

WIS

PROJECT ID:
WITH: N/A

6911-00-72

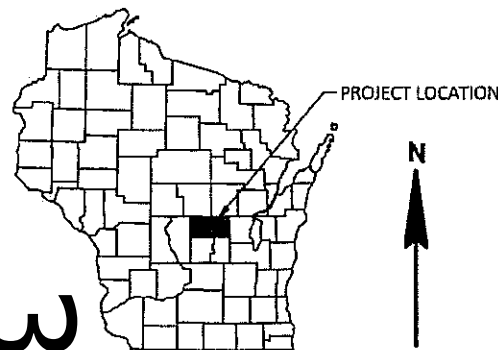
COUNTY:
WAUSHARA

JANUARY 2026

ORDER OF SHEETS

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

TOTAL SHEETS = 90



DESIGN DESIGNATION

A.A.D.T.	2026	=	916
A.A.D.T.	2046	=	1,117
D.H.V.		=	-
D.D.		=	50/50
T.		=	7.2 %
DESIGN SPEED		=	55 MPH
ESALS		=	130,000

CONVENTIONAL SYMBOLS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STH 49 - WINNEBAGO CO LINE

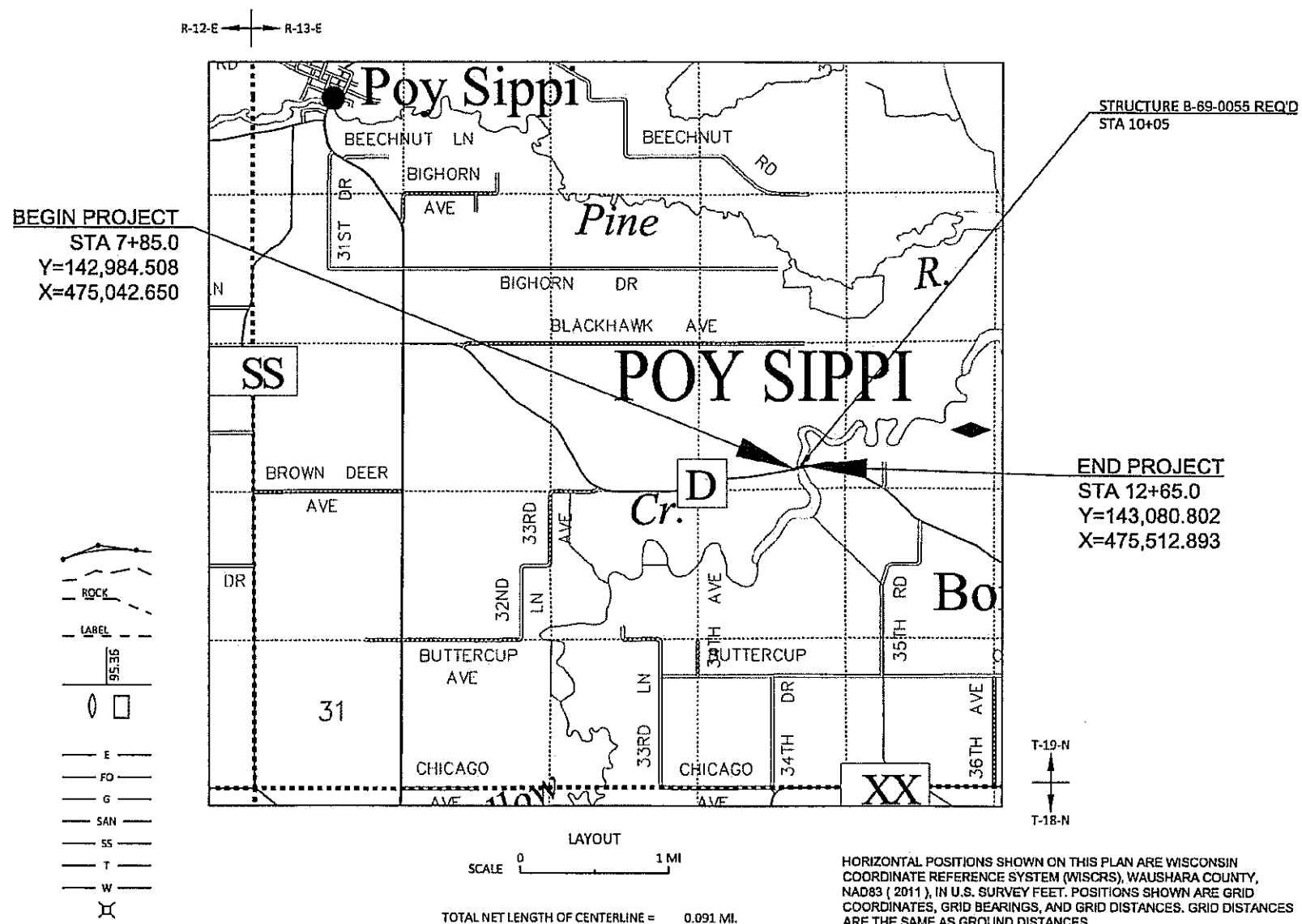
WILLOW CREEK BRIDGE B-69-0055

CTH D

WAUSHARA COUNTY

STATE PROJECT NUMBER

6911-00-72



HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN
COORDINATE REFERENCE SYSTEM (WISCRS), WAUSHARA 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 18.

STATE PROJECT

6911-00-72

FEDERAL PROJECT

PROJECT

WISC 2026152

CONTRACT

1

ACCEPTED FOR
WAUSHARA COUNTY

7/22/25
DATE
HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

AYRES



7-22-2025
(Date)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY:

Surveyor	AYRES
Designer	AYRES
Project Manager	JASON SCHAEFFER
Regional Supervisor	DAN ERVA

APPROVED FOR THE DEPARTMENT

DATE: 7/24/2025
(Signature)

E

UTILITIES CONTACTS

ALLIANT ENERGY
ELECTRICITY
WESLEY SCHAAL
883 W SCOTT ST
FOND DU LAC, WI 54937
PHONE: 920-322-6624
EMAIL: WESLEYSCHAAL@ALLIANTENERGY.COM

AT&T
COMMUNICATIONS
CHARLES BARTELT
70 E DIVISION STREET
FOND DU LAC, WI 54935
PHONE: 920-410-5104
EMAIL: CB1461@ATT.COM

BRIGHTSPEED
COMMUNICATIONS
SCOTT HEINZELMAN
144 N PEARL ST
BERLIN, WI 54923
PHONE: 920-757-4802
EMAIL: SCOTT.HEINZELMAN@BRIGHTSPEED.COM

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAIL
- EROSION CONTROL
- DETOUR

WISCONSIN DNR LIAISON

MARTY DILLENBERG
CENTRAL REGION
625 E COUNTY ROAD Y STE 700
OSHKOSH, WI 54901
PHONE: (920) 410-7428
EMAIL: MARTY.DILLENBURG@WISCONSIN.GOV

WAUSHARA COUNTY

DEAN ANDERSON
HIGHWAY COMMISSIONER
403 RUTH'S WAY
WAUTOMA, WI 54982
PHONE: (920) 787-3327
EMAIL: DEAN.ANDERSON@WAUSHARACOUNTYWI.GOV

AYRES

RYAN SCHAITEL
DESIGN ENGINEER
700 PILGRIM WAY, SUITE 180
GREEN BAY, WI 54304
PHONE: 920-498-1200
EMAIL: SCHAITELR@AYRESASSOCIATES.COM

GENERAL NOTES

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

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT APPROXIMATE LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND APPROVED BY THE ENGINEER. MAINTAIN EROSION CONTROL MEASURES UNTIL SUCH A TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

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

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

ALL TIES ON THIS PLAN ARE HORIZONTAL UNLESS DESCRIBED OTHERWISE.

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

PROPERTY LINES AS SHOWN ARE APPROXIMATE.

ASPHALTIC SURFACE CALCULATED AT 115LB/SY-IN AND TACK COAT CALCULATED AT 0.07 GAL/SY.

RUNOFF COEFFICIENT TABLE

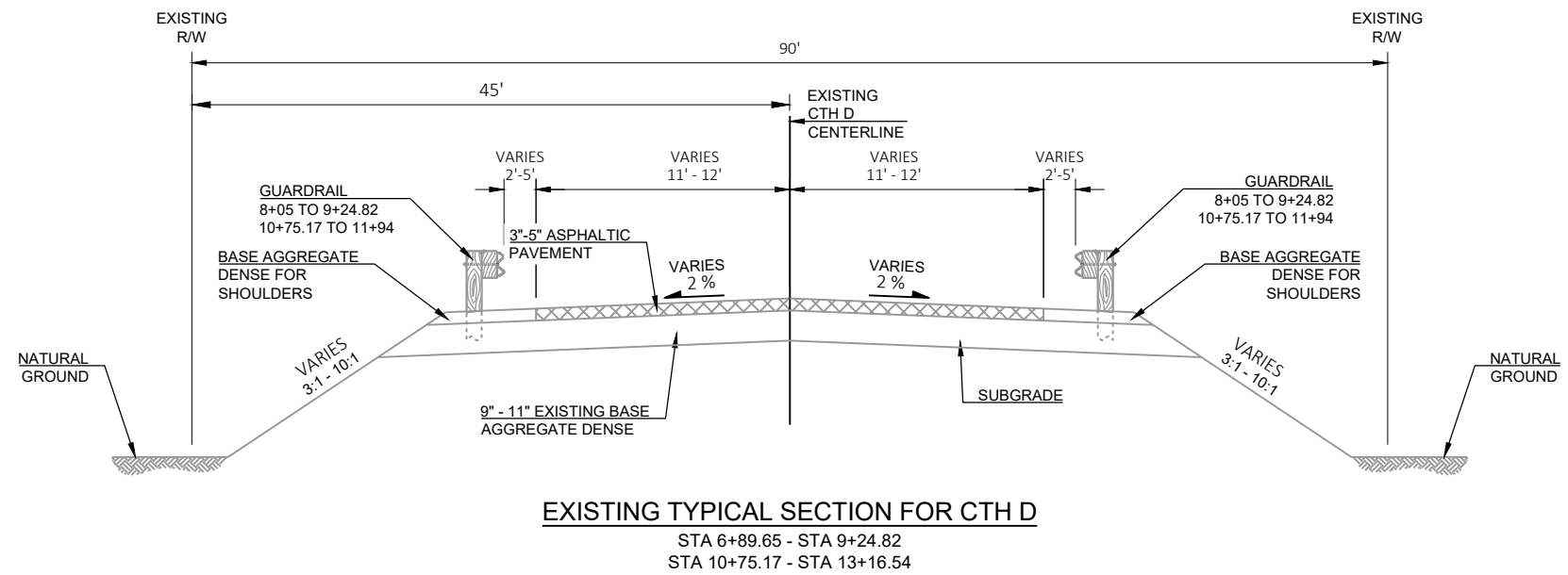
LAND USE:	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS:	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIPTURF:	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPETURF:			.25			.27			.28			.30
			.32			.34			.36			.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 = 1.295 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.777 ACRES

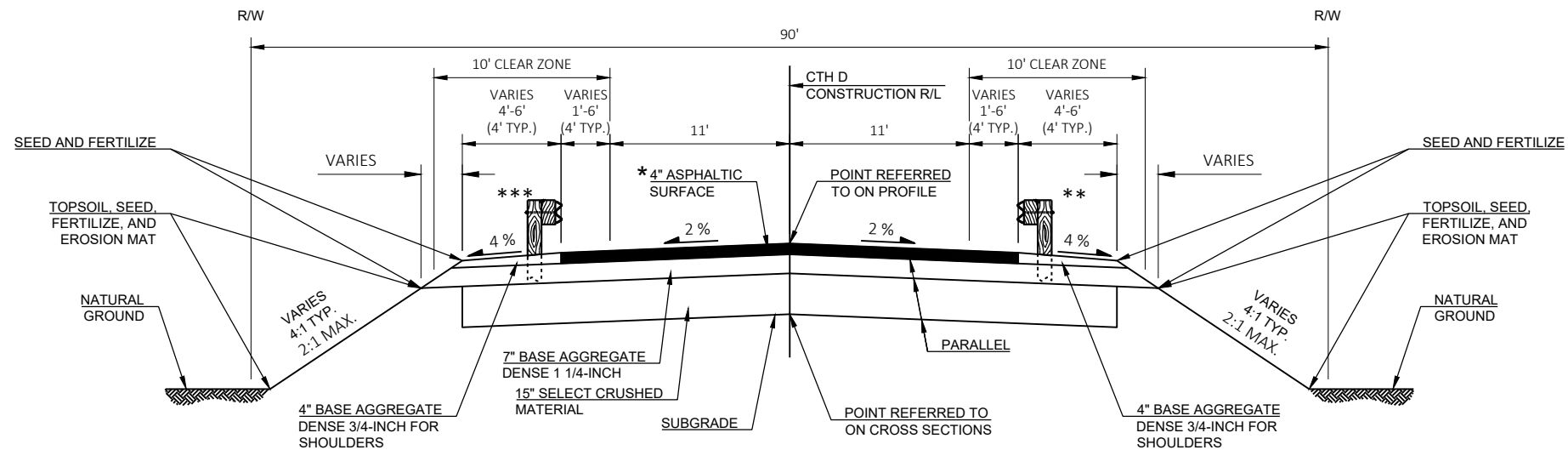
DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com



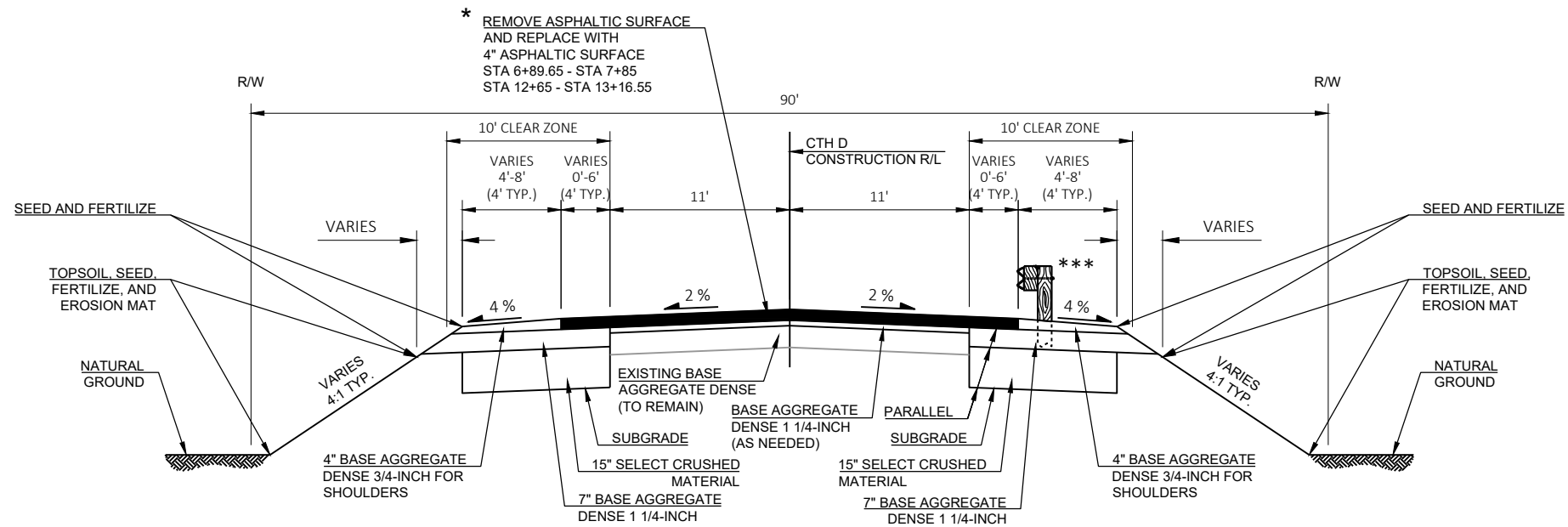
*** GUARDRAIL TO BE INSTALLED FROM
STA 8+12.90 LT - STA 9+14.75 LT
STA 10+95.25 LT - STA 12+59.55 LT



FINISHED TYPICAL SECTION CTH D

STA 7+85 - STA 9+14.75
STA 10+95.25 - STA 12+65

** GUARDRAIL TO BE INSTALLED FROM
STA 7+85 RT - STA 9+14.75 RT
STA 10+95.25 RT - STA 12+22.08 RT



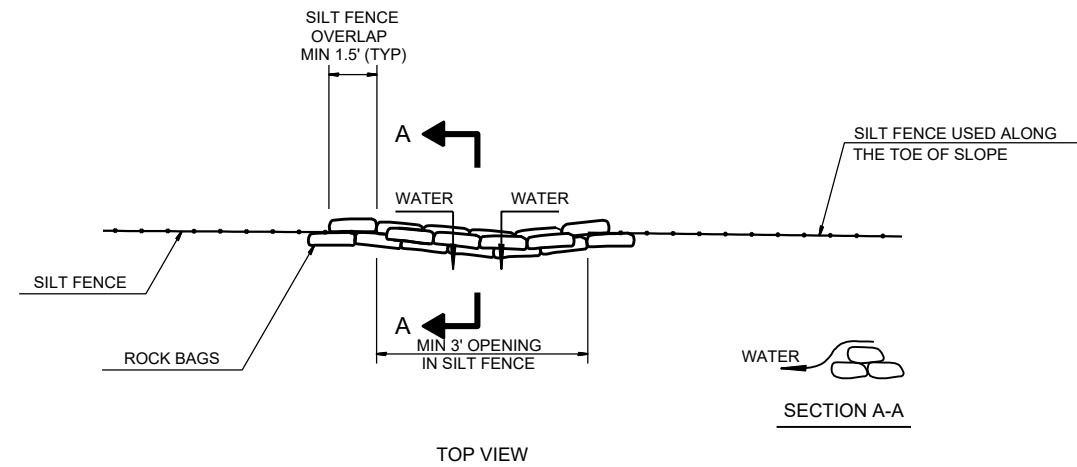
FINISHED TYPICAL SECTION CTH D

STA 6+37.36 - STA 7+85 RT.
STA 7+07.17 - STA 7+85 LT.
STA 12+65 - STA 13+40.48 RT.
STA 12+65 - STA 13+65.08 LT.

*** GUARDRAIL TO BE INSTALLED FROM
STA 7+50.41 RT - STA 7+85 RT

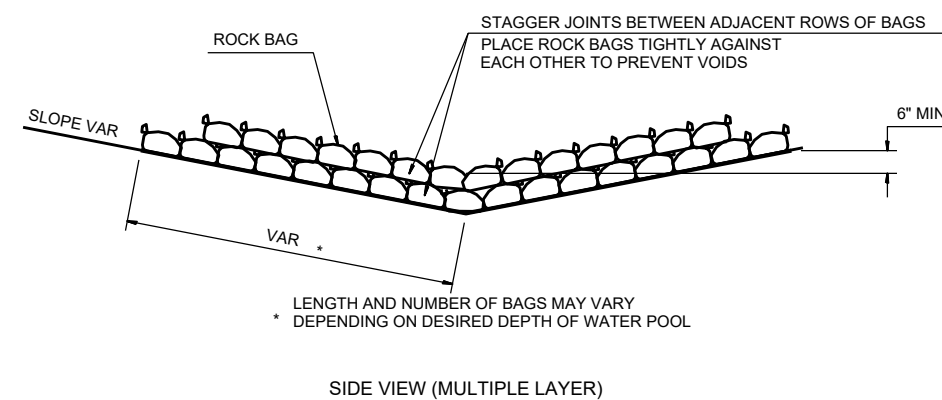
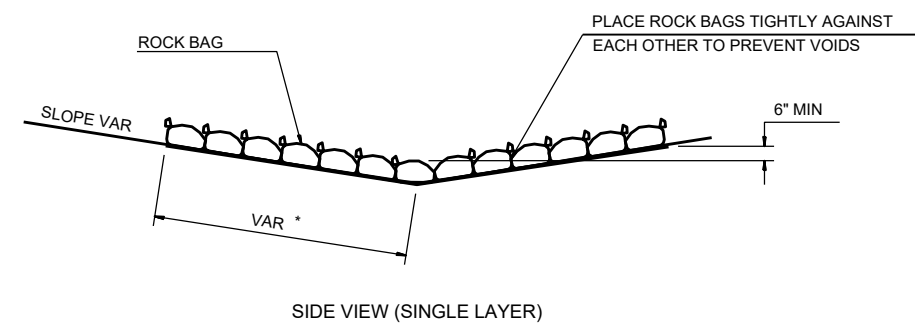
PAVEMENT LAYERS

* 4" ASPHALTIC SURFACE	1.75" UPPER LAYER 2.25" LOWER LAYER
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ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL

PAID AS ROCK BAGS
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)



ROCK BAGS DITCH CHECK

PAID AS ROCK BAGS
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)

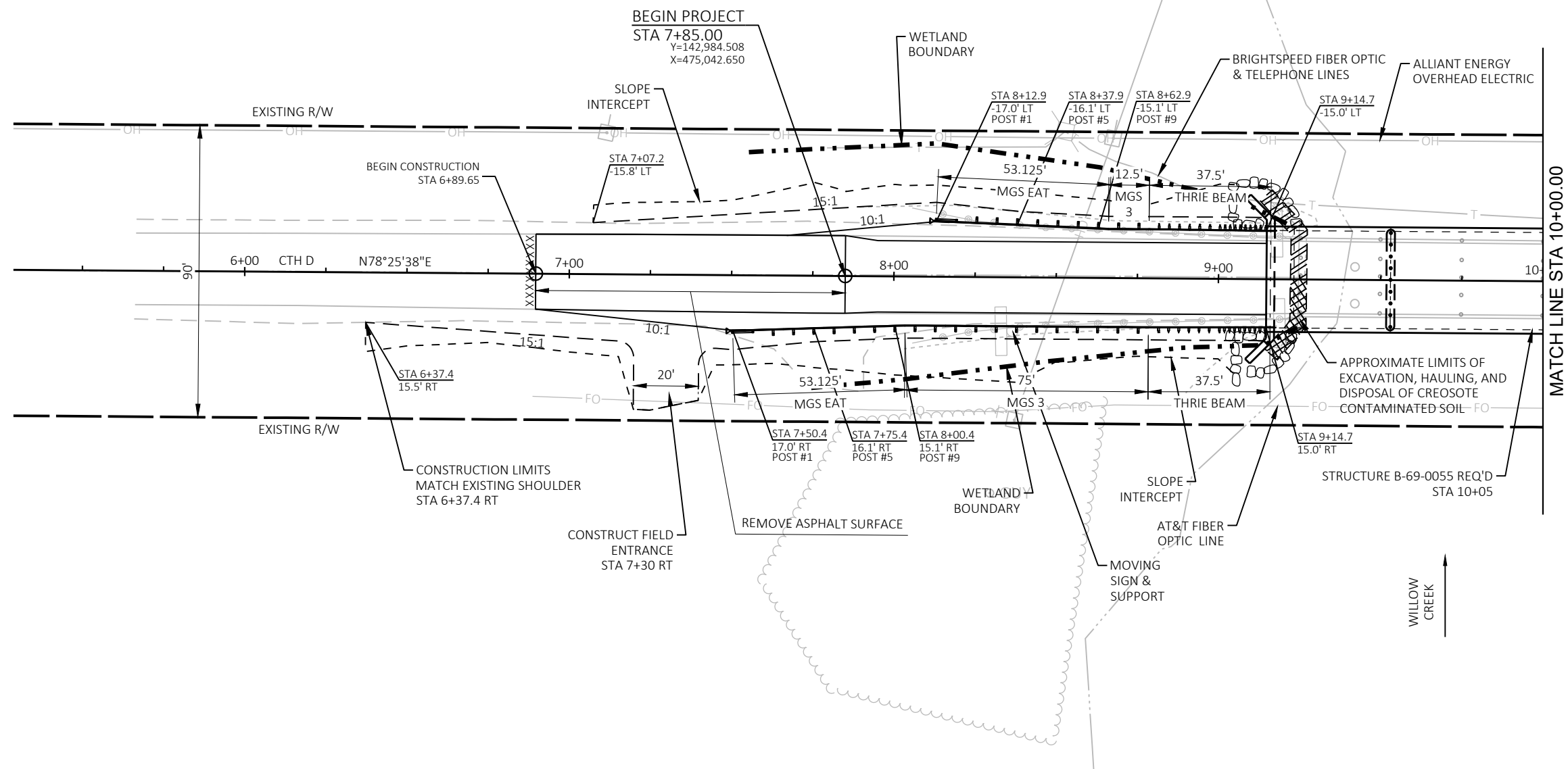
LEGEND

XXXXX SAW CUTS



SOIL MANAGEMENT ZONE

-  GROUND SURFACE TO 2 FEET BELOW GRADE
-  GROUND SURFACE TO 4 FEET BELOW GRADE



PROJECT NO: 6911-00-72

HWY: CTH D

COUNTY: WAUSHARA

PLAN DETAILS

SHEET

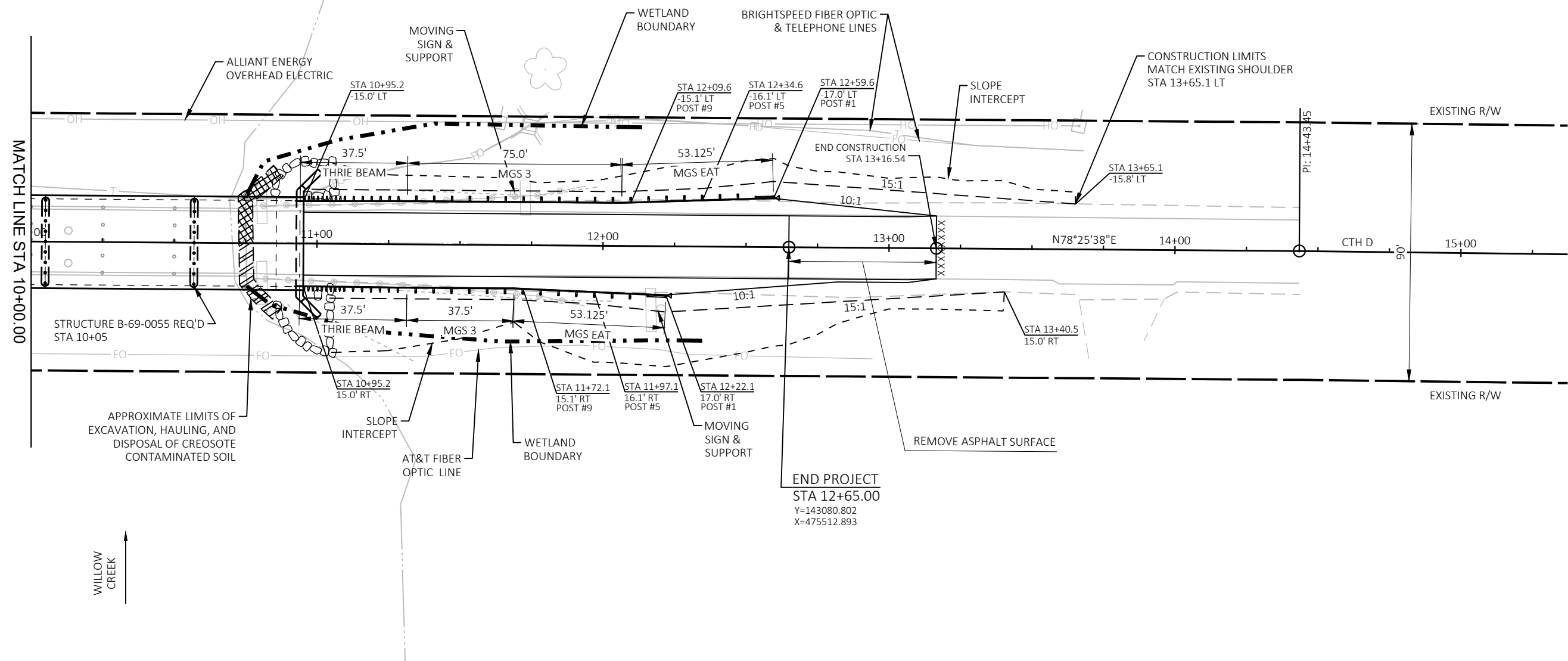
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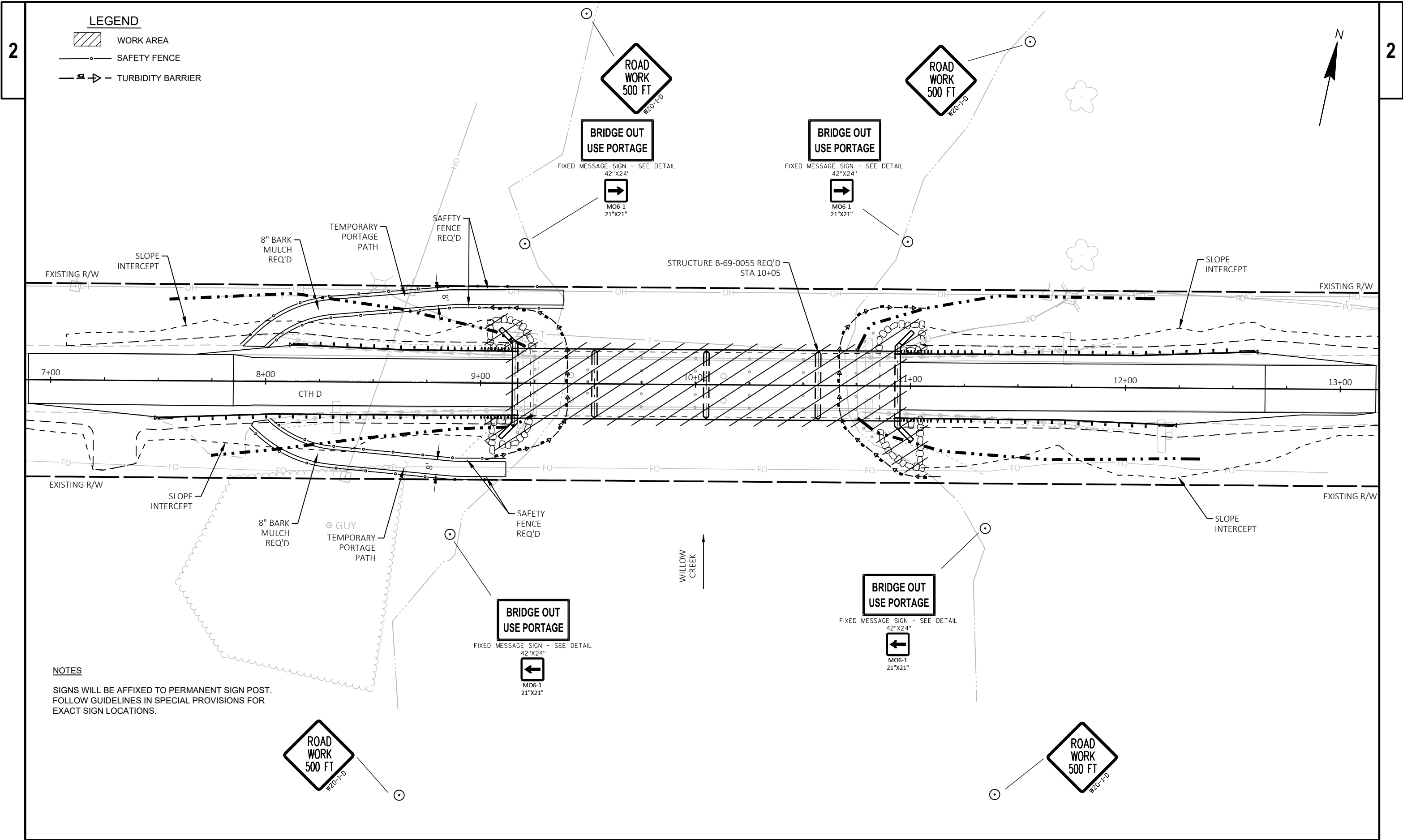
LEGEND

XXXXX SAW CUTS

SOIL MANAGEMENT ZONE

-  GROUND SURFACE TO 2 FEET BELOW GRADE
-  GROUND SURFACE TO 4 FEET BELOW GRADE

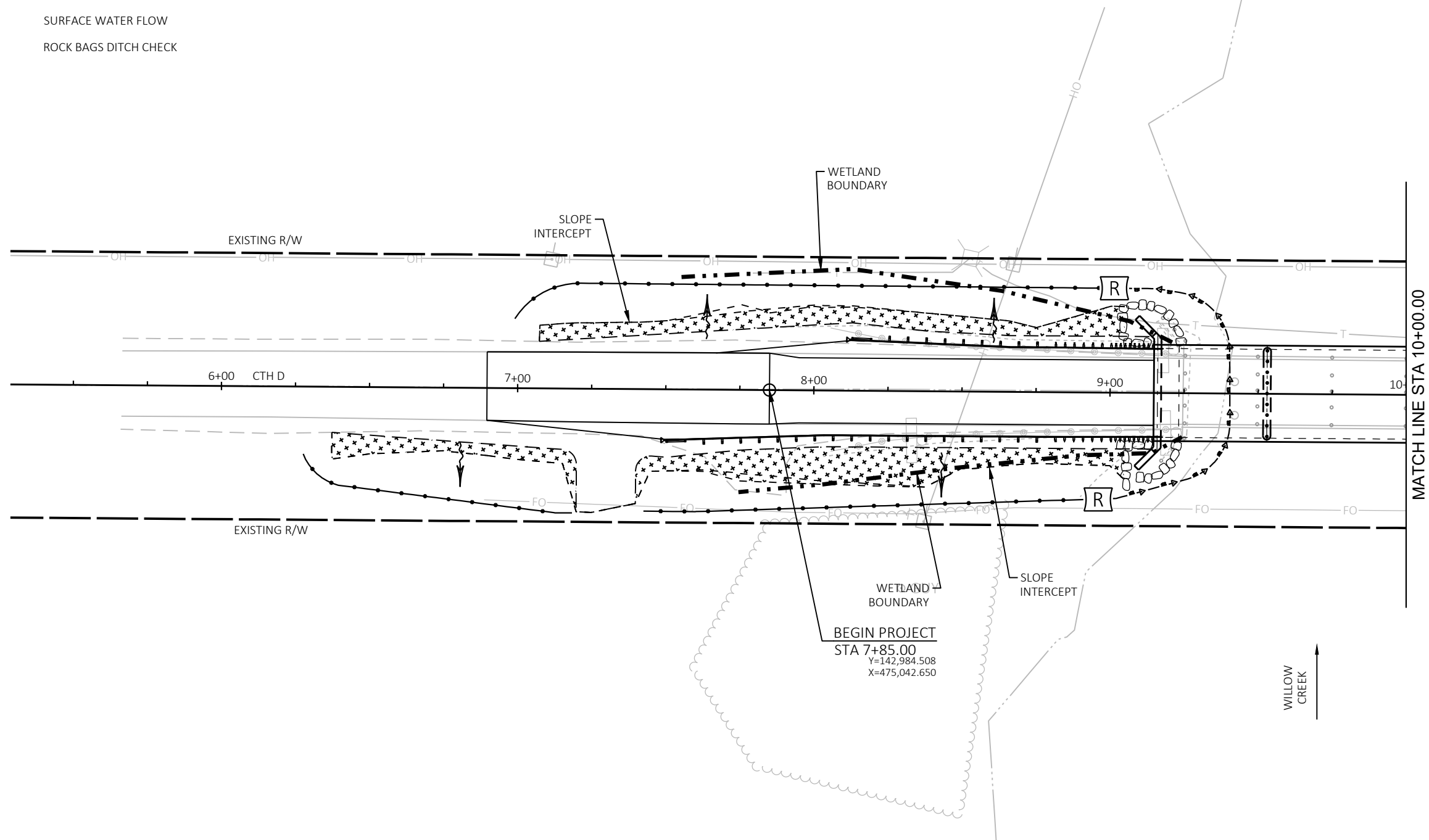




PROJECT NO: 6911-00-72	HWY: CTH D	COUNTY: WAUSHARA	TEMPORARY PORTAGE PLAN	SHEET	E
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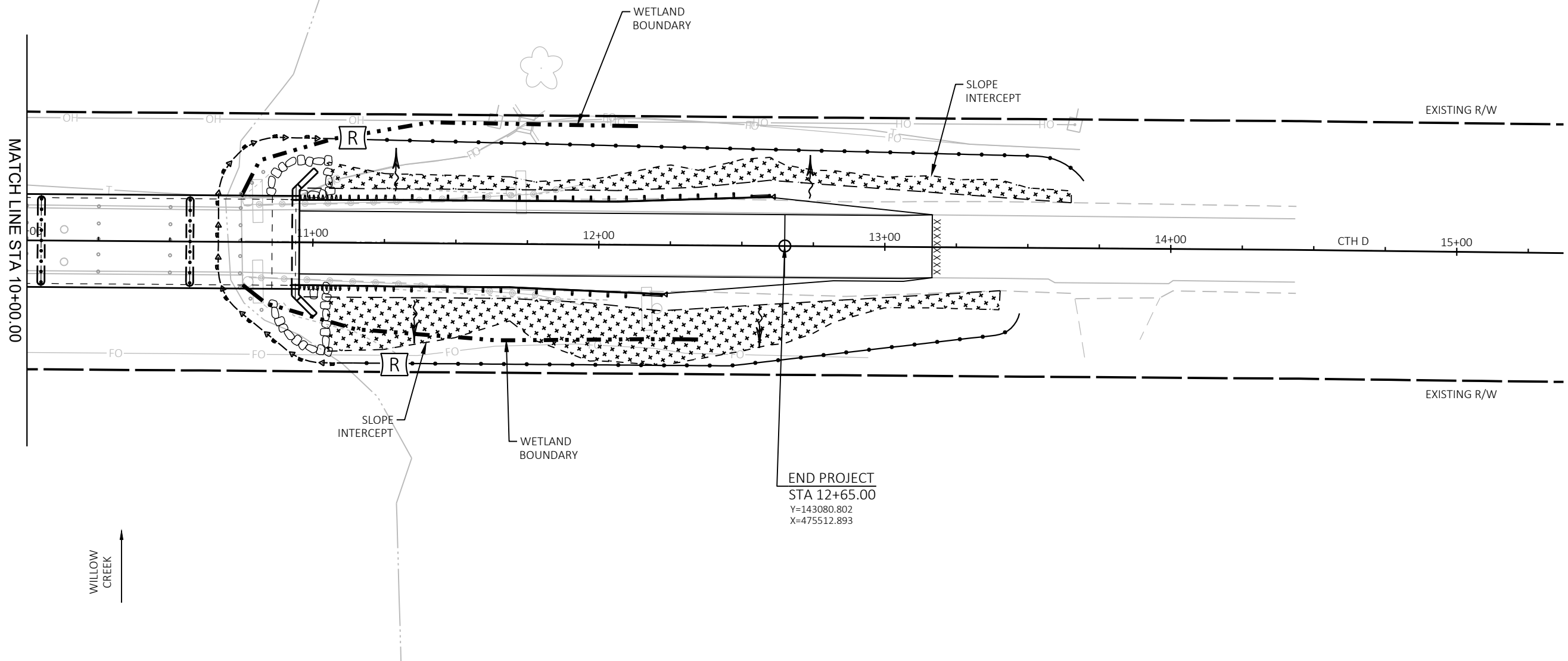
LEGEND

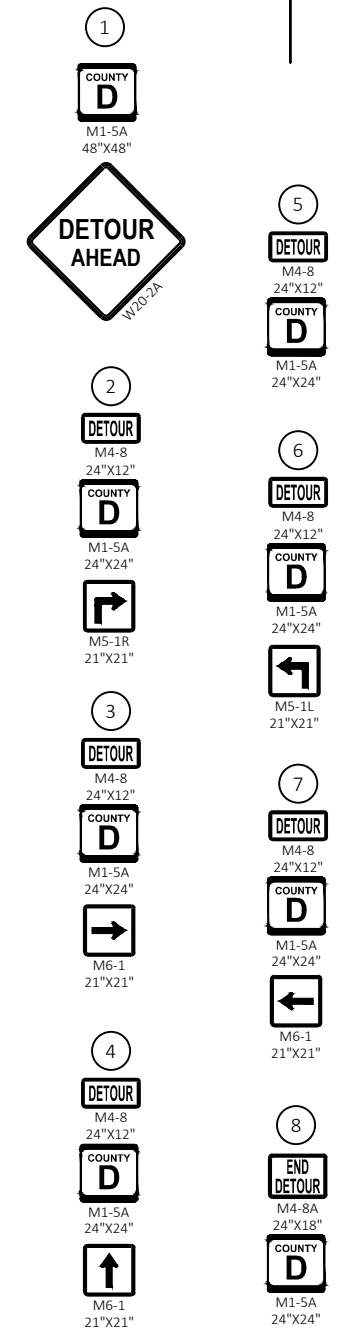
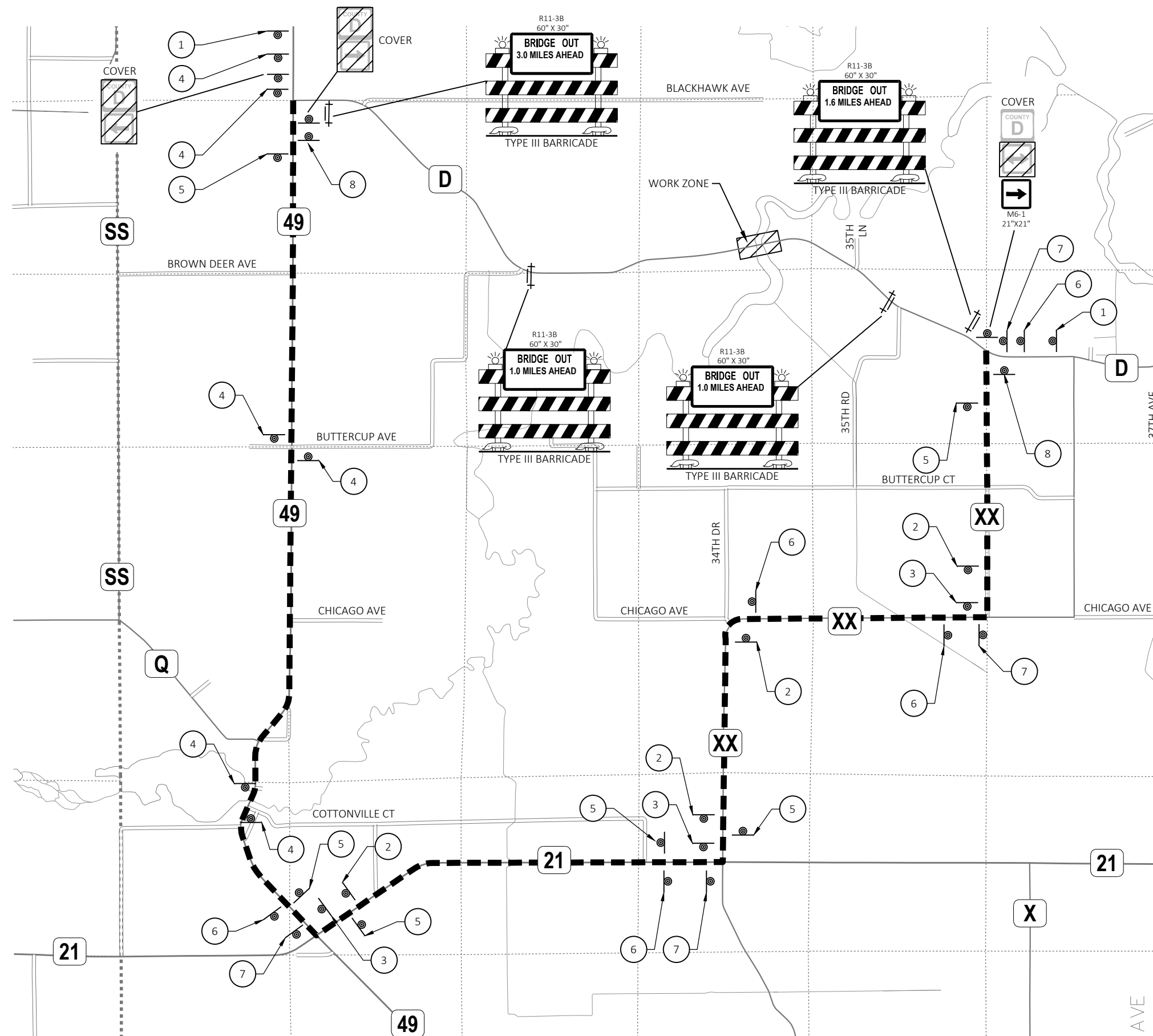
- EROSION MAT URBAN CLASS I, TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- TURBIDITY BARRIER
- SURFACE WATER FLOW
- ROCK BAGS DITCH CHECK



LEGEND

- EROSION MAT URBAN CLASS I, TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- TURBIDITY BARRIER
- SURFACE WATER FLOW
- ROCK BAGS DITCH CHECK





LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR ROUTE

PROJECT NO: 6911-00-72

HWY: CTH D

COUNTY: WAUSHARA

DETOUR

SHEET

E

Estimate Of Quantities

6911-00-72

Line	Item	Item Description	Unit	Total	Qty
0002	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-69-0973	EACH	1.000	1.000
0004	204.0110	Removing Asphaltic Surface	SY	444.000	444.000
0006	204.0165	Removing Guardrail	LF	471.000	471.000
0008	205.0100	Excavation Common	CY	1,100.000	1,100.000
0010	205.0506.S	Excavation, Hauling, and Disposal of Creosote Contaminated Soil	TON	150.000	150.000
0012	206.1001	Excavation for Structures Bridges (structure) 01. B-69-0055	EACH	1.000	1.000
0014	206.5001	Cofferdams (structure) 01. B-69-0055	EACH	1.000	1.000
0016	210.1500	Backfill Structure Type A	TON	255.000	255.000
0018	213.0100	Finishing Roadway (project) 01. 6911-00-72	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	184.000	184.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	790.000	790.000
0024	312.0110	Select Crushed Material	TON	1,010.000	1,010.000
0026	455.0605	Tack Coat	GAL	102.000	102.000
0028	465.0105	Asphaltic Surface	TON	336.000	336.000
0030	502.0100	Concrete Masonry Bridges	CY	510.000	510.000
0032	502.3200	Protective Surface Treatment	SY	790.000	790.000
0034	502.9000.S	Underwater Substructure Inspection (structure) 01. B-69-0055	EACH	1.000	1.000
0036	505.0400	Bar Steel Reinforcement HS Structures	LB	9,330.000	9,330.000
0038	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	87,540.000	87,540.000
0040	513.4061	Railing Tubular Type M	LF	366.000	366.000
0042	516.0500	Rubberized Membrane Waterproofing	SY	14.000	14.000
0044	550.0600	Pile Redriving	EACH	5.000	5.000
0046	550.2126	Piling CIP Concrete 12 3/4 X 0.375-Inch	LF	3,040.000	3,040.000
0048	606.0300	Riprap Heavy	CY	130.000	130.000
0050	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0052	614.2300	MGS Guardrail 3	LF	200.000	200.000
0054	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0056	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0058	619.1000	Mobilization	EACH	1.000	1.000
0060	624.0100	Water	MGAL	40.000	40.000
0062	625.0100	Topsoil	SY	440.000	440.000
0064	628.1504	Silt Fence	LF	1,000.000	1,000.000
0066	628.1520	Silt Fence Maintenance	LF	2,000.000	2,000.000
0068	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0070	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0072	628.2008	Erosion Mat Urban Class I Type B	SY	440.000	440.000
0074	628.6005	Turbidity Barriers	SY	210.000	210.000
0076	628.7570	Rock Bags	EACH	75.000	75.000
0078	629.0210	Fertilizer Type B	CWT	1.000	1.000
0080	630.0120	Seeding Mixture No. 20	LB	45.000	45.000
0082	630.0500	Seed Water	MGAL	21.000	21.000
0084	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0086	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0088	638.2102	Moving Signs Type II	EACH	3.000	3.000
0090	638.2602	Removing Signs Type II	EACH	6.000	6.000
0092	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0094	638.4000	Moving Small Sign Supports	EACH	3.000	3.000
0096	642.5001	Field Office Type B	EACH	1.000	1.000
0098	643.0420	Traffic Control Barricades Type III	DAY	2,520.000	2,520.000

Estimate Of Quantities

6911-00-72

Line	Item	Item Description	Unit	Total	Qty
0100	643.0705	Traffic Control Warning Lights Type A	DAY	3,920.000	3,920.000
0102	643.0900	Traffic Control Signs	DAY	14,560.000	14,560.000
0104	643.0920	Traffic Control Covering Signs Type II	EACH	5.000	5.000
0106	643.1000	Traffic Control Signs Fixed Message	SF	28.000	28.000
0108	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0110	643.5000	Traffic Control	EACH	1.000	1.000
0112	645.0111	Geotextile Type DF Schedule A	SY	110.000	110.000
0114	645.0120	Geotextile Type HR	SY	250.000	250.000
0116	646.1020	Marking Line Epoxy 4-Inch	LF	2,510.000	2,510.000
0118	650.4500	Construction Staking Subgrade	LF	548.000	548.000
0120	650.5000	Construction Staking Base	LF	548.000	548.000
0122	650.6501	Construction Staking Structure Layout (structure) 01. B-69-0055	EACH	1.000	1.000
0124	650.9911	Construction Staking Supplemental Control (project) 01. 6911-00-72	EACH	1.000	1.000
0126	650.9920	Construction Staking Slope Stakes	LF	548.000	548.000
0128	690.0150	Sawing Asphalt	LF	45.000	45.000
0130	715.0502	Incentive Strength Concrete Structures	DOL	3,066.000	3,066.000
0132	999.2005.S	Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0134	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,260.000	1,260.000
0136	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	2,000.000	2,000.000
0138	SPV.0090	Special 01. Temporary Portage Path	LF	270.000	270.000

EARTHWORK SUMMARY									
DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE (15)
			CUT (2)				FACTOR 1.30		
DIVISION 1									
CTH D	6+37.36/13+65.08		1,100	82	1,018	108	135	883	883
DIVISION 1 SUBTOTAL			1,100	82	1,018	108	135	883	883
TOTAL COMMON EXC			1,100						

NOTES:
(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
(2) SALVAGED/UNSUALE PAVEMENT MATERIAL IS INCLUDED IN CUT.
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUALE PAVEMENT MATERIAL
(13) EXPANDED FILL FACTOR = UNEXPANDED FILL X EXPANDED FILL FACTOR
(14) 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.
(15) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

REMOVING ASPHALTIC SURFACE

STATION	TO	STATION	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY
6+90	-	7+85	CTH D	243
12+65	-	13+47	CTH D	201
TOTAL 0010				444

REMOVING GUARDRAIL

STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF
8+05	-	9+24	CTH D, LT	119
8+06	-	9+24	CTH D, RT	118
10+76	-	11+94	CTH D, LT	118
10+78	-	11+94	CTH D, RT	116
TOTAL 0010				471

EXCAVATION, HAULING, AND DISPOSAL OF CREOSOTE CONTAMINATED SOIL

CATEGORY	STATION	LOCATION	205.0506.S EXCAVATION, HAULING, AND DISPOSAL OF CREOSOTE CONTAMINATED SOIL TON	REMARKS
0030	9+25	CTH D	75	WEST ABUTMENT
0030	10+75	CTH D	75	EAST ABUTMENT
TOTAL 0030			150	

BASE AGGREGATE & WATER

STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	312.0110 SELECT CRUSHED MATERIAL TON	624.0100 WATER MGAL	REMARKS
6+37	-	9+15	CTH D	84	400	455	19	
10+95	-	13+65	CTH D	72	390	555	20	
FIELD ENTRANCE 7+25 RT			CTH D	28	-	-	1	FE
TOTAL 0010				184	790	1,010	40	

ASPHALTIC SURFACE

STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
6+37	-	9+15	CTH D	51	168
10+95	-	13+65	CTH D	51	168
TOTAL 0010				102	336

GUARDRAIL

STATION	TO	STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
7+50.4	-	9+14.7	CTH D, RT	75	39.4	1
8+12.9	-	9+14.7	CTH D, LT	12.5	39.4	1
10+95.2	-	12+22.1	CTH D, RT	37.5	39.4	1
10+95.2	-	12+59.6	CTH D, LT	75	39.4	1
TOTAL 0010				200	157.6	4

LANDSCAPING ITEMS							
STATION	TO	STATION	LOCATION	625.0100	629.0210	630.0120	630.0500
				TOPSOIL	FERTILIZER TYPE	SEEDING	SEED WATER
				SY	B	MIXTURE NO. 20	MGAL
					CWT	LB	
6+37	-	9+15	CTH D	42	0.2	15	7.5
10+95	-	13+65	CTH D	316	0.3	23	11.5
UNDISTRIBUTED				82	0.5	7	2.0
TOTAL 0010				440	1.0	45	21

EROSION CONTROL							
STATION	TO	STATION	LOCATION	628.1504	628.1520	628.2008	628.7570
				SILT FENCE	SILT FENCE	EROSION MAT	
				LF	MAINTENANCE	URBAN CLASS I	ROCK BAGS
					LF	TYPE B	EACH
						SY	
6+37	-	9+15	CTH D	464	928	42	30
10+95	-	13+65	CTH D	502	1,004	316	30
UNDISTRIBUTED				34	68	82	15
TOTAL 0010				1,000	2,000	440	75

MOBILIZATIONS EROSION CONTROL					
STATION	TO	STATION	LOCATION	628.1905	628.1910
				MOBILIZATIONS	MOBILIZATIONS
				EROSION	EROSION
				CONTROL	CONTROL
				EACH	EACH
6+37	-	9+15	CTH D	5	3
TOTAL 0010				5	3

TURBIDITY BARRIER		
LOCATION	628.6005	REMARKS
	TURBIDITY	
	SY	
	BARRIERS	
CTH D	99	WEST ABUTMENT
CTH D	111	EAST ABUTMENT
TOTAL 0010	210	

SIGNS AND SIGN POSTS					
STATION	LOCATION	634.0612	637.2230		REMARKS
		POSTS WOOD	SIGNS TYPE II		
		4X6-INCH X 12-	REFLECTIVE F		
		FT	SF		
		EACH			
NW	CTH D, LT	1	3		W5-52L
SW	CTH D, RT	1	3		W5-52R
NE	CTH D, LT	1	3		W5-52L
SE	CTH D, RT	1	3		W5-52R
TOTAL 0010		4	12		

REMOVING & MOVING SIGNS AND POSTS						
STATION	LOCATION	638.2102	638.2602	638.3000	638.4000	REMARKS
		MOVING SIGNS	REMOVING	REMOVING	MOVING SMALL	
		TYPE II	SIGNS TYPE II	SIGN	SIGN SUPPORTS	
		EACH	EACH	SUPPORTS	EACH	
750' WEST	CTH D, RT	-	1	1	-	NARROW BRIDGE
8+37	CTH D, RT	1	-	-	1	NO FISHING FROM BRIDGE
9+21	CTH D, LT	-	1	1	-	OBJECT MARKER
9+22	CTH D, RT	-	1	1	-	OBJECT MARKER
10+77	CTH D, LT	-	1	1	-	OBJECT MARKER
10+77	CTH D, RT	-	1	1	-	OBJECT MARKER
11+69	CTH D, LT	1	-	-	1	NO FISHING FROM BRIDGE
13+00	CTH D, RT	1	-	-	1	LEFT BEND AHEAD
750' EAST	CTH D, LT	-	1	1	-	NARROW BRIDGE
TOTAL 0010		3	6	6	3	

TRAFFIC CONTROL											
* 643.0420				* 643.0705				* 643.0900			
TRAFFIC CONTROL				TRAFFIC CONTROL				TRAFFIC CONTROL			
APPOXIMATE BARRICADES TYPE III				WARNING LIGHTS TYPE A				CONTROL SIGNS FIXED MESSAGE			
LOCATION	SERVICE DAYS	NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	SF	NO. IN SERVICE	DAY	REMARKS
WEST ADVANCED WORK ZONE	140	2	280	4	560	3	420	-	1	7	(1)
WEST WORK ZONE LIMITS	140	5	700	6	840	1	140	-	-	-	(2)
EAST WORK ZONE LIMITS	140	5	700	6	840	1	140	-	-	-	(2)
EAST ADVANCED WORK ZONE	140	2	280	4	560	3	420	-	1	7	(1)
WILLOW CREEK	70	-	-	-	-	8	560	28	-	-	(3)
TOTAL 0010			1,960	2,800	1,680	28	14				

(1) SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL A & C
(2) SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL D
(3) SEE PORTAGE PLAN DETAIL
* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

CONSTRUCTION STAKING									
					650.4500	650.5000	650.9920	650.6501.01	650.9911.01
					CONSTRUCTION			CONSTRUCTION	CONSTRUCTION
					STAKING	CONSTRUCTION	CONSTRUCTION	STAKING	STAKING
					SUBGRADE	STAKING BASE	STAKING SLOPE	STRUCTURE	SUPPLEMENTAL
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF	LAYOUT	CONTROL
								(STRUCTURE)	(PROJECT) (01. B-
								(01. B-69-0055)	69-0055)
					LF	LF	LF	EACH	EACH
0010	6+37	-	9+15	CTH D, LT & RT	278	278	278	-	-
0010	10+95	-	13+65	CTH D, LT & RT	270	270	270	-	-
0010	PROJECT			CTH D	-	-	-	-	1
TOTAL 0010					548	548	548	0	1
0020	B-69-0055				-	-	-	1	-
TOTAL 0020					0	0	0	1	0
TOTAL 0010					548	548	548	1	1

PAVEMENT MARKING					
646.1020 MARKING LINE EPOXY 4-INCH					
STATION	TO	STATION	LOCATION	LF	REMARKS
6+90	-	13+17	CTH D, LT	627	WHITE EDGELINE
6+90	-	13+17	CTH D, RT	627	WHITE EDGELINE
6+90	-	13+17	CTH D, LT & RT	1,256	DOUBLE YELLOW CENTERLINE
TOTAL 0010				2,510	

SAWING ASPHALT			MAINTAINING BIRD DETERRENT SYSTEM		
690.0150 SAWING ASPHALT LF			999.2005.S.01 MAINTAINING BIRD DETERRENT SYSTEM (STATION) (01. 10+00) EACH		
STATION	LOCATION	LF	STATION	LOCATION	EACH
6+90	CTH D	23	10+00	CTH D	1
13+17	CTH D	22			
TOTAL 0010		45	TOTAL 0010		1

TEMPORARY PORTAGE PATH	
SPV.0090.01 SPECIAL (01. TEMPORARY PORTAGE PATH) LF	
LOCATION	LF
CTH D	270
TOTAL 0010	270

TRAFFIC CONTROL DETOUR SIGN SUMMARY - PROJECT 6911-00-72

SIGN NO.	APPROXIMATE LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD	* 643.0900 SIGNS	* 643.0420 BARRICADES TYPE III	* 643.0705 WARNING LIGHTS TYPE A	NO OF CYCLES	643.0920 COVERING SIGNS TYPE II	REMARKS
					140 DAYS	DAYS	DAYS	DAYS		EACH	
A	STH 49, 2500 FT NORTH OF CTH D	M1-5A	48"X48"	1	140	140					D
	"	W20-2A	48"x48"	1	140	140					
B	STH 49, 1500 FT NORTH OF CTH D	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1	21"X21"	1	140	140					
C	STH 49, 500 FT NORTH OF CTH D	M1-5A	24"X24"						1	1	COVER "COUNTY D"
	"	M6-1L	21"X21"						1	1	COVER "<- "
D	STH 49, 150 FT NORTH OF CTH D	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1R	21"X21"	1	140	140					
E	STH 49, 500 FT SOUTH OF CTH D	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
F	STH 49, 150 FT NORTH OF BUTTERCUP AVE	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1L	21"X21"	1	140	140					
G	STH 49, 150 FT NORTH OF COTTONVILLE CT	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1	21"X21"	1	140	140					
H	STH 49, 750 FT NORTH OF STH 21	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M5-1L	21"X21"	1	140	140					
I	STH 49, 150 FT NORTH OF STH 21	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1L	21"X21"	1	140	140					
J	STH 21, 500 FT EAST OF STH 49	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
K	STH 21, 1000 FT WEST OF CTH XX	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M5-1L	21"X21"	1	140	140					
L	STH 21, 150 FT WEST OF CTH XX	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1L	21"X21"	1	140	140					
M	CTH XX, 500 FT NORTH OF STH 21	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
N	CTH XX, 500 FT SOUTH OF 34TH DRIVE	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M5-1R	21"X21"	1	140	140					
O	CTH XX, 750 FT WEST OF CTH XX TURN	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M5-1L	21"X21"	1	140	140					
P	CTH XX, 150 FT WEST OF CTH XX TURN	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1L	21"X21"	1	140	140					
Q	CTH XX, 500 FT SOUTH OF CTH D	M4-8A	24"X18"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D

PAGE SUBTOTALS436,020002

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC CONTROL DETOUR SIGN SUMMARY - PROJECT 6911-00-72 CONTINUED

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 140 DAYS	* 643.0900 SIGNS	* 643.0420 BARRICADES TYPE III	* 643.0705 WARNING LIGHTS TYPE A	NO OF CYCLES	643.0920 COVERING SIGNS TYPE II	REMARKS
						DAYS	DAYS	DAYS		EACH	
AA	CTH D, 2500 FT EAST OF CTH XX	M1-5A	48"X48"	1	140	140					D
	"	W20-2A	48"x48"	1	140	140					
AB	CTH D, 1000 FT EAST OF CTH XX	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M5-1L	21"X21"	1	140	140					
AC	CTH D, 150 FT EAST OF CTH XX	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1L	21"X21"	1	140	140					
AD	CTH XX, 500 FT NORTH OF CTH D	M1-5A	24"X24"	1	140	140					D
	"								1	1	COVER "<->"
	"	M6-1R	21"X21"	1	140	140					
AE	CTH D, 50 FT WEST OF CTH XX	R11-3B	60"X30"	1	140	140	140	280			1.6 MILES AHEAD
AF	CTH D, 50 FT WEST OF 35TH RD	R11-3B	60"X30"	1	140	140	140	280			1.0 MILES AHEAD
AG	CTH XX, 500 FT SOUTH OF CTH D	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
AH	CTH XX, 750 FT NORTH OF CTH XX TURN	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1	21"X21"	1	140	140					
AI	CTH XX, 150 FT NORTH OF CTH XX TURN	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
		M6-1R	21"X21"	1	140	140					
AJ	CTH XX, 750 FT EAST OF 34TH DR	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M5-1L	21"X21"	1	140	140					
AK	CTH XX, 750 FT NORTH OF STH 21	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M5-1R	21"X21"	1	140	140					
AL	CTH XX, 150 FT NORTH OF STH 21	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1R	21"X21"	1	140	140					
AM	STH 21, 500 FT WEST OF CTH XX	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
AN	STH 21, 750 FT EAST OF STH 49	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M5-1R	21"X21"	1	140	140					
A0	STH 21, 150 FT EAST OF STH 49	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1R	21"X21"	1	140	140					
AP	STH 49, 500 FT NORTH OF STH 21	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
AQ	STH 49, 150 FT SOUTH OF COTTONVILLE CT	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1	21"X21"	1	140	140					
PAGE SUBTOTALS				42		5,880	280	560		1	

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC CONTROL DETOUR SIGN SUMMARY - PROJECT 6911-00-72 CONTINUED

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 140 DAYS	* 643.0900 SIGNS DAYS	* 643.0420 BARRICADES TYPE III DAYS	* 643.0705 WARNING LIGHTS TYPE A DAYS	NO OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
BA	STH 49, 150 FT SOUTH OF BUTTERCUP AVE	M4-8	24"X12"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
	"	M6-1	21"X21"	1	140	140					
BB	STH 49, 500 FT SOUTH CTH D	M4-8A	24"X18"	1	140	140					
	"	M1-5A	24"X24"	1	140	140					D
BC	STH 49, 250 FT SOUTH OF CTH D								1	1	COVER "COUNTY D"
	"								1	1	COVER "->"
BD	CTH D, 50 FT EAST OF STH 49	R11-3B	60"X30"	1	140	140	140	280			3.0 MILES AHEAD
BE	CTH D, 50 FT EAST OF 33RD AVE	R11-3B	60"X30"	1	140	140	140	280			1.0 MILES AHEAD
PAGE SUBTOTALS				7		980	280	560		2	

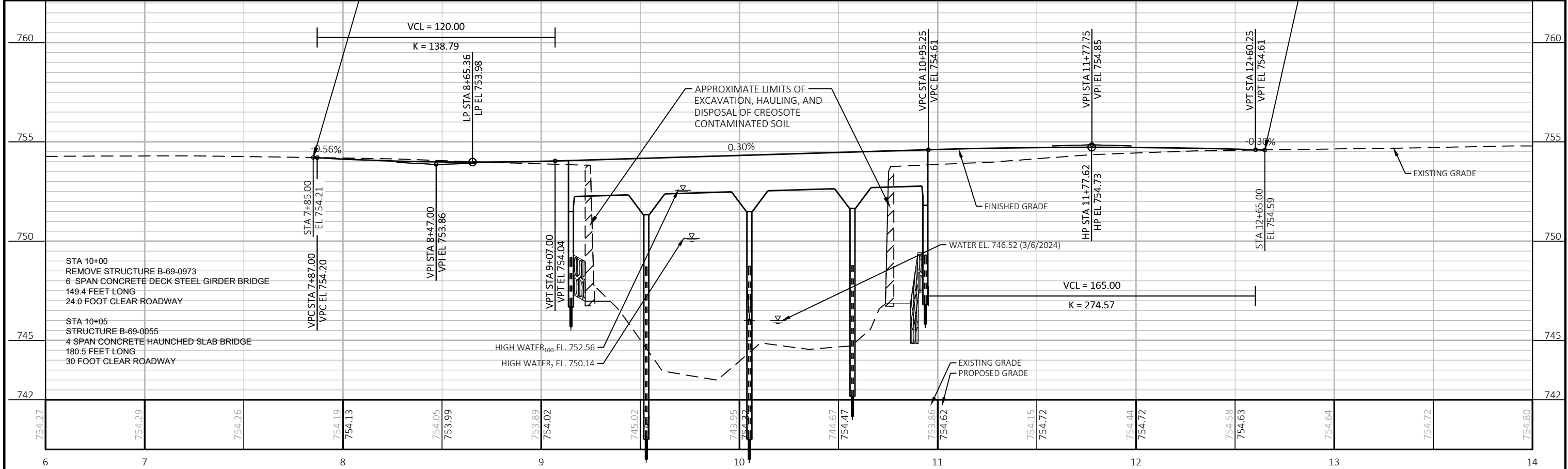
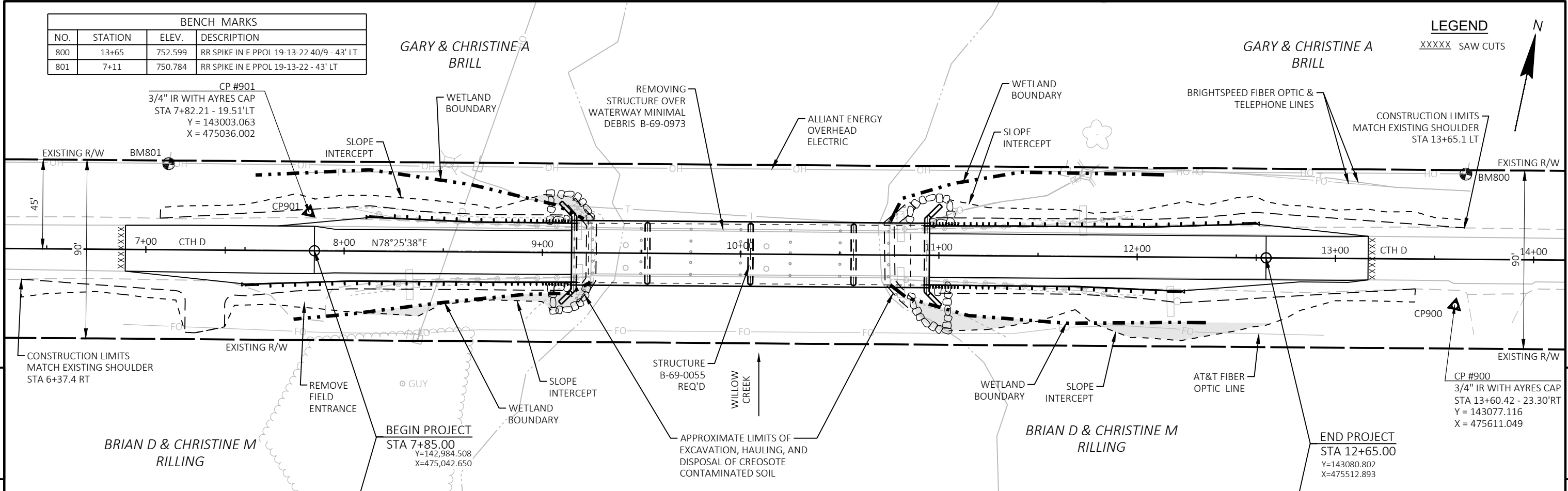
*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

DETOUR 6911-01-72 TOTAL 001012,8805601,1205

BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
800	13+65	752.599	RR SPIKE IN E PPOL 19-13-22 40/9 - 43' LT
801	7+11	750.784	RR SPIKE IN E PPOL 19-13-22 - 43' LT

LEGEND

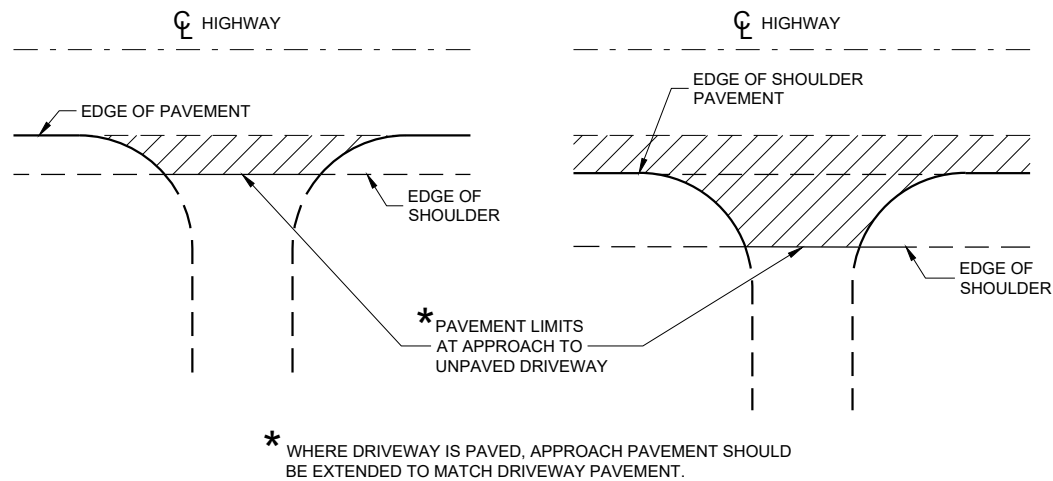
XXXXX SAW CUTS



PROJECT NO: 6911-00-72	HWY: CTH D	COUNTY: WAUSHARA	PLAN AND PROFILE: CTH D	SHEET	E
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Standard Detail Drawing List

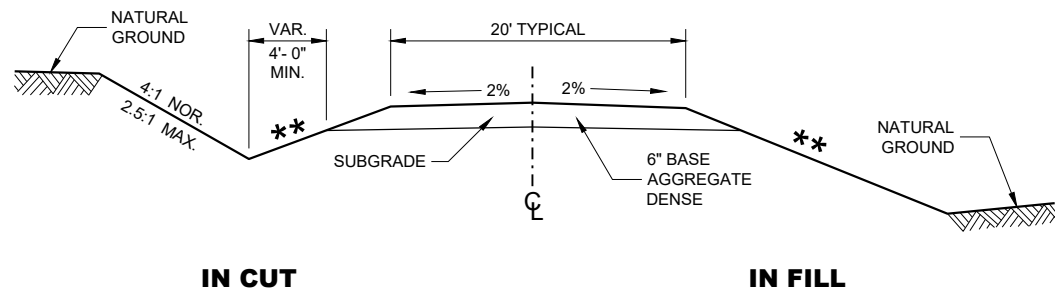
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	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)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

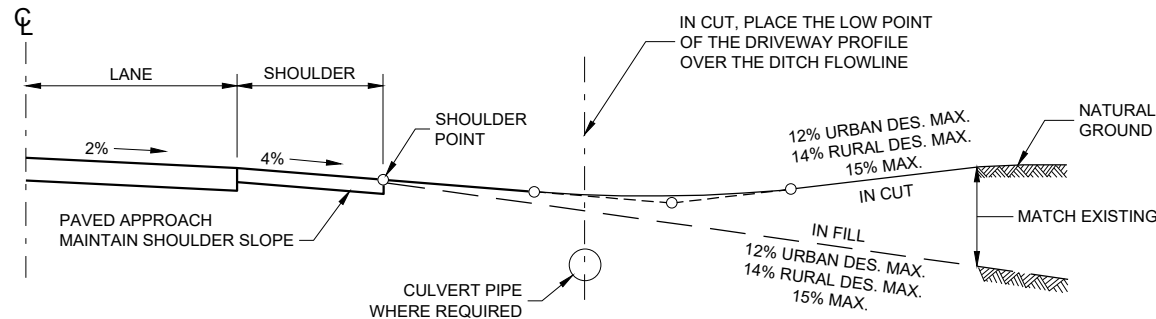
**RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB AND GUTTER OR SIDEWALK)**



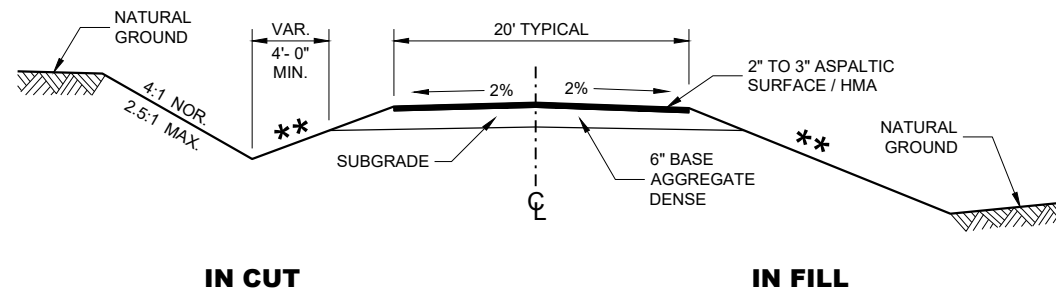
**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE**

** SLOPE CAN VARY WITH SPEED. SEE 11-45-30.6.2

POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥ 35 TO < 60	6:1
≥60	10:1



TYPICAL DRIVEWAY PROFILES



**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE**

**DRIVEWAYS WITHOUT
CURB AND GUTTER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

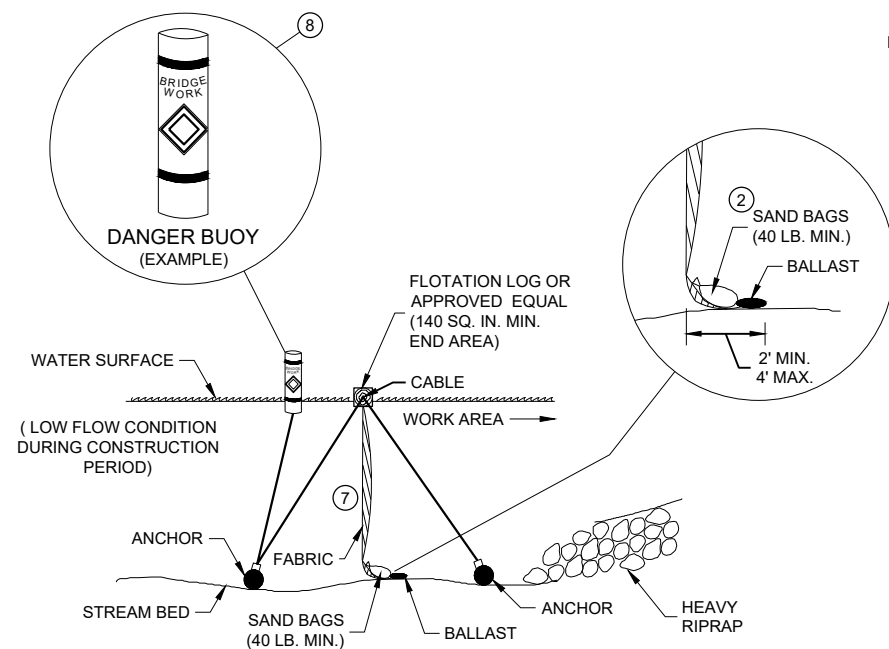
APPROVED
December 2017
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



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

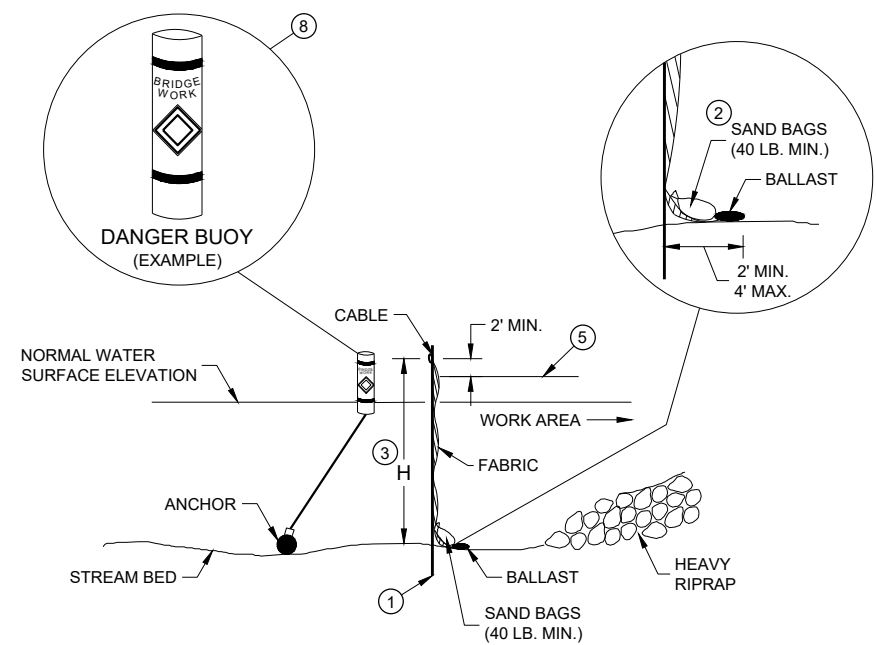


SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/s/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER



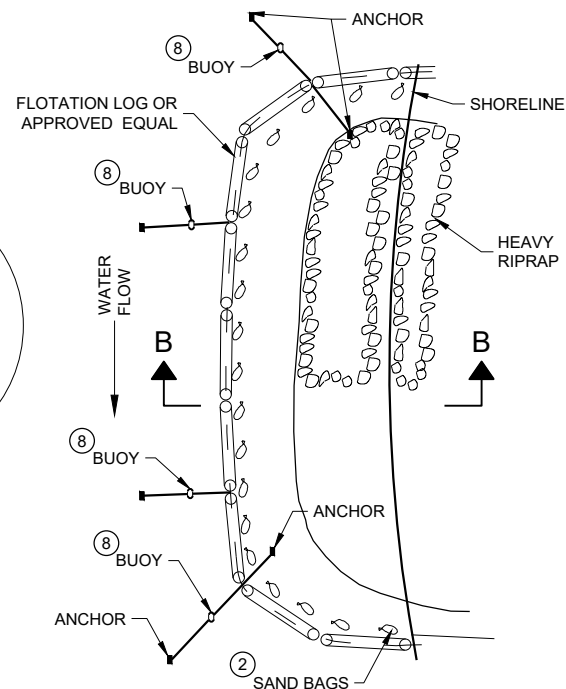
SECTION B - B

TURBIDITY BARRIER - FLOAT ALTERNATIVE CAUTION - SEE NOTE 6

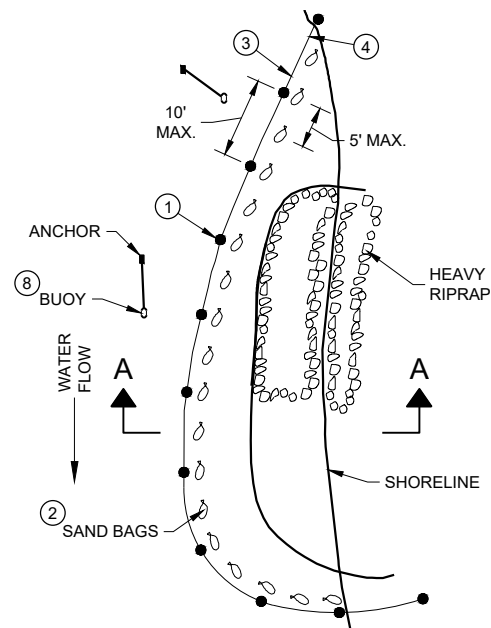


SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW



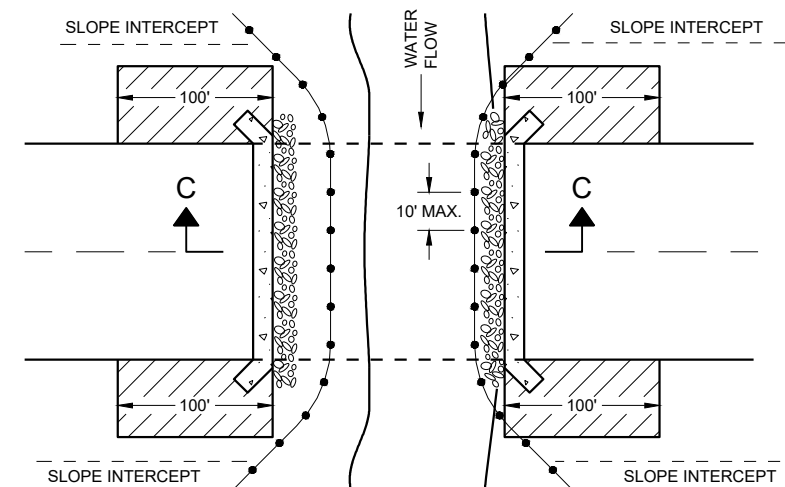
PLAN VIEW

GENERAL NOTES

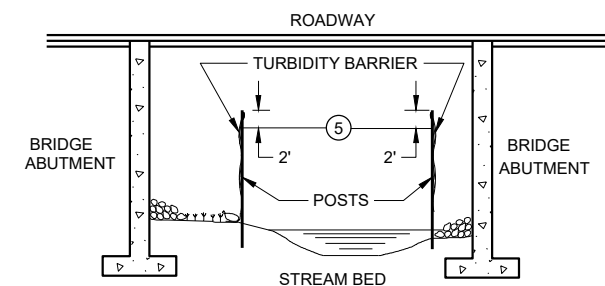
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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 SAND BAGS 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 FEET, 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 Q2 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 BEDROCK 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

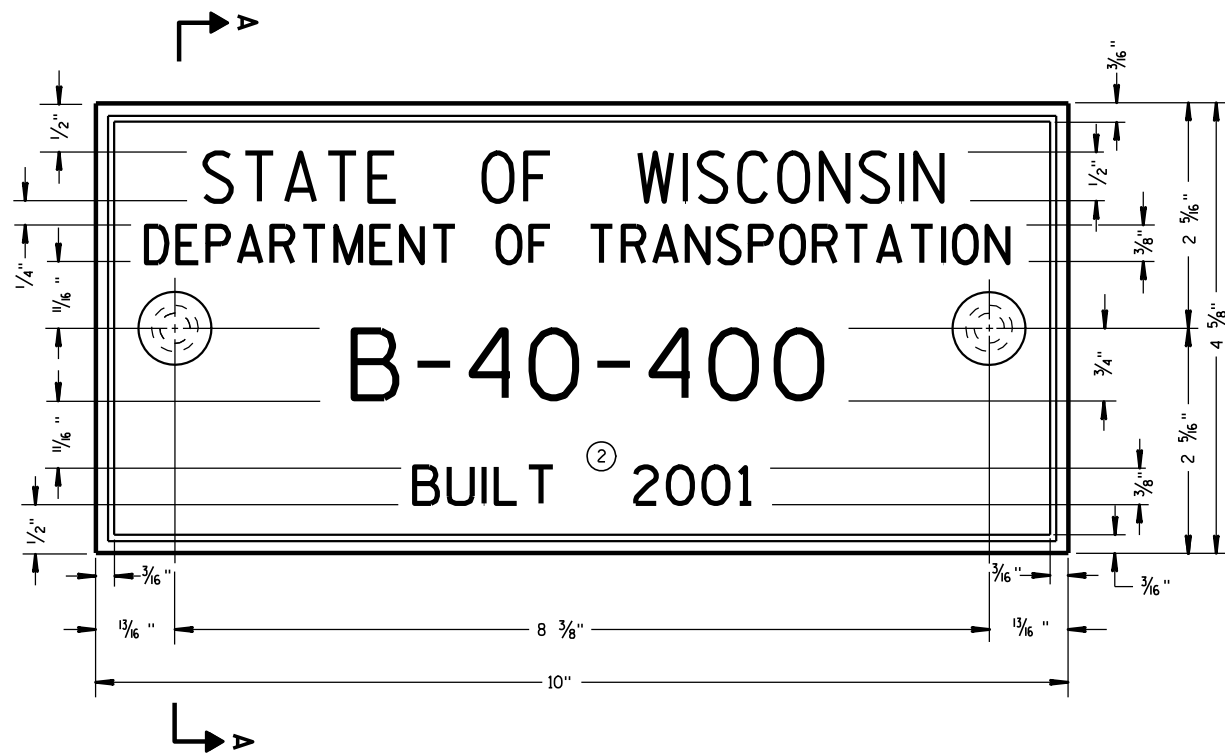
APPROVED

6/4/02

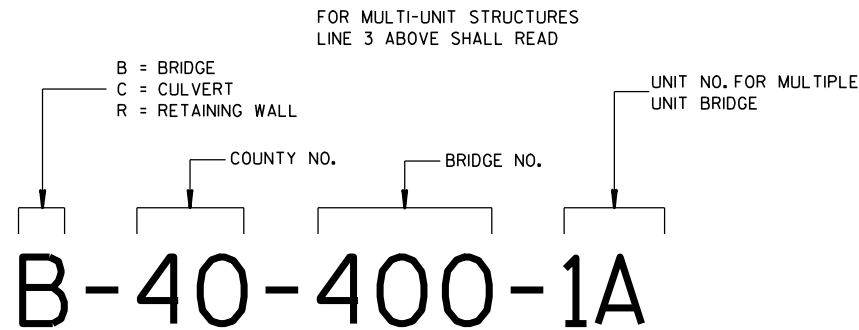
DATE

FHWA

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT
ENGINEER



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



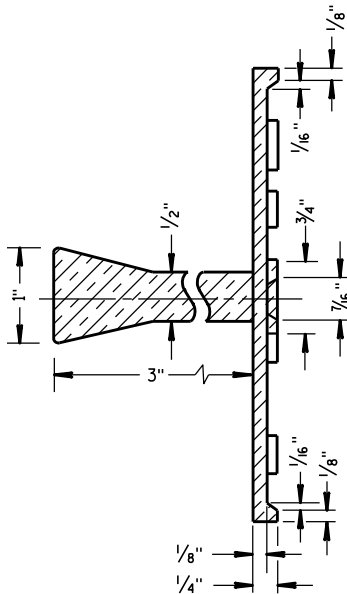
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

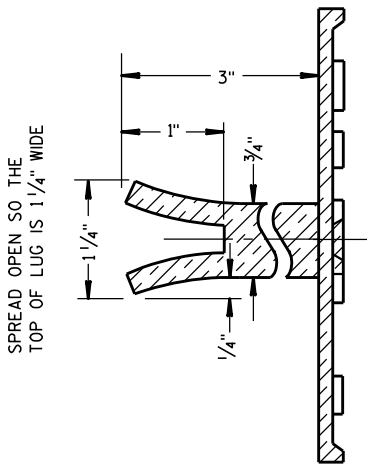
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

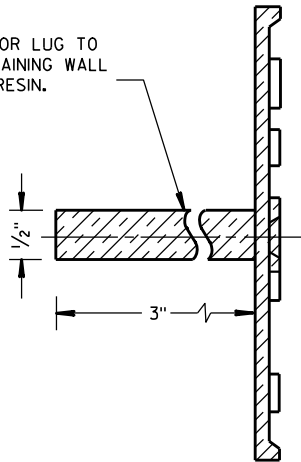


SECTION A-A



ALTERNATE LUG

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

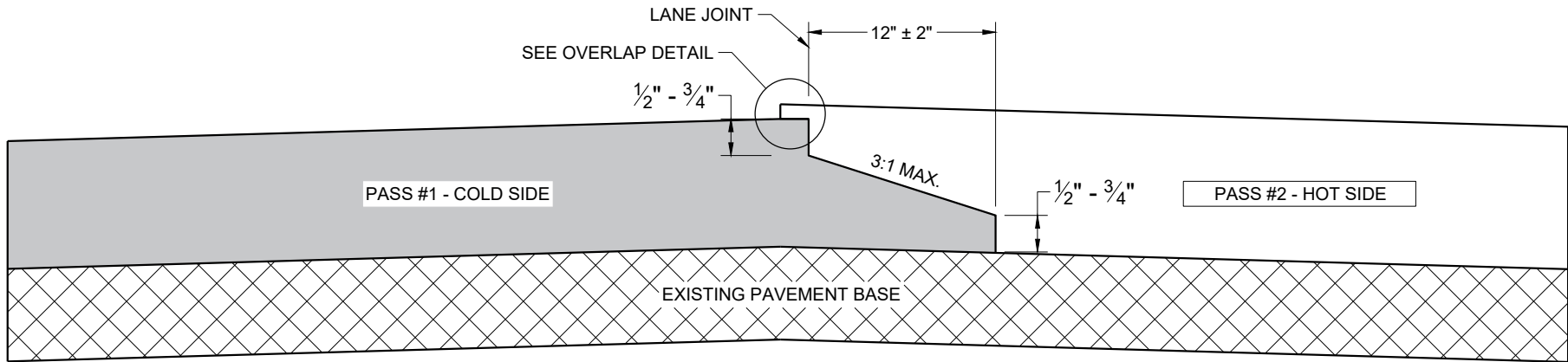


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

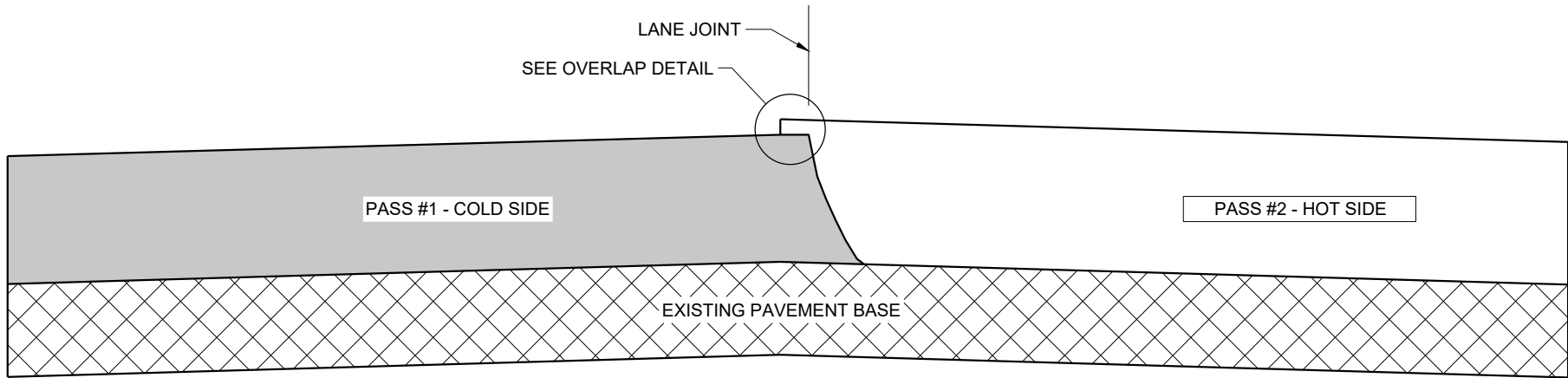
NAME PLATE
(STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

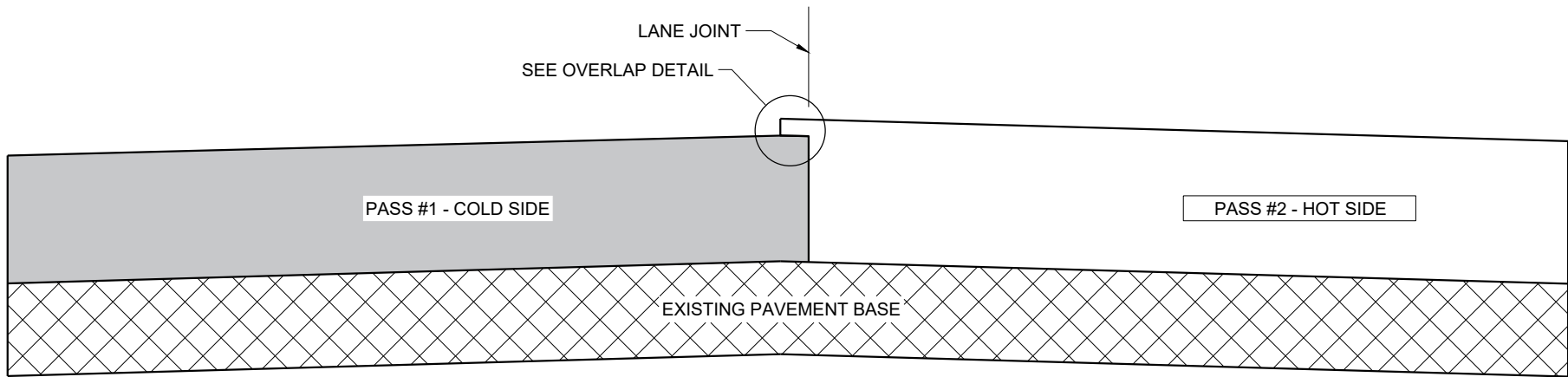
APPROVED
3/26/10
DATE
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

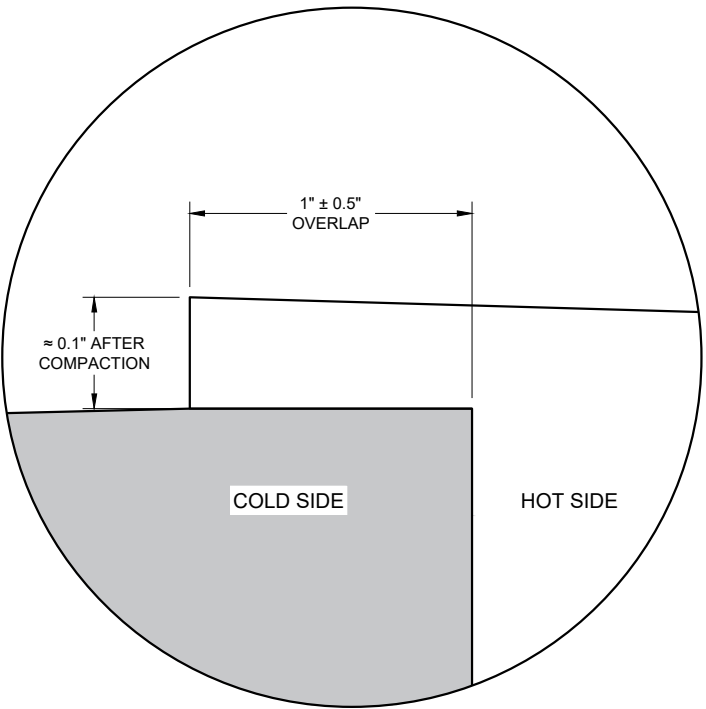
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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

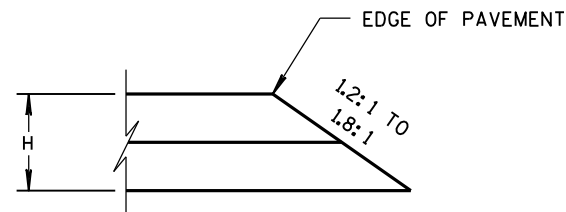


OVERLAP DETAIL (TYPICAL)

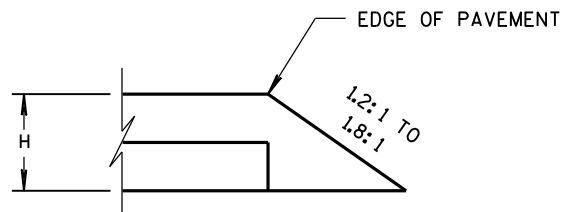
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

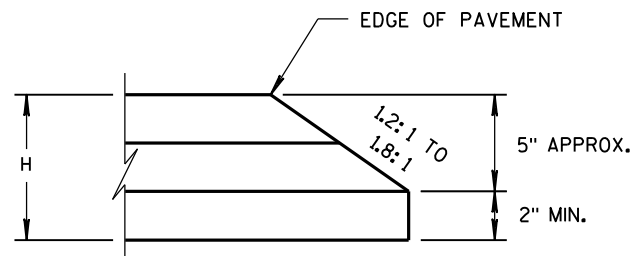
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER
FHWA



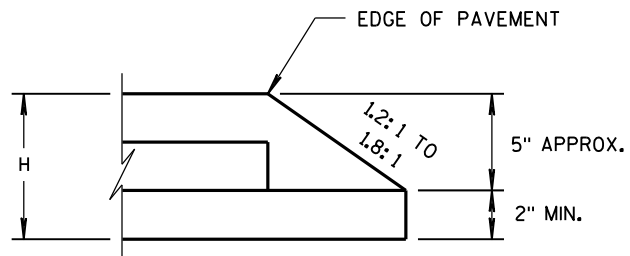
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

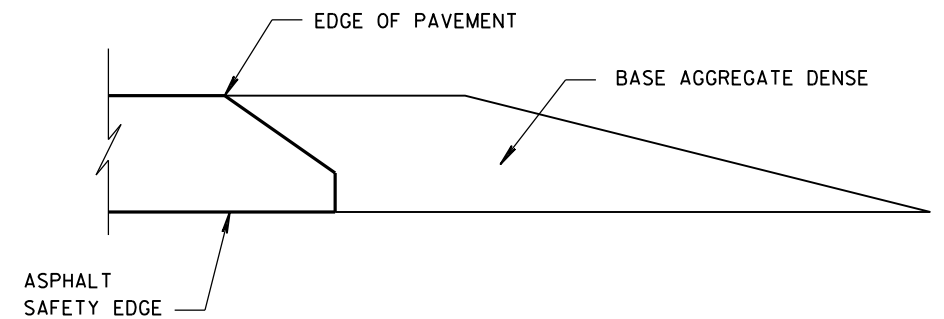


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

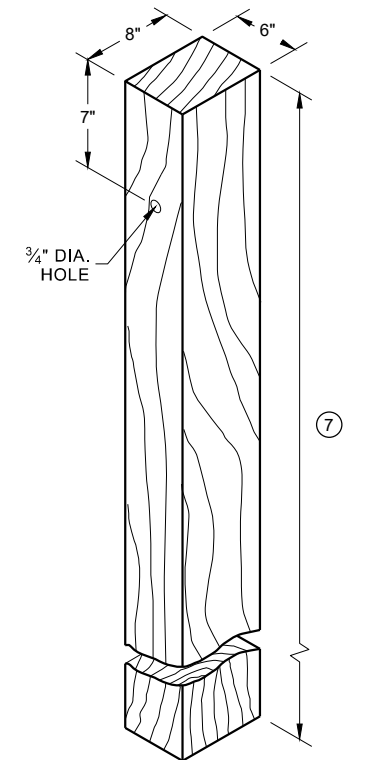
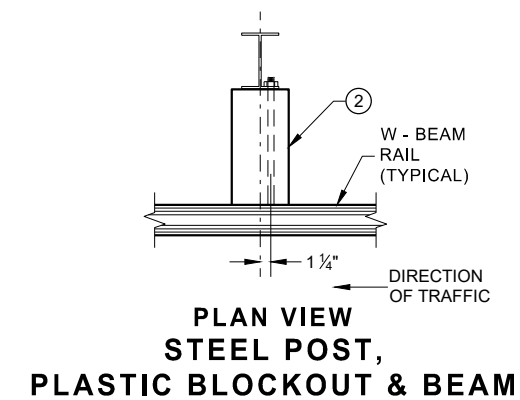
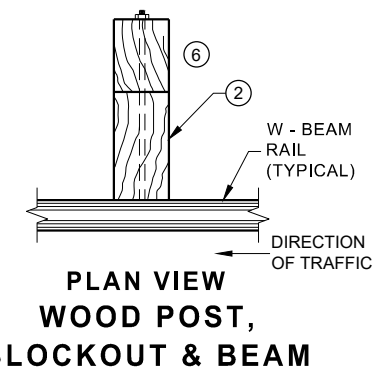
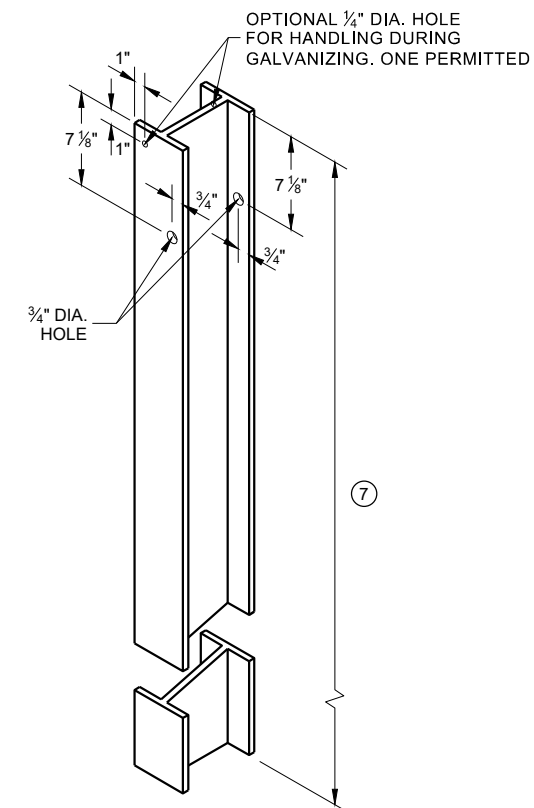
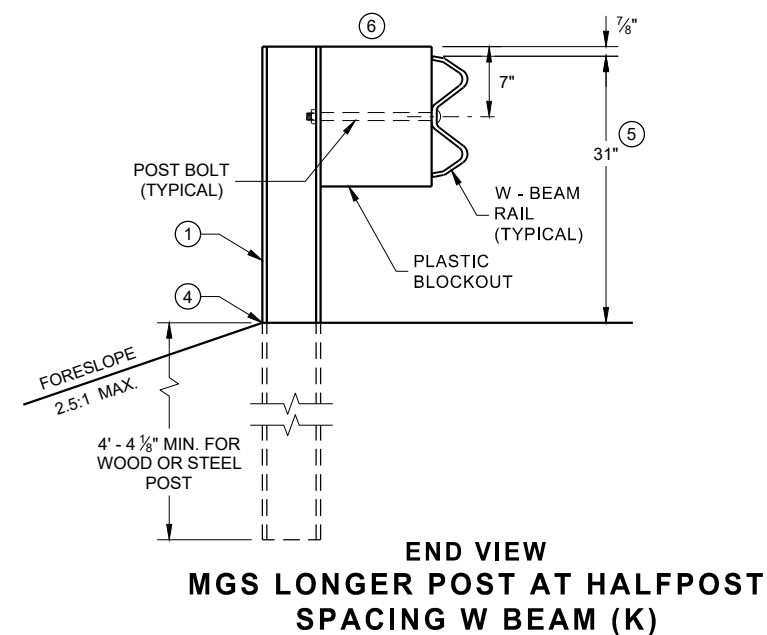
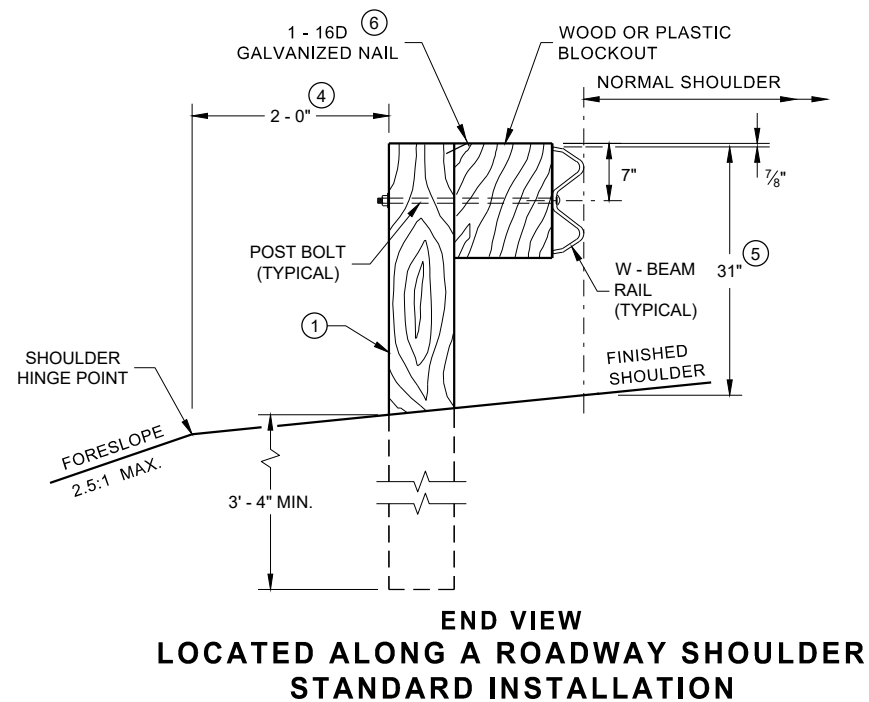
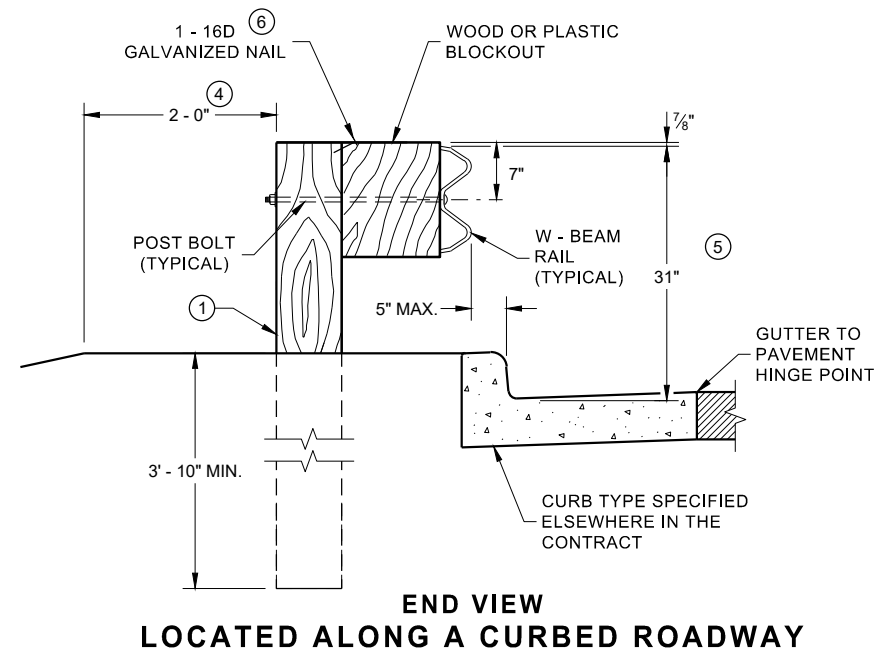
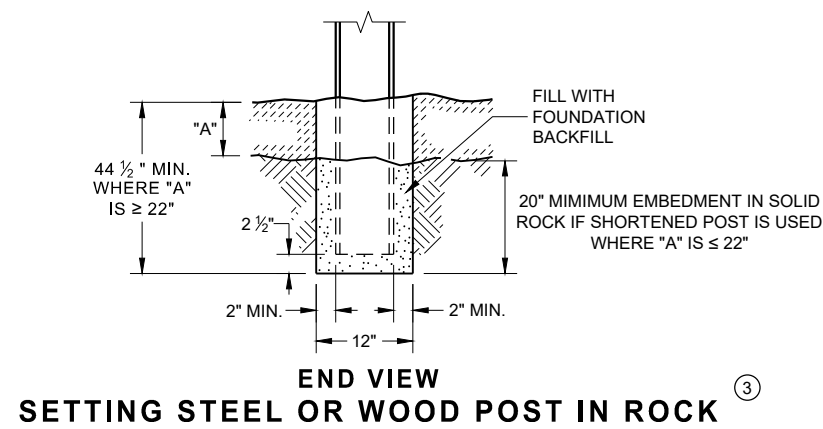
SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

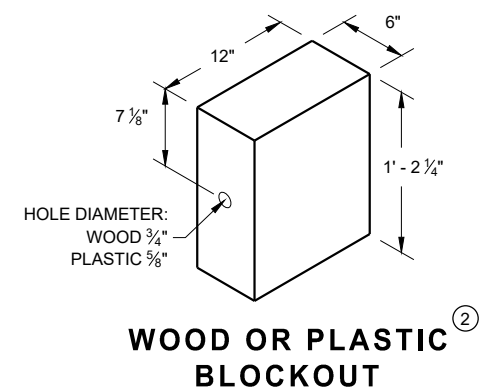
APPROVED
11/30/2012
DATE
FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

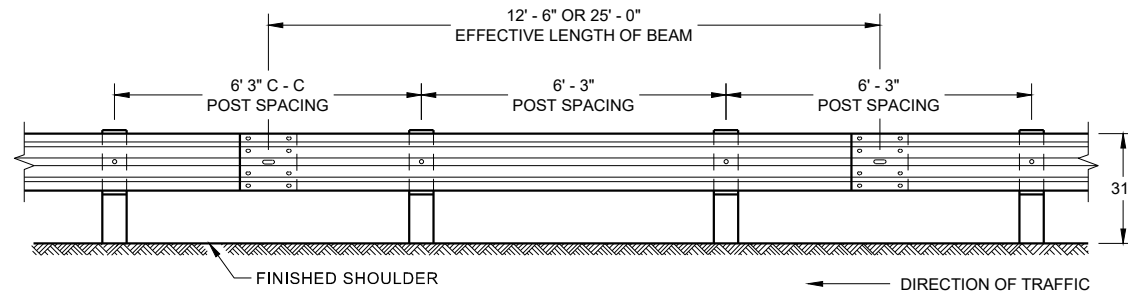
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS 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 $\pm 1"$. 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".



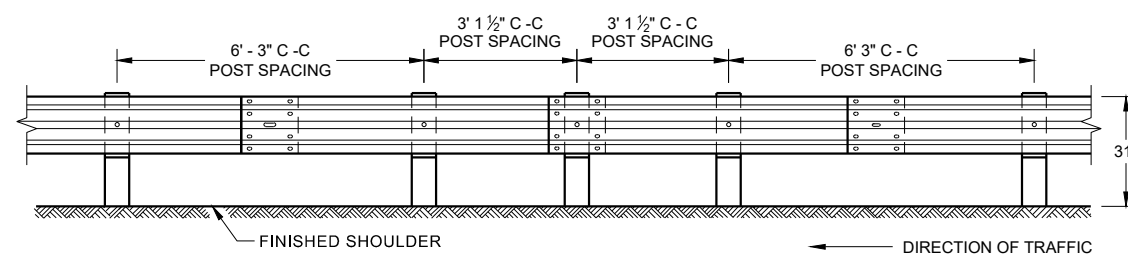
WOOD POST (6" X 8") NOMINAL ⁽¹⁾



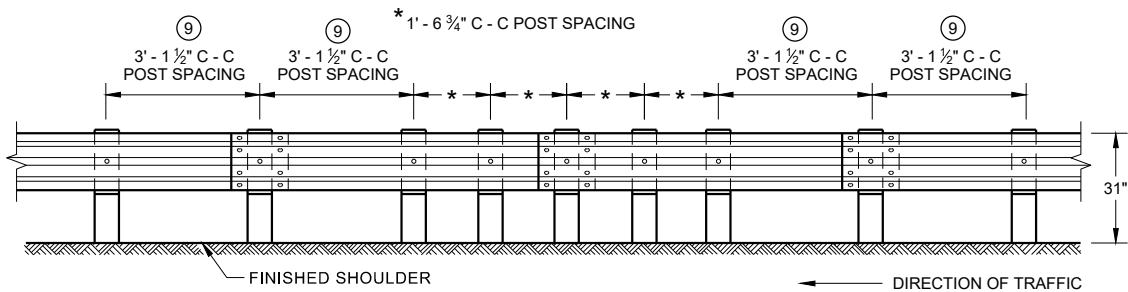
**WOOD OR PLASTIC
BLOCKOUT**



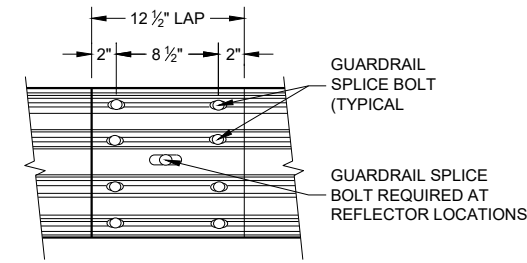
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



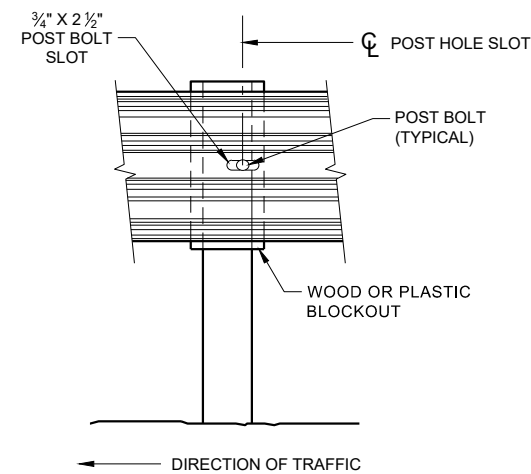
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



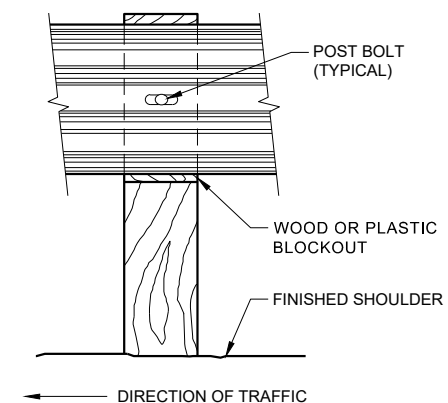
**FRONT VIEW
QUARTER POST SPACING (QS)**



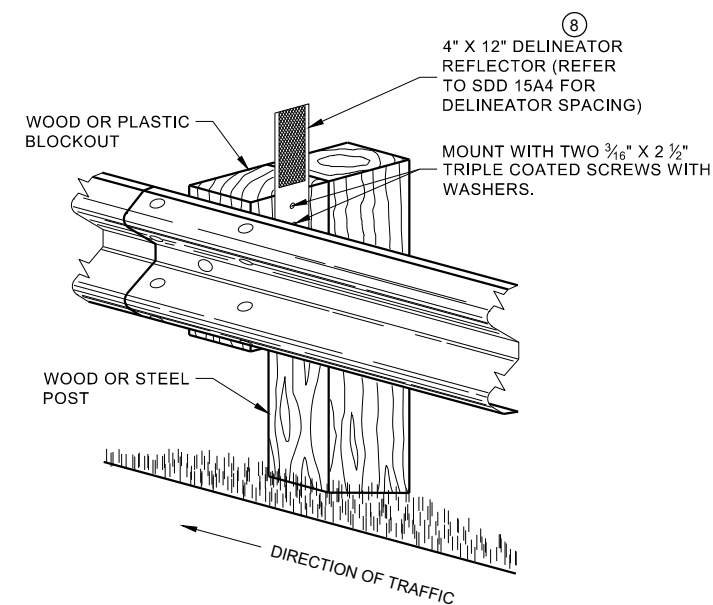
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



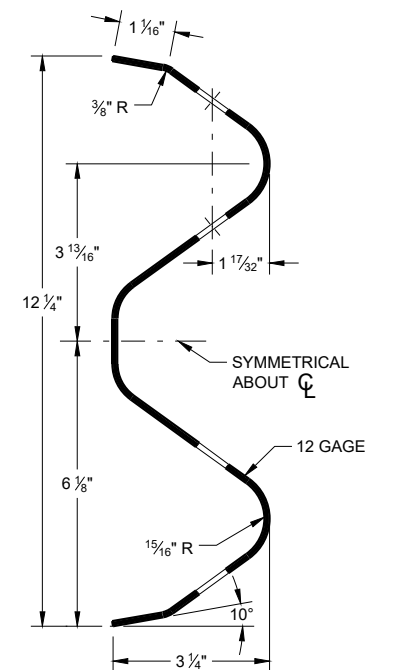
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

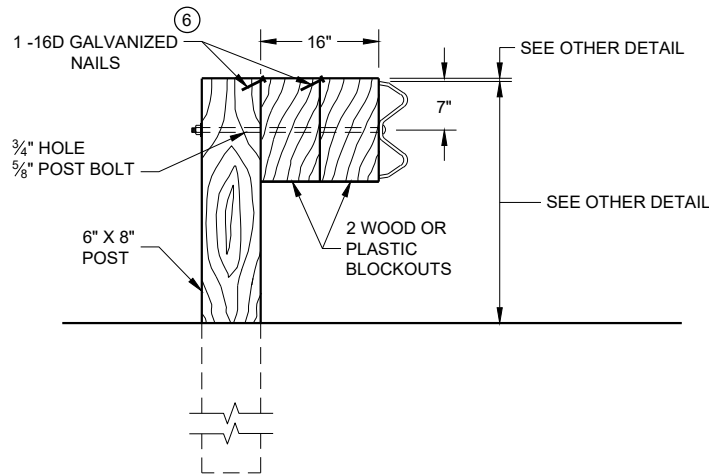
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

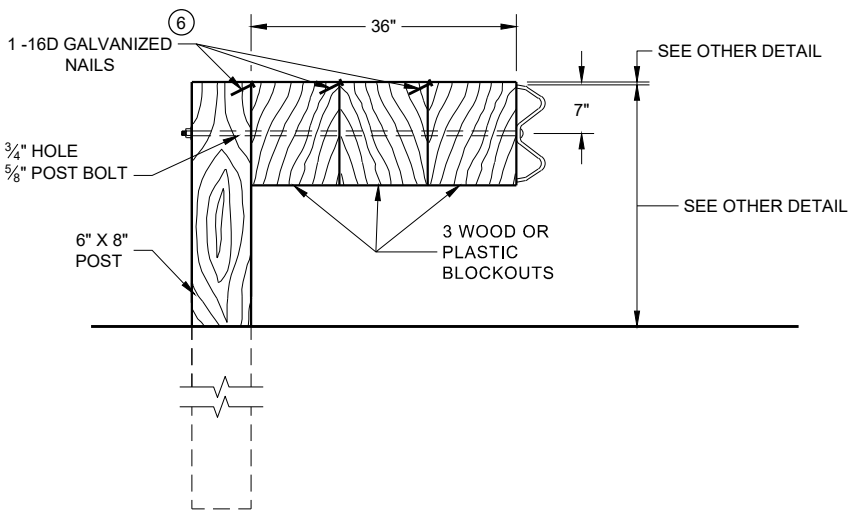
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

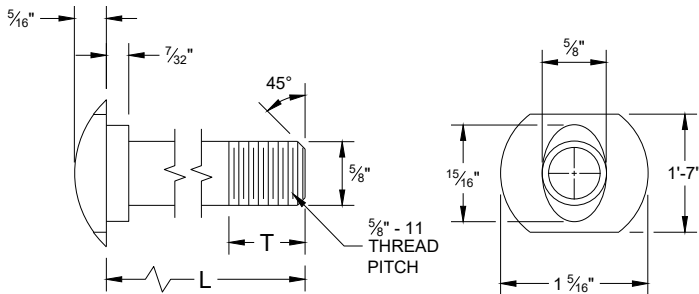
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

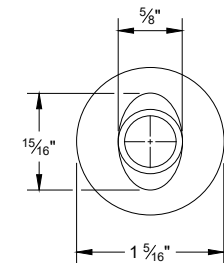
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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

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

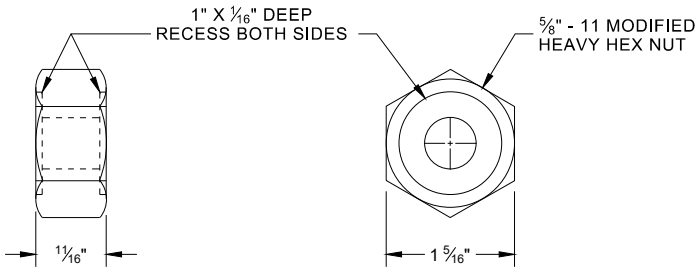


POST BOLT TABLE

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

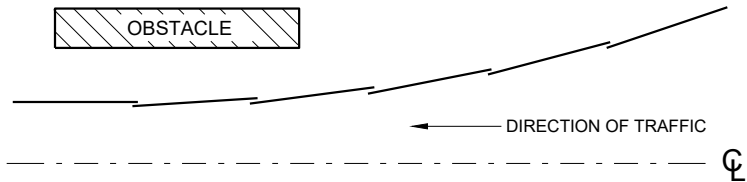


ALTERNATE BOLT HEAD

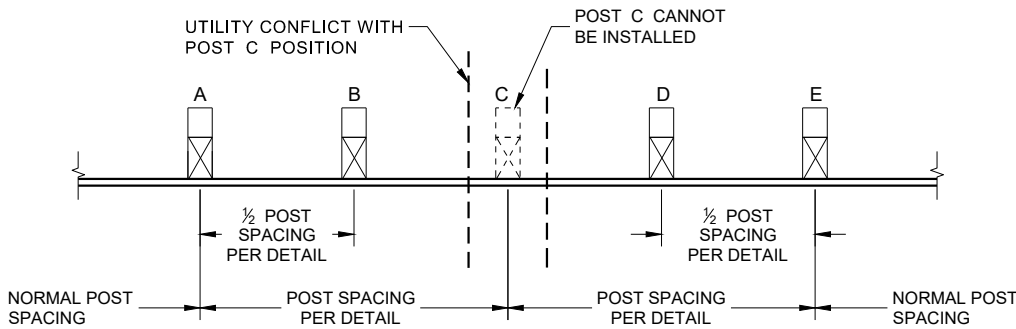


POST BOLT, SPLICE BOLT
AND RECESS NUT

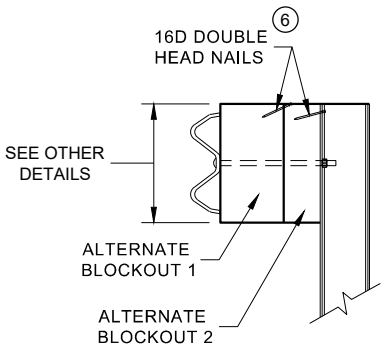
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



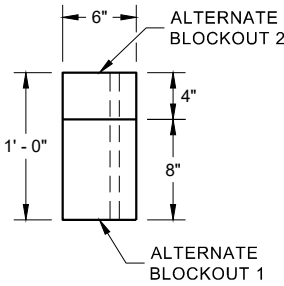
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

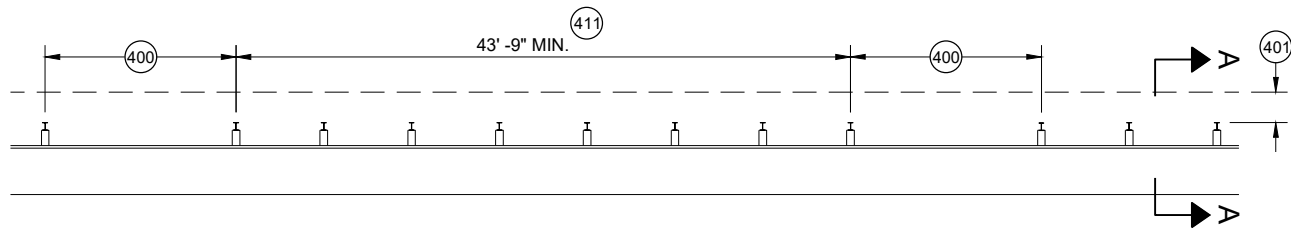


PLAN VIEW

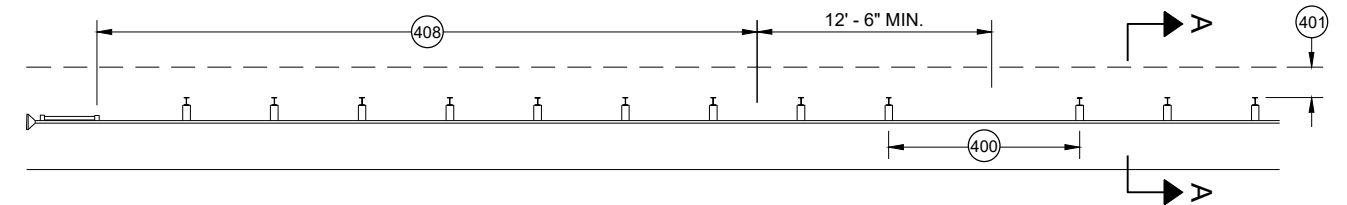
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

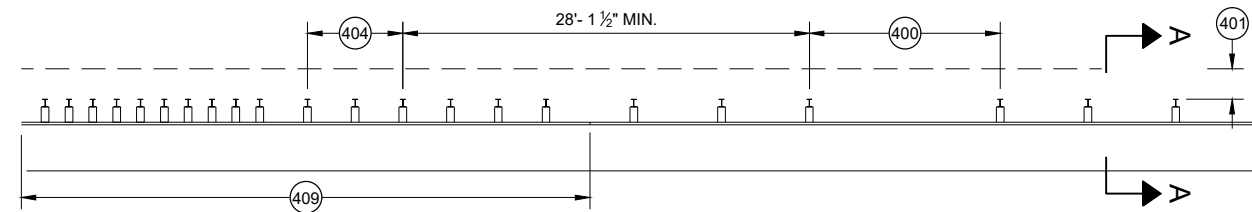
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



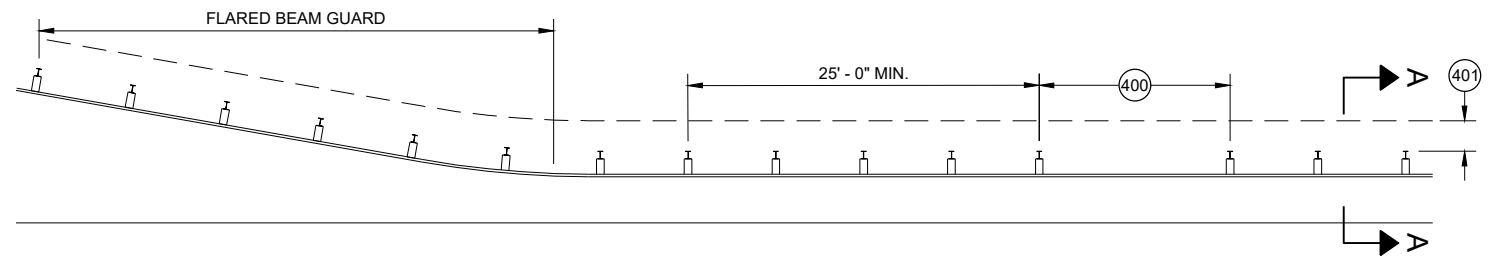
MISSING POST IN MGS GUARDRAIL



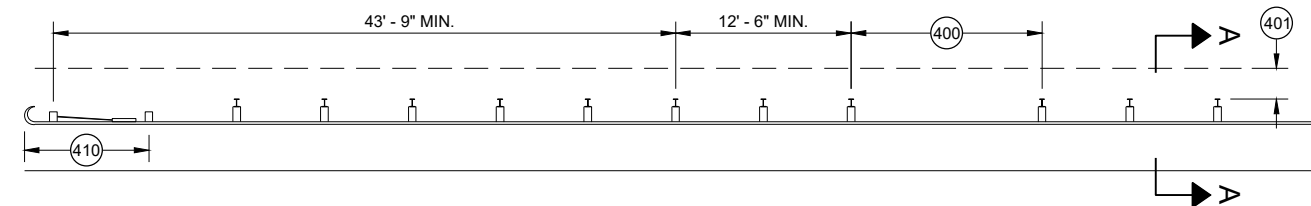
MISSING POST IN MGS GUARDRAIL NEAR EAT



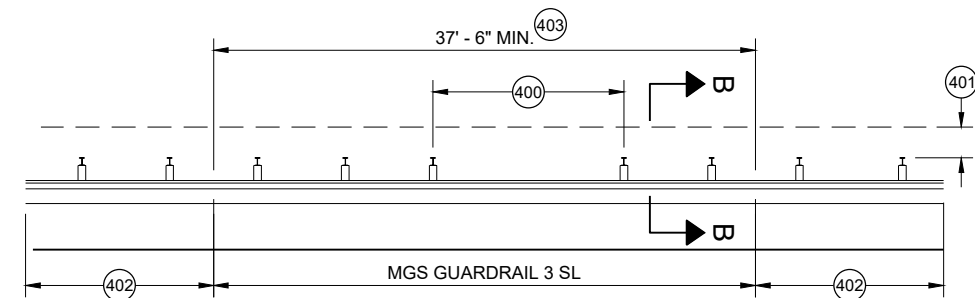
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

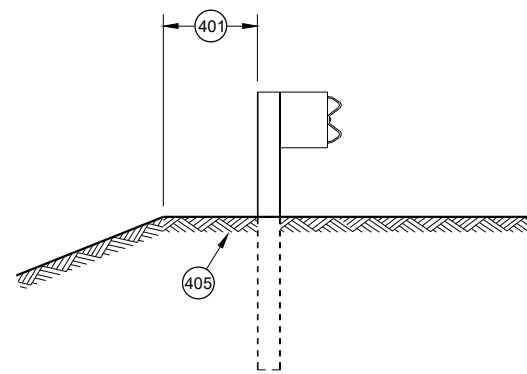


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

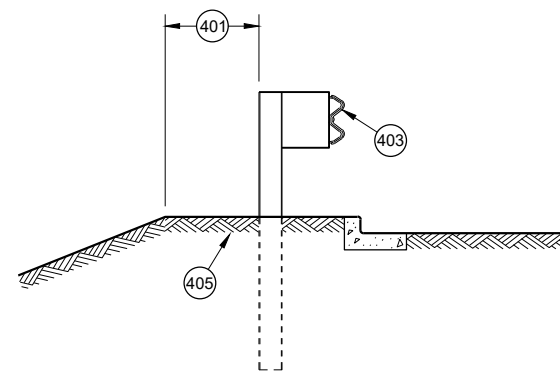


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (400) MAX SPAN 12' - 6"
- (401) 2' MIN.
- (402) MGS GUARDRAIL 3
- (403) NESTING BEAM GUARD
- (404) ASYMMETRIC TRANSITION
- (405) SOIL WELL DRAINED AND COMPACTED
- (406) SEE OTHER DRAWINGS IN THIS SDD
- (407) SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- (408) SEE SDD 14B44
- (409) SEE SDD 14B45
- (410) SEE SDD 14B47
- (411) MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

GENERAL NOTES

- (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.

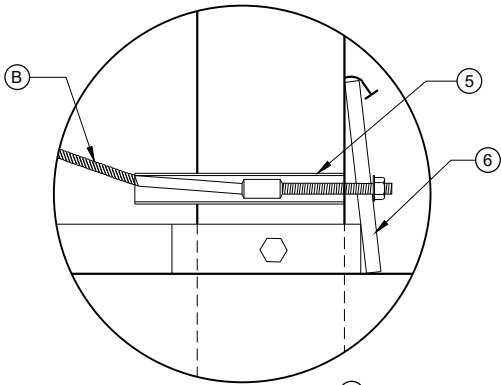
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

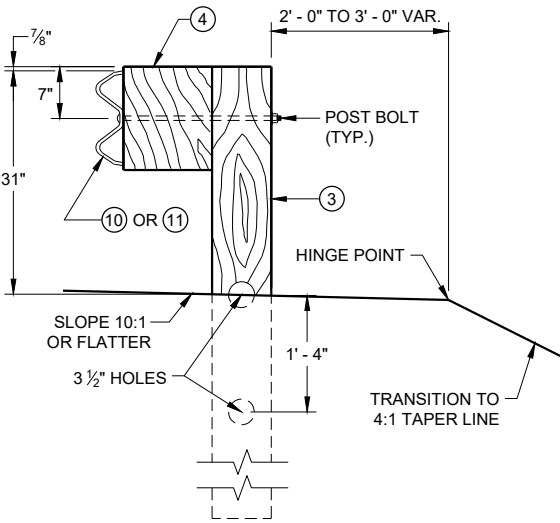
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

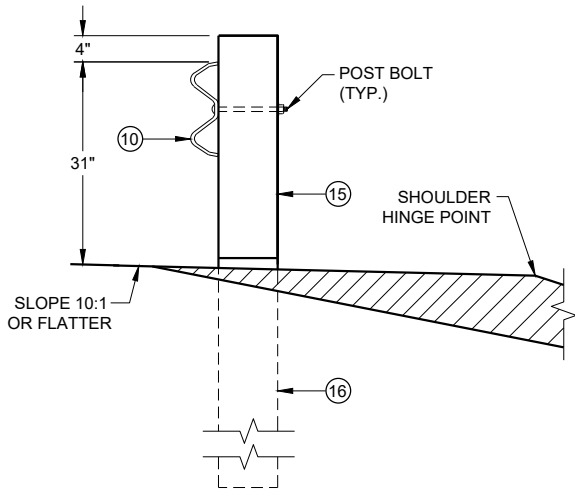
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



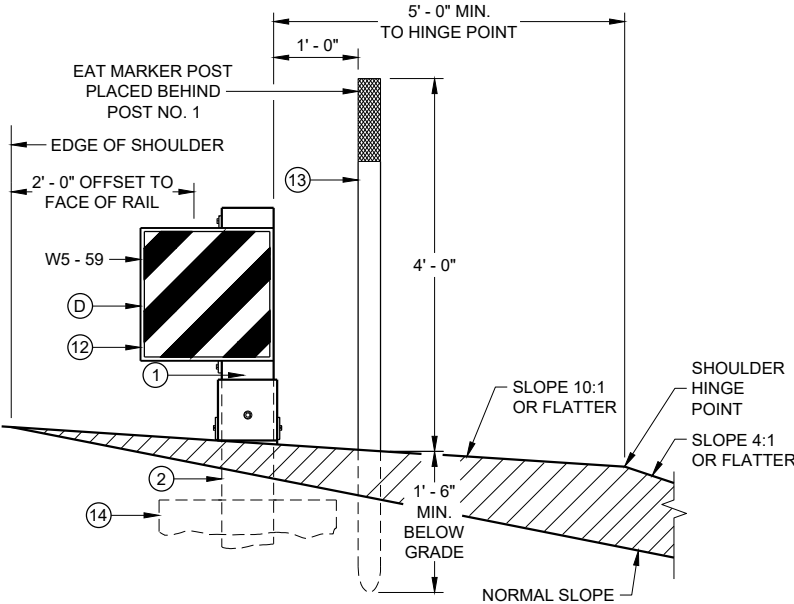
DETAIL "A"



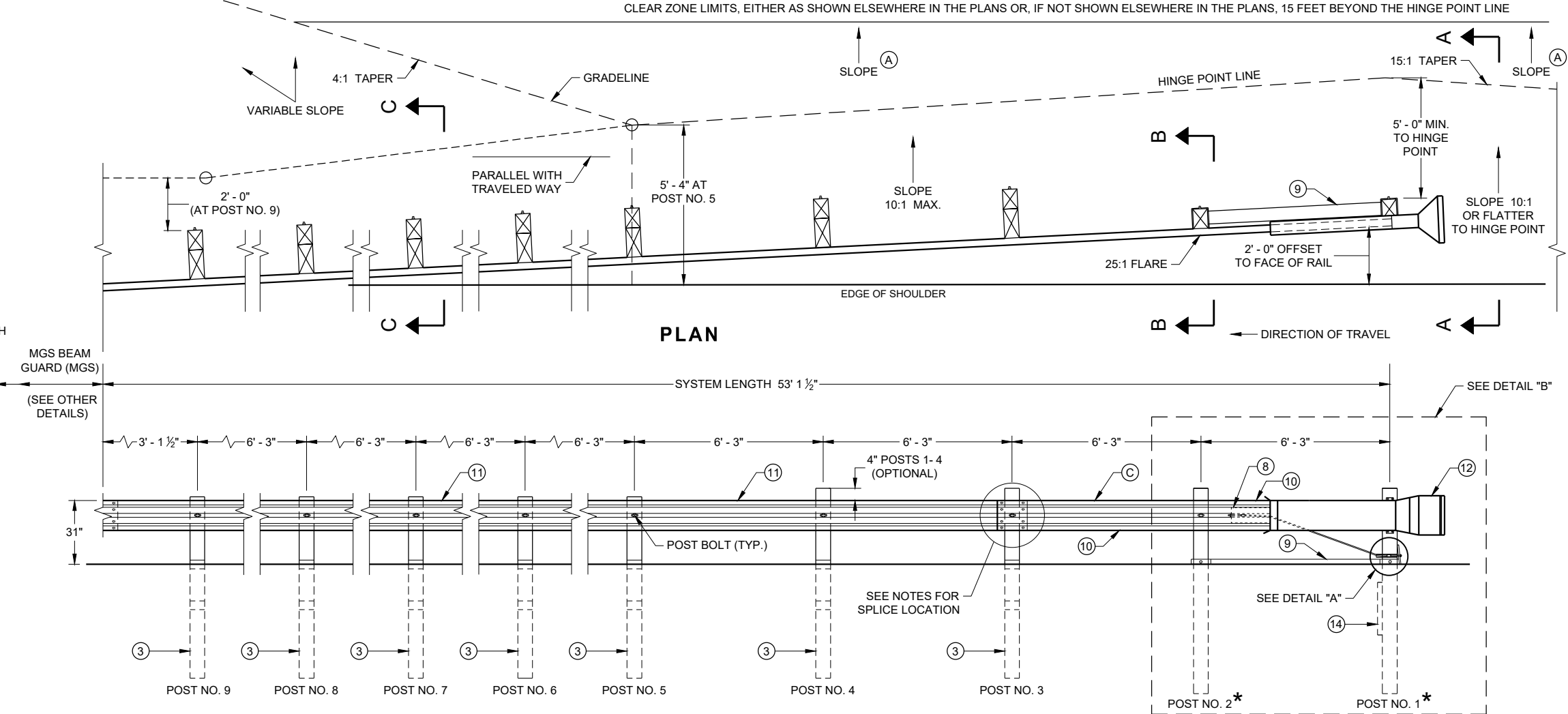
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*

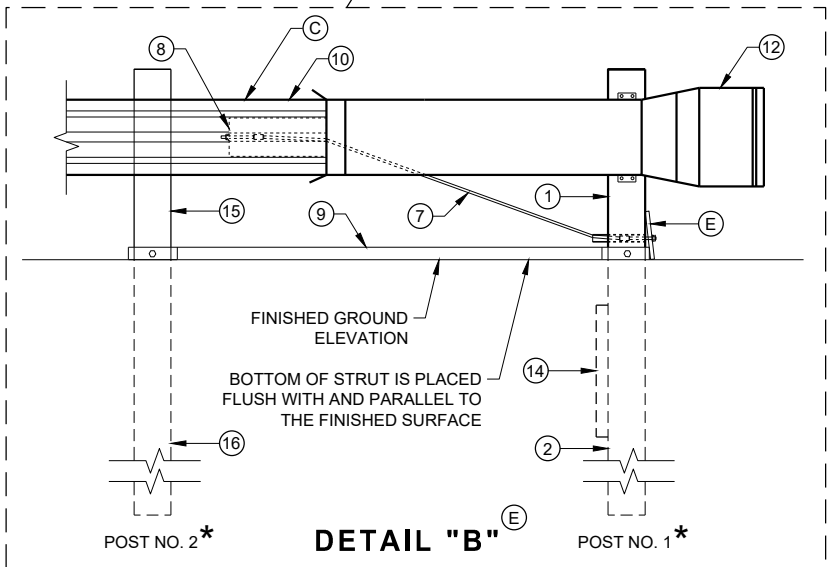


SECTION A - A
TYPICAL AT POST NO. 1*



PLAN

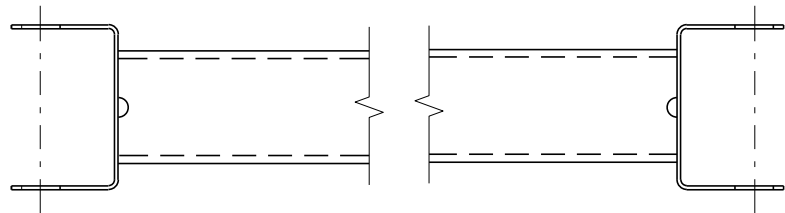
ELEVATION



DETAIL "B"

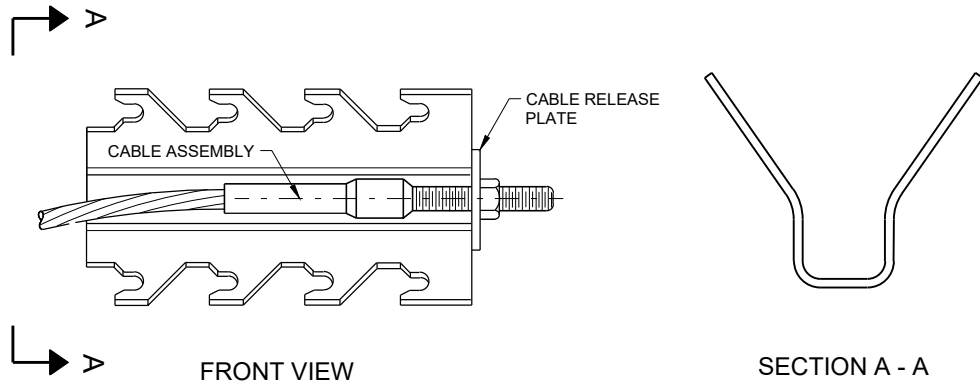
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

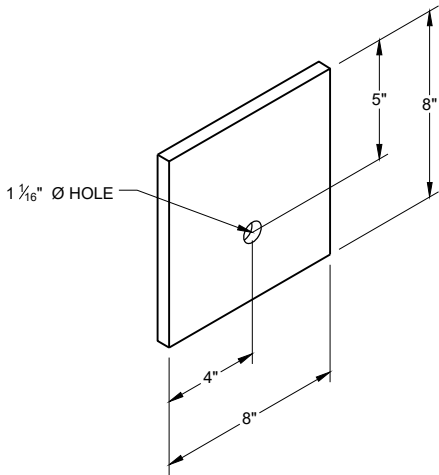


GENERIC GROUND STRUT ⁹ ^E

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



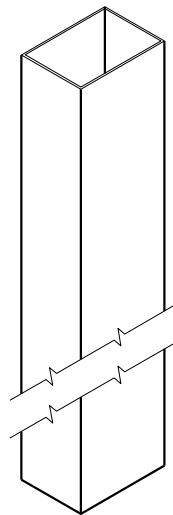
GENERIC ANCHOR CABLE BOX ⁹ ^E



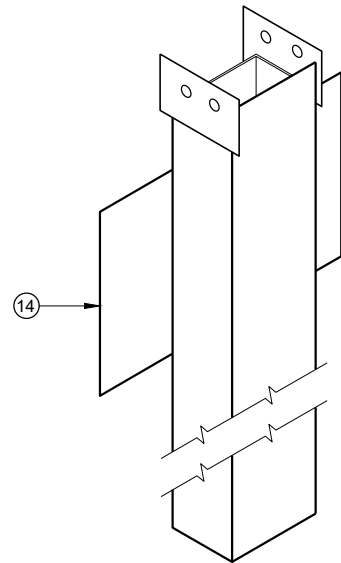
BEARING PLATE ⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

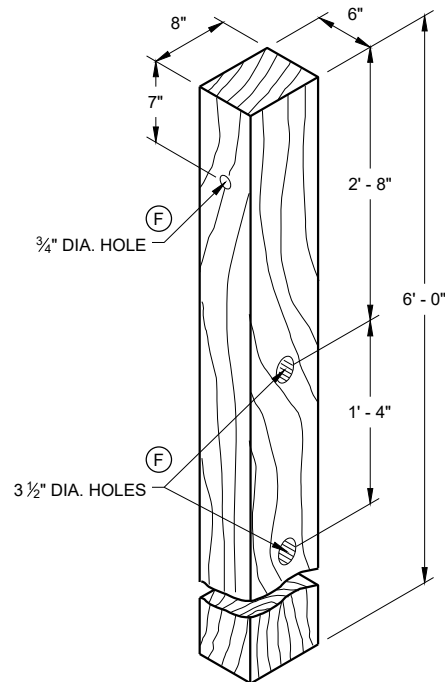
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



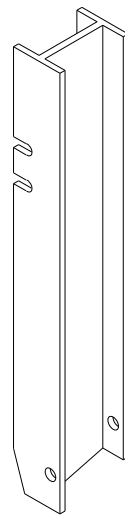
UPPER POST NO. 1 ⁽¹⁾ (E)



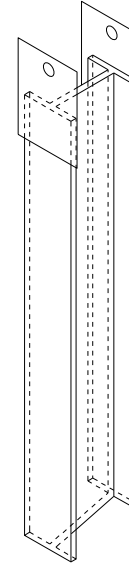
LOWER POST NO. 1 ⁽²⁾ (E)



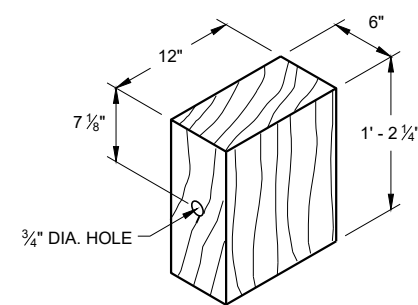
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



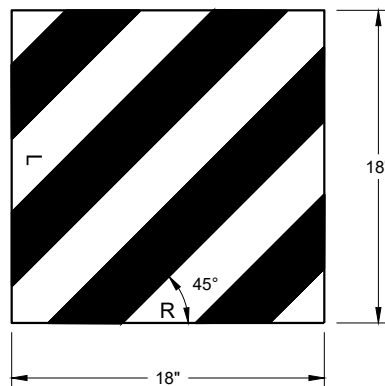
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



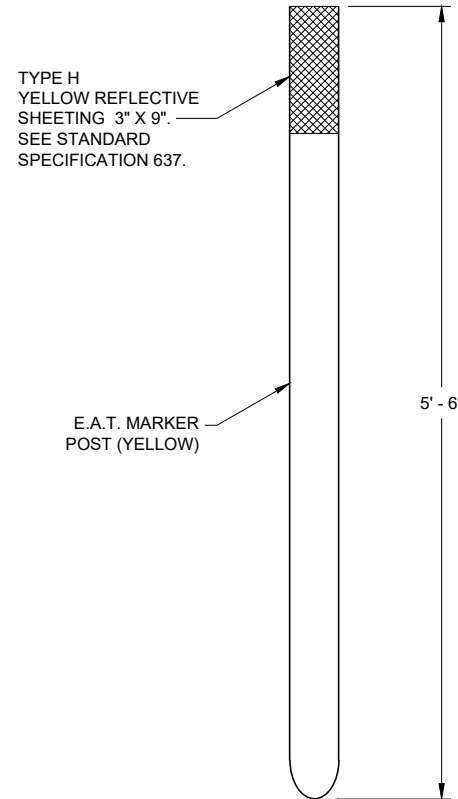
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



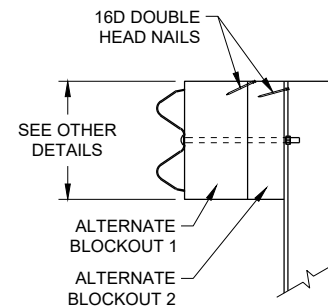
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



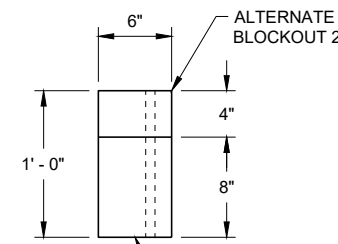
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



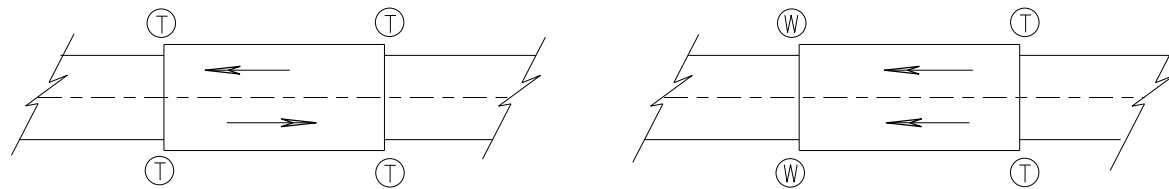
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

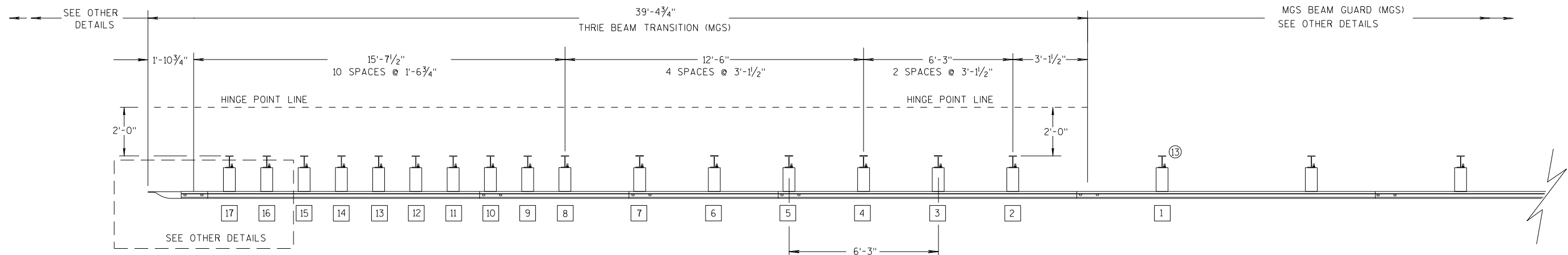
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

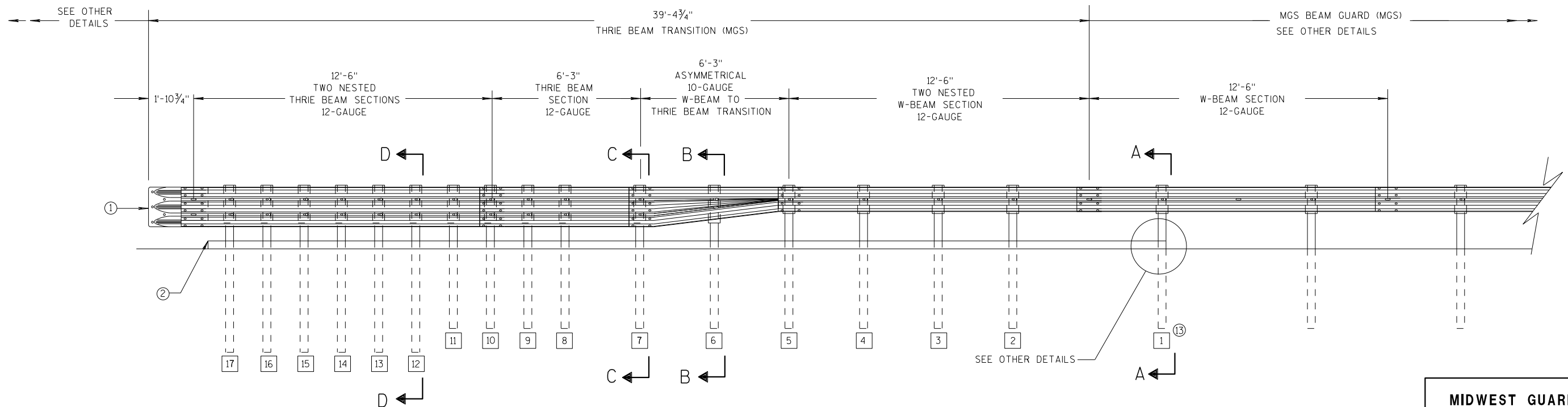
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

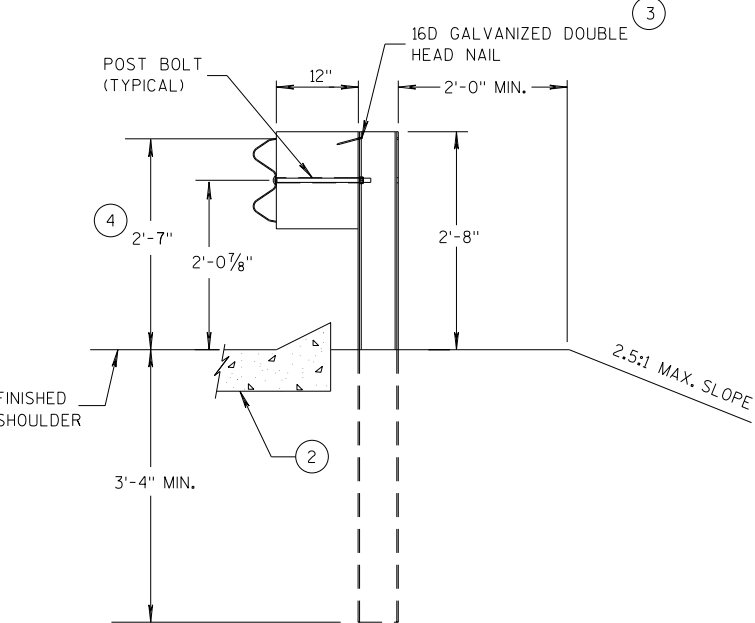
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

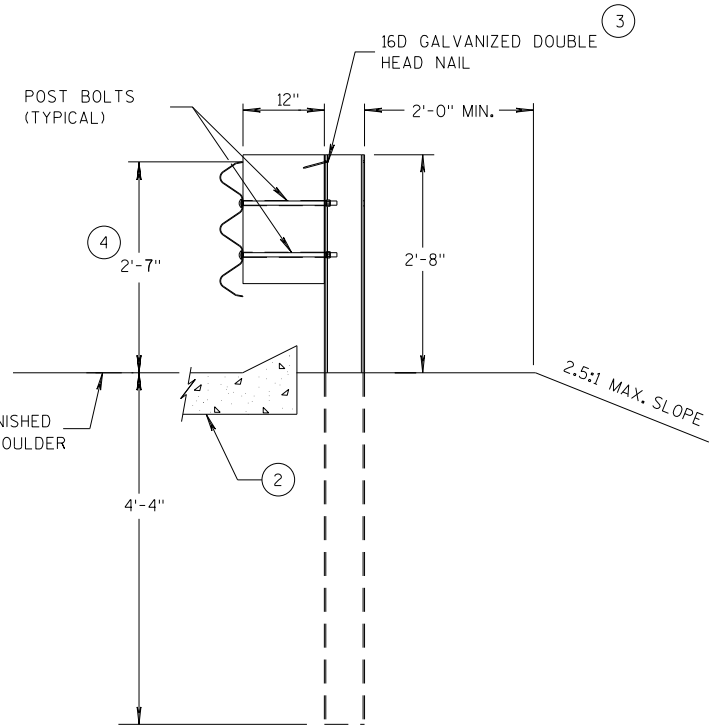
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

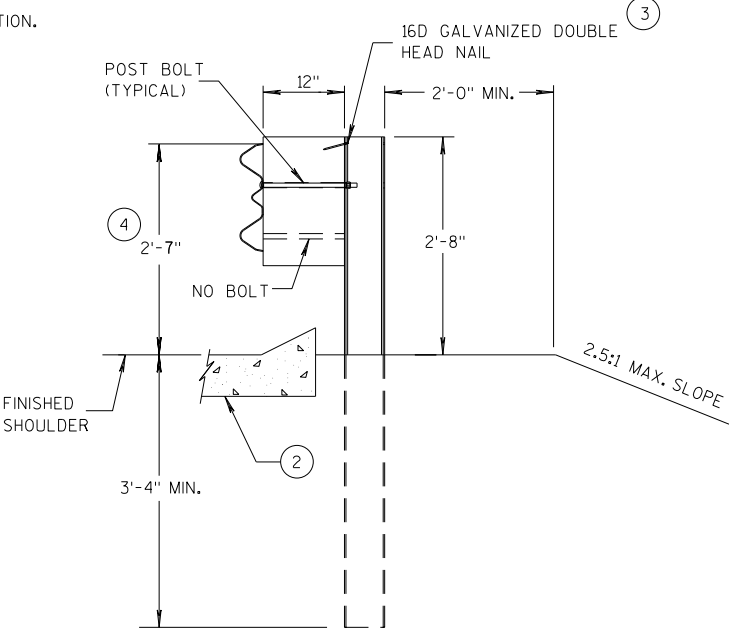
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



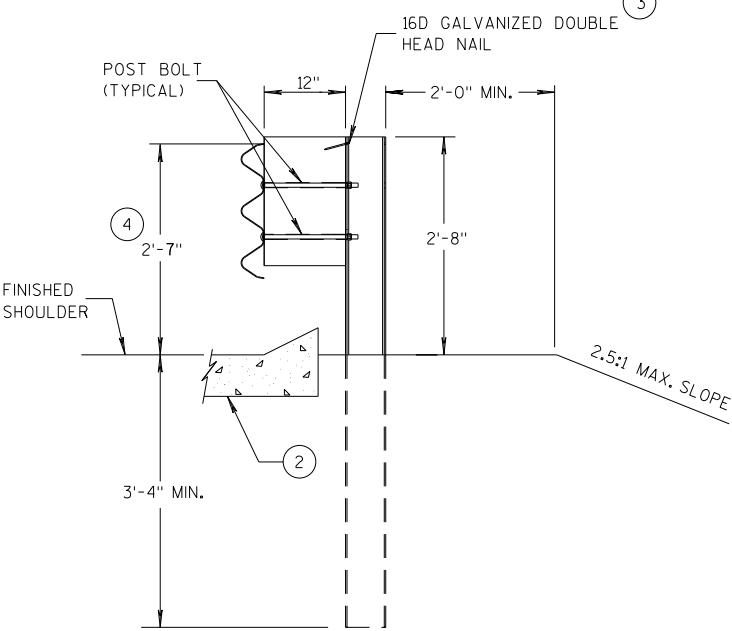
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

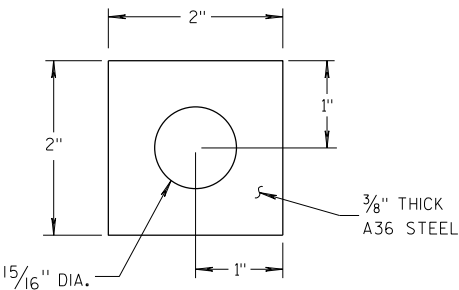
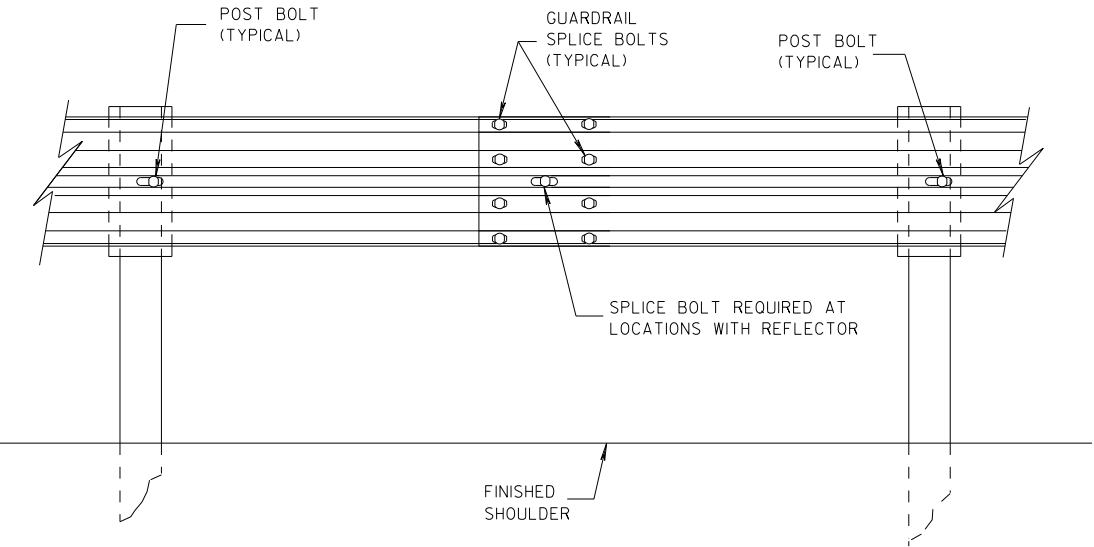
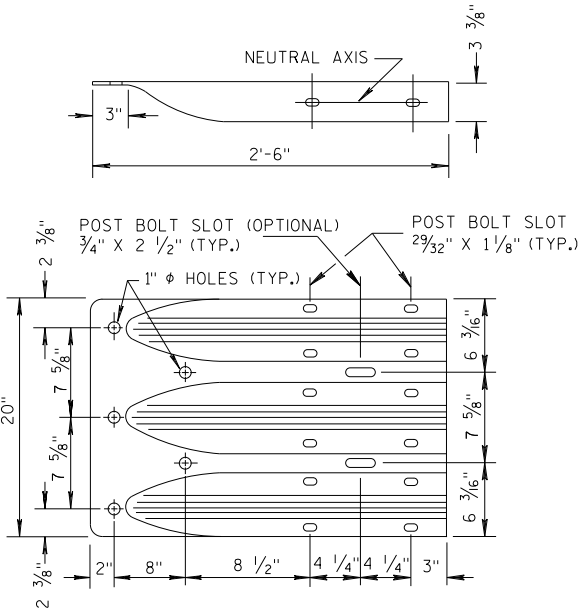


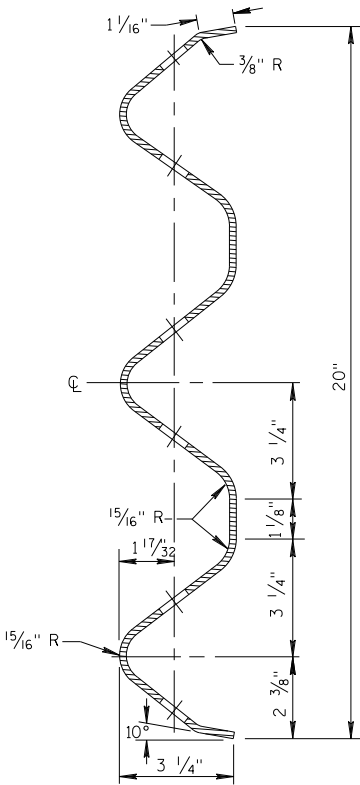
PLATE WASHER DETAIL



SPLICE DETAIL



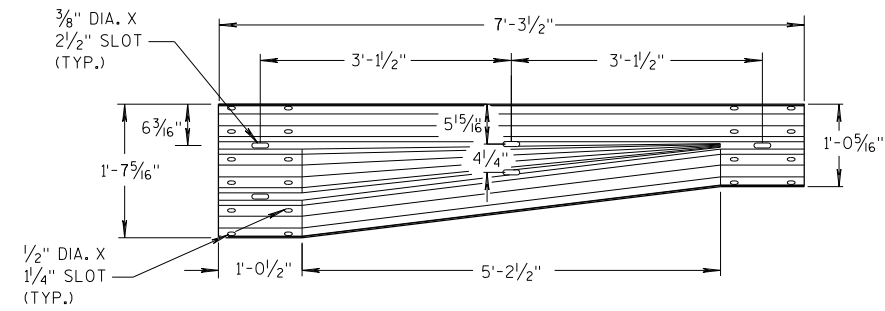
THRIE BEAM
TERMINAL CONNECTOR



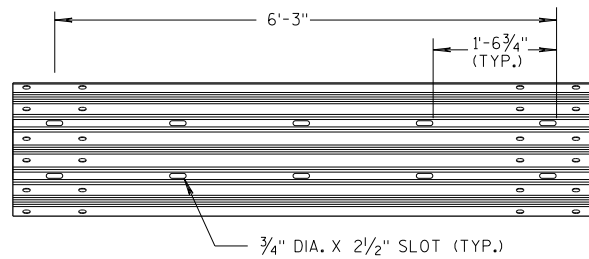
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

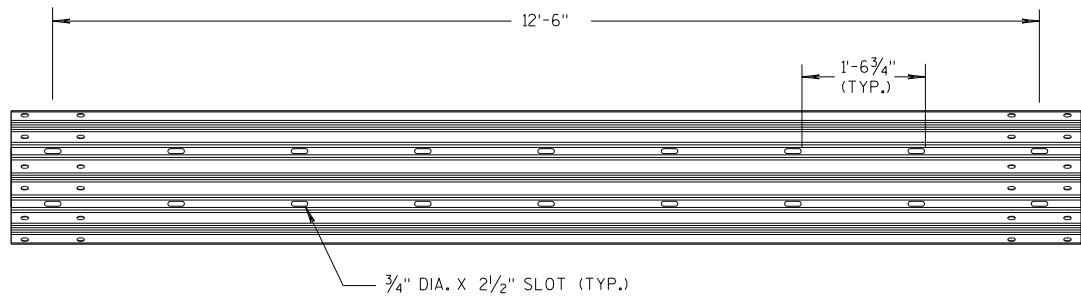
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



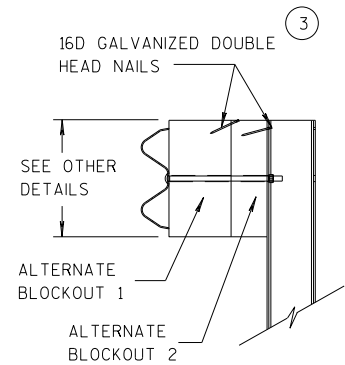
W-BEAM TO THRIE BEAM TRANSITION SECTION



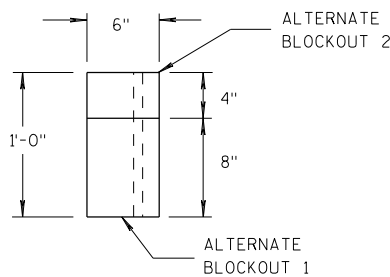
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

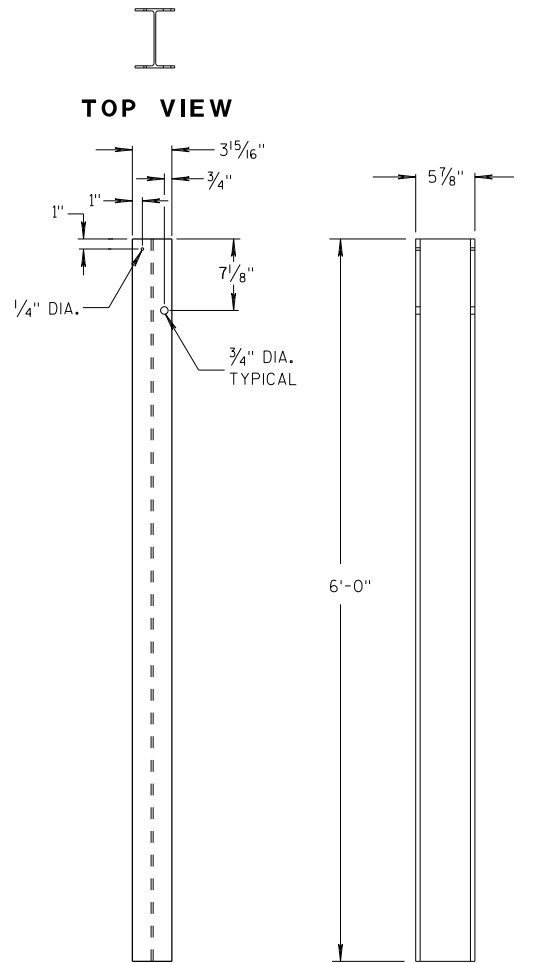


SIDE VIEW



TOP VIEW

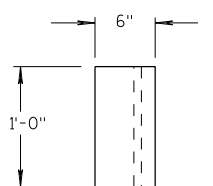
ALTERNATE WOOD BLOCKOUT DETAIL



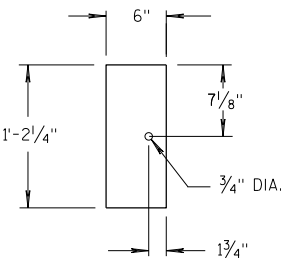
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

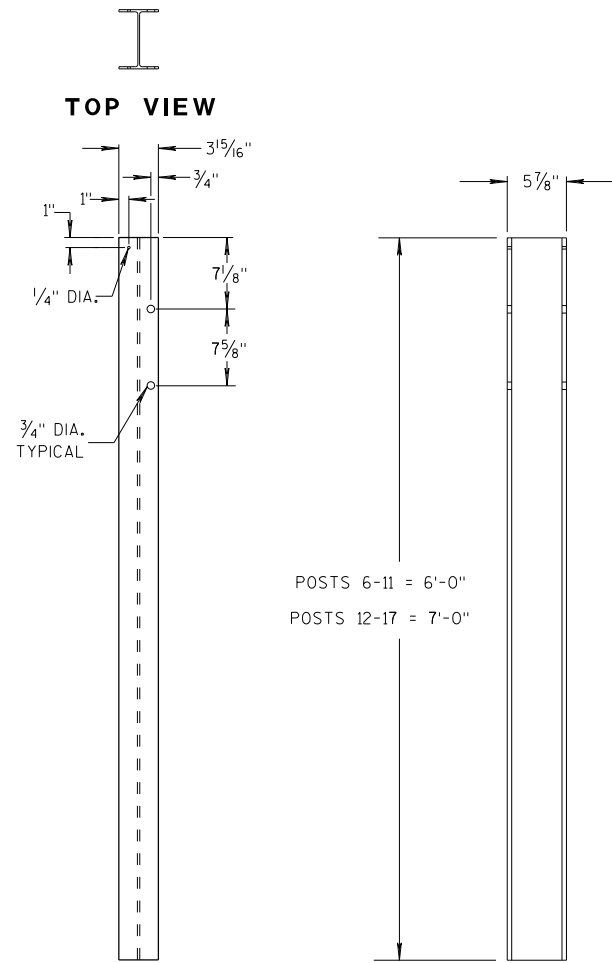


TOP VIEW



FRONT VIEW

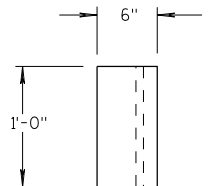
BLOCKOUT POSTS 1-5



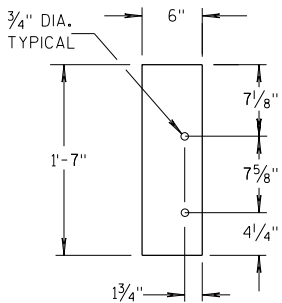
FRONT VIEW

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.

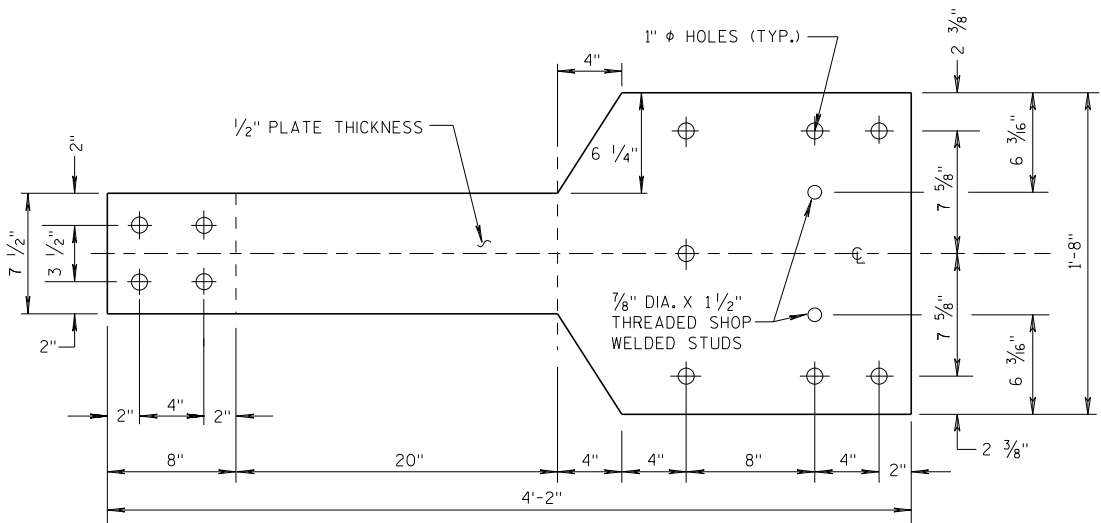
⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

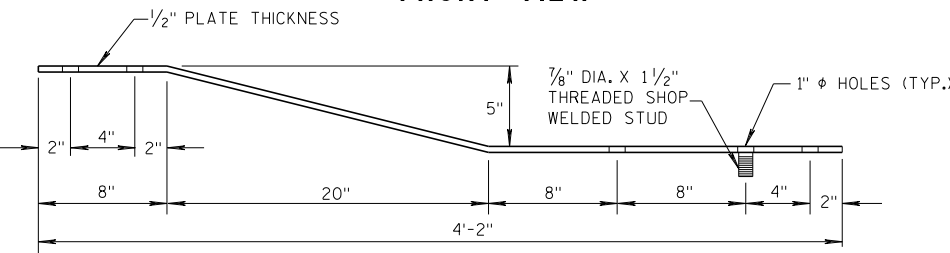
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

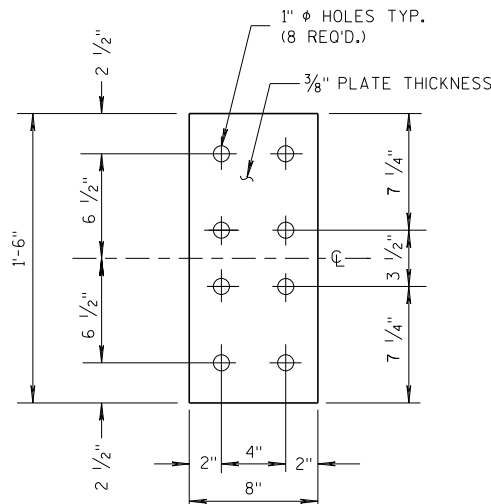
④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

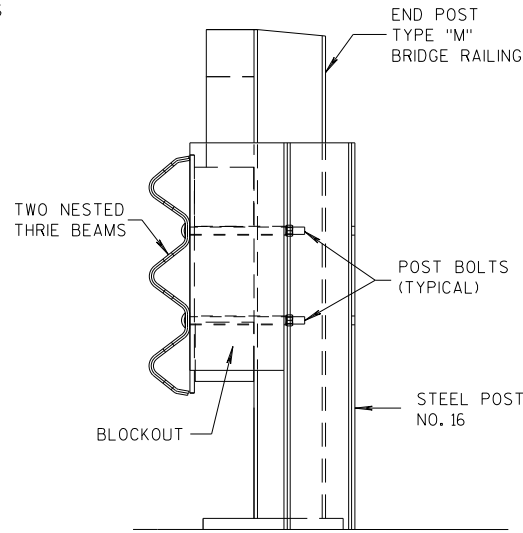


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

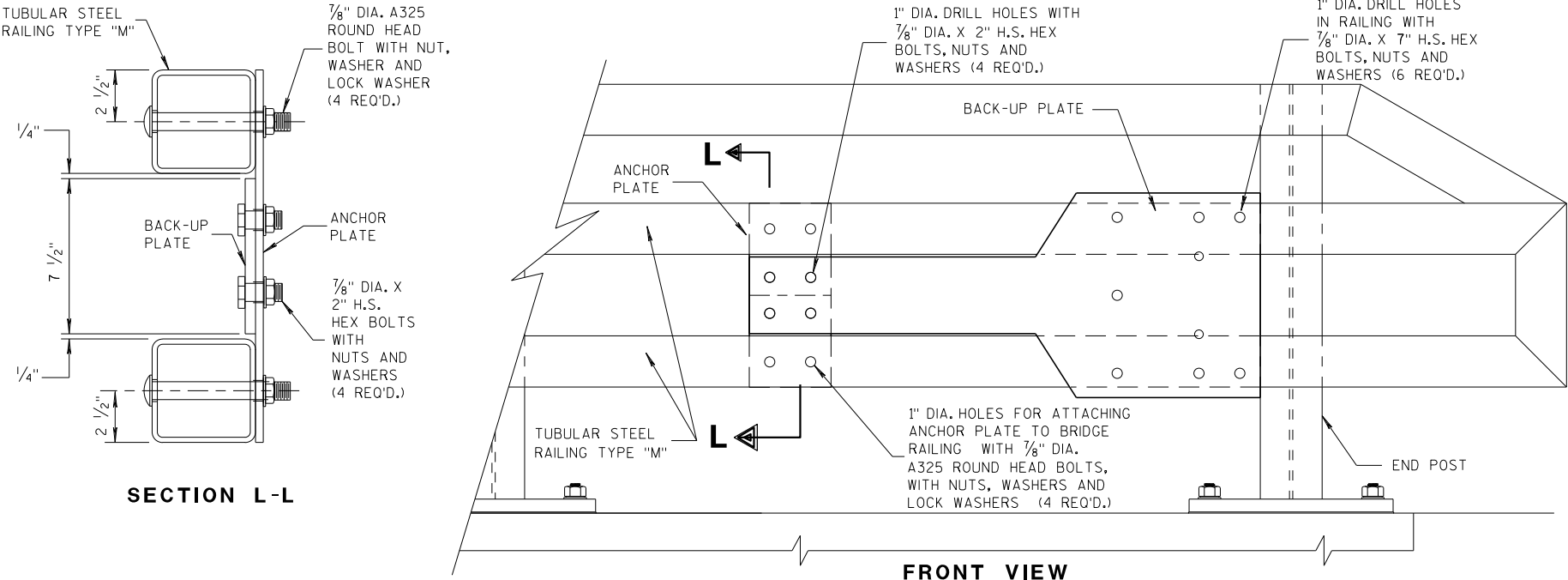


FRONT VIEW

ANCHOR
PLATE DETAIL,
TYPE "M"



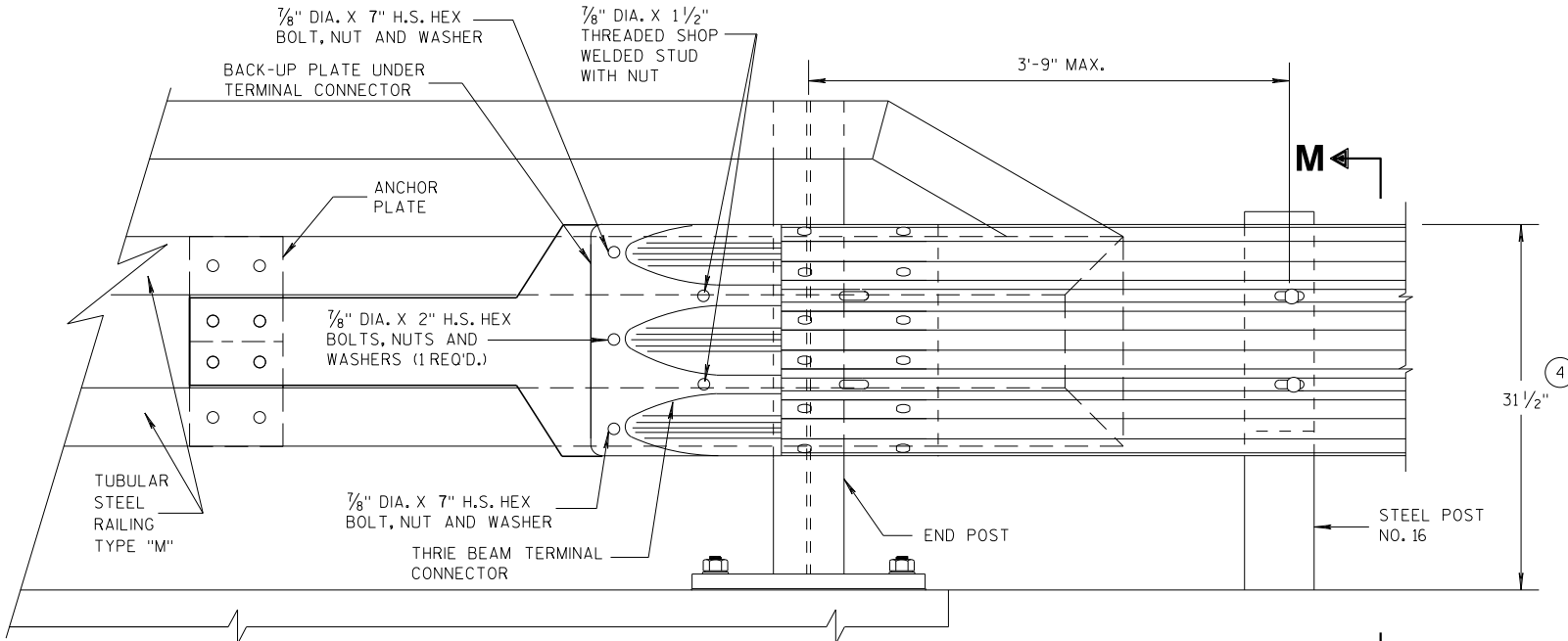
SECTION M-M



SECTION L-L

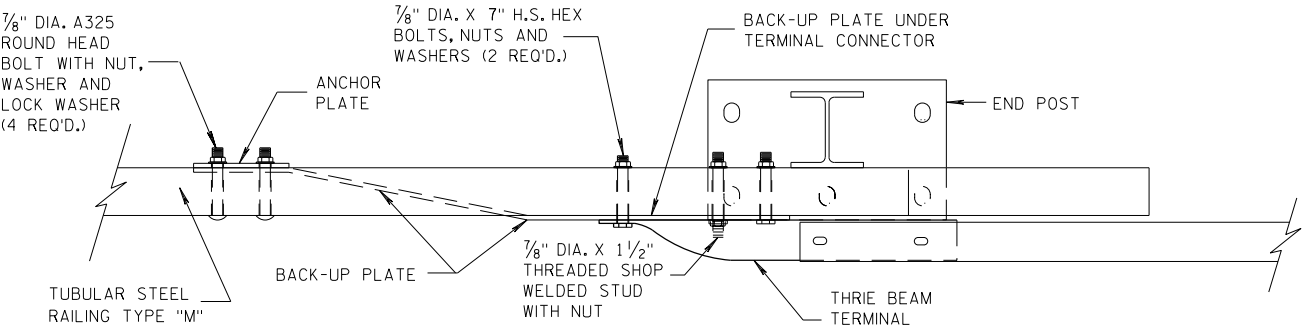
FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW

M



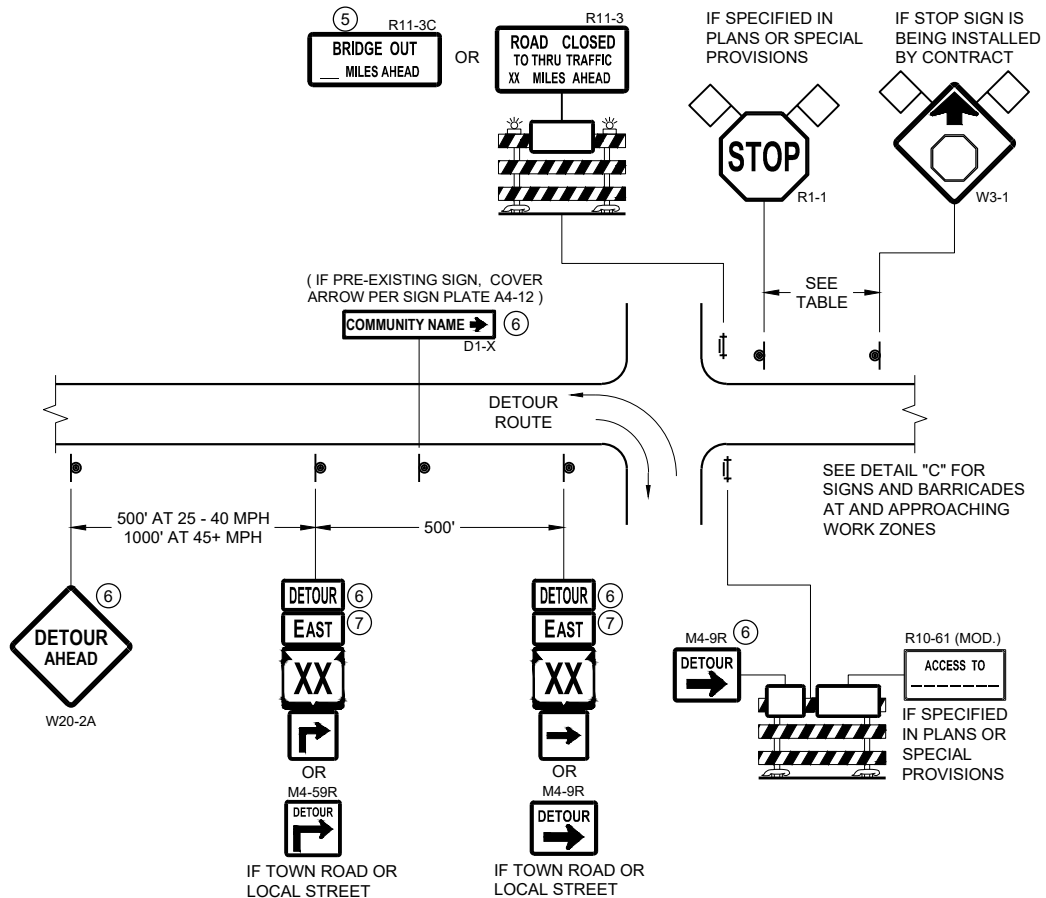
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

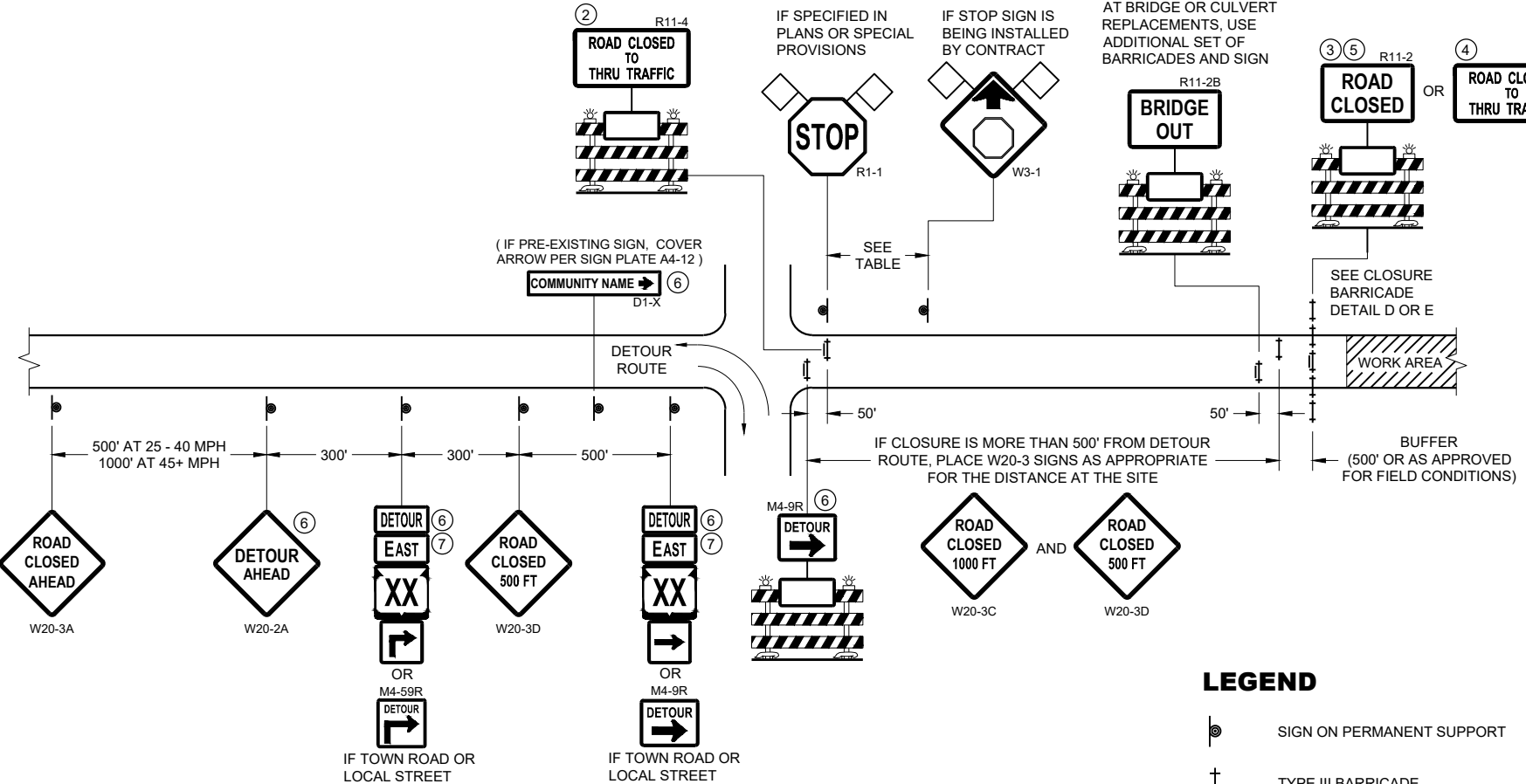
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



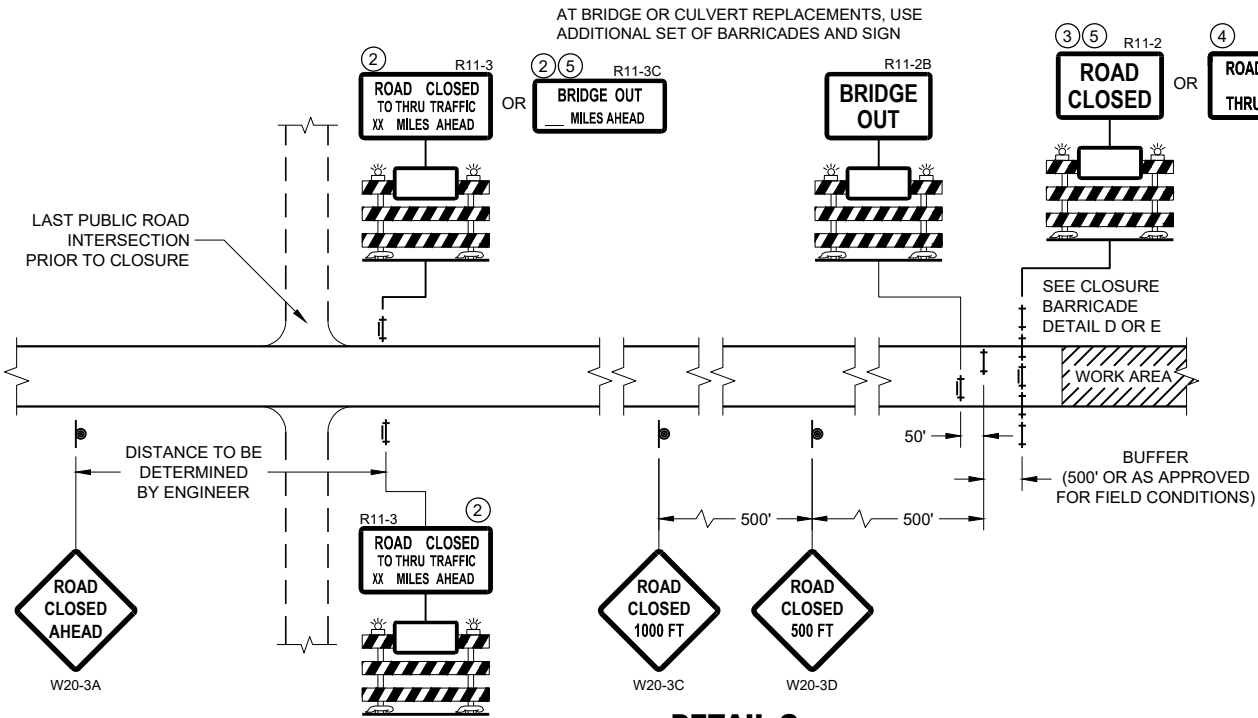
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

- 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)

- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY M1 - 5A
- OR M05 - 1 OR M06 - 1

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

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



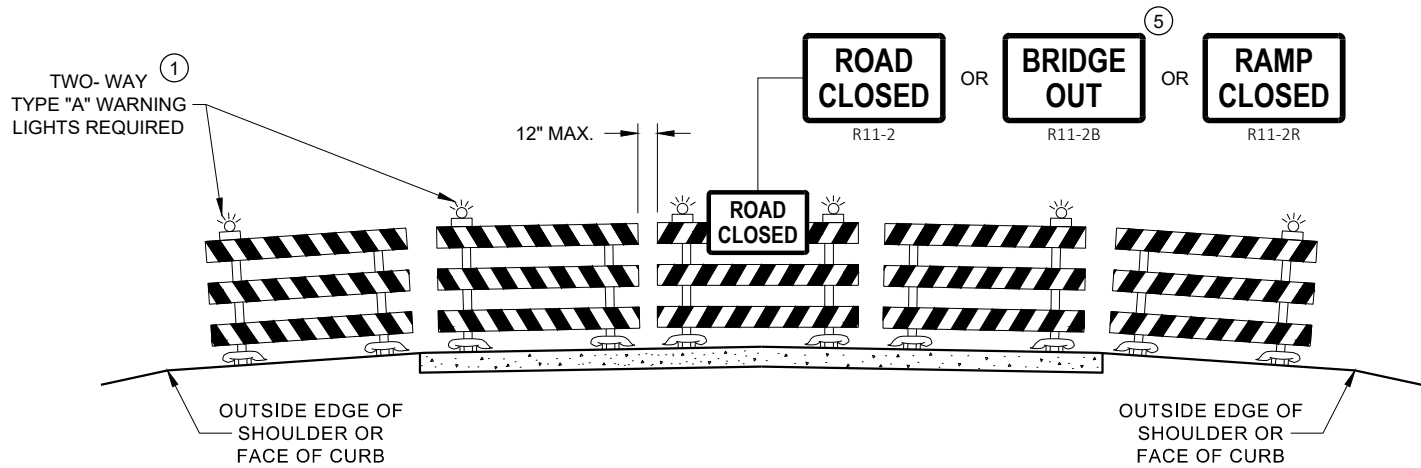
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

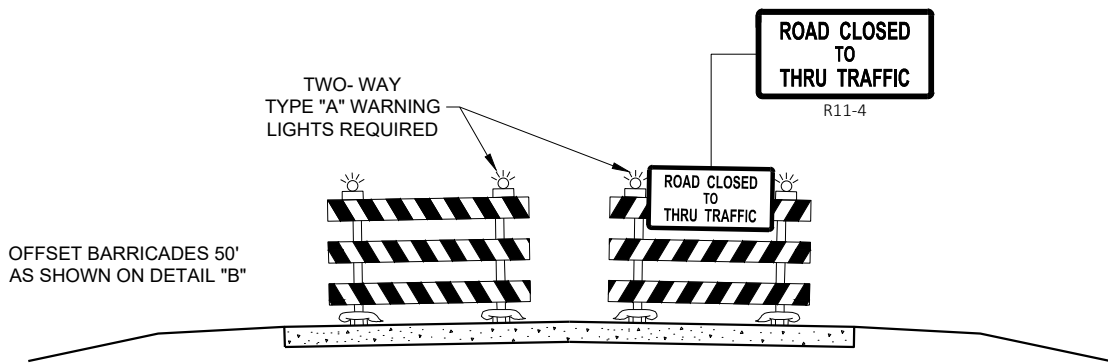
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /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"

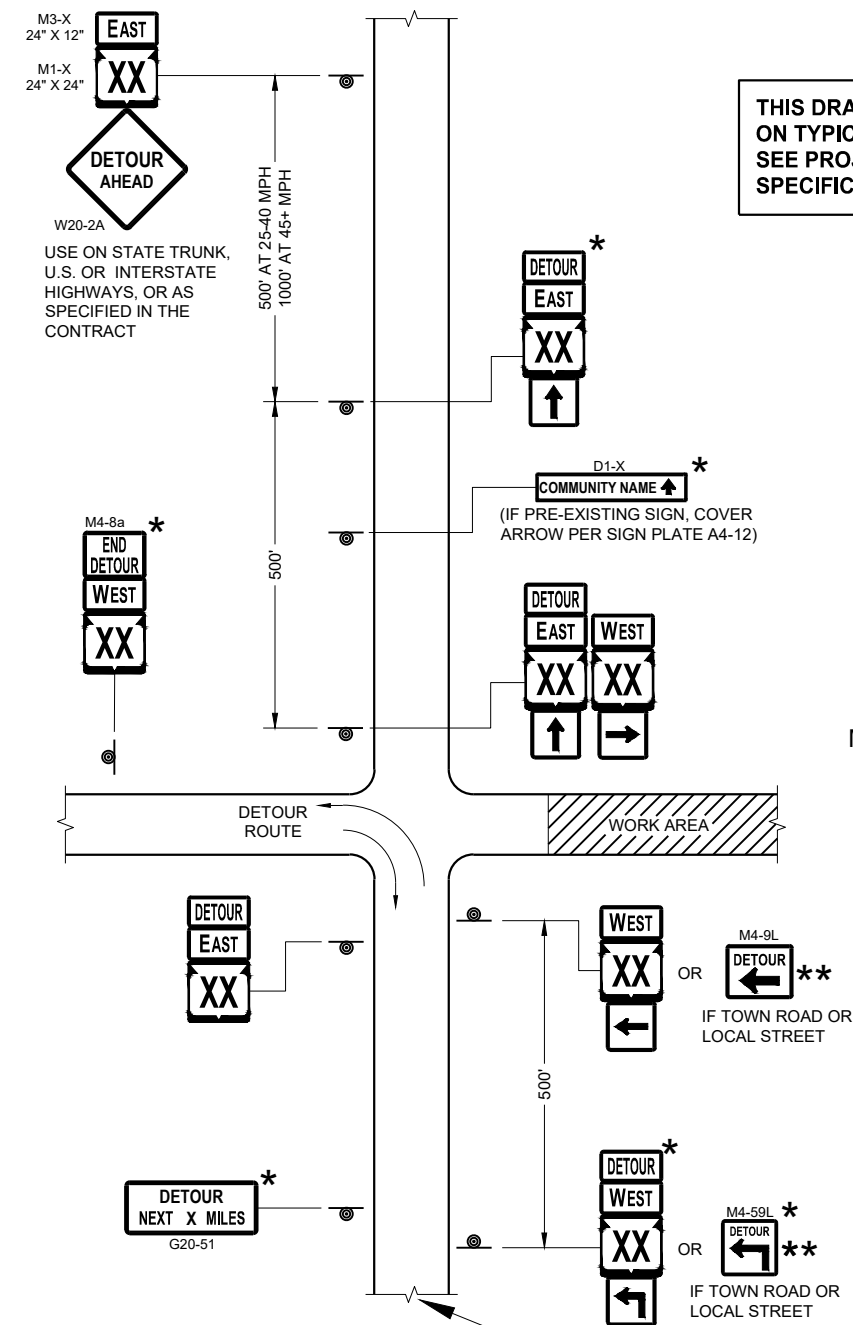
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS 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
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

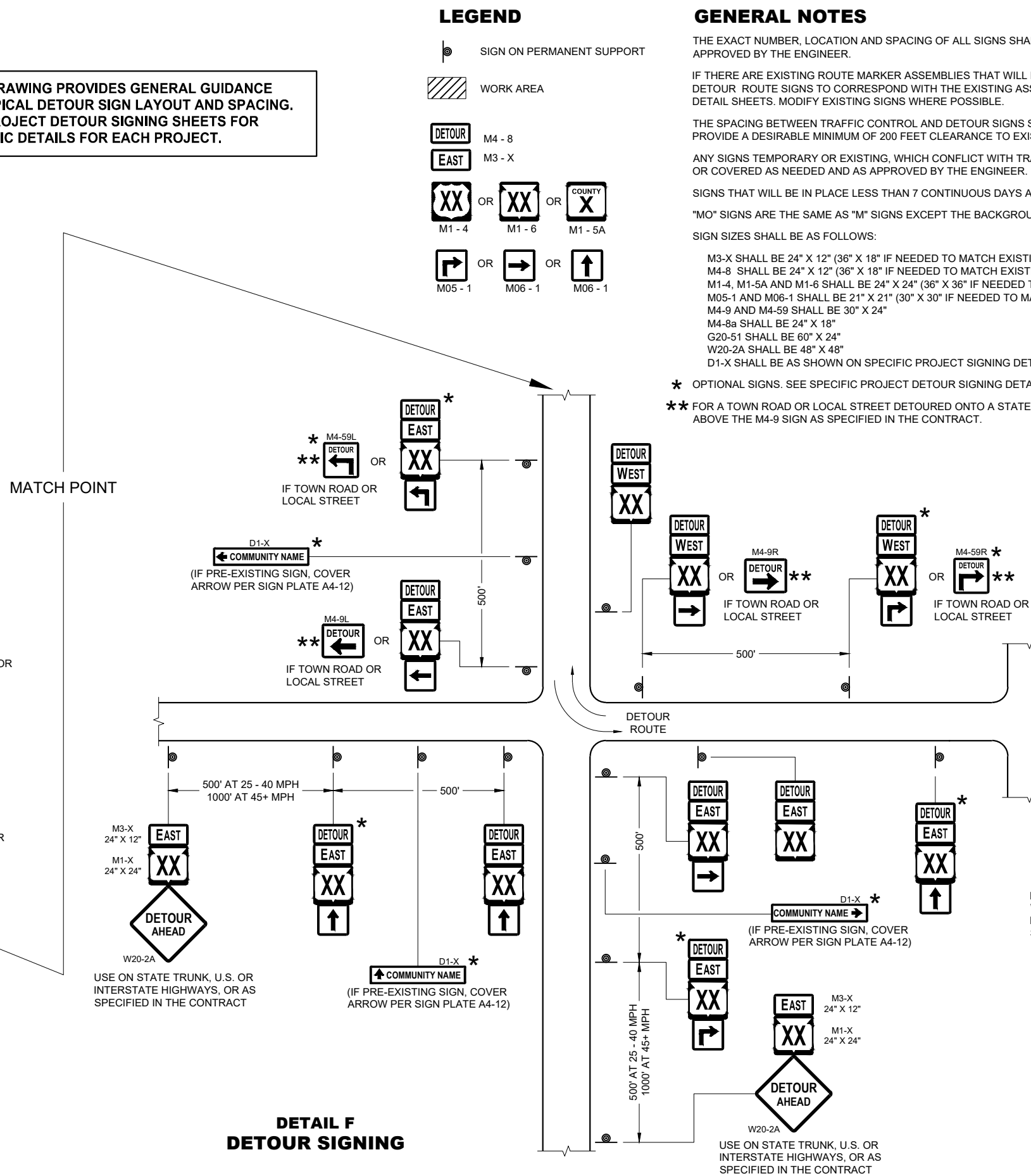
FHWA



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

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

SDD 15C02 - 09c



DETAIL F DETOUR SIGNING

GENERAL NOTES

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

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

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

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

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

**** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.**

DETOUR SIGNING FOR MAINLINE CLOSURES

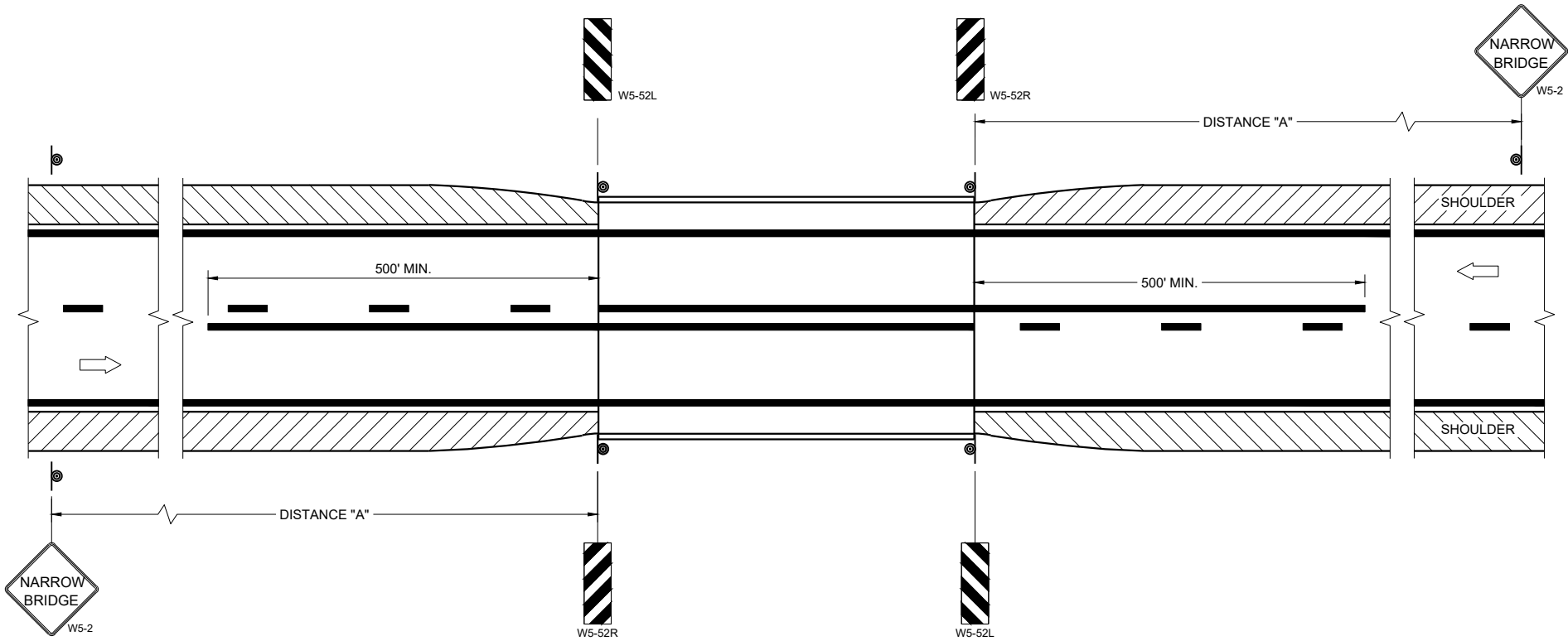
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

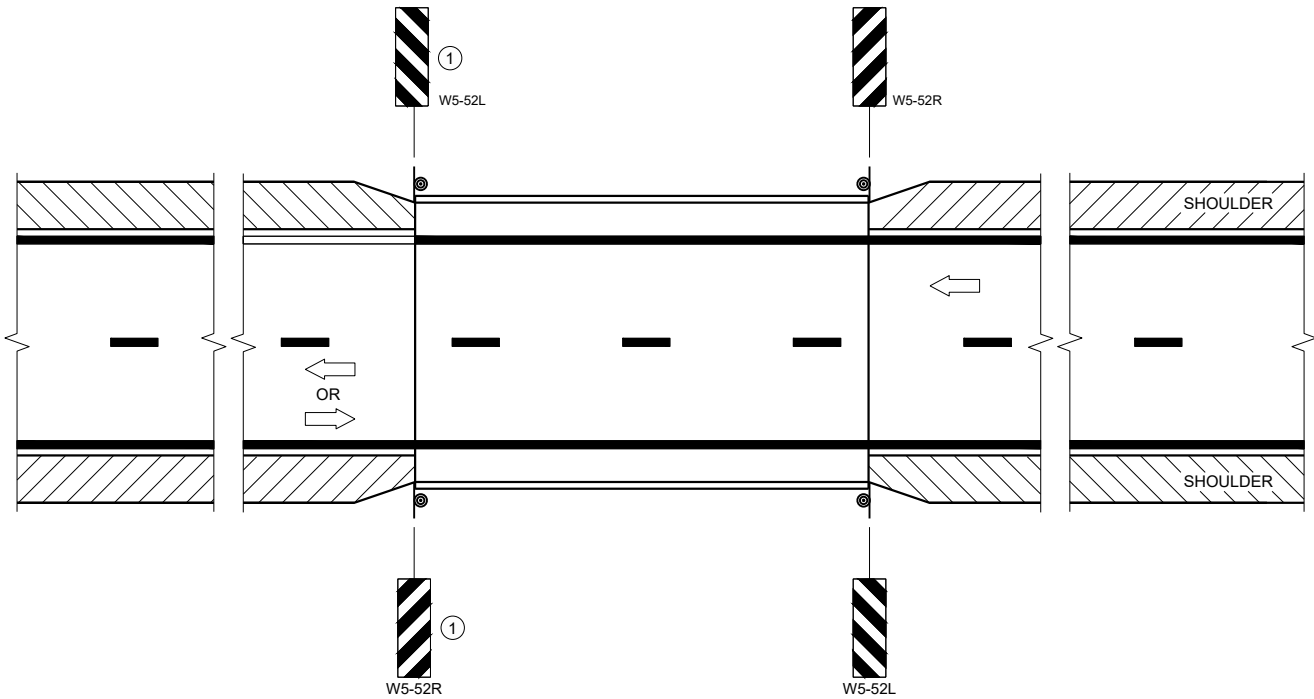
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD15C02 - 09c



SITUATION 1
WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



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

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THE 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.

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

DISTANCE TABLE

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

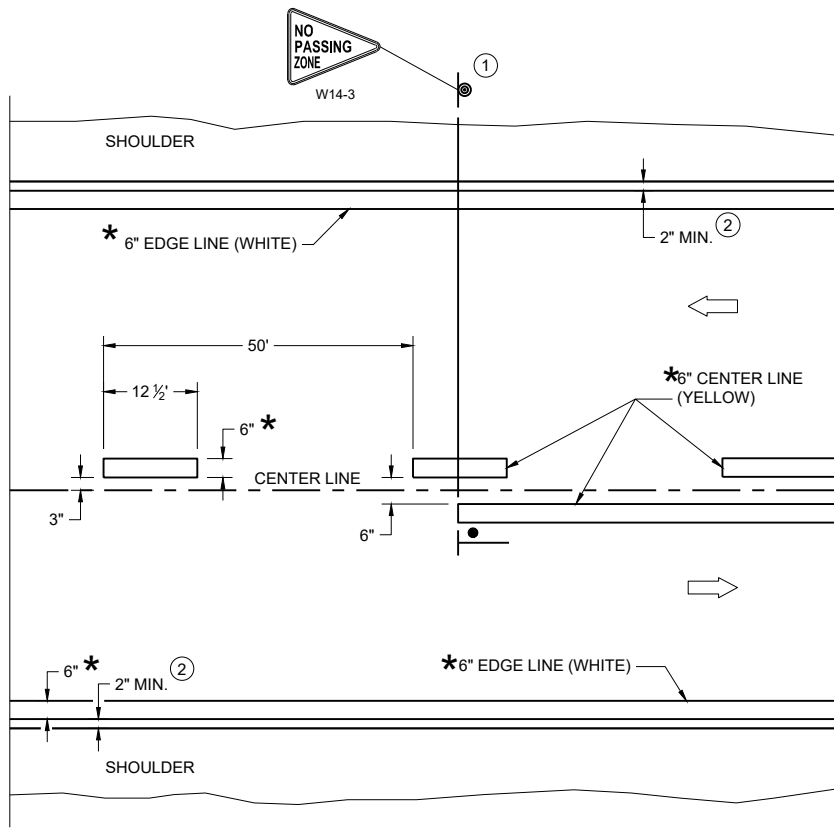
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

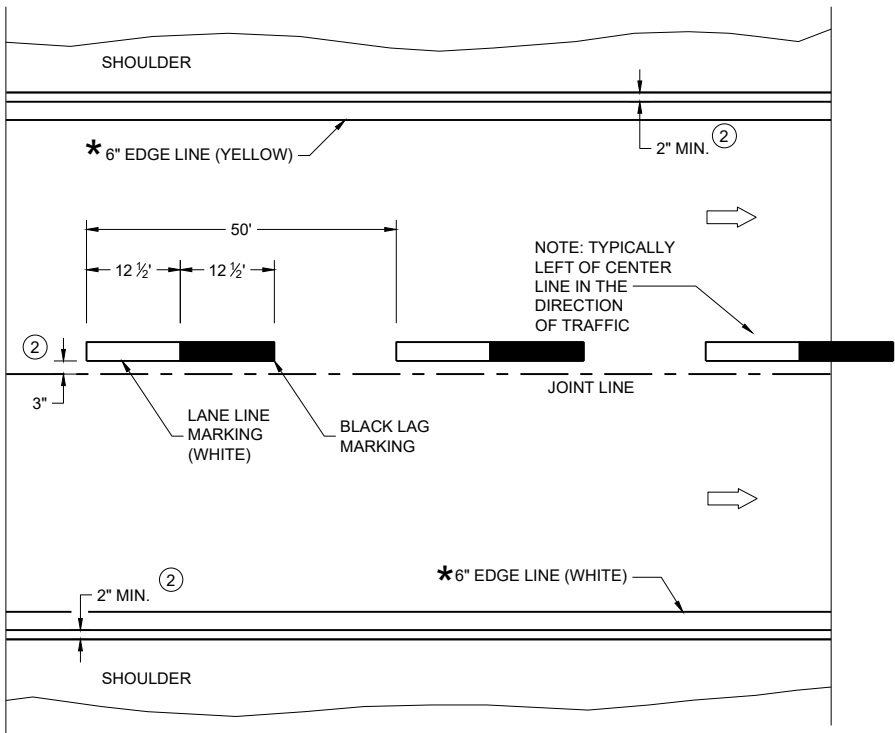
APPROVED
May 2023
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

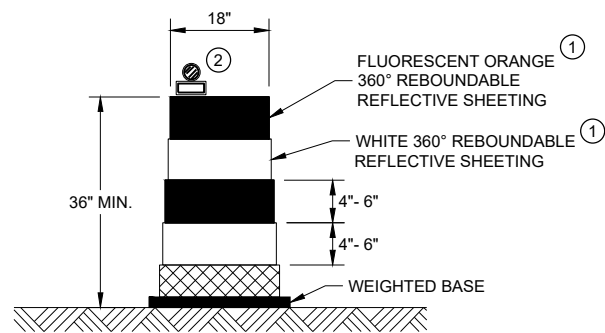
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

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

LEGEND

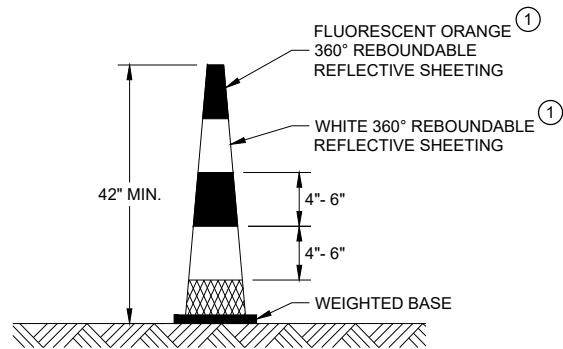
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	



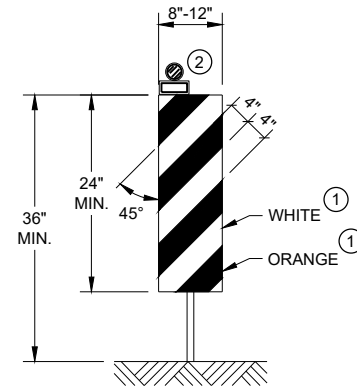
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



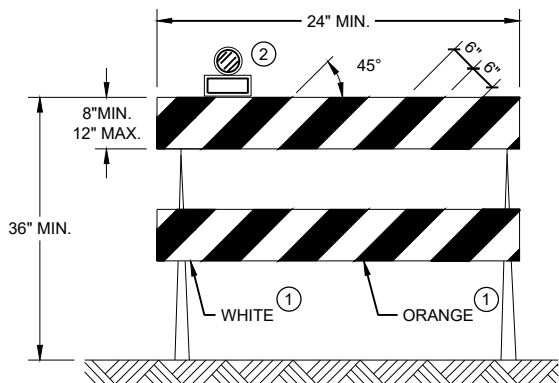
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



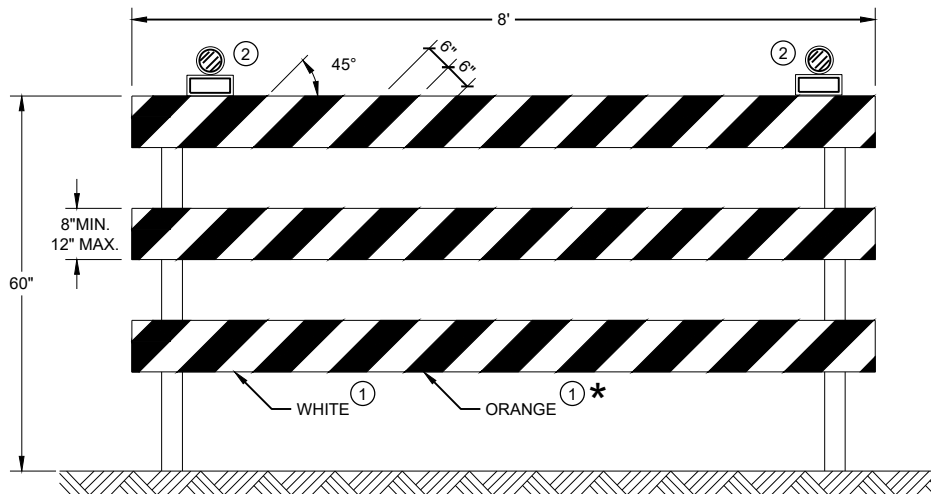
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

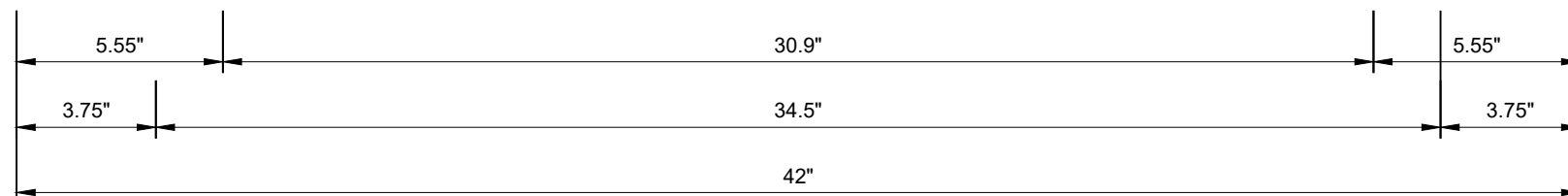
**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

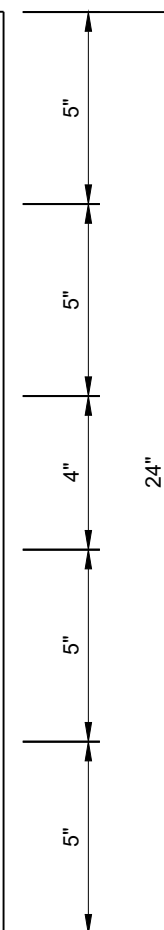
APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

BRIDGE OUT
USE PORTAGE



1.125" Radius, 0.50" Boarder, 0.375" Indent



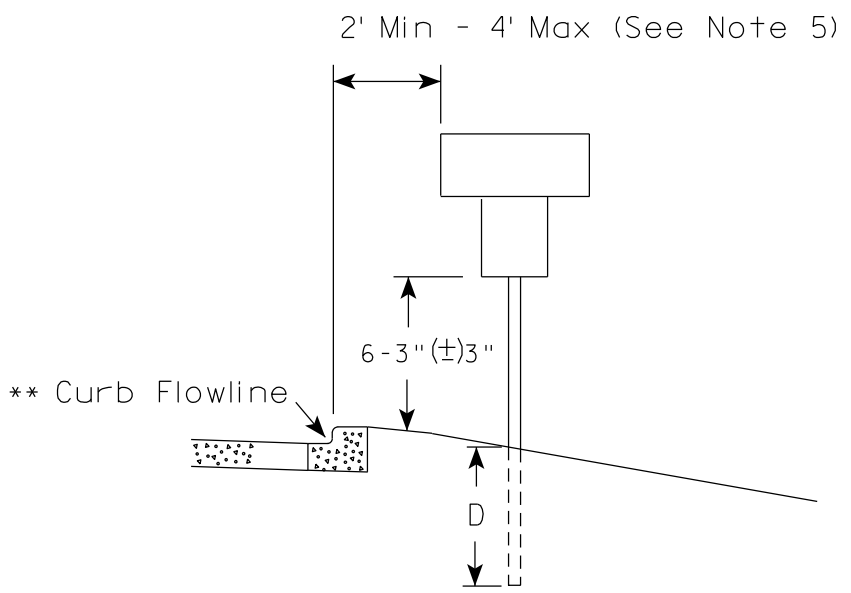
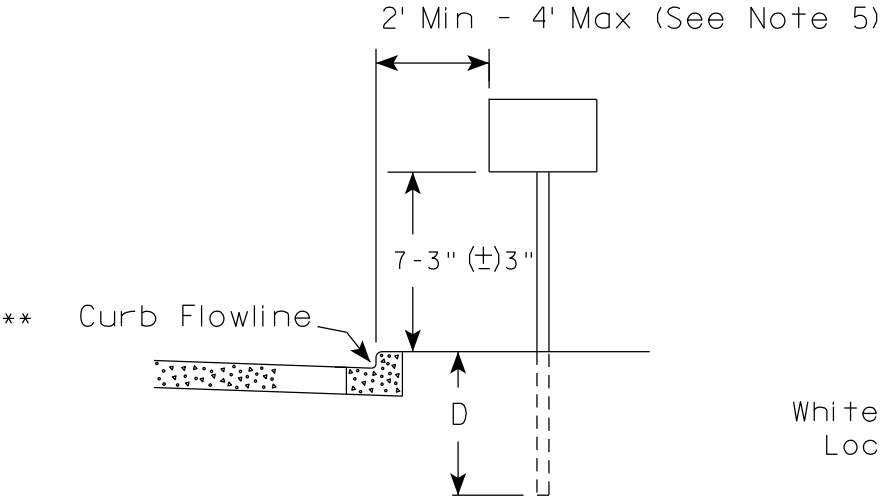
NOTES:

1. ALL SIGNS TYPE II - TYPE F REFLECTIVE
2. COLOR:
BACKGROUND - ORANGE
MESSAGE - BLACK
3. MESSAGE SERIES - D

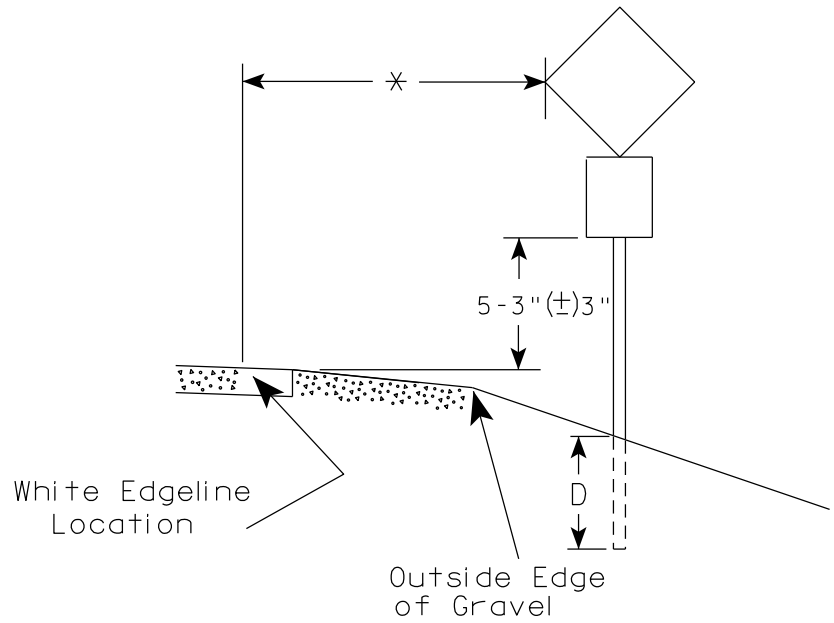
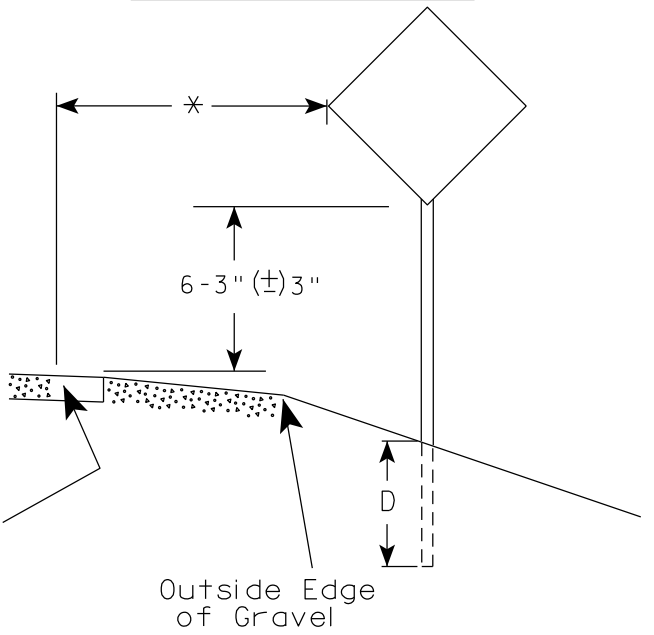
7

7

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±) 3".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

* * 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. Offset of signs is measured from the flow line.

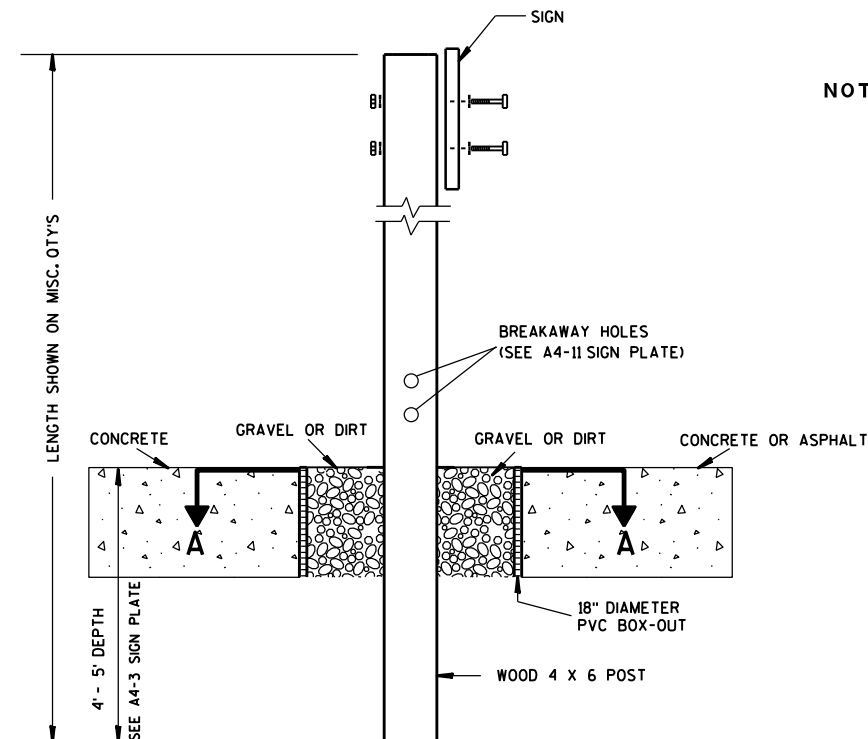
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

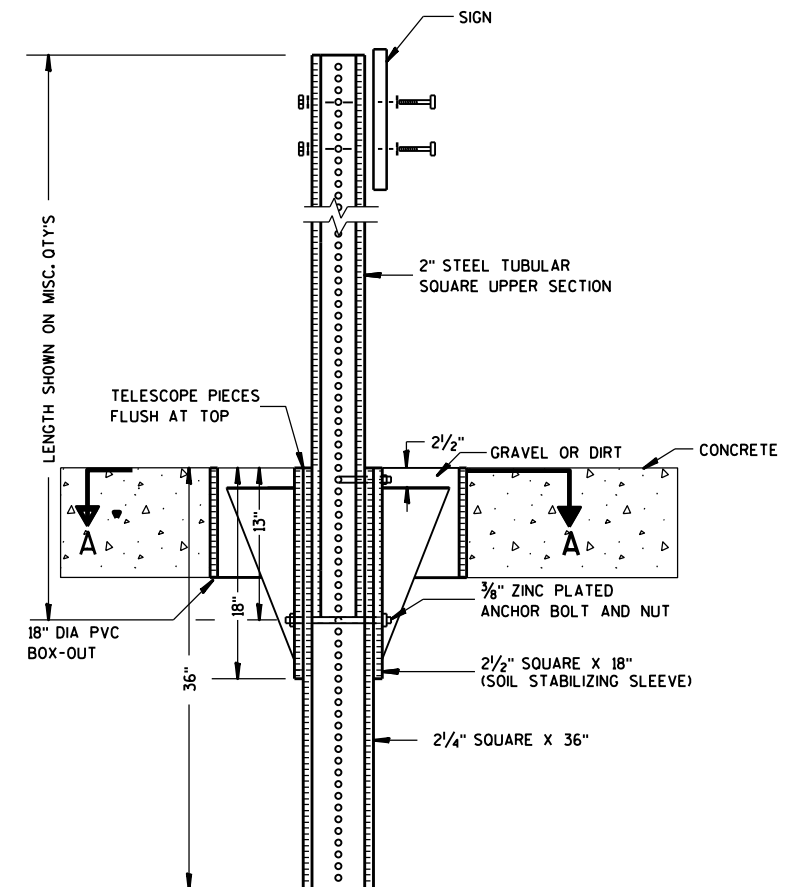
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

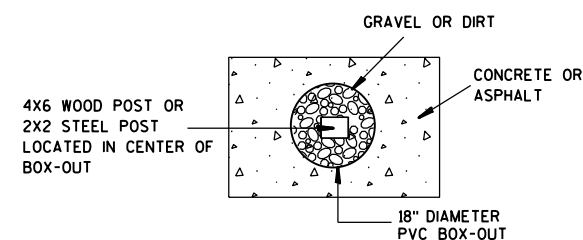
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

PROJECT NO:

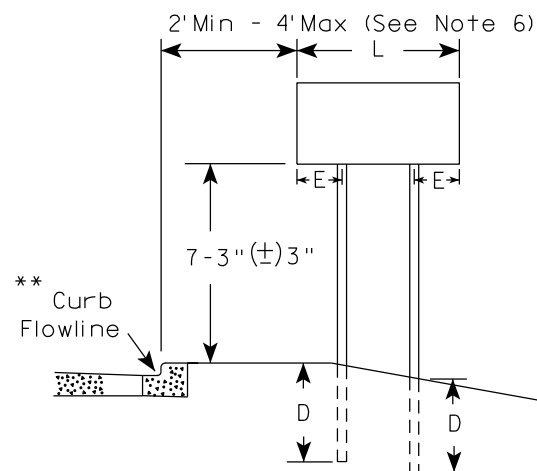
HWY:

COUNTY:

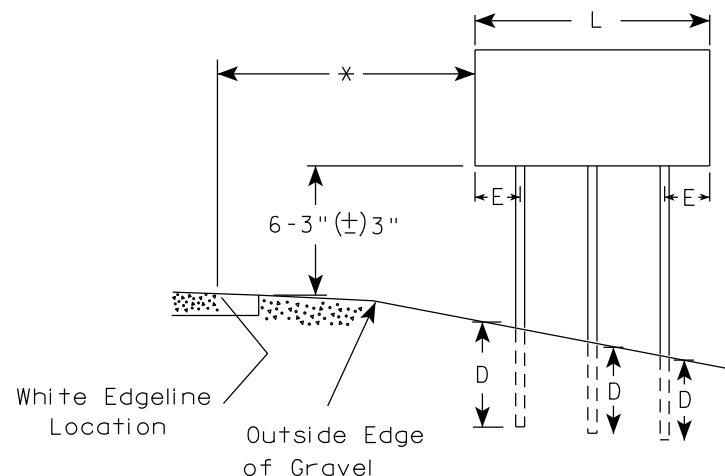
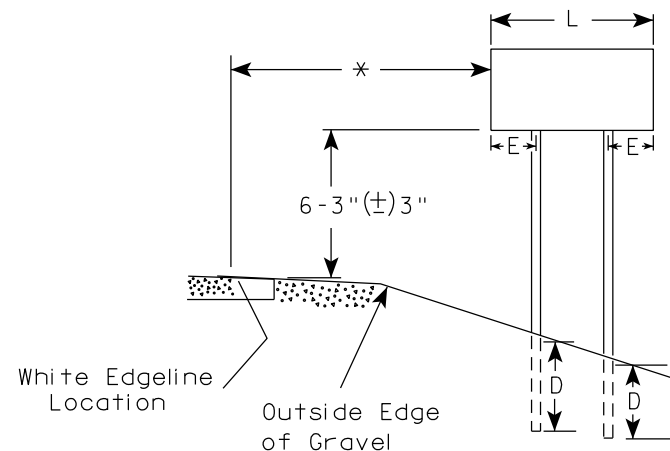
SHEET NO:

E

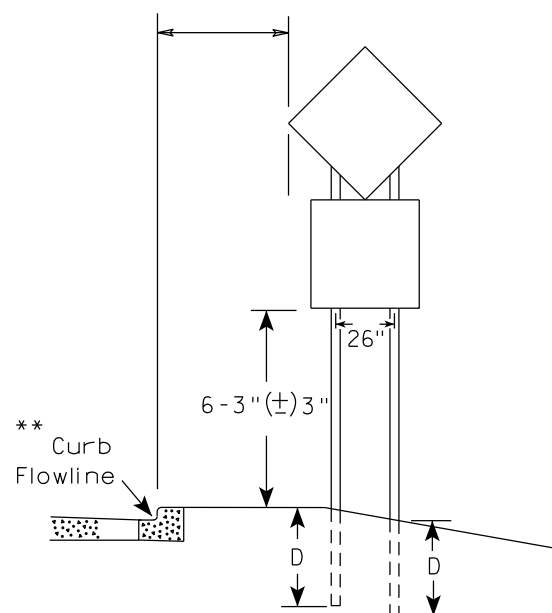
URBAN AREA



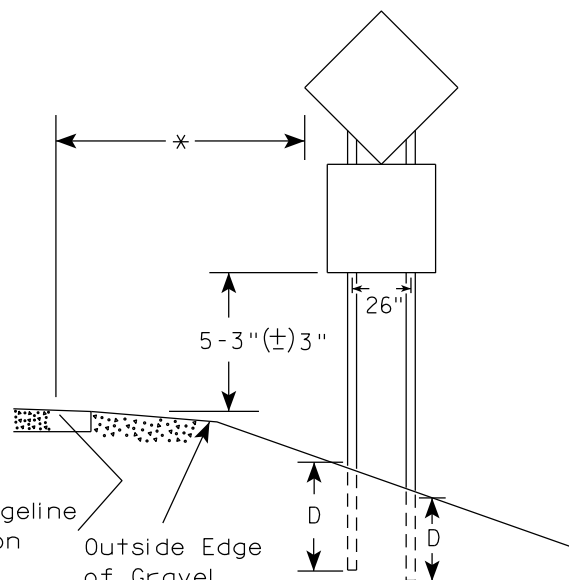
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

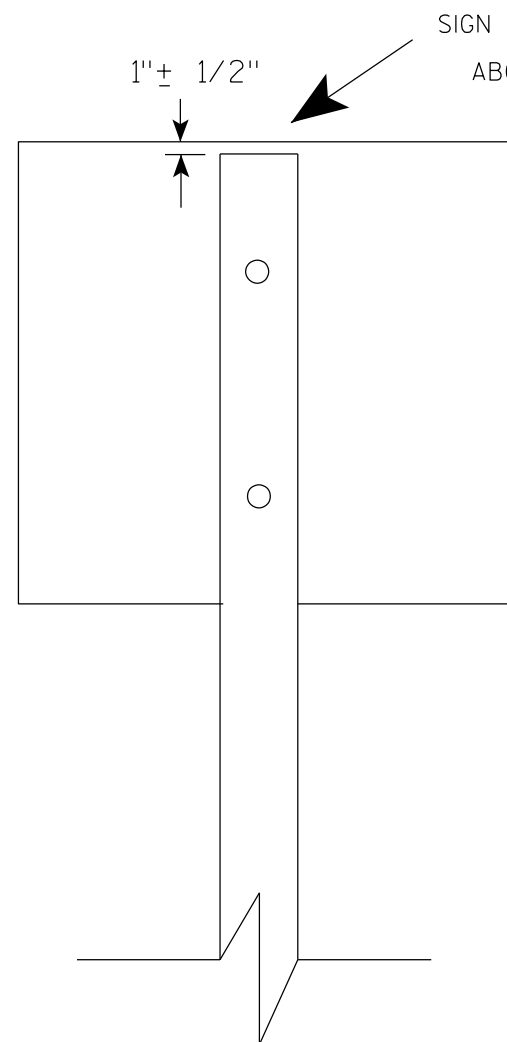
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

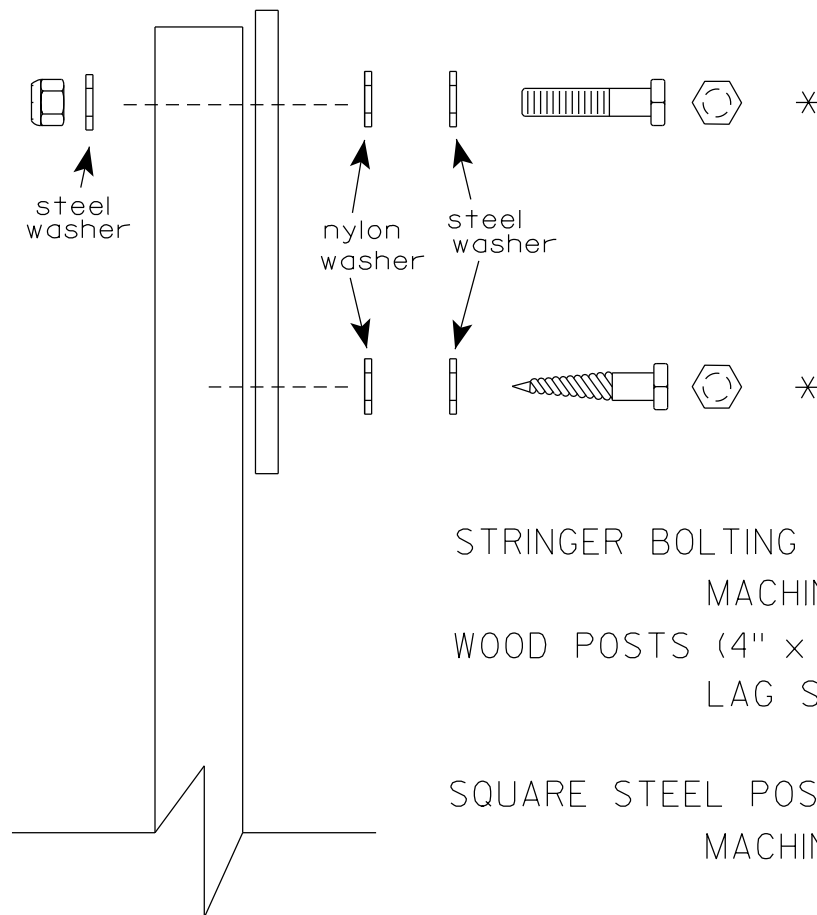
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16



SIGN SHALL BE MOUNTED TO PROJECT
ABOVE THE TOP OF THE POST



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 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.

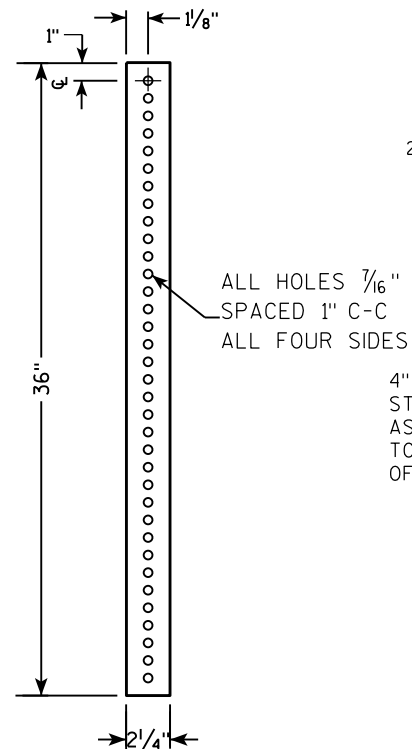
ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

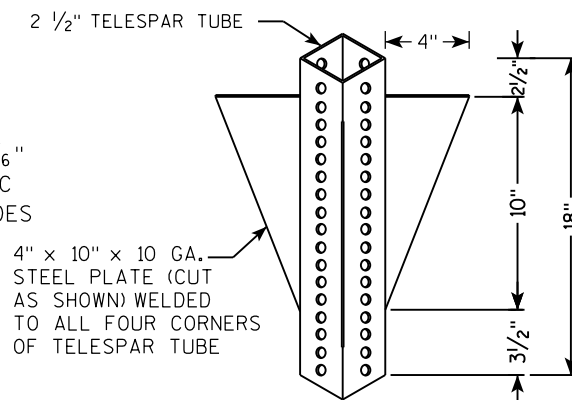
APPROVED Matthew R. Rauch
For State Traffic Engineer

DATE 4/1/2020 PLATE NO. A4-8.9

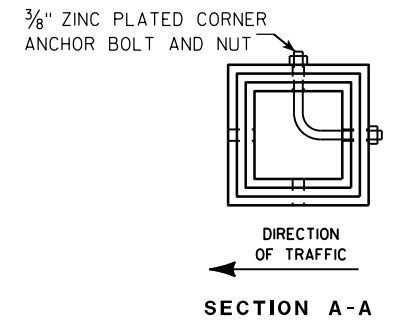
**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



LENGTH SHOWN ON MISC. QTY'S
 18" DIA SCHEDULE 40 PVC BOX-OUT
 TELESCOPE PIECES FLUSH AT TOP
 36"
 18"
 13"
 2 1/2"
 2 1/4" SQUARE X 36"
 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 3/8" ZINC PLATED ANCHOR BOLT AND NUT
 2 1/2" GRAVEL OR DIRT
 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT
 ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES
 2" STEEL TUBULAR SQUARE UPPER SECTION
 SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 SIGN



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

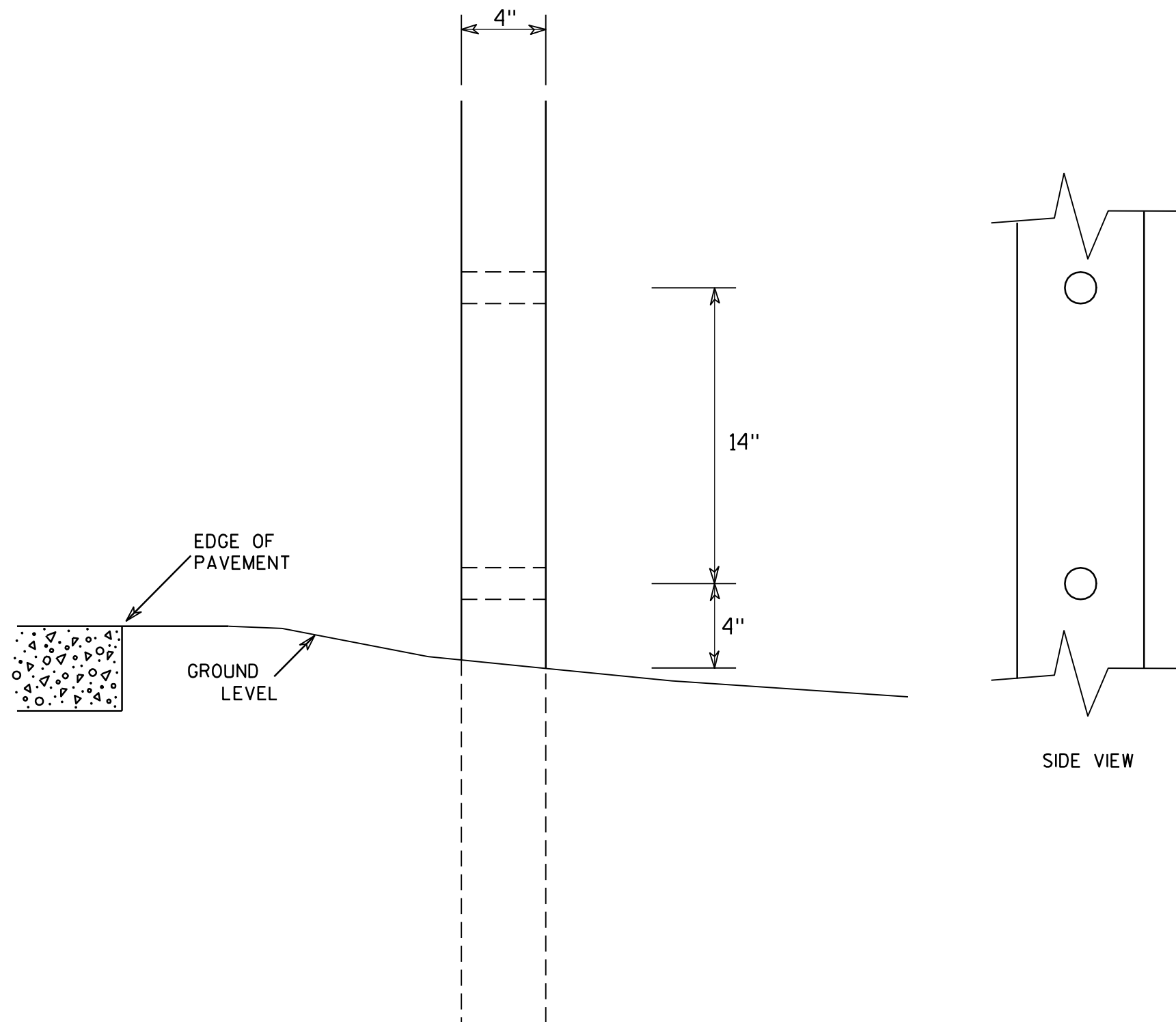
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

7



GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

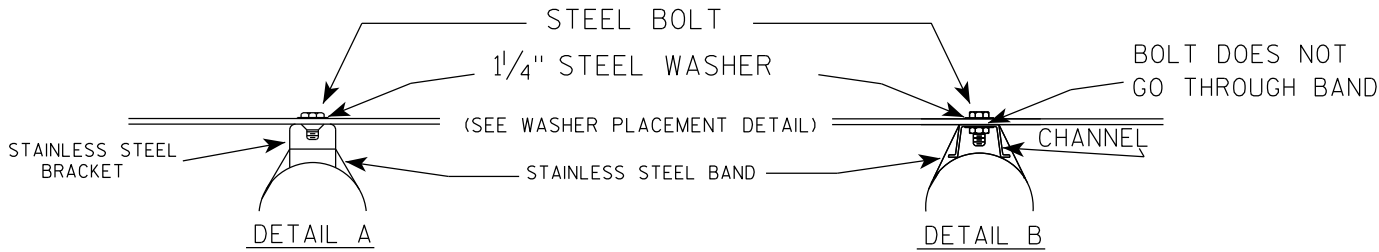
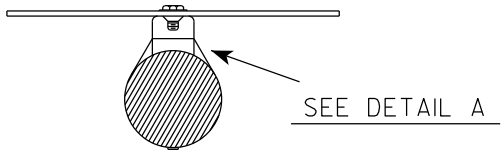
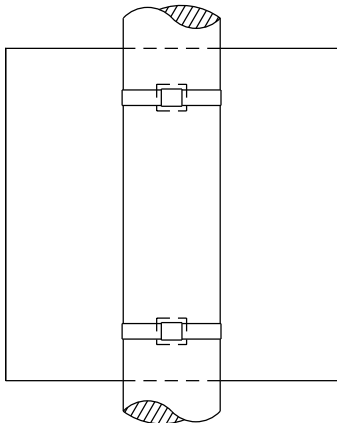
COUNTY:

SHEET NO:

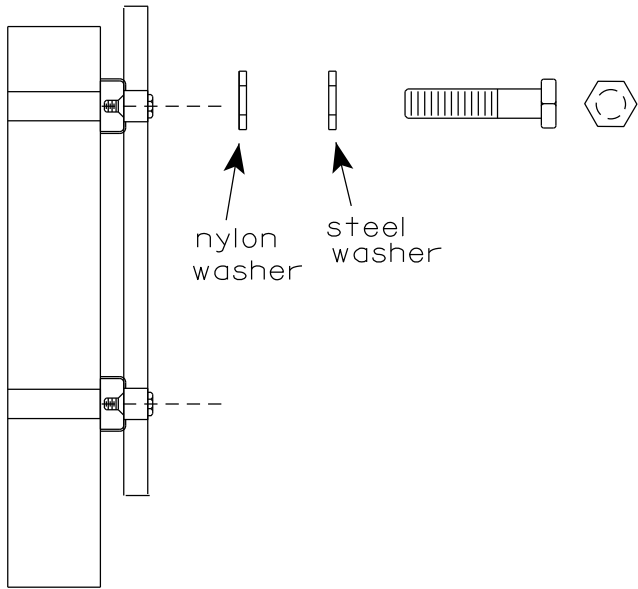
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

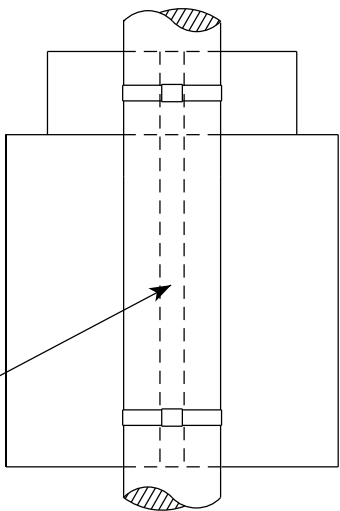


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

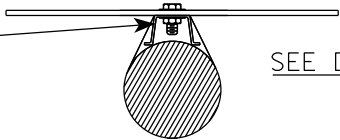
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



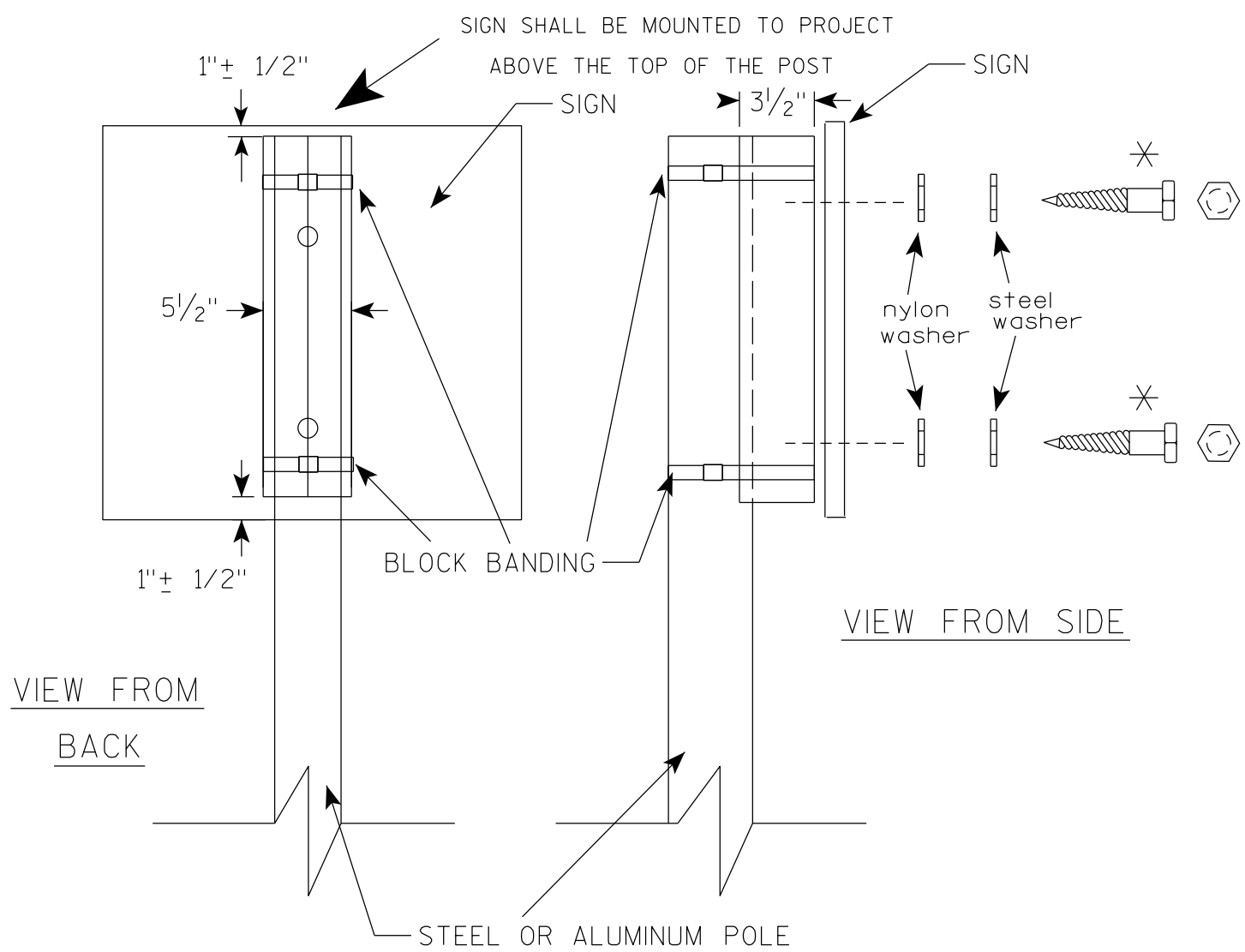
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

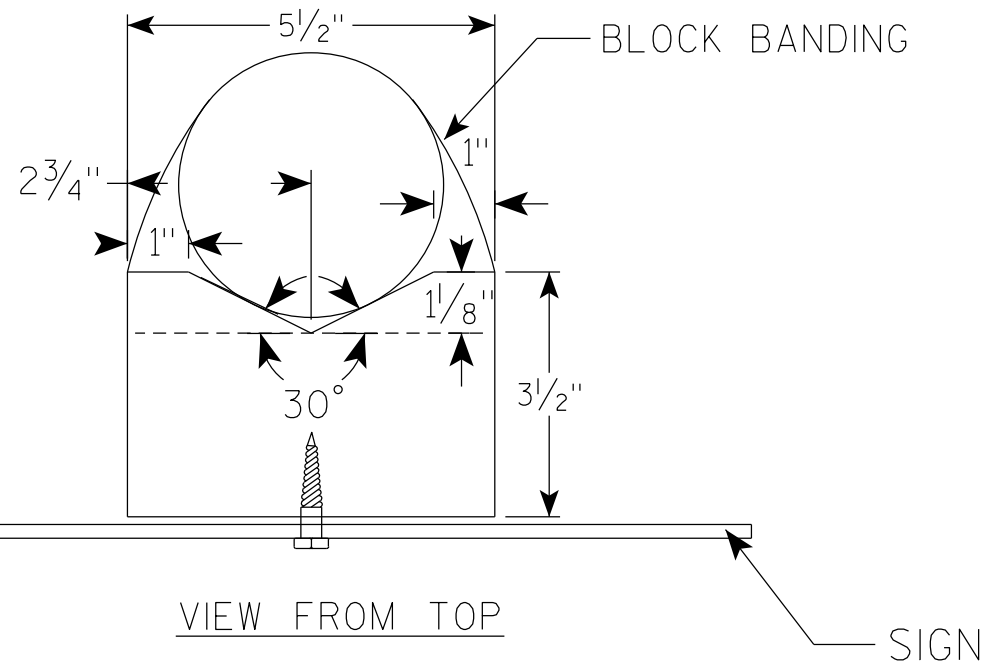
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

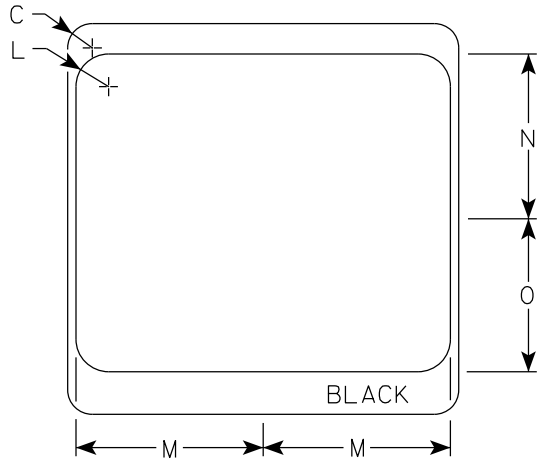
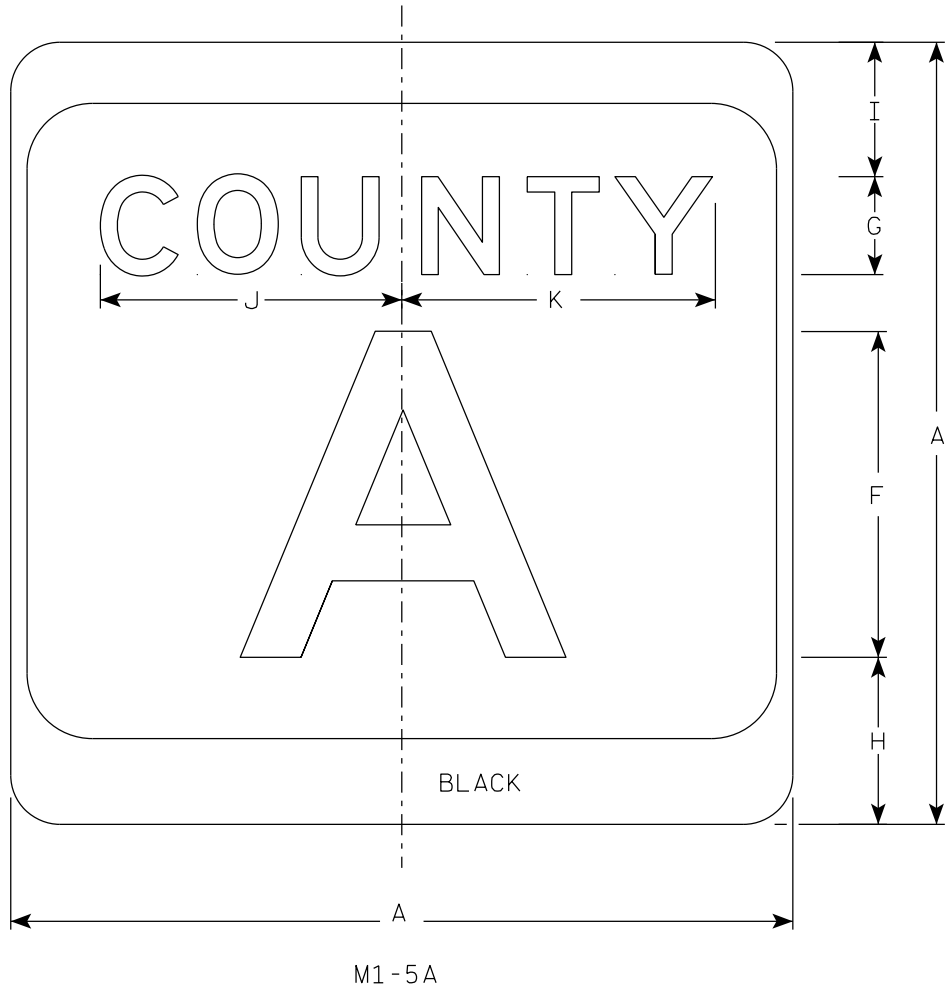
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO:

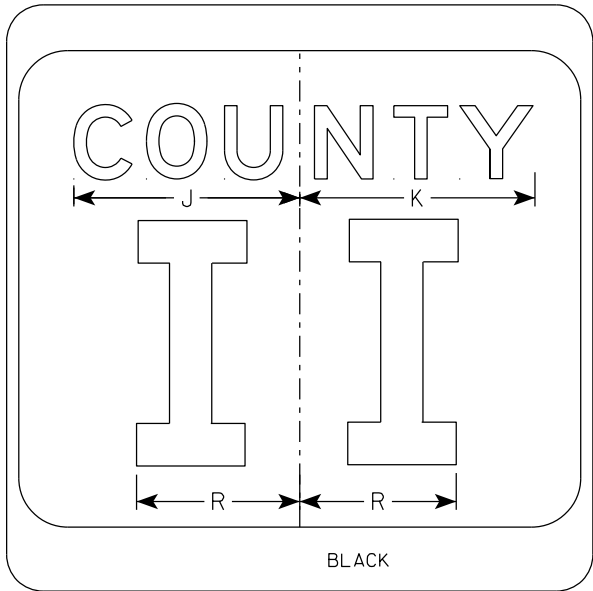
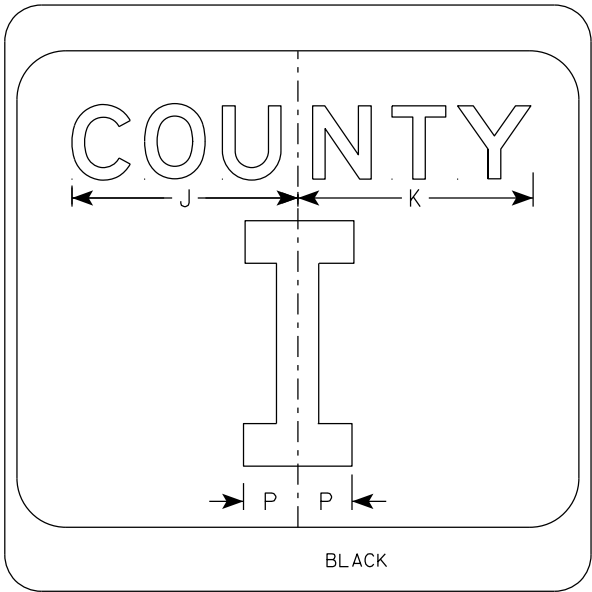
E

7



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White & Black
Message - Black
3. Message Series - see Note 4
4. Message Series E for 1 letter.
Message Series D for 2 letters unless
message is too big then Series C.
Message Series C for 3 letters unless
message is too big then Series B.
5. Substitute appropriate letters & optically
center to achieve proper balance.



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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
2M	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/8/2022 PLATE NO. M1-5A.9

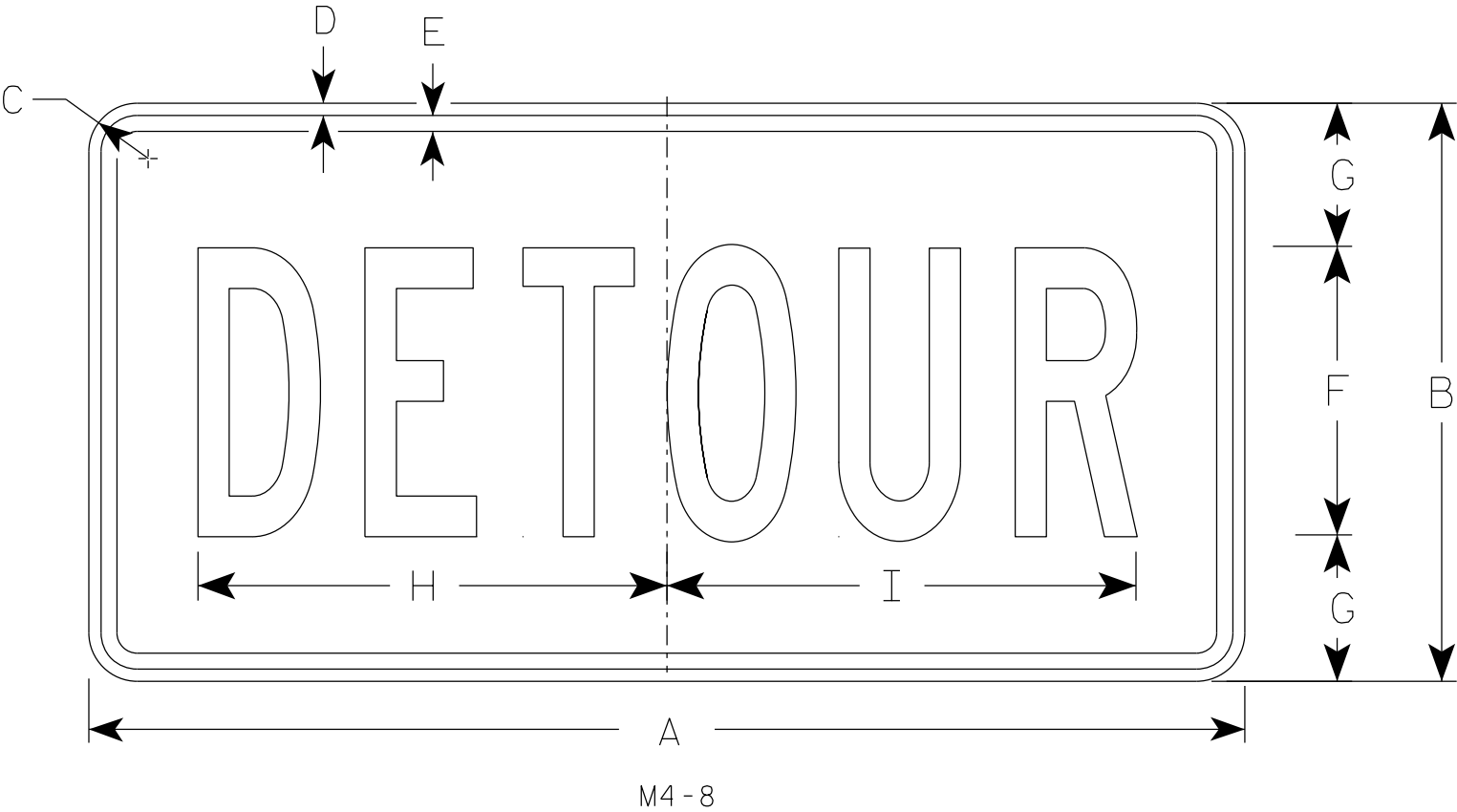
7

7

7

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - B
- 4. 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.



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																											
2	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
2M	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
5	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5

STANDARD SIGN

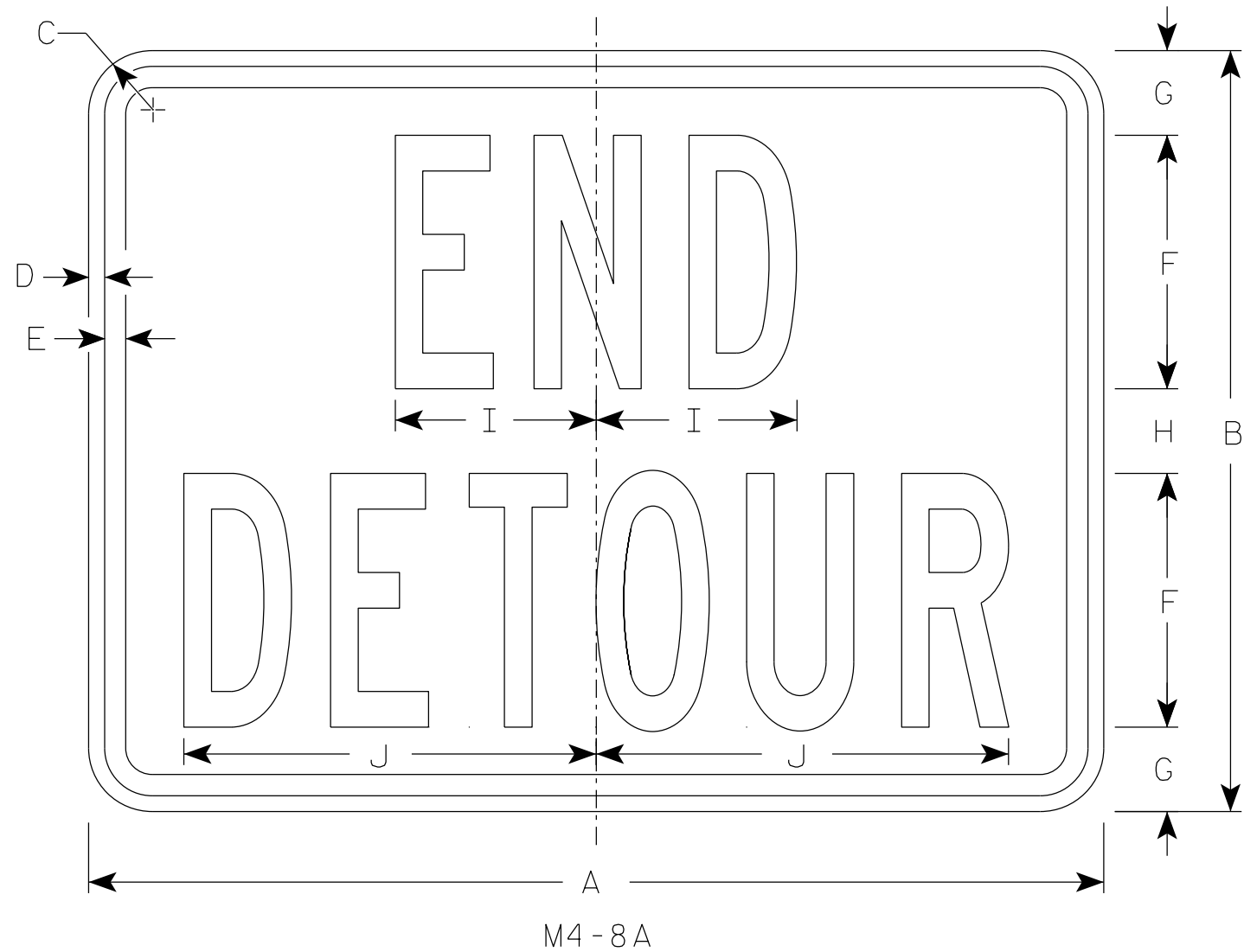
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8.4

7



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - B
- 4. 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.

7

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																											
2	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
2M	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
5	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0

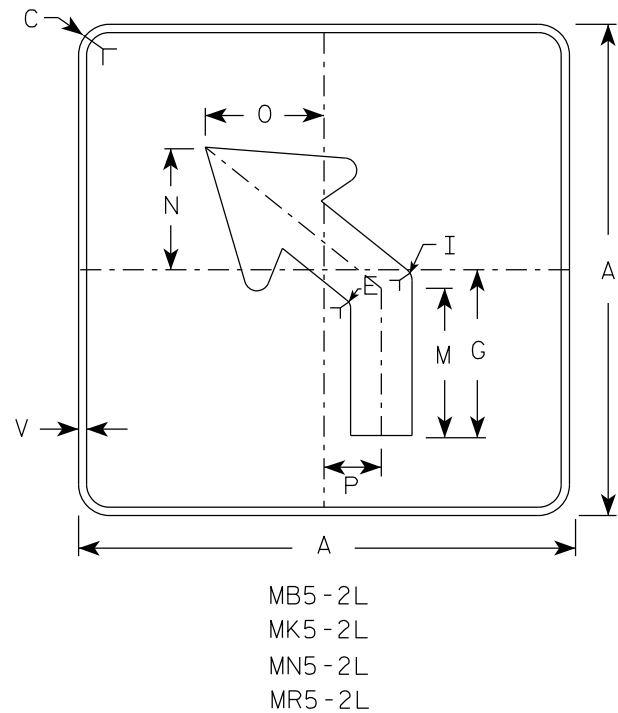
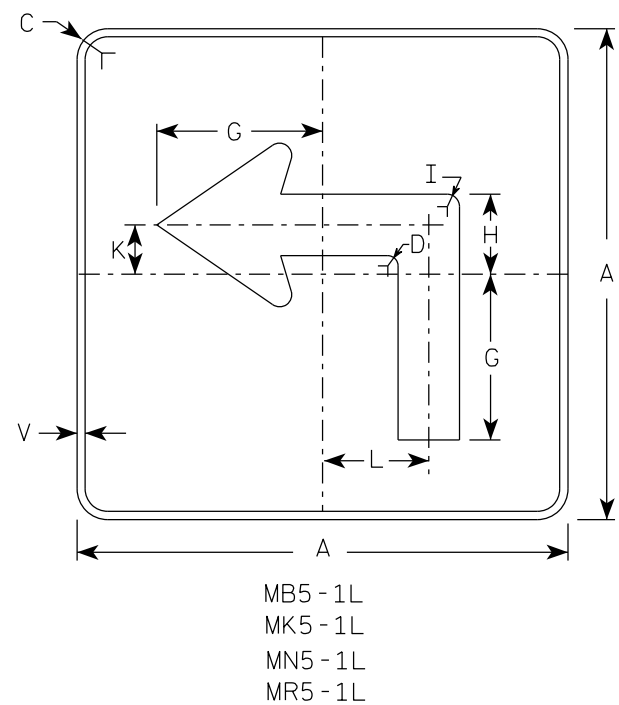
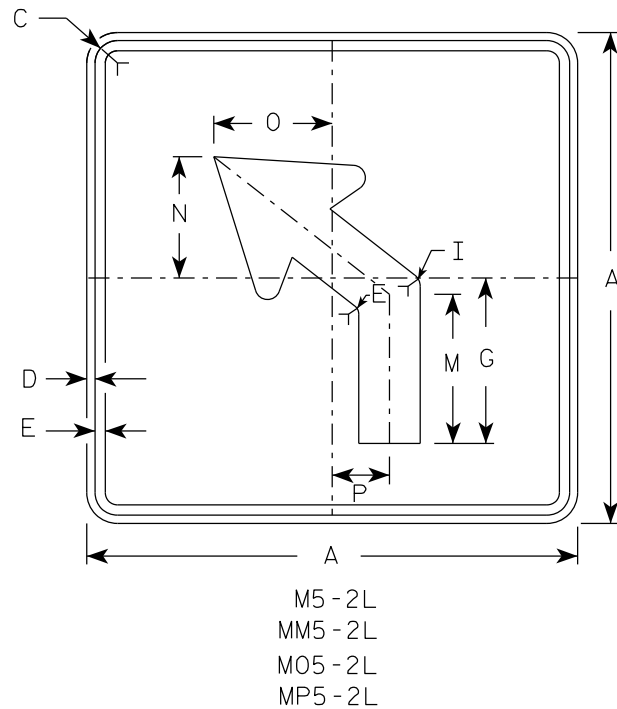
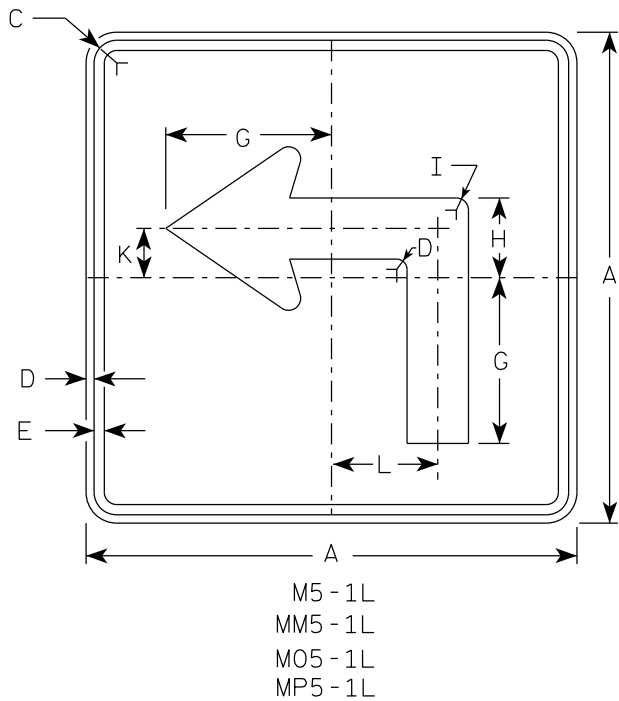
STANDARD SIGN

M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

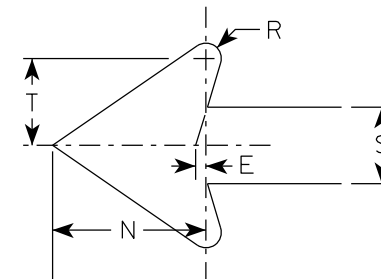
DATE 2/9/2023 PLATE NO. M4-8A.4



NOTES

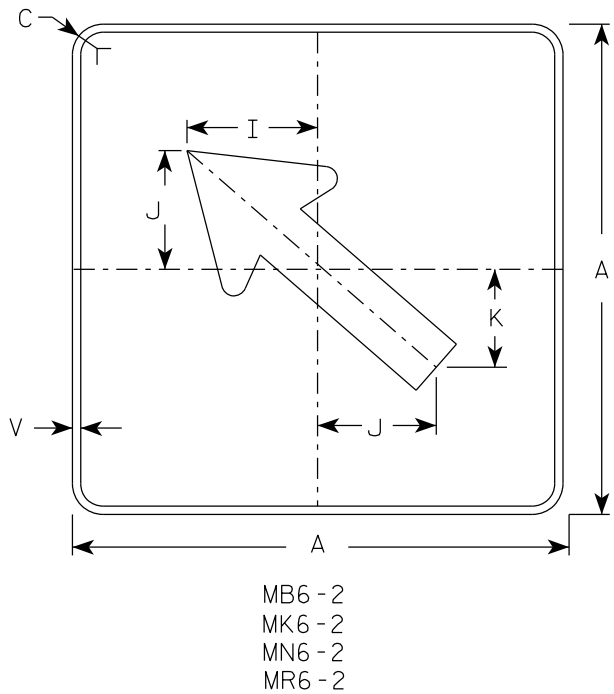
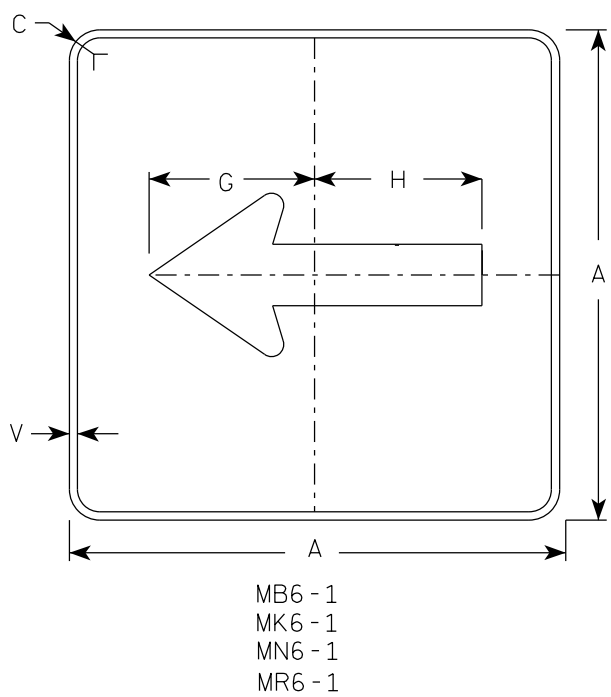
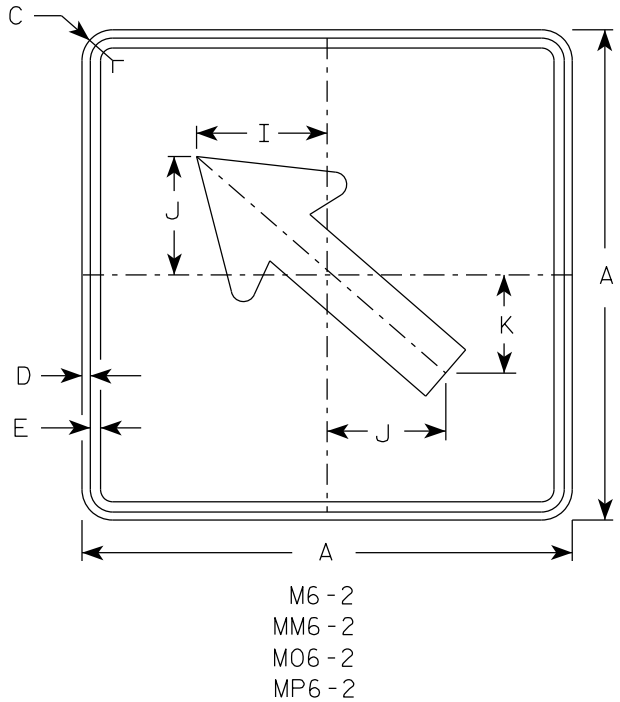
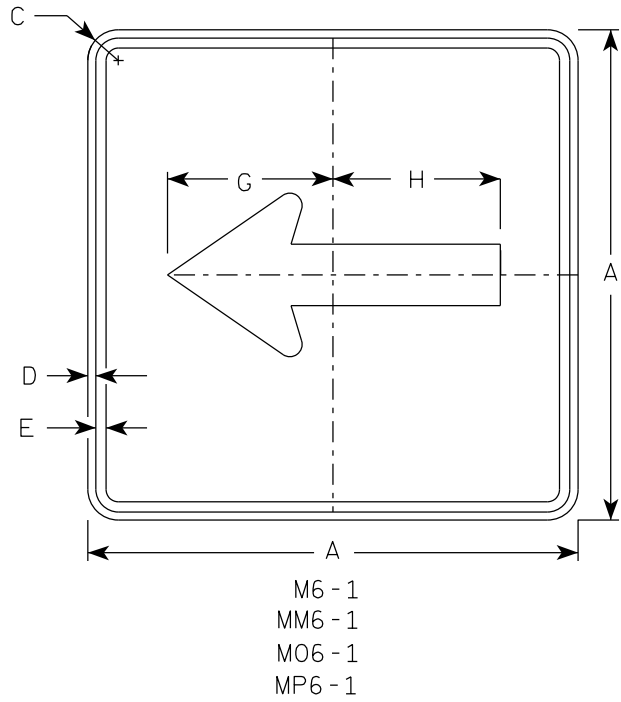
- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | | |
|-----------|-------|---|
| M5-1 and | M5-2 | Background - White |
| | | Message - Black |
| MB5-1 and | MB5-2 | Background - Blue |
| | | Message - White |
| MK5-1 and | MK5-2 | Background - Green |
| | | Message - White |
| MM5-1 and | MM5-2 | Background - White |
| | | Message - Green |
| MN5-1 and | MN5-2 | Background - Brown |
| | | Message - White |
| M05-1 and | M05-2 | Background - Orange - Type F Reflective |
| | | Message - Black |
| MP5-1 and | MP5-2 | Background - White |
| | | Message - Blue |
| MR5-1 and | MR5-2 | Background - Brown |
| | | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

ARROW DETAIL

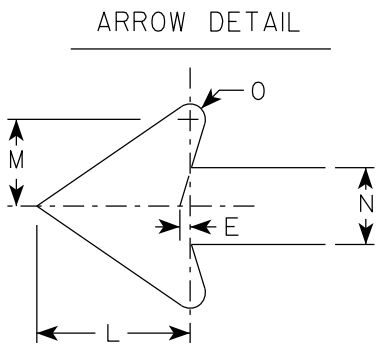


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
4	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
5	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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- NOTES**
- Signs are Type II - Type H Reflective except as Shown
 - Color:
Background - See note 4
Message - See note 4
 - 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.
 - M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow



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	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2						3.06
2M	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2						3.06
3	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2						6.25
4	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2						6.25
5	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2						6.25

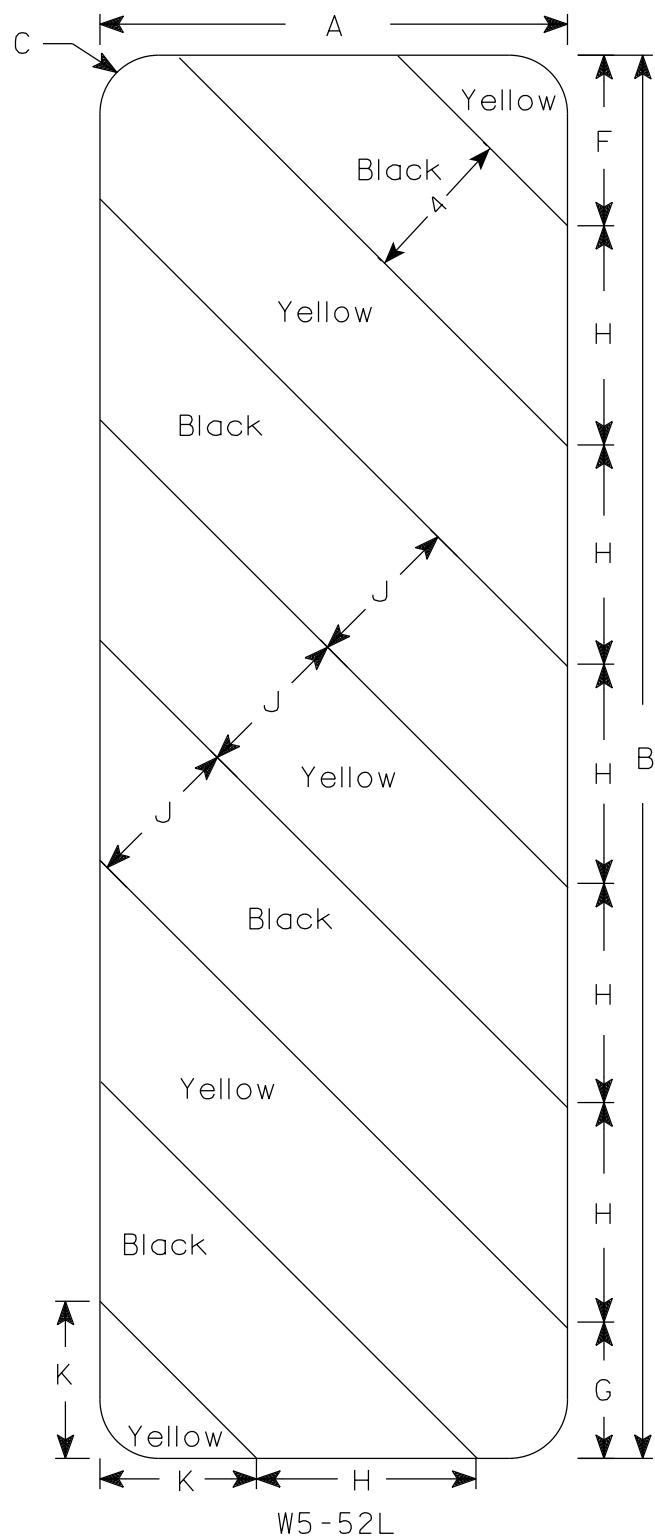
PROJECT NO:

HWY:

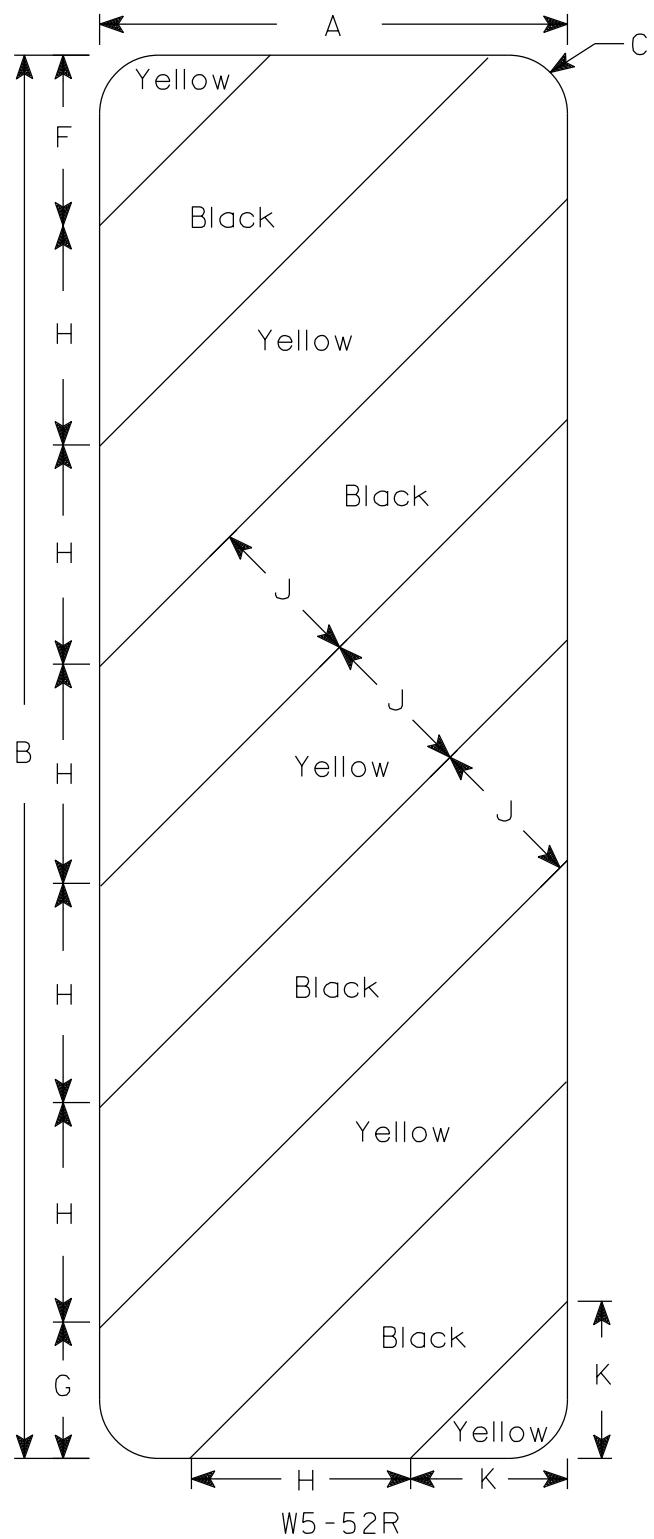
COUNTY:

SHEET NO:

E



W5-52L



W5-52R

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Yellow
 - Message - Black
- 3. Alternate colors of stripes as shown.

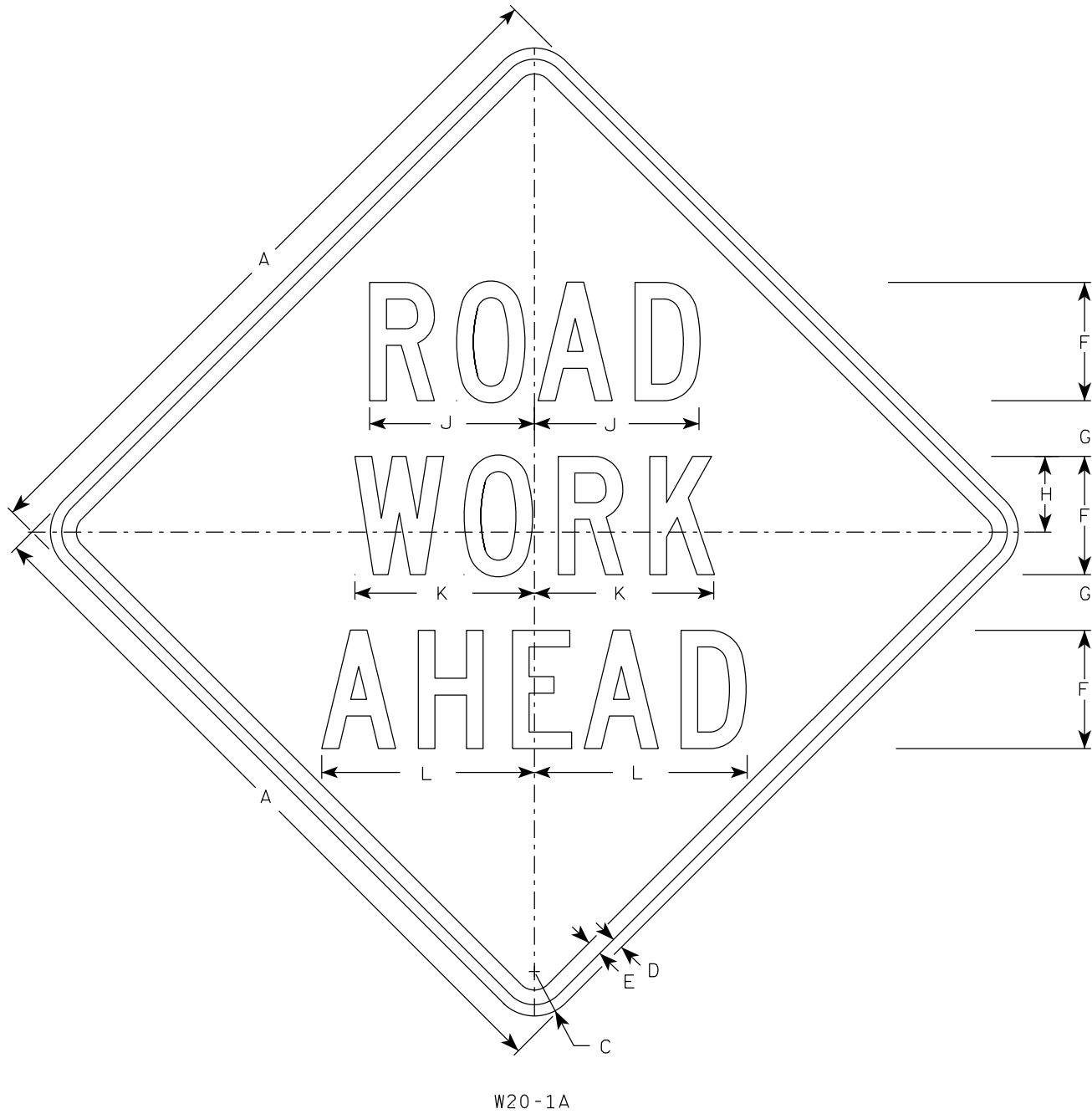
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54	1 1/2			6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

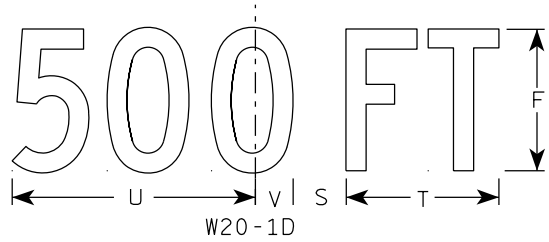
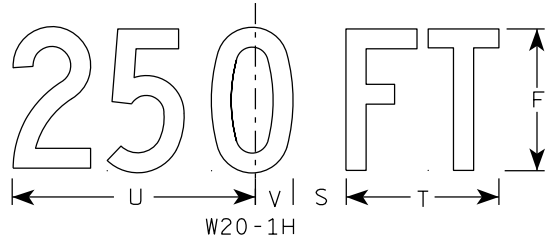
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/4/2024 PLATE NO. W5-52.10

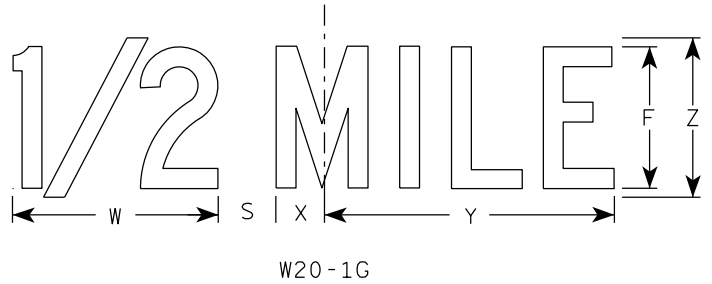


W20-1A

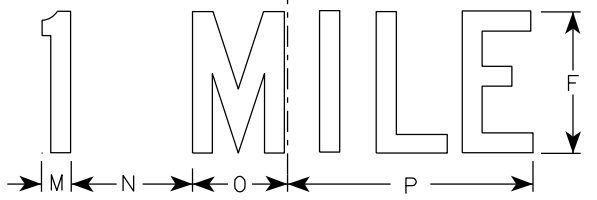


W20-1B

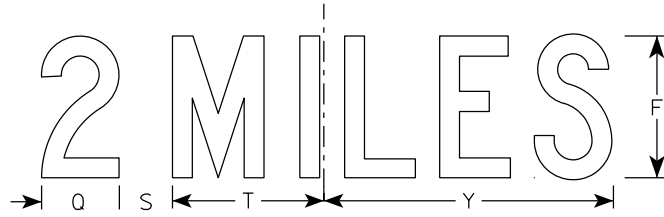
- NOTES
1. Sign is Type II - Type F Reflective
 2. Color:
Background - Orange
Message - Black
 3. Message Series - C
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G

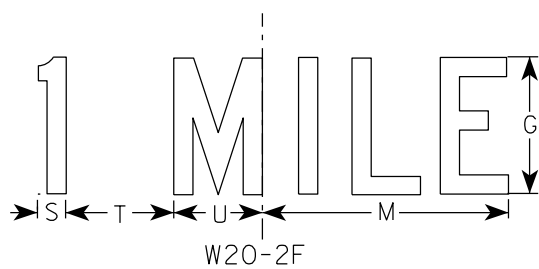
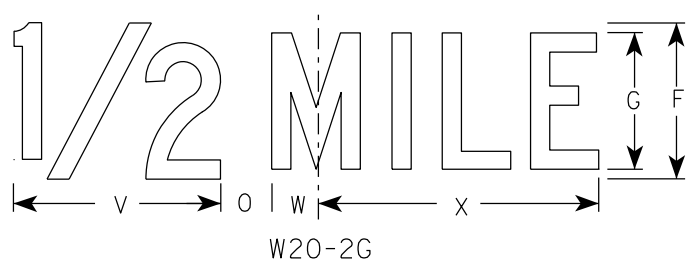
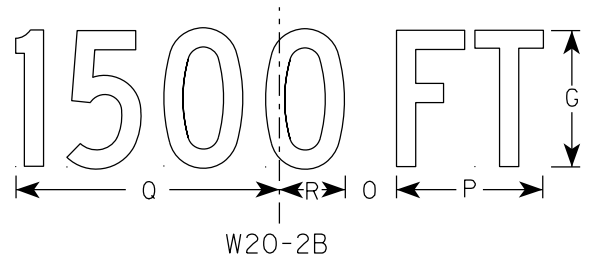
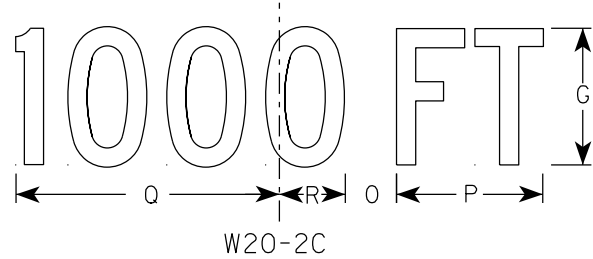
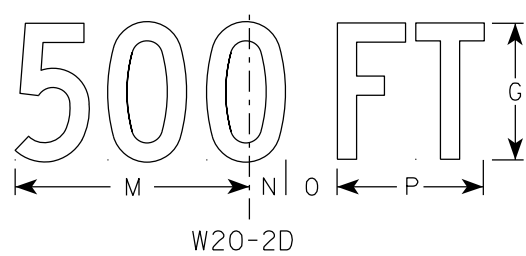
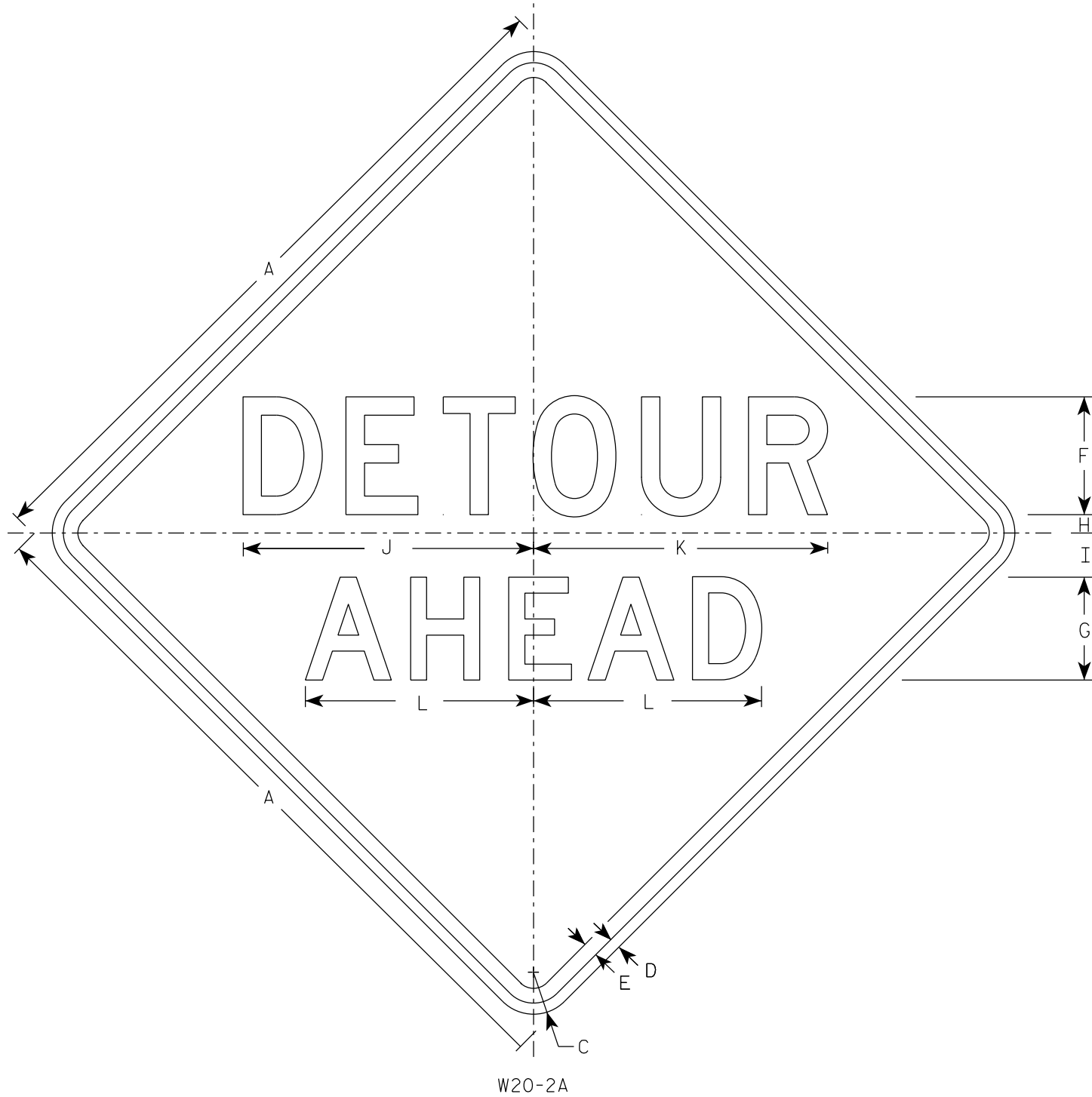


W20-1F



W20-1E

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	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0



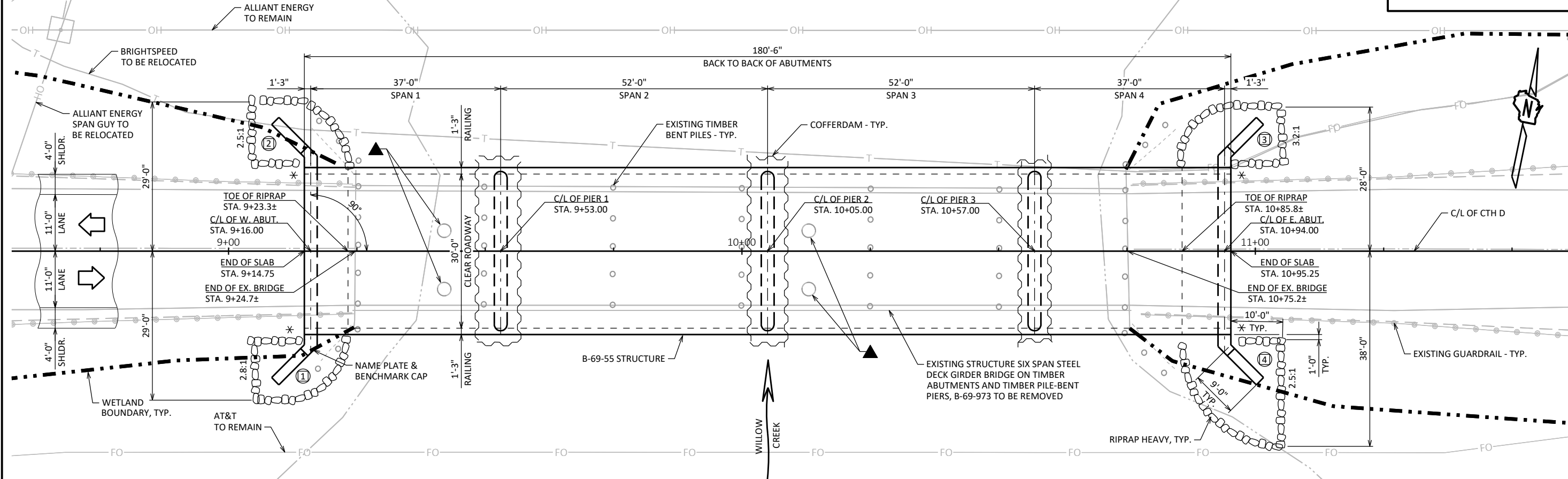
NOTES

- Sign is Type II - Type F Reflective
- Color:
Background - Orange
Message - Black
- Message Series - See note 5
- 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.
- Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

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	36		2 1/4	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN W20-2A,B,C,D,F & G	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 1/10/2024	PLATE NO. W20-2.7

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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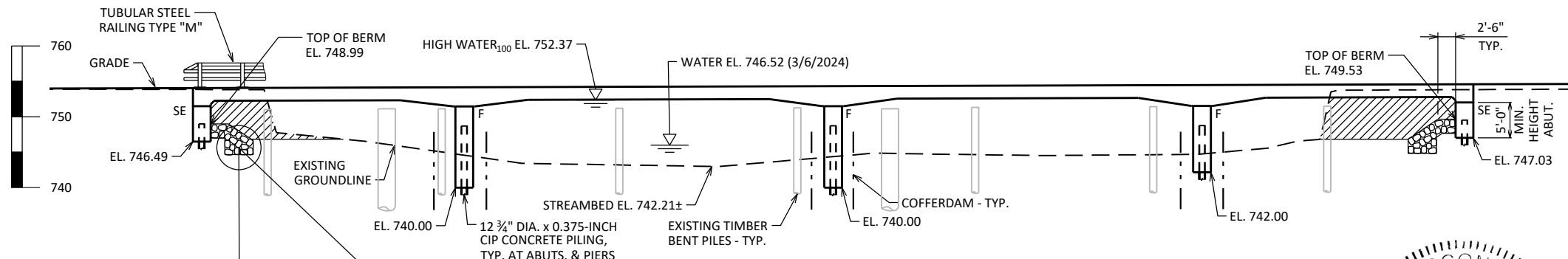
- * PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT.
- INDICATES WING NUMBER
- ▲ REMOVAL OF OLD STEEL CAISONS INCLUDED IN BID ITEM "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS"

PLAN

FOUR-SPAN CONCRETE HAUNCH SLAB BRIDGE

LIST OF DRAWINGS:

1. GENERAL PLAN
2. TYPICAL SECTION, QUANTITIES AND NOTES
3. STRUCTURE DETAILS
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT
6. WEST ABUTMENT WING DETAILS
7. WEST ABUTMENT BILL OF BARS AND DETAILS
8. EAST ABUTMENT
9. EAST ABUTMENT WING DETAILS
10. EAST ABUTMENT BILL OF BARS AND DETAILS
11. PIER 1
12. PIER 2
13. PIER 3
14. SUPERSTRUCTURE
15. SUPERSTRUCTURE PLAN
16. SUPERSTRUCTURE DETAILS
17. TUBULAR STEEL RAILING TYPE M



ELEVATION

NORMAL TO C/L WATERWAY

COST OF EXCAVATION OR FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-69-55"

REMOVE EXISTING SUBSTRUCTURE AS NEEDED. COST CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS" ITEM, TYPICAL AT ALL SUBSTRUCTURES.



11/25/2025

STRUCTURE DESIGN CONTACTS:

AARON BONK 608-261-0261
KRISTOFER OLSON 920-498-1200

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
AYRES 700 Pilgrim Way, Suite 180 Green Bay, WI 54304 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED		CHIEF STRUCTURES DESIGN ENGINEER	12/01/25 DATE
STRUCTURE B-69-55			
CTH D OVER WILLOW CREEK			
COUNTY	WAUSHARA	TOWN	POY SIPPI
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY	JMC	DESIGN CK'D	NBE
DRAWN BY	JMC	PLANS CK'D	KRO
GENERAL PLAN			SHEET 1 OF 17

I.D.

DATE:

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	W ABUT.	PIER 1	PIER 2	PIER 3	E ABUT.	TOTALS
203.0260	REMOVING STRUCTURE OVERWATERWAY MINIMAL DEBRIS B-69-973	EACH	---	---	---	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-69-55	EACH	---	---	---	---	---	---	1
206.5001	COFFERDAMS (B-69-55)	EACH	---	---	---	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	---	125	---	---	---	130	255
502.0100	CONCRETE MASONRY BRIDGES	CY	368.6	27.5	30.2	30.6	25.9	27.5	510
502.3200	PROTECTIVE SURFACE TREATMENT	SY	760	15	---	---	---	15	790
502.9000.S	UNDERWATER SUBSTRUCTURE INSPECTION (B-69-55)	EACH	---	---	---	---	---	---	1
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	---	2,520	1,500	1,520	1,270	2,520	9,330
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	84,680	1,340	60	60	60	1,340	87,540
513.4061	RAILING TUBULAR TYPE M	LF	366	---	---	---	---	---	366
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---	7	---	---	---	7	14
550.0600	PILE REDRIVING	EACH	---	1	1	1	1	1	5
550.2126	PIILING CIP CONCRETE 12 ¾ X 0.375- INCH	LF	---	385	680	760	760	455	3,040
606.0300	RIPRAP HEAVY	CY	---	55	---	---	---	75	130
612.0406	PIPE UNDERDRAIN WRAPPED 6 - INCH	LF	---	80	---	---	---	80	160
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	---	55	---	---	---	55	110
645.0120	GEOTEXTILE TYPE HR	SY	---	110	---	---	---	140	250
	NON-BID ITEMS								
	FILLER	SIZE	---	---	---	---		---	½", ¾"

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING: RF = 1.01
OPERATING RATING: RF = 1.31
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 (KIPS)

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

MATERIAL PROPERTIES:
CONCRETE MASONRY:
SUPERSTRUCTURE f'c = 4,000 PSI
ALL OTHER f'c = 3,500 PSI
BAR STEEL REINFORCEMENT
GRADE 60 fy = 60,000 PSI

FOUNDATION DATA

WEST ABUT. TO BE SUPPORTED ON 12 ¾" DIA. X 0.375-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 55'-0" LONG.

EAST ABUT. TO BE SUPPORTED ON 12 ¾" DIA. X 0.375-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 65'-0" LONG.

PIERS TO BE SUPPORTED ON 12 ¾" DIA. X 0.375-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 85'-0" LONG AT PIER 1. ESTIMATED 95'-0" LONG AT PIER 2. ESTIMATED 95'-0" LONG AT PIER 3.

**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 PILE CAPACITY.

DRIVE PILING TO PLAN LENGTH UNLESS THE REQUIRED BEARING IS OBTAINED AT A SHORTER LENGTH. IF THE REQUIRED BEARING IS NOT OBTAINED WHEN THE PILE IS DRIVEN TO PLAN LENGTH, THE ITEM "PILE REDRIVING" IS REQUIRED. NOTIFY THE BUREAU OF STRUCTURES IF THE REQUIRED BEARING IS NOT OBTAINED.

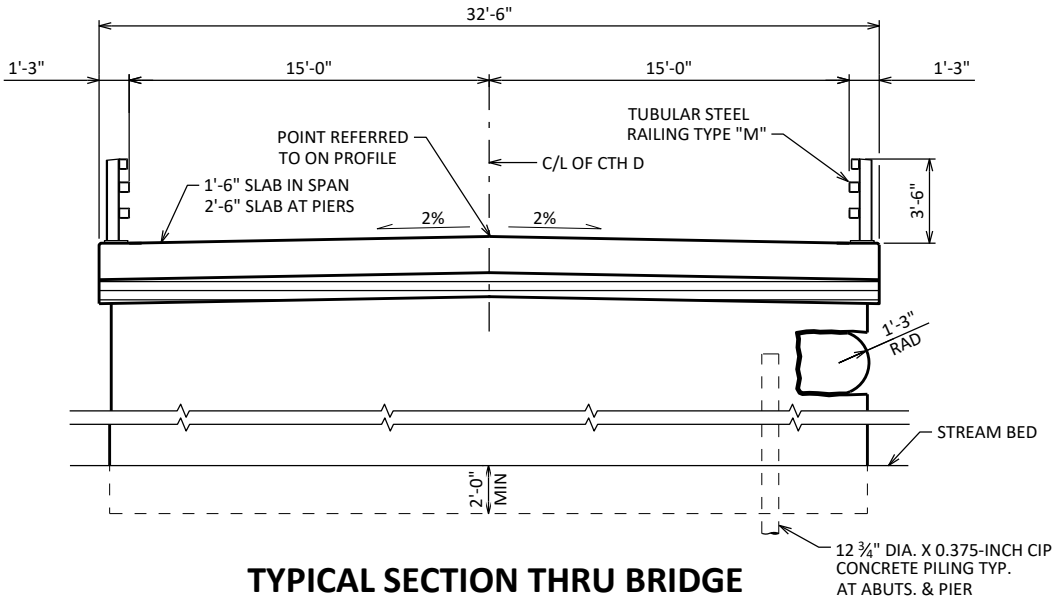
HYDRAULIC DATA

100-YEAR FREQUENCY:
Q100= 3,750 C.F.S.
V100= 3.3 F.P.S.
HW100= EL. 752.37
WATERWAY AREA = 1,154 SQ. FT.
DRAINAGE AREA = 127 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5

2-YEAR FREQUENCY:
Q2= 1,250 C.F.S.
V2= 1.5 F.P.S.
HW2= EL. 750.11

TRAFFIC DATA

FEATURE ON: CTH D
ADT = 916 (2026)
ADT = 1,117 (2046)
R.D.S. = 55 MPH



TYPICAL SECTION THRU BRIDGE



PROFILE GRADE LINE

BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
800	13+65	RR SPIKE IN E. PPOL, 43' LT	752.60
801	7+11	RR SPIKE IN E PPOL, 43' LT	750.78

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF JOINT FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD ⅛" BELOW THE SURFACE OF CONCRETE.)

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-69-55" SHALL BE THE EXISTING GROUNDLINE.

AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED AS SHOWN IN DETAIL ON SHEET 3 AND APPLY TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

EXISTING SUBSTRUCTURE LOCATIONS ARE BASED ON SURVEY AND EXISTING PLANS. COST OF SUBSTRUCTURE REMOVAL IS CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS" BID ITEM.

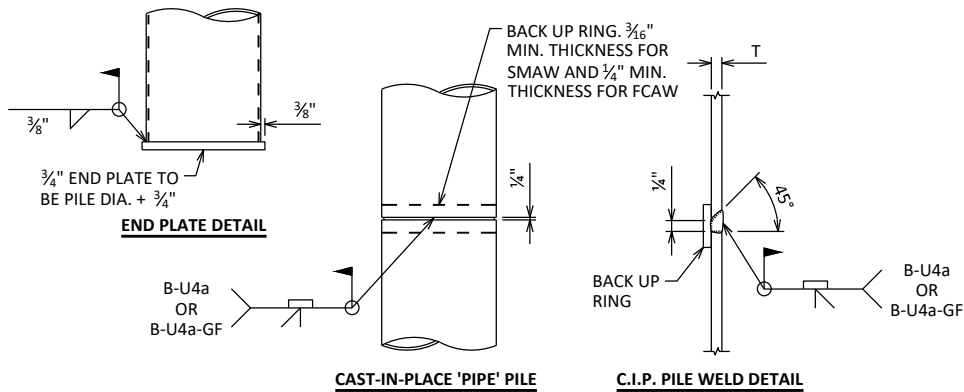
DO NOT PULL TIMBER PILES IN PIERS OR ABUTMENTS. TIMBER PILES TO BE CUT OFF AT STREAMBED OR GROUND SURFACE. COST OF PILING REMOVAL IS CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE" BID ITEM.

AT ABUTMENTS AND PIERS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

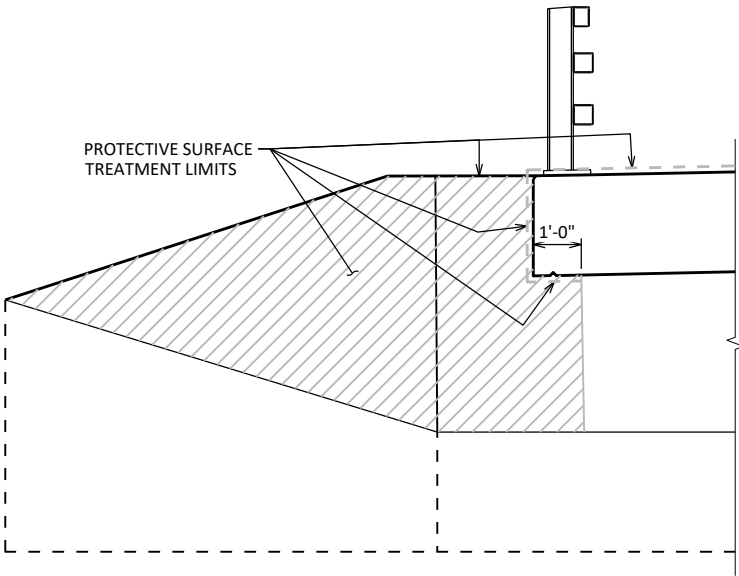
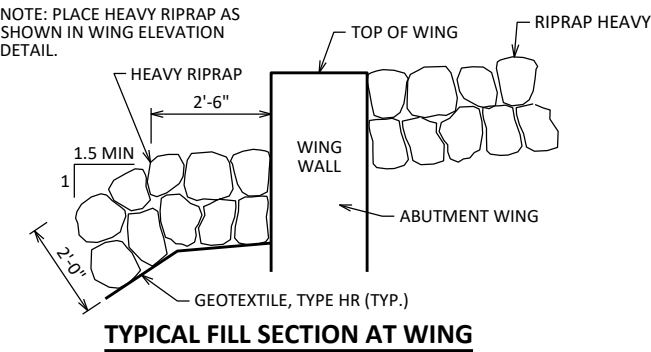
STATE PROJECT NUMBER

6911-00-72

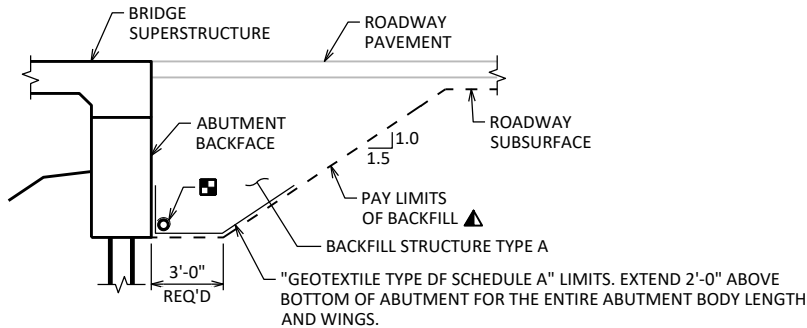
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
		DRAWN BY JMC/CLP	PLANS CK'D JMC
TYPICAL SECTION, QUANTITIES AND NOTES		SHEET 2 OF 17	



CIP PILE DETAILS

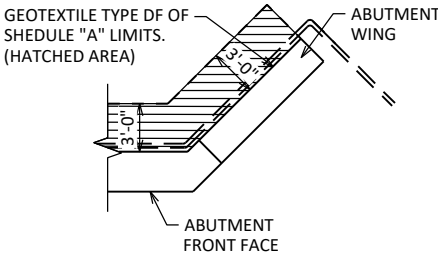


PROTECTIVE SURFACE TREATMENT DETAILS



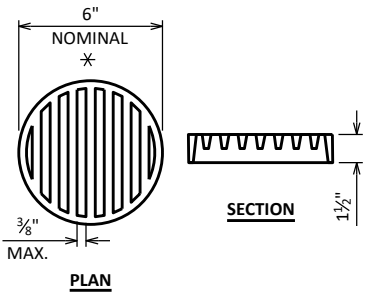
TYPICAL SECTION THRU ABUTMENT

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ▣ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



BACKFILL STRUCTURE LIMITS

ABUTMENT PLAN WITH WING

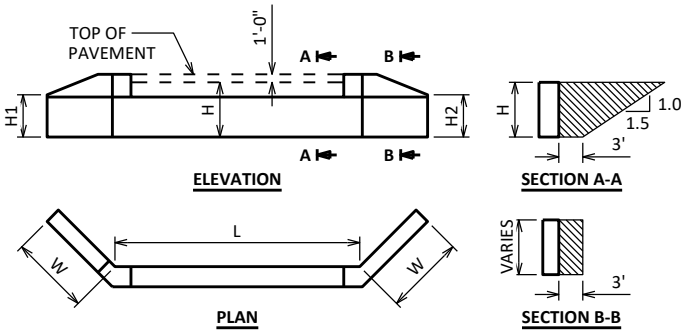


RODENT SHIELD DETAIL

* 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 A 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 SHIELD 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 STAINLESS STEEL SHEET METAL SCREWS.

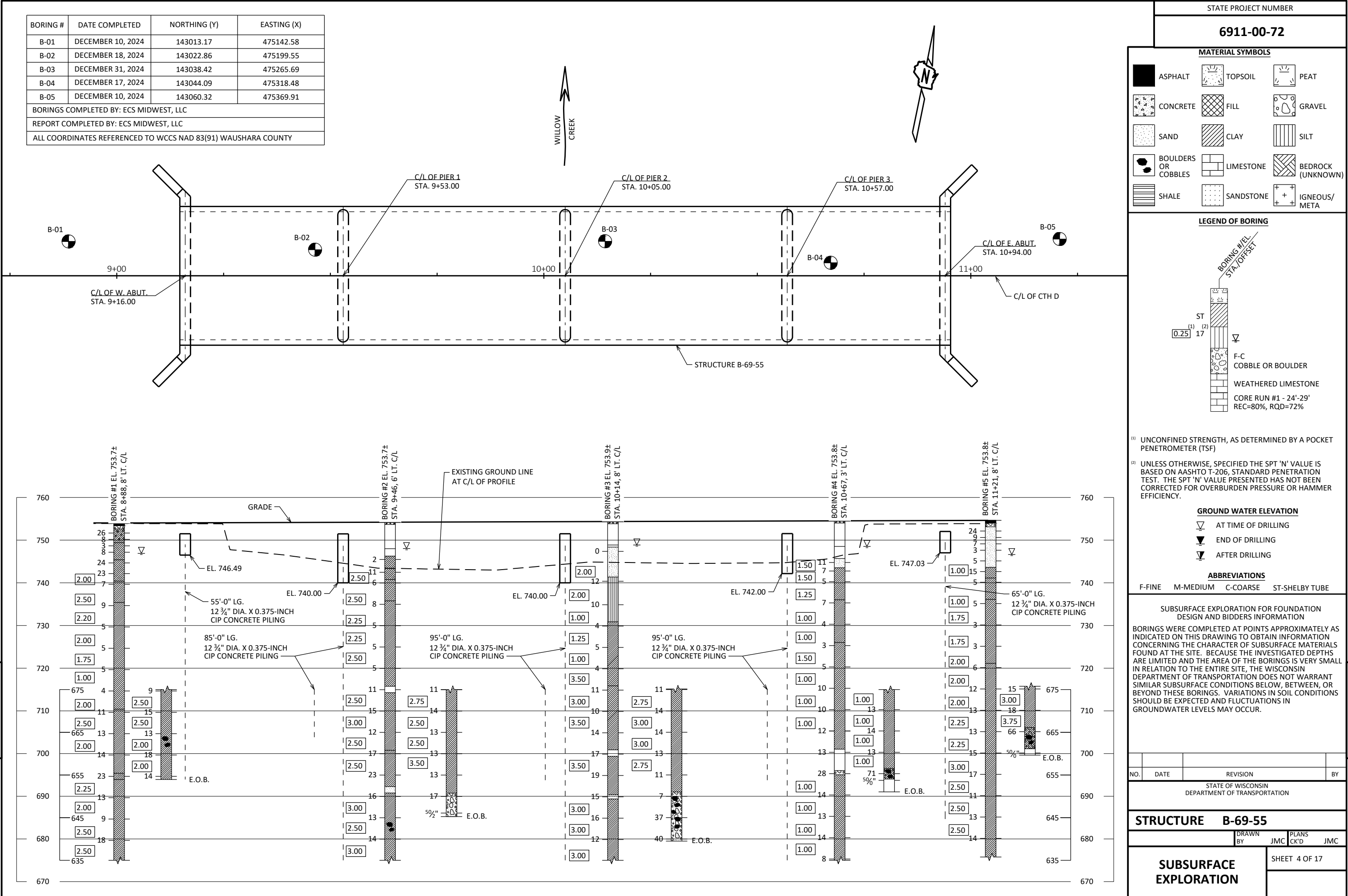


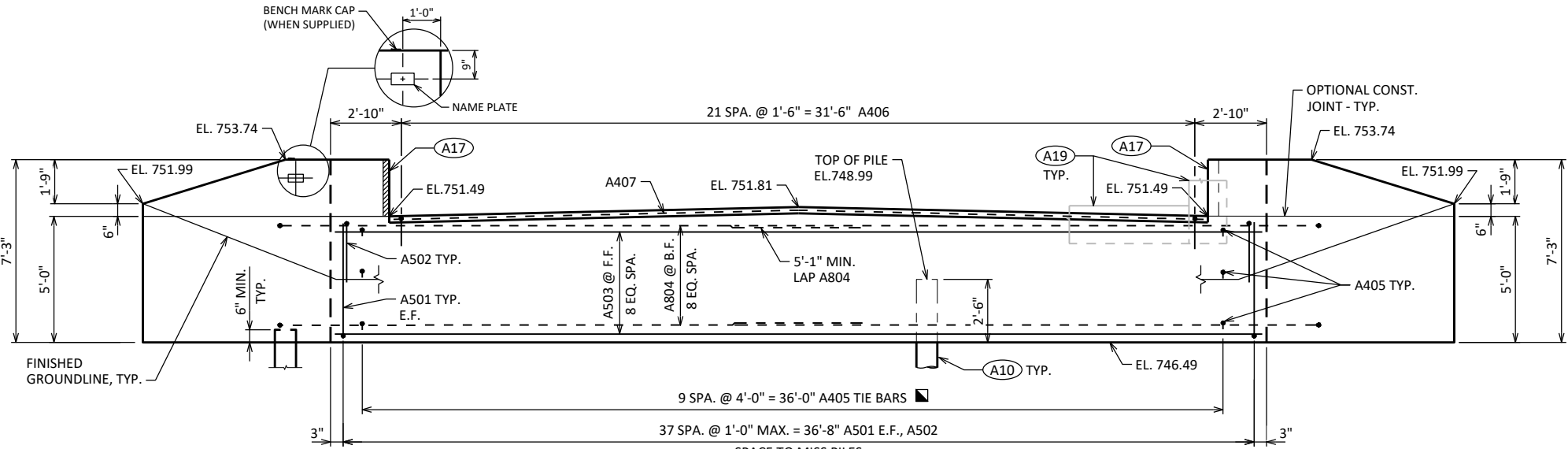
ABUTMENT BACKFILL DIAGRAM

- L = ABUTMENT BODY LENGTH AT BACKFACE (FT)
- H = AVERAGE ABUTMENT FILL HEIGHT (FT)
- H1 = WING 1 HEIGHT AT TIP (FT)
- H2 = WING 2 HEIGHT AT TIP (FT)
- W = WING LENGTH (FT)
- EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
- V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3')(0.5)(H1+H2+H+H)(W)
- V_{CY} = V_{CF}(EF)/27
- V_{TON} = V_{CY}(2.0)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
DRAWN BY JMC/CLP		PLANS CK'D JMC	
STRUCTURE DETAILS		SHEET 3 OF 17	

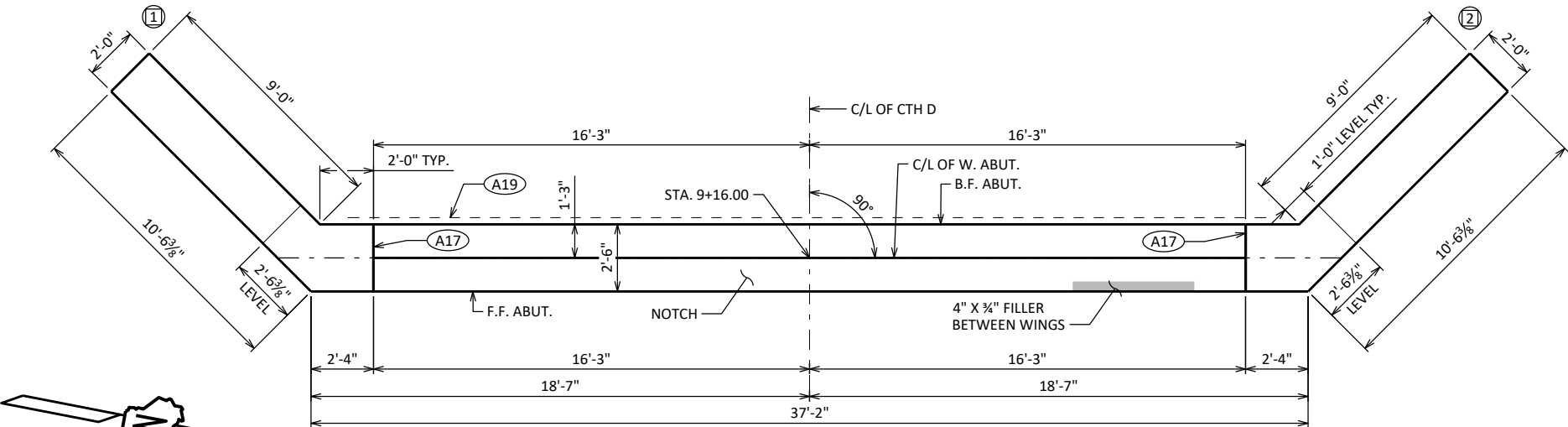
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-01	DECEMBER 10, 2024	143013.17	475142.58
B-02	DECEMBER 18, 2024	143022.86	475199.55
B-03	DECEMBER 31, 2024	143038.42	475265.69
B-04	DECEMBER 17, 2024	143044.09	475318.48
B-05	DECEMBER 10, 2024	143060.32	475369.91
BORINGS COMPLETED BY: ECS MIDWEST, LLC			
REPORT COMPLETED BY: ECS MIDWEST, LLC			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) WAUSHARA COUNTY			



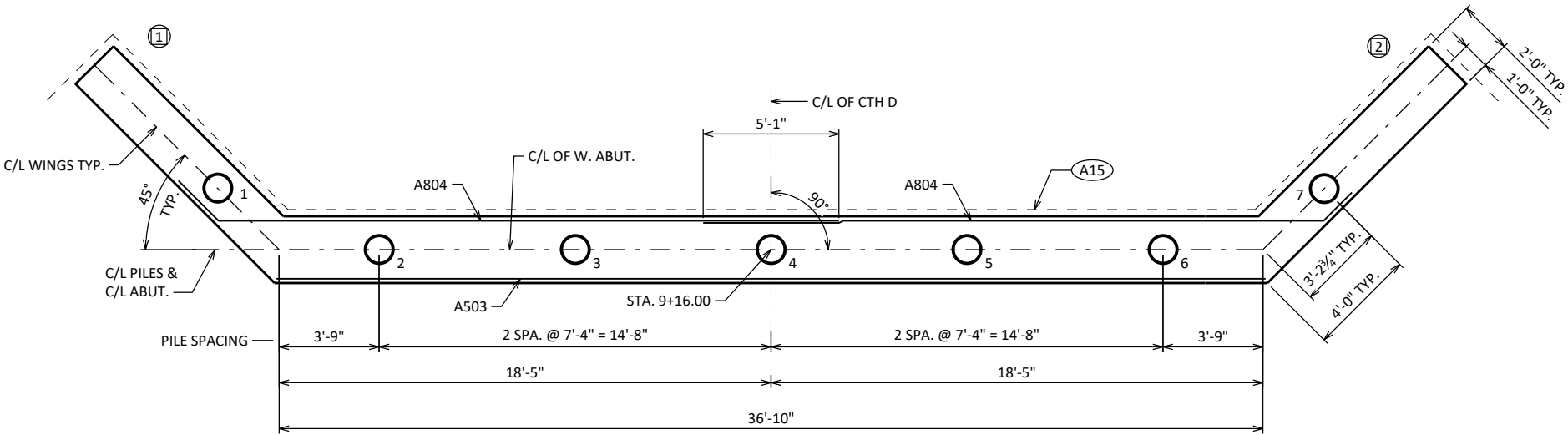


ELEVATION

LOOKING DOWNSTATION



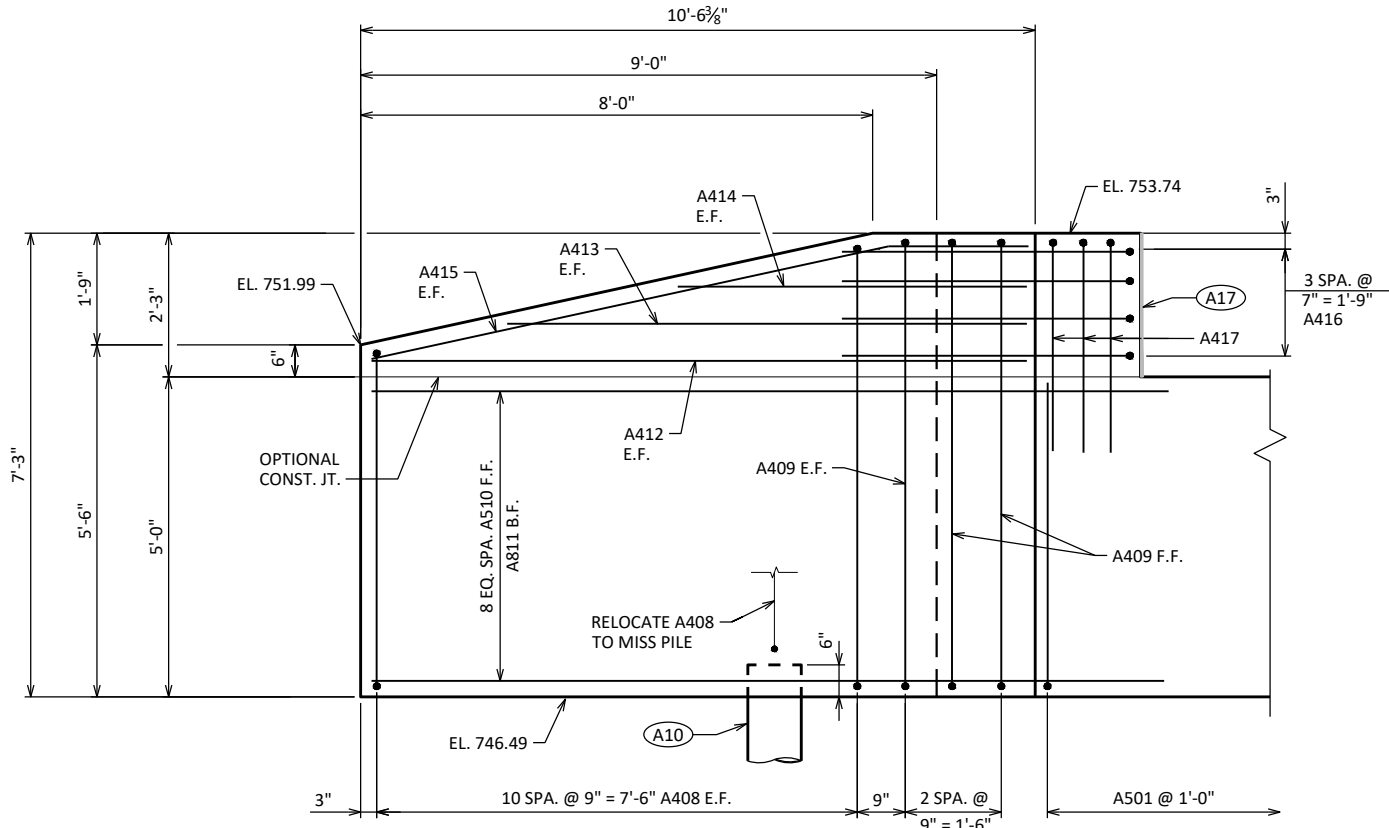
PLAN



PILE PLAN

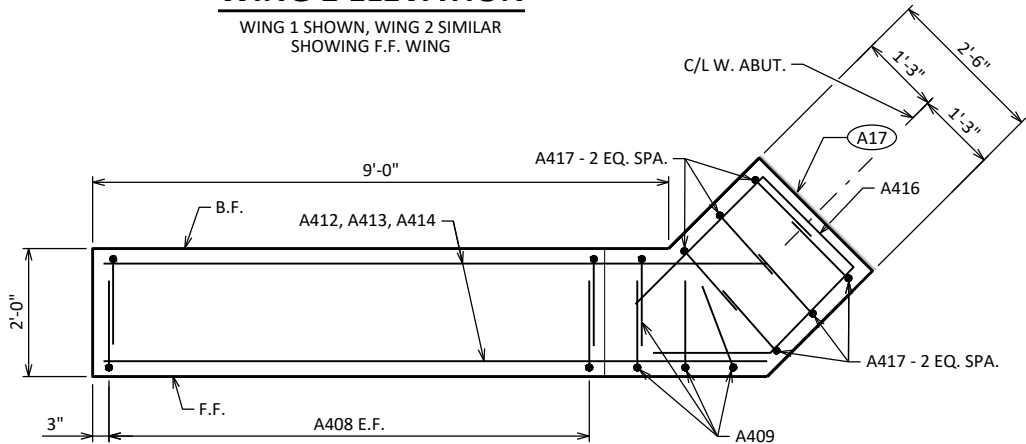
- A10 SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375-INCH CIP CONCRETE PILING. ESTIMATED 55' LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.
- A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17 1/2" FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
DRAWN BY		CLP	PLANS CK'D JMC
WEST ABUTMENT		SHEET 5 OF 17	



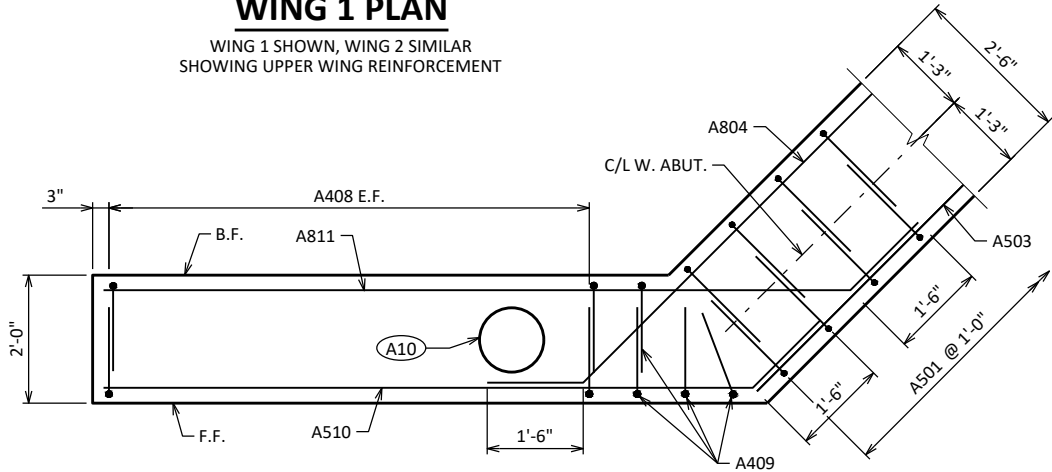
WING 1 ELEVATION

WING 1 SHOWN, WING 2 SIMILAR
SHOWING F.F. WING



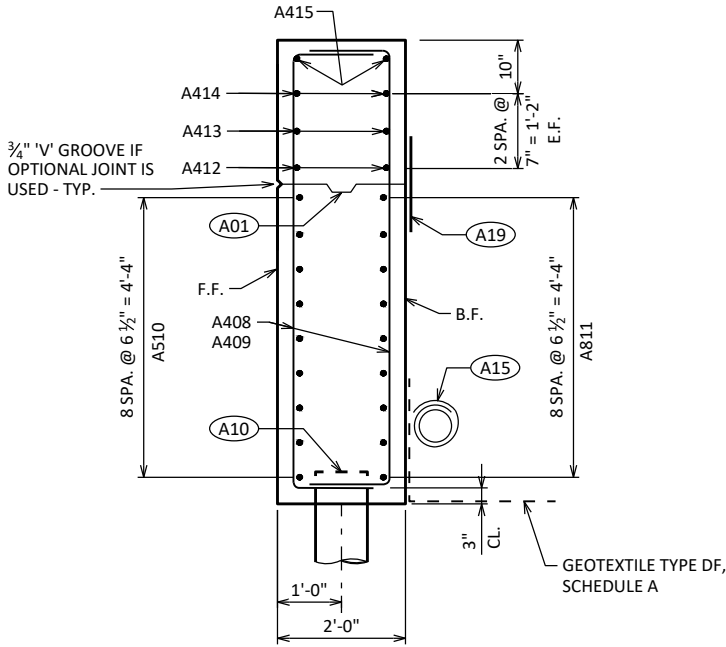
WING 1 PLAN

WING 1 SHOWN, WING 2 SIMILAR
SHOWING UPPER WING REINFORCEMENT



WING 1 PLAN

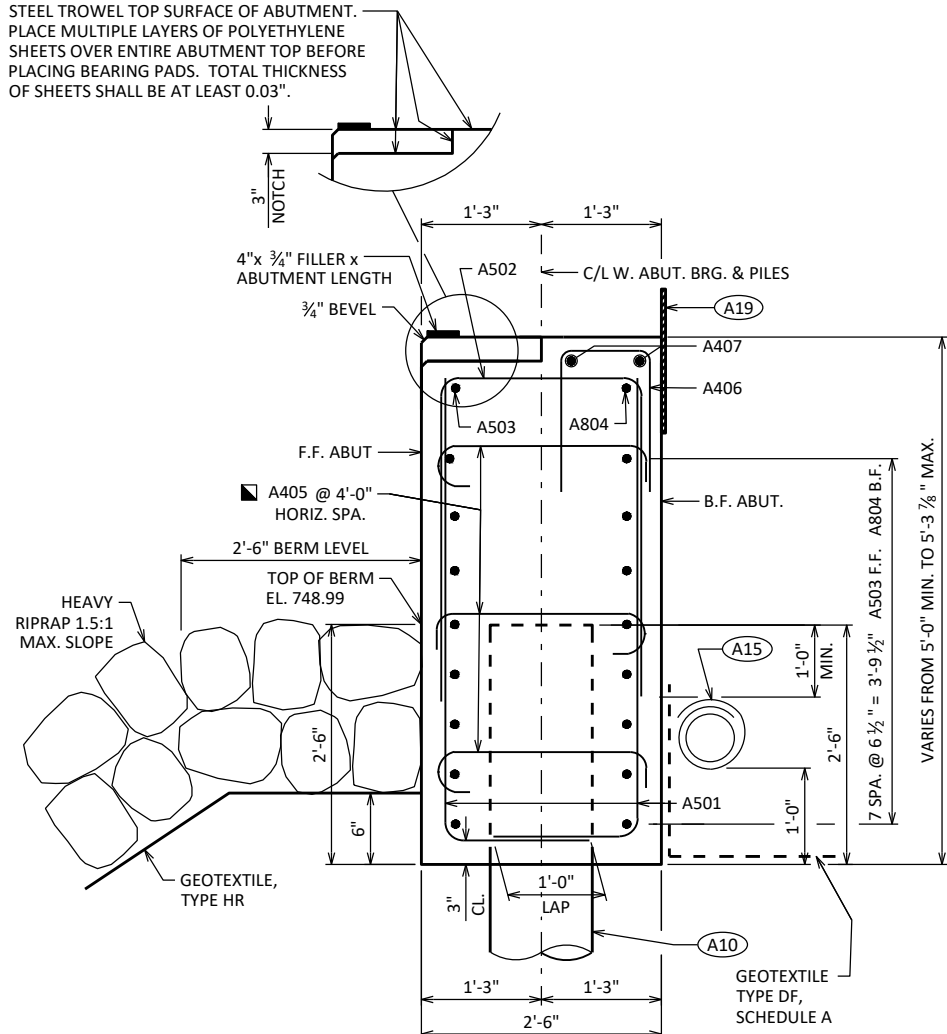
WING 1 SHOWN, WING 2 SIMILAR
SHOWING LOWER WING REINFORCEMENT



SECTION THRU WING 1

- A01** OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- A10** SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375-INCH CIP CONCRETE PILING. ESTIMATED 55' LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.
- A15** PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17** 1/2" FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 3/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19** 18" RUBBERIZED MEMBRANE WATERPROOFING, ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY STRUCTURES".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
DRAWN BY		CLP	PLANS CK'D JMC
WEST ABUTMENT WING DETAILS		SHEET 6 OF 17	



SECTION THRU BODY

A501

A502, A406, A409

A408

A405

A804, A510, A811

A415

A416

A417

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		76	6'-0"	X		ABUT BODY STIRRUPS
A502		38	8'-9"	X		ABUT BODY STIRRUPS - TOP U-BAR
A503		9	37'-0"			ABUT BODY HORIZ. - F.F.
A804		18	24'-9"	X		ABUT BODY HORIZ. - B.F.
A405		30	2'-11"	X		ABUT BODY TIE BARS
A406		22	3'-9"	X		ABUT. BODY TOP @ NOTCH VERT.
A407		2	32'-2"			ABUT. BODY TOP @ NOTCH HORIZ.
A408	X	44	8'-5"	X	▲	WINGS 1 & 2 STIRRUPS
A409	X	8	9'-4"	X		WINGS 1 & 2 STIRRUPS
A510	X	18	11'-9"	X		WINGS 1 & 2 LOWER HORIZ - F.F.
A811	X	18	13'-5"	X		WINGS 1 & 2 LOWER HORIZ. - B.F.
A412	X	4	10'-3"			WINGS 1 & 2 UPPER HORIZ.
A413	X	4	8'-1"			WINGS 1 & 2 UPPER HORIZ.
A414	X	4	5'-5"			WINGS 1 & 2 UPPER HORIZ.
A415	X	4	10'-5"	X		WINGS 1 & 2 UPPER DIAG.
A416	X	8	8'-2"	X		WINGS 1 & 2 TOP HORIZ. CORNER
A417	X	12	5'-7"	X		WINGS 1 & 2 TOP VERT. CORNER

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY.

BAR MARK	NO. REQ'D.	LENGTH
A408	4 SERIES OF 11	7'-7" TO 9'-3"

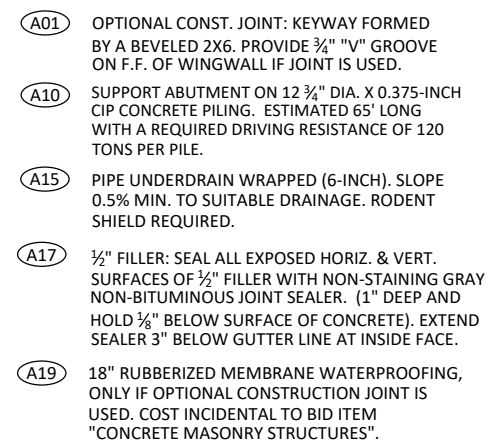
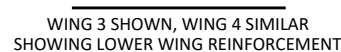
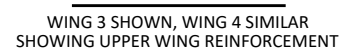
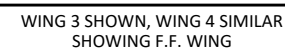
- (A10) SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375-INCH CIP CONCRETE PILING. ESTIMATED 55' LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
		DRAWN BY CLP	PLANS CK'D JMC
WEST ABUTMENT BILL OF BARS AND DETAILS		SHEET 7 OF 17	

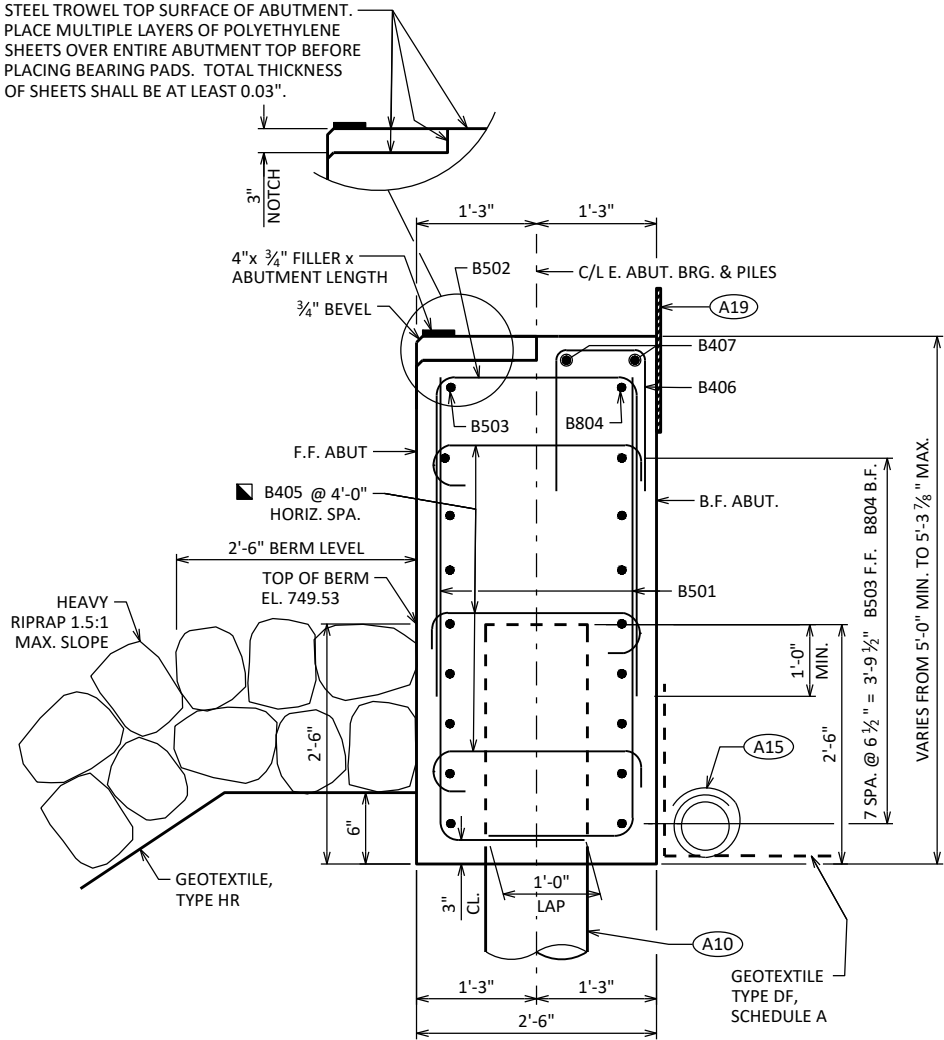


- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
	DRAWN BY	CLP	PLANS CK'D JMC
EAST ABUTMENT		SHEET 8 OF 17	

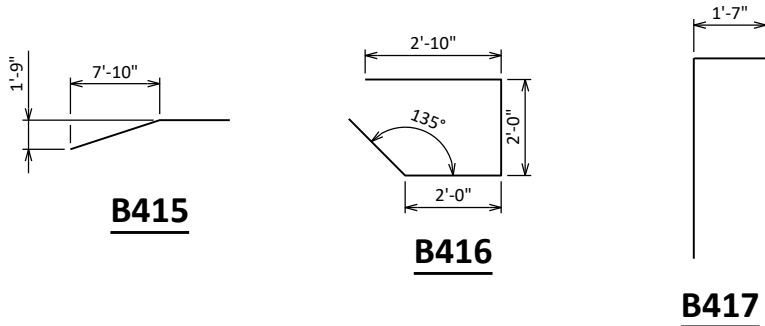
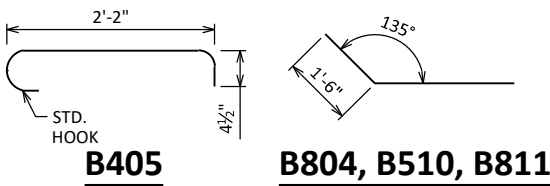
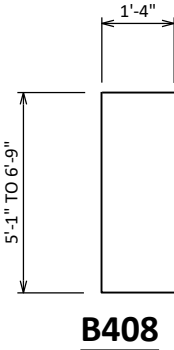
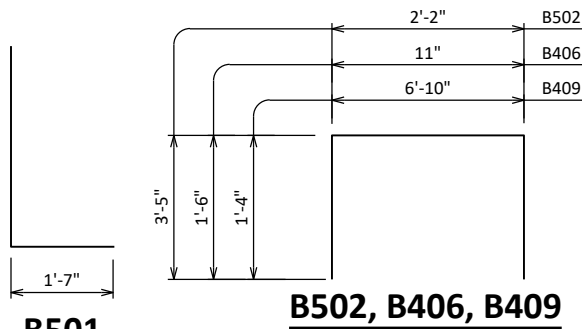


NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION					
STRUCTURE B-69-55					
		DRAWN BY	CLP	PLANS CK'D	JMC
EAST ABUTMENT WING DETAILS			SHEET 9 OF 17		



SECTION THRU BODY

- (A10) SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375-INCH CIP CONCRETE PILING. ESTIMATED 65' LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.



BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		76	6'-0"	X		ABUT BODY STIRRUPS
B502		38	8'-9"	X		ABUT BODY STIRRUPS - TOP U-BAR
B503		9	37'-0"			ABUT BODY HORIZ. - F.F.
B804		18	24'-9"	X		ABUT BODY HORIZ. - B.F.
B405		30	2'-11"	X		ABUT BODY TIE BARS
B406		22	3'-9"	X		ABUT. BODY TOP @ NOTCH VERT.
B407		2	32'-2"			ABUT. BODY TOP @ NOTCH HORIZ.
B408	X	44	8'-5"	X	▲	WINGS 3 & 4 STIRRUPS
B409	X	8	9'-4"	X		WINGS 3 & 4 STIRRUPS
B510	X	18	11'-9"	X		WINGS 3 & 4 LOWER HORIZ - F.F.
B811	X	18	13'-5"	X		WINGS 3 & 4 LOWER HORIZ. - B.F.
B412	X	4	10'-3"			WINGS 3 & 4 UPPER HORIZ.
B413	X	4	8'-1"			WINGS 3 & 4 UPPER HORIZ.
B414	X	4	5'-5"			WINGS 3 & 4 UPPER HORIZ.
B415	X	4	10'-5"	X		WINGS 3 & 4 UPPER DIAG.
B416	X	8	8'-2"	X		WINGS 3 & 4 TOP HORIZ. CORNER
B417	X	12	5'-7"	X		WINGS 3 & 4 TOP VERT. CORNER

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY.

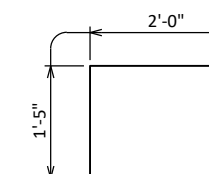
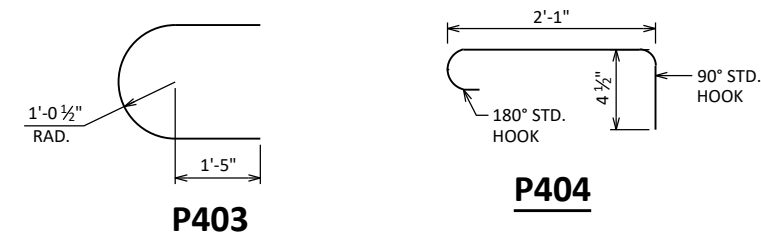
BAR MARK	NO. REQ'D.	LENGTH
B408	4 SERIES OF 11	7'-7" TO 9'-3"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
DRAWN BY		CLP	PLANS CK'D JMC
EAST ABUTMENT BILL OF BARS AND DETAILS		SHEET 10 OF 17	

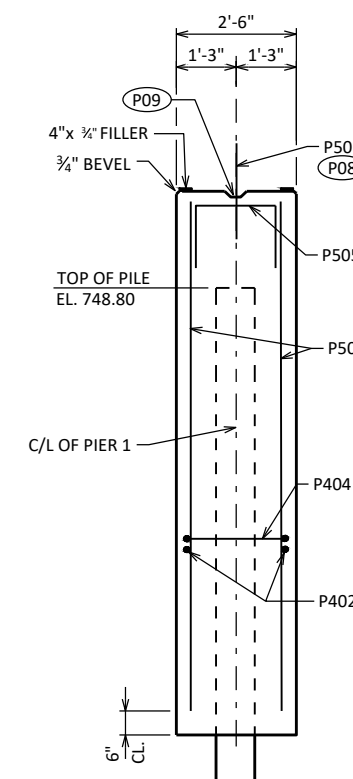
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P501		64	10'-7"			COLUMN VERT.
P402		24	28'-6"			COLUMN HORIZ.
P403		24	6'-1"	X		COLUMN HORIZ.
P404		88	2'-10"	X		COLUMN TIES
P505		16	4'-7"	X		COLUMN TOP
P506	x	29	2'-0"			COLUMN DOWELS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



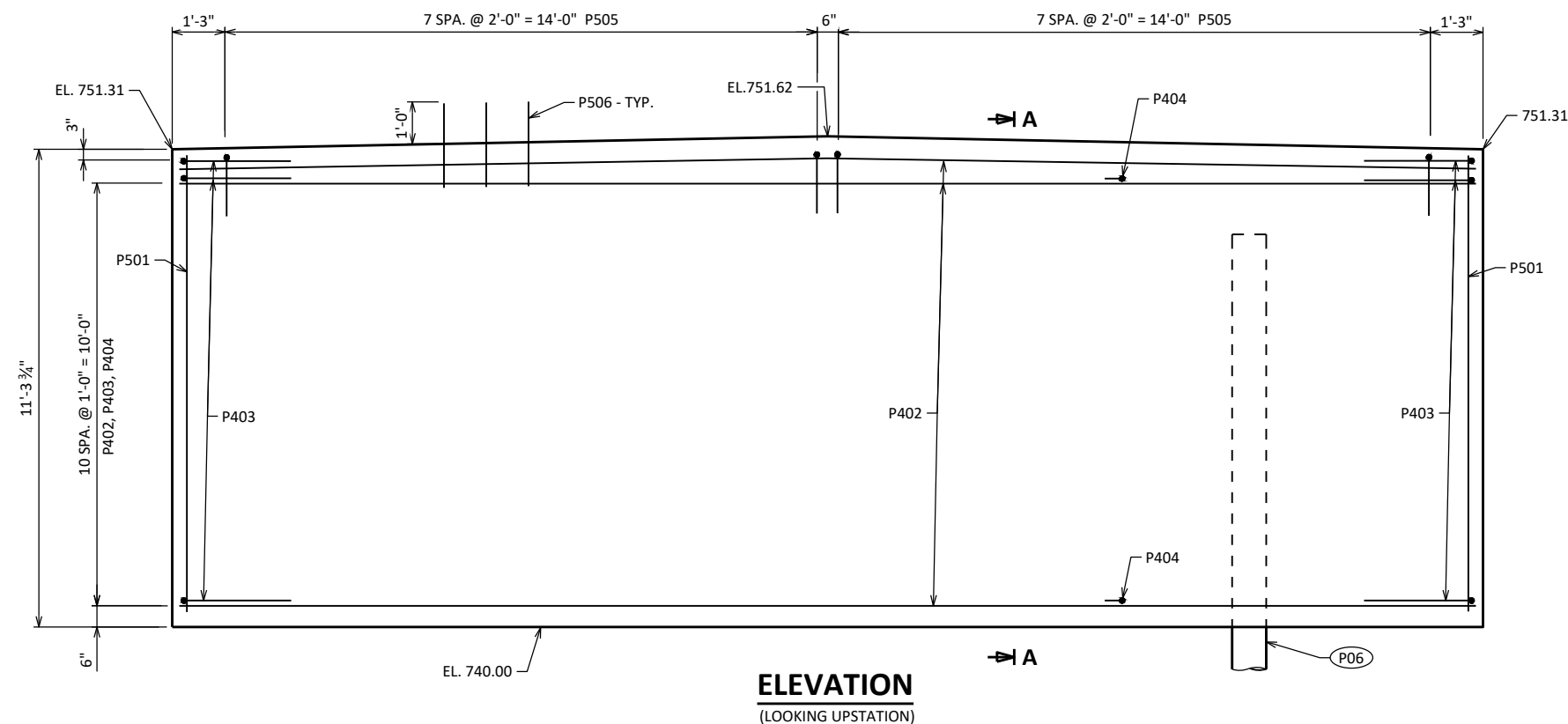
P505



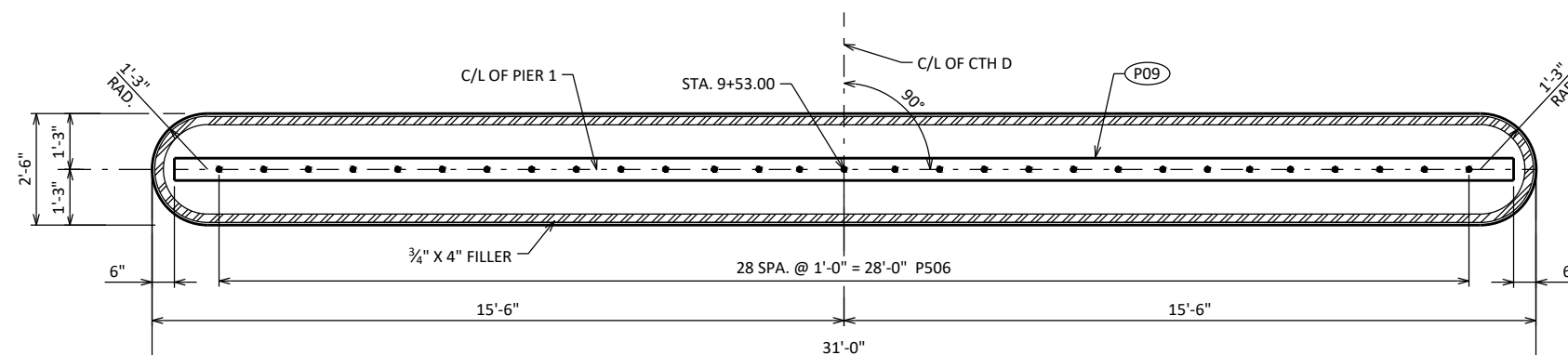
SECTION A

- P06** SUPPORT PIER ON 12 3/4" DIA. X 0.375-INCH CIP CONCRETE PILING, ESTIMATED 85'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.
- P08** BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- P09** KEYED CONST. JOINT - FORMED BY A BEVELED 2 x 6 BETWEEN BEAM SEATS.
-  ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

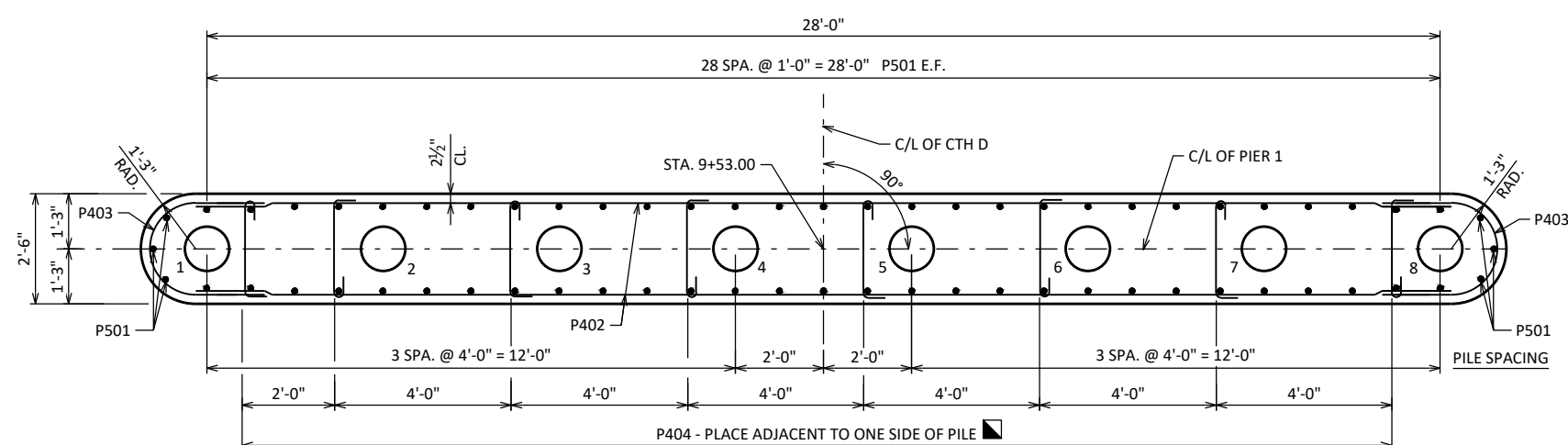
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-69-55	
		DRAWN BY	CLP
		PLANS CK'D	JMC
PIER 1		SHEET 11 OF 17	



ELEVATION
(LOOKING UPSTATION)



PLAN



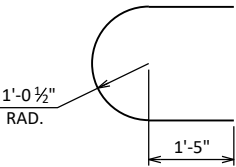
PILE LAYOUT

BILL OF BARS

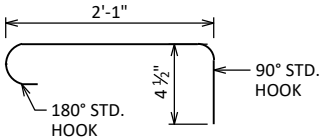
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
T501		64	10'-9"			COLUMN VERT.
T402		24	28'-6"			COLUMN HORIZ.
T403		24	6'-1"	X		COLUMN HORIZ.
T404		88	2'-10"	X		COLUMN TIES
T505		16	4'-7"	X		COLUMN TOP
T506	x	29	2'-0"			COLUMN DOWELS

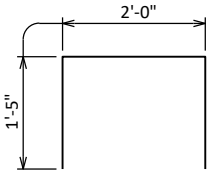
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



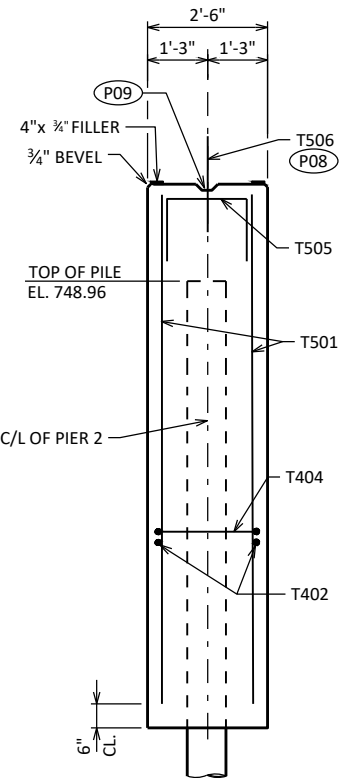
T403



T404



T505



SECTION A

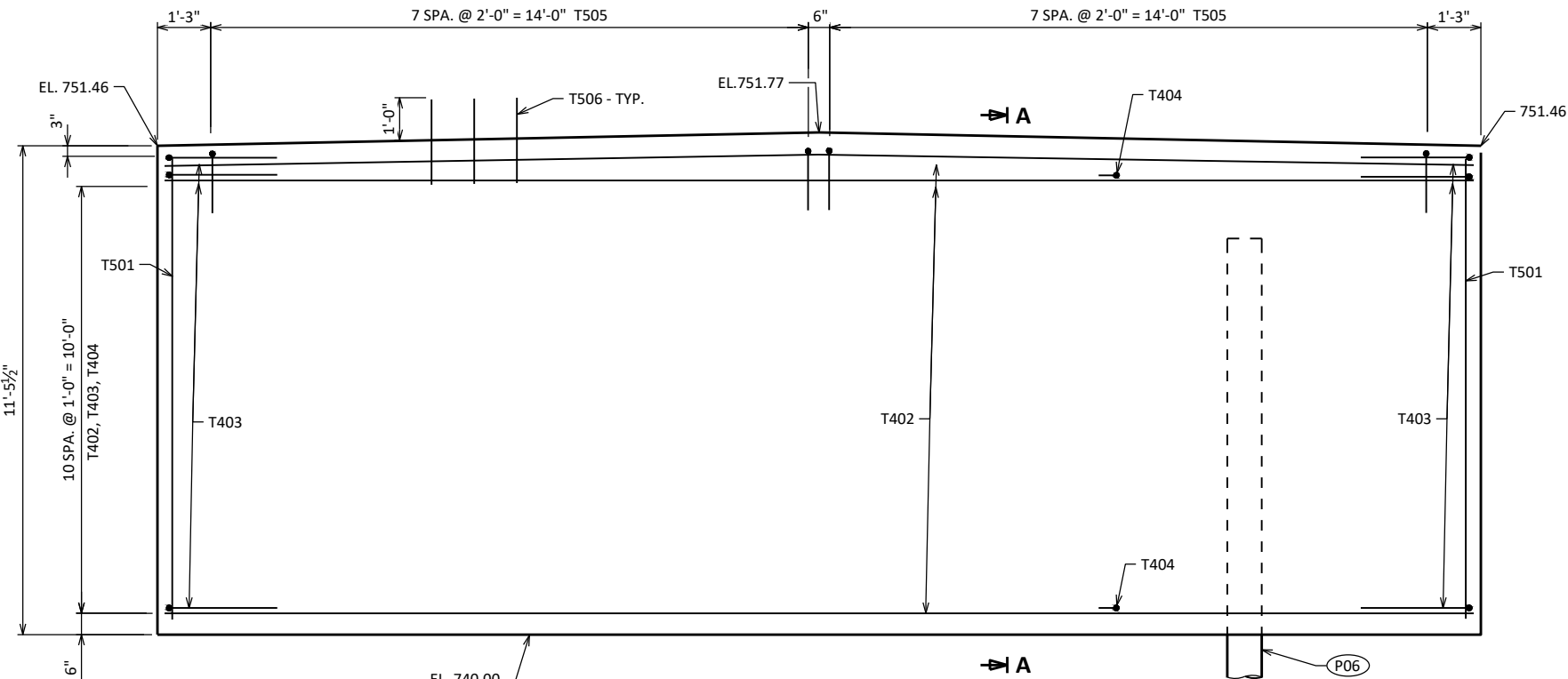
- P06

 SUPPORT PIER ON 12 3/4" DIA. X 0.375-INCH CIP CONCRETE PILING, ESTIMATED 95'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.
- P08

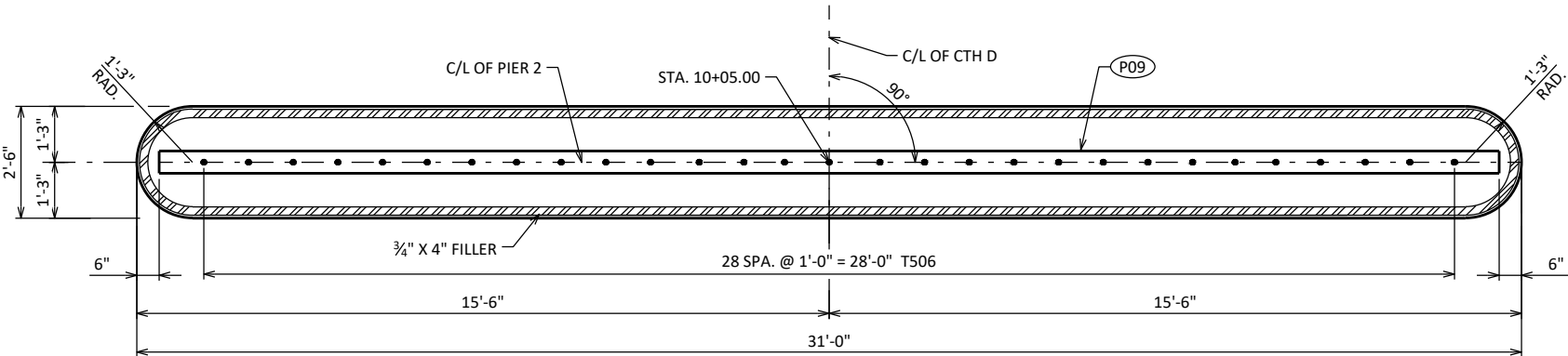
 BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- P09

 KEYED CONST. JOINT - FORMED BY A BEVELED 2 x 6 BETWEEN BEAM SEATS.
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

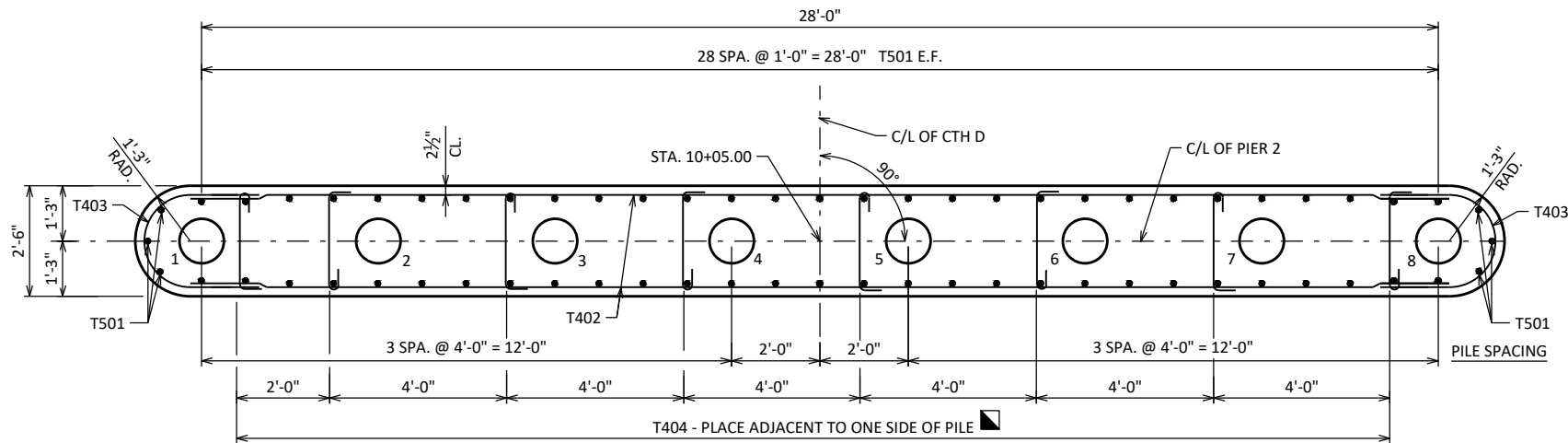
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
DRAWN BY		CLP	PLANS CK'D JMC
PIER 2		SHEET 12 OF 17	



ELEVATION
(LOOKING UPSTATION)



PLAN



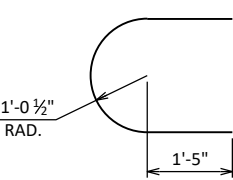
PILE LAYOUT

BILL OF BARS

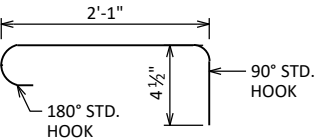
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
V501		64	8'-11"			COLUMN VERT.
V402		20	28'-6"			COLUMN HORIZ.
V403		20	6'-1"	X		COLUMN HORIZ.
V404		72	2'-10"	X		COLUMN TIES
V505		16	4'-7"	X		COLUMN TOP
V506	x	29	2'-0"			COLUMN DOWELS

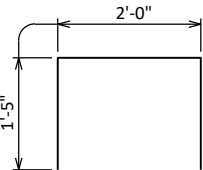
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



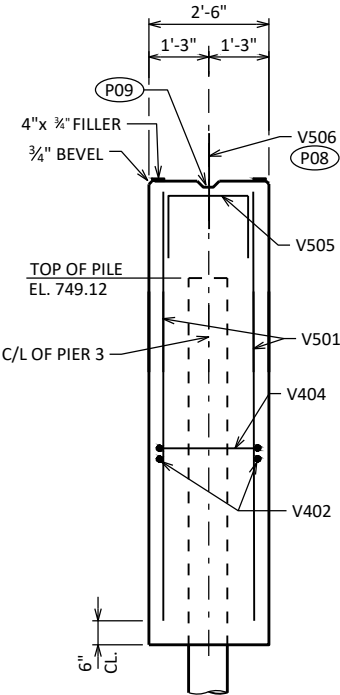
V403



V404



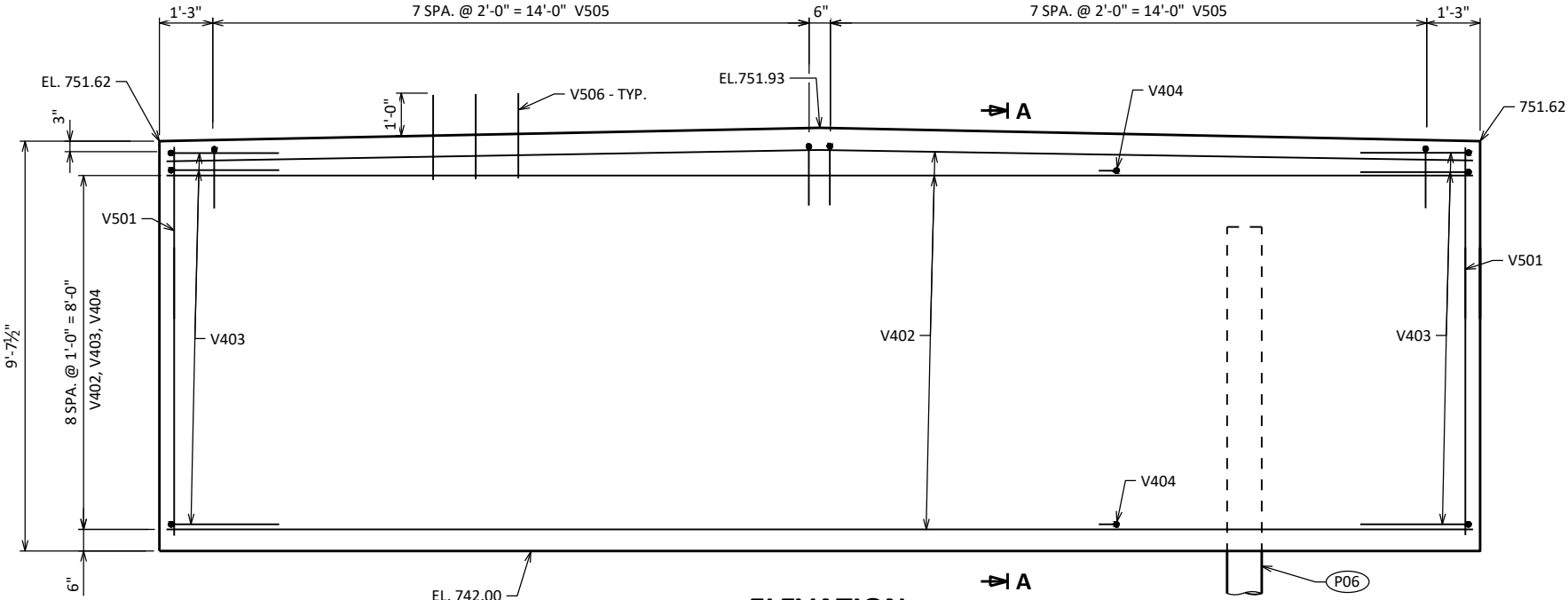
V505



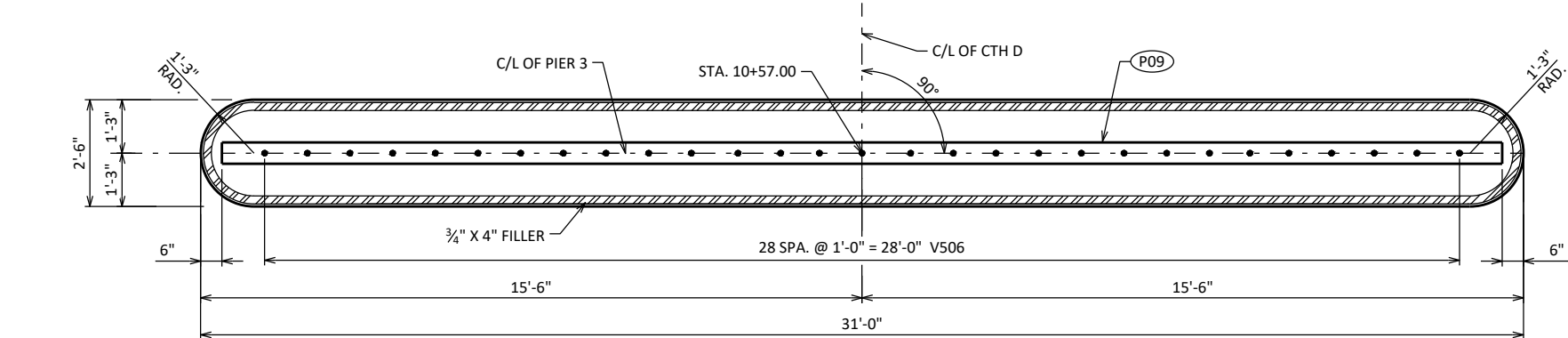
SECTION A

- P06 SUPPORT PIER ON 12 3/4" DIA. X 0.375-INCH CIP CONCRETE PILING, ESTIMATED 95'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.
- P08 BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- P09 KEYED CONST. JOINT - FORMED BY A BEVELED 2 x 6 BETWEEN BEAM SEATS.
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

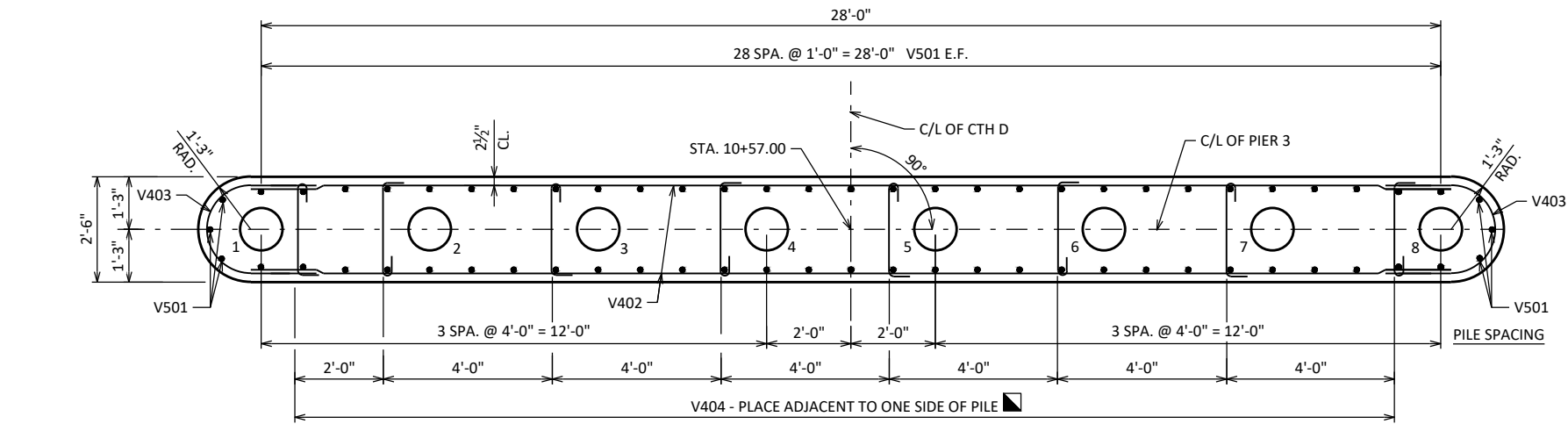
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
DRAWN BY		CLP	PLANS CK'D JMC
PIER 3		SHEET 13 OF 17	



ELEVATION
(LOOKING UPSTATION)



PLAN



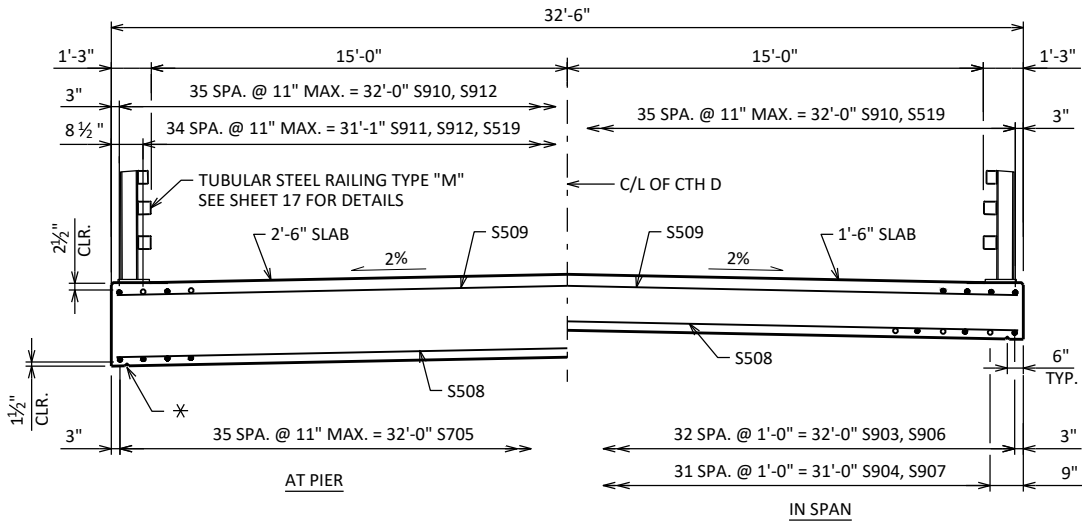
PILE LAYOUT

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	66	3'-3"	X		SLAB @ ABUT. NOTCH
S402	X	4	32'-2"			SLAB @ ABUT. NOTCH
S903	X	66	35'-0"			SLAB LONG. BOT. SPANS 1 & 4
S904	X	64	23'-3"			SLAB LONG. BOT. SPANS 1 & 4
S705	X	108	20'-0"	X		SLAB LONG. BOT. @ PIERS
S906	X	66	42'-2"			SLAB LONG. BOT. SPANS 2 & 3
S907	X	64	29'-1"			SLAB LONG. BOT. SPANS 2 & 3
S508	X	189	32'-2"			SLAB TRANS. BOT.
S509	X	181	32'-2"			SLAB TRANS. TOP
S910	X	72	47'-3"			SLAB LONG. TOP @ PIERS 1 & 3
S911	X	70	43'-6"			SLAB LONG. TOP @ PIERS 1 & 3
S912	X	71	47'-4"			SLAB LONG. TOP @ PIER 2
S514	X	66	7'-3"	X		SLAB @ ABUT. DIAPHRAGM STIRRUPS
S515	X	4	32'-2"			SLAB @ ABUT. DIAPHRAGM TRANS.
S616	X	116	11'-3"	X		SLAB @ RAIL POSTS
S617	X	216	6'-0"			SLAB @ INT. RAIL POSTS
S618	X	16	4'-8"	X		SLAB @ END RAIL POSTS
S519	X	70	12'-8"			SLAB LONG. TOP @ ABUT.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



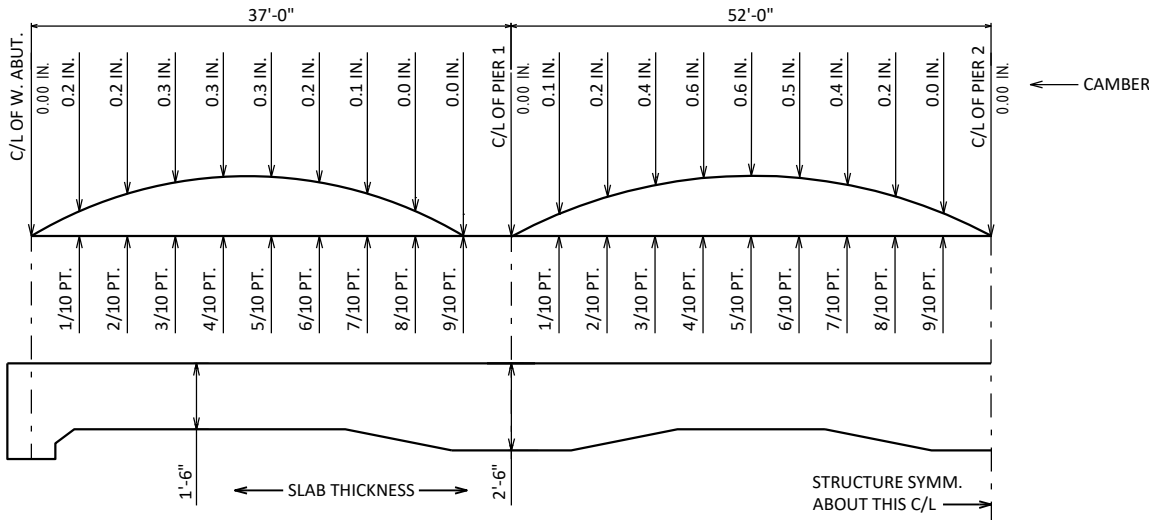
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

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

* 3/4" V-GROOVE. EXTEND V-GROOVE TO 6" FROM F.F. OF ABUT.

V-GROOVES ARE REQUIRED.

TYPICAL SECTION THRU BRIDGE



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

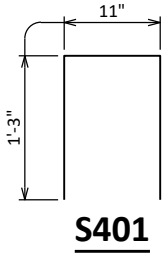
TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE FOLLOW THIS PROCEDURE:

MINUS	TOP OF SLAB ELEVATION AT FINAL GRADE
PLUS	SLAB THICKNESS
PLUS	CAMBER
PLUS	FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS	TOP OF SLAB FALSEWORK ELEVATION

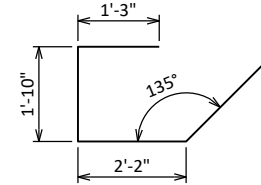
SURVEY TOP OF SLAB ELEVATIONS

	W. ABUTMENT	5/10 PT.	PIER 1	5/10 PT.	PIER 2	5/10 PT.	PIER 3	5/10 PT.	E. ABUTMENT
N. EDGE OF SLAB									
C/L OF CTH D									
S. EDGE OF SLAB									

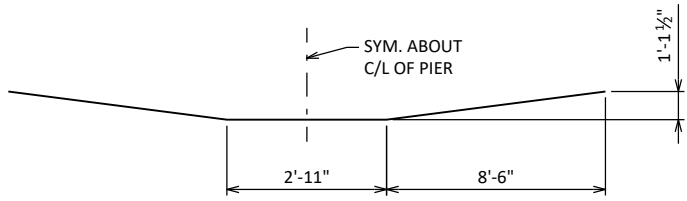
PRIOR TO RELEASING SLAB FORMWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C/L OF SUBSTRUCTURES, AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND C/L. RECORD ELEVATIONS IN THE TABLE ABOVE FOR THE "AS BUILT" PLANS.



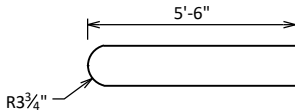
S401



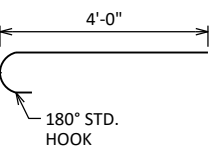
S514



S705

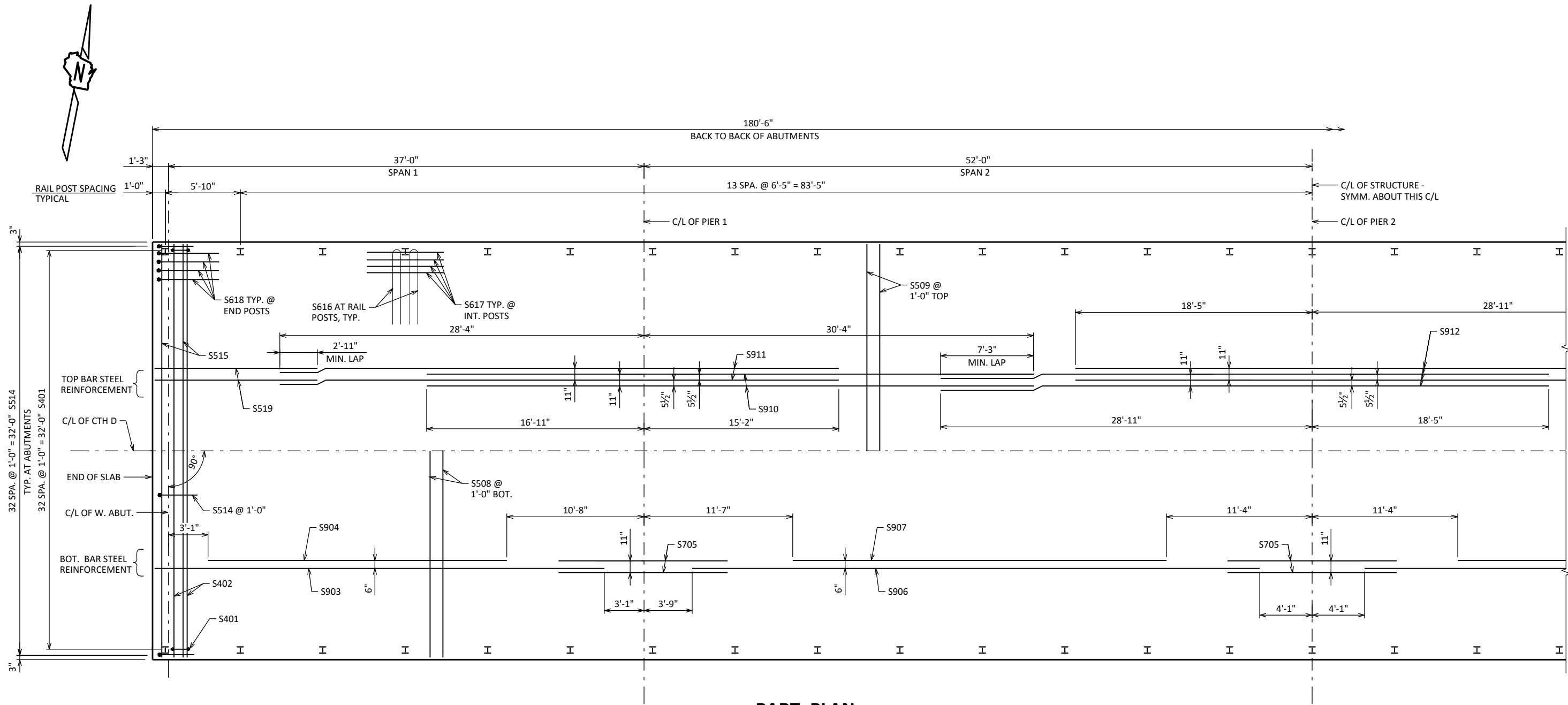


S616



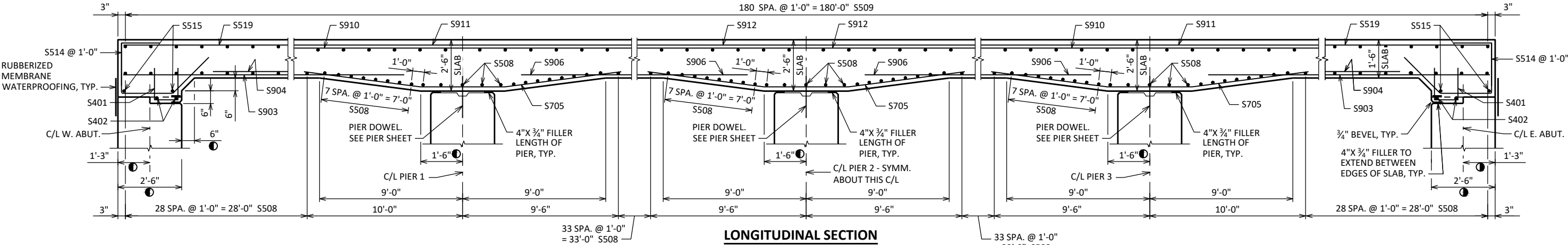
S618

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
DRAWN BY		CLP	PLANS CK'D JMC
SUPERSTRUCTURE			SHEET 14 OF 17



PART. PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
DRAWN BY		CLP	PLANS CK'D JMC
SUPERSTRUCTURE PLAN		SHEET 15 OF 17	



MEASURED NORMAL TO THE C/L OF SUBSTRUCTURES.
DIMENSIONS ARE TYPICAL FOR BOTH ABUTMENTS.

TOP OF SLAB ELEVATIONS

LOCATION	C/L W. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	C/L PIER 1
N. EDGE OF SLAB	753.74	753.75	753.76	753.78	753.79	753.80	753.81	753.82	753.83	753.84	753.85
C/L OF CTH D	754.07	754.08	754.09	754.10	754.11	754.12	754.13	754.15	754.16	754.17	754.18
S. EDGE OF SLAB	753.74	753.75	753.76	753.78	753.79	753.80	753.81	753.82	753.83	753.84	753.85

LOCATION	C/L PIER 1	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	C/L PIER 2
N. EDGE OF SLAB	753.85	753.87	753.87	753.90	753.92	753.93	753.95	753.96	753.98	754.00	754.01
C/L OF CTH D	754.18	754.20	754.21	754.23	754.24	754.26	754.27	754.29	754.31	754.32	754.34
S. EDGE OF SLAB	753.85	753.87	753.87	753.90	753.92	753.93	753.95	753.96	753.98	754.00	754.01

LOCATION	C/L PIER 2	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	C/L PIER 3
N. EDGE OF SLAB	754.01	754.03	754.04	754.06	754.07	754.09	754.11	754.12	754.14	754.15	754.17
C/L OF CTH D	754.34	754.35	754.37	754.38	754.40	754.42	754.43	754.45	754.46	754.48	754.49
S. EDGE OF SLAB	754.01	754.03	754.04	754.06	754.07	754.09	754.11	754.12	754.14	754.15	754.17

LOCATION	C/L PIER 3	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	C/L E. ABUT.
N. EDGE OF SLAB	754.17	754.18	754.19	754.20	754.21	754.21	754.24	754.25	754.26	754.27	754.28
C/L OF CTH D	754.49	754.51	754.52	754.53	754.54	754.55	754.56	754.57	754.58	754.60	754.61
S. EDGE OF SLAB	754.17	754.18	754.19	754.20	754.21	754.21	754.24	754.25	754.26	754.27	754.28

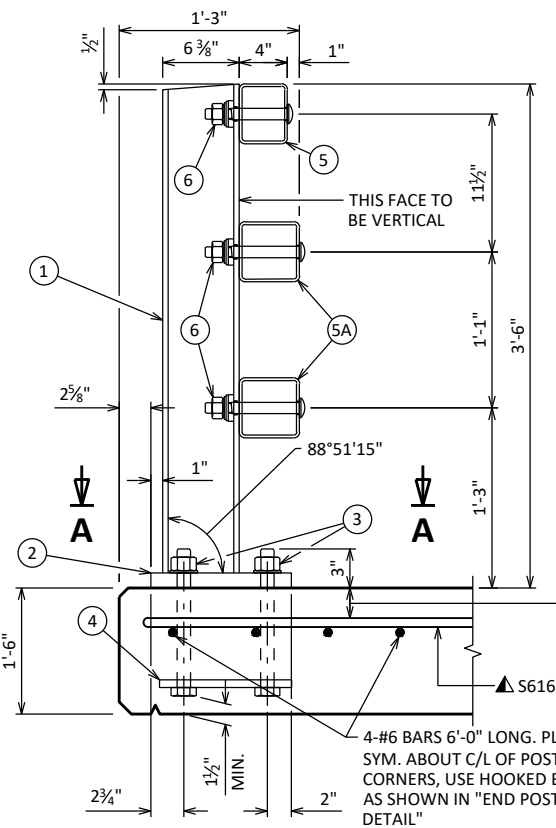
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
DRAWN BY CLP		PLANS CK'D JMC	
SUPERSTRUCTURE DETAILS		SHEET 16 OF 17	

LEGEND

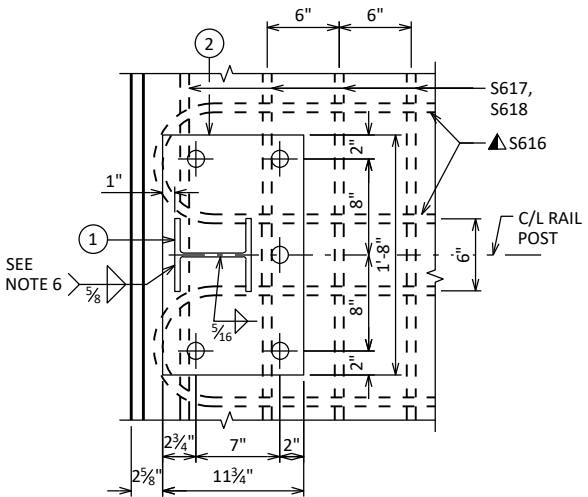
- 1 W6 X 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- 2 PLATE 1 1/4" X 11 3/4" X 1'-8" WITH 1 1/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- 3 ASTM A449 - 1 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
- 4 5/8" X 11" X 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- 5 TS 5 X 4 X 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 5A TS 5 X 5 X 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 6 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- 7 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" X 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- 8 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- 9 SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- 10 3/8" X 3 5/8" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- 10A 3/8" X 2 5/8" X 2'-4" PLATE USED IN NO. 5, 3/8" X 3 5/8" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- 11 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/16" X 1 1/4" LONGIT. SLOTTED HOLES IN PLATE NO. 10A. AT FIELD JOINTS AND 1 5/16" X 2 3/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A. PROVIDE 1 5/16" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.
- 12 7/8" DIA. X 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D.).
- 13 3/8" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- 14 7/8" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- 15 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

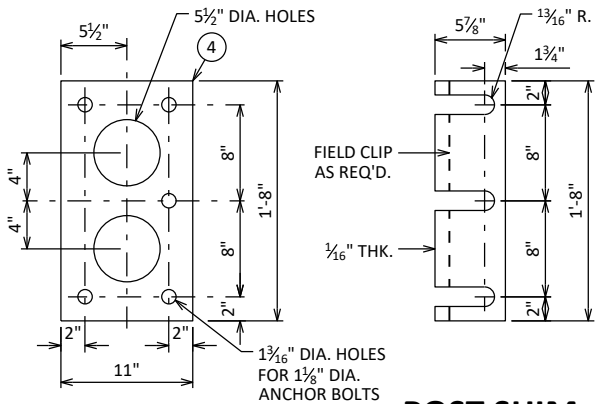
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.



SECTION THRU RAILING ON SLAB

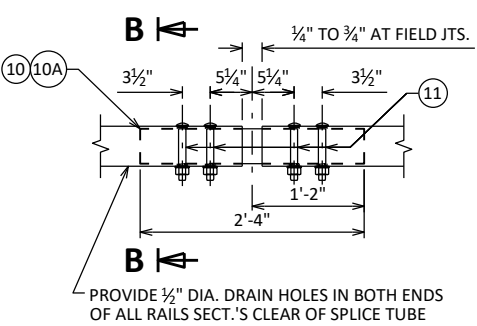


SECTION A-A

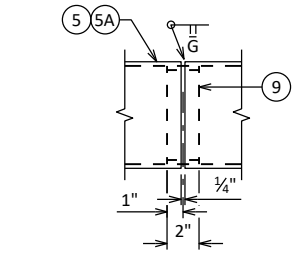


ANCHOR PLATE
AT RAIL TO SLAB CONNECTION

POST SHIM
DETAIL



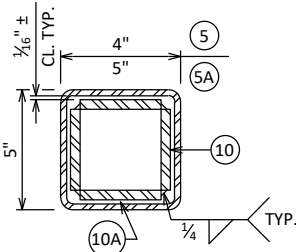
FIELD ERECTION JOINT DETAIL



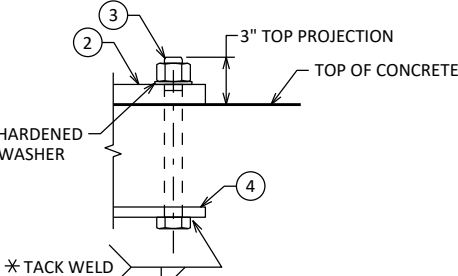
SHOP RAIL SPLICE DETAIL

LOCATION MUST BE SHOWN
ON SHOP DRAWINGS

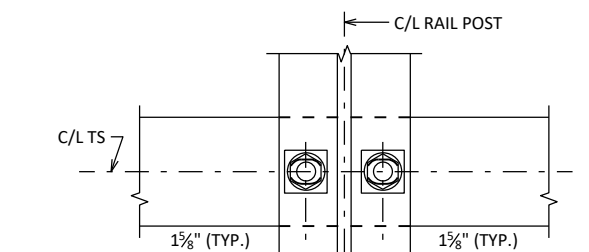
PLACE BELOW TOP MAT SLAB
REINFORCEMENT



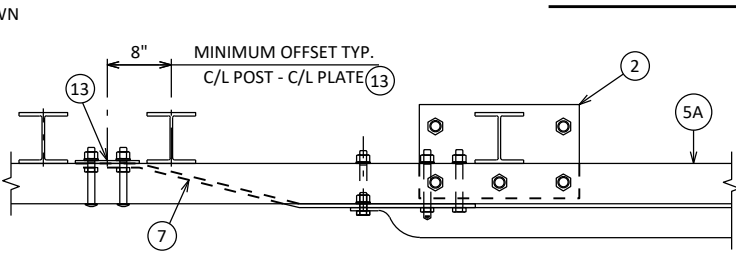
SECTION B-B



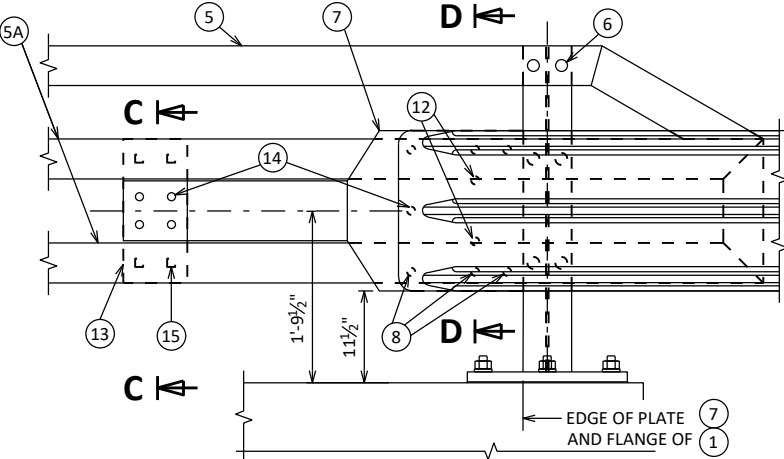
ANCHOR BOLTS



TYPICAL RAIL TO POST CONNECTIONS

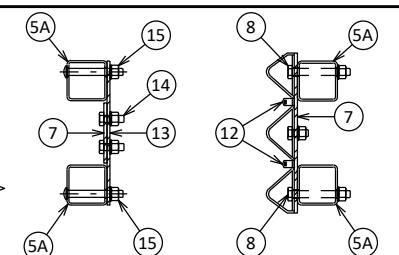


TOP VIEW AT END POST

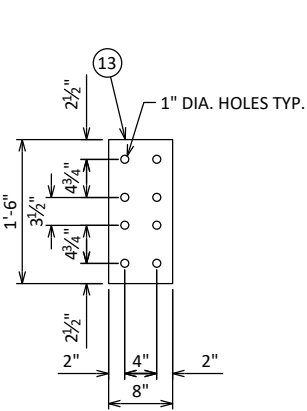


DETAIL AT END POST

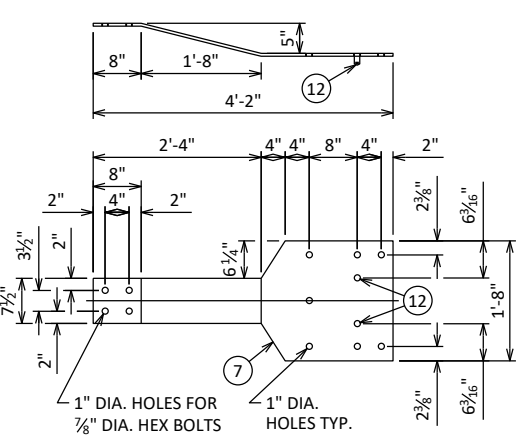
THRIE BEAM RAIL ATTACHMENT



SECTION C-C SECTION D-D

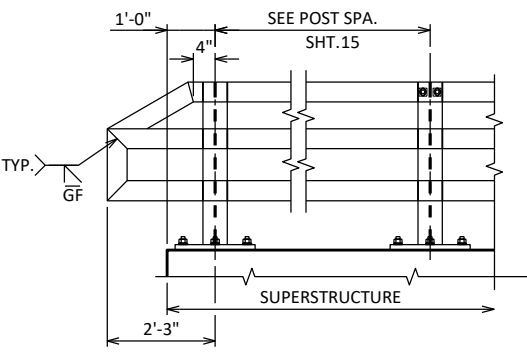


ANCHOR PLATE
AT BEAM GUARD ATTACHMENT



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

▲ TIE TO TOP MAT OF STEEL.

* ANCHOR BOLT ASSEMBLY MAY BE TACK
WELDED, EITHER IN THE SHOP, OR IN THE
FIELD AFTER THE ANCHOR PLATE IS PLACED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-55			
DRAWN BY		CLP	PLANS CK'D JMC
TUBULAR STEEL RAILING TYPE M		SHEET 17 OF 17	

SCALE =

CTH D (MAINLINE)									
STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
				NOTE 1	NOTE 2	NOTE 3	1.00 NOTE 1	1.25	NOTE 8
7+85.01	47.32	7.50	0.00	0	0	0	0	0	0
8+00.40	98.35	7.50	0.00	42	4	0	42	0	38
8+12.90	102.33	7.50	0.00	46	3	0	88	0	81
8+37.89	99.30	7.50	0.00	93	7	0	181	0	167
8+50.00	91.75	7.50	0.00	43	3	0	224	0	207
8+62.88	87.50	7.50	0.00	43	4	0	267	0	246
9+00.00	75.41	7.50	3.53	112	10	2	379	3	346
9+04.75	72.85	7.50	7.39	13	1	1	392	4	356
9+14.75	72.85	7.50	7.39	27	3	3	419	8	377
B-69-0055									
10+95.25	48.77	7.50	38.08	0	0	0	419	8	377
11+05.25	48.77	7.50	38.08	18	3	14	437	25	374
11+50.00	61.98	7.50	6.42	92	12	37	529	71	408
11+72.11	67.08	7.50	1.58	53	6	3	582	75	451
11+97.11	71.82	7.50	12.89	64	7	7	646	84	499
12+00.00	72.51	7.50	13.01	8	1	1	654	85	505
12+09.61	74.04	7.50	16.23	26	3	5	680	91	522
12+22.05	76.56	7.50	21.47	35	3	9	715	103	543
12+34.61	78.62	7.50	15.42	36	3	9	751	114	564
12+50.00	81.90	7.50	11.67	46	4	8	797	124	596
12+59.55	83.91	7.50	8.68	29	3	4	826	129	617
12+65.00	25.97	7.50	5.29	11	2	1	837	130	625

TOTALS 837 82 104

NOTES:

1 - CUT

2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL

3 - FILL

8 - MASS ORDINATE

CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL

THIS DOES NOT SHOW UP IN CROSS SECTIONS

DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME

CUT - UNUSABLE PAVEMENT MATERIAL - (FILL * FILL FACTOR)

CTH D (NW SHOULDER)									
STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
				NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.25	NOTE 8
7+07.33	14.42	0.00	0.00	0	0	0	0	0	0
7+50.41	12.63	0.00	0.00	22	0	0	22	0	22
7+75.39	21.21	0.00	0.66	16	0	0	38	0	38
7+85.00	24.25	0.00	0.00	8	0	0	46	0	46

TOTALS 46 0 0

CTH D (SW SHOULDER)									
STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
				NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.25	NOTE 8
6+37.36	13.48	0.00	0.00	0	0	0	0	0	0
7+00.00	20.66	0.00	0.16	40	0	0	40	0	40
7+07.33	21.46	0.00	0.18	6	0	0	46	0	46
7+50.41	25.90	0.00	0.21	38	0	0	84	0	84
7+75.39	22.86	0.00	0.00	23	0	0	107	0	107
7+85.00	22.83	0.00	0.00	8	0	0	115	0	115

TOTALS 115 0 0

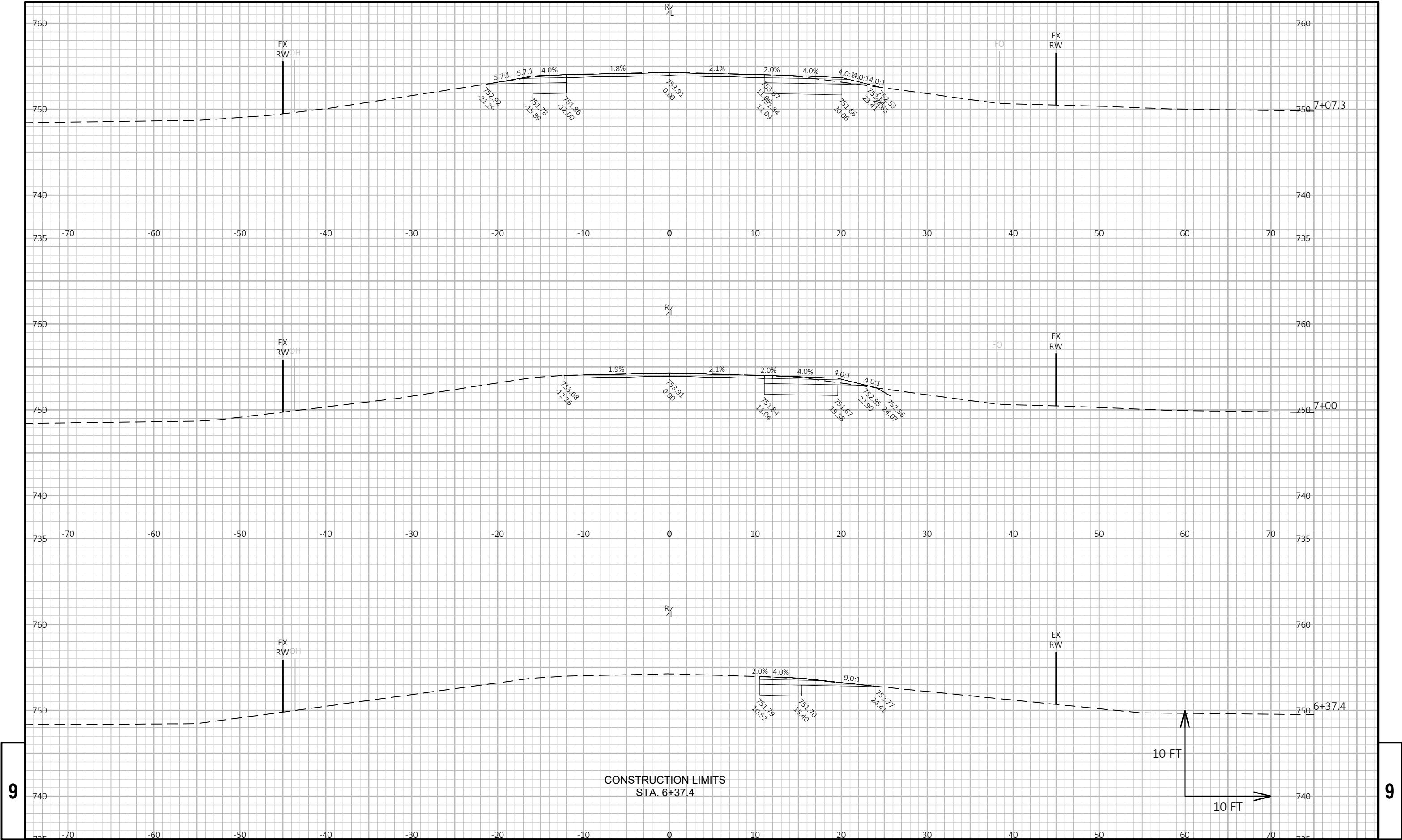
CTH D (NE SHOULDER)									
STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
				NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.25	NOTE 8
12+65.01	13.35	0.00	1.10	0	0	0	0	0	0
13+00.00	20.98	0.00	0.09	22	0	1	22	1	21
13+40.40	13.96	0.00	0.00	26	0	0	48	1	47
13+50.00	12.10	0.00	0.02	5	0	0	53	1	52
13+65.08	11.02	0.00	0.00	6	0	0	59	1	58

TOTALS 59 0 1

CTH D (SE SHOULDER)									
STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
				NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.25	NOTE 8
12+65.01	12.63	0.00	4.16	0	0	0	0	0	0
13+00.00	18.72	0.00	0.00	20	0	3	20	4	16
13+40.40	12.38	0.00	0.00	23	0	0	43	4	39

TOTALS 43 0 3

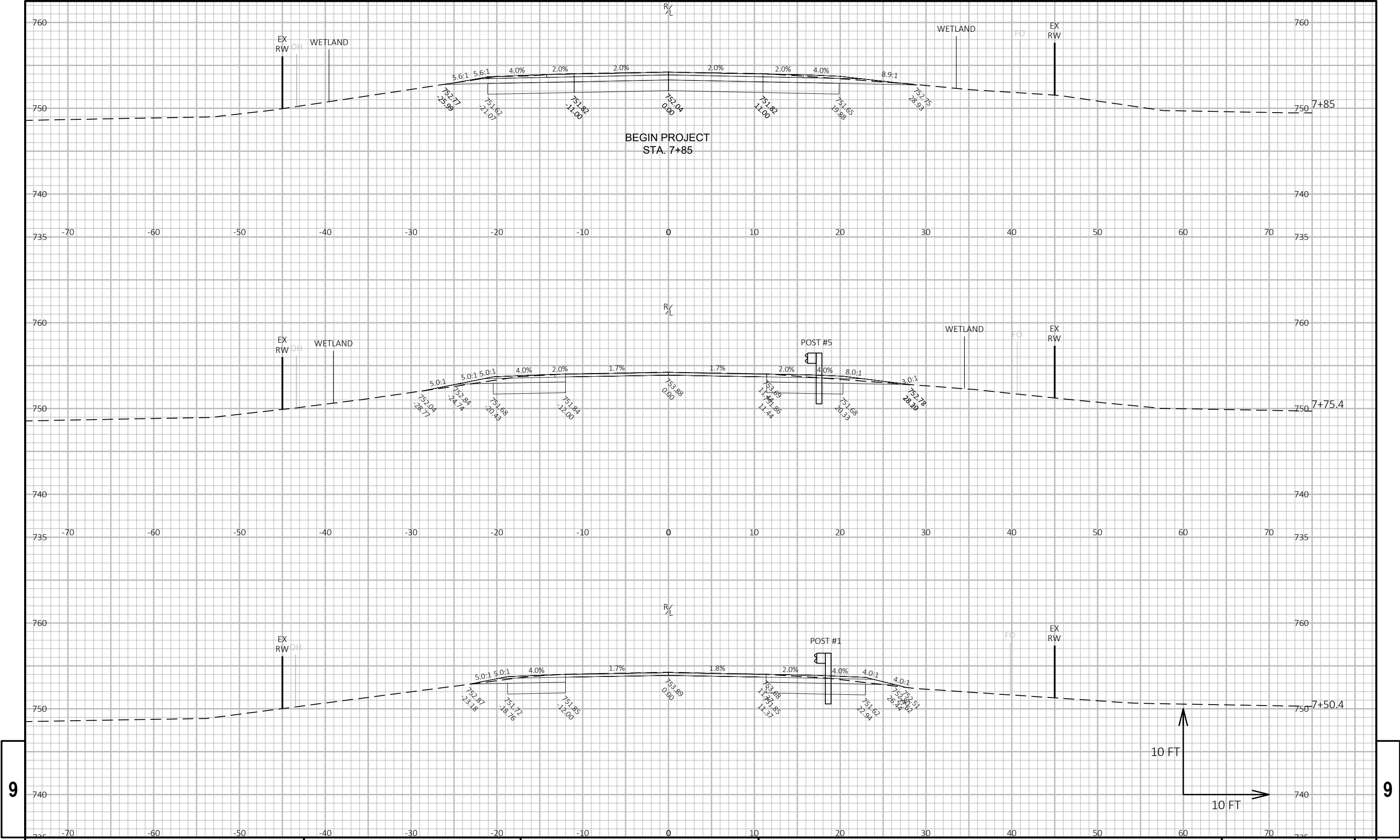
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	CUT - UNUSABLE PAVEMENT MATERIAL - (FILL * FILL FACTOR)

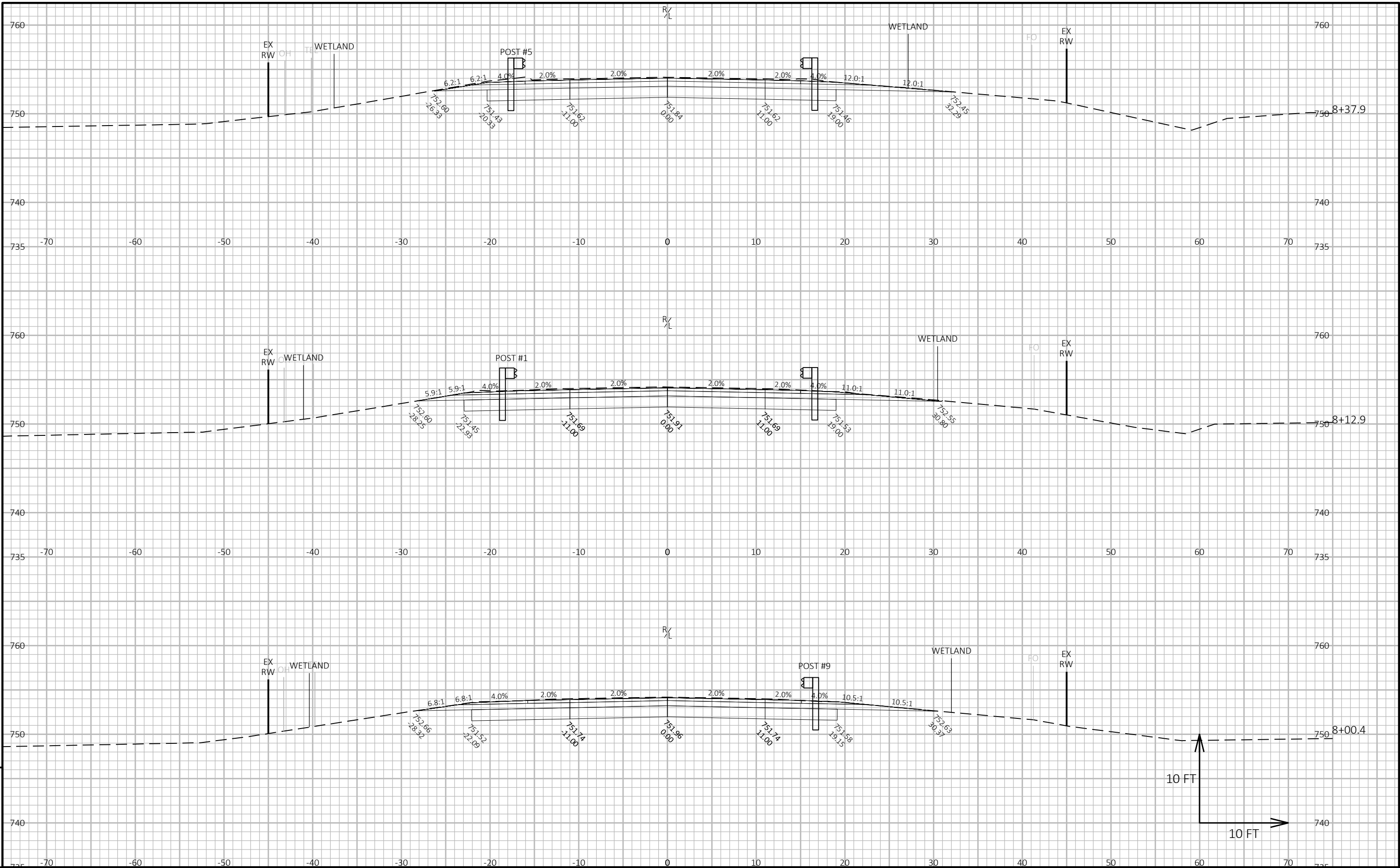


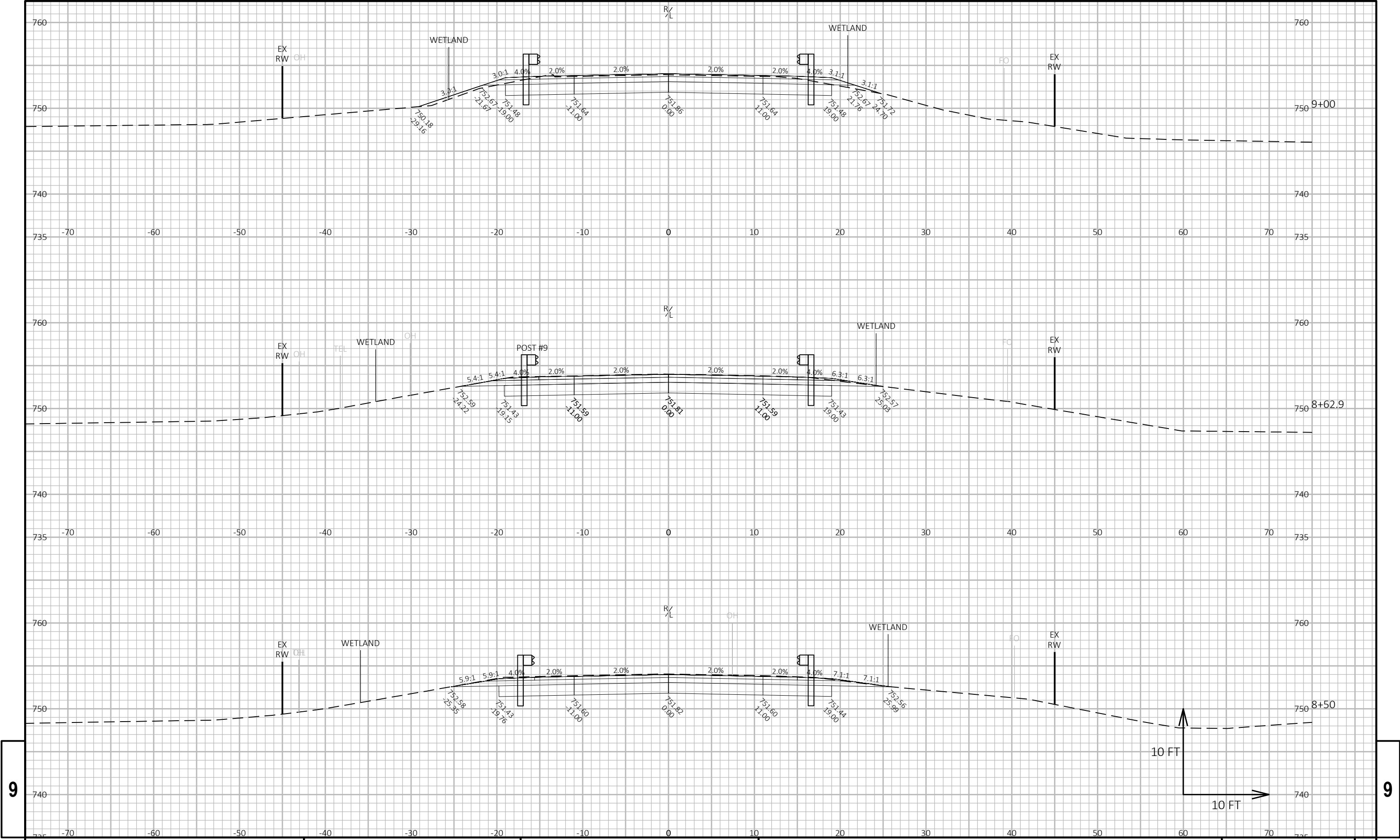
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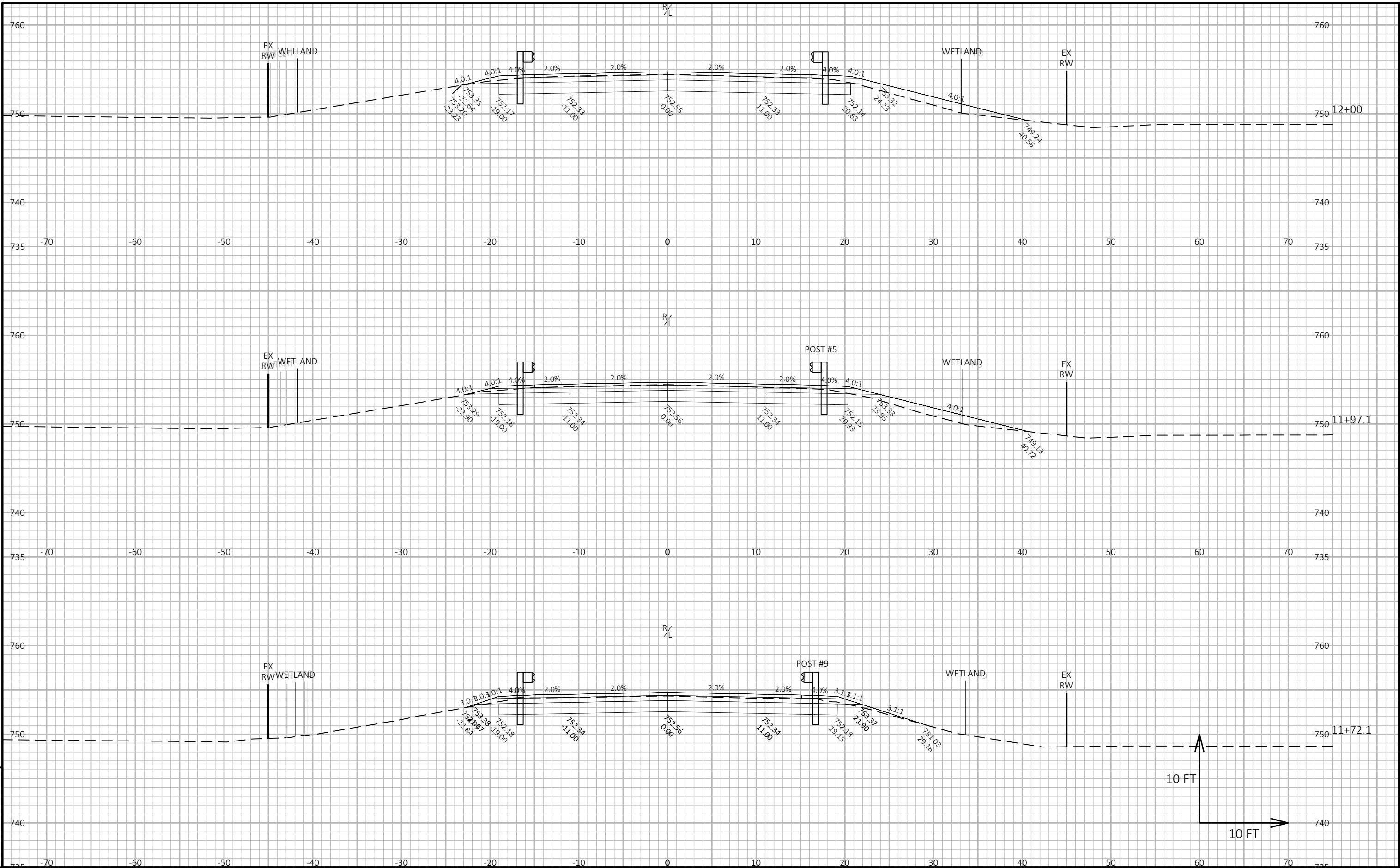
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PROJECT NO: 6911-00-72	HWY: CTH D	COUNTY: WAUSHARA	CROSS SECTIONS: CTH D	SHEET E
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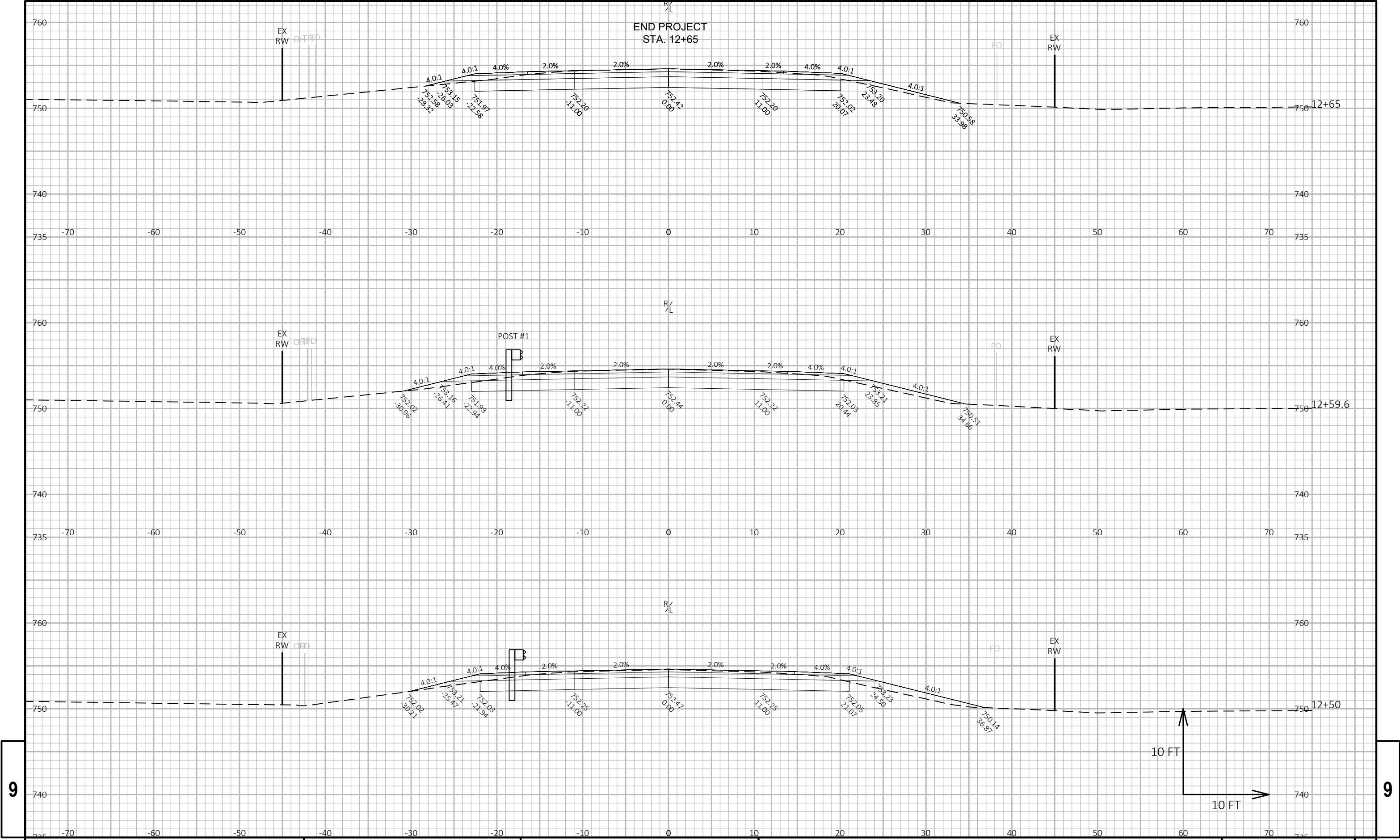


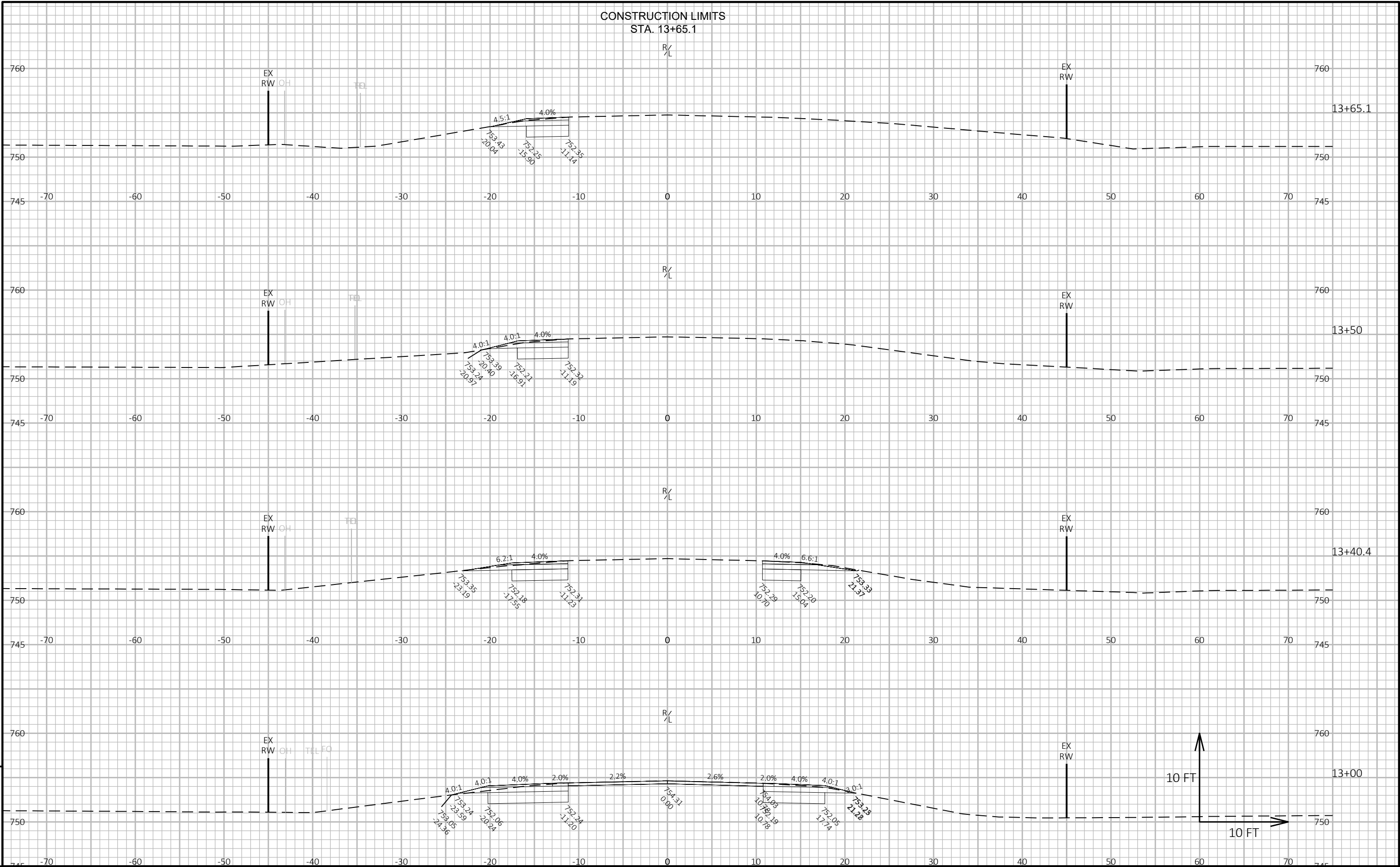


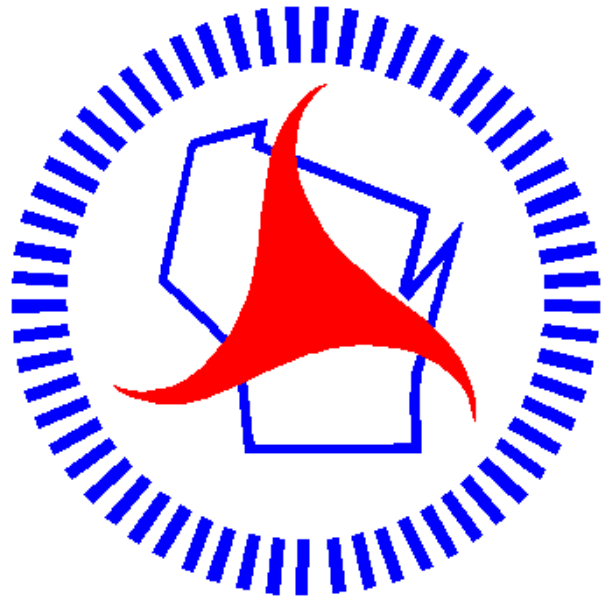
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9

PROJECT NO: 6911-00-72	HWY: CTH D	COUNTY: WAUSHARA	CROSS SECTIONS: CTH D	SHEET E
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Wisconsin Department of Transportation

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