

WKE

PROJECT ID:
WITH: N/A

2695-03-72

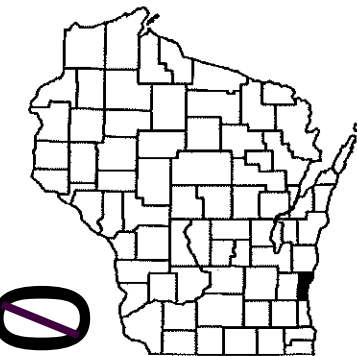
COUNTY:

OZAUKEE

OCTOBER 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 = 106



DESIGN DESIGNATION

A.A.D.T.	2027	=	1,400
A.A.D.T.	2047	=	1,500
D.H.V.		=	150
D.D.		=	59/41
T.		=	4.4%
DESIGN SPEED		=	40
ESALS		=	185,000

CONVENTIONAL SYMBOLS

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

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

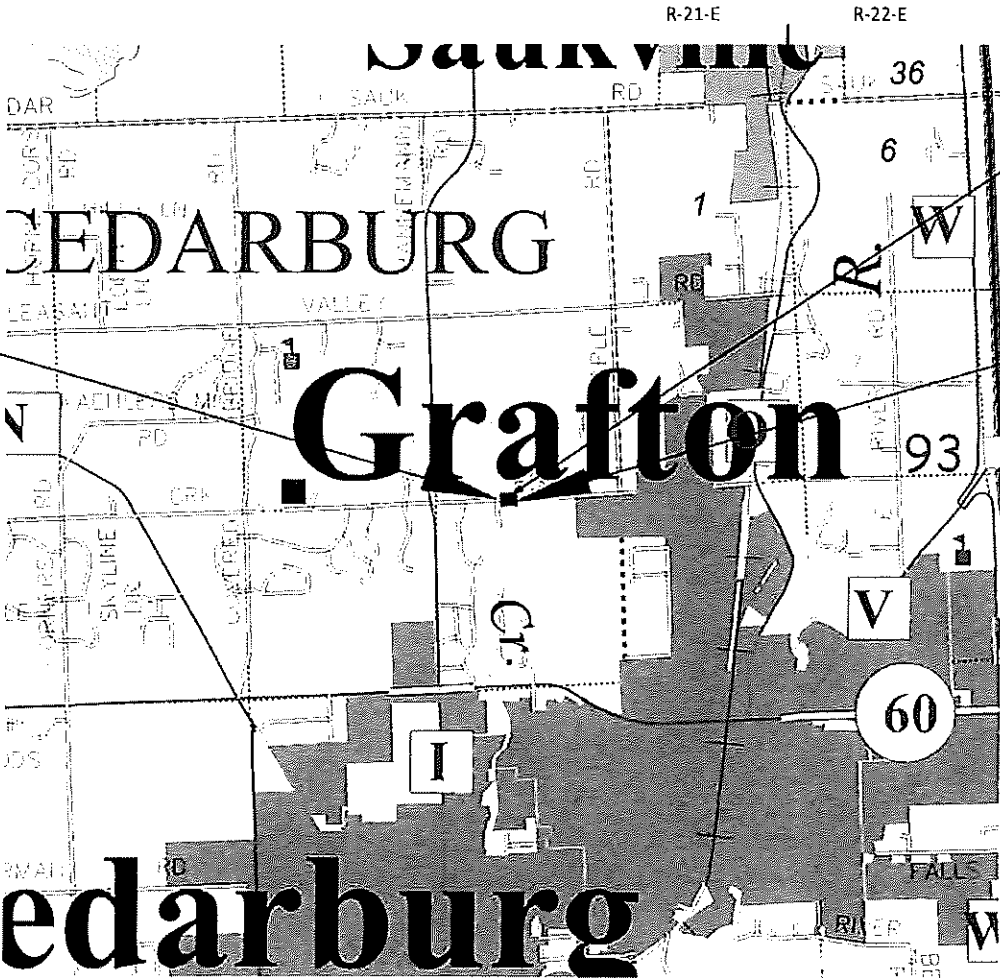
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
T CEDARBURG, CEDAR CREEK RD
CEDAR CREEK BRIDGE, P-45-38
LOCAL STREET
OZAUKEE COUNTY

STATE PROJECT NUMBER
2695-03-72

BEGIN PROJECT
STA 12+25.00
Y = 408,520.89
X = 587,722.97

REMOVE STRUCTURE P-45-38
STRUCTURE B-45-117

END PROJECT
STA 16+74.00
Y = 408,532.19
X = 588,171.83



LAYOUT
SCALE 0 1 MI
TOTAL NET LENGTH OF CENTERLINE = 0.098 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), OZAUKEE 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	FEDERAL PROJECT	
	PROJECT	CONTRACT
2695-03-72	WISC 2027318	1

ACCEPTED FOR	
TOWN	of CEDARBURG
7-31-2026 (Date)	<i>[Signature]</i> (Signature & Title of Official)
ORIGINAL PLANS PREPARED BY	
GRAEF 275 W. Wisconsin Avenue, Suite 300 Milwaukee, WI 53203	
7-30-26 <i>[Signature]</i>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	GRAEF
Designer	GRAEF
Project Manager	GREG HAFMAN
Regional Examiner	
Regional Supervisor	AMY TAETSCH
APPROVED FOR THE DEPARTMENT	
DATE: 07/31/2026	<i>[Signature]</i> (Signature)
E	

GENERAL NOTES

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

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

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

EXCAVATION BELOW SUBGRADE (EBS) SHALL BE MEASURED AND PAID FOR AS EXCAVATION COMMON. THE EXACT LOCATION OF EBS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

STANDARD ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CONC	CONCRETE
CP	CULVERT PIPE
CPCM	CULVERT PIPE CORRUGATED METAL
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CSCP	CORRUGATED STEEL CULVERT PIPE
CSPA	CORRUGATED STEEL PIPE ARCH
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC-YARD
D	DEGREE OF CURVE
▲	DELTA
DISCH	DISCHARGE
FE	FIELD ENTRANCE
HERCP	HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
NTS	NOT TO SCALE
PAVT	PAVEMENT
PB	PULL BOX
PC	POINT-OF-CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENT
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RAD	RADIUS
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
RCHES	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL STORM SEWER
RCPS	REINFORCED CONCRETE PIPE - STORM SEWER
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SB	SIGNAL BASE
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TC	TOP OF CURB
TLE	TEMPORARY LIMITED EASEMENT

WISDOT PROJECT MANAGER

GREG HAFEMAN
SE REGION LPPM
141 NW BARSTOW STREET
CITY, WI ZIP
PHONE: 262 548 8677
EMAIL: GREG.HAFEMAN@DOT.WI.GOV

DESIGN PROJECT LEADER

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275 W. WISCONSIN AVENUE, SUITE 300
MILWAUKEE, WI 53203
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EMAIL: BEN.MCGILLICUDDY@GRAEF-USA.COM

TOWN OF CEDARBURG

ADAM MONTICELLI
DIRECTOR OF PUBLIC WORKS
1293 WASHINGTON AVE
CEDARBURG, WI 53012
PHONE: 262 377 4509
EMAIL: AMONTICELLI@TOWNOFCEDARBURGWI.GOV

WISCONSIN DNR LIAISON

RYAN PAPPAS
DNR SOUTHEAST REGION HEADQUARTERS
1027 WEST PAUL AVENUE
MILWAUKEE, WI 53233
PHONE: 414-750-7495
EMAIL: RYAN.PAPPAS@WISCONSIN.GOV

UTILITIES CONTACTS

AT&T WISCONSIN
JAMIE BRAATZ
435 S ADLER
WEST ALLIS, WI
PHONE: 262-707-6335 (OFFICE)
PHONE: 414-429-0515 (MOBILE)

SPECTRUM COMMUNICATIONS
TODD HALL
1515 W WASHINGTON ST
WEST BEND, WI 53095
PHONE: 414-430-2296 (MOBILE)
EMAIL: TODD.HALL@SPECTRUM.COM

UTILITIES CONTACTS

WE ENERGIES - ELECTRIC
JOE FELLEENZ
W140 N9100 LILLY RD
MENOMONEE FALLS, WI 53051
PHONE: 262-502-6831 (OFFICE), 414-322-8928 (MOBILE)
EMAIL: JOSEPH.FELLEENZ@WE-ENERGIES.COM

WE ENERGIES - GAS
SPENSER DOONER
700 S KANE ST
BURLINGTON, WI 53105
PHONE: 262-763-1083
EMAIL: SPENSER.DOONER@WE-ENERGIES.COM

ORDER OF SECTION 2 DETAIL SHEETS

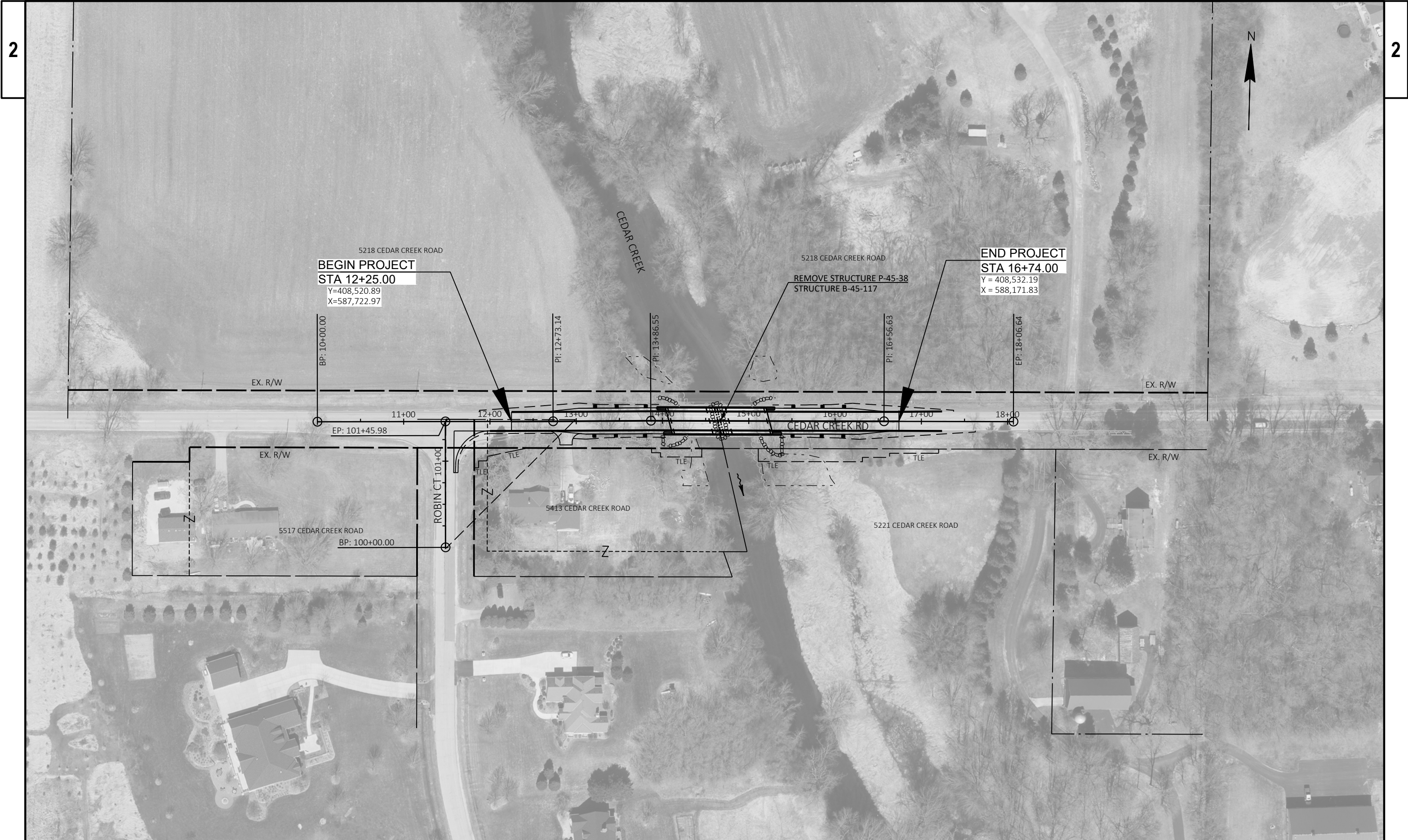
- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- REMOVAL PLAN
- PLAN DETAILS
- EROSION CONTROL
- PAVEMENT MARKING & PERMANENT SIGNING PLAN
- TRAFFIC CONTROL
- BOATING TRAFFIC CONTROL
- DETOUR PLAN
- ALIGNMENT PLAN

DIGGERS

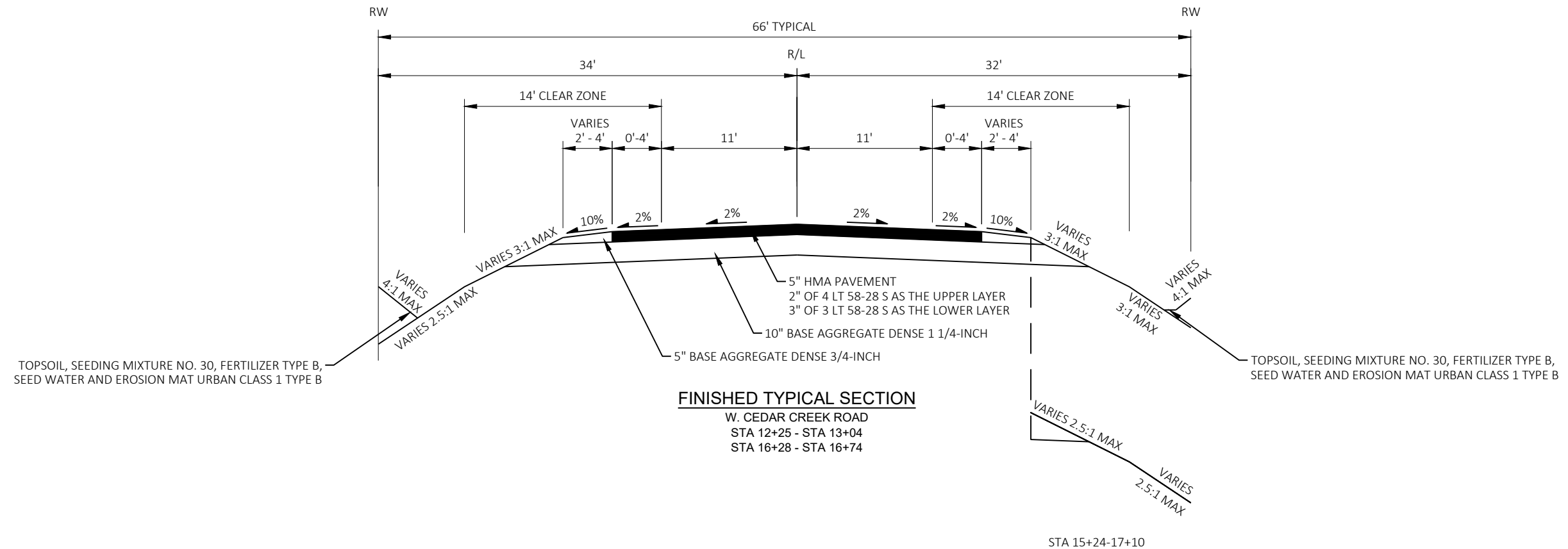
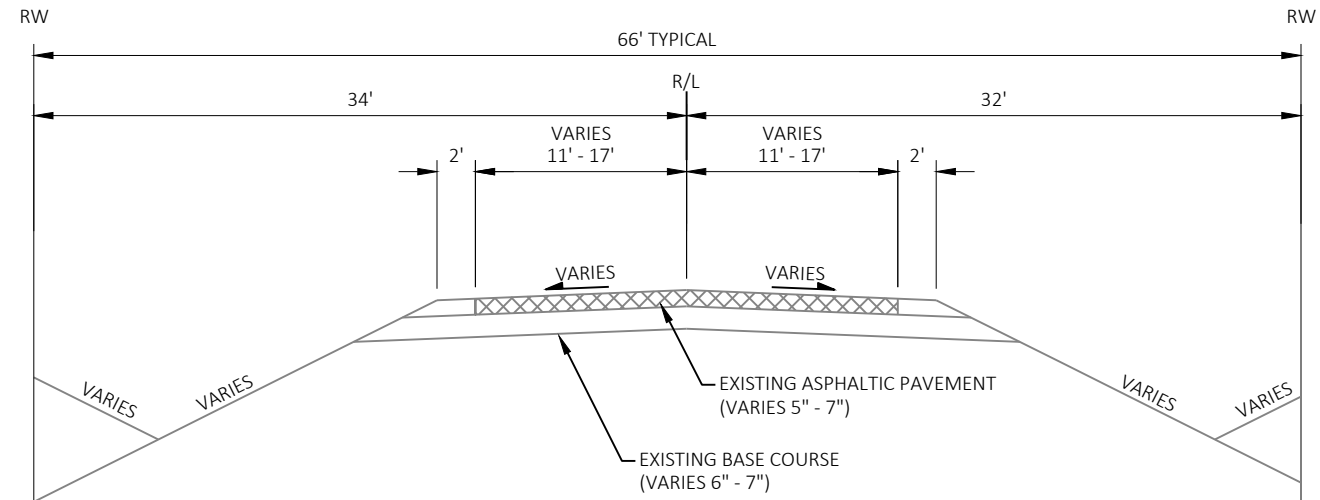
HOTLINE

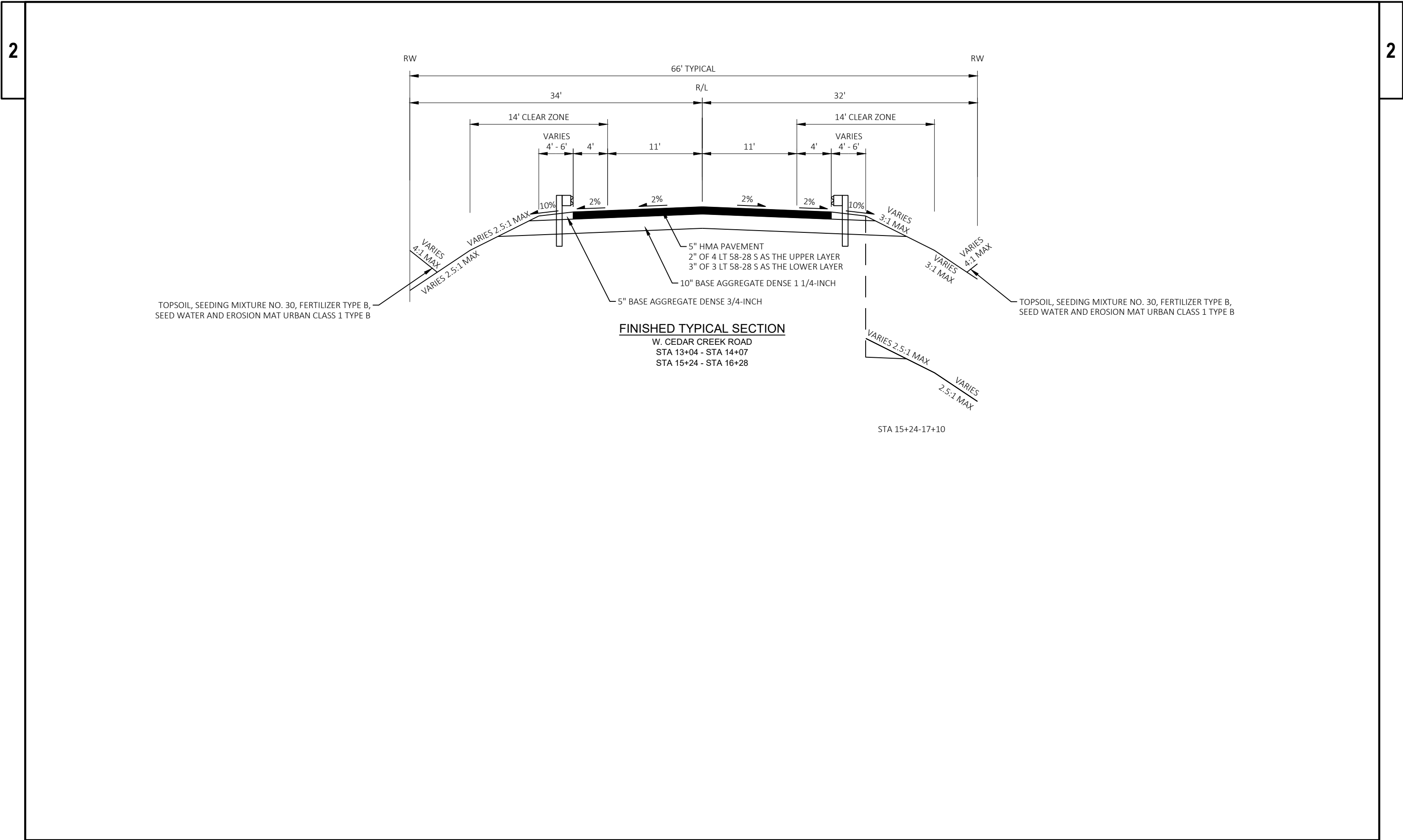
Dial 811 or (800)242-8511

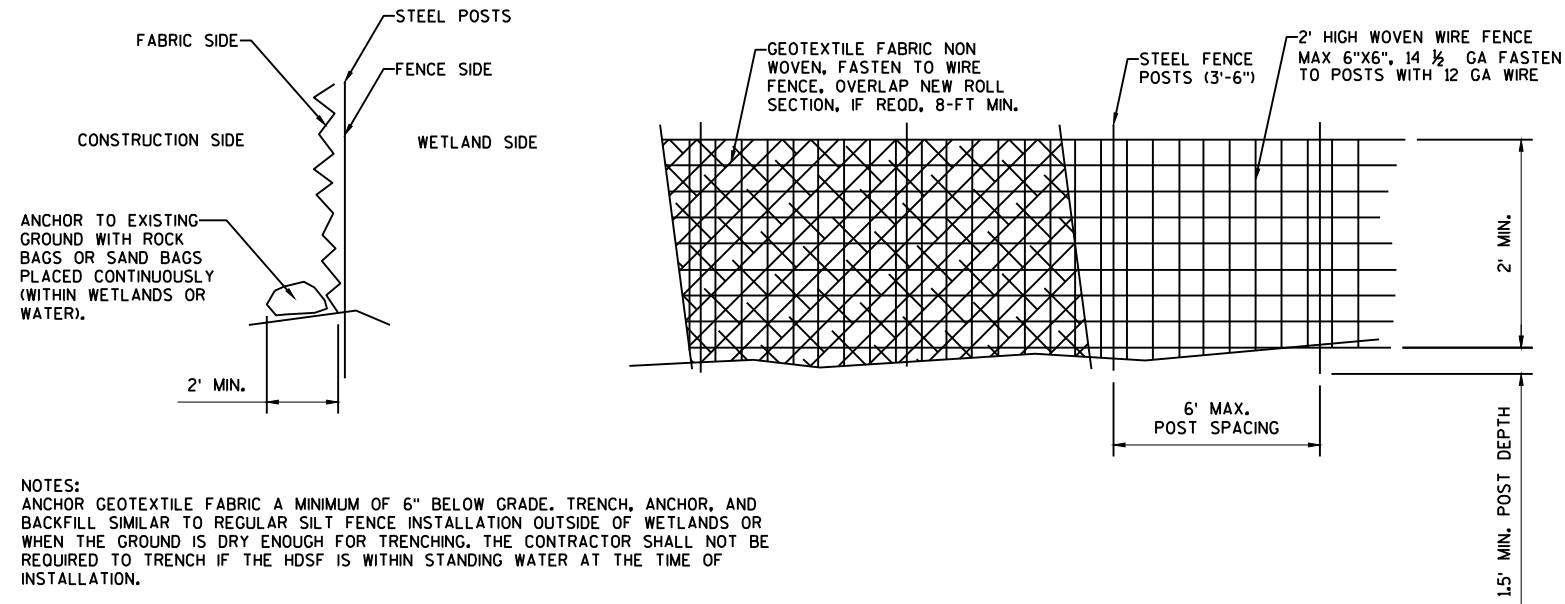
www.DiggersHotline.com



PROJECT NO: 2695-03-72	HWY: CEDAR CREEK RD	COUNTY: OZAUKEE	PROJECT OVERVIEW	SHEET	E
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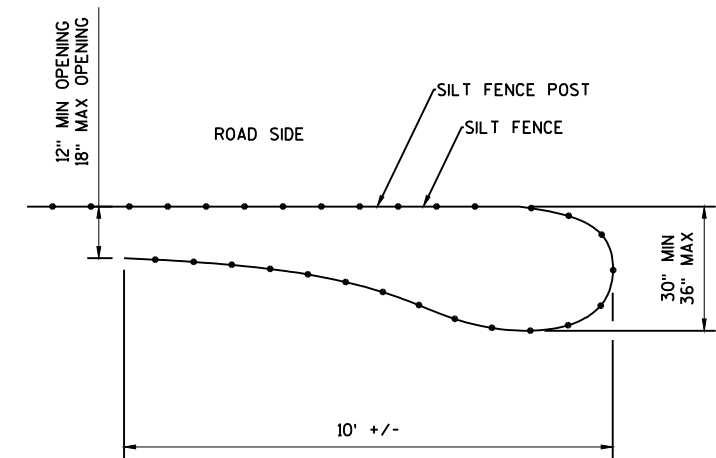






SILT FENCE - SNAKE EXCLUSION FENCING

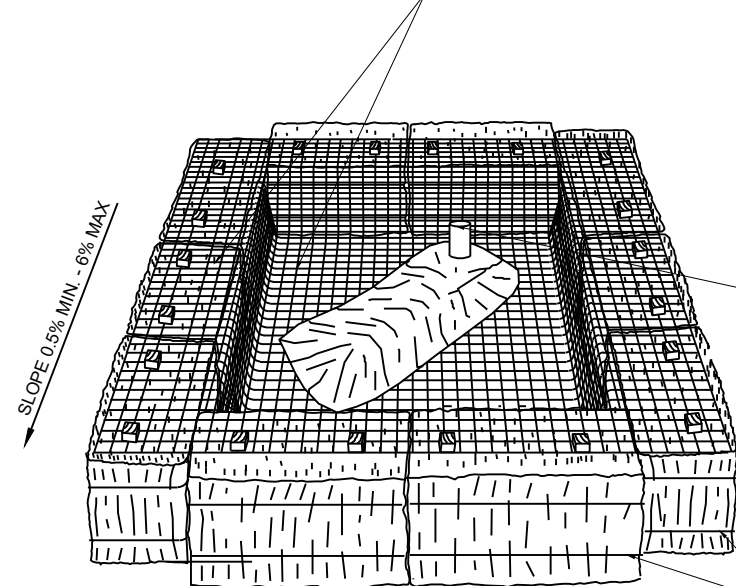
LOCATIONS SHOWN ON EROSION CONTROL PLANS OR AS DIRECTED BY THE ENGINEER.



SILT FENCE TURN-AROUND DETAIL

LOCATIONS SHOWN ON EROSION CONTROL PLANS OR AS DIRECTED BY THE ENGINEER.

LINE BASIN WITH GEOTEXTILE FABRIC TYPE HR



NOTES

1. PUMP FROM DEWATERING OPERATIONS INTO TEMPORARY SETTLING BASINS PRIOR TO DISCHARGING INTO ROADSIDE DITCHES.
2. BASIN SHALL BE KEPT LESS THAN 10% FULL OF SEDIMENT. GEOTEXTILE FABRIC AND SEDIMENTS SHALL BE DISPOSED BY THE CONTRACTOR OFF THE PROJECT SITE.
3. SETTLING BASIN SHALL BE PLACED IN AN UPLAND, FLAT, VEGETATED AREA, ON THE ROADWAY, SHOULDER OR EQUIVALENT LOCATION APPROVED BY THE ENGINEER.
4. SIZE OF SETTLING BASIN AND FILTER BAG SHALL BE DETERMINED BY THE CONTRACTOR AS PART OF THE EROSION CONTROL IMPLEMENTATION PLAN.
5. ONLY ONE HOSE PER BAG ALLOWED AT A TIME. SIZE BASIN APPROPRIATELY FOR ADDITIONAL BAGS IF MORE THAN ONE HOSE IS NEEDED.
6. THE NECK OF THE BAG WHERE THE HOSE ATTACHES SHALL BE PLACED ON THE UPSTREAM CORNER OF THE SETTLING BASIN.
7. REPLACE SEDIMENT BAG, BALES, AND FABRIC AS NECESSARY OR AS DIRECTED BY THE ENGINEER. REMOVE SPENT BAGS PRIOR TO REPLACING. DO NOT STACK NEW BAG ON TOP OF SPENT BAG.
8. ALL ITEMS ARE INCIDENTAL TO THE CONTRACT. INCLUDING CLEANING, DISPOSAL, AND REPLACEMENT OF BAGS AND BASIN MATERIALS.

CONNECT PUMP HOSE TO FILTER BAG INSIDE OF SETTLING BASIN. FILTER BAG INCIDENTAL TO PROJECT

EROSION BALES SECURED IN PLACE. STAKES SHOWN. USE ALTERNATIVE METHODS TO SECURE WHEN PLACING ON ROADWAY.

TEMPORARY SETTLING BASIN DETAIL WITH SEDIMENT BAG

PROJECT NO: 2695-03-72

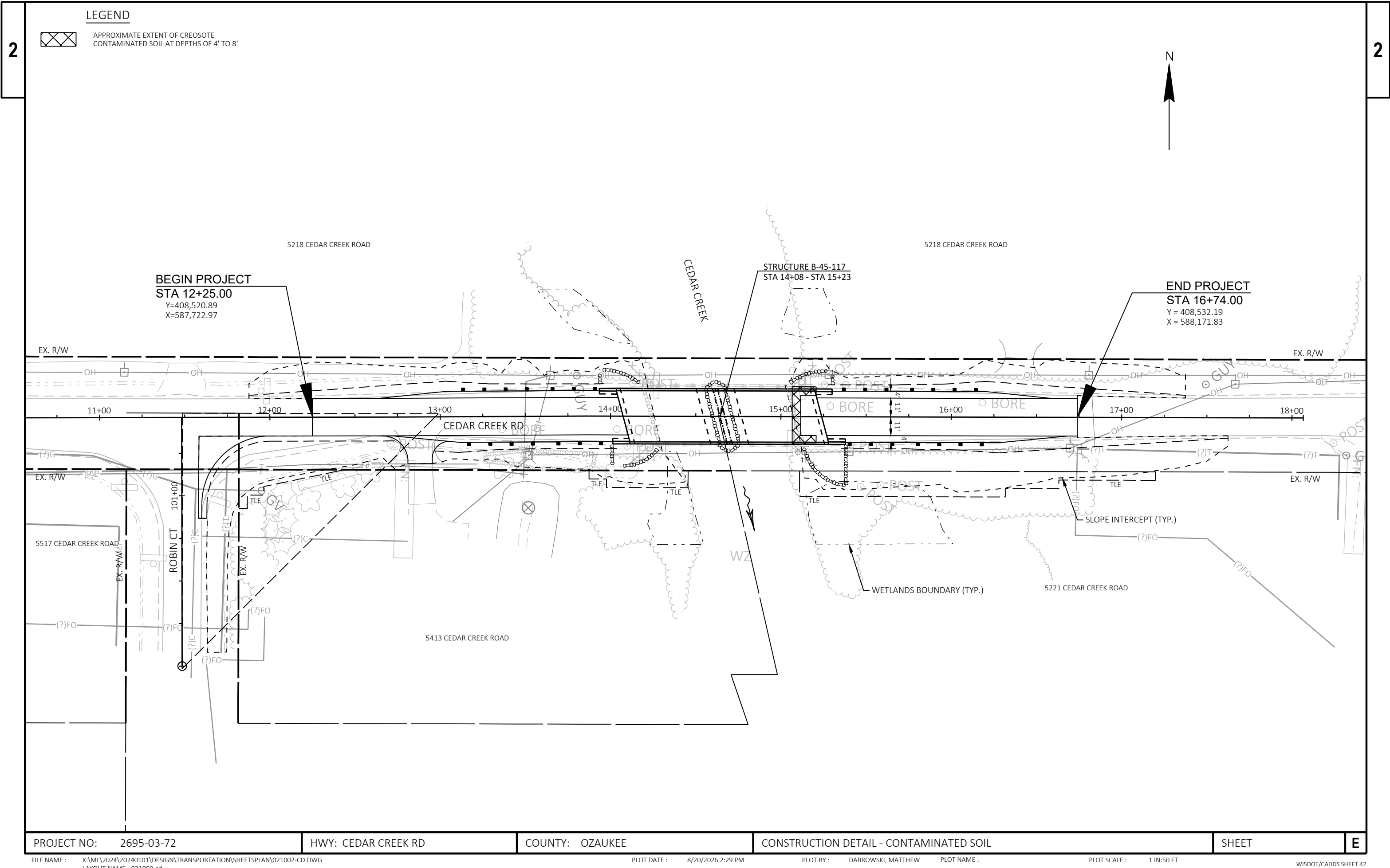
HWY: CEDAR CREEK RD

COUNTY: OZAUKEE

CONSTRUCTION DETAILS

SHEET

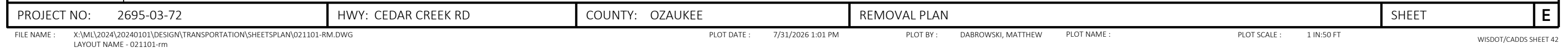
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LEGEND

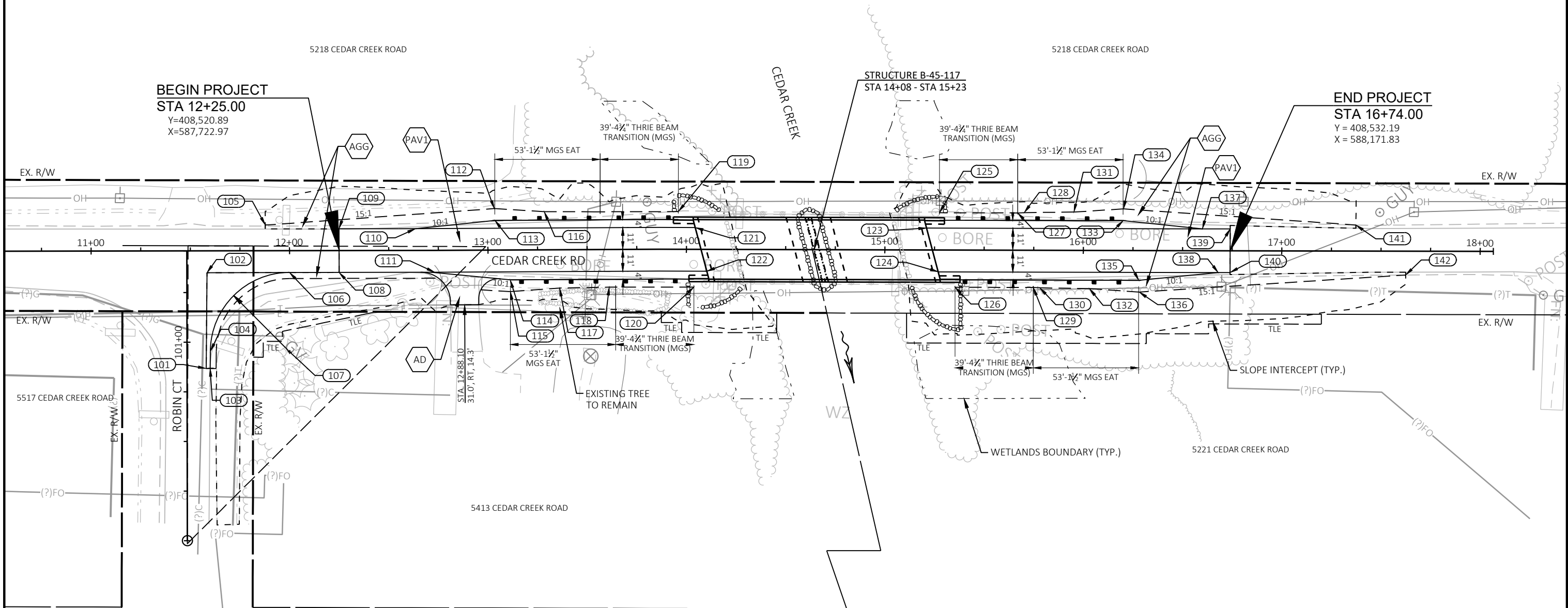
APPROXIMATE EXTENT OF CREOSOTE
CONTAMINATED SOIL AT DEPTHS OF 4' TO 8'

REMOVE ASPHALT (PAID FOR AS EXCAVATION COMMON)
REMOVE EXISTING BRIDGE P-45-38
CLEARING & GRUBBING
SAWING ASPHALT



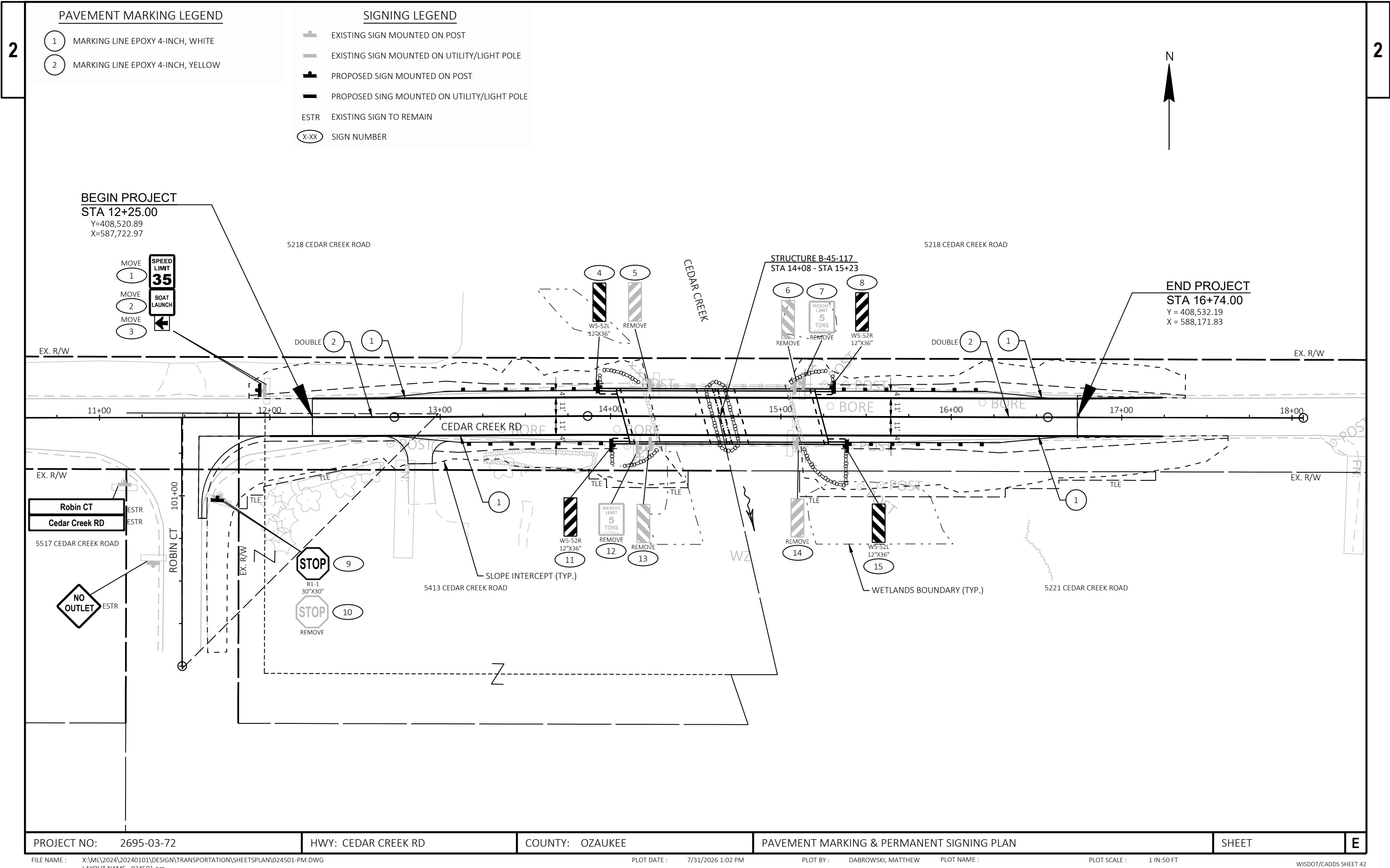
LEGEND

- PAV1 5-INCH HMA PAVEMENT OVER
10-INCHES BASE AGGREGATE DENSE 1 1/4-INCH
- AD ASPHALTIC SURFACE DRIVEWAYS AND FIELD
ENTRANCES
- AGG AGGREGATE SHOULDER, 5-INCHES BASE
AGGREGATE DENSE 3/4-INCH
- .XXX. SAWING ASPHALT

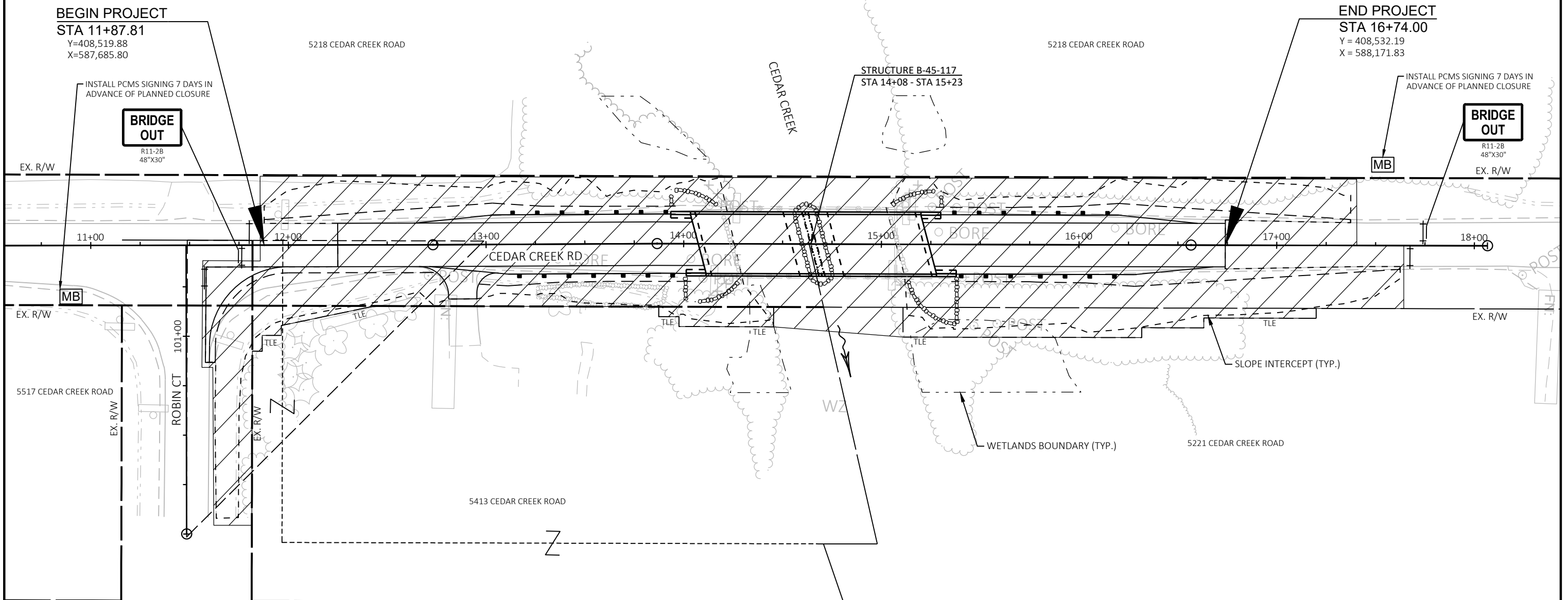
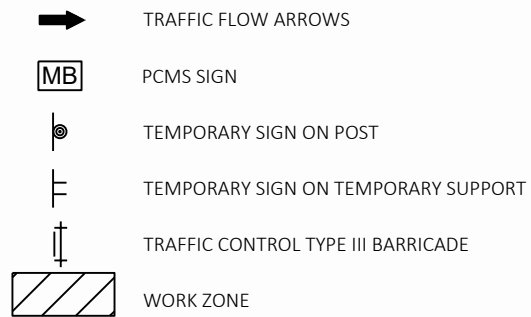


POINT NUMBER	STATION	OFFSET	DESCRIPTION
101	11+57.94	59.22' RT	SAWCUT, MATCH EXISTING, BEGIN PAV1
102	11+58.41	11.00' RT	SAWCUT, MATCH EXISTING, BEGIN PAV1
103	11+59.95	59.24' RT	SAWCUT, MATCH EXISTING, BEGIN PAV1
104	11+60.03	50.61' RT	BEGIN 40' RADIUS
105	11+87.81	13.00' LT	BEGIN SHOULDER AGGREGATE
106	12+00.03	11.00' RT	SAWCUT, MATCH EXISTING, END 40' RADIUS
107	12+00.03	51.00' RT	40' RADIUS
108	12+25.00	11.00' RT	SAWCUT, MATCH EXISTING, BEGIN PAV1
109	12+25.00	11.00' LT	SAWCUT, MATCH EXISTING, BEGIN PAV1
110	12+63.47	11.00' LT	PAV1 PI
111	12+73.14	11.00' RT	PAV1 PI
112	13+03.29	20.92' LT	AGGREGATE SHOULDER PI
113	13+03.57	14.98' LT	PAV1 PI
114	13+11.13	14.99' RT	PAV1 PI
115	13+11.16	20.91' RT	AGGREGATE SHOUDLER PI
116	13+28.48	19.25' LT	AGGREGATE SHOULDER PI
117	13+36.03	19.27' RT	AGGREGATE SHOUDLER PI
118	13+61.05	18.94' RT	AGGREGATE SHOUDLER PI
119	13+95.93	19.00' LT	END AGGREGATE SHOULDER
120	14+03.84	19.00' RT	END AGGREGATE SHOULDER
121	14+04.44	11.00' LT	END PAV1

POINT NUMBER	STATION	OFFSET	DESCRIPTION
122	14+10.33	11.00' RT	END PAV1
123	15+21.02	11.00' LT	BEGIN PAV1
124	15+26.92	11.00' RT	BEGIN PAV1
125	15+27.52	18.76' LT	BEGIN AGGREGATE SHOULDER
126	15+35.42	18.76' RT	BEGIN AGGREGATE SHOULDER
127	15+66.92	18.76' LT	AGGREGATE SHOULDER PI
128	15+70.19	18.93' LT	AGGREGATE SHOULDER PI
129	15+74.82	18.76' RT	AGGREGATE SHOULDER PI
130	15+78.17	18.93' RT	AGGREGATE SHOULDER PI
131	15+95.20	19.27' LT	AGGREGATE SHOULDER PI
132	16+03.18	19.27' RT	AGGREGATE SHOULDER PI
133	16+20.04	15.00' LT	PAV1 PI
134	16+20.26	20.93' LT	AGGREGATE SHOULDER PI
135	16+28.02	15.00' RT	PAV1 PI
136	16+28.24	20.93' RT	AGGREGATE SHOULDER PI
137	16+60.04	11.00' LT	PAV1 PI
138	16+68.02	11.00' RT	PAV1 PI
139	16+74.00	11.00' LT	SAWCUT, MATCH EXISTING, END PAV1
140	16+74.00	11.00' RT	SAWCUT, MATCH EXISITNG, END PAV1
141	17+37.37	13.13' LT	END SHOUDLER AGGREGATE
142	17+62.50	11.98' RT	END SHOULDER AGGREGATE

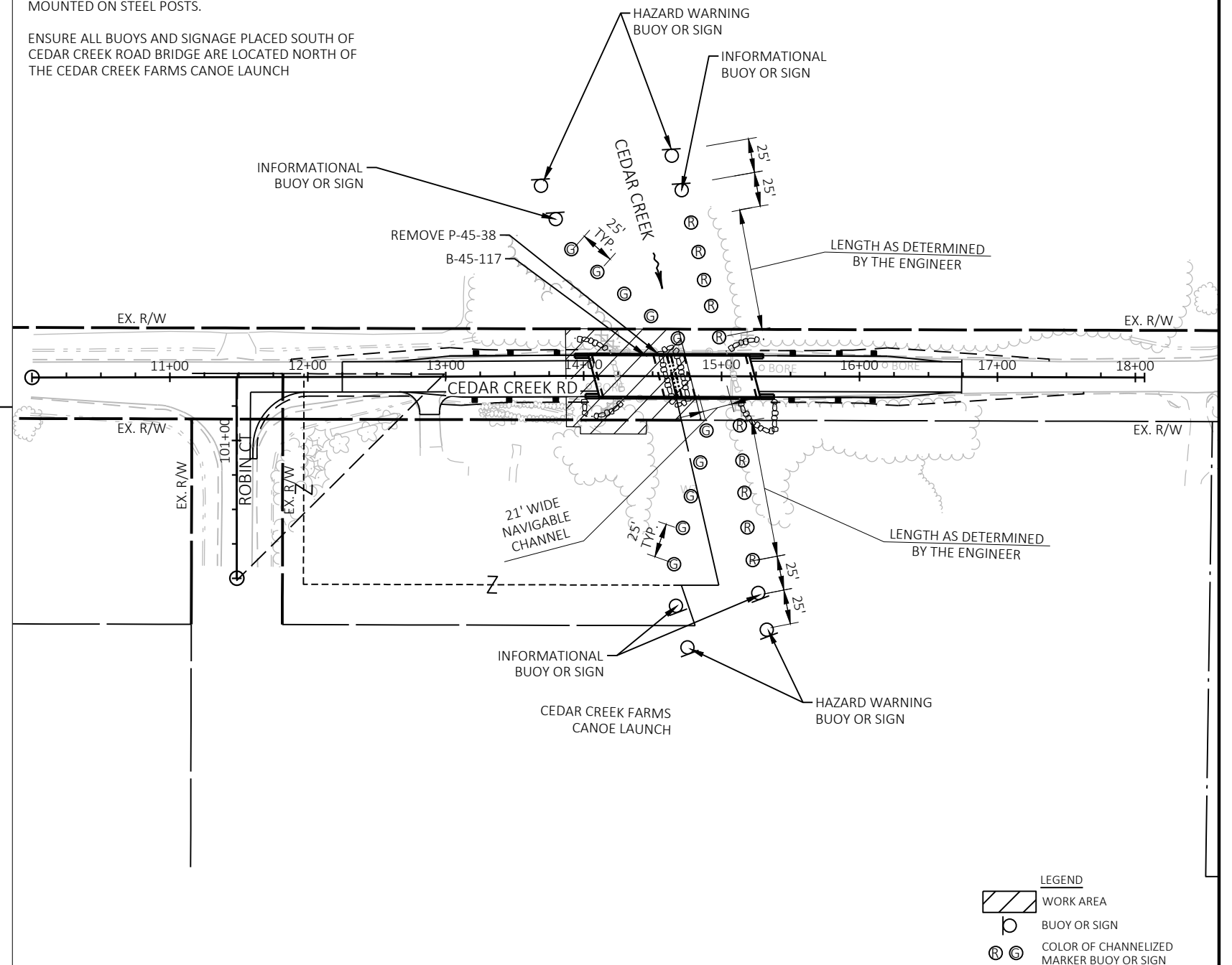


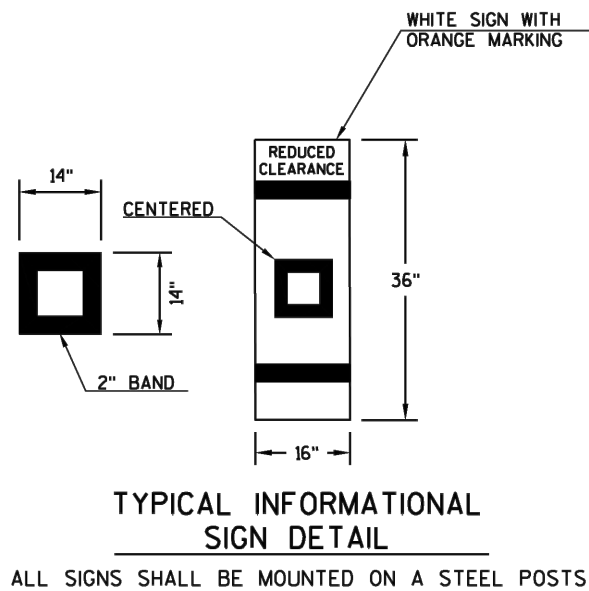
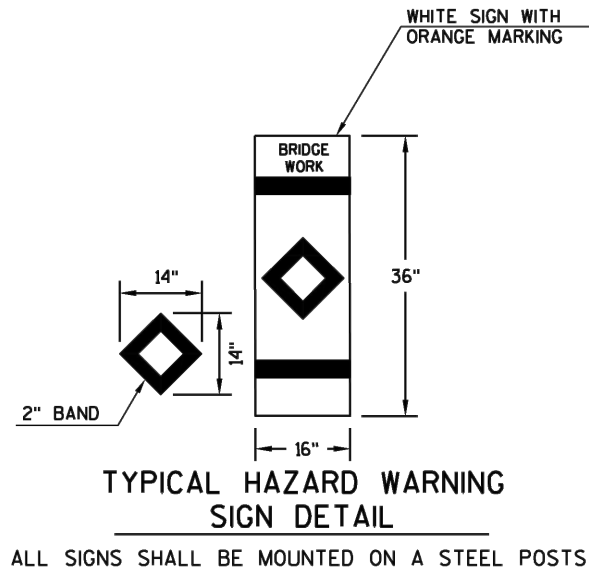
TRAFFIC CONTROL PCMS MESSAGE MB	
PLACE 7 DAYS PRIOR TO CLOSURE	
FRAME	MESSAGE
1	ROAD TO CLOSE
2	"DAY" "DATE"





ENSURE ALL BUOYS AND SIGNAGE PLACED SOUTH OF CEDAR CREEK ROAD BRIDGE ARE LOCATED NORTH OF THE CEDAR CREEK FARMS CANOE LAUNCH





NOTES:

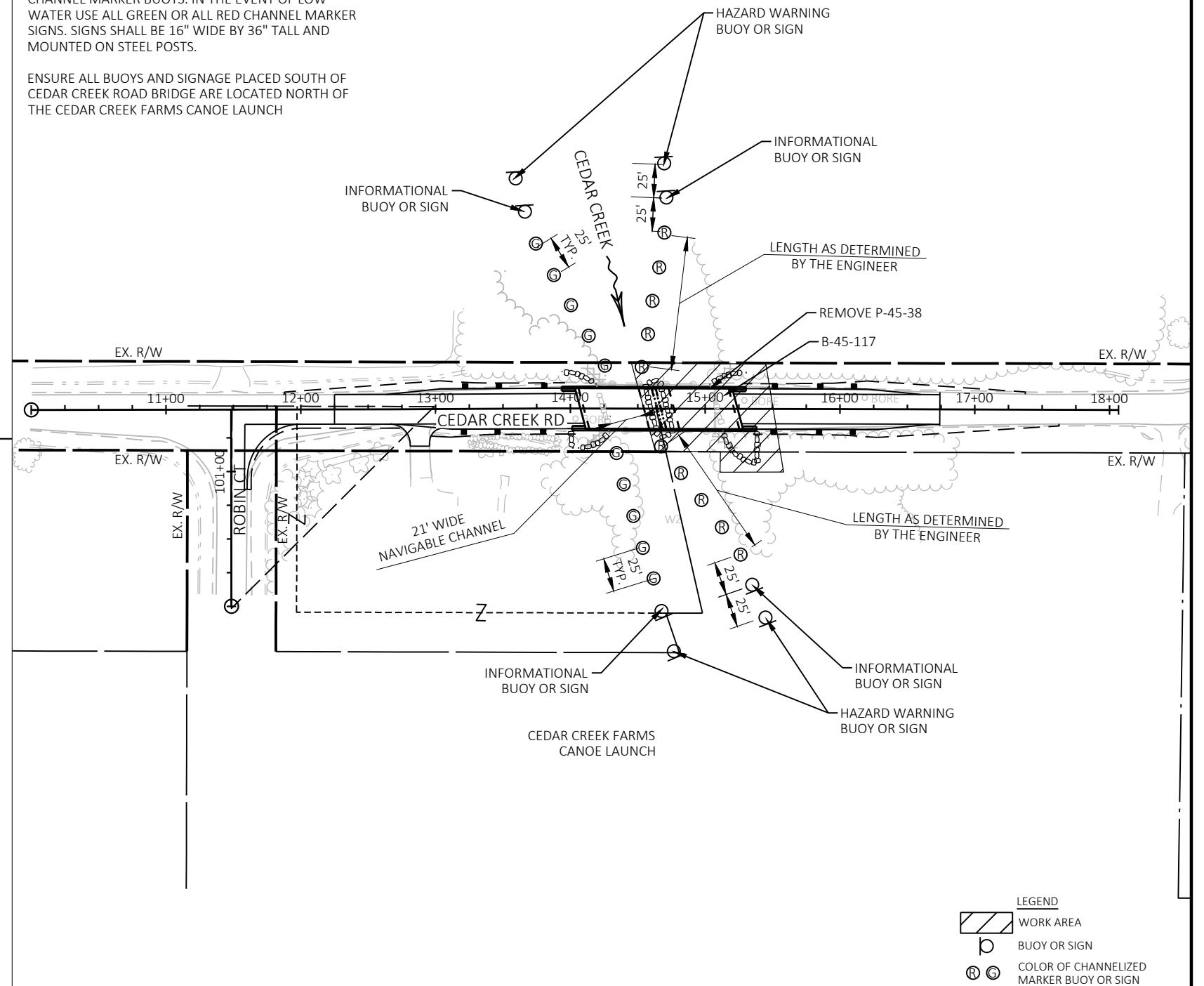
A WATERWAY MARKER APPLICATION AND PERMIT IS REQUIRED FROM THE WDNR. REFER TO SPECIAL PROVISIONS FOR REQUIREMENTS.

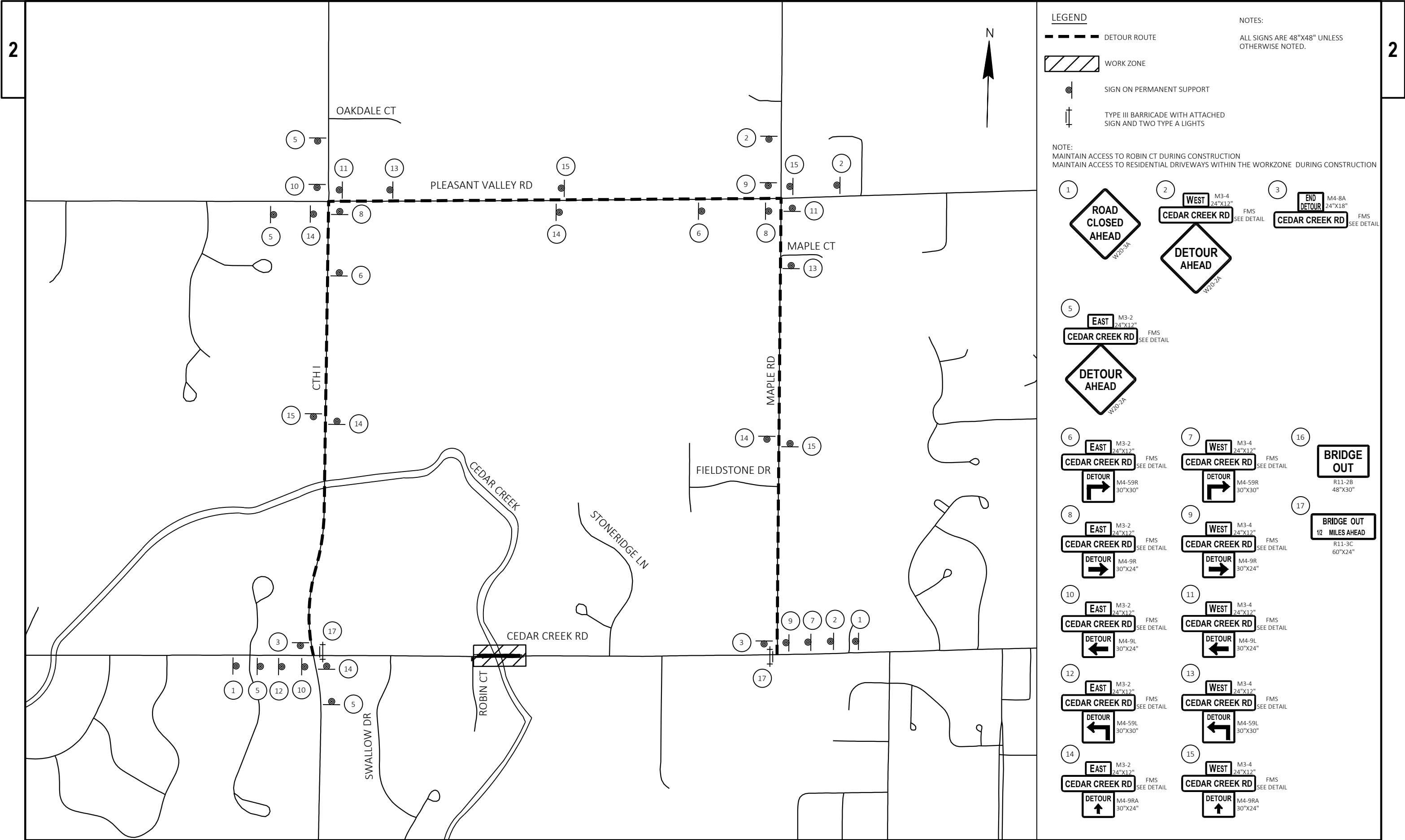
MAINTAIN NAVIGATIONAL CHANNEL DURING CONSTRUCTION. WZ

DETERMINE WHETHER BUOYS OR SIGNS ARE NEEDED BASED ON CURRENT WATER LEVELS. IN THE EVENT OF HIGH WATER (>4') USE BUOYS. IN THE EVENT OF LOW WATER (<4') USE SIGNS MOUNTED TO STEEL POSTS.

DURING HIGH WATER (>4') USE ALL GREEN AND RED CHANNEL MARKER BUOYS. IN THE EVENT OF LOW WATER USE ALL GREEN OR ALL RED CHANNEL MARKER SIGNS. SIGNS SHALL BE 16" WIDE BY 36" TALL AND MOUNTED ON STEEL POSTS.

ENSURE ALL BUOYS AND SIGNAGE PLACED SOUTH OF CEDAR CREEK ROAD BRIDGE ARE LOCATED NORTH OF THE CEDAR CREEK FARMS CANOE LAUNCH





LEGEND

DETOUR ROUTE

WORK ZONE

SIGN ON PERMANENT SUPPORT

TYPE III BARRICADE WITH ATTACHED SIGN AND TWO TYPE A LIGHTS

NOTES:

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

NOTE:

MAINTAIN ACCESS TO ROBIN CT DURING CONSTRUCTION

MAINTAIN ACCESS TO RESIDENTIAL DRIVEWAYS WITHIN THE WORKZONE DURING CONSTRUCTION

1

ROAD CLOSED AHEAD

W20-2A

2

WEST

M3-4 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR AHEAD

W20-2A

3

END DETOUR

M4-8A 24"X18"

CEDAR CREEK RD

FMS SEE DETAIL

5

EAST

M3-2 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR AHEAD

W20-2A

6

EAST

M3-2 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR

M4-59R 30"X30"

7

WEST

M3-4 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR

M4-59R 30"X30"

8

EAST

M3-2 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR

M4-9R 30"X24"

9

WEST

M3-4 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR

M4-9R 30"X24"

10

EAST

M3-2 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR

M4-9L 30"X24"

11

WEST

M3-4 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR

M4-9L 30"X24"

12

EAST

M3-2 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR

M4-59L 30"X30"

13

WEST

M3-4 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR

M4-59L 30"X30"

14

EAST

M3-2 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR

M4-9RA 30"X24"

15

WEST

M3-4 24"X12"

CEDAR CREEK RD

FMS SEE DETAIL

DETOUR

M4-9RA 30"X24"

16

BRIDGE OUT

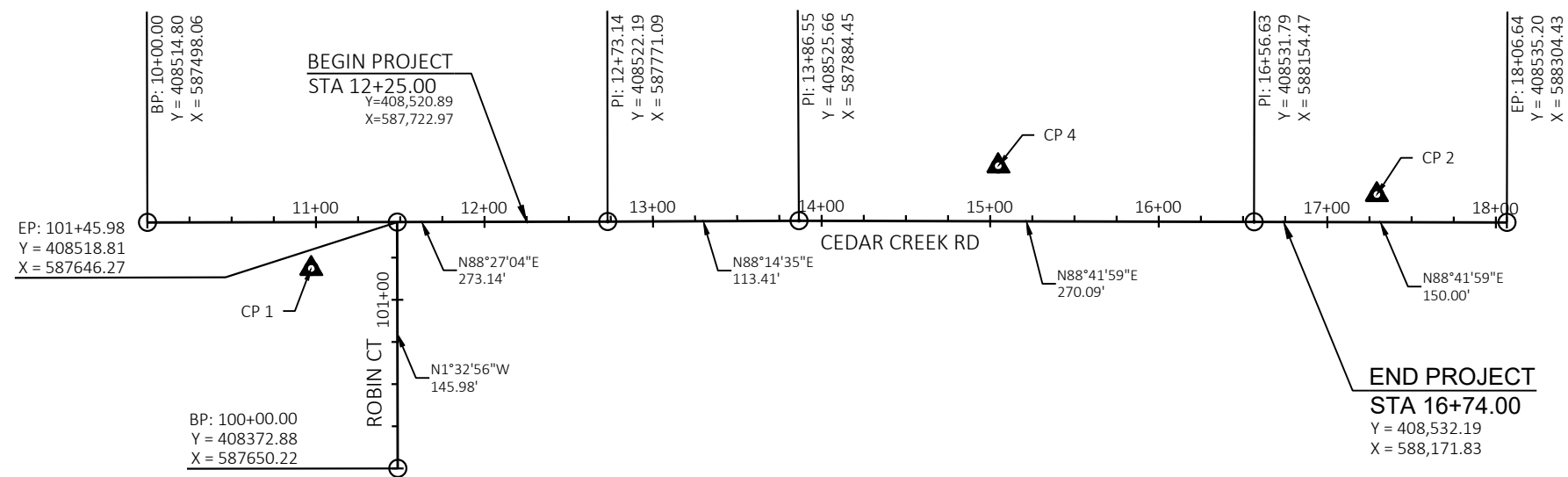
R11-2B 48"X30"

17

BRIDGE OUT

1/2 MILES AHEAD

R11-3C 60"X24"



CONTROL POINTS						
POINT NUMBER	DESCRIPTION	STATION	OFFSET	ELEVATION	NORTHING	EASTING
CP 1	CP 5/8-INCH REBAR WITH PINK GRAEF CAP	10+97.14	27.47' RT	--	408489.97	587595.91
CP 2	CP 5/8-INCH REBAR WITH PINK GRAEF CAP	17+29.31	16.31' LT	--	408549.75	588226.76
CP 4	CP 5/8-INCH REBAR WITH PINK GRAEF CAP	15+04.72	32.84' LT	--	408561.18	588001.85

Estimate Of Quantities

2695-03-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	5.000	5.000
0004	201.0205	Grubbing	STA	5.000	5.000
0006	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0008	203.0270	Removing Structure Over Waterway Debris Capture (structure) 01. P-45-0038	EACH	1.000	1.000
0010	205.0100	Excavation Common	CY	605.000	605.000
0012	205.0506.S	Excavation, Hauling, and Disposal of Creosote Contaminated Soil	TON	180.000	180.000
0014	206.1001	Excavation for Structures Bridges (structure) 01. B-45-117	EACH	1.000	1.000
0016	206.5001	Cofferdams (structure) 01. B-45-117	EACH	1.000	1.000
0018	210.1500	Backfill Structure Type A	TON	306.000	306.000
0020	213.0100	Finishing Roadway (project) 01. 2695-03-72	EACH	1.000	1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	141.000	141.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,066.000	1,066.000
0026	455.0605	Tack Coat	GAL	64.000	64.000
0028	460.2000	Incentive Density HMA Pavement	DOL	180.000	180.000
0030	460.5223	HMA Pavement 3 LT 58-28 S	TON	186.000	186.000
0032	460.5224	HMA Pavement 4 LT 58-28 S	TON	124.000	124.000
0034	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	9.000	9.000
0036	502.0100	Concrete Masonry Bridges	CY	384.000	384.000
0038	502.3200	Protective Surface Treatment	SY	518.000	518.000
0040	505.0400	Bar Steel Reinforcement HS Structures	LB	5,970.000	5,970.000
0042	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	78,280.000	78,280.000
0044	513.4061	Railing Tubular Type M	LF	280.000	280.000
0046	516.0500	Rubberized Membrane Waterproofing	SY	16.000	16.000
0048	550.1120	Piling Steel HP 12-Inch x 53 Lb	LF	1,325.000	1,325.000
0050	606.0300	Riprap Heavy	CY	207.000	207.000
0052	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	132.000	132.000
0054	614.2500	MGS Thrie Beam Transition	LF	158.000	158.000
0056	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0058	618.0100	Maintenance and Repair of Haul Roads (project) 01. 2695-03-72	EACH	1.000	1.000
0060	619.1000	Mobilization	EACH	1.000	1.000
0062	624.0100	Water	MGAL	18.000	18.000
0064	625.0100	Topsoil	SY	1,560.000	1,560.000
0066	628.1504	Silt Fence	LF	653.000	653.000
0068	628.1520	Silt Fence Maintenance	LF	653.000	653.000
0070	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0072	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	6.000
0074	628.2008	Erosion Mat Urban Class I Type B	SY	1,560.000	1,560.000
0076	628.7504	Temporary Ditch Checks	LF	40.000	40.000
0078	628.7560	Tracking Pads	EACH	2.000	2.000
0080	629.0210	Fertilizer Type B	CWT	2.000	2.000
0082	630.0130	Seeding Mixture No. 30	LB	69.000	69.000
0084	630.0170	Seeding Mixture No. 70	LB	1.000	1.000
0086	630.0200	Seeding Temporary	LB	42.000	42.000
0088	630.0500	Seed Water	MGAL	35.000	35.000
0090	632.0201	Shrubs (species, root, size) 01. Buttonbush CG 3-ft Ht	EACH	8.000	8.000
0092	632.0201	Shrubs (species, root, size) 02. Dogwood Redosier CG 2-ft Ht	EACH	8.000	8.000
0094	632.9101	Landscape Planting Surveillance and Care Cycles	EACH	28.000	28.000
0096	634.0612	Posts Wood 4x6-Inch x 12-FT	EACH	4.000	4.000
0098	634.0614	Posts Wood 4x6-Inch x 14-FT	EACH	1.000	1.000

Estimate Of Quantities

2695-03-72

Line	Item	Item Description	Unit	Total	Qty
0100	634.0616	Posts Wood 4x6-Inch x 16-FT	EACH	1.000	1.000
0102	637.2210	Signs Type II Reflective H	SF	5.180	5.180
0104	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0106	638.2102	Moving Signs Type II	EACH	3.000	3.000
0108	638.2602	Removing Signs Type II	EACH	7.000	7.000
0110	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0112	642.5001	Field Office Type B	EACH	1.000	1.000
0114	643.0420	Traffic Control Barricades Type III	DAY	1,400.000	1,400.000
0116	643.0705	Traffic Control Warning Lights Type A	DAY	2,800.000	2,800.000
0118	643.0900	Traffic Control Signs	DAY	13,600.000	13,600.000
0120	643.1000	Traffic Control Signs Fixed Message	SF	128.000	128.000
0122	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0124	643.5000	Traffic Control	EACH	1.000	1.000
0126	645.0111	Geotextile Type DF Schedule A	SY	66.000	66.000
0128	645.0120	Geotextile Type HR	SY	343.000	343.000
0130	646.1020	Marking Line Epoxy 4-Inch	LF	1,921.000	1,921.000
0132	650.4500	Construction Staking Subgrade	LF	399.000	399.000
0134	650.5000	Construction Staking Base	LF	399.000	399.000
0136	650.6501	Construction Staking Structure Layout (structure) 01. B-45-117	EACH	1.000	1.000
0138	650.9911	Construction Staking Supplemental Control (project) 01. 2695-03-72	EACH	1.000	1.000
0140	650.9920	Construction Staking Slope Stakes	LF	547.000	547.000
0142	690.0150	Sawing Asphalt	LF	179.000	179.000
0144	715.0502	Incentive Strength Concrete Structures	DOL	2,304.000	2,304.000
0146	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,600.000	1,600.000
0148	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,500.000	1,500.000
0150	SPV.0060	Special 01. Fisheries Consultant	EACH	1.000	1.000
0152	SPV.0090	Special 01. Silt Fence - Snake Exclusion Fencing	LF	653.000	653.000

CLEARING & GRUBBING			
		201.0105	201.0205
		CLEARING	GRUBBING
STATION TO STATION		STA	STA
CEDAR CREEK RD			
	11+87 - 14+11	2	2
	15+20 - 17+10	3	3
	TOTALS	5	5

REMOVING SMALL PIPE CULVERTS		
		203.0100
		REMOVING SMALL
		PIPE CULVERTS
STATION TO STATION		EACH
CEDAR CREEK RD		
	11+87 - 14+11	1
	15+20 - 17+10	-
	TOTALS	1

FINISHING ROADWAY		
		213.0100
		FINISHING
		ROADWAY
STATION TO STATION		EACH
CEDAR CREEK RD		
	2695-03-72	1
	TOTALS	1

205.0506.S		
EXCAVATION, HAULING, AND DISPOSAL OF CREOSOTE		
CONTAMINATED SOIL		
STATION TO STATION		TON
CEDAR CREEK RD		
	11+87 - 14+11	-
	15+20 - 17+10	180
	TOTALS	180

BASE AGGREGATE DENSE 3/4-INCH			
			305.0110
			BASE AGGREGATE DENSE 3/4-INCH
STATION TO STATION			TON
CEDAR CREEK RD		CATEGORY 0010	CATEGORY 0030
	11+87 - 14+11	55	21
	15+20 - 17+10	65	-
	CATEGORY SUBTOTALS	120	21
	TOTALS		141

BASE AGGREGATE DENSE 1 1/4-INCH			
			305.0120
			BASE AGGREGATE DENSE 1 1/4-INCH
STATION TO STATION			TON
CEDAR CREEK RD		CATEGORY 0010	CATEGORY 0030
	11+87 - 14+11	403	152
	15+20 - 17+10	475	-
	CATEGORY SUBTOTALS	880	160
	TOTALS		1,040

HMA PAVEMENT							
				460.5223	460.5224	465.0120	455.0605
				3 LT 58-28 S	4 LT 58-28 S	DRIVEWAYS AND	TACK COAT
						FIELD ENTRANCES	
STATION TO STATION				TON	TON	TON	GAL
CEDAR CREEK RD		CATEGORY 0010	CATEGORY 0030	CATEGORY 0010	CATEGORY 0030		CATEGORY 0010
	11+87 - 14+11	82	22	55	15	9	28
	15+20 - 17+10	82	-	54	-	-	28
	CATEGORY SUBTOTALS	164	22	109	15	9	56
	TOTALS		186		124	9	64

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

DIVISION	CATEGORY	FROM/TO STATION	LOCATION	205.0100 EXCAVATION COMMON (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE (15)
				CUT (2)	EBS EXCAVATION				FACTOR 1.10		
DIVISION 1											
CEDAR CREEK	CAT 0010	12+25.00/17+62.50		541	0	148	393	226	249	144	144
CEDAR CREEK	CAT 0030	12+00.00/12+25.00		40	0	8	32	1	1	31	31
ROBIN CT	CAT 0030	100+09.00/101+00.00		24	0	0	24	0	0	24	24
CATEGORY 0010 SUBTOTAL				541	0	148	393	226	249	144	144
CATEGORY 0030 SUBTOTAL				64	0	8	56	1	1	55	55
GRAND TOTAL				605	0	156	449	227	250	199	199
TOTAL COMMON EXC				605							

NOTES:
(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
(2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
(13) EXPANDED FILL FACTOR = 1.10
EXPANDED FILL = (UNEXPANDED FILL) * 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.

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

3

3

<u>GUARDRAIL</u> 614.2500 614.2610 MGS THRIE BEAM MGS GUARDRAIL TRANSITION TERMINAL EAT STATION TO STATION LF EACH CEDAR CREEK RD 11+87 - 14+11 15+20 - 17+10 TOTALS 79 79 158 4 2 2			<u>MOBILIZATION</u> 619.1000 MOBILIZATION STATION TO STATION EACH CEDAR CREEK RD 2695-03-72 TOTALS 1 1			<u>WATER</u> 624.0100 WATER STATION TO STATION MGAL CEDAR CREEK RD 11+87 - 14+11 15+20 - 17+10 CATEGORY SUBTOTALS TOTALS CATEGORY 0010 7 8 15 18 CATEGORY 0030 3 - 3		
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<u>TOPSOIL</u> 625.0100 TOPSOIL STATION TO STATION SY CEDAR CREEK RD 11+87 - 14+11 15+20 - 17+10 CATEGORY SUBTOTALS TOTALS CATEGORY 0010 366 737 1,110 1,560 CATEGORY 0030 443 - 450			<u>SILT FENCE</u> 628.1504 628.1520 SILT FENCE SILT FENCE MAINTENANCE STATION TO STATION LF LF CEDAR CREEK RD 11+87 - 14+11 15+20 - 17+10 TOTALS 203 450 653 203 450 653		
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<u>SEEDING</u> 630.0130 630.0170 630.0200 630.0500 SEEDING MIXTURE NO. 30 SEEDING MIXTURE NO. 70 SEEDING TEMPORARY SEED WATER STATION TO STATION LB LB LB MGAL CEDAR CREEK RD 11+87 - 14+11 15+20 - 17+10 CATEGORY SUBTOTALS TOTALS CATEGORY 0010 16 33 49 69 CATEGORY 0030 20 - 20 0.2 0.1 1 1 10 20 30 42 12 - 12 8 17 25 35 10 - 10								ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED	
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TRACKING PADS 628.7560 TRACKING PADS <table><tr><th>STATION TO STATION</th><th>EACH</th></tr><tr><td>CEDAR CREEK RD</td><td></td></tr><tr><td>11+87 - 14+11</td><td>1</td></tr><tr><td>15+20 - 17+10</td><td>1</td></tr><tr><td>TOTALS</td><td>2</td></tr></table>		STATION TO STATION	EACH	CEDAR CREEK RD		11+87 - 14+11	1	15+20 - 17+10	1	TOTALS	2	EROSION CONTROL MOBILIZATIONS 628.1905 MOBILIZATIONS EROSION CONTROL 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL <table><tr><th>STATION TO STATION</th><th>EACH</th><th>EACH</th></tr><tr><td>CEDAR CREEK RD</td><td></td><td></td></tr><tr><td>11+87 - 14+11</td><td>1</td><td>3</td></tr><tr><td>15+20 - 17+10</td><td>2</td><td>3</td></tr><tr><td>TOTALS</td><td>3</td><td>6</td></tr></table>		STATION TO STATION	EACH	EACH	CEDAR CREEK RD			11+87 - 14+11	1	3	15+20 - 17+10	2	3	TOTALS	3	6	EROSION MATTING 628.2008 EROSION MAT URBAN CLASS I TYPE B <table><tr><th>STATION TO STATION</th><th colspan="2">SY</th></tr><tr><td>CEDAR CREEK RD</td><td>CATEOGRY 0010</td><td>CATEGORY 0030</td></tr><tr><td>11+87 - 14+11</td><td>365</td><td>443</td></tr><tr><td>15+20 - 17+10</td><td>736</td><td>-</td></tr><tr><td>CATEGORY SUBTOTALS</td><td>1,110</td><td>450</td></tr><tr><td>TOTALS</td><td colspan="2">1,560</td></tr></table>		STATION TO STATION	SY		CEDAR CREEK RD	CATEOGRY 0010	CATEGORY 0030	11+87 - 14+11	365	443	15+20 - 17+10	736	-	CATEGORY SUBTOTALS	1,110	450	TOTALS	1,560															
STATION TO STATION	EACH																																																													
CEDAR CREEK RD																																																														
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DITCH CHECKS 628.7504 TEMPORARY DITCH CHECKS <table><tr><th>STATION TO STATION</th><th colspan="2">LF</th></tr><tr><td>CEDAR CREEK RD</td><td>CATEGORY 0010</td><td>CATEGORY 0030</td></tr><tr><td>11+87 - 14+11</td><td>20</td><td>20</td></tr><tr><td>15+20 - 17+10</td><td>-</td><td>-</td></tr><tr><td>CATEGORY SUBTOTALS</td><td>20</td><td>20</td></tr><tr><td>TOTALS</td><td colspan="2">40</td></tr></table>		STATION TO STATION	LF		CEDAR CREEK RD	CATEGORY 0010	CATEGORY 0030	11+87 - 14+11	20	20	15+20 - 17+10	-	-	CATEGORY SUBTOTALS	20	20	TOTALS	40		FERTILIZER 629.0210 FERTILIZER TYPE B <table><tr><th>STATION TO STATION</th><th colspan="2">CWT</th></tr><tr><td>CEDAR CREEK RD</td><td>CATEGORY 0010</td><td>CATEGORY 0030</td></tr><tr><td>11+87 - 14+11</td><td>0.2</td><td>0.3</td></tr><tr><td>15+20 - 17+10</td><td>0.5</td><td>-</td></tr><tr><td>CATEGORY SUBTOTALS</td><td>1</td><td>1</td></tr><tr><td>TOTALS</td><td colspan="2">2</td></tr></table>		STATION TO STATION	CWT		CEDAR CREEK RD	CATEGORY 0010	CATEGORY 0030	11+87 - 14+11	0.2	0.3	15+20 - 17+10	0.5	-	CATEGORY SUBTOTALS	1	1	TOTALS	2		FIELD OFFICE 642.5001 FIELD OFFICE TYPE B <table><tr><th>PROJECT</th><th>EACH</th></tr><tr><td>CEDAR CREEK RD</td><td></td></tr><tr><td>2695-03-72</td><td>1</td></tr><tr><td>TOTALS</td><td>1</td></tr></table>		PROJECT	EACH	CEDAR CREEK RD		2695-03-72	1	TOTALS	1													
STATION TO STATION	LF																																																													
CEDAR CREEK RD	CATEGORY 0010	CATEGORY 0030																																																												
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TOTALS	1																																																													
SHRUBS ITEMS 632.0201.01 SHRUBS (SPECIES) (ROOT) (SIZE) BUTTONBUSH CG 3-FT HT 632.0201.02 SHRUBS (SPECIES) (ROOT) (SIZE) DOGWOOD REDOSIER CG 2-FT HT 632.9101 LANDSCAPE PLANTING SURVEILLANCE AND CARE CYCLES <table><tr><th>STATION TO STATION</th><th>EACH</th><th>EACH</th><th>EACH</th></tr><tr><td>CEDAR CREEK RD</td><td></td><td></td><td></td></tr><tr><td>11+87 - 14+11</td><td>4</td><td>4</td><td>14</td></tr><tr><td>15+20 - 17+10</td><td>4</td><td>4</td><td>14</td></tr><tr><td>TOTALS</td><td>8</td><td>8</td><td>28</td></tr></table>		STATION TO STATION	EACH	EACH	EACH	CEDAR CREEK RD				11+87 - 14+11	4	4	14	15+20 - 17+10	4	4	14	TOTALS	8	8	28	MARKING LINE 646.1020 EPOXY 4-INCH <table><tr><th>STATION TO STATION</th><th>(WHITE) LF</th><th>(YELLOW) LF</th><th>(WHITE) LF</th><th>(YELLOW) LF</th></tr><tr><td>CEDAR CREEK RD</td><td>CATEGORY 0010</td><td>CATEGORY 0010</td><td>CATEGORY 0030</td><td>CATEGORY 0030</td></tr><tr><td>11+87 - 14+11</td><td>417</td><td>417</td><td>89</td><td>64</td></tr><tr><td>15+20 - 17+10</td><td>517</td><td>417</td><td>-</td><td>-</td></tr><tr><td>SUBTOTALS</td><td>934</td><td>834</td><td>89</td><td>64</td></tr><tr><td>CATEGORY SUBTOTALS</td><td>1,768</td><td></td><td>153</td><td></td></tr><tr><td>TOTALS</td><td colspan="4">1,921</td></tr></table>				STATION TO STATION	(WHITE) LF	(YELLOW) LF	(WHITE) LF	(YELLOW) LF	CEDAR CREEK RD	CATEGORY 0010	CATEGORY 0010	CATEGORY 0030	CATEGORY 0030	11+87 - 14+11	417	417	89	64	15+20 - 17+10	517	417	-	-	SUBTOTALS	934	834	89	64	CATEGORY SUBTOTALS	1,768		153		TOTALS	1,921				ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED	
STATION TO STATION	EACH	EACH	EACH																																																											
CEDAR CREEK RD																																																														
11+87 - 14+11	4	4	14																																																											
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CEDAR CREEK RD	CATEGORY 0010	CATEGORY 0010	CATEGORY 0030	CATEGORY 0030																																																										
11+87 - 14+11	417	417	89	64																																																										
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PROJECT NO: 2695-03-72		HWY: CEDAR CREEK RD		COUNTY: OZAUKEE		MISCELLANEOUS QUANTITIES		SHEET:		E																																																				

TYPE II PERMANENT SIGNING

SIGN NO.	SIGN CODE & SIZE		SIGN TYPE	TYPE II SIGN SIZE			637.2210	637.2230	638.2602	638.3000	634.0612	634.0614	634.0616	638.2102	MOUNT ON SAME POST AS SIGN #
				W	x	H	SIGNS TYPE II REFLC H [SF]	SIGNS TYPE II REFLC F [SF]	REMOVING SIGNS TYPE II [EA]	REMOVING SMALL SIGN SUPPORTS [EA]	POSTS WOOD 4"X6"X12' [EA]	POSTS WOOD 4"X6"X14' [EA]	POSTS WOOD 4"X6"X16' [EA]	MOVING SIGNS TYPE II [EA]	
				[IN.]	x	[IN.]									
1	--	--	--	--	x	--	--	--	--	1	--	--	1	1	--
2	--	--	--	--	x	--	--	--	--	--	--	--	--	1	1
3	--	--	--	--	x	--	--	--	--	--	--	--	--	1	1
4	W5-52L	(2S)	II	12	x	36	--	3.00	--	--	1	--	--	--	--
5	--	--	--	--	x	--	--	--	1	1	--	--	--	--	--
6	--	--	--	--	x	--	--	--	1	1	--	--	--	--	--
7	--	--	--	--	x	--	--	--	1	1	--	--	--	--	--
8	W5-52R	(2S)	II	12	x	36	--	3.00	--	--	1	--	--	--	--
9	R1-1	(2S)	II	30	x	30	5.18	--	1	1	--	1	--	--	--
10	--	--	--	--	x	--	--	--	--	--	--	--	--	--	--
11	W5-52R	(2S)	II	12	x	36	--	3.00	--	--	1	--	--	--	--
12	--	--	--	--	x	--	--	--	1	1	--	--	--	--	--
13	--	--	--	--	x	--	--	--	1	1	--	--	--	--	--
14	--	--	--	--	x	--	--	--	1	1	--	--	--	--	--
15	W5-52L	(2S)	II	12	x	36	--	3.00	--	--	1	--	--	--	--
TOTALS							5.18	12.00	7	8	4	1	1	3	

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

CONSTRUCTION STAKING

ITEM	QUANTITY	UNIT	DESCRIPTION
650.4500	399	LF	CONSTRUCTION STAKING SUBGRADE
650.5000	399	LF	CONSTRUCTION STAKING BASE
650.6501	1	EACH	CONSTRUCTION STAKING STRUCTURE LAYOUT (B-45-117)
650.9911	1	EACH	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (2695-03-72)
650.9920	547	LF	CONSTRUCTION STAKING SLOPE STAKES

SAWING

STATION TO STATION			690.0150 ASPHALT LF
CEDAR CREEK RD	CATEGORY 0010	CATEGORY 0030	
11+87 - 14+11	15	139	
15+20 - 17+10	25	-	
CATEGORY SUBTOTALS	40	139	
TOTALS		179	

TRAFFIC CONTROL

		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS		643.1050 TRAFFIC CONTROL SIGNS PCMS	
STAGE	DURATION DAYS**	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY
CEDAR CREEK RD									
DETOUR	200	7	1,400	14	2,800	68	13,600	2	28
TOTALS			1,400		2,800		13,600		28

**FOR INFORMATION ONLY

FISHERIES CONSULTANT

PROJECT	SPV.0060.01 FISHERIES CONSULTANT EACH
CEDAR CREEK RD	
2695-03-72	1
TOTALS	1

TRAFFIC CONTROL SIGNS FIXED MESSAGE

					643.1000			
SIGN DIMENSIONS**					NO. OF SIGNS**	SIGN AREA**	TRAFFIC CONTROL SIGNS FIXED MESSAGE	COMMENTS
SIGN MESSAGE	IN			EACH	SF		SF	
CEDAR CREEK RD	24	X	24	32	4		128	DETOUR PLAN
TOTALS							128	

**FOR INFORMATION ONLY

SILT FENCE - SNAKE EXCLUSION FENCING

STATION TO STATION		SPV.0090.01 SILT FENCE - SNAKE EXCLUSION FENCING LF
CEDAR CREEK RD		
11+87 - 14+11	203	
15+20 - 17+10	450	
TOTALS	653	

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

CONVENTIONAL SYMBOLS

SECTION LINE

QUARTER LINE

SIXTEENTH LINE

NEW REFERENCE LINE

NEW R/W LINE

EXISTING R/W OR HE LINE

PROPERTY LINE

LOT, TIE & OTHER MINOR LINES

EXISTING CENTERLINE

CORPORATE LIMITS

NEW R/W (FEE OR HE)
(HATCHING VARIES BY OWNER)

TEMPORARY LIMITED EASEMENT AREA

EASEMENT AREA
(PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)

BUILDING

BRIDGE

TO BE REMOVED

CULVERT

SECTION CORNER SYMBOL

SECTION CORNER MONUMENT

GEODETIC SURVEY MONUMENT

NON-PERMITTED SIGN

PERMITTED SIGN

ACCESS RESTRICTED BY ACQUISITION

NO ACCESS (BY STATUTORY AUTHORITY)

ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)

NO ACCESS (NEW HIGHWAY)

PARCEL NUMBER 25

PARALLEL OFFSETS

R/W MONUMENT
(TO BE SET)

NON-MONUMENTED R/W POINT

FOUND SURVEY MONUMENT
(SEE FOUND MONUMENT TABLE)

IP

NON-PERMITTED SIGN

PERMITTED SIGN

ACCESS RESTRICTED BY ACQUISITION

NO ACCESS (BY STATUTORY AUTHORITY)

ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)

NO ACCESS (NEW HIGHWAY)

PARCEL NUMBER 25

PARALLEL OFFSETS

CONVENTIONAL UTILITY SYMBOLS

WATER

GAS

TELEPHONE

OVERHEAD TRANSMISSION LINES

ELECTRIC

CABLE TELEVISION

FIBER OPTIC

SANITARY SEWER

STORM SEWER

COMBINED SEWER

ELECTRIC TOWER

TRANSMISSION STRUCTURES

NON-COMPENSABLE

COMPENSABLE

NON-COMPENSABLE

COMPENSABLE

ELECTRIC POLE

TELEPHONE POLE

PEDESTAL (LABEL TYPE)

(TV, TEL, ELEC, ETC.)

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS

ACRES

ALUMINUM

AND OTHERS

BLOCK

CENTERLINE

CERTIFIED SURVEY MAP

CONCRETE

COUNTY TRUNK HIGHWAY

CORNER

DOCUMENT NUMBER

EASEMENT

EXISTING

GAS VALVE

GRID NORTH

IDENTIFICATION

INTERSTATE HIGHWAY

LEFT

MONUMENT

NATIONAL GEODETIC SURVEY

NUMBER

OUTLOT

PAGE

POINT OF TANGENCY

POINT OF BEGINNING

POINT OF CURVATURE

POINT OF COMPOUND CURVE

POINT OF INTERSECTION

AR

AC

ALUM

ET AL

BLK

C/L

CSM

CONC

CTH

COR

DOC

EASE

EX

GV

GN

ID

IH

LT

MON

NGS

NO

OL

P

PT

POB

PC

PCC

PI

PROPERTY LINE

RECORDED AS

REEL / IMAGE

REFERENCE LINE

REMAINING

RESTRICTIVE DEVELOPMENT

EASEMENT

RIGHT

RIGHT OF WAY

SECTION

SEPTIC VENT

SQUARE FEET

STATE TRUNK HIGHWAY

STATION

TELEPHONE FEDESTAL

TRANSPORTATION PROJECT PLAT

UNITED STATES HIGHWAY

VOLUME

PL

(100')

R/I

R/L

REM

RDE

RT

R/W

SEC

SEPV

SF

STH

STA

TP

TTP

USH

V

CURVE DATA ABBREVIATIONS

LONG CHORD

LONG CHORD BEARING

RADIUS

DEGREE OF C.JRVE

DELTA ANGLE

LENGTH OF CURVE

TANGENT

DIRECTION AHEAD

DIRECTION BACK

LCH

LCB

R

D

Δ/DELTA

L

T

DA

DB

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), OZAUKEE COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY ¾" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

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

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

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN THE TOWN OF CEDARBURG.

PARCEL AND UTILITY IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE DETAIL PAGES.

INFORMATION FOR THE BASIS OF EXISTING HIGHWAY RIGHT-OF-WAY POINTS OF REFERENCE AND ACCESS CONTROL ARE LISTED ON THE DETAIL PAGES.

AN EASEMENT FOR HIGHWAY PURPOSES (HE), AS LONG AS SO USED, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON, THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE. ALL (TLES) ON THIS PLAT EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

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

R/W PROJECT NUMBER 2695-03-02	SHEET NUMBER 4.01	TOTAL SHEETS 2
FEDERAL PROJECT NUMBER N/A		
PLAT OF RIGHT OF WAY REQUIRED FOR T CEDARBURG, CEDAR CREEK RD CEDAR CREEK BRIDGE, P-45-0038		
CEDAR CREEK ROAD	OZAUKEE COUNTY	
CONSTRUCTION PROJECT NUMBER 2695-03-72		

BEGIN RELOCATION ORDER
1792.00 FEET EAST AND 2.42 FEET
SOUTH OF THE NORTHWEST
CORNER OF SECTION 14, T10N, R21E

END RELOCATION ORDER
316.42 FEET WEST AND 1.14 FEET
SOUTH OF THE NORTH QUARTER
CORNER OF SECTION 14, T10N, R21E

THIS PLAT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES AND ACCESS RIGHTS.

ORIGINAL PLANS PREPARED BY

GRÄEF

275 W. WISCONSIN AVENUE, SUITE 300
MILWAUKEE, WI 53203

03/19/2026

(Date)

(Signature)

APPROVED FOR THE TOWN OF CEDARBURG

DATE: 3/31/2026

(Signature)

FILE NAME : X:\ML\2024\20240101\DESIGN\TRANSPORTATION\SHEETS\PLAN\040101-RT.DWG

PLOT DATE : 3/19/2026 8:40 AM

PLOT BY : ROLLINS, CARLA

PLOT NAME :

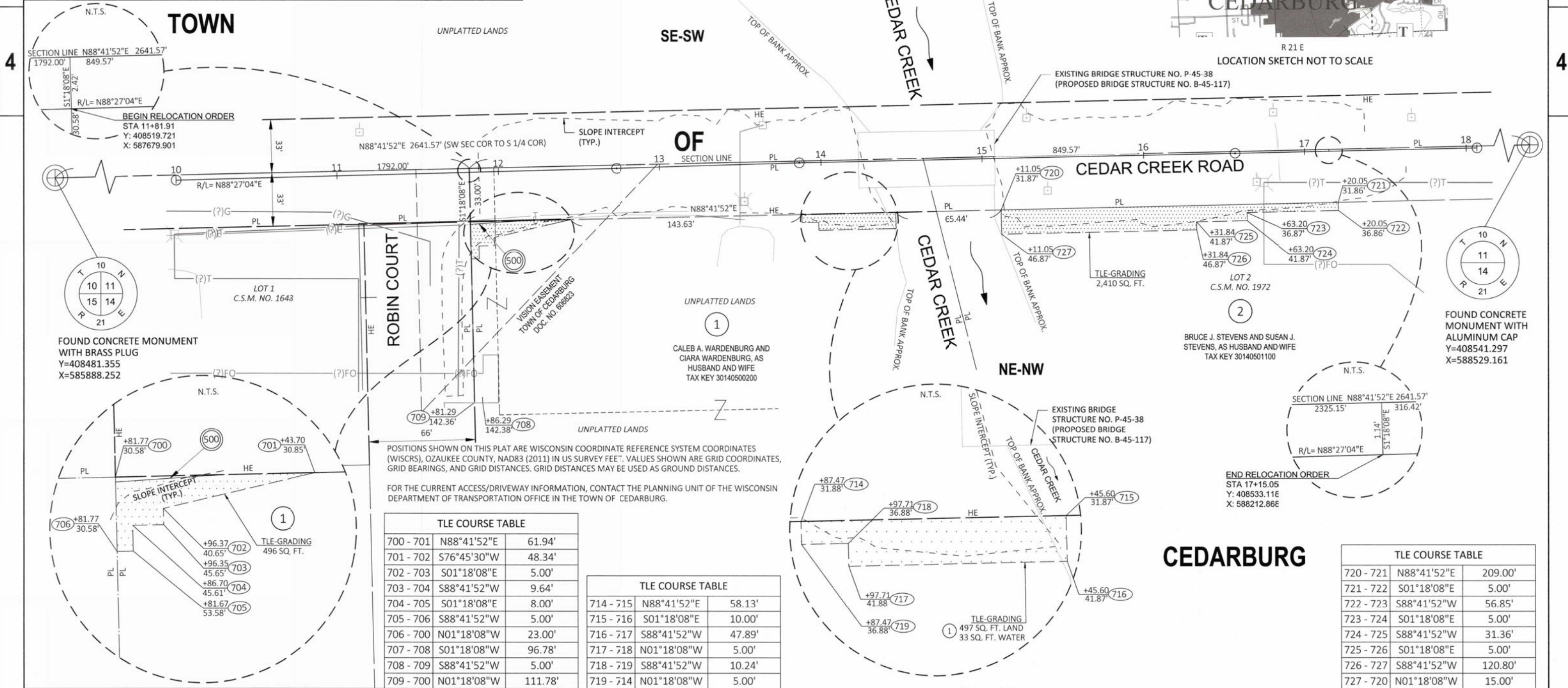
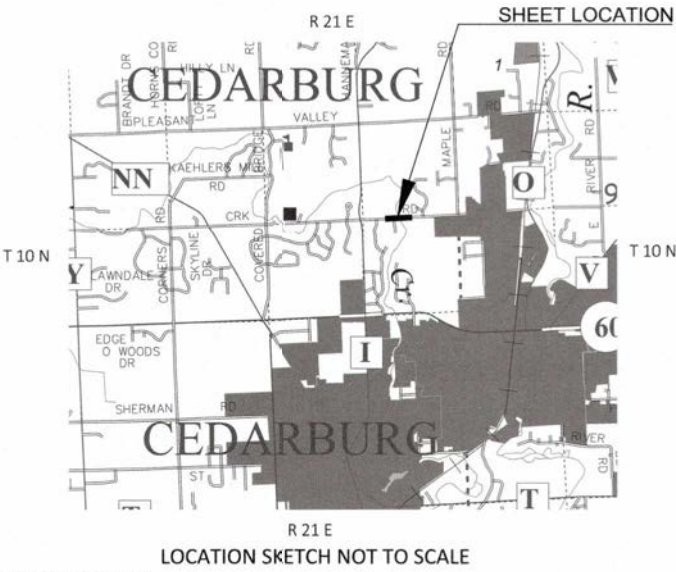
SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE CITY OF CEDARBURG.

PARCEL NUMBER	SHEET NUMBER	OWNER(S)	INTEREST REQUIRED	R/W REQUIRED (S.F.)			P.L.E. S.F.	T.L.E. S.F.
				NEW	EXISTING	TOTAL		
1	4.02	CALEB A. WARDENBURG AND CIARA WARDENBURG, AS HUSBAND AND WIFE	TLE	0	0	0	0	1026
2	4.02	BRUCE J. STEVENS AND SUSAN J. STEVENS, AS HUSBAND AND WIFE	TLE	0	0	0	0	2410

BASIS OF EXISTING RIGHT-OF-WAY			
ROUTE	BASIS	WIDTH	YEAR
CEDAR CREEK ROAD (S OF CL, W OF BRIDGE)	CSM 1648	33'	1955
CEDAR CREEK ROAD (S OF CL, E OF BRIDGE)	CSM 1972	33'	1988
CEDAR CREEK ROAD (N OF CL AND ACROSS BRIDGE)	STATUTE 82.31	PRESUMED 66'	N/A

UTILITY INTERESTS REQUIRED				
UTILITY NUMBER	SHEET NUMBER	OWNER(S)	INTEREST REQUIRED	DOCUMENT #
500	4.02	WE ENERGIES - ELECTRIC	RELEASE OF RIGHTS	NO EASEMENT OF RECORD PROVIDED



POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), OZAUKEE COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

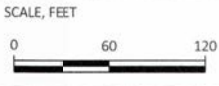
FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN THE TOWN OF CEDARBURG.

TLE COURSE TABLE		
700 - 701	N88°41'52"E	61.94'
701 - 702	S76°45'30"W	48.34'
702 - 703	S01°18'08"E	5.00'
703 - 704	S88°41'52"W	9.64'
704 - 705	S01°18'08"E	8.00'
705 - 706	S88°41'52"W	5.00'
706 - 700	N01°18'08"W	23.00'
707 - 708	S01°18'08"W	96.78'
708 - 709	S88°41'52"W	5.00'
709 - 700	N01°18'08"W	111.78'

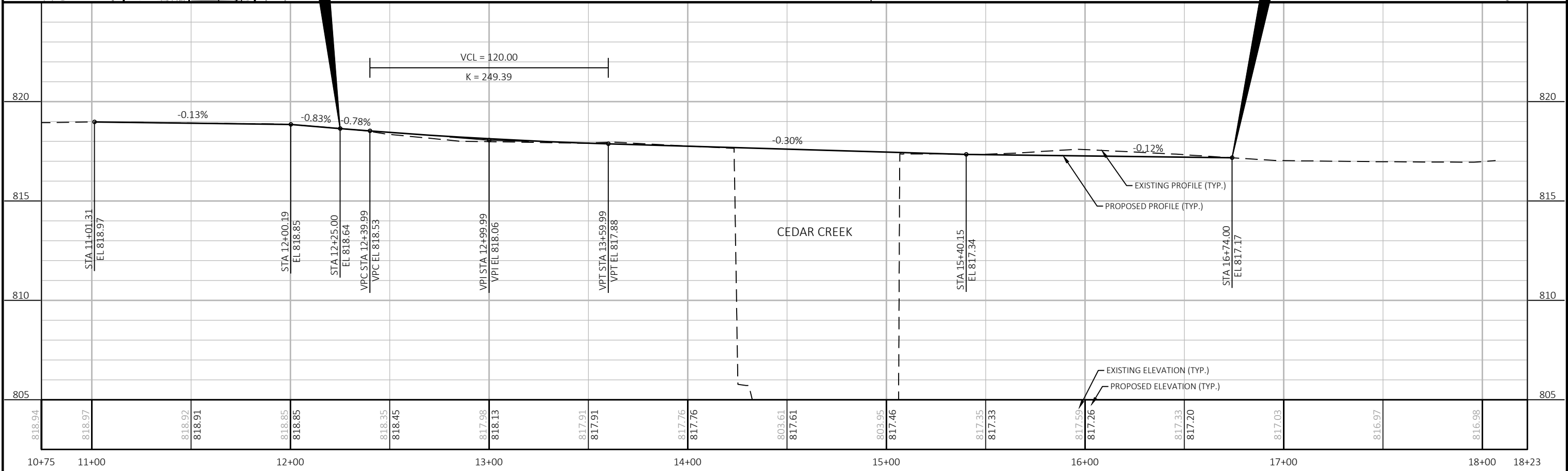
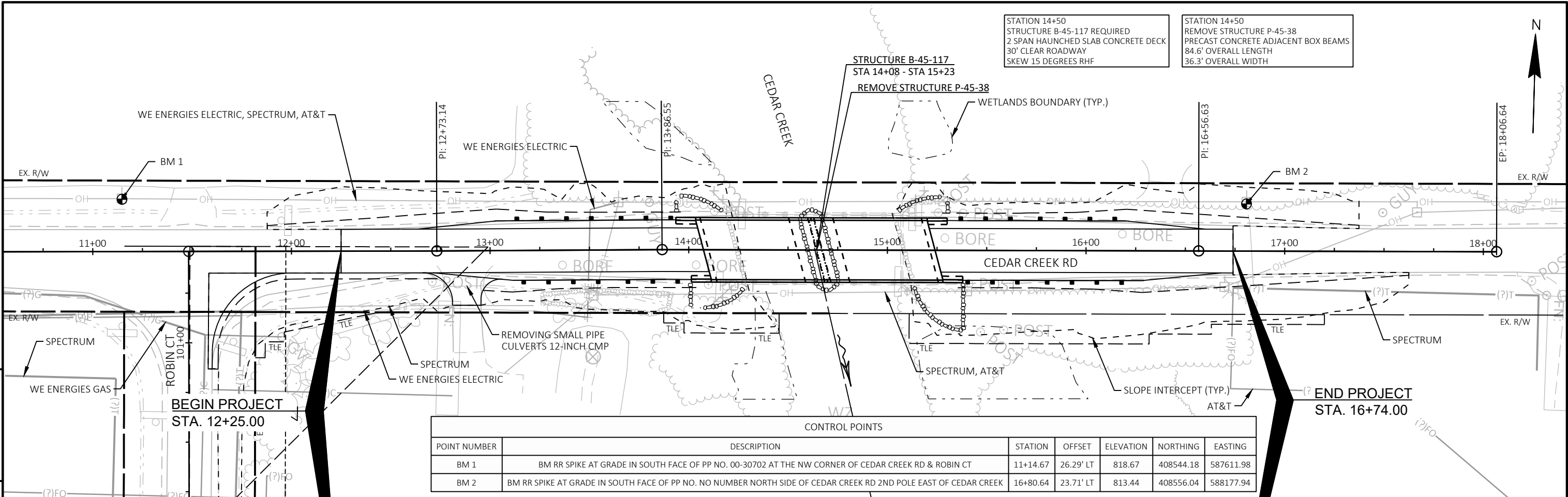
TLE COURSE TABLE		
714 - 715	N88°41'52"E	58.13'
715 - 716	S01°18'08"E	10.00'
716 - 717	S88°41'52"W	47.89'
717 - 718	N01°18'08"W	5.00'
718 - 719	S88°41'52"W	10.24'
719 - 714	N01°18'08"W	5.00'

TLE COURSE TABLE		
720 - 721	N88°41'52"E	209.00'
721 - 722	S01°18'08"E	5.00'
722 - 723	S88°41'52"W	56.85'
723 - 724	S01°18'08"E	5.00'
724 - 725	S88°41'52"W	31.36'
725 - 726	S01°18'08"E	5.00'
726 - 727	S88°41'52"W	120.80'
727 - 720	N01°18'08"W	15.00'

REVISION DATE	DATE	GRID FACTOR
	03/19/2026	N/A



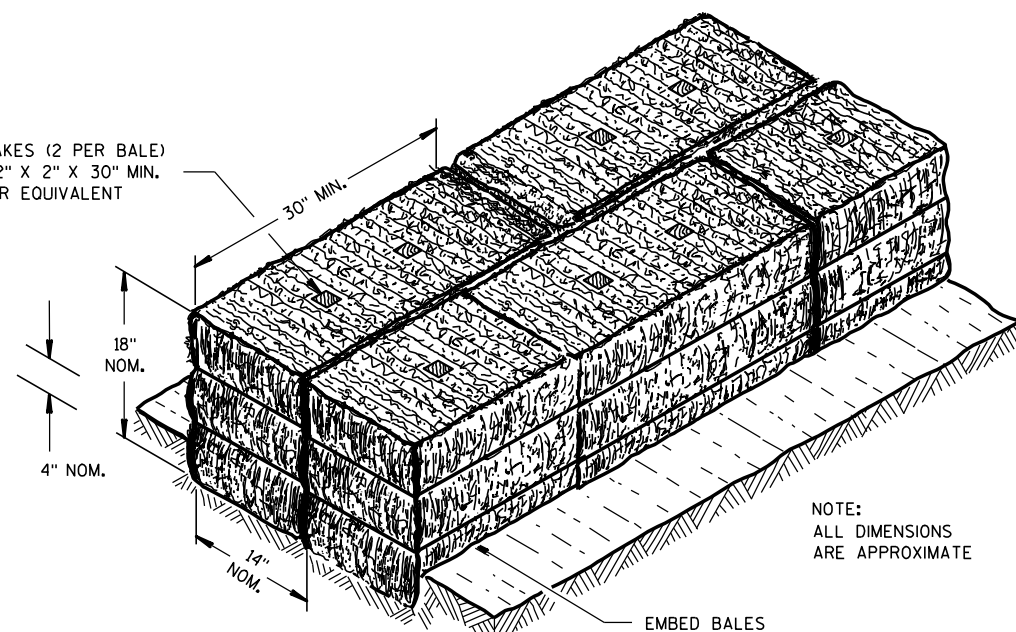
HWY: CEDAR CREEK ROAD	STATE R/W PROJECT NUMBER	2695-03-02	PLAT SHEET	4.02
COUNTY: OZAUKEE	CONSTRUCTION PROJECT NUMBER	2695-03-72	PS&E SHEET	E



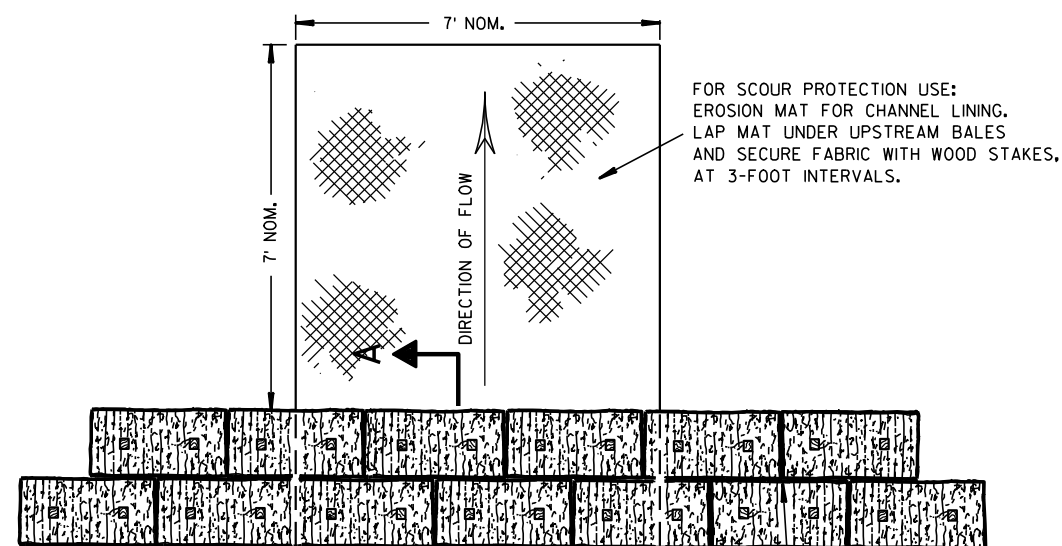
Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E14-01	TRACKING PAD
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
14A02-01	TREE PLANTING DETAIL
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)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-10A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-10B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-10C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-12	SIGNING AND MARKING FOR TWO LANE BRIDGES
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

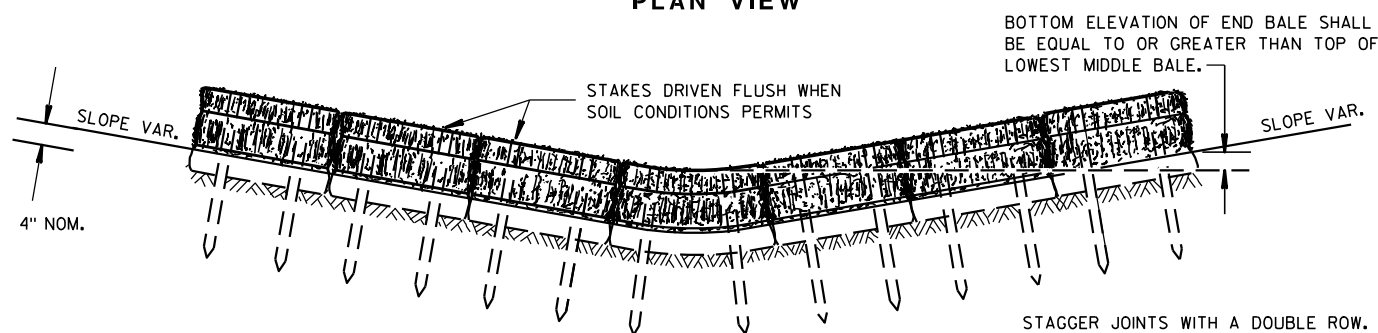
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



SECTION A-A



PLAN VIEW



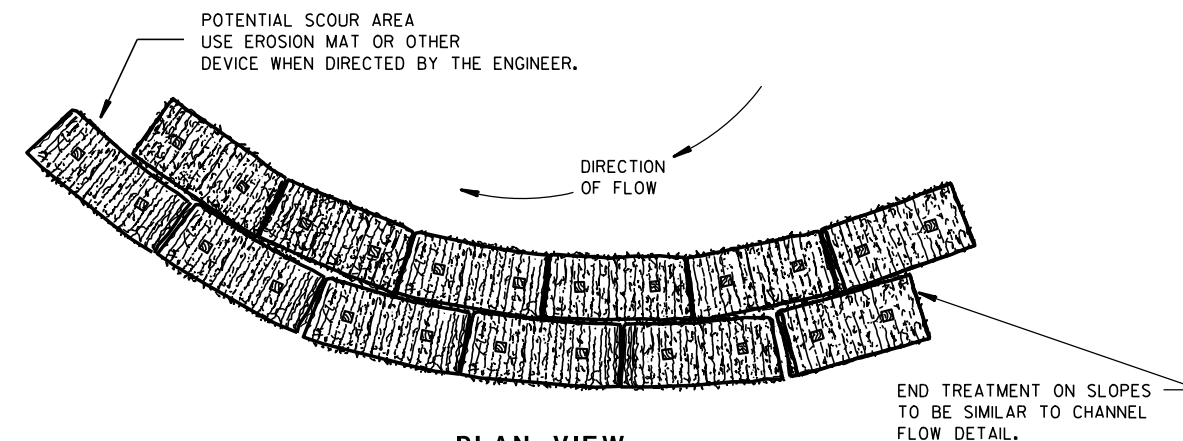
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

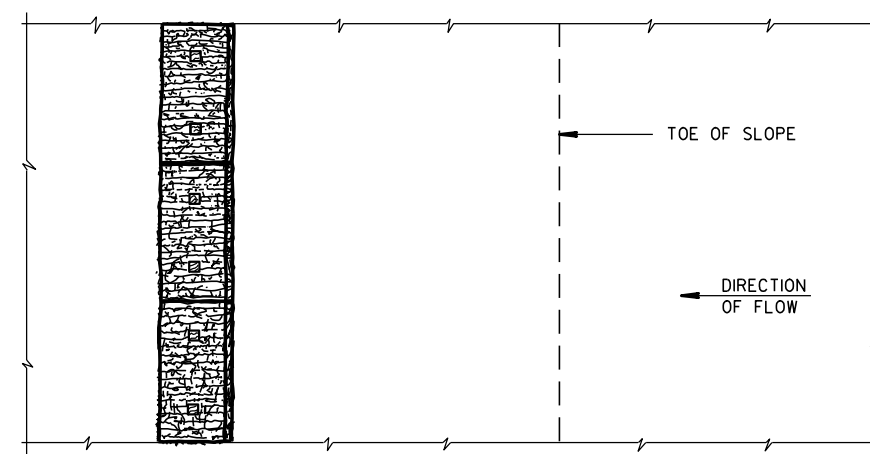
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

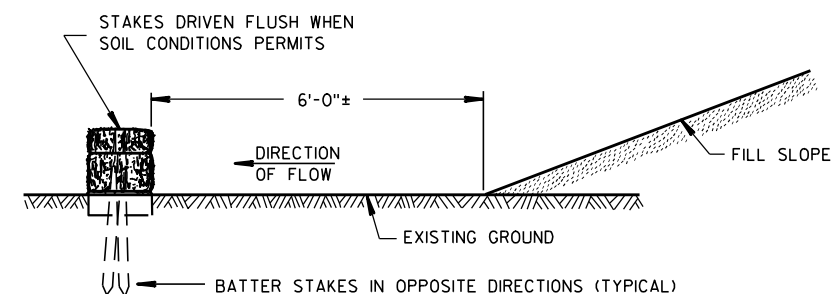


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

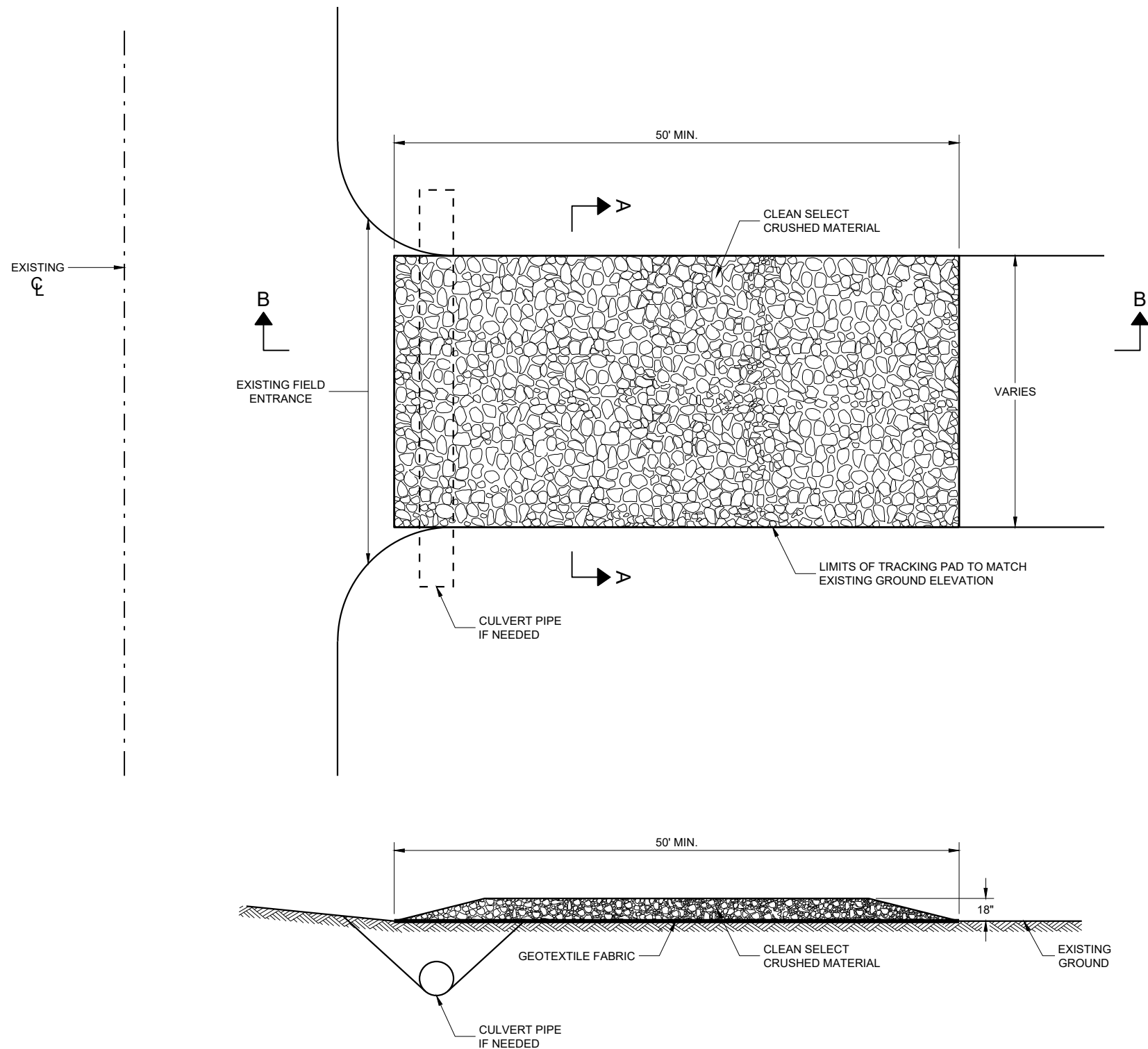
FHWA



- 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

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

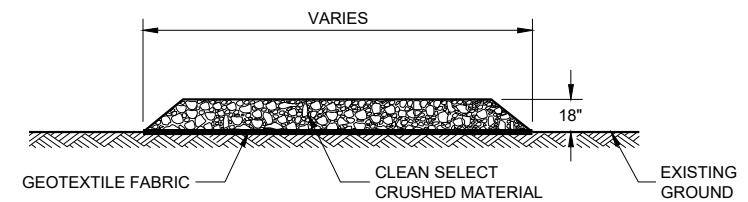
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



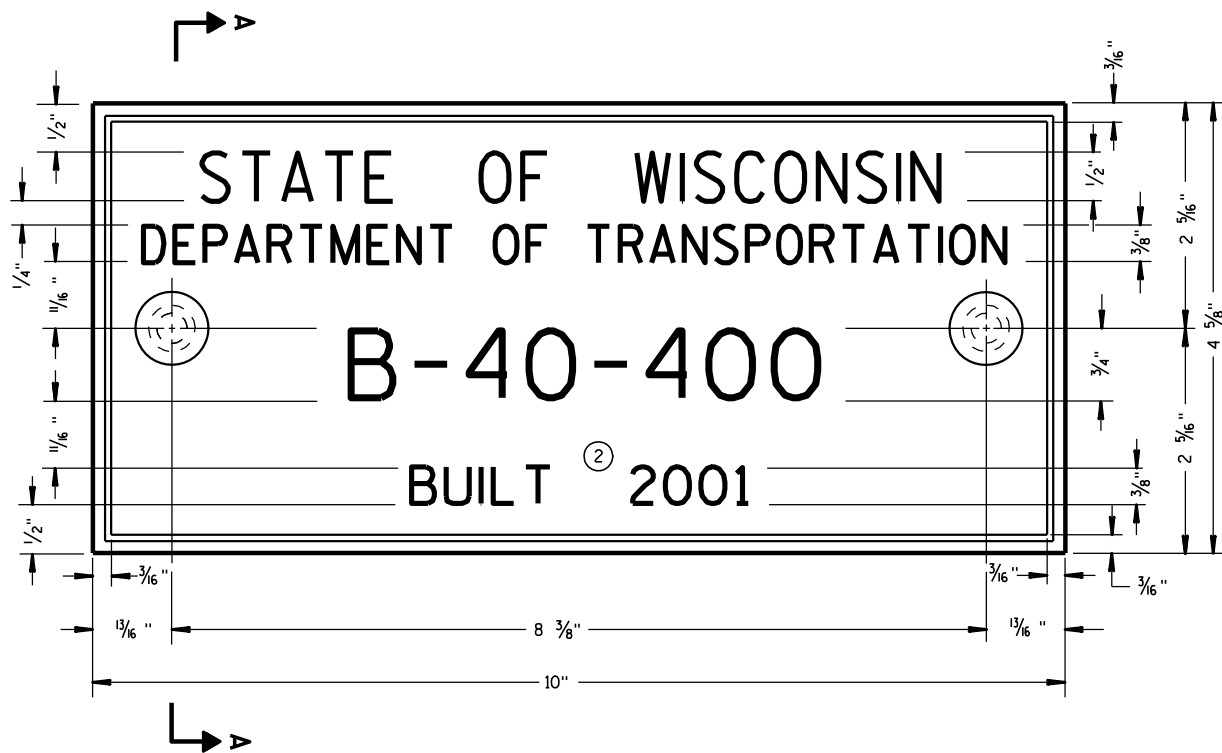
SECTION A - A

TRACKING PAD

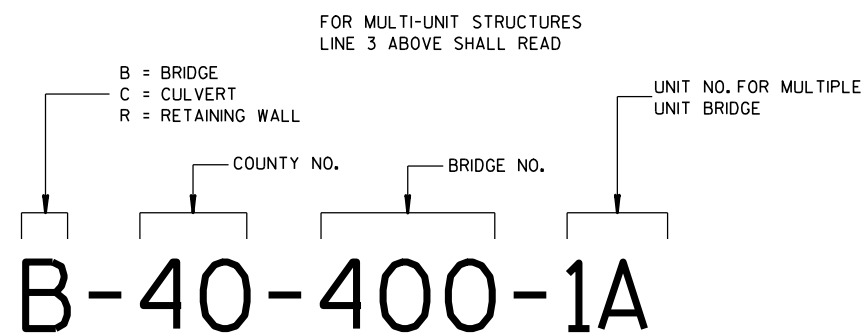
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA



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



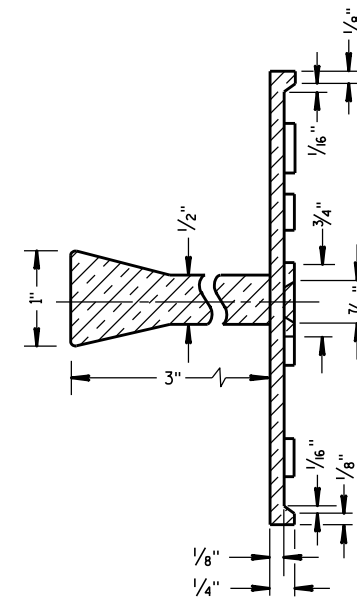
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

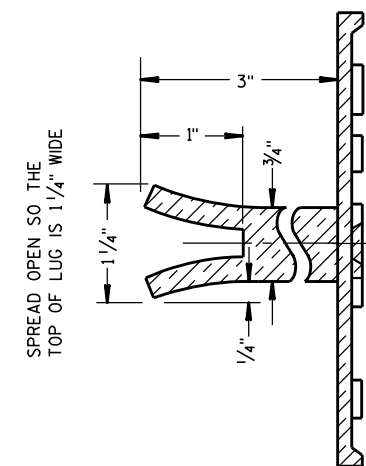
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

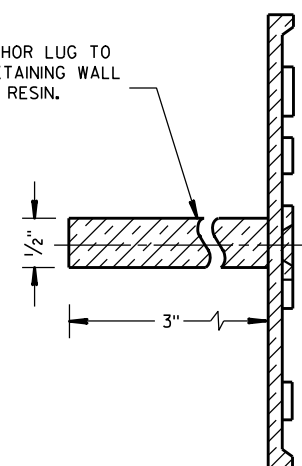


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

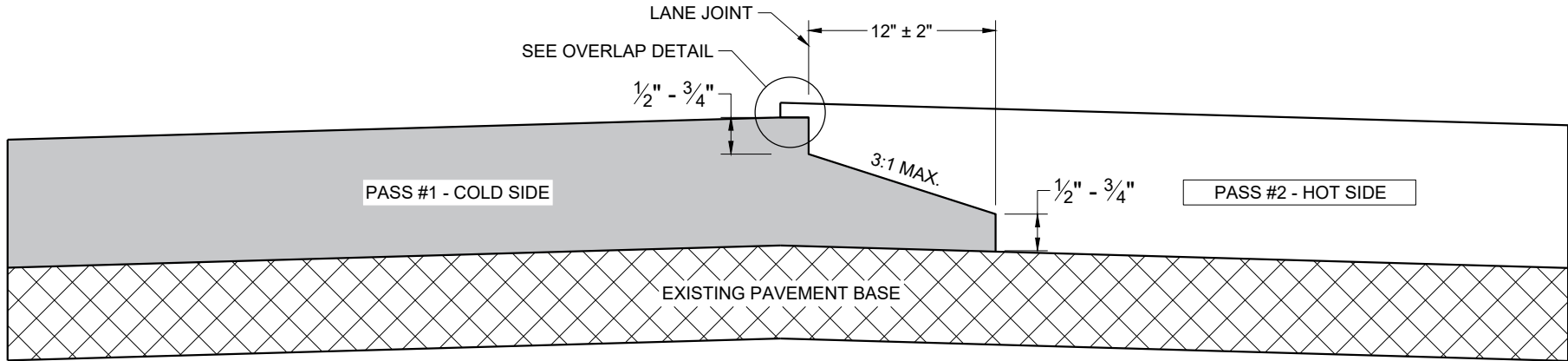
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

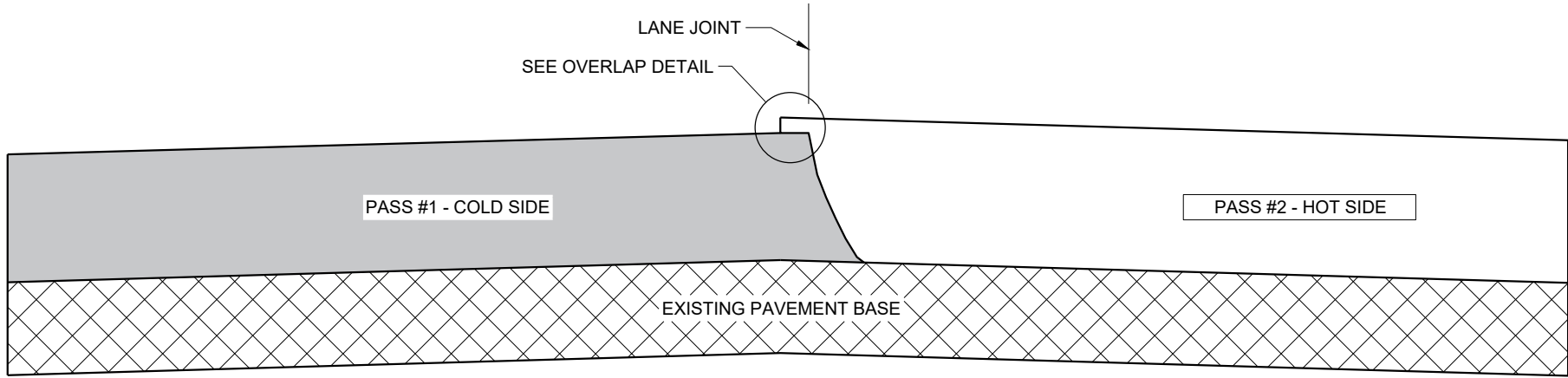
3/26/10
DATE

FHWA

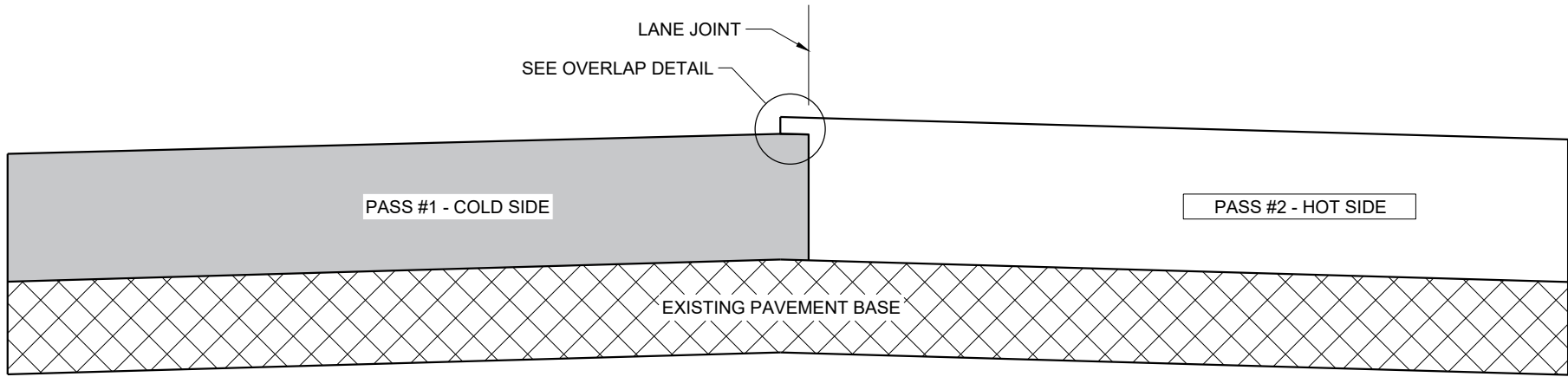
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

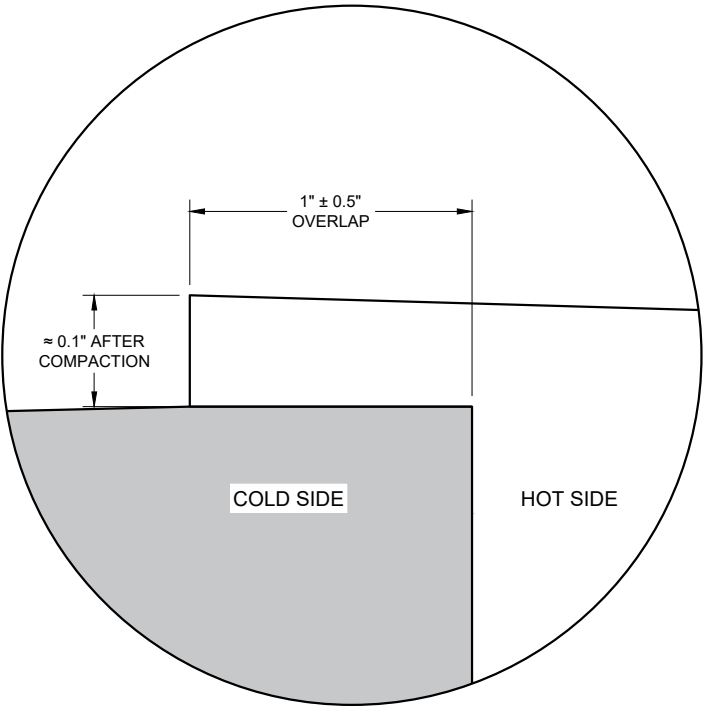
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY 1" ± 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.

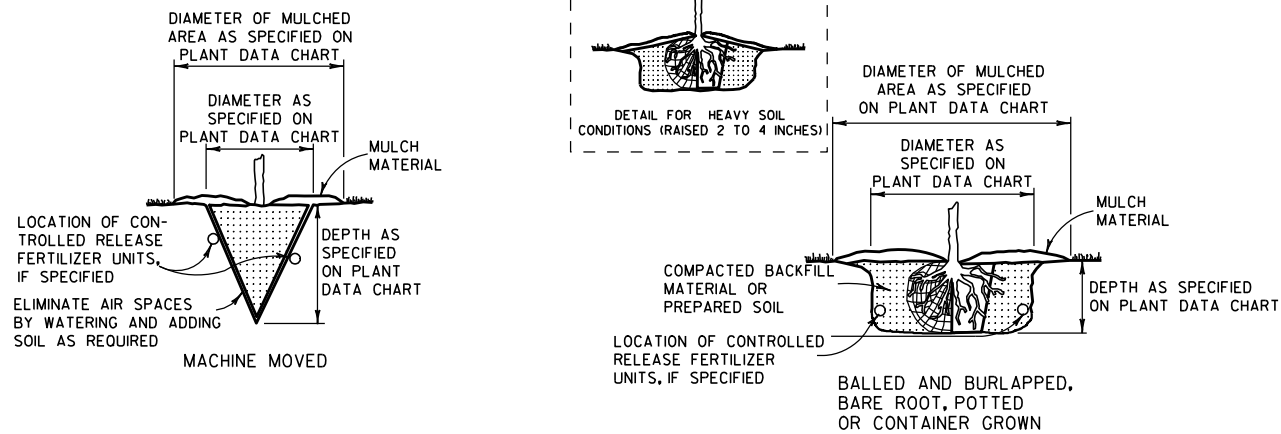


OVERLAP DETAIL (TYPICAL)

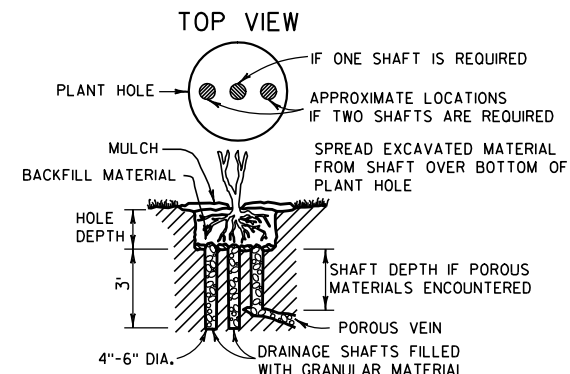
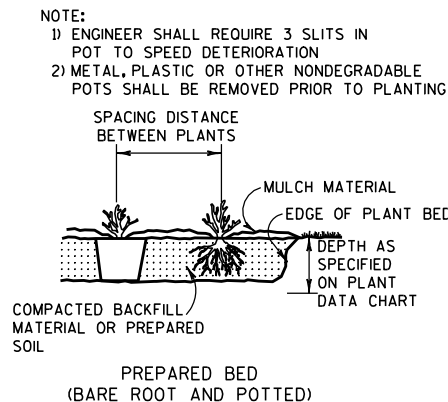
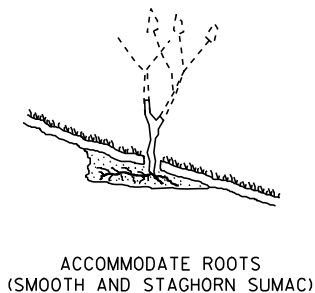
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

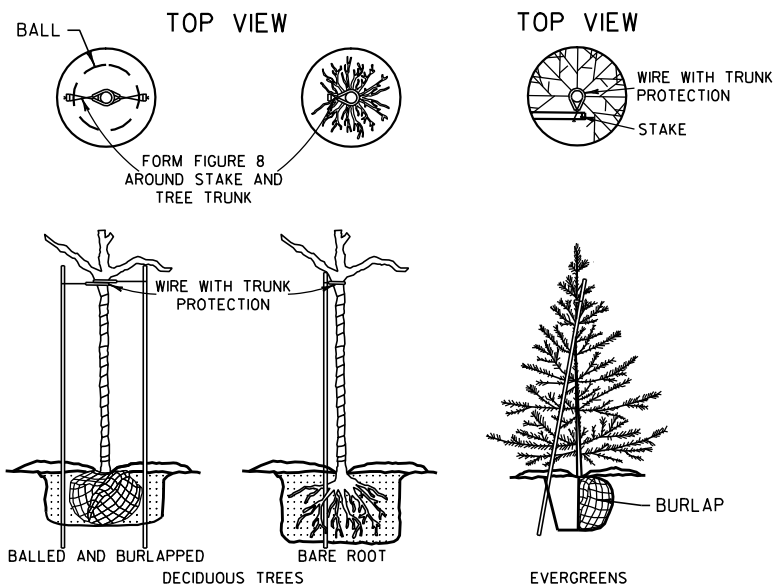
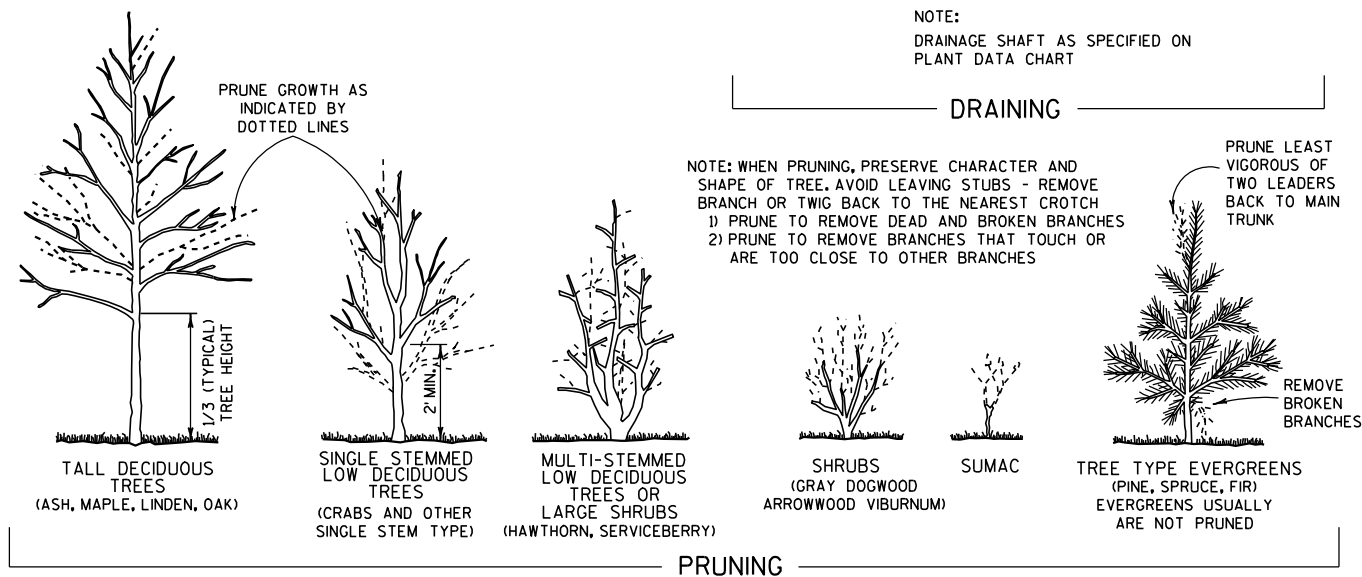
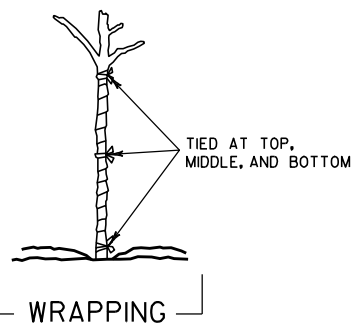
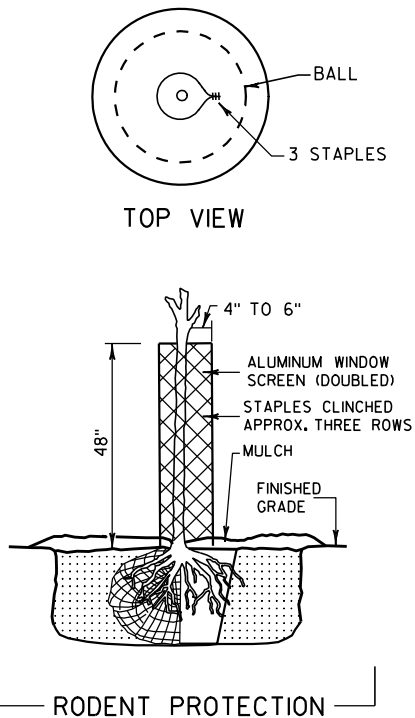
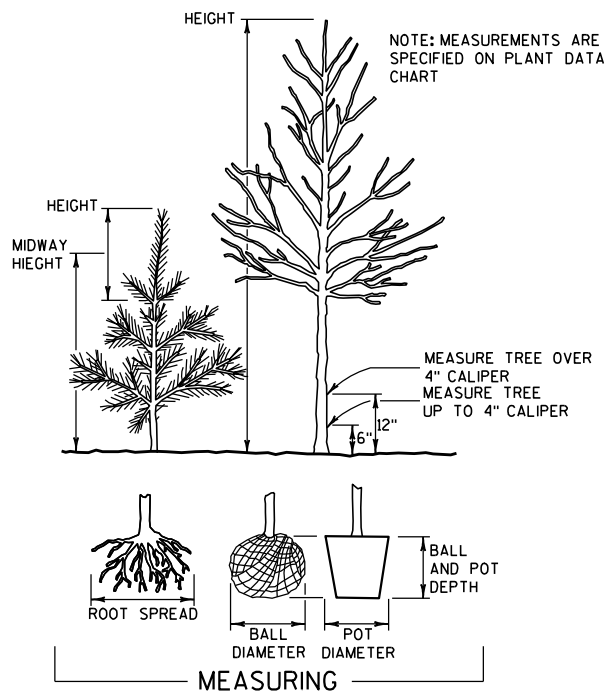


PLANTING

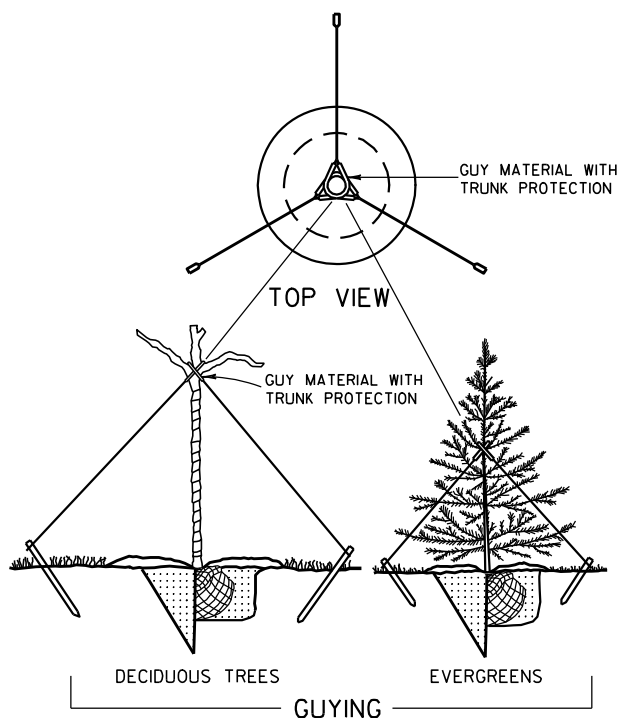


NOTE:
DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

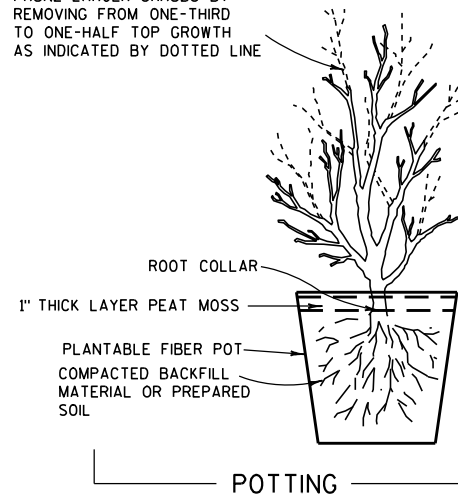
DRAINING



NOTE: BRACING STAKE
1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE IN PLACE.



PRUNE LARGER SHRUBS BY REMOVING FROM ONE-THIRD TO ONE-HALF TOP GROWTH AS INDICATED BY DOTTED LINE



NOTES

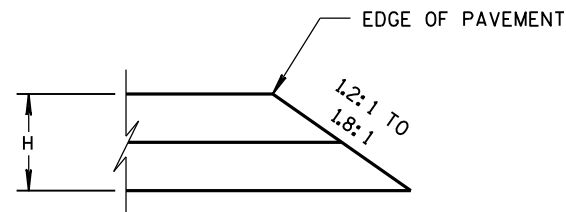
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

BRACING, WRAPPING, GUYING, RODENT PROTECTION, FERTILIZER AND MULCH SHALL BE USED ONLY WHEN SPECIFIED ON THE PLANT DATA CHART (PART OF PLAN) OR SPECIAL PROVISIONS.

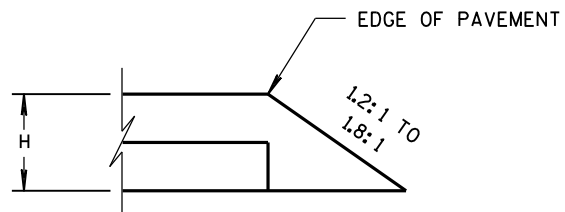
TREE PLANTING DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

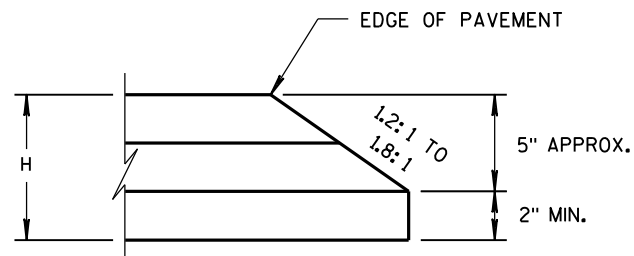
APPROVED
4/11/94 /S/ Rory L. Rhinesmith
DATE CHIEF METHODS DEVELOPMENT ENGINEER
FHWA



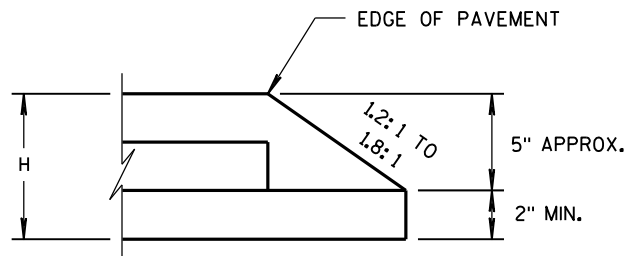
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

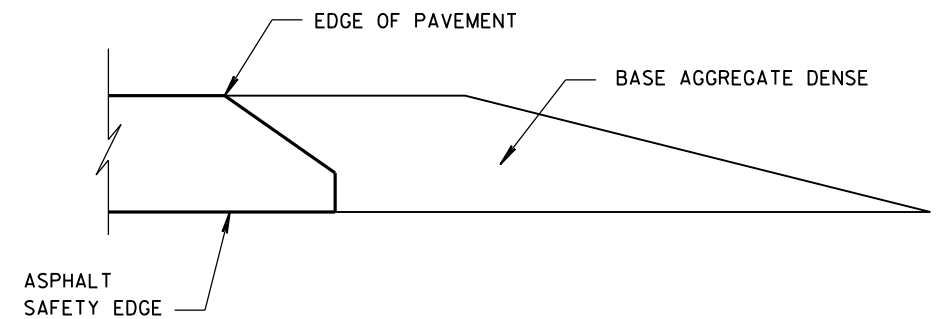


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

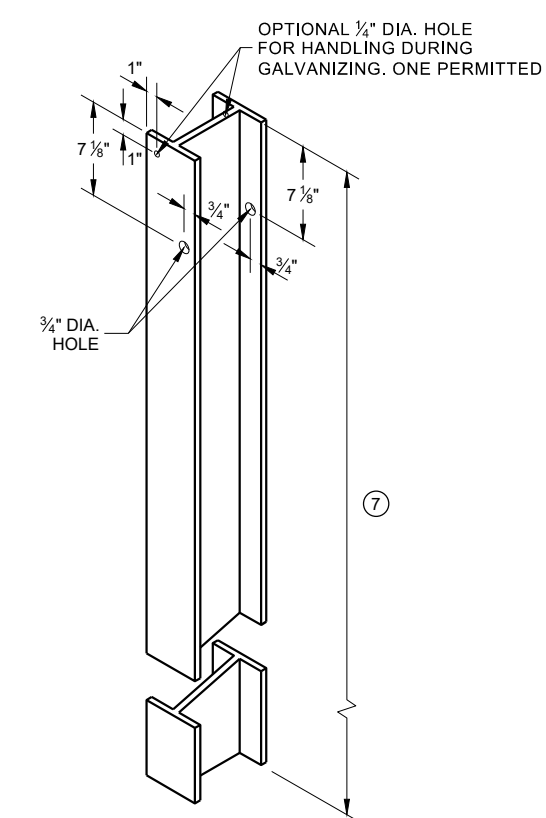
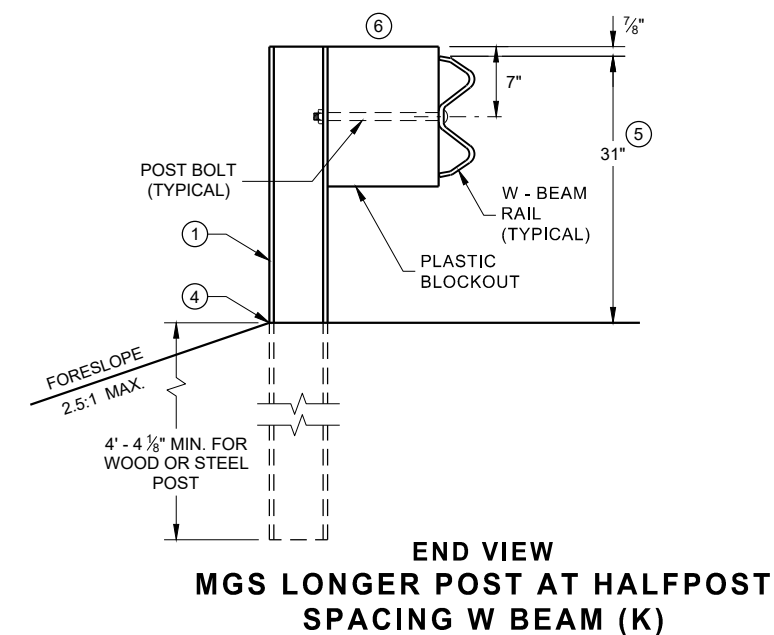
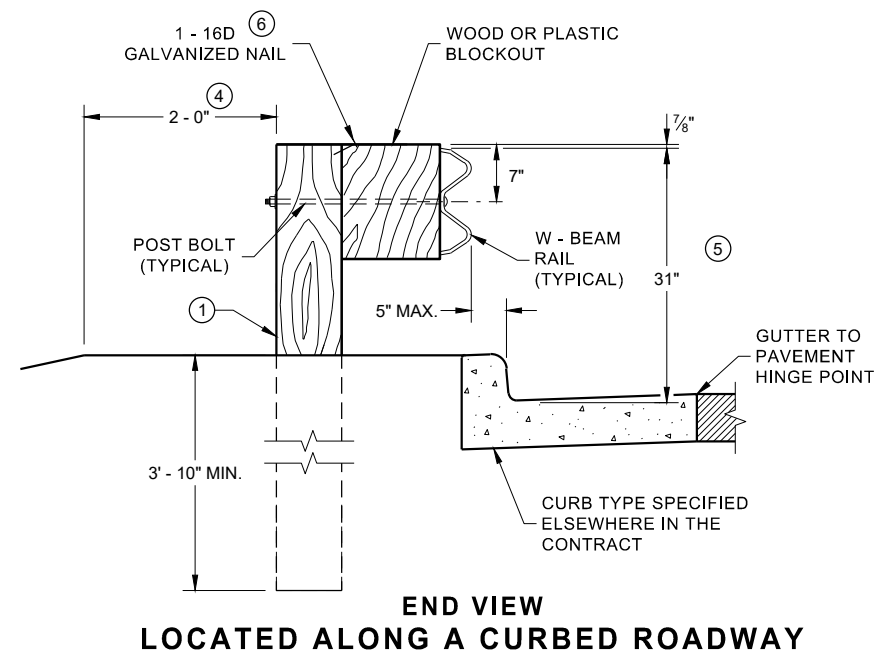
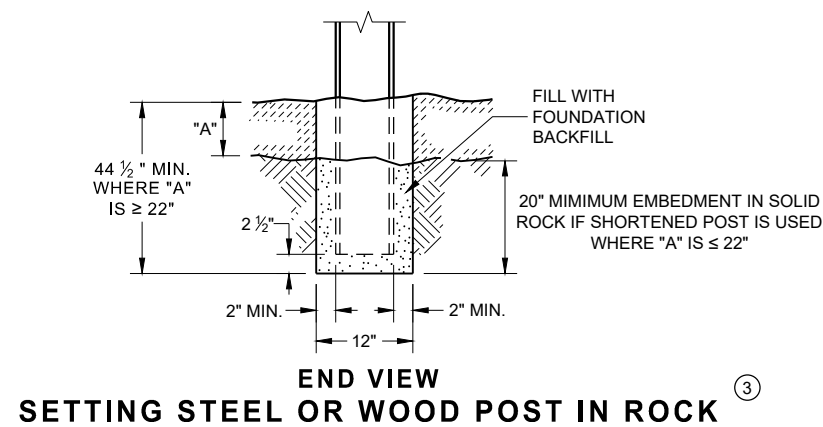
HMA PAVEMENT AND HMA OVERLAYS



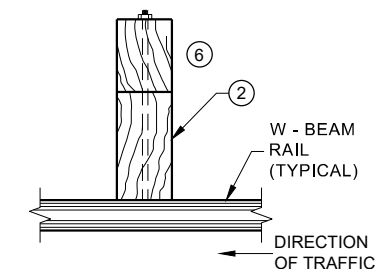
FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE _{SM}	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 11/30/2012	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER FHWA

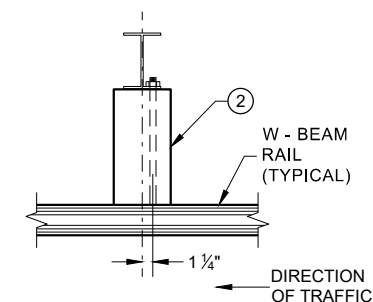
- WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- 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".
- 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.
- TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



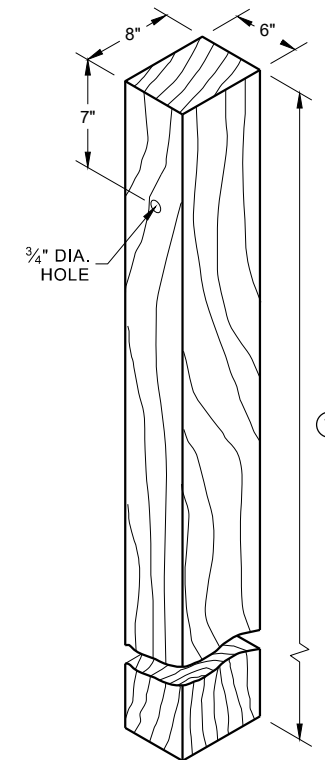
STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9)



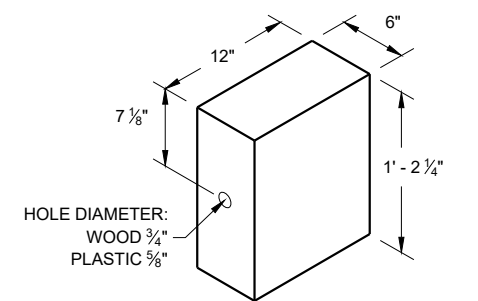
PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



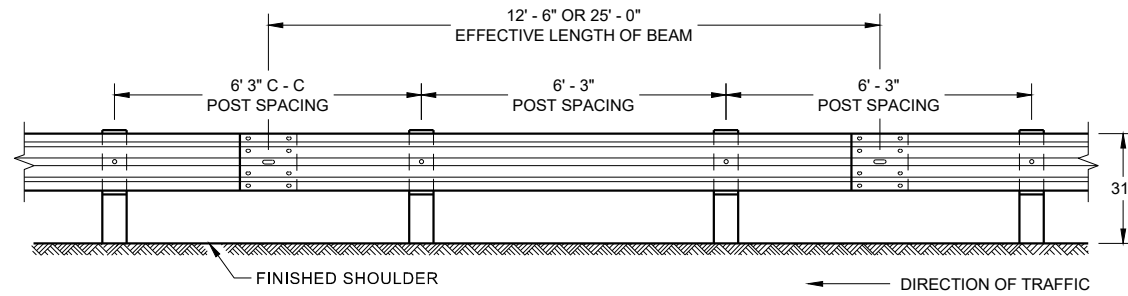
WOOD POST
(6" X 8") NOMINAL



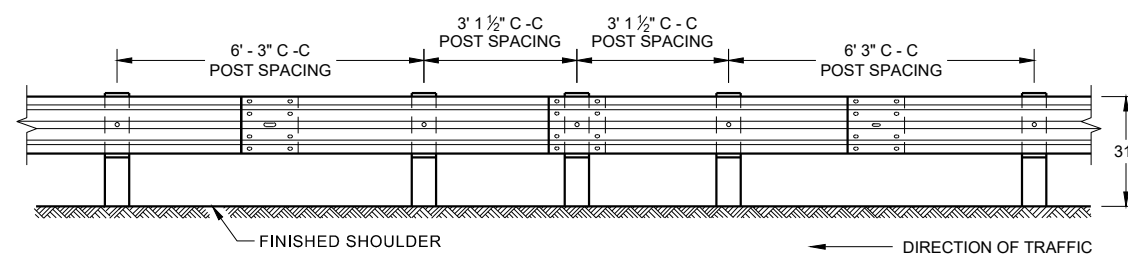
WOOD OR PLASTIC
BLOCKOUT

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

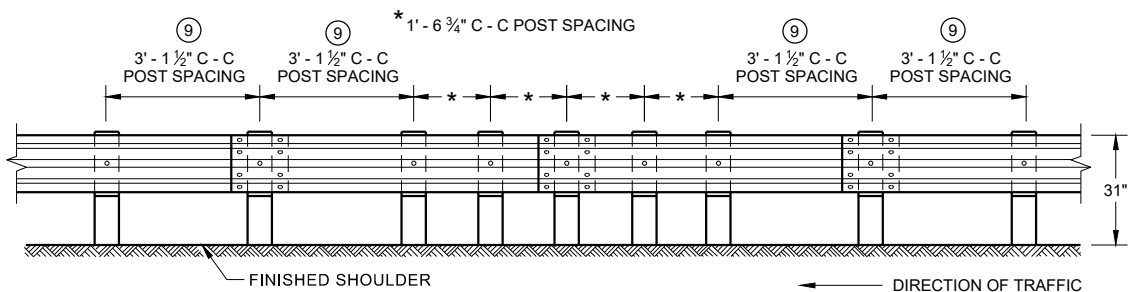
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



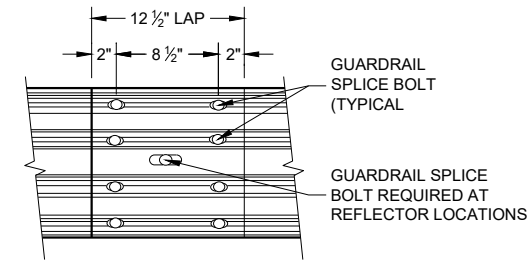
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



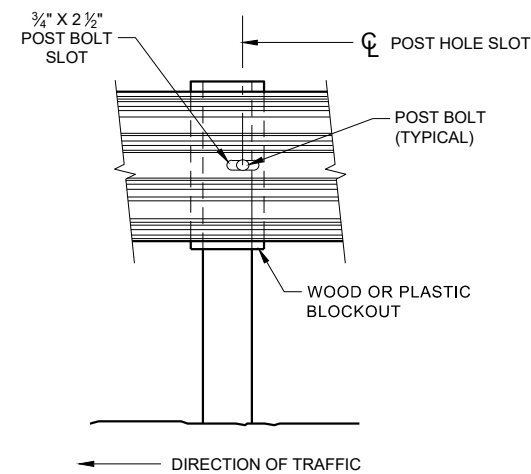
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



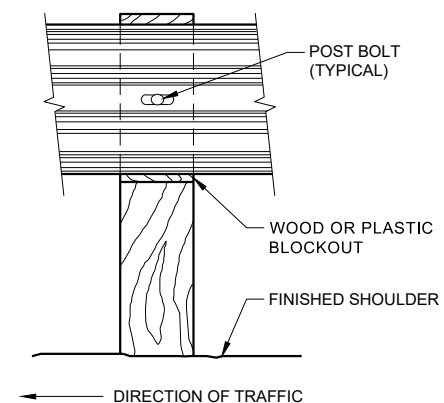
**FRONT VIEW
QUARTER POST SPACING (QS)**



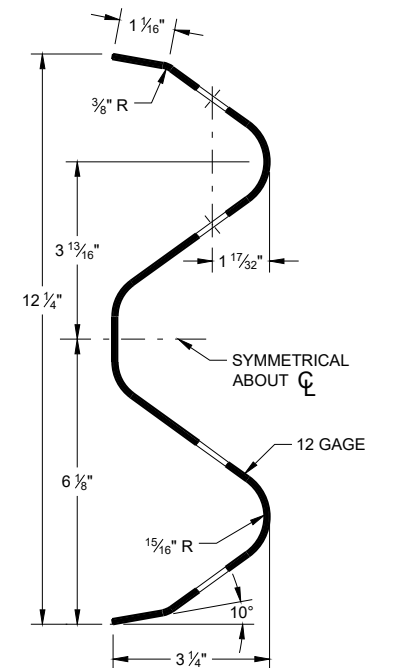
**FRONT VIEW
MID-SPAN BEAM SPLICE**



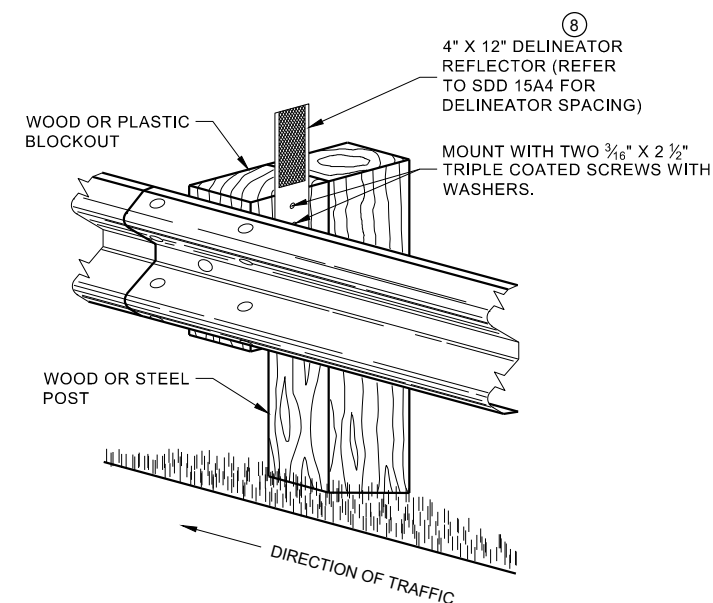
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

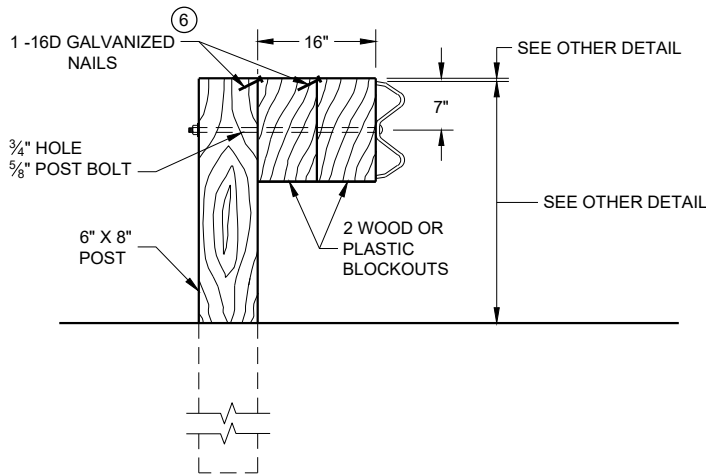
- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" 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.

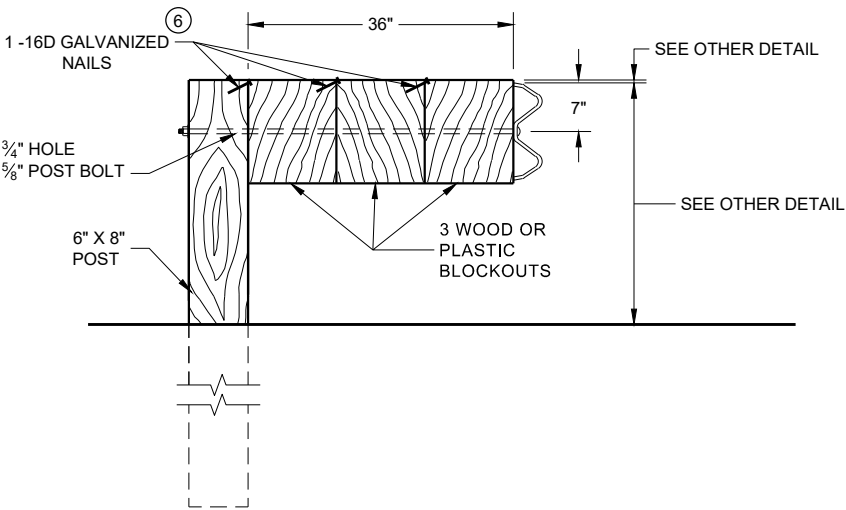
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

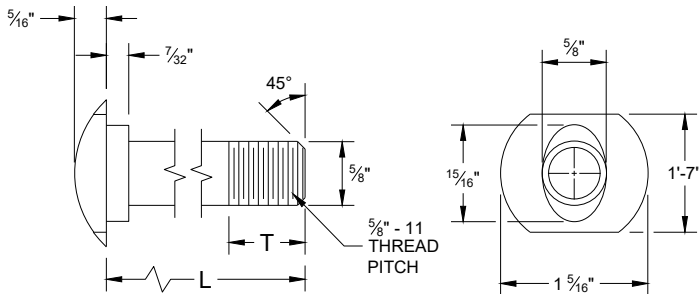
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

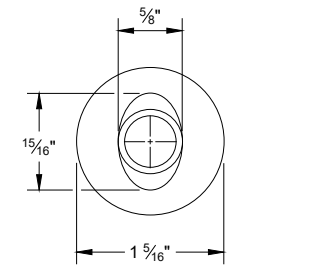
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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

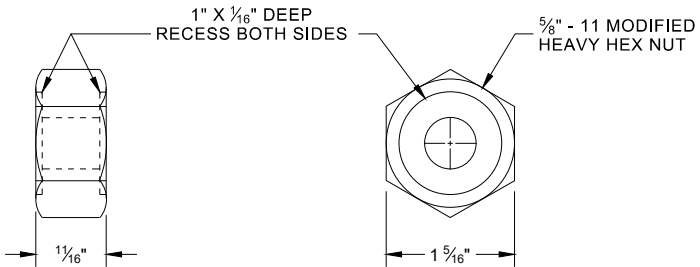


POST BOLT TABLE

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"

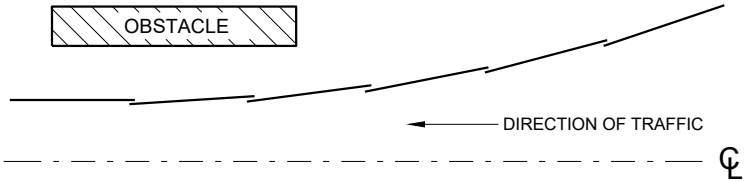


ALTERNATE BOLT HEAD

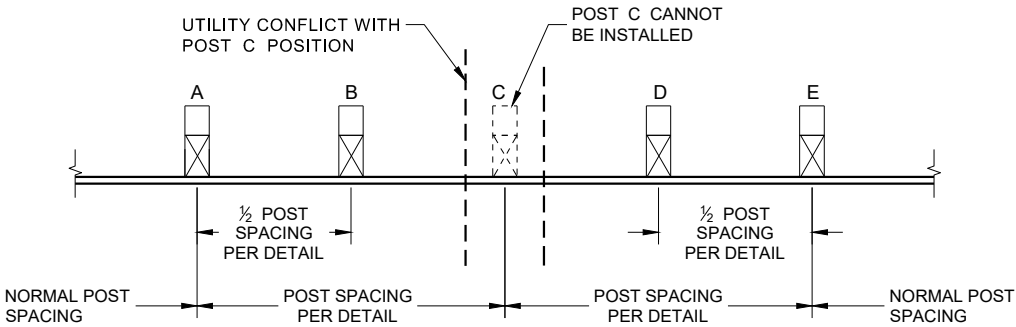


POST BOLT, SPLICE BOLT AND RECESS NUT

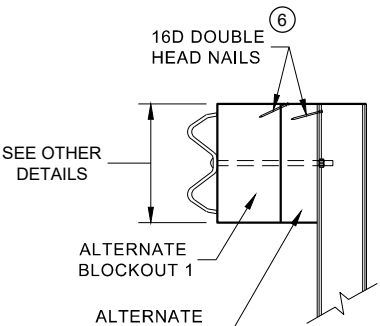
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



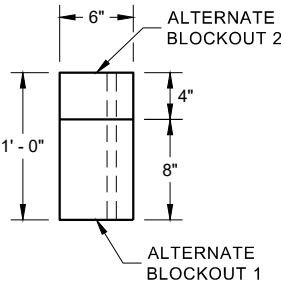
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

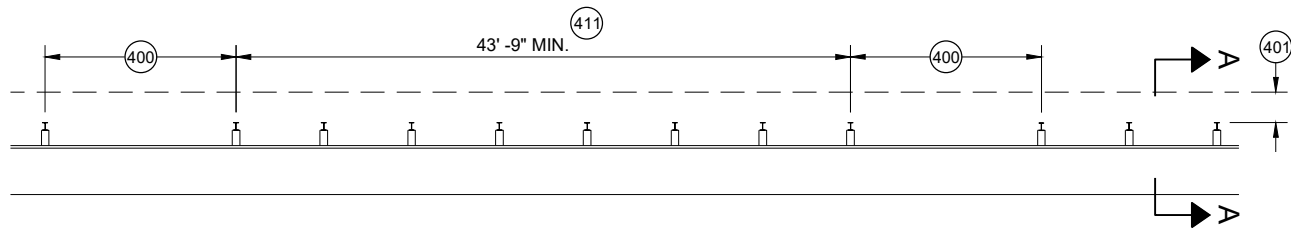


PLAN VIEW

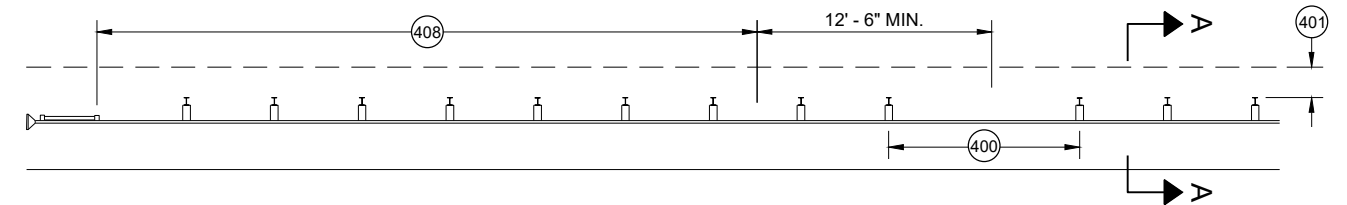
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

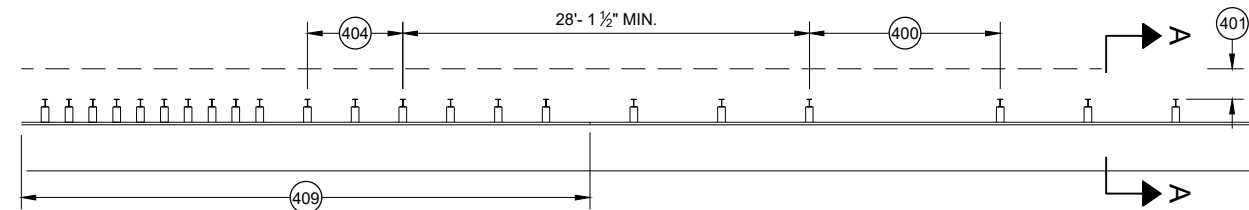
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



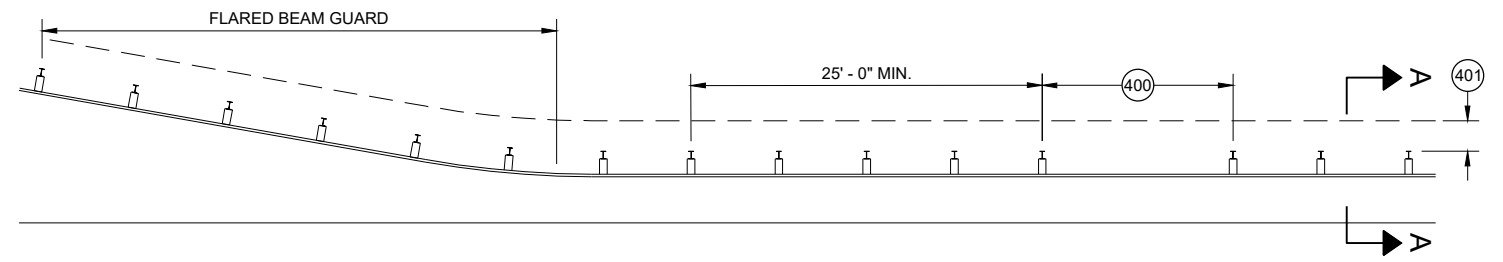
MISSING POST IN MGS GUARDRAIL



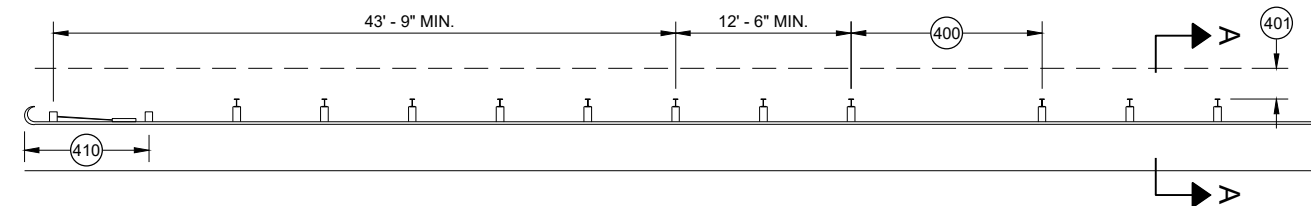
MISSING POST IN MGS GUARDRAIL NEAR EAT



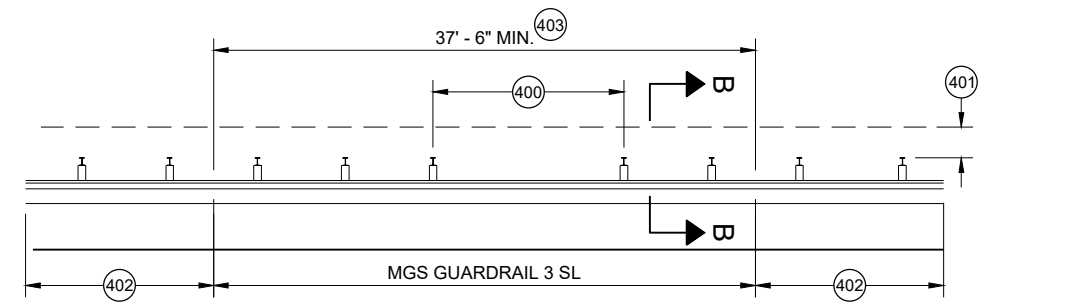
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

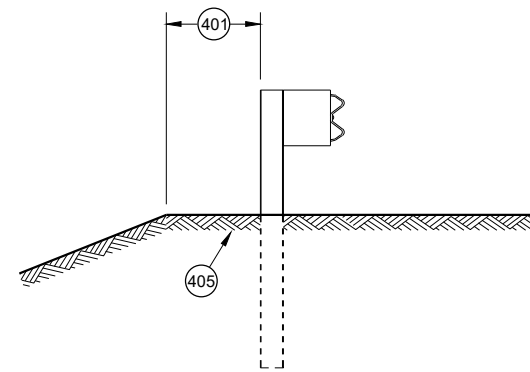


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

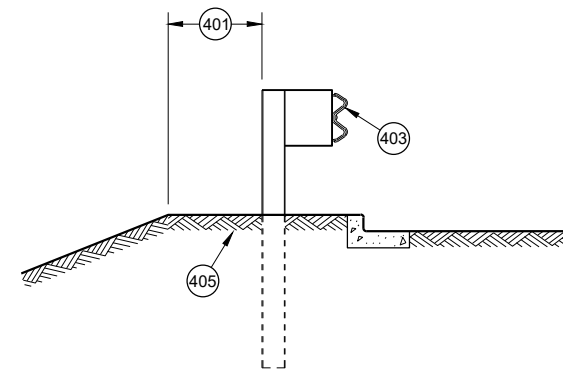


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (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

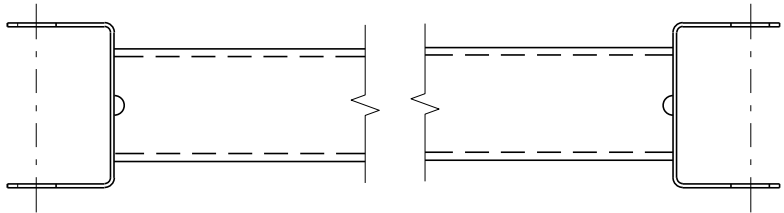
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

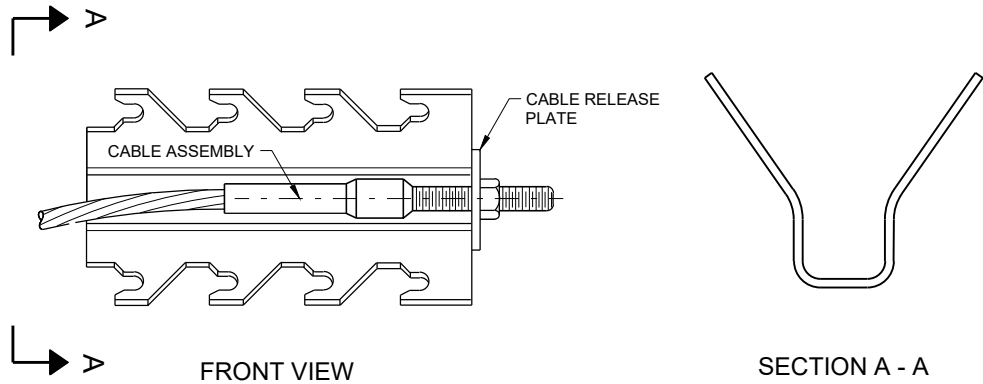
FHWA

SDD14B44 - 04a

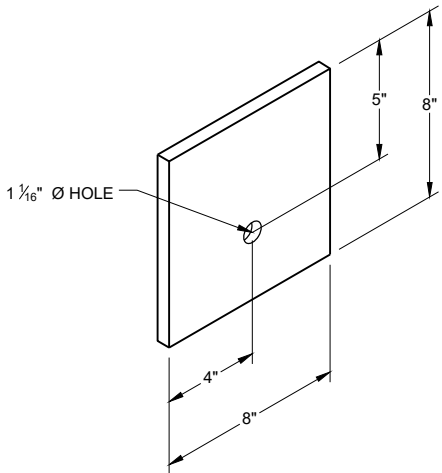


GENERIC GROUND STRUT⁹ E

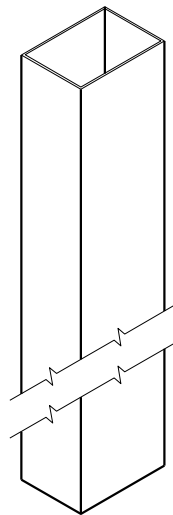
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED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



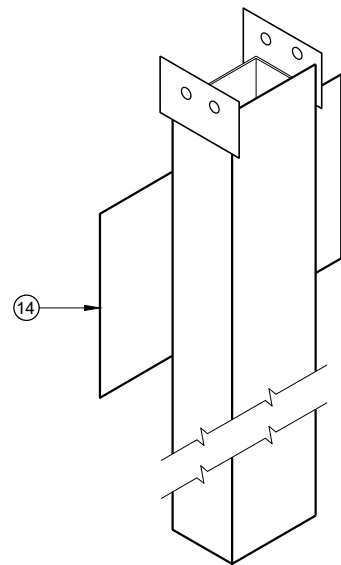
GENERIC ANCHOR CABLE BOX⁹ E



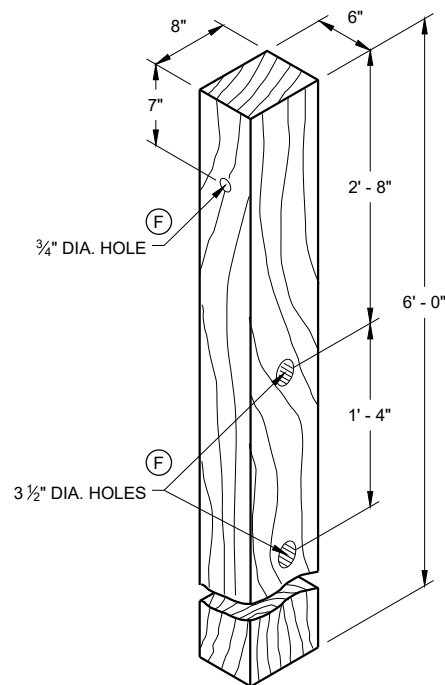
BEARING PLATE⁶ E



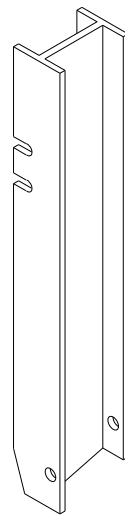
UPPER POST NO. 1 ⁽¹⁾ (E)



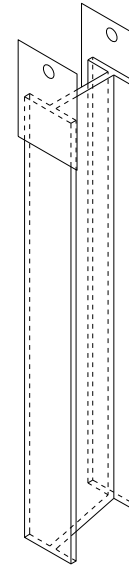
LOWER POST NO. 1 ⁽²⁾ (E)



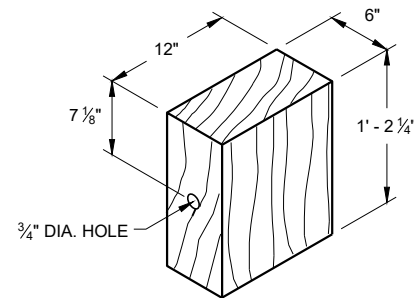
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



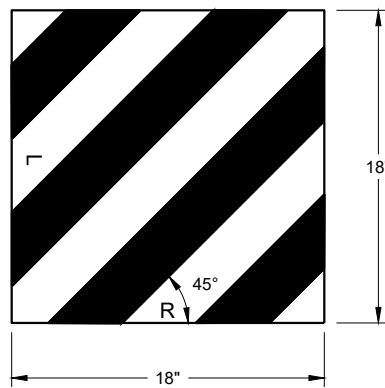
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



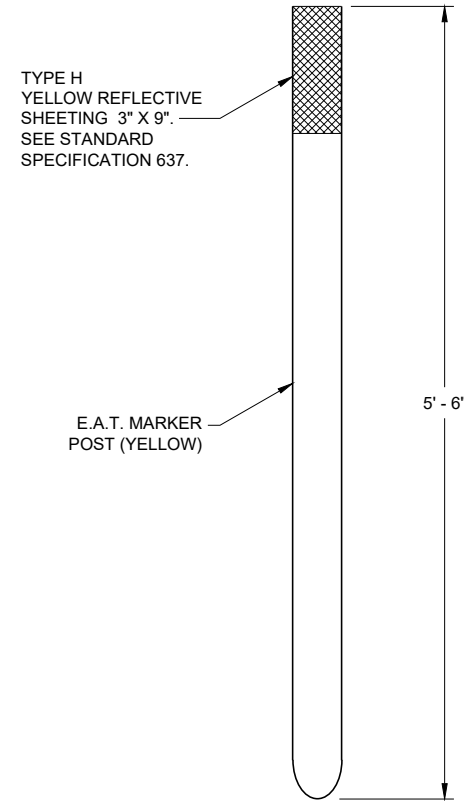
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



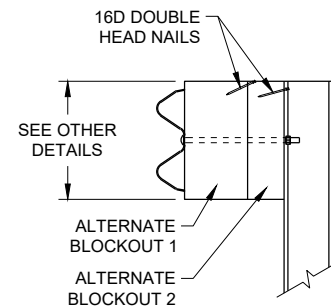
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



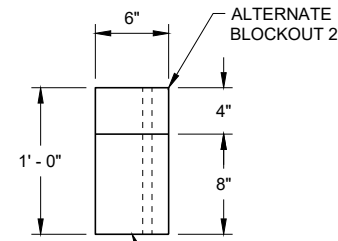
REFLECTIVE SHEETING DETAIL ^(E)



FRONT VIEW
SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



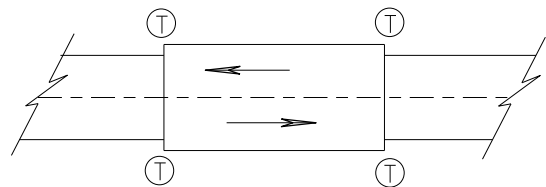
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

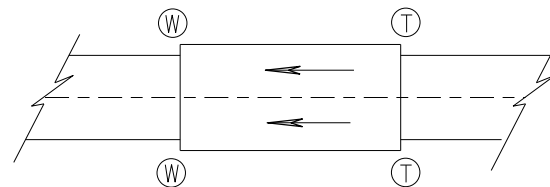
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

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

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

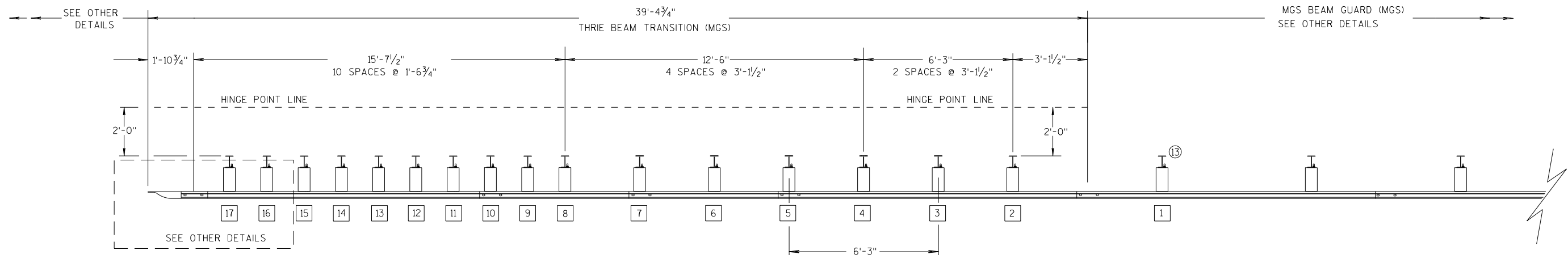
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

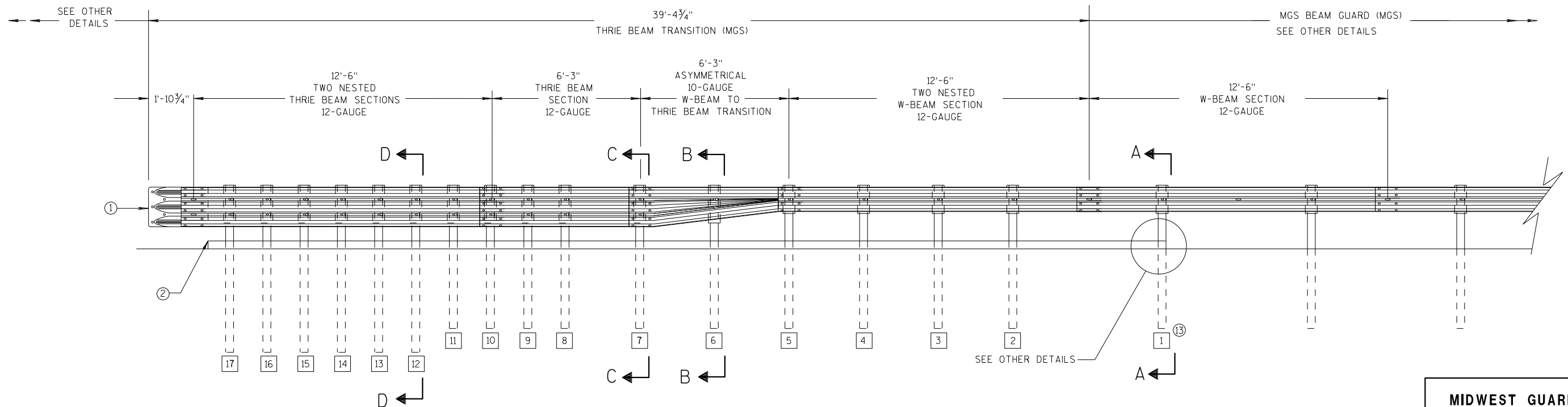
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

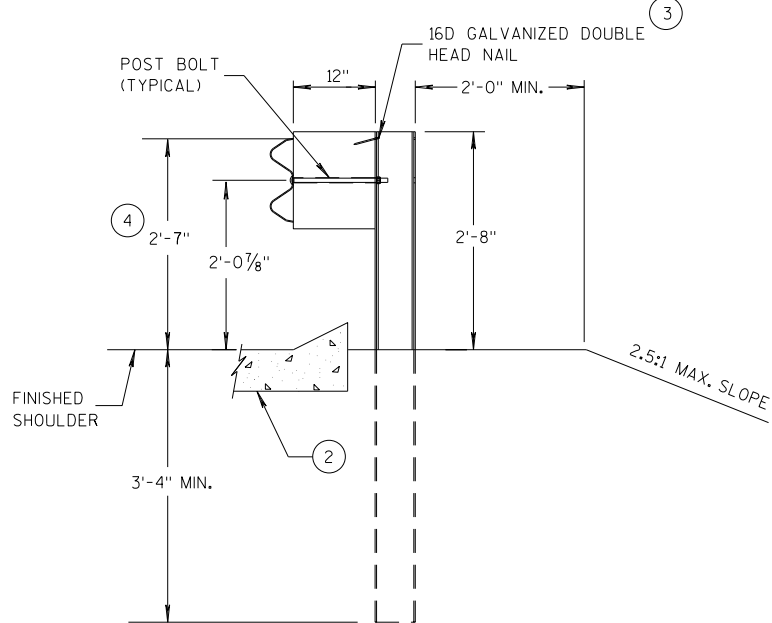
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

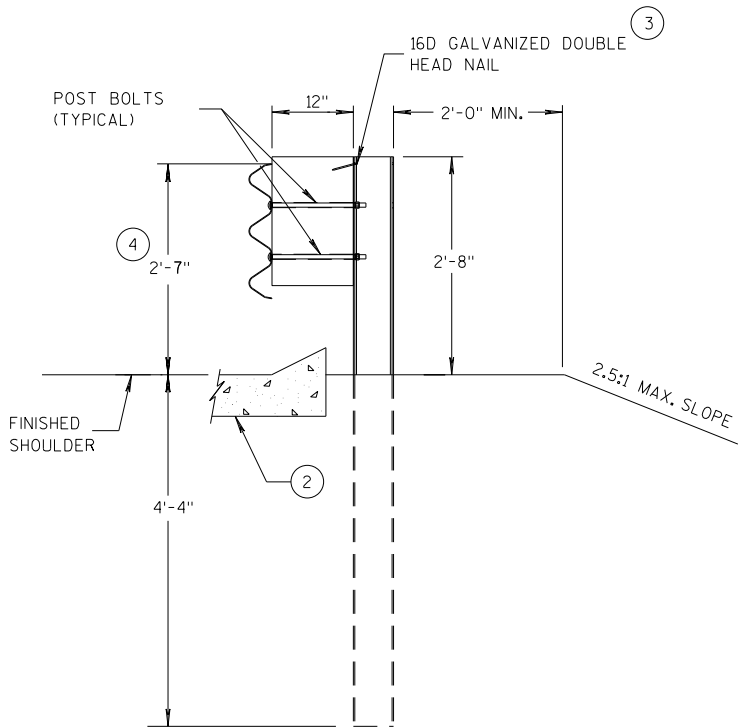
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

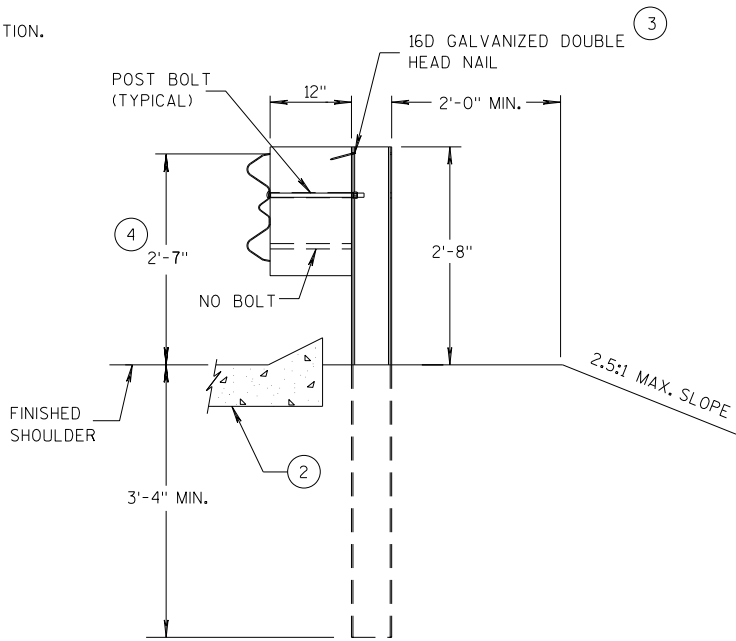
- 2
- OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3
- WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4
- TOLERANCE FOR TOP OF W-BEAM RAIL IS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



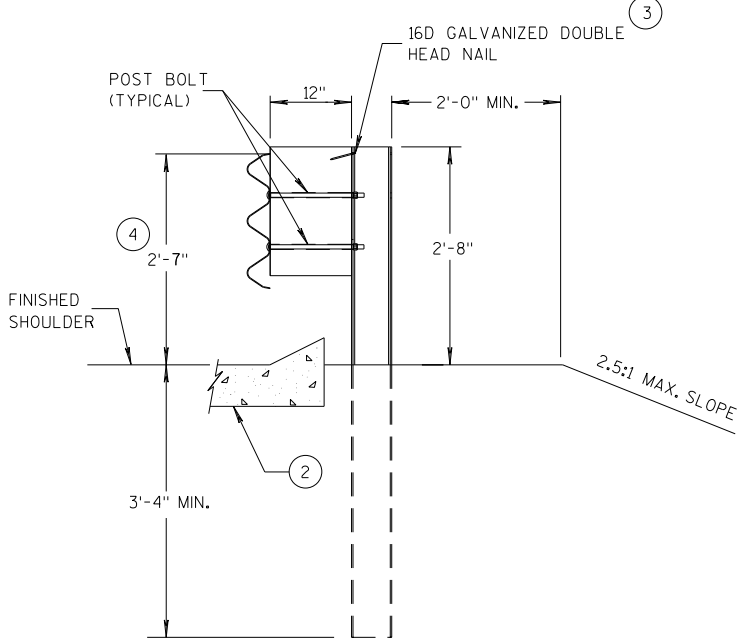
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

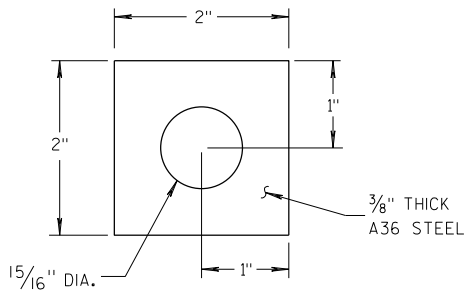
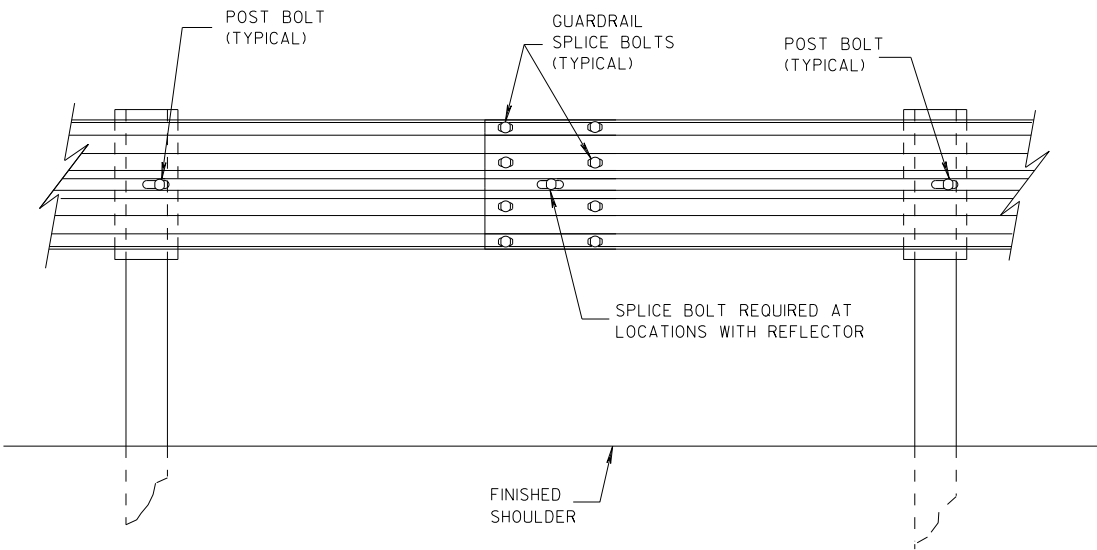
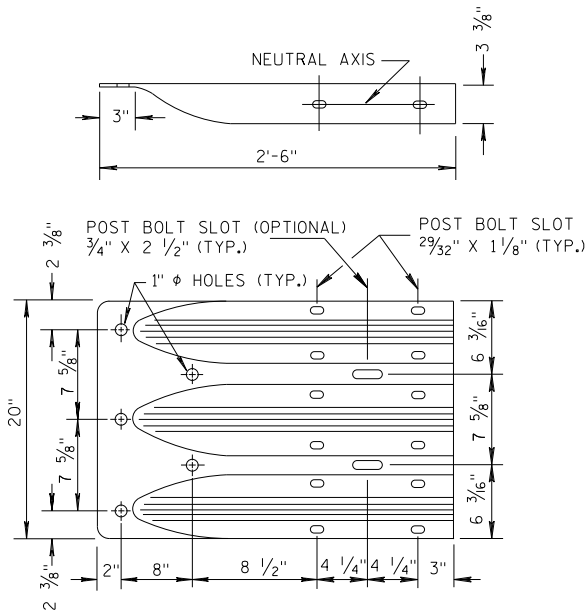


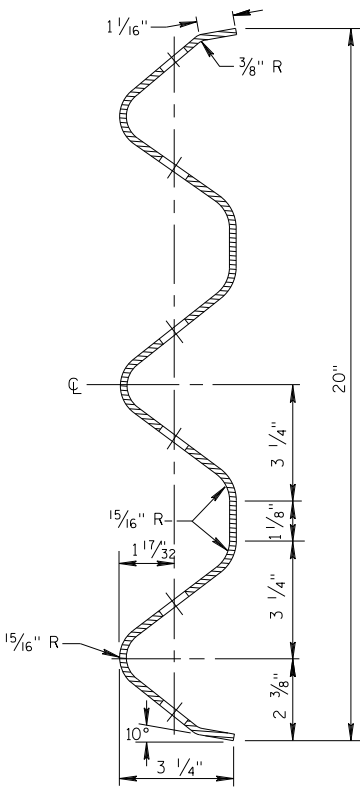
PLATE WASHER DETAIL



SPLICE DETAIL



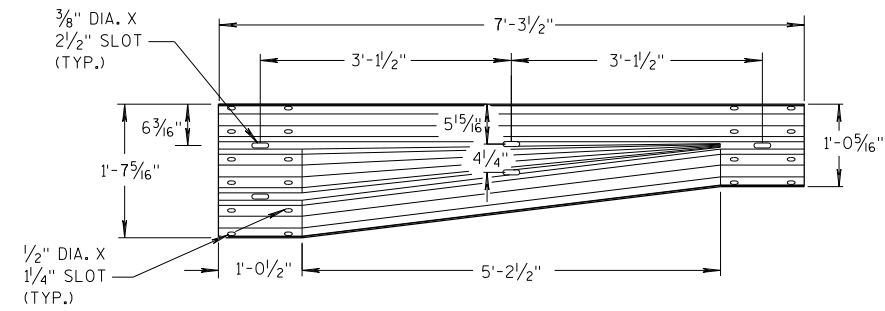
THRIE BEAM
TERMINAL CONNECTOR



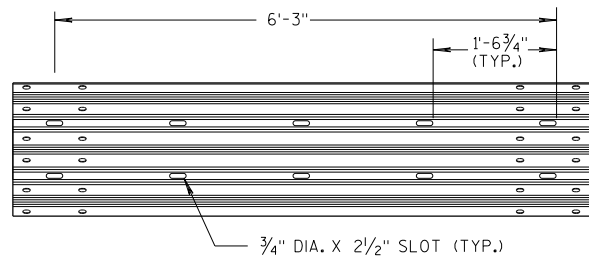
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

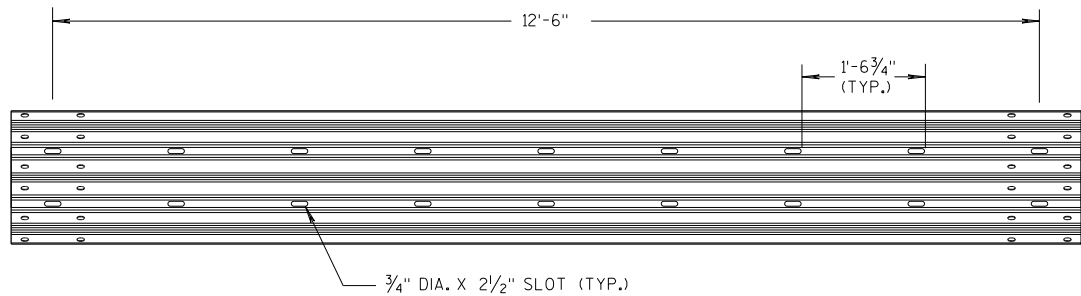
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



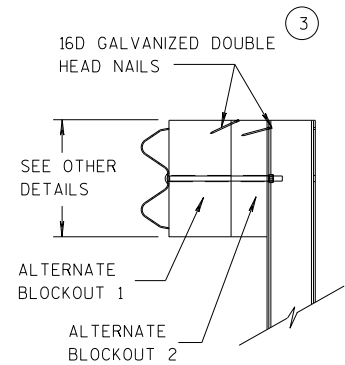
W-BEAM TO THRIE BEAM TRANSITION SECTION



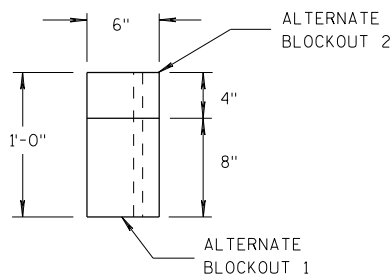
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

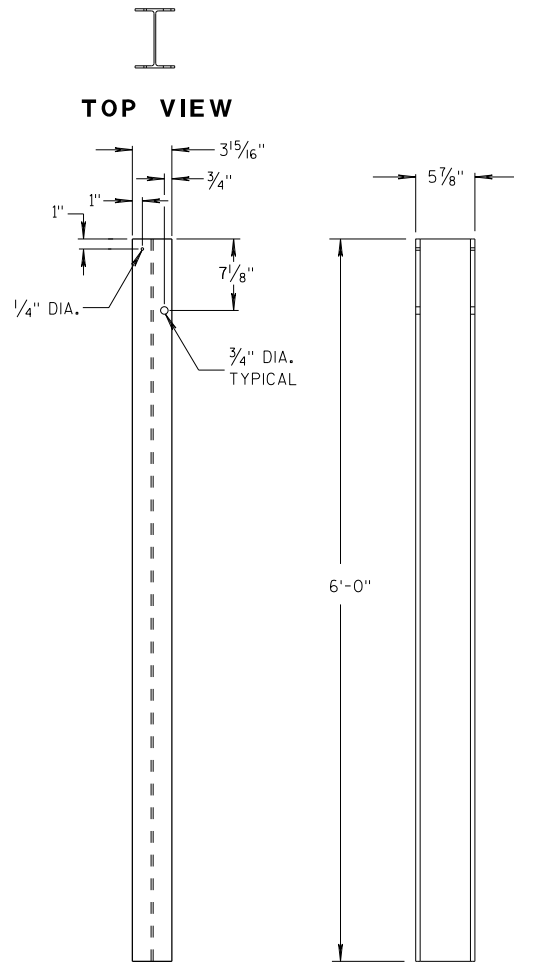


SIDE VIEW



TOP VIEW

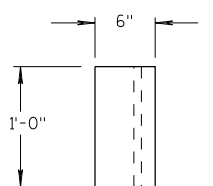
ALTERNATE WOOD BLOCKOUT DETAIL



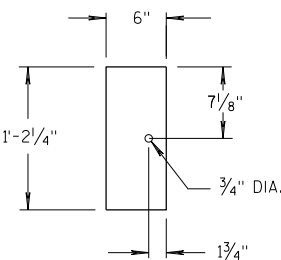
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

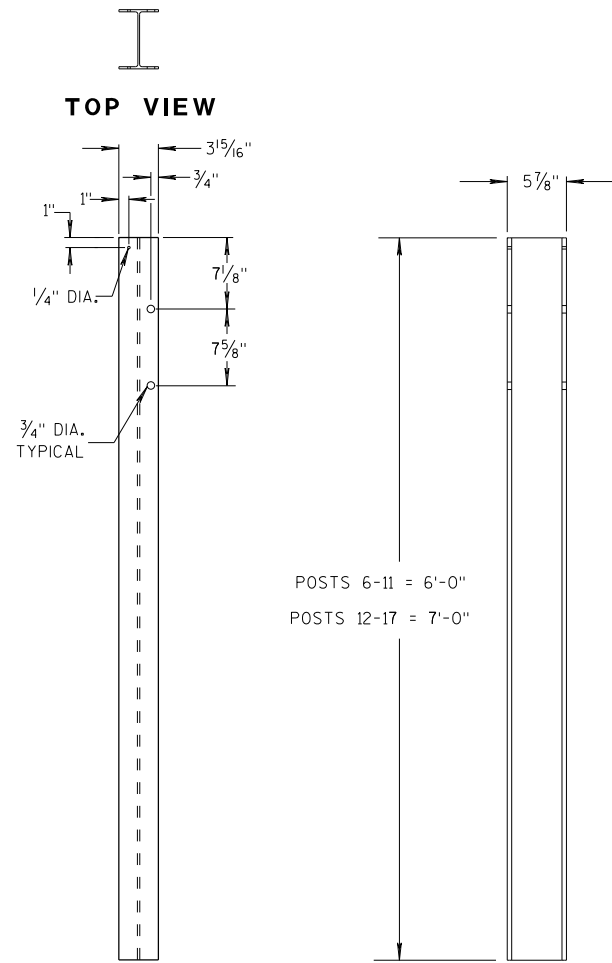


TOP VIEW



FRONT VIEW

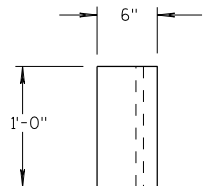
BLOCKOUT POSTS 1-5



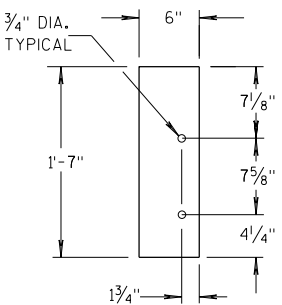
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

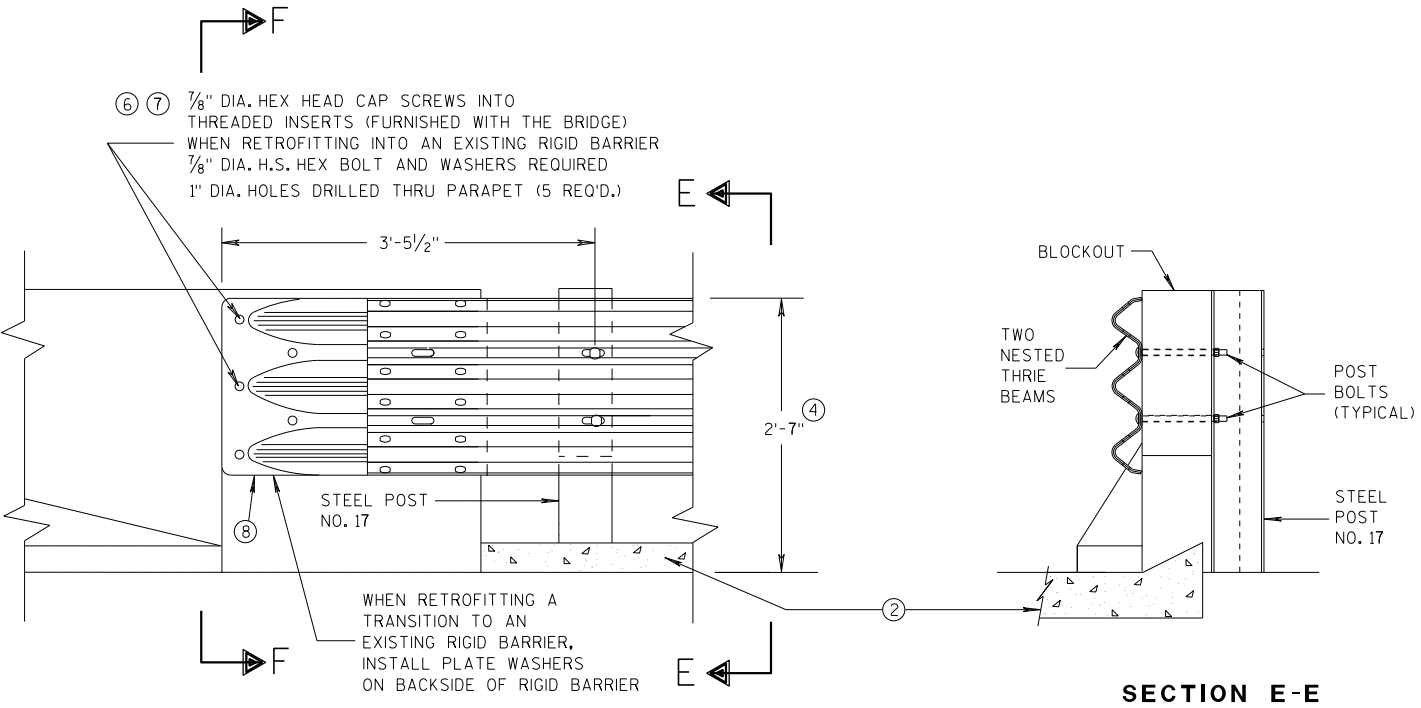
3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

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

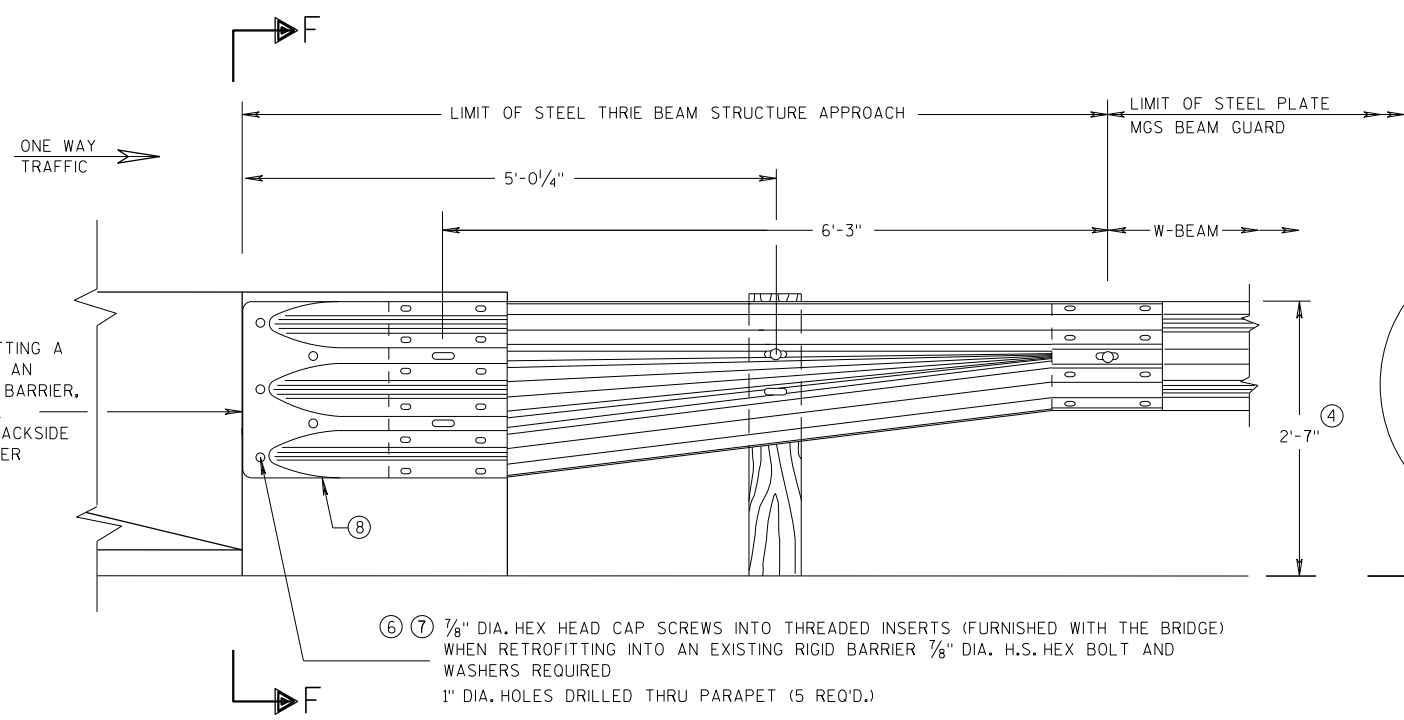
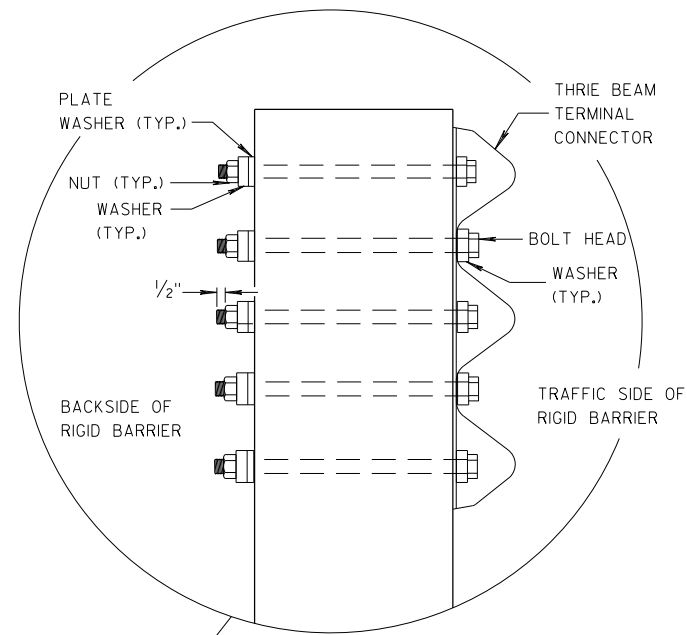
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

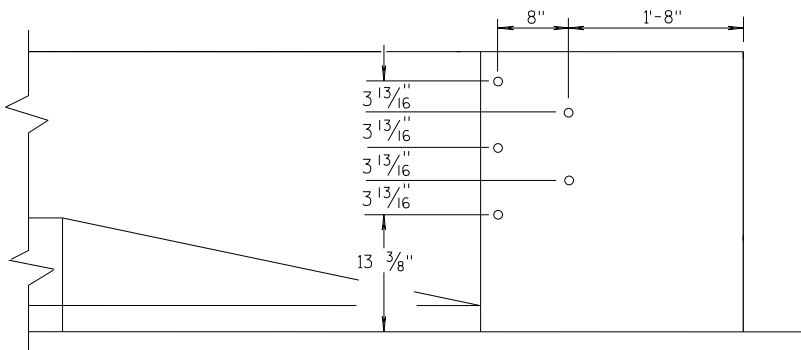


GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



SECTION F-F

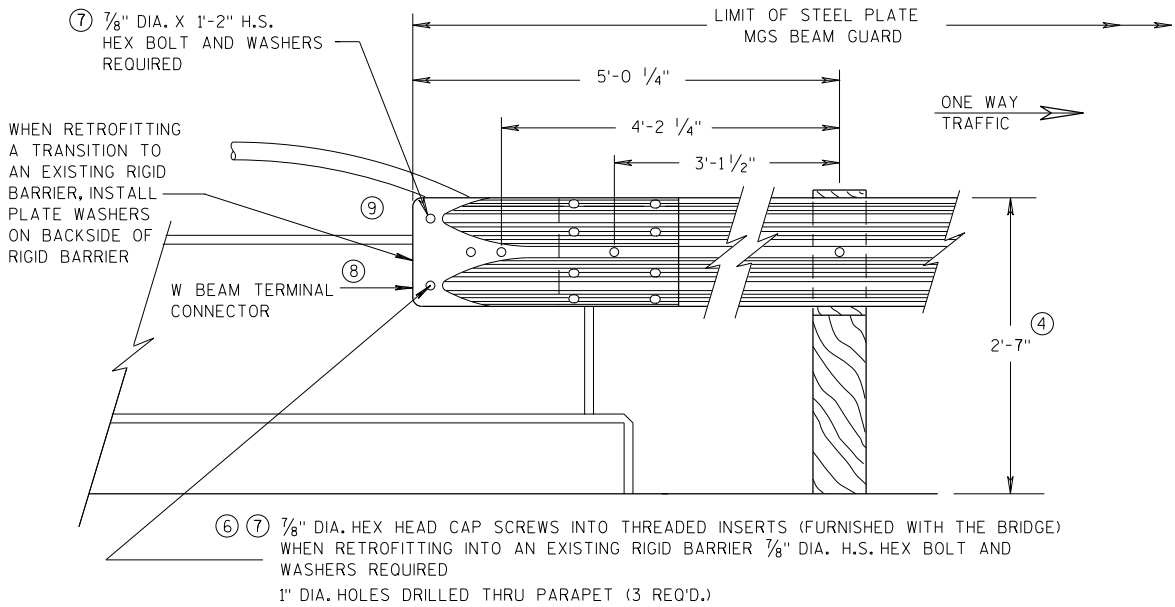


MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

GENERAL NOTES

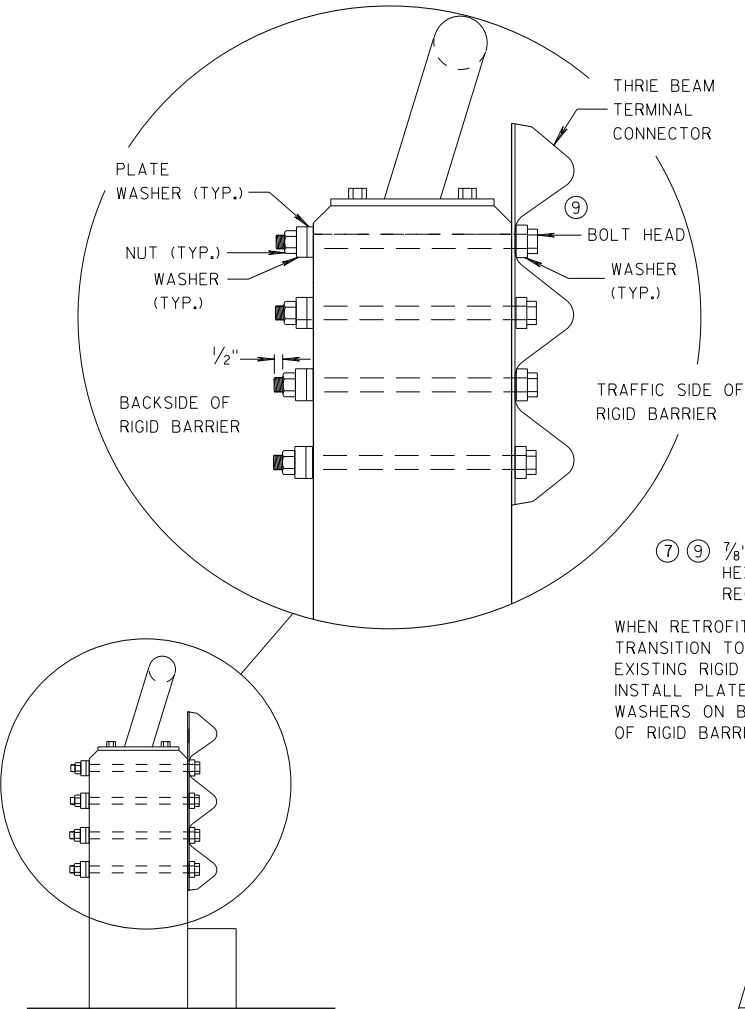
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ②
- OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④
- TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥
- DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦
- BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧
- THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ⑨
- BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

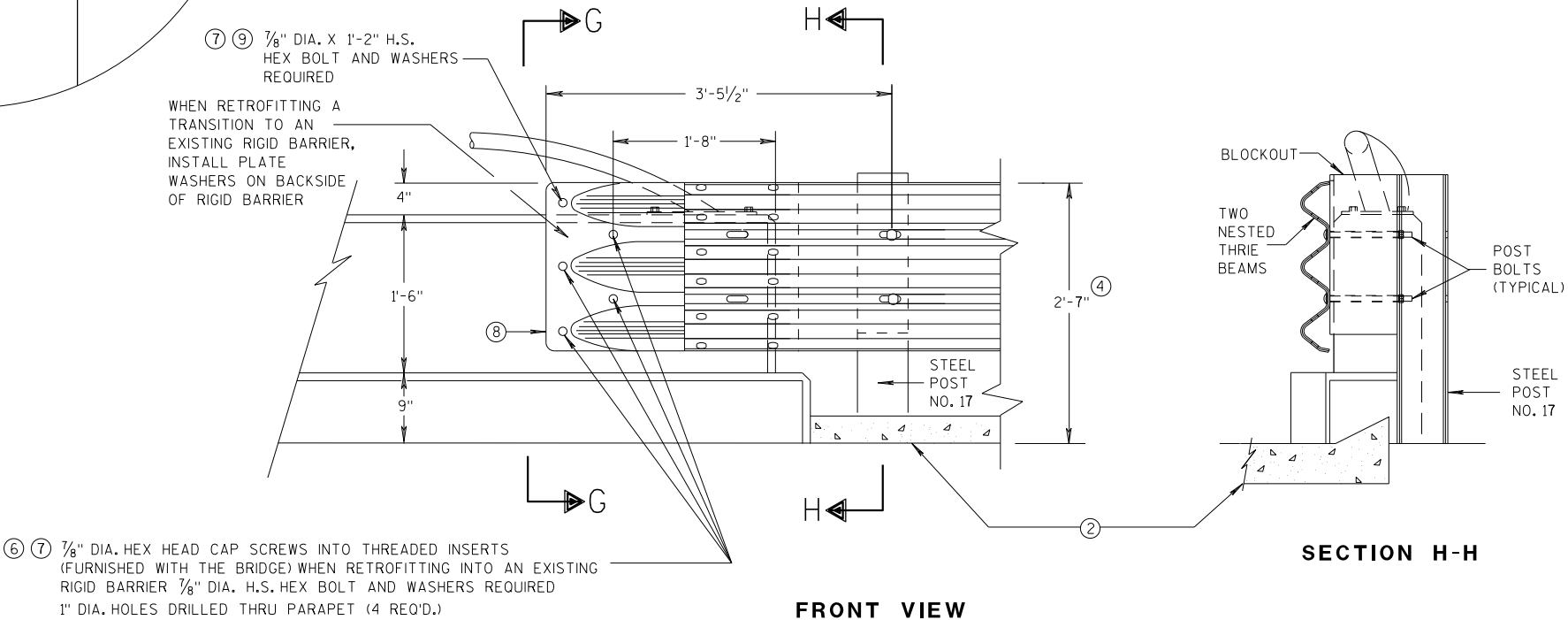


FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

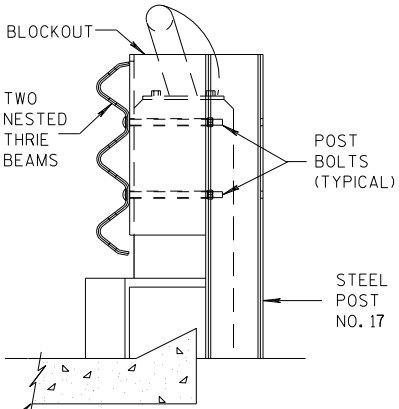


SECTION G-G



FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

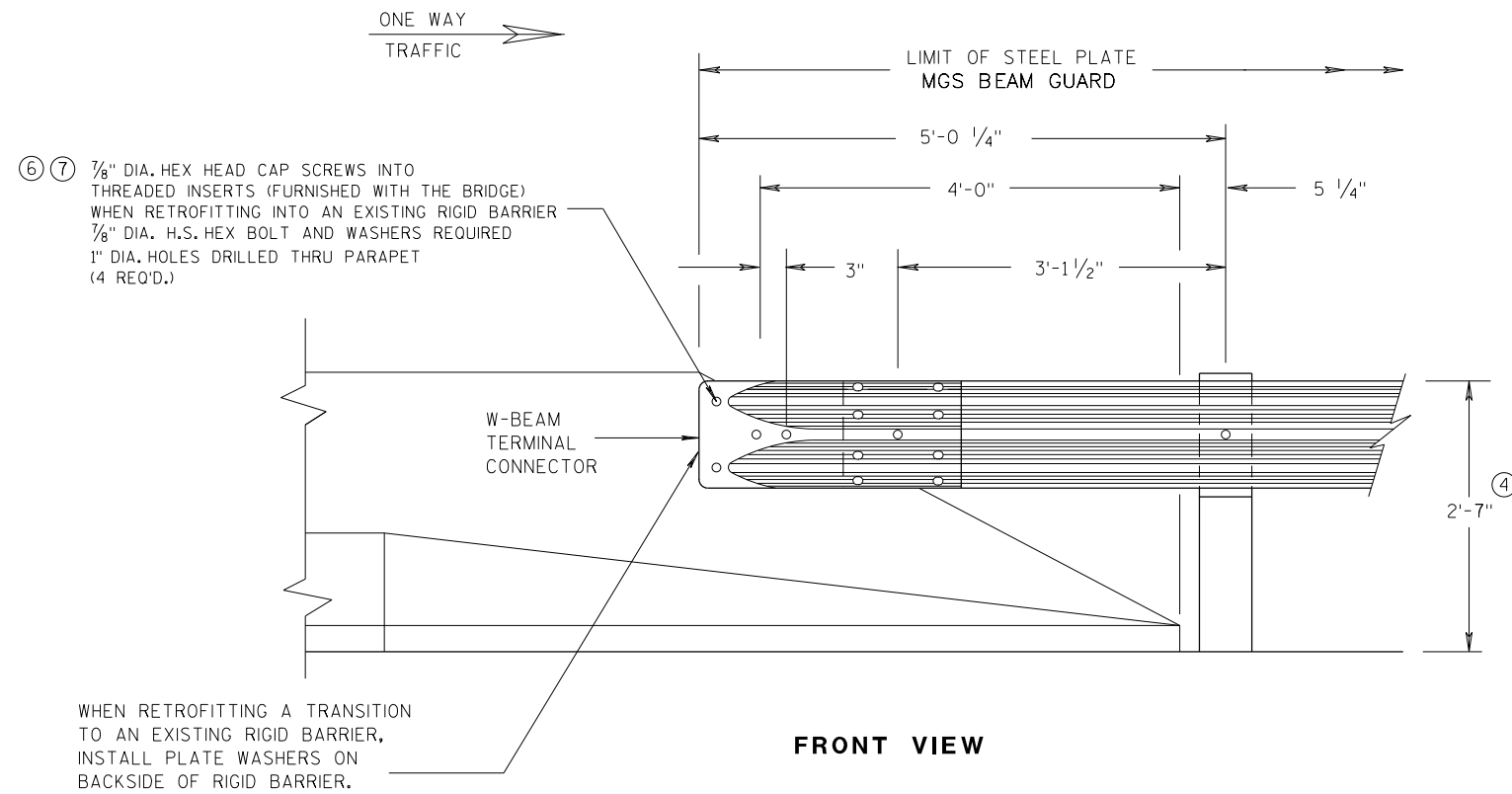


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

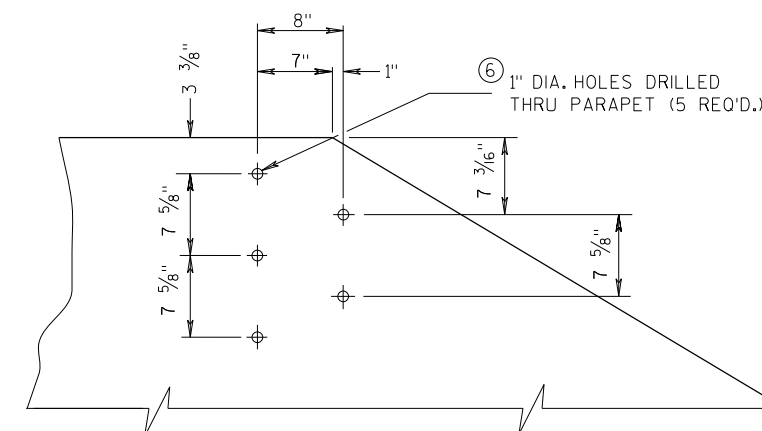
APPROVED
07/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



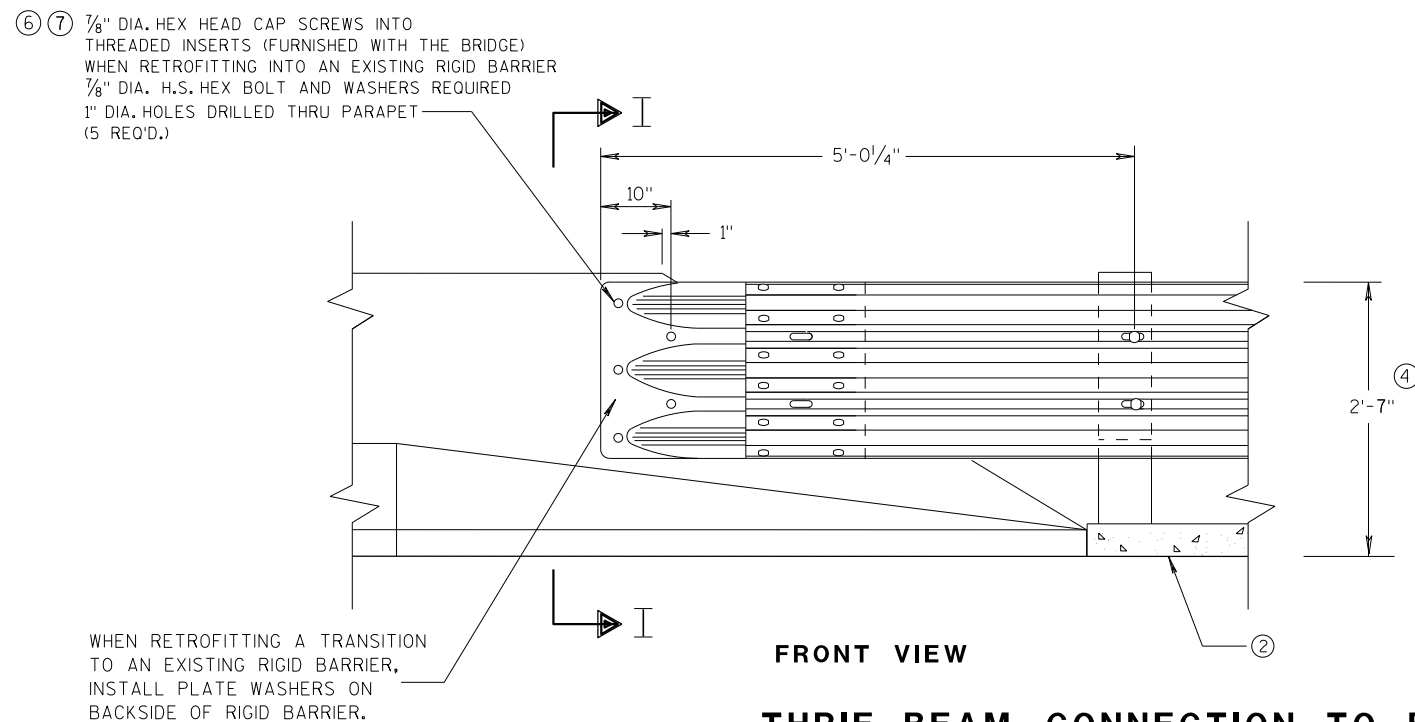
**W BEAM CONNECTION TO
PARAPETS WITH SLOPED ENDS**
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

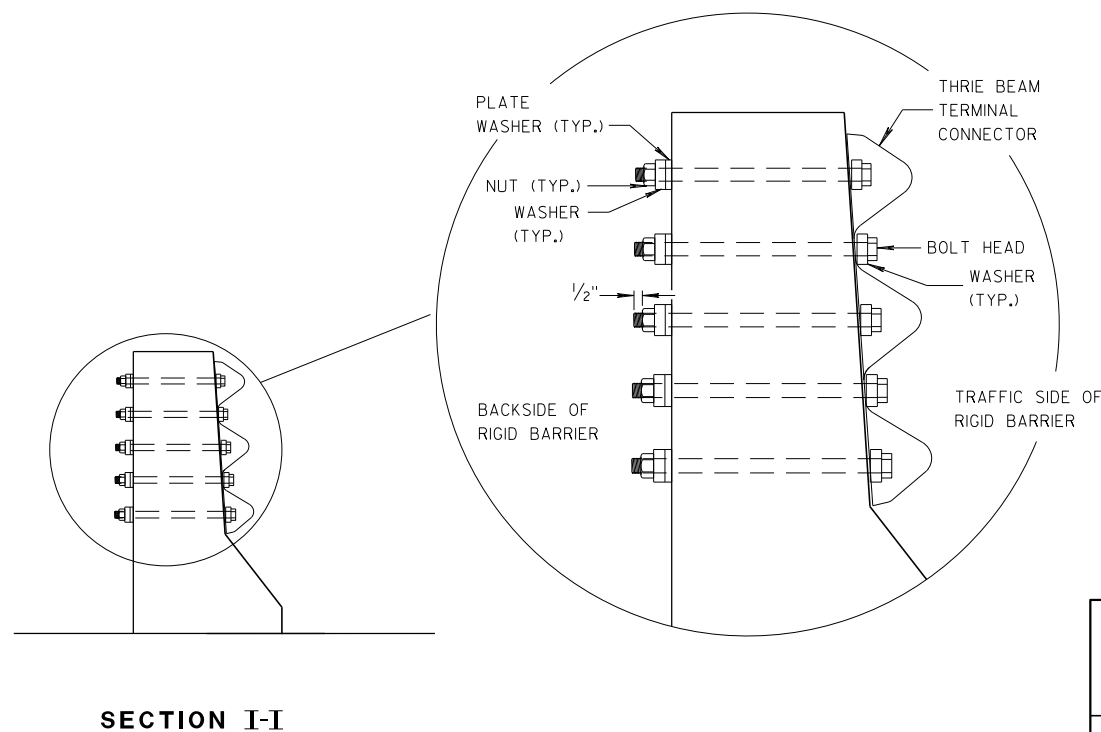
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



**DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION**



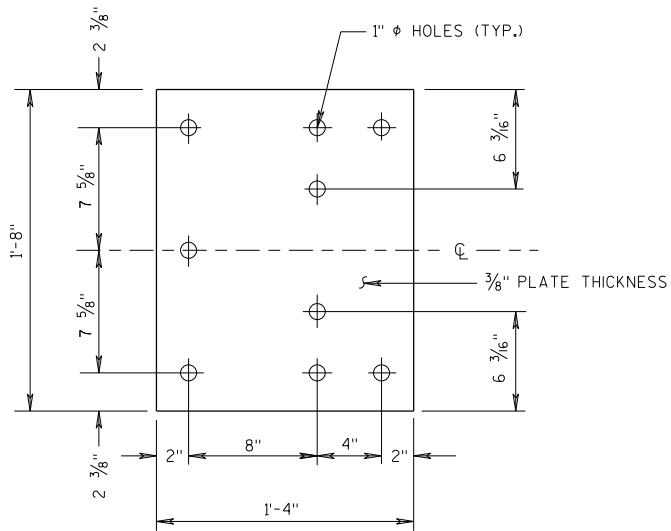
**THRIE BEAM CONNECTION TO BRIDGE
PARAPETS WITH SLOPED ENDS**



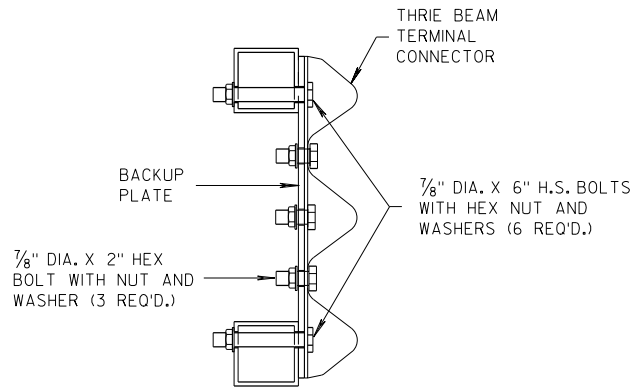
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

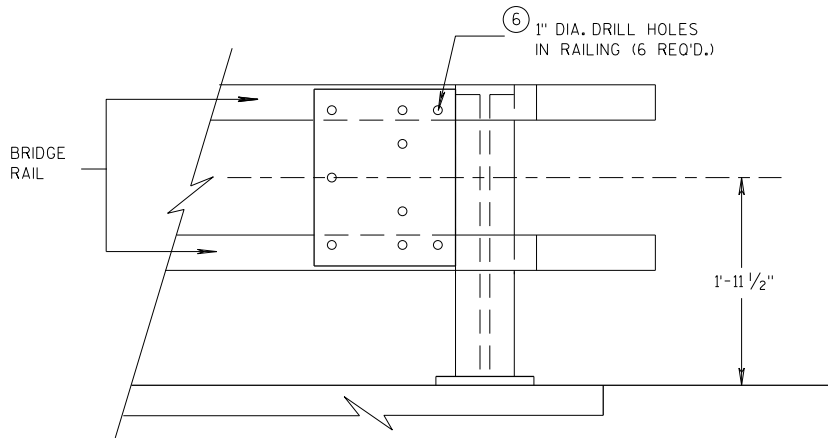
APPROVED
07/2018
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



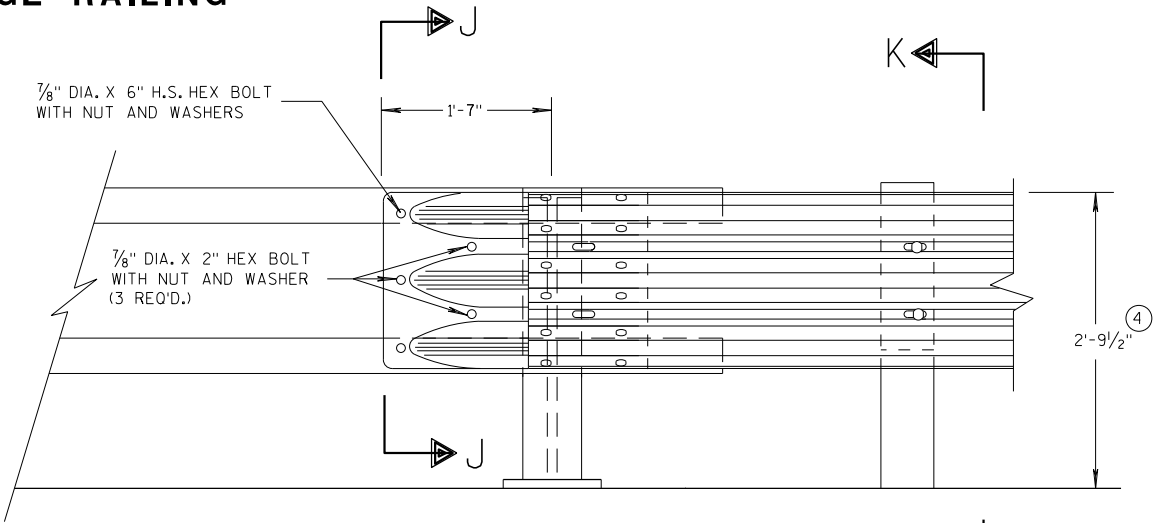
BACK-UP PLATE DETAIL



SECTION J-J

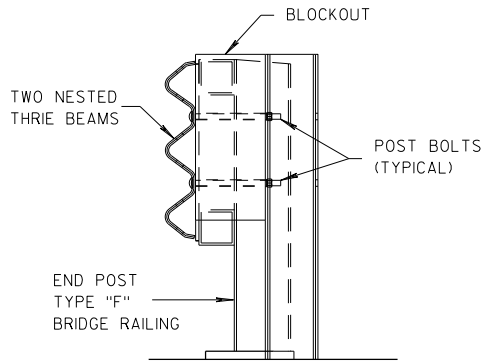


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

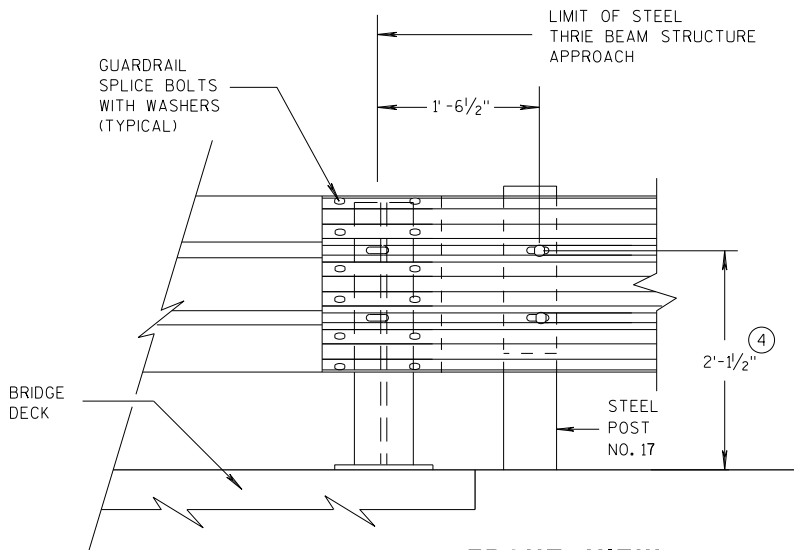
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.



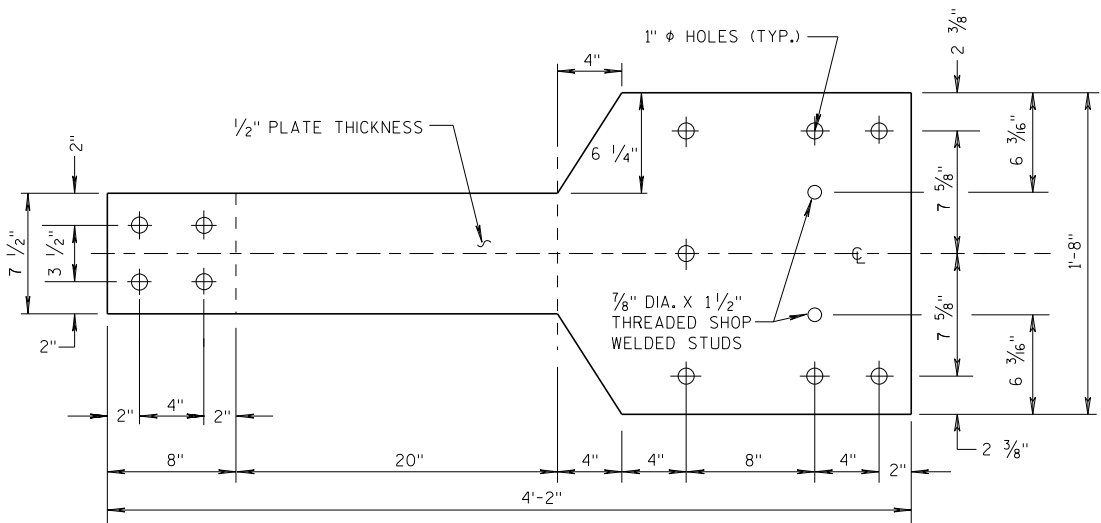
FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

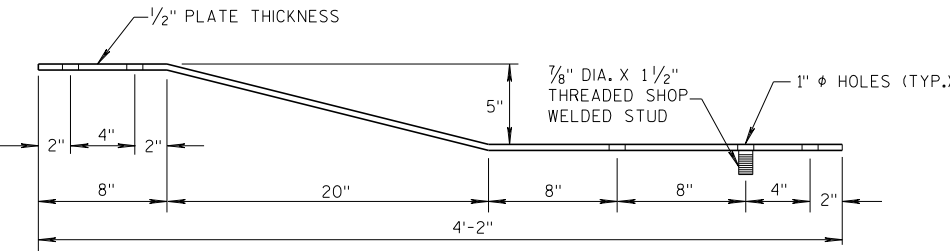
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

GENERAL NOTES

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

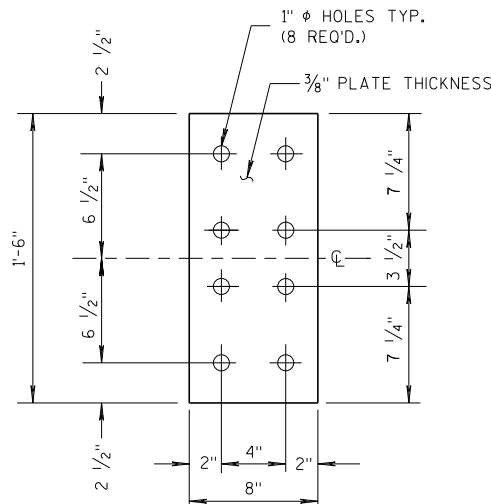


FRONT VIEW



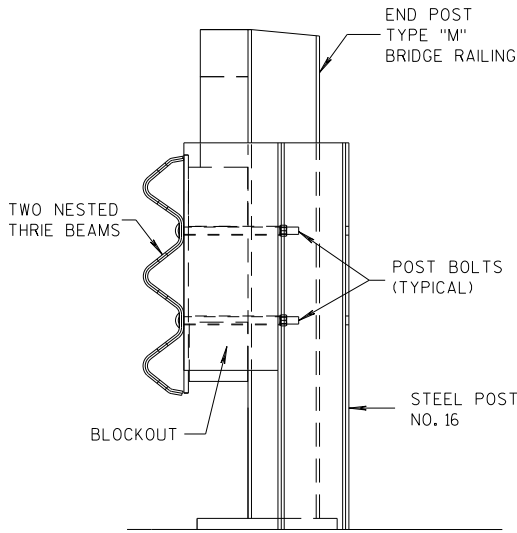
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

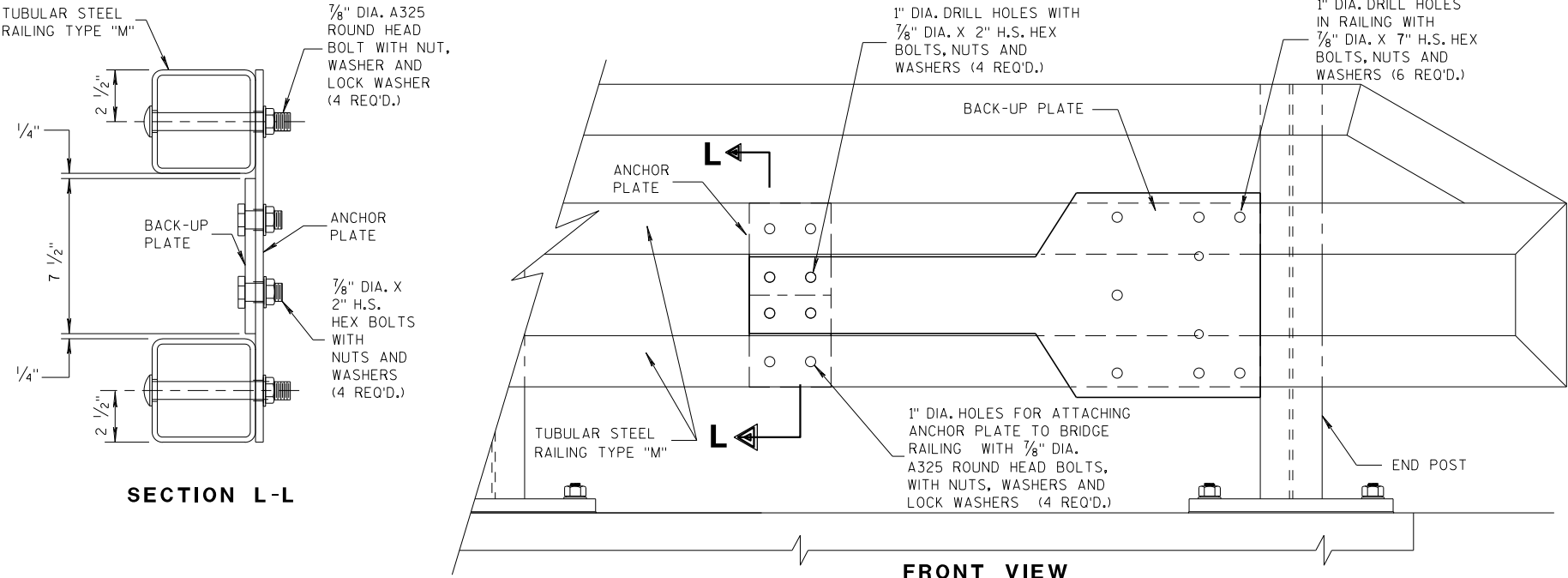


FRONT VIEW

ANCHOR
PLATE DETAIL,
TYPE "M"



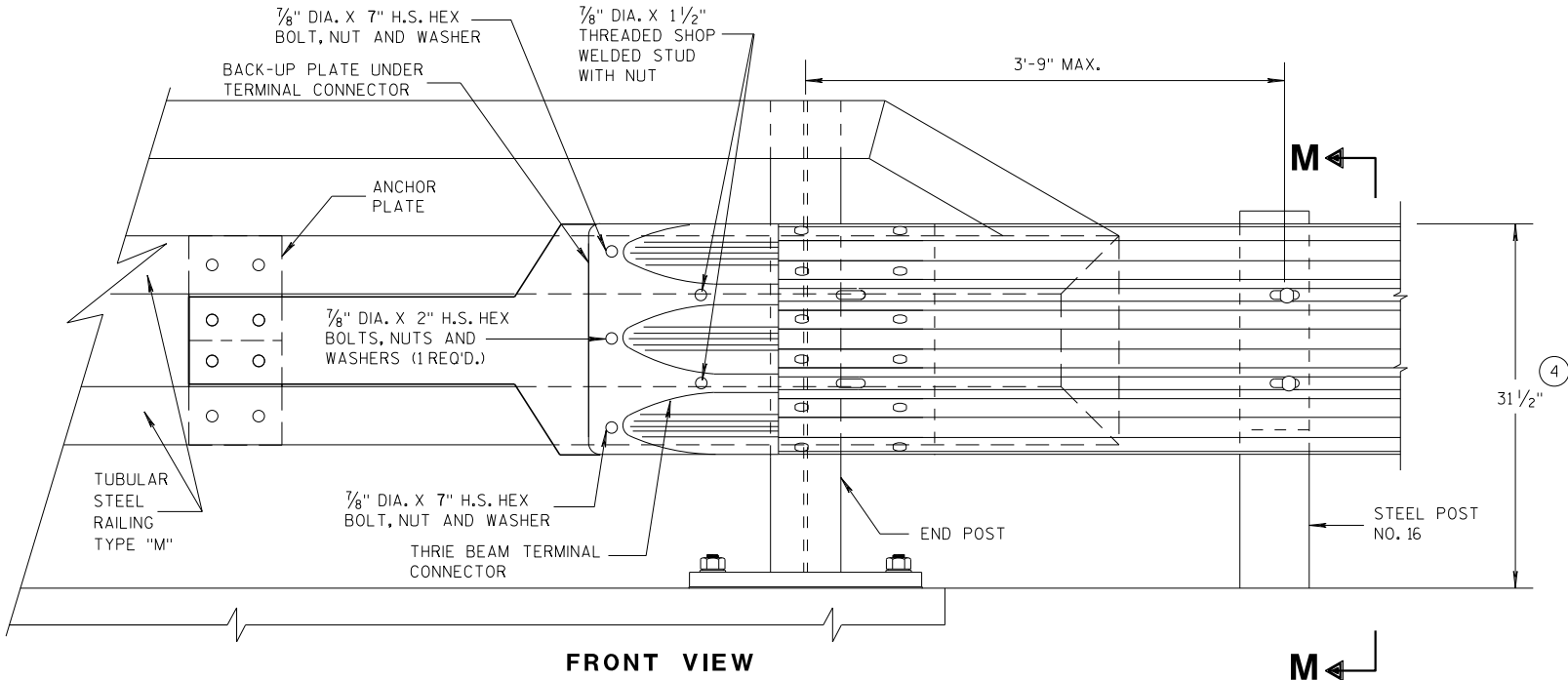
SECTION M-M



SECTION L-L

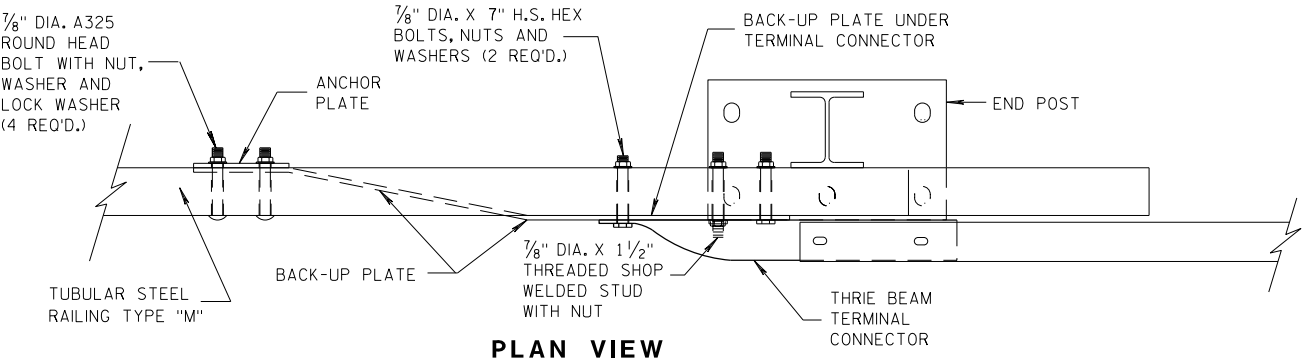
FRONT VIEW

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



FRONT VIEW

M



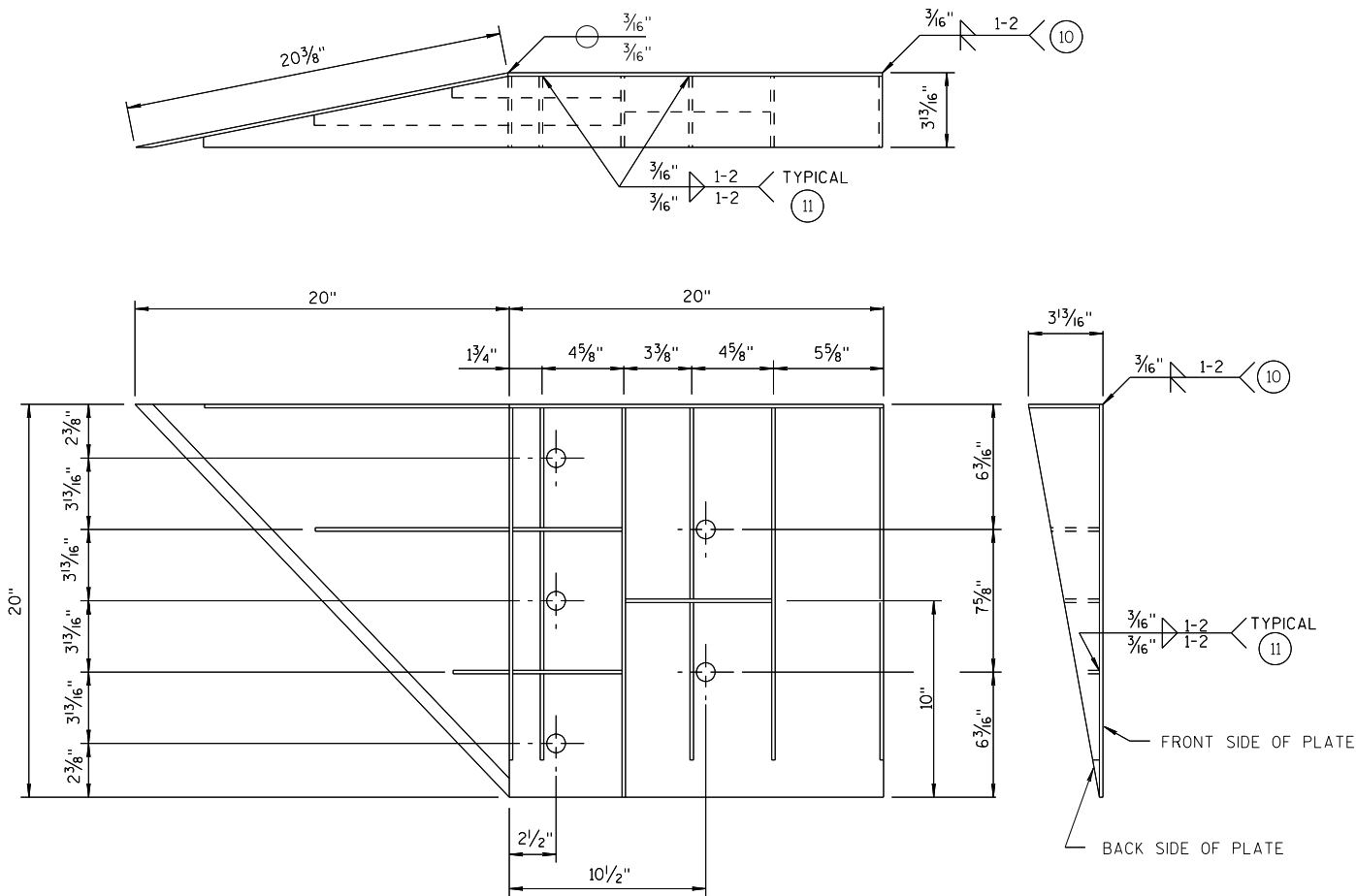
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

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

SINGLE SLOPE CONNECTION PLATE

GENERAL NOTES

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

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

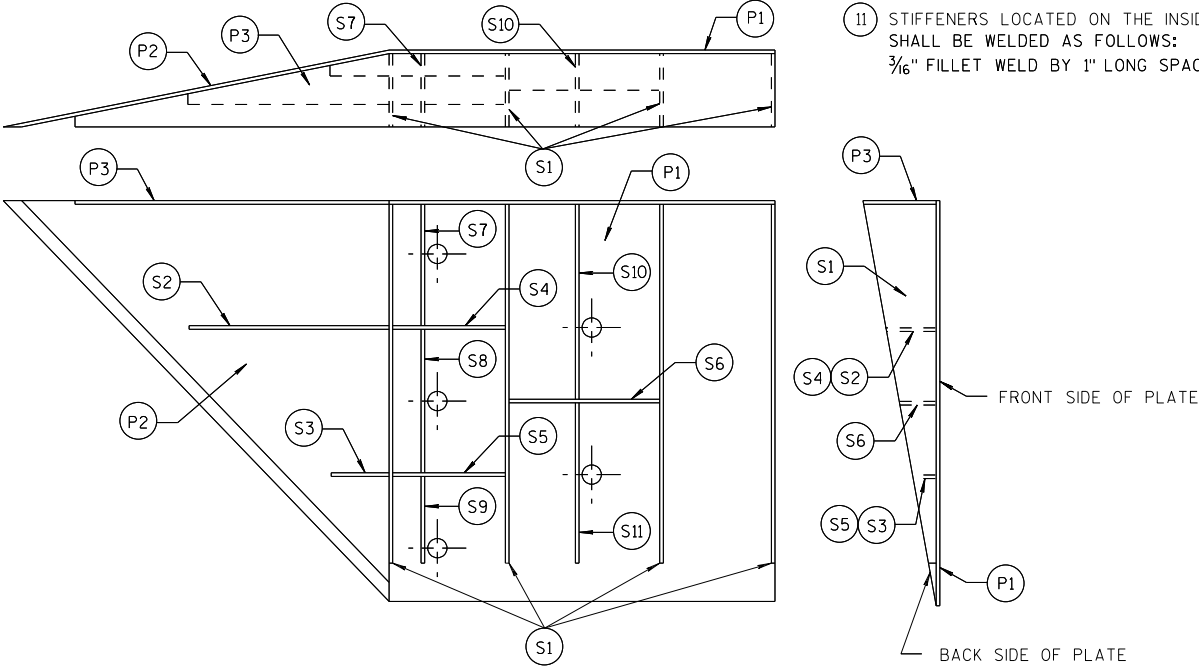
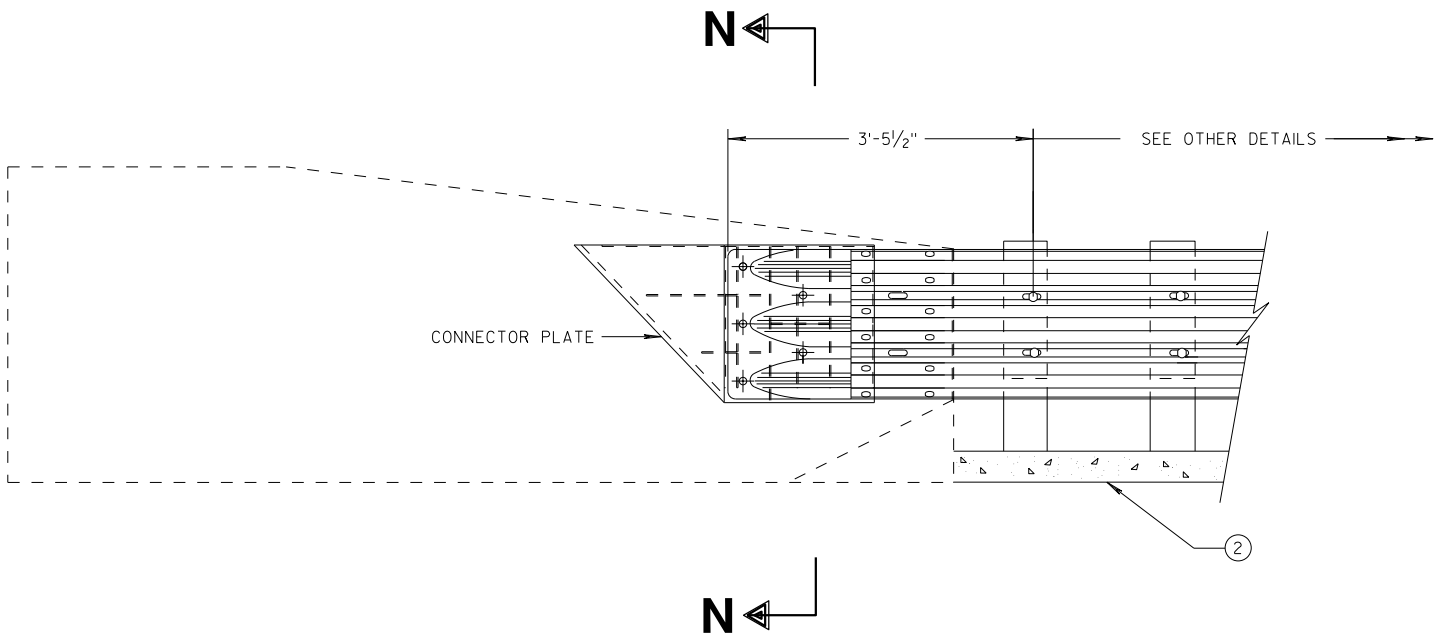


PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

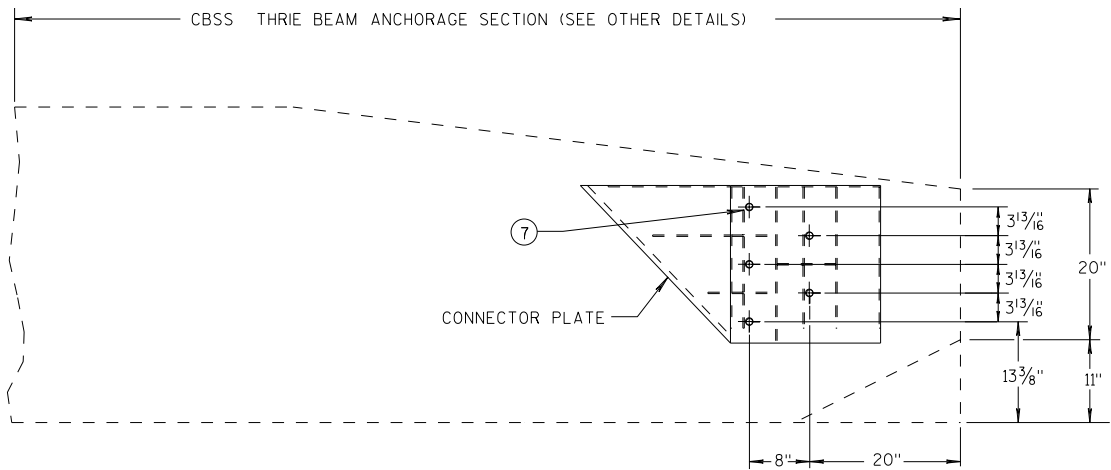
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



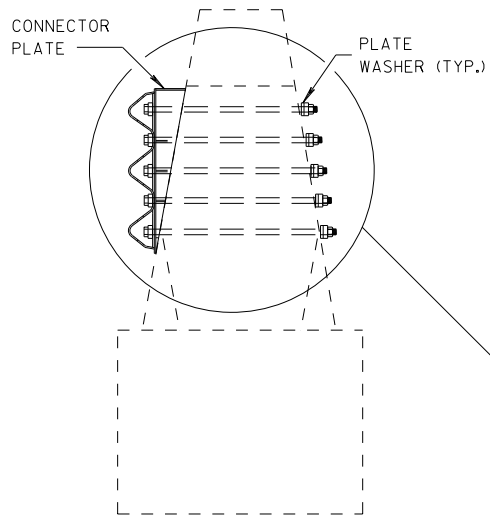
THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



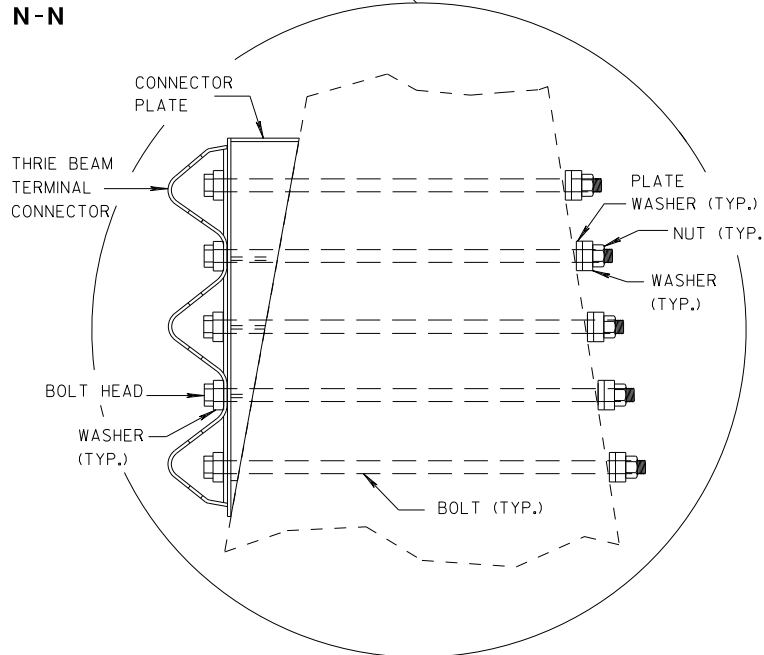
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

- CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- (7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTION PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



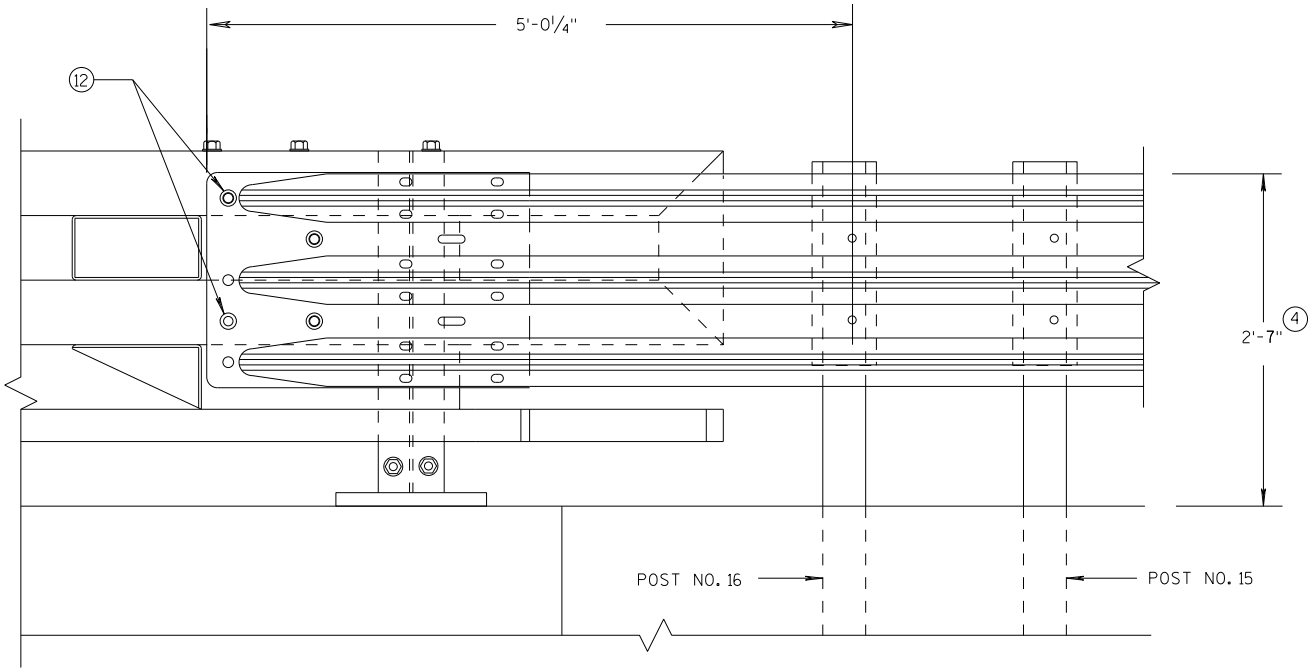
SECTION N-N



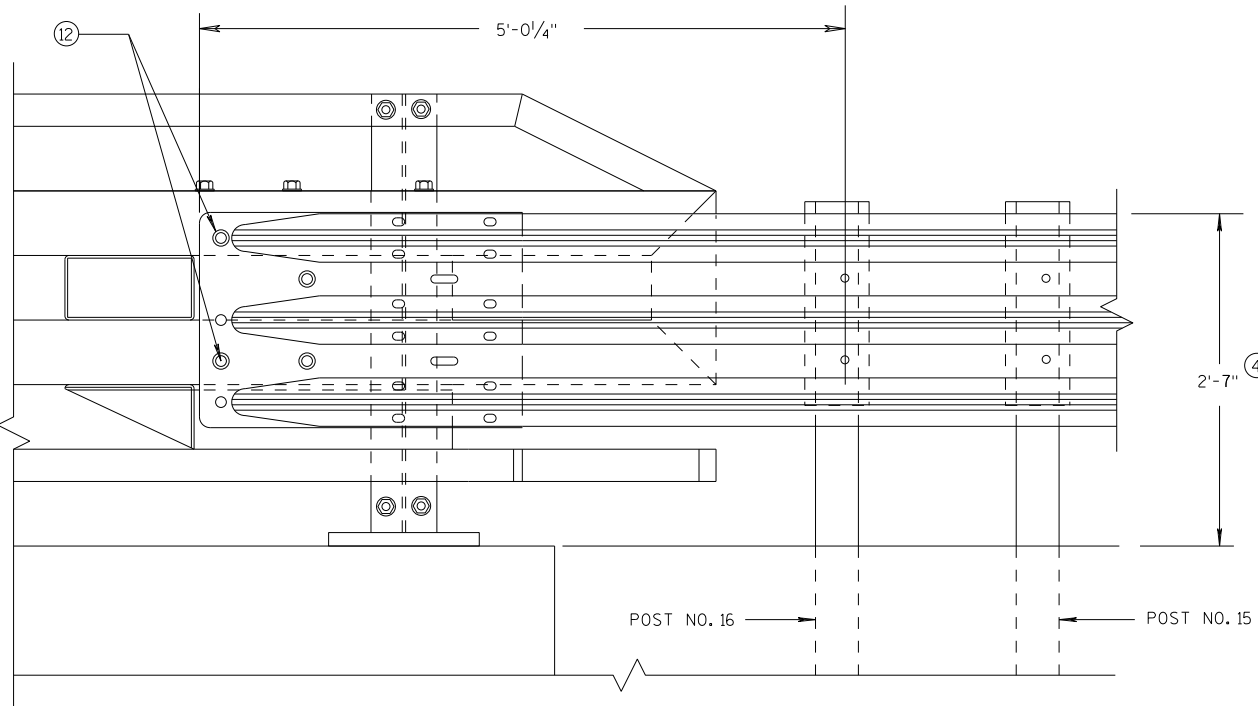
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



ELEVATION OF DETAIL AT NY3 END POST
THRIE BEAM RAIL ATTACHMENT

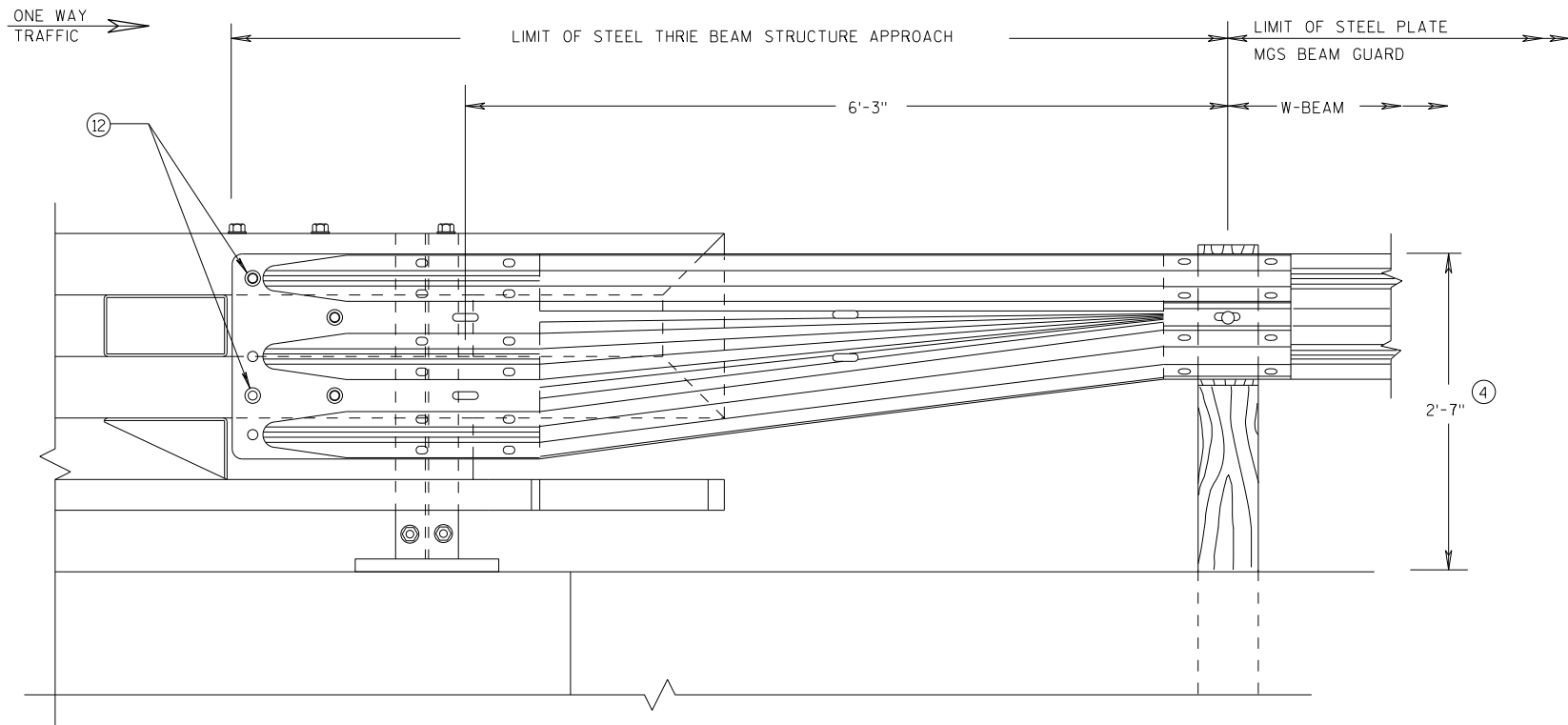


ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



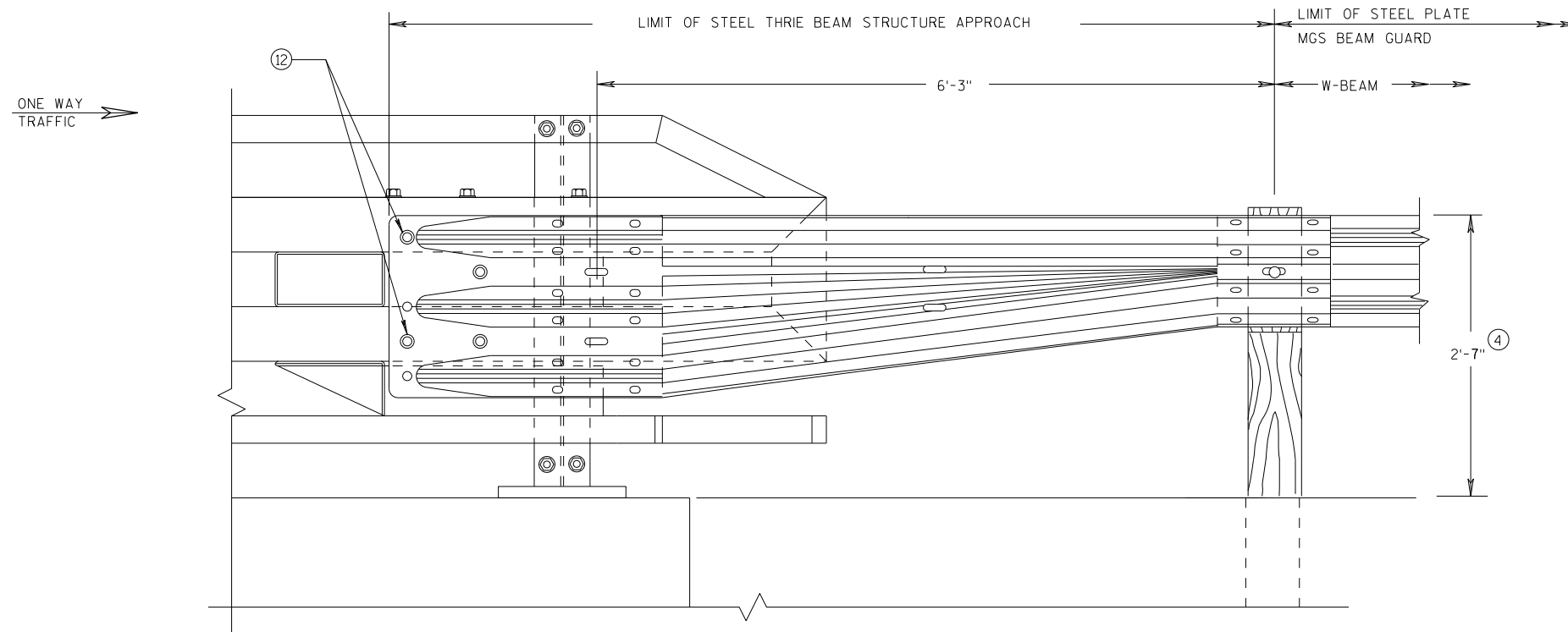
GENERAL NOTES

(4) TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.

FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3" (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY4" (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018

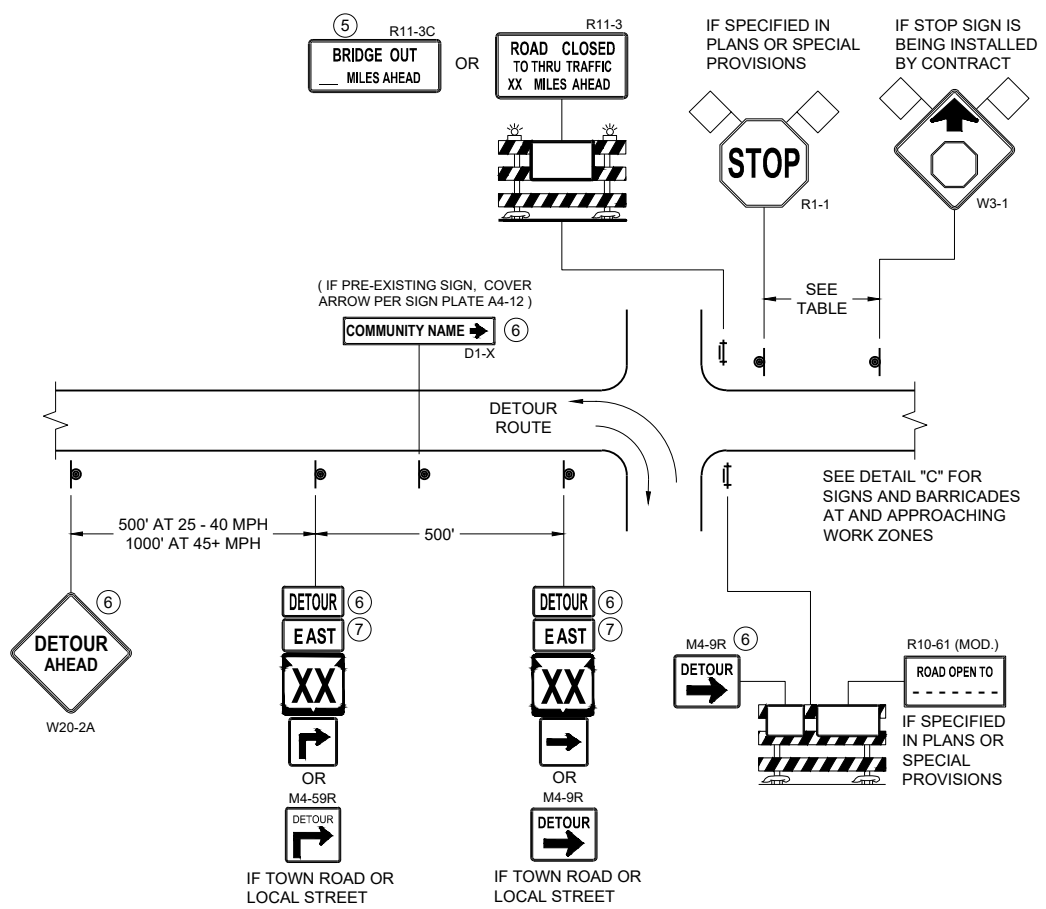
DATE

FHWA

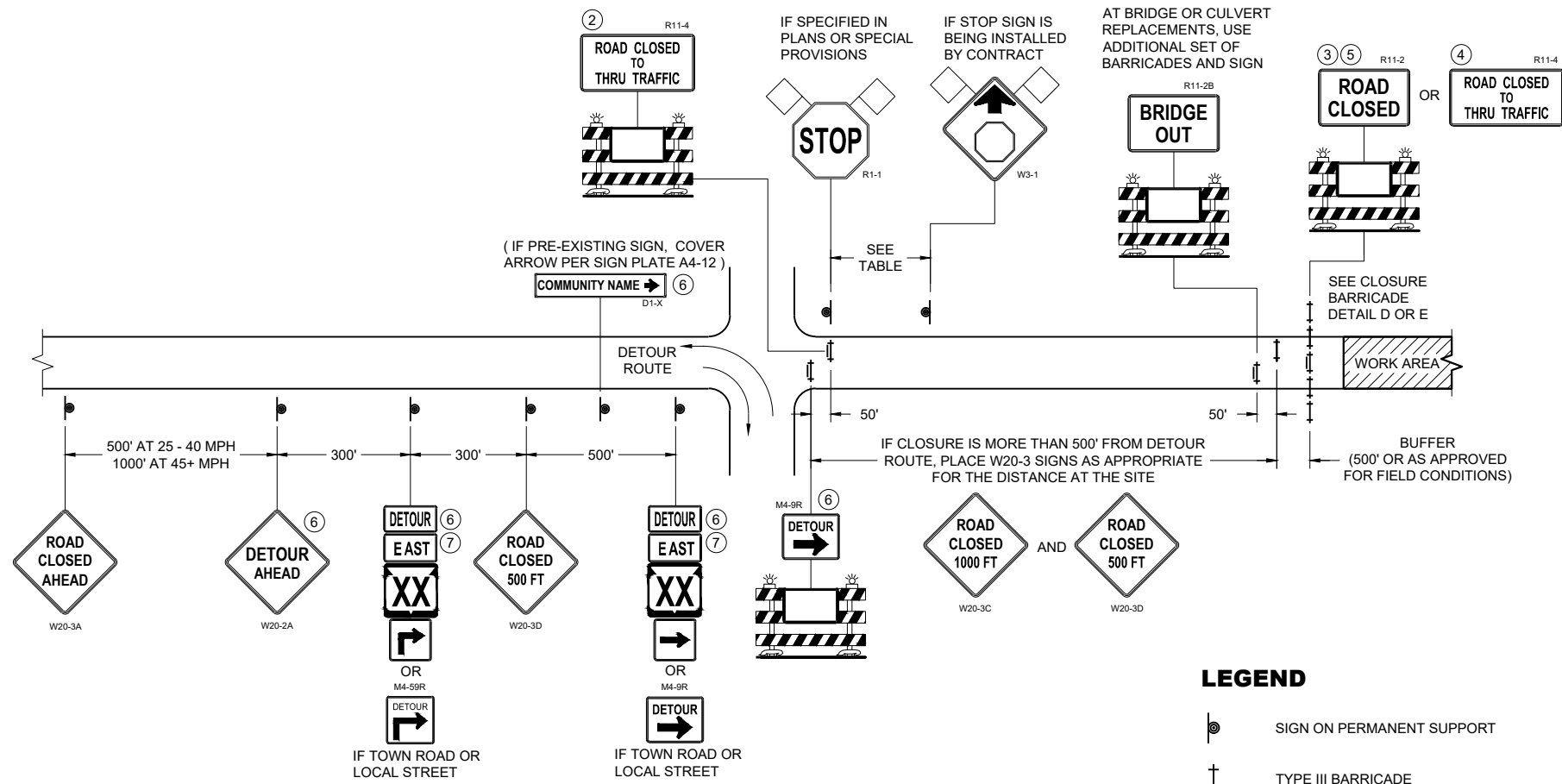
/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

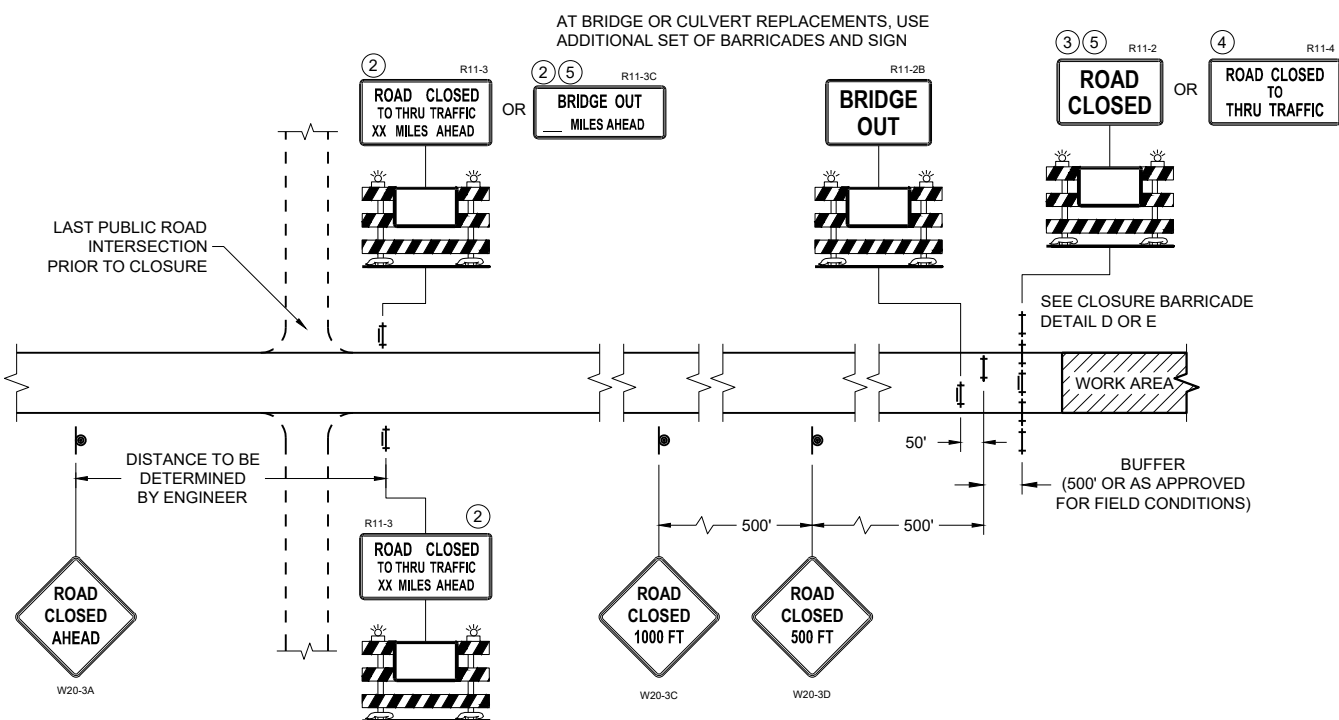
UNIT SUPERVISOR



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)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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)

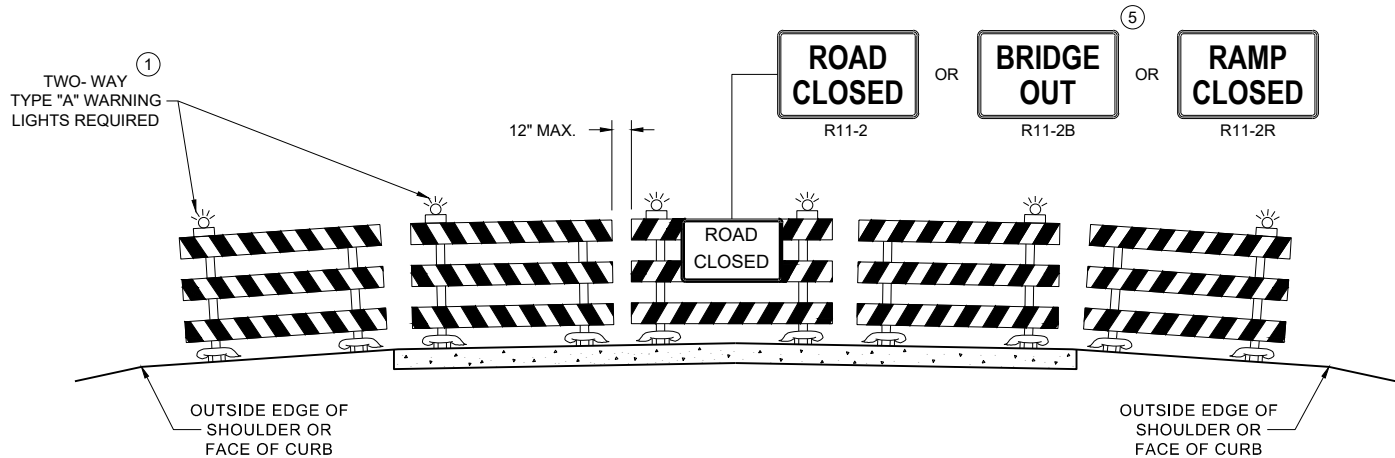
DETOUR M4 - 8
EAST M3 - X
XX OR **XX** OR **COUNTY X**
M1 - 4 M1 - 6 M1 - 5A
DETOUR OR **DETOUR**
M05 - 1 M06 - 1

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

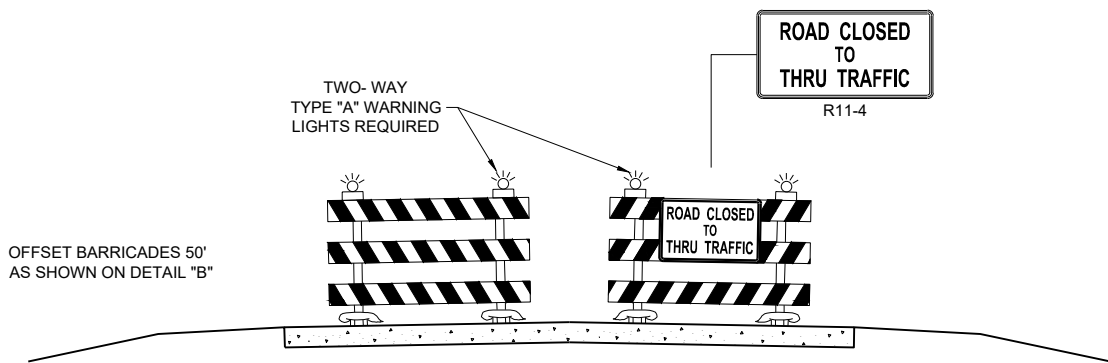
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /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.

PARTIAL NUMBERS ON SIGNS SHALL BE DISPLAYED AS A WHOLE NUMBER(AS NEEDED) FOLLOWED BY A FRACTION. SIGNS SHALL NOT DISPLAY NUMBERS IN DECIMAL FORM.

"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"

SIGNS PLACED ON TYPE III BARRICADES THAT ARE SIZES OTHER THAN 48"X30" SHALL HAVE A CORRUGATED POLYPROPYLENE OR POLYETHYLENE PLASTIC SIGN BASE.

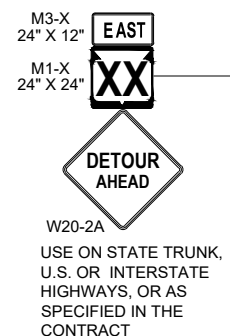
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

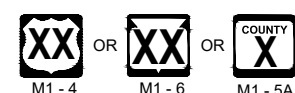
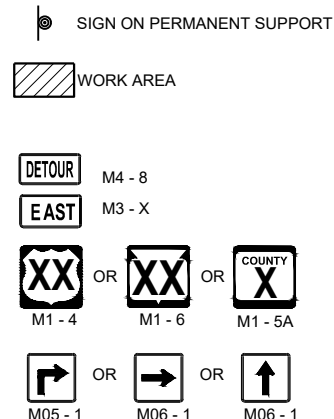
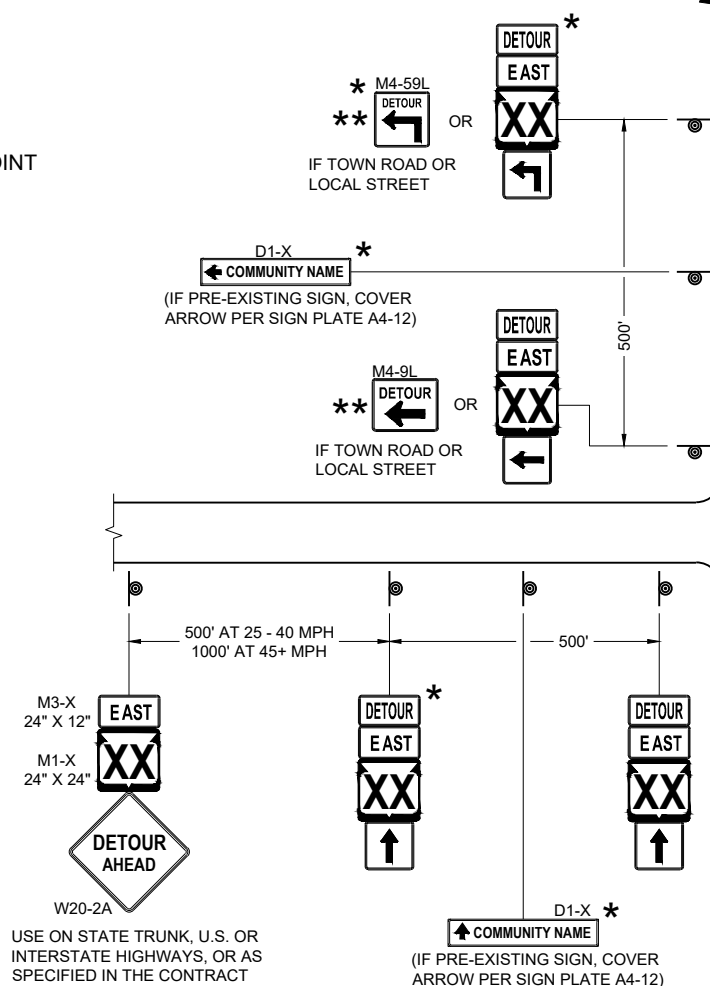
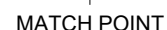
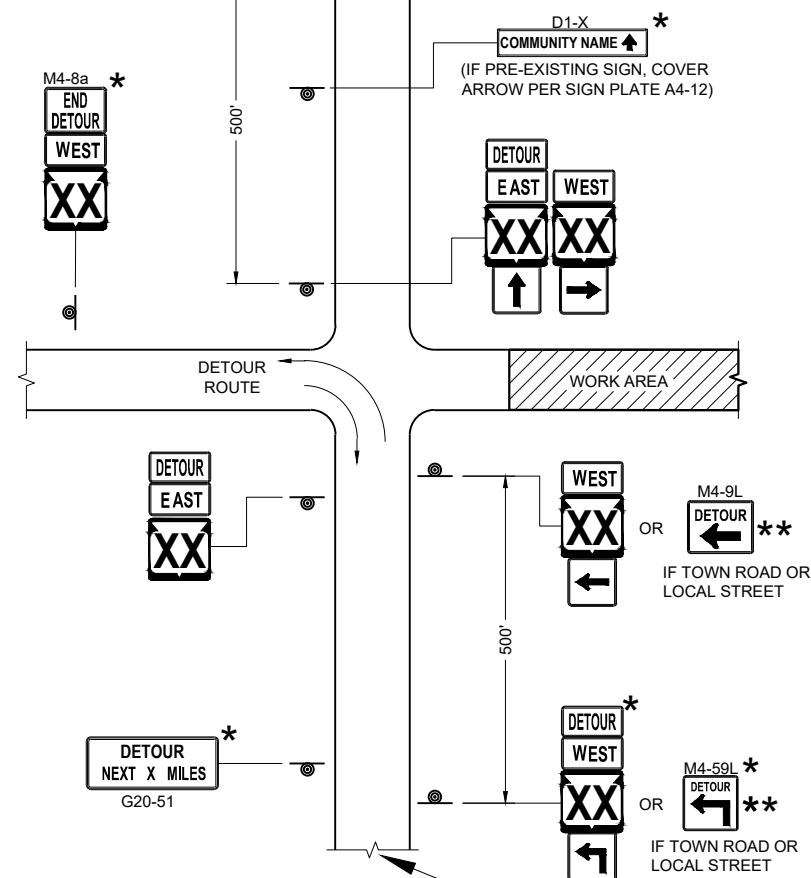
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /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.



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"

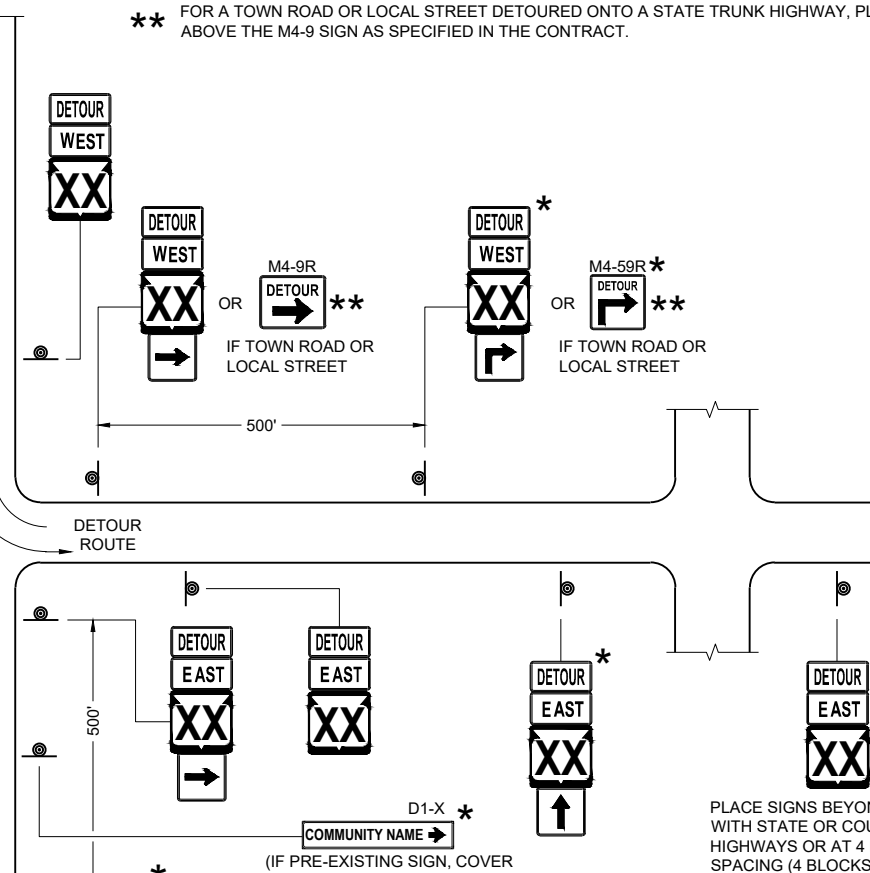
G20-51 SHALL BE 60" X 24"

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.**



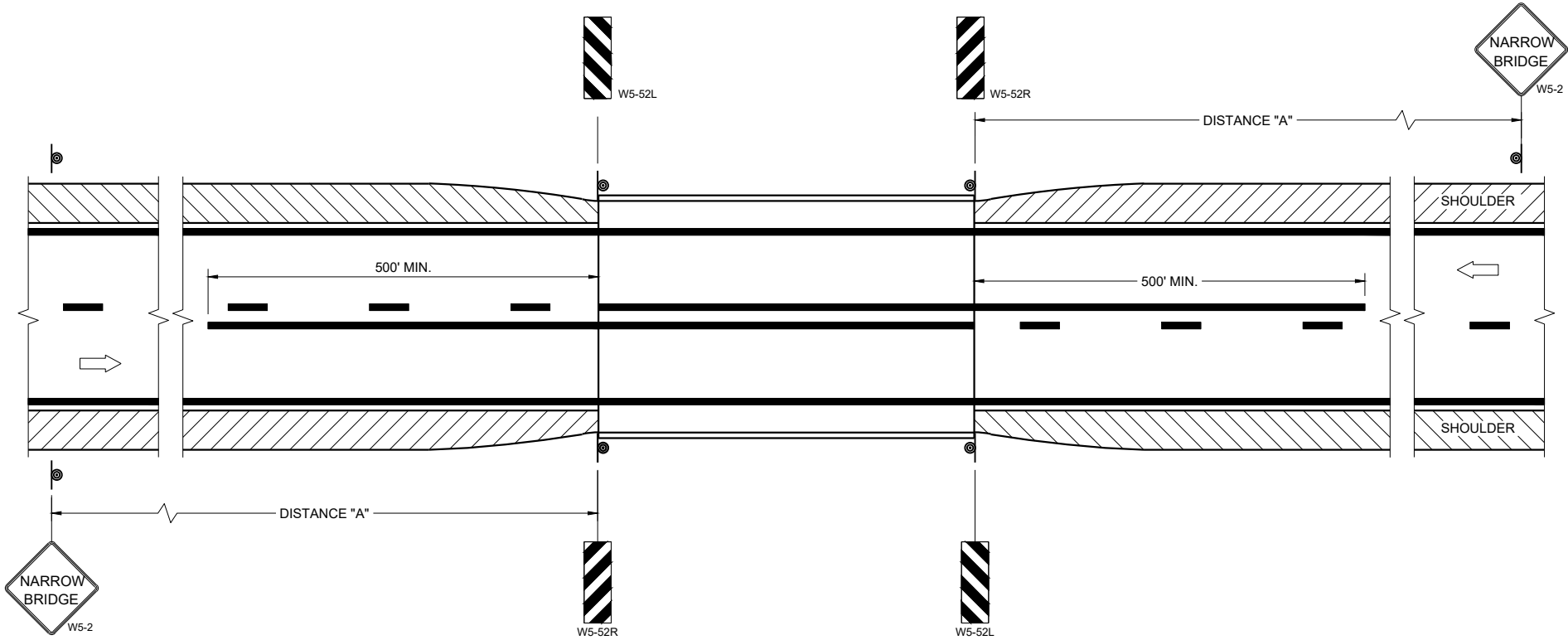
PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING FOR MAINLINE CLOSURES

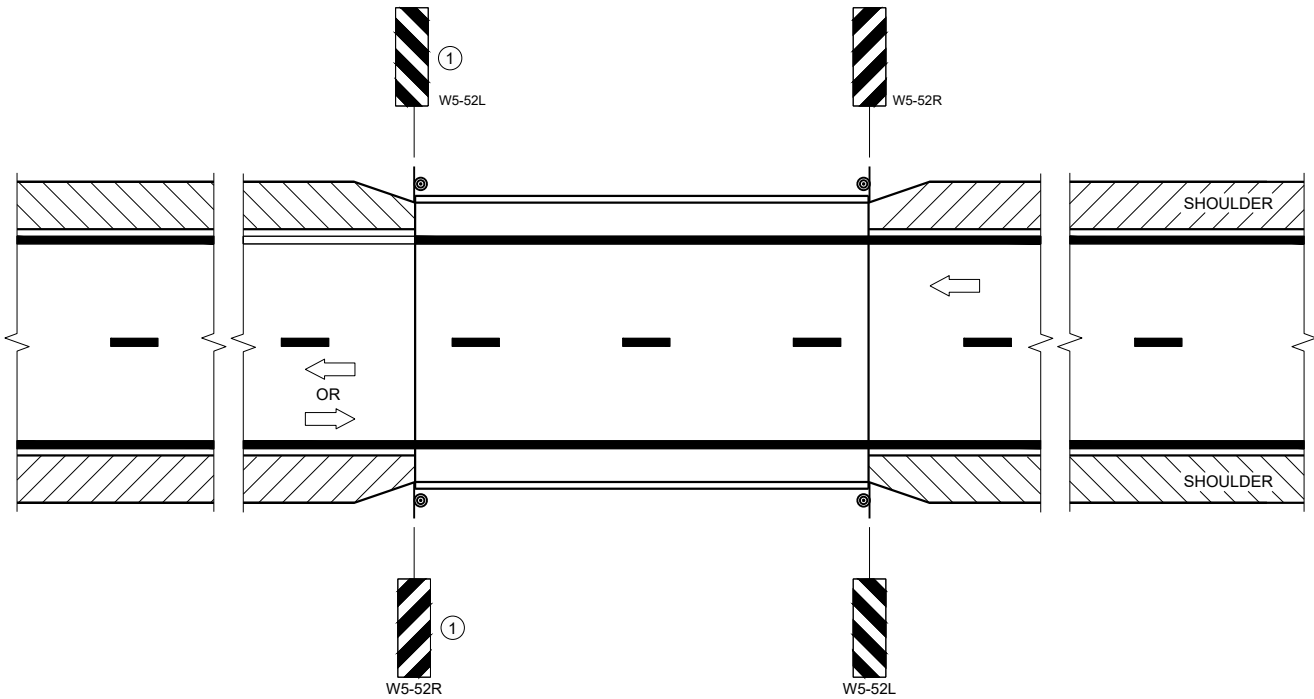
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

EJWA



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

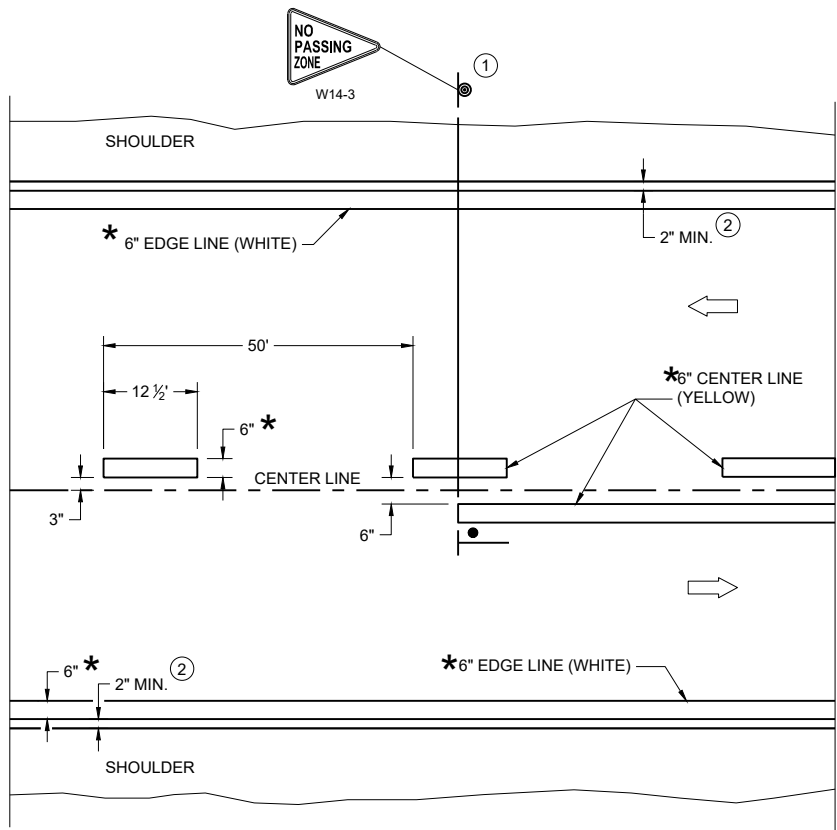
DISTANCE TABLE

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

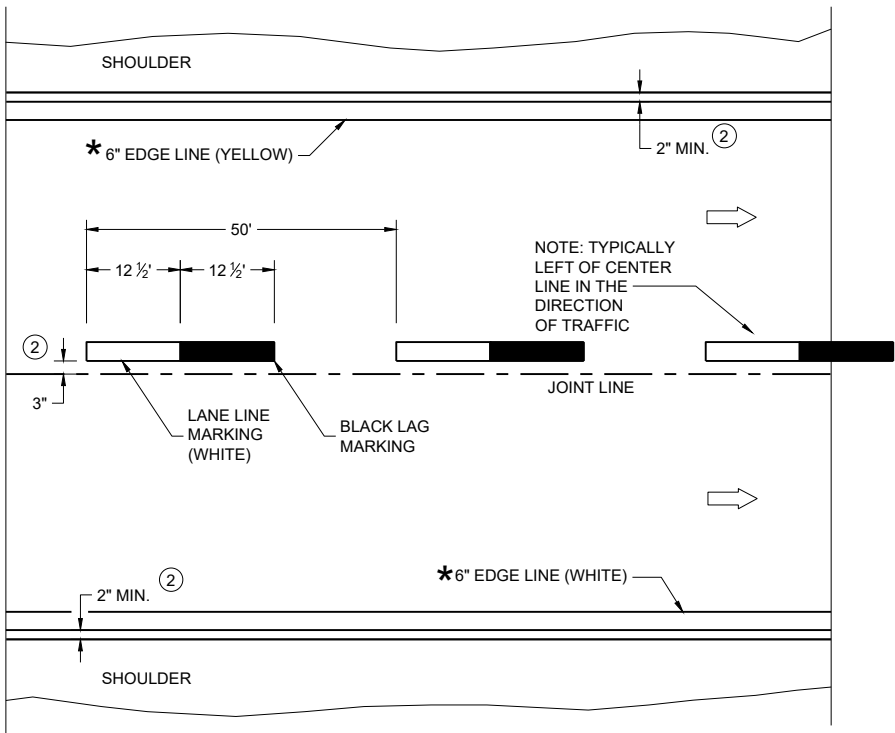
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

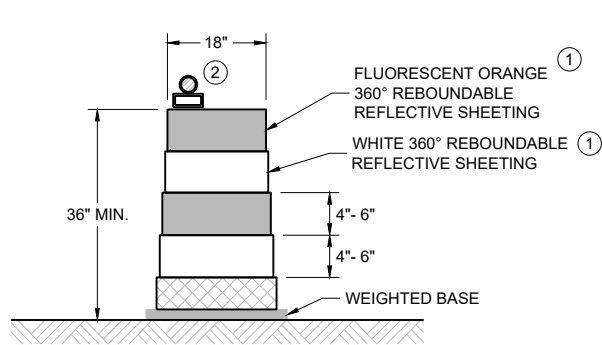
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- 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.

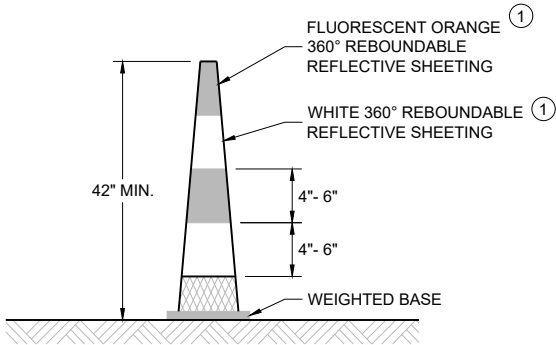
LEGEND

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

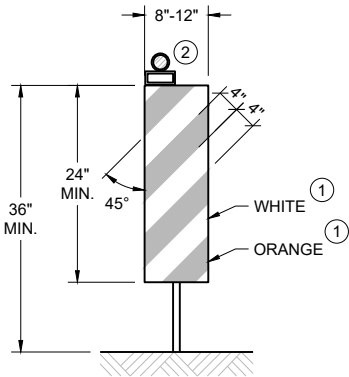
PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	



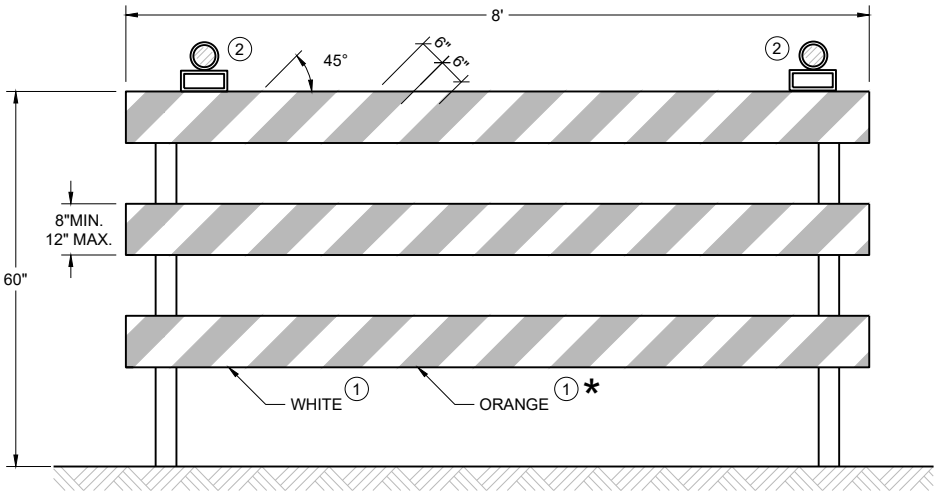
DRUM
BALLAST WIDTHS
RANGE FROM 24"-36"



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.



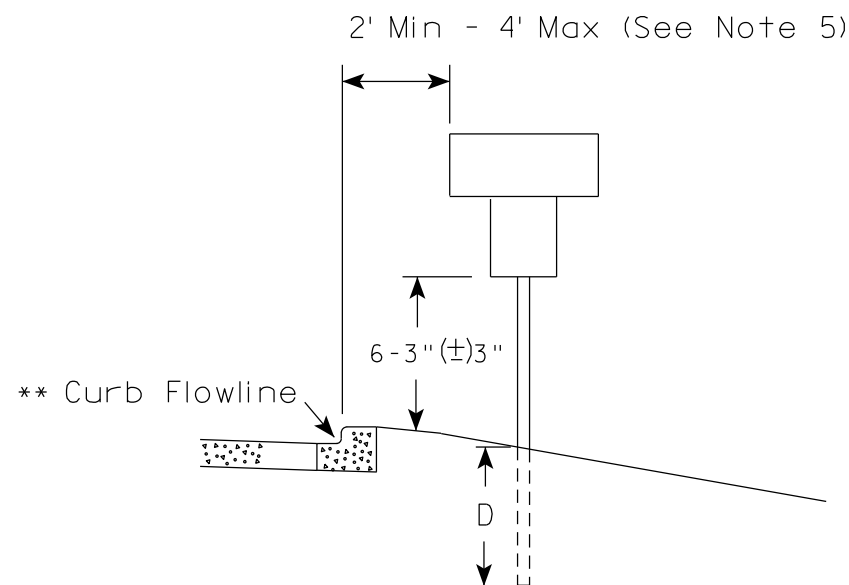
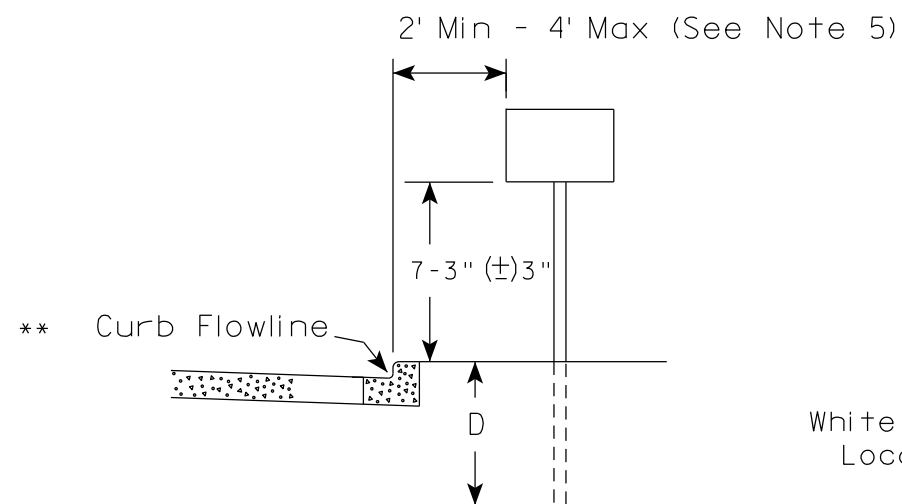
TYPE III BARRICADE
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.
* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

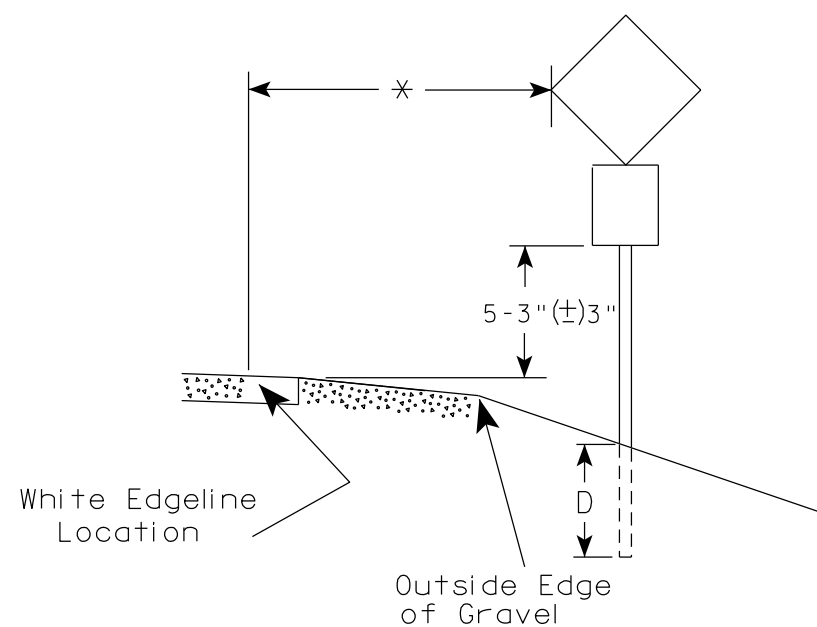
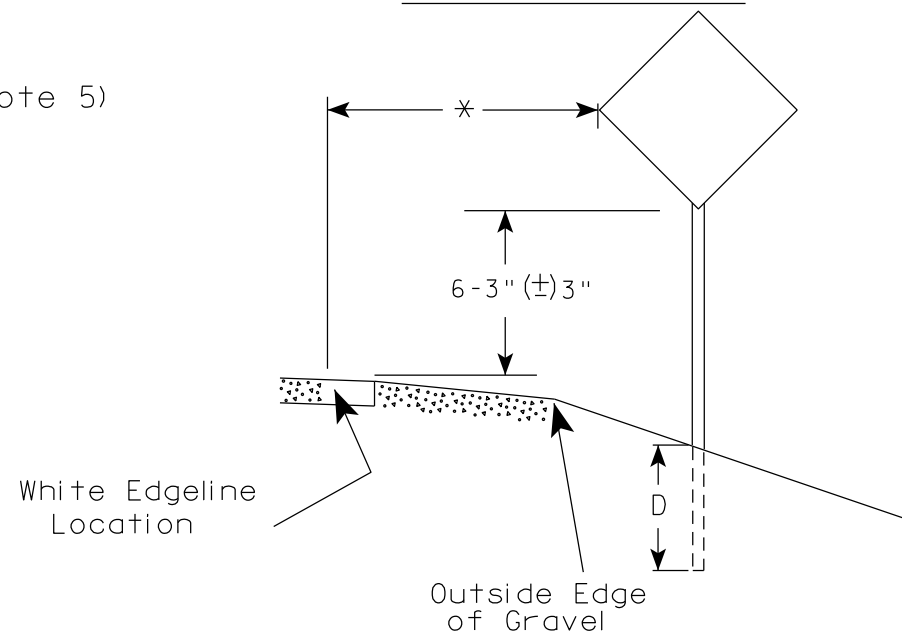
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2026 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

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

- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- 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".
- For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

* * 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.

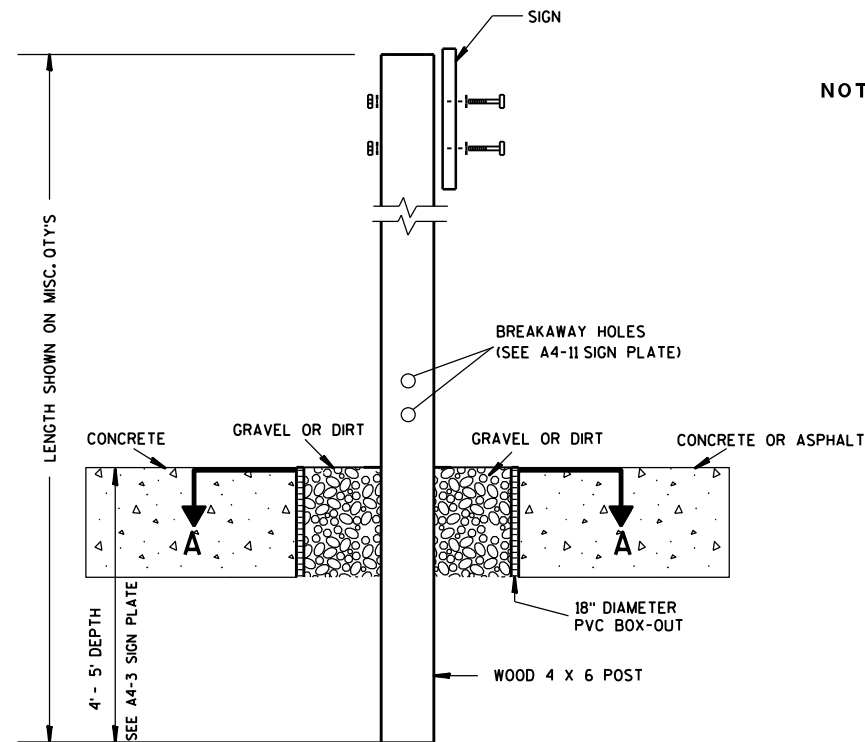
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
for State Traffic Engineer

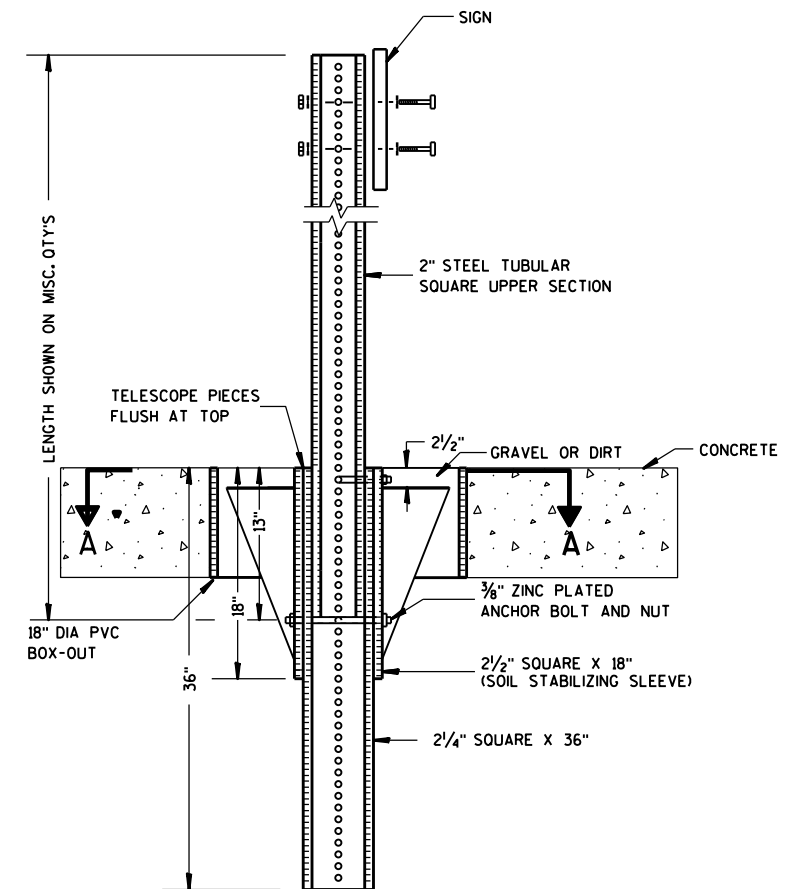
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

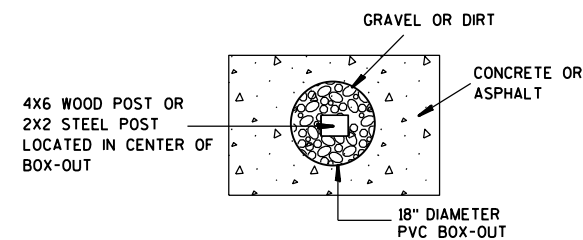
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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

GENERAL NOTES

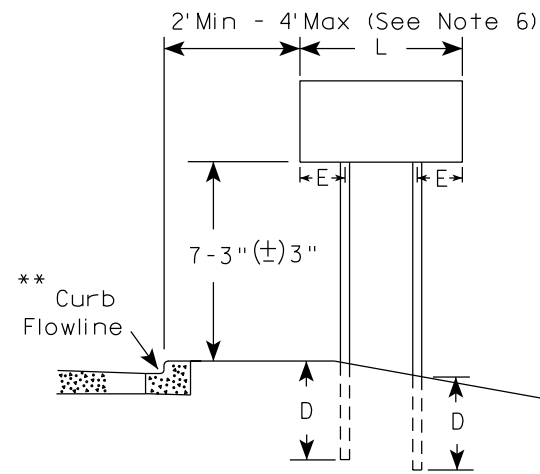
- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- J-Assemblies are considered to be one sign for mounting height.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), 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".

* 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.

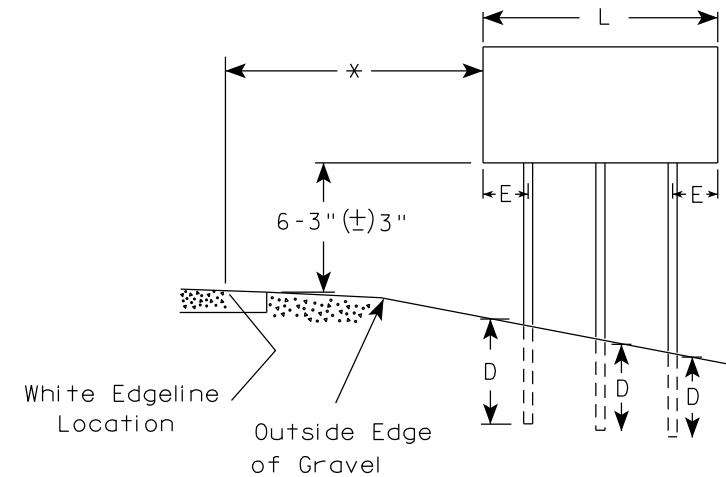
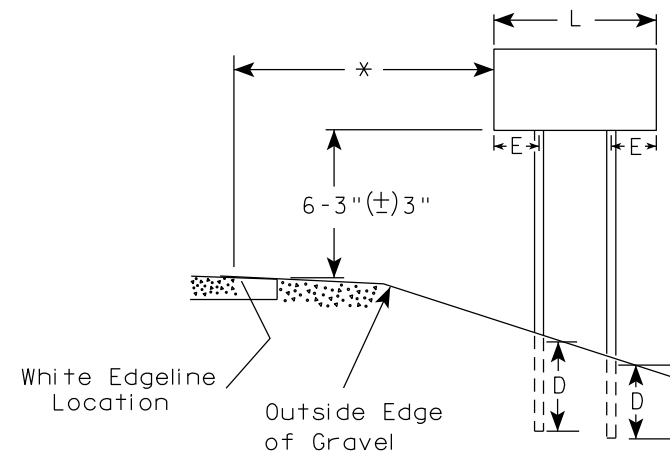
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

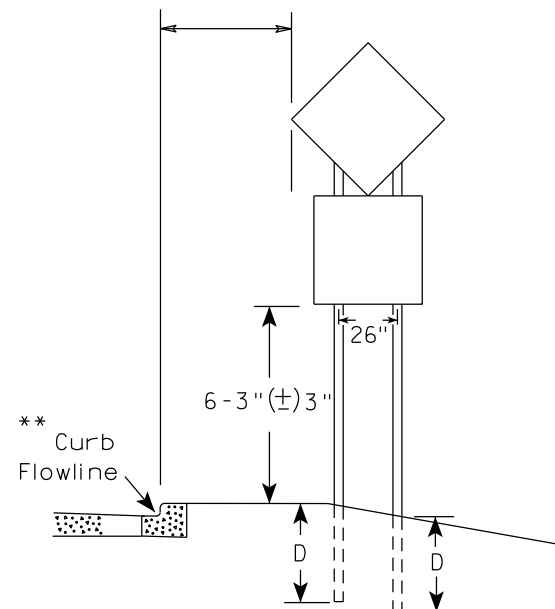
URBAN AREA



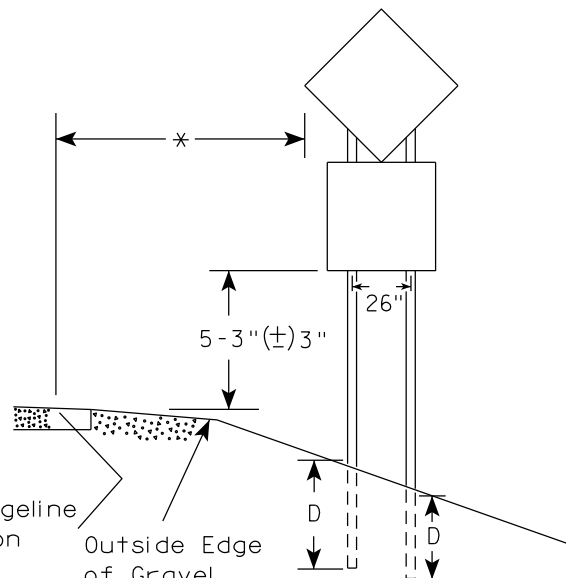
RURAL AREA (See Note 3)



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

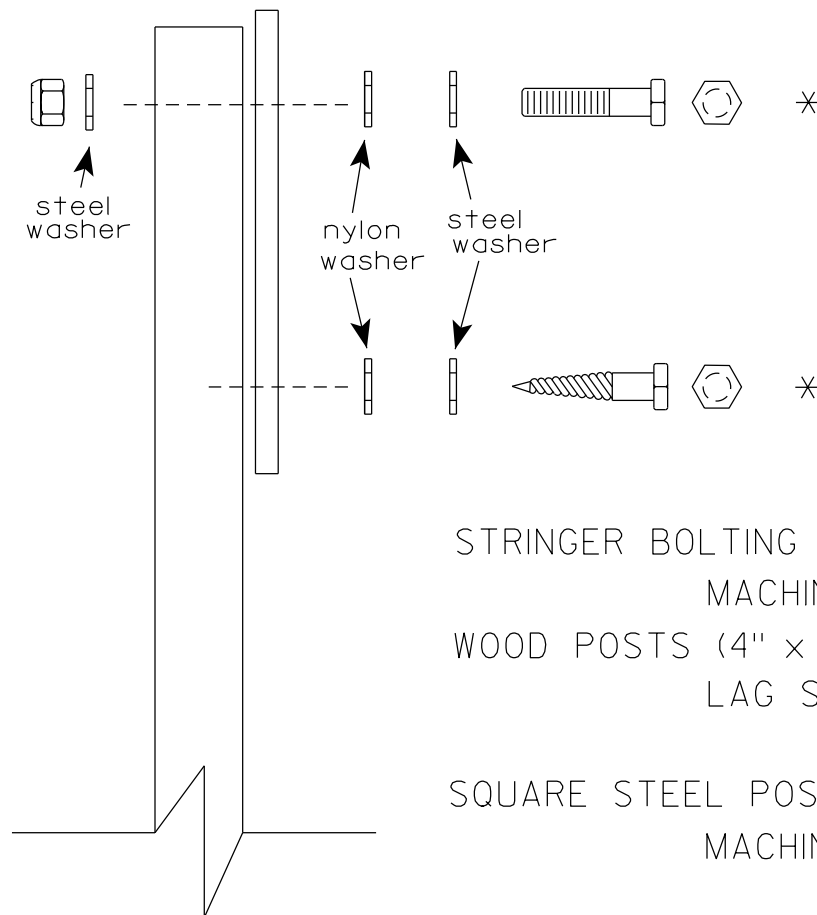
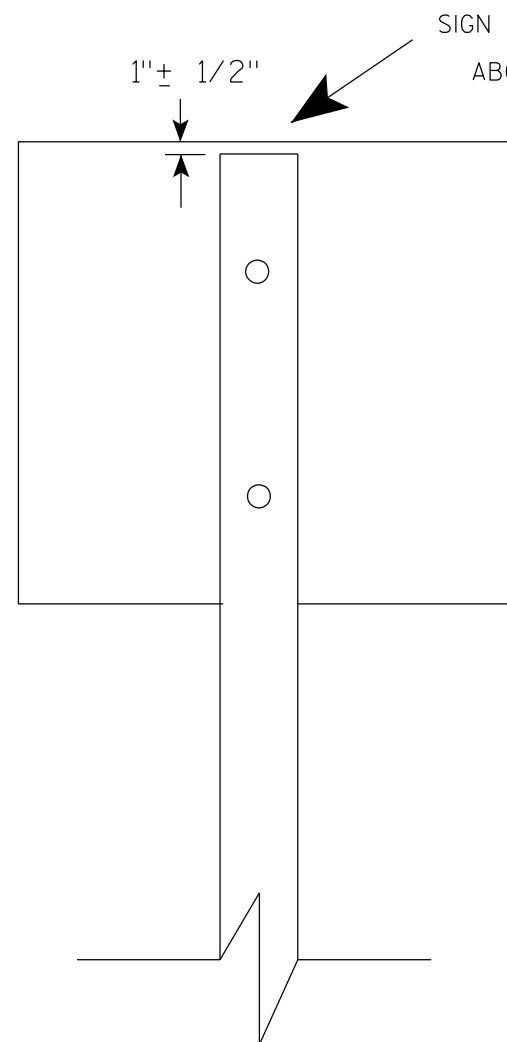
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

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



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.

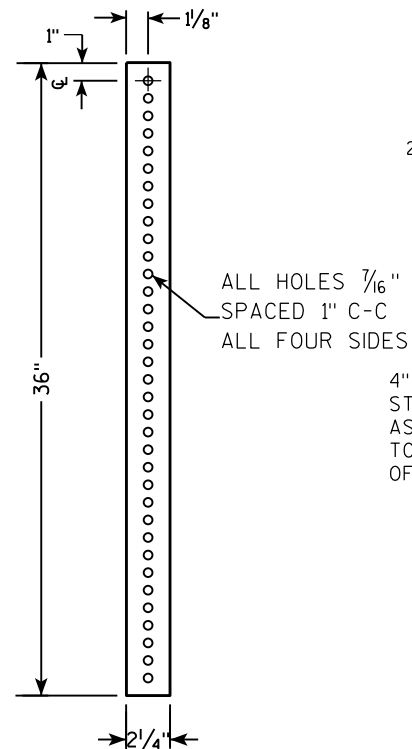
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (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 $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

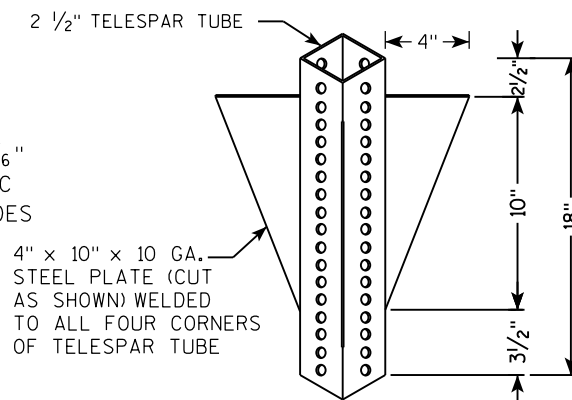
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> 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

LENGTH SHOWN ON MISC. QTY'S

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

1"

TELESCOPE PIECES FLUSH AT TOP

18"

12"

36"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

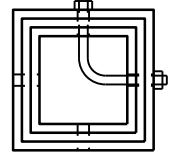
2 1/4" SQUARE X 36"

A

B

C

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



DIRECTION
OF TRAFFIC

SECTION A-A

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 Matthieu R. Rauch

for State Traffic Engineer

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

PROJECT NO:

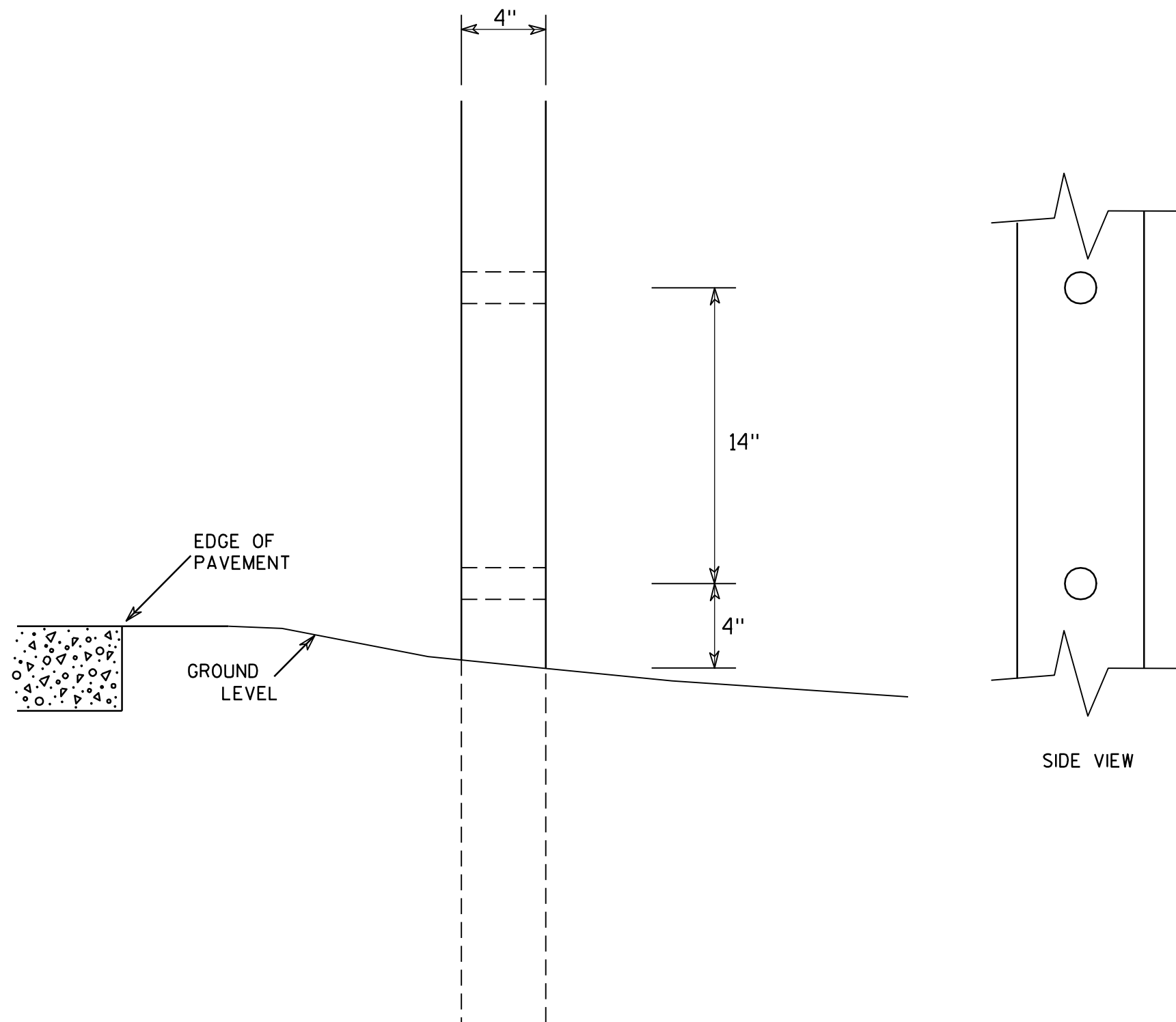
HWY:

COUNTY:

SHEET NO:

11

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:

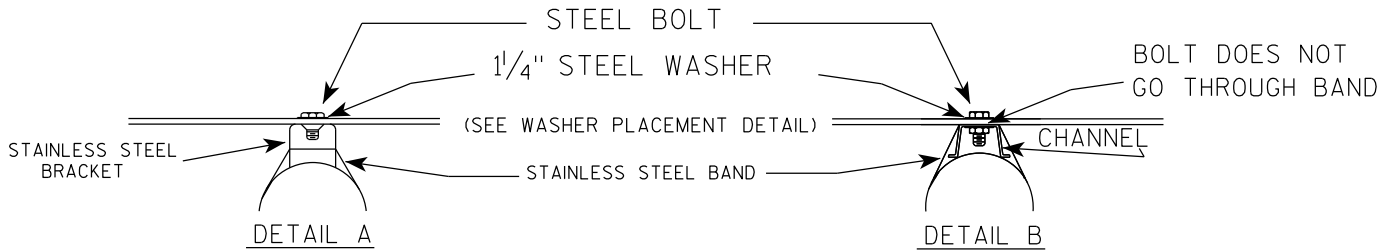
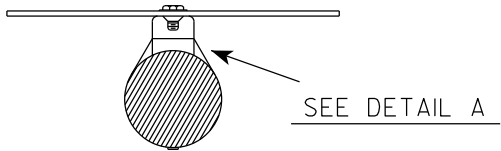
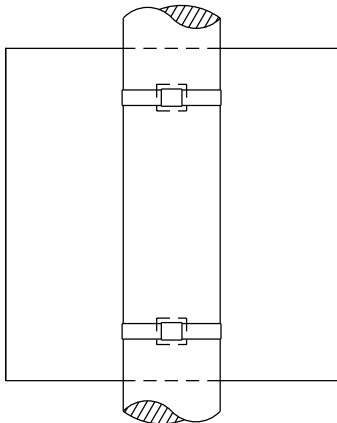
COUNTY:

SHEET NO:

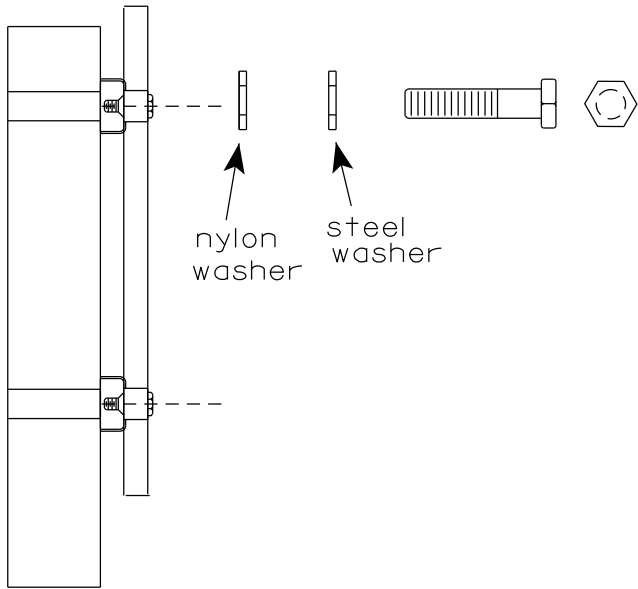
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

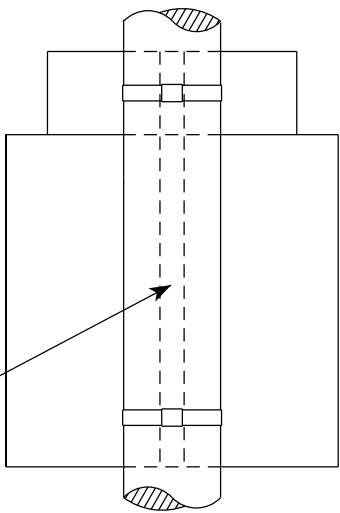


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

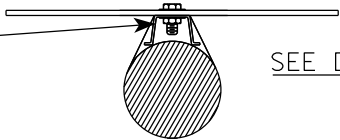
GENERAL NOTES

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



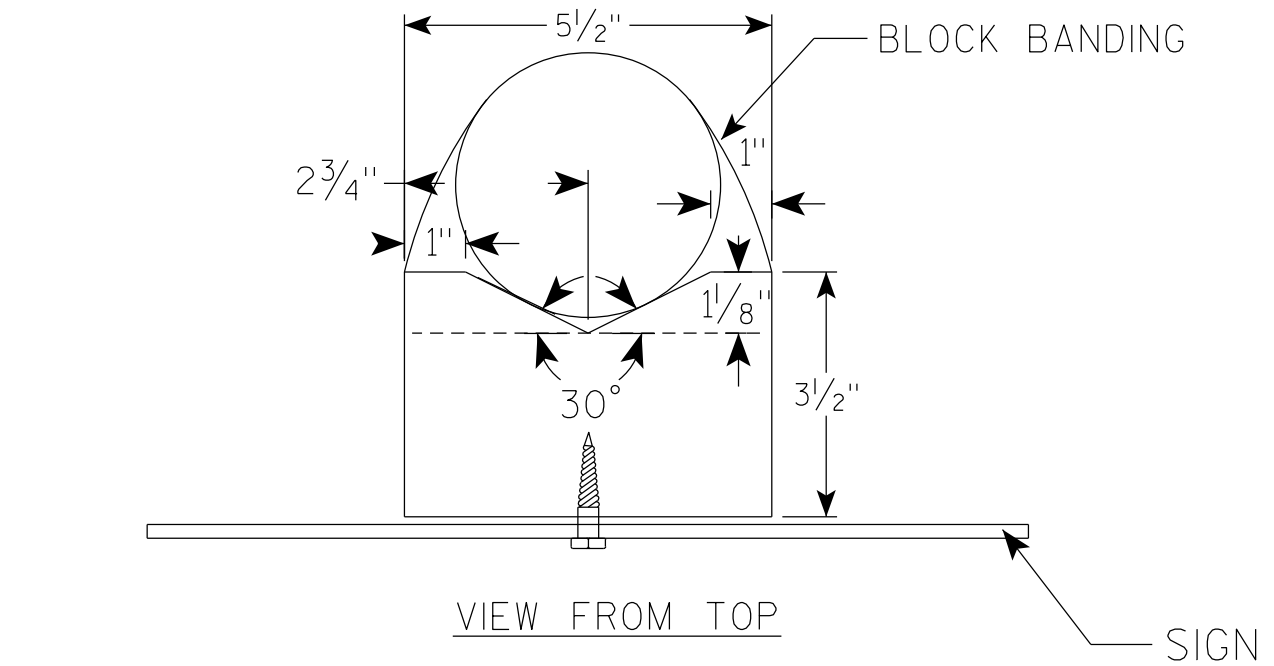
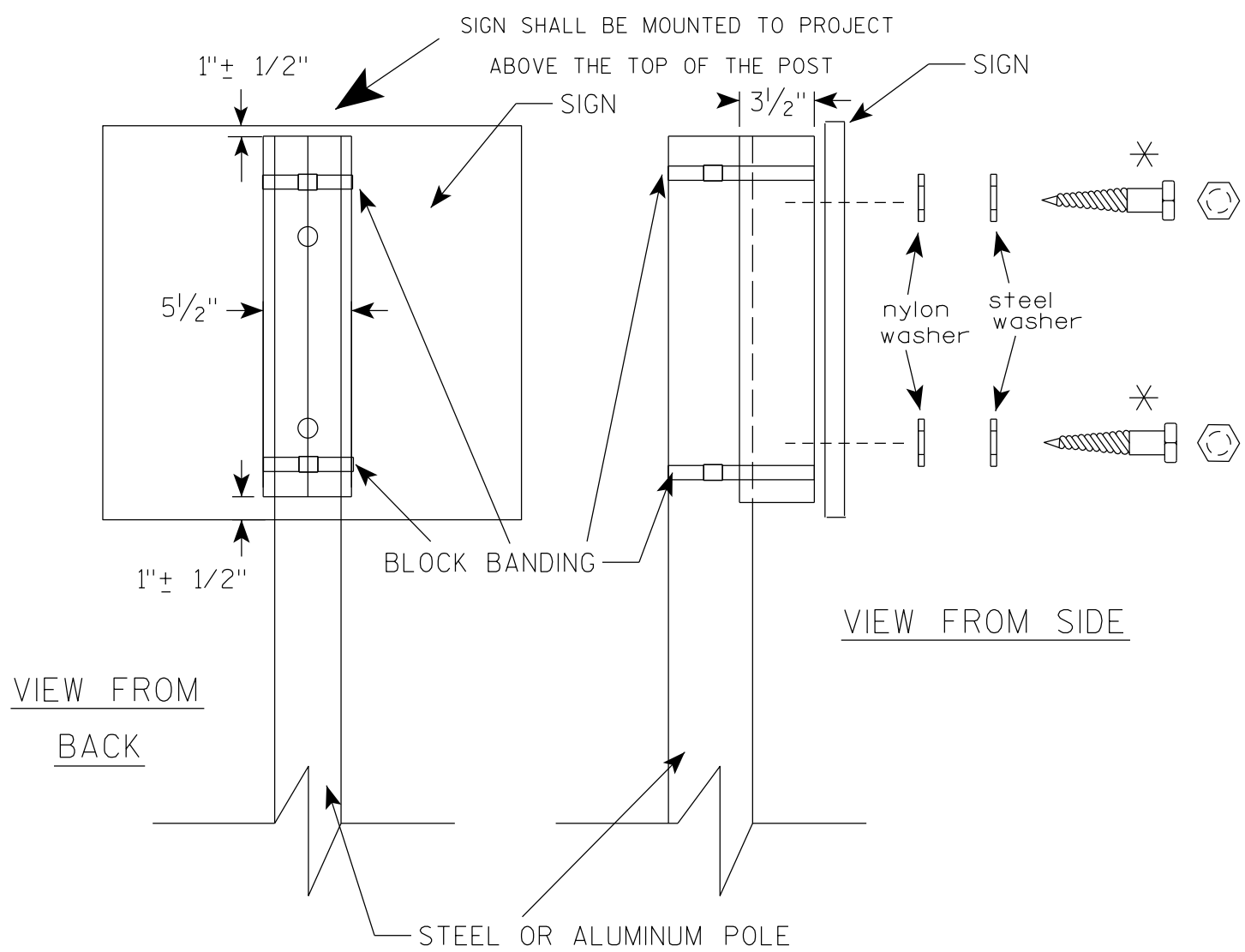
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



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

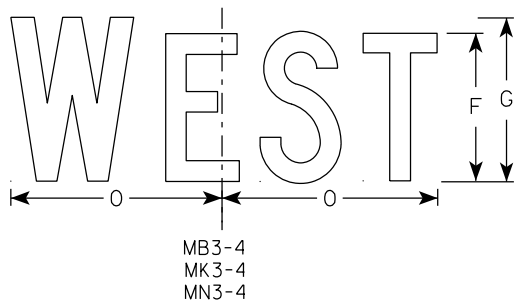
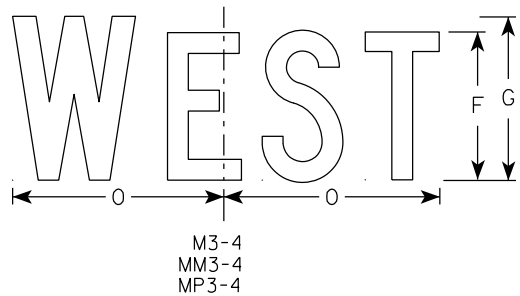
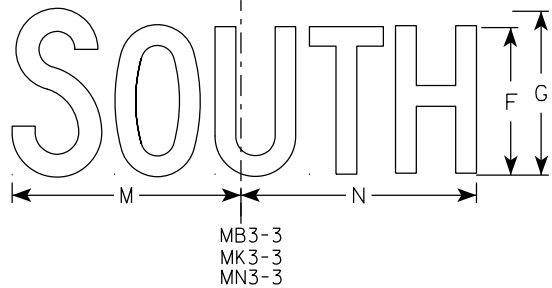
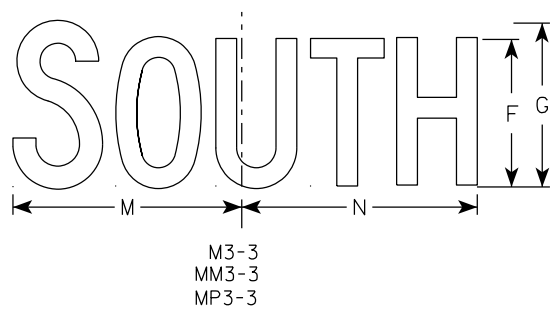
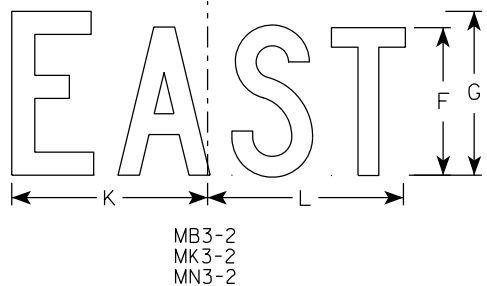
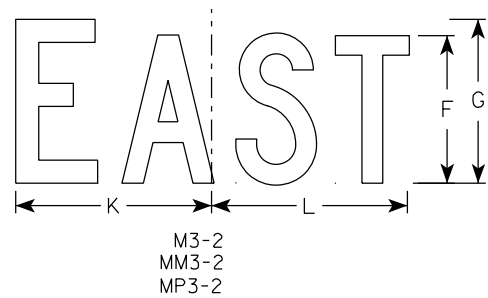
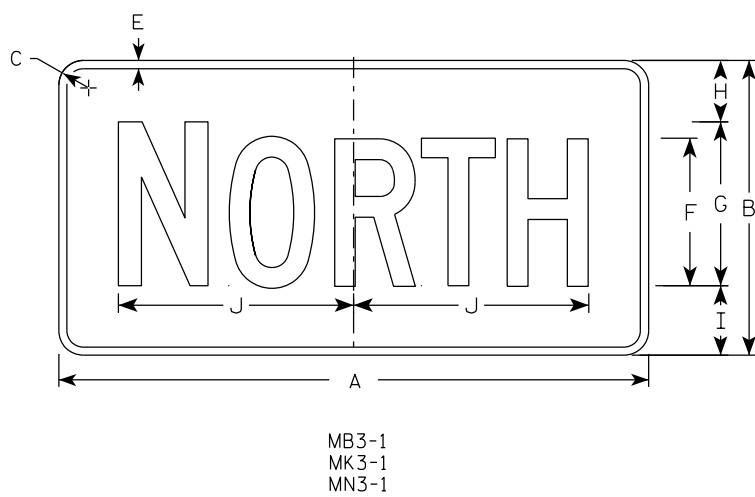
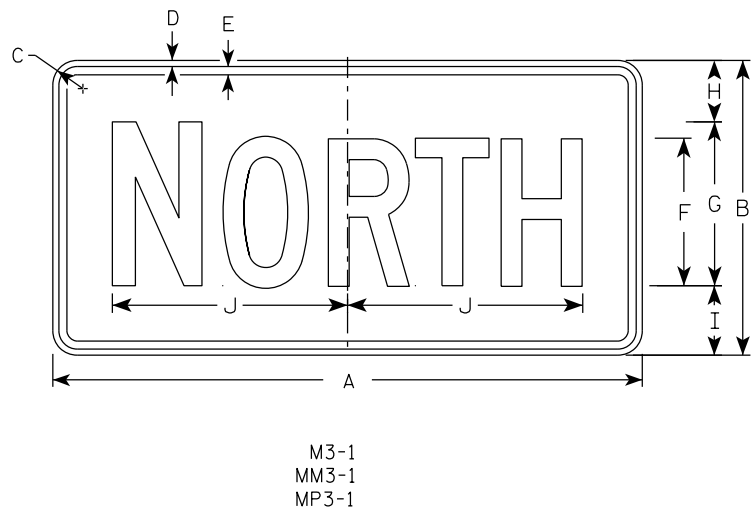


GENERAL NOTES

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	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/19/2022	PLATE NO. A5-10.3



NOTES

1. All Signs Type II - Type H Reflective
2. Color:
Background - See note 5
Message - See note 5
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.
5. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

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	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
2M	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
3	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
4	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
5	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5

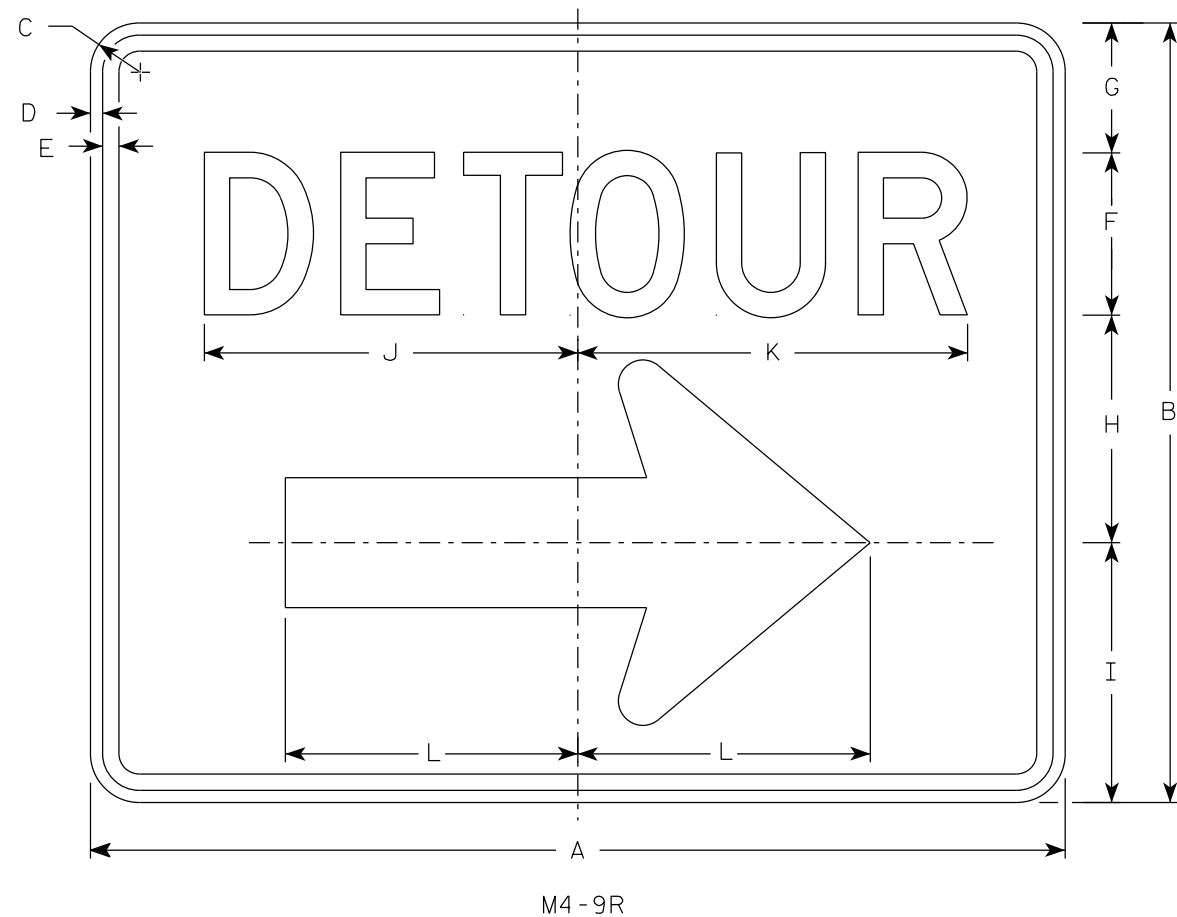
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGNS
M3-1 THRU M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

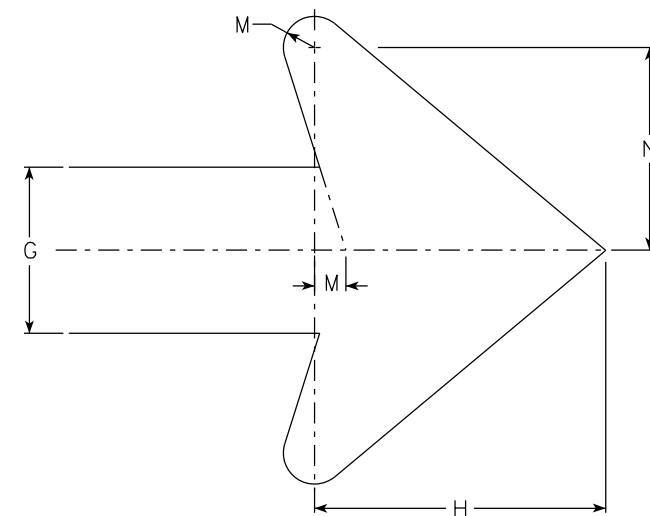
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/8/2023 PLATE NO. M3-1.15



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D
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.
4. M4-9L is the same as M4-9R except the arrow is reversed.



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																											
2	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
2M	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 7/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 7/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

STANDARD SIGN
M4-9 R & L

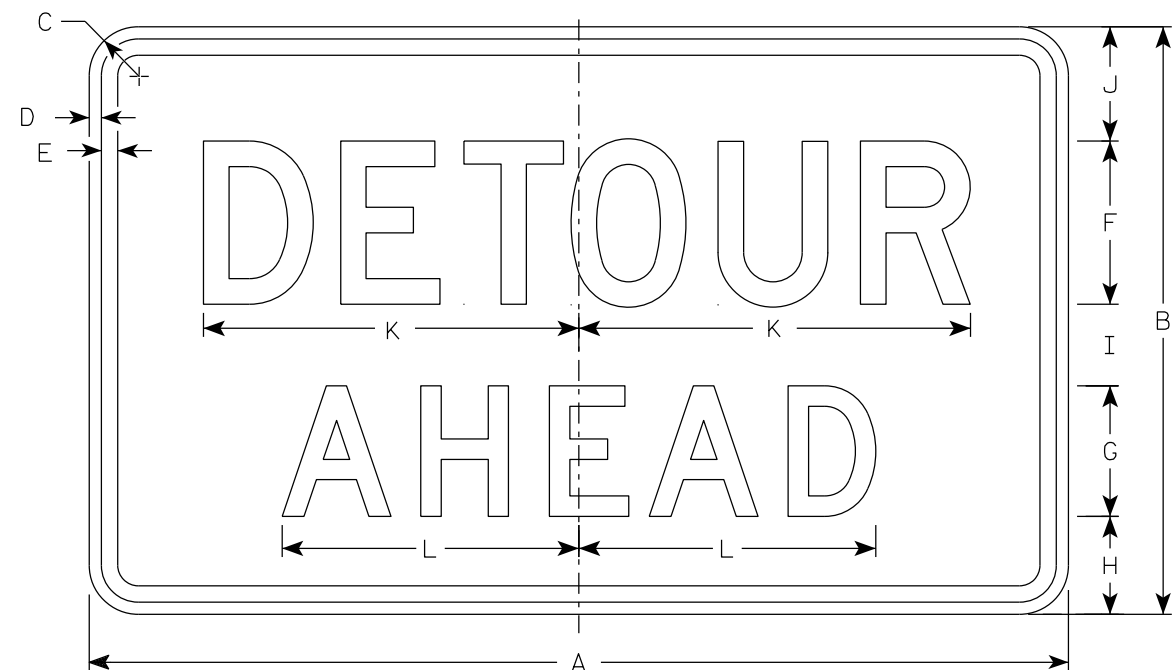
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-9R.6

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---

7



M4-59A

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - D
- 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																											
2S	30	18	1 1/2	3/8	1/2	5	4	3	2 1/2	3 1/2	11 3/4	9 1/8														3.75	
2M	30	18	1 1/2	3/8	1/2	5	4	3	2 1/2	3 1/2	11 3/4	9 1/8														3.75	
3																											
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

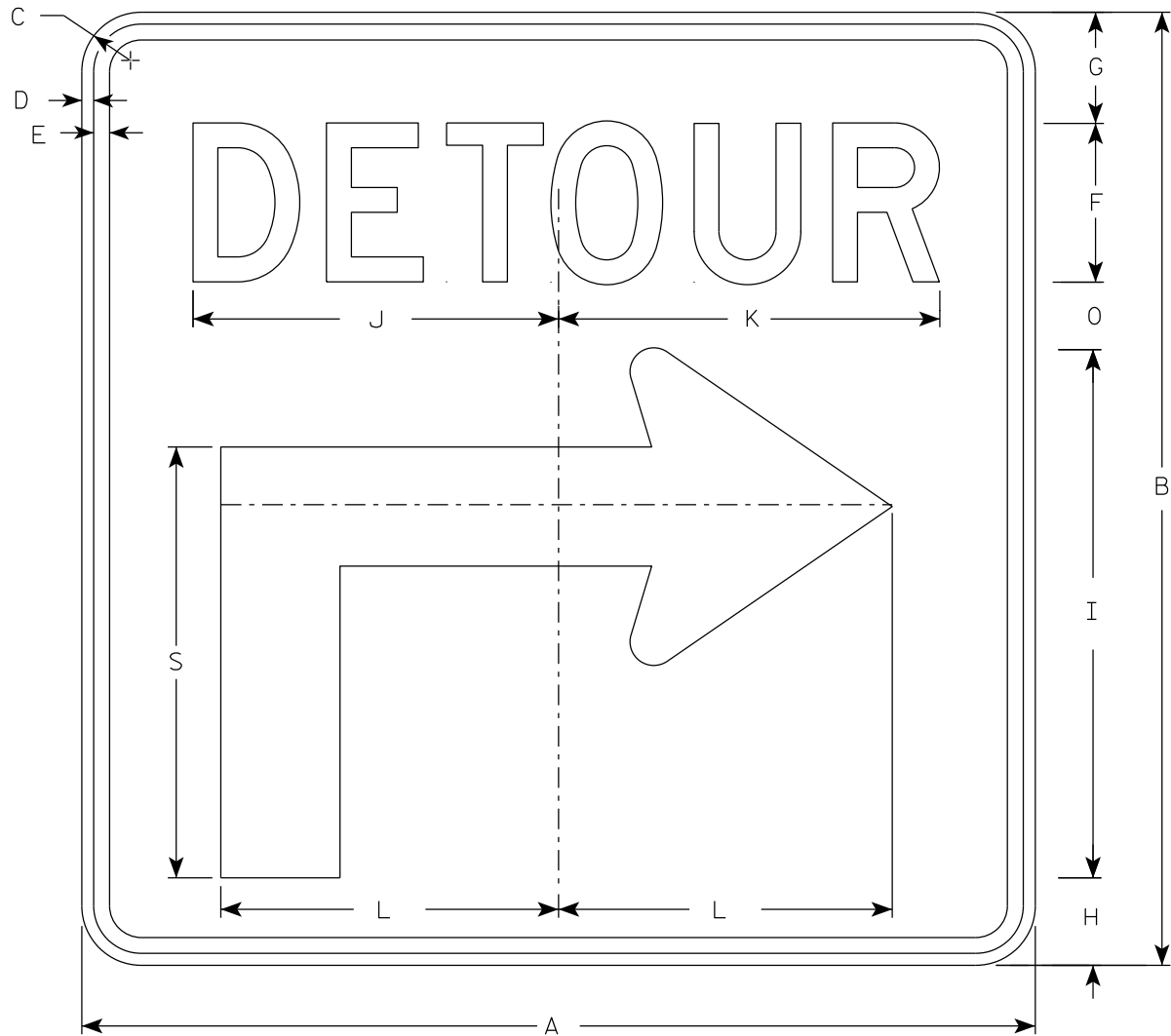
E

STANDARD SIGN
M4-59A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

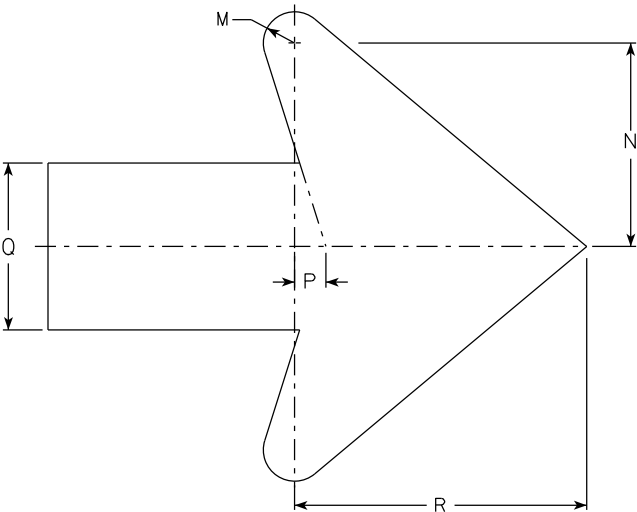
DATE 2/13/2023 PLATE NO. M4-59A.2



M4-59R

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown when base material is metal.
- 5. M4-59L is the same as M4-59R except the arrow is reversed.



Arrow Detail

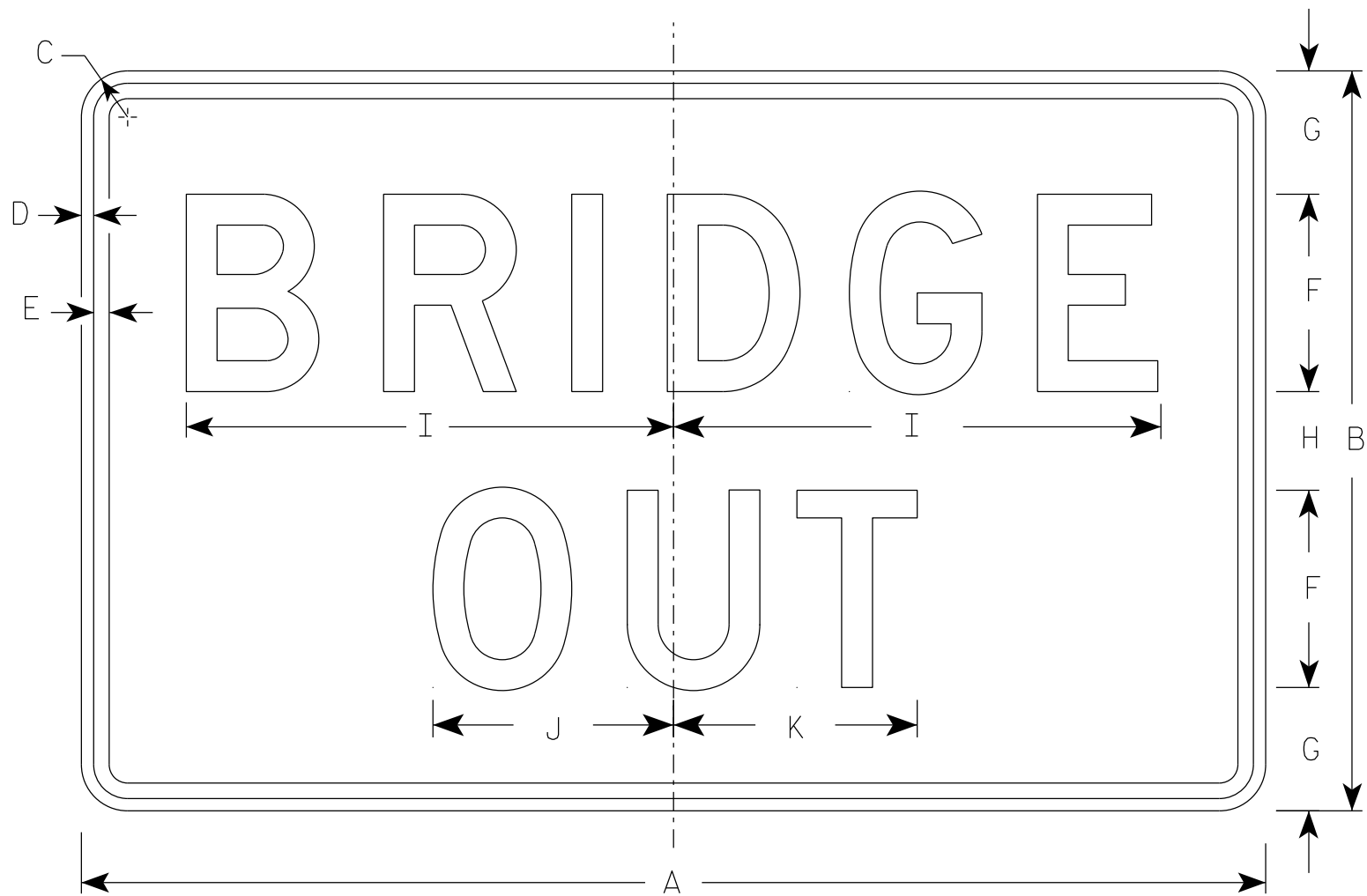
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	30	1 7/8	3/8	1/2	5	3 1/2	2 3/4	16 5/8	11 1/2	12	10 1/2	3/4	4 1/4	2 1/8	5/8	3 3/4	7 1/2	13 1/2								6.25
2M	30	30	1 7/8	3/8	1/2	5	3 1/2	2 3/4	16 5/8	11 1/2	12	10 1/2	3/4	4 1/4	2 1/8	5/8	3 3/4	7 1/2	13 1/2								6.25
3	30	30	1 7/8	3/8	1/2	5	3 1/2	2 3/4	16 5/8	11 1/2	12	10 1/2	3/4	4 1/4	2 1/8	5/8	3 3/4	7 1/2	13 1/2								6.25
4	48	48	2 1/4	1/2	5/8	8	5 5/8	4 3/8	26 5/8	20 5/8	20 1/2	17	1 1/4	6 3/4	3 3/8	7/8	6	12	21 3/4								16.0
5	48	48	2 1/4	1/2	5/8	8	5 5/8	4 3/8	26 5/8	20 5/8	20 1/2	17	1 1/4	6 3/4	3 3/8	7/8	6	12	21 3/4								16.0

STANDARD SIGN
M4-59 L&R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/10/26 PLATE NO. M4-59.3



R11-2B

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - Black
- 3. Message Series - D
- 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.

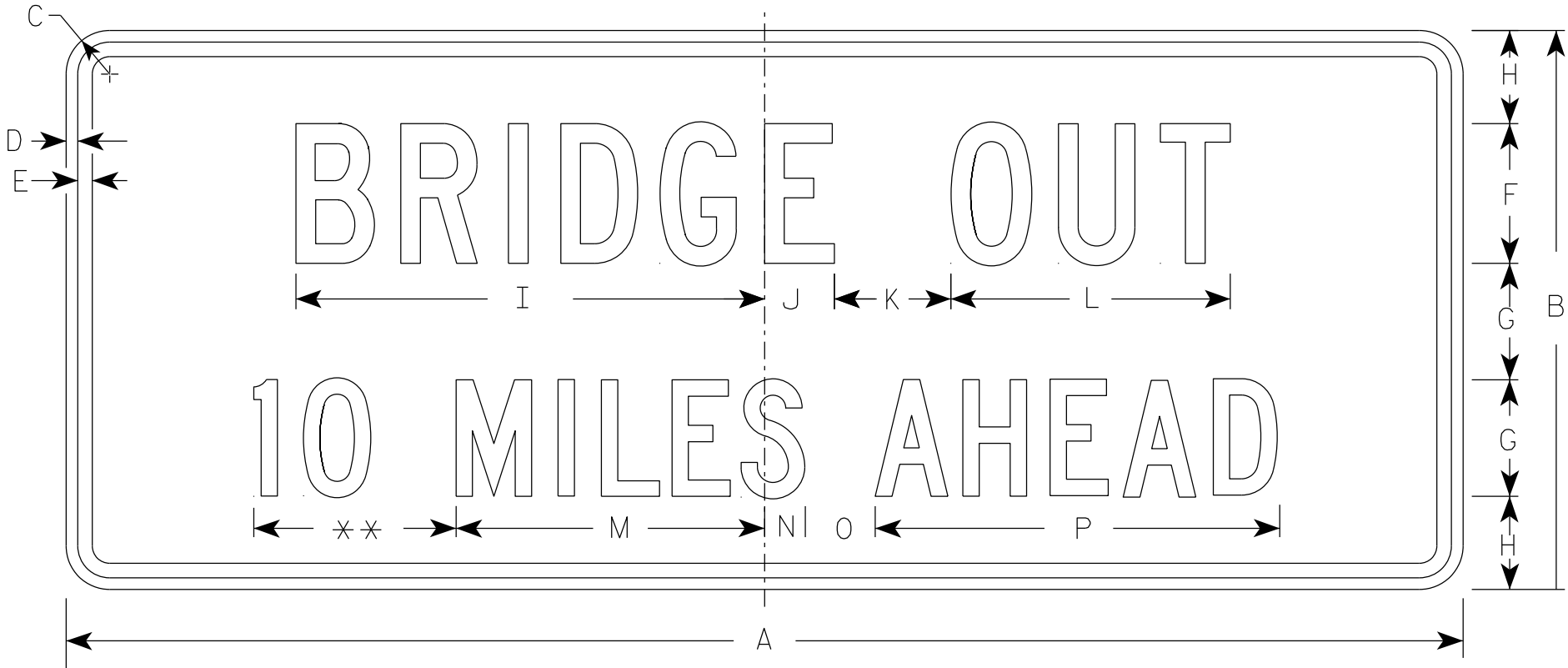
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

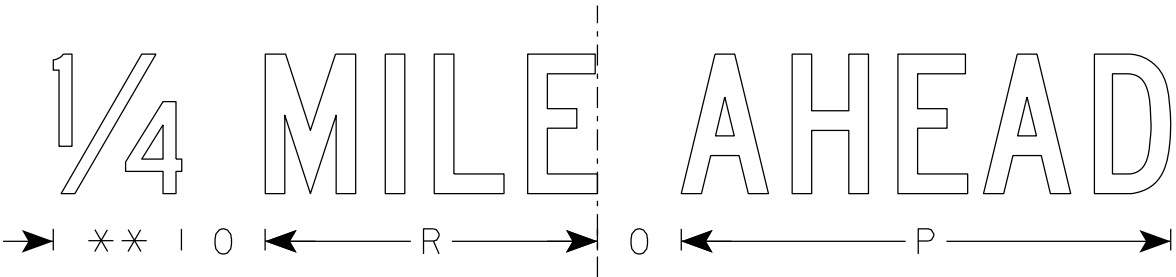
Background - White

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.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3C

** See Note 5



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	15	1 1/2	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4		7 1/8									3.75
2S	60	24	1 7/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
2M	60	24	1 7/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
3																											
4																											
5																											

STANDARD SIGN
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

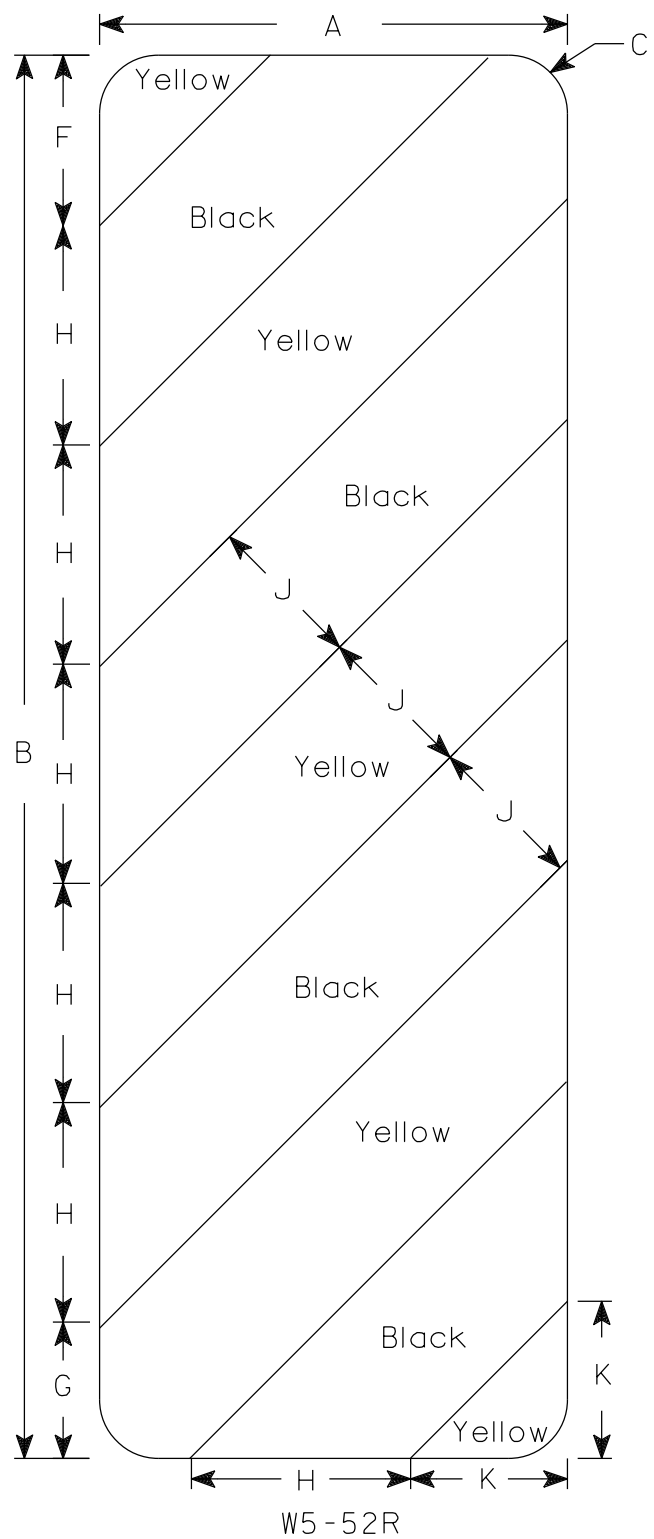
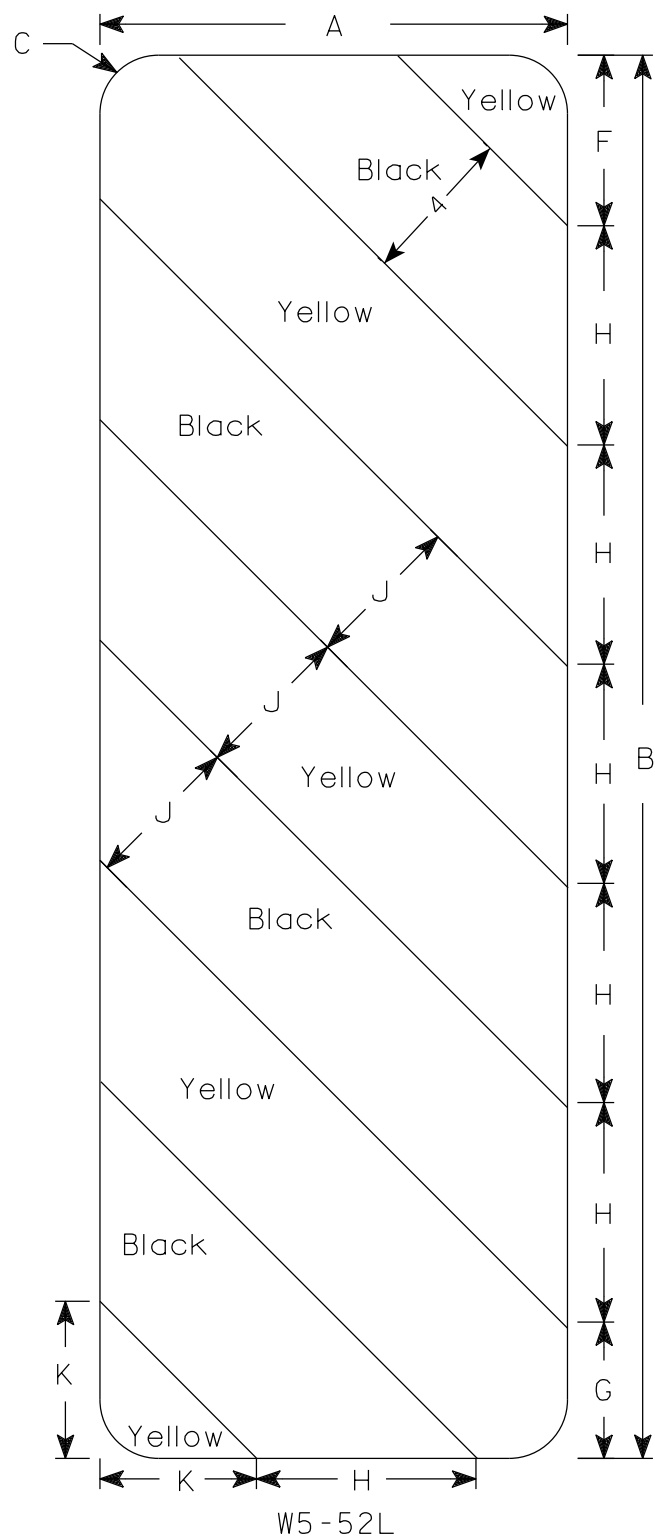
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-3C.4

PROJECT NO:

SHEET NO:

E



NOTES

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

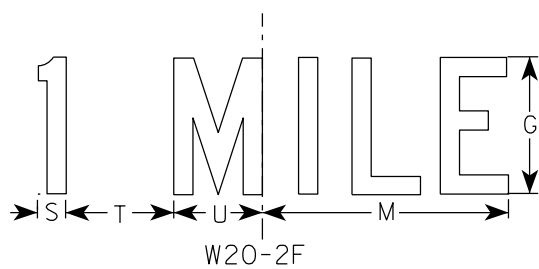
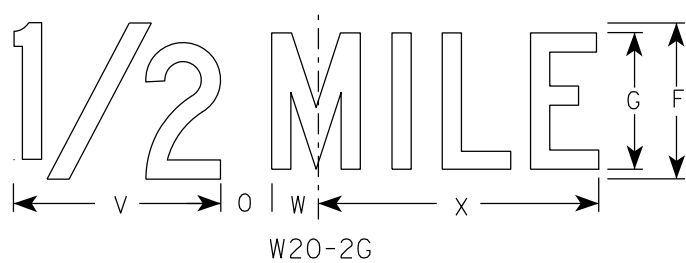
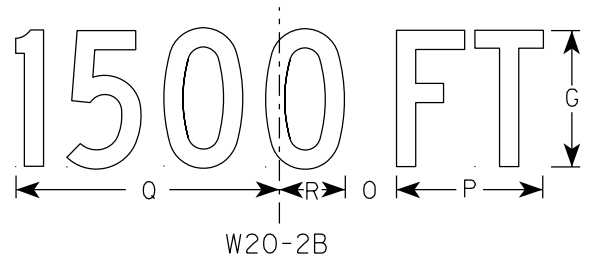
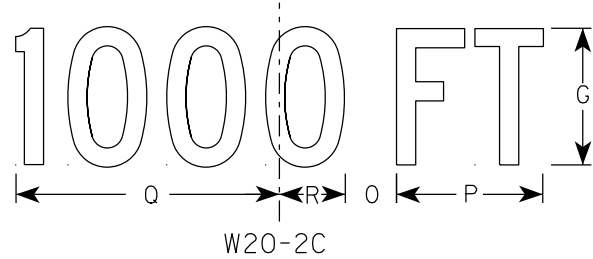
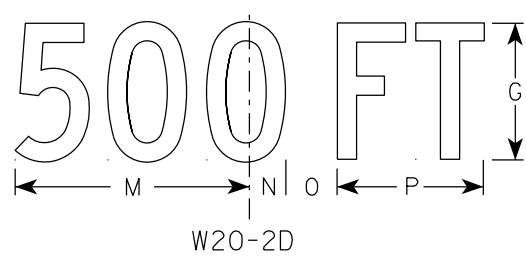
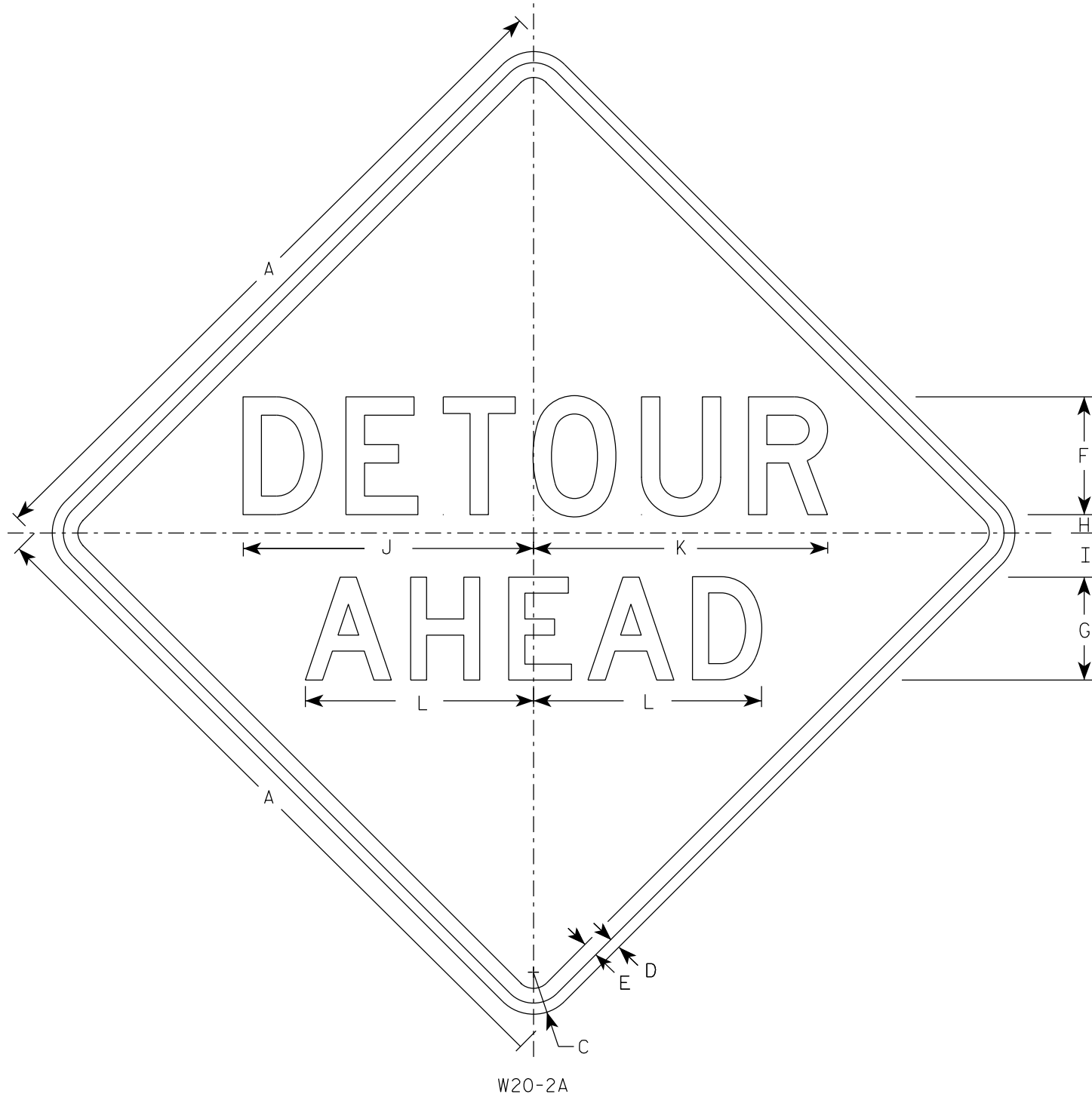
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54	1 1/2			6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4													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



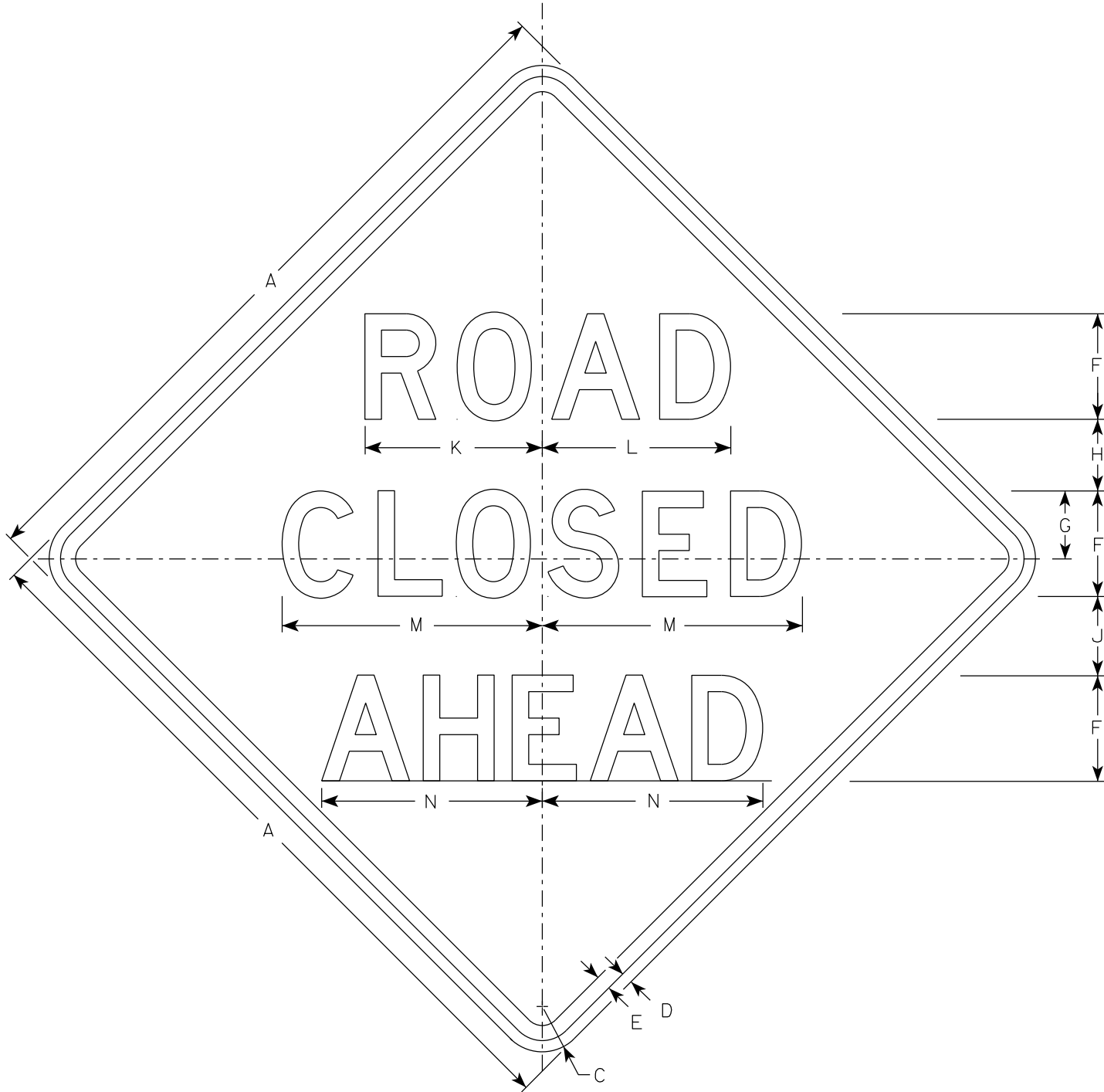
NOTES

- 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.

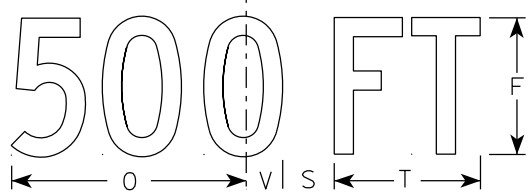
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	w	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			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

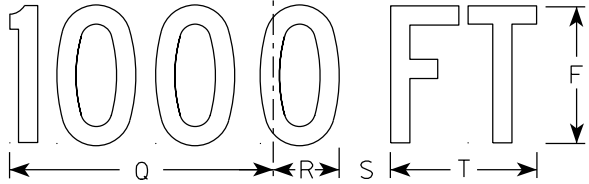
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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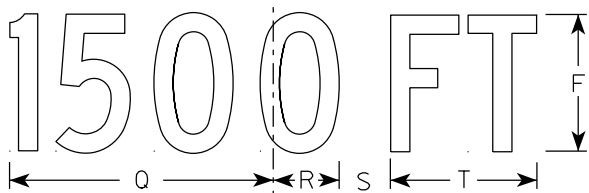
W20-3A



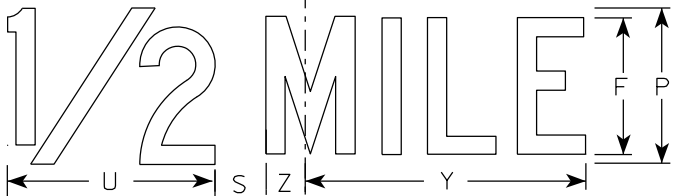
W20-3D



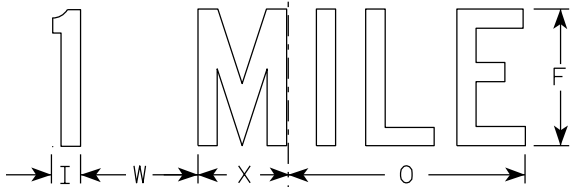
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
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.
5. Lines 1 and 2 are Series D.
Line 3 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	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

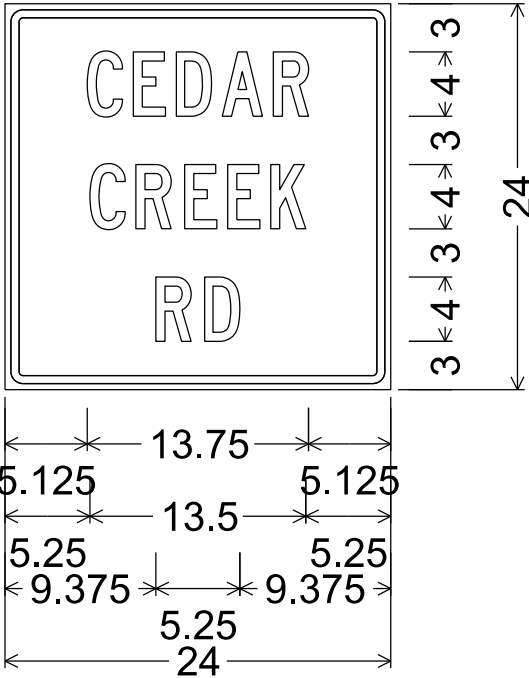
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-3.8

NOTES

- 1. Fixed Message Signs Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - C



1.125" Radius, 0.500" Border, 0.375" Indent

DESIGN LOADING: HL-93
INVENTORY RATING: RF = 1.17
OPERATING RATING: RF = 1.52
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 (KIPS)

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

CONCRETE MASONRY:	
SUPERSTRUCTURE _____	$f'_c = 4,000 \text{ PSI}$
ALL OTHER _____	$f'_c = 3,500 \text{ PSI}$
BAR STEEL REINFORCEMENT	
GRADE 60 _____	$f_y = 60,000 \text{ PSI}$
STEEL PILING ASTM A572 _____	$f_y = 50,000 \text{ PSI}$

ABUTMENTS TO BE SUPPORTED ON HP 12 X 53 PILING DRIVEN TO A
REQUIRED DRIVING RESISTANCE OF 140 TONS ** PER PILE AS DETERMINED
BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 50'-0" LONG AT WEST ABUTMENT.
ESTIMATED 55'-0" LONG AT EAST ABUTMENT.

PIER TO BE SUPPORTED ON HP 12 X 53 PILING DRIVEN TO A REQUIRED
DRIVING RESISTANCE OF 220 TONS ** PER PILE AS DETERMINED BY THE
MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 80'-0" LONG.

***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.

FEATURE ON:
ADT = 2,250 (2046)
R.D.S. = 40 MPH

1. GENERAL PLAN & ELEVATION
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. PIER
9. SUPERSTRUCTURE
10. SUPERSTRUCTURE DETAILS
11. TUBULAR STEEL RAILING TYPE 'M'



* PROVIDE FOR THREE BEAM GUARD RAIL ATTACHMENT.

LOOKING NORTH
NORMAL TO SUBSTRUCTURE



STRUCTURE DESIGN CONTACTS:

CONSULTANT CONTACT: KEVIN WOOD	(414) 266-9144
BOS CONTACT: AARON BONK	(608) 261-0261

NO.	DATE	REVISION	BY
		275 W. Wisconsin Avenue Suite 300 Milwaukee, WI 53203 414 / 258 1500 414 / 259 0037 fax www.graef-usa.com	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED  JLR CHIEF STRUCTURES DESIGN ENGINEER	08/11/26 DATE		
STRUCTURE B-45-117			
CEDAR CREEK RD. OVER CEDAR CREEK			
COUNTY	OZAUKEE	TOWN	CEDARBUR
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY	CWG	DESIGN CK'D	KGW
DRAWN BY	CWG	PLANS CK'D	KGW
GENERAL PLAN & ELEVATION			SHEET 1 OF 11

EXISTING STRUCTURE P-45-38 IS A SINGLE SPAN PRESTRESSED CONCRETE ADJACENT BOX BEAM GIRDER BRIDGE THAT IS POST TENSIONED WITH A WIDTH OF 36'-4" AND OVERALL LENGTH OF 84'-9 $\frac{3}{8}$ " SUPPORTED ON STEEL H PILES. THE ENTIRE STRUCTURE IS TO BE REMOVED.

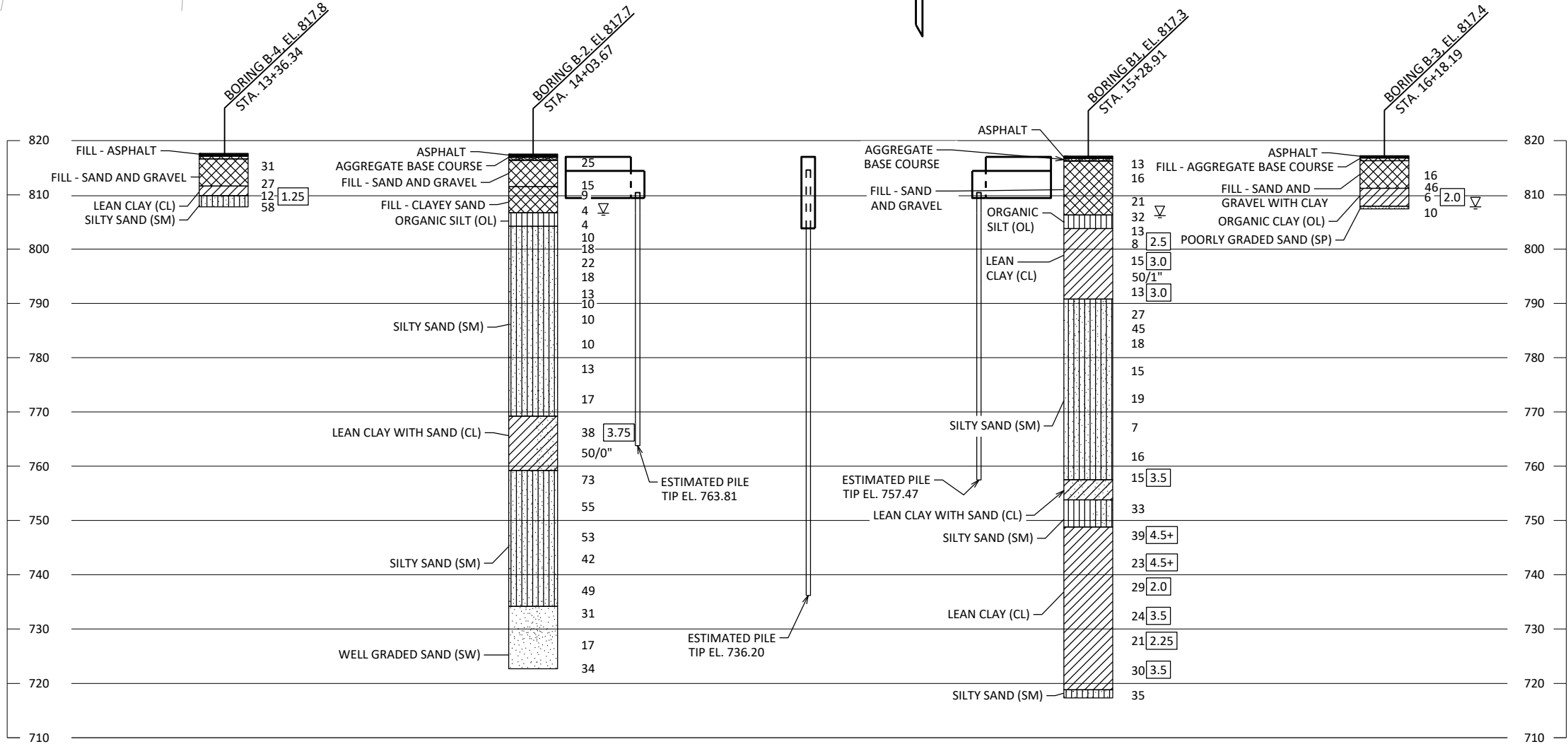
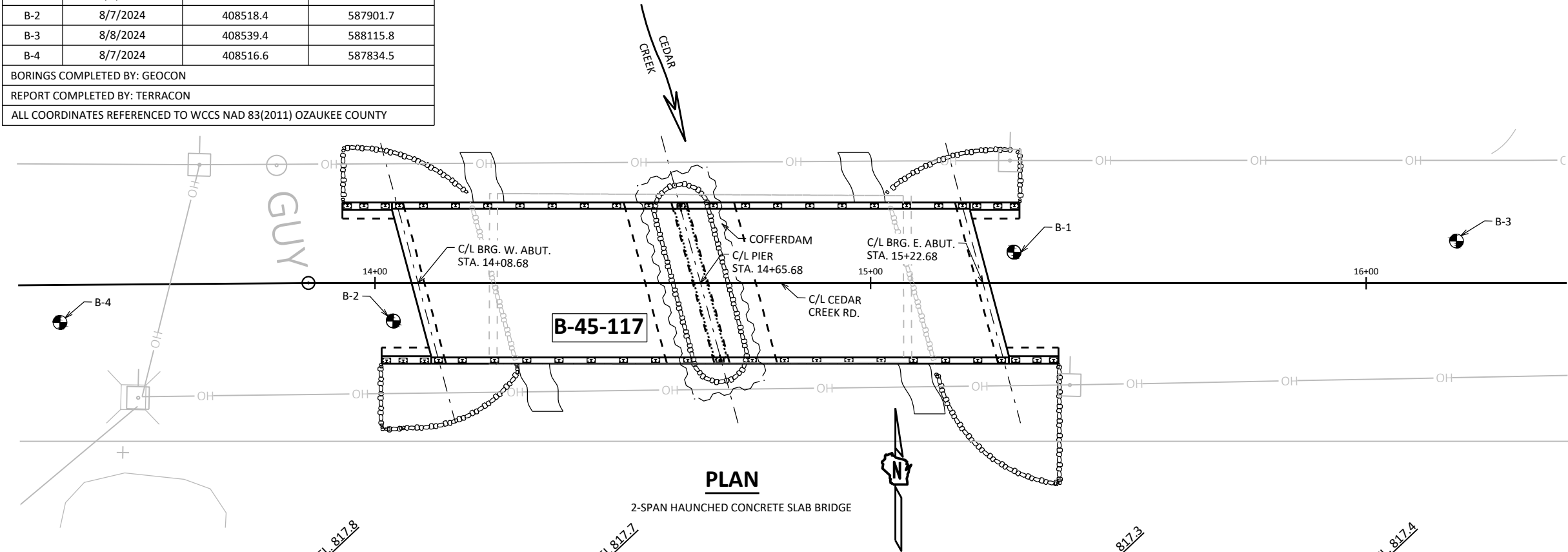


 PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO:

- ENTIRE TOP OF SLAB
- EDGES OF SLAB & 1'-0" WIDTH ALONG UNDERSIDE OF SLAB
- TOP AND EXPOSED FACES OF WINGS
- THE END 1'-0" OF THE FRONT FACE OF ABUTMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-45-117			
DRAWN BY		PLANS CK'D	KGW
CROSS SECTION & QUANTITIES		SHEET 2 OF 11	

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-1	8/8/2024	408535.1	588026.6
B-2	8/7/2024	408518.4	587901.7
B-3	8/8/2024	408539.4	588115.8
B-4	8/7/2024	408516.6	587834.5
BORINGS COMPLETED BY: GEOCON			
REPORT COMPLETED BY: TERRACON			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) OZAUKEE COUNTY			



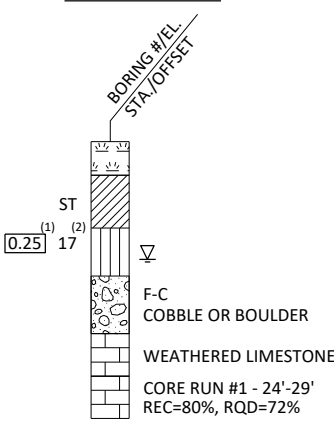
STATE PROJECT NUMBER

2695-03-72

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

▽	AT TIME OF DRILLING
▼	END OF DRILLING
▽	AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-117

DRAWN BY	SMS	PLANS CK'D	KGW
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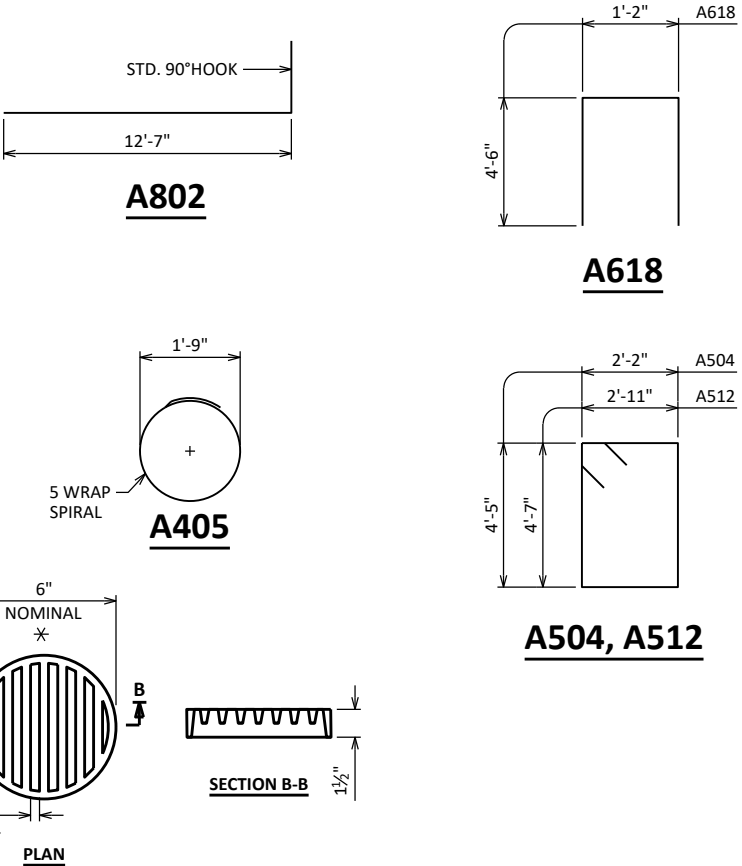
SUBSURFACE
EXPLORATION

SHEET 3 OF 11

WEST ABUTMENT - 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
A601		11	33'-3"			BOTTOM, TOP, AND F.F. HORIZ.
A802		14	13'-9"	X		B.F. HORIZ. END
A603		7	14'-3"			B.F. HORIZ. MIDDLE
A504		43	13'-10"	X		BODY VERT. STIRRUP
A405		5	28'-0"	X		PILE SPIRAL
A406		10	2'-3"			PILE VERTICAL
A507		35	2'-0"			VERT. TO SUPERSTRUCTURE
A411		6	4'-7"			BODY VERT. ENDS
A512	X	22	15'-8"	X		WING VERT. STIRRUP
A613	X	8	11'-11"			WING 1 - LOWER HORIZ. B.F.
A514	X	6	12'-7"			WING 1 - LOWER HORIZ. F.F.
A616	X	8	11'-6"			WING 2 - LOWER HORIZ. B.F.
A517	X	6	11'-8"			WING 2 - LOWER HORIZ. F.F.
A618	X	28	9'-10"	X		UPPER WING VERT.
A419	X	14	9'-7"			UPPER WING HORIZ.
A620	X	4	9'-7"			UPPER WING HORIZ. TOP



RODENT SHIELD DETAIL

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

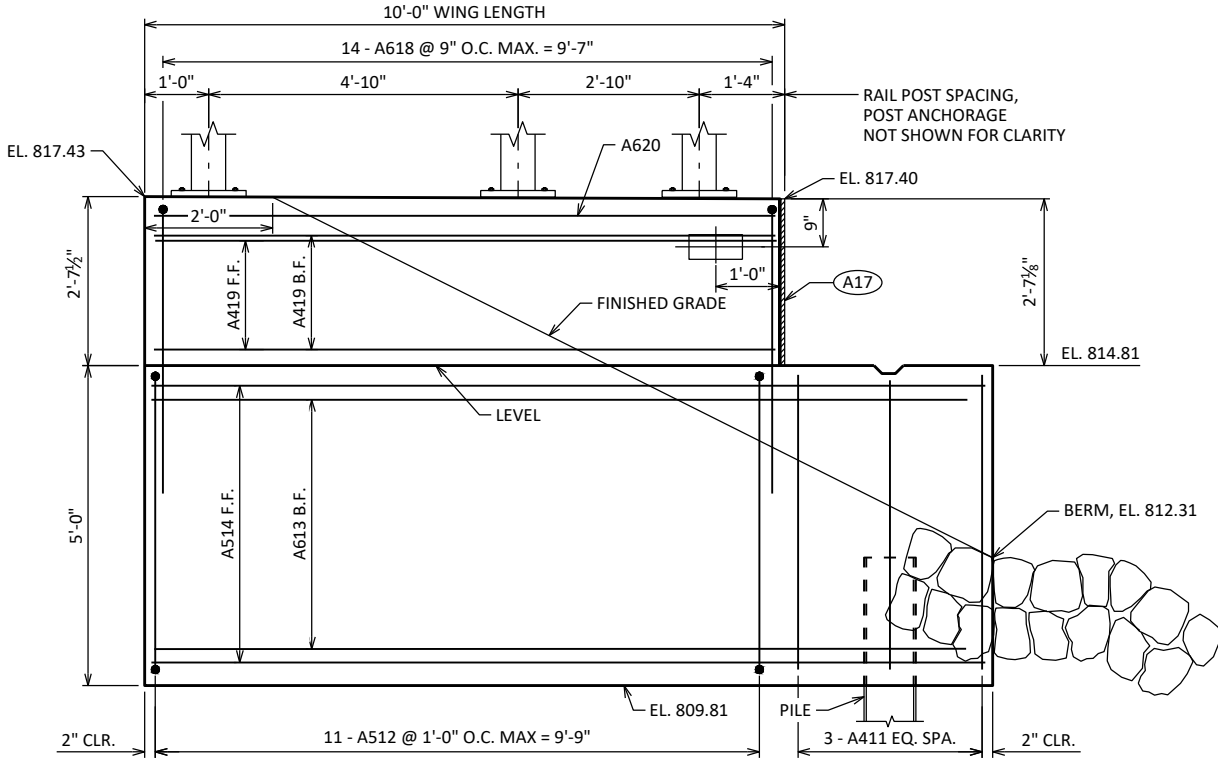
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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.

LEGEND

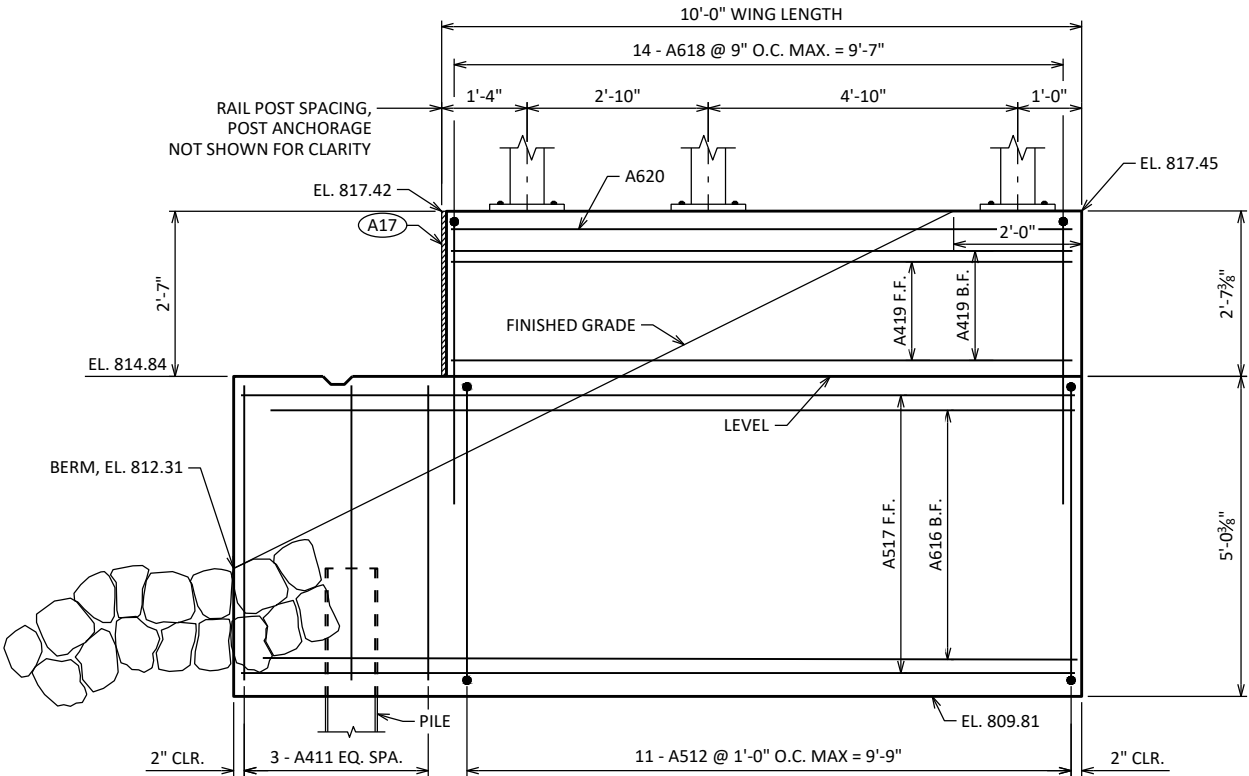
- A03 OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" x 6". (18" RMW @ B.F. & 3/4" V-GROOVE @ F.F. IF JOINT IS USED).
- A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD " BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE EXPOSED TOP AND F.F. SURFACES OF THE WINGWALLS

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STRUCTURE B-45-117			
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WEST ABUTMENT DETAILS		SHEET 5 OF 11	



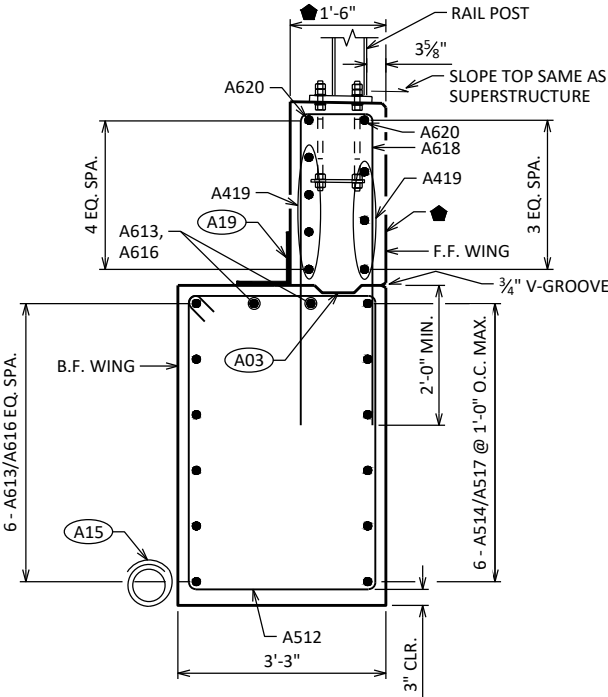
WING 1 ELEVATION

LOCATION AT F.F. WING
ELEVATIONS TAKEN AT F.F. WING



WING 2 ELEVATION

LOCATION AT F.F. WING





(A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 X 6.

(A08) SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING, ESTIMATED 55'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE. MINIMUM PILE TIP SHALL BE EL. 767.47.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED. HIGH POINT = EL. 809.62

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): 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" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A22) BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

◆ PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE END 1'-0" OF THE FRONT OF ABUTMENT.

⑤ WING NUMBER

PILE NUMBER

○ ELEVATION TAKEN AT C/L BEARING

SEE SHEET 5 FOR RODENT SHIELD DETAILS

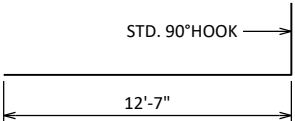
SEE SHEET 8 FOR PILE SPLICE DETAILS

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STRUCTURE B-45-117			
		DRAWN BY	PLANS CK'D
		CWG	KGW
EAST ABUTMENT			SHEET 6 OF 11

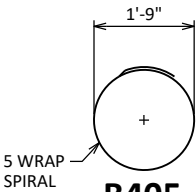
EAST ABUTMENT - BILL OF BARS

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

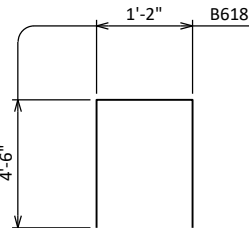
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B601		11	33'-3"			BOTTOM, TOP, AND F.F. HORIZ.
B802		14	13'-9"	X		B.F. HORIZ. END
B603		7	14'-3"			B.F. HORIZ. MIDDLE
B504		43	13'-10"	X		BODY VERT. STIRRUP
B405		5	28'-0"	X		PILE SPIRAL
B406		10	2'-3"			PILE VERTICAL
B507		35	2'-0"			VERT. TO SUPERSTRUCTURE
B411		6	4'-7"			BODY VERT. ENDS
B512	X	22	15'-8"	X		VERT. STIRRUP
B613	X	8	11'-11"			WING 1 - LOWER HORIZ. B.F.
B514	X	6	12'-7"			WING 1 - LOWER HORIZ. F.F.
B616	X	8	11'-6"			WING 2 - LOWER HORIZ. B.F.
B517	X	6	11'-8"			WING 2 - LOWER HORIZ. F.F.
B618	X	28	9'-10"	X		UPPER WING VERT.
B419	X	14	9'-7"			UPPER WING HORIZ.
B620	X	4	9'-7"			UPPER WING HORIZ. TOP



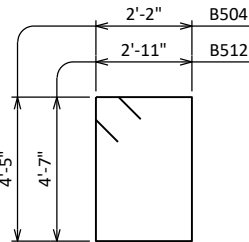
B802



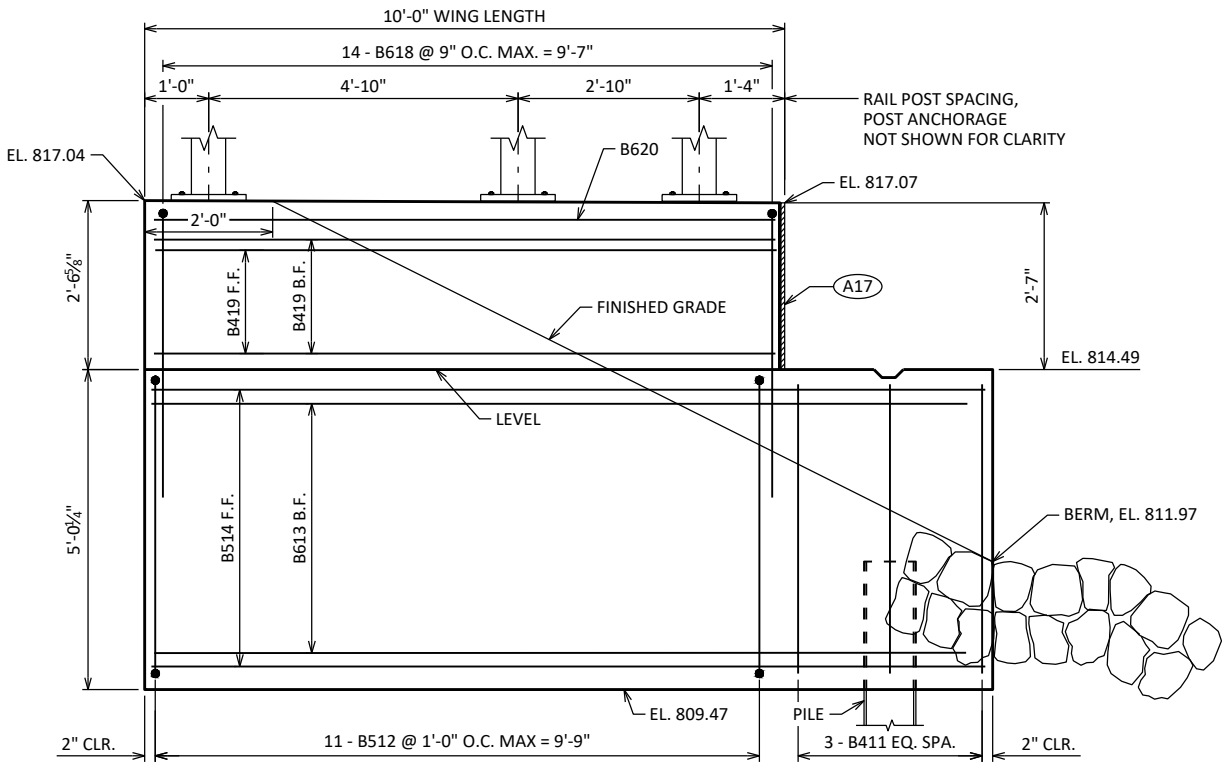
B405



B618

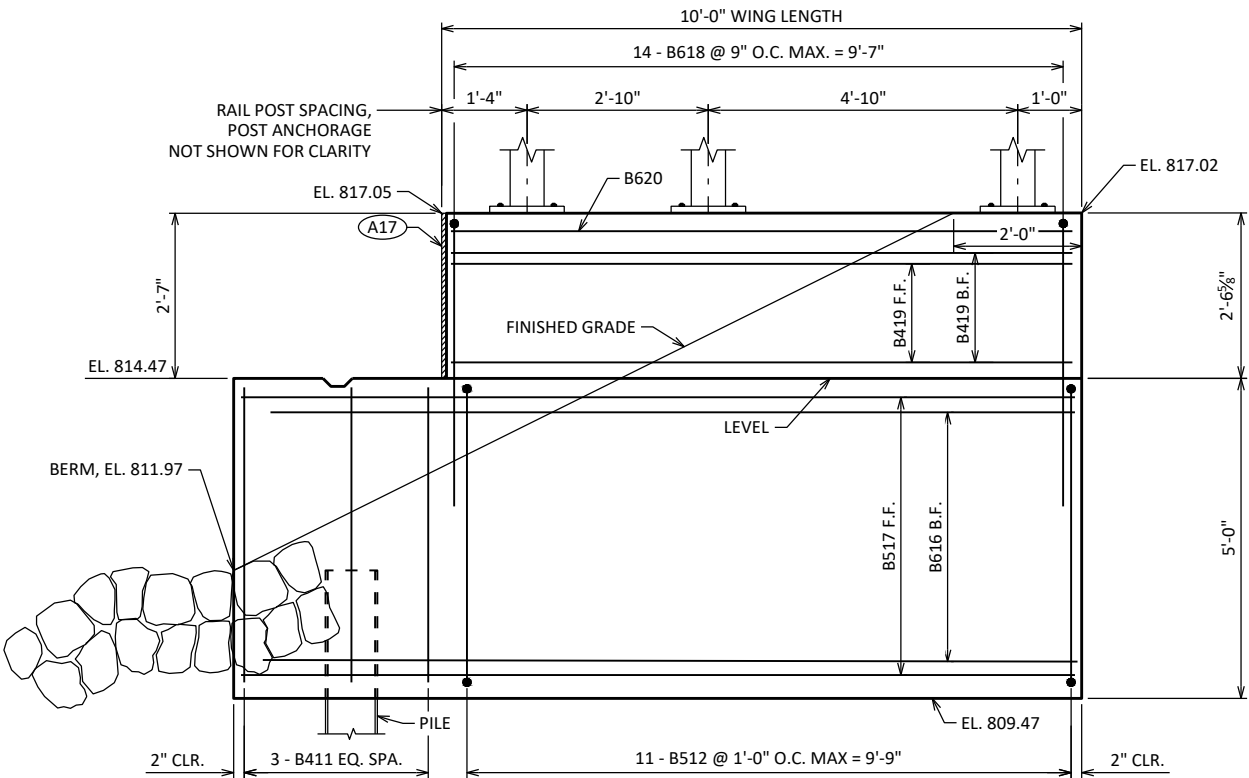


B504, B512



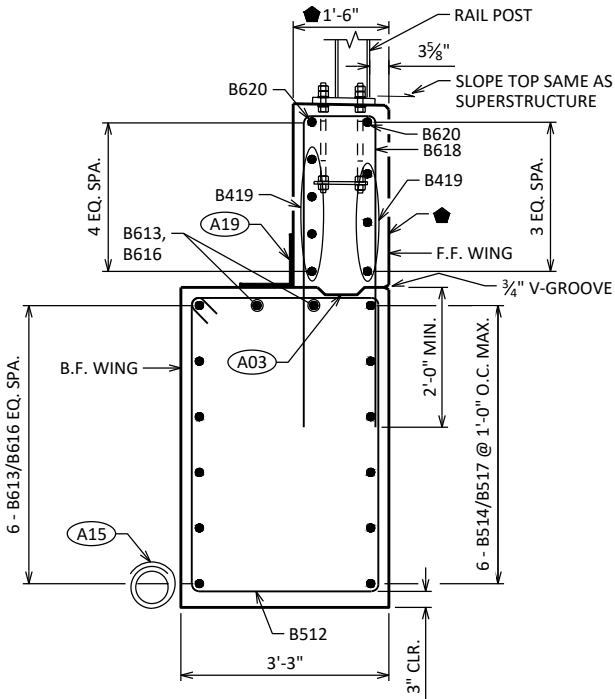
WING 3 ELEVATION

LOCATION AT F.F. WING



WING 4 ELEVATION

LOCATION AT F.F. WING



LEGEND

- A03 OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" x 6". (18" RMW @ B.F. & 3/4" V-GROOVE @ F.F. IF JOINT IS USED).
- A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD " BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE EXPOSED TOP AND F.F. SURFACES OF THE WINGWALLS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-45-117			
DRAWN BY		CWG	PLANS CK'D KGW
EAST ABUTMENT DETAILS		SHEET 7 OF 11	

NOTE

AT PIER, CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH STANDARD SPEC 502.3.5.3 CONCRETE POURED UNDERWATER SHALL NOT EXCEED 10.0 FEET IN DEPTH, UNLESS APPROVED OTHERWISE.

LEGEND

- (P02) SUPPORT PIER ON HP 12 x 53 STEEL PILING, ESTIMATED 80'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. MINIMUM PILE TIP SHALL BE EL. 736.20
- (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 BEVELED 2" x 6"
- (P13) PLACE BARS ADJACENT TO EACH PILE, TIE TO NEAREST P501. VERTICAL SPACING TO MATCH P404. ALTERNATE THE POSITION OF THE 90° AND THE 180° HOOKS AT EACH VERTICAL LAYER OF TIES.
- # PILE NUMBER

PIER - 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	LOCATION
P501		70	12'-2"		VERTICAL
P502	X	32	2'-0"		DOWELS
P503		16	5'-4"	X	STIRRUP TOP
P404		28	29'-10"		HORIZONTAL
P405		28	6'-4"	X	HORIZONTAL ENDS
P406		140	2'-11"	X	HORIZONTAL TIES

ELEVATION

LOOKING EAST

SECTION A-A

PLAN

'HP' PILE DETAILS

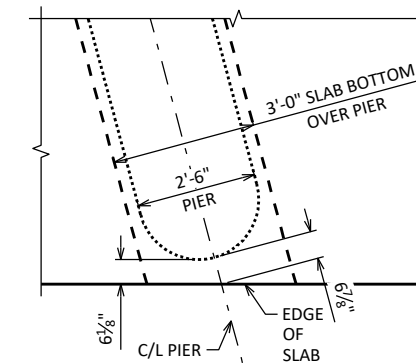
SECTION P-P

P503

P405

P406

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PIER		SHEET 8 OF 11	



DETAIL P

PLAN



LOOKING EAST
ALL DIMENSIONS TAKEN NORMAL TO C/L CEDAR CREEK RD.

FILL IN THE TABLE OF "SURVEY TOP OF SLAB ELEVATIONS" FOR EACH SPAN ON AS BUILT PLANS.

TOP OF SLAB ELEVATIONS

☆ EDGE OF SLAB ELEVATION IS THE TOP OUTER EDGE OF THE SLAB

SURVEY TOP OF SLAB ELEVATIONS

LOCATION	C/L BRG. W. ABUTMENT	5/10 PT.	C/L PIER 1	5/10 PT.	C/L PIER 2	5/10 PT.	C/L BRG. E. ABUTMENT
NORTH SLAB EDGE							
C/L CEDAR CREEK RD.							
SOUTH SLAB EDGE							

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C/L OF ABUTMENTS, THE C/L OF PIERS AND AT $\frac{5}{10}$ PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN OR R/L. RECORD ELEVATIONS ON AS BUILT PLANS.

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SUPERSTRUCTURE		SHEET 9 OF 11	

NOTES

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

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

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

LEGEND

* DIMENSION TAKEN NORMAL TO C/L SUBSTRUCTURE.

△ BARS PLACED PARALLEL TO "C/L CEDAR CREEK RD" AND SPACE PERPENDICULAR TO "C/L CEDAR CREEK RD" @ 1'-0" MAX.

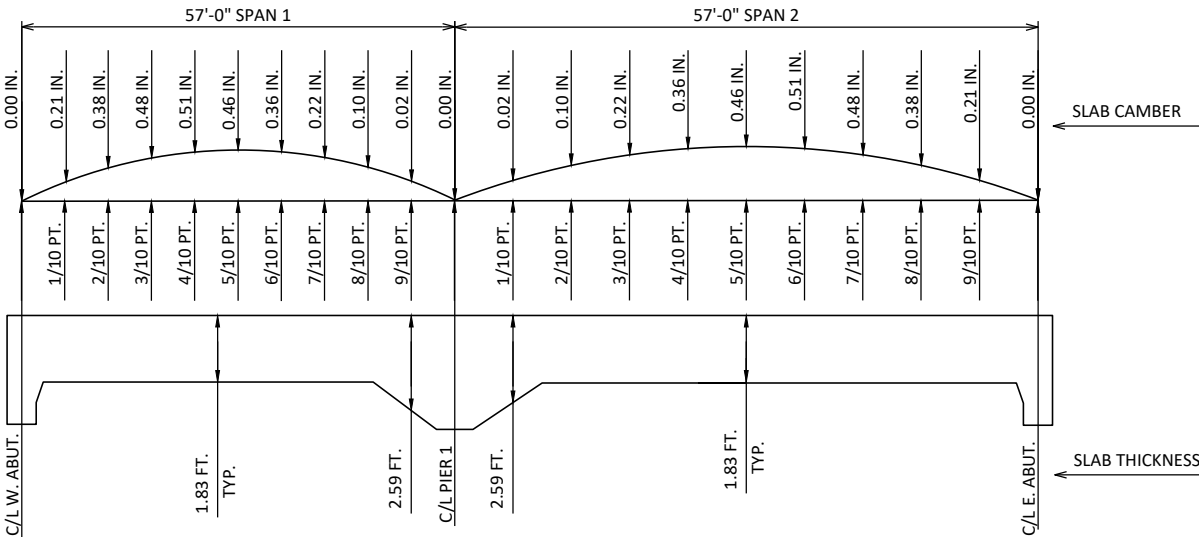
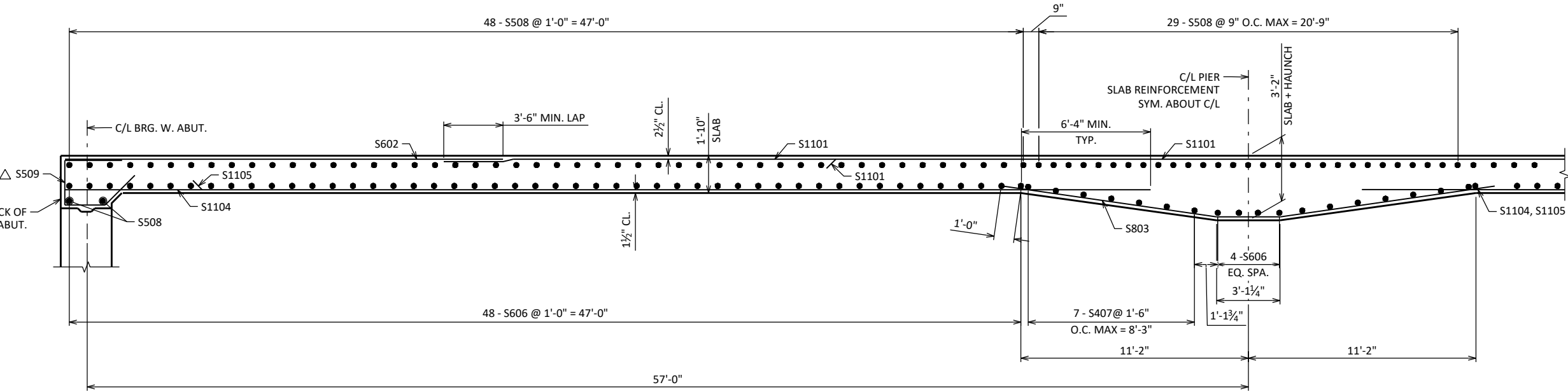
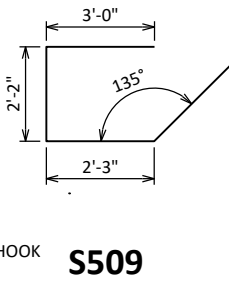
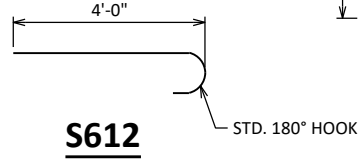
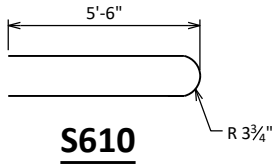
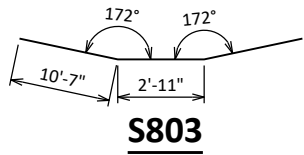
PART LONGITUDINAL SECTION

DIMENSIONED ALONG R/L CEDAR CREEK UNLESS NOTED OTHERWISE

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
S1101	X	68	60'-0"			LONG. TOP- OVER PIER
S602	X	68	22'-1"			LONG. TOP - NEAR ABUT.
S803	X	34	24'-3"	X		LONG. BOTTOM - OVER PIER
S1104	X	68	52'-3"			LONG. BOTTOM - FULL SPAN
S1105	X	68	47'-3"			LONG. BOTTOM - IN SPAN
S606	X	100	33'-3"			TRANS. BOTTOM - IN SPAN
S407	X	14	33'-3"			TRANS. BOTTOM - ALONG HAUNCH
S508	X	129	33'-3"			TRANS. BOTTOM & TOP
S509	X	68	9'-2"	X		ABUTMENT END OF SLAB
S610	X	76	11'-4"	X		TRANS. TOP AT RAIL POST
S611	X	136	6'-0"			LONG. TOP AT INTERIOR RAIL POST
S612	X	16	4'-8"	X		LONG. TOP AT RAIL POST CORNER
S1113	X	2	30'-6"			LONG. TOP AT OPP. CORNERS



CAMBER DIAGRAM

CAMBER 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.

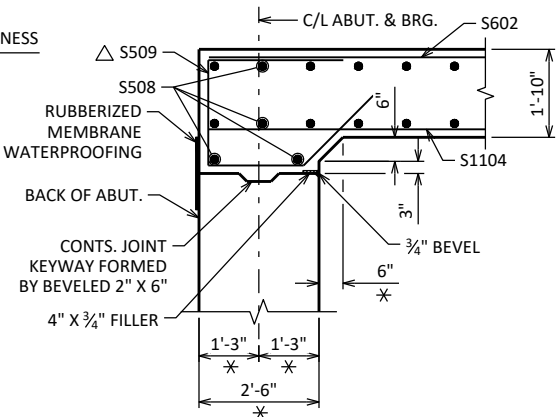
TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE THIS PROCEDURE:

TOP OF SLAB ELEVATION AT FINAL GRADE
LESS (-) SLAB THICKNESS

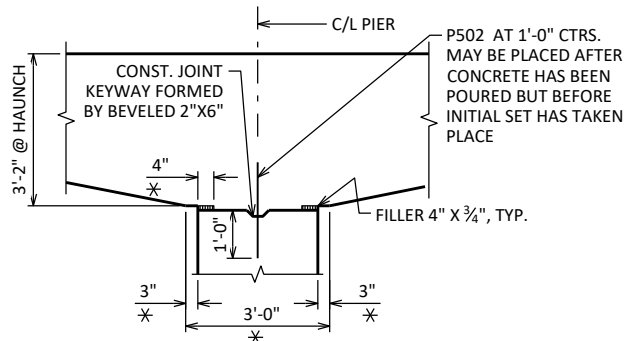
PLUS (+) CAMBER

PLUS (+) FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY CONTRACTOR)

EQUALS = TOP OF SLAB FALSEWORK ELEVATION.



DETAIL AT ABUTMENT



DETAIL AT PIER

NO.	DATE	REVISION	BY
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STRUCTURE B-45-117			
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SUPERSTRUCTURE DETAILS		SHEET 10 OF 11	

LEGEND

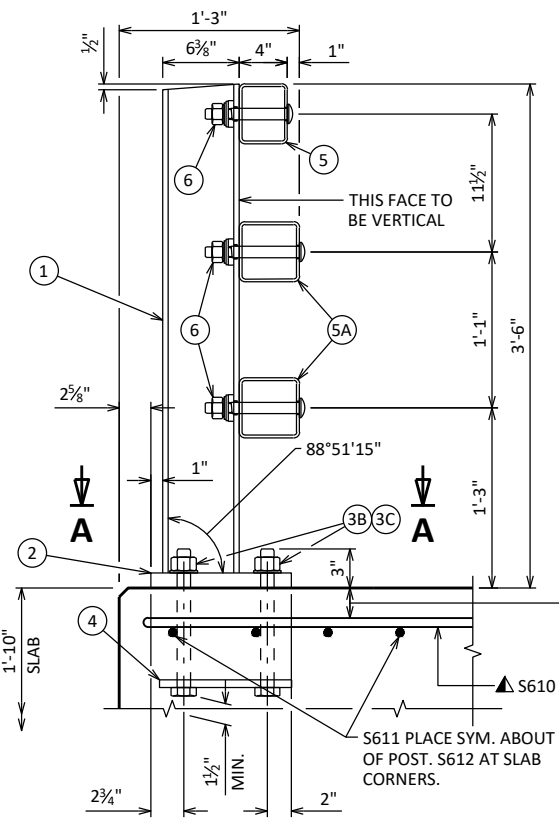
- ① W6 X 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1 1/4" X 11 3/4" X 1'-8" WITH 1 1/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- ③B ASTM A449 - 1 1/8" DIA. X 1'-3" LONG 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.
- ③C ASTM A449 - 1 1/8" DIA. X 1'-9" LONG ANCHOR BOLTS IN ABUTMENT WINGS. 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. (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 1/16" 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 1/8" X 1 1/8" 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 3/8" 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 3/8" 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 AT FIELD JOINTS AND 1 3/16" X 2 3/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A. PROVIDE 1 3/16" DIA. ROUND HOLES IN TUBE 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

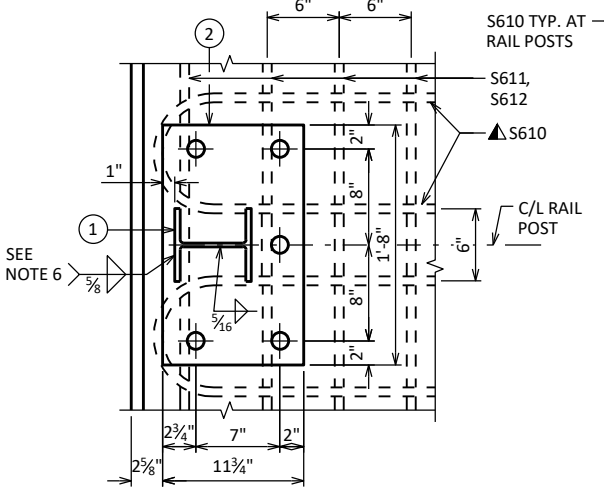
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, 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.

LEGEND

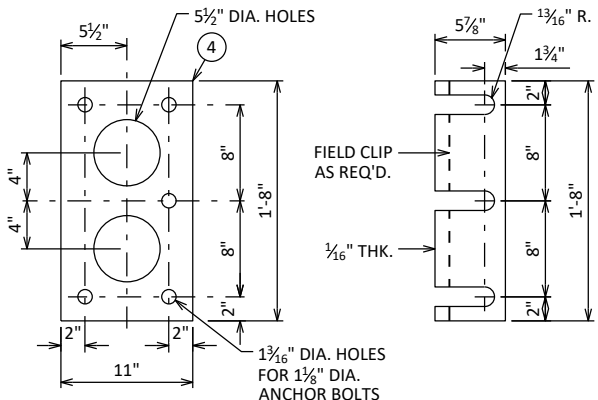
- ▲ TIE TO TOP MAT OF STEEL.
- * ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.
- 1/4" TO 3/4" OPENING



SECTION THRU RAILING ON DECK

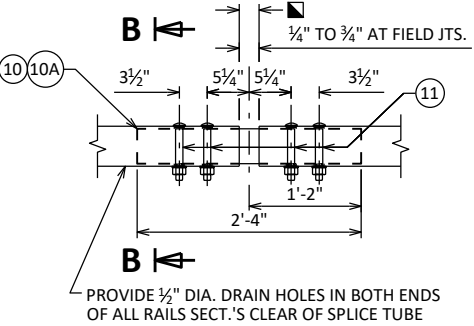


SECTION A-A

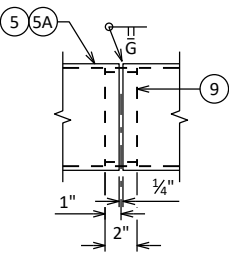


ANCHOR PLATE
AT RAIL TO DECK CONNECTION

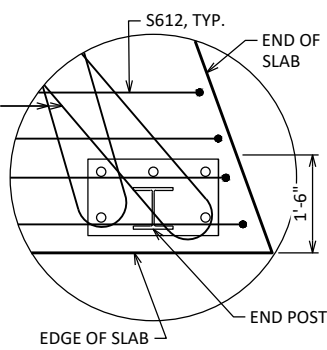
POST SHIM
DETAIL



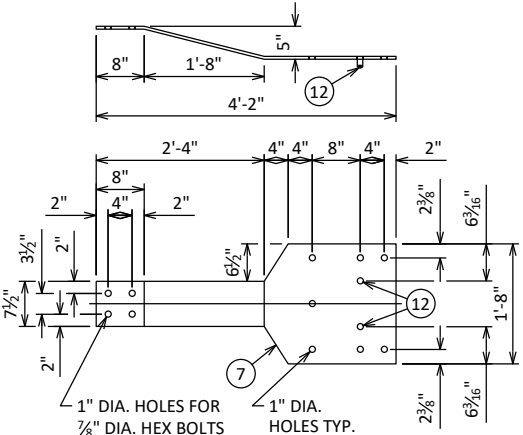
FIELD ERECTION JOINT DETAIL



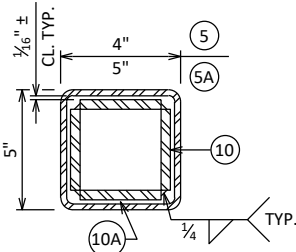
SHOP RAIL SPLICE DETAIL



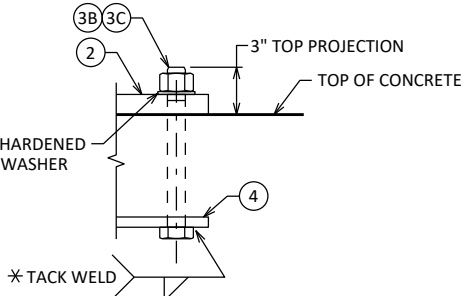
END POST DETAIL
REINFORCEMENT AT CORNERS



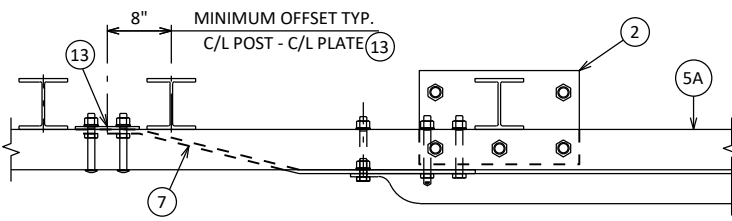
BACK-UP PLATE DETAIL
AT BEAM GUARD ATTACHMENT



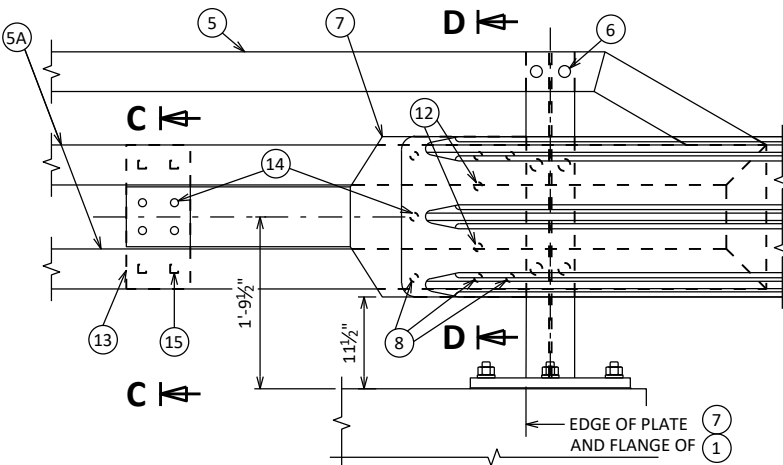
SECTION B-B



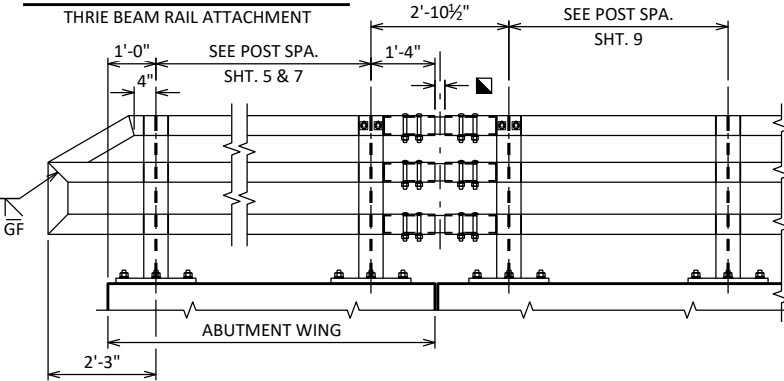
ANCHOR BOLTS



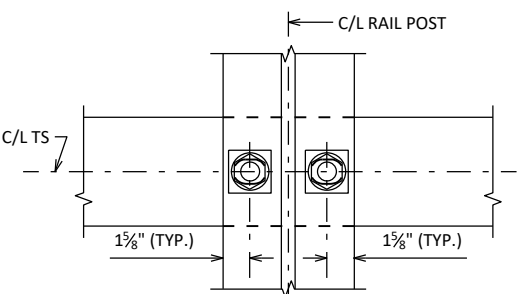
TOP VIEW AT END POST
THRIE BEAM RAIL ATTACHMENT



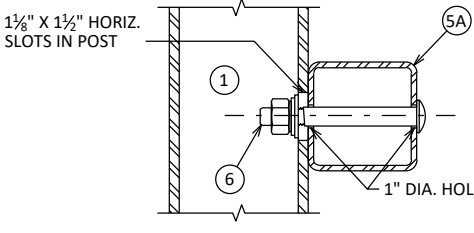
DETAIL AT END POST
THRIE BEAM RAIL ATTACHMENT



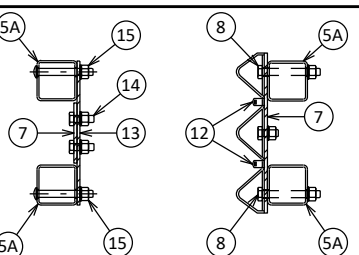
PART ELEVATION OF RAILING



SECTION THRU POST WEB



TYPICAL RAIL TO POST CONNECTIONS



SECTION C-C SECTION D-D

ANCHOR PLATE
AT BEAM GUARD ATTACHMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-45-117			
DRAWN BY		CWG	PLANS CK'D KGW
TUBULAR STEEL RAILING TYPE "M"		SHEET 11 OF 11	

DIVISION 1 - CEDAR CREEK RD CAT 0030

STATION	REAL STATION	DISTANCE	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	1.10	NOTE 8
12+00.00	1200.00	0.00	33.77	4.55	0.31	0	0	0	0	0	0
12+25.00	1225.00	25.00	53.29	13.59	1.39	40	8	1	40	1	31

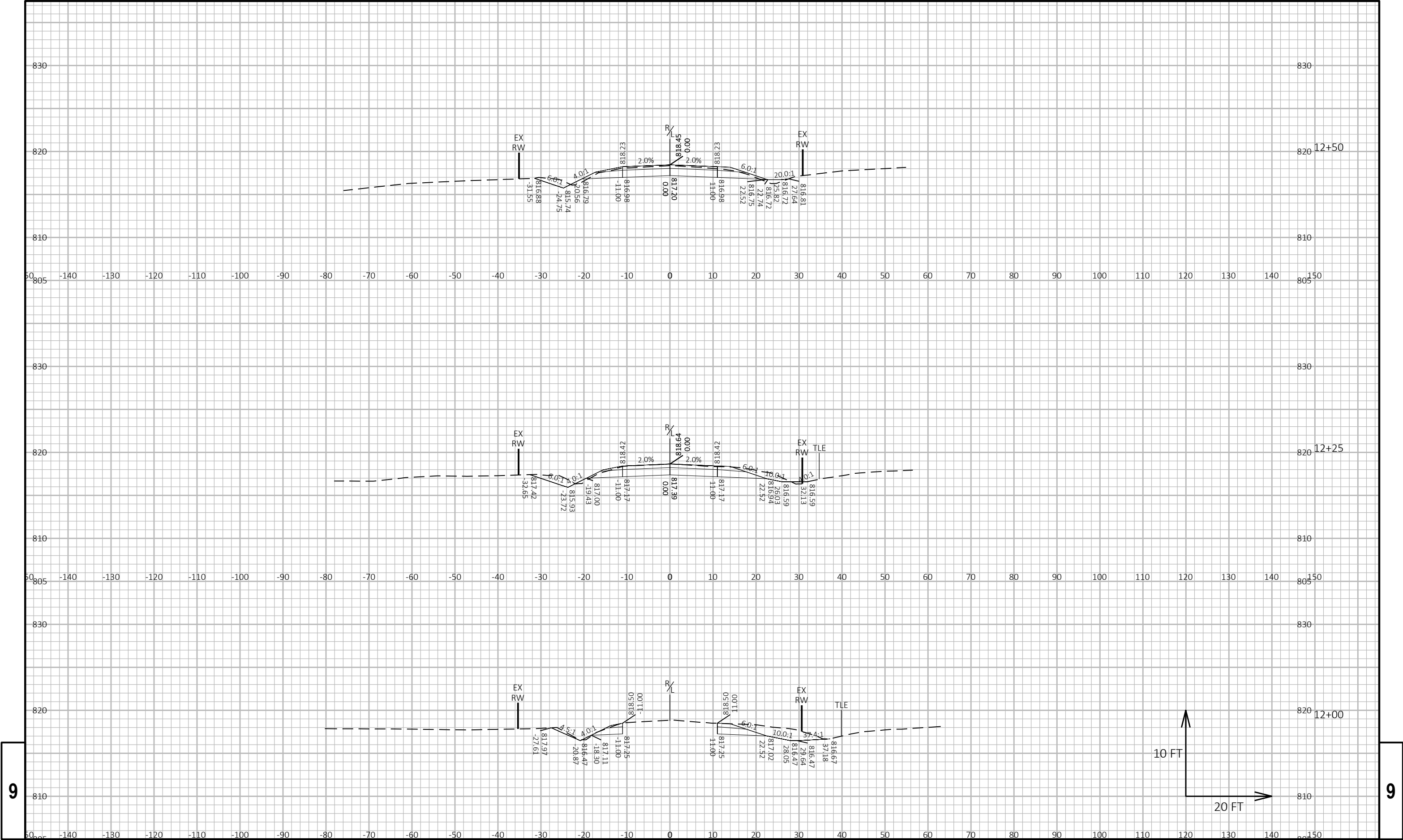
DIVISION 1 - CEDAR CREEK RD CAT 0010

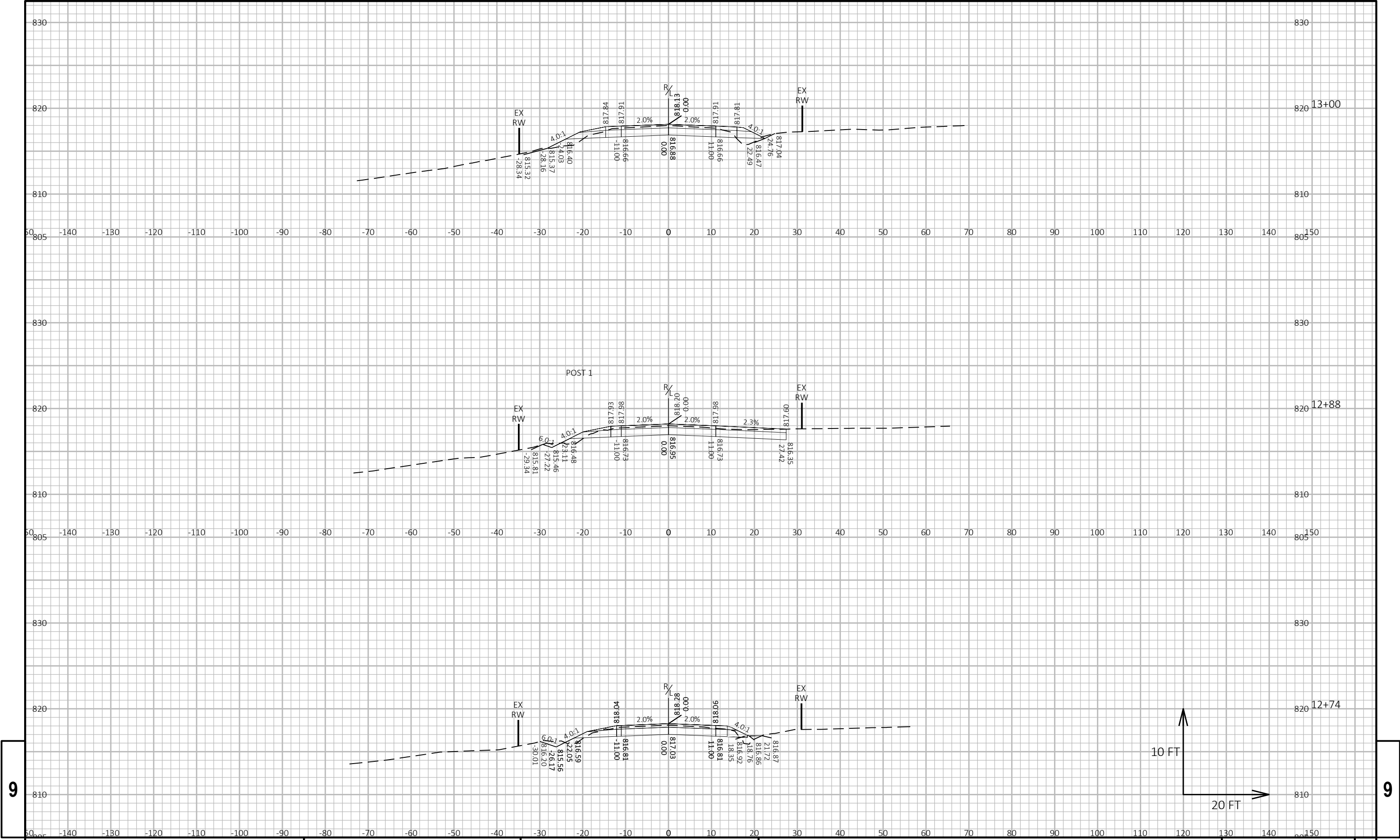
STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.10	NOTE 8
12+25.00	1225.00	0.00	53.29	13.59	1.39	0	0	0	0	0	0
12+50.00	1250.00	25.00	40.60	12.07	2.78	43	12	2	43	2	29
12+75.00	1275.00	25.00	35.33	13.66	4.29	35	17	3	78	6	49
12+88.10	1288.10	13.10	47.08	20.11	2.13	20	8	2	98	8	58
13+00.00	1300.00	11.90	32.83	12.28	7.10	18	7	2	116	10	67
13+02.45	1302.45	2.45	32.80	12.36	8.30	3	1	1	119	11	68
13+11.20	1311.20	8.75	33.64	12.65	11.36	11	4	3	130	14	72
13+25.00	1325.00	13.80	36.47	13.12	8.76	18	7	5	148	20	77
13+27.41	1327.41	2.41	37.23	13.20	5.89	3	1	1	151	21	78
13+36.17	1336.17	8.76	40.76	13.49	1.73	13	4	1	164	22	86
13+50.00	1350.00	13.83	54.04	13.96	1.33	24	7	1	188	23	102
13+52.38	1352.38	2.38	51.59	14.04	1.68	5	1	0	193	23	106
13+61.13	1361.13	8.75	48.91	14.33	2.95	16	5	1	209	24	116
13+75.00	1375.00	13.87	51.26	14.81	4.53	26	7	2	235	26	133
14+00.00	1400.00	25.00	53.44	15.67	5.34	48	14	5	283	32	161
15+50.00	1550.00	0.00	47.03	15.52	17.75	0	0	0	283	32	161
15+70.10	1570.10	20.10	52.61	14.95	12.08	37	11	11	320	44	175
15+75.00	1575.00	4.90	53.73	14.81	10.94	10	3	2	330	46	180
15+79.16	1579.16	4.16	55.04	14.69	11.01	8	2	2	338	48	184
15+95.07	1595.07	15.91	59.67	14.24	9.32	34	9	6	372	55	202
16+00.00	1600.00	4.93	59.52	14.11	27.00	11	3	3	383	58	207
16+04.12	1604.12	4.12	58.40	14.01	38.51	9	2	5	392	64	208
16+20.03	1620.03	15.91	54.50	13.64	47.80	33	8	24	425	90	207
16+25.00	1625.00	4.97	53.41	13.52	44.13	10	2	8	435	99	206
16+29.09	1629.09	4.09	52.51	13.42	44.03	8	2	7	443	107	204
16+50.00	1650.00	20.91	47.64	12.94	30.94	39	10	29	482	139	201
16+75.00	1675.00	25.00	11.43	0.10	34.51	27	6	30	509	172	189
17+00.00	1700.00	25.00	11.69	0.07	34.24	11	0	32	520	207	165
17+25.00	1725.00	25.00	12.80	0.08	20.74	11	0	25	531	234	149
17+50.00	1750.00	25.00	5.18	0.00	5.46	8	0	12	539	248	144
17+62.50	1762.50	12.50	5.45	0.00	0.00	2	0	1	541	249	144

DIVISION 1 - ROBIN CT CAT 0030

STATION	REAL STATION	DISTANCE	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	1.10	NOTE 8
100+09.00	10009.00	0.00	1.36	0.00	0.00	0	0	0	0	0	0
100+25.00	10025.00	16.00	4.13	0.00	0.00	2	0	0	2	0	2
100+50.00	10050.00	25.00	4.74	0.00	0.00	4	0	0	6	0	6
100+75.00	10075.00	25.00	5.21	0.00	0.00	5	0	0	11	0	11
101+00.00	10100.00	25.00	22.68	0.00	0.00	13	0	0	24	0	24

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 + SALVAGED PAVT - ((FILL) * FILL FACTOR)]

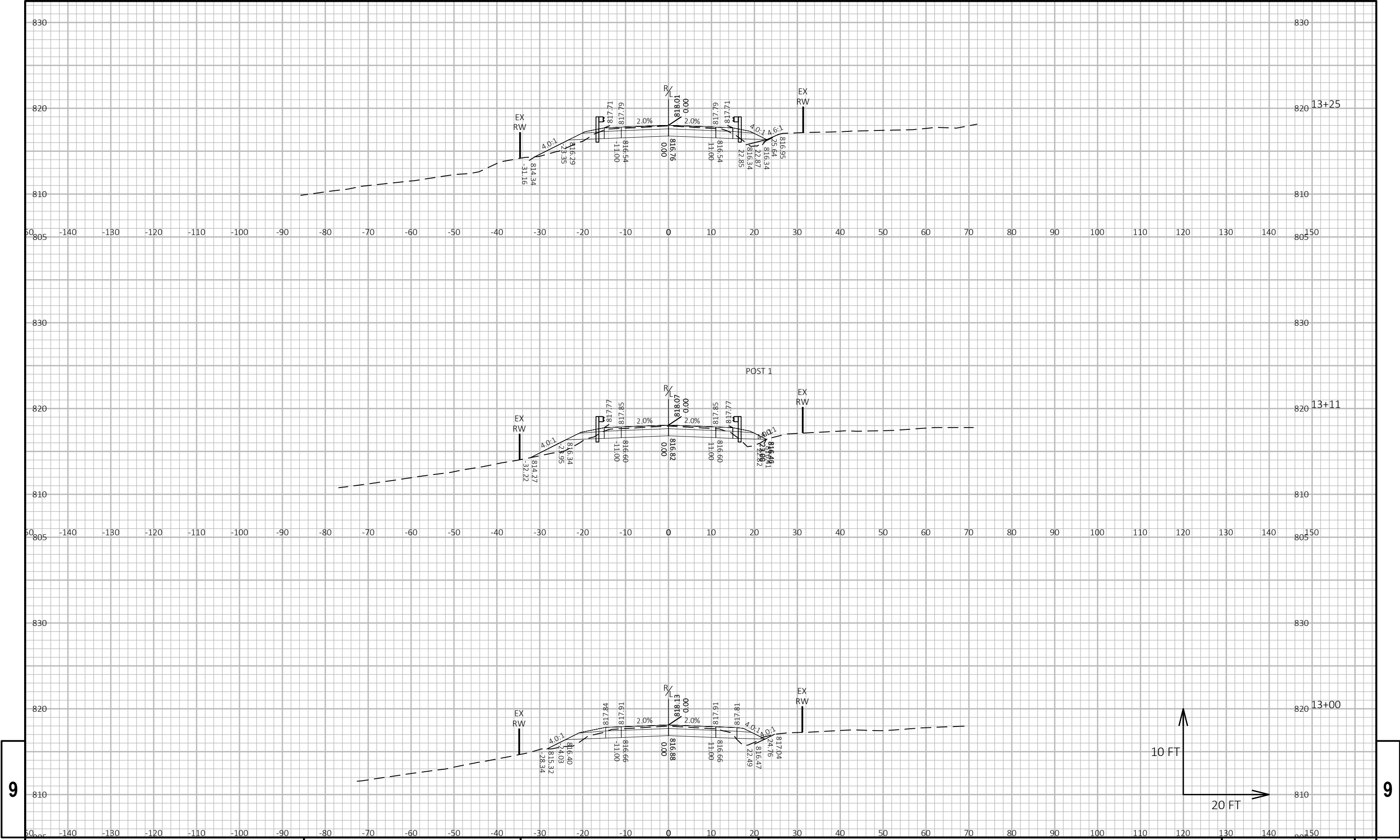


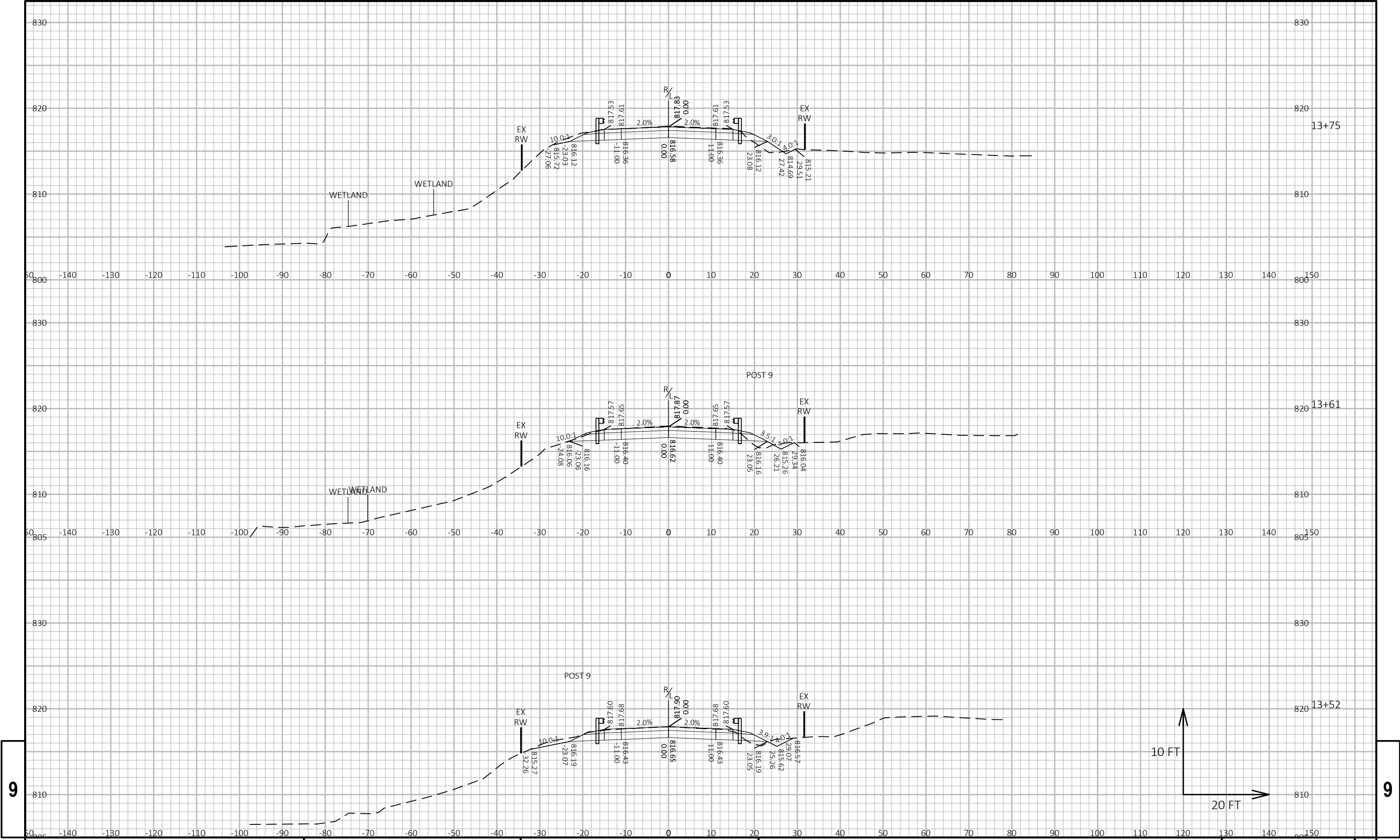


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PROJECT NO: 2695-03-72	HWY: CEDAR CREEK RD	COUNTY: OZAUKEE	CROSS SECTIONS: CROSS SECTIONS	SHEET	E
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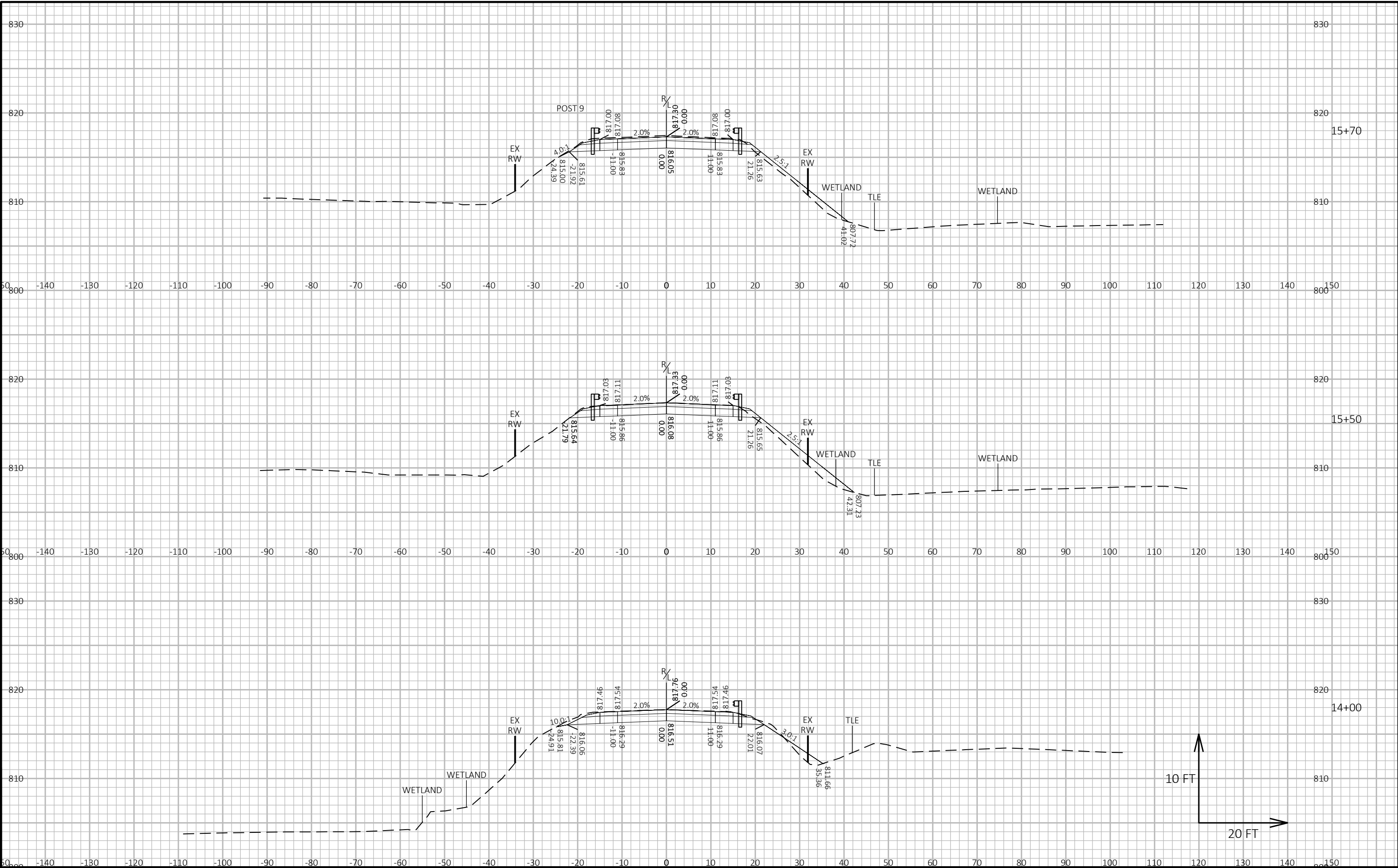


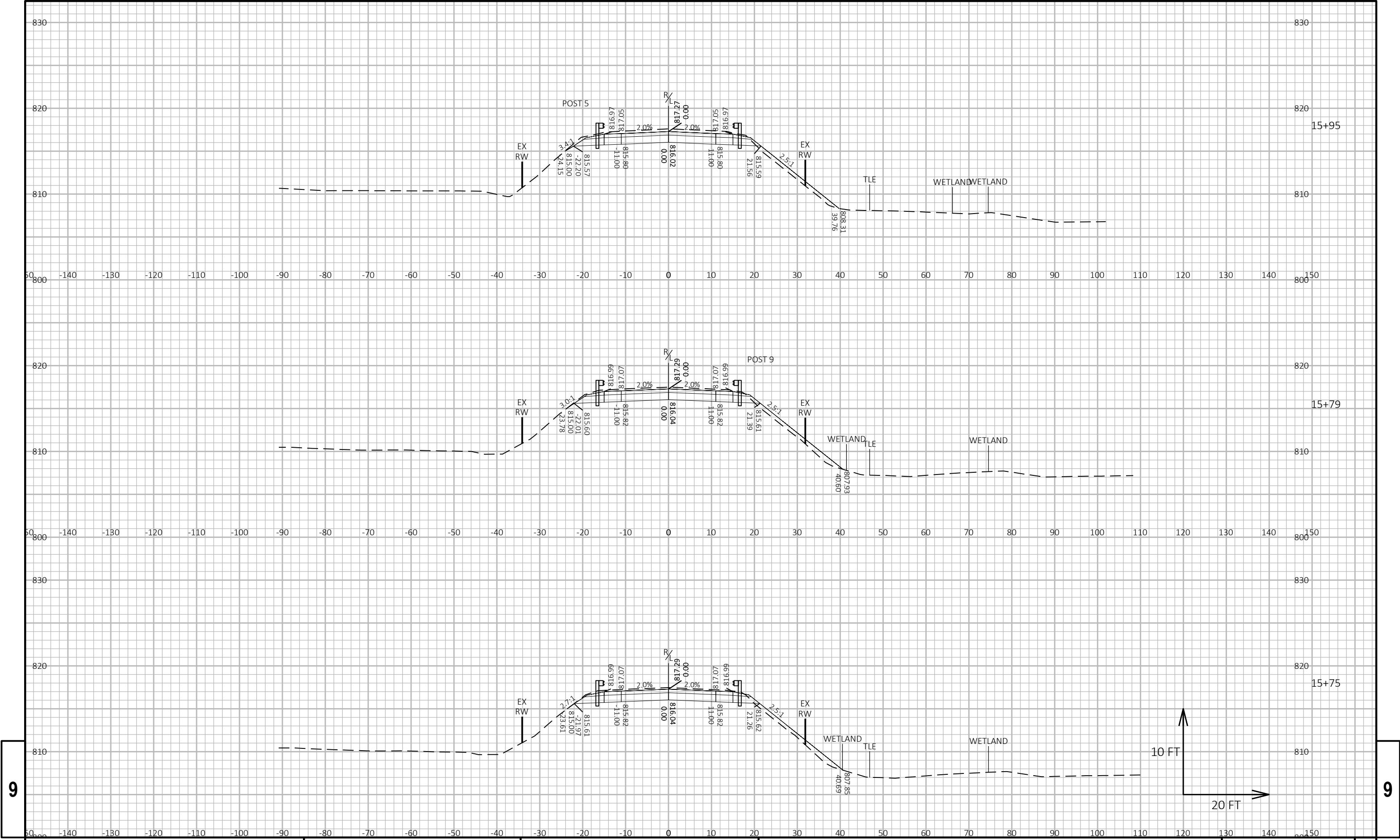


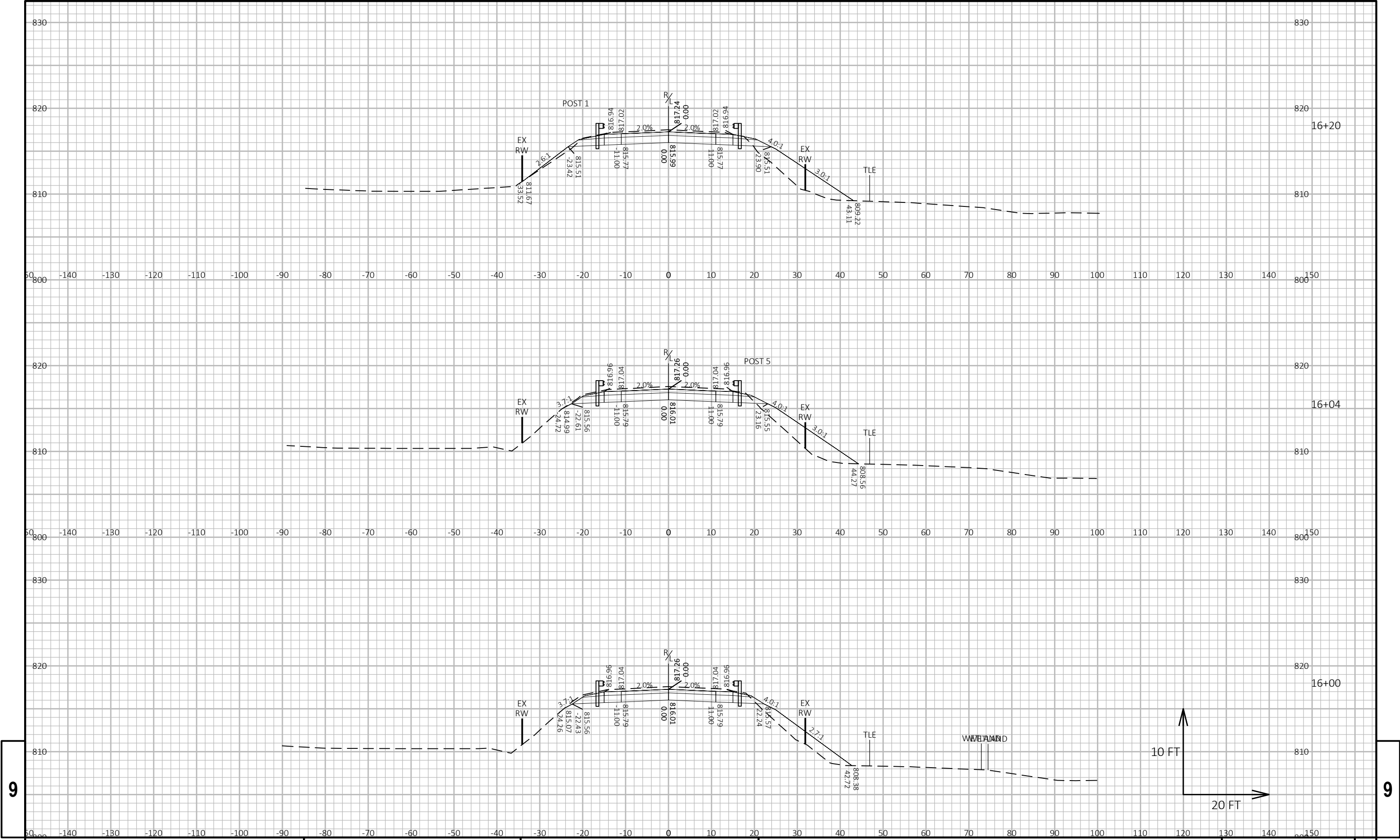
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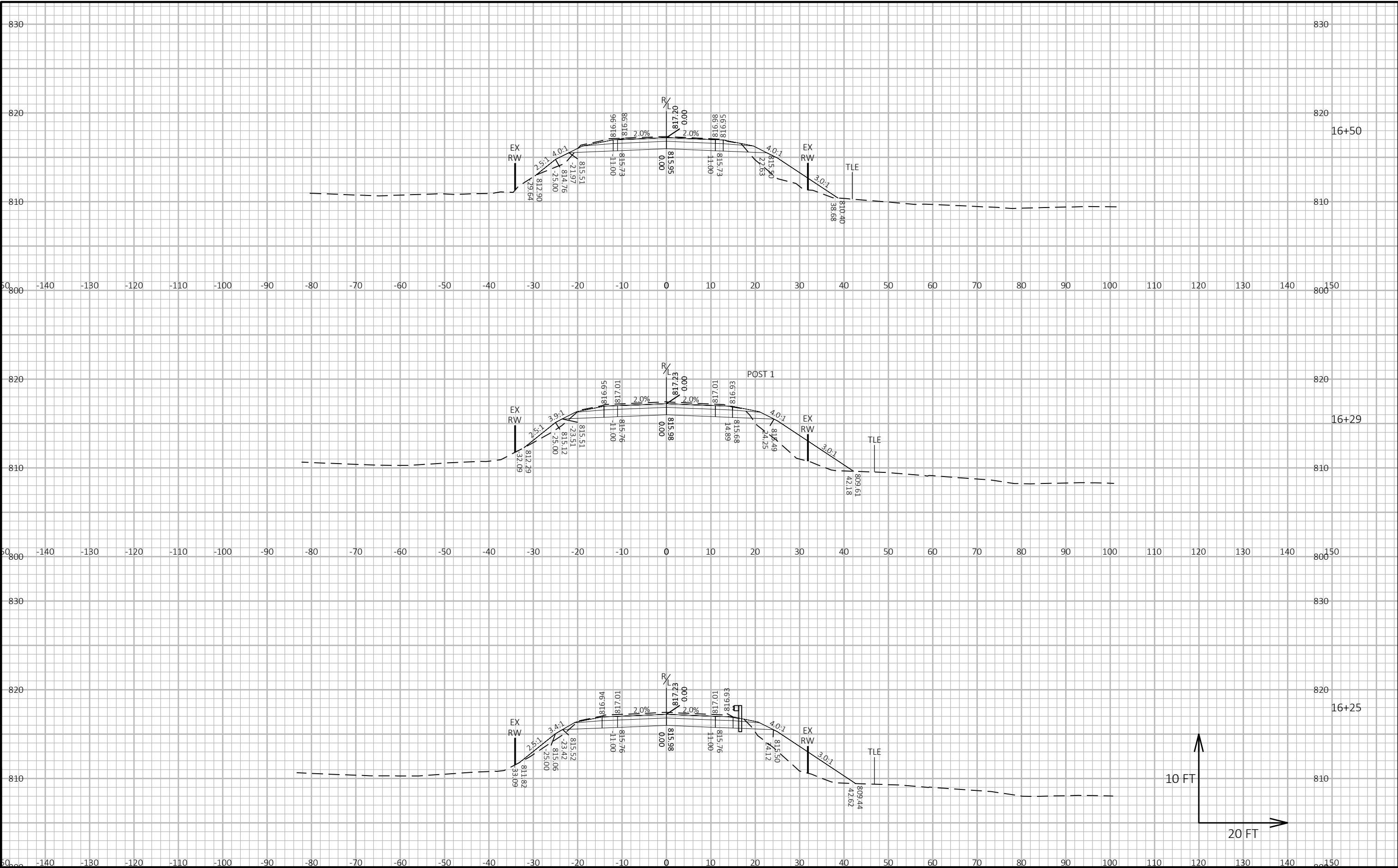
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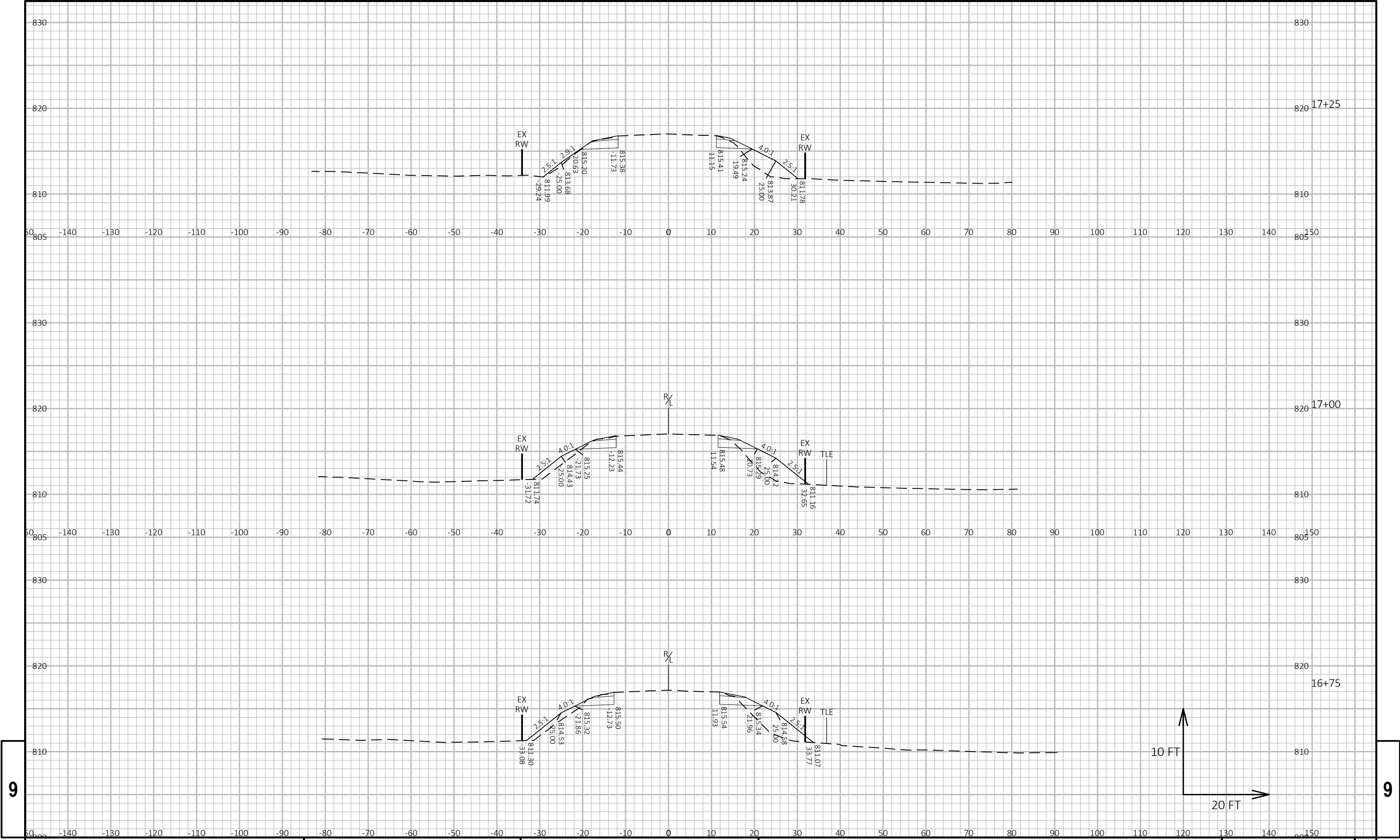
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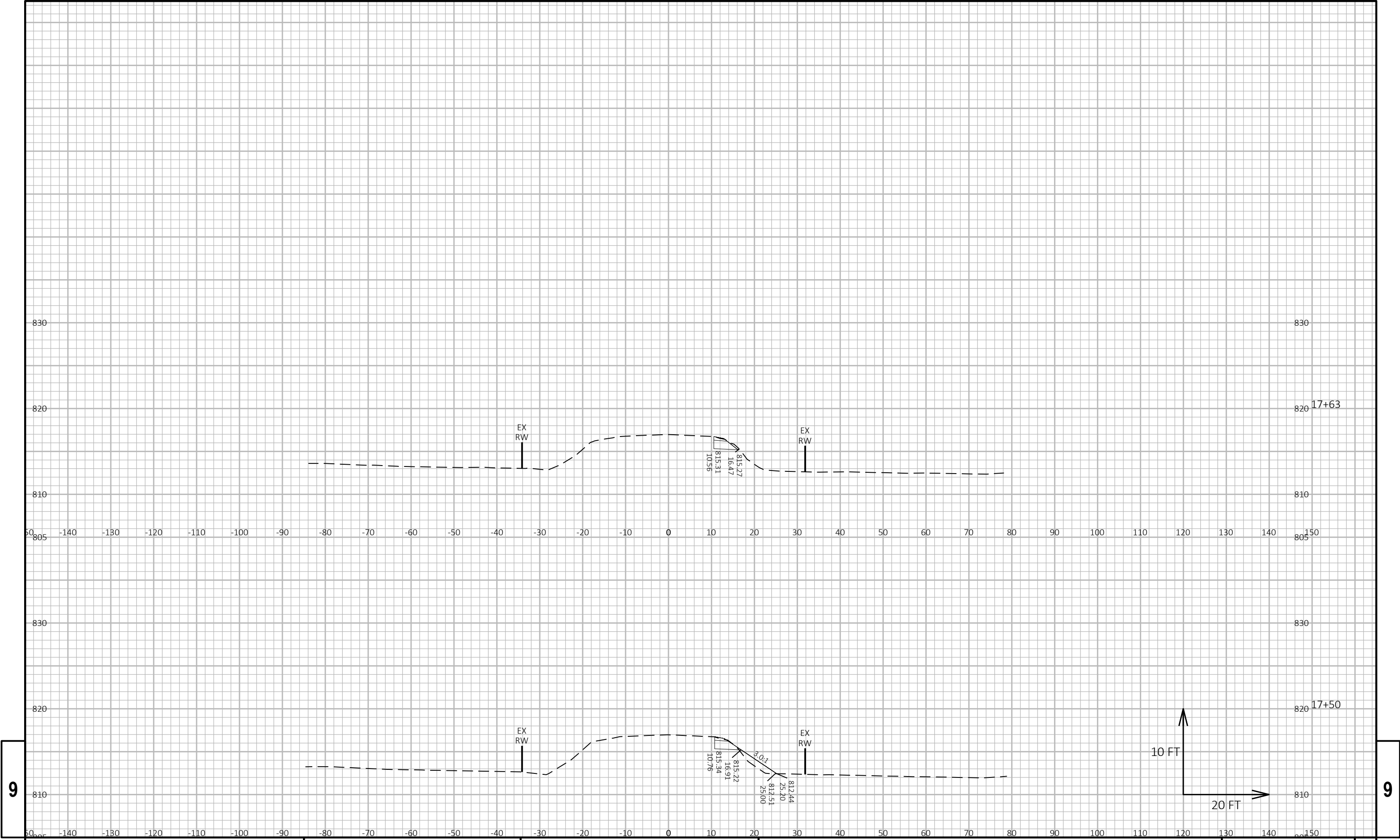








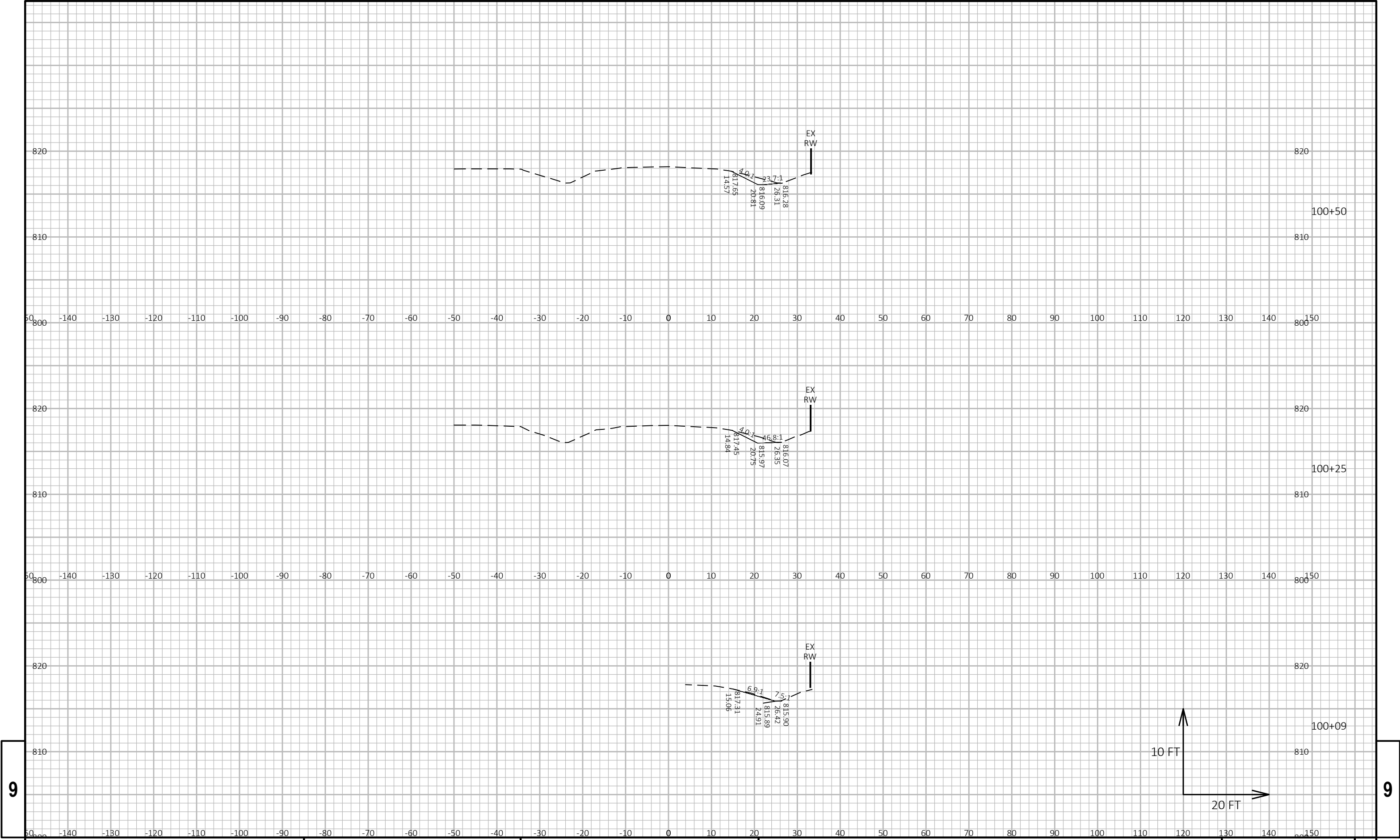




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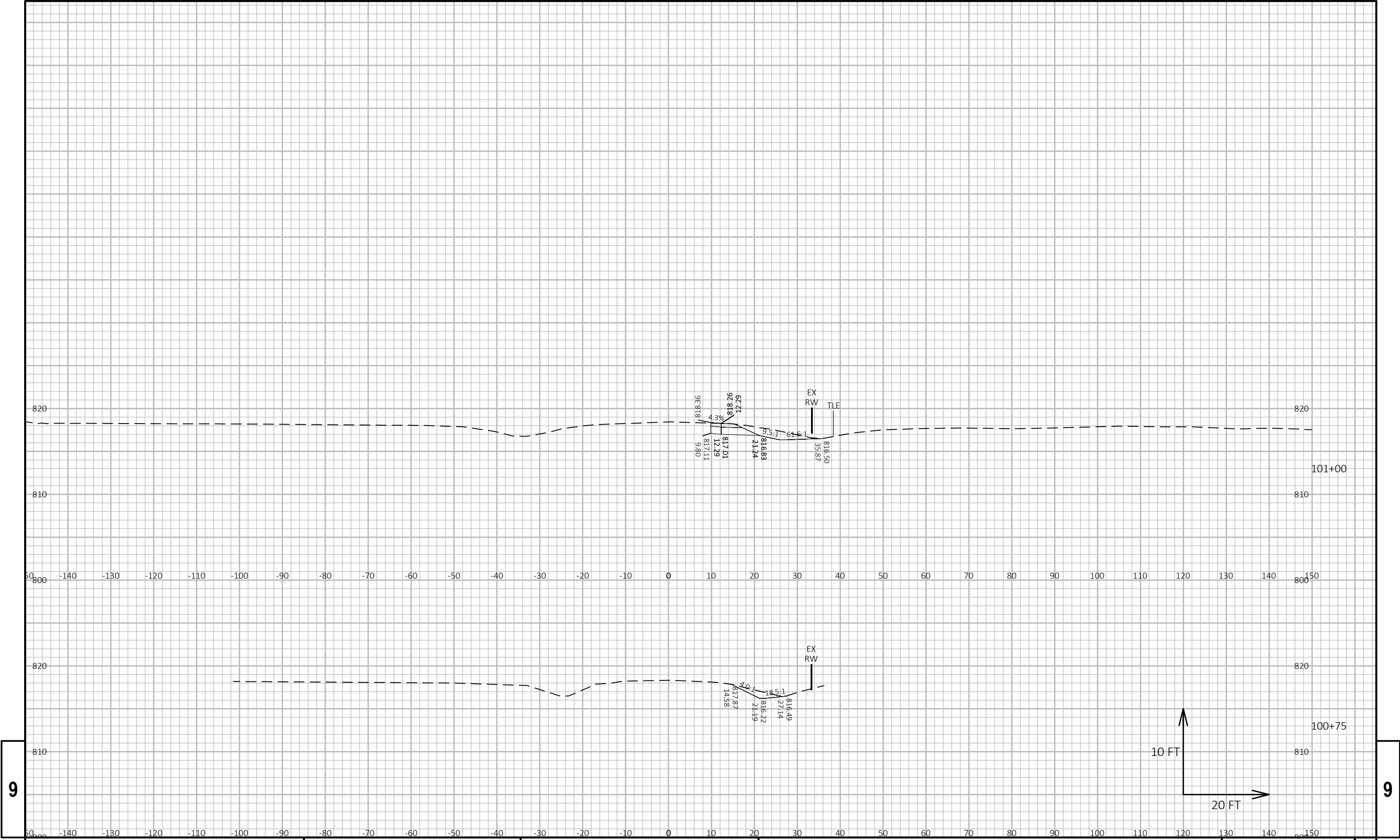
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PROJECT NO: 2695-03-72	HWY: CEDAR CREEK RD	COUNTY: OZAUKEE	CROSS SECTIONS: CROSS SECTIONS	SHEET	E
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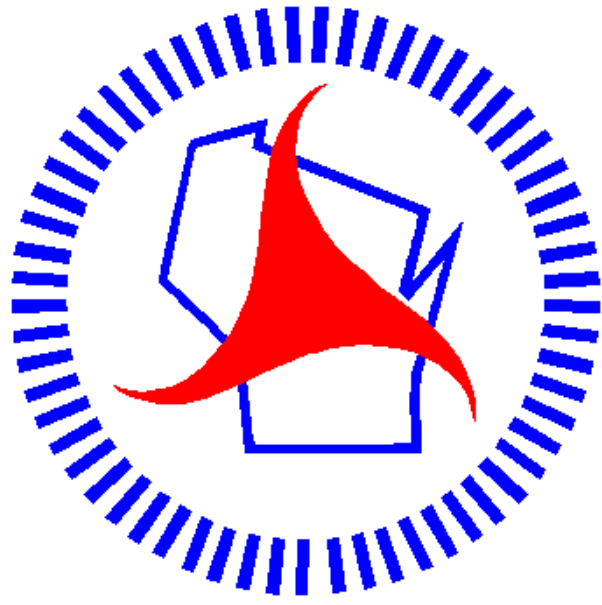
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Notes



Wisconsin Department of Transportation

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