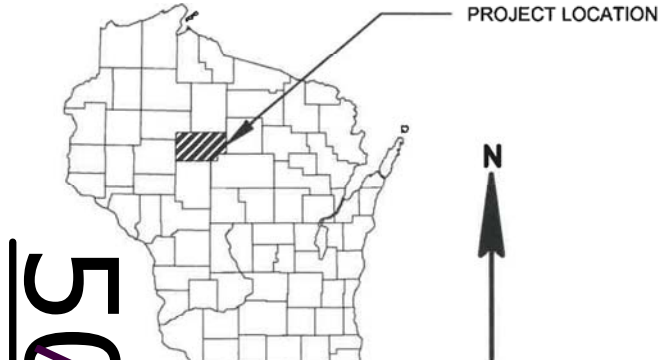


ORDER OF SHEETS

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 (Includes Erosion Control Plan)
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 = 26



DESIGN DESIGNATION

A.A.D.T.	2017	=	90 (est.)
A.A.D.T.	2037	=	100 (est.)
D.H.V.		=	<15 (est.)
D.D.		=	60/40 (est.)
T.		=	10% (est.)
DESIGN SPEED		=	55 MPH
ESALS		=	36,000

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

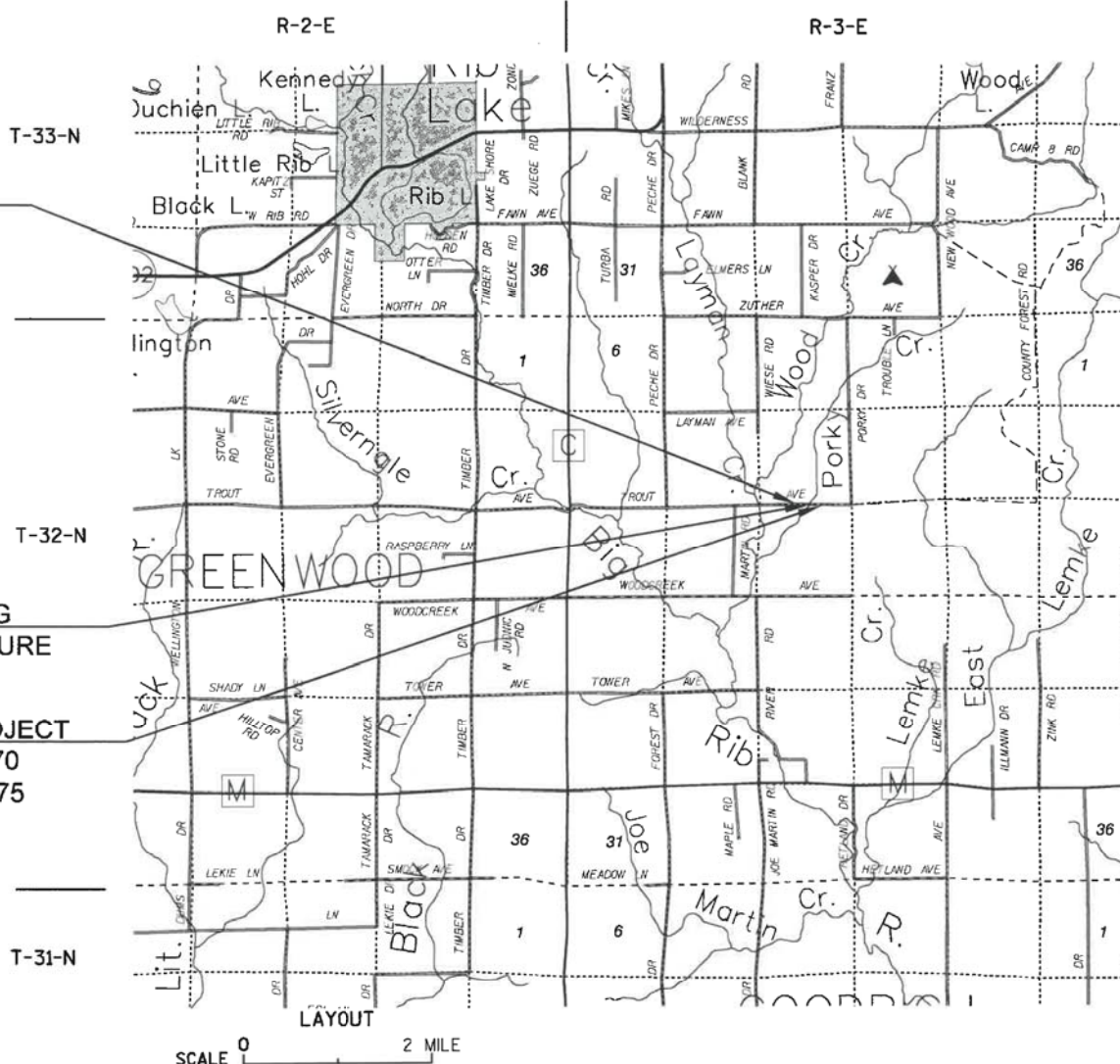
T RIB LAKE, TROUT AVENUE
PORKY CREEK BRIDGE P-60-0948
LOCAL STREET
TAYLOR COUNTY

STATE PROJECT NUMBER
9545-00-70

BEGIN PROJECT
9545-00-70
STA. 9+25
Y= 385934.83
X= 708571.48

EXISTING
STRUCTURE

END PROJECT
9545-00-70
STA. 11+75



TOTAL NET LENGTH OF CENTERLINE = 0.047 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, TAYLOR COUNTY, NAD88 (2012), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE PROJECT

9545-00-70

FEDERAL PROJECT

PROJECT

CONTRACT

ACCEPTED FOR
TOWN of RIB LAKE

1/5/17
(Date)
CHAIRMAN

ACCEPTED FOR
COUNTY of TAYLOR

1/5/17
(Date)
HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

MSA
TRANSPORTATION • MUNICIPAL
DEVELOPMENT • ENVIRONMENTAL
1835 N Stevens St. Rhinelander, WI 54501
715-362-3244 1-800-844-7854 Fax: 715-362-4116
Web Address: www.msa-ps.com
© MSA Professional Services, Inc.

WISCONSIN
SEAN M. SPROMBERG
E 37771-008
SCHOFIELD, WI
PROFESSIONAL ENGINEER

1/4/2017
(Date)
(Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor MSA PROFESSIONAL SERVICES, INC.
Designer MSA PROFESSIONAL SERVICES, INC.
Management Consultant KNIGHT E/A INC.

APPROVED FOR THE DEPARTMENT
DATE: 1/26/17
(Signature)

GENERAL NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS SHALL BE FERTILIZED, SEEDED AND HAVE EROSION MAT INSTALLED AS DIRECTED BY THE ENGINEER. OVERSOW PERMANENT SEEDING AREAS WITH TEMPORARY SEED AT 1.5 LBS. PER 1000 SQUARE FEET.

THE LOCATIONS OF THE EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE AREA THAT ARE NOT SHOWN.

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

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO "6T49", A NGS SURVEY MONUMENT, ELEV. 1595.53, NAVD 88 DATUM.

THE 3 1/2" ASPHALTIC SURFACE SHALL CONSIST OF A 1 3/4" UPPER LAYER AND A 1 3/4" LOWER LAYER. ASPHALTIC SURFACE SHALL USE No. 4 (12.5 MM) NOMINAL AGGREGATE SIZE.

SILT FENCE TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER AND IN PLACE PRIOR TO BRIDGE REMOVAL.

WHEN THE QUANTITY OF THE ITEM OF BASE LAYER IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTURAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

SHRINKAGE IS ESTIMATED AT 30%

DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
ATTN.: ALEX PASSOW
1835 N. STEVENS STREET
RHINELANDER, WI 54501-2163
PHONE: 715-362-3244
apassow@msa-ps.com

UTILITIES

BURIED TELEPHONE:
FRONTIER COMMUNICATIONS OF WI LLC
ATTN.: GLENN LEFEBVRE
53 N. STEVENS STREET
RHINELANDER, WI 54501
PHONE: 715-365-2237
glen.lefebvre@ftr.com

TOWN OF RIB LAKE

TOWN CHAIRMAN
ATTN.: JOSEPH KNORN
N8650 STH 102
RIB LAKE, WI 54470
PHONE: 715-427-3346

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES
ATTN.: JON SIMONSEN
107 SUTLIFF AVENUE
RHINELANDER, WI 54501
PHONE: 715-365-8916
jonathan.simonsen@wisconsin.gov

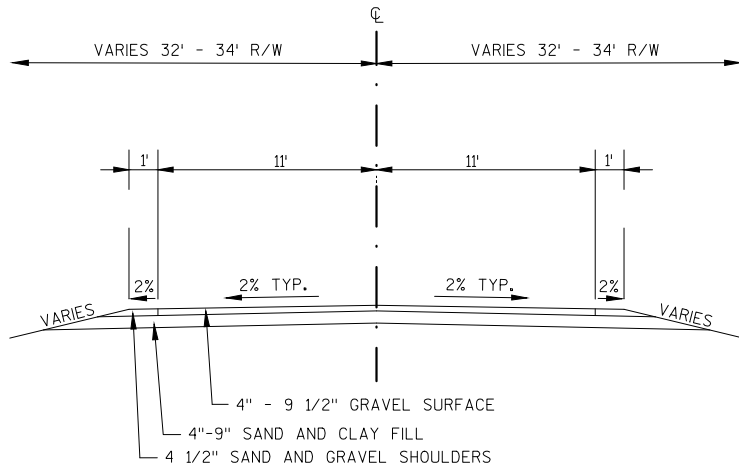
BURIED ELECTRIC:
TAYLOR ELECTRIC COOP.
ATTN.: KEVIN COMSTOCK
N1831 STH 13
MEDFORD, WI 54451
PHONE: 715-678-2411
kevin@taylorelectric.org



Dial 811 or (800)242-8511
www.DiggersHotline.com

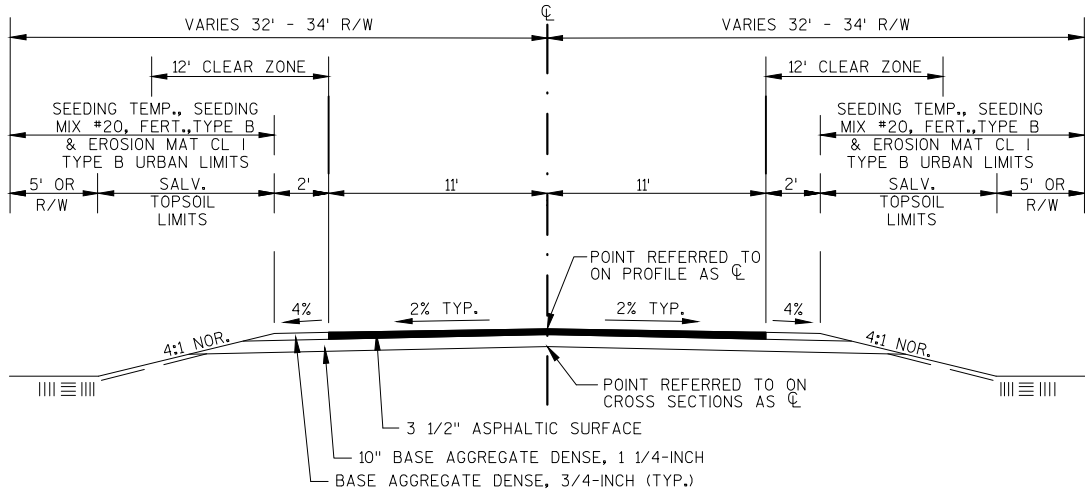
RUNOFF COEFFICIENT TABLE				
	HYDROLOGIC SOIL TABLE			
	A	B	C	D
	SLOPE RANGE %	SLOPE RANGE %	SLOPE RANGE %	SLOPE RANGE %
LAND USE:	6 & OVER	6 & OVER	6 & OVER	6 & OVER
SIDE SLOPE-	.25	.27	.28	.30
TURF	.32	.34	.36	.38
PAVEMENT:				
ASPHALT	.70 - .95			
CONCRETE	.80 - .95			
GRAVEL ROADS, SHOULDERS	.40 - .60			

THE RUNOFF COEFFICIENTS OF SURFACE DRAINAGE AT THE PROJECT SITES WILL NOT BE CHANGED FROM BEFORE TO AFTER CONSTRUCTION. THE TOTAL AREA OF THE PROJECT IS 0.50 ACRES. THE TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES IS 0.42 ACRES.



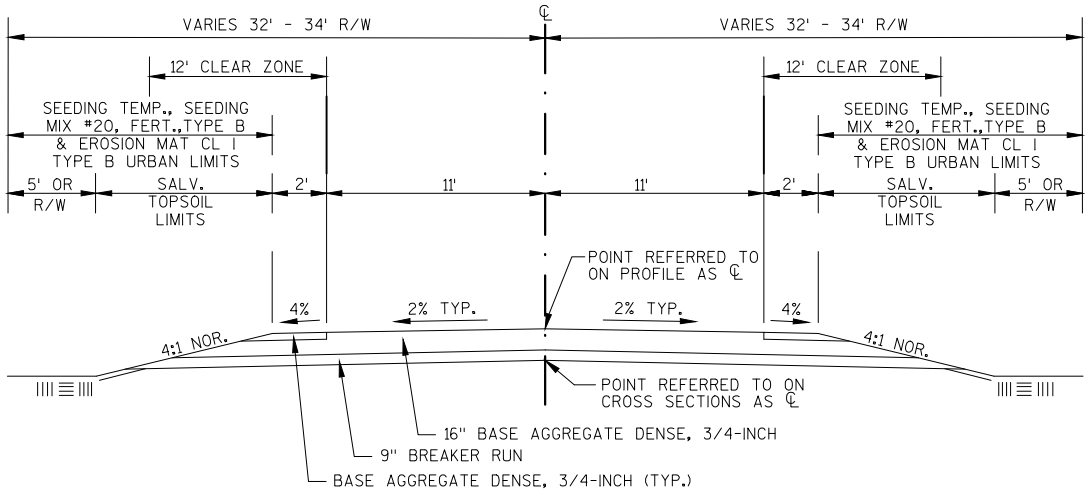
TYPICAL EXISTING SECTION

STA. 9+25 TO STA. 11+75



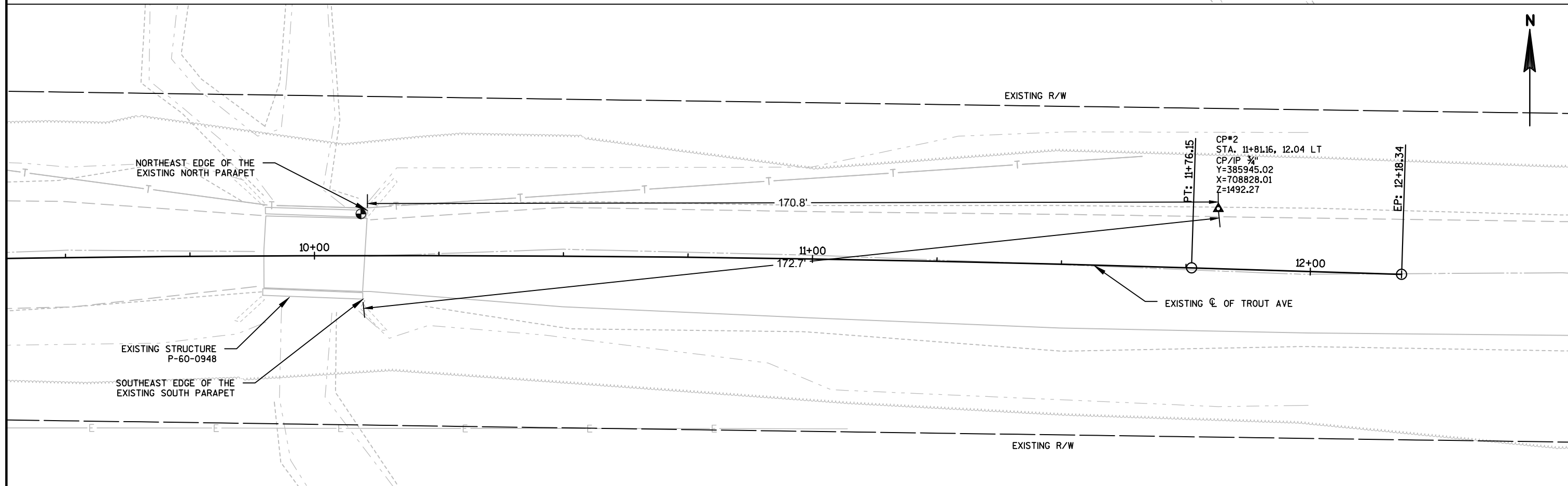
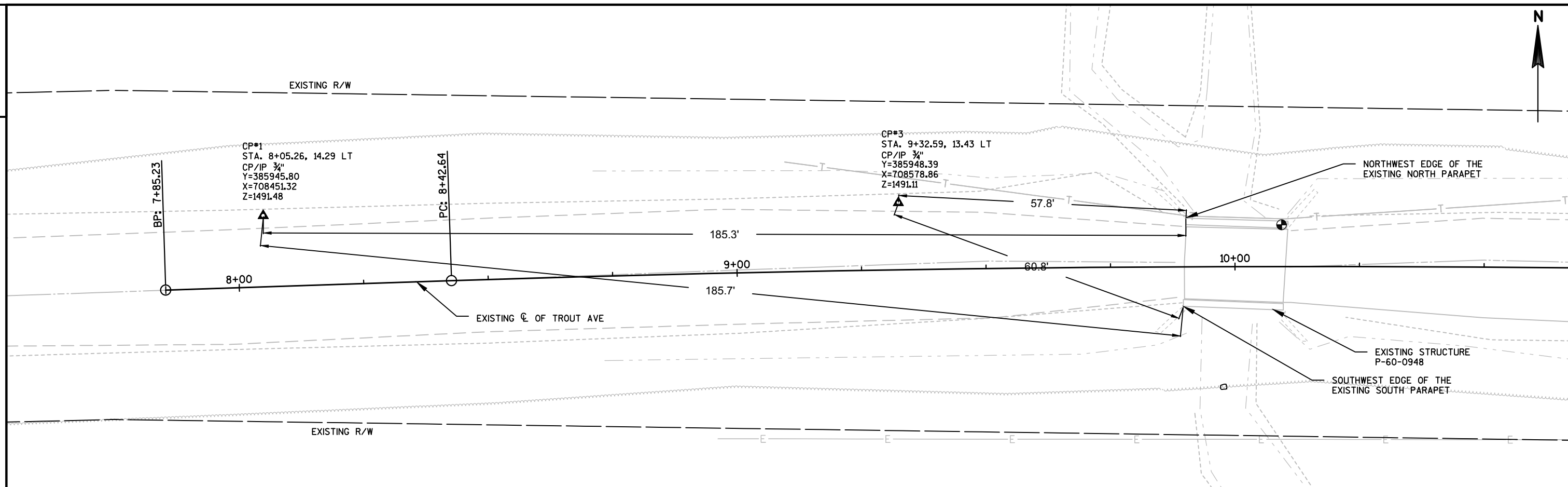
TYPICAL FINISHED SECTION

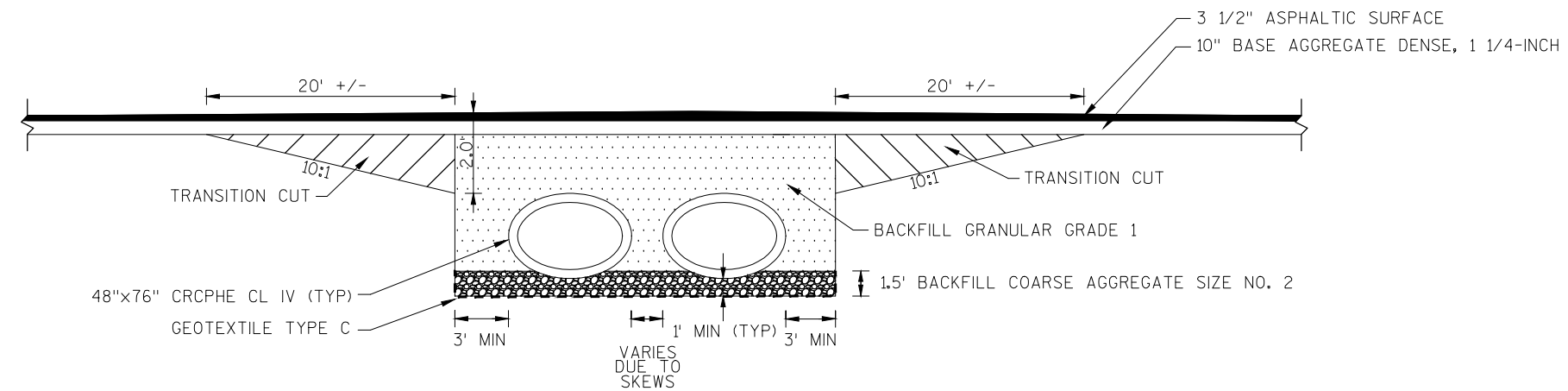
STA. 9+25 TO STA. 10+75



TYPICAL FINISHED SECTION

STA. 10+75 TO STA. 11+75



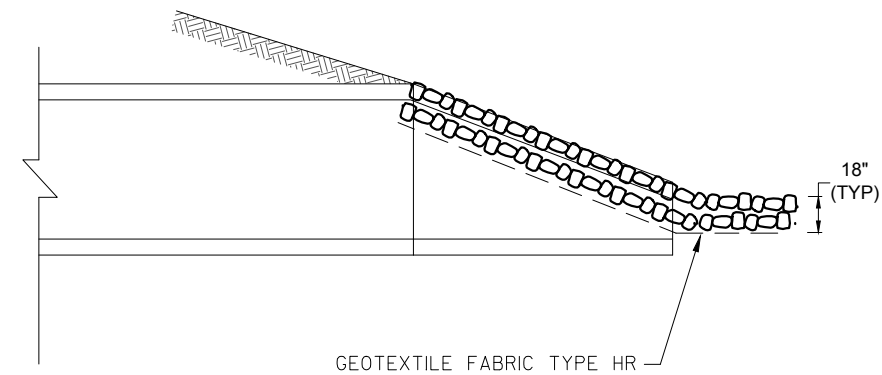
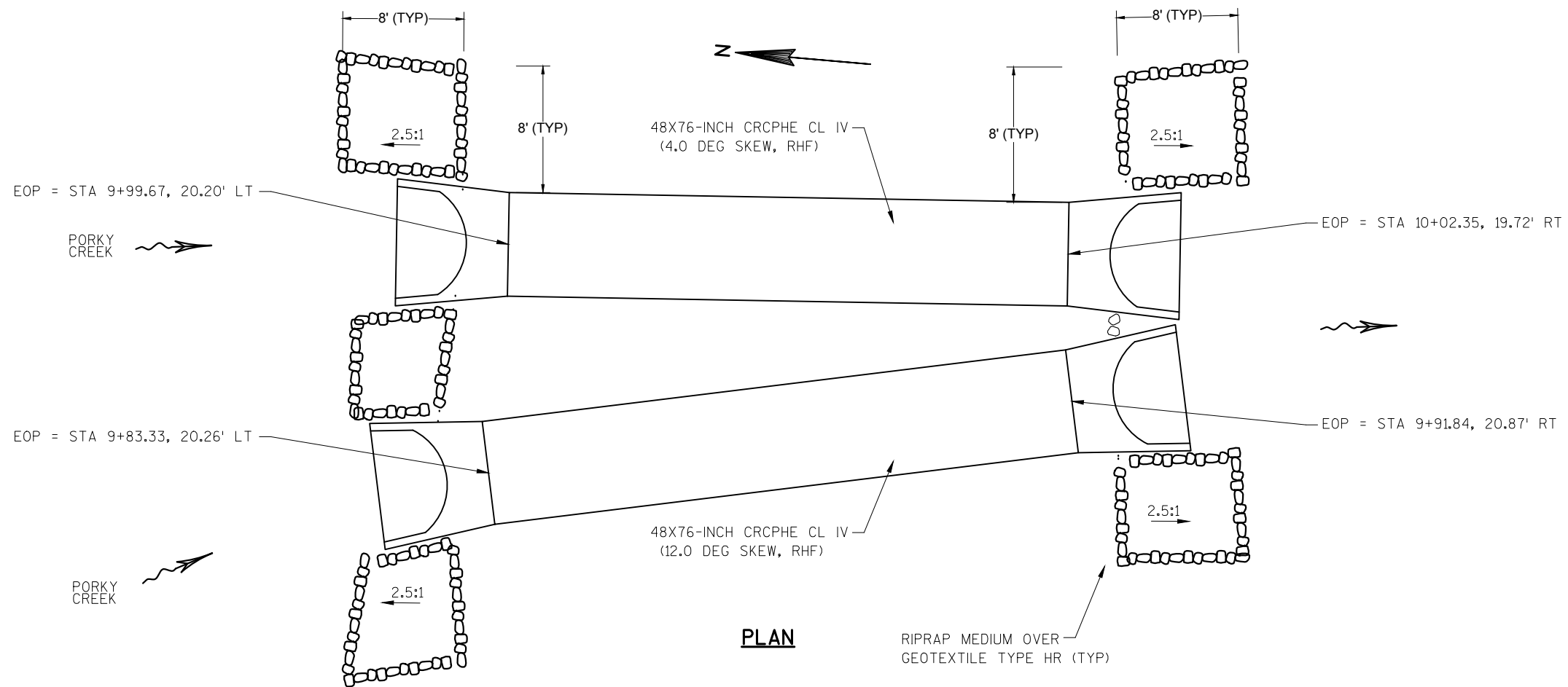


NOTE: MATERIAL REMOVED IN THE TRANSITION CUT AND PIPE TRENCH EXCAVATIONS TO BE REUSED AS BACKFILL UNLESS DETERMINED TO BE UNSUITABLE BY THE ENGINEER IN WHICH CASE BACKFILL GRANULAR GRADE 1 SHALL BE USED.

PAYMENT FOR PIPE EXCAVATION IS INCIDENTAL TO ITEM SPV.0090.01.

TRANSITION CUT WILL BE 26' WIDE, 2' OUTSIDE EDGE OF THE PROPOSED ASPHALT ON EACH SIDE OF THE CENTERLINE.

CULVERT PIPE TRANSITION

RIPRAP LAYOUT

Estimate Of Quantities

9545-00-70					
Line	Item	Item Description	Unit	Total	Qty
0010	201.0110	Clearing	SY	300.000	300.000
0020	201.0210	Grubbing	SY	300.000	300.000
0030	203.0500.S	Removing Old Structure Over Waterway (station) 01. Sta. 10+00	LS	1.000	1.000
0040	205.0100	Excavation Common	CY	350.000	350.000
0050	209.0300.S	Backfill Coarse Aggregate (size) 01. No.2	CY	90.000	90.000
0060	209.1500	Backfill Granular Grade 1	TON	210.000	210.000
0070	213.0100	Finishing Roadway (project) 01. 9545-00-70	EACH	1.000	1.000
0080	305.0110	Base Aggregate Dense 3/4-Inch	TON	360.000	360.000
0090	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	320.000	320.000
0100	311.0110	Breaker Run	TON	225.000	225.000
0110	455.0605	Tack Coat	GAL	20.000	20.000
0120	465.0105	Asphaltic Surface	TON	75.000	75.000
0130	523.0548	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 48x76-Inch	EACH	4.000	4.000
0140	606.0200	Riprap Medium	CY	25.000	25.000
0150	619.1000	Mobilization	EACH	1.000	1.000
0160	624.0100	Water	MGAL	12.000	12.000
0170	625.0500	Salvaged Topsoil	SY	683.000	683.000
0180	628.1504	Silt Fence	LF	530.000	530.000
0190	628.1520	Silt Fence Maintenance	LF	530.000	530.000
0200	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0210	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0220	628.2008	Erosion Mat Urban Class I Type B	SY	683.000	683.000
0230	628.7570	Rock Bags	EACH	30.000	30.000
0240	629.0210	Fertilizer Type B	CWT	0.500	0.500
0250	630.0120	Seeding Mixture No. 20	LB	19.000	19.000
0260	630.0200	Seeding Temporary	LB	10.000	10.000
0270	633.5200	Markers Culvert End	EACH	4.000	4.000
0280	642.5001	Field Office Type B	EACH	1.000	1.000
0290	643.0100	Traffic Control (project) 01. 9545-00-70	EACH	1.000	1.000
0300	643.0420	Traffic Control Barricades Type III	DAY	400.000	400.000
0310	643.0705	Traffic Control Warning Lights Type A	DAY	800.000	800.000
0320	643.0900	Traffic Control Signs	DAY	350.000	350.000
0330	645.0105	Geotextile Type C	SY	205.000	205.000
0340	645.0120	Geotextile Type HR	SY	80.000	80.000
0350	650.4500	Construction Staking Subgrade	LF	250.000	250.000
0360	650.5000	Construction Staking Base	LF	250.000	250.000
0370	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0380	650.9910	Construction Staking Supplemental Control (project) 01.	LS	1.000	1.000

Estimate Of Quantities

9545-00-70					
Line	Item	Item Description	Unit	Total	Qty
9545-00-70					
0390	650.9920	Construction Staking Slope Stakes	LF	250.000	250.000
0400	SPV.0060	Special 01. Temporary Water Diversion Porky Creek	EACH	1.000	1.000
0410	SPV.0090	Special 01. Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 48x76-Inch	LF	82.000	82.000

CLEARING AND GRUBBING

CATEGORY	STATION	LOCATION	201.0110	201.0210
			CLEARING SY	GRUBBING SY
0010	9+25 - 11+75	RT & LT	300	300
TOTAL			300	300

REMOVING OLD STRUCTURE

203.0500.S REMOVING OLD STRUCTURE OVER WATERWAY STATION 10+00				
CATEGORY	STATION	LS	REMARKS	
0010	10+00	1	23.3' SINGLE SPAN CONCRETE FLAT SLAB	
TOTAL		1		

EXCAVATION

CATEGORY	STATION	205.0100	FILL (1) CY	EXPANDED	WASTE (1)
		EXCAVATION COMMON CY		FILL (1)(2) CY	WASTE (1) CY
0010	9+25 - 9+80	58	21	28	30
0010	10+08 - 11+75	252	42	54	198
0010	TRANSITION CUT (3)	40	-	-	-
TOTAL		350	63	82	228

- (1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY.
(2) - FILL EXPANSION = 30%
(3) - TRANSITION CUT MATERIAL TO BE REUSED UNLESS DETERMINED UNSUITABLE BY THE ENGINEER.

BACKFILL ITEMS

CATEGORY	LOCATION	209.1500
		BACKFILL GRANULAR GRADE 1 TON
0010	TRANSITION CUT (1)	40
0010	ADJACENT TO ENDWALLS	55
0010	PIPE TRENCH (2)	115
TOTAL		210

- (1) - TRANSITION CUT MATERIAL TO BE REUSED UNLESS DETERMINED UNSUITABLE BY THE ENGINEER.
(2) - PIPE TRENCH EXCAVATION MATERIAL TO BE REUSED UNLESS DETERMINED UNSUITABLE BY THE ENGINEER.

BEDDING ITEMS

CATEGORY	LOCATION	209.0300.S	645.0105
		BACKFILL COARSE AGGREGATE SIZE NO. 2 CY	GEOTEXTILE TYPE C SY
0010	PIPE BEDDING	90	205
TOTAL		90	205

BASE AGGREGATE ITEMS

CATEGORY	STATION	305.0110	305.0120	311.0110	624.0100
		BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	BREAKER RUN TON	WATER MGAL
0010	9+25 - 10+75	20	320	-	6
0010	10+75 - 11+75	340	-	225	6
TOTAL		360	320	225	12

ASPHALT PAVEMENT ITEMS

CATEGORY	STATION	THICKNESS	455.0605	465.0105
			TACK COAT GAL	ASPHALTIC SURFACE TON
0010	9+25 - 10+75	3.5 INCHES	20	75
TOTAL			20	75

NOTE: TACK COAT CALCULATED AT 0.05 GALLONS PER SQUARE YARD

CULVERT PIPE

CATEGORY	STATION	523.0548	SPV.0090.01	633.5200
		APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HE 48x76-INCH CY	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 48x76-INCH LF	MARKERS CULVERT END EA
0010	9+87	2	42	2
0010	10+01	2	40	2
TOTAL		4	82	4

NOTE: PIPE TIES ARE REQUIRED AT EVERY JOINT.

RIPRAP ITEMS

CATEGORY	STATION	LOCATION	606.0200	645.0120
			RIPRAP MEDIUM CY	GEOTEXTILE TYPE HR SY
0010	9+72 - 10+10	LT	14	44
	9+83 - 10+14	RT	11	36
TOTAL			25	80

MOBILIZATION		
CATEGORY	PROJECT	619.1000 MOBILIZATION EACH
0010	9545-00-70	1
TOTAL		1

EROSION CONTROL ITEMS					
CATEGORY	STATION	LOCATION	628.1504 SILT FENCE	628.1520 SILT FENCE MAINTENANCE	628.7570 ROCK BAGS
			LF	LF	EACH
0010	9+25 - 11+75	LT	240	240	---
	9+25 - 11+75	RT	240	240	---
	UNDISTRIBUTED		50	50	30
TOTAL			530	530	30

NOTE: USE ROCK BAGS FOR SILT FENCE WEEPS AS DIRECTED BY THE ENGINEER

MOBILIZATION EROSION CONTROL			
CATEGORY	PROJECT	628.1905 MOBILIZATION EROSION CONTROL	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL
0010	9545-00-70	EACH 3	EACH 2
TOTAL		3	2

FIELD OFFICE		
CATEGORY	PROJECT	642.5001 FIELD OFFICE TYPE B
0010	9545-00-70	EACH 1
TOTAL		1

RESTORATION ITEMS						
CATEGORY	STATION	LOCATION	625.0500 SALVAGED TOPSOIL	628.2008 EROSION MAT URBAN CLASS 1 TYPE B	629.0210 FERTILIZER TYPE B	630.0120 SEEDING MIXTURE #20
			SY	SY	CWT	LB
0010	9+25 - 11+75	LT	290	290	0.2	8
	9+25 - 11+75	RT	330	330	0.2	9
	UNDISTRIBUTED		63	63	0.1	2
TOTAL			683	683	0.5	19

TRAFFIC CONTROL ITEMS								
CATEGORY	PROJECT	DAYS	643.0100 TRAFFIC CONTROL (PROJECT)	643.0420 TRAFFIC CONTROL BARRICADES TYPE III	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A	643.0900 TRAFFIC CONTROL SIGNS	EACH	DAYS
			EACH	EACH	TYPE A DAYS	TYPE A DAYS		
0010	9545-00-70	25	1	16	400	32	800	14
TOTALS			1	400	800	350		

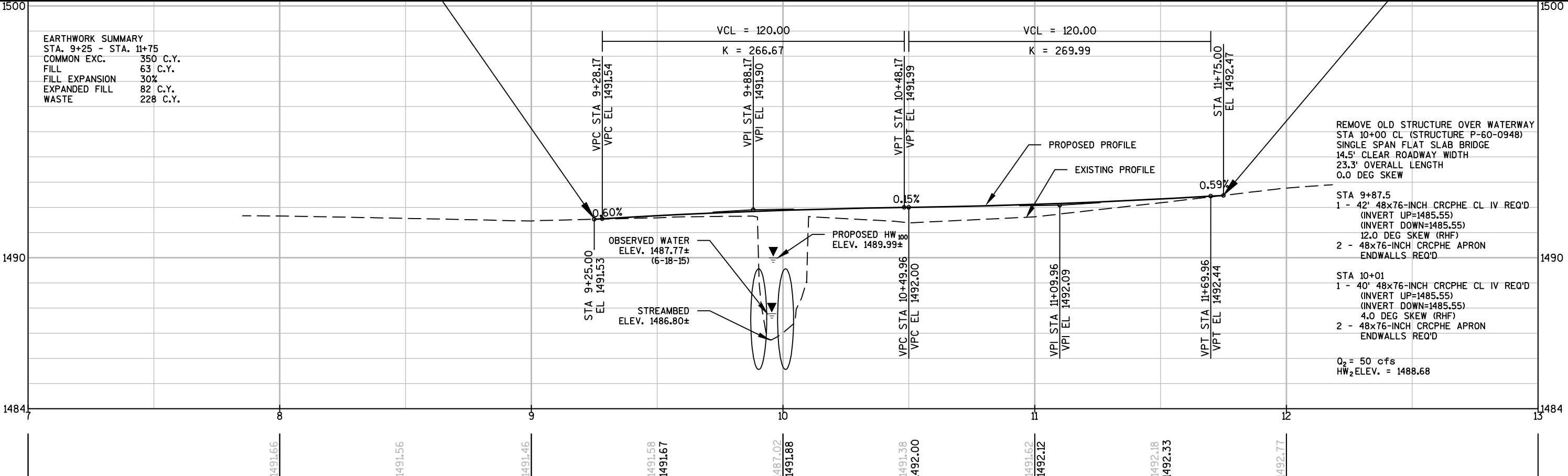
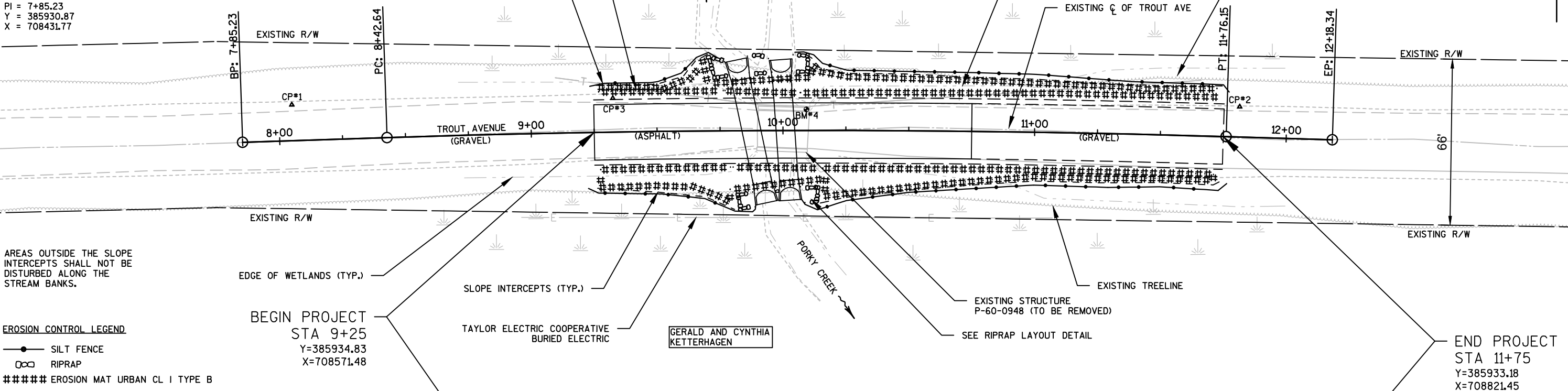
CONSTRUCTION STAKING						
CATEGORY	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE	650.5000 CONSTRUCTION STAKING BASE	650.6000 CONSTRUCTION STAKING PIPE CULVERTS	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL
0010	9+25 - 11+75	LT & RT	LF 250	LF 250	EACH 2	LS 1
TOTAL			250	250	2	1

TEMPORARY WATER DIVERSION			
CATEGORY	STATION	LOCATION	SPV.0060.01 TEMPORARY WATER DIVERSION PORKY CREEK
0010	10+00	PORKY CREEK	EA 1
TOTAL			1

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
CP#1	8+05	IR 0.75"	1491.48
CP#2	11+81	IR 0.75"	1492.27
CP#3	9+32	IR 0.75"	1491.11
BM#4	10+09	X CHISELED IN TOP OF PARAPET	1494.49

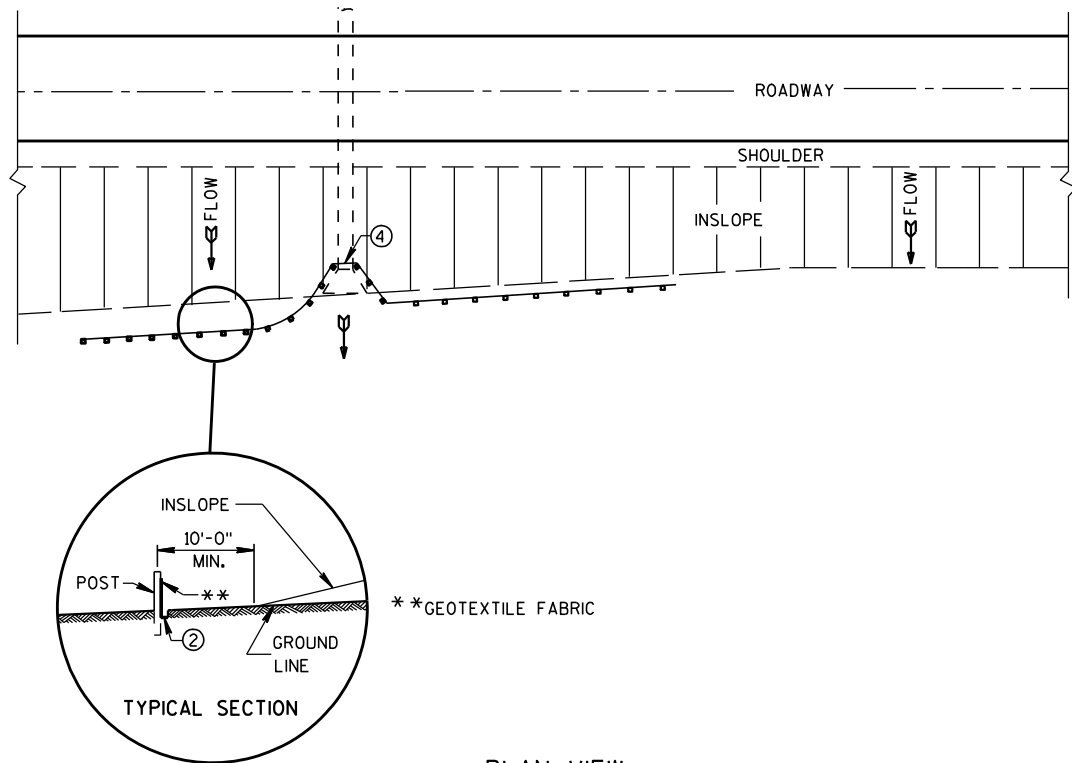
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Y = 385930.87
X = 708431.77

PI = 10+09.45
Y = 385938.28
X = 708655.87
Δ = 03°39'13"
D = 01°05'43"
T = 166.81
L = 333.51'
R = 5,230.00'
PC = 8+42.64
PT = 11+76.15

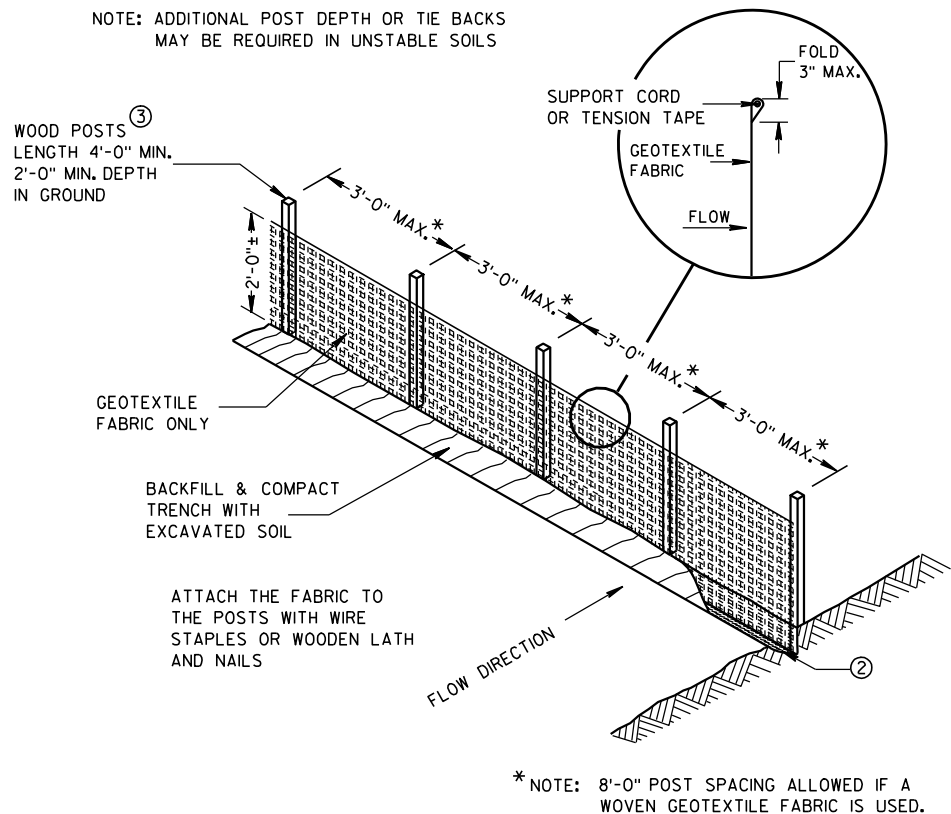


Standard Detail Drawing List

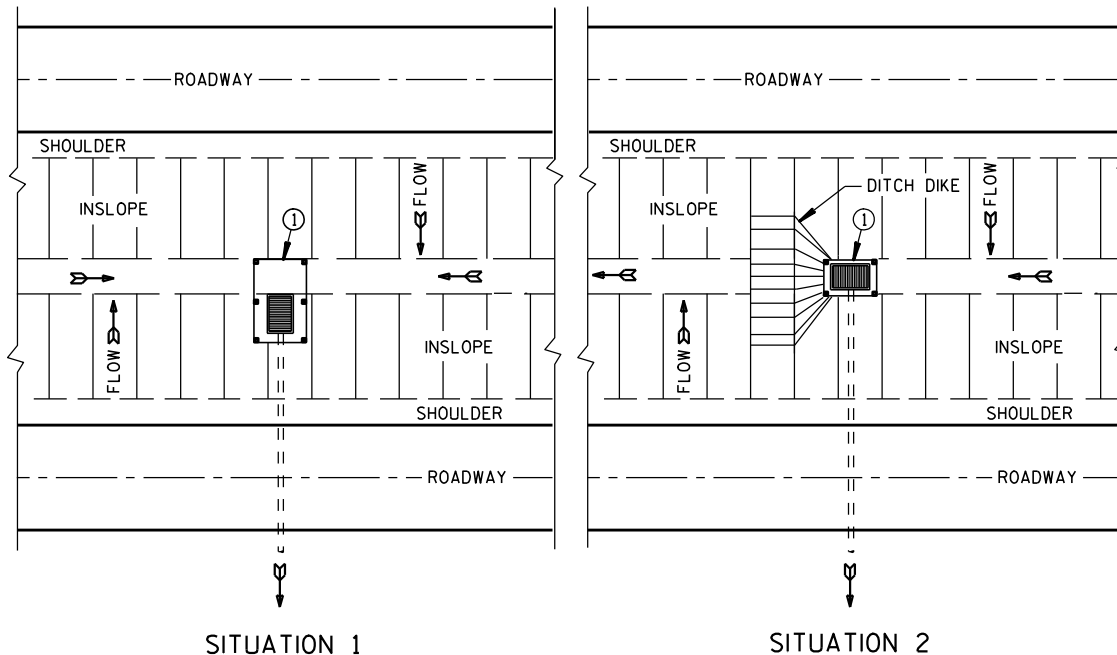
08E09-06	SILT FENCE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES



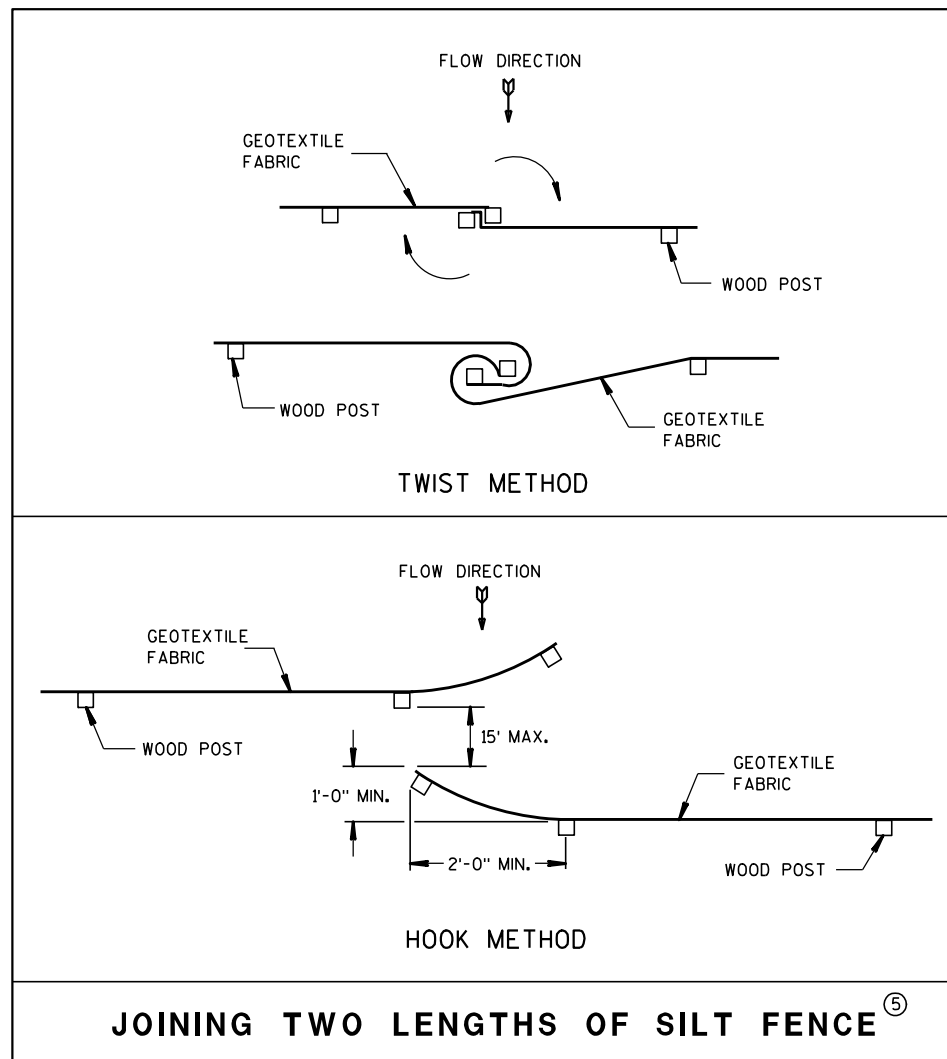
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

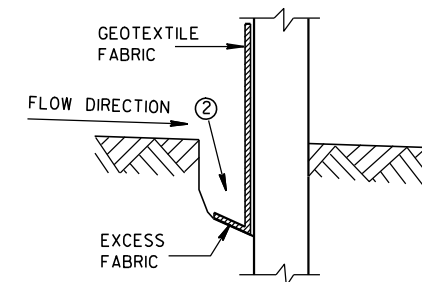


JOINING TWO LENGTHS OF SILT FENCE

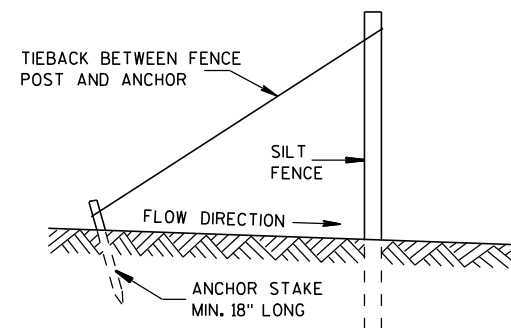
GENERAL NOTES

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.

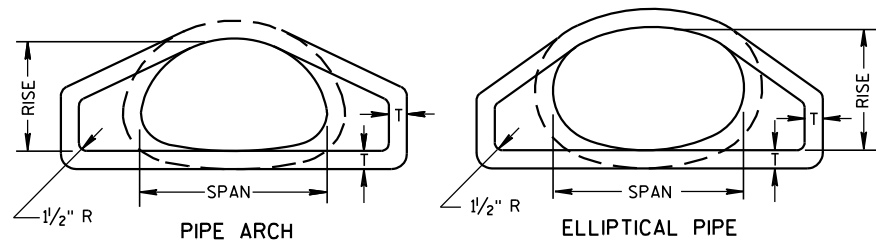


TRENCH DETAIL

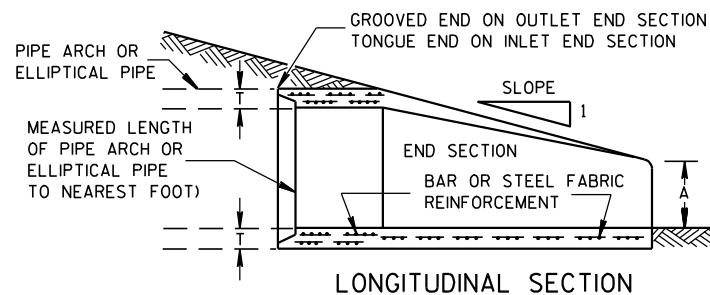


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

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

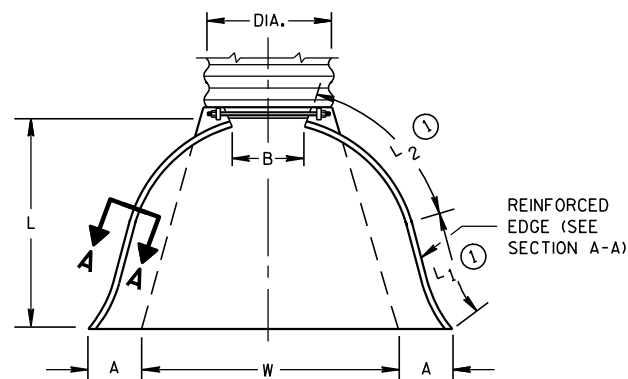


END VIEW



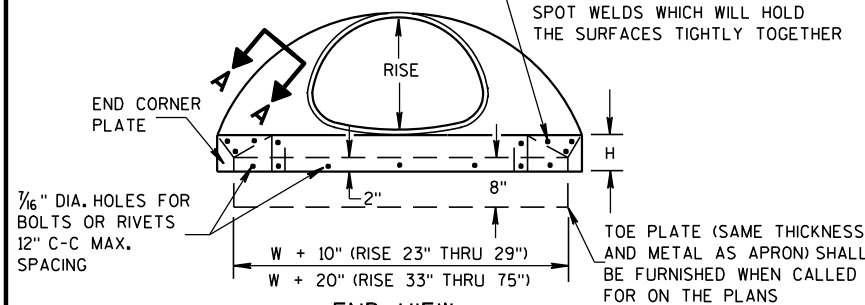
LONGITUDINAL SECTION

CONCRETE ENDWALLS

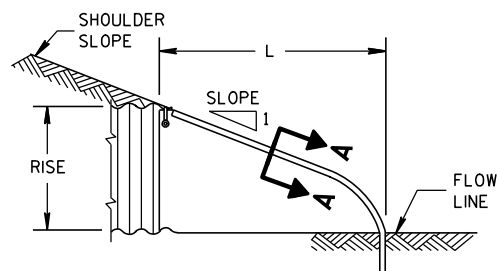
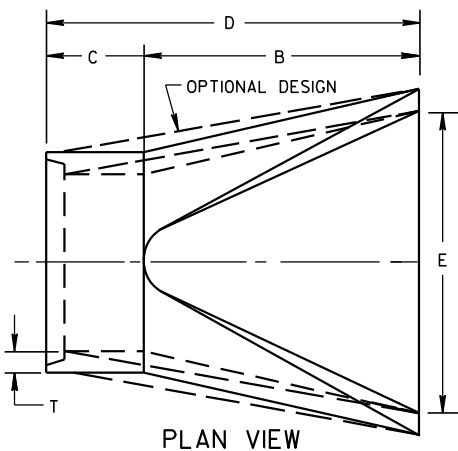


PLAN VIEW

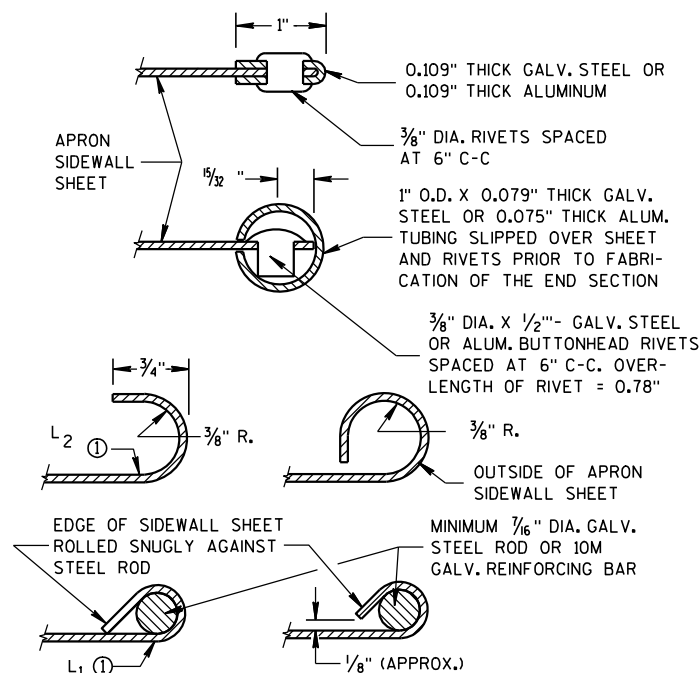
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW

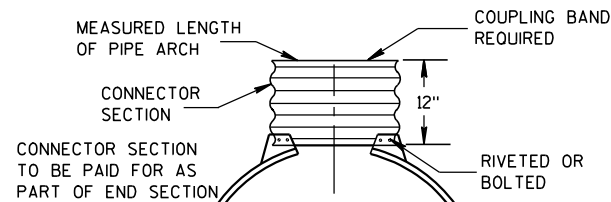


SECTION A-A



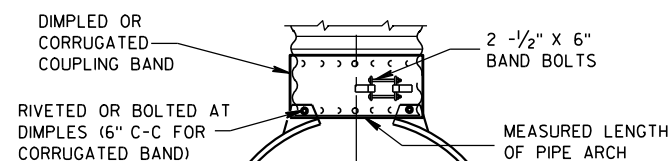
TYPE 2

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

CONNECTION DETAILS

2- 2/3" X 1/2" CORRUGATIONS

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

3" X 1" CORRUGATIONS

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

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	
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 1/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28 1/2	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

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

**NOMINAL SIZE

GENERAL NOTES

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

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

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

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

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

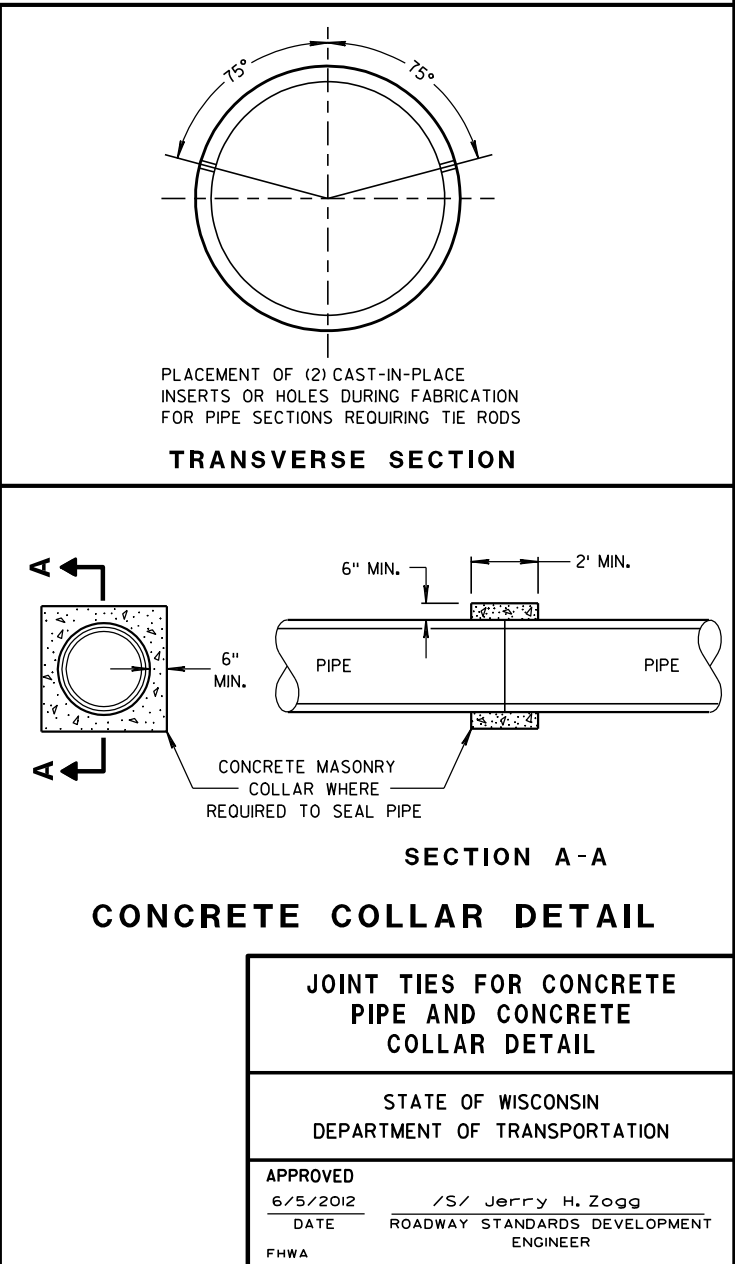
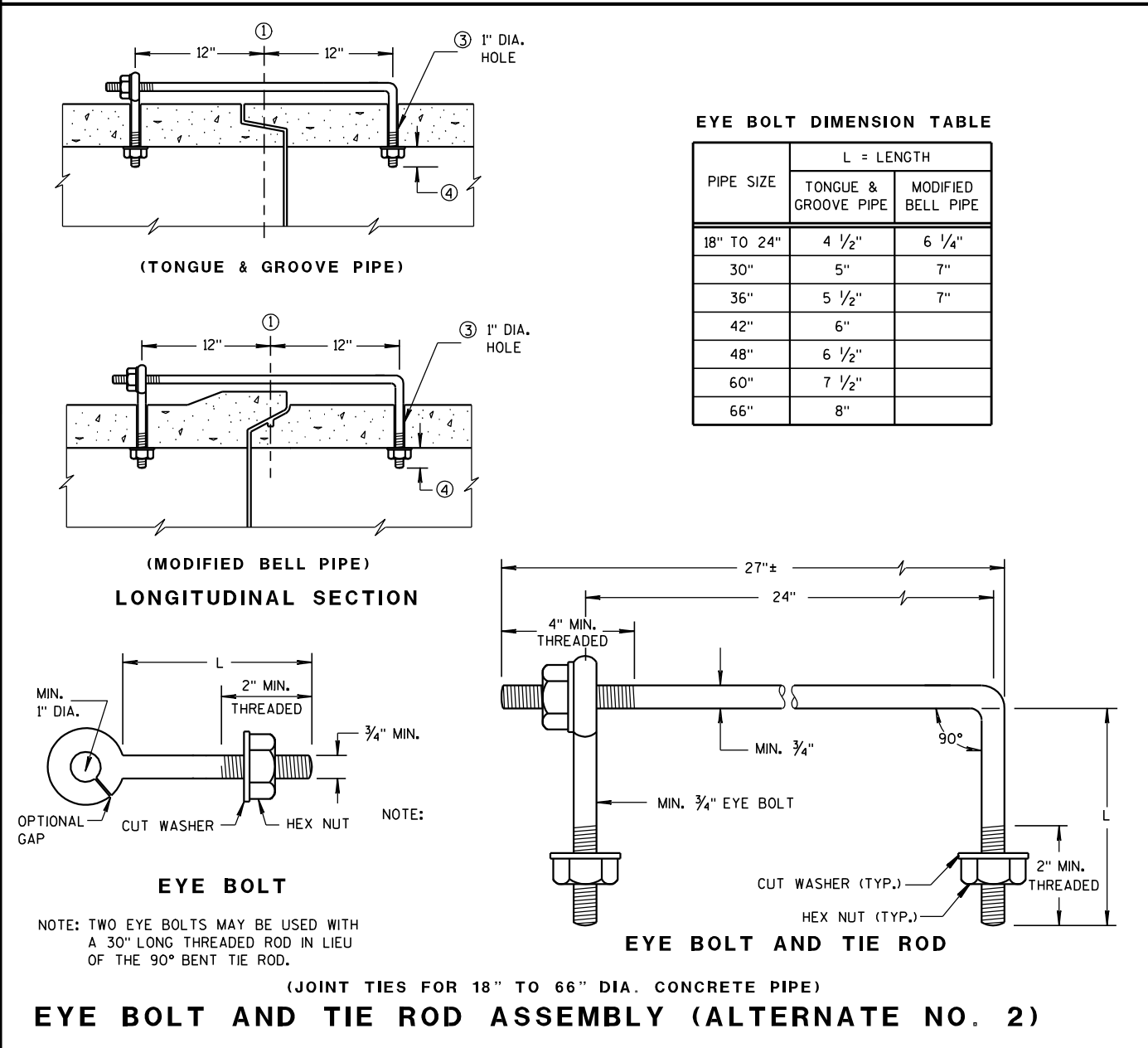
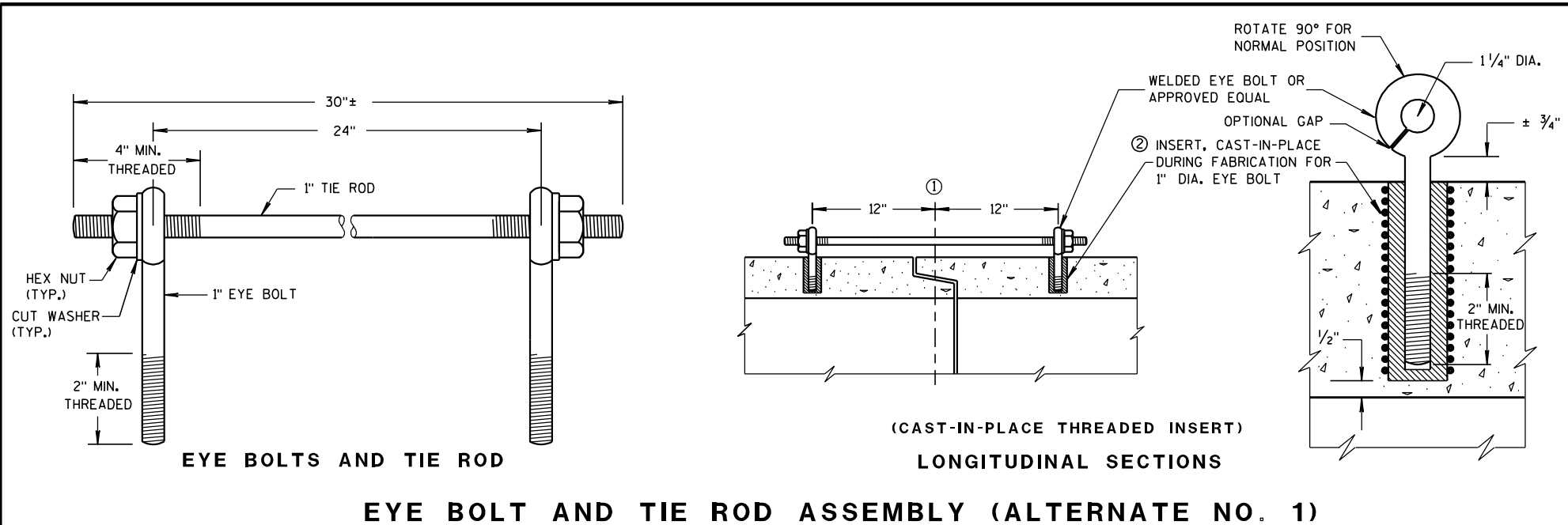
① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

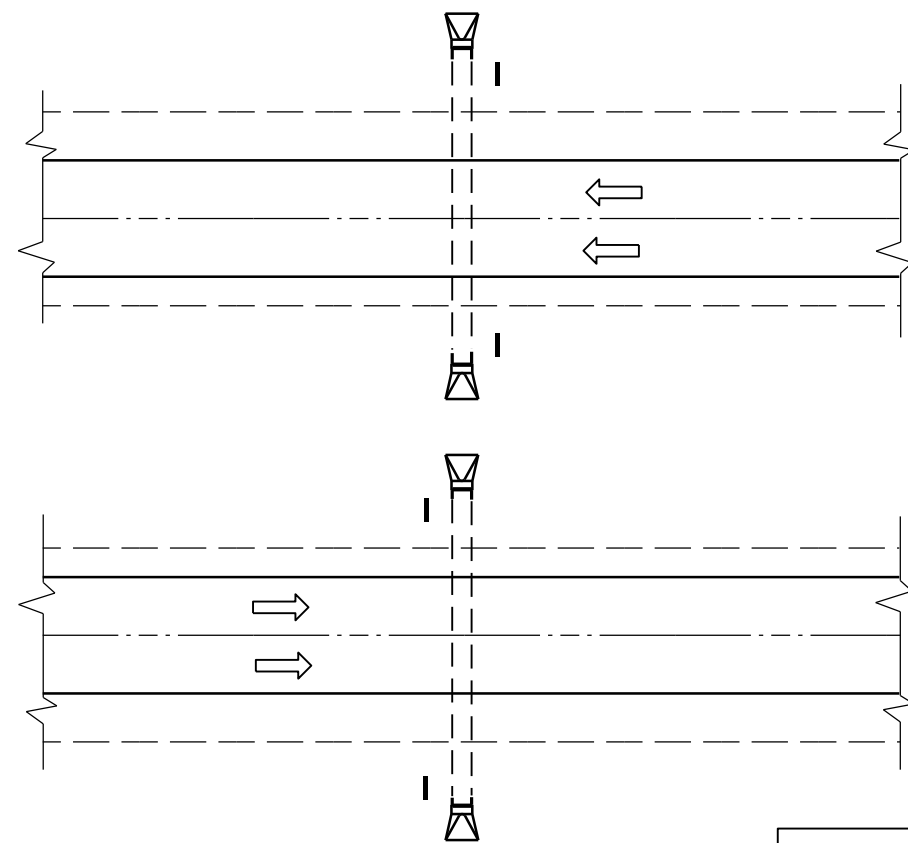
APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPESTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

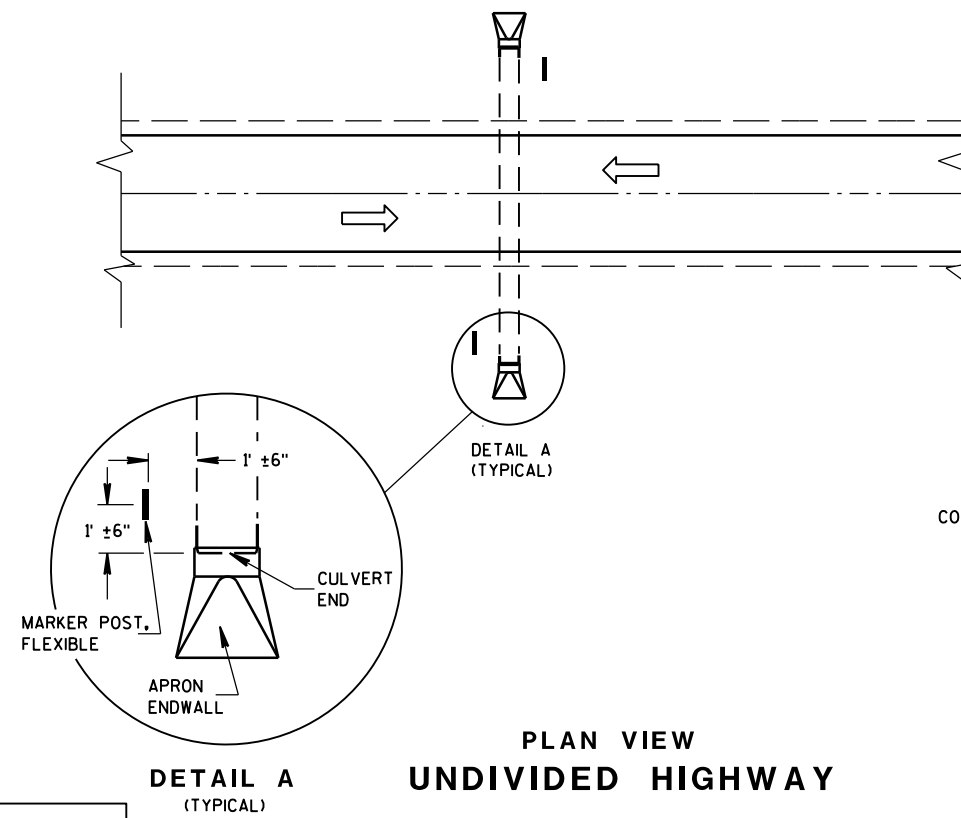
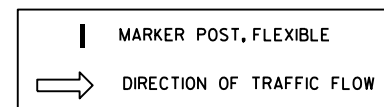
11/30/94
DATE/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA





PLAN VIEW
DIVIDED HIGHWAY

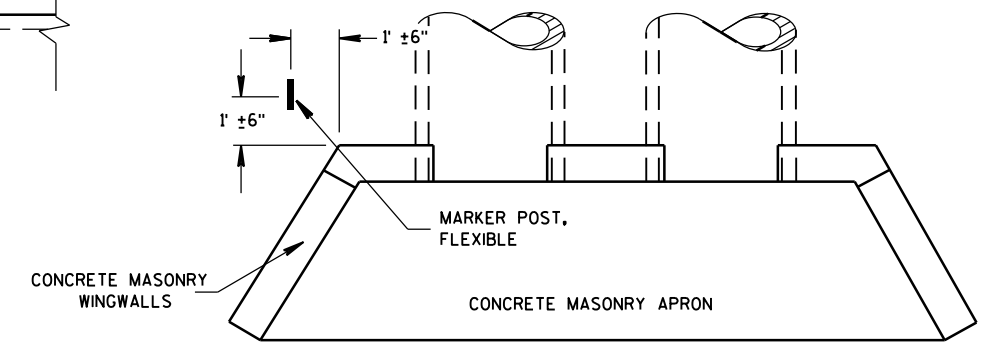


PLAN VIEW
UNDIVIDED HIGHWAY

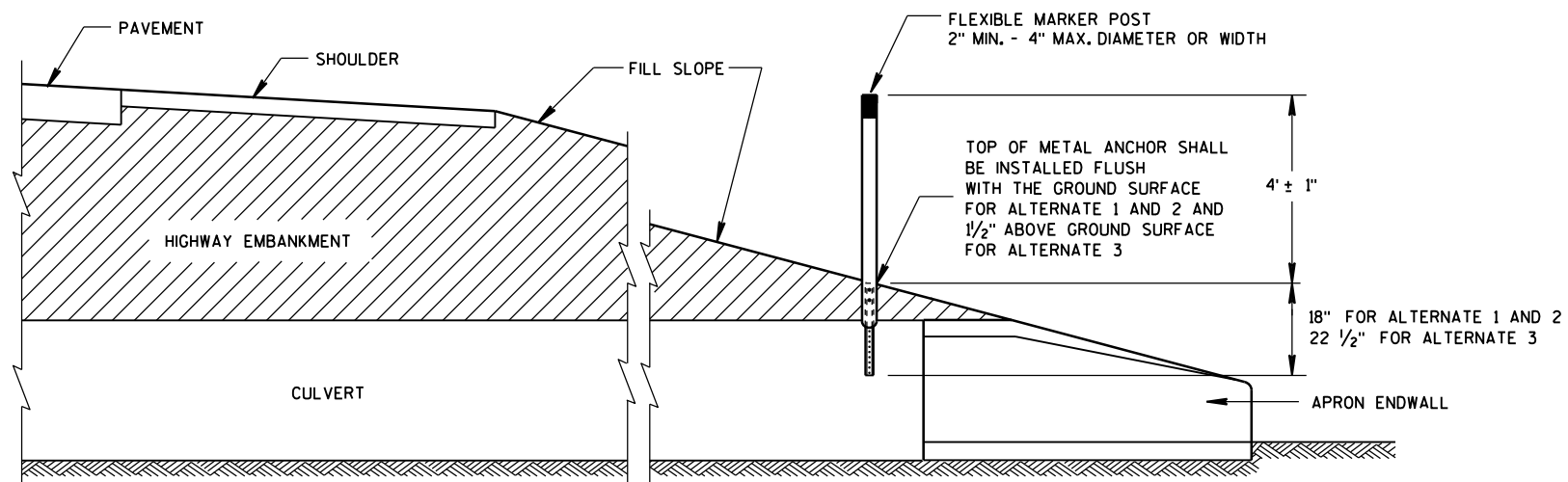
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



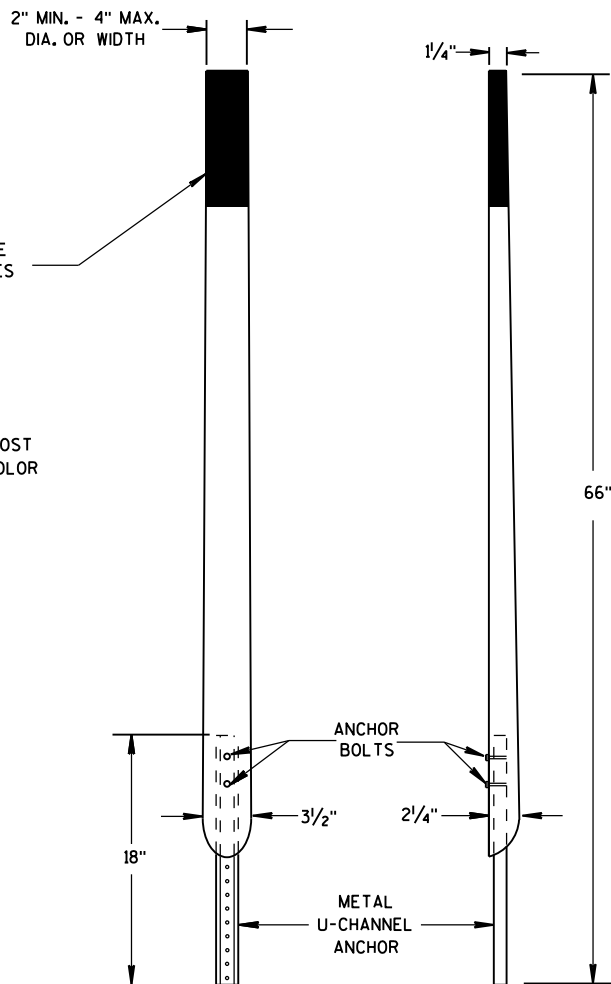
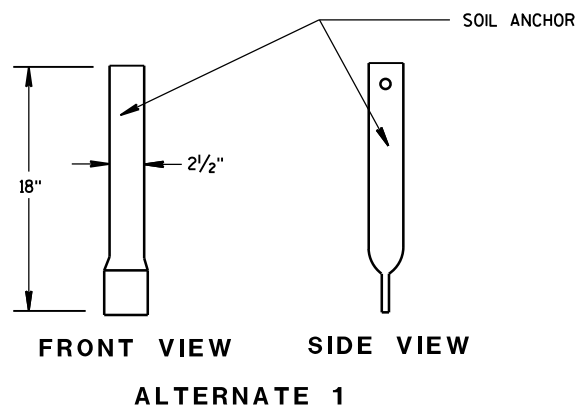
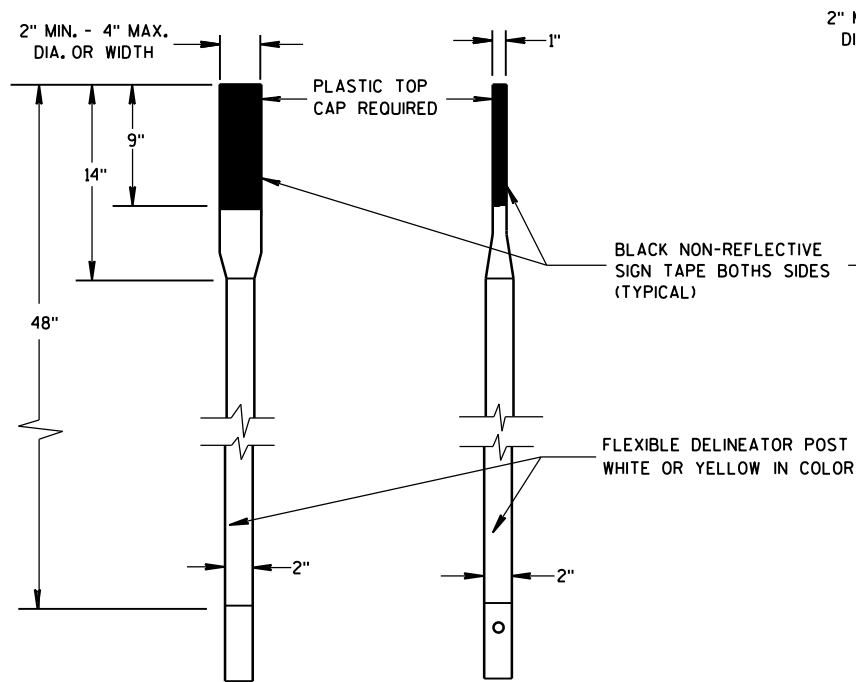
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

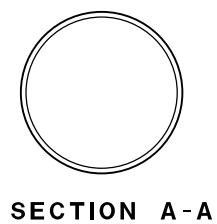
FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

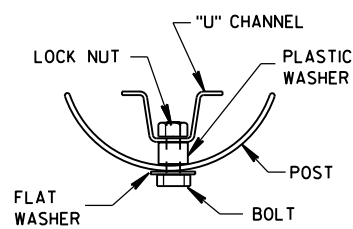
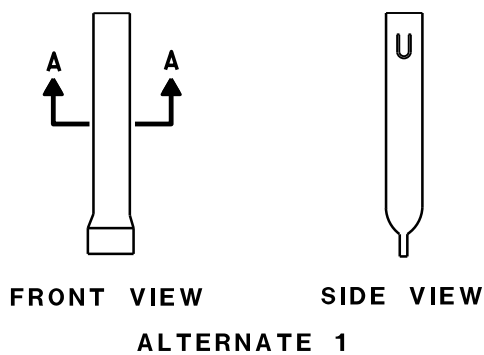


FRONT VIEW SIDE VIEW
ALTERNATE 2

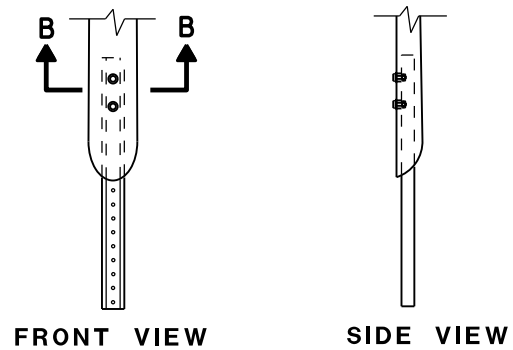
FLEXIBLE MARKER POSTS



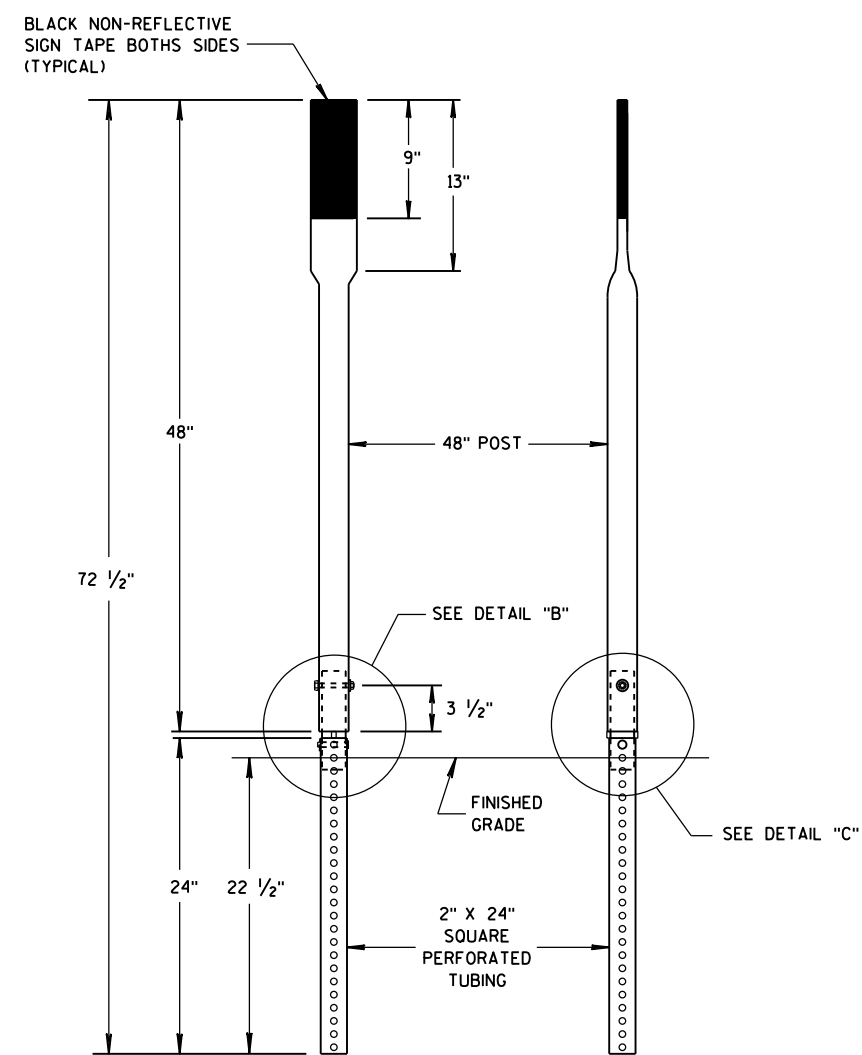
SECTION A-A



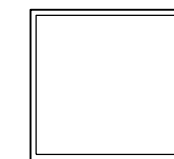
SECTION B-B



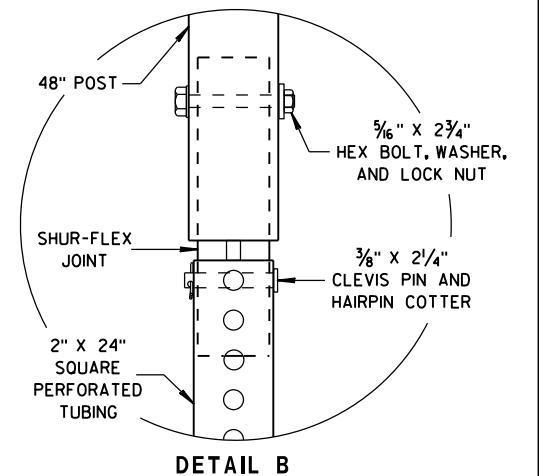
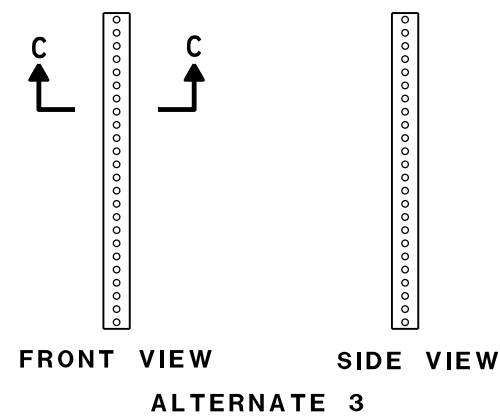
FRONT VIEW SIDE VIEW
ALTERNATE 2
FLEXIBLE MARKER POST ANCHORS



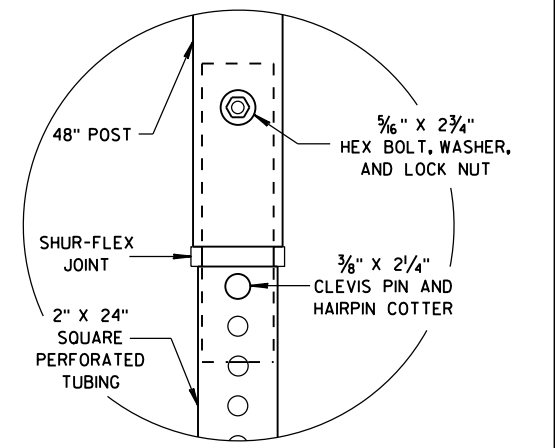
FRONT VIEW SIDE VIEW
ALTERNATE 3



SECTION C-C



DETAIL B



DETAIL C

FLEXIBLE MARKER POST FOR CULVERT END

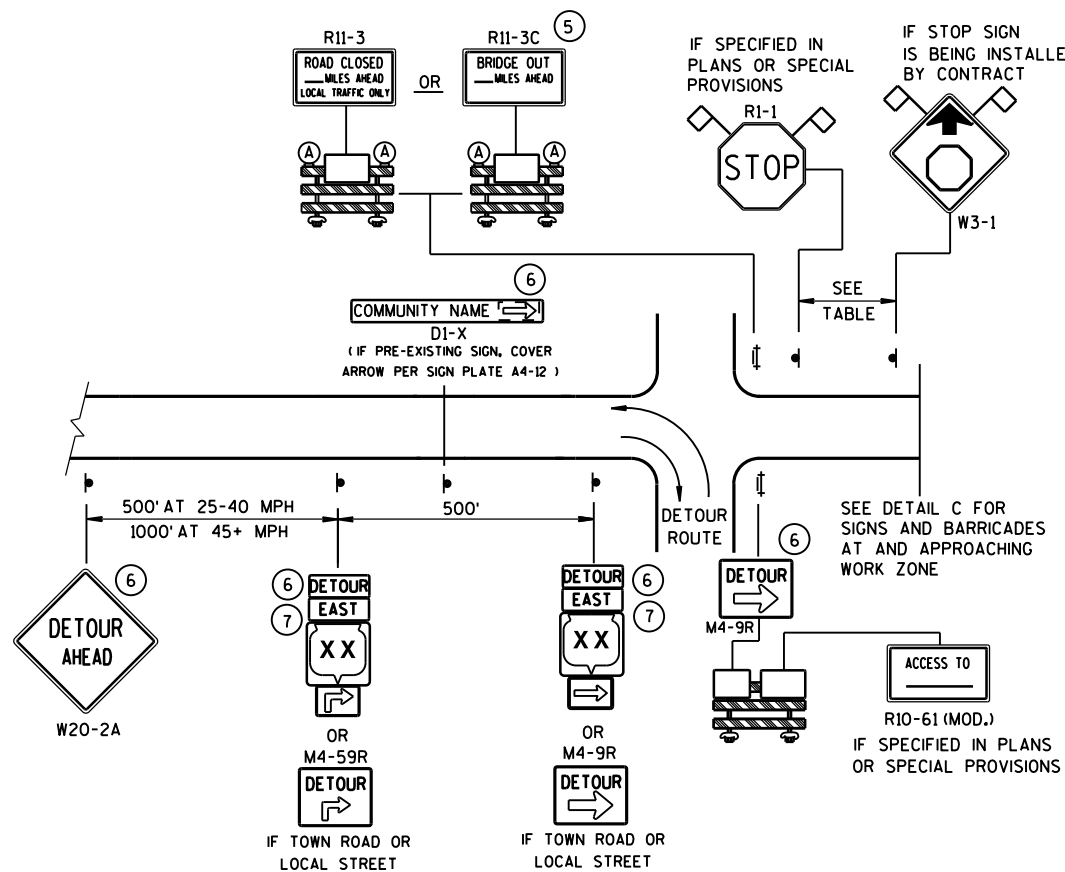
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

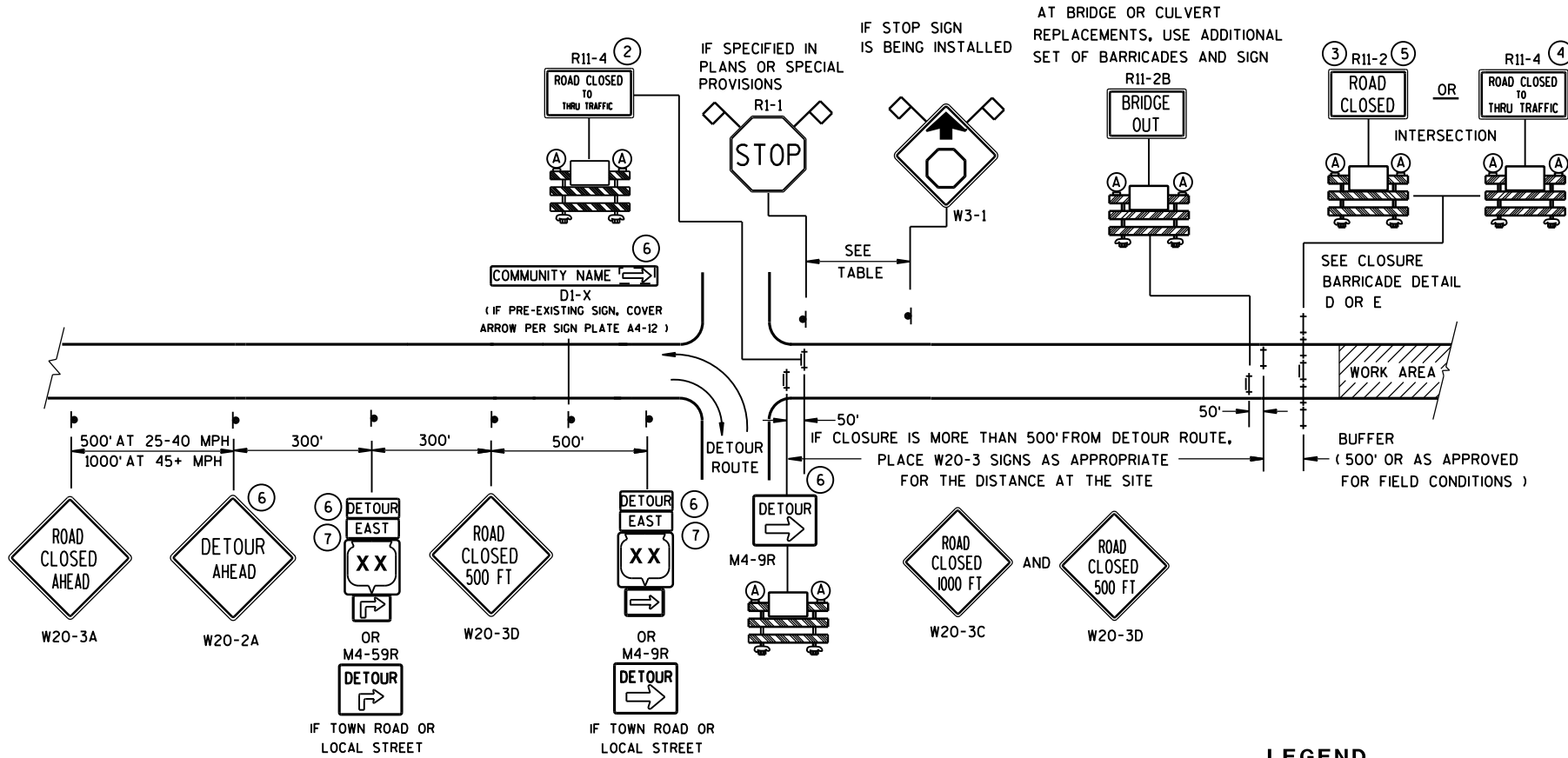
10/1/2012
DATE

FHWA

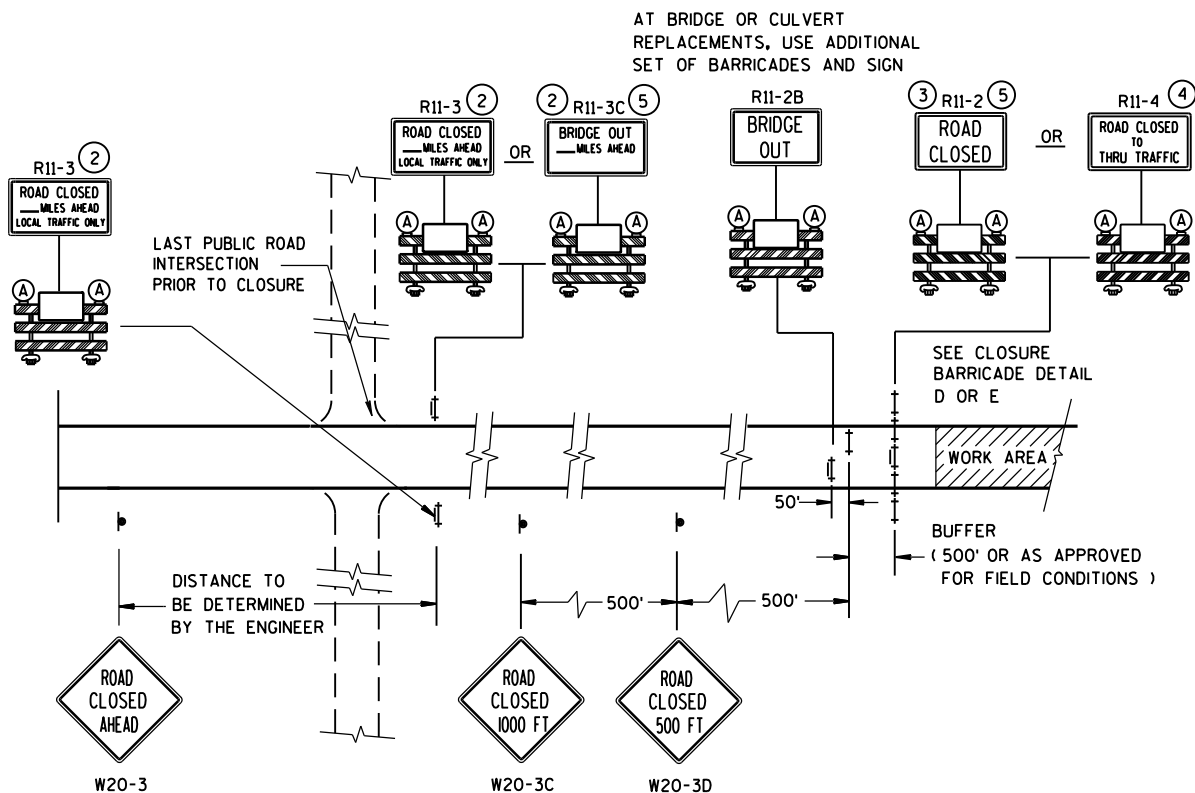
/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

LEGEND

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

WORK AREA

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

M05-1 OR M06-1

FLAGS, 16" X 16" MIN., (ORANGE)

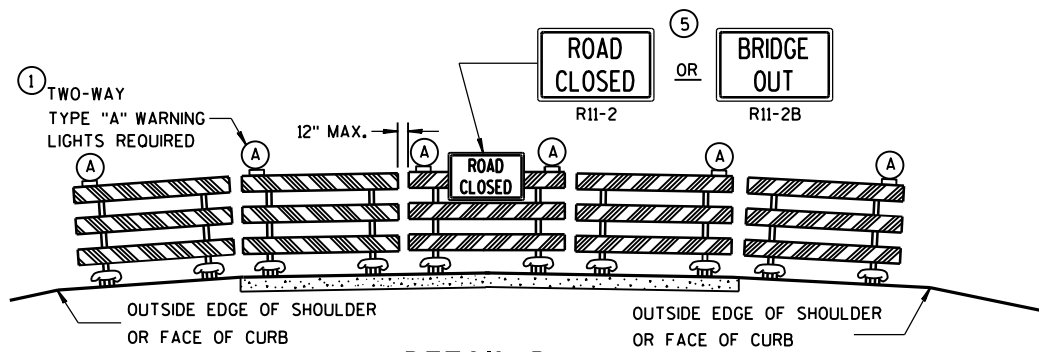
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

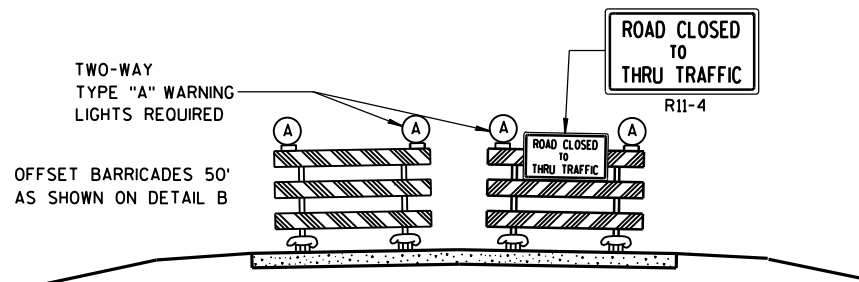
BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

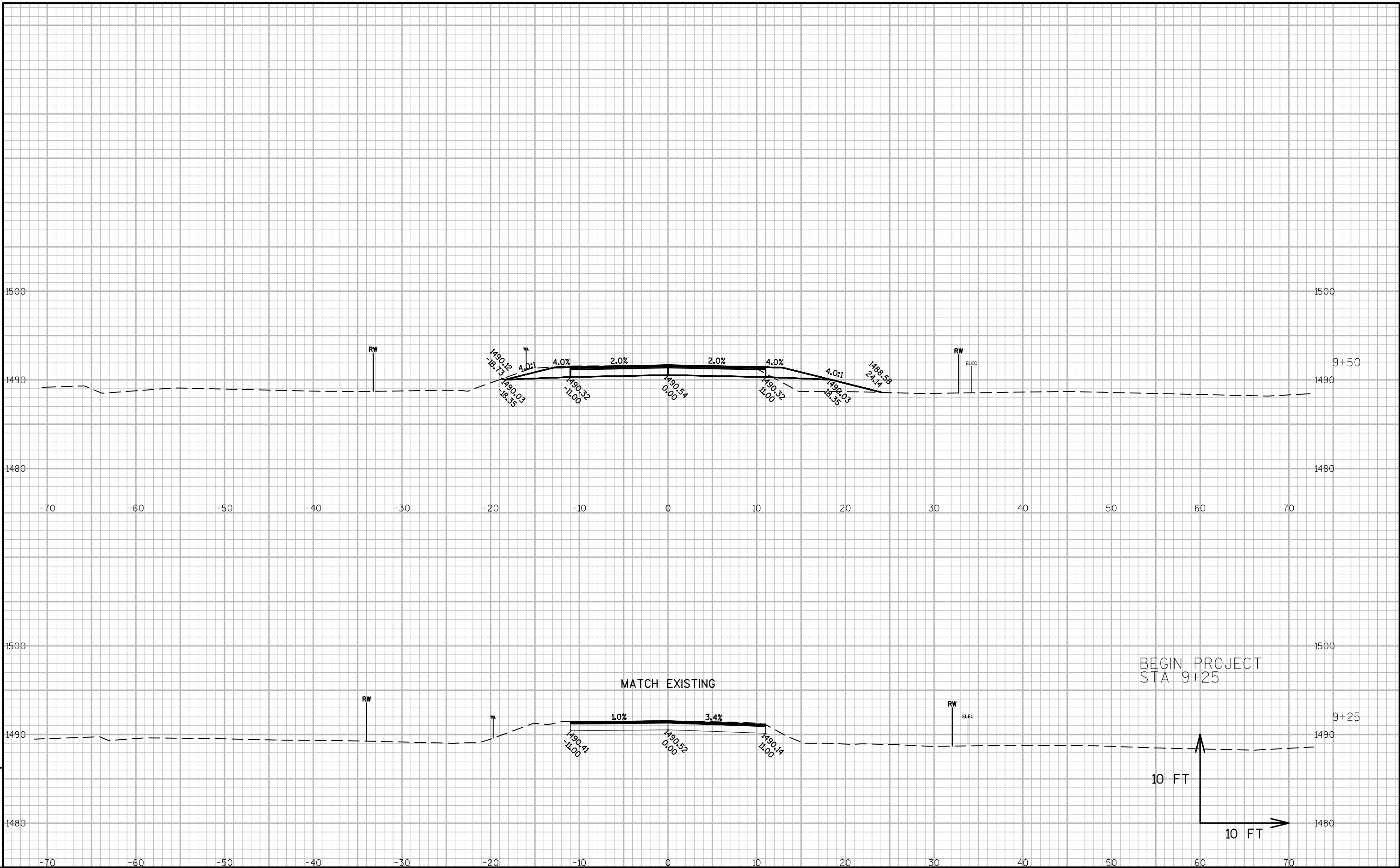
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

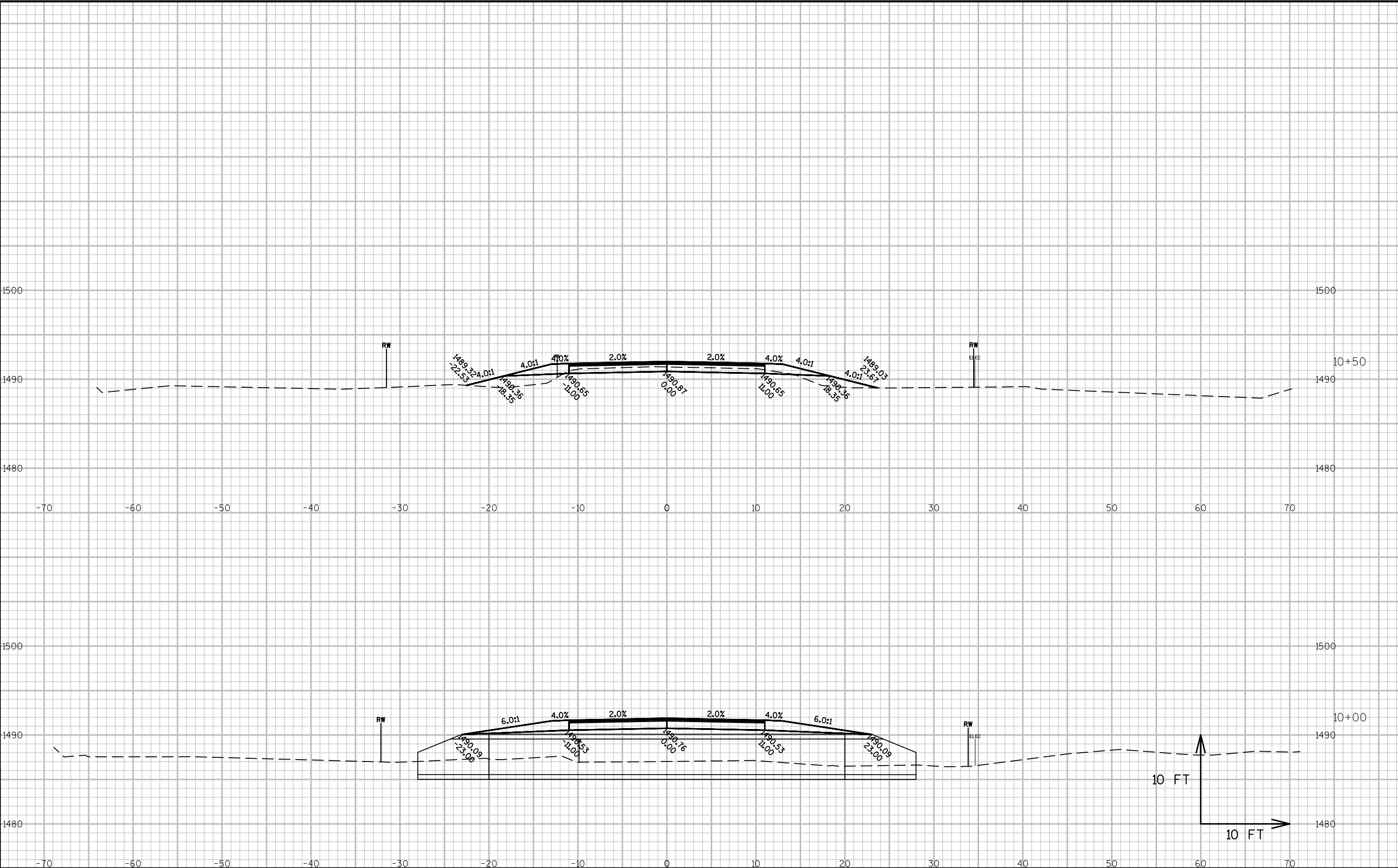
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- 2 THESE SIGNS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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
Sept. 2015 DATE	/S/ Peter Amokobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

PROJECT I.D. 9545-00-70 EARTHWORK SUMMARY

STA	EXCAVATION COMMON CY	FILL (1) CY	EXPANDED FILL (2) CY	WASTE CY	MASS ORDINATE CY
9+25.00	25	5	7	18	18
9+50.00	28	13	17	11	11
9+75.00	5	3	4	1	1
9+80.00					
CULVERTS					
10+08.00	13	15	20	-7	-7
10+25.00	14	18	23	-9	-9
10+50.00	26	8	10	16	16
10+75.00	43	1	1	42	42
11+00.00	49	0	0	49	49
11+25.00	56	0	0	56	56
11+50.00	51	0	0	51	51
11+75.00					
SUBTOTALS					
WEST APPROACH	58	21	28	30	30
EAST APPROACH	252	42	54	198	198
TRANSITION CUT	40	0	0	0	0
TOTALS	350	63	82	228	228
(1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY. (2) - FILL EXPANSION 30% (3) - TRANSITION CUT MATERIAL TO BE REUSED UNLESS DETERMINED UNSUITABLE BY THE ENGINEER.					





PROJECT NO: 9545-00-70

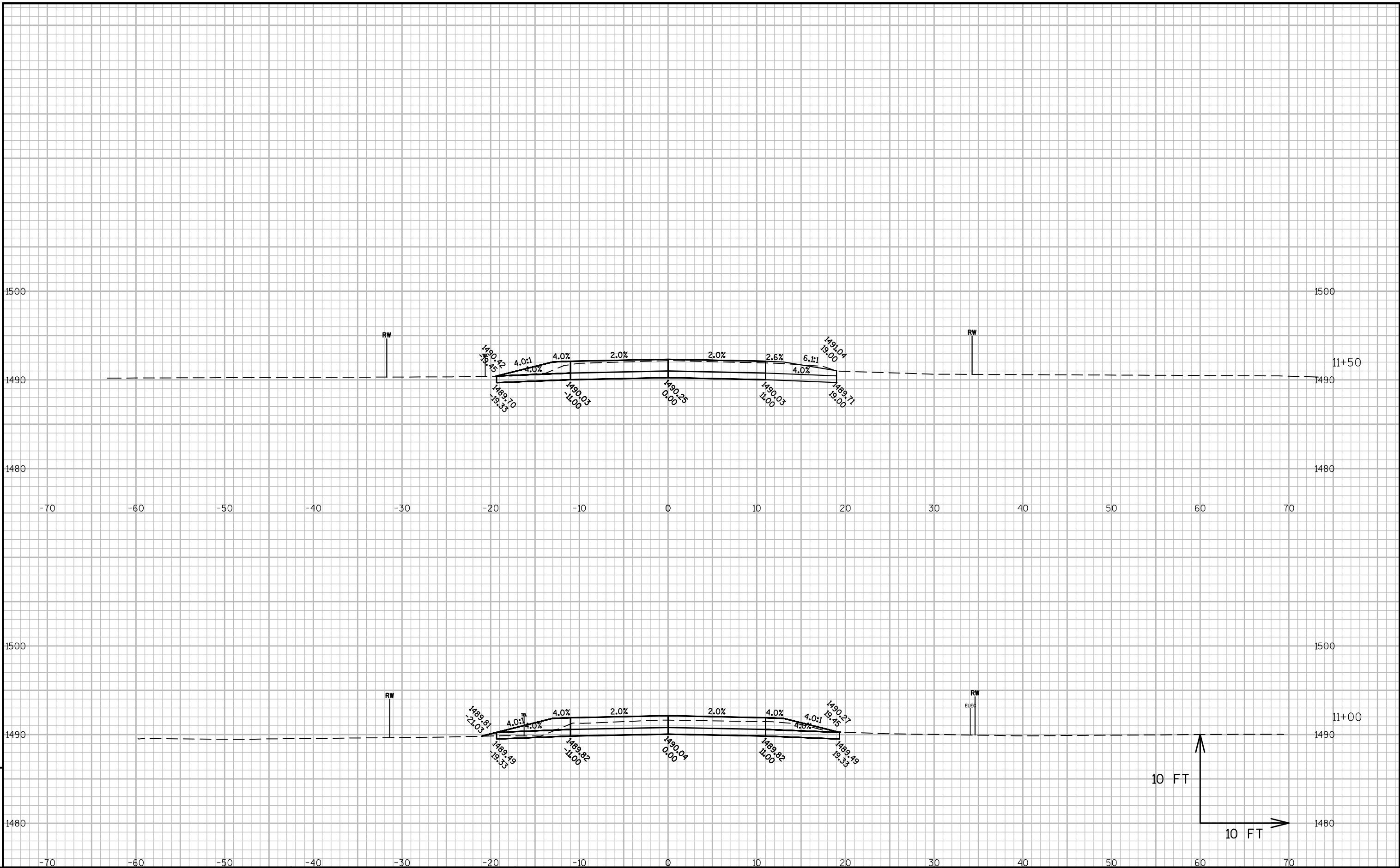
HWY: TROUT AVENUE

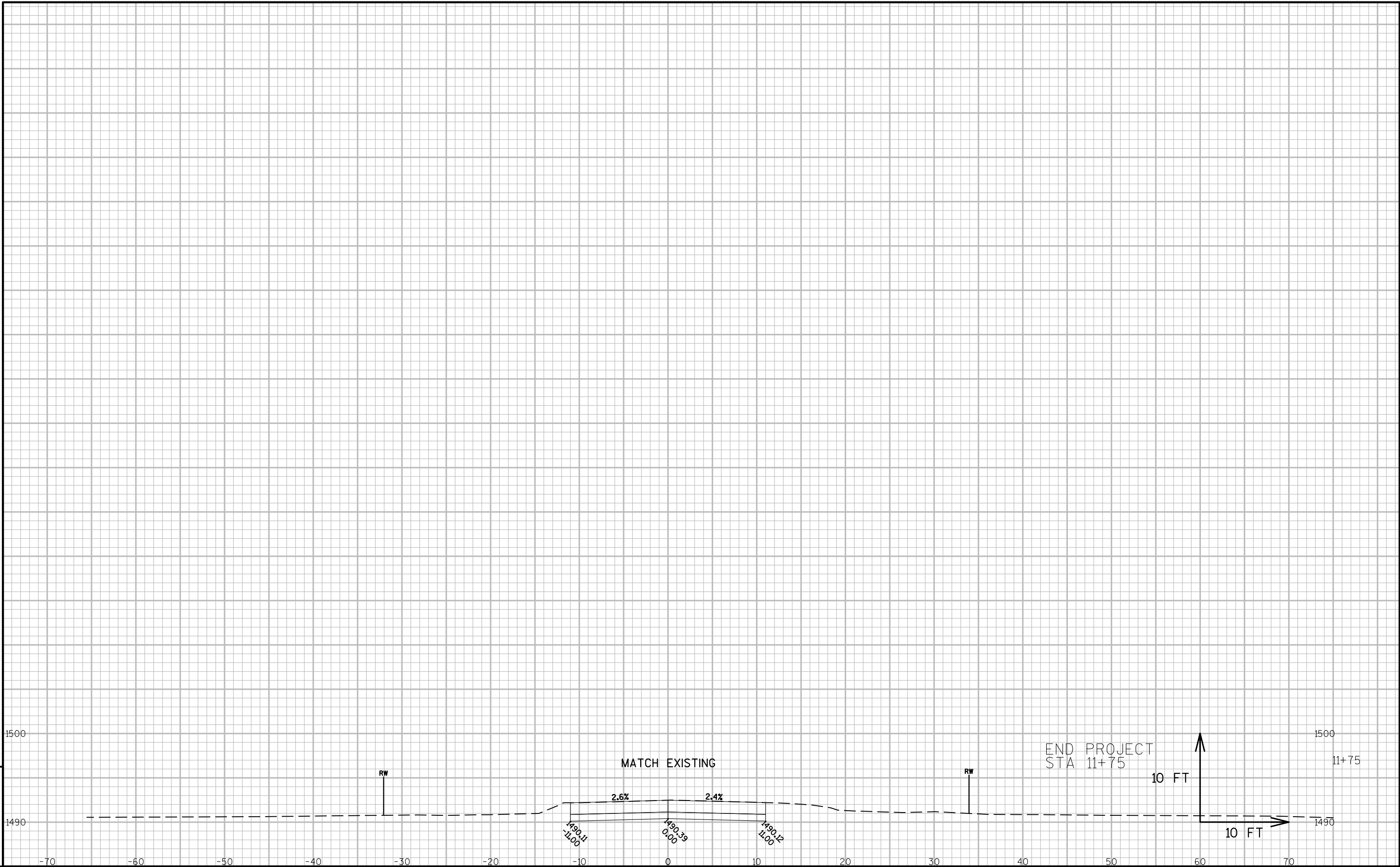
COUNTY: TAYLOR

CROSS SECTIONS:

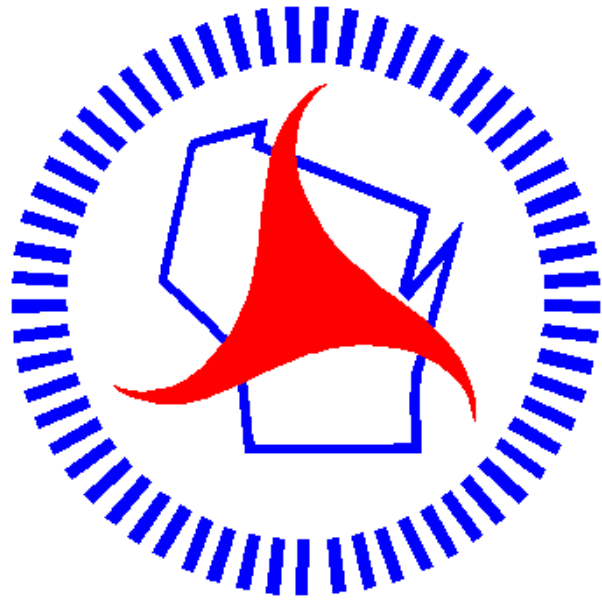
SHEET

E





Notes



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