WKE

APRIL 2020

PROJECT ID: 3831-00-71

WITH: N/A

COUNTY: KENOSHA

ORDER OF SHEETS

TOTAL SHEETS = 88

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

13TH AVENUE

(PIKE RIVER BRIDGE B-30-0013)

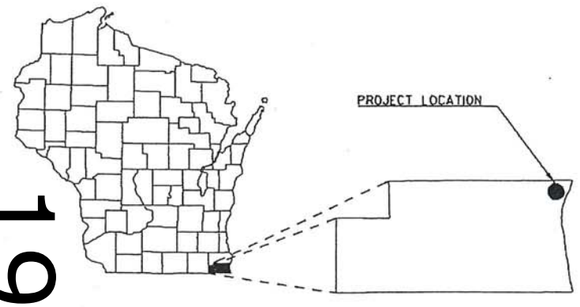
LOCAL ROAD

KENOSHA COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3831-00-71	WISC 2020143	1

STATE PROJECT NUMBER

3831-00-71



19

DESIGN DESIGNATION 3831-00-01

A.A.D.T.	2020	= 900
A.A.D.T.	2040	= 1000
D.H.V.		= 15.4
D.D.		= 60/40
T.		= 3.2%
DESIGN SPEED		= 40 M.P.H
ESALS		= 52,000

CONVENTIONAL SYMBOLS

PLAN

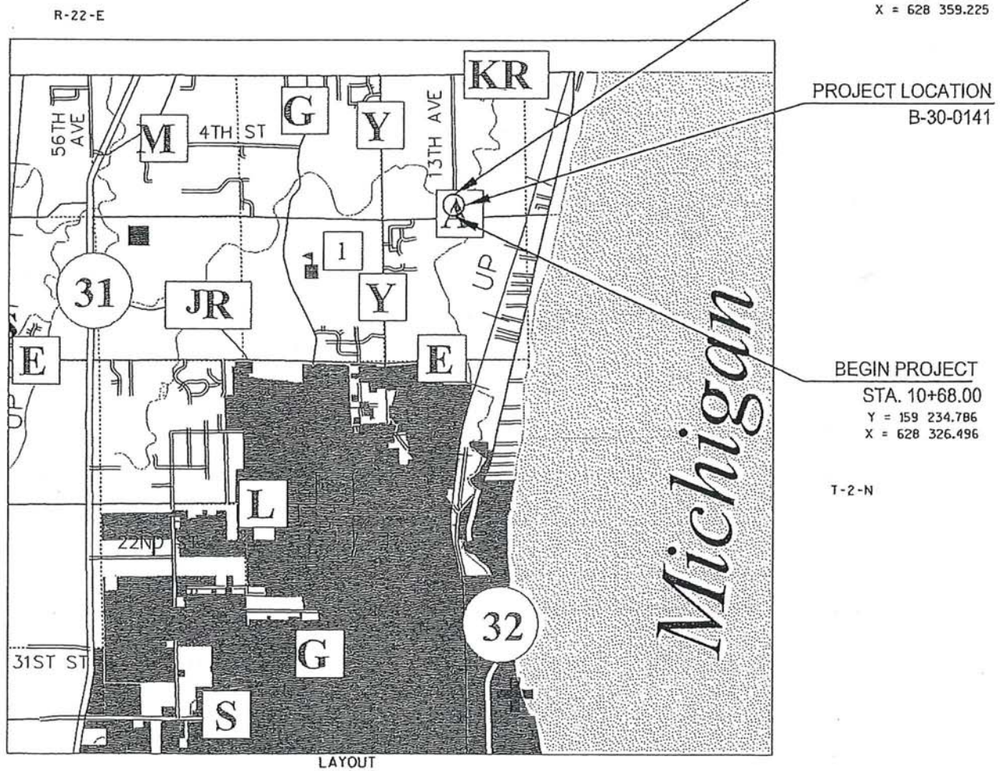
- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (3000'E)
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- OVERHEAD UTILITY (OH)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE



END PROJECT
STA. 15+60.00
Y = 159 725.691
X = 628 359.225

PROJECT LOCATION
B-30-0141

BEGIN PROJECT
STA. 10+68.00
Y = 159 234.786
X = 628 326.496

T-2-N

LAYOUT

SCALE 0 1 MILES

TOTAL NET LENGTH OF CENTERLINE = 0.093 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, KENOSHA 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 REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD88 (2012).

ACCEPTED FOR

VILLAGE of SOMERS

President

10/16/19 (Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

WESTBROOK
Associated Engineers, Inc.
619 EAST HOXIE STREET
P.O. BOX 429
SPRING GREEN, WISCONSIN 53588
PHONE (608) 588-7866
FAX (608) 588-7954

WISCONSIN
AARON B. PALMER
E-35695
RICHLAND CENTER, WI
PROFESSIONAL ENGINEER

10-22-2019 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WESTBROOK ASSOCIATED ENGINEERS
Designer	WESTBROOK ASSOCIATED ENGINEERS
Project Manager	KATHY KRAMER, P.E.
Regional Examiner	SE REGION
Regional Supervisor	JEFF BOHEN, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 10/24/19 K Kramer (Signature)

E

FILE NAME : G:\00-PROJECT FILES\2017\1T153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\SHEETSPLAN\010101_TI.DWG PLOT DATE : 10/15/2019 10:35 AM PLOT BY : ERIK MEYER PLOT NAME :
LAYOUT NAME - 010101_TI

WISDOT/CADDS SHEET 10

STANDARD ABBREVIATIONS

ABUT.	Abutment
AC	Acre
AGG.	Aggregate
AH	Ahead
<	Angle
ASPH	Asphaltic
AVG.	Average
A.D.T	Average Daily Traffic
BAD	Base Aggregate Dense
BK	Back
BF	Back Face
B.M.	Bench Mark
BR.	Bridge
C/L	Center Line
CC	Center to Center
CTH	County Trunk Highway
CR.	Creek
CY or CU YD	Cubic Yard
CP	Culvert Pipe
C & G	Curb and Gutter
D	Degree of Curve
DHV	Design Hour Volume
DIA	Diameter
E	East
X	East Grid Coordinate
ELEC	Electric
EL OR ELEV	Elevation
ESALS	Equivalent Single Ac=xle Loads
EBS	Excavation Below Subgrade
FF	Face to Face
FE	Field Entrance
F	Fill
FG	Finished Grade
FL or F/L	Flow Line
FT	Foot
FTG	Footing
GN	Grid North
HT	Height
CWT	Hundredweight
HYD	Hydrant
INL	inlet
ID	Inside Diameter
INV	Invert
IP	Iron Pipe or Pin
IRS	Iron Rod Set
JT	Joint
JCT	Junction
LHF	Left-Hand Forward
L	Length of Curve
LIN FT OR LF	Linear Foot
LC	Long Chord of Curve
MH	Manhole
MB	Mailbox
ML OR M/L	Match Line
N	North
Y	North Grid Coordinate
OD	Outside Diameter
PLE	Permanent Limited Easement
PT	Point
PC	Point of Curvature
PI	Point of Intersection
PRC	Point of Reverse Curvature
PT	Point of Tangency
POC	Point on Curve
PVC	Polyvinyl Chloride
PCC	Portland Cement Concrete
LB	Pound
PSI	Pounds Per Square Inch
PE	Private Entrance
R	Radius
RR	Railroad
RL OR R/L	Reference Line
RP	Reference Point
RCCP	Reinforced Concrete Culvert Pipe
REQD	Required
RES	Residence or Residential
RW	Retaining Wall
RT	Right
RHF	Right-Hand Forward
R/W	Right-of-Way
R	River
RD	Road
RDWY	Roadway
SALV	Salvaged
SAN S	Sanitary Sewer
SEC	Section
SHLDR	Shoulder
SHR	SHRINKAGE
SW	Sidewalk
S	South
SQ	Square
SF OR SQ FT	Square Feet
SY or SQ YD	Square Yard
STD	Standard
SDD	Standard Detail Drawings
STH	State Trunk Highway
STA	Station
SS	Storm Sewer
SG	Subgrade
SE	Superelevation
SL or S/L	Survey Line
SV	Septic Vent
T	Tangent
TEL	Telephone
TEMP	Temporary
TI	Temporary Interest
t	Ton
T or TN	Town
TRANS	Transition
TL OR T/L	Transit Line
T	Trucks (percent of)
TYP	Typical
UNCL	Unclassified
UG	Underground Cable
USH	United States Highway
VAR	Variable
V	Velocity or Design Speed
VERT	Vertical
VC	Vertical Curve
VOL	Volume
WM	Water Main
WV	Water Valve
W	West
WB	Westbound
YD	Yard

RUNOFF COEFFICIENT TABLE

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 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES,WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

ORDER OF SECTION 2 SHEETS

CONTACTS

CONSULTANT LIAISON
WESTBROOK ASSOCIATED ENGINEERS, INC.
619 EAST HOXIE STREET
SPRING GREEN, WI 53588

ATTN: AARON PALMER, P.E.
PH: (608) 588-7866
FAX: (608) 588-7954
aplamer@westbrookeng.com

COUNTY LIAISON
VILLAGE OF SOMERS
7511 12TH STREET
KENOSHA, WI 53144

ATTN: BILL MORRIS
PH: (262) 859-2822
bmorris@somers.org

WDNR LIAISON
DNR SERVICE CENTER
141 NW BARSTOW ROOM 180
WAUKESHA, WI 53188

ATTN: CRAIG WEBSTER
PH: (262) 574-2141
Craig.Webster@wisconsin.gov

UTILITIES

WE ENERGIES - GAS
ATTN: CHRIS DeGRAVE
231 W. MICHIGAN ST, ROOM A252
PO BOX 2046
MILWAUKEE, WI 53201
(262) 886-7018
Chris.DeGrave@we-energies.com

TOWN OF SOMERS - SANITARY
ATTN: JASON PETERS
7511 12TH ST
PO BOX 197
SOMERS, WI 53171
(262) 859-2822
JPeters@somers.org

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

**DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

GENERAL NOTES

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. ALL IN-WATER EROSION CONTROL ITEMS SHALL BE INSTALLED PRIOR TO DEMO, UNLESS WDNR AND PROJECT ENGINEER AGREE OTHERWISE AS PROPOSED IN THE PROJECTS ECIP. SILT FENCE SHALL BE IN PLACE PRIOR TO CONSTRUCTION.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE DRIVING LANES AND THE SHOULDERS ARE TO BE FERTILIZED, SEEDED, TEMPORARY SEEDED, AND E-MATTED OR AS DIRECTED BY THE ENGINEER. OVERSOW PERMANENT SEEDING AREAS WITH TEMPORARY SEED AT 3 LBS PER 1000 SQUARE FEET.

ANY AND ALL DISTURBED AREAS THAT WILL NOT BE FINISHED AND RESTORED WITHIN 14 DAYS SHALL BE SEEDED WITH TEMPORARY SEED WITHIN 48 HOURS.

RESTORATION OF EXPOSED SLOPES AND DITCHES SHALL TAKE PLACE WITHIN 7 CALENDAR DAYS AFTER FINISHED GRADING IS COMPLETE.

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

WETLANDS ARE PRESENT AT THE LOCATIONS SHOWN IN THE PLANS. DO NOT OPERATE MACHINERY OUTSIDE OF THE SLOPE INTERCEPTS IN THESE LOCATIONS.

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES.

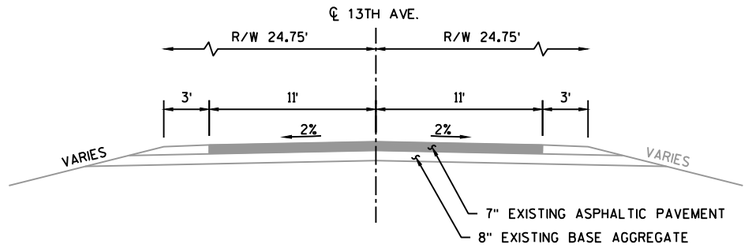
D.O.T. MONUMENT IS TO BE FURNISHED BY THE STATE AND PLACED BY THE CONTRACTOR IN THE SAME WING THAT THE PROPOSED NAME PLATE WILL BE PLACED, AS DIRECTED BY THE ENGINEER.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), KENOSHA COUNTY, HORIZONTAL DATUM NAD83, ELEVATION DATUM NAVD88.

ASPHALTIC SURFACE CALCULATIONS ARE BASED ON 112lb/sy/in.

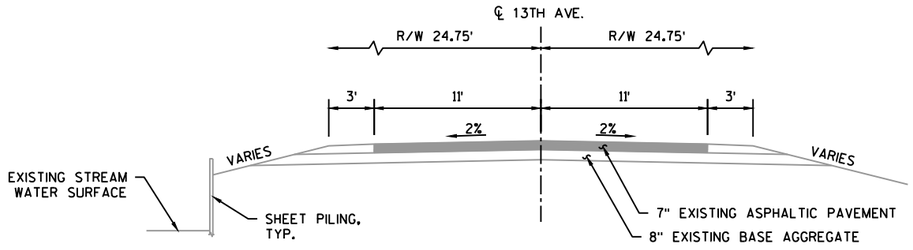
ASPHALTIC SURFACE LAYERS:
- UPPER: 1¾" (12.5 MM NOMINAL SIZE)
- LOWER: 2¼" (12.5 MM NOMINAL SIZE)

2



TYPICAL EXISTING SECTION

STA. 10+67.41 - STA. 13+67
STA. 14+98 - STA. 15+60.13



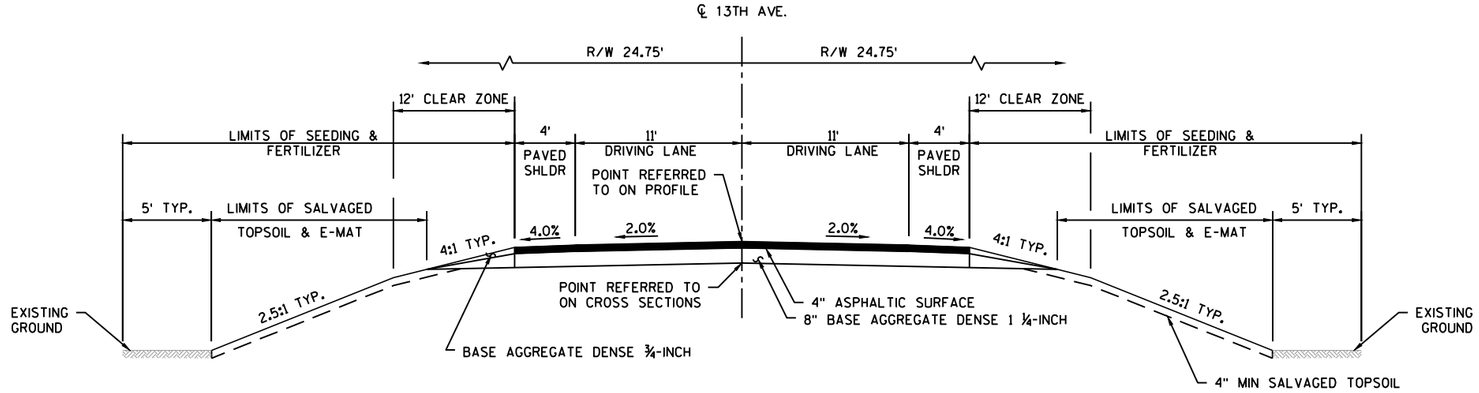
TYPICAL EXISTING SECTION

STA. 13+67 - STA. 14+98

PROJECT NO: 3831-00-71	HWY: 13TH AVE	COUNTY: KENOSHA	TYPICAL EXISTING SECTIONS	SHEET 3	E

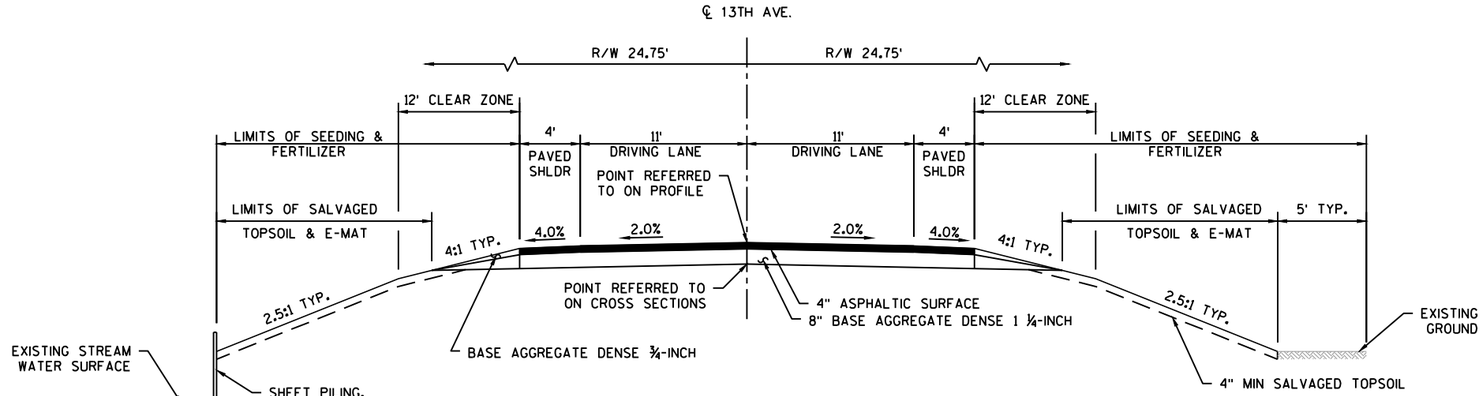
FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\SHEETSPLAN\020301_TS.DWG PLOT DATE : 2/3/2020 8:57 AM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:10 FT
LAYOUT NAME - ****

WISDOT/CADDS SHEET 42



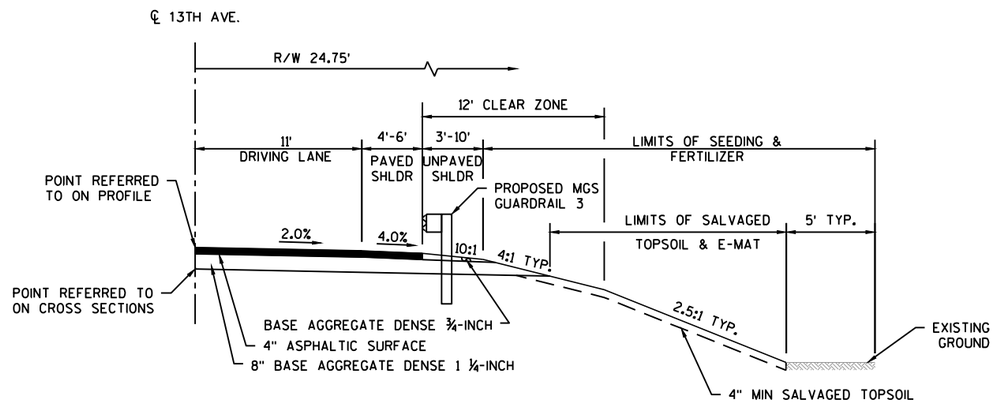
TYPICAL FINISHED SECTION

STA. 10+67.41 - STA. 13+67
STA. 14+98 - STA. 15+60.13



TYPICAL FINISHED SECTION

STA. 13+67 - STA. 14+98



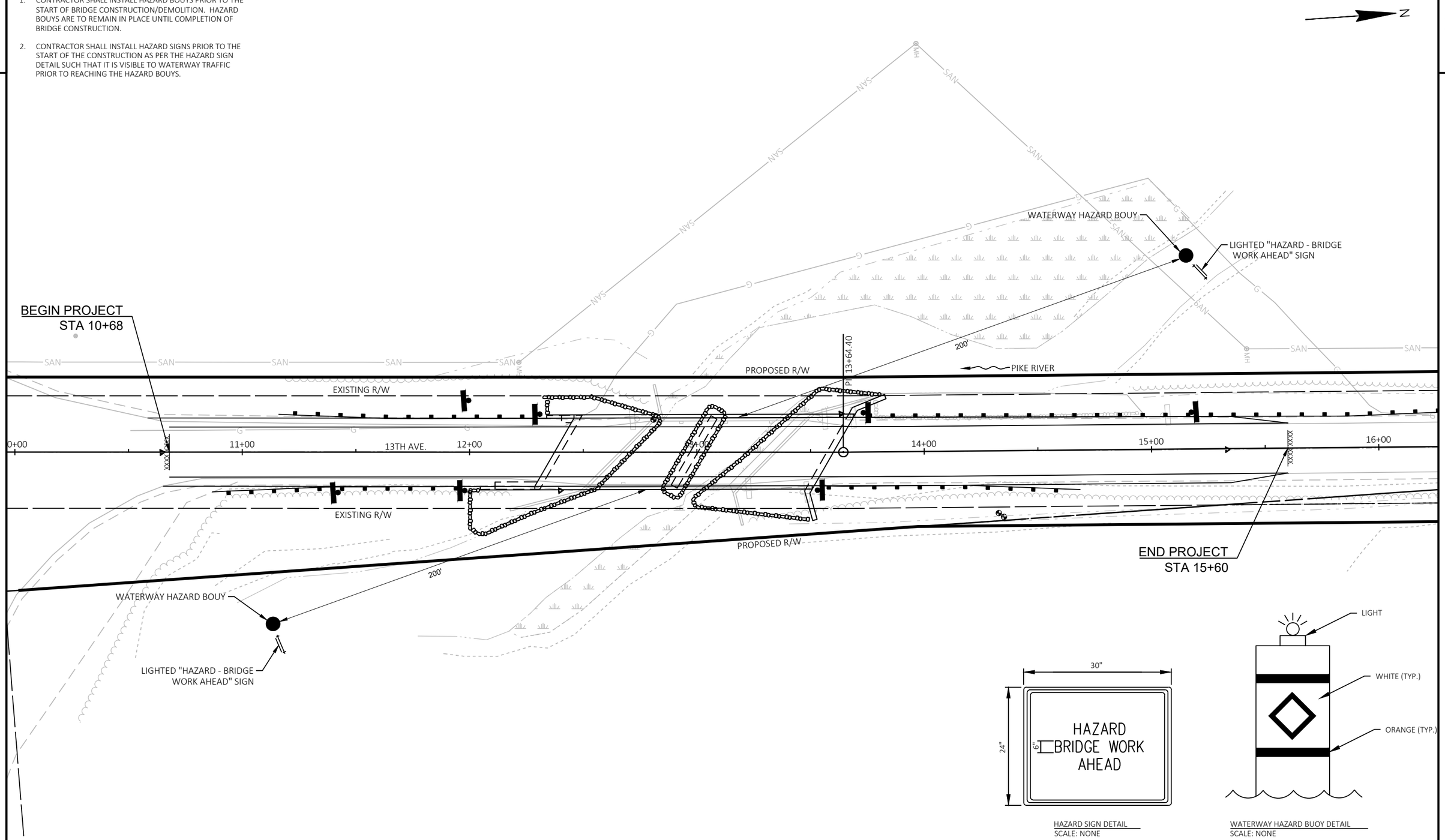
TYPICAL FINISHED HALF SECTION - GUARDRAIL

PROJECT NO: 3831-00-71	HWY: 13TH AVE	COUNTY: KENOSHA	TYPICAL SECTIONS	SHEET 4	E

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\SHEETSPLAN\020301_TS.DWG PLOT DATE : 2/3/2020 8:57 AM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:10 FT
LAYOUT NAME - ****
WISDOT/CADDS SHEET 42

NOTES:

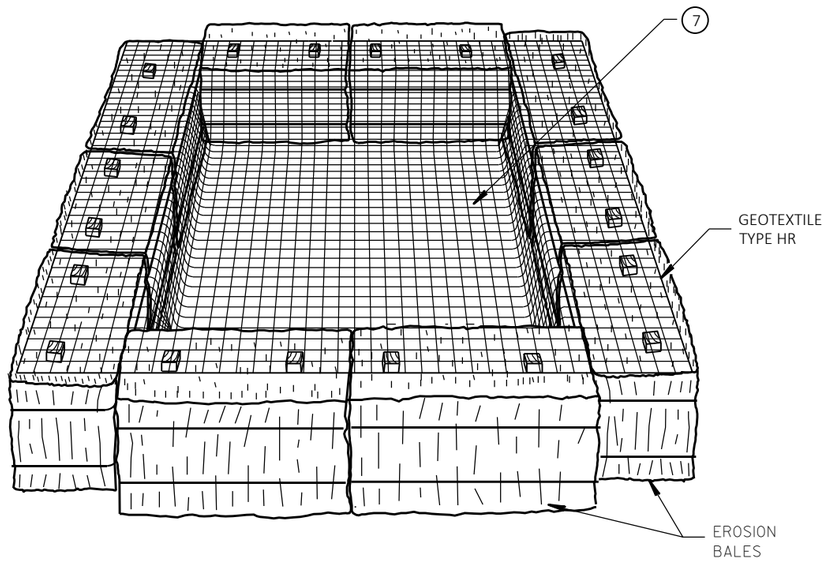
1. CONTRACTOR SHALL INSTALL HAZARD BOUYS PRIOR TO THE START OF BRIDGE CONSTRUCTION/DEMOLITION. HAZARD BOUYS ARE TO REMAIN IN PLACE UNTIL COMPLETION OF BRIDGE CONSTRUCTION.
2. CONTRACTOR SHALL INSTALL HAZARD SIGNS PRIOR TO THE START OF THE CONSTRUCTION AS PER THE HAZARD SIGN DETAIL SUCH THAT IT IS VISIBLE TO WATERWAY TRAFFIC PRIOR TO REACHING THE HAZARD BOUYS.



HAZARD SIGN DETAIL
SCALE: NONE

WATERWAY HAZARD BUOY DETAIL
SCALE: NONE

PROJECT NO: 3831-00-71	HWY: 13TH AVENUE	COUNTY: KENOSHA	HAZARD BOUY LAYOUT	SHEET 5	E



NOTES

1. CONTRACTOR SHALL PUMP WATER FROM WORK AREA EXCAVATION TO BASIN PRIOR TO DISCHARGING.
2. BASIN SHALL BE KEPT LESS THAN 10% FULL OF SEDIMENT. GEOTEXTILE FABRIC AND SEDIMENTS SHALL BE DISPOSED OF BY THE CONTRACTOR OFF THE PROJECT SITE.
3. SIZE TO BE DETERMINED BY THE ENGINEER IN THE FIELD BASED ON WATER QUANTITY AND QUALITY.
4. GEOTEXTILE FABRIC SHALL BE REPLACED AS NEEDED, USED GEOTEXTILE FABRIC AND SEDIMENTS SHALL BE DISPOSED OF BY THE CONTRACTOR OFF THE PROJECT SITE AT NO COST TO THE DEPARTMENT.
5. GEOTEXTILE TYPE HR TO BE PAID FOR SEPARATELY.
6. EROSION BALES TO BE PAID FOR SEPARATELY.
7. DEWATERING BAG SHALL BE PLACED INSIDE THE TEMPORARY SETTLING BASIN TO MEET WATER QUALITY DISCHARGE STANDARDS.
8. DO NOT PLACE TEMPORARY SETTLING BASIN WITHIN WETLAND AREA.

(SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:)

STORAGE VOLUME (C.F.) = 16 X GPM (PUMP RATE)

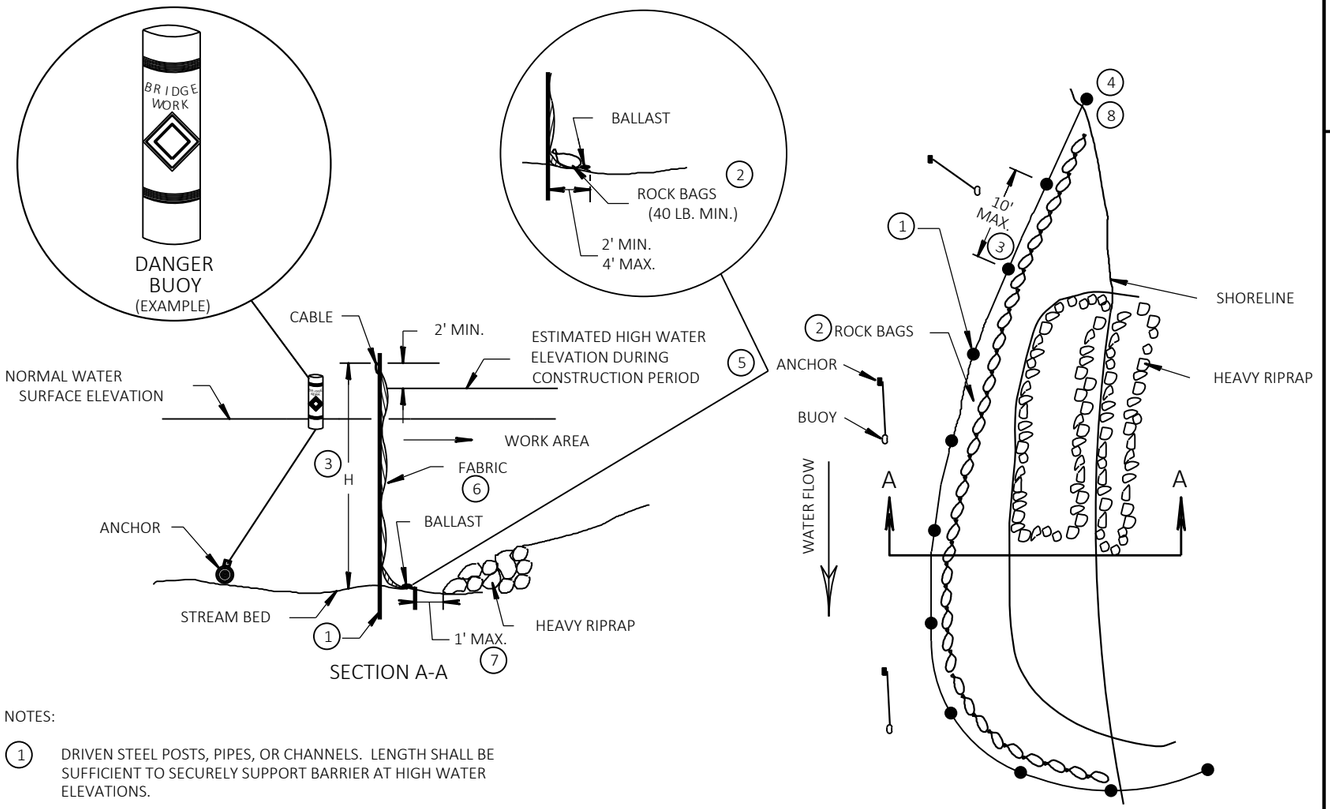
EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT.

SOLUTION:
SV (C.F.) = 16 X 50
SV = 800 C.F.

$$\frac{800\ \text{C.F.}}{1.5\ \text{FT.}} = 533\ \text{S.F.}$$

USE A 20 FT. X 27 FT. BASIN

TEMPORARY SETTLING BASIN



NOTES:

1. DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
2. ROCK BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. ROCK BAGS SHALL BE CONTINUOUS WITH NO SPACING.
3. WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
4. IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
5. ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD, MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN THE Q2 OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
6. ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
7. INSTALL THE TURBIDITY BARRIER WITH THE BALLAST PLACED NO MORE THAN 1' AWAY FROM THE TOE OF THE RIPRAP.
8. THE UPSTREAM ENDS OF TURBIDITY BARRIER SHALL BE CONNECTED TO THE STEEL SHEETING OR TRENCHED INTO THE BANK AND FIRMLY ANCHORED.

ENHANCED TURBIDITY BARRIER DETAIL

2

LEGEND

EXISTING SIGN MOUNTED ON POST(S)

PROPOSED SIGN MOUNTED ON POST(S)

(XXX) DENOTES SIGN NUMBER

N

2

BEGIN PROJECT
STA 10+68

2
NO PASSING ZONE
W14-3
48"X36"

R2
NO PASSING ZONE
REMOVE

4
W5-52L
12"X36"

R4
REMOVE

R6
REMOVE

REMOVE BY OTHERS
NO PARKING ANY TIME

PI: 13+64.40

6
W5-52R
12"X36"

PIKE RIVER

REMOVE BY OTHERS
NO PARKING ANY TIME

R7
STOP AHEAD
REMOVE

7
W3-1
36"X36"

SAN
G
MH

10+00
11+00
13TH AVE.
12+00
13+00
14+00
15+00
16+00

MARKING LINE,
EPOXY 4-INCH (DOUBLE YELLOW)

SPEED LIMIT 35
R2-1
24"X30"
1

SPEED LIMIT 35
REMOVE
R1

W5-52R
12"X36"
3

REMOVE
R5

NO PARKING ANY TIME
REMOVE BY OTHERS

W5-52L
12"X36"
5

END PROJECT
STA 15+60

NOTES:

FOR SIGNING DETAILS SEE SDD 15C6 "SIGNING & MARKINGS FOR TWO LANE BRIDGES".

W5-52 SIGNS SHALL BE MOUNTED AT 4-FT MINIMUM MOUNTING HEIGHT.

PROJECT NO: 3831-00-71	HWY: 13TH AVENUE	COUNTY: KENOSHA	SIGNING & PAVEMENT MARKING	SHEET 7	E

2

2

N

BP: 9+87.81
Y = 159 154.798
X = 628 320.862

BOP: 10+68.00
Y = 159 234.786
X = 628 326.496

BM #1
CHISELED X ON SW WING
STA. 12+80.88, 14.28' LT
Y = 159 448.149
X = 628 327.209

CP #3
3/4-INCH REBAR
STA. 13+63.38, 16.85' LT
Y = 159 530.624
X = 628 330.440

CP #4
GIN SPIKE ON CENTERLINE
STA. 15+33.33, 0.38' RT
Y = 159 699.050
X = 628 357.985

PI: 13+64.40
Y = 159 530.455
X = 628 347.321

BM #2
DOUBLE SPIKE IN TREE
STA. 14+32.53, 27.45' RT
Y = 159 596.794
X = 628 378.864

EOP: 15+60.00
Y = 159 725.691
X = 628 359.225

EP: 17+00.00
Y = 159 865.431
X = 628 367.745

IRON PIPE
STA. 16+93.90, 32.45' RT
Y = 159 857.371
X = 628 399.765

FD. CONCRETE MONUMENT
WITH SEWRPC BRASS CAP
Y = 159 131.220
X = 628 382.535

CP #1
GIN SPIKE ON CENTERLINE
STA. 10+64.65, 0.12' RT
Y = 159 231.444
X = 628 326.377

CP #2
3/4-INCH REBAR
STA. 12+39.89, 16.90' RT
Y = 159 405.070
X = 628 355.430

PROPOSED R/W
EXISTING R/W
PIKE RIVER
SAN
G
MH
10+00
11+00
12+00
13+00
14+00
15+00
16+00
N4° 01' 44"E
376.59'
13TH AVE.
N3° 29' 21"E
335.60'
N00° 02' 18"W, 2,648.92'
SECTION QTR. LINE FROM S1/4 TO CENTER OF SECTION
T 02 N
R 23 E
08
07

PROJECT NO: 3831-00-71	HWY: 13TH AVENUE	COUNTY: KENOSHA	ALIGNMENT DETAILS	SHEET 8	E

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\SHEETSPLAN\027201_AD.DWG
LAYOUT NAME - 027201_ad
PLOT DATE : 10/15/2019 12:40 PM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:50 FT

3831-00-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	6.000	6.000
0004	201.0205	Grubbing	STA	6.000	6.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 13+00	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	425.000	425.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-30-0141	LS	1.000	1.000
0012	208.0100	Borrow	CY	245.000	245.000
0014	210.1500	Backfill Structure Type A	TON	1,130.000	1,130.000
0016	213.0100	Finishing Roadway (project) 01. 3831-00-71	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	50.000	50.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	730.000	730.000
0022	455.0605	Tack Coat	GAL	86.000	86.000
0024	465.0105	Asphaltic Surface	TON	276.000	276.000
0026	502.0100	Concrete Masonry Bridges	CY	562.000	562.000
0028	502.3200	Protective Surface Treatment	SY	405.000	405.000
0030	502.3210	Pigmented Surface Sealer	SY	139.000	139.000
0032	505.0400	Bar Steel Reinforcement HS Structures	LB	15,620.000	15,620.000
0034	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	88,860.000	88,860.000
0036	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0038	550.2126	Piling CIP Concrete 12 3/4 X 0.375-Inch	LF	1,445.000	1,445.000
0040	603.8000	Concrete Barrier Temporary Precast Delivered	LF	87.500	87.500
0042	603.8125	Concrete Barrier Temporary Precast Installed	LF	87.500	87.500
0044	606.0300	Riprap Heavy	CY	375.000	375.000
0046	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	190.000	190.000
0048	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0050	614.2300	MGS Guardrail 3	LF	250.000	250.000
0052	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0054	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0056	618.0100	Maintenance And Repair of Haul Roads (project) 01. 3831-00-71	EACH	1.000	1.000
0058	619.1000	Mobilization	EACH	1.000	1.000
0060	624.0100	Water	MGAL	7.800	7.800
0062	625.0500	Salvaged Topsoil	SY	1,125.000	1,125.000
0064	628.1104	Erosion Bales	EACH	40.000	40.000
0066	628.1504	Silt Fence	LF	575.000	575.000
0068	628.1520	Silt Fence Maintenance	LF	460.000	460.000
0070	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0072	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0074	628.2008	Erosion Mat Urban Class I Type B	SY	1,125.000	1,125.000

Line	Item	Item Description	Unit	Total	Qty
0076	628.6005	Turbidity Barriers	SY	540.000	540.000
0078	629.0210	Fertilizer Type B	CWT	1.500	1.500
0080	630.0120	Seeding Mixture No. 20	LB	70.000	70.000
0082	630.0200	Seeding Temporary	LB	70.000	70.000
0084	630.0500	Seed Water	MGAL	55.000	55.000
0086	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	7.000	7.000
0088	637.2230	Signs Type II Reflective F	SF	31.560	31.560
0090	638.2602	Removing Signs Type II	EACH	6.000	6.000
0092	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0094	642.5001	Field Office Type B	EACH	1.000	1.000
0096	643.0300	Traffic Control Drums	DAY	1,310.000	1,310.000
0098	643.0420	Traffic Control Barricades Type III	DAY	2,096.000	2,096.000
0100	643.0705	Traffic Control Warning Lights Type A	DAY	2,620.000	2,620.000
0102	643.0715	Traffic Control Warning Lights Type C	DAY	1,310.000	1,310.000
0104	643.0900	Traffic Control Signs	DAY	1,179.000	1,179.000
0106	643.5000	Traffic Control	EACH	1.000	1.000
0108	645.0111	Geotextile Type DF Schedule A	SY	57.000	57.000
0110	645.0120	Geotextile Type HR	SY	756.000	756.000
0112	646.1020	Marking Line Epoxy 4-Inch	LF	984.000	984.000
0114	650.4500	Construction Staking Subgrade	LF	370.000	370.000
0116	650.5000	Construction Staking Base	LF	370.000	370.000
0118	650.6500	Construction Staking Structure Layout (structure) 01. B-30-0141	LS	1.000	1.000
0120	650.9910	Construction Staking Supplemental Control (project) 01. 3831-00-71	LS	1.000	1.000
0122	650.9920	Construction Staking Slope Stakes	LF	370.000	370.000
0124	690.0150	Sawing Asphalt	LF	50.000	50.000
0126	715.0502	Incentive Strength Concrete Structures	DOL	3,370.000	3,370.000
0128	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	800.000	800.000
0130	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	900.000	900.000

CLEARING & GRUBBING

STATION	- STATION	LOCATION	201.0105 CLEARING (STA)	201.0205 GRUBBING (STA)
11+00	- 12+00	RT	1.0	
11+00	- 12+00	LT & RT	-	1.0
12+00	- 13+00	LT & RT	1.0	1.0
13+00	- 15+00	RT	2.0	2.0
15+00	- 17+00	LT & RT	2.0	2.0
		TOTALS	6.0	6.0

EARTHWORK SUMMARY

STATION	- STATION	LOCATION	205.0100 EXCAVATION COMMON (CY)	208.0100 BORROW EXCAVATION (CY)
10+68	- 12+38	MAINLINE	180	245
13+60	- 15+60	MAINLINE	245	
		TOTALS	425	245

BASE AGGREGATE DENSE

STATION	- STATION	LOCATION	305.0110 3/4-INCH (TON)	305.0110 1 1/4-INCH (TON)	624.0100 WATER (MGAL)
10+68	- 12+38.00	MAINLINE	20	320	3.4
13+60	- 15+60	MAINLINE	30	410	4.4
		TOTALS	50	730	7.8

ASPHALTIC ITEMS

STATION	- STATION	LOCATION	455.0605 TACK COAT (GAL)	465.0105 ASPHALTIC SURFACE (TON)
10+68	- 12+38	MAINLINE	40	128
13+60	- 15+60	MAINLINE	46	148
		TOTALS	86	276

MGS GUARDRAIL

STATION	- STATION	LOCATION	614.2300 MGS GUARDRAIL 3 (LF)	614.2500 MGS THRIE BEAM TRANSITION (LF)	614.2610 MGS GUARDRAIL TERMINAL EAT (EACH)
10+87	- 12+05	RT	25	39.40	1
11+16	- 12+34	LT	25	39.40	1
13+51	- 14+69	RT	25	39.40	1
13+69	- 16+37	LT	175	39.40	1
		TOTALS	250.00	157.60	4

FINISHING ITEMS

STATION	- STATION	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	638.2008 EROSION MAT URBAN CLASS I TYPE B (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0120 SEEDING MIXTURE NO. 20 (LB)	630.0200 SEEDING TEMPORARY (LB)	630.0500 SEED WATER (MGAL)
10+68	- 12+38	MAINLINE	433	433	0.50	22	22	17.6
13+60	- 15+60	MAINLINE	470	470	0.75	33	33	26.6
		UNDISTRIBUTED	222	222	0.25	15	15	10.8
		TOTALS	1125	1125	1.50	70	70	55

SILT FENCE

STATION	- STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)
10+68	- 12+38	RT	35	35
10+68	- 13+38	LT	93	93
13+60	- 15+60	LT	255	255
13+60	- 15+60	RT	77	77
		UNDISTRIBUTED	115	—
		TOTALS	575	460

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)
ID 3831-00-71	3	2
TOTALS	3	2

CONCRETE BARRIER TEMPORARY PRECAST

LOCATION	603.8000 DELIVERED (LF)	603.8125 INSTALLED (LF)
SOUTH ABUTMENT	25	25
PIER	37.5	37.5
NORTH ABUTMENT	25	25
TOTALS	87.5	87.5

TURBIDITY BARRIERS

LOCATION	628.6005 (SY)
SOUTH ABUT	370
NORTH ABUT	170
TOTALS	540

TEMPORARY SETTLING BASIN

LOCATION	628.1104 EROSION BALES (EACH)	645.012 GEOTEXTILE TYPE HR SY
ID 3831-00-71	40	80
TOTALS	40	80*

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

PERMANENT SIGNING

STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE	634.0614 POSTS WOOD 4X6-INCH X 14-FT (EACH)	637.2230 SIGNS TYPE II REFLECTIVE F (SF)	SIGN MESSAGE
11+42	RT	1	R2-1	24" X 30"	1	5	SPEED LIMIT 35 MPH
12+00	LT	2	W14-3	48" X 36"	1	5.56	NO PASSING ZONE
11+98	RT	3	W5-52R	12" X 36"	1	3	BRIDGE HASH MARKS
12+31	LT	4	W5-52L	12" X 36"	1	3	BRIDGE HASH MARKS
13+53	RT	5	W5-52L	12" X 36"	1	3	BRIDGE HASH MARKS
13+73	LT	6	W5-52R	12" X 36"	1	3	BRIDGE HASH MARKS
15+18	LT	7	W3-1	36" X 36"	1	9	STOP AHEAD
		TOTAL			7	31.56	

TRAFFIC CONTROL

LOCATION	SERVICE PERIOD (DAYS)	643.0300 TRAFFIC CONTROL DRUMS (NO.)	(DAYS)	643.0420 TRAFFIC CONTROL BARRICADES, TYPE III (NO.)	(DAYS)	643.0705 TRAFFIC CONTROL WARNING LIGHTS, TYPE A (NO.)	(DAYS)	643.0715 TRAFFIC CONTROL WARNING LIGHTS, TYPE C (NO.)	(DAYS)	643.0900 TRAFFIC CONTROL SIGNS (NO.)	(DAYS)
ROAD CLOSURE	131	—	—	16	2096	20	2620	—	—	9	1179
UNDISTRIBUTED	131	10	1310	—	—	—	—	10	1310	—	—
		10	1310	16	2096	20	2620	10	1310	9	1179

PLACE TRAFFIC CONTROL IN ACCORDANCE WITH SDD 15C2

MARKING LINE EPOXY 4-INCH

STATION	- STATION	LOCATION	646.1020 (LF)
10+68	- 15+50	CENTERLINE	984
		TOTAL	984

CONSTRUCTION STAKING

STATION	- STATION	LOCATION	650.4500 SUBGRADE (LF)	650.5000 BASE (LF)	650.6500 STRUCTURE LAYOUT (STRUCTURE) 01. B-30-0141 (LS)	650.9910 SUPPLEMENTAL CONTROL (LS)	650.9920 SLOPE STAKES (LF)
10+68	- 12+38	MAINLINE	170	170	—	0.5	170
13+60	- 15+60	MAINLINE	200	200	—	0.5	200
		TOTALS	370	370	1*	1	370

* CATEGORY 0020

REMOVING SIGNS TYPE II & REMOVING SMALL SIGN SUPPORTS

STATION	LOCATION	DESCRIPTION	638.2602 (EACH)	638.3000 (EACH)
11+42	RT	35 MPH	1	1
12+00	LT	NO PASSING	1	1
12+74	LT	W5-52L	1	1
13+20	RT	W5-52L	1	1
13+54	LT	W5-52R	1	1
15+18	LT	STOP AHEAD	1	1
		TOTAL	6	6

SAWING ASPHALT

STATION	LOCATION	690.0150 (L.F.)
10+68	13TH AVE.	28
15+60	13TH AVE	22
	TOTAL	50

ALL ITEMS CATEGORY 0010 UNLESS NOTED OTHERWISE.

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W OR HE LINE
PROPERTY LINE
LOT, TIE & OTHER MINOR LINES
SLOPE INTERCEPT
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)
TEMPORARY LIMITED EASEMENT AREA
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING — TO BE REMOVED
BRIDGE

SECTION CORNER SYMBOL
SECTION CORNER MONUMENT
R/W MONUMENT (TO BE SET)
NON-MONUMENTED R/W POINT
FOUND IRON PIN (1-INCH UNLESS NOTED) IP
GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT
SIGN — SIGN
OFF-PREMISE SIGN — I-25 — SIGN

	COMPENSABLE	NON-COMPENSABLE
ELECTRIC POLE		
TELEPHONE POLE		
PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)		

ACCESS RESTRICTED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)
NO ACCESS (NEW HIGHWAY)
PARCEL NUMBER (25) — UTILITY NUMBER (40)
PARALLEL OFFSETS

CONVENTIONAL ABBREVIATIONS

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

CURVE DATA

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

CONVENTIONAL UTILITY SYMBOLS

WATER	—W—
GAS	—G—
TELEPHONE	—T—
OVERHEAD TRANSMISSION LINES	—OH—
ELECTRIC	—E—
CABLE TELEVISION	—TV—
FIBER OPTIC	—FO—
SANITARY SEWER	—SAN—
STORM SEWER	—SS—

NOTES:

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

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"X24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

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

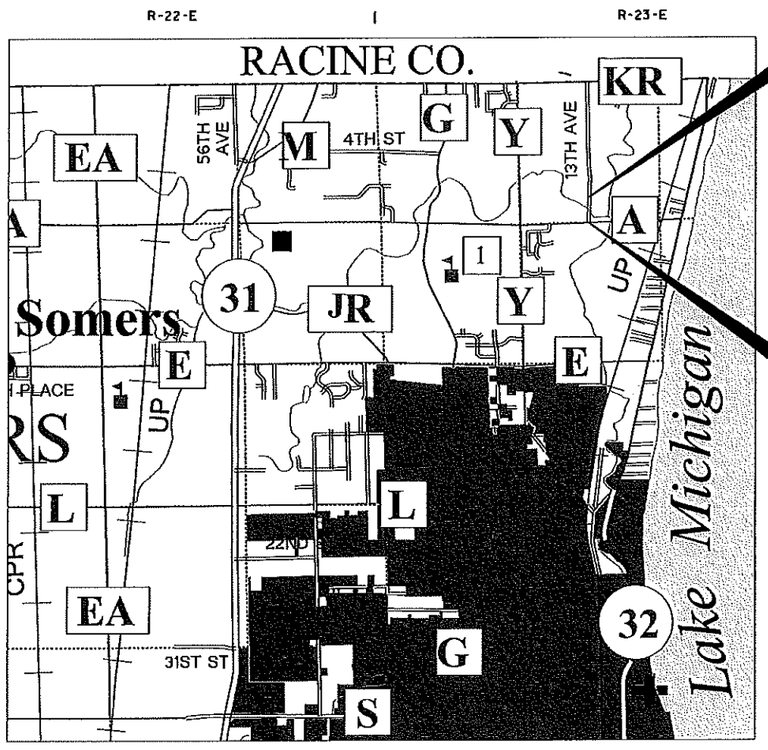
THE PROPOSED REFERENCE LINE IS COINCIDENTAL WITH THE EXISTING CENTERLINE AND IS REFERRED TO AS "RDWY CENTERLINE" WITHIN THIS PLAT.

THE GOVERNMENT LAND LINE AND REFERENCE LINE ARE NOT COINCIDENTAL.

A PERMANENT LIMITED EASEMENT (PLE) IS A RIGHT FOR CONSTRUCTION AND MAINTENANCE PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE, BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHTS TO MAKE OR CONSTRUCT IMPROVEMENTS ON SAID LANDS OR TO FLATTEN THE SLOPES, SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES.

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

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



LAYOUT
SCALE 0 0.5 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.138 MILES

GN

R/W PROJECT NUMBER 3831-00-01	SHEET NUMBER	TOTAL SHEETS
FEDERAL PROJECT NUMBER	4.01	

PLAT OF RIGHT OF WAY REQUIRED FOR

VILLAGE OF SOMERS, 13TH AVENUE PIKE RIVER BRIDGE B-30-0141

LOCAL STREET — KENOSHA COUNTY

CONSTRUCTION PROJECT NUMBER 3831-00-71

CAUTION
THIS PLAT IS FOR ILLUSTRATIVE PURPOSES ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES.

ORIGINAL PLAT PREPARED BY

WESTBROOK
Associated Engineers, Inc.
619 EAST HOXIE STREET
PO BOX 429
SPRING GREEN, WI
608-588-7866
WWW.WESTBROOKENG.COM

I HEREBY CERTIFY THAT THIS PLAT WAS CREATED FOR THE VILLAGE OF SOMERS, KENOSHA COUNTY, WISCONSIN AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN
NICHOLAS J. BREY
S-3145
LAVALLE
WISCONSIN
LAND SURVEYOR

03-01-2019

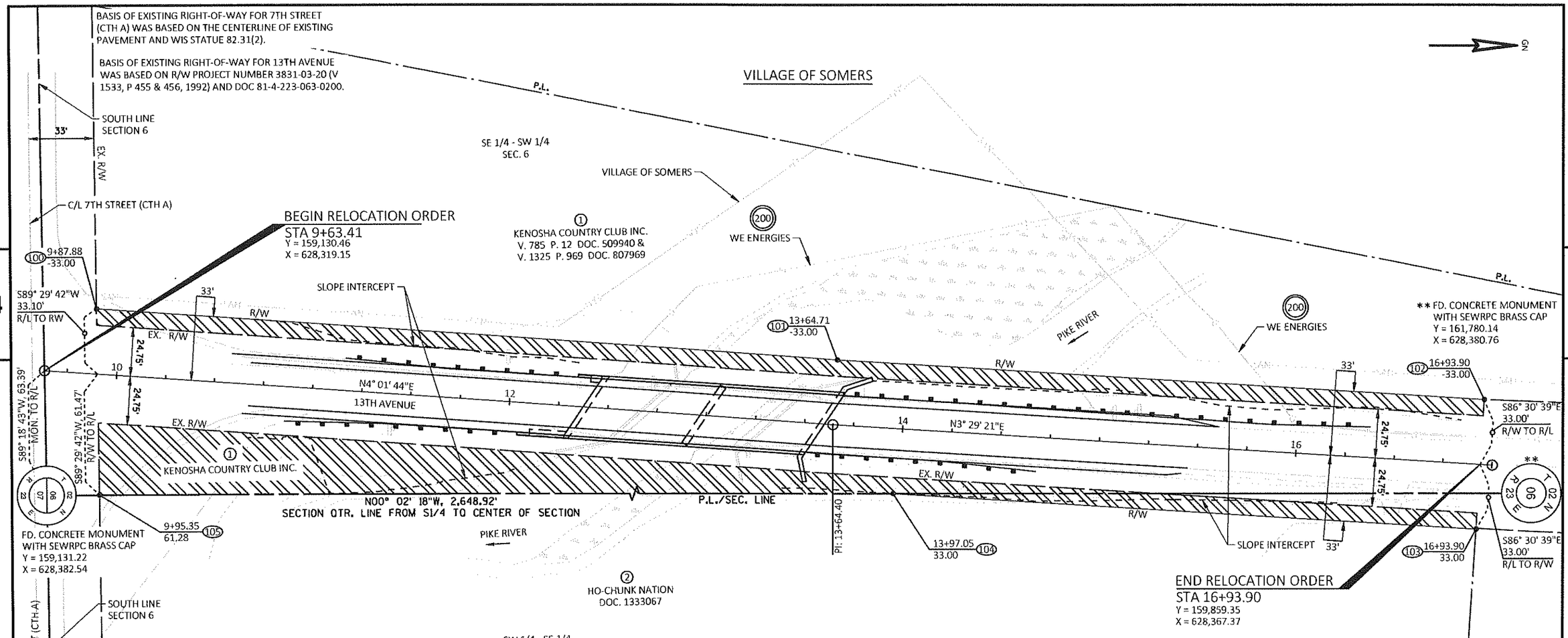
REVISION DATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED FOR THE VILLAGE OF SOMERS
DATE: 10/9/19 (Signature)

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\SHEETSPLAN\040101_RP.DWG PLOT DATE : 3/1/2019 12:29 PM PLOT BY : NICHOLAS J. BREY PLOT NAME :
LAYOUT NAME - ****

WISDOT/CADDS SHEET 50



R/W POINT COORDINATES

POINT NUMBER	Y	X
100	159,157.18	628,287.95
101	159,532.77	628,314.40
102	159,861.35	628,334.44
103	159,857.34	628,400.31
104	159,561.04	628,382.25
105	159,158.02	628,382.52

R/W COURSE TABLE

COURSE	BEARING	DISTANCE
100-101	N04°01'44"E	376.52'
101-102	N03°29'21"E	329.19'
102-103	S86°30'39"E	66.00'
103-104	S03°29'21"W	296.85'
104-105	S00°02'18"E	403.02'

UTILITY NUMBER	UTILITY OWNER	INTERESTS REQUIRED
200	WE ENERGIES	RELEASE OF RIGHTS

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NUMBER	OWNER (S)	INTERESTS REQUIRED	TOTAL ACRES	R/W REQUIRED ACRES			TOTAL REMAINING ACRES	TLE ACRES
				NEW	EXISTING	TOTAL		
1	KENOSHA COUNTRY CLUB, INC.	HE	141.96	0.35	0.78	1.13	141.96	--
2	HO-CHUNK NATION	HE	16.52	0.04	0.02	0.06	16.52	--

REVISION DATE	DATE MARCH 1, 2019	SCALE, FEET 0 25 50	HWY: 13TH AVENUE	STATE R/W PROJECT NUMBER 3831-00-01	PLAT SHEET 4.02
	GRID FACTOR N/A		COUNTY: KENOSHA	CONSTRUCTION PROJECT NUMBER 3831-00-71	PS&E SHEET E

FILE NAME : 040102_RP.DWG
LAYOUT NAME - 040102_rp
PLOT DATE : 3/7/2019 10:07 AM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:50 FT

LEGEND

XXXX SAWCUT, MATCH EXISTING

FLOW ARROW

STREAM EDGE

CONCRETE BARRIER TEMPORARY*

* TO BE DETERMINED BY FIELD ENGINEER IN CONSULTATION WITH WDNR.

REMOVE EXISTING STRUCTURE B-30-0013
STA. 13+00, SINGLE SPAN CONCRETE DECK GIRDER BRIDGE
61.6-FT OVERALL LENGTH AND 28-FT CLEAR ROADWAY WIDTH

N

WE ENERGIES

WETLAND, TYP.

TOWN OF SOMERS

PI: STA. 13+64.40
N = 159 530.4553
E = 628 347.3206

PIKE RIVER

REMOVING EXISTING RIPRAP INCIDENTAL TO COMMON EXCAVATION

PROPOSED SILT FENCE

SLOPE INTERCEPT

RIPRAP HEAVY

PROPOSED R/W

PROPOSED ℄ 13TH AVE.

EXISTING R/W

BM #1

CP #3

CP #1

11+00 N4° 01' 44"E

13TH AVE. (ASPHALT)

12+00

13+64.40

14+00 N3° 29' 21"E

15+00

16+00

CP #4

CP #2

EXISTING R/W

BM #2

PROPOSED R/W

SLOPE INTERCEPT

SLOPE INTERCEPT

PROPOSED TURBIDITY BARRIER

BEGIN PROJECT
STA 10+68
Y = 159 234.786
X = 628 326.496

STA. 12+98.79, STRUCTURE B-30-0141
TWO SPAN REINFORCED CONCRETE HAUNCH SLAB
30-FT CLEAR ROADWAY WIDTH
30° SKEW

END PROJECT
STA 15+60
Y = 159 725.691
X = 628 359.225

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
BM-1	12+80.91	CHISLED X IN SW WING, 13.79' LT	603.76
BM-2	14+32.54	RAILROAD SPIKE, 27.45' RT	595.76

STA 10+68.00
EL 608.73

EXISTING ℄ PROFILE

-2.45%

PROPOSED ℄ PROFILE

STA 13+76.00
EL 601.17

VCL = 184.00

K = 64.00

STA 15+60.00
EL 597.60

0.42%

EXISTING GROUNDLINE

OBSERVED WATER
EL. = 588.0'
(12-4-2017)

VPI STA 14+68.00
VPI EL 598.06

APPROX. STREAMBED EL. = 585.15'

EXISTING ℄ ELEVATION

PROPOSED ℄ ELEVATION

610
600
590
580

10+50 607.94 607.94
11+00 606.72 606.72
12+00 605.49 605.49
604.26 604.26
13+00 603.04 603.04
601.81 601.81
14+00 600.41 600.41
599.10 599.10
15+00 598.18 598.18
597.66 597.66
16+00 597.76 597.76
16+50

PROJECT NO: 3831-00-71	HWY: 13TH AVENUE	COUNTY: KENOSHA	PLAN AND PROFILE	SHEET 14	E

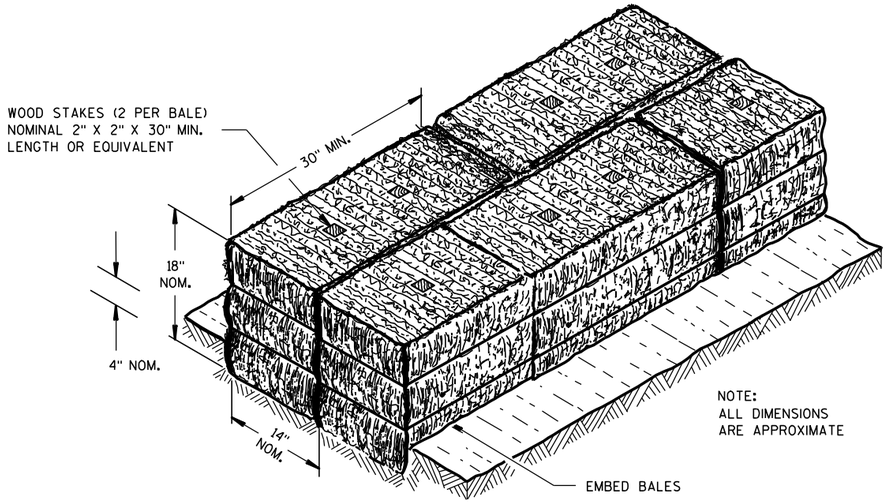
FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\SHEETSPLAN\050101_PP.DWG
LAYOUT NAME - 050101_pp

PLOT DATE : 10/15/2019 3:14 PM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : ##########

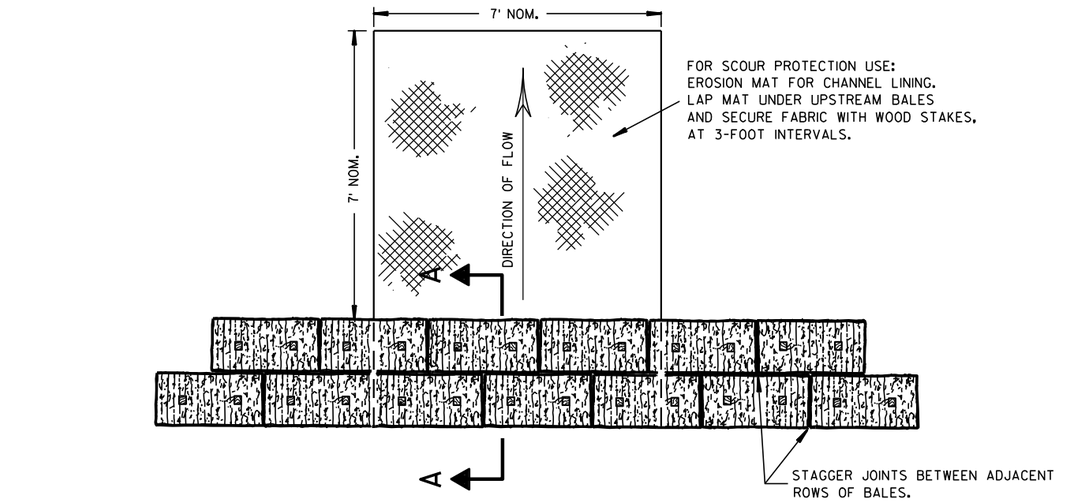
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

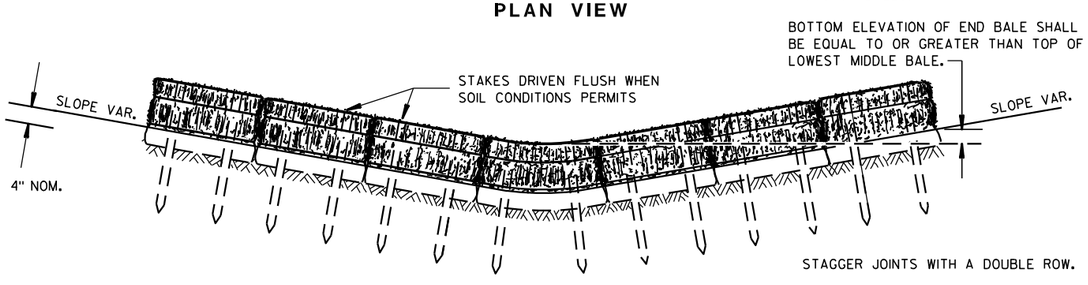
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE 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"
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)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



SECTION A-A



PLAN VIEW



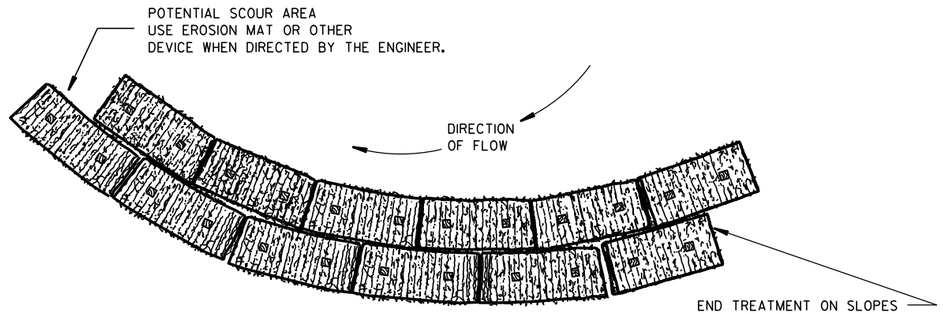
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

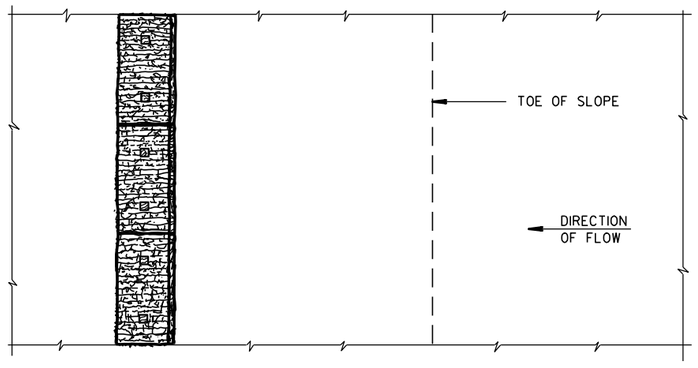
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

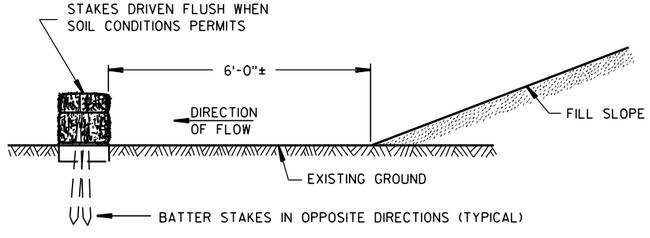


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

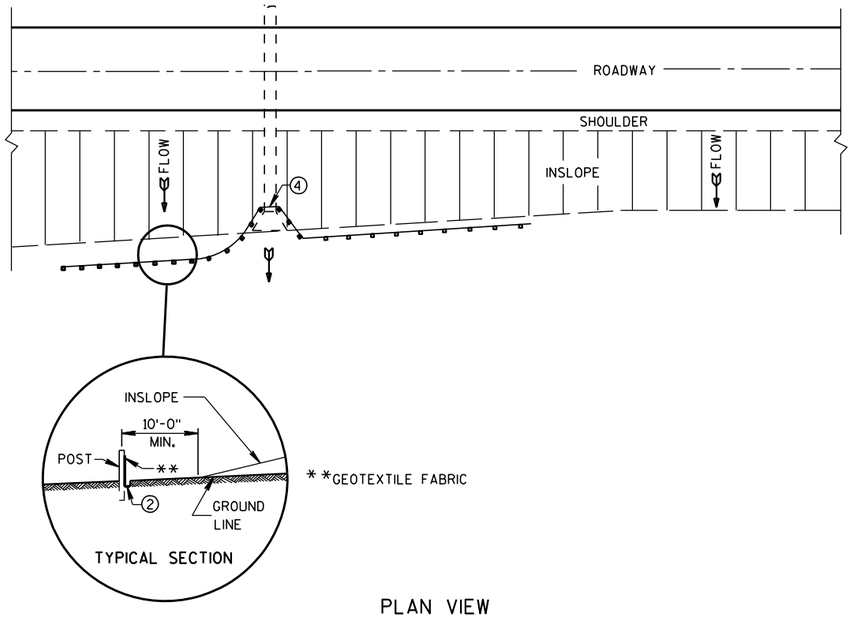
FHWA

6

S.D.D. 8 E 8-3

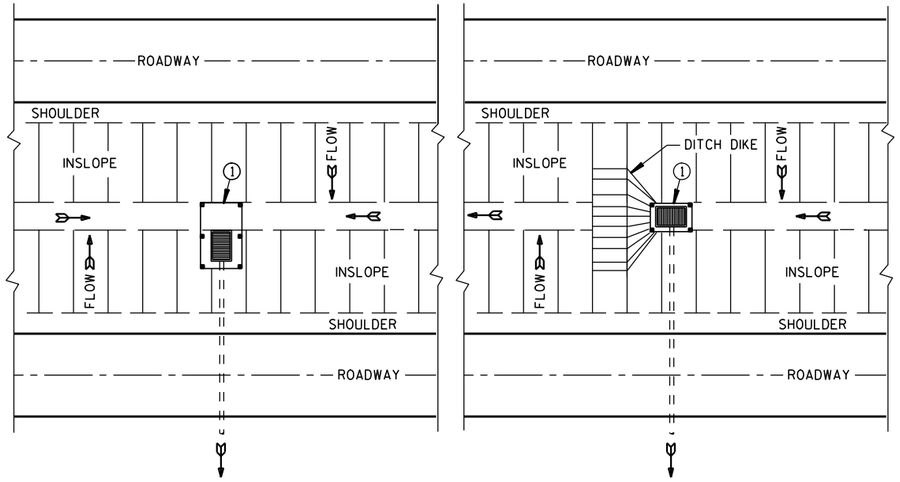
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



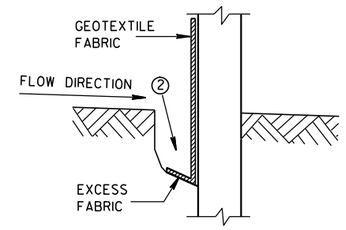
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

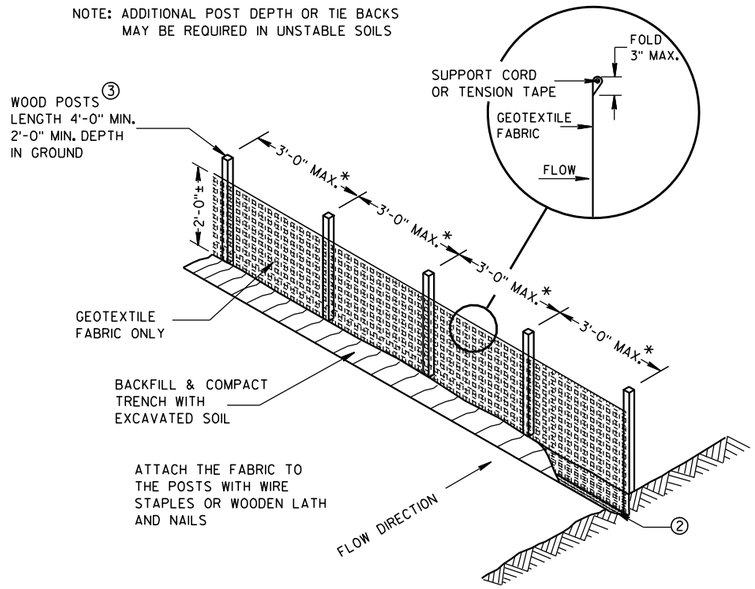
GENERAL NOTES

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

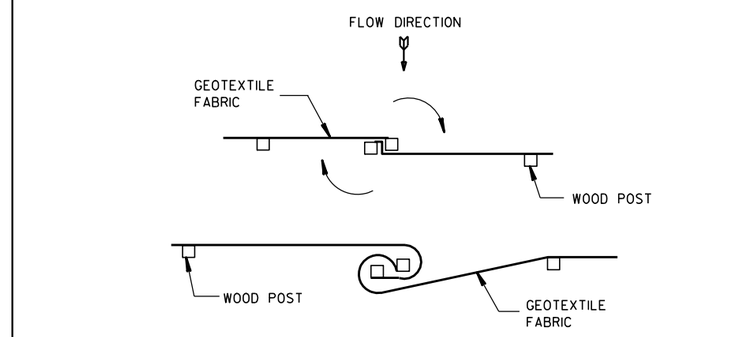
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" 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.



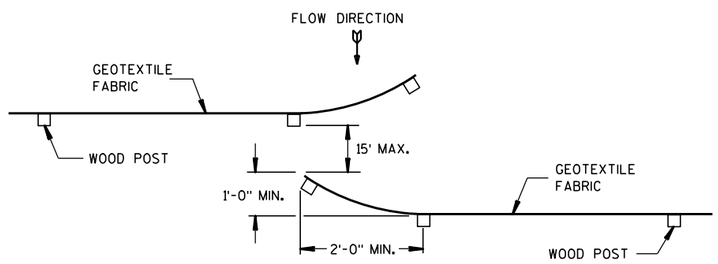
TRENCH DETAIL



SILT FENCE

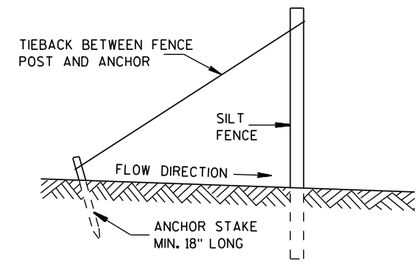


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

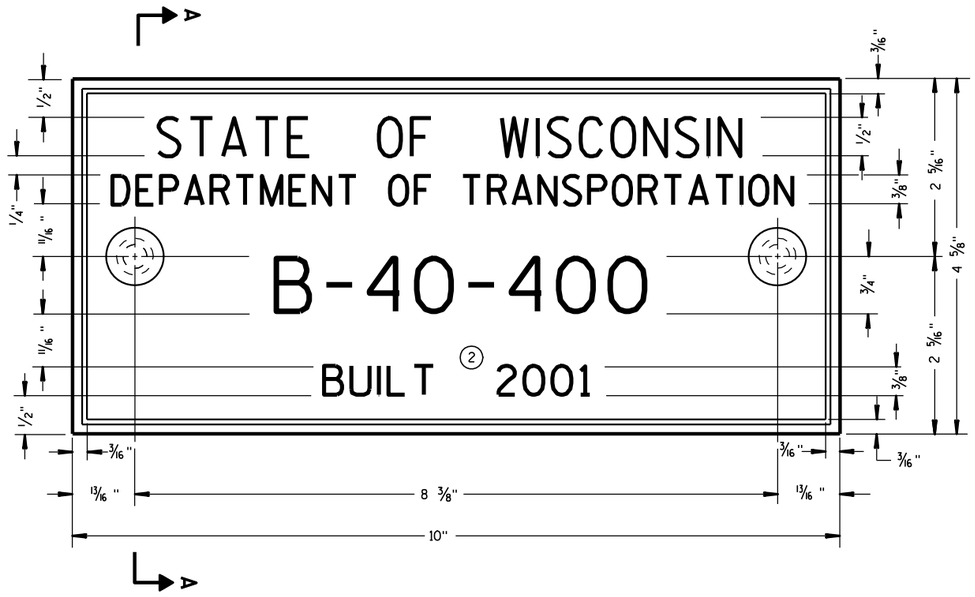
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

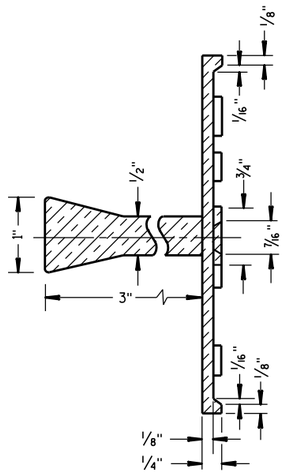
GENERAL NOTES

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

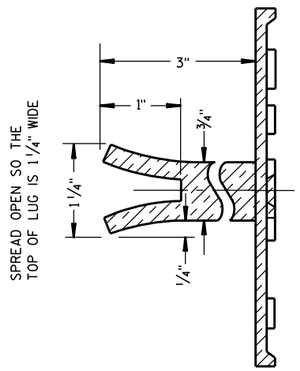
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

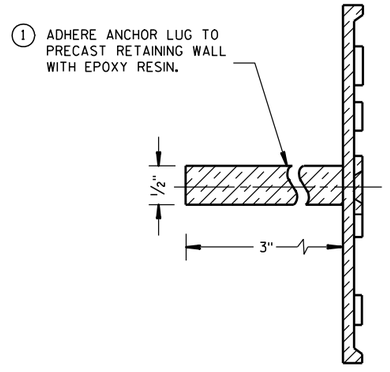
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

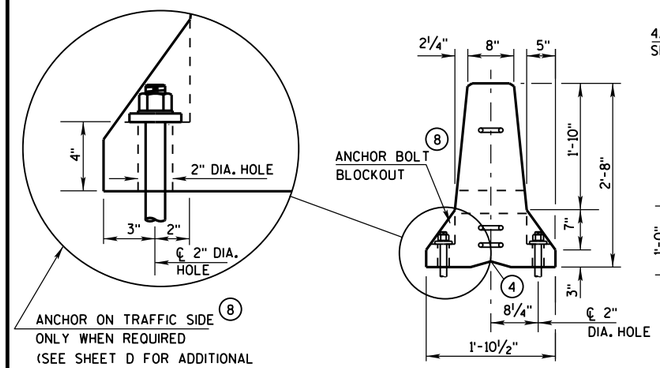
3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOPMENT ENGINEER

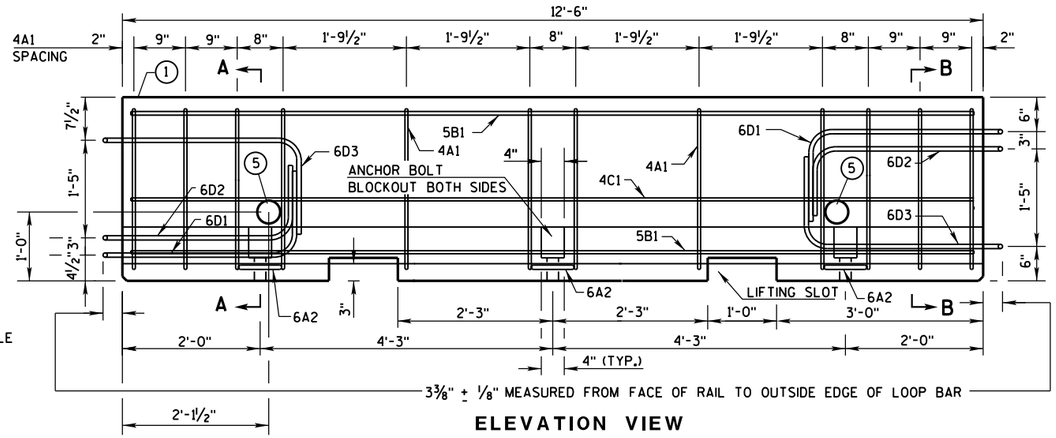
FHWA

6

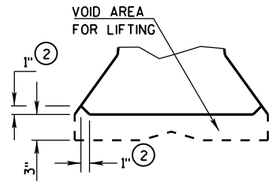
S.D.D. 12 A 3-10



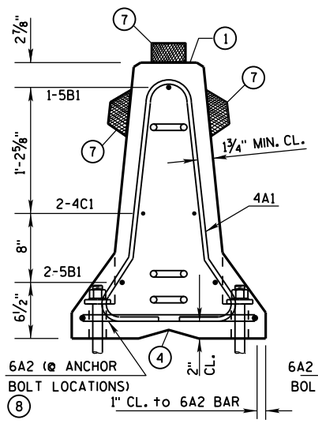
END VIEW



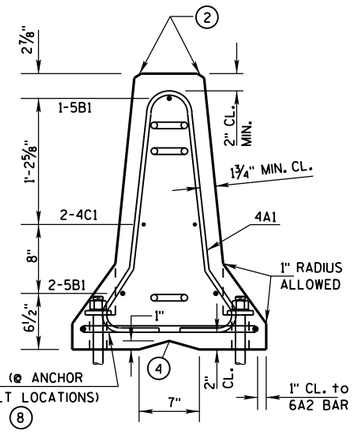
ELEVATION VIEW



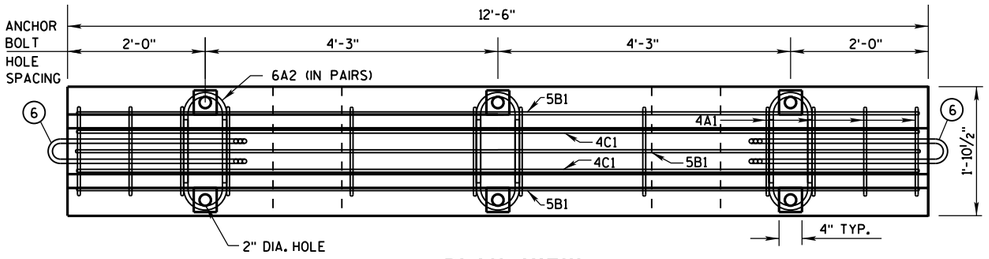
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

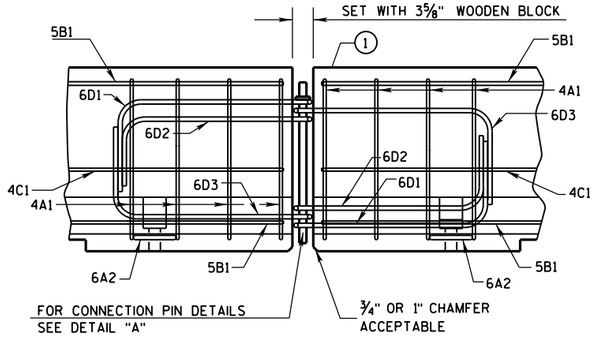


SECTION B-B
(STIRRUP PLACEMENT)

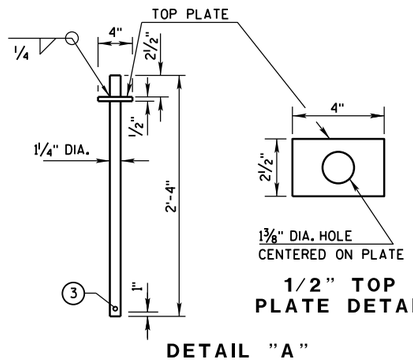


PLAN VIEW

DETAILS OF BARRIER SECTION

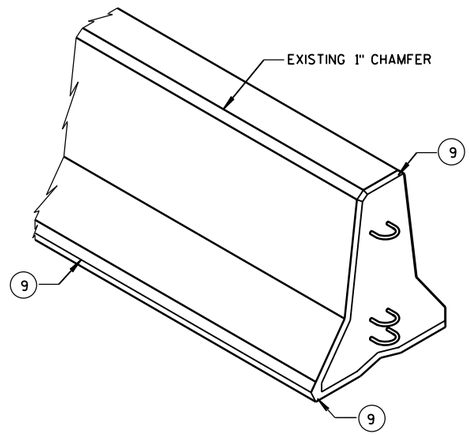


DETAILS OF BARRIER CONNECTION



1/2" TOP
PLATE DETAIL

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 PRCAST, 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 ¾" 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 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

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

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

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

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO 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.

(8) SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.

(9) 1" CHAMFER OPTIONAL.

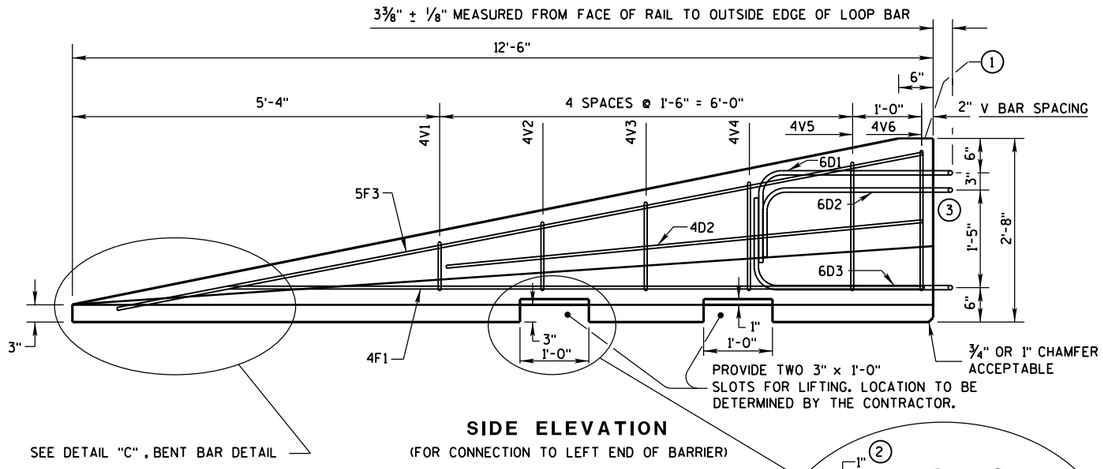
f'c = 4,000 psi

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

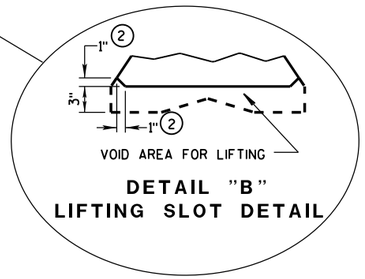
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

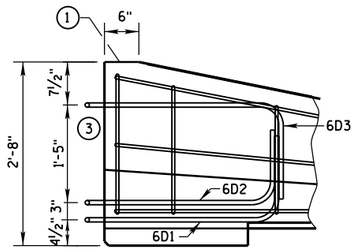
S.D.D. 14 B 7-15a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



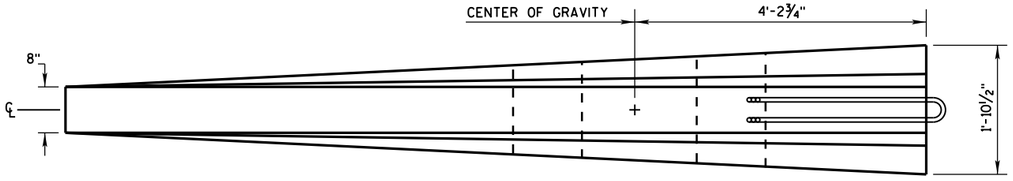
DETAIL "B"
LIFTING SLOT DETAIL



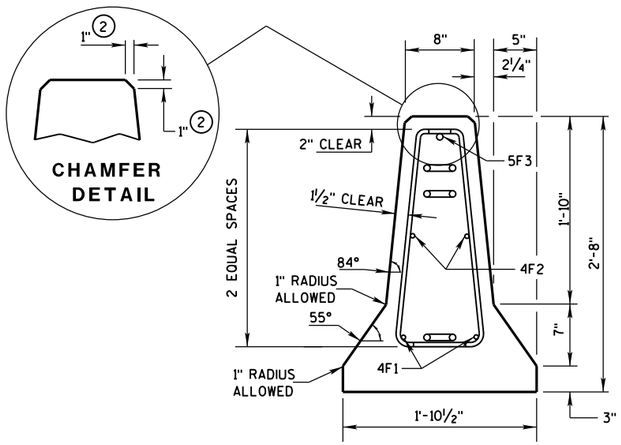
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

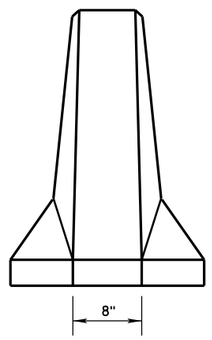
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



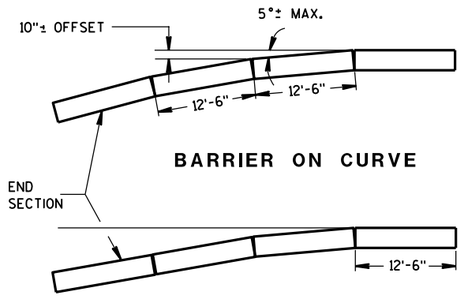
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

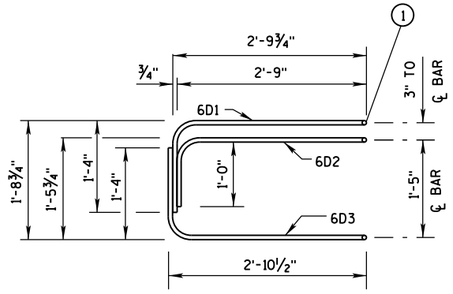
6

S.D.D. 14 B 7-15b

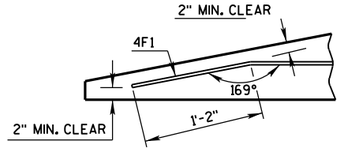
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

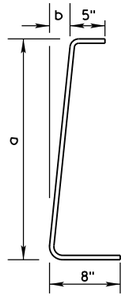
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

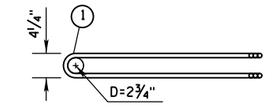
GENERAL NOTES

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

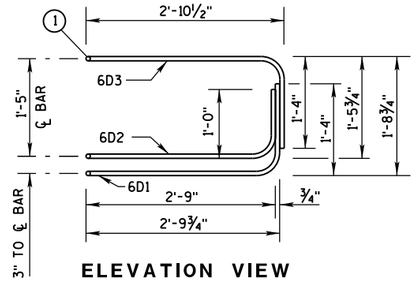
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

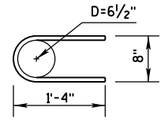
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



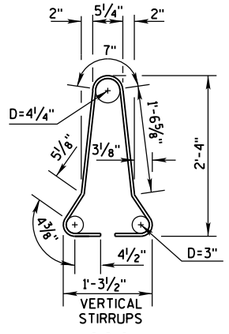
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2



4A1

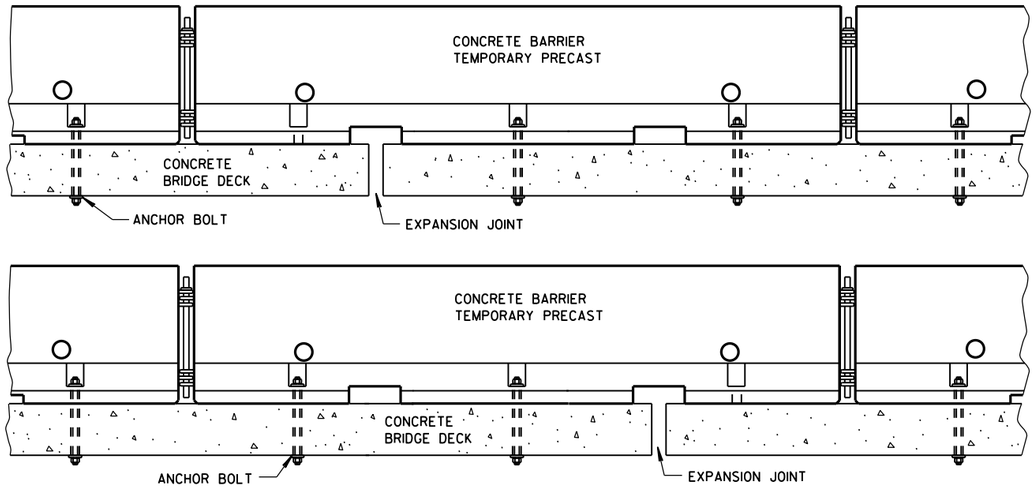
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 7-15c



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.)

GENERAL NOTES

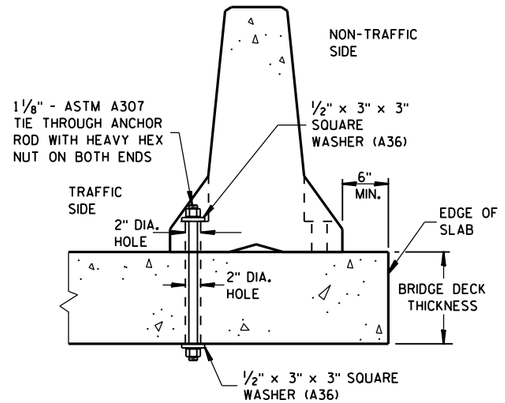
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

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

(1) 1⅛" DIAMENTER A307 THREADED ROD. ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL. ASTM A563A HEAVY HEX NUT.

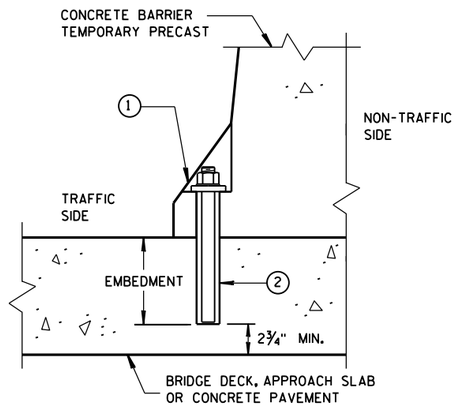
(2) ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

(3) ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THAN DRIVE ASPHALT ANCHOR PIN.



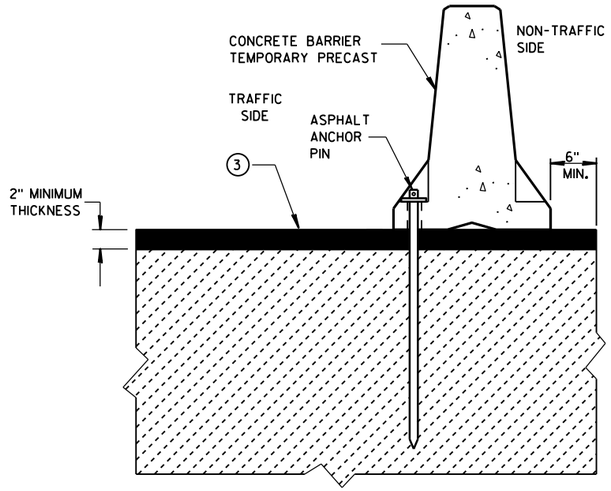
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)

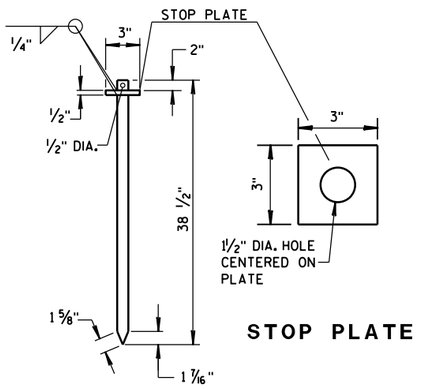


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



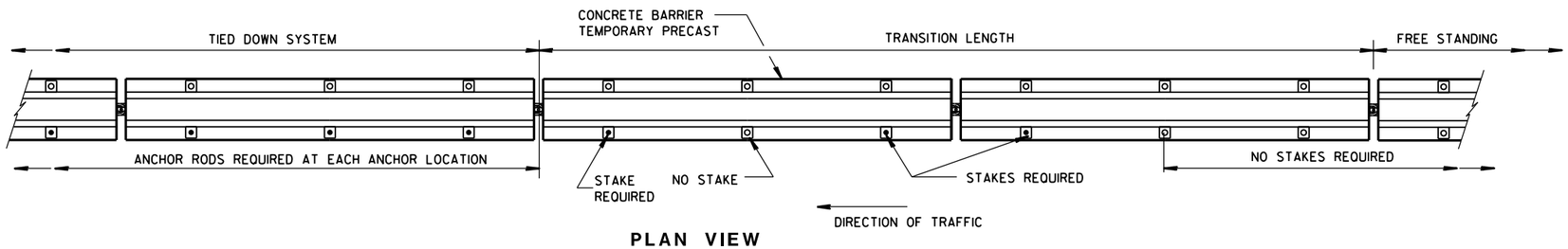
STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



STOP PLATE

ASPHALT ANCHOR PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

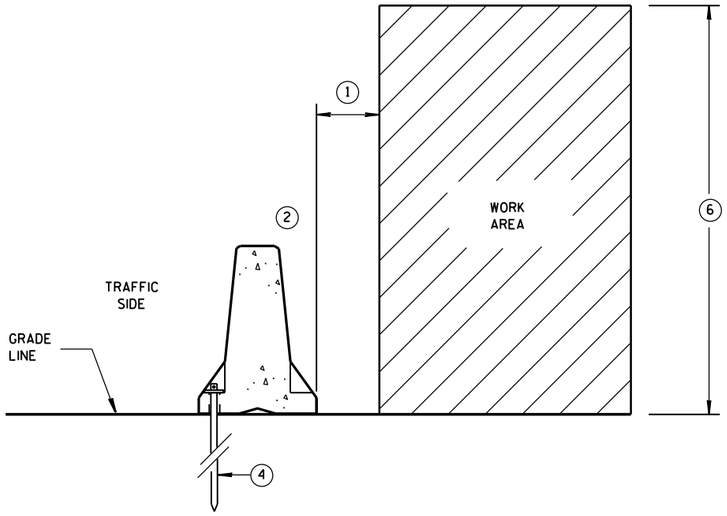
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

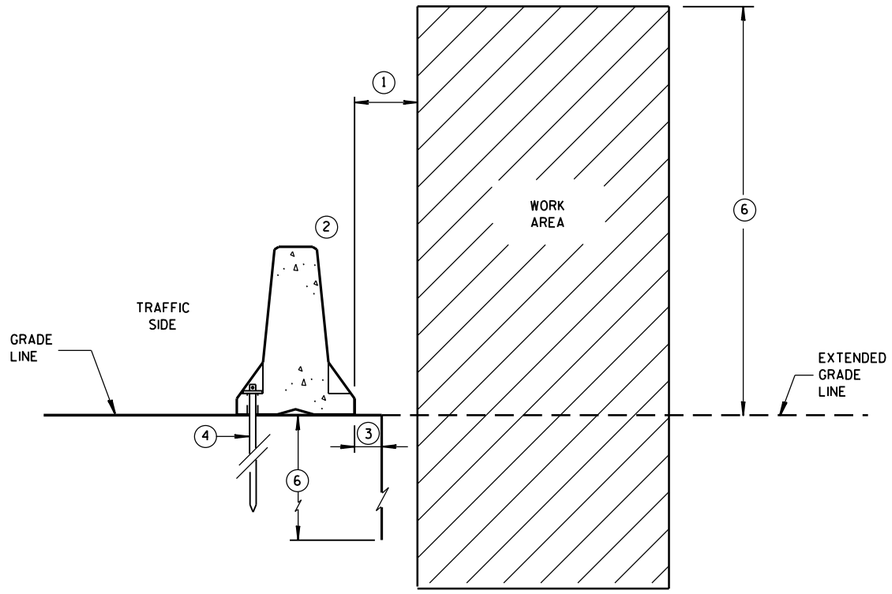
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 7-15d



ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

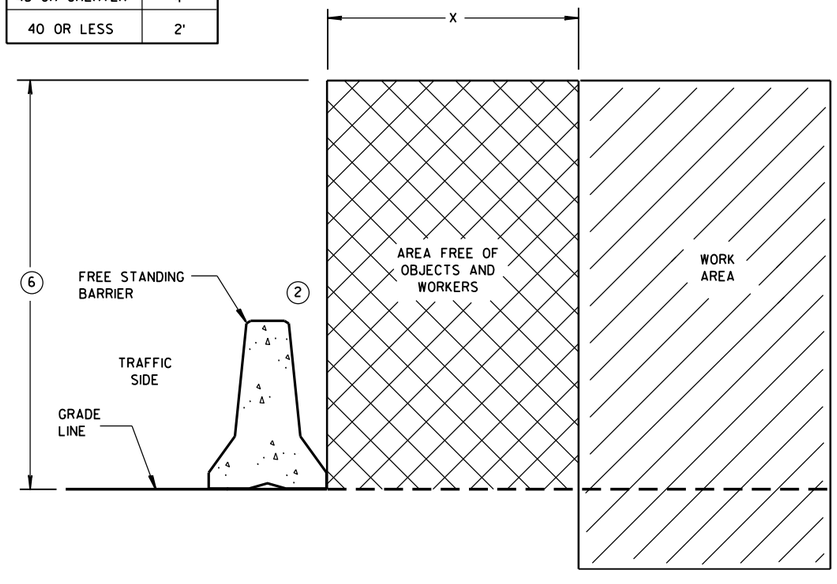


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

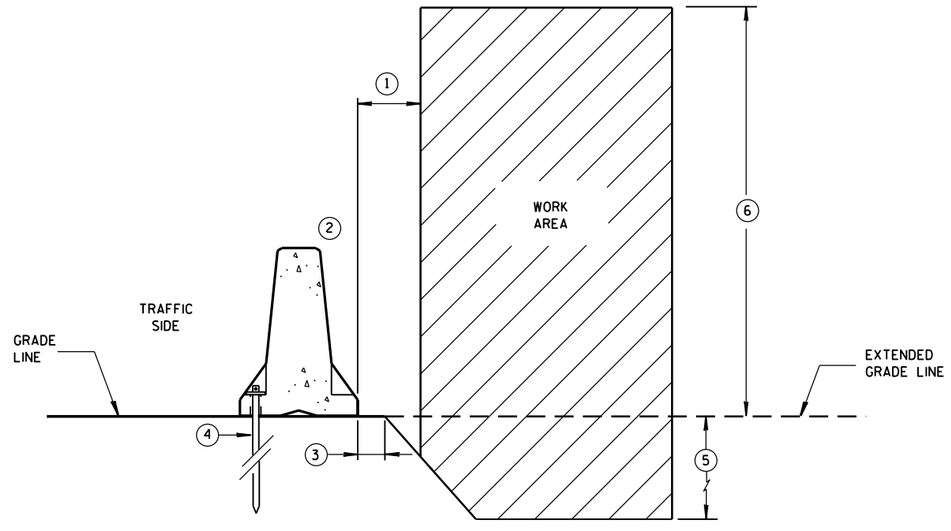
GENERAL NOTES

1. WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR 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



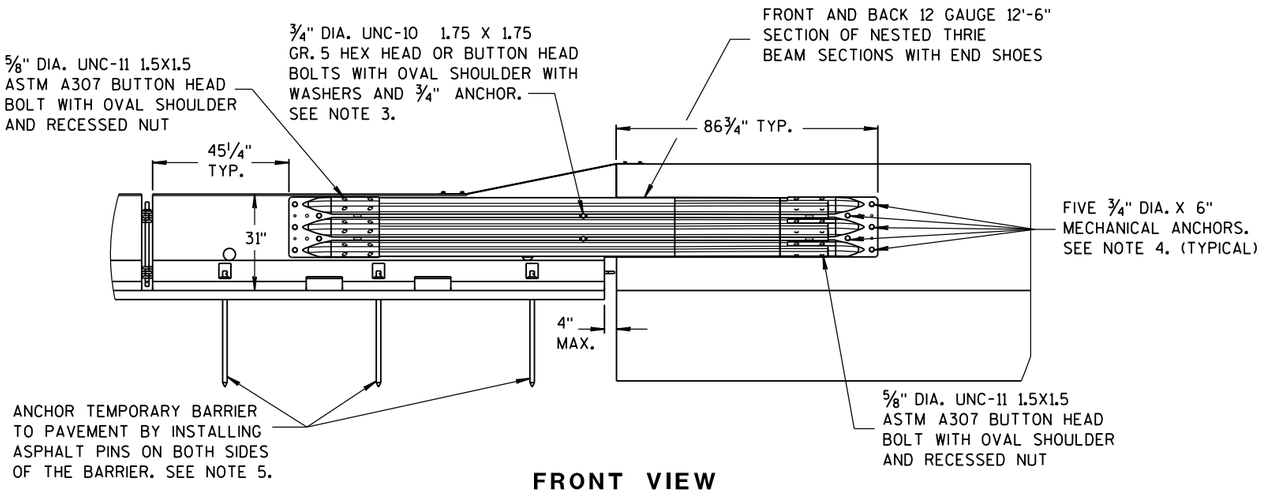
ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

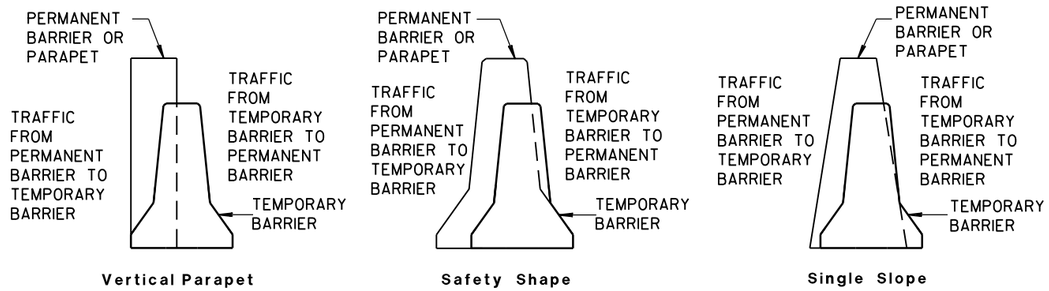
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 7-15e



FRONT VIEW

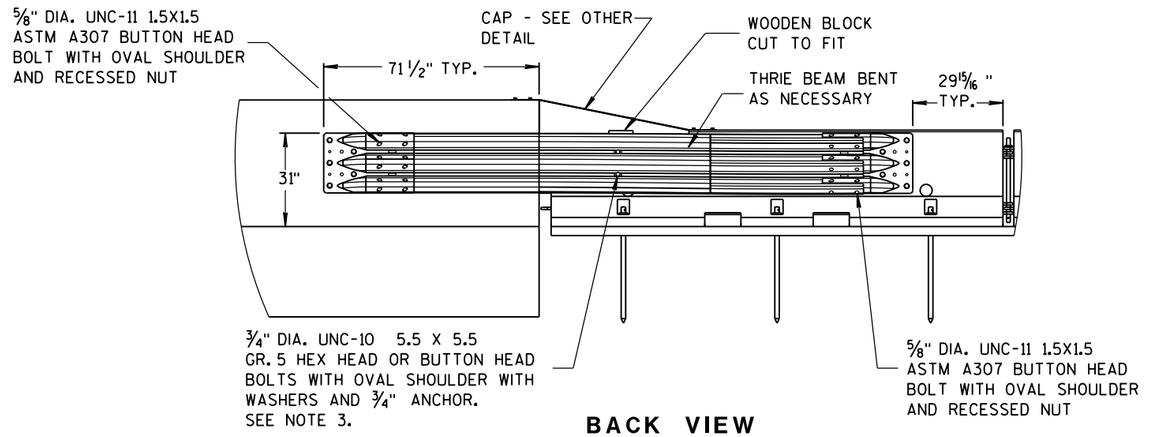


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

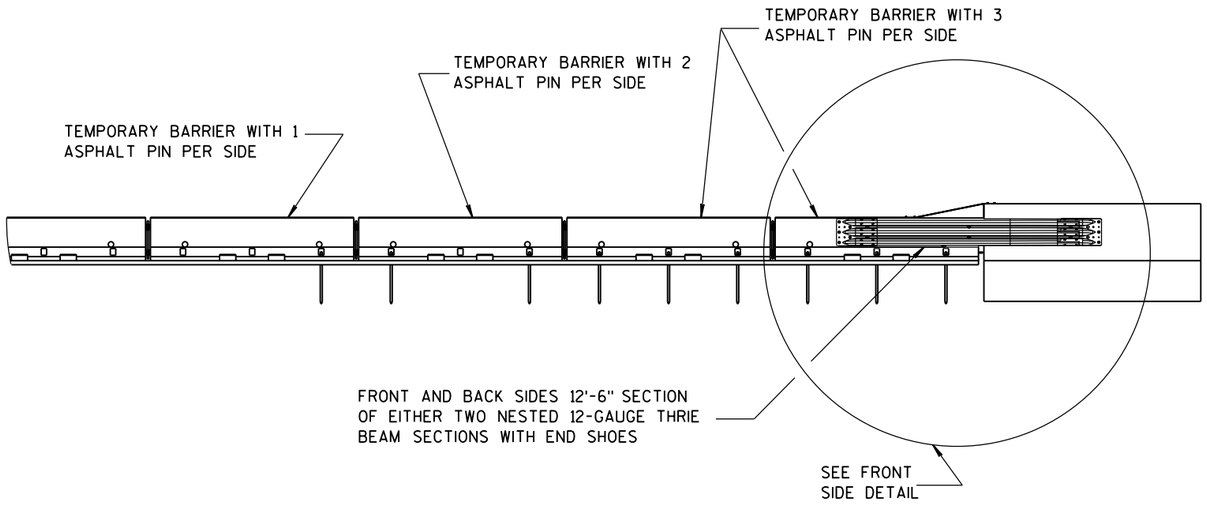
NOTES

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

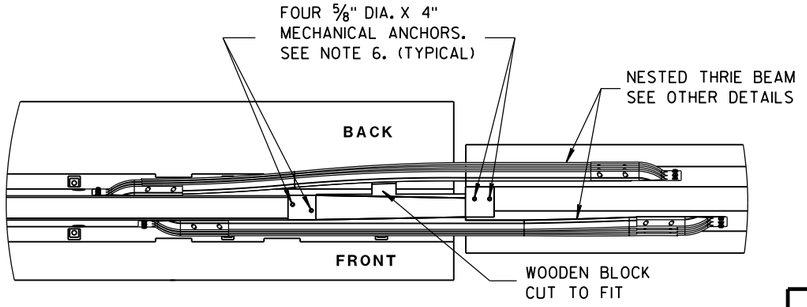
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD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



BACK VIEW



FRONT VIEW



PLAN VIEW

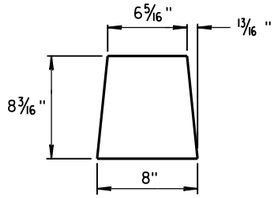
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

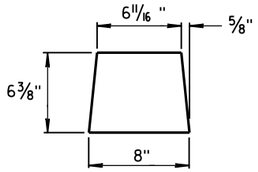
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

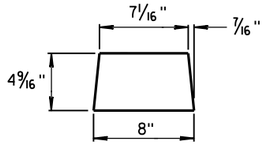
S.D.D. 14 B 7-15f



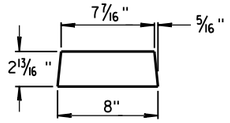
GUSSET 1



GUSSET 2

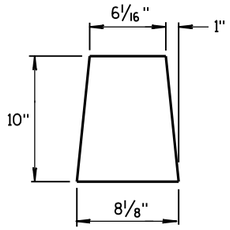


GUSSET 3

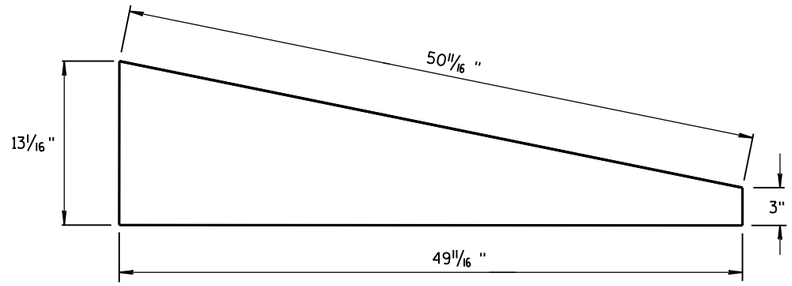


GUSSET 4

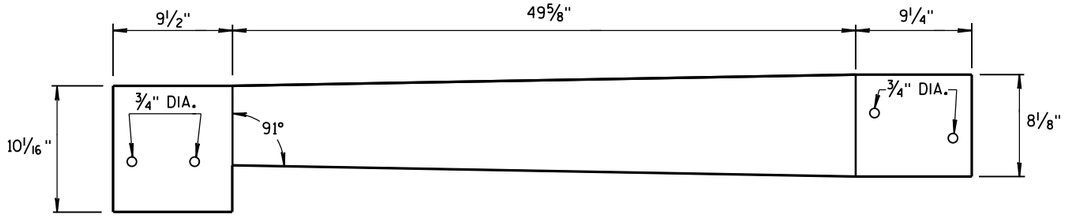
GUSSETS

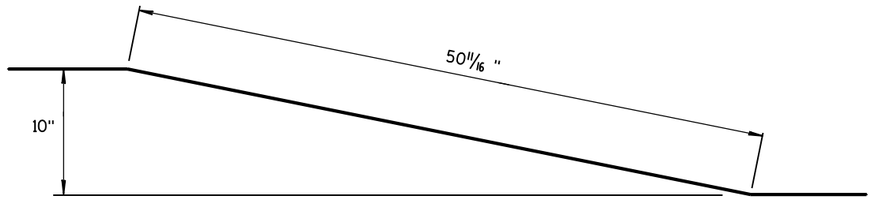


END PLATE



SIDE PLATE

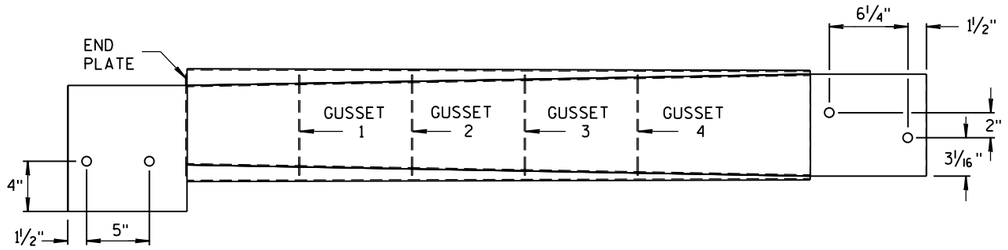


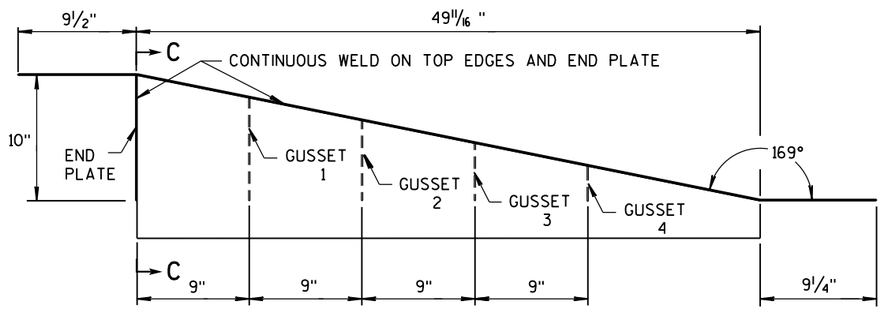


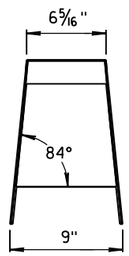
TOP PLATE

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

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







SECTION C-C

NOTES

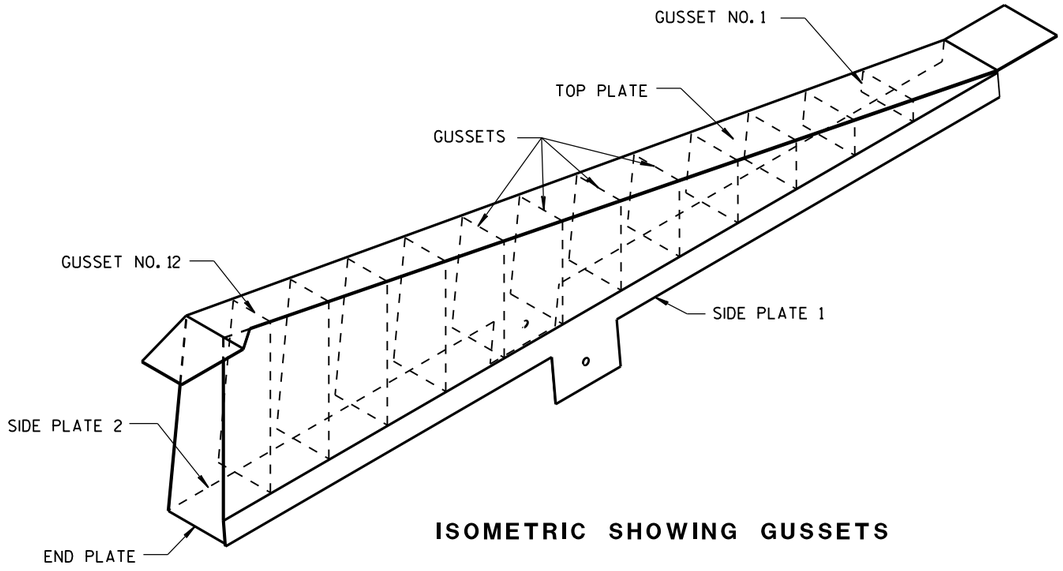
1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

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

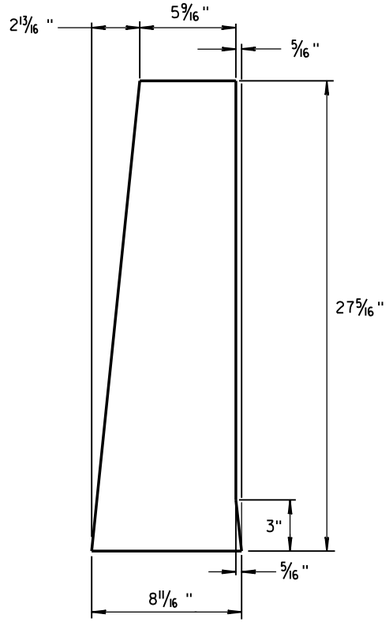
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 7-15g

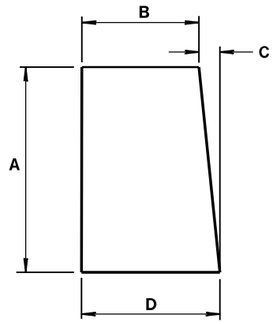


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



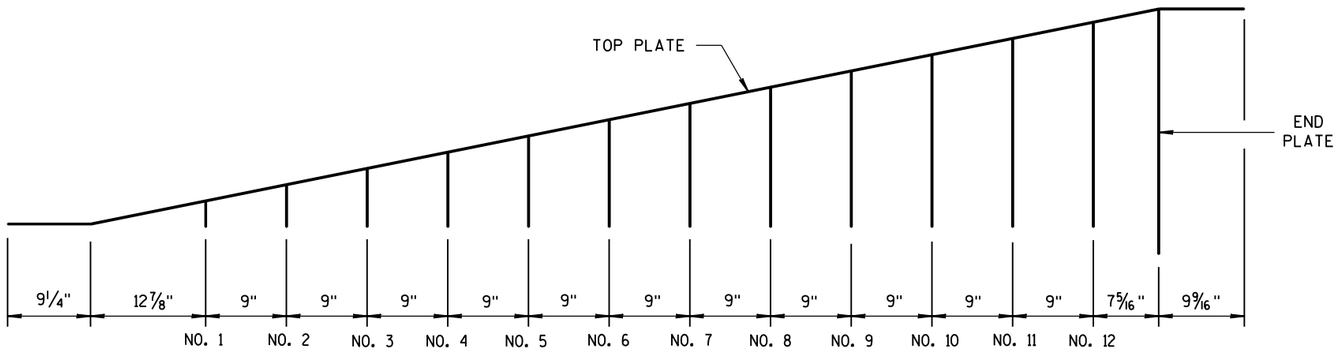
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	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 15/16 "	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.



GUSSET LOCATION

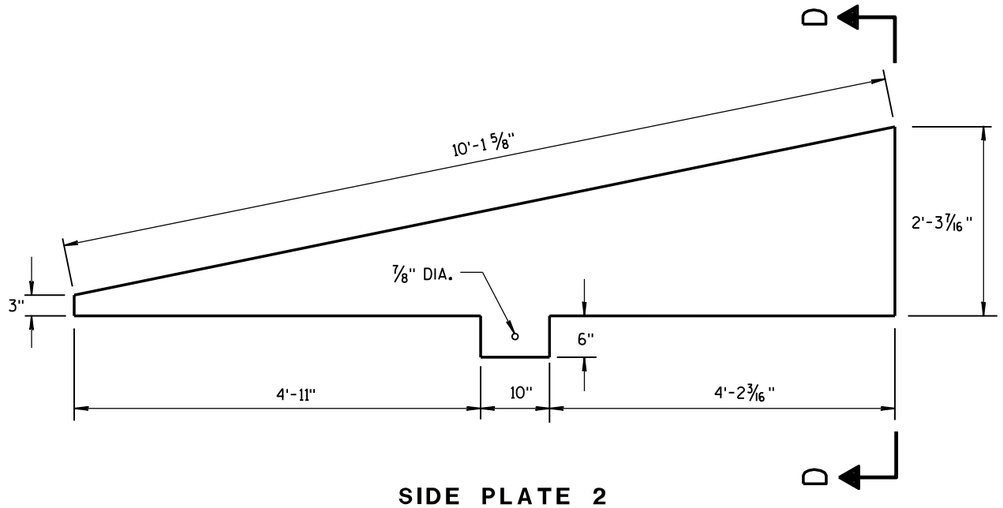
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

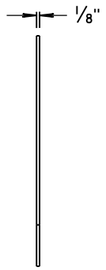
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

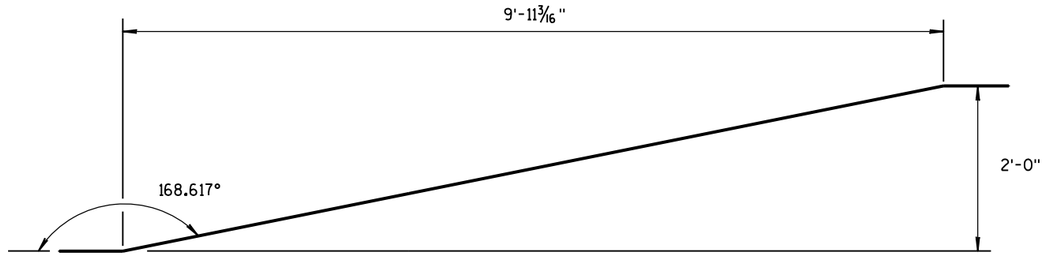
S.D.D. 14 B 7-15h



SIDE PLATE 2

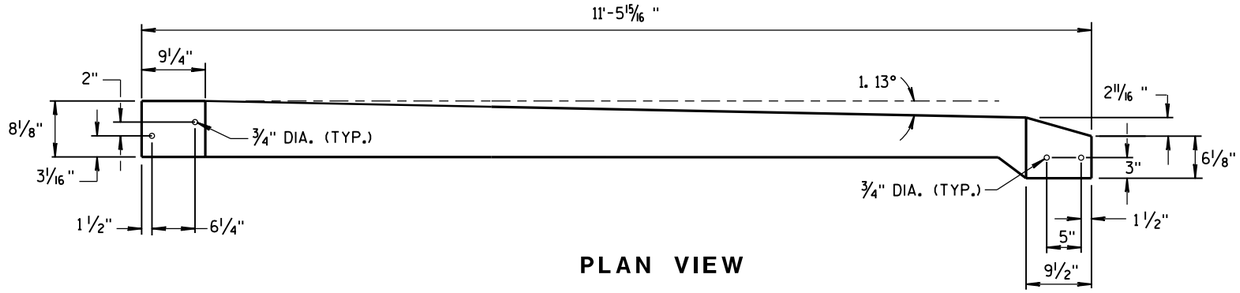


END VIEW



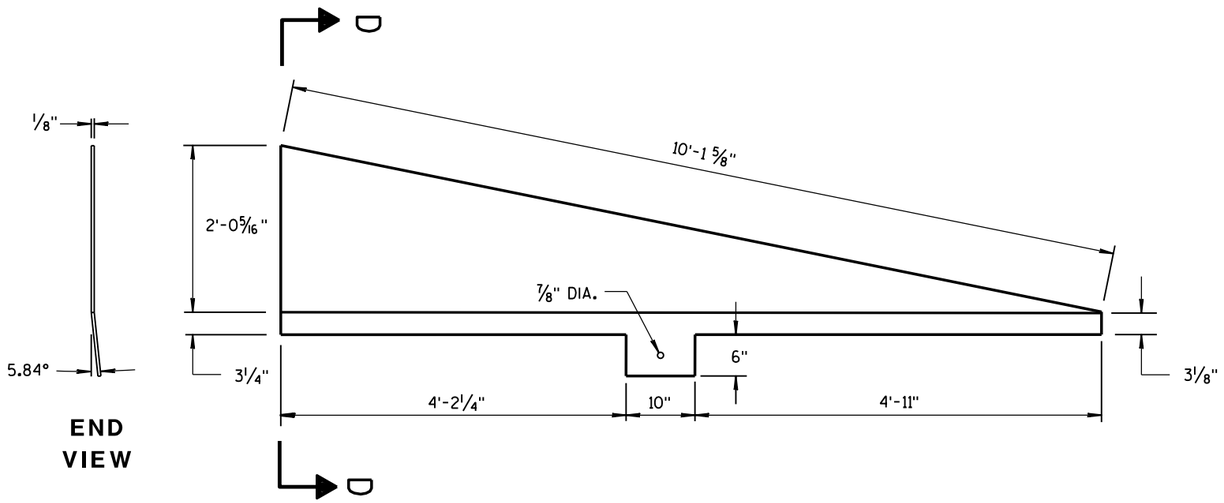
SIDE VIEW

TOP PLATE



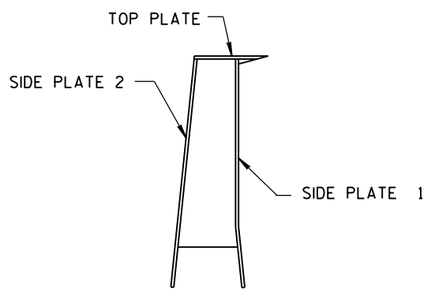
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERV
27
ENT
FHWA

6

S.D.D. 14 B 7-15i

6

S.D.D. 14 B 7-15i

(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.

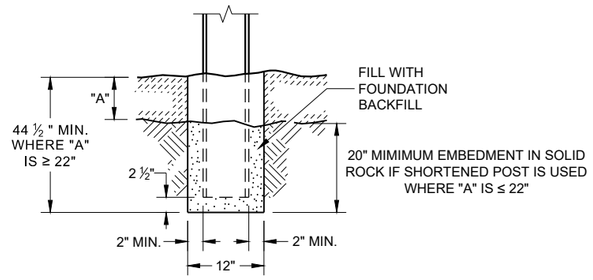
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL 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).

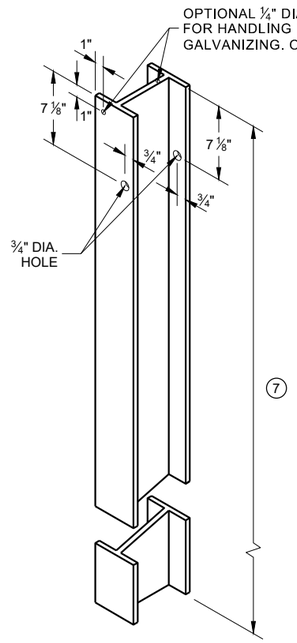
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

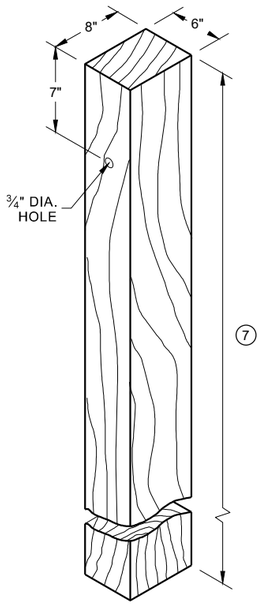
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



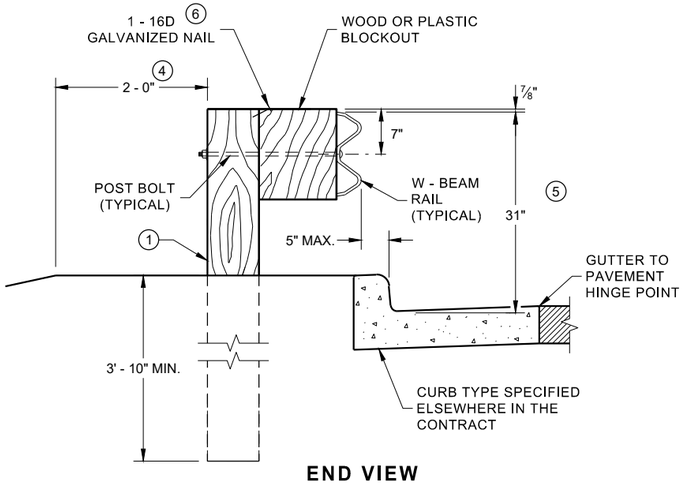
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



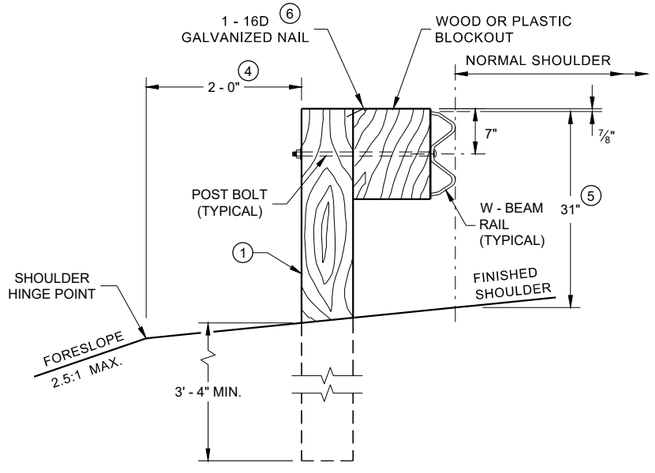
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



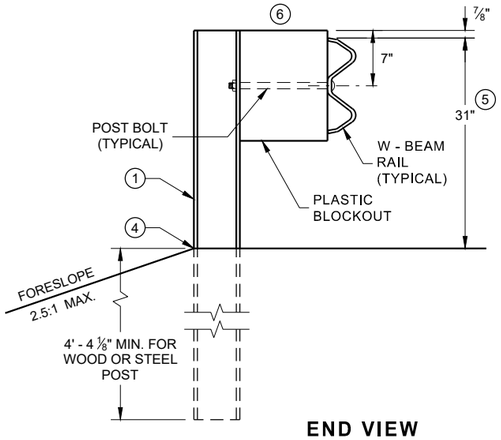
WOOD POST (6" X 8") NOMINAL (1)



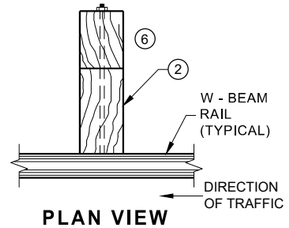
END VIEW
LOCATED ALONG A CURBED ROADWAY



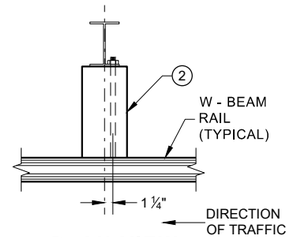
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



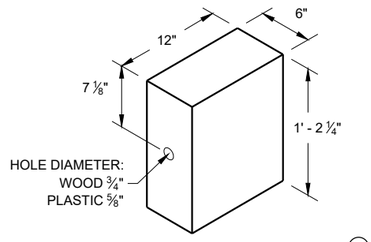
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

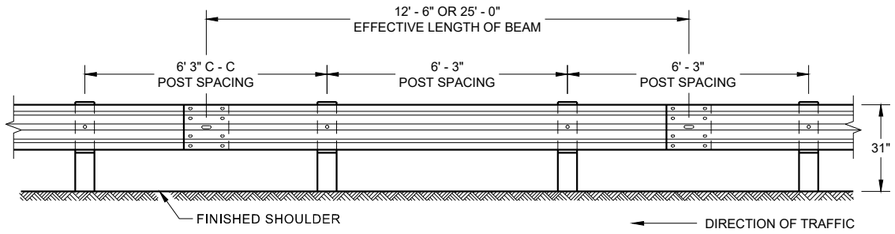
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

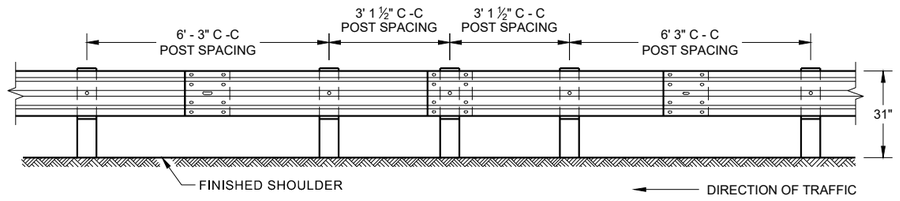
SDD 14B42 - 06a

6

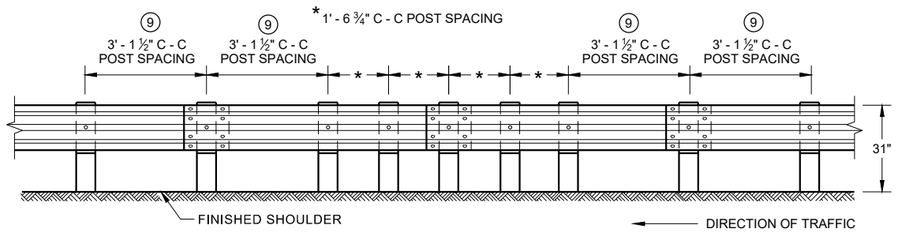
SDD 14B42 - 06a



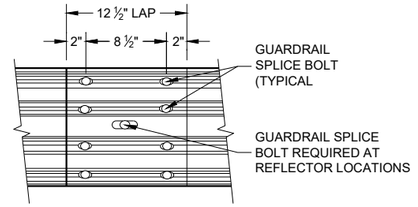
FRONT VIEW
POST SPACING STANDARD INSTALLATION



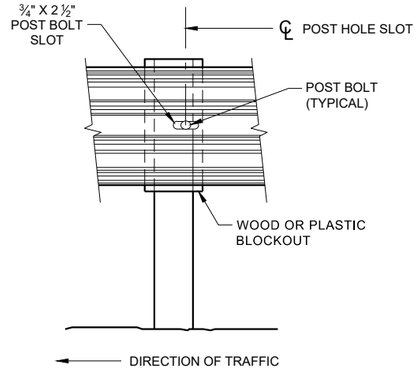
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



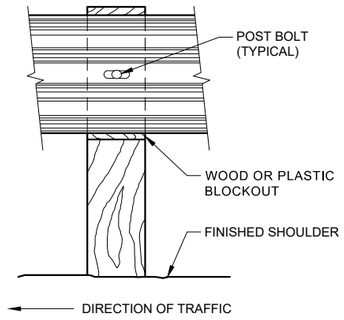
FRONT VIEW
QUARTER POST SPACING (QS)



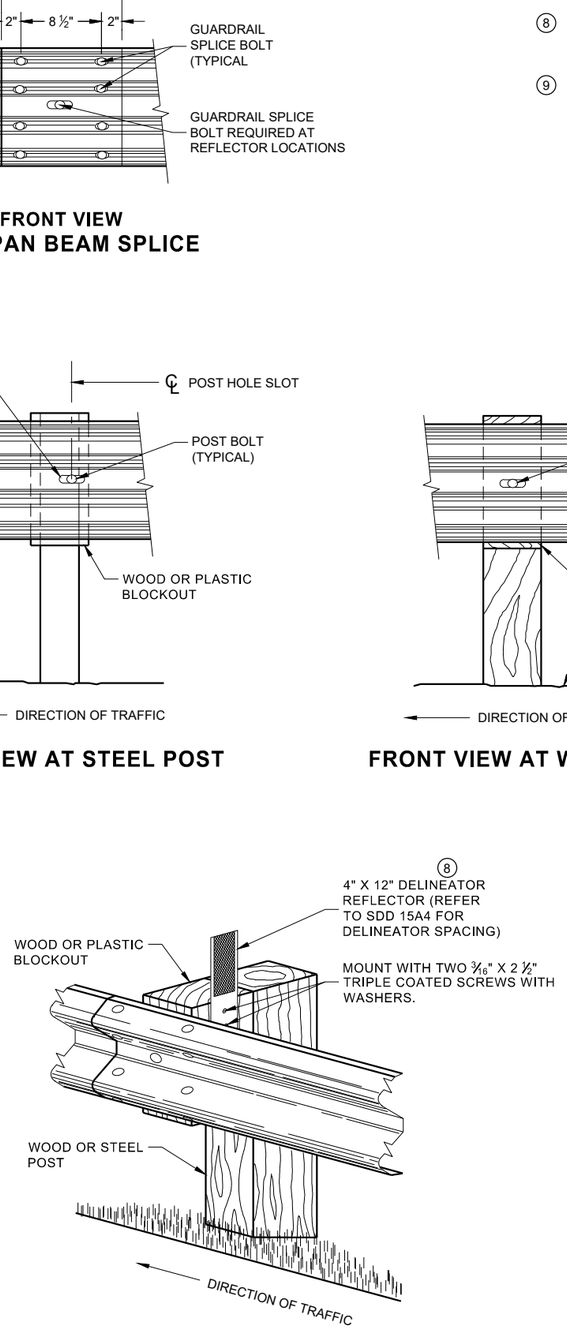
FRONT VIEW
MID-SPAN BEAM SPLICE



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

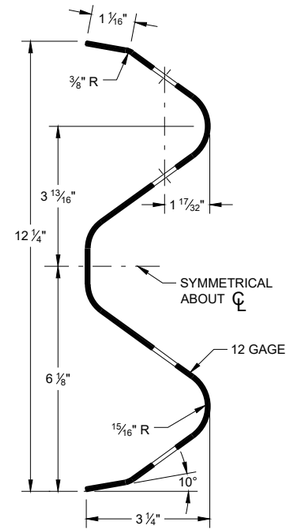
GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ¾" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

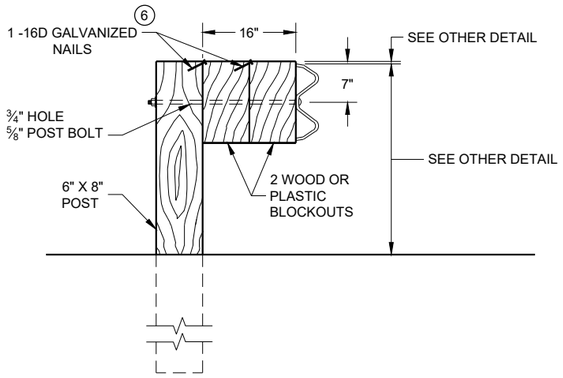


SECTION THRU W-BEAM RAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B42 - 06b

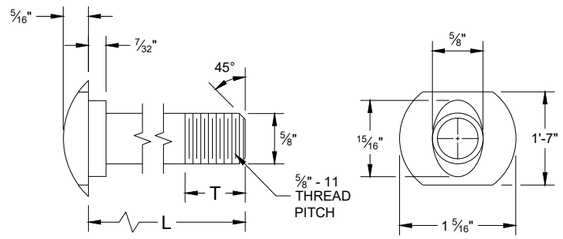


DETAIL FOR 16" BLOCKOUT DEPTH

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.

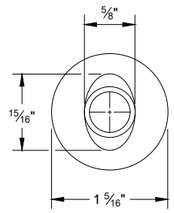
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

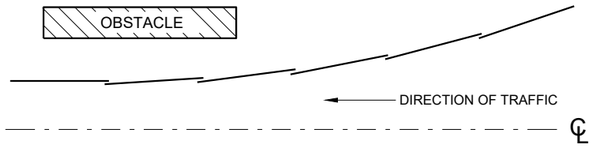


POST BOLT TABLE

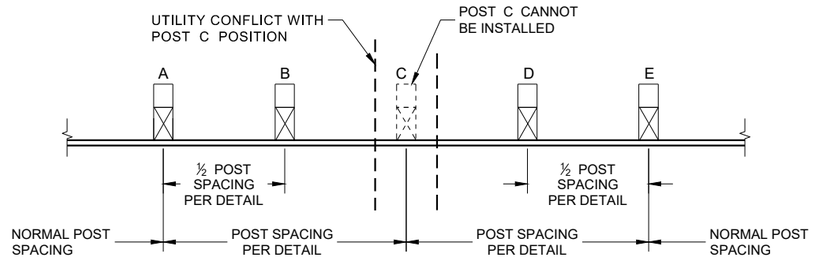
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



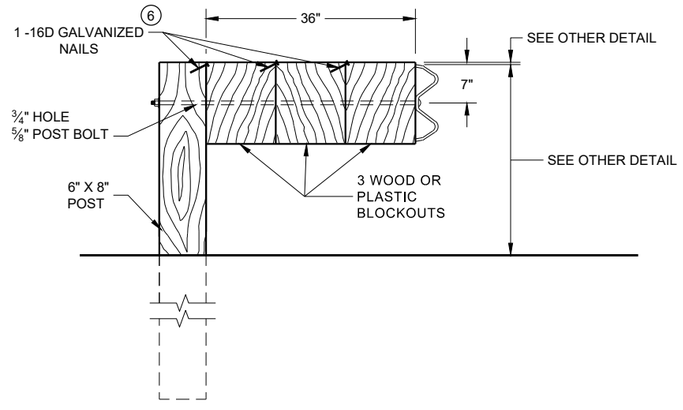
ALTERNATE BOLT HEAD



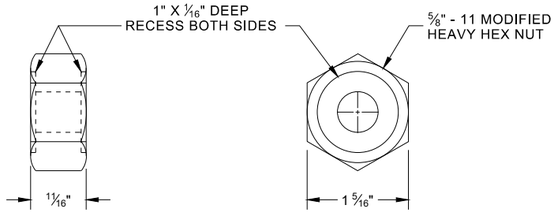
PLAN VIEW
BEAM LAPPING DETAIL



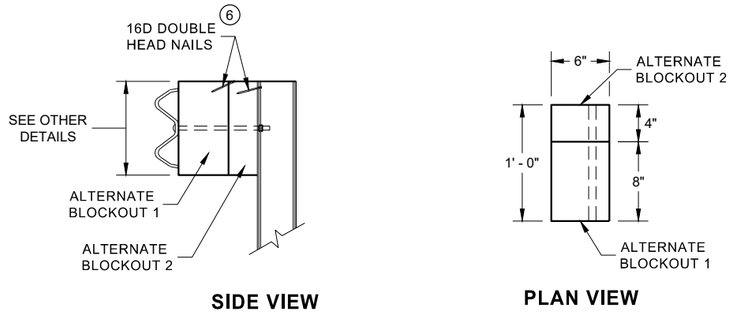
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



ALTERNATE WOOD BLOCKOUT DETAIL

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.

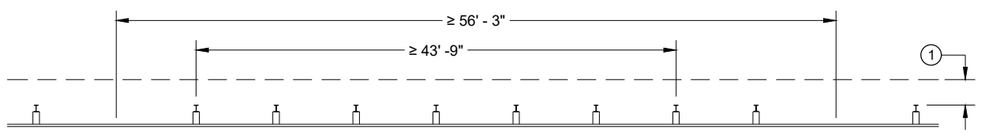
(6) WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

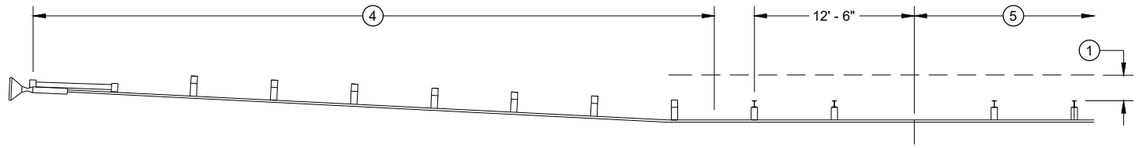
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

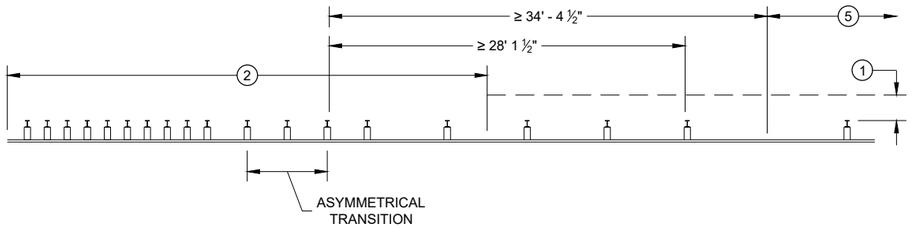
SDD 14B42 - 06c



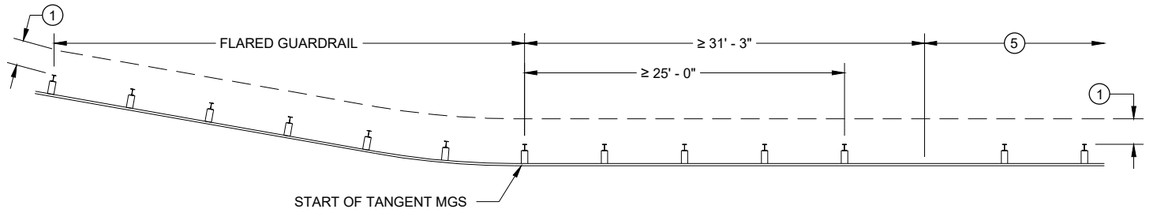
MISSING POST IN NORMAL BEAM GUARD RUN



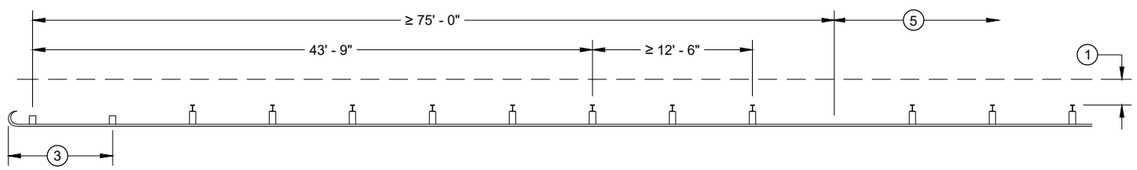
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



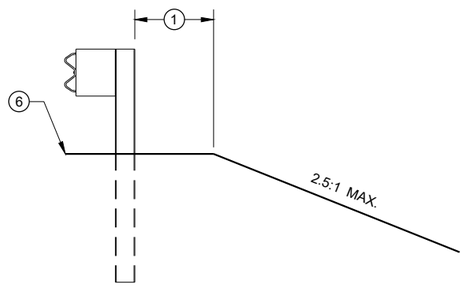
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

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.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

SDD 14B42 - 06d

SDD 14B42 - 06d

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.

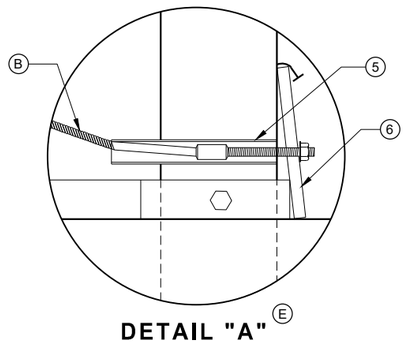
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

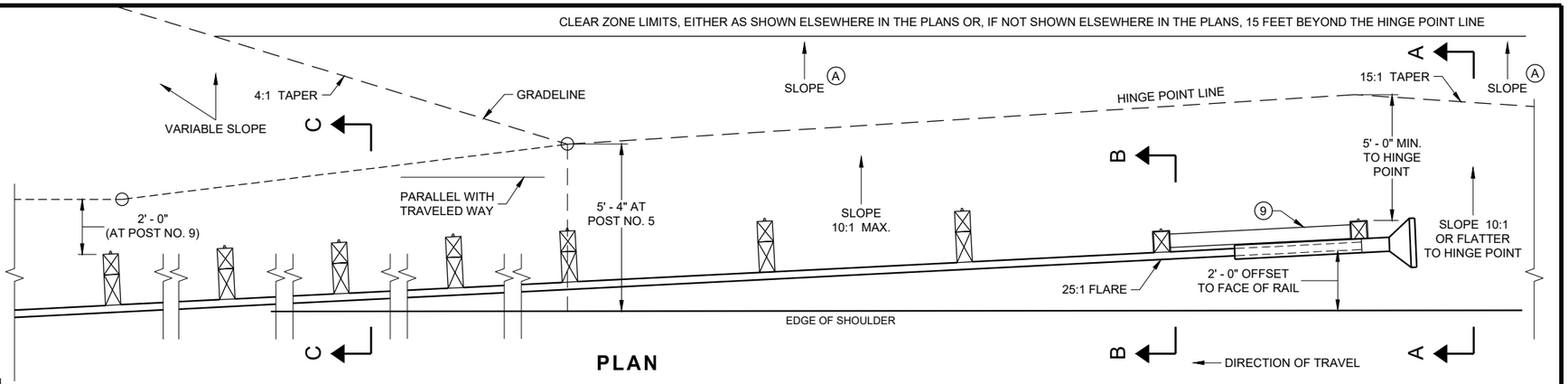
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

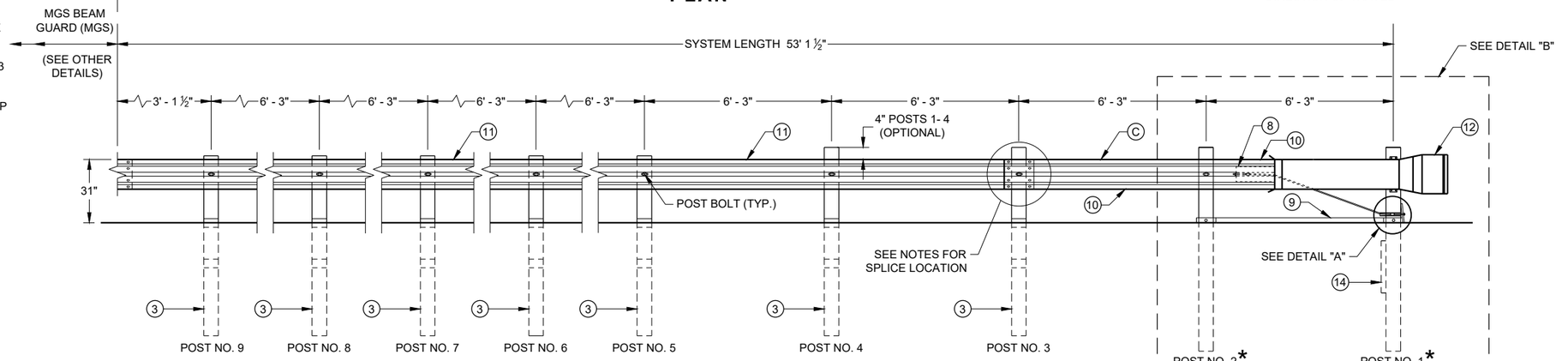
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



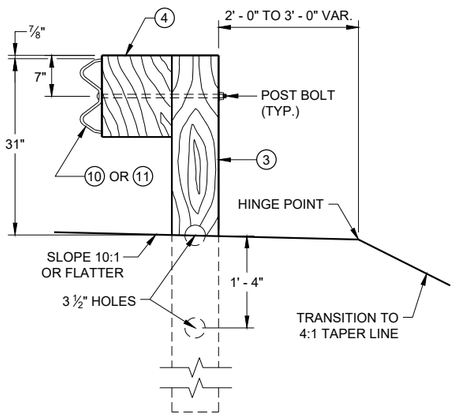
DETAIL "A" (E)



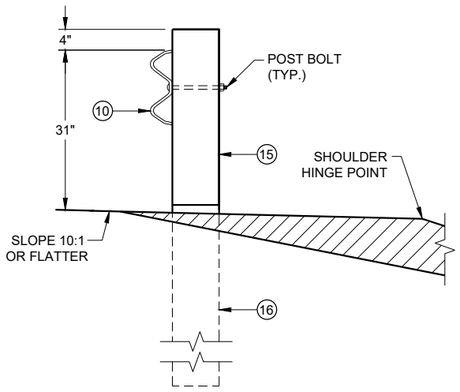
PLAN



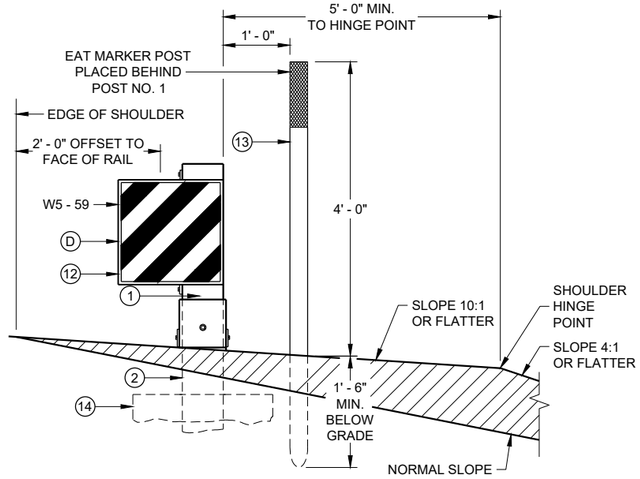
ELEVATION



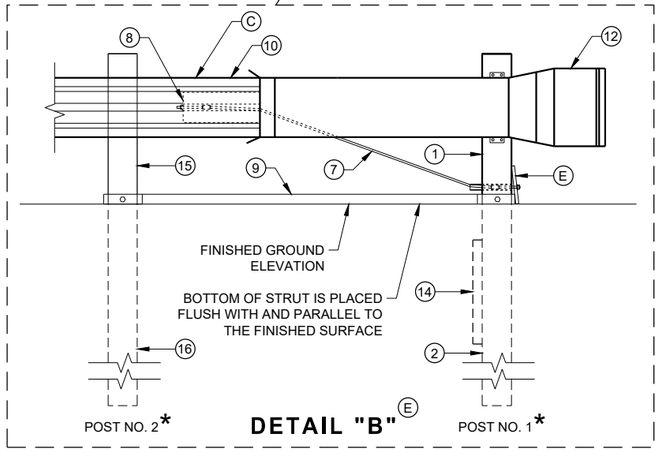
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



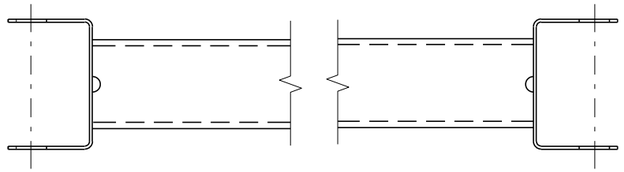
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

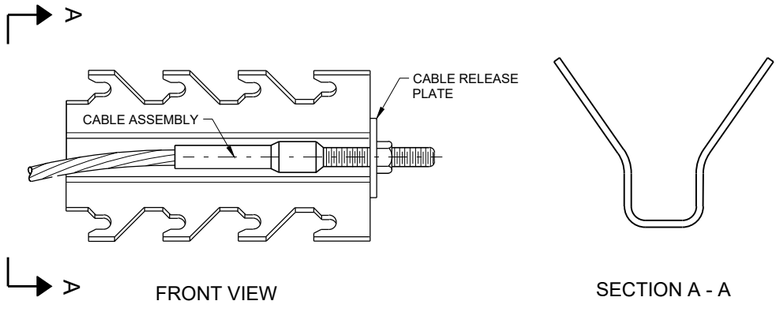
SDD 14B44 - 04a



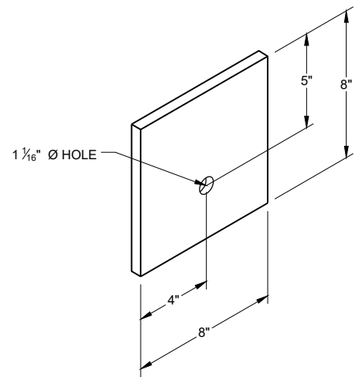
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑧ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

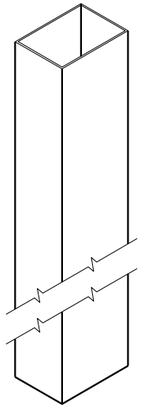
6

SDD 14B44 - 04b

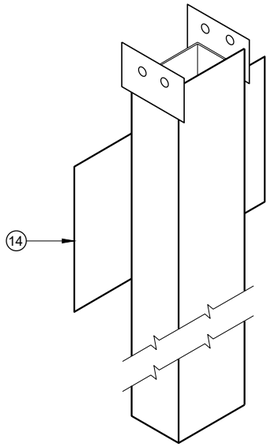
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

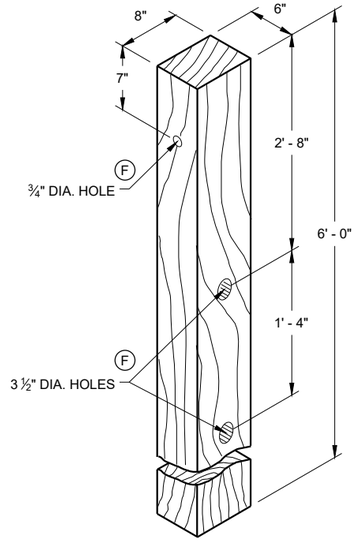
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



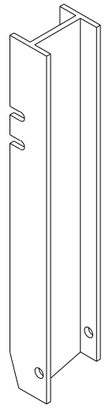
UPPER POST NO. 1 (1) (E)



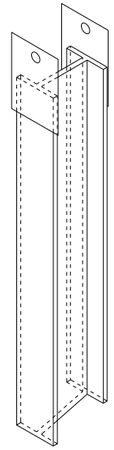
LOWER POST NO. 1 (2) (E)



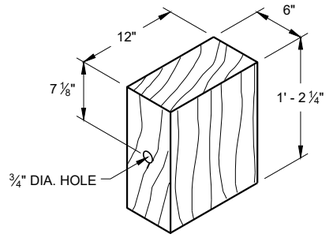
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



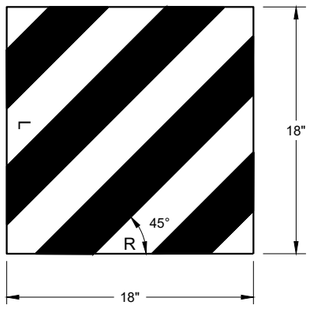
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

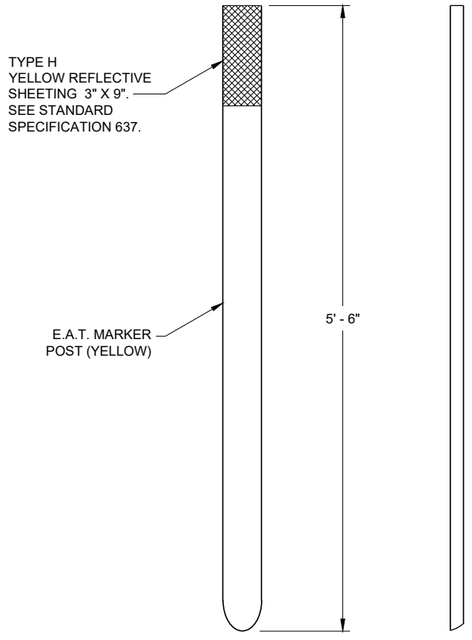


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



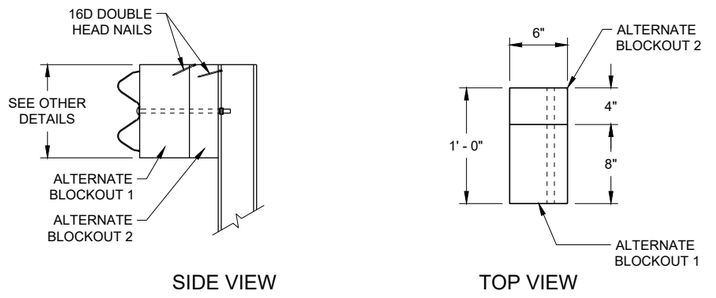
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

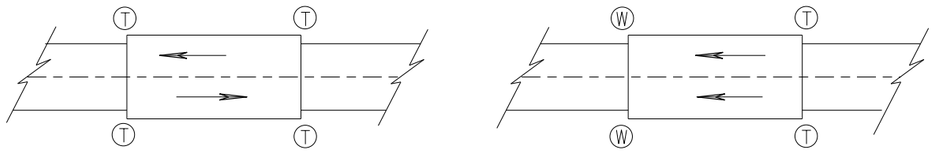
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR

FHWA

6

SDD 14B44 - 04c



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 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

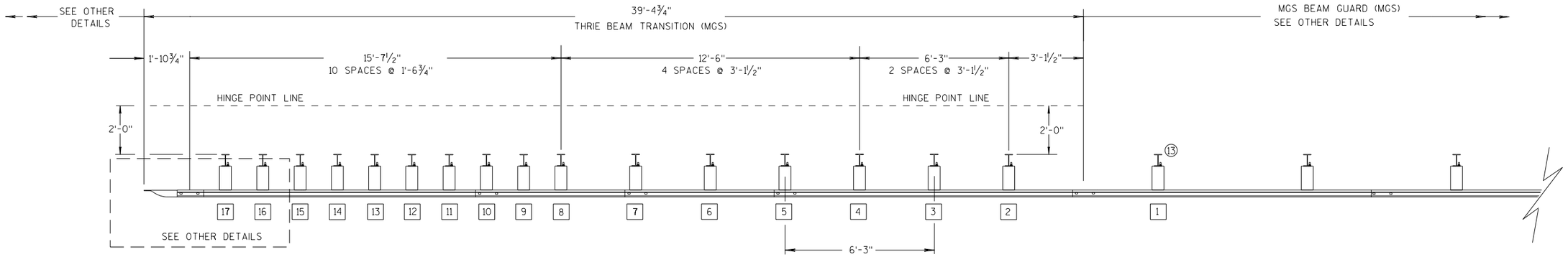
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

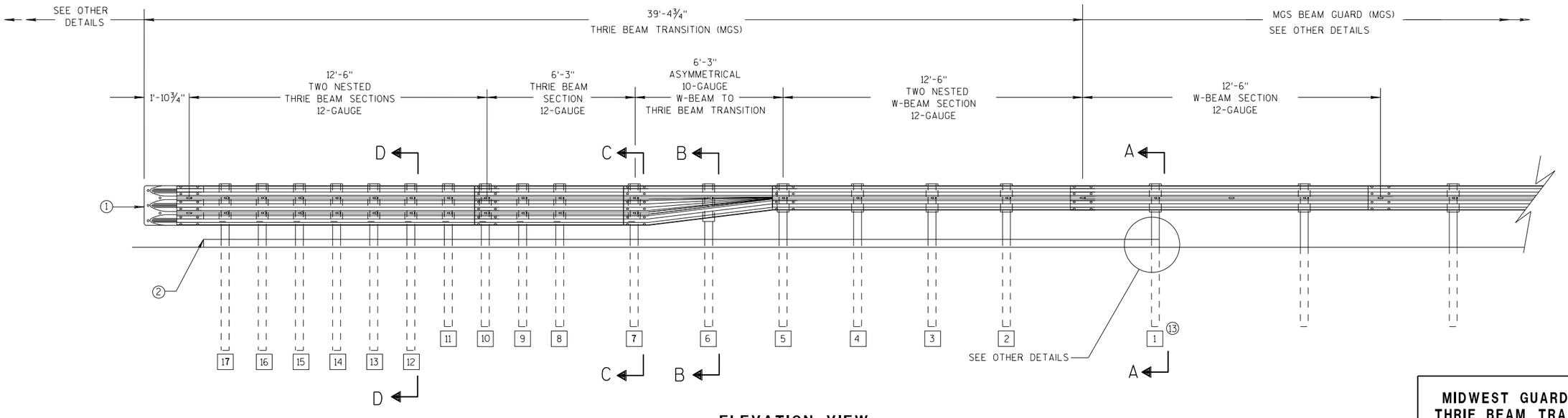
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 35

6

S.D.D. 14 B 45-5a

6

S.D.D. 14 B 45-5a

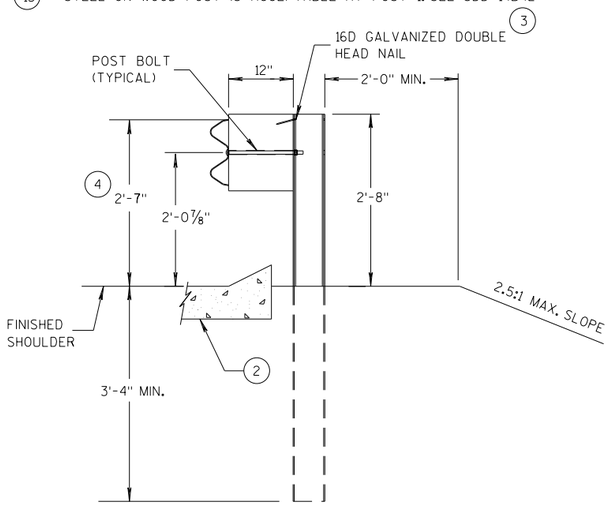
GENERAL NOTES

(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.

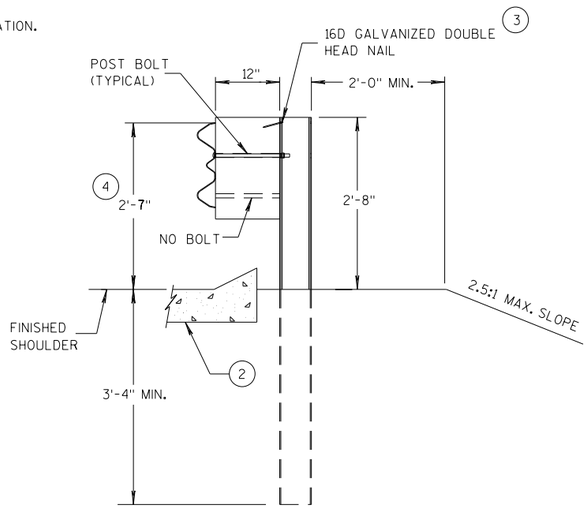
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



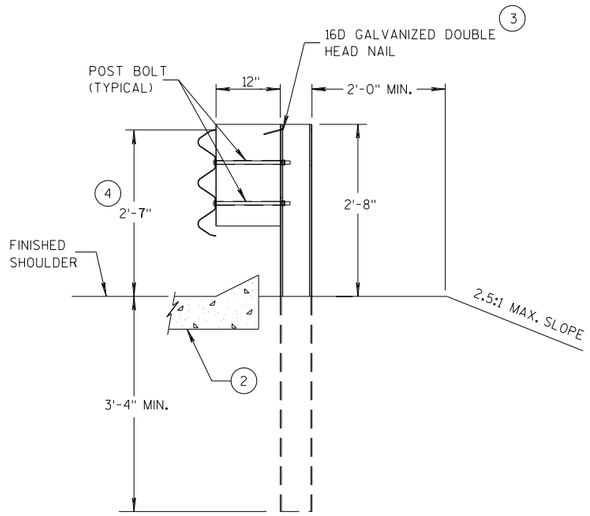
SECTION A-A (13)

POSTS 1-5



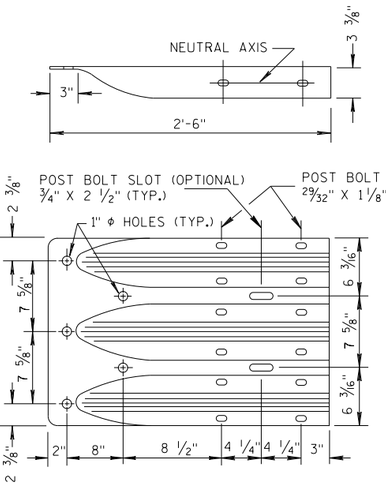
SECTION B-B

POST 6

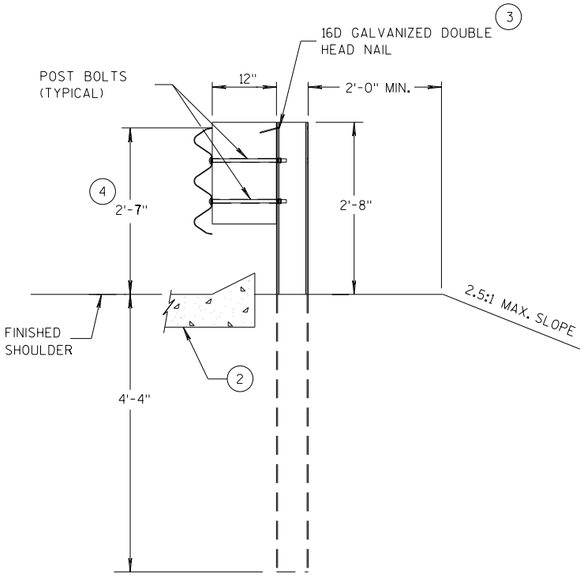


SECTION C-C

POSTS 7-11

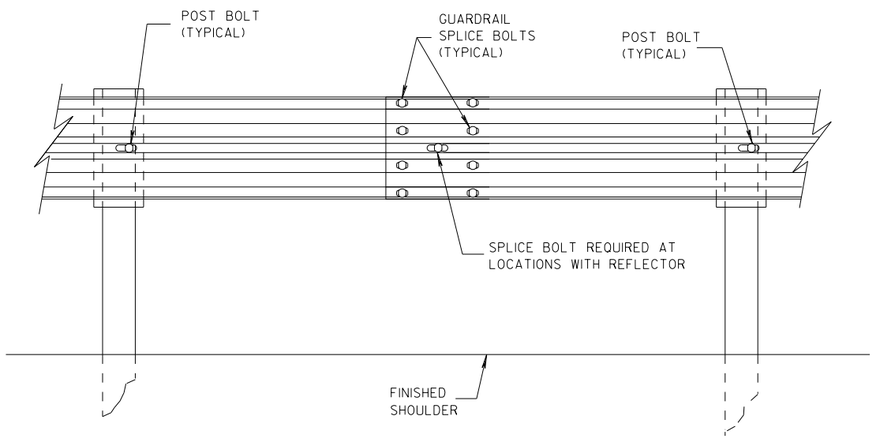


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

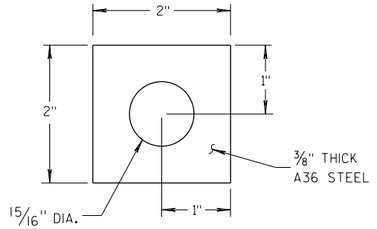
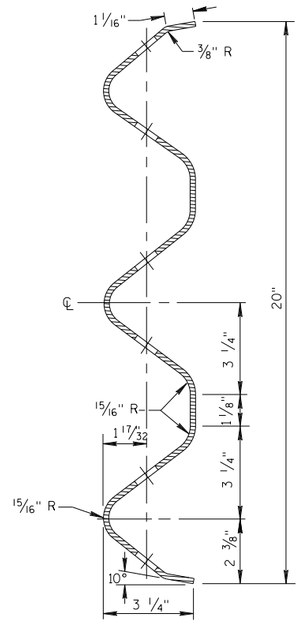


PLATE WASHER DETAIL



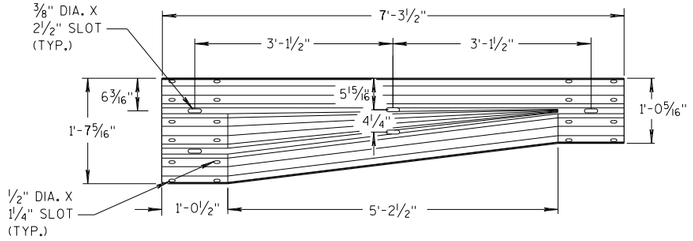
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

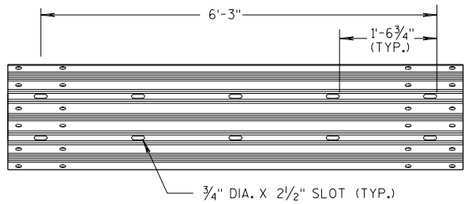
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOF

6

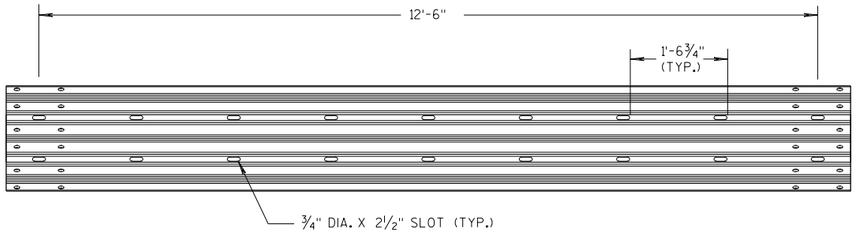
S.D.D. 14 B 45-5b



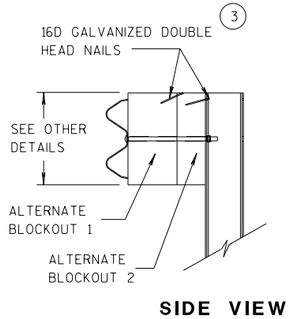
W-BEAM TO THRIE BEAM TRANSITION SECTION



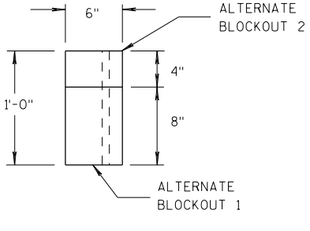
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

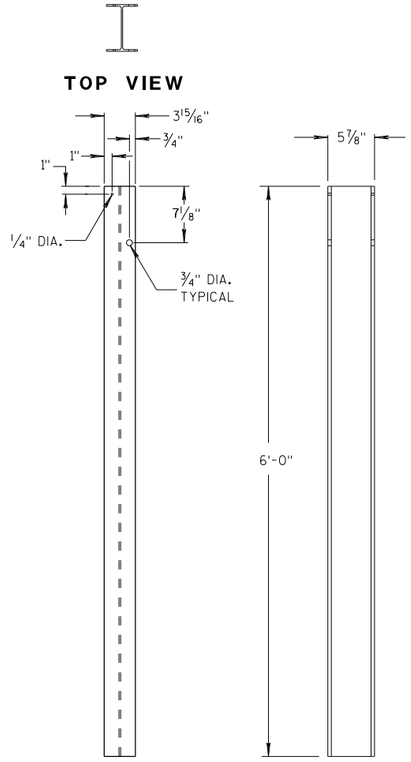


SIDE VIEW



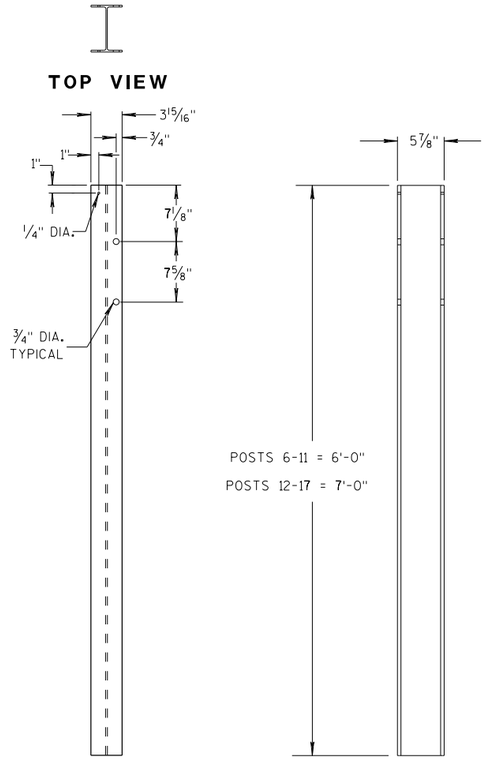
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



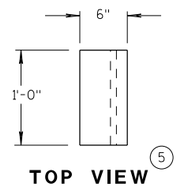
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

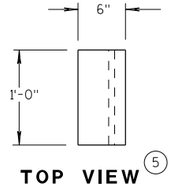


FRONT VIEW SIDE VIEW

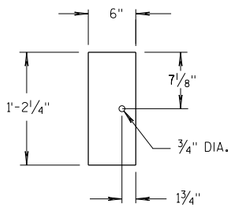
STEEL POSTS 6-17



TOP VIEW (5)

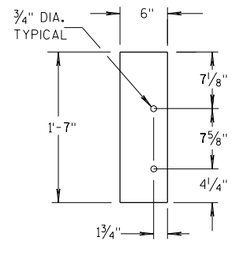


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



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.

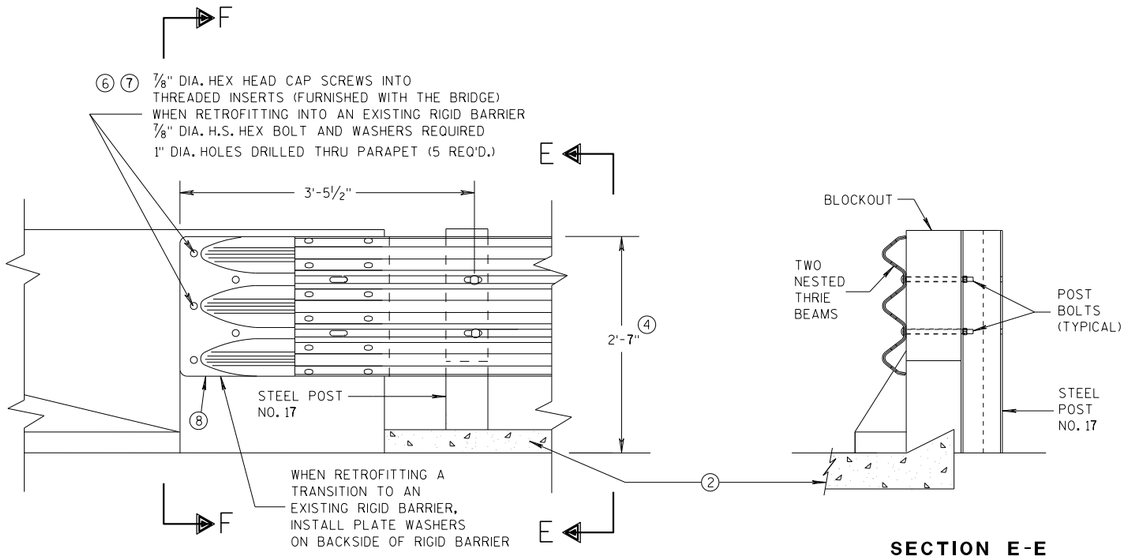
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

(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 TRANSPOF

6
S.D.D. 14 B 45-5c



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

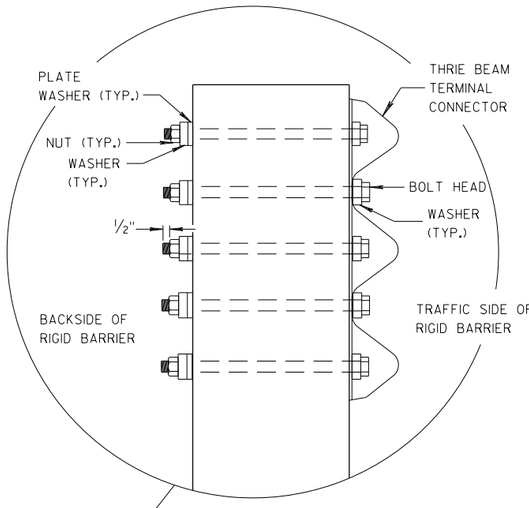
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

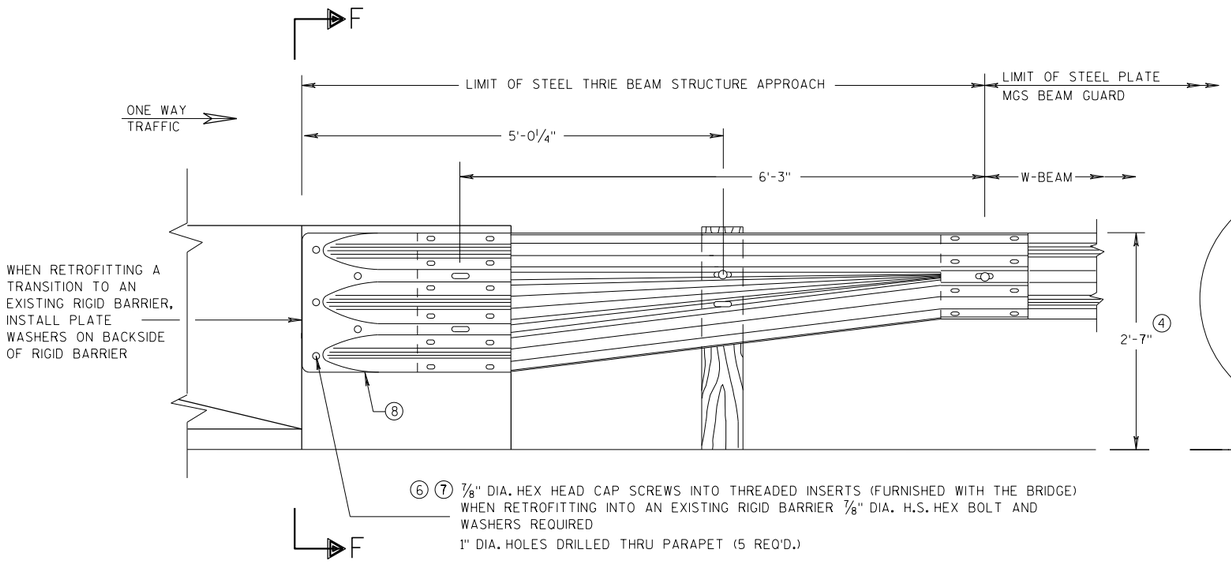
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

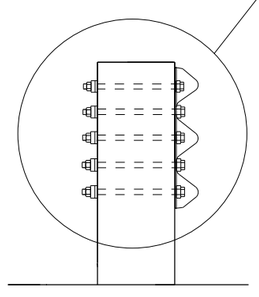
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" 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".

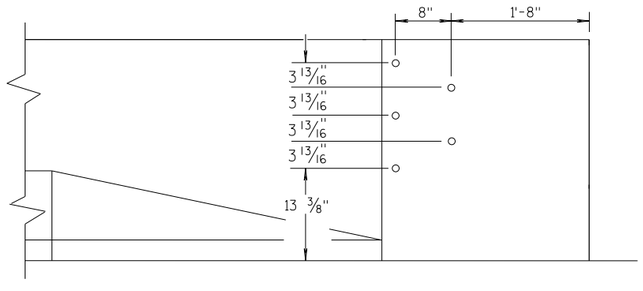




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS D[UNIT SUPERVIS
NT
FHWA

6

S.D.D. 14 B 45-5d

6

S.D.D. 14 B 45-5d

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.

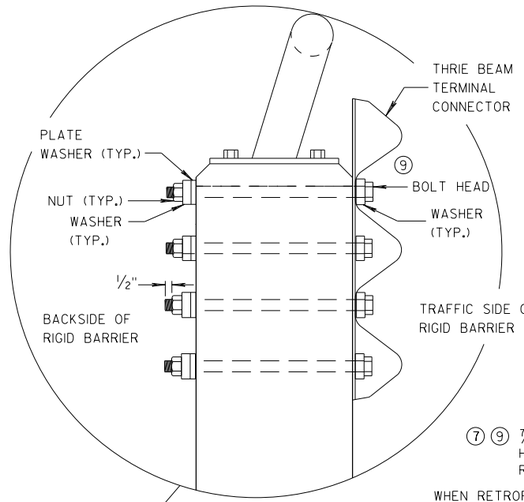
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

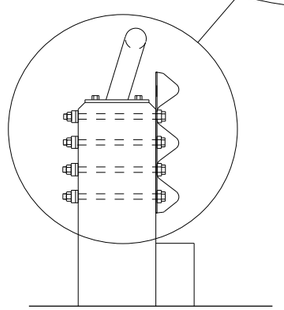
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

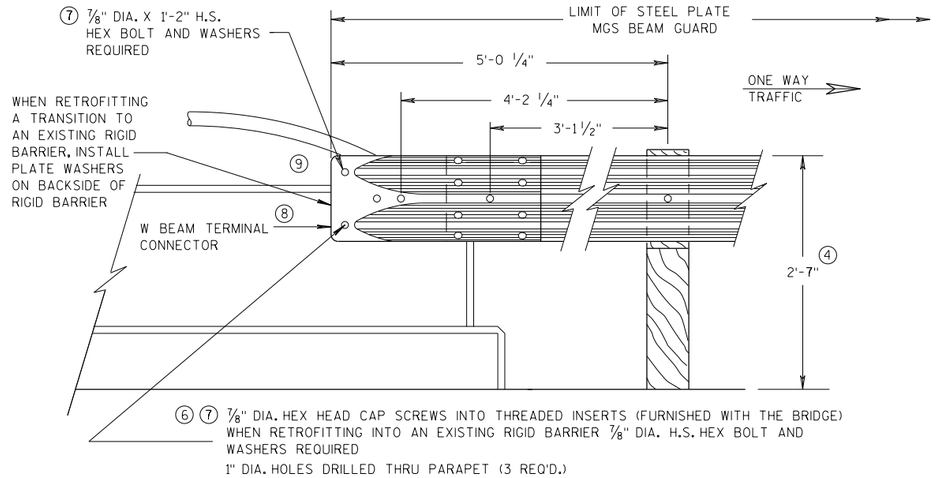
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

(9) BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.





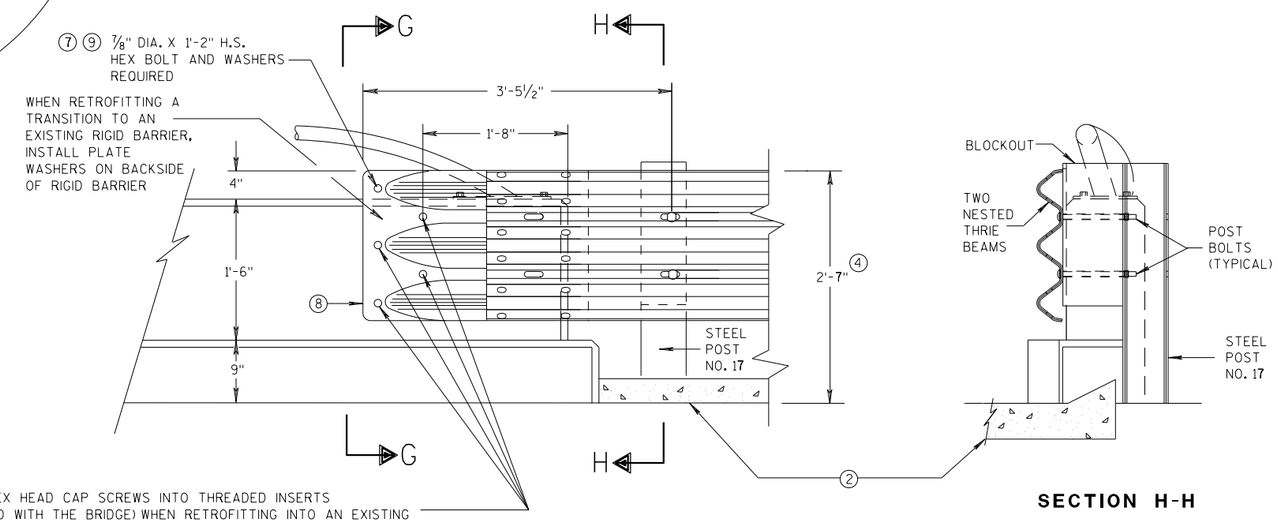
SECTION G-G



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

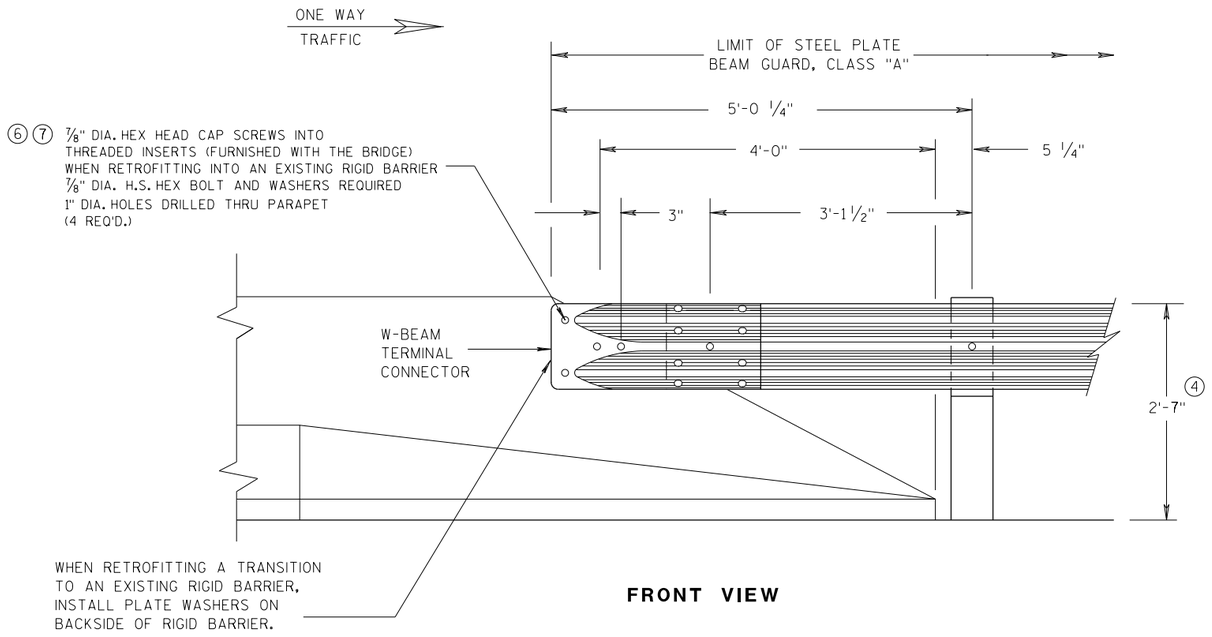
APPROVED
07/2018 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVIS
FHWA

6

S.D.D. 14 B 45-5e

6

S.D.D. 14 B 45-5e



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

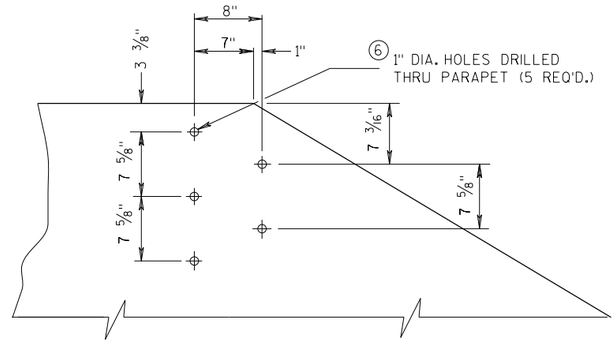
GENERAL NOTES

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

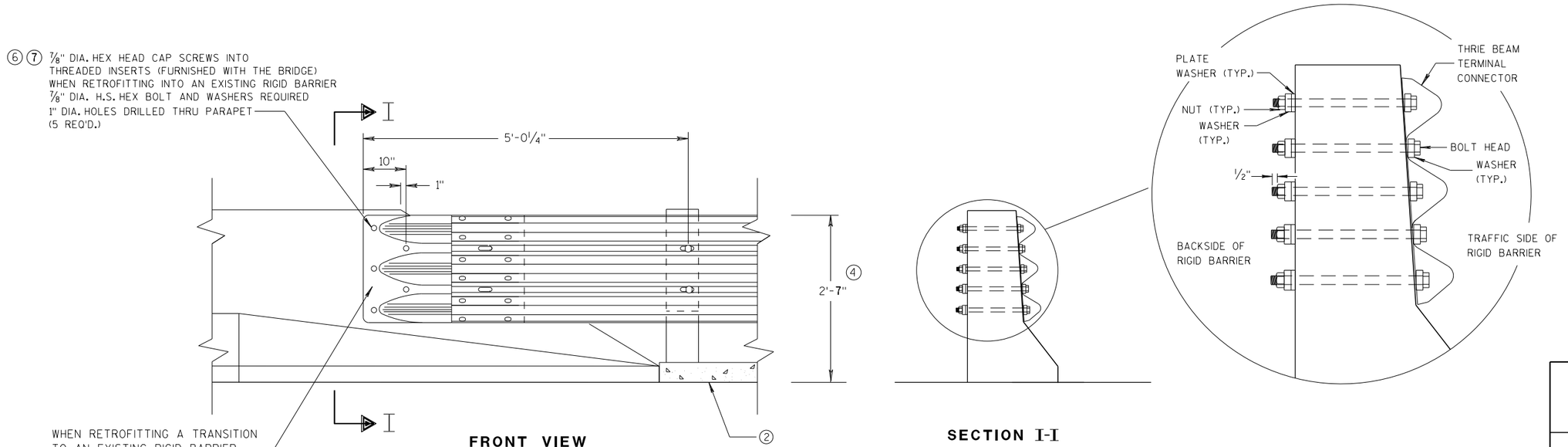
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



FRONT VIEW

SECTION I-I

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

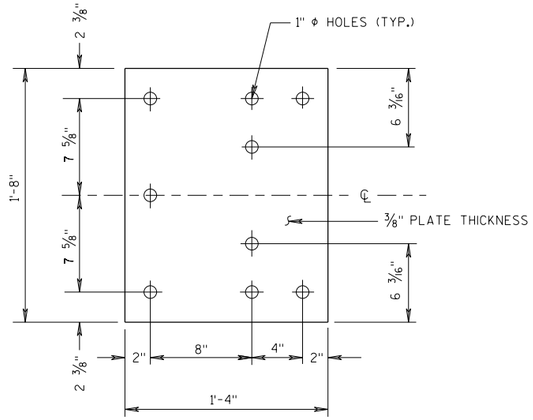
APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS [illegible] UNIT SUPERVI[illegible]ENT
FHWA

6

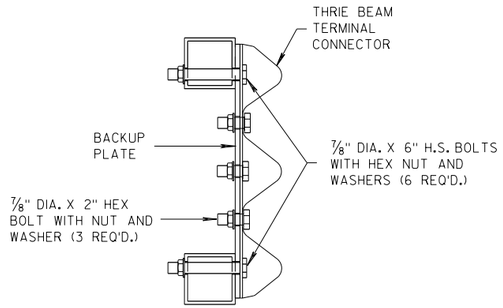
S.D.D. 14 B 45-5f

6

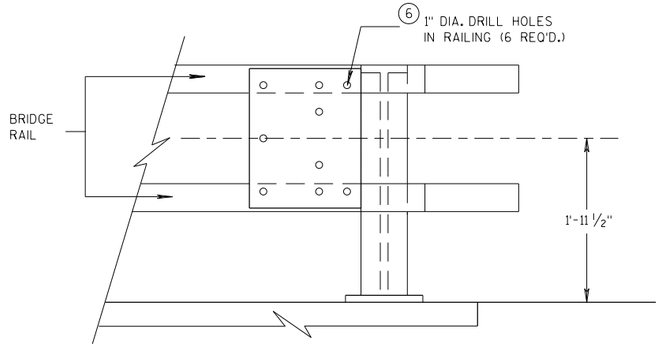
S.D.D. 14 B 45-5f



BACK-UP PLATE DETAIL



SECTION J-J

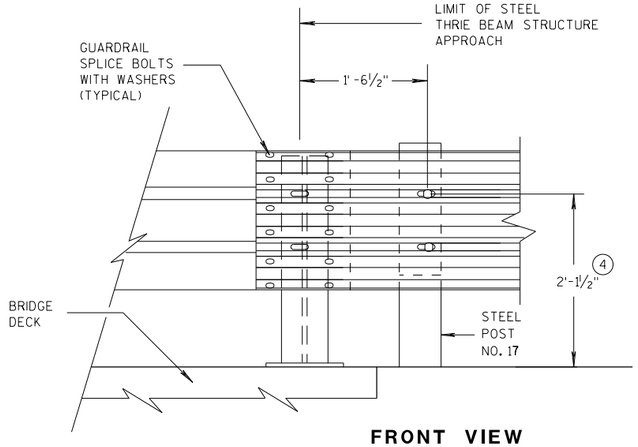


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

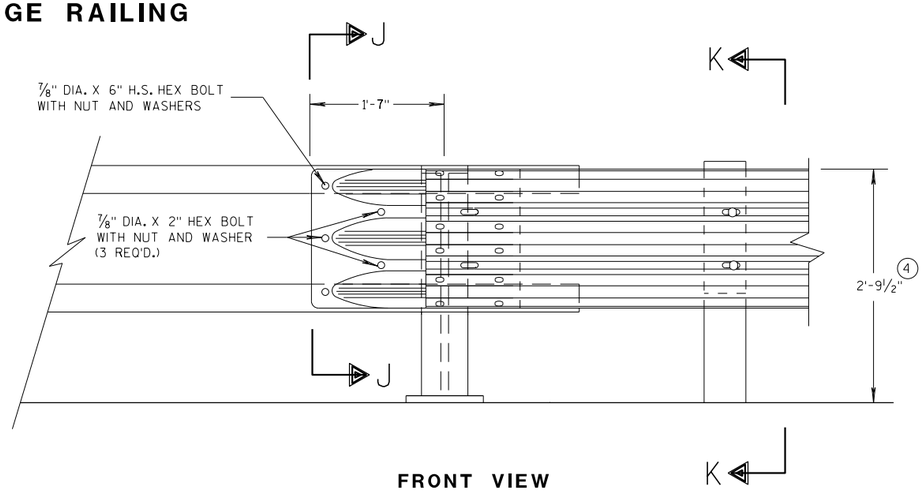
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

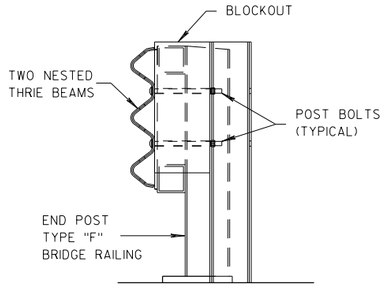


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 07/2018 — DATE
FHWA

/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

6

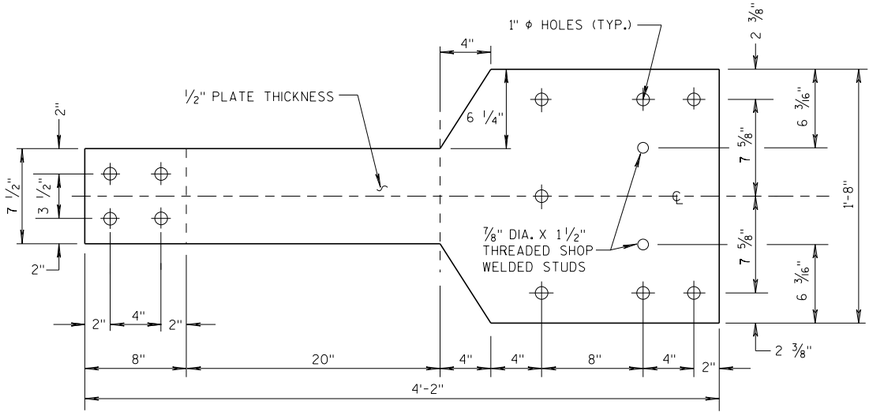
S.D.D. 14 B 45-5g

6

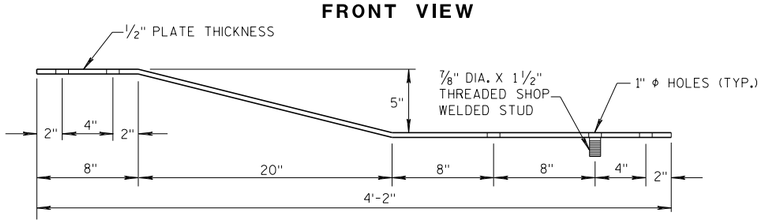
S.D.D. 14 B 45-5g

GENERAL NOTES

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

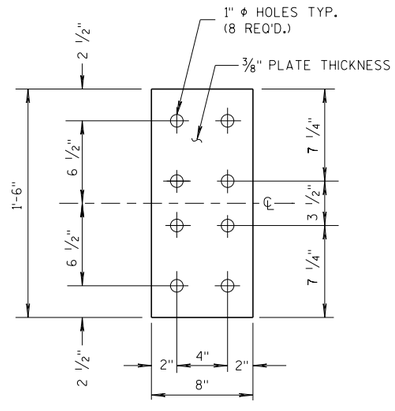


FRONT VIEW



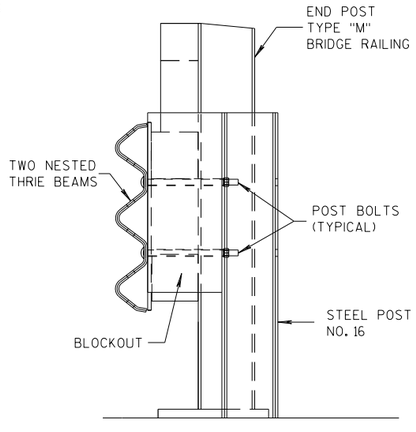
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

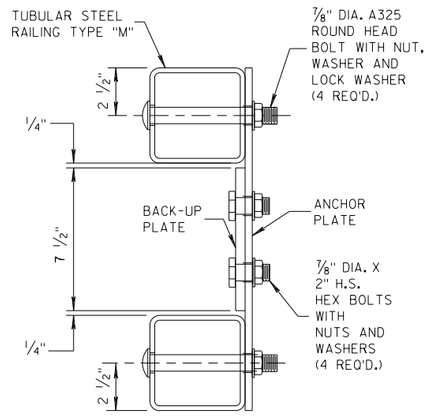


FRONT VIEW

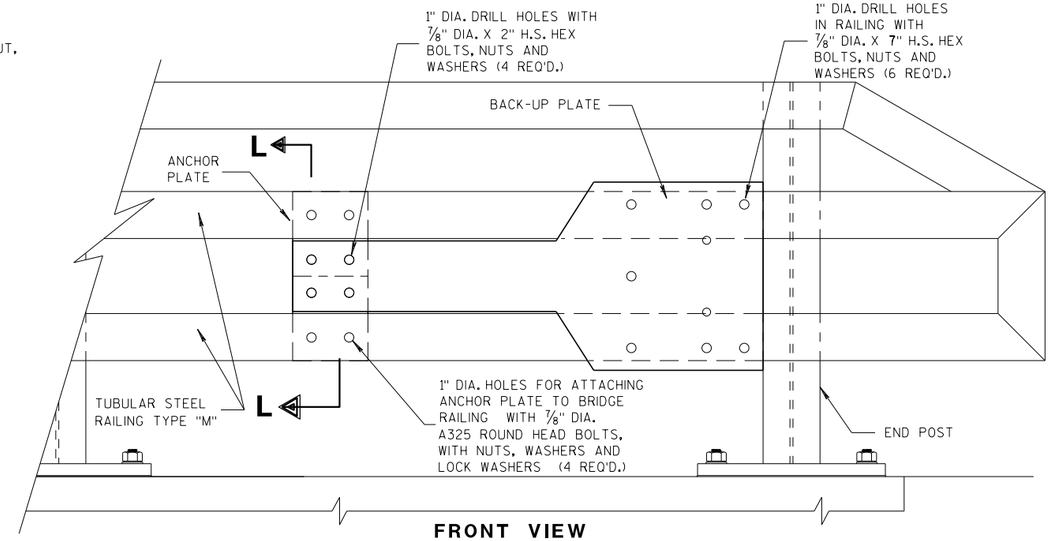
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

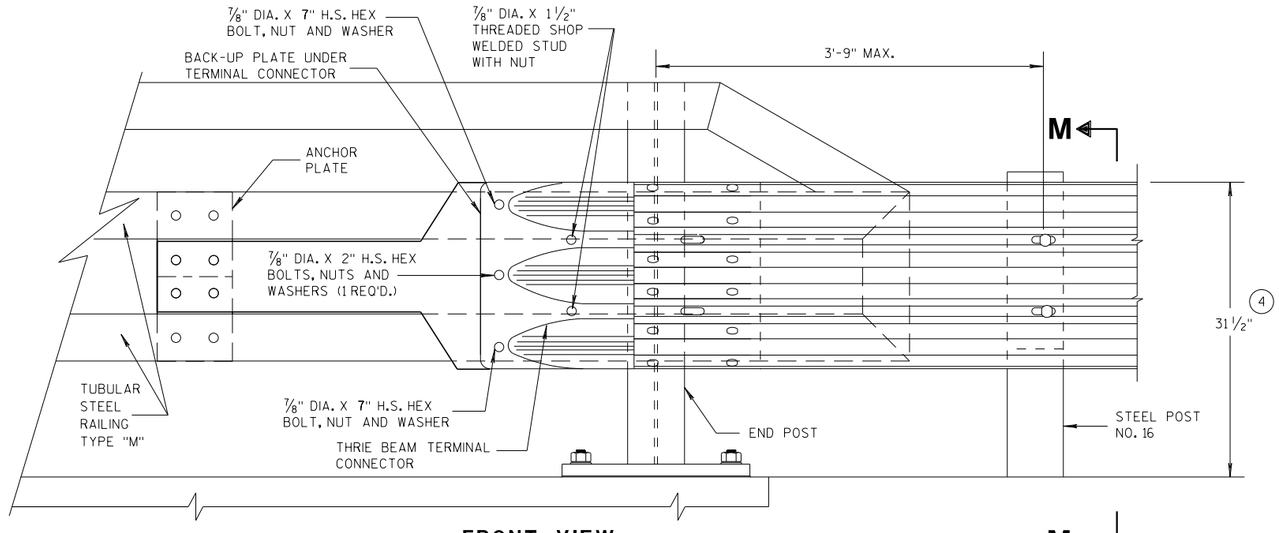


SECTION L-L

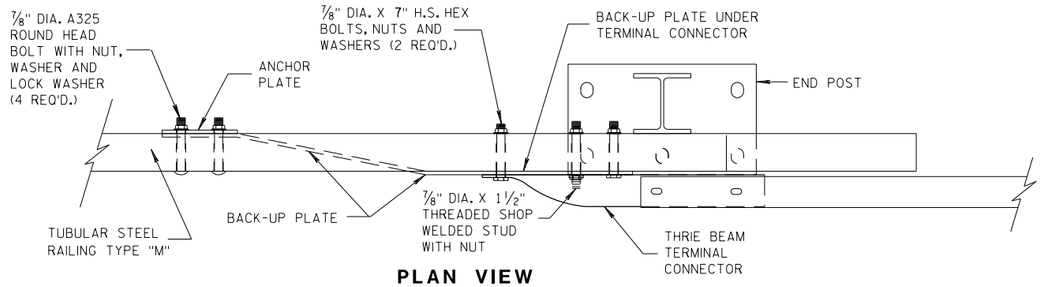


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

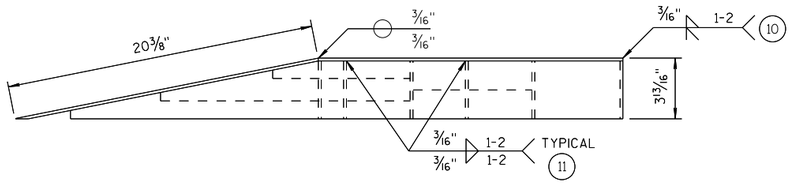
APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA

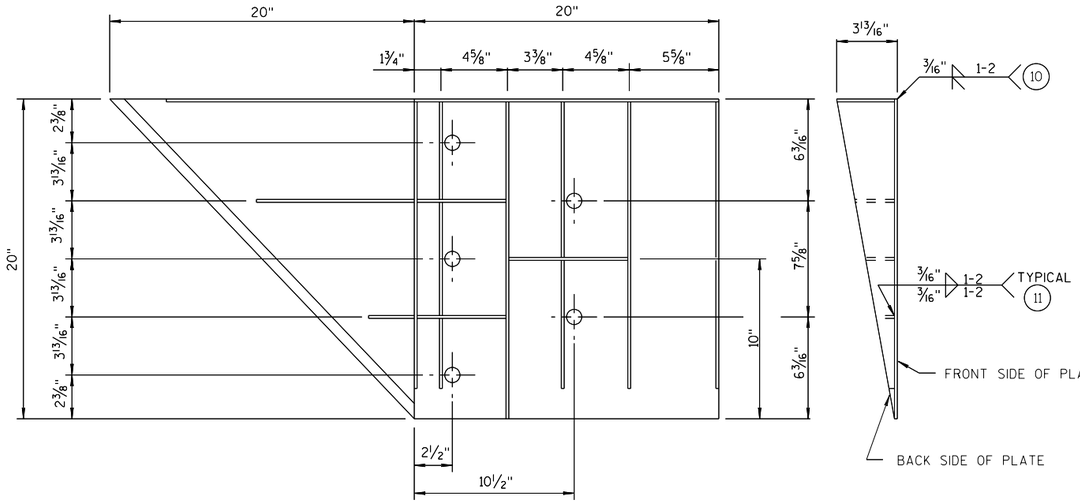
6

S.D.D. 14 B 45-5h

6

S.D.D. 14 B 45-5h





WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

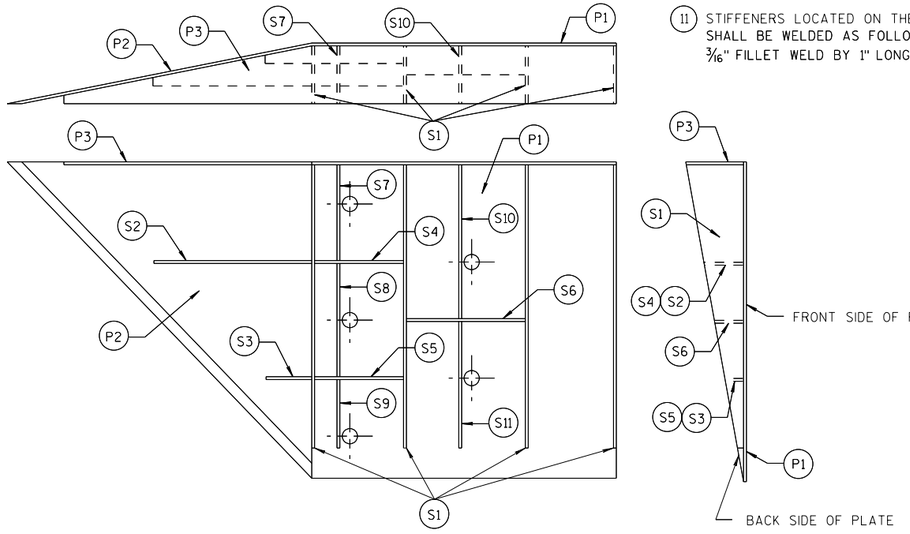


PLATE AND STIFFENER IDENTIFICATION

(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.

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

(11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

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 9/16"	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 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" 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 9/16" 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 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

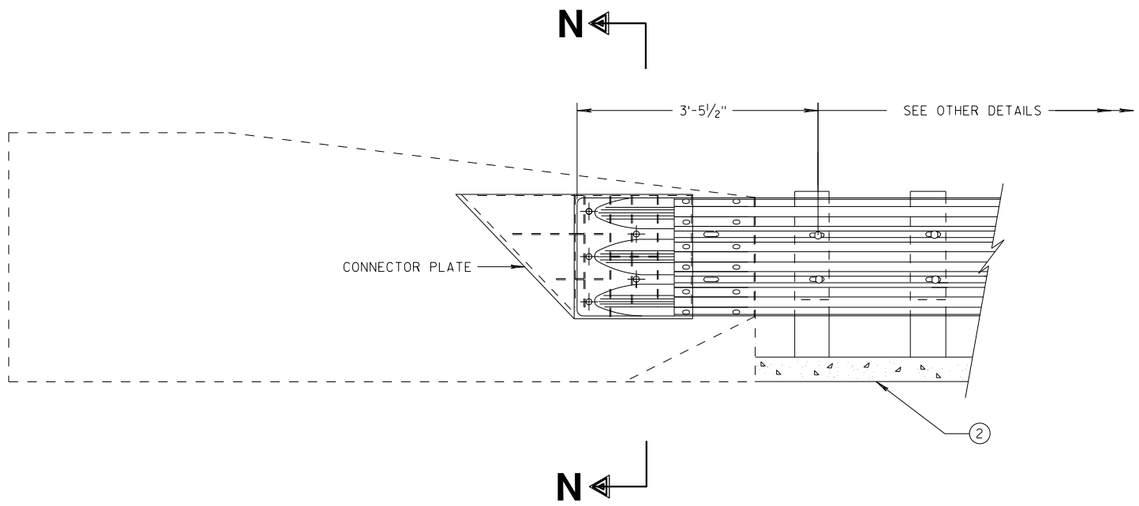
/S/ Rodney Taylor
ROADWAY STANDARDS I
UNIT SUPERVI

6

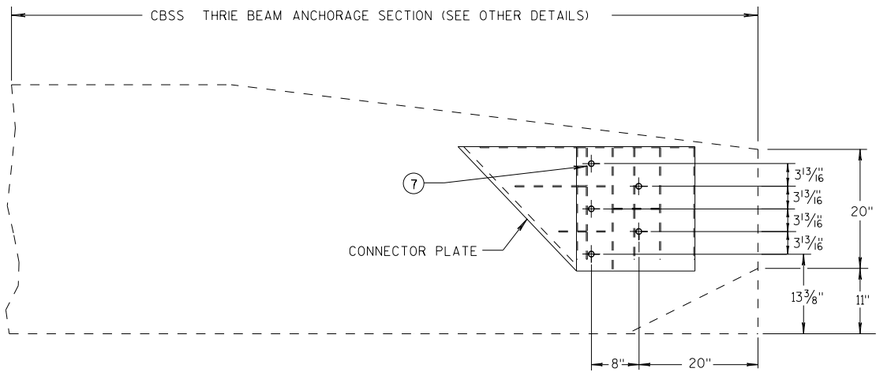
S.D.D. 14 B 45-5i

6

S.D.D. 14 B 45-5i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



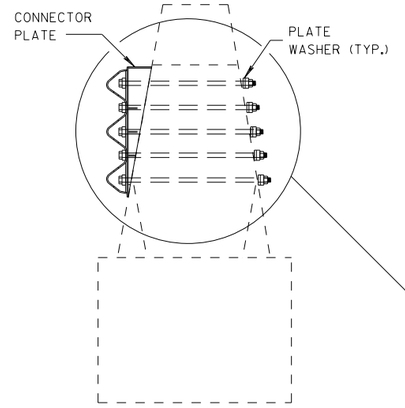
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

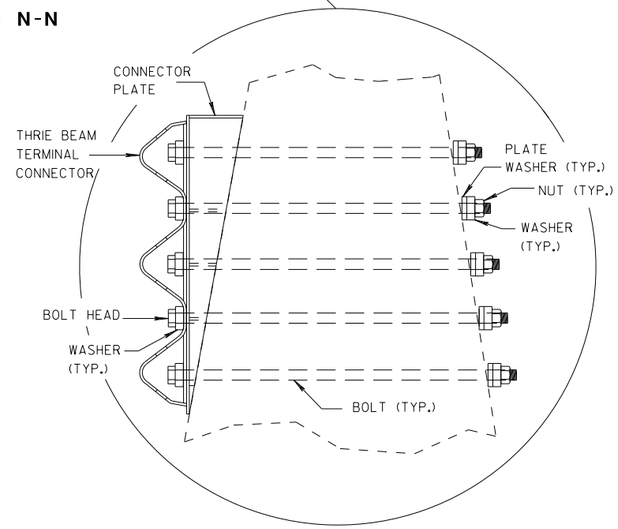
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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 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 ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

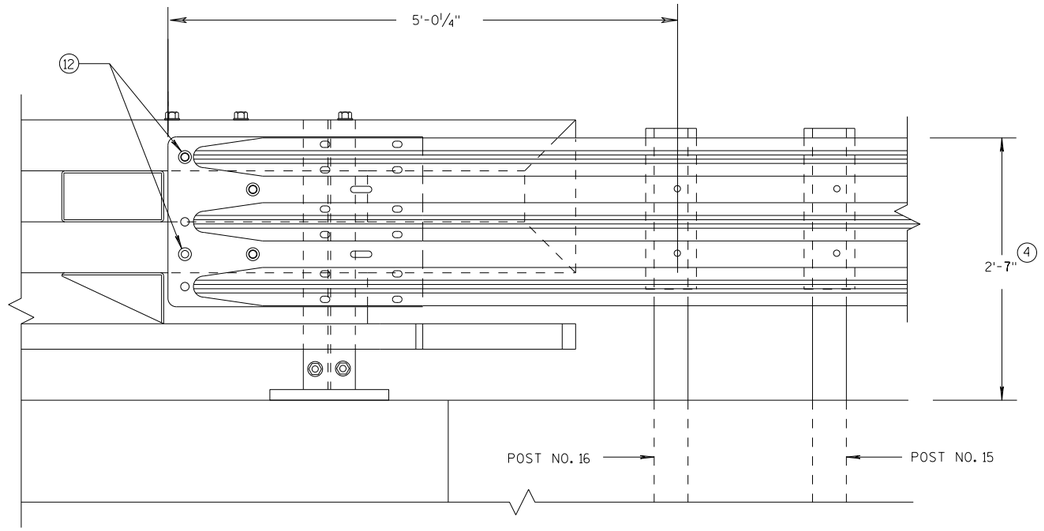
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DI
UNIT SUPERVIS
NT
FHWA

6

S.D.D. 14 B 45-5j

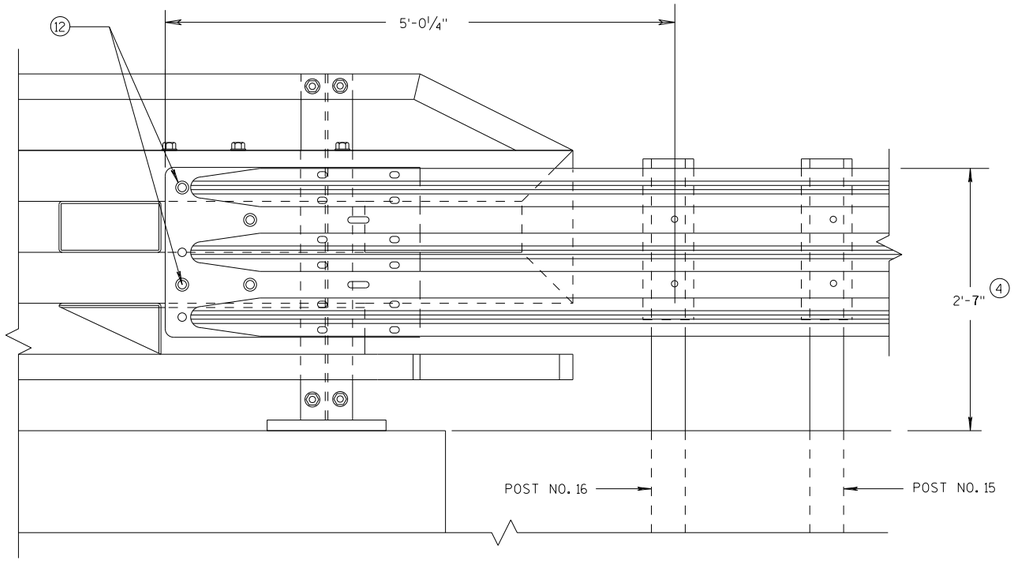
6

S.D.D. 14 B 45-5j



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

(4) TOLERANCE FOR TOP OF BEAM IS ± 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 1/2-INCH BEYOND NUT.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS D
UNIT SUPERVIS

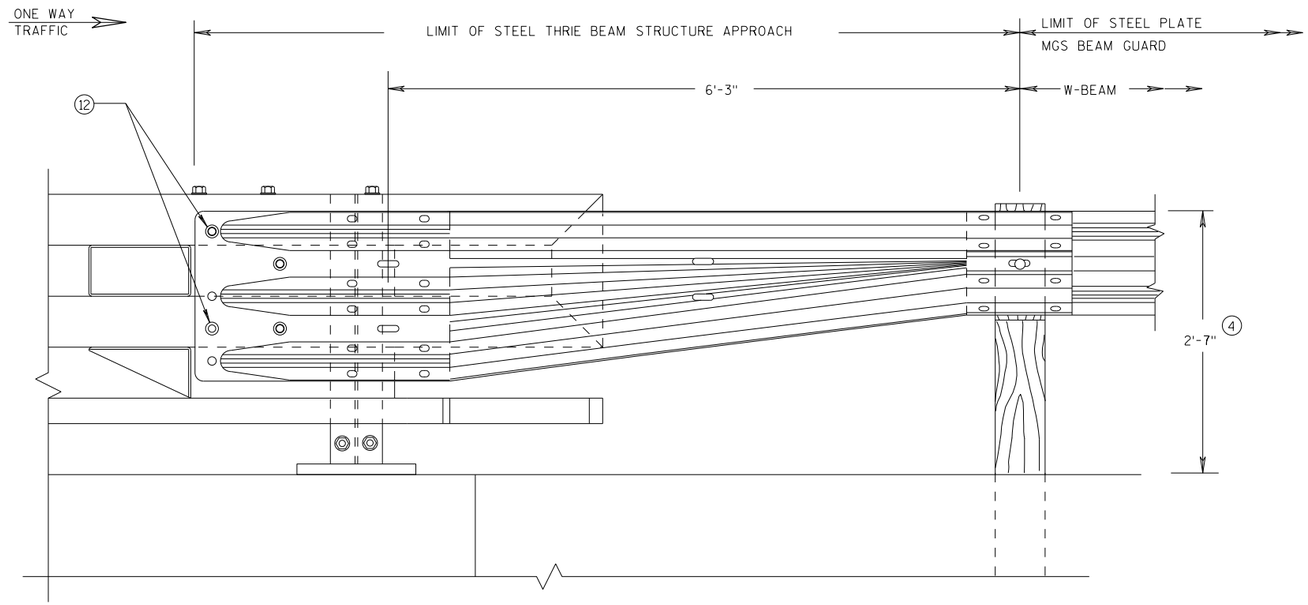
NT

6

S.D.D. 14 B 45-5k

6

S.D.D. 14 B 45-5k



FRONT VIEW

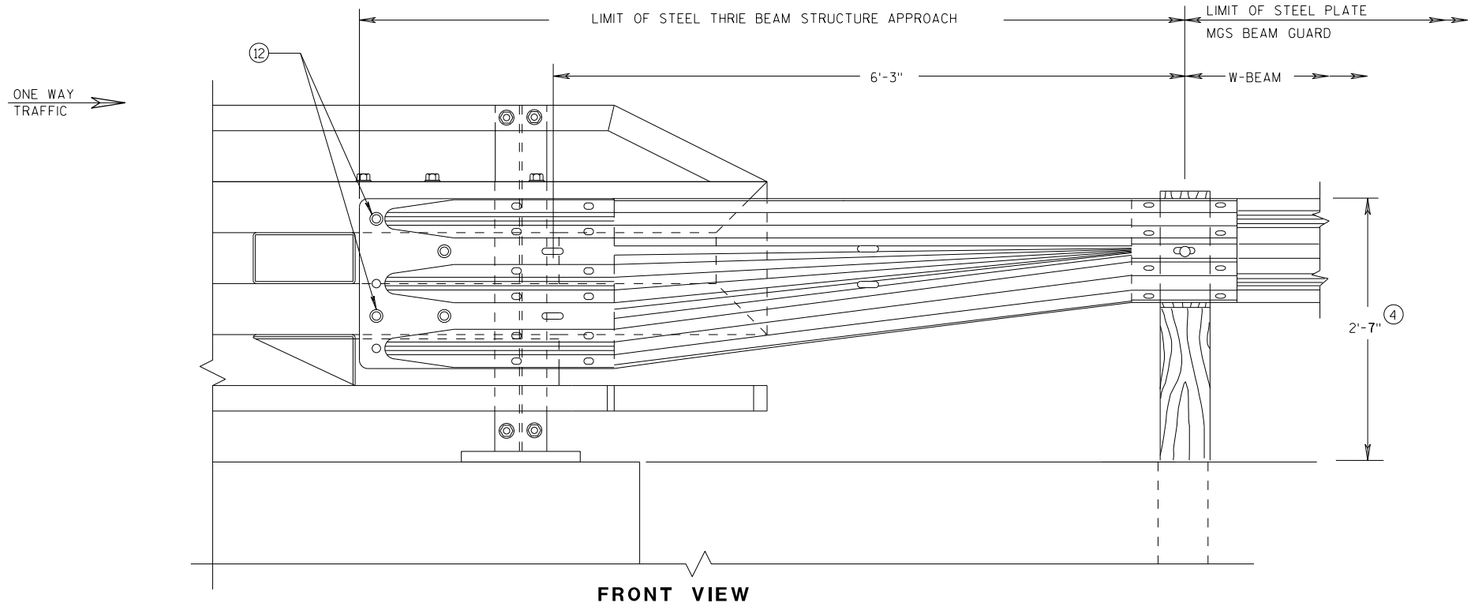
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

GENERAL NOTES

(4) TOLERANCE FOR TOP OF BEAM IS ± 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 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

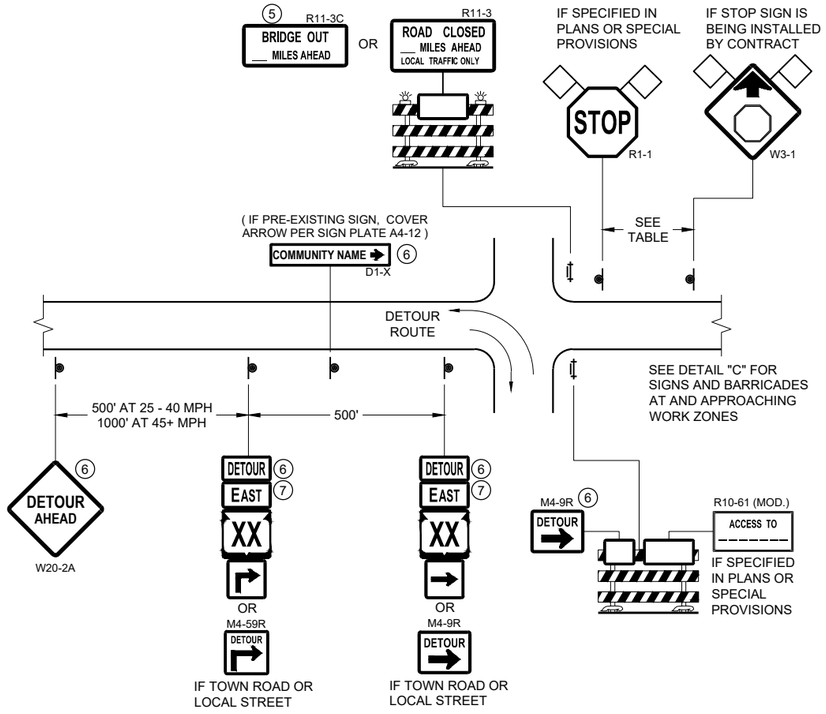
APPROVED
7/2018 DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVIS
NT
FHWA

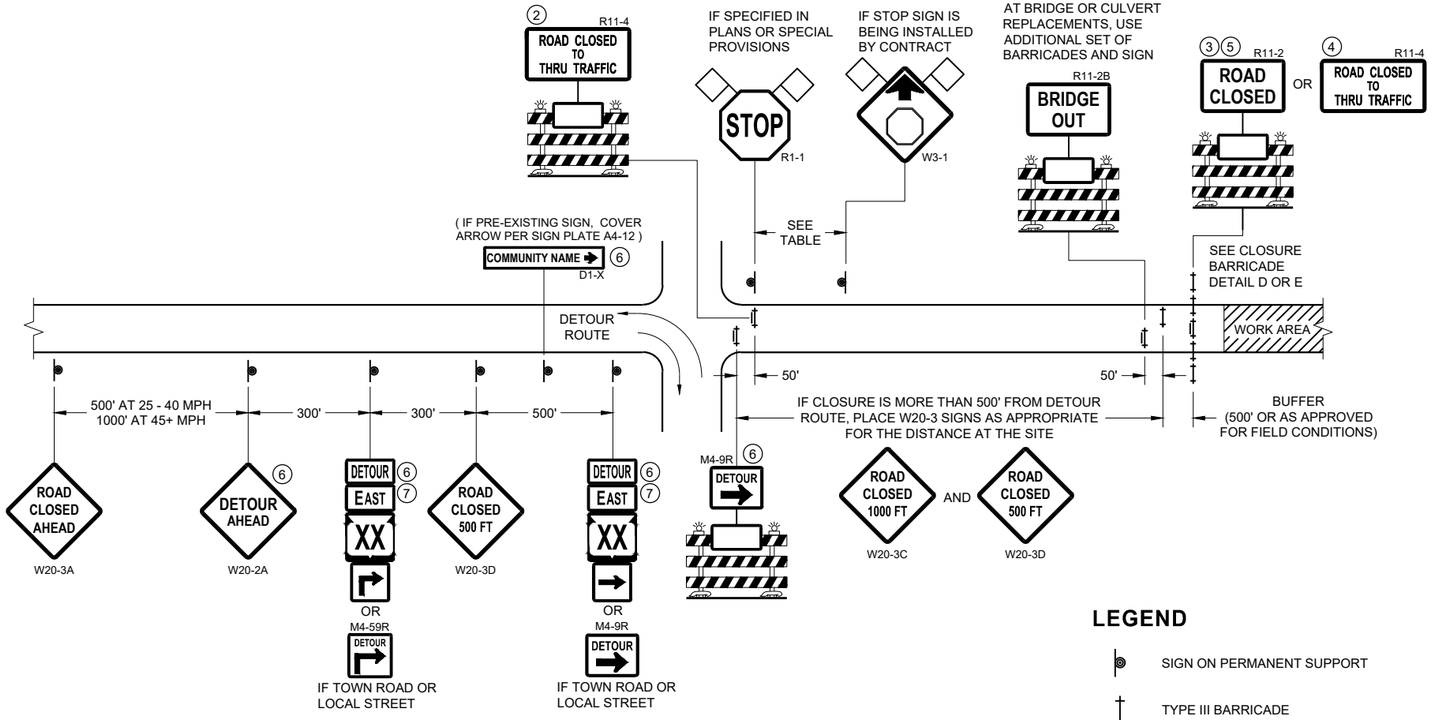
6

S.D.D. 14 B 45-5L

6

S.D.D. 14 B 45-5L



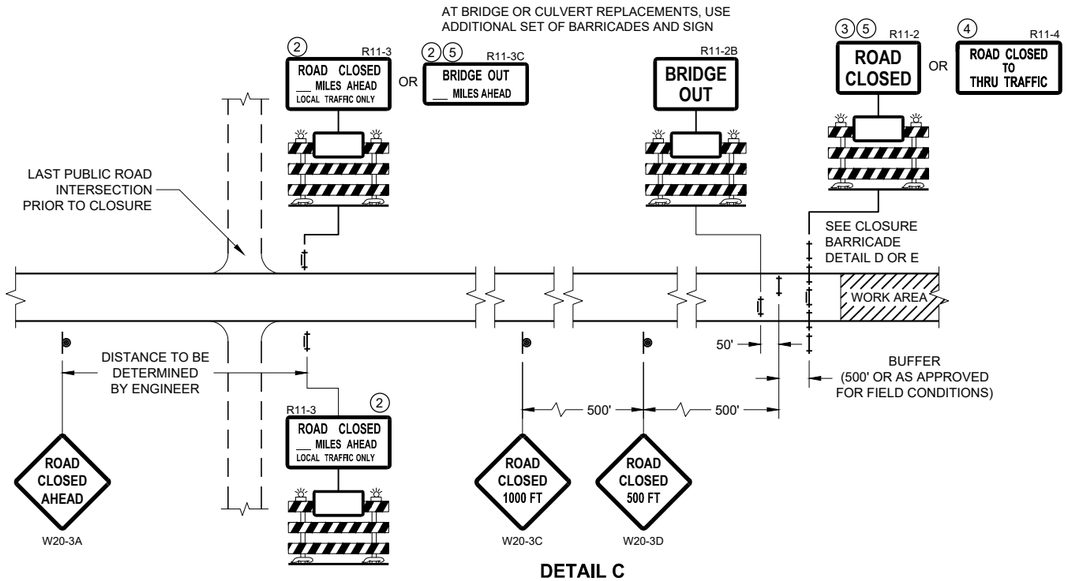


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

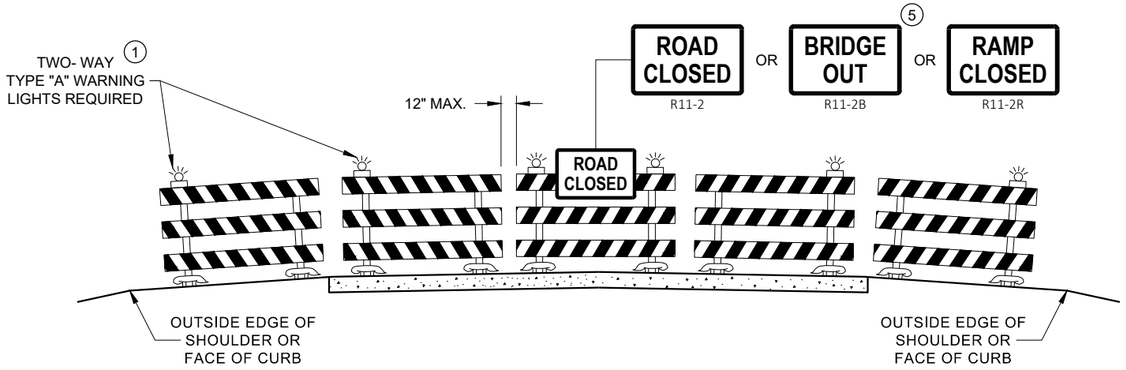
APPROVED
November 2018
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

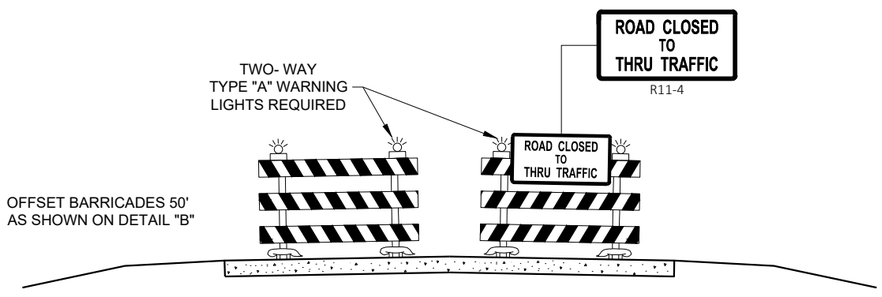
6

SDD 15C02 - 07a

SDD 15C02 - 07a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

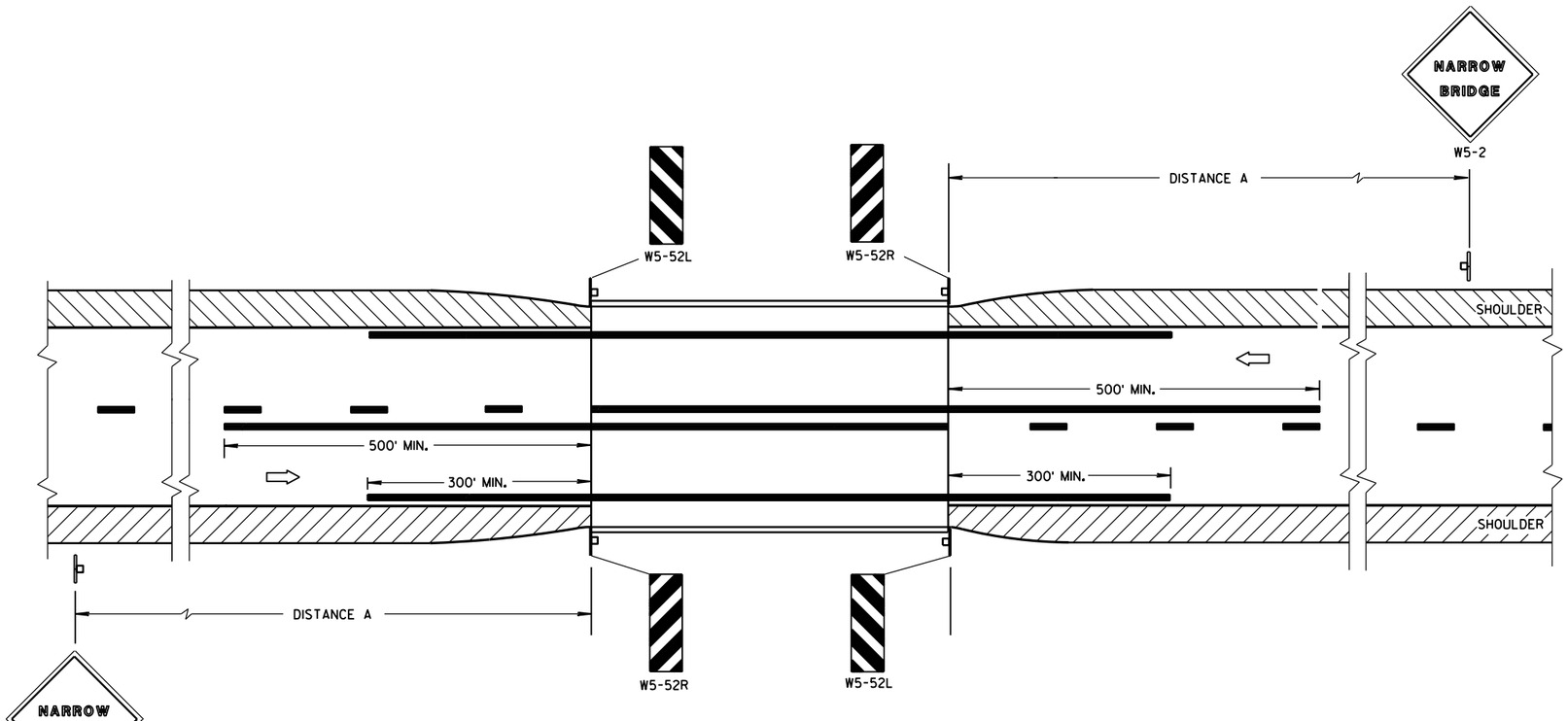
FHWA

6

SDD 15C02 - 07b

6

SDD 15C02 - 07b



SITUATION 1

WARRANTING CRITERIA:

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

DISTANCE TABLE

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

GENERAL NOTES

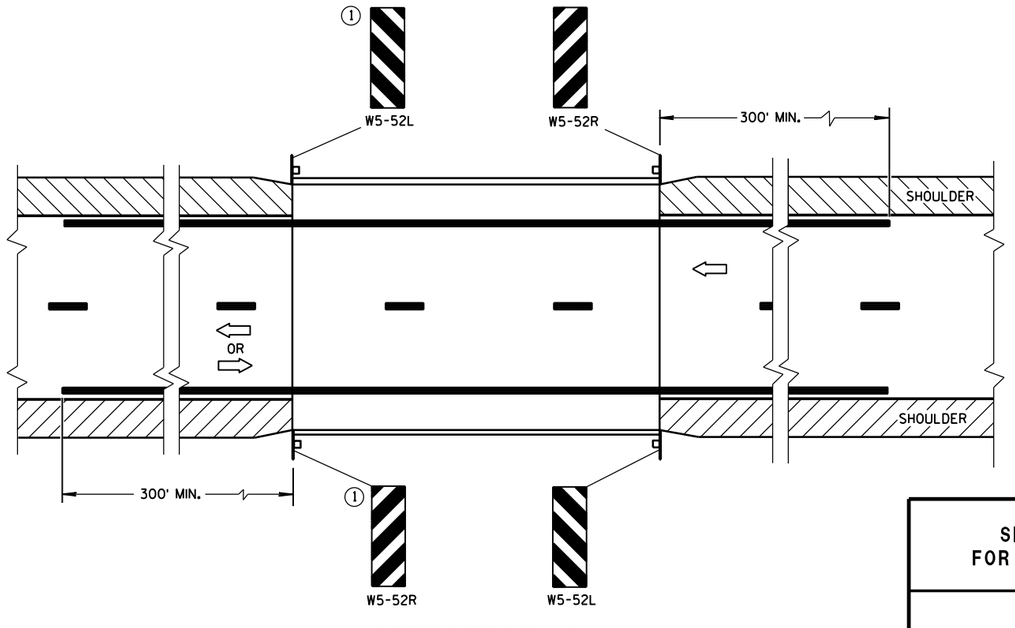
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

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

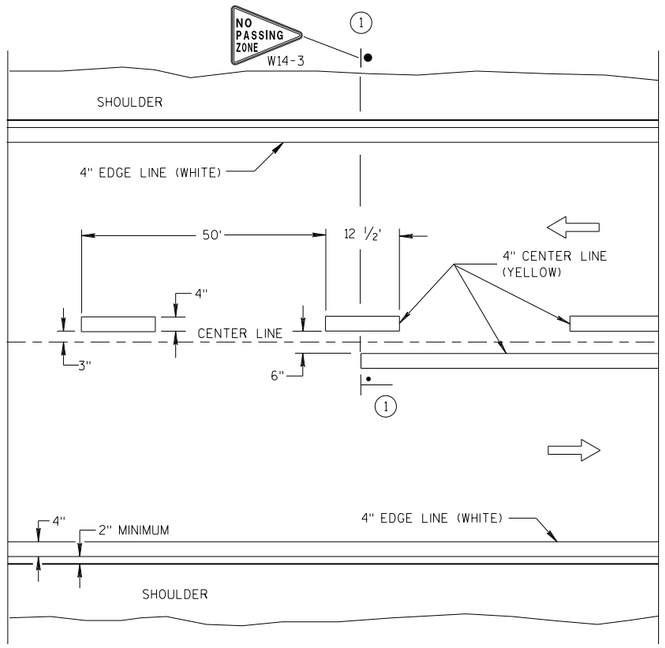
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

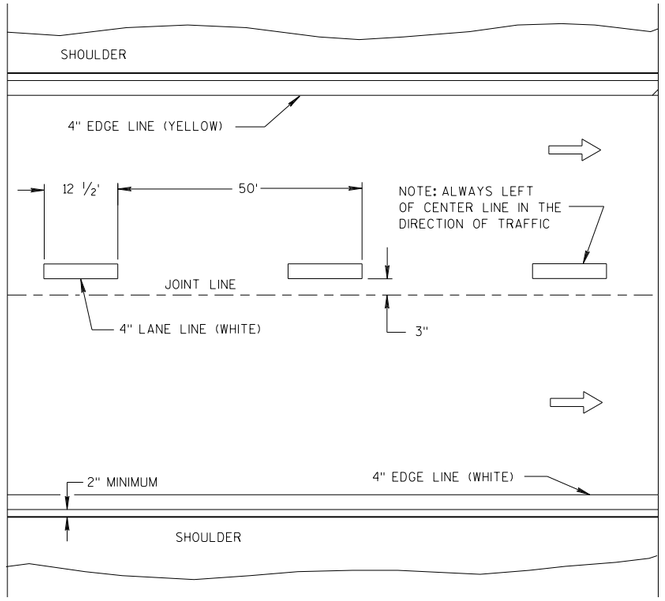
APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR[illegible]EER
FHWA

6

S.D.D. 15 C 6-9



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

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

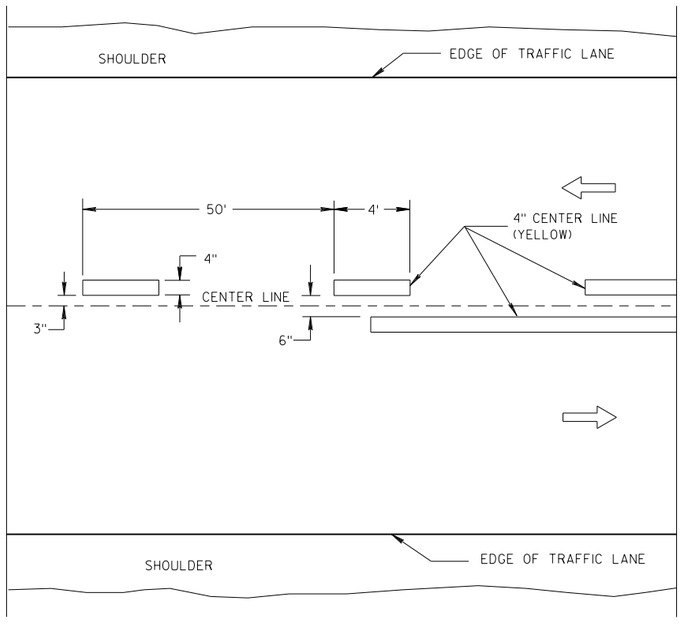
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

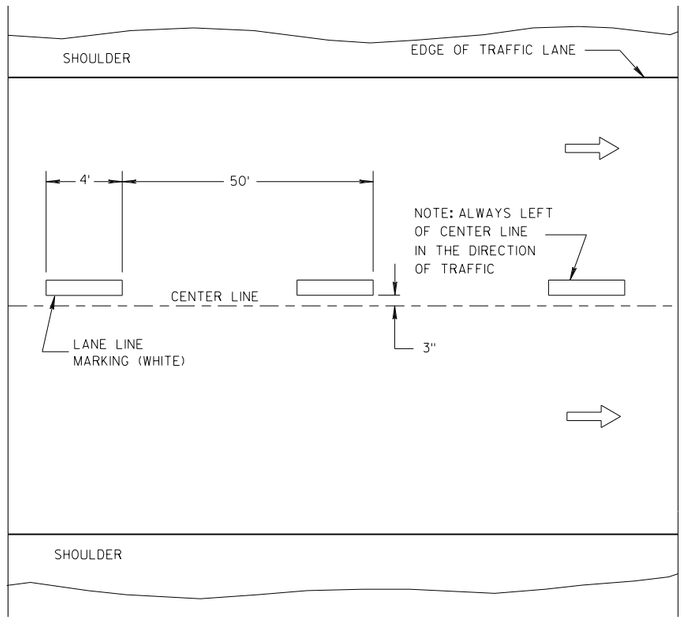
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 — DATE

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

FHWA

6

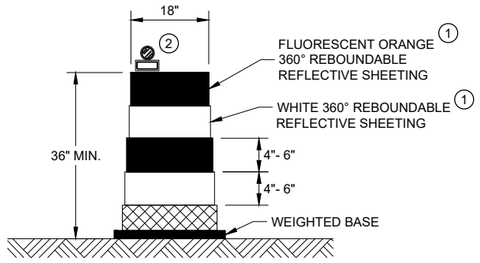
S.D.D. 15 C 8-19a

6

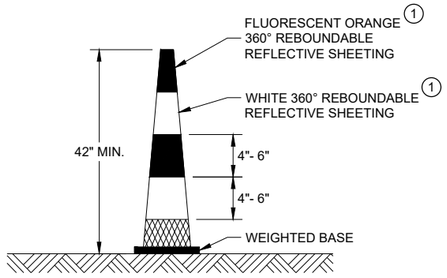
S.D.D. 15 C 8-19a

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.

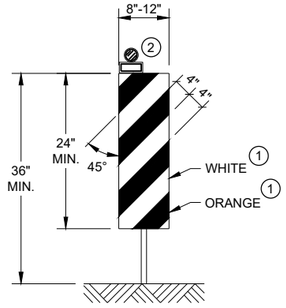


DRUM



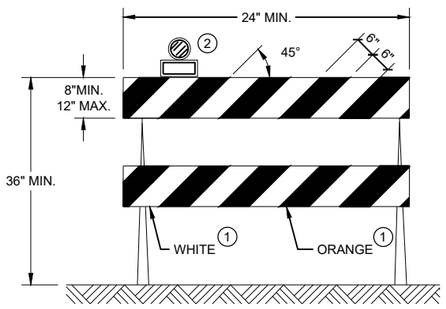
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



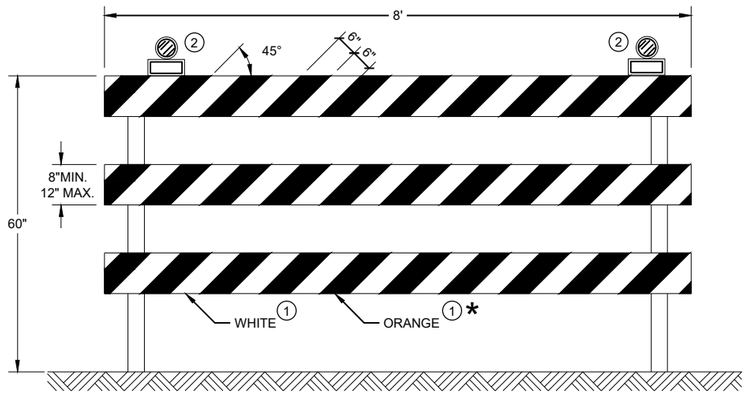
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

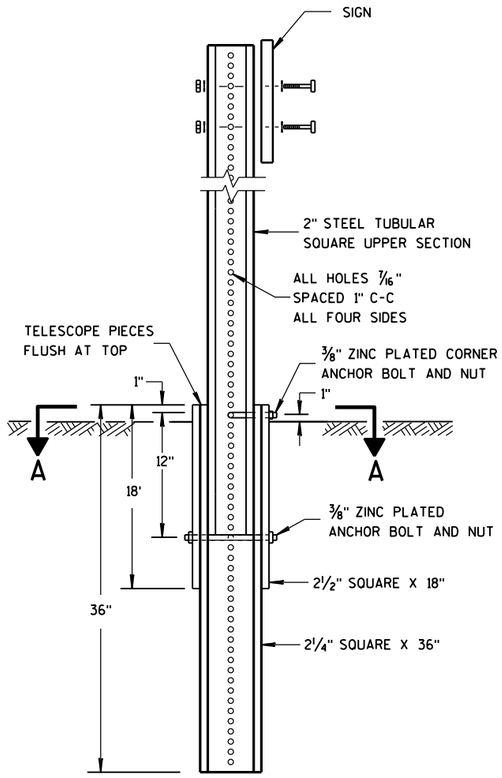
APPROVED
June 2017 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

6

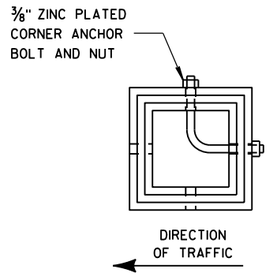
SDD 15C11 - 07b

6

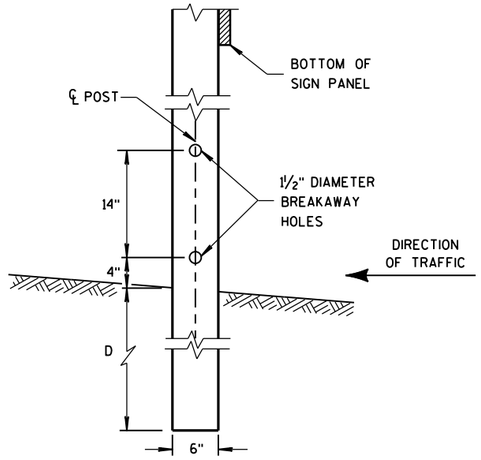
SDD 15C11 - 07b



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



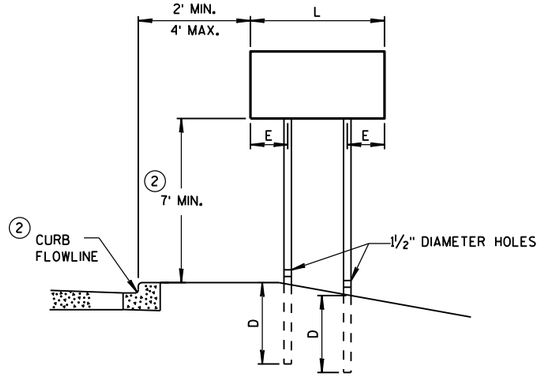
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

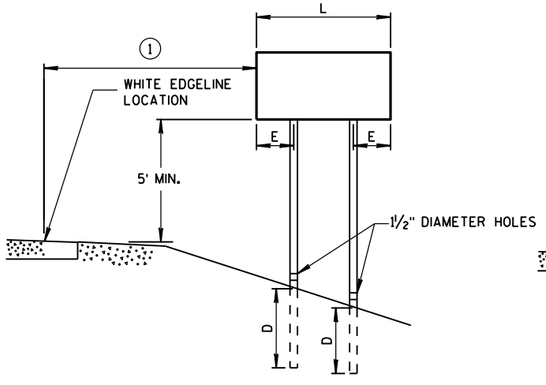
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

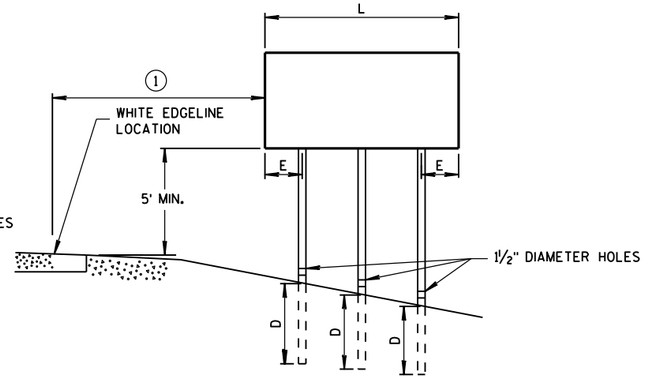
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK 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.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

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.

WOOD POST EMBEDMENT DEPTH

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

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

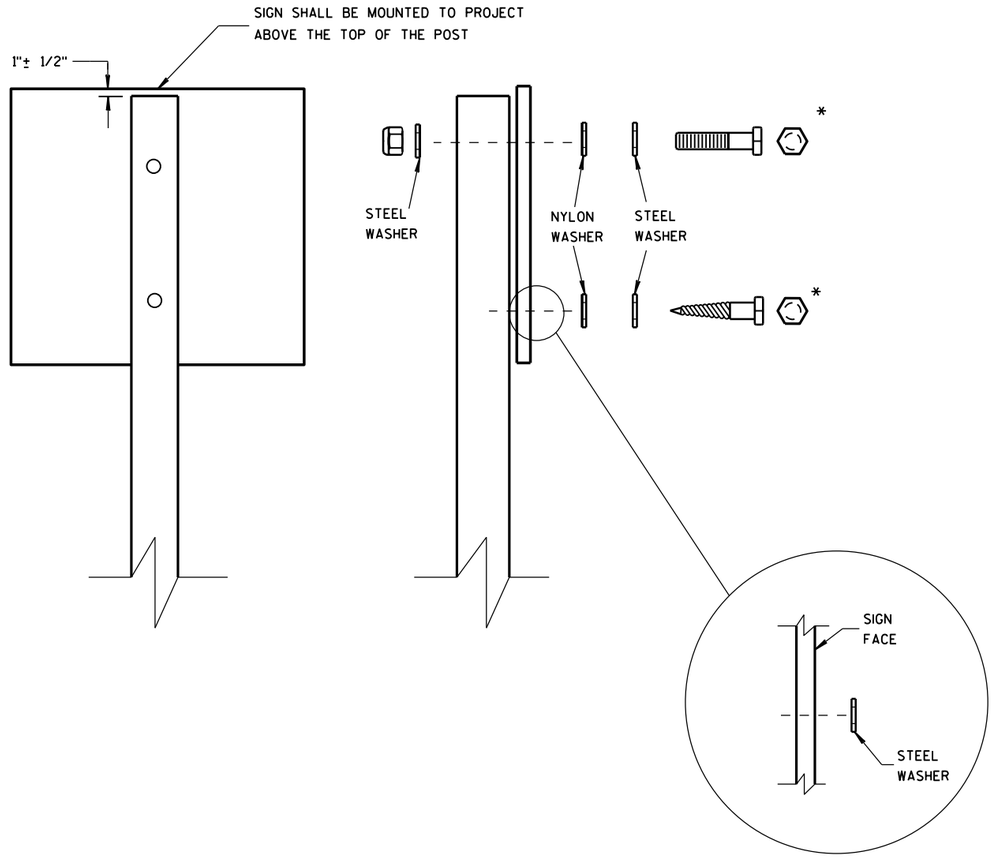
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 D 38-2a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

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

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

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

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

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

6

6

S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

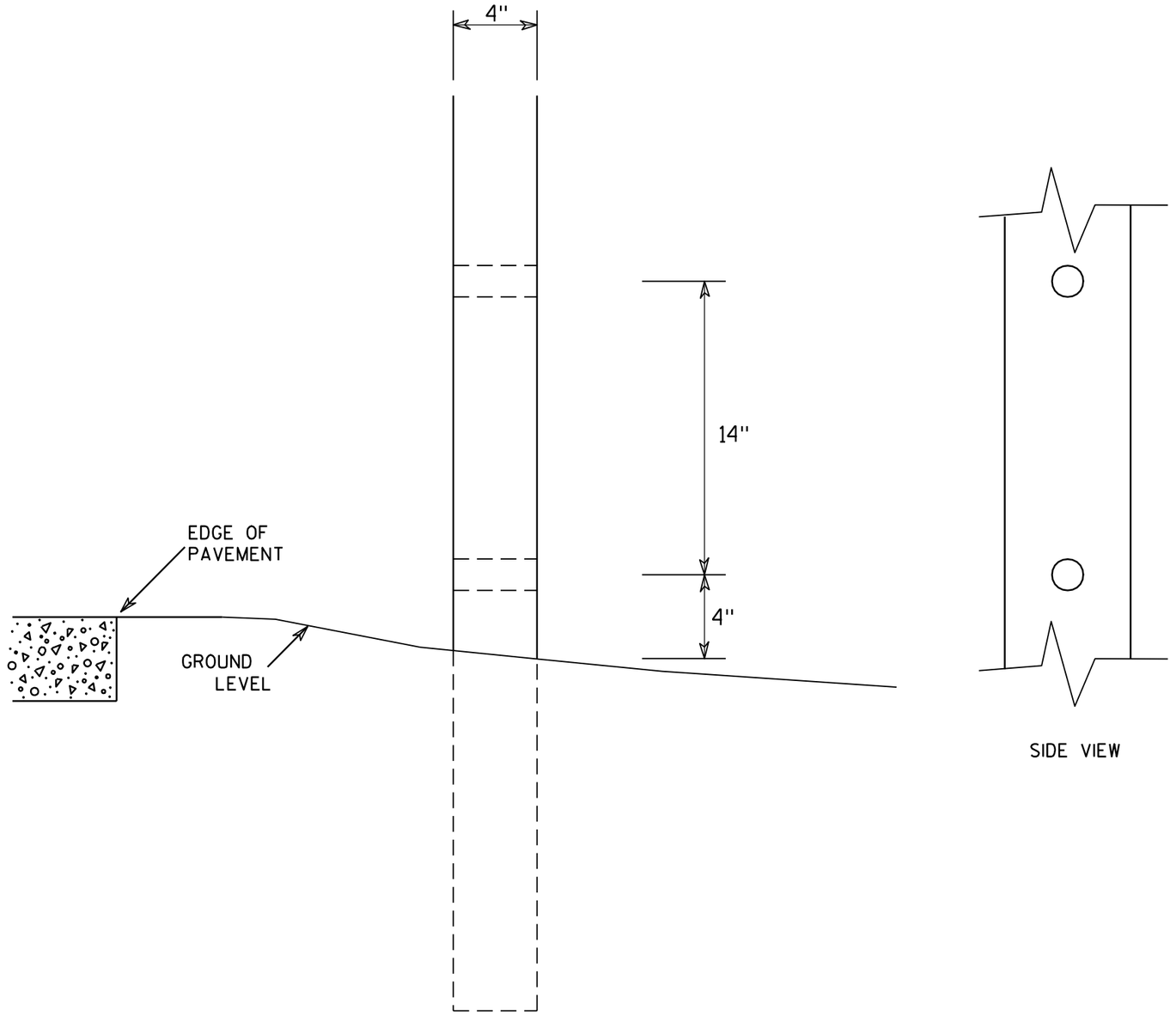
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heldtke
WORK ZONE ENG

FHWA



SIDE VIEW

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

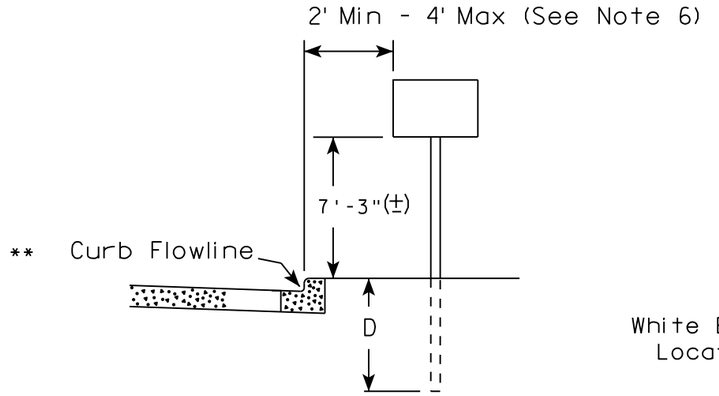
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

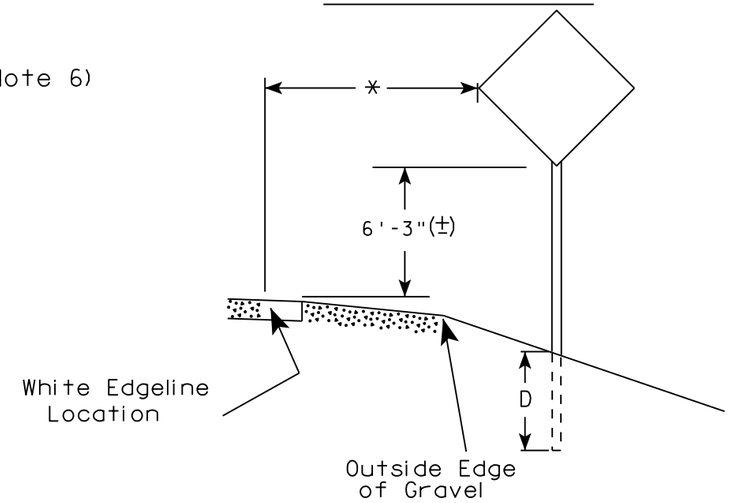
DATE 3/27/97 PLATE NO. A4-11.2

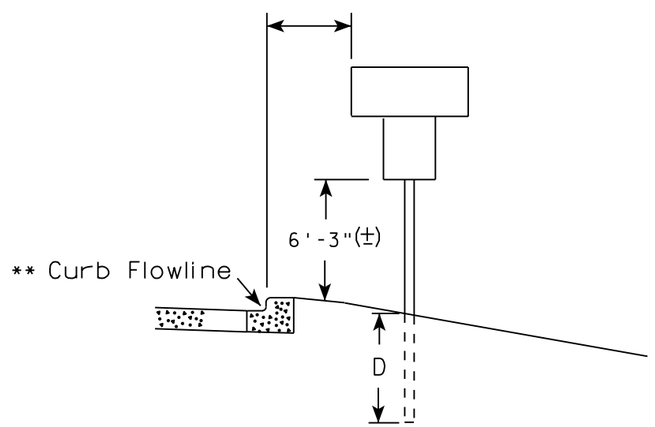
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 54	E

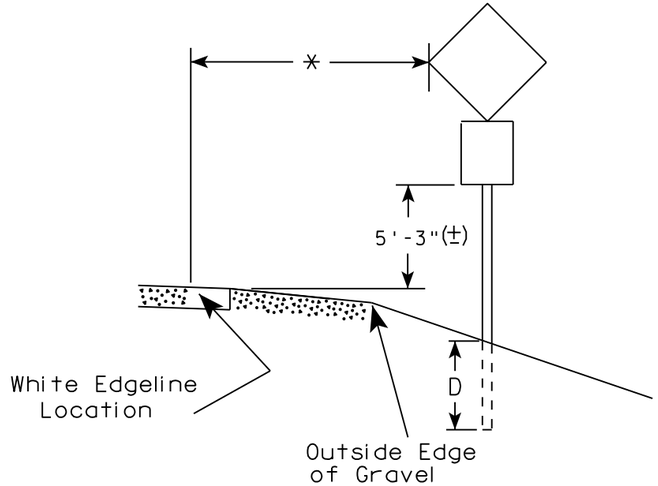
URBAN AREA



RURAL AREA (See Note 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. Offset of signs is measured from the flow line.

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. 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), 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" (±).

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

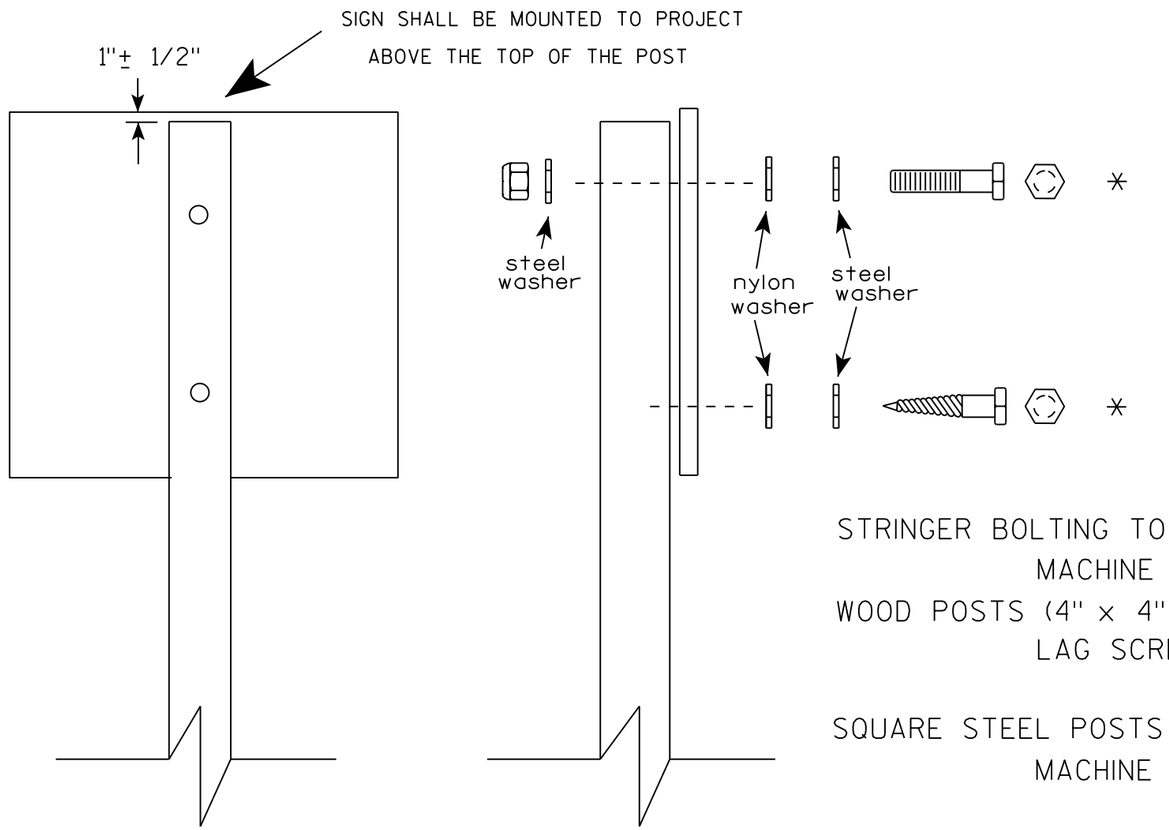
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

7

7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 55	E



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

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

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

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

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

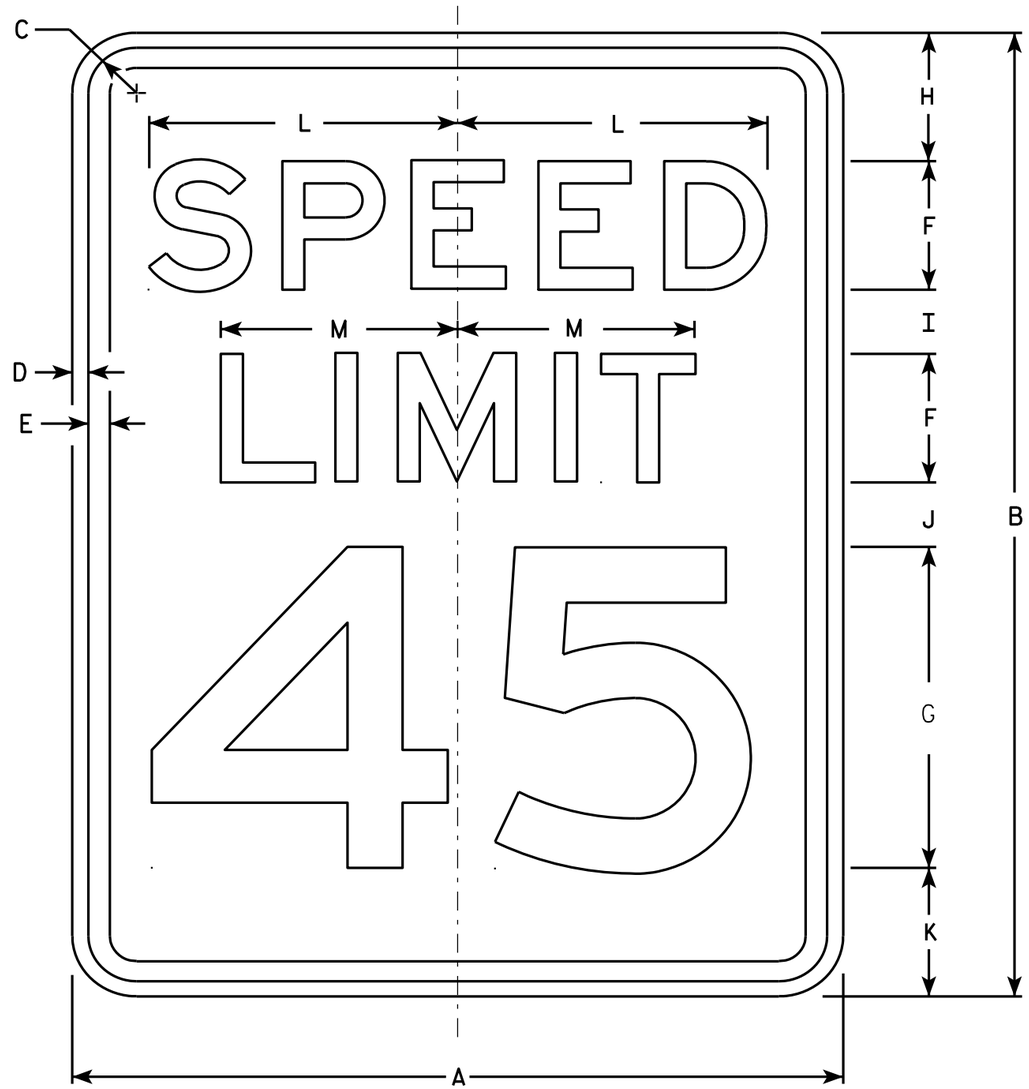
ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO: SHEET NO: E



R2-1

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
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 adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

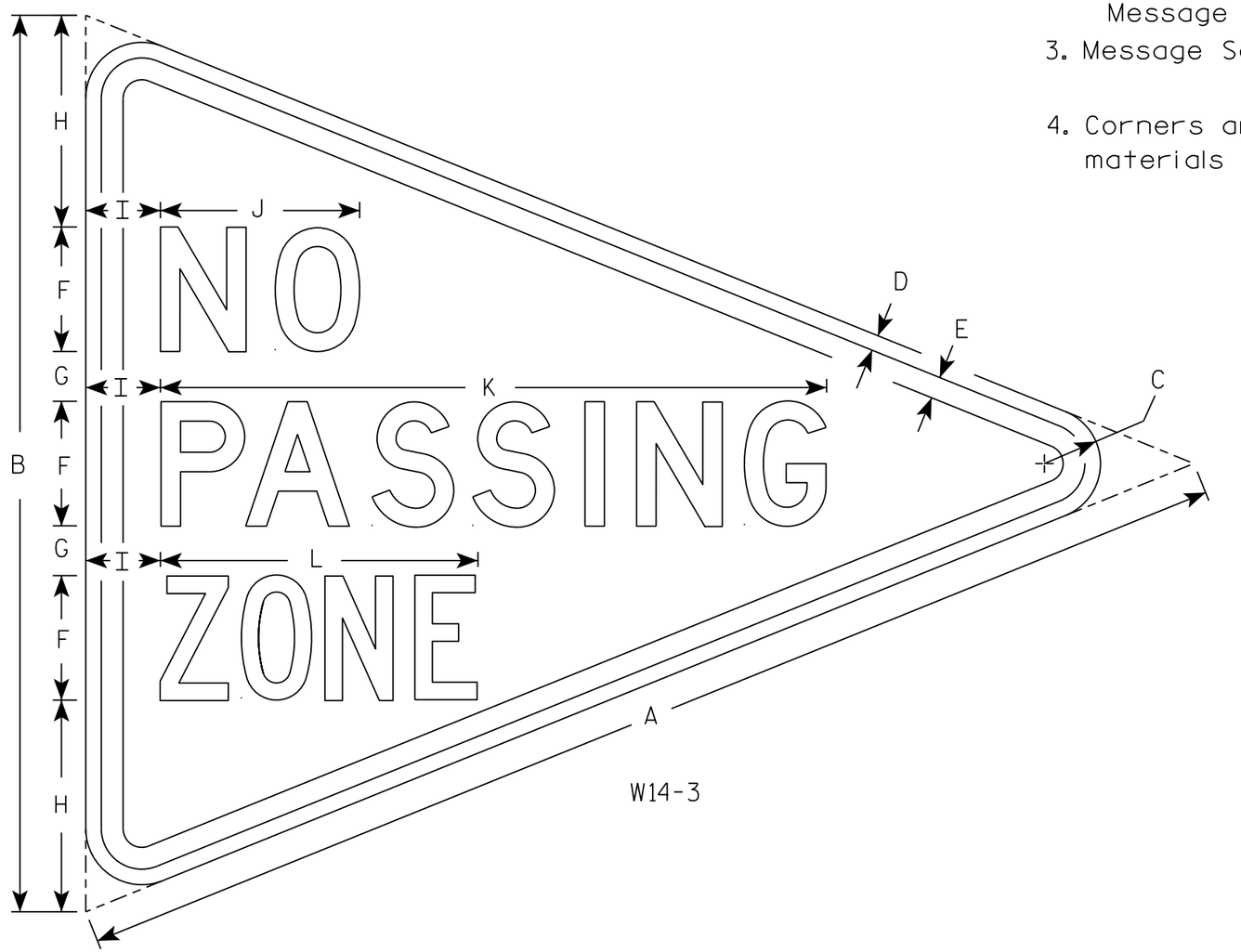
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 57	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.



W14-3

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																											

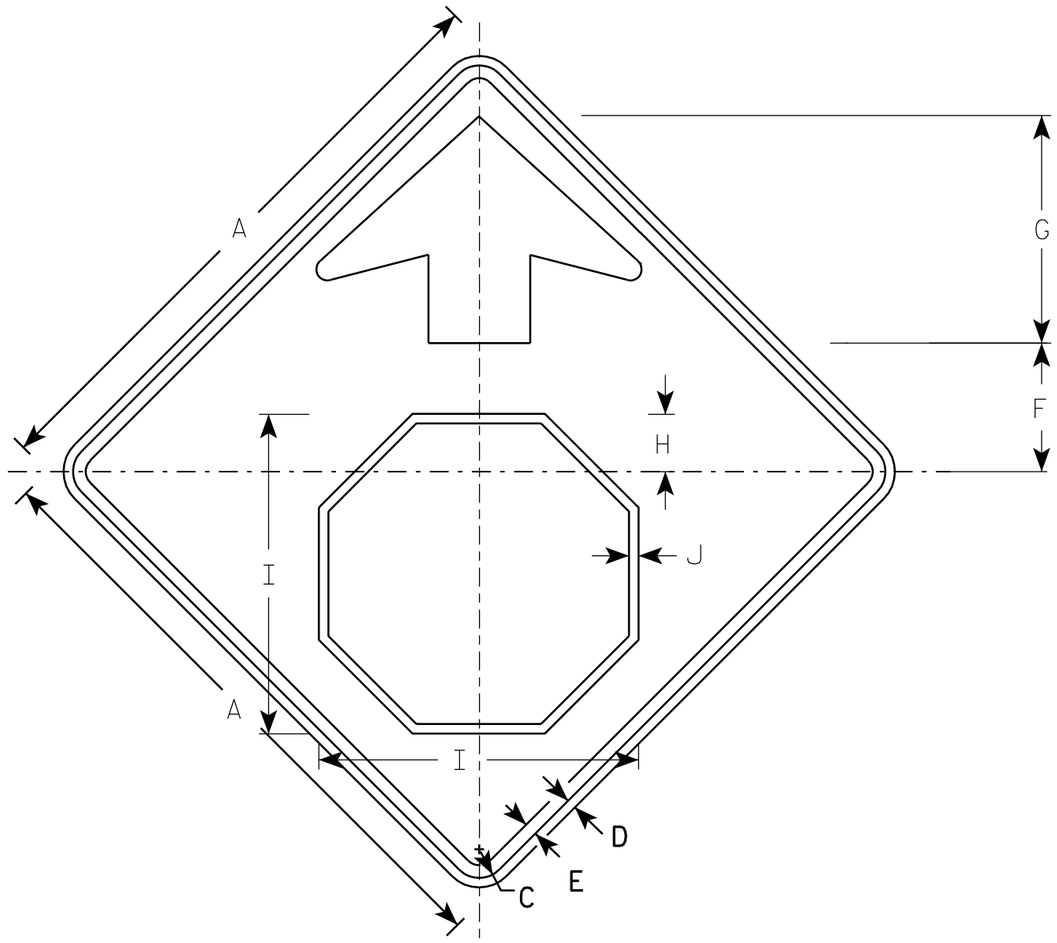
STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

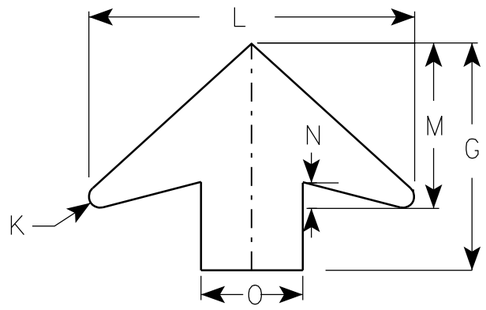
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 58	E



W3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW
   Arrow & Border - BLACK
   Stop Symbol - WHITE BORDER ON RED BACKGROUND



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	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

STANDARD SIGN
W3-1

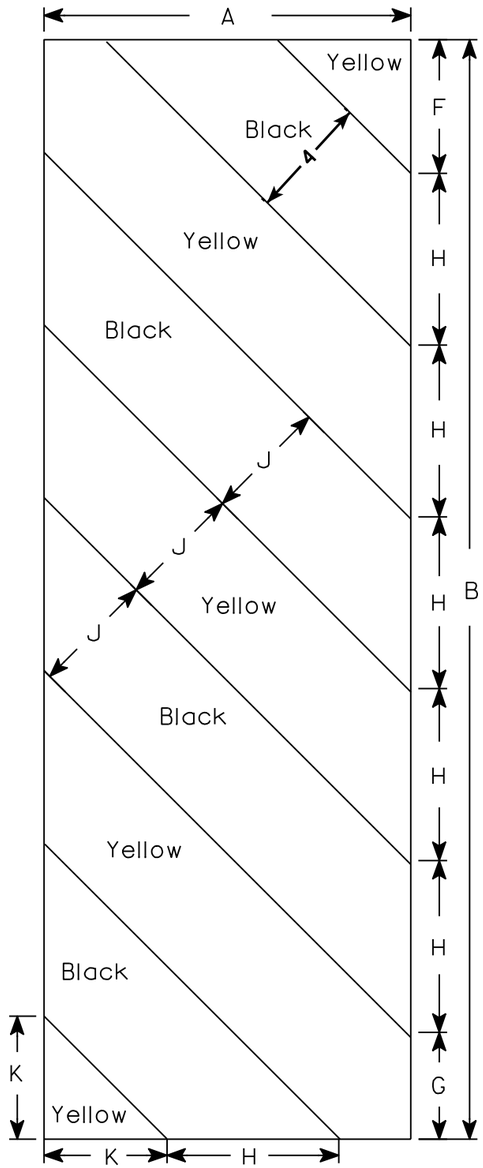
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

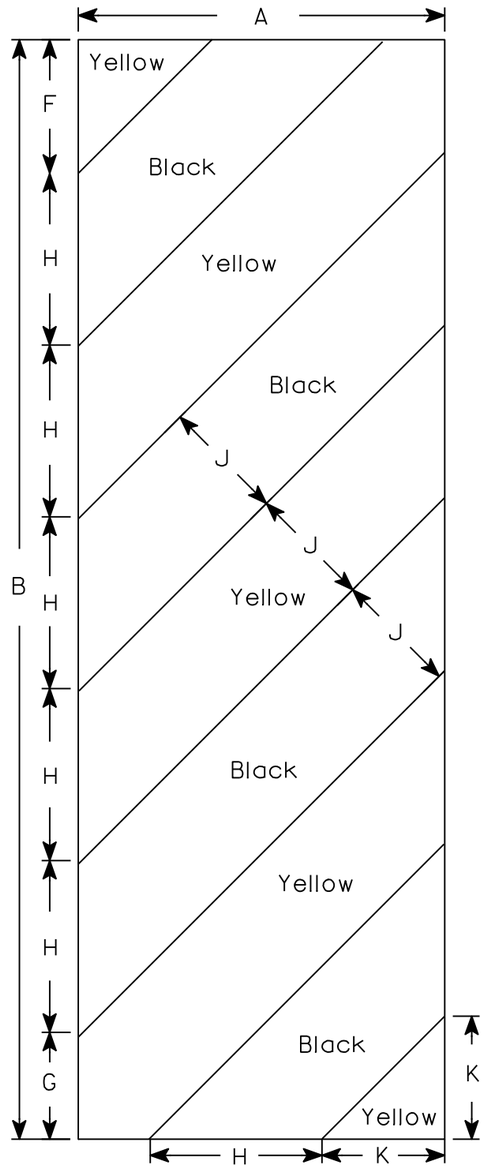
DATE 6/7/10 PLATE NO. W3-1.12

PROJECT NO:

SHEET NO: 59 E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

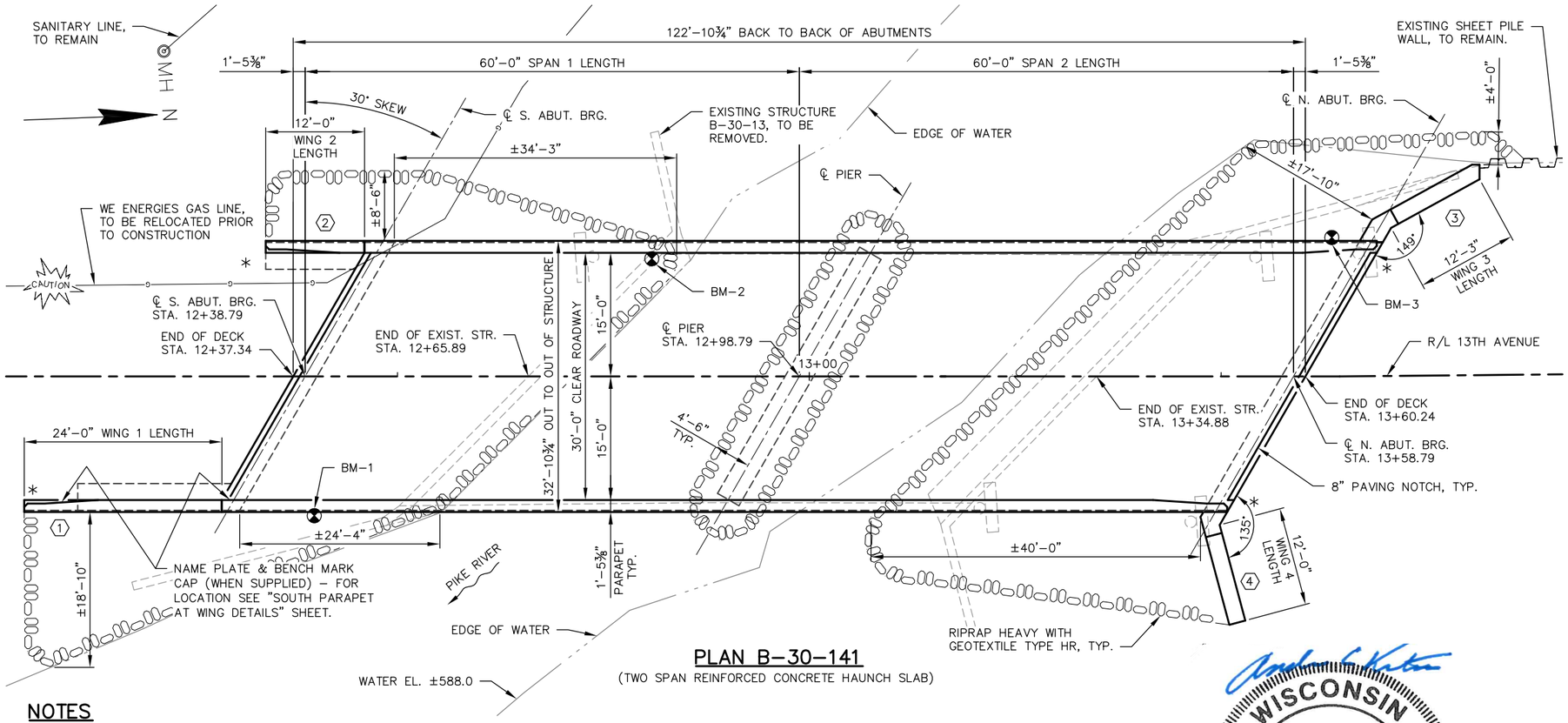
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 60	E

STATE PROJECT NUMBER

3831-00-71



PLAN B-30-141

(TWO SPAN REINFORCED CONCRETE HAUNCH SLAB)

NOTES

* LOCATION OF BEAM GUARD ATTACHMENT

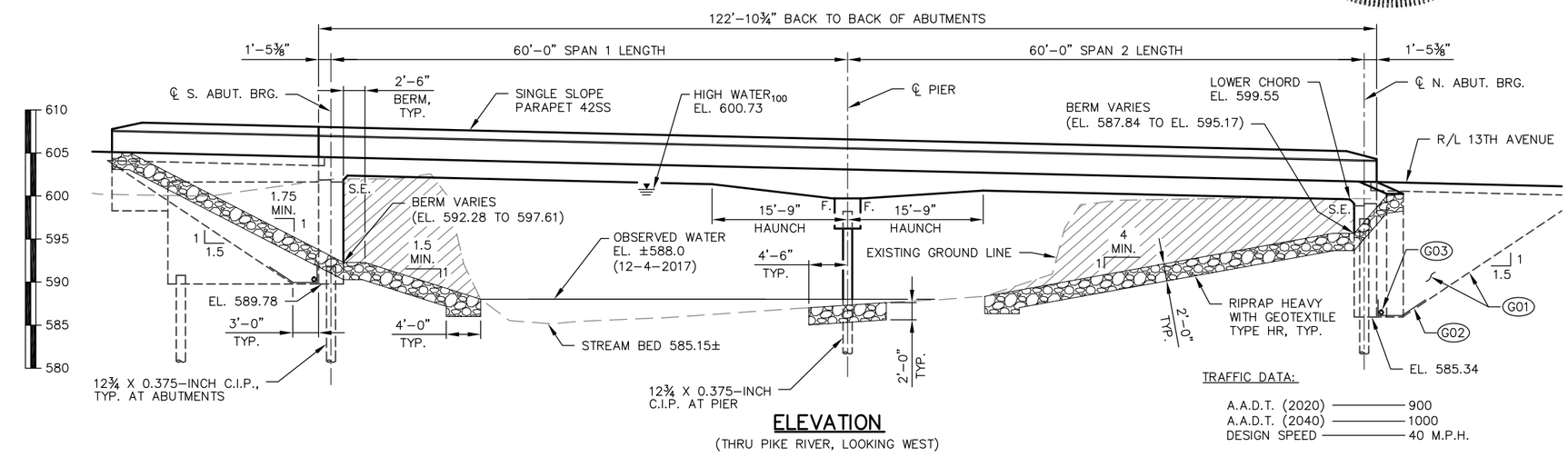
⬡ INDICATES WING NUMBER

▨ EXCAVATION AS INDICATED IN THE HATCH AREAS, TO BE INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-30-141".

(G01) BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCLUDED WITH THE EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

(G02) "GEOTEXTILE TYPE DF SCHEDULE A" LIMITS. EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT FOR THE ENTIRE ABUTMENT BODY LENGTH.

(G03) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED IN "SOUTH ABUTMENT DETAILS" SHEET.



ELEVATION

(THRU PIKE RIVER, LOOKING WEST)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING	HL-93
INVENTORY RATING FACTOR	RF=1.03
OPERATING RATING FACTOR	RF=1.34
WISCONSIN STANDARD PERMIT VEHICLE RATING (WIS.-SPV):	250 KIPS

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

MATERIAL PROPERTIES:

CONCRETE MASONRY, SLAB	$f'c$ = 4,000 P.S.I.
ALL OTHER	$f'c$ = 3,500 P.S.I.
HIGH-STRENGTH BAR STEEL REINFORCEMENT	f_y = 60,000 P.S.I.

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON 12¾ X 0.375-INCH PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AT THE S. ABUT. AND 120 TONS PER PILE AT THE N. ABUT. AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 35 FT PILE LENGTHS AT S. ABUT. AND 45 FT PILE LENGTHS AT N. ABUT.

PIER TO BE SUPPORTED ON 12¾ X 0.375-INCH PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 40 FT PILE LENGTHS AT THE PIER.

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

HYDRAULIC DATA:

Q_{100}	4,180 C.F.S.
Q_{100} (THRU BRIDGE)	1,998 C.F.S.
Q_{100} (ROAD)	2,182 C.F.S.
DRAINAGE AREA	41.4 SQ. MI.
BRIDGE WATER AREA	816 SQ. FT.
BRIDGE VELOCITY	2.45 F.P.S.
HIGH WATER$_{100}$ EL.	600.73 FT.
OVERTOPPING Q	1,880 C.F.S.
OVERTOPPING EL.	597.66 FT.
OVERTOPPING RDWY	4.0 YR
SCOUR CRITICAL CODE	5
Q_2	1,510 C.F.S
Q_2 ELEVATION	597.17 FT.
Q_2 VELOCITY	2.55 C.F.S.

BENCH MARKS

NO.	STATION/OFFSET	DESCRIPTION	ELEVATION
BM-1	12+39.84, 17.28' RT.	3/4-INCH REBAR	603.24
BM-2	12+80.91, 13.79' LT.	CHISELED X SW WING	603.76
BM-3	13+63.47, 16.13' LT.	3/4-INCH REBAR	599.79
BM-4	14+32.54, 27.45' RT.	RAILROAD SPIKE	595.76

TRAFFIC DATA:

A.A.D.T. (2020)	900
A.A.D.T. (2040)	1000
DESIGN SPEED	40 M.P.H.

WISCONSIN
ANDREW C. KNUTSON
E-34662
SPRING GREEN, WI
2-10-2020
PROFESSIONAL ENGINEER

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

CONSULTANT CONTACT
ANDY KNUTSON, P.E., S.E.
(608) 588-7866

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION, GENERAL NOTES & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. SOUTH ABUTMENT WING DETAILS
7. SOUTH ABUTMENT REINFORCEMENT
8. NORTH ABUTMENT
9. NORTH ABUTMENT DETAILS
10. NORTH ABUTMENT WING DETAILS
11. NORTH ABUTMENT REINFORCEMENT
12. PIER
13. SUPERSTRUCTURE
14. SUPERSTRUCTURE DETAILS
15. NORTH PARAPET & SUPERSTRUCTURE REINFORCEMENT
16. SOUTH PARAPET AT WING DETAILS

NO.	DATE	REVISION	BY

WESTBROOK Associated Engineers, Inc.
619 EAST HOXIE STREET
P.O. BOX 429
SPRING GREEN, WI 53588
PHONE (608) 588-7866
FAX (608) 588-7954

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 02/10/20
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-30-141

13TH AVENUE OVER PIKE RIVER

COUNTY	~~TOWN/CITY~~/VILLAGE
KENOSHA	SOMERS

DESIGN SPEC. AASHTO LRFD DESIGN SPEC.

DESIGNED BY	JDO	DESIGN CK'D.	CDS	DRAWN BY	JDO	PLANS CK'D.	ACK

GENERAL PLAN

SHEET 1 OF 16

61

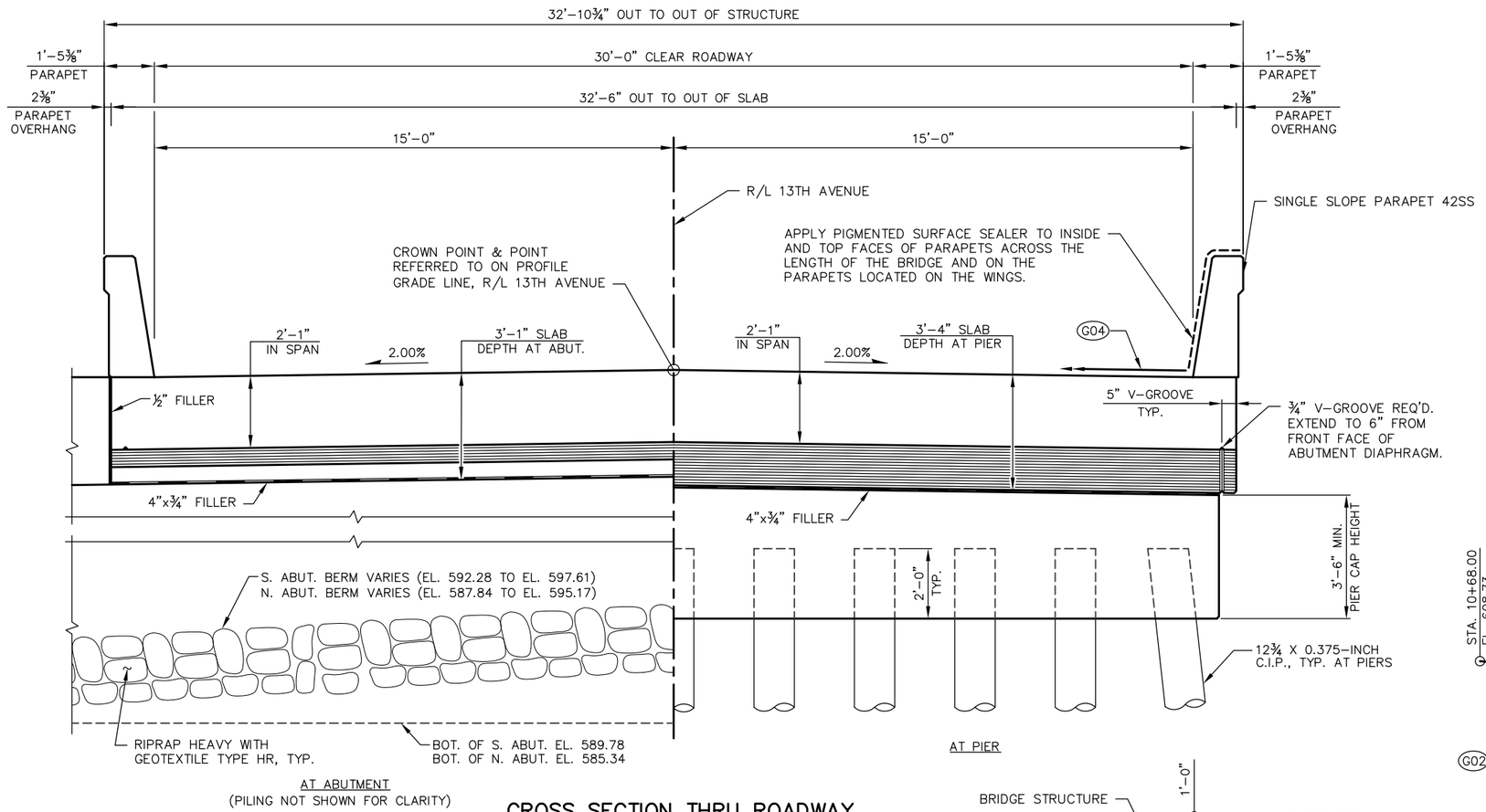
8

8

FILE: 01_B300141_fsh.dwg
PLOT SCALE:

I.D. 3831-00-71

PLOT DATE: Feb 10, 2020



CROSS SECTION THRU ROADWAY

(LOOKING NORTH)

NOTE

(G04) COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST OR FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

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

THE QUANTITY FOR BACKFILL STRUCTURE TYPE A, BID ITEMS 210.1500, IS CALCULATED BASED ON STRUCTURE BACKFILL LIMITS AND NOTES SHOWN ON "GENERAL PLAN" SHEET.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE SUPERSTRUCTURE SLAB PER THE STANDARD SPECIFICATION. PIGMENTED SURFACE SEALER TO BE APPLIED TO THE CONCRETE PARAPETS PER THE STANDARD SPECIFICATION.

THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE THE EXISTING GROUND LINE.

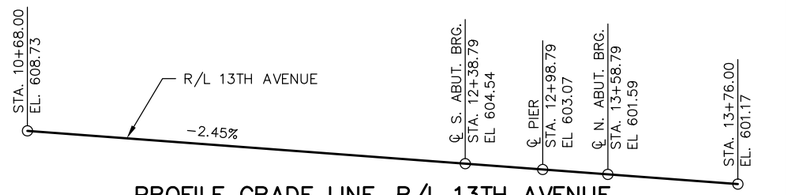
AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

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

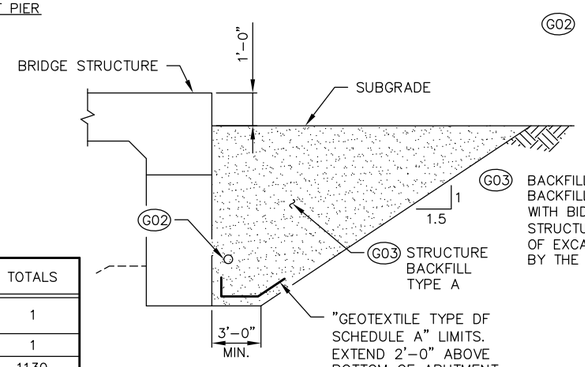
AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

DO NOT PLACE FILL ABOVE 3'–0" FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

THE EXISTING STRUCTURE (B–30–13) IS A SINGLE SPAN CONCRETE T–GIRDER BRIDGE WITH AN OVERALL LENGTH OF 67.6–FT AND A DECK WIDTH OF 30.6–FT TO BE REMOVED PER BID ITEM "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 13+00".

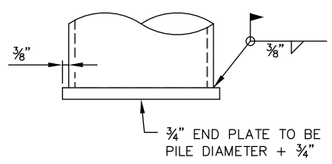


PROFILE GRADE LINE, R/L 13TH AVENUE

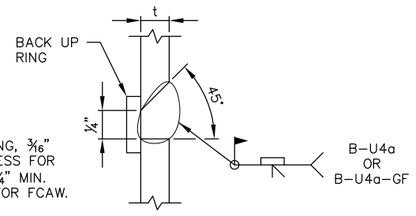


(G03) BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCLUDED WITH BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B–62–257." LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

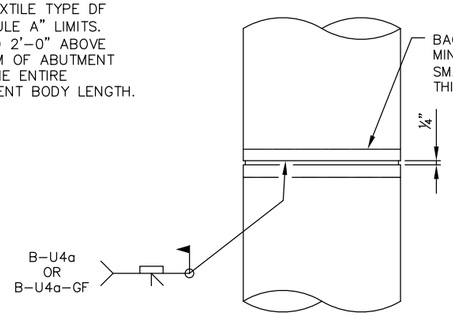
(G02) PIPE UNDERDRAIN WRAPPED (6–INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS SHOWN ON "ABUTMENTS" SHEET.



END PLATE DETAIL FOR CIP PILING



C.I.P. PILE WELD DETAIL



CAST–IN–PLACE 'PIPE PILE'

NOTE: CAST–IN–PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATION.

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	S. ABUT.	PIER	N. ABUT.	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 13+00	LS	---	---	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B–30–141	LS	---	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	410	---	720	---	1130
502.0100	CONCRETE MASONRY BRIDGES	CY	93	15	79	375	562
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	---	405	405
502.3210	PIGMENTED SURFACE SEALER	SY	18	---	---	121	139
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	5490	5000	5130	---	15620
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	5030	80	2890	80860	88860
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	---	7	---	18
550.2126	PILING CIP CONCRETE 12 3/4 X 0.375–INCH	LF	420	440	585	---	1445
606.0300	RIPRAP HEAVY	CY	188	29	158	---	375
612.0406	PIPE UNDERDRAIN WRAPPED 6–INCH	LF	105	---	85	---	190
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	---	2	---	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	24	---	33	---	57
645.0120	GEOTEXTILE TYPE HR	SY	333	66	277	---	676
(NON–BID ITEM)	FILLER	SIZE					½" & ¾"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B–30–141

DRAWN BY JDO | PLANS CK'D ACK

CROSS SECTION, GENERAL NOTES & QUANTITIES

SHEET 2 OF 16

62

STATE PROJECT NUMBER

3831–00–71

8

8

I.D. 3831–00–71

PLOT DATE: Feb 10, 2020

FILE: 02_B300141_qnt.dwg
PLOT SCALE:

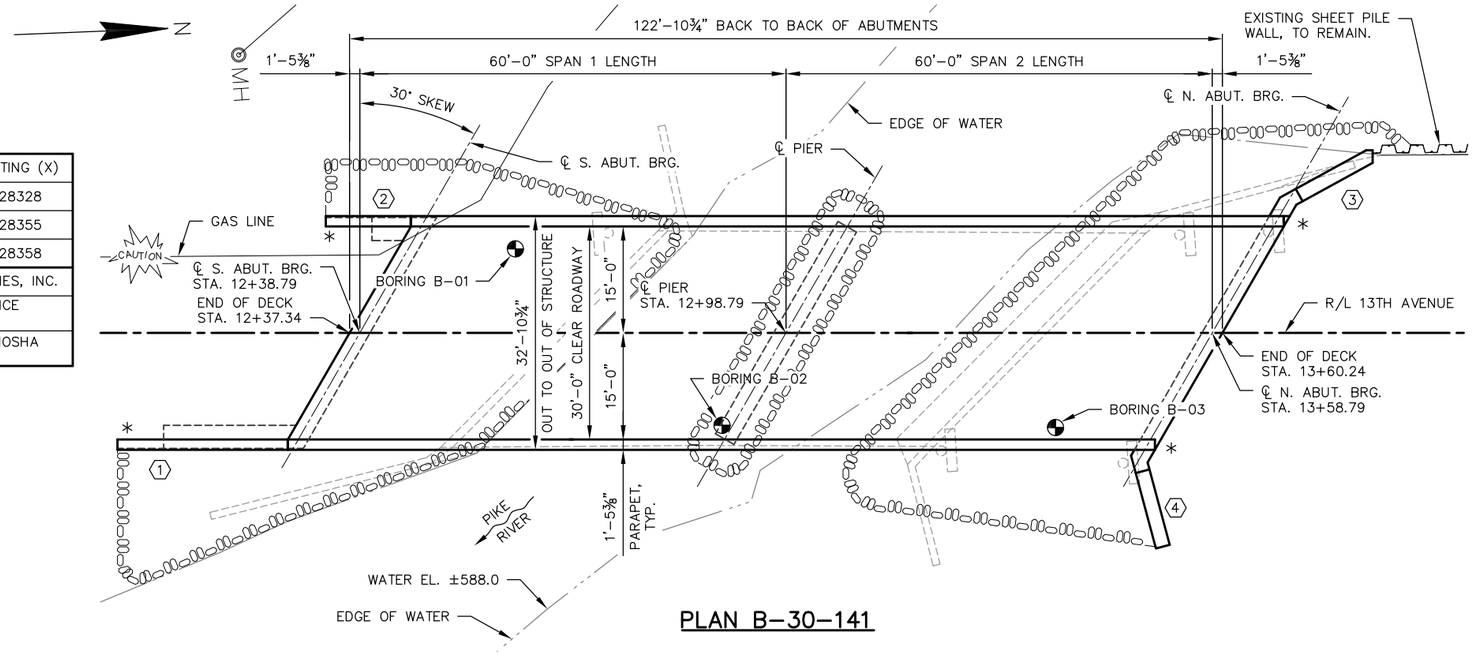
13TH AVENUE BORINGS

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
BORING B-01	11/27/2017	159428	628328
BORING B-02	11/29/2017	159455	628355
BORING B-03	11/28/2017	159502	628358
BORINGS COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC.			
SUBSURFACE INVESTIGATION REPORT: PROFESSIONAL SERVICE INDUSTRIES, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(07) KENOSHA COUNTY			

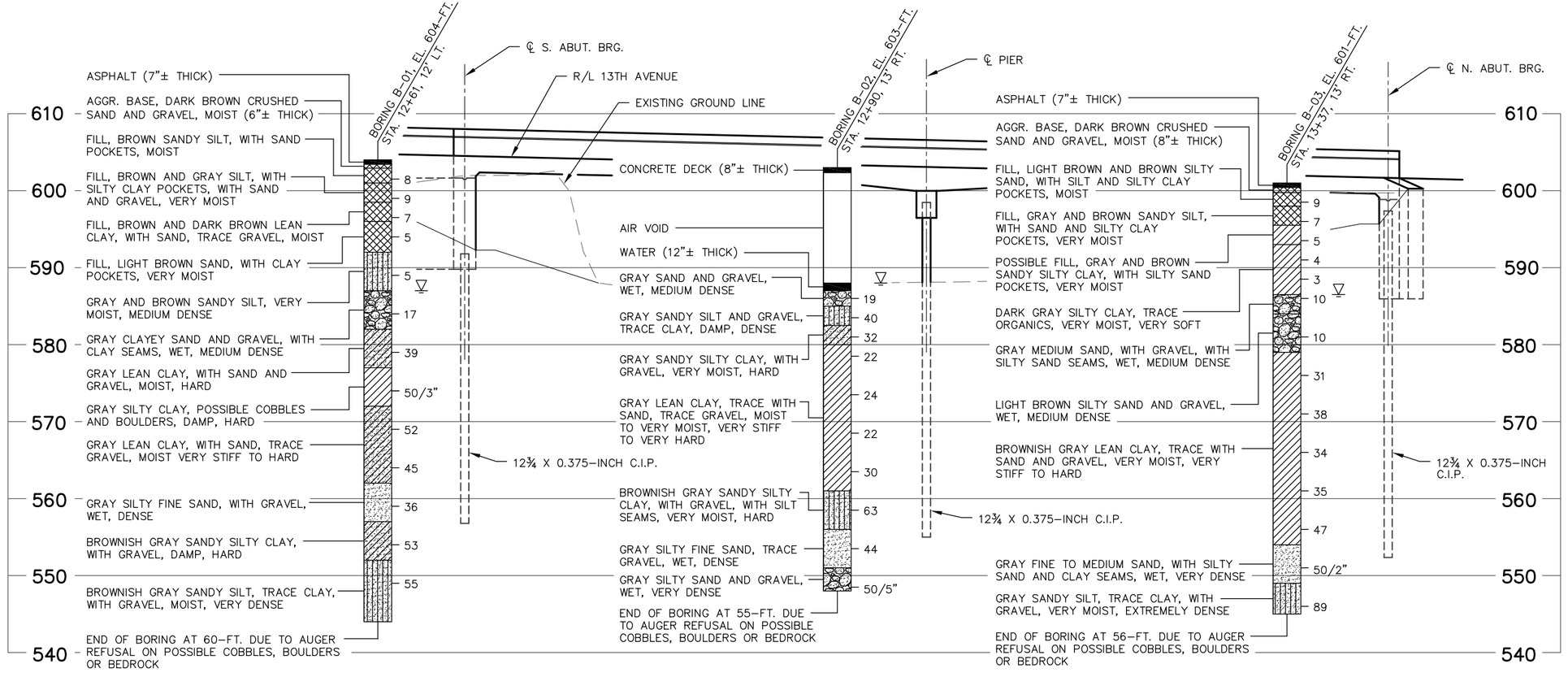
NOTES

* LOCATION OF BEAM GUARD ATTACHMENT

⬡ INDICATES WING NUMBER



PLAN B-30-141



8

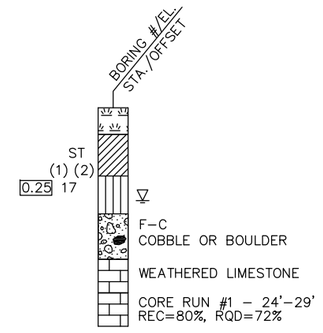
STATE PROJECT NUMBER

3831-00-71

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

▽ AT TIME OF DRILLING

▼ END OF DRILLING

▽ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-30-141

DRAWN BY CDS | PLANS CK'D ACK

SUBSURFACE EXPLORATION

SHEET 3 OF 16

63

8

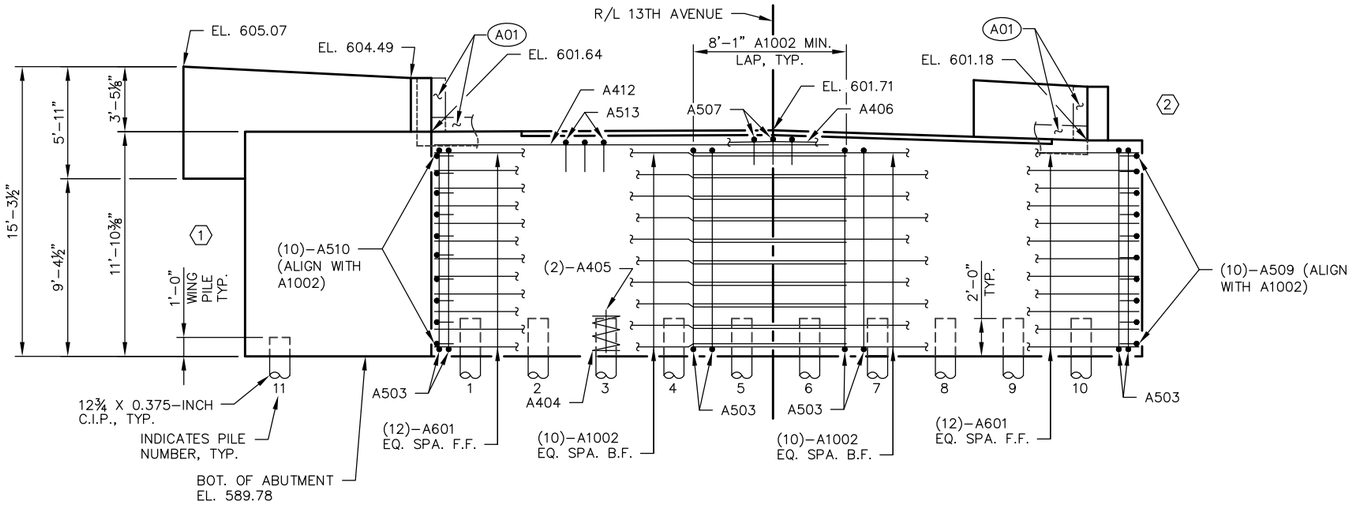
FILE: 03-B300141_bor.dwg
PLOT SCALE:

I.D. 3831-00-71

PLOT DATE: Feb 10, 2020

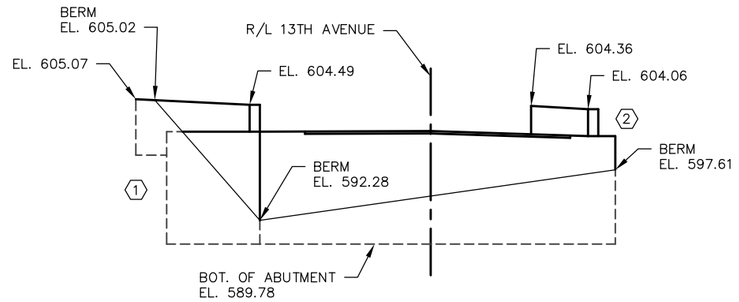
STATE PROJECT NUMBER

3831-00-71



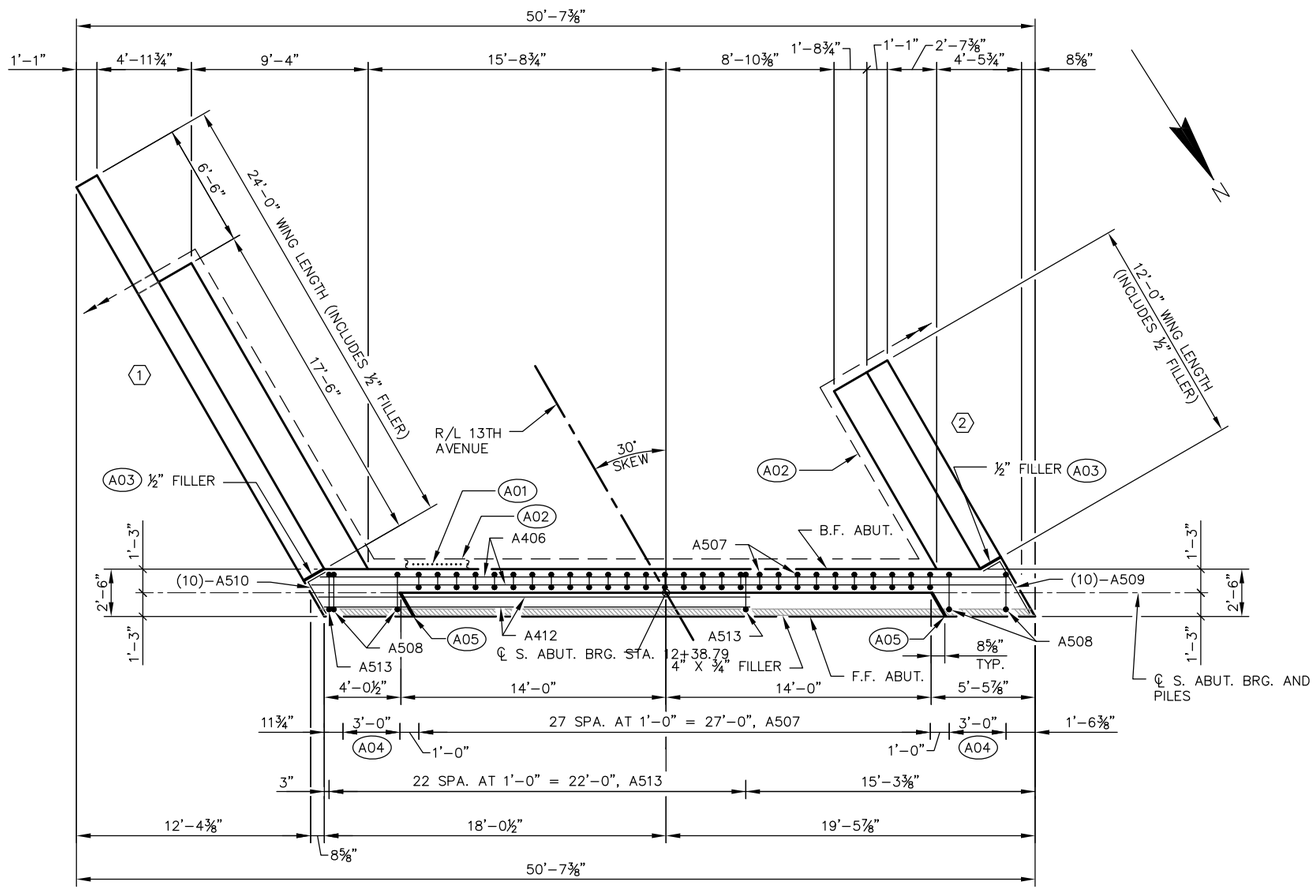
ELEVATION

(S. ABUT. - LOOKING SOUTH)



BERM LAYOUT

(S. ABUT. - LOOKING SOUTH)



PLAN

NOTES

FOR TYPICAL SECTION THRU ABUTMENT BODY AND PILE LAYOUT SEE "SOUTH ABUTMENT DETAILS" SHEET.

SOUTH ABUTMENT TO BE SUPPORTED ON 12¾ X 0.375-INCH C.I.P. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 35 FT PILE LENGTHS AT THE SOUTH ABUTMENT.

SEE "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET FOR C.I.P. PILE SPLICE DETAILS.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

(A01) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

(A02) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED IN "SOUTH ABUTMENT DETAILS" SHEET. RODENT SHIELD IS INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

(A03) ½" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF CONCRETE PARAPET.

(A04) 3 SPA. AT 1'-0" = 3'-0", A508

(A05) ¾" CORK FILLER ON VERTICAL FACE ONLY. SET VERTICAL FACE PARALLEL TO SKEW ANGLE.

⬡ INDICATES WING NUMBER

→→ INDICATES CONTINUATION

F.F. - FRONT FACE
B.F. - BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-30-141

DRAWN BY JDO | PLANS CK'D ABP

SOUTH ABUTMENT

SHEET 4 OF 16

64

8

8

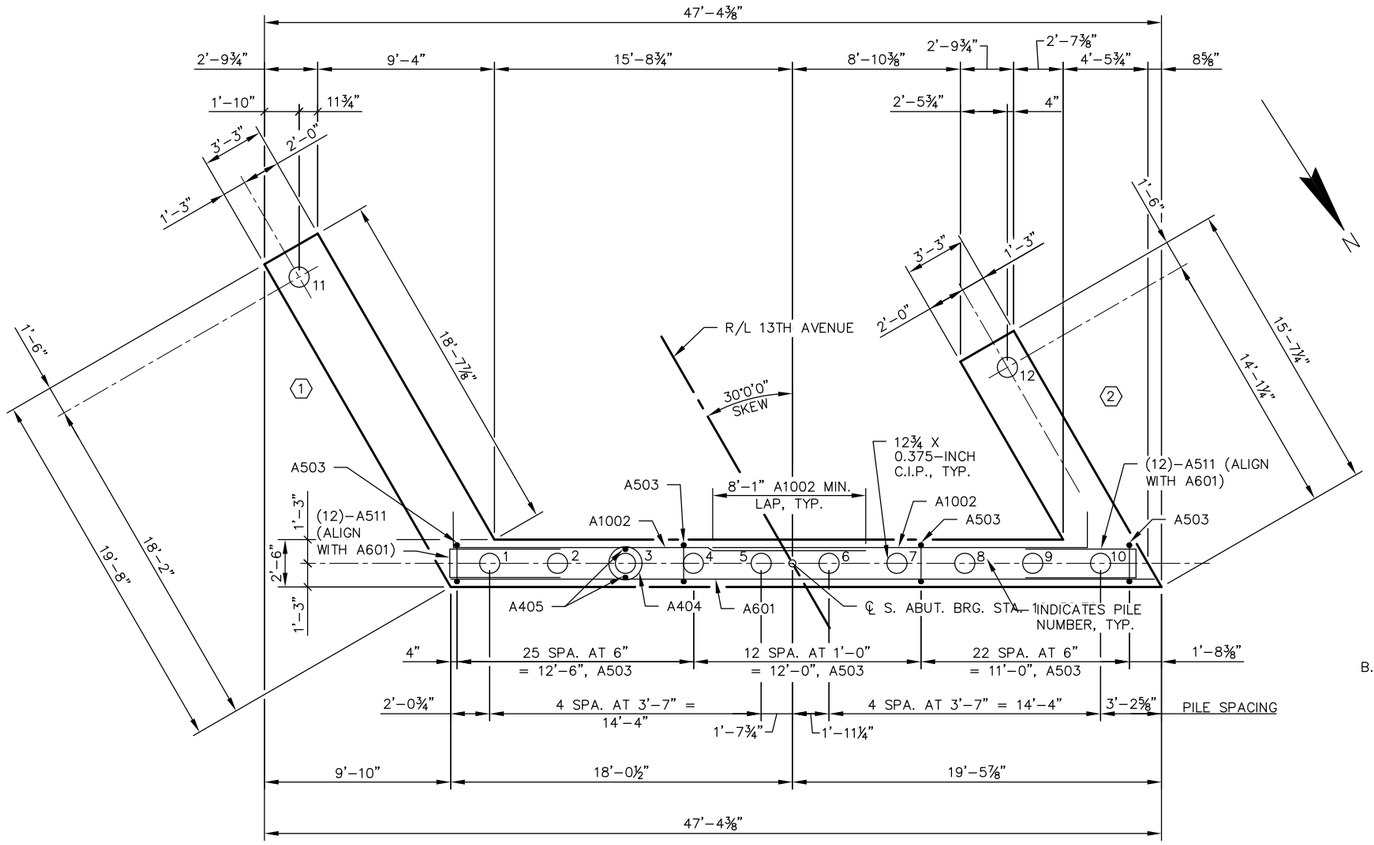
I.D. 3831-00-71

PLOT DATE: Feb 10, 2020

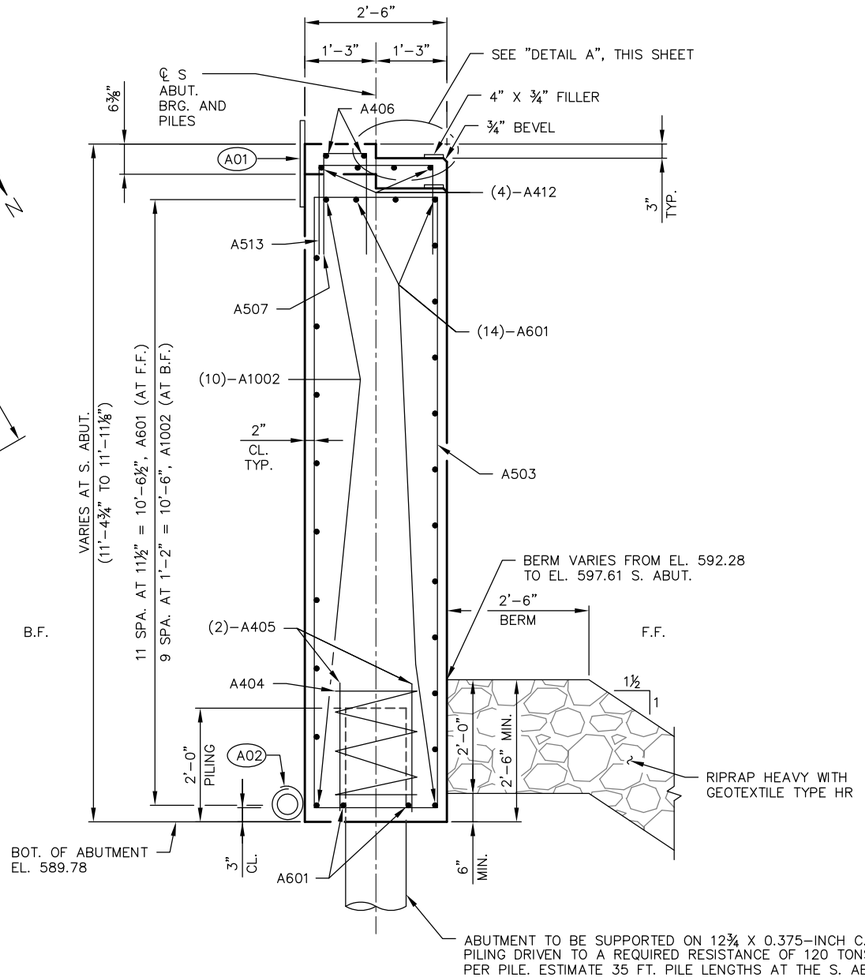
FILE: 04-11_B300141_abut.dwg
PLOT SCALE:

STATE PROJECT NUMBER

3831-00-71



PILE LAYOUT



TYPICAL SECTION THRU SOUTH ABUTMENT

NOTES

SOUTH ABUTMENT TO BE SUPPORTED ON 12¾ X 0.375-INCH C.I.P. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 35 FT PILE LENGTHS AT THE SOUTH ABUTMENT.

SEE "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET FOR C.I.P. PILE SPLICE DETAILS.

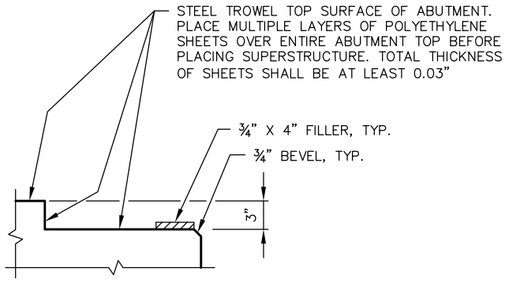
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

(A01) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

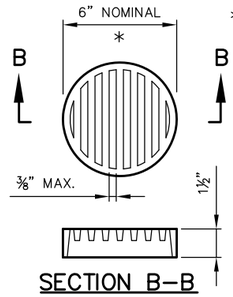
(A02) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED THIS SHEET. RODENT SHIELD IS INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

⬡ INDICATES WING NUMBER

F.F. - FRONT FACE
B.F. - BACK FACE



DETAIL A



SECTION B-B

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

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

THE RODENT SHIELD. PIPE COUPLING AND SCREWS SHALL BE INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

RODENT SHIELD DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-30-141

DRAWN BY JDO | PLANS CK'D ABP

SOUTH ABUTMENT DETAILS

SHEET 5 OF 16

65

I.D. 3831-00-71

PLOT DATE: Feb 10, 2020

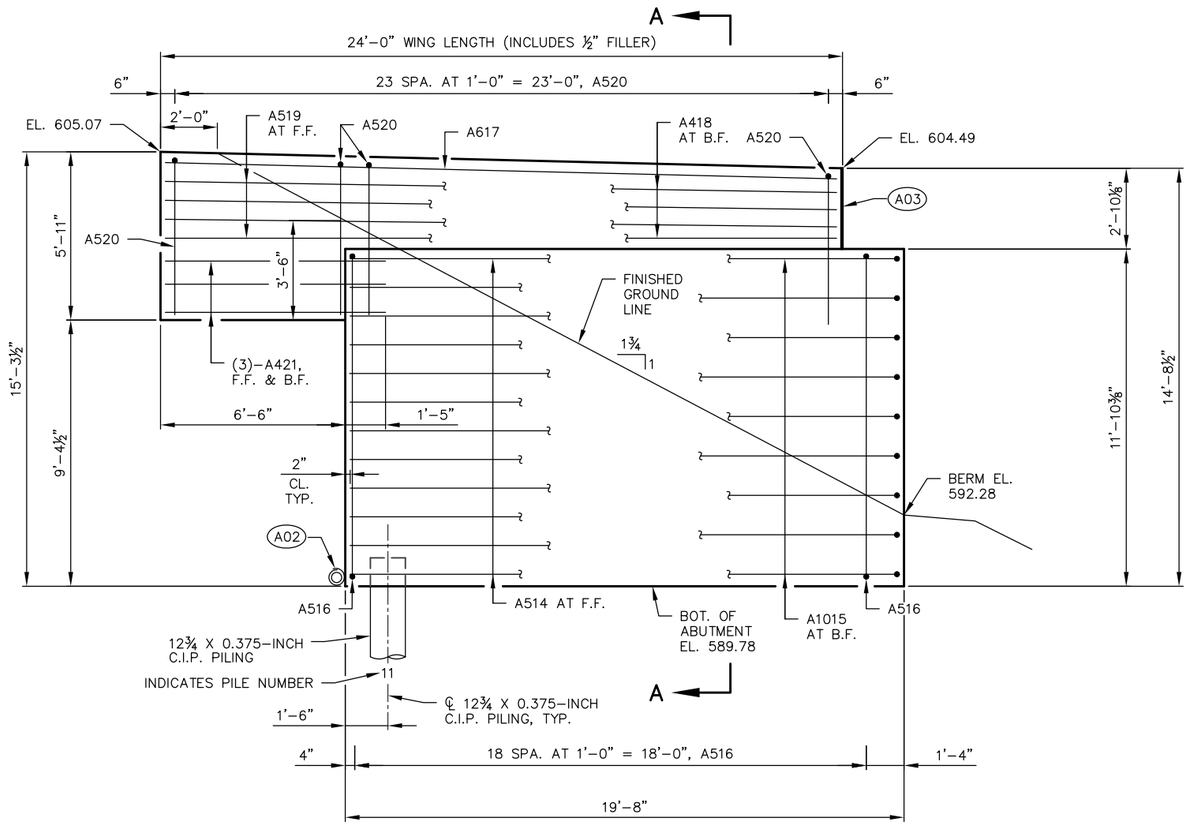
FILE: 04-11_B300141_abut.dwg
PLOT SCALE:

8

8

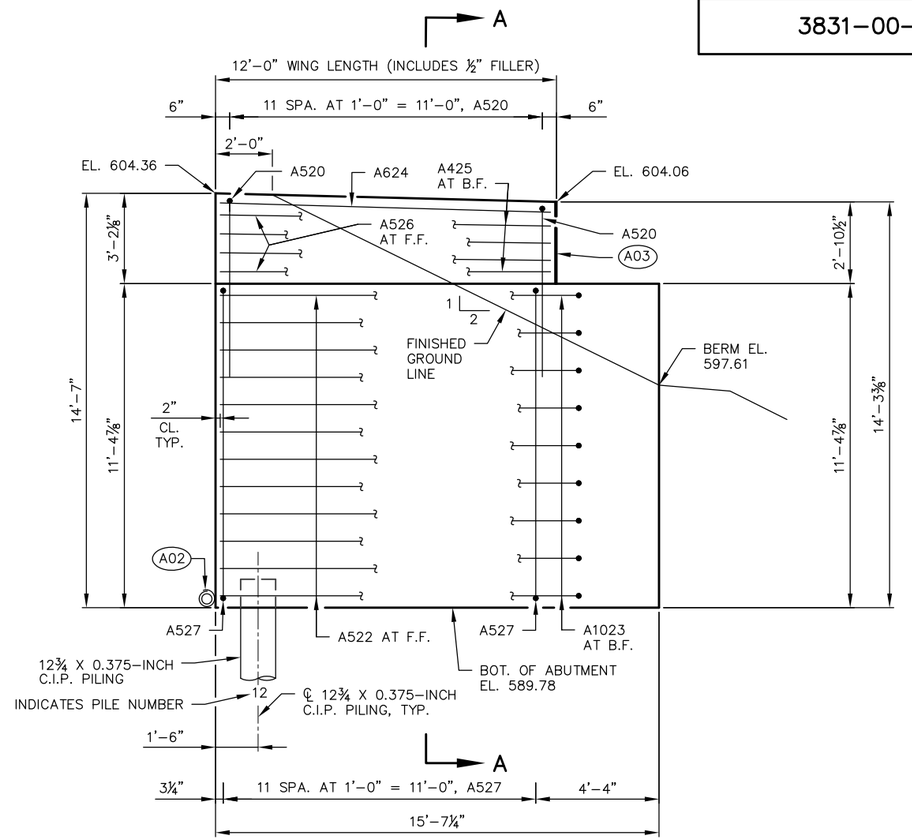
STATE PROJECT NUMBER

3831-00-71



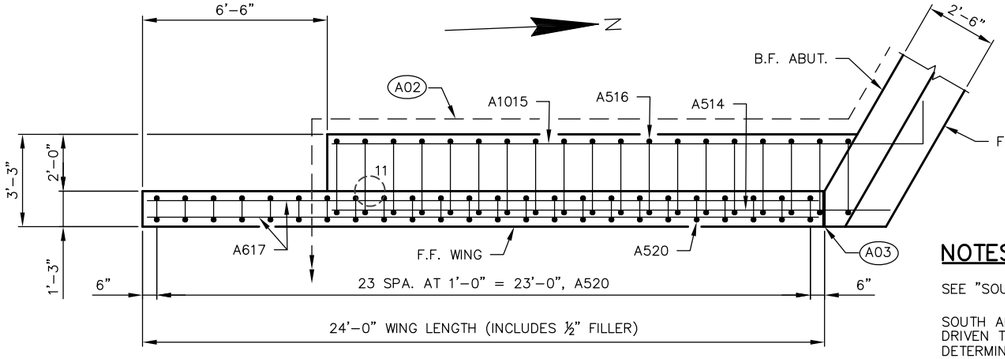
WING 1 ELEVATION

(LOOKING AT WING 1 FRONT FACE)
(ABUTMENT PILING NOT SHOWN FOR CLARITY)

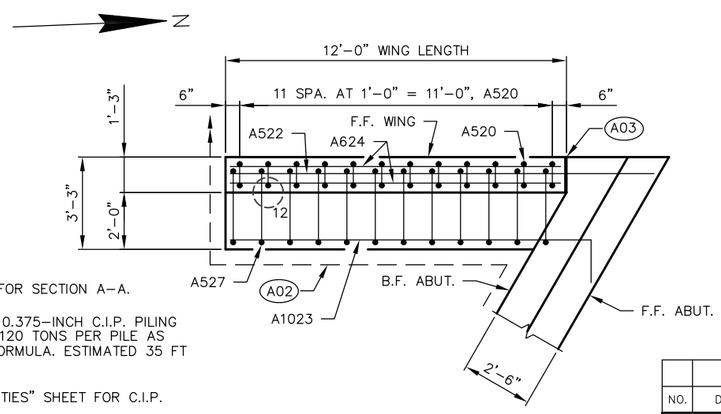


WING 2 ELEVATION

(LOOKING AT WING 2 FRONT FACE)
(ABUTMENT PILING NOT SHOWN FOR CLARITY)



WING 1 PLAN



WING 2 PLAN

NOTES

SEE "SOUTH ABUTMENT REINFORCEMENT" SHEET FOR SECTION A-A.

SOUTH ABUTMENT TO BE SUPPORTED ON 12¾ X 0.375-INCH C.I.P. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 35 FT PILE LENGTHS AT THE SOUTH ABUTMENT.

SEE "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET FOR C.I.P. PILE SPLICE DETAILS.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

(A02) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED IN "SOUTH ABUTMENT DETAILS" SHEET. RODENT SHIELD IS INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

(A03) ½" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF CONCRETE PARAPET.

F.F. - FRONT FACE
B.F. - BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-30-141

DRAWN BY JDO | PLANS CK'D ABP

SOUTH ABUTMENT WING DETAILS

SHEET 6 OF 16

66

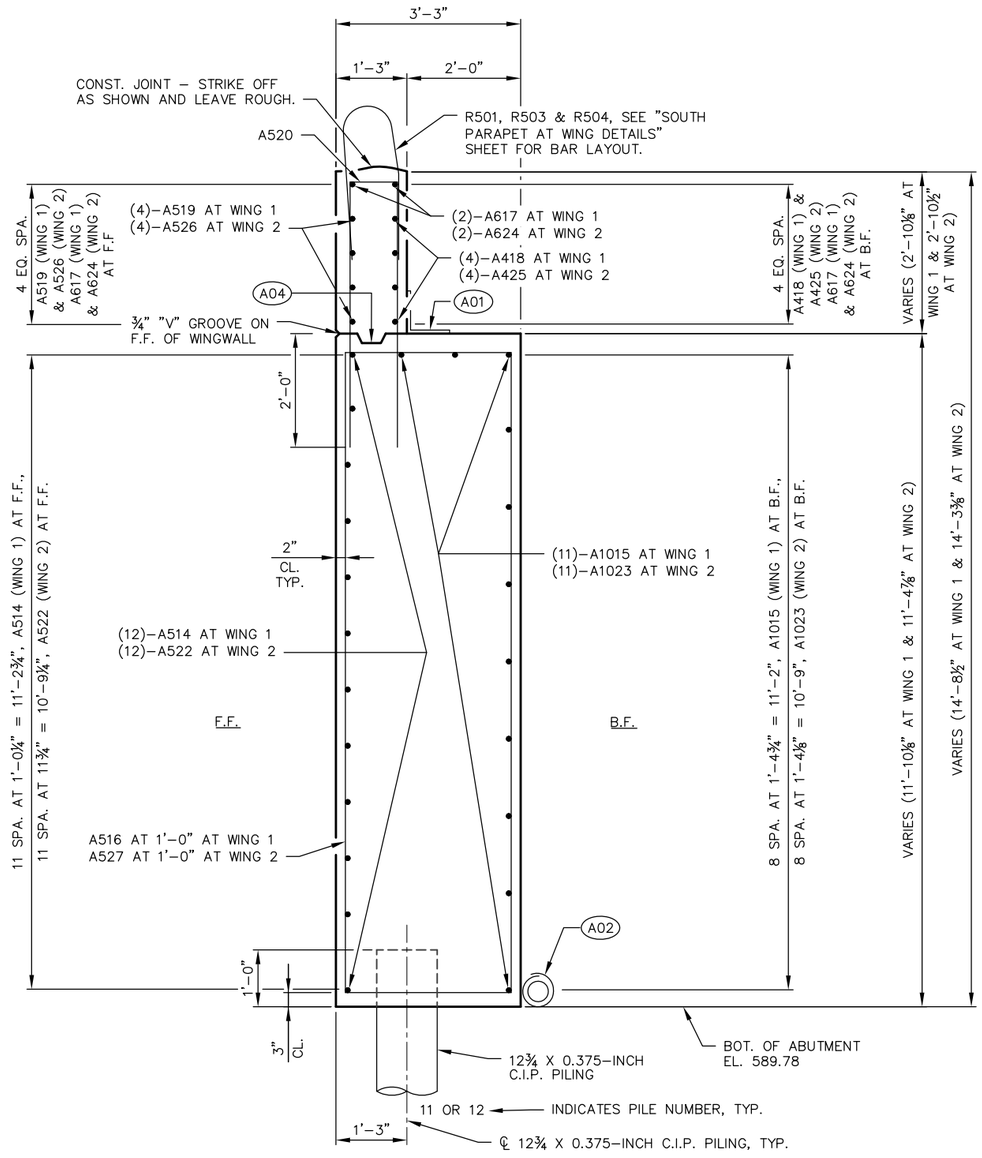
I.D. 3831-00-71

PLOT DATE: Feb 10, 2020

FILE: 04-11_B300141_abut.dwg
PLOT SCALE:

8

8



SECTION A–A

NOTES

SOUTH ABUTMENT TO BE SUPPORTED ON 12¾ X 0.375–INCH C.I.P. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 35 FT PILE LENGTHS AT THE SOUTH ABUTMENT.

SEE "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET FOR C.I.P. PILE SPLICE DETAILS.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON–STAINING GRAY NON–BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

(A01) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

(A02) PIPE UNDERDRAIN WRAPPED (6–INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED IN "SOUTH ABUTMENT DETAILS" SHEET. RODENT SHIELD IS INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6–INCH".

(A04) OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH MEMBRANE ON BACKFACE.

F.F. – FRONT FACE
B.F. – BACK FACE

STATE PROJECT NUMBER
3831–00–71

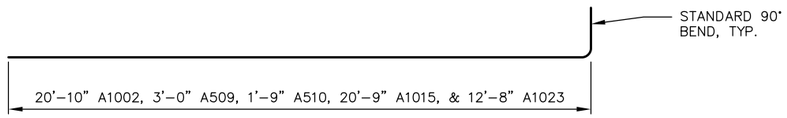
BILL OF BARS
SOUTH ABUTMENT

COATED = 3,880 LBS.
UNCOATED = 5,490 LBS.

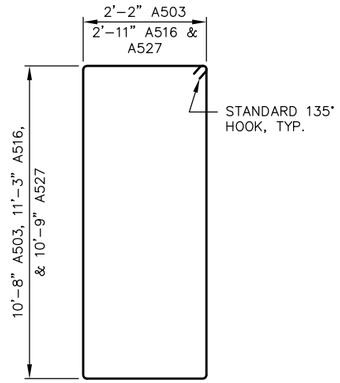
MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION	
A601		16	37'–0"			BODY – F.F.	HORIZ.
A1002		20	22'–4"	X		BODY – B.F.	HORIZ.
A503		60	26'–4"	X		BODY – STIRRUP	VERT.
A404		10	28'–0"	X		BODY – PILES	VERT.
A405		20	2'–3"			BODY – PILES	VERT.
A406		2	36'–3"			BODY – TOP	HORIZ.
A507		28	3'–8"	X		BODY – TOP STIRRUP	VERT.
A508		8	4'–11"	X		BODY – TOP STIRRUP	VERT.
A509		10	3'–9"	X		BODY – WEST EDGE LAP ON B.F.	HORIZ.
A510		10	2'–6"	X		BODY – EAST EDGE LAP ON B.F.	HORIZ.
A511		24	13'–7"	X		BODY – EAST & WEST EDGE LAP ON F.F.	HORIZ.
A412		4	23'–0"			BODY – TOP	HORIZ.
A513		23	5'–11"	X		BODY – TOP STIRRUP	VERT.
A514	12		19'–5"			WING 1 – F.F.	HORIZ.
A1015	11		22'–3"	X		WING 1 – B.F.	HORIZ.
A516	19		29'–0"	X		WING 1 – STIRRUP	VERT.
A617	2		23'–8"			WING 1 – TOP	HORIZ.
A418	4		23'–8"			WING 1 – B.F.	HORIZ.
A519	4		23'–8"			WING 1 – F.F.	HORIZ.
A520	36		11'–2"	X		WINGS 1 & 2 – TOP STIRRUP	VERT.
A421	6		7'–9"			WING 1 – F.F. & B.F.	HORIZ.
A522	12		14'–10"			WING 2 – F.F.	HORIZ.
A1023	11		14'–2"	X		WING 2 – B.F.	HORIZ.
A624	2		11'–8"			WING 2 – TOP	HORIZ.
A425	4		11'–8"			WING 2 – B.F.	HORIZ.
A526	4		11'–8"			WING 2 – F.F.	HORIZ.
A527	12		28'–0"	X		WING 2 – STIRRUP	VERT.

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

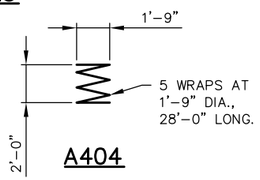
ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.



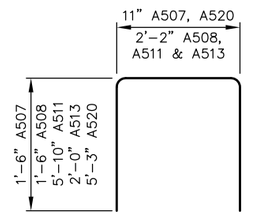
A1002, A509, A510, A1015 & A1023



A503, A516, & A527



A404



A507, A508, A511, A513, & A520

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B–30–141

DRAWN BY JDO | PLANS CK'D ABP

SOUTH ABUTMENT REINFORCEMENT

SHEET 7 OF 16

67

8

8

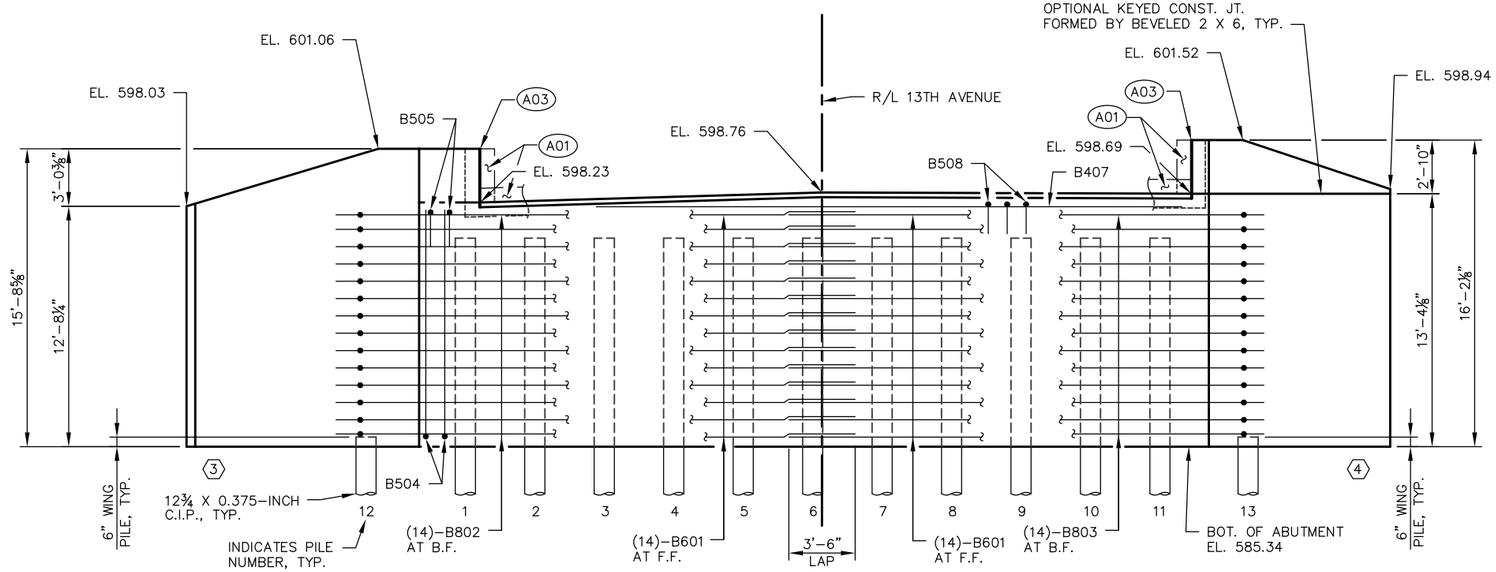
I.D. 3831–00–71

PLOT DATE: Feb 10, 2020

FILE: 04–11_B300141_abut.dwg
PLOT SCALE:

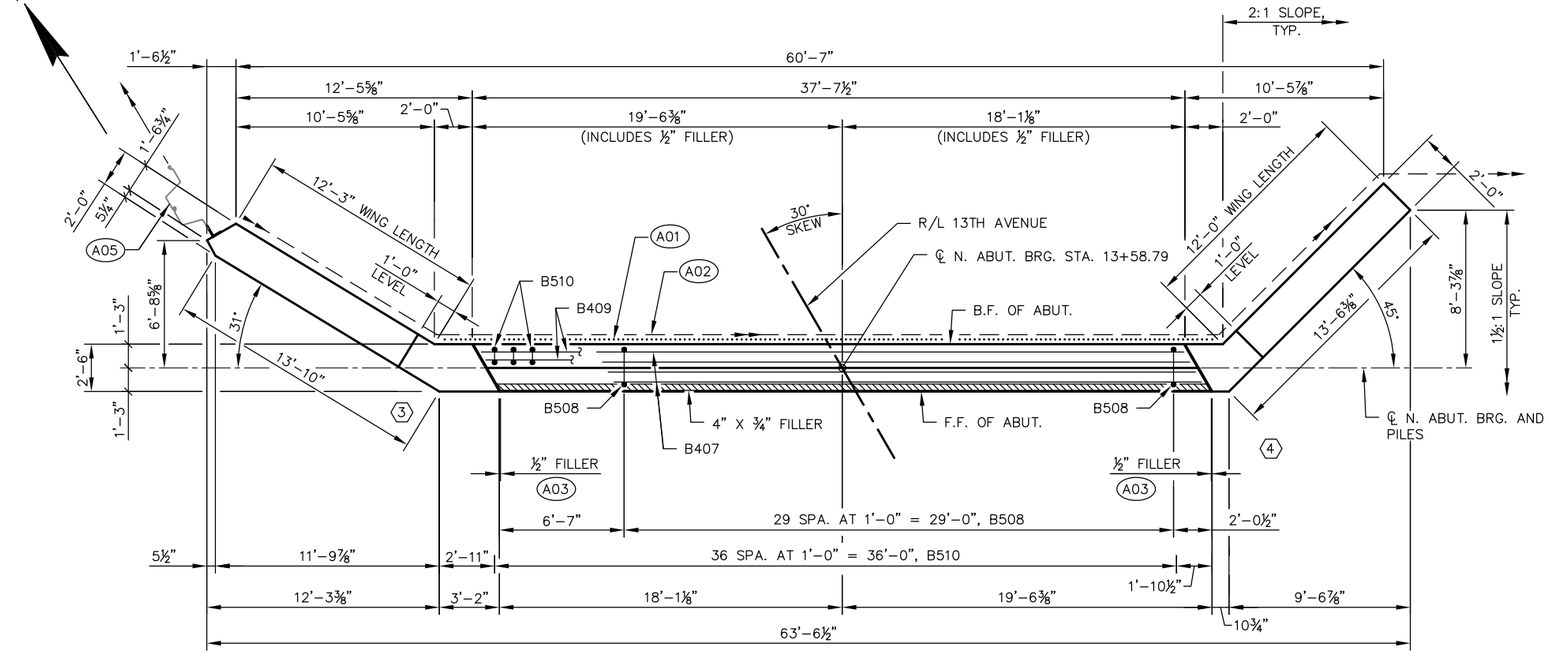
STATE PROJECT NUMBER

3831-00-71



ELEVATION

(N. ABUT. – LOOKING NORTH)



PLAN

NOTES

DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF THE ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

NORTH ABUTMENT TO BE SUPPORTED ON 12¾ X 0.375-INCH C.I.P. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45 FT PILE LENGTHS AT THE NORTH ABUTMENT.

SEE "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET FOR C.I.P. PILE SPLICE DETAILS.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

(A01) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

(A02) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE TO THE EAST SIDE OF THE ABUTMENT. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED IN "SOUTH ABUTMENT DETAILS" SHEET. RODENT SHIELD IS INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

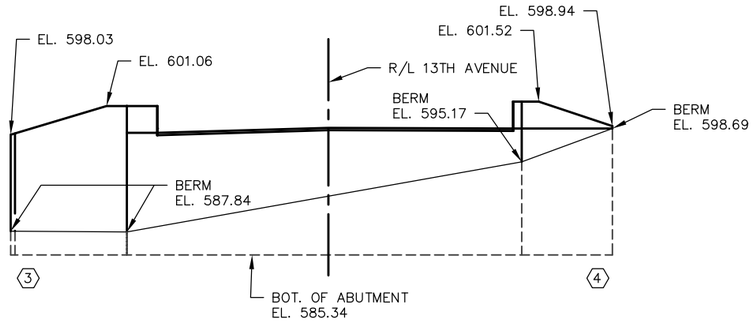
(A03) ½" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

(A05) EXISTING SHEET PILE WALL TO REMAIN. SEE "WING CONNECTION DETAIL" ON "NORTH ABUTMENT WING DETAILS" SHEET.

⬡ INDICATES WING NUMBER

→→ INDICATES CONTINUATION

F.F. – FRONT FACE
B.F. – BACK FACE



BERM LAYOUT

(N. ABUT. – LOOKING NORTH)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-30-141

DRAWN BY JDO | PLANS CK'D ABP

NORTH ABUTMENT

SHEET 8 OF 16

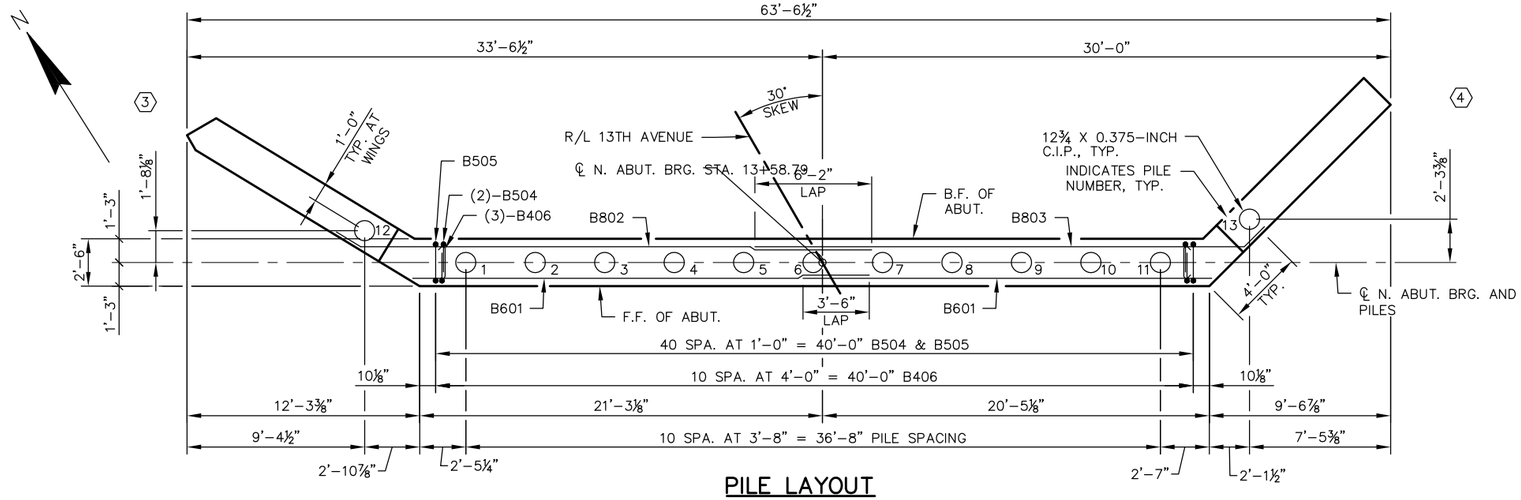
68

I.D. 3831-00-71

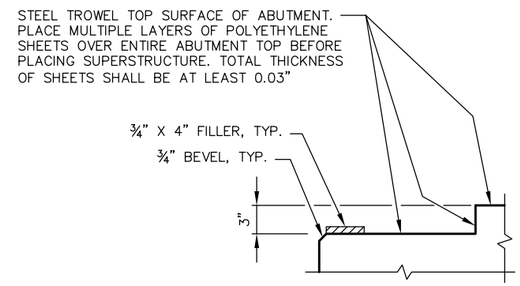
PLOT DATE: Feb 10, 2020

FILE: 04-11_B300141_abut.dwg
PLOT SCALE:

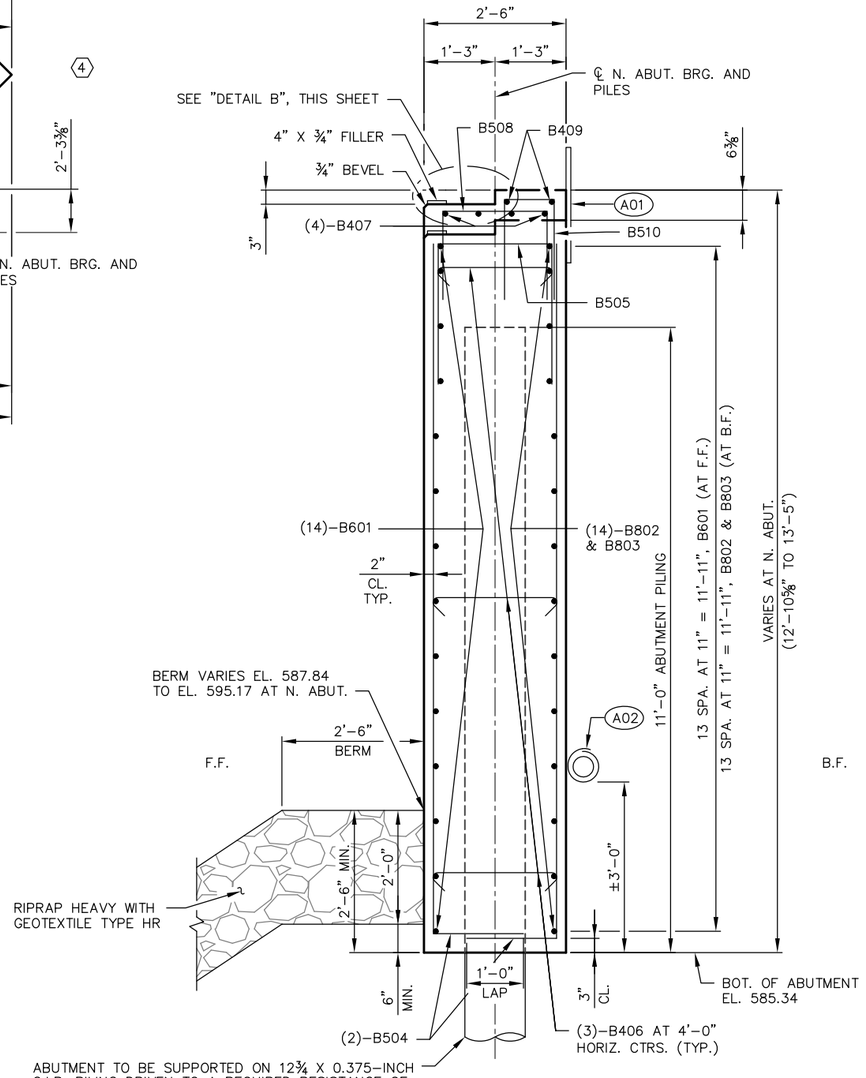
STATE PROJECT NUMBER
3831–00–71



PILE LAYOUT



DETAIL B



TYPICAL SECTION THRU NORTH ABUTMENT

NOTES

DO NOT PLACE FILL ABOVE 3'–0" FROM THE BOTTOM OF THE ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

NORTH ABUTMENT TO BE SUPPORTED ON 12¾ X 0.375–INCH C.I.P. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45 FT PILE LENGTHS AT THE NORTH ABUTMENT.

SEE "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET FOR C.I.P. PILE SPLICE DETAILS.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON–STAINING GRAY NON–BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

(A01) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

(A02) PIPE UNDERDRAIN WRAPPED (6–INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE TO THE EAST SIDE OF THE ABUTMENT. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED IN "SOUTH ABUTMENT DETAILS" SHEET. RODENT SHIELD IS INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6–INCH".

⬡ INDICATES WING NUMBER

F.F. – FRONT FACE
B.F. – BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B–30–141

DRAWN BY JDO | PLANS CK'D ABP

NORTH ABUTMENT DETAILS

SHEET 9 OF 16

69

I.D. 3831–00–71

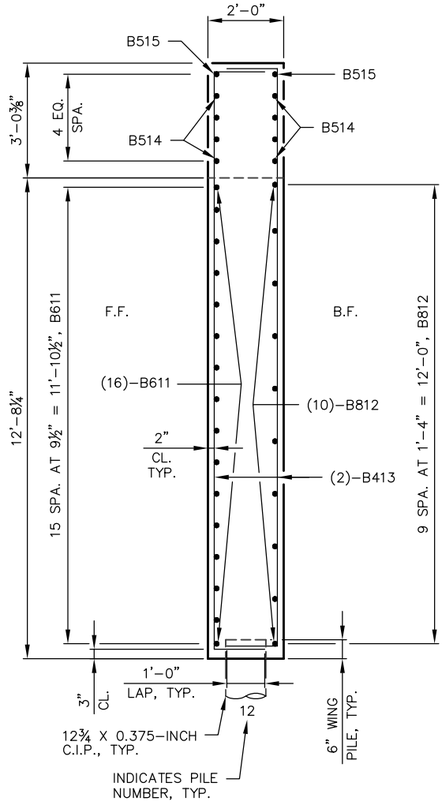
PLOT DATE: Feb 10, 2020

FILE: 04–11_B300141_abut.dwg
PLOT SCALE:

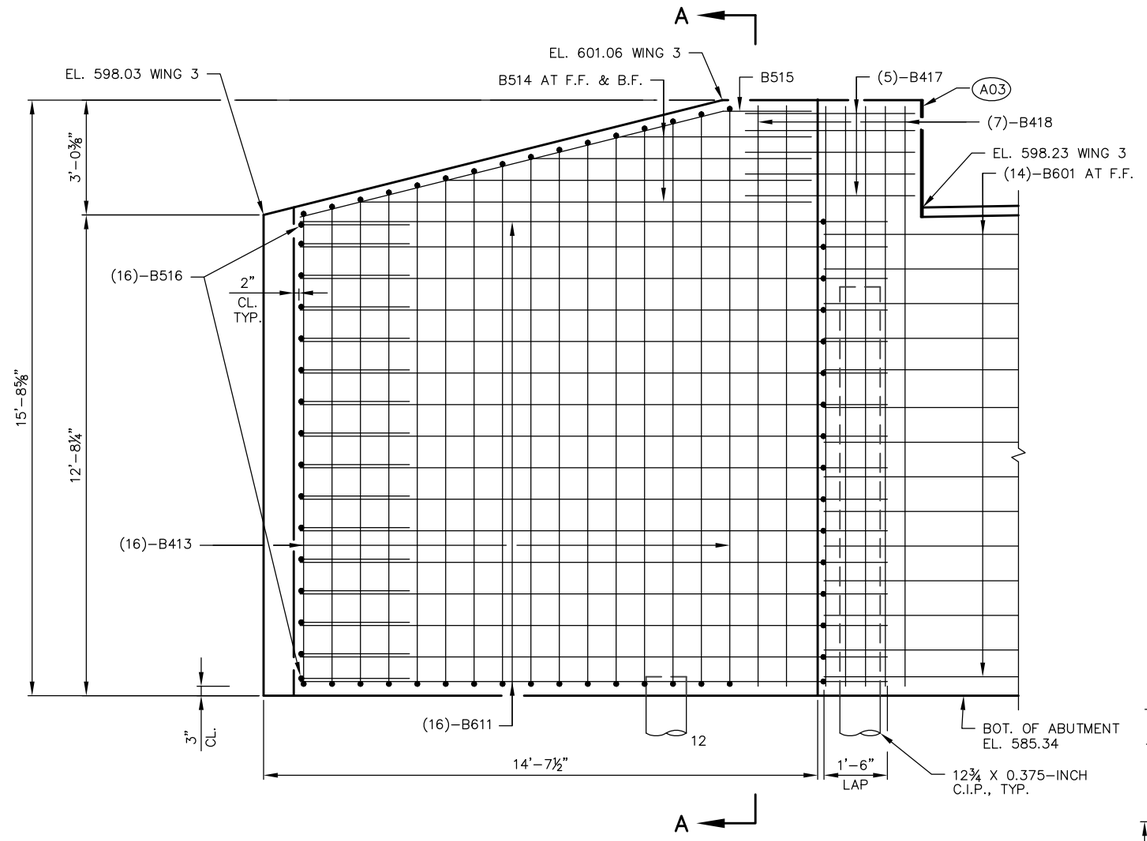
8

8

STATE PROJECT NUMBER
3831-00-71

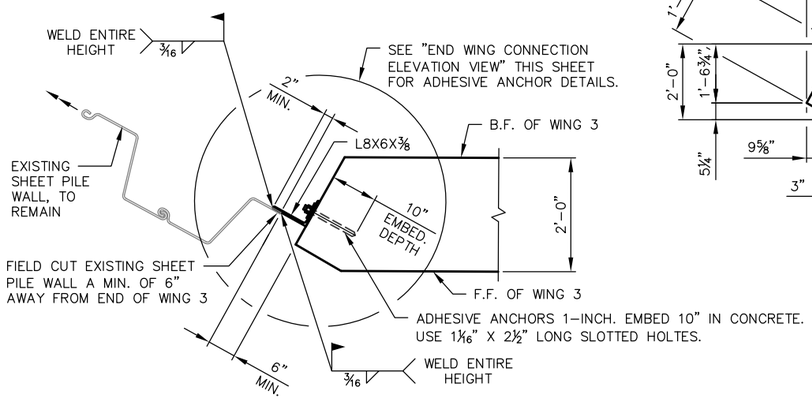


SECTION A-A

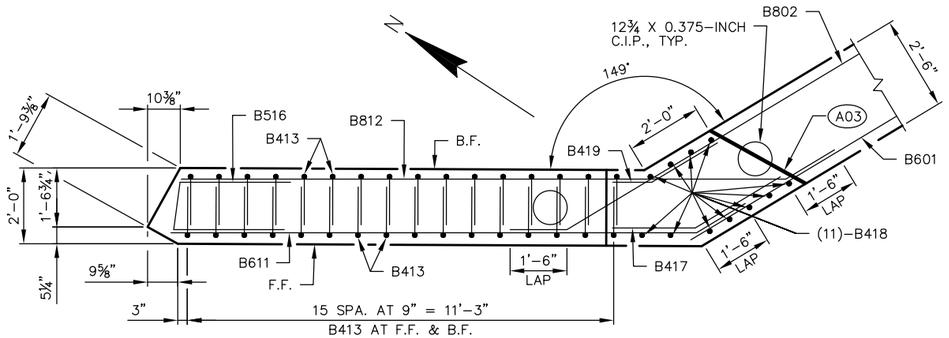


F.F. ELEVATION - WING 3

(B.F. ELEVATION OF WING 3 SIMILAR)



WING CONNECTION DETAIL



PLAN - WING 3

NOTES

DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF THE ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

NORTH ABUTMENT TO BE SUPPORTED ON 12¾ X 0.375-INCH C.I.P. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45 FT PILE LENGTHS AT THE NORTH ABUTMENT.

SEE "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET FOR C.I.P. PILE SPLICE DETAILS.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

ALL ITEMS USED TO CONSTRUCT THE WING CONNECTION INCLUDING THE STEEL, ADHESIVE ANCHORS, NUTS, & WASHERS SHALL BE INCLUDED WITH THE BID ITEM "CONCRETE MASONRY BRIDGES".

ALL PROVIDED STEEL MATERIAL SHALL CONFORM TO ASTM A36.

ALL STRUCTURAL STEEL SHOWN SHALL BE GALVANIZED. THREADED RODS, MASONRY ANCHORS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C.

CUTTING AND DRILLING OF ANGLE SHALL BE DONE IN FABRICATION SHOP, PRIOR TO GALVANIZING.

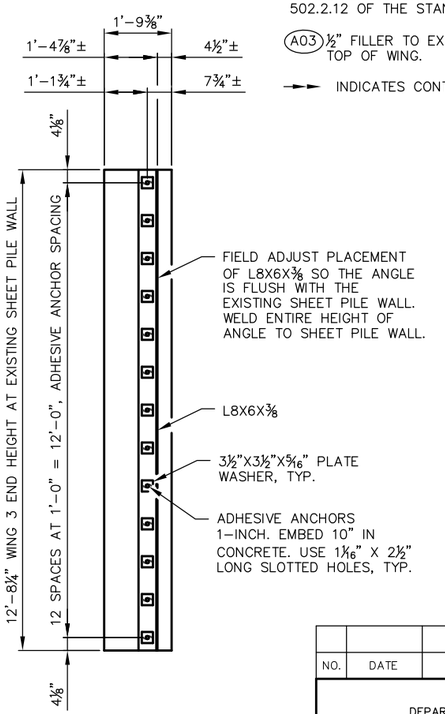
FOR WELDING ANGLE IN FIELD. PRIOR TO WELDING, REMOVE GALVANIZING FROM AREA TO BE WELDED. TOUCH UP WITH PAINT ALL AREAS LACKING GALVANIZING WHEN COMPLETE.

CAULK AROUND PERIMETER OF ANGLE ALONG THE WING CONCRETE FACE AND FILL PORTION OF HOLE AROUND ANCHOR BOLT AND SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.

(A03) ½" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

→→ INDICATES CONTINUATION



END WING CONNECTION ELEVATION VIEW

F.F. - FRONT FACE
B.F. - BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-30-141

DRAWN BY JDO | PLANS CK'D ABP

NORTH ABUTMENT WING DETAILS

SHEET 10 OF 16

70

8

8

I.D. 3831-00-71

PLOT DATE: Feb 10, 2020

FILE: 04-11_B300141_abut.dwg
PLOT SCALE:

STATE PROJECT NUMBER
3831–00–71

BILL OF BARS
NORTH ABUTMENT

COATED = 2,890 LBS.
UNCOATED = 5,130 LBS.

MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION	
B601		28	22'–9"			BODY – F.F.	HORIZ.
B802		14	28'–1"	X		BODY – B.F. – WEST SIDE	HORIZ.
B803		14	28'–1"	X		BODY – B.F. – EAST SIDE	HORIZ.
B504		82	13'–8"	X		BODY – STIRRUP – F.F. & B.F.	VERT.
B505		41	7'–11"	X		BODY – STIRRUP – TOP	VERT.
B406		33	2'–11"	X		BODY – TIES	HORIZ.
B407		4	31'–0"			BODY – TOP	HORIZ.
B508		30	5'–11"	X		BODY – TOP STIRRUP	VERT.
B409		2	37'–1"			BODY – TOP	HORIZ.
B510		37	4'–8"	X		BODY – TOP STIRRUP	VERT.
B611	16		15'–4"	X		WING 3 – F.F.	HORIZ.
B812	10		17'–7"	X		WING 3 – B.F.	HORIZ.
B413	32		16'–5"	X	⚠	WING 3 – STIRRUP – F.F. & B.F.	VERT.
B514	8		8'–11"		⚠	WING 3 – F.F. & B.F.	HORIZ.
B515	2		13'–9"	X		WING 3 – F.F. & B.F. – TOP	HORIZ.
B516	16		7'–1"	X		WING 3 – END STIRRUP	HORIZ.
B417	5		4'–10"	X		WING 3 – F.F. CORNER	HORIZ.
B418	11		15'–3"			WING 3 – VERTICAL BAR – F.F. & B.F.	VERT.
B419	5		2'–10"	X		WING 3 – B.F. CORNER	HORIZ.
B620	16		14'–8"	X		WING 4 – F.F.	HORIZ.
B821	10		16'–1"	X		WING 4 – B.F.	HORIZ.
B422	32		17'–0"	X	⚠	WING 4 – STIRRUP – F.F. & B.F.	VERT.
B523	8		9'–0"		⚠	WING 4 – F.F. & B.F.	HORIZ.
B524	2		13'–5"	X		WING 4 – F.F. & B.F. – TOP	HORIZ.
B425	6		15'–9"			WING 4 – VERTICAL BAR – F.F. & B.F.	VERT.
B426	5		2'–10"	X		WING 4 – F.F. CORNER	HORIZ.
B427	5		2'–6"	X		WING 4 – B.F. CORNER	HORIZ.

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

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

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

NOTES

DO NOT PLACE FILL ABOVE 3'–0" FROM THE BOTTOM OF THE ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

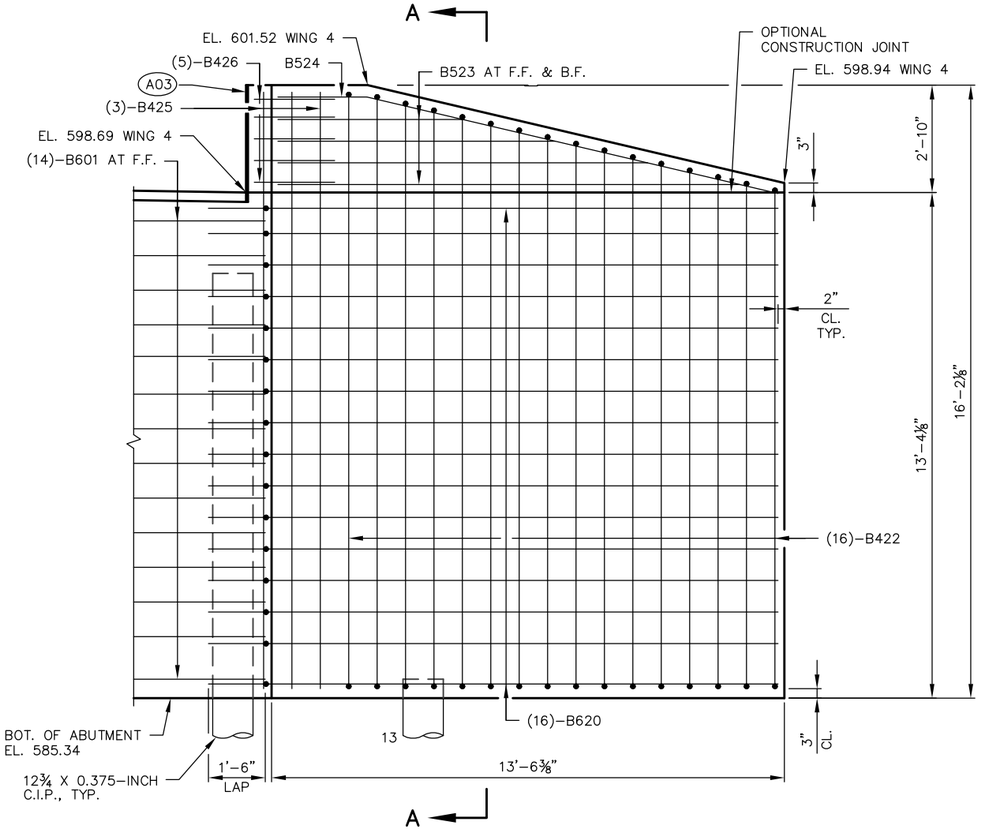
NORTH ABUTMENT TO BE SUPPORTED ON 12¾ X 0.375–INCH C.I.P. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45 FT PILE LENGTHS AT THE NORTH ABUTMENT.

SEE "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET FOR C.I.P. PILE SPLICE DETAILS.

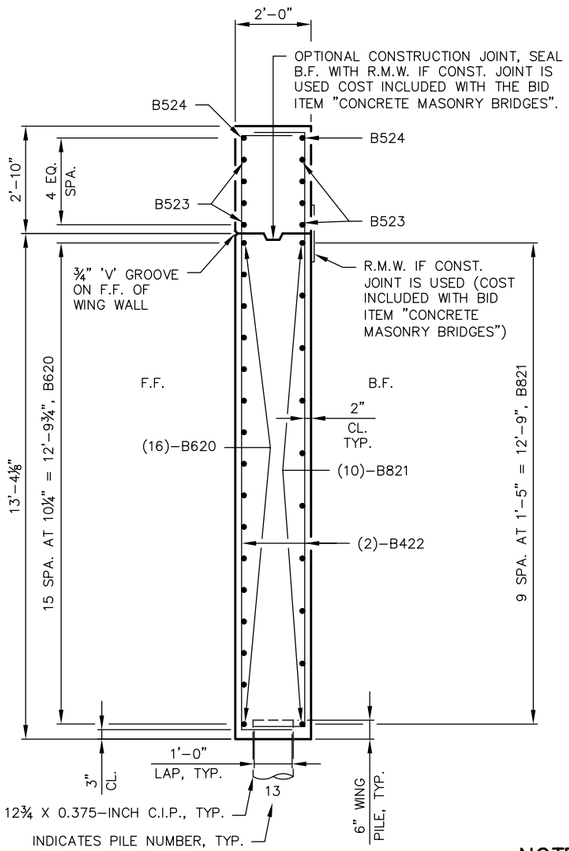
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON–STAINING GRAY NON–BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

(A03) ½" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

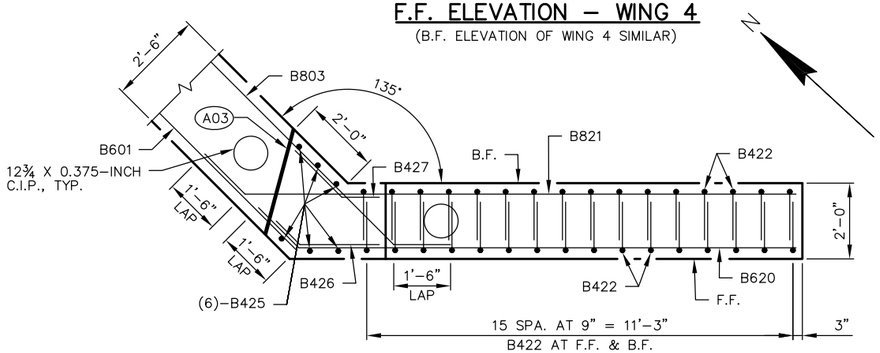
F.F. – FRONT FACE
B.F. – BACK FACE



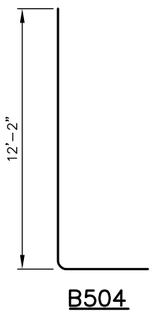
F.F. ELEVATION – WING 4
(B.F. ELEVATION OF WING 4 SIMILAR)

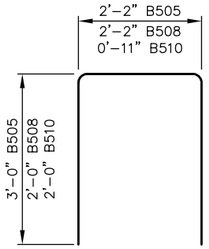


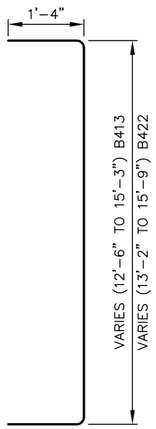
SECTION A–A

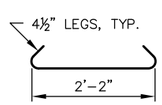


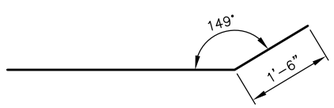
PLAN – WING 4

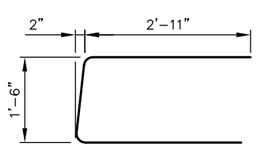


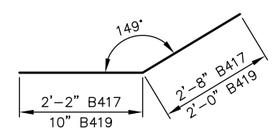


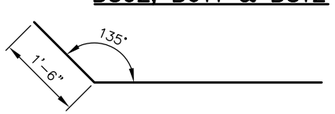


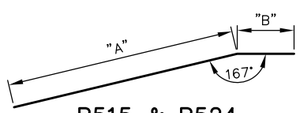












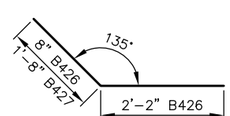
BAR BEND DIMENSIONS

MARK	"A"	"B"
B515	11'–6"	2'–3"
B524	11'–1"	2'–4"

BAR SERIES TABLE

MARK	NO. REQ'D	LENGTH
B413	2 SERIES OF 16	15'–0" TO 17'–9"
B514	2 SERIES OF 4	5'–6" TO 12'–3"
B422	2 SERIES OF 16	15'–8" TO 18'–3"
B523	2 SERIES OF 4	5'–4" TO 12'–8"

BUNDLE AND TAG EACH SERIES SEPARATELY.



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B–30–141

DRAWN BY JDO | PLANS CK'D ABP

NORTH ABUTMENT REINFORCEMENT

SHEET 11 OF 16

71

I.D. 3831–00–71

PLOT DATE: Feb 10, 2020

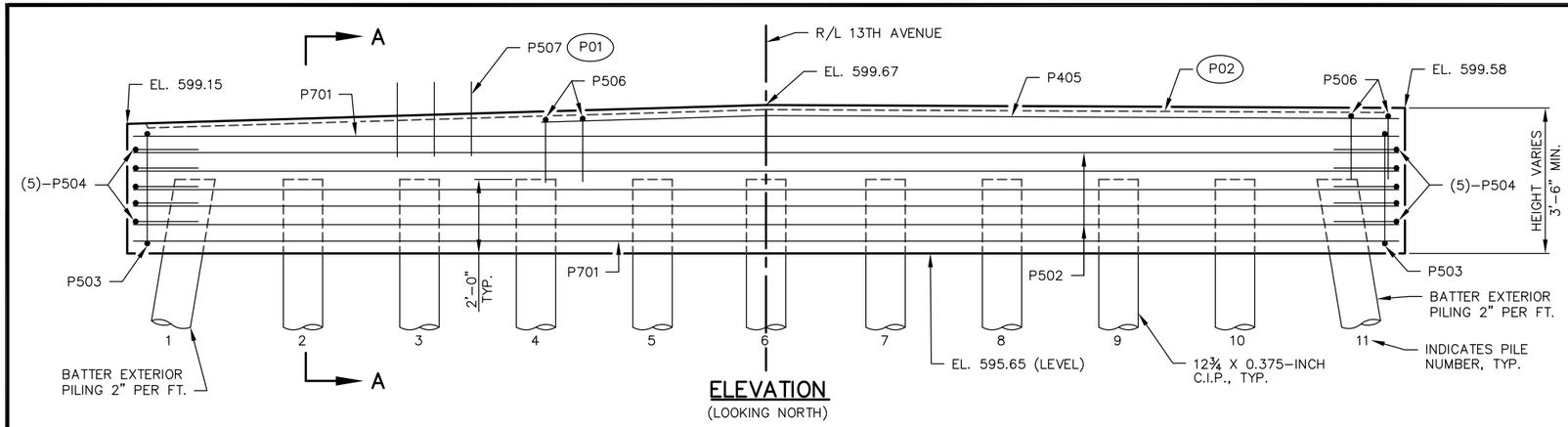
FILE: 04-11_B300141_abut.dwg
PLOT SCALE:

8

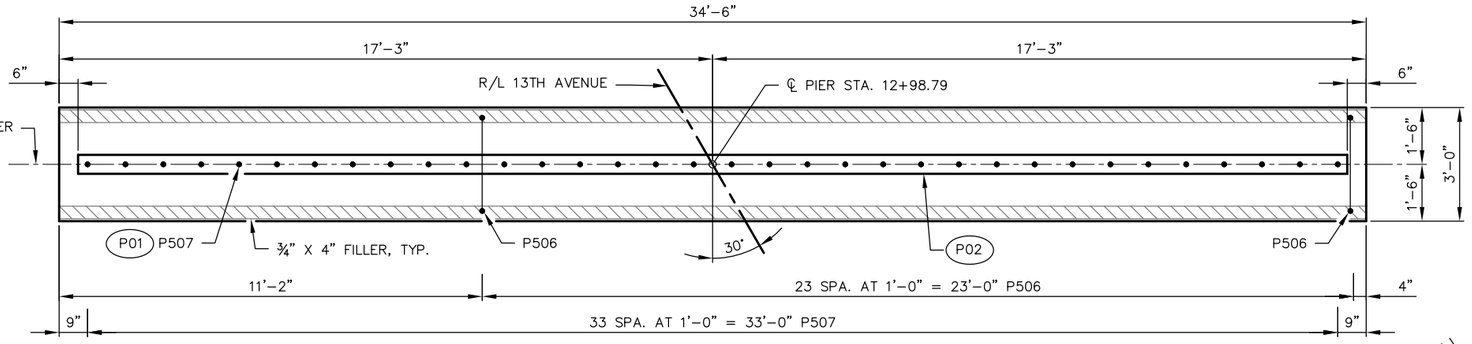
8

STATE PROJECT NUMBER

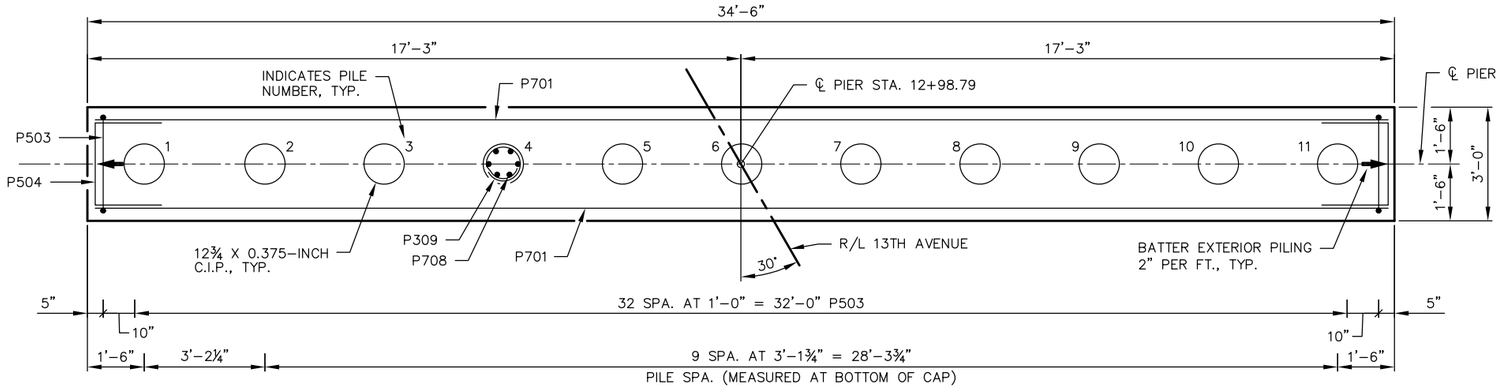
3831-00-71



ELEVATION
(LOOKING NORTH)

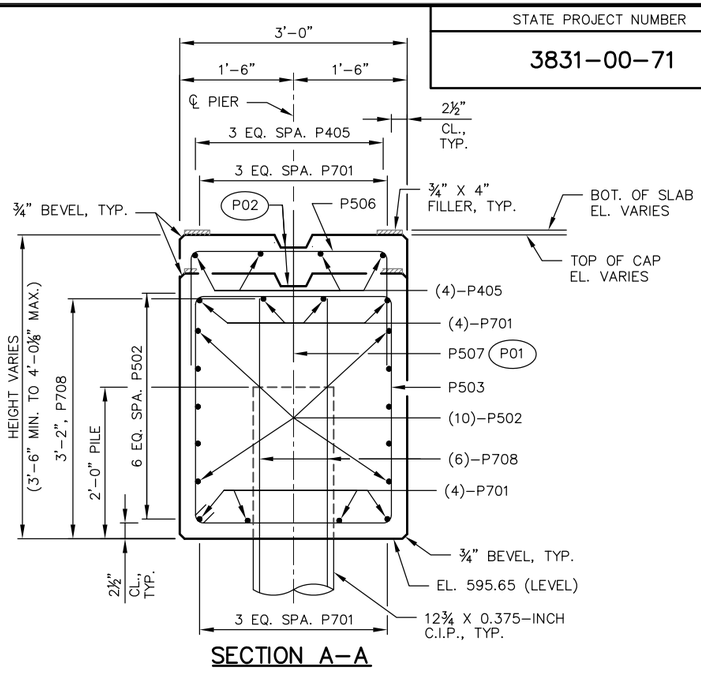


PLAN



PILE SPA. (MEASURED AT BOTTOM OF CAP)

PILE AND REINFORCEMENT PLAN



SECTION A-A

BILL OF BARS
PIER

COATED = 80 LBS.
UNCOATED = 5,000 LBS

MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION	
P701		8	34'-1"			PIER CAP - TOP & BOTTOM	HORIZ.
P502		10	34'-1"			PIER CAP - SIDES	HORIZ.
P503		35	12'-0"	X		PIER CAP - STIRRUP	VERT.
P504		10	5'-0"	X		PIER CAP - END STIRRUP	HORIZ.
P405		4	23'-5"			PIER CAP - TOP	HORIZ.
P506		24	5'-8"	X		PIER CAP - TOP STIRRUP	VERT.
P507	34		2'-0"			PIER CAP - DOWELS	VERT.
P708		66	23'-10"			PILE VERT.	VERT.
P309		121	3'-7"	X		PILE TIES	HORIZ.

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

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

NOTES

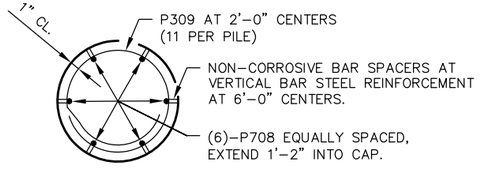
PIER TO BE SUPPROTED ON 12¾ X 0.375-INCH C.I.P. PILING DRIVEN TO A REQUIRED RESISTANCE OF 210 TONS PER PILE. ESTIMATE 40 FT. PILE LENGTHS AT THE PIER.

PILES SHALL BE PAINTED IN ACCORDANCE WITH SECTION 550.3.11.3 OF THE STANDARD SPECIFICATIONS.

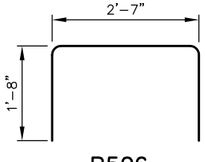
FOR PILE SPLICE DETAILS SEE "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET.

(P01) P507 BARS MAY BE PLACED AFTER CONCRETE IS POURED, BUT BEFORE INITIAL SET HAS TAKEN PLACE.

(P02) KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"x6".

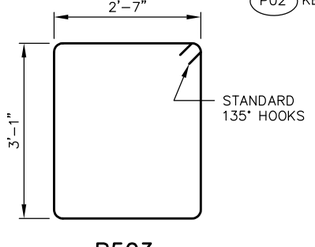


SECTION THRU CONCRETE CAST-IN-PLACE PILING AT PIER

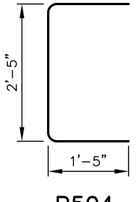


P506

P309



P503



P504

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-30-141

DRAWN BY JDO | PLANS CK'D ABP

PIER

SHEET 12 OF 16

72

I.D. 3831-00-71

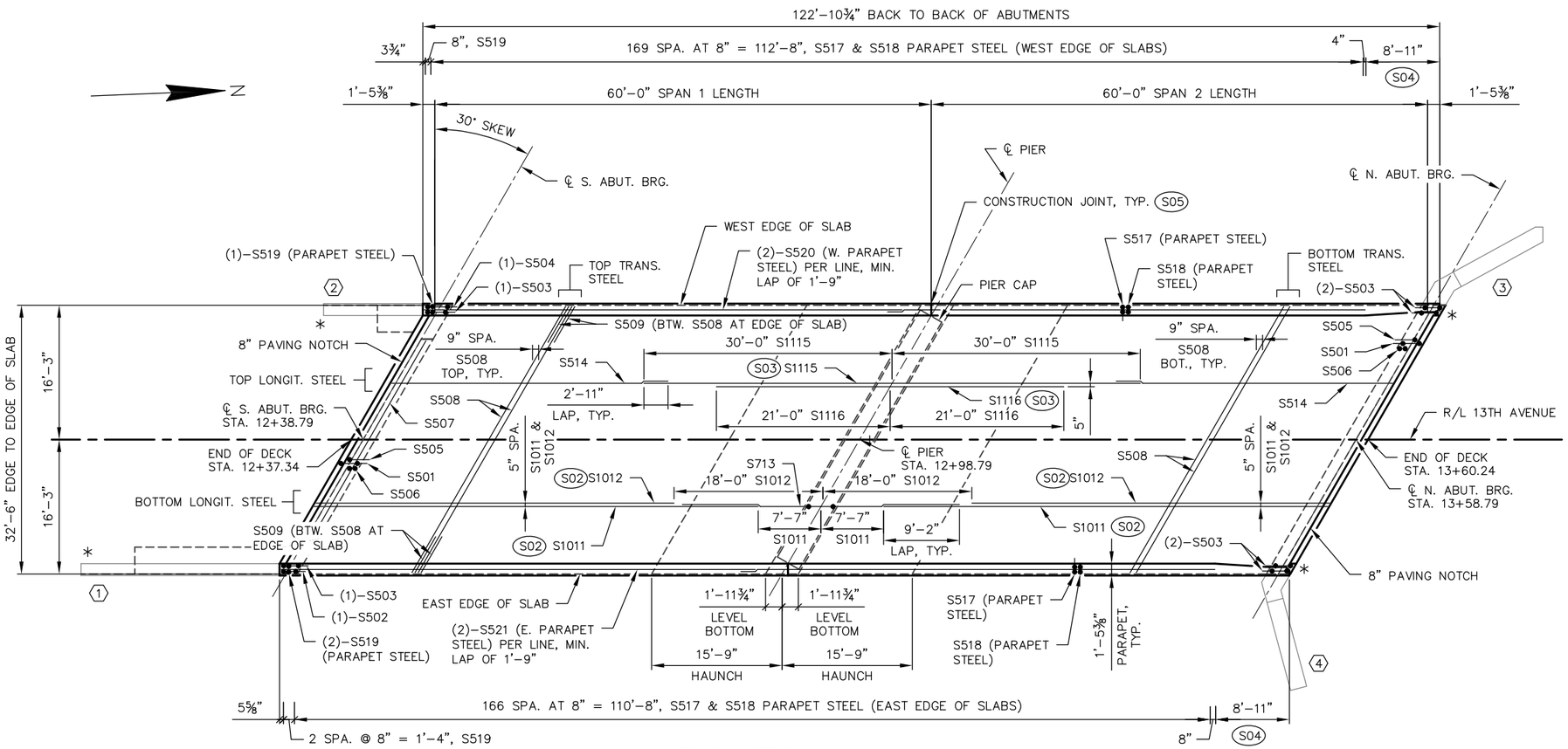
PLOT DATE: Feb 10, 2020

FILE: 12_B300141_pier.dwg
PLOT SCALE:

8

8

STATE PROJECT NUMBER
3831-00-71



PLAN VIEW

NOTES

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

BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

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

PARAPETS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED.

(S01) DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNIT.

(S02) ALTERNATE BETWEEN S1011 & S1012 ACROSS ENTIRE WIDTH OF THE BRIDGE SLAB IN SPANS 1 & 2.

(S03) ALTERNATE BETWEEN S1115 & S1116 ACROSS ENTIRE WIDTH OF THE BRIDGE SLAB OVER THE PIER.

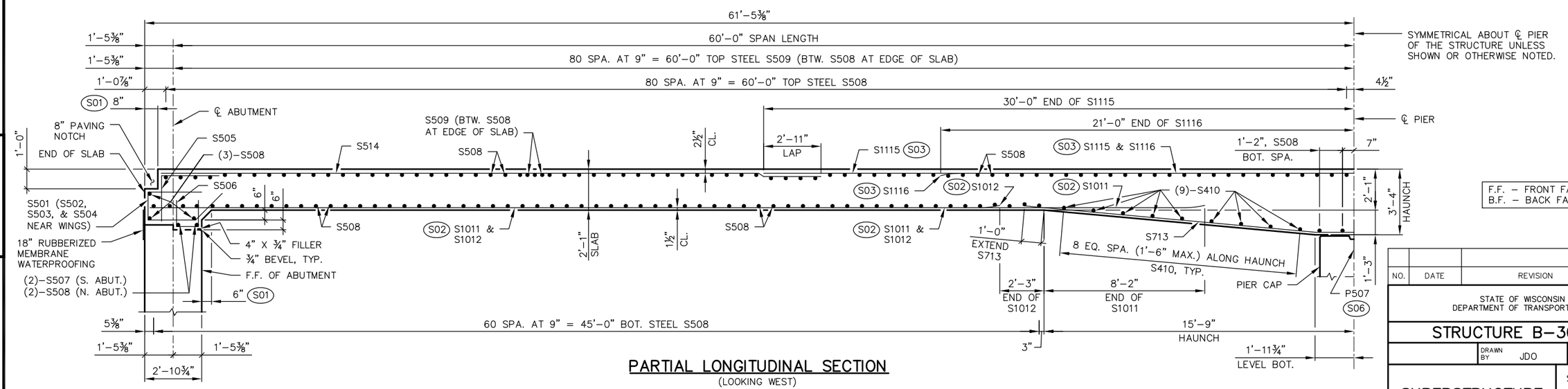
(S04) SEE "NORTH PARAPET & SUPERSTRUCTURE REINFORCEMENT" SHEET FOR PARAPET STEEL SPACING AND LAYOUT IN TRANSITION ZONE.

(S05) MANDATORY CONSTRUCTION JOINT IN PARAPETS AT ℄ PIER, SEE "SOUTH PARAPET AT WING DETAILS" SHEET FOR DETAILS.

(S06) SEE "PIER" SHEET FOR PLACEMENT OF P507 BARS.

* LOCATION OF BEAM GUARD ATTACHMENT

⬡ INDICATES WING NUMBER



PARTIAL LONGITUDINAL SECTION

(LOOKING WEST)

F.F. – FRONT FACE
B.F. – BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-30-141

DRAWN BY JDO | PLANS CK'D ABP

SUPERSTRUCTURE

SHEET 13 OF 16

73

8

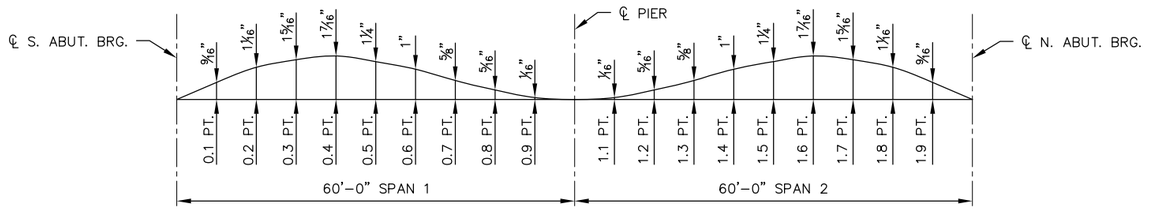
8

I.D. 3831-00-71

PLOT DATE: Feb 10, 2020

FILE: 13-15_B300141_super.dwg
PLOT SCALE:

STATE PROJECT NUMBER
3831–00–71



SLAB CAMBER DIAGRAM

SURVEY TOP OF SLAB ELEVATIONS

℄	S. ABUT. BRG.	5/10 PT.	℄ PIER	5/10 PT.	℄ N. ABUT. BRG.
WEST SLAB EDGE					
R/L 13TH AVENUE					
EAST SLAB EDGE					

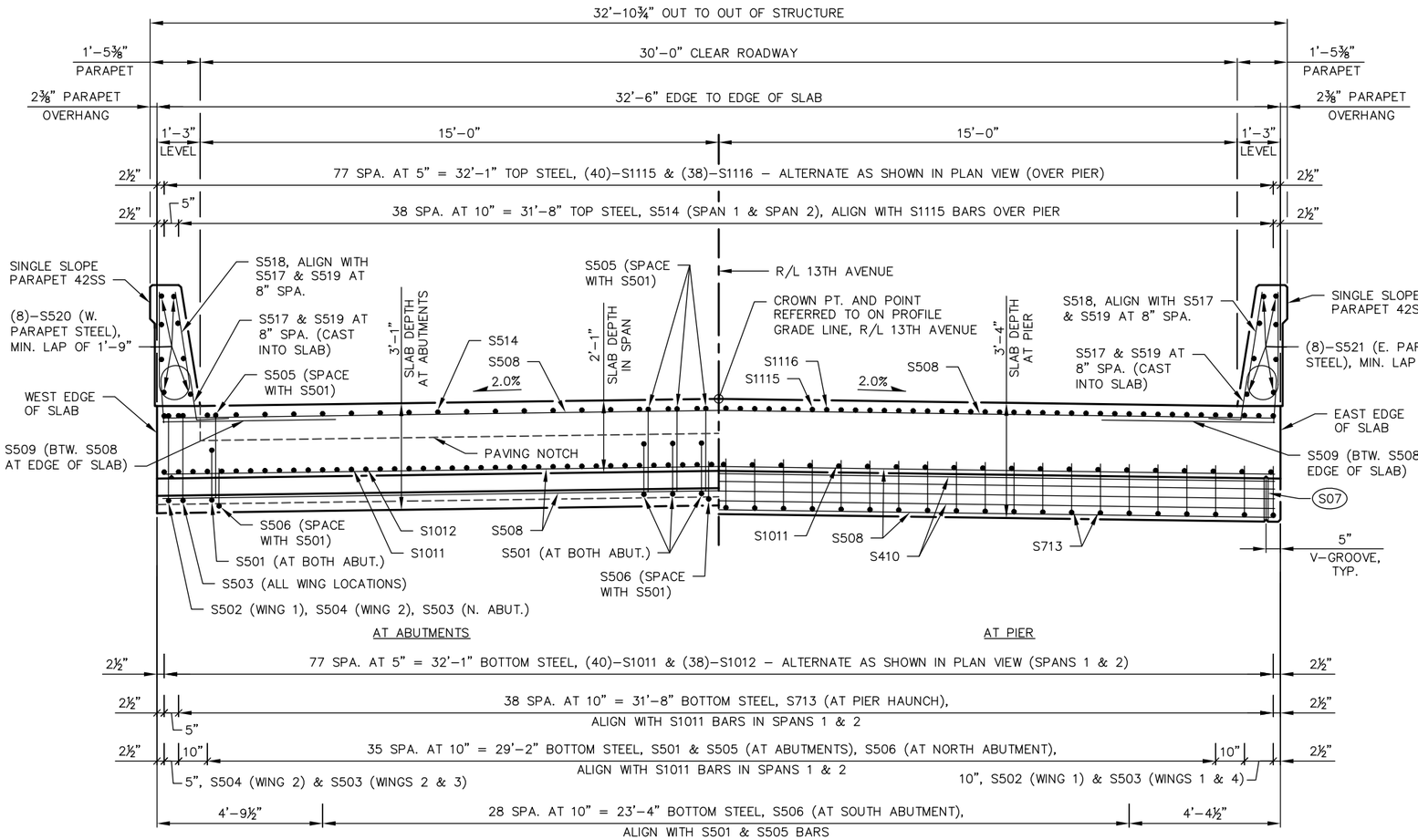
PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS, ℄ OF PIER AND AT 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND REFERENCE LINE. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

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

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

TOP OF SLAB ELEVATIONS

SPAN PT	W. SLAB EDGE	R/L 13TH AVE.	E. SLAB EDGE
℄ S. ABUT.	604.01	604.54	604.47
0.1	603.86	604.39	604.32
0.2	603.71	604.24	604.17
0.3	603.57	604.10	604.03
0.4	603.42	603.95	603.88
0.5	603.27	603.80	603.73
0.6	603.12	603.65	603.58
0.7	602.98	603.51	603.44
0.8	602.83	603.36	603.29
0.9	602.68	603.21	603.14
℄ PIER	602.53	603.07	603.00
1.1	602.39	602.92	602.85
1.2	602.24	602.77	602.70
1.3	602.09	602.62	602.55
1.4	601.95	602.48	602.41
1.5	601.80	602.33	602.26
1.6	601.65	602.18	602.11
1.7	601.50	602.03	601.96
1.8	601.36	601.89	601.82
1.9	601.21	601.74	601.67
℄ N. ABUT.	601.06	601.59	601.52



CROSS SECTION THRU ROADWAY

(LOOKING NORTH)

NOTES

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

(S07) ¾" V–GROOVE. EXTEND V–GROOVE TO 6" FROM FRONT FACE OF ABUTMENT BODY. V–GROOVES ARE REQUIRED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B–30–141

DRAWN BY JDO | PLANS CK'D ABP

SUPERSTRUCTURE DETAILS

SHEET 14 OF 16

74

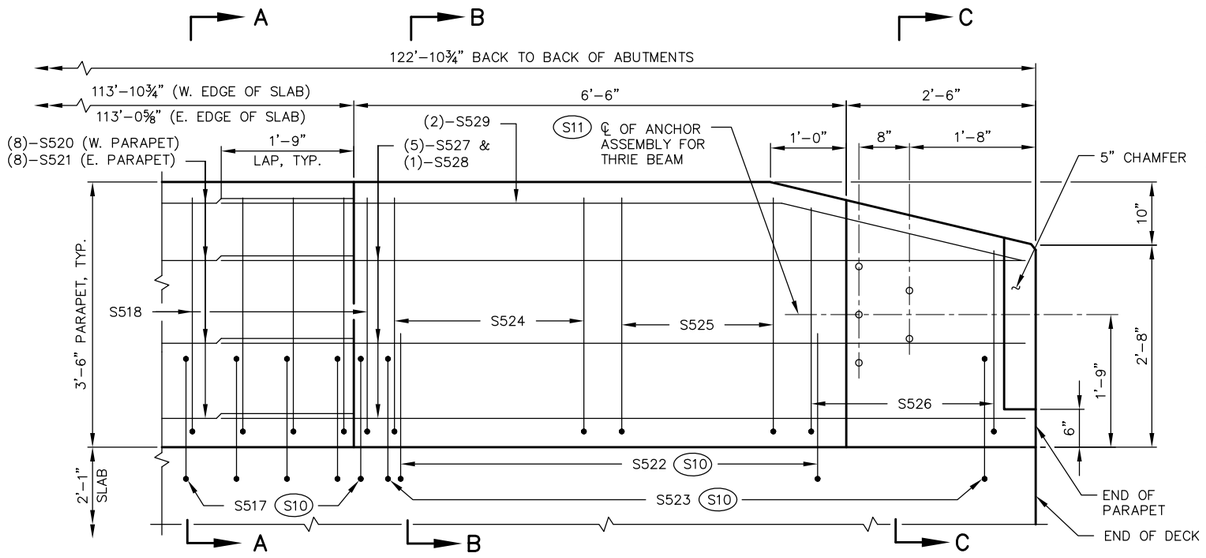
8

8

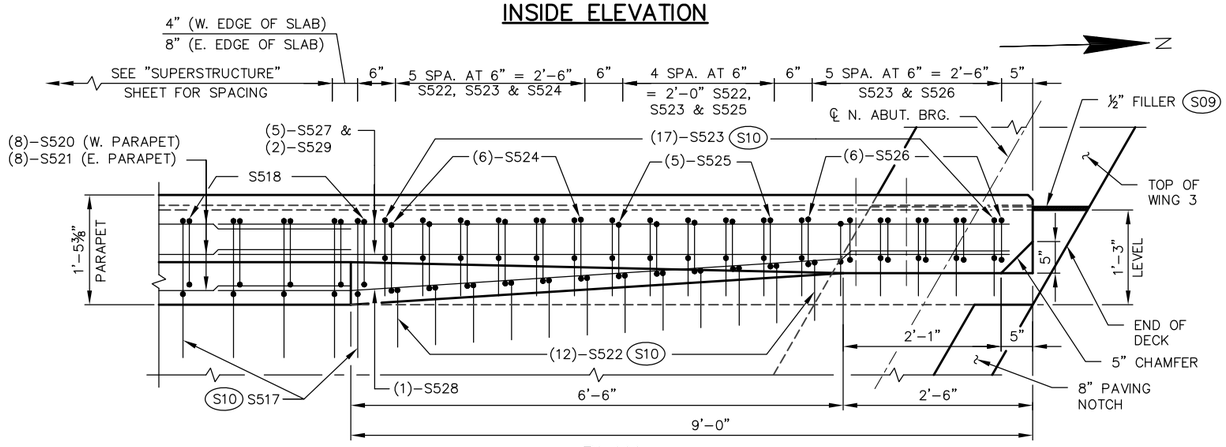
I.D. 3831–00–71

PLOT DATE: Feb 10, 2020

FILE: 13-15_B300141_super.dwg
PLOT SCALE:

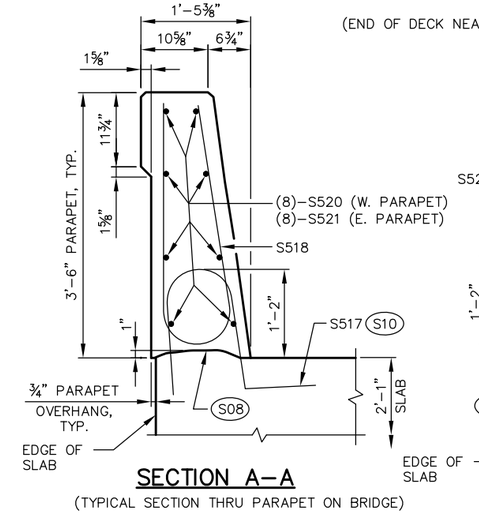


INSIDE ELEVATION



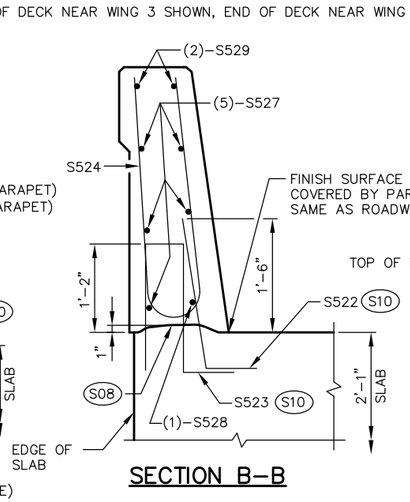
PLAN

(END OF DECK NEAR WING 3 SHOWN, END OF DECK NEAR WING 4 SIMILAR)

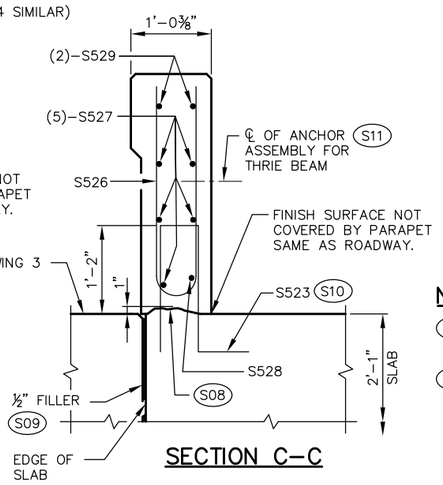


SECTION A–A

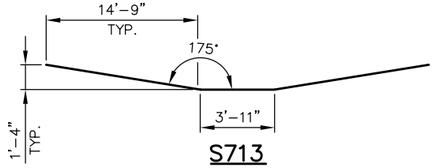
(TYPICAL SECTION THRU PARAPET ON BRIDGE)



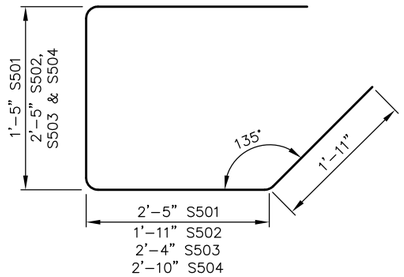
SECTION B–B



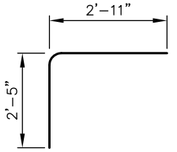
SECTION C–C



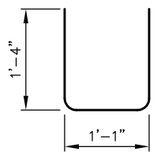
S713



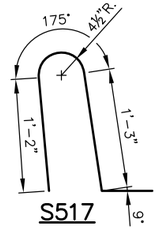
S501, S502, S503 & S504



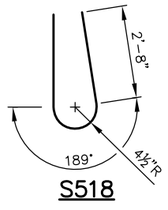
S505



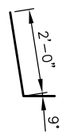
S506



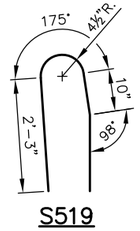
S517



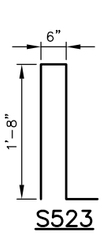
S518



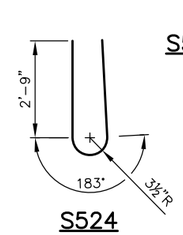
S522



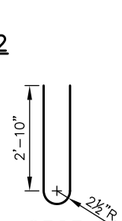
S519



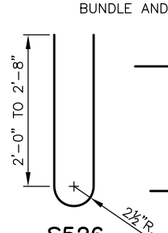
S523



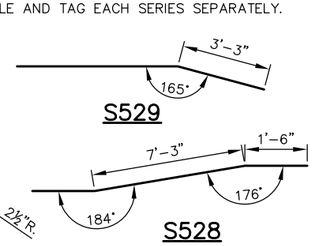
S524



S525



S526



S529 S528

STATE PROJECT NUMBER

3831–00–71

BILL OF BARS SUPERSTRUCTURE

COATED = 80,860 LBS.

MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION	
S501	72		8'–5"	X		SLAB AT ABUTMENTS – VERT. TIES	LONGIT.
S502	1		8'–11"	X		SLAB AT S. ABUT. (WING 1) – VERT. TIES	LONGIT.
S503	6		9'–4"	X		SLAB AT WINGS 1, 2, 3 & 4 – VERT. TIES	LONGIT.
S504	1		9'–10"	X		SLAB AT S. ABUT. (WING 2) – VERT. TIES	LONGIT.
S505	72		5'–3"	X		SLAB AT ABUTMENTS – VERT. TIES	LONGIT.
S506	69		3'–6"	X		SLAB AT ABUTMENTS – VERT. TIES	LONGIT.
S507	2		27'–7"			SLAB AT S. ABUTMENT – BOT.	TRANS.
S508	296		37'–1"			SLAB – TOP & BOT.	TRANS.
S509	322		5'–0"			SLAB – TOP AT EDGE OF SLAB	TRANS.
S410	18		37'–1"			SLAB – BOT. ALONG HAUNCH	TRANS.
S1011	80		53'–8"			SLAB – BOT. IN SPANS 1 & 2	LONGIT.
S1012	76		43'–3"			SLAB – BOT. IN SPANS 1 & 2	LONGIT.
S713	40		33'–6"	X		SLAB – BOT. OVER PIER	LONGIT.
S514	80		33'–5"			SLAB – TOP IN SPANS 1 & 2	LONGIT.
S1115	40		60'–0"			SLAB – TOP OVER PIER	LONGIT.
S1116	38		42'–0"			SLAB – TOP OVER PIER	LONGIT.
S517	339		4'–5"	X		PARAPET – STIRRUP	VERT.
S518	342		6'–8"	X		PARAPET – STIRRUP	VERT.
S519	3		5'–10"	X		PARAPET – STIRRUP (NEAR S. ABUT.)	VERT.
S520	16		57'–9"			PARAPET – WEST PARAPET HORIZ.	LONGIT.
S521	16		57'–4"			PARAPET – EAST PARAPET HORIZ.	LONGIT.
S522	24		2'–9"	X		PARAPET – NORTH END TRANSITIONS	VERT.
S523	34		4'–4"	X		PARAPET – NORTH END TRANSITIONS	VERT.
S524	12		6'–6"	X		PARAPET – NORTH END TRANSITIONS	VERT.
S525	10		6'–5"	X		PARAPET – NORTH END TRANSITIONS	VERT.
S526	12		5'–5"	X	⚠	PARAPET – NORTH END TRANSITIONS	VERT.
S527	10		10'–7"			PARAPET – NORTH END TRANSITIONS	HORIZ.
S528	2		10'–7"	X		PARAPET – NORTH END TRANSITIONS	HORIZ.
S529	4		10'–7"	X		PARAPET – NORTH END TRANSITIONS	HORIZ.

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

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

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

BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
S526	2 SERIES OF 6	4'–9" TO 6'–1"

BUNDLE AND TAG EACH SERIES SEPARATELY.

NOTES

(S08) CONST. JOINT – STRIKE OFF AS SHOWN AND LEAVE ROUGH.

(S09) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON–STAINING GRAY NON–BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(S10) S517, S522 AND S523 BARS TO BE TIED TO SUPERSTRUCTURE SLAB STEEL BEFORE CONCRETE IS POURED.

(S11) SEE "GENERAL PLAN" SHEET FOR WING LOCATIONS OF ANCHOR ASSEMBLY FOR THRIE BEAM. SEE "SOUTH PARAPET AT WING DETAILS" SHEET FOR DETAILS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B–30–141

DRAWN BY JDO | PLANS CK'D ABP

NORTH PARAPET & SUPERSTRUCTURE REINFORCEMENT

SHEET 15 OF 16

75

8

8

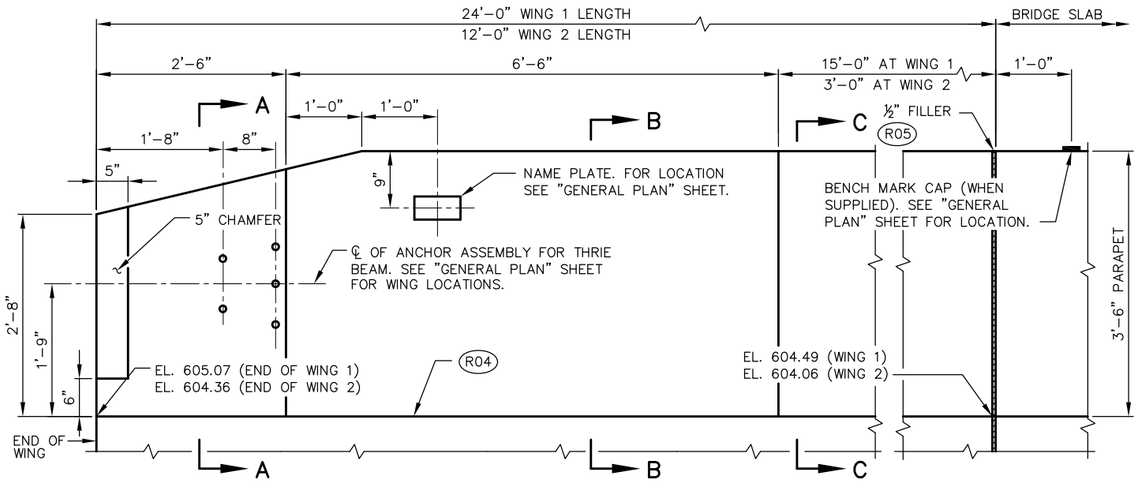
I.D. 3831–00–71

PLOT DATE: Feb 10, 2020

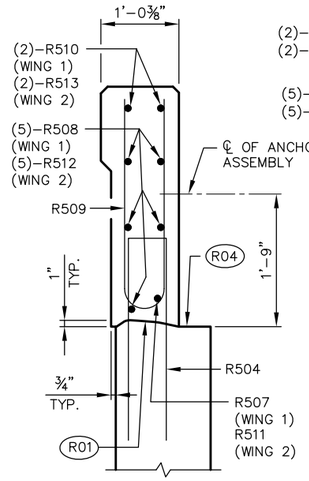
FILE: 13–15_B300141_super.dwg
PLOT SCALE:

STATE PROJECT NUMBER

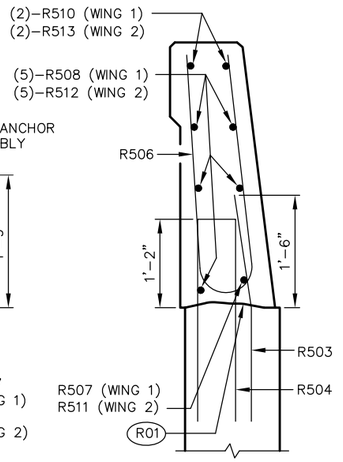
3831-00-71



INSIDE ELEVATION OF PARAPET



SECTION A-A



SECTION B-B

BILL OF BARS
PARAPETS ON WINGS

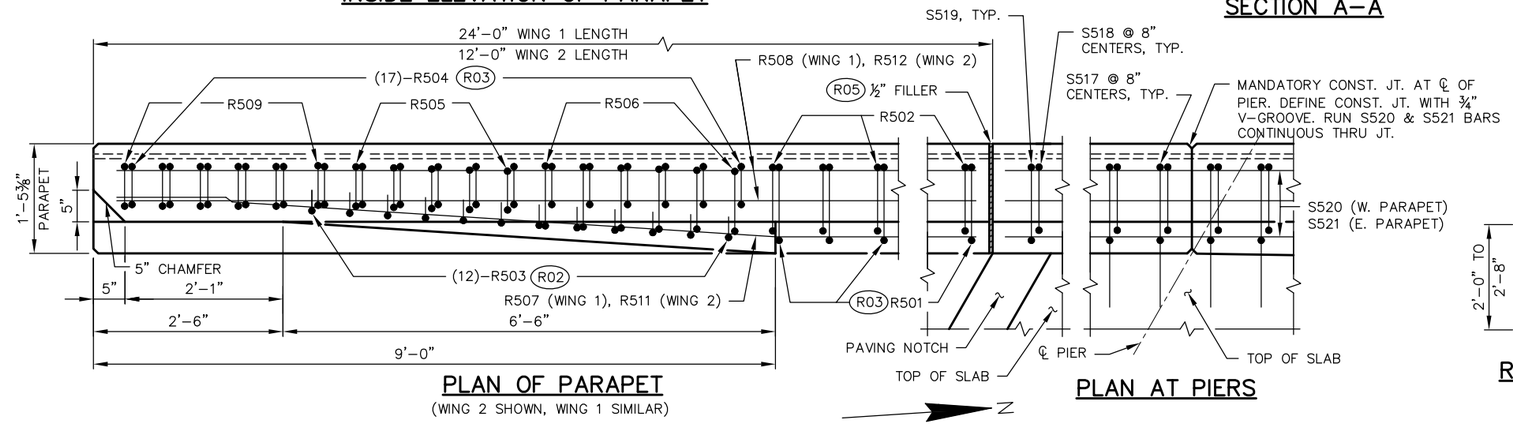
WING 1 = 740 LBS.
WING 2 = 410 LBS.

BAR MARK	COAT.	NO. REQ'D. WING 1	NO. REQ'D. WING 2	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	23	5	5'-10"	X		PARAPET (WING 1 & 2) VERT.
R502	X	23	5	6'-8"	X		PARAPET (WING 1 & 2) VERT.
R503	X	12	12	3'-0"	X		PARAPET (WING 1 & 2) VERT.
R504	X	17	17	5'-7"	X		PARAPET (WING 1 & 2) VERT.
R505	X	5	5	6'-5"	X		PARAPET (WING 1 & 2) VERT.
R506	X	6	6	6'-6"	X		PARAPET (WING 1 & 2) VERT.
R507	X	1	--	23'-5"	X		PARAPET (WING 1) HORIZ.
R508	X	5	--	23'-6"			PARAPET (WING 1) HORIZ.
R509	X	6	6	5'-5"	X	◭	PARAPET (WING 1 & 2) VERT.
R510	X	2	--	23'-3"	X		PARAPET (WING 1) HORIZ.
R511	X	--	1	11'-5"	X		PARAPET (WING 2) HORIZ.
R512	X	--	5	11'-6"			PARAPET (WING 2) HORIZ.
R513	X	--	2	11'-3"	X		PARAPET (WING 2) HORIZ.

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

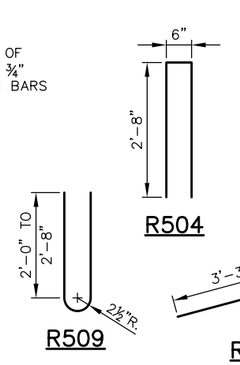
ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

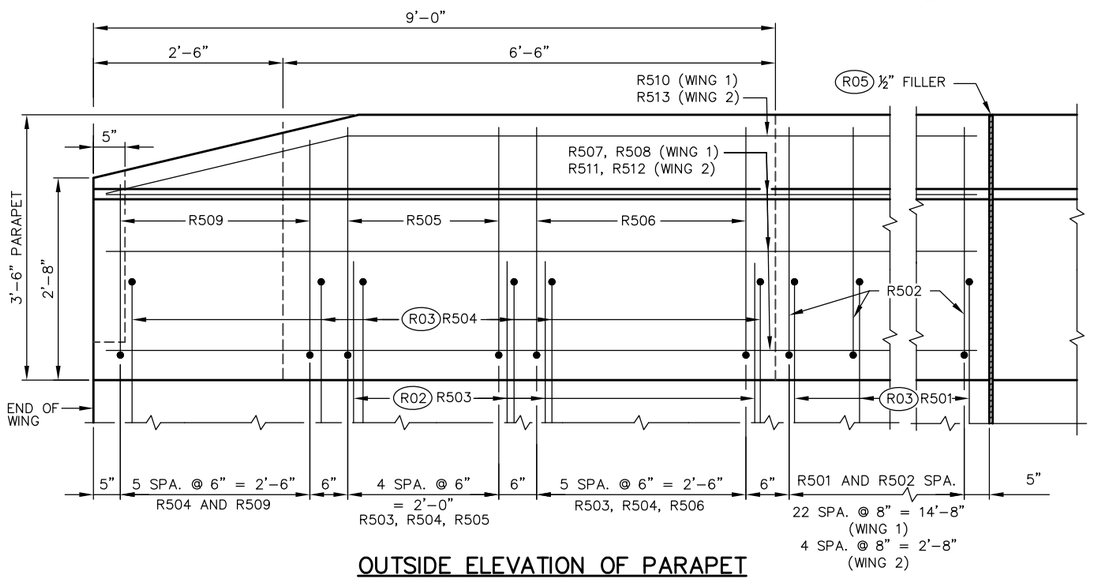
◭ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE "BAR SERIES TABLE" FOR ACTUAL LENGTHS.



PLAN OF PARAPET
(WING 2 SHOWN, WING 1 SIMILAR)

PLAN AT PIERS





OUTSIDE ELEVATION OF PARAPET

BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
R509	2 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.

NOTES

STEEL & CONCRETE QUANTITIES FOR PARAPETS ON WINGS INCLUDED IN SOUTH ABUTMENT QUANTITIES ON "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET.

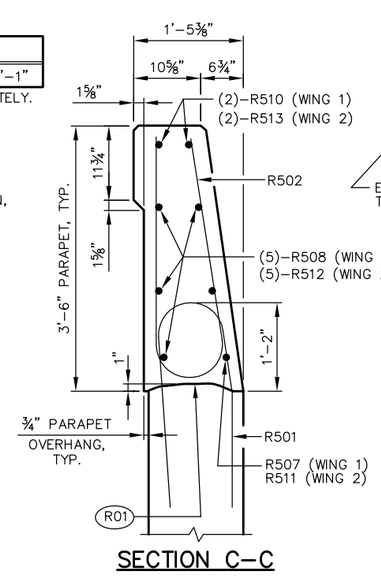
(R01) CONST. JOINT – STRIKE OFF AS SHOWN AND LEAVE ROUGH.

(R02) R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 CORRECTLY ALONG TRANSITION OF PARAPET.

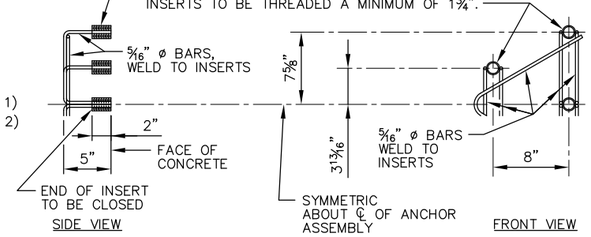
(R03) R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

(R04) FINISH CONCRETE NOT COVERED BY THE PARAPET. MATCH ROADWAY OR APPROACH SLAB CROSS SLOPE.

(R05) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.



SECTION C-C



DETAIL OF ANCHOR ASSEMBLY

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

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-30-141

DRAWN BY CDS | PLANS CK'D ACK

SOUTH PARAPET AT WING DETAILS

SHEET 16 OF 16

76

8

8

FILE: 16_B300141_parapet.dwg
PLOT SCALE:

I.D. 3831-00-71

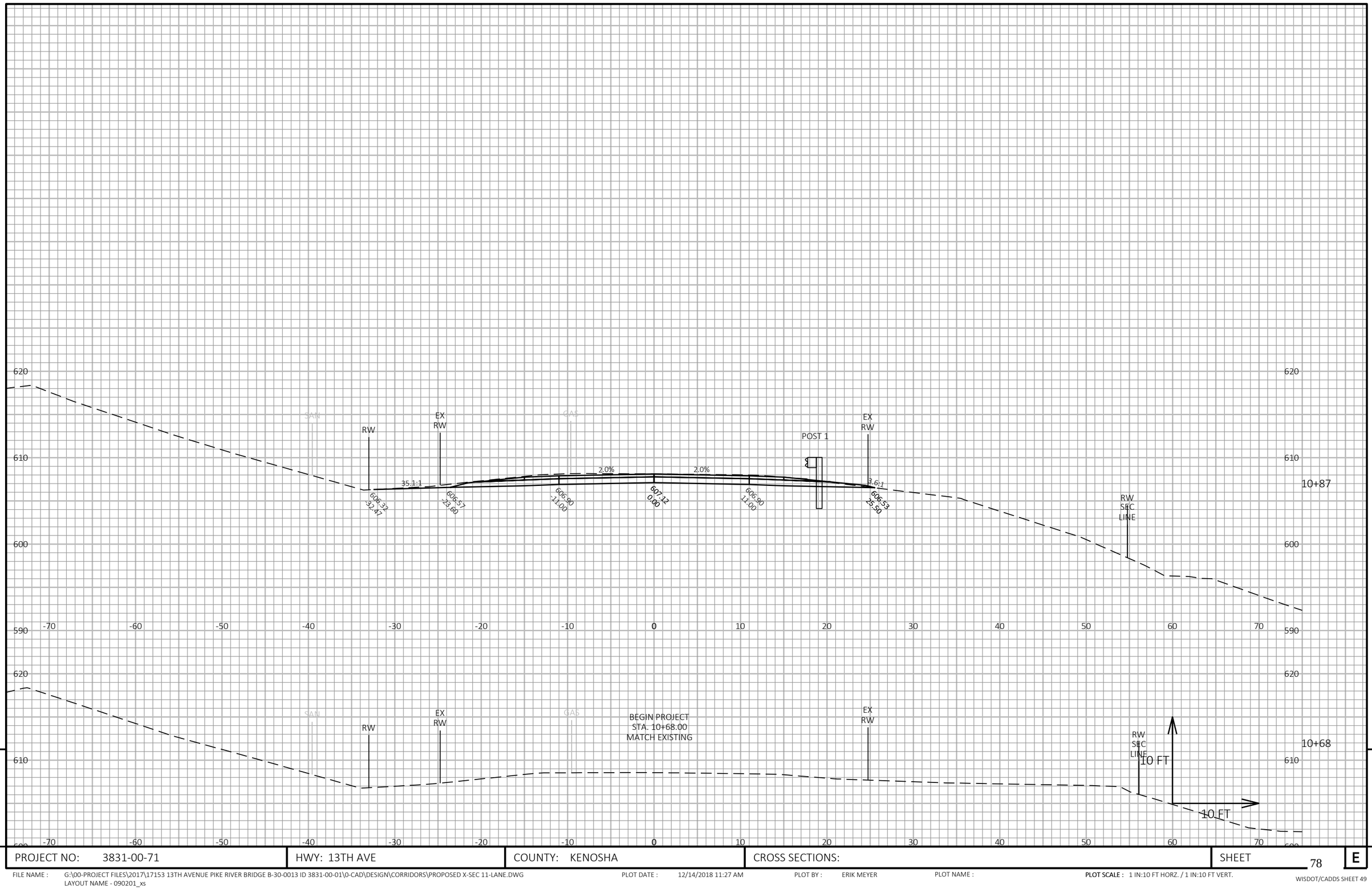
PLOT DATE: Feb 10, 2020

From/To Station	Location	Common Excavation (1)	(item # 205.0100)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6)	Rock Excavation (7)	Reduced Marsh in Fill (8)	Reduced EBS in Fill (9)	Expanded Marsh Backfill (10)	Expanded EBS Backfill (11)	Expanded Rock (12)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Borrow	Comment:
		Cut (2)	EBS Excavation (3)			(item #205.0500)	(item #205.0200)	Factor 0.60	Factor 0.80	Factor 1.50	Factor 1.30	Factor 1.10		Factor 1.25			(item #208.0100)	
10+68 To	South Approach	180	0	67	112	0	0	0	0	0	0	0	291	364	-252		252	
14+81.25 to 16+50	North Approach	245	0	83	162	0	0	0	0	0	0	0	124	155	6	6		
Grand Total		425	0	150	274	0	0	0	0	0	0	0	416	520	-245		245	See note 15
		Total Common Exc	425															

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusable Pavement Material (Salvaged/Unusable Material includes existing asphaltic material)
6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 205.0500
7) Rock Excavation item number 205.0200
8) Reduced Marsh in Fill - Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
9) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.11
11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.11
12) Expanded Rock - Factor = 1.1.
13) Expanded Fill. Factor = 1.25
Depending on selections: **Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor**
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
15) Use 274 CY of common excavation material. Borrow Excavation item number 208.0100

STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.25	Expanded EBS Backfill 1.30 Note 5	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
10+68.00	1068.00	-	0.00	0	0.00	0	0	0	0.0	0.0	0.0	0	0	0	0	0	0
10+86.72	1086.72	18.72	46.06	12.83	0.53	0	0	0	16.0	4.4	0.2	0	16	0	0	0	11
11+00.00	1100.00	13.28	41.50	12.83	0.34	0	0	0	21.5	6.3	0.2	0	38	1	0	0	26
11+11.70	1111.70	11.70	38.88	12.83	77.88	0	0	0	17.4	5.6	16.9	0	55	22	0	0	17
11+15.95	1115.95	4.25	37.58	12.83	83.96	0	0	0	6.0	2.0	12.7	0	61	38	0	0	5
11+36.68	1136.68	20.73	33.54	12.83	90.82	0	0	0	27.3	9.9	67.1	0	88	121	0	0	-61
11+40.95	1140.95	4.27	33.00	12.83	86.93	0	0	0	5.3	2.0	14.1	0	93	139	0	0	-76
11+50.00	1150.00	9.05	32.44	12.83	82.77	0	0	0	11.0	4.3	28.4	0	104	175	0	0	-105
11+65.91	1165.91	15.91	33.40	12.83	67.04	0	0	0	19.4	7.6	44.1	0	124	230	0	0	-148
12+00.00	1200.00	34.09	26.19	12.83	49.25	0	0	0	37.6	16.2	73.4	0	161	322	0	0	-218
BRIDGE	1237.34	37.34	0.00	0.00	0.00	0	0	0	18.1	8.9	34.1	0	180	364	0	0	-252
BRIDGE	1250.00	12.66	0.00	0.00	0.00	0	0	0	0.0	0.0	0.0	0	180	364	0	0	-252
BRIDGE	1300.00	50.00	0.00	0.00	0.00	0	0	0	0.0	0.0	0.0	0	180	364	0	0	-252
BRIDGE	1350.00	50.00	0.00	0.00	0.00	0	0	0	0.0	0.0	0.0	0	180	364	0	0	-252
BRIDGE	1360.24	10.24	0.00	0.00	0.00	0	0	0	0.0	0.0	0.0	0	180	364	0	0	-252
14+00.00	1400.00	39.76	29.44	12.83	11.45	0	0	0	21.7	9.4	8.4	0	201	375	0	0	-250
14+18.67	1418.67	18.67	29.45	12.83	14.29	0	0	0	20.4	8.9	8.9	0	222	386	0	0	-250
14+43.62	1443.62	24.95	28.40	12.83	18.48	0	0	0	26.7	11.9	15.1	0	248	405	0	0	-254
14+50.00	1450.00	6.38	28.48	12.83	20.14	0	0	0	6.7	3.0	4.6	0	255	410	0	0	-256
14+68.61	1468.61	18.61	29.06	12.83	23.24	0	0	0	19.8	8.8	15.0	0	275	429	0	0	-263
15+00.00	1500.00	31.39	32.38	12.83	23.55	0	0	0	35.7	14.9	27.2	0	311	463	0	0	-277
15+50.00	1550.00	50.00	38.97	12.83	5.07	0	0	0	66.1	23.8	26.5	0	377	496	0	0	-267
15+60.00	1560.00	10.00	12.73	0.00	3.44	0	0	0	9.6	2.4	1.6	0	386	498	0	0	-262
15+87.00	1587.00	27.00	11.46	0.00	1.63	0	0	0	12.1	0.0	2.5	0	398	501	0	0	-253
16+00.00	1600.00	13.00	10.40	0.00	1.68	0	0	0	5.3	0.0	0.8	0	404	502	0	0	-249
16+12.00	1612.00	12.00	6.50	0.00	3.00	0	0	0	3.8	0.0	1.0	0	407	504	0	0	-247
16+37.00	1637.00	25.00	5.26	0.00	3.98	0	0	0	5.4	0.0	3.2	0	413	508	0	0	-245
16+50.00	1650.00	13.00	4.85	0.00	3.99	0	0	0	2.4	0.0	1.9	0	415	510	0	0	-245
17+53.00	1753.00	103.00	0.00	0.00	0.00	0	0	0	9.2	0.0	7.6	0	425	520	0	0	-245
								Approach 1 Totals	180	67	291	0					
								Approach 2 Totals	245	83	124	0					
								Column totals	425	150	416	0					

Notes:		
1 - Cut	Cut includes Salvaged/Unusable Pavement material	
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections	
3 - Fill	Does not include Unusable Pavement Exc volume	
4 - Expanded Marsh B	Will be backfilled with Granular Backfill (or Cut, or Borrow)	Note 4 - Select one based on input dialog selection
5 - Expanded EBS	Will be backfilled with Granular Backfill (or Cut, or Borrow)	Note 5 - Select one based on input dialog selection
6 - Reduced Marsh in	Reduced Marsh Excavation that can be used in Fill	Note 6 - If excavated Marsh can be used in Fill
7 - Reduced EBS in Fil	Reduced EBS Excavation that can be used in Fill	Note 7 - If excavated EBS can be used in Fill
8 - Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) - ((Fill - Reduced Marsh in Fill) - (Reduced EBS in Fill) - Expanded Rock) * Fill Factor)]	Note 8 - Select one based on mass haul input dialog selection. EBS and Marsh Exc used outside 1:1 in fill slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut + EBS + Marsh Exc) - ((Fill - (Reduced Marsh in Fill) - (Reduced EBS in Fill) - (Expanded Rock)) * Fill Factor))]	EBS and Marsh Exc used outside 1:1 in fill slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]	Marsh and EBS are not usable outside the 1:1 slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Cut or Borrow: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]	Marsh and EBS are not usable outside the 1:1 slopes



9

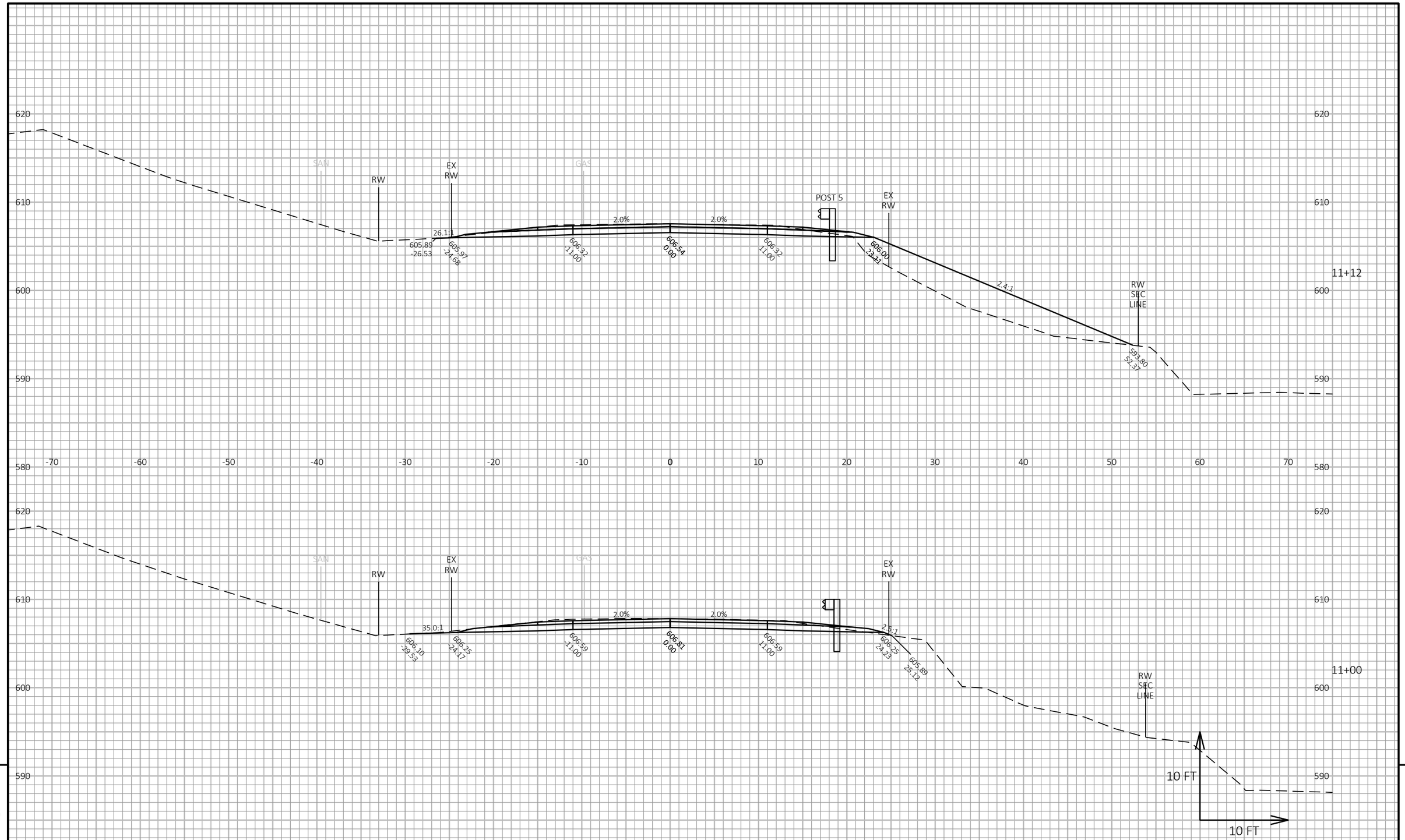
9

PROJECT NO: 3831-00-71	HWY: 13TH AVE	COUNTY: KENOSHA	CROSS SECTIONS:	SHEET 78	E

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\DESIGN\CORRIDORS\PROPOSED X-SEC 11-LANE.DWG
LAYOUT NAME - 090201_xs

PLOT DATE : 12/14/2018 11:27 AM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

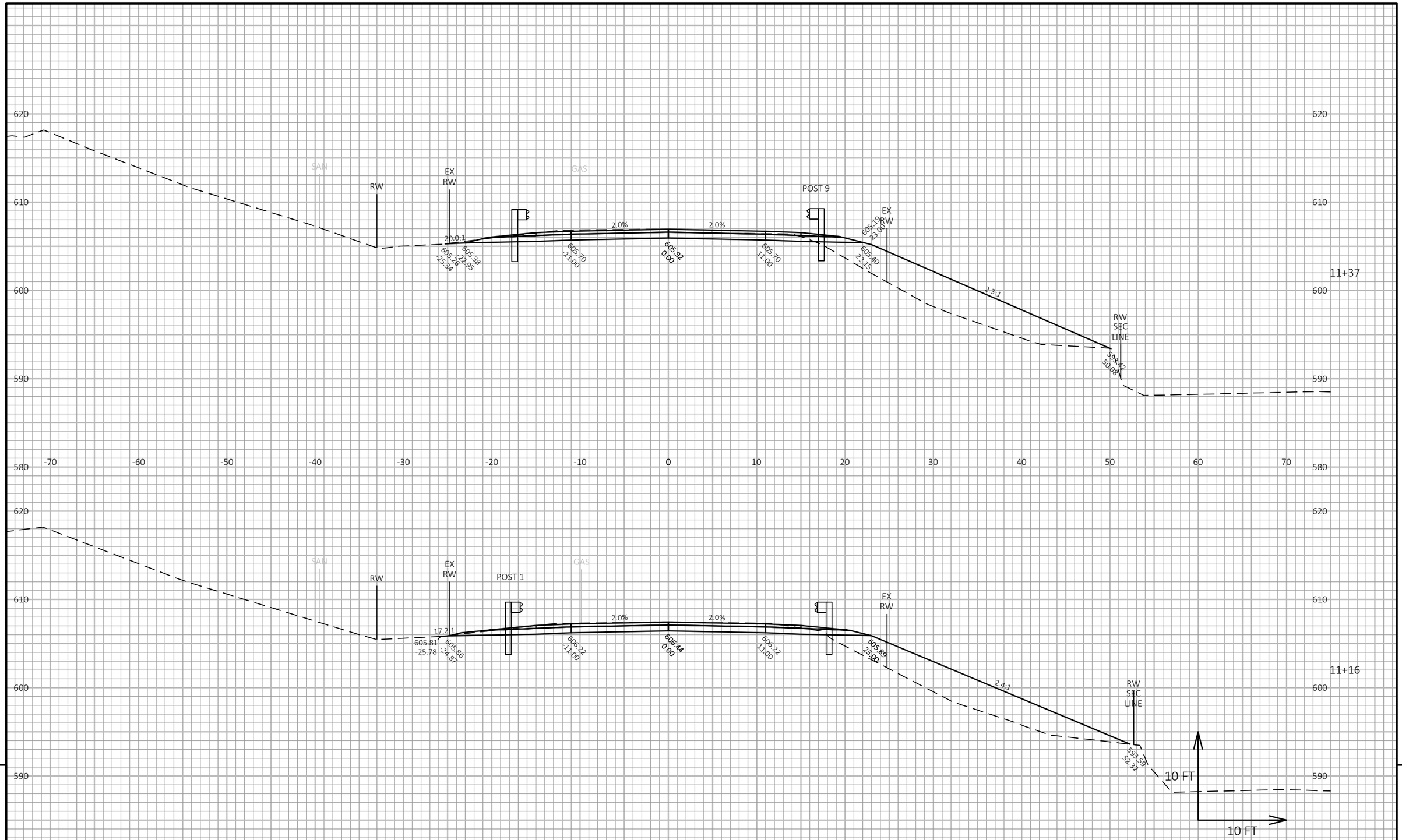


PROJECT NO: 3831-00-71	HWY: 13TH AVE	COUNTY: KENOSHA	CROSS SECTIONS:	SHEET 79	E

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\DESIGN\CORRIDORS\PROPOSED X-SEC 11-LANE.DWG
LAYOUT NAME - 090202_xs

PLOT DATE : 12/14/2018 11:27 AM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

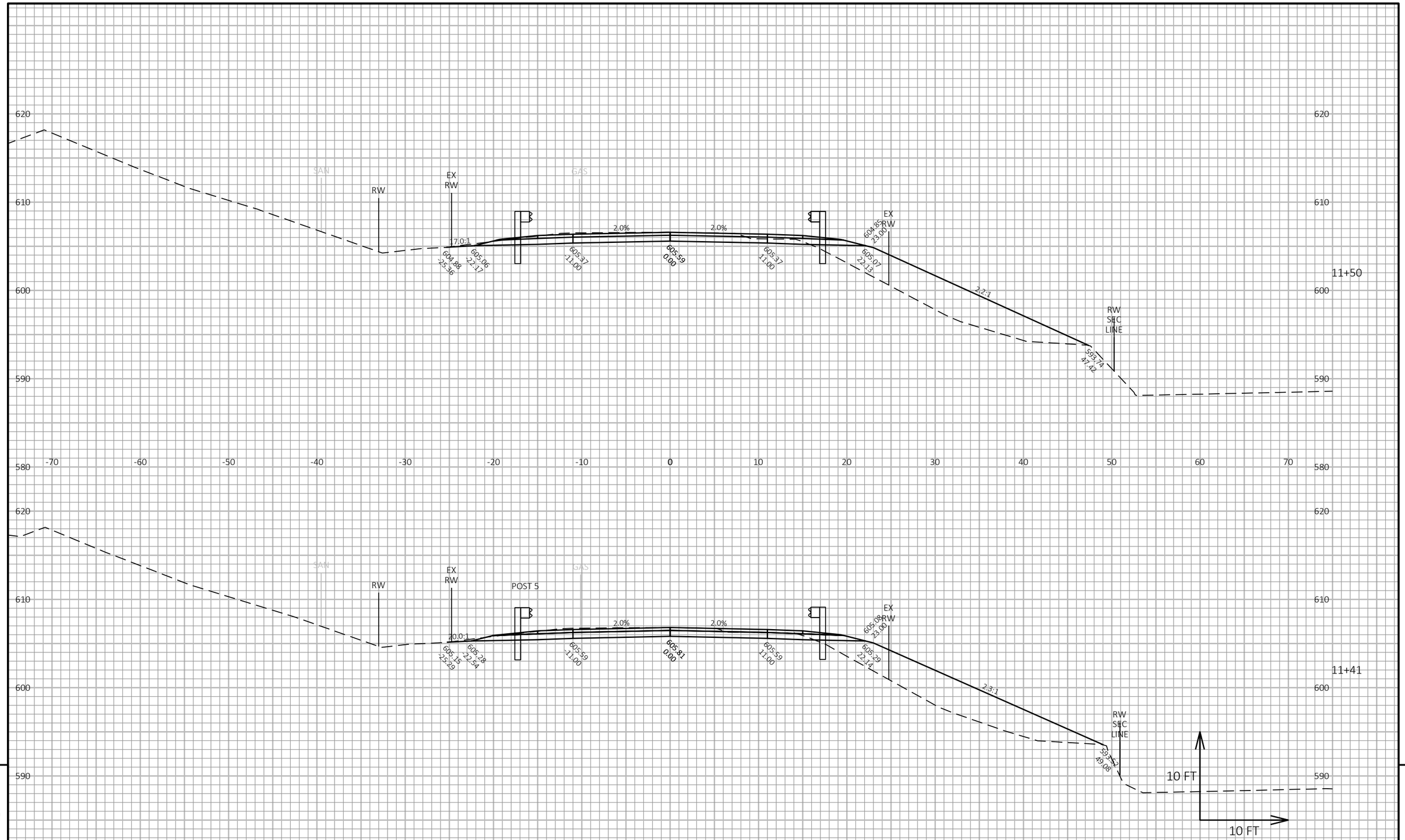


PROJECT NO: 3831-00-71	HWY: 13TH AVE	COUNTY: KENOSHA	CROSS SECTIONS:	SHEET 80	E

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\DESIGN\CORRIDORS\PROPOSED X-SEC 11-LANE.DWG
LAYOUT NAME - 090203_xs

PLOT DATE : 12/14/2018 11:27 AM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

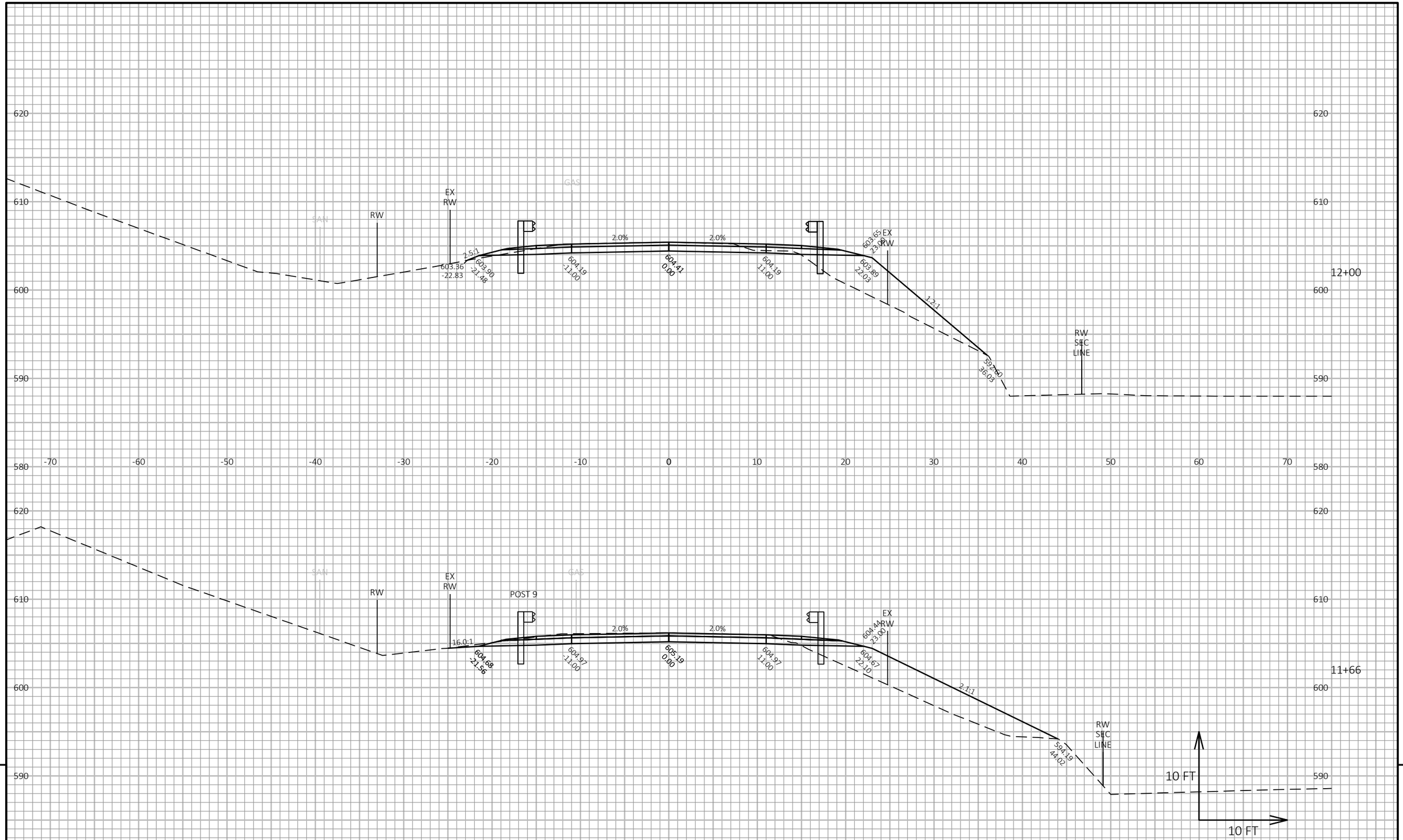


PROJECT NO: 3831-00-71	HWY: 13TH AVE	COUNTY: KENOSHA	CROSS SECTIONS:	SHEET 81	E

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\DESIGN\CORRIDORS\PROPOSED X-SEC 11-LANE.DWG
LAYOUT NAME - 090204_xs

PLOT DATE : 12/14/2018 11:27 AM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 3831-00-71	HWY: 13TH AVE	COUNTY: KENOSHA	CROSS SECTIONS:	SHEET 82	E

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\DESIGN\CORRIDORS\PROPOSED X-SEC 11-LANE.DWG
LAYOUT NAME - 090205_xs

PLOT DATE : 12/14/2018 11:28 AM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

STRUCTURE B-30-0141

EX RW

RW SEC LINE

RW

EX RW

13+50

610 600 590 580

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

GAS

STRUCTURE B-30-0141

RW SEC LINE

EX RW

RW

EX RW

13+00

610 600 590 580

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

GAS

STRUCTURE B-30-0141

SAN

EX RW

RW

EX RW

RW SEC LINE

12+50

10 FT

10 FT

610 600 590 580

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

9

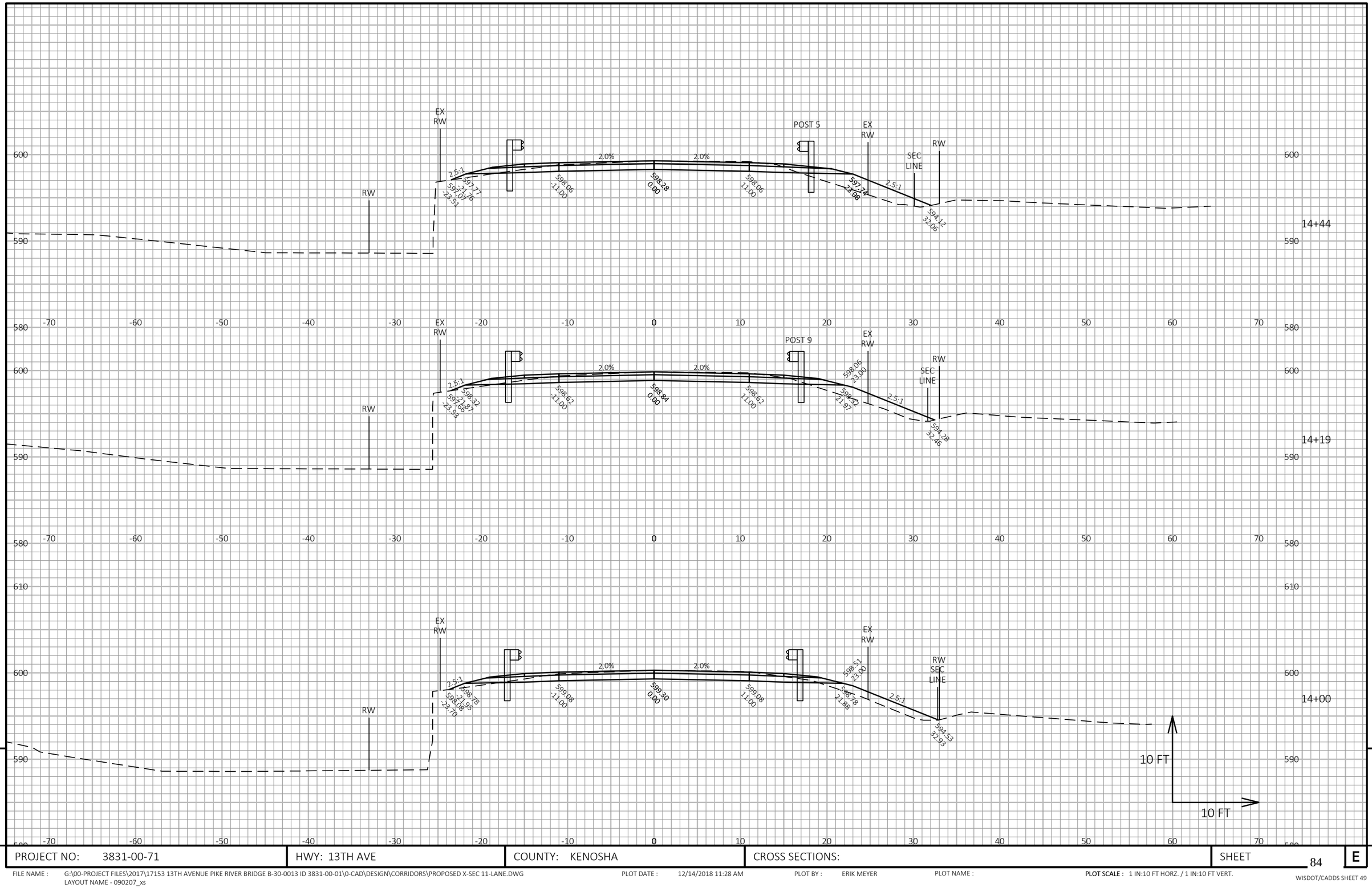
9

PROJECT NO: 3831-00-71	HWY: 13TH AVE	COUNTY: KENOSHA	CROSS SECTIONS:	SHEET 83	E

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\DESIGN\CORRIDORS\PROPOSED X-SEC 11-LANE.DWG
LAYOUT NAME - 090206_xs

PLOT DATE : 12/14/2018 11:28 AM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

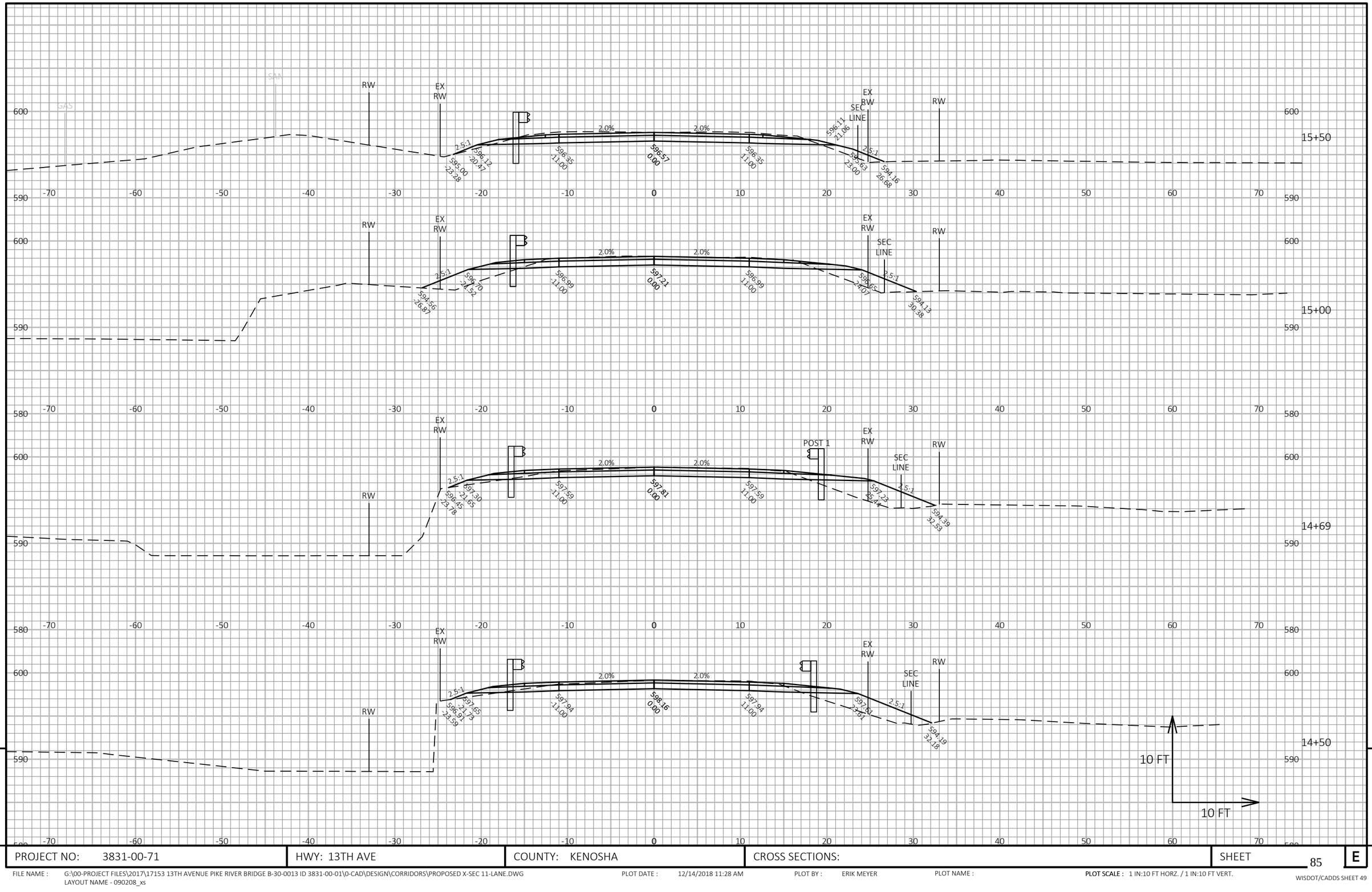
9

PROJECT NO: 3831-00-71	HWY: 13TH AVE	COUNTY: KENOSHA	CROSS SECTIONS:	SHEET 84	E

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\DESIGN\CORRIDORS\PROPOSED X-SEC 11-LANE.DWG
LAYOUT NAME - 090207_xs

PLOT DATE : 12/14/2018 11:28 AM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

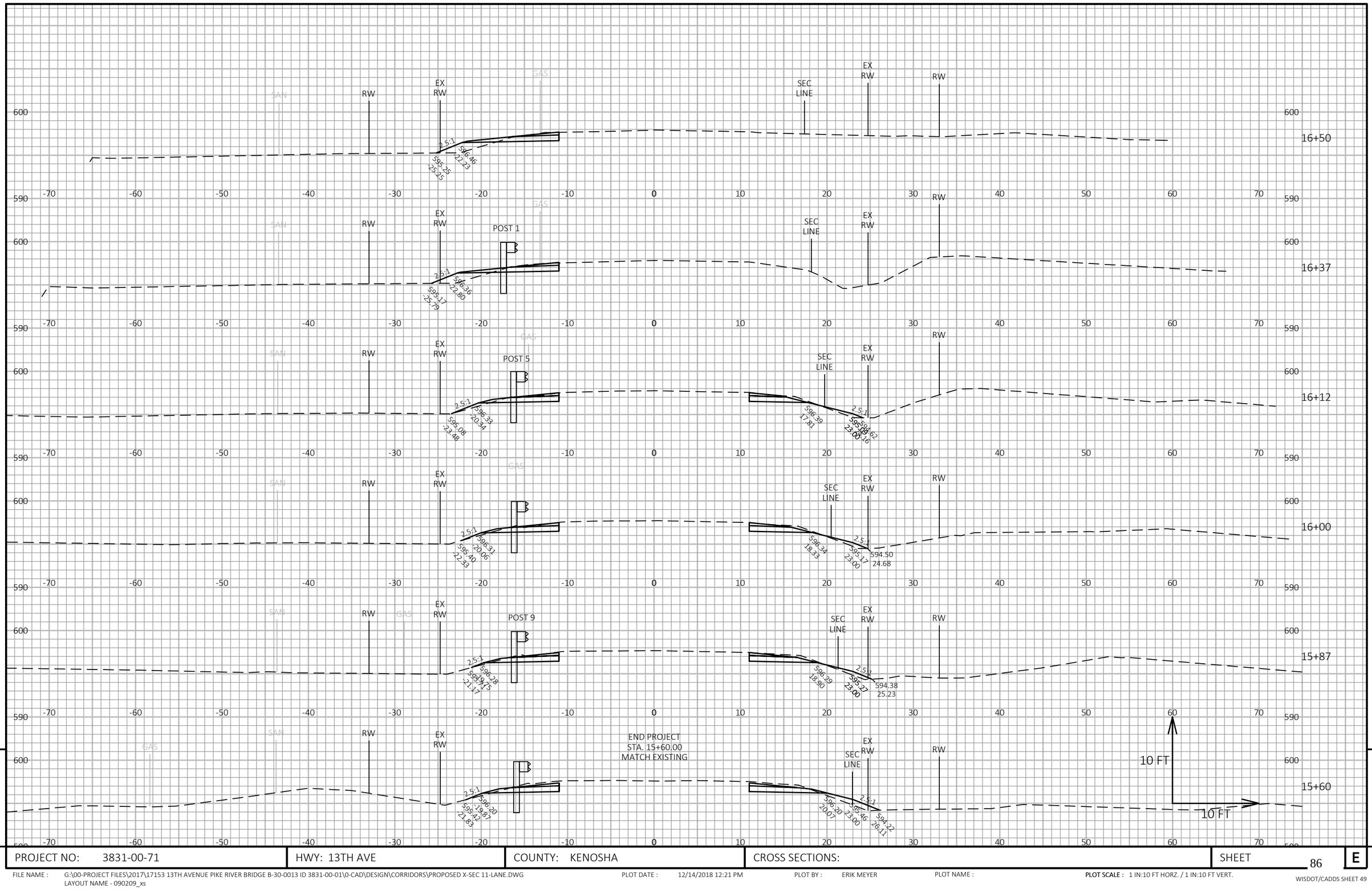
9

PROJECT NO: 3831-00-71	HWY: 13TH AVE	COUNTY: KENOSHA	CROSS SECTIONS:	SHEET 85	E

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\DESIGN\CORRIDORS\PROPOSED X-SEC 11-LANE.DWG
LAYOUT NAME - 090208_xs

PLOT DATE : 12/14/2018 11:28 AM PLOT BY : ERIK MEYER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 3831-00-71	HWY: 13TH AVE	COUNTY: KENOSHA	CROSS SECTIONS:	SHEET 86	E

FILE NAME : G:\00-PROJECT FILES\2017\17153 13TH AVENUE PIKE RIVER BRIDGE B-30-0013 ID 3831-00-01\0-CAD\DESIGN\CORRIDORS\PROPOSED X-SEC 11-LANE.DWG
LAYOUT NAME - 090209_xs

PLOT DATE : 12/14/2018 12:21 PM PLOT BY : ERIK MEYER PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov