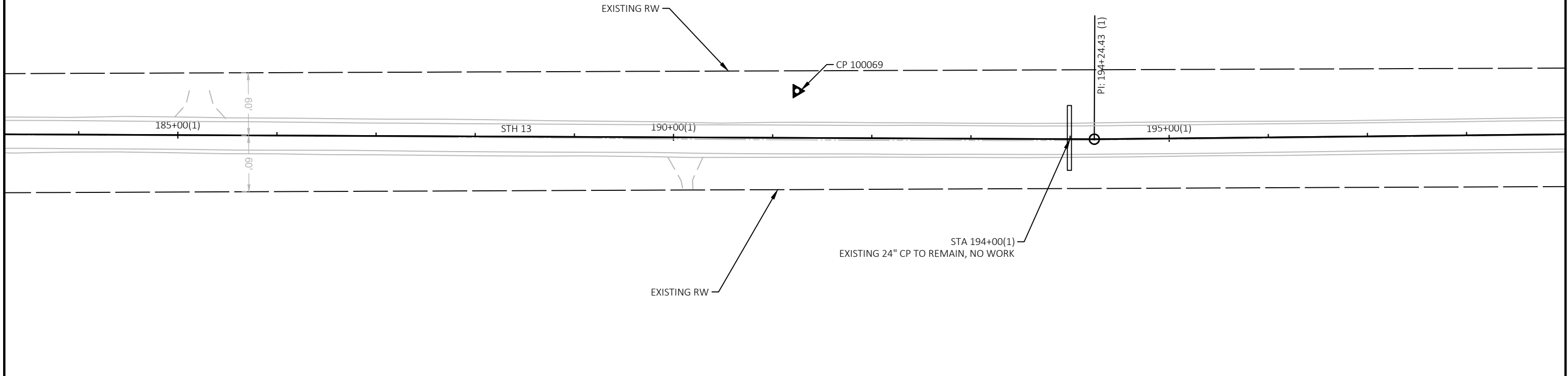
LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW

CONTROL POINTS					
NO	STATION	DESCRIPTION	X	Y	
106228	177+93.30 (1)	PK NAIL, 19.72' RT	644512.8040	506809.9410	
106227	177+95.22 (1)	PK NAIL, 18.17' LT	644474.9390	506812.2630	
100069	191+24.34 (1)	PK NAIL, 47.34' LT	644459.8400	508141.6200	

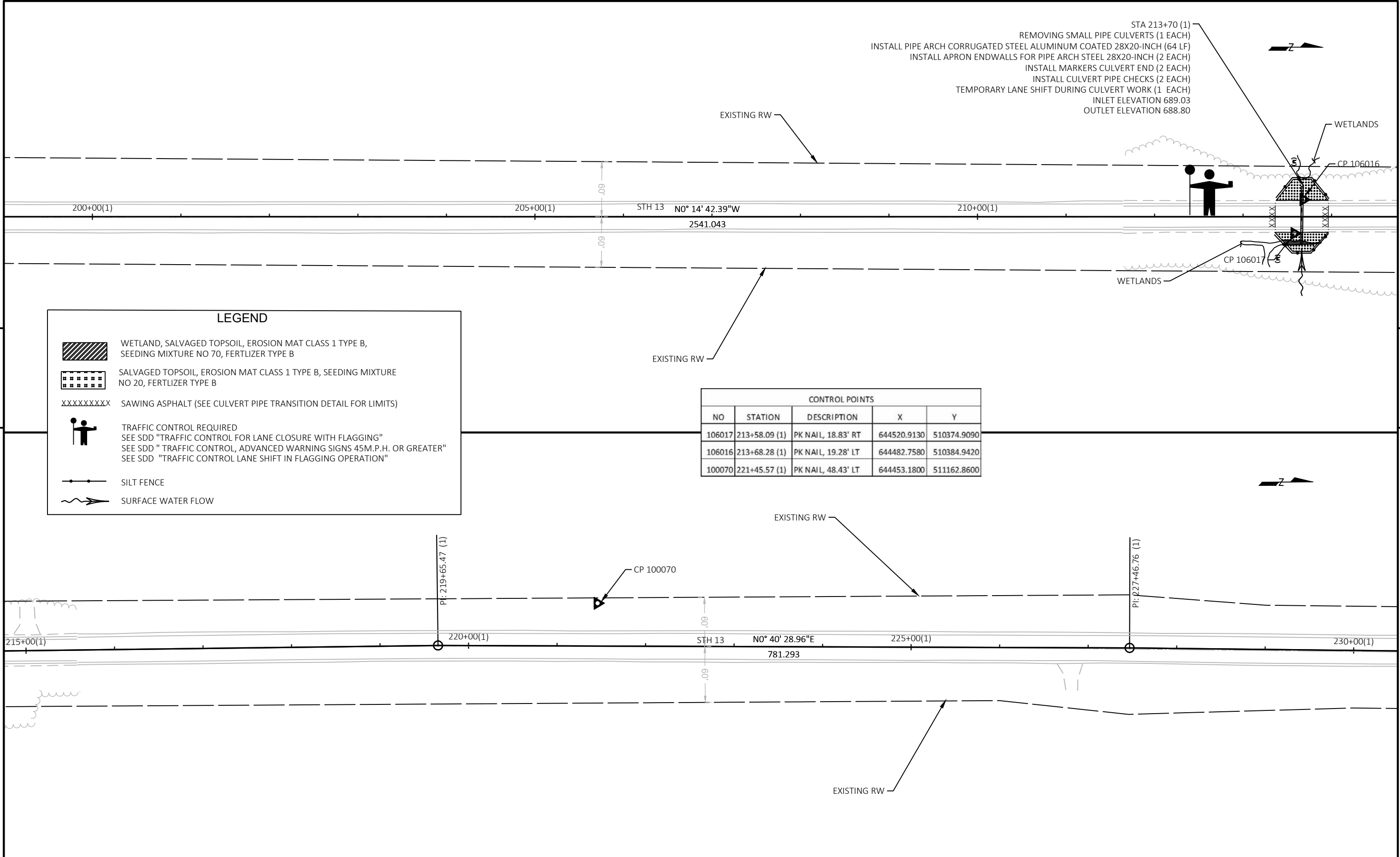
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


STA 194+00(1)
EXISTING 24" CP TO REMAIN, NO WORK

STA 213+70 (1)
 REMOVING SMALL PIPE CULVERTS (1 EACH)
 INSTALL PIPE ARCH CORRUGATED STEEL ALUMINUM COATED 28X20-INCH (64 LF)
 INSTALL APRON ENDWALLS FOR PIPE ARCH STEEL 28X20-INCH (2 EACH)
 INSTALL MARKERS CULVERT END (2 EACH)
 INSTALL CULVERT PIPE CHECKS (2 EACH)
 TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
 INLET ELEVATION 689.03
 OUTLET ELEVATION 688.80



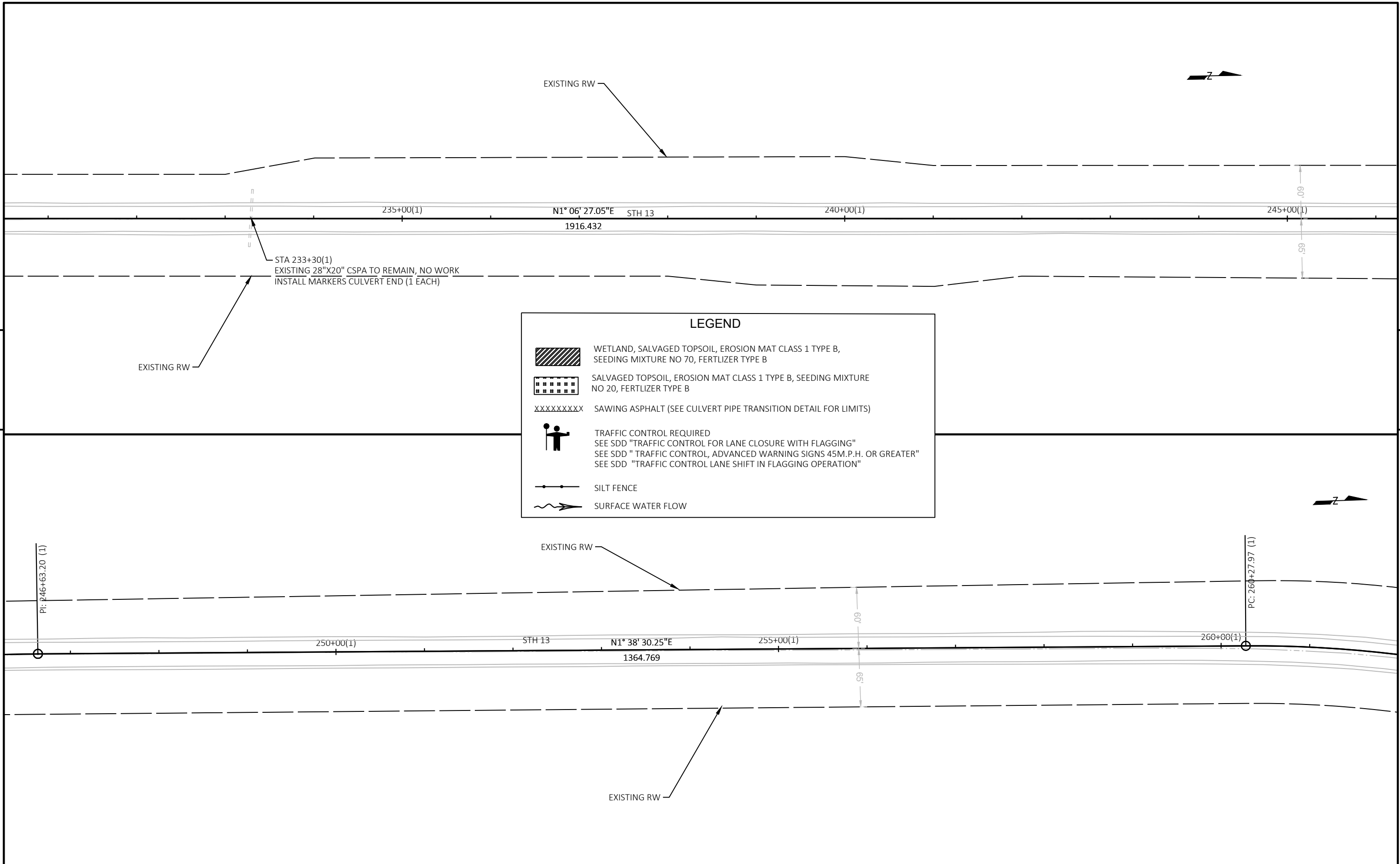
LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
 SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
 SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
 SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW


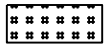



CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
106017	213+58.09 (1)	PK NAIL, 18.83' RT	644520.9130	510374.9090
106016	213+68.28 (1)	PK NAIL, 19.28' LT	644482.7580	510384.9420
100070	221+45.57 (1)	PK NAIL, 48.43' LT	644453.1800	511162.8600

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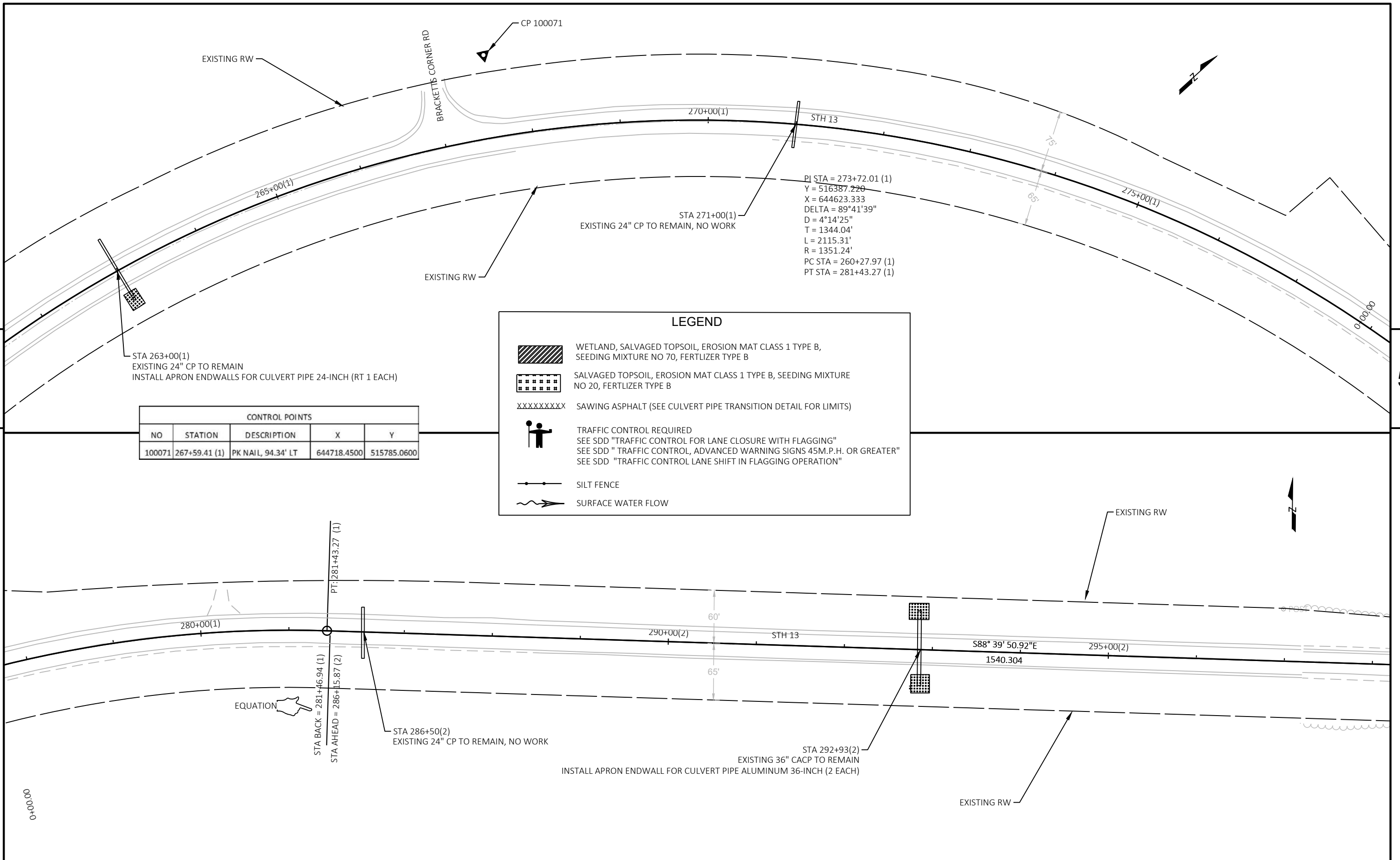


LEGEND

	WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
	SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
XXXXXXXXXX	SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
	TRAFFIC CONTROL REQUIRED SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING" SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER" SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
	SILT FENCE
	SURFACE WATER FLOW

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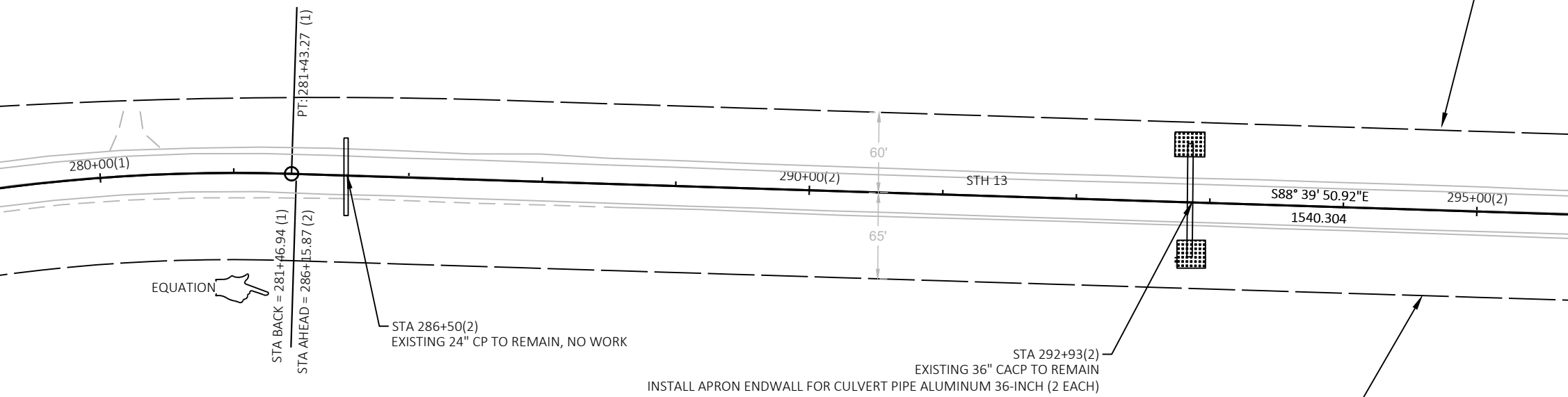
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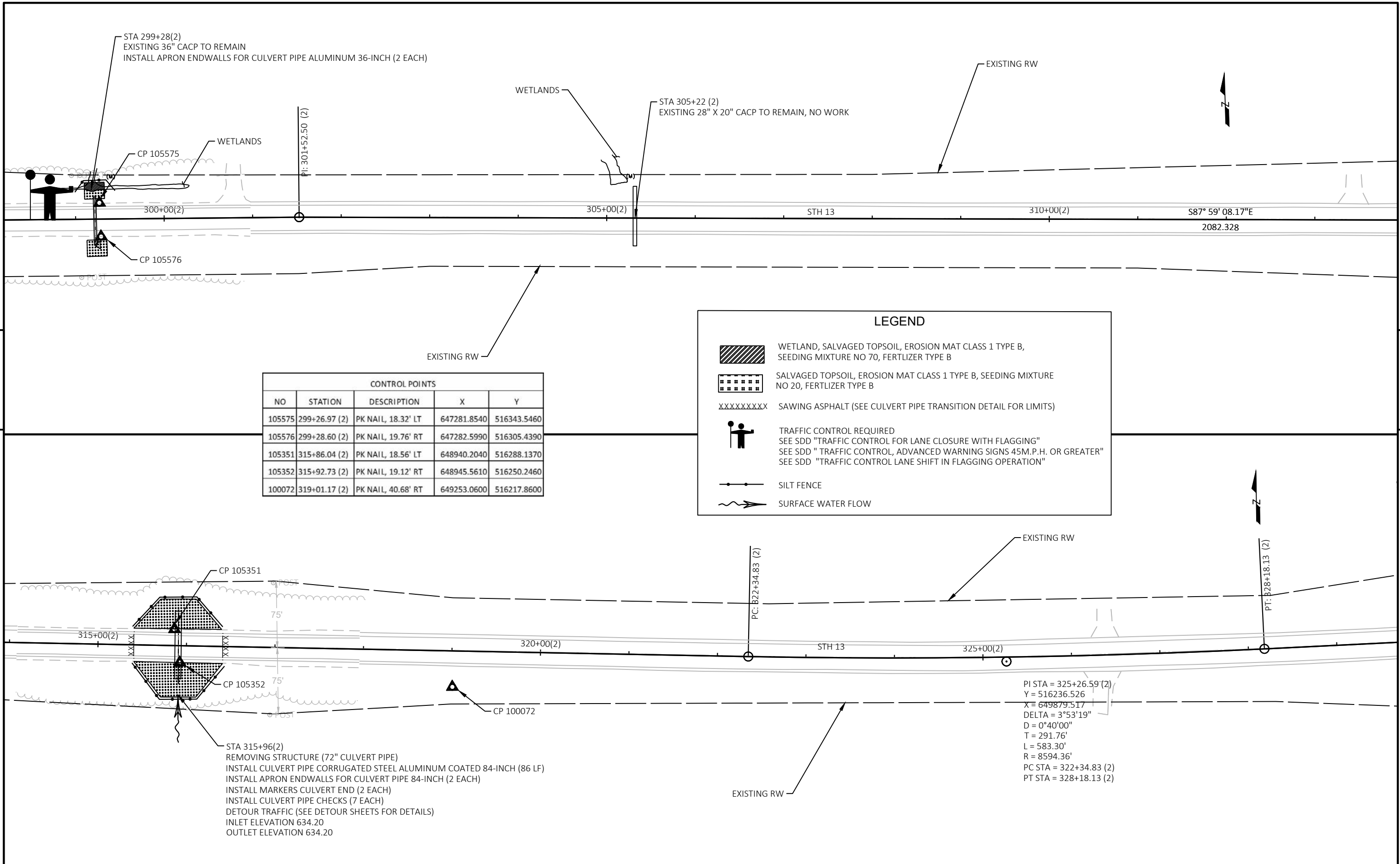


CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
100071	267+59.41 (1)	PK NAIL, 94.34' LT	644718.4500	515785.0600

LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW





CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
105575	299+26.97 (2)	PK NAIL, 18.32' LT	647281.8540	516343.5460
105576	299+28.60 (2)	PK NAIL, 19.76' RT	647282.5990	516305.4390
105351	315+86.04 (2)	PK NAIL, 18.56' LT	648940.2040	516288.1370
105352	315+92.73 (2)	PK NAIL, 19.12' RT	648945.5610	516250.2460
100072	319+01.17 (2)	PK NAIL, 40.68' RT	649253.0600	516217.8600

LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW

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PROJECT NO: 8510-03-72

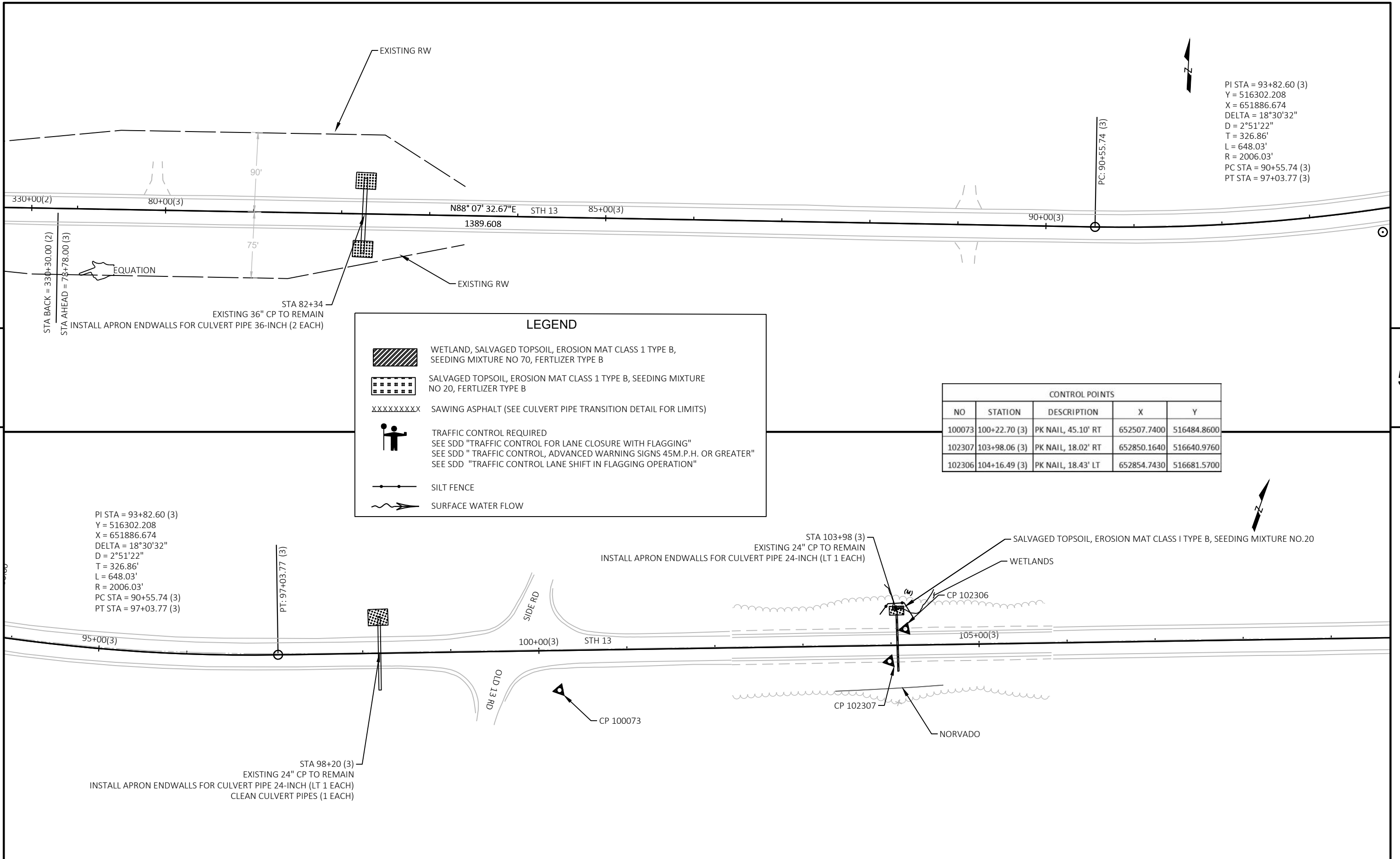
HWY: 13

COUNTY: BAYFIELD

PLAN


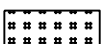
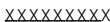

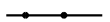

SHEET

E



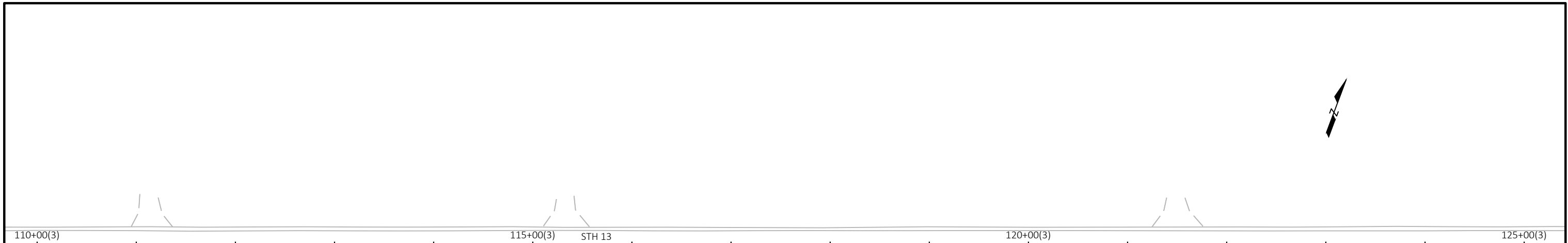
PI STA = 93+82.60 (3)
 Y = 516302.208
 X = 651886.674
 DELTA = 18°30'32"
 D = 2°51'22"
 T = 326.86'
 L = 648.03'
 R = 2006.03'
 PC STA = 90+55.74 (3)
 PT STA = 97+03.77 (3)

LEGEND


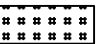



-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
-  SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
100073	100+22.70 (3)	PK NAIL, 45.10' RT	652507.7400	516484.8600
102307	103+98.06 (3)	PK NAIL, 18.02' RT	652850.1640	516640.9760
102306	104+16.49 (3)	PK NAIL, 18.43' LT	652854.7430	516681.5700

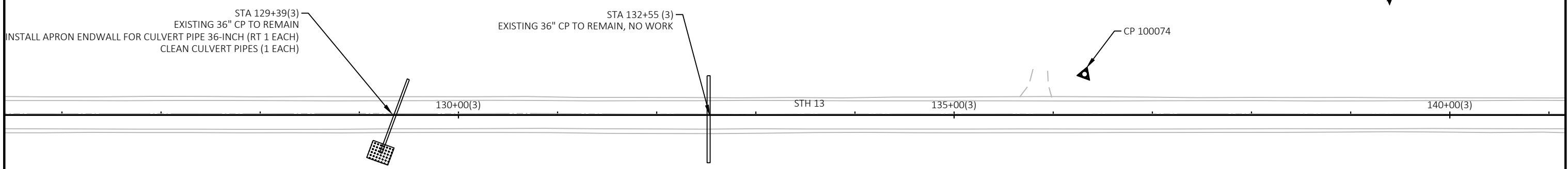
PI STA = 93+82.60 (3)
 Y = 516302.208
 X = 651886.674
 DELTA = 18°30'32"
 D = 2°51'22"
 T = 326.86'
 L = 648.03'
 R = 2006.03'
 PC STA = 90+55.74 (3)
 PT STA = 97+03.77 (3)

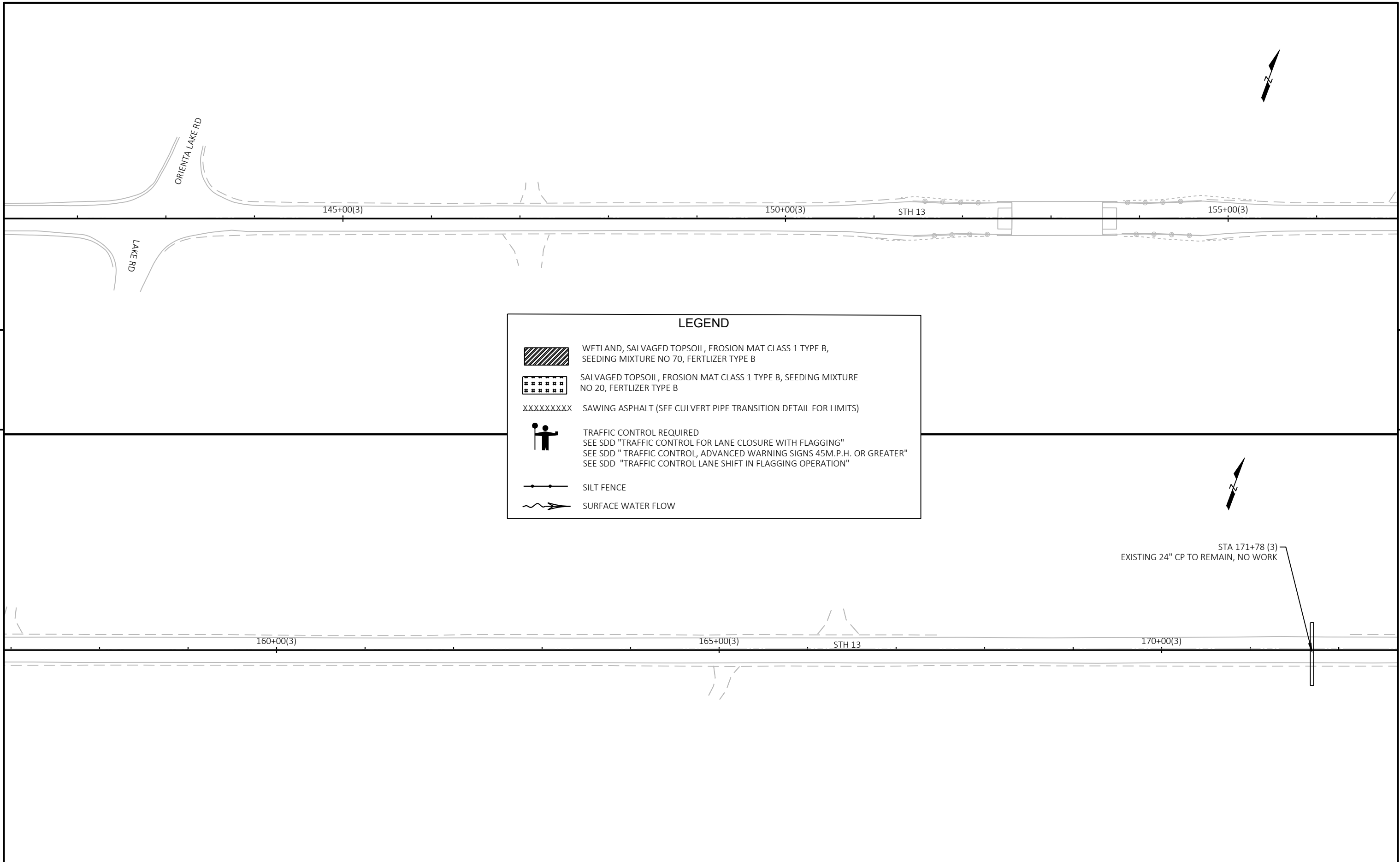


LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
100074	136+31.53 (3)	PK NAIL, 41.20' LT	655860.5400	517822.7000










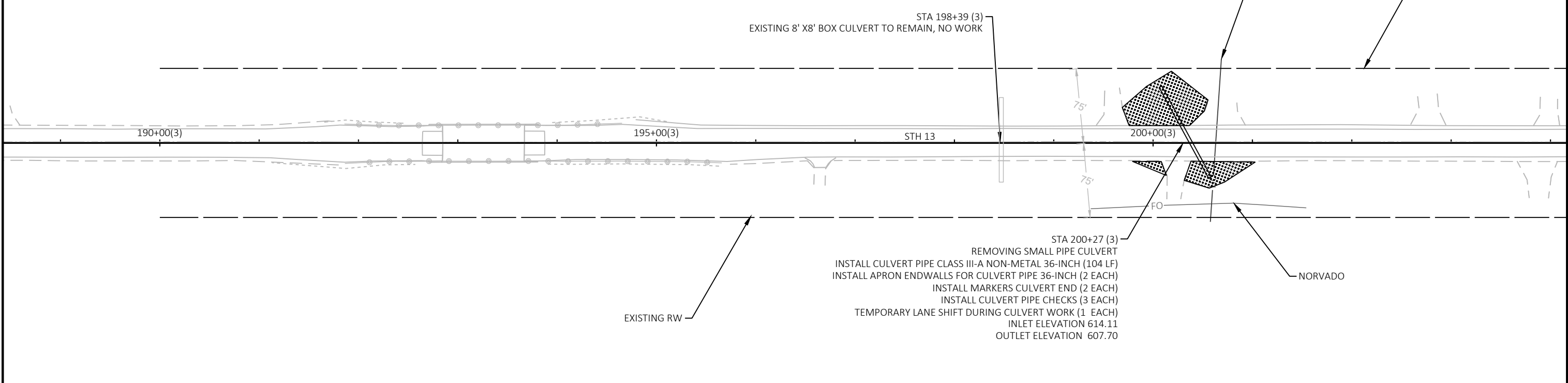
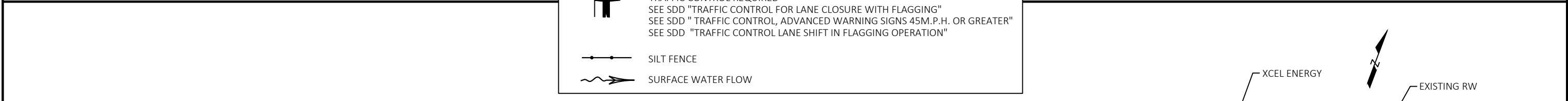
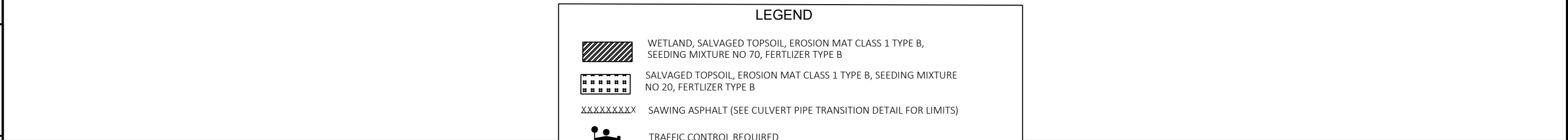
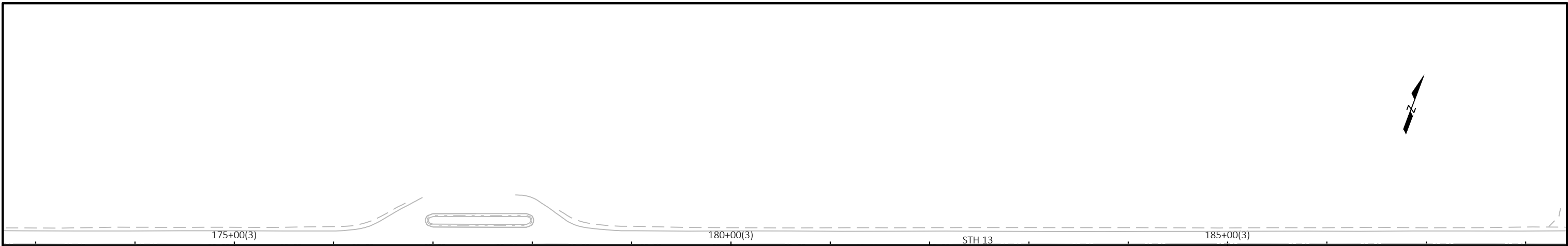
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LEGEND

	WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
	SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
xxxxxxxxx	SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
	TRAFFIC CONTROL REQUIRED SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING" SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER" SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
	SILT FENCE
	SURFACE WATER FLOW

STA 171+78 (3)
EXISTING 24" CP TO REMAIN, NO WORK



LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW

STA 206+19 (3)
EXISTING 36" CP TO REMAIN
INSTAL APRON ENDWALL FOR CULVERT PIPE 36-INCH (RT 1 EACH)

CP 100076

205+00(3)

210+00(3)

STH 13

215+00(3)






220+00(3)

5

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CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
100076	212+82.78 (3)	PK NAIL, 30.10' LT	663036.5800	520477.1900
102017	231+78.82 (3)	PK NAIL, 18.09' RT	664830.6770	521092.3980
102016	231+94.21 (3)	PK NAIL, 18.38' LT	664832.4020	521131.9450

LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW

STA 226+85 (3)
EXISTING 24" CP TO REMAIN
CLEANING CULVERT PIPES (1 EACH)

STA 231+80 (3)
EXISTING 24" CP TO REMAIN
INSTALL APRON ENDWALL FOR CULVERT PIPE 24-INCH (LT 1 EACH)
CLEAN CULVERT PIPES (1 EACH)

SALVAGED TOPSOIL, EROSION MAT CLASS I TYPE B,
SEEDING MIXTURE NO.20

WETLANDS

CP 102016

N69° 37' 00.75"E

27099.738

CP 102017

WETLANDS

NORVADO

220+00(3)

225+00(3)

STH 13


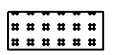
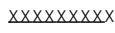

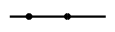
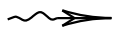
230+00(3)

235+00(3)

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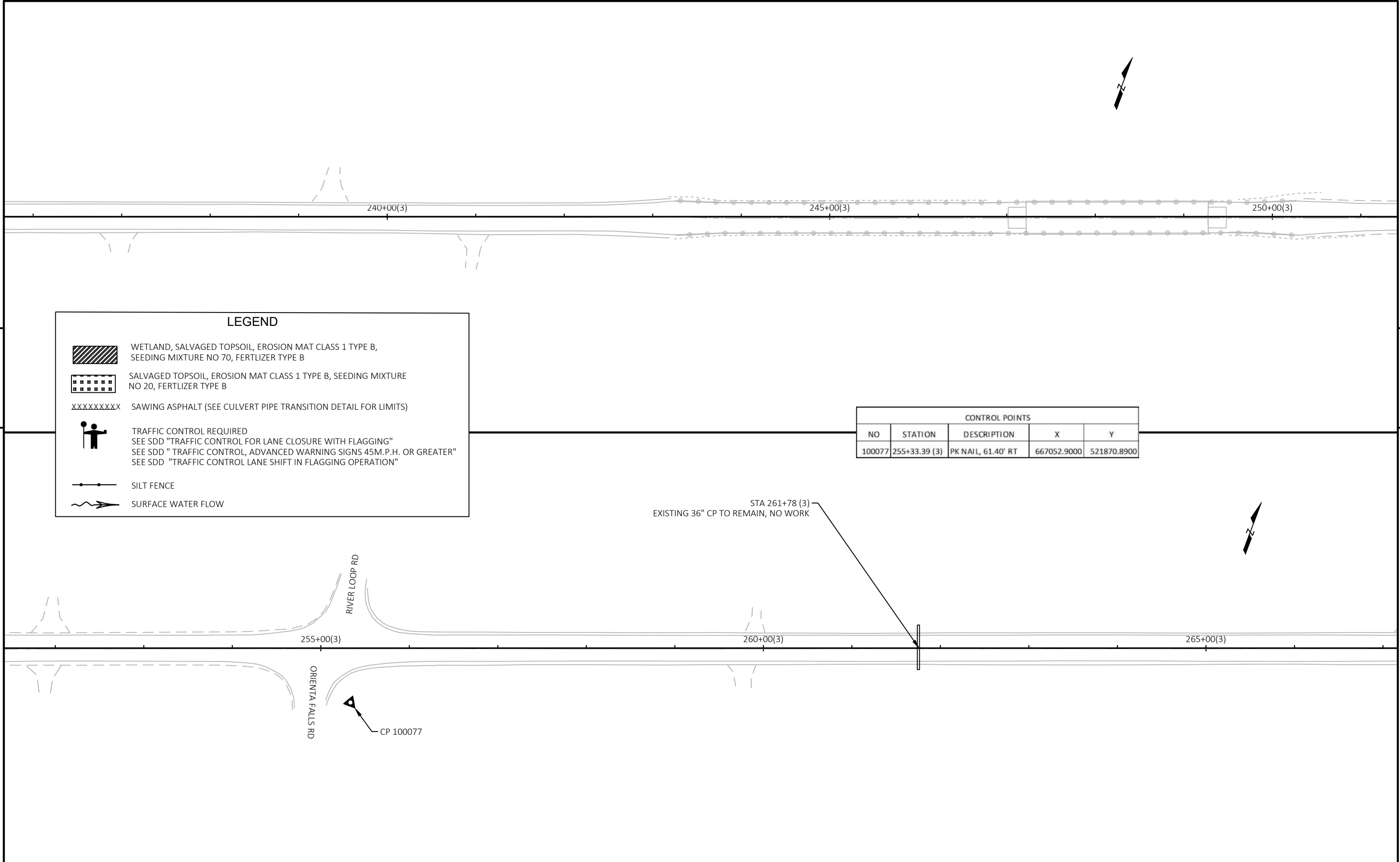
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LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
-  SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
100077	255+33.39 (3)	PK NAIL, 61.40' RT	667052.9000	521870.8900

STA 261+78 (3)
EXISTING 36" CP TO REMAIN, NO WORK










270+00(3) 275+00(3) STH 13 280+00(3)

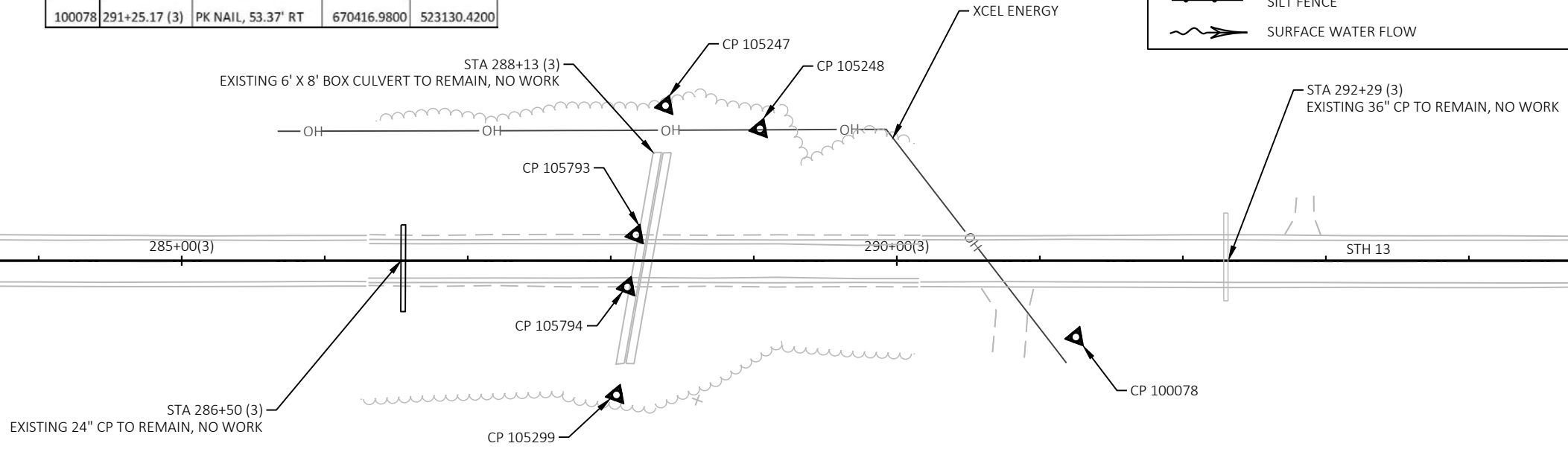
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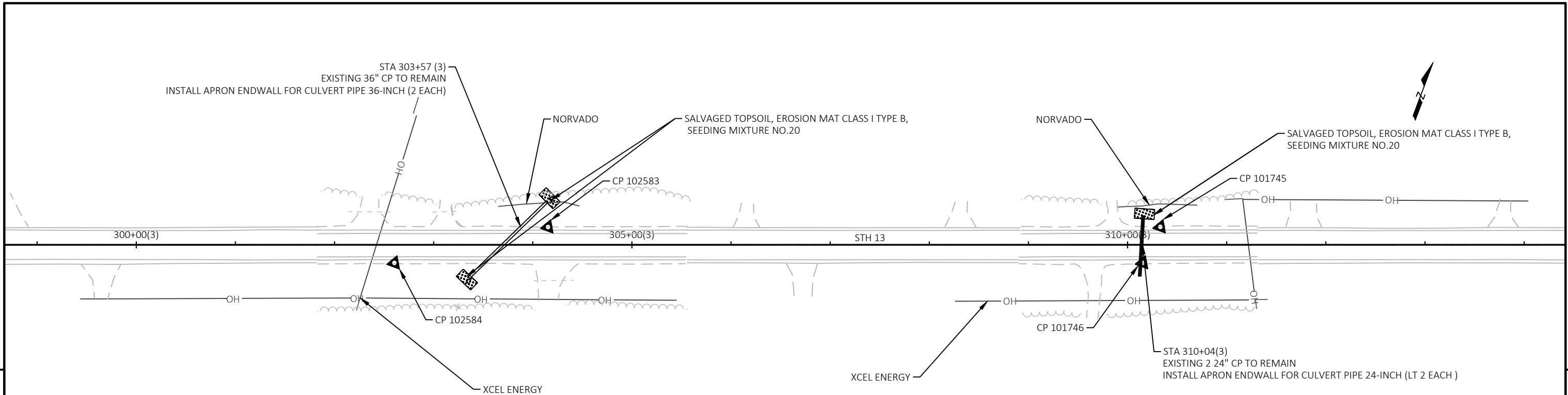
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CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
105299	288+03.90 (3)	PK NAIL, 93.86' RT	670129.9310	522980.5670
105794	288+11.32 (3)	PK NAIL, 18.39' RT	670110.6001	523053.8953
105793	288+17.61 (3)	PK NAIL, 18.07' LT	670103.7970	523090.2650
105247	288+38.22 (3)	PK NAIL, 108.41' LT	670091.6490	523182.1290
105248	289+04.23 (3)	PK NAIL, 92.21' LT	670159.1680	523189.9310
100078	291+25.17 (3)	PK NAIL, 53.37' RT	670416.9800	523130.4200

LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW

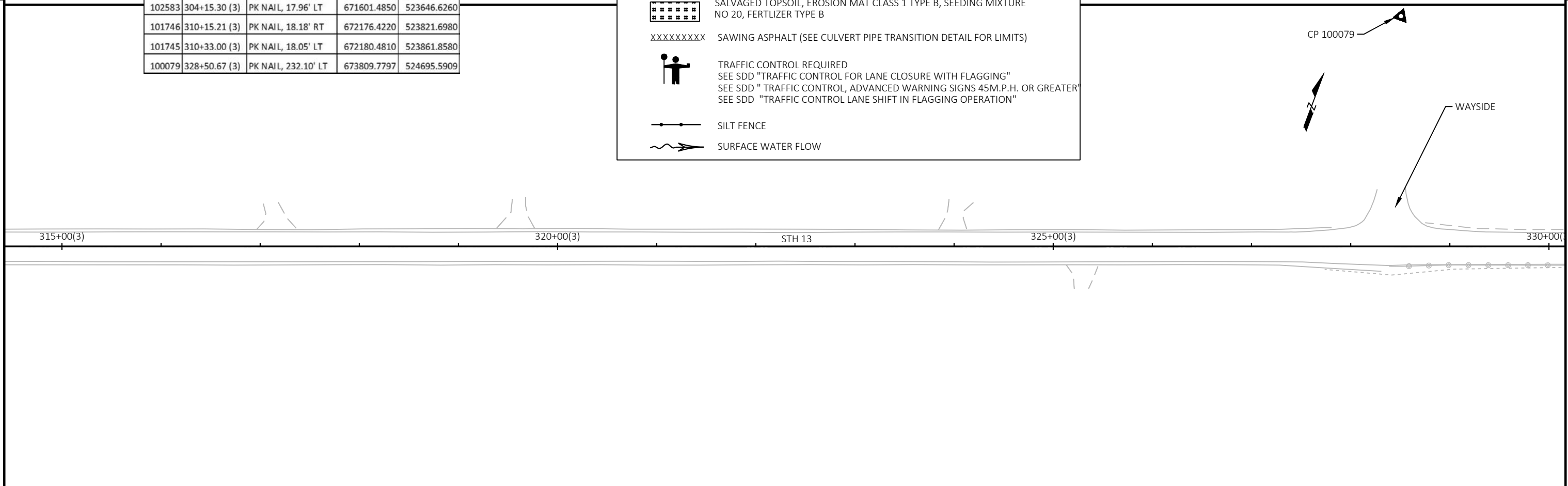


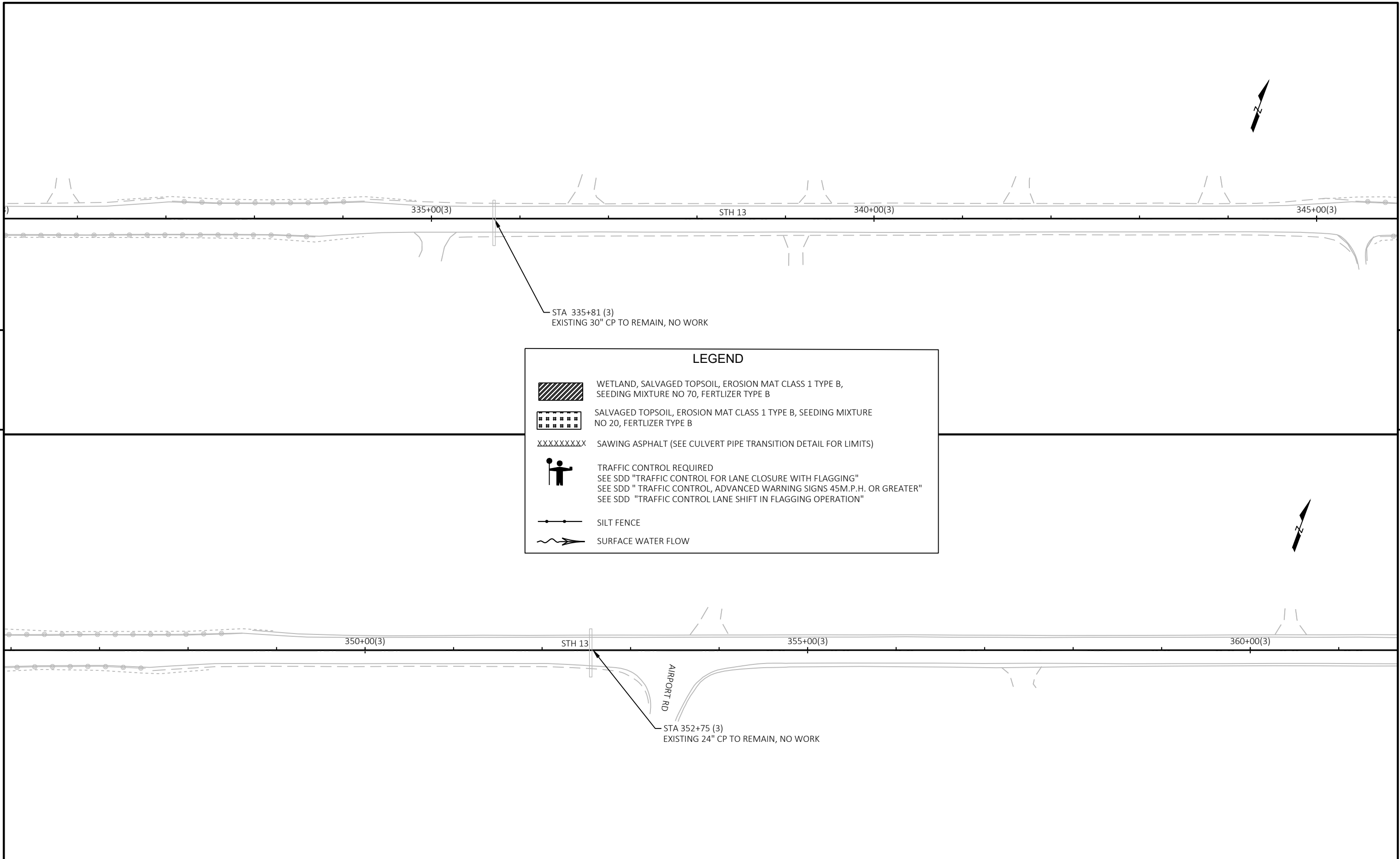


CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
102584	302+60.33 (3)	PK NAIL, 18.36' RT	671468.8740	523558.6130
102583	304+15.30 (3)	PK NAIL, 17.96' LT	671601.4850	523646.6260
101746	310+15.21 (3)	PK NAIL, 18.18' RT	672176.4220	523821.6980
101745	310+33.00 (3)	PK NAIL, 18.05' LT	672180.4810	523861.8580
100079	328+50.67 (3)	PK NAIL, 232.10' LT	673809.7797	524695.5909






LEGEND

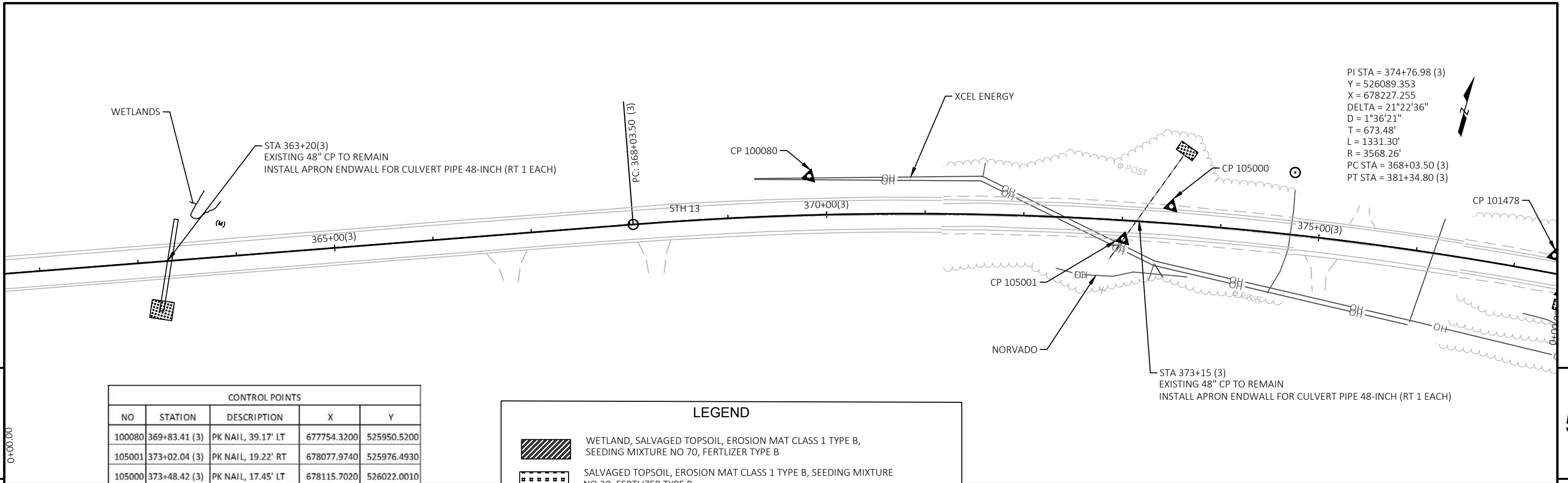
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- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW





LEGEND

	WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
	SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
XXXXXXXXXX	SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
	TRAFFIC CONTROL REQUIRED SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING" SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER" SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
	SILT FENCE
	SURFACE WATER FLOW

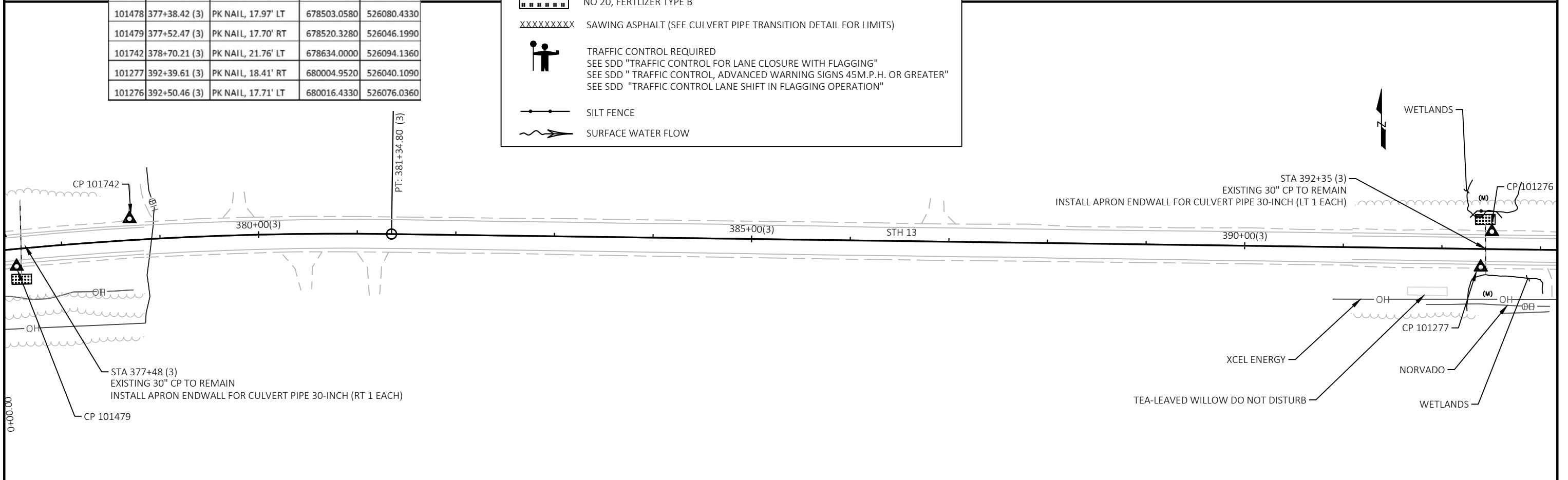


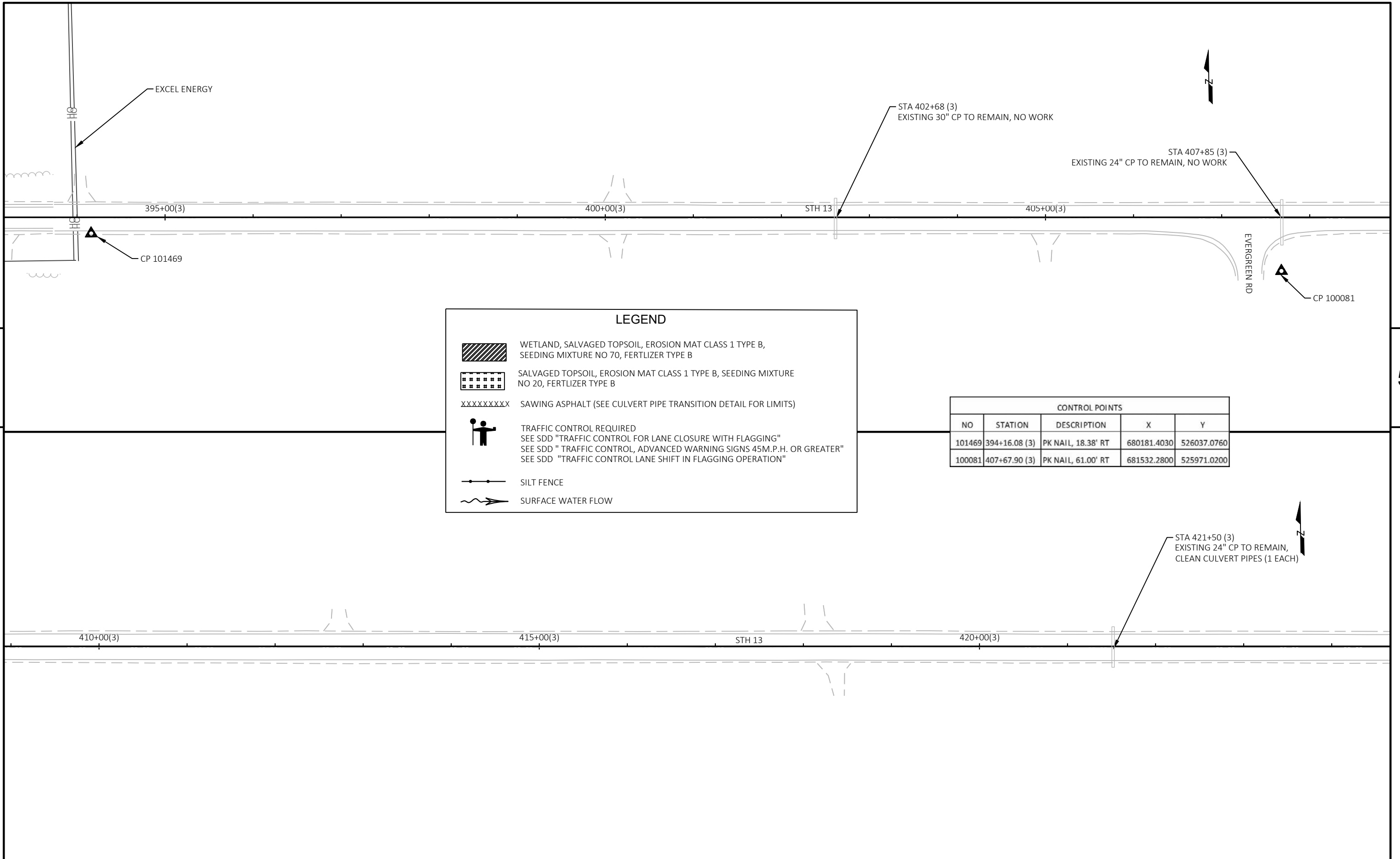
PI STA = 374+76.98 (3)
 Y = 526089.353
 X = 678227.255
 DELTA = 21°22'36"
 D = 1°36'21"
 T = 673.48'
 L = 1331.30'
 R = 3568.26'
 PC STA = 368+03.50 (3)
 PT STA = 381+34.80 (3)

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
100080	369+83.41 (3)	PK NAIL, 39.17' LT	677754.3200	525950.5200
105001	373+02.04 (3)	PK NAIL, 19.22' RT	678077.9740	525976.4930
105000	373+48.42 (3)	PK NAIL, 17.45' LT	678115.7020	526022.0010
101478	377+38.42 (3)	PK NAIL, 17.97' LT	678503.0580	526080.4330
101479	377+52.47 (3)	PK NAIL, 17.70' RT	678520.3280	526046.1990
101742	378+70.21 (3)	PK NAIL, 21.76' LT	678634.0000	526094.1360
101277	392+39.61 (3)	PK NAIL, 18.41' RT	680004.9520	526040.1090
101276	392+50.46 (3)	PK NAIL, 17.71' LT	680016.4330	526076.0360

LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW





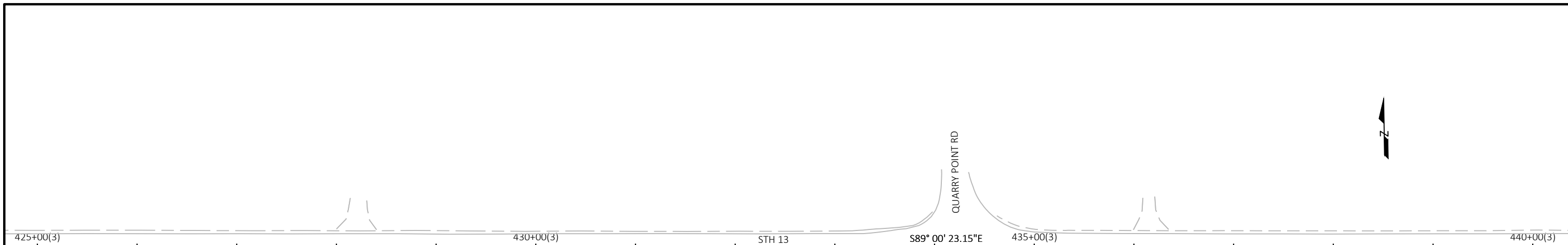
LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW






CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
101469	394+16.08 (3)	PK NAIL, 18.38' RT	680181.4030	526037.0760
100081	407+67.90 (3)	PK NAIL, 61.00' RT	681532.2800	525971.0200

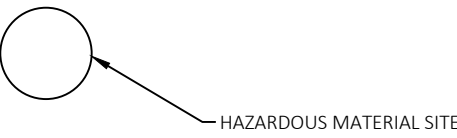
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LEGEND

	WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
	SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
XXXXXXXXXX	SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
	TRAFFIC CONTROL REQUIRED SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING" SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER" SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
	SILT FENCE
	SURFACE WATER FLOW

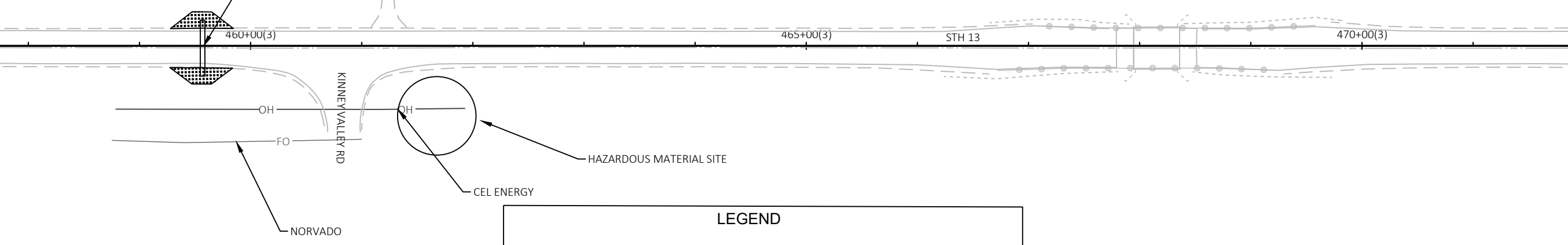


STA 441+64 (3)
EXISTING 24" CP TO REMAIN, NO WORK

STA 452+00 (3)
EXISTING 24" CP TO REMAIN,
CLEAN CULVERT PIPES (1 EACH)

CP 100083

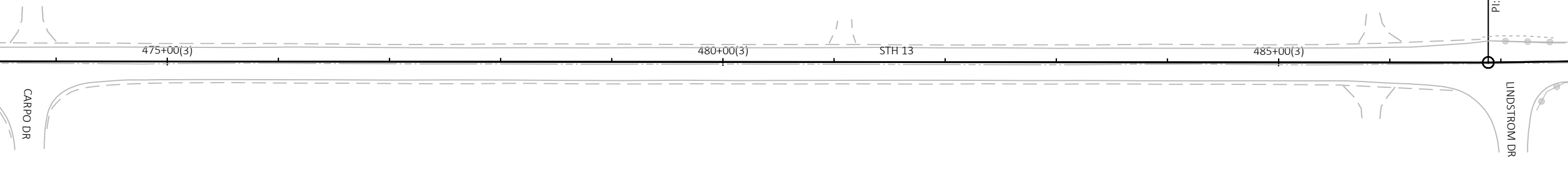
STA 459+50 (3)
 REMOVING SMALL PIPE CULVERTS (1 EACH)
 INSTALL CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 29X45" (50 LF)
 INSTALL APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 29X45" (2 EACH)
 INSTALL MARKERS CULVERT END (2 EACH)
 INSTALL CULVERT PIPE CHECKS (5 EACH)
 TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
 GRADING AND SHAPING PIPE ENDS (1 EACH)
 INLET ELEVATION 605.65
 OUTLET ELEVATION 605.60

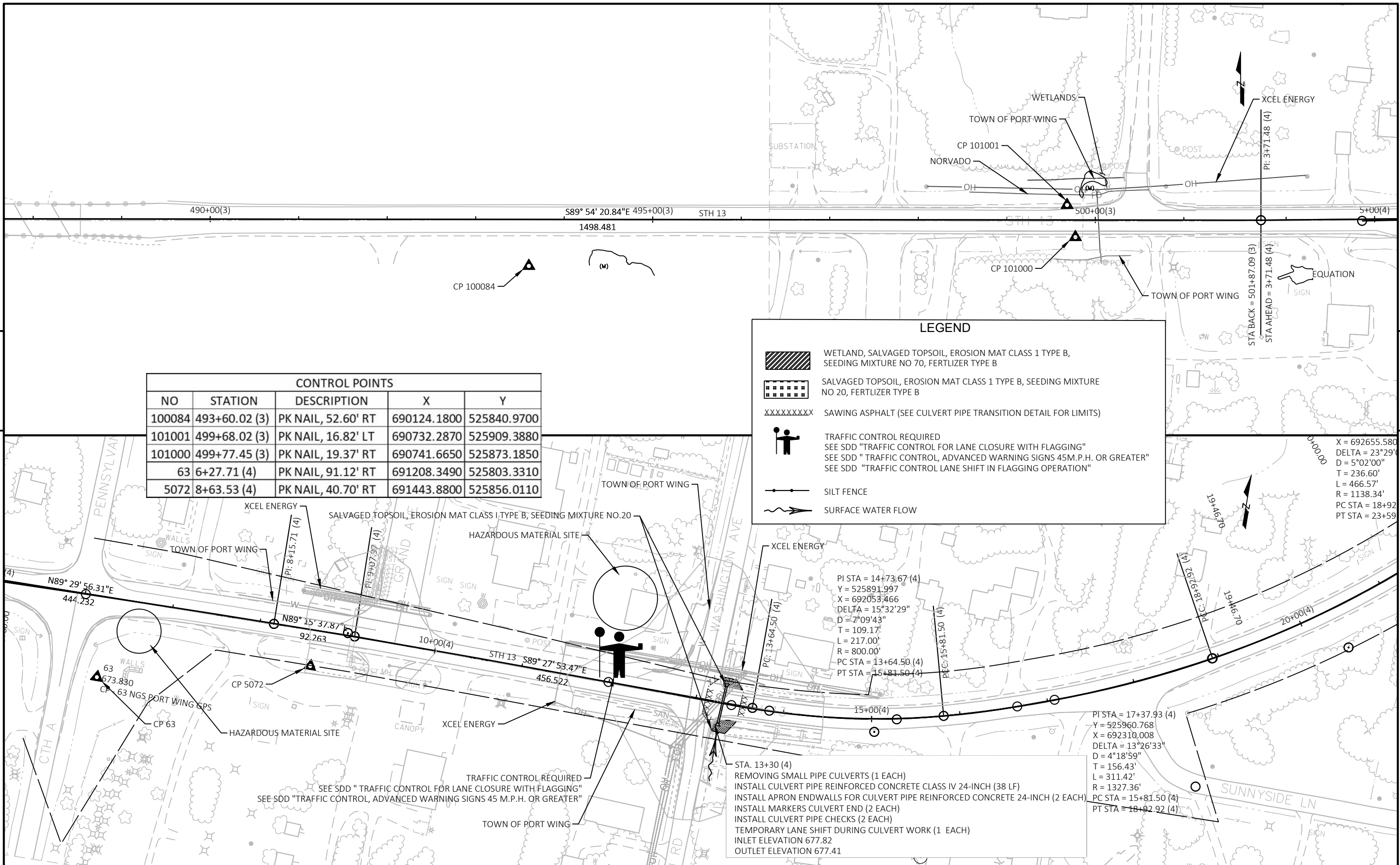


CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
100083	458+64.64 (3)	PK NAIL, 49.18' LT	686630.1600	525992.8100

LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
 SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
 SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
 SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW





CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
100084	493+60.02 (3)	PK NAIL, 52.60' RT	690124.1800	525840.9700
101001	499+68.02 (3)	PK NAIL, 16.82' LT	690732.2870	525909.3880
101000	499+77.45 (3)	PK NAIL, 19.37' RT	690741.6650	525873.1850
63	6+27.71 (4)	PK NAIL, 91.12' RT	691208.3490	525803.3310
5072	8+63.53 (4)	PK NAIL, 40.70' RT	691443.8800	525856.0110

LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW

STA. 13+30 (4)
 REMOVING SMALL PIPE CULVERTS (1 EACH)
 INSTALL CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH (38 LF)
 INSTALL APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH (2 EACH)
 INSTALL MARKERS CULVERT END (2 EACH)
 INSTALL CULVERT PIPE CHECKS (2 EACH)
 TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
 INLET ELEVATION 677.82
 OUTLET ELEVATION 677.41

PT STA = 17+37.93 (4)
 Y = 525960.768
 X = 692310.008
 DELTA = 13°26'33"
 D = 4°18'59"
 T = 156.43'
 L = 311.42'
 R = 1327.36'
 PC STA = 15+81.50 (4)
 PT STA = 18+92.92 (4)

PI STA = 14+73.67 (4)
 Y = 525891.997
 X = 692053.466
 DELTA = 15°32'29"
 D = 7°09'43"
 T = 109.17'
 L = 217.00'
 R = 800.00'
 PC STA = 13+64.50 (4)
 PT STA = 15+81.50 (4)

X = 692655.580
 DELTA = 23°29'
 D = 5°02'00"
 T = 236.60'
 L = 466.57'
 R = 1138.34'
 PC STA = 18+92
 PT STA = 23+59







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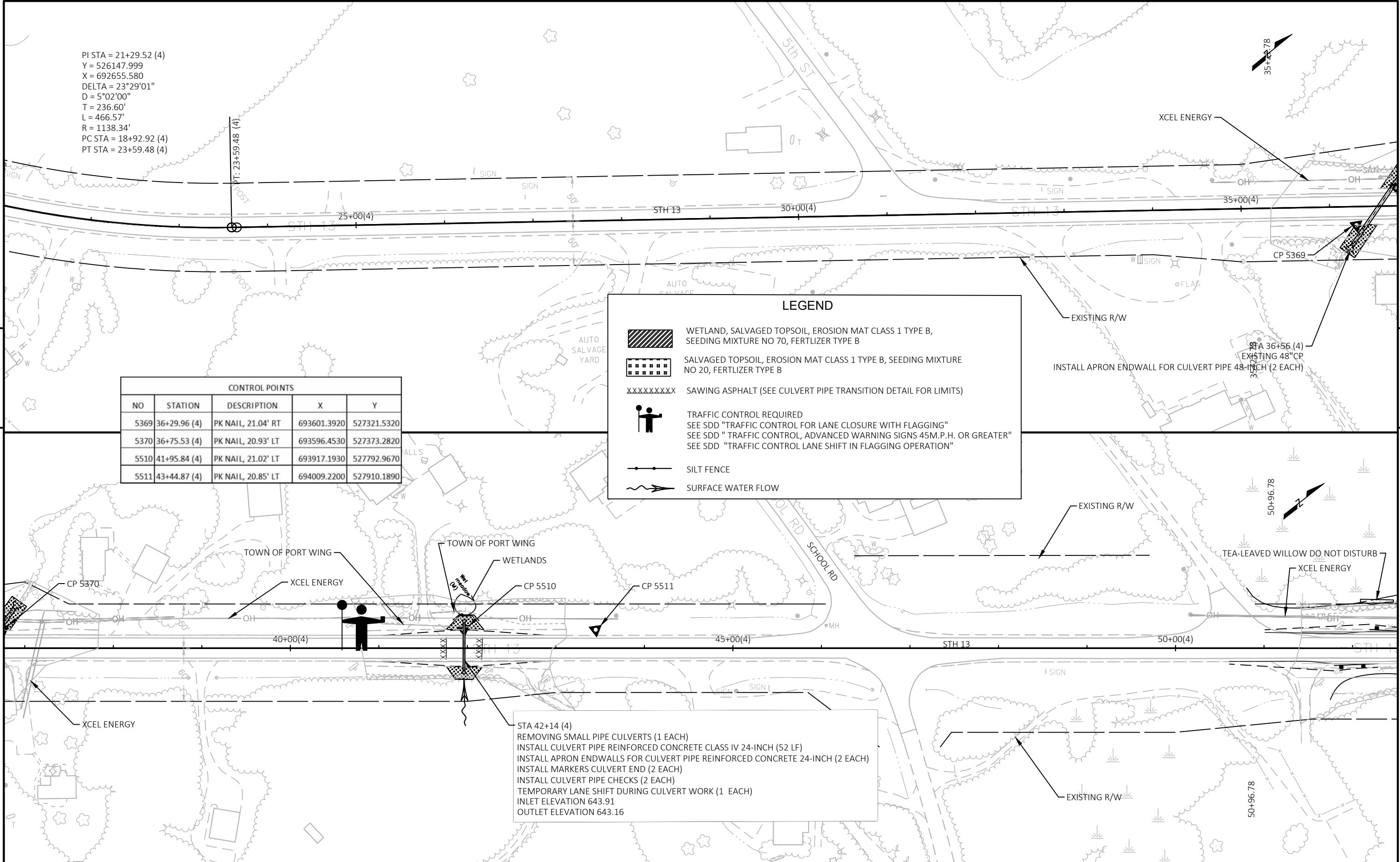
PI STA = 21+29.52 (4)
 Y = 526147.999
 X = 692655.580
 DELTA = 23°29'01"
 D = 5°02'00"
 T = 236.60'
 L = 466.57'
 R = 1138.34'
 PC STA = 18+92.92 (4)
 PT STA = 23+59.48 (4)

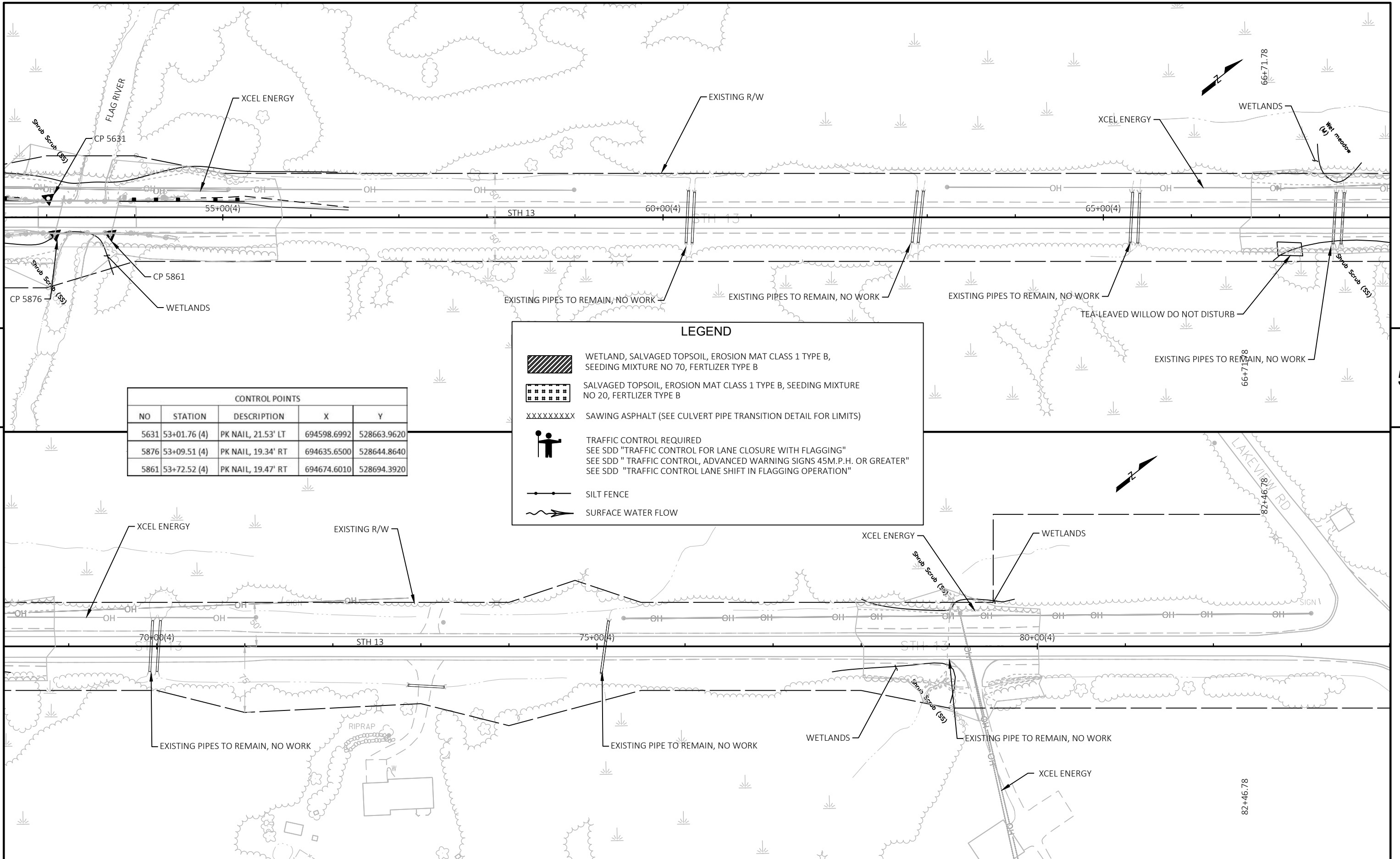
CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
5369	36+29.96 (4)	PK NAIL, 21.04' RT	693601.3920	527321.5320
5370	36+75.53 (4)	PK NAIL, 20.93' LT	693596.4530	527373.2820
5510	41+95.84 (4)	PK NAIL, 21.02' LT	693917.1930	527792.9670
5511	43+44.87 (4)	PK NAIL, 20.85' LT	694009.2200	527910.1890

LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
-  SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW

STA 42+14 (4)
 REMOVING SMALL PIPE CULVERTS (1 EACH)
 INSTALL CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH (52 LF)
 INSTALL APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH (2 EACH)
 INSTALL MARKERS CULVERT END (2 EACH)
 INSTALL CULVERT PIPE CHECKS (2 EACH)
 TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
 INLET ELEVATION 643.91
 OUTLET ELEVATION 643.16

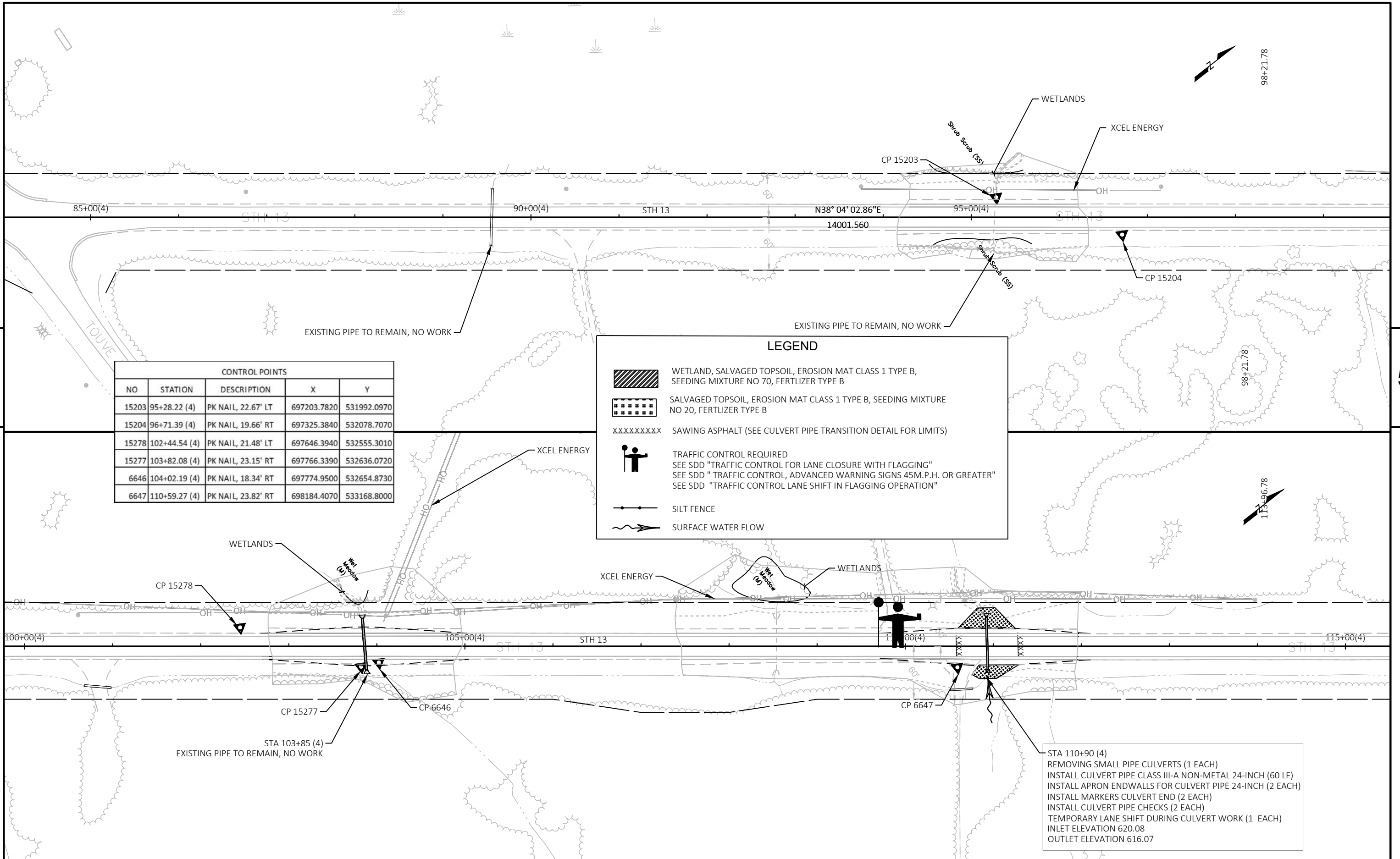




CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
5631	53+01.76 (4)	PK NAIL, 21.53' LT	694598.6992	528663.9620
5876	53+09.51 (4)	PK NAIL, 19.34' RT	694635.6500	528644.8640
5861	53+72.52 (4)	PK NAIL, 19.47' RT	694674.6010	528694.3920

LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW

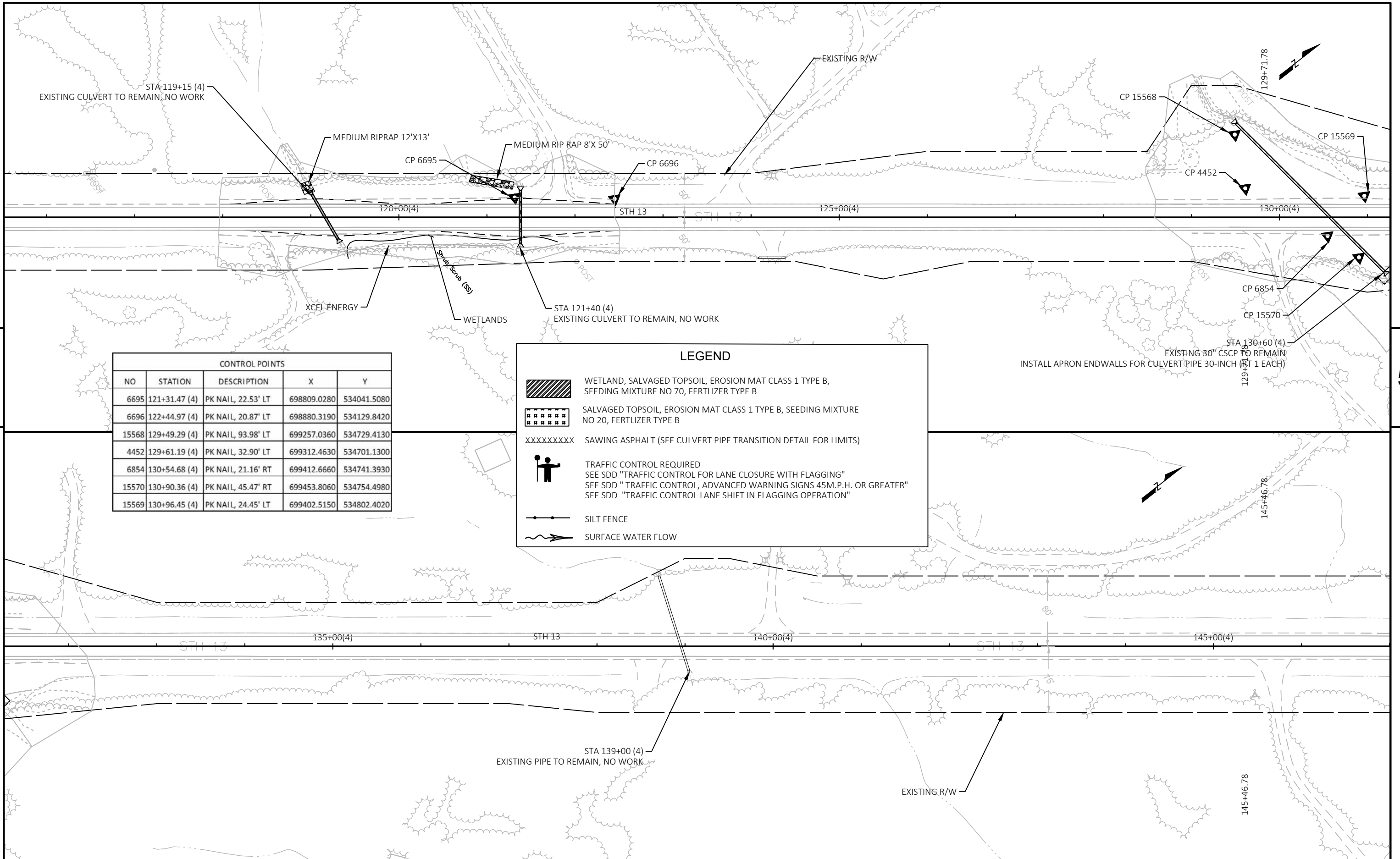


CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
15203	95+28.22 (4)	PK NAIL, 22.67' LT	697203.7820	531992.0970
15204	96+71.39 (4)	PK NAIL, 19.66' RT	697325.3840	532078.7070
15278	102+44.54 (4)	PK NAIL, 21.48' LT	697646.3940	532555.3010
15277	103+82.08 (4)	PK NAIL, 23.15' RT	697766.3390	532636.0720
6646	104+02.19 (4)	PK NAIL, 18.34' RT	697774.9500	532654.8730
6647	110+59.27 (4)	PK NAIL, 23.82' RT	698184.4070	533168.8000

LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW

STA 110+90 (4)
 REMOVING SMALL PIPE CULVERTS (1 EACH)
 INSTALL CULVERT PIPE CLASS III-A NON-METAL 24-INCH (60 LF)
 INSTALL APRON ENDWALLS FOR CULVERT PIPE 24-INCH (2 EACH)
 INSTALL MARKERS CULVERT END (2 EACH)
 INSTALL CULVERT PIPE CHECKS (2 EACH)
 TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
 INLET ELEVATION 620.08
 OUTLET ELEVATION 616.07



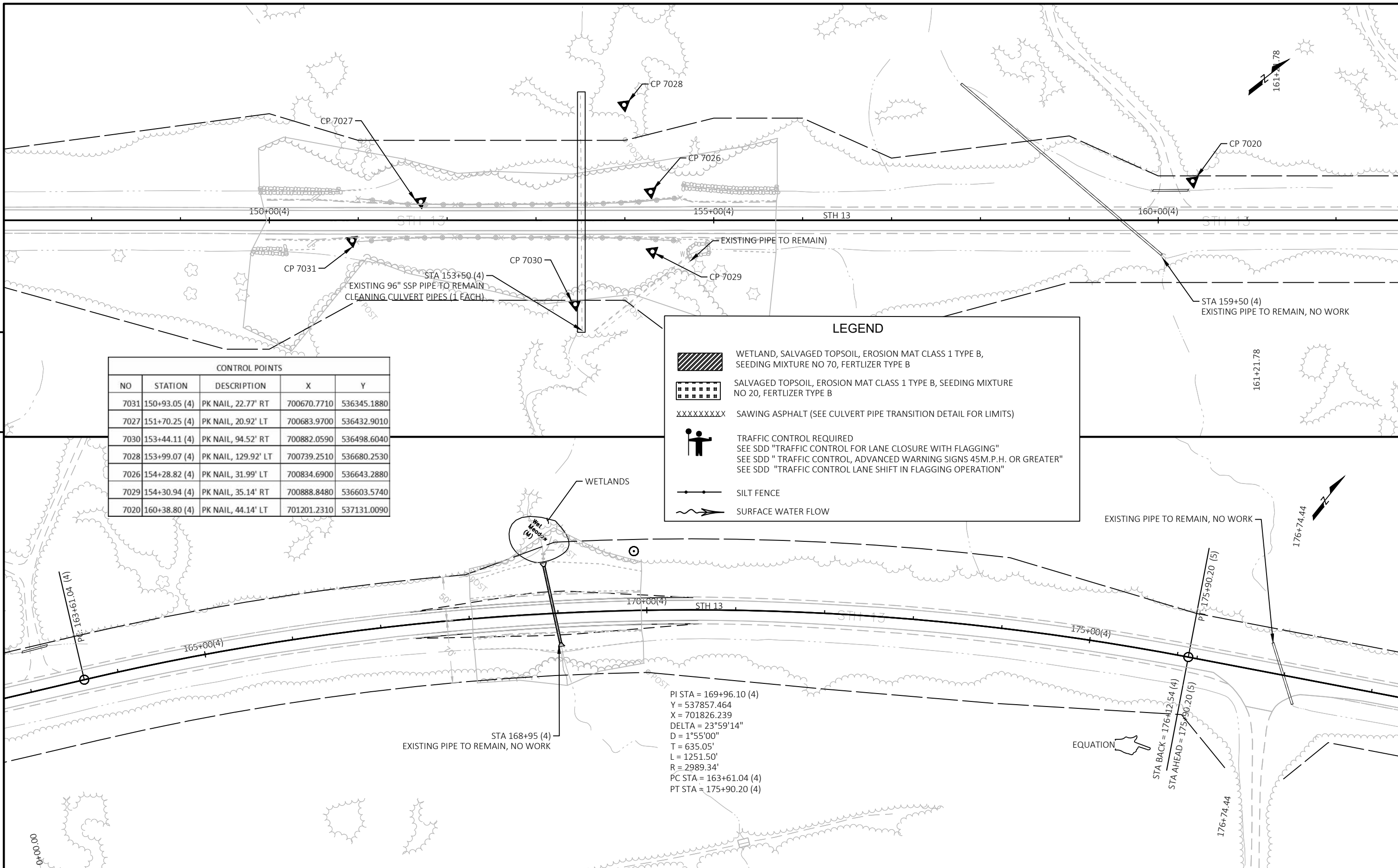
CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
6695	121+31.47 (4)	PK NAIL, 22.53' LT	698809.0280	534041.5080
6696	122+44.97 (4)	PK NAIL, 20.87' LT	698880.3190	534129.8420
15568	129+49.29 (4)	PK NAIL, 93.98' LT	699257.0360	534729.4130
4452	129+61.19 (4)	PK NAIL, 32.90' LT	699312.4630	534701.1300
6854	130+54.68 (4)	PK NAIL, 21.16' RT	699412.6660	534741.3930
15570	130+90.36 (4)	PK NAIL, 45.47' RT	699453.8060	534754.4980
15569	130+96.45 (4)	PK NAIL, 24.45' LT	699402.5150	534802.4020

LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW

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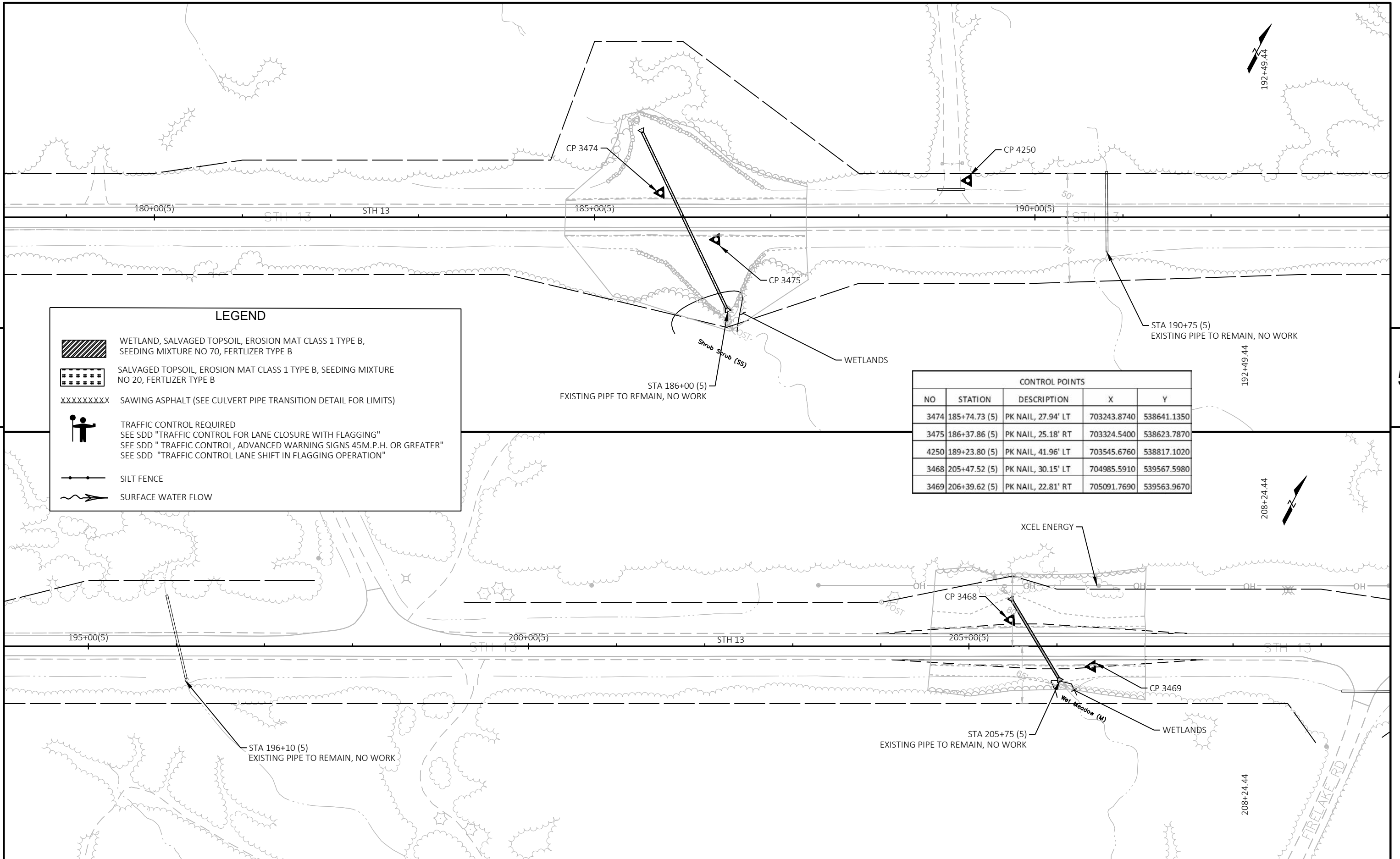


CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
7031	150+93.05 (4)	PK NAIL, 22.77' RT	700670.7710	536345.1880
7027	151+70.25 (4)	PK NAIL, 20.92' LT	700683.9700	536432.9010
7030	153+44.11 (4)	PK NAIL, 94.52' RT	700882.0590	536498.6040
7028	153+99.07 (4)	PK NAIL, 129.92' LT	700739.2510	536680.2530
7026	154+28.82 (4)	PK NAIL, 31.99' LT	700834.6900	536643.2880
7029	154+30.94 (4)	PK NAIL, 35.14' RT	700888.8480	536603.5740
7020	160+38.80 (4)	PK NAIL, 44.14' LT	701201.2310	537131.0090







LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW

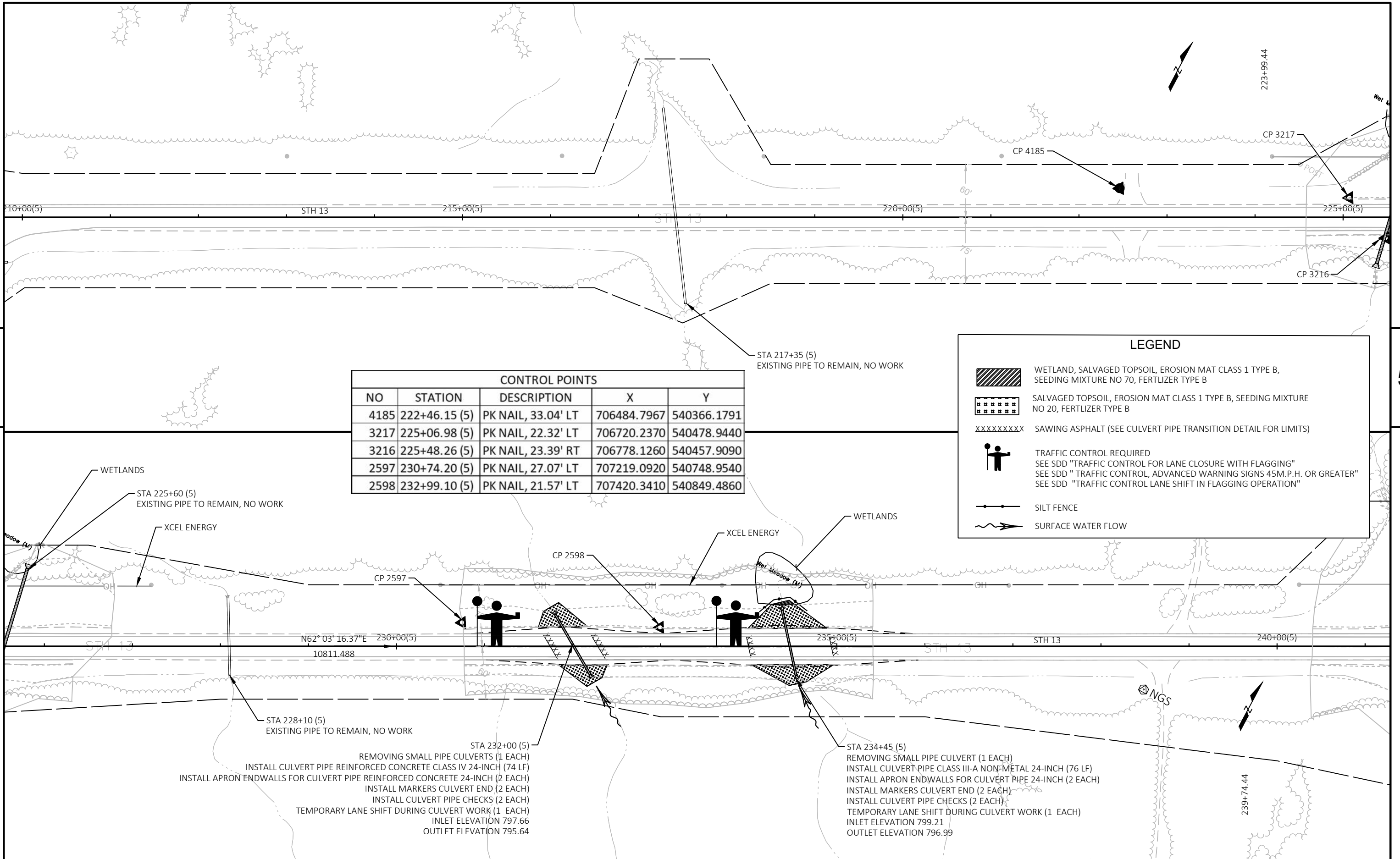
PI STA = 169+96.10 (4)
 Y = 537857.464
 X = 701826.239
 DELTA = 23°59'14"
 D = 1°55'00"
 T = 635.05'
 L = 1251.50'
 R = 2989.34'
 PC STA = 163+61.04 (4)
 PT STA = 175+90.20 (4)



LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
-  XXXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
3474	185+74.73 (5)	PK NAIL, 27.94' LT	703243.8740	538641.1350
3475	186+37.86 (5)	PK NAIL, 25.18' RT	703324.5400	538623.7870
4250	189+23.80 (5)	PK NAIL, 41.96' LT	703545.6760	538817.1020
3468	205+47.52 (5)	PK NAIL, 30.15' LT	704985.5910	539567.5980
3469	206+39.62 (5)	PK NAIL, 22.81' RT	705091.7690	539563.9670



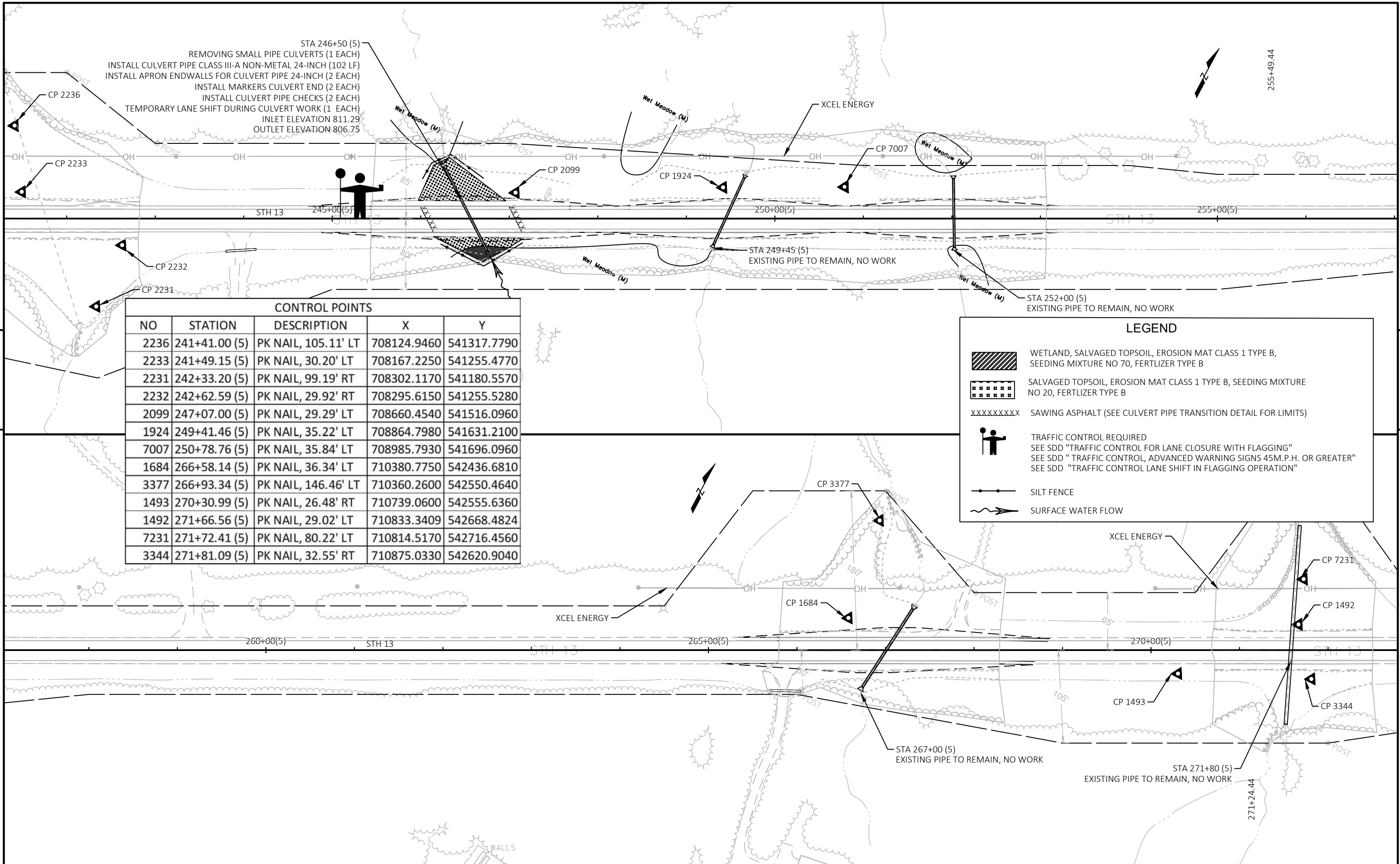
CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
4185	222+46.15 (5)	PK NAIL, 33.04' LT	706484.7967	540366.1791
3217	225+06.98 (5)	PK NAIL, 22.32' LT	706720.2370	540478.9440
3216	225+48.26 (5)	PK NAIL, 23.39' RT	706778.1260	540457.9090
2597	230+74.20 (5)	PK NAIL, 27.07' LT	707219.0920	540748.9540
2598	232+99.10 (5)	PK NAIL, 21.57' LT	707420.3410	540849.4860

LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- xxxxxxx SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW

STA 232+00 (5)
 REMOVING SMALL PIPE CULVERTS (1 EACH)
 INSTALL CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH (74 LF)
 INSTALL APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH (2 EACH)
 INSTALL MARKERS CULVERT END (2 EACH)
 INSTALL CULVERT PIPE CHECKS (2 EACH)
 TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
 INLET ELEVATION 797.66
 OUTLET ELEVATION 795.64

STA 234+45 (5)
 REMOVING SMALL PIPE CULVERT (1 EACH)
 INSTALL CULVERT PIPE CLASS III-A NON-METAL 24-INCH (76 LF)
 INSTALL APRON ENDWALLS FOR CULVERT PIPE 24-INCH (2 EACH)
 INSTALL MARKERS CULVERT END (2 EACH)
 INSTALL CULVERT PIPE CHECKS (2 EACH)
 TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
 INLET ELEVATION 799.21
 OUTLET ELEVATION 796.99

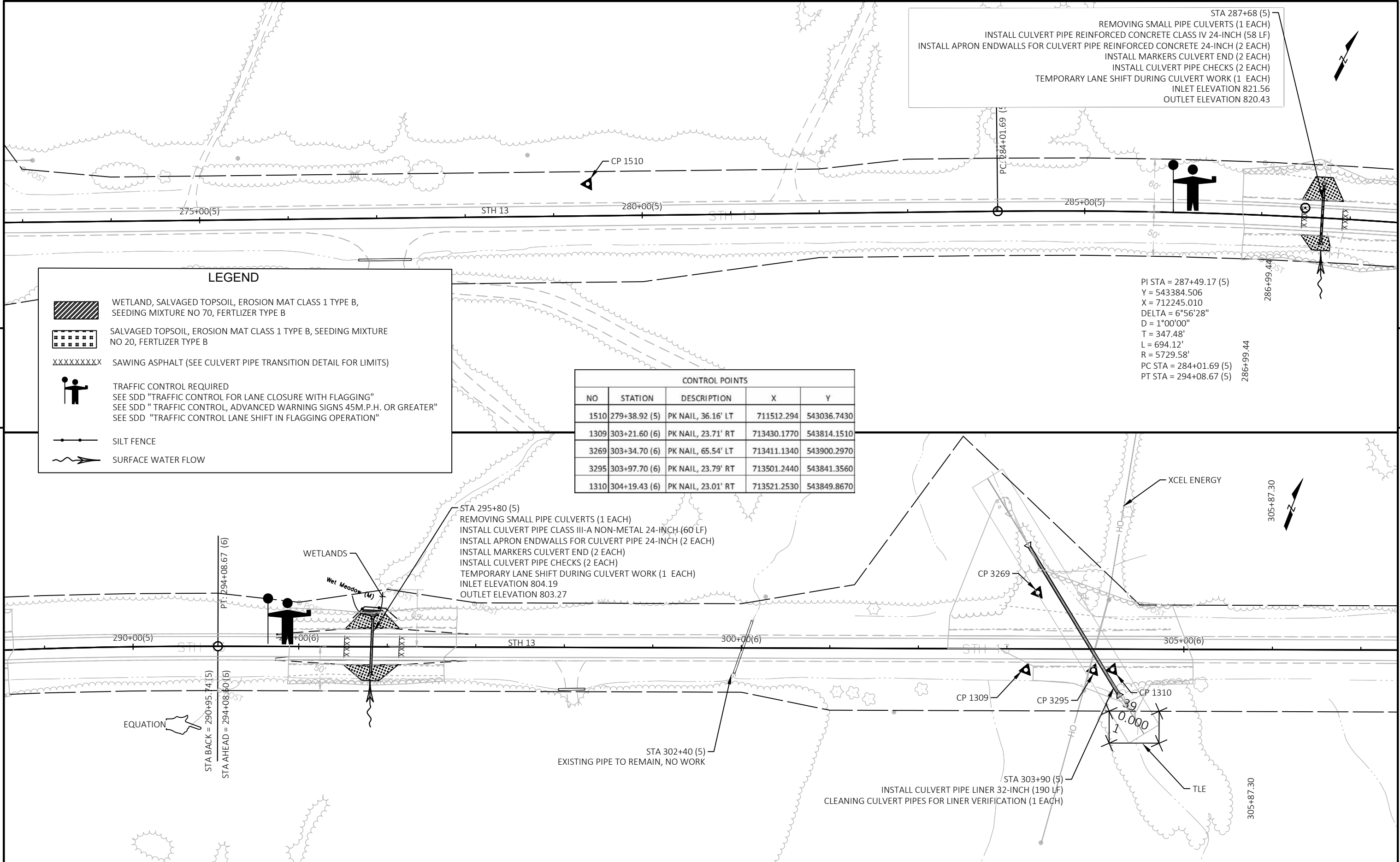


STA 246+50 (5)
 REMOVING SMALL PIPE CULVERTS (1 EACH)
 INSTALL CULVERT PIPE CLASS III-A NON-METAL 24-INCH (102 LF)
 INSTALL APRON ENDWALLS FOR CULVERT PIPE 24-INCH (2 EACH)
 INSTALL MARKERS CULVERT END (2 EACH)
 INSTALL CULVERT PIPE CHECKS (2 EACH)
 TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
 INLET ELEVATION 811.29
 OUTLET ELEVATION 806.75

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
2236	241+41.00 (5)	PK NAIL, 105.11' LT	708124.9460	541317.7790
2233	241+49.15 (5)	PK NAIL, 30.20' LT	708167.2250	541255.4770
2231	242+33.20 (5)	PK NAIL, 99.19' RT	708302.1170	541180.5570
2232	242+62.59 (5)	PK NAIL, 29.92' RT	708295.6150	541255.5280
2099	247+07.00 (5)	PK NAIL, 29.29' LT	708660.4540	541516.0960
1924	249+41.46 (5)	PK NAIL, 35.22' LT	708864.7980	541631.2100
7007	250+78.76 (5)	PK NAIL, 35.84' LT	708985.7930	541696.0960
1684	266+58.14 (5)	PK NAIL, 36.34' LT	710380.7750	542436.6810
3377	266+93.34 (5)	PK NAIL, 146.46' LT	710360.2600	542550.4640
1493	270+30.99 (5)	PK NAIL, 26.48' RT	710739.0600	542555.6360
1492	271+66.56 (5)	PK NAIL, 29.02' LT	710833.3409	542668.4824
7231	271+72.41 (5)	PK NAIL, 80.22' LT	710814.5170	542716.4560
3344	271+81.09 (5)	PK NAIL, 32.55' RT	710875.0330	542620.9040

LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW



STA 287+68 (5)
 REMOVING SMALL PIPE CULVERTS (1 EACH)
 INSTALL CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH (58 LF)
 INSTALL APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH (2 EACH)
 INSTALL MARKERS CULVERT END (2 EACH)
 INSTALL CULVERT PIPE CHECKS (2 EACH)
 TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
 INLET ELEVATION 821.56
 OUTLET ELEVATION 820.43

LEGEND

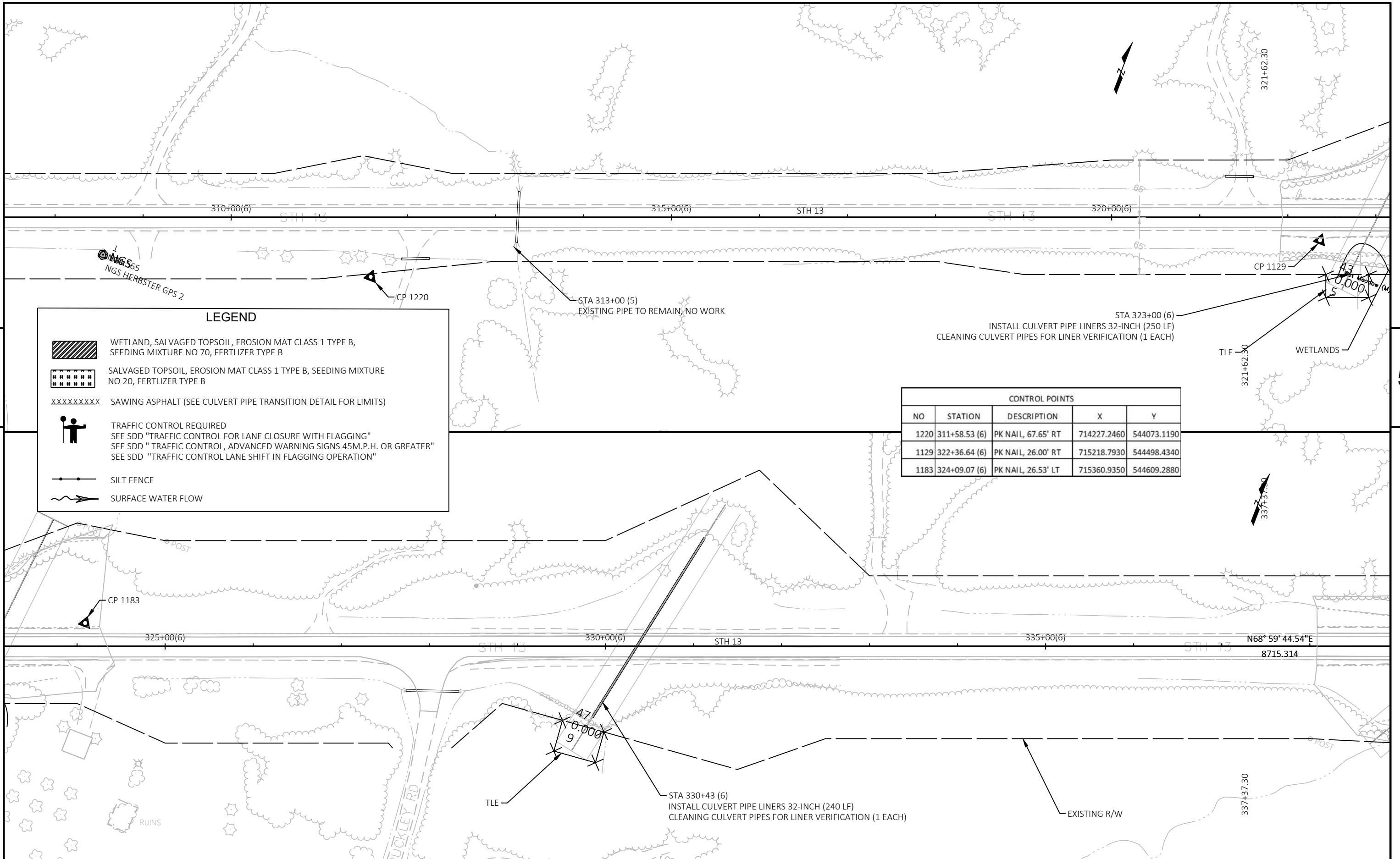
- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
1510	279+38.92 (5)	PK NAIL, 36.16' LT	711512.294	543036.7430
1309	303+21.60 (6)	PK NAIL, 23.71' RT	713430.1770	543814.1510
3269	303+34.70 (6)	PK NAIL, 65.54' LT	713411.1340	543900.2970
3295	303+97.70 (6)	PK NAIL, 23.79' RT	713501.2440	543841.3560
1310	304+19.43 (6)	PK NAIL, 23.01' RT	713521.2530	543849.8670


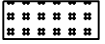
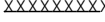



PI STA = 287+49.17 (5)
 Y = 543384.506
 X = 712245.010
 DELTA = 6°56'28"
 D = 1°00'00"
 T = 347.48'
 L = 694.12'
 R = 5729.58'
 PC STA = 284+01.69 (5)
 PT STA = 294+08.67 (5)

STA 295+80 (5)
 REMOVING SMALL PIPE CULVERTS (1 EACH)
 INSTALL CULVERT PIPE CLASS III-A NON-METAL 24-INCH (60 LF)
 INSTALL APRON ENDWALLS FOR CULVERT PIPE 24-INCH (2 EACH)
 INSTALL MARKERS CULVERT END (2 EACH)
 INSTALL CULVERT PIPE CHECKS (2 EACH)
 TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
 INLET ELEVATION 804.19
 OUTLET ELEVATION 803.27

STA 303+90 (5)
 INSTALL CULVERT PIPE LINER 32-INCH (190 LF)
 CLEANING CULVERT PIPES FOR LINER VERIFICATION (1 EACH)



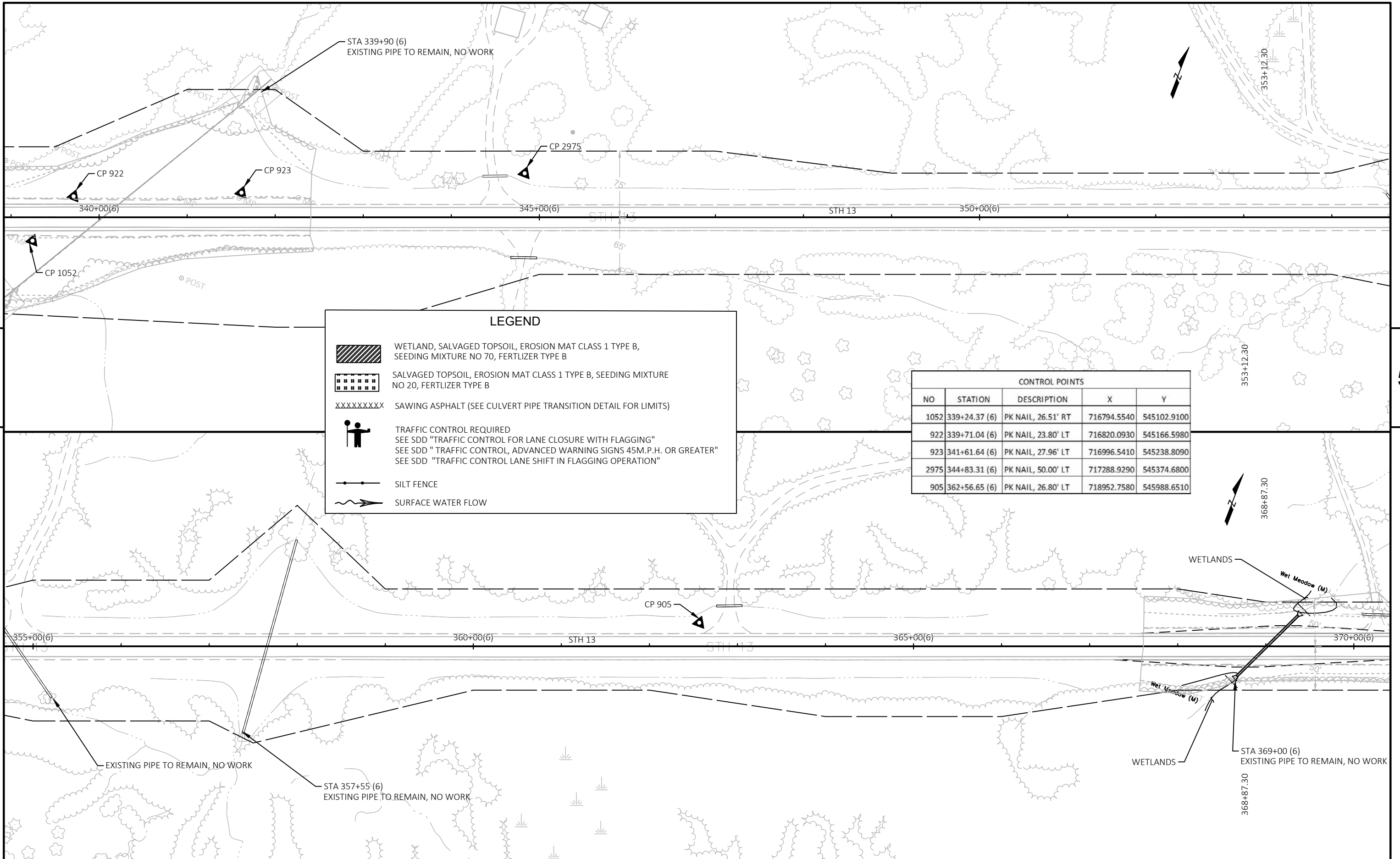
LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
-  SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
1220	311+58.53 (6)	PK NAIL, 67.65' RT	714227.2460	544073.1190
1129	322+36.64 (6)	PK NAIL, 26.00' RT	715218.7930	544498.4340
1183	324+09.07 (6)	PK NAIL, 26.53' LT	715360.9350	544609.2880

5

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LEGEND

- WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
- SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
- TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
- SILT FENCE
- SURFACE WATER FLOW

CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
1052	339+24.37 (6)	PK NAIL, 26.51' RT	716794.5540	545102.9100
922	339+71.04 (6)	PK NAIL, 23.80' LT	716820.0930	545166.5980
923	341+61.64 (6)	PK NAIL, 27.96' LT	716996.5410	545238.8090
2975	344+83.31 (6)	PK NAIL, 50.00' LT	717288.9290	545374.6800
905	362+56.65 (6)	PK NAIL, 26.80' LT	718952.7580	545988.6510






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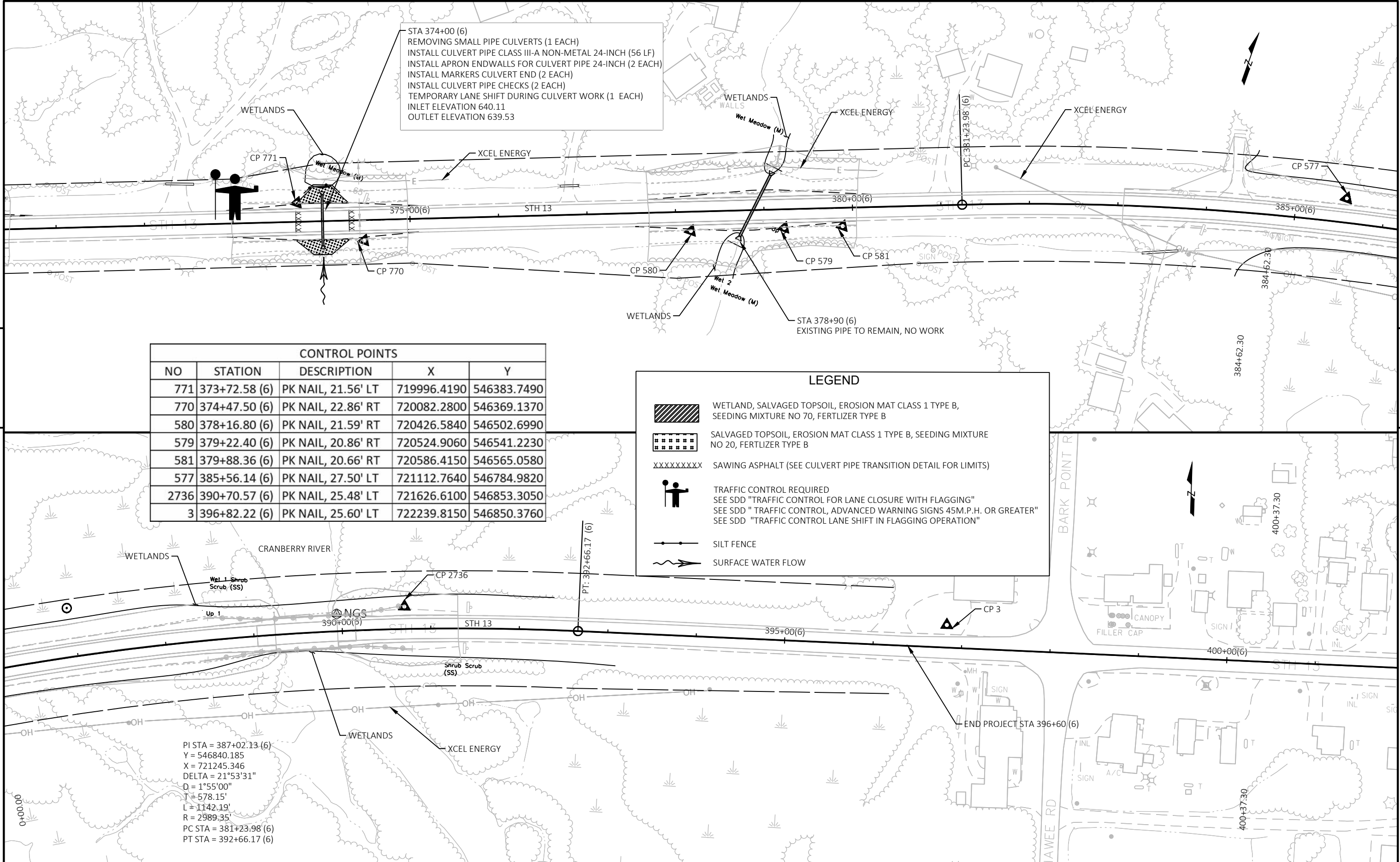
STA 374+00 (6)
 REMOVING SMALL PIPE CULVERTS (1 EACH)
 INSTALL CULVERT PIPE CLASS III-A NON-METAL 24-INCH (56 LF)
 INSTALL APRON ENDWALLS FOR CULVERT PIPE 24-INCH (2 EACH)
 INSTALL MARKERS CULVERT END (2 EACH)
 INSTALL CULVERT PIPE CHECKS (2 EACH)
 TEMPORARY LANE SHIFT DURING CULVERT WORK (1 EACH)
 INLET ELEVATION 640.11
 OUTLET ELEVATION 639.53

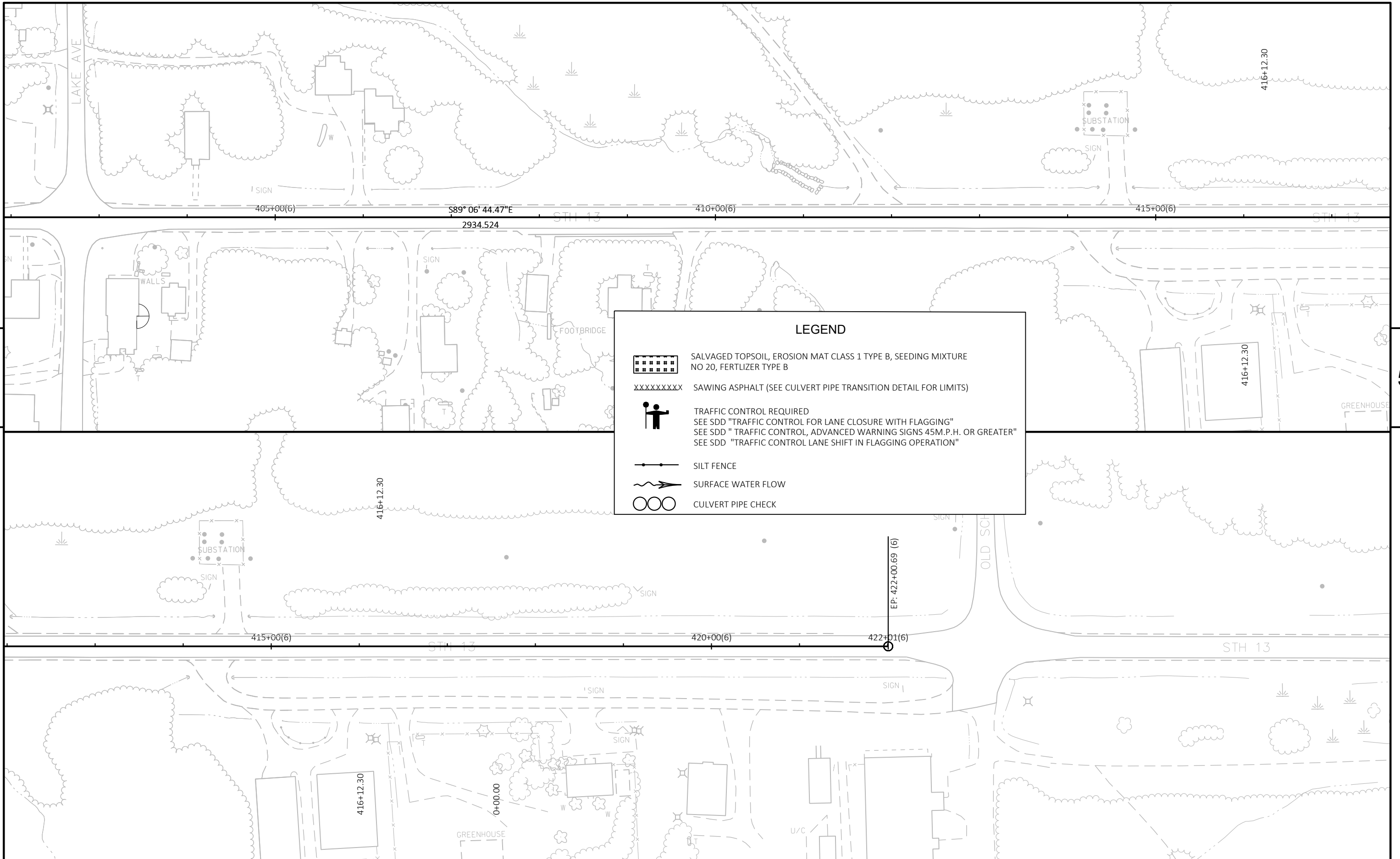
CONTROL POINTS				
NO	STATION	DESCRIPTION	X	Y
771	373+72.58 (6)	PK NAIL, 21.56' LT	719996.4190	546383.7490
770	374+47.50 (6)	PK NAIL, 22.86' RT	720082.2800	546369.1370
580	378+16.80 (6)	PK NAIL, 21.59' RT	720426.5840	546502.6990
579	379+22.40 (6)	PK NAIL, 20.86' RT	720524.9060	546541.2230
581	379+88.36 (6)	PK NAIL, 20.66' RT	720586.4150	546565.0580
577	385+56.14 (6)	PK NAIL, 27.50' LT	721112.7640	546784.9820
2736	390+70.57 (6)	PK NAIL, 25.48' LT	721626.6100	546853.3050
3	396+82.22 (6)	PK NAIL, 25.60' LT	722239.8150	546850.3760

LEGEND

-  WETLAND, SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 70, FERTILIZER TYPE B
-  SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
- XXXXXXXXX SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
-  TRAFFIC CONTROL REQUIRED
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING"
SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER"
SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
-  SILT FENCE
-  SURFACE WATER FLOW

PI STA = 387+02.13 (6)
 Y = 546840.185
 X = 721245.346
 DELTA = 21°53'31"
 D = 1°55'00"
 T = 578.15'
 L = 1142.19'
 R = 2989.35'
 PC STA = 381+23.98 (6)
 PT STA = 392+66.17 (6)










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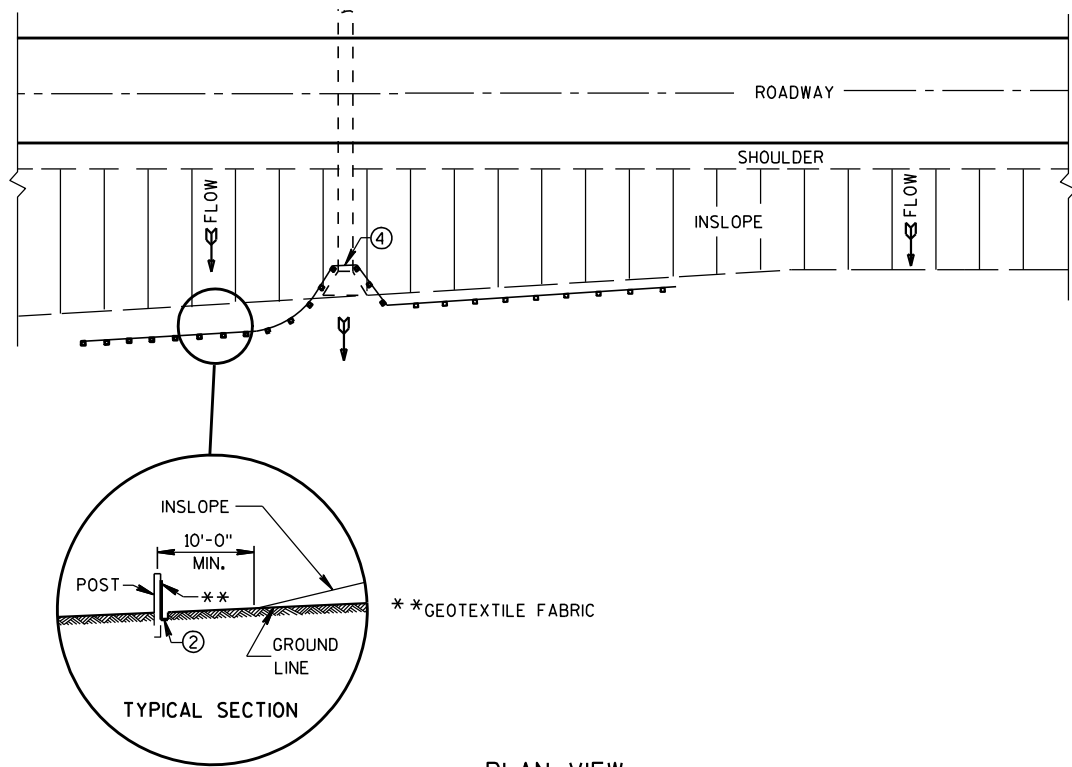
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LEGEND

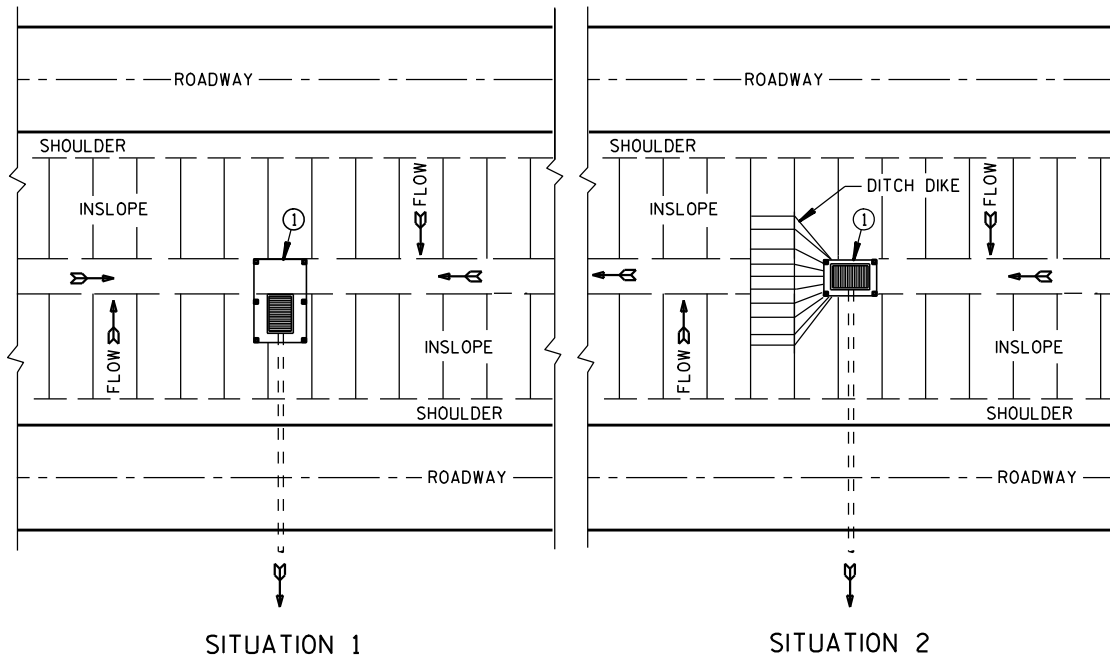
	SALVAGED TOPSOIL, EROSION MAT CLASS 1 TYPE B, SEEDING MIXTURE NO 20, FERTILIZER TYPE B
XXXXXXXXXX	SAWING ASPHALT (SEE CULVERT PIPE TRANSITION DETAIL FOR LIMITS)
	TRAFFIC CONTROL REQUIRED SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING" SEE SDD "TRAFFIC CONTROL, ADVANCED WARNING SIGNS 45M.P.H. OR GREATER" SEE SDD "TRAFFIC CONTROL LANE SHIFT IN FLAGGING OPERATION"
	SILT FENCE
	SURFACE WATER FLOW
	CULVERT PIPE CHECK

Standard Detail Drawing List

08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
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
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-22A	LONGITUDINAL MARKING (MAINLINE)
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-08A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D48-01	TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

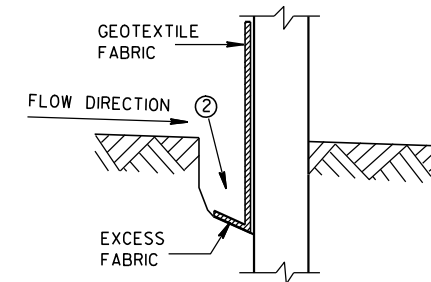


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

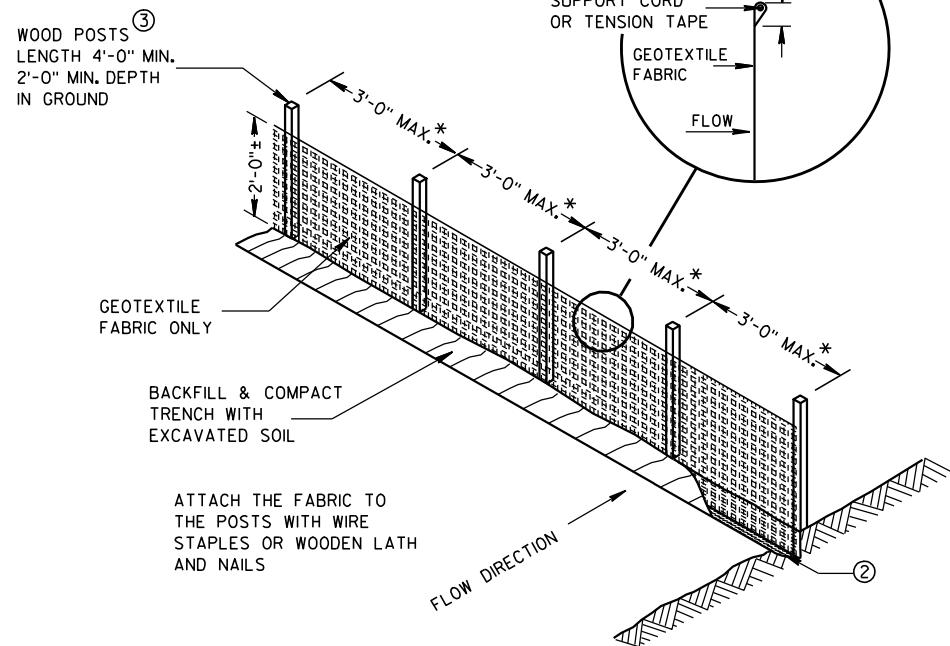
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



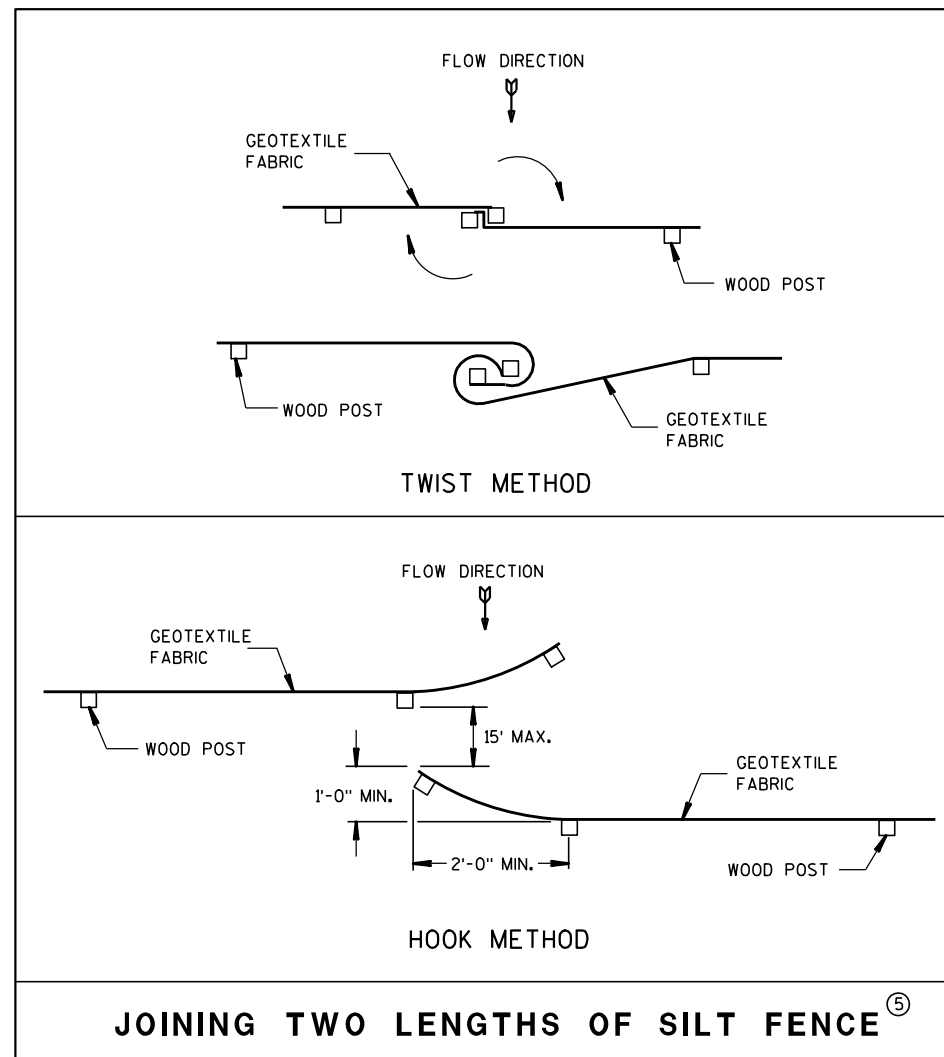
TRENCH DETAIL

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

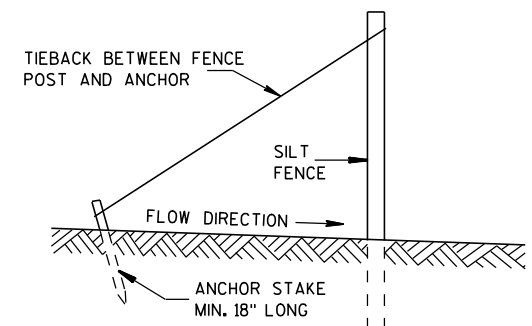


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤

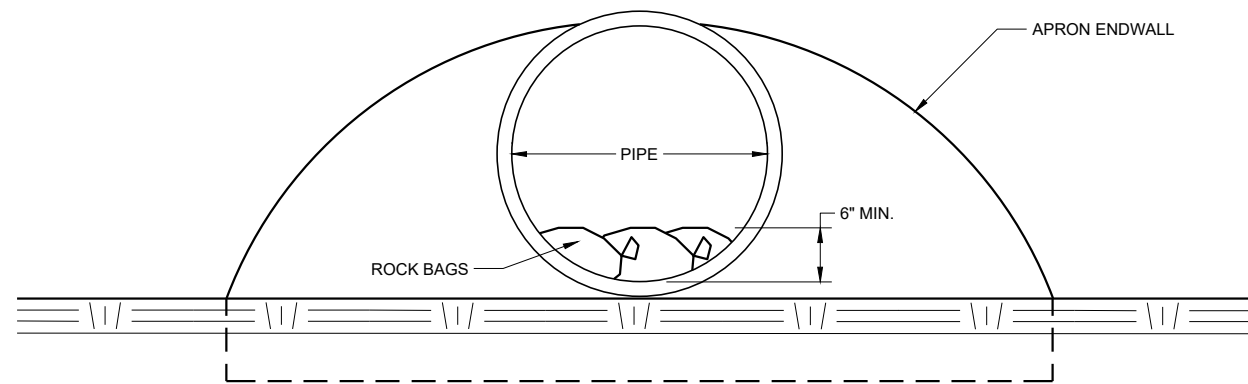


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

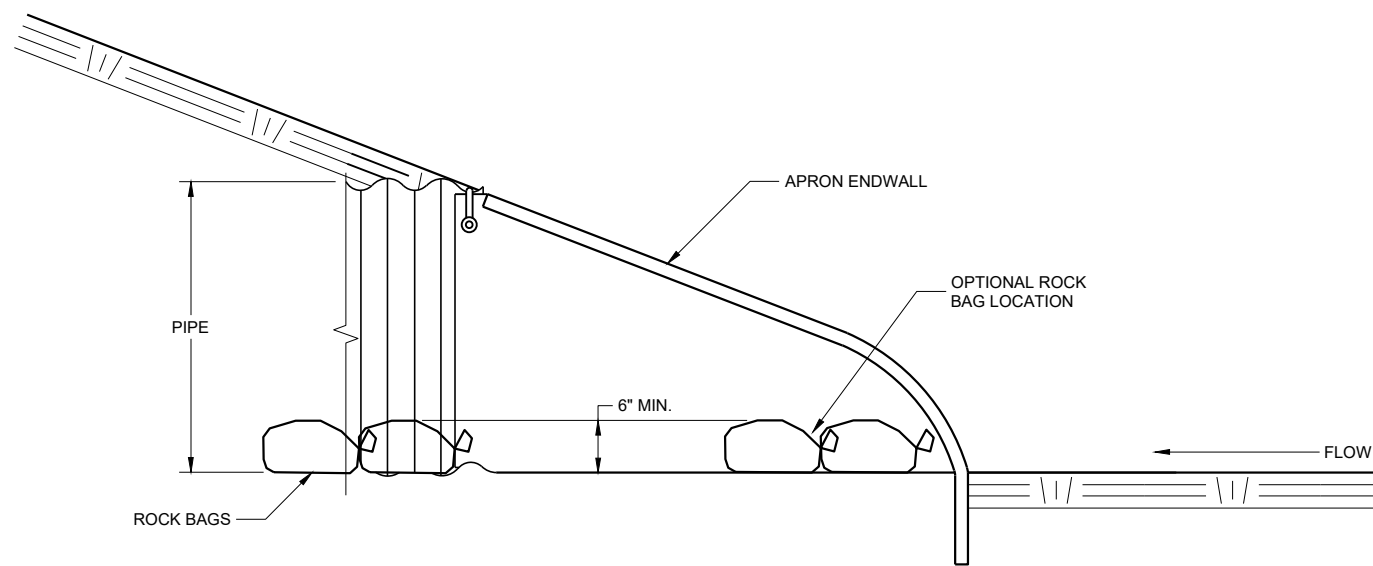
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



END VIEW



SIDE VIEW

CULVERT PIPE CHECK
 (INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
 May 2019 /S/ Daniel Schave
 DATE EROSION CONTROL ENGINEER

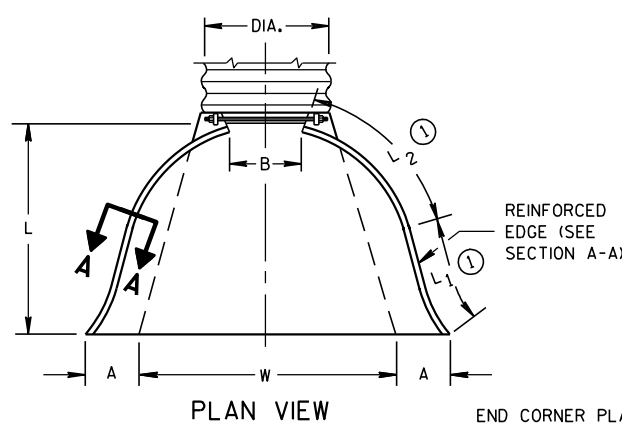
FHWA

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	L2	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.

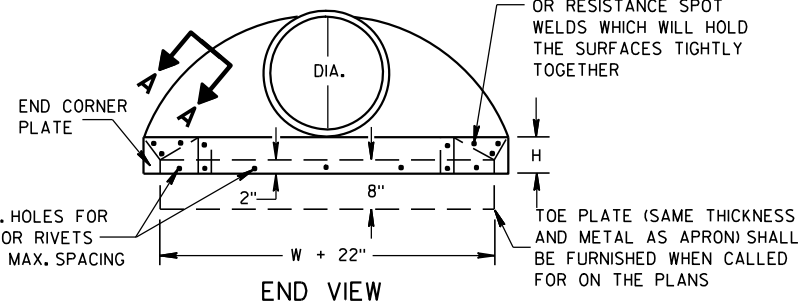
* EXCEPT CENTER PANEL SEE GENERAL NOTES

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

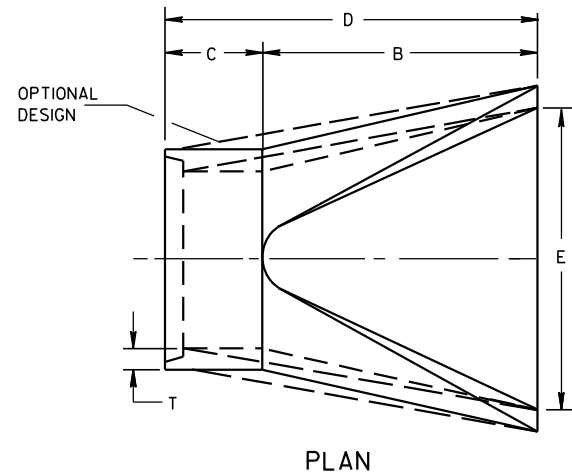
* MINIMUM
** MAXIMUM



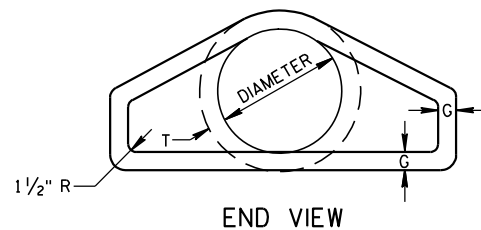
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



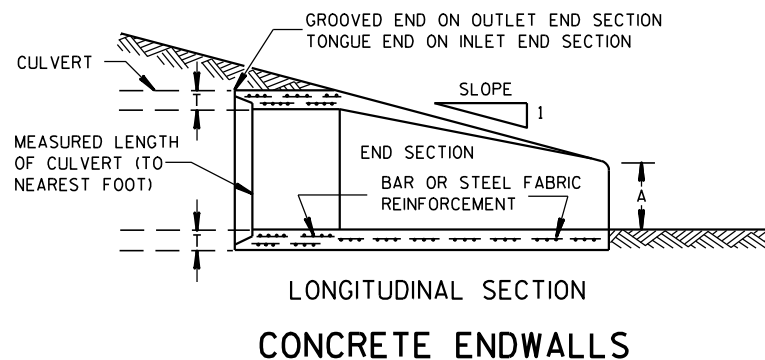
SIDE ELEVATION
METAL ENDWALLS



PLAN

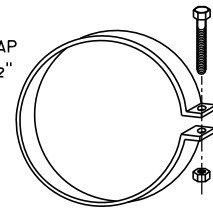


END VIEW

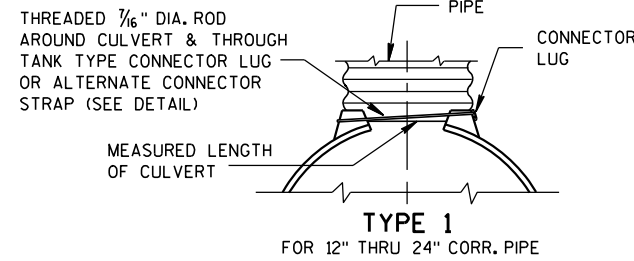


LONGITUDINAL SECTION
CONCRETE ENDWALLS

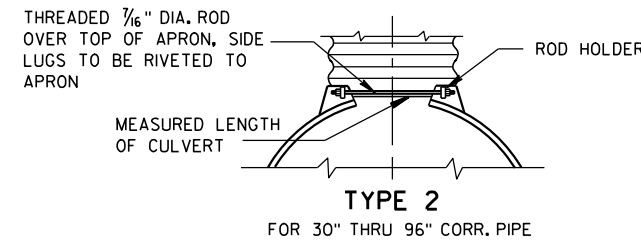
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



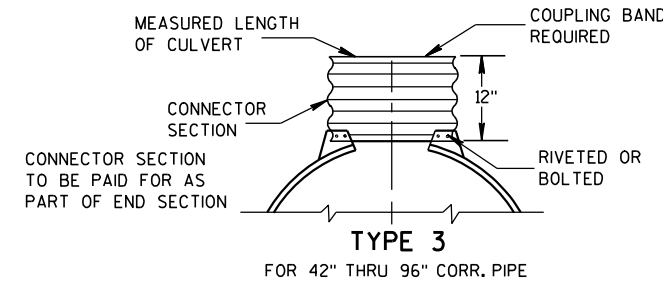
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



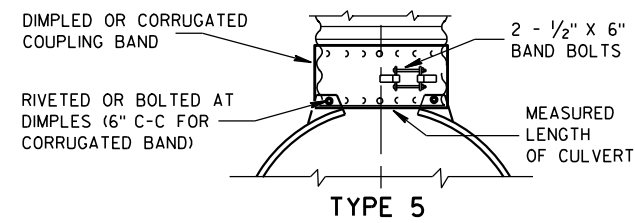
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

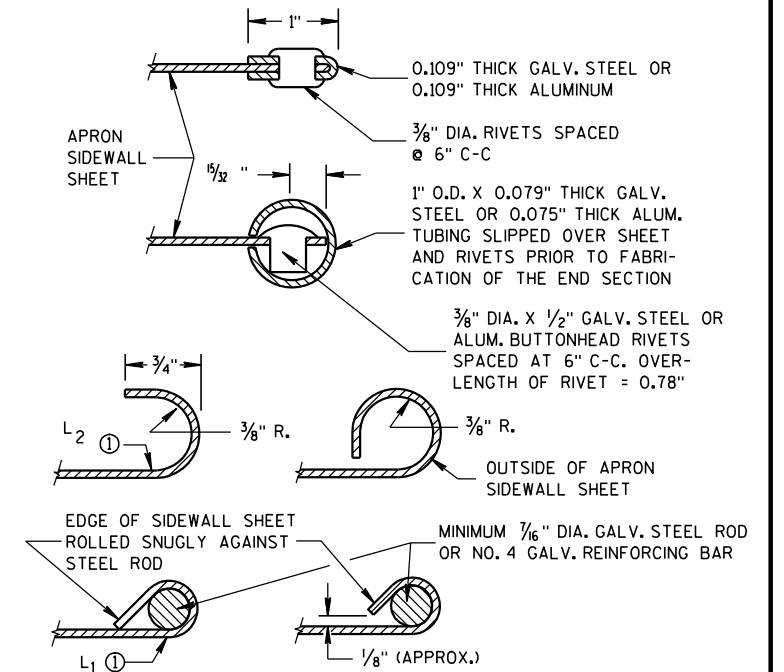
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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 VICE 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.

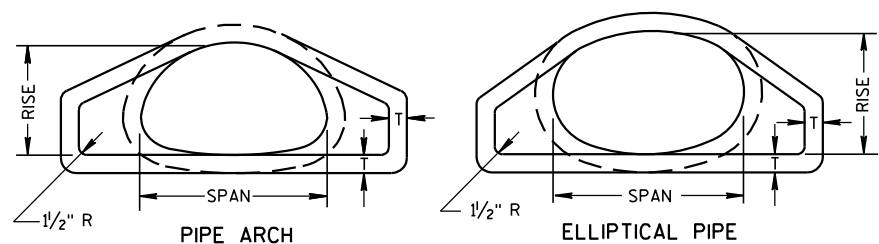
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

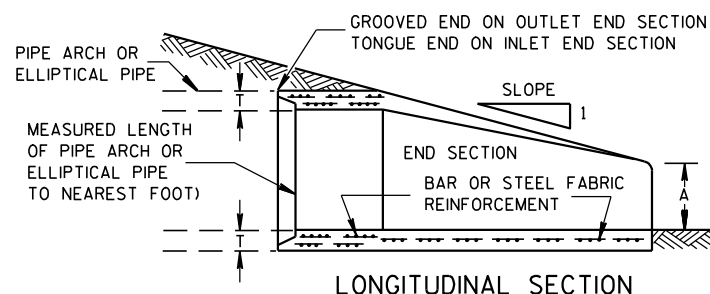
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

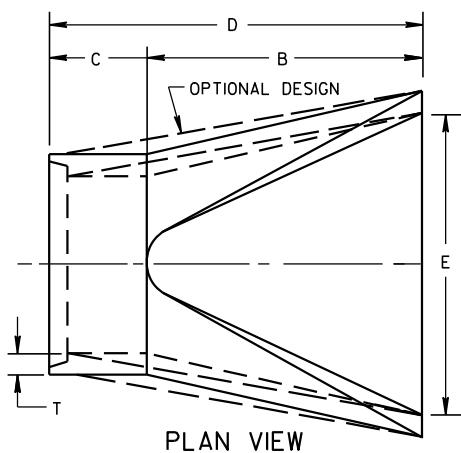


END VIEW



LONGITUDINAL SECTION

CONCRETE ENDWALLS



PLAN VIEW

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

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

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED. * EXCEPT CENTER PANEL SEE GENERAL NOTES

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

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

**NOMINAL SIZE

GENERAL NOTES

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

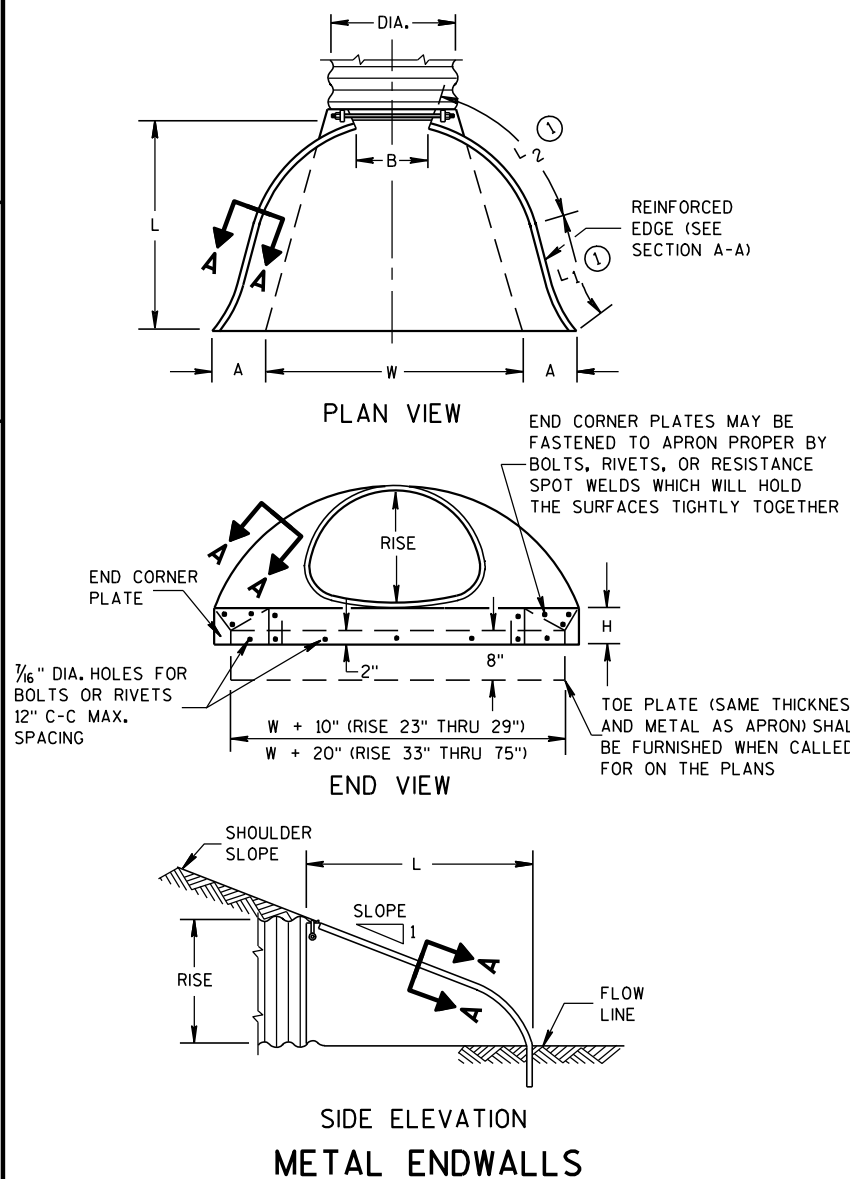
CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

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

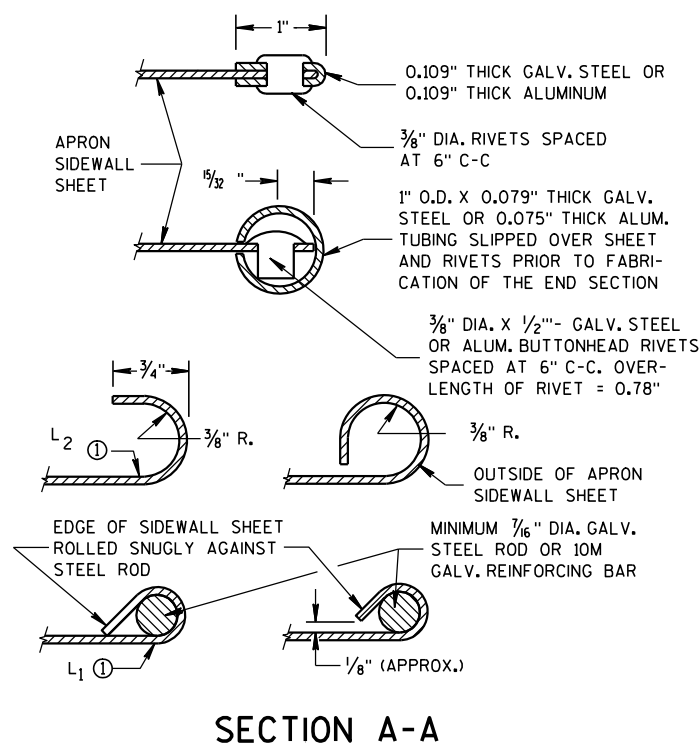
LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER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

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

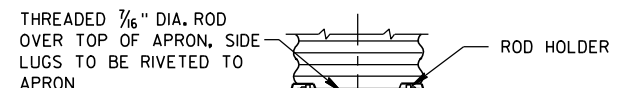
① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.



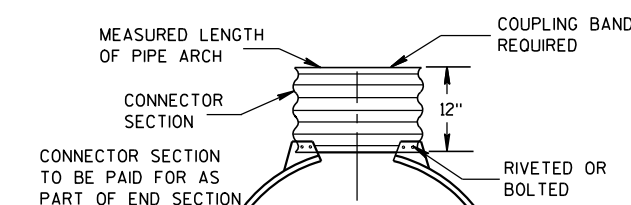
METAL ENDWALLS



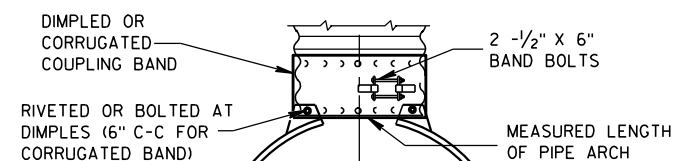
SECTION A-A



TYPE 2 FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3 FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5 ALTERNATE FOR: ALL SIZES CORRUGATED PIPE ARCHES

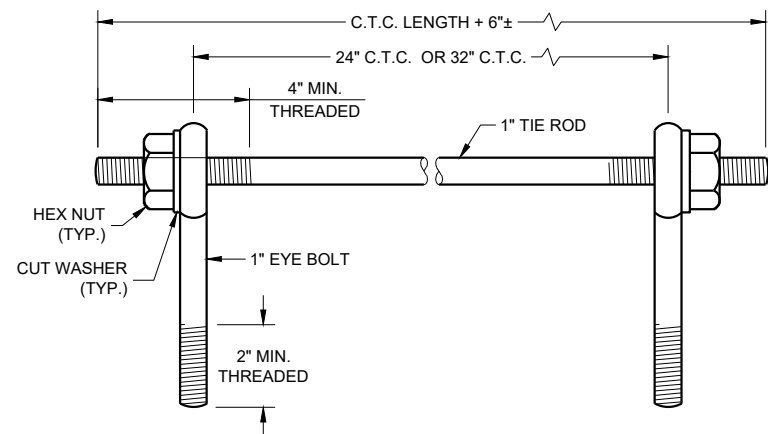
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

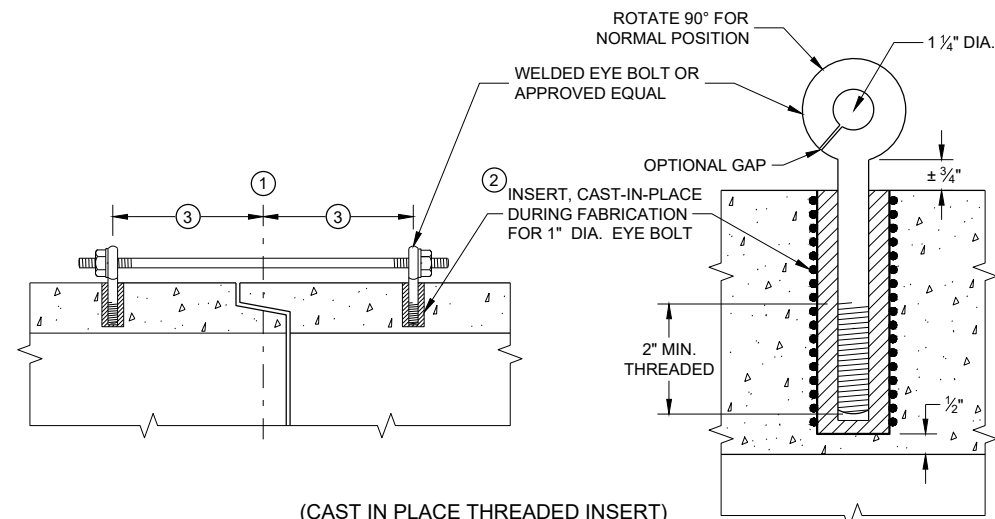
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



EYE BOLTS AND TIE ROD

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



LONGITUDINAL SECTIONS

GENERAL NOTES

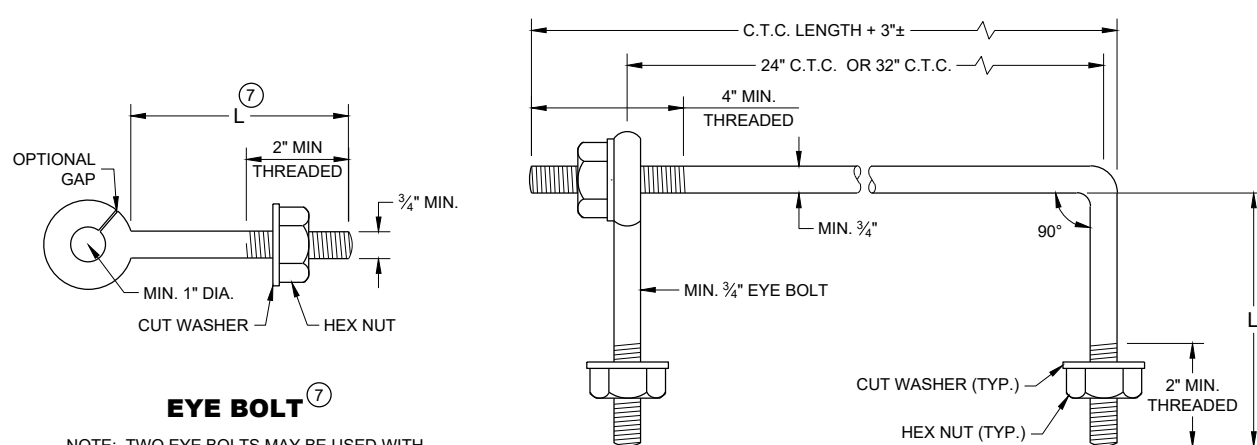
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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

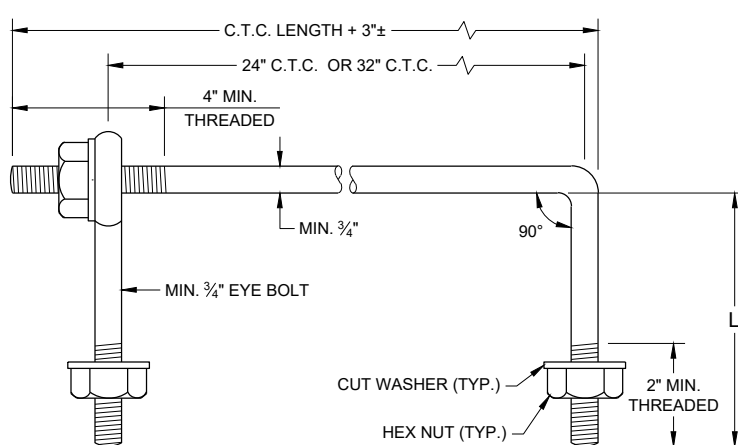
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

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

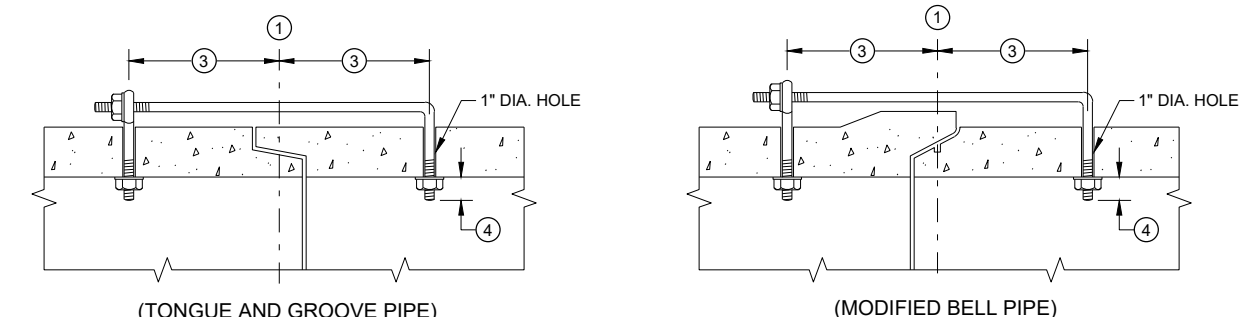


EYE BOLT ⑦

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



EYE BOLT AND TIE ROD



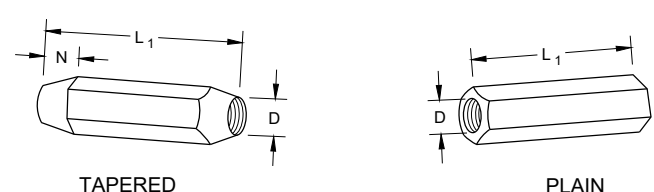
LONGITUDINAL SECTION
(JOINT TIES FOR 18\"/>

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

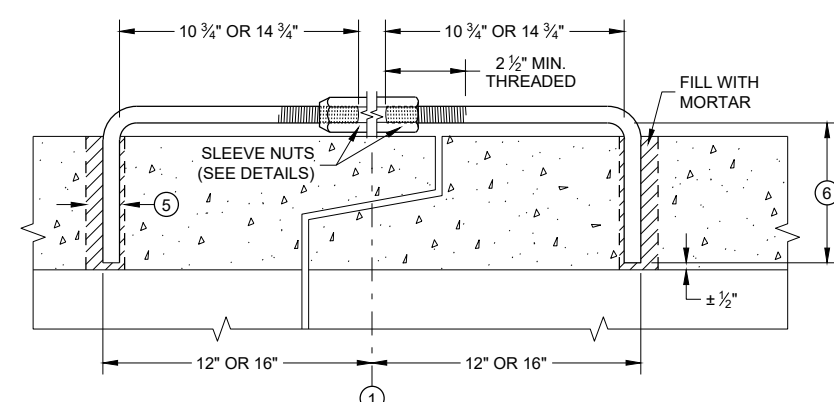
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES

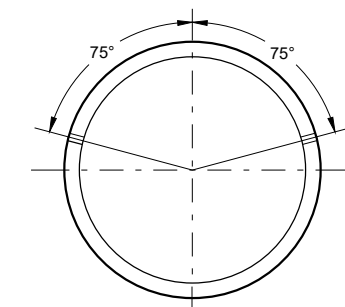


RIGHT AND LEFT THREADS SLEEVE NUTS



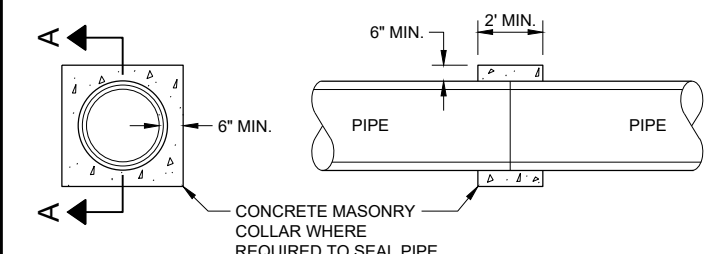
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION

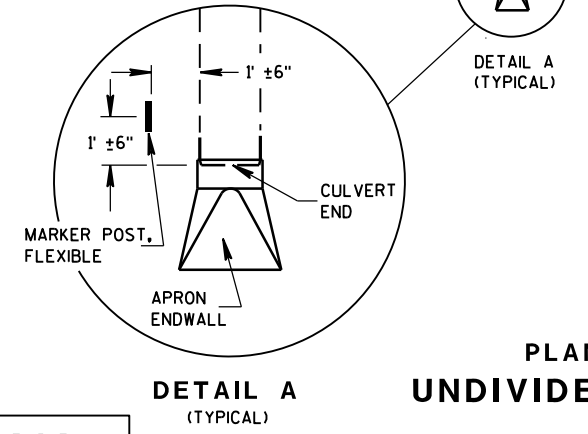
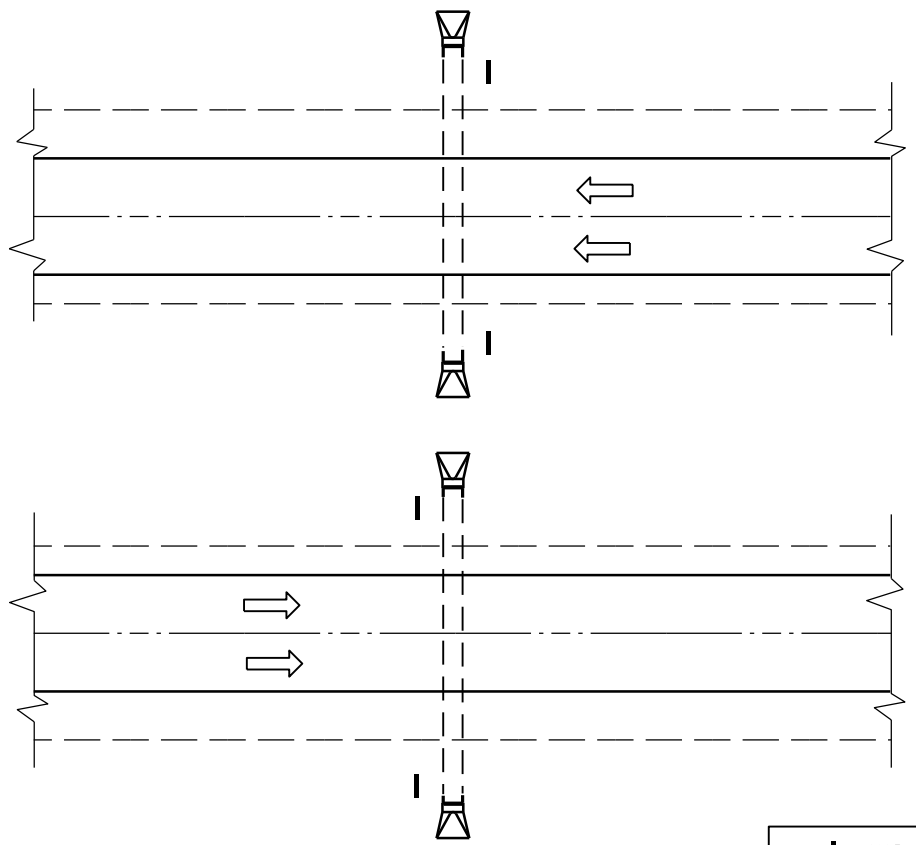


SECTION A - A
CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



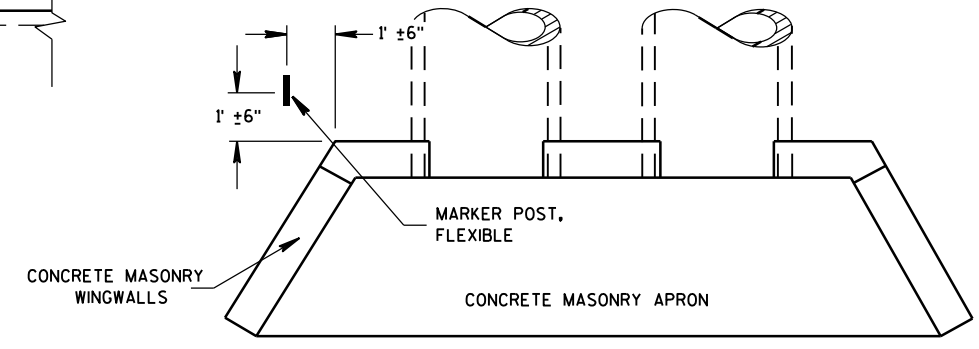
MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

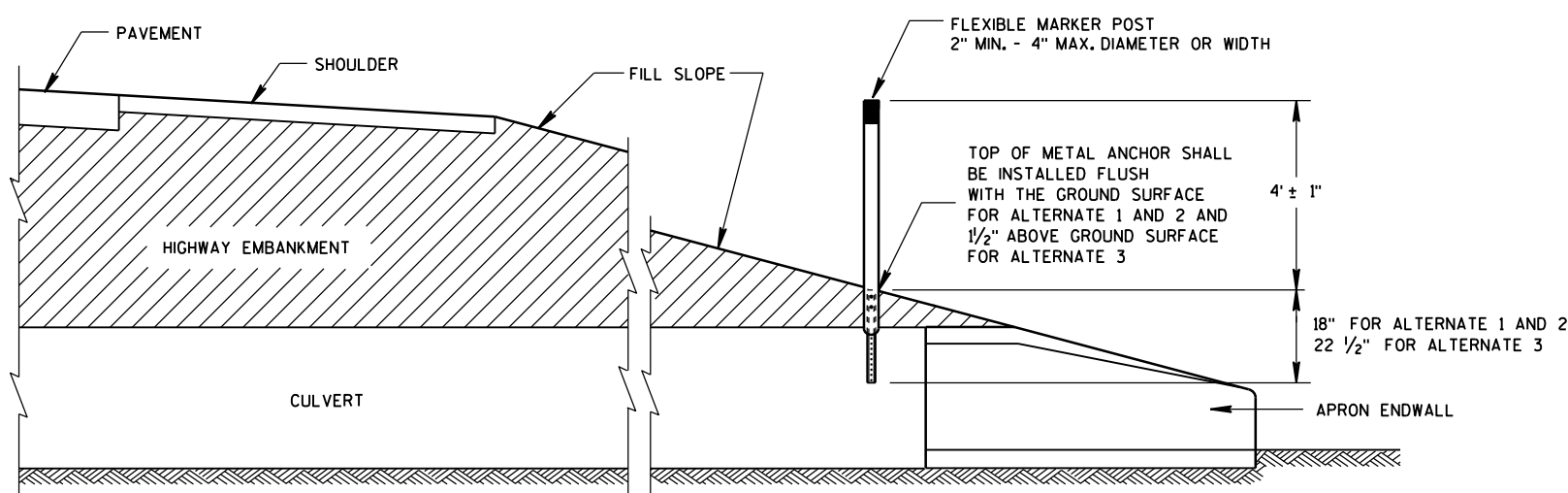
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



**PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH**

6

6



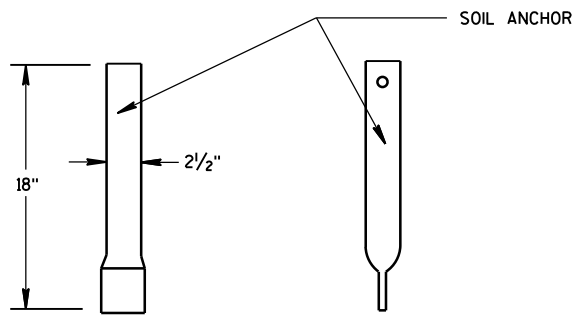
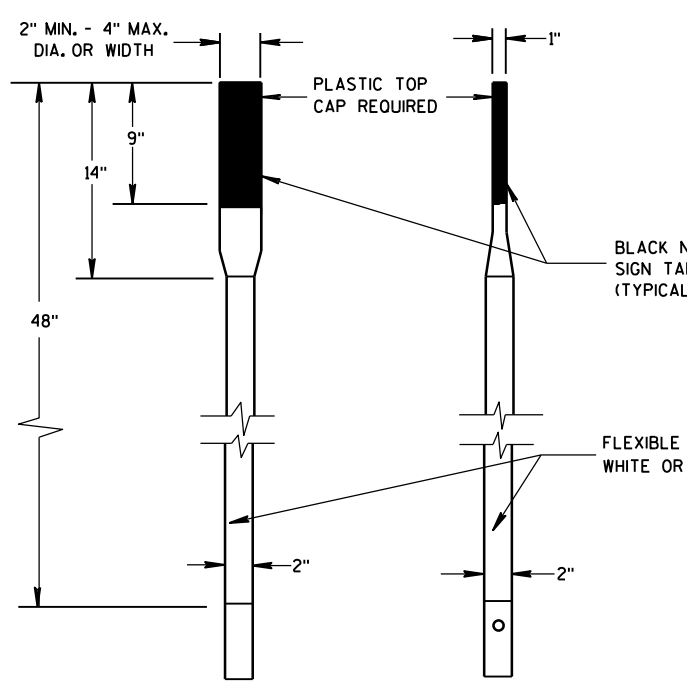
**CROSS SECTION
FLEXIBLE MARKER POST**

**FLEXIBLE MARKER POST
FOR CULVERT END**

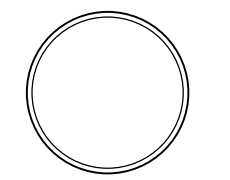
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

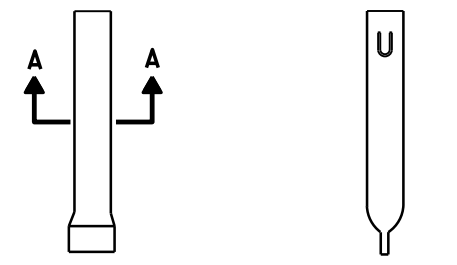
S.D.D. 15 A 3-2a



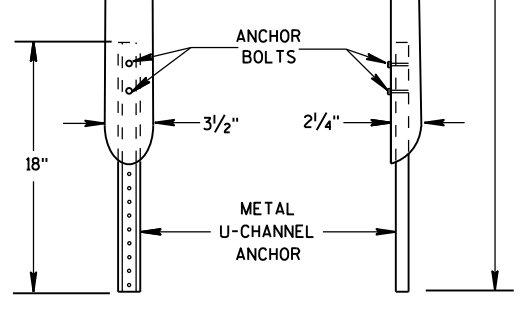
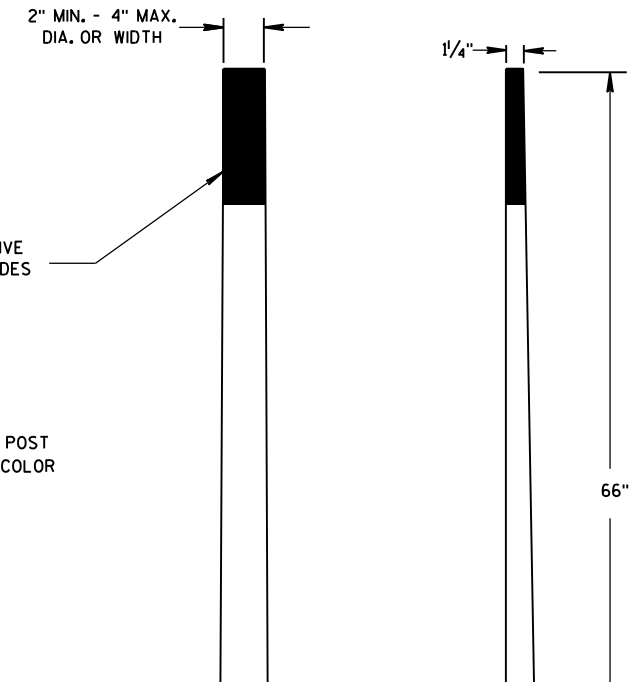
FRONT VIEW SIDE VIEW
ALTERNATE 1



SECTION A-A

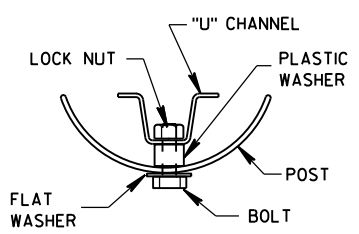


FRONT VIEW SIDE VIEW
ALTERNATE 1

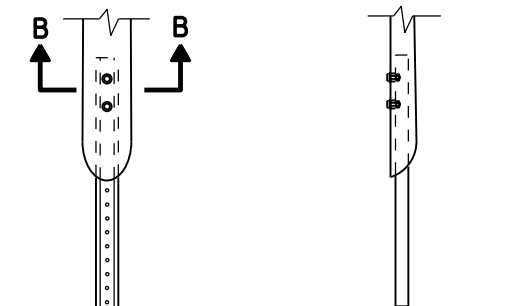


FRONT VIEW SIDE VIEW
ALTERNATE 2

FLEXIBLE MARKER POSTS

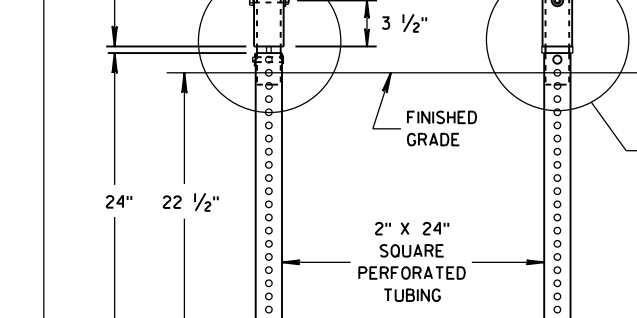
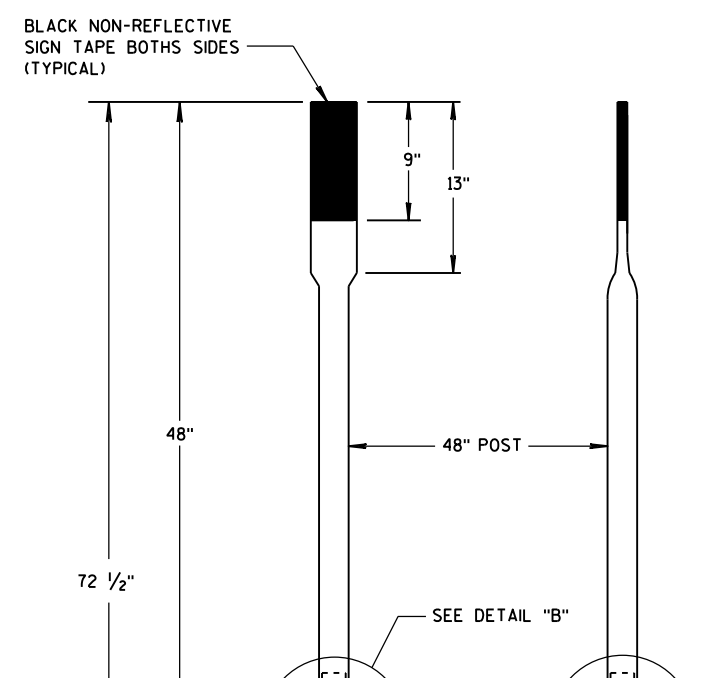


SECTION B-B

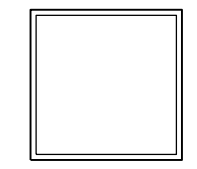


FRONT VIEW SIDE VIEW
ALTERNATE 2

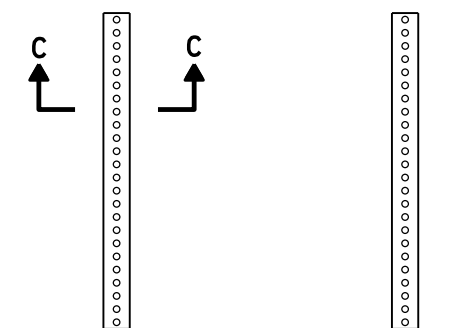
FLEXIBLE MARKER POST ANCHORS



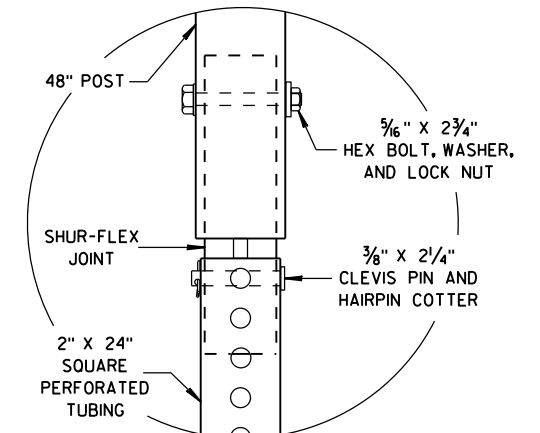
FRONT VIEW SIDE VIEW
ALTERNATE 3



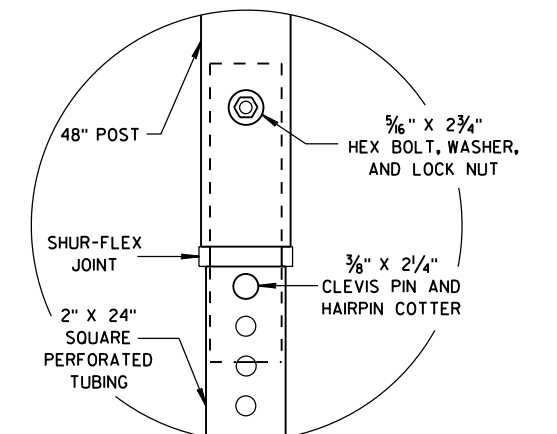
SECTION C-C



FRONT VIEW SIDE VIEW
ALTERNATE 3



DETAIL B

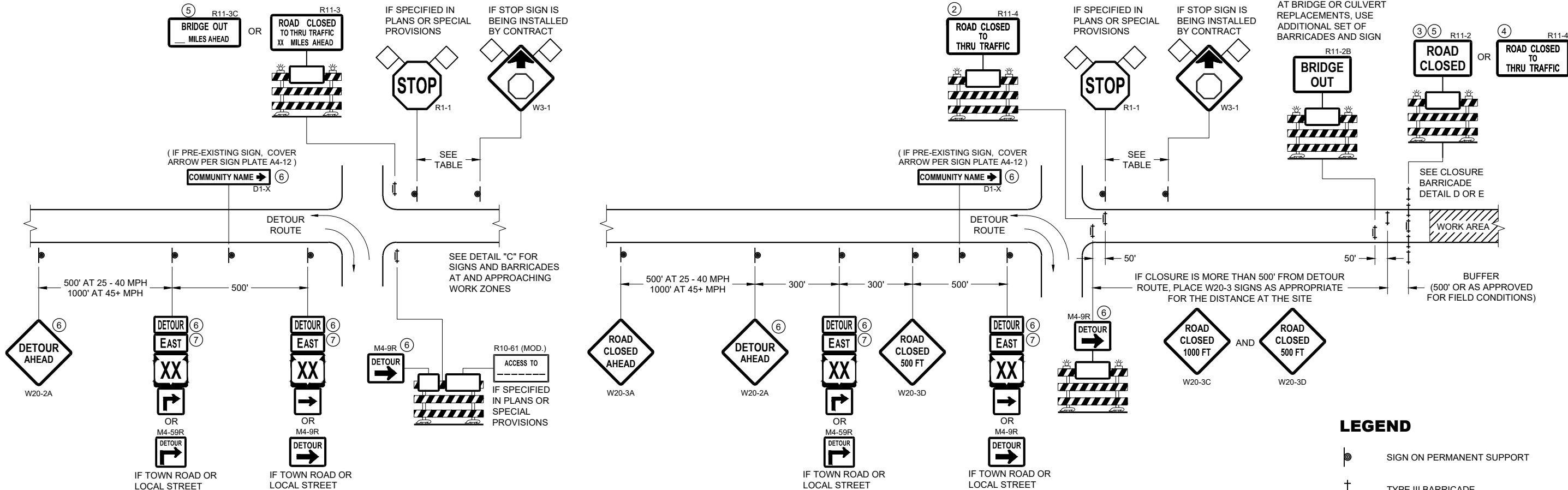


DETAIL C

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 DATE /S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN
FHWA



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

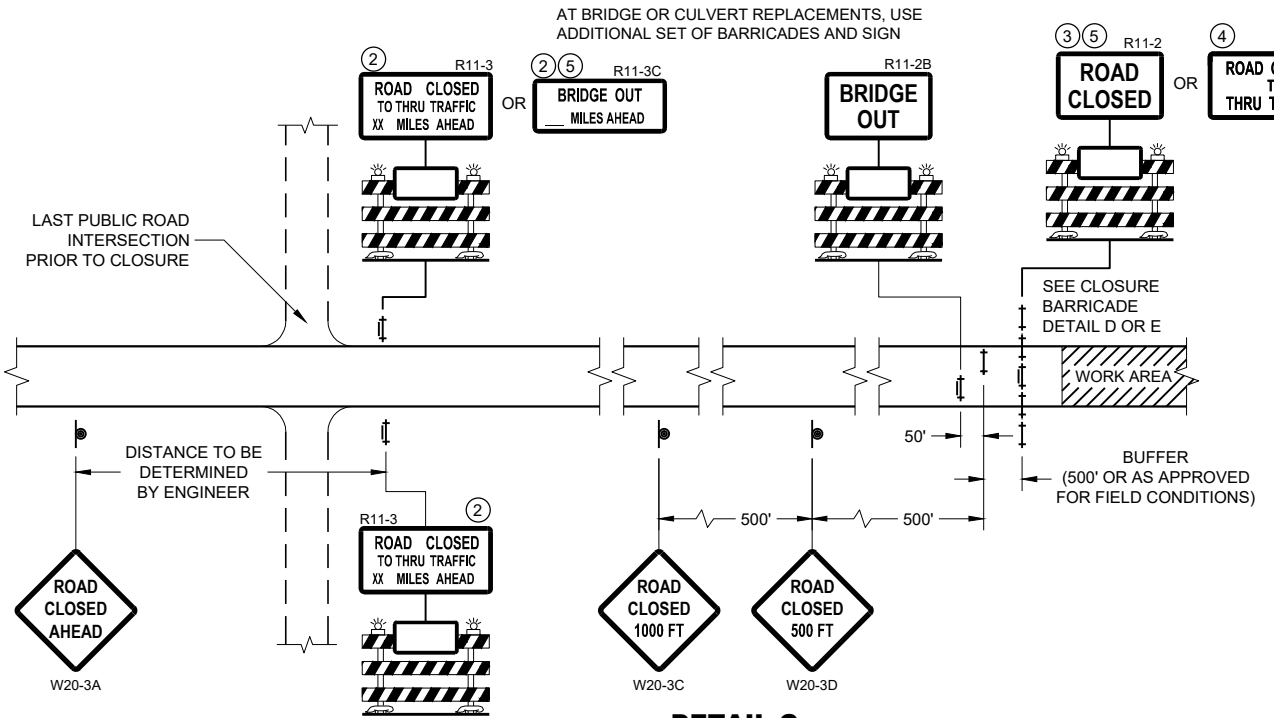
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- M4 - 8
- M3 - X
- M1 - 4 OR M1 - 6 OR M1 - 5A
- M05 - 1 OR M06 - 1

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

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

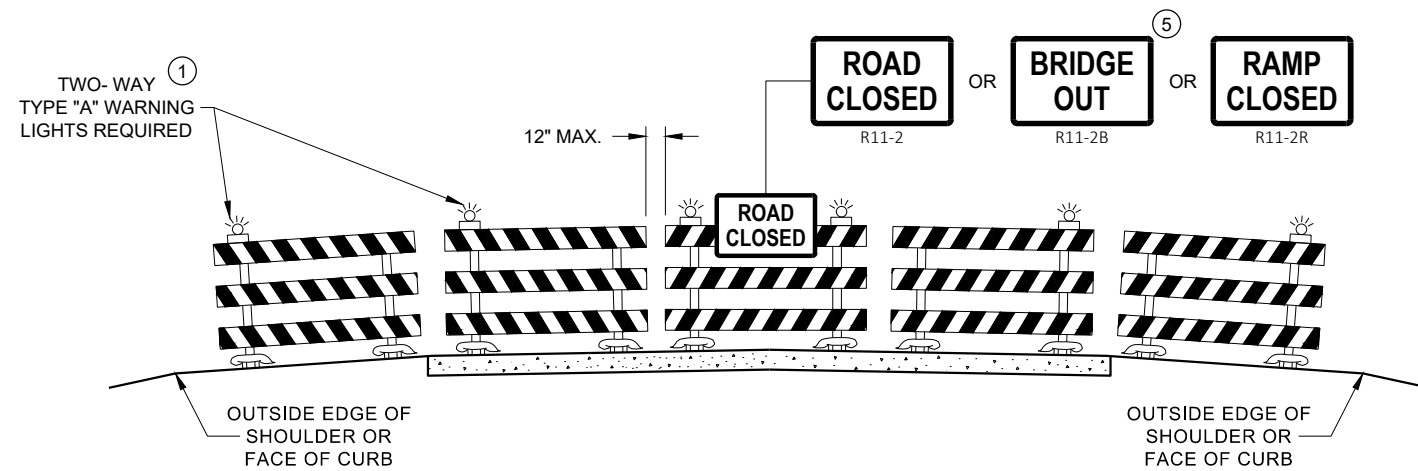


**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

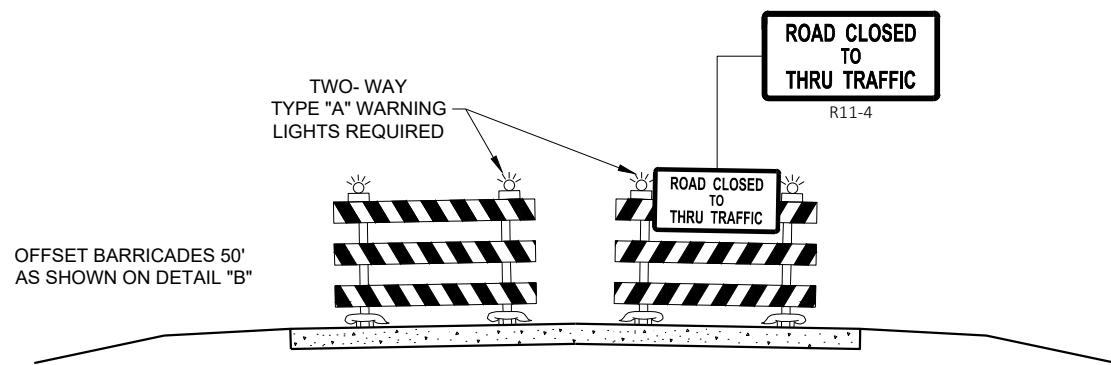
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE 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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

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

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

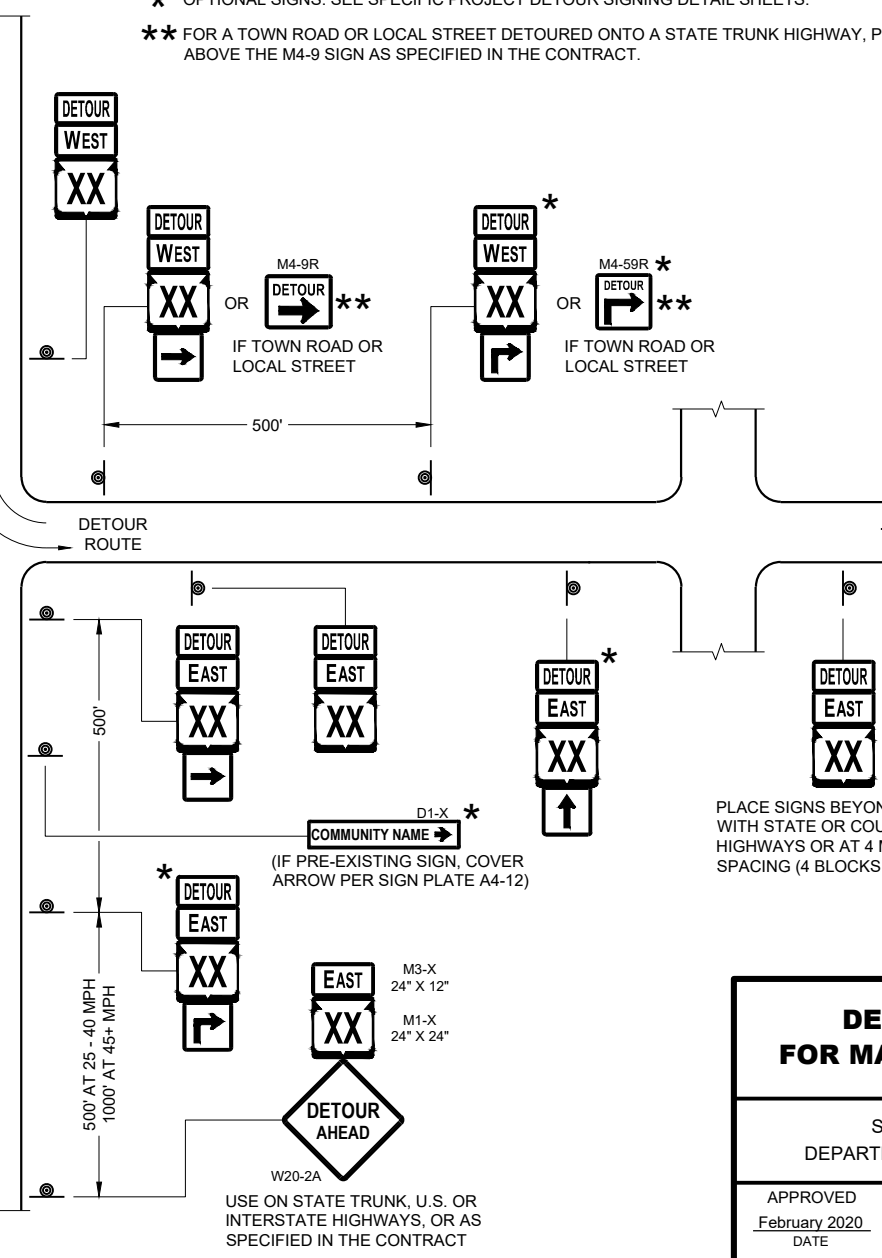
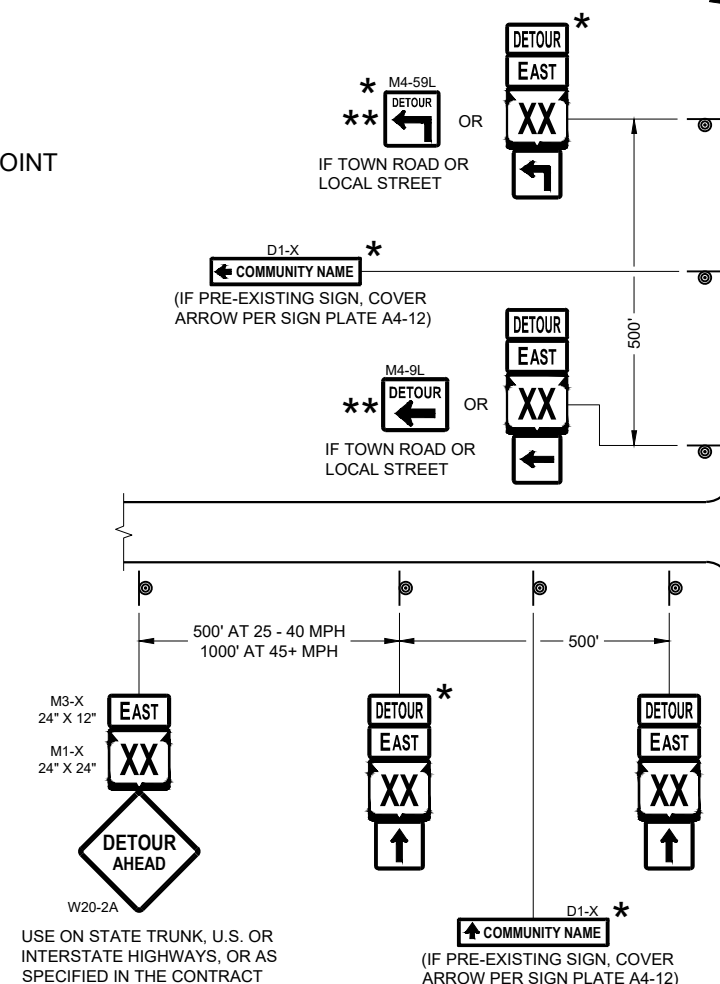
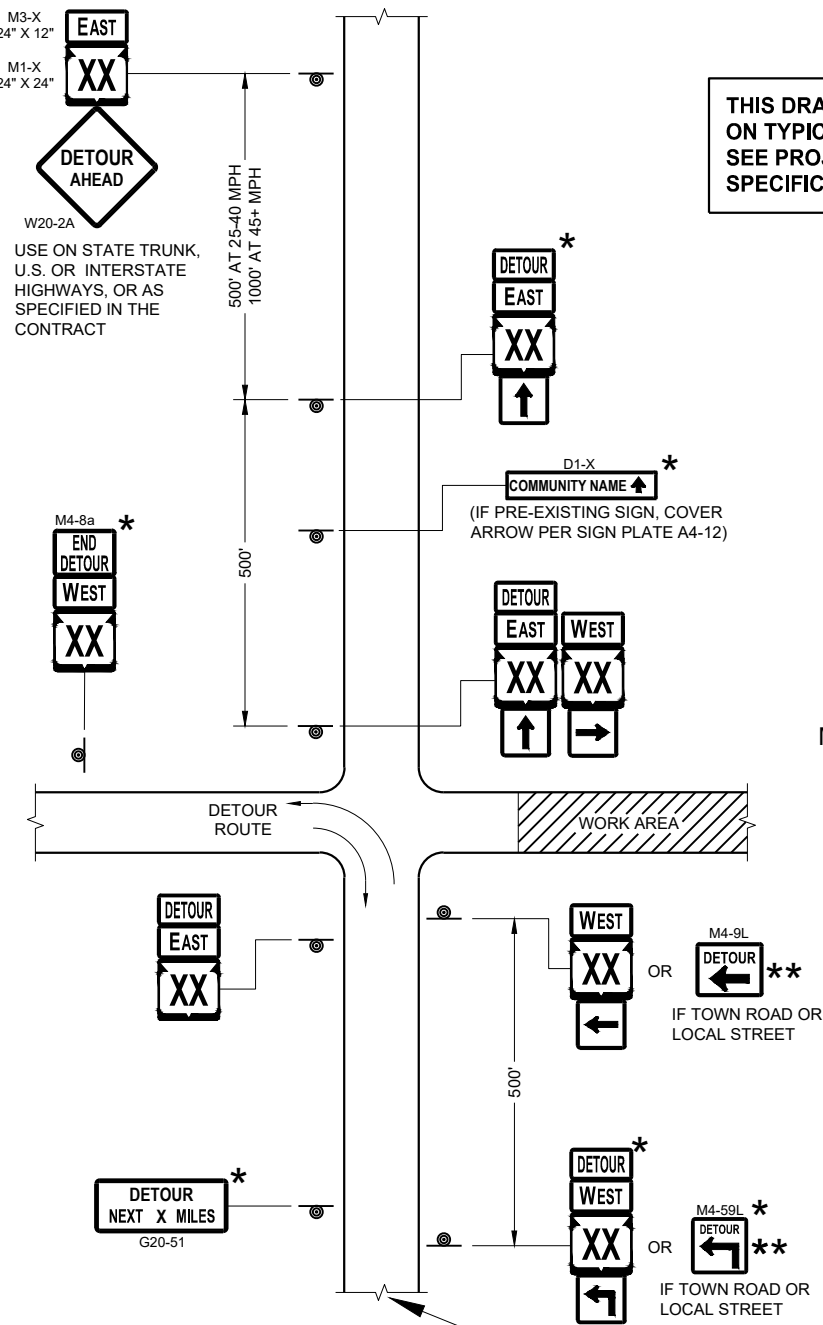
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING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

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**



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

**DETOUR SIGNING
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

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




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

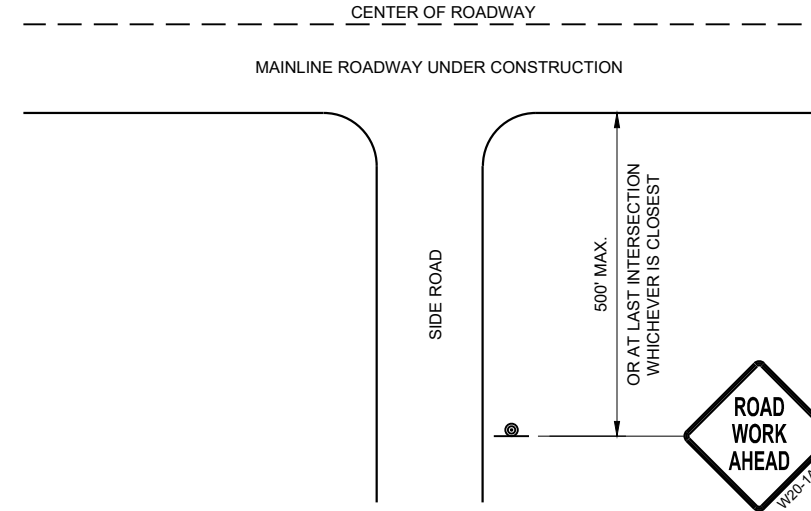
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

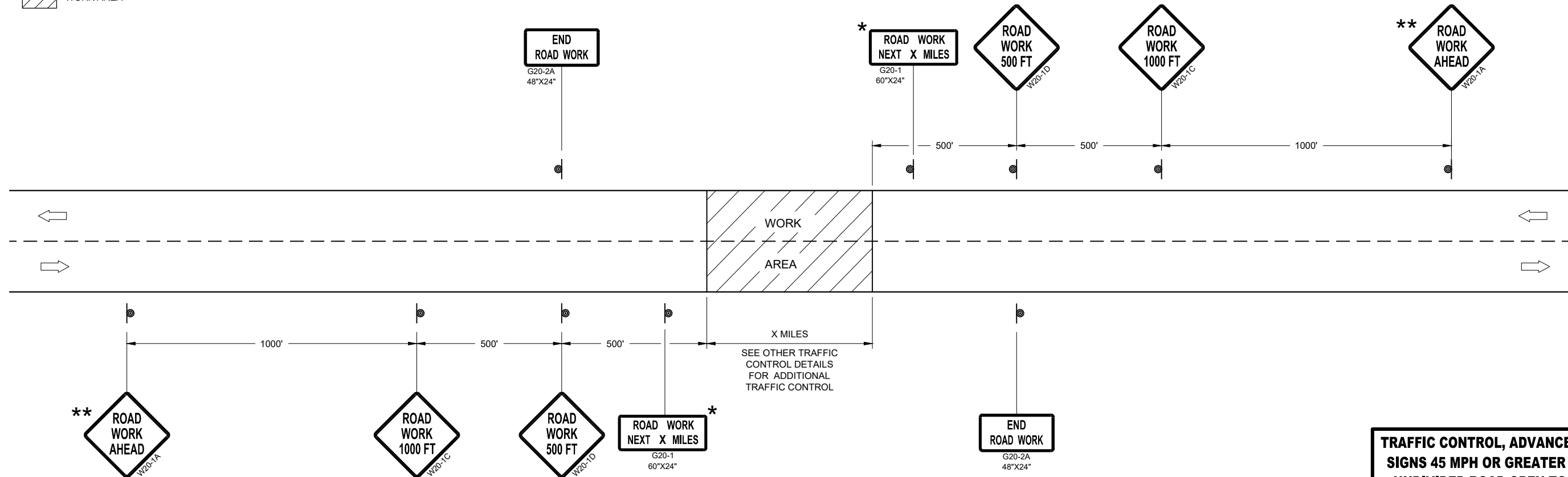
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



**TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL**



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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




FHWA

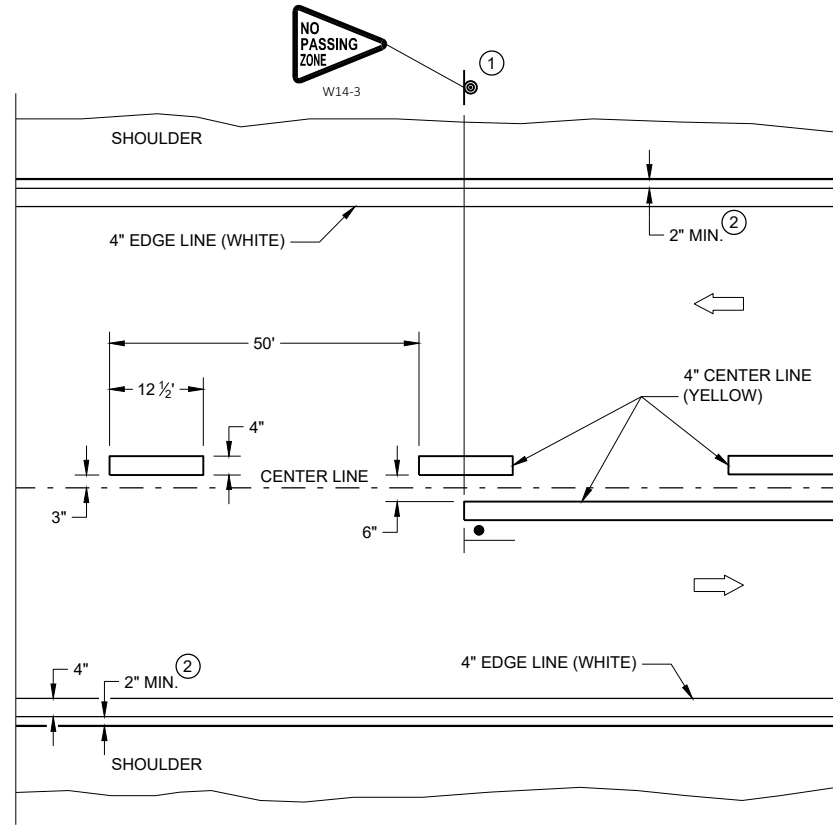
GENERAL NOTES

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

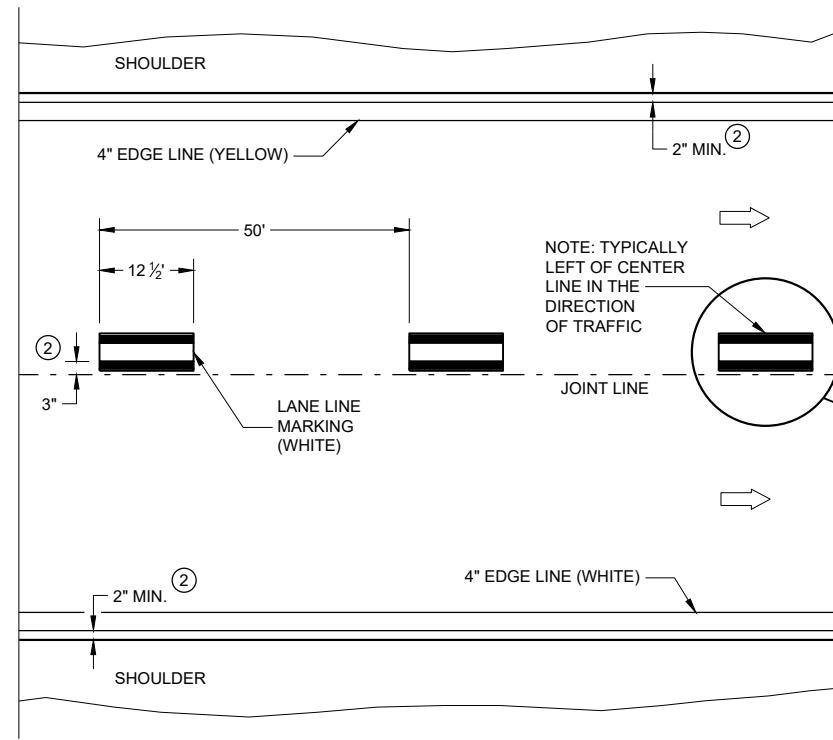
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

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

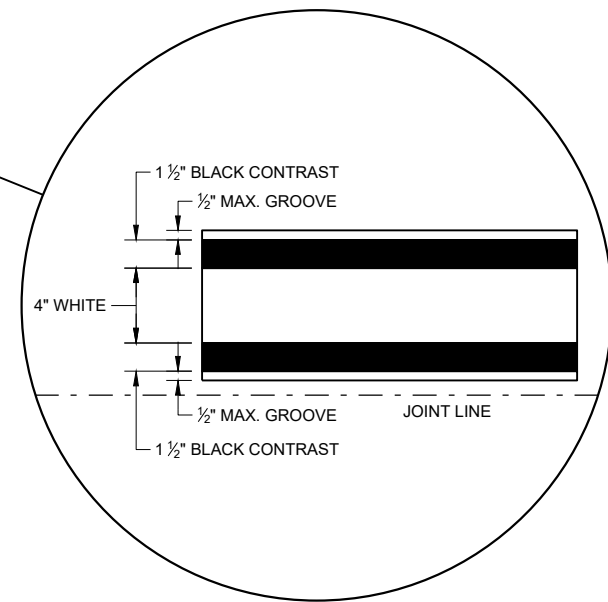


TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



6

6

SDD 15C08 - 22a

SDD 15C08 - 22a






PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

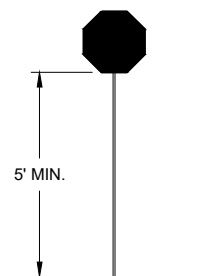
WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

- FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.
- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
 - ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

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



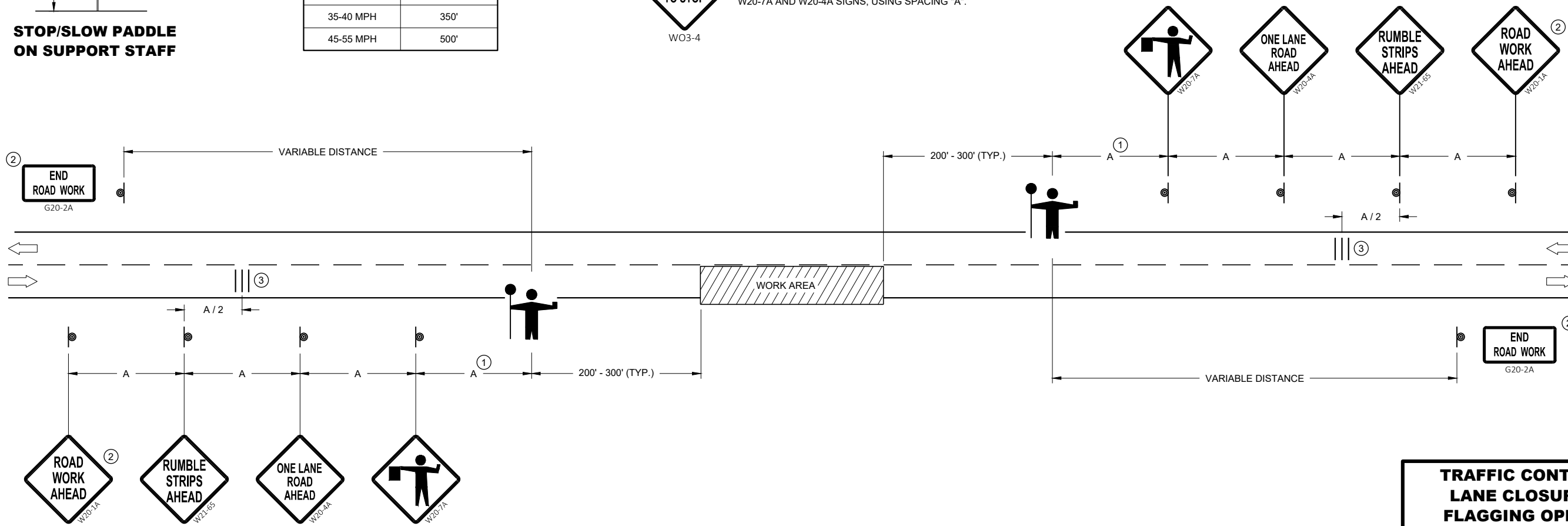
STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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







TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

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

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

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

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

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

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

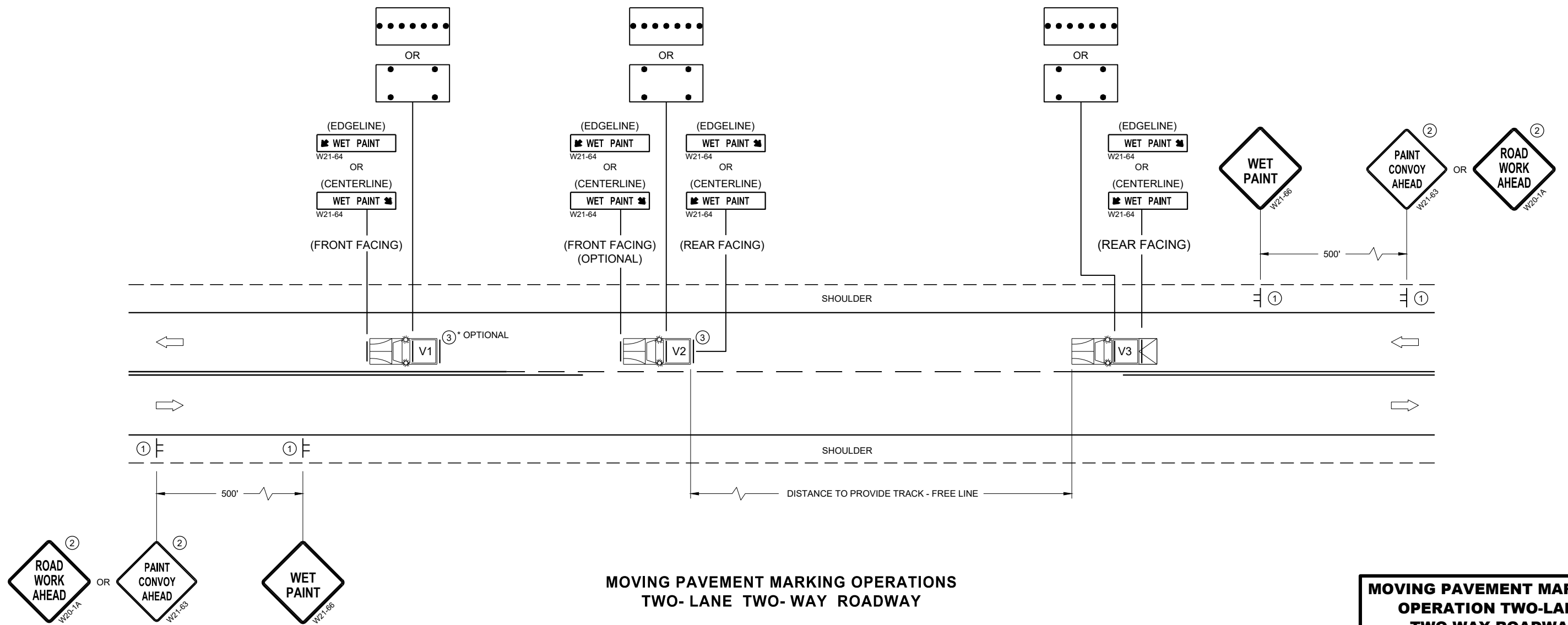
CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL BE A MINIMUM OF 28" FOR WET PAVEMENT MARKING .

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.
- ③ V1 AND V2 CAN BE SWITCHED SO THAT THE MARKER IS THE LEAD VEHICLE.

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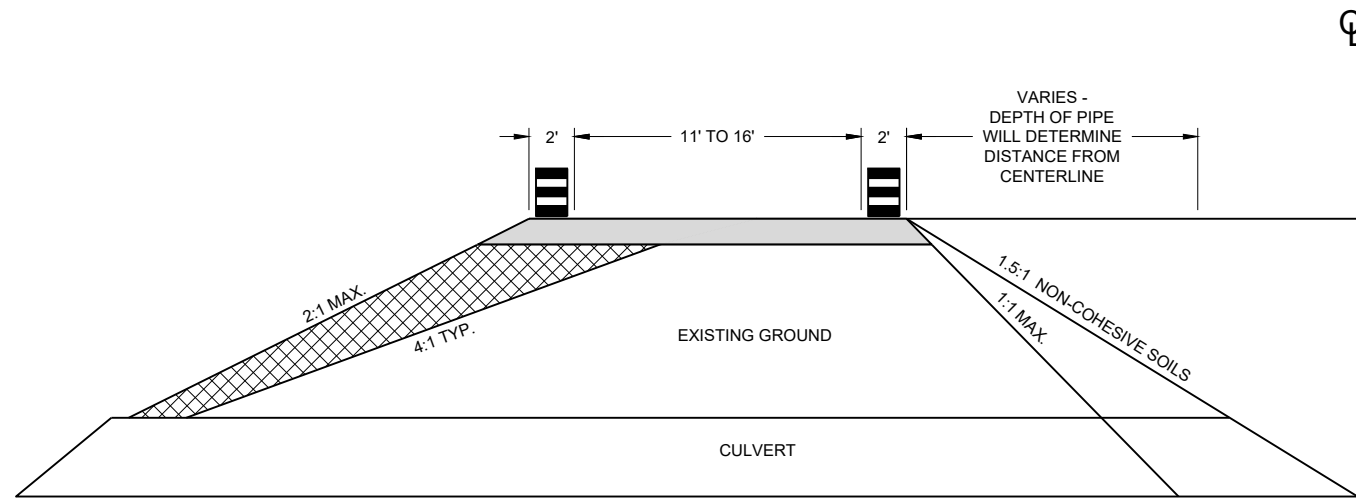


**MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY**

SDD 15C19-08a

SDD 15C19-08a

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2023 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



CROSS SECTION

GENERAL NOTES

USE 1:1 FOR COHESIVE CLAYS AND SILTS, LOAMS, SANDY CLAYS AND ANGULAR GRAVEL SOILS.
 USE 1.5:1 FOR NON-COHESIVE SOILS.

THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.






ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.

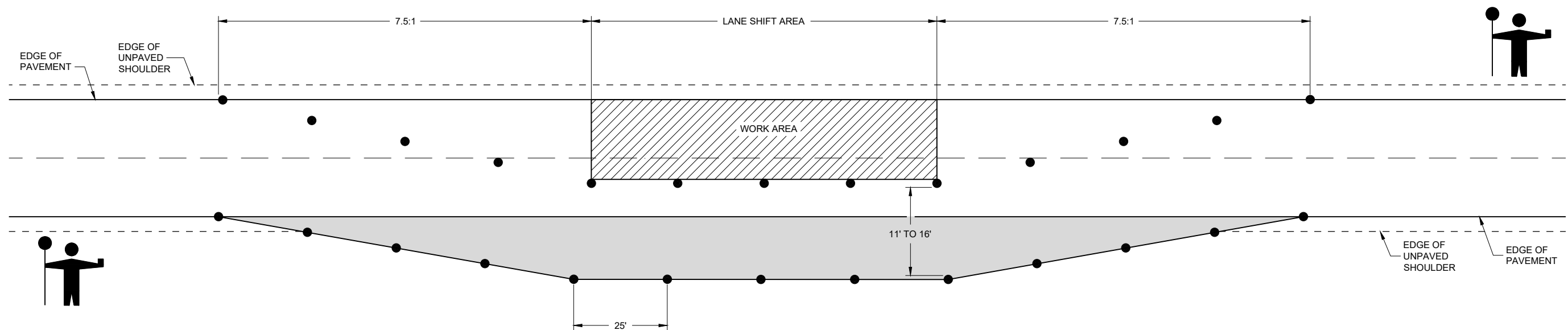
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

USE WITH SDD 15C12 "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATIONS"

USE WITH SDD 15D45 "SIGNING ON ROADWAYS WITH LOOSE GRAVEL"

LEGEND

-  DRUM WITHOUT WARNING LIGHT
-  6" BASE AGGREGATE DENSE 1 1/2" - INCIDENTAL TO LANE SHIFT ITEM
-  FILL - INCIDENTAL TO LANE SHIFT ITEM
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



LANE SHIFT IN FLAGGING OPERATION

**TRAFFIC CONTROL,
 TEMPORARY LANE SHIFT
 DURING CULVERT WORK**

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

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

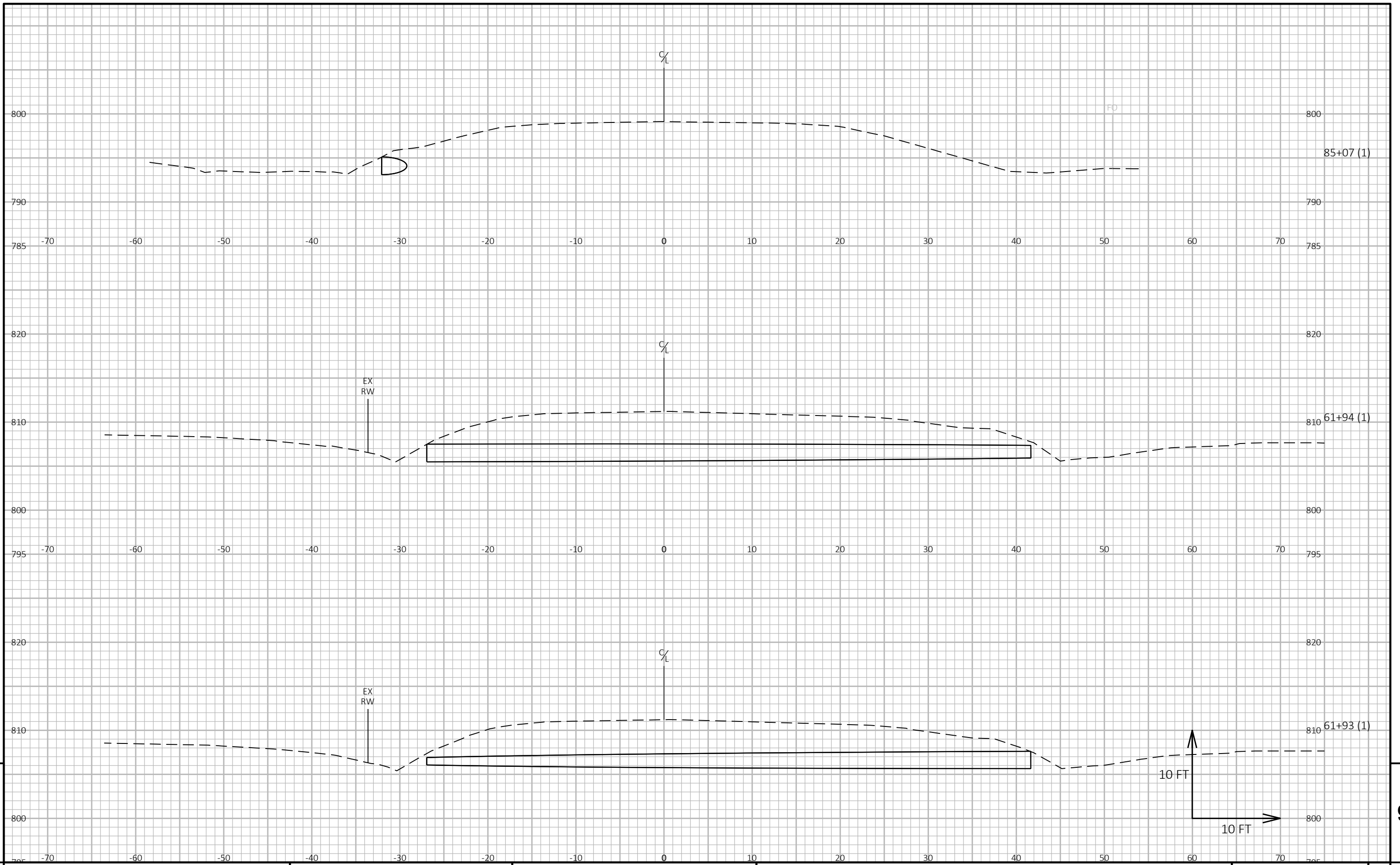
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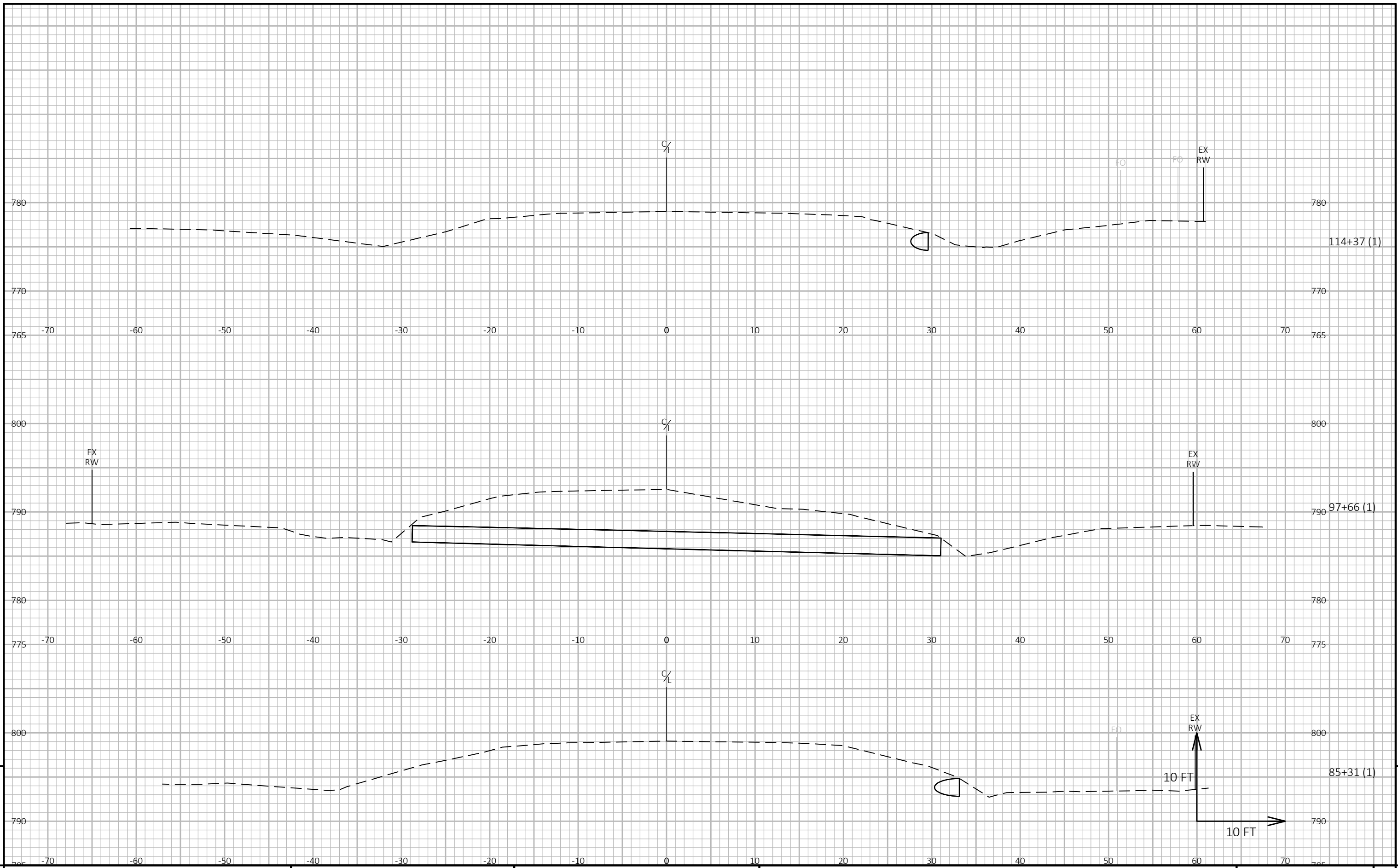
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SDD 15D48 - 01

SDD 15D48 - 01



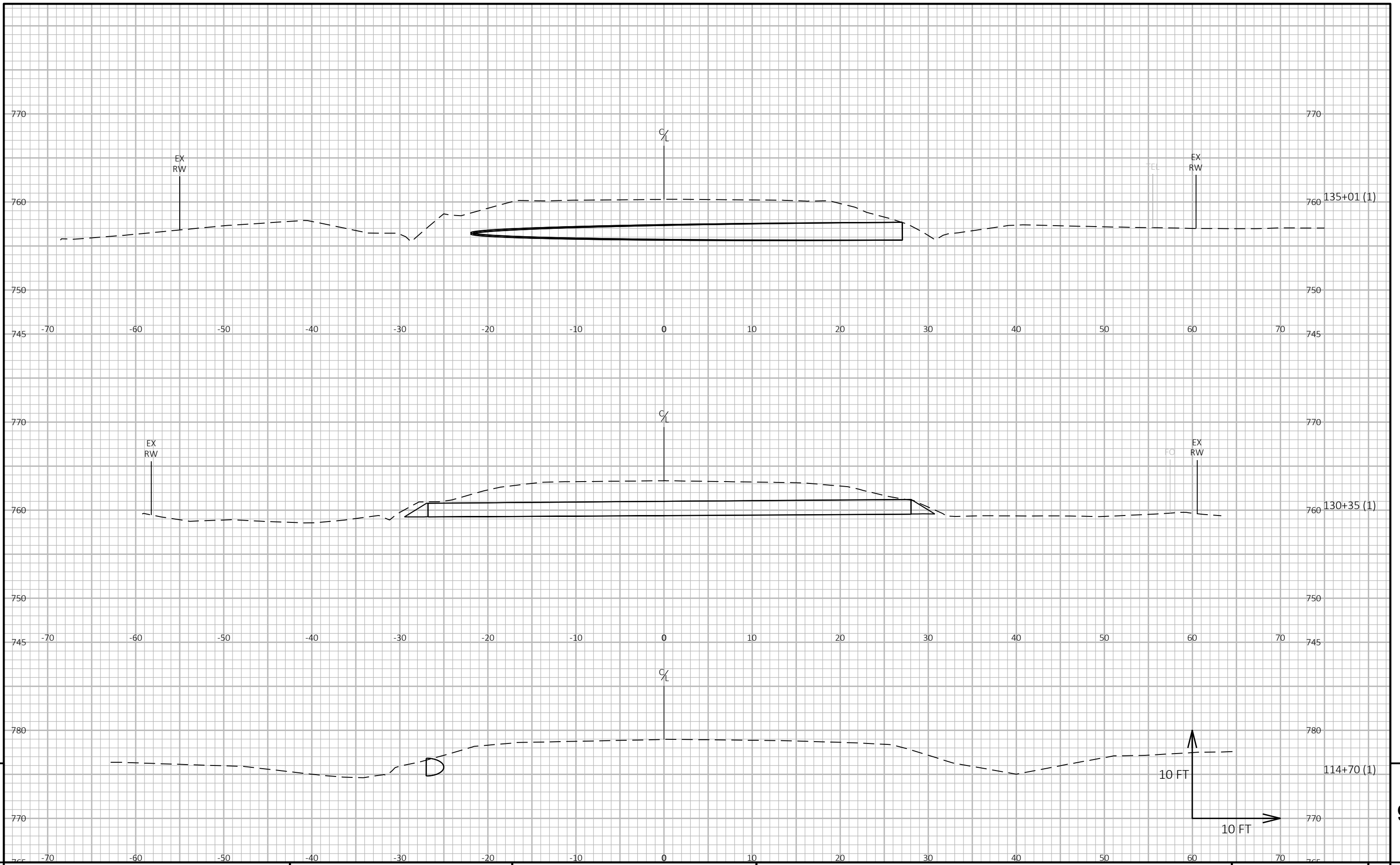
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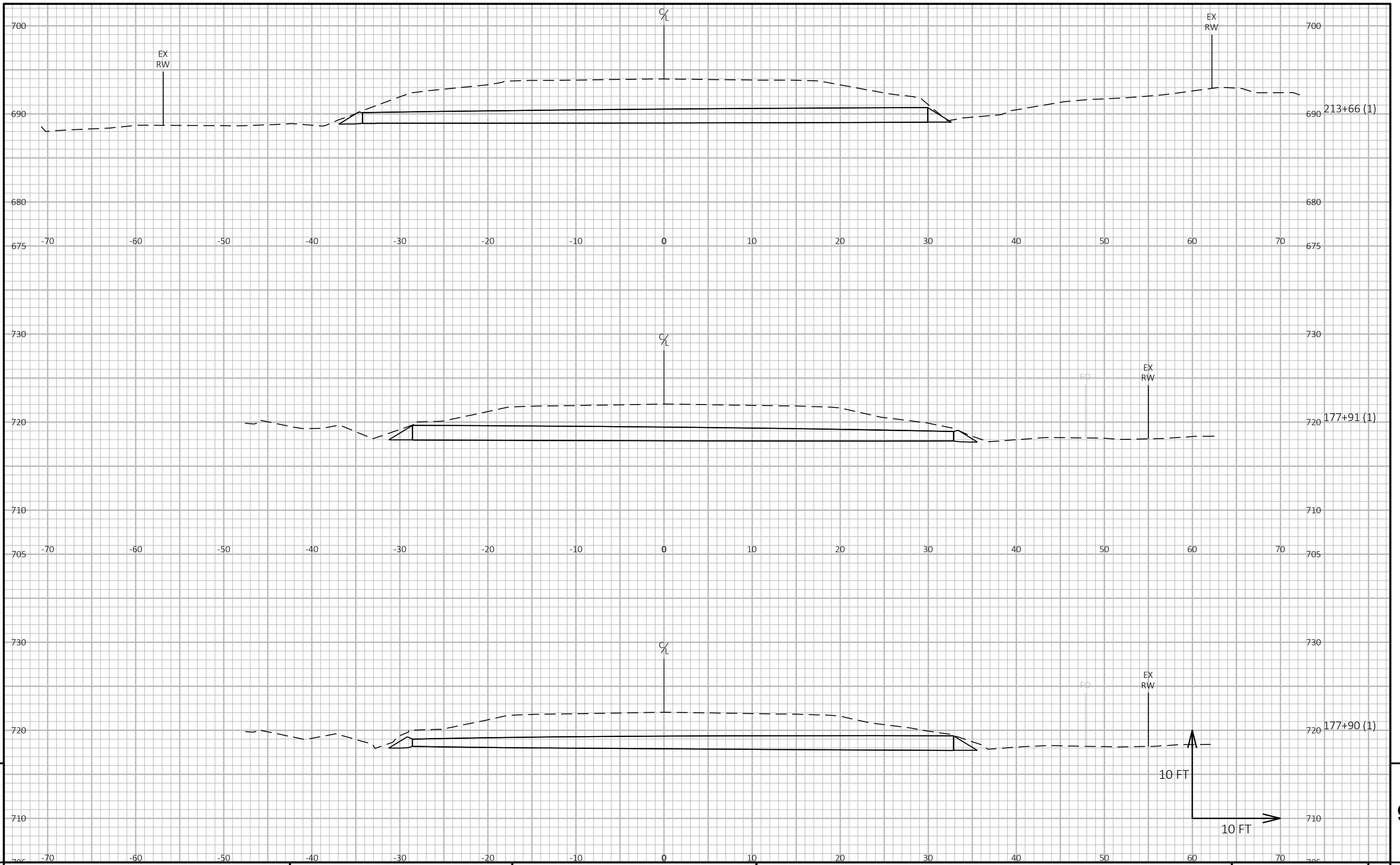


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 PLOT NAME :
 PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
 WISDOT/CADDs SHEET 49



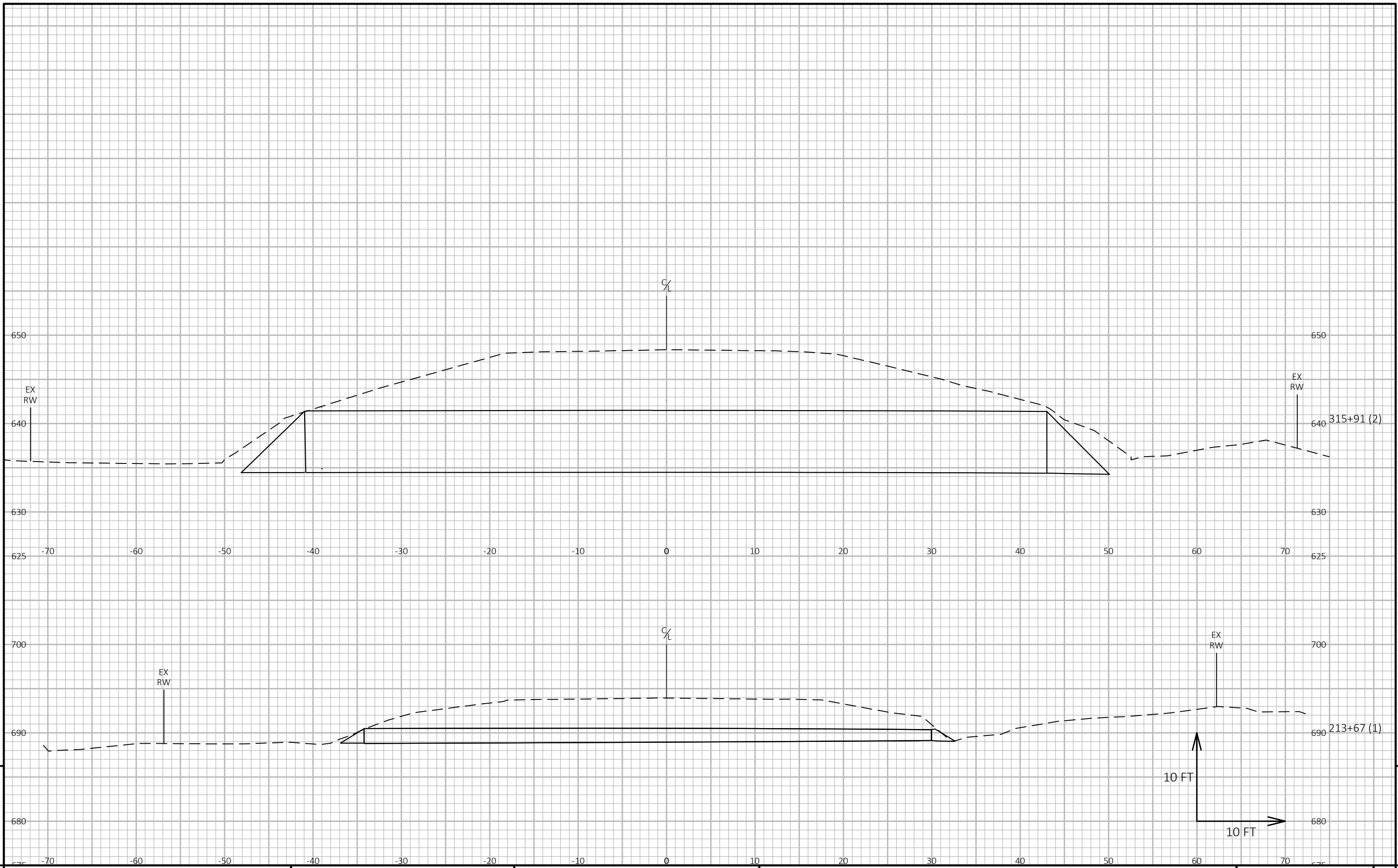
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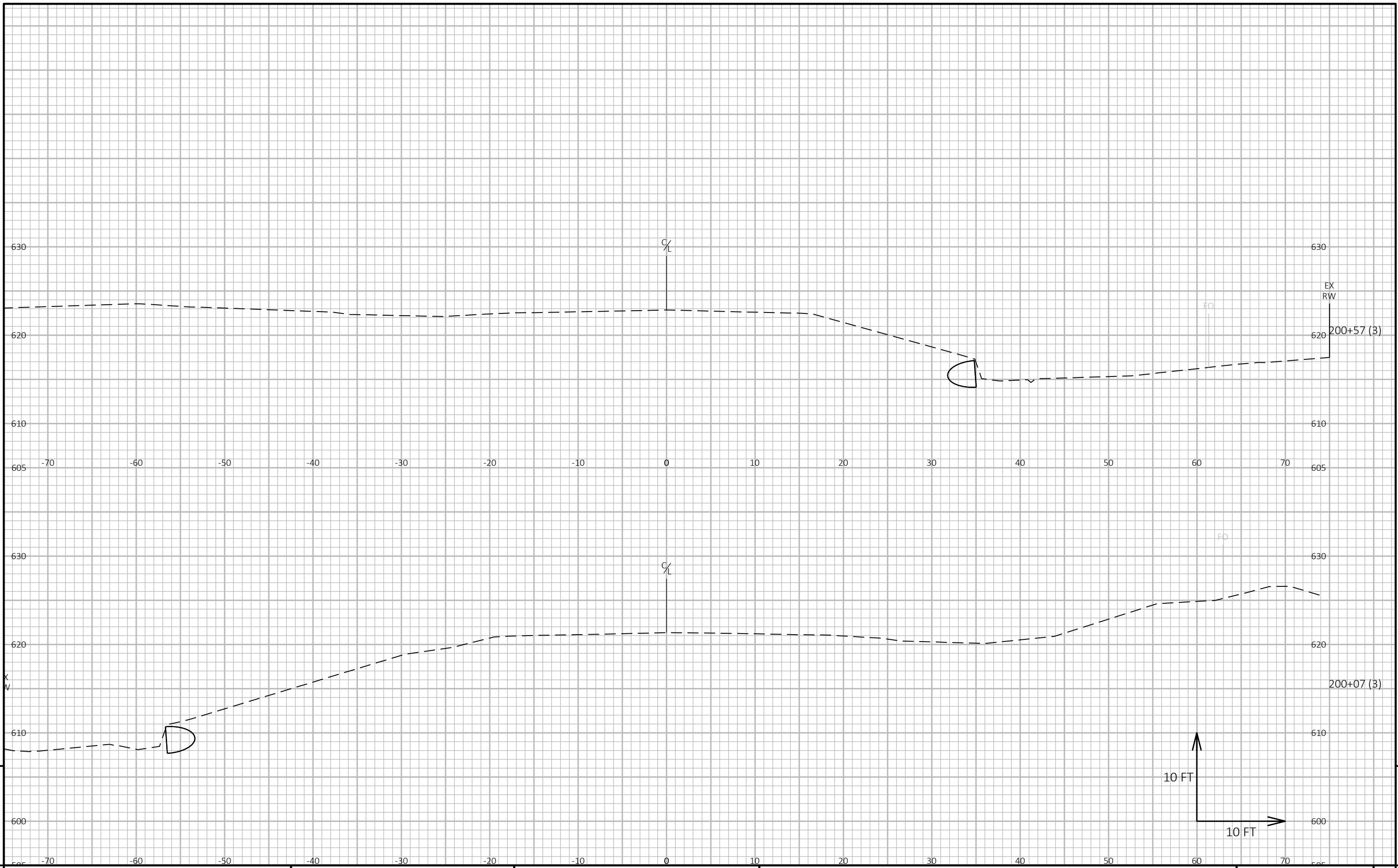
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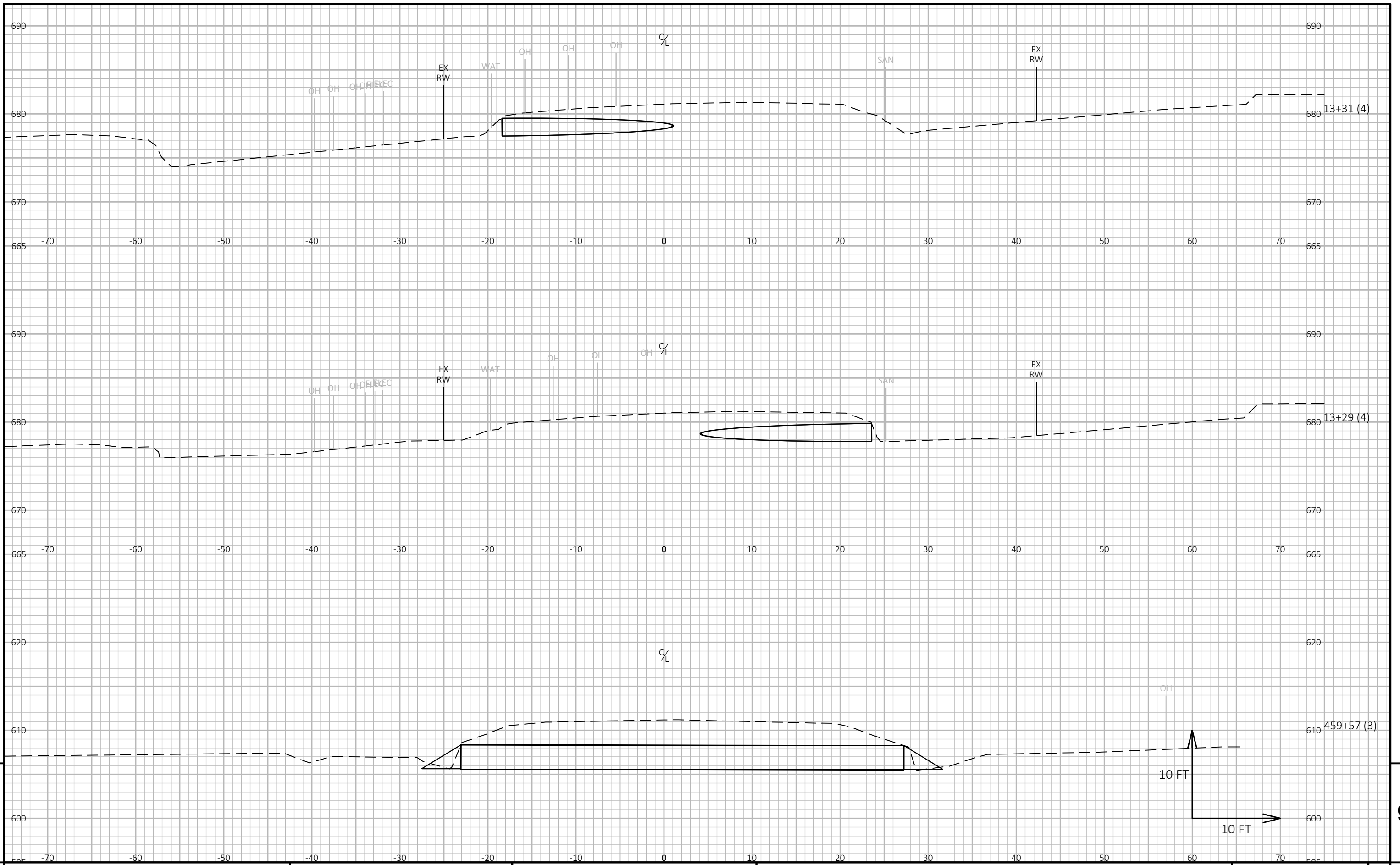
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PROJECT NO: 8510-03-72

HWY: 13

COUNTY: BAYFIELD

CROSS SECTIONS: CROSS SECTIONS

SHEET

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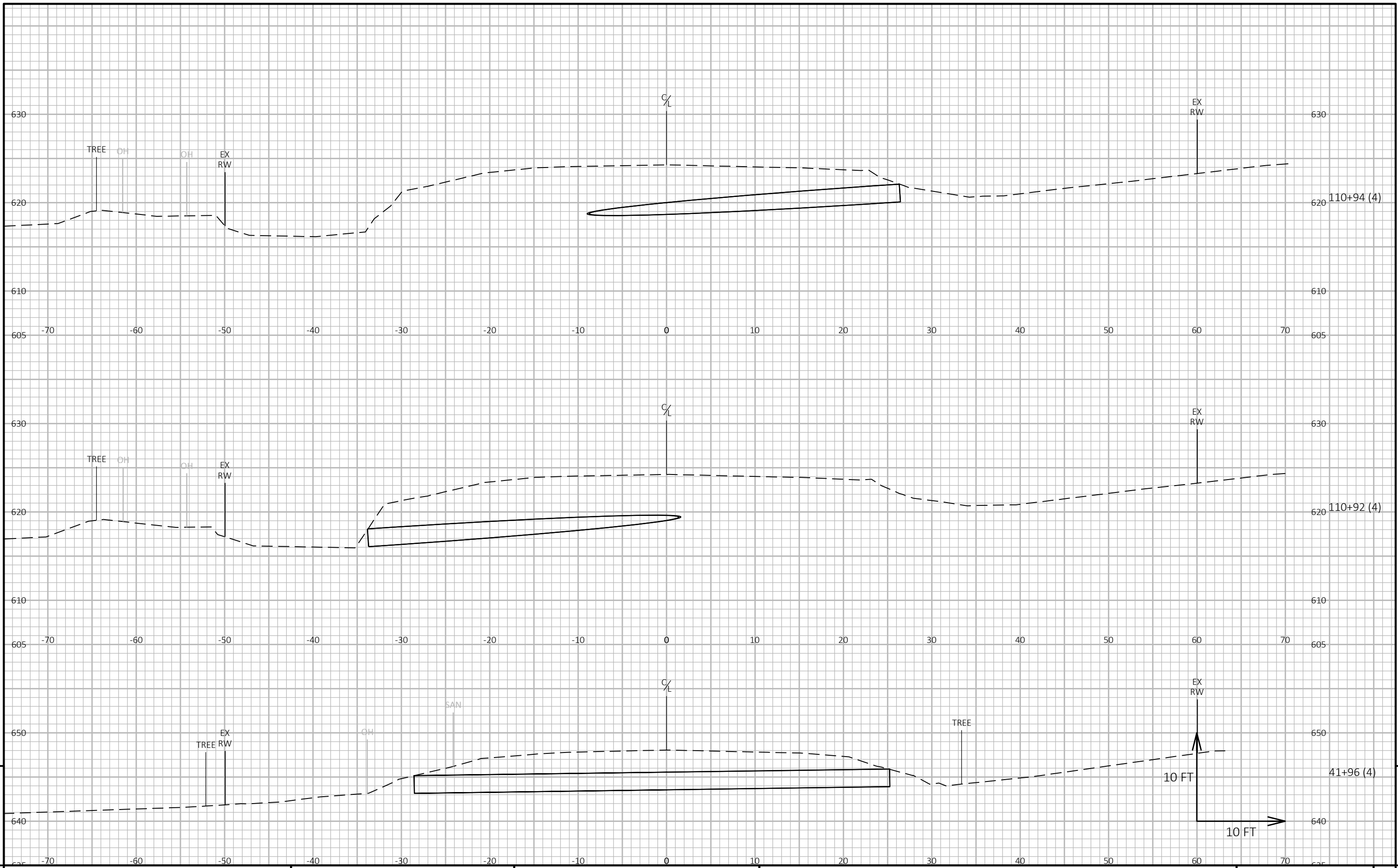
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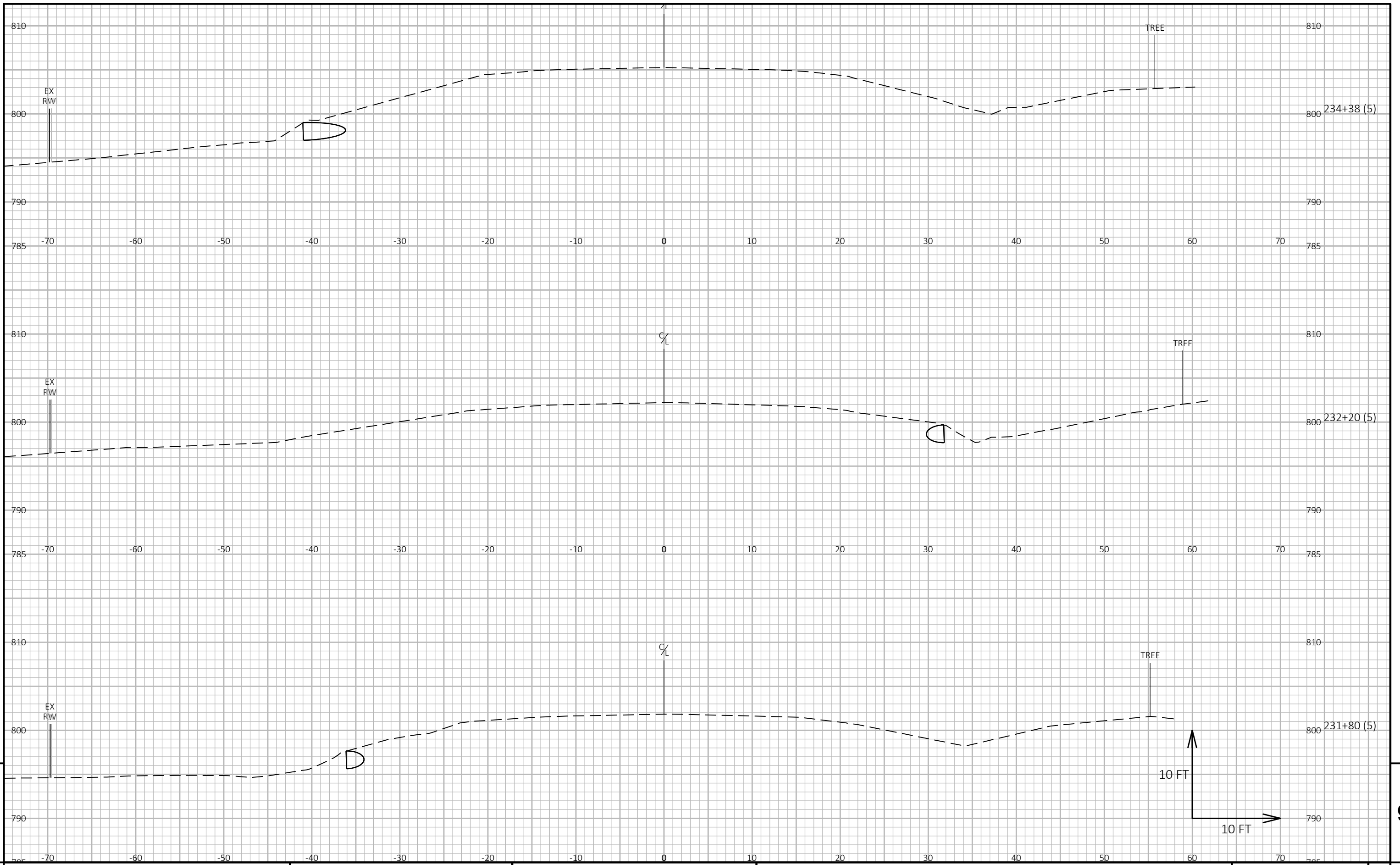
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CROSS SECTIONS: CROSS SECTIONS

SHEET

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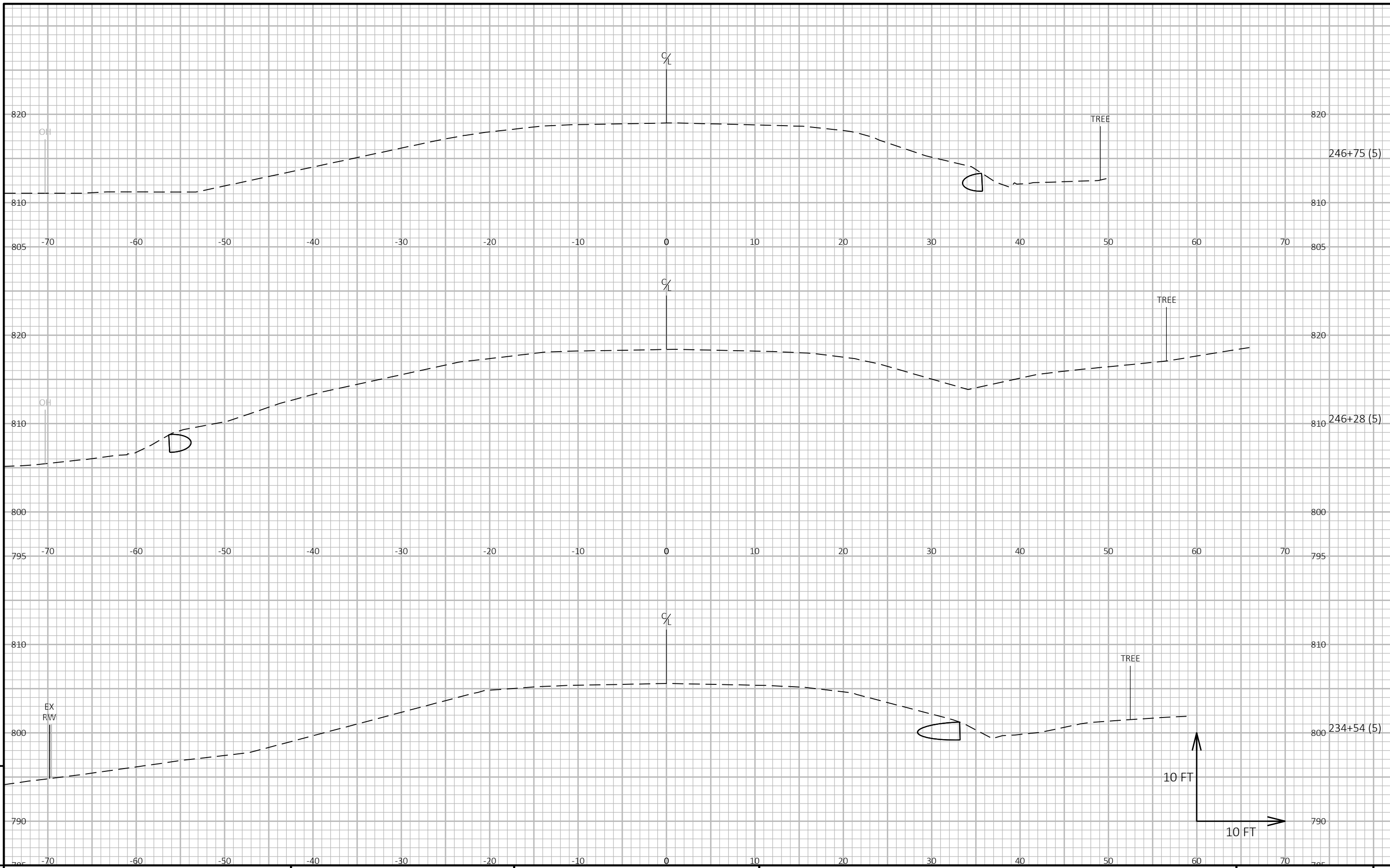


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 WISDOT/CADD SHEET 49



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PROJECT NO: 8510-03-72

HWY: 13

COUNTY: BAYFIELD

CROSS SECTIONS: CROSS SECTIONS

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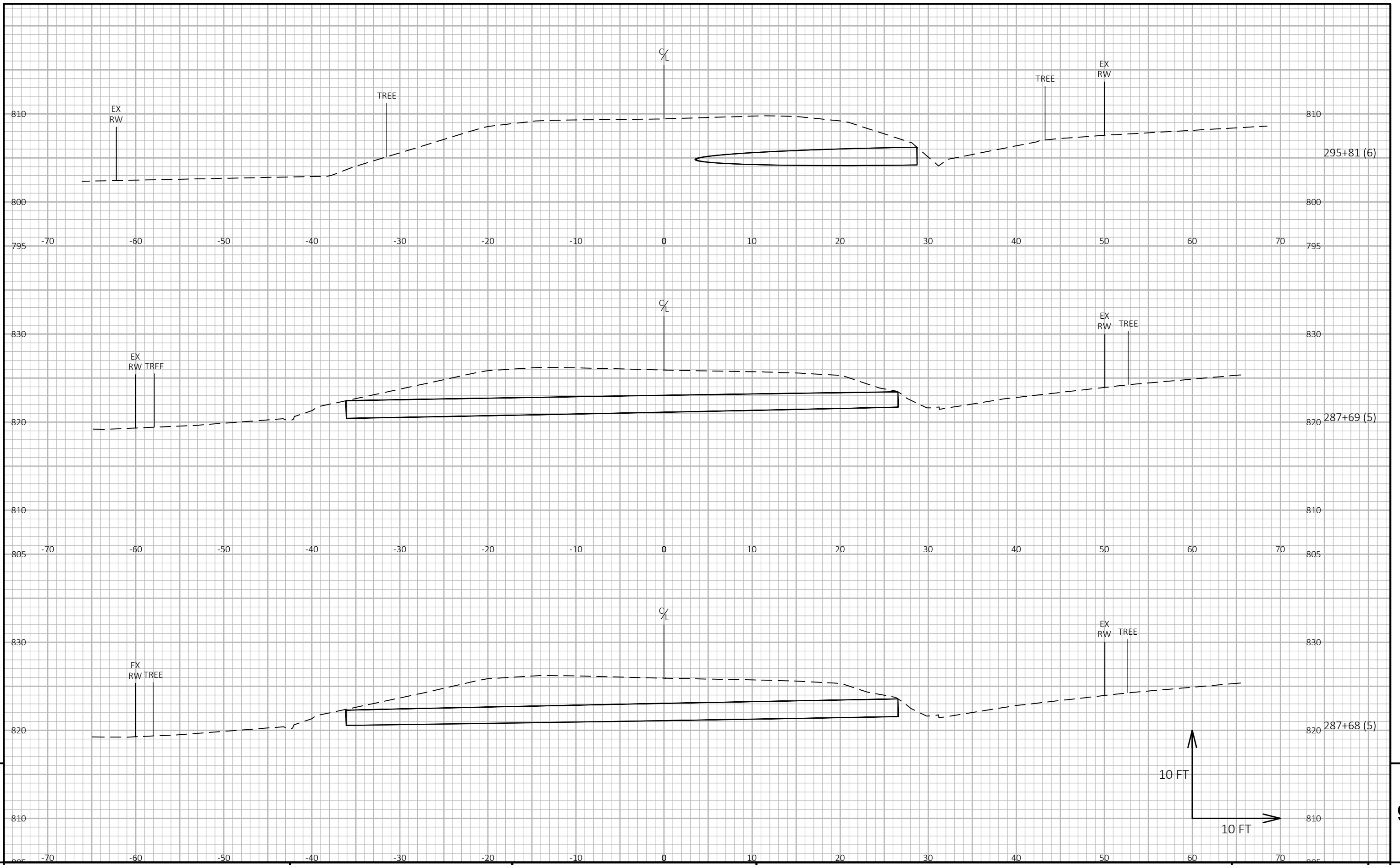
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WISDOT/CADD SHEET 49



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PROJECT NO: 8510-03-72 HWY: 13 COUNTY: BAYFIELD CROSS SECTIONS: CROSS SECTIONS SHEET E

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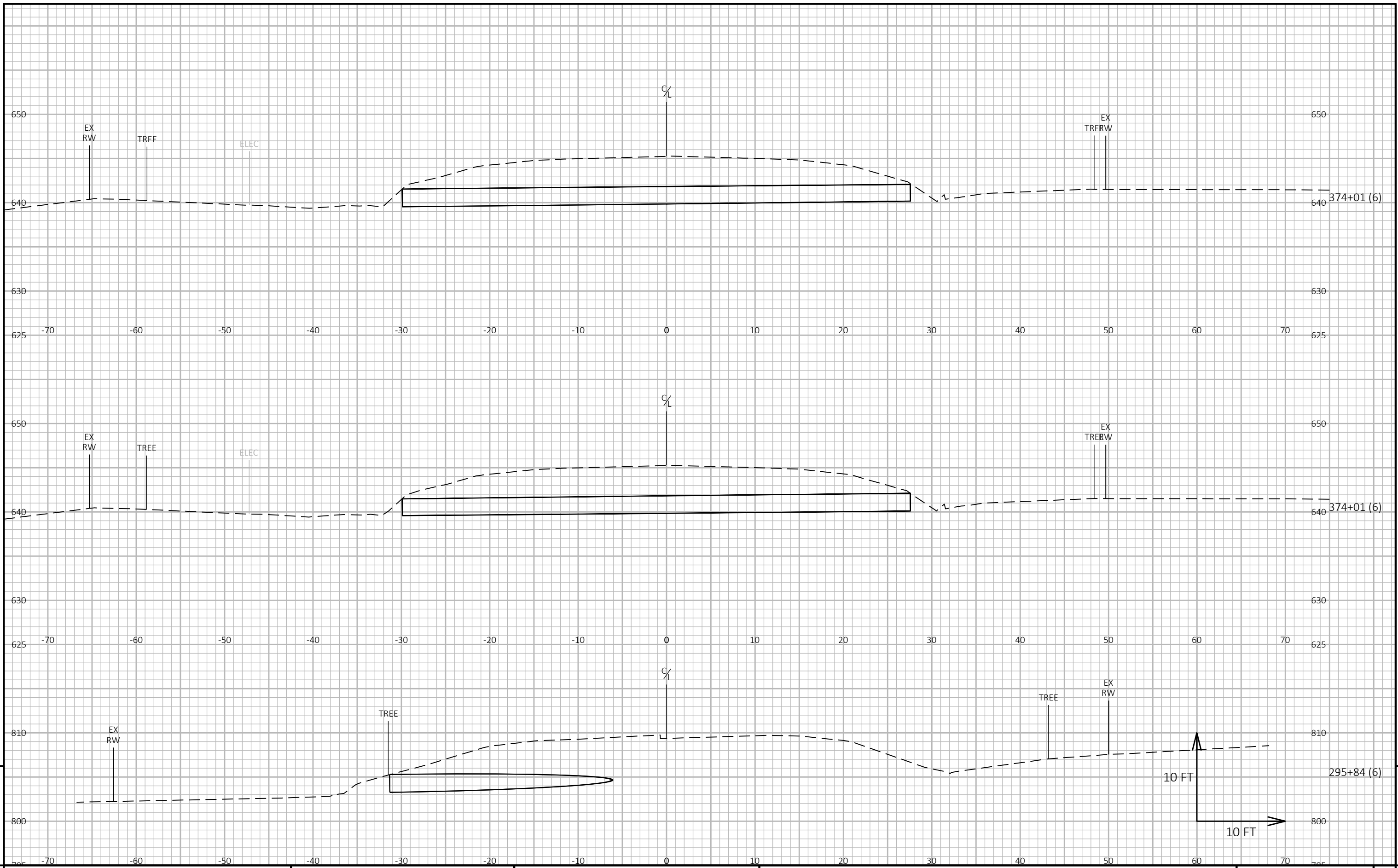
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PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADD SHEET 49



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PROJECT NO: 8510-03-72	HWY: 13	COUNTY: BAYFIELD	CROSS SECTIONS: CROSS SECTIONS	SHEET	E
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Notes



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