

MAY 2017

Section No. 1	Title
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Section No. 3	Miscellaneous Quantities
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Section No. 9	Cross Sections

PROJECT LOCATION



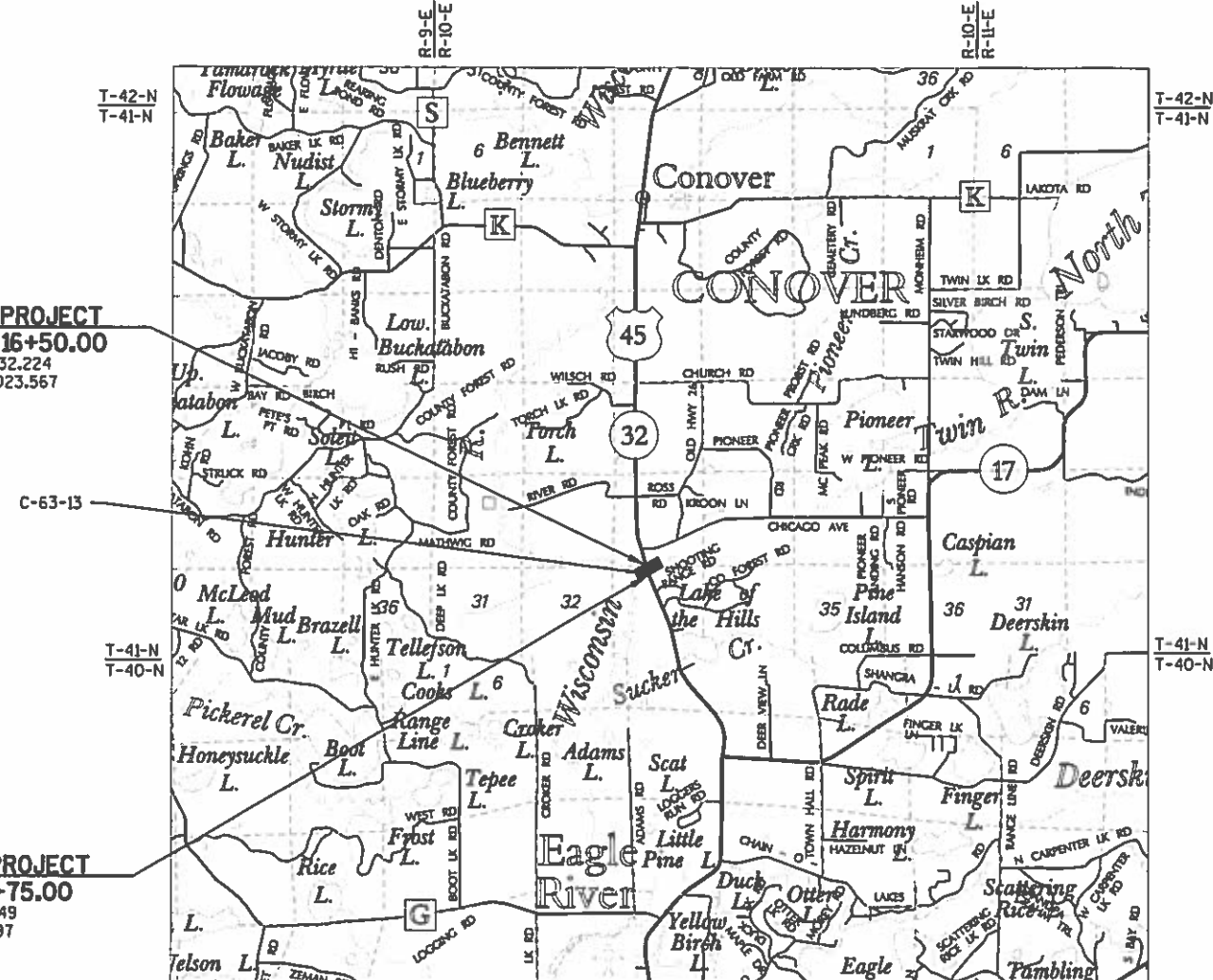
A.A.D.T.	2017	=	4500
A.A.D.T.	2037	=	5800
D.H.V.	2037	=	783
D.D.		=	61/39
T.(DHV)		=	10.3%
DESIGN SPEED		=	60 MPH
ESALS		=	897,900


TELEPHONE TOLL

1601-13-60

END PROJECT
STA 16+50.00
Y=135632.224
X=500023.567

BEGIN PROJECT
STA 13+75.00
Y=135370.249
X=500107.197



SCALE 0  2 MILE
 TOTAL NET LENGTH OF CENTERLINE = 0.052

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATE SYSTEM, VILAS COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. VERTICAL DATUM IS NAVD88.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1601-13-60		

ORIGINAL PLANS PREPARED BY
OMNI
ASSOCIATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	<u>OMNNI ASSOCIATES</u>
Designer	<u>OMNNI ASSOCIATES</u>
Project Manager	<u>JED P. PETERS</u>
Regional Examiner	<u></u>
Regional Supervisor	<u>R. STAFFORD</u>

APPROVED FOR THE DEPARTMENT

DATE: 1/19/17 J.P.R.
(Signature)

FILE NAME : F:\TR\JOBS\E2153A15\CIVIL 3D 2014\SHEETS\PLAN\USH 45\16011360-010101-TI.DWG
16011360-010101-1

PLOT DATE : 1/19/2017 10:18 AM

PLOT BY : JAIRO MAZARIEGOS

PLOT NAME :

WISDOT/CADDSS SHEET 10

2

GENERAL NOTES

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

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

PIPE USED FOR TEMPORARY WATER DIVERSION WILL BE LEFT IN PLACE AND COMPLETELY FILLED WITH GROUT UNDER THE ITEM GROUTING PIPE.

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0- 2	2- 6	6 & OVER	0- 2	2- 6	6 & OVER	0- 2	2- 6	6 & OVER	0- 2	2- 6	6 & OVER
ROW CROPS	0. 08	0. 16	0. 22	0. 12	0. 20	0. 27	0. 15	0. 24	0. 33	0. 19	0. 28	0. 38
	0. 22	0. 30	0. 38	0. 26	0. 34	0. 44	0. 30	0. 37	0. 50	0. 34	0. 41	0. 56
MEDIAN STRIP - TURF	0. 19	0. 20	0. 24	0. 19	0. 22	0. 26	0. 20	0. 23	0. 30	0. 20	0. 25	0. 30
	0. 24	0. 26	0. 30	0. 25	0. 28	0. 33	0. 26	0. 30	0. 37	0. 27	0. 32	0. 40
SIDE SLOPE - TURF			0. 25			0. 27			0. 28			0. 30
			0. 32			0. 34			0. 36			0. 38
PAVEMENT:												
ASPHALT				. 70 - . 95								
CONCRETE				. 80 - . 95								
BRICK				. 70 - . 80								
DRIVES, WALKS				. 75 - . 85								
ROOFS				. 75 - . 95								
GRAVEL ROADS, SHOULDERS				. 40 - . 60								

TOTAL PROJECT AREA = 3.5 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.7 ACRES

WI SDNR
NORTHERN REGION HEADQUARTERS
107 SUTLIFF
RHINELANDER, WI 54501
ATTN: JON SIMONSEN
TELEPHONE: 715-367-1936
E-MAIL: JONATHAN.SIMONSEN@WISCONSIN.GOV

UTILITIES

ELECTRIC
V

GERALD RHODE
ATC MANAGEMENT, INC.
801 O'KEEFE RD.
DE PERE, WI 54115
(920) 338-6523
EMAIL: GRHODE@ATCLLC.COM

DNR LI AISON

DEPARTMENT OF NATURAL RESOURCES
810 W. MAPLE STREET
SPOONER, WI 54801
ATTN: SHAWN HASELEU
TELEPHONE: 715- 635- 4228
E- MAIL: SHAWN.HASELEU@WISCONSIN.GOV

COMMUNICATIONS

BRIAN DOMPKE
FRONTIER COMMUNICATIONS OF WI LLC
521 4TH ST
WAUSAU, WI 54403
(715) 358-5372
CELL: (715) 203-9257
EMAIL: BRIAN.DOMPKE@FTR.COM

COMMUNICATIONS

MARK OLEJNICZAK
CHARTER COMMUNICATIONS
821 LINCOLN ST
RHINELANDER, WI 54501
(715) 420-0301 Ext 61162
CELL: (715) 490-1795
EMAIL: MARK.OLEJNICZAK@CHARTER.COM

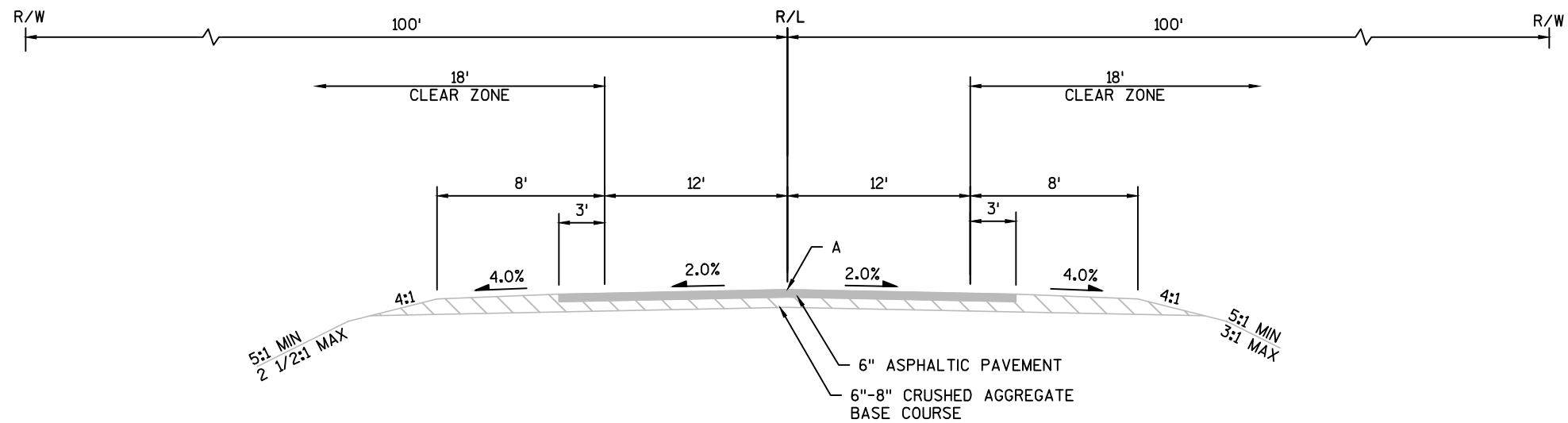


Dial 811 or (800) 242-8511

www.DiggersHotline.com

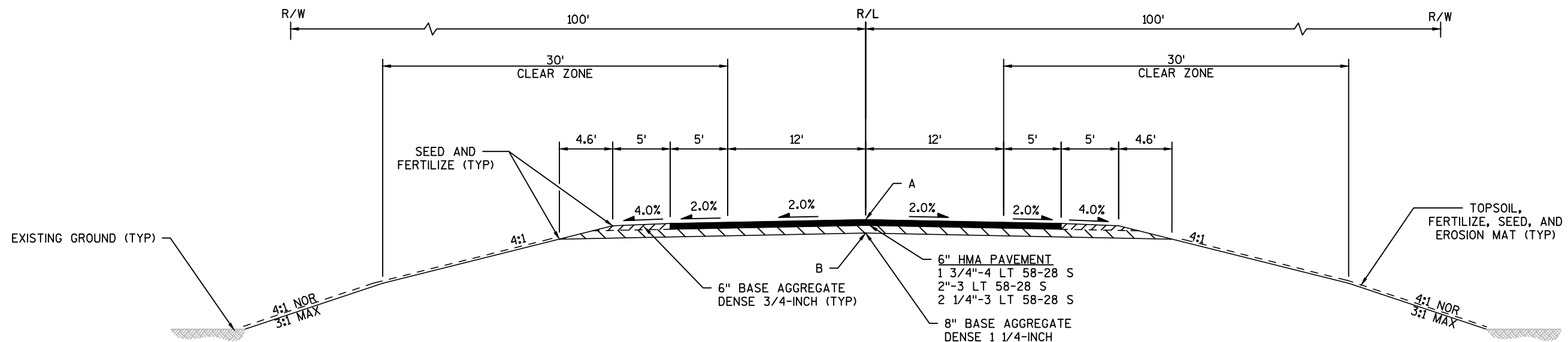
SHEET TITLE

GENERAL NOTES
TYPICAL SECTIONS
CONSTRUCTION DETAILS
TRAFFIC CONTROL PLANS



TYPICAL EXISTING SECTION USH 45

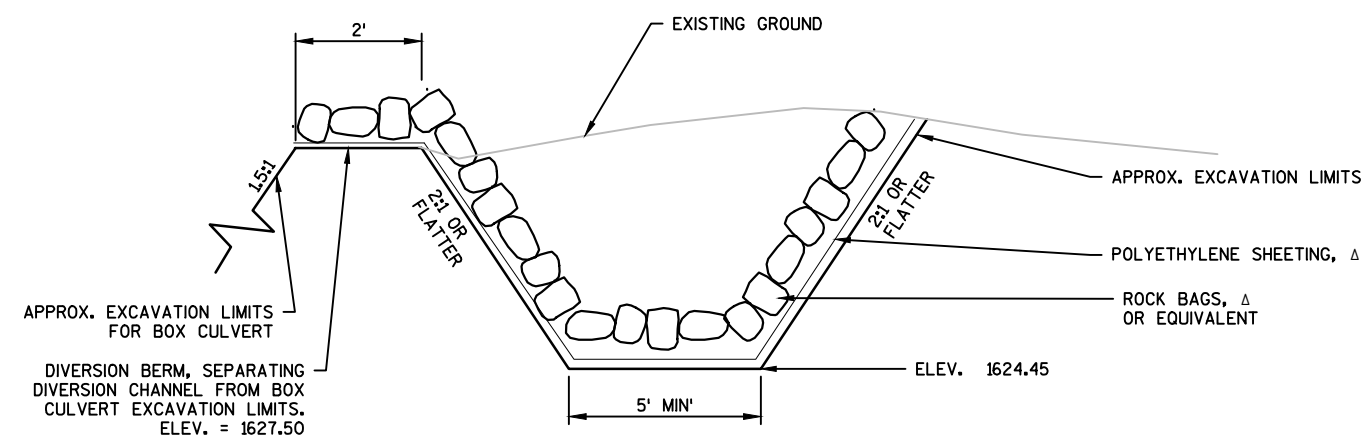
STA 13+75 TO STA 16+50



TYPICAL FINISHED SECTION USH 45

STA 13+75 TO STA 16+50

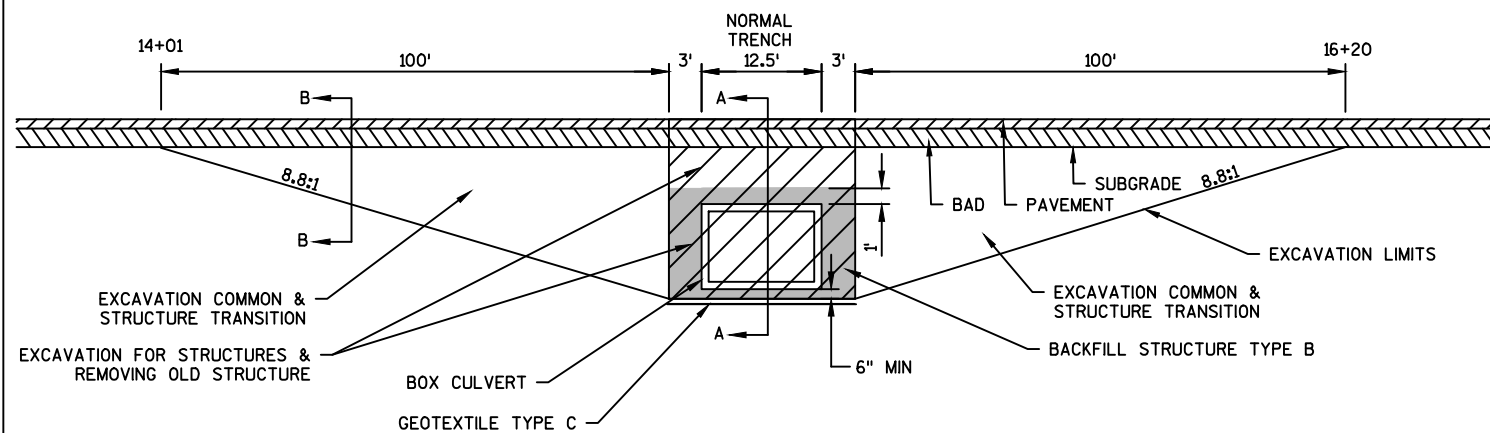
NOTE A; POINT REFERRED TO ON PROFILE.
NOTE B; POINT REFERRED TO ON CROSS SECTIONS.



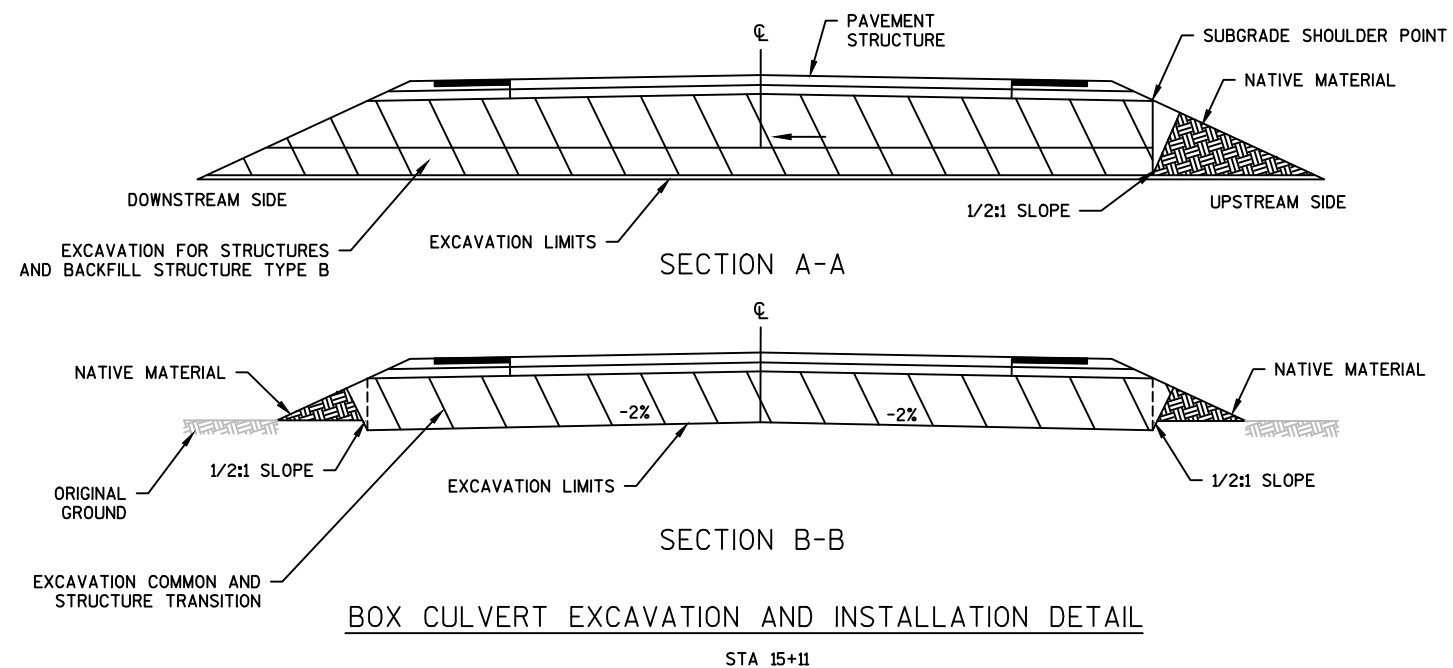
TEMPORARY WATER DIVERSION CHANNEL

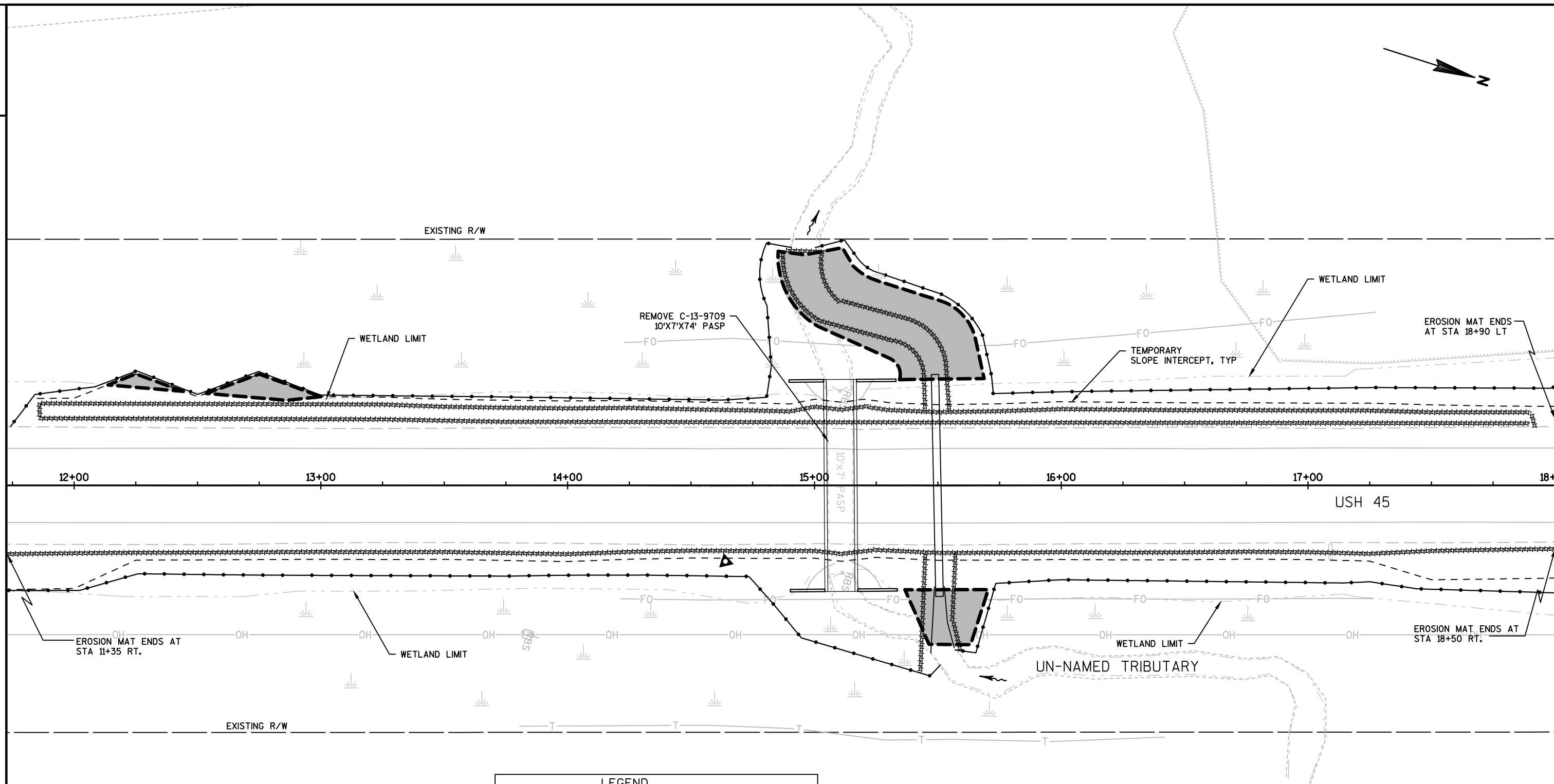
Δ INCIDENTAL TO TEMPORARY WATER DIVERSION

NOTE: EXCEPT FOR MARSH EXCAVATION AND MARSH BACKFILL, EXCAVATION AND BACKFILL FOR THE DIVERSION CHANNEL IS INCLUDED IN THE TEMPORARY WATER DIVERSION ITEM.



NOTE: MATERIAL REMOVED IN THE TRANSITION CUT AND STRUCTURE EXCAVATIONS TO BE REUSED AS BACKFILL UNLESS DETERMINED TO BE UNUSABLE BY THE ENGINEER.





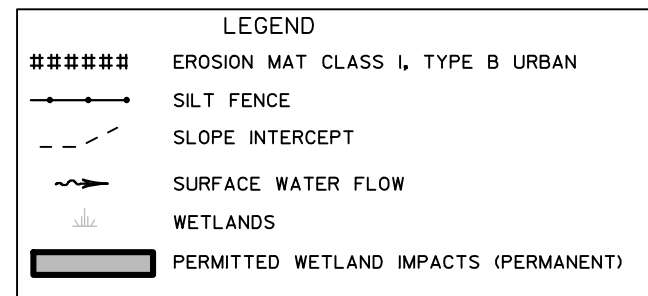
LEGEND

- EROSION MAT CLASS II, TYPE C
- SILT FENCE
- SLOPE INTERCEPT
- SURFACE WATER FLOW
- WETLANDS
- PERMITTED WETLAND IMPACTS (TEMPORARY)

Q2 = 14 CFS
HWQ2 = 16.25.93
Q5 = 20 CFS
HWQ5 = 1627.07 WITH 36" DIVERSION PIPE
V5 = 5.99 FPS WITH 36" DIVERSION PIPE

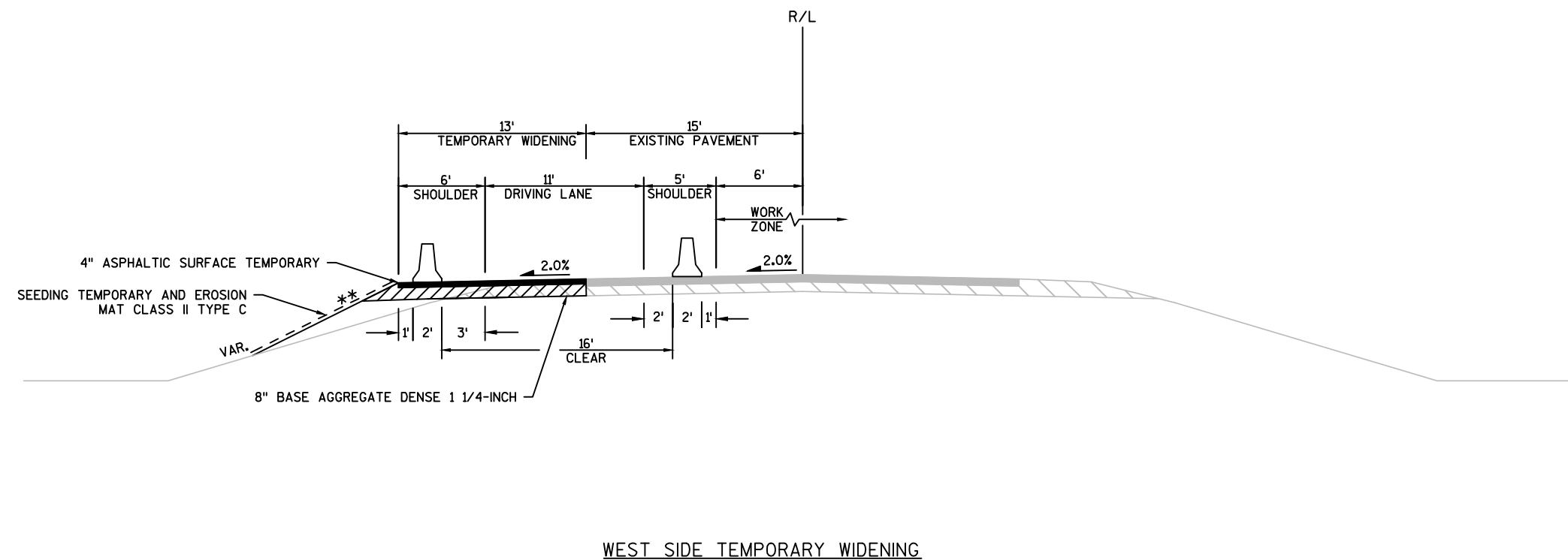
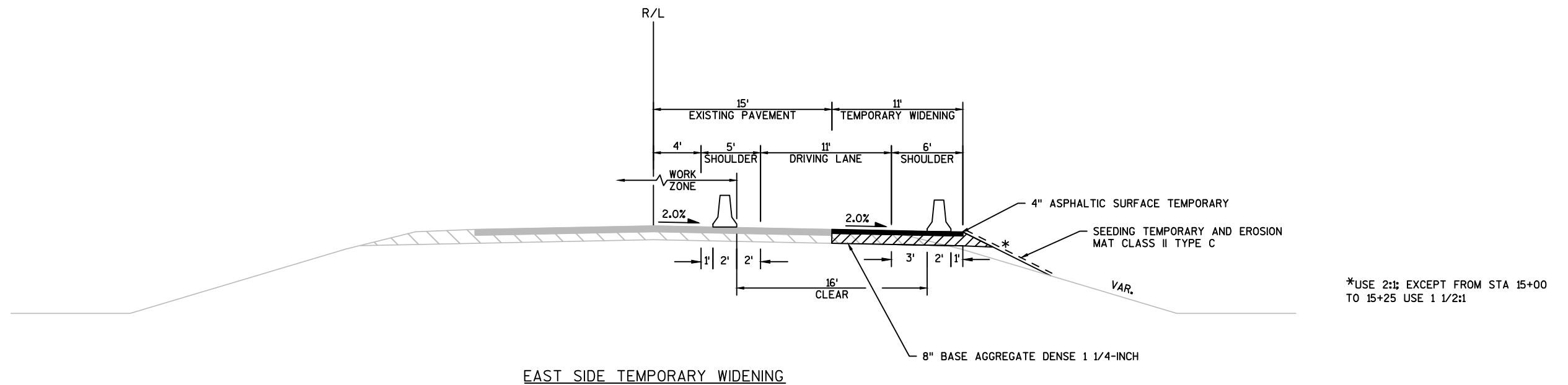
SEE TEMPORARY WATER DIVERSION CONSTRUCTION
DETAIL FOR CHANNEL CONFIGURATION

2

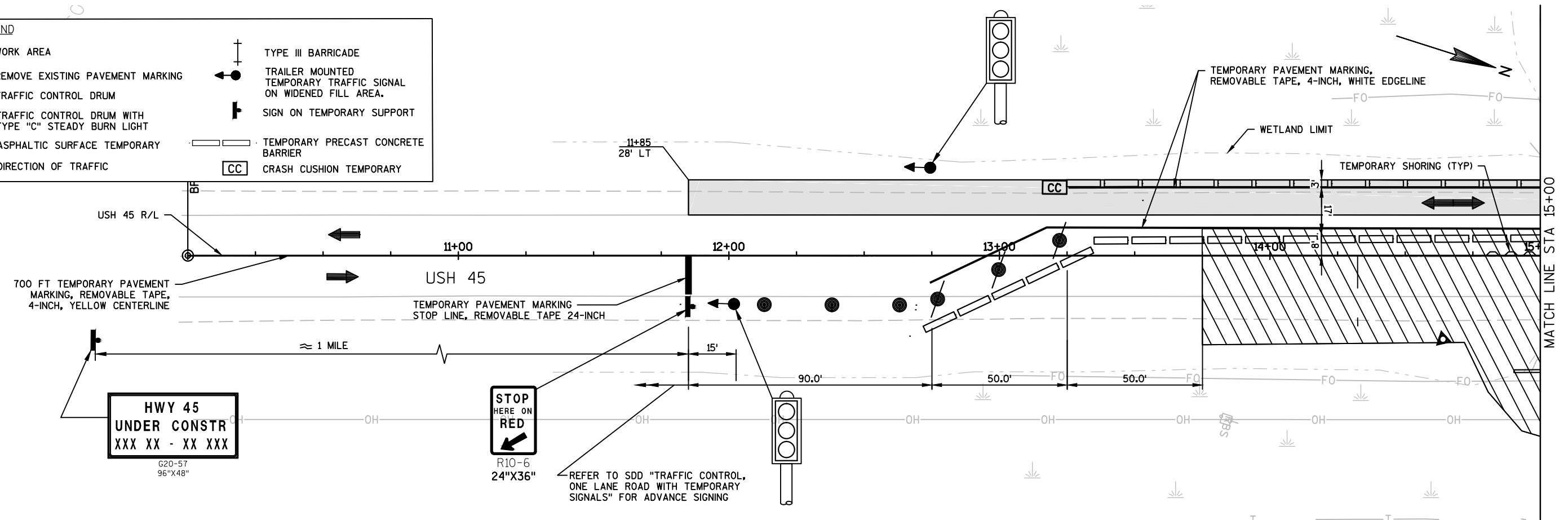
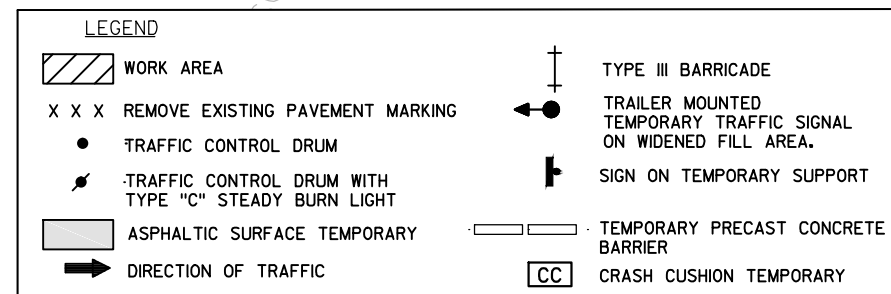


WISDOT/CADDS SHEET 42

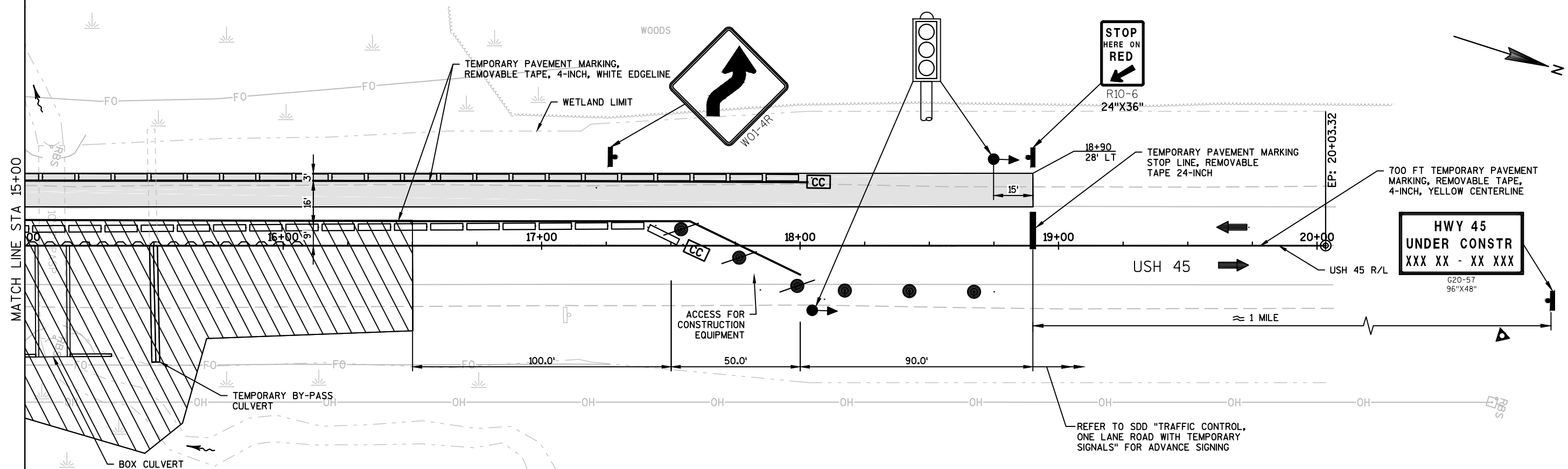
2	<p><u>TRAFFIC CONTROL GENERAL NOTES</u></p> <ol style="list-style-type: none">1. THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.2. THE SPACING BETWEEN PROPOSED SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.3. ALL SIGNS SHALL BE 48" x 48" UNLESS OTHERWISE NOTED.4. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.5. FOR NIGHTTIME OPERATION, ALL DRUMS IN TAPERS SHALL HAVE A TYPE C WARNING LIGHT.6. TEMPORARY PAVEMENT MARKINGS PLACED ON NEW PAVEMENTS OR PAVEMENT TO REMAIN IN PLACE SHALL BE REMOVABLE TAPE. TEMPORARY PAVEMENT MARKINGS ON PAVEMENTS TO BE REMOVED MAY BE PAINT.7. ALL TEMPORARY PAVEMENT MARKING FROM PREVIOUS STAGE(S) OR PHASE(S) IN CONFLICT WITH TEMPORARY PAVEMENT SHOWN IN CURRENT STAGE OR PHASE SHALL BE REMOVED.8. FIXED MESSAGE SIGNS SHALL BE PLACED APPROXIMATELY 1 MILE IN ADVANCE OF THE PROJECT, ONE WEEK IN ADVANCE OF INITIAL LANE CLOSURE AND AS NEEDED THROUGHOUT THE PROJECT.9. SEE ADDITIONAL TRAFFIC CONTROL DETAIL SHEETS AND STANDARD DETAIL DRAWINGS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.	2						
	<p><u>1601-13-60 CONSTRUCTION STAGING SUMMARY</u></p> <p>USH 45 WILL REMAIN OPEN DURING CONSTRUCTION WITH ONE LANE OF TRAFFIC MAINTAINED AT ALL TIMES. TEMPORARY ROADWAY WIDENING WILL BE CONSTRUCTED AND TEMPORARY TRAFFIC SIGNALS WILL BE UTILIZED TO DIRECT THE ONE-LANE TWO-WAY TRAFFIC THROUGH THE WORK ZONE.</p> <p><u>TRAFFIC CONTROL STAGE 1</u></p> <p>CONSTRUCTION STAGE 1A</p> <ul style="list-style-type: none">- TRAFFIC WILL BE ON THE EXISTING ROADWAY UTILIZING BOTH LANES (ONE LANE IN EACH DIRECTION).- THE SDD 15D 28-3 FOR MAINLINE SHOULDER CLOSURE WILL BE USED.- CONSTRUCT TEMPORARY WIDENING ON THE EAST SIDE.- INSTALL TEMPORARY CONCRETE BARRIER AND TEMPORARY TRAFFIC SIGNALS PER SDD 15D 33-3 AND PLAN DETAILS. <p>CONSTRUCTION STAGE 1B</p> <ul style="list-style-type: none">- TRAFFIC WILL BE SINGLE LANE AND ON THE EAST SIDE TEMPORARY WIDENING AND CONTROLLED BY SIGNALS.- DRIVE TEMPORARY SHORING PARALLEL TO AND IMMEDIATELY TO THE WEST OF THE PROPOSED R/L WITHIN THE AREA OF THE TEMPORARY BY-PASS PIPE- INSTALL THE WEST PORTION OF THE TEMPORARY BY-PASS PIPE (DOWNSTREAM END) UP TO THE TEMPORARY SHORING, BUT DO NOT OUTLET TO WATERWAY.- CONSTRUCT THE TEMPORARY WIDENING ON THE WEST SIDE.- INSTALL TEMPORARY CONCRETE BARRIER PER SDD 15D 33-3 AND PLAN DETAILS.							
<table><tr><td>PROJECT NO: 1601-13-60</td><td>HWY: USH 45</td><td>COUNTY: VILAS</td><td>TRAFFIC CONTROL GENERAL NOTES</td><td>SHEET:</td><td>E 2.1</td></tr></table>			PROJECT NO: 1601-13-60	HWY: USH 45	COUNTY: VILAS	TRAFFIC CONTROL GENERAL NOTES	SHEET:	E 2.1
PROJECT NO: 1601-13-60	HWY: USH 45	COUNTY: VILAS	TRAFFIC CONTROL GENERAL NOTES	SHEET:	E 2.1			



2



2



PROJECT NO:1601-13-60

HWY: USH 45

COUNTY: VILAS

CONSTRUCTION STAGING - STAGE 2

SHEET

E

FILE NAME : F:\TR\JOBS\2153A15\CIVIL 3D 2014\SHEETS\PLAN\USH 45\16011360-026003-S1.DWG
16011360-026003-s1

PLOT DATE : 3/7/2017 11:24 AM

PLOT BY : MARK FUERST

PLOT NAME :

PLOT SCALE : *****

WISDOT/CADDs SHEET 42

SEQUENCE OF OPERATIONS				
STRUCTURE: C-63-9709 USH 45				
PRE - TIMED CYCLE 1 = 130 seconds				
TIME: 6:00 AM - 6:00 PM				
INTERVAL	EB	WB	INTERVAL LENGTH (SEC)	% OF CYCLE
	A1, A2	B1, B2		
PHASE A	G	R	45	34.9%
CLEARANCE	Y	R	4	3.1%
CLEARANCE	R	R	24	18.3%
PHASE B	R	G	29	22.3%
CLEARANCE	R	Y	4	3.1%
CLEARANCE	R	R	24	18.3%
			130	100.0%

SEQUENCE OF OPERATIONS				
STRUCTURE: C-63-9709 USH 45				
PRE - TIMED CYCLE 2 = 100 seconds				
TIME: 6:00 PM - 6:00 AM				
INTERVAL	EB	WB	INTERVAL LENGTH (SEC)	% OF CYCLE
	A1, A2	B1, B2		
PHASE A	G	R	27	27.1%
CLEARANCE	Y	R	4	4.0%
CLEARANCE	R	R	24	23.8%
PHASE B	R	G	17	17.3%
CLEARANCE	R	Y	4	4.0%
CLEARANCE	R	R	24	23.8%
			100	100.0%

- NOTES:
1.

G = GREEN, Y = YELLOW, R = RED
2.

THE ALL-RED CLEARANCE (INTERVAL 3 & 6) IS BASED ON A STOPLINE TO STOPLINE DISTANCE = 705 FT. IF THIS DISTANCE IS MODIFIED IN THE FIELD, CONTACT CHRIS DROES, NC REGION, AT 715-365-5749 FOR TRAFFIC TIMING MODIFICATIONS.

Estimate Of Quantities

1601-13-60

Line	Item	Item Description	Unit	Total	Qty
0010	203.0200	Removing Old Structure (station) 01. STA 15+10	LS	1.000	1.000
0020	205.0100	Excavation Common	CY	2,654.000	2,654.000
0030	205.0400	Excavation Marsh	CY	79.000	79.000
0040	206.2000	Excavation for Structures Culverts (structure) 01. C-63-13	LS	1.000	1.000
0050	210.2500	Backfill Structure Type B	TON	460.000	460.000
0060	213.0100	Finishing Roadway (project) 01. 1601-13-60	EACH	1.000	1.000
0070	305.0110	Base Aggregate Dense 3/4-Inch	TON	115.000	115.000
0080	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	730.000	730.000
0090	455.0605	Tack Coat	GAL	72.000	72.000
0100	460.2000	Incentive Density HMA Pavement	DOL	230.000	230.000
0110	460.5223	HMA Pavement 3 LT 58-28 S	TON	253.000	253.000
0120	460.5224	HMA Pavement 4 LT 58-28 S	TON	104.000	104.000
0130	504.0100	Concrete Masonry Culverts	CY	141.000	141.000
0140	505.0400	Bar Steel Reinforcement HS Structures	LB	16,980.000	16,980.000
0150	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	3,160.000	3,160.000
0160	511.1100	Temporary Shoring	SF	1,400.000	1,400.000
0170	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0180	603.8000	Concrete Barrier Temporary Precast Delivered	LF	2,035.000	2,035.000
0190	603.8125	Concrete Barrier Temporary Precast Installed	LF	3,025.000	3,025.000
0200	606.0300	Riprap Heavy	CY	30.000	30.000
0210	614.0905	Crash Cushions Temporary	EACH	9.000	9.000
0220	619.1000	Mobilization	EACH	1.000	1.000
0230	624.0100	Water	MGAL	5.000	5.000
0240	625.0100	Topsoil	SY	3,560.000	3,560.000
0250	628.1504	Silt Fence	LF	1,900.000	1,900.000
0260	628.1520	Silt Fence Maintenance	LF	1,900.000	1,900.000
0270	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0280	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0290	628.2008	Erosion Mat Urban Class I Type B	SY	3,560.000	3,560.000
0300	628.2027	Erosion Mat Class II Type C	SY	3,560.000	3,560.000
0310	629.0210	Fertilizer Type B	CWT	2.500	2.500
0320	630.0120	Seeding Mixture No. 20	LB	100.000	100.000
0330	630.0200	Seeding Temporary	LB	10.000	10.000
0340	633.5200	Markers Culvert End	EACH	2.000	2.000
0350	642.5001	Field Office Type B	EACH	1.000	1.000
0360	643.0100	Traffic Control (project) 01. 1601-13-60	EACH	1.000	1.000
0370	643.0300	Traffic Control Drums	DAY	1,602.000	1,602.000
0380	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000
0390	643.0420	Traffic Control Barricades Type III	DAY	73.000	73.000

Estimate Of Quantities

1601-13-60					
Line	Item	Item Description	Unit	Total	Qty
0400	643.0715	Traffic Control Warning Lights Type C	DAY	660.000	660.000
0410	643.0900	Traffic Control Signs	DAY	1,474.000	1,474.000
0420	643.1000	Traffic Control Signs Fixed Message	SF	64.000	64.000
0430	645.0105	Geotextile Type C	SY	177.000	177.000
0440	645.0120	Geotextile Type HR	SY	57.000	57.000
0450	646.0106	Pavement Marking Epoxy 4-Inch	LF	2,460.000	2,460.000
0460	646.0600	Removing Pavement Markings	LF	720.000	720.000
0470	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	5,990.000	5,990.000
0480	649.1400	Temporary Pavement Marking Stop Line Removable Tape 24-Inch	LF	72.000	72.000
0490	650.4500	Construction Staking Subgrade	LF	275.000	275.000
0500	650.5000	Construction Staking Base	LF	275.000	275.000
0510	650.6500	Construction Staking Structure Layout (structure) 01. C-63-13	LS	1.000	1.000
0520	650.9910	Construction Staking Supplemental Control (project) 01.1601-13-60	LS	1.000	1.000
0530	650.9920	Construction Staking Slope Stakes	LF	275.000	275.000
0540	661.0100	Temporary Traffic Signals for Bridges (structure) 01. C-63-13	LS	1.000	1.000
0550	690.0150	Sawing Asphalt	LF	60.000	60.000
0560	715.0502	Incentive Strength Concrete Structures	DOL	828.000	828.000
0570	SPV.0060	Special 01. Lane Shift	EACH	2.000	2.000
0580	SPV.0105	Special 01. Grouting Pipe	LS	1.000	1.000
0590	SPV.0105	Special 02. Temporary Water Diversion	LS	1.000	1.000

<div>USH 45 EARTHWORK SUMMARY</div> <table><tr><th rowspan="3">STATION TO STATION</th><th rowspan="3">ROADWAY</th><th rowspan="3">205.0100 EXCAVATION COMMON CY</th><th rowspan="3">AVAILABLE MATERIAL CY NOTE 1</th><th>205.0400</th><th rowspan="3">UNEXPANDED FILL CY</th><th rowspan="2">EXPANDED FILL CY</th><th rowspan="3">MASS ORDINATE +/- CY NOTE 2</th><th rowspan="3">WASTE CY</th></tr><tr><th>EXCAVATION MARSH CY</th></tr><tr><th></th><th>EXP FACTOR 1.15</th></tr><tr><td>13+75 - 16+50</td><td>USH 45</td><td>530</td><td>530</td><td>0</td><td>115</td><td>132</td><td>398</td><td>398</td></tr><tr><td>14+01 - 16+20</td><td>STR.TRANSISTION</td><td>2,124</td><td>2,124</td><td>0</td><td>2,124</td><td>2,443</td><td>-319</td><td>-319</td></tr><tr><td>15+00 - 15+50</td><td>TEMP. DIVERSION</td><td>0</td><td>0</td><td>79</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td colspan="2">PROJECT TOTALS</td><td>2,654</td><td>2,654</td><td>79</td><td>2,239</td><td>2,575</td><td>79</td><td>79</td></tr><tr><td colspan="9">NOTES: 1) ALL EXCAVATED ASPHALT MATERIAL ASSUMED USABLE AS FILL 2) MASS ORDINATE = EXCAVATION COMMON - EXPANDED FILL</td></tr></table>										STATION TO STATION	ROADWAY	205.0100 EXCAVATION COMMON CY	AVAILABLE MATERIAL CY NOTE 1	205.0400	UNEXPANDED FILL CY	EXPANDED FILL CY	MASS ORDINATE +/- CY NOTE 2	WASTE CY	EXCAVATION MARSH CY		EXP FACTOR 1.15	13+75 - 16+50	USH 45	530	530	0	115	132	398	398	14+01 - 16+20	STR.TRANSISTION	2,124	2,124	0	2,124	2,443	-319	-319	15+00 - 15+50	TEMP. DIVERSION	0	0	79	0	0	0	0	PROJECT TOTALS		2,654	2,654	79	2,239	2,575	79	79	NOTES: 1) ALL EXCAVATED ASPHALT MATERIAL ASSUMED USABLE AS FILL 2) MASS ORDINATE = EXCAVATION COMMON - EXPANDED FILL																																																																																										
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15+00 - 15+50	TEMP. DIVERSION	0	0	79	0	0	0	0																																																																																																																																												
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PROJECT NO: 1601-13-60			HWY: USH 45			COUNTY: VILAS			MISCELLANEOUS QUANTITIES		SHEET E																																																																																																																																									

RESTORATION AND EROSION CONTROL													
STATION TO STATION			ROADWAY	624. 0100 TOPSOIL SY	628. 1504 SILT FENCE LF	628. 1520 SILT FENCE MAINTENANCE LF	628. 1905 MOBILIZATIONS EROSION CONTROL EA	628. 1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EA	628. 2008 EROSION MAT CLASS I URBAN TYPE B SY	628. 2027 EROSION MAT CLASS II TYPC C SY	629. 0210 FERTILIZER TYPE B CWT	630. 0120 SEEDING MIXTURE NO. 20 LB	630. 0200 SEEDING TEMPORARY LB
CATEGORY 0010													
11+35	-	18+90	USH 45	2, 847	1, 520	1, 520	3	2	2, 847	2, 847	1. 9	80	---
UNDISTRIBUTED				713	380	380	---	---	713	713	0. 6	20	10
PROJECT TOTALS				3, 560	1, 900	1, 900	3	2	3, 560	3, 560	2. 5	100	10

PAVEMENT MARKING AND REMOVALS									
STATION TO STATION			ROADWAY	646. 0106		646. 0600	649. 0400		649. 1400
				EPOXY 4-INCH		REMOVING PAVEMENT MARKINGS	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH		TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH
				WHITE LF	YELLOW LF	LF	WHITE LF	YELLOW LF	WHITE LF
CATEGORY 0010									
11+35	-	18+90	USH 45	1, 510	950	---	---	---	---
11+35	-	18+40	TEMP RT	---	---	720	2, 120	---	48
11+85	-	18+90	TEMP LT	---	---	---	1, 070	2, 800	24
SUB TOTAL				1, 510	950	720	3, 190	2, 800	72
PROJECT TOTALS					2, 460	720	5, 990		72

CONSTRUCTION STAKING								
STA	TO	STA	LOCATION	650. 4500 SUBGRADE LF	650. 5000 BASE LF	CATEGORY 0020 650. 6500 STRUCTURE LAYOUT LF	650. 9910 SUPPLEMENTAL CONTROL	650. 9920 SLOPE STAKES
CATEGORY 0010								
11+35	-	18+90	USH 45	275	275	---	---	275
STRUCTURE C- 63- 13			STH 86	---	---	1	---	---
PROJECT				---	---	---	1	---
PROJECT TOTALS				275	275	1	1	275

<u>SAWING</u>				
STATION TO STATION		ROADWAY	690. 0150 ASPHALT LF	
CATEGORY 0010				
13+75	-	16+50	USH 45	60
PROJECT TOTALS				60

TEMPORARY TRAFFIC SIGNALS FOR BRIDGES C- 63- 13			
	ROADWAY	661. 0100 L. S.	REMARKS
CATEGORY 0010			
	USH 45	1	USE TRAILER MOUNTED TEMP. TRAFFIC SIGNALS
PROJECT TOTALS		1	

GROUTING PIPE			
		SPV. 0105. 01 GROUTING PIPE L. S.	REMARKS
CATEGORY 0010			
15+50	USH 45	1	42 CY GROUT EST. (FOR INFO. ONLY)
PROJECT TOTALS		1	

LANE SHIFT

STATION TO STATION	LOCATION	CONSTRUCTION STAGE	SPV 0060. 01 LANE SHIFT LS	EXCAVATION* CY	FILL* CY	EXP FILL* FACTOR 1. 25 CY	WASTE* CY	BORROW* CY	BASE AGGREGATE DENSE 1 1/4-INCH* TON	ASPHALTIC SURFACE TEMPORARY* TON	REMARKS
CATEGORY 0010											
11+35 - 18+40	TEMP WIDENING RT	1A	1	164	91	114	50	---	440	198	
11+85 - 18+90	TEMP WIDENING LT	1B	1	164	197	246	---	82	512	234	
11+85 - 18+90	REMOVE TEMP. WIDENING LT	3A	---	424	---	---	424	---	---	---	REMOVALS INCLUDED IN LANE SHIFT ITEM
11+35 - 18+40	REMOVE TEMP. WIDENING RT	4	---	274	---	---	274	---	---	---	REMOVALS INCLUDED IN LANE SHIFT ITEM
PROJECT TOTALS			2	1026*			748*	82*	952*	432*	

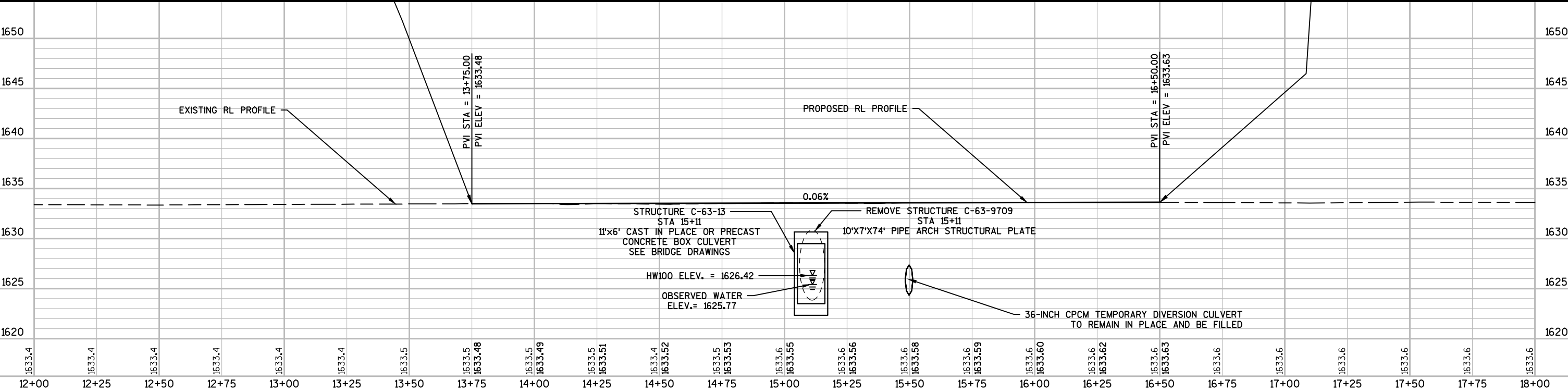
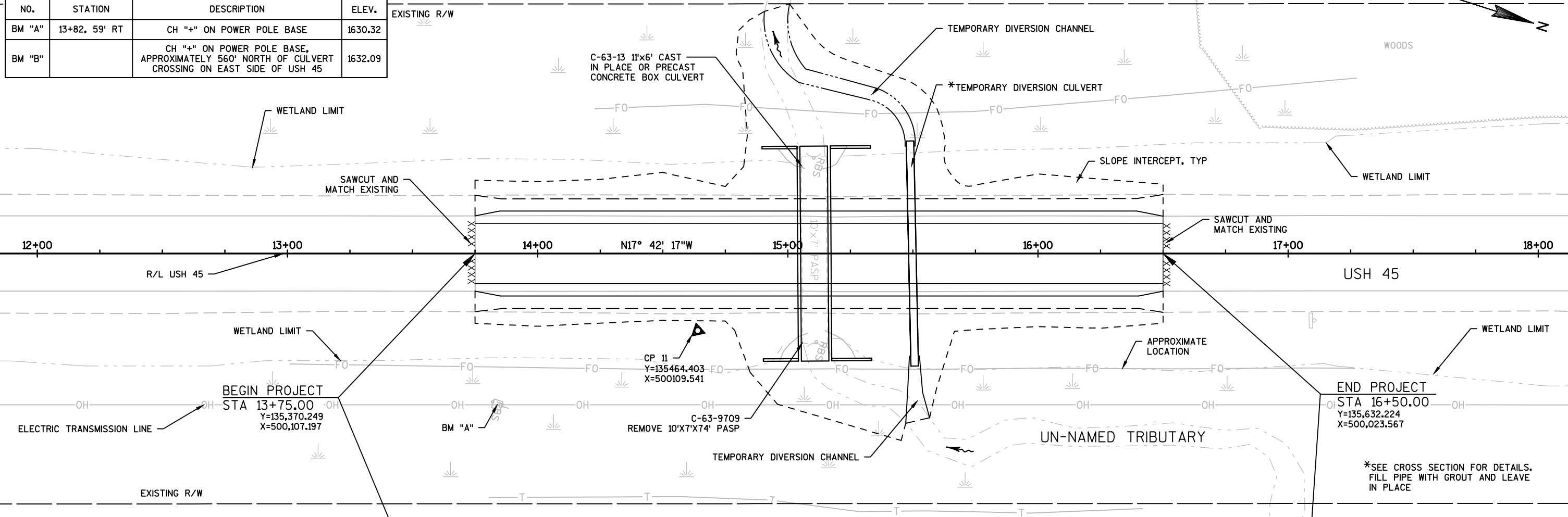
* ESTIMATED QUANTITIES; FOR INFORMATION ONLY

TRAFFIC CONTROL

PHASE	LOCATION	APPROX. SERVI CE PERI OD 75 DAYS	643. 0300		643. 0310. S		643. 0420		643. 0715		643. 0900		643. 1000	
			TRAFFI C CONTROL DRUMS		TEMPORARY PORTABLE RUMBLE STRI PS		BARRI CADES TYPE I I I		WARNI NG LI GHTS TYPE C		SI GNS		SI GNS FIXED MESSAGE	
			NO.	DAYS	LS		NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	SF
CATEGORY 0010														
1A	USH 45	4	19	76	--	--	--	0	0	5	20	2	64	
1B	USH 45	4	20	80	--	1	4	10	40	20	80	--	--	
2	USH 45	30	20	600	--	1	30	10	300	20	600	--	--	
3	USH 45	32	20	640	--	1	32	10	320	20	640	--	--	
4	USH 45	5	12	60	--	--	--	--	--	--	--	--	--	
PROJECT					1									
UNDI STRI BUTED				146			7				134			
TOTALS				1, 602	1		73		660		1, 474		64	

FIXED MESSAGE TO BE PLACED 1 WEEK PRIORTO PHASE I

BENCHMARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM "A"	13+82, 59' RT	CH "+" ON POWER POLE BASE	1630.32
BM "B"		CH "+" ON POWER POLE BASE, APPROXIMATELY 560' NORTH OF CULVERT CROSSING ON EAST SIDE OF USH 45	1632.09



PROJECT NO:1601-13-60	HWY:USH 45	COUNTY:VILAS	PLAN AND PROFILE: USH 45	SHEET	E
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Standard Detail Drawing List

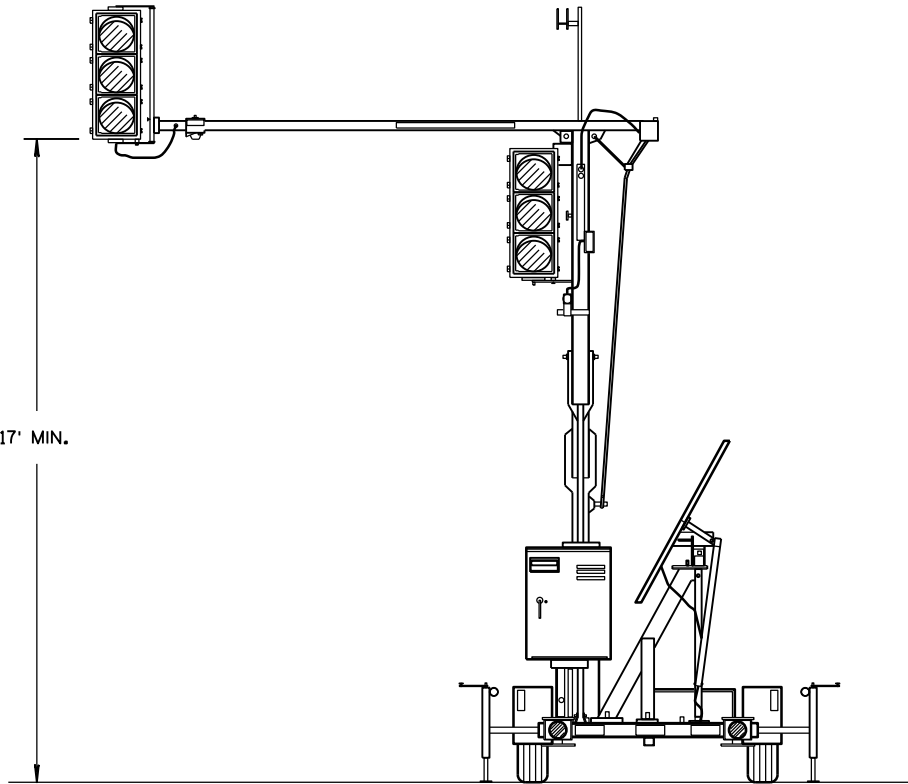
08E09-06	SILT FENCE
09G02-04C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C12-05	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D33-04	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



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

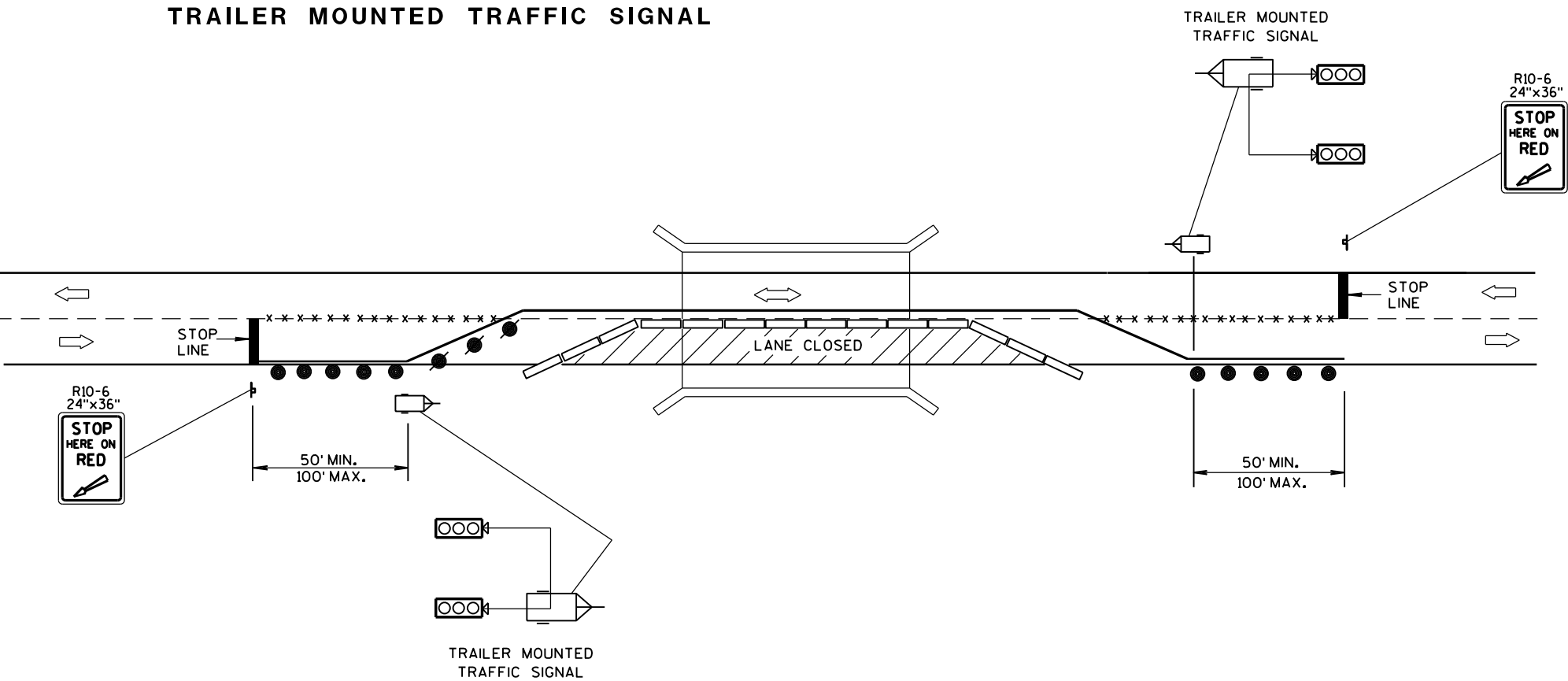


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

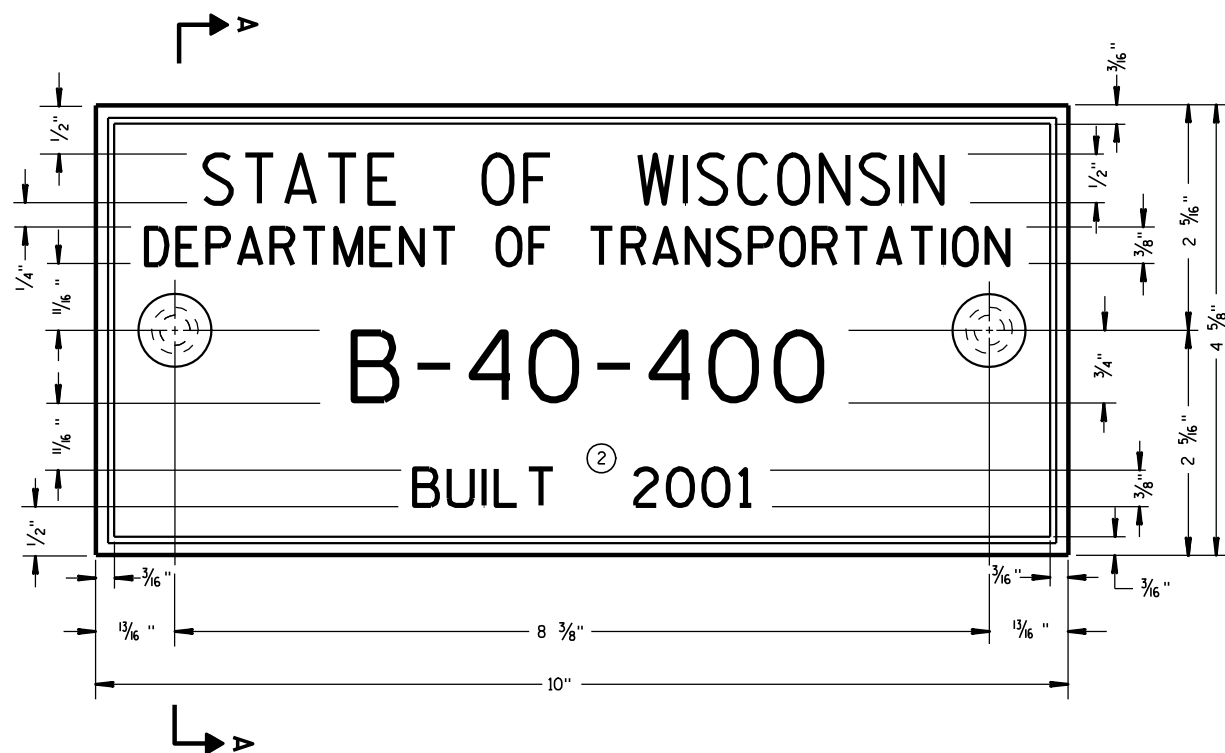
LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

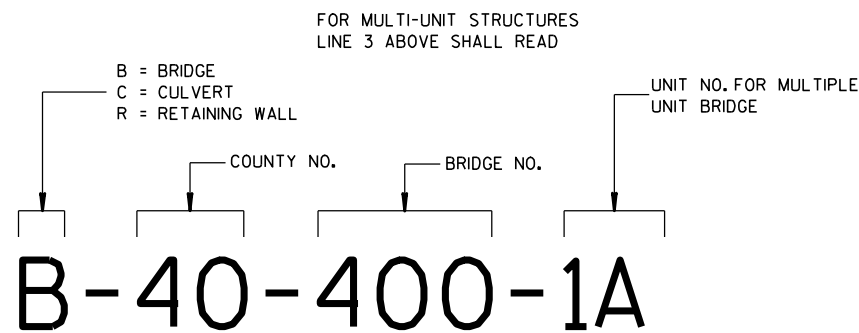
BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)



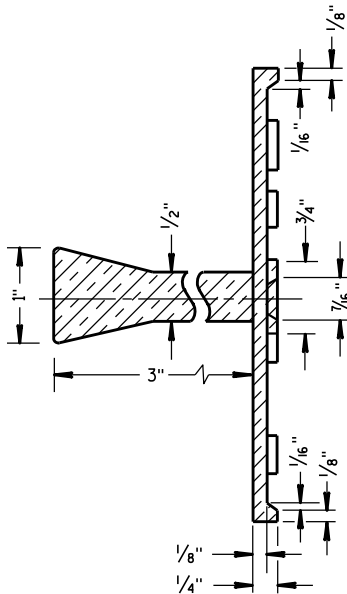
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

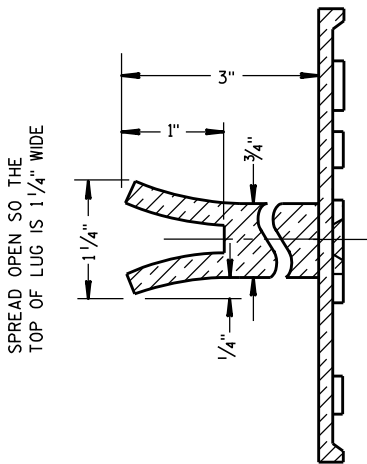
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- 1 EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 2 REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

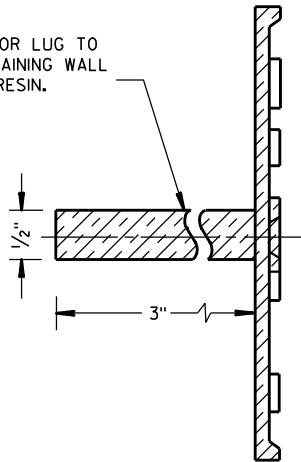


SECTION A-A



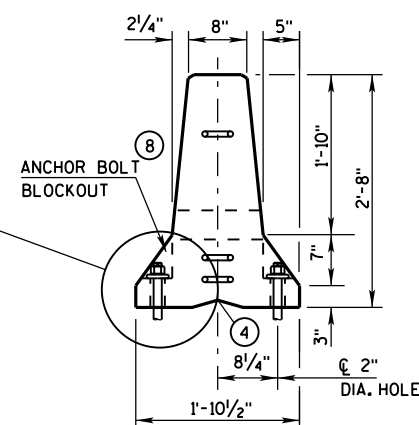
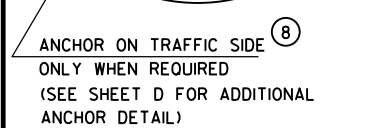
ALTERNATE LUG

- 1 ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.

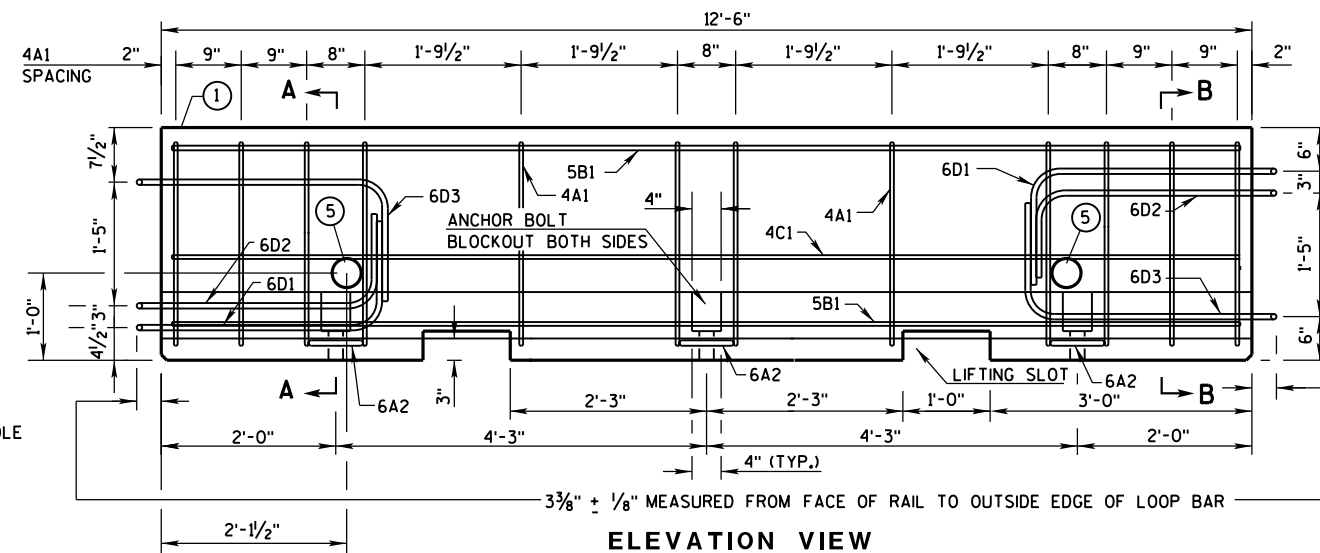


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

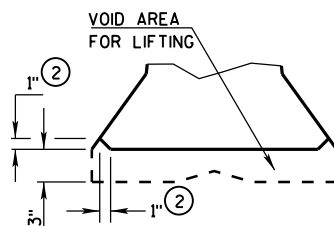
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/26/10 DATE	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



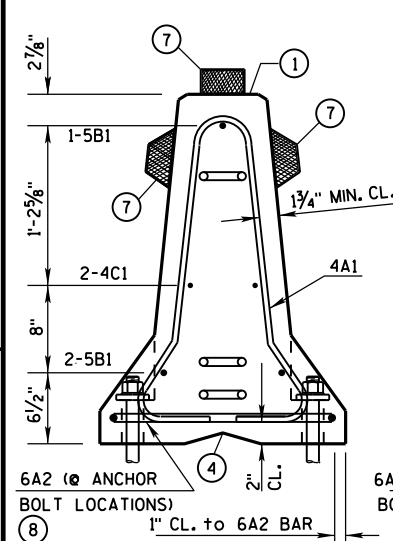
END VIEW



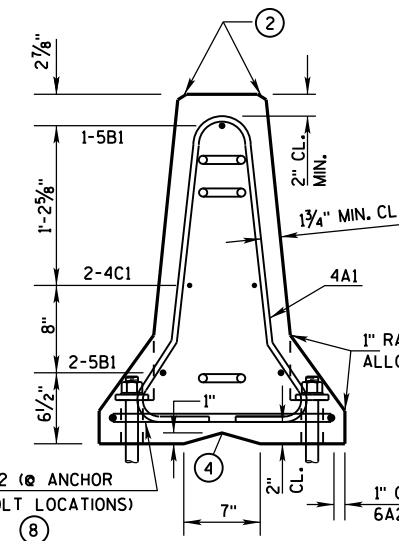
ELEVATION VIEW



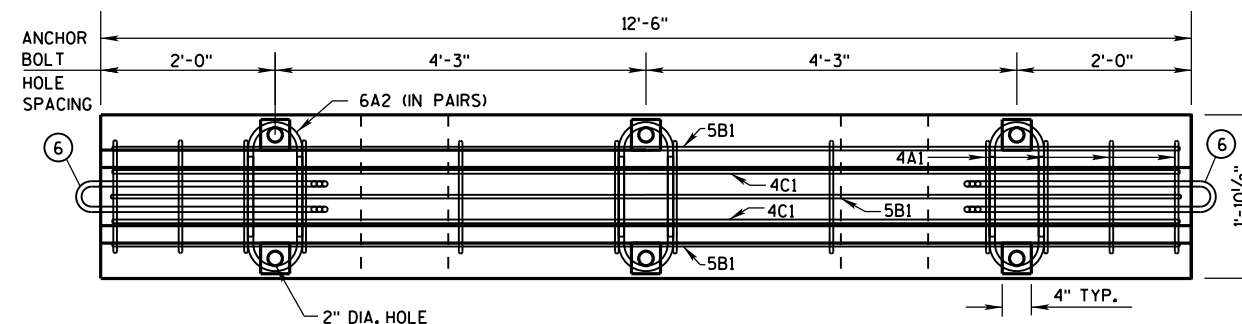
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

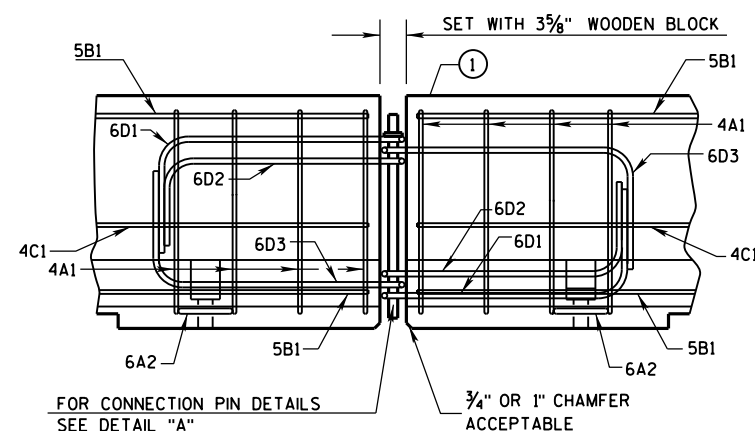


SECTION B-B
(STIRRUP PLACEMENT)

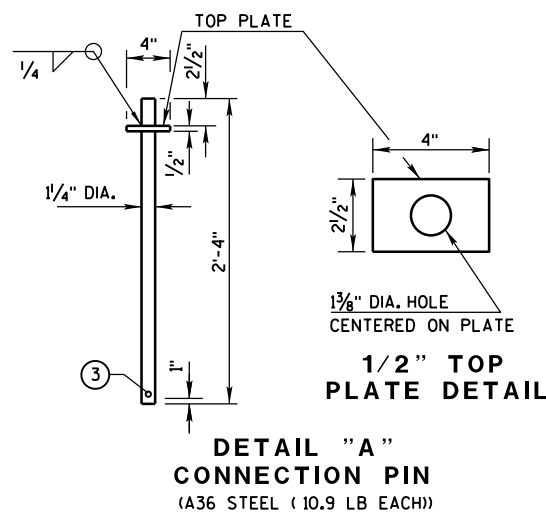


PLAN VIEW

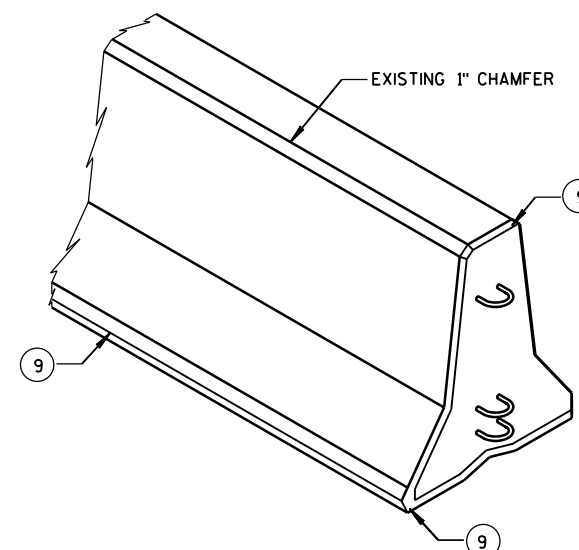
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-14(d) THRU 14B7-14(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE $\frac{3}{4}$ " SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3- $\frac{1}{2}$ " PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN $\frac{1}{8}$ " OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

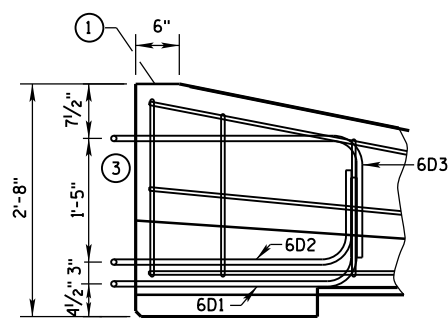
PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS.
PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE: WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ A $\frac{3}{8}$ " HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- ④ "V" NOTCH IS OPTIONAL.
- ⑤ THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- ⑥ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- ⑦ USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURER'S INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- ⑧ SEE SHEET D FOR ANCHORING CRITERIA.
- ⑨ 1" CHAMFER OPTIONAL.

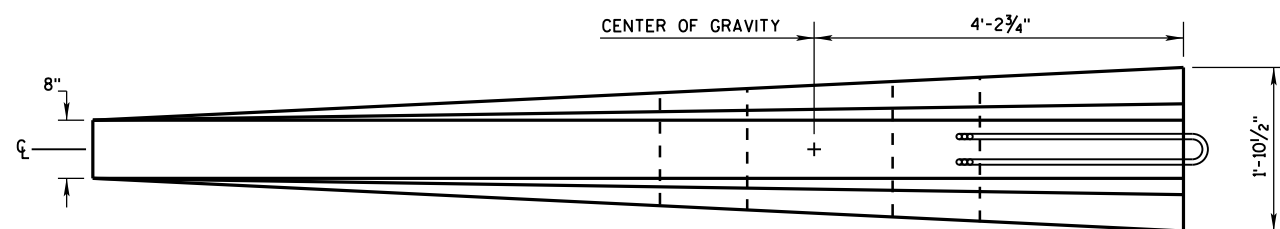
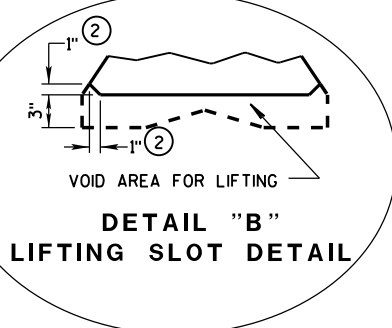
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

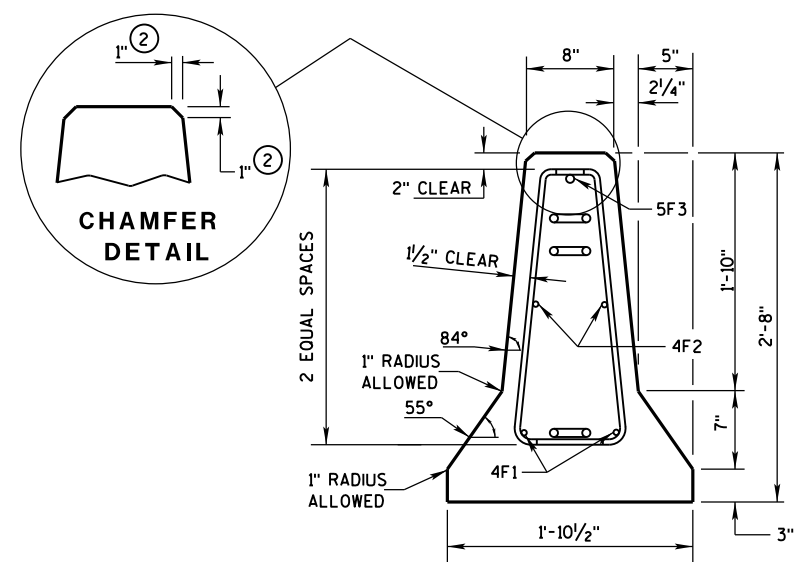


LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

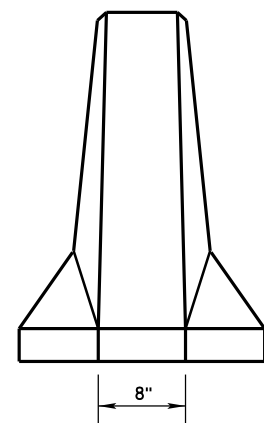
- ## GENERAL NOTES
- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
 - ② 1" CHAMFER TO PREVENT SPALLING.
 - ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



PLAN VIEW

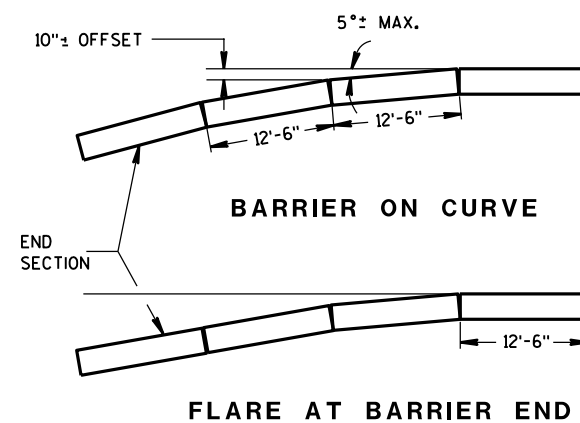


END SECTION



FRONT ELEVATION

DETAILS OF BARRIER TAPER SECTION



POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

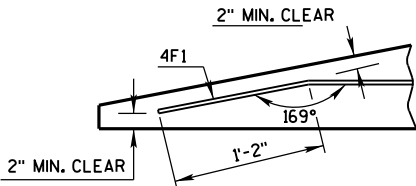
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

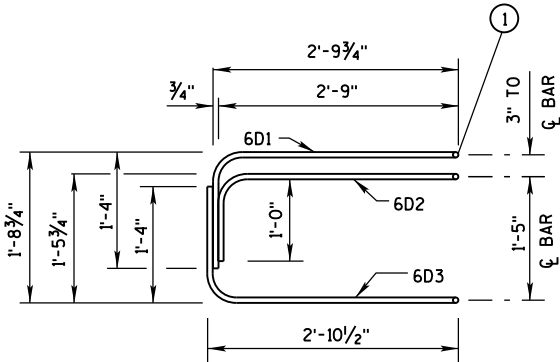
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

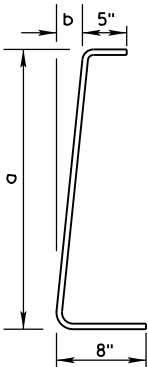
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

TAPER BARRIER SECTION

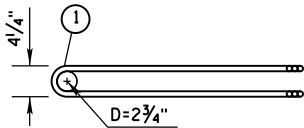
GENERAL NOTES

① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

BARRIER SECTION
BILL OF MATERIALS

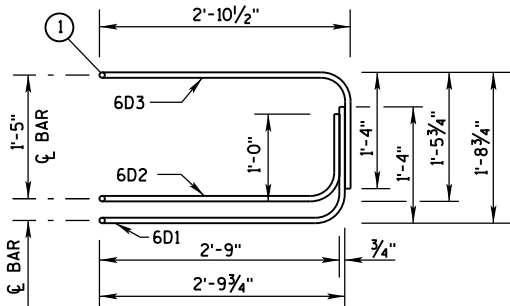
(PER 12'-6" BARRIER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"

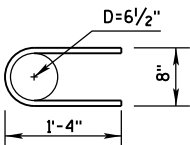


PLAN VIEW
LOOP BAR ASSEMBLY

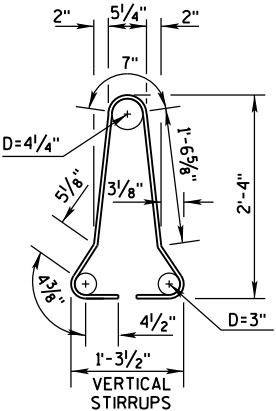
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

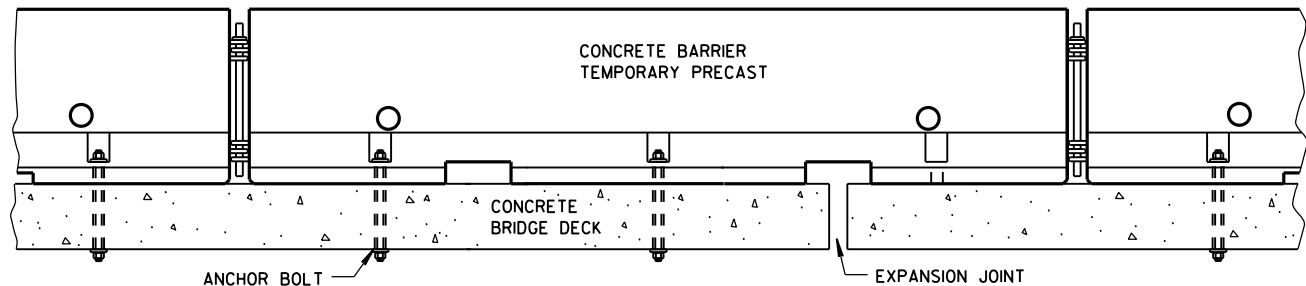
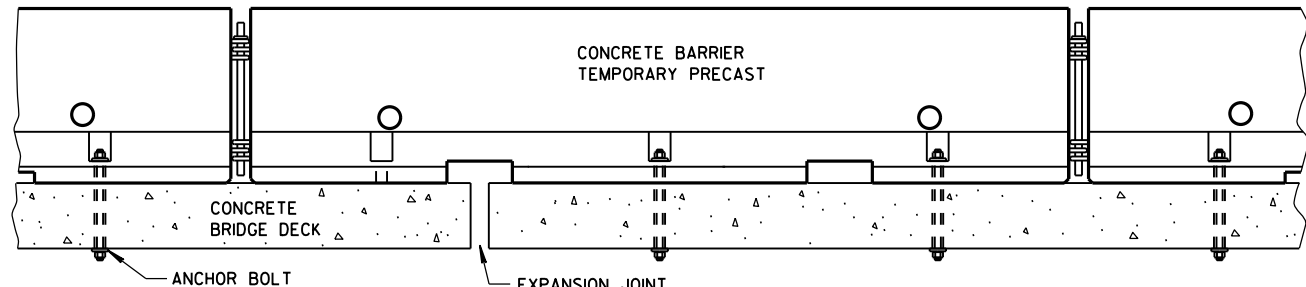


4A1

BARRIER SECTION

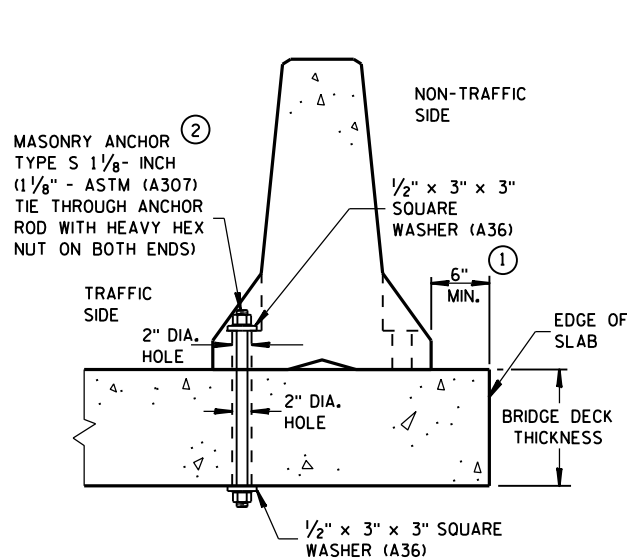
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



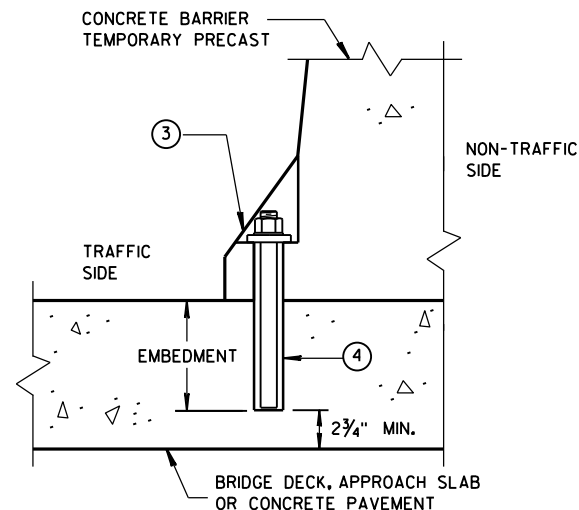
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



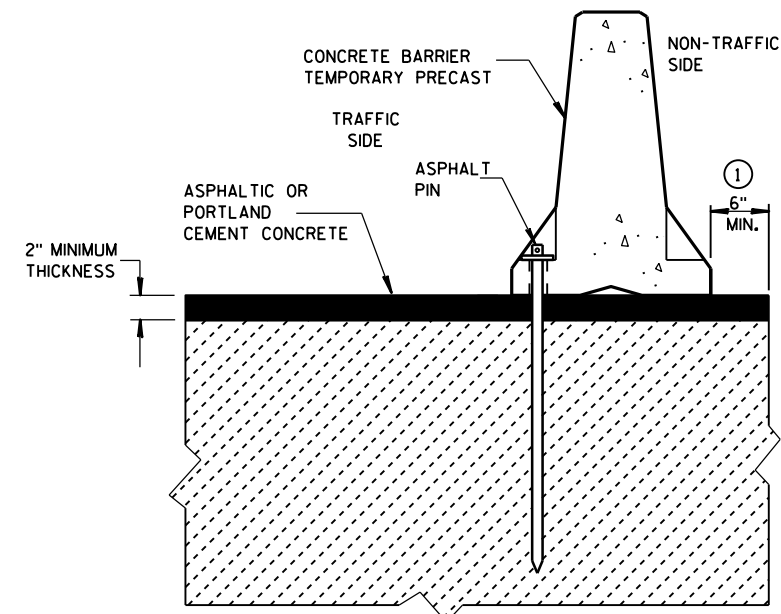
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



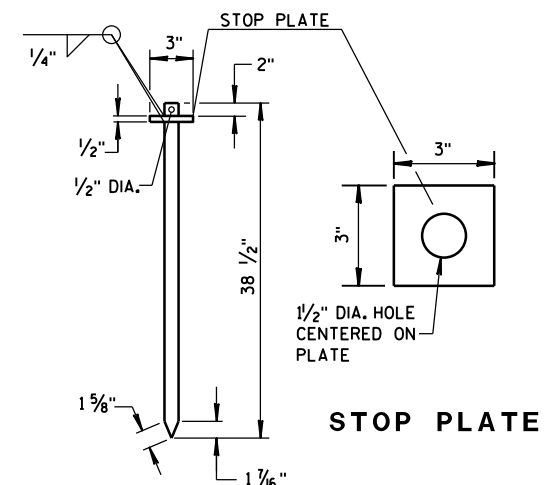
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

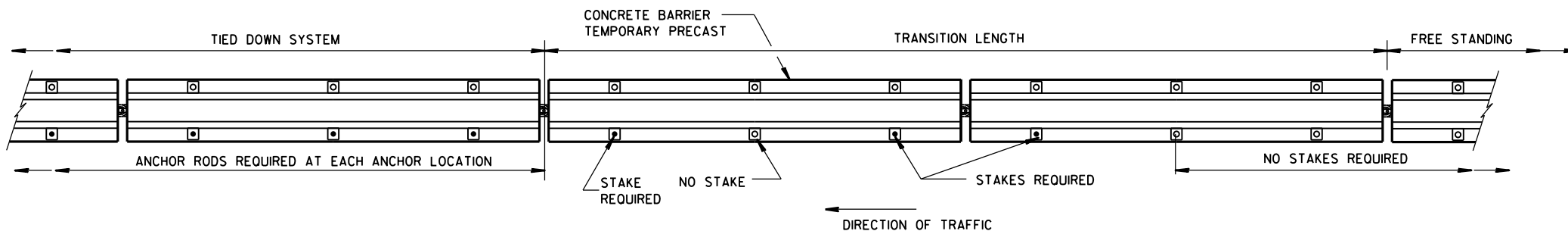


STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



ASPHALT PIN
(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

- ① CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V,
FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT,
IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF
AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

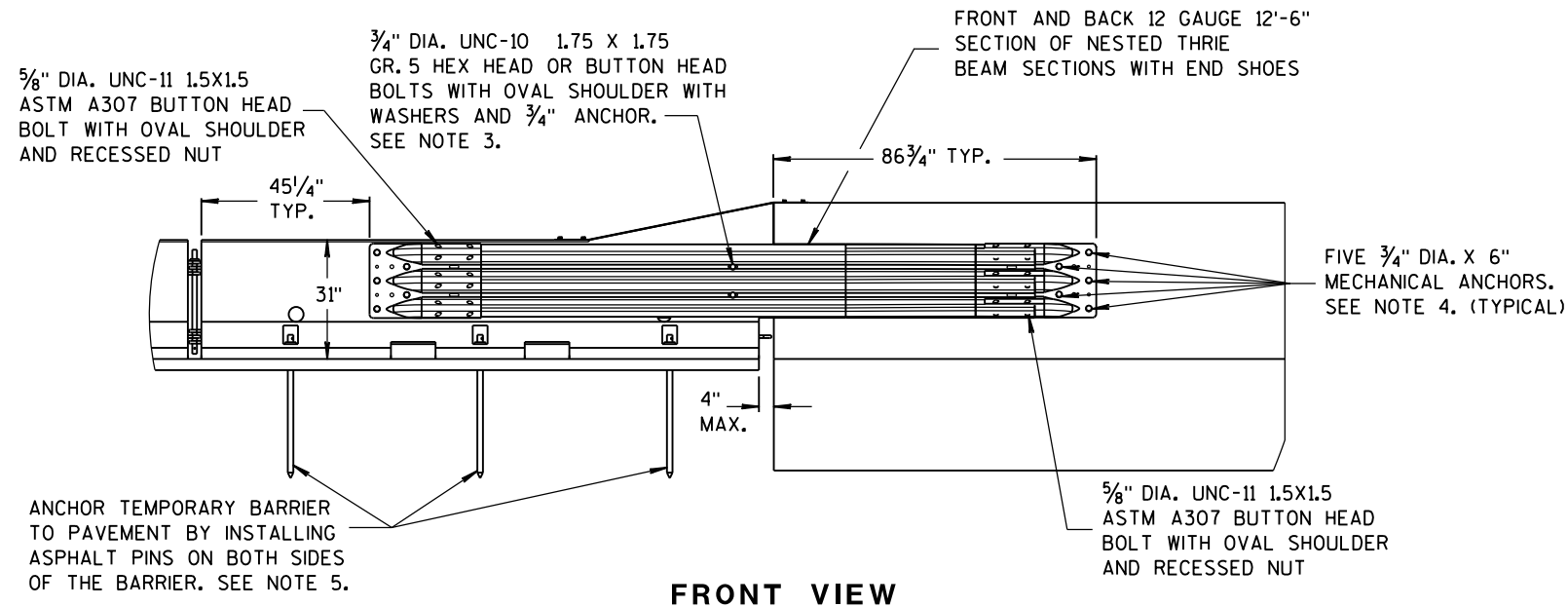
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V,
FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT,
IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF
AND THE POSTED SPEED IS 40 MPH OR LESS.
- ② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT
INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE
BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE
S 1 1/8"-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE
ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY
FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CON-
CRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERCIAL GROUT OR MATERIAL
IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.
- ③ 1/8" DIAMETER A307 THREADED ROD, 1/2" x 3" x 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL,
ASTM A563A HEAVY HEX NUT.
- ④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2
AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



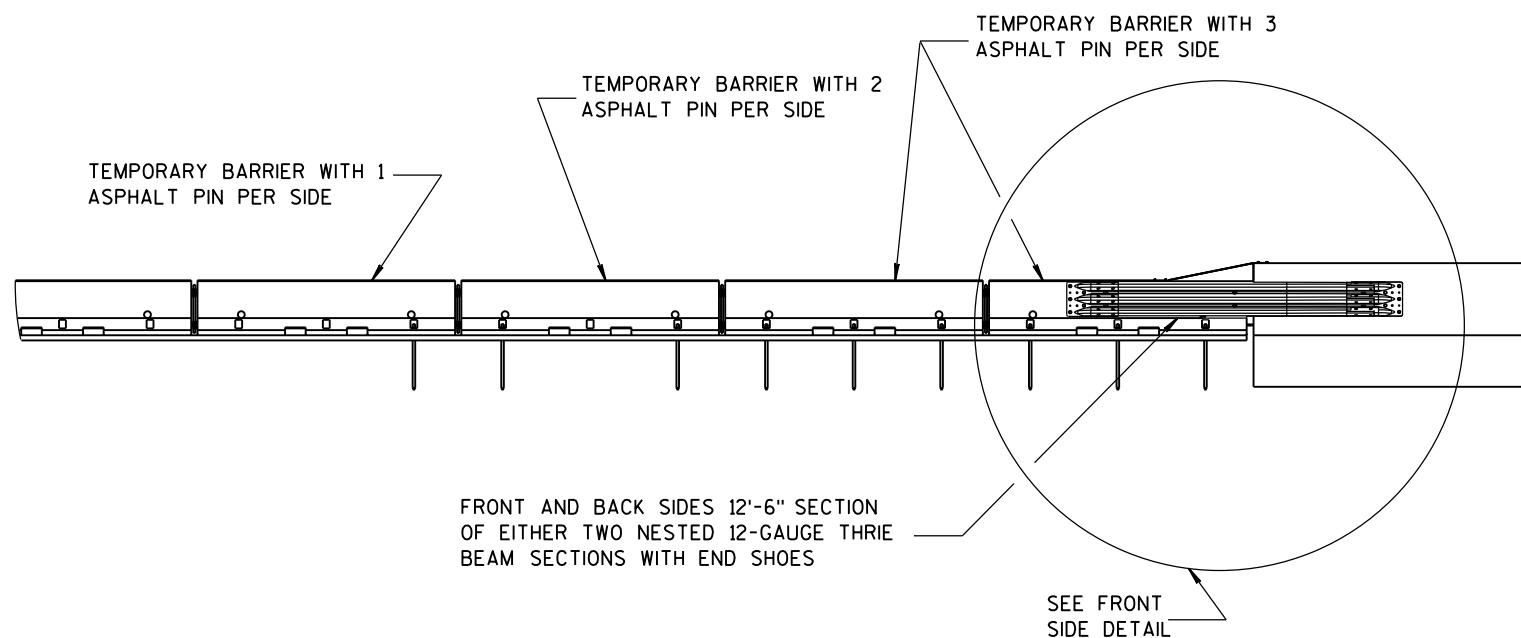
FRONT VIEW

NOTES

NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

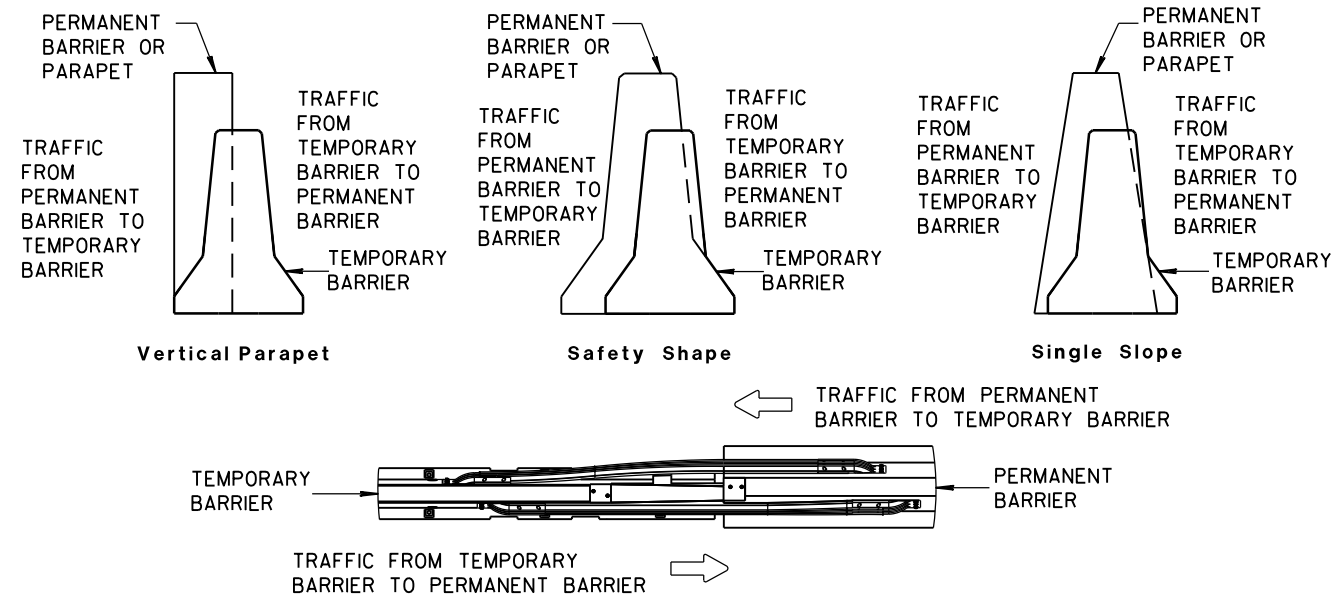
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.

4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

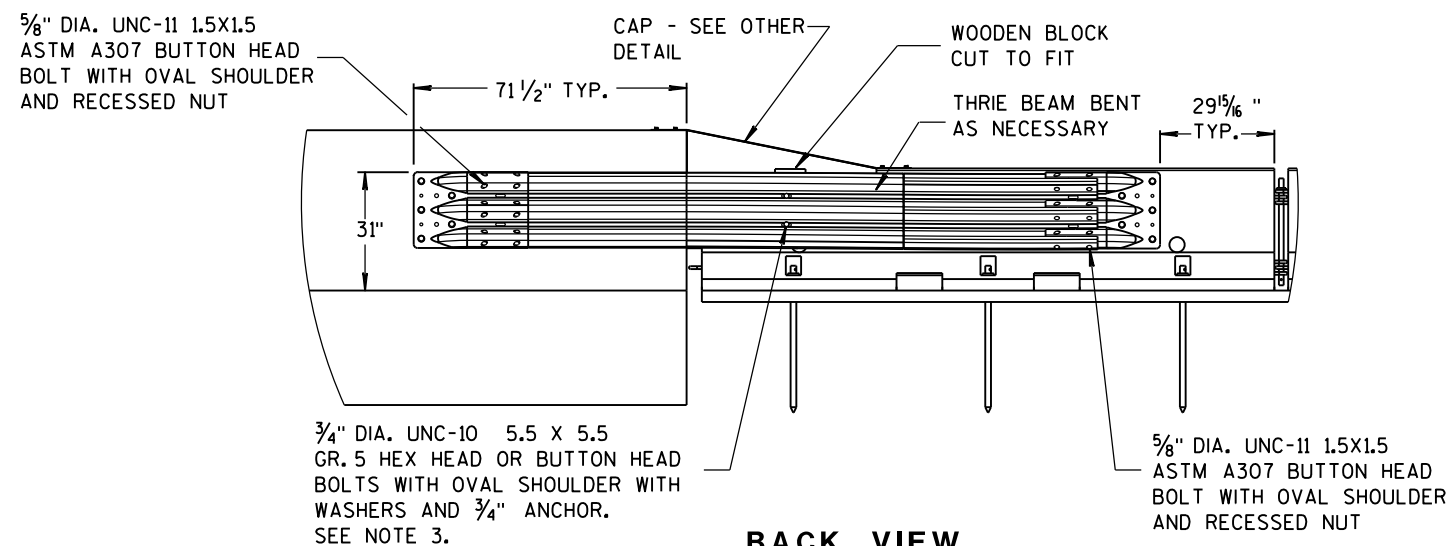


FRONT VIEW

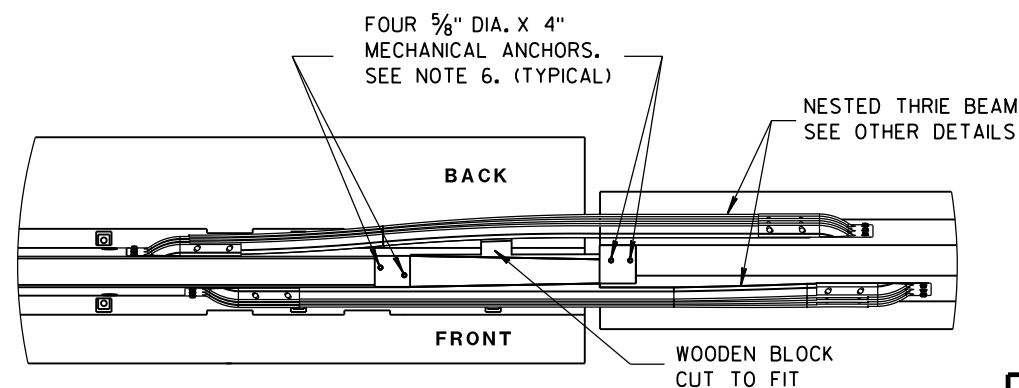
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



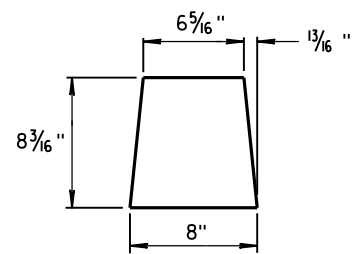
BACK VIEW



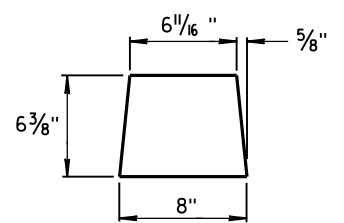
PLAN VIEW

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

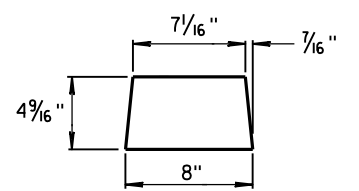
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



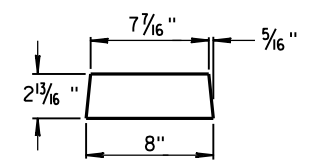
GUSSET 1



GUSSET 2

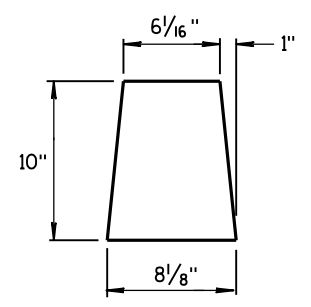


GUSSET 3

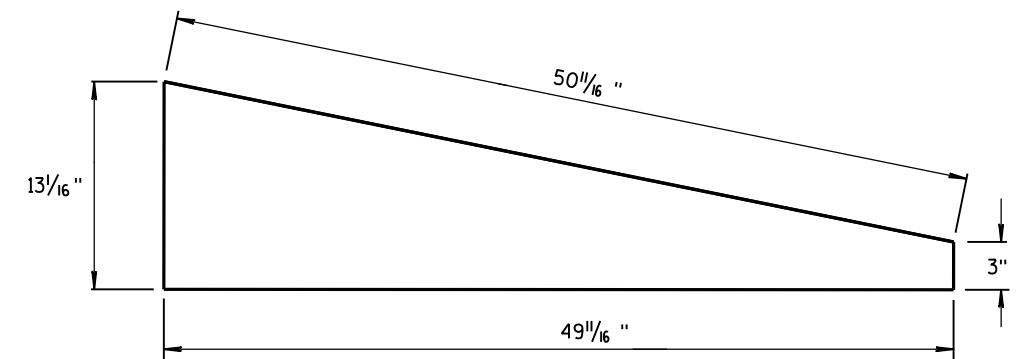


GUSSET 4

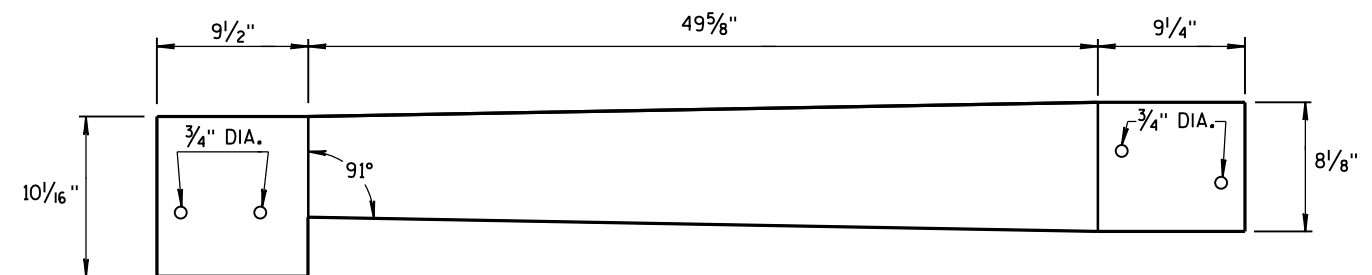
GUSSETS



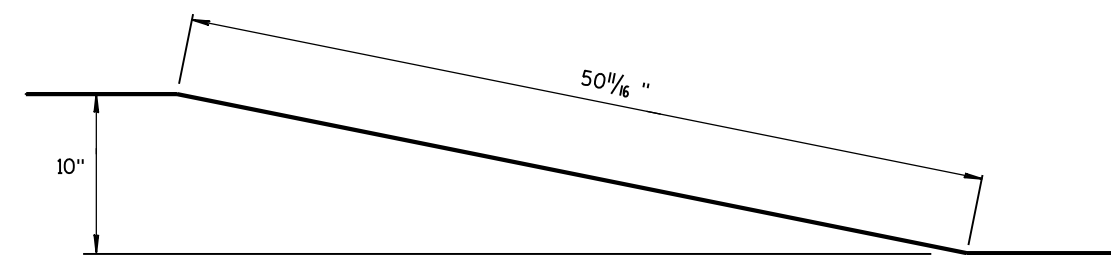
END PLATE



SIDE PLATE

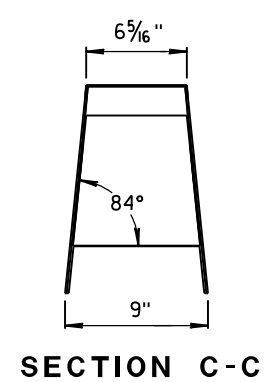


TOP PLATE

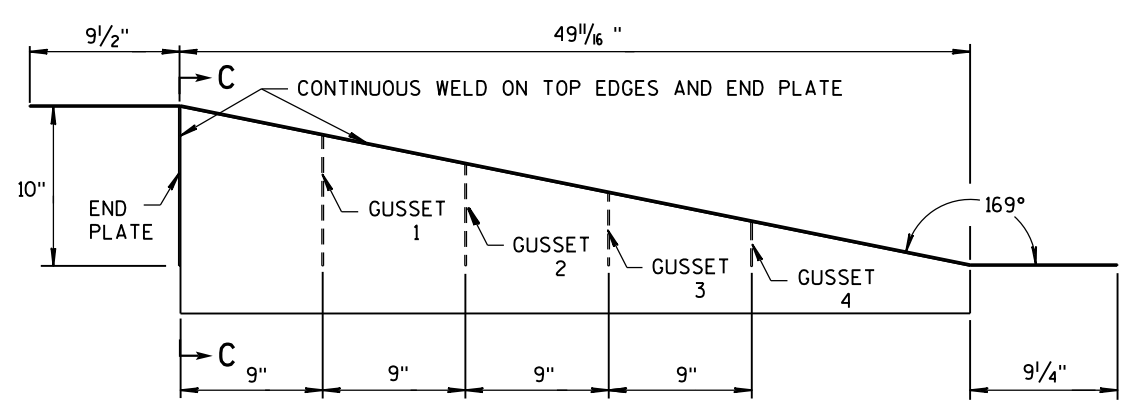
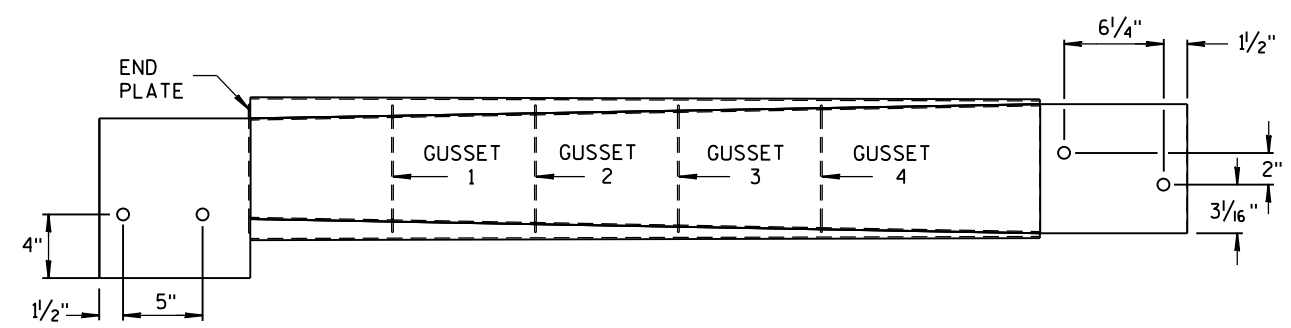


**SIDE, TOP AND END PLATES FOR CAP
FROM TEMPORARY CONCRETE BARRIER
TO 42" PERMANENT CONCRETE BARRIER**

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.



SECTION C-C



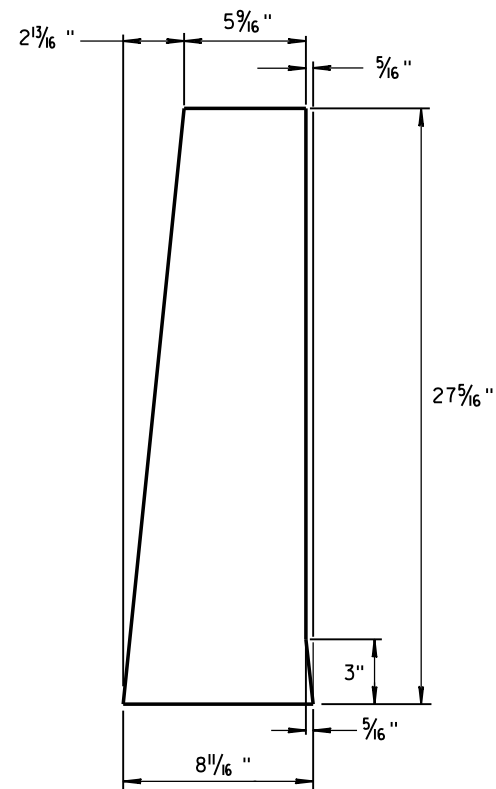
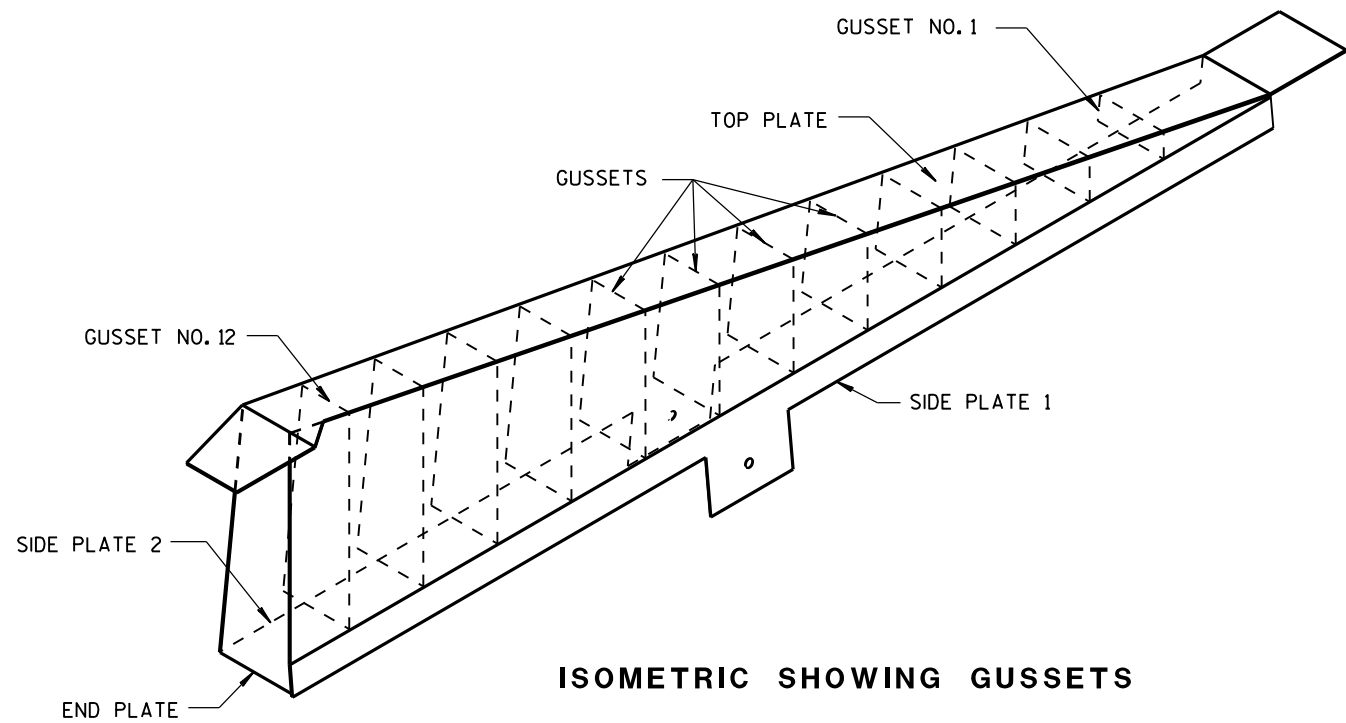
NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

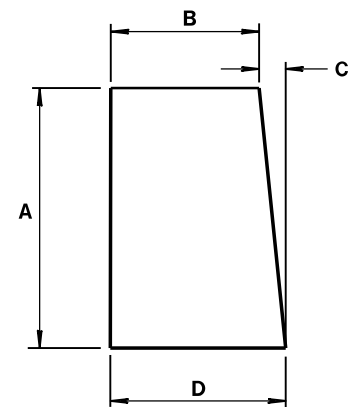
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



END PLATE
1/8" STEEL PLATE

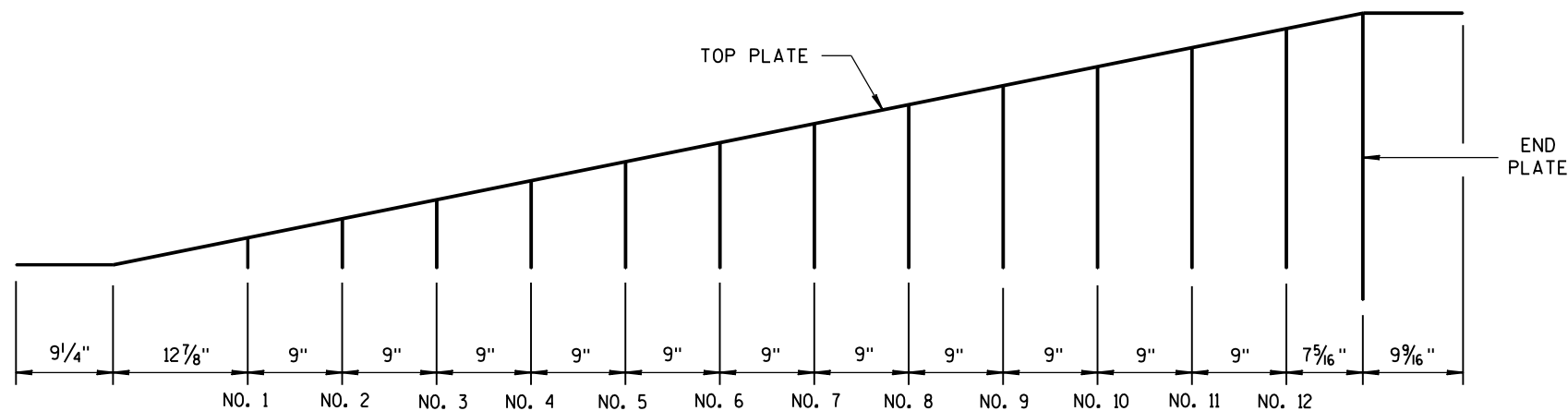


GUSSETS 1 - 12
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	1 1/16 "	8 1/16 "
4	8 5/16"	7 3/16"	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 5/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16"	6 1/16"	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16"	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16"	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

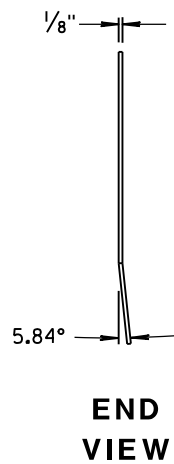
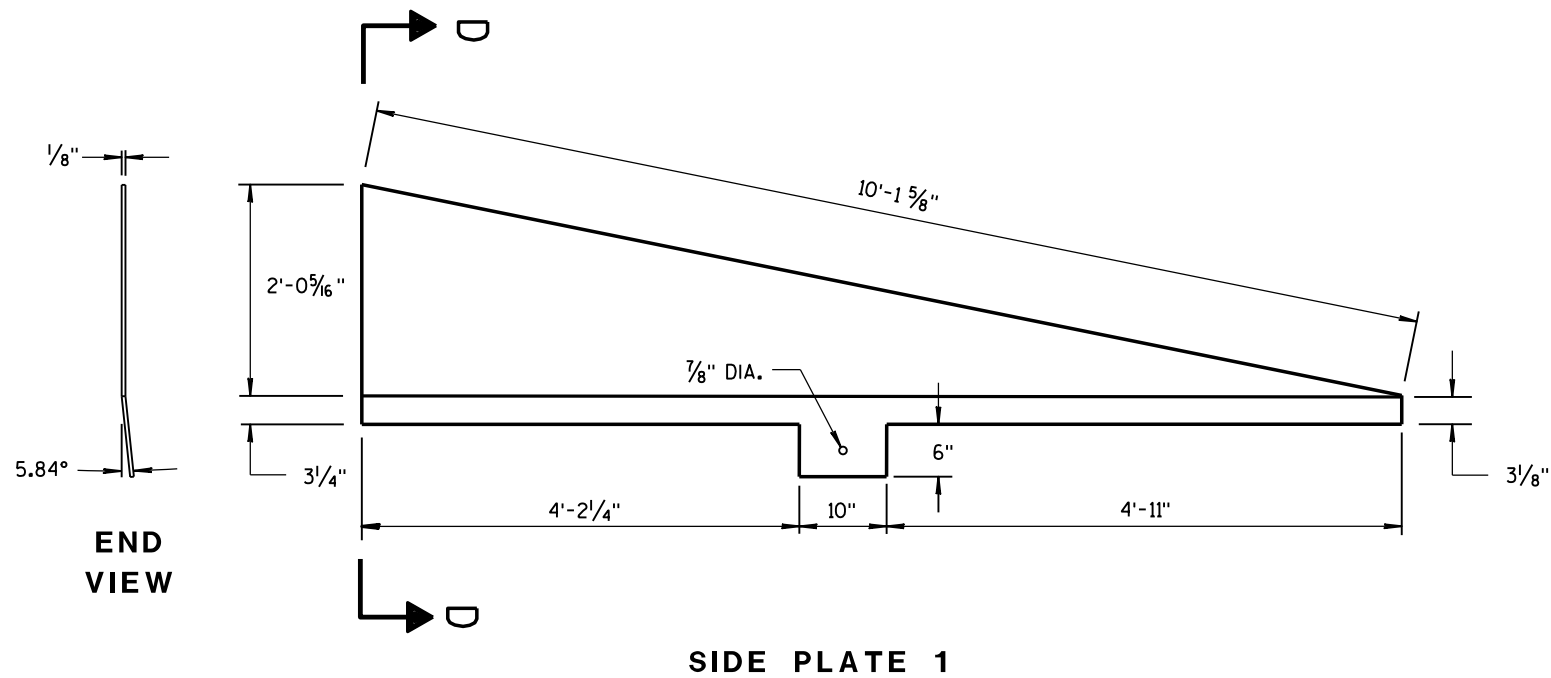
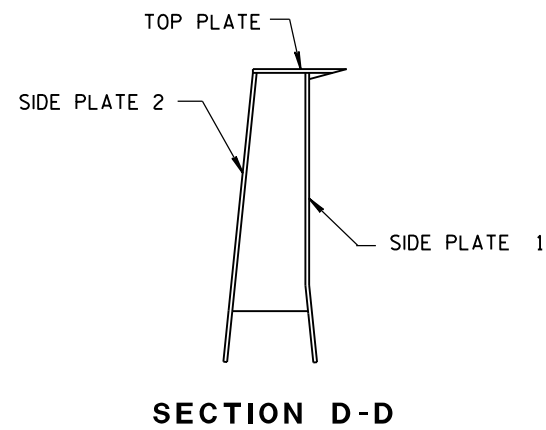
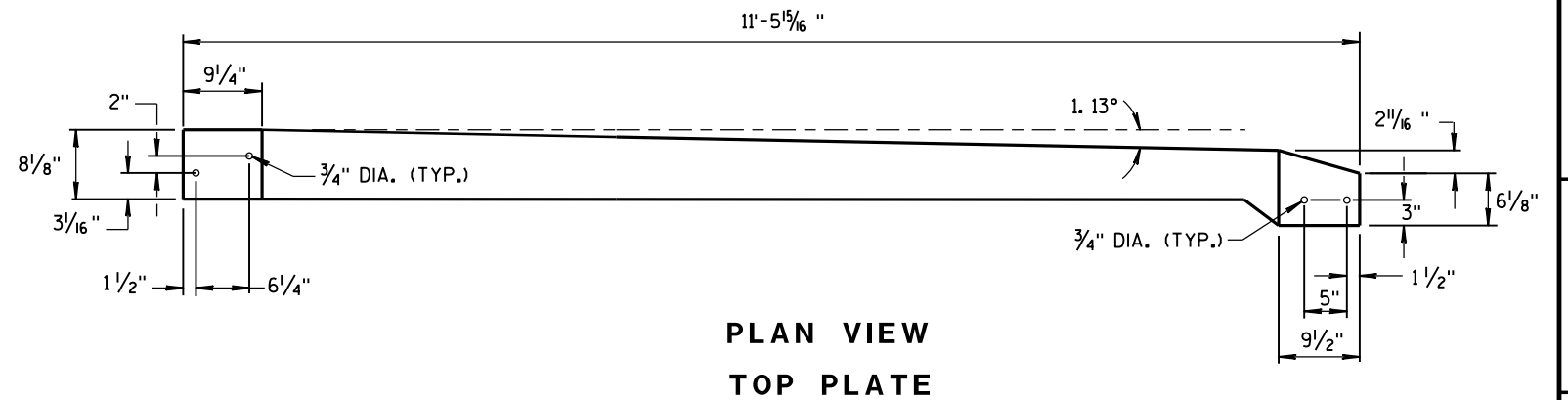
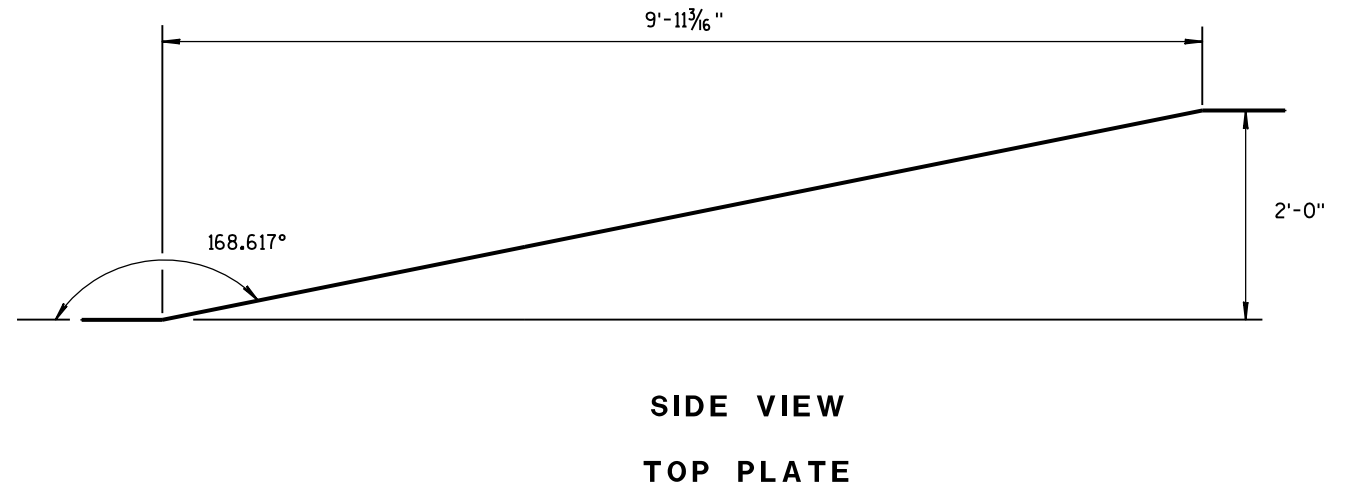
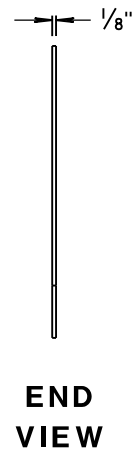
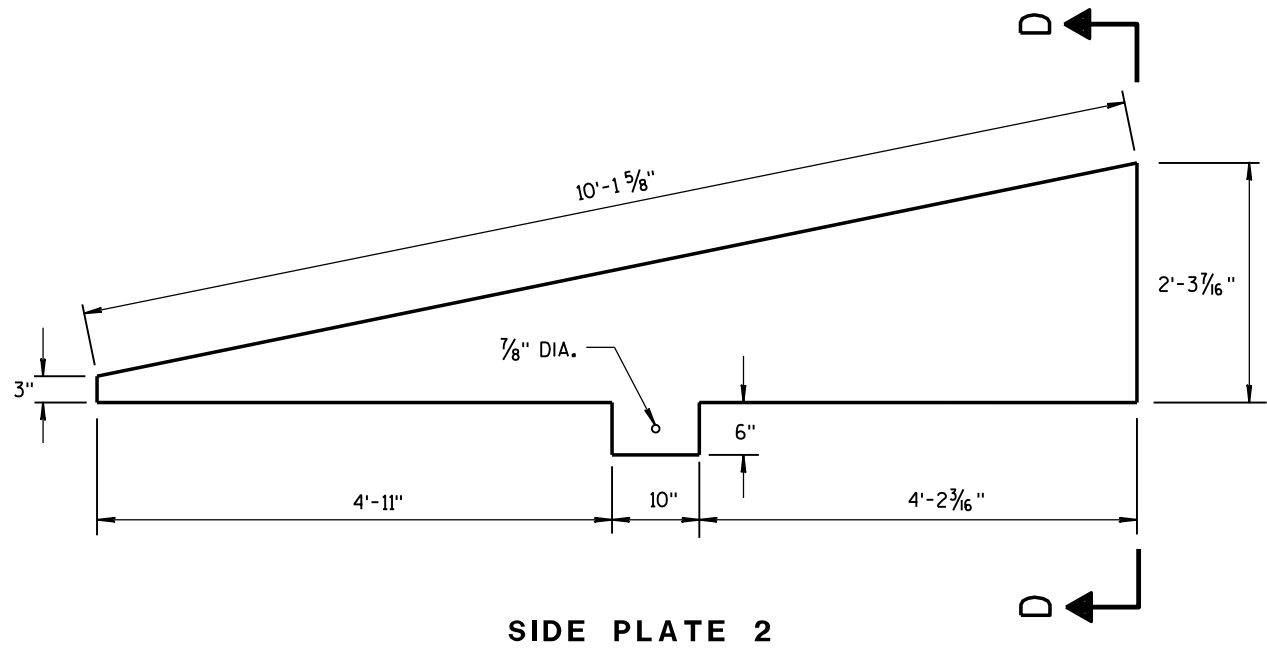
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

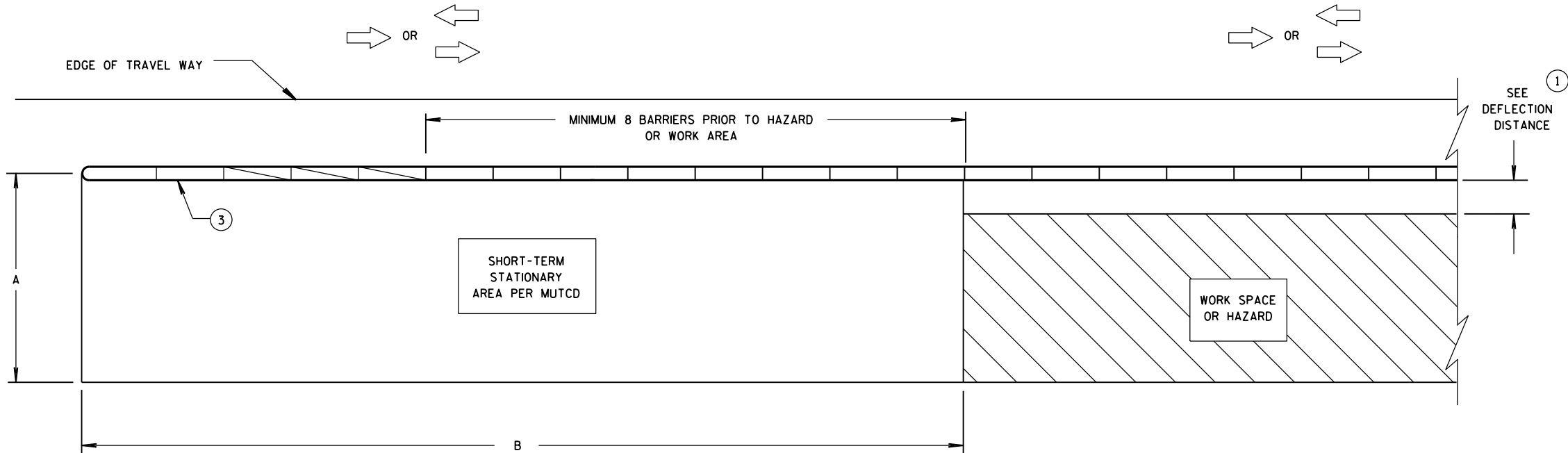


CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 DATE /S/ Jerry H. Zogg
ROADWAY STANDARD DEVELOPMENT
ENGINEER
FHWA



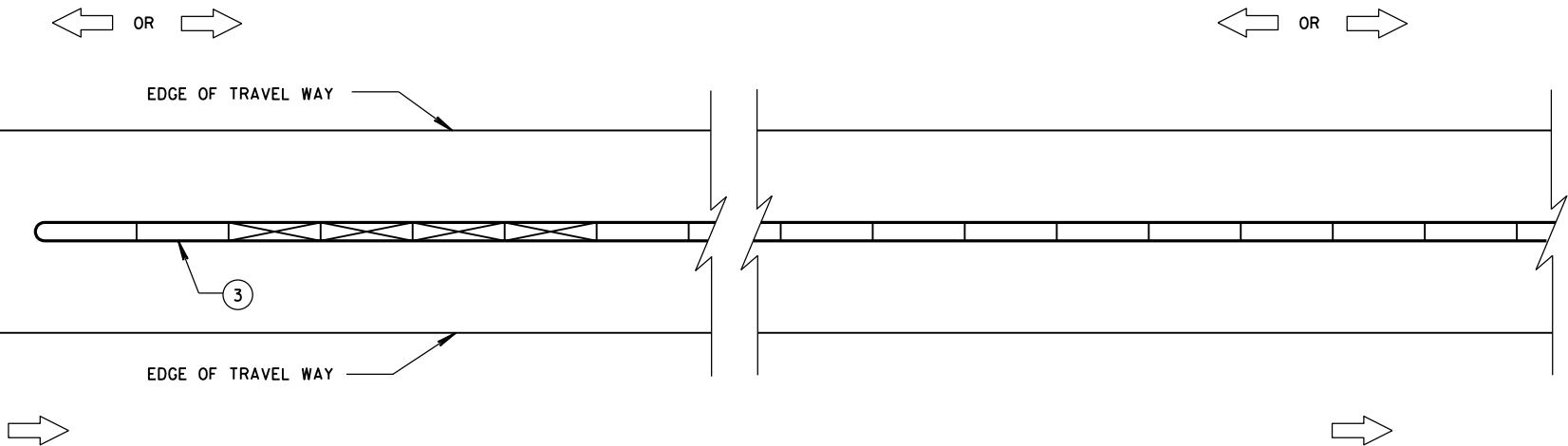
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE ②

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE ②

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER

LEGEND

DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

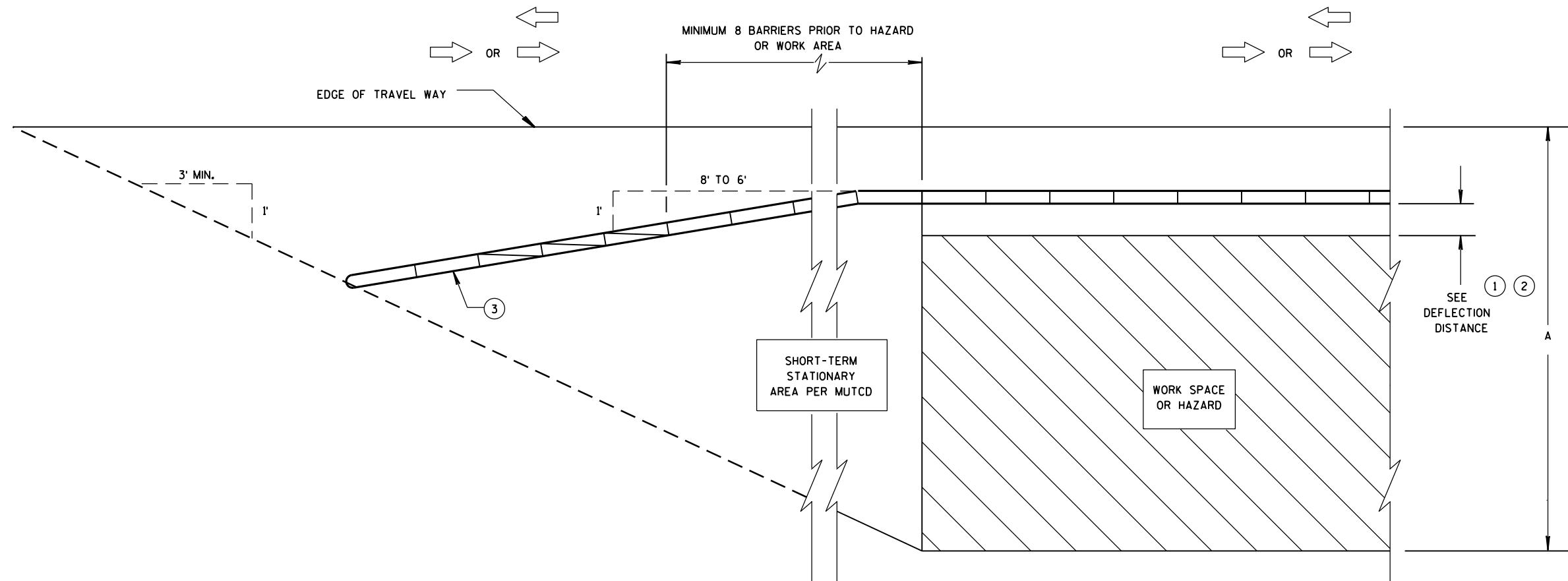
FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

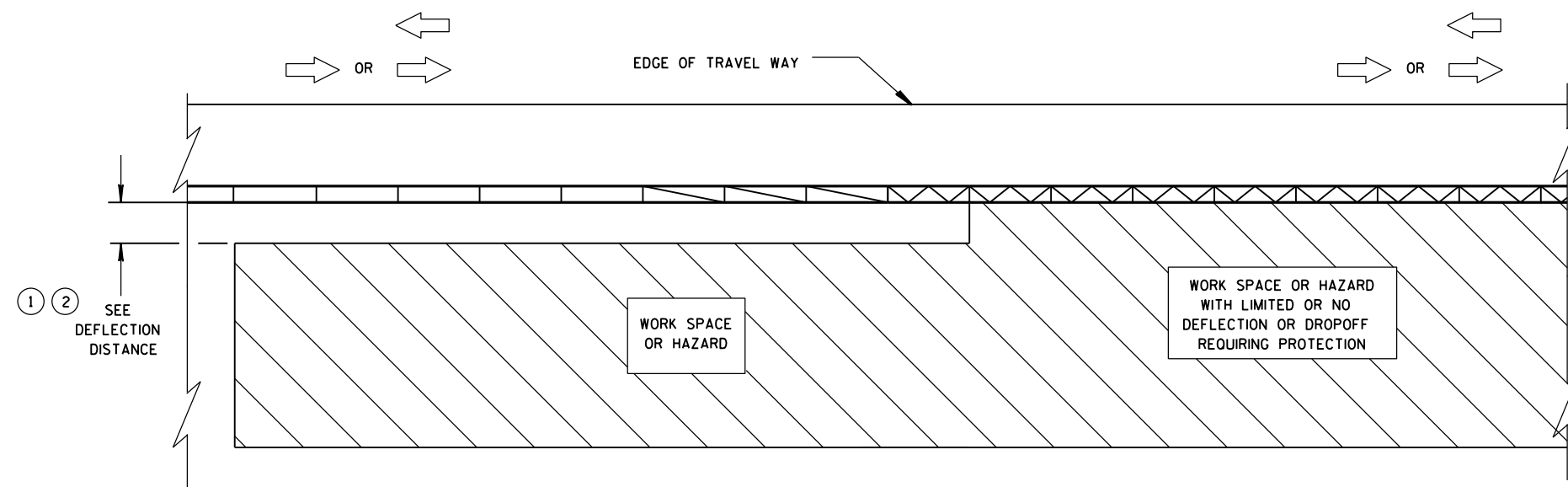
- ① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- ② VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.
- ③ ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION**



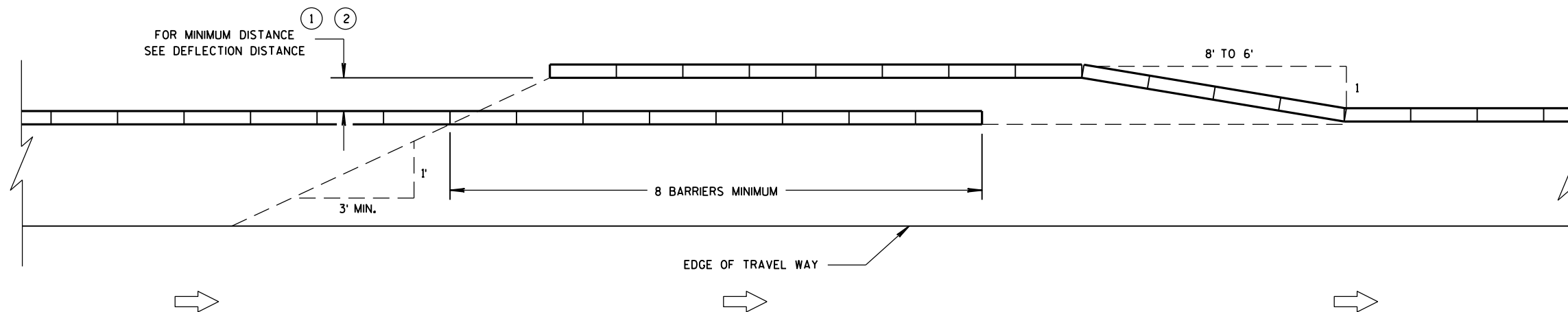
**TRANSITION FROM FREE STANDING TEMPORARY BARRIER
TO ANCHORED BARRIER**

LEGEND

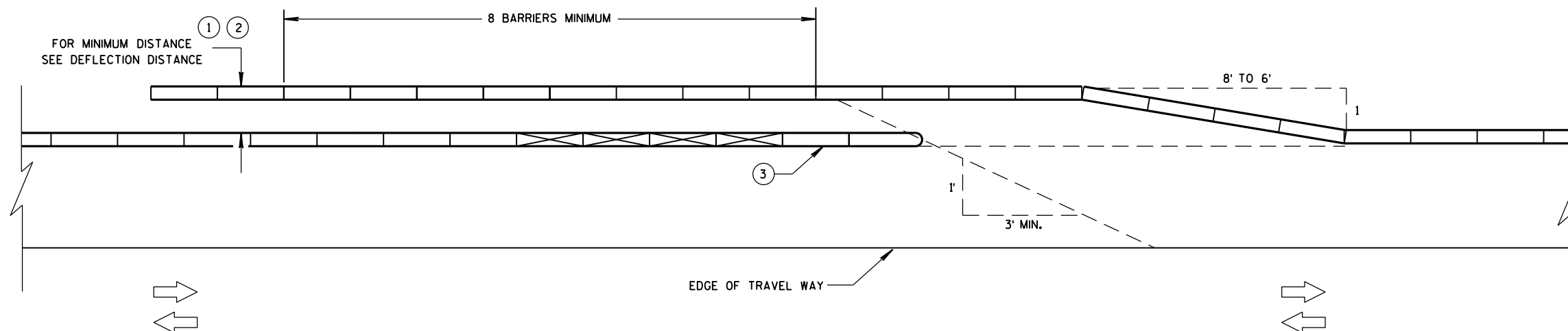
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

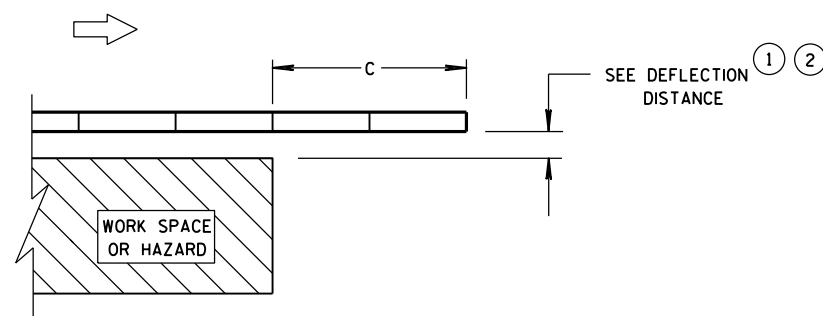
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



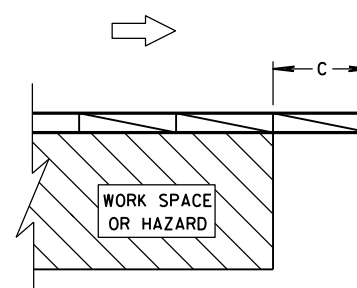
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



**ENDING TEMPORARY BARRIER
DOWNSTREAM - UNANCHORED**



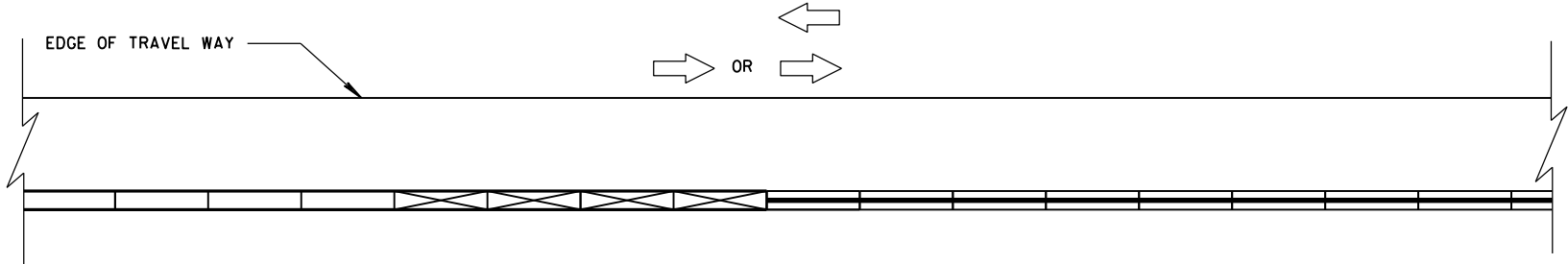
**ENDING TEMPORARY BARRIER
DOWNSTREAM - ANCHORED**

LEGEND

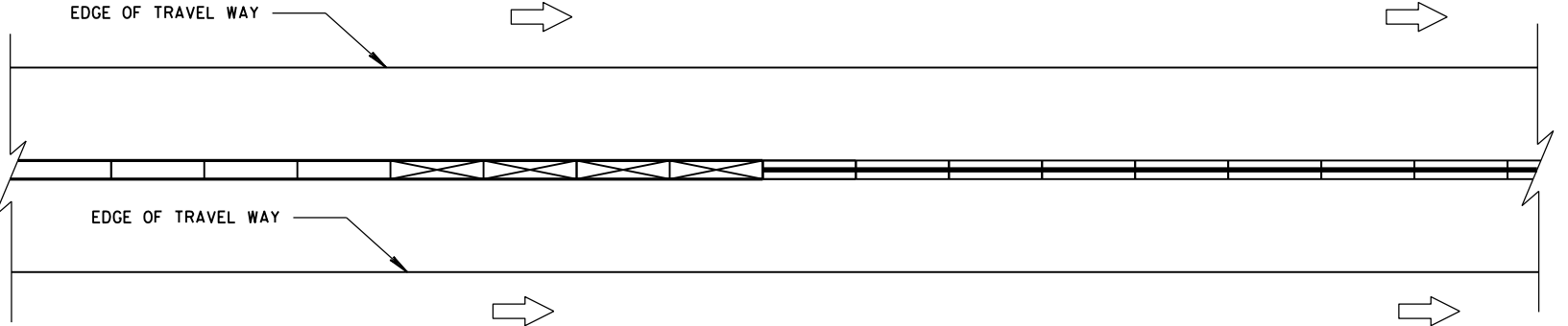
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



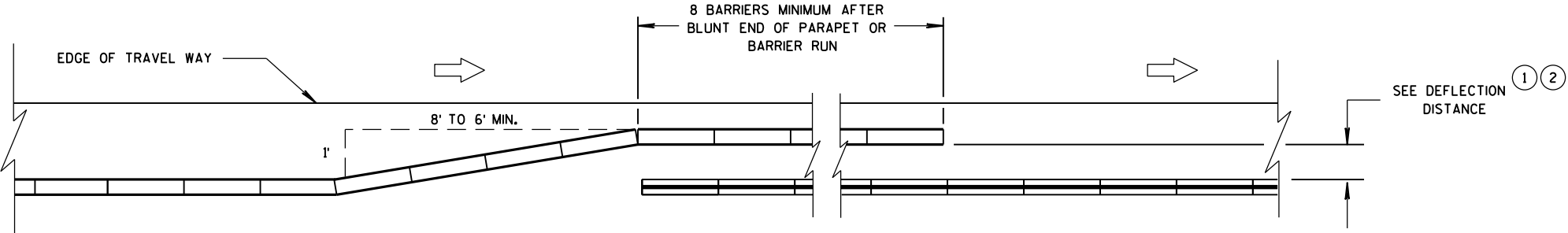
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



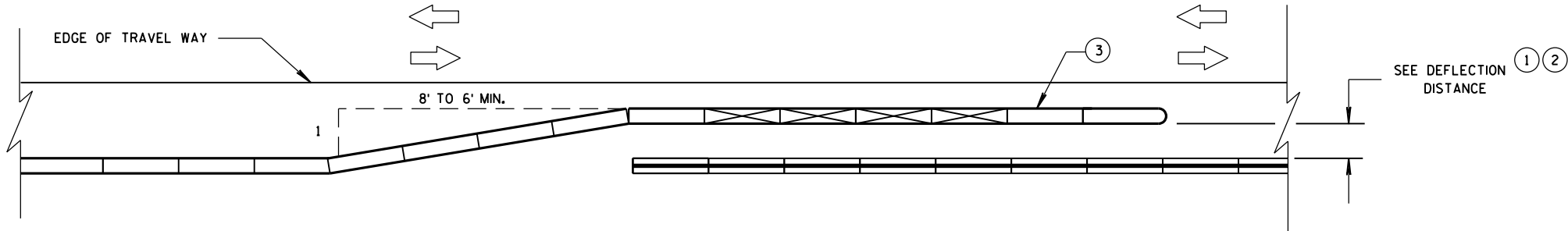
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC




OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

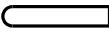
CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

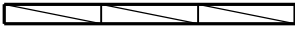
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION


LEGEND


- DIRECTION OF TRAVEL

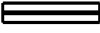

- CRASH CUSHION OR SAND BARREL ARRAY

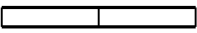

- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS


- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS


- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER


- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

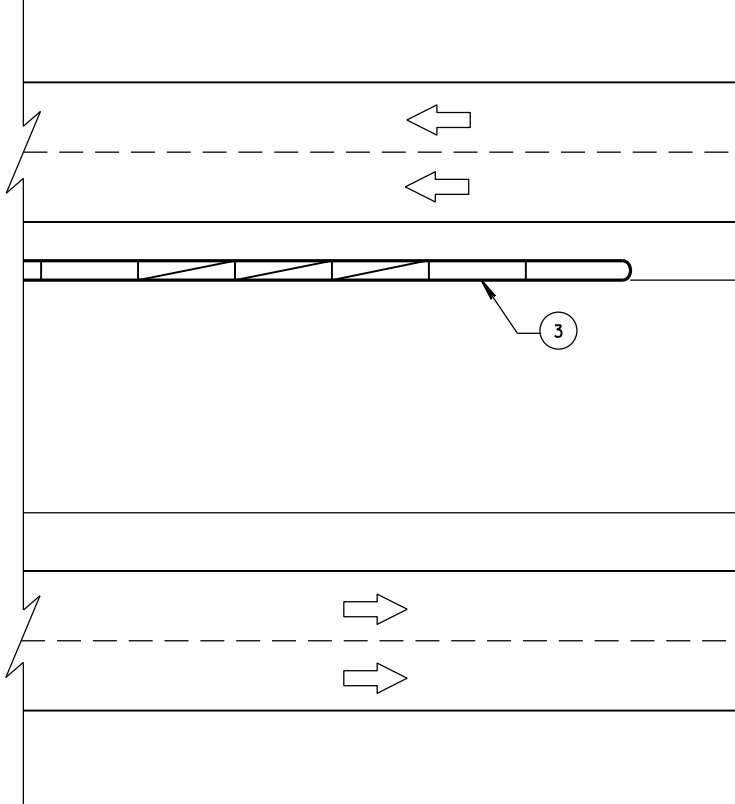
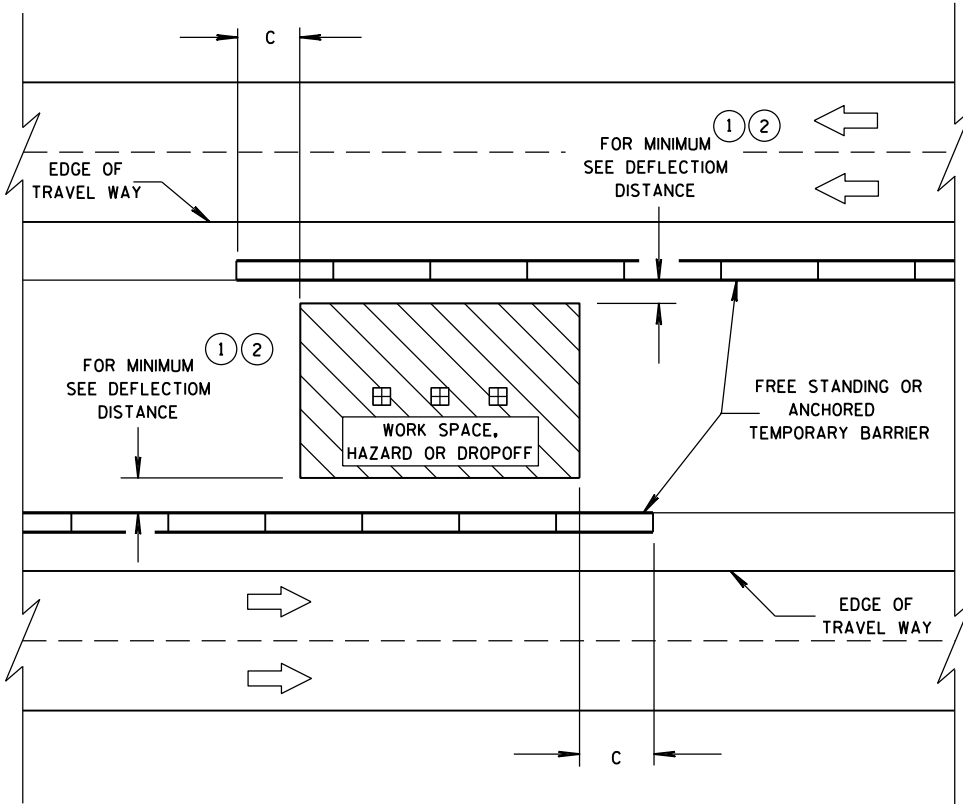
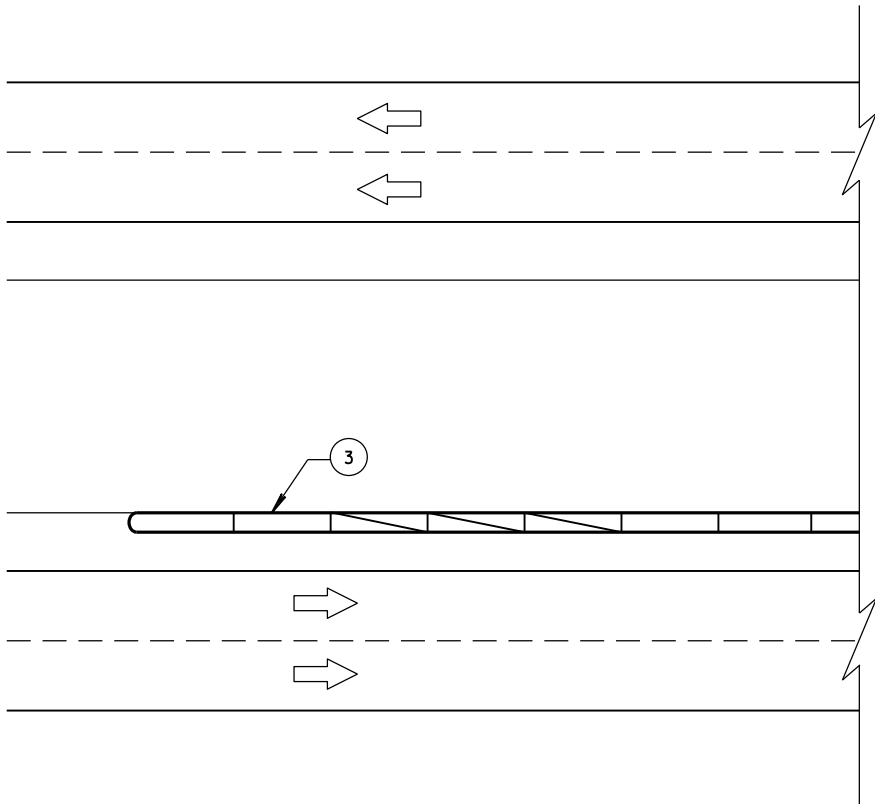

- FREE STANDING TEMPORARY BARRIER



DIMENSION C TABLE

2

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

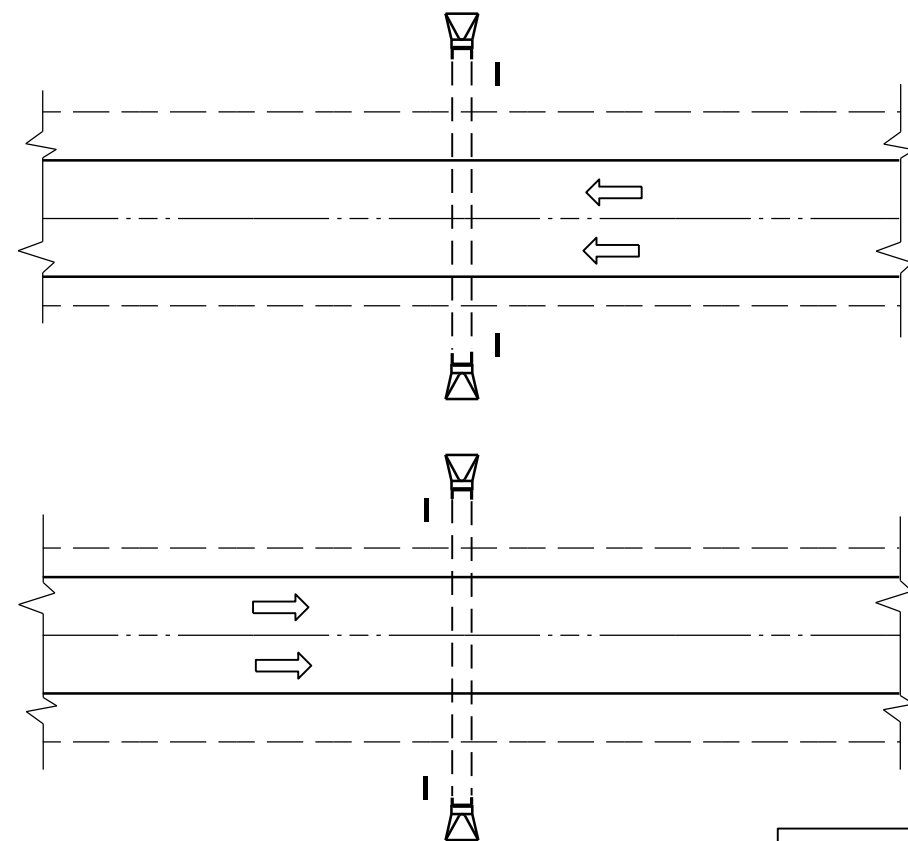
June, 2015

DATE

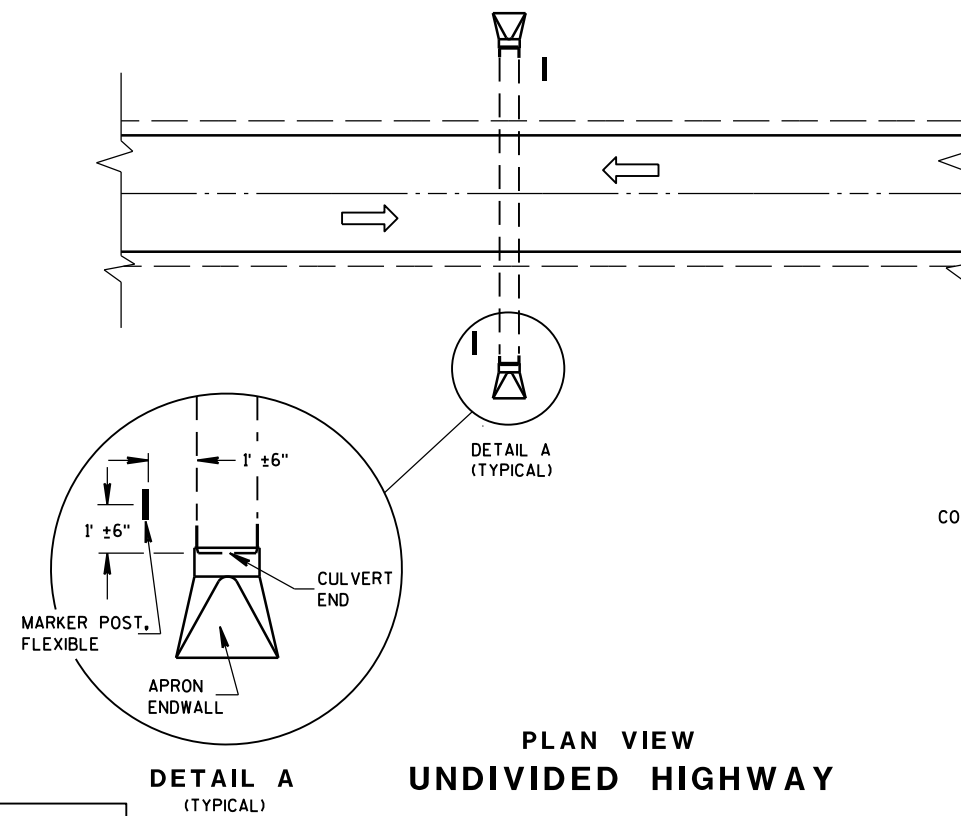
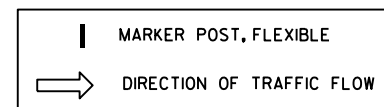
FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLAN VIEW
DIVIDED HIGHWAY

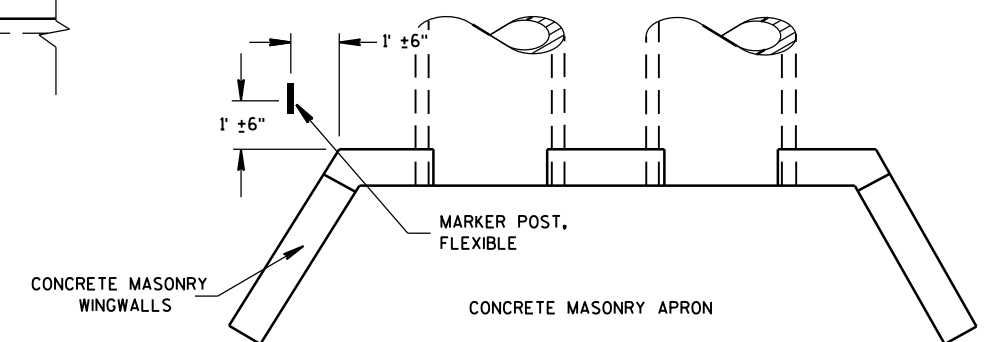


PLAN VIEW
UNDIVIDED HIGHWAY

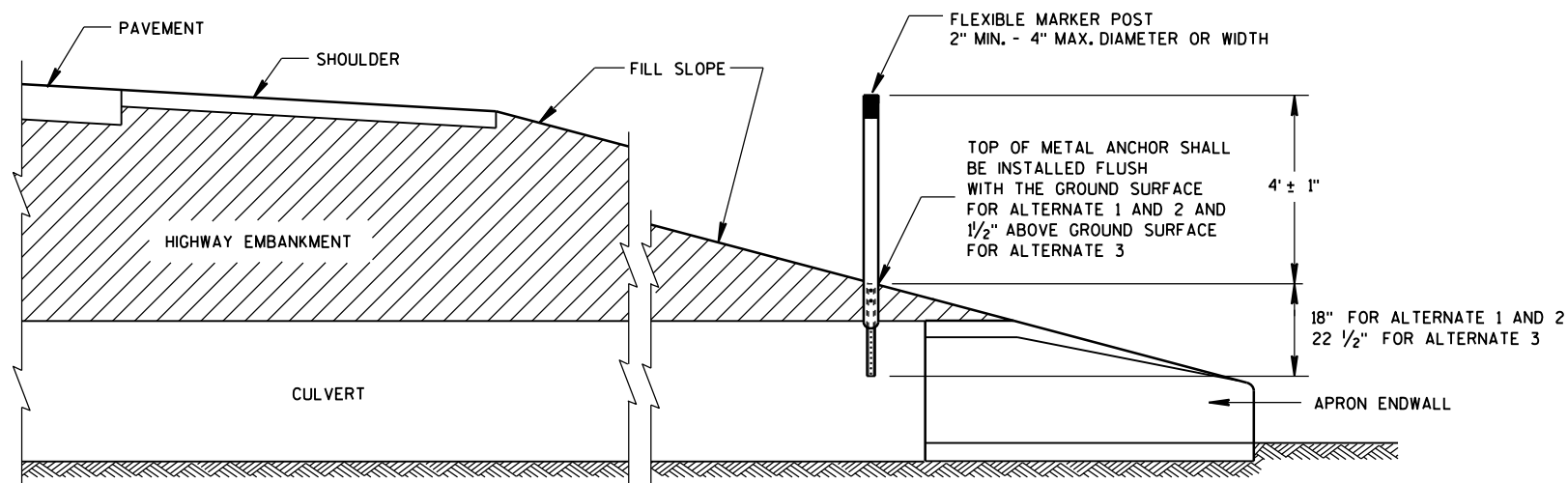
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



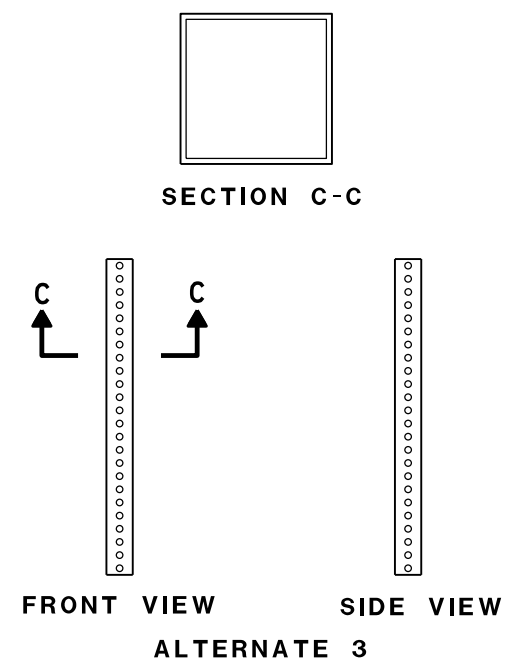
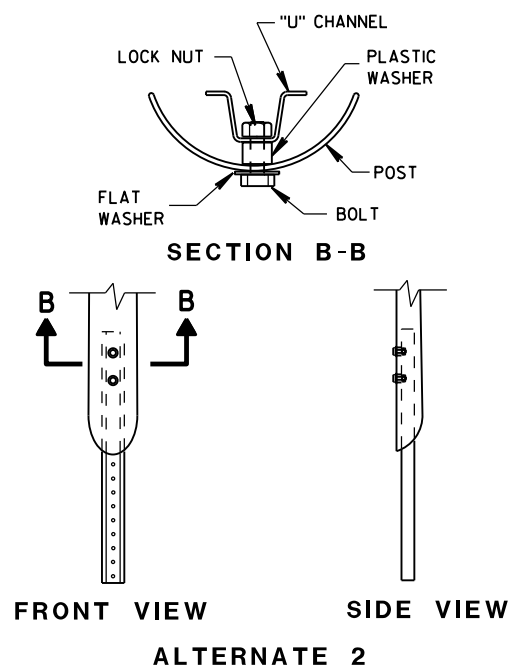
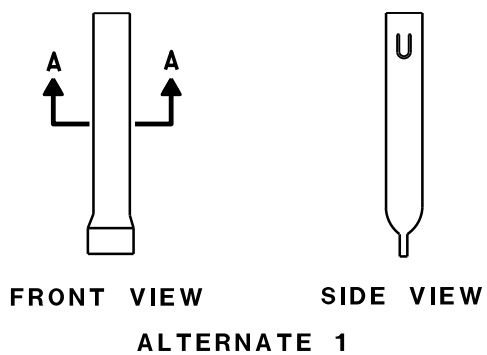
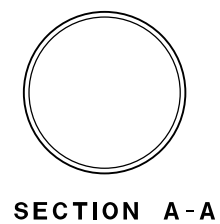
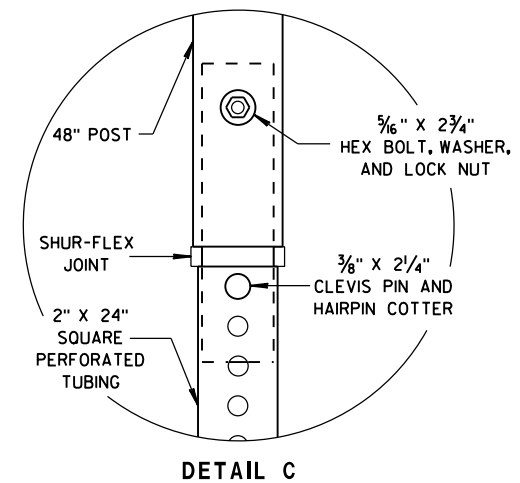
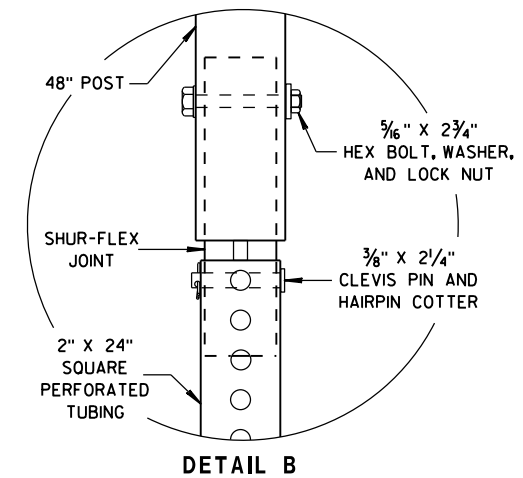
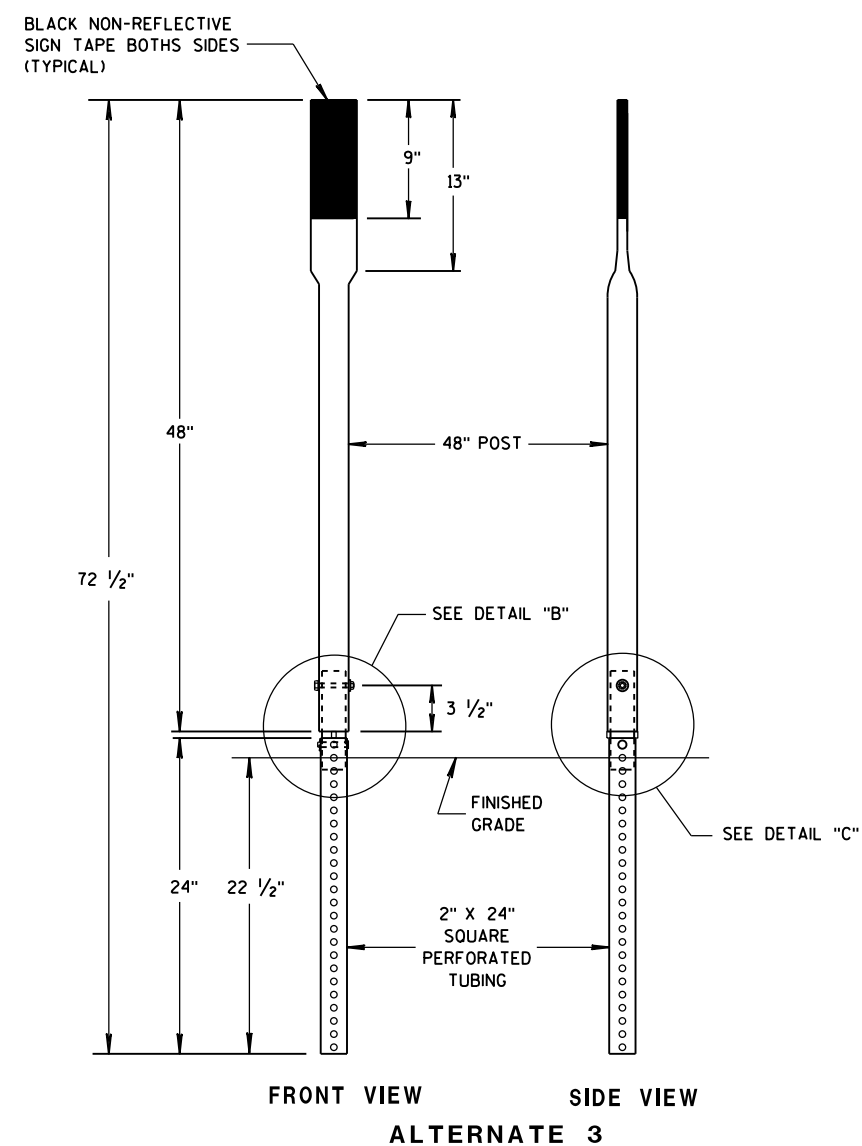
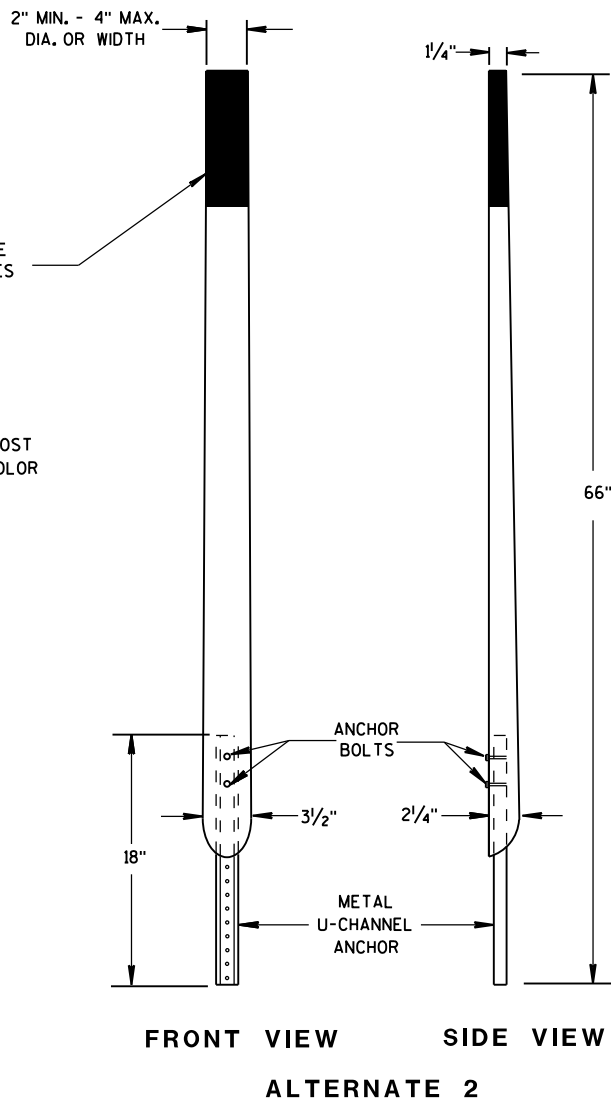
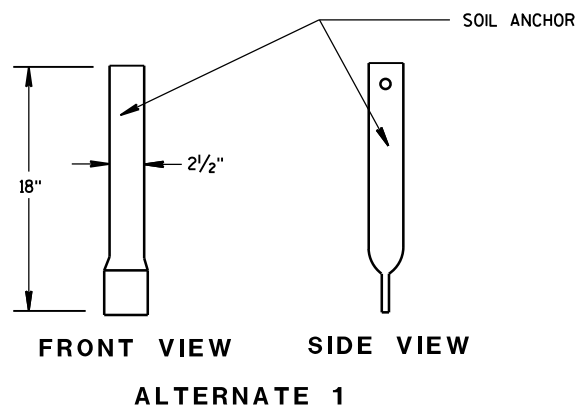
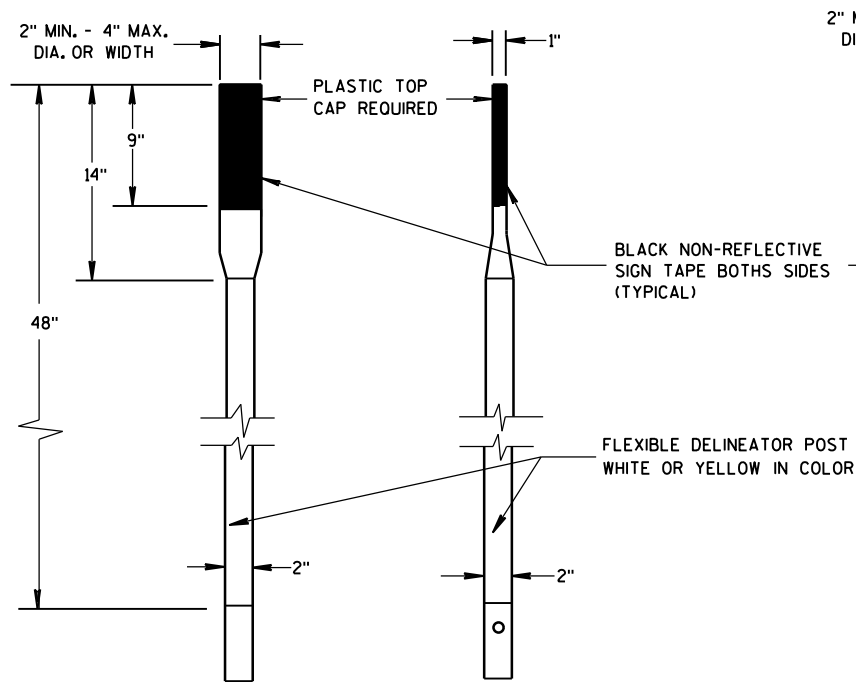
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

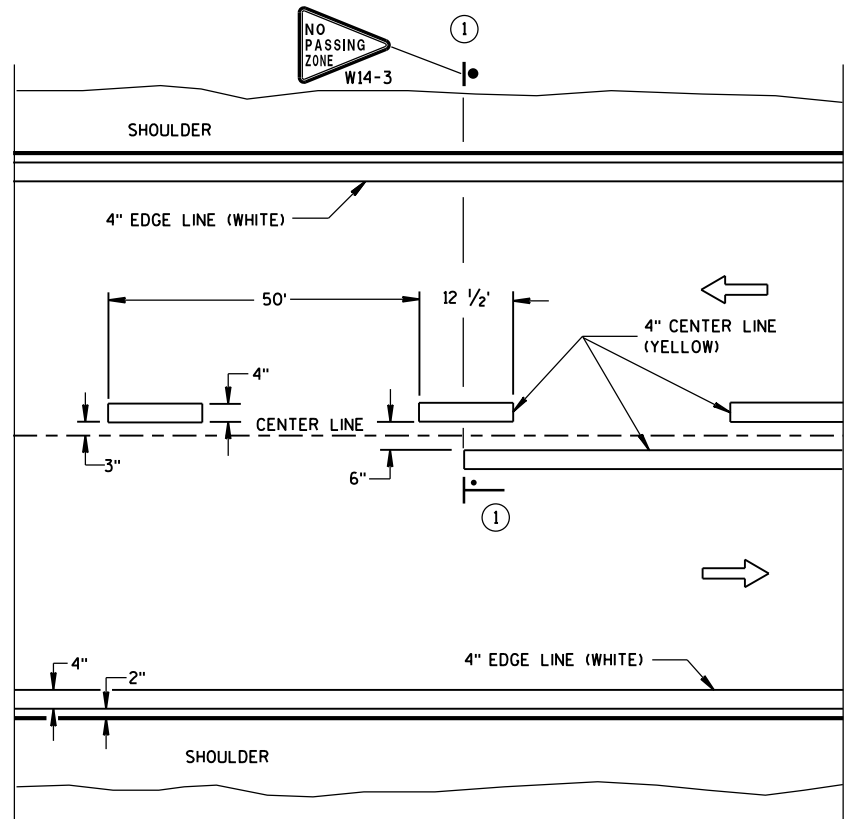


FLEXIBLE MARKER POST FOR CULVERT END

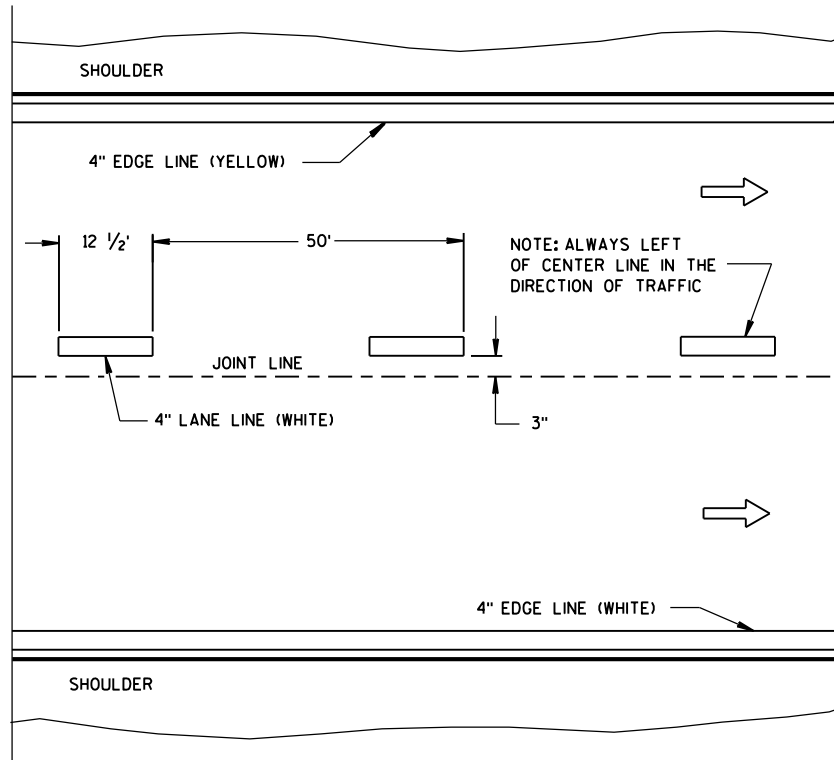
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012
DATE
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN

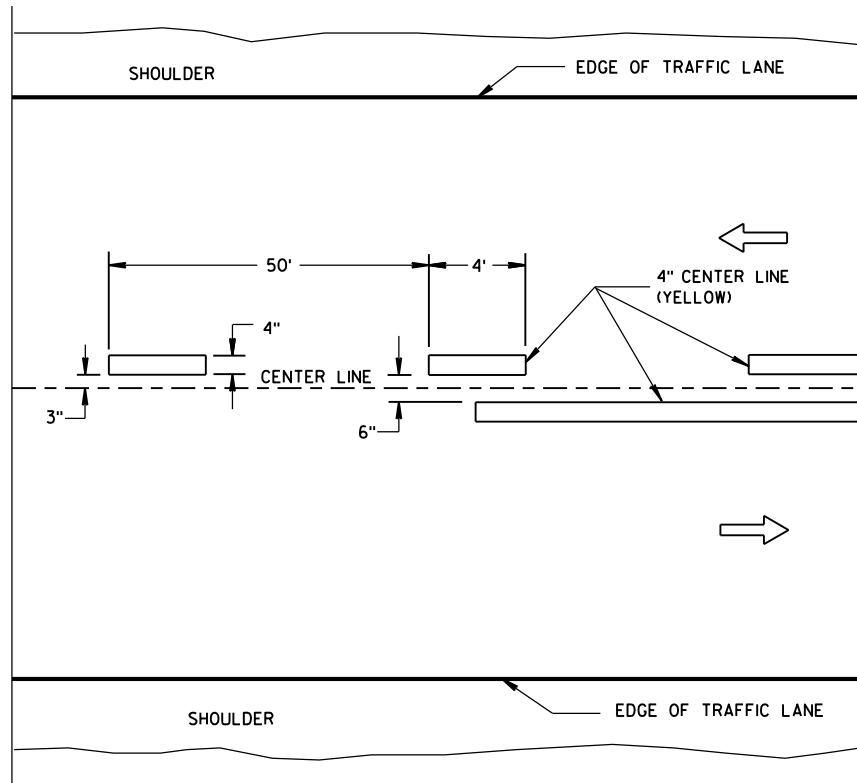


TWO WAY TRAFFIC

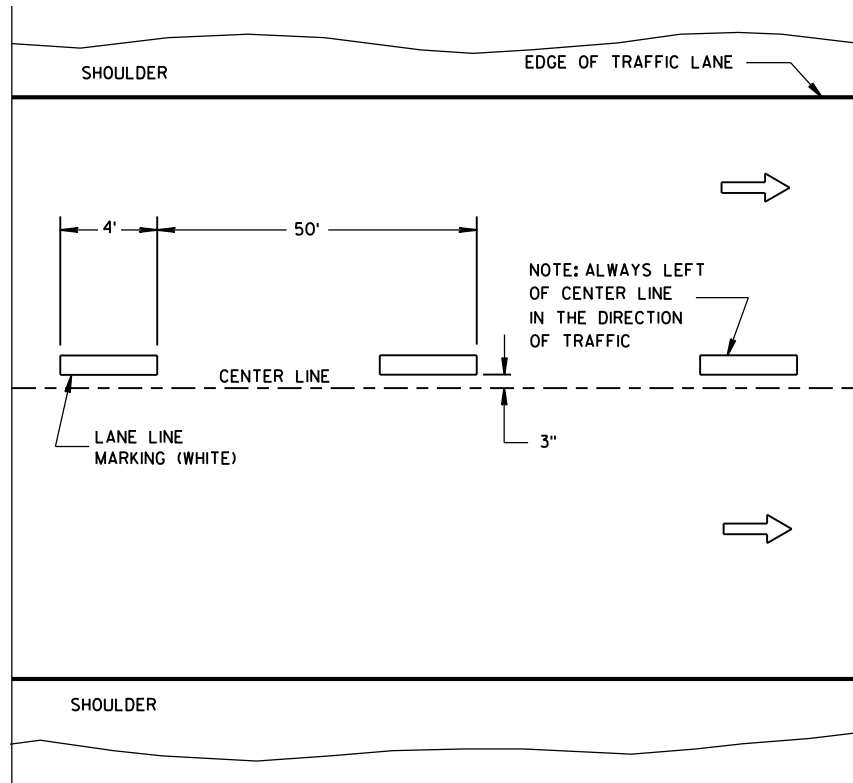


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

—●— "T" MARKING

● POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

LEGEND

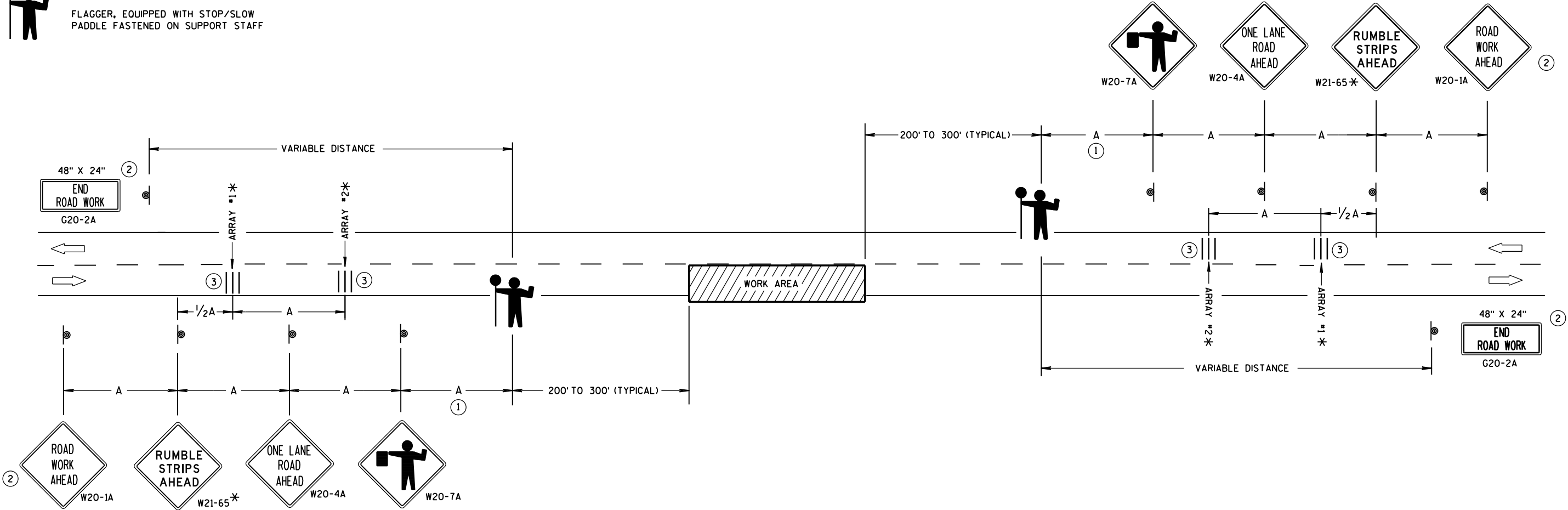
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



USE OF THE "BE PREPARED TO STOP" 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

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.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE 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.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

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 RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- * UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.
- ① FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT 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.
- ③ EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 /S/ Andrew Heldtke
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 AS APPROVED BY THE ENGINEER.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

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

TABLE A

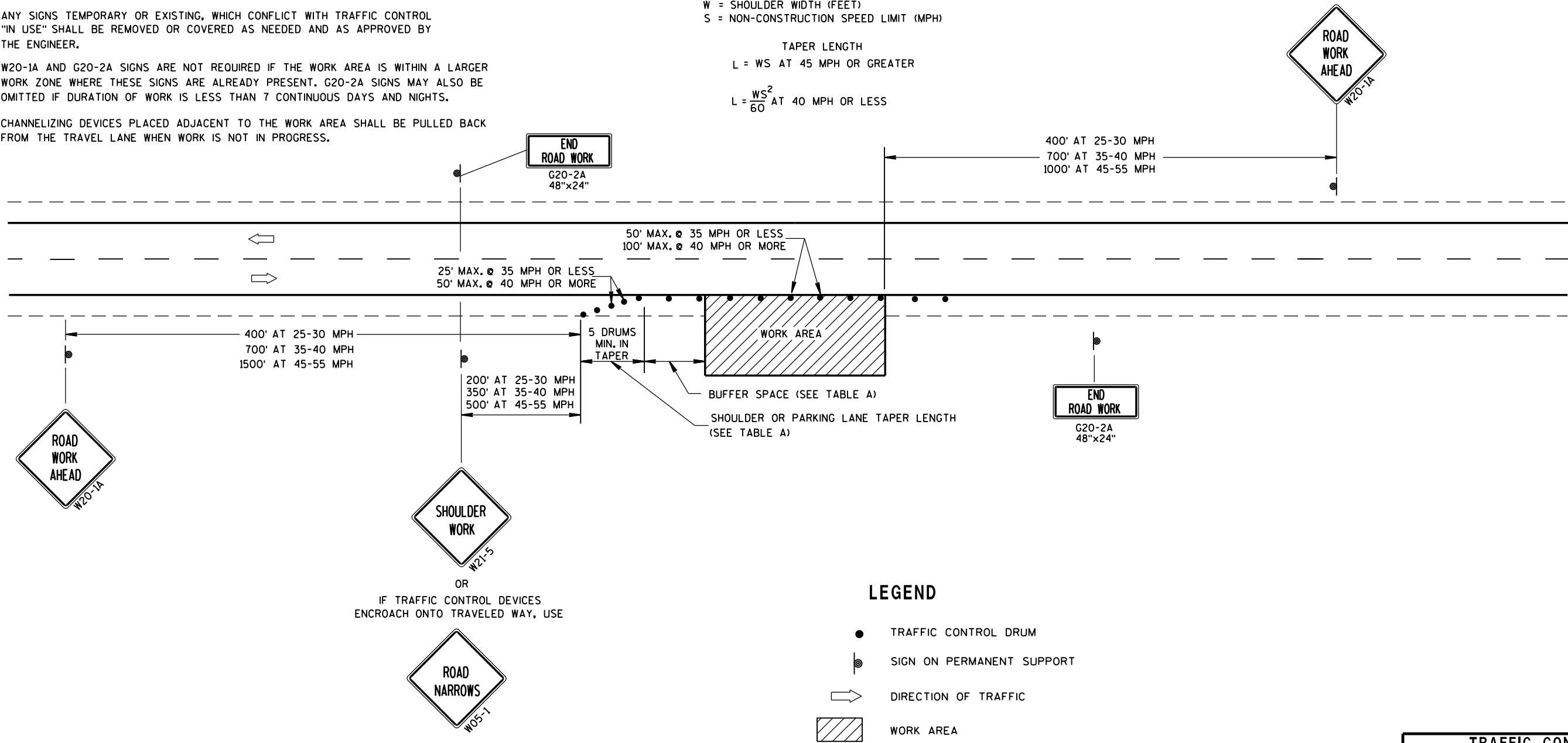
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH
L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

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

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 14, 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC
- 4" X 6" WOOD POST
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET.)

GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.

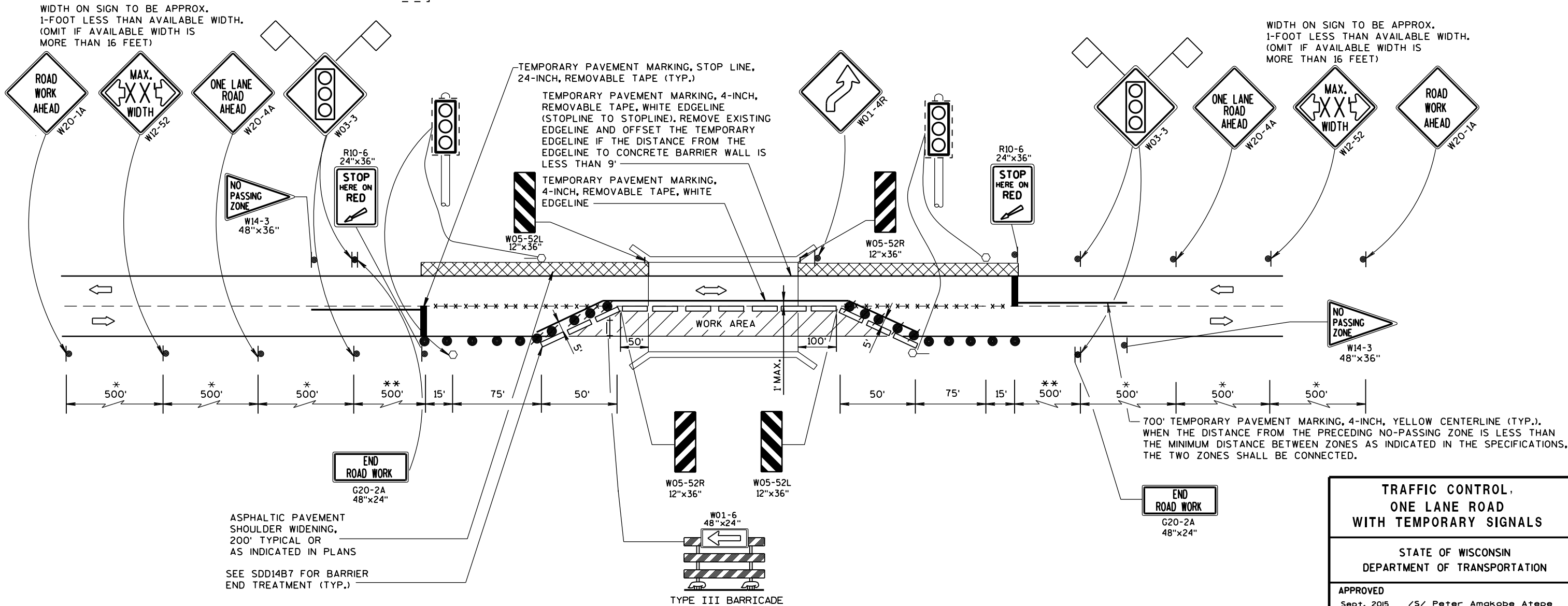
PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350-FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200-FOOT TYPICAL SPACING.

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.

6

S.D.D. 15 D 33-4



6

S.D.D. 15 D 33-4

TRAFFIC CONTROL,
ONE LANE ROAD
WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

THE UPPER LIMITS OF THE "EXCAVATION FOR STRUCTURES CULVERTS C-63-13" SHALL BE THE EXISTING GROUND LINE.

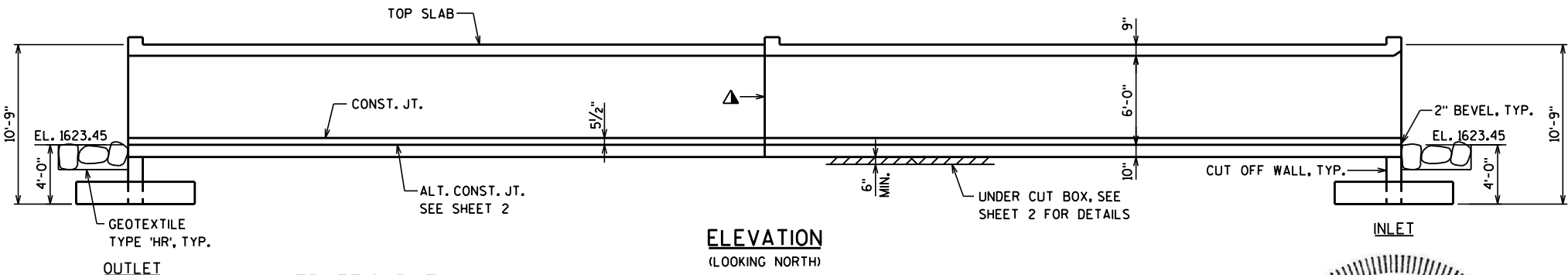
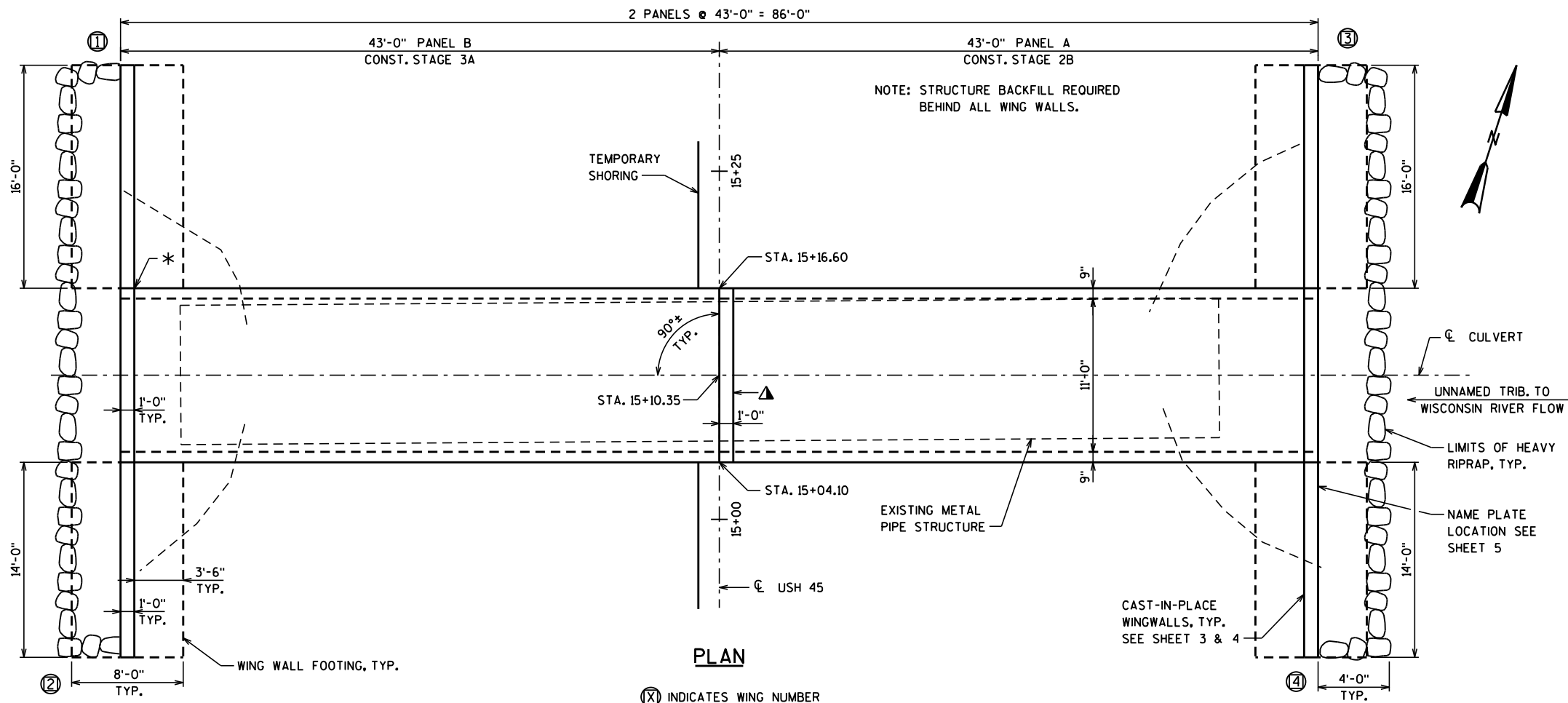
WITHIN THE LENGTH OF THE BOX ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE ELEVATION AND SECTION EXISTING PRIOR TO EXCAVATION WITHIN THE LENGTH OF THE CULVERT.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE APPROVAL OF THE STRUCTURES DESIGN SECTION. THE PRECAST STRUCTURE SHALL CONFORM TO PRECAST DETAILS IN CHAPTER 36 STANDARDS OF THE CURRENT WISCONSIN DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES". ALL PRECAST BOX SECTIONS SHALL BE PLACED ON A BEDDING OF "STRUCTURE BACKFILL TYPE B" OF 6" MINIMUM DEPTH.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

FOUNDATION DATA

WINGWALLS TO BE SUPPORTED ON SPREAD FOOTINGS WITH A MAXIMUM ALLOWABLE BEARING PRESSURE OF 2,000 PSF.



TRAFFIC DATA

ADT = 4,500 (2017)
5,800 (2037)
RDS = 60 M.P.H.

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	TOTAL
203.0200	REMOVING OLD STRUCTURE STA 15+10	LS	1
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-63-13	LS	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	460
504.0100	CONCRETE MASONRY CULVERTS	CY	141
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	16,980
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	3,160
511.1100	TEMPORARY SHORING	SF	1,400
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	20
606.0300	RIPRAP HEAVY	CY	30
645.0105	GEOTEXTILE TYPE C	SY	177
645.0120	GEOTEXTILE TYPE HR	SY	57
NON-BID ITEMS			
	FILLER	SIZE	3/4"

NOTES

(X) INDICATES WING NUMBER

* SEE CORNER DETAILS SHT. 5, TYP.

▲ VERTICAL CONSTRUCTION JOINT (TYP.); 18" MIN. RMW UP WALLS & ACROSS TOP SLAB

HYDRAULIC DATA

100 YEAR FREQUENCY

Q₁₀₀ ————— 35 C.F.S.
VELOCITY ————— 1.87 F.P.S.
HIGH WATER — EL. 1626.42 (100 YEAR)
WATERWAY AREA — N/A S.F.
DRAINAGE AREA — 1.58 SQ. MILES
OVERTOPPING FREQUENCY = N/A
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

Q₂ ————— 14 C.F.S.
HIGH WATER — EL. 1625.93 (2 YEAR)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING ————— HL-93
INVENTORY RATING FACTOR — RF = 1.05
OPERATING RATING FACTOR — RF = 1.35
WISCONSIN STANDARD
PERMIT VEHICLE (Wis-SPV) — 255 KIPS

EARTH LOAD:

DESIGNED FOR 2.5 TO 3.5 FEET OF FILL.

MATERIAL PROPERTIES:

CONCRETE MASONRY GRADE A-FA — f'_c = 3,500 P.S.I.
HIGH STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 — f_y = 60,000 P.S.I.

LIST OF DRAWINGS

1. LAYOUT
2. BOX DETAILS
3. DOWNSTREAM WING DETAILS
4. UPSTREAM WING DETAILS
5. DETAILS
6. SUBSURFACE EXPLORATION

CONSULTANT CONTACT

KRIS OLSON
OMNI ASSOCIATES, INC.
(920) 735-6900

BRIDGE OFFICE CONTACT

WILLIAM DREHER
(608) 266-8489

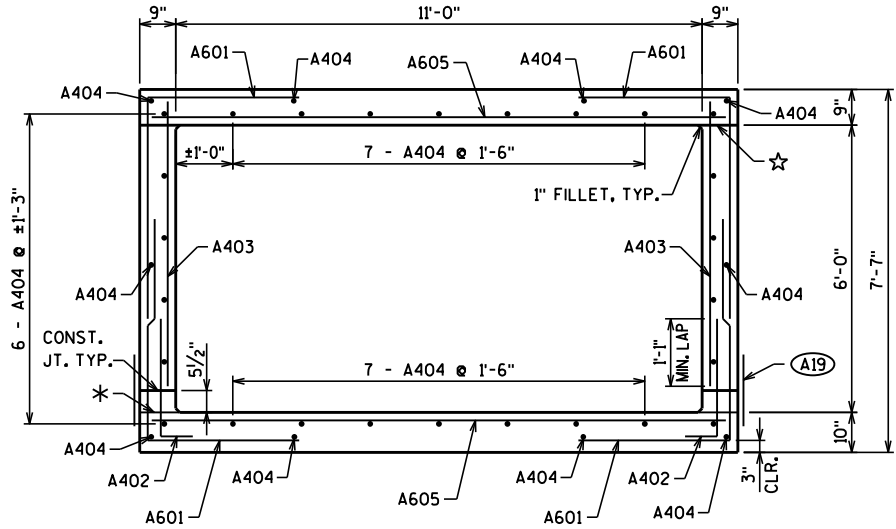
NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
Omni ASSOCIATES			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>William C. Dreher</i>	03/20/17	DATE
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE C-63-13			
USH 45 OVER UNNAMED TRIBUTARY			
COUNTY	VILAS	TOWN	CONOVER
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS	LOAD	HL-93
DESIGNED BY	BRE	CK'D.	KRO
DRAWN BY	BRE	CK'D.	KRO
LAYOUT			SHEET 1 OF 6

BILL OF BARS

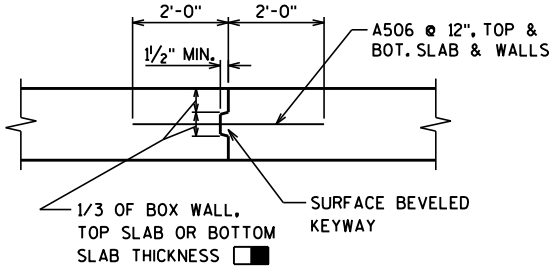
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A601		592	7'-8"	X	CORNERS
A402		176	2'-9"	X	WALLS - DOWEL VERT.
A403		176	6'-0"		WALLS - VERT.
A404		72	42'-8"		TOP & BOT. SLAB & WALL
A605		296	12'-2"		TOP & BOT. SLAB TRANS.
A506		38	4'-0"		VERT. CONST. JOINT
A307		34	2'-8"	X	HEADERS STIRRUPS VERT. OUTLET
A408		6	12'-2"		HEADERS HORIZ.
A309		17	2'-4"	X	HEADER STIRRUP VERT. INLET

LEGEND

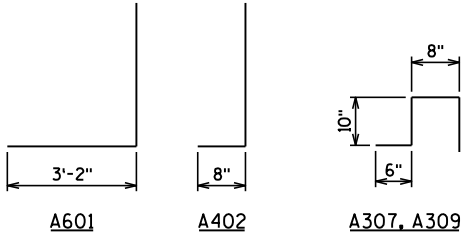
- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- (A19) PLACE AN 18" (MIN.) WIDE SHEET OF "RUBBERIZED MEMBRANE WATERPROOFING" ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.
- ☆ OPTIONAL CONST. JOINT. OMIT 1" FILLET IF OPTIONAL CONST. JOINT IS USED.
- * ALTERNATE CONST. JOINT. OMIT 1" FILLET IF ALTERNATE CONST. JOINT IS USED.
- ① UNDER CUT BOX AND APRONS 6" (INCLUDED IN EXCAVATION FOR STRUCTURES), PLACE GEOTEXTILE FABRIC TYPE 'C', AND BACKFILL WITH STRUCTURE BACKFILL TYPE B. EXTEND 3'-0" BEYOND THE FOOTPRINT OF THE CULVERT.
- IN LIEU OF CONSTRUCTION JOINTS IN THE BOTTOM SLAB, THE CONTRACTOR MAY USE 2" DEEP SAW CUTS WITHIN 12 HOURS AFTER POURING.



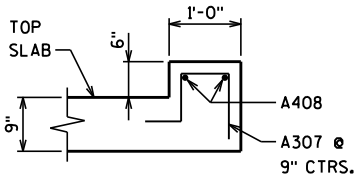
TYPICAL SECTION THRU BOX



VERTICAL CONSTRUCTION JOINT

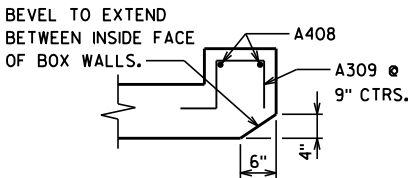


BAR BEND DIAGRAMS

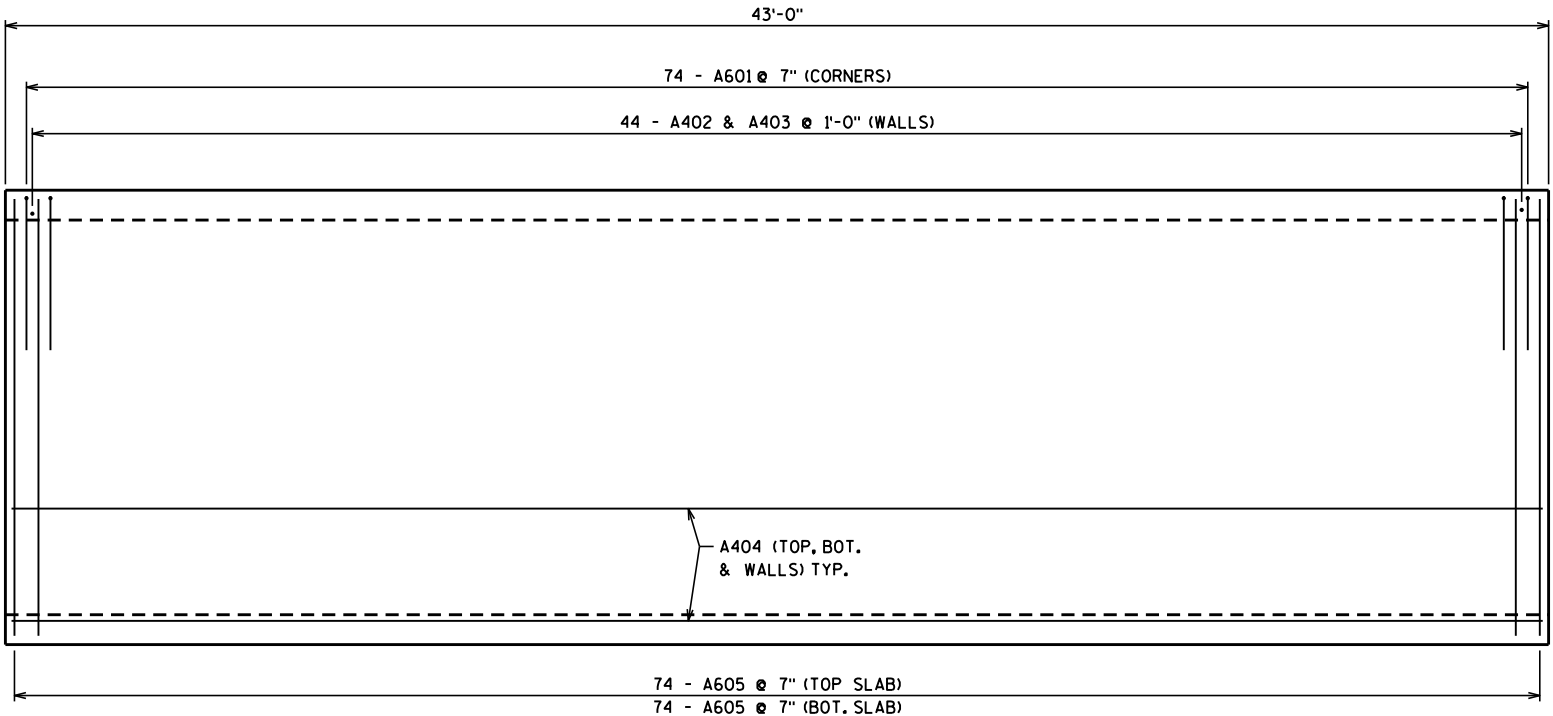


SECTION THRU TOP HEADER

AT OUTLET & C/L JOINT

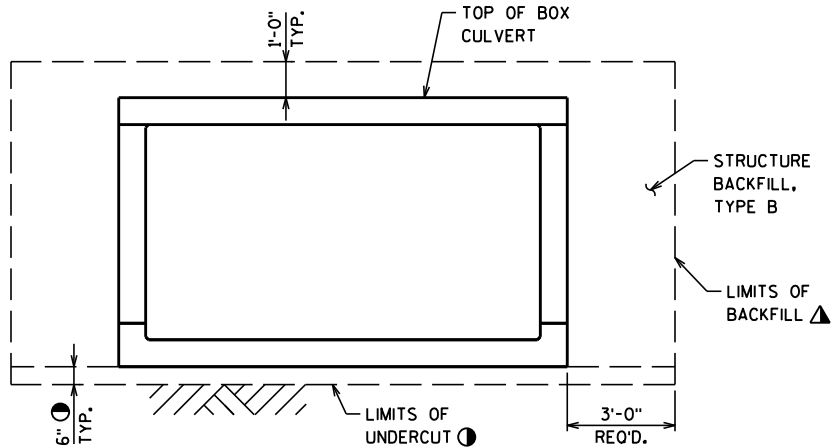


SECTION THRU HEADER AT INLET



PLAN VIEW OF PANEL

HEADERS NOT SHOWN FOR CLARITY.



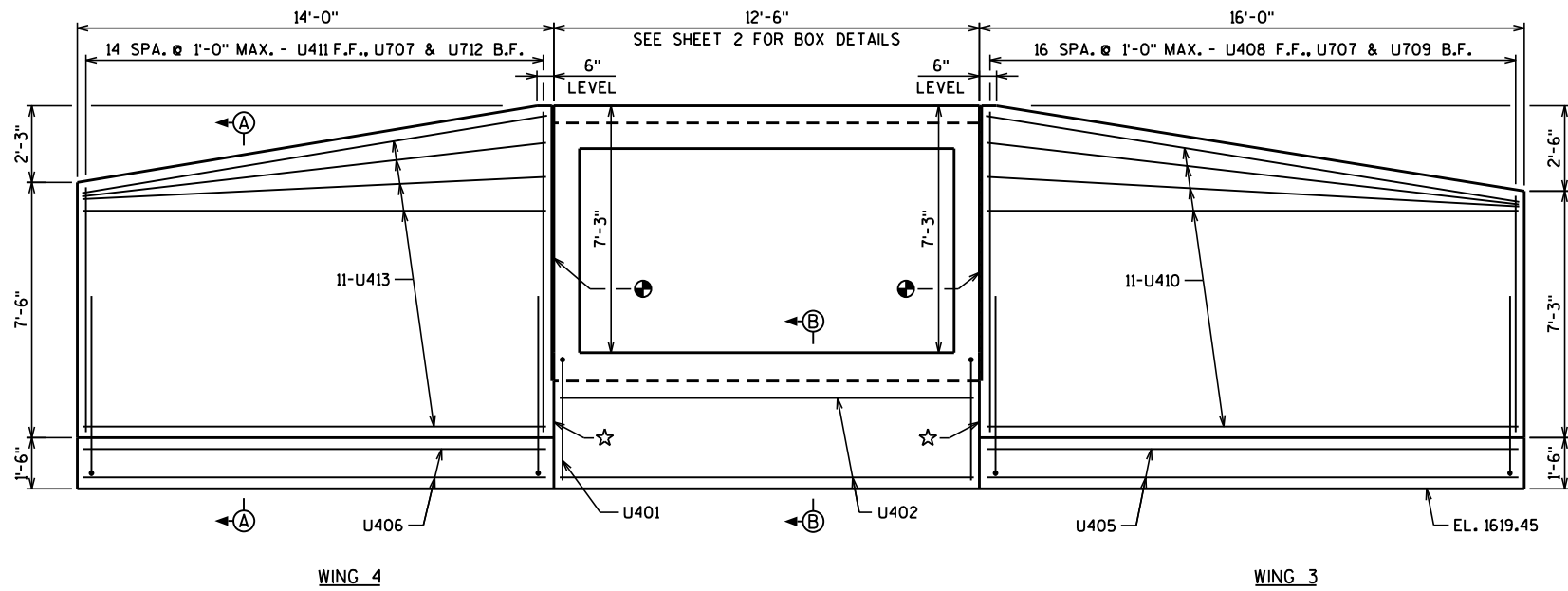
TYPICAL SECTION THRU BOX CULVERT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-63-13			
DRAWN BY		BRE	PLANS CK'D. KRO
BOX DETAILS		SHEET 2 OF 6	



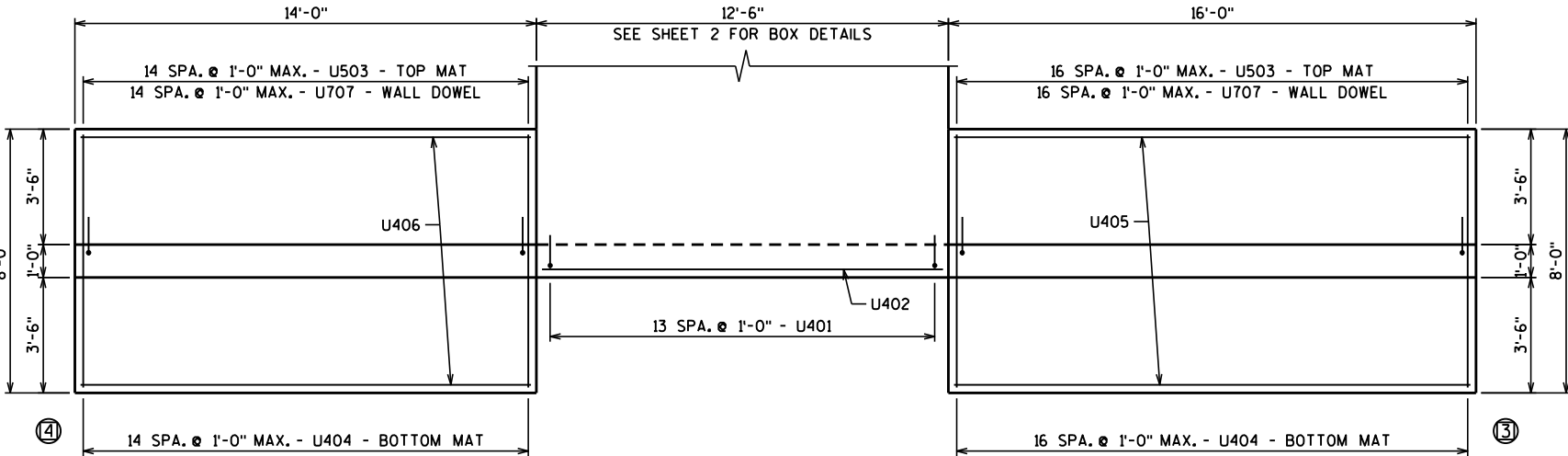
- △ CONSTRUCTION JOINT FORMED BY BEVELED 2"x4",
TYP. AT CENTER OF STEM.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-63-13			
DRAWN BY		BRE	PLANS CK'D. KRO
DOWNSTREAM WING DETAILS		SHEET 3 OF 6	

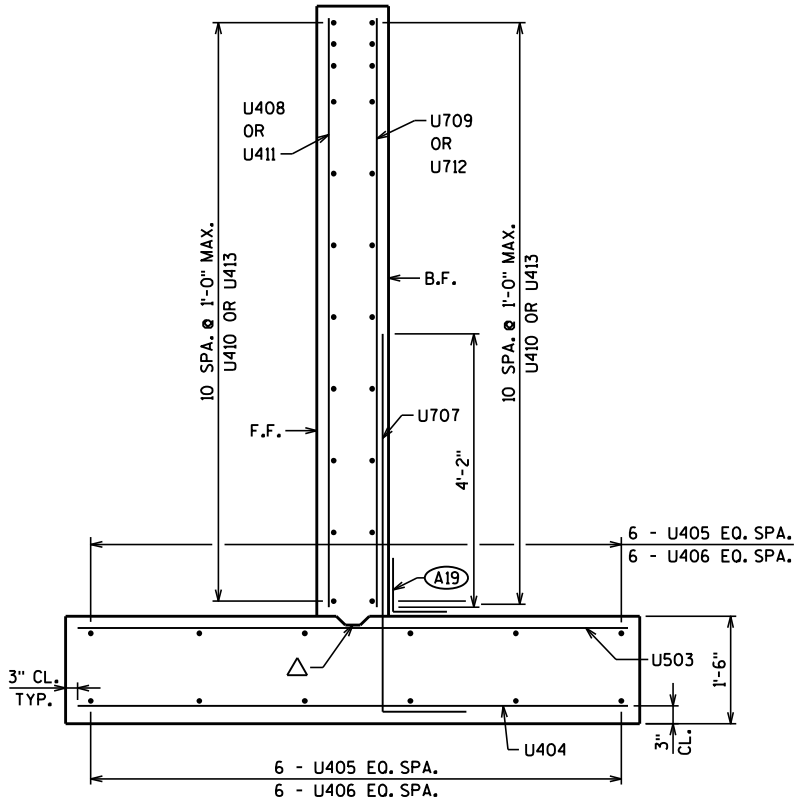


UPSTREAM WINGWALLS ELEVATION

LOOKING DOWNSTREAM AT FRONT FACE

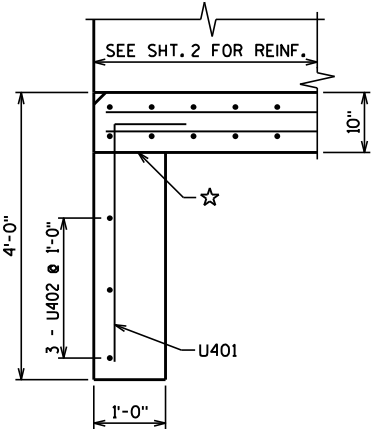


UPSTREAM FOOTING PLAN



SECTION A-A

SECTION THRU WING 3 & 4



SECTION B-B

SECTION THRU CUTOFF WALL

NOTES

☆ OPTIONAL CONSTRUCTION JOINT

⊕ 3/4" FILLER INCLUDED IN WING LENGTH TO EXTEND FROM BOTTOM OF BOX TO TOP OF WING.

① 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

△ CONSTRUCTION JOINT FORMED BY BEVELED 2"x4", TYP. AT CENTER OF STEM.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-63-13			
DRAWN BY		BRE	PLANS CK'D. KRO
UPSTREAM WING DETAILS		SHEET 4 OF 6	

BILL OF BARS

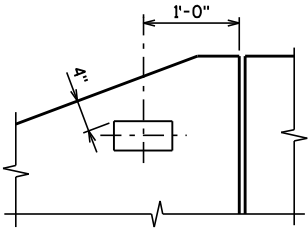
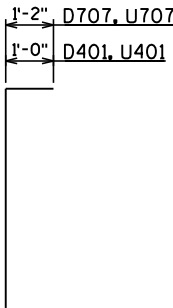
BAR MARK	COAT	NO. REQ'D.	LENGTH	SERIES	BENT	LOCATION
D401		13	4'-6"		X	OUTLET CUTOFF WALL VERT.
D402		3	12'-0"			OUTLET CUTOFF WALL HORIZ.
D503		32	7'-6"			FOOTINGS TOP HORIZ.
D404		32	7'-6"			FOOTINGS BOTTOM HORIZ.
D405		12	15'-6"			FOOTING WING 1 HORIZ.
D406		12	13'-6"			FOOTING WING 2 HORIZ.
D707	X	32	6'-7"		X	FOOTING DOWEL, VERT.
D408	X	17	8'-3"	△		WING 1 VERT. F.F.
D709	X	17	8'-3"	△		WING 1 VERT. B.F.
D410	X	22	15'-7"			WING 1 HORIZ.
D411	X	15	8'-4"	△		WING 2 VERT. F.F.
D712	X	15	8'-4"	△		WING 2 VERT. B.F.
D413	X	22	13'-7"			WING 2 HORIZ.
U401		13	4'-6"		X	INLET CUTOFF WALL VERT.
U402		3	12'-0"			INLET CUTOFF WALL HORIZ.
U503		32	7'-6"			FOOTINGS TOP HORIZ.
U404		32	7'-6"			FOOTINGS BOTTOM HORIZ.
U405		12	15'-6"			FOOTING WING 3 HORIZ.
U406		12	13'-6"			FOOTING WING 4 HORIZ.
U707	X	32	6'-7"		X	FOOTING DOWEL, VERT.
U408	X	17	8'-3"	△		WING 3 VERT. F.F.
U709	X	17	8'-3"	△		WING 3 VERT. B.F.
U410	X	22	15'-7"			WING 3 HORIZ.
U411	X	15	8'-4"	△		WING 4 VERT. F.F.
U712	X	15	8'-4"	△		WING 4 VERT. B.F.
U413	X	22	13'-7"			WING 4 HORIZ.

△ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

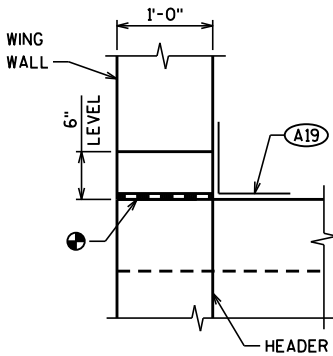
BAR SERIES TABLE

BAR NO.	NO. REQ'D.	LENGTH
D408	1 SERIES OF 17	7'-0" TO 9'-6"
D709	1 SERIES OF 17	7'-0" TO 9'-6"
D411	1 SERIES OF 15	7'-2" TO 9'-6"
D712	1 SERIES OF 15	7'-2" TO 9'-6"
U408	1 SERIES OF 17	7'-0" TO 9'-6"
U709	1 SERIES OF 17	7'-0" TO 9'-6"
U411	1 SERIES OF 15	7'-2" TO 9'-6"
U712	1 SERIES OF 15	7'-2" TO 9'-6"

BAR BEND DIAGRAMS



NAME PLATE
LOCATION WING 4



TYPICAL CORNER DETAIL

- ¾" FILLER TYPICAL. EXTEND FILLER FROM BOTTOM OF BOX TO TOP OF WING.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. FROM BOTTOM OF BOX TO TOP OF WING (FLUSH WITH FACE OF CONCRETE)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-63-13			
DRAWN BY		BRE	PLANS CK'D. KRO
DETAILS		SHEET 5 OF 6	

ABBREVIATIONS
F—Fine M—Medium C—Coarse
Ws—Weathered So—Sound

MATERIAL SYMBOLS
Topsoil Silt Sandstone
Sand Peat Limestone
Gravel Clay Igneous Rock

LEGEND OF PROBING
Probing No.
Sta.
Elevation
95/6=95 Blows for 6"
Penetration
Probing taken with a
350*wt.
Falling 18" on a 2"
O.D. Point.
7 Average Blows Per Foot
Refusal 95/6

LEGEND OF BORING
Boring No.
Sta.
Elev.
Unconfined
Strength
Blows Per Ft.
Using 140* Wt.
Falling 30"
Wash Sample
Shelby Tube — S.T.
Ground Water
Elevation
No Ground Water
Observed Above
This Elevation
Sandy Gravel
F.
Boulders or
Cobbles
Sand
Silty Clay
So
Limestone

Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 0.0.x1.4" I.D. split spoon sampler with a 140* hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

SUBSURFACE EXPLORATION FOR FOUNDATION
DESIGN AND BIDDERS INFORMATION

To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because the depths investigated are limited and the area of the borings and/or soundings is very small in relation to the entire area, the Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessarily typical of the entire site.

NO.	DATE	REVISION	BY
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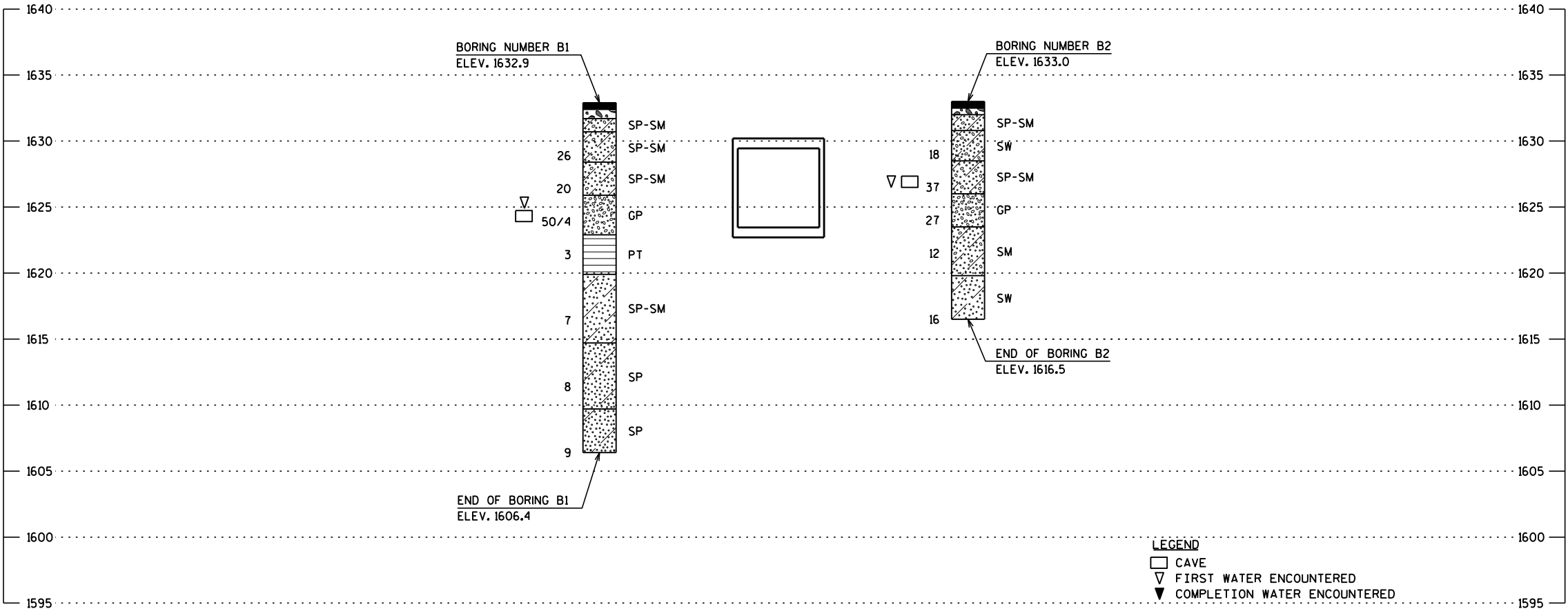
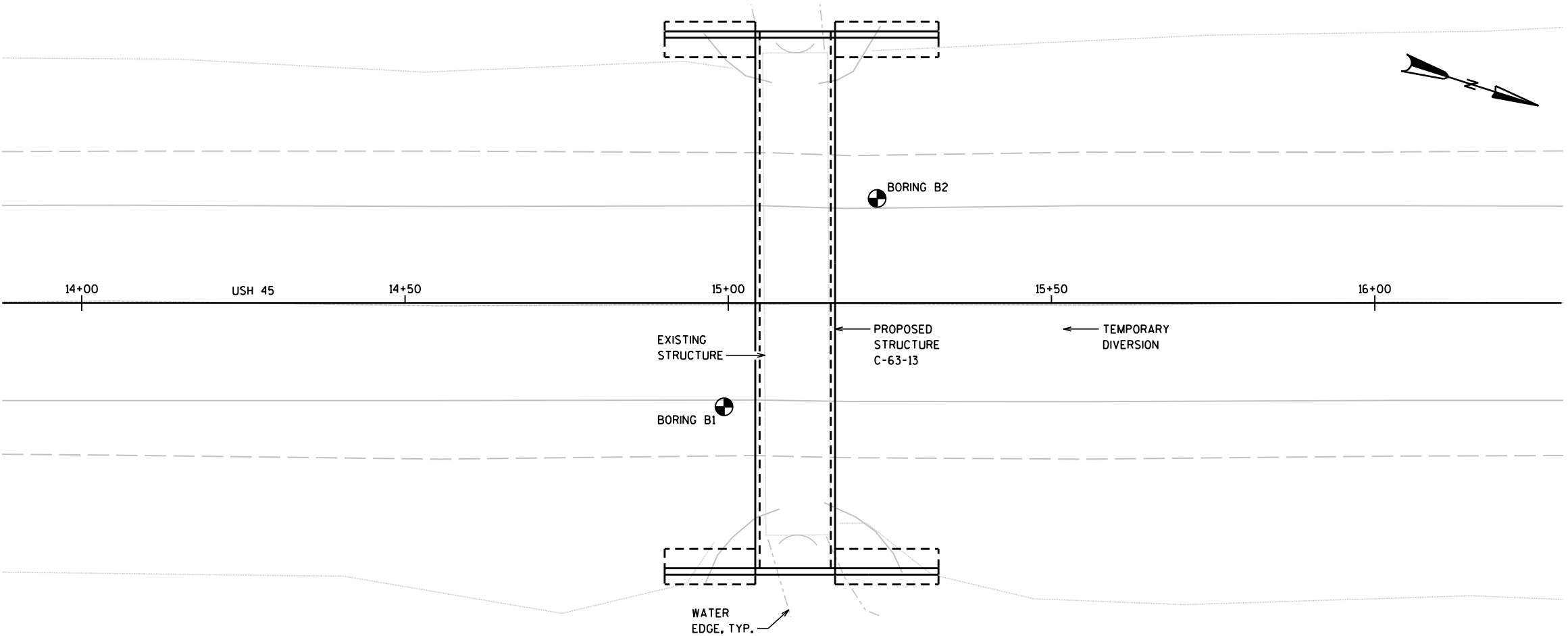
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-63-13

DRAWN BY BRE PLANS CK'D. KRO

SUBSURFACE
EXPLORATION

SHEET 6 OF 6



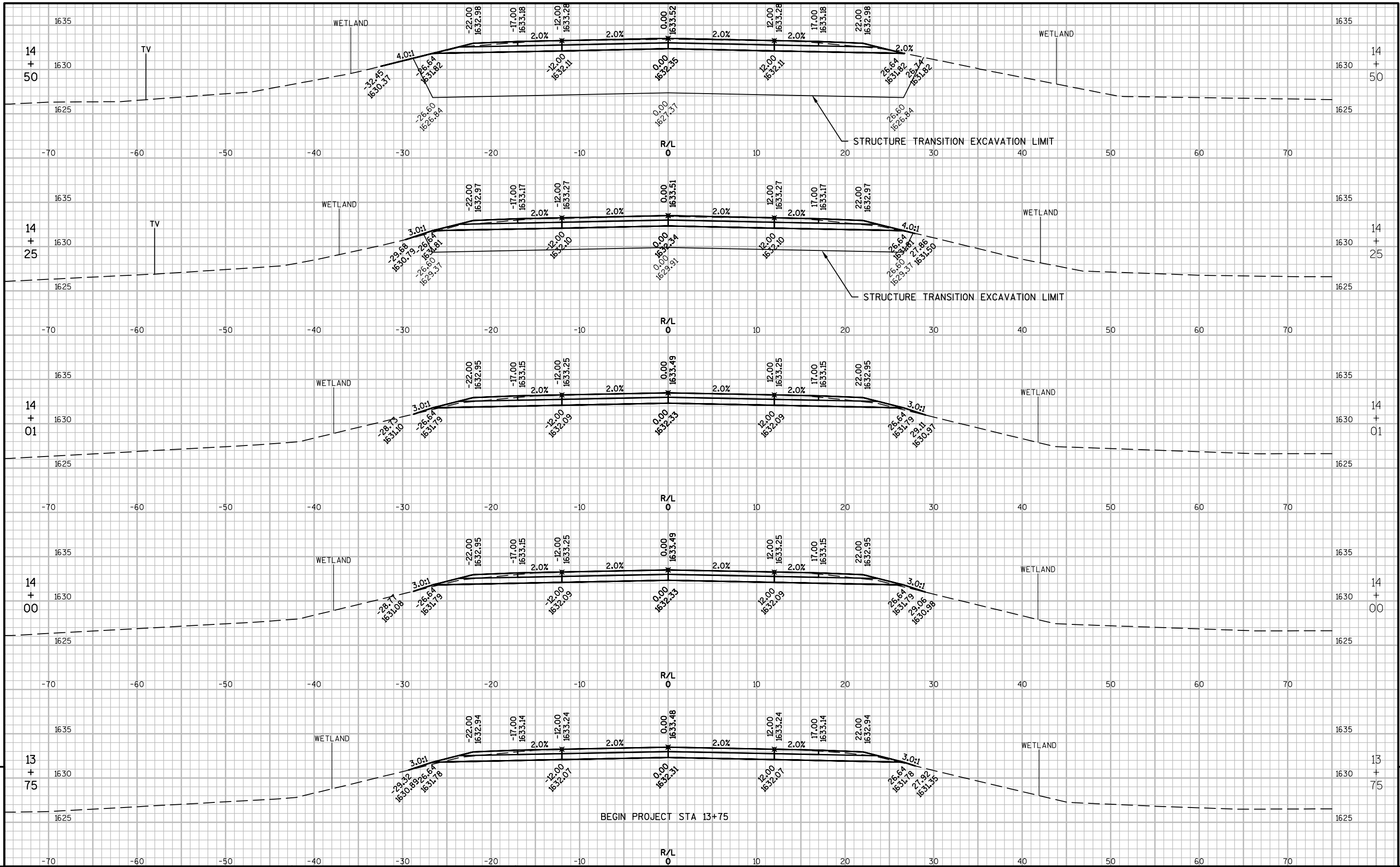
USH 45 - EARTHWORK - CATEGORY 0010

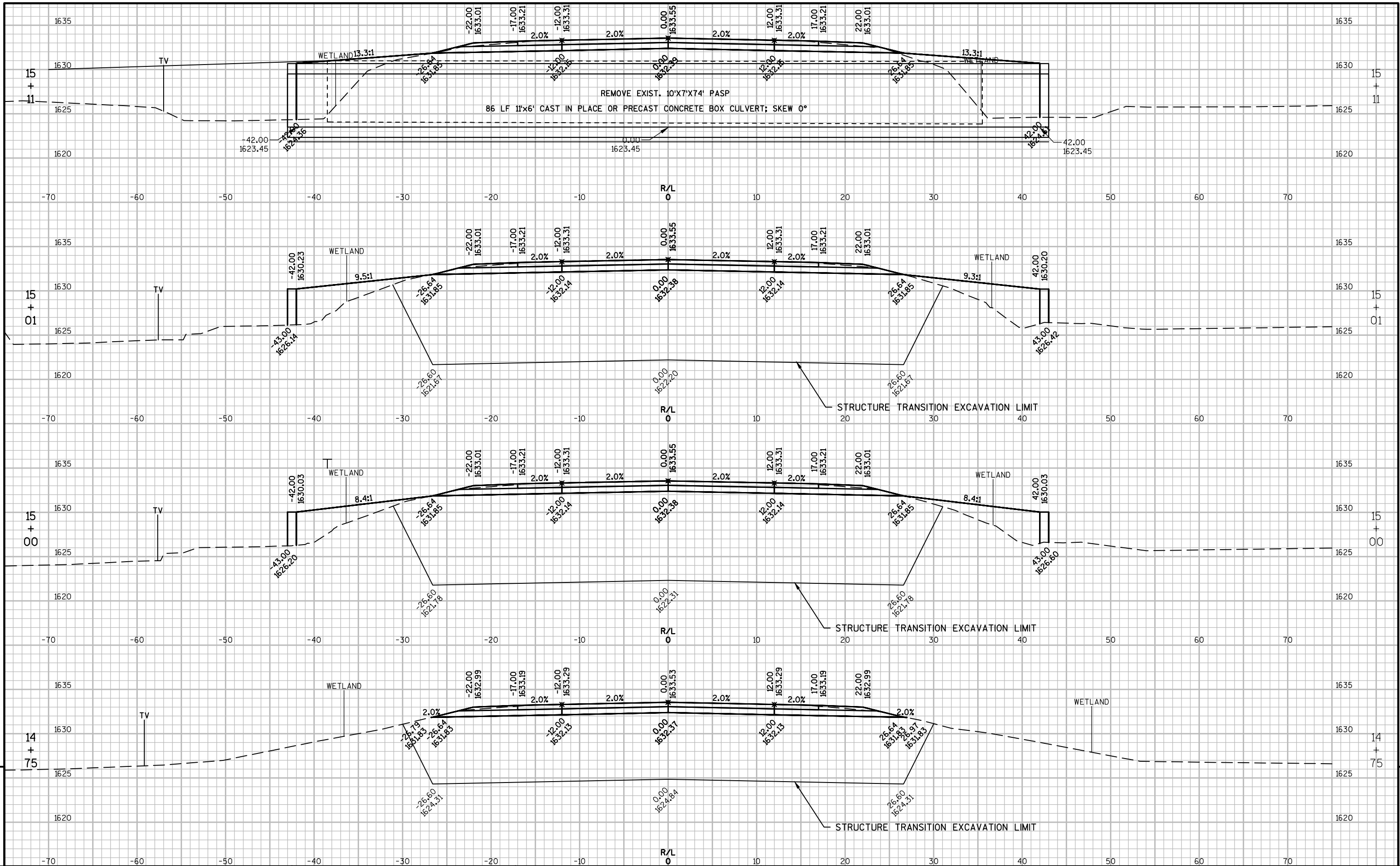
STATION	Real Station	Distance	INCREMENTAL AREA (SF)					INCREMENTAL AREA (SF)					CUMULATIVE VOL (CY)		MASS ORDINATE NOTE 2
			CUT	FILL	Marsh Exc NOTE 5	TRANSITION CUT NOTE 3	TRANSITION FILL NOTE 3	CUT	FILL	Marsh Exc NOTE 5	TRANSITION CUT	TRANSITION FILL	CUT + TRANSITION CUT	EXPANDED FILL	
													FACTOR 1.00	FACTOR 1.15	
START ABRUPTLY															
13+75	1375.00	0.00	50.7	0.5	0.0	0.00	0.00	0	0	0	0	0	0	0	0
14+00	1400.00	25.00	50.1	0.7	0.0	0.00	0.00	47	1	0	0	0	47	1	46
14+01.1	1401.10	1.10	50.1	0.7	0.0	0.00	0.00	2	0	0	0	0	49	1	48
14+25	1425.00	23.90	49.0	0.4	0.0	131.78	131.78	44	1	0	58	58	151	68	83
14+50	1450.00	25.00	50.5	0.1	0.0	275.98	275.98	46	0	0	189	189	386	286	100
14+75	1475.00	25.00	52.9	0.0	0.0	426.05	426.05	48	0	0	325	325	759	660	99
15+00	1500.00	25.00	54.4	51.6	0.0	580.93	580.93	50	24	0	466	466	1,275	1,223	51
15+01.1	1501.10	1.10	54.4	61.2	20.0	587.77	587.77	2	2	0	24	24	1,301	1,253	47
15+10.87	1510.87	9.77	52.5	103.9	20.0	NOTE 4	NOTE 4	19	30	7	0	0	1,320	1,288	32
15+19.6	1519.60	8.73	54.0	73.0	20.0	585.59	585.59	17	29	6	0	0	1,337	1,320	17
15+25	1525.00	5.40	53.4	35.9	30.0	553.94	553.94	11	11	5	114	114	1,462	1,464	-2
15+50	1550.00	25.00	53.3	0.3	50.0	399.93	399.93	49	17	37	442	442	1,953	1,991	-38
15+75	1575.00	25.00	53.1	0.2	0.0	251.10	251.10	49	0	23	301	301	2,303	2,338	-35
16+00	1600.00	25.00	51.8	0.4	0.0	107.88	107.88	49	0	0	166	166	2,518	2,529	-11
16+19.6	1619.60	19.60	52.0	0.3	0.0	0.00	0.00	38	0	0	39	39	2,595	2,575	20
16+25	1625.00	5.40	52.2	0.3	0.0	0.00	0.00	10	0	0	0	0	2,605	2,575	31
16+50	1650.00	25.00	53.0	0.0	0.0	0.00	0.00	49	0	0	0	0	2,654	2,575	79
END ABRUPTLY															

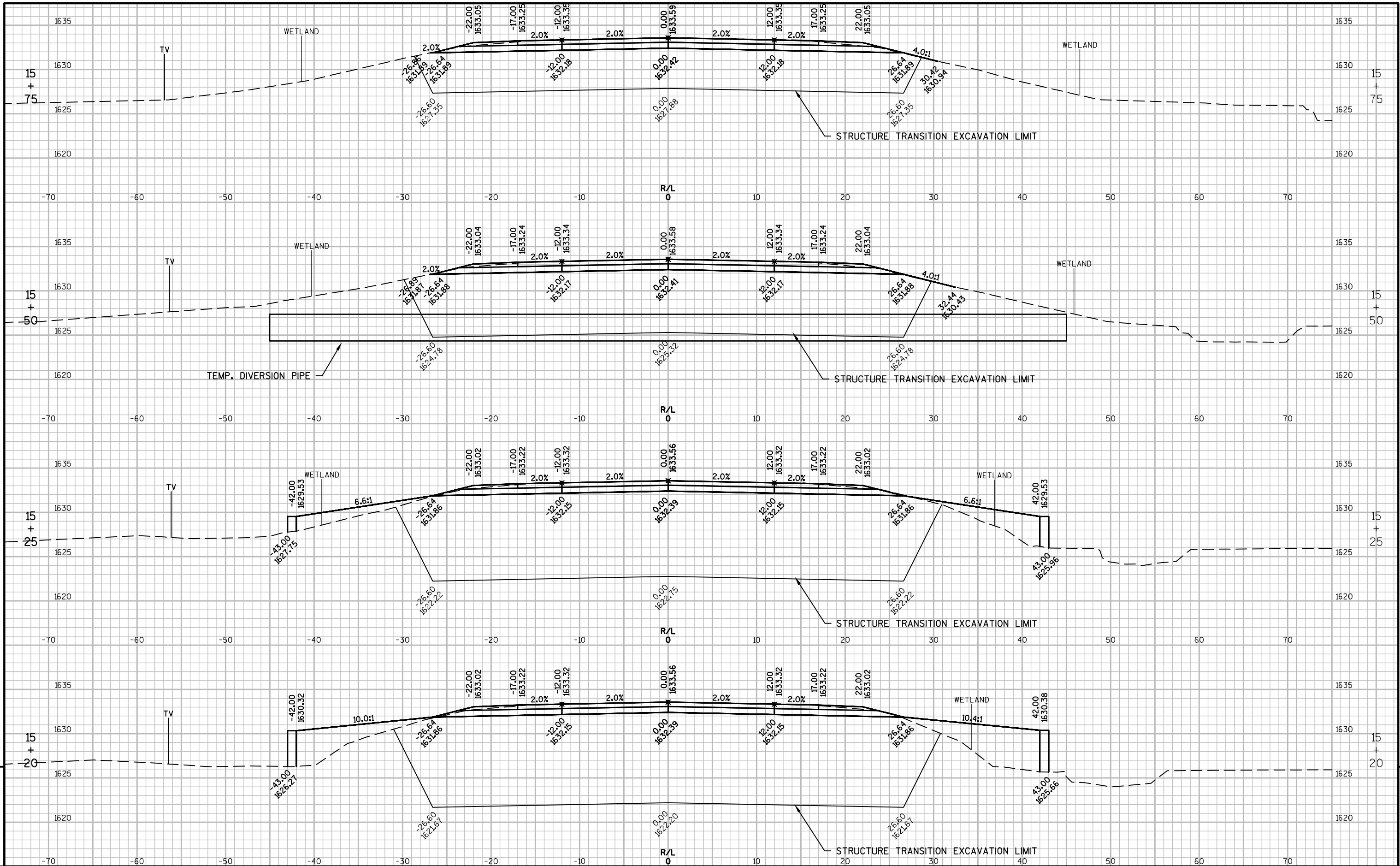
530 115 79 2,124 2,124

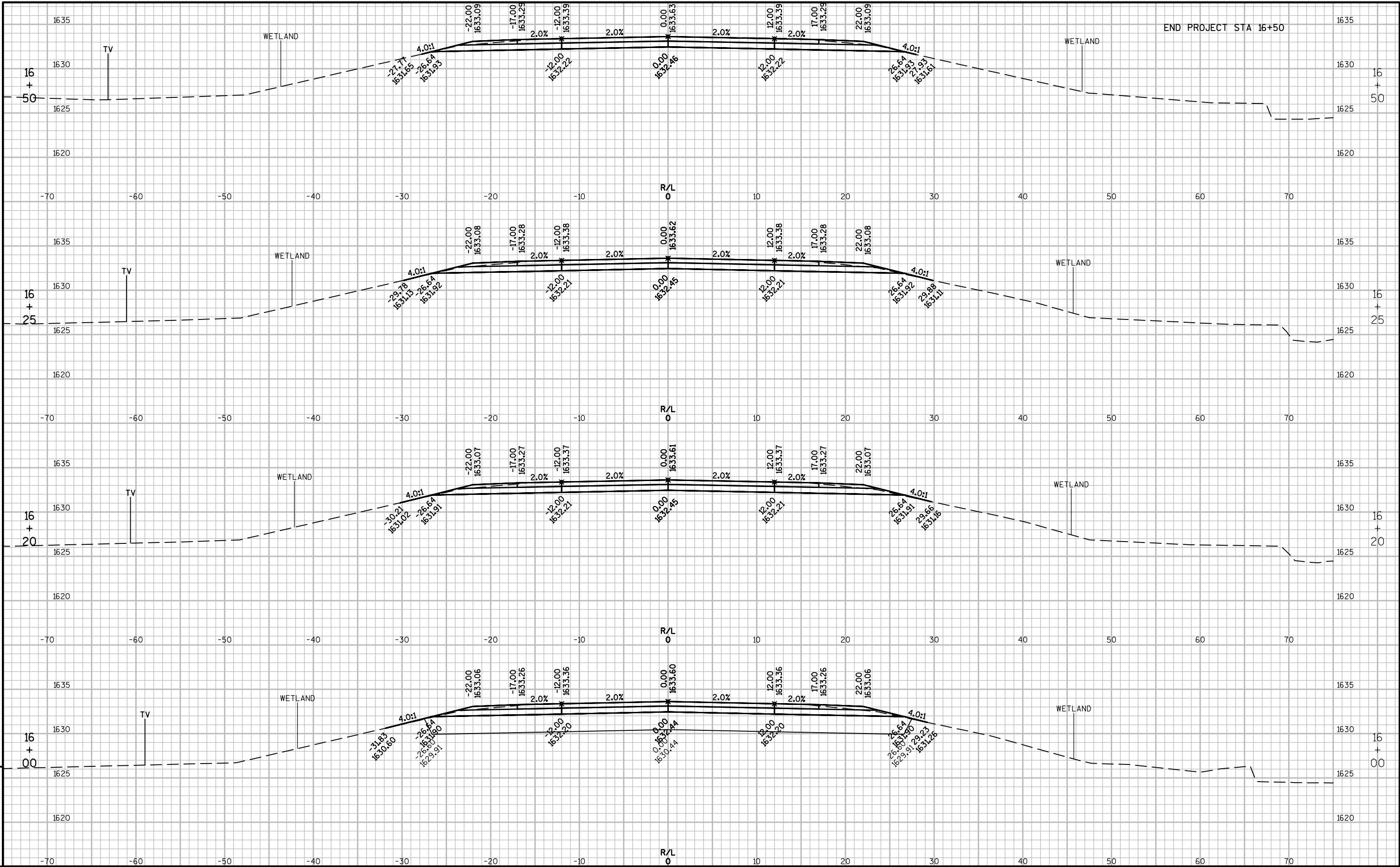
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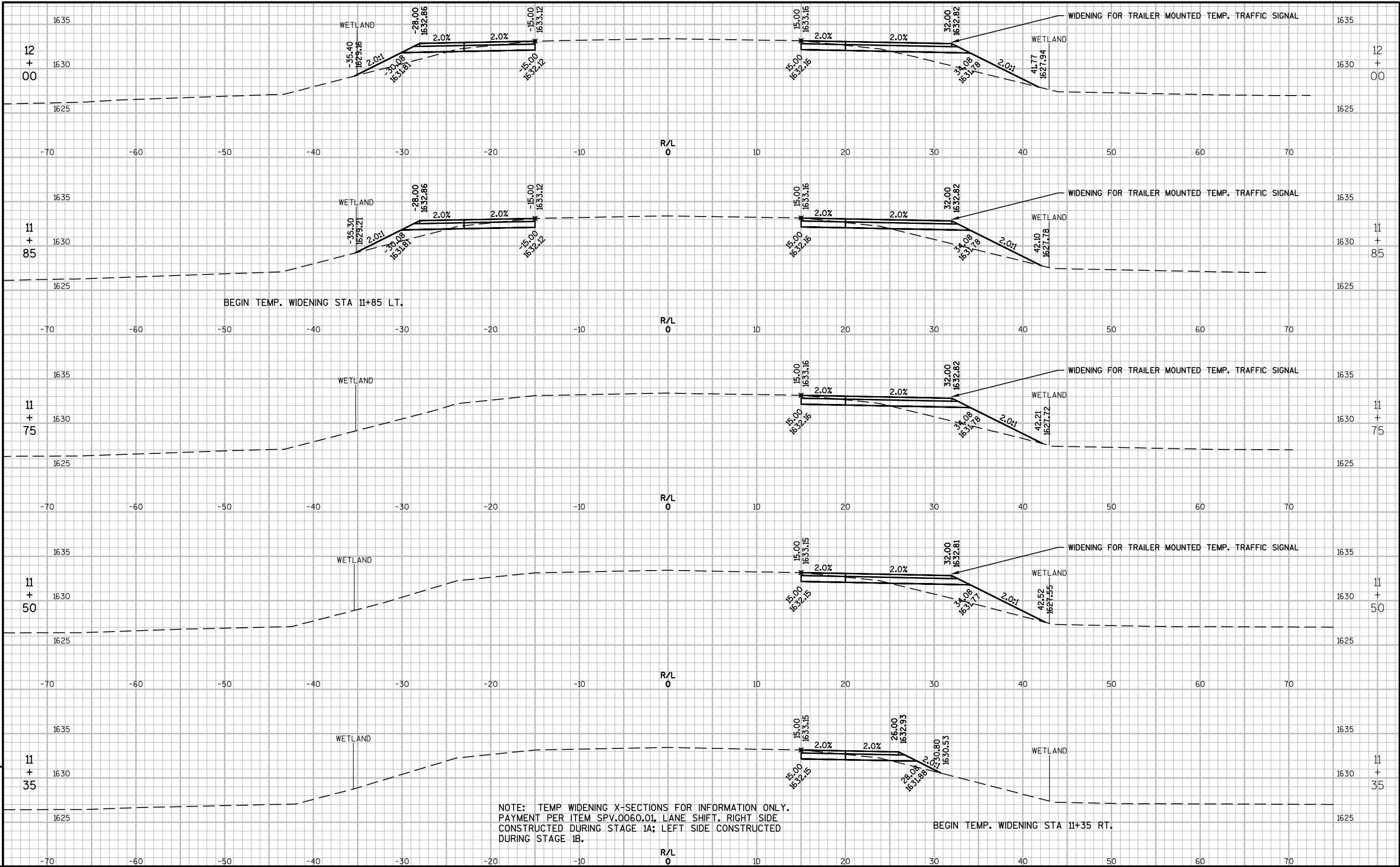
- 1) ALL EXCAVATED ASPHALT MATERIAL ASSUMED USABLE AS FILL
- 2) MASS ORDINATE = CUT - EXPANDED FILL
- 3) TRANSITION CUT IS EXCAVATION COMMON REQUIRED FOR BOX INSTALLATION. SEE BOX CULVERT EXCAVATION AND INSTALLATION DETAIL.
- 4) END TRANSITION CUT ABRUPTLY STA 15+01 AND BEGIN TRANSITION CUT ABRUPTLY 15+19.
- 5) MARSH EXCAVATION QUANTITY SHOWN IN TABLE IS LOCATED IN THE TEMPORARY DIVERSION CHANNEL. MARSH EXCAVATION LOCATED WITHIN THE STRUCTURE EXCAVATION AREA IS PAID FOR UNDER EXCAVATION FOR STRUCTURES CULVERTS C-63-13.

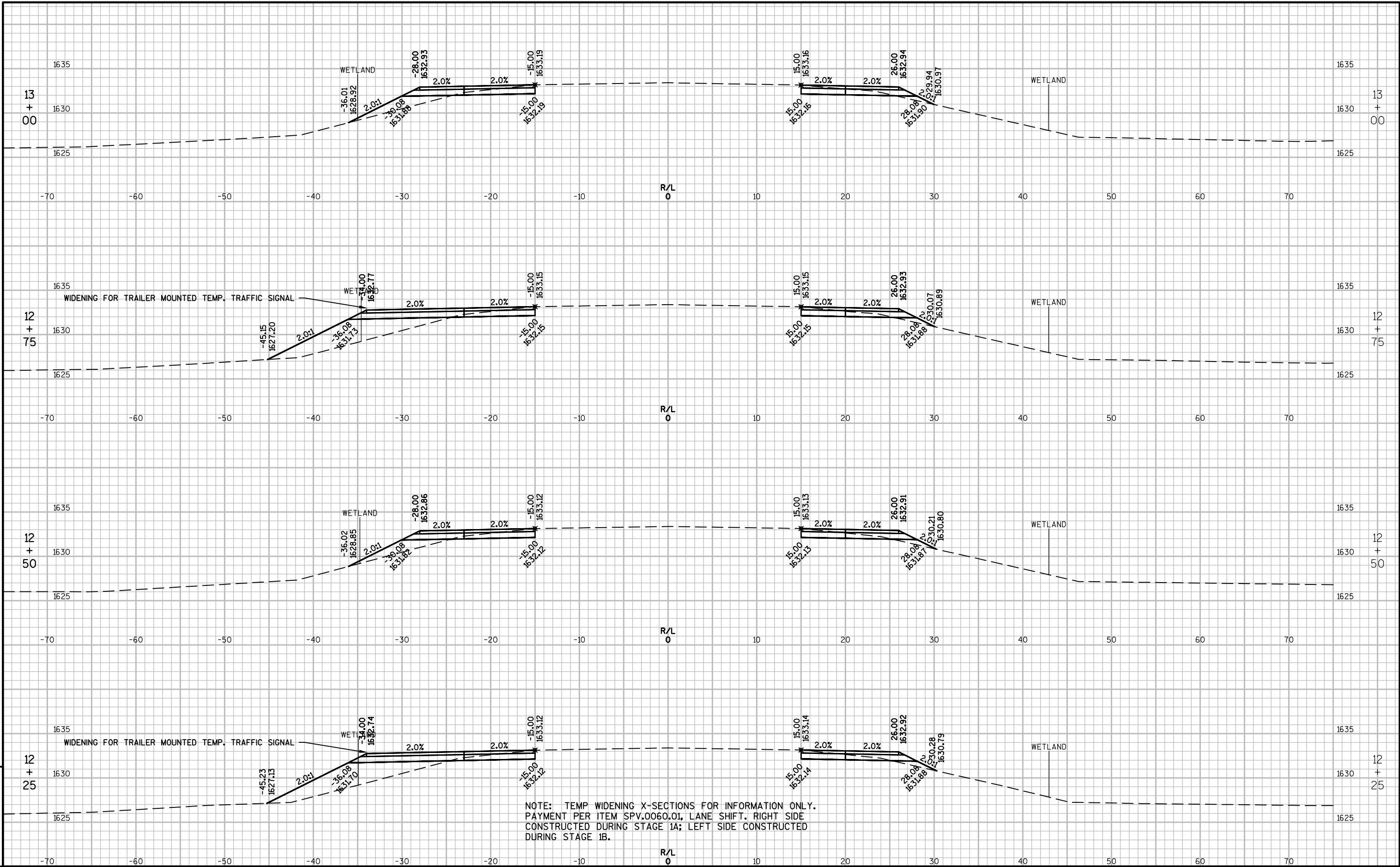


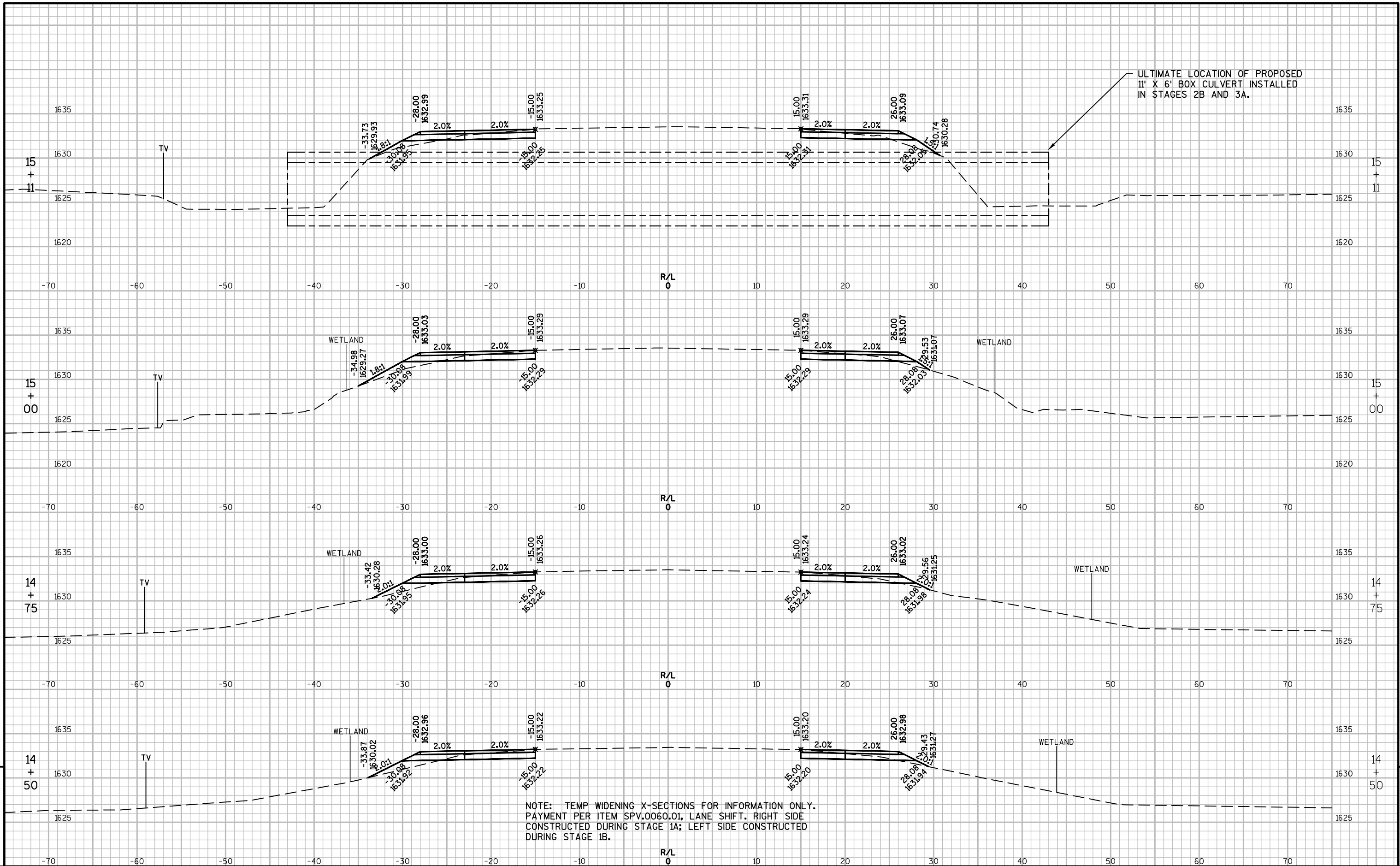


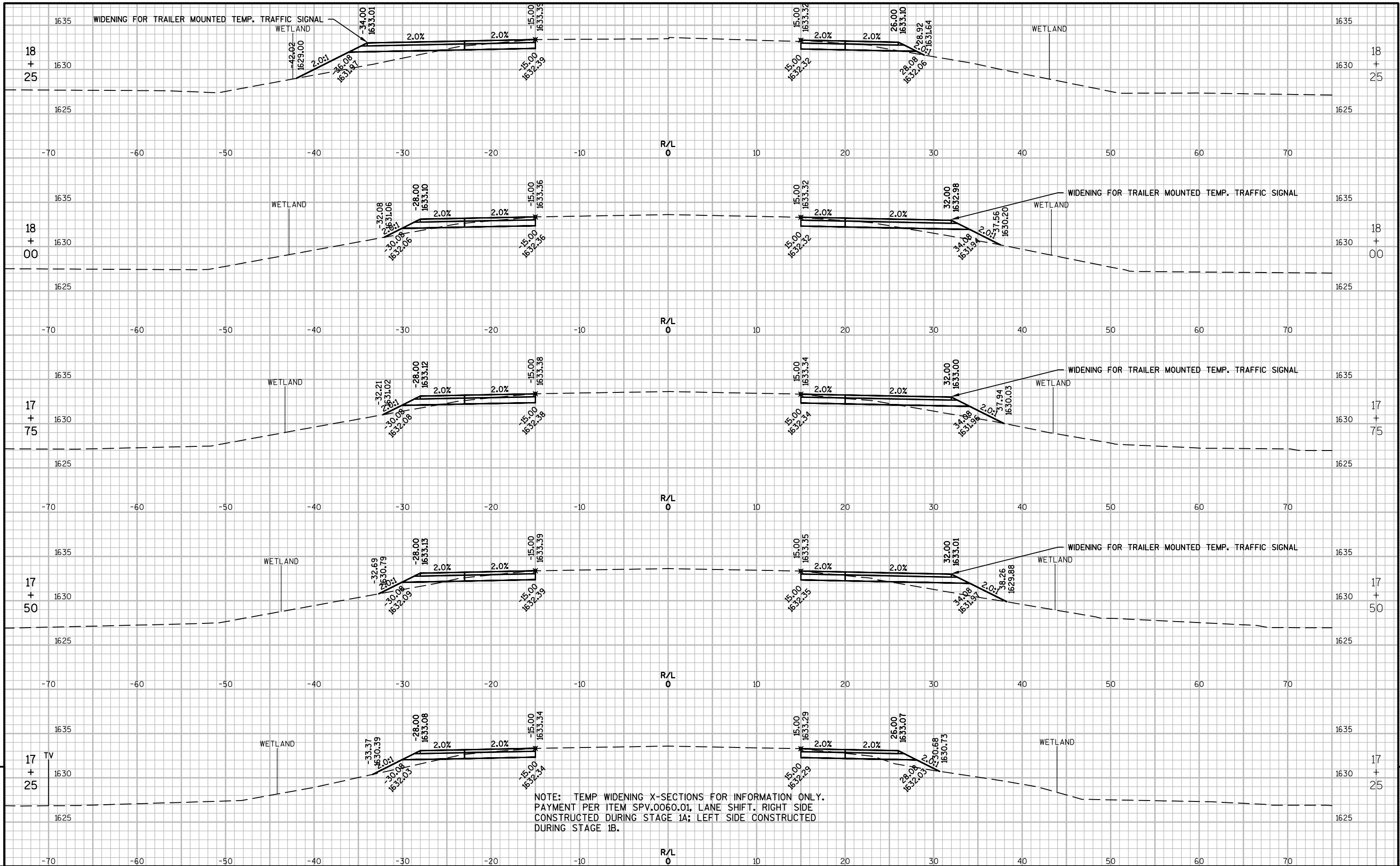














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