

SUP

PROJECT ID:

8827-00-70

COUNTY:

BARRON

APRIL 2020

ORDER OF SHEETS

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

TOTAL SHEETS = 58



DESIGN DESIGNATION

A.A.D.T.	2020	=	750
A.A.D.T.	2040	=	830
D.H.V.		=	83
D.D.		=	50/50
T.		=	10%
DESIGN SPEED		=	55MPH
ESALS		=	<100,000

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

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

ARLAND - HILLSDALE

FOUR MILE CREEK BRIDGE B-03-0211

CTH D
BARRON COUNTY

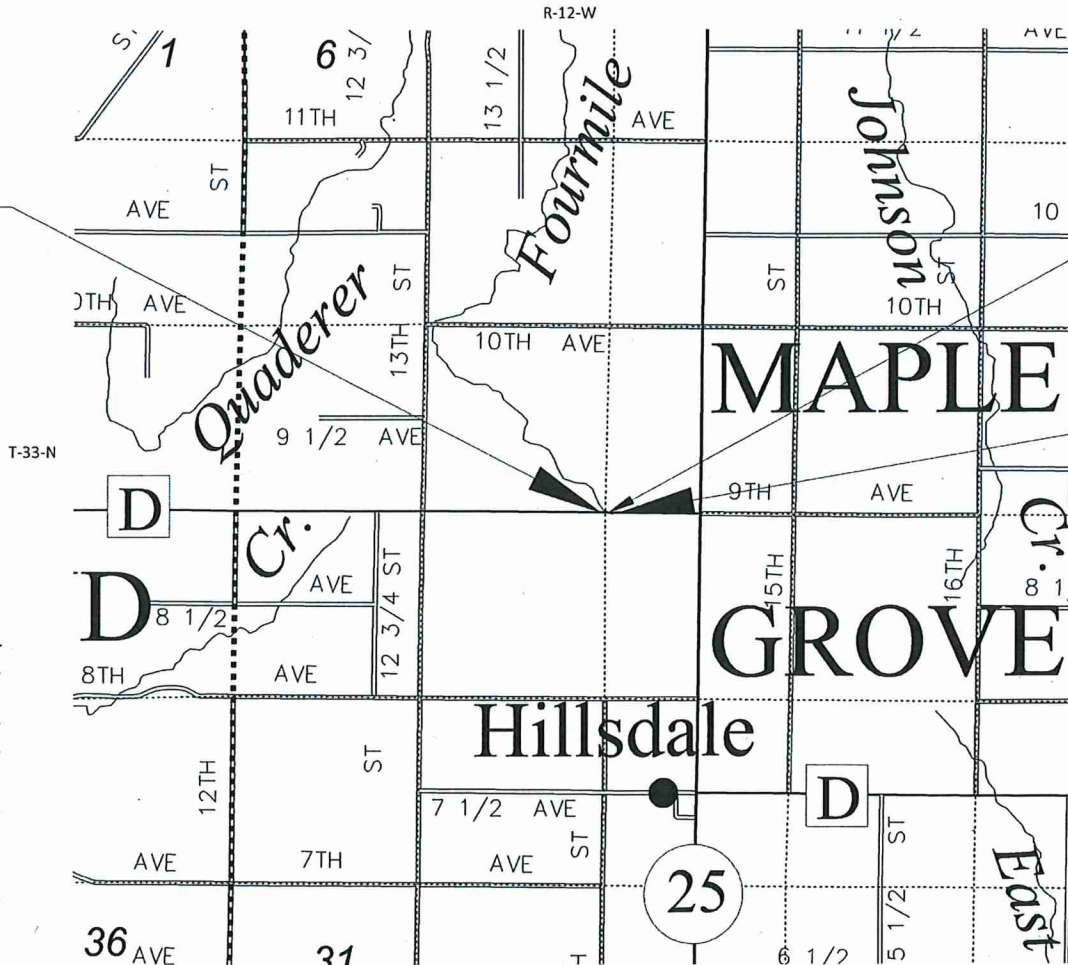
STATE PROJECT NUMBER

8827-00-70

BEGIN PROJECT
STA 39+50.00
Y = 74360.322
X = 300584.153

STRUCTURE B-03-0211
STA 40+00.00

END PROJECT
STA 40+50.00
Y = 74359.583
X = 300684.150



LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.0189 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), BARRON COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT

8827-00-70

FEDERAL PROJECT

PROJECT

CONTRACT

ACCEPTED FOR

COUNTY OF BARRON

Date 10/29/19
Highway Commissioner

ORIGINAL PLANS PREPARED BY

JOHN W. BECKFIELD
34273
EAU CLAIRE, WI
PROFESSIONAL ENGINEER
DATE 10/29/19

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor CBS SQUARED INC.
Designer CBS SQUARED INC.

APPROVED FOR THE DEPARTMENT

Date 11/22/19
Signature

E

GENERAL NOTES

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

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

THE EXACT LOCATION AND WIDTH OF PRIVATE ENTRANCES WILL BE DETERMINED IN THE FIELD BY THE ENGINEER. ALL DRIVEWAYS ARE TO BE REPLACED IN KIND UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR AS SHOWN ON THE PLANS. BASE AGGREGATE DENSE 1 1/4-INCH WILL BE USED UNDER ALL DRIVEWAYS.

MAINTAIN DRIVING SURFACE TO ALL PROPERTY OWNERS WITH BASE AGGREGATE DENSE 1 1/4-INCH.

FILL EXPANSION FACTOR IS 30%.

PROPERTY LINES SHOWN ARE APPROXIMATE.

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

BEARINGS SHOWN ON THIS PLAN ARE TRUE BEARINGS TO THE NEAREST SECOND.

ALL TIES ON THIS PLAN ARE HORIZONTAL UNLESS DESCRIBED OTHERWISE.

PLACE EROSION CONTROL MEASURES AS SHOWN ON THE EROSION CONTROL PLAN. THE EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE FERTILIZED, SEEDED, AND MULCH/EROSION MAT AS DIRECTED BY THE ENGINEER.

ELEVATIONS SHOWN ON THE ROADWAY CROSS SECTIONS ARE SUBGRADE ELEVATIONS AT THE CENTERLINE OF THE ROADWAY.

ALL ELEVATIONS ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF NAVD 88 (2012).

WISDOT WILL FURNISH A BENCHMARK MONUMENT TO BE SET BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER IN THE FIELD.

SAW CUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD. THE LINE OF SUCH SAW CUTS WILL BE NEATLY DELINEATED THROUGH THE ASPHALT WITHOUT ANY DAMAGE TO THE REMAINING PORTION OF THE EXISTING PAVEMENT.

THE 4" OF ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 2" LOWER LAYER AND A 2" UPPER LAYER.

UTILITY CONTACTS

BARRON ELECTRIC COOPERATIVE - ELECTRICTY
SUSAN DAU
1434 STATE HIGHWAY 25
BARRON, WI 54812
715-537-3171 (OFFICE)
715-418-1137 (MOBILE)
SDAU@BARRONELECTRIC.COM

MOSAIC TELECOM - COMMUNICATION LINE
DENNIS RUSSETT
401 S 1ST ST
P.O. BOX 664
CAMERON, WI 54822
715-458-5378 (OFFICE)
715-458-5518 (MOBILE)
CTCDENNIS@MOSAICTELECOM.COM



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

DESIGN CONTACT

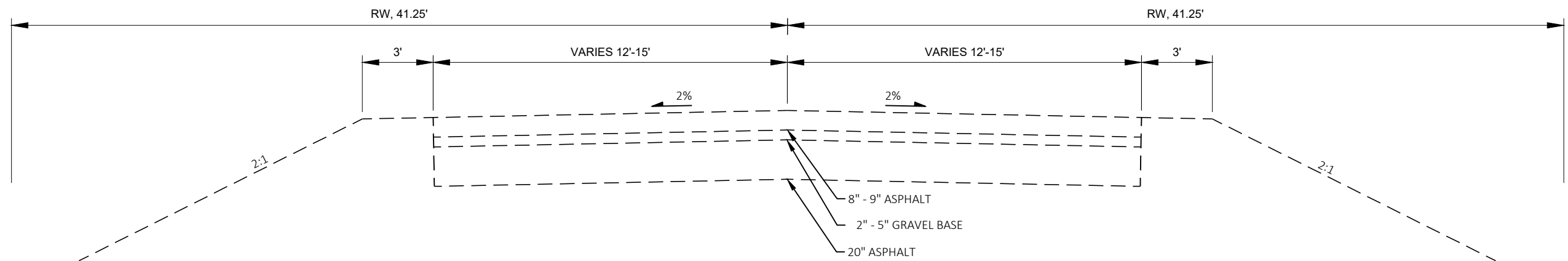
CBS SQUARED INC.
770 TECHNOLOGY WAY, SUITE 1A
CHIPPEWA FALLS, WI 54729
ATTN: MATT GUNDRY, PE
715-861-7425
MGUNDRY@CBSSQUAREDINC.COM

WISCONSIN DNR - LIASON

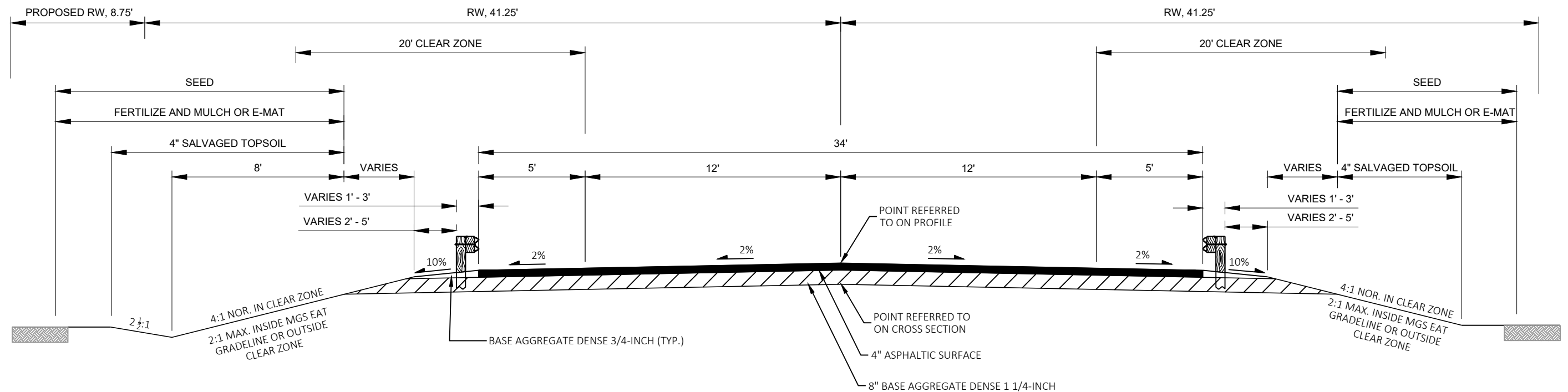
DEPARTMENT OF NATURAL RESOURCES
SPOONER - DNR SERVICE CENTER
810 W MAPLE ST
SPOONER, WI 54801
ATTN: AMY CRONK
715-635-4229
AMY.CRONK@WISCONSIN.GOV

BARRON COUNTY HIGHWAY DEPARTMENT

MARK SERVI, HIGHWAY COMMISSIONER
BARRON COUNTY HIGHWAY DEPARTMENT
260 N 7TH ST
BARRON, WI 54812
715-637-3755
MARK.SERVI@CO.BARRON.WI.US

**EXISTING TYPICAL SECTION - CTH D**

STA 39+50 - 39+79.50, STA 40+19.85 - 40+50

**FINISHED SHOULDER SECTION - CTH D**

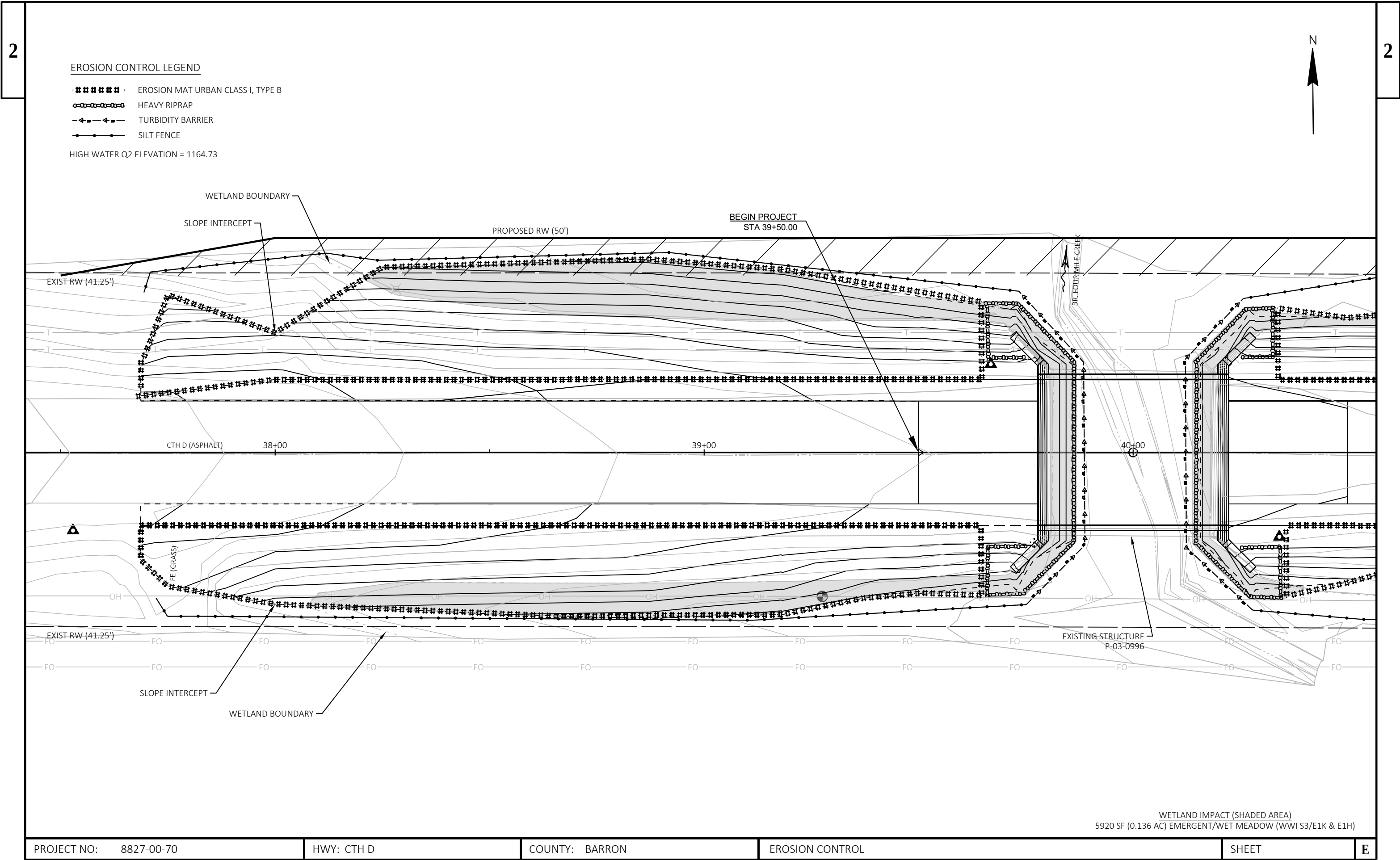
STA 37+68.69 - 39+50, STA 40+50 - 42+31.26

FINISHED TYPICAL SECTION - CTH D

STA 39+50 - 39+79.64, STA 40+20.36 - 40+50

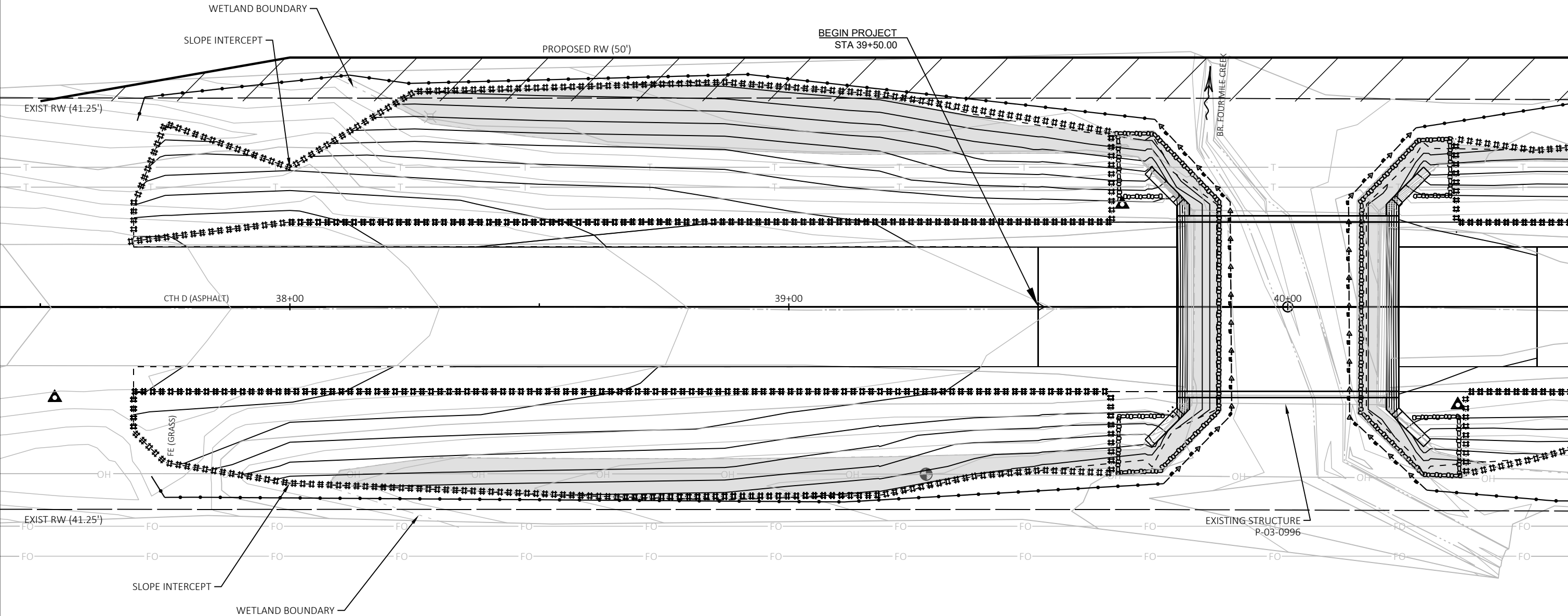
FINISHED SHOULDER SECTION - CTH D

STA 37+68.69 - 39+50, STA 40+50 - 42+31.26



 EROSION MAT URBAN CLASS I, TYPE B
 HEAVY RIPRAP
 TURBIDITY BARRIER
 SILT FENCE

HIGH WATER Q2 ELEVATION = 1164.73



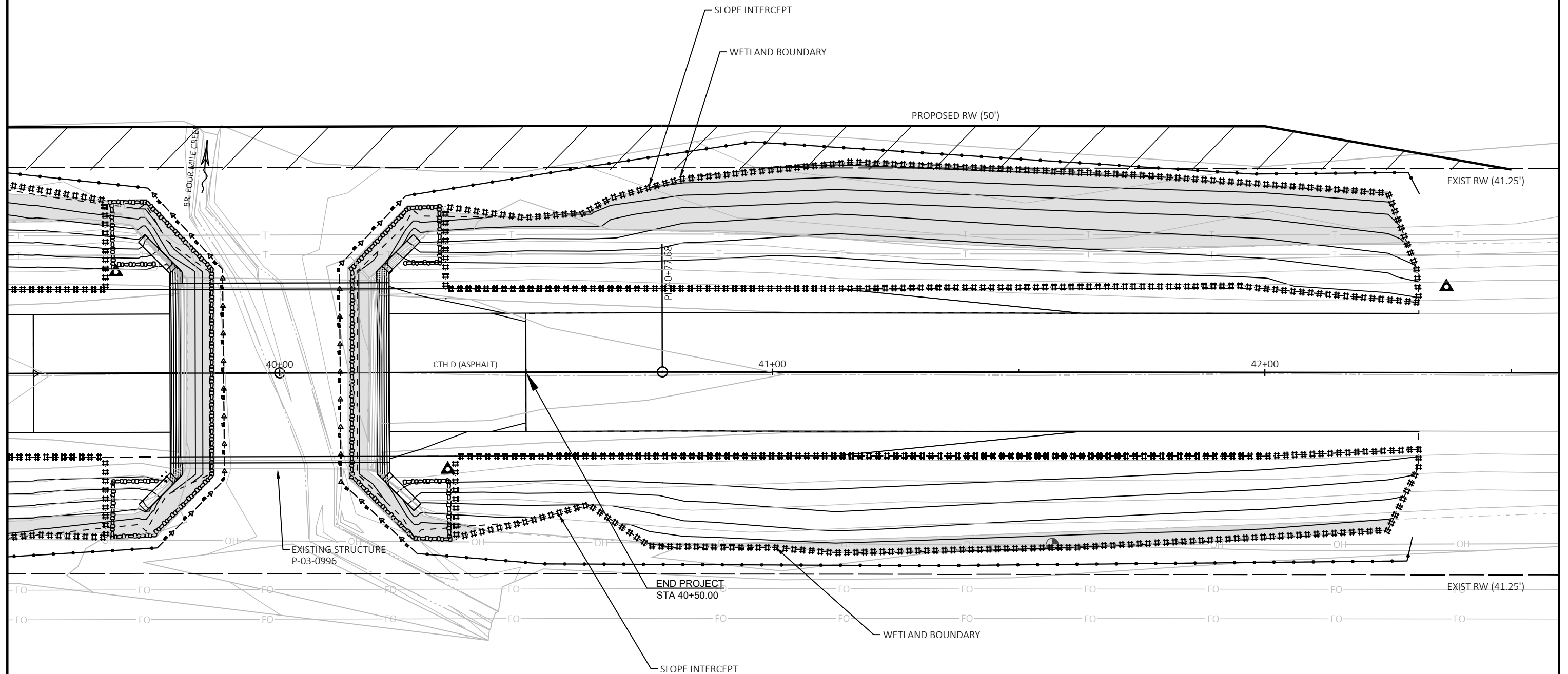
WETLAND IMPACT (SHADED AREA)
5920 SF (0.136 AC) EMERGENT/WET MEADOW (WWI S3/E1K & E1H)

PROJECT NO: 8827-00-70	HWY: CTH D	COUNTY: BARRON	EROSION CONTROL	SHEET	E
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EROSION CONTROL LEGEND

- EROSION MAT URBAN CLASS I, TYPE B
- HEAVY RIPRAP
- ▲-▲-▲-▲-▲-▲ TURBIDITY BARRIER
- SILT FENCE

HIGH WATER Q2 ELEVATION = 1164.73



WETLAND IMPACT (SHADED AREA)
5920 SF (0.136 AC) EMERGENT/WET MEADOW (WWI S3/E1K & E1H)

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COUNTY: BARRON

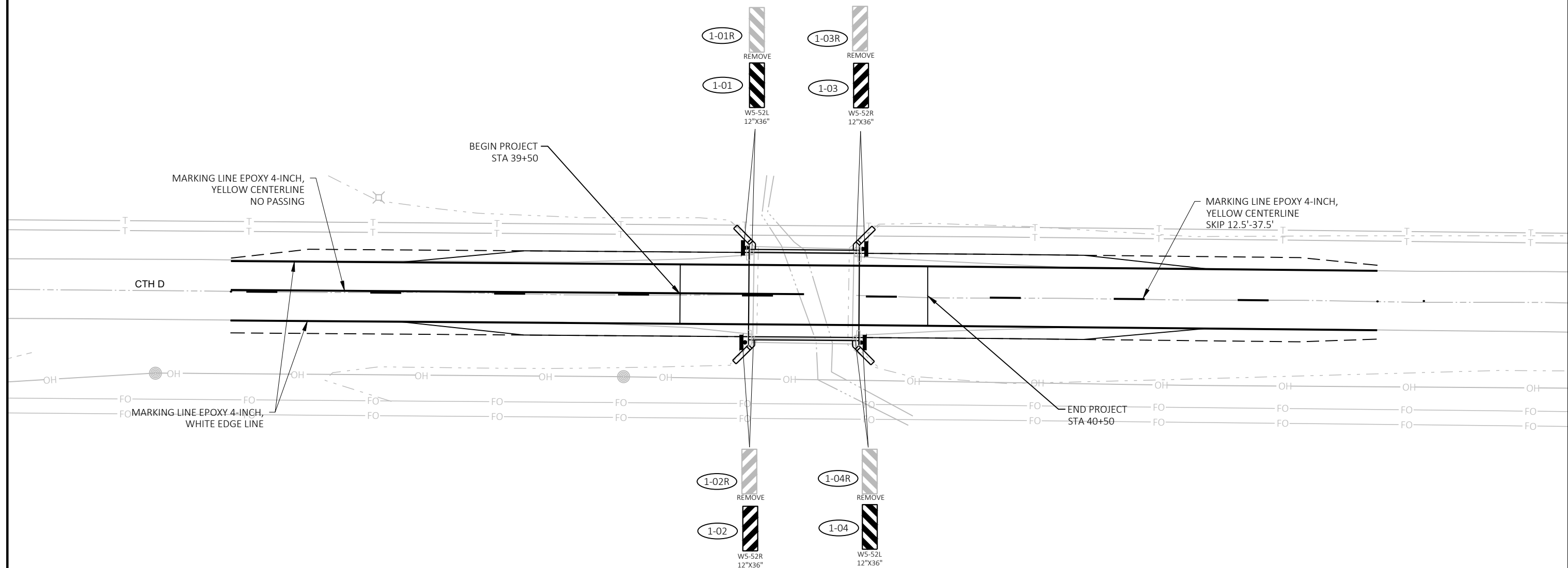
EROSION CONTROL

SHEET

E

SIGN LEGEND

-  EXISTING SIGN MOUNTED ON POST(S)
-  PROPOSED SIGN MOUNTED ON POST(S)
-  DENOTES SIGN NUMBER



PROJECT NO: 8827-00-70

HWY: CTH D

COUNTY: BARRON

PERMANENT SIGNING/PAVEMENT MARKING

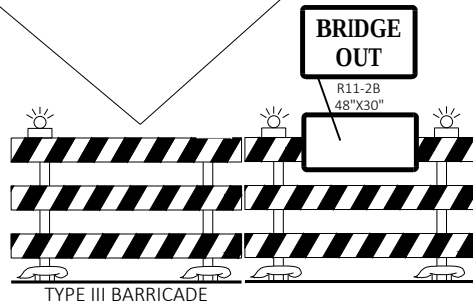
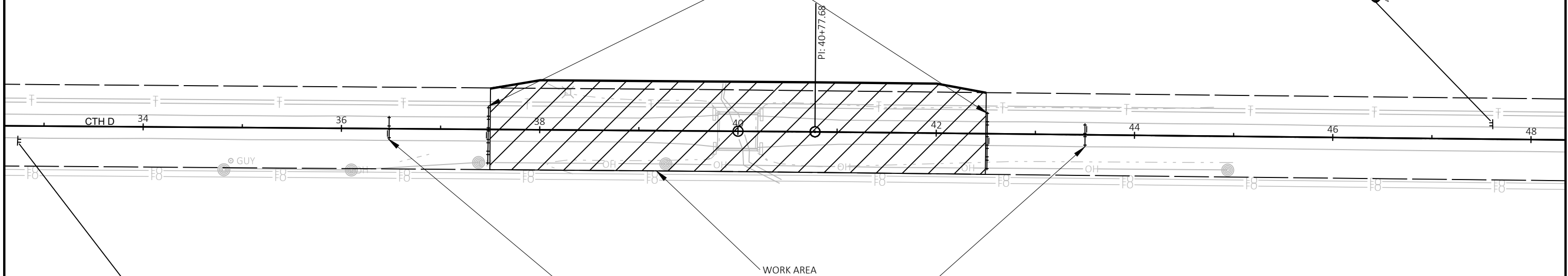
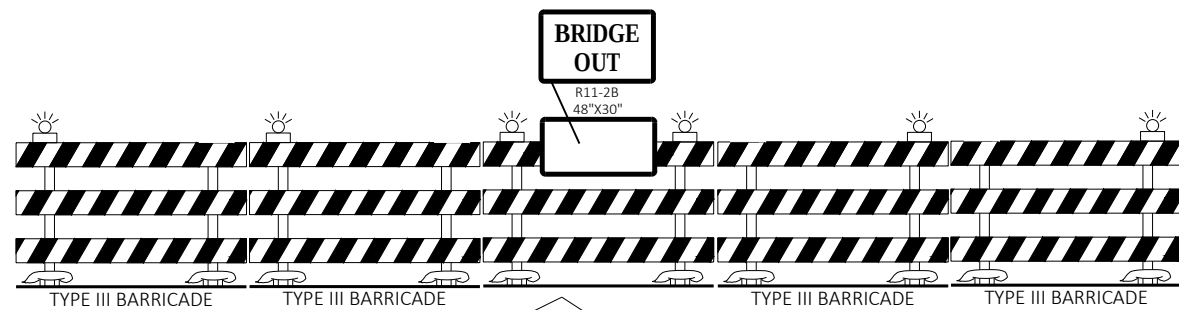
SHEET

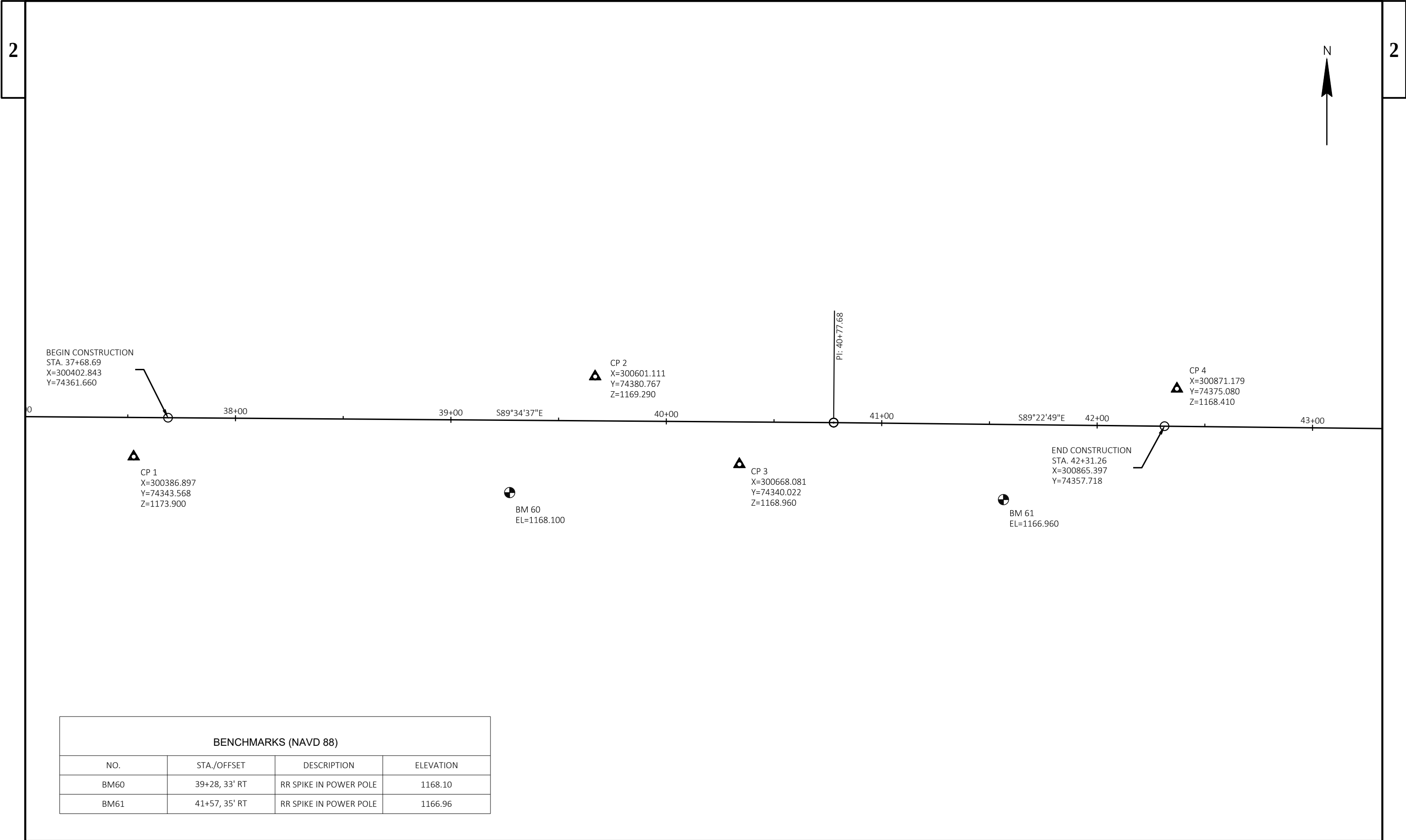
E

TRAFFIC CONTROL LEGEND

- ↑ TYPE III BARRICADE
- ↑↓ TYPE III BARRICADE WTH ATTACHED SIGN
- F SIGN ON TEMPORARY SUPPORT
- WORK AREA

NOTE: DETOUR ROUTE BY OTHERS





Estimate Of Quantities

8827-00-70					
Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 40+00.00	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	318.000	318.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-03-0211	LS	1.000	1.000
0012	208.0100	Borrow	CY	811.000	811.000
0014	210.1500	Backfill Structure Type A	TON	260.000	260.000
0016	213.0100	Finishing Roadway (project) 01. 8827-00-70	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	50.000	50.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	440.000	440.000
0022	455.0605	Tack Coat	GAL	82.000	82.000
0024	465.0105	Asphaltic Surface	TON	94.000	94.000
0026	502.0100	Concrete Masonry Bridges	CY	193.000	193.000
0028	502.3200	Protective Surface Treatment	SY	180.000	180.000
0030	502.3210	Pigmented Surface Sealer	SY	44.000	44.000
0032	505.0400	Bar Steel Reinforcement HS Structures	LB	5,200.000	5,200.000
0034	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	23,180.000	23,180.000
0036	516.0500	Rubberized Membrane Waterproofing	SY	42.000	42.000
0038	550.2104	Piling CIP Concrete 10 3/4 X 0.25-Inch	LF	540.000	540.000
0040	606.0300	Riprap Heavy	CY	79.000	79.000
0042	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	40.000	40.000
0044	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	118.000	118.000
0046	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0048	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0050	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0052	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8827-00-70	EACH	1.000	1.000
0054	619.1000	Mobilization	EACH	1.000	1.000
0056	624.0100	Water	MGAL	4.900	4.900
0058	625.0500	Salvaged Topsoil	SY	1,750.000	1,750.000
0060	627.0200	Mulching	SY	460.000	460.000
0062	628.1504	Silt Fence	LF	830.000	830.000
0064	628.1520	Silt Fence Maintenance	LF	830.000	830.000
0066	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0068	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0070	628.2008	Erosion Mat Urban Class I Type B	SY	1,750.000	1,750.000
0072	628.6005	Turbidity Barriers	SY	140.000	140.000
0074	629.0210	Fertilizer Type B	CWT	2.000	2.000

Estimate Of Quantities

8827-00-70					
Line	Item	Item Description	Unit	Total	Qty
0076	630.0120	Seeding Mixture No. 20	LB	60.000	60.000
0078	630.0500	Seed Water	MGAL	50.000	50.000
0080	634.0812	Posts Tubular Steel 2x2-Inch X 12-FT	EACH	4.000	4.000
0082	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0084	638.2602	Removing Signs Type II	EACH	4.000	4.000
0086	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0088	642.5001	Field Office Type B	EACH	1.000	1.000
0090	643.0420	Traffic Control Barricades Type III	DAY	630.000	630.000
0092	643.0705	Traffic Control Warning Lights Type A	DAY	810.000	810.000
0094	643.0900	Traffic Control Signs	DAY	270.000	270.000
0096	643.5000	Traffic Control	EACH	1.000	1.000
0098	645.0120	Geotextile Type HR	SY	213.000	213.000
0100	646.1020	Marking Line Epoxy 4-Inch	LF	1,273.000	1,273.000
0102	650.4500	Construction Staking Subgrade	LF	420.000	420.000
0104	650.5000	Construction Staking Base	LF	420.000	420.000
0106	650.6500	Construction Staking Structure Layout (structure) 01. B-03-0211	LS	1.000	1.000
0108	650.9910	Construction Staking Supplemental Control (project) 01. 8827-00-70	LS	1.000	1.000
0110	650.9920	Construction Staking Slope Stakes	LF	420.000	420.000
0112	690.0150	Sawing Asphalt	LF	774.000	774.000
0114	715.0502	Incentive Strength Concrete Structures	DOL	1,158.000	1,158.000

CTH D EARTHWORK SUMMARY

From/To Station	Location	205.0100 Common Excavation (1)		Salvaged/Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (6)	Mass Ordinate +/- (7)	208.0100 Borrow
		Cut (2)	EBS Excavation (3)				Factor 1.30		
37+68.69/42+31.26	CTH D	318	0	231	86	690	897	-811	811
		318	0	231	86	690	897	-811	811
		318	0	231	86	690	897	-811	811
TOTAL		318		231	86	690	897	-811	811

Notes:

- (1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100 (includes existing asphaltic pavement).
- (2) Salvaged/Unusable Pavement Material is included in Cut.
- (3) EBS Excavation to be backfilled with Cut material.
- (4) Salvaged/Unusable Pavement Material (existing asphaltic pavement is not included in Fill quantity).
- (5) Available Material = Cut - Salvaged/Unusable Pavement Material.
- (6) Expanded Fill Factor = 1.3; Expanded Fill = Unexpanded Fill * Fill Factor.
- (7) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

CLEARING AND GRUBBING

ROADWAY	STA	TO	STA	201.0105	201.0205
				<u>CLEARING</u>	<u>GRUBBING</u>
CTH D	38+00	-	39+00	1	1
CTH D	41+00	-	42+00	1	1
TOTAL				2	2

FINISHING ROADWAY

	213.0100
	FINISHING
	<u>ROADWAY</u>
LOCATION	EACH
PROJECT	1
TOTAL	1

AGGREGATE ITEMS

ROADWAY	STA	TO	STA	305.0110	305.0120	624.0100
				BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	
CTH D	37+68.69	-	39+77.75	25	208	2.3
CTH D	40+22.25	-	42+31.26	25	232	2.6
TOTAL				50	440	4.9

ASPHALT ITEMS

ROADWAY	STA	TO	STA	455.0605	465.0105
				<u>TACK COAT</u> GAL	<u>ASPHALTIC SURFACE</u> TON
CTH D	37+68.69	-	39+77.75	41	47
CTH D	40+22.25	-	42+31.26	41	47
TOTAL				82	94

GUARDRAIL ITEMS

ROADWAY	STA	TO	STA	LOCATION	614.2500	614.2610
					<u>MGS THRIE BEAM TRANSITION</u> LF	<u>MGS GUARDRAIL TERMINAL EAT</u> EACH
CTH D	38+87.12	-	39+79.64	LT	39.4	1
CTH D	38+87.12	-	39+79.64	RT	39.4	1
CTH D	40+20.36	-	41+12.93	LT	39.4	1
CTH D	40+20.36	-	41+12.93	RT	39.4	1
TOTAL					157.6	4

RESTORATION ITEMS

ROADWAY	STA	TO	STA	LOCATION	625.0500	627.0200	628.2008	629.0210	630.0120	630.0500
					SALVAGED	MULCHING	EROSION	FERTILIZER	SEEDING	SEED
					TOPSOIL	SY	CLASS I	TYPE B	MIXTURE	WATER
					SY	SY	TYPE B	CWT	NO. 20	MGAL
CTH D	37+68.69	-	39+77.75	LT	502	118	502	0.56	17	14
CTH D	37+68.69	-	39+77.75	RT	410	111	410	0.47	14	12
CTH D	40+22.25	-	42+31.26	LT	470	116	470	0.53	16	13
CTH D	40+22.25	-	42+31.26	RT	368	115	368	0.44	13	11
TOTAL					1750	460	1750	2	60	50

MAINTENANCE AND REPAIR OF HAUL ROADS

618.0100*	
MAINTENANCE	
AND REPAIR OF	
HAUL ROADS	
LOCATION	EACH
PROJECT	1
TOTAL	
1	

*CAT 0030 (NON-PARTICIPATING)

MOBILIZATION

619.1000	
MOBILIZATION	
LOCATION	EACH
0010	0.3
0020	0.7
TOTAL	
1	

EROSION CONTROL ITEMS

ROADWAY	STA	TO	STA	LOCATION	628.1504	628.1520	628.6005
					SILT FENCE	FENCE	TURBIDITY
					<u>SILT FENCE</u>	<u>MAINTENANCE</u>	<u>BARRIERS</u>
					LF	LF	SY
CTH D	37+68.69	-	40+00	LT	209	209	--
CTH D	37+68.69	-	40+00	RT	205	205	--
CTH D	40+00	-	42+31.26	LT	210	210	--
CTH D	40+00	-	42+31.26	RT	206	206	--
CTH D	B-03-0211 West Abutment				--	--	70
CTH D	B-03-0211 East Abutment				--	--	70
TOTAL					830	830	140

EROSION CONTROL MOBILIZATION

628.1905		
MOBILIZATIONS		
EROSION CONTROL		
LOCATION	EACH	EACH
PROJECT	1	1
TOTAL		
1		

PERMANENT SIGNING ITEMS

SIGN GROUP NO.	SIGN CODE	SIGN MESSAGE	SIZE			637.2230 SIGNS TYPE II REFLECTIVE F SF	634.0812 POSTS TUBULAR STEEL 2X2-INCH X 12-FT EACH
1-01	W5-52L	BRIDGE CLEARANCE STRIPER LEFT	12	X	36	3.00	1
1-02	W5-52R	BRIDGE CLEARANCE STRIPER RIGHT	12	X	36	3.00	1
1-03	W5-52R	BRIDGE CLEARANCE STRIPER RIGHT	12	X	36	3.00	1
1-04	W5-52L	BRIDGE CLEARANCE STRIPER LEFT	12	X	36	3.00	1
TOTAL						12.00	4

REMOVING SIGNING ITEMS

SIGN NO.	SIGN MESSAGE	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
1-01R	BRIDGE CLEARANCE STRIPER LEFT	1	1
1-02R	BRIDGE CLEARANCE STRIPER RIGHT	1	1
1-03R	BRIDGE CLEARANCE STRIPER RIGHT	1	1
1-04R	BRIDGE CLEARANCE STRIPER LEFT	1	1
TOTAL		4	4

TRAFFIC CONTROL ITEMS								
		643.0420		643.0705				
		TRAFFIC		TRAFFIC CONTROL				
		CONTROL		WARNING		643.0900	643.5000	
		BARRICADES		LIGHTS		TRAFFIC		TRAFFIC
	DURATION	TYPE III		TYPE A		CONTROL SIGNS		CONTROL
ROADWAY	(DAYS)	EACH*	DAY	EACH*	DAY	EACH*	DAY	EACH
CTH D	45	14	630	18	810	6	270	1
TOTAL		630		810		270		1

* INFORMATION ONLY

PAVEMENT MARKING ITEMS

						646.1020
						MARKING LINE EPOXY
						4-INCH
		Sta			WHITE	YELLOW
ROADWAY	STA	TO	STA		LF	LF
CTH D	37+68.69	-	42+31.26		926	347
TOTAL					1,273	

FIELD OFFICE

		642.5001
		FIELD OFFICE
		TYPE B
LOCATION		EACH
PROJECT		1
TOTAL		1

CONSTRUCTON STAKING

				650.9910			
				650.4500	650.5000	CONSTRUCTION	650.9920
				CONSTRUCTION	CONSTRUCTION	STAKING	CONSTRUCTION
				STAKING	STAKING	SUPPLEMENTAL	STAKING
				<u>SUBGRADE</u>	<u>BASE</u>	<u>CONTROL</u>	<u>SLOPE STAKES</u>
ROADWAY	STA	TO	STA	LF	LF	LS	LF
CTH D	37+68.69	-	39+77.75	210	210	--	210
CTH D	40+22.25	-	42+31.26	210	210	--	210
CTH D	PROJECT			--	--	1	--
TOTAL				420	420	1	420

SAWING ASPHALT

					690.0150
					SAWNG
					ASPHALT
ROADWAY	STA	TO	STA	LF	
CTH D	37+68.69	-	39+77.75	387	
CTH D	40+22.25	-	42+31.26	387	
TOTAL				774	

CONVENTIONAL ABBREVIATIONS

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

CURVE DATA

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

CONVENTIONAL SYMBOLS

SECTION LINE	---	SECTION CORNER SYMBOL		R/W MONUMENT (TO BE SET)	●
QUARTER LINE	---	SIXTEENTH LINE	---	NON-MONUMENTED R/W POINT	○
SIXTEENTH LINE	---	NEW REFERENCE LINE	---	FOUND IRON PIN (1-INCH UNLESS NOTED)	IP
NEW REFERENCE LINE	---	EXISTING R/W OR HE LINE	---		
PROPERTY LINE	---	LOT, TIE & OTHER MINOR LINES	---		
SLOPE INTERCEPT	---	CORPORATE LIMITS	---		
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)	---	NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)	---		
TEMPORARY LIMITED EASEMENT AREA	---	EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)	---		
TRANSMISSION STRUCTURES	---				
BUILDING		TO BE REMOVED			
BRIDGE					

CONVENTIONAL UTILITY SYMBOLS

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

NOTES:

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

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTER LINE OF EXISTING PAVEMENTS.

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

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE BARRON COUNTY HIGHWAY DEPARTMENT.

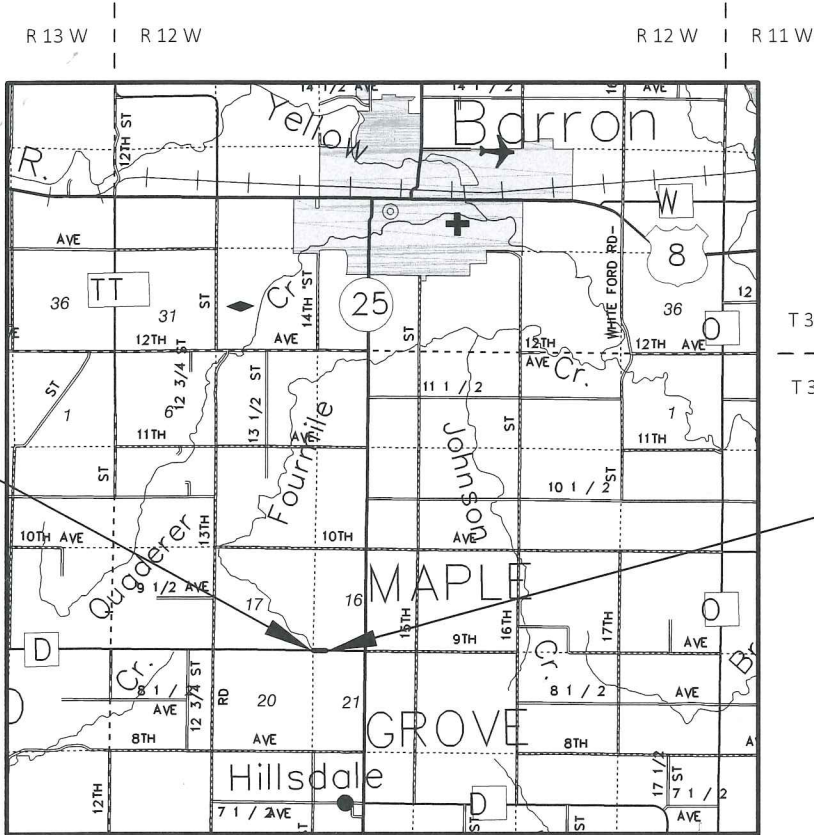
PARCEL IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE SCHEDULE OF LANDS & INTERESTS REQUIRED.

BEGIN RELOCATION ORDER
STA 37+00.00
Y= 74,362.167
X= 300,334.160
271.61 FEET WEST & 1.40 FEET NORTH
FROM THE SOUTHEAST CORNER OF
SECTION 17, T33N, R12W.

END RELOCATION ORDER
STA 43+00.00
Y= 74,356.974
X= 300,934.136
328.37 FEET EAST & 3.79 FEET SOUTH
FROM THE SOUTHEAST CORNER OF
SECTION 17, T33N, R12W.

LAYOUT
SCALE 0 1 MI.
TOTAL NET LENGTH OF CENTERLINE = 0.114 MI.

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
STATE PROJECT NUMBER 8827-00-70	4.1	2
PLAT OF RIGHT-OF-WAY REQUIRED FOR CTH D FOUR MILE CREEK BRIDGE B-03-0211 CTH D BARRON CO. CONSTRUCTION PROJECT NUMBER		



ORIGINAL PLANS PREPARED BY

DATE: 11/1/19

BARRON COUNTY

APPROVED FOR BARRON COUNTY

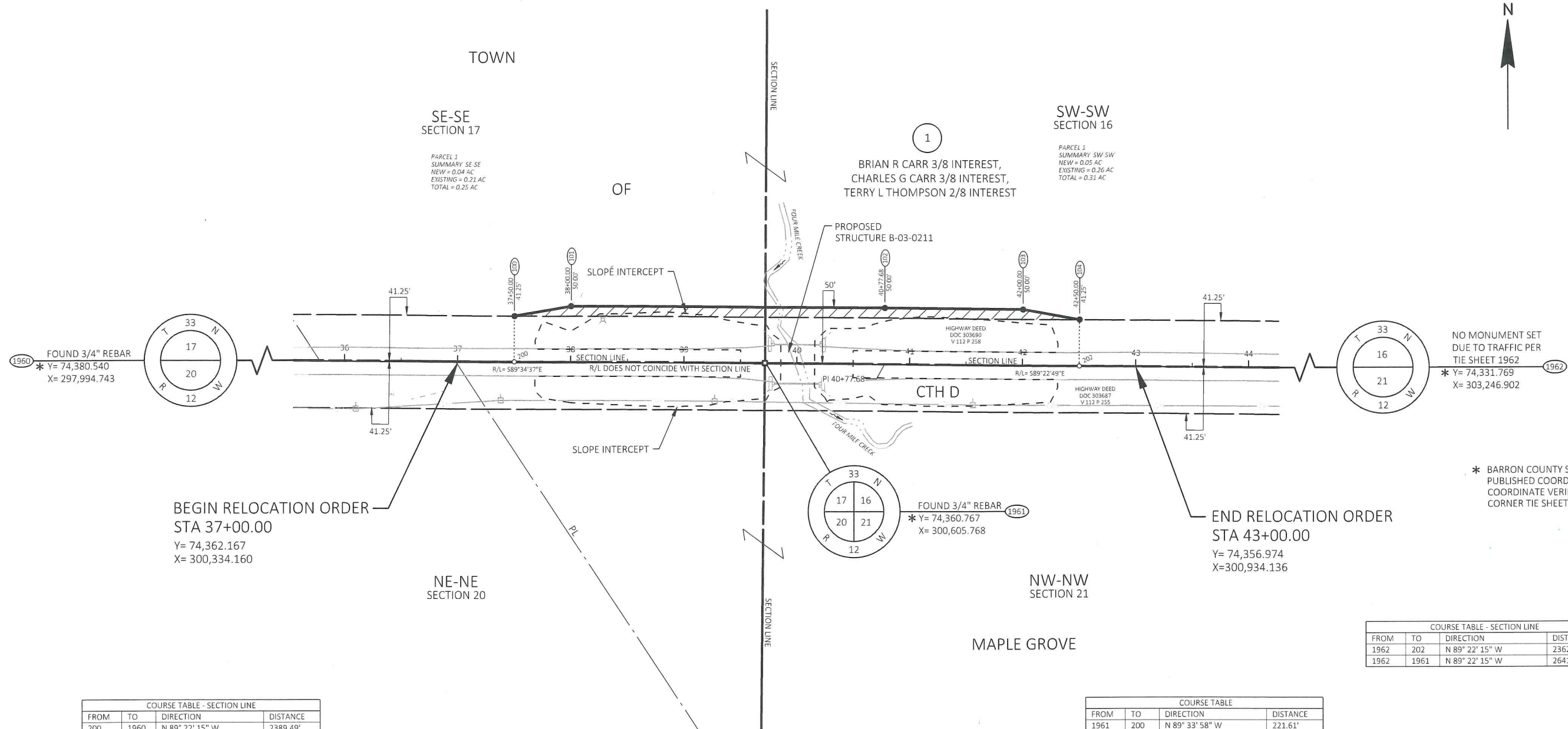
DATE: 10/30/19

SCHEDULE OF LANDS & INTERESTS REQUIRED

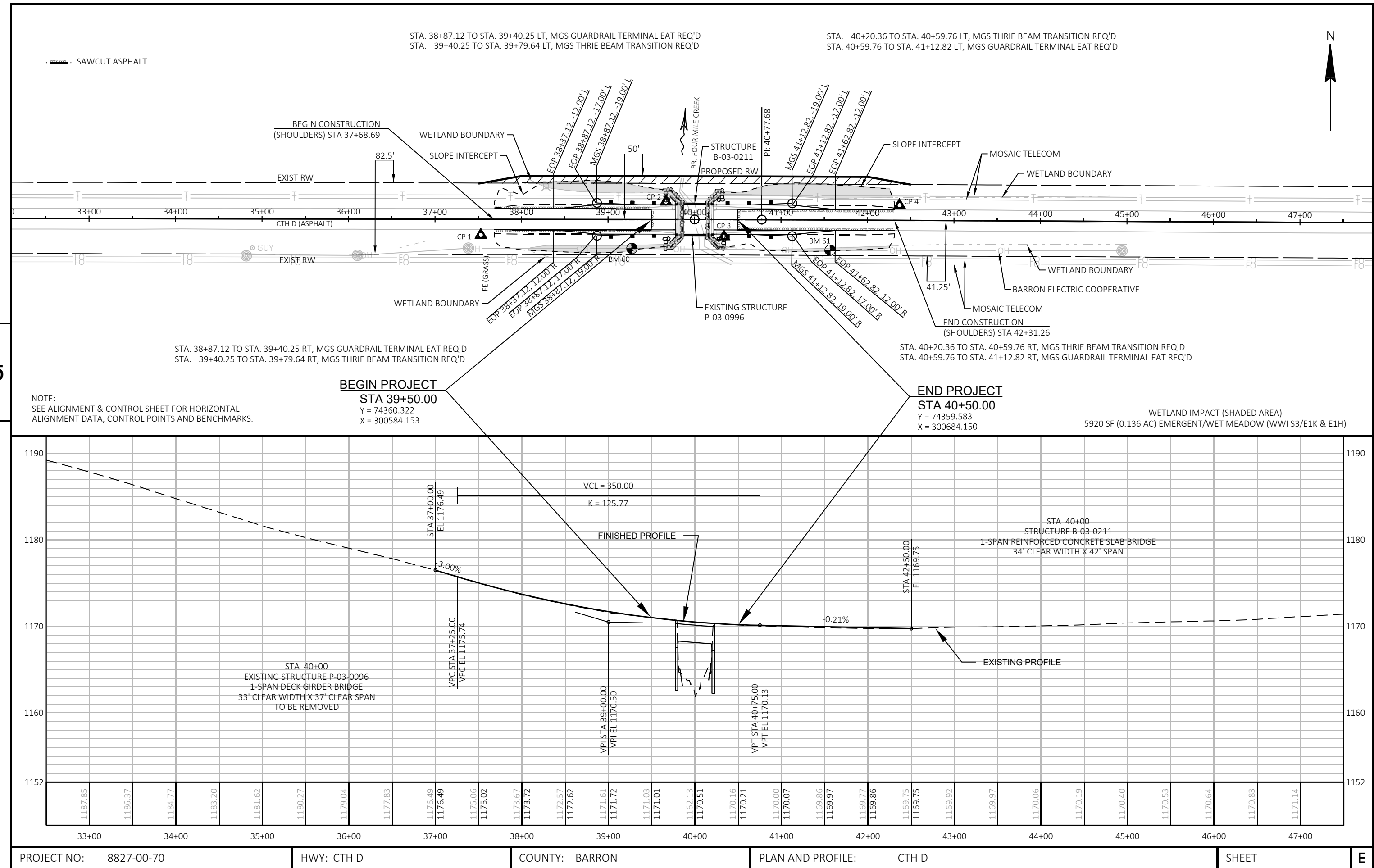
OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT.

PARCEL NUMBER	SHEET NUMBER	OWNER(S)	INTEREST REQUIRED	R/W ACRES REQUIRED			TLE ACRES
				NEW	EXISTING	TOTAL	
1	4.2	BRIAN R CARR 3/8 INTEREST, CHARLES G CARR 3/8 INTEREST, TERRY L THOMPSON 2/8 INTEREST	FEE	0.09	0.47	0.56	-

ROAD NAME	BASIS OF EXISTING R/W	YEAR
CTH D	R/W PLAT S0167(4)	1955



REVISION DATE	DATE 11/1/19	SCALE, FEET 0 50 100	HWY: CTH D	R/W PROJECT NUMBER	PLAT SHEET 4.2	
	GRID FACTOR N/A		COUNTY: BARRON	STATE PROJECT NUMBER 8827-00-70	PS&E SHEET	E

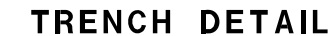


Standard Detail Drawing List

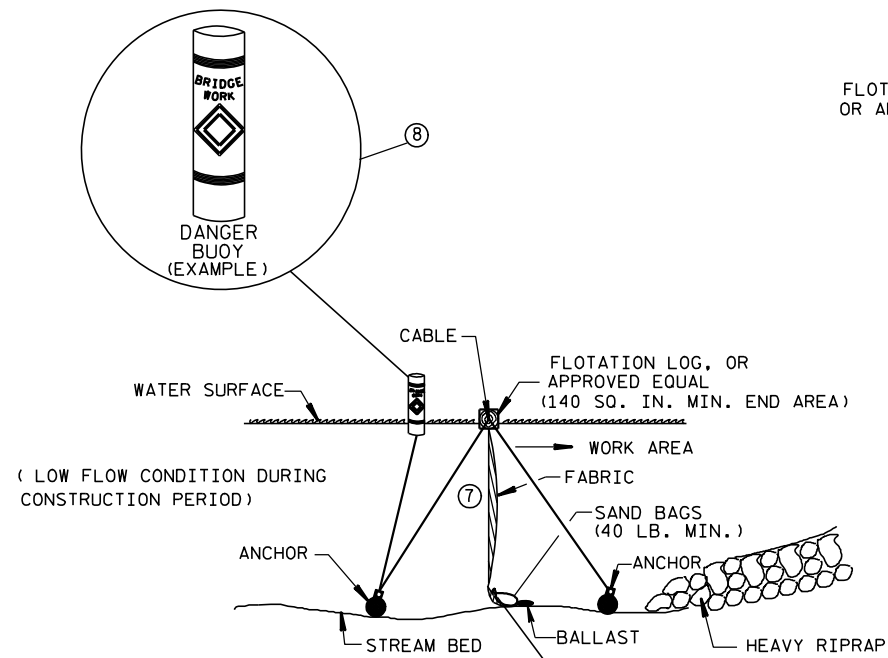
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



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



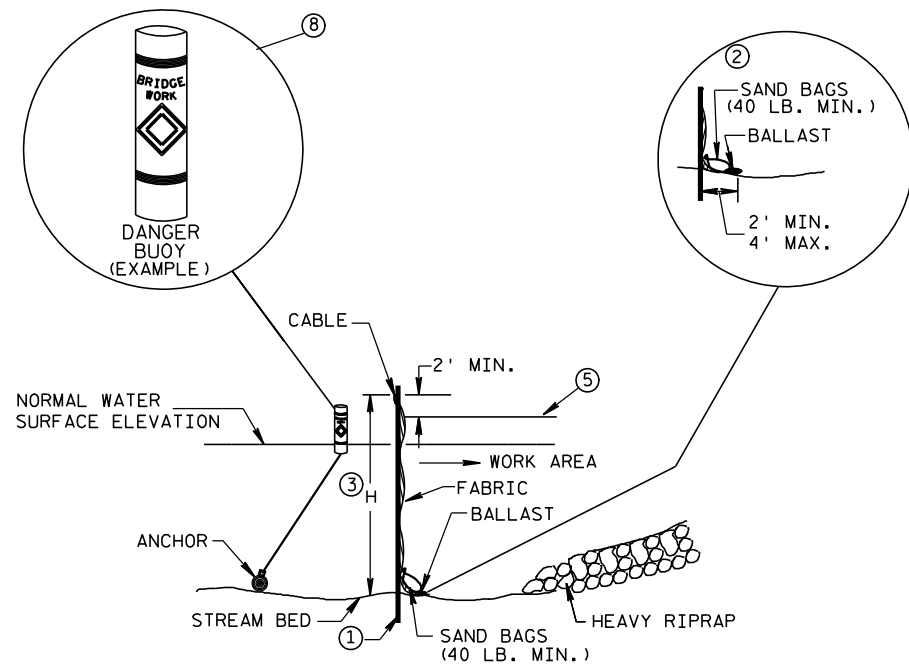
SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	<u>/S/ Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER



SECTION B-B

TURBIDITY BARRIER FLOAT ALTERNATIVE

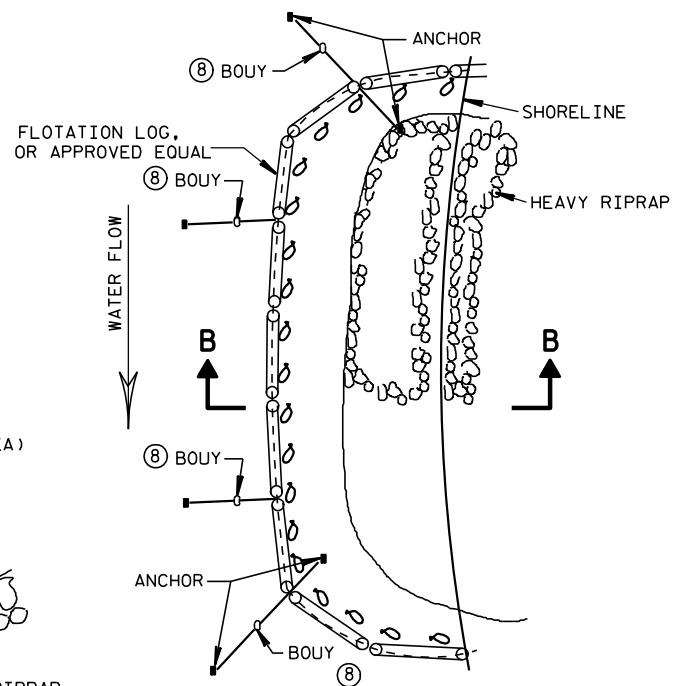
CAUTION - SEE NOTE 6



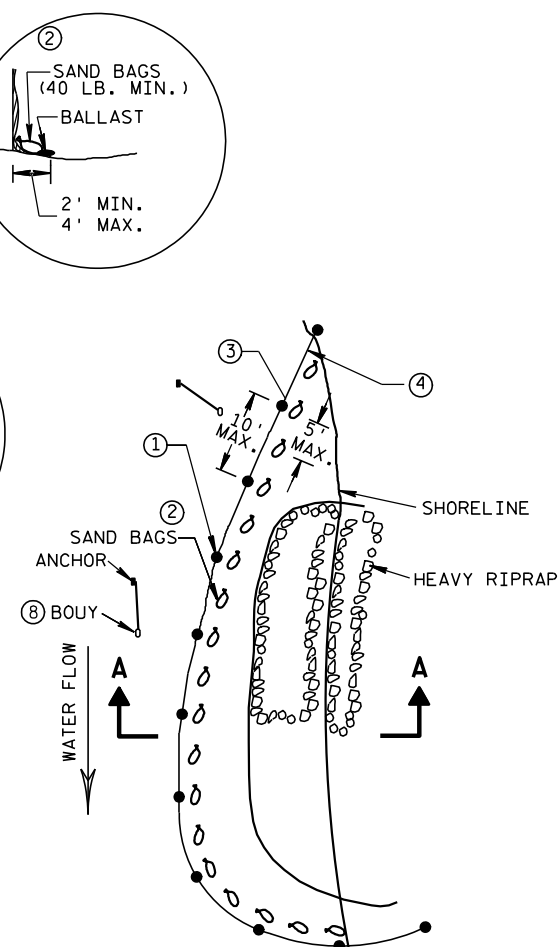
SECTION A-A

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS



PLAN VIEW

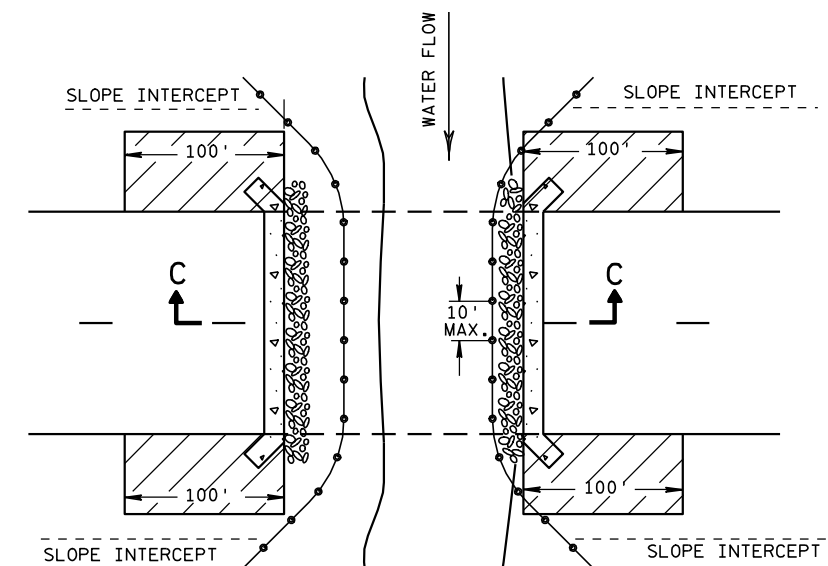


GENERAL NOTES

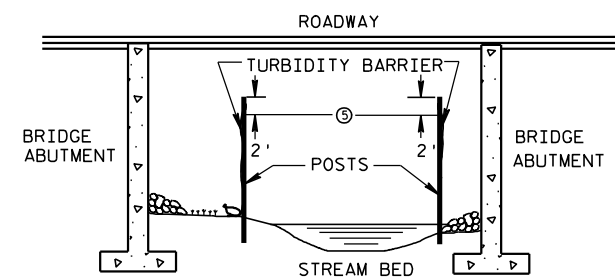
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

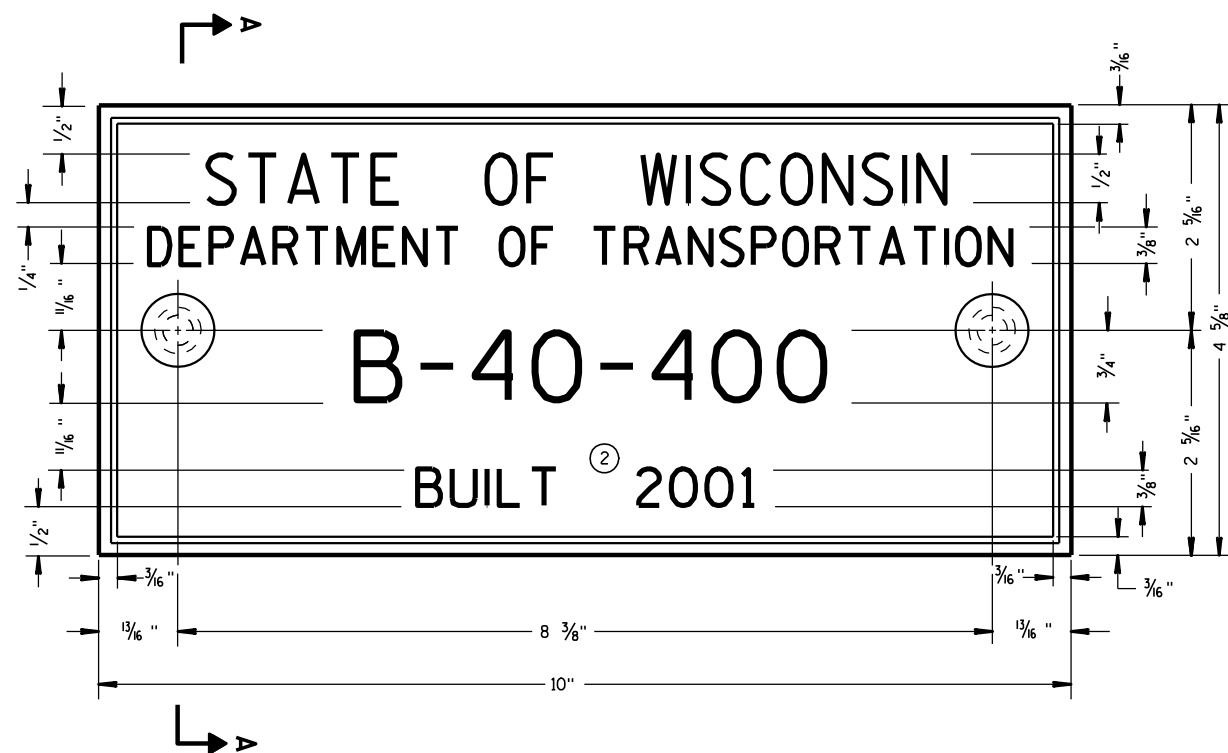
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

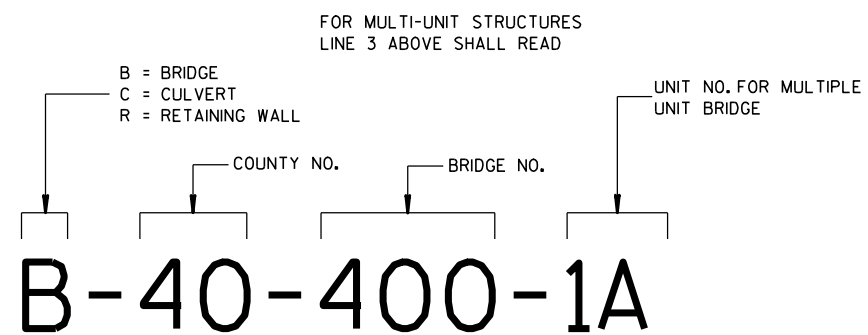
6/04/02
DATE

FHWA

/S/ Beth Connestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



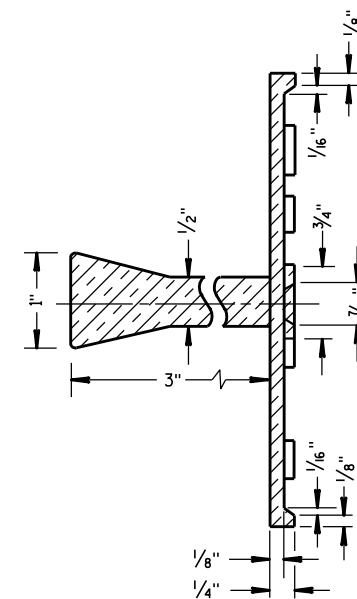
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

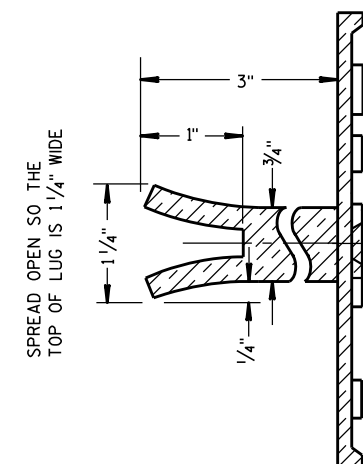
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

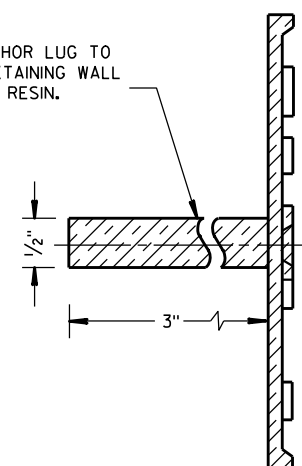


SECTION A-A



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

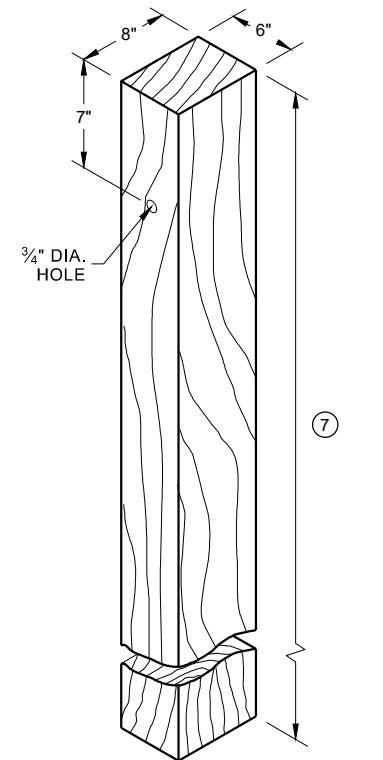
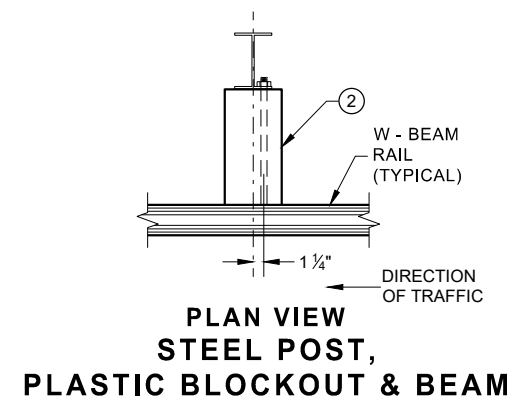
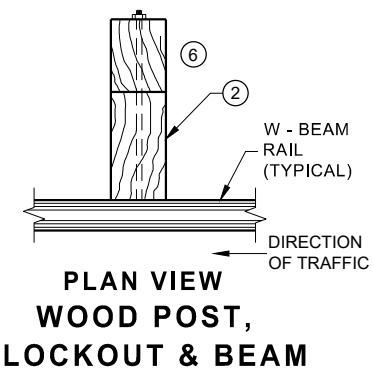
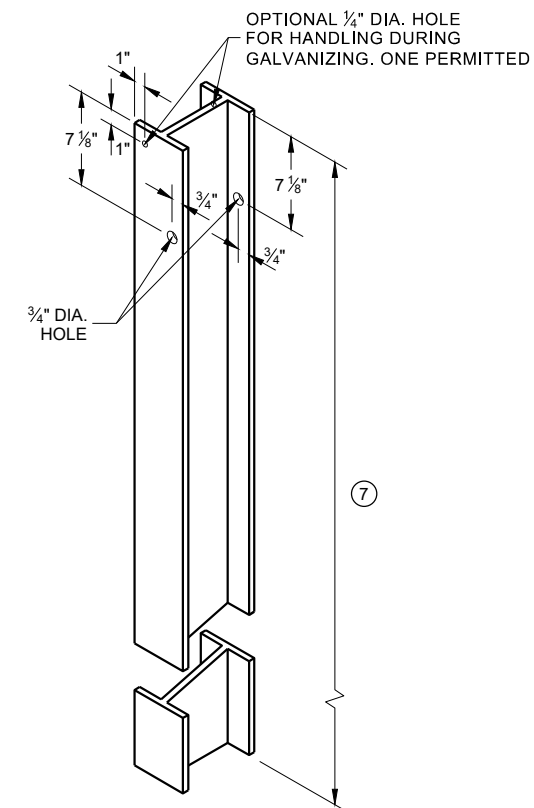
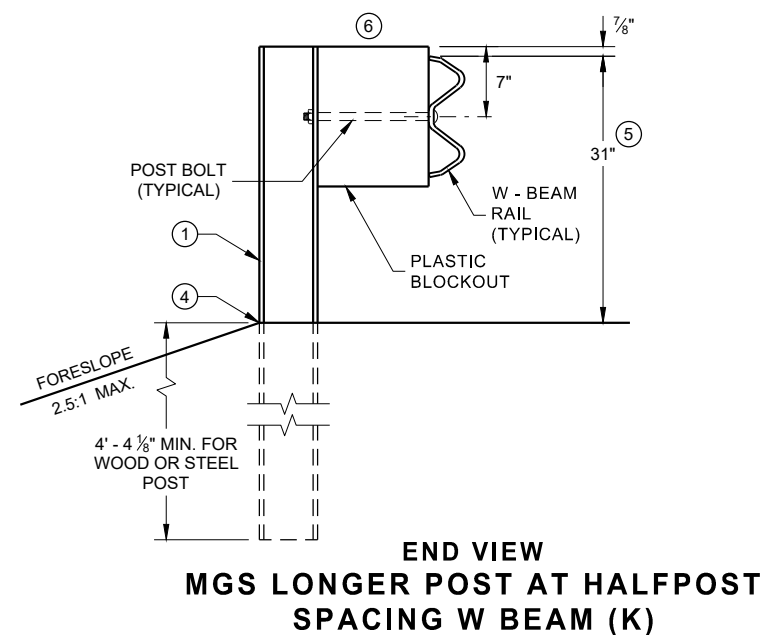
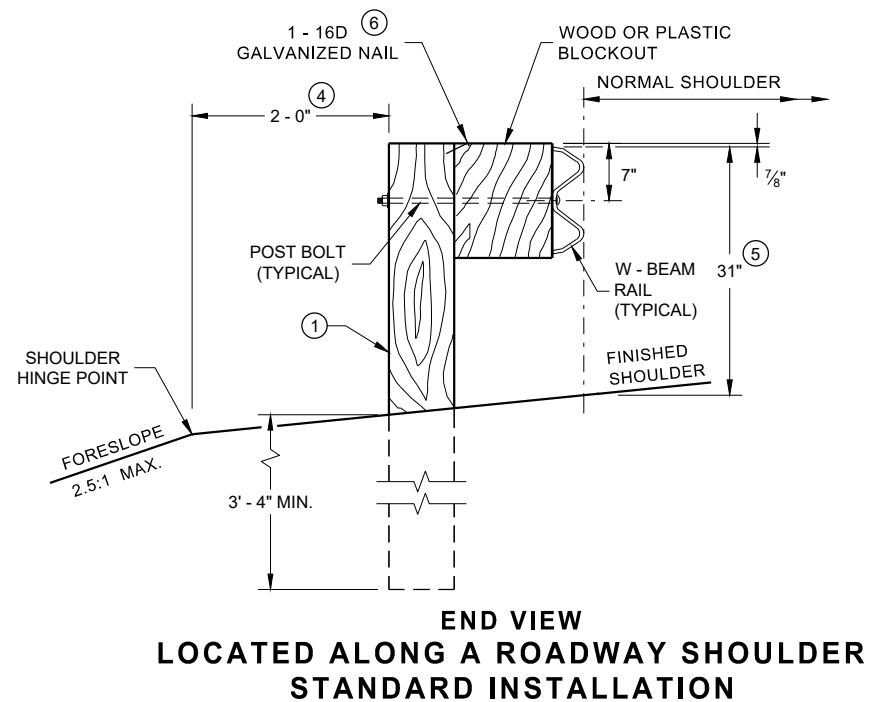
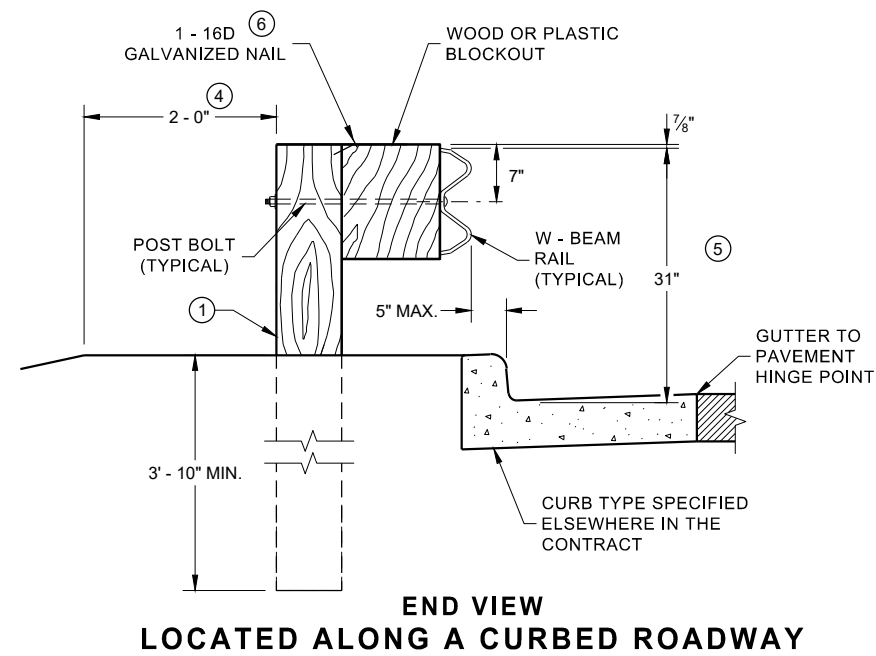
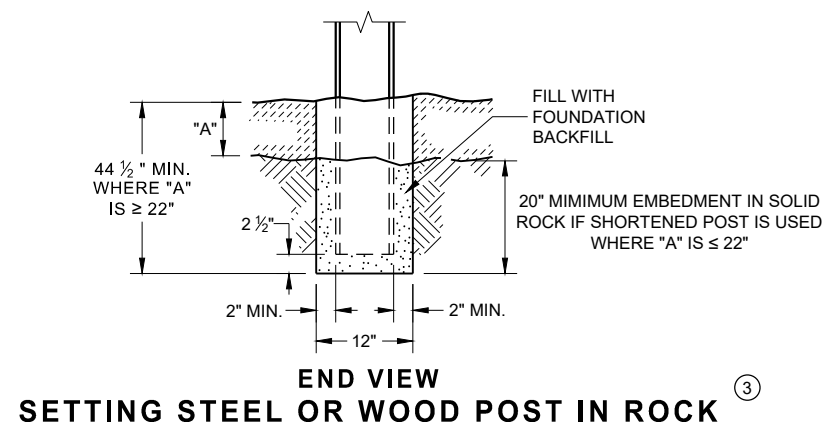
APPROVED

3/26/10
DATE

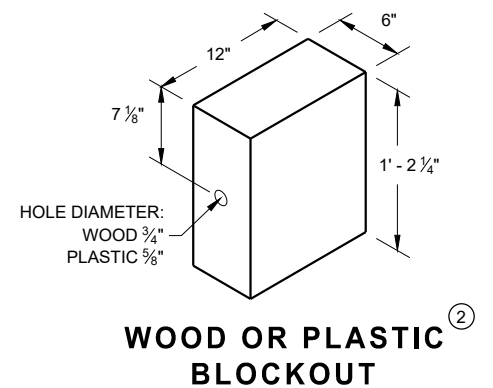
FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER

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



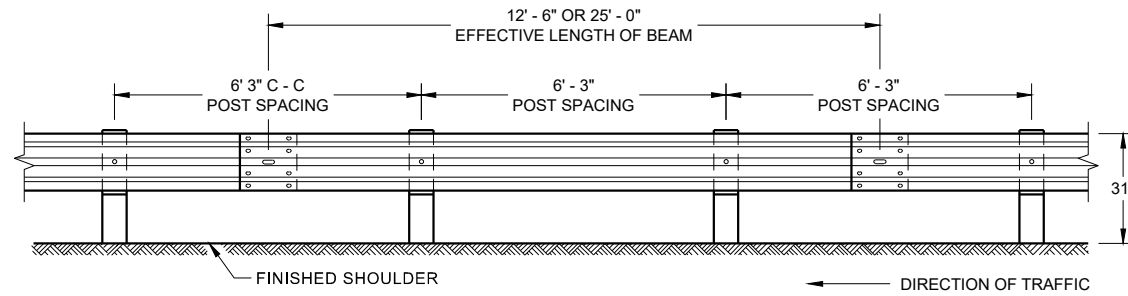
WOOD POST (6" X 8") NOMINAL ^①



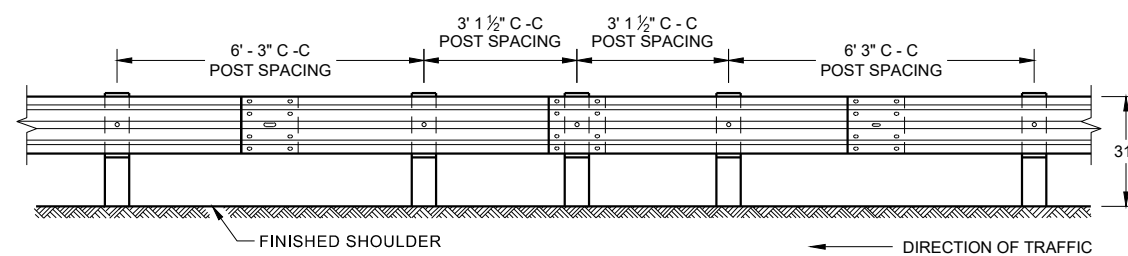
**WOOD OR PLASTIC
BLOCKOUT**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

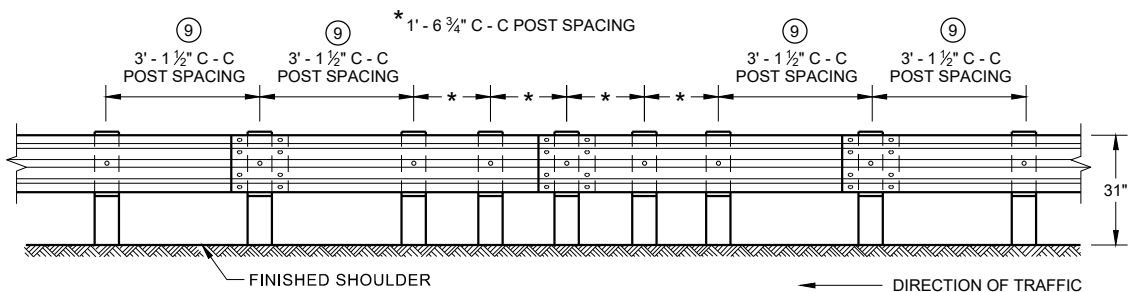
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



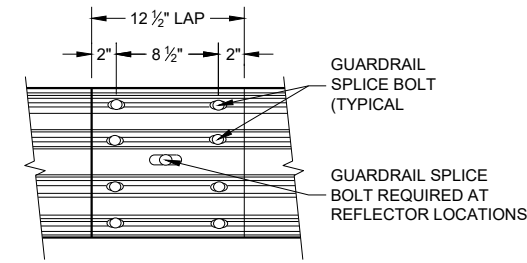
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



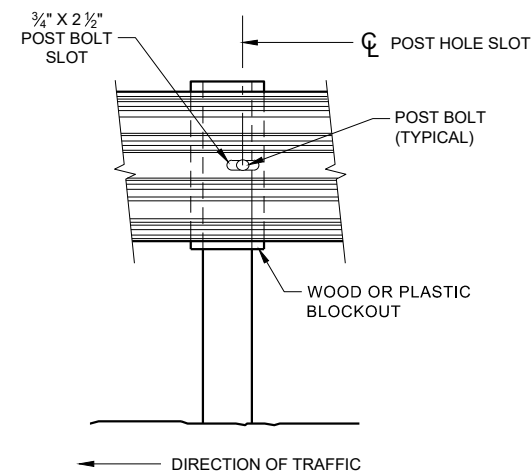
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



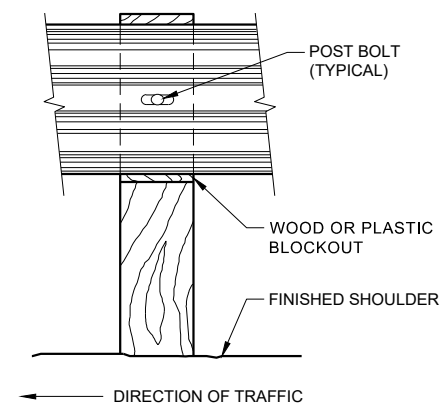
**FRONT VIEW
QUARTER POST SPACING (QS)**



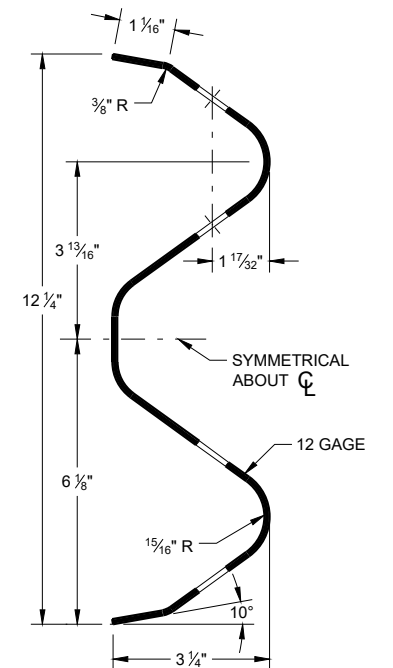
**FRONT VIEW
MID-SPAN BEAM SPLICE**



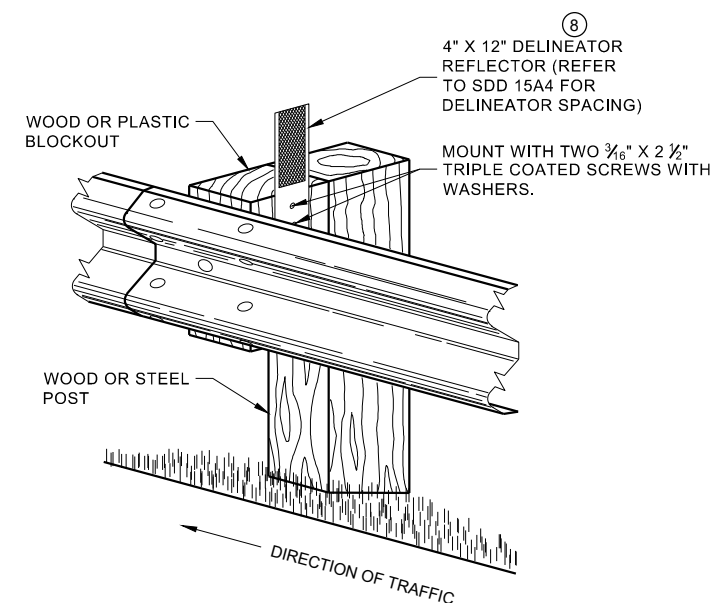
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



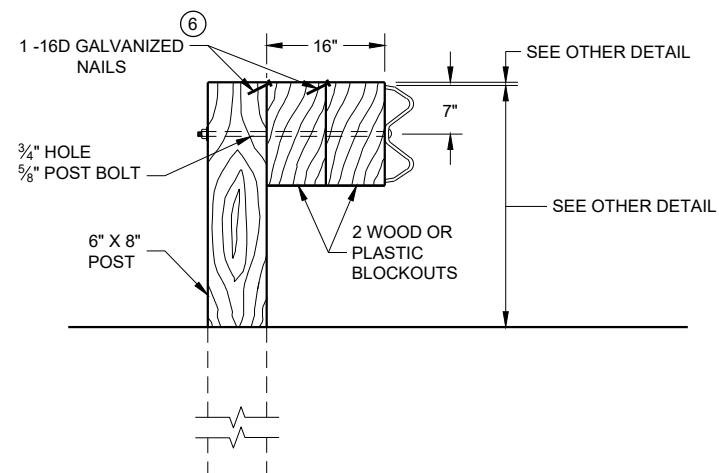
SECTION THRU W-BEAM RAIL



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

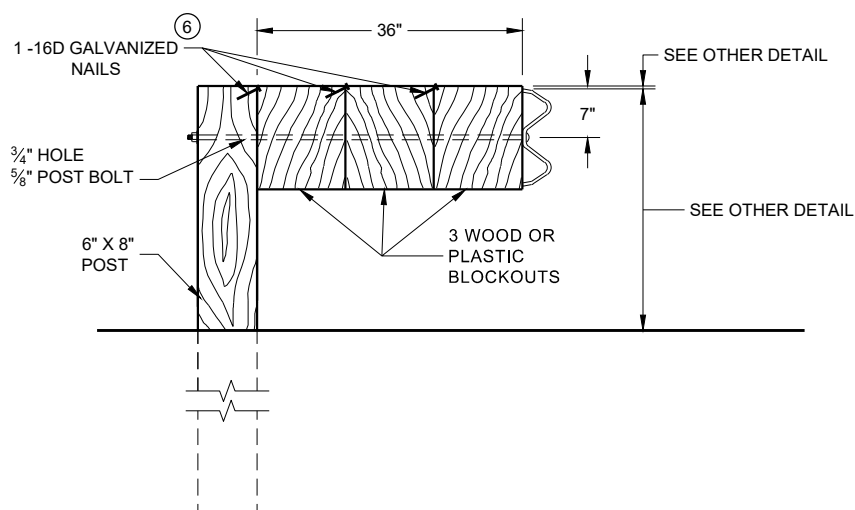
GENERAL NOTES

- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



DETAIL FOR 16" BLOCKOUT DEPTH

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



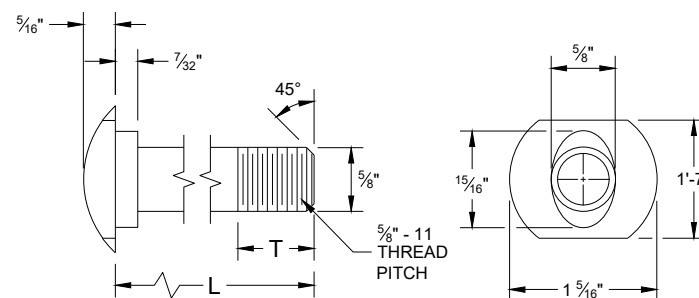
DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

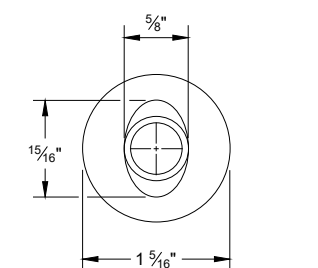
NOTE:

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

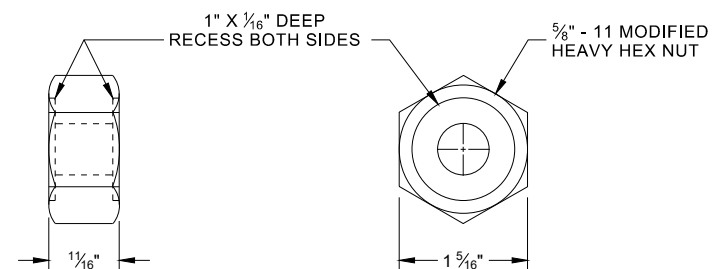


POST BOLT TABLE

L	T (MIN.)
1 ¼"	1 ⅝"
2"	1 ¾"
10"	4"
14"	4 ⅙"
18"	4"
21"	4 ⅙"
25"	4"

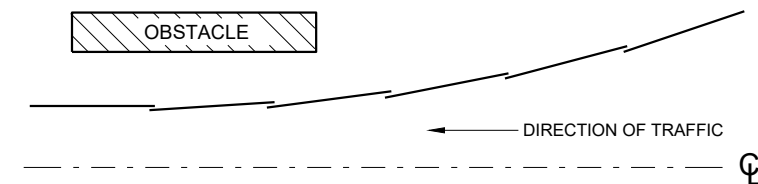


ALTERNATE BOLT HEAD

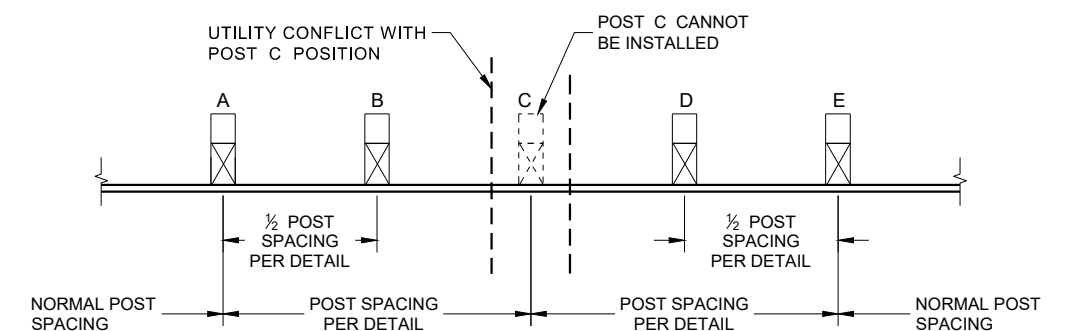


POST BOLT, SPLICE BOLT AND RECESS NUT

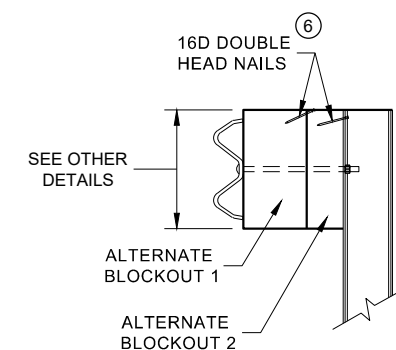
- ⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



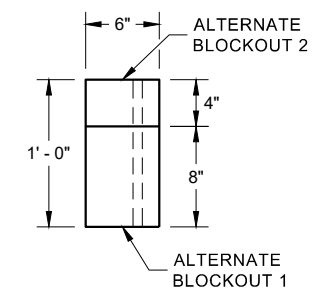
**PLAN VIEW
BEAM LAPPING DETAIL**



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

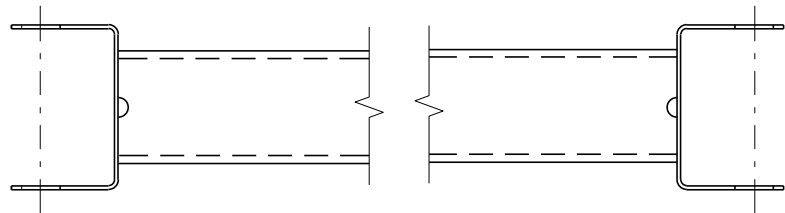
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

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

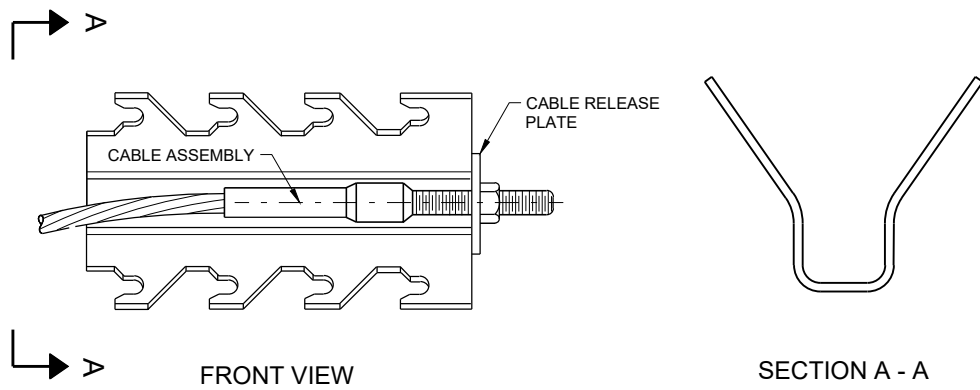


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

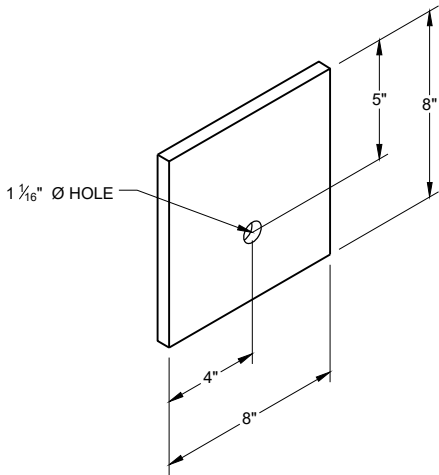


GENERIC GROUND STRUT⁹ E

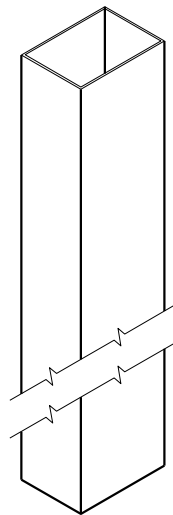
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED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



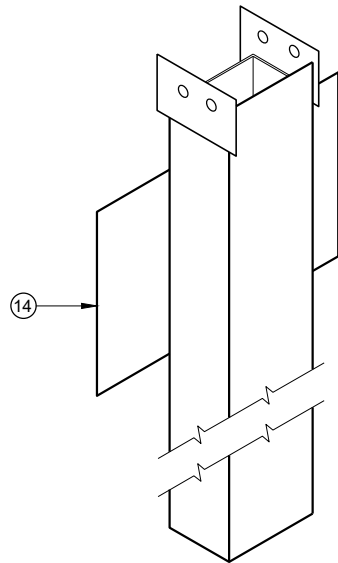
GENERIC ANCHOR CABLE BOX⁹ E



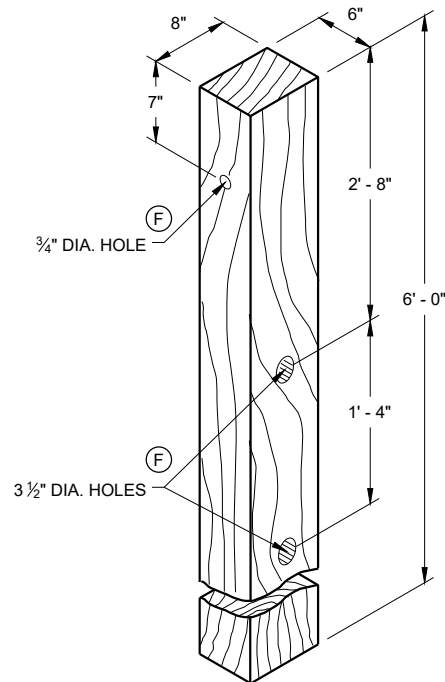
BEARING PLATE⁶ E



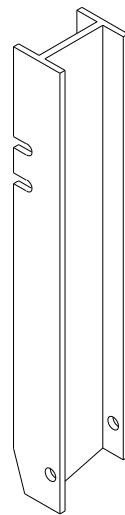
UPPER POST NO. 1 ⁽¹⁾ (E)



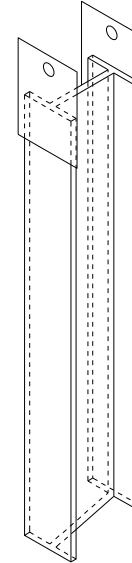
LOWER POST NO. 1 ⁽²⁾ (E)



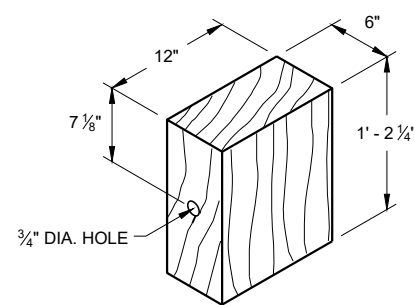
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



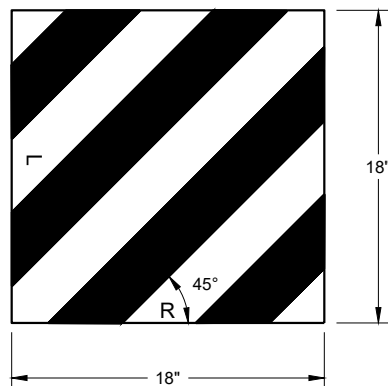
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



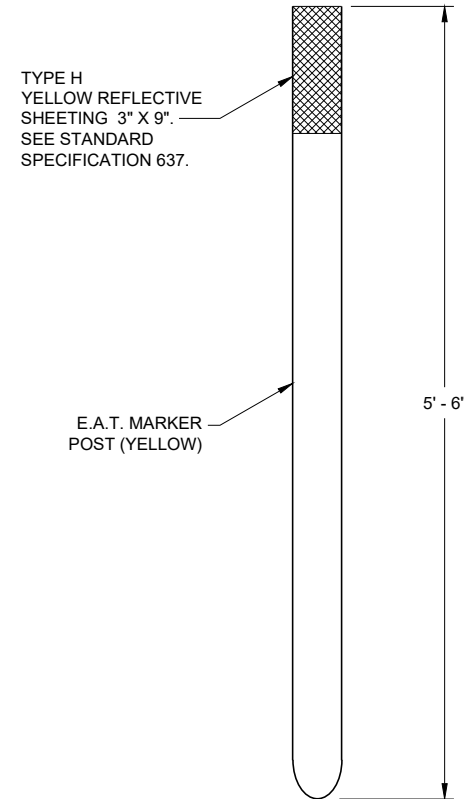
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



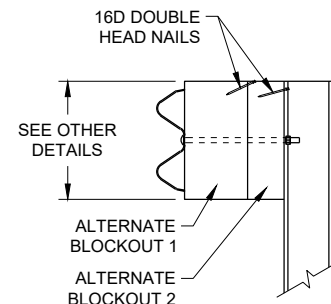
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



REFLECTIVE SHEETING DETAIL ^(E)

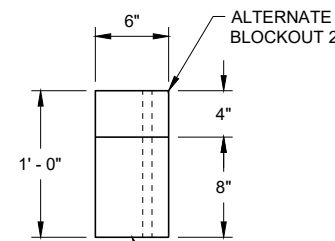


E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

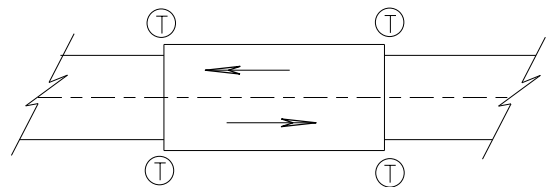


TOP VIEW

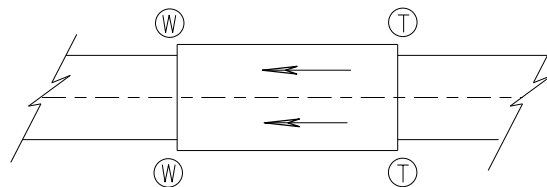
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

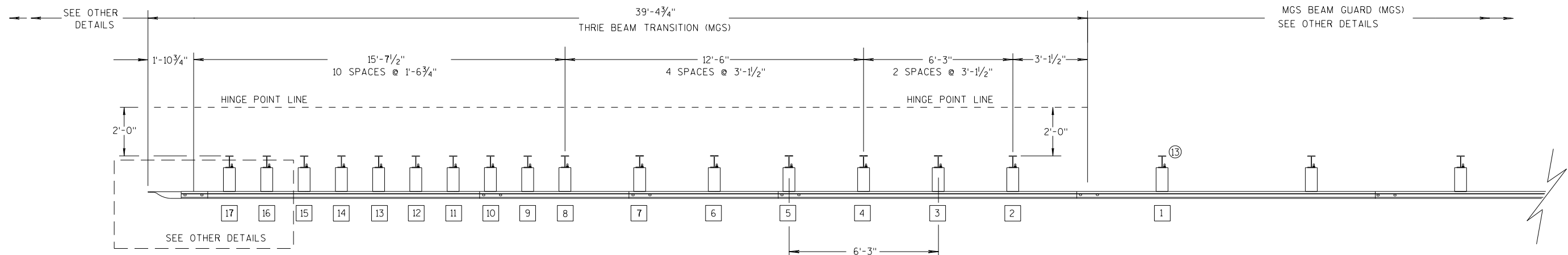
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

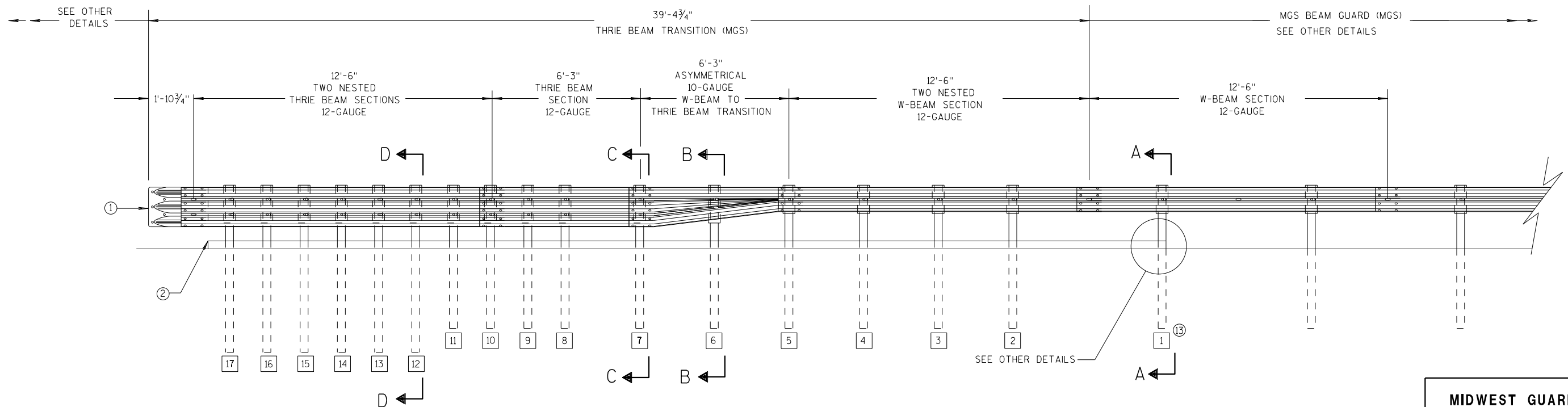
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

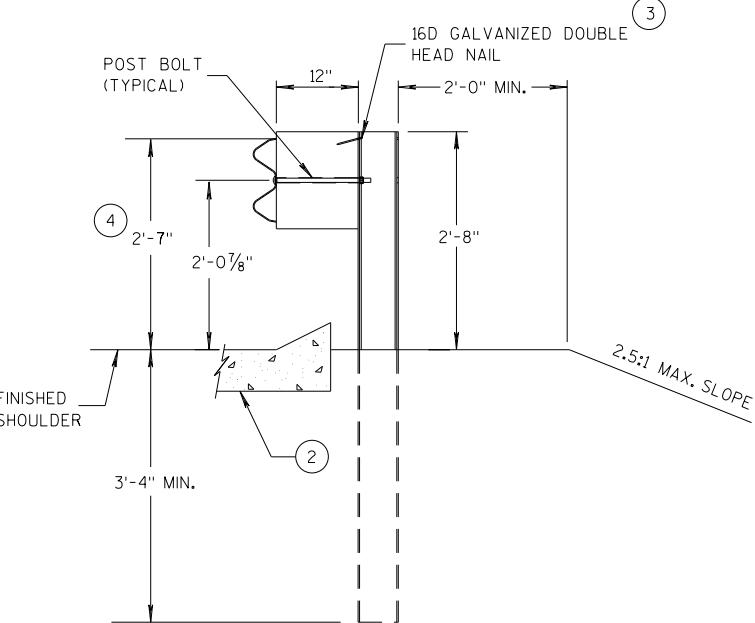
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

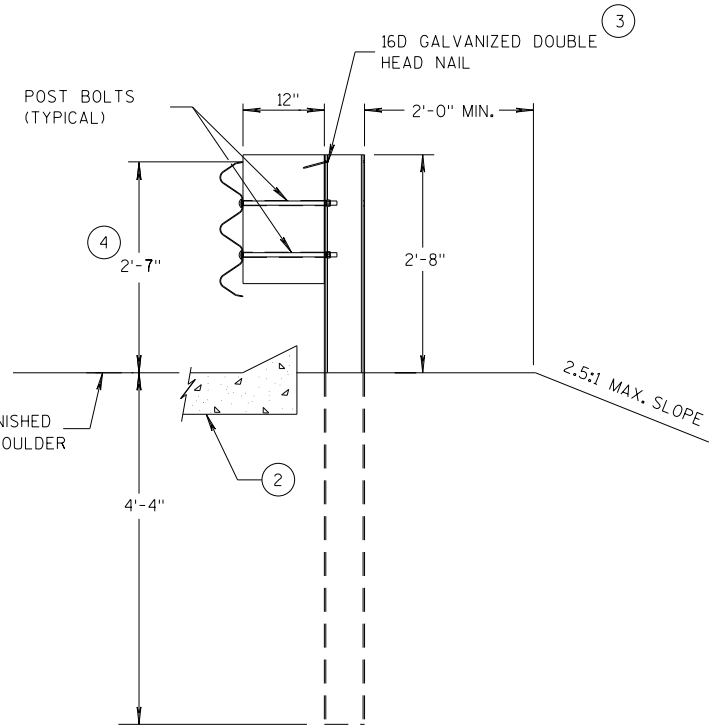
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

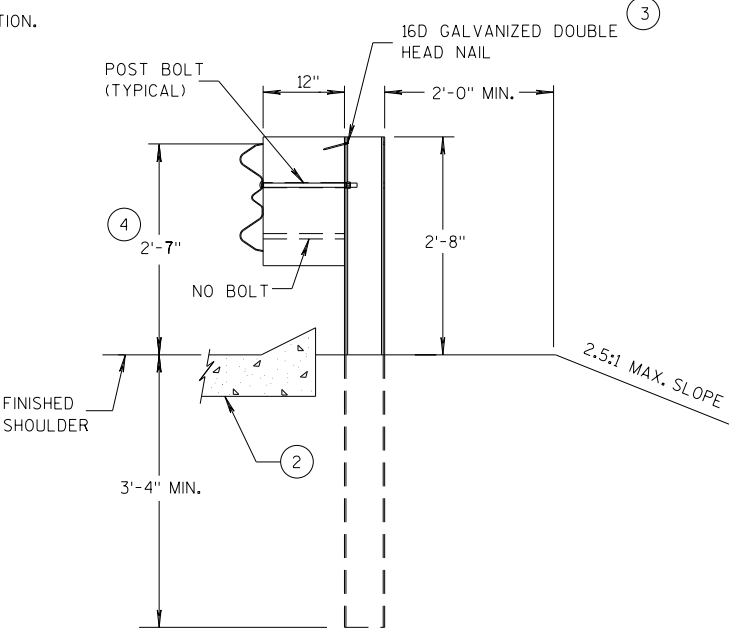
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.
- 13 STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



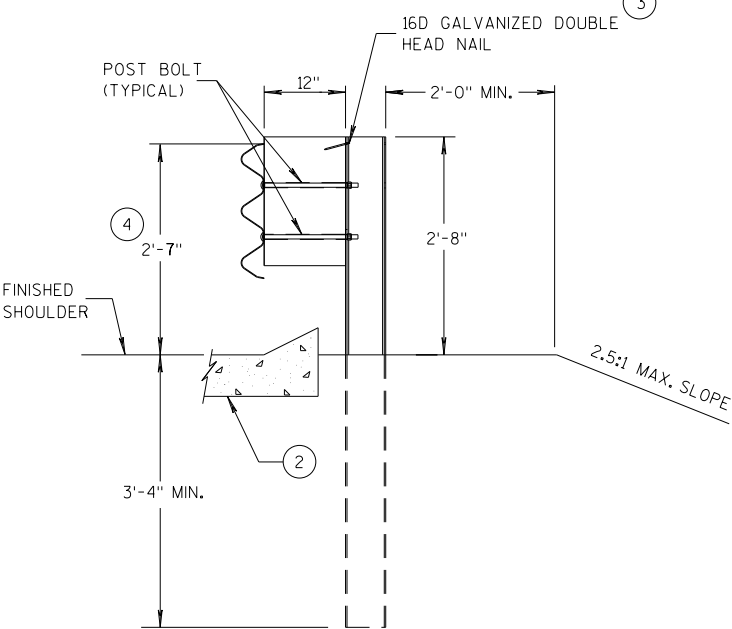
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

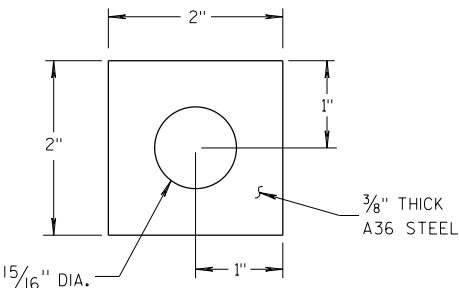
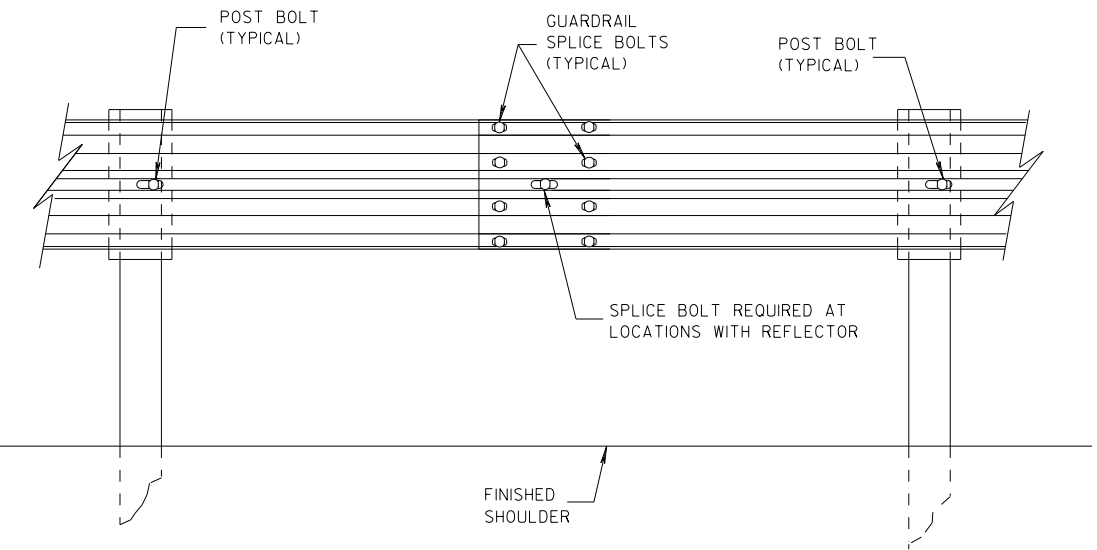
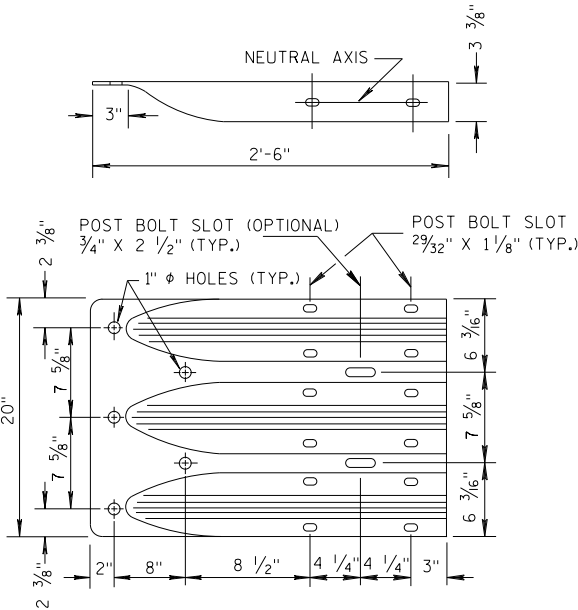


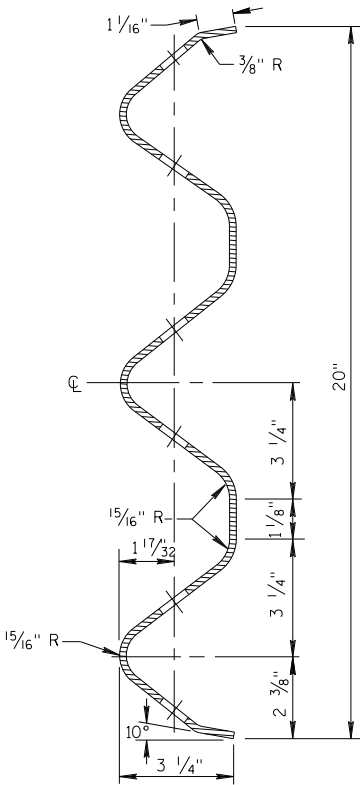
PLATE WASHER DETAIL



SPLICE DETAIL



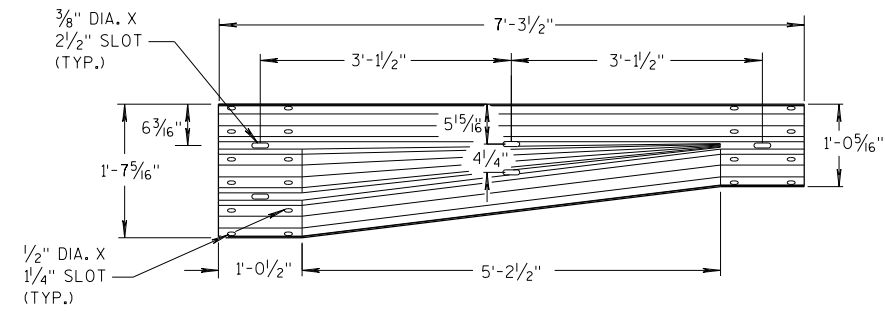
THRIE BEAM
TERMINAL CONNECTOR



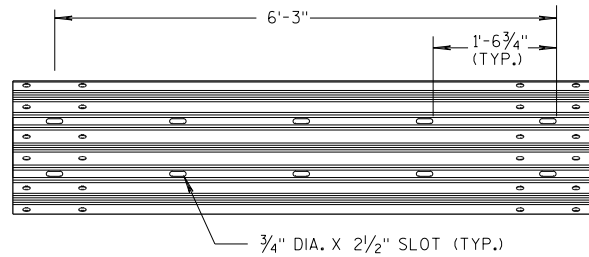
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

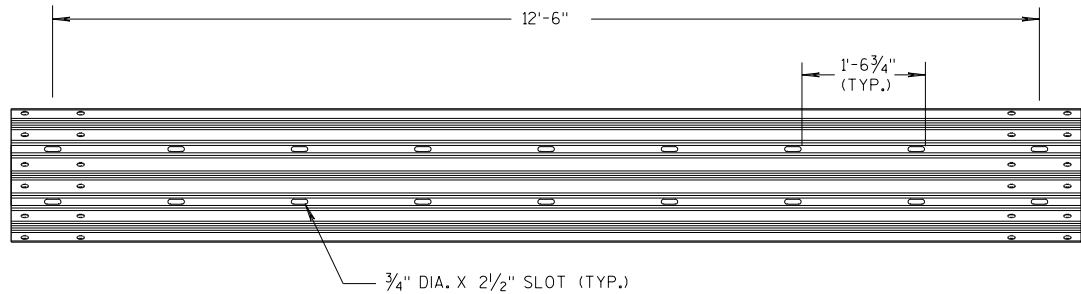
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



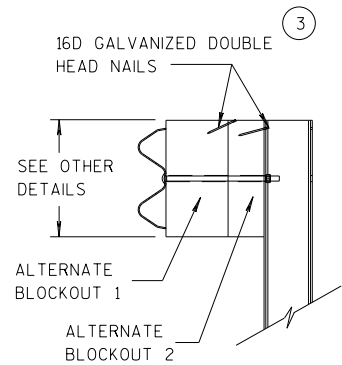
W-BEAM TO THRIE BEAM TRANSITION SECTION



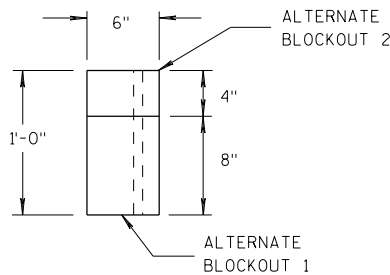
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

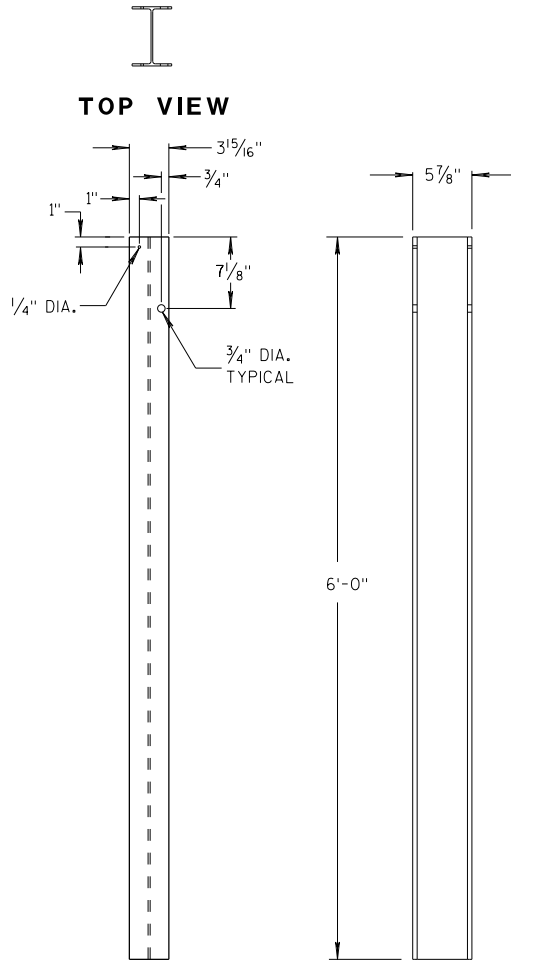


SIDE VIEW



TOP VIEW

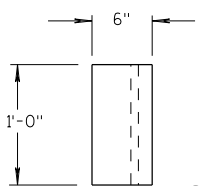
ALTERNATE WOOD BLOCKOUT DETAIL



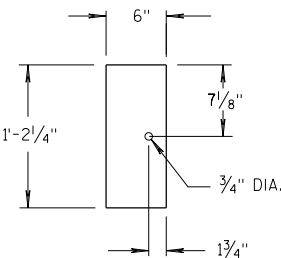
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

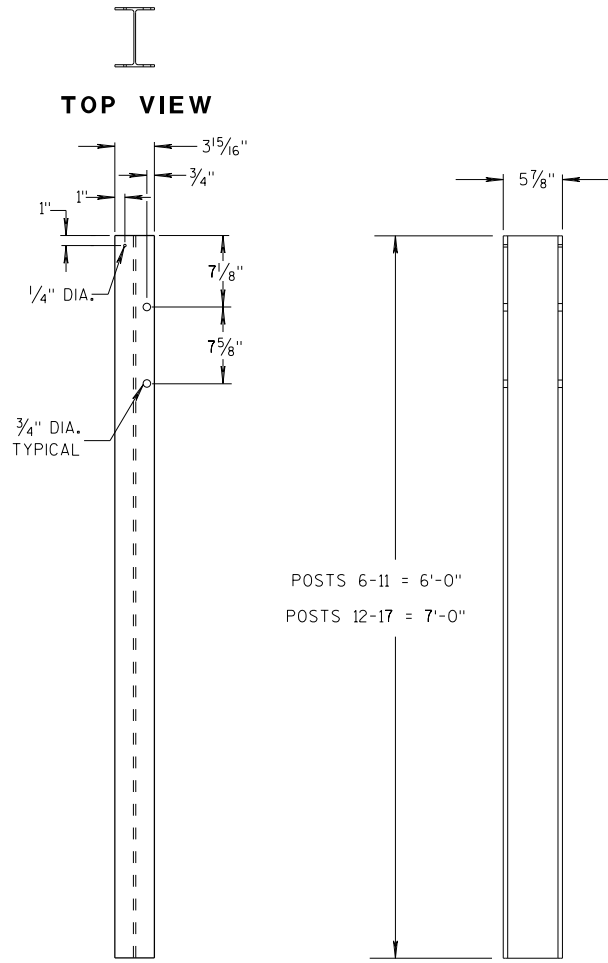


TOP VIEW



FRONT VIEW

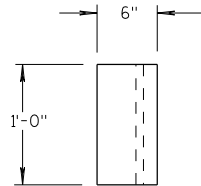
**BLOCKOUT
POSTS 1-5**



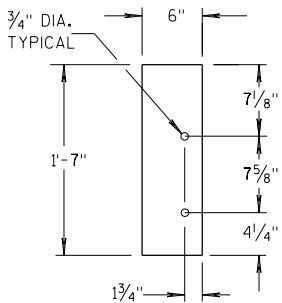
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

**BLOCKOUT
POSTS 6-17**

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

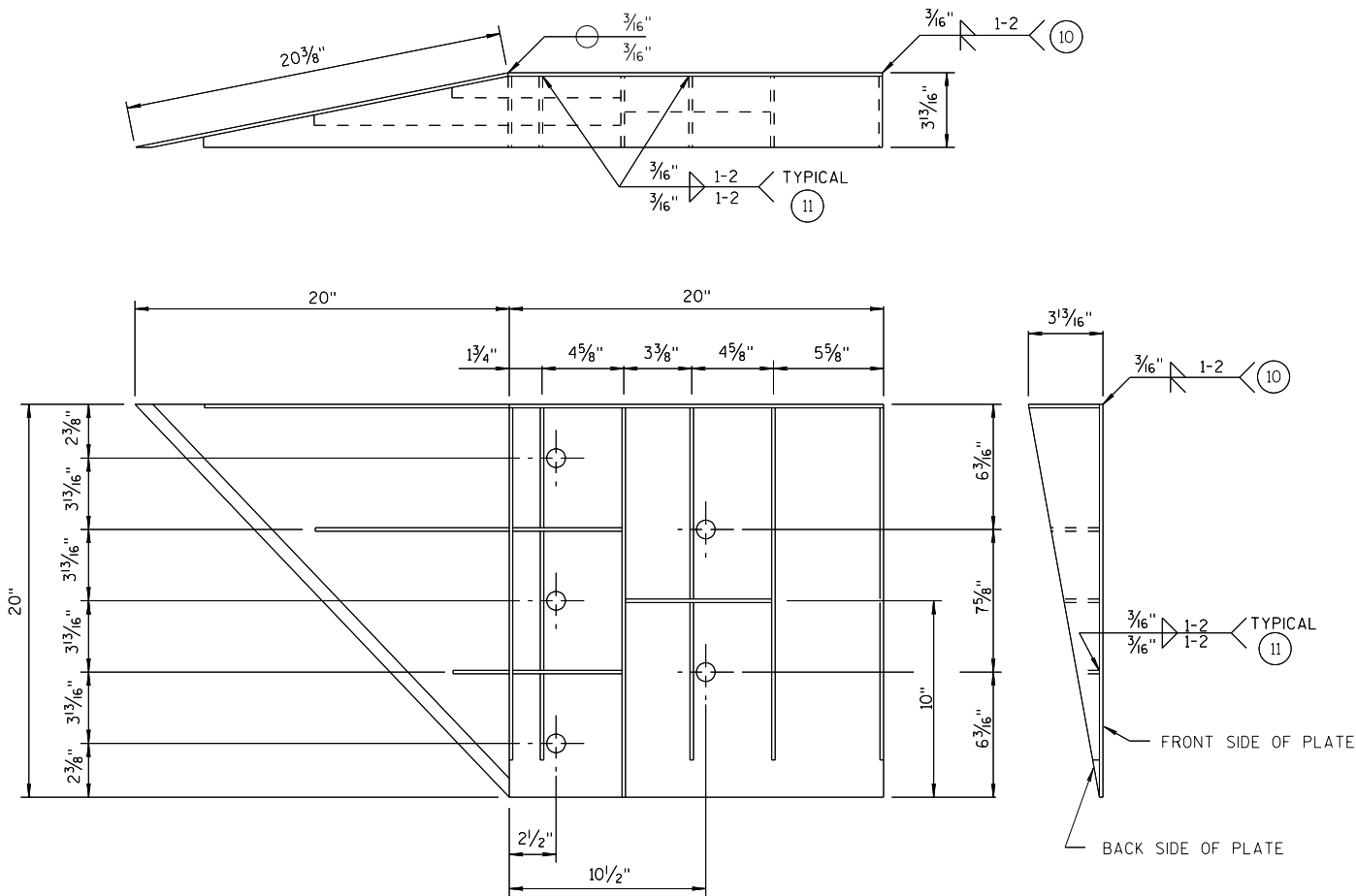
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

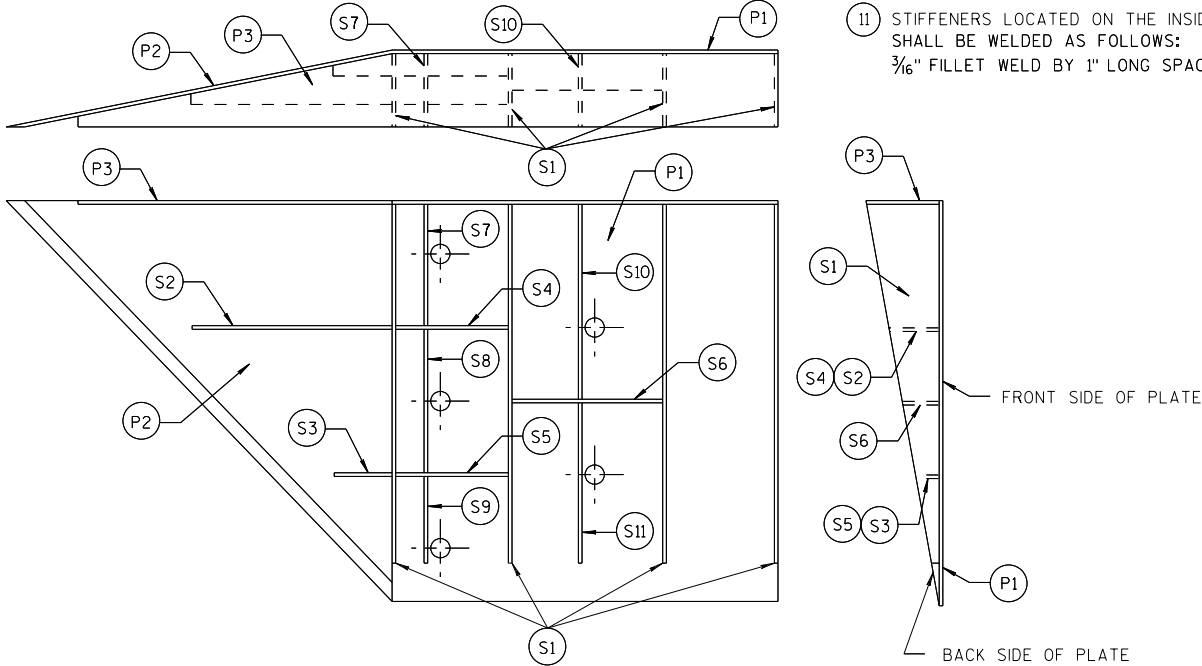


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 3/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 3/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)



GENERAL NOTES

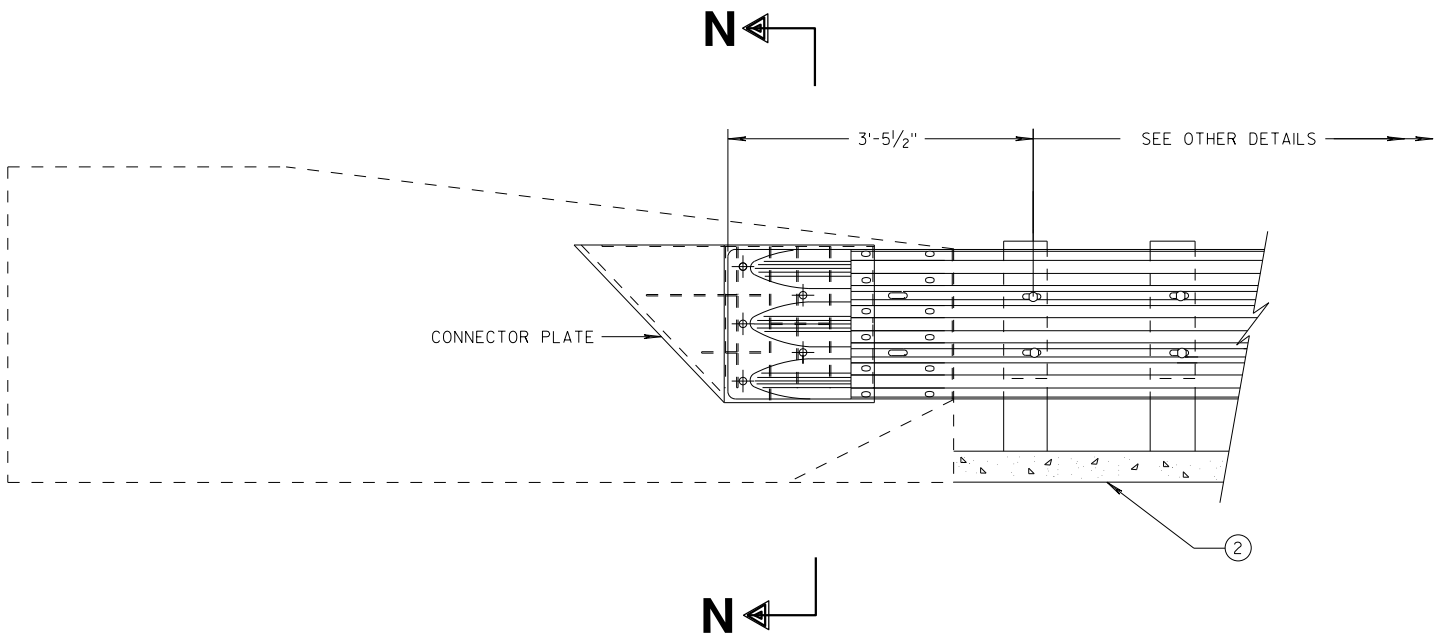
- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

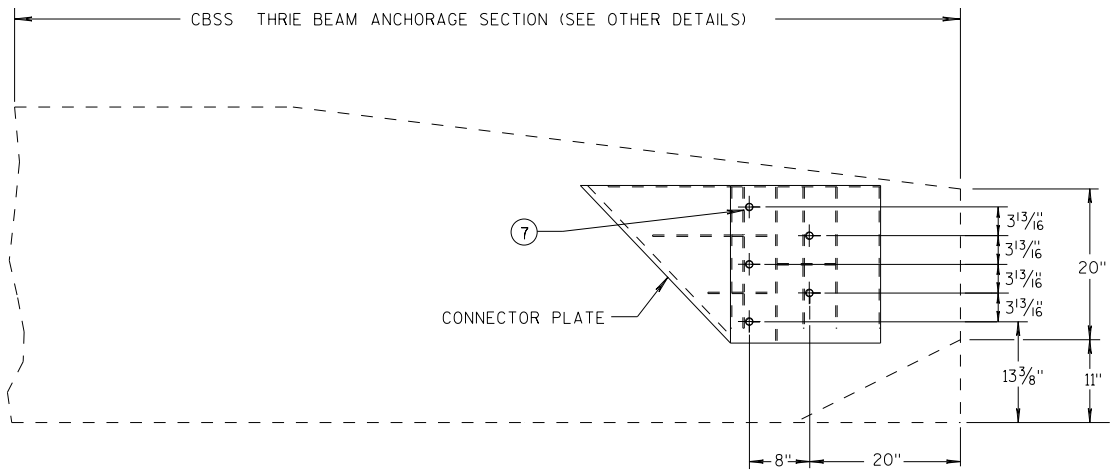
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



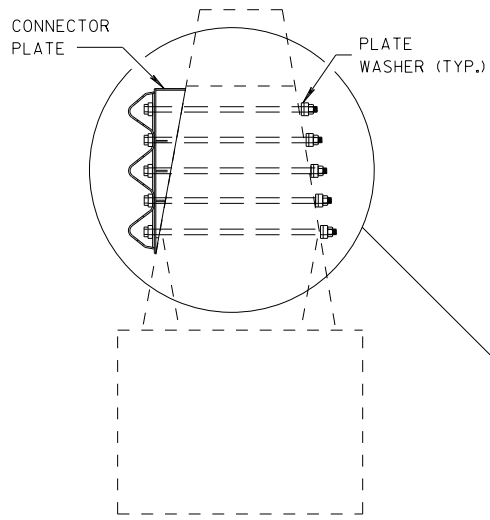
THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



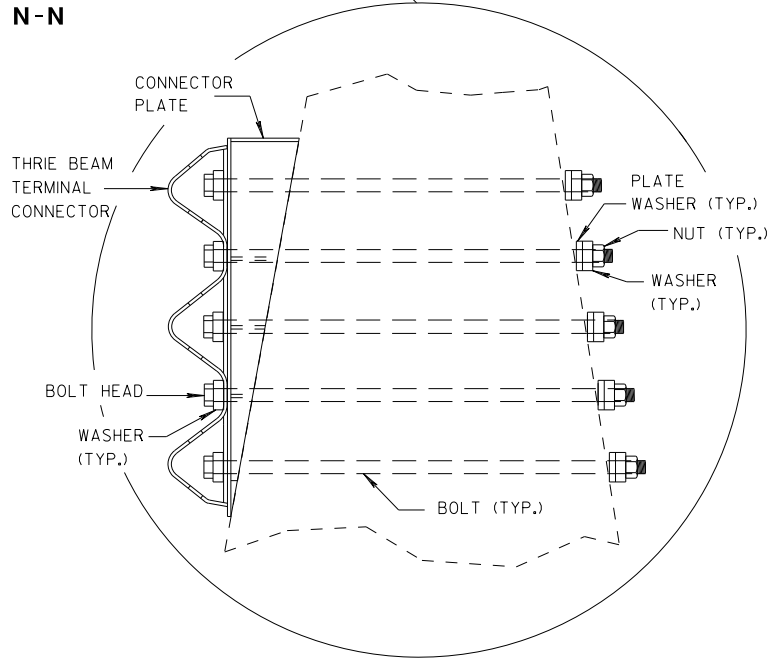
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

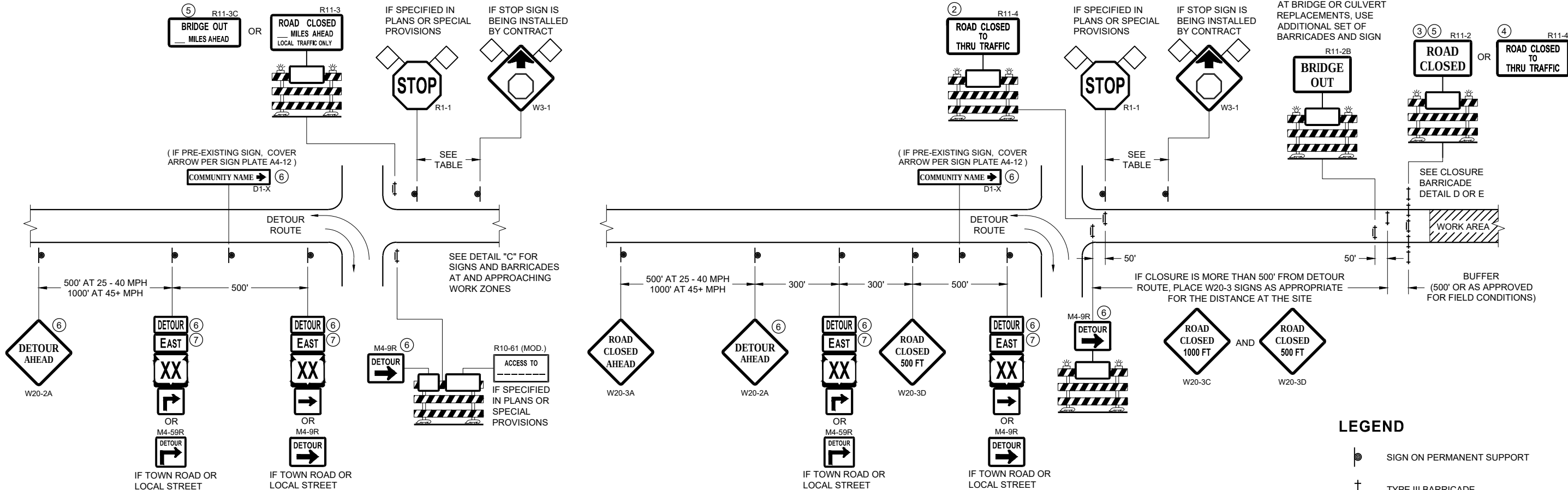
- CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- (7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTION PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



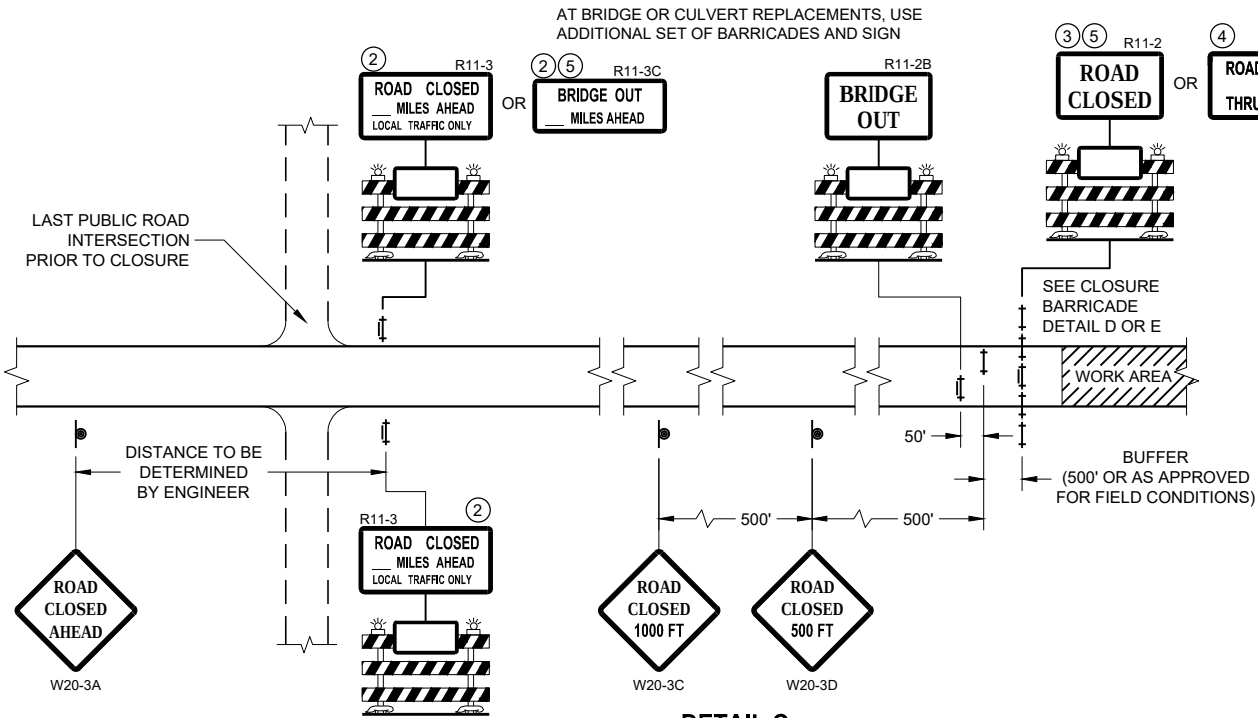
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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

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

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

- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

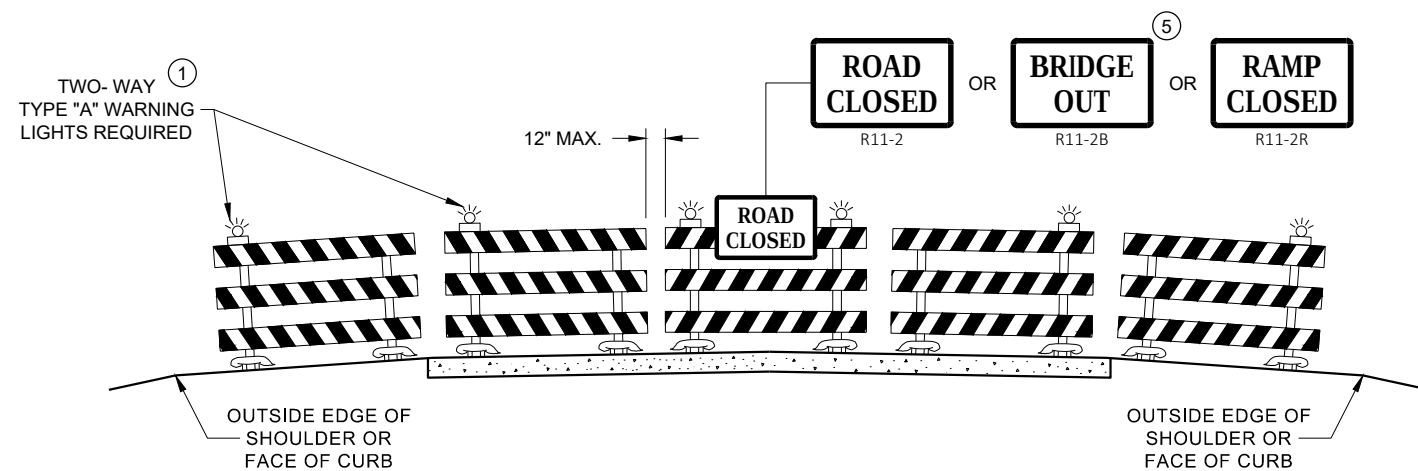
SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

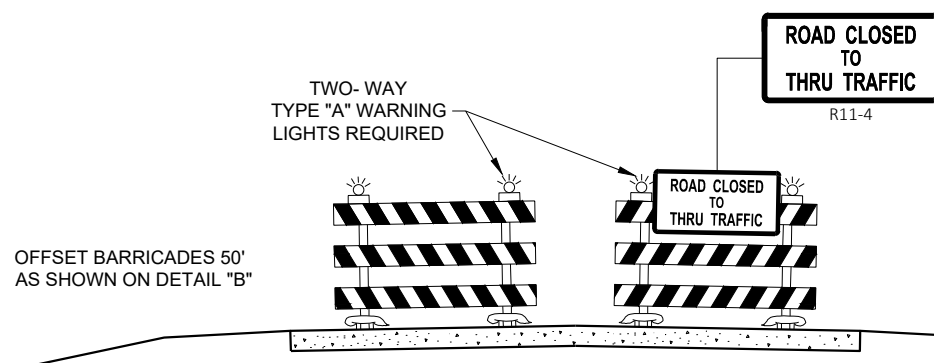
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

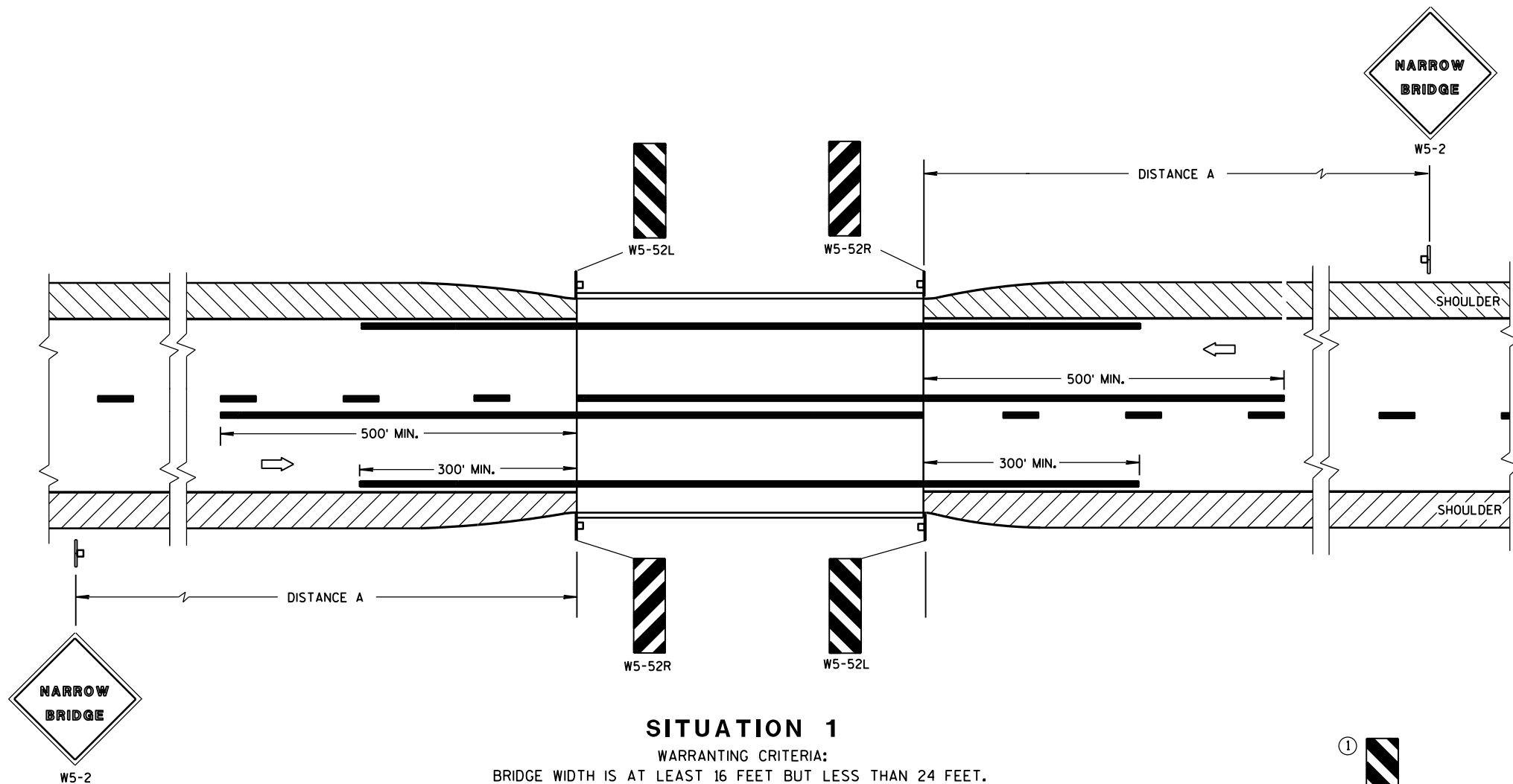
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



SITUATION 1

WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A "
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

GENERAL NOTES

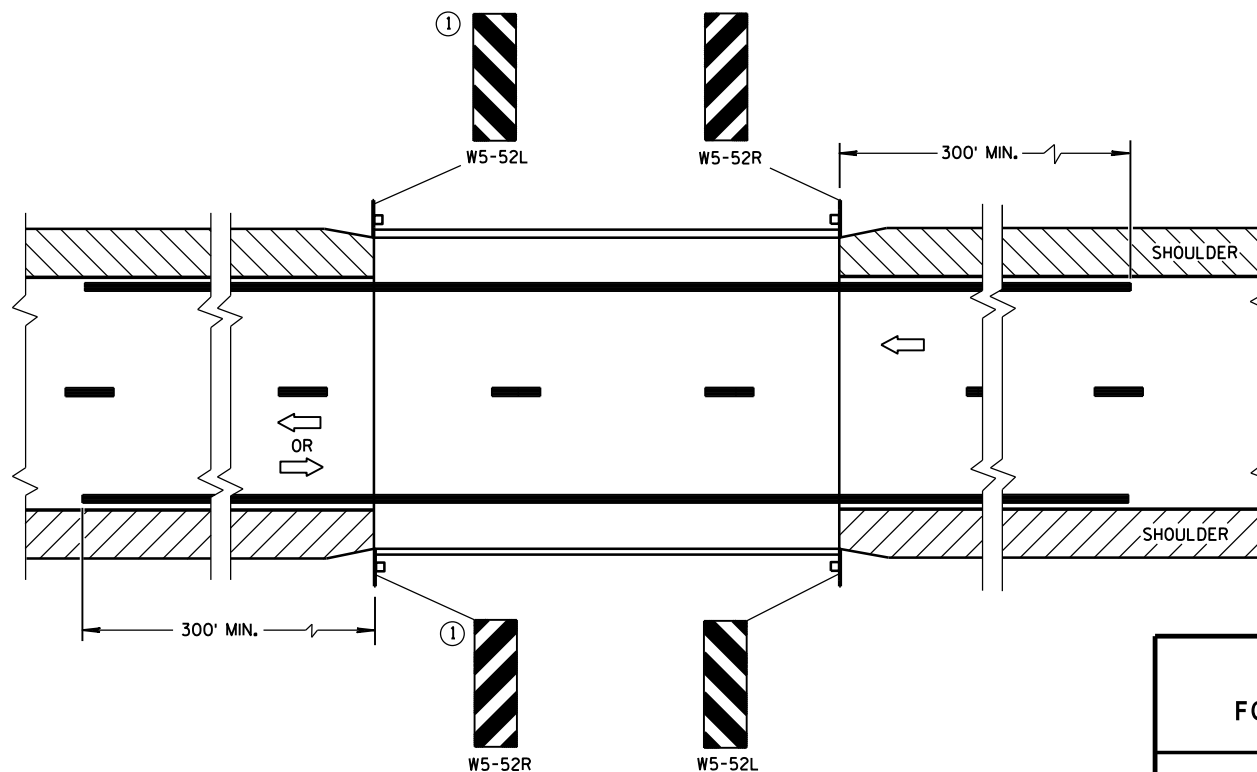
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

SIGNING & MARKING FOR TWO LANE BRIDGES

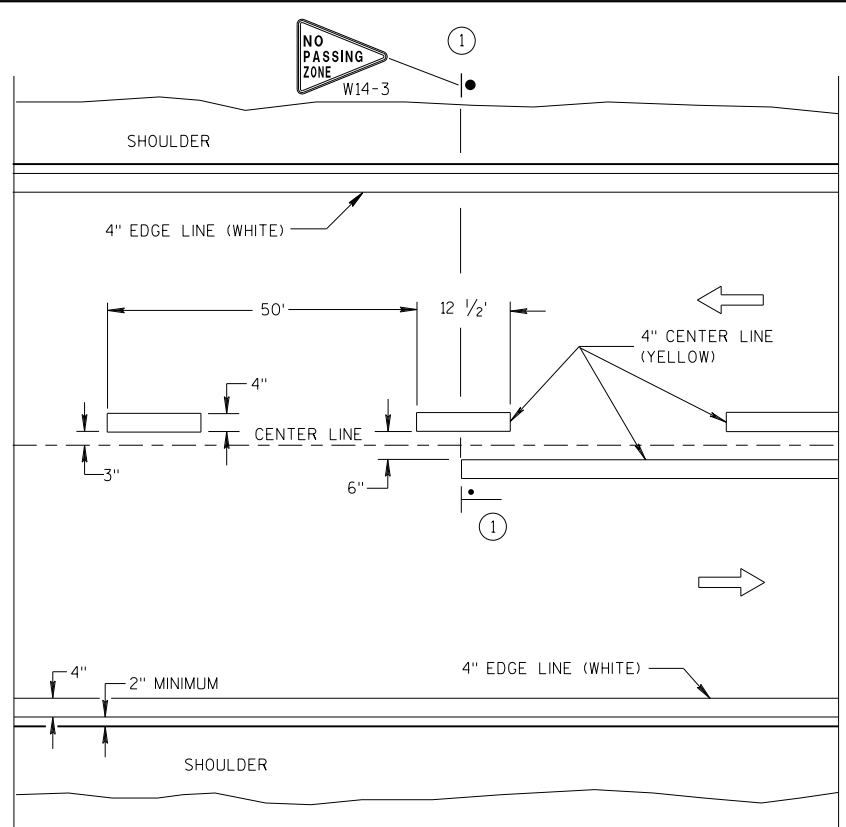
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

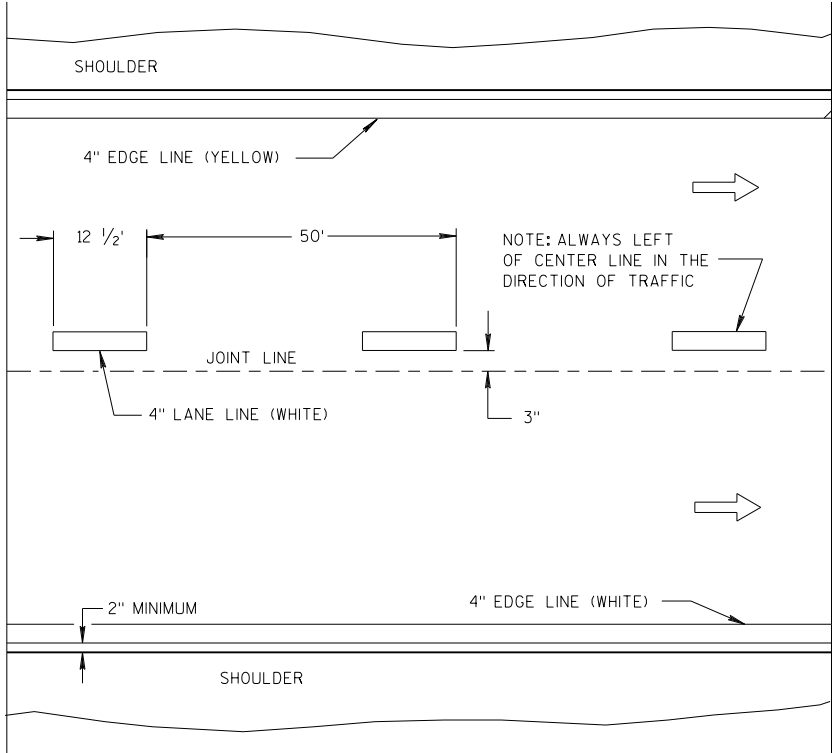
June 2017
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER

FHWA

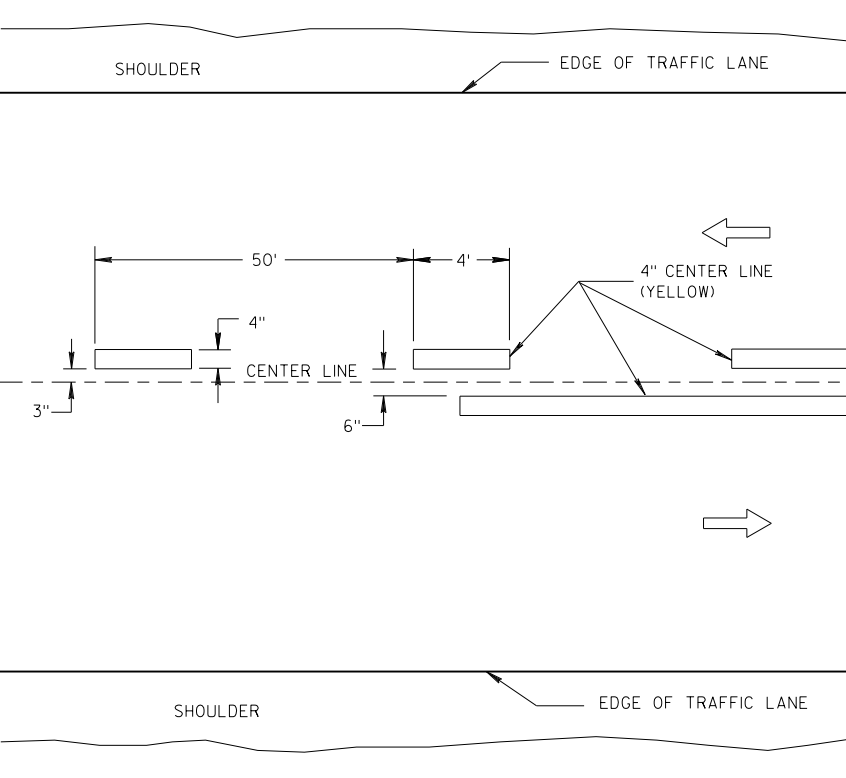


TWO WAY TRAFFIC

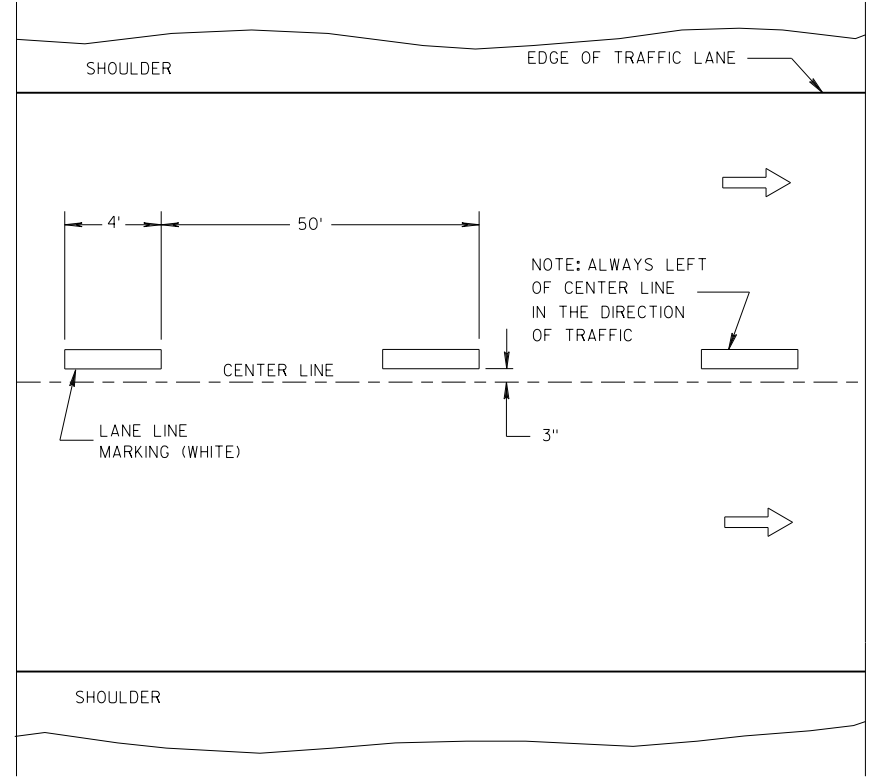


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

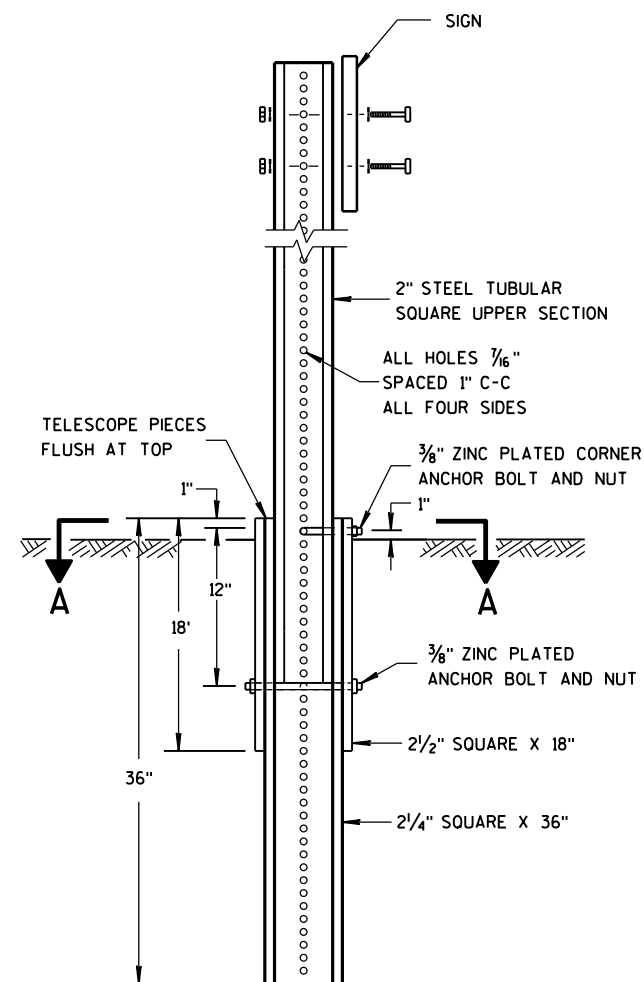
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

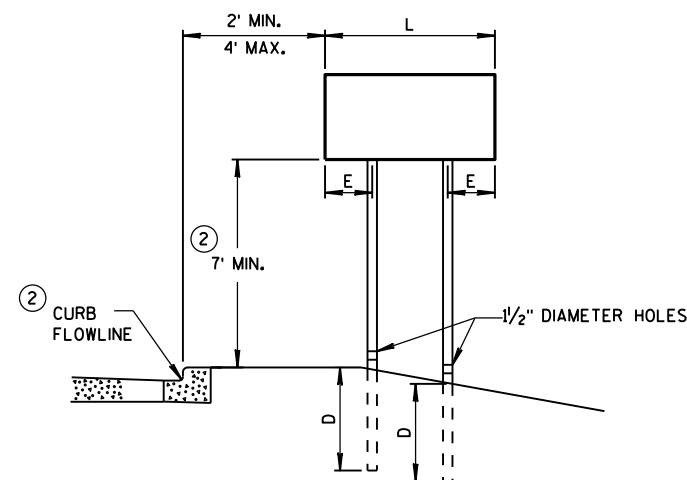
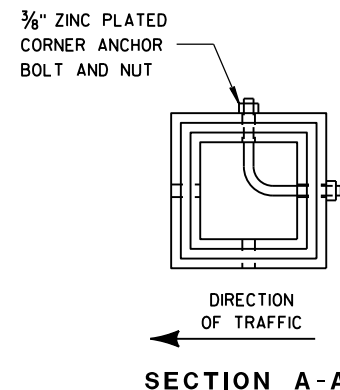


DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

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

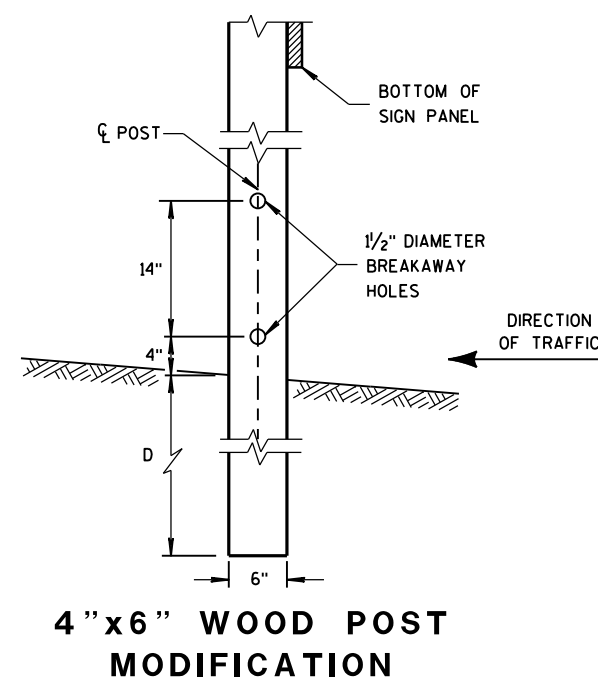
SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED
ON TUBULAR STEEL POSTS.



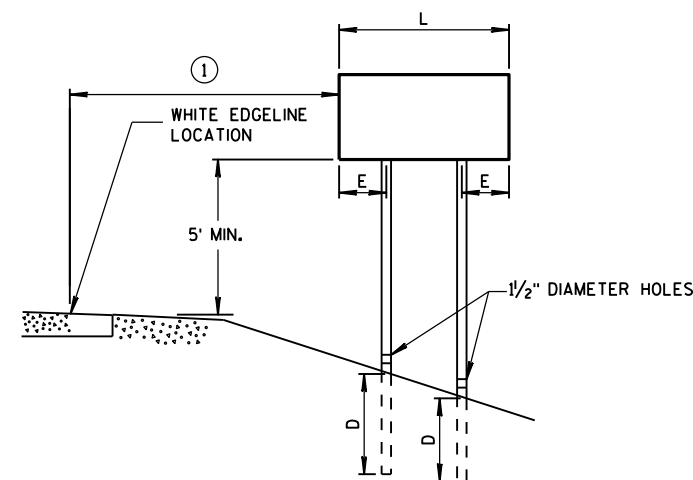
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

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



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

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

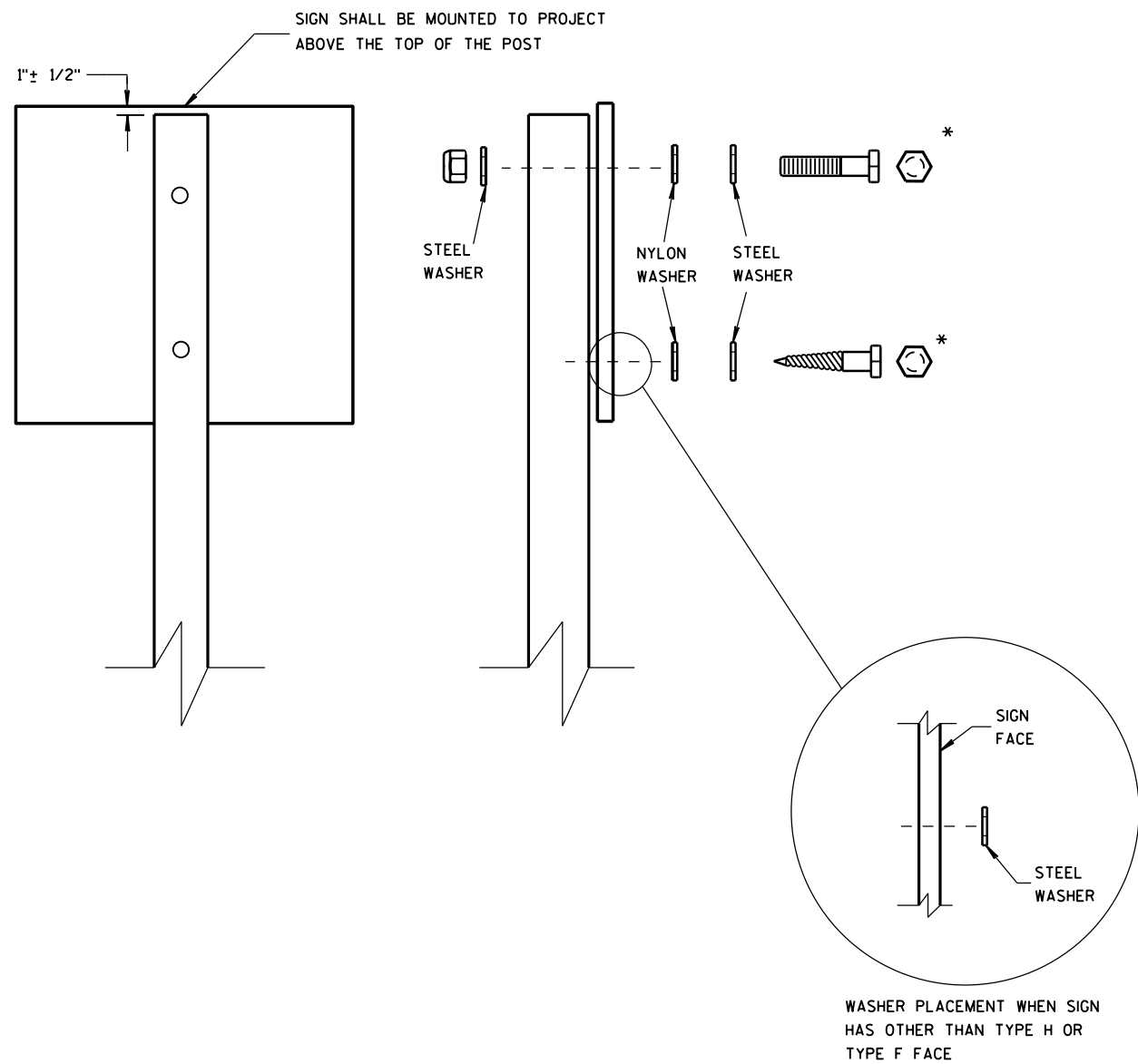
SEE NOTE ③

GENERAL NOTES

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

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

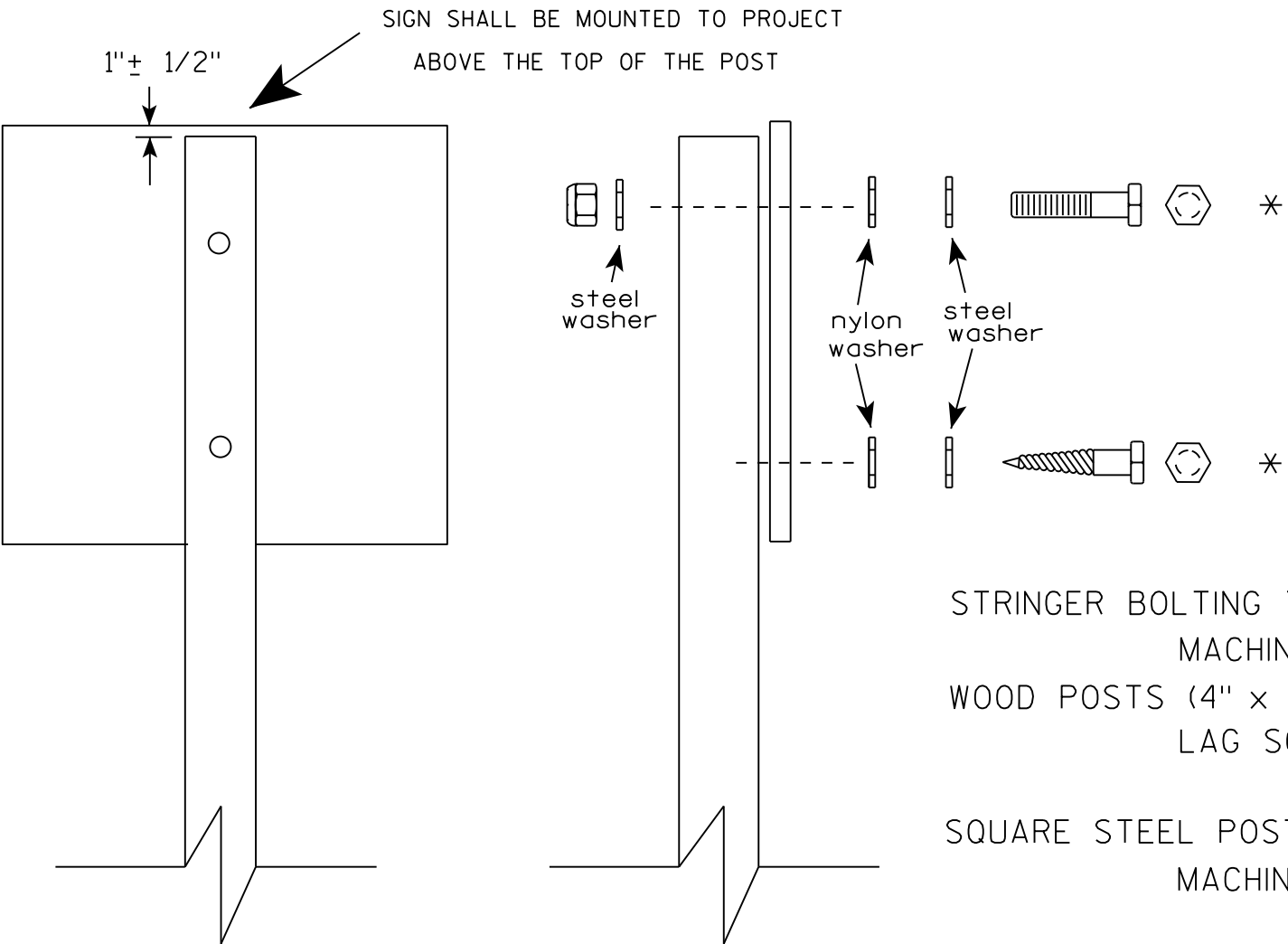
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

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

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



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

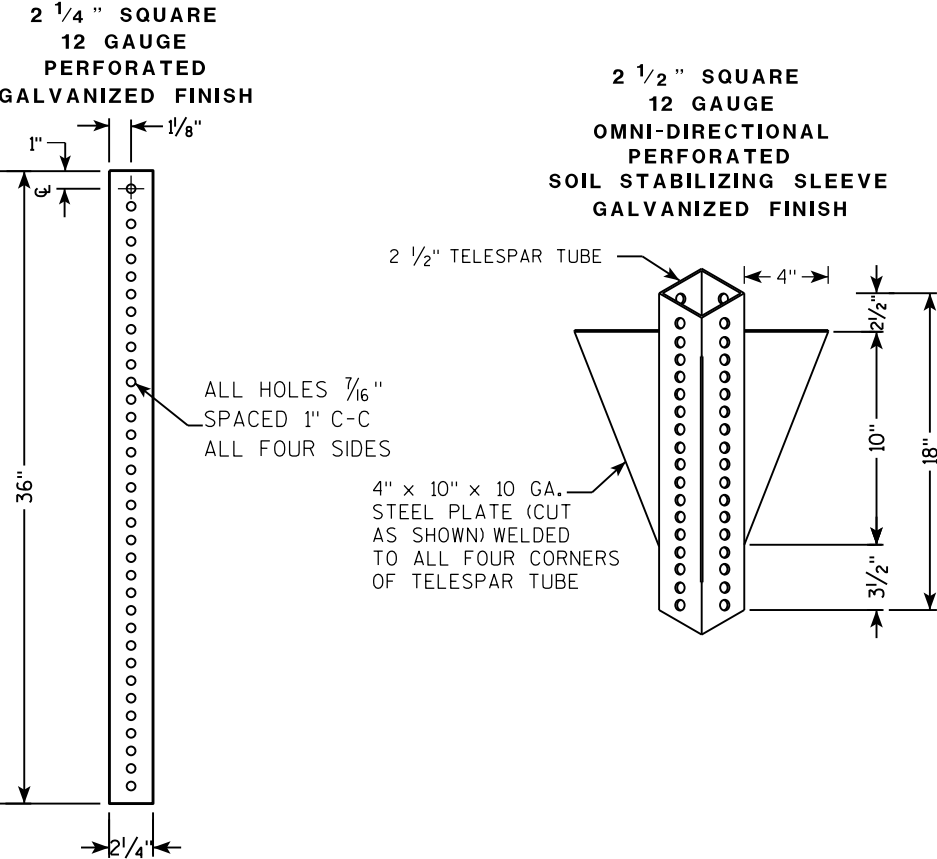
ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

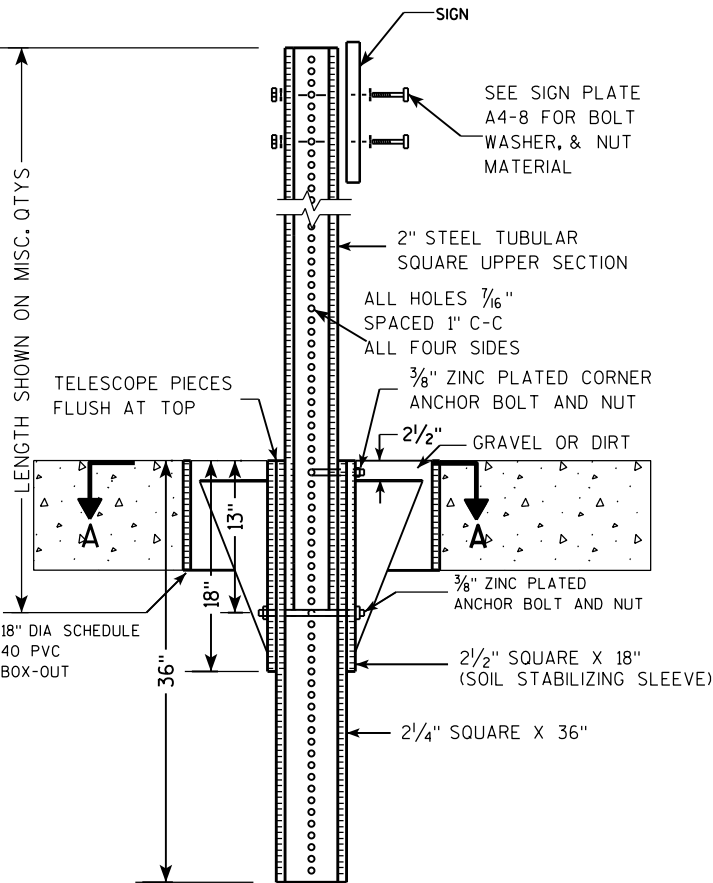
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

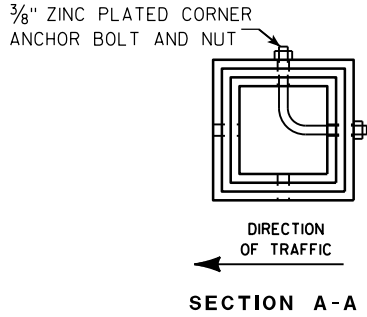
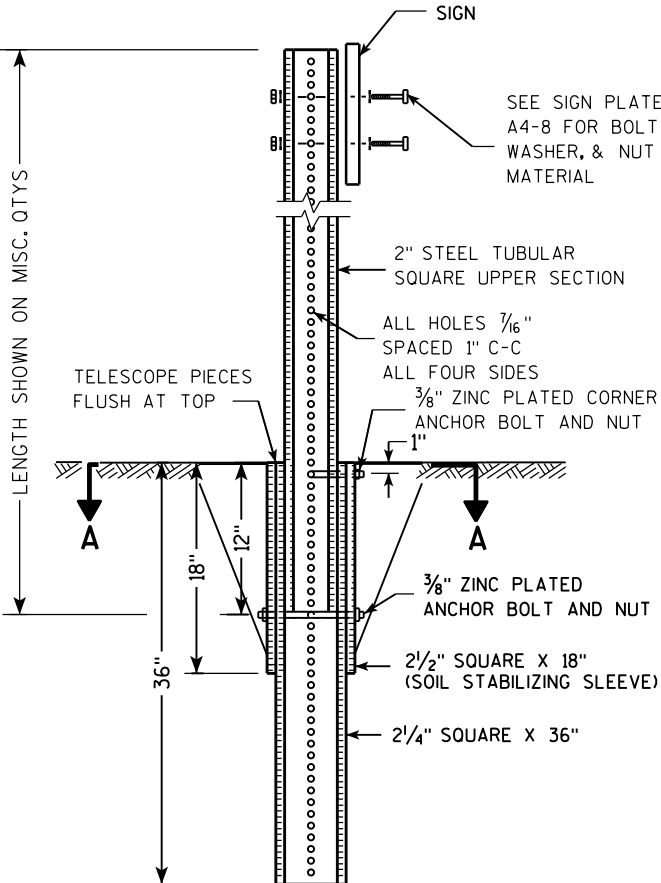
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

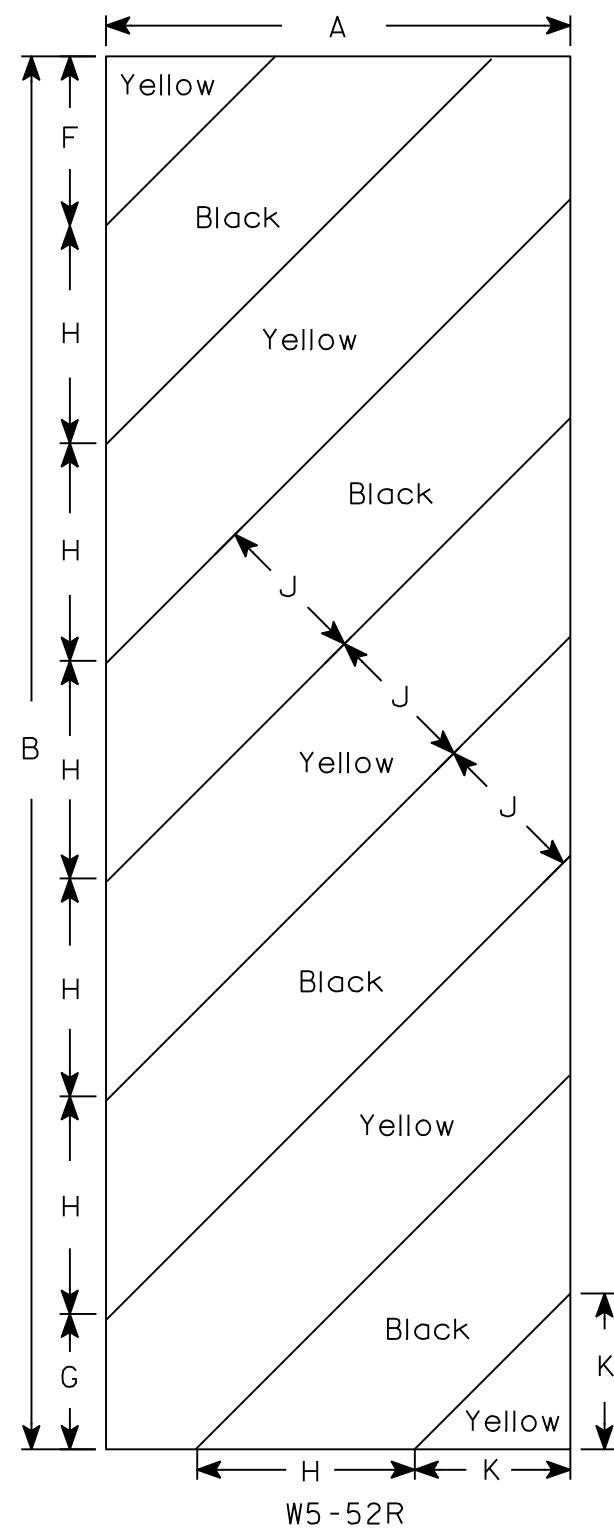
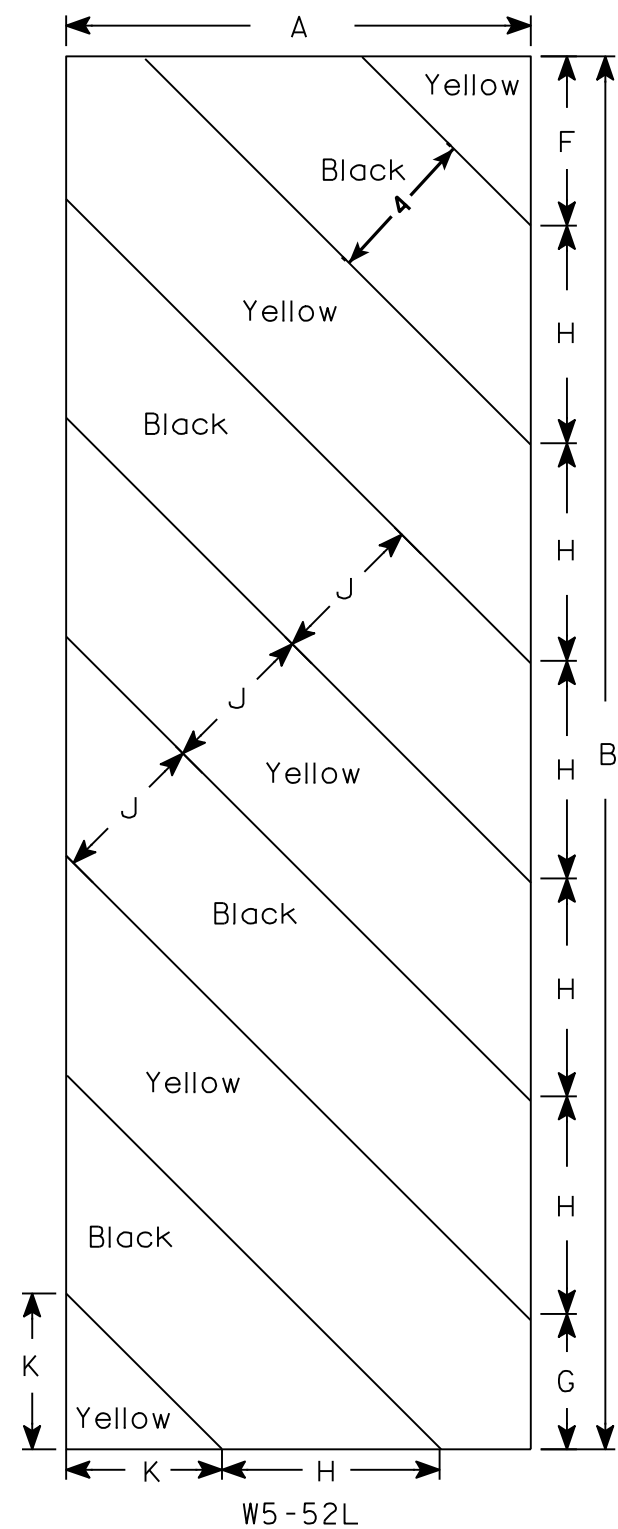
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9



NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Yellow
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 4. Alternate colors of stripes as shown.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
2M	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
3	18	54				6	5 1⁄2	8 1⁄2	45°	6	6 5⁄16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

(X) INDICATES WING NUMBER

LIVE LOAD:

DESIGN LOADING; HL-93
INVENTORY RATING FACTOR; RF = 1.14
OPERATING RATING FACTOR; RF = 1.48
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR FUTURE WEARING
SURFACE OF 20 POUNDS PER SQUARE FOOT

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB ----- $f'_c = 4000$ P.S.I.
ALL OTHER CONCRETE MASONRY ----- $f'_c = 3500$ P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 ----- $f_y = 60,000$ P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON 10 $\frac{3}{4}$ X 0.25-INCH CIP CONCRETE PILING
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 115 TONS ** PER PILE
AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 45' LONG AT WEST ABUTMENT
ESTIMATED 45' LONG AT EAST ABUTMENT

THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

HYDRAULIC DATA

100 YEAR FREQUENCY

Q (100) = 280 C.F.S.
Q (100) THRU BRIDGE = 280 C.F.S.
VEL. = 3.22 F.P.S.
HW. EL. (100) = 1166.28
WATERWAY AREA (BRIDGE) = 87 SQ. FT.
DRAINAGE AREA = 1.8 SQ. MI.
ROAD OVERTOPPING FREQUENCY = > 100 YEAR
OVERTOPPING MIN. EL. = 1169.75
SCOUR CRITICAL CODE = 5

TRAFFIC DATA

A.D.T. (2040) = 830
R.D.S. = 55 MPH

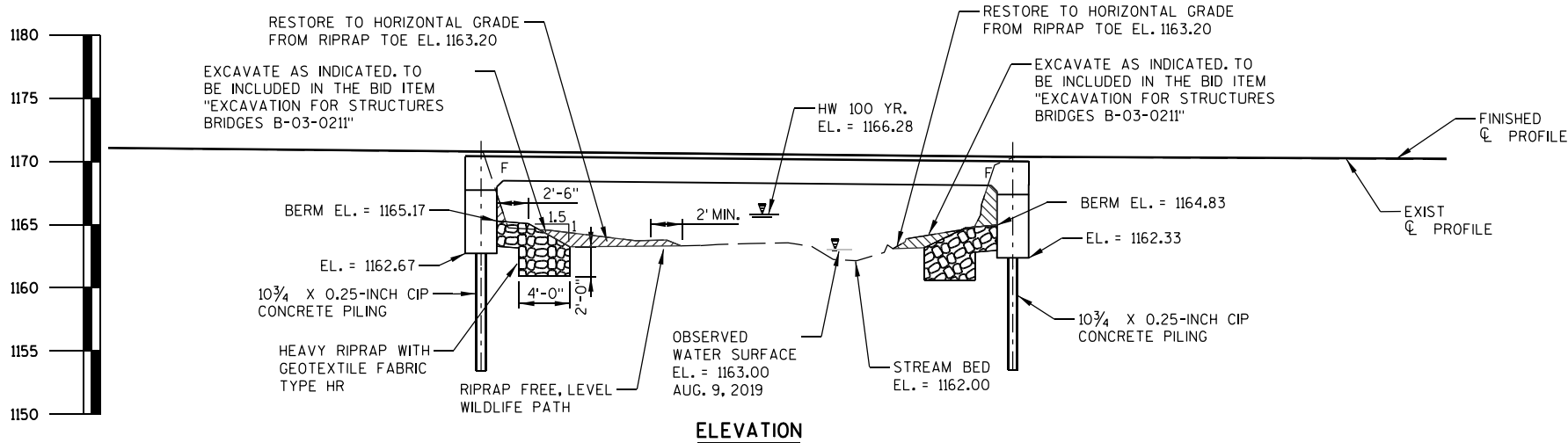
2 YEAR FREQUENCY

Q (2) = 99 C.F.S.
HW. EL. (2) = 1165.04
VEL. (2) = 2.38 F.P.S.

BENCHMARKS (NAVD 88) 			
NO.	STA./OFFSET	DESCRIPTION	ELEV.
BM60	39+28, 33' RT	RR SPIKE IN POWER POLE	1168.10
BM61	41+57, 35' RT	RR SPIKE IN POWER POLE	1166.96

CONSULTANT CONTACT:
MATT GUNDRY (715) 861-7425

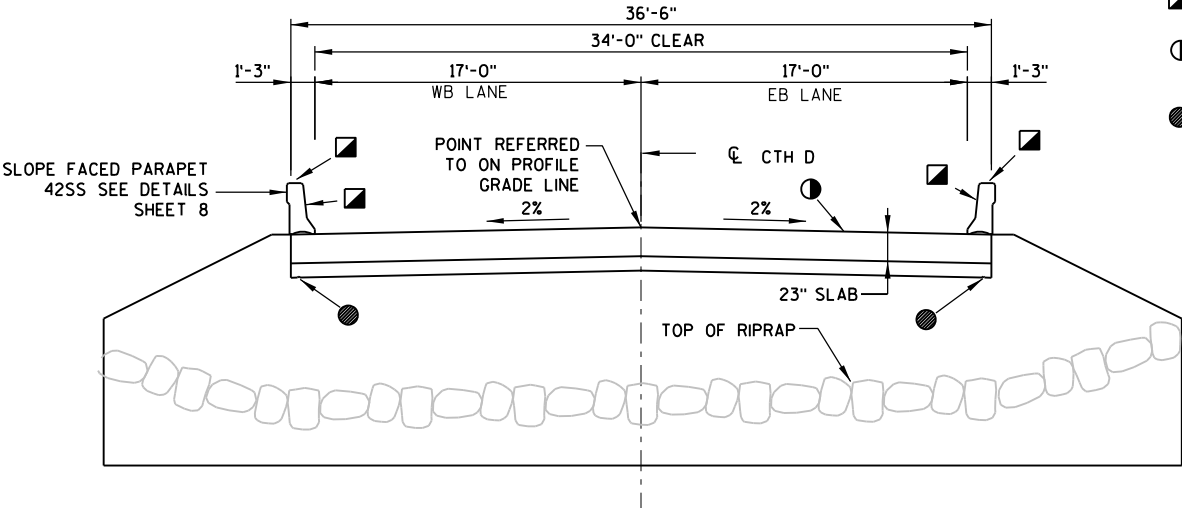
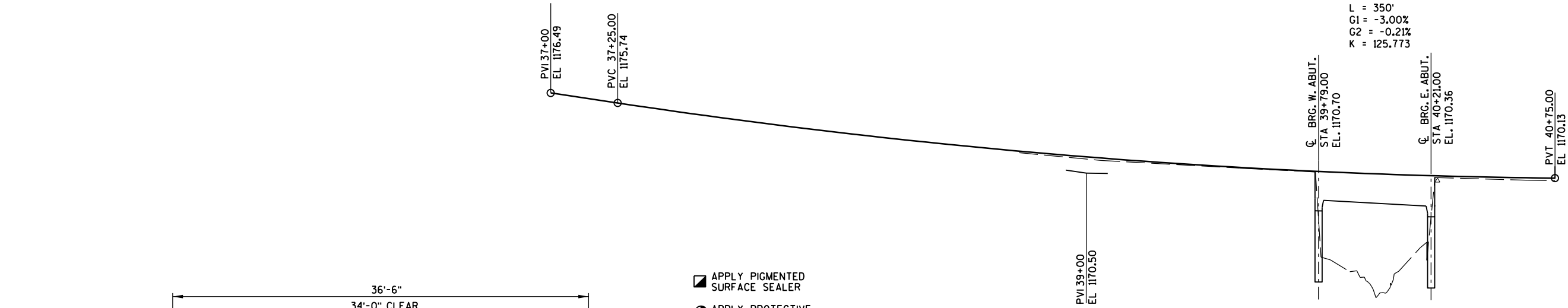
BRIDGE OFFICE CONTACT:
WILLIAM DREHER (608) 266-8489



LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. ABUTMENT ELEVATION DETAILS
5. ABUTMENT WING DETAILS
6. ABUTMENT BILL OF BARS
7. SUPERSTRUCTURE
8. SINGLE SLOPE PARAPET 42SS

NO.	DATE	REVISION	BY
		Engineers - Surveyors - Architects 770 Technology Way Chippewa Falls, WI 54729 Phone: 715.861.5226 www.cbssquaredinc.com	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	 CHIEF STRUCTURES DESIGN ENGINEER		01/15/20 DATE
STRUCTURE B-03-0211			
CTH D OVER FOUR MILE CREEK			
COUNTY	BARRON	TOWN/ CITY /VILLAGE	MAPLE GROVE
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	MJG	DESIGN CK'D.	MJG
	MJG	DRAWN BY	DPB
		PLANS CK'D.	MJG
GENERAL PLAN			SHEET 1 OF 8



- APPLY PIGMENTED SURFACE SEALER
- APPLY PROTECTIVE SURFACE TREATMENT
- 3/4" DRIP GROOVE 5" FROM EDGE OF DECK. TERMINATE 6" FROM F.F. ABUT.

PROFILE GRADE LINE CTH D

TOP OF SLAB ELEVATIONS AND CAMBER VALUES

LOCATION	LT. EDGE SLAB ELEV.	CL BRIDGE ELEV.	RT. EDGE SLAB ELEV.	CAMBER VALUE (INCHES)
W. CL ABUT.	1170.34	1170.70	1170.34	0
1/10	1170.30	1170.66	1170.30	1/2
2/10	1170.26	1170.62	1170.26	1
3/10	1170.22	1170.58	1170.22	1 1/4
4/10	1170.18	1170.54	1170.18	1 1/2
5/10	1170.15	1170.51	1170.15	1 5/8
6/10	1170.12	1170.48	1170.12	1 1/2
7/10	1170.08	1170.44	1170.08	1 1/4
8/10	1170.06	1170.42	1170.06	1
9/10	1170.03	1170.39	1170.03	1/2
E. CL ABUT.	1170.00	1170.36	1170.00	0

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED
- THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE FABRIC TYPE HR TO THE LIMITS SHOWN ON SHEET 1 AND ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER
- THE EXISTING GROUND LINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES" FOR THE ABUTMENTS
- SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER
- THIS STRUCTURE WILL REPLACE EXISTING BRIDGE, P-03-996, A 40.5-FOOT LONG, SINGLE-SPAN PRECAST CONCRETE CHANNEL BRIDGE SET ON TIMBER ABUTMENTS
- AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A. THE BACKFILL STRUCTURE QUANTITIES ASSUMED A 1 1/2:1 EXCAVATION SLOPE BEHIND THE ABUTMENTS
- THE FIRST DIGIT OF A THREE DIGIT BAR MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE
- AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS
- DO NOT PLACE BACKFILL STRUCTURE ABOVE 3'-0" FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE AND MEETS MINIMUM CURING REQUIREMENTS OF SECTION 502.3.4.2 OF THE STANDARD SPECIFICATIONS

TOTAL ESTIMATED QUANTITIES

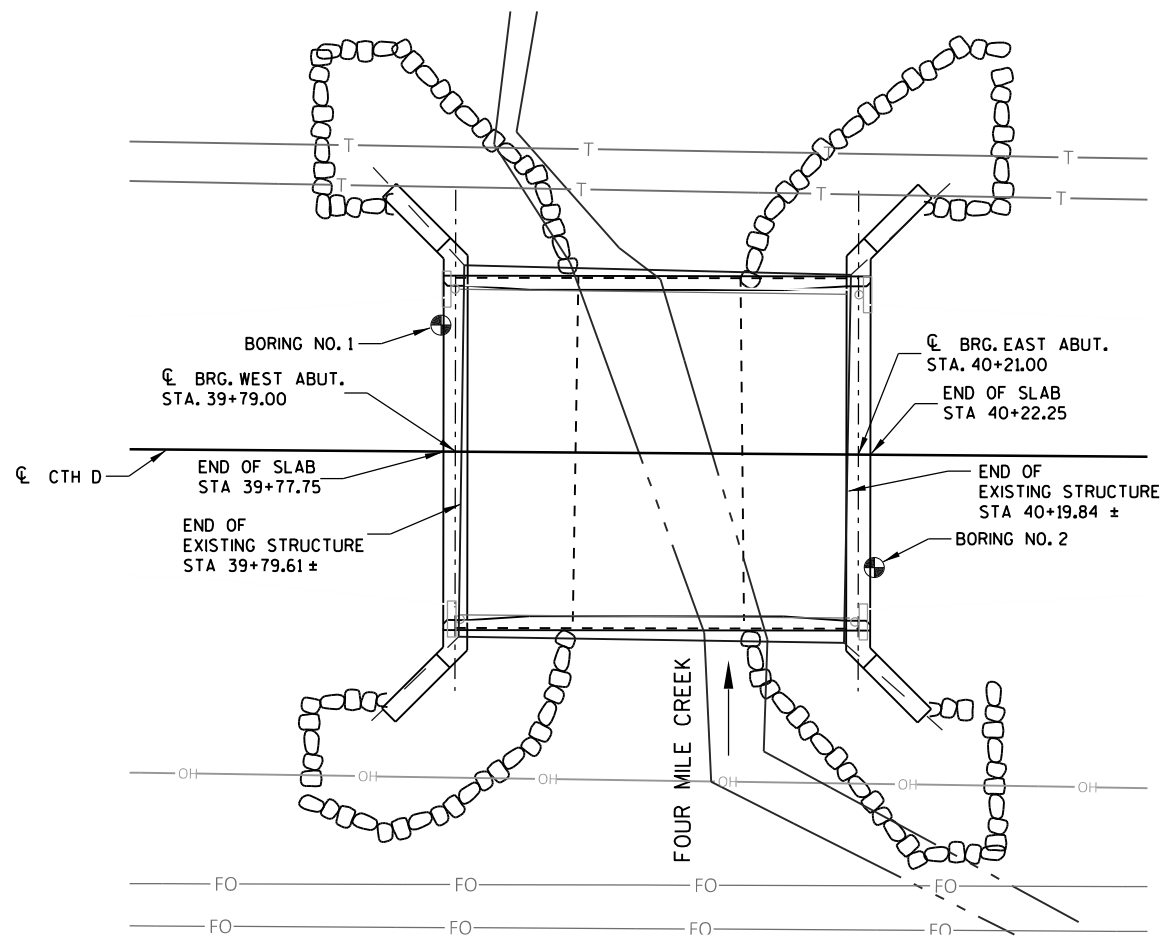
ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	TOTAL
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 40+00.00	LS	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-03-0211	LS	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	-	130	130	260
502.0100	CONCRETE MASONRY BRIDGES	CY	133	30	30	193
502.3200	PROTECTIVE SURFACE TREATMENT	SY	180	-	-	180
502.3210	PIGMENTED SURFACE SEALER	SY	44	-	-	44
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	-	2600	2600	5200
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	20,360	1410	1410	23,180
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-	21	21	42
550.2104	PIILING STEEL CIP CONCRETE 10 3/4 X 0.25-INCH	LF	-	270	270	540
606.0300	RIPRAP HEAVY	CY	-	42	37	79
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	-	20	20	40
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	-	59	59	118
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	-	-	4
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	-	111	102	213
NON-BID ITEMS						
	PREFORMED FILLER	SIZE				1/2" & 3/4"

ALL ITEMS = CAT. 0020

ORIGINAL PLANS PREPARED BY



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-03-0211			
DRAWN BY		DPB	PLANS CK'D. MJG
CROSS SECTION & QUANTITIES			SHEET 2 OF 8



SOIL BORINGS

BY: INTERTEK PSI
EAU CLAIRE, WI

ON: AUGUST 8, 2019

GEOTECHNICAL REPORT

BY: INTERTEK PSI
EAU CLAIRE, WI

ON: SEPTEMBER 30, 2019

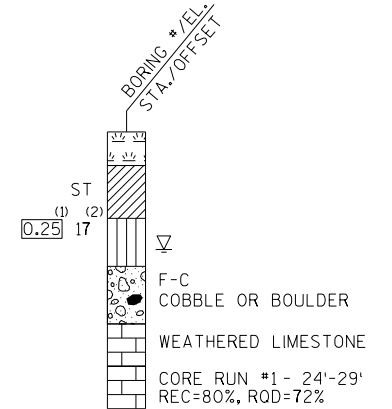
STATE PROJECT NUMBER

8827-00-70

MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

	AT TIME OF DRILLING
	END OF DRILLING
	AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-03-0211			
DRAWN BY		DPB	PLANS CKD. MJG
SUBSURFACE EXPLORATION		SHEET 3 OF 8	

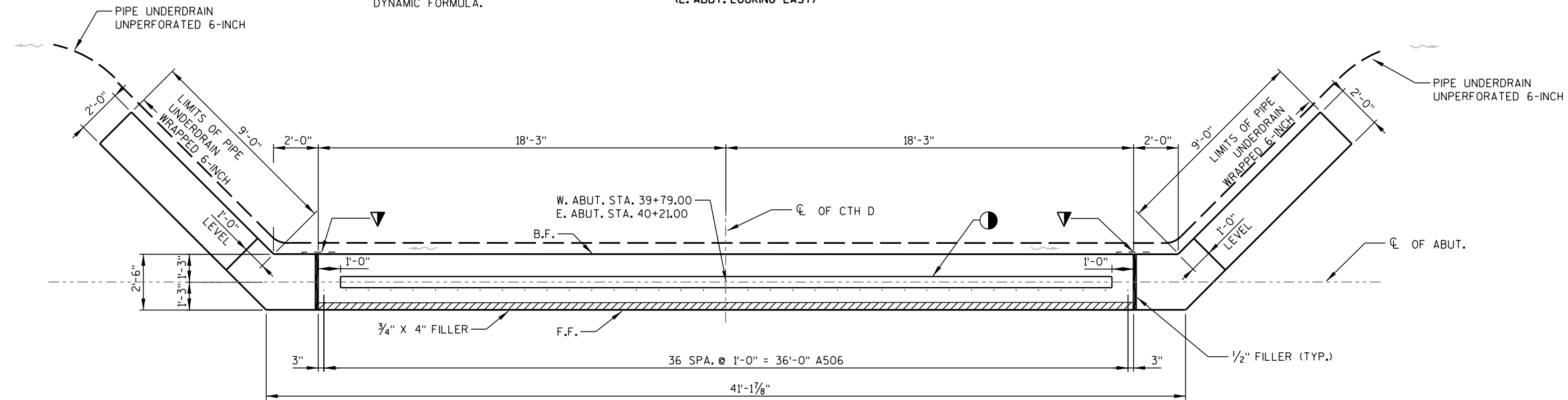
40+00

8

8

SCALE =

E.F. DENOTES EACH FACE
B.F. DENOTES BACK FACE
F.F. DENOTES FRONT FACE



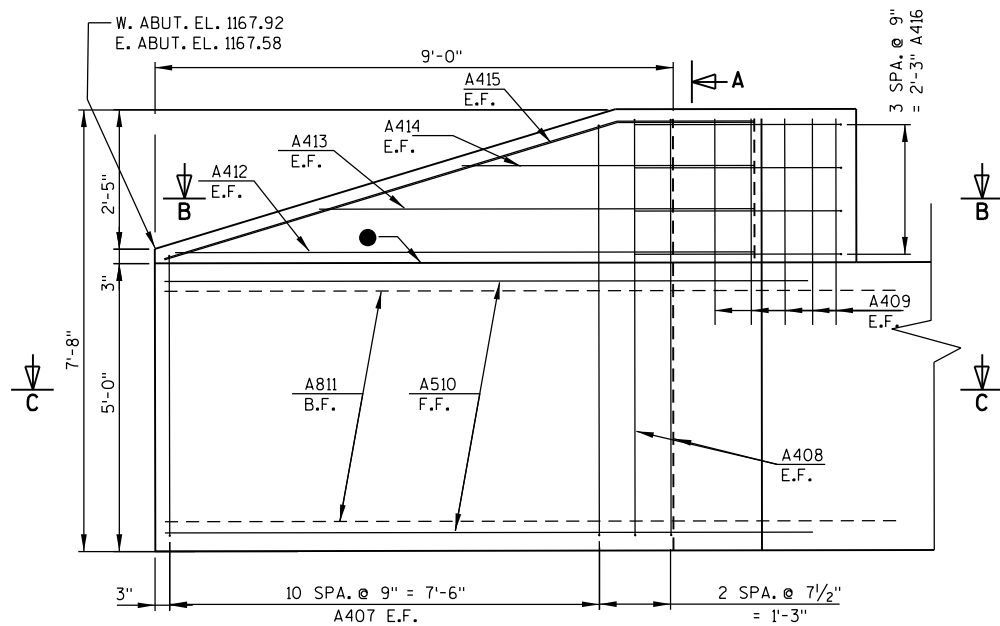
Technical drawing of a bridge deck cross-section. The drawing shows a central deck section with a width of 40'-11 1/8" (41 SPA. @ 1'-0" = 40'-11 1/8" A501, A502). The deck is supported by abutments on either side. The left abutment has a width of 6'-4 3/8" and a height of 7'-5 3/8". The right abutment has a width of 10'-6 3/8" and a height of 9'-0". The deck is reinforced with A804 bars (top) and A503 bars (bottom). The reinforcement is spaced at 1'-8" (5 SPA. @ 3'-9" = 18'-9" A405 (SYMMETRICAL ABOUT C.L.) (ADJUST SPACING TO AVOID PILING)). The drawing also shows the centerline of the deck (C.L. OF CTH D) and the centerline of the abutment and piles (C.L. OF ABUTMENT AND PILES). Other dimensions include 1'-5", 1'-0", 5'-9 7/8", 2'-3 1/2", 3'-8 1/2", 6'-9", 3'-4 1/2", 1'-8", 1 3/8", and 13 3/8".

ORIGINAL PLANS PREPARED BY

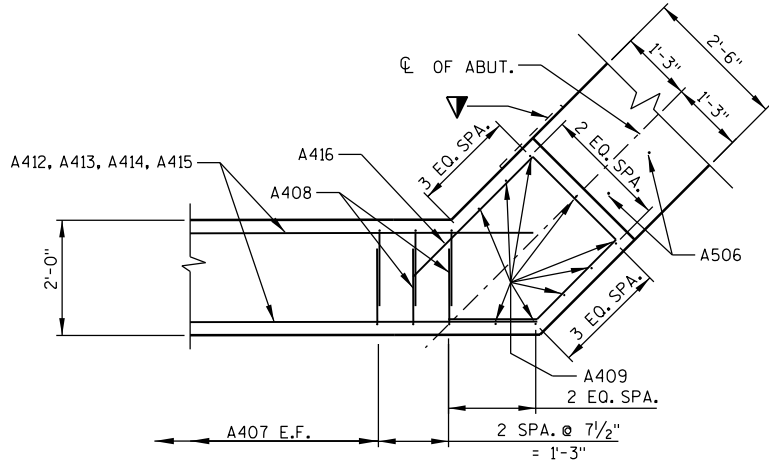
cbs² Engineers - Surveyors - Architects

770 Technology Way
Chippewa Falls, WI 54729
Phone: 715.861.5226
www.cbssquaredinc.com

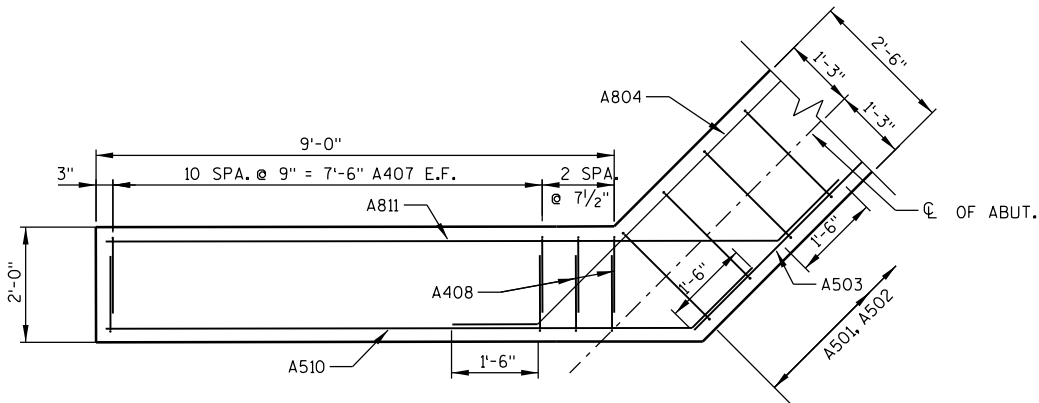
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-03-0211			
		DRAWN BY ALC	PLANS CK'D. MJG
ABUTMENT ELEVATION DETAILS		SHEET 4 OF 8	



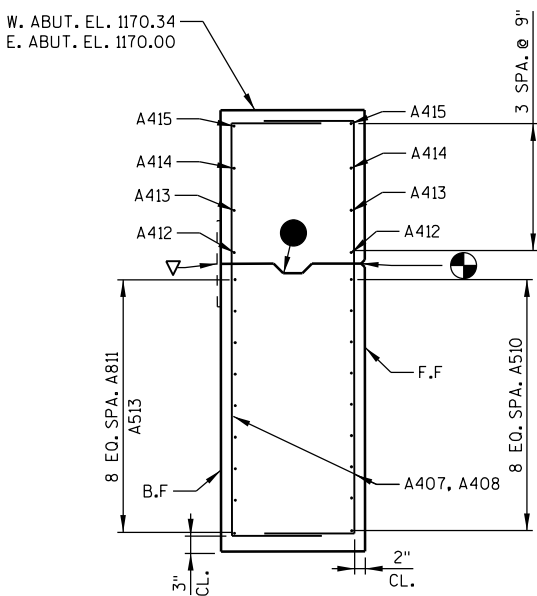
ELEVATION - WING



SECTION B



SECTION C



SECTION A

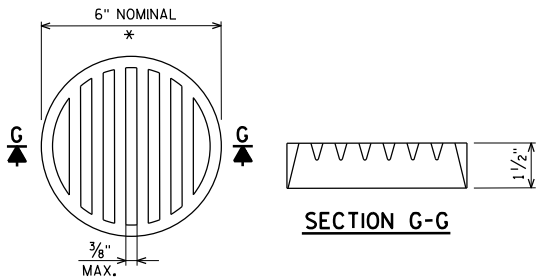
LEGEND

- ◆ THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED, BUT BEFORE INITIAL SET HAS TAKEN PLACE.
- ◆ PIPE UNDERDRAIN WRAPPED (6-INCH). TO BE PLACED AT AN ELEVATION AND SLOPED 0.5% MIN. TO ALLOW FOR SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL THIS SHEET.
- ▽ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL JOINTS ON BACKFACE.
- KEYED CONST. JOINT FORMED BY BEVELED 2" x 6".
- OPT. KEYED CONST. JOINT FORMED BY BEVELED 2" x 6" WITH MEMBRANE ON BACKFACE.
- 3/4" "V" GROOVE ON F.F. OF WING WALL.
- ▽ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

E.F. DENOTES EACH FACE

B.F. DENOTES BACK FACE

F.F. DENOTES FRONT FACE

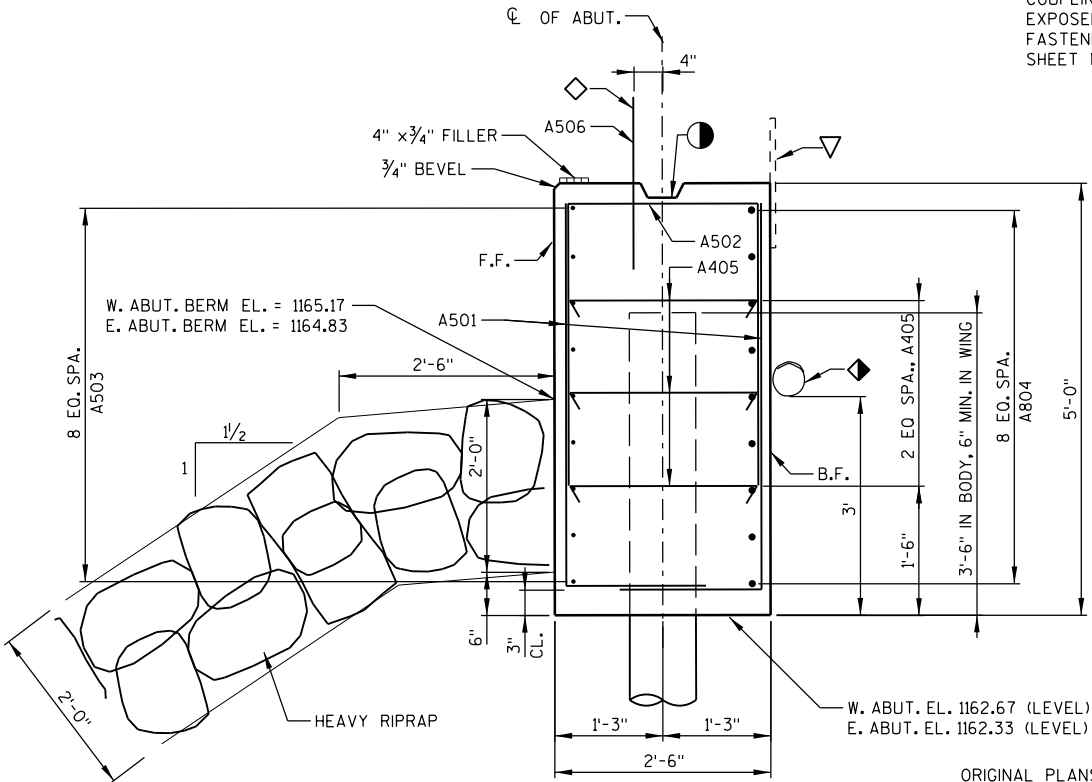


* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH SHEET METAL SCREWS.

RODENT SHIELD DETAIL



TYPICAL SECTION THRU ABUT. BODY

ORIGINAL PLANS PREPARED BY



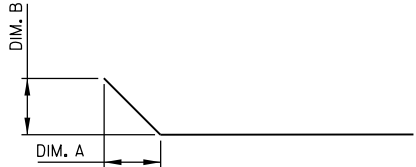
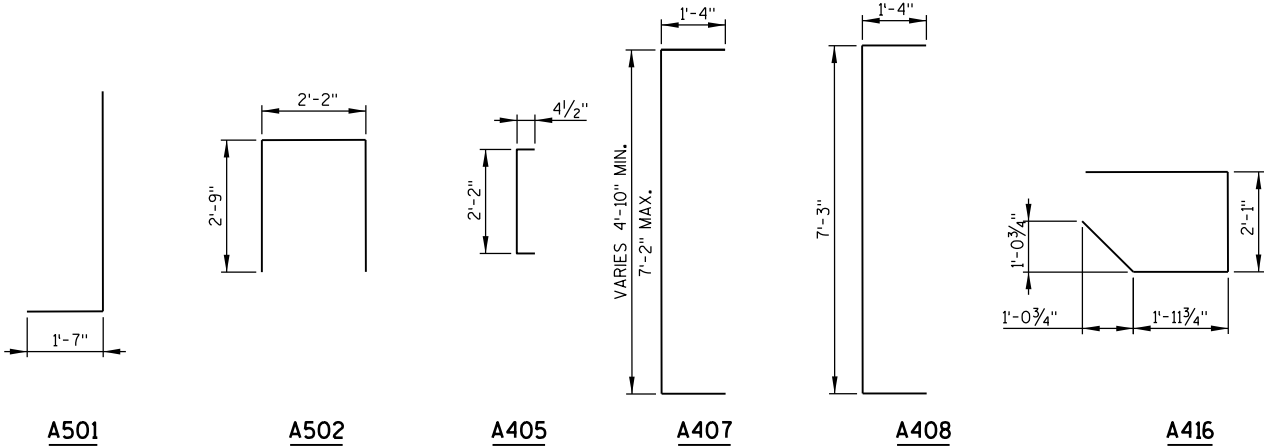
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-03-0211			
DRAWN BY ALC		PLANS CK'D. MJG	
ABUTMENT WING DETAILS			SHEET 5 OF 8

LEGEND

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

NOTES

DIMENSIONS ARE OUT TO OUT OF BARS.



MARK	DIM. A	DIM. B
A804	1'-0 3/4"	1'-0 3/4"
A510	1'-0 3/4"	1'-0 3/4"
A811	1'-0 3/4"	1'-0 3/4"
A415	2'-3 1/4"	0'-8 1/4"

BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY

MARK	NO. REQ'D	LENGTH
A407	4 SERIES OF 11	4-10 TO 7-2

BILL OF BARS - EACH ABUTMENT

MARK	NO. REQ'D	LENGTH	SERIES	COAT	BENT	LOCATION
A501	84	6 - 0			X	BODY VERT.
A502	42	7 - 5			X	BODY VERT.
A503	9	41 - 1				BODY HORIZ. F.F.
A804	18	27 - 0			X	BODY HORIZ. B.F.
A405	36	2 - 9			X	BODY TIES
A506	37	2 - 0		X		BODY DOWELS
A407	44	8 - 6	X	X	X	WING VERT. E.F.
A408	8	9 - 9		X	X	WING VERT. E.F.
A409	18	4 - 0		X		WING VERT. E.F.
A510	18	11 - 8		X	X	WING HORIZ. F.F.
A811	18	13 - 2		X	X	WING HORIZ. B.F.
A412	4	10 - 0		X		WING HORIZ. E.F.
A413	4	7 - 6		X		WING HORIZ. E.F.
A414	4	5 - 0		X		WING HORIZ. E.F.
A415	4	10 - 7		X	X	WING DIAG. E.F.
A416	8	8 - 4		X	X	WING HORIZ.

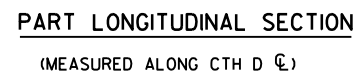
TOTAL WEIGHT - COATED	1410 LBS
TOTAL WEIGHT - UNCOATED	2600 LBS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-03-0211			
DRAWN BY ALC		PLANS CK'D. MJG	
ABUTMENT BILL OF BARS		SHEET 6 OF 8	

ORIGINAL PLANS PREPARED BY

cbs²

Engineers - Surveyors - Architects
770 Technology Way
Chippewa Falls, WI 54729
Phone: 715.861.5226
www.cbssquaredinc.com



MARK	NO. REQ'D	LENGTH	COAT	BENT	LOCATION
S501	74	8-8	X	X	SLAB VERT. @ ABUT.
S1102	66	39-10	X		SLAB LONG. BOT.
S503	111	36-2	X		SLAB TRANS. TOP & BOT
S404	44	44-2	X		SLAB LONG. TOP
S505	44	5-0	X		SLAB @ RAIL
TOTAL WEIGHT (COATED BARS) - 20,360 LBS					



KEYED CONST. JOINT FORMED BY BEVELED 2" x 6".

DIMENSIONS ARE OUT TO OUT OF BARS.

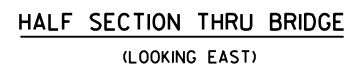
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

PARAPETS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C/L OF ABUTMENTS, THE C/L OF PIERS AND AT THE 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN OR C/L.

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-03-0211			
		DRAWN BY ALC	PLANS CK'D. MJG
SUPERSTRUCTURE		SHEET 7 OF 8	

TOTAL WEIGHT (COATED BARS) - 2570 LBS

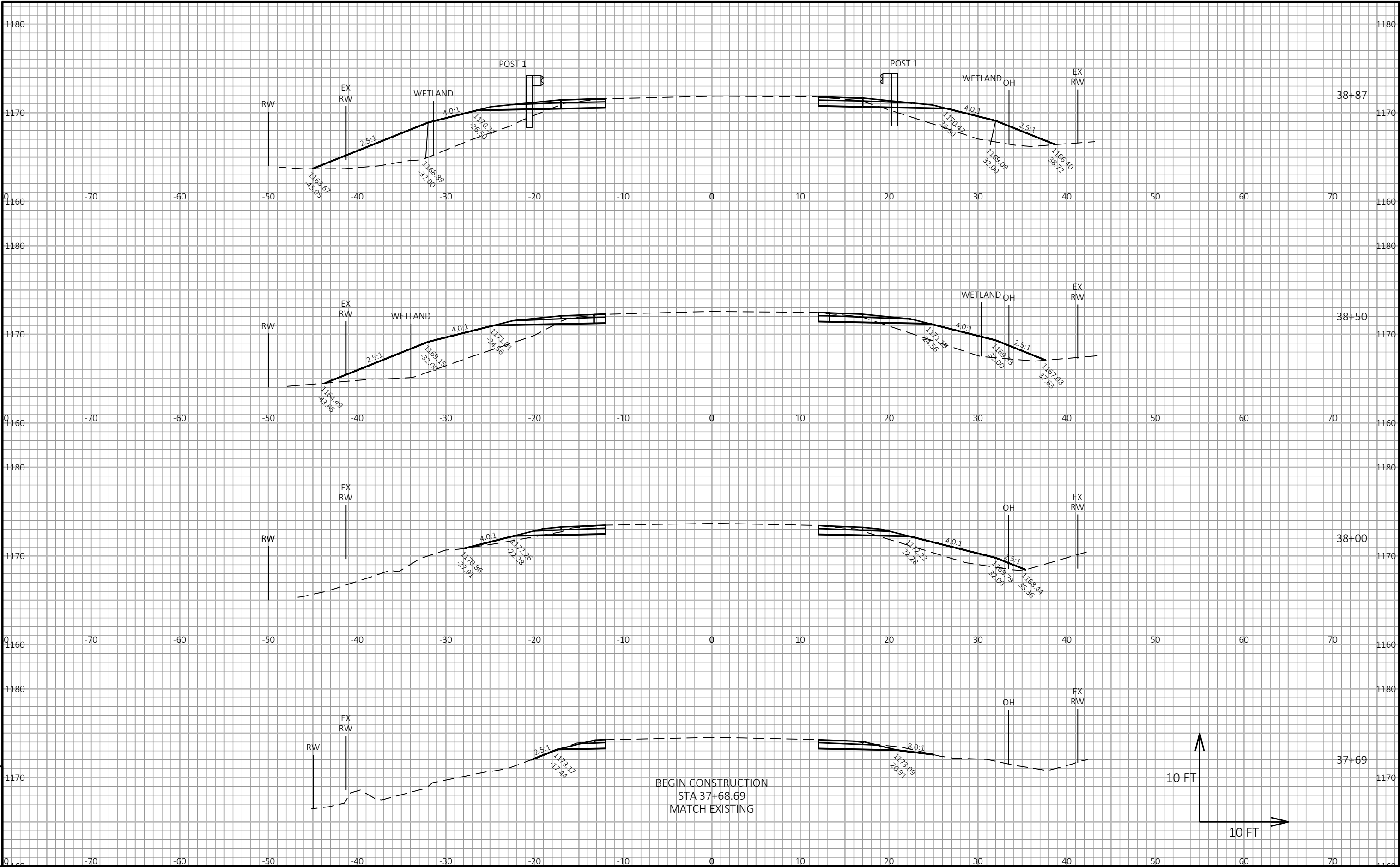
BAR MARK	NO. REQ'D	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"

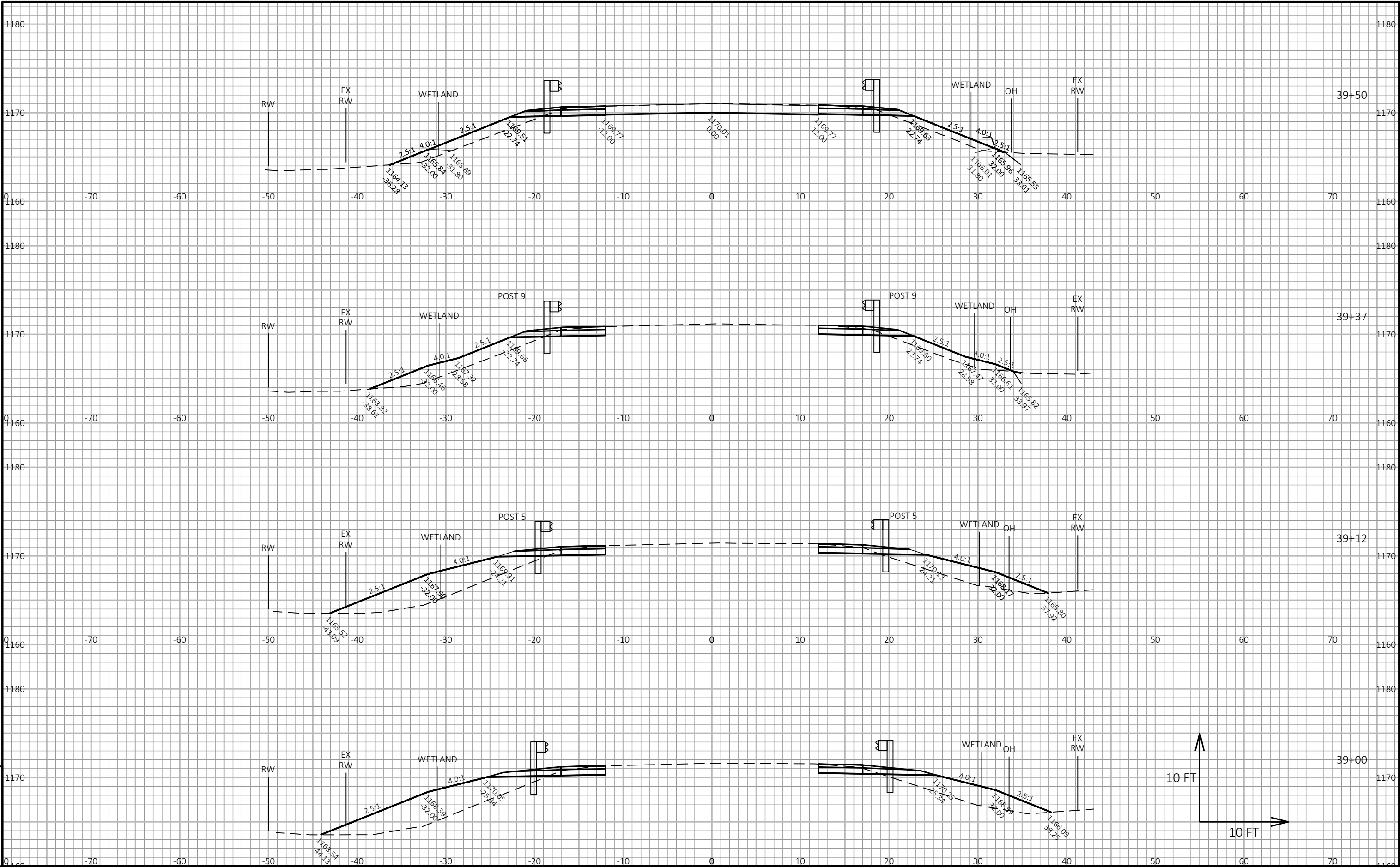
BAR MARK	NO. REQ'D	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"

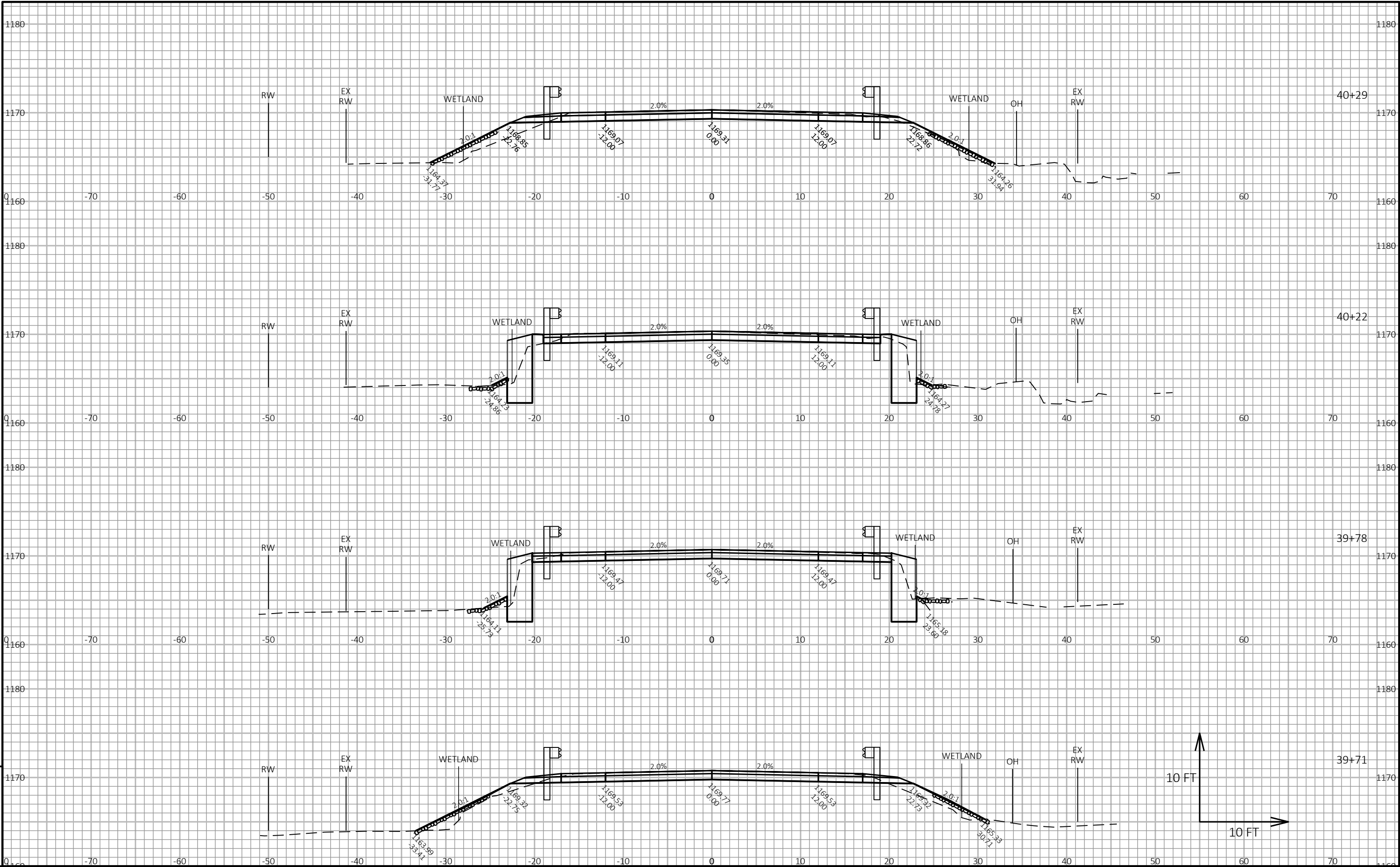
CTH D EARTHWORK SUMMARY

STATION	Real Station	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
			Cut	Salvaged/Unusable	Fill	Cut	Salvaged/Unusable	Fill	Cut 1.00	Expanded	Mass Ordinate
				Pavement Material			Pavement Material			Fill	
										1.30	
						Note 1	Note 2	Note 3	Note 1		Note 4
37+68.69	3768.69	0.00	11.09	13.50	0.14	0	0	0	0	0	0
38+00	3800.00	31.31	8.77	13.50	18.23	12	16	11	12	14	-18
38+50	3850.00	50.00	8.59	13.50	81.13	16	25	92	28	133	-147
38+87.13	3887.13	37.13	9.11	13.50	92.74	12	19	120	40	289	-308
39+00	3900.00	12.87	9.24	13.50	83.68	4	6	42	44	344	-365
39+12.14	3912.14	12.14	9.45	13.50	73.93	4	6	35	48	390	-413
39+37.13	3937.13	24.98	10.92	13.50	34.22	9	12	50	58	455	-481
39+50	3950.00	12.87	35.96	13.50	25.08	11	6	14	69	473	-495
39+71.39	3971.39	21.39	36.22	13.50	18.00	29	11	17	98	495	-499
39+77.75	3977.75	6.36	65.49	13.50	1.59	12	3	2	110	498	-493
40+22.25	4022.25	44.50	59.91	13.50	3.27	103	22	4	213	503	-417
40+29	4029.00	6.75	34.96	13.50	19.07	12	3	3	225	507	-412
40+50	4050.00	21.00	34.59	13.50	14.30	27	10	13	252	524	-413
40+62.87	4062.87	12.87	11.03	13.50	14.01	11	6	7	263	533	-417
40+87.91	4087.91	25.04	9.64	13.50	42.32	10	13	26	272	567	-454
41+00	4100.00	12.09	8.97	13.50	52.78	4	6	21	276	594	-484
41+12.82	4112.82	12.82	8.51	13.50	66.47	4	6	28	281	631	-523
41+50	4150.00	37.18	8.78	13.50	64.26	12	19	90	292	748	-646
42+00	4200.00	50.00	8.46	13.50	36.70	16	25	93	308	870	-777
42+31.26	4231.26	31.26	7.73	13.50	0.09	9	16	21	318	897	-811

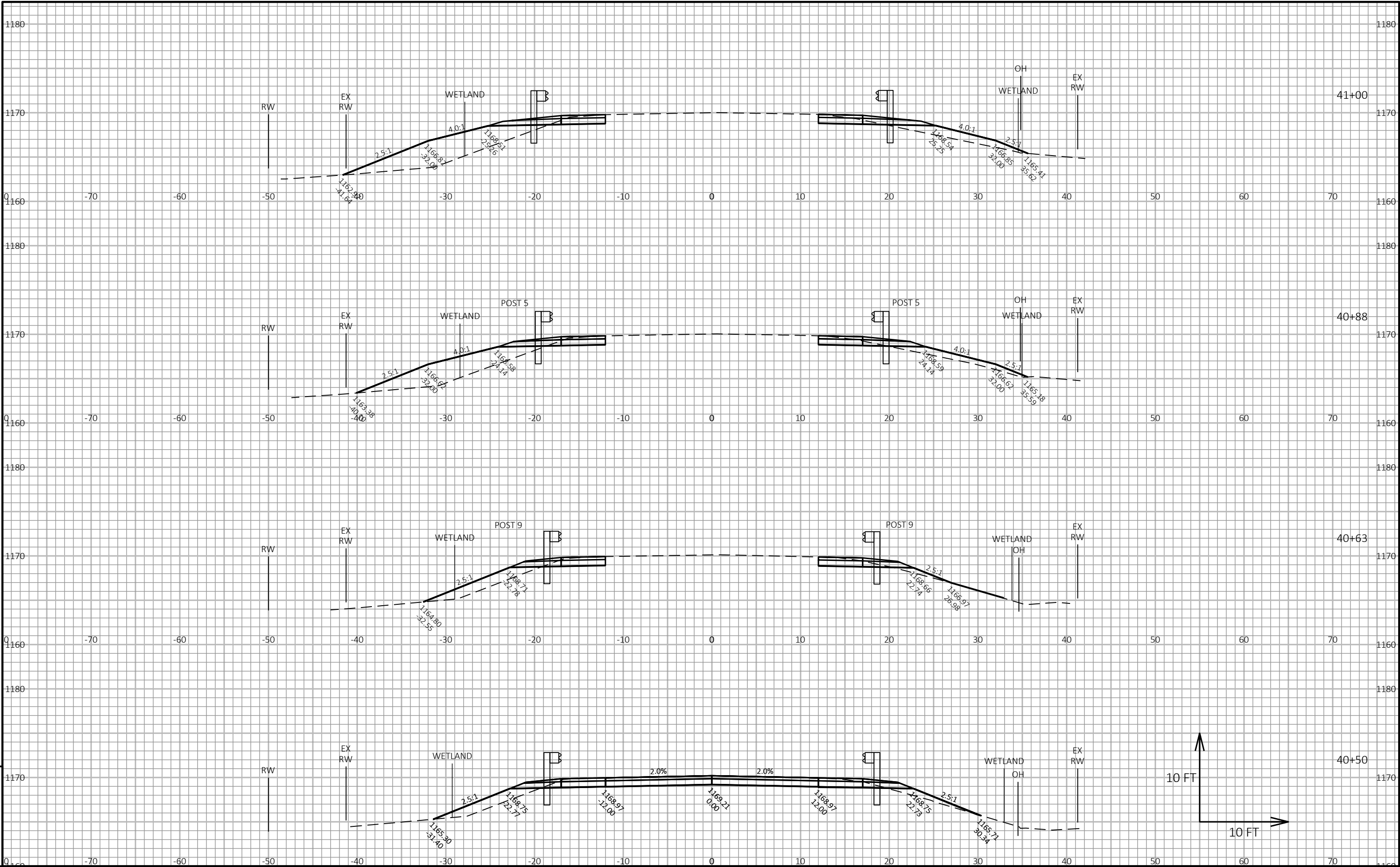
Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Mass Ordinate	[Cut - Salvaged Pavt - (Fill * Fill Factor)]

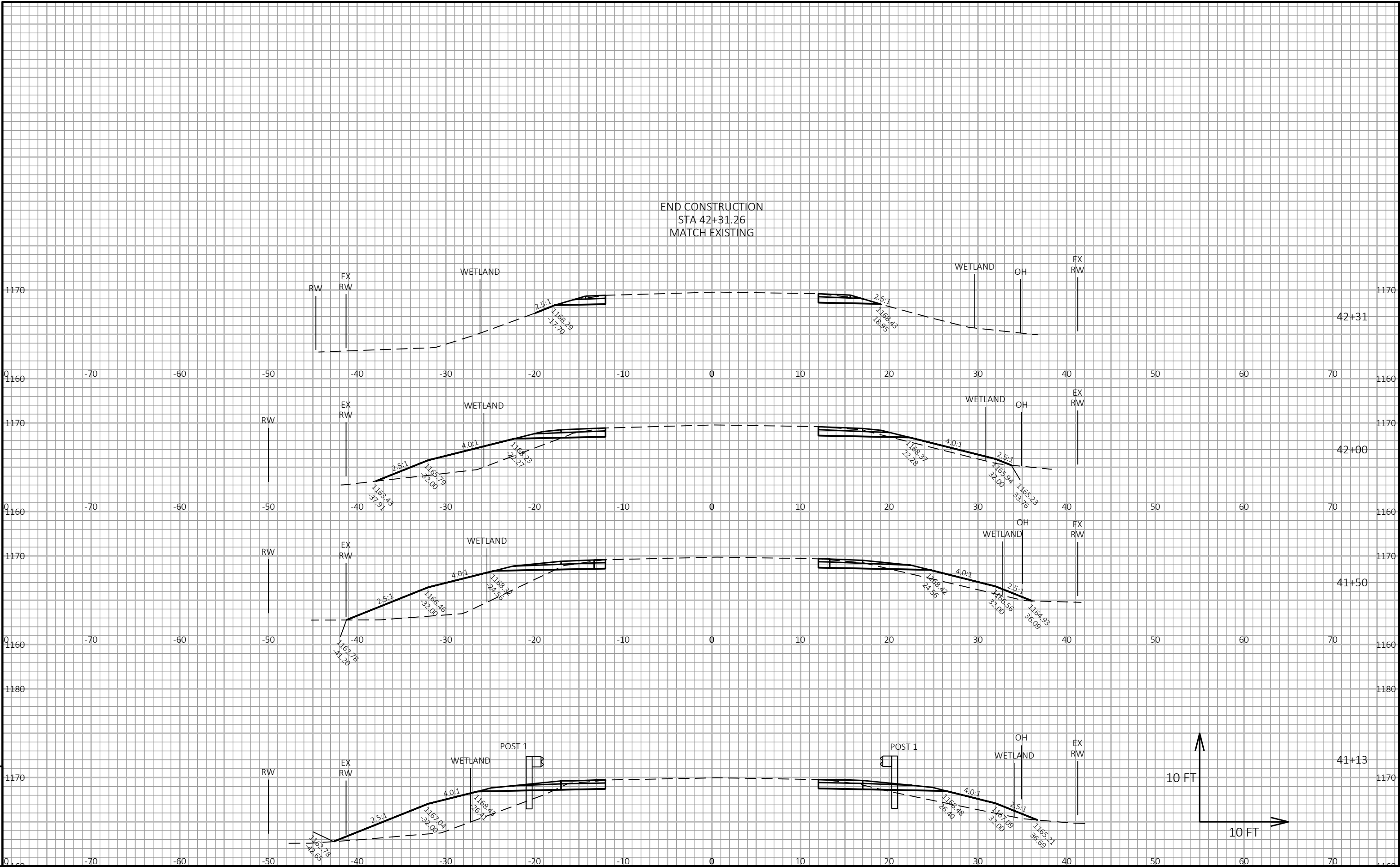




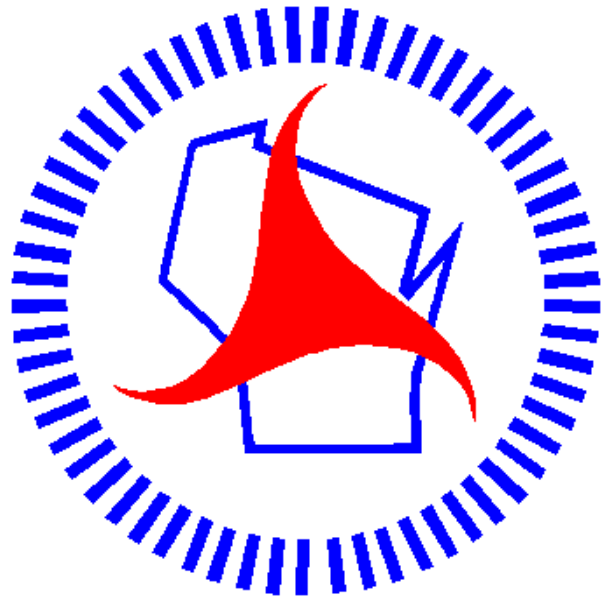


PROJECT NO: 8827-00-70	HWY: CTH D	COUNTY: BARRON	CROSS SECTIONS: MAINLINE	SHEET	E
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PROJECT NO: 8827-00-70	HWY: CTH D	COUNTY: BARRON	CROSS SECTIONS: MAINLINE	SHEET	E
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Wisconsin Department of Transportation

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