

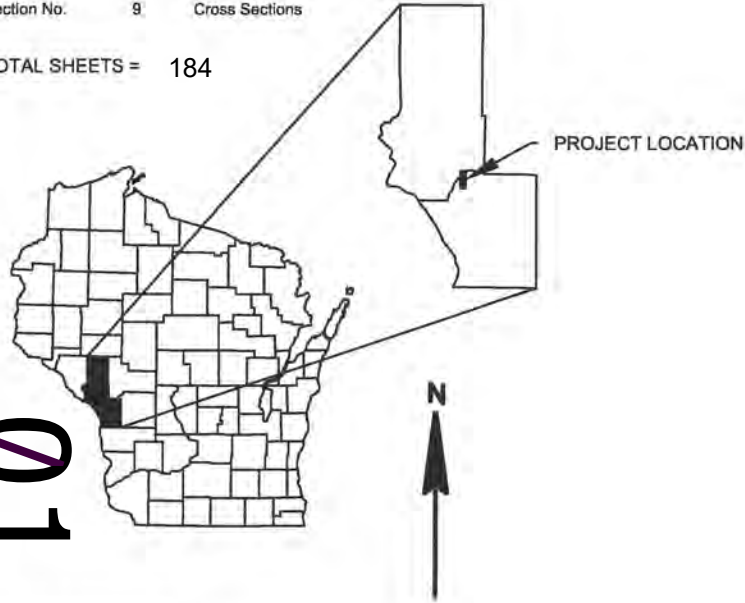
LAX

March 09, 2021

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 = 184



DESIGN DESIGNATION

A.A.D.T.	2020	=	10,000
A.A.D.T.	2040	=	12,400
D.H.V.	2040	=	1,230
D.D.		=	60-40
T.		=	19.2%
DESIGN SPEED		=	60 MPH
ESALS		=	7,100,000

CONVENTIONAL SYMBOLS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

LA CROSSE - GALESVILLE

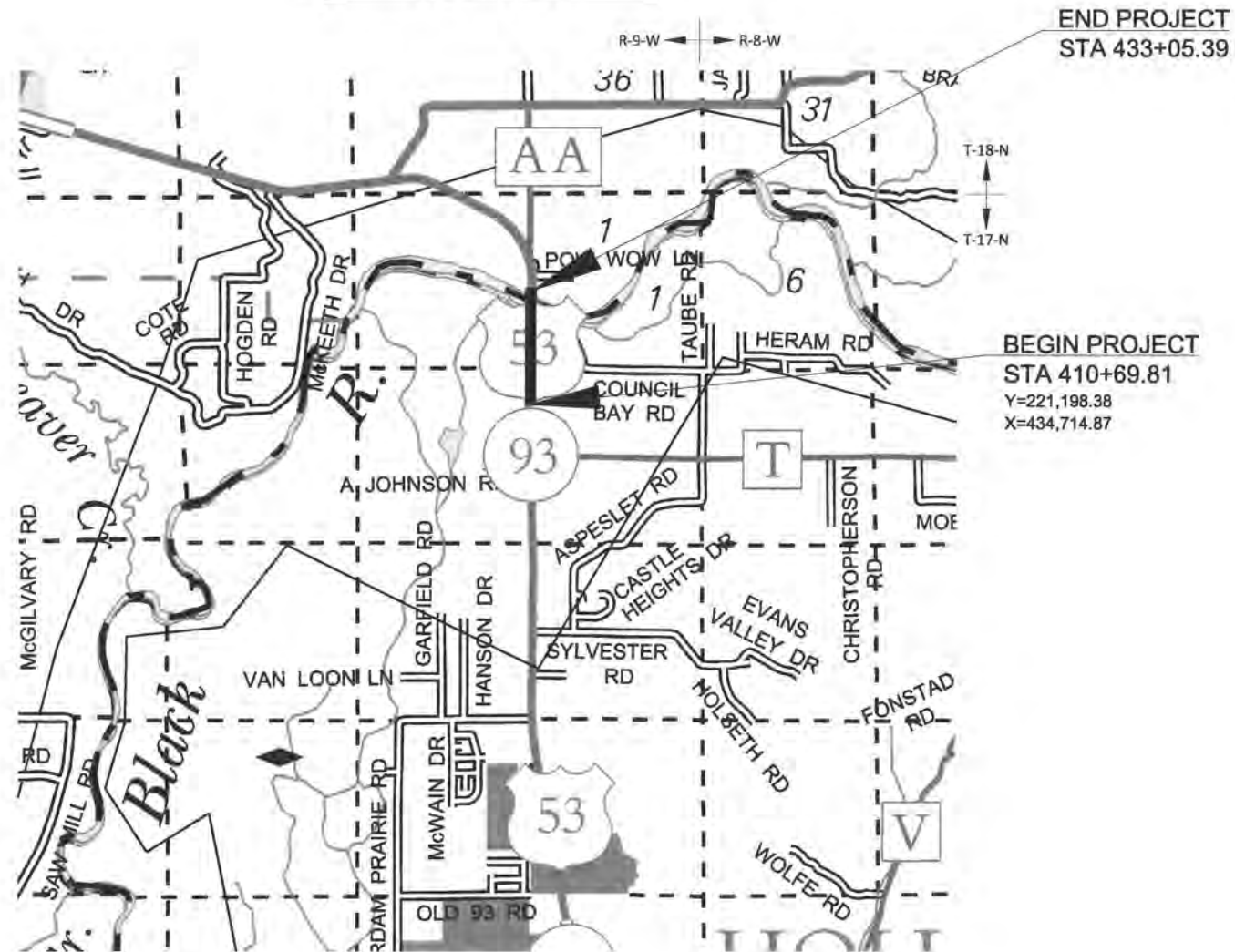
(BLACK R BRIDGE B-32-79)

USH 53

LA CROSSE & TREMPLEALEAU COUNTY

STATE PROJECT NUMBER

1630-03-61



LAYOUT
SCALE 0 1 MI
TOTAL NET LENGTH OF CENTERLINE = 0.423 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, LA CROSSE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD (2012).

STATE PROJECT

1630-03-61

FEDERAL PROJECT

PROJECT

WISC 2021216

CONTRACT

1

ORIGINAL PLANS PREPARED BY

ISG



DATE: 02/01/2020 William A. Kratt
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	I+S GROUP, INC.
Designer	I+S GROUP, INC.
Project Manager	VALERIE GUIDER, PE
Regional Examiner	SW REGION
Regional Supervisor	REINY YAHNKE, PE

APPROVED FOR THE DEPARTMENT

DATE: 02/01/2020 Valerie Guider
(Signature)

E

GENERAL NOTES

- NO TREES OR SHRUBS SHALL BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.
- DISTURBED AREAS WITHIN THE RIGHT-OF-WAY ARE TO BE TOPSOILED, FERTILIZED, SEEDED, AND E-MATTED AS DIRECTED BY THE ENGINEER.
- TOPSOIL IS TO BE PLACED AND SPREAD TO A UNIFORM DEPTH OF 4 INCHES AT A MINIMUM.
- CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING, SEEDING, AND E-MATTING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY THEIR OPERATION OUTSIDE OF NORMAL CONSTRUCTION LIMITS.
- LOCATION OF UNDERGROUND UTILITIES AS SHOWN ON THE PLAN ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- WHEN PORTIONS OF EXISTING ASPHALTIC SURFACES ARE TO BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION, THE LINE OF SUCH REMOVAL SHALL BE NEATLY DELINEATED WITH A SAW CUT JOINT THROUGH THE ASPHALTIC SURFACE SO THAT REMOVAL OF THE ASPHALT SHALL BE ACCOMPLISHED WITHOUT DAMAGE TO REMAINING PORTIONS. THE LOCATION OF SAW JOINTS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- EROSION CONTROL TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER AND BE IN PLACE PRIOR TO CONSTRUCTION OR REMOVALS.
- 4" ASPHALTIC SURFACE FOR SHOULDERS MAY BE PLACED IN A SINGLE LAYER.
- HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.
- TACK COAT APPLICATION RATE IS 0.07 GAL/SY.
- ALL RADII ARE MEASURED TO EDGE OF PAVEMENT UNLESS OTHERWISE SHOWN OR NOTED ON THE PLAN.
- ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION. ANY CONFLICTING SIGNS SHALL BE COVERED OR REMOVED.
- TYPICAL SECTIONS SHOW THE GENERAL FEATURES THROUGHOUT THE PROJECT. PAVEMENT SLOPES, SIDE SLOPES, ETC., MAY VARY WITHIN THE LIMITS OF THE SECTION.
- PAVING LIMITS ARE TO BE DETERMINED BY THE ENGINEER.
- CROSS SLOPES SHOWN ON THE TYPICAL SECTION WILL VARY AT THE INTERSECTION.
- FURNISH AND APPLY BOND BREAKER BETWEEN NEW AND EXISTING CONCRETE PAVEMENT. COST IS INCIDENTAL TO CONCRETE PAVEMENT 9 1/2-INCH.

UTILITY CONTACTS

ATC MANAGEMENT, INC. - ELECTRIC TRANSMISSION
MIKE OLSEN
MOLSEN@ATCLLC.COM
OFFICE: (920) 338-6582
801 O'KEEFE RD
P.O. BOX 6113
DE PERE, WI 54115-6113

CHARTER COMMUNICATIONS- COMMUNICATIONS
PERRY MCCLELLAN
PERRY.MCCLELLAN@CHARTER.COM
OFFICE: (608) 317-6213
1228 12TH AVENUE S
ONALASKA, WI 54650

CENTURYLINK - COMMUNICATIONS
TOM MURRAY
TOM.L.MURRAY@CENTURYLINK.COM
OFFICE: (608) 615-4169
CELL: (608) 780-0895
333 N FRONT STREET
LA CROSSE, WI 54601

JACKSON ELECTRIC COOPERATIVE - ELECTRICITY
ERIC STEIEN
ESTEIEN@JACKELEC.COM
OFFICE: (715) 284-5385
N6868 CO HWY F
P.O. BOX 546
BLACK RIVER FALLS, WI 54615

MIDWEST NATURAL GAS, INC. - GAS/PETROLEUM
RICK SCHERMERHORN
RICKS@MIDWESTNATURALGAS.COM
OFFICE: (608) 781-1011
3600 STATE HIGHWAY 157
P.O. BOX 429
LA CROSSE, WI 54602

RIVERLAND ENERGY COOPERATIVE - ELECTRICITY
TIM HOLTAN
THOLTAN@RIVERLANDENERGY.COM
OFFICE: (608) 783-2238
P.O. BOX 277
ARCADIA, WI, 54612

XCEL ENERGY - ELECTRIC TRANSMISSION
MITCHELL DIENGER
MITCHELL.A.DIENGER@XCELENERGY.COM
OFFICE: (612) 321-3109
CELL: (608) 386-2233
414 NICOLLET MALL, 5TH FLOOR
MINNEAPOLIS, MN 55401

DNR LIAISON

WISCONSIN DEPARTMENT OF NATURAL RESOURCES (PRIMARY)
KAREN KALVELAGE
3550 MORMON COULEE RD
LA CROSSE, WI 54601
PHONE: (608) 785-9115
EMAIL: KAREN.KALVELAGE@WISCONSIN.GOV

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JAY SCHIEFELBEIN
3550 MORMON COULEE RD
LA CROSSE, WI 54601
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EMAIL: JEREMIAH.SCHIEFELBEIN@WISCONSIN.GOV

DESIGN CONTACT

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201 MAIN STREET, SUITE 1020
LA CROSSE, WI 54601
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EMAIL: WILL.KRATT@ISGINC.COM

WISCONSIN DEPARTMENT OF TRANSPORTATION
VALERIE GUIDER, P.E.
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LA CROSSE, WI 54601
PHONE: (608) 797-91635
EMAIL: VALERIE.GUIDER@DOT.WI.GOV

ORDER OF DETAIL SHEETS

1. GENERAL NOTES
2. PROJECT OVERVIEW
3. TYPICAL SECTIONS
4. CONSTRUCTION DETAILS
5. INTERSECTION DETAIL
6. PAVING DETAILS
7. EROSION CONTROL
8. STORM SEWER PLAN
9. PERMANENT SIGNING
10. PAVEMENT MARKING
11. ADVANCED WARNING SIGNING
12. TRAFFIC CONTROL
13. ALIGNMENT DETAILS

AC	ACRE
AGG	AGGREGATE
AH	AHEAD
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ASPH	ASPHALTIC
AVG	AVERAGE
BK	BACK
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
BR	BRIDGE
CL or C/L	CENTER LINE
CE	COMMERCIAL ENTRANCE
CONC	CONCRETE
CO	COUNTY
CTH	COUNTY TRUNK HIGHWAY
CR	CREEK
CABC	CRUSHED AGGREGATE BASE COURSE
CY or CUYD	CUBIC YARD
CULV	CULVERT
CP	CULVERT PIPE
C & G	CURB AND GUTTER
D	DEGREE OF CURVE
DIA	DIAMETER
DISCH	DISCHARGE
E	EAST
EB	EASTBOUND
EL or ELEV	ELEVATION
EW	ENDWALL
ENT	ENTRANCE
EXC	EXCAVATION
EX	EXISTING
FERT	FERTILIZER
FE	FIELD ENTRANCE
FL or F/L	FLOW LINE
FT	FOOT
HMA	HOT MIX ASPHALT
CWT	HUNDREDWEIGHT

STANDARD ABBREVIATIONS

INL	INLET
INV	INVERT
JCT	JUNCTION
LT	LEFT
L	LENGTH OF CURVE
LIN FT or LF	LINEAR FOOT
LS	LUMP SUM
NC	NORMAL CROWN
N	NORTH
NB	NORTHBOUND
NO	NUMBER
PT	POINT
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PCC	PORTLAND CEMENT CONCRETE
LB	POUND
PE	PRIVATE ENTRANCE
R	RADIUS
RL or R/L	REFERENCE LINE
RT	RIGHT
R/W	RIGHT-OF-WAY
RD	ROAD
SHLDR	SHOULDER
SB	SOUTHBOUND
SF or SQ FT	SQUARE FEET
SY or SQ YD	SQUARE YARD
SDD	STANDARD DETAIL DRAWINGS
STH	STATE TRUNK HIGHWAYS
SE	SUPERELEVATION
T	TANGENT
TEMP	TEMPORARY
USH	UNITED STATES HIGHWAY
V	VELOCITY OR DESIGN SPEED
VC	VERTICAL CURVE
WB	WESTBOUND
YD	YARD



Dial 811 or (800)242-8511

www.DiggersHotline.com

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0 - 2	2 - 6	6 & OVER	0 - 2	2 - 6	6 & OVER	0 - 2	2 - 6	6 & OVER	0 - 2	2 - 6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIP-TURF	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPE-TURF			.25			.27			.28			.30
			.32			.34			.36			.38
PAVEMENT:												
ASPHALT							.70 - .95					
CONCRETE							.80 - .95					
BRICK							.70 - .80					
DRIVES, WALKS							.75 - .85					
ROOFS							.75 - .95					
GRAVEL ROADS, SHOULDERS							.40 - .60					
TOTAL PROJECT AREA = 5.66 ACRES												
TOTAL EXPECTED DISTURBED AREA = 3.66 ACRES												

PROJECT NO: 1630-03-61

HWY: USH 53

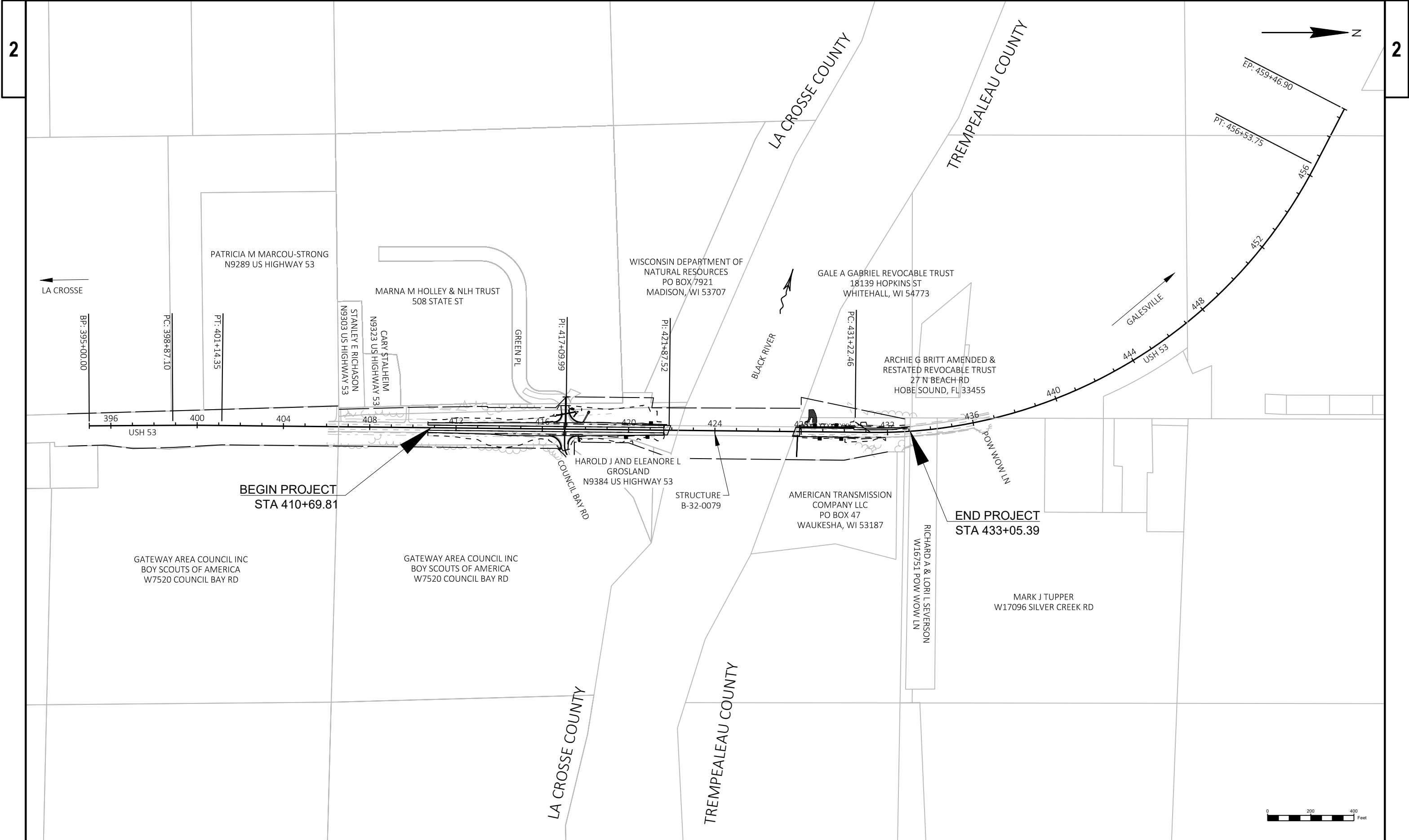
COUNTY: LA CROSSE & TREMPPEALEAU

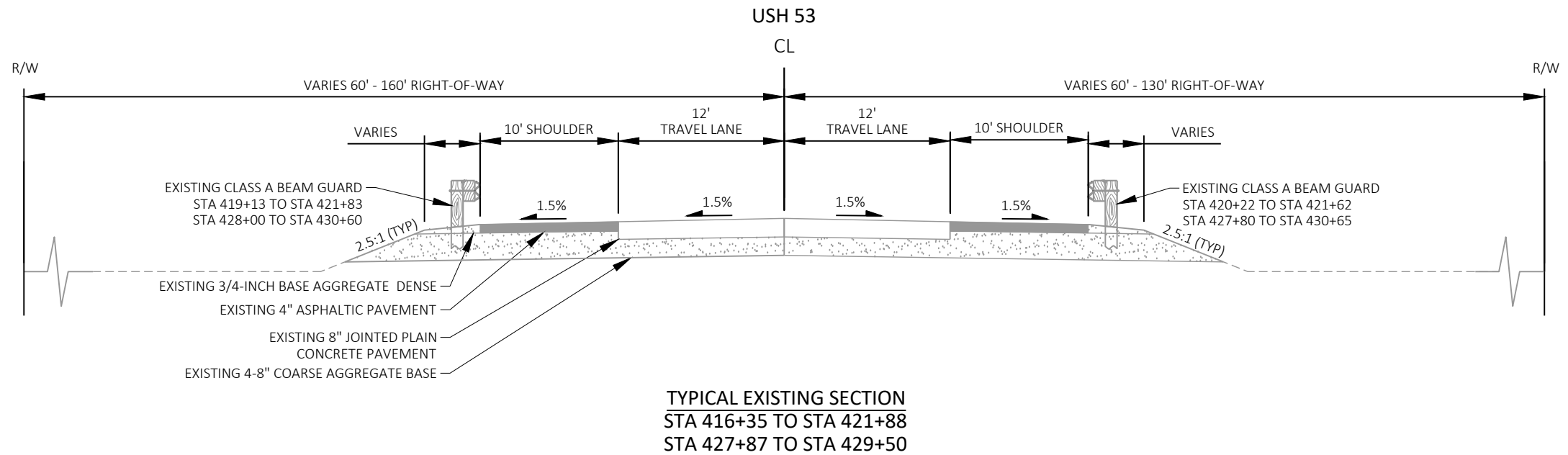
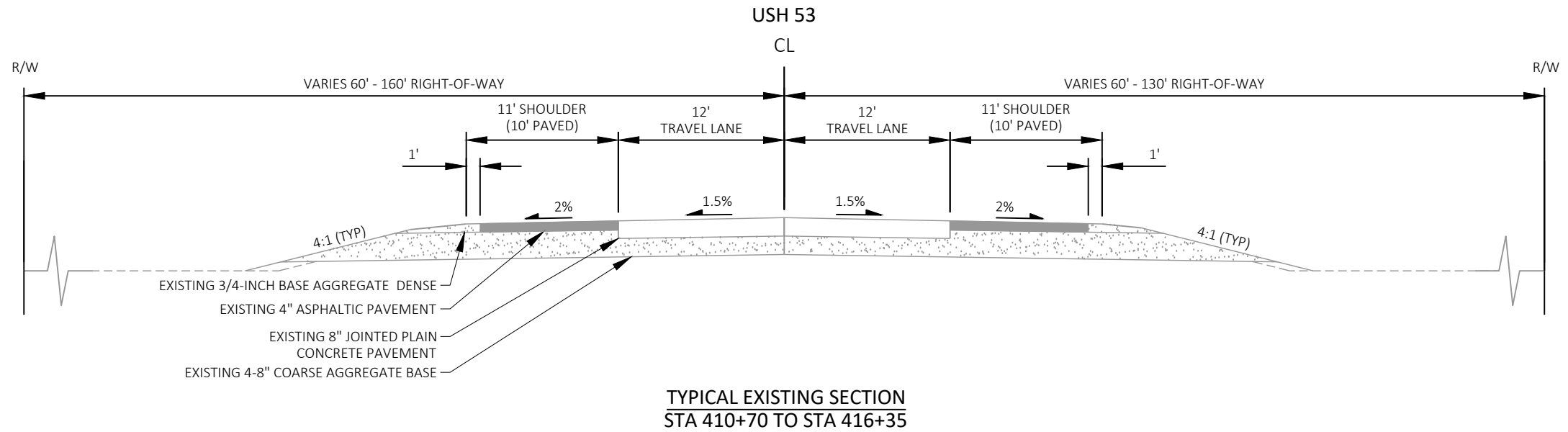
GENERAL NOTES

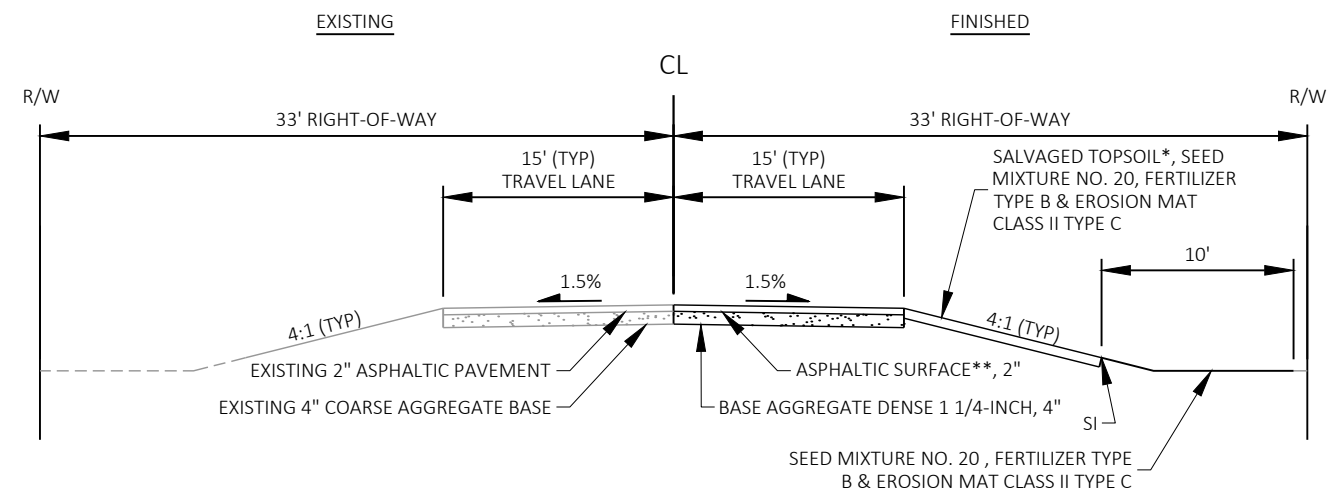
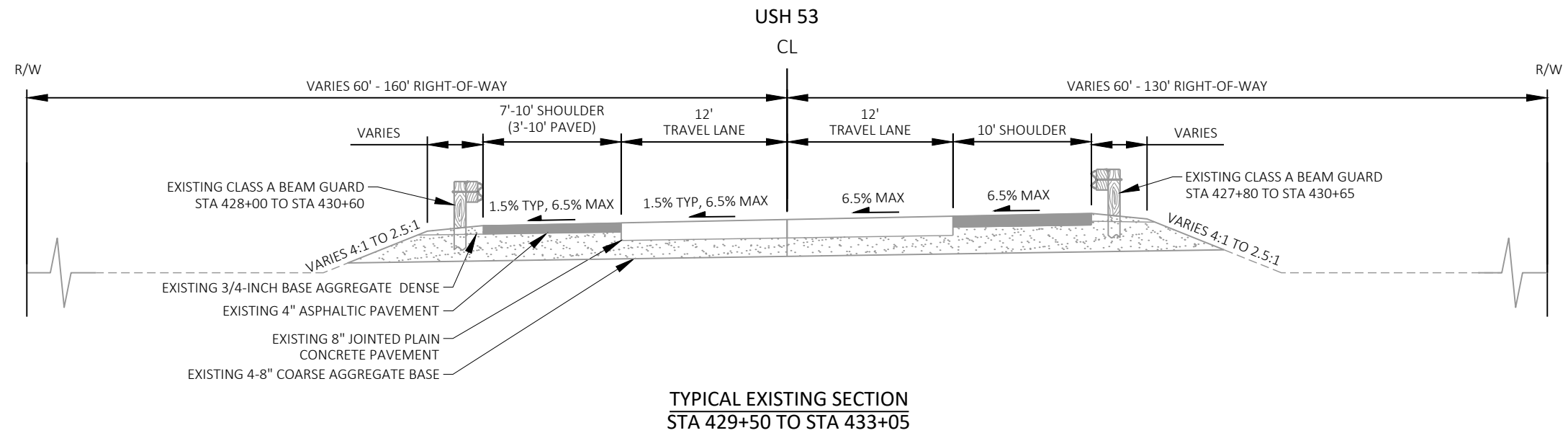
SHEET

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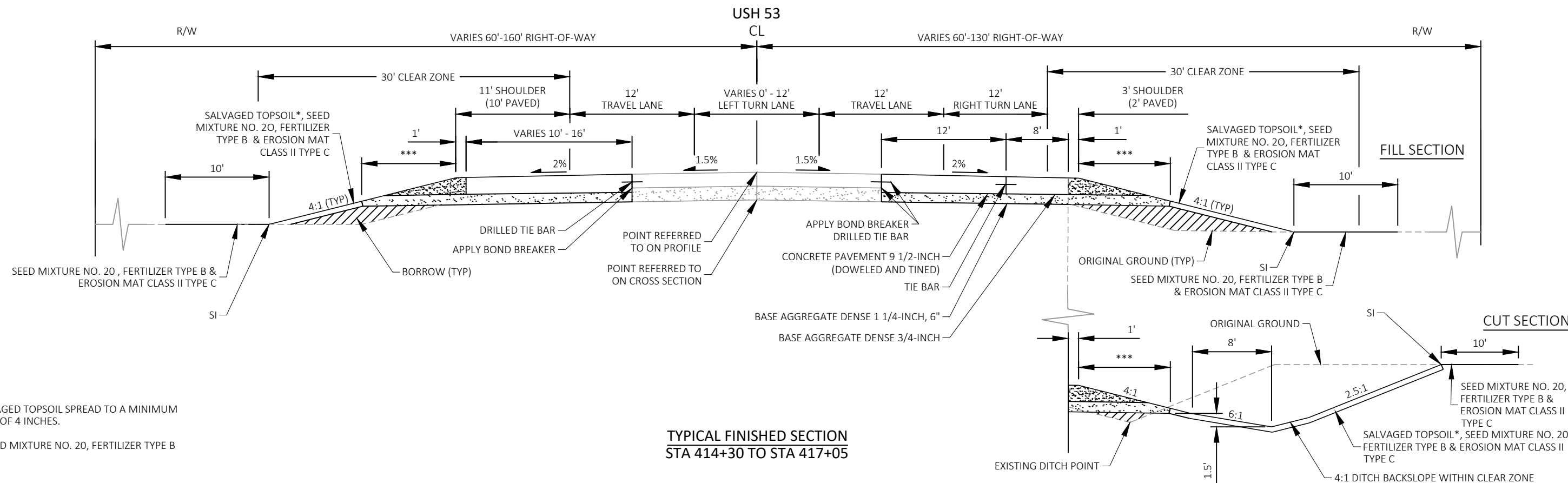
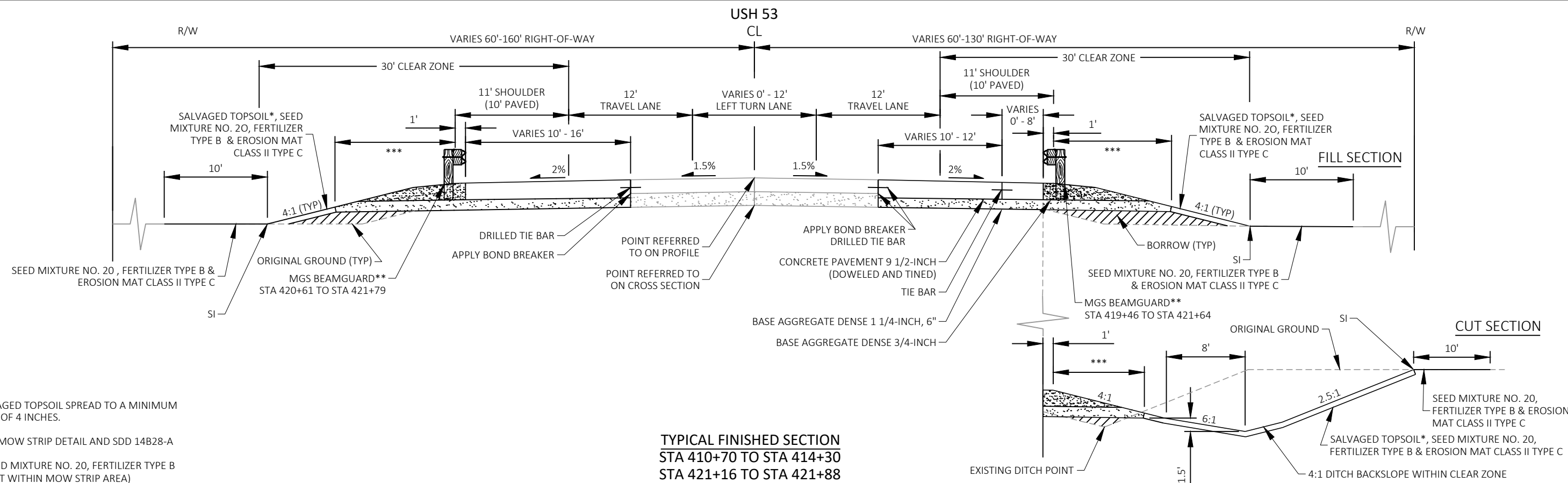




SIDE ROAD TYPICAL EXISTING & FINISHED SECTIONS
GREEN PL - STA 10+41 "G" TO STA 11+38 "G"
COUNCIL BAY RD - STA 20+12 "B" TO STA 21+31 "B"

*SALVAGED TOPSOIL SPREAD TO A MINIMUM DEPTH OF 4 INCHES.

**2" ASPHALTIC SURFACE CONSISTS OF A SINGLE LAYER WITH A NOMINAL AGGREGATE SIZE OF 12.5 MM.

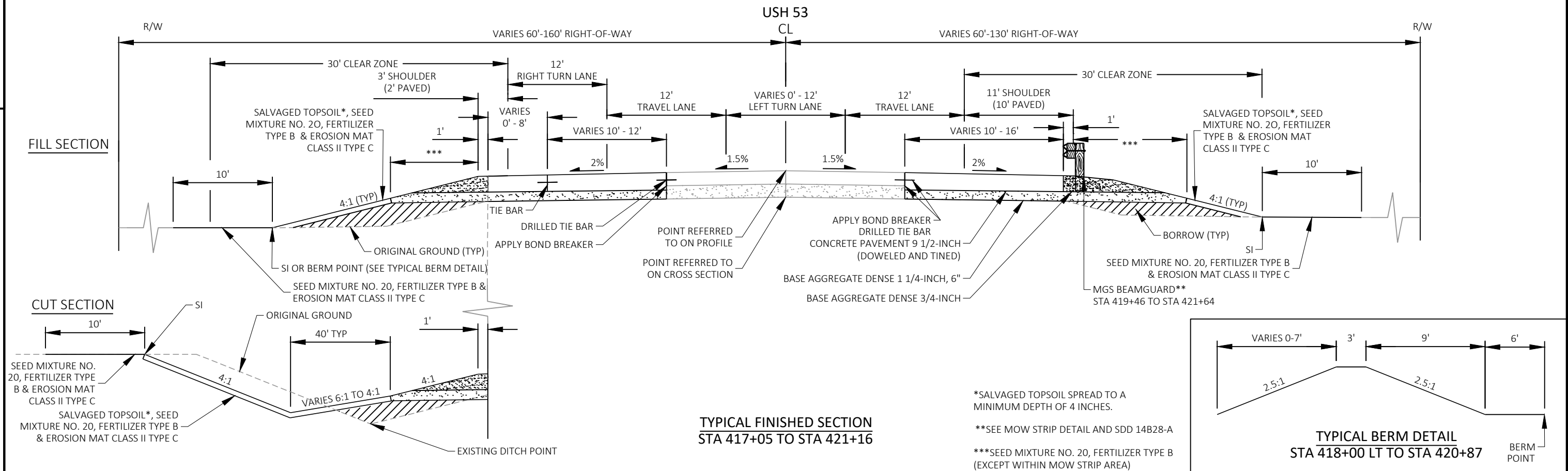
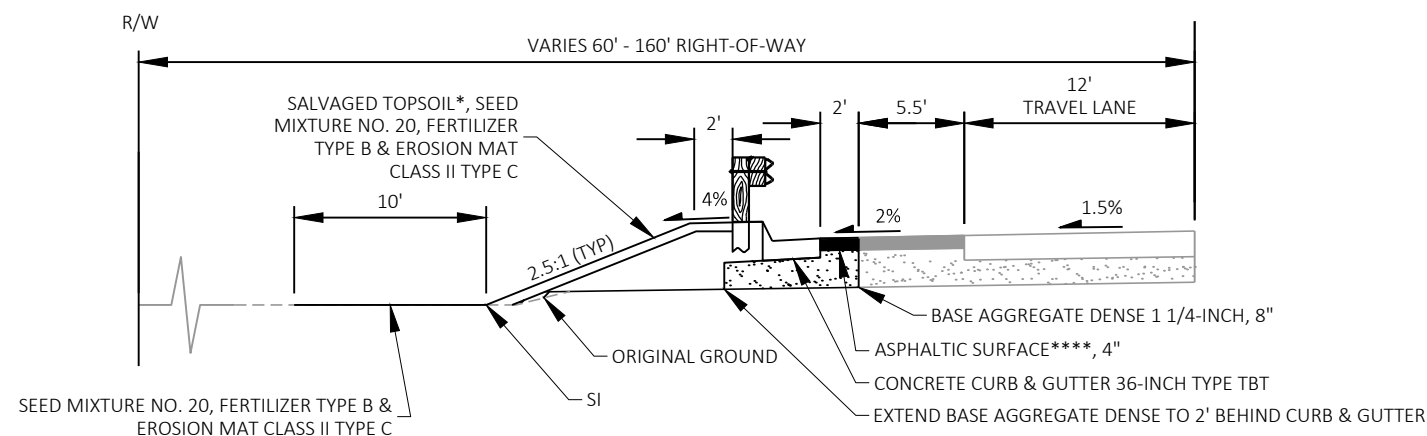
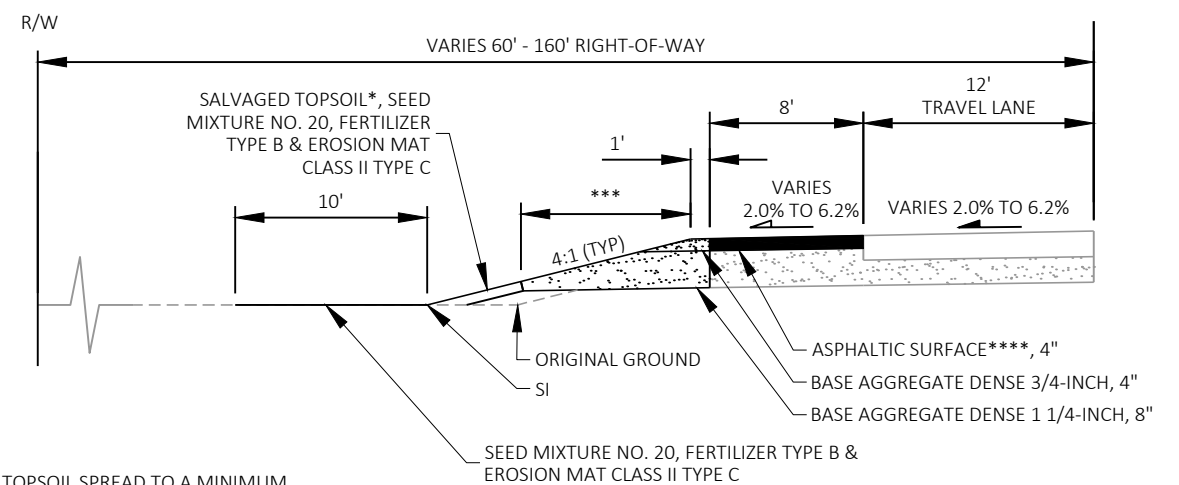


2

2

FILL SECTION

CUT SECTION

USH 53
CLTYPICAL FINISHED LT HALF SECTION
STA 427+92 TO STA 430+44*SALVAGED TOPSOIL SPREAD TO A MINIMUM DEPTH
OF 4 INCHES.****4" ASPHALTIC SURFACE CONSISTS OF A SINGLE
LAYER WITH A NOMINAL AGGREGATE SIZE OF 12.5 MM.USH 53
CLTYPICAL FINISHED LT HALF SECTION
STA 430+44 TO STA 433+05*SALVAGED TOPSOIL SPREAD TO A MINIMUM
DEPTH OF 4 INCHES.

***SEED MIXTURE NO. 20, FERTILIZER TYPE B

****4" ASPHALTIC SURFACE CONSISTS OF A
SINGLE LAYER WITH A NOMINAL AGGREGATE
SIZE OF 12.5 MM.

PROJECT NO: 1630-03-61

HWY: USH 53

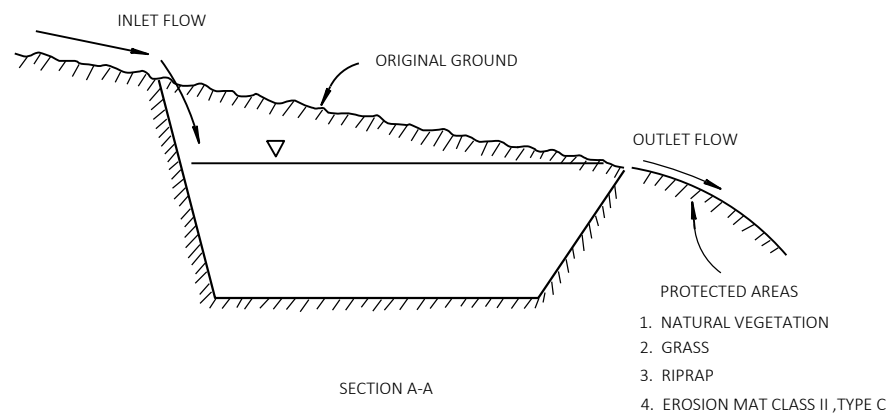
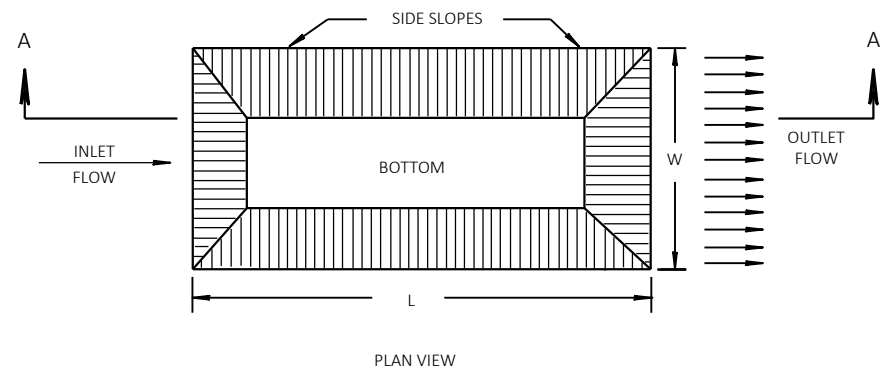
COUNTY: LA CROSSE & TREMPLEAU

TYPICAL SECTIONS

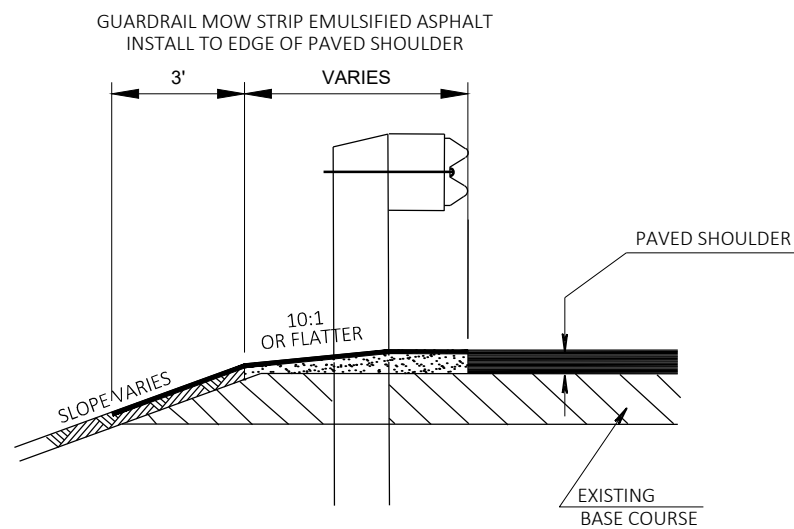
SHEET

7

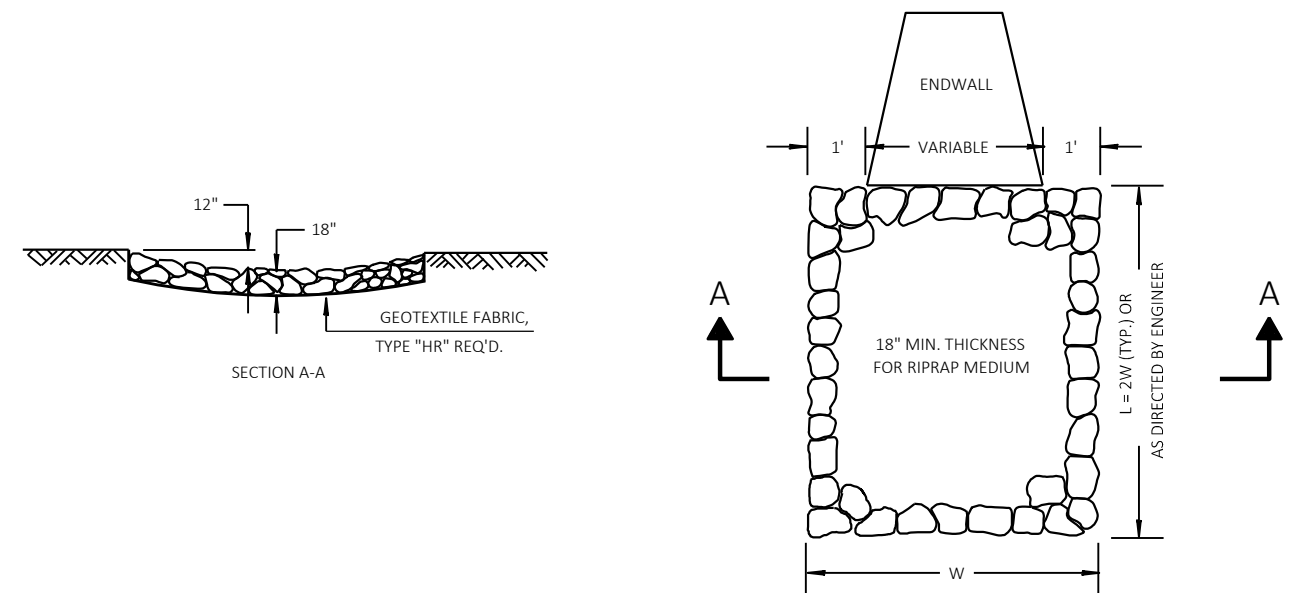
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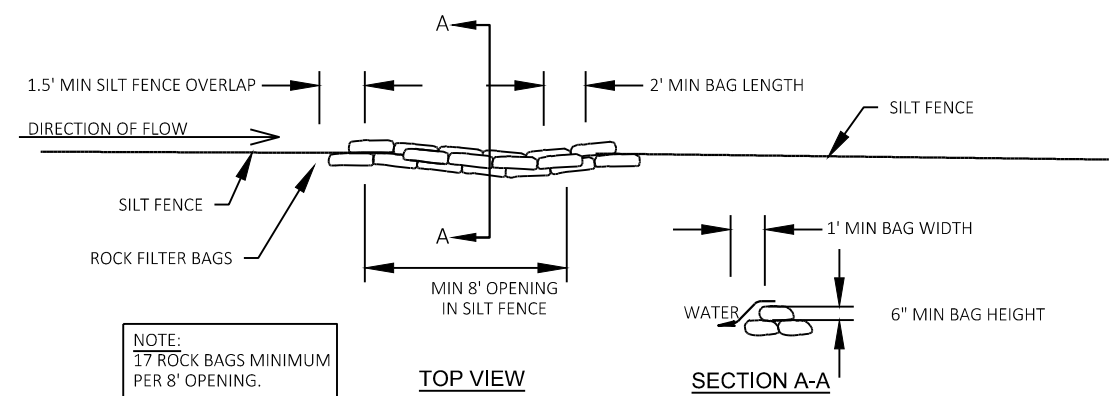
TYPICAL EXCAVATED SEDIMENT TRAP



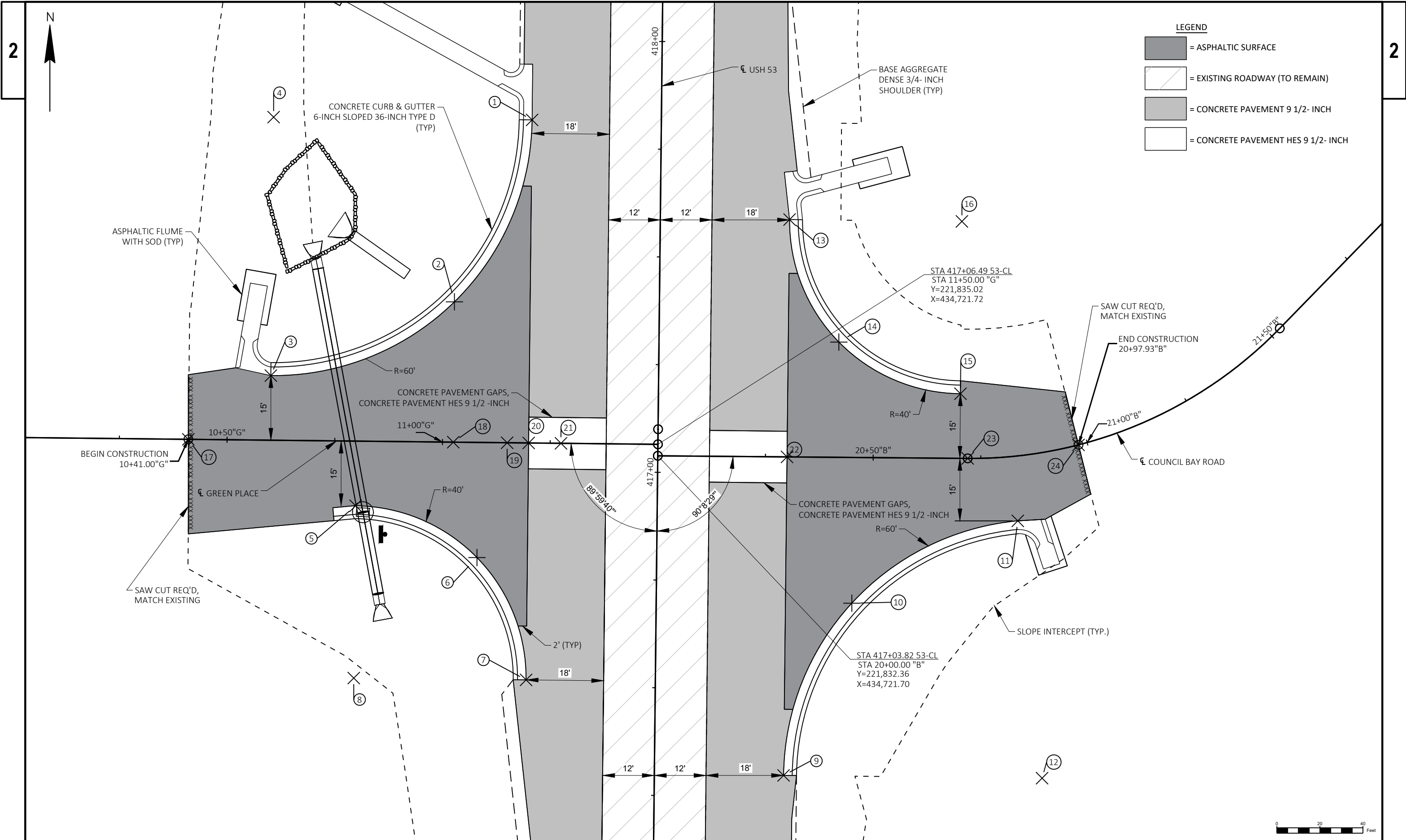
MOW STRIP AT GUARD RAIL



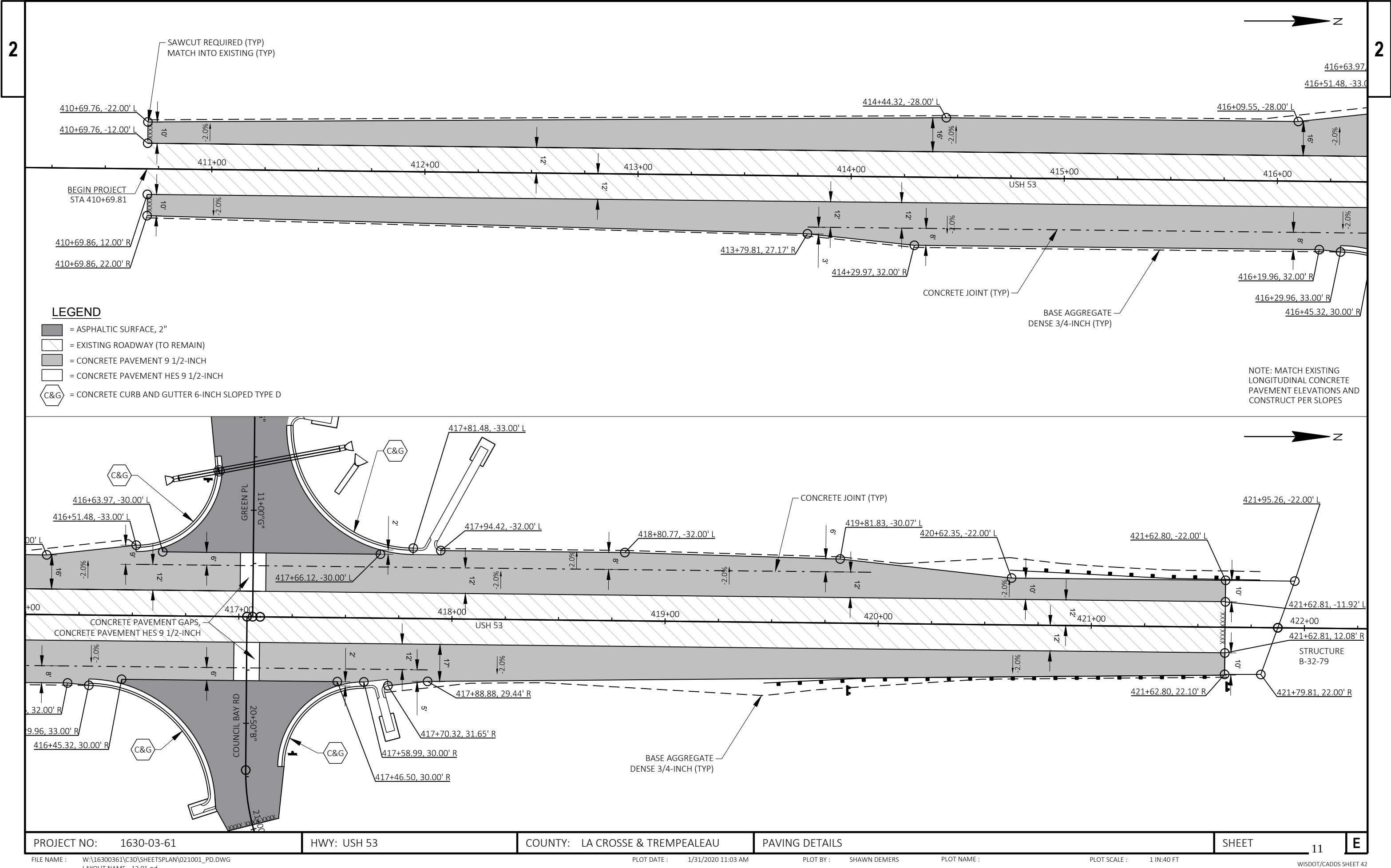
RIPRAP MEDIUM TREATMENT AT CULVERTS

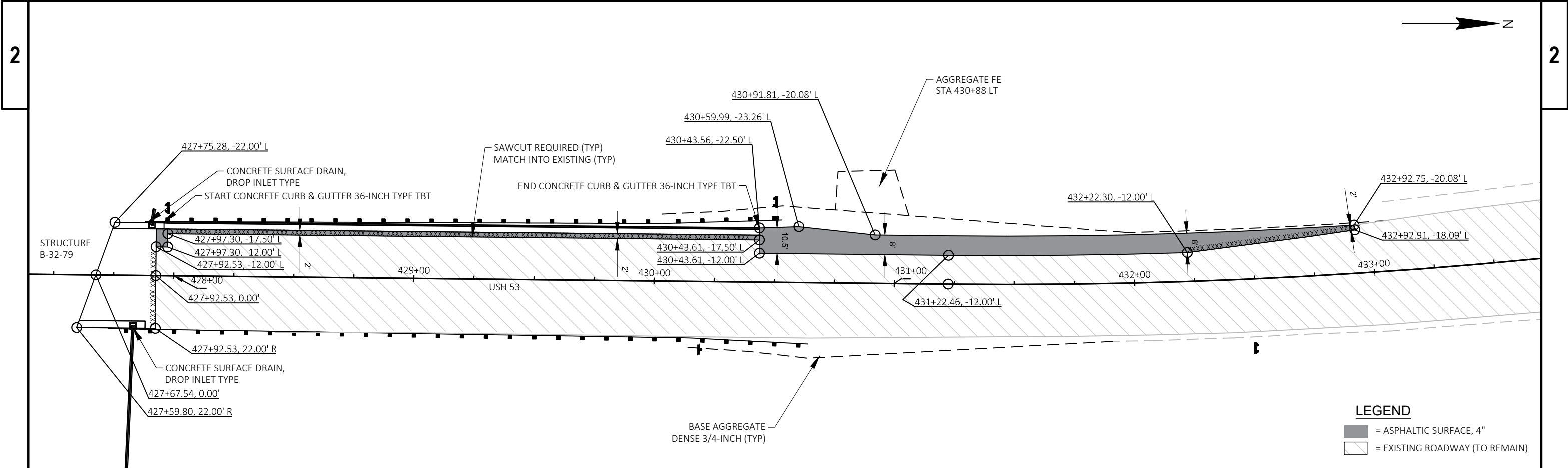


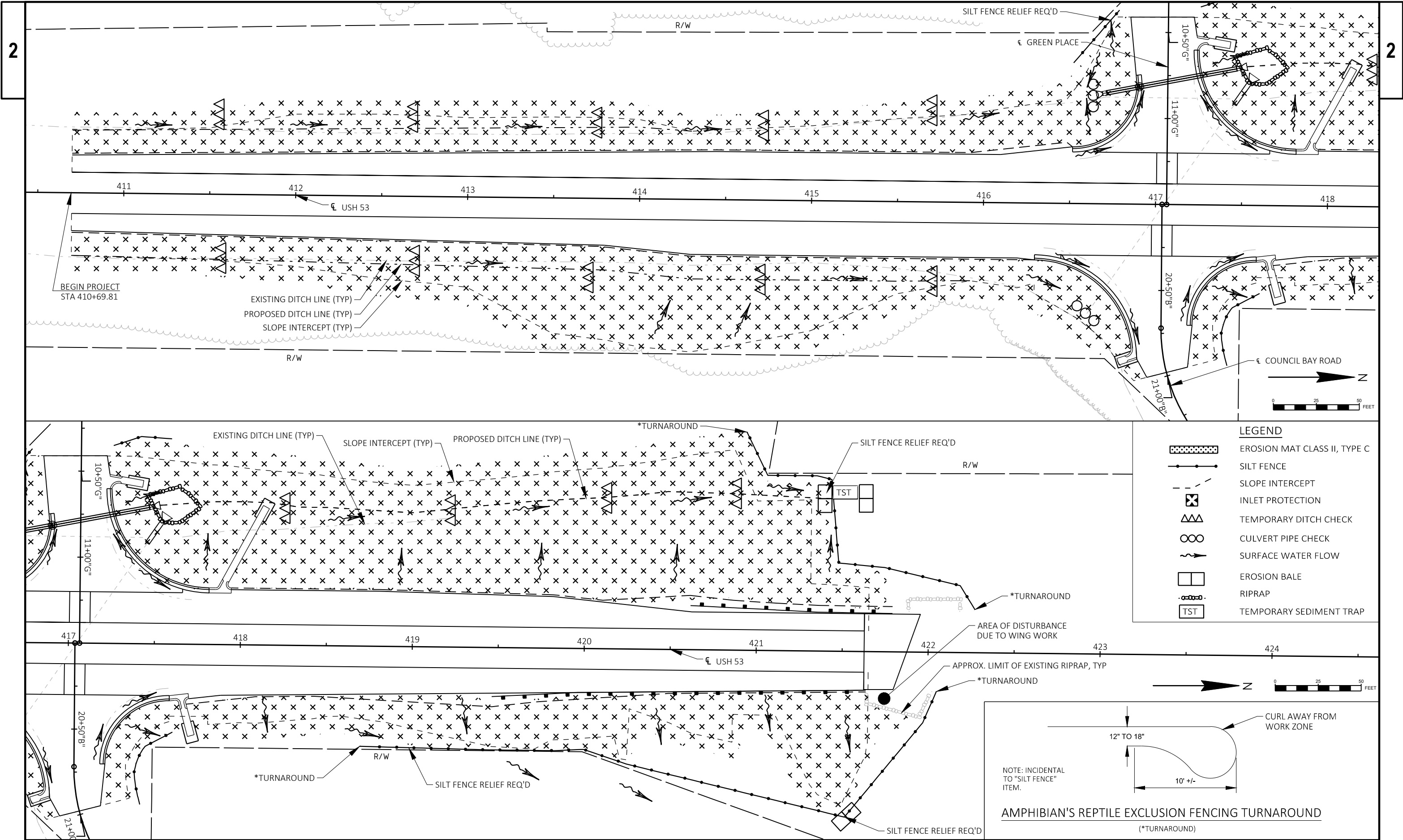
ROCK BAGS USED FOR SILT FENCE RELIEF



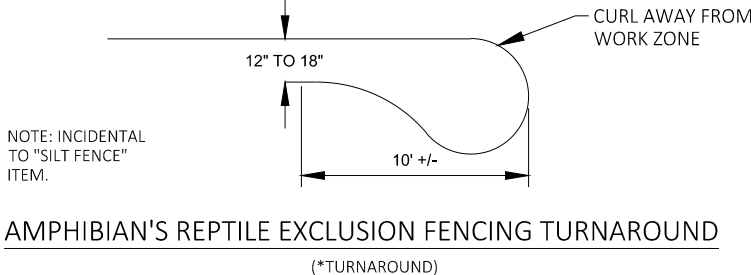
STATION & OFFSET TABLE										
POINT	ALIGNMENT	STATION	OFFSET	ALIGNMENT	ELEV.	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
1	53-CL	417+81.48	-30.00	GREENPLACE-CL	719.23	11+20.01 "G"	-75.00	221,910.34	434,692.53	
2	53-CL	417+39.06	-47.57	GREENPLACE-CL	719.39	11+02.43 "G"	-32.57	221,868.10	434,674.50	
3	53-CL	417+21.48	-90.00	GREENPLACE-CL	717.10	10+60.00 "G"	-15.00	221,850.98	434,631.89	
4	53-CL	417+81.48	-90.00	GREENPLACE-CL		10+60.01 "G"	-75.00	221,910.98	434,632.54	60'
5	53-CL	416+91.48	-70.00	GREENPLACE-CL	718.33	10+80.00 "G"	15.00	221,820.77	434,651.57	
6	53-CL	416+79.77	-41.72	GREENPLACE-CL	720.41	11+08.28 "G"	26.72	221,808.75	434,679.72	
7	53-CL	416+51.48	-30.00	GREENPLACE-CL	722.49	11+19.99 "G"	55.00	221,780.34	434,691.13	
8	53-CL	416+51.48	-70.00	GREENPLACE-CL		10+79.99 "G"	55.00	221,780.77	434,651.14	40'
9	53-CL	416+29.96	30.00	COUNCILBAYROAD-CL	723.54	20+29.82 "B"	73.94	221,758.17	434,750.90	
10	53-CL	416+70.10	45.41	COUNCILBAYROAD-CL	722.01	20+45.33 "B"	33.83	221,798.15	434,766.74	
11	53-CL	416+89.63	83.72	COUNCILBAYROAD-CL	720.47	20+82.17 "B"	15.00	221,817.26	434,805.26	
12	53-CL	416+29.96	90.00	COUNCILBAYROAD-CL		20+82.17 "B"	75.00	221,757.53	434,810.90	60'
13	53-CL	417+58.99	30.00	COUNCILBAYROAD-CL	720.09	20+30.14 "B"	-55.10	221,887.20	434,752.29	
14	53-CL	417+30.67	41.75	COUNCILBAYROAD-CL	720.58	20+41.82 "B"	-26.75	221,858.76	434,763.73	
15	53-CL	417+18.99	70.10	COUNCILBAYROAD-CL	720.59	20+70.14 "B"	-15.00	221,846.77	434,791.95	
16	53-CL	417+58.99	70.00	COUNCILBAYROAD-CL		20+70.14 "B"	-55.00	221,886.77	434,792.28	40'
17	53-CL	417+06.48	-109.00	GREENPLACE-CL	716.23	10+41.00 "G"	0.00	221,836.19	434,612.73	
18	53-CL	417+06.49	-47.50	GREENPLACE-CL	719.99	11+02.50 "G"	0.00	221,835.53	434,674.23	
19	53-CL	417+06.49	-35.00	GREENPLACE-CL	720.66	11+15.00 "G"	0.00	221,835.40	434,686.73	
20	53-CL	417+06.49	-30.00	GREENPLACE-CL	720.87	11+20.00 "G"	0.00	221,835.34	434,691.73	
21	53-CL	417+06.49	-22.50	GREENPLACE-CL	721.13	11+27.50 "G"	0.00	221,835.26	434,699.23	
22	53-CL	417+03.89	30.00	COUNCILBAYROAD-CL	721.41	20+30.00 "B"	0.00	221,832.11	434,751.69	
23	53-CL	417+04.00	71.94	COUNCILBAYROAD-CL	720.87	20+71.94 "B"	0.00	221,831.76	434,793.63	
24	53-CL	417+07.42	97.63	COUNCILBAYROAD-CL	720.54	20+97.93 "B"	0.00	221,834.90	434,819.35	

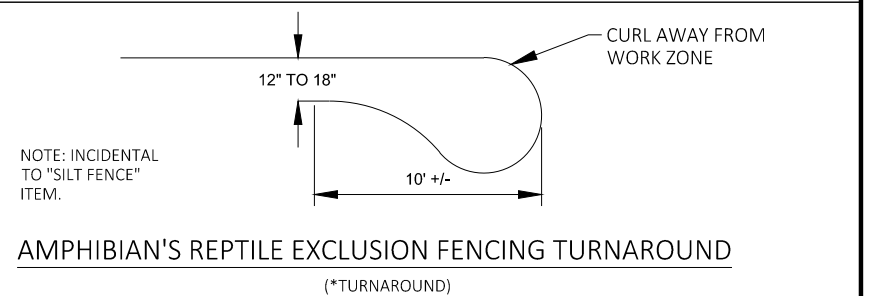
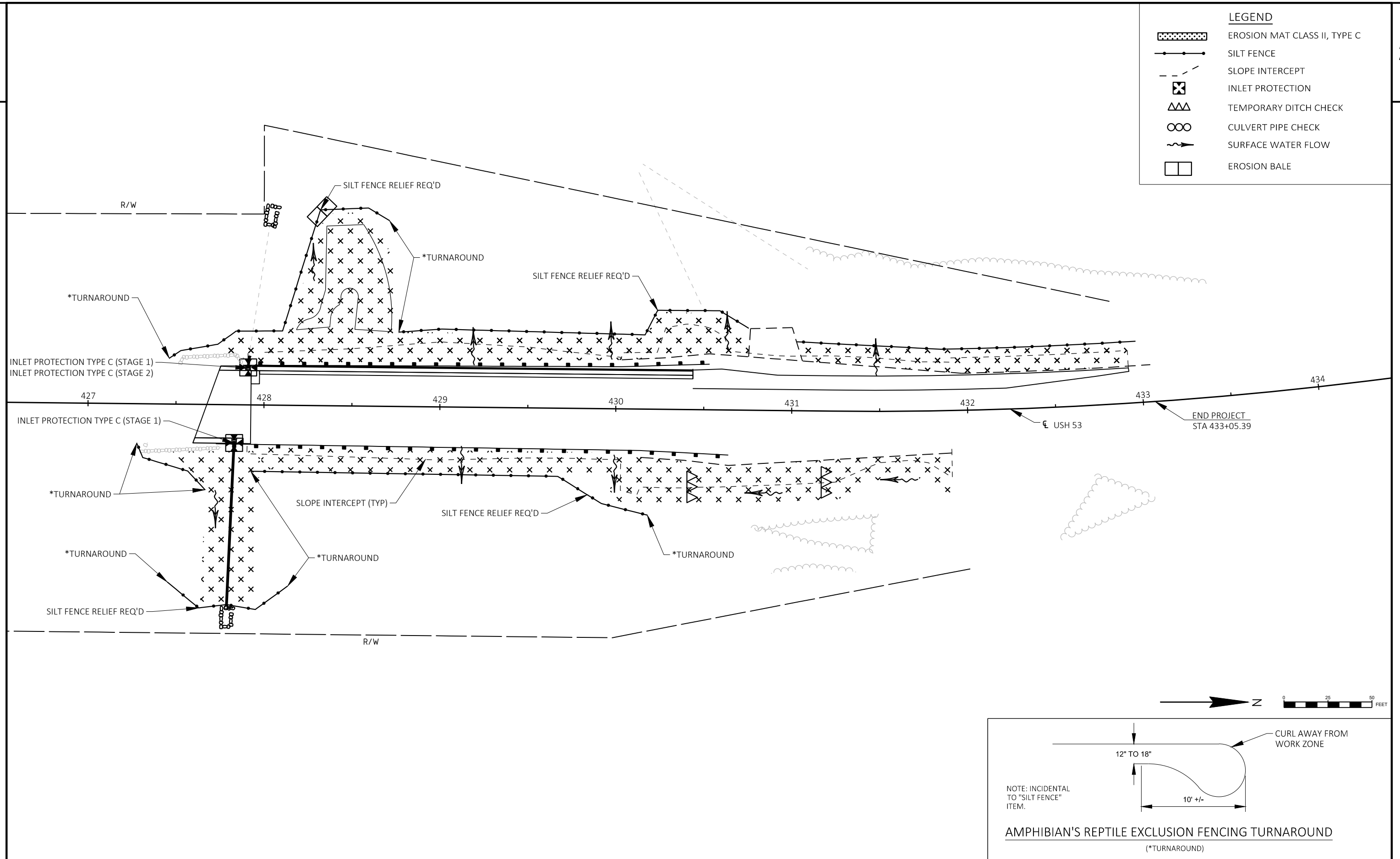


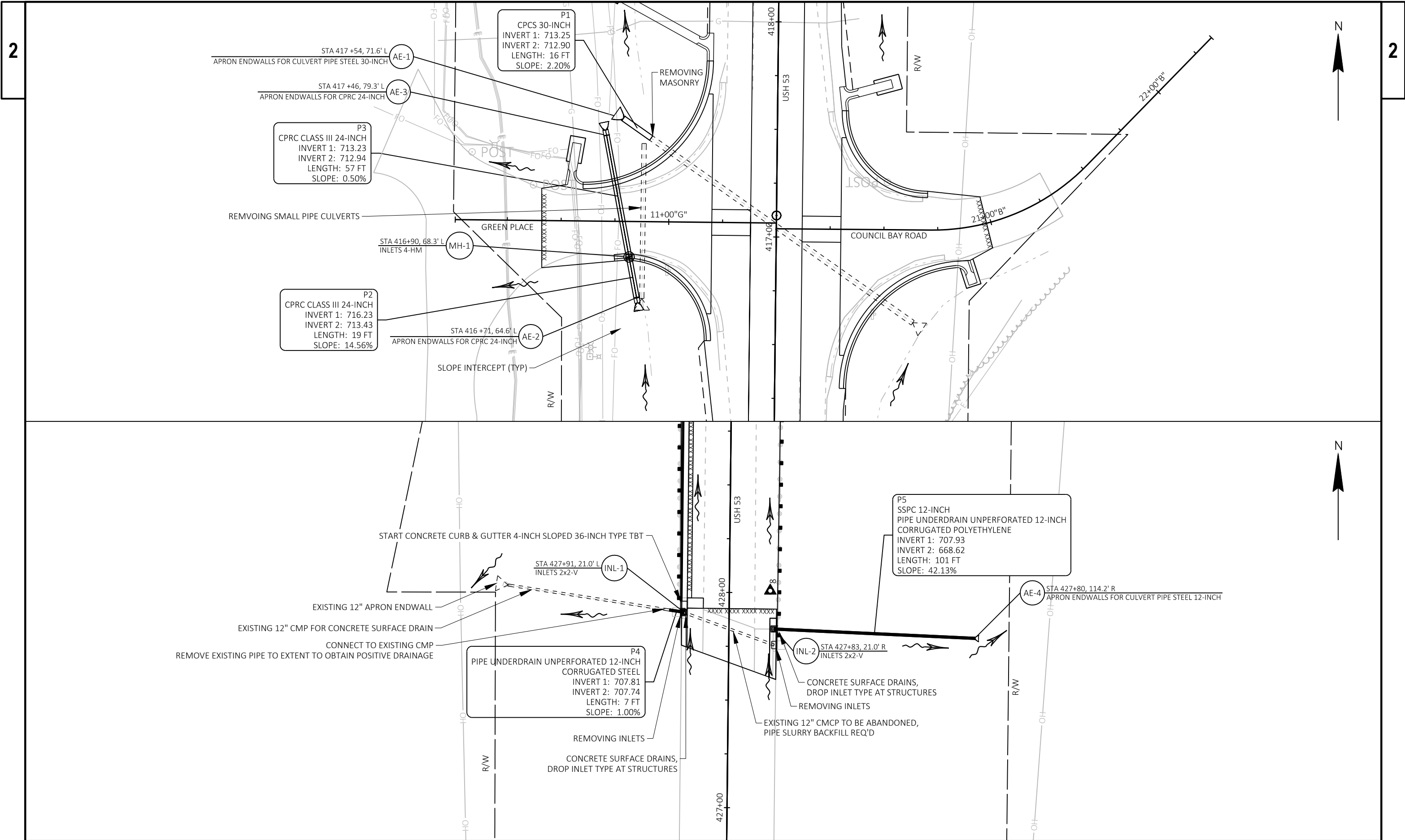


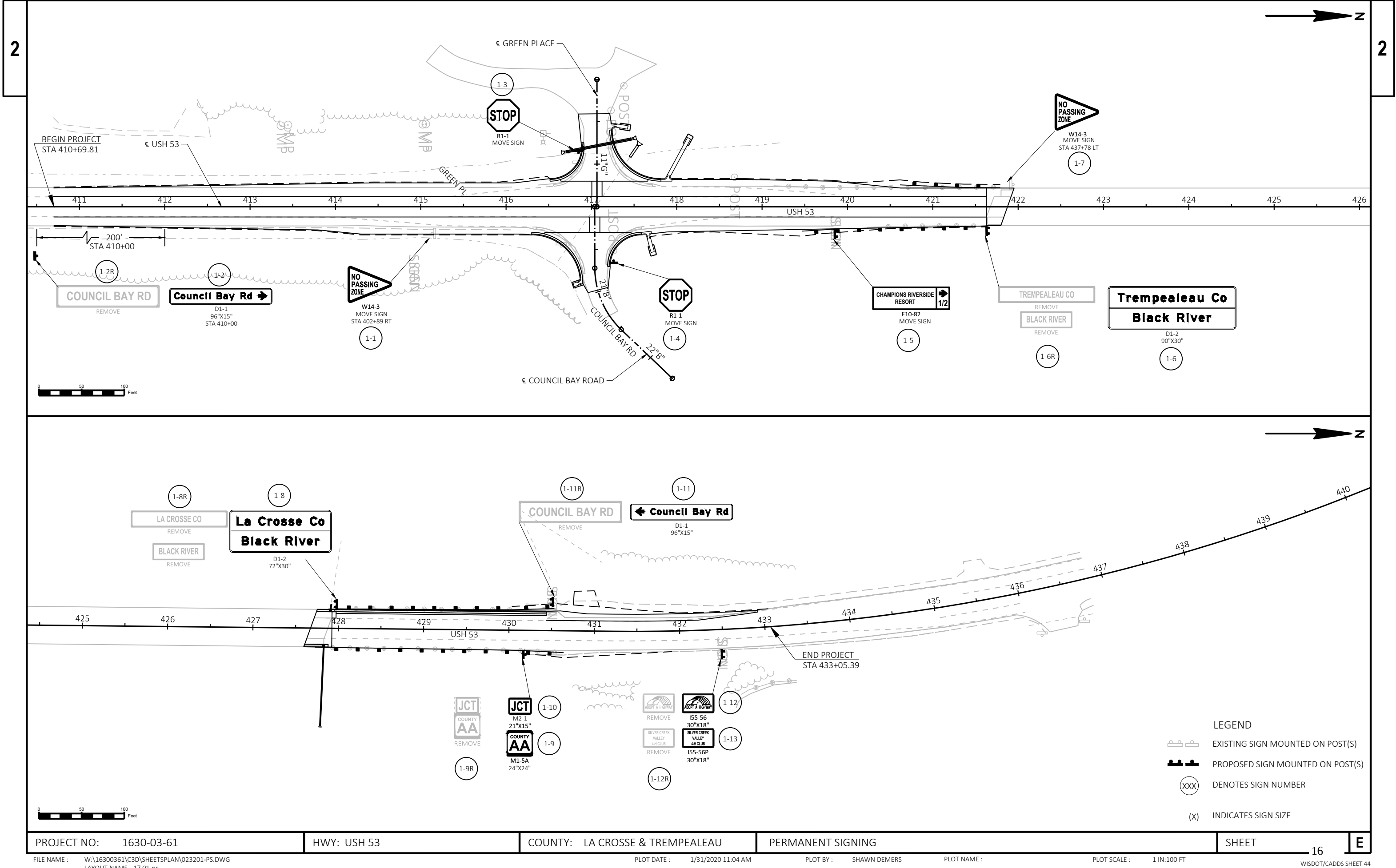


- LEGEND**
- EROSION MAT CLASS II, TYPE C
 - SILT FENCE
 - SLOPE INTERCEPT
 - INLET PROTECTION
 - TEMPORARY DITCH CHECK
 - CULVERT PIPE CHECK
 - SURFACE WATER FLOW
 - EROSION BALE
 - RIPRAP
 - TEMPORARY SEDIMENT TRAP



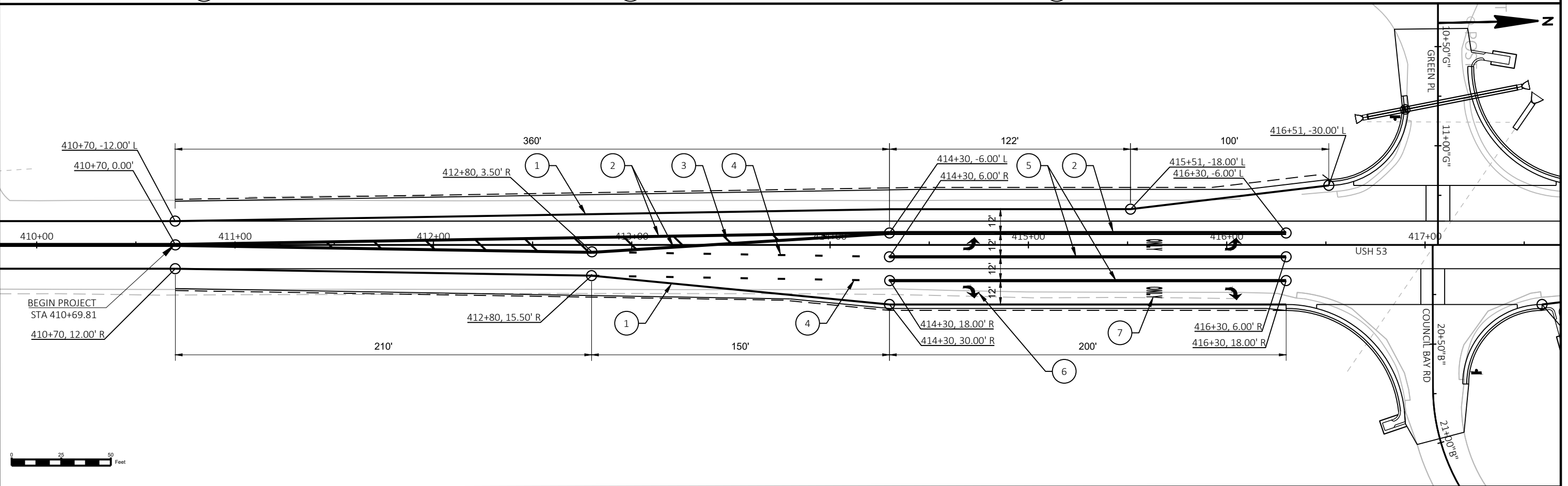


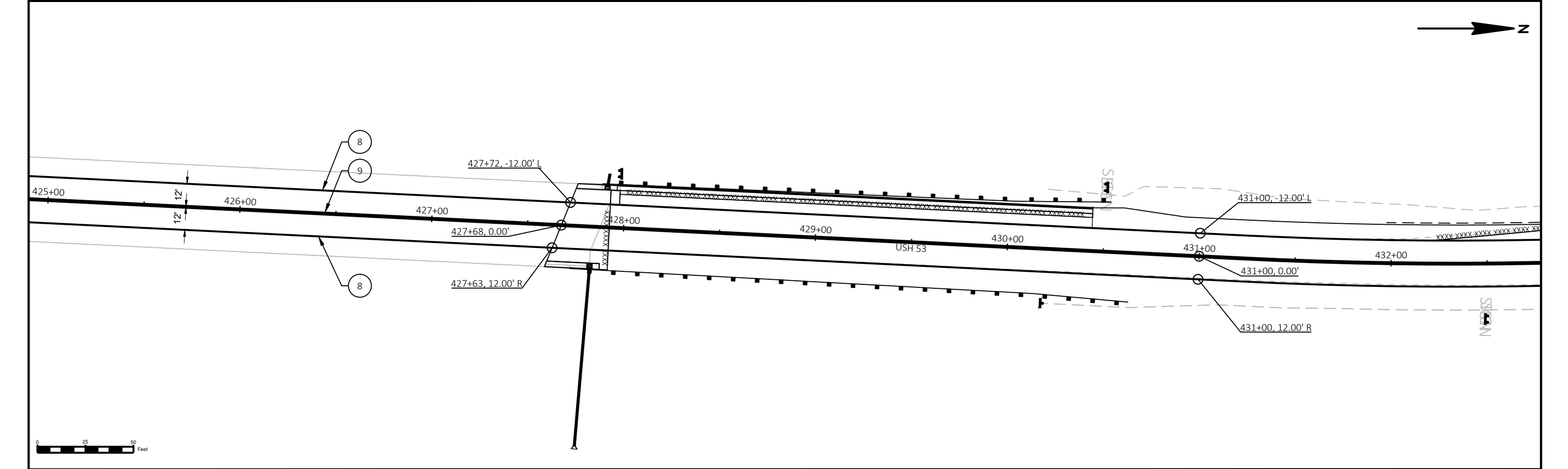
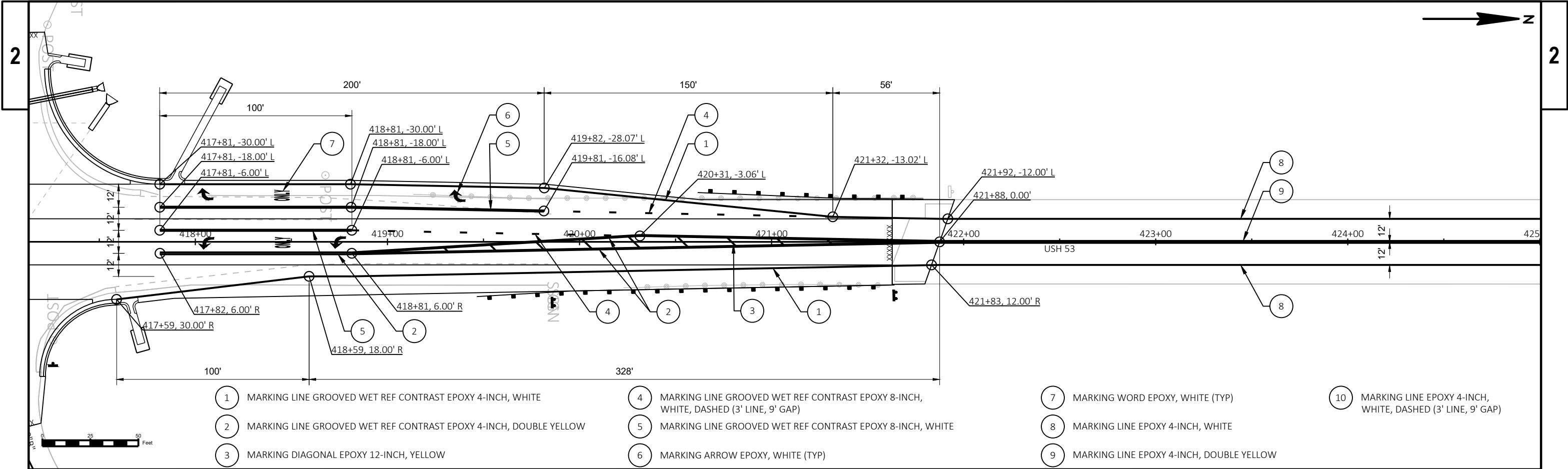


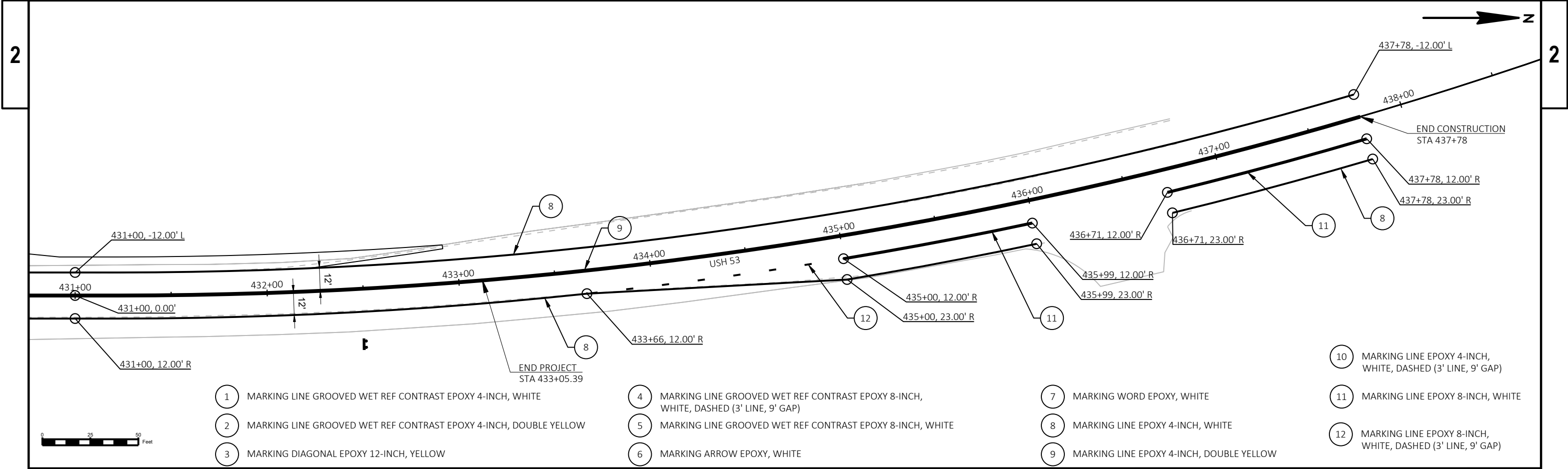


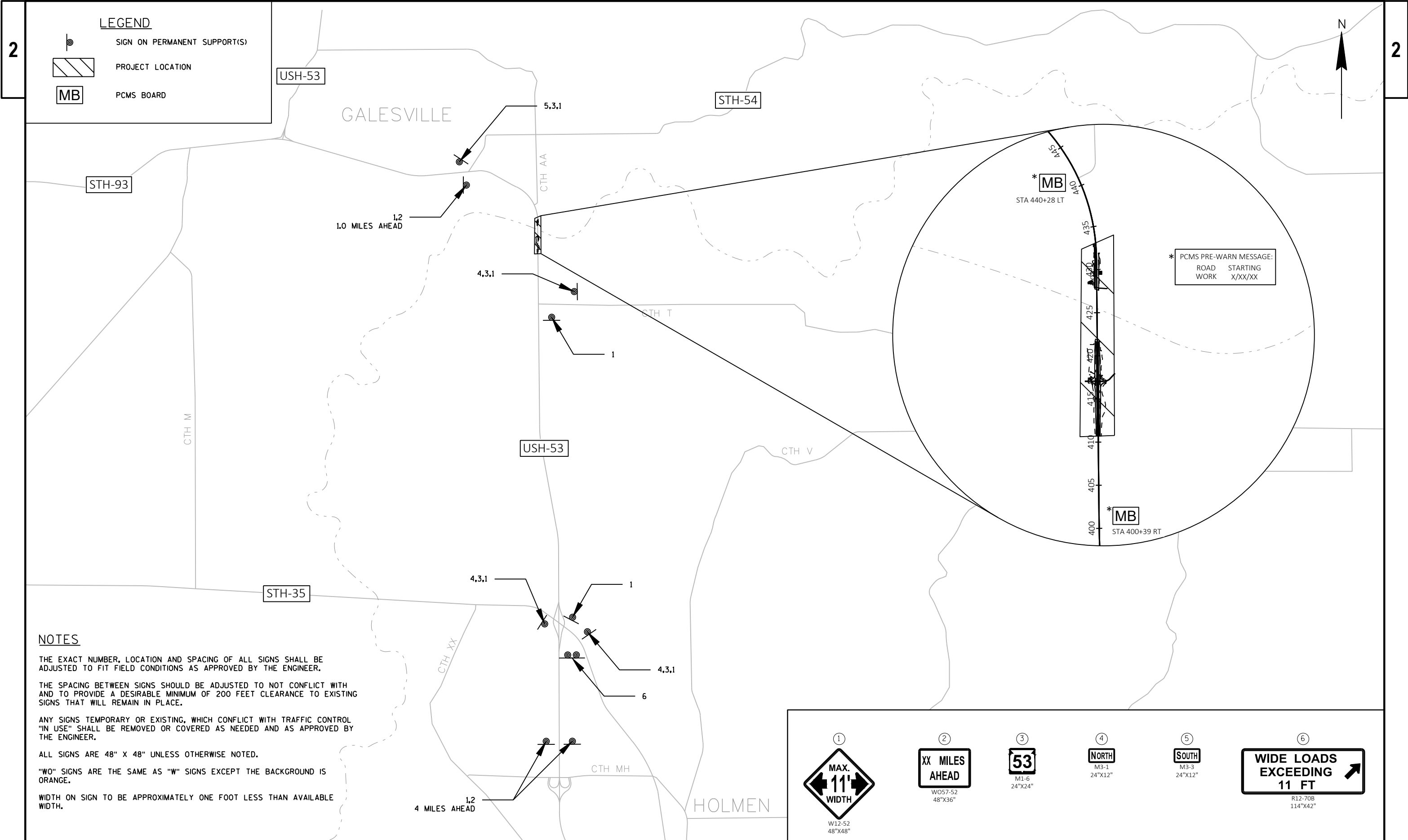
2

2









LEGEND

- SIGN ON PERMANENT SUPPORT(S)
- PROJECT LOCATION
- PCMS BOARD

NOTES

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

THE SPACING BETWEEN 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.

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

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

WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

* PCMS PRE-WARN MESSAGE:
ROAD WORK X/XX/XX

①

W12-52
48"X48"

②

WO57-52
48"X36"

③

M1-6
24"X24"

④

NORTH
M3-1
24"X12"

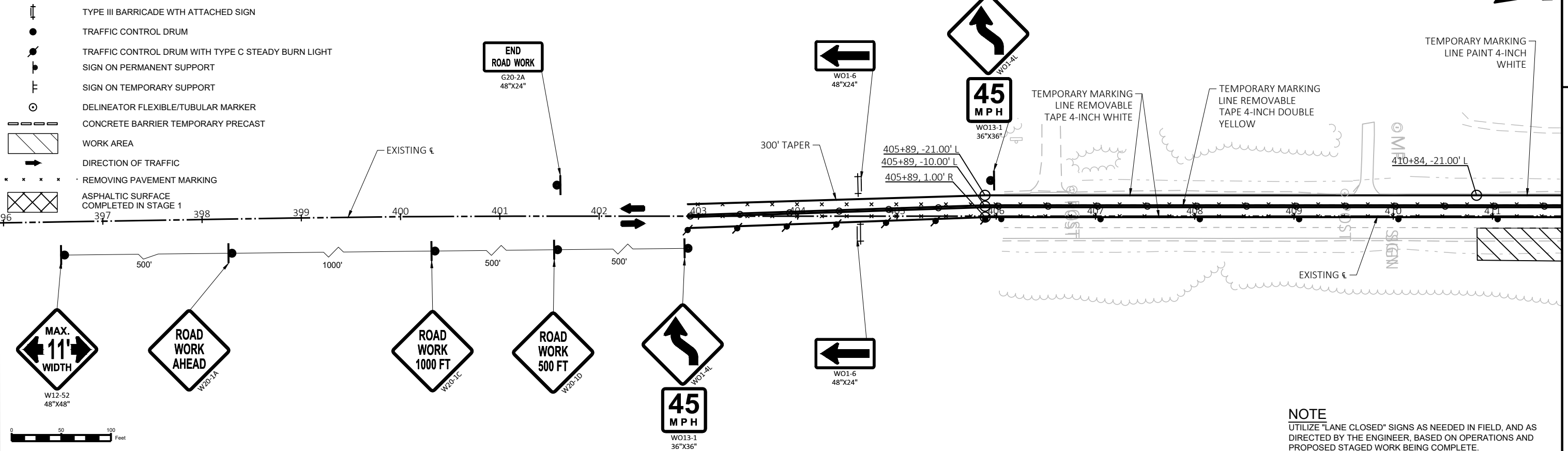
⑤

SOUTH
M3-3
24"X12"

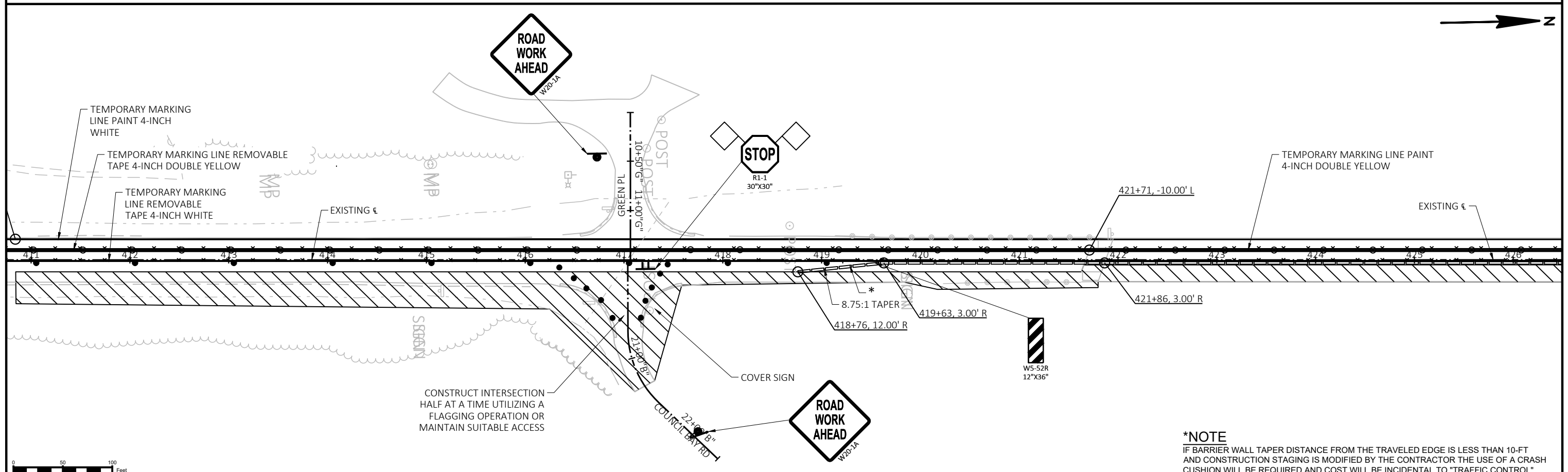
⑥

R12-70B
114"X42"

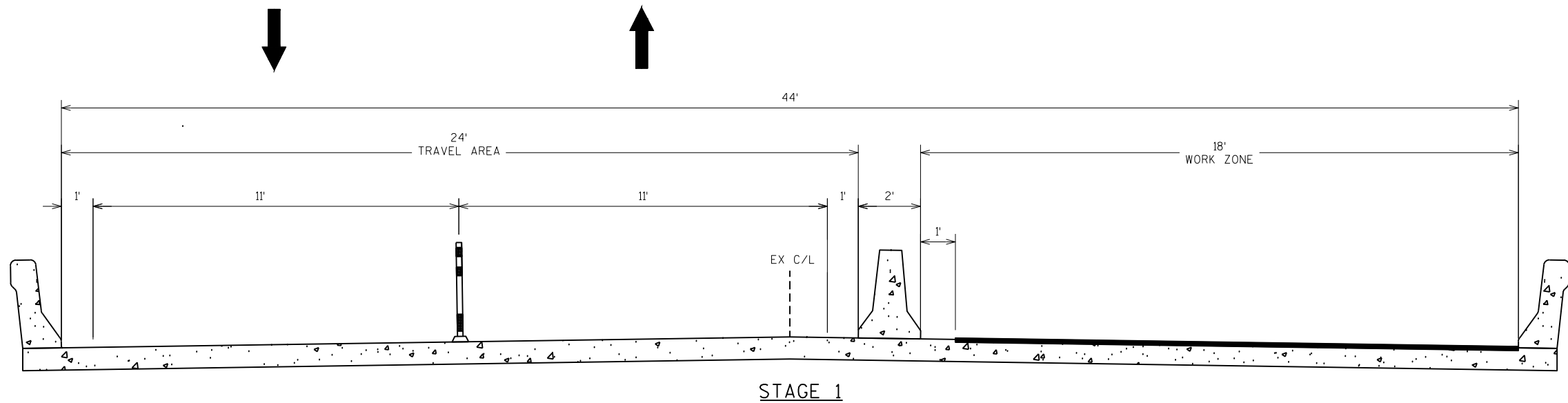
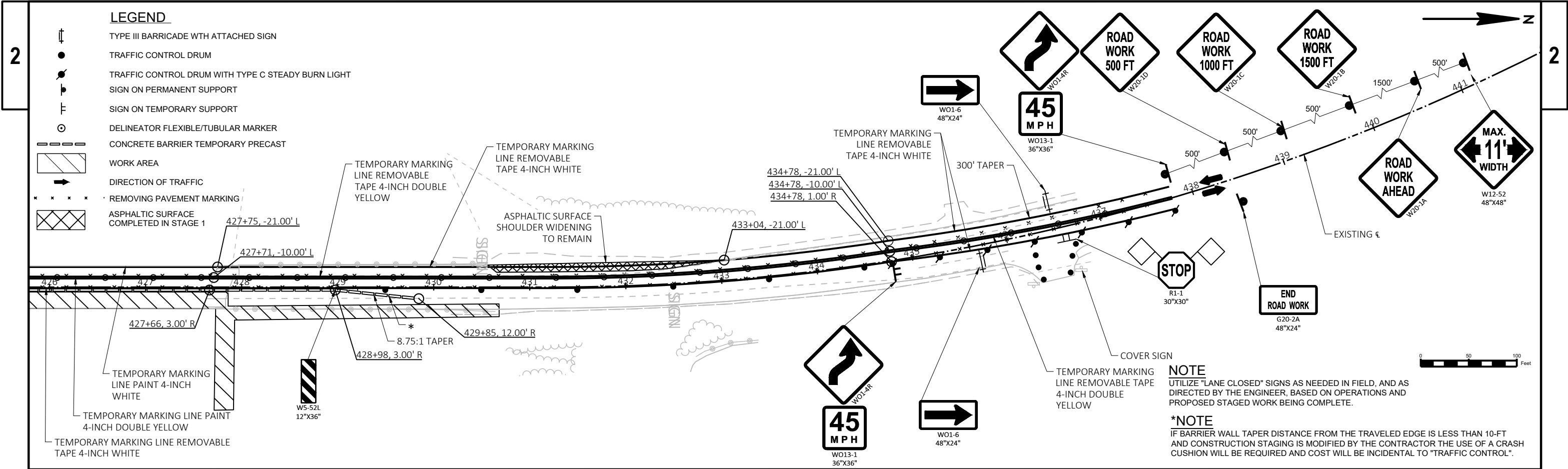
ASPHALTIC SURFACE
COMPLETED IN STAGE 1



NOTE
UTILIZE "LANE CLOSED" SIGNS AS NEEDED IN FIELD, AND AS DIRECTED BY THE ENGINEER, BASED ON OPERATIONS AND PROPOSED STAGED WORK BEING COMPLETE.



***NOTE**
IF BARRIER WALL TAPER DISTANCE FROM THE TRAVELED EDGE IS LESS THAN 10-FT
AND CONSTRUCTION STAGING IS MODIFIED BY THE CONTRACTOR THE USE OF A CRASH
CUSHION WILL BE REQUIRED AND COST WILL BE INCIDENTAL TO "TRAFFIC CONTROL".



NOT TO SCALE

STAGE 1
A 3:1 "CONCRETE MASONRY OVERLAY DECKS" WEDGE WILL BE REQUIRED TO BE PLACED ON THE WEST SIDE OF THE WORK ZONE LIMITS TO BE UTILIZED AS SAFETY EDGE FOR UPCOMING TRAFFIC CONTROL STAGES.

PROJECT NO: 1630-03-61

HWY: USH 53

COUNTY: LA CROSSE & TREMPLEAU

TRAFFIC CONTROL STAGE 1

SHEET

22

E

FILE NAME : W:\16300361\C3D\SHEETPLAN\025100-TC.DWG
LAYOUT NAME - 22 02-TC STAGE 1

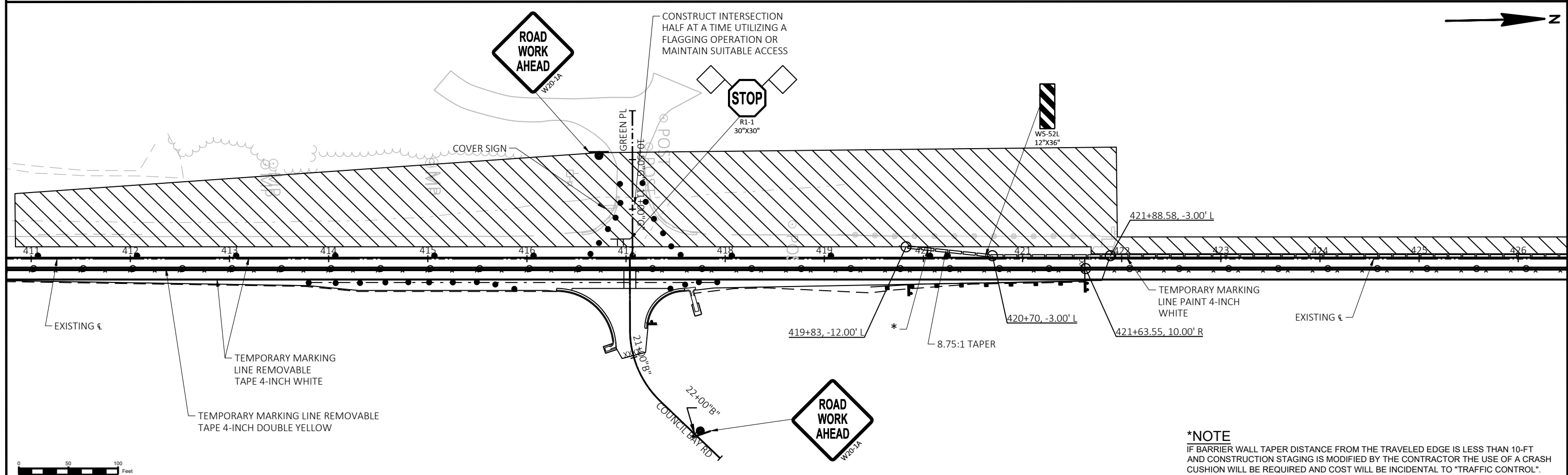
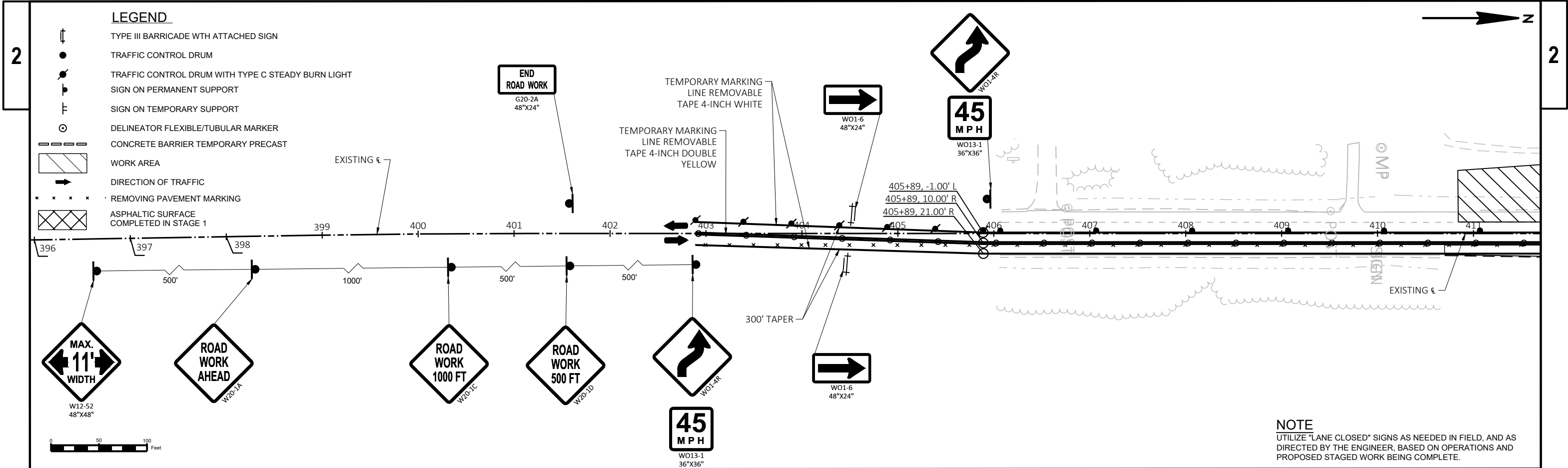
PLOT DATE : 1/31/2020 11:05 AM

PLOT BY : SHAWN DEMERS

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADD5 SHEET 44



TYPE III BARRICADE WITH ATTACHED SIGN

TRAFFIC CONTROL DRUM

TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT

SIGN ON PERMANENT SUPPORT

SIGN ON TEMPORARY SUPPORT

DELINEATOR FLEXIBLE/TUBULAR MARKER

CONCRETE BARRIER TEMPORARY PRECAST

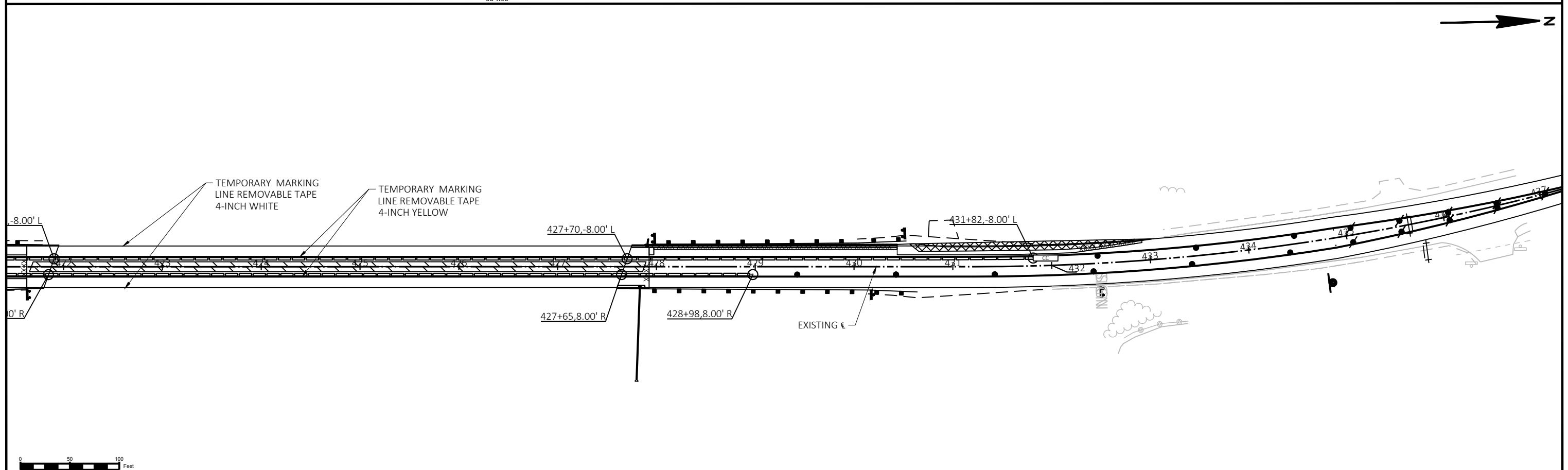
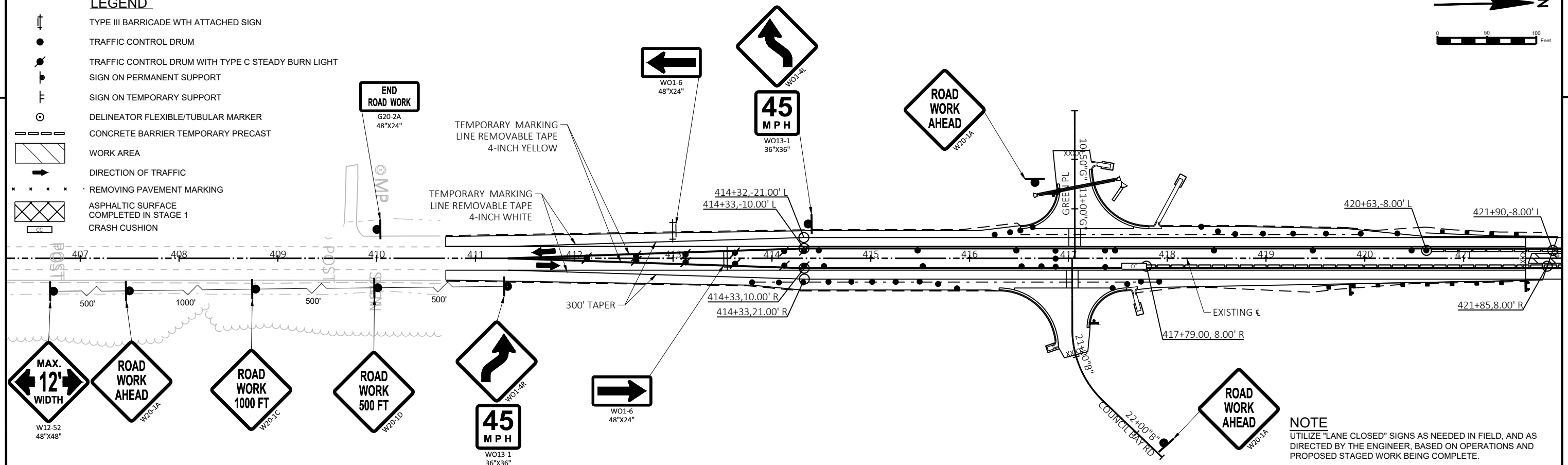
WORK AREA

DIRECTION OF TRAFFIC

REMOVING PAVEMENT MARKING

ASPHALTIC SURFACE
COMPLETED IN STAGE 1

CRASH CUSHION



W12-52
48"X48"

WISDOT/CADDS SHEET 44



PI STA = 400+00.73
Y = 220,129.36
X = 434,703.37
DELTA = 0°57'16"
D = 0°25'12"
T = 113.63'
L = 227.25'
R = 13640.61'
PC STA = 398+87.10
Y = 220,015.73
X = 434,704.04
PT STA = 401+14.35
Y = 220,242.98
X = 434,704.59
BK = N00°20'16.9"W
AH = N00°36'59.5"E

STA 417+03.8
STA 20+00.00
Y=221,832.36
X=434,721.70

STA 417+03.82 R/L 53-CL =
STA 20+00.00 "B" R/L COUNCIL BAY RD
Y=221,832.36
X=434,721.70

PI STA = 21+14.59
Y = 221,831.41
X = 434,836.28
DELTA = 46°11'56"
D = 57°17'45"
T = 42.65'
L = 80.63'
R = 100.00'
PC STA = 20+71.94
Y = 221,831.76
X = 434,793.63
PT STA = 21+52.57
Y = 221,861.94
X = 434,866.06
BK = S89°31'29.3"E
AH = N44°16'34.3"E

STA 417+06.49 R/L 53-CL =
STA 11+50.00 "G" R/L GREEN PL
Y=221,835.02
X=434,721.72

PROJECT NO: 1630-03-61

HWY: USH 53

COUNTY: LA CROSSE & TREMPLEAU

ALIGNMENT DATA

SHEET 27

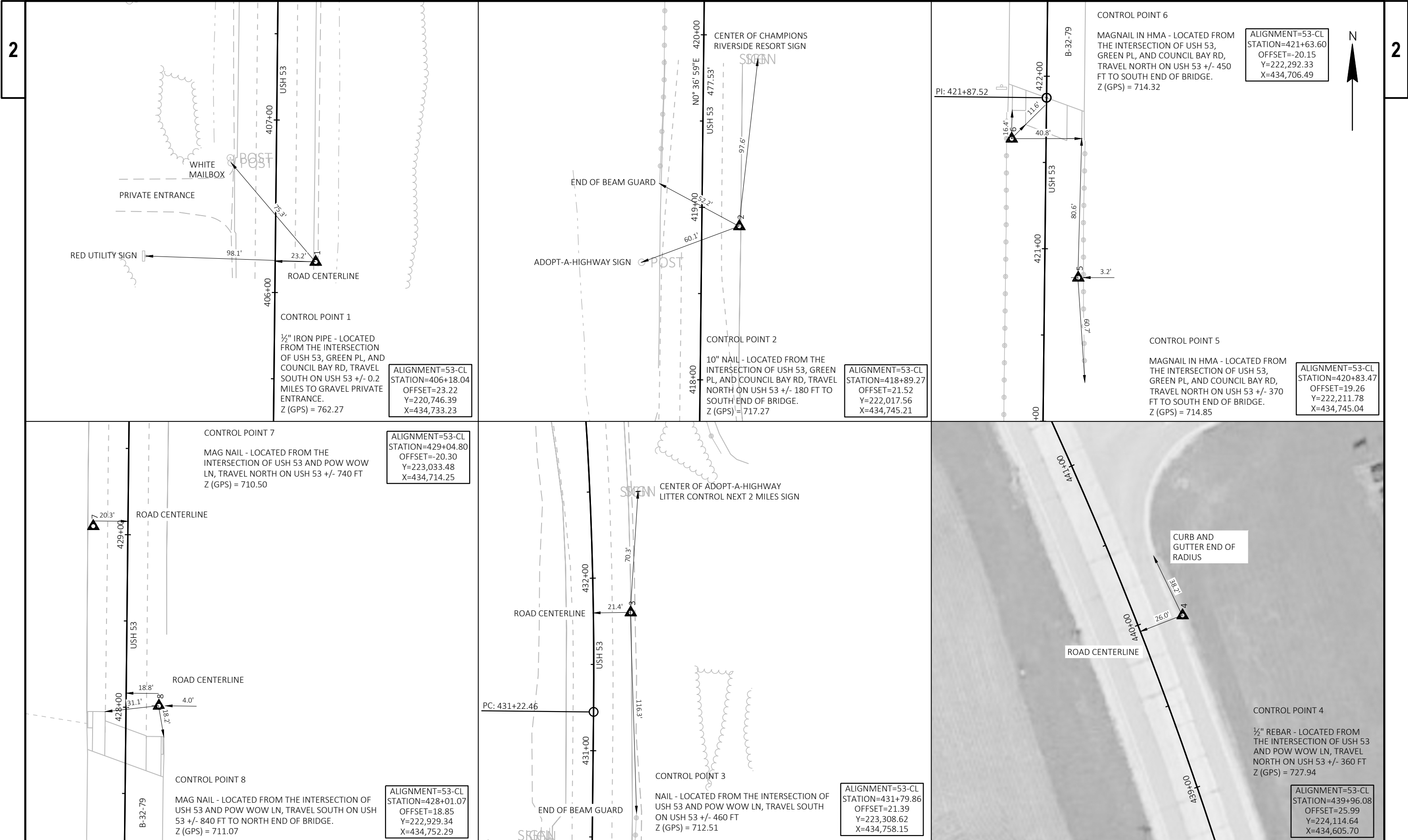
E



PI STA = 445+34.67
Y = 224,663.05
X = 434,751.93
DELTA = 63°16'56"
D = 2°30'00"
T = 1412.21'
L = 2531.29'
R = 2291.83'
PC STA = 431+22.46
Y = 223,250.91
X = 434,736.87
PT STA = 456+53.75
Y = 225,311.39
X = 433,497.34
BK = N00°36'39.6"E
AH = N62°40'16.4"W

PI STA = 445+34.67
Y = 224,663.05
X = 434,751.93
DELTA = 63°16'56"
D = 2°30'00"
T = 1412.21'
L = 2531.29'
R = 2291.83'
PC STA = 431+22.46
Y = 223,250.91
X = 434,736.87
PT STA = 456+53.75
Y = 225,311.39
X = 433,497.34
BK = N00°36'39.6"E
AH = N62°40'16.4"W

EP: 459+46.90
Y = 225,445.970
X = 433,236.909



Estimate Of Quantities

1630-03-61					
Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0004	203.0210.S	Abatement of Asbestos Containing Material (structure) 01. B-32-79	LS	1.000	1.000
0006	204.0100	Removing Concrete Pavement	SY	225.000	225.000
0008	204.0110	Removing Asphaltic Surface	SY	265.000	265.000
0010	204.0150	Removing Curb & Gutter	LF	291.000	291.000
0012	204.0165	Removing Guardrail	LF	955.000	955.000
0014	204.0185	Removing Masonry	CY	1.000	1.000
0016	204.0220	Removing Inlets	EACH	2.000	2.000
0018	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	7.000	7.000
0020	204.9060.S	Removing (item description) 01. STA. 424+76.51, Wingwall	EACH	1.000	1.000
0022	205.0100	Excavation Common	CY	3,061.000	3,061.000
0024	206.1000	Excavation for Structures Bridges (structure) 01. B-32-79	LS	1.000	1.000
0026	208.0100	Borrow	CY	200.000	200.000
0028	210.1500	Backfill Structure Type A	TON	91.000	91.000
0030	213.0100	Finishing Roadway (project) 01. 1630-03-61	EACH	1.000	1.000
0032	305.0110	Base Aggregate Dense 3/4-Inch	TON	493.000	493.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,230.000	2,230.000
0036	415.0095	Concrete Pavement 9 1/2-Inch	SY	3,683.000	3,683.000
0038	415.0210	Concrete Pavement Gaps	EACH	2.000	2.000
0040	415.0410	Concrete Pavement Approach Slab	SY	228.000	228.000
0042	415.1095	Concrete Pavement HES 9 1/2-Inch	SY	48.000	48.000
0044	415.4100	Concrete Pavement Joint Filling	SY	3,731.000	3,731.000
0046	415.5110.S	Concrete Pavement Joint Layout	LS	1.000	1.000
0048	416.0610	Drilled Tie Bars	EACH	899.000	899.000
0050	416.0620	Drilled Dowel Bars	EACH	40.000	40.000
0052	416.1010	Concrete Surface Drains	CY	3.000	3.000
0054	465.0105	Asphaltic Surface	TON	144.000	144.000
0056	465.0315	Asphaltic Flumes	SY	53.000	53.000
0058	502.0100	Concrete Masonry Bridges	CY	8.000	8.000
0060	502.3101	Expansion Device 01. B-31-79	LF	100.000	100.000
0062	502.3215.S	Protective Surface Treatment Reseal	SY	490.000	490.000
0064	502.4204	Adhesive Anchors No. 4 Bar	EACH	5.000	5.000
0066	502.4205	Adhesive Anchors No. 5 Bar	EACH	134.000	134.000
0068	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	4,445.000	4,445.000
0070	505.0904	Bar Couplers No. 4	EACH	8.000	8.000
0072	505.0905	Bar Couplers No. 5	EACH	12.000	12.000
0074	505.0906	Bar Couplers No. 6	EACH	32.000	32.000

Estimate Of Quantities

1630-03-61					
Line	Item	Item Description	Unit	Total	Qty
0076	505.0908	Bar Couplers No. 8	EACH	20.000	20.000
0078	506.6000	Bearing Assemblies Expansion (structure) 01. B-32-79	EACH	10.000	10.000
0080	506.7050.S	Removing Bearings (structure) 01. B-32-79	EACH	10.000	10.000
0082	509.0301	Preparation Decks Type 1	SY	167.000	167.000
0084	509.0302	Preparation Decks Type 2	SY	118.000	118.000
0086	509.0500	Cleaning Decks	SY	2,836.000	2,836.000
0088	509.1000	Joint Repair	SY	43.000	43.000
0090	509.1500	Concrete Surface Repair	SF	48.000	48.000
0092	509.2000	Full-Depth Deck Repair	SY	13.000	13.000
0094	509.2500	Concrete Masonry Overlay Decks	CY	190.000	190.000
0096	509.5100.S	Polymer Overlay	SY	2,836.000	2,836.000
0098	509.9020.S	Epoxy Crack Sealing	LF	159.000	159.000
0100	514.0900	Adjusting Floor Drains	EACH	4.000	4.000
0102	516.0500	Rubberized Membrane Waterproofing	SY	2.000	2.000
0104	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	1.000	1.000
0106	521.1030	Apron Endwalls for Culvert Pipe Steel 30-Inch	EACH	1.000	1.000
0108	521.3130	Culvert Pipe Corrugated Steel 30-Inch	LF	16.000	16.000
0110	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0112	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	301.000	301.000
0114	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	249.000	249.000
0116	603.8000	Concrete Barrier Temporary Precast Delivered	LF	2,236.000	2,236.000
0118	603.8125	Concrete Barrier Temporary Precast Installed	LF	4,472.000	4,472.000
0120	606.0200	Riprap Medium	CY	27.000	27.000
0122	608.0324	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	76.000	76.000
0124	611.0627	Inlet Covers Type HM	EACH	1.000	1.000
0126	611.0654	Inlet Covers Type V	EACH	2.000	2.000
0128	611.2004	Manholes 4-FT Diameter	EACH	1.000	1.000
0130	611.3220	Inlets 2x2-FT	EACH	2.000	2.000
0132	612.0212	Pipe Underdrain Unperforated 12-Inch	LF	108.000	108.000
0134	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	1.000	1.000
0136	614.0397	Guardrail Mow Strip Emulsified Asphalt	SY	333.000	333.000
0138	614.0905	Crash Cushions Temporary	EACH	2.000	2.000
0140	614.2300	MGS Guardrail 3	LF	525.000	525.000
0142	614.2500	MGS Thrie Beam Transition	LF	158.000	158.000
0144	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0146	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1630-03-61	EACH	1.000	1.000
0148	619.1000	Mobilization	EACH	1.000	1.000

Estimate Of Quantities

1630-03-61					
Line	Item	Item Description	Unit	Total	Qty
0150	624.0100	Water	MGAL	41.000	41.000
0152	625.0500	Salvaged Topsoil	SY	9,260.000	9,260.000
0154	628.1104	Erosion Bales	EACH	36.000	36.000
0156	628.1504	Silt Fence	LF	2,063.000	2,063.000
0158	628.1520	Silt Fence Maintenance	LF	2,063.000	2,063.000
0160	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0162	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000
0164	628.2027	Erosion Mat Class II Type C	SY	12,800.000	12,800.000
0166	628.7015	Inlet Protection Type C	EACH	3.000	3.000
0168	628.7504	Temporary Ditch Checks	LF	218.000	218.000
0170	628.7555	Culvert Pipe Checks	EACH	12.000	12.000
0172	628.7570	Rock Bags	EACH	170.000	170.000
0174	629.0210	Fertilizer Type B	CWT	6.000	6.000
0176	630.0120	Seeding Mixture No. 20	LB	442.000	442.000
0178	630.0200	Seeding Temporary	LB	120.000	120.000
0180	630.0500	Seed Water	MGAL	171.000	171.000
0182	631.0300	Sod Water	MGAL	3.600	3.600
0184	631.1000	Sod Lawn	SY	22.000	22.000
0186	633.5200	Markers Culvert End	EACH	5.000	5.000
0188	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	11.000	11.000
0190	637.2210	Signs Type II Reflective H	SF	67.450	67.450
0192	638.2102	Moving Signs Type II	EACH	5.000	5.000
0194	638.2602	Removing Signs Type II	EACH	6.000	6.000
0196	638.3000	Removing Small Sign Supports	EACH	11.000	11.000
0198	642.5001	Field Office Type B	EACH	1.000	1.000
0200	643.0300	Traffic Control Drums	DAY	9,132.000	9,132.000
0202	643.0420	Traffic Control Barricades Type III	DAY	984.000	984.000
0204	643.0500	Traffic Control Flexible Tubular Marker Posts	EACH	146.000	146.000
0206	643.0600	Traffic Control Flexible Tubular Marker Bases	EACH	146.000	146.000
0208	643.0715	Traffic Control Warning Lights Type C	DAY	2,090.000	2,090.000
0210	643.0900	Traffic Control Signs	DAY	7,012.000	7,012.000
0212	643.0920	Traffic Control Covering Signs Type II	EACH	3.000	3.000
0214	643.1050	Traffic Control Signs PCMS	DAY	62.000	62.000
0216	643.5000	Traffic Control	EACH	1.000	1.000
0218	645.0111	Geotextile Type DF Schedule A	SY	18.000	18.000
0220	645.0120	Geotextile Type HR	SY	86.000	86.000
0222	646.1020	Marking Line Epoxy 4-Inch	LF	6,291.000	6,291.000
0224	646.1545	Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch	LF	8,370.000	8,370.000
0226	646.3020	Marking Line Epoxy 8-Inch	LF	243.000	243.000
0228	646.3545	Marking Line Grooved Wet Ref Contrast Epoxy 8-Inch	LF	856.000	856.000

Estimate Of Quantities

1630-03-61					
Line	Item	Item Description	Unit	Total	Qty
0230	646.5020	Marking Arrow Epoxy	EACH	8.000	8.000
0232	646.5120	Marking Word Epoxy	EACH	4.000	4.000
0234	646.7120	Marking Diagonal Epoxy 12-Inch	LF	125.000	125.000
0236	646.9000	Marking Removal Line 4-Inch	LF	9,787.000	9,787.000
0238	649.0105	Temporary Marking Line Paint 4-Inch	LF	5,803.000	5,803.000
0240	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	35,026.000	35,026.000
0242	650.4000	Construction Staking Storm Sewer	EACH	7.000	7.000
0244	650.4500	Construction Staking Subgrade	LF	1,242.000	1,242.000
0246	650.5000	Construction Staking Base	LF	147.000	147.000
0248	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	550.000	550.000
0250	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000
0252	650.7000	Construction Staking Concrete Pavement	LF	1,097.000	1,097.000
0254	650.9910	Construction Staking Supplemental Control (project) 01. 1630-03-61	LS	1.000	1.000
0256	650.9920	Construction Staking Slope Stakes	LF	1,654.000	1,654.000
0258	690.0150	Sawing Asphalt	LF	414.000	414.000
0260	690.0250	Sawing Concrete	LF	196.000	196.000
0262	715.0415	Incentive Strength Concrete Pavement	DOL	1,120.000	1,120.000
0264	715.0710	Optimized Aggregate Gradation Incentive	DOL	4,770.000	4,770.000
0266	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	600.000	600.000
0268	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	900.000	900.000
0270	SPV.0035	Special 01. Pipe Slurry Backfill	CY	2.000	2.000
0272	SPV.0060	Special 01. Embedded Galvanic Anodes	EACH	46.000	46.000
0274	SPV.0060	Special 02. Remove Debris and Regrade	EACH	3.000	3.000
0276	SPV.0060	Special 03. Temporary Sediment Traps	EACH	4.000	4.000

3

REMOVING CONCRETE PAVEMENT

204.0100					
CAT	STATION	TO	STATION	LOCATION	REMARKS
0010	421+62	-	421+87	BRIDGE APPROACH	
0010	427+67	-	427+92	BRIDGE APPROACH	
PROJECT TOTALS =					225

REMOVING ASPHALTIC SURFACE

204.0110					
CAT	STATION	TO	STATION	LOCATION	REMARKS
0010	427+97		430+44	LT SHOULDER	
0010	430+44	-	432+93	LT SHOULDER	
PROJECT TOTALS =					265

3

REMOVING SMALL PIPE CULVERTS

203.0100					
CAT	STATION	LOCATION	EACH	REMARKS	
0030	417+05	LT	1	PIPE CROSSES S TO N OF COUNCIL BAY ROAD	
PROJECT TOTALS =			1		

REMOVING GUARDRAIL

204.0165					
CATEGORY	STATION	TO	STATION	LOCATION	REMARKS
0010	419+13	-	421+83	24' LT	
0010	420+22	-	421+62	24' RT	
0010	427+96	-	430+55	24' LT	
0010	427+73	-	430+65	24' RT	
PROJECT TOTALS =					955

USH 53 EARTHWORK SUMMARY

STATION TO STATION	LOCATION	COMMON EXCAVATION (1)	UNEXPANDED FILL	EXPANDED FILL (2)	MASS ORDINATE +/- (3)	WASTE	BORROW (ITEM 208.0100)	COMMENT:
		CUT		FACTOR 1.30				
410+70 - 421+65	USH 53 SOUTH OF BRIDGE & SIDE ROADS	2915	1627	2115	+800	800	0	CAT 0030
428+48	WASHOUT AREA, LT	0		0	0	0	200	CAT 0010
427+97 - 433+05	USH 53 NORTH OF BRIDGE	146	74	96	+50	50	0	CAT 0010

		205.0100
0010 PROJECT TOTALS =		146
0030 PROJECT TOTALS =		2915
PROJECT TOTALS =		3061

		208.0100
		200
		0
		200

- 1) COMMON EXCAVATION IS THE CUT. ITEM NUMBER 205.0100.
- 2) EXPANDED FILL FACTOR = 1.30; EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
- 3) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL ON THE PROJECT.
- 4) ALL QUANTITIES SHOWN IN CY.

3

BASE AGGREGATE DENSE 3/4-INCH

CAT	STATION	TO	STATION	LOCATION	305.0110 TON	REMARKS
0030	410+70	-	421+87	LT/RT	420	
0010	427+67	-	437+78	LT/RT	55	
0010	430+88	-	-	LT	18	FOR AGGREGATE FE
0010 PROJECT TOTALS =					73	
0030 PROJECT TOTALS =					420	
PROJECT TOTALS =					493	

BASE AGGREGATE DENSE 1 1/4-INCH

CAT	STATION	TO	STATION	LOCATION	305.0120 TON	REMARKS
0010	427+67	-	437+78	LT/RT	238	
0030	410+70	-	421+87	LT/RT	1992	
0010 PROJECT TOTALS =					238	
0030 PROJECT TOTALS =					1992	
PROJECT TOTALS =					2230	

3

CONCRETE PAVEMENT SUMMARY

					CONCRETE PAVEMENT 9 1/2-INCH 415.0095 SY	CONCRETE PAVEMENT GAPS 415.0210 EACH	CONCRETE PAVEMENT HES 9 1/2-INCH 415.1095 SY	CONCRETE PAVEMENT JOINT FILLING 415.4100 SY	REMARKS
0030	410+70	-	416+98	RT	1110	-	-	1110	
0030	417+10	-	421+65	RT	742	-	-	742	
0030	410+70	-	417+00	LT	1020	-	-	1020	
0030	417+12	-	421+65	LT	811	-	-	811	
0030	416+98	-	417+10	RT	-	1	24	24	18'x12' SLAB
0030	417+00	-	417+12	LT	-	1	24	24	18'x12' SLAB
PROJECT TOTALS =					3683	2	48	3731	

CONCRETE PAVEMENT APPROACH SLAB

CAT	STATION	TO	STATION	LOCATION	415.0410 SY	REMARKS
0010	421+63	-	421+87	SOUTH SLAB	121	
0010	427+68	-	427+92	NORTH SLAB	107	
PROJECT TOTALS =					228	

CONCRETE SURFACE DRAINS

CAT	STATION	TO	STATION	LOCATION	416.1010 CY	REMARKS
0010	427+61	-	427+88	RT	2	
0010	427+74	-	427+96	LT	1	
PROJECT TOTALS =					3	

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DRILLED TIE BARS

416.0610						REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	EACH	
0030	410+70	-	421+63	12' LT	438	SPACED 30" C-C
0030	410+70	-	421+63	12' RT	438	SPACED 30" C-C
0010	427+60	-	427+73	22' RT	11	SPACED 12" C-C
0010	427+74	-	427+88	22' LT	12	SPACED 12" C-C
0010 PROJECT TOTALS =					23	
0030 PROJECT TOTALS =					876	
PROJECT TOTALS =					899	

ASPHALTIC FLUMES AND SOD

465.0315						REMARKS
CAT	STATION	LOCATION	SY	MGAL	SY	
0030	416+80	90' RT	6	0.9	4	
0030	417+32	94' LT	9	0.7	6	
0030	417+70	50' RT	12	1.3	6	
0030	418+15	77' LT	26	0.7	6	
PROJECT TOTALS =			53	3.6	22	

CONCRETE BARRIER TEMPORARY PRECAST DELIVERED

603.8000						REMARKS
CAT	STATION	TO	STATION	LOCATION	LF	
0010	418+76	-	429+85	STAGE 1	1118	
0010	419+83	-	430+95	STAGE 2	-	
0010	417+79	-	431+82	STAGE 3	1118	
PROJECT TOTALS =					2236	

DRILLED DOWEL BARS

416.0620					REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	
0010	421+63	-	427+92	LT/RT	20
0010	421+63	-	427+92	LT/RT	20
PROJECT TOTALS =					40

ASPHALTIC PAVING ITEMS

465.0105						REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	TON	
0030	10+41"G"	-	11+20"G"	RT/LT	46	
0030	20+30"B"	-	20+98"B"	RT/LT	38	
0010	427+90	-	430+44	LT 18'	13	
0010	430+44	-	432+93	LT 18'	47	
0010 PROJECT TOTALS =					60	
0030 PROJECT TOTALS =					84	
PROJECT TOTALS =					144	

CONCRETE BARRIER TEMPORARY PRECAST INSTALLED

603.8125						REMARKS
CAT	STATION	TO	STATION	LOCATION	LF	
0010	418+76	-	429+85	STAGE 1	1118	
0010	419+83	-	430+95	STAGE 2	1118	
0010	417+79	-	431+82	STAGE 3	2236	
PROJECT TOTALS =					4472	

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CULVERT SUMMARY

CAT	FROM STRUCTURE NO.	TO STRUCTURE NO.	REMOVING MASONRY 204.0185 CY	APRON ENDWALLS FOR CULVERT PIPE STEEL 30-INCH 521.1030 EACH	CULVERT PIPE CORRUGATED STEEL 30-INCH 521.3130 LF	CONSTRUCTION STAKING PIPE CULVERTS 650.6000 EACH	REMARKS
0030	EX. P1	AE-1	1	1	16	1	P1, PIPE CROSSES FROM SE TO NW OF INTERSECTION
PROJECT TOTALS =			1	1	16	1	

STORM SEWER SUMMARY

CAT	FROM STRUCTURE NO.	TO STRUCTURE NO.	INLET ELEV	OUTLET ELEV	SLOPE %	REMOVING STORM SEWER 12- INCH 204.0245 LF	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH 608.0324 LF	PIPE UNDERDRAIN UNPERFORATED 12-INCH 612.0212 LF	REMARKS
0030	AE-2	MH-1	716.23	713.43	14.56%	-	19	-	P2, 9 JOINT TIES REQ'D
0030	MH-1	AE-3	413.23	712.94	0.50%	-	57	-	P3, 9 JOINT TIES REQ'D
0010	INL-1	EX P4	707.81	707.74	1.00%	7	-	7	P4
0010	INL-2	AE-4	707.93	668.62	42.13%	-	-	101	P5
0010 PROJECT TOTALS =						7	0	108	
0030 PROJECT TOTALS =						0	76	0	
PROJECT TOTALS =						7	76	108	

STRUCTURE SUMMARY

CAT	STRUCTURE NO.	STATION	OFFSET	RIM ELEVATION	REMOVING INLETS 204.0220 EACH	APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH 521.1012 EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24- INCH 522.1024 EACH	INLET COVERS TYPE HM 611.0627 EACH	INLET COVERS TYPE V 611.0654 EACH	INLETS 2X2-FT 611.3220 EACH	MANHOLES 4-FT DIAMETER 611.2004 EACH	CONSTRUCTION STAKING STORM SEWER 650.4000 EACH	REMARKS
0030	AE-2	416+71	64.6' LT	716.23	-	-	1	-	-	-	-	1	
0030	MH-1	416+90	68.3' LT	718.46	-	-	-	1	-	-	1	1	
0030	AE-3	417+46	79.3' LT	712.94	-	-	1	-	-	-	-	1	
0030	AE-1	417+54	71.6' LT	712.90	-	-	-	-	-	-	-	1	
0010	EX-INL-2	427+75	21.0' RT	-	1	-	-	-	-	-	-	-	
0010	AE-4	427+80	114.2' RT	668.62	-	1	-	-	-	-	-	1	
0010	INL-2	427+83	21.0' RT	711.26	-	-	-	-	1	1	-	1	
0010	INL-1	427+91	21.0' LT	711.14	1	-	-	-	1	1	-	1	
0010 PROJECT TOTALS =					2	1	0	0	2	2	0	3	
0030 PROJECT TOTALS =					0	0	2	1	0	0	1	4	
PROJECT TOTALS =					2	1	2	1	2	2	1	7	

CURB & GUTTER SUMMARY									
CATEGORY	STATION	TO	STATION	LOCATION	REMOVING	CONCRETE CURB &	CONCRETE CURB &	CONSTRUCTION	REMARKS
					CURB &	GUTTER 6-INCH	GUTTER 4-INCH	STAKING CURB	
					GUTTER	SLOPED 36-INCH	SLOPED 36-INCH	GUTTER AND CURB &	
					204.0150	TYPE D	TYPE TBT	GUTTER	
					LF	601.0557	601.0588	650.5500	
					LF	LF	LF	LF	
0030	416+51	-	416+89	LT	56	65	-	65	SW QUAD OF INTERSECTION
0030	416+30	-	416+88	RT	83	85	-	85	SE QUAD OF INTERSECTION
0030	417+23	-	417+81	LT	77	91	-	91	NW QUAD OF INTERSECTION
0030	417+21	-	417+59	RT	65	60	-	60	NE QUAD OF INTERSECTION
0010	427+96	-	430+44	LT	10	-	249	249	NW QUAD OF BRIDGE AT BEAM GUARD
0010 PROJECT TOTALS =					10	0	249	249	
0030 PROJECT TOTALS =					281	301	0	301	
PROJECT TOTALS =					291	301	249	550	

GUARDRAIL ITEMS						
CAT	STATION	LOCATION	GUARDRAIL MOW	MGS	MGS THRIE	MGS
			STRIP EMULSIFIED		BEAM	GUARDRAIL
			ASPHALT	GUARDRAIL 3	TRANSITION	TERMINAL EAT
			614.0397			
			SY	LF	LF	EACH
0010	419+46	RT	206	125	39	1
0010	420+86	LT	127	25	39	1
0010	430+53	LT	-	175	39	1
0010	430+64	RT	-	200	39	1
PROJECT TOTALS =			333	525	158	4

CRASH CUSHIONS TEMPORARY				
CAT	STATION	LOCATION	614.0905	REMARKS
			EACH	
0010	417+79	8' RT	1	STAGE 3
0010	431+82	8' LT	1	STAGE 3
PROJECT TOTALS =			2	

RIPRAP AND GEOTEXTILE FABRIC				
CAT	STATION	LOCATION	RIPRAP	GEOTEXTILE
			MEDIUM	TYPE HR
			606.0200	645.0120
			CY	SY
0030	417+62	LT	21	56
0010	427+79	RT	3	15
0010	428+03	LT	3	15
0010 PROJECT TOTALS =			6	30
0030 PROJECT TOTALS =			21	56
PROJECT TOTALS =			27	86

WATER			
CAT	LOCATION	WATER	REMARKS
		624.0100	
		MGAL	
0010	427+67 - 433+05	5	
0030	410+70 - 421+87	36	
0010 PROJECT TOTALS =		5	
0030 PROJECT TOTALS =		36	
PROJECT TOTALS =		41	

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SILT FENCE SUMMARY

CAT	STATION	TO	STATION	LOCATION	SILT FENCE	SILT FENCE	REMARKS
					628.1504	628.1520	
					LF	LF	
0030	416+52	-	416+78	LT	41	41	
0030	417+25	-	417+59	LT	35	35	
0030	420+93	-	422+27	LT	203	203	
0030	417+39	-	417+61	RT	54	54	
0030	418+70	-	422+05	RT	380	380	
0010	427+46	-	428+70	LT	180	180	
0010	428+76	-	430+75	LT	210	210	
0010	431+02	-	432+98	LT	200	200	
0010	427+28	-	427+67	RT	50	50	
0010	427+46	-	428+15	RT	80	80	
0010	427+93	-	430+19	RT	230	230	
0010			UNDISTRIBUTED		250	250	
0030			UNDISTRIBUTED		150	150	
0010 PROJECT TOTALS =					1200	1200	
0030 PROJECT TOTALS =					863	863	
PROJECT TOTALS =					2063	2063	

MARKERS_CULVERT_END

CAT	STATION	LOCATION	633.5200	REMARKS
			EACH	
0030	416+62	RT	1	
0030	416+70	LT	1	
0030	417+46	LT	1	
0010	428+02	LT	1	
0010	427+80	RT	1	
0010 PROJECT TOTALS =			2	
0030 PROJECT TOTALS =			3	
PROJECT TOTALS =			5	

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EROSION CONTROL MOBILIZATIONS SUMMARY

CATEGORY	LOCATION	MOBILIZATIONS	MOBILIZATIONS	REMARKS
		EROSION	EMERGENCY	
		CONTROL	EROSION CONTROL	
		628.1905	628.1910	
		EACH	EACH	
0010	PROJECT 1630-03-01	5	5	
PROJECT TOTALS =		5	5	

INLET PROTECTION TYPE C

CATEGORY	STATION	LOCATION	628.7015	REMARKS
			EACH	
0010	427+91	22' LT	1	STAGE 1
0010	427+91	22' LT	1	STAGE 2
0010	427+83	22' RT	1	STAGE 1
PROJECT TOTALS =			3	

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EROSION CONTROL SUMMARY																
					SALVAGED TOPSOIL 625.0500	ROCK BAGS 628.7570	EROSION BALES 628.1104	EROSION MAT CLASS II TYPE C 628.2027	TEMPORARY DITCH CHECKS 628.7504	CULVERT PIPE CHECKS 628.7555	FERTILIZER TYPE B 629.0210	SEEDING MIXTURE NO. 20 630.0120	SEEDING TEMPORARY 630.0200	SEED WATER 630.0500	TEMPORARY SEDIMENT TRAPS SPV.0060.03	
CAT	STATION	TO	STATION	LOCATION	SY	EACH	EACH	SY	LF	EACH	CWT	LB	LB	MGAL	EACH	REMARKS
0030	411+58	-	-	46.5' LT	-	-	-	-	13	-	-	-	-	-	-	
0030	411+60	-	-	37' RT	-	-	-	-	13	-	-	-	-	-	-	
0030	412+70	-	-	46' LT	-	-	-	-	13	-	-	-	-	-	-	
0030	412+72	-	-	37' RT	-	-	-	-	13	-	-	-	-	-	-	
0030	413+78	-	-	44' LT	-	-	-	-	13	-	-	-	-	-	-	
0030	413+73	-	-	46' RT	-	-	-	-	13	-	-	-	-	-	-	
0030	414+75	-	-	43.5' LT	-	-	-	-	13	-	-	-	-	-	-	
0030	413+73	-	-	46' RT	-	-	-	-	13	-	-	-	-	-	-	
0030	415+72	-	-	53' LT	-	-	-	-	13	-	-	-	-	-	-	
0030	415+73	-	-	46' RT	-	-	-	-	13	-	-	-	-	-	-	
0030	418+28	-	-	80' LT	-	-	-	-	13	-	-	-	-	-	-	
0030	419+24	-	-	79.5' LT	-	-	-	-	13	-	-	-	-	-	-	
0030	420+15	-	-	87.5' LT	-	-	-	-	13	-	-	-	-	-	-	
0030	420+90	-	-	91' LT	-	-	-	-	13	-	-	-	-	-	-	
0010	430+41	-	-	44' RT	-	-	-	-	13	-	-	-	-	-	-	
0010	431+17	-	-	40.5' RT					13							
0030	410+70	-	416+89	LT	1312	-	-	2000	-	-	0.8	73	-	22	-	
0030	410+70	-	416+91	RT	1937	-	-	2627	-	-	1.0	90	-	30	-	
0030	417+22	-	421+75	LT	3197	-	-	3700	-	-	1.3	113	-	42	1	
0030	417+20	-	421+90	RT	1057	-	-	1579	-	-	0.7	57	-	18	-	
0010	427+70	-	432+93	LT	218	-	-	799	-	-	0.4	37	-	9	-	
0010	427+50	-	431+91	RT	553	-	-	1043	-	-	0.5	41	-	12	-	
0010	428+18	-	428+72	LT	292	-	-	352	-	-	0.1	11	-	4	-	
0030	416+63	-	-	63' LT	-	-	-	-	-	6	-	-	-	-	-	
0030	416+59	-	-	64' RT	-	-	-	-	-	6	-	-	-	-	-	
0030	416+73	-	-	107' LT	-	17	-	-	-	-	-	-	-	-	-	
0030	418+99	-	-	59' RT	-	17	-	-	-	-	-	-	-	-	-	
0030	419+48	-	-	59.5' RT	-	17	-	-	-	-	-	-	-	-	-	
0030	421+34	-	-	102' LT	-	17	-	-	-	-	-	-	-	-	-	
0010	427+64	-	-	116' RT	-	17	-	-	-	-	-	-	-	-	-	
0010	428+31	-	-	111' LT	-	17	-	-	-	-	-	-	-	-	-	
0010	429+84	-	-	49' RT	-	17	-	-	-	-	-	-	-	-	-	
0010	430+23	-	-	56' LT	-	17	-	-	-	-	-	-	-	-	-	
0010	421+51	-	-	93' RT	-	-	7	-	-	-	-	-	-	-	-	
0010	421+44	-	-	90' LT	-	-	7	-	-	-	-	-	-	-	-	
0010	421+73	-	-	90' LT	-	-	7	-	-	-	-	-	-	-	-	
0030	428+29	-	-	113' LT	-	-	7	-	-	-	-	-	-	-	-	
0010	UNDISTRIBUTED =				100	17	4	100	-	-	-	3	20	6	2	
0030	UNDISTRIBUTED =				600	17	4	600	10	-	-	15	100	25	1	
0010 PROJECT TOTALS =					1160	85	25	2290	26	0	2	92	20	31	2	
0030 PROJECT TOTALS =					8100	85	11	10510	192	12	4	350	100	140	2	
PROJECT TOTALS =					9260	170	36	12800	218	12	6	442	120	171	4	

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EXISTING SIGNING SUMMARY							
				REMOVING SIGNS TYPE II 638.2602	REMOVING SMALL SIGN SUPPORTS 638.3000		
CAT	SIGN NUMBER	STATION	LOCATION	SIGN CODE	EACH	EACH	REMARKS
0030	1-2R	410+00	RT	D1-1	1	2	COUNCIL BAY RD
0030	1-6R	421+64	RT	I2-2 AND I3-1	1	2	TREMPEALEAU CO/BLACK RIVER
0010	1-8R	427+96	LT	I2-2 AND I3-1	1	2	LA CROSSE CO/BLACK RIVER
0010	1-9R	430+19	RT	M1-5A AND M2-1	1	1	JCT/COUNTY AA
0010	1-11R	430+50	LT	D1-1	1	2	COUNCIL BAY RD
0010	1-12R	432+49	RT	I55-56 AND I55-56P	1	2	ADOPT A HWY
0010 PROJECT TOTALS =					4	7	
0030 PROJECT TOTALS =					2	4	
PROJECT TOTALS =					6	11	

PERMANENT SIGNING SUMMARY										
						SIGN SIZE IN	POSTS WOOD 4x6-INCH X 16-FT 634.0616	SIGNS TYPE II REFLECTIVE H 637.2210	MOVING SIGNS TYPE II 638.2102	
CATEGORY	SIGN NUMBER	STATION	LOCATION	SIGN CODE	SIZE CODE	INCHES	EACH	SF	EACH	REMARKS
0030	1-1	402+89	RT	W14-3	2M	48X36	-	-	1	NO PASSING ZONE
0030	1-2	410+00	RT	D1-1	2M	96X15	2	10.00	-	COUNCIL BAY RD
0030	1-3	416+85	LT	R1-1	3	36X36	-	-	1	STOP
0030	1-4	417+26	RT	R1-1	3	36X36	-	-	1	STOP
0030	1-5	419+86	RT	E10-82	2M	10X15	-	-	1	CHAMPIONS RIVERSIDE RESORT
0030	1-6	421+64	RT	D1-2	2M	90X30	2	18.75	-	TREMPEALEAU CO/BLACK RIVER
0030	1-7	437+78	LT	W14-3	2M	48X36	-	-	1	NO PASSING ZONE
0010	1-8	427+96	LT	D1-2	2	72X30	2	15.00	-	LA CROSSE CO/BLACK RIVER
0010	1-9	430+19	RT	M1-5A	2	24X24	1	4.00	-	COUNTY AA
0010	1-10	430+19	RT	M2-1	2	21X15	0	2.20	-	JCT
0010	1-11	430+50	LT	D1-1	2M	96X15	2	10.00	-	COUNCIL BAY RD
0010	1-12	432+49	RT	I55-56	2M	30X18	1	3.75	-	ADOPT A HWY
0010	1-13	432+49	RT	I55-56P	2M	30X18	1	3.75	-	SILVER CREEK VALLEY
0010 PROJECT TOTALS =							7	38.70	0	
0030 PROJECT TOTALS =							4	28.75	5	
PROJECT TOTALS =							11	67.45	5	

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TRAFFIC CONTROL SUMMARY

		TRAFFIC CONTROL DRUMS 643.0300		TRAFFIC CONTROL BARRICADES TYPE III 643.0420		TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS 643.0500		TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES 643.0600		TRAFFIC CONTROL WARNING LIGHTS TYPE C 643.0715		TRAFFIC CONTROL SIGNS 643.0900		NUMBER OF SIGNS	NUMBER OF CYCLES	TRAFFIC CONTROL COVERING SIGNS TYPE II 643.0920
STAGE 1 CATEGORY	LOCATION	EACH	DAY	EACH	DAY	EACH	EACH	EACH	DAY	EACH	DAY	DAY	SIGNS			EACH
0010	START OF PROJECT TO BRIDGE	32	1312	5	205	39	39	7	287	34	1394	1	1			1
0010	ON BRIDGE	-	-	-	-	12	12	-	-	-	-	-	-	-	-	-
0010	BRIDGE TO END OF PROJECT	20	820	3	123	22	22	7	287	20	820	1	1			1
STAGE 1 PROJECT TOTALS =			2132		328	73	73		574		2214					2

TRAFFIC CONTROL SUMMARY

STAGE 2 CATEGORY	LOCATION	TRAFFIC CONTROL DRUMS 643.0300		TRAFFIC CONTROL BARRICADES TYPE III 643.0420		TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS 643.0500		TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES 643.0600		TRAFFIC CONTROL WARNING LIGHTS TYPE C 643.0715		TRAFFIC CONTROL SIGNS 643.0900		NUMBER OF SIGNS	NUMBER OF CYCLES	TRAFFIC CONTROL COVERING SIGNS TYPE II 643.0920
		EACH	DAY	EACH	DAY	EACH	EACH	EACH	DAY	EACH	DAY	DAY	DAY	DAY	DAY	
0010	START OF PROJECT TO BRIDGE	32	1152	5	180	39	39	7	252	34	1224	1	1	1		
0010	ON BRIDGE	-	-	-	-	12	12	-	-	-	-	-	-	-		
0010	BRIDGE TO END OF PROJECT	20	720	3	108	22	22	7	252	19	684	-	-	-		
STAGE 2 PROJECT TOTALS =			1872		288		73		73		504		1908			1

TRAFFIC CONTROL SUMMARY

STAGE 3 CATEGORY	LOCATION	TRAFFIC CONTROL DRUMS 643.0300		TRAFFIC CONTROL BARRICADES TYPE III 643.0420		TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS 643.0500		TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES 643.0600		TRAFFIC CONTROL WARNING LIGHTS 643.0715		TRAFFIC CONTROL SIGNS 643.0900		NUMBER OF	NUMBER OF	TRAFFIC CONTROL COVERING SIGNS TYPE 643.0920
		EACH	DAY	EACH	DAY	EACH	EACH	EACH	DAY	EACH	DAY	SIGNS	CYCLES	EACH		
0010	START OF PROJECT TO BRIDGE	52	2392	5	230	-	-	11	506	32	1472	-	-	-		
0010	BRIDGE TO END OF PROJECT	21	966	3	138	-	-	11	506	18	828	-	-	-		
STAGE 3 PROJECT TOTALS =			3358		368	0	0		1012		2300			0		

TRAFFIC CONTROL SUMMARY

STAGE 4 CATEGORY		TRAFFIC CONTROL DRUMS 643.0300		TRAFFIC CONTROL BARRICADES TYPE III 643.0420		TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS 643.0500		TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES 643.0600		TRAFFIC CONTROL WARNING LIGHTS 643.0715		TRAFFIC CONTROL SIGNS 643.0900		NUMBER OF SIGNS	NUMBER OF CYCLES	TRAFFIC CONTROL COVERING SIGNS TYPE 643.0920
		EACH	DAY	EACH	DAY	EACH	EACH	EACH	DAY	EACH	DAY			EACH		
0010	START OF PROJECT OF END OF PROJECT	30	1770	-	-	-	-	-	-	-	10	590	-	-	-	
STAGE 4 PROJECT TOTALS =			1770		0	0	0	0	0			590			0	
PROJECT TOTALS =			9132		984	146	146	2090	7012						3	

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PAVEMENT MARKING SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	MARKING LINE	MARKING LINE	REMARKS
					EPOXY 4-INCH 646.1020	EPOXY 8-INCH 646.3020	
					LF	LF	
0010	421+88	-	427+91	12' RT	603	-	WHITE EDGE LINE
0010	421+88	-	427+91	12' LT	603	-	WHITE EDGE LINE
0010	421+88	-	427+91	CL	1206	-	DBL YELLOW
0010	427+91	-	433+66	12' RT	575	-	WHITE EDGE LINE
0010	427+91	-	437+78	12' LT	987	-	WHITE EDGE LINE
0010	427+91	-	437+78	CL	1974	-	DBL YELLOW
0010	433+66	-	435+14	12' RT	-	36	WHITE 3' SKIPS
0010	433+66	-	435+99	RT EDGE	236	-	WHITE EDGE LINE
0010	435+00	-	436+00	12' RT	-	100	WHITE EDGE LINE
0010	436+71	-	437+78	23' RT	107	-	WHITE EDGE LINE
0010	436+71	-	437+78	12' RT	-	107	WHITE EDGE LINE
PROJECT TOTALS =					6291	243	

MARKING LINE GROOVED WET REF CONTRAST EPOXY 8-INCH

CATEGORY	STATION	TO	STATION	LOCATION	646.3545	REMARKS
					LF	
0030	412+80	-	414+30	3.5'-6' RT	39	SHARED LANE MARKING
0030	412+80	-	414+30	15.5'-18' RT	39	SHARED LANE MARKING
0030	414+30	-	416+30	6' RT	200	SHARED LANE MARKING
0030	414+30	-	416+30	18' RT	200	SHARED LANE MARKING
0030	417+81	-	418+81	6' LT	100	SHARED LANE MARKING
0030	417+81	-	419+81	16'-18' LT	200	SHARED LANE MARKING
0030	418+81	-	420+31	3'-6' LT	39	SHARED LANE MARKING
0030	419+81	-	421+31	13'-16' LT	39	SHARED LANE MARKING
PROJECT TOTALS =					856	

3

TRAFFIC CONTROL SIGNS PCMS

CAT	LOCATION	EACH	643.1050	REMARKS
			DAY	
0010	SOUTH END OF PROJECT	1	7	PROJECT PRE-WARN
0010	NORTH END OF PROJECT	1	7	PROJECT PRE-WARN
0010	SOUTH END OF PROJECT	1	6	IF NIGHTTIME WORK IS UTILIZED
0010	NORTH END OF PROJECT	1	6	IF NIGHTTIME WORK IS UTILIZED
0010	SOUTH END OF PROJECT	1	18	POLYMER OVERLAY (PRE-WARN + DURING)
0010	NORTH END OF PROJECT	1	18	POLYMER OVERLAY (PRE-WARN + DURING)
PROJECT TOTALS =			62	

PAVEMENT MARKING WORDS & SYMBOLS SUMMARY

CATEGORY	STATION	LOCATION	MARKING ARROW	MARKING WORD	REMARKS
			EPOXY 646.5020 EACH	EPOXY 646.5120 EACH	
0030	414+71	0'	1	-	TURN LANE ARROW
0030	414+71	24' RT	1	-	TURN LANE ARROW
0030	415+63	0'	-	1	"ONLY" TEXT
0030	415+63	24' RT	-	1	"ONLY" TEXT
0030	416+03	0'	1	-	TURN LANE ARROW
0030	416+03	24' RT	1	-	TURN LANE ARROW
0030	418+06	0'	1	-	TURN LANE ARROW
0030	418+06	24' LT	1	-	TURN LANE ARROW
0030	418+45	0'	-	1	"ONLY" TEXT
0030	418+45	24' LT	-	1	"ONLY" TEXT
0030	418+74	0'	1	-	TURN LANE ARROW
0030	419+36	24' LT	1	-	TURN LANE ARROW
PROJECT TOTALS =			8	4	

3

MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH

646.1545					
CATEGORY	STATION	TO	STATION	LOCATION	LF
0030	402+89	-	410+70	12' LT	781
0030	402+89	-	410+70	12' RT	781
0030	402+89	-	410+70	CL	1562
0030	410+70	-	412+80	0.5'-4' RT	420
0030	410+70	-	414+30	0.5'-6.5' LT	720
0030	410+70	-	416+30	12'-30' RT	561
0030	410+70	-	416+51	12'-30' LT	583
0030	412+80	-	414+30	4' RT - 5.5' LT	300
0030	414+30	-	416+30	6.5' LT	400
0030	417+59	-	421+88	12'-30' RT	429
0030	417+81	-	418+81	6.5' RT	200
0030	417+81	-	421+88	12'-30' LT	407
0030	418+81	-	420+31	5.5' RT - 3.5' LT	300
0030	418+81	-	421+88	0.5'-6.5' RT	612
0030	420+31	-	421+88	0.5'-3.5' LT	314
PROJECT TOTALS =					8370

3

MARKING REMOVAL LINE 4-INCH

646.9000					
CATEGORY	STATION	TO	STATION	LOCATION	LF
0010	402+88	-	415+31	LT	1243
0010	402+88	-	415+31	CL	1554
0010	402+88	-	414+04	RT	1116
0010	415+31	-	416+56	LT	125
0010	415+31	-	423+00	CL	193
0010	415+31	-	416+35	RT	104
0010	423+00	-	435+35	CL	1544
0010	435+35	-	437+78	CL	486
0010	417+71	-	418+94	LT	123
0010	417+71	-	418+73	LT	102
0010	418+64	-	421+62	RT	298
0010	418+94	-	420+23	LT	129
0010	420+23	-	432+07	LT	1184
0010	427+85	-	433+77	RT	592
0010	432+07	-	433+78	LT	171
0010	433+77	-	435+04	RT	127
0010	433+78	-	437+78	LT	400
0010	435+04	-	436+04	RT	100
0010	435+04	-	436+04	RT	100
0010	436+82	-	437+78	RT	96
PROJECT TOTALS =					9787

MARKING DIAGONAL EPOXY 12-INCH

646.7120					
CATEGORY	STATION	TO	STATION	LOCATION	LF
0030	410+70	-	414+30	GORE	72
0030	418+81	-	421+87	GORE	53
PROJECT TOTALS =					125

TEMPORARY MARKING LINES							
				TEMPORARY MARKING LINE PAINT 4-INCH 649.0105	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH 649.0150		
TC STAGE 1	CATEGORY	STATION	TO STATION	LOCATION	LF	LF	REMARKS
	0010	402+89	- 410+84	EDGE AND CL	-	3180	
	0010	410+84	- 421+71	EDGE AND CL	1087	3261	WEST EDGE IN PAINT
	0010	421+71	- 427+71	EDGE AND CL	1800	600	WEST EDGE AND CL IN PAINT
	0010	427+71	- 437+78	EDGE AND CL	-	4020	
TC STAGE 1 PROJECT TOTALS =					2887	11061	
TC STAGE 2	CATEGORY	STATION	TO STATION	LOCATION	LF	LF	REMARKS
	0010	402+89	- 421+64	EDGE AND CL	-	7500	
	0010	421+64	- 427+68	EDGE AND CL	600	1800	WEST EDGE IN PAINT
	0010	427+68	- 437+78	EDGE AND CL	-	4065	
TC STAGE 2 PROJECT TOTALS =					600	13365	
TC STAGE 3	CATEGORY	STATION	TO STATION	LOCATION	LF	LF	REMARKS
	0010	411+33	- 437+78	EDGE AND CL	-	10600	
TC STAGE 3 PROJECT TOTALS =					0	10600	
TC STAGE 4	CATEGORY	STATION	TO STATION	LOCATION	LF	LF	REMARKS
	0010	421+87	- 427+66	EDGE AND CL	2316	-	
TC STAGE 4 PROJECT TOTALS =					2316	0	
PROJECT TOTALS =					5803	35026	

CONSTRUCTION STAKING CONCRETE PAVEMENT					
				650.7000	
CATEGORY	STATION	TO STATION	LOCATION	LF	REMARKS
0030	410+70	- 421+63	LT/RT	1097	
PROJECT TOTALS =				1097	

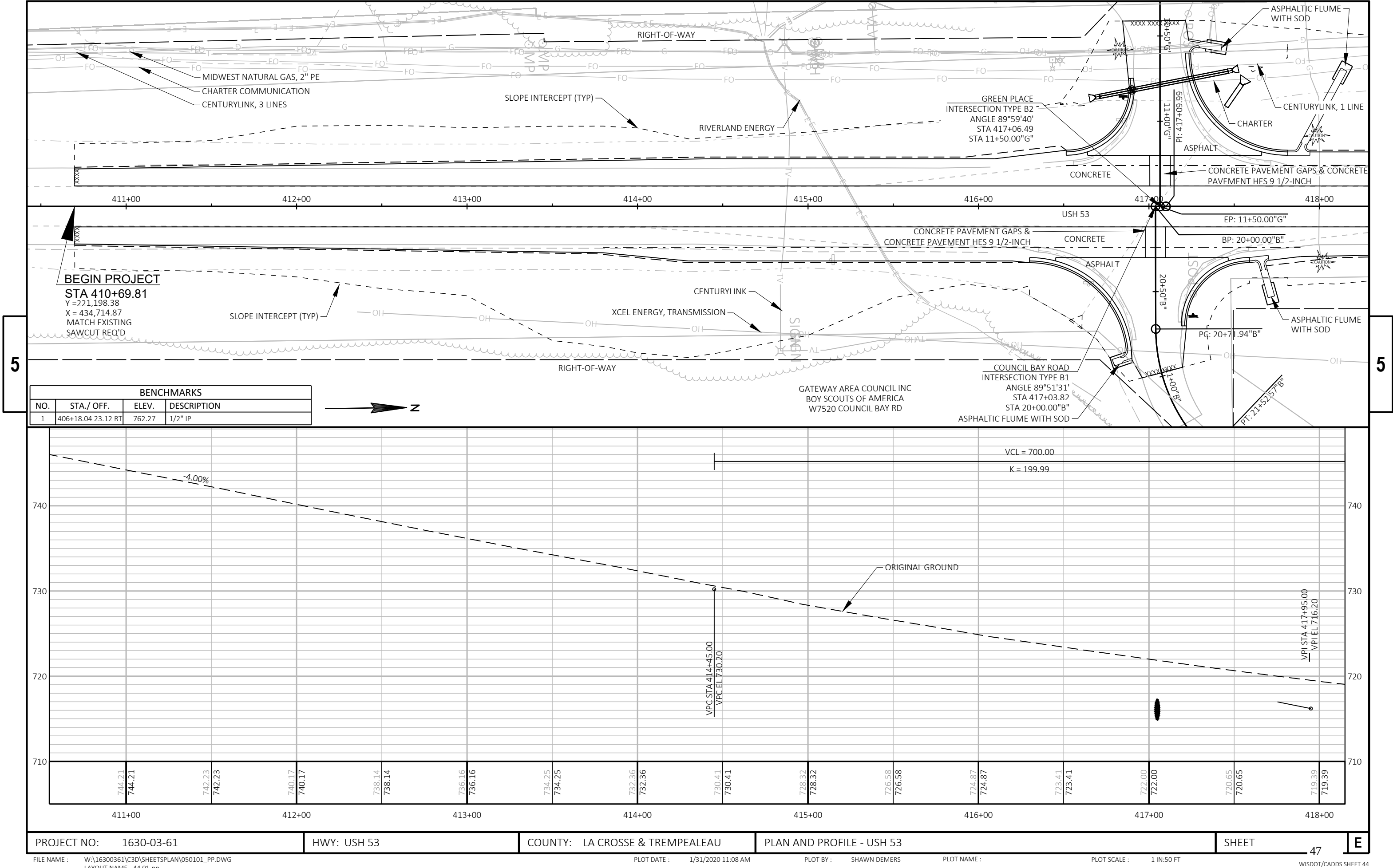
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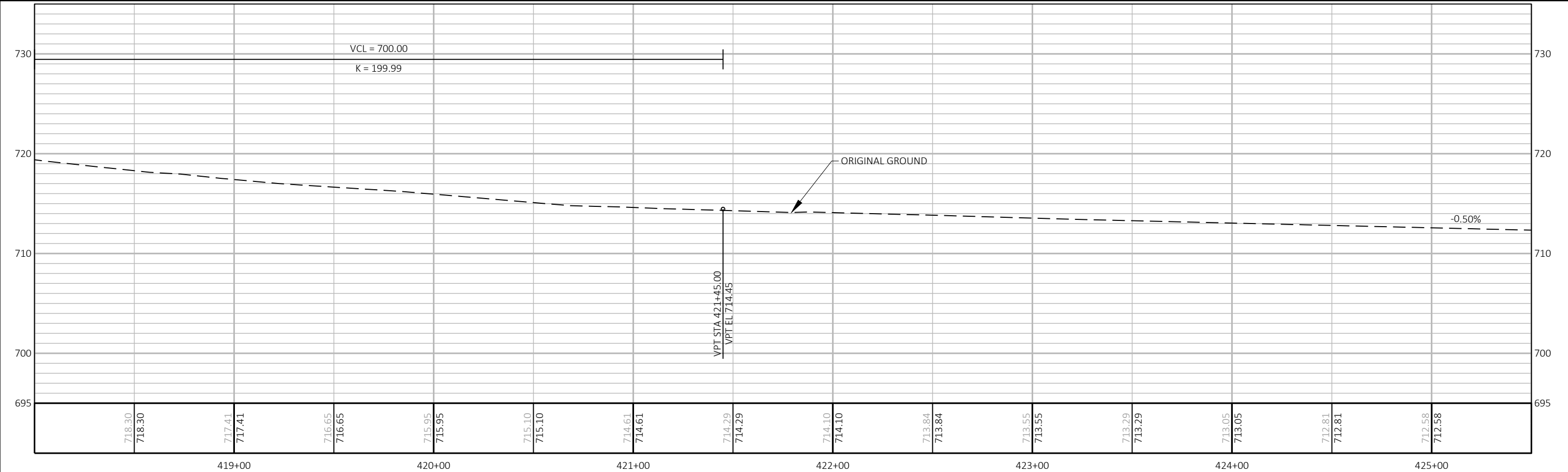
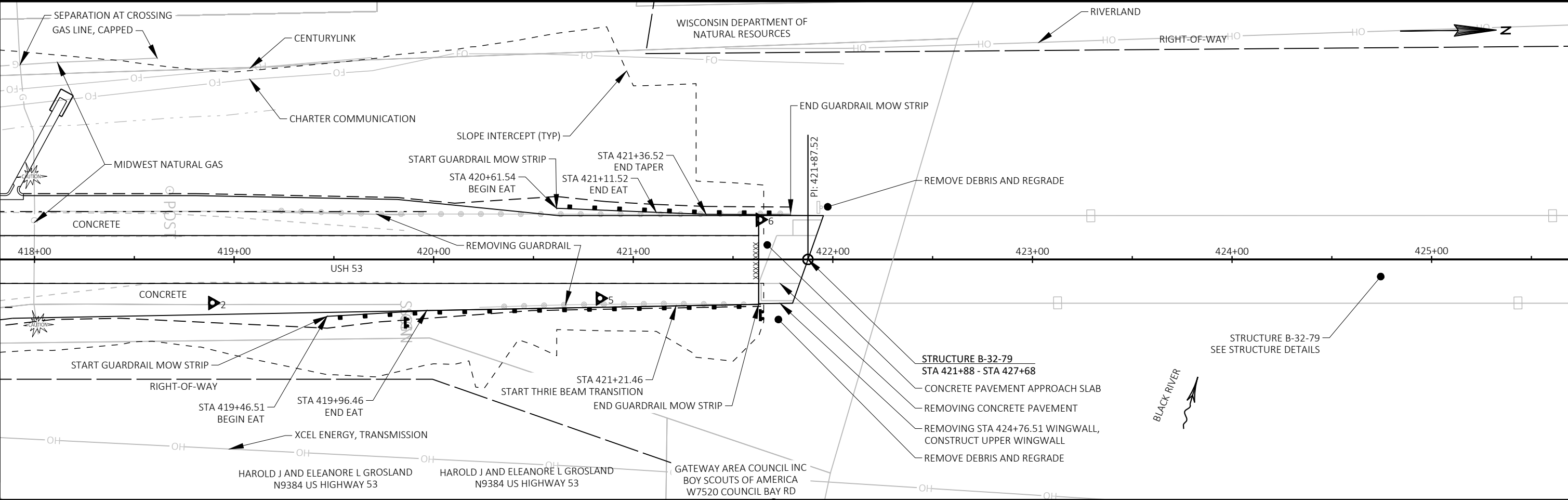
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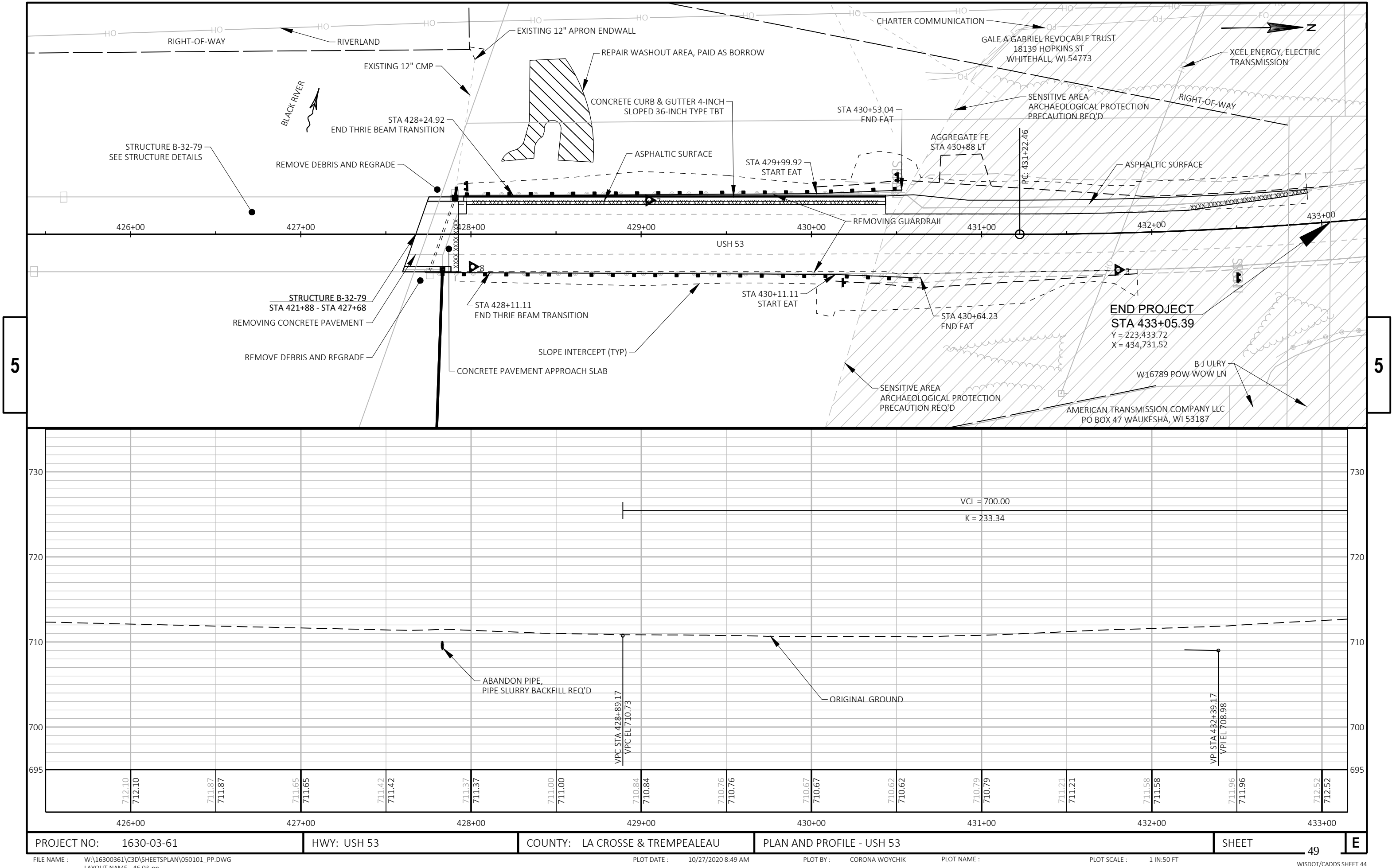
SAWING ASPHALT							SAWING CONCRETE						
690.0150							690.0250						
CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS	CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0030	410+70	-	-	LT	10	MATCHLINE - USH 53	0010	421+62	-	-	LT/RT	24	
0030	410+70	-	-	RT	10	MATCHLINE - USH 53	0010	421+80	-	421+95	22' LT	16	
0030	10+41"G"	-	-	RT/LT	37	MATCHLINE - GREEN PL	0010	421+62	-	421+95	LT/RT	49	
0030	20+98"B"	-	-	RT/LT	25	MATCHLINE - COUNCIL BAY RD	0010	427+60	-	427+66	22' RT	16	
0010	427+97	-	-	LT	8		0010	427+74	-	427+90	22' LT	16	
0010	427+97	-	430+44	LT	246		0010	427+60	-	427+92	RT/LT	51	
0010	430+44	-	-	LT	6		0010	427+92	-	-	LT/RT	24	
0010	432+22	-	432+93	LT	72		PROJECT TOTALS =					196	
0010 PROJECT TOTALS =					332								
0030 PROJECT TOTALS =					82								
PROJECT TOTALS =					414								

CONSTRUCTION STAKING									
					CONSTRUCTION STAKING SUBGRADE 650.4500	CONSTRUCTION STAKING BASE 650.5000	CONSTRUCTION STAKING SLOPE STAKES 650.9920		
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF	REMARKS	
0030	410+70	-	421+63	LT/RT	1095	-	-		
0030	20+30"B"	-	20+98"B"	LT/RT	68	68	-		
0030	10+41"G"	-	11+20"G"	LT/RT	79	79	-		
0030	410+70	-	416+88	LT/RT	-	-	618		
0030	417+19	-	421+62	LT/RT	-	-	445		
0010	427+92	-	433+93	LT/RT	-	-	591		
0010 PROJECT TOTALS =					0	0	591		
0030 PROJECT TOTALS =					1242	147	1063		
PROJECT TOTALS =					1242	147	1654		

PIPE SLURRY BACKFILL					REMOVE DEBRIS AND REGRADE				
SPV.0035.01					SPV.0060.02				
CATEGORY	STATION	LOCATION	CY	REMARKS	CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	427+80	LT & RT	2	TO ABANDON 12" CMCP PIPE CROSSING HIGHWAY	0010	421+88	LT	1	SW WINGWALL
PROJECT TOTALS =			2		0010	427+68	RT	1	NE WINGWALL
					0010	427+82	LT	1	NW WINGWALL
					PROJECT TOTALS =			3	







PROJECT NO: 1630-03-61

HWY: USH 53

COUNTY: LA CROSSE & TREMPPEALEAU

PLAN AND PROFILE - USH 53

SHEET

49

E

FILE NAME : W:\16300361\C3D\SHEETSPLAN\050101_PP.DWG
LAYOUT NAME - 46 03-pp

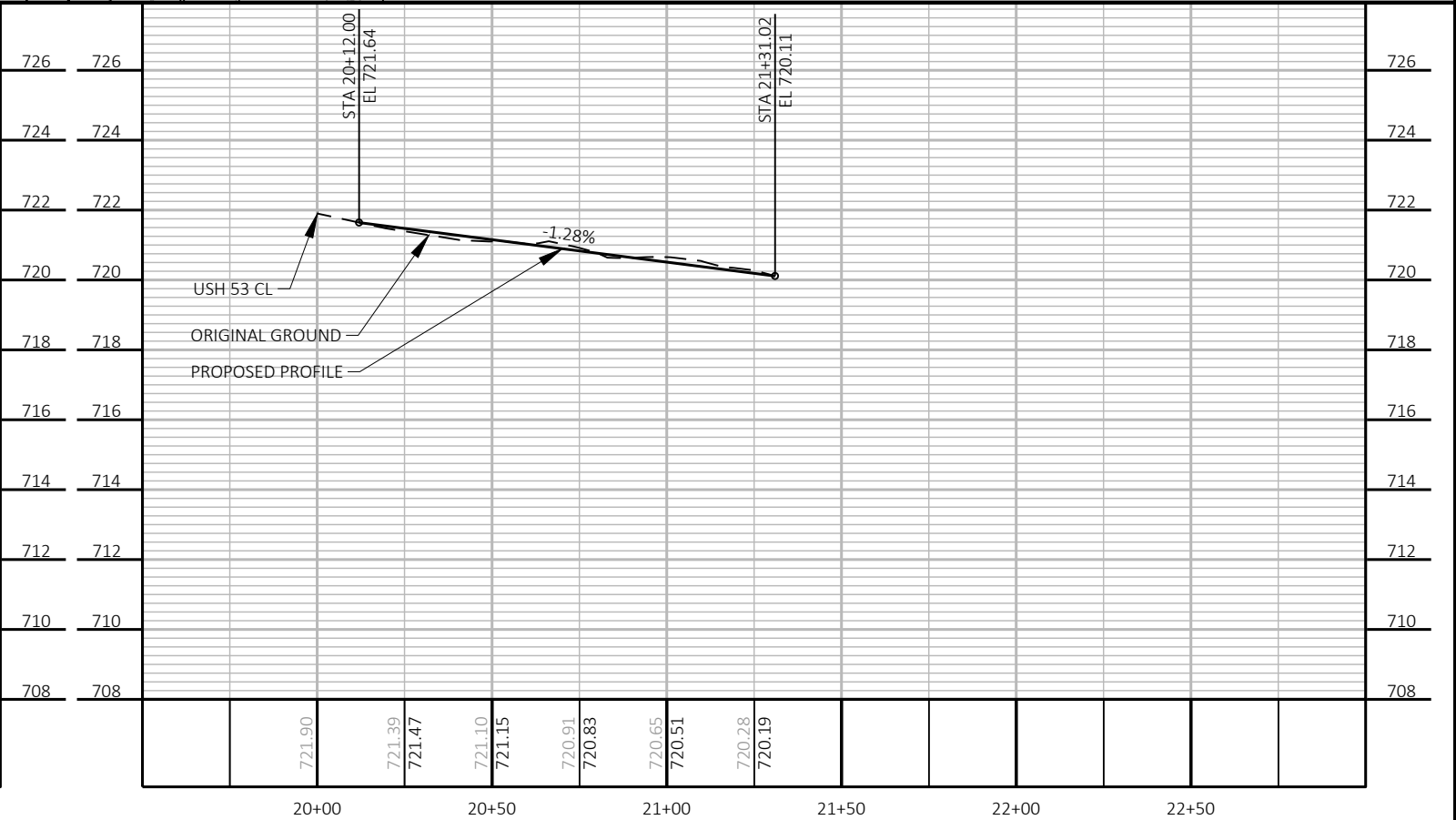
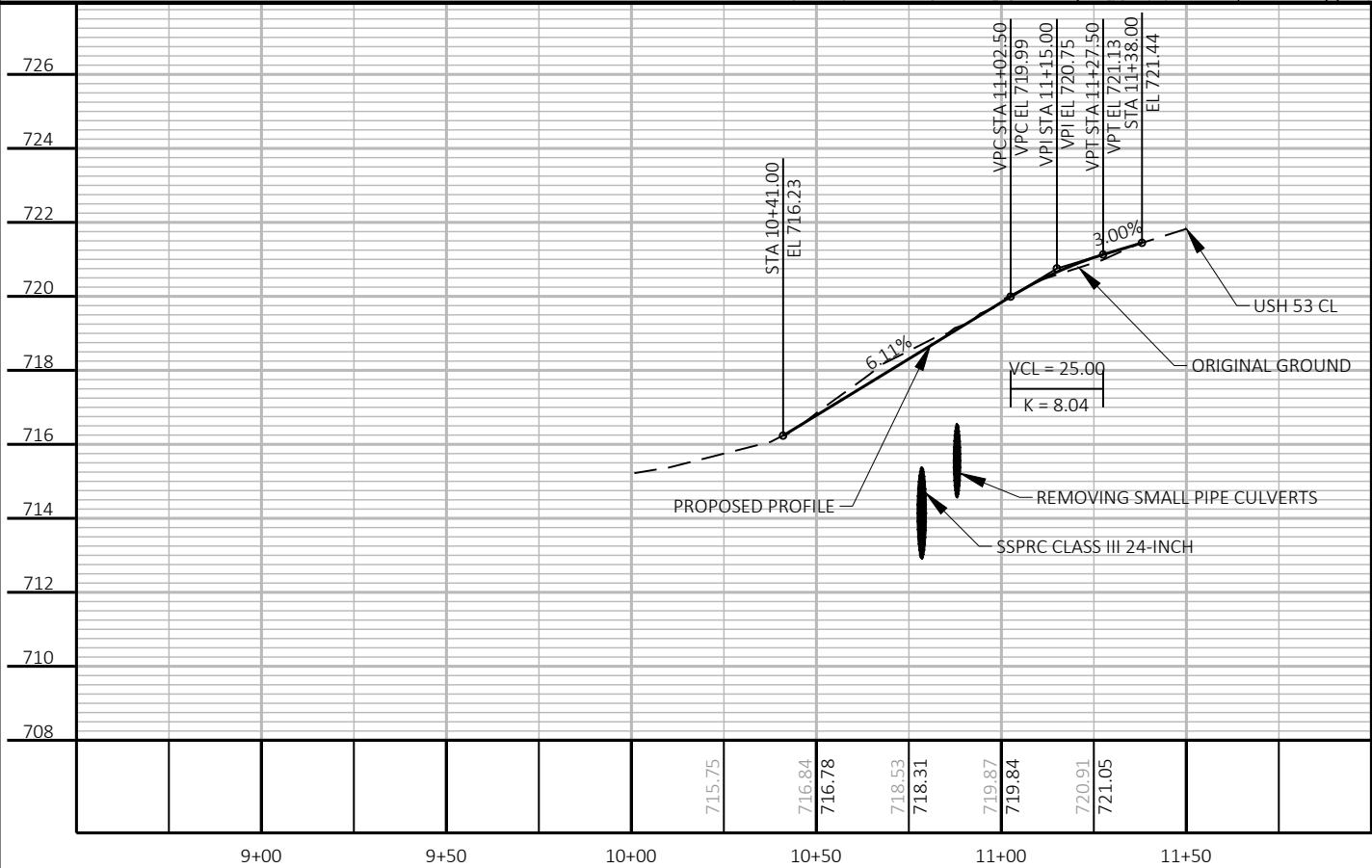
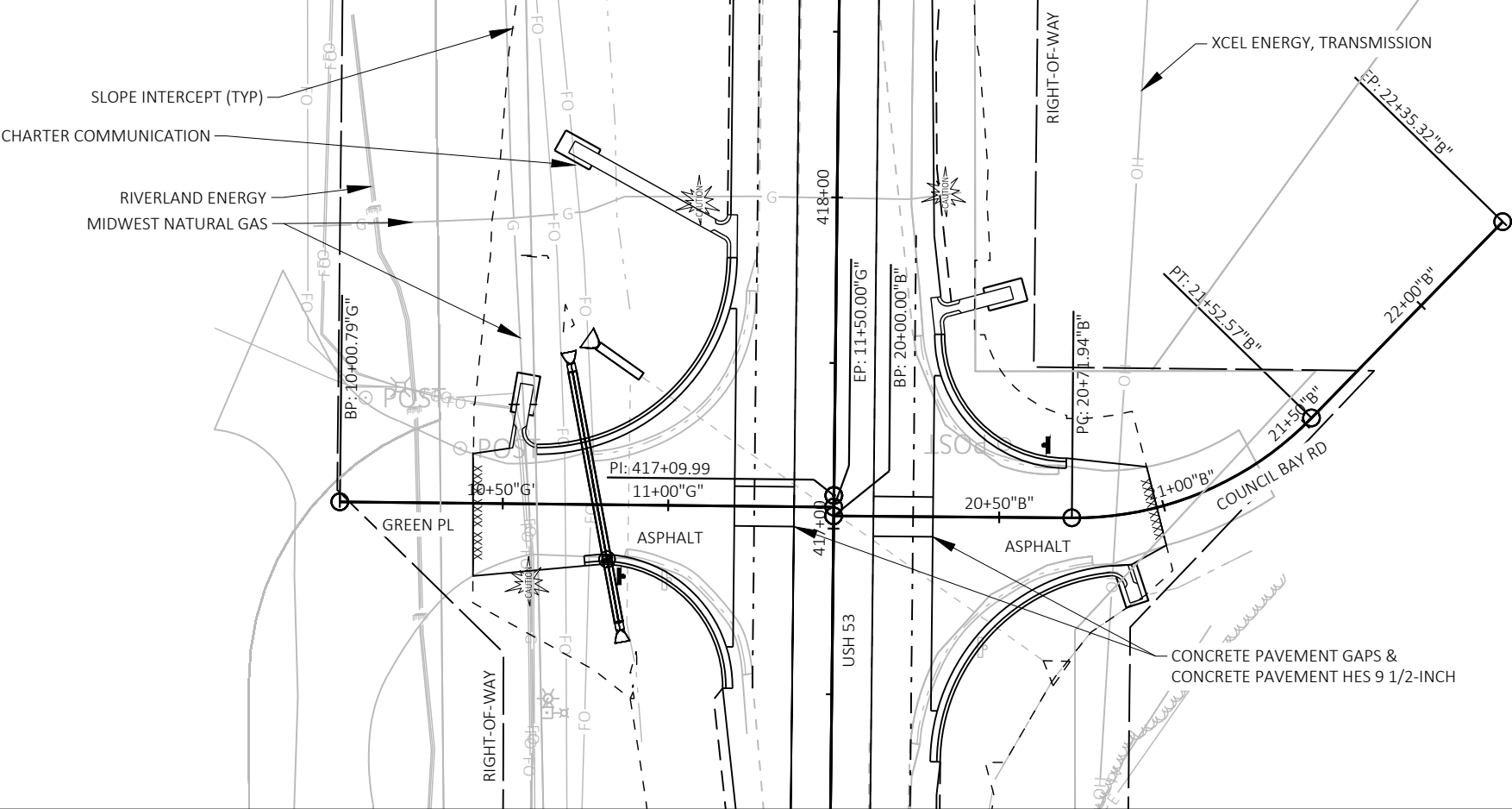
PLOT DATE : 10/27/2020 8:49 AM

PLOT BY : CORONA WOYCHIK

PLOT NAME :

PLOT SCALE : 1 IN:50 FT

WISDOT/CADDs SHEET 44

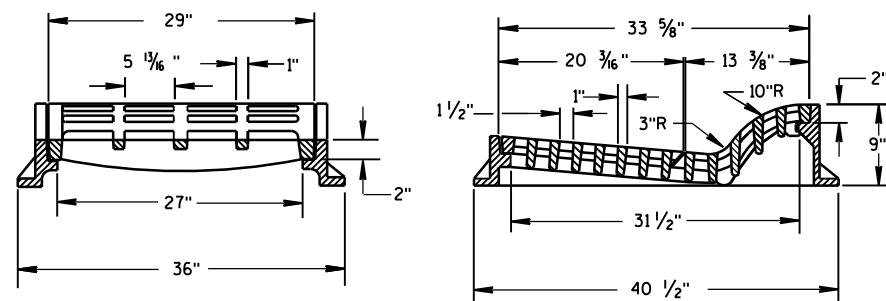
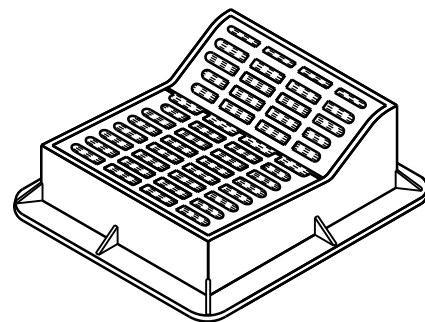


Standard Detail Drawing List

08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08B09-02	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-21A	CONCRETE CURB & GUTTER
08D01-21B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D03-08A	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D03-08B	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13B02-09B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C11-12A	RURAL DOWELED CONCRETE PAVEMENT
13C11-12B	RURAL DOWELED CONCRETE PAVEMENT
13C16-02A	DETAIL FOR RIGHT TURN LANE/TEE INTERSECTION BYPASS LANE ON A CONCRETE ROADWAY
13C18-07A	CONCRETE PAVEMENT JOINTING
13C18-07B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-07C	CONCRETE PAVEMENT JOINT TYPES
13C18-07D	CONCRETE PAVEMENT JOINT TYPES AT UTILITY FIXTURES
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B28-04A	GUARDRAIL MOW STRIP
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	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)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08F	ADVANCED WIDTH RESTRICTION SIGNING
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-15B	PAVEMENT MARKING WORDS
15C07-15C	PAVEMENT MARKING ARROWS
15C08-20A	LONGITUDINAL MARKING (MAINLINE)

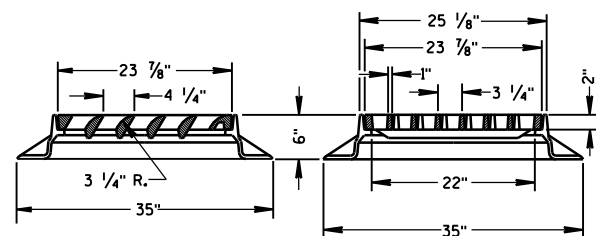
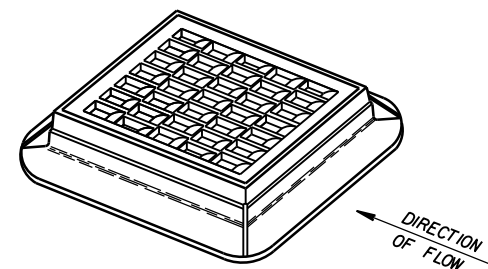
Standard Detail Drawing List

15C08-20C	PAVEMENT MARKING (TURN LANES)
15C11-07A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D06-04	TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

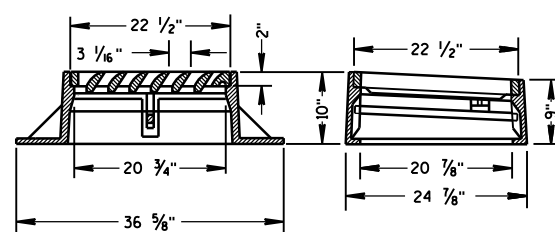
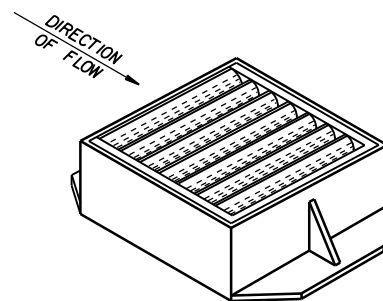


TYPE "F"

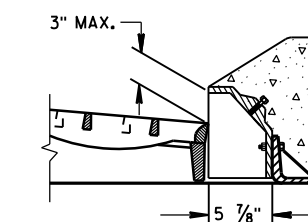
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



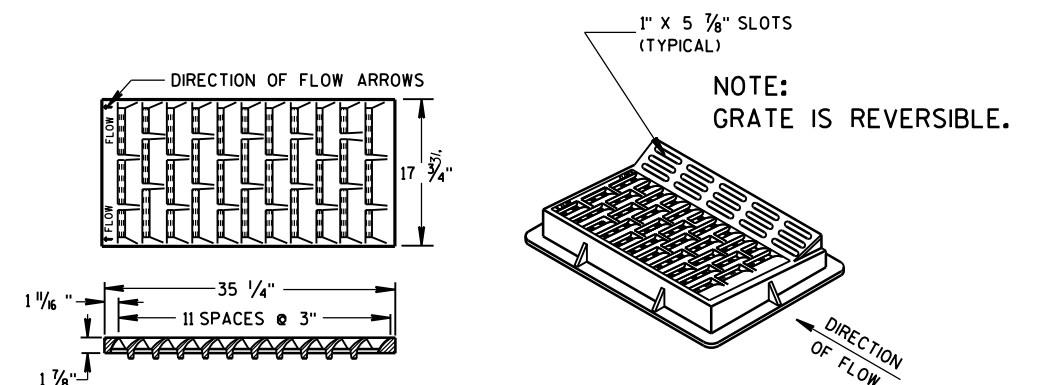
TYPE "S"



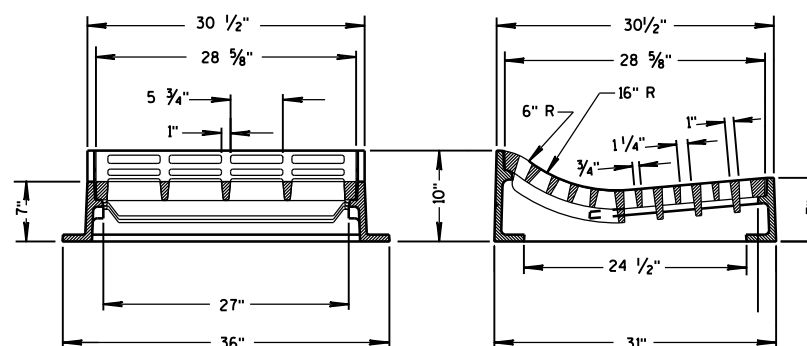
TYPE "V"

ALTERNATIVE CURB BOX
FOR TYPE "HM" COVERUSE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLENOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

GENERAL NOTES

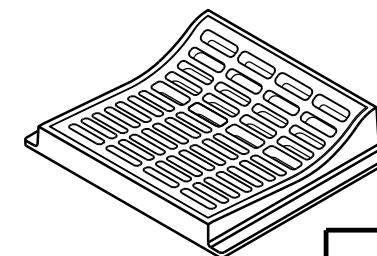
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING
SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND
THE APPLICABLE SPECIAL PROVISIONS.DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED
TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION
FOR EQUIVALENT CAPACITY AND STRENGTH.

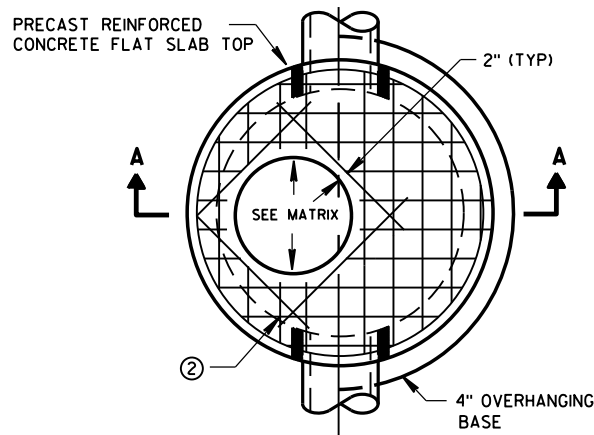
TYPE "HM"

USE WITH TYPES A & D CONCRETE
CURB & GUTTER, 36 INCH.NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE

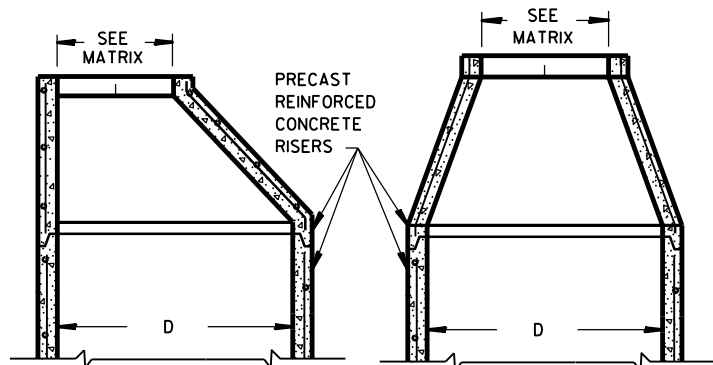
TYPE "T"

USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.

INLET COVERS
TYPE F, HM, HM-S, S, T, V,
HM-GJ, & HM-GJ-SSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATIONAPPROVED
11/27/2013
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

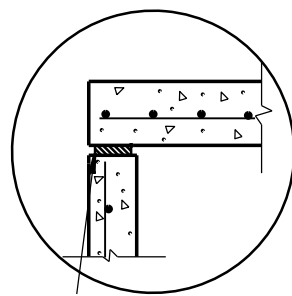


PLAN VIEW CIRCULAR OPENING

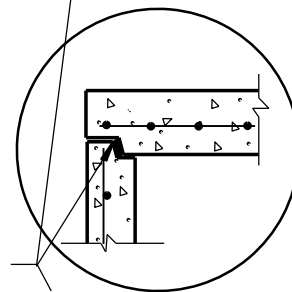


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

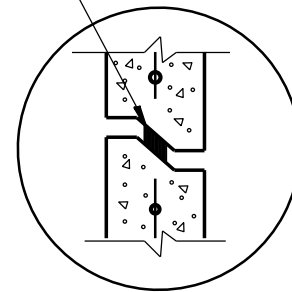
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT

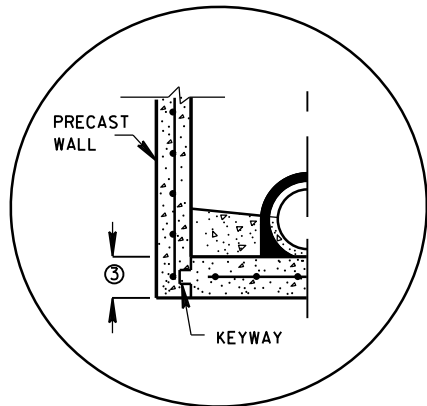


TOP WITH TONGUE AND GROOVE JOINT

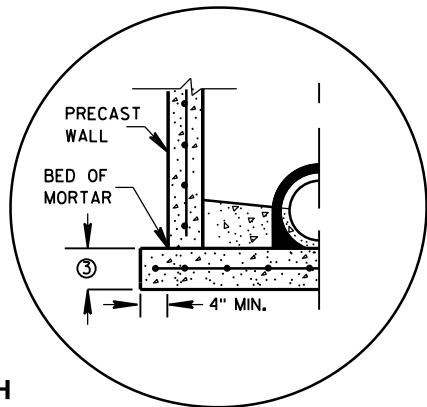


DETAIL "B"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

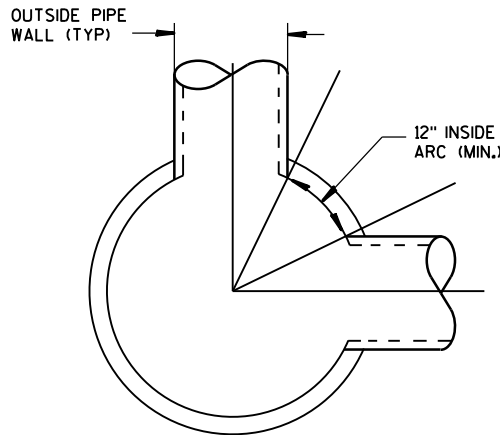


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

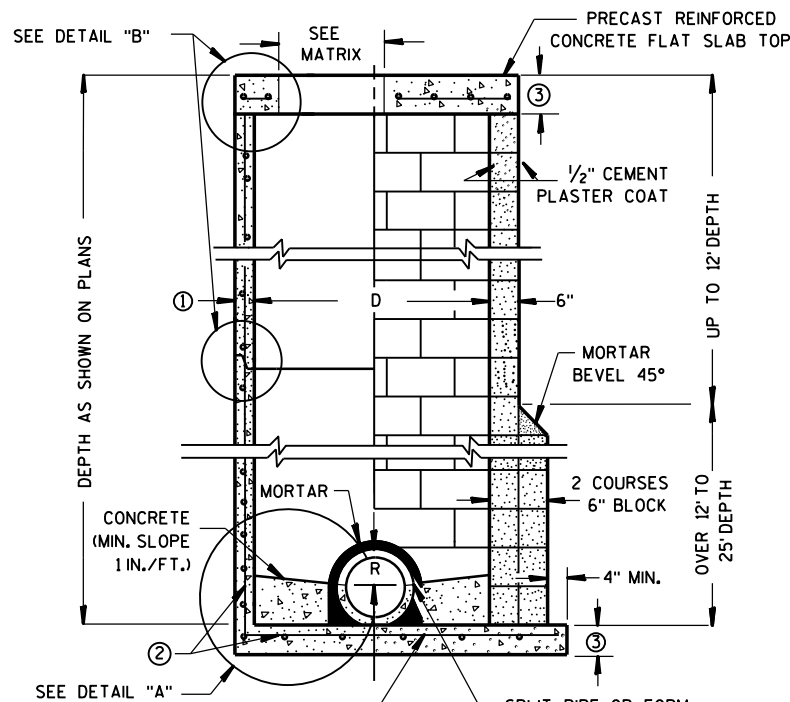


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"



PRECAST REINFORCED CONCRETE BLOCK WITH CONCRETE WITH MONOLITHIC BASE CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

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. UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

- ① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.
- ② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept., 2016

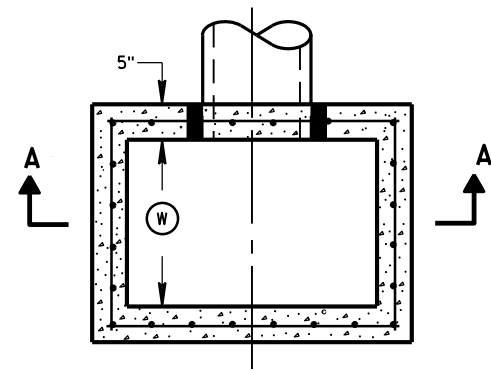
DATE

FHWA

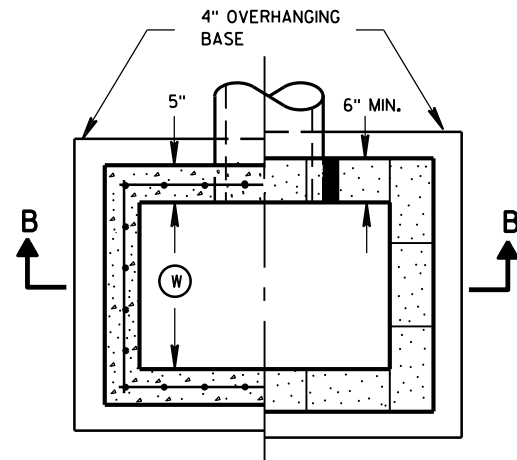
/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

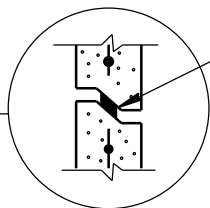
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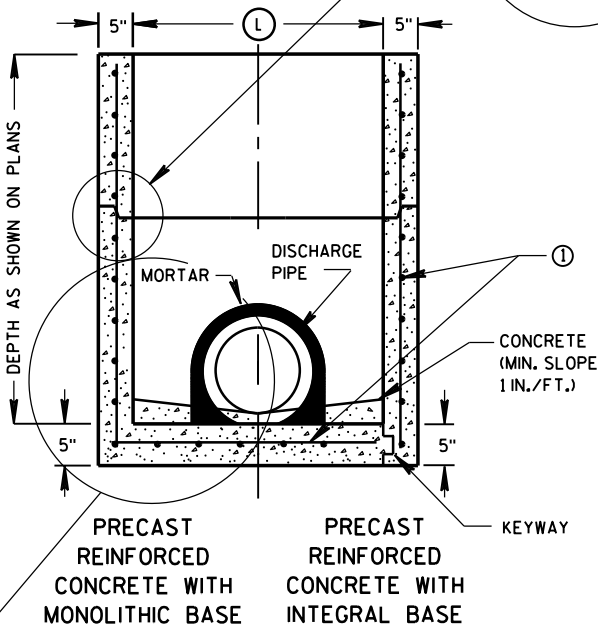
PLAN VIEW



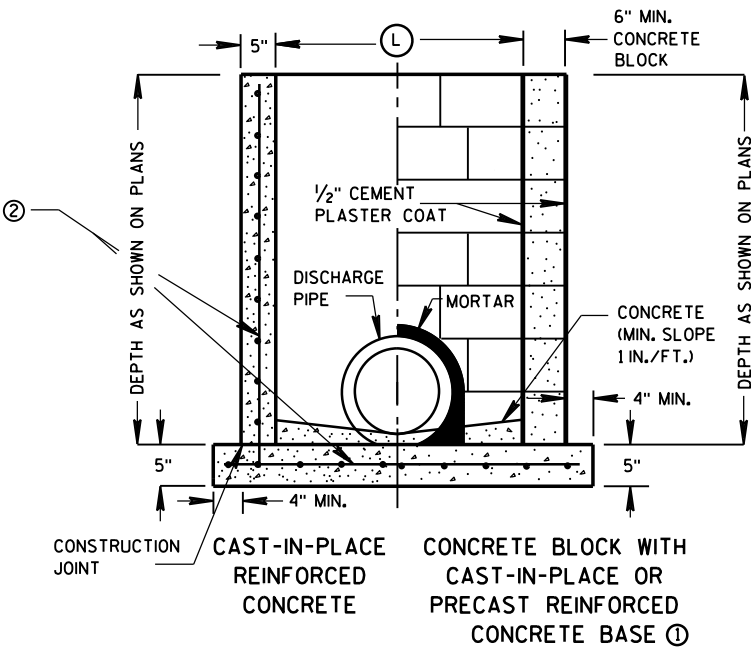
PLAN VIEW



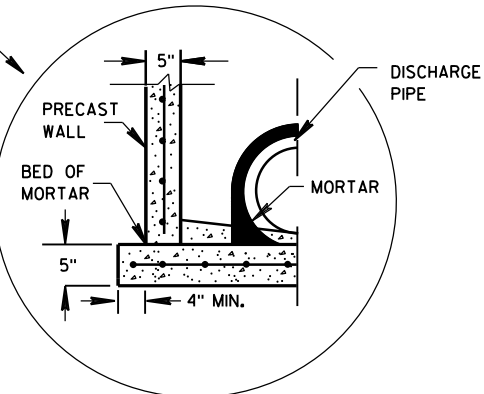
RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

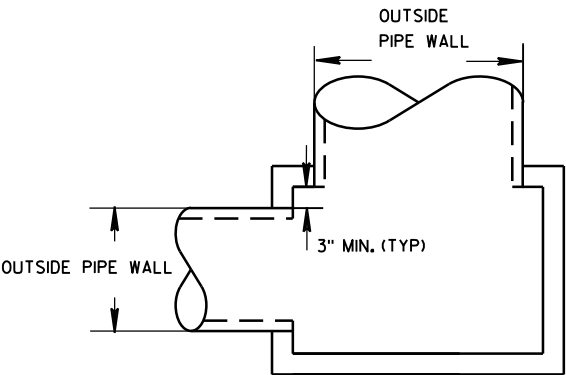
- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH ① (FT)	LENGTH ② (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24

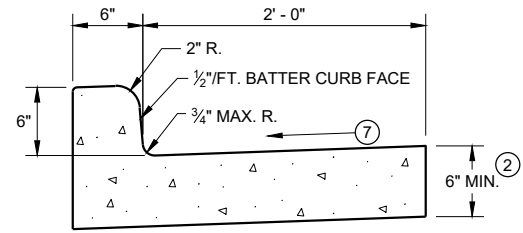


DETAIL "A"

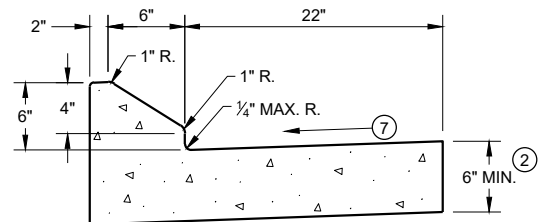
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

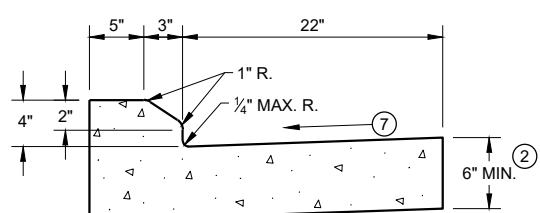
APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DIVISION
FHWA UNIT SUPERVISOR 55



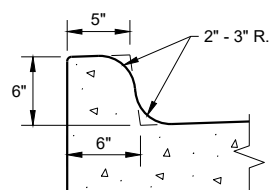
TYPES A^① & D



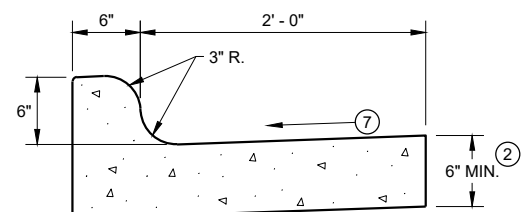
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

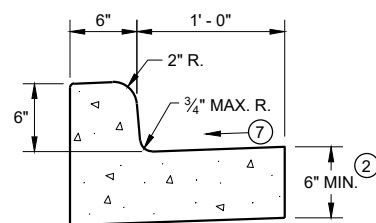


TYPES K^① & L
(OPTIONAL CURB SHAPE)



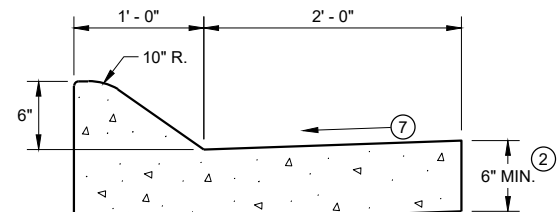
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

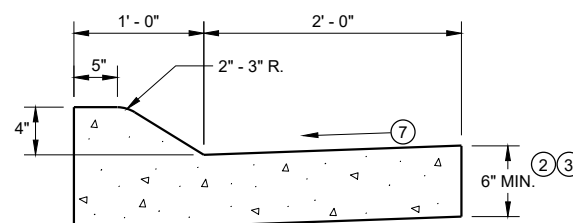


TYPES A^① & D

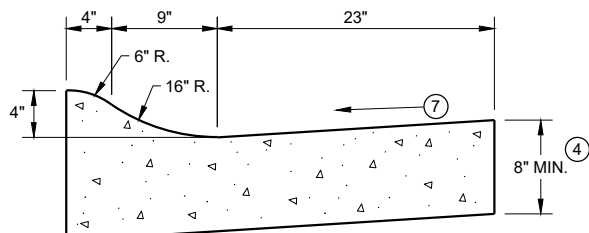
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A^① & D



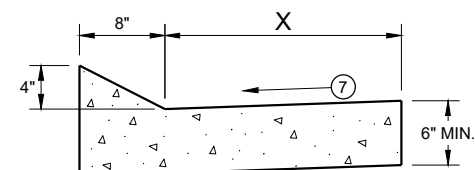
4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

CONCRETE CURB AND GUTTER 36"

TBT & TBTT	X
30"	22"
36"	28"

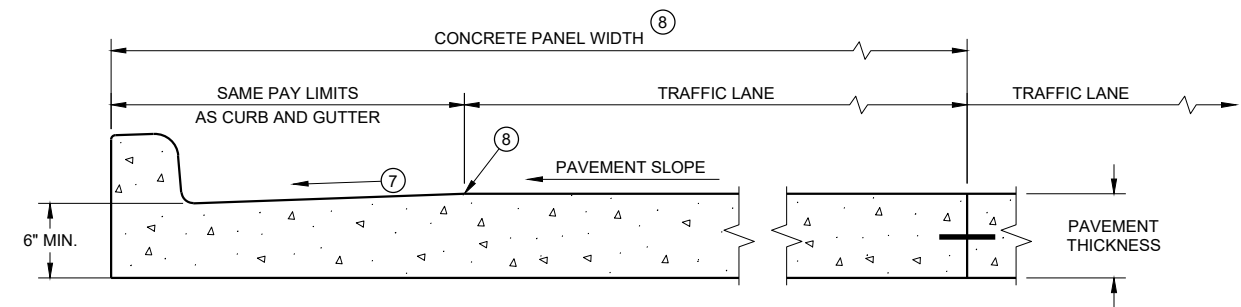


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

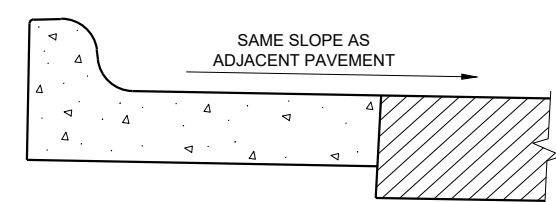
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

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

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

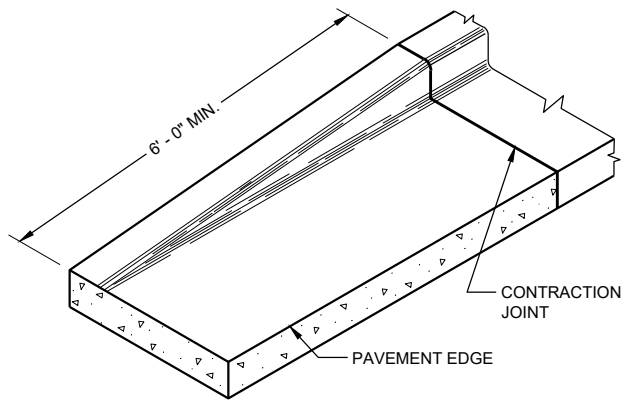
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

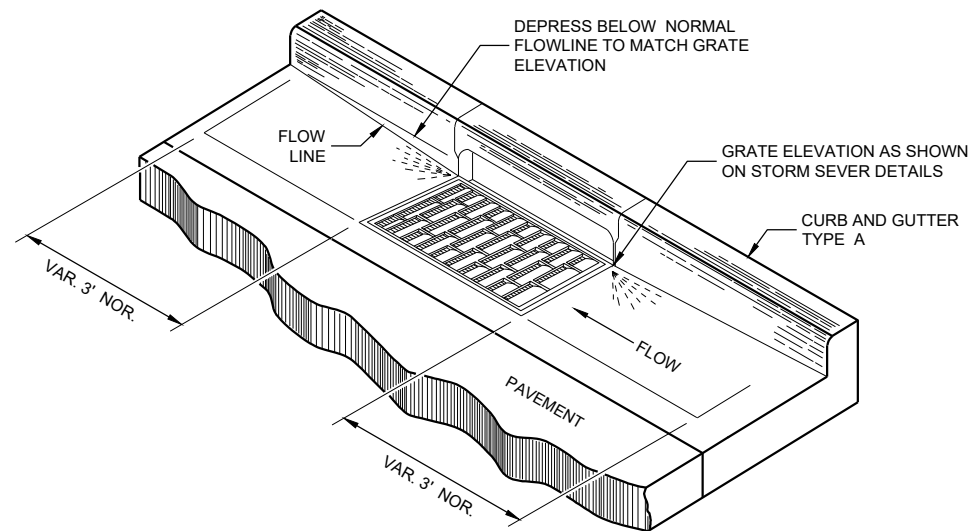
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

CONCRETE CURB AND GUTTER

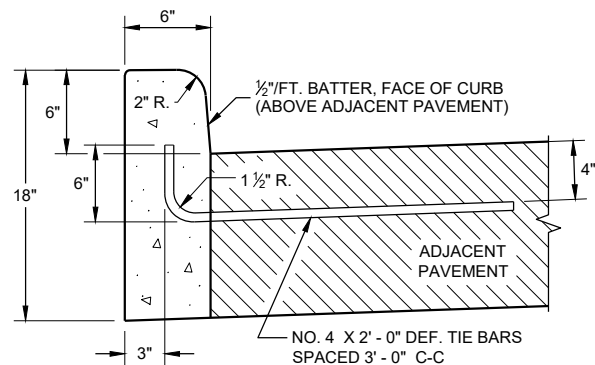
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 156



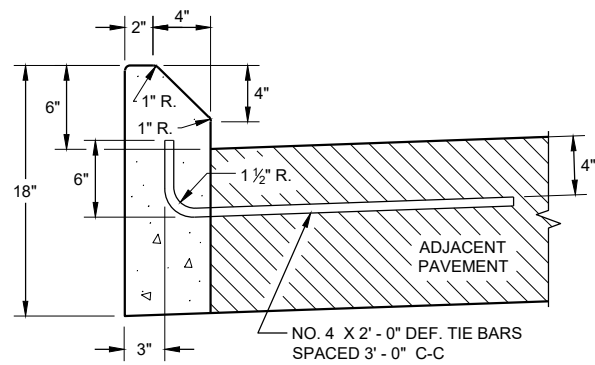
END SECTION CURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

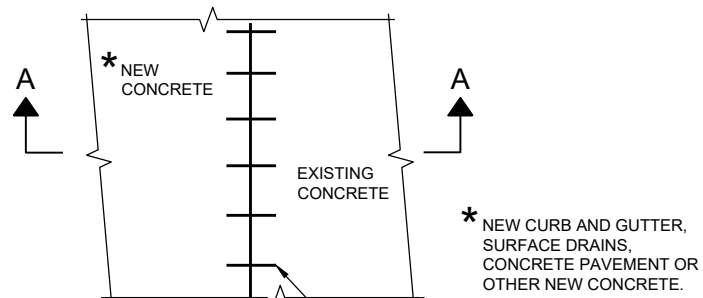


TYPES A^① & D

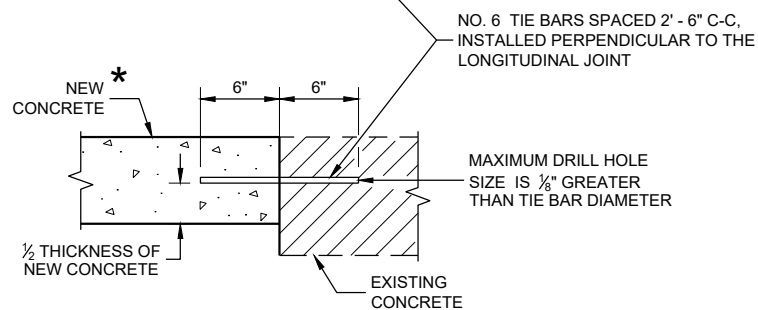


TYPES G^① & J

CONCRETE CURB



PLAN VIEW



SECTION A - A

TIE BARS DRILLED
INTO EXISTING PAVEMENT

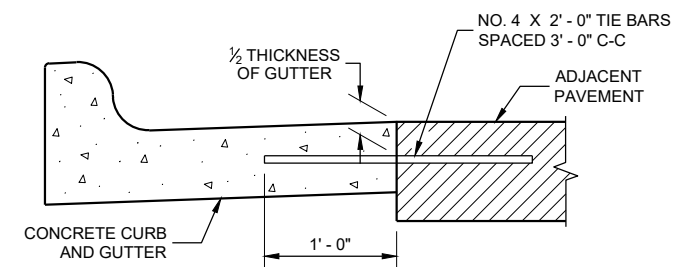
GENERAL NOTES

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

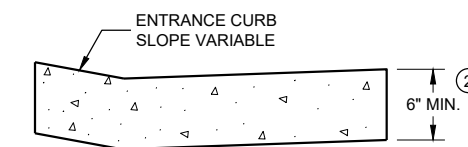
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION^①



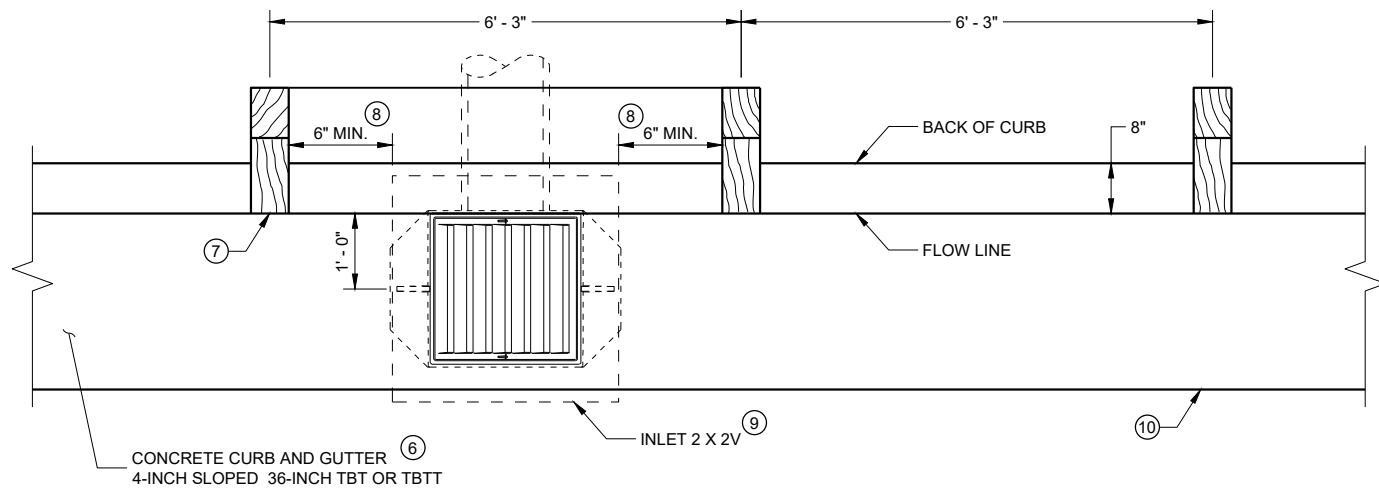
DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

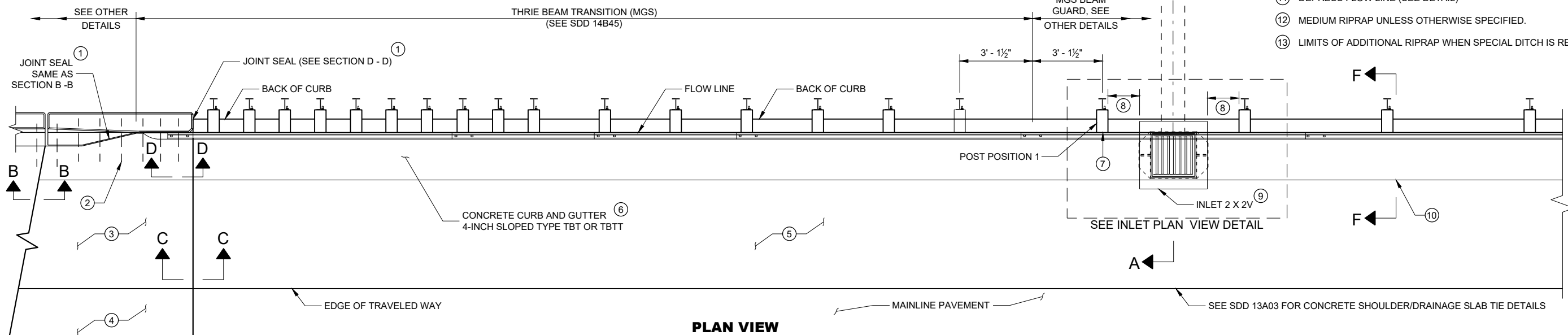
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER
57

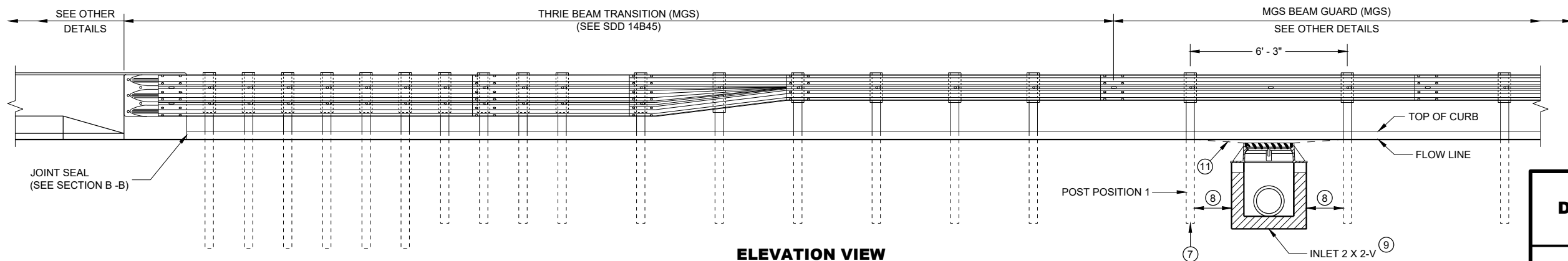
FHWA



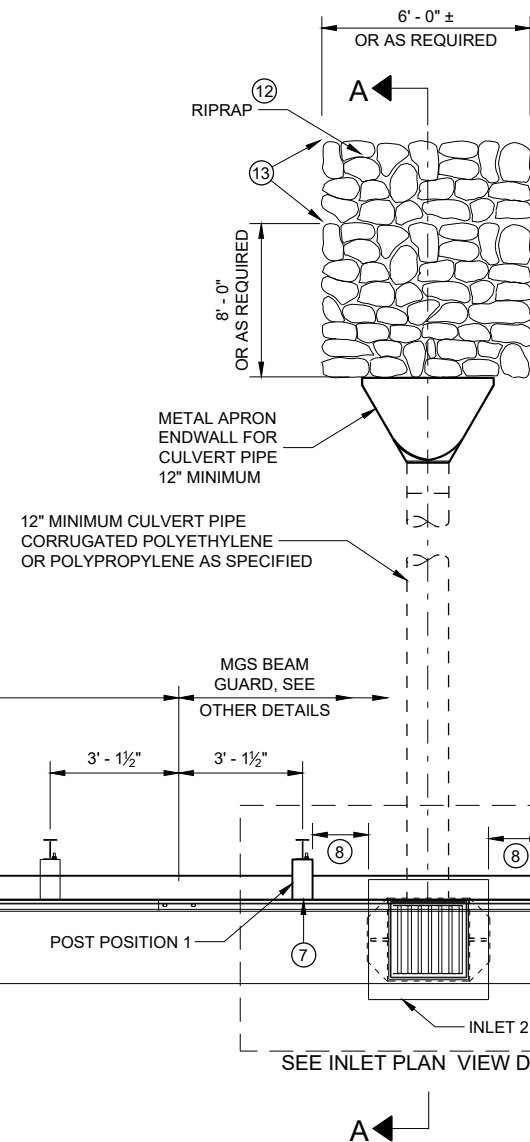
INLET PLAN VIEW
(NOTE: RAIL NOT SHOWN FOR CLARITY)



PLAN VIEW



ELEVATION VIEW



GENERAL NOTES

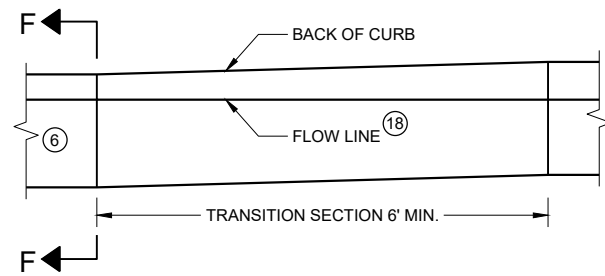
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

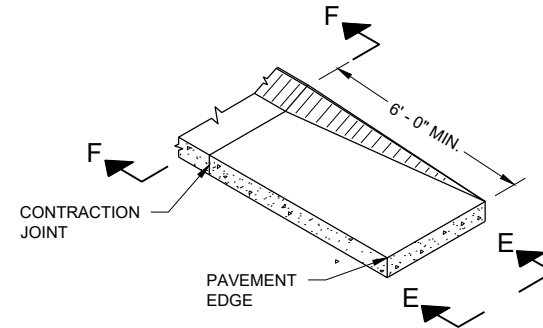
- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBT. USE TYPE TBT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE DRAINAGE STRUCTURE BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER DRAINAGE STRUCTURE BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE WALL OF DRAINAGE STRUCTURE TO POSTS.
- ⑨ SEE SDD 08A05 AND 08C07 FOR DETAILS. SEE ROADWAY PLANS FOR LOCATION.
- ⑩ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑪ DEPRESS FLOW LINE (SEE DETAIL)
- ⑫ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑬ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

**CONCRETE SURFACE
DRAINS DROP INLET TYPE
AT STRUCTURES**

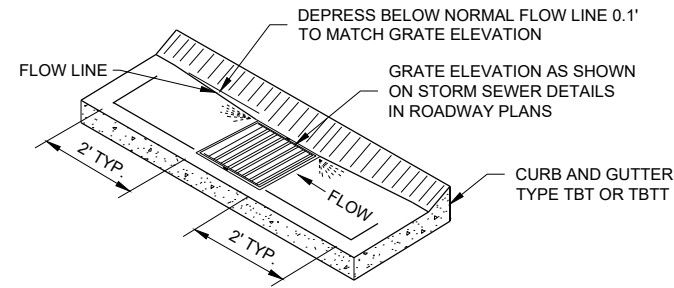
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 158



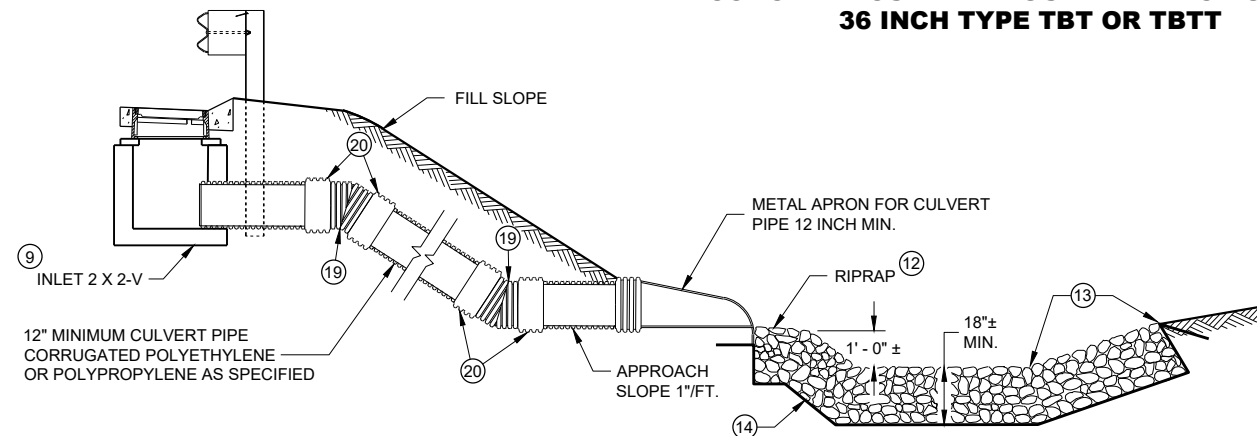
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBT**



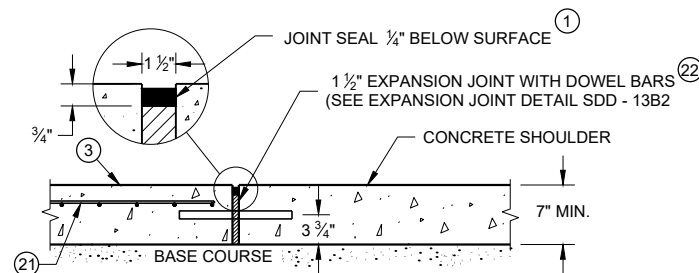
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBT**



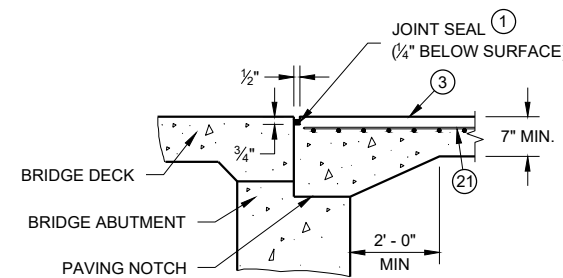
**CURB AND GUTTER FLOW LINE DEPRESSION
AT INLETS CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBT**



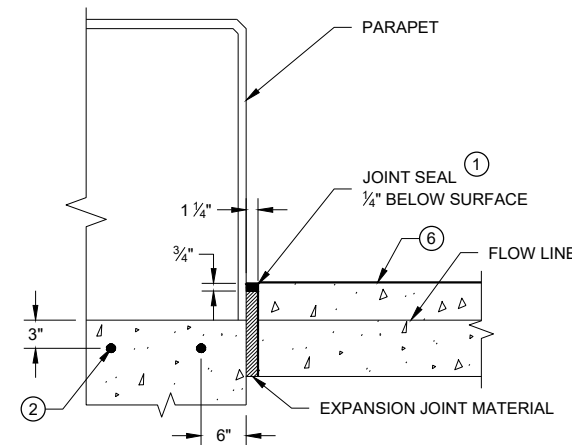
SECTION A - A



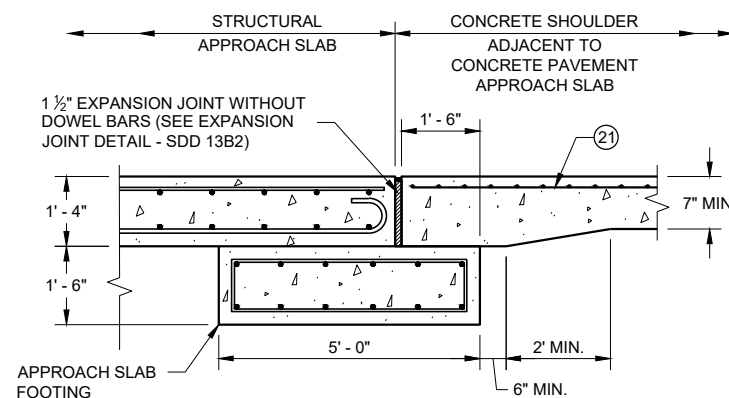
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



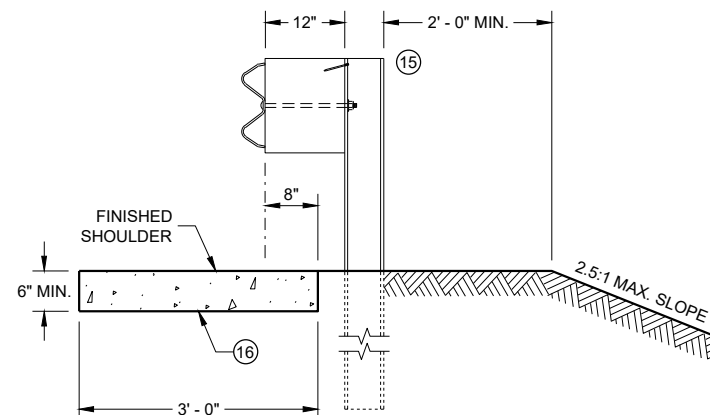
SECTION B-B



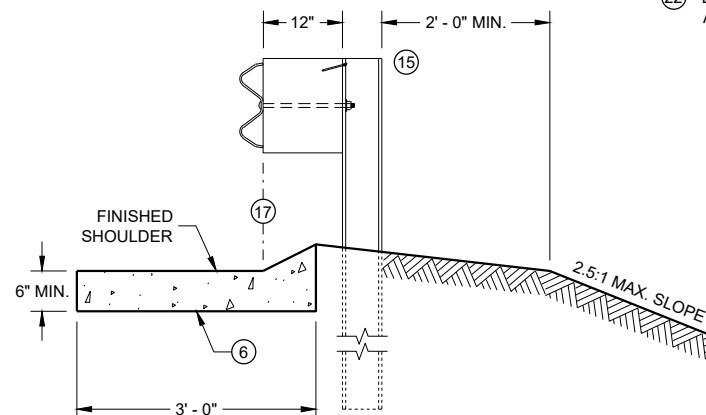
SECTION D - D



**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



SECTION E - E



SECTION F - F

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.

ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBT. USE TYPE TBT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE DRAINAGE STRUCTURE BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER DRAINAGE STRUCTURE BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE WALL OF DRAINAGE STRUCTURE TO POSTS.
- ⑨ SEE SDD 08A05 AND 08C07 FOR DETAILS. SEE ROADWAY PLANS FOR LOCATION.
- ⑩ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑪ DEPRESS FLOW LINE (SEE DETAIL)
- ⑫ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑬ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑭ GEOTEXTILE FABRIC TYPE HR.
- ⑮ MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- ⑯ MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ⑰ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑱ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ⑲ MANUFACTURER SUPPLIED BEND.
- ⑳ MANUFACTURER SUPPLIED EXTERNAL MECHANICAL COUPLING OR A MANUFACTURER RECOMMENDED COUPLING WITH A MASTIC IMPREGNATED GEOTEXTILE WRAP AND MECHANICAL FASTENING BANDS.
- ㉑ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ㉒ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.

CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 59
FHWA

6



PLAN VIEW
FLUME AT CURB END

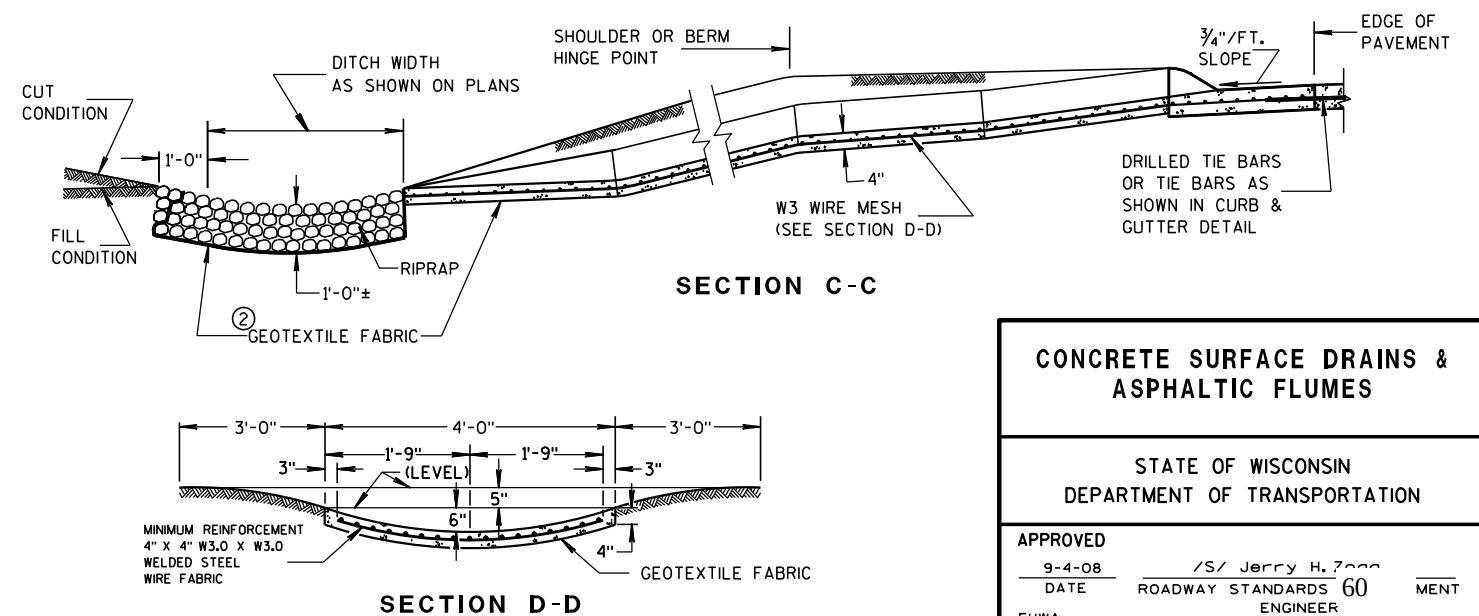


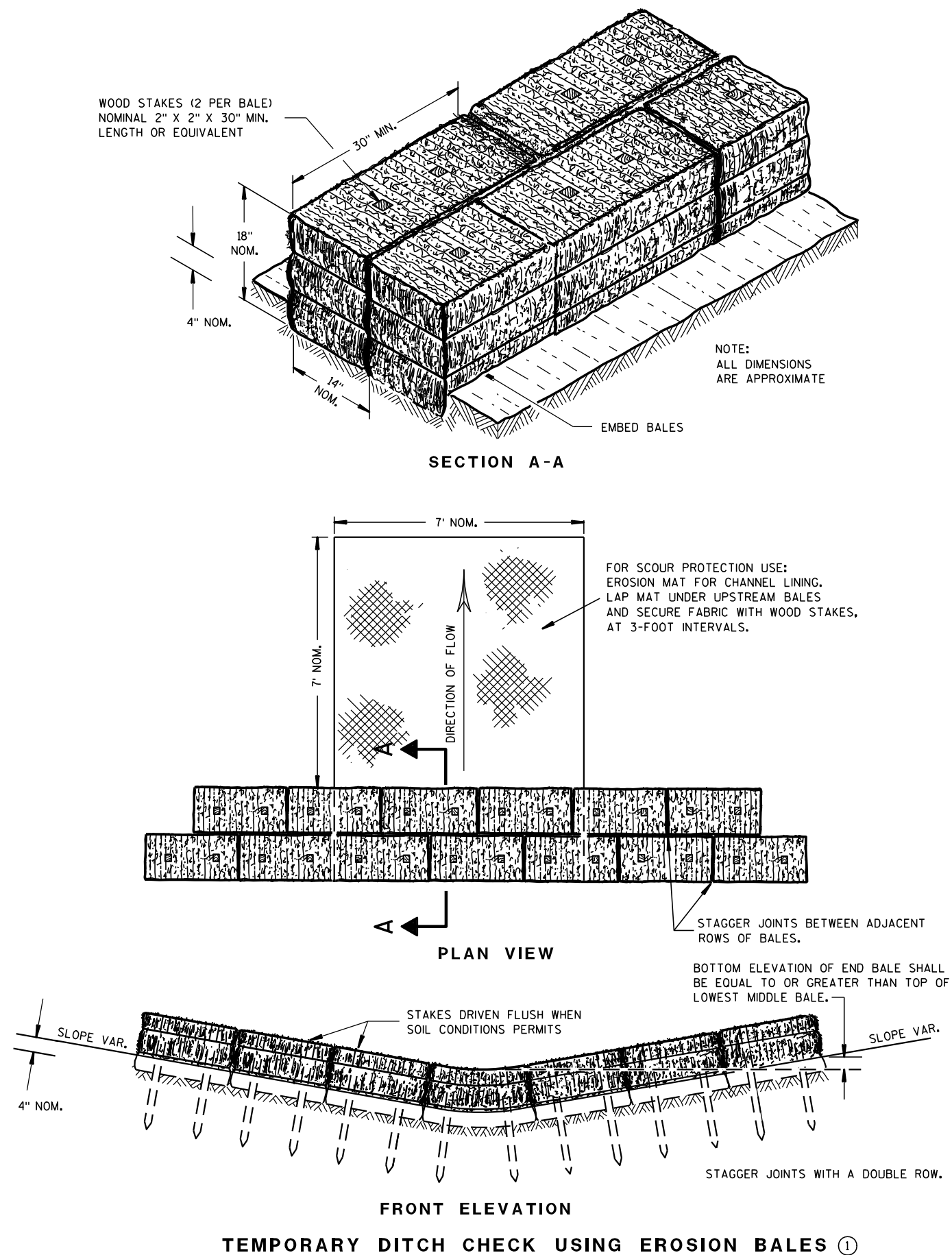
6

S.D.D. 8 D 4-5

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

SECTION C-C

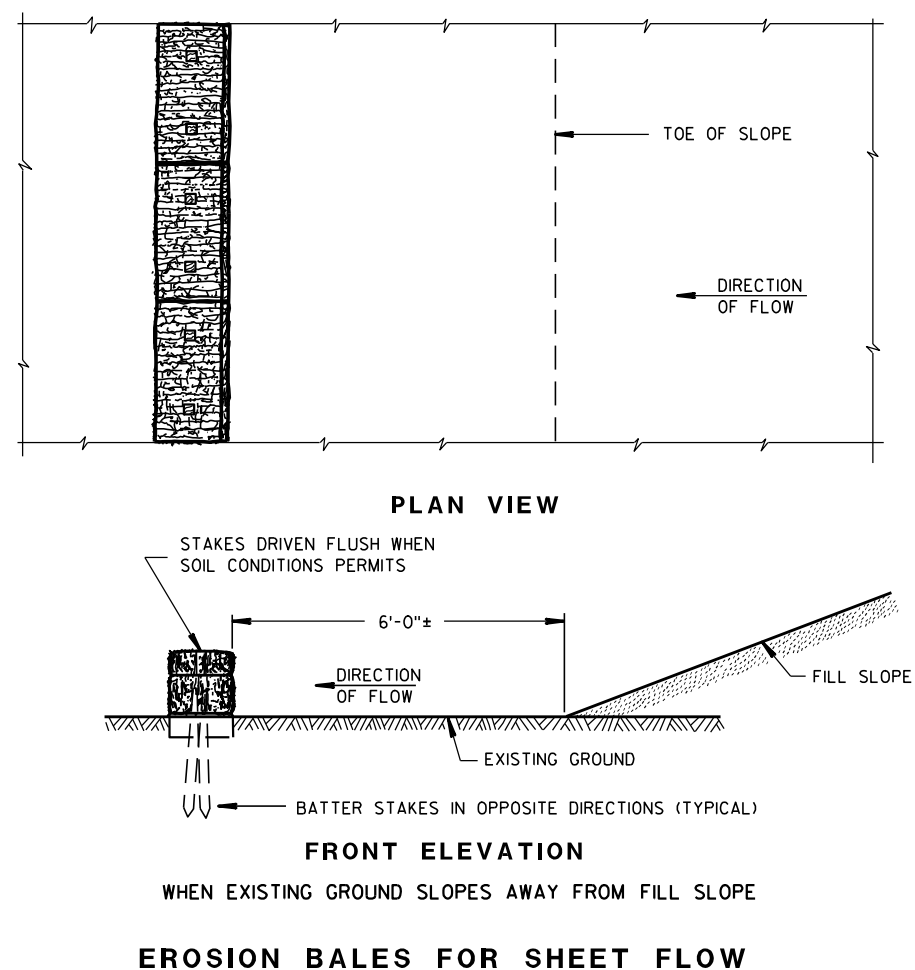
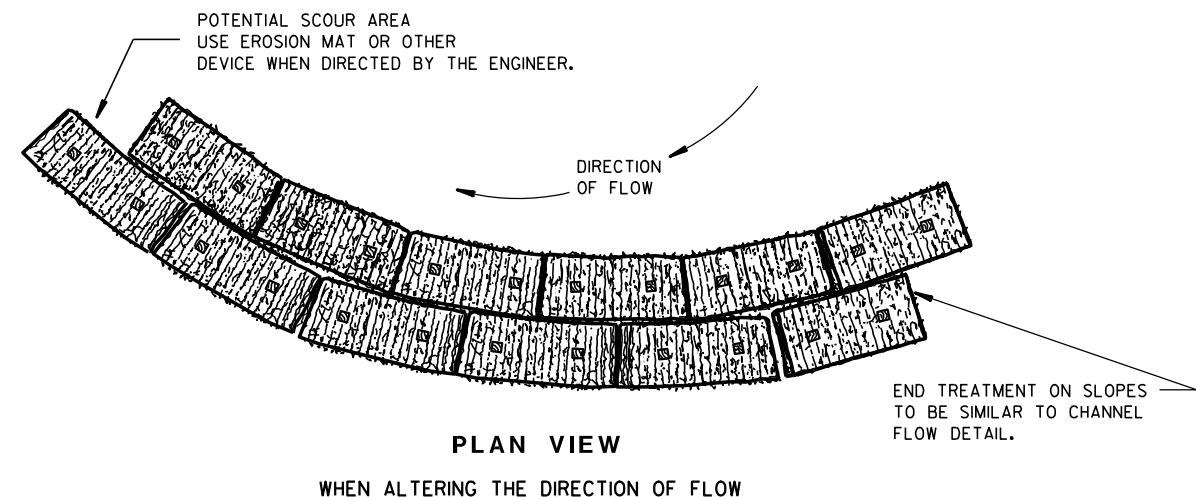




GENERAL NOTES

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.

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

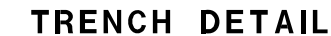
6/04/02
DATE/S/ Beth Connolly
CHIEF ROADWAY DEVELOPER

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.

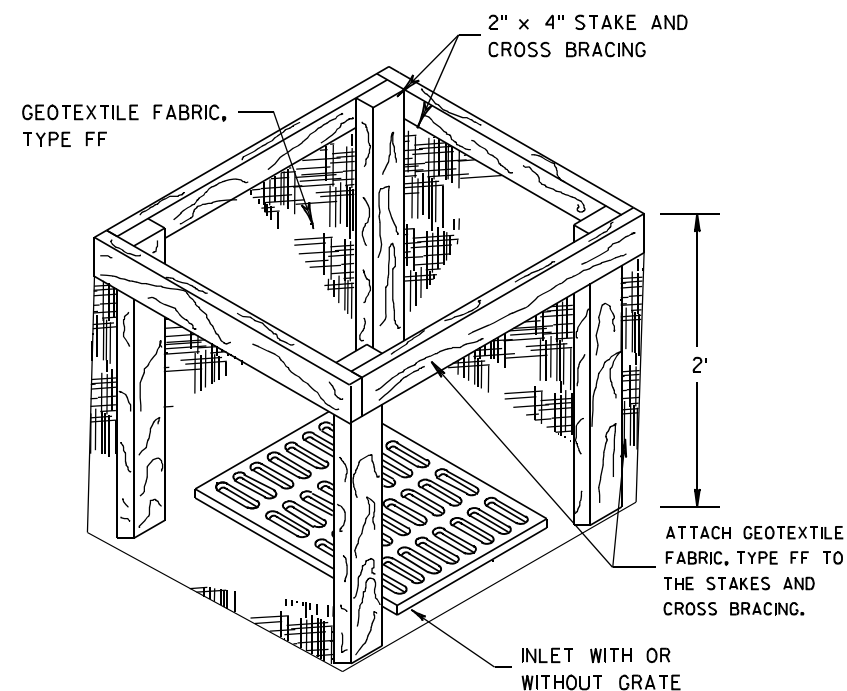
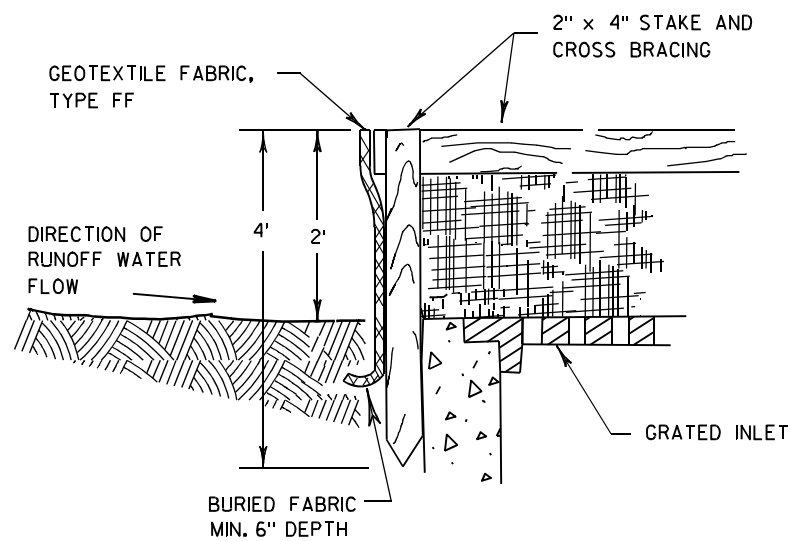


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Connolly
DATE CHIEF ROADWAY DEVELOPMENT 62 INEER

FHWA



INLET PROTECTION, TYPE A

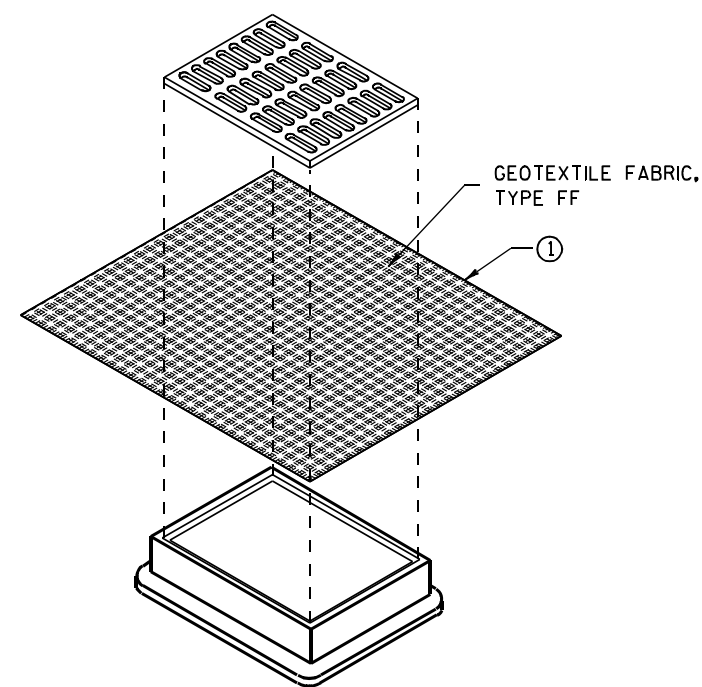
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

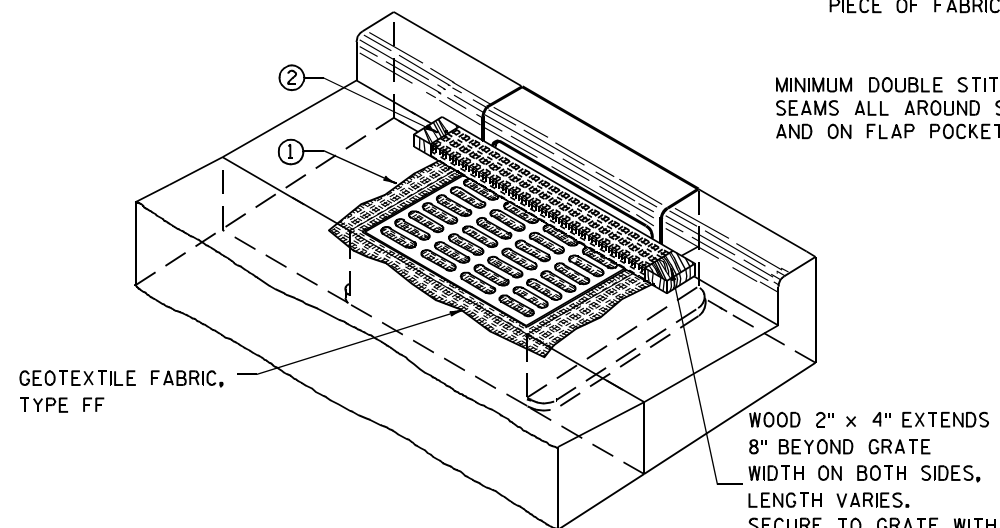
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

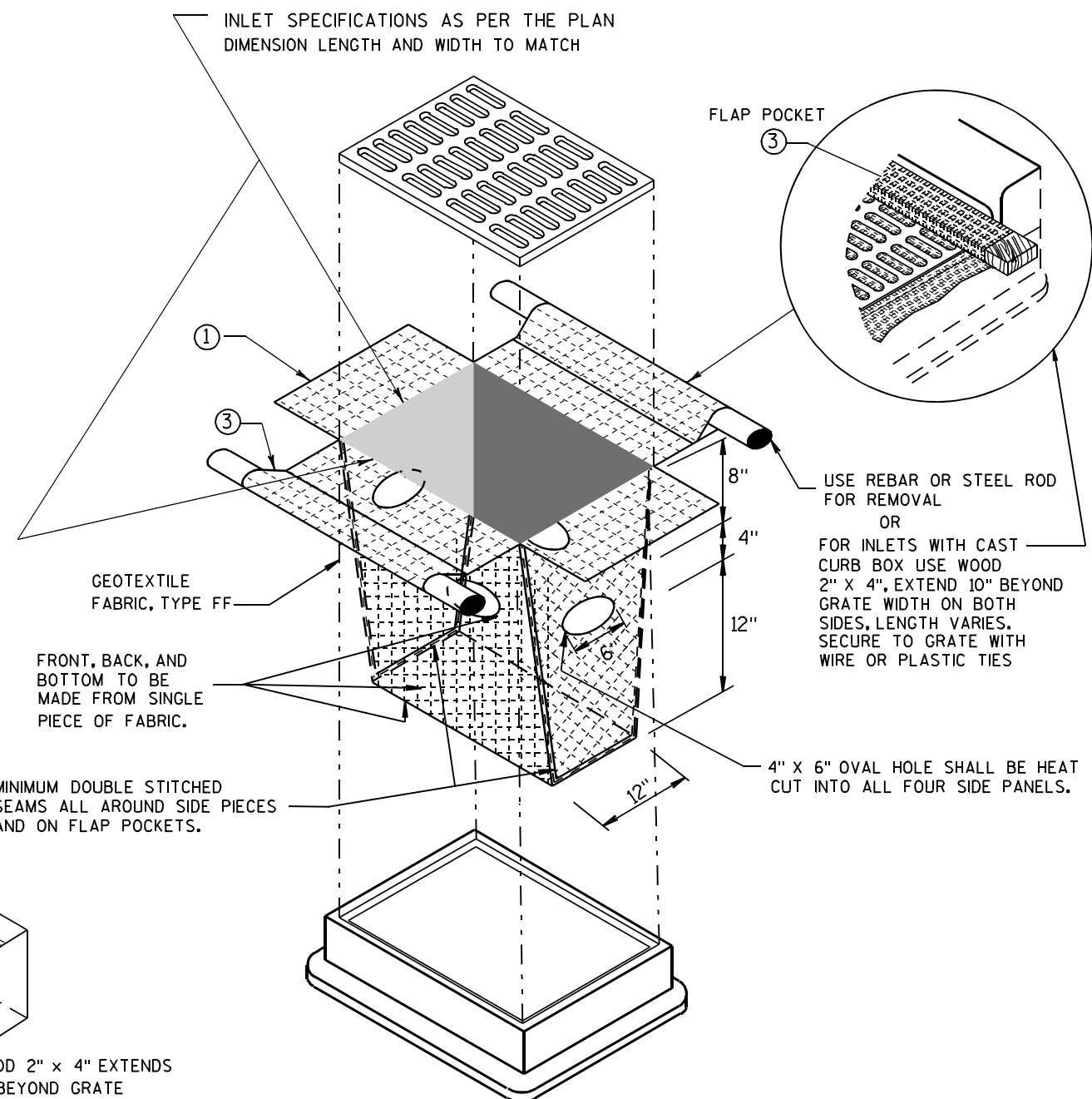
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



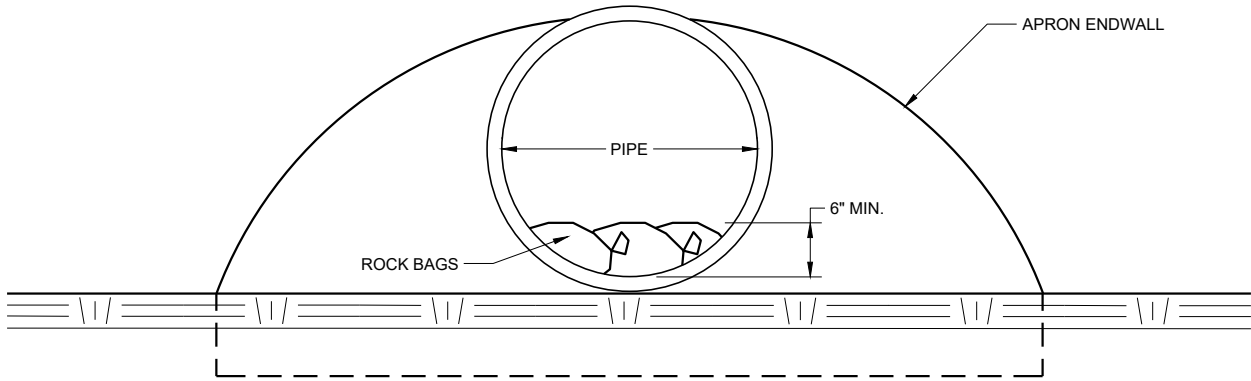
INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

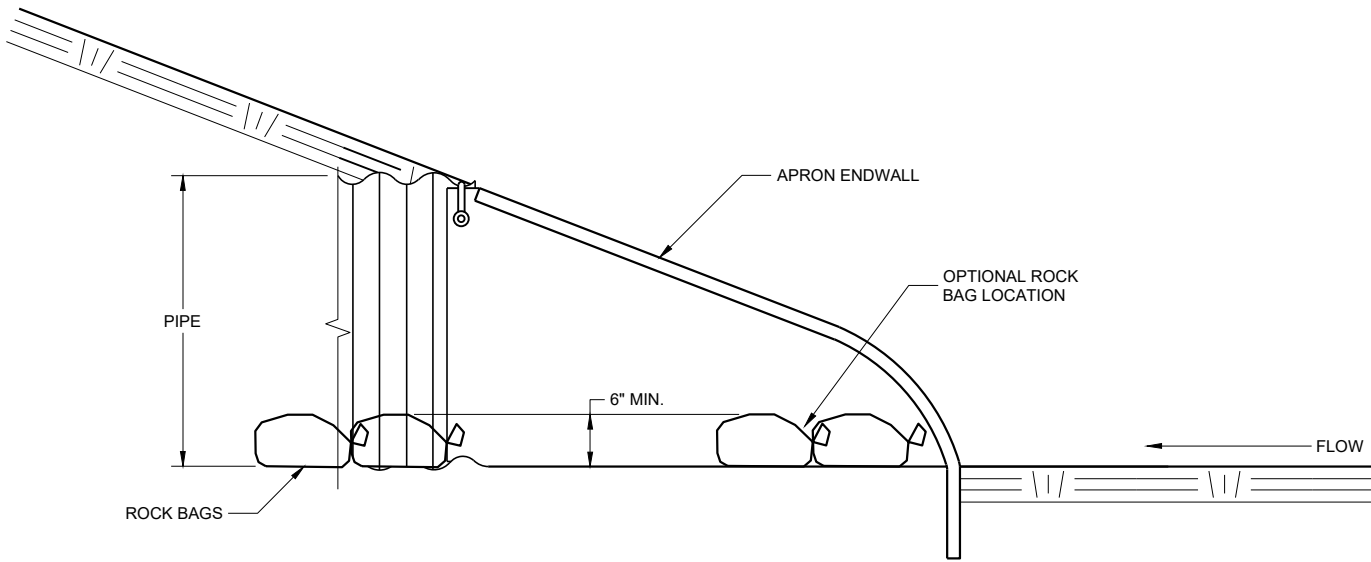
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 63
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



DD 8



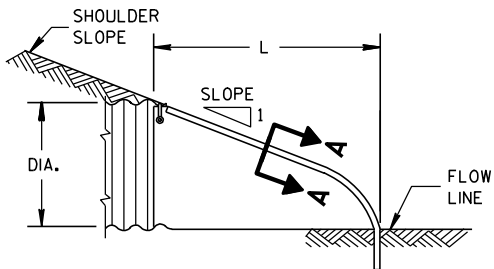
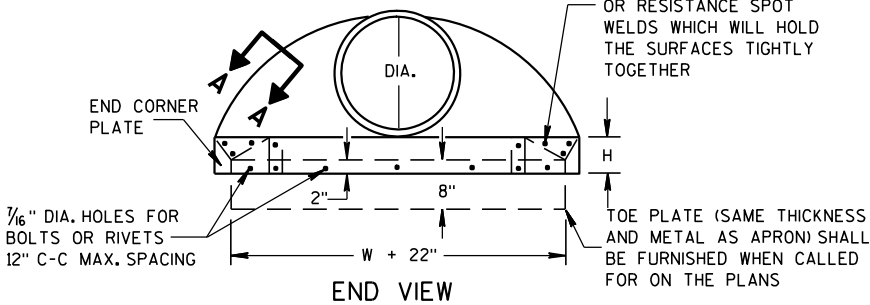
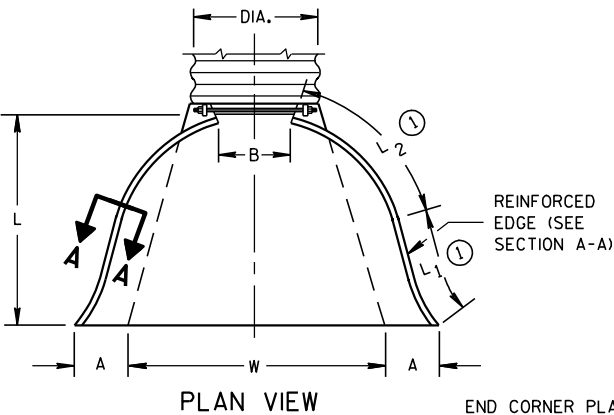
DD 8

RR (INSTALL ON INLET END ONLY)

RR	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI 64
FHWA	

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.	
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.	
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.	
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.	
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.	
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.	
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.	
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.	
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.	
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.	
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.	
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.	
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.	
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.	
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.	
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.	

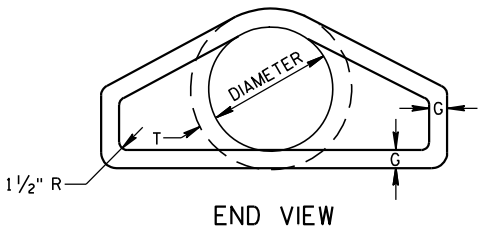
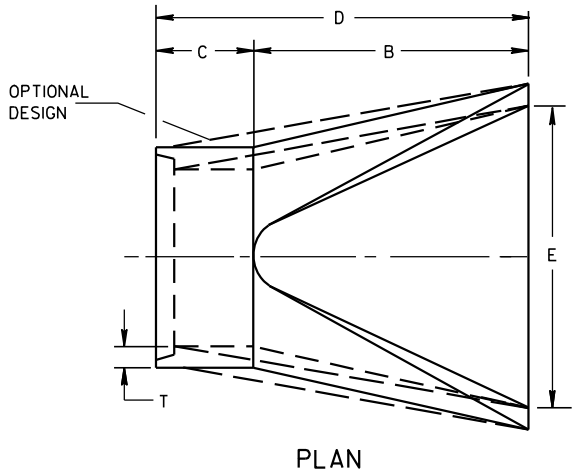
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



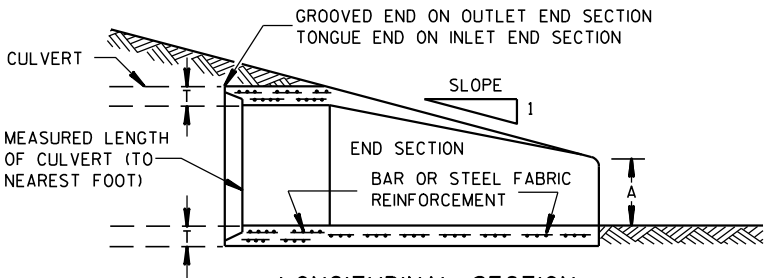
SIDE ELEVATION
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ¹ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	3 to 1
27	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	3 to 1
30	3 ¹ / ₂	12	54	19 ³ / ₄	73 ¹ / ₂	60	3 ¹ / ₂	3 to 1
36	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	3 to 1
42	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 ¹ / ₂	27	65	33 ¹ / ₄ -35	98 ¹ / ₄ -100	90	5 ¹ / ₂	2 ¹ / ₂ to 1
60	6	30-35	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	24-30	72-78	21-27	99	102	5 ¹ / ₂	2 to 1
72	7	24-36	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	24-36	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

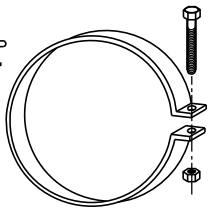
* MINIMUM
** MAXIMUM



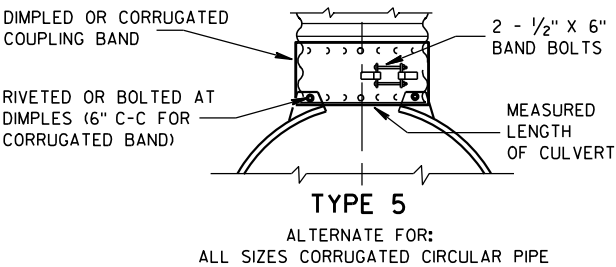
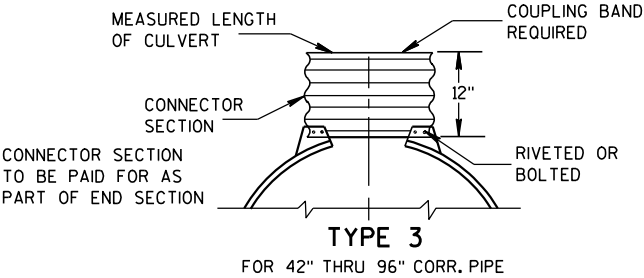
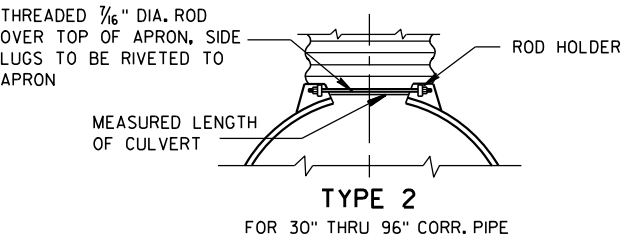
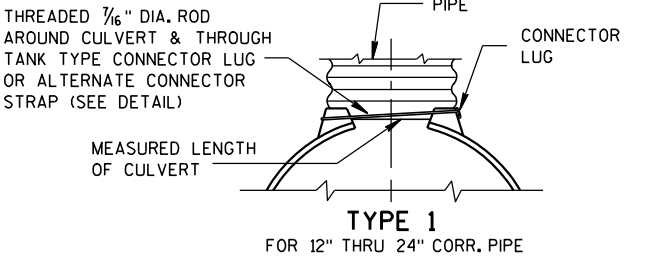
LONGITUDINAL SECTION
CONCRETE ENDWALLS



1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



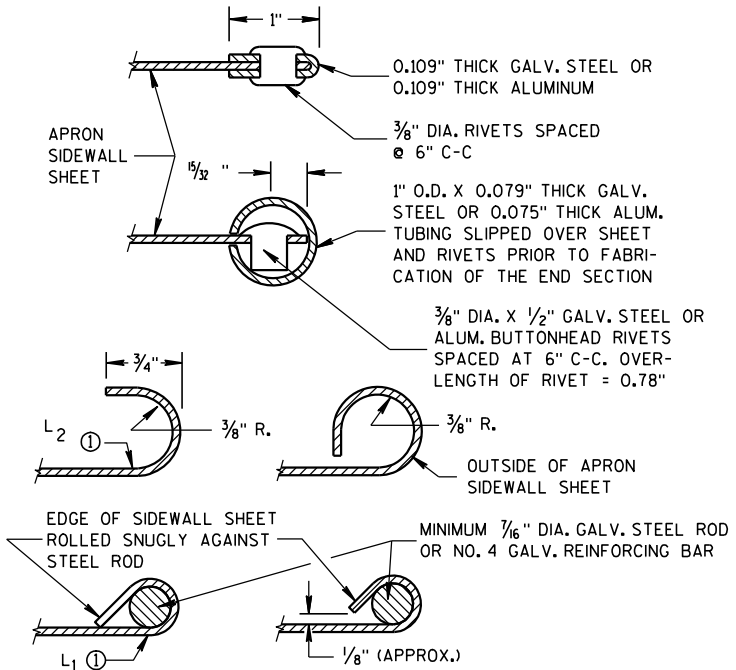
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

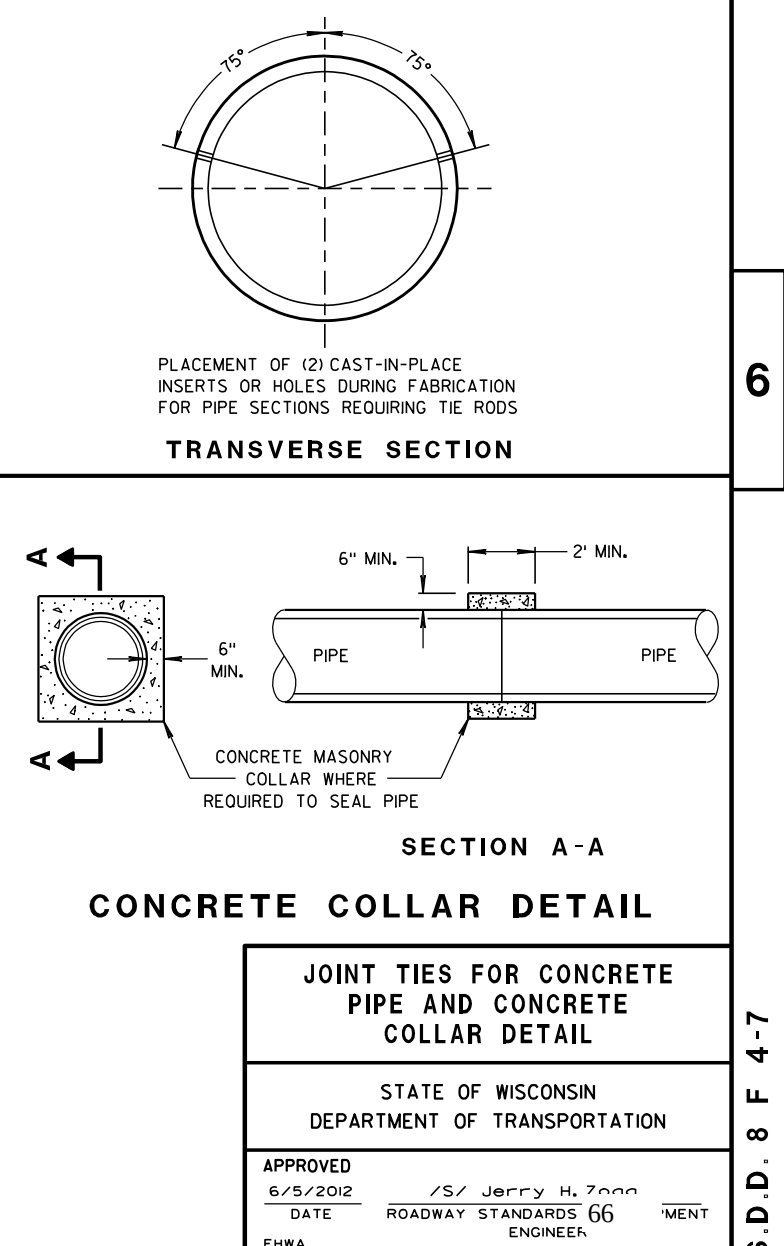
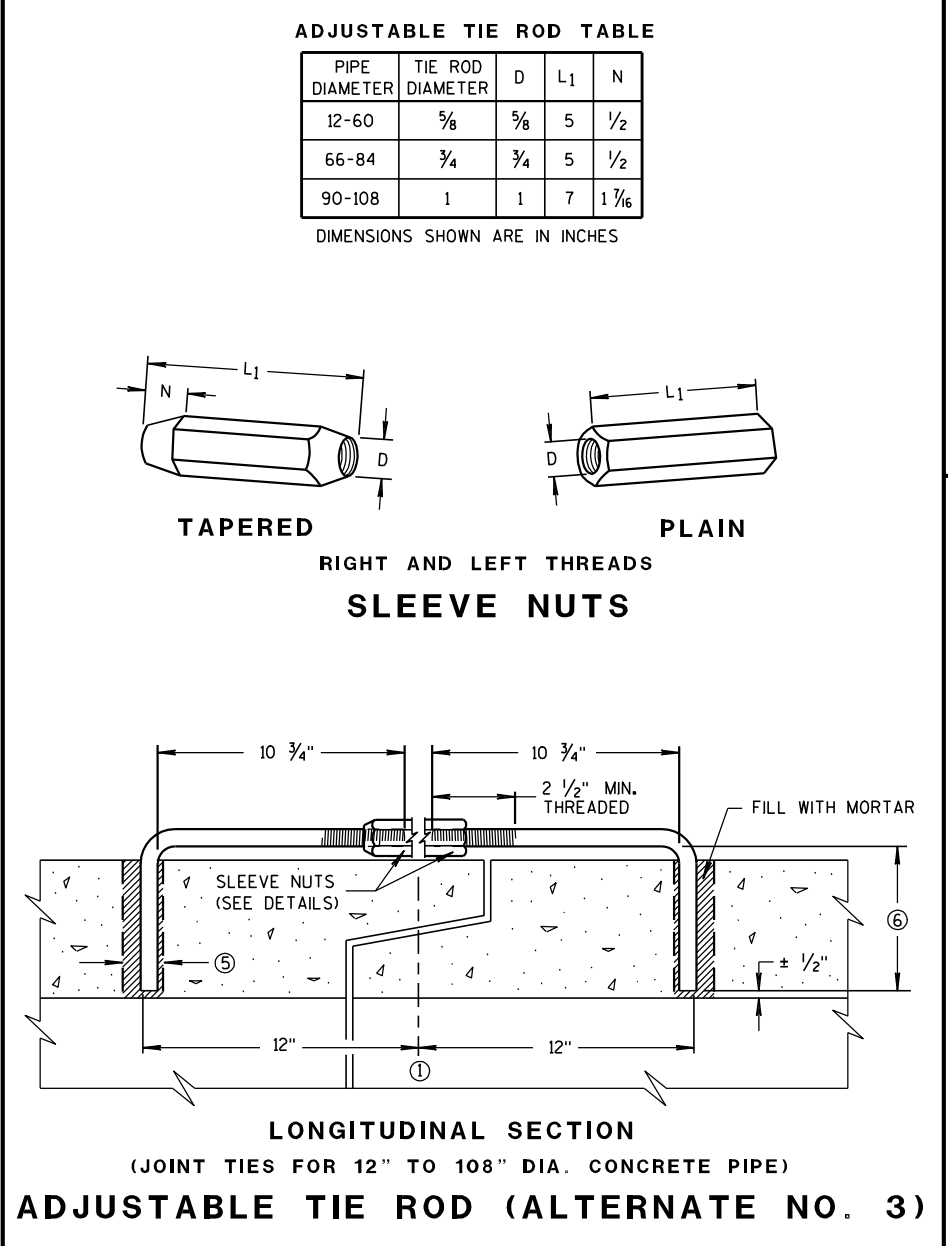
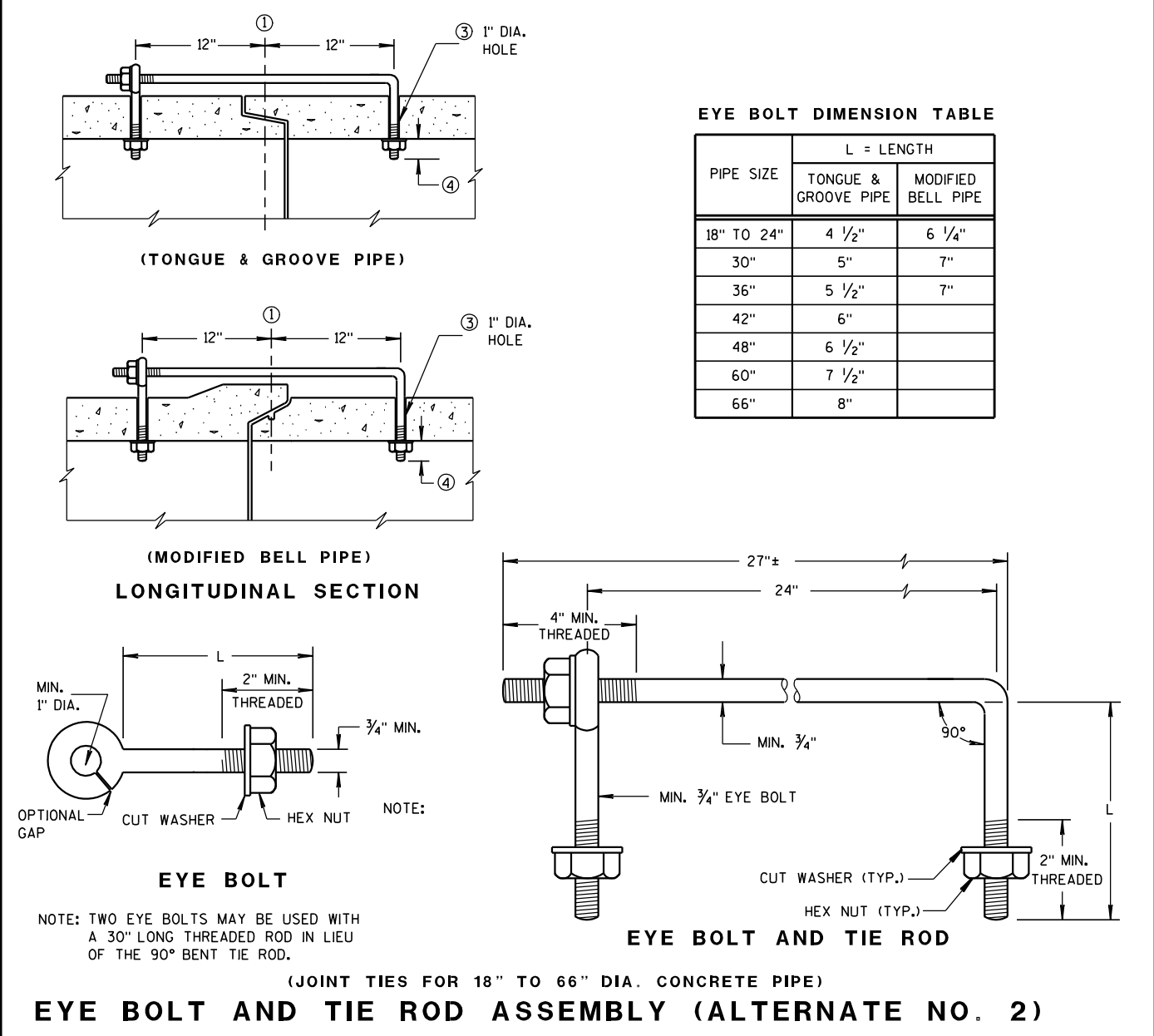
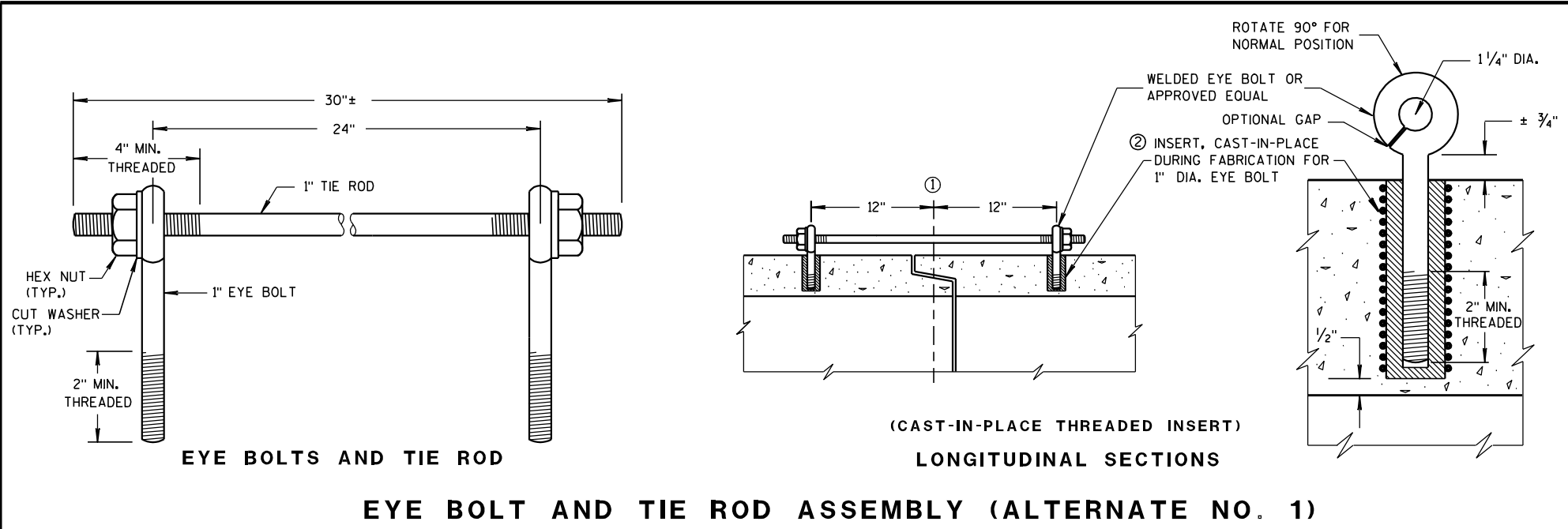
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

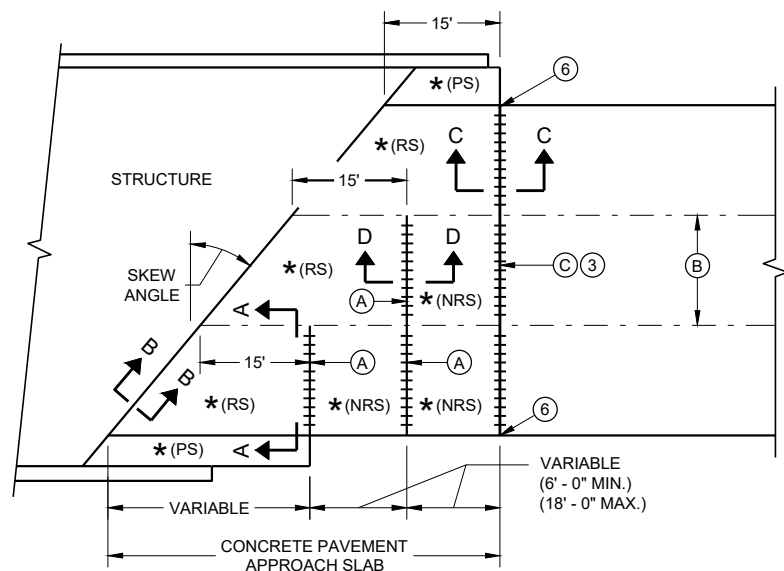
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

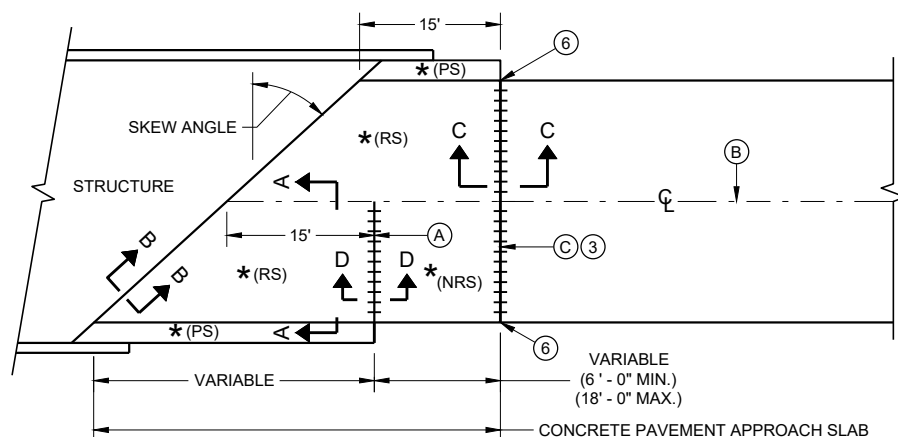
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOP 65
NEER
FHWA

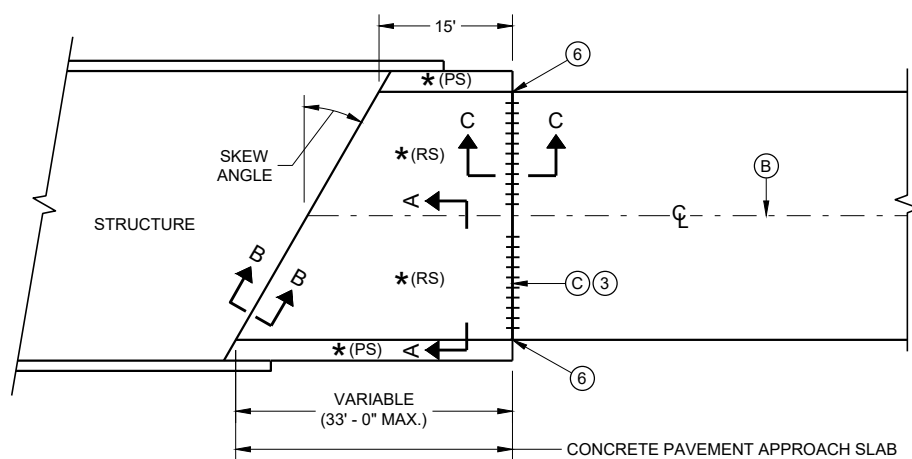




**SKewed APPROACH
(PAVEMENT MORE THAN TWO LANES)**



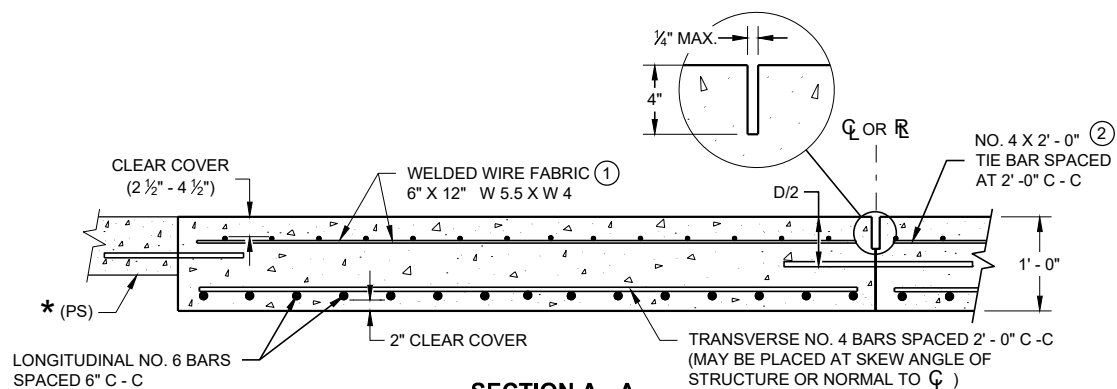
**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**



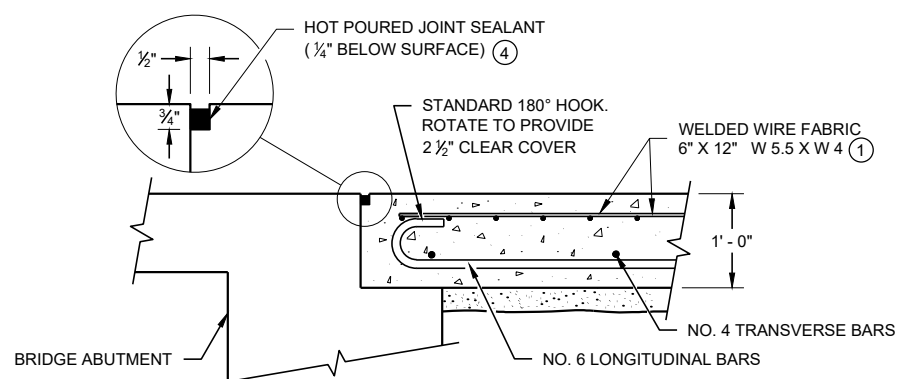
**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**

APPROACH SLAB AND ADJACENT PAVEMENT

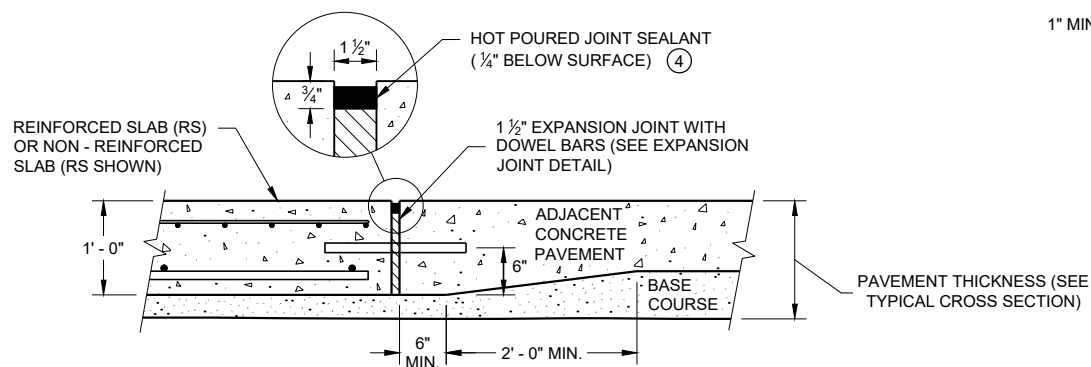
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



**SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT**



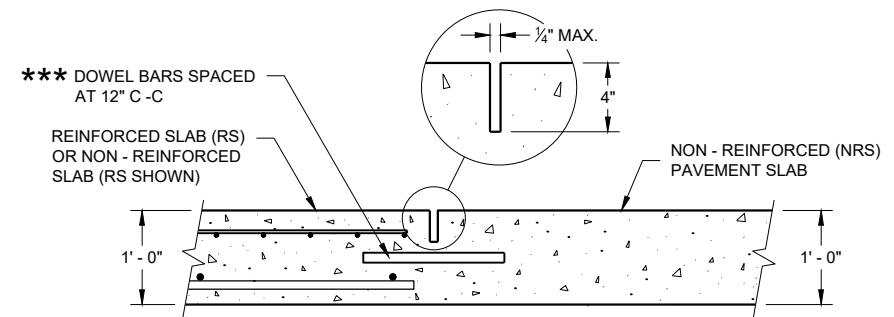
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

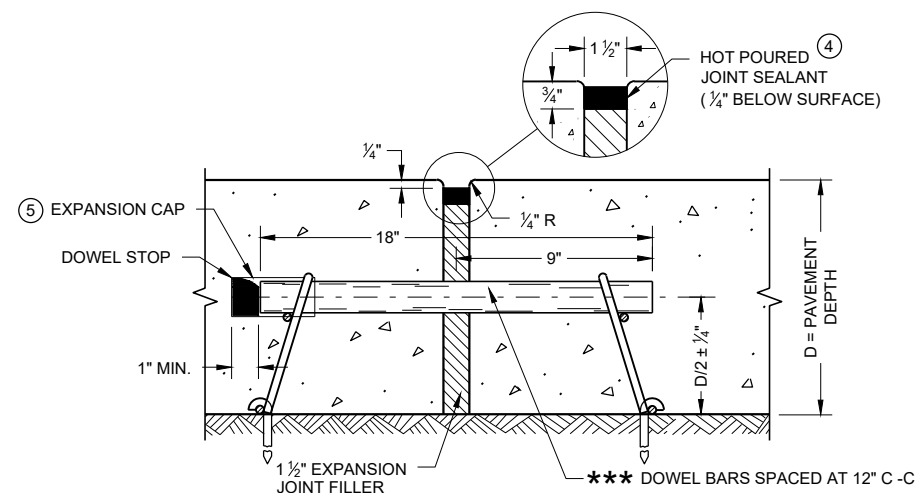
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
- ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- (A) STANDARD CONTRACTION JOINT NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.
- (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.



**SECTION D - D
CONTRACTION JOINT**



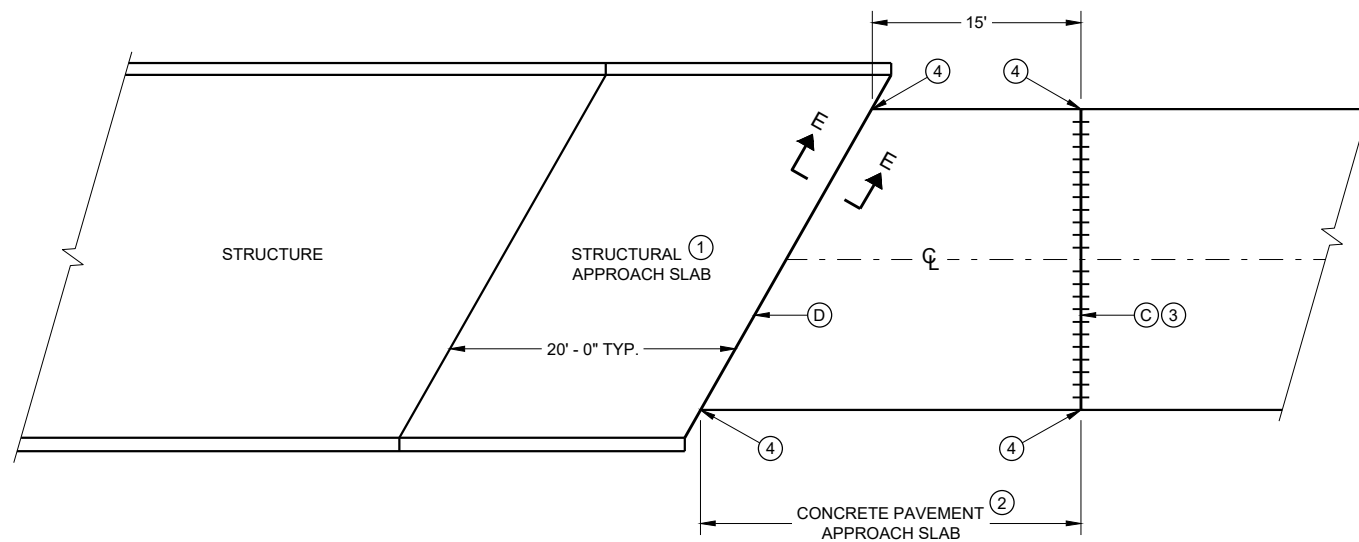
EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR 69

FHWA

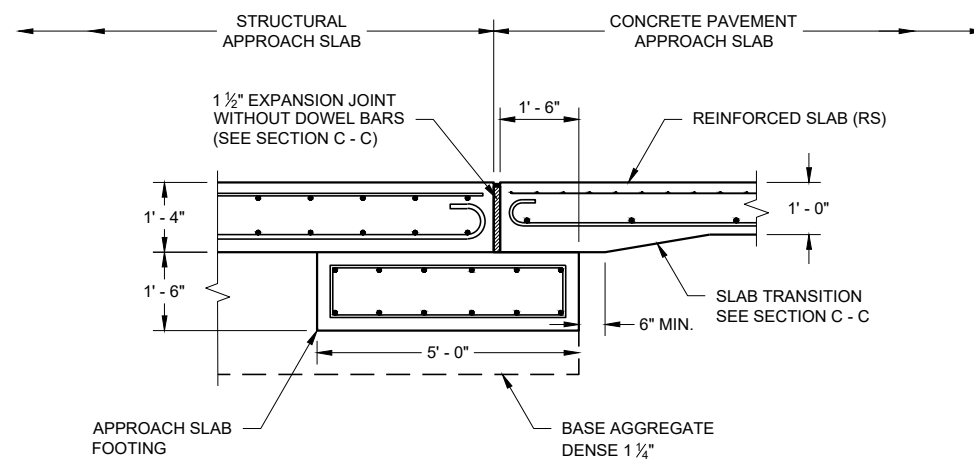


GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE PAVEMENT APPROACH SLAB.

- ① SEE BRIDGE PLAN.
- ② CONFORM TO SDD 13B02 SHEET A FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- Ⓒ 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO $\overline{CL}$ OR $\overline{RL}$.
- Ⓓ 1 ½" EXPANSION JOINT (NO DOWELS)

BRIDGE APPROACHES

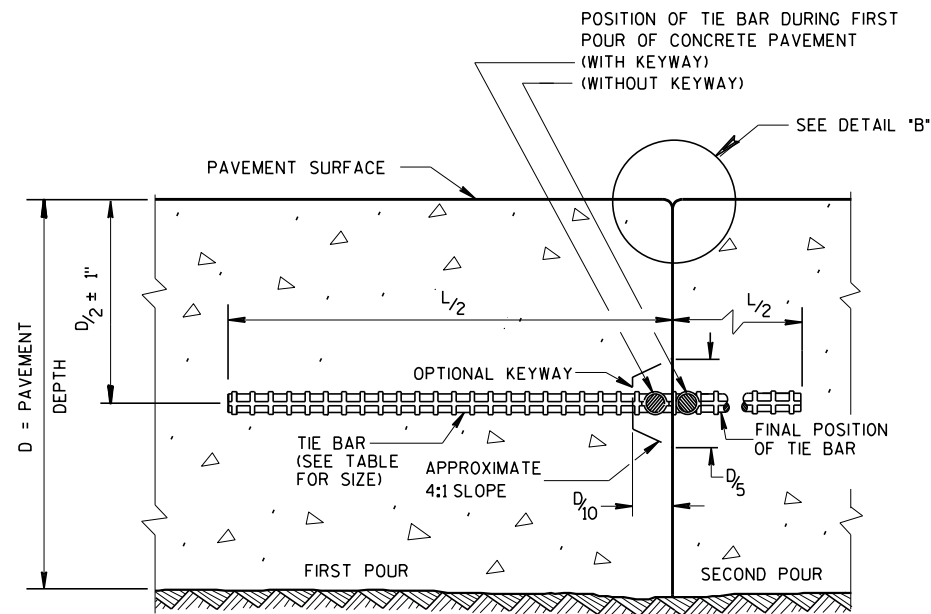


SECTION E - E FOOTING DETAIL STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

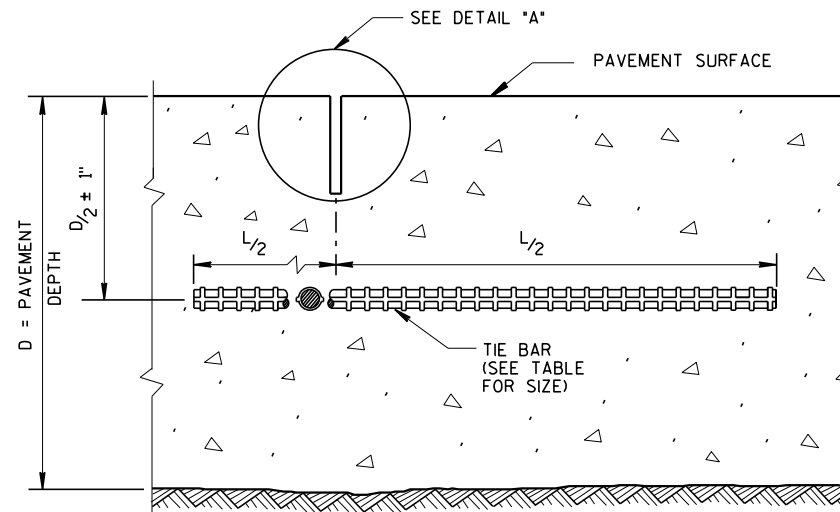
STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 70
FHWA



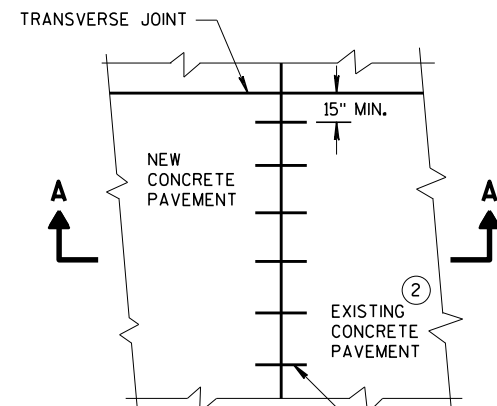
CONSTRUCTION JOINT



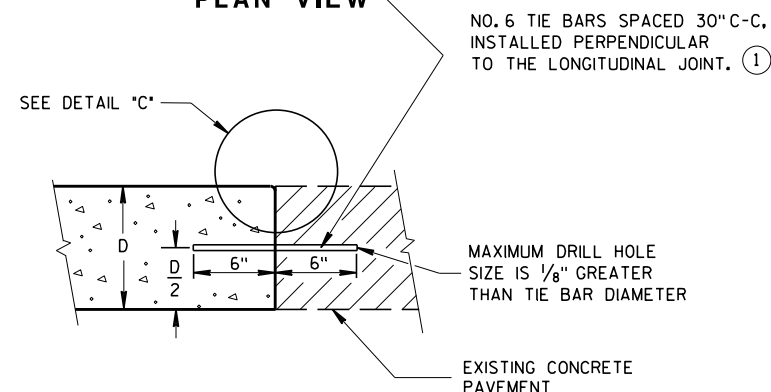
SAWED JOINT

GENERAL NOTES

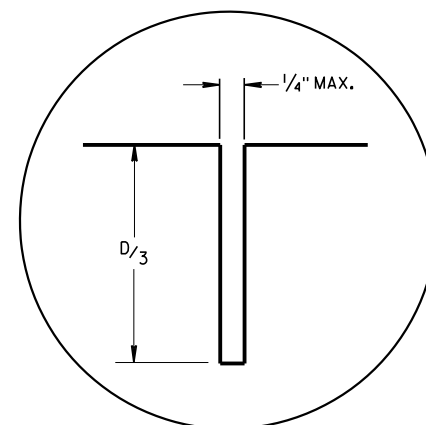
- CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
 - PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



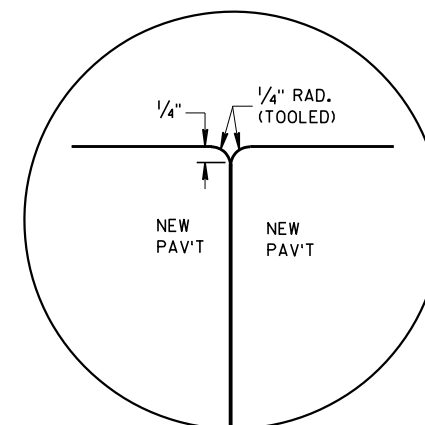
PLAN VIEW



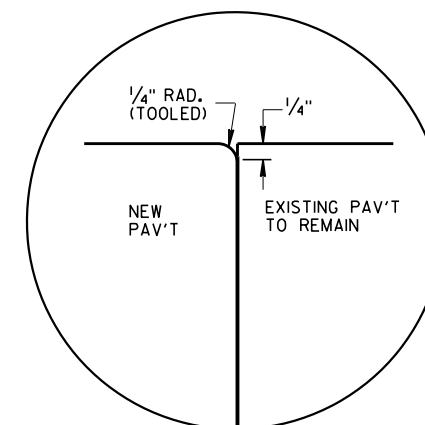
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



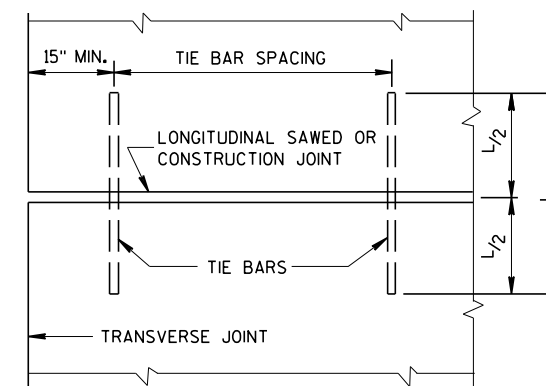
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
$< 10 \frac{1}{2}"$	NO. 4	30"	36"
$\geq 10 \frac{1}{2}"$	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

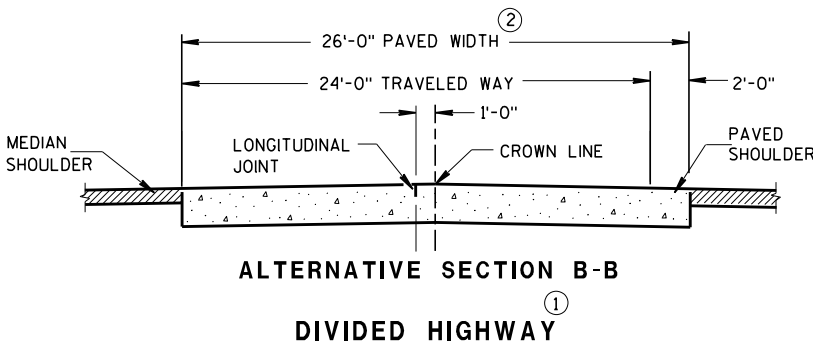
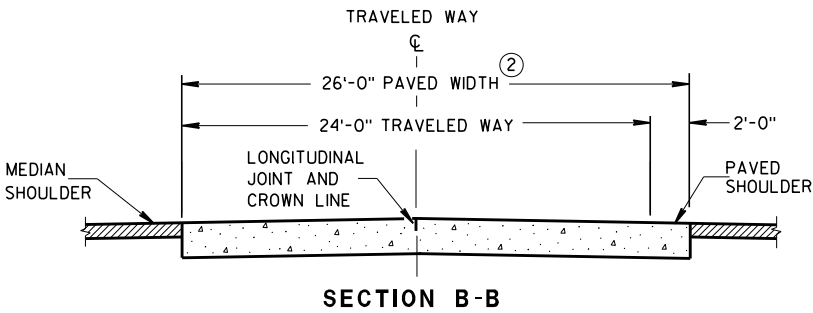
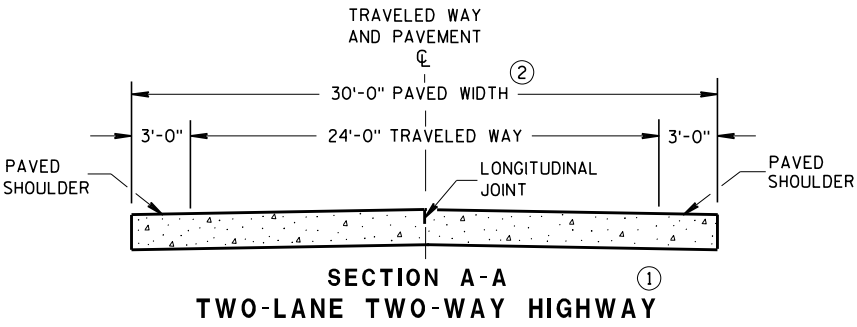


PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Peter Kern
DATE PAVEMENT SUPERVISOR
FHWA



GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

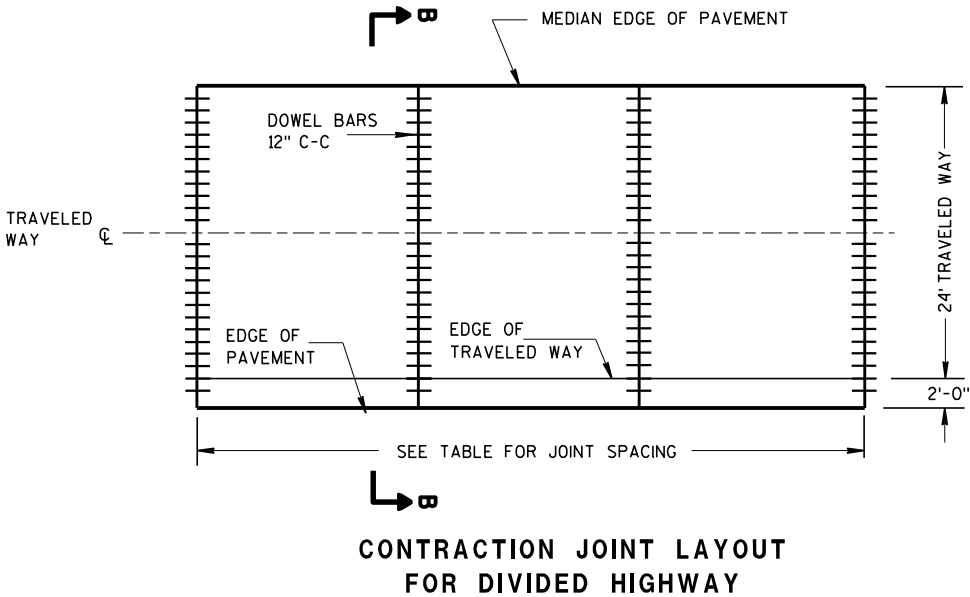
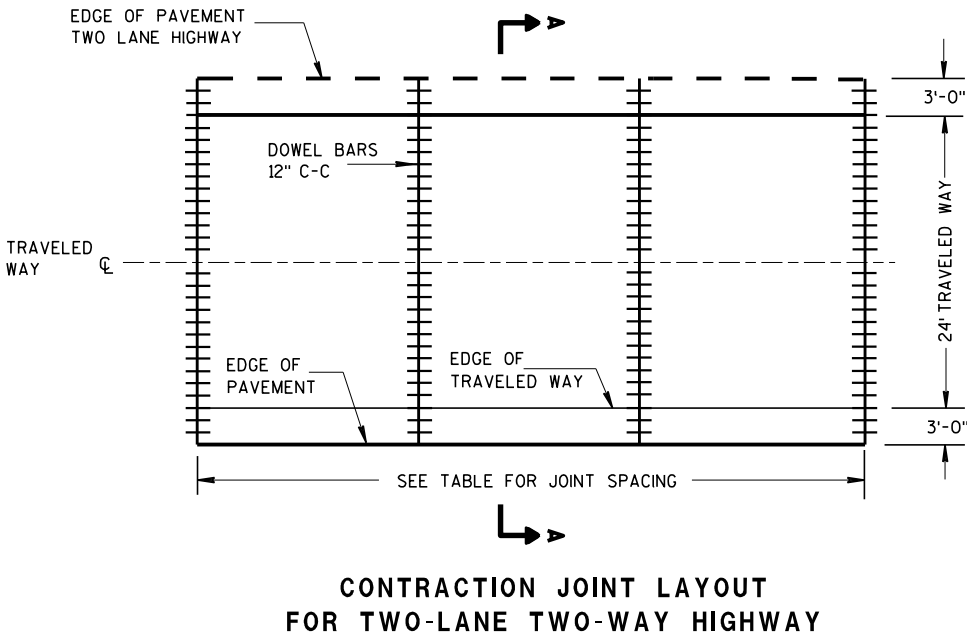
CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

- 1 REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.
- 2 MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

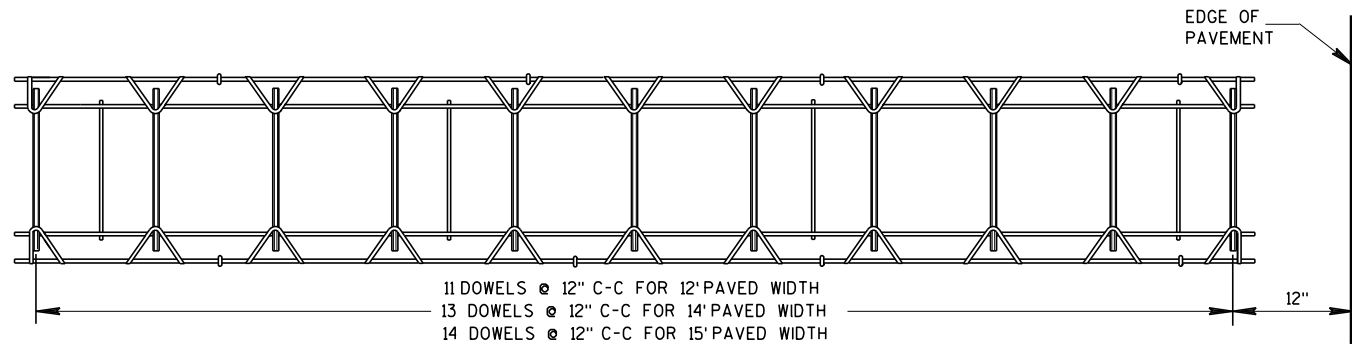
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

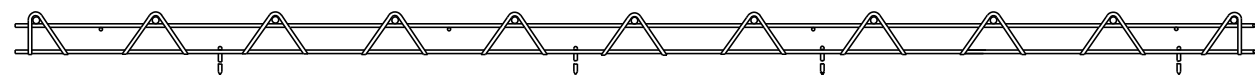


RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

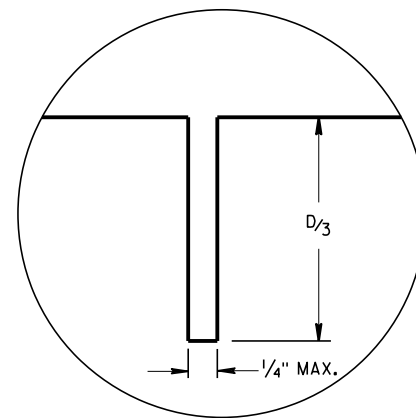


②

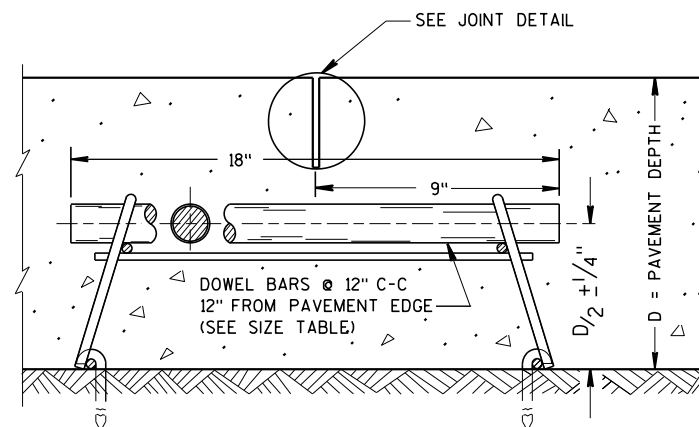
SIDE VIEW

(NORMAL TO CENTERLINE)

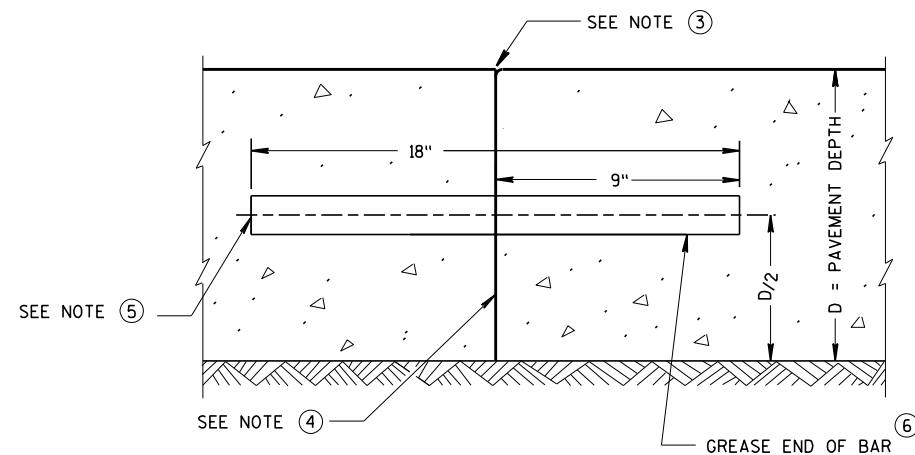
CONTRACTION JOINT DOWEL ASSEMBLY ①



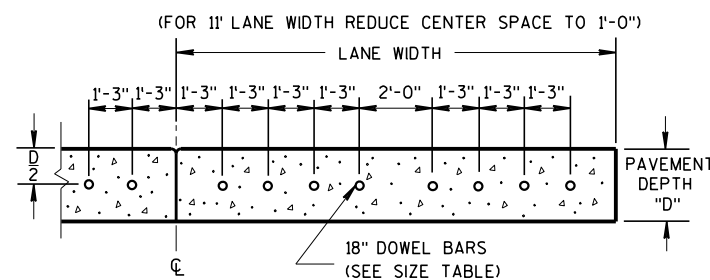
JOINT DETAIL



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

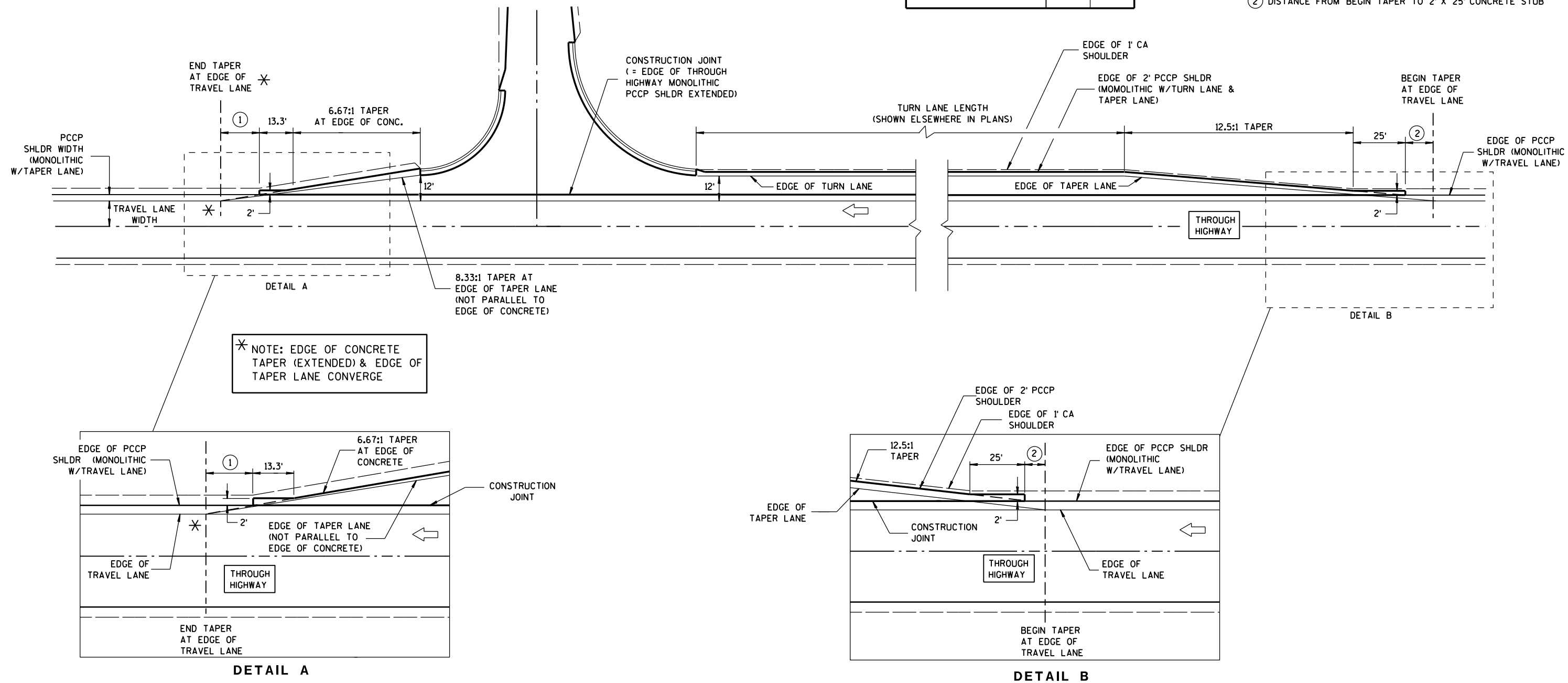
GENERAL NOTES

- ① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.
- ② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.
- ③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A $1/4$ -INCH RADIUS AT FORMED JOINTS.
- ④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.
- ⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.
- ⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
- ⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS $1/8$ -INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.

RURAL DOWELED
CONCRETE PAVEMENT

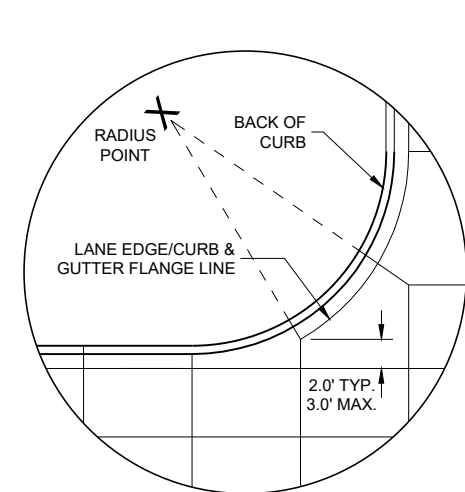
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Peter Kern
DATE PAVEMENT SUP 73
FHWA

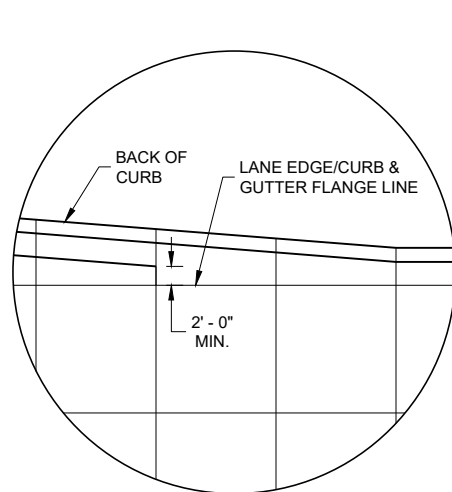


DETAIL FOR RIGHT TURN LANE/
TEE INTERSECTION BYPASS LANE
ON A CONCRETE ROADWAY

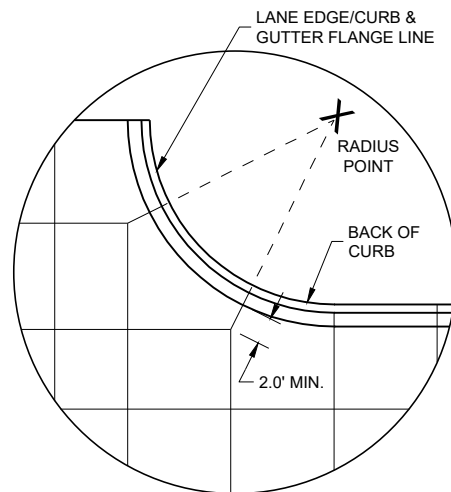
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



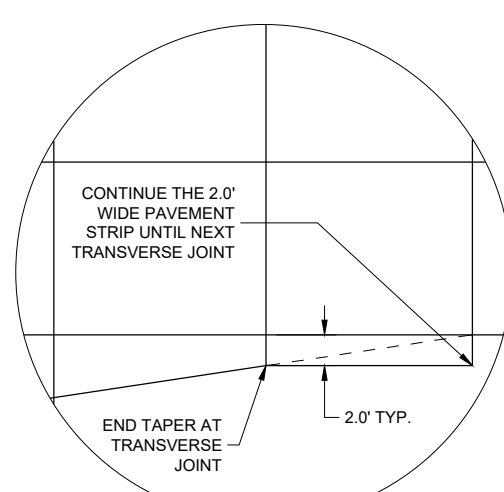
DETAIL "A"



DETAIL "B"



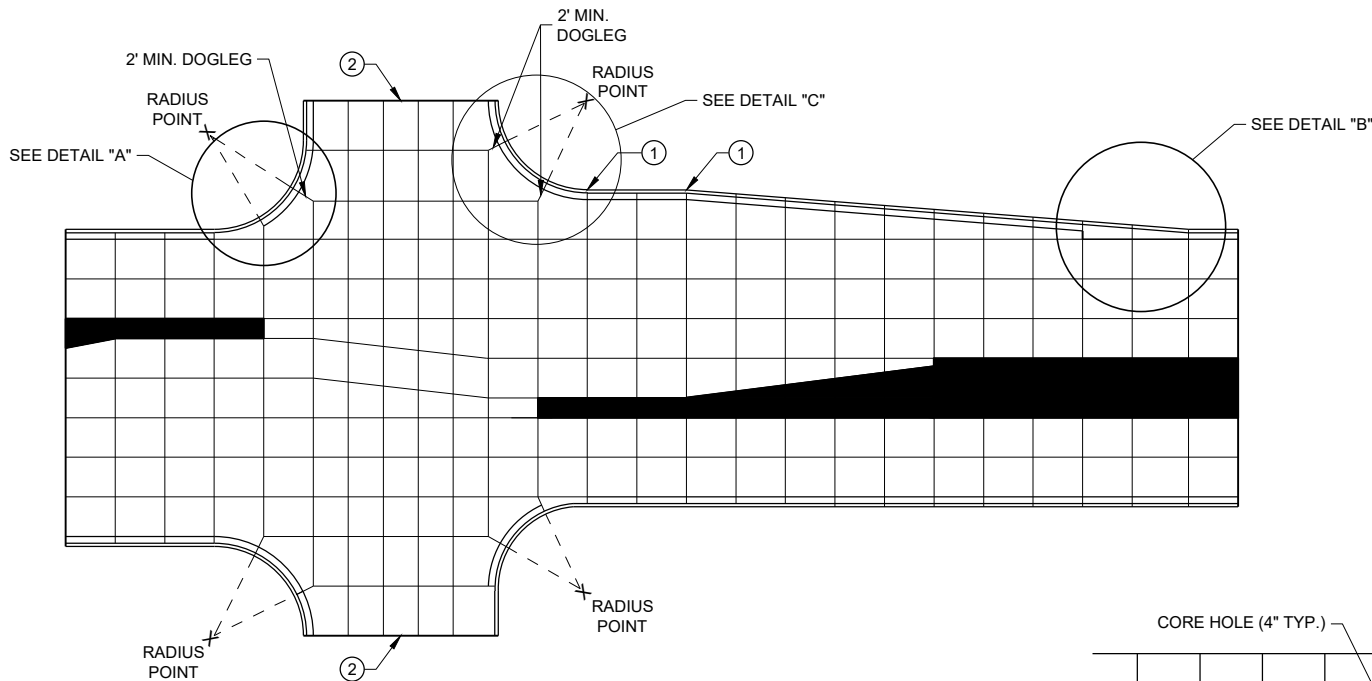
DETAIL "C"



DETAIL "D"

GENERAL NOTES

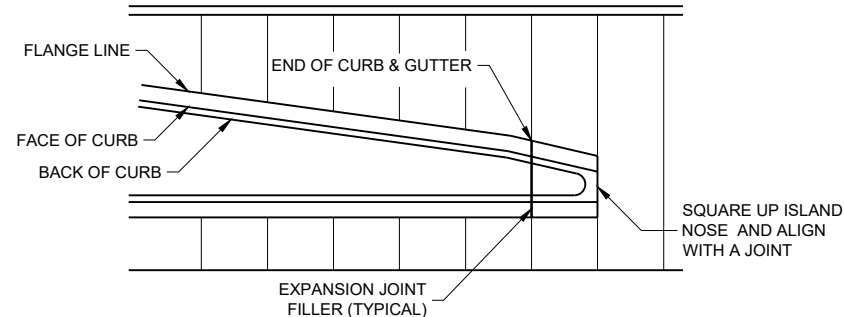
- THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.
- ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.
- ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.
- AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.
- SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.
- AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- 1 PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
 - 2 CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
 - 3 THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



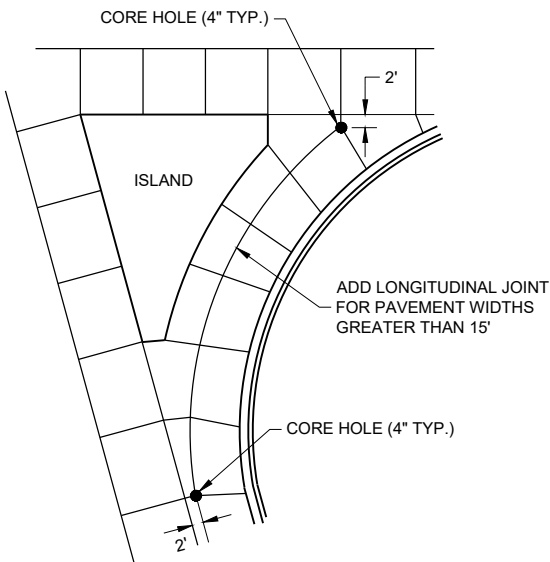
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

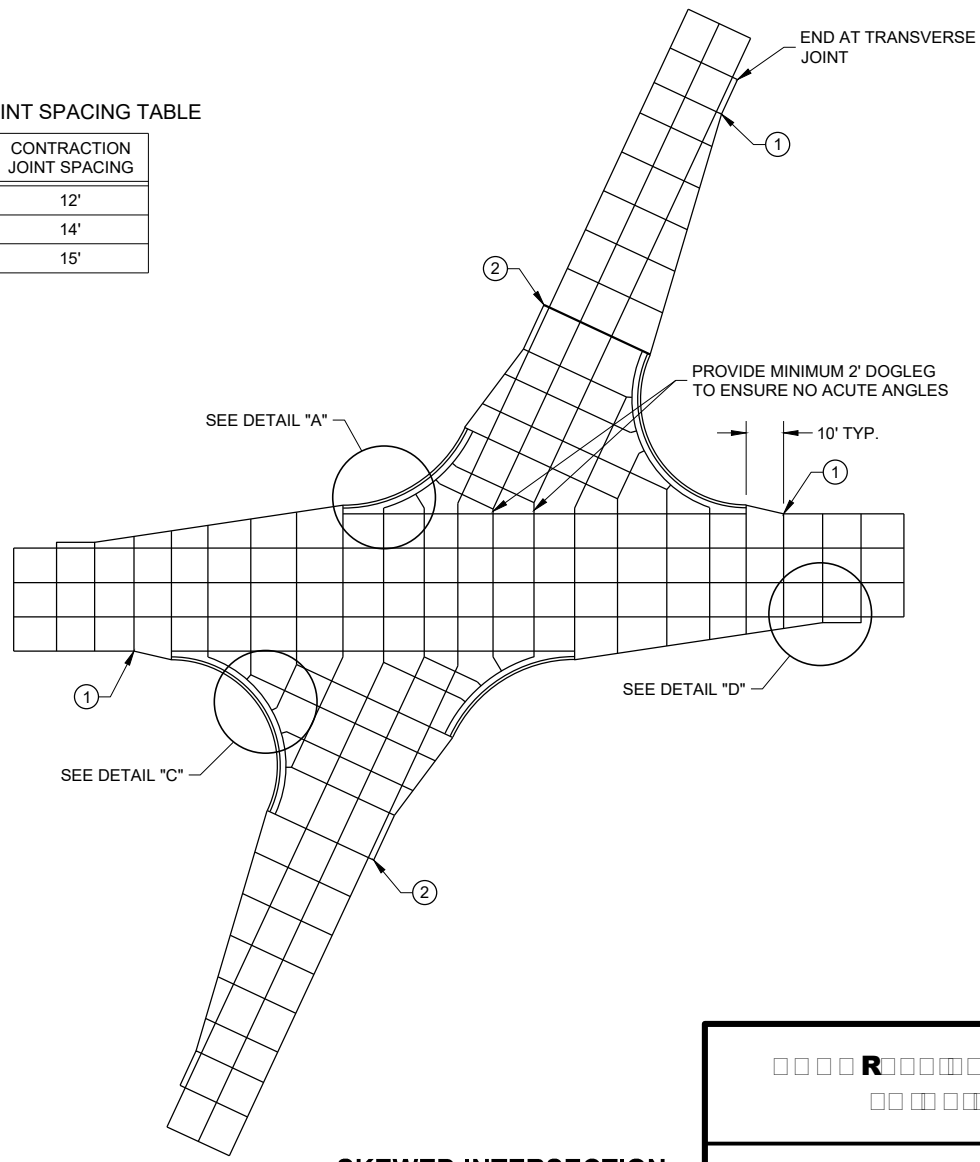
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



APPROACH TO MEDIAN



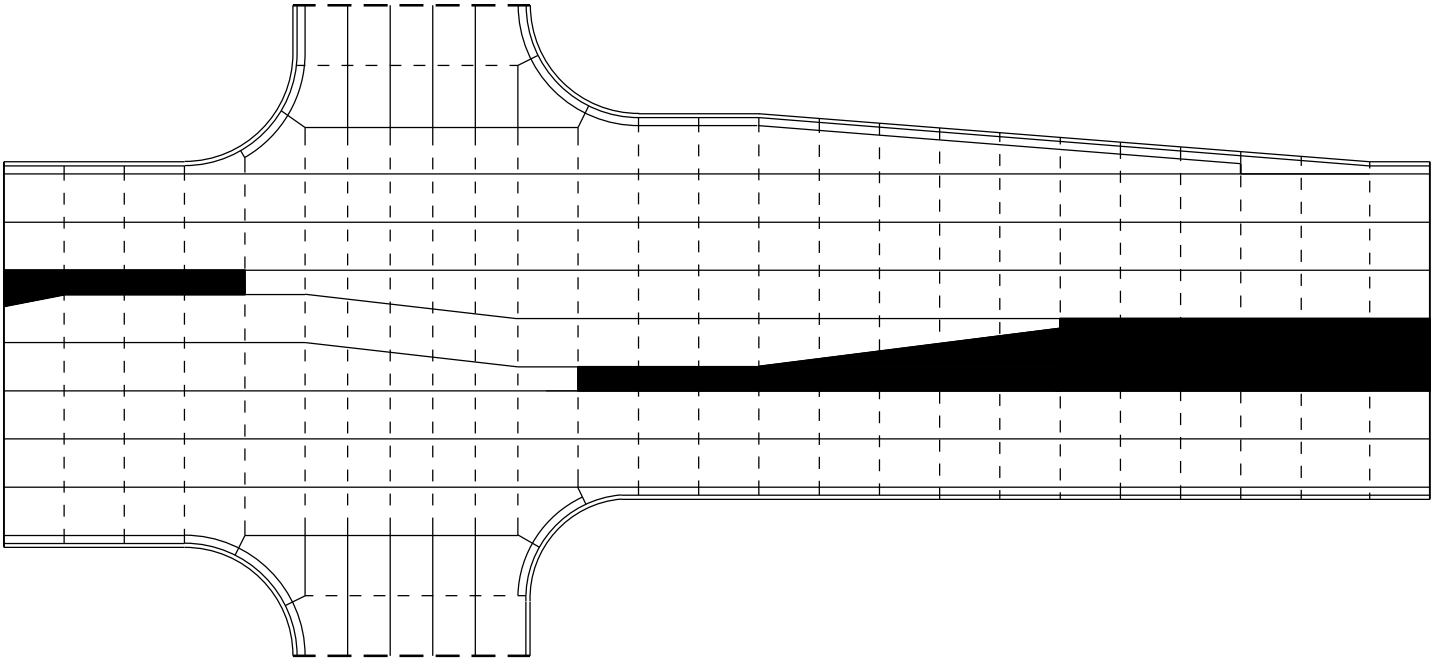
LARGE RIGHT TURN



SKEWED INTERSECTION

LEGEND

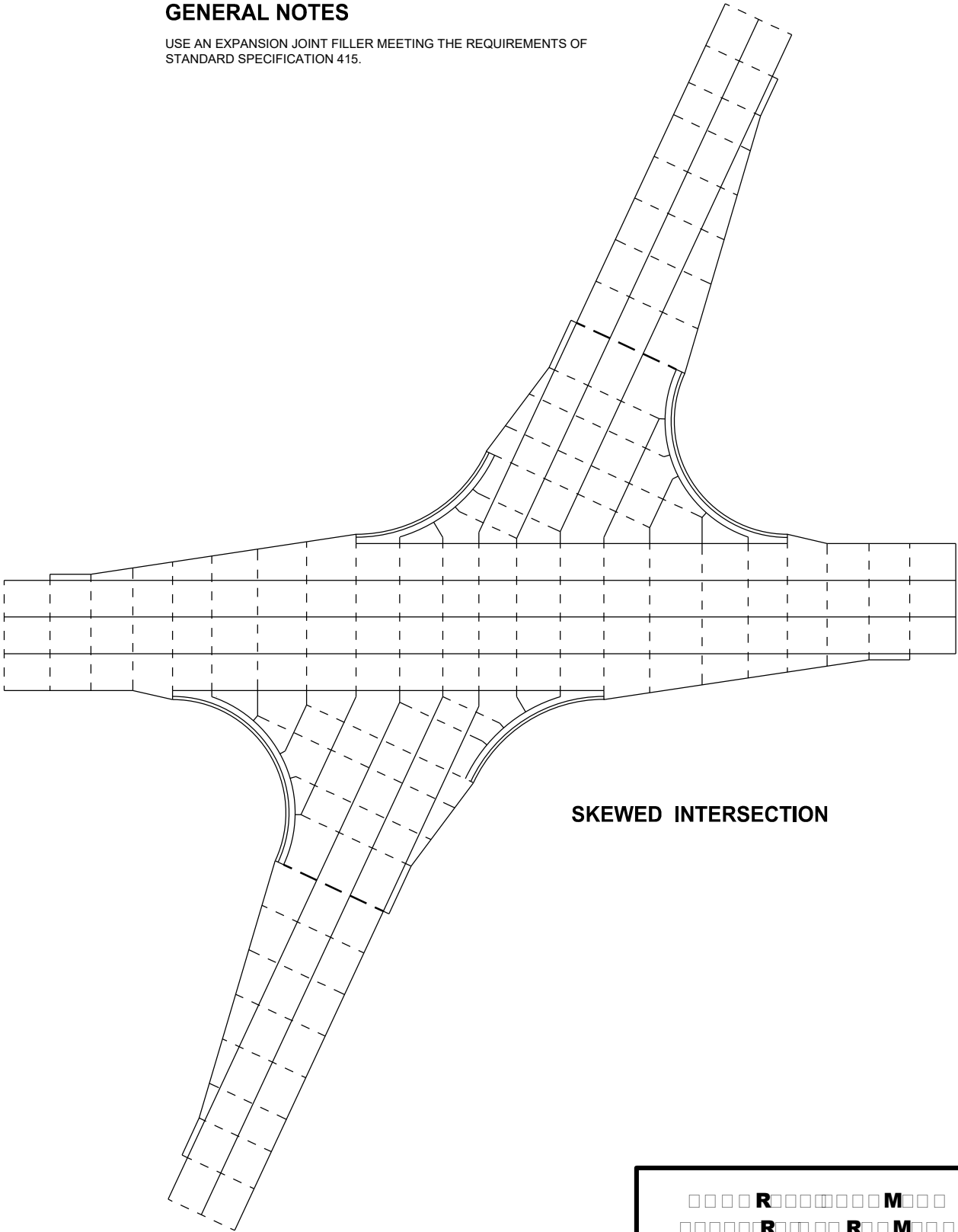
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT



STANDARD INTERSECTION

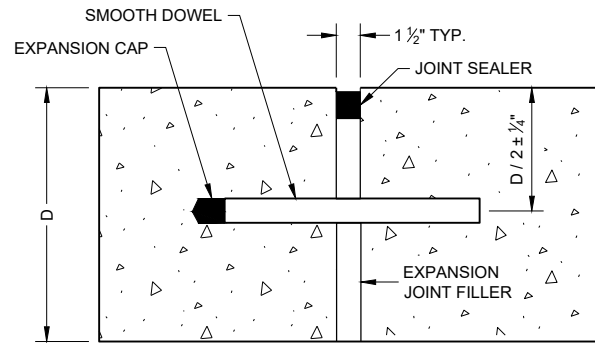
GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.

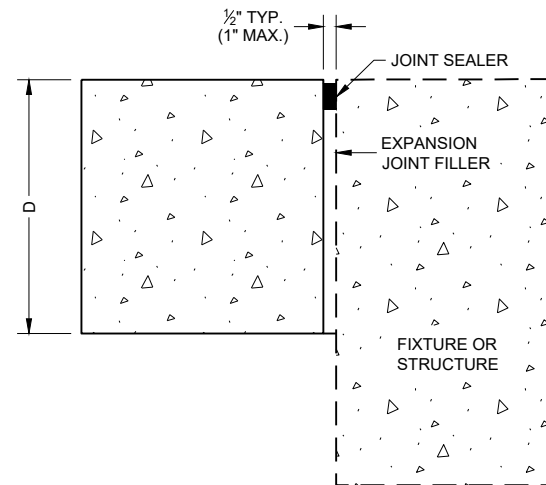


SKEWED INTERSECTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

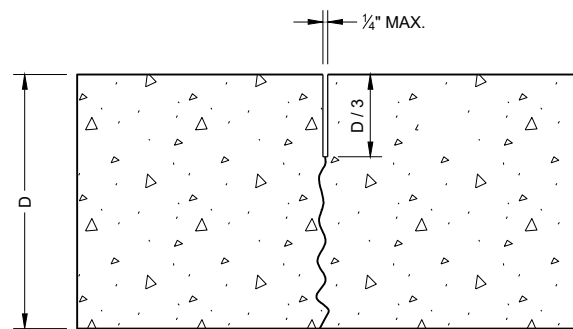


DOWELED TRANSVERSE ①

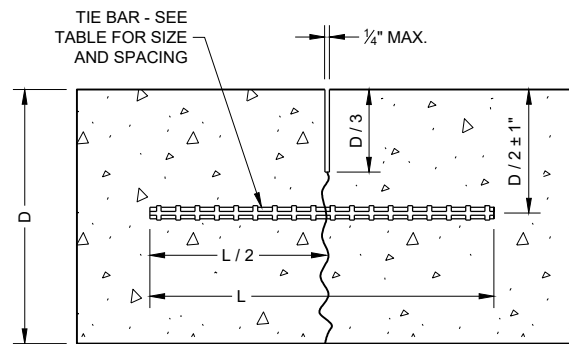


UNTIED - LONGITUDINAL

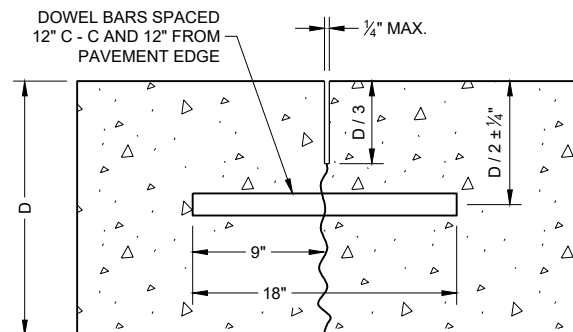
EXPANSION JOINTS



UNDOWELED TRANSVERSE



TIED LONGITUDINAL



DOWELED TRANSVERSE

CONTRACTION JOINTS ②

TIE BAR TABLE

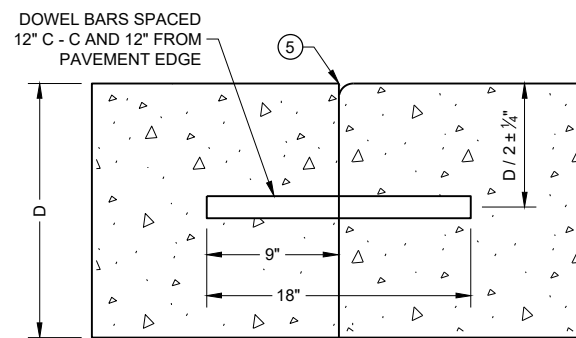
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

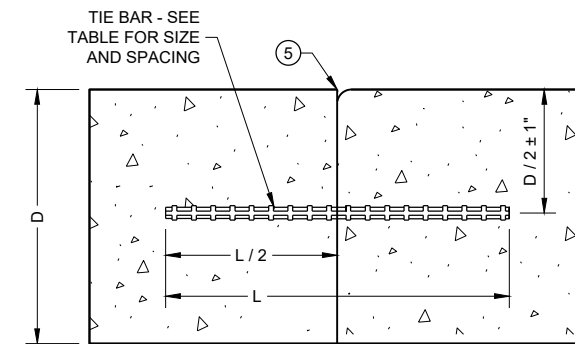
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

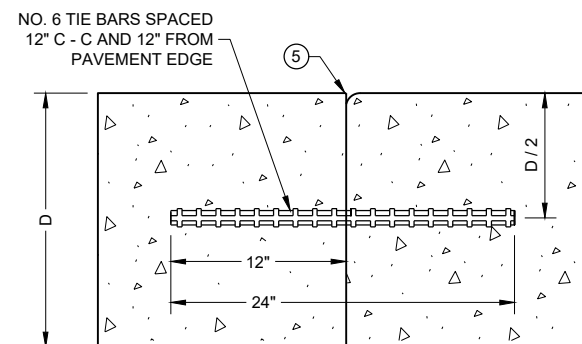
- ① USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
- ② SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
- ③ LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
- ④ CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
- ⑤ IF JOINT IS FORMED, PROVIDE A 1/4" RADIUS.
- ⑥ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



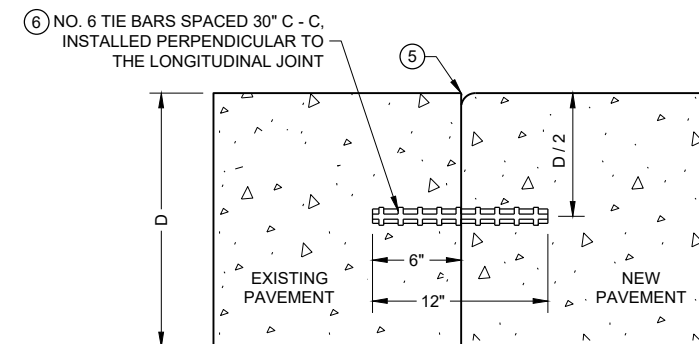
DOWELED TRANSVERSE ③



TIED LONGITUDINAL



TIED TRANSVERSE ③
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)

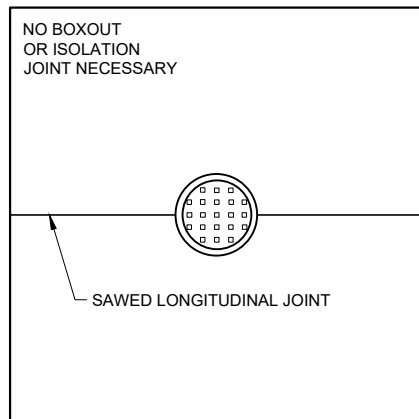


TIED LONGITUDINAL TO EXISTING

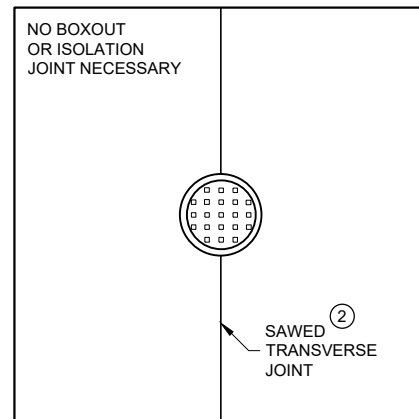
CONSTRUCTION JOINTS ④

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

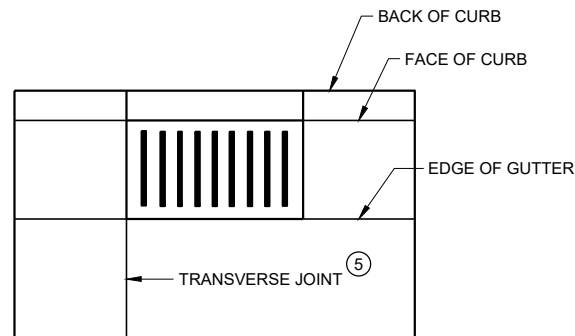
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MANHOLE WITH
LONGITUDINAL JOINT



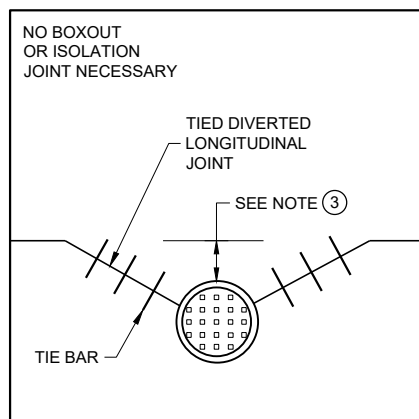
MANHOLE WITH
TRANSVERSE JOINT



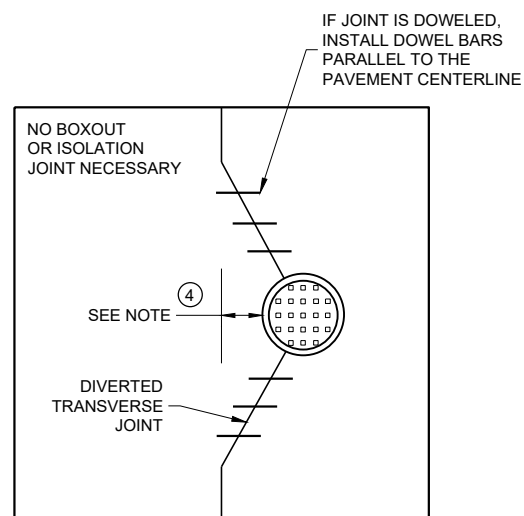
INLET WITH
TRANSVERSE JOINT

GENERAL NOTES

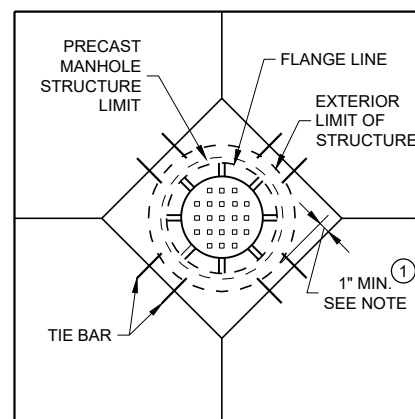
- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
- ④ IF THE DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS LESS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
- ⑤ ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.



MANHOLE WITH DIVERTED
LONGITUDINAL CONTRACTION JOINT

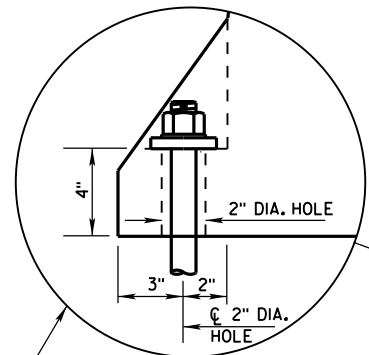


MANHOLE WITH DIVERTED
TRANSVERSE CONTRACTION JOINT

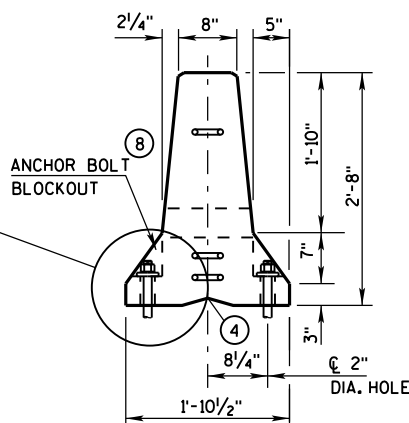


DIAGONAL MANHOLE BOXOUT
FOR CONSTRUCTION JOINTS

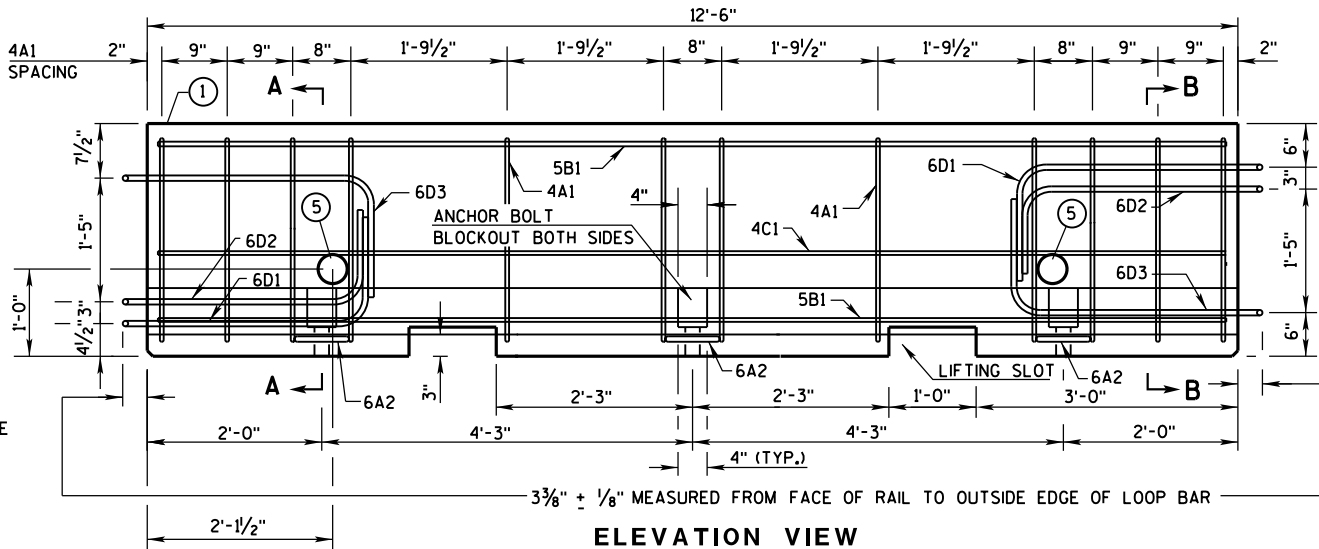
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□□□□ R □□
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED November 2018 /S/ Peter Kemp P.E. DATE PAVEMENT SUPERVISOR 78
FHWA



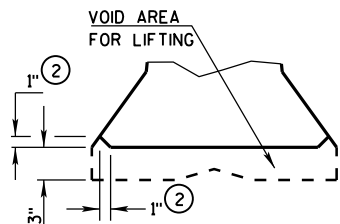
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



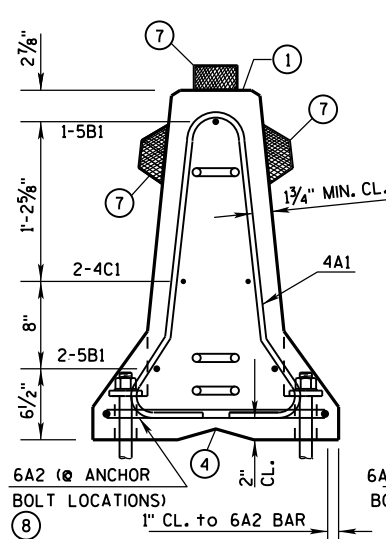
END VIEW



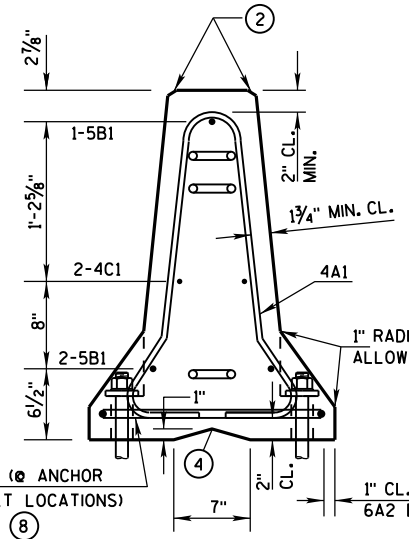
ELEVATION VIEW



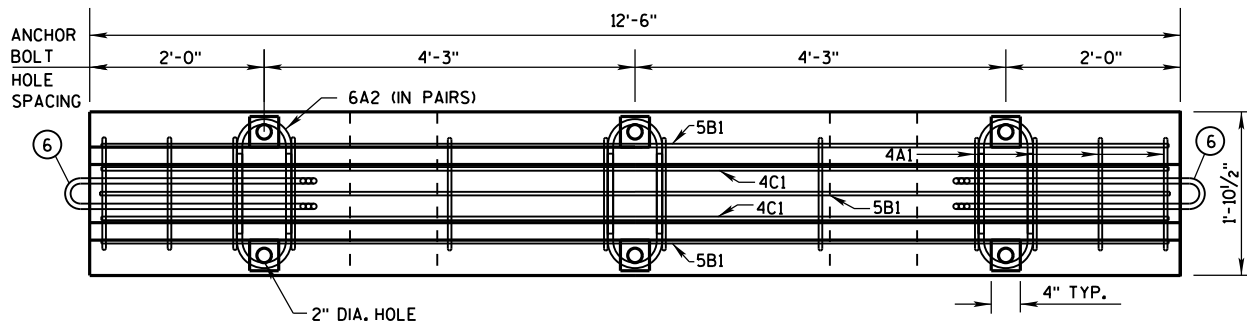
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

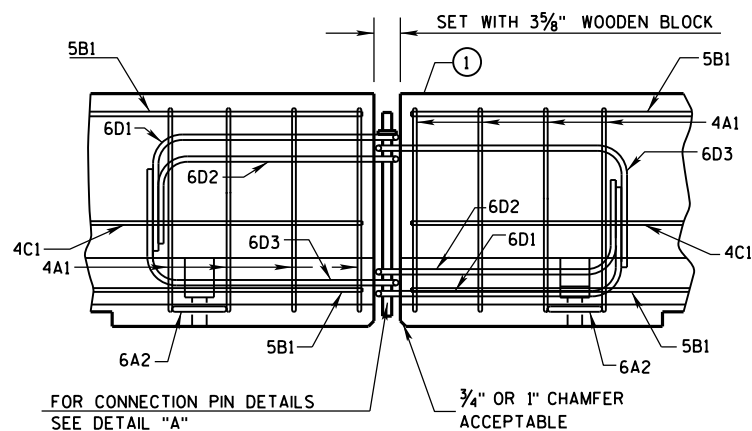


SECTION B-B
(STIRRUP PLACEMENT)

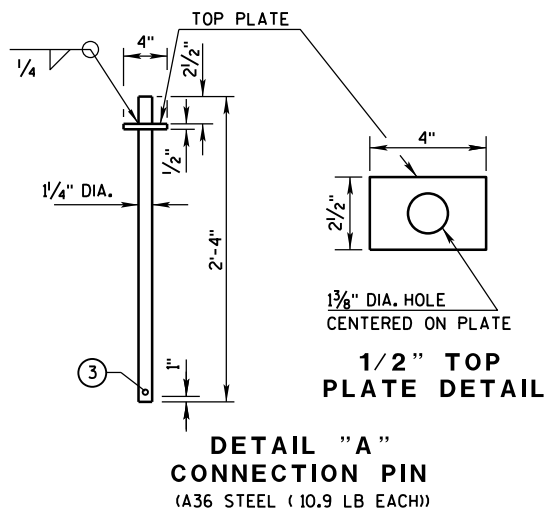


PLAN VIEW

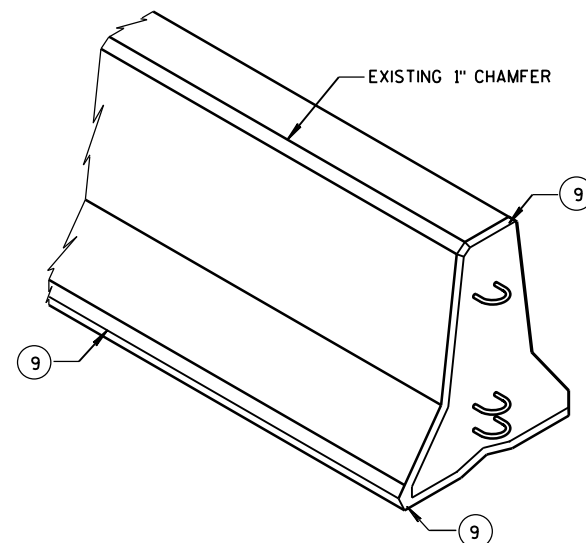
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



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



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-15(a) THRU 14B7-15(i).

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

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

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

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

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

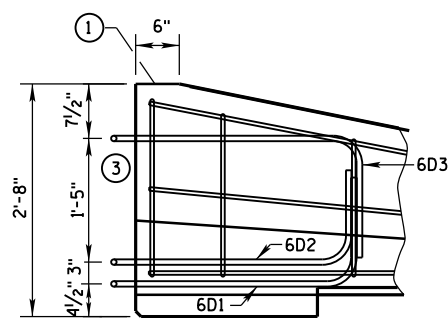
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

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

f'c = 4,000 psi

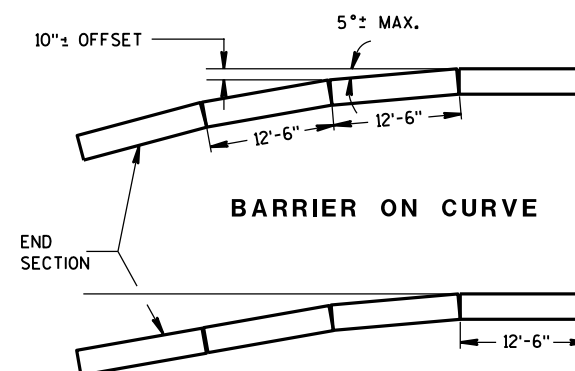
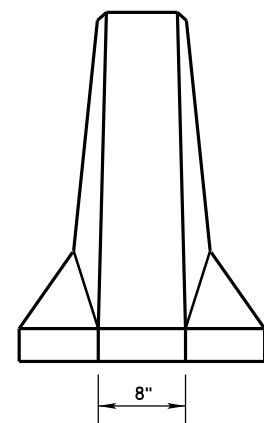
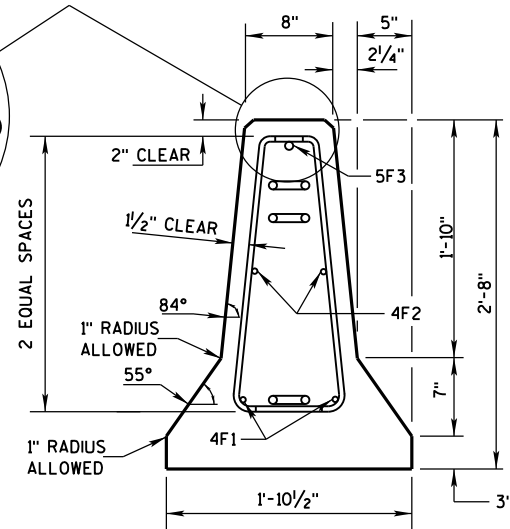
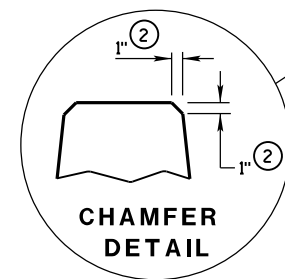
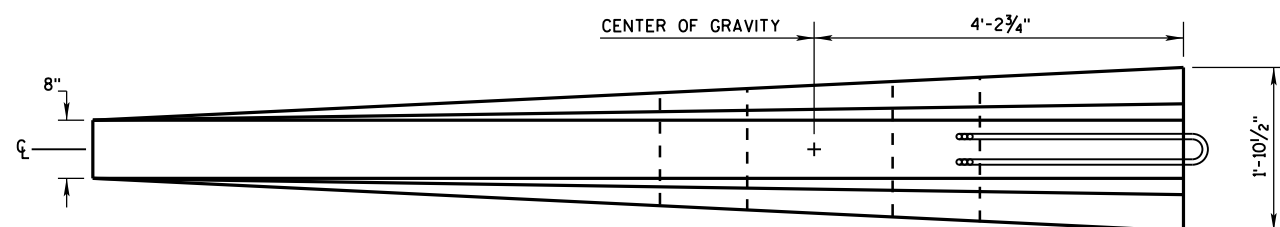
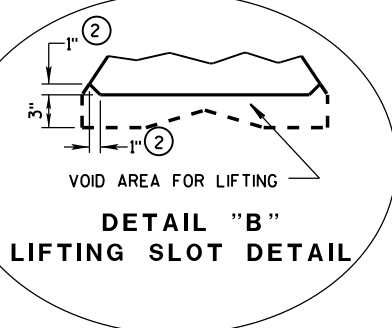
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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



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

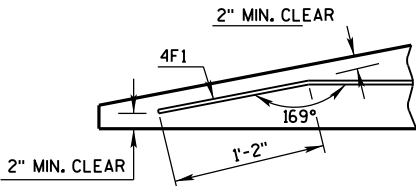
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁸⁰

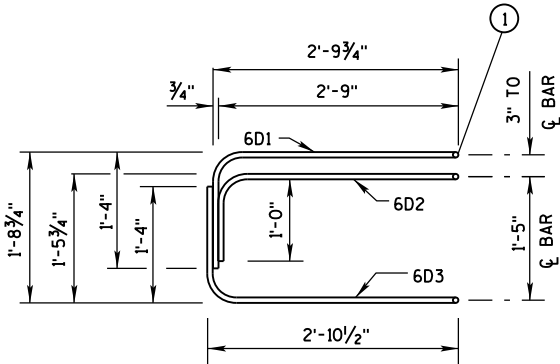
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

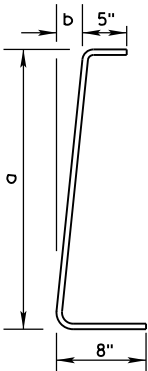
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



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

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

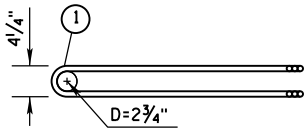
GENERAL NOTES

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

BARRIER SECTION
BILL OF MATERIALS

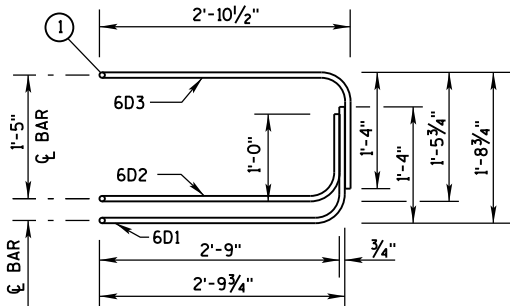
(PER 12'-6" BARRIER SECTION)

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

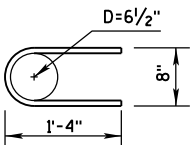


PLAN VIEW
LOOP BAR ASSEMBLY

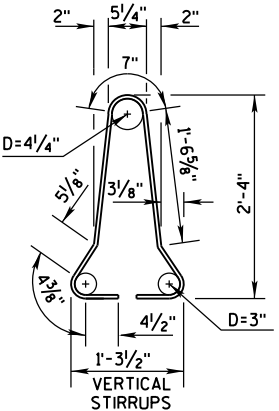
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

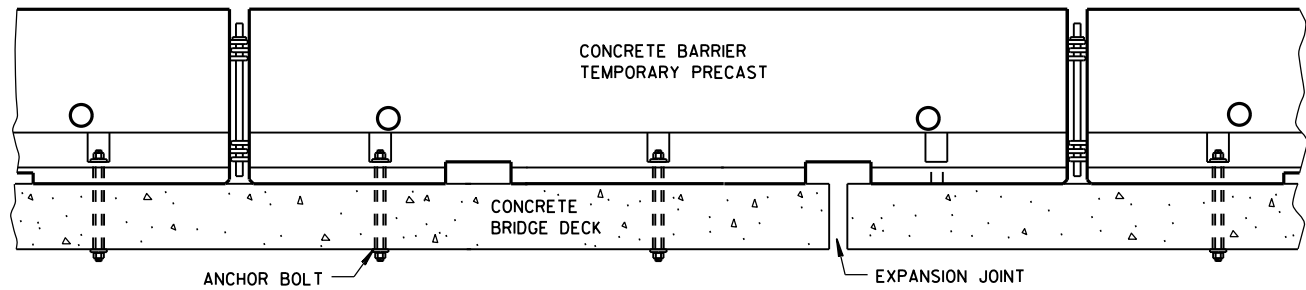
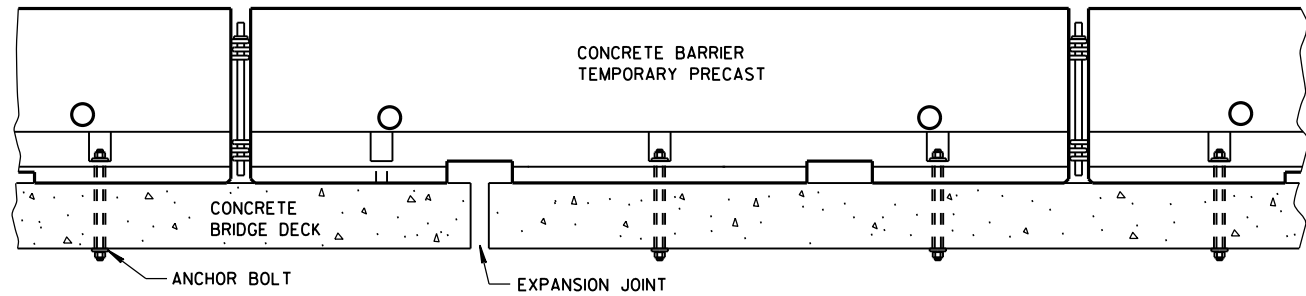


4A1

BARRIER SECTION

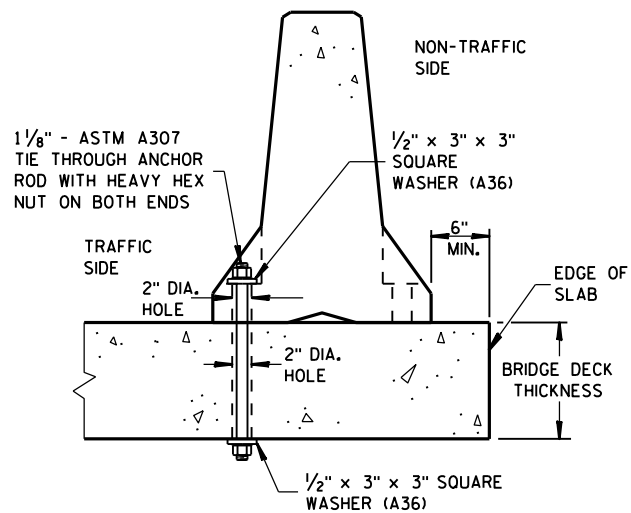
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



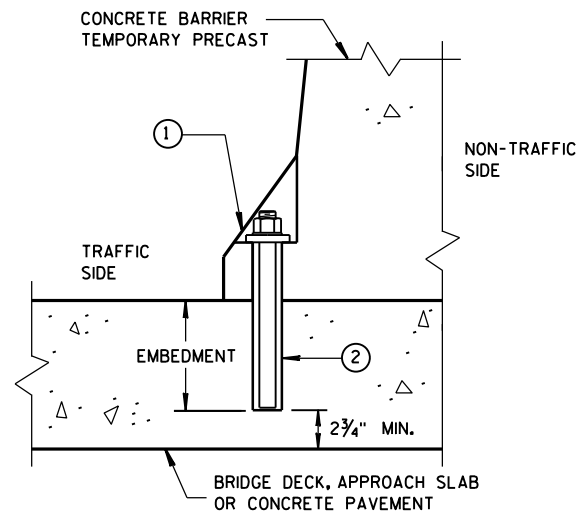
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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



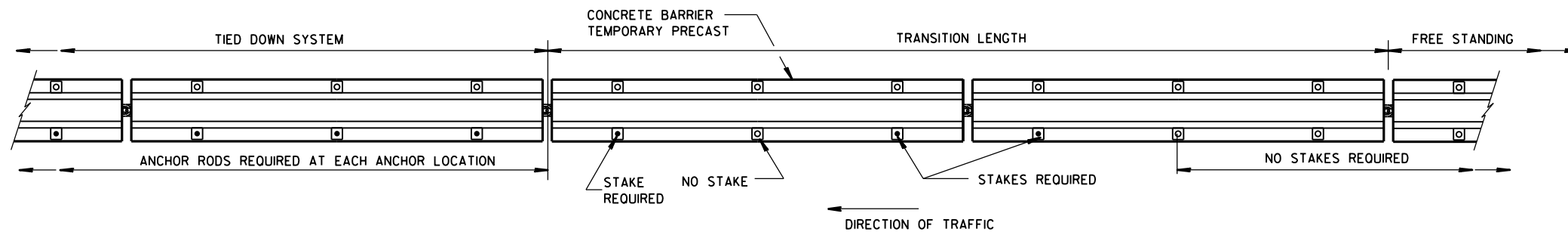
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

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



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

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

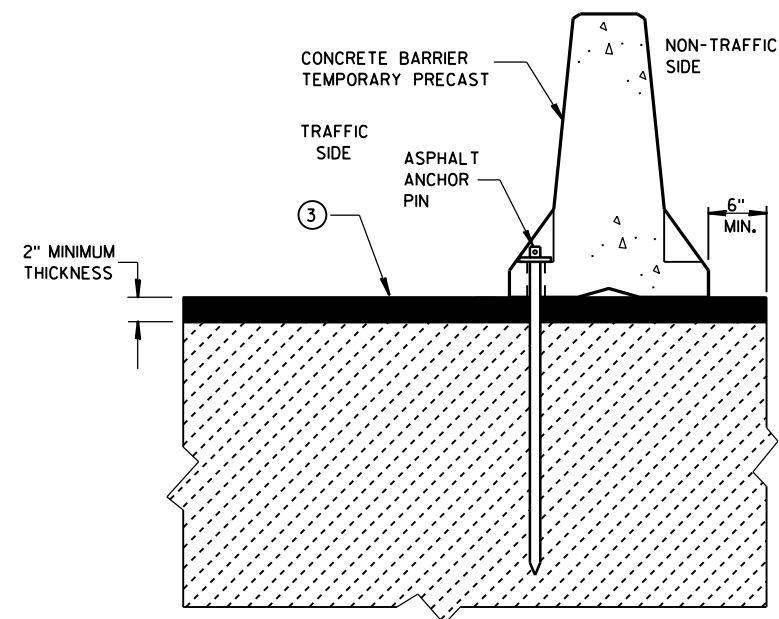
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

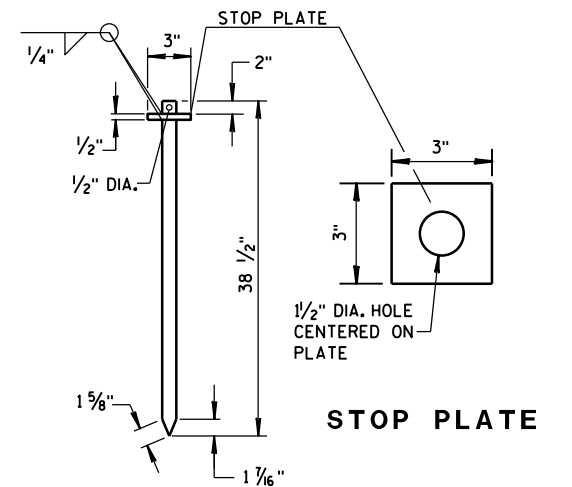
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.12 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE

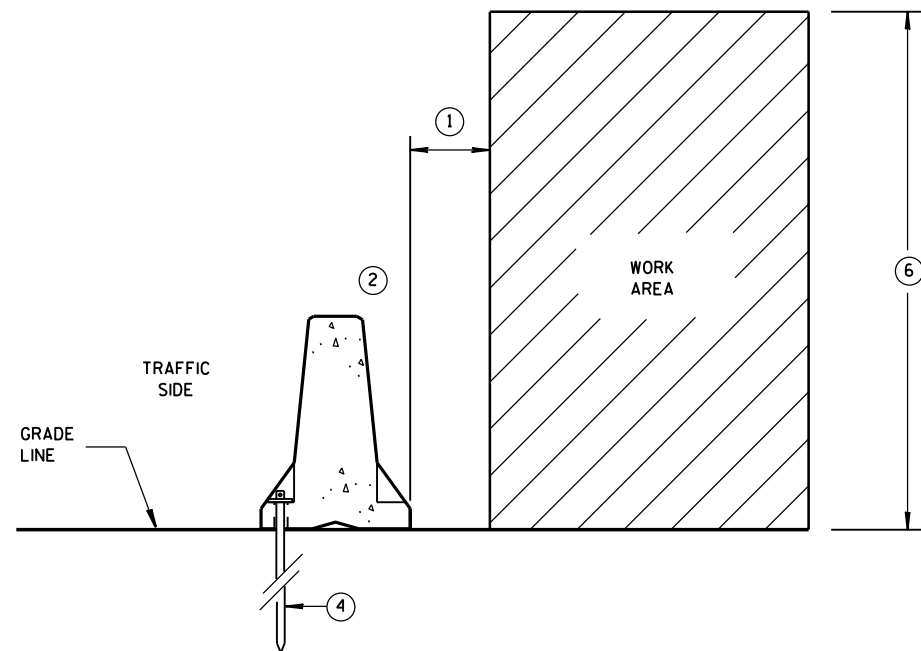


ASPHALT ANCHOR PIN

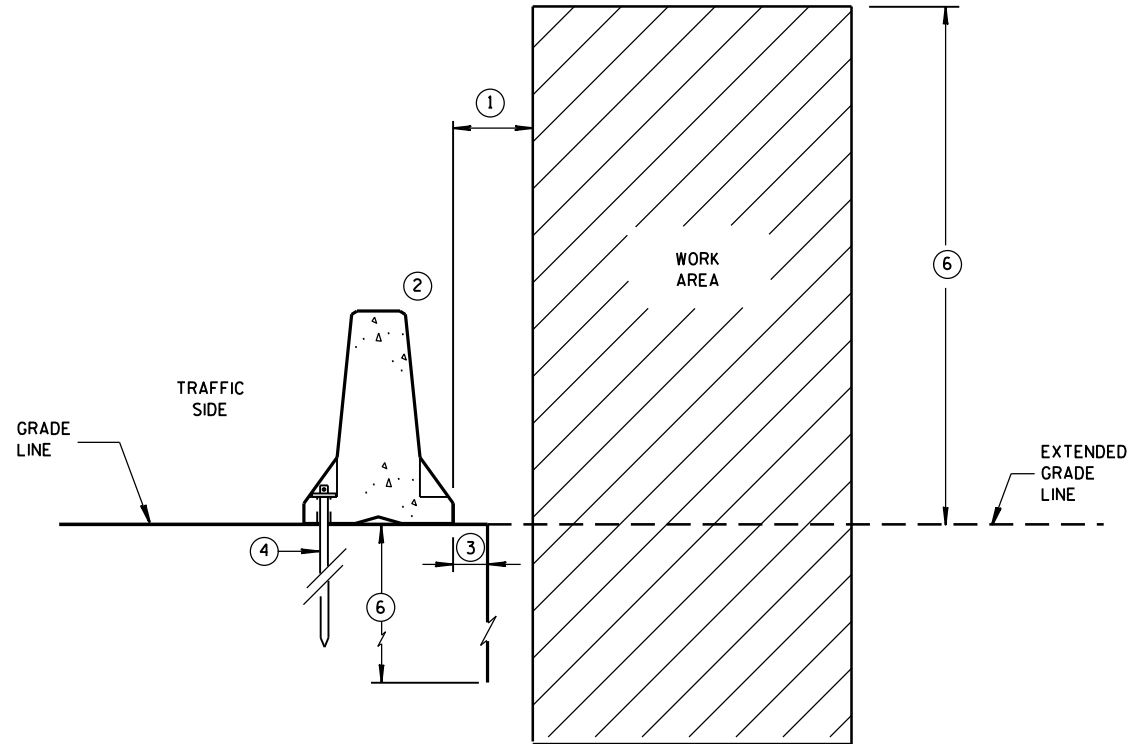
(ASTM A36 STEEL)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**ANCHORED BARRIER SPACE REQUIREMENTS
FOR HAZARDS EXTENDED
ABOVE THE GRADE LINE**

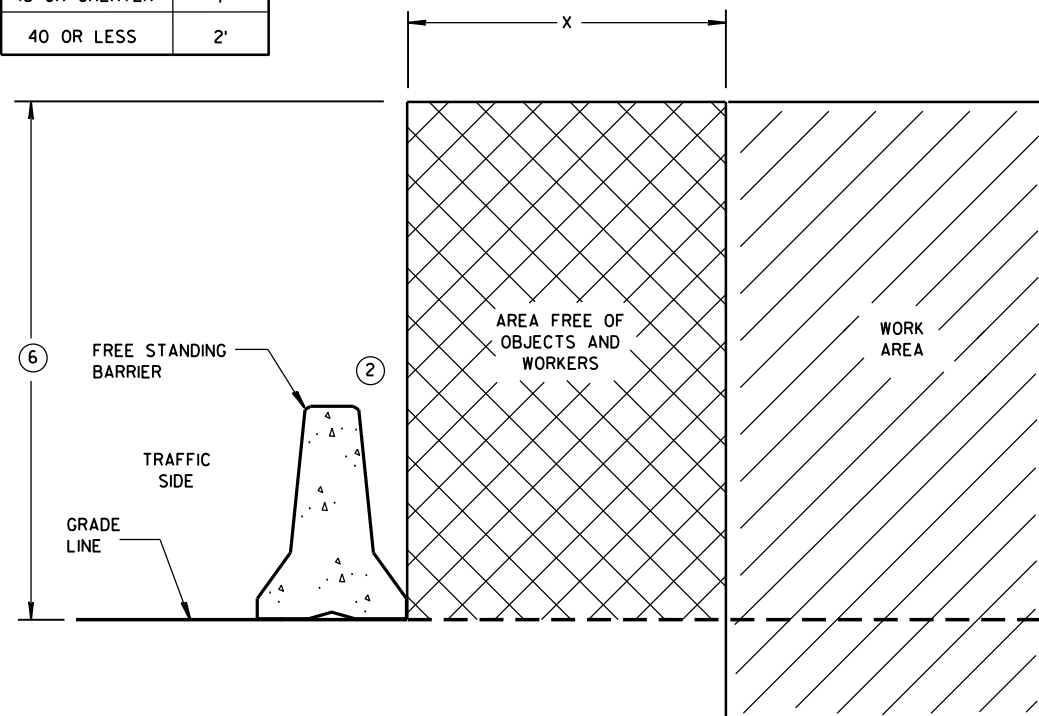


**ANCHORED BARRIER SPACE REQUIREMENTS
ON VERTICAL DROP OFFS**

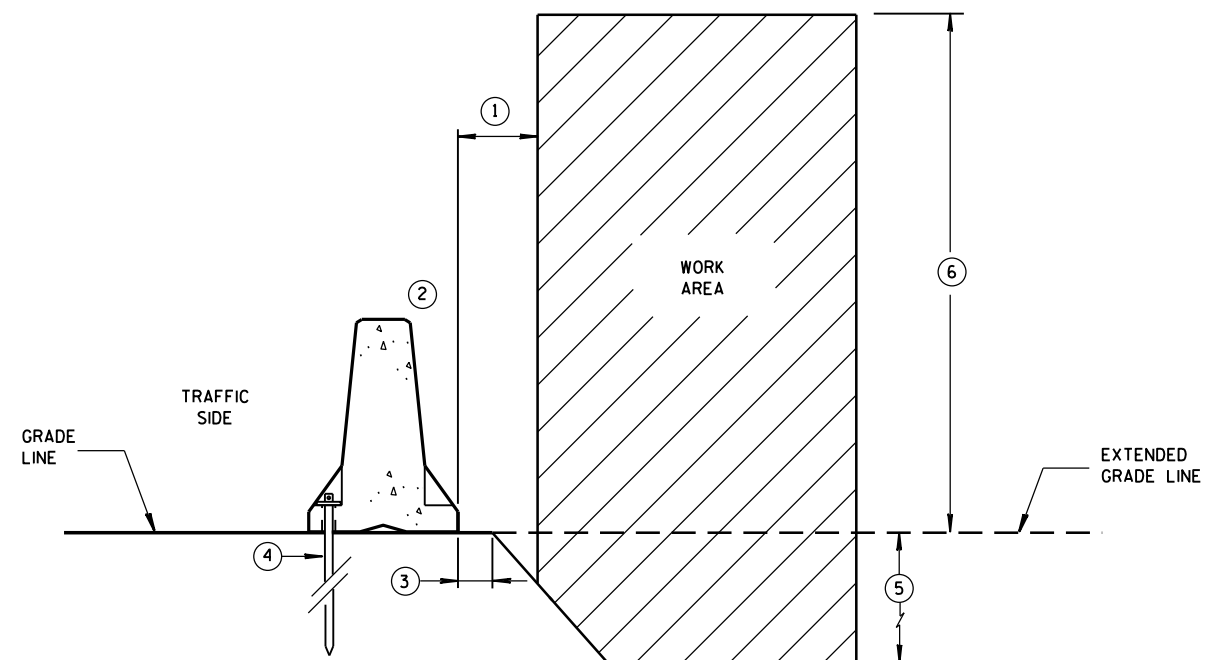
GENERAL NOTES

- ① WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR THE MINIMUM OFFSET FROM BACK OF BARRIER TO SLOPES OR VERTICAL DROPS.
- ② OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR LEANED AGAINST THE BARRIER WITHOUT PERMISSION OF THE PROJECT ENGINEER.
- ③ SEE OTHER DETAIL ON SHEET "D" FOR SPACE REQUIREMENTS.
- ④ SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR A STAKE DOWN FOR ASPHALTIC SURFACE TREATMENT DETAILS. ASPHALTIC ANCHOR SHOWN.
- ⑤ DEPTH OF 3 FEET OR MORE.
- ⑥ Y = 6'-6".

POSTED SPEED MPH	X
45 OR GREATER	4'
40 OR LESS	2'



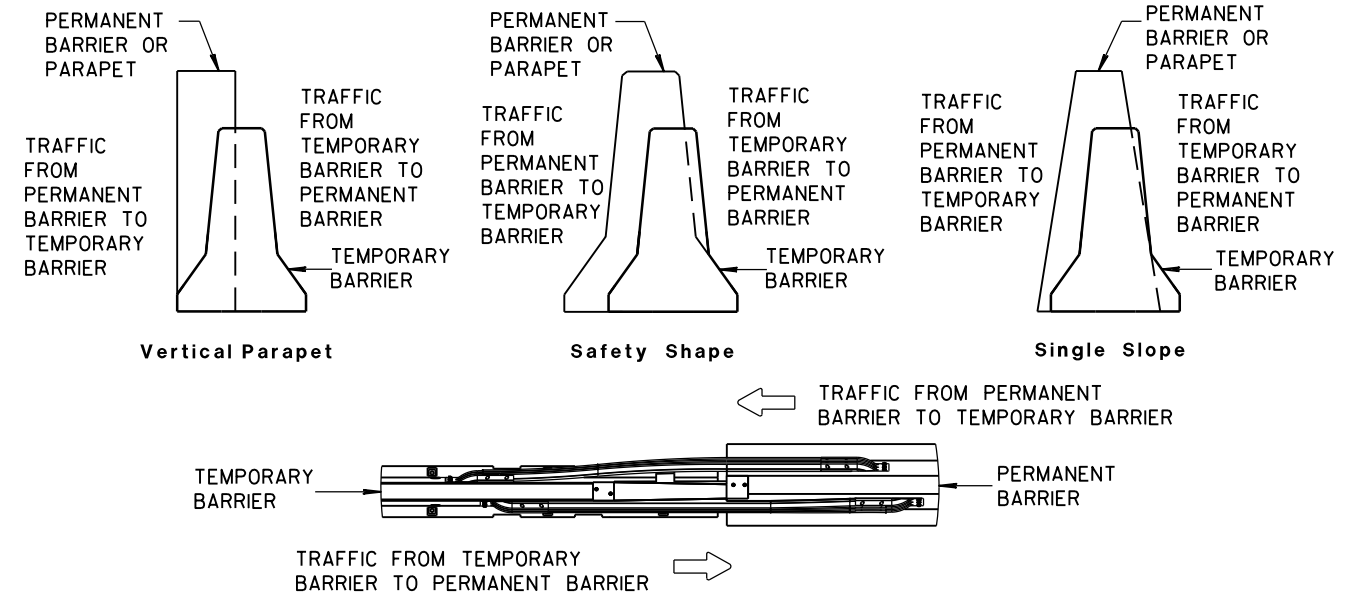
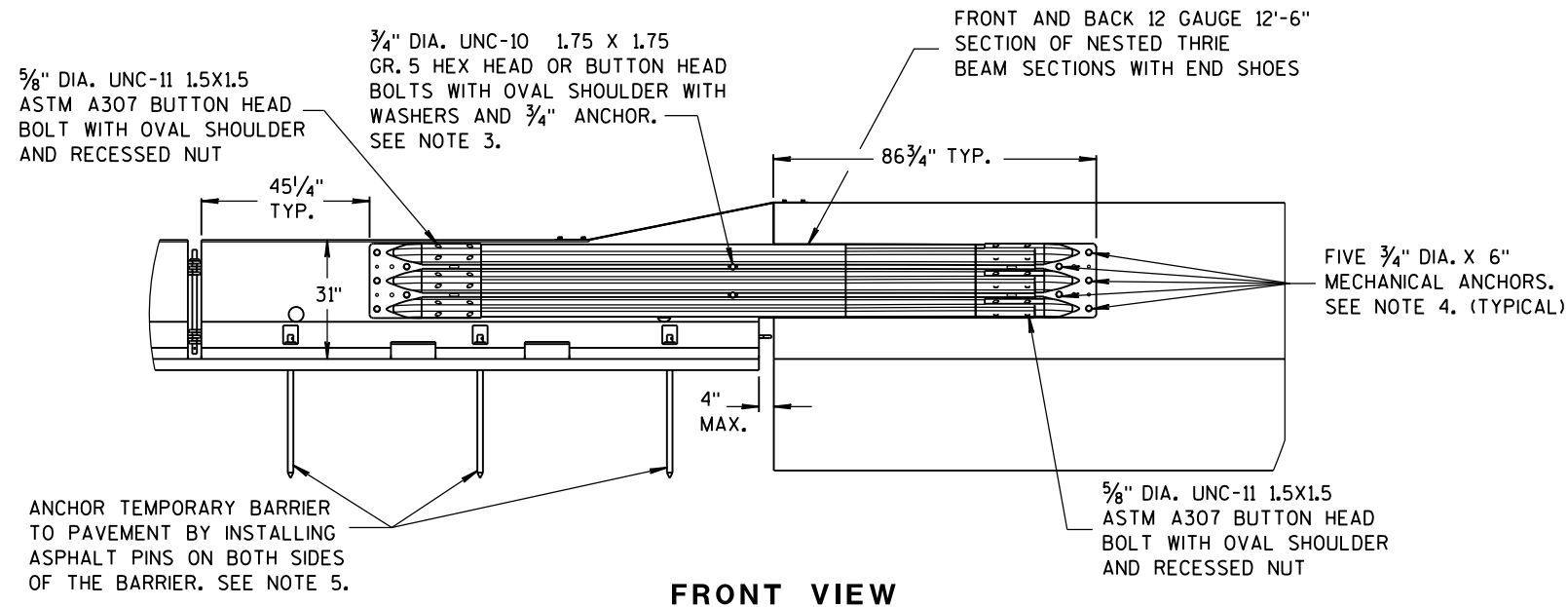
FREE STANDING BARRIER SPACE REQUIREMENTS



**ANCHORED BARRIER SPACE REQUIREMENTS
ON SLOPES**

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

NOTES

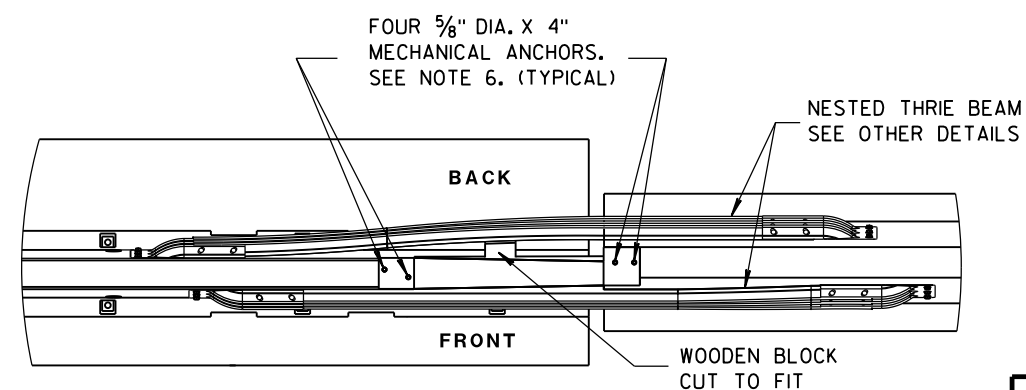
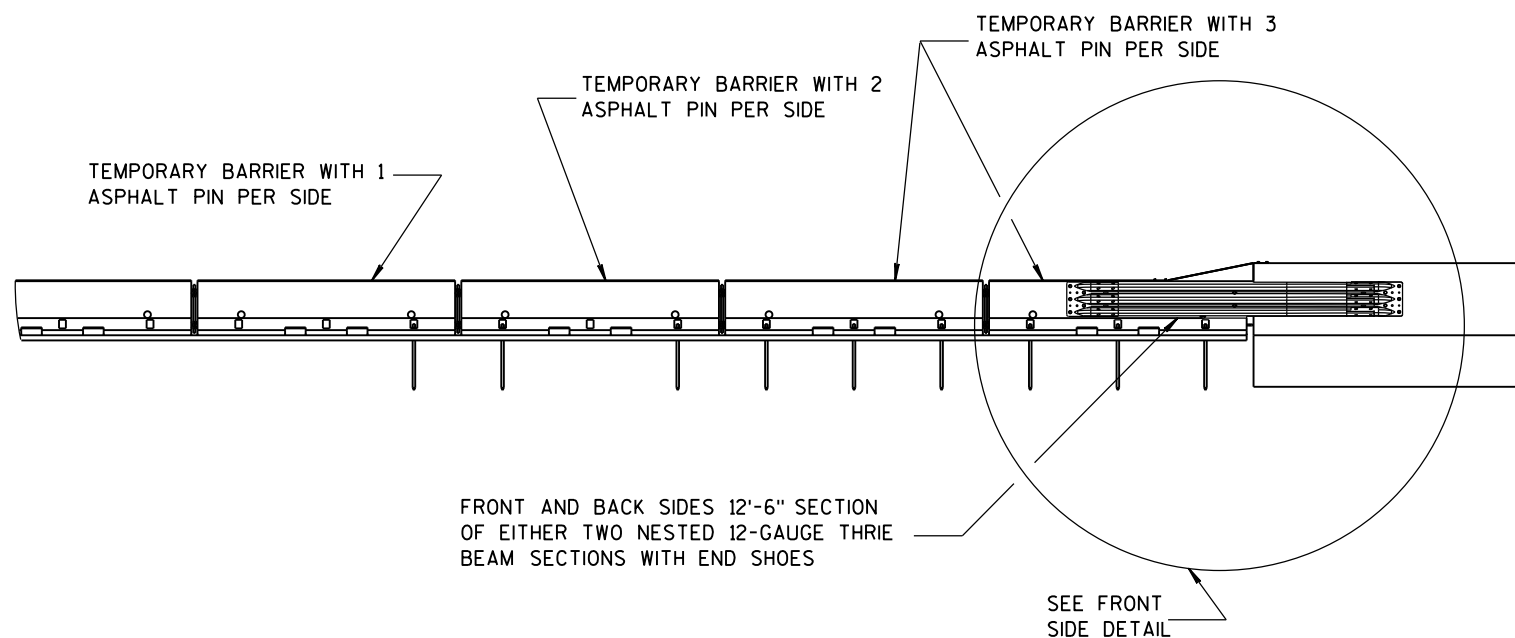
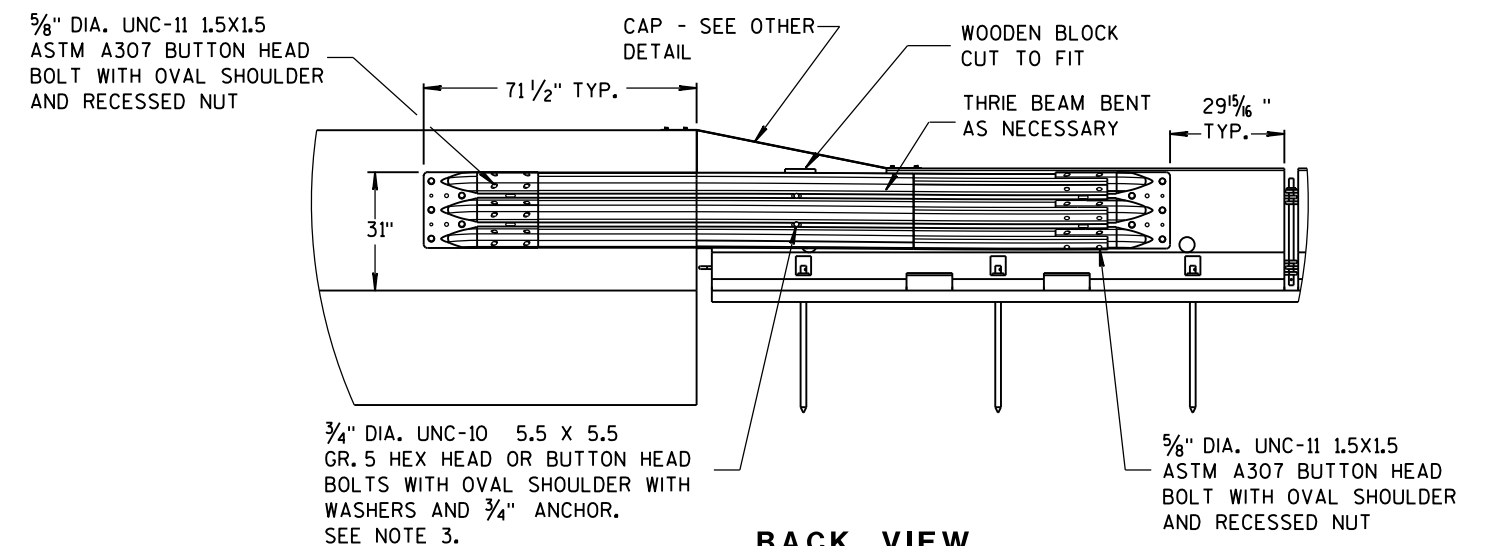
NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS REGARDLESS OF TRAFFIC.

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

4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.

5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.

6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



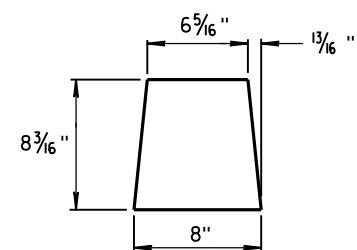
FRONT VIEW

PLAN VIEW

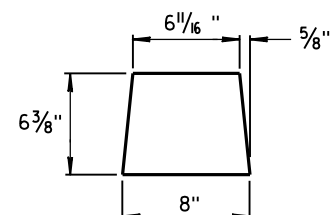
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

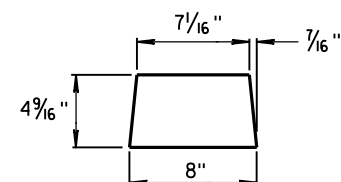
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



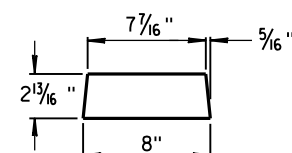
GUSSET 1



GUSSET 2

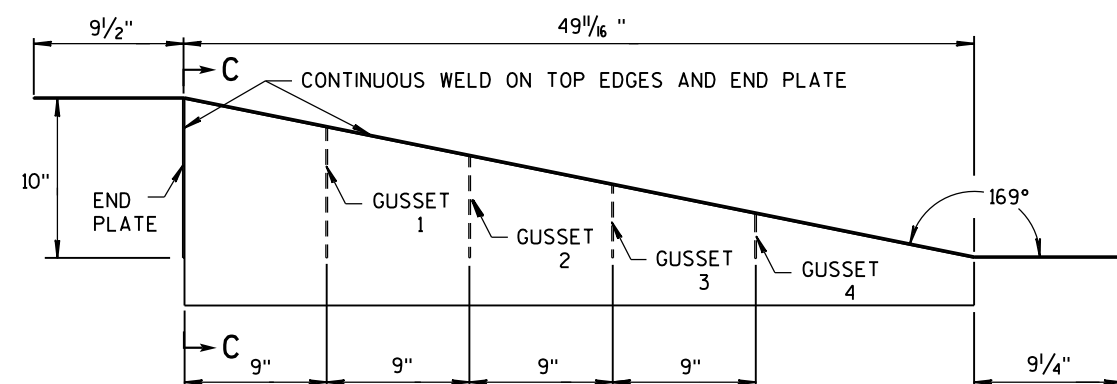
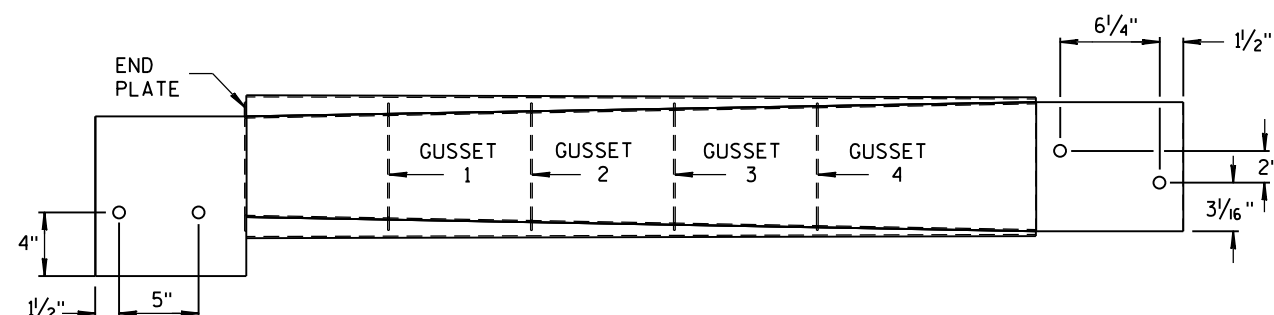


GUSSET 3

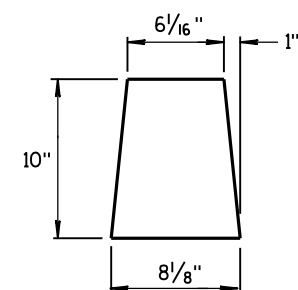
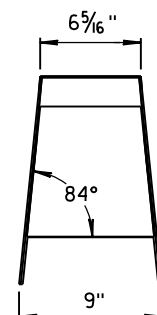


GUSSET 4

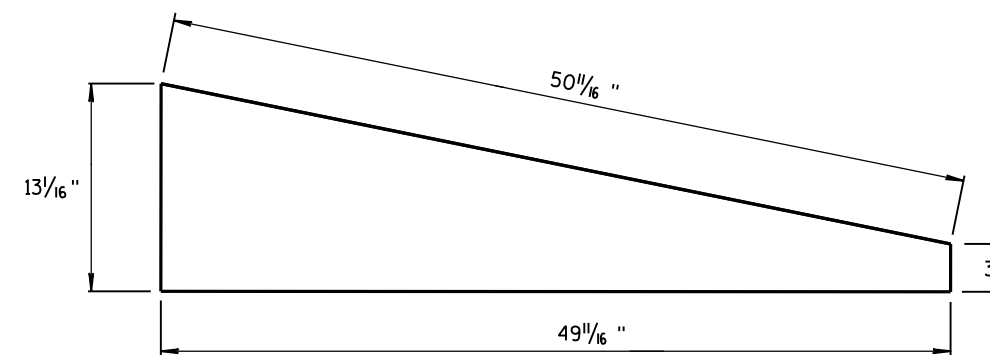
GUSSETS



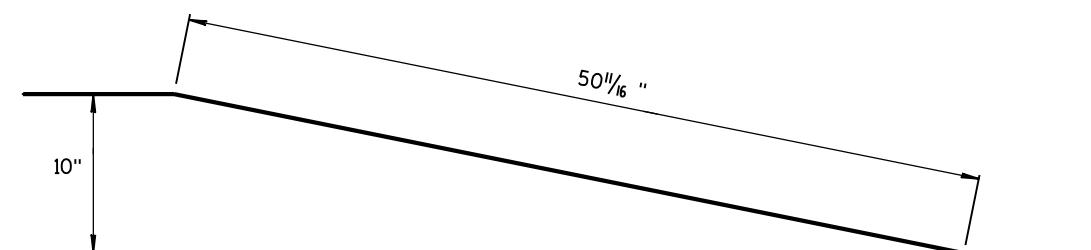
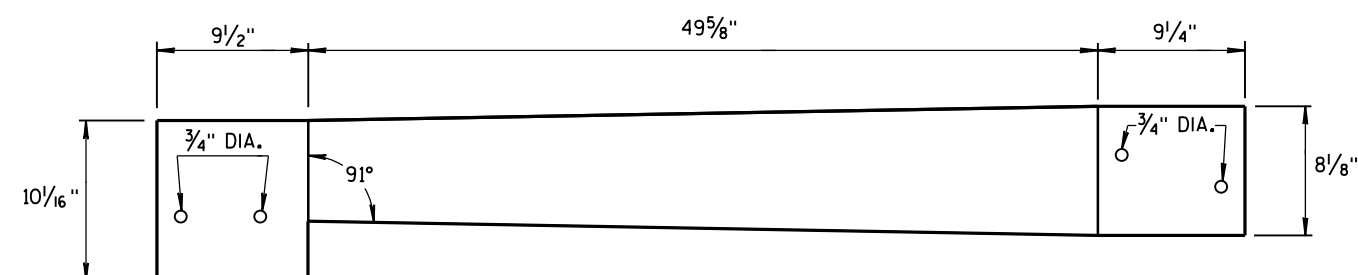
SECTION C-C



END PLATE



SIDE PLATE



TOP PLATE

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

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

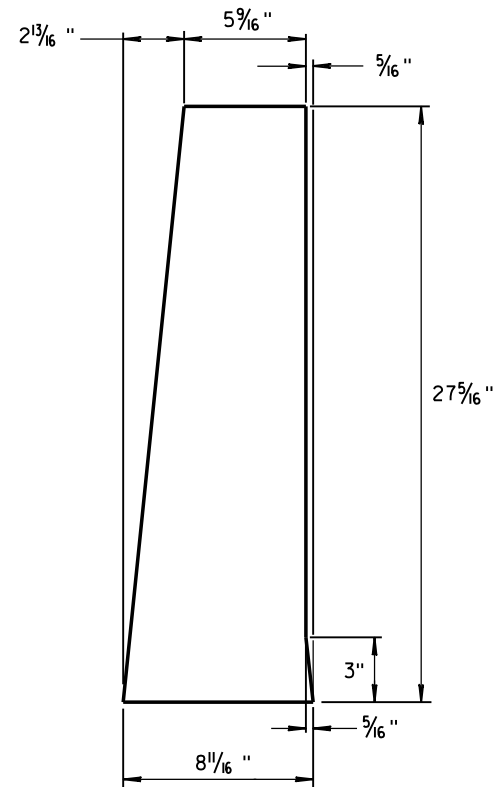
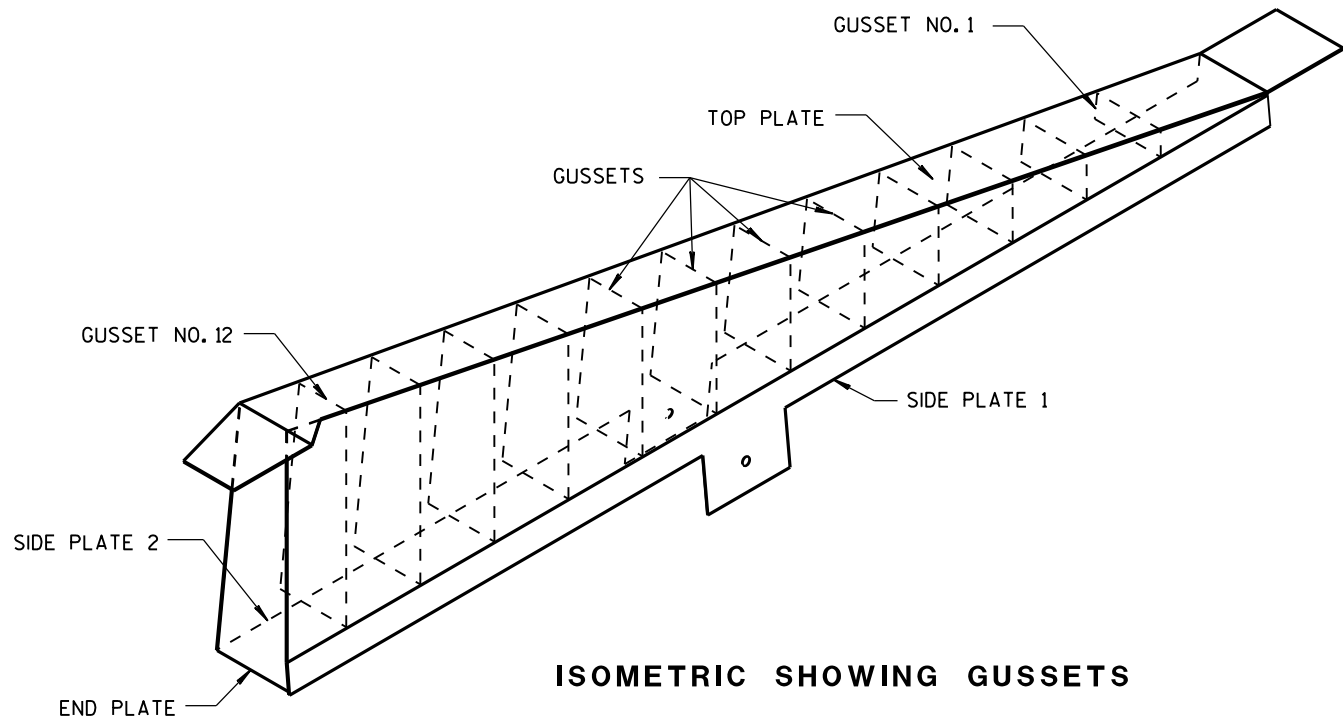
NOTES

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

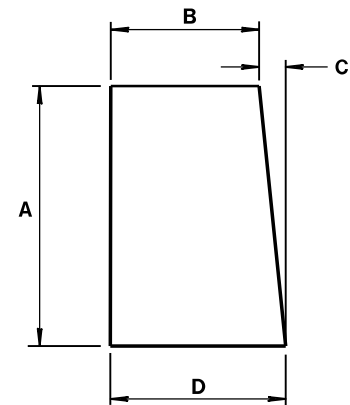
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁸⁵



1/8" STEEL PLATE

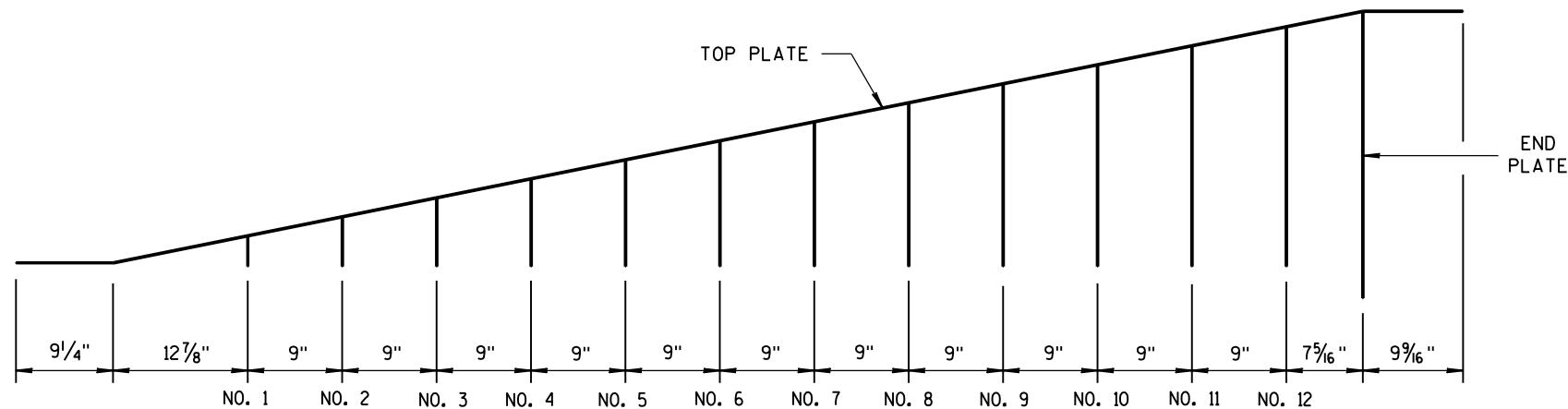


ALL GUSSETS 1/8" STEEL PLATE

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

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

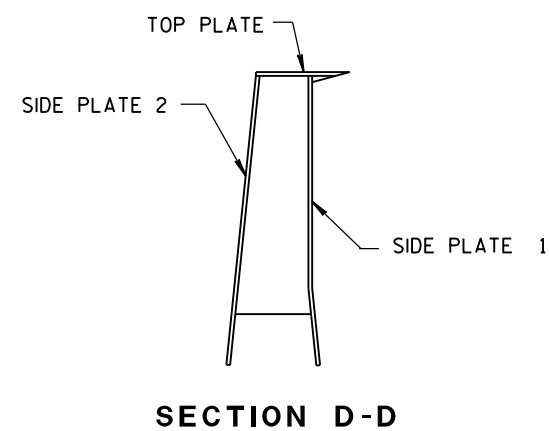
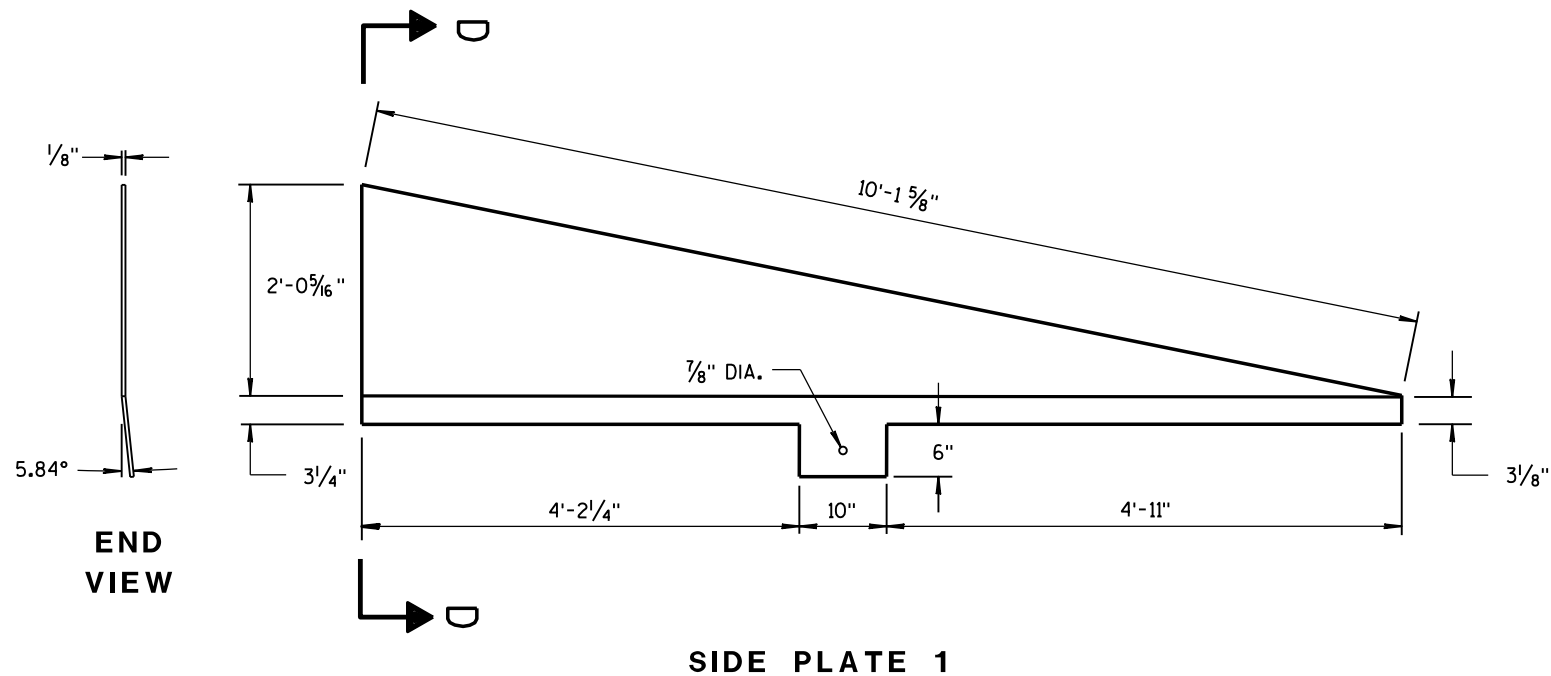
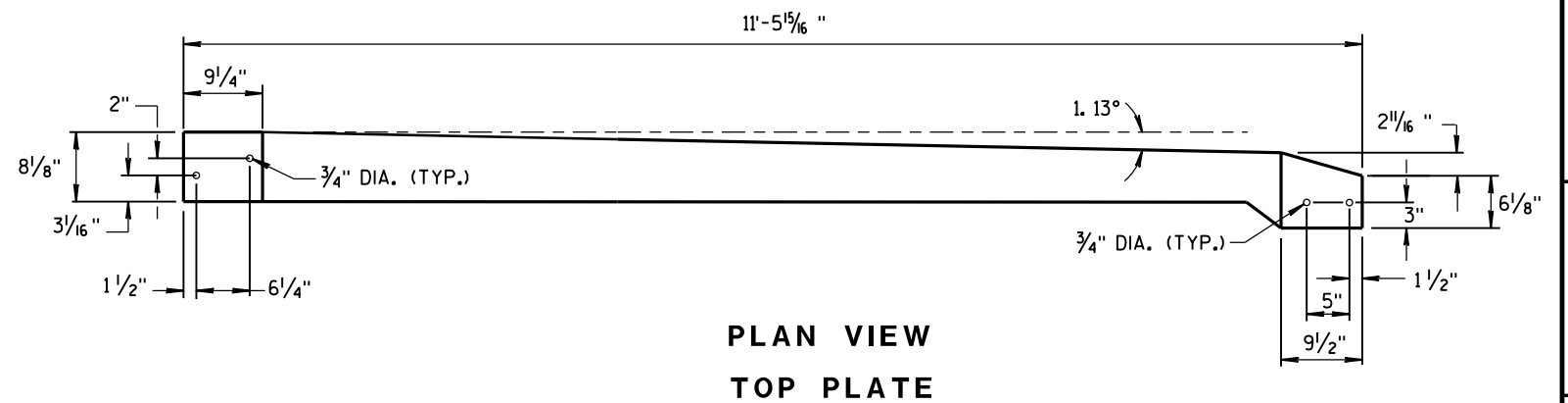
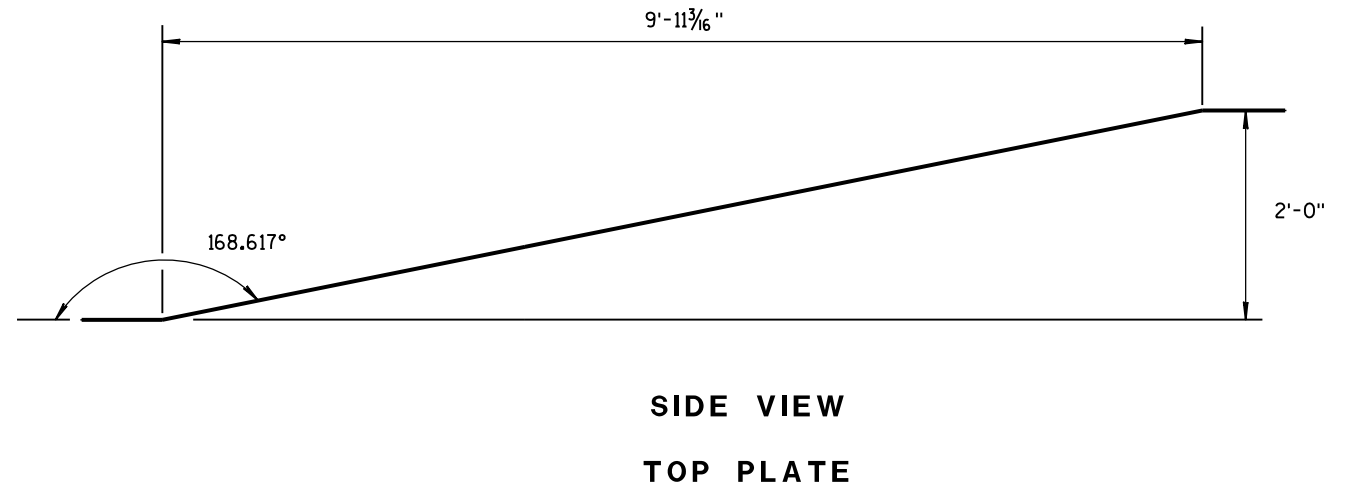
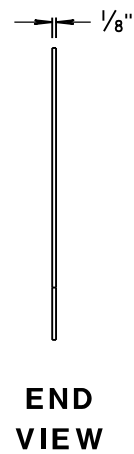
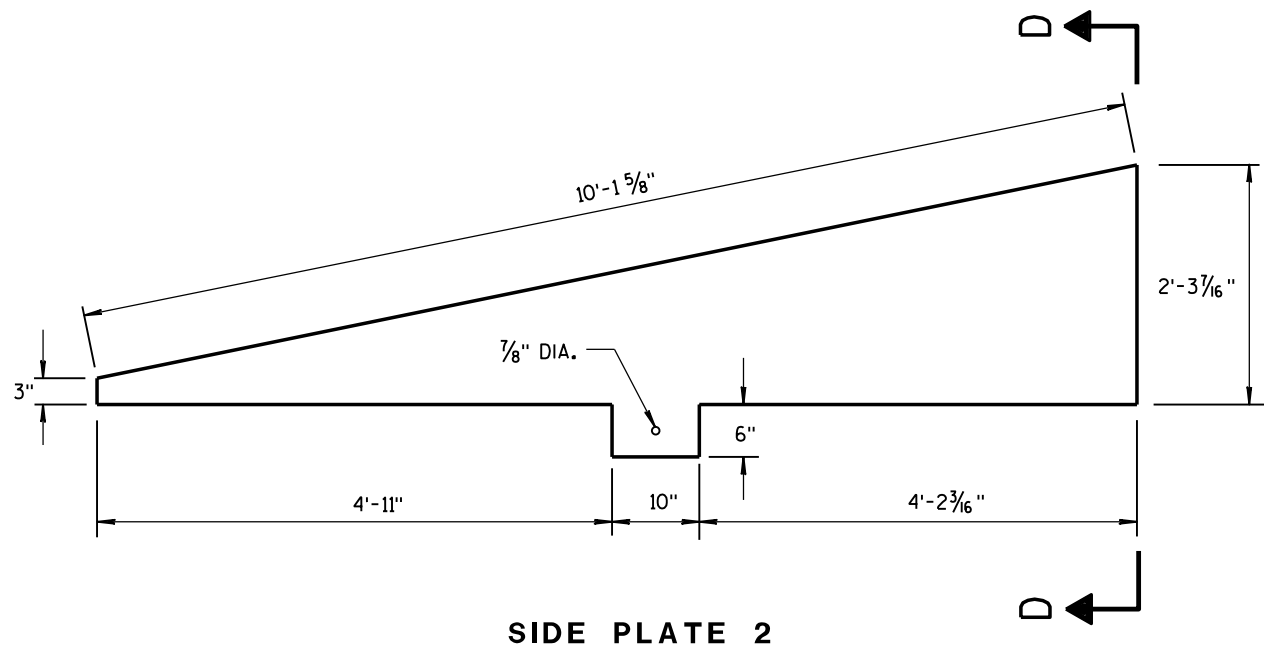
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



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

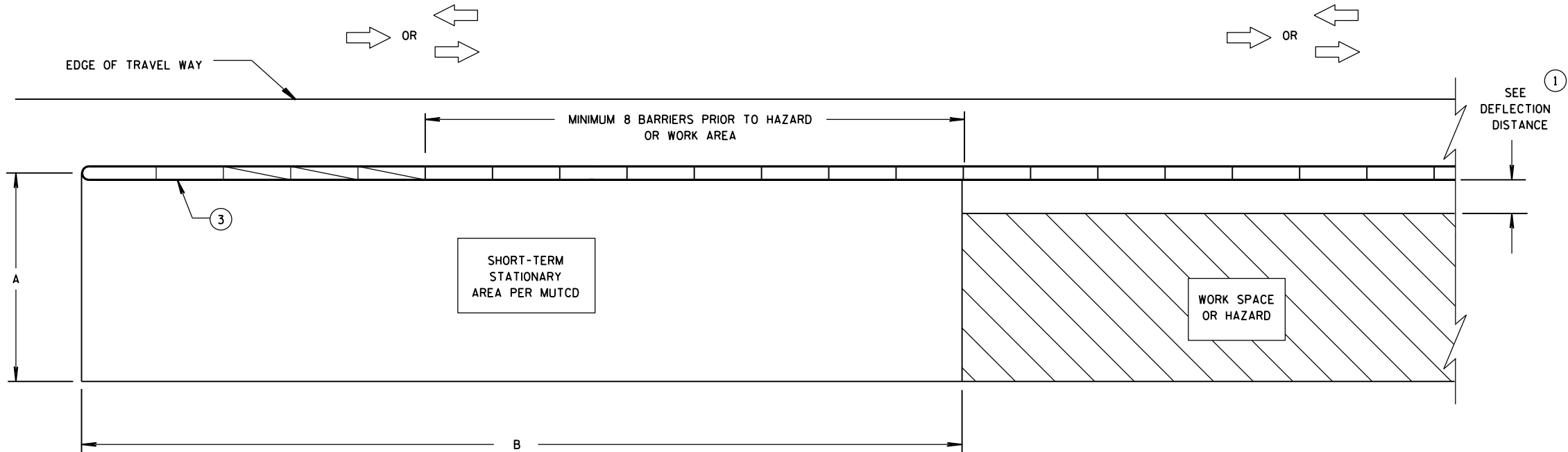
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED June 2017	/S/ Rodney Taylor		
DATE	ROADWAY STANDARD	87	ENT
FHWA	UNIT SUPERV		



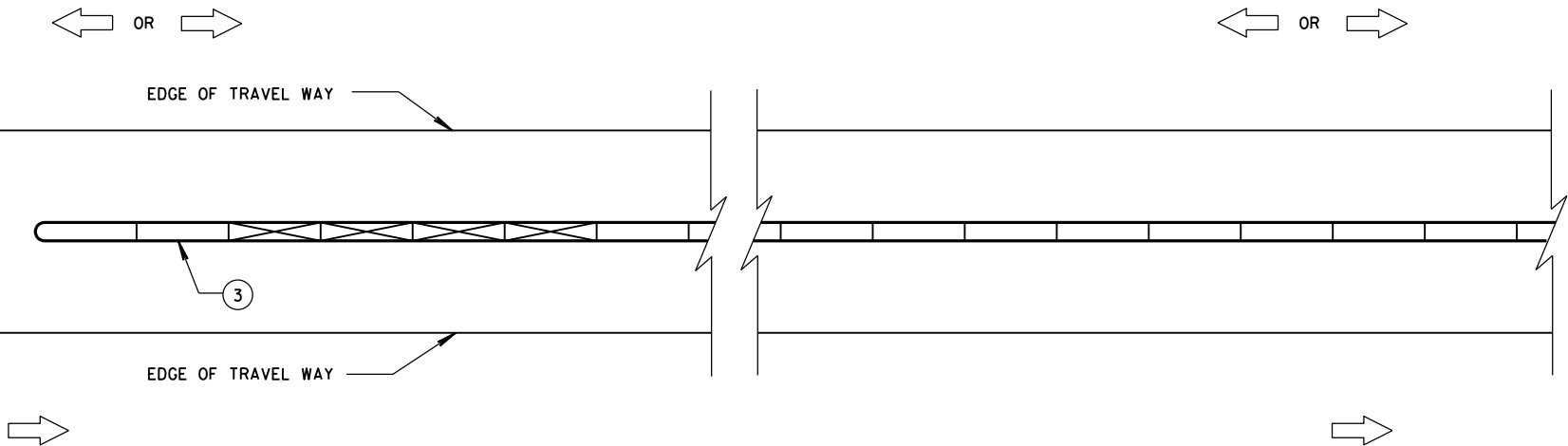
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE ②

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

DIMENSION B TABLE ②

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



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

LEGEND

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

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

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

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

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

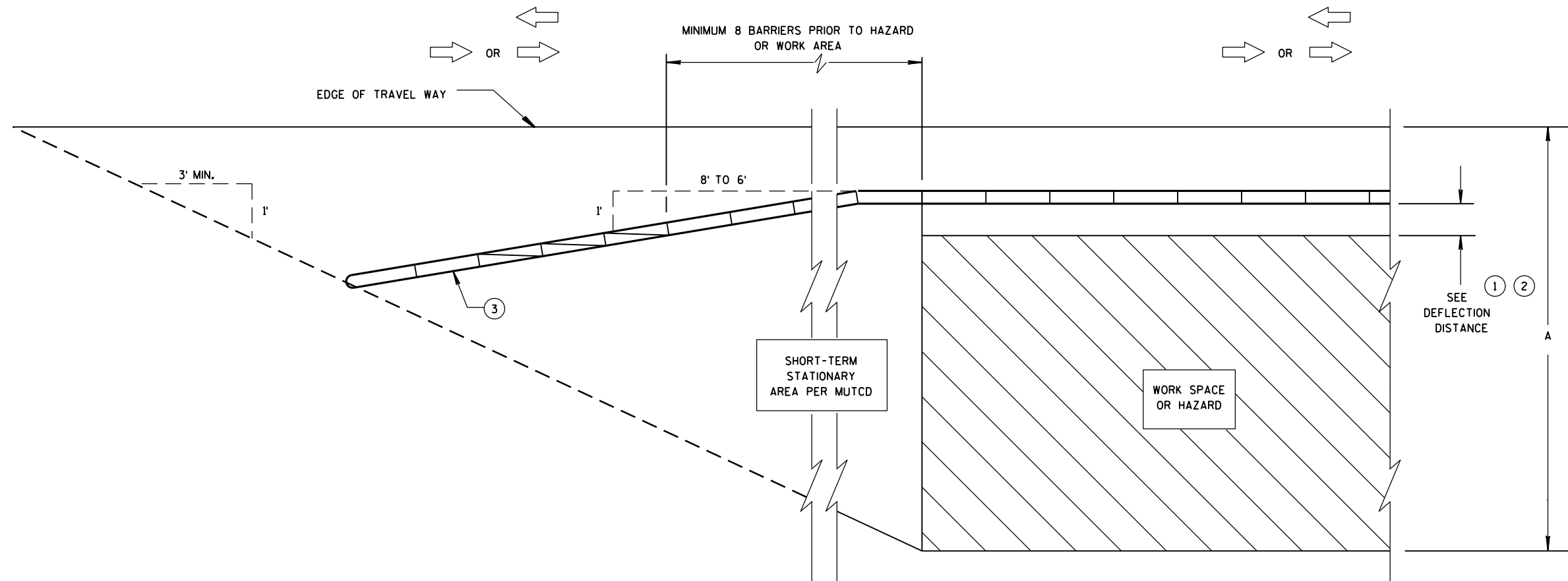
FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

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

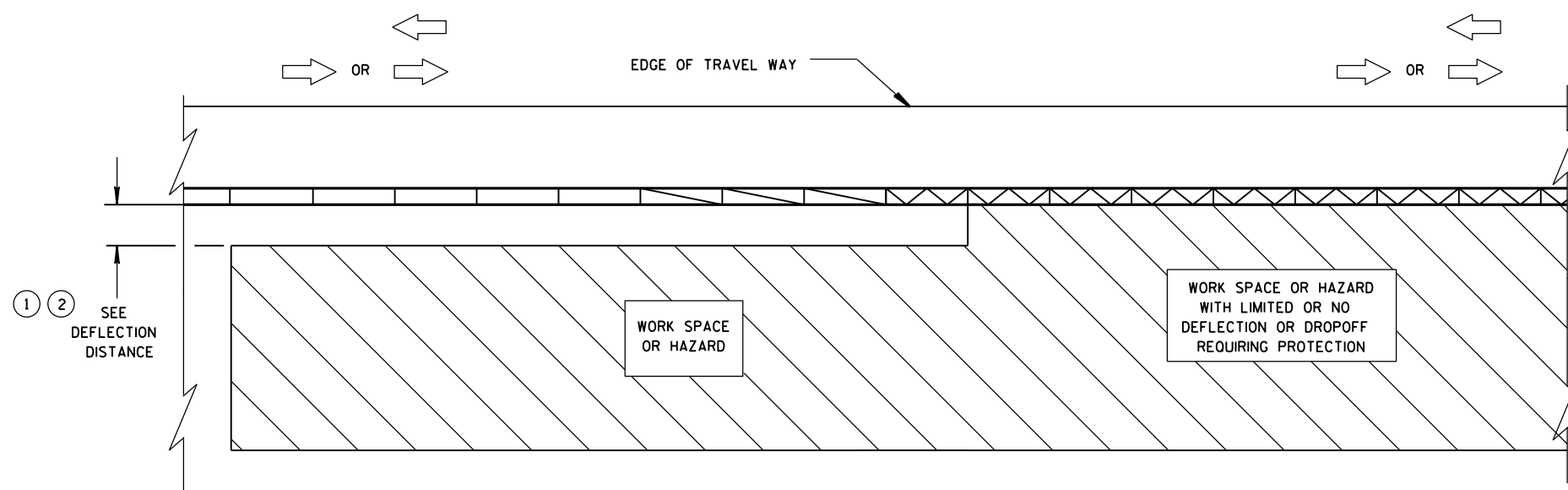
- ① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- ② VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.
- ③ ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS.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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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



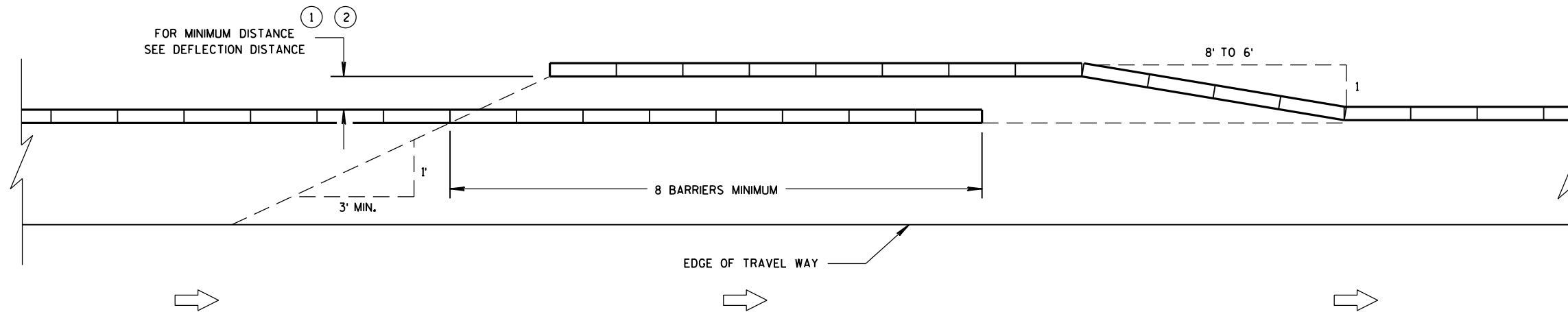
**TRANSITION FROM FREE STANDING TEMPORARY BARRIER
TO ANCHORED BARRIER**

LEGEND

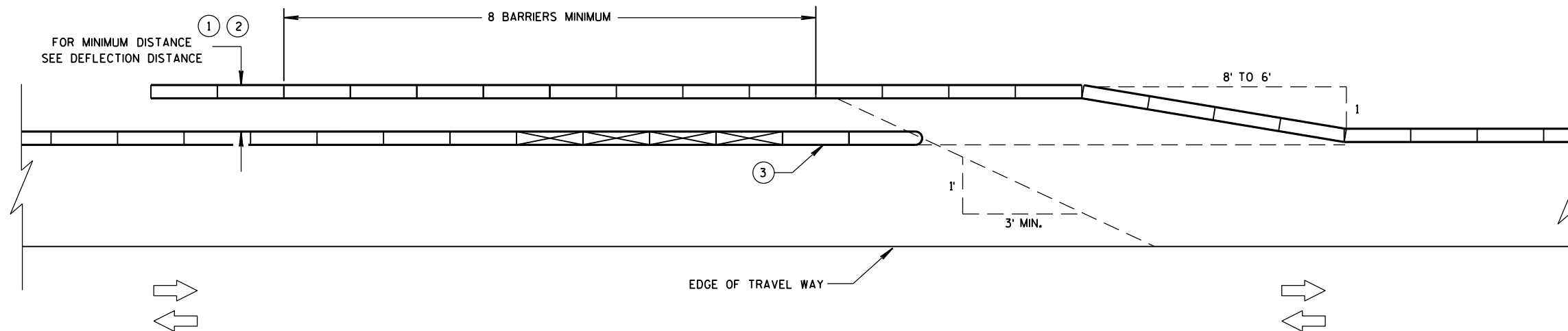
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

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

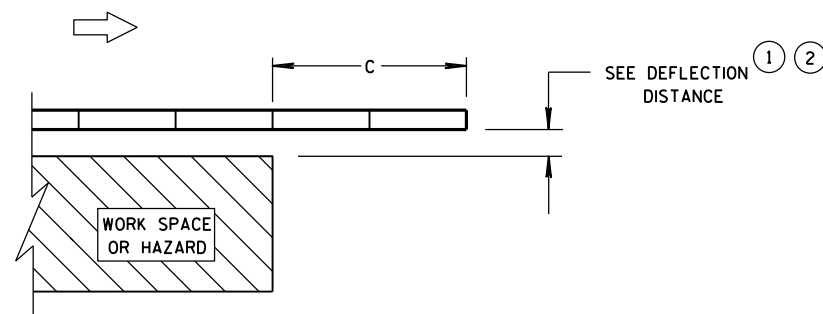
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



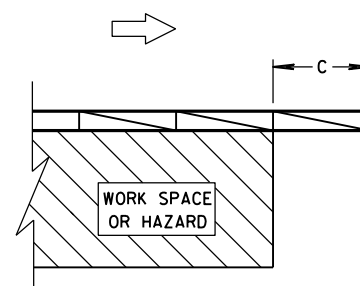
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



**ENDING TEMPORARY BARRIER
DOWNSTREAM - UNANCHORED**



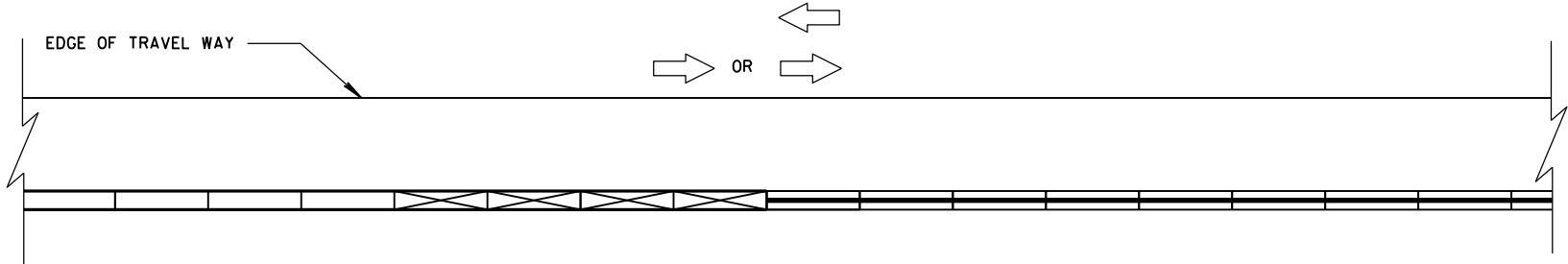
**ENDING TEMPORARY BARRIER
DOWNSTREAM - ANCHORED**

LEGEND

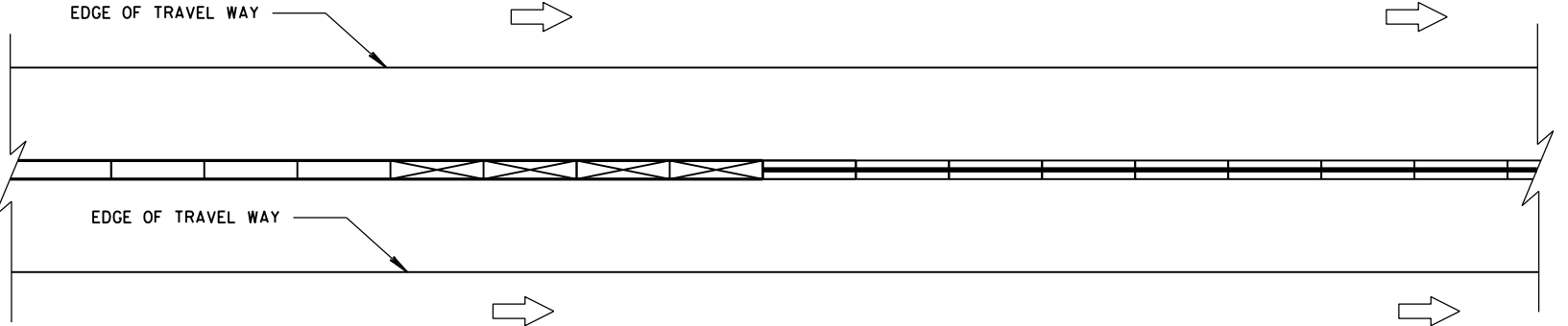
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



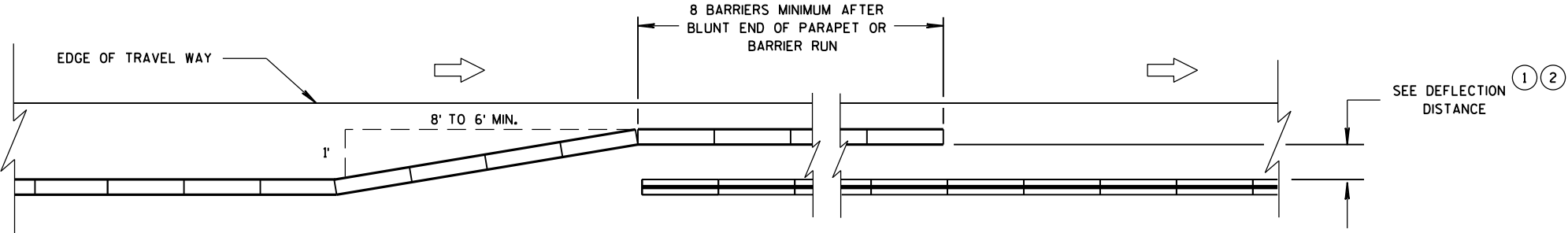
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



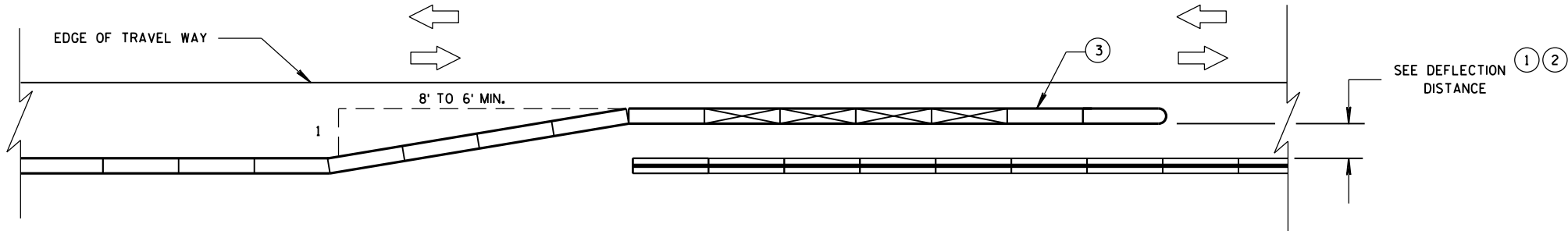
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

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



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

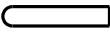
CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

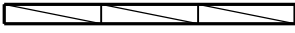
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

- DIRECTION OF TRAVEL

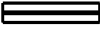

- CRASH CUSHION OR SAND BARREL ARRAY

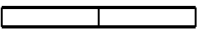

- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS


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


- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER


- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET


- FREE STANDING TEMPORARY BARRIER



DIMENSION C TABLE

2

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

6

6

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS

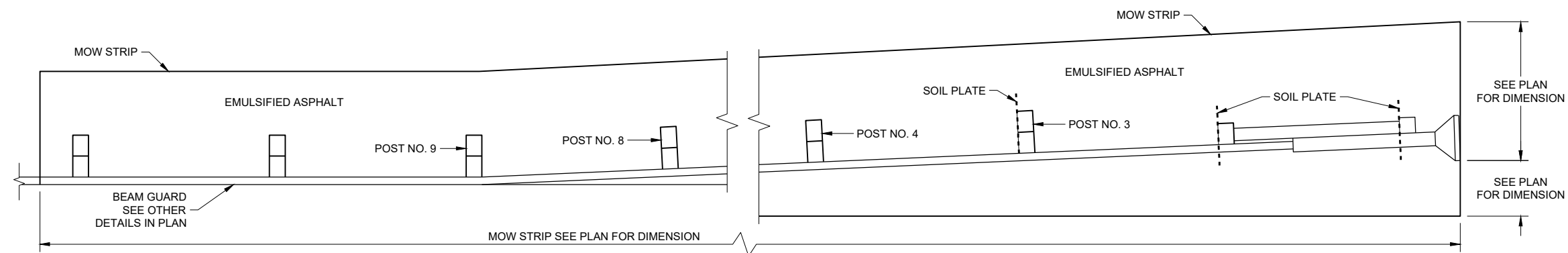
ENGINEER

92

ENT

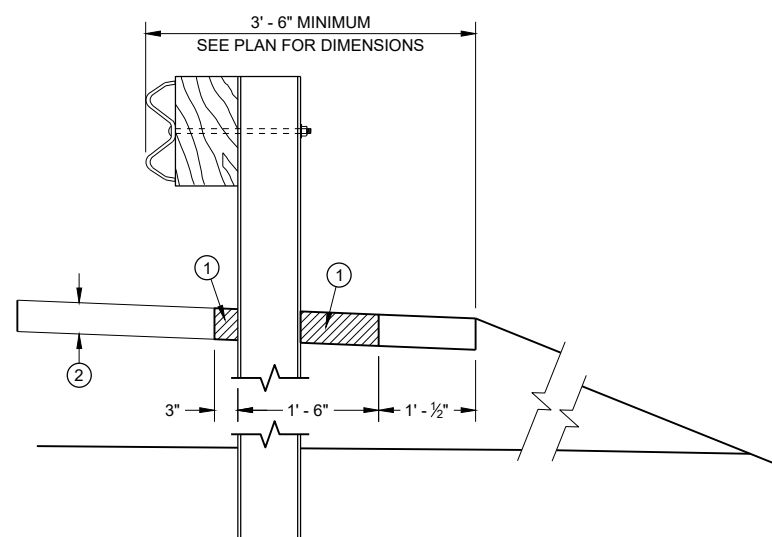
S.D.D. 14 B 8-2e

S.D.D. 14 B 8-2e

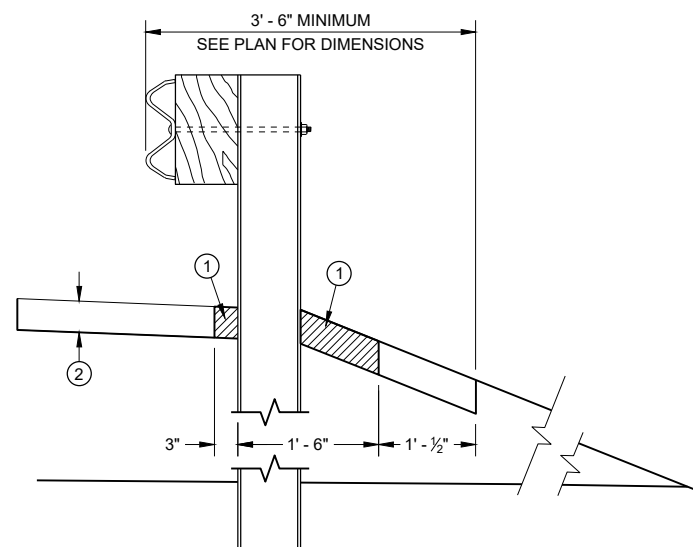


PLAN VIEW

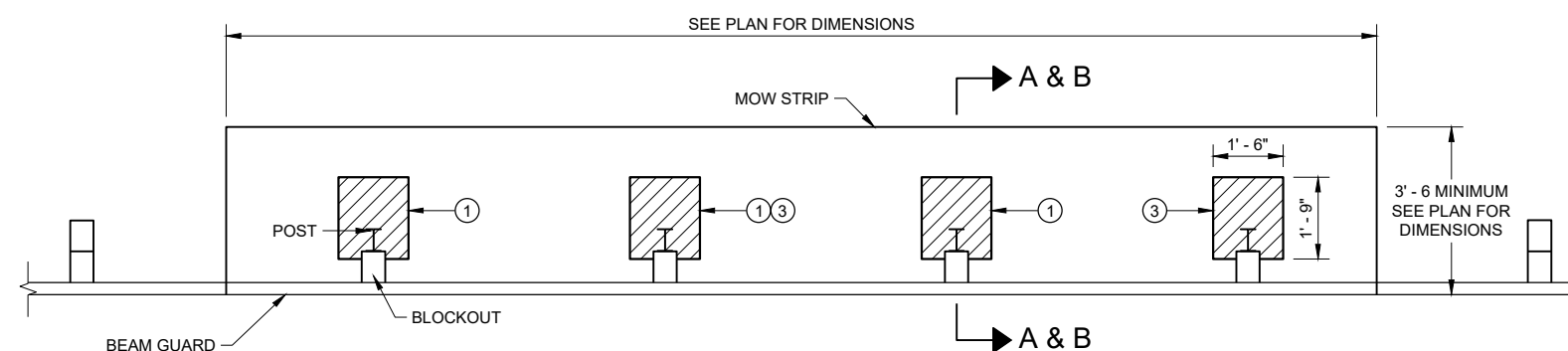
MOW STRIP LAYOUT FOR ENERGY ABSORBING TERMINAL



SECTION A - A

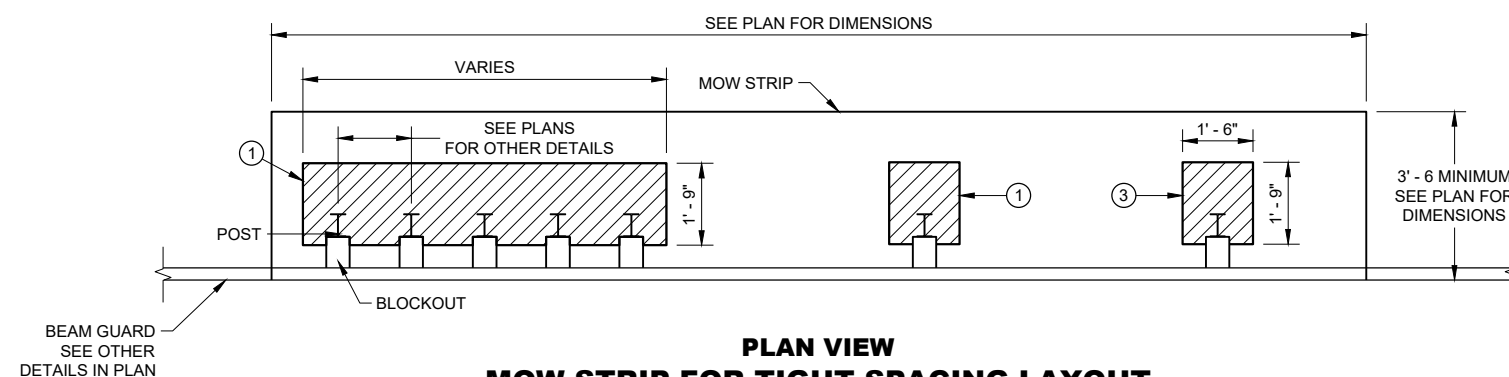


SECTION B - B



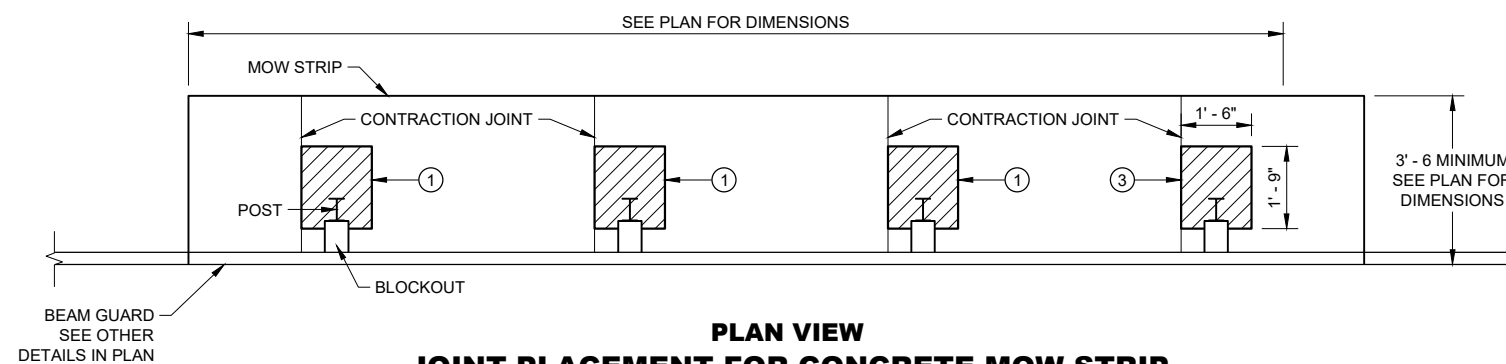
PLAN VIEW A & B

MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



PLAN VIEW

MOW STRIP FOR TIGHT SPACING LAYOUT



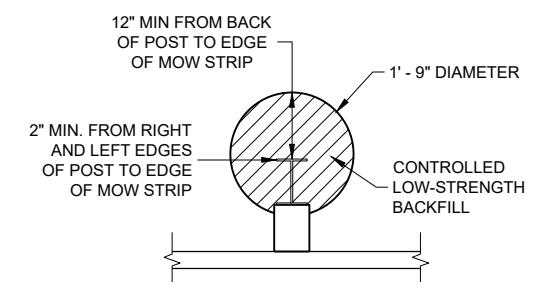
PLAN VIEW

JOINT PLACEMENT FOR CONCRETE MOW STRIP

GENERAL NOTES

ONLY USE STEEL POSTS IN CONCRETE AND ASPHALT MOW STRIPS.

- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:
ASPHALT - 4"
CONCRETE - 4"
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT, MOW STRIP STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS)

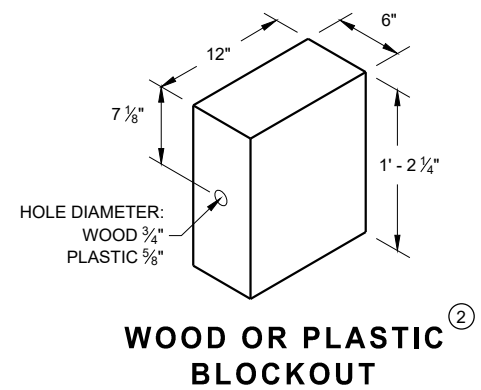
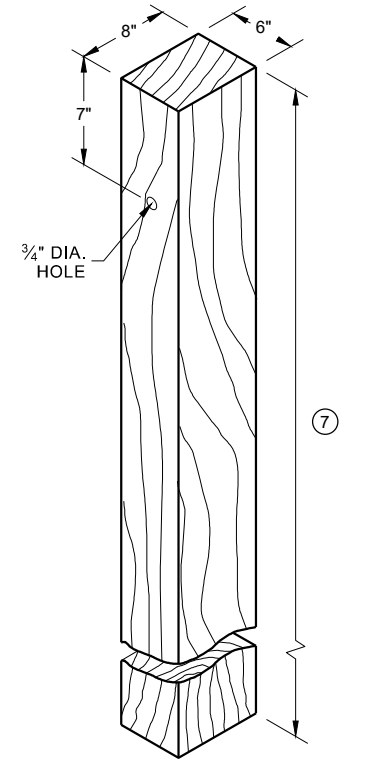
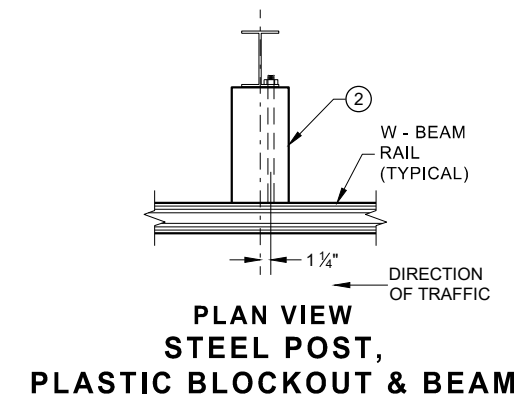
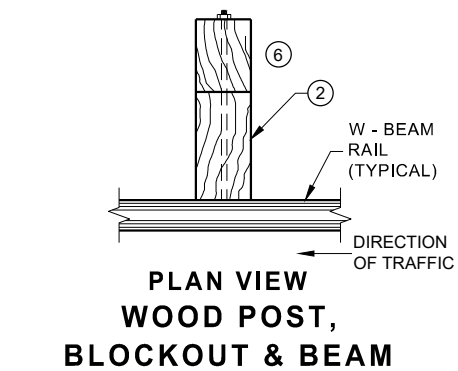
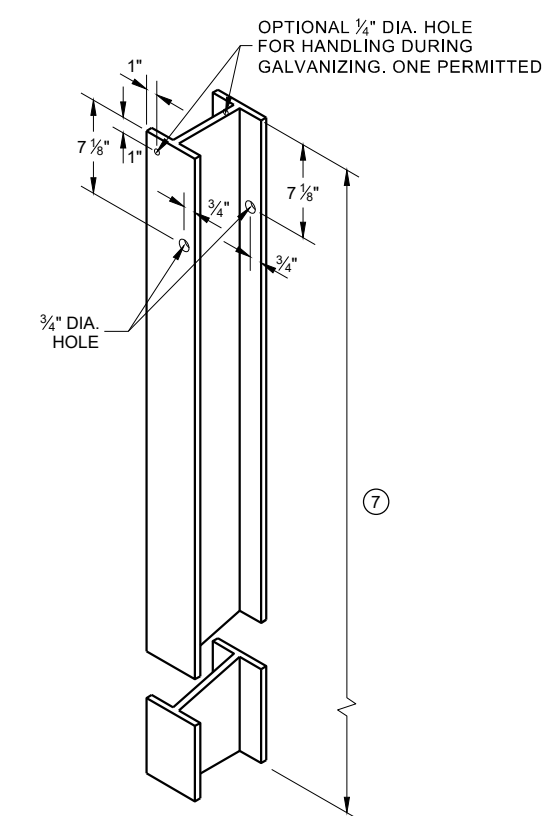
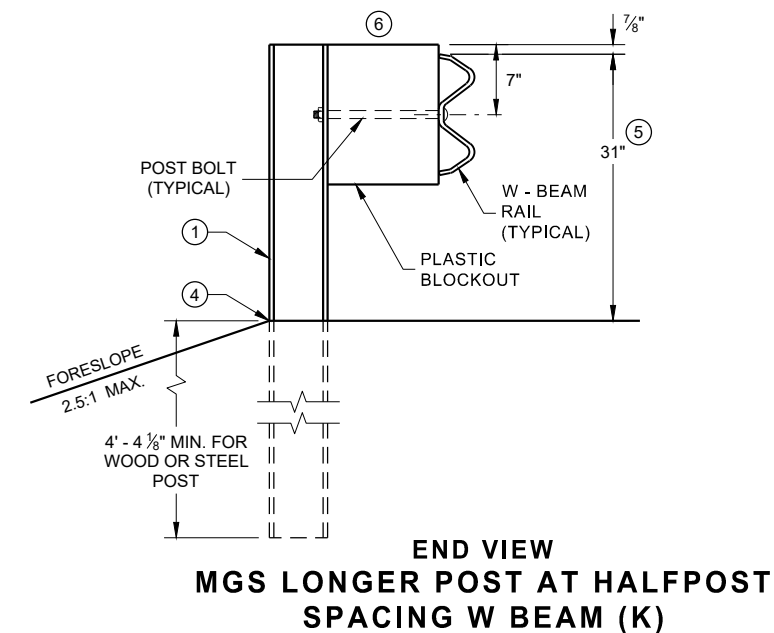
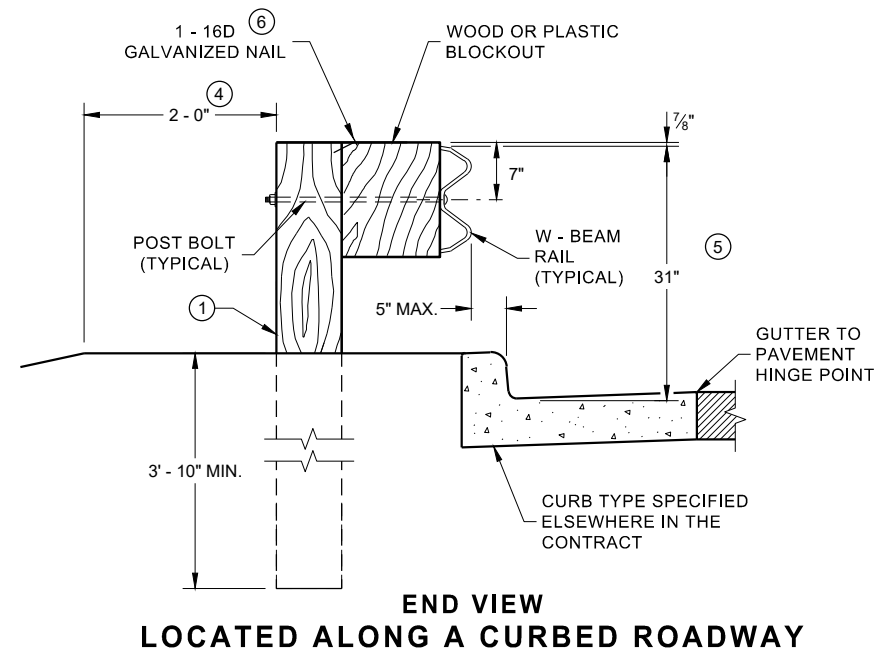
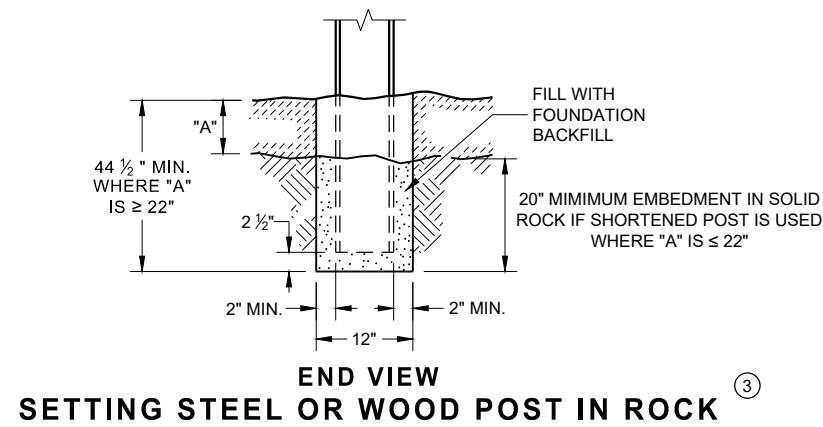


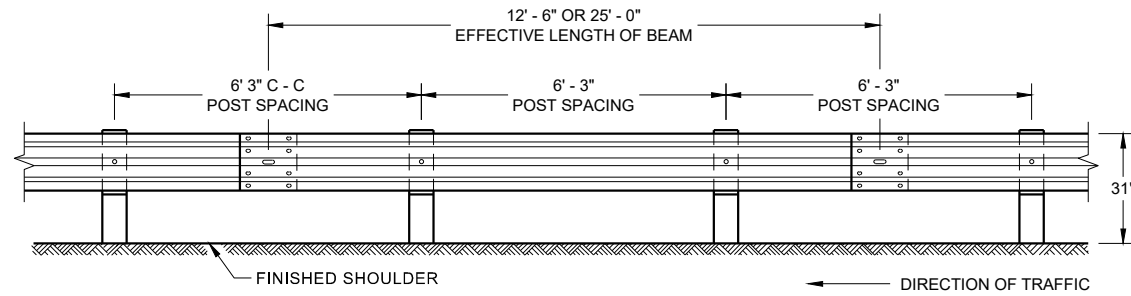
ALTERNATIVE HMA MOW STRIP DESIGN

GUARDRAIL MOW STRIP

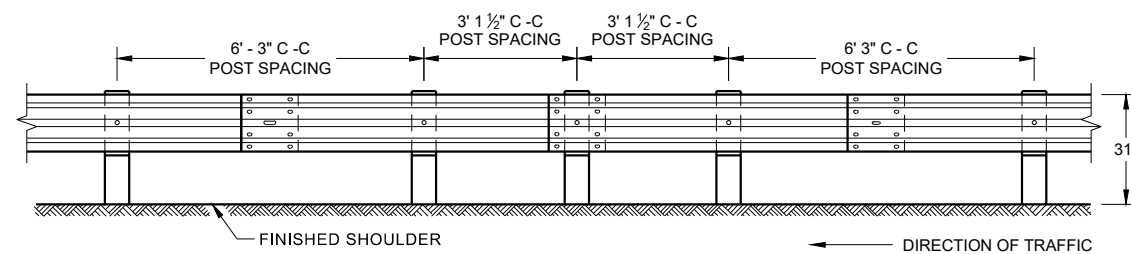
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 93

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

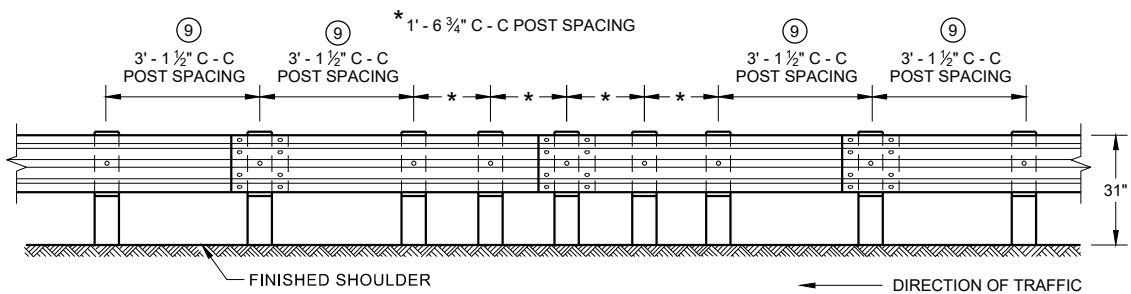




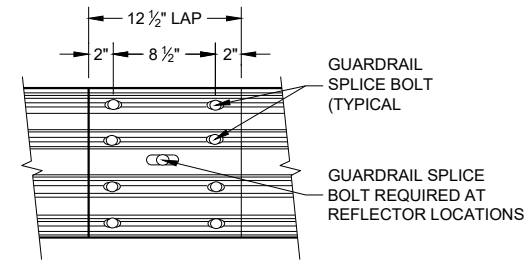
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



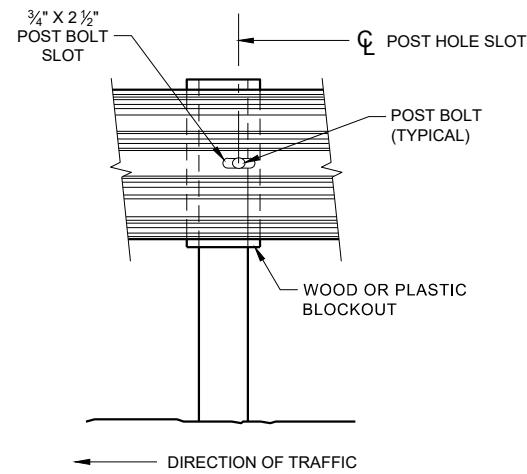
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



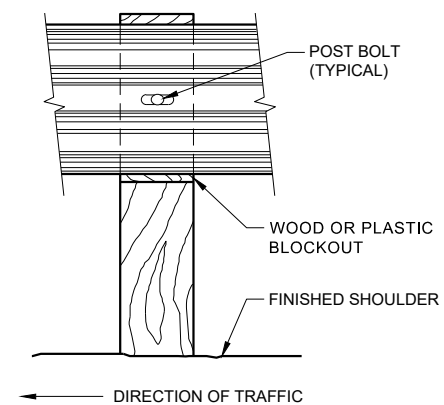
**FRONT VIEW
QUARTER POST SPACING (QS)**



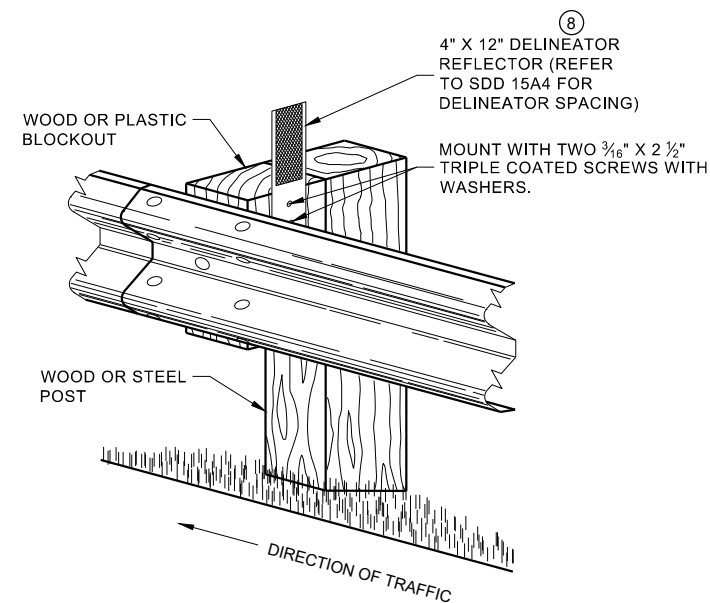
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



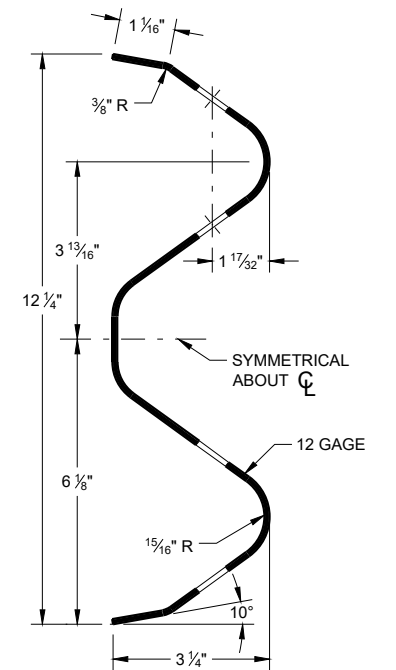
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" 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.

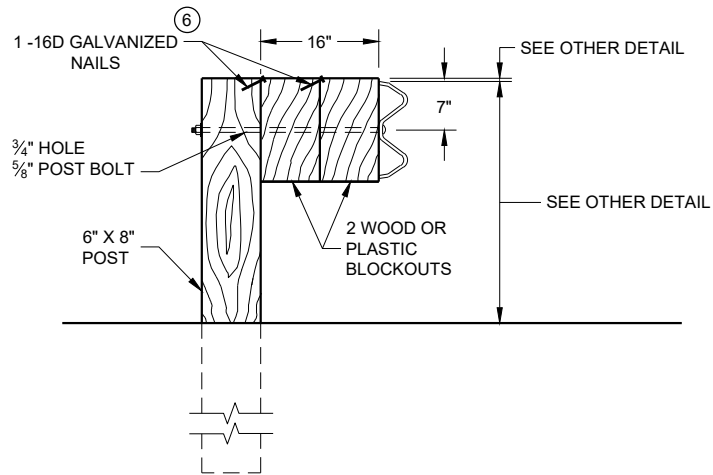
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

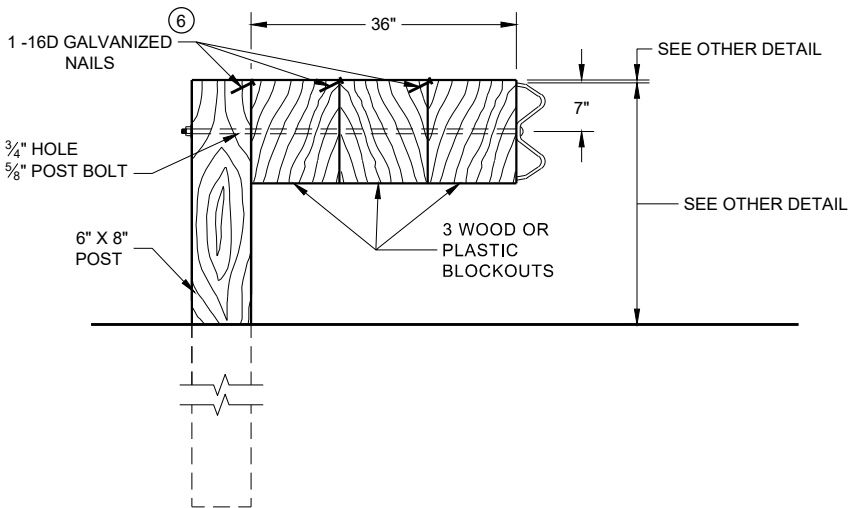
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

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

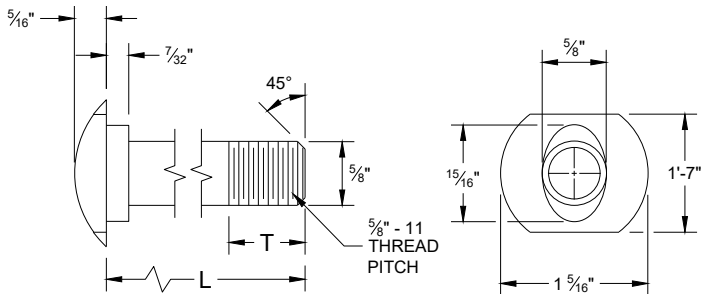


DETAIL FOR 36" BLOCKOUT DEPTH

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

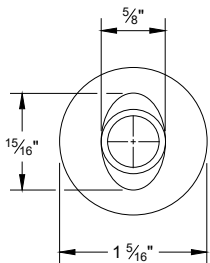
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

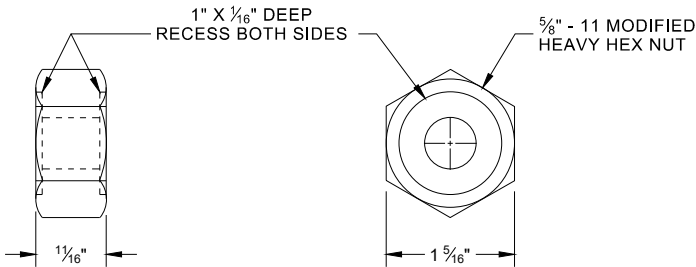


POST BOLT TABLE

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

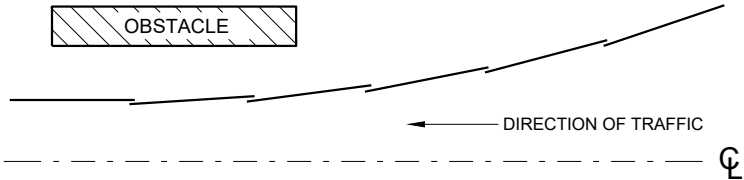


ALTERNATE BOLT HEAD

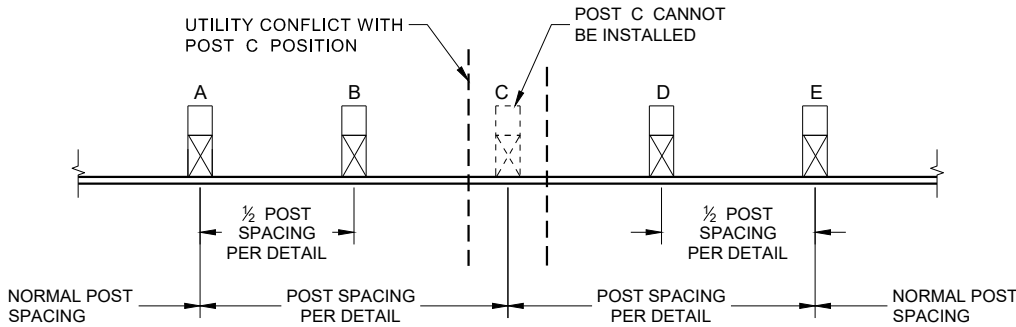


POST BOLT, SPLICE BOLT AND RECESS NUT

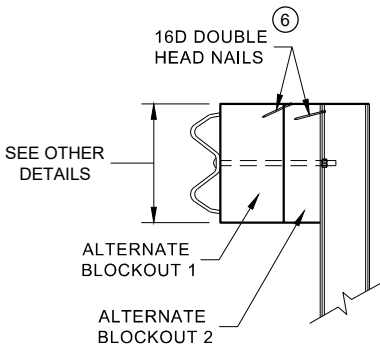
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



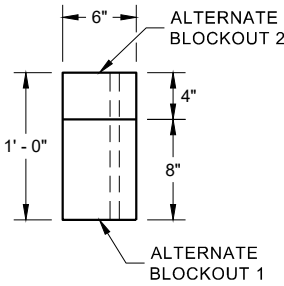
PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

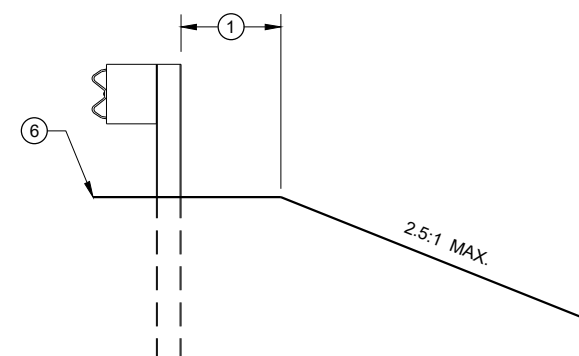
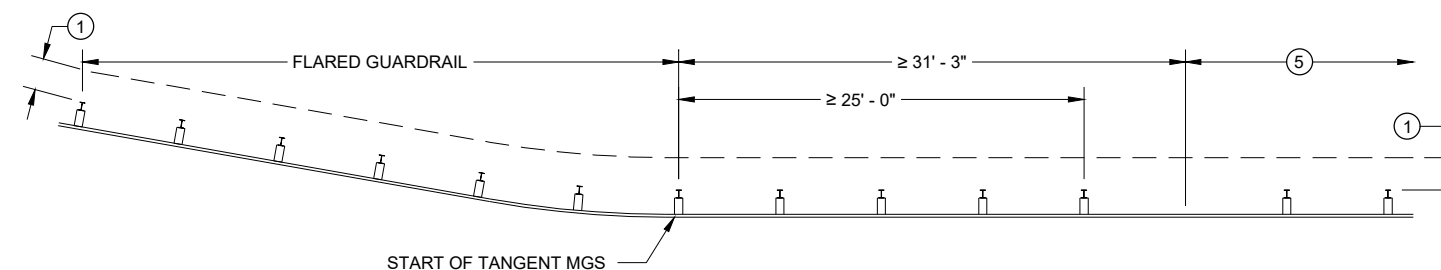
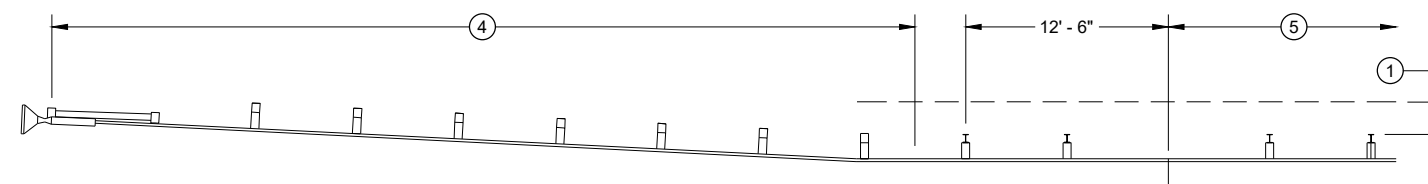
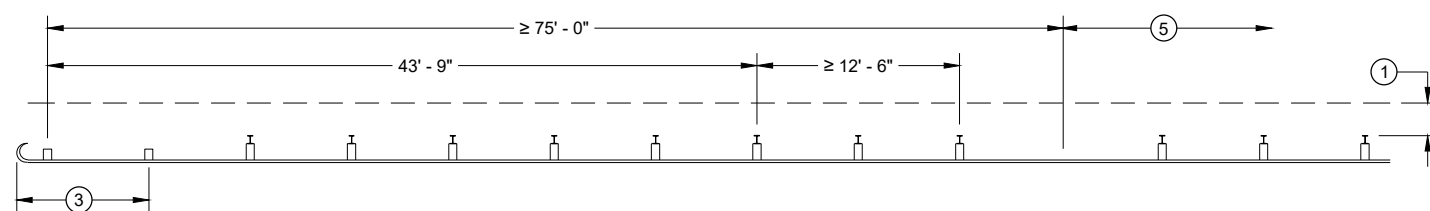
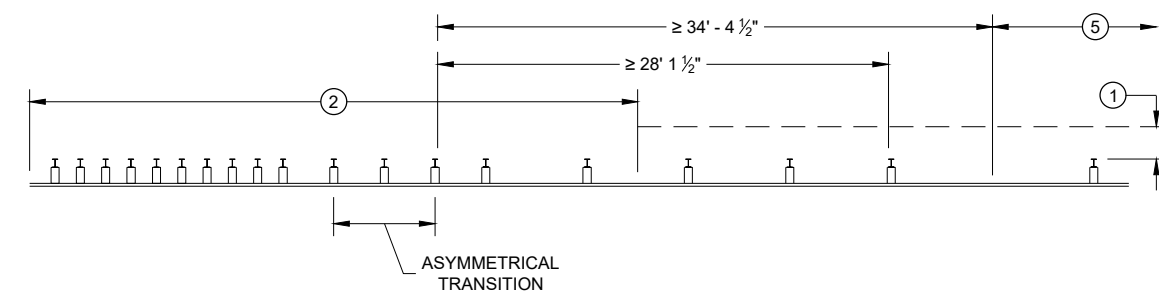
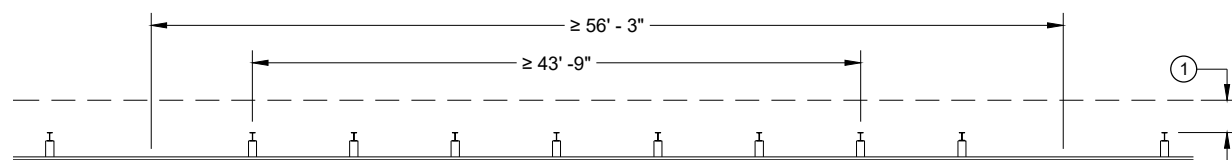


PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MDD RDR M
M RDR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER DESIGN.

M D										RDR										M									
M										RDR																			
STATE OF WISCONSIN																													
DEPARTMENT OF TRANSPORTATION																													
APPROVED																													
7/2018										/S/ Rodney Taylor																			
DATE										ROADWAY STANDARDS DEVE										97									
										UNIT SUPERVISOR																			

GENERAL NOTES

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

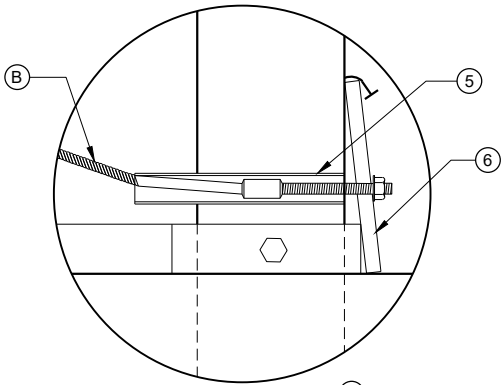
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

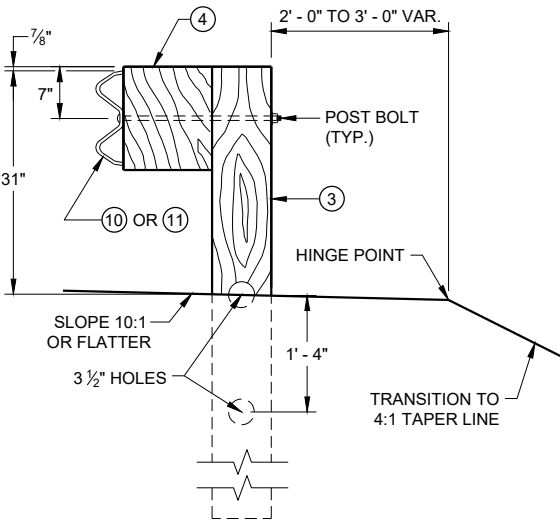
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

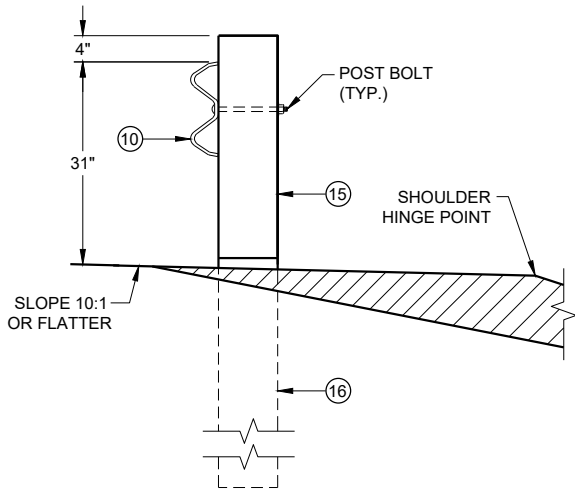
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



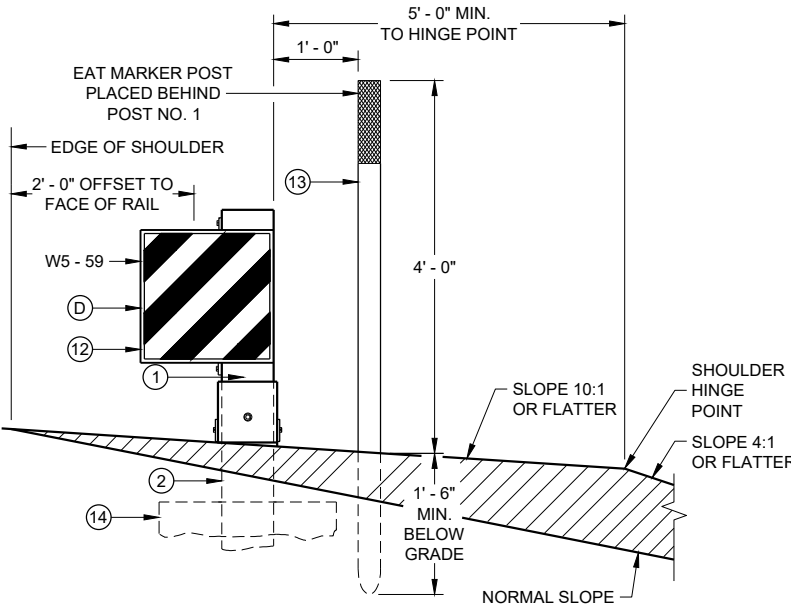
DETAIL "A"



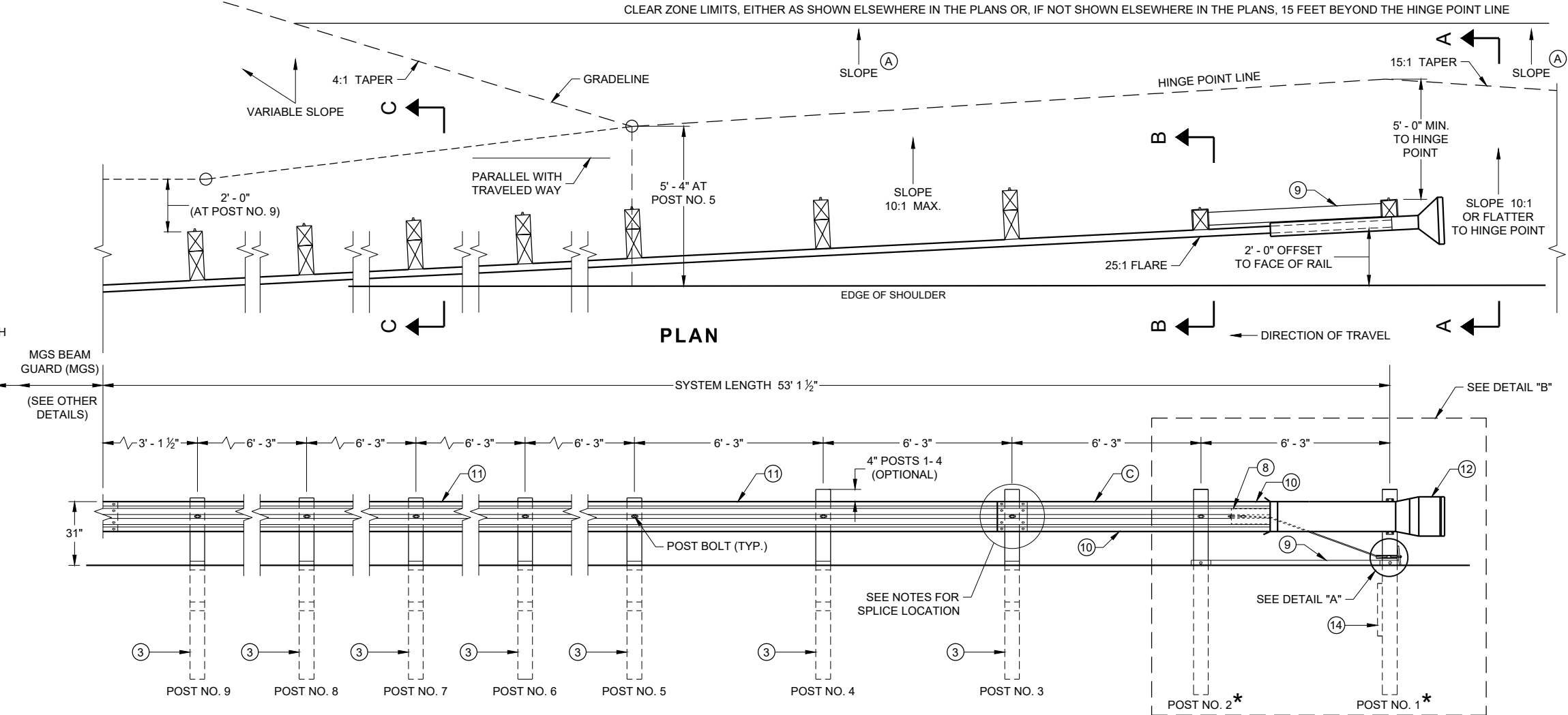
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*

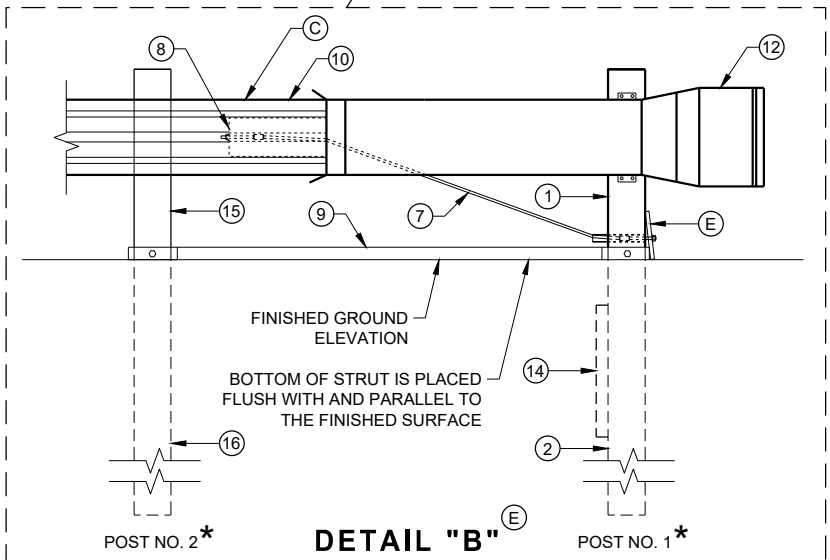


SECTION A - A
TYPICAL AT POST NO. 1*



PLAN

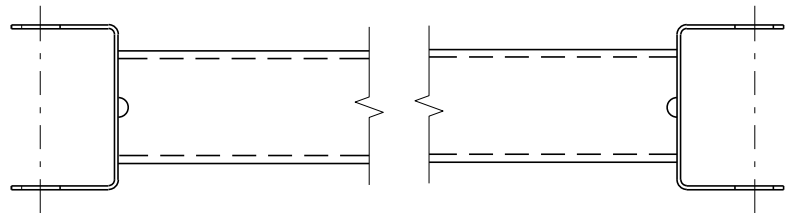
ELEVATION



DETAIL "B"

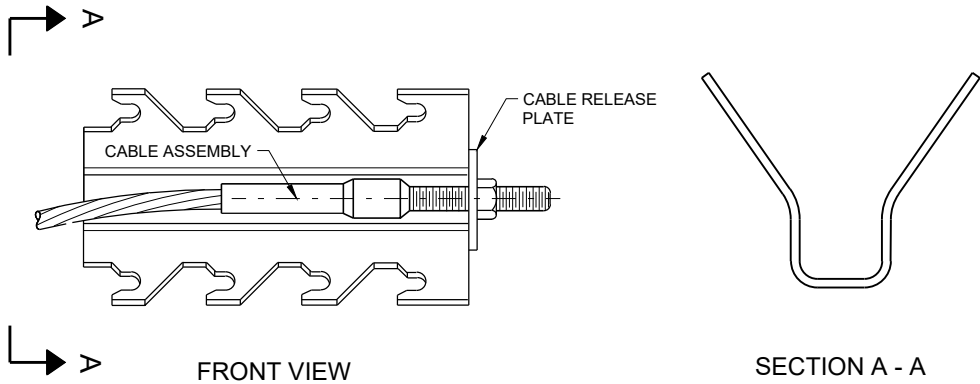
M D RDR M
ENERGY ABSORBING TERMINAL
M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

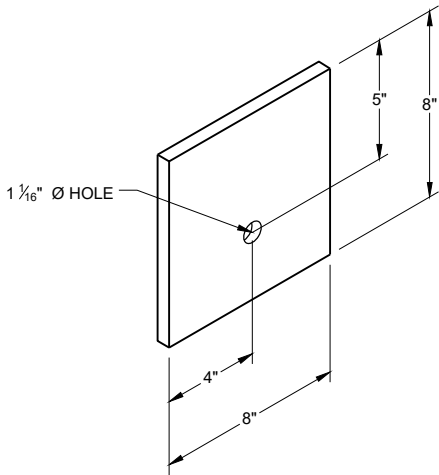


GENERIC GROUND STRUT⁹ E

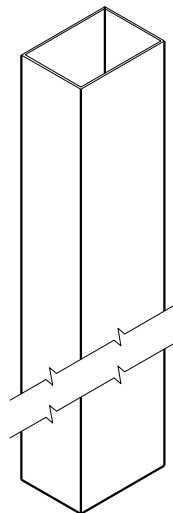
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED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



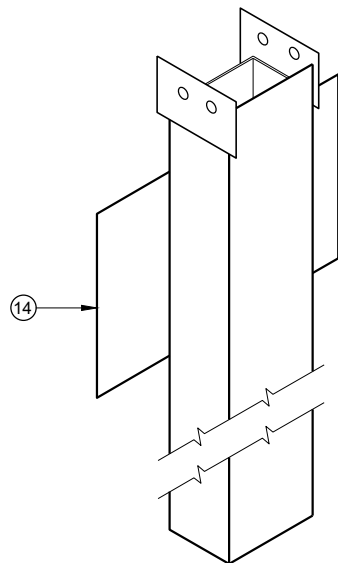
GENERIC ANCHOR CABLE BOX⁹ E



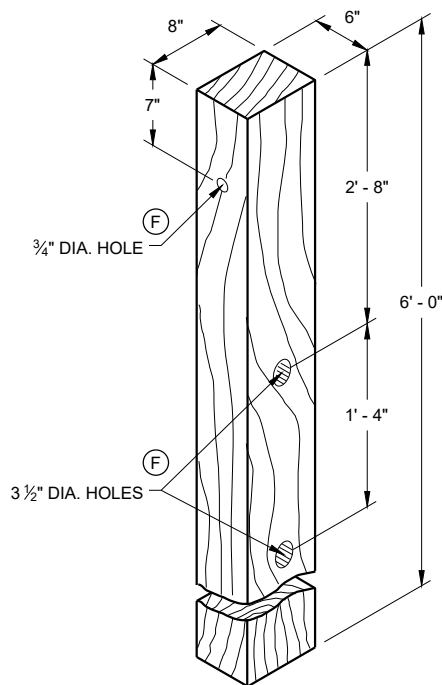
BEARING PLATE⁶ E



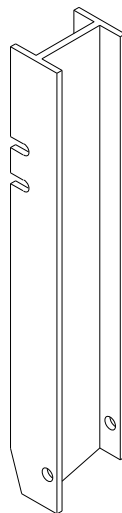
UPPER POST NO. 1 ⁽¹⁾ (E)



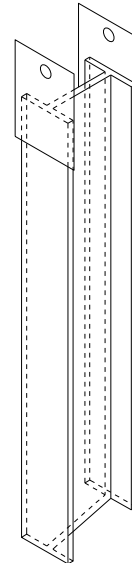
LOWER POST NO. 1 ⁽²⁾ (E)



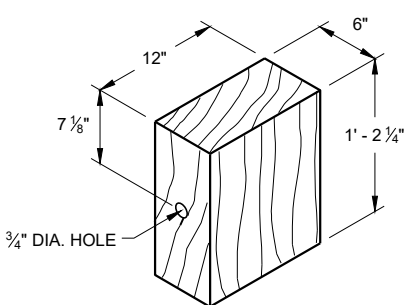
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



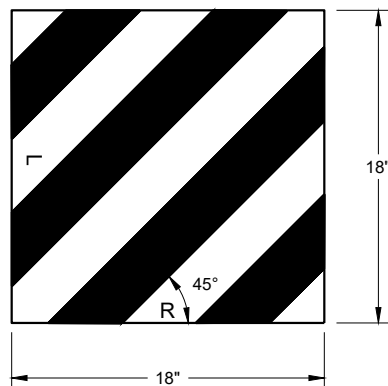
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



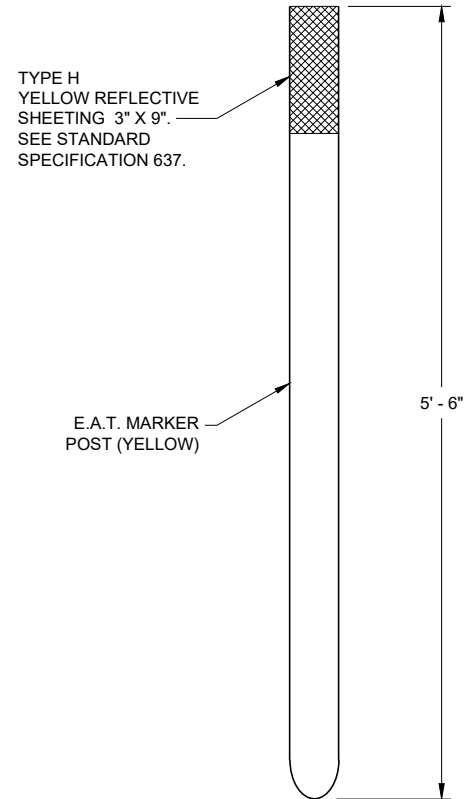
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



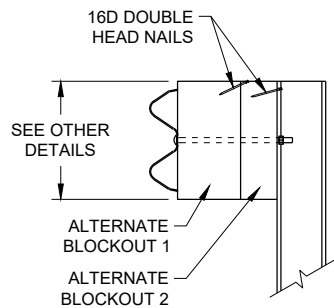
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



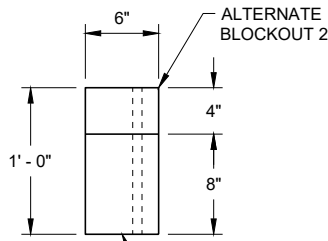
REFLECTIVE SHEETING DETAIL ^(E)



E.A.T. MARKER POST ⁽¹³⁾



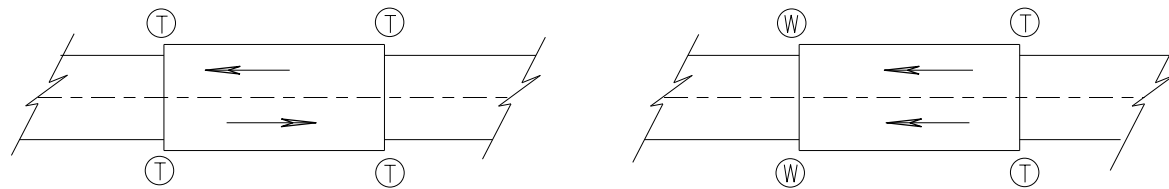
SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

M D RDR M	
ENERGY ABSORBING TERMINAL	
M	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA 100	



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

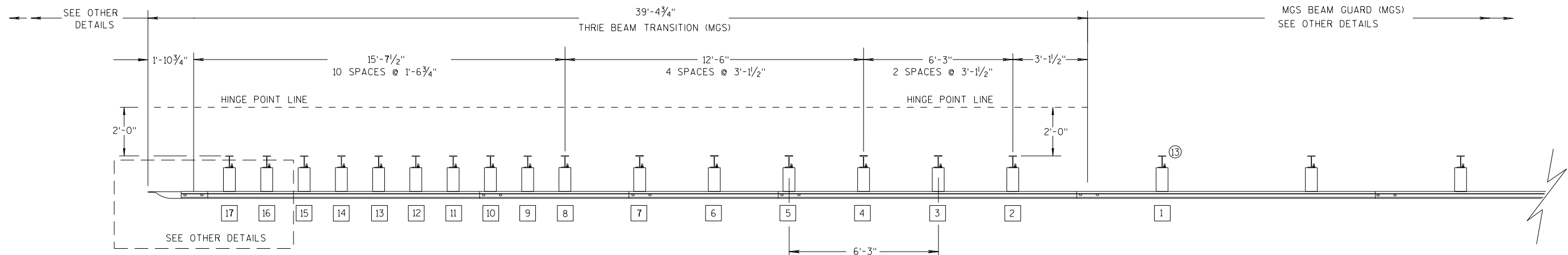
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

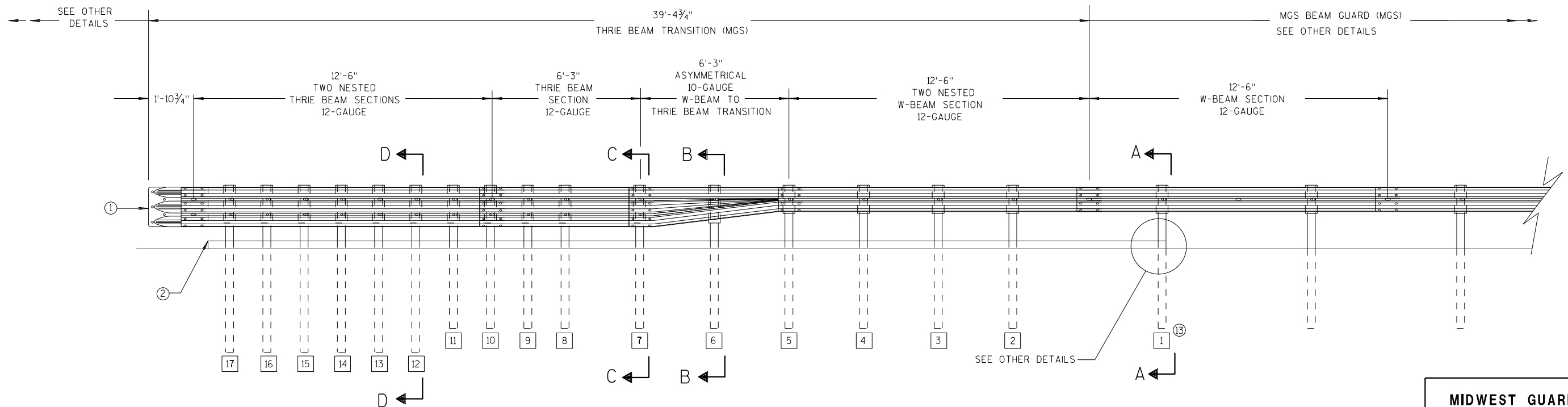
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

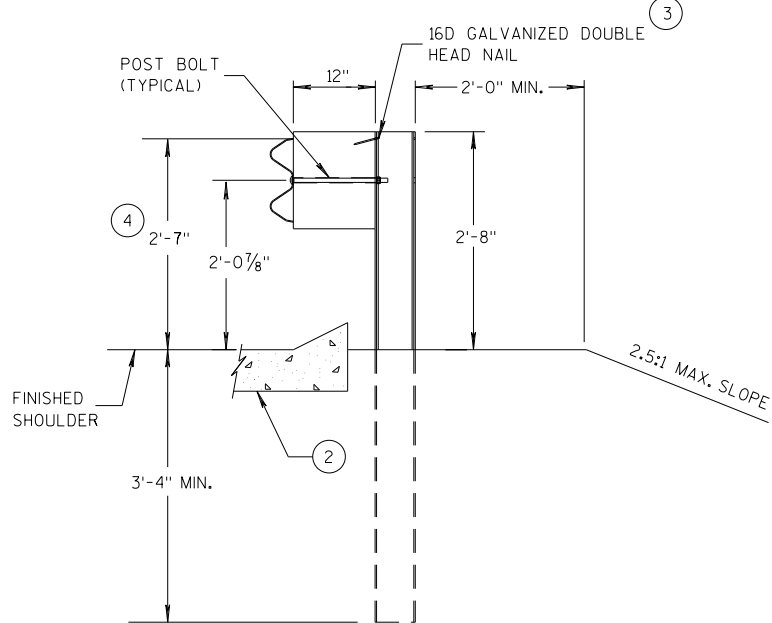
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

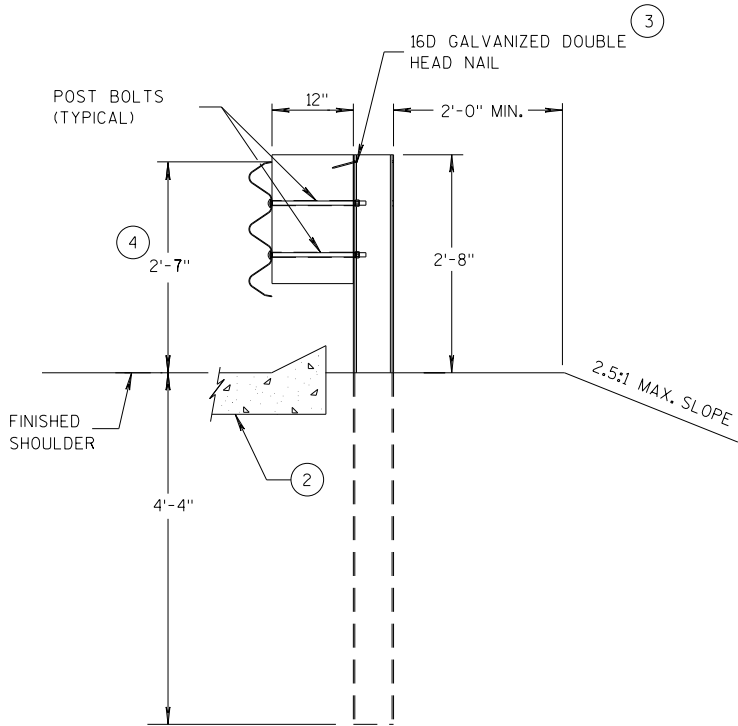
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 101

GENERAL NOTES

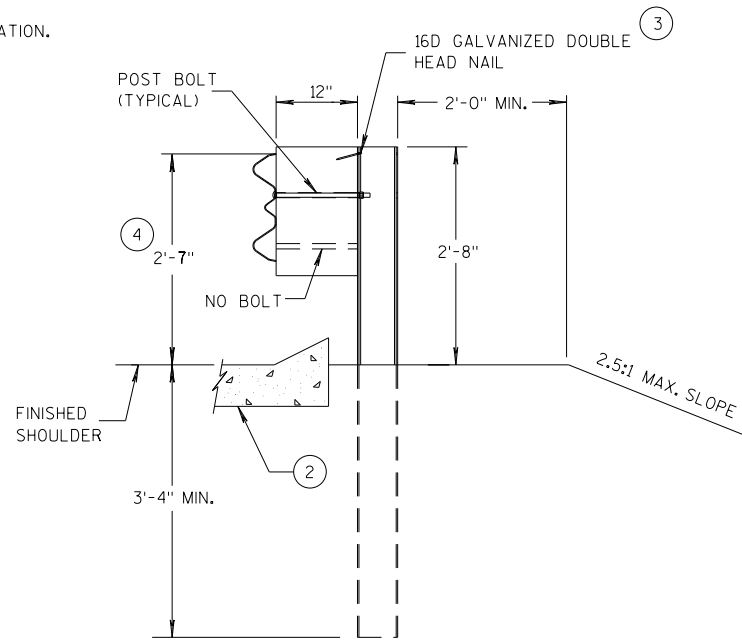
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



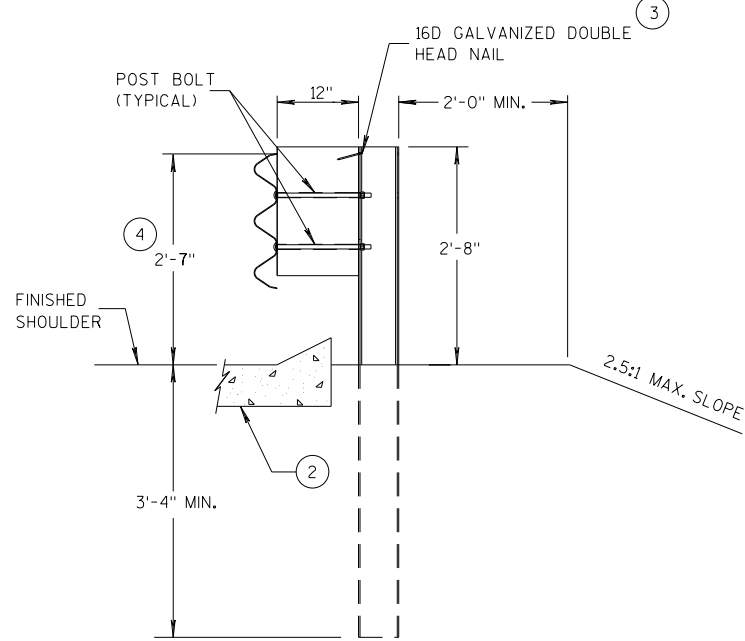
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

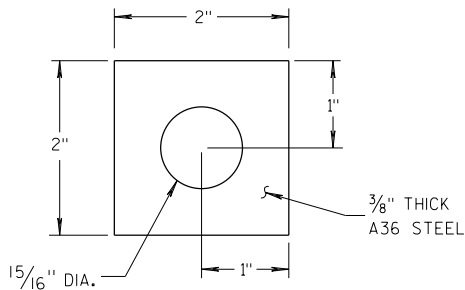
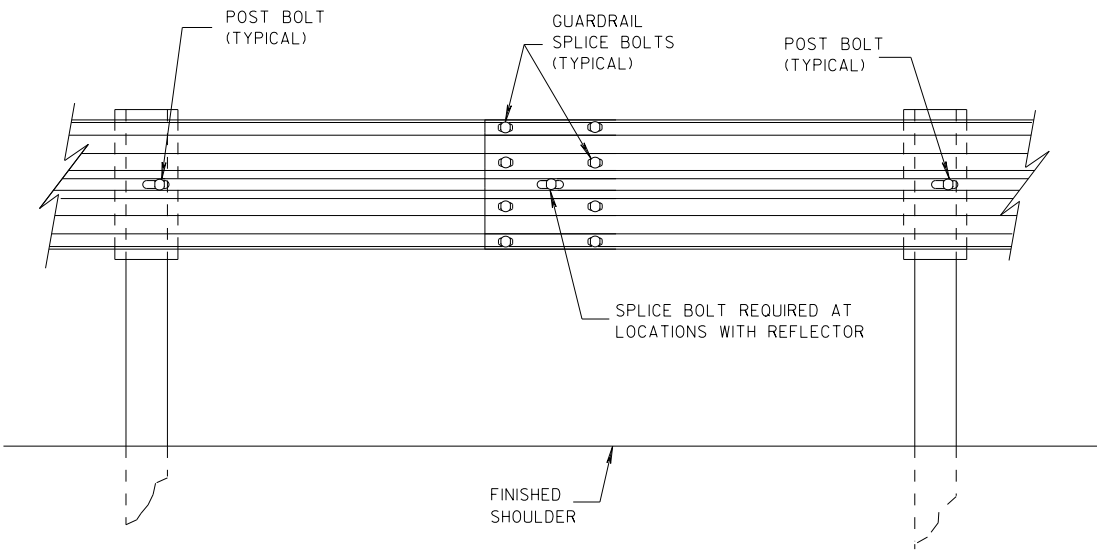
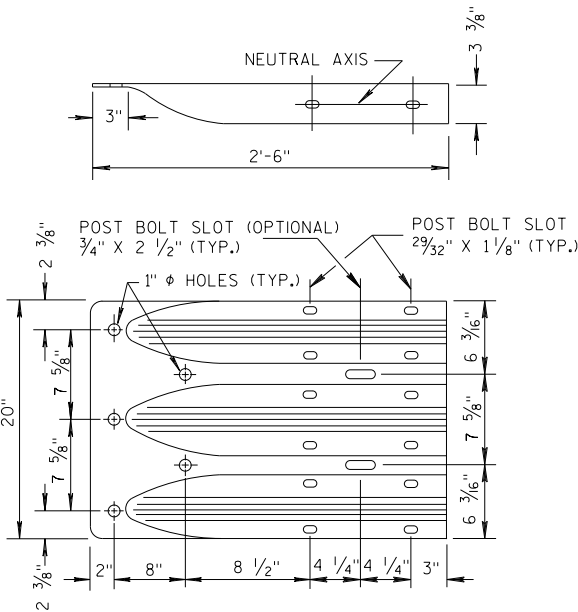


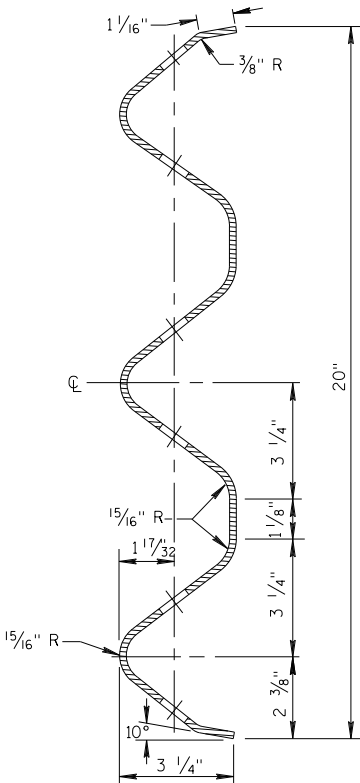
PLATE WASHER DETAIL



SPlice DETAIL



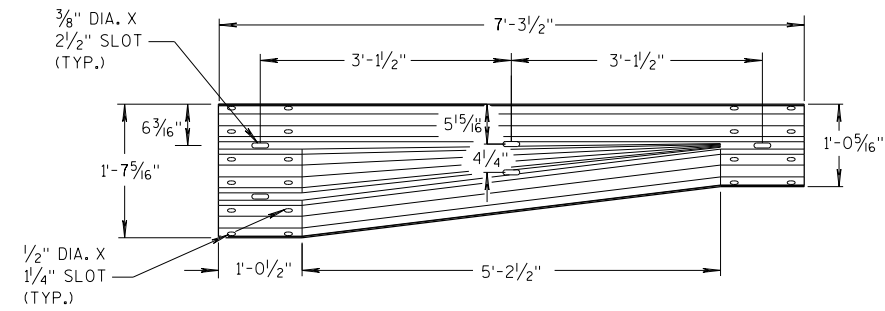
THRIE BEAM
TERMINAL CONNECTOR



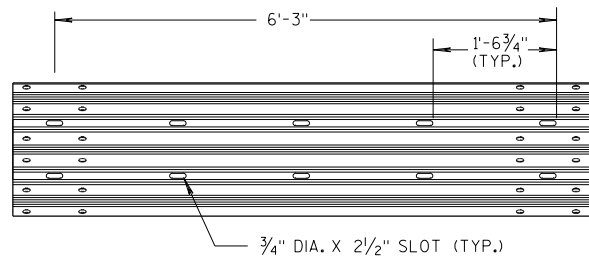
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

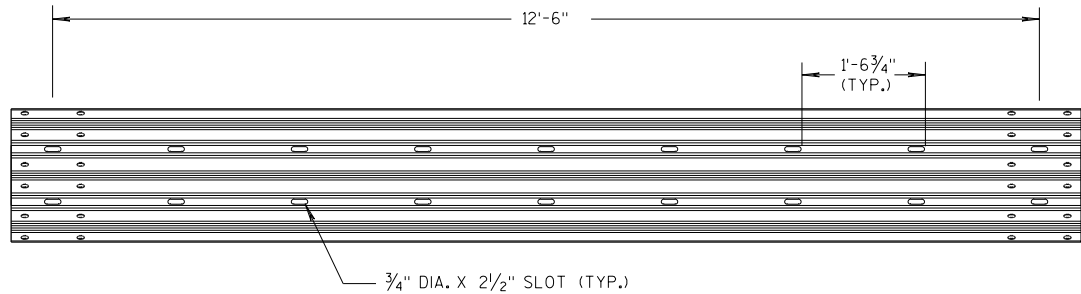
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



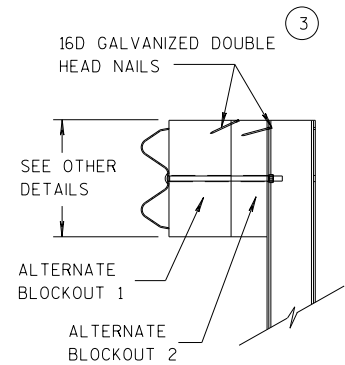
W-BEAM TO THRIE BEAM TRANSITION SECTION



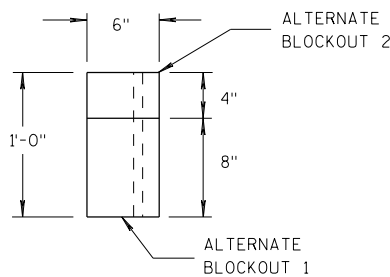
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

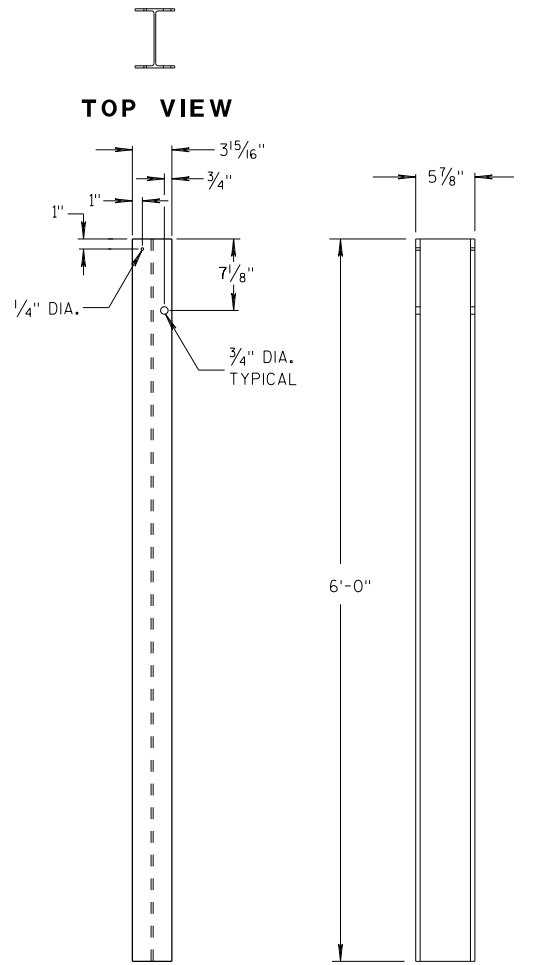


SIDE VIEW



TOP VIEW

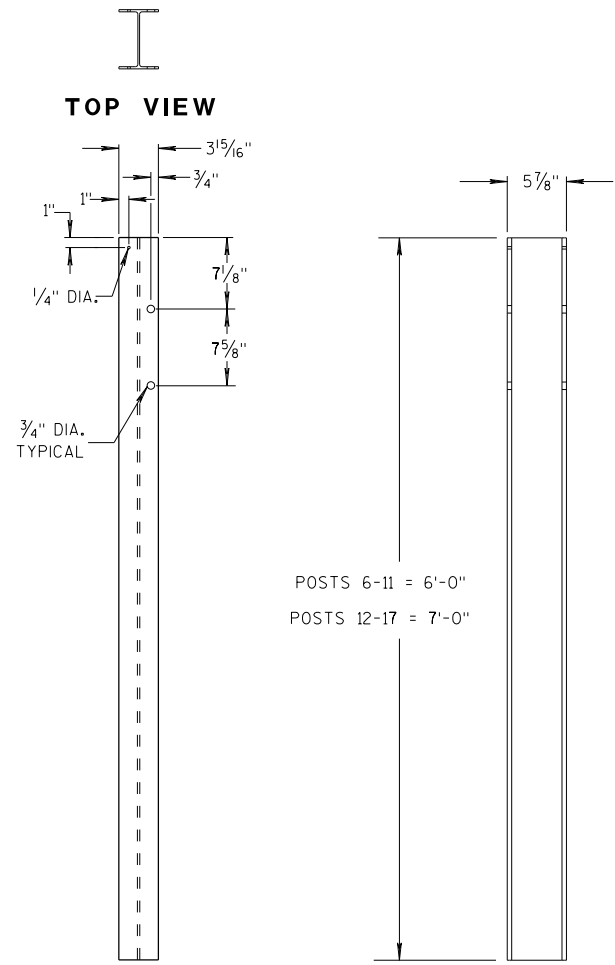
ALTERNATE WOOD BLOCKOUT DETAIL



FRONT VIEW

SIDE VIEW

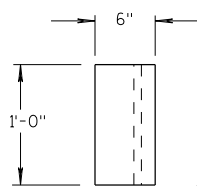
STEEL POSTS 1-5



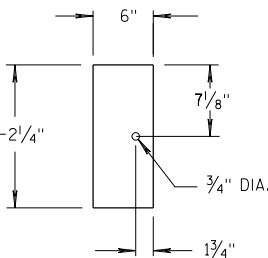
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17

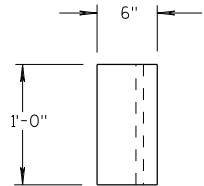


TOP VIEW

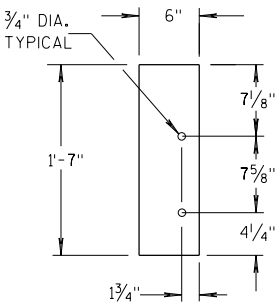


FRONT VIEW

BLOCKOUT POSTS 1-5



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.

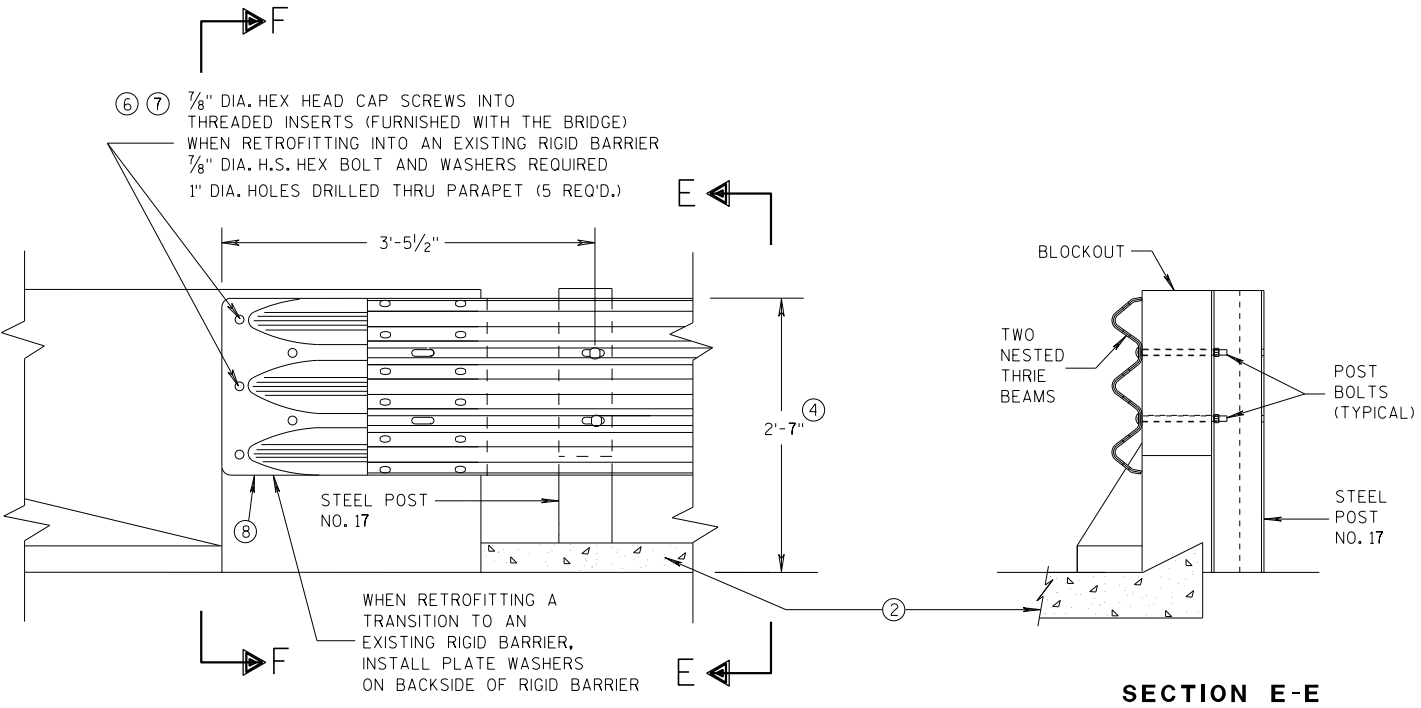
3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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.

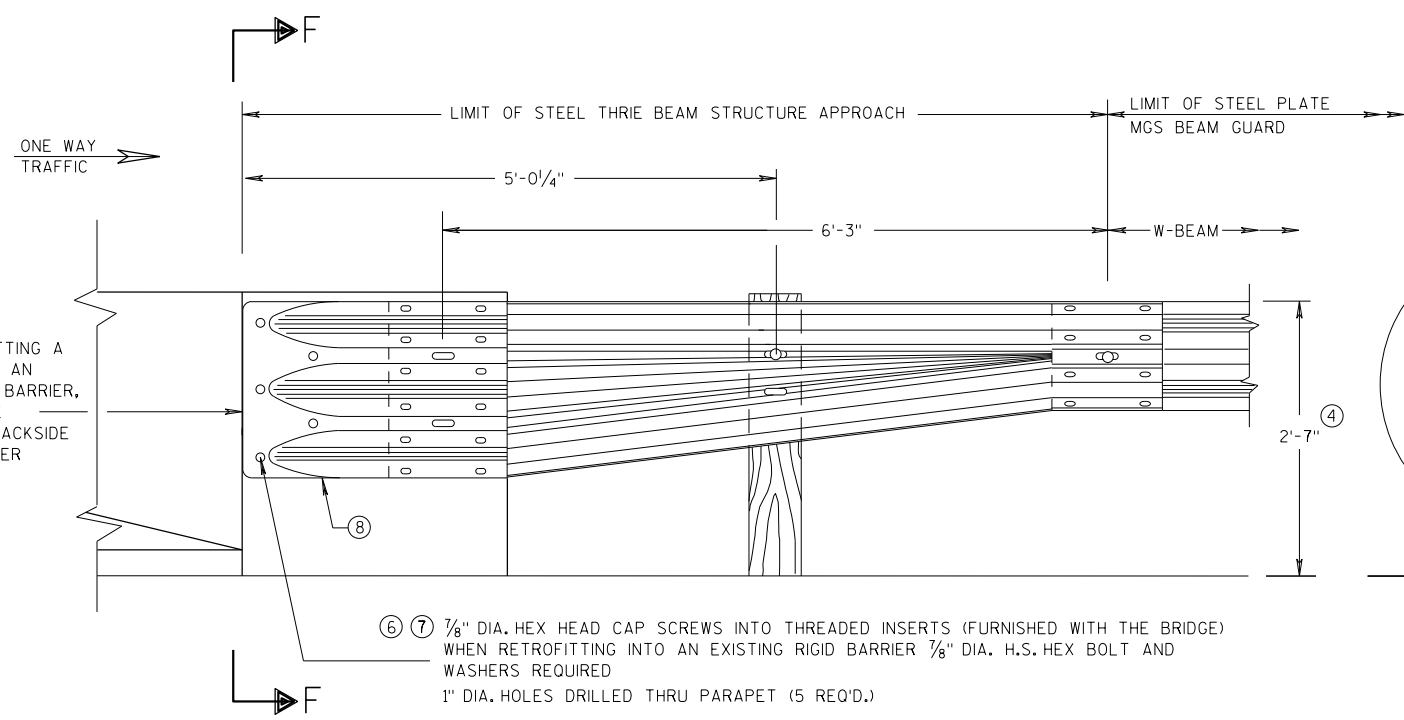
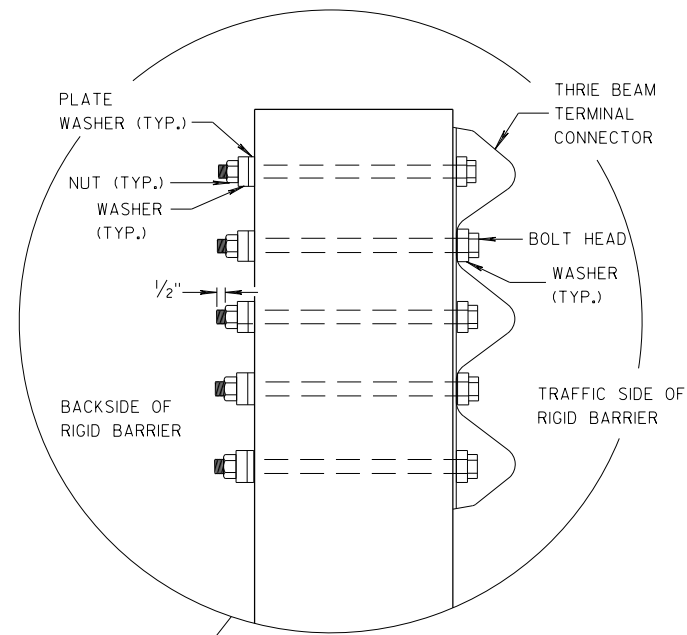
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

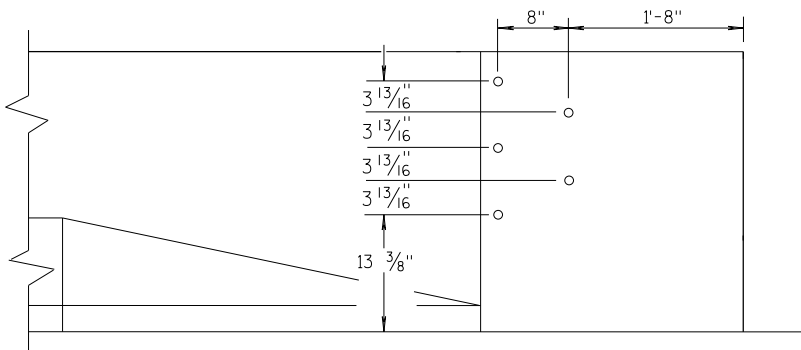


GENERAL NOTES

- 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

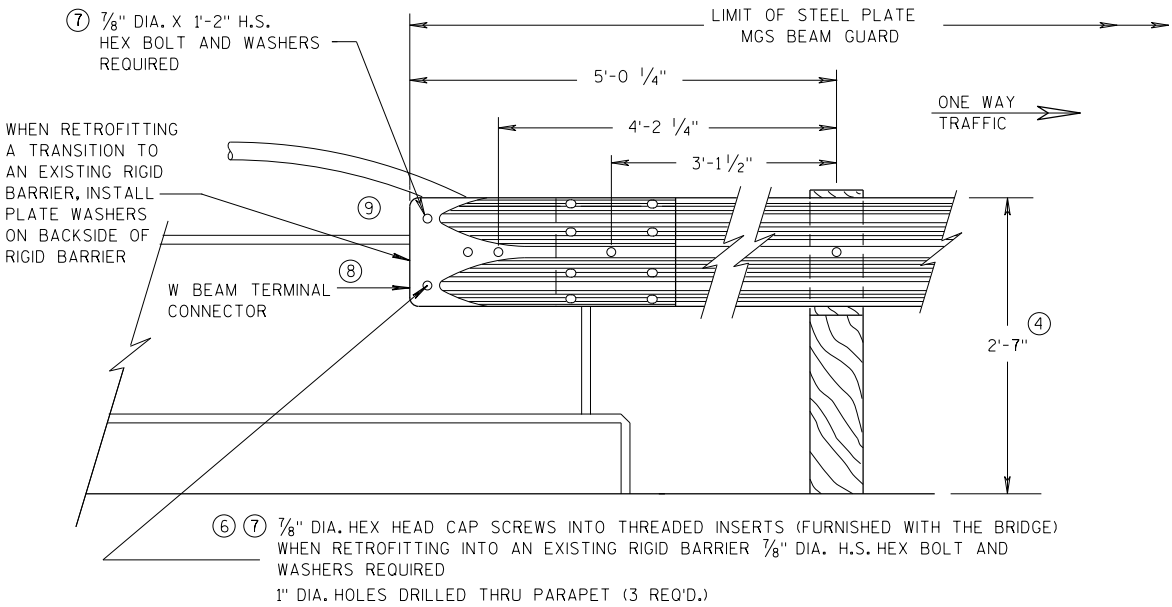


MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS UNIT SUPERVISOR		
FHWA	104	NT	

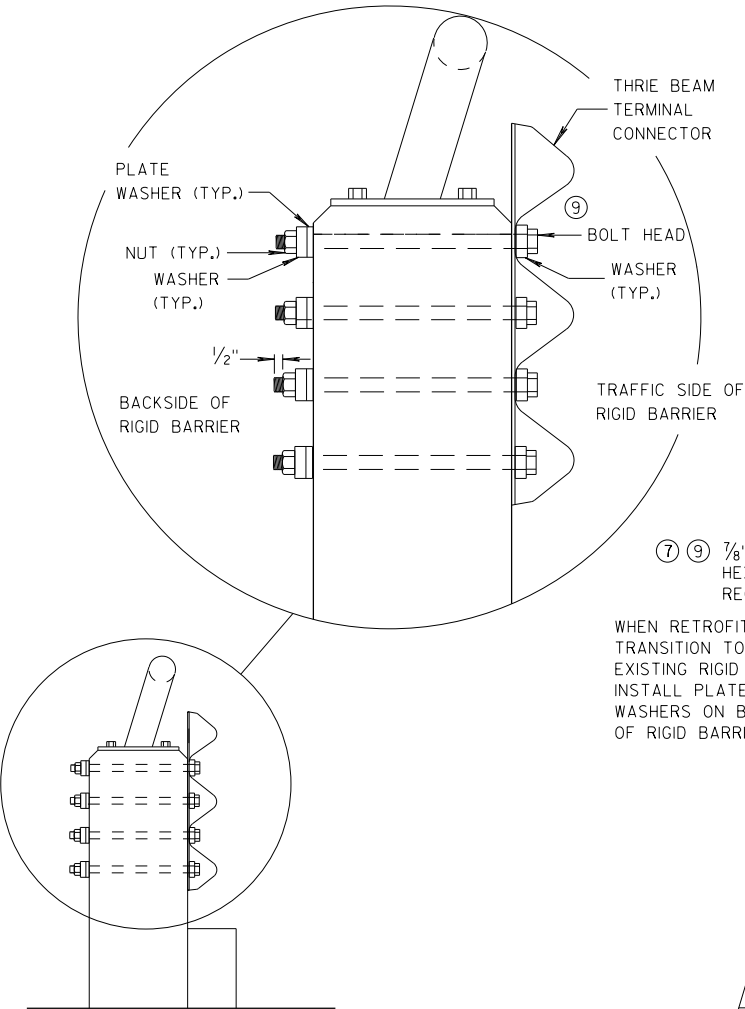
GENERAL NOTES

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

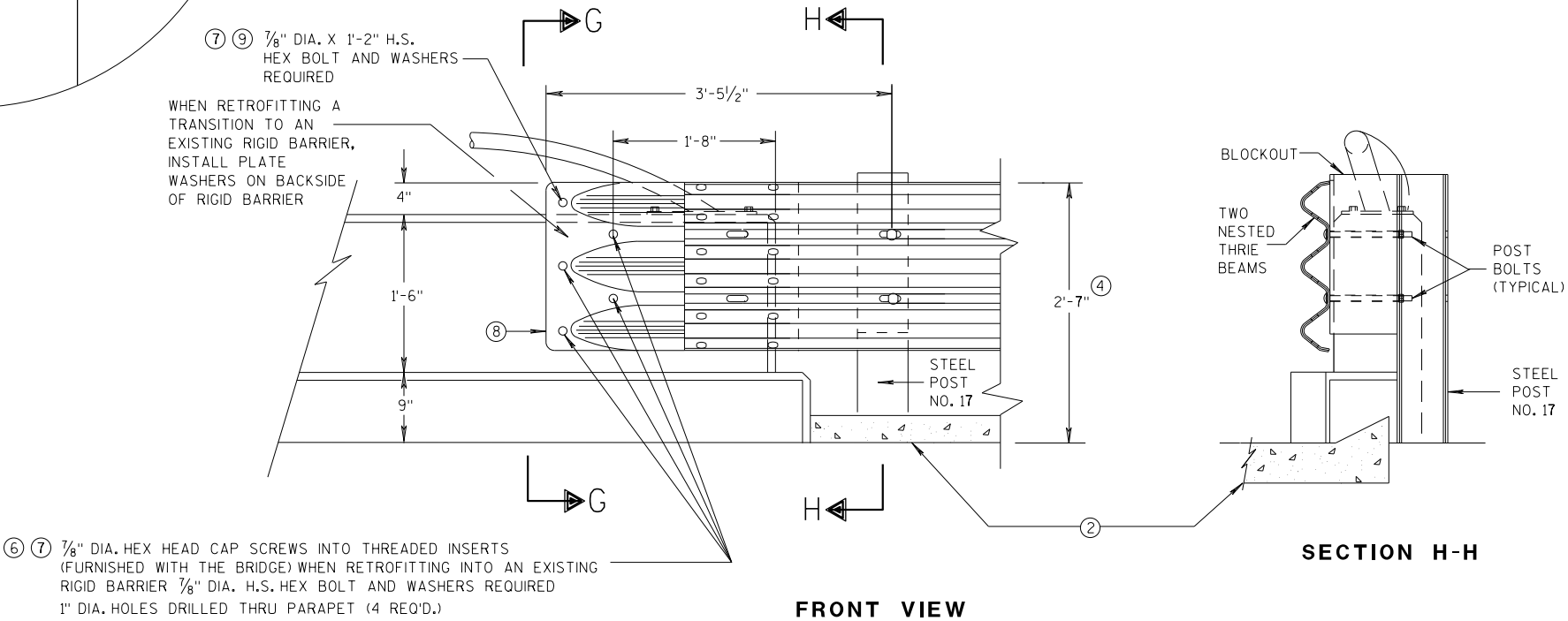
- OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
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- THE RECESS 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 $\frac{1}{2}"$.
- 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)

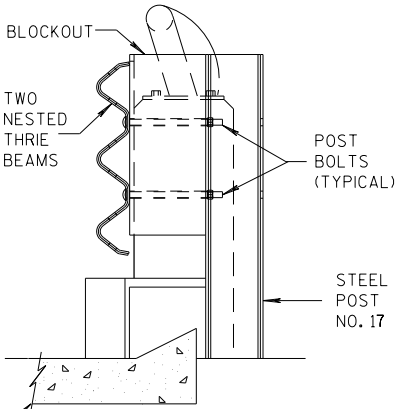


SECTION G-G



FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

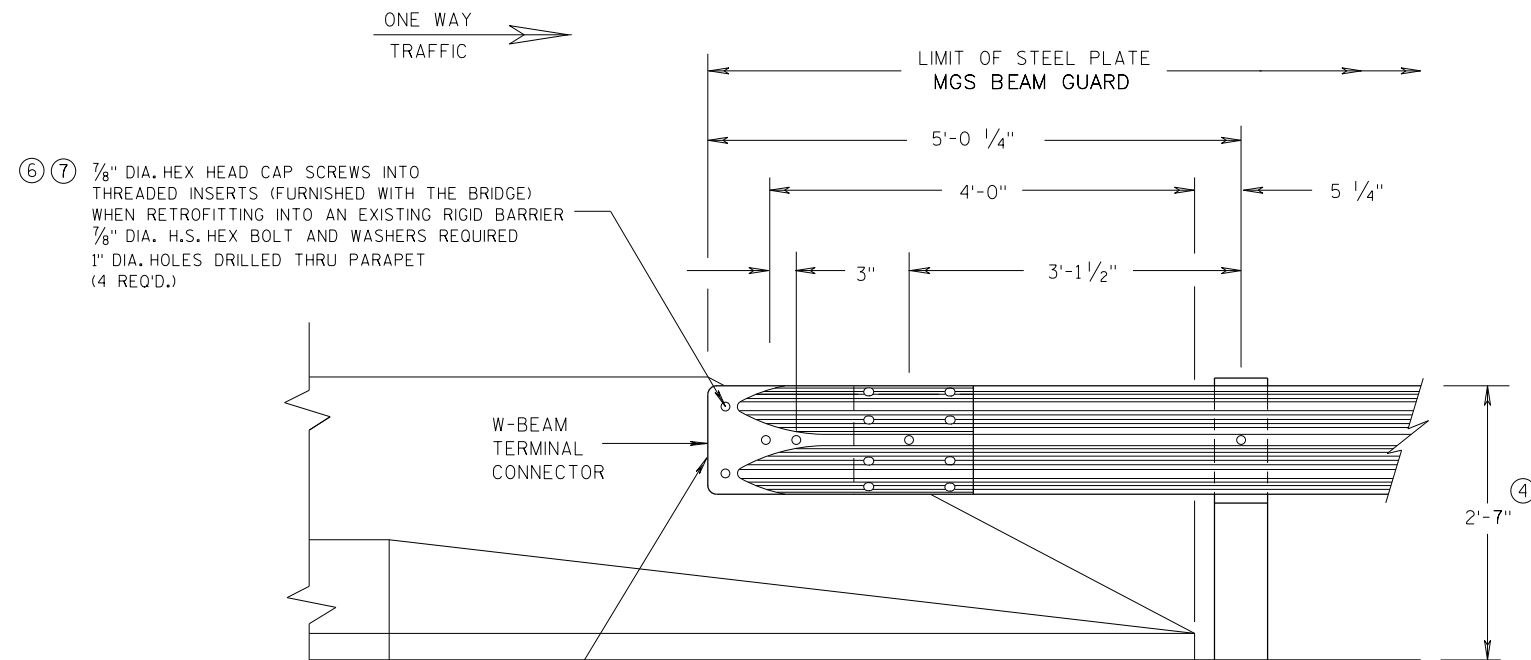


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

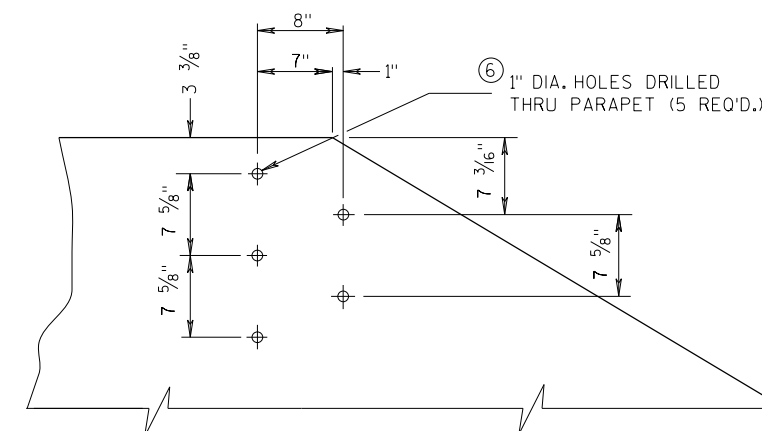
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105
FHWA



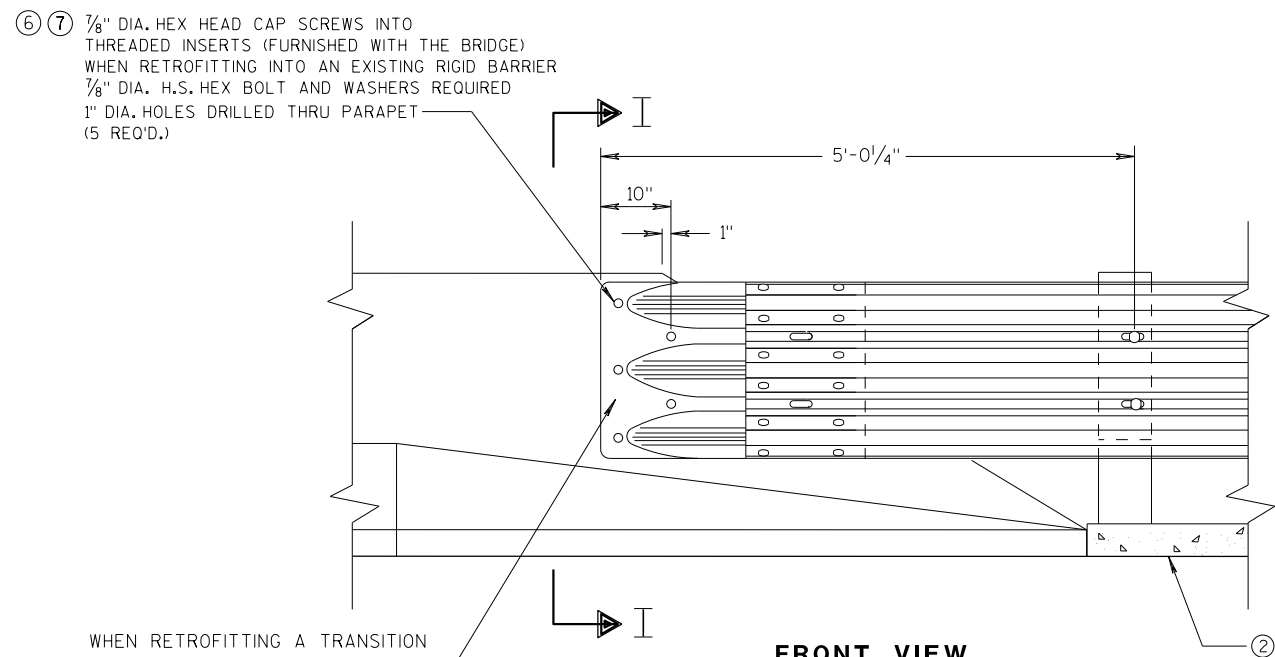
WHEN RETROFITTING A TRANSITION TO AN EXISTING RIGID BARRIER, INSTALL PLATE WASHERS ON BACKSIDE OF RIGID BARRIER.

FRONT VIEW

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



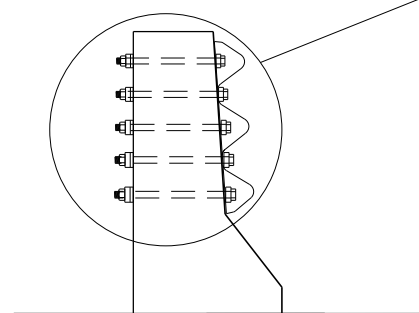
**DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION**



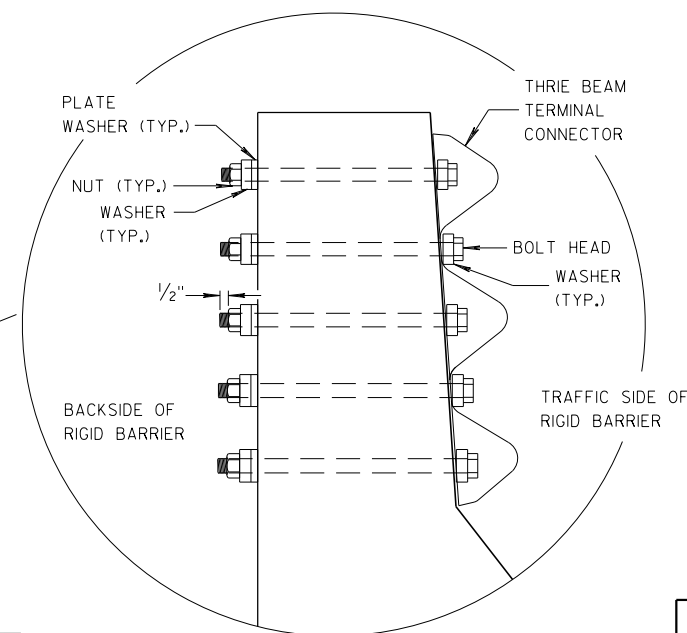
WHEN RETROFITTING A TRANSITION TO AN EXISTING RIGID BARRIER, INSTALL PLATE WASHERS ON BACKSIDE OF RIGID BARRIER.

FRONT VIEW

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



SECTION I-I



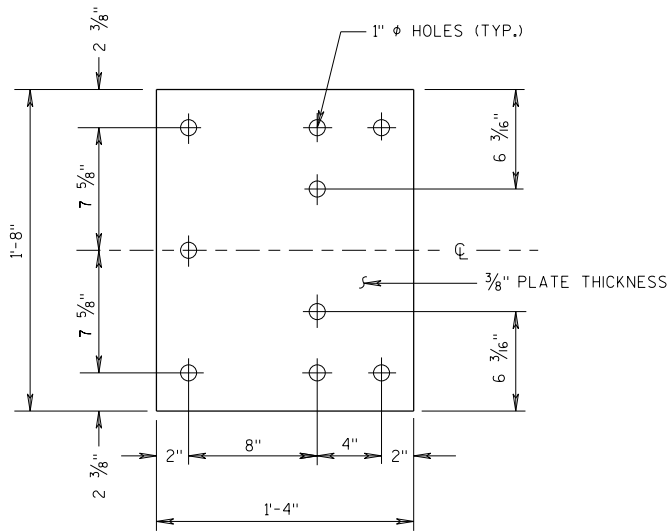
GENERAL NOTES

- 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.

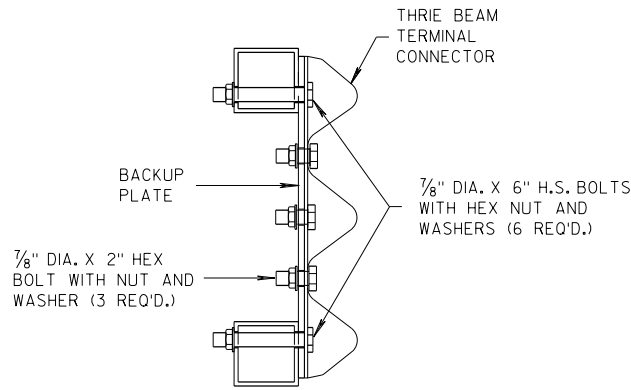
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

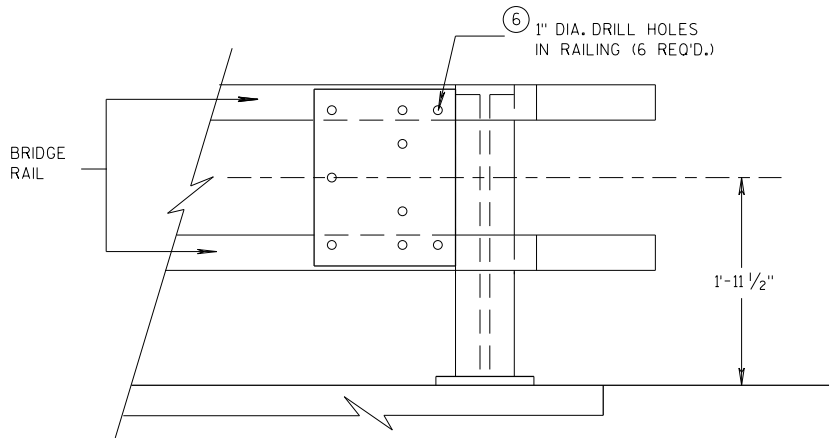
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FHWA



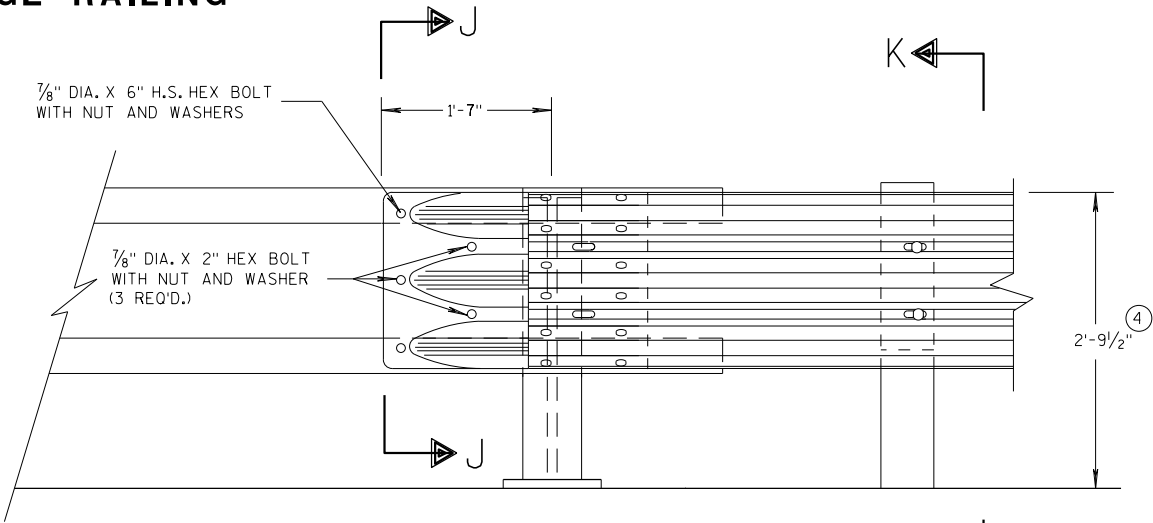
BACK-UP PLATE DETAIL



SECTION J-J

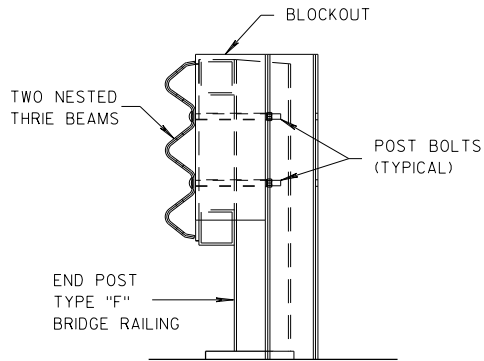


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

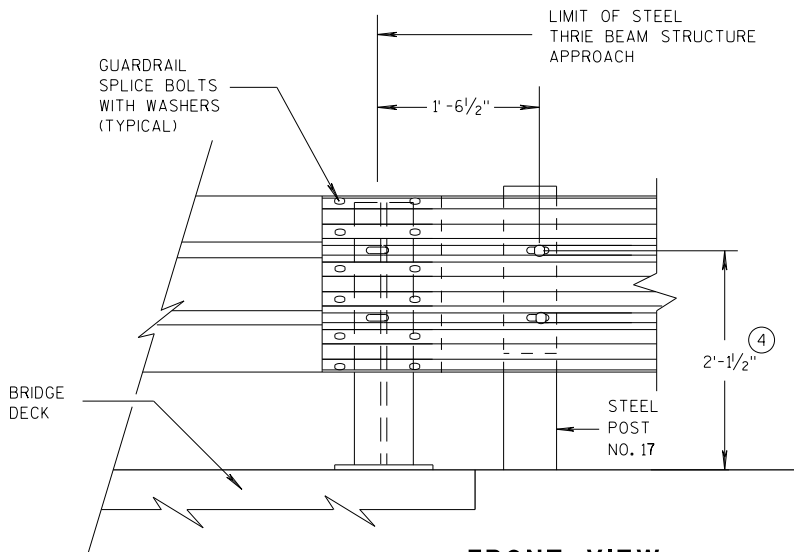
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



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"

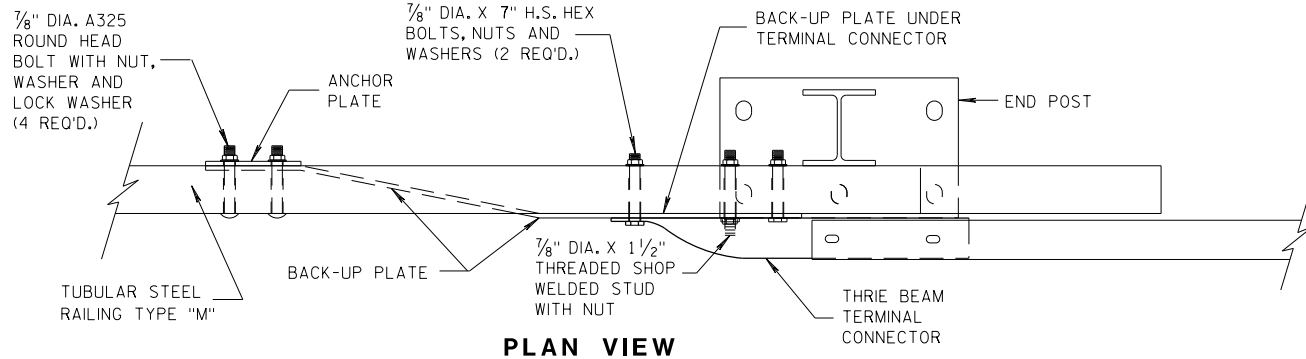
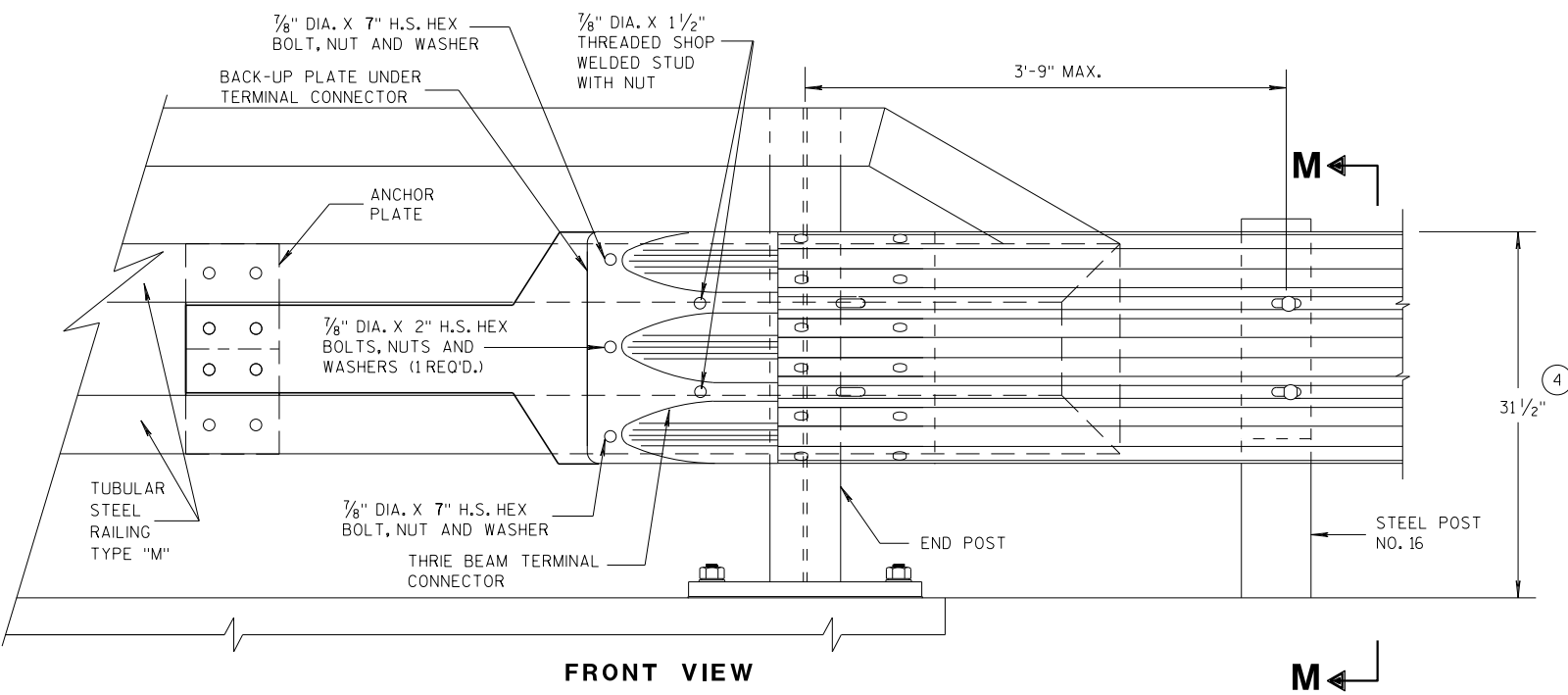
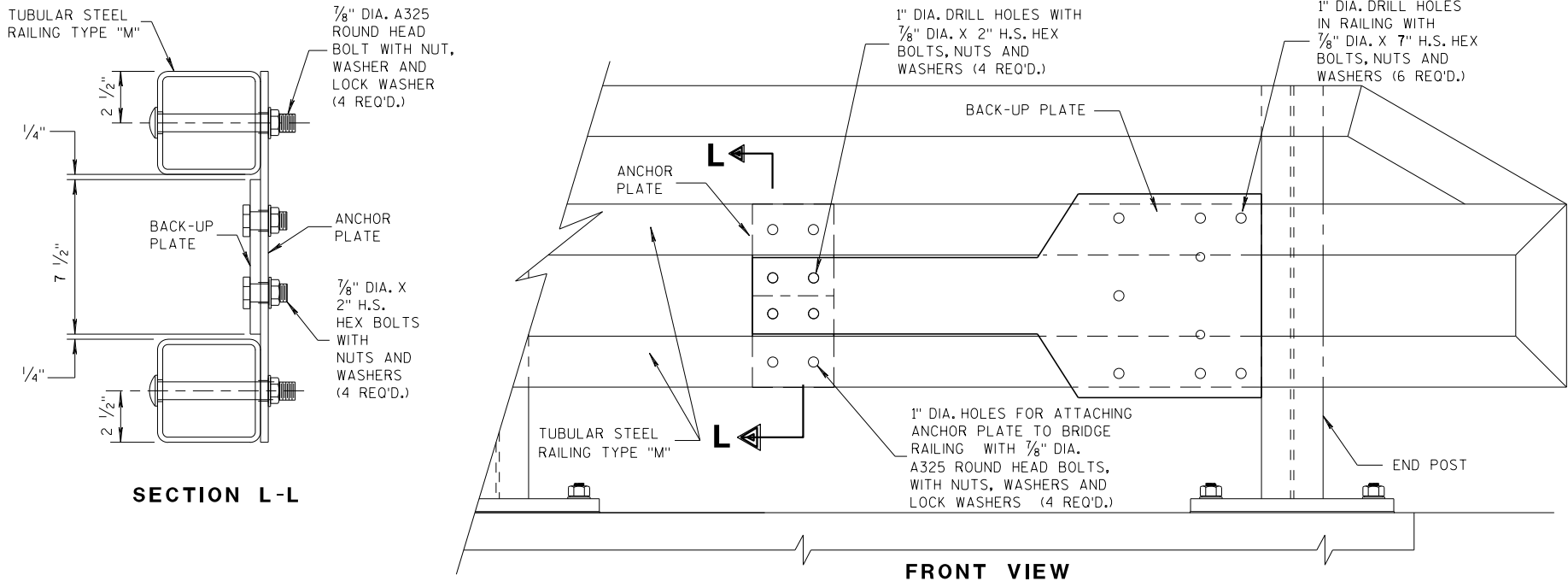
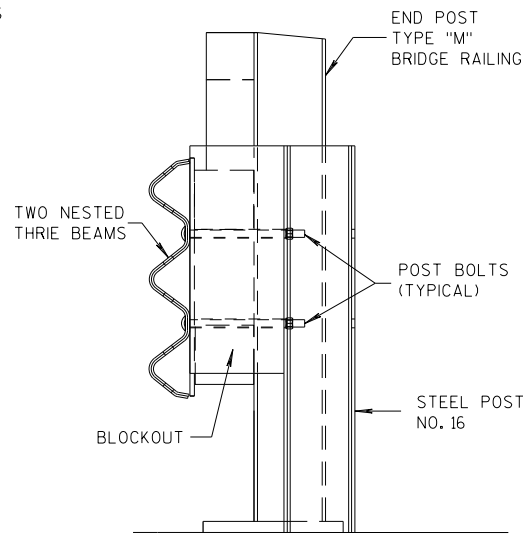
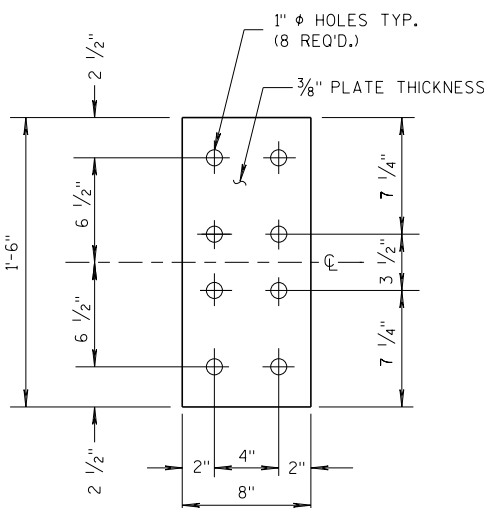
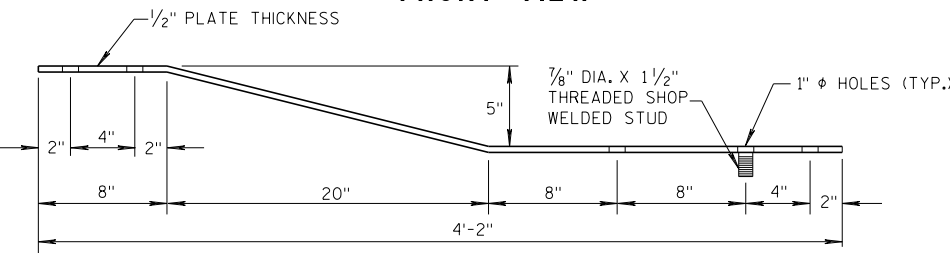
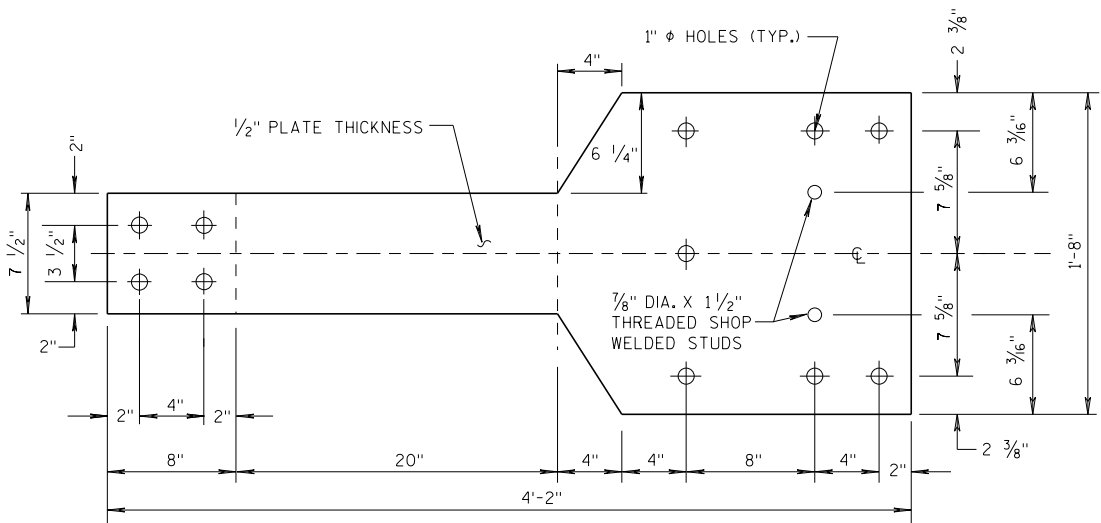
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018
DATE
/S/ Rodney Taylor 107
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

GENERAL NOTES

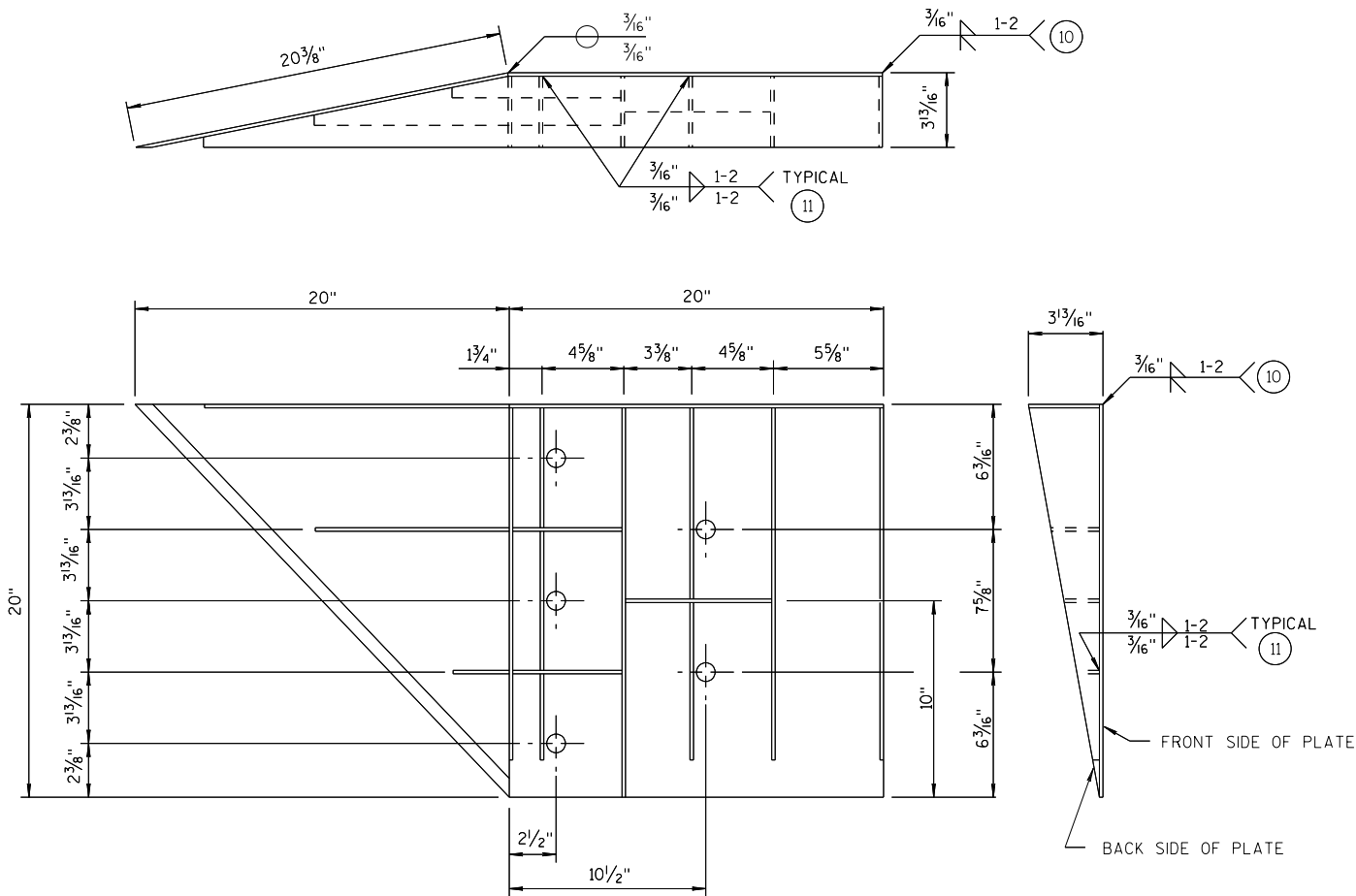
④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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FHWA 108 ENT

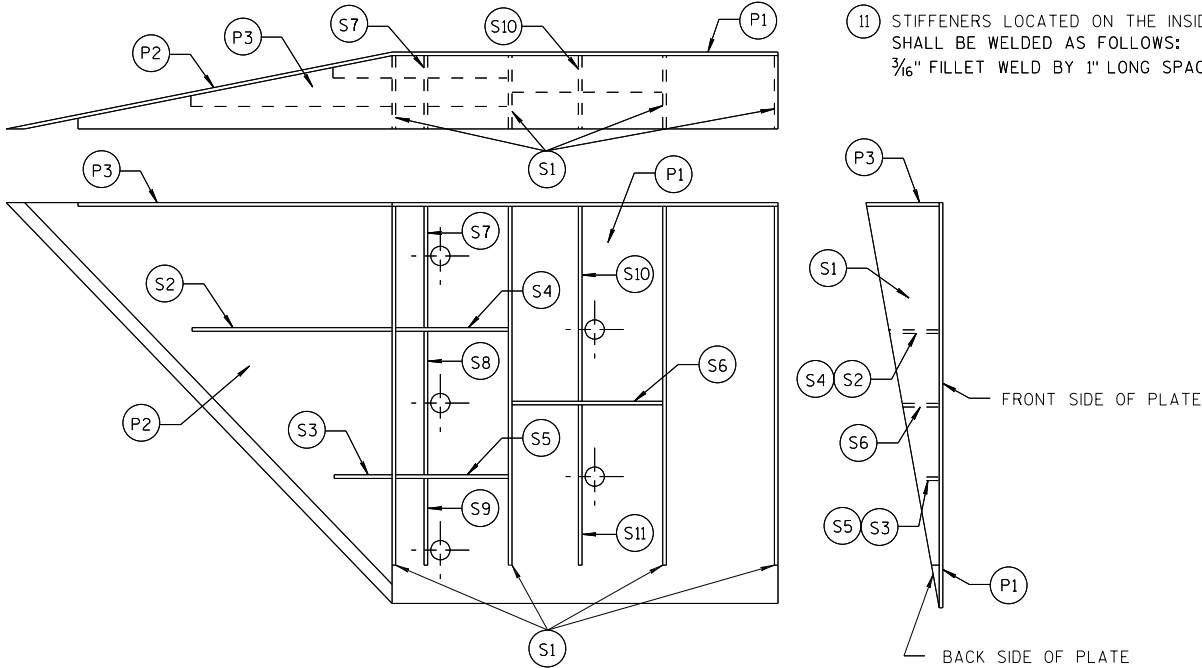


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

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

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



GENERAL NOTES

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

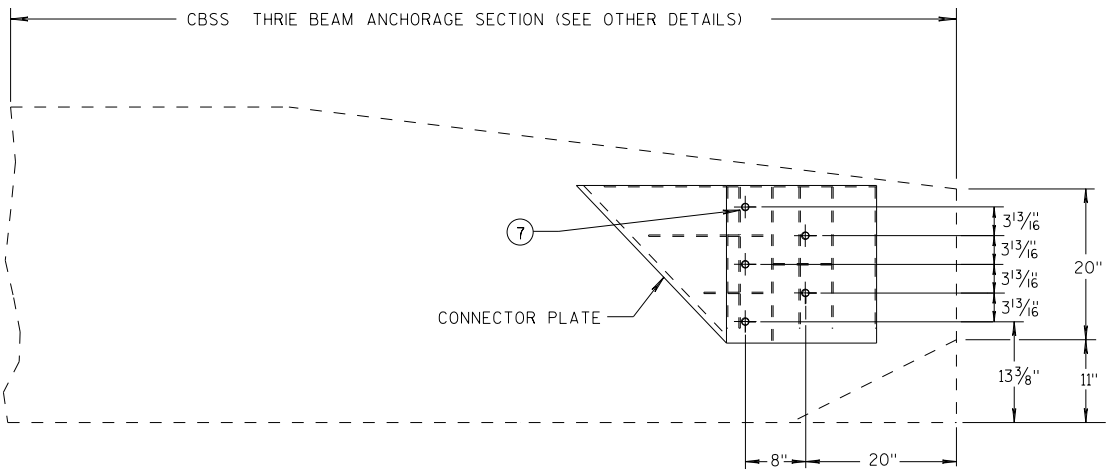
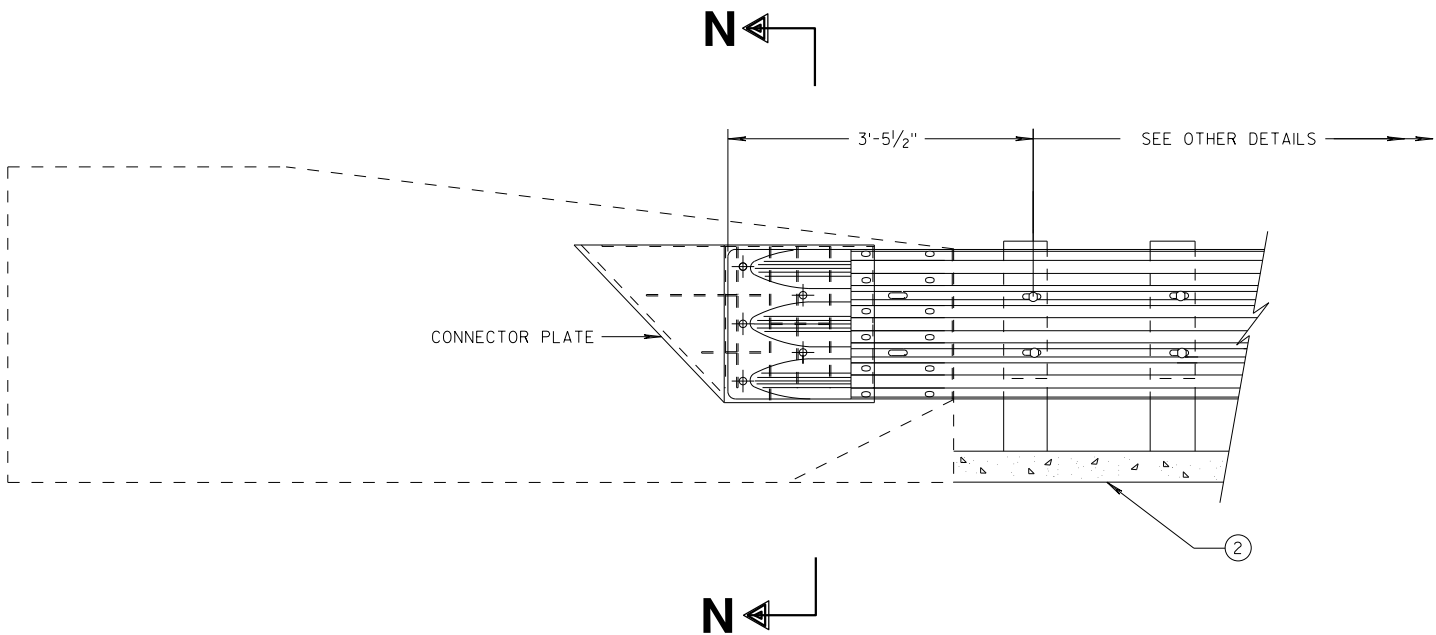
- STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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FHWA 109 ENT

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



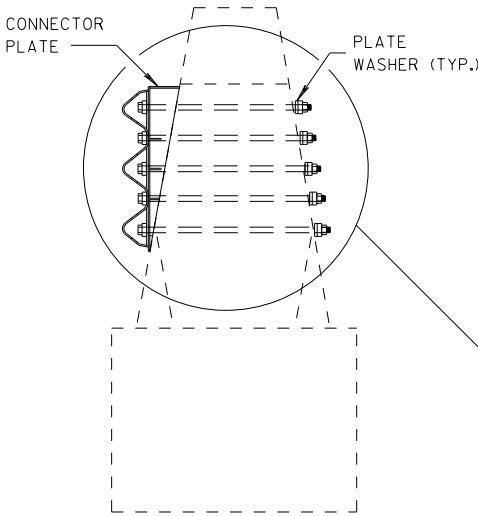
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

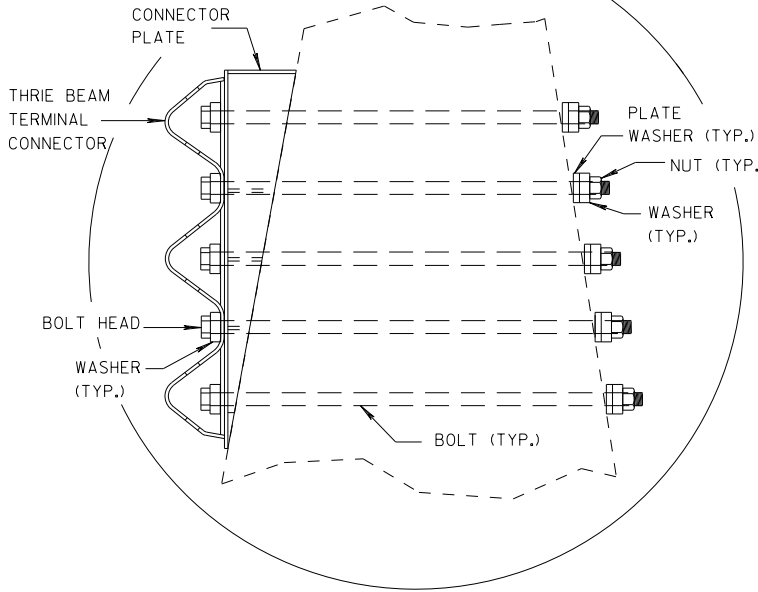
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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



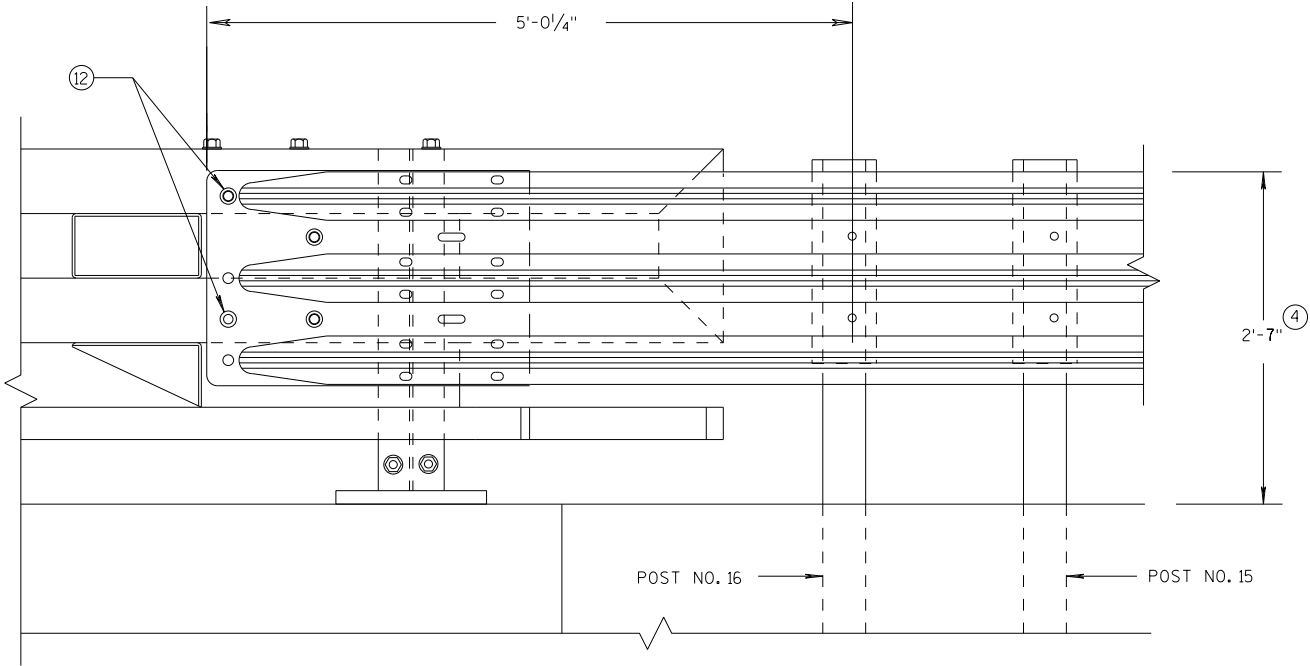
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

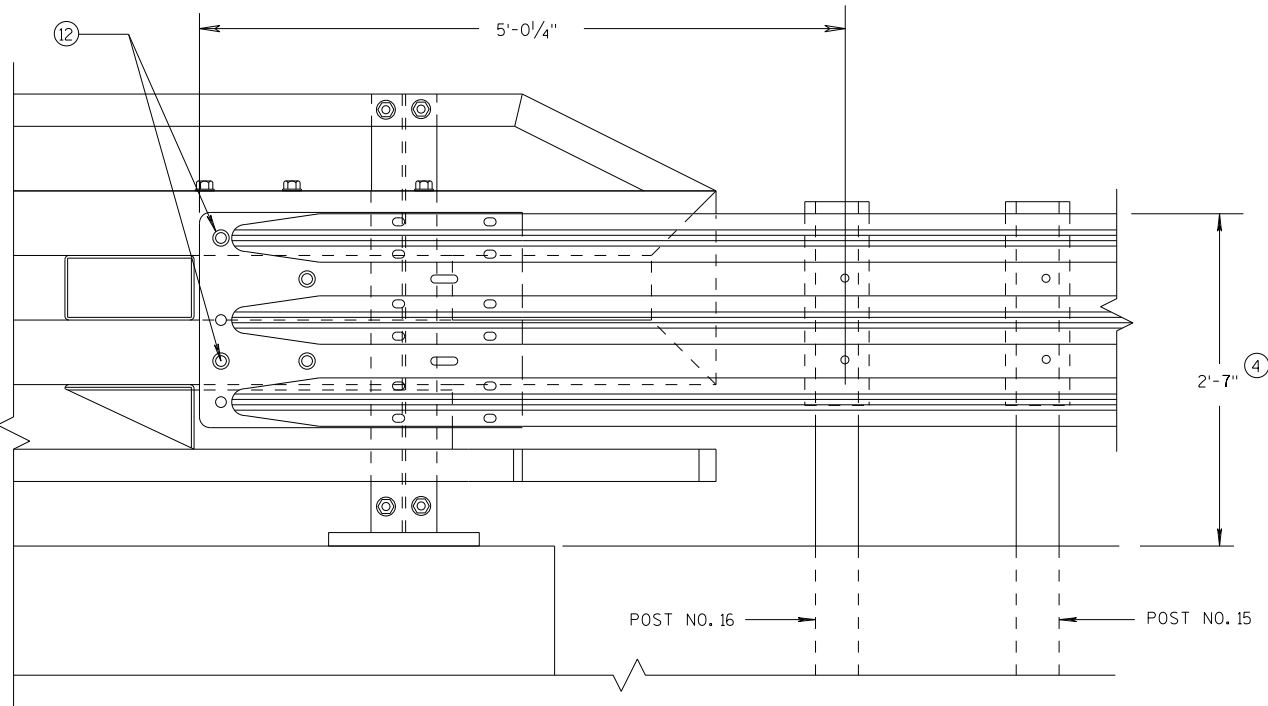
APPROVED
DATE 7/2018 /S/ Rodney Taylor
ROADWAY STANDARDS DISTRICT UNIT SUPERVISOR 110
FHWA

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

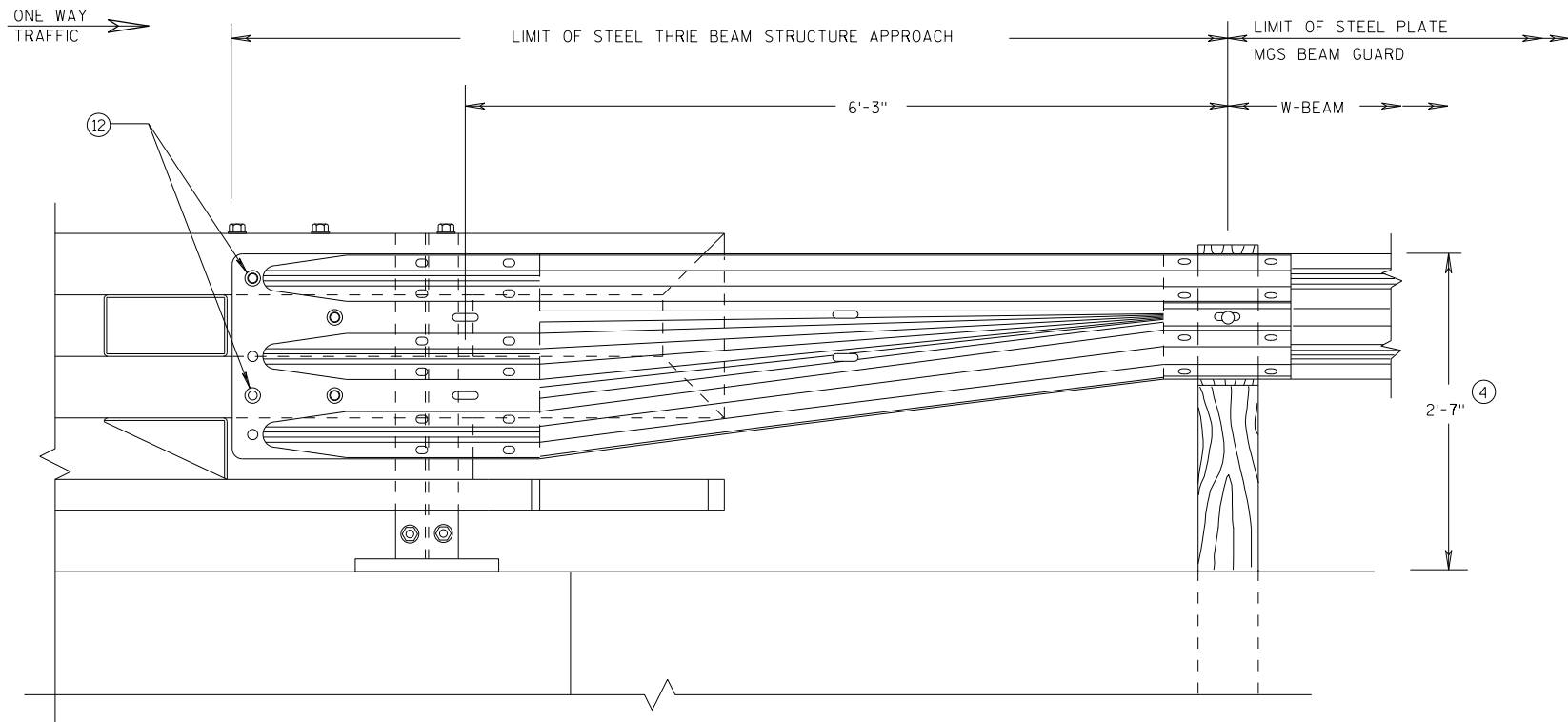


ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

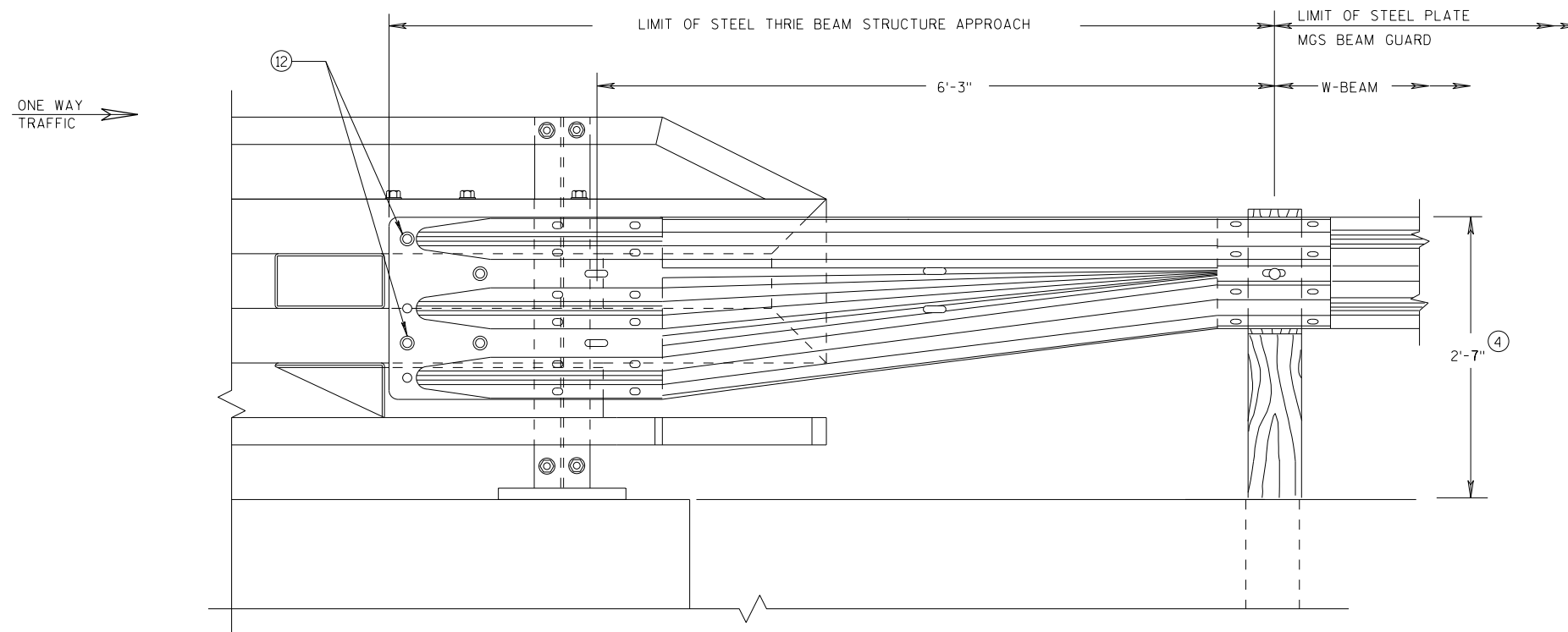
APPROVED	/S/ Rodney Taylor	
DATE	7/2018	111
FHWA	ROADWAY STANDARDS C	UNIT SUPERVISOR



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

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.

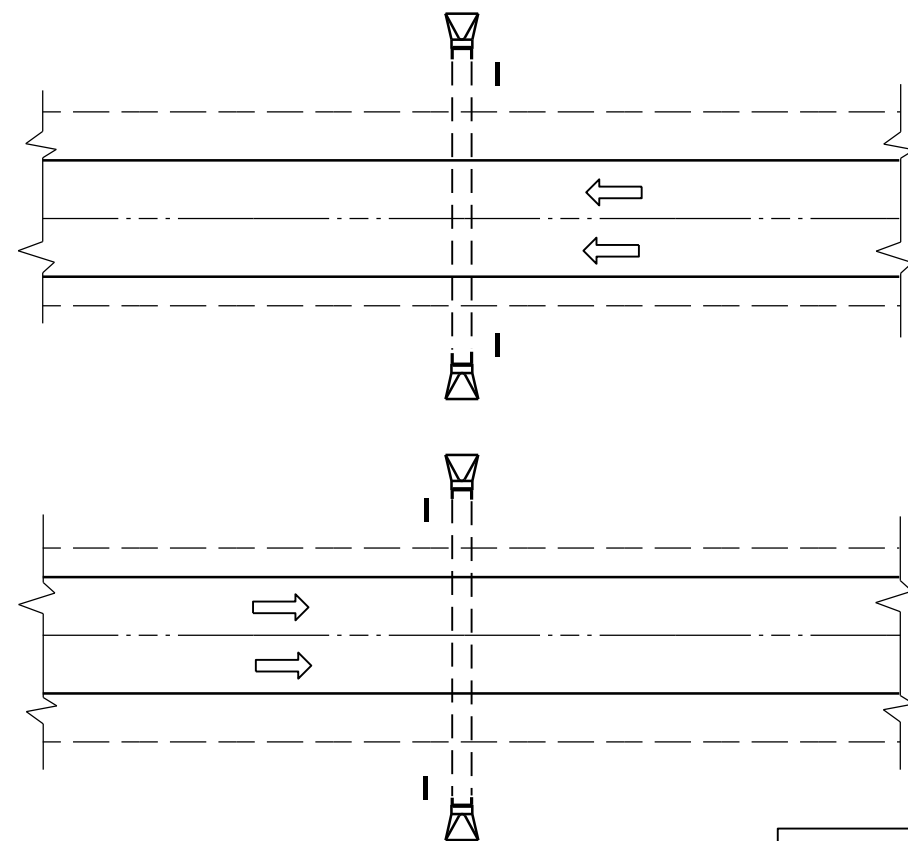


FRONT VIEW
W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY4"
 (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

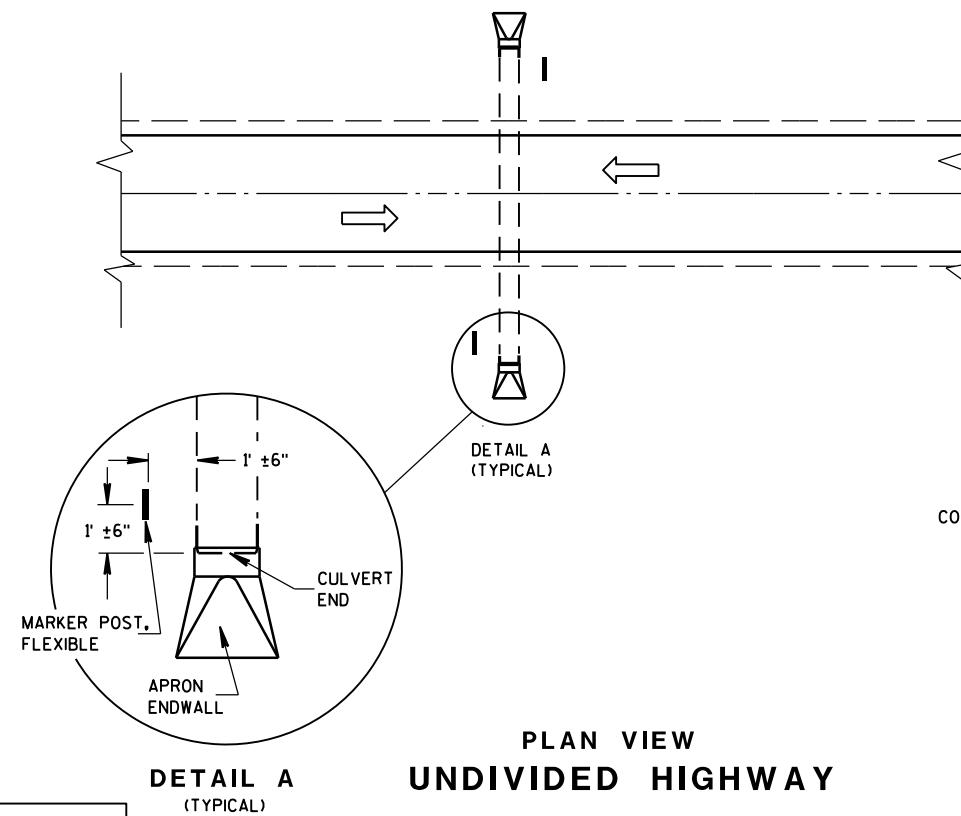
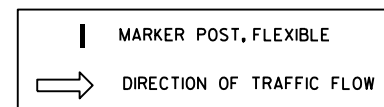
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

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DATE	7/2018	/S/ Rodney Taylor
FHWA	ROADWAY STANDARDS C 112	UNIT SUPERVISOR NT



PLAN VIEW
DIVIDED HIGHWAY

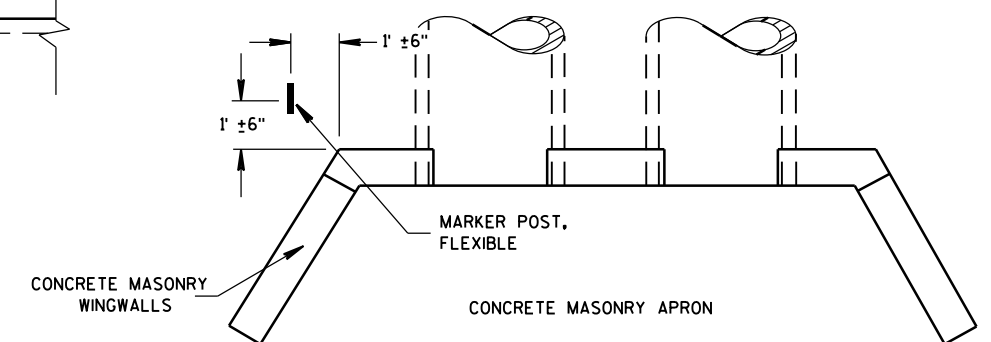


PLAN VIEW
UNDIVIDED HIGHWAY

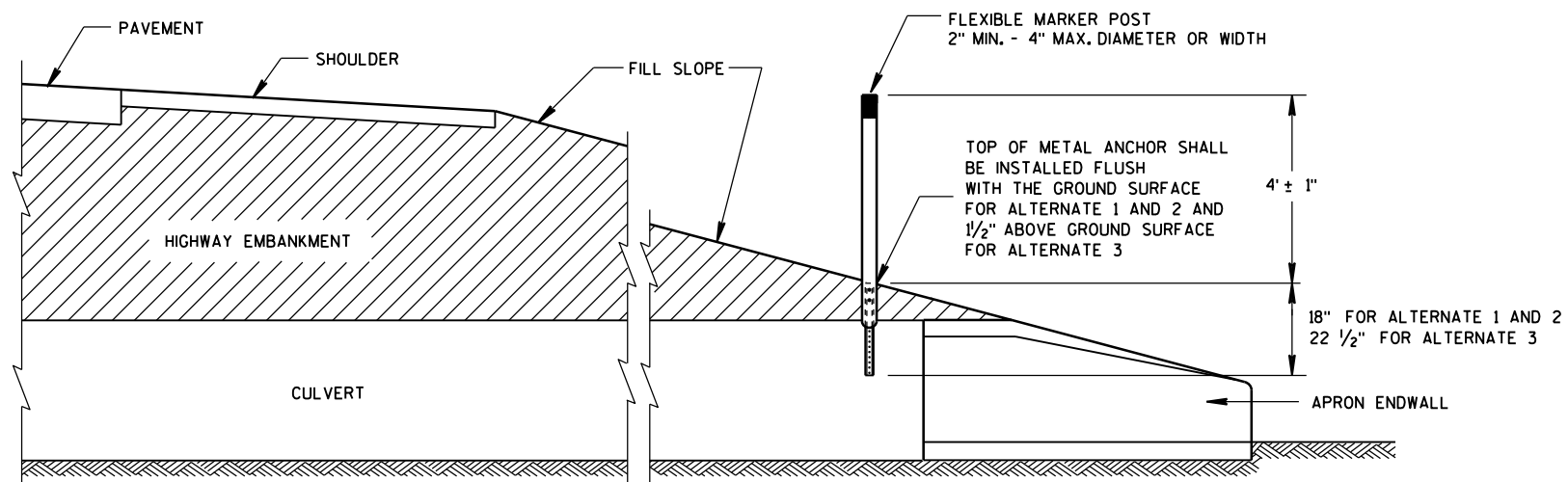
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



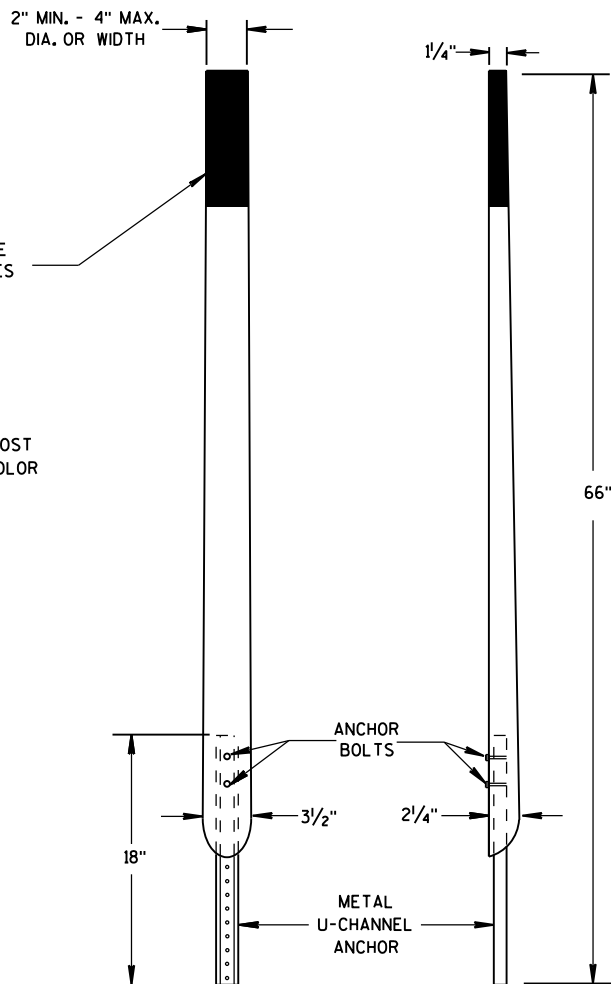
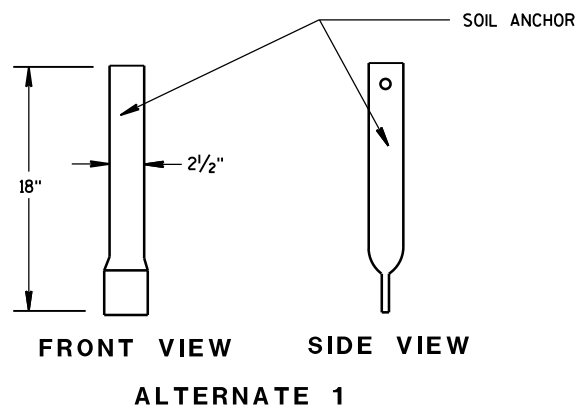
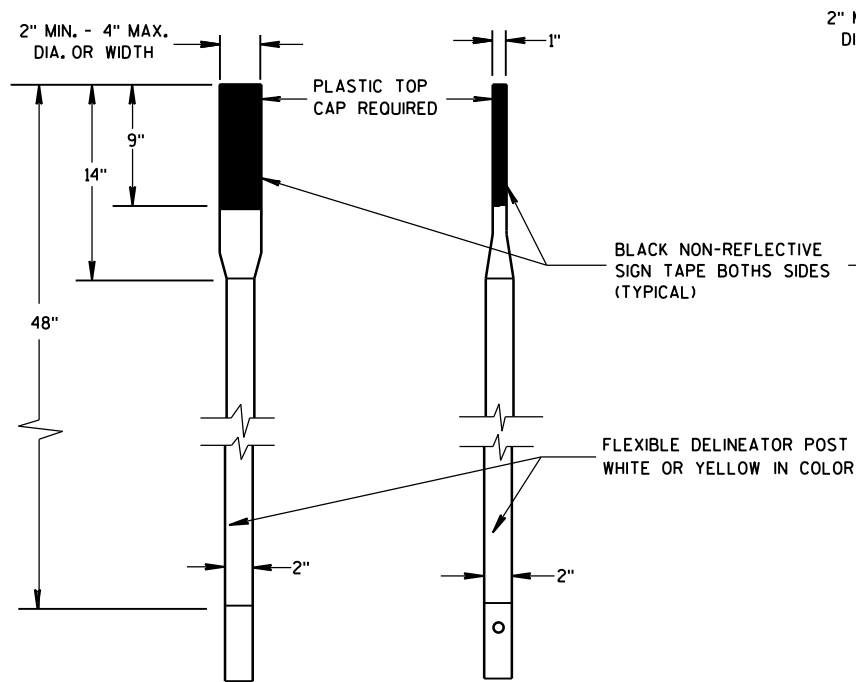
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

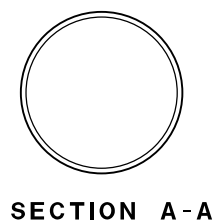
FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 113

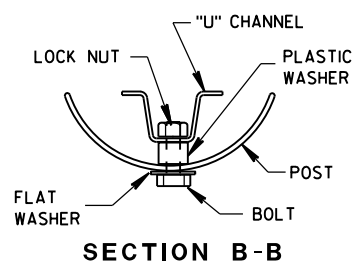
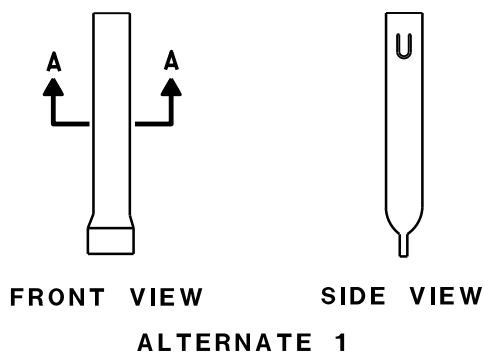


FRONT VIEW SIDE VIEW
ALTERNATE 2

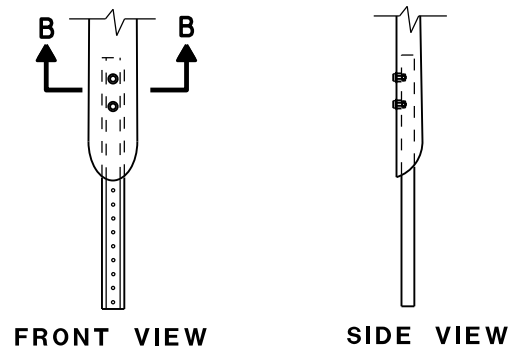
FLEXIBLE MARKER POSTS



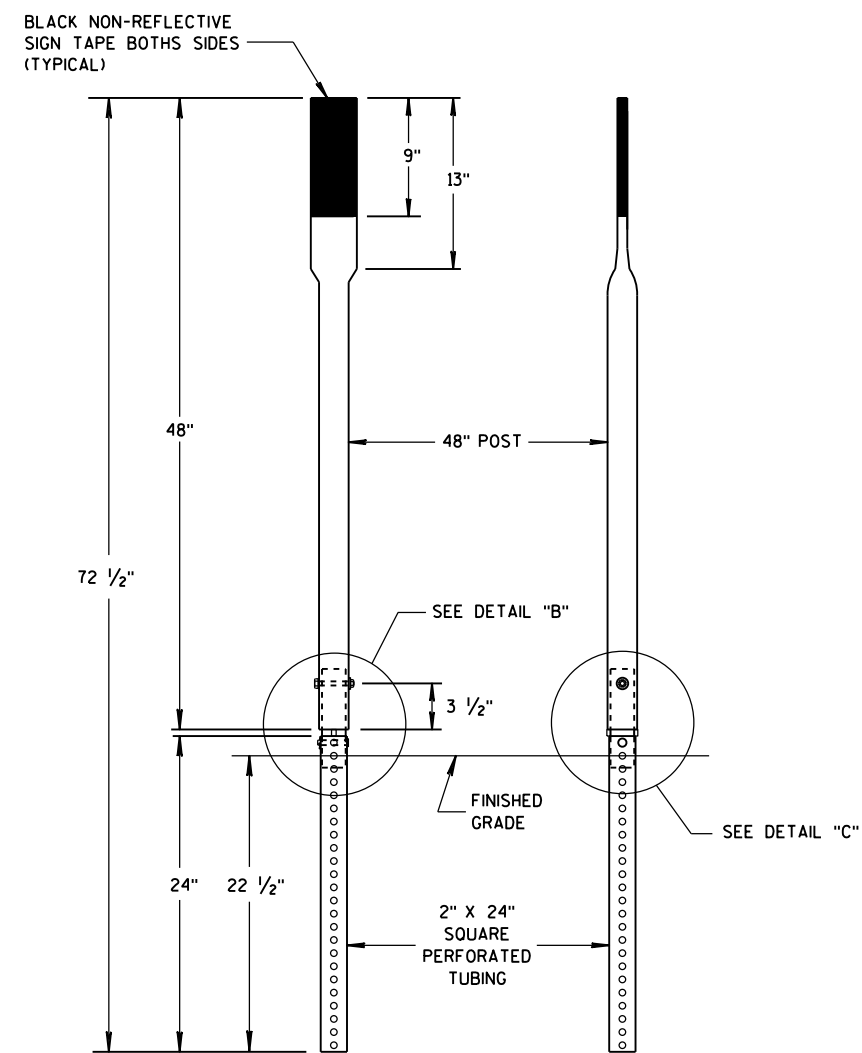
SECTION A-A



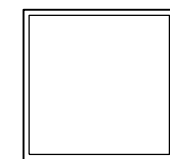
SECTION B-B



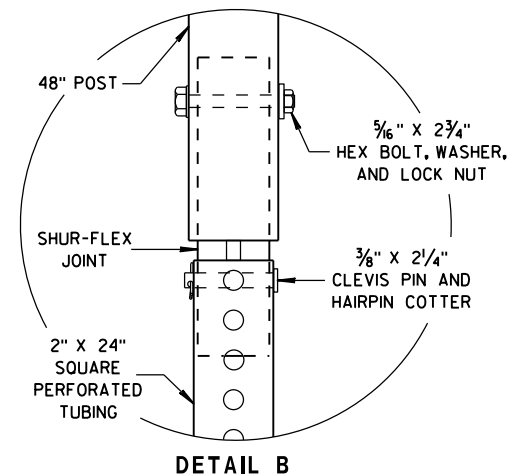
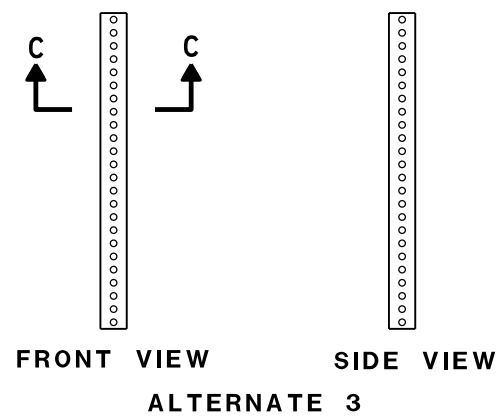
FRONT VIEW SIDE VIEW
ALTERNATE 2
FLEXIBLE MARKER POST ANCHORS



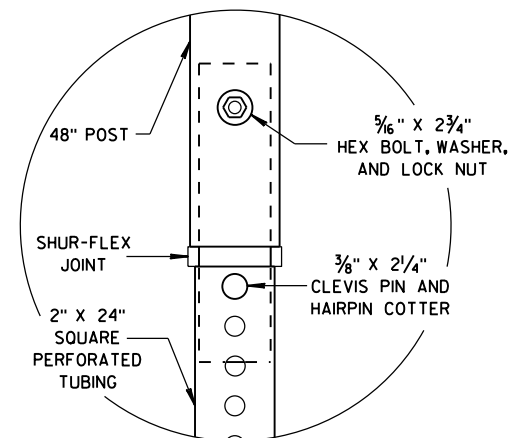
FRONT VIEW SIDE VIEW
ALTERNATE 3



SECTION C-C



DETAIL B



DETAIL C

FLEXIBLE MARKER POST FOR CULVERT END

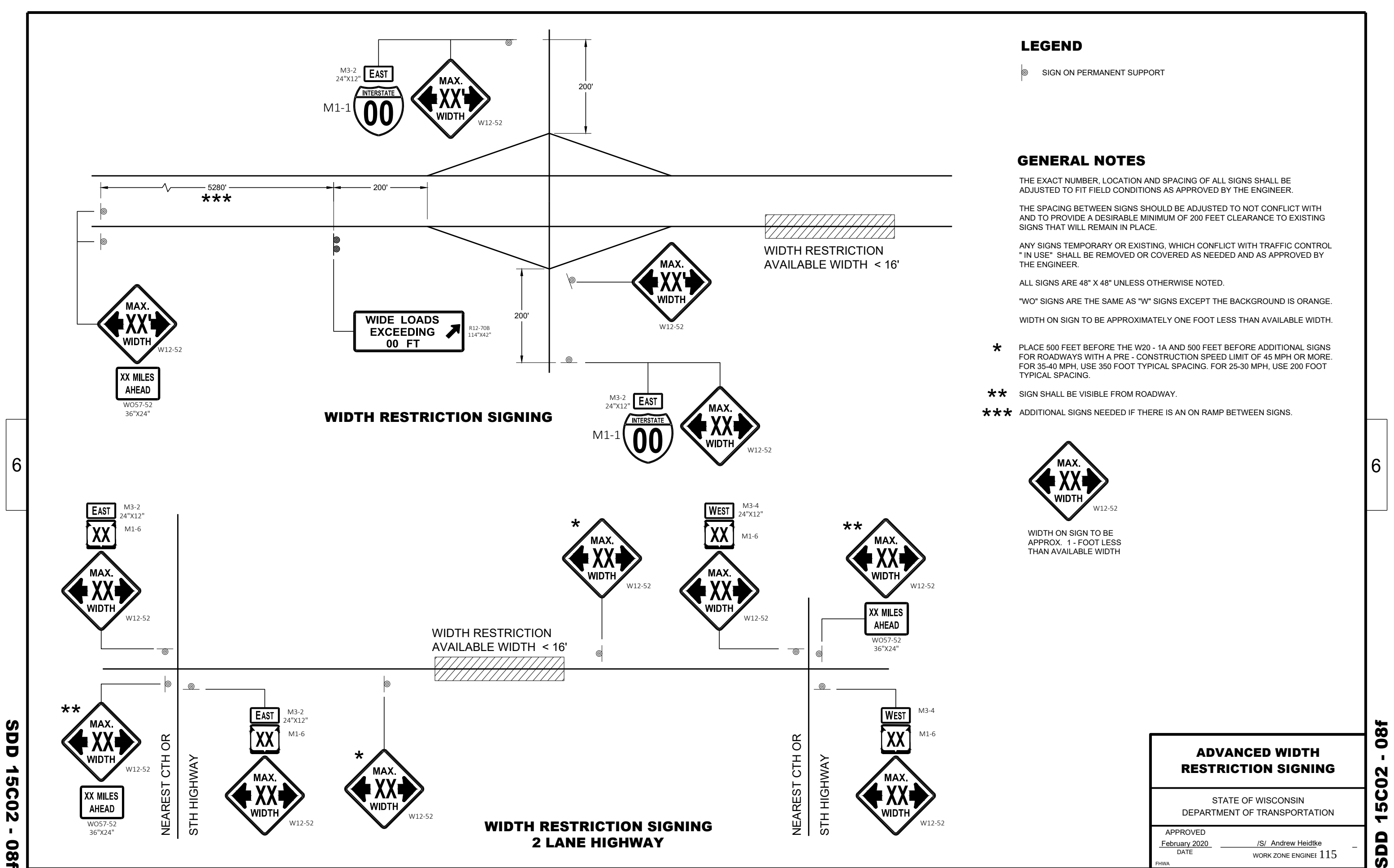
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/1/2012
DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER 114 IGN



GENERAL NOTES

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

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

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

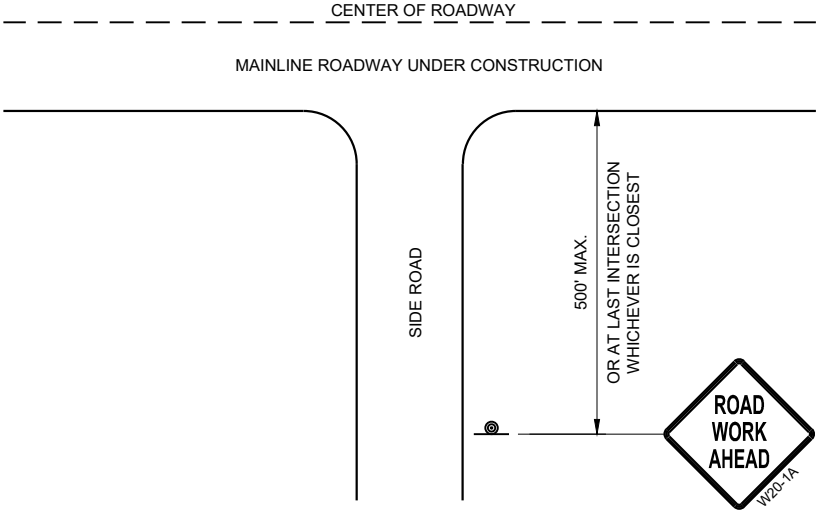
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS REESTABLISHED.

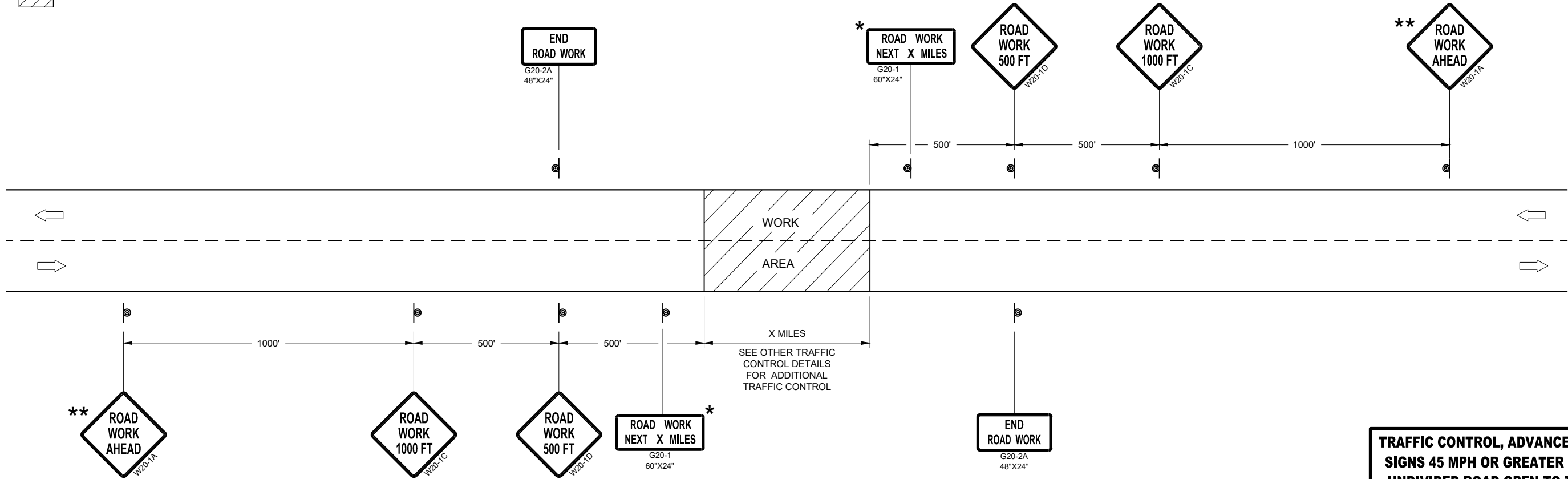
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



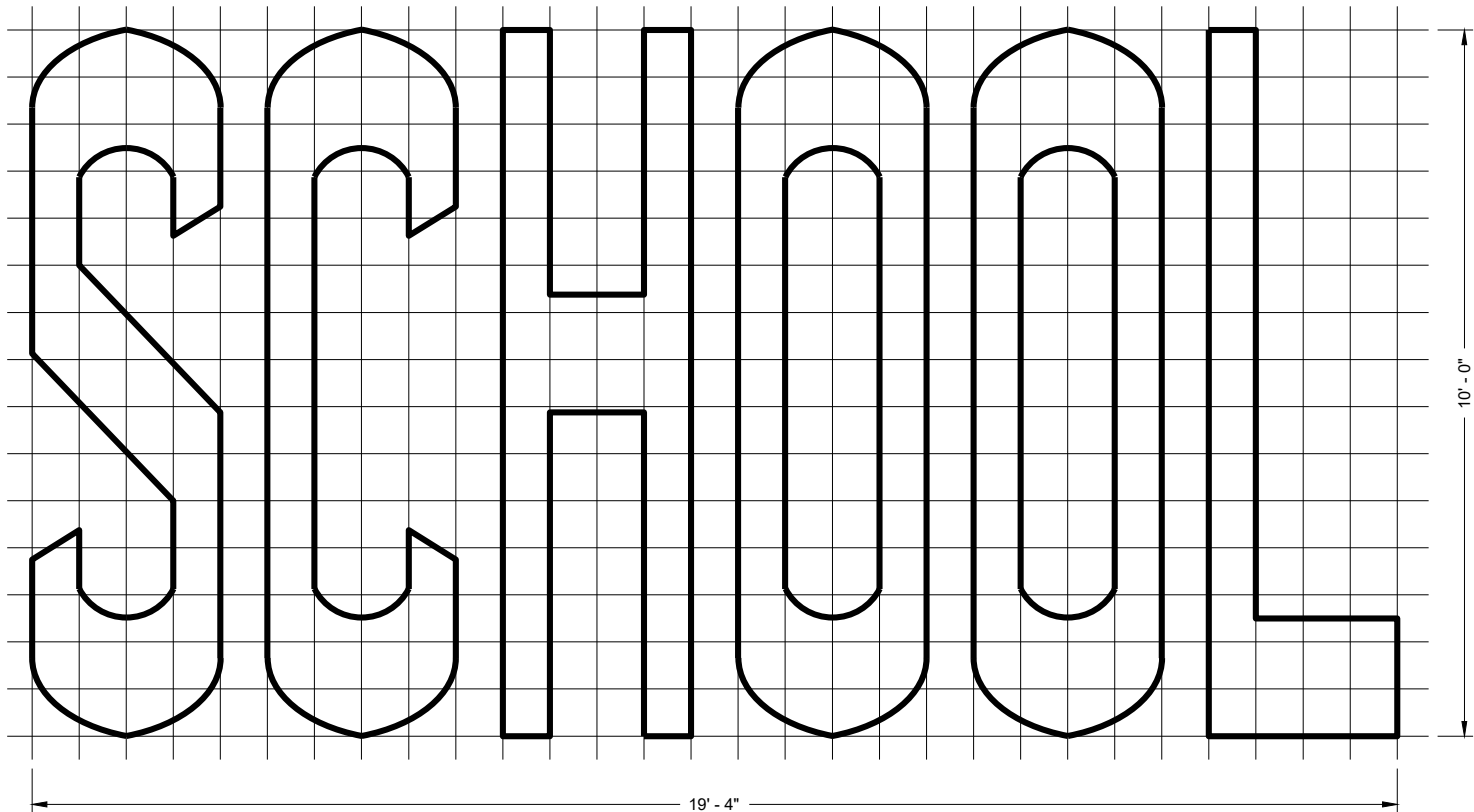
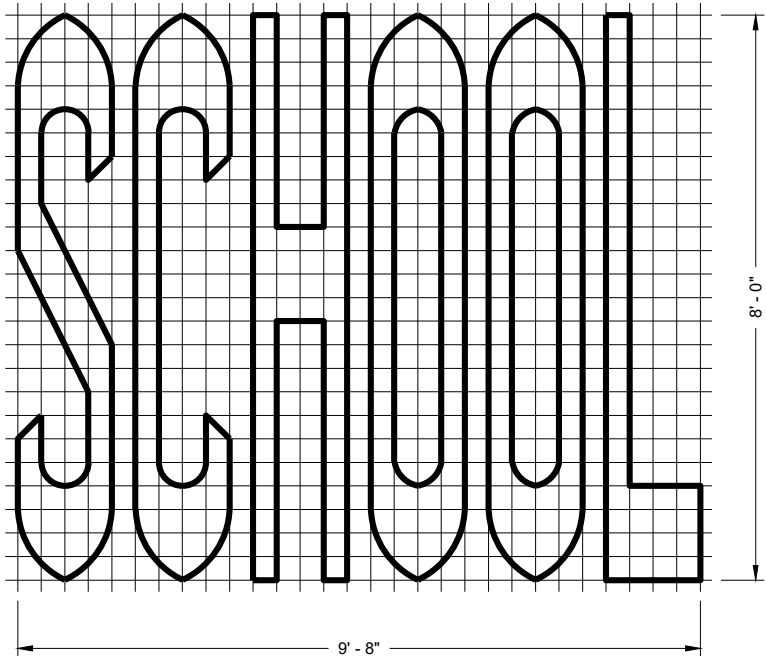
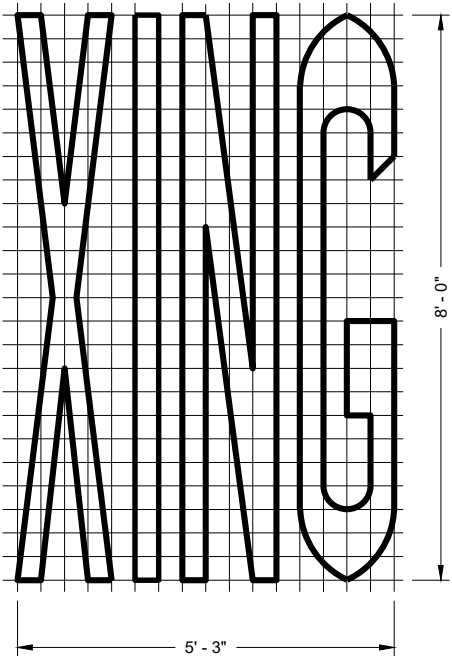
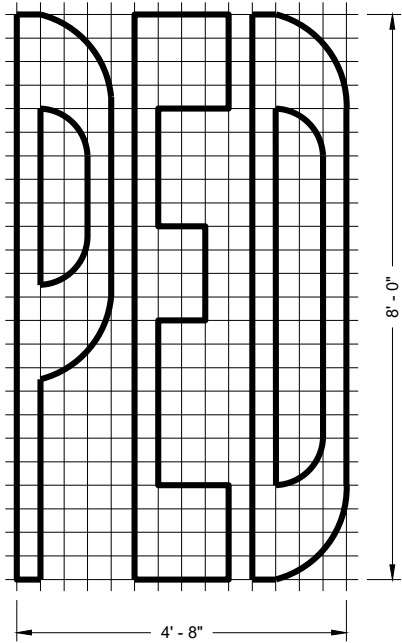
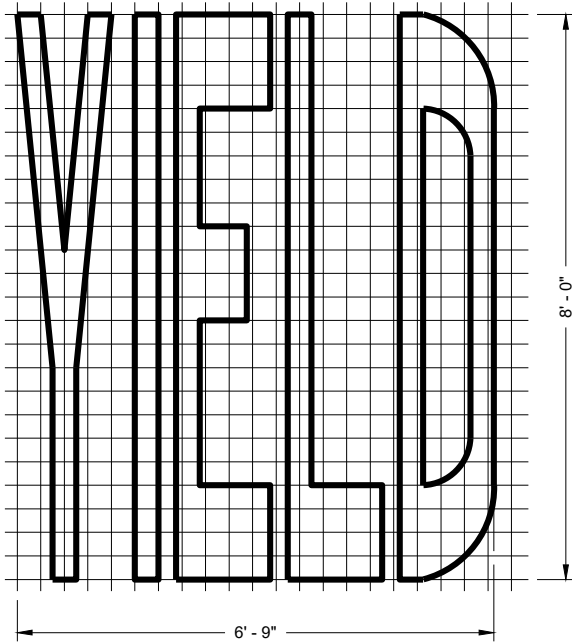
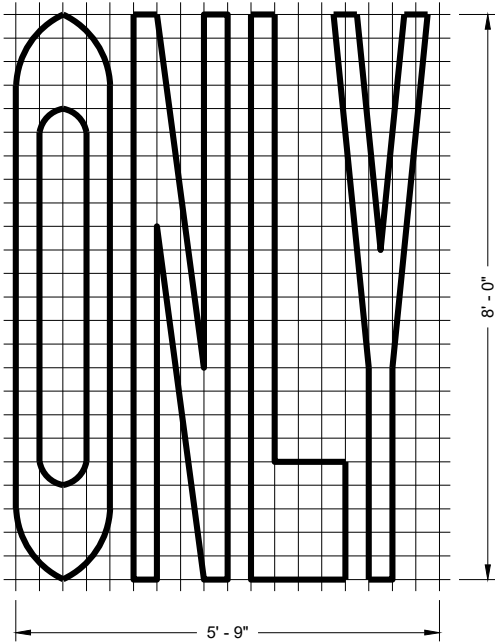
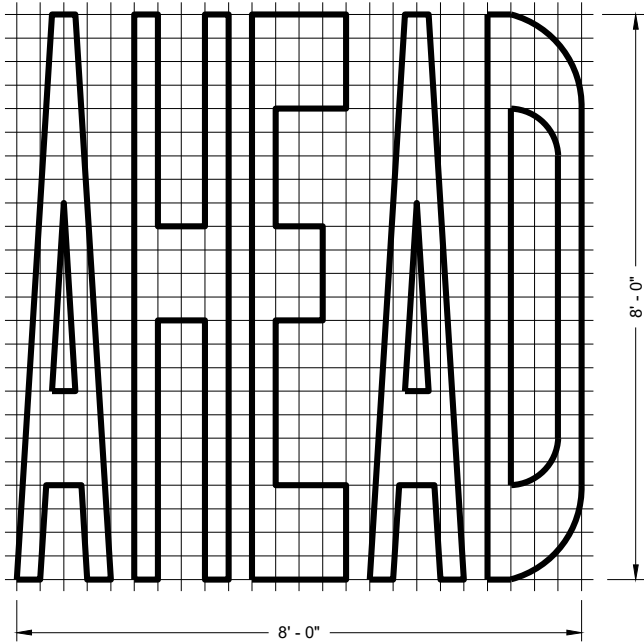
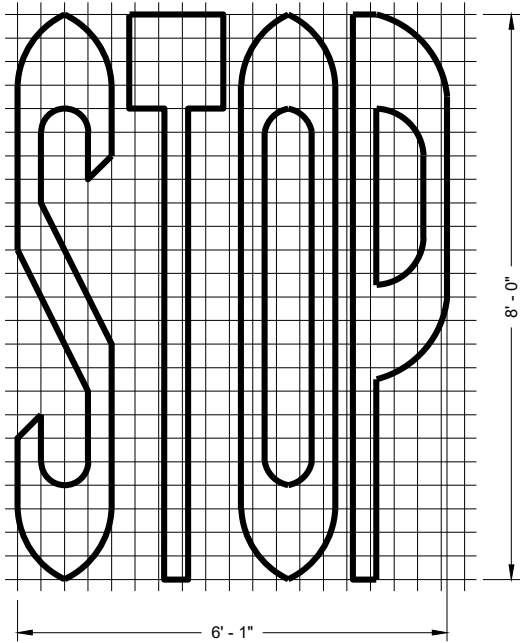
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 45 MPH OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 116

FHWA



SINGLE LANE

TWO - LANE

GENERAL NOTES

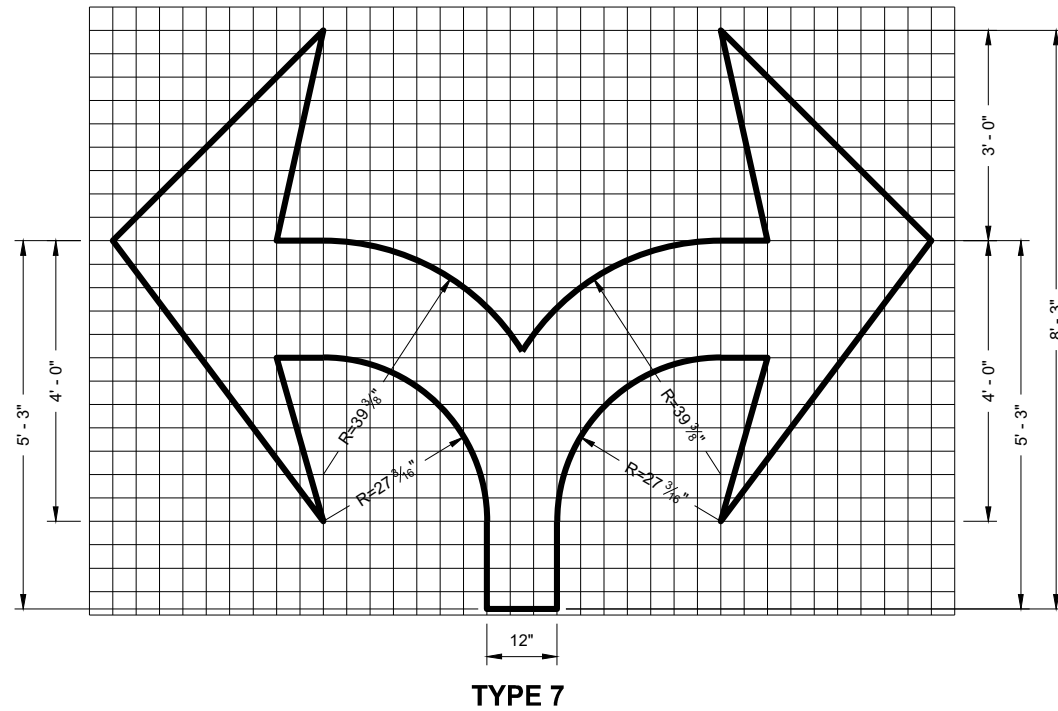
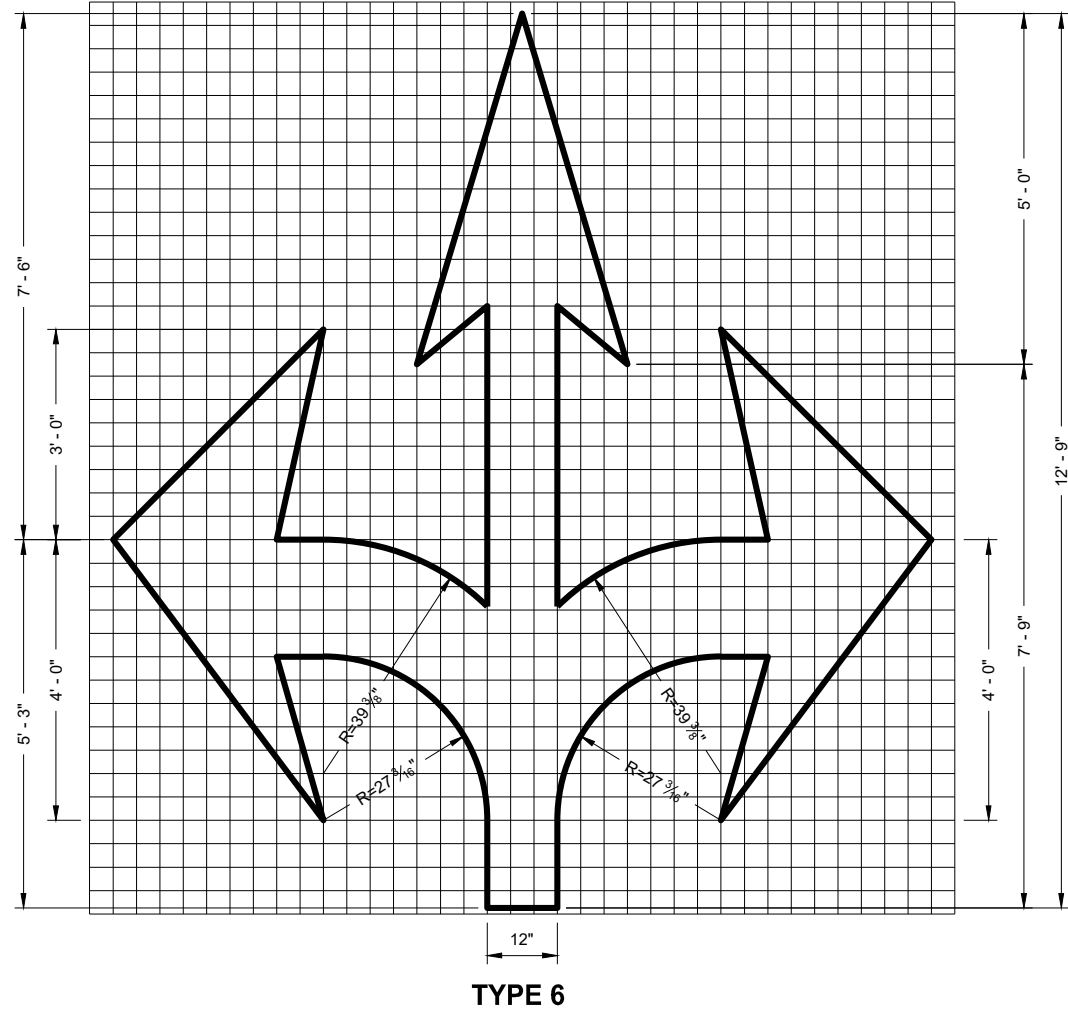
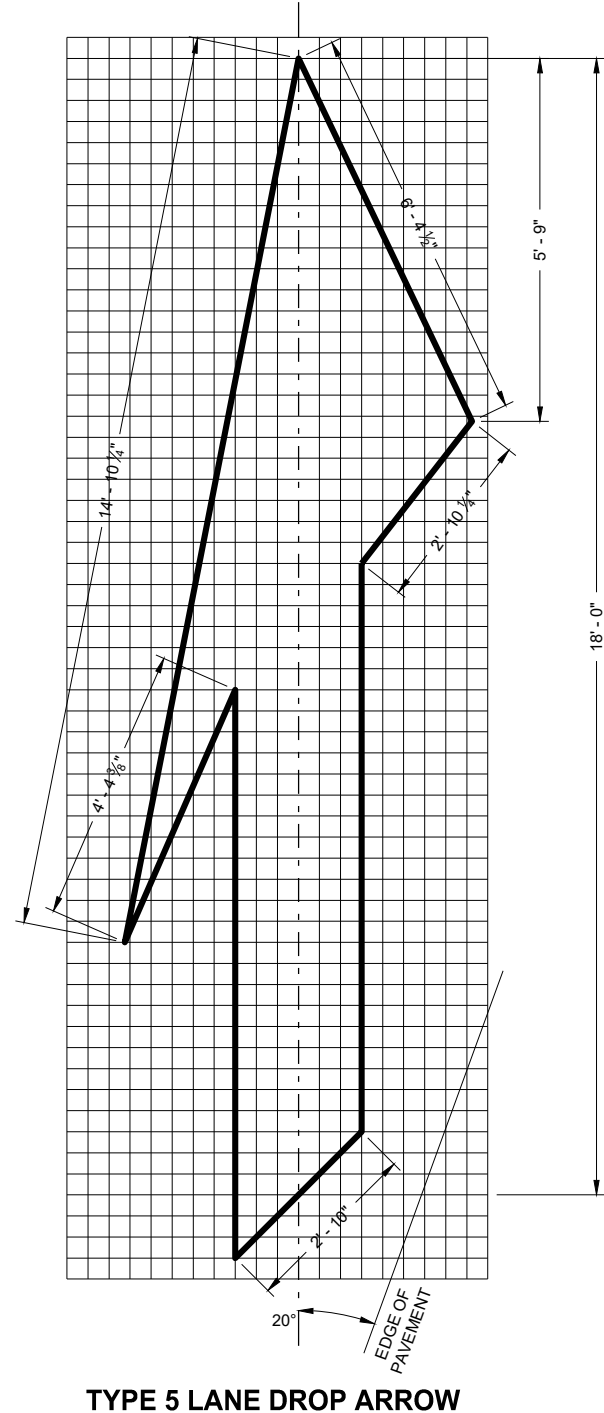
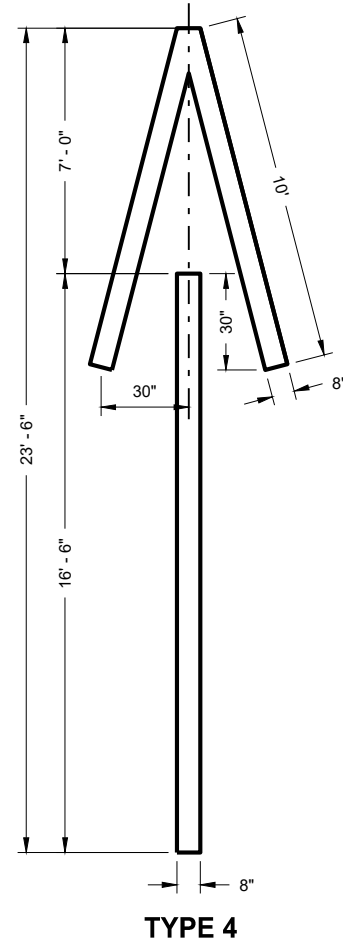
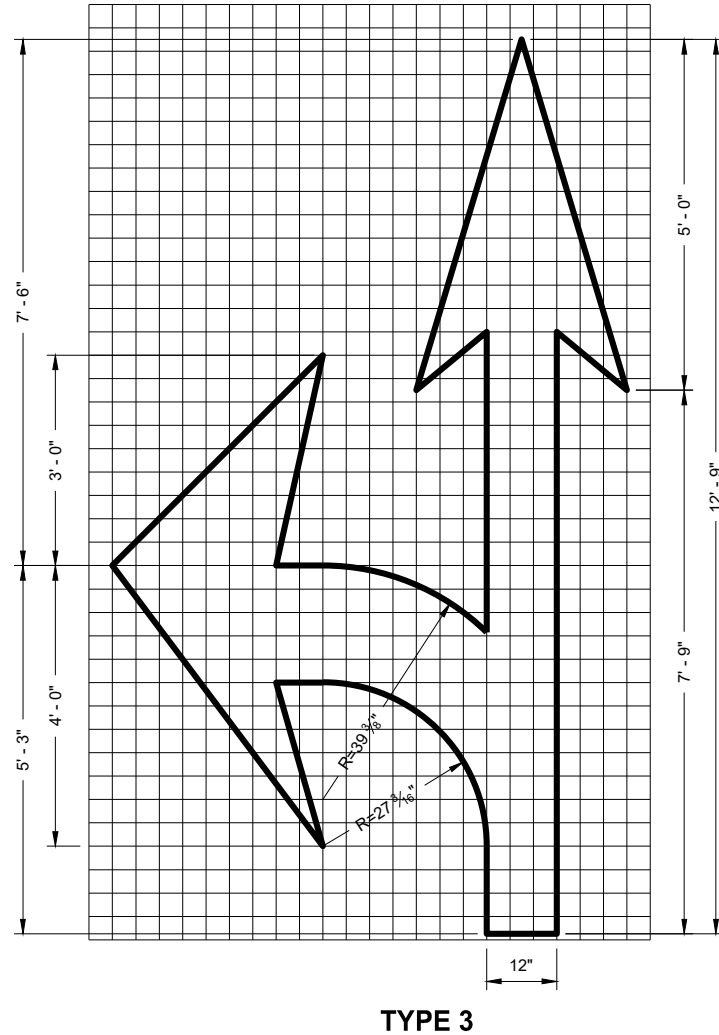
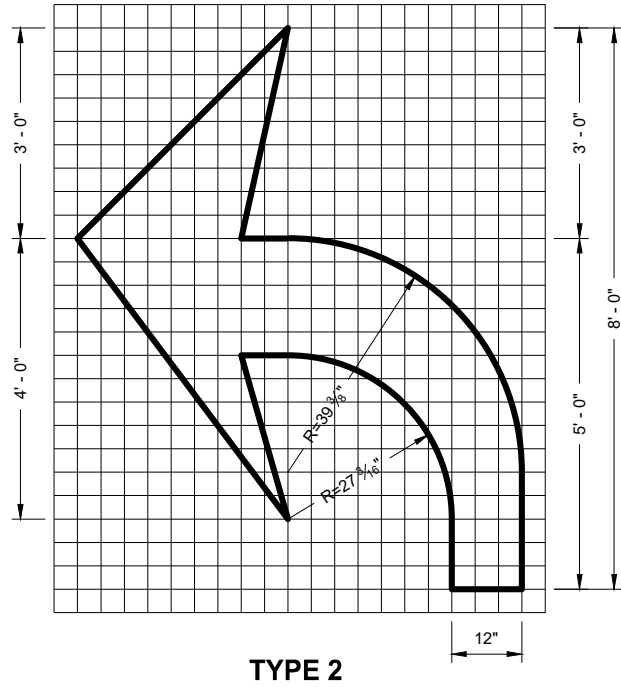
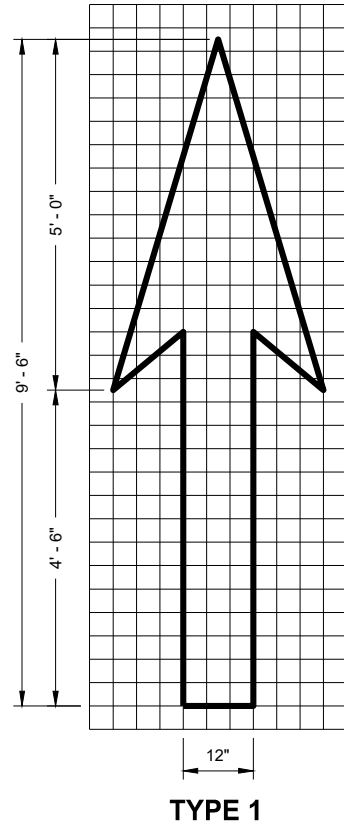
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 117

FHWA



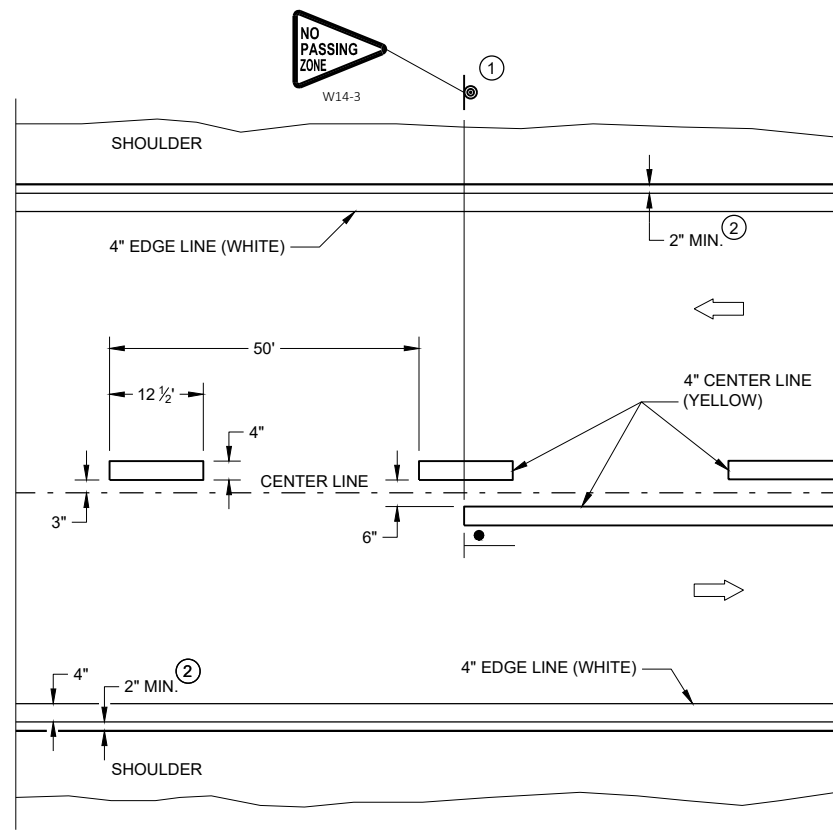
GENERAL NOTES

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

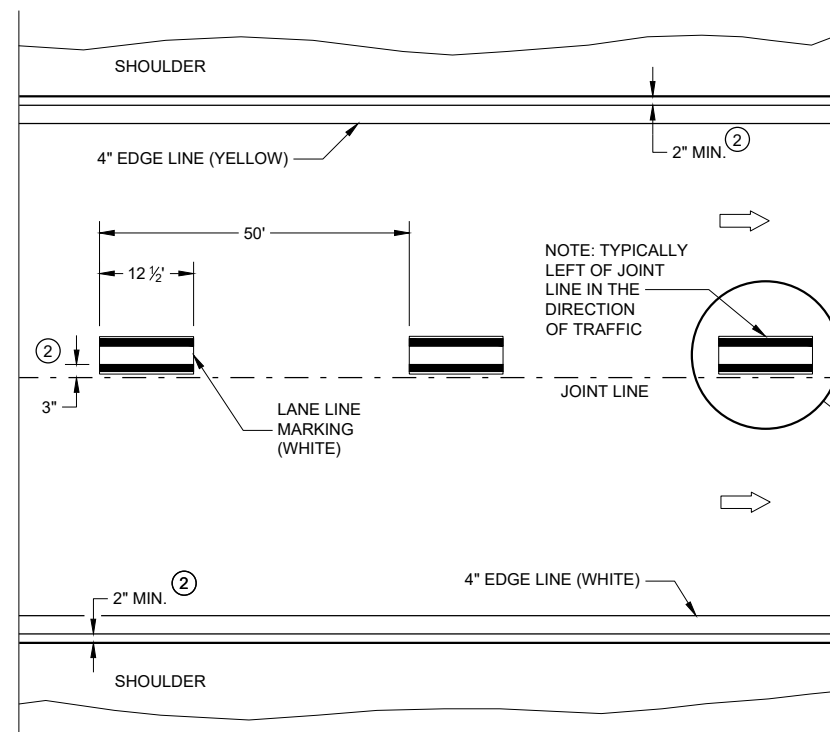
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE
/S/ Matthew Rauch
STATE SIGNING AND MAF
ENGINEER 118
FHWA

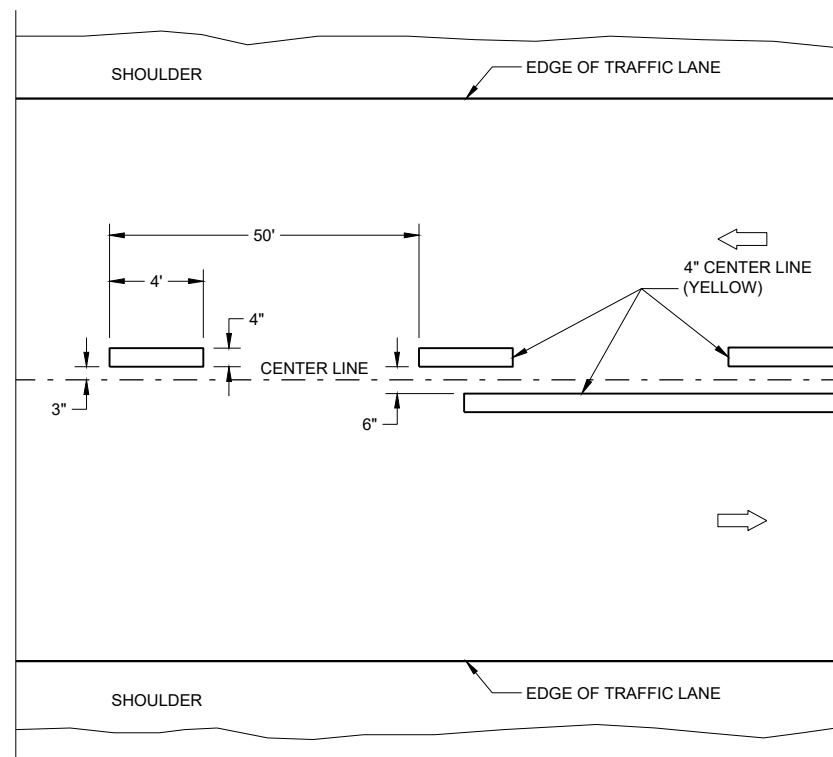


TWO WAY TRAFFIC

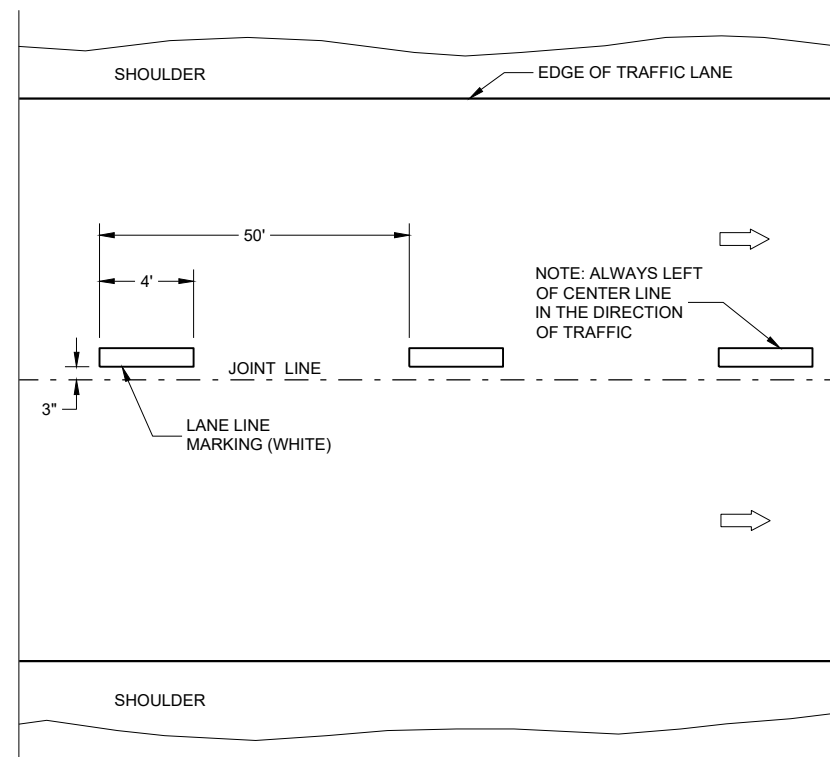


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

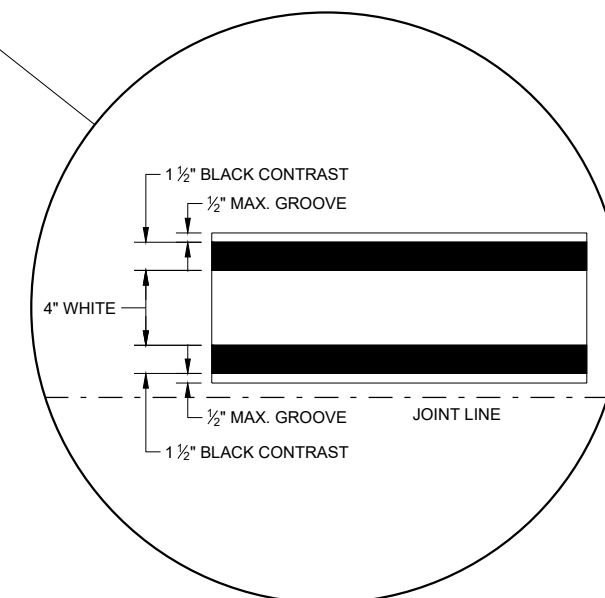
GENERAL NOTES

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITH 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



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

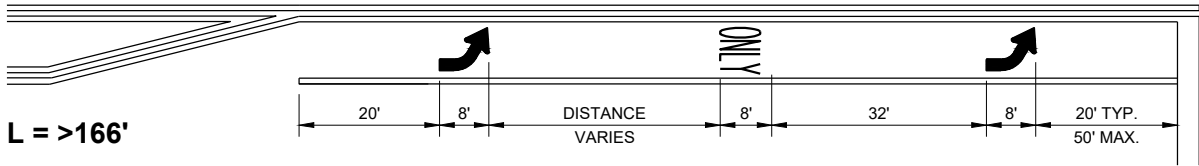
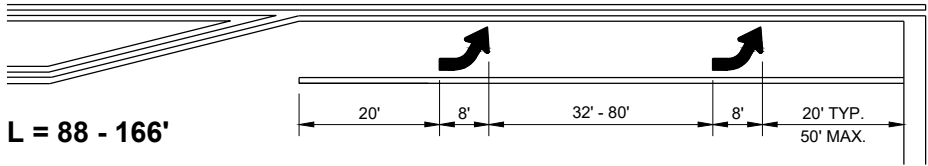
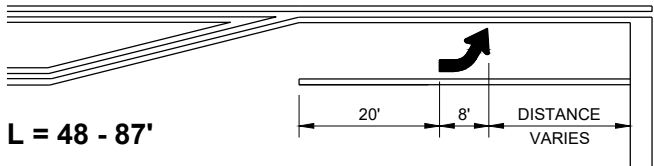
/S/ Matthew Rauch
STATEWIDE SIGNING AND MAPPING ENGINEER

119

FWHA

TURN LANE OPTIONS

LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



*(SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

GENERAL NOTES

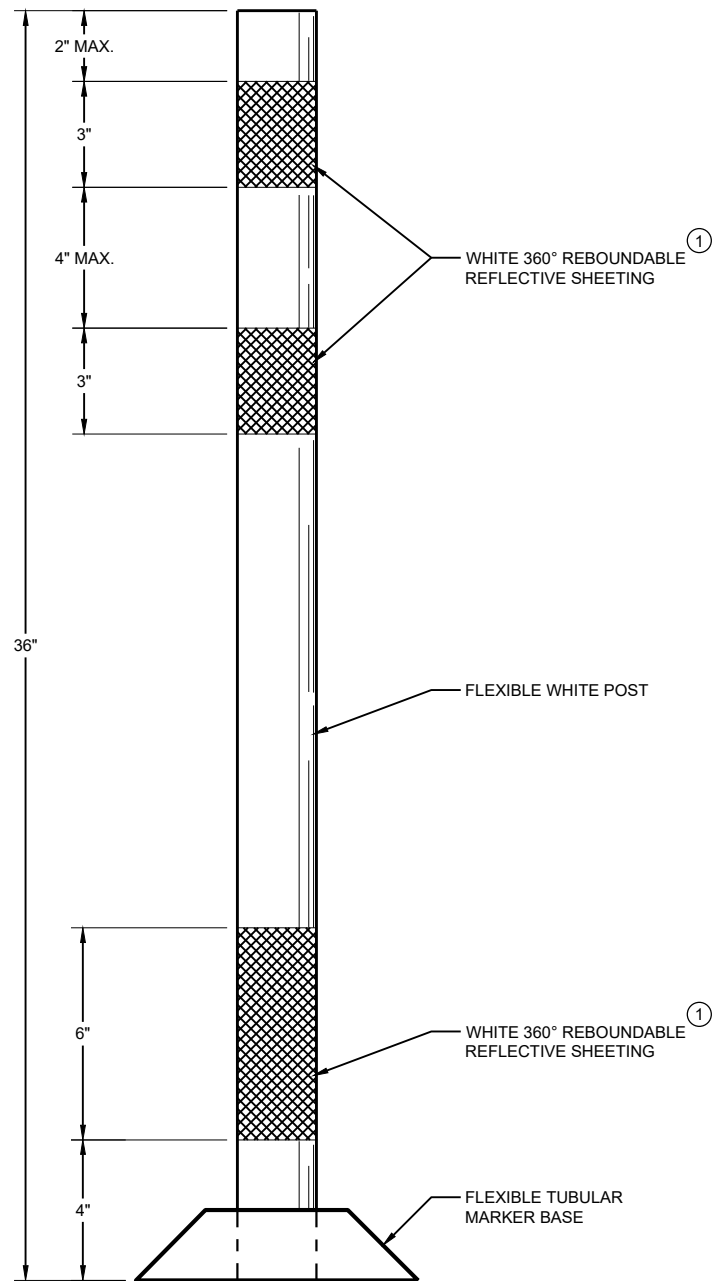
- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

➡ DIRECTION OF TRAFFIC

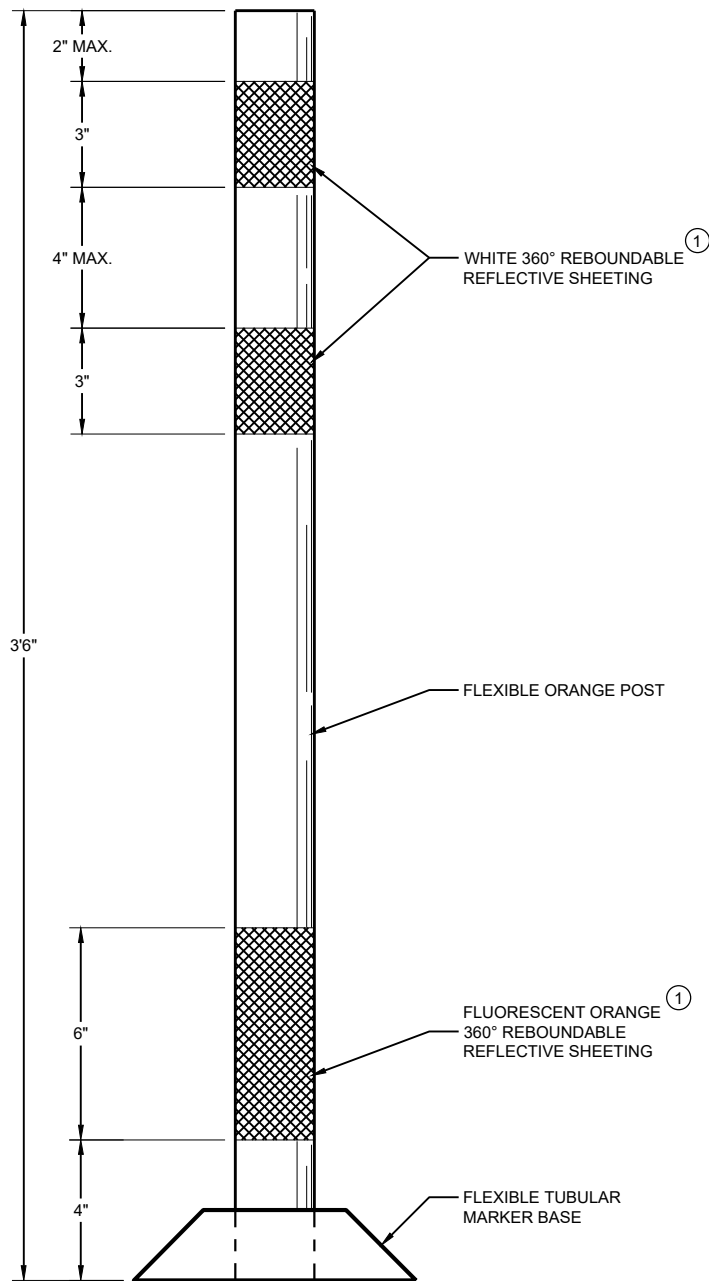
L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 120



**FLEXIBLE TUBULAR
MARKER POST
PERMANENT CROSSOVER**



**FLEXIBLE TUBULAR
MARKER POST
WORK ZONE**

GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

□ □ □ □ □ □ □ □ □ □ D □ □ □ □ □
□ □ □ □ □ □ □ □ □ □ □ □ □ R □
M R R □ □ □ □ □
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED June 2017 /S/ Andrew Heidtke DATE WORK ZONE ENGINEER 121
FHWA



DO NOT USE IN TAPERS
 $\frac{1}{2}$ SPACING OF DRUMS



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



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



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.

STATE OF WISCONSIN	
DEPARTMENT OF TRANSPORTATION	
APPROVED	
<u>June 2017</u>	<u>/S/ Andrew Heidtke</u>
DATE	WORK ZONE ENGINEER

- 

SIGN ON PORTABLE OR PERMANENT SUPPORT
- 

TEMPORARY PORTABLE RUMBLE STRIP ARRAY
- 

DIRECTION OF TRAFFIC
- 

WORK AREA
- 

FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

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

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

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

- FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.
- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

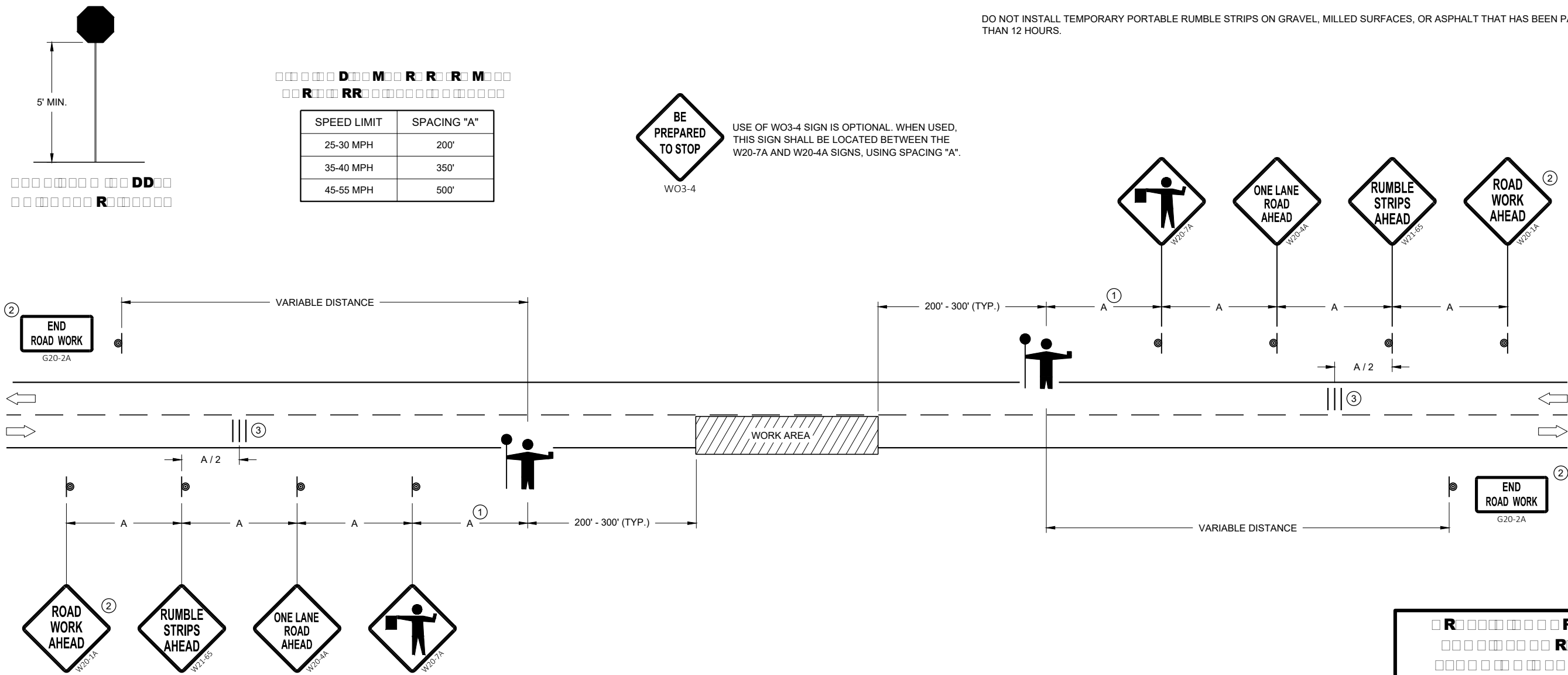
② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.
- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.

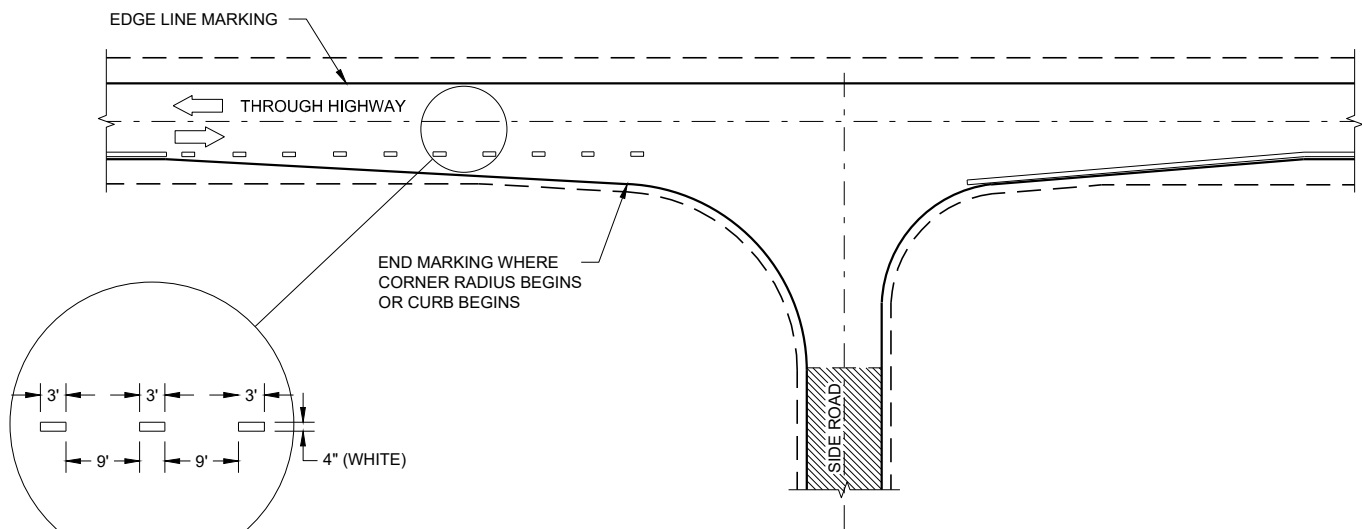
INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

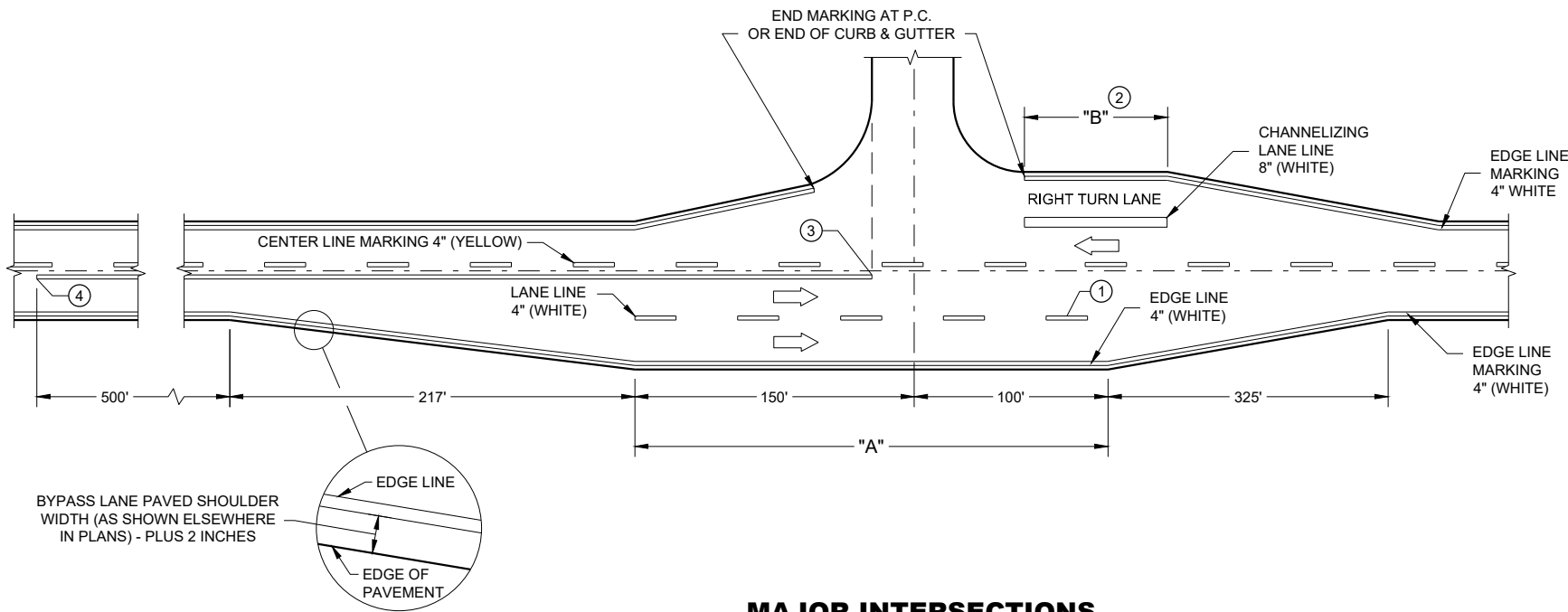
DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 123
FHWA	



MINOR INTERSECTION



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

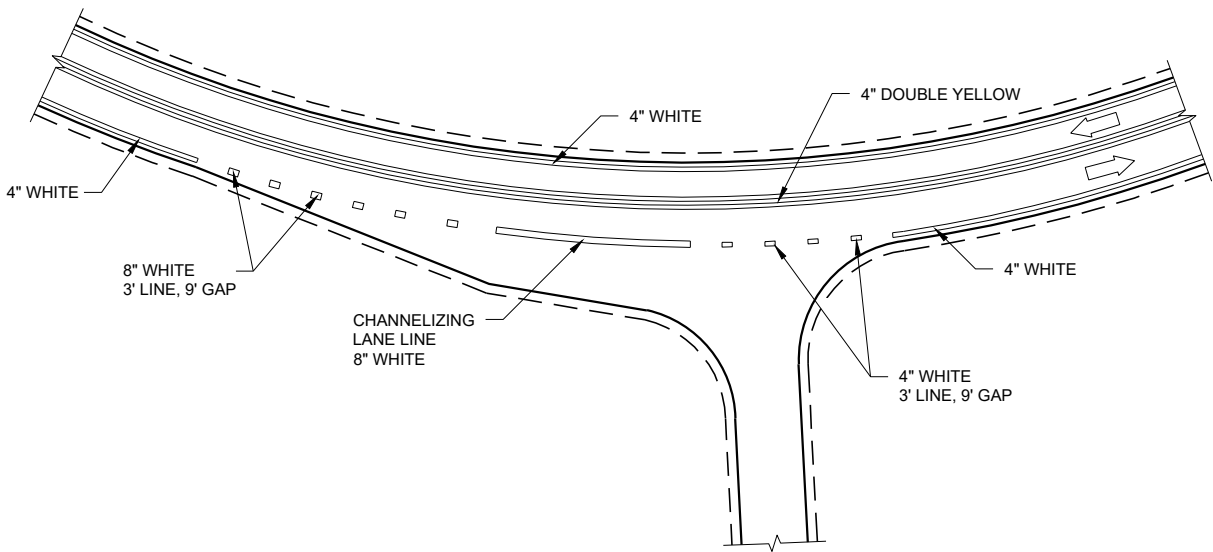
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 124

LEGEND

- SIGN ON PERMANENT SUPPORT
- DELINEATOR, FLEXIBLE/TUBULAR MARKER
- DIRECTION OF TRAFFIC

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

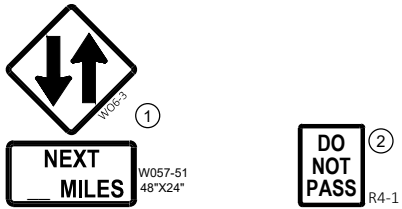
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

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

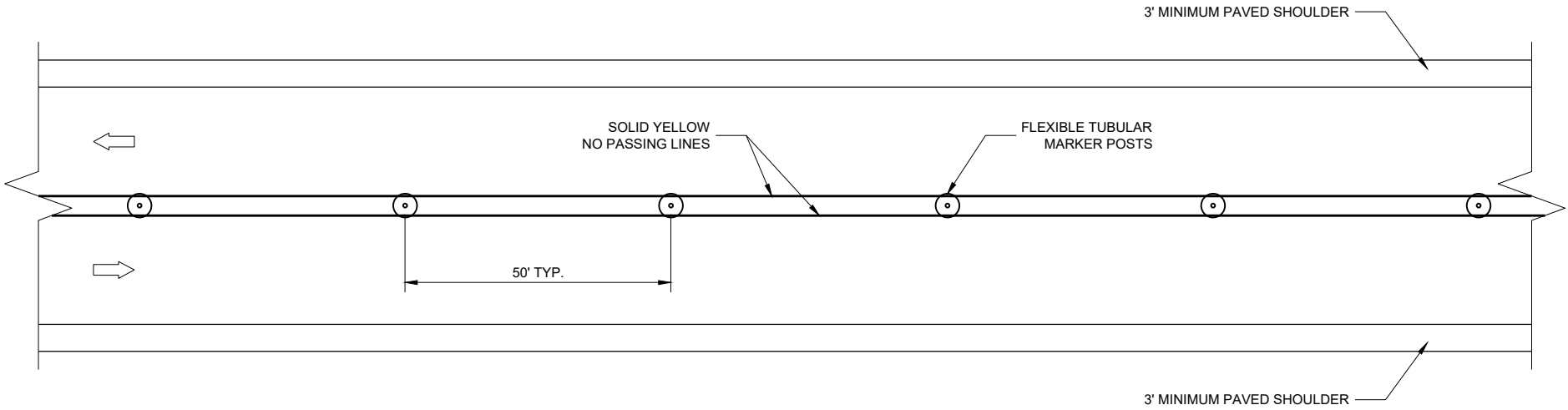
THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS.

A SINGLE ROW OF FLEXIBLE TUBULAR MARKERS ON CENTERLINE EXTEND FOR THE ENTIRE LENGTH OF TWO-WAY TRAFFIC AT 50 FOOT SPACING.

COVER EXISTING CENTERLINE STRIPE WITH TEMPORARY PAVEMENT MARKING, 4 INCH DOUBLE YELLOW.



- ① THE WO6-3 AND WO57-51 SHALL BE LOCATED 200 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND / OR 500 FEET BEYOND ANY SIDE ROAD. THE R4-1 SHALL BE LOCATED 1000 FEET BEYOND THE WO6-3 AND THE WO57-51 AND THE SIGNS SHALL BE ALTERNATED WITH ONE MILE INTERVALS BETWEEN THE SIGNS.
- ② CONVENTIONAL: 24" X 30"
FREEWAY AND EXPRESSWAY: 36" X 48"

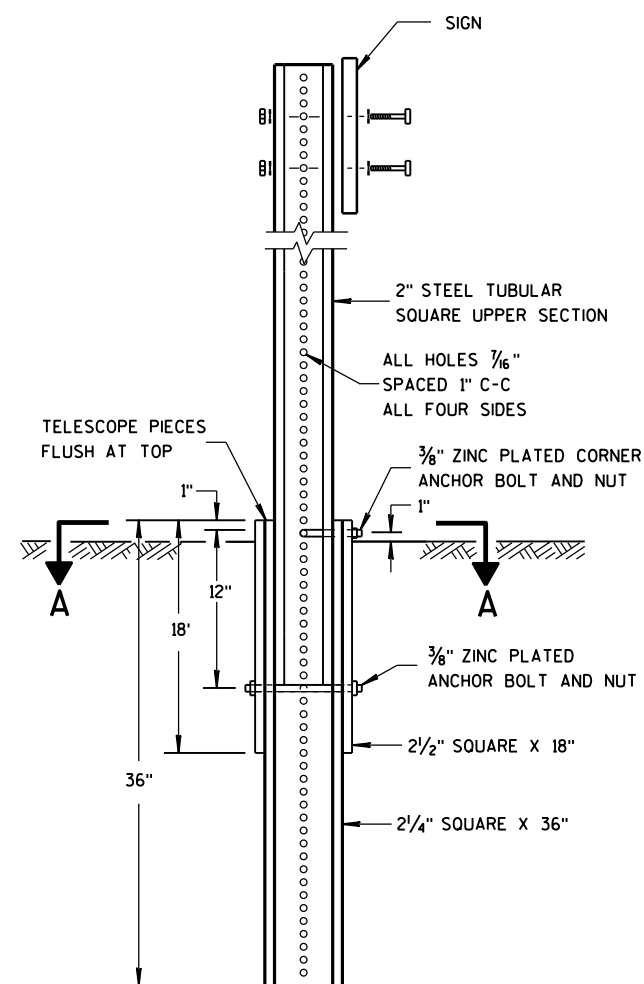


TWO LANE, TWO WAY OPERATION

TRAFFIC CONTROL
TWO LANE TWO WAY
OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE STATE TRAFFIC ENGINEER O 125
FHWA



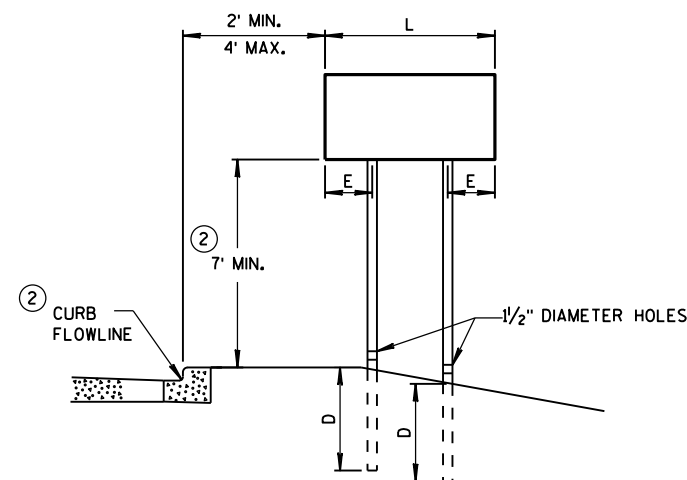
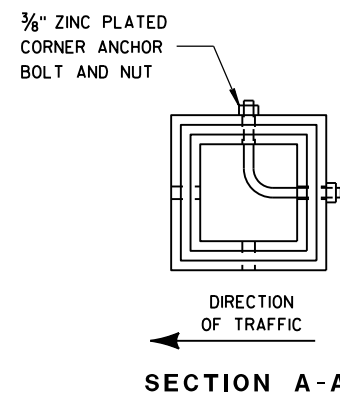
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

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

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ.FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

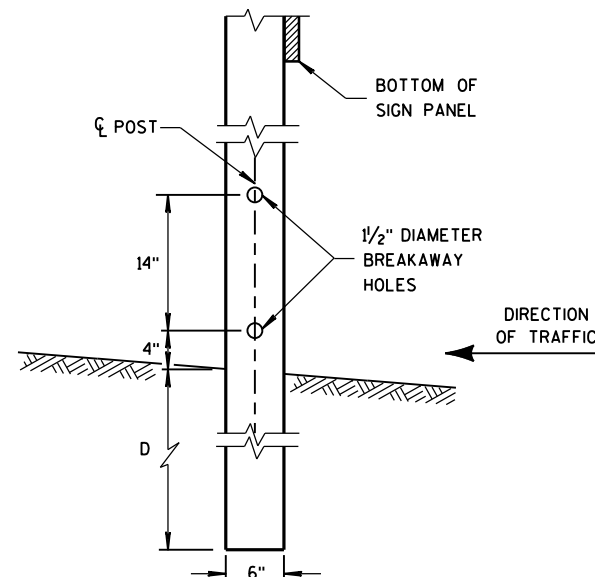


URBAN AREA

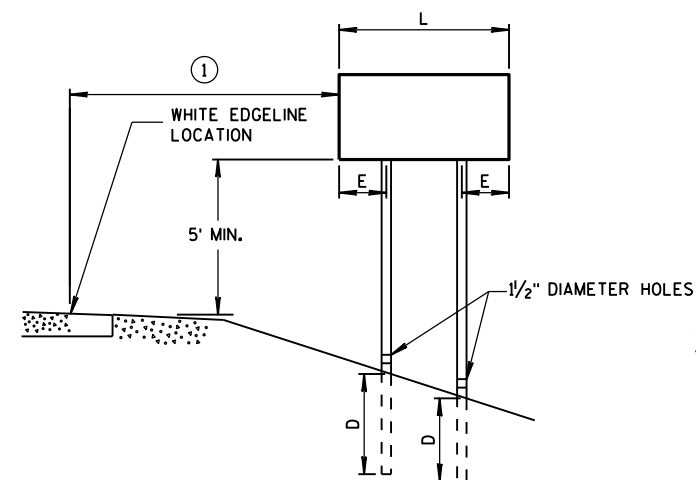
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

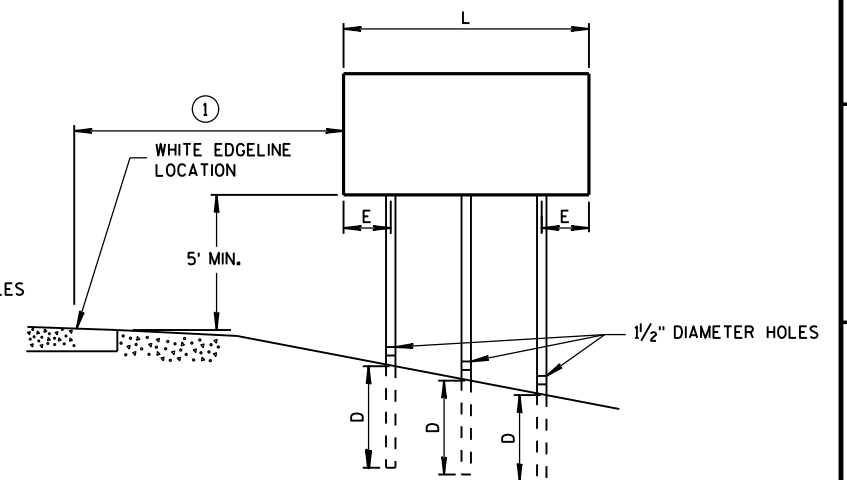
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4"x6" WOOD POST MODIFICATION



RURAL AREA



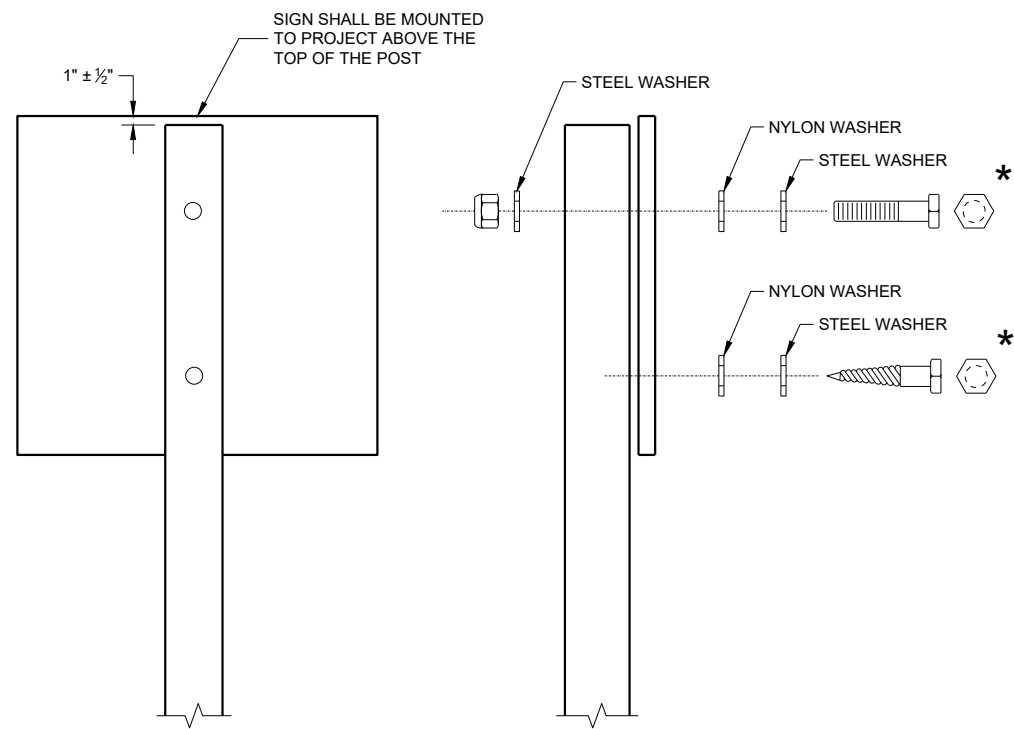
4" X 6" WOOD POST

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

SEE NOTE (3)

GENERAL NOTES

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



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

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

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

WOOD POST (4" x 6")
LAG SCREWS - ¾" x 3"
MACHINE BOLTS - ⅝" x 6 ½" OR 7" LENGTH W/NUTS

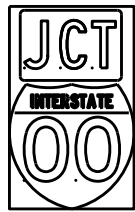
SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ¾" x 3 ¼" LENGTH W/NUTS
RIVETS - ⅝" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x ⅛" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 NYLON

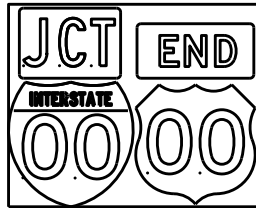
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 127
FHWA	

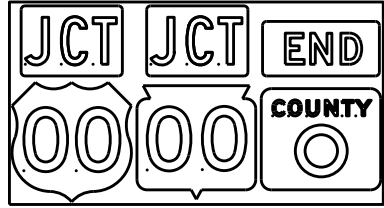
TYPICAL ASSEMBLIES



J1-1



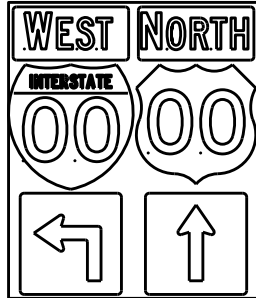
J1-2



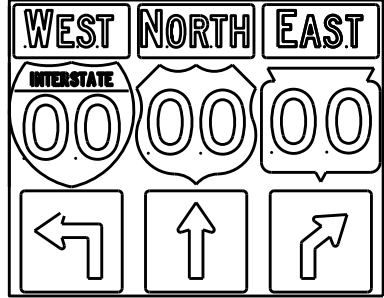
J1-3



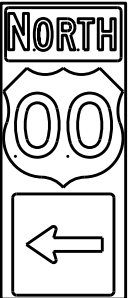
J2-1



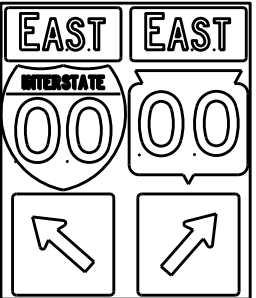
J2-2



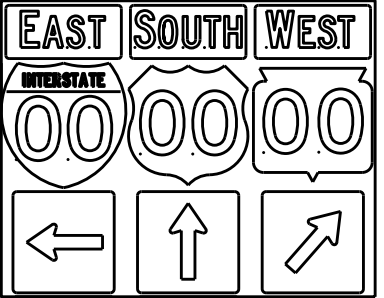
J2-3



J3-1



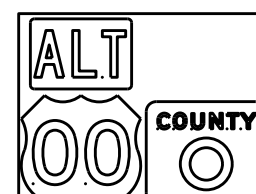
J3-2



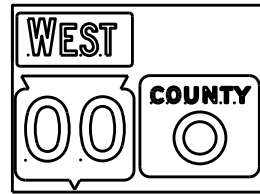
J3-3



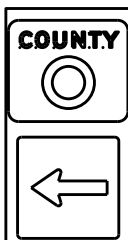
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

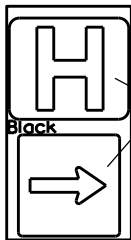


J22-1



JV

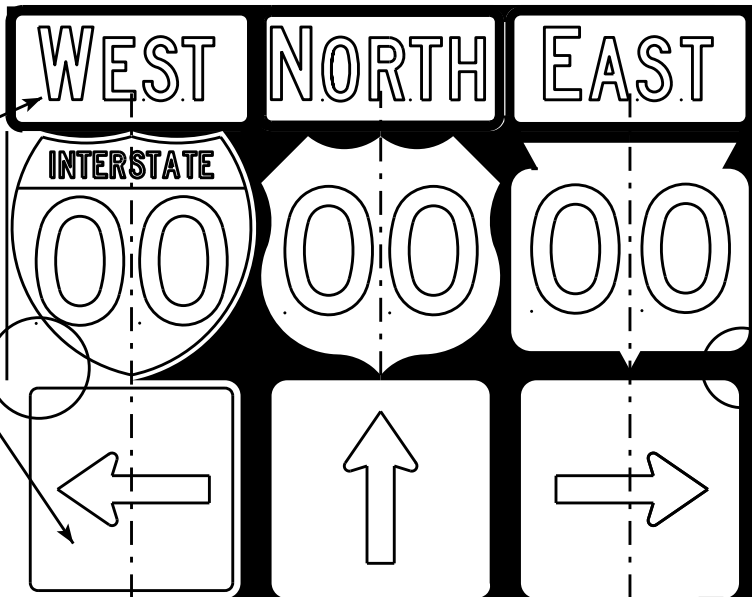
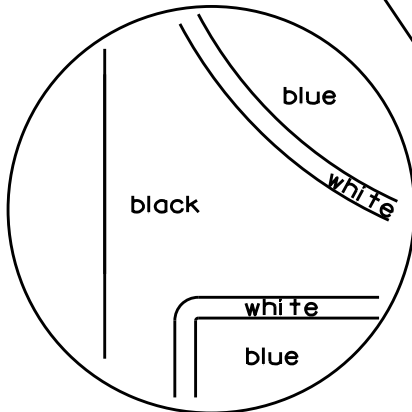
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

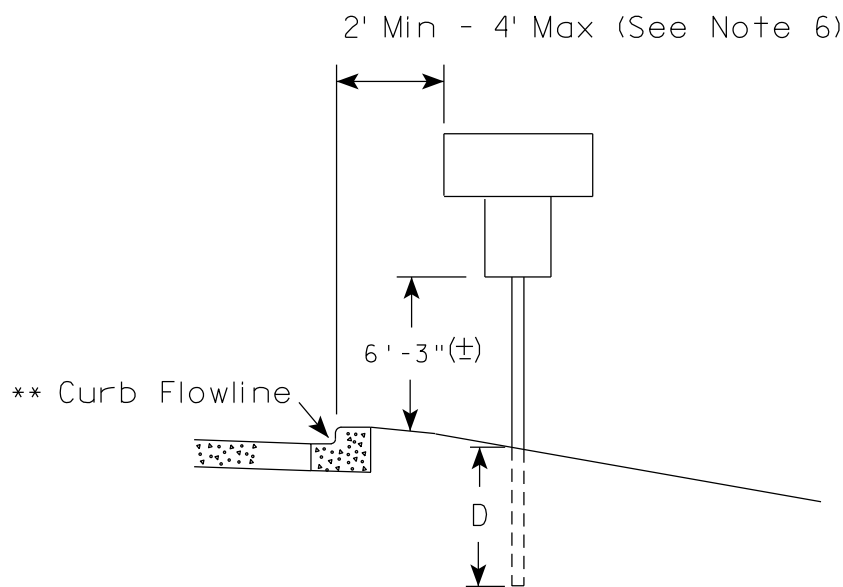
DATE 2/06/14 PL 128 A2-1S.8

SHEET NO: E

NOTES

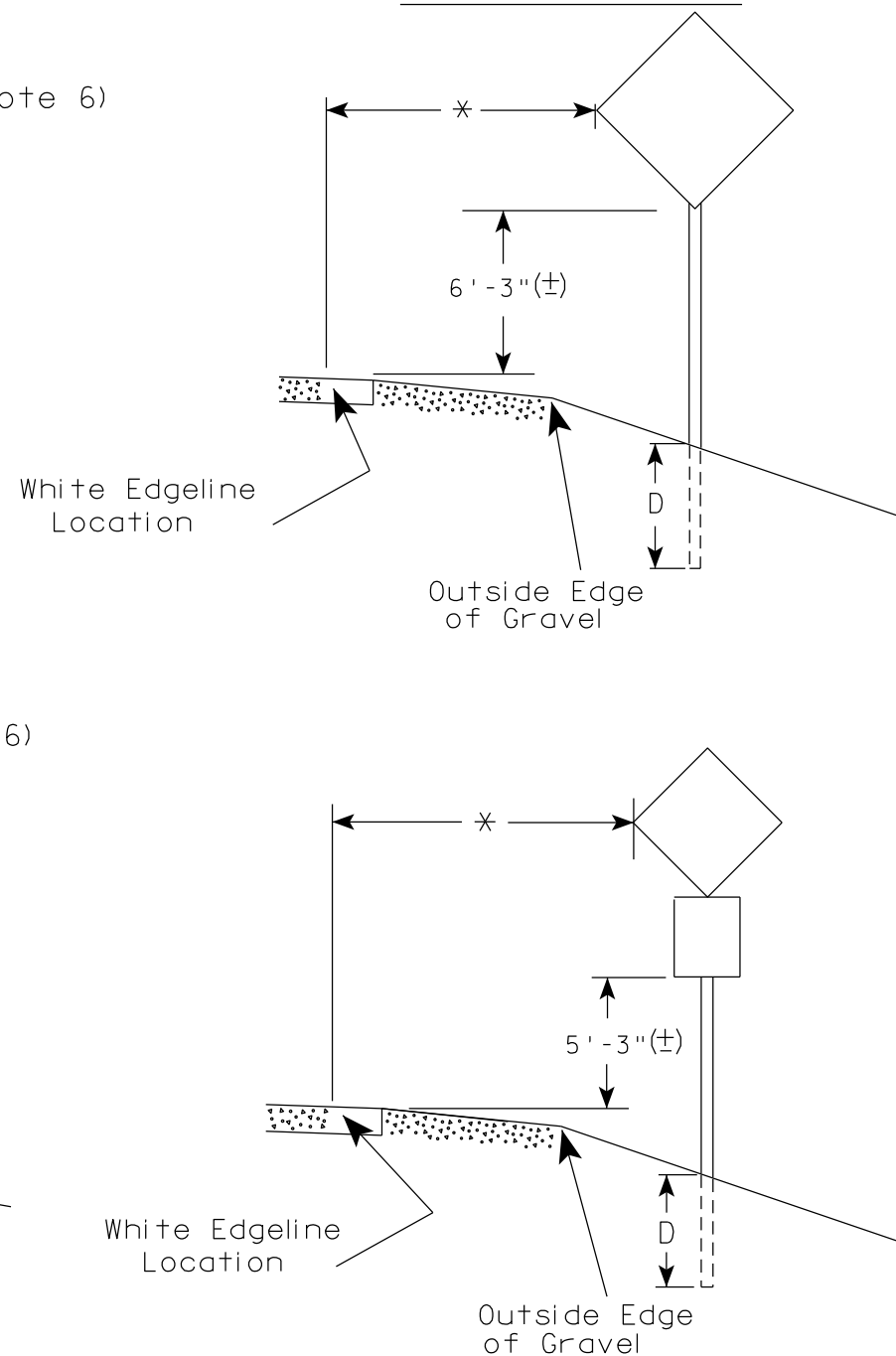
1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Black Non-reflective
Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

7



✖✖ 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.

7



- * 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.

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" ($\pm$). 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" ($\pm$).
3. For expressways and freeways, mounting height is 7'- 3" ($\pm$) or 6'-3" ($\pm$) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" ($\pm$).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The ($\pm$) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" ($\pm$) or as directed by the Engineer.

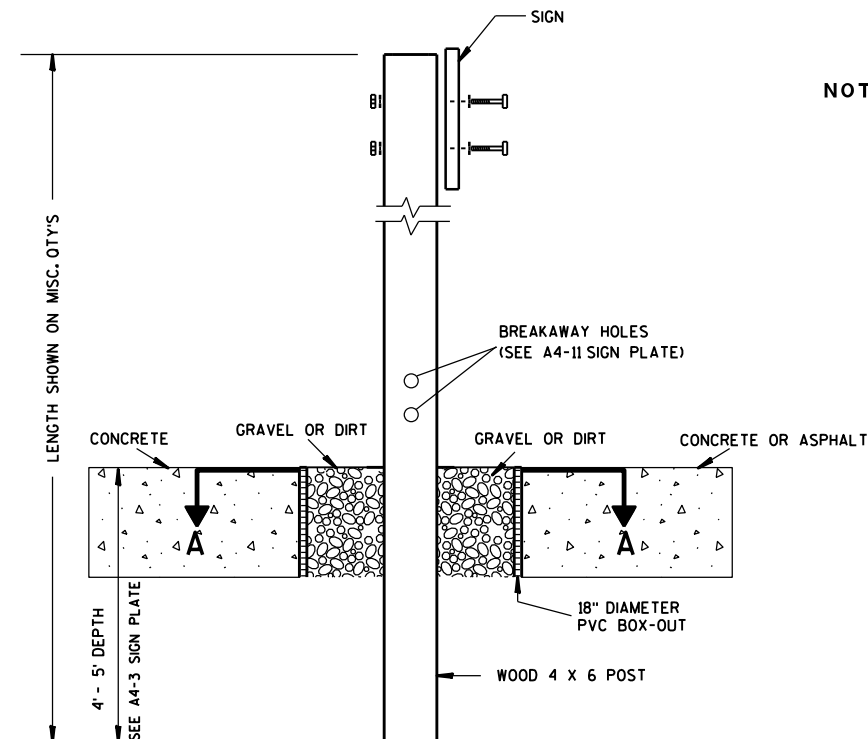
POST EMBEDMENT DEPTH	
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4"
Greater than 20	5'

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

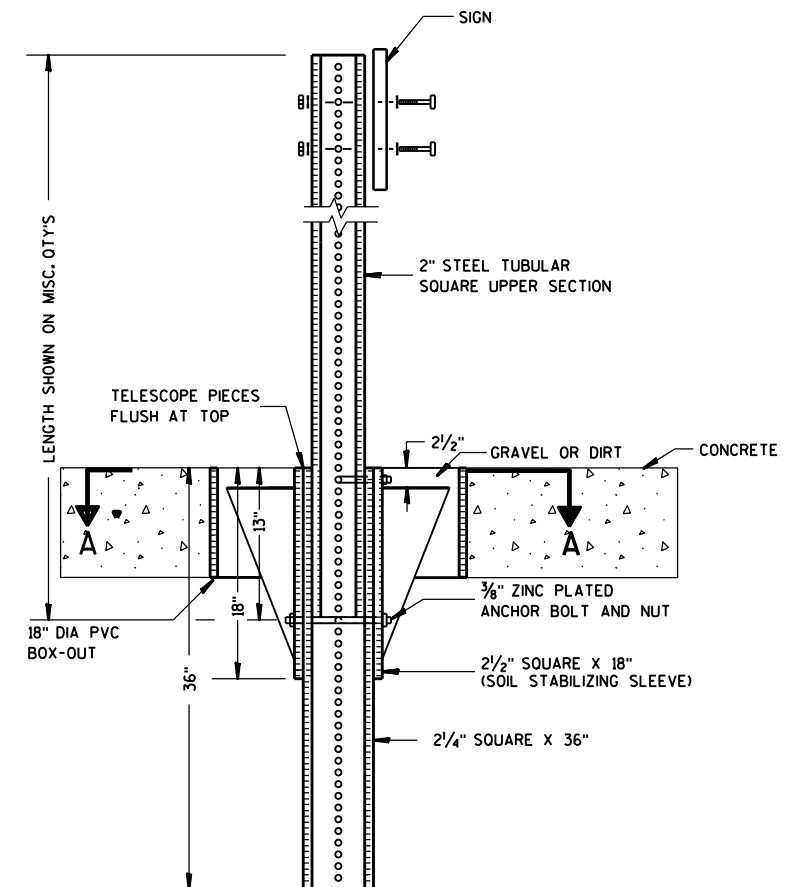
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

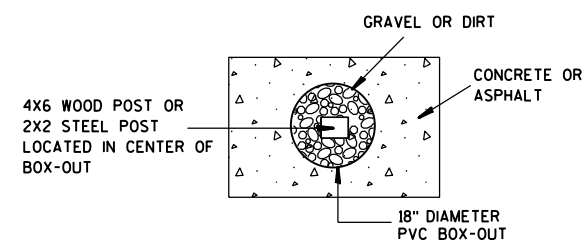


ELEVATION VIEW
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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



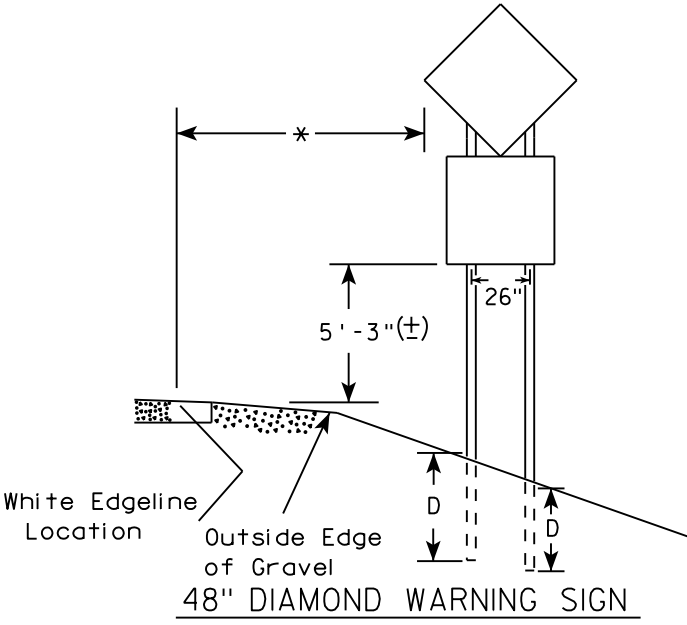
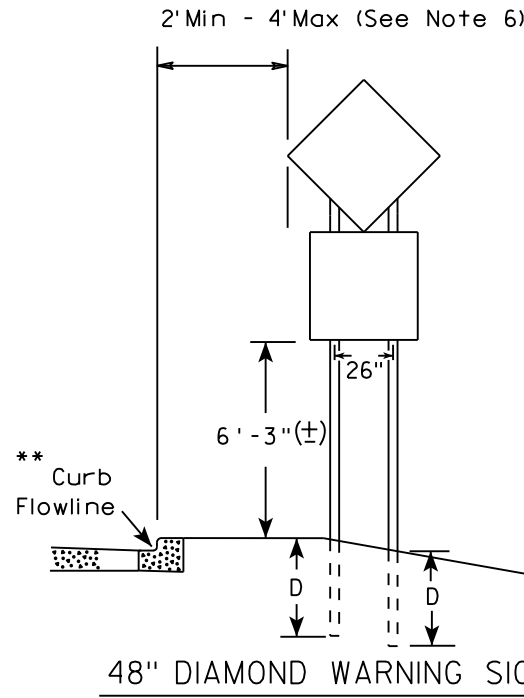
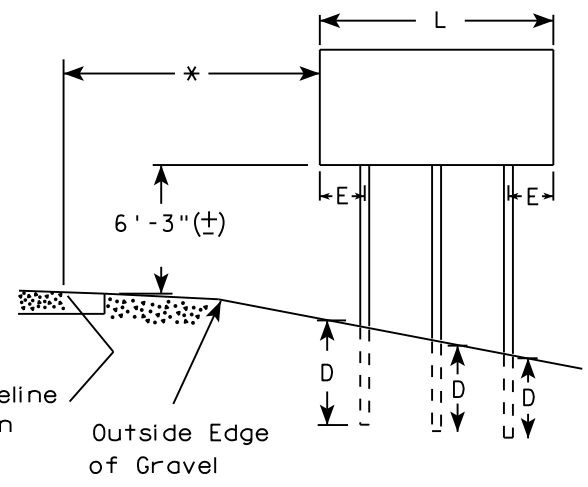
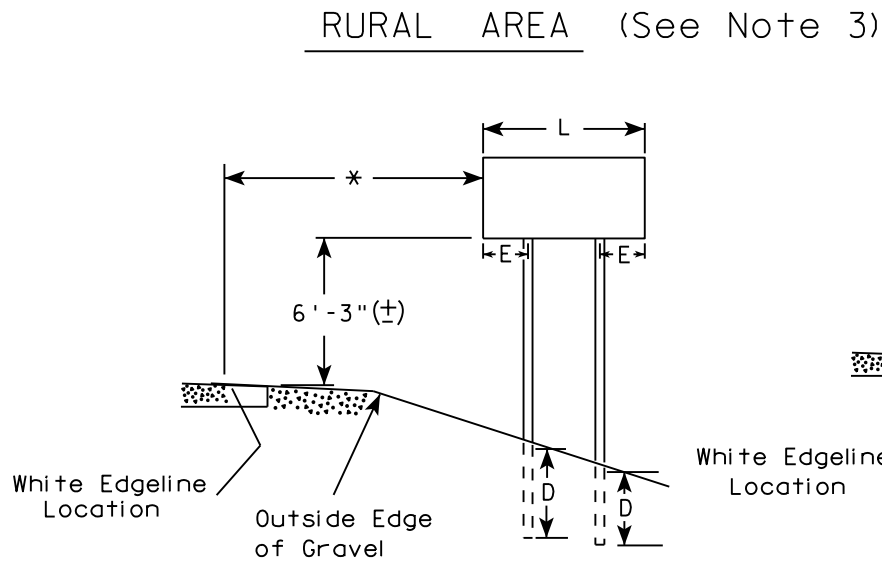
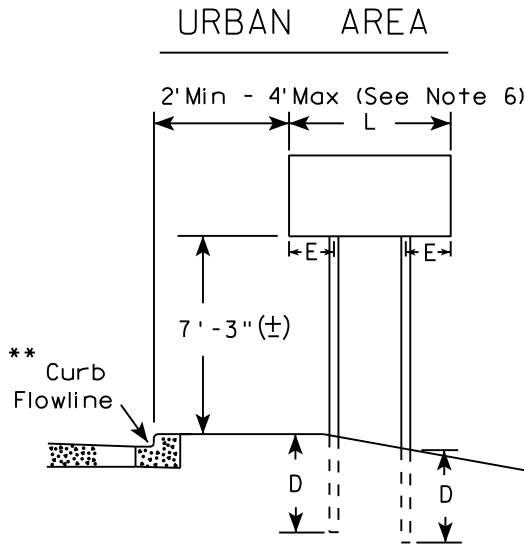
PLAN VIEW
FOR NEW CONCRETE/ASPHALT INSTALLATIONS

**SIGN POST
 BOX-OUTS
 A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
 for State Traffic Engineer

DATE 1/27/14 PLAT 130 A4-3B.1



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

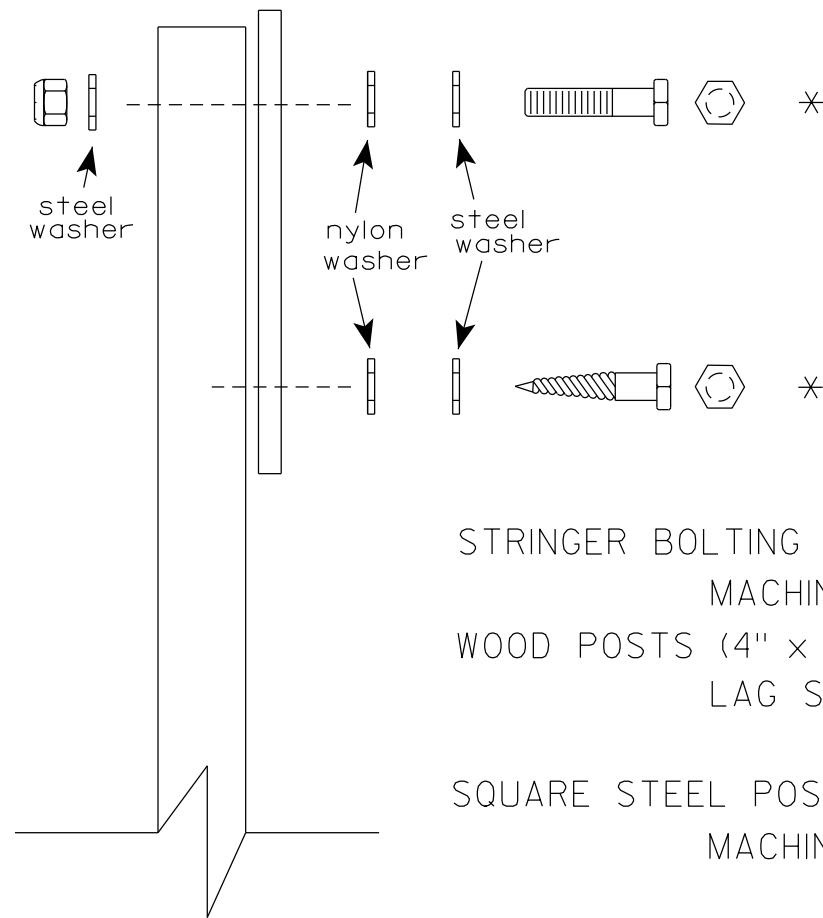
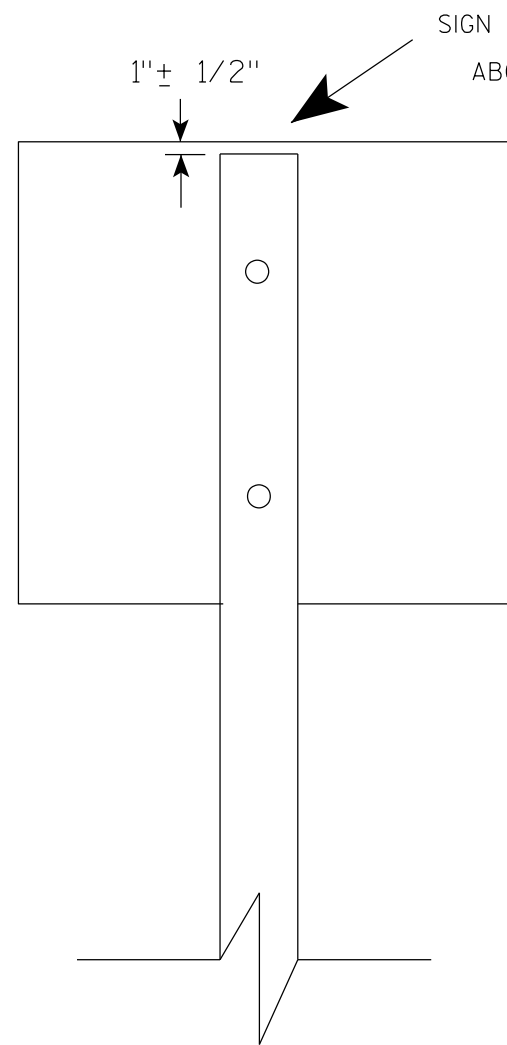
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

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

- * 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.



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

2 1/2" TELES PAR TUBE

4"

2 1/2"

10"

1 1/2"

12 1/2"

4" x 10" x 10 GA. STEEL PLATE (CUT AS SHOWN) WELDED TO ALL FOUR CORNERS OF TELES PAR TUBE

LENGTH SHOWN ON MISC. Q'TYS

SIGN

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

2 1/2" GRAVEL OR DIRT

TELESCOPE PIECES FLUSH AT TOP

18" DIA SCHEDULE 40 PVC BOX-OUT

36"

18"

13"

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

2 1/4" SQUARE X 36"

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

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY.

Side View Dimensions:

- Overall height: LENGTH SHOWN ON MISC. QTY'S
- Section 1: 2" STEEL TUBULAR SQUARE UPPER SECTION
- Section 2: 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- Section 3: 2 1/4" SQUARE X 36"
- Section 4: 36" (Total length of the bottom section)
- Section 5: 18"
- Section 6: 12"

End View Details:

- SIGN
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
- ALL HOLES 7/16" SPACED 1" C-C
- ALL FOUR SIDES
- 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT
- 1"
- 3/8" ZINC PLATED ANCHOR BOLT AND NUT

Other Labels:

- TELESCOPE PIECES FLUSH AT TOP
- A
- B

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

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATI 133 14-9.9

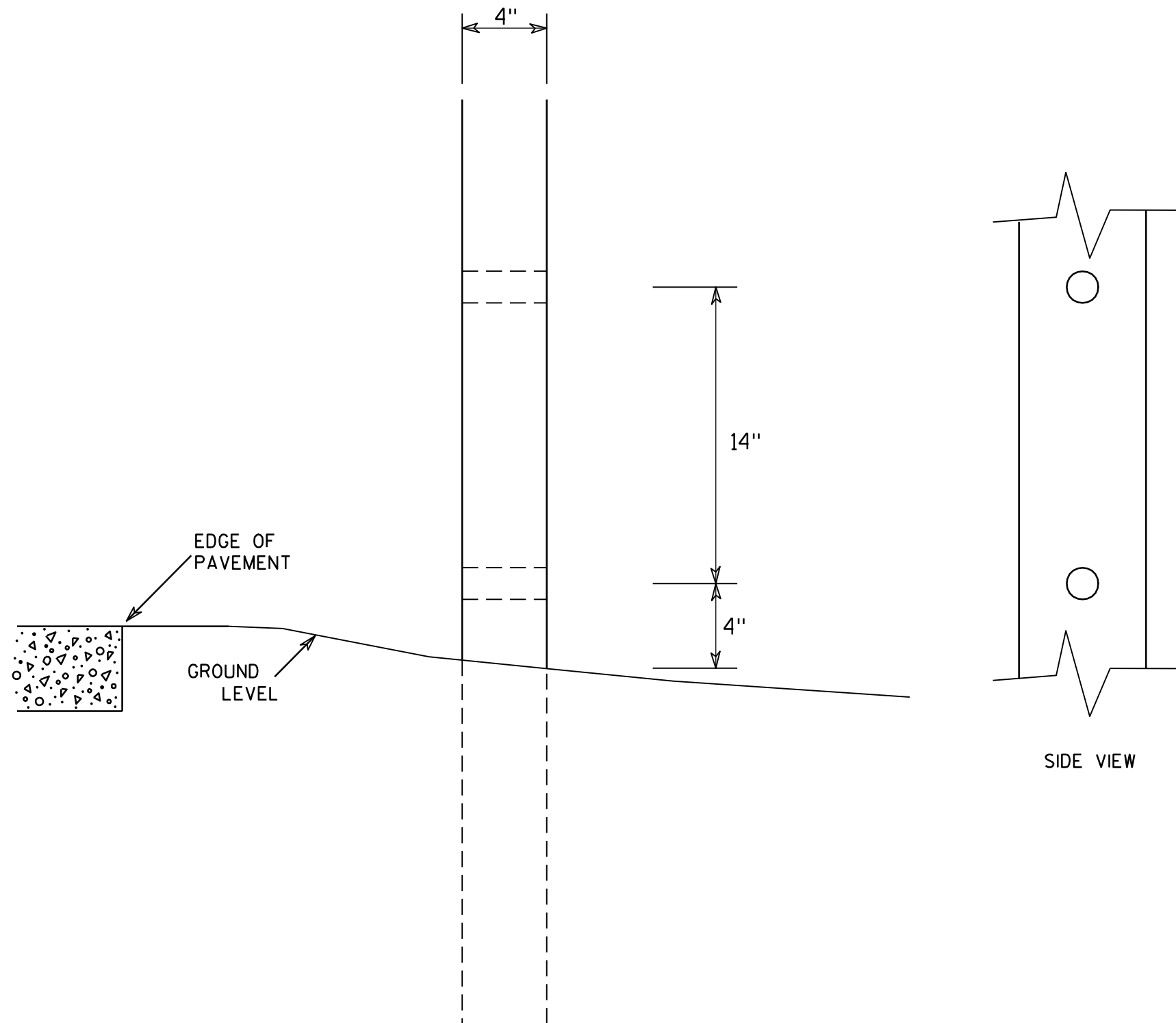
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

T



GENERAL NOTES

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

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

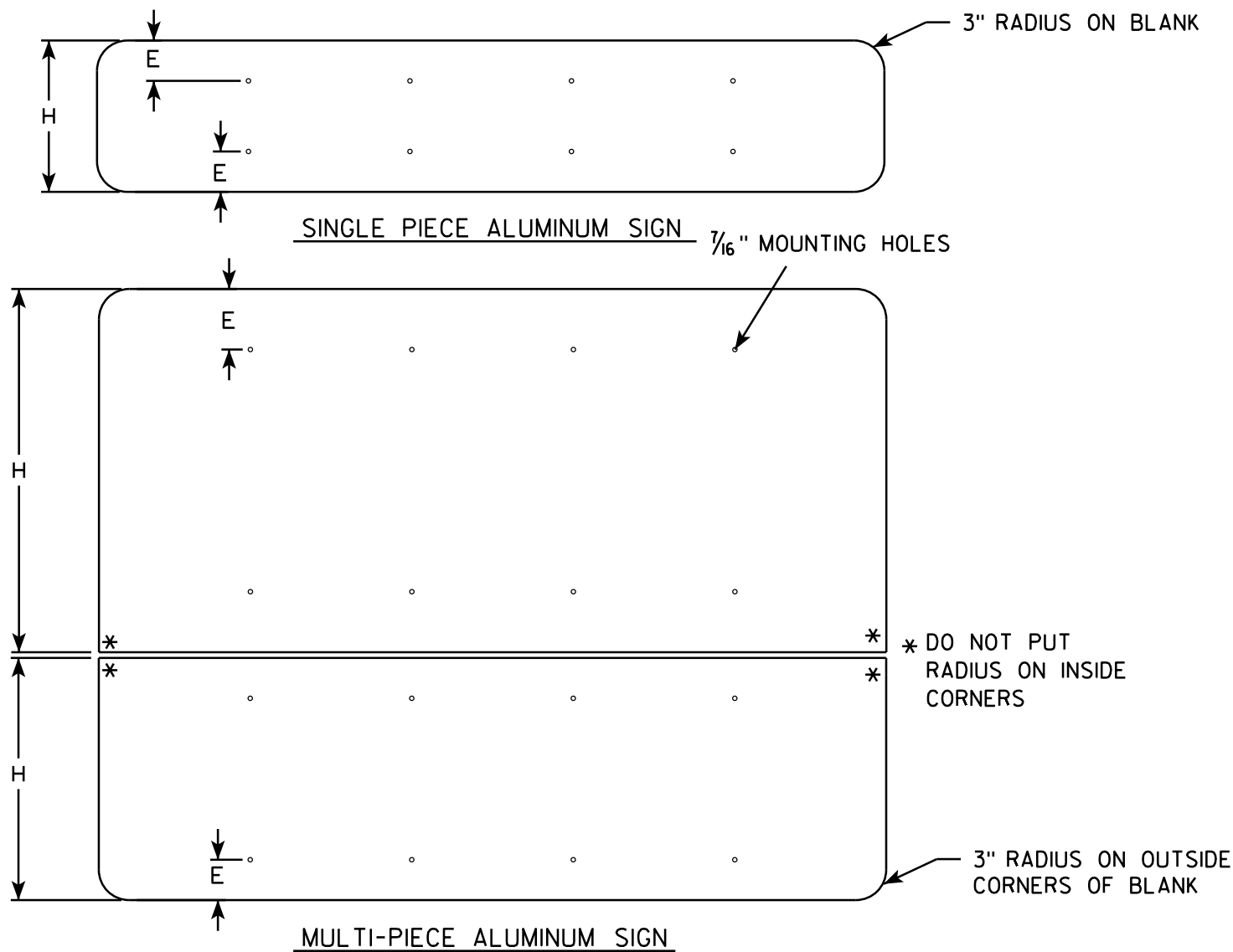
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HWY:

COUNTY:

SHEET NO: 134

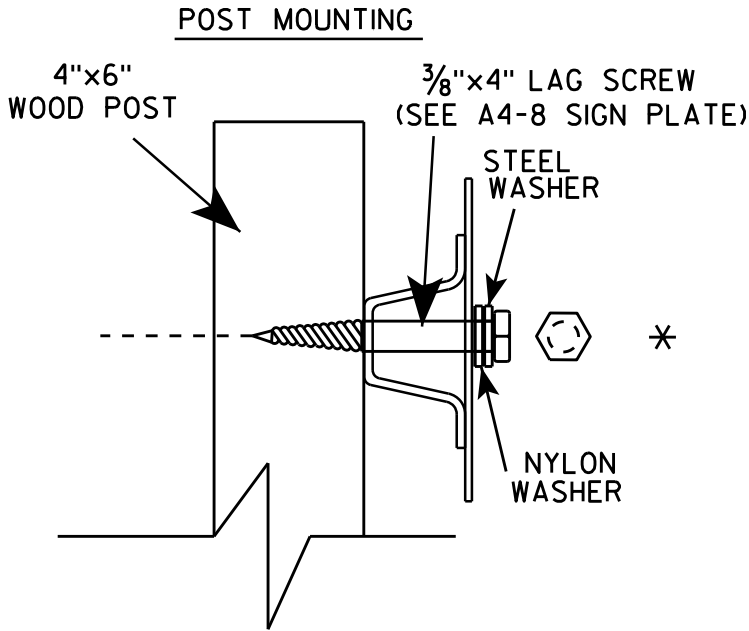
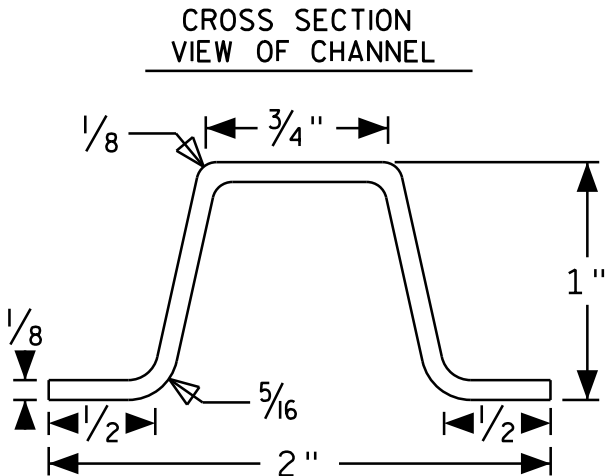
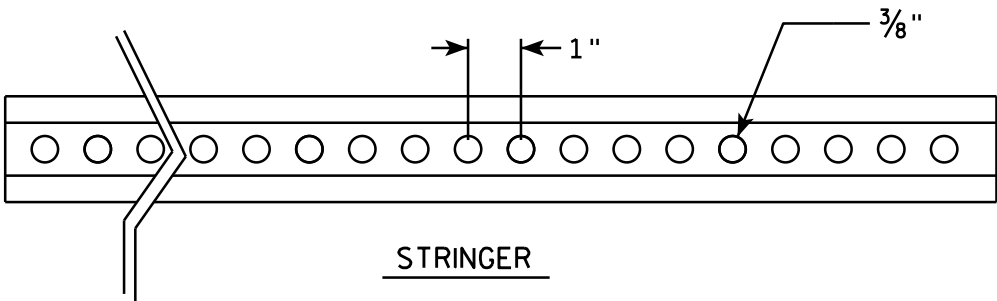
E



GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE $\frac{7}{16}$ " DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

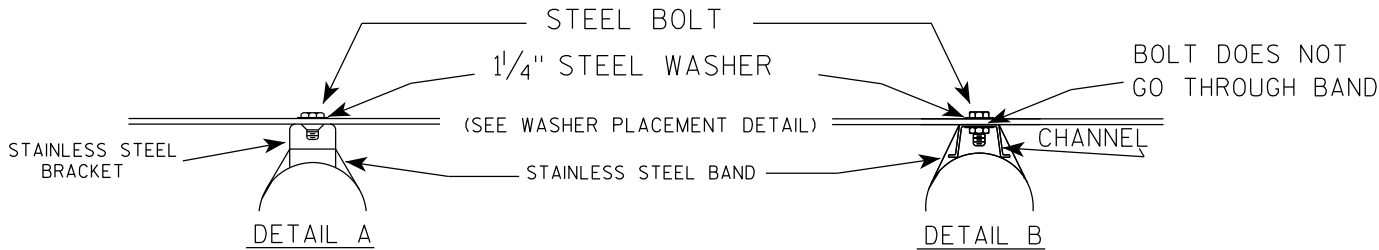
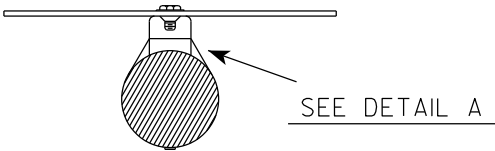
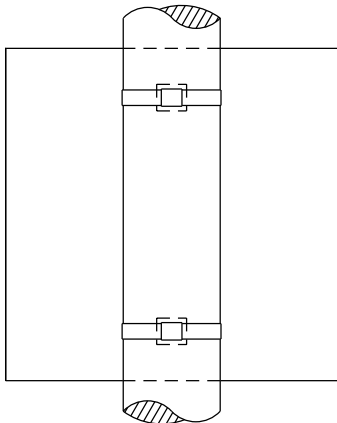
SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES			
78"	72"	2	16"	15"	31"	47"	63"
84"	72"	2	17"	16 $\frac{1}{2}$ "	33 $\frac{1}{2}$ "	50 $\frac{1}{2}$ "	67 $\frac{1}{2}$ "
90"	72"	2	18"	18"	36"	54"	72"
96"	90"	2	19"	19 $\frac{1}{2}$ "	38 $\frac{1}{2}$ "	57 $\frac{1}{2}$ "	76 $\frac{1}{2}$ "
102"	90"	2	20"	21"	41"	61"	81"
108"	90"	2	21"	22 $\frac{1}{2}$ "	43 $\frac{1}{2}$ "	64 $\frac{1}{2}$ "	85 $\frac{1}{2}$ "
114"	108"	3	15"	12"	27"	42"	57" 72" 87" 102"
120"	108"	3	16"	12"	28"	44"	60" 76" 92" 108"
126"	108"	3	17"	12"	29"	46"	63" 80" 97" 114"
132"	126"	3	18"	12"	30"	48"	66" 84" 102" 120"
138"	126"	3	19"	12"	31"	50"	69" 88" 107" 126"
144"	126"	3	20"	12"	32"	52"	72" 92" 112" 132"



SIGN STRINGER MOUNTING REQUIREMENTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/26/16	PLATE No A4-18.1

BANDING

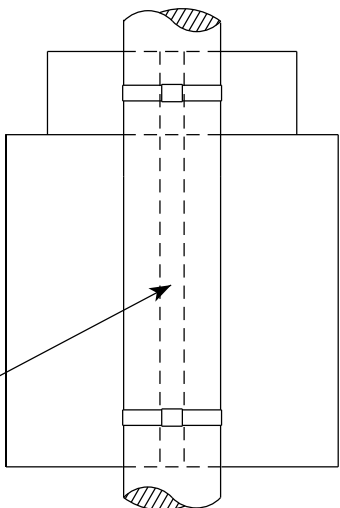
SINGLE SIGN



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 $\frac{3}{4}$ " 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

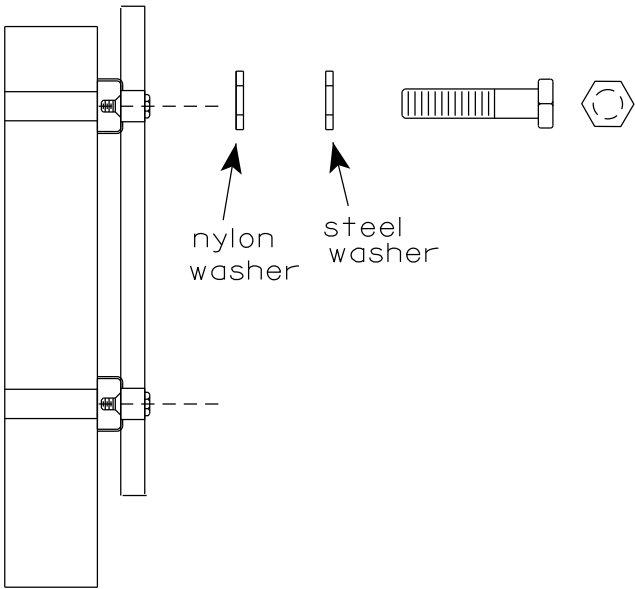
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

WASHER PLACEMENT



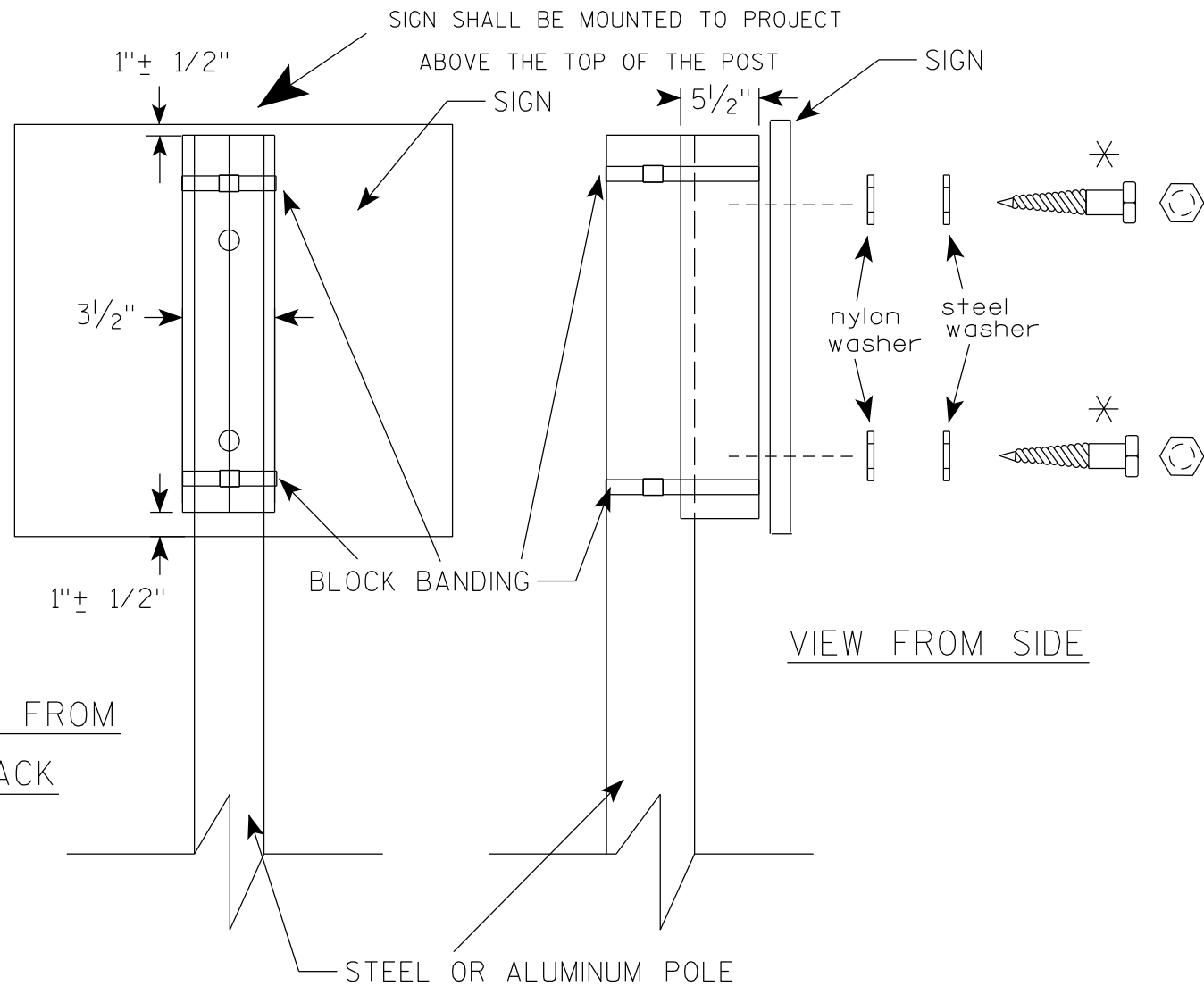
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

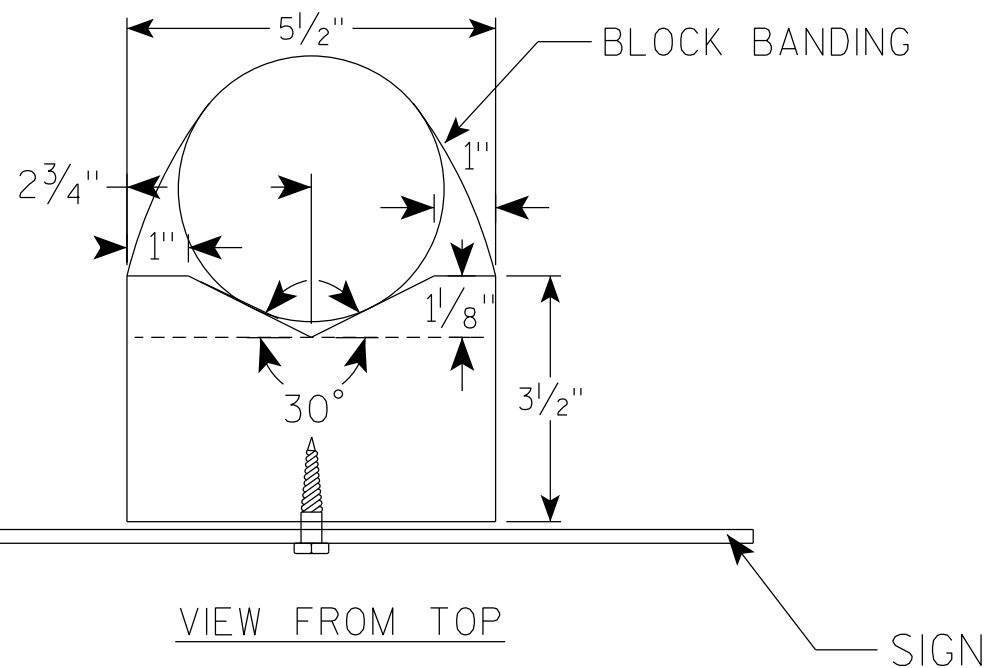
WISCONSIN DEPT OF TRANSPORTATION

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

VIEW FROM
BACK



VIEW FROM SIDE



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 $1\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $1\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

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

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

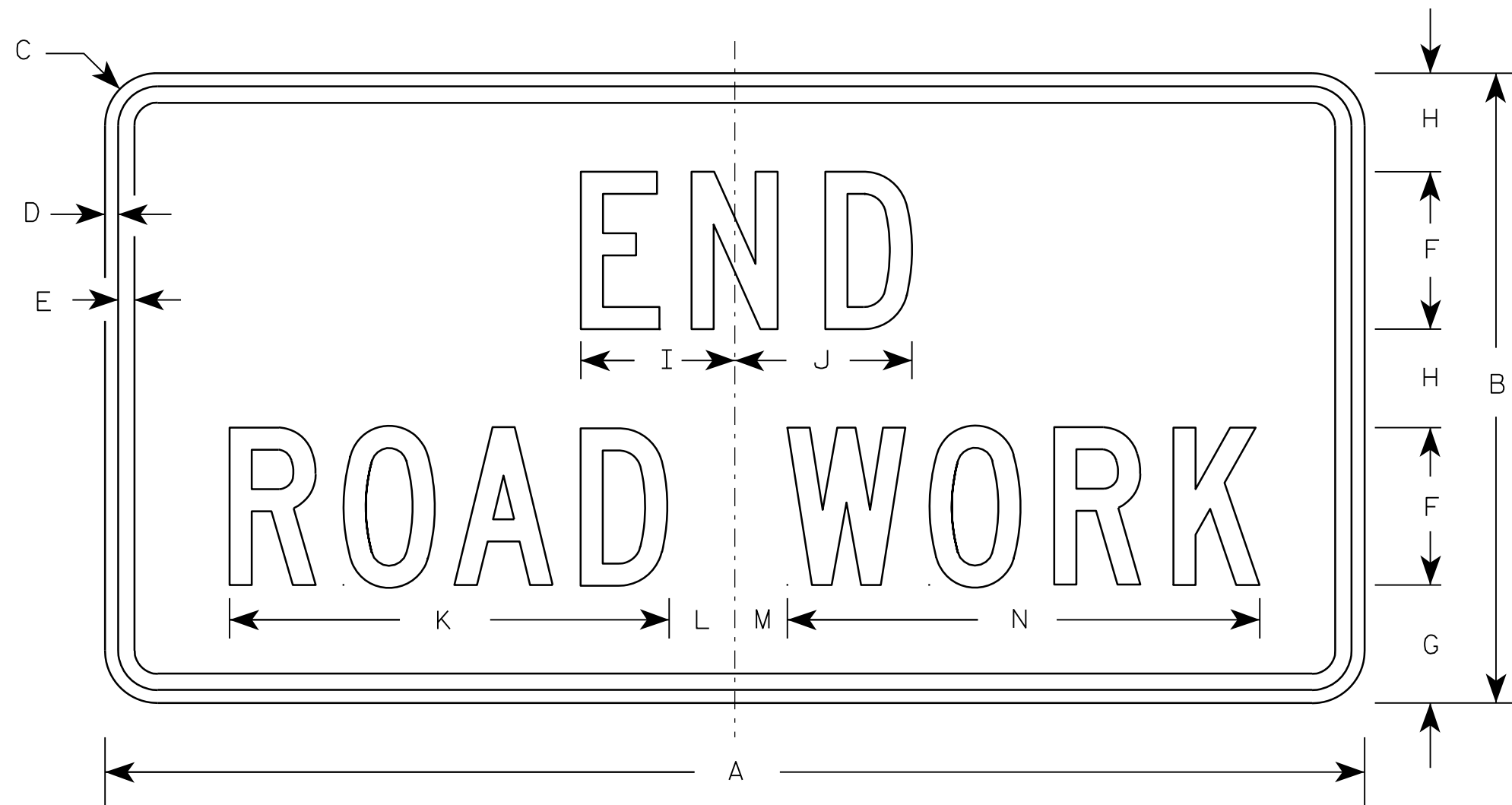
DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:

SHEET NO: 137

E

7



G20-2A

NOTES

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

Metric equivalent
for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

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.	Area m ²
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

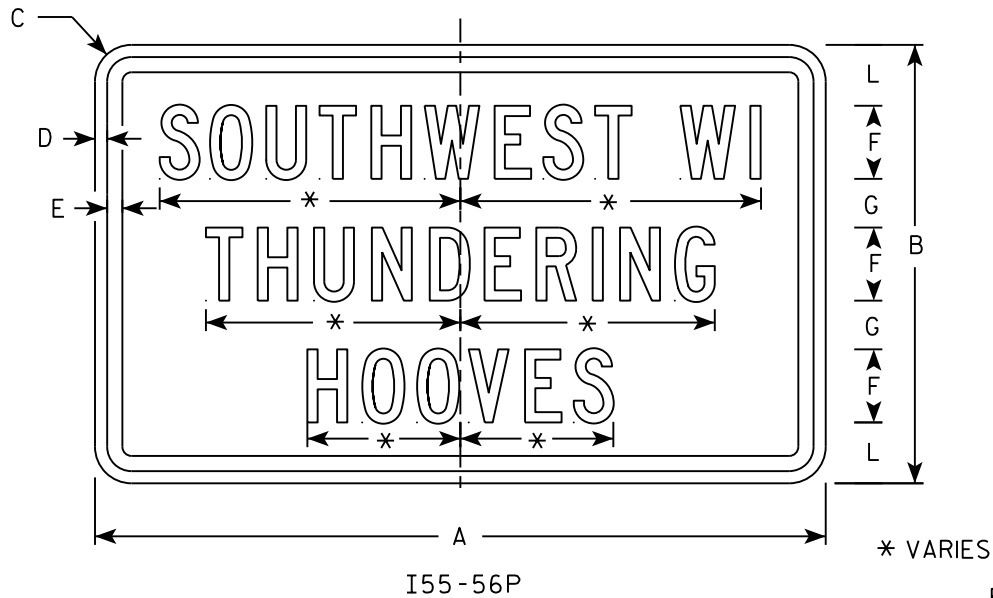
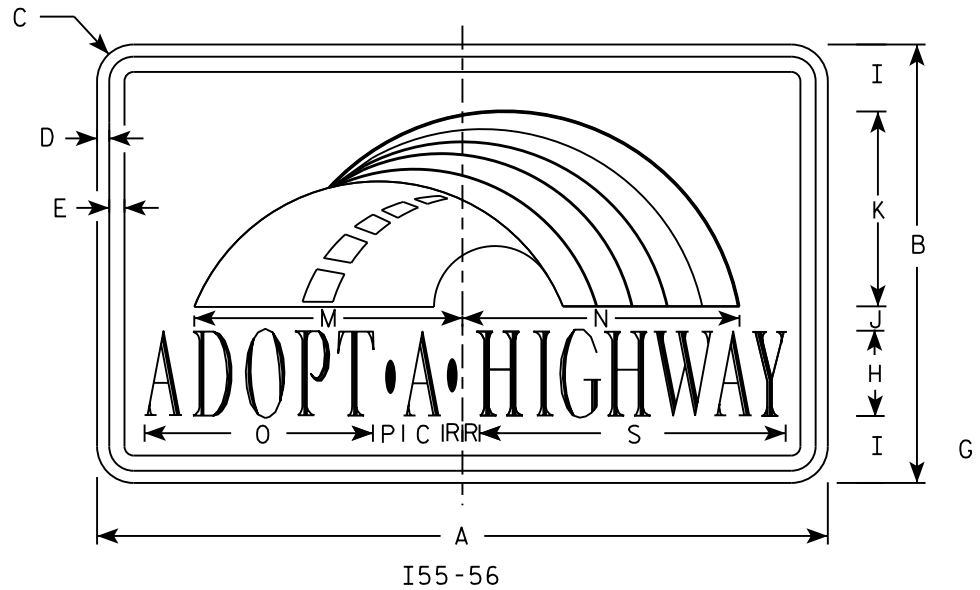
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

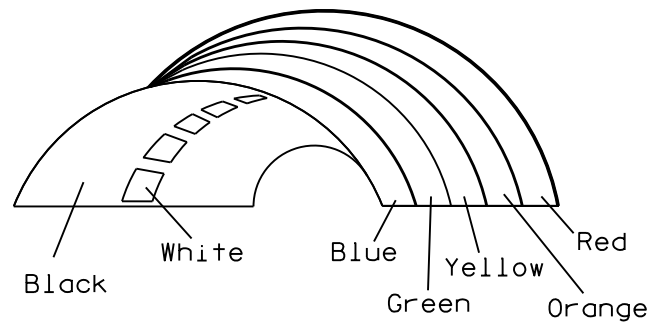
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

7



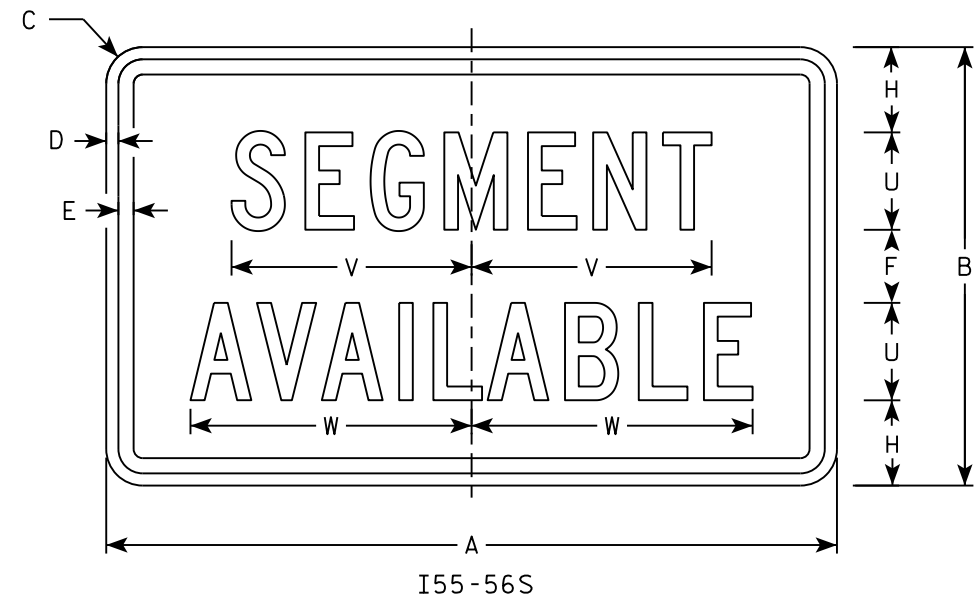
Background Colors of Symbol*



*1/4" Black Border between each color of rainbow and border of rainbow

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - (See Note 4)
3. Message Series - (See Note 5)
4. Border - Blue
Adopt a Highway - Red
All other Text - Blue
5. Adopt a Highway - Dutch 8011L
All other Text - Series C
6. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign 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	18	1 1/2	1/2	5/8	3	2	3 1/2	2 3/4	1	8	2 1/2	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2	4	9 7/8	11 1/2				3.75
3																											
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 139

E

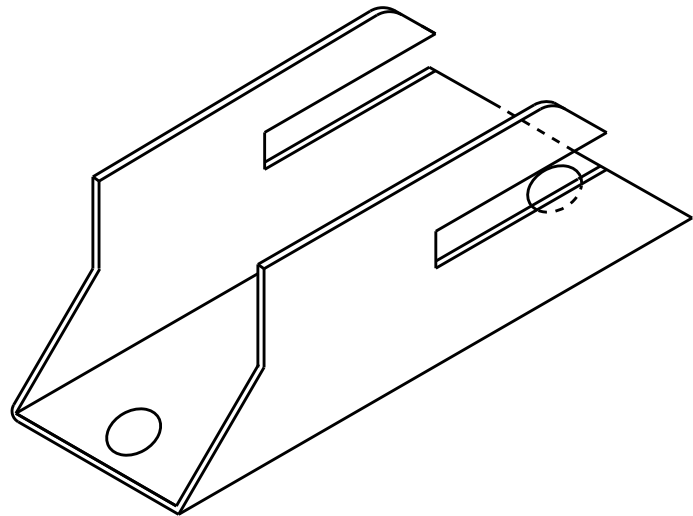
STANDARD SIGN
I55-56

WISCONSIN DEPT OF TRANSPORTATION

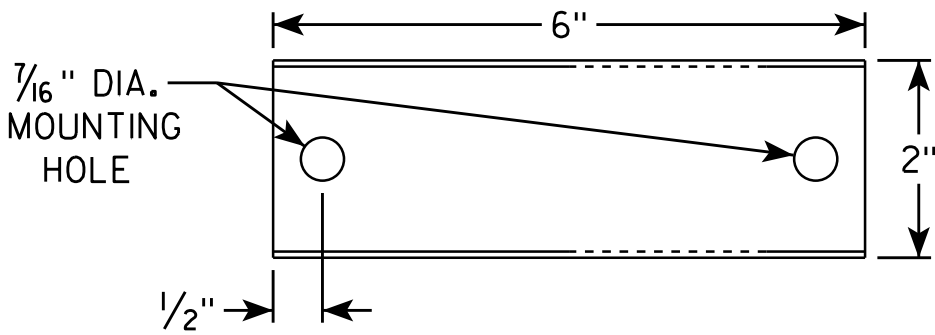
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/20/18 PLATE NO. I55-56.4

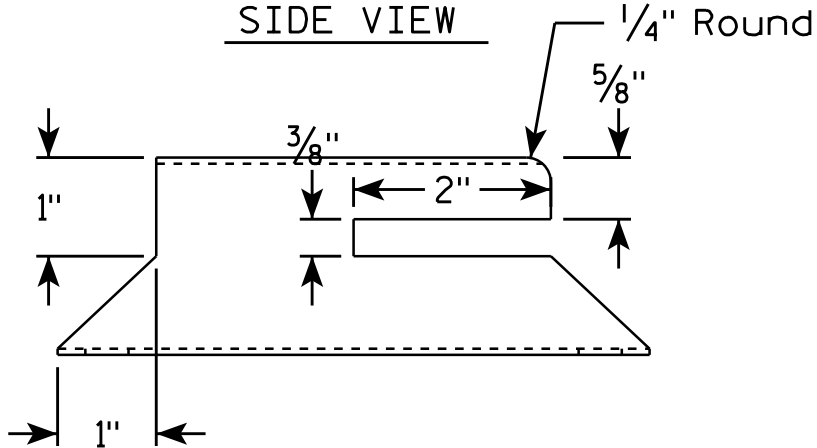
ISOMETRIC VIEW



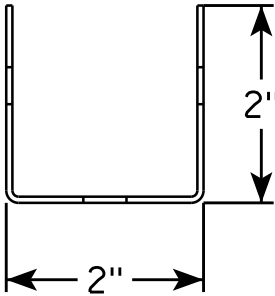
TOP VIEW



SIDE VIEW



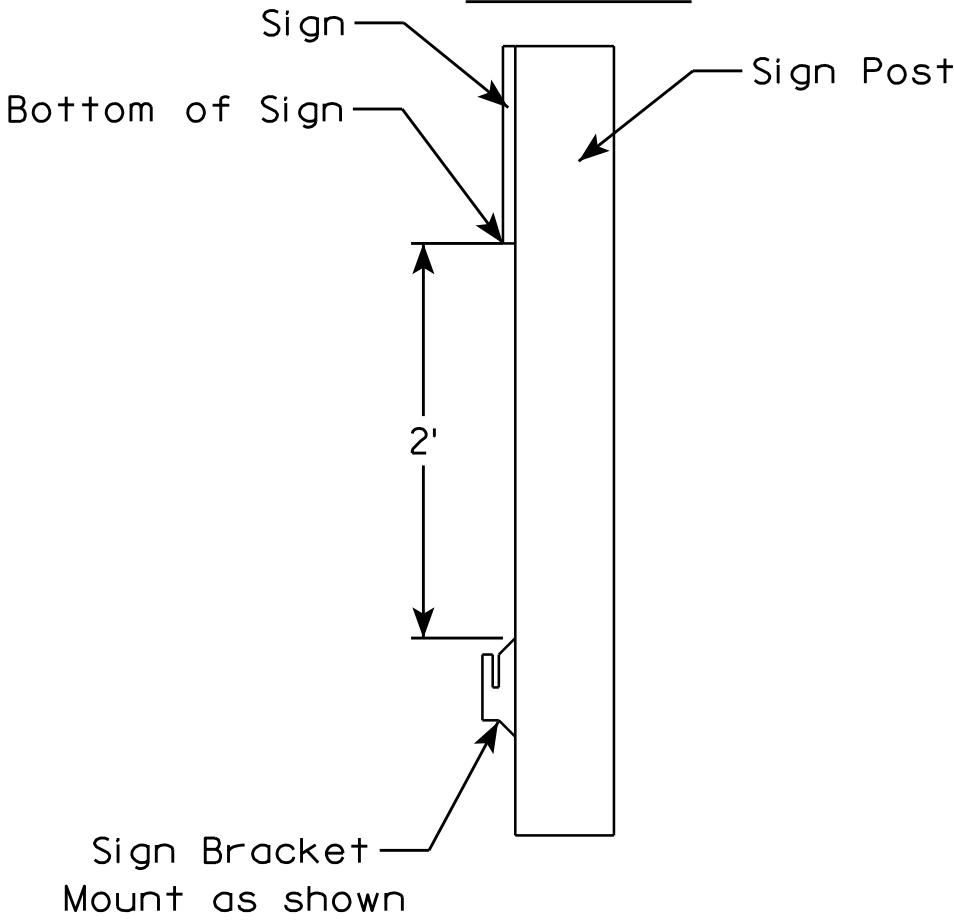
END VIEW



NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

SIDE VIEW

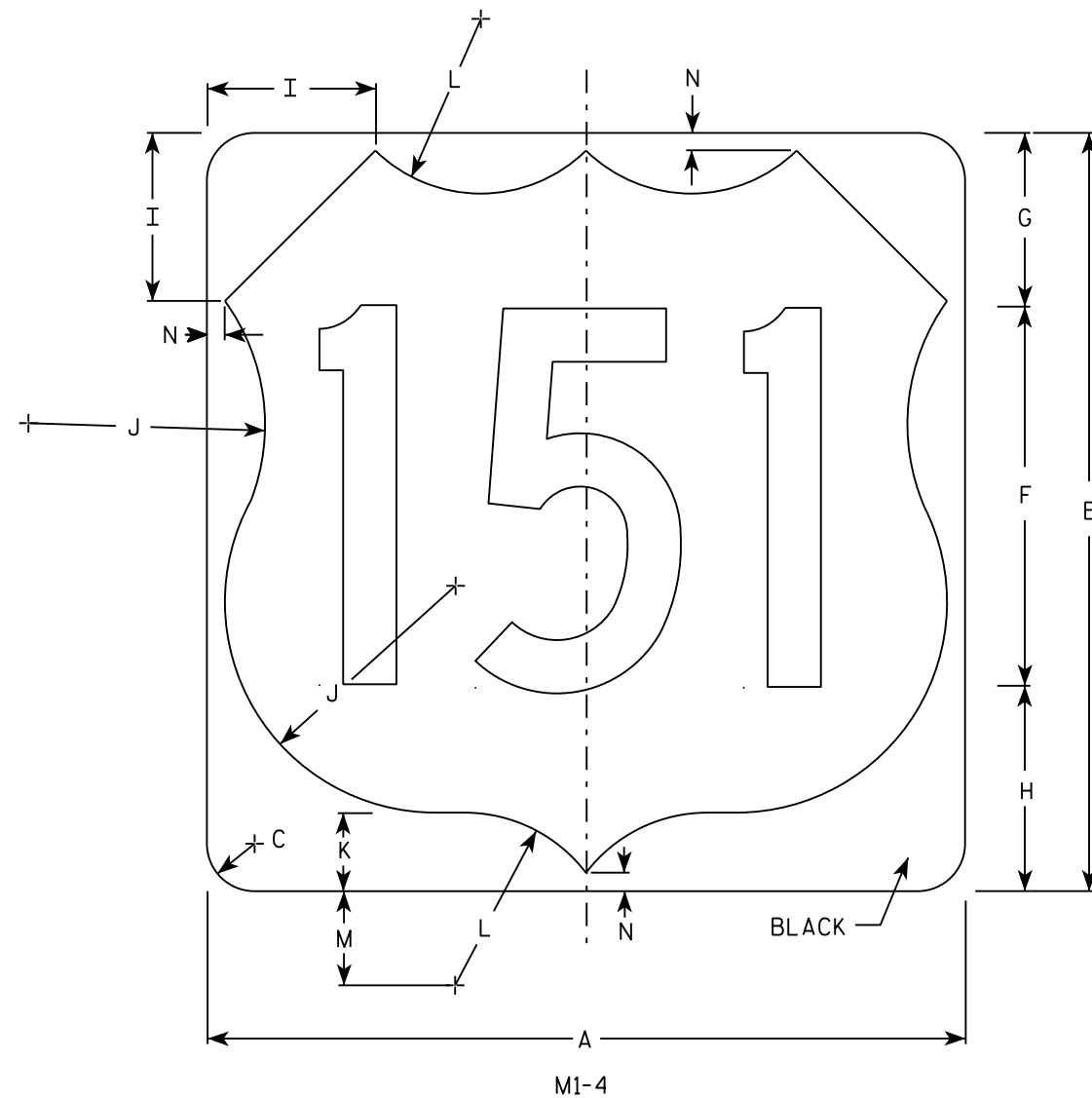
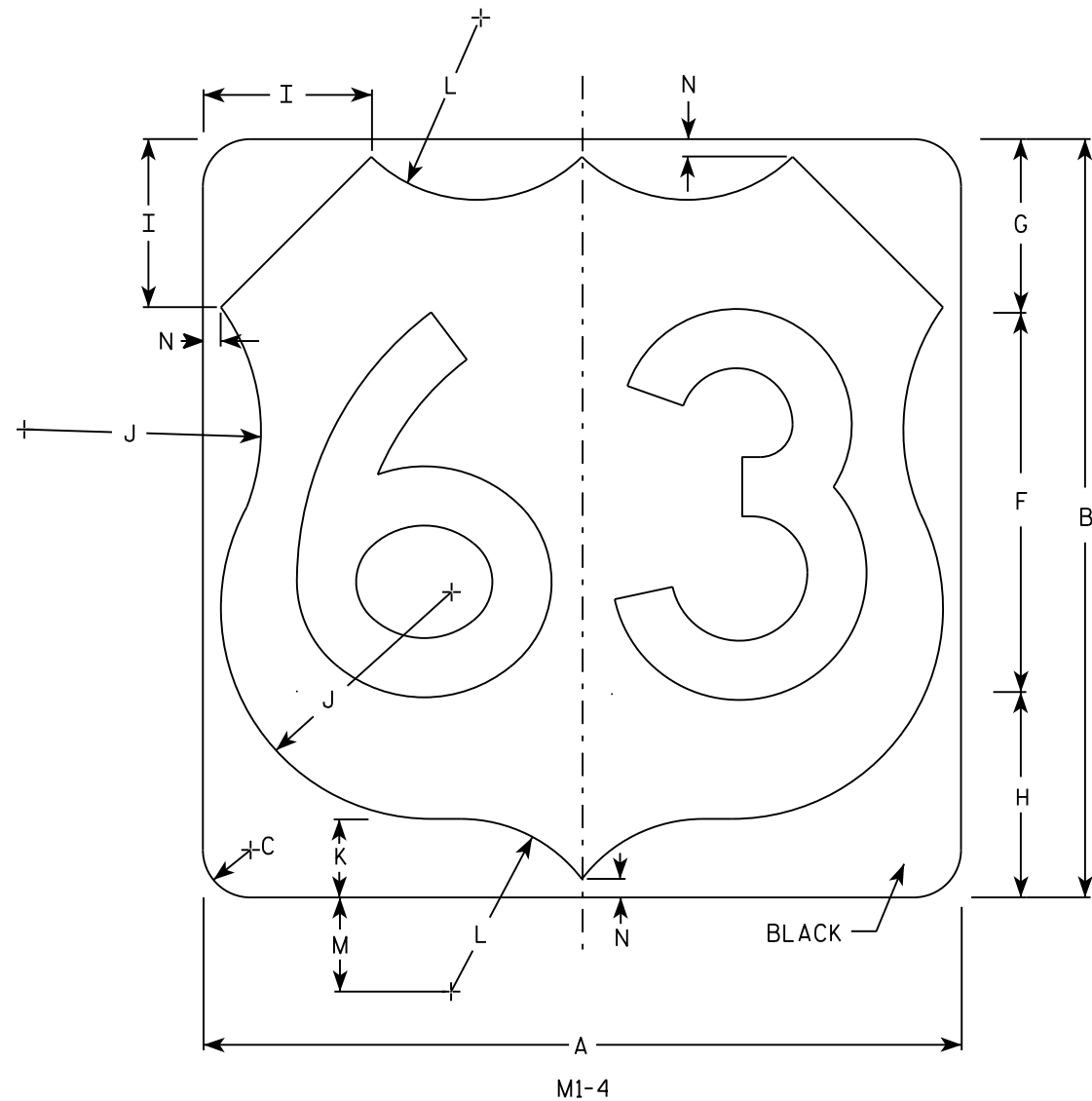


ROLLUP SIGN BRACKET
I55-56B

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 4/26/16 PLA 140 5-56B.2

NOTES

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



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	Areq. sq. ft.
1																											
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 141	E
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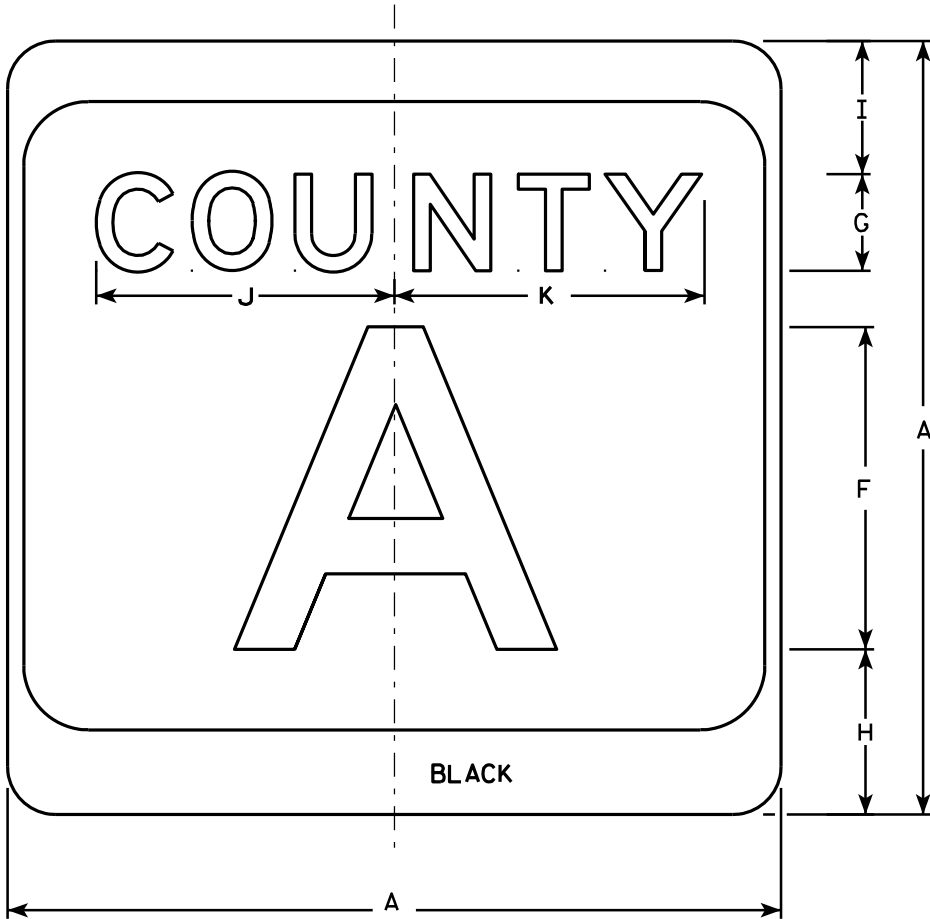
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

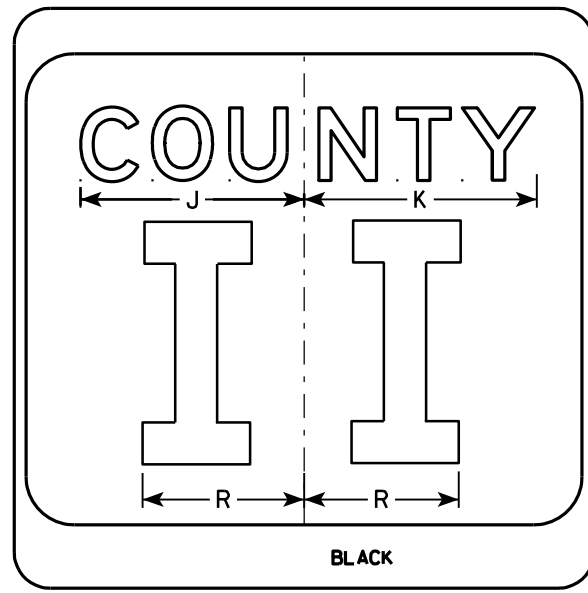
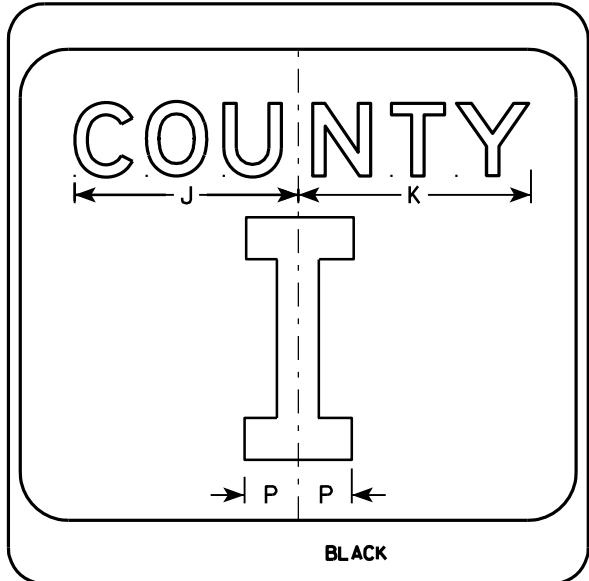
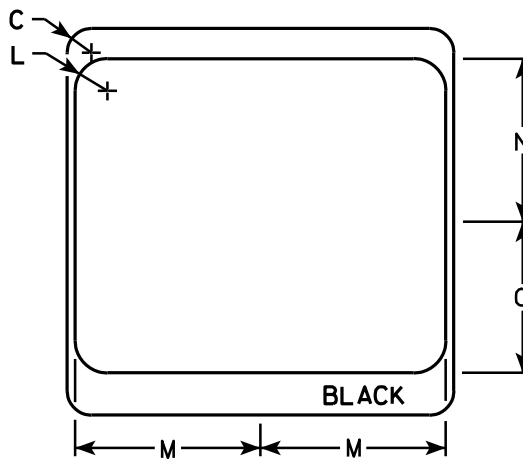
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-4.10

7



M1-5A



NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
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. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 142

E

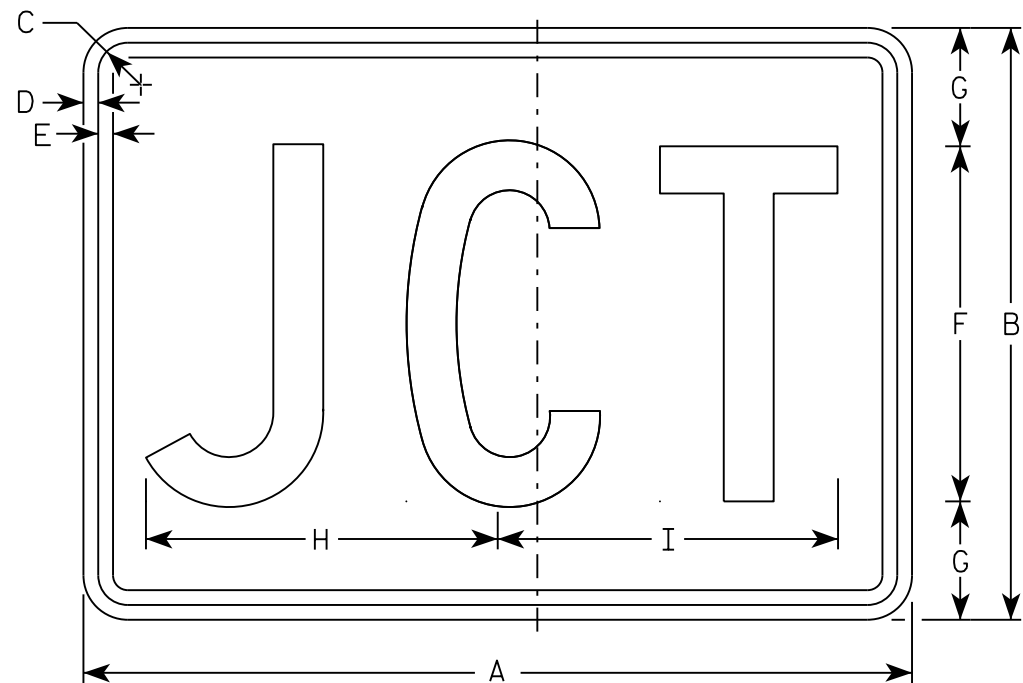
CTH MARKER

M1-5A FOR ASSEMBLIES

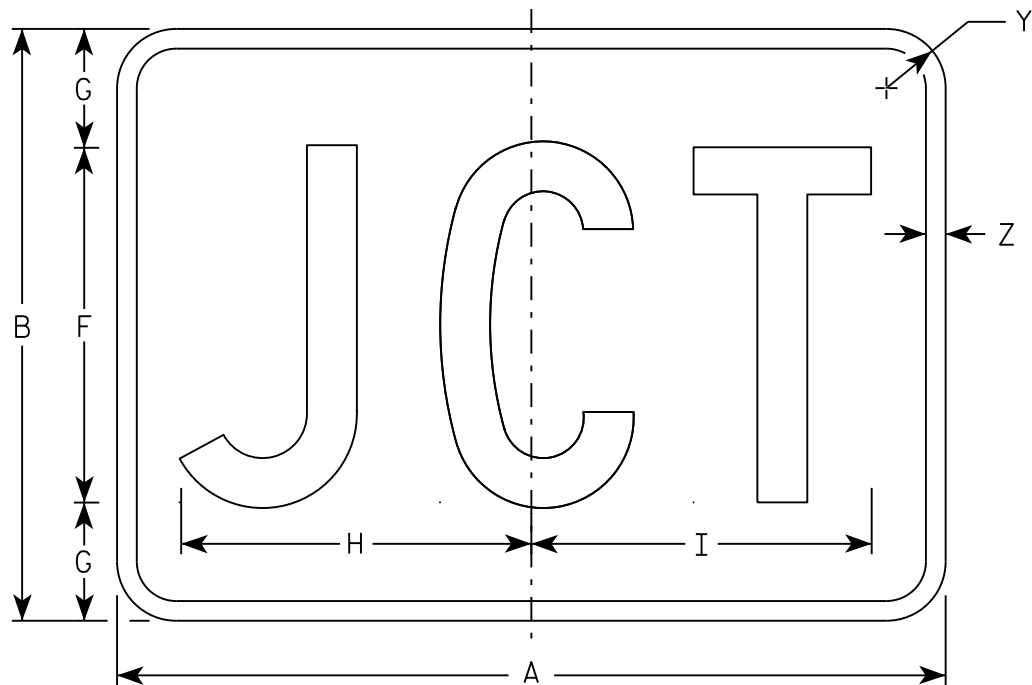
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

NOTES

- 1. Sign is Type II - Type H
- 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. M2-1 Background - White
 Message - Black
 MB2-1 Background - Blue
 Message - White
 MK2-1 Background - Green
 Message - White
 MM2-1 Background - White
 Message - Green
 MN2-1 Background - Brown
 Message - White
 MP2-1 Background - White
 Message - Blue
 MR2-1 Background - Brown
 Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN

M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch

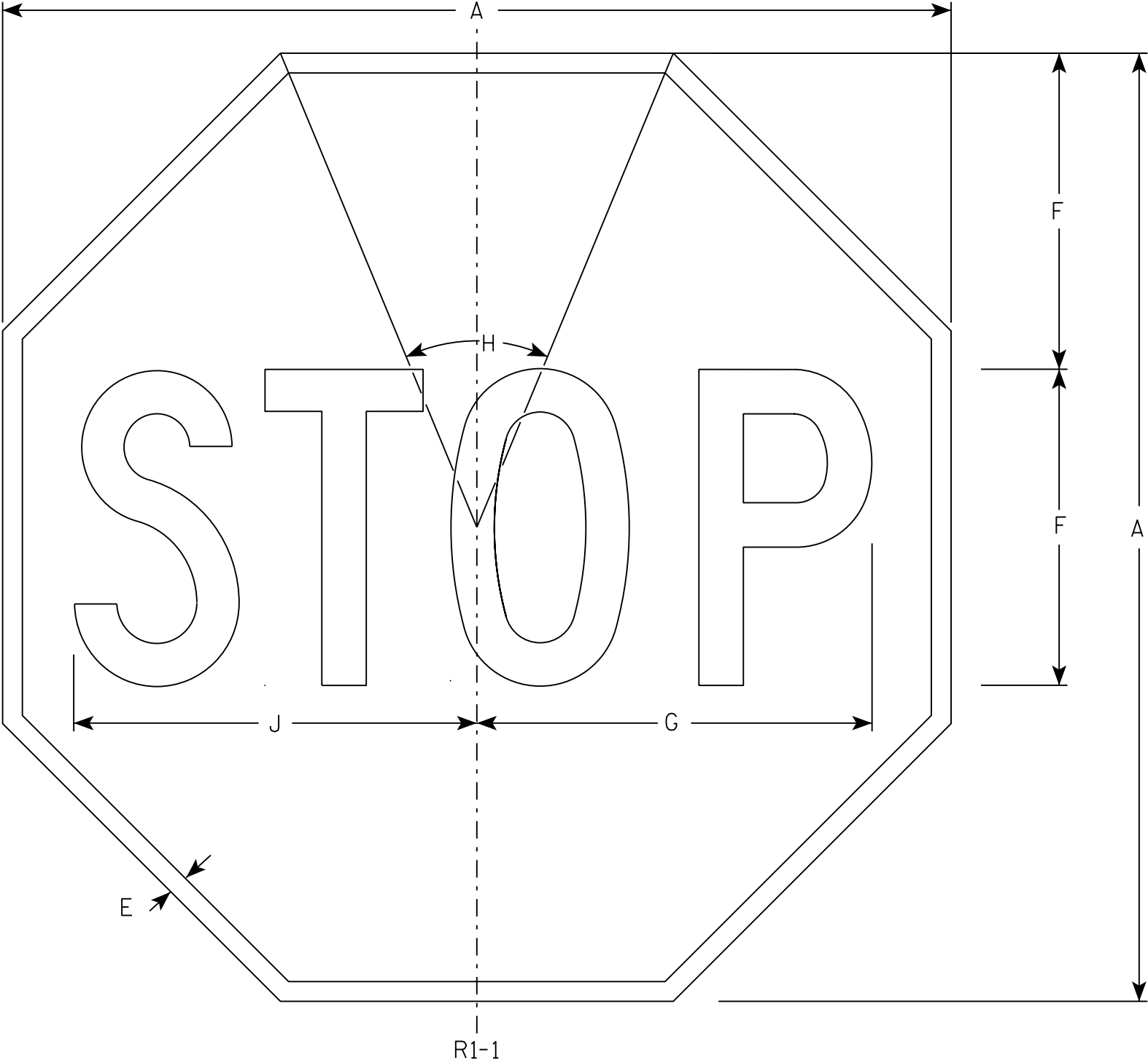
For State Traffic Engineer

DATE 10/15/15

PLATE 143

'2-1.12

7



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Red
Message - White
- 3. Message Series - C

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	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 144

E

STANDARD SIGN

R1 - 1

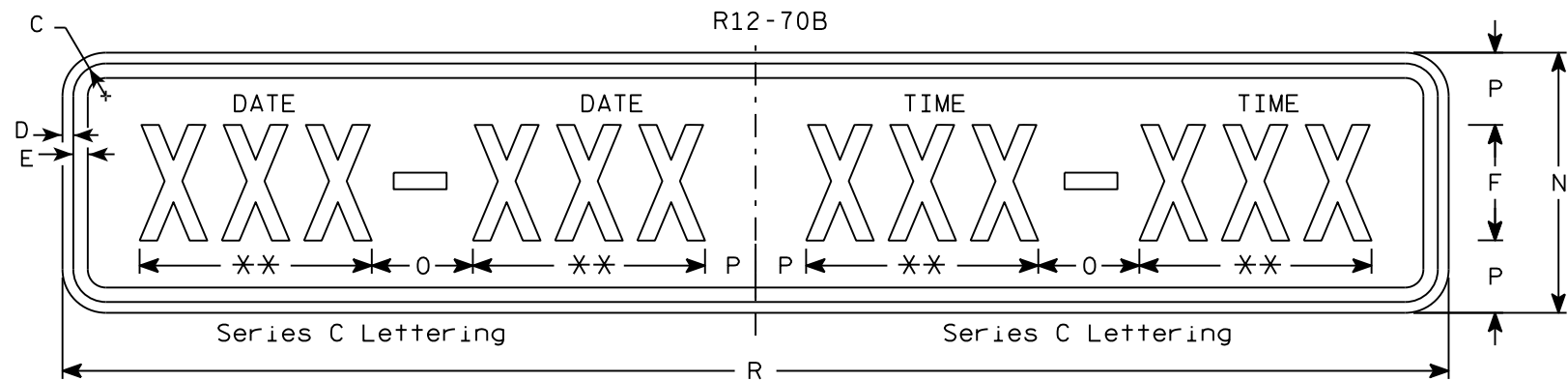
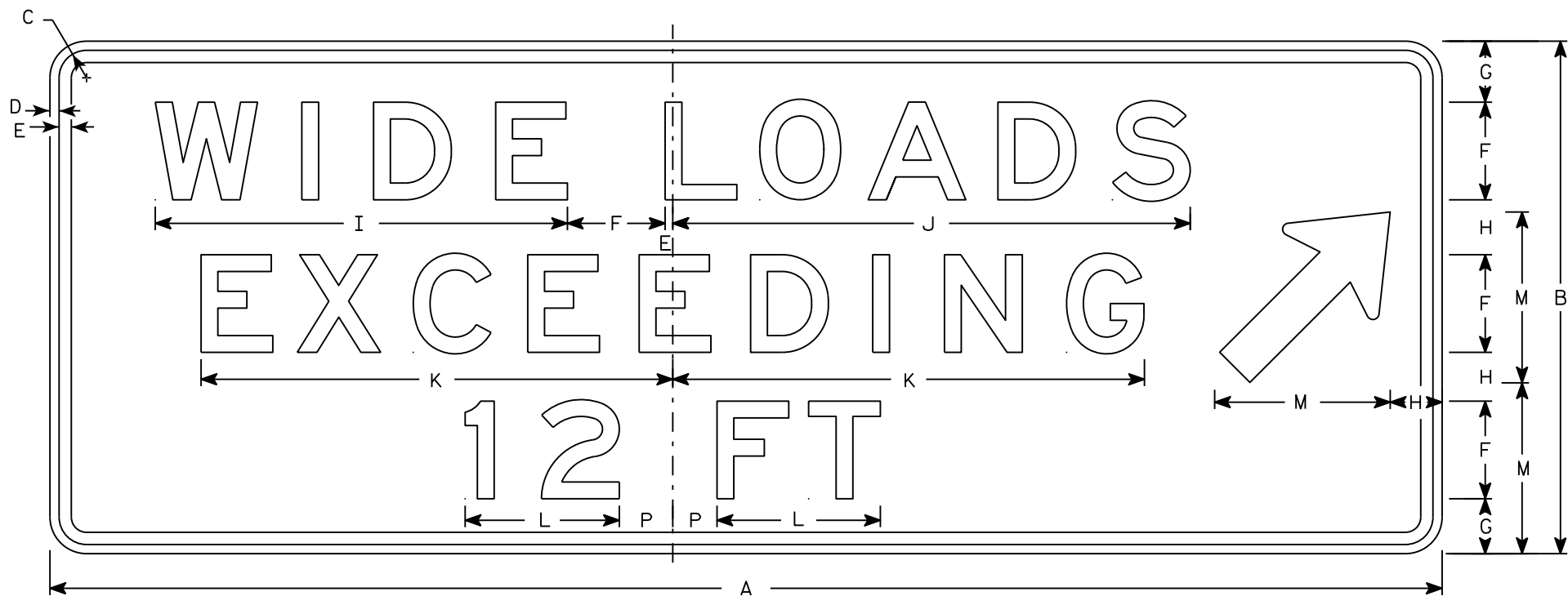
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
 2. Color:
Background - White
Message - Black
 3. Message Series - E except as noted
 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.
- ** Substitute appropriate message, optically center message



R12-70C																												R12-70	R12-70C
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.	Area sq. ft.	
1																													
2S	90	36	2 1/4	1/2	5/8	6	4	5	20 7/8	28 3/8	24 5/8	8 1/8	12	12	6	3		66									22.5	5.5	
2M	90	36	2 1/4	1/2	5/8	6	4	5	20 7/8	28 3/8	24 5/8	8 1/8	12	12	6	3		66									22.5	5.5	
3																													
4	114	42	2 1/4	3/4	1	8	5	4	34	42	39	13	14	18	7	3 1/2		96									36.75	12.0	
5	114	42	2 1/4	3/4	1	8	5	4	34	42	39	13	14	18	7	3 1/2		96									36.75	12.0	

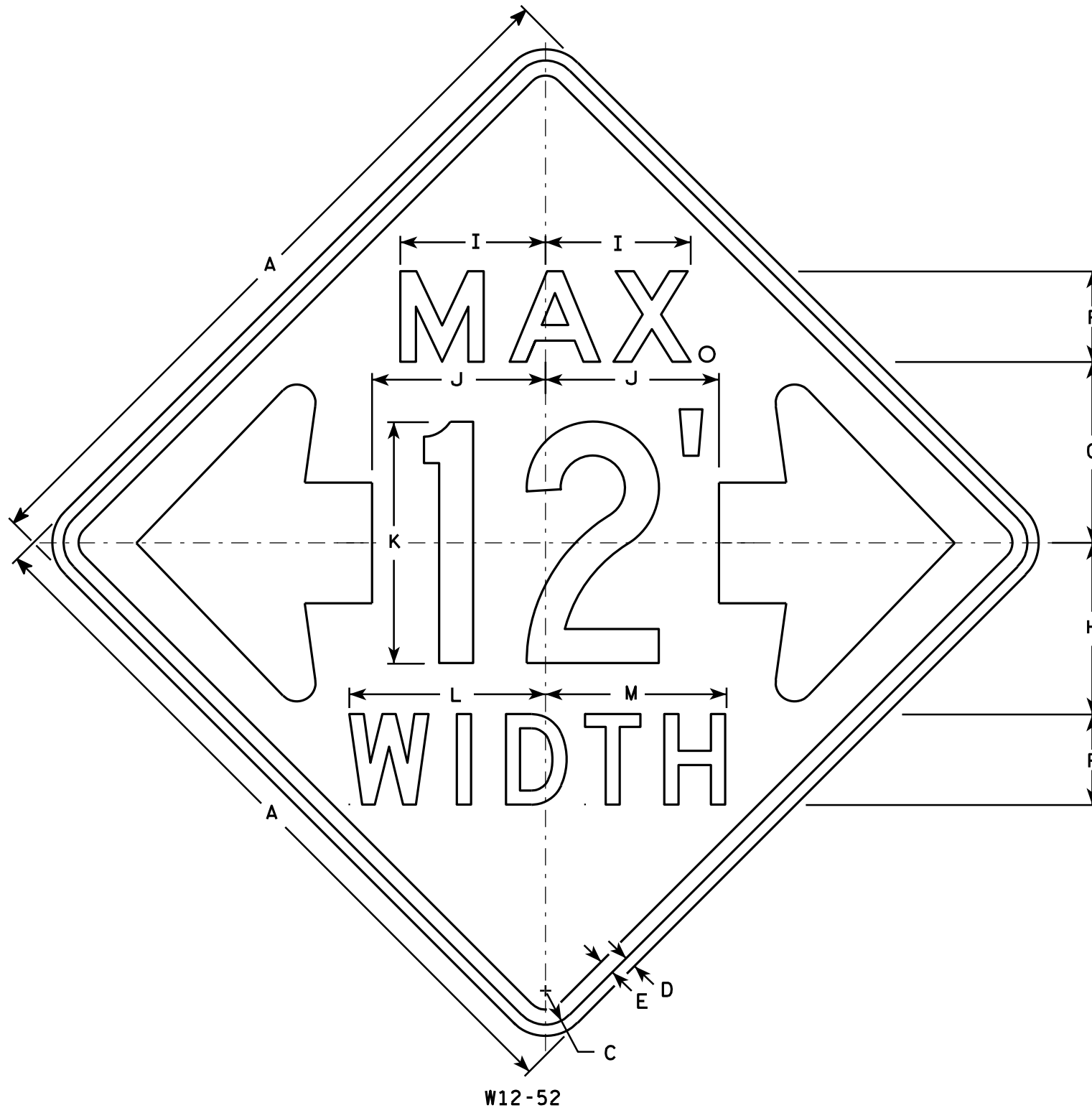
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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TYPICAL SIGN
R12-70B

WISCONSIN DEPT OF TRANSPORTATION

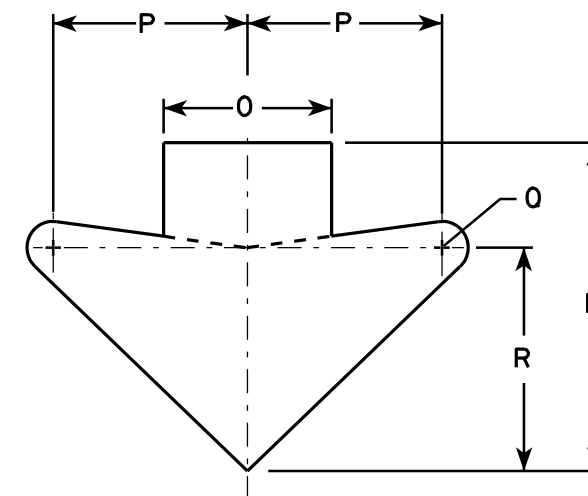
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/10/15 PLATE NO. 145 R12-70B.3



NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 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.
- The top line is series E, the numerals are series C, and the bottom line is series D.
- Substitute appropriate numerals and adjust spacing as required.



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	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN W12-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

PROJECT NO:

HWY:

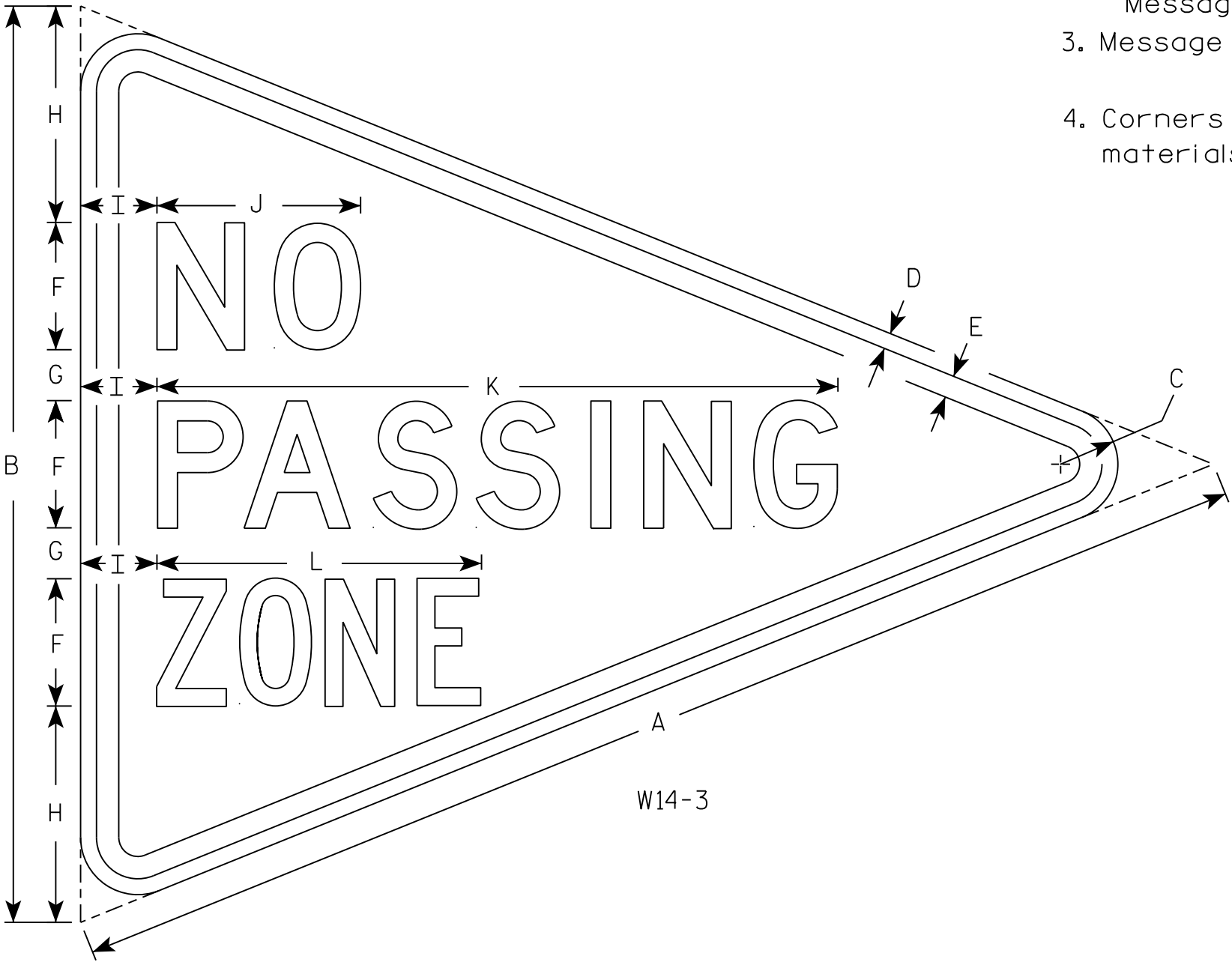
COUNTY:

SHEET NO: 146

E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Yellow
Message - Black
- 3. Message Series - Lines 1 and 2 are Series D.
Line 3 is series C.
- 4. Corners and borders shall be rounded on all base materials for this sign.



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	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															5.56
2M																											
3																											
4																											
5																											

STANDARD SIGN
W14-3

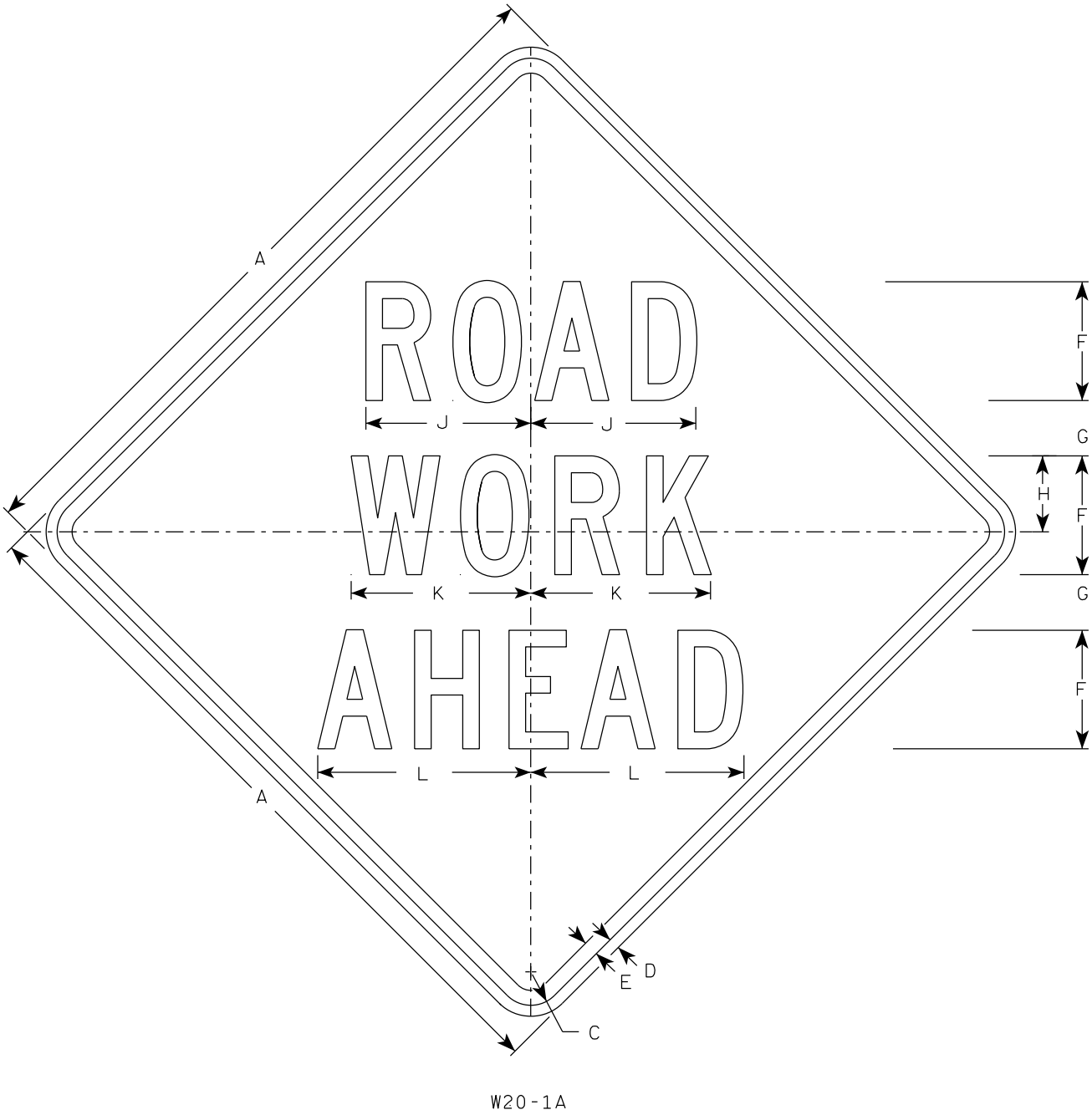
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

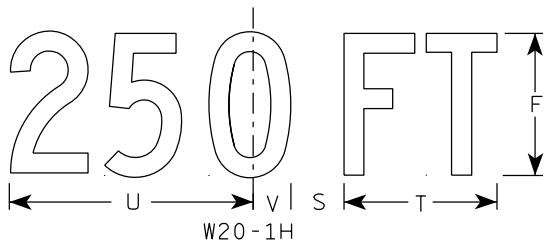
DATE 3/21/17 PLATE NO. W14-3.10

NOTES

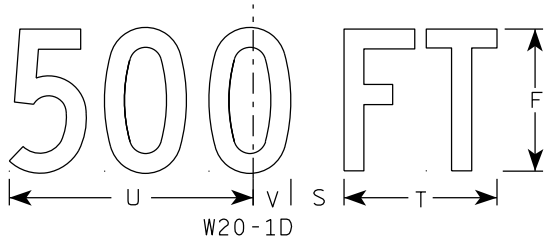
1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



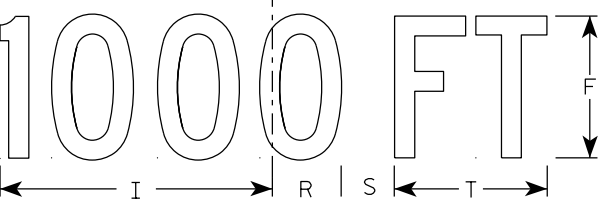
W20-1A



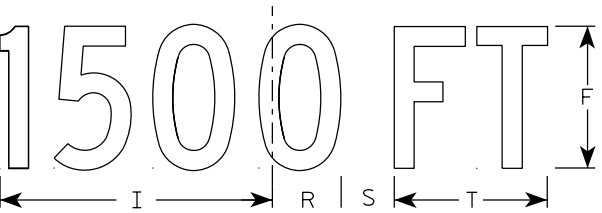
W20-1H



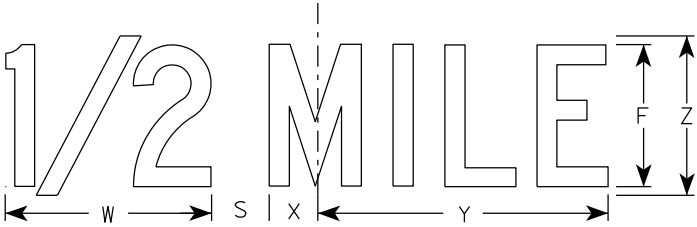
W20-1D



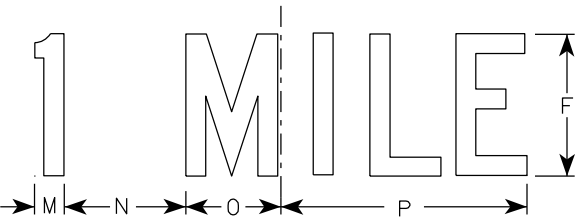
W20-1C



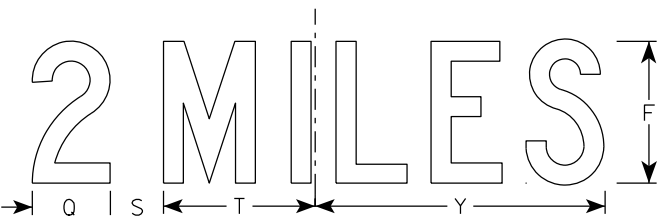
W20-1B



W20-1G



W20-1F



W20-1E

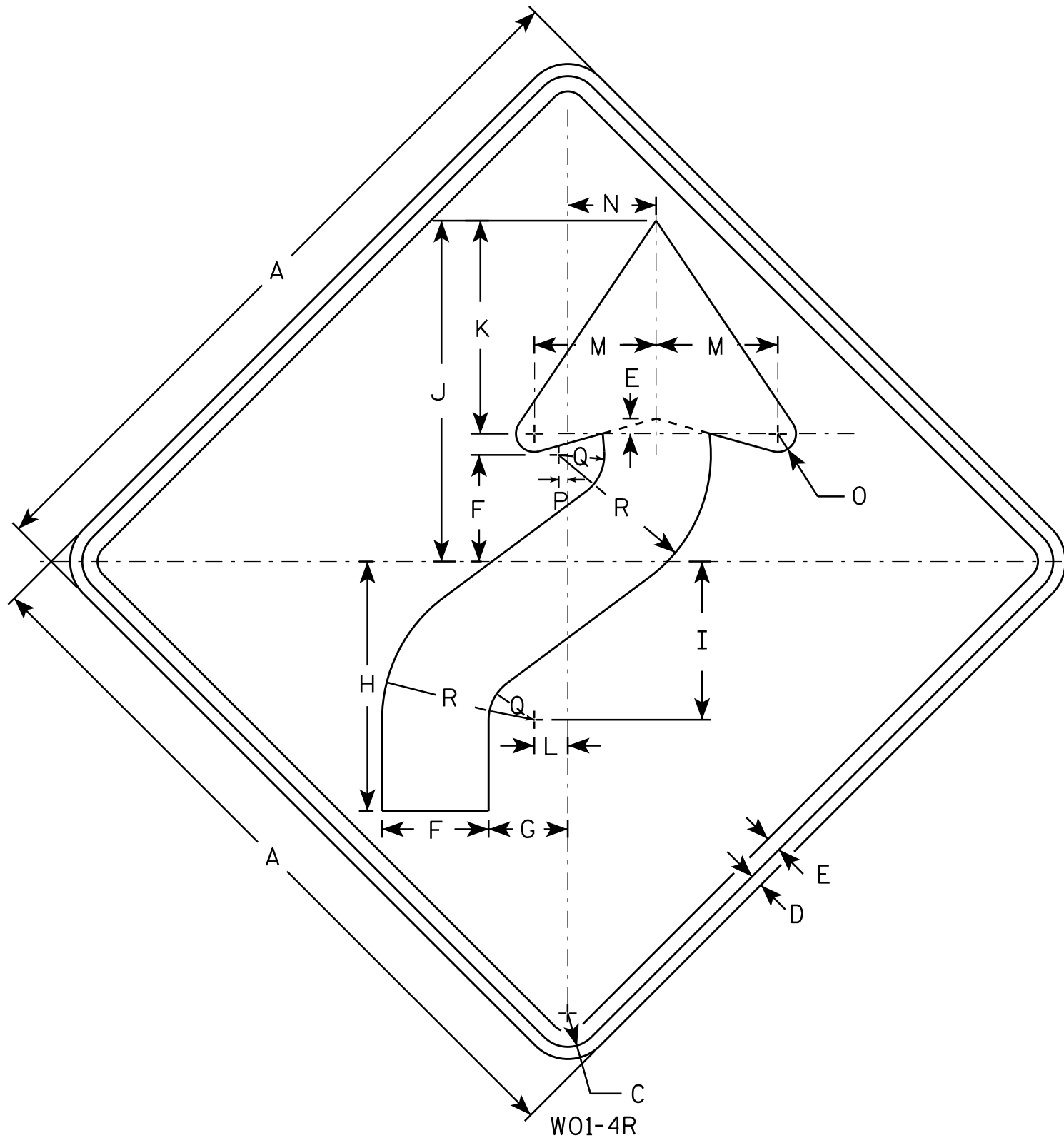
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A _{req} sq. ft.
1	36		1 5/8	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/25/2020 PLATE NO. W20-1.11



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

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		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

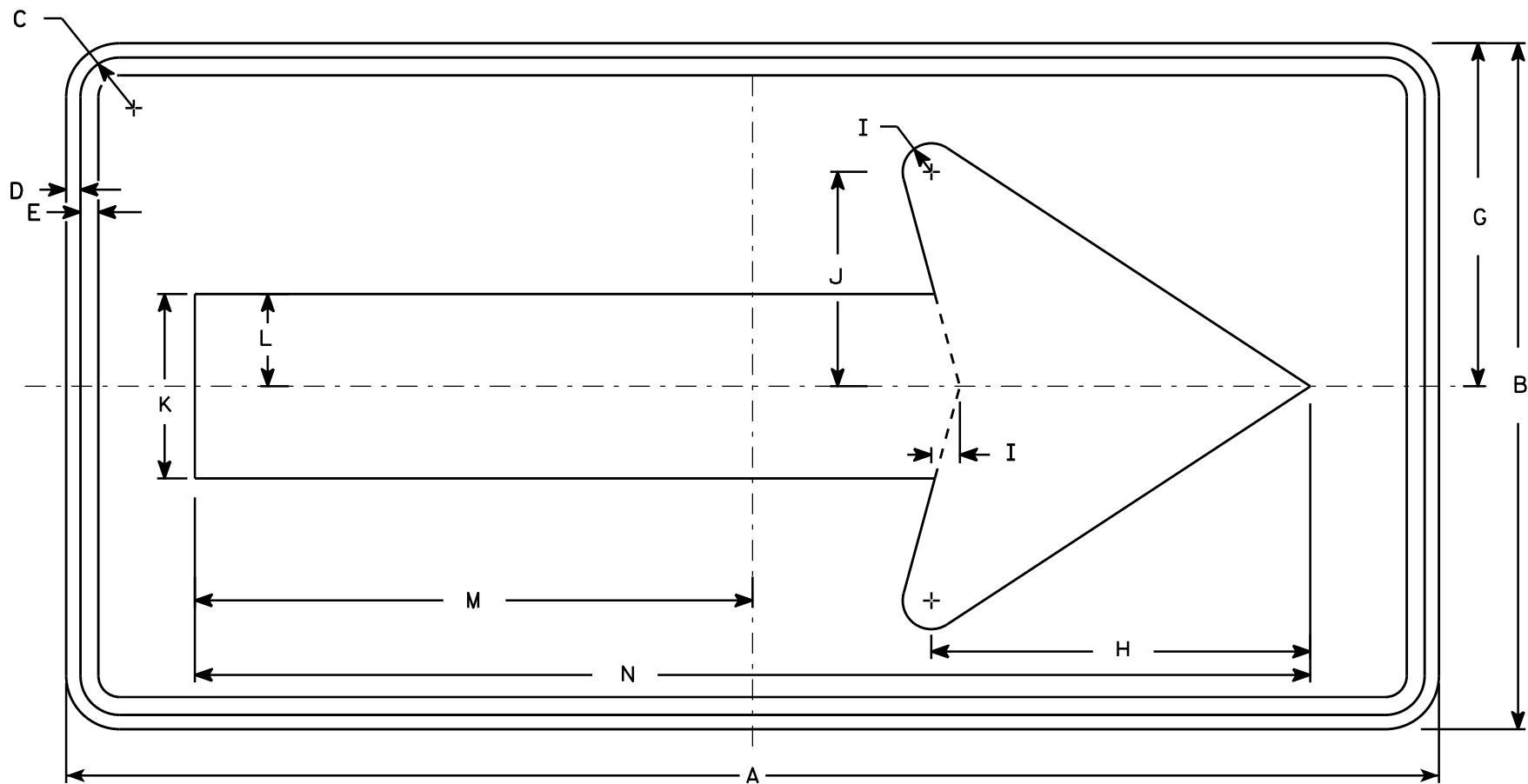
STANDARD SIGN W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4.1
149

PROJECT NO: HWY: COUNTY: SHEET NO: E



W01-6

NOTES

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

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	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

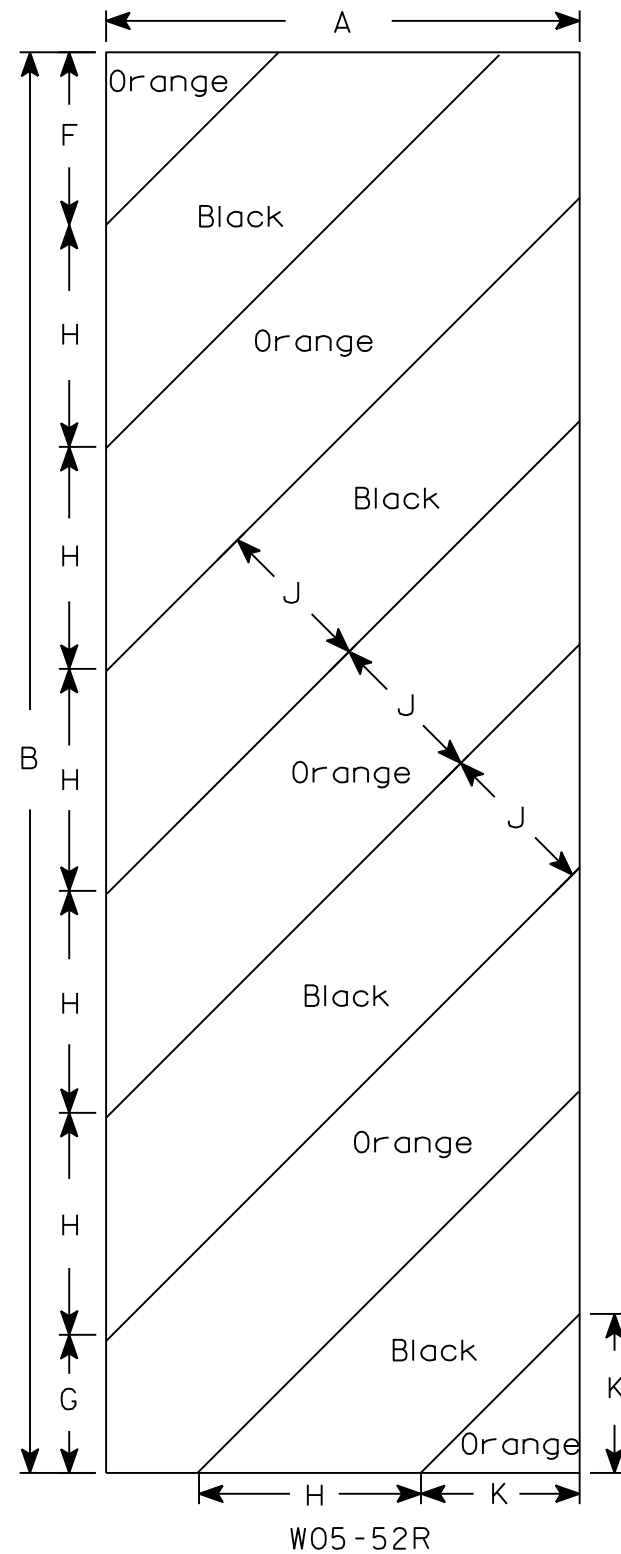
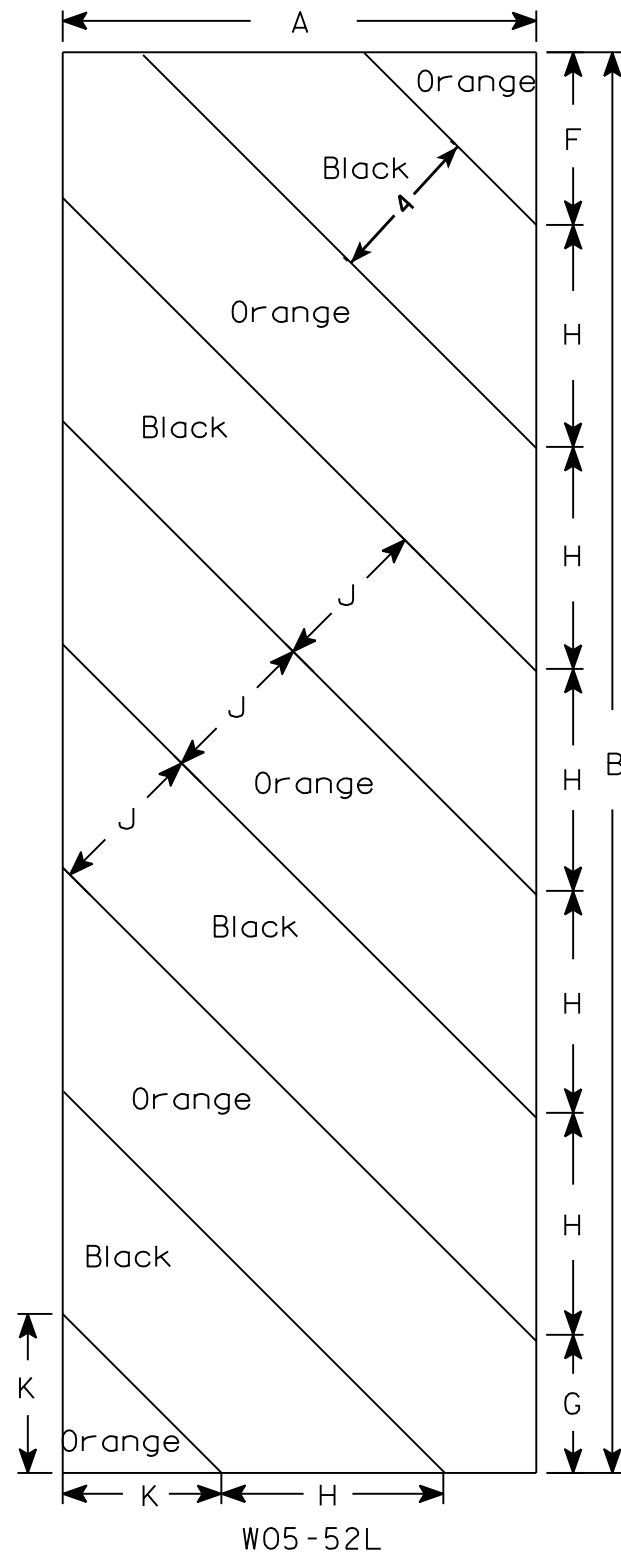
STANDARD SIGN

W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. 150 W01-6.1



NOTES

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

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

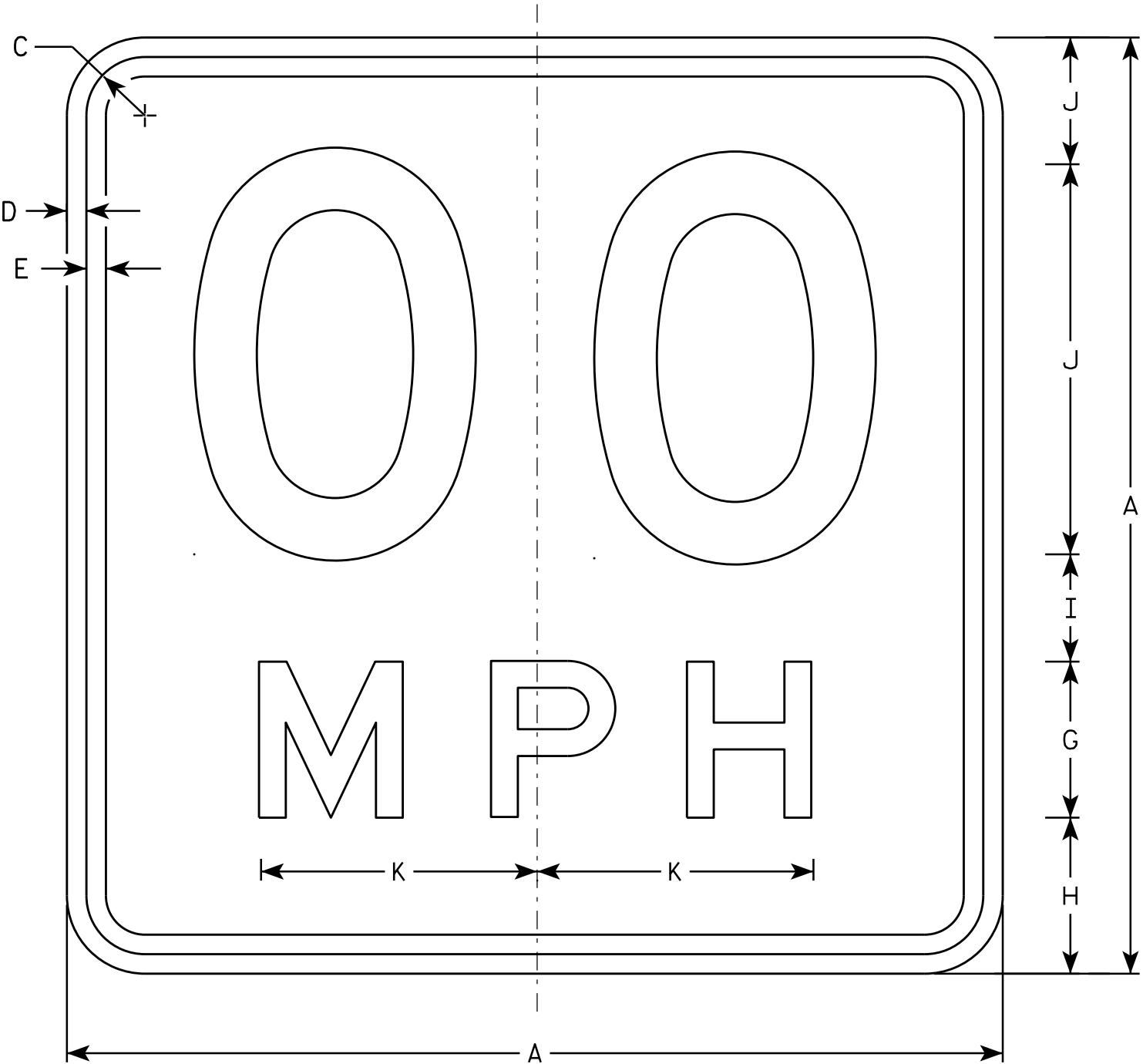
STANDARD SIGN

W05-52L & W05-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/20/13 PLATE 151 W05-52.1



W013-1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See Note 6
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 and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

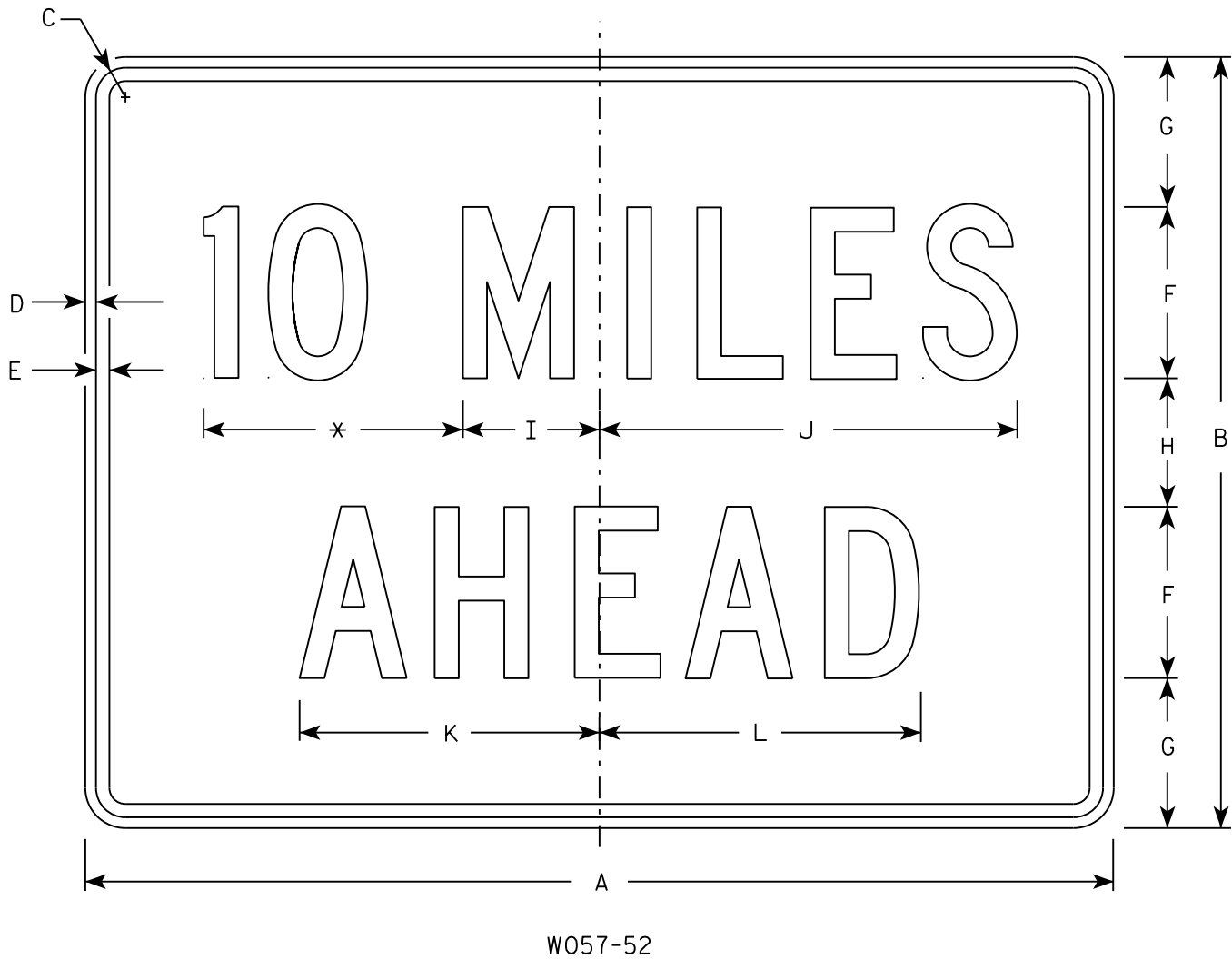
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	7 1/8																4.00
2S	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
2M	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
3	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN
W013-1

WISCONSIN DEPT OF TRANSPORTATION

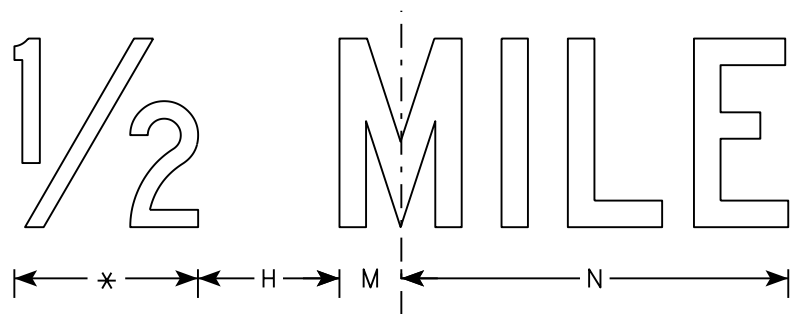
APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 11/21/13 PLATE 152 W013-1.1



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Substitute appropriate numerals to the nearest quarter mile and optically adjust spacing to achieve proper balance.



* 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	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

PROJECT NO:

HWY:

COUNTY:

DATE 3/21/17

PLATE NO. W057-52.2

SHEET NO: 153

E

STANDARD SIGN
W057-52

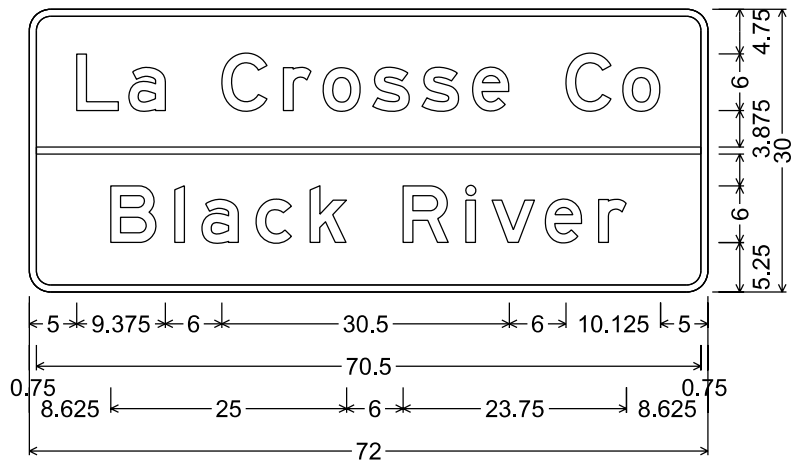
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

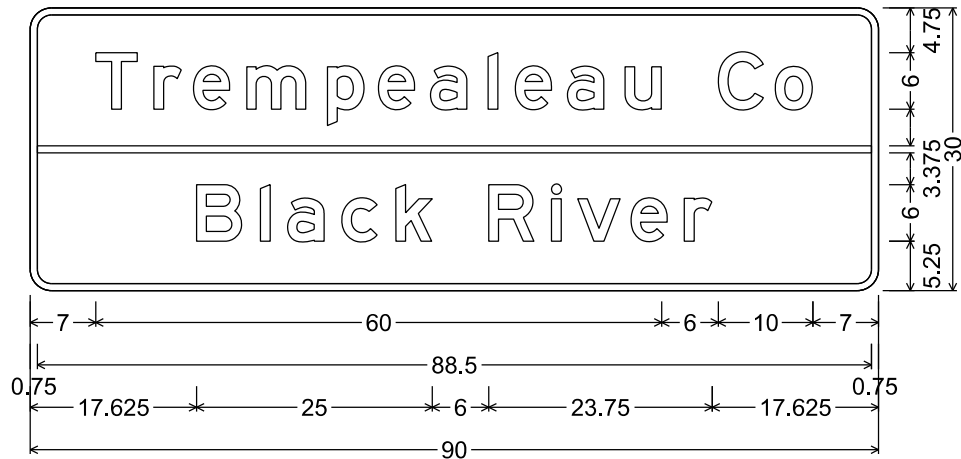
DATE 3/21/17

PLATE NO. W057-52.2

7



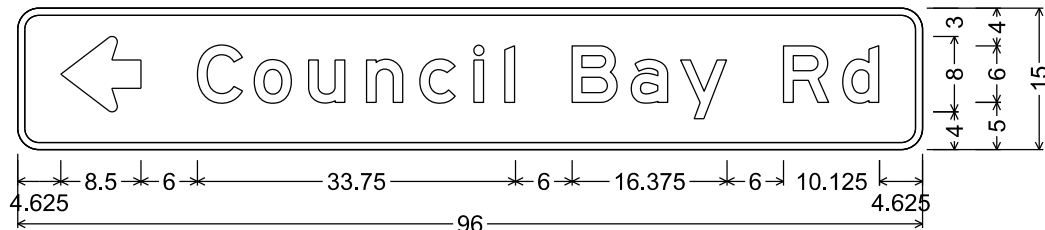
D1-2; 2.250" Radius, 0.750" Border



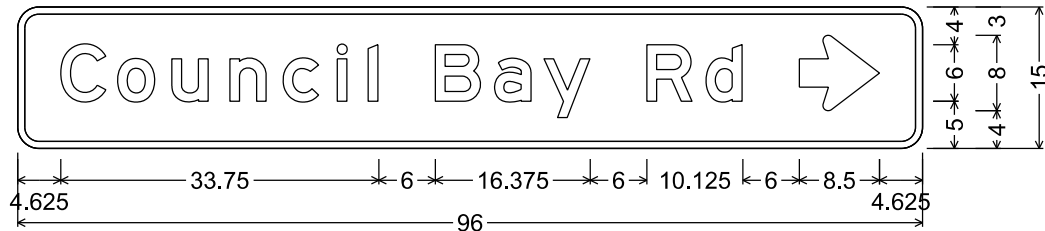
D1-2; 2.250" Radius, 0.750" Border

NOTES

1. All Signs Type II - Type H Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E

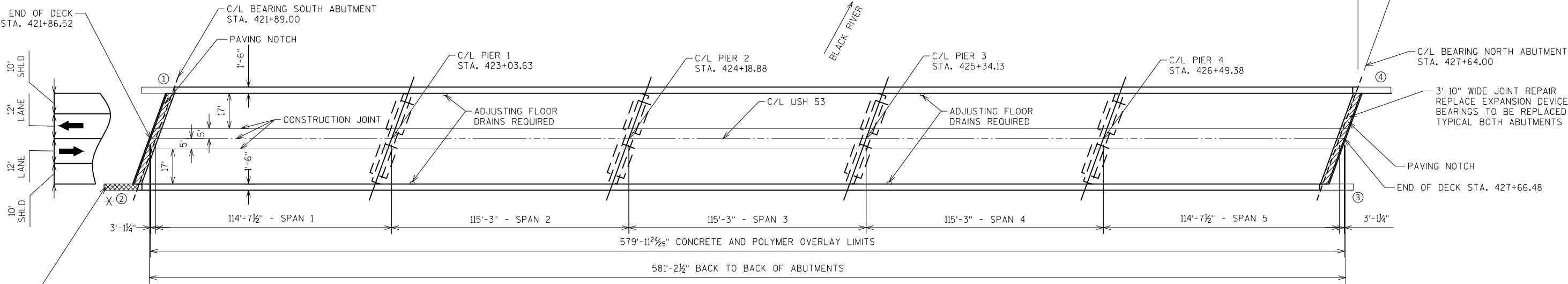


D1-1; 2.250" Radius, 0.750" Border



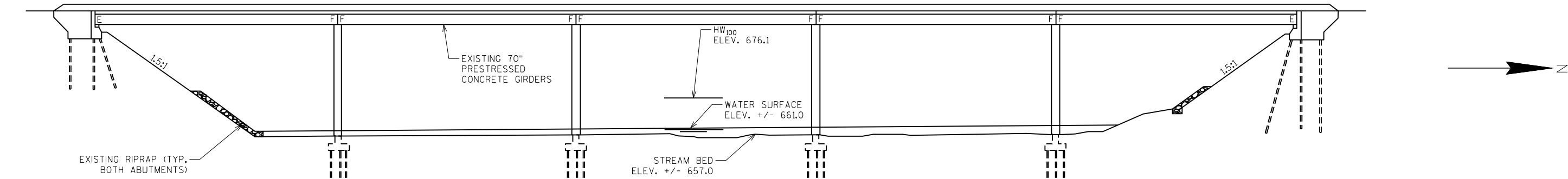
D1-1; 2.250" Radius, 0.750" Border

7



PLAN

(REHAB - CONCRETE OVERLAY AND JOINT REPAIR ON EXISTING 5-SPAN 70" PRESTRESSED CONCRETE GIRDER BRIDGE)



ELEVATION

(NORMAL TO BLACK RIVER)

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION DETAILS & NOTES
3. BRIDGE DECK CONDITION SURVEY
4. TC STAGING TYPICAL SECTIONS
5. GALVANIZED ANODE & DRAIN DETAILS
6. JOINT REPAIR DETAIL
7. EXPANSION DEVICE
8. COVER PLATE DETAILS
9. JOINT PARAPET DETAILS
10. SLOPE FACED PARAPET 'B'
11. SOUTH ABUTMENT WING DETAILS
12. STEEL BEARINGS FOR PRESTRESSED CONCRETE GIRDERS

BRIDGE OFFICE CONTACT
WILLIAM DREHER P.E.
(608)-266-8489

CONSULTANT CONTACT
NICK ELLENBERGER, P.E.
(608)-789-2034



DESIGN DATA

LIVE LOAD:
INVENTORY RATING: HS - 23
OPERATING RATING: HS - 39
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 190 (KIPS)

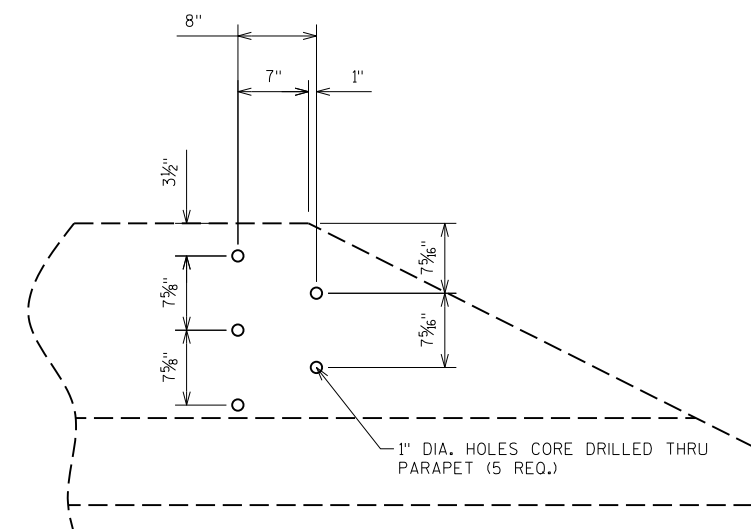
MATERIAL PROPERTIES

CONCRETE MASONRY OVERLAY DECKS f'c = 4,000 P.S.I.
CONCRETE MASONRY SLAB, PARAPETS f'c = 4,000 P.S.I.
ALL OTHER CONCRETE MASONRY f'c = 3,500 P.S.I.
HIGH STRENGTH BAR STEEL GRADE 60 fy = 60,000 P.S.I.

TRAFFIC DATA

USH 53
AADT (2020) ----- 10,000
AADT (2040) ----- 12,400
DESIGN SPEED ----- 60 MPH

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY LA CROSSE OFFICE 201 MAIN STREET SUITE 1020 LA CROSSE, WI 54601			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>William C. Dreher</i> ^{SCR} CHIEF STRUCTURES DESIGN ENGINEER		02/10/20 DATE
STRUCTURE B-32-79			
USH 53 OVER BLACK RIVER			
COUNTY	LA CROSSE TREMPEALEAU	TOWN	HOLLAND GALE
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	DCM	DESIGN CK'D.	NJE
		DRAWN BY	NLH
			PLANS CK'D.
			NJE
GENERAL PLAN			SHEET 1 OF 12
			155



CORE DRILLED BOLT HOLES THROUGH THE PARAPET, AS NECESSARY. BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

CROSS SECTION THRU ROADWAY
LOOKING NORTH

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-32-79" SHALL BE THE EXISTING GROUND LINE.

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

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

PROTECTIVE SURFACE TREATMENT RESEAL TO BE APPLIED TO THE FRONT FACE AND TOP SURFACE OF THE PARAPET.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1-INCH DEEP SAW CUT.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR (1982).

COMPLETE REQUIRED WORK FOR BRIDGE SEAT PROTECTION AS STATED WITHIN SECTION 502.3.12, TO BE INCIDENTAL TO 506.6000 "BEARING ASSEMBLIES EXPANSION B-32-79".

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE DECK UNDER THE BID ITEM "CLEANING DECKS".

THE AVERAGE OVERLAY THICKNESS IS BASED ON THE MINIMUM OVERLAY THICKNESS PLUS 1/8-INCH TO ACCOUNT FOR VARIATIONS IN THE DECK SURFACE.

PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL-DEPTH DECK REPAIR AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. DECK PREPARATION, FULL-DEPTH DECK REPAIRS AND JOINT REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

REMOVAL OF EXISTING FRICTION COURSE/CHIP SEAL IS INCLUDED IN THE ITEM CLEANING DECKS. DEPTH OF CONCRETE REMOVED DOES NOT INCLUDE THE FRICTION COURSE/CHIP SEAL.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY OR JOINT REPAIRS AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

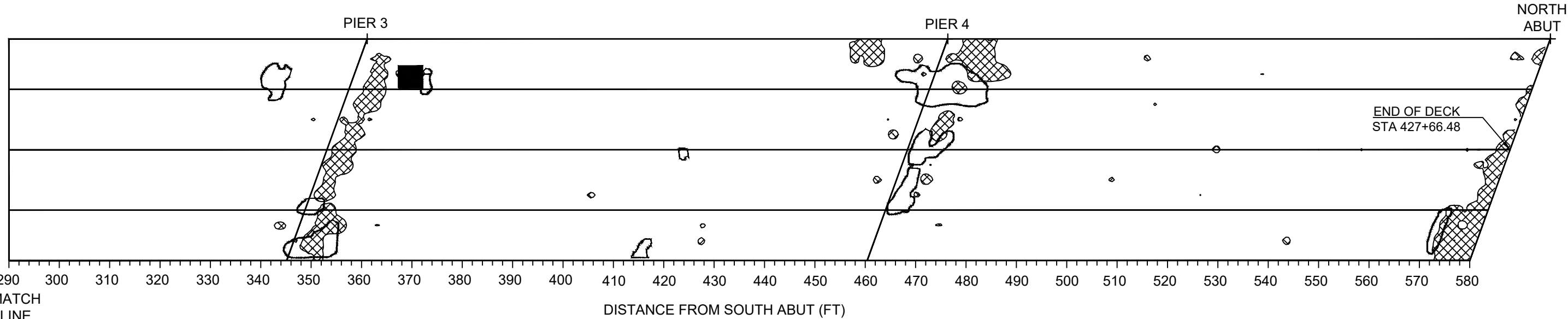
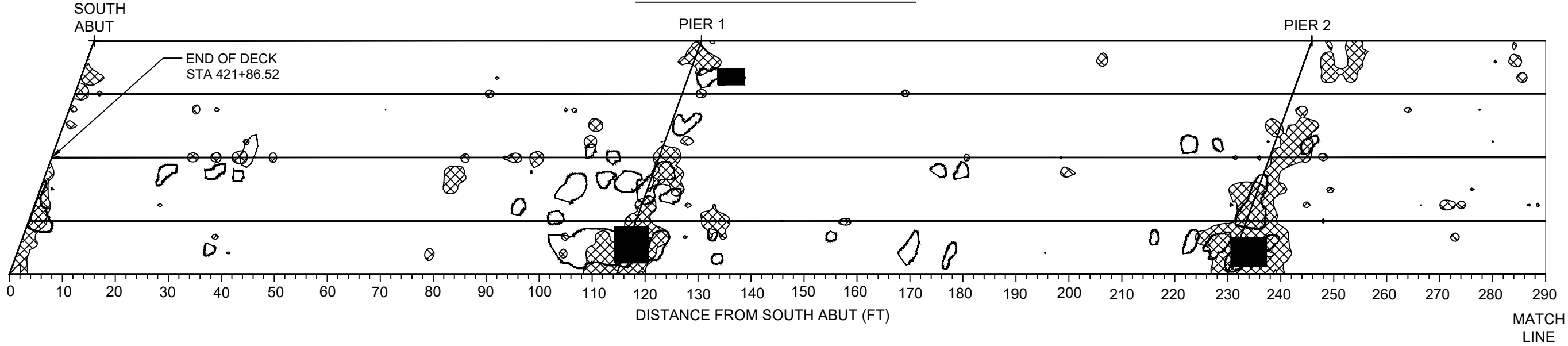
EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR BY THE LINEAR FOOT BID PRICE AS "EXPANSION DEVICE B-32-79".

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1½" PLACED ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION, EXPECTED AVERAGE OVERLAY THICKNESS IS 2". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN ½", CONTACT THE STRUCTURES DESIGN SECTION.

DECK SURFACE PREPARATION IS INCLUDED IN THE BID ITEM "POLYMER OVERLAY".

EXISTING FLOOR DRAINS TO REMAIN IN PLACE AND BE ADJUSTED.

DECK PREPARATION ITEM LOCATIONS



- PREPARATION DECKS
TYPE 1
- PREPARATION DECKS
TYPE 2
- POTENTIAL FULL DEPTH
REPAIR

NOTES

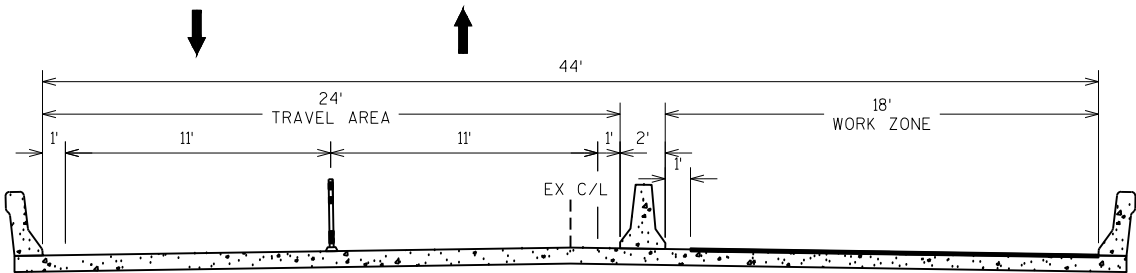
DRAWINGS SHALL NOT BE SCALED

LOCATIONS AND QUANTITIES WERE DETERMINED BY INFRARED AND GPR SURVEY ON SEPTEMBER 27, 2018.
ACTUAL PREPARATION DECKS AND FULL DEPTH REPAIR SHALL BE DETERMINED BY FIELD ENGINEER.

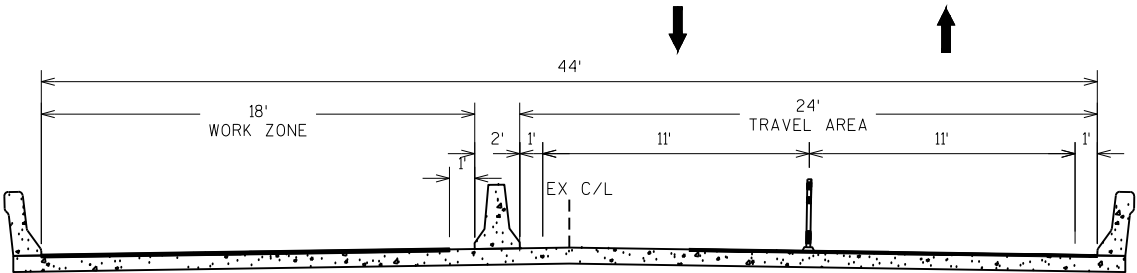
TOTAL ESTIMATED QUANTITIES

PREPARATION DECKS TYPE 1 = 167 SY
PREPARATION DECKS TYPE 2 = 118 SY
FULL DEPTH DECK REPAIR = 13 SY

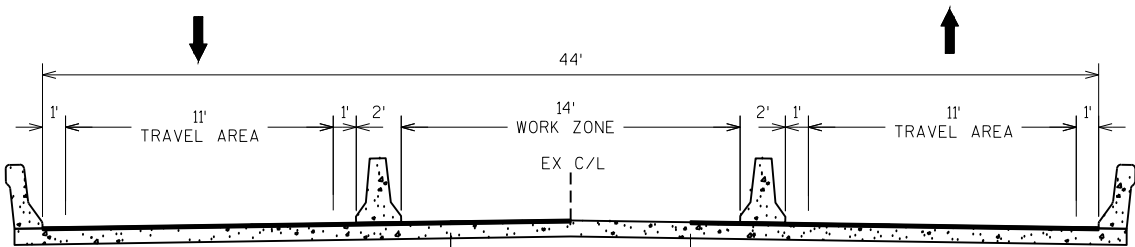
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-32-79			
DRAWN BY		NLH	PLANS CK'D. NJE
BRIDGE DECK CONDITION SURVEY		SHEET 3 OF 12	
		157	



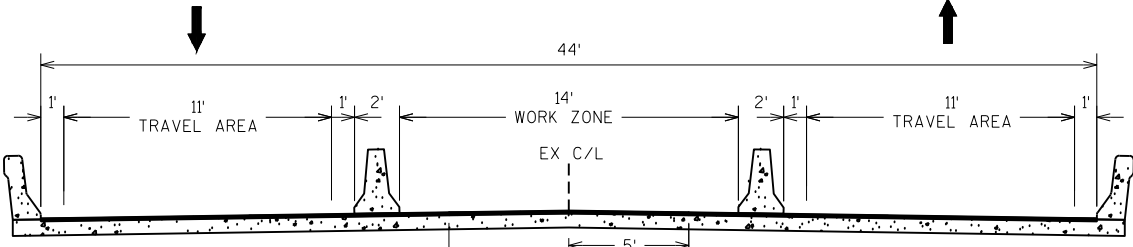
STAGE 1



STAGE 2



STAGE 3 (PHASE A)



STAGE 3 (PHASE B)

8

NOTES

DRAWINGS NOT TO SCALE

STAGE 1

A 3:1 "CONCRETE MASONRY OVERLAY DECKS" WEDGE WILL BE REQUIRED TO BE PLACED ON THE WEST SIDE OF THE WORK ZONE LIMITS TO BE UTILIZED AS A SAFETY EDGE FOR UPCOMING TRAFFIC CONTROL STAGES

STAGE 3B

THE SAFETY WEDGE THAT WAS PLACED WITHIN STAGE 1 WILL BE REQUIRED TO BE MILLED OFF WITH THE ASSOCIATED "CLEANING DECKS" WORK WITHIN STAGE 3B.

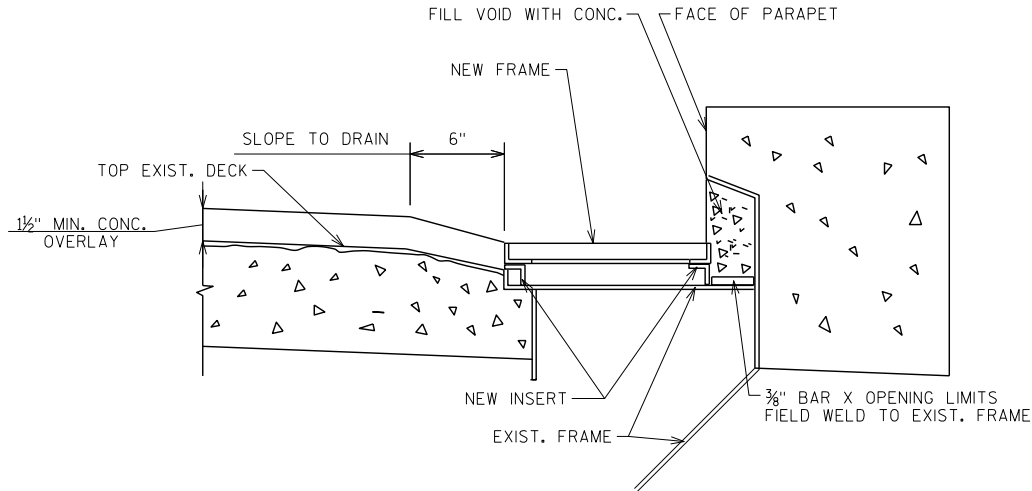
STAGE 4 - NOT SHOWN

THE FOURTH STAGE WILL BE TO COMPLETE THE REQUIRED POLYMER OVERLAY, UTILIZING FLAGGING OPERATIONS, ONCE THE REQUIRED CONCRETE OVERLAY CURING PERIOD IS COMPLETED AS STATED WITHIN ARTICLE "POLYMER OVERLAY" OF THE SPECIAL PROVISIONS. THE WIDTH AND LENGTH OF THE APPLICATION OF THE POLYMER OVERLAY IS TO BE RESTRICTED TO A DISTANCE IN WHICH BOTH LAYERS OF THE POLYMER OVERLAY CAN BE COMPLETED SO THAT TWO WAY TRAFFIC WILL BE RE-ESTABLISHED AT THE END OF THE DAY. PERMANENT PAVEMENT MARKING WILL THEN ALSO BE COMPLETED ON THE BRIDGE ONCE THE POLYMER OVERLAY IS COMPLETED.

8

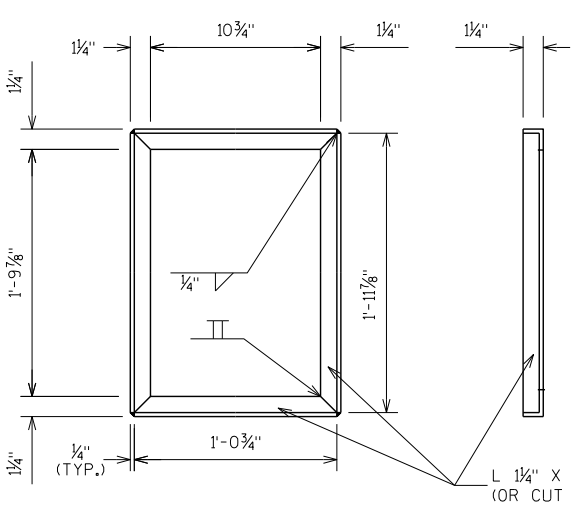
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-32-79			
		DRAWN BY NLH	PLANS CK'D. KPM
TC STAGING TYPICAL SECTIONS			SHEET 4 OF 12
			158

ALL MATERIAL SHALL BE A36 STEEL AND ALL STEEL SHALL BE GALVANIZED.
WELDS SHALL BE MADE WITH LOW HYDROGEN ELECTRODES. PRIOR TO GALVANIZING A
#6 BLAST CLEANING IS REQUIRED.

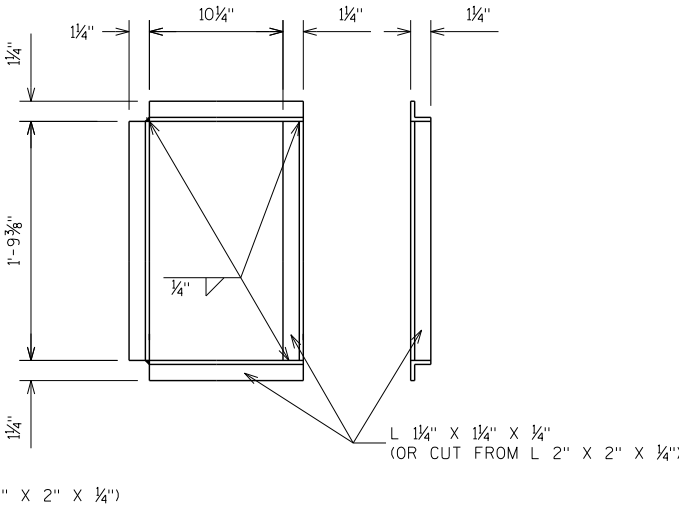


DRAIN RAISING DETAILS

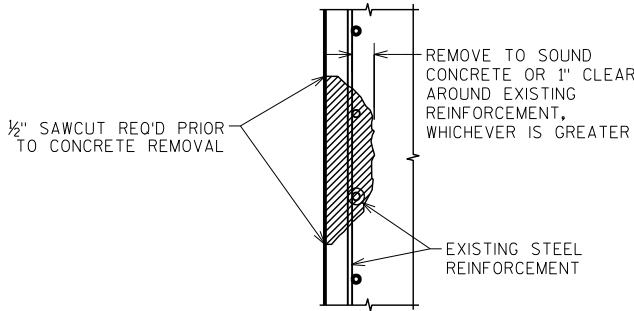
FRAMES AND INSERTS TO BE INCLUDED IN PRICE BID FOR "ADJUSTING FLOOR DRAINS".
FIELD WELD NEW INSERT TO EXISTING FRAME AND NEW FRAME TO NEW INSERT.
SALVAGE AND REUSE OLD GRATE. TACK WELD TO NEW FRAME



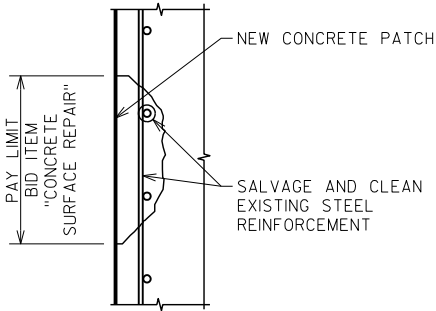
FRAME DETAILS



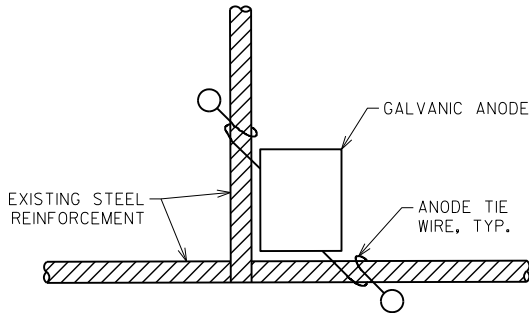
INSERT DETAILS



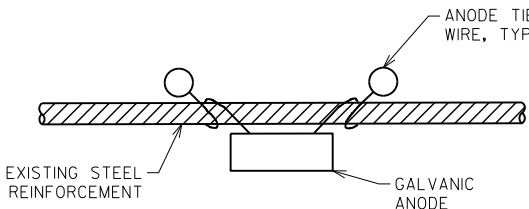
TYPICAL CONCRETE SURFACE
REMOVAL DETAIL



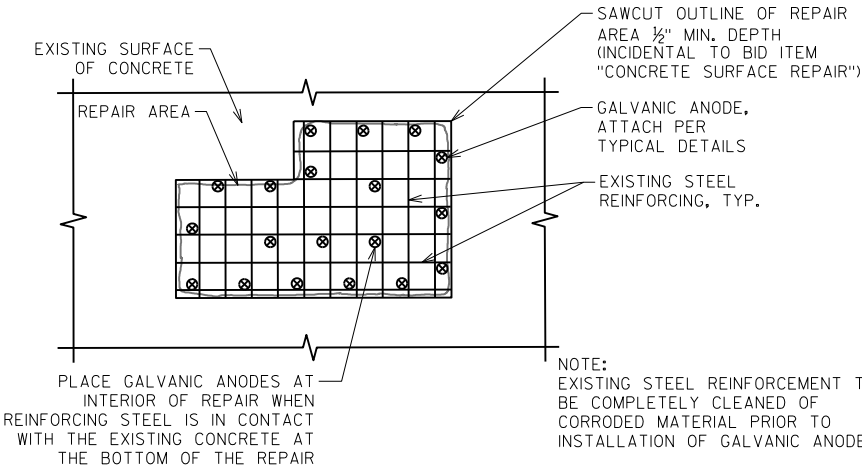
TYPICAL CONCRETE SURFACE
REPAIR DETAIL



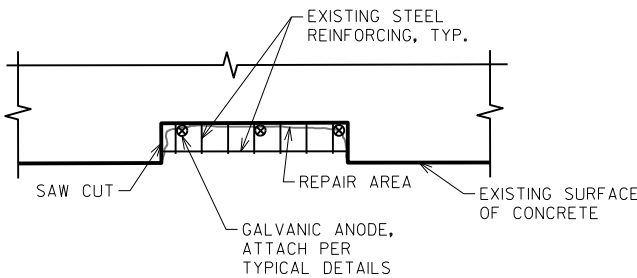
TYPICAL ANODE INSTALLATION AT
BAR STEEL INTERSECTION



TYPICAL ANODE INSTALLATION
FOR BAR STEEL



NOTE:
EXISTING STEEL REINFORCEMENT TO
BE COMPLETELY CLEANED OF
CORRODED MATERIAL PRIOR TO
INSTALLATION OF GALVANIC ANODES.



PART. PLAN TYPICAL REPAIR DETAIL

STEEL DENSITY RATIO	MAXIMUM ANODE SPACING (INCHES)
≤ 0.30	24"
0.31 → 0.50	20"
0.51 → 0.60	18"
0.61 → 0.80	16"
0.81 → 0.90	15"
0.91 → 1.00	14"
1.01 → 1.20	12"
≥ 1.20	*

1) * AT STEEL DENSITY RATIOS GREATER THAN 1.20, CONTRACTOR
TO CONSULT THE ENGINEER TO DETERMINE MAXIMUM ANODE SPACING
AND ANODE LAYOUT.

2) STEEL DENSITY RATIO IS THE RATIO OF STEEL REINFORCING BAR
SURFACE AREA TO EXPOSED CONCRETE SURFACE AREA WITHIN THE
REPAIR AREA.

3) TABLE IS BASED ON THE HIGH CORROSION RISK WITHIN THE
SURFACE REPAIR AREA, A MINIMUM ZINC MASS OF 38 GRAMS, AND
AN APPROXIMATE SERVICE LIFE OF 10-20 YEARS.

NOTES

AREAS AND LOCATIONS FOR "CONCRETE SURFACE REPAIR" ARE APPROXIMATE.
PERFORM REPAIRS AS DIRECTED BY THE ENGINEER, ANTICIPATED LOCATIONS ARE
AS FOLLOWS:
WING #3 - 4'x4'
WING #4 - 4'x8'

THE FINISHED CONCRETE SURFACE SHALL MATCH
THE SHAPE AND FINISH OF THE ORIGINAL CONCRETE SURFACE, UNLESS
OTHERWISE DIRECTED BY THE ENGINEER TO PROVIDE ADDITIONAL CONCRETE.

SEE SPECIAL PROVISION "EMBEDDED GALVANIC ANODES" FOR DESCRIPTION,
MATERIALS, CONSTRUCTION, MEASUREMENT, AND PAYMENT INFORMATION.

ANODES NEAREST TO THE EDGE OF REPAIR TO BE WITHIN 6" OF EDGE.

AFTER PLACEMENT, GALVANIC ANODES SHOULD MAINTAIN A MINIMUM TOP COVER
OF 1 1/2" AND A MINIMUM BOTTOM COVER OF 3/4".

GALVANIC ANODES ARE TO BE INSTALLED IN THE ABUTMENTS, WINGWALLS, AND
PIERS ONLY.

ENSURE ALL EXPOSED REINFORCING STEEL IS SECURELY FASTENED TOGETHER
WITH TIE WIRE TO PROVIDE GOOD CONTINUITY. SEE SPECIAL PROVISIONS.

GALVANIC ANODES SHALL BE PLACED PER SPECIAL PROVISIONS "EMBEDDED
GALVANIC ANODES". GALVANIC ANODES ESTIMATED QUANTITIES ON PLANS ARE
BASED ON A MAXIMUM SPACING OF 24 INCHES IN EACH DIRECTION OF THE
ESTIMATED "CONCRETE SURFACE REPAIR" AREA.

EXISTING STEEL REINFORCEMENT MAY BE CORRODED AND/OR DAMAGED DURING
CONCRETE REMOVAL. PRESERVE AND INCORPORATE EXISTING REINFORCEMENT.

NO.	DATE	REVISION	BY
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STRUCTURE B-32-79			
DRAWN BY NLH		PLANS CKD. NJE	
GALVANIZED ANODE & DRAIN DETAILS			SHEET 5 OF 12
			159

BILL OF BARS(COATED) 3,563 LBS.

MARK	NUMBER REQUIRED		LENGTH	BENT	NO. COUPLINGS	LOCATION
	COATED	UNCOATED				
S501	18	-	7'-11"		6	PAVING BLOCK HORIZ.
S402	40	-	5'-2"	X	-	DIAPHRAGM STIRRUPS
S803	10	-	7'-6"		-	DIAPHRAGM HORIZ. BETWEEN GIRDERS
S604	16	-	19'-6"		16	TRANSVERSE DECK STEEL
S405	4	-	19'-6"		4	TRANSVERSE DECK STEEL
S506	49	-	2'-7"	X	-	PAVING BLOCK VERT.
S407	49	-	3'-4"	X	-	PAVING BLOCK STIRRUPS
S408	14	-	4'-10"	X	-	EXPANSION JOINT PARAPET
S409	10	-	4'-3"	X	-	EXPANSION JOINT PARAPET
S410	5	-	4'-9"	X	-	EXPANSION JOINT PARAPET
S511	16	-	2'-6"		-	EXPANSION JOINT PARAPET
S512	16	-	1'-1"		-	EXPANSION JOINT PARAPET
S513	6	-	6'-4"		-	PAVING BLOCK HORIZ.
S614	8	-	10'-8"		-	TRANSVERSE DECK STEEL
S415	4	-	10'-8"		-	TRANSVERSE DECK STEEL
S816	10	-	3'-5"		10	DIAPHRAGM HORIZ. BETWEEN GIRDERS
S817	10	-	3'-7"		-	DIAPHRAGM HORIZ. BETWEEN GIRDERS

- REINFORCING BAR DIMENSIONS ARE OUT TO OUT OF BAR.
- THE FIRST DIGIT OF A THREE-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.
- BAR TOTALS IN TABLE ARE FOR EACH JOINT

NOTES

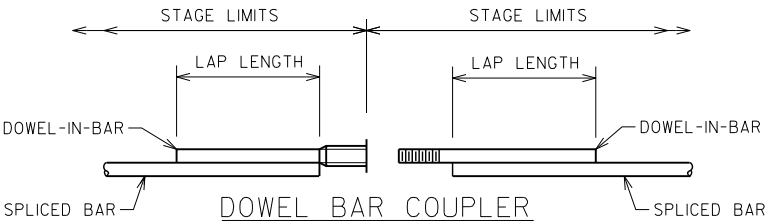
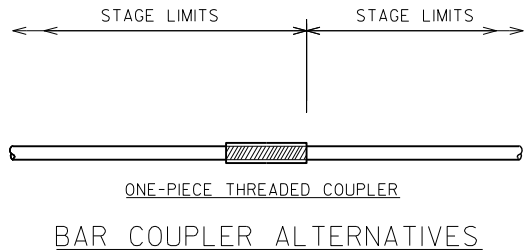
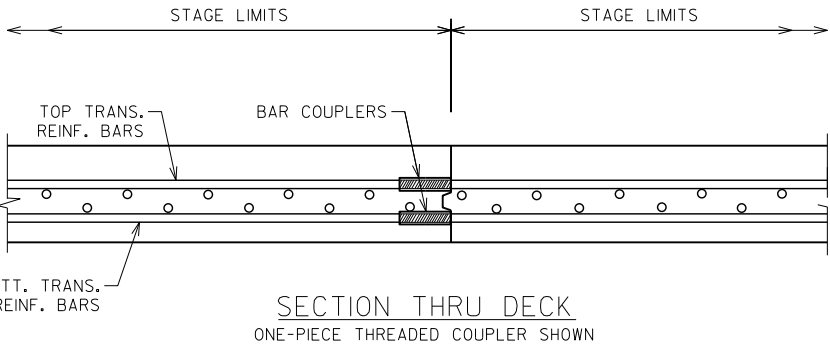
FOR DOWEL BAR COUPLERS, ALL DOWEL BARS SHALL BE LAPPED AND TIED TO THE REINFORCEMENT BARS.

‡ EXISTING BARS ARE LIKELY TO BE CORRODED AND/OR DAMAGED DURING CONCRETE REMOVAL. REPAIR DAMAGED EPOXY COATING PER STANDARD SPEC 505. SALVAGE AND INCORPORATE AS MUCH REBAR AS PRACTICAL. SUPPLEMENT WITH THE BARS INDICATED BY ☆.

☆ ADHESIVE ANCHORS NO. 5 BAR, EMBED 1'-0" IN CONCRETE. SPACE AT 1'-0" O.C. TURN 10" LEG AS NECESSARY TO FIT.

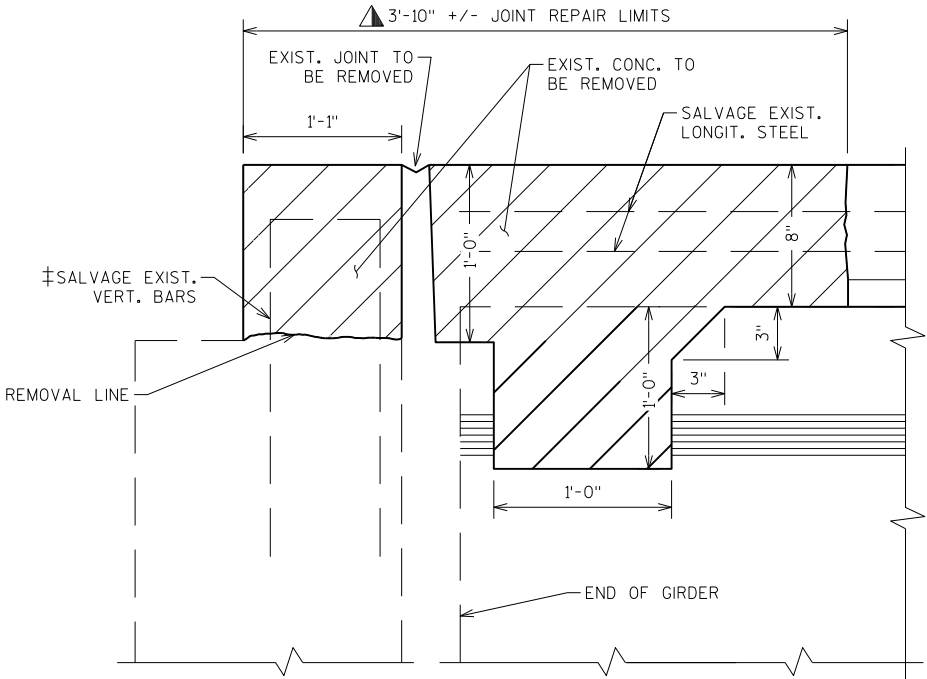
◆ OPTIONAL CONSTRUCTION JOINT 1" MIN. BELOW EXISTING REINFORCEMENT.

▲ DIMENSIONS GIVEN ARE NORMAL TO C/L OF SUBSTRUCTURE UNIT, INCORPORATE EXISTING REINFORCEMENT.

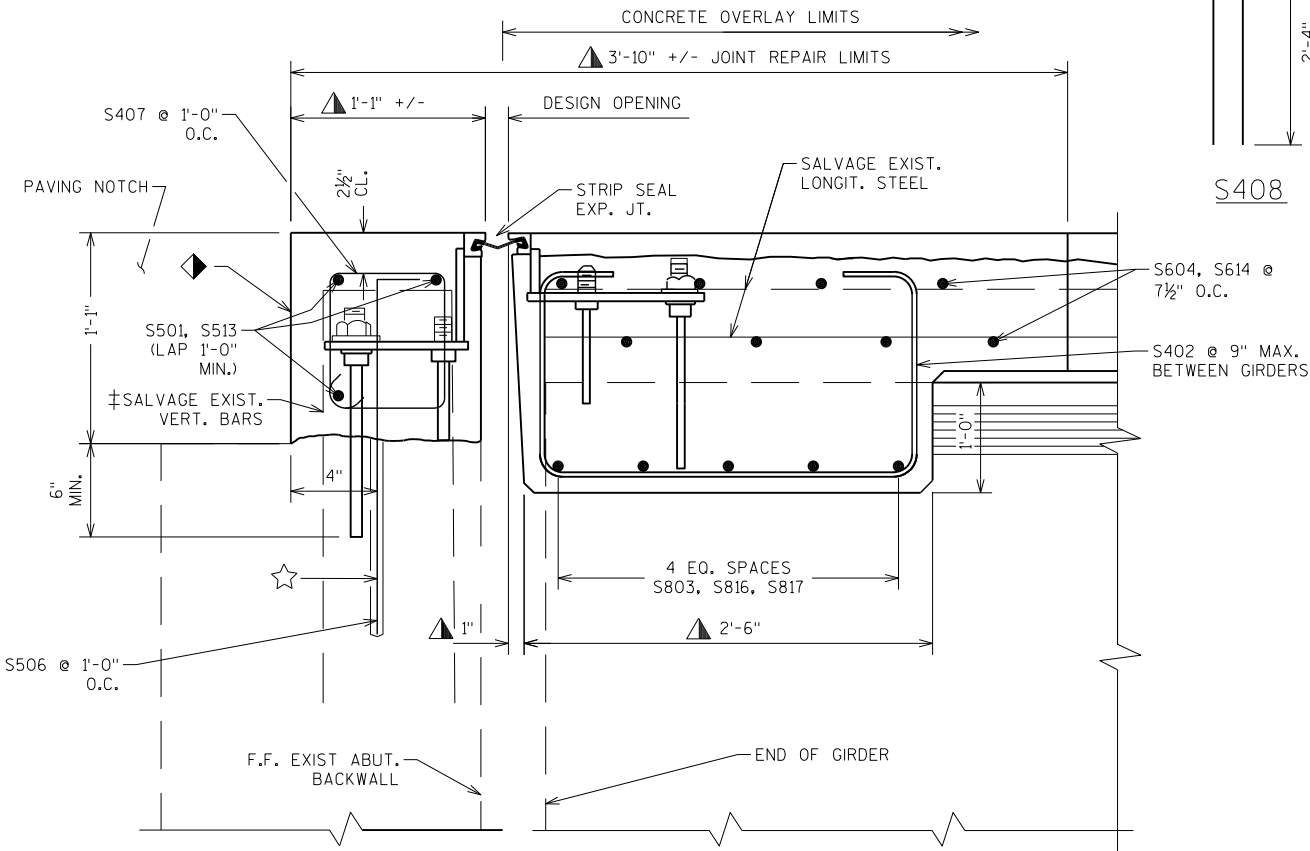


LAP LENGTHS
S405: 1'-11"
S501: 3'-0"
S604: 3'-7"
S816: 5'-11"

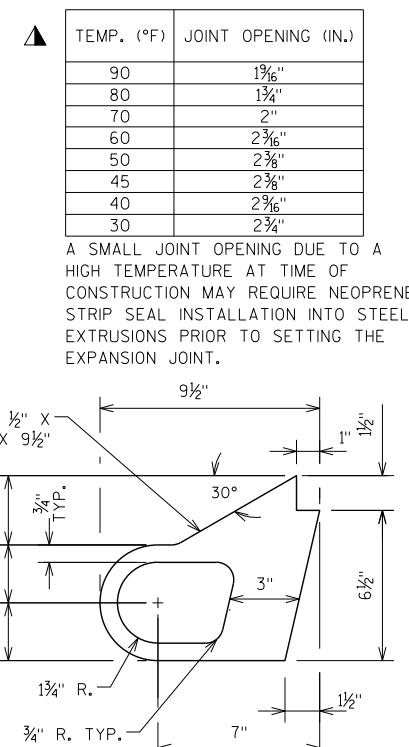
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-32-79			
DRAWN BY NLH		PLANS NJE	
JOINT REPAIR DETAIL		SHEET 6 OF 12	
		160	



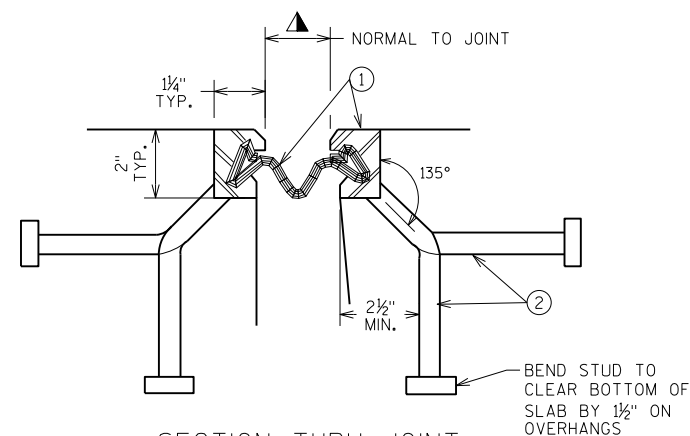
JOINT REPAIR-REMOVAL
PRESTRESSED GIRDER



SECTION THRU PROPOSED JOINT
PRESTRESSED GIRDER WITH END DIAPHRAGM
CONCRETE OVERLAY



ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT
EXTERIOR GIRDER TO EDGE OF DECK, AND
AT PARAPETS



HALF PART PLAN

▲ ① NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS.

- ② STUDS $\frac{5}{8}$ " DIA. X $6\frac{3}{8}$ " LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- ②A $\frac{1}{2}$ " THICK ANCHOR PLATE WITH $\frac{5}{8}$ " DIA. (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- ③ $\frac{3}{4}$ " DIA. THREADED ROD WITH 2 NUTS AND PLATE WASHERS. FOR PRESTRESSED GIRDERS, GROUT THREADED ROD INTO FIELD DRILLED HOLES ON C/L OF GIRDER. ON ABUTMENT SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- ④ $\frac{3}{4}$ " DIA. THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
- ⑤ FABRICATE SUPPORT FROM 3" X $\frac{1}{2}$ " BAR AS SHOWN OR EQUIVALENT. ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1 IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE $1\frac{1}{2}$ " DIA. HOLE FOR NO. 3 AND 1" DIA. HOLE FOR NO. 4.
- ⑥ GALVANIZED PLATE $\frac{3}{8}$ " X 1'-2" X 2'-0" LONG FOR SLOPED FACE PARAPET.
- ⑦ $\frac{3}{4}$ " DIA. X $1\frac{1}{2}$ " STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS $\frac{1}{8}$ " BELOW PLATE SURFACE.
- ⑧ $\frac{3}{4}$ " DIA. X 4" GALVANIZED HEX HEAD BOLT, BEND 45°.
- ⑨ $\frac{3}{4}$ " DIA. X $2\frac{1}{4}$ " GALVANIZED THREADED COUPLING.
- ⑩ 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

ONE FIELD SPlice PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPlicing PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED. SLIP-RESISTANT SURFACE IS APPLIED TO SIDEWALK COVER PLATED BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THE SURFACE.

ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS S AND D.

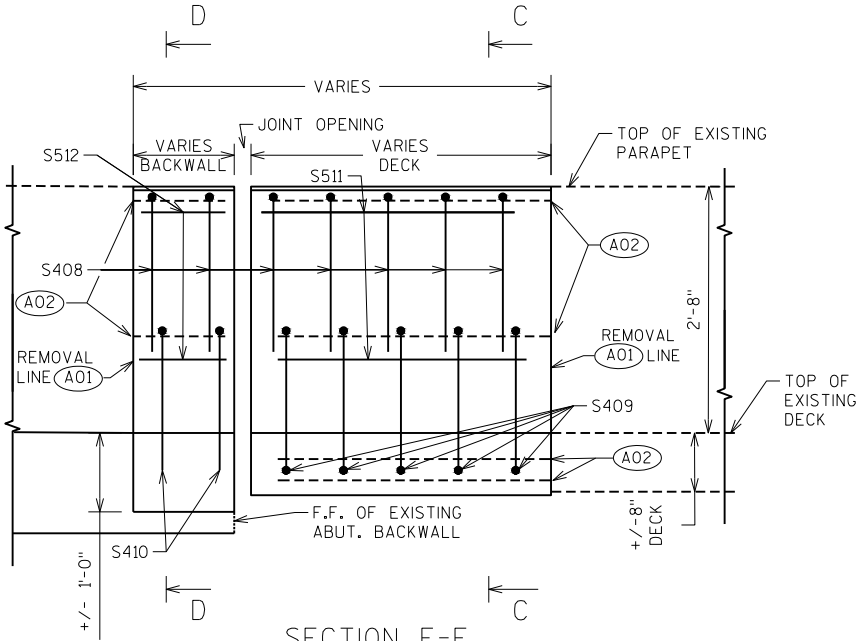
ALL MATERIAL IN THE EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID AT THE UNIT PRICE BID FOR "EXPANSION DEVICE B-32-79", LF.

NO.	DATE	REVISION	BY
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STRUCTURE B-32-79			
		DRAWN BY NLH	PLANS CK'D. NJE
EXPANSION DEVICE		SHEET 7 OF 12	
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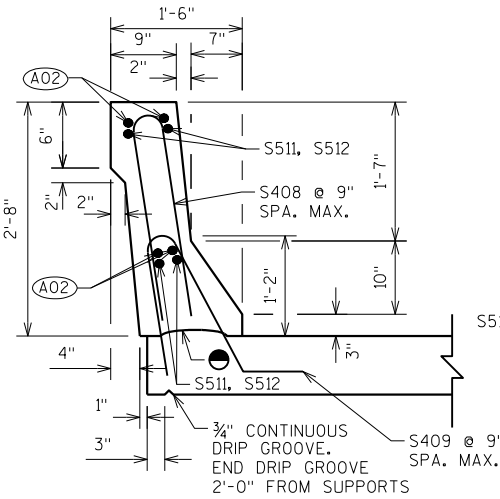
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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-32-79			
DRAWN BY NLH		PLANS CK'D. NJE	
COVER PLATE DETAILS		SHEET 8 OF 12	
		162	

NOTES & LEGEND

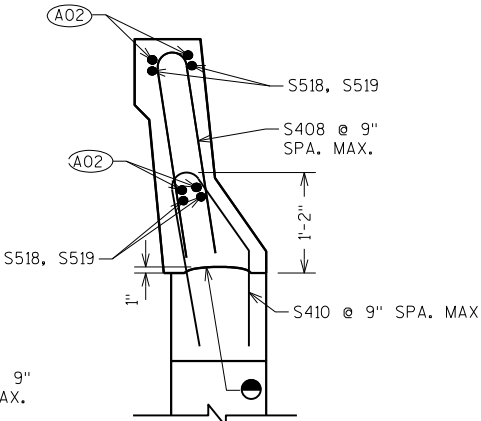
- CONST. JOINT - STRIKE OFF AS SHOWN.
SEE SHEET 6, 7, & 8 FOR ADDITIONAL DETAILS.
- (A01) ROUGHEN EXISTING CONCRETE ¼" MIN. EVERYWHERE NEW CONCRETE COMES INTO CONTACT WITH EXISTING CONCRETE.
- (A02) SALVAGE EXISTING REINFORCEMENT & EXTEND FULL LENGTH INTO NEW WORK.



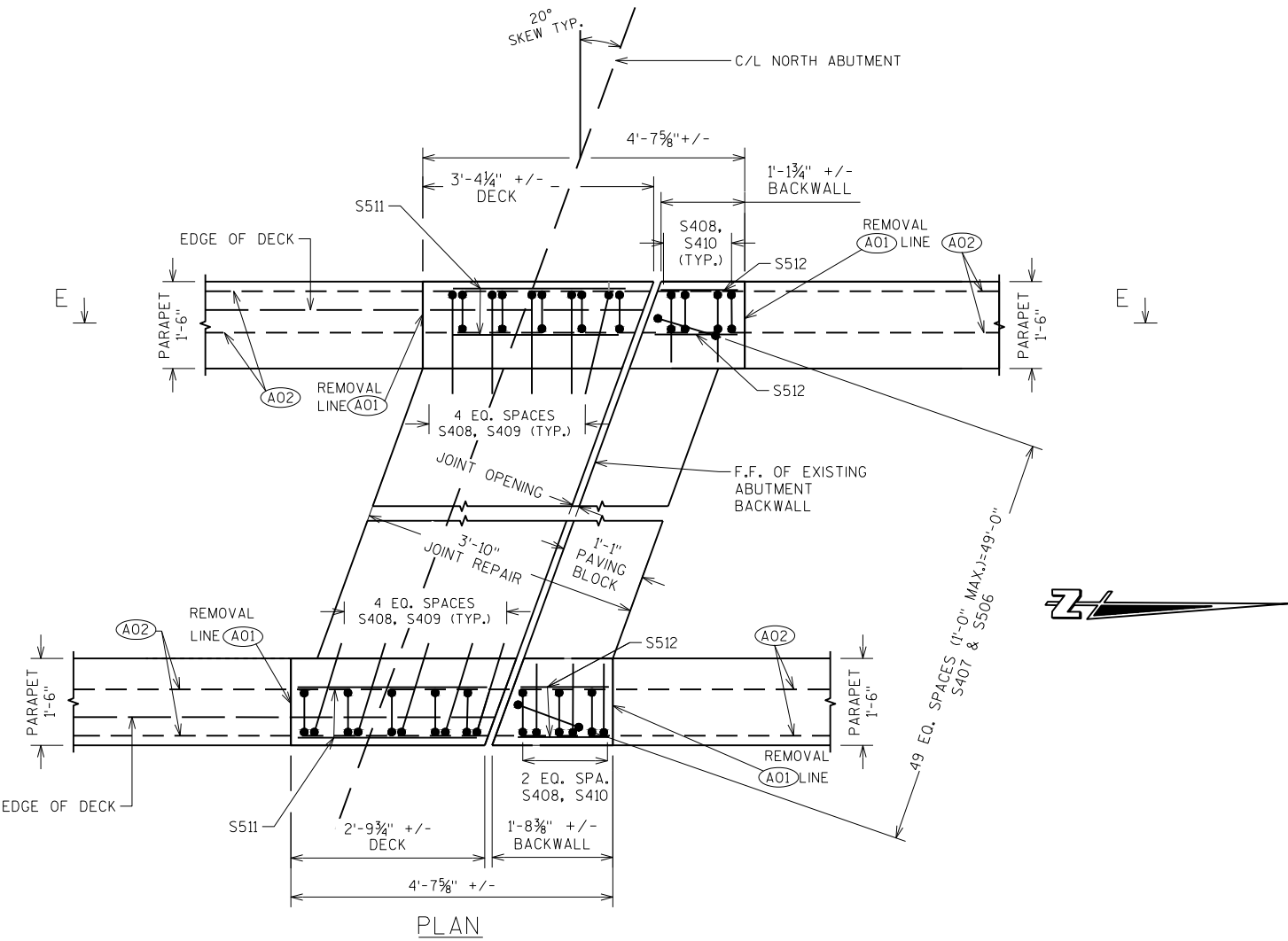
SECTION E-E
EXTERIOR FACE



SECTION C-C

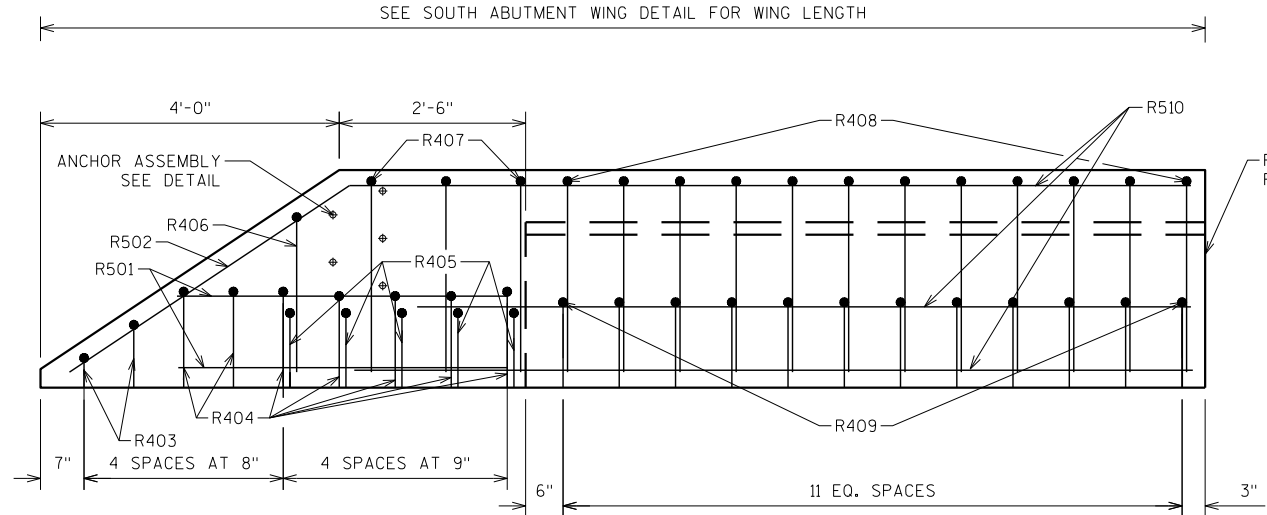


SECTION D-D

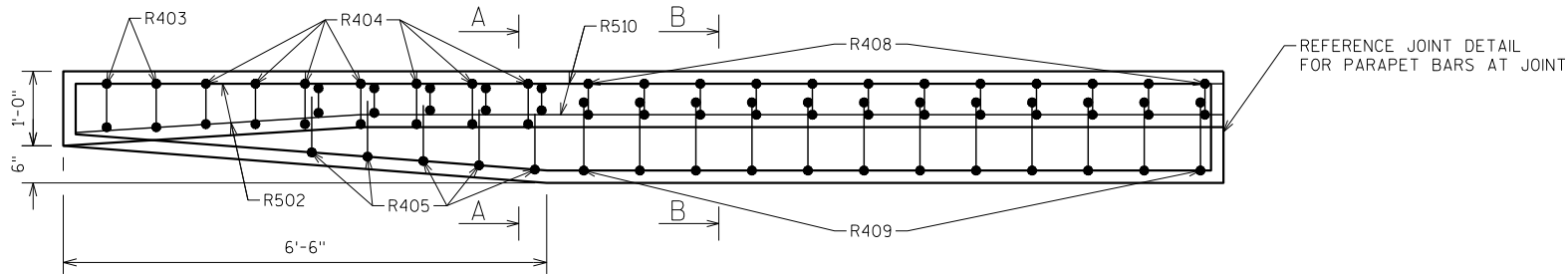


PLAN

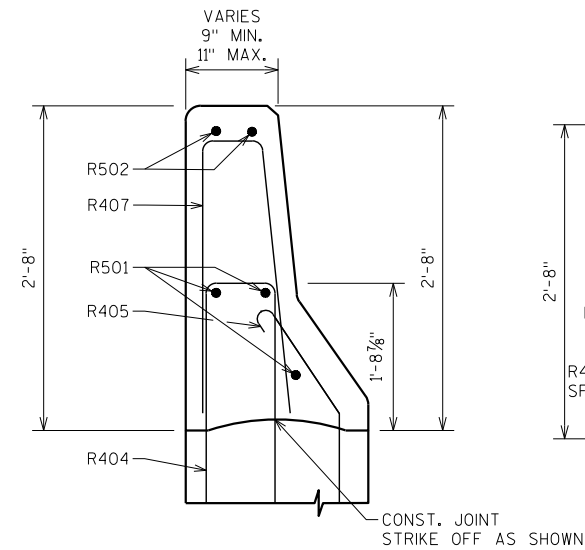
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-32-79			
DRAWN BY NLH		PLANS CK'D. NJE	
JOINT PARAPET DETAILS			SHEET 9 OF 12
			163



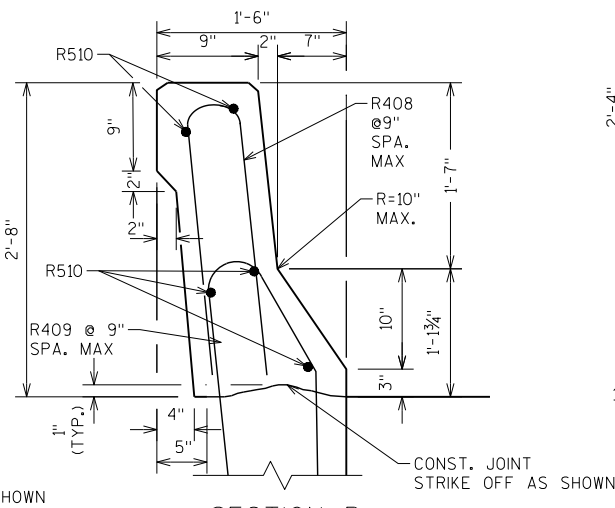
PARAPET ELEVATION



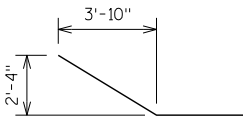
PARAPET PLAN



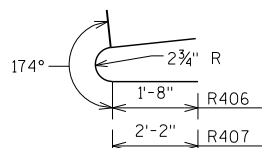
SECTION A



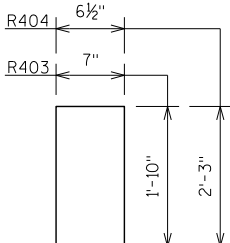
SECTION B



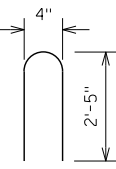
R502



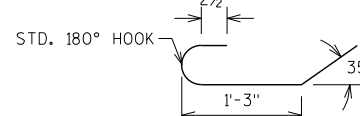
R406, R407



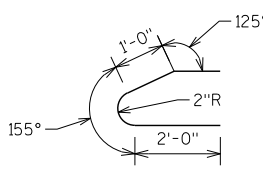
R403, R404



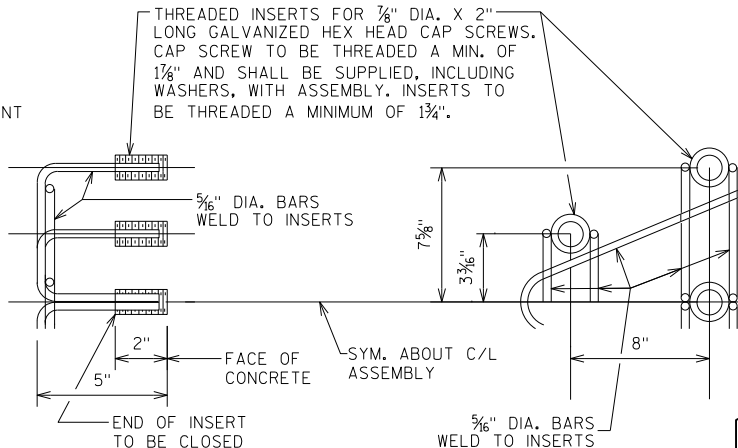
R408



R405



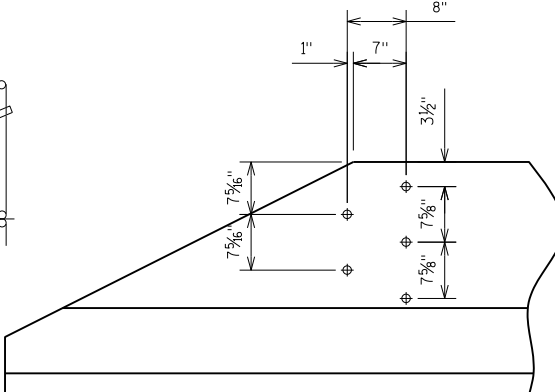
R409



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232, CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD" EACH.



ANCHOR ASSEMBLY LAYOUT

BILL OF BARS (COATED) 216 LBS.

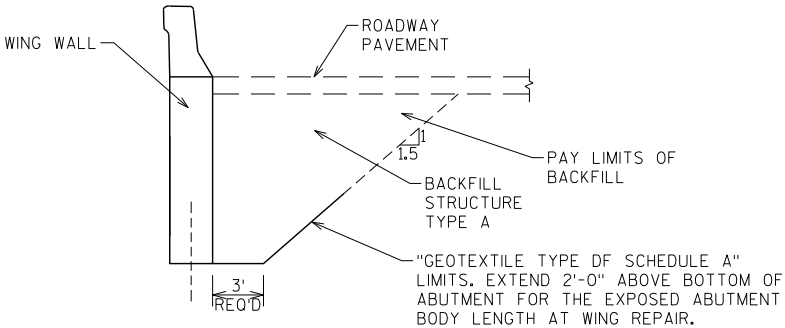
MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
R501	3	4'-6"		WING PARAPET
R502	2	6'-8"	X	WING PARAPET
R403	2	4'-1"	X	WING PARAPET STIRRUPS
R404	7	4'-11"	X	WING PARAPET STIRRUPS
R405	5	3'-1"	X	WING PARAPET
R406	1	4'-0"	X	WING PARAPET STIRRUPS
R407	3	5'-0"	X	WING PARAPET STIRRUPS
R408	12	5'-0"	X	WING PARAPET STIRRUPS
R409	12	4'-9"	X	WING PARAPET STIRRUPS
R510	5	11'-2"		WING PARAPET

- REINFORCING BAR DIMENSIONS ARE OUT TO OUT OF BAR.
- THE FIRST DIGIT OF A THREE-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.
- EPOXY COAT ALL PARAPET REINFORCEMENT

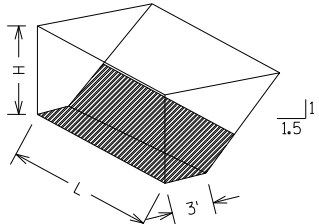
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-32-79			
DRAWN BY NLH		PLANS CK'D. NJE	
SLOPED FACED PARAPET 'B'			SHEET 10 OF 12
			164

- ▲
- SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). INCIDENTAL TO "CONCRETE MASONRY BRIDGES".
- ☆
- ADHESIVE ANCHORS NO. 4 BARS NO. 5 BARS. EMBED 20X BAR DIAMETER INTO EXISTING CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.
- ▽
- 18" "RUBBERIZED MEMBRANE WATERPROOFING". SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

BILL OF BARS (COATED) 666 LBS.					
MARK	NUMBER REQUIRED		LENGTH	BENT	LOCATION
	COATED	UNCOATED			
A501	9	-	17'-11"	X	VERT. WING
A502	36	-	8'-4"	X	VERT. WING
A403	9	-	15'-2"		HORIZ. B.F. WING
A404	5	-	7'-3"	X	HORIZ. F.F. WING
A405	5	-	7'-1"		HORIZ. WING
A606	2	-	15'-2"		HORIZ. WING TOP
- REINFORCING BAR DIMENSIONS ARE OUT TO OUT OF BAR. - THE FIRST DIGIT OF A THREE-DIGIT BAR MARK SIGNIFIES THE BAR SIZE. - EPOXY COAT ALL WING REINFORCEMENT					



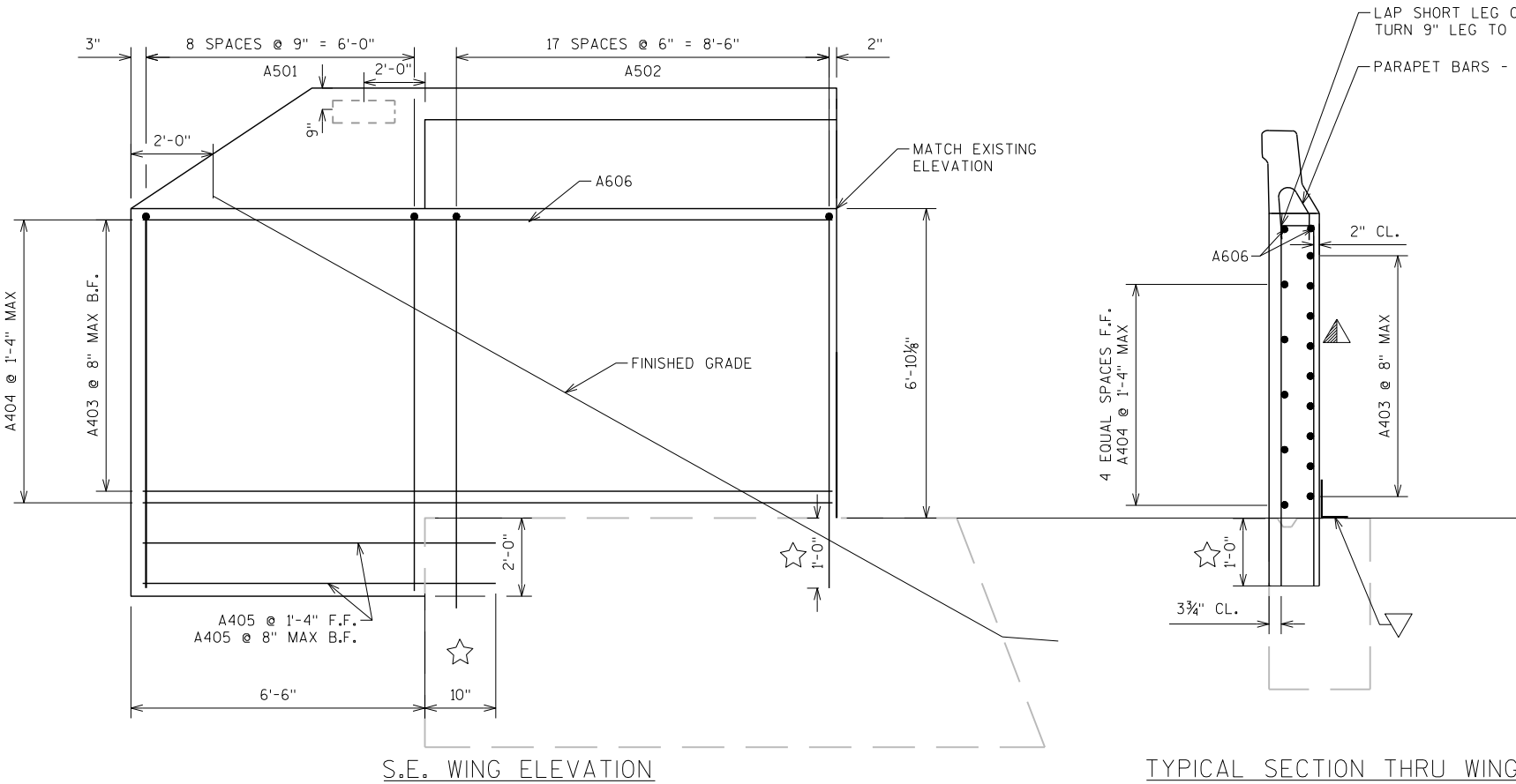
STRUCTURE BACKFILL & LIMITS



WING WALL BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

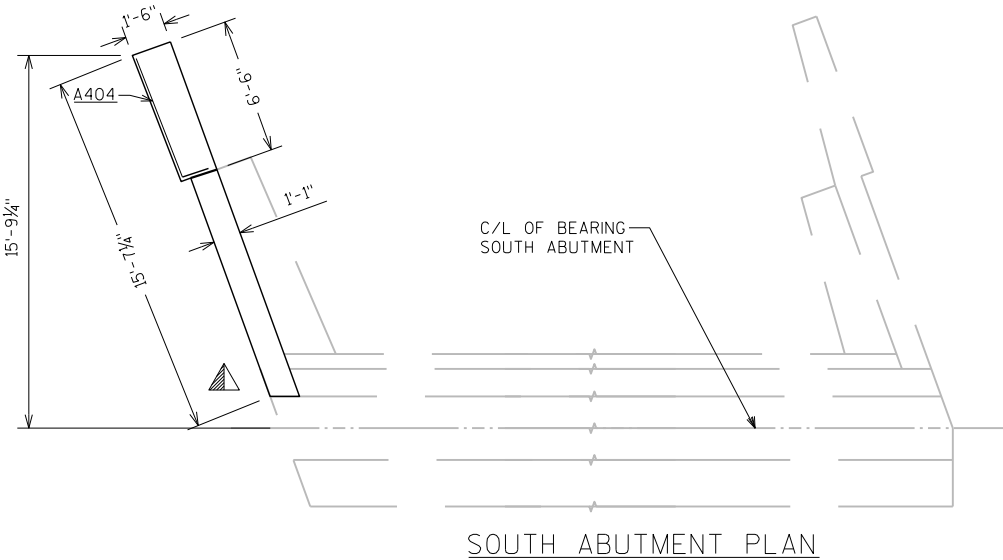
- L = OUT TO OUT OF WING WALL
- H = AVERAGE WING WALL FILL HEIGHT (FT)
- EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS & 1.00 FOR TON BID ITEMS)
- $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)$
- $V_{CY} = V_{CF}(EF) / 27$
- $V_{TON} = V_{CY}(2.0)$

NO.	DATE	REVISION		BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION				
STRUCTURE B-32-79				
DRAWN BY		NLH	PLANS CK'D. NJE	
SOUTH ABUTMENT WING DETAILS			SHEET 11 OF 12	
			165	

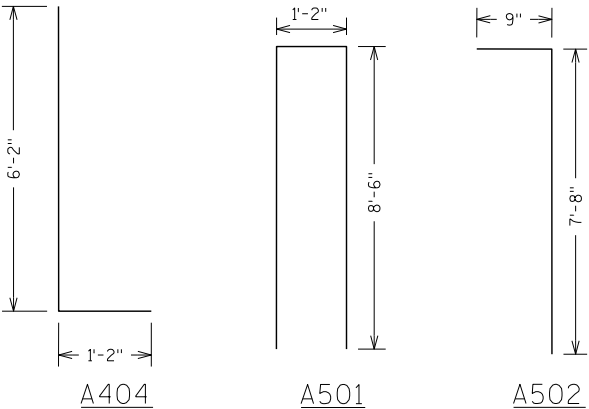


S.E. WING ELEVATION

TYPICAL SECTION THRU WING



SOUTH ABUTMENT PLAN



A404

A501

A502



AT INSTALLATION, ENSURE STAINLESS STEEL SLIDING FACE OF THE UPPER ELEMENT AND THE TFE SLIDING FACE OF THE LOWER ELEMENT HAVE THE SURFACE FINISH SPECIFIED AND ARE CLEAN AND FREE OF ALL DUST, MOISTURE, AND ANY OTHER FOREIGN MATTER.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-32-79			
		DRAWN BY NLH	PLANS CHKD. NJE
STEEL BEARINGS FOR PRESTRESSED CONCRETE GIRDERS		SHEET 12 OF 12	
		166	

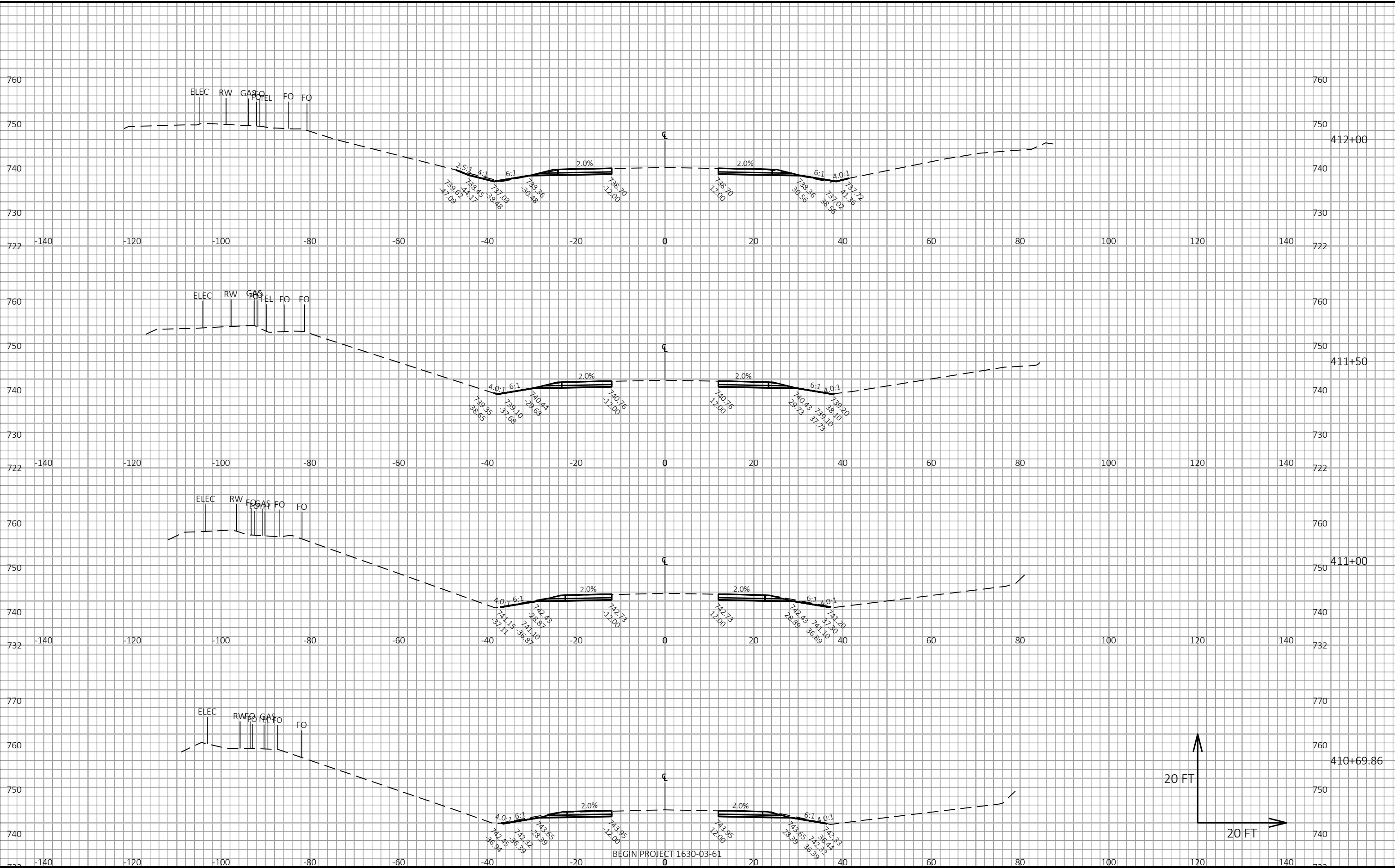
SOUTH OF BRIDGE (CAT 0030)

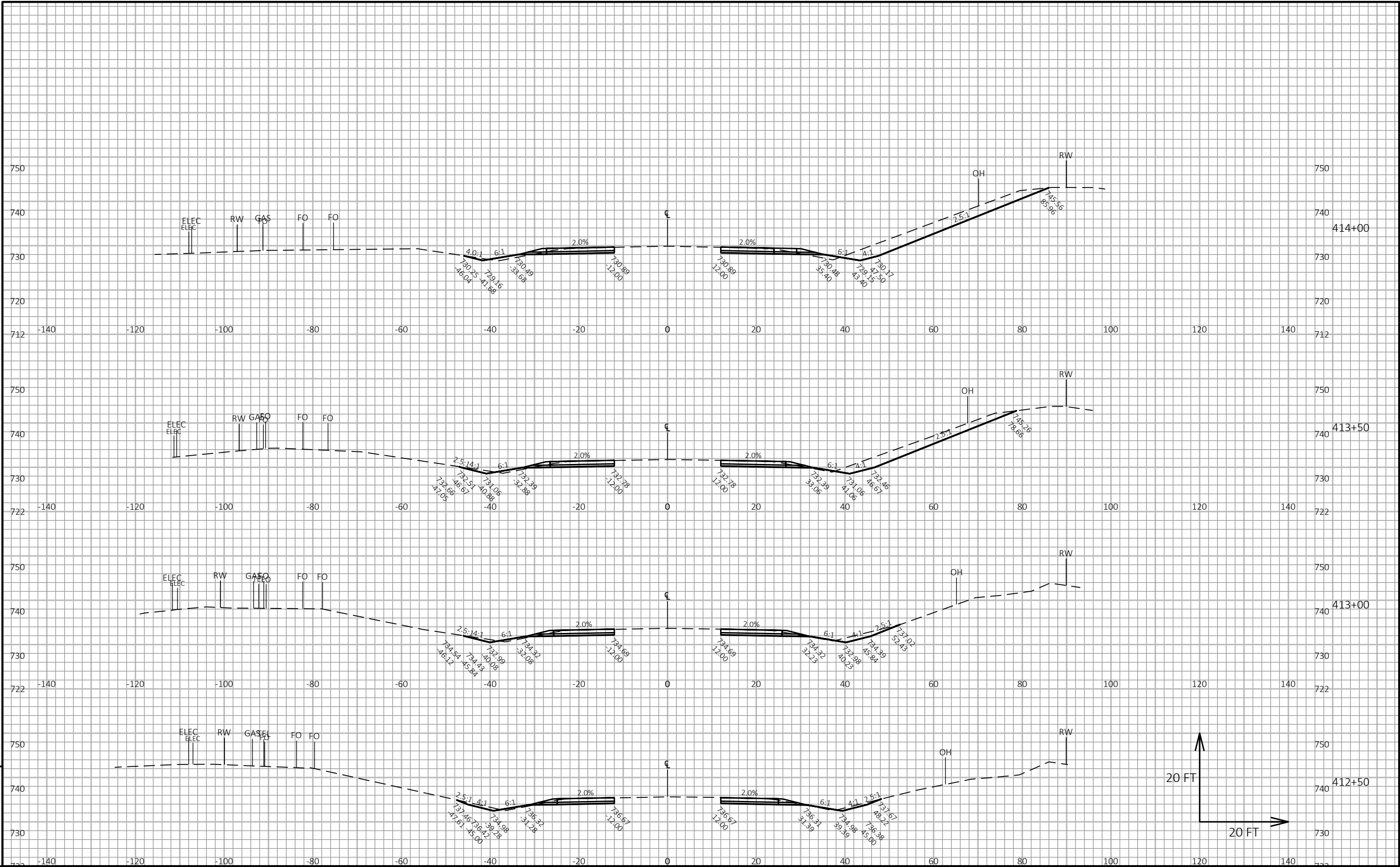
Total Volume Table							
Station	Cut Area	Fill Area	Cut Vol	Fill Vol	Cum Cut Vol	Cum Fill Vol	Net Vol
410+69.86	40.28	0.00	0.00	0.00	0.00	0.00	0.00
411+00.00	40.57	0.00	45.13	0.00	45.13	0.00	45.13
411+50.00	37.53	0.38	72.31	0.35	117.44	0.35	117.10
412+00.00	40.53	3.06	72.28	3.18	189.72	3.53	186.19
412+50.00	45.81	3.11	79.95	5.71	269.67	9.24	260.43
413+00.00	51.38	3.19	90.00	5.83	359.67	15.07	344.60
413+50.00	109.11	4.26	148.61	6.89	508.28	21.97	486.31
414+00.00	137.17	8.66	228.04	11.96	736.32	33.92	702.39
414+50.00	147.94	11.22	263.99	18.40	1000.31	52.32	947.99
415+00.00	109.23	10.51	238.12	20.11	1238.43	72.44	1165.99
415+50.00	45.81	15.93	143.55	24.48	1381.98	96.92	1285.06
416+00.00	40.20	18.59	79.64	31.96	1461.62	128.88	1332.74
416+50.00	61.59	27.96	94.25	43.10	1555.87	171.98	1383.88
416+76.48	105.38	14.36	81.88	20.75	1637.75	192.73	1445.01
417+00.00	254.47	0.00	156.74	6.25	1794.48	198.99	1595.50
417+36.48	84.55	36.93	229.02	24.95	2023.50	223.93	1799.57
417+50.00	76.52	94.14	40.33	32.82	2063.83	256.75	1807.08
418+00.00	59.51	104.70	125.95	184.11	2189.78	440.86	1748.92
418+50.00	53.67	70.40	104.79	162.13	2294.58	602.99	1691.59
419+00.00	51.27	51.55	97.17	112.92	2391.74	715.90	1675.84
419+50.00	51.98	111.21	95.60	150.71	2487.34	866.61	1620.73
420+00.00	54.18	172.49	98.29	262.68	2585.63	1129.30	1456.33
420+50.00	55.48	218.63	101.54	362.15	2687.17	1491.44	1195.73
420+86.54	54.71	247.02	74.57	315.09	2761.74	1806.53	955.21
421+31.38	56.08	71.56	92.00	264.54	2853.74	2071.07	782.67
421+64.28	44.57	0.00	61.32	43.59	2915.06	2114.66	800.40

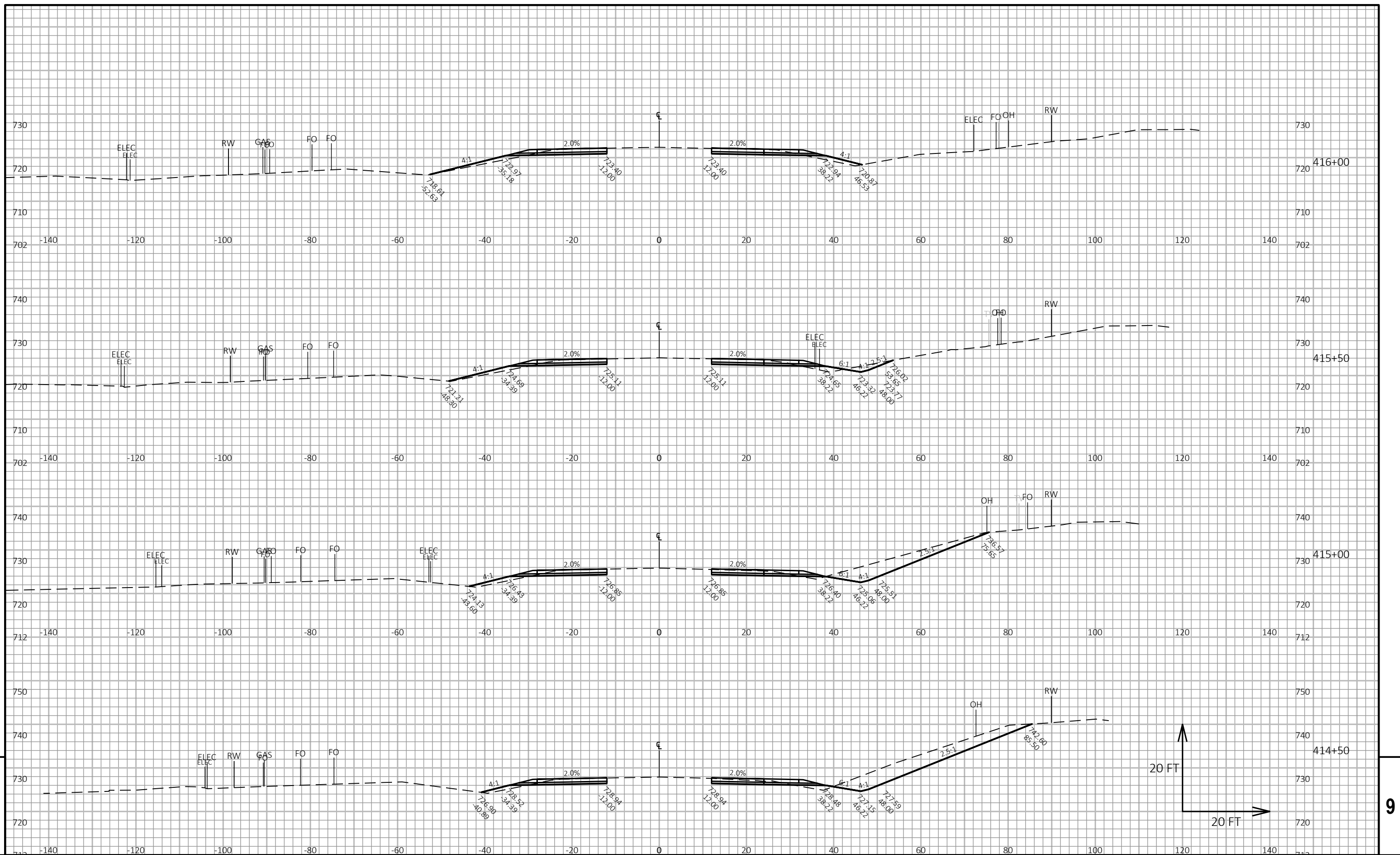
NORTH OF BRIDGE (CAT 0010)

Total Volume Table							
Station	Cut Area	Fill Area	Cut Vol	Fill Vol	Cum Cut Vol	Cum Fill Vol	Net Vol
427+90.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00
428+00.00	9.80	2.37	1.70	0.41	1.70	0.41	1.29
428+50.00	10.44	3.19	18.74	5.15	20.44	5.56	14.88
429+00.00	9.80	5.96	18.74	8.47	39.18	14.03	25.15
429+50.00	10.25	4.35	18.56	9.54	57.75	23.57	34.18
430+00.00	9.92	1.46	18.68	5.37	76.42	28.94	47.48
430+50.00	11.97	24.31	20.27	23.86	96.69	52.80	43.89
431+00.00	8.21	7.41	18.69	29.37	115.38	82.17	33.21
431+50.00	6.10	0.45	13.26	7.27	128.64	89.44	39.20
431+90.62	5.54	4.36	8.77	3.66	137.41	93.10	44.31
432+00.00	1.43	0.38	1.21	0.82	138.62	93.93	44.70
432+50.00	1.83	0.75	3.00	1.04	141.63	94.97	46.66
432+92.75	3.15	0.00	3.92	0.59	145.54	95.56	49.98

- NOTES:
- 1. "CUT VOL" INCLUDES EXISTING ASPHALT PAVEMENT. ASSUMED TO BE USED AS FILL OUTSIDE THE 1:1 ROAD CORE.
 - 2. "FILL VOL" = VOLUME NEEDED TO BE FILLED * 1.30
 - 3. "NET VOL" = "CUM CUT VOL" - "CUM FILL VOL"







PROJECT NO:	1630-03-61
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HWY: USH 53

COUNTY: LA CROSSE & TREMPLEAU

CROSS SECTIONS: USH 53

SHEET
170

■

FILE NAME : W:\16300361\C3D\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 57 03-xs

PLOT DATE : 1/31/2020 11:15 AM

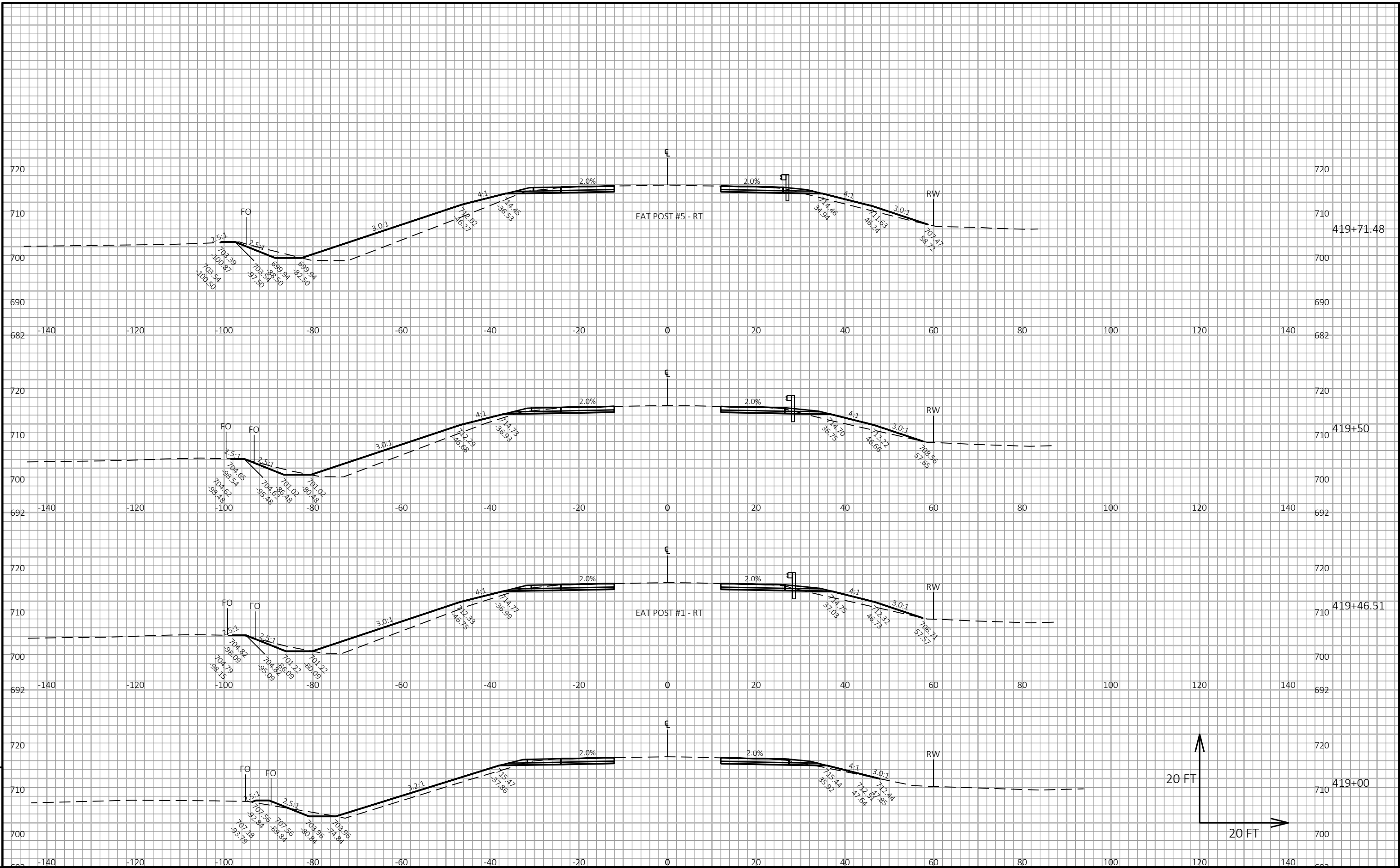
PLOT BY : SHAWN DEMERS

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

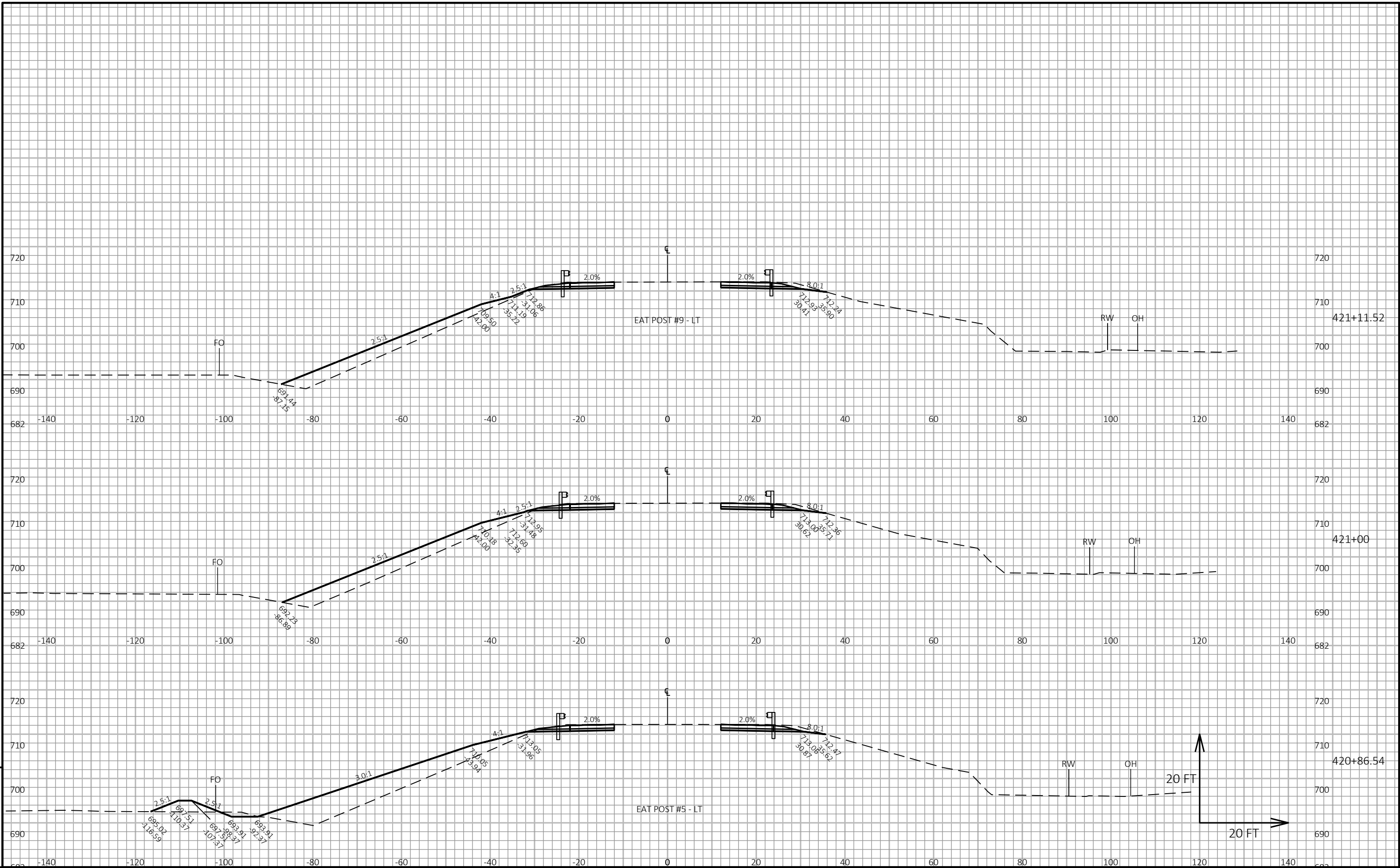
WISDOT/CADDS SHEET 49

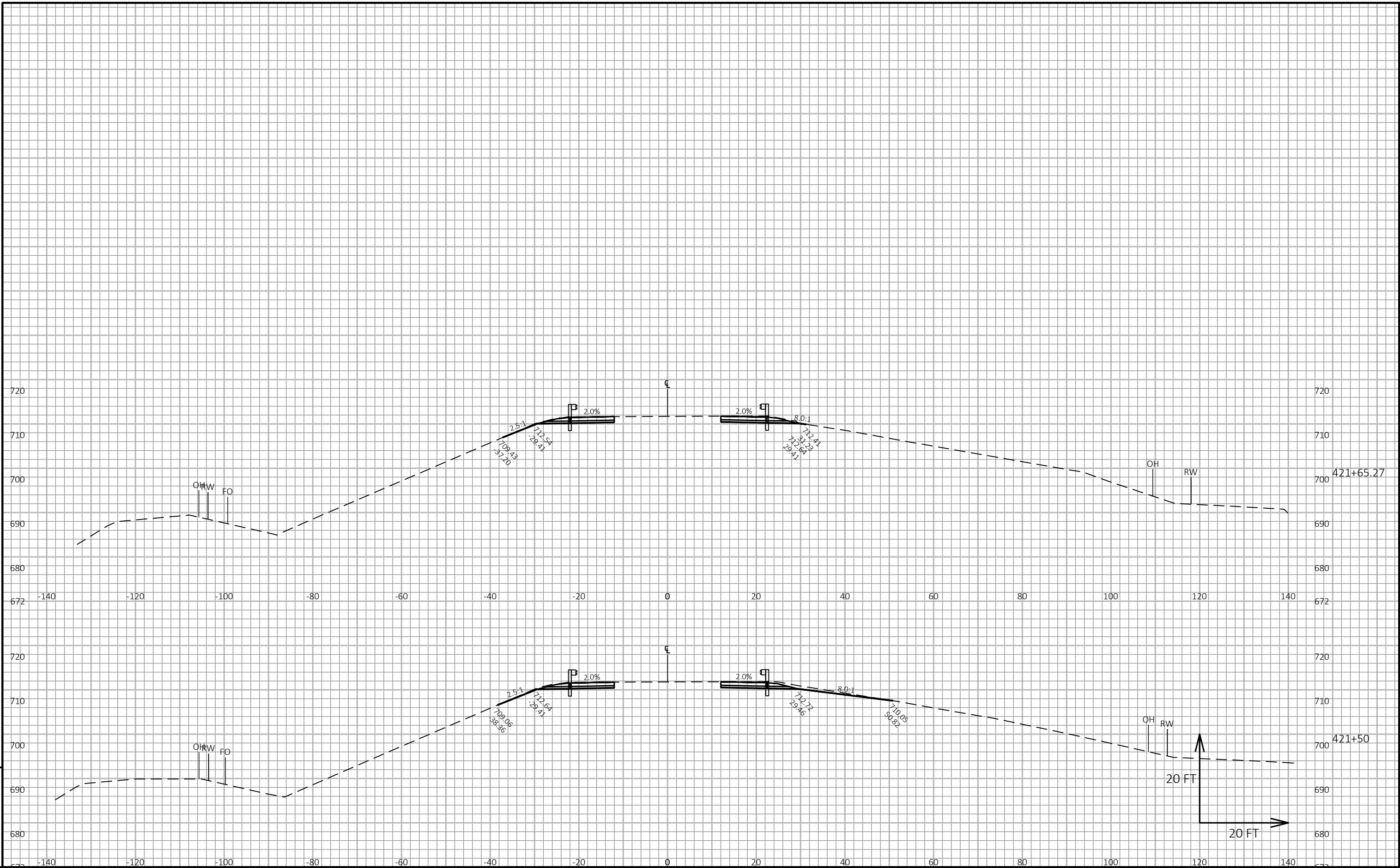


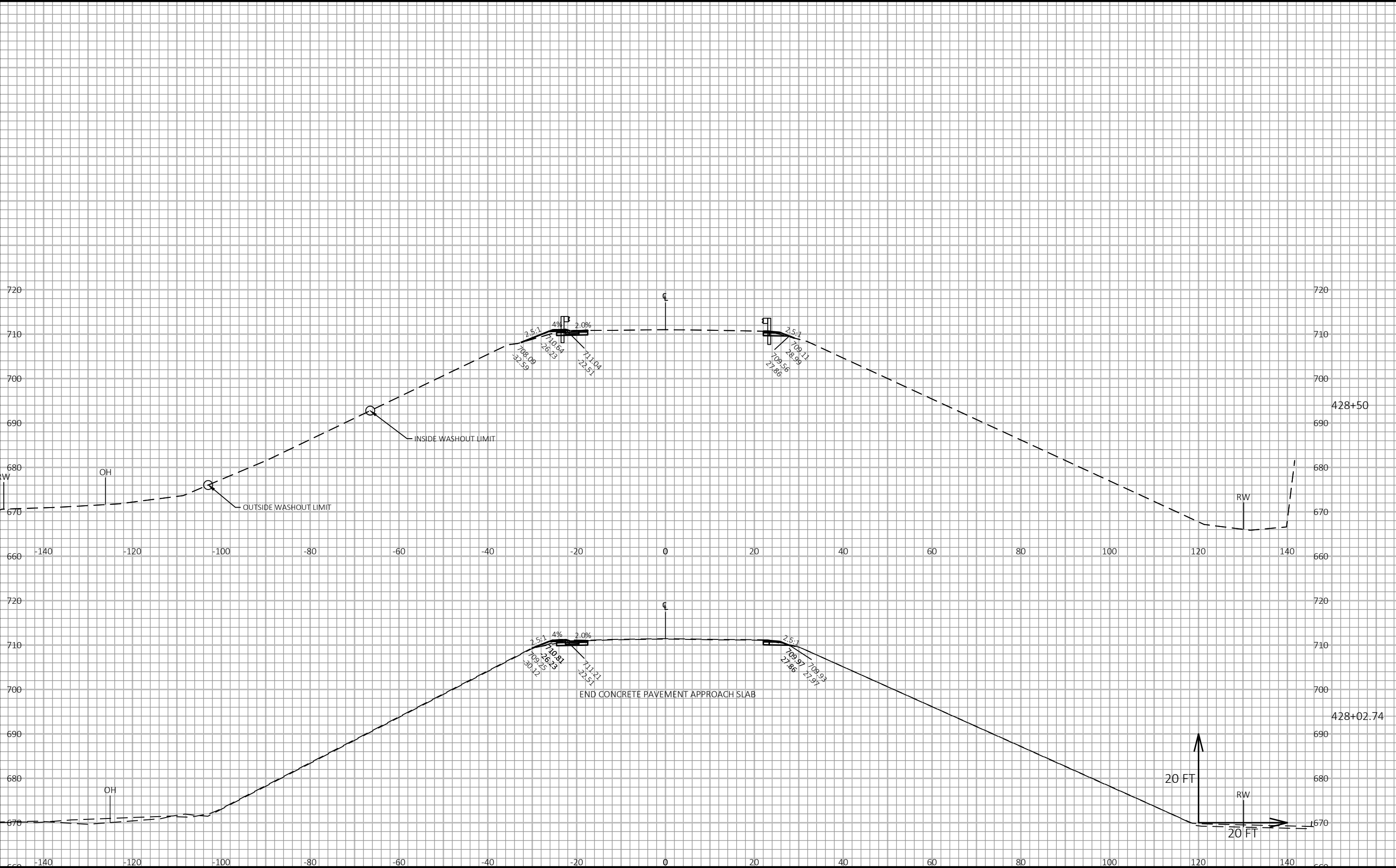


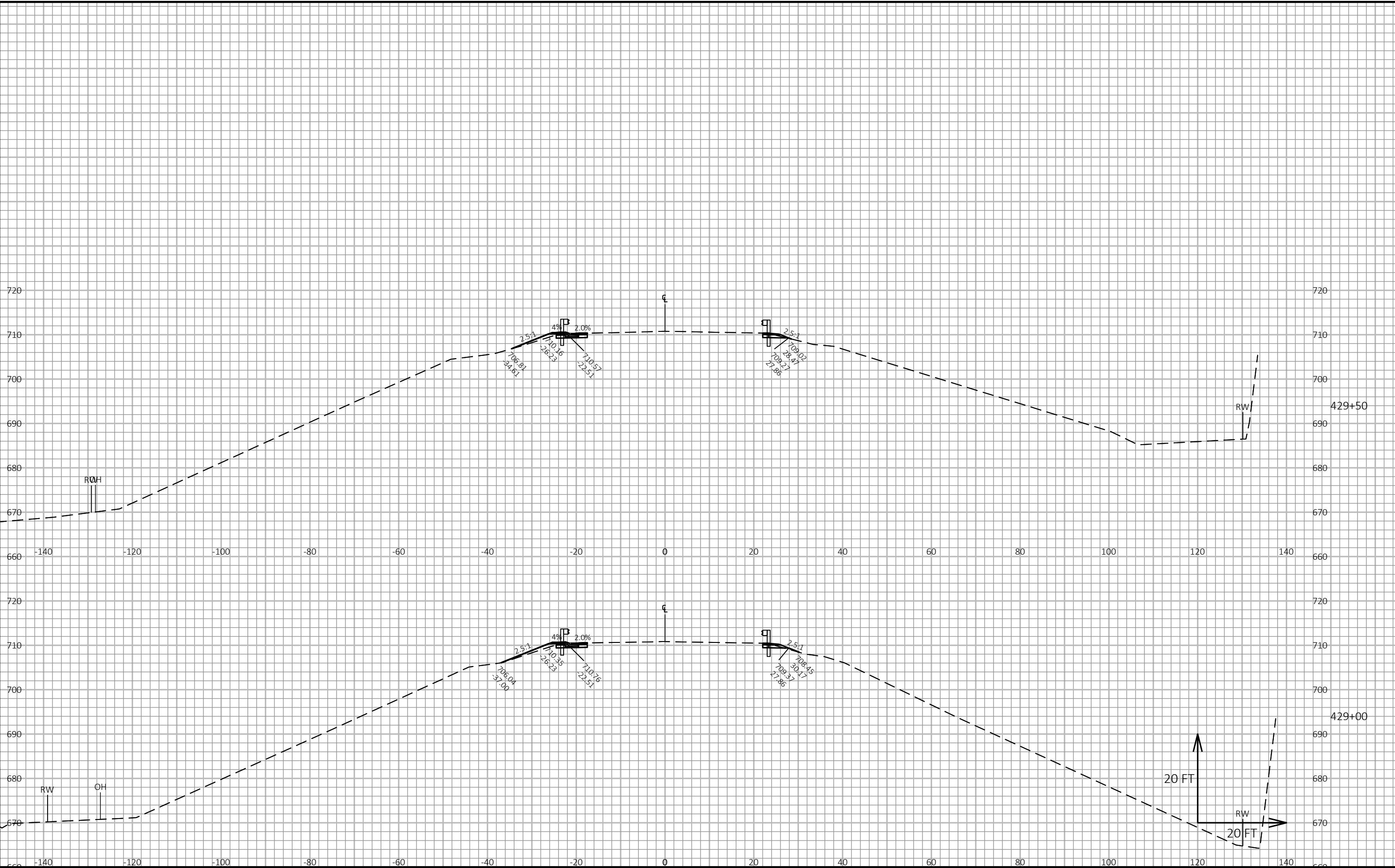
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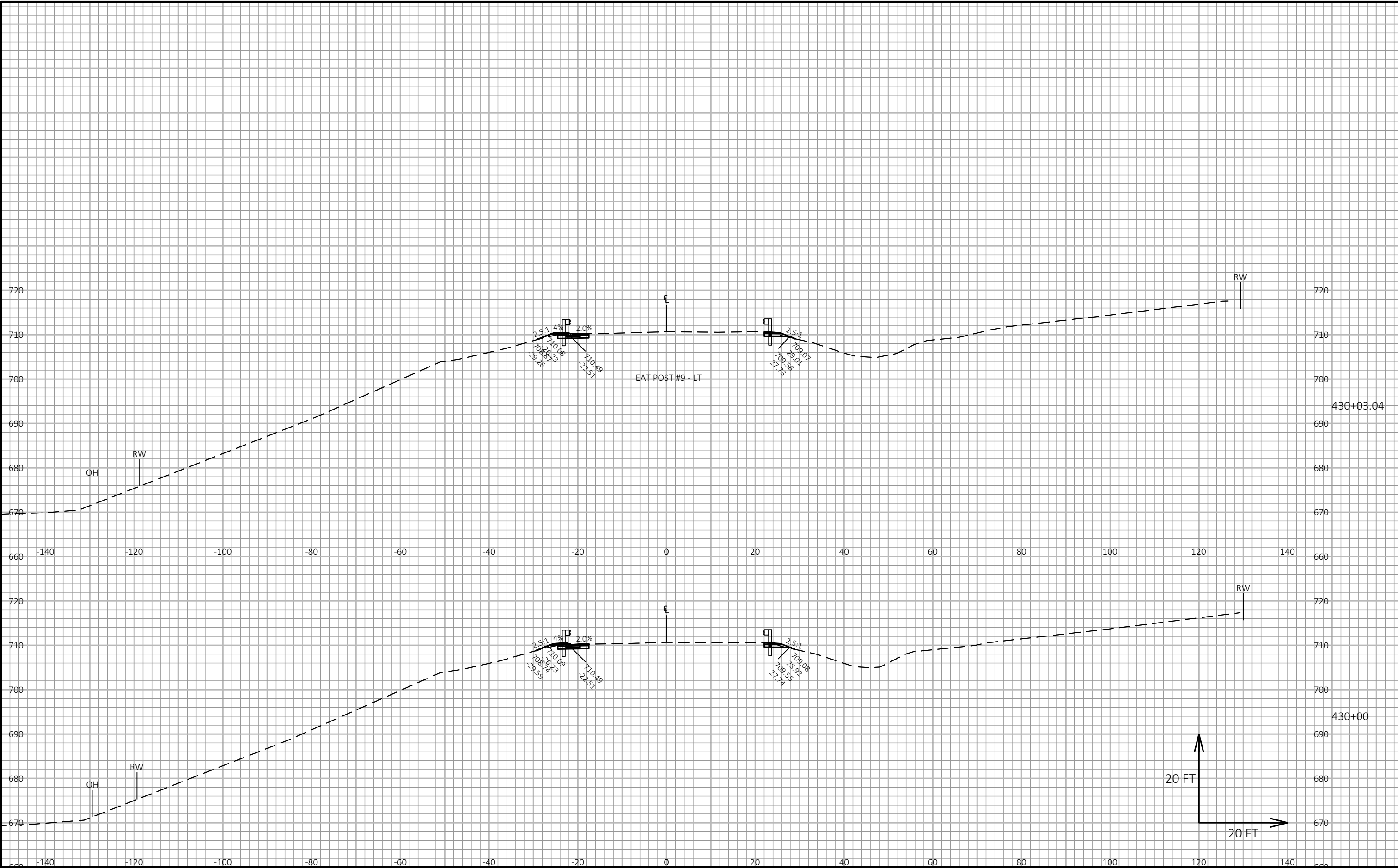
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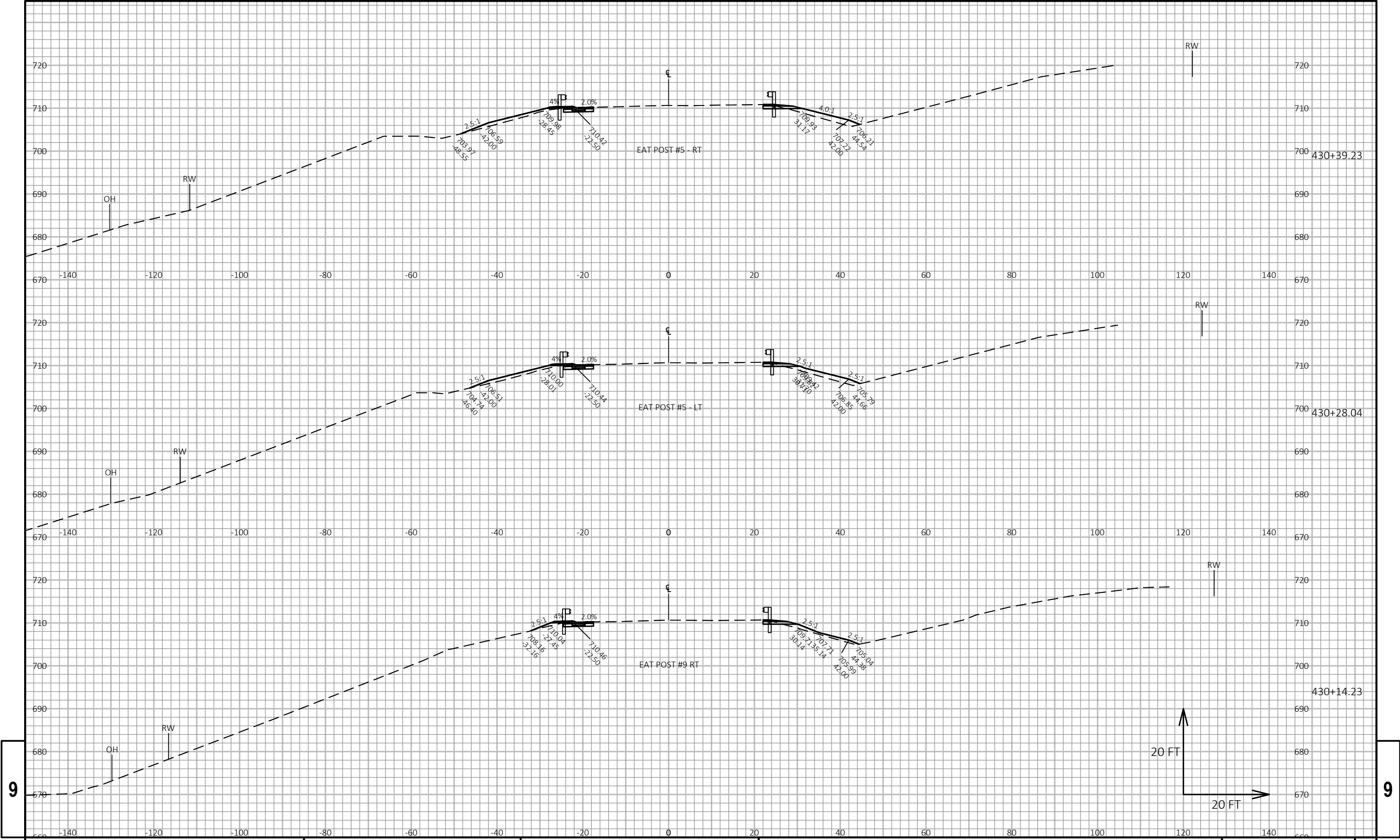


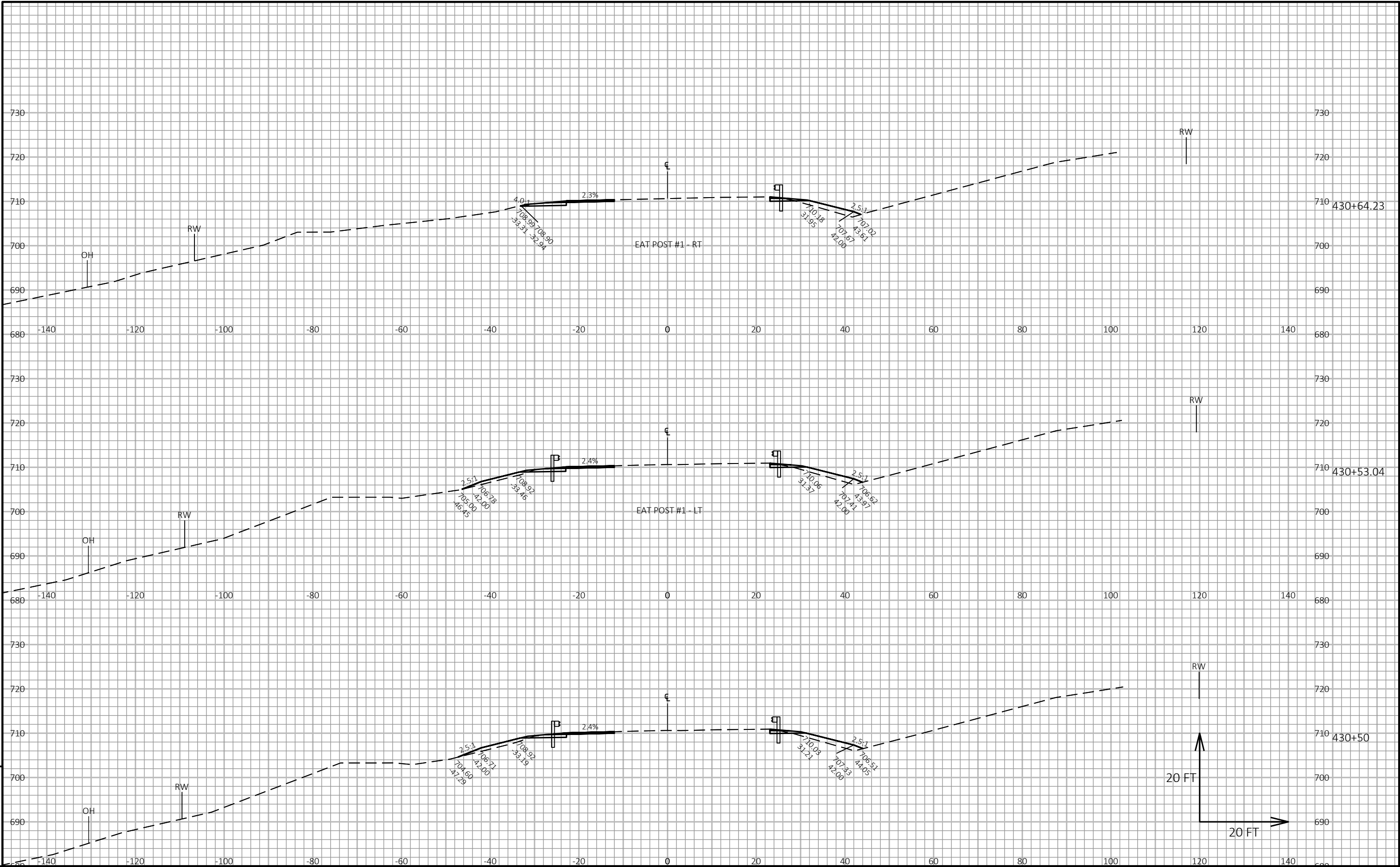




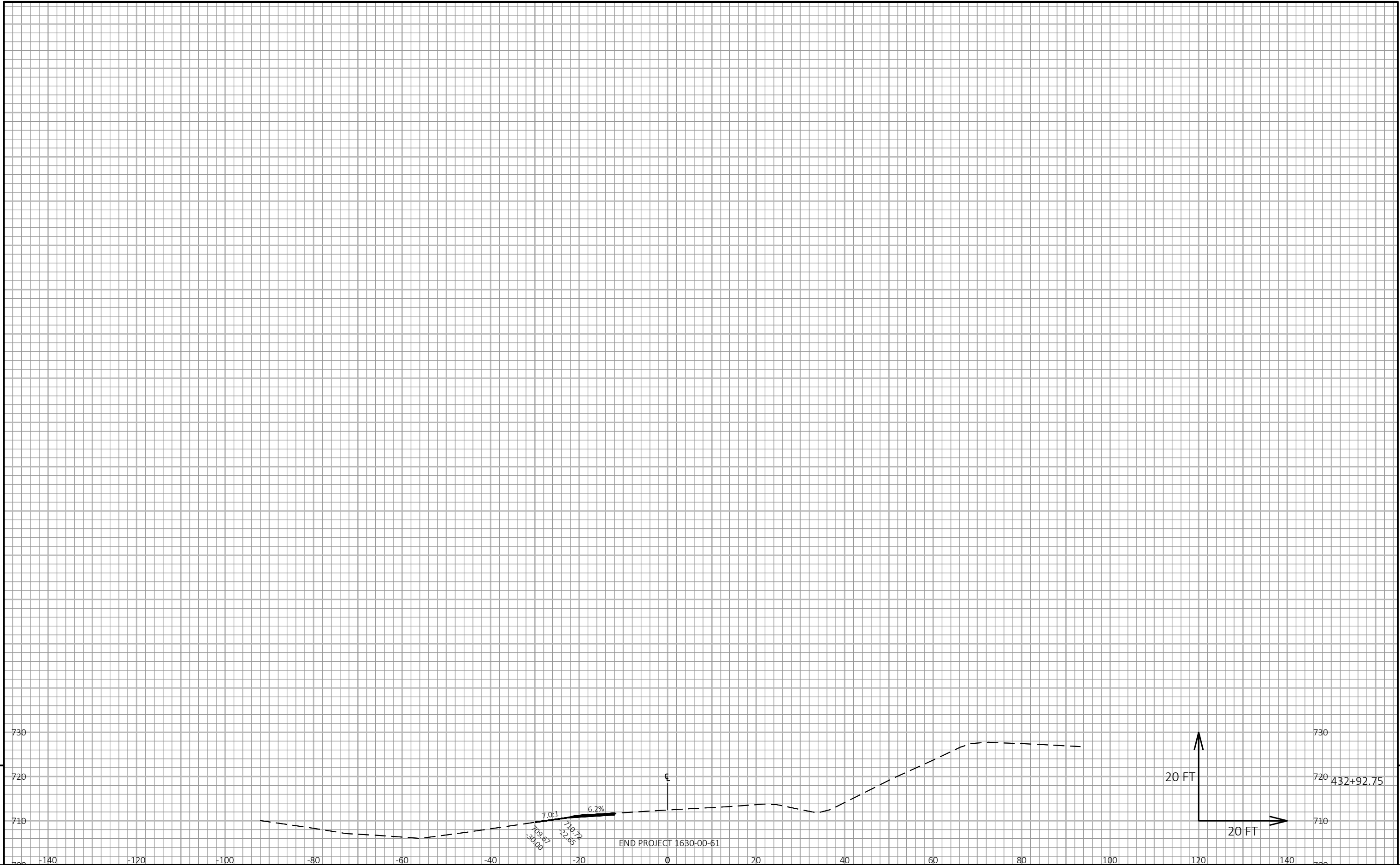






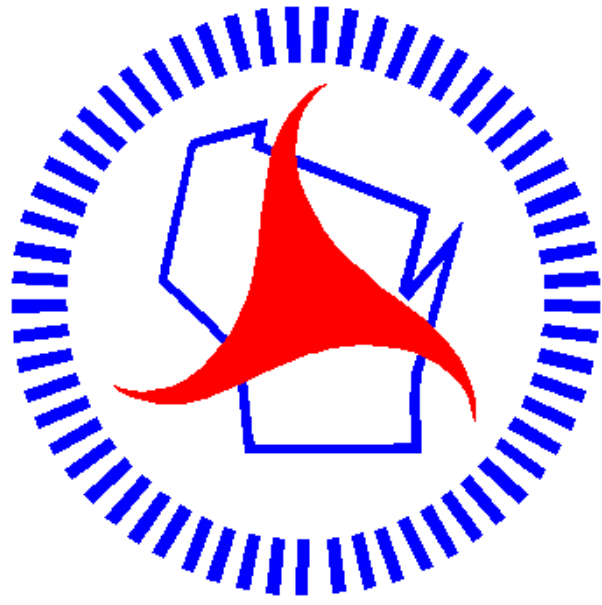


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Notes



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