SUP | OCTOBER 2026

PROJECT ID: 1196-00-60

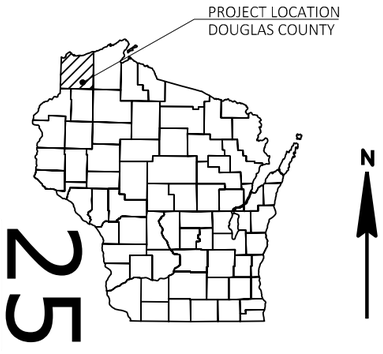
WITH: N/A

COUNTY: DOUGLAS

ORDER OF SHEETS

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

TOTAL SHEETS = 172



DESIGN DESIGNATION

A.A.D.T.	2026	=	5,910
A.A.D.T.	2046	=	7,280
D.H.V.		=	1,310
D.D.		=	61/39
T.		=	15.0%
DESIGN SPEED		=	70 MPH
ESALS		=	2,230,000

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 (300'EB')
- 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)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MINONG - SOLON SPRINGS

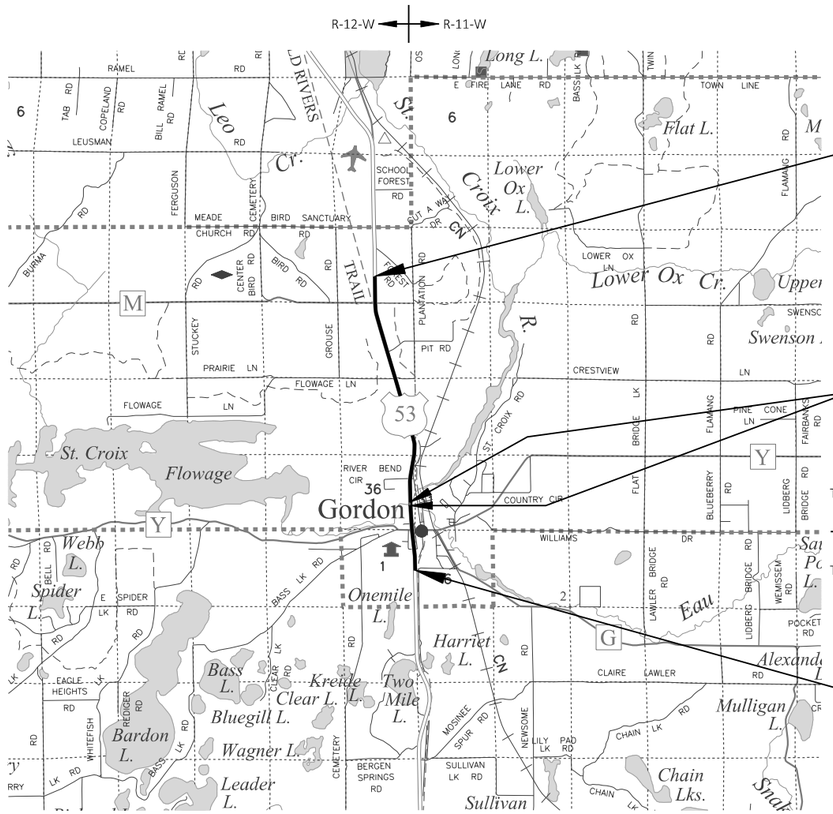
CTH Y TO CTH M (SB)

USH 53

DOUGLAS COUNTY

STATE PROJECT NUMBER
1196-00-60

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1196-00-60		



END PROJECT
STA 714+50 'SB'
X = 220,565.498
Y = 149,414.943

EXCEPTION TO NET CENTERLINE
STA 552+02 TO STA 553+72

BEGIN PROJECT
STA 506+50 'SB'
X = 223,367.414
Y = 128,986.108

LAYOUT

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 3.907 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), DOUGLAS COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

ORIGINAL PLANS PREPARED BY

MSA

146 North Central Ave, Marshfield WI 54449
(715) 384-2133 www.msa-ps.com

© MSA Professional Services, Inc.

WISCONSIN PROFESSIONAL ENGINEER
ALEX A PASSOW
E-46488
DE PERE
WI

DATE: 4/28/2026 Alex Passow

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	MSA PROFESSIONAL SERVICES, INC.
Designer	MSA PROFESSIONAL SERVICES, INC.
Project Manager	ADAM HETRICK
Regional Examiner	WISDOT
Regional Supervisor	JEFFREY OLSON

APPROVED FOR THE DEPARTMENT

DATE: Adam M. Hetrick, P.E. (Signature)

Digitally signed by Adam M. Hetrick, P.E.
DN: C=US, E=adam.hetrick@dot.wi.gov, O=Wisconsin Department of Transportation, OU=WDS Project Manager, CN="Adam M. Hetrick, P.E."
Date: 2026.04.29 08:30:14 -05'00'

E

STANDARD ABBREVIATIONS

AC	ACRE
AGG	AGGREGATE
	ANGLE
ASPH	ASPHALTIC
AC	ASPHALT CEMENT
ADT	AVERAGE DAILY TRAFFIC
B & B	BALLED AND BURLAPPED
BM	BENCH MARK
CB	CATCH BASIN
` OR C/L	CENTER LINE
C-C	CENTER TO CENTER
CONC	CONCRETE
CO	COUNTY
CTH	COUNTY TRUNK HIGHWAY
CY	CUBIC YARD
CULV	CULVERT
CP	CULVERT PIPE
CPRC	CULVERT PIPE
	REINFORCED CONCRETE
C & G	CURB AND GUTTER
	DEGREE OF CURVE
DHV	DESIGN HOUR VOLUME
DIA OR |	DIAMETER
DIST	DISTRICT
DWY	DRIVEWAY
	EAST
	EAST GRID COORDINATE
EB	EASTBOUND
ELEC	ELECTRIC
EL OR ELEV	ELEVATION
EMB	EMBANKMENT
EW	ENDWALL
ESALS	EQUIVALENT SINGLE
	AXLE LOADS
EXC	EXCAVATION
EBS	EXCAVATION BELOW
	SUBGRADE
EXIST	EXISTING
EXP	EXPANSION
F-F	FACE TO FACE
FERT	FERTILIZER
FE	FIELD ENTRANCE
F/L	FLOW LINE
FT	FOOT
GN	GRID NORTH
HR	HANDICAP RAMP
HT	HEIGHT
CWT	HUNDREDWEIGHT
HYD	HYDRANT
IN DIA	INCH DIAMETER
INL	INLET
ID	INSIDE DIAMETER
I	INTERSECTION ANGLE
IE	INVERT ELEVATION
IP	IRON PIPE OR PIN
JCT	JUNCTION
L	LENGTH OF CURVE
LF	LINEAR FOOT
LC	LONG CHORD OF CURVE
LCB	LONG CHORD BEARING
LS	LUMP SUM
MH	MANHOLE
N	NORTH
Y	NORTH GRID COORDINATE
OE	OUTLET ELEVATION
OL	OUT LOT
OD	OUTSIDE DIAMETER
OH	OVERHEAD LINES
PAVT	PAVEMENT
PLE	PERMANENT LIMITED EASEMENT
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PCC	PORTLAND CEMENT CONCRETE
LB	POUND
PE	PRIVATE ENTRANCE
R OR RAD	RADIUS
RR	RAILROAD
R	RANGE
~ OR R/L	REFERENCE LINE
REQD	REQUIRED
RT	RIGHT
R / W	RIGHT-OF-WAY
RD	ROAD
SALV	SALVAGED
SAN	SANITARY SEWER
SECT	SECTION
SHLDR	SHOULDER
SW	SIDEWALK
S	SOUTH
SB	SOUTHBOUND
SPECS	SPECIFICATIONS
SQ	SQUARE
SF OR SQ FT	SQUARE FEET
SY	SQUARE YARD
SSPRC	STORM SEWER
	PIPE REINFORCED CONCRETE
STD	STANDARD
SDD	STANDARD DETAIL DRAWINGS
STH	STATE TRUNK HIGHWAYS
STA	STATION
SS	STORM SEWER
T	TANGENT
TEL	TELEPHONE
TEMP	TEMPORARY
TLE	TEMPORARY LIMITED EASEMENT
T	TON
TC	TOP OF CURB
TN	TOWN
TRANS	TRANSITION
T	TRUCKS (percent of)
TYP	TYPICAL
UNCL	UNCLASSIFIED
USH	UNITED STATES HIGHWAY
VAR	VARIABLE
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		2-6	6 & OVER	0-2	2-6	6 & OVER
MEDIAN STRIP TURF	0.19	0.20	0.24	0.19	0.22	0.26	0.20	0.23	0.30	0.20	0.25 0.32	0.30 0.40
SIDE SLOPE TURF			0.25			0.27			0.28			0.30 0.38
PAVEMENT:	0.40 - 0.60											
ASPHALT:	0.70 - 0.95											
CONCRETE:	0.80 - 0.95											
BRICK:	0.70 - 0.80											
DRIVES, WALKS:	0.75 - 0.85											
ROOFS:	0.75 - 0.95											
GRAVEL ROADS, SHOULDERS	0.40 - 0.60											

TOTAL PROJECT AREA = 76.024 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.28 ACRES

EROSION CONTROL NOTES

RUNOFF COEFFICIENTS FOR THIS PROJECT: EXISTING SIDE SLOPES 0.30, PROPOSED SIDE SLOPES 0.30, EXISTING PAVEMENT 0.95, PROPOSED PAVEMENT 0.95.

SECTION 2 ORDER

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
PLAN DETAILS
PAVEMENT MARKINGS
TRAFFIC CONTROL

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES
AMY CRONK
810 W. MAPLE STREET
SPOONER, WI 54801
PHONE: (715) 635-4229
EMAIL: AMY.CRONK@WISCONSIN.GOV

DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
ALEX PASSOW, PE
146 NORTH CENTRAL AVE
MARSHFIELD, WI 54449
PHONE: (715) 304-0401
EMAIL: APASSOW@MSA-PS.COM

GENERAL NOTES

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE ARE UTILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO UTILITIES THAT HAVE FACILITIES IN THE AREA.

THE ROADWAY CENTERLINE SHOWN ON THESE PLANS IS FOR STATIONING REFERENCE ONLY. THE PROPOSED ROADWAY TO FOLLOW THE EXISTING CENTERLINE.

R/W APPROXIMATED ON PLAN SHEETS BASED ON AS-BUILTS\GIS DATA.

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

AS-BUILTS

PROJECT: 1193-06-71 (1986)
PROJECT: 1198-01-83 (1997)
PROJECT: 1198-01-91 (1997)
PROJECT: 1198-01-96 (1998)
PROJECT: 1190-40-71 (2000)
PROJECT: 1196-00-77 (2014)
PROJECT: 1196-00-63 (2020)

COMMUNICATIONS

SPECTRUM
CHAD LAWRENCE
640 GARFIELD AVE
DULUTH, MN 55802
PHONE: (218) 529-8042 (OFFICE)
(218) 241-1095 (MOBILE)
EMAIL: chad.lawrence@charter.com
Ryan.Nelson@charter.com

BRIGHTSPEED NW WI
MICHAEL COUGHLIN
135 N 21ST STREET
SUPERIOR, WI 54880
PHONE: (980) 376-1865 (OFFICE)
(218) 264-9866 (MOBILE)
EMAIL: MICHAEL.COUGHLIN@BRIGHTSPEED.COM

ELECTRICITY

DAHLBERG LIGHT AND POWER COMPANY
JAMES DAHLBERG
9221 E MAIN
P.O. BOX 300
SOLON SPRINGS, WI 54873-0300
PHONE: (715) 378-2205
EMAIL: jimdahlberg@dahlberglightandpower.com

ELECTRICITY - TRANSMISSION

ATC MANAGEMENT, INC.
DOUG VOSBERG
2489 RINDEN ROAD
COTTAGE GROVE, WI 53527
PHONE: (608) 877-7650
EMAIL: DVOSBERG@ATCLLC.COM

GAS/PETROLEM

ENBRIDGE ENERGY
WILL SUMNER
10 BARDON AVENUE
SUPERIOR, WI 54880
PHONE: (218) 390-4832
EMAIL: WILLIAM.SUMNER@ENBRIDGE.COM

SANITARY SEWER

GORDON SANITARY DISTRICT #1
CODY EAGLE
P.O. BOX 68
GORDON, WI 54838
PHONE: (715) 376-2693 (OFFICE)
(218) 626-7916 (MOBILE)
EMAIL: TOWNOFGORDONSUPERVISOR2@GMAIL.COM

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

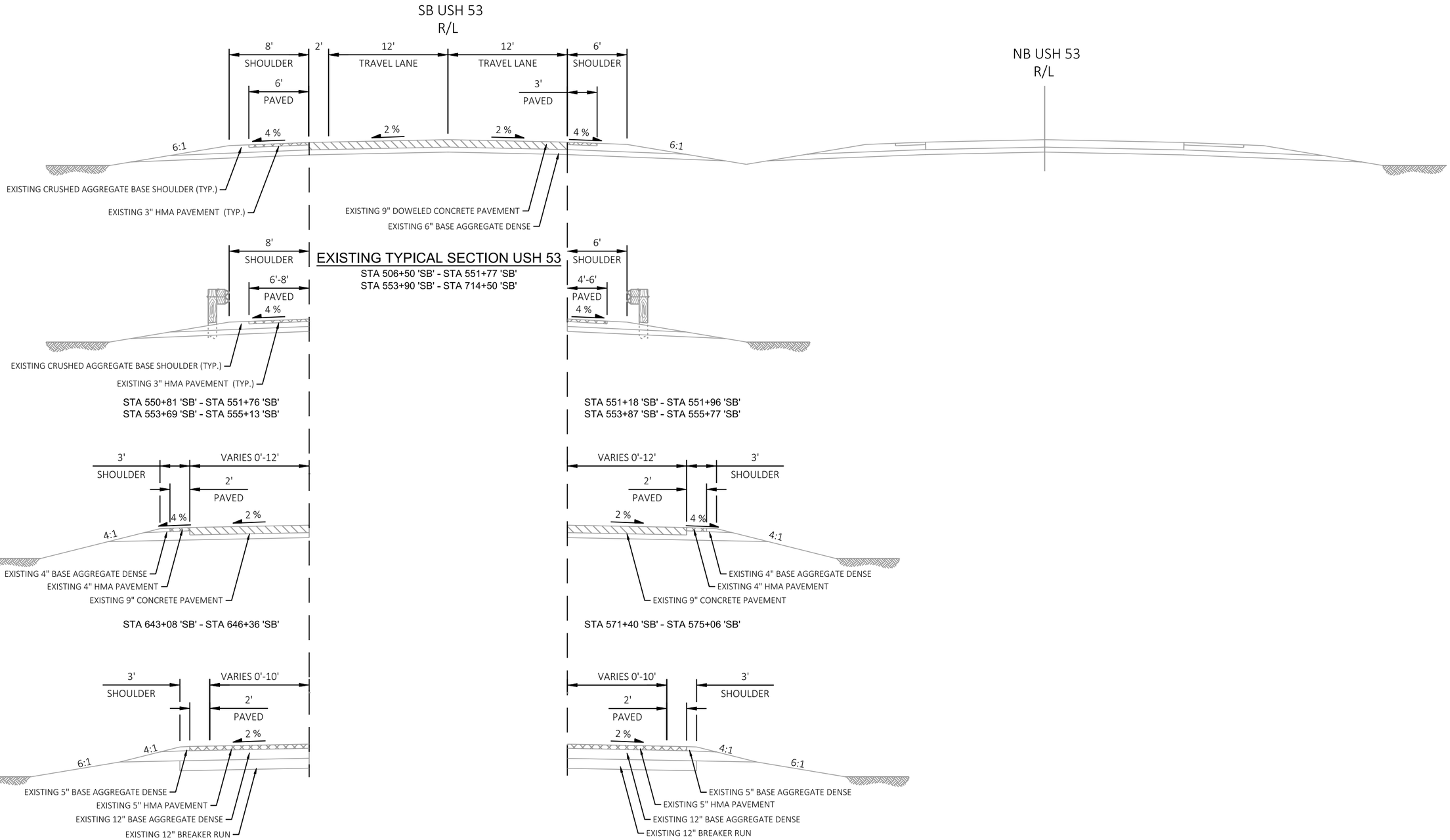
2

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\020201-PO.DWG
LAYOUT NAME - 020201-po

PLOT DATE : 4/24/2026 1:35 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1:1600

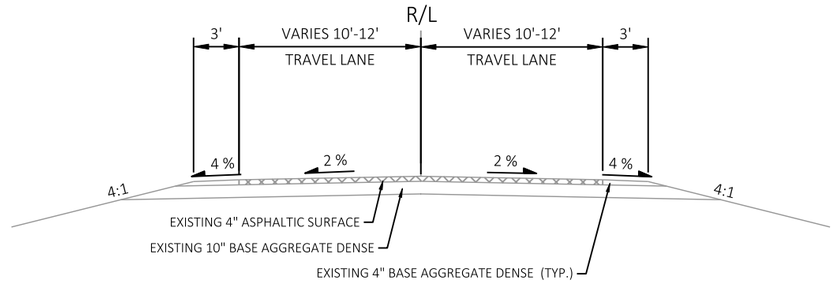
2



PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET 4	E

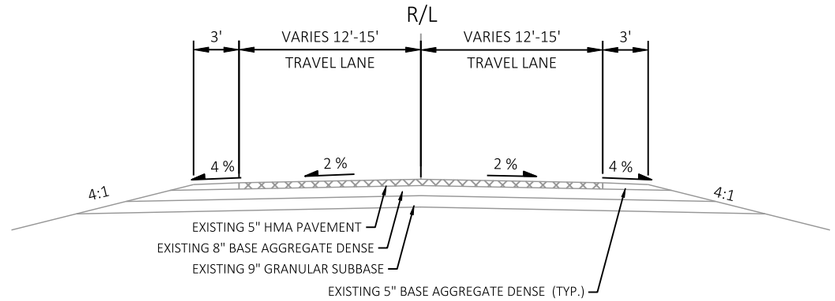
FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020301-TS
PLOT DATE : 4/29/2026 11:00 AM
PLOT BY : SHAWN DOLENS
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2



EXISTING TYPICAL SECTION SIDE ROADS

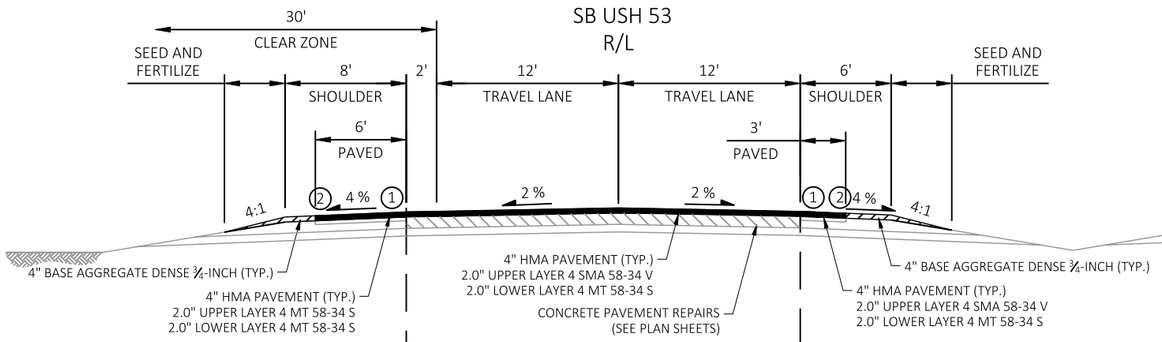
SNOWBERRY LN
SPRUCE DR
RIVERBEND CIR
E. FLOWAGE LN
CTH M



EXISTING TYPICAL SECTION SIDE ROADS

CTH Y

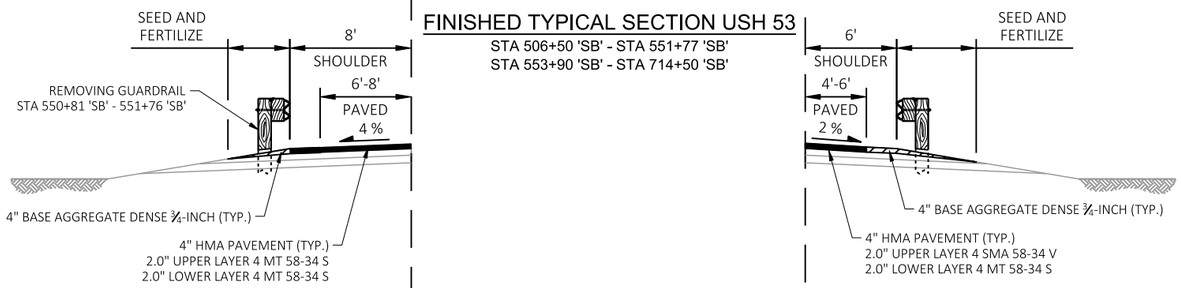
PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET 5	E



SB USH 53
R/L

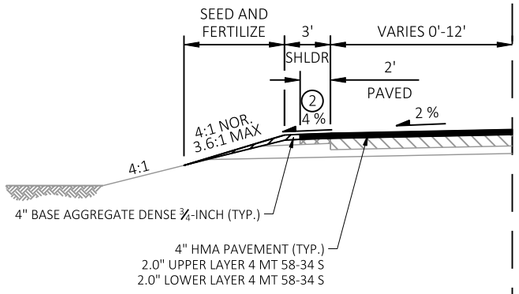
FINISHED TYPICAL SECTION USH 53

STA 506+50 'SB' - STA 551+77 'SB'
STA 553+90 'SB' - STA 714+50 'SB'

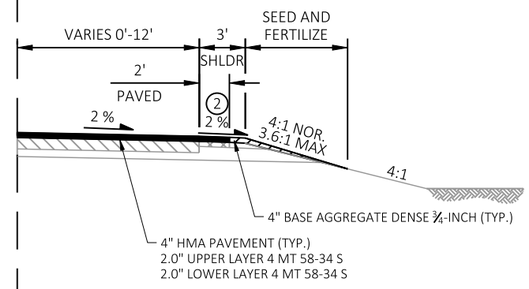


STA 550+81 'SB' - STA 551+70 'SB'
STA 553+90 'SB' - STA 555+13 'SB'

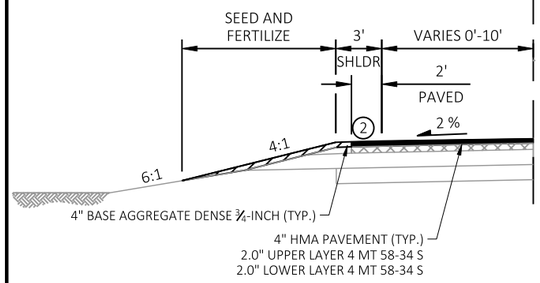
STA 551+18 'SB' - STA 551+70 'SB'
STA 553+90 'SB' - STA 555+77 'SB'



STA 643+08 'SB' - STA 646+36 'SB'

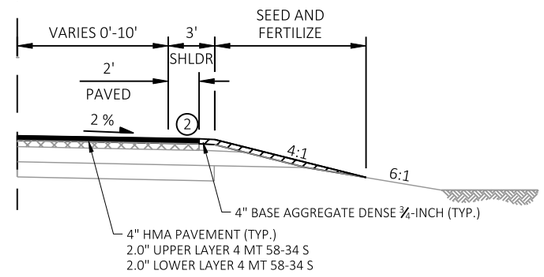


STA 571+40 'SB' - STA 575+06 'SB'

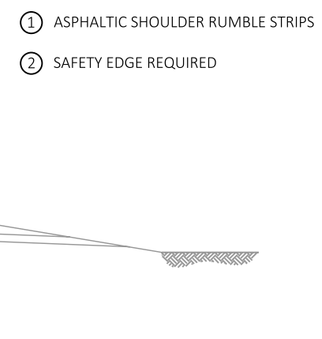


STA 539+62 'SB' - STA 542+74 'SB'
STA 697+12 'SB' - STA 700+12 'SB'

FINISHED TYPICAL TURN LANES



STA 527+95 'SB' - STA 536+29 'SB'
STA 697+08 'SB' - STA 700+38 'SB'

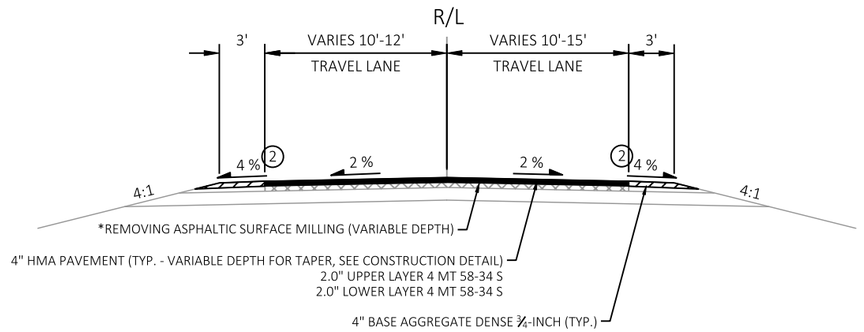


NO PROPOSED IMPROVEMENTS ON NB USH 53
EXCEPT FOR THE INSIDE SHOULDER IMPROVEMENTS
BETWEEN STA 548+47 'NB' - STA 552+00 'NB' LT

NOTE:
USH 53 NB INSIDE SHOULDER IMPROVEMENTS BETWEEN STA 548+47 'NB' - STA 552+00 'NB' LT CONSISTS OF:
- REMOVING ASPHALTIC SURFACE
- PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
- 2.0" UPPER LAYER 4 MT 58-34 S
- 2.0" LOWER LAYER 4 MT 58-34 S

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET 6	E

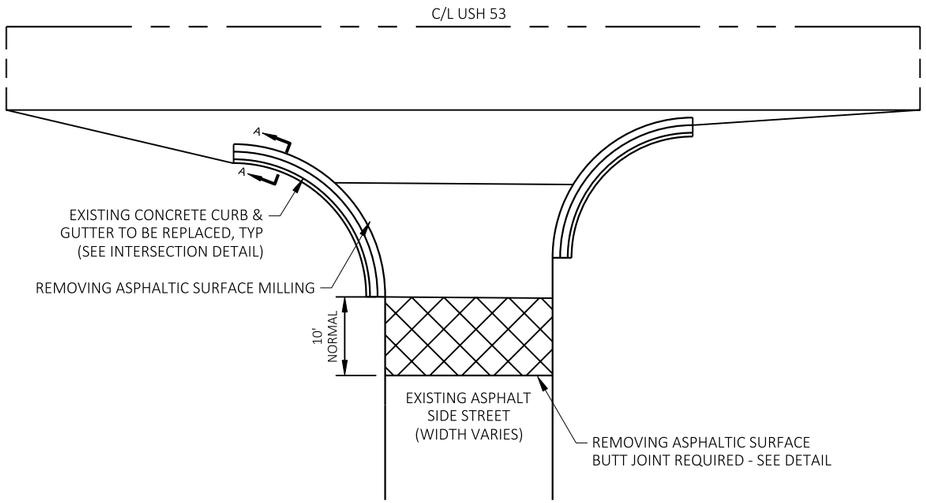
2 SAFETY EDGE REQUIRED



FINISHED TYPICAL SECTION SIDE ROADS

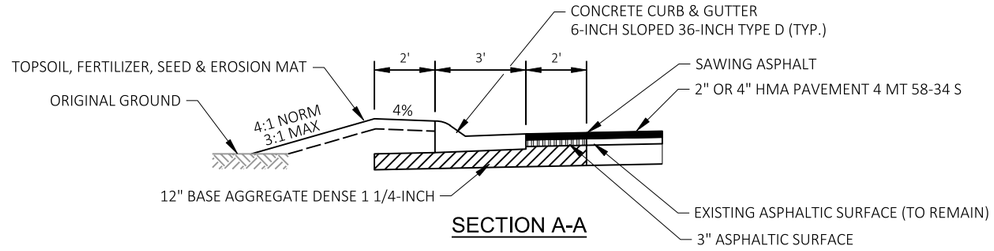
SNOWBERRY LN
*CTH Y
SPRUCE DR
RIVERBEND CIR
*E. FLOWAGE LN
*CTH M

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	TYPICAL SECTIONS	SHEET 7	E



RURAL ASPHALTIC SURFACE SIDE ROAD DETAIL

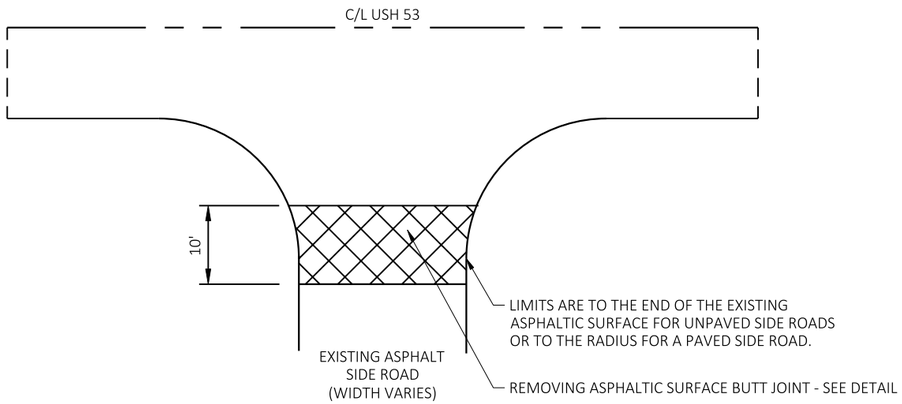
SIDE ROAD WITH CURB AND GUTTER



SECTION A-A

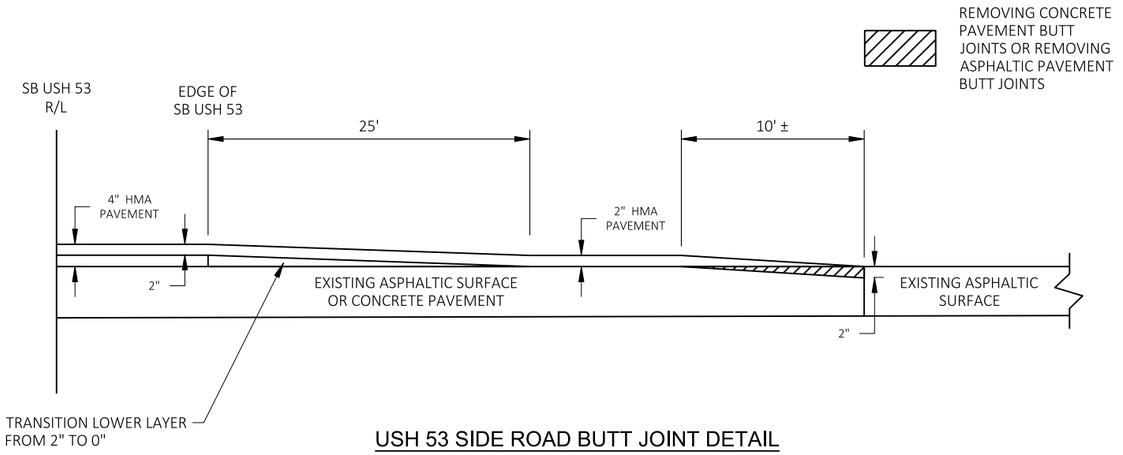
REPLACEMENT CURB & GUTTER SIDE ROADS

NOTE: GRADING FROM 2' IN FRONT OF CURB & GUTTER TO SLOPE INTERCEPT



RURAL ASPHALTIC SURFACE SIDE ROAD DETAIL

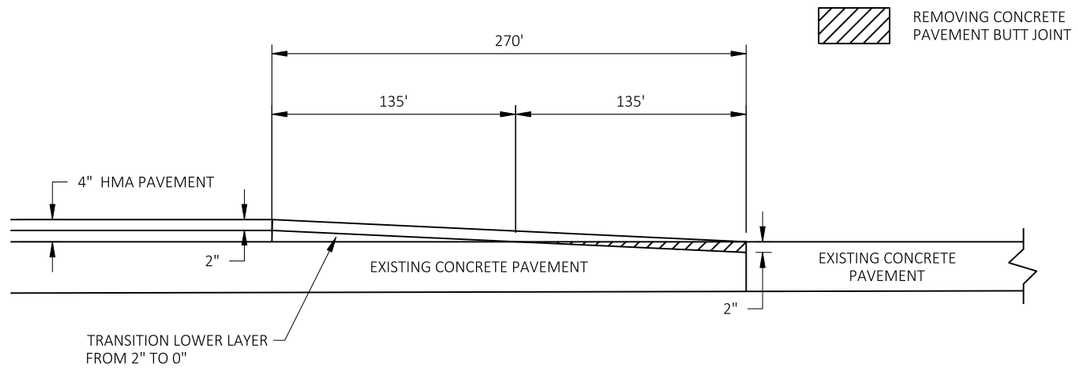
SIDE ROAD WITH NO CURB AND GUTTER



USH 53 SIDE ROAD BUTT JOINT DETAIL

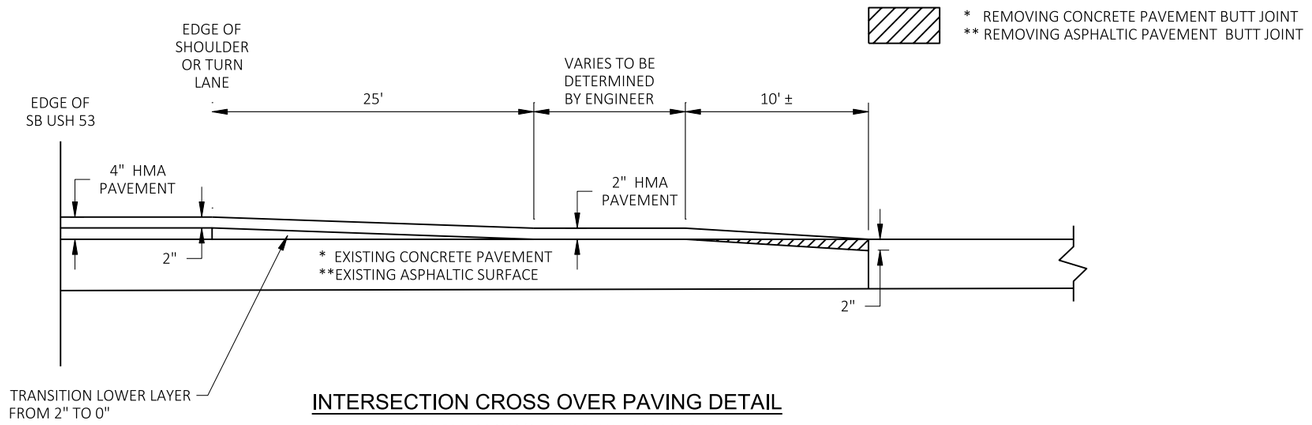
* EXACT DIMENSIONS TO BE DETERMINED
BY ENGINEER IN THE FIELD

2



USH 53 MAINLINE BUTT JOINT DETAIL

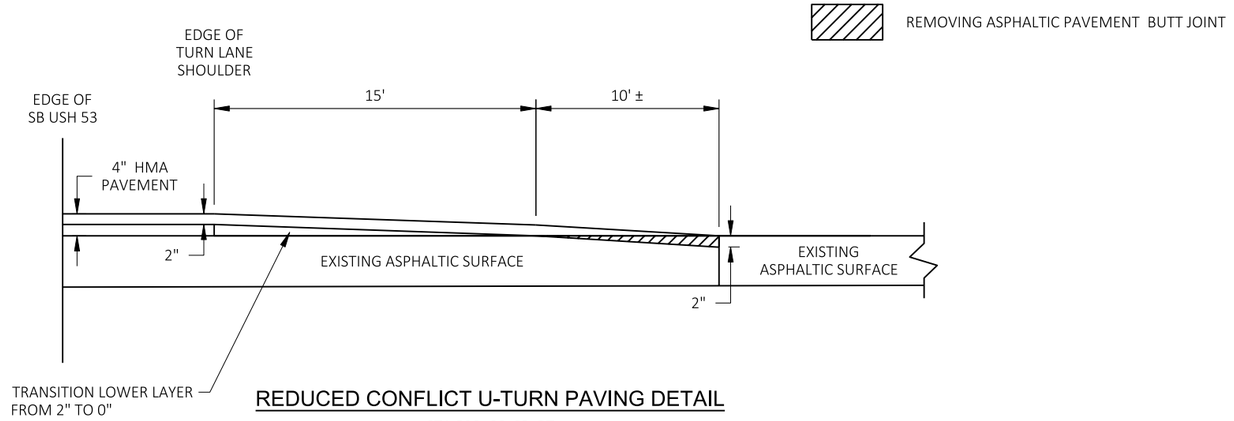
* EXACT DIMENSIONS TO BE DETERMINED
BY ENGINEER IN THE FIELD



INTERSECTION CROSS OVER PAVING DETAIL

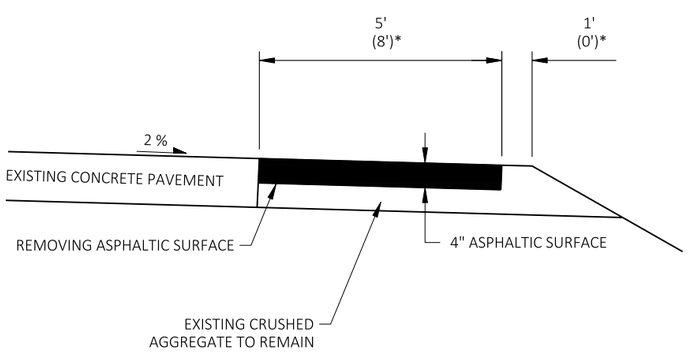
** STA 521+32 'SB' (SNOWBERRY LN CROSS OVER)
* STA 570+60 'SB' (E. RIVER BEND CR CROSS OVER)
** STA 641+88 'SB' (E. FLOWAGE LN CROSS OVER)
** STA 661+18 'SB' (PIT DR CROSS OVER)
* STA 696+42 'SB' (CTH M CROSS OVER)

2



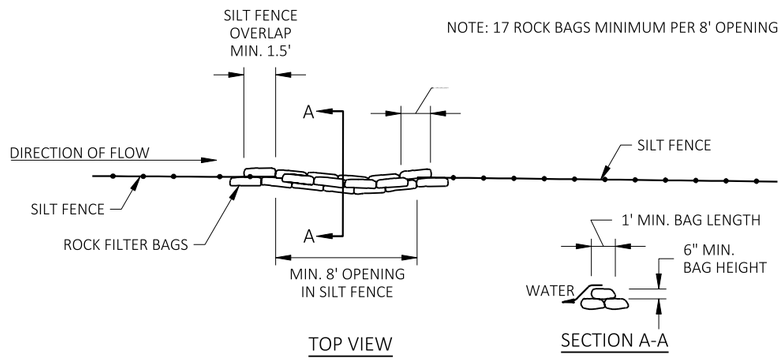
REDUCED CONFLICT U-TURN PAVING DETAIL

STA 528+00 'SB' RT
STA 541+30 'SB' RT



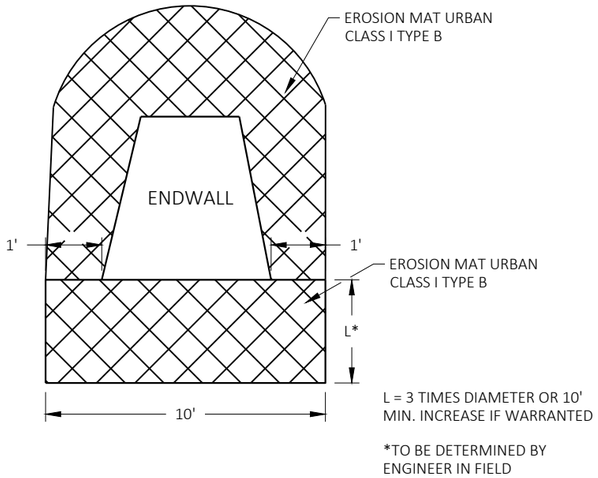
TEMPORARY SHOULDER WIDENING DETAIL

* (OUTSIDE LANE DIMENSION)
STAGE 1A - STA 549+50 'SB' - 562+34 'SB' RT
STAGE 1B - STA 552+00 'SB' - 553+62 'SB' LT

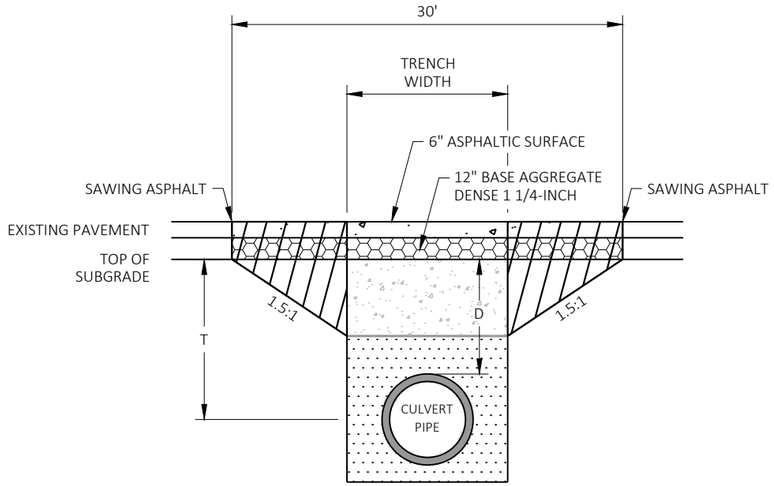


ROCK BAGS USED FOR SILT FENCE RELIEF

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CONSTRUCTION DETAILS	SHEET 10	E



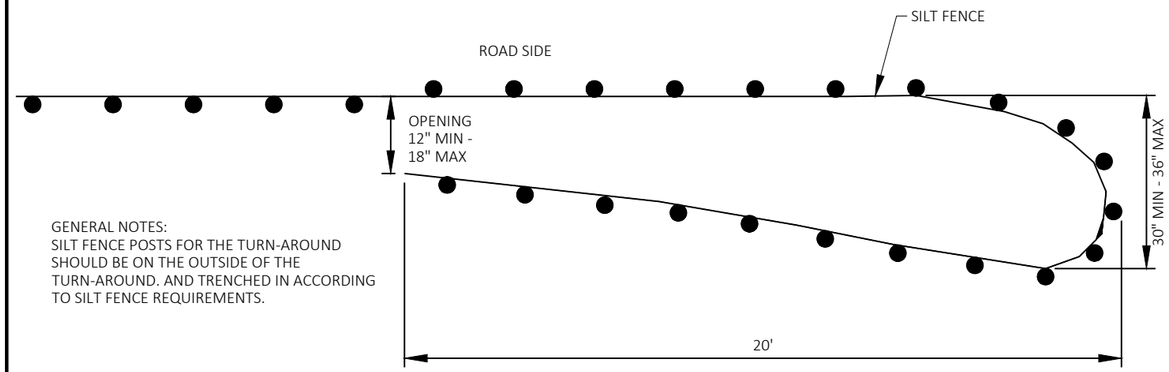
EROSION CONTROL AT PIPE ENDS



TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.

CULVERT REPLACEMENT DETAIL

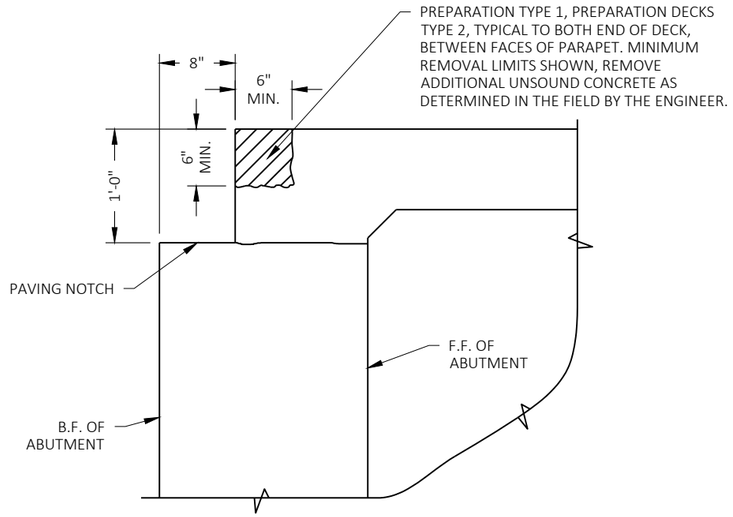
CONDUCT CULVERT PIPE REPLACEMENTS PRIOR TO MAINLINE
OR SIDE ROAD HMA PAVEMENT OVERLAYS.



PLAN VIEW

EXCLUSION SILT FENCE TURN-AROUND

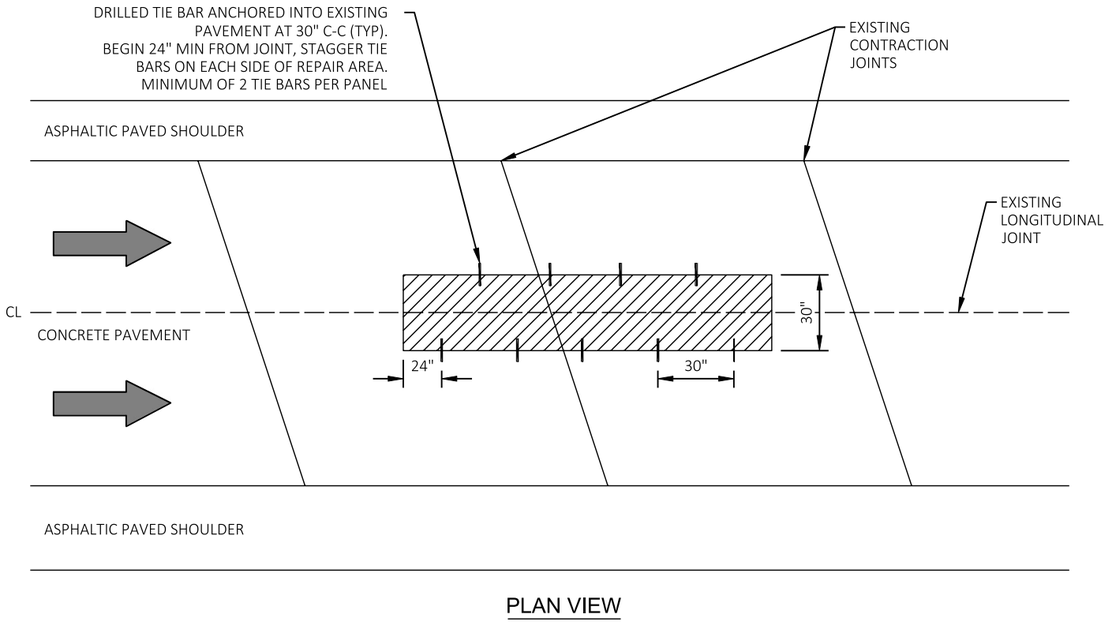
REQUIRED AT ALL SILT FENCE LOCATIONS



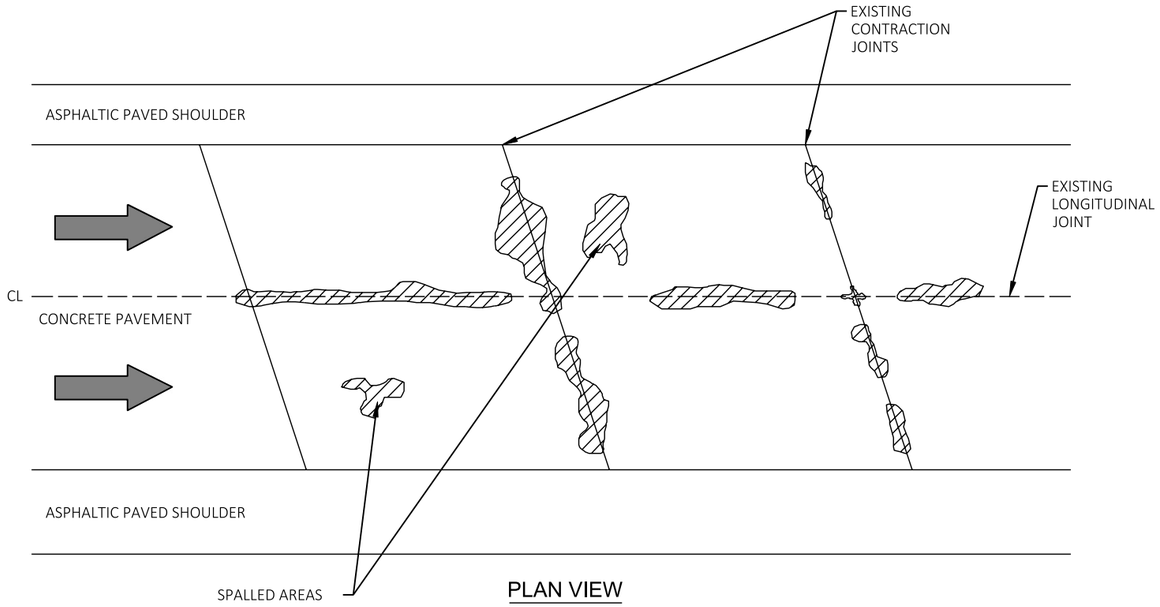
EDGE OF DECK REPAIR

B-16-79

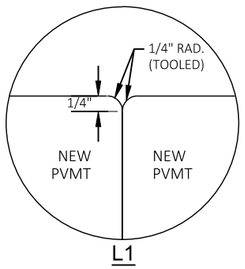
PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CONSTRUCTION DETAILS	SHEET 11	E



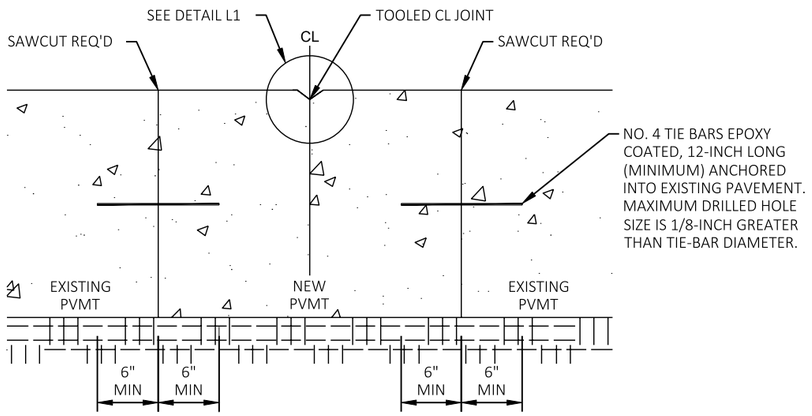
PLAN VIEW



PLAN VIEW



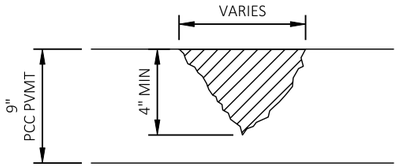
L1



SECTION VIEW

SPECIAL CONCRETE PAVEMENT CENTERLINE JOINT REPAIR

NOTE
LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.



REPAIR AREAS

NOTES
1. REMOVE ALL CONCRETE, ASPHALT, AND ANY UNSOUND MATERIAL FROM TRAVERSE AND LONGITUDINAL CRACKS AS WELL AS ANY RANDOM CRACKS. LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN IN THE FIELD.
2. ASPHALTIC SURFACE SHALL BE PLACED IN THE JOINT REPAIR AREA. PATCHING SHALL BE COMPACTED IN LIFTS (2 LIFTS MINIMUM) UNTIL FLUSH WITH SURFACE OF THE CONCRETE, ASPHALTIC SURFACE PAID SEPARATELY FROM THIS ITEM.
3. DEPTH VARIES FROM A MINIMUM DEPTH OF 4 INCHES TO A FULL DEPTH JOINT AS CONDITIONS DICTATE.

PREPARE FOUNDATION FOR ASPHALTIC PAVING (1196-00-60)

CLEANING AND REPAIRING DISTRESSED CONCRETE PAVEMENT AREAS

2

2

LEGEND

- SENSITIVE AREA
- EROSION MAT URBAN CLASS I TYPE B
- SAWING ASPHALT
- SAWING CONCRETE
- SLOPE INTERCEPT
- CULVERT PIPE CHECK
- SILT FENCE
- SURFACE WATER FLOW
- ROCK BAGS
- INLET PROTECTION

CTH Y

APPROX. R/W

APPROX. R/W

BUTT JOINT REQUIRED
(SEE DETAIL)

1037.49

CULVERT
STA. 534+35 'SB'
EXISTING 16" CMCP (TO REMAIN)
1 EA - CLEANING CULVERT PIPE

12' ASPH CE

STA. 534+14.37, 64.00' LT
40.36' RAD. TO FLANGE

1037.86

CONCRETE CURB AND GUTTER
6-INCH SLOPED 36-INCH TYPE D

EXCLUSION SILT FENCE
TURN-AROUND (TYP.)
SEE CONSTRUCTION DETAIL

1.5%

1038.08

1038.49

STA. 535+46.95, 83.94' LT
60.25' RAD. TO FLANGE

CONCRETE CURB AND GUTTER
6-INCH SLOPED 36-INCH TYPE D

CP 25

ASPHALTIC FLUMES

0.5%

CULVERT 16053086773
STA. 534+75 'SB'
EXISTING 24" CMCP (TO REMAIN)
CLEANING CULVERT PIPE

BURIED COMMUNICATIONS
(SPECTRUM)

1037.02

1037.27

N

USH 53 SB

534 'SB'

535 'SB'

536 'SB'

BM 26

OVERHEAD ELECTRICITY
(DAHLBERG LIGHT AND
POWER COMPANY)

BURIED SANITARY SEWER
(GORDON SANITARY DISTRICT #1)

BENCH MARKS & CONTROL POINTS			
NO.	STATION	ELEV.	DESCRIPTION
26	534+67.40 'SB'	1037.77	BM / MAG NAIL, 30.21' RT
25	535+44.49 'SB'	1036.45	CP / IRON ROD, 62.73' LT

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN DETAILS	SHEET 13	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021201-pd

PLOT DATE : 4/29/2026 11:42 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:20 FT

2

LEGEND

- SENSITIVE AREA
- EROSION MAT URBAN CLASS I TYPE B
- SAWING ASPHALT
- SAWING CONCRETE
- SLOPE INTERCEPT
- CULVERT PIPE CHECK
- SILT FENCE
- SURFACE WATER FLOW
- ROCK BAGS
- INLET PROTECTION

N

CULVERT 16053086689
STA. 548+97 'SB'
EXISTING 24" RCCP (TO REMAIN)

APPROX. R/W

BURIED COMMUNICATIONS
(SPECTRUM)

REMOVE CONCRETE PAVEMENT (EXISTING APPROACH SLAB)
CONCRETE APPROACH SLAB

REMOVE CONCRETE PAVEMENT
REMOVING CURB & GUTTER
CONCRETE PAVEMENT 9-INCH
CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBTT
ADJUSTING INLET COVERS

WETLAND BOUNDARY (TYP.)

EXCLUSION SILT FENCE
TURN-AROUND (TYP.)
SEE CONSTRUCTION DETAIL

REMOVING
GUARDRAIL

B-16-79 (TO REMAIN)

CP 22

PI: 547+96.25 'SB'

PI: 548+25.00 'SB'

BM 20

FO FO FO FO FO FO FO FO FO FO FO FO FO

SIGN

547 'SB' 548 'SB' 549 'SB' USH 53 SB 550 'SB' 551 'SB' 552 'SB'

LANE EDGE
PAVED SHOULDER EDGE
GRAVEL SHOULDER EDGE

SLOPE INTERCEPT

POST 1
548+98.80 'NB', 20.03' LT

SS

POST 5
549+23.78 'NB', 19.04' LT

CULVERT 16053086690
STA. 547+90 'SB'
EXISTING 18" RCCP (TO REMAIN)

547+79.71 'SB', 56.29' LT

548 'NB' 549 'NB' 550 'NB' 551 'NB' 552 'NB'

548+47 'NB', 15' LT

BM 21

POST 9
549+48.75 'NB', 18.05' LT

BP: 547+89.98 'NB'

PI: 549+50.00 'NB'

REMOVING
GUARDRAIL

CULVERT
STA. 551+50 'SB'
EXISTING 24" CPCP (TO REMAIN)

CP 19

ST. CROIX RIVER

MGS GUARDRAIL 3
MGS THRIE BEAM TRANSITION
MGS GUARDRAIL TERMINAL EAT

REMOVE CONCRETE PAVEMENT
REMOVING CURB & GUTTER
CONCRETE PAVEMENT 9-INCH
CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBTT
ADJUSTING INLET COVERS

B-16-82 (TO REMAIN)

PREPARATION DECKS TYPE 1
PREPARATION DECKS TYPE 2
SAWING CONCRETE PAVEMENT DECK PREPARATION AREAS
CONCRETE MASONRY DECK REPAIR

WETLAND BOUNDARY (TYP.)

STA 548+47 'NB' - STA 552+00 'NB' LT CONSISTS OF:
- REMOVING ASPHALTIC SURFACE
- PREPARING FOUNDATION FOR ASPHALTIC SHOULDERS
- 2.0" UPPER LAYER HMA PAVEMENT 4 MT 58-34 S
- 2.0" LOWER LAYER HMA PAVEMENT 4 MT 58-34 S

APPROX. R/W

BENCH MARKS & CONTROL POINTS			
NO.	STATION	ELEV.	DESCRIPTION
22	547+74.40 'SB'	1021.10	CP / IRON ROD, 32.59' LT
21	549+22.44 'SB'	1023.70	BM / MAG NAIL, 59.62' RT
20	550+44.63 'SB'	1023.73	BM / MAG NAIL, 18.59' LT
19	551+74.61 'SB'	1023.35	CP / IRON ROD, 36.29' RT

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN DETAILS	SHEET 14	E

BENCH MARKS & CONTROL POINTS			
NO.	STATION	ELEV.	DESCRIPTION
18	554+36.00 'SB'	1023.29	CP/ IRON ROD, 36.47' RT
17	555+66.47 'SB'	1025.16	BM / MAG NAIL, 59.91' RT
16	556+73.48 'SB'	1025.89	BM / MAG NAIL, 12.39' RT
15	558+50.10 'SB'	1023.23	CP / IRON ROD, 35.61' LT

N

APPROX. R/W

REMOVE CONCRETE PAVEMENT (EXISTING APPROACH SLAB)
CONCRETE APPROACH SLAB

REMOVE CONCRETE PAVEMENT
CONCRETE PAVEMENT 9-INCH

MGS GUARDRAIL 3
MGS THRIE BEAM TRANSITION
MGS GUARDRAIL TERMINAL EAT

POST 1
554+86.57 'SB', 24.00' LT

POST 5
554+61.59 'NB', 23.06' LT

POST 9
554+36.60 'SB', 22.12' LT

555+26.57 'SB', 20.00' LT

SLOPE INTERCEPT

BURIED COMMUNICATIONS
(SPECTRUM)

EXCLUSION SILT FENCE
TURN-AROUND (TYP.)
SEE CONSTRUCTION DETAIL

B-16-79 (TO REMAIN)

CP 15

PI: 558+50.00 'SB'

556+05.67 'SB', 22.00' LT

'SB' 554 'SB' 555 'SB' USH 53 SB 556 'SB' 557 'SB' 558 'SB' 559 'SB'

557+80.08 'SB', 15.00' RT

PI: 553+00.00 'NB'

CP 18

SLOPE INTERCEPT

REMOVING
GUARDRAIL

BM 16

POST 1
557+30.08 'SB', 20.00' RT

POST 5
557+05.09 'SB', 19.06' RT

POST 9
556+80.11 'SB', 18.12' RT

558+49.17 'SB', 18.00' RT

LANE EDGE
PAVED SHOULDER EDGE
GRAVEL SHOULDER EDGE

REMOVE CONCRETE PAVEMENT
CONCRETE PAVEMENT 9-INCH

'NB' 554 'NB' 555 'NB' 556 'NB' 557 'NB' 558 'NB' 559 'NB'

BM 17

PREPARATION DECKS TYPE 1
PREPARATION DECKS TYPE 2
SAWING PAVEMENT DECK PREPARATION AREAS
CONCRETE MASONRY DECK REPAIR

MGS GUARDRAIL 3
MGS THRIE BEAM TRANSITION
MGS GUARDRAIL TERMINAL EAT

ST. CROIX RIVER

B-16-82 (TO REMAIN)

CULVERT 16053028725
STA. 555+56 'SB'
EXISTING 24" RCCP (TO REMAIN)

WETLAND BOUNDARY (TYP.)

APPROX. R/W

LEGEND

- SENSITIVE AREA
- EROSION MAT URBAN CLASS I TYPE B
- SAWING ASPHALT
- SAWING CONCRETE
- SLOPE INTERCEPT
- CULVERT PIPE CHECK
- SILT FENCE
- SURFACE WATER FLOW
- ROCK BAGS
- INLET PROTECTION

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN DETAILS	SHEET 15	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021203-pd

PLOT DATE : 4/29/2026 11:42 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

BENCH MARKS & CONTROL POINTS			
NO.	STATION	ELEV.	DESCRIPTION
13	567+08.31 'SB'	1029.14	BM / MAG NAIL, 16.72' RT
12	569+21.70 'SB'	1027.16	CP / IRON ROD, 58.91' LT
11	570+52.14 'SB'	1032.30	BM / MAG NAIL, 45.74' LT

N

APPROX. R/W

E. RIVER BEND CR.

APPROX. R/W

BUTT JOINT REQUIRED (SEE DETAIL)

CULVERT
STA 566+95 'SB'
EXISTING 24" RCCP (TO REMAIN)

BURIED COMMUNICATIONS
(SPECTRUM)

CP 12

BM 11

FO

USH 53 SB

566 'SB' 567 'SB' 568 'SB' 569 'SB' 570 'SB' 571 'SB'

BM 13

STA 567+40 'SB' RT
EOP = STA 567+38.5 'SB', 38.2' RT
IE (O) = 1025.35
REMOVING SMALL PIPE CULVERT
(EXISTING APRON ENDWALL AND 4' OF EXISTING PIPE)
APRON ENDWALL FOR CULVERT PIPE STEEL 18-INCH
CULVERT PIPE CORRUGATED STEEL 18-INCH
MARKERS CULVERT END

OVERHEAD ELECTRICITY
(DAHLBERG LIGHT AND
POWER COMPANY)

BURIED SANITARY SEWER
(GORDON SANITARY DISTRICT #1)

BURIED COMMUNICATIONS
(BRIGHTSPEED NW WI)

E. ACCESS RD.

OH

SAN

LEGEND

- SENSITIVE AREA
- EROSION MAT URBAN CLASS I TYPE B
- SAWING ASPHALT
- SAWING CONCRETE
- SLOPE INTERCEPT
- CULVERT PIPE CHECK
- SILT FENCE
- SURFACE WATER FLOW
- ROCK BAGS
- INLET PROTECTION

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN DETAILS	SHEET 16	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021204-pd

PLOT DATE : 4/29/2026 11:42 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

APPROX. R/W

BUTT JOINT REQUIRED (SEE DETAIL)

ASPHALTIC FLUMES

1058.19

E. FLOWAGE LN.

EXCLUSION SILT FENCE
TURN-AROUND (TYP.)
SEE CONSTRUCTION DETAIL

BURIED COMMUNICATIONS
(BRIGHTSPEED NW WI)

ASPHALTIC FLUMES

CONCRETE CURB AND GUTTER
6-INCH SLOPED 36-INCH TYPE D

STA. 641+65.10, 62.10' LT
39.76' RAD. TO FLANGE

1057.69

STA. 643+05.31, 82.71' LT
60.0' RAD. TO FLANGE

CONCRETE CURB AND GUTTER 6-INCH
SLOPED 36-INCH TYPE D

CULVERT 16053028878
STA 642+31 'SB'
EXISTING 24" CMCP (TO REMAIN)

BURIED COMMUNICATIONS
(SPECTRUM)

FO FO FO FO FO FO FO FO FO FO FO

ASPHALTIC FLUMES

BM 9

1058.44

1057.93

1057.70

1059.48

USH 53 SB

641 'SB'

642 'SB'

643 'SB'

15

15

CULVERT 16053086688
STA 641+88 'SB' RT
EOP = STA 641+49 'SB', 51.0' RT
IE (O) = 1053.47
EOP = STA 642+29 'SB', 51.4' RT
IE (I) = 1054.42
60 LF - EXISTING 18" CMCP
REMOVING SMALL PIPE
APRON ENDWALL FOR CULVERT PIPE STEEL 18-INCH
CULVERT PIPE CORRUGATED STEEL 18-INCH
MARKERS CULVERT END

LEGEND

- SENSITIVE AREA
- EROSION MAT URBAN CLASS I TYPE B
- SAWING ASPHALT
- SAWING CONCRETE
- SLOPE INTERCEPT
- CULVERT PIPE CHECK
- SILT FENCE
- SURFACE WATER FLOW
- ROCK BAGS
- INLET PROTECTION

BENCH MARKS & CONTROL POINTS			
NO.	STATION	ELEV.	DESCRIPTION
9	642+04.95 'SB'	1057.67	BM / MAG NAIL, 44.06' LT

2

LEGEND

- SENSITIVE AREA
- EROSION MAT URBAN CLASS I TYPE B
- SAWING ASPHALT
- SAWING CONCRETE
- SLOPE INTERCEPT
- CULVERT PIPE CHECK
- SILT FENCE
- SURFACE WATER FLOW
- ROCK BAGS
- INLET PROTECTION

NOTE: THE WILD RIVERS STATE TRAIL CROSSES USH 53 AT THE CTH M INTERSECTION. MAINTAIN ACCESS TO TRAIL USERS AT ALL TIMES.

N

APPROX. R/W

CTH M

BUTT JOINT REQUIRED (SEE DETAIL)

ASPHALTIC FLUMES

EXCLUSION SILT FENCE TURN-AROUND (TYP.) SEE CONSTRUCTION DETAIL

ASPHALTIC FLUMES

CP 101

STA. 697+16.38, 80.97' LT
59.94' RAD. TO FLANGE

1084.39

BURIED COMMUNICATIONS (SPECTRUM)

STA. 695+86.28, 61.31' LT
39.86' RAD. TO FLANGE

1084.42

CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D

1085.02

CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D

1085.44

1085.82

1085.65

PT: 695+20.61 'SB'

695 'SB'

696 'SB'

697 'SB'

698 'SB'

USH 53 SB

BUTT JOINT REQUIRED (SEE DETAIL)

BURIED COMMUNICATIONS (BRIGHTSPEED NW WI)

OVERHEAD ELECTRICITY (DAHLBERG LIGHT AND POWER COMPANY)

USH 53 MEDIAN CROSSOVER

BENCH MARKS & CONTROL POINTS			
NO.	STATION	ELEV.	DESCRIPTION
101	697+06.25 'SB	1084.35	CP / MONUMENT 8Q45, 75.06' LT

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN DETAILS	SHEET 18	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021206-pd
PLOT DATE : 4/29/2026 11:42 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

2

BEGIN PROJECT
STA 506+50 'SB'

N

505 'SB'

USH 53 SB

510 'SB'

515

MGLAG6

MWGWR6

MYGWR6

USH 53 NB

MATCH LINE STA 515+00 'SB'

MARKING LEGEND

MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MY6	MARKING LINE EPOXY 6-INCH (YELLOW)
MYGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
MWGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
MGLAG6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) & MARKING LINE GROOVED BLACK EPOXY 6-INCH (12.5' WHITE EPOXY LAGGED BY 12.5' BLACK EPOXY)
MWGWR10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MWGWRS10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (3' DASH 9' GAP) (WHITE)
MYDIA12	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
MWYLD18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)
MW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
MWAR2	MARKING ARROW EPOXY (TYPE 2, WHITE)
MWWD	MARKING WORD EPOXY (WHITE)

SNOWBERRY LN.

MDY6

N

MATCH LINE STA 515+00 'SB'

MWGWR6

'SB'

520 'SB'

USH 53 SB

525 'SB'

530

MGLAG6

MWGWR6

STA 527+39 'SB'

MYGWR6

MYGWR6

MWAR2

MYDIA12

MWWD

MYGWR6

MWGWR10

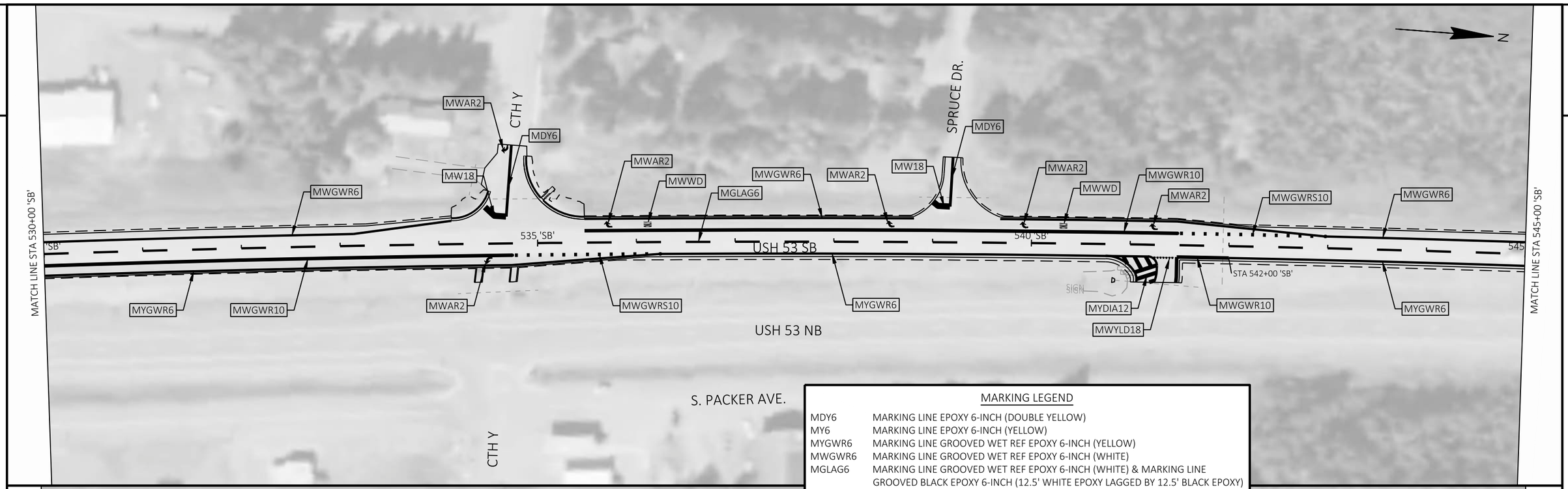
MATCH LINE STA 530+00 'SB'

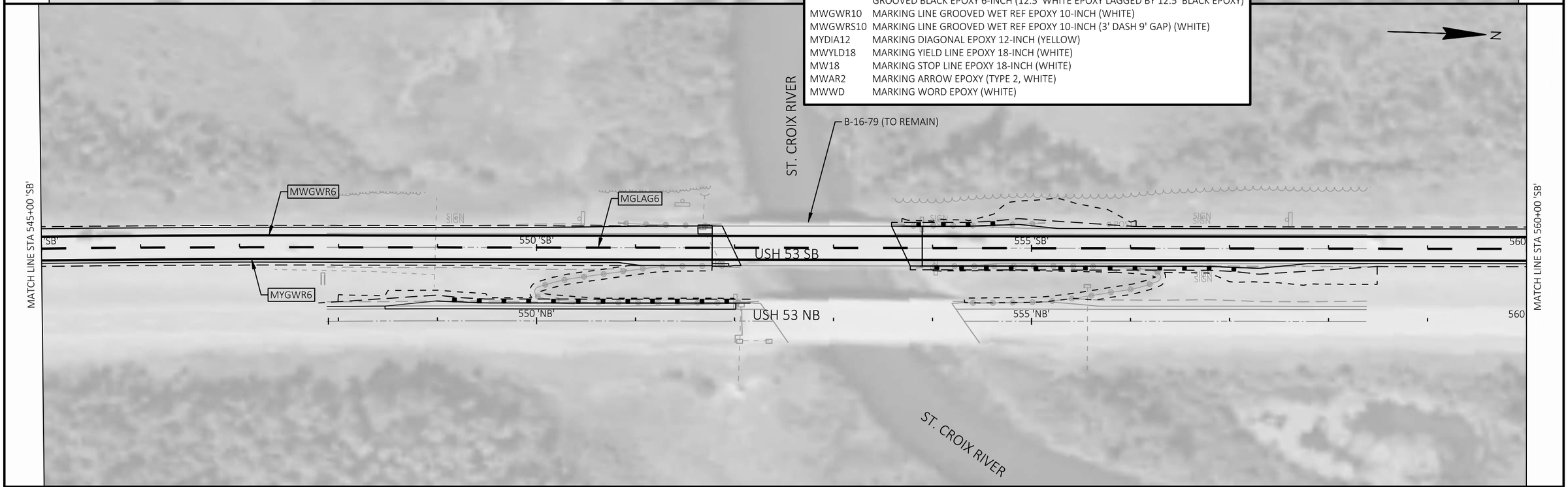
USH 53 NB

S. PACKER AVE.

2

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PAVEMENT MARKING	SHEET 19	E





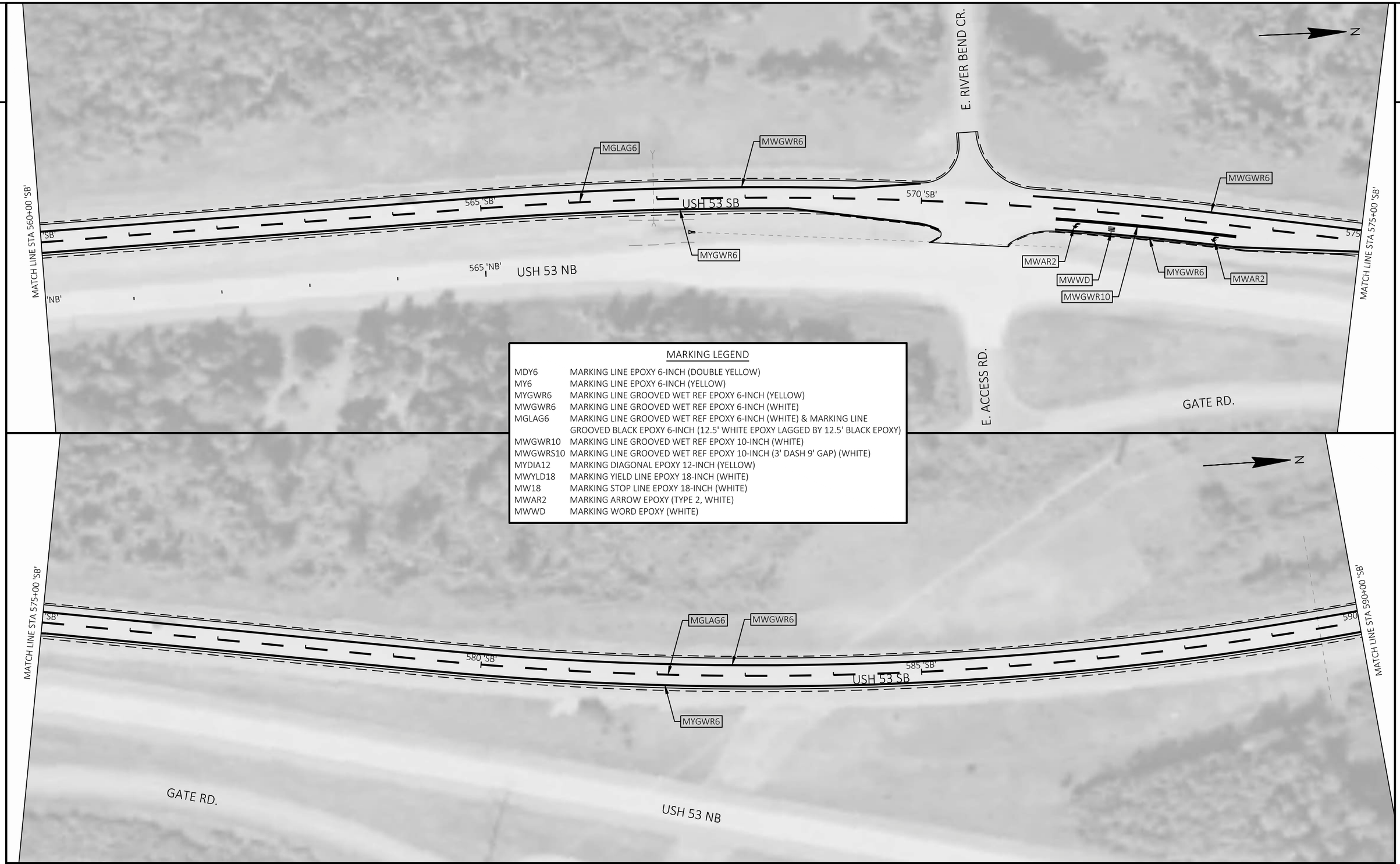
MARKING LEGEND

MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MY6	MARKING LINE EPOXY 6-INCH (YELLOW)
MYGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
MWGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
MGLAG6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) & MARKING LINE GROOVED BLACK EPOXY 6-INCH (12.5' WHITE EPOXY LAGGED BY 12.5' BLACK EPOXY)
MWGWR10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MWGWRS10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (3' DASH 9' GAP) (WHITE)
MYDIA12	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
MWYLD18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)
MW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
MWAR2	MARKING ARROW EPOXY (TYPE 2, WHITE)
MWWD	MARKING WORD EPOXY (WHITE)

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PAVEMENT MARKING	SHEET 20 E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 024502-pm
PLOT DATE : 4/30/2026 12:36 PM
PLOT BY : SHAWN DOLENS
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

2



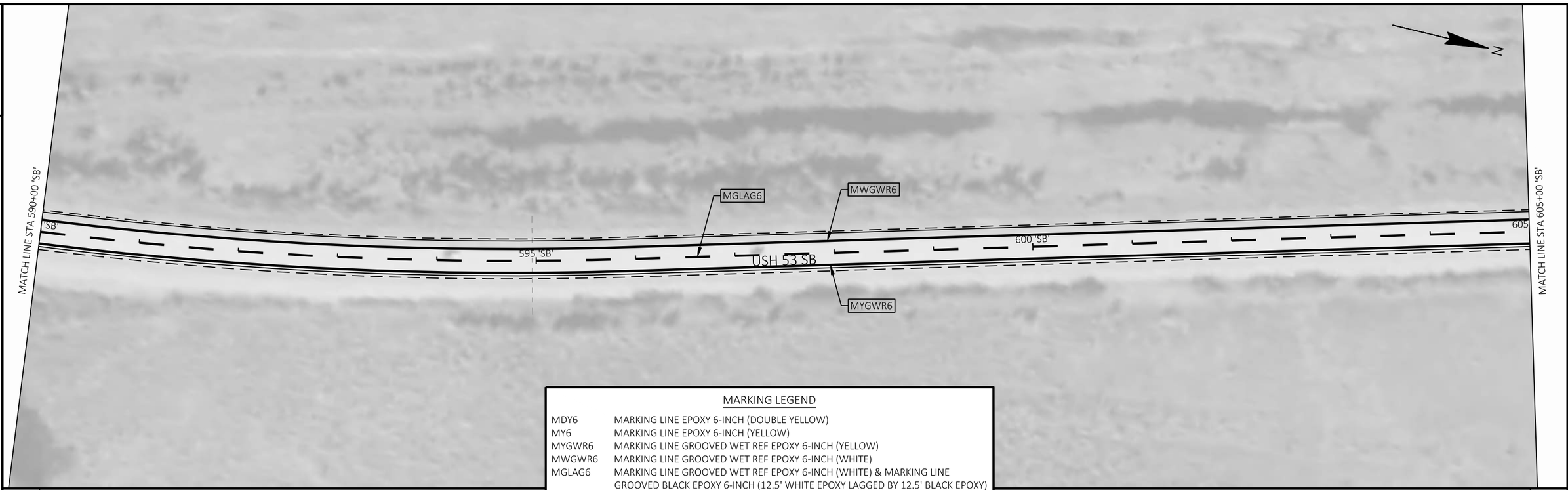
MARKING LEGEND

MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MY6	MARKING LINE EPOXY 6-INCH (YELLOW)
MYGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
MWGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
MGLAG6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) & MARKING LINE GROOVED BLACK EPOXY 6-INCH (12.5' WHITE EPOXY LAGGED BY 12.5' BLACK EPOXY)
MWGWR10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MWGWRS10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (3' DASH 9' GAP) (WHITE)
MYDIA12	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
MWYLD18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)
MW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
MWAR2	MARKING ARROW EPOXY (TYPE 2, WHITE)
MWWD	MARKING WORD EPOXY (WHITE)

2

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PAVEMENT MARKING	SHEET 21	E

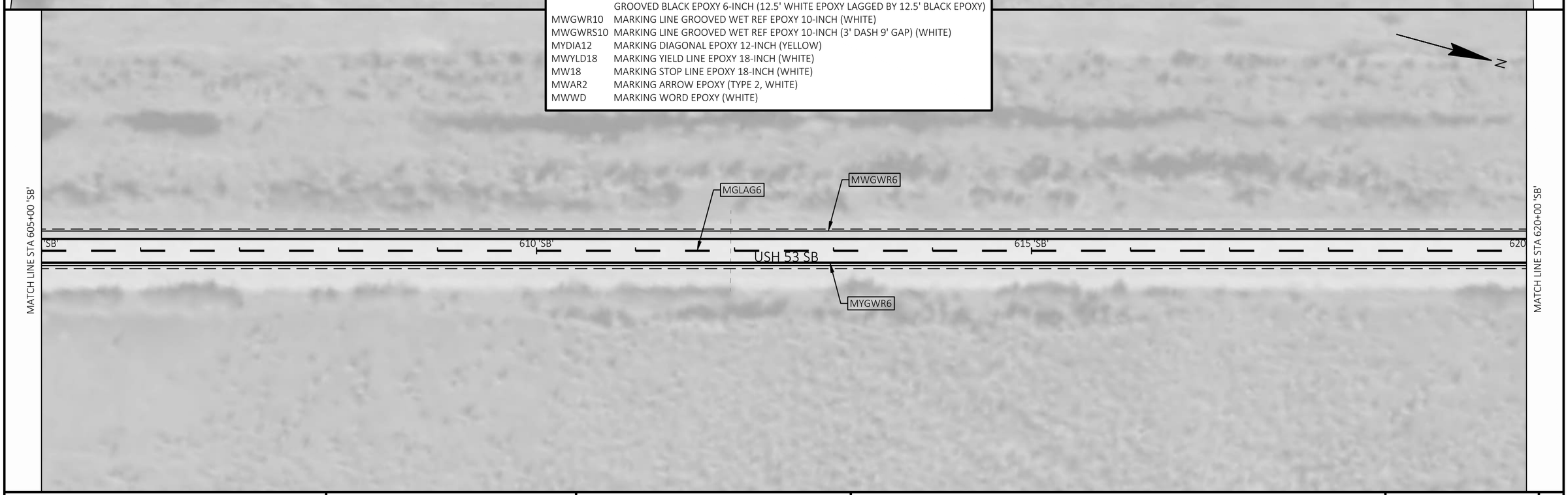
2



2

MARKING LEGEND

MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MY6	MARKING LINE EPOXY 6-INCH (YELLOW)
MYGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
MWGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
MGLAG6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) & MARKING LINE GROOVED BLACK EPOXY 6-INCH (12.5' WHITE EPOXY LAGGED BY 12.5' BLACK EPOXY)
MWGWR10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MWGWRS10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (3' DASH 9' GAP) (WHITE)
MYDIA12	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
MWYLD18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)
MW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
MWAR2	MARKING ARROW EPOXY (TYPE 2, WHITE)
MWWD	MARKING WORD EPOXY (WHITE)



PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PAVEMENT MARKING	SHEET 22	E

2

MATCH LINE STA 620+00 'SB'

'SB'

625 'SB'

USH 53 SB

MGLAG6

MWGWR6

630 'SB'

MYGWR6

635

MATCH LINE STA 635+00 'SB'

2

N

MARKING LEGEND

MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MY6	MARKING LINE EPOXY 6-INCH (YELLOW)
MYGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
MWGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
MGLAG6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) & MARKING LINE GROOVED BLACK EPOXY 6-INCH (12.5' WHITE EPOXY LAGGED BY 12.5' BLACK EPOXY)
MWGWR10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MWGWRS10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (3' DASH 9' GAP) (WHITE)
MYDIA12	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
MWYLD18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)
MW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
MWAR2	MARKING ARROW EPOXY (TYPE 2, WHITE)
MWWD	MARKING WORD EPOXY (WHITE)

MATCH LINE STA 635+00 'SB'

E. FLOWAGE LN.

MDY6

MWAR2

MWGWR10

MWAR2

MWGWR6

MGLAG6

MWGWR6

'SB'

640 'SB'

645 'SB'

650

USH 53 SB

USH 53 SB

MYGWR6

MYGWR6

MDY6

E. FLOWAGE LN.

MATCH LINE STA 650+00 'SB'

N

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PAVEMENT MARKING	SHEET 23 E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 024505-pm

PLOT DATE : 4/30/2026 12:36 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

2

MATCH LINE STA 650+00 'SB'

'SB' 655 'SB' 660 'SB' 665

USH 53 SB

MGLAG6

MWGWR6

MYGWR6

MYGWR6

MDY6

PIT DR.

USH 53 NB

N

MATCH LINE STA 665+00 'SB'

MATCH LINE STA 665+00 'SB'

2

MARKING LEGEND

MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MY6	MARKING LINE EPOXY 6-INCH (YELLOW)
MYGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
MWGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
MGLAG6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) & MARKING LINE GROOVED BLACK EPOXY 6-INCH (12.5' WHITE EPOXY LAGGED BY 12.5' BLACK EPOXY)
MWGWR10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MWGWRS10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (3' DASH 9' GAP) (WHITE)
MYDIA12	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
MWYLD18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)
MW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
MWAR2	MARKING ARROW EPOXY (TYPE 2, WHITE)
MWWD	MARKING WORD EPOXY (WHITE)

N

MATCH LINE STA 665+00 'SB'

MATCH LINE STA 680+00 'SB'

'SB' 670 'SB' 675 'SB' 680

USH 53 SB

MGLAG6

MWGWR6

MYGWR6

USH 53 NB

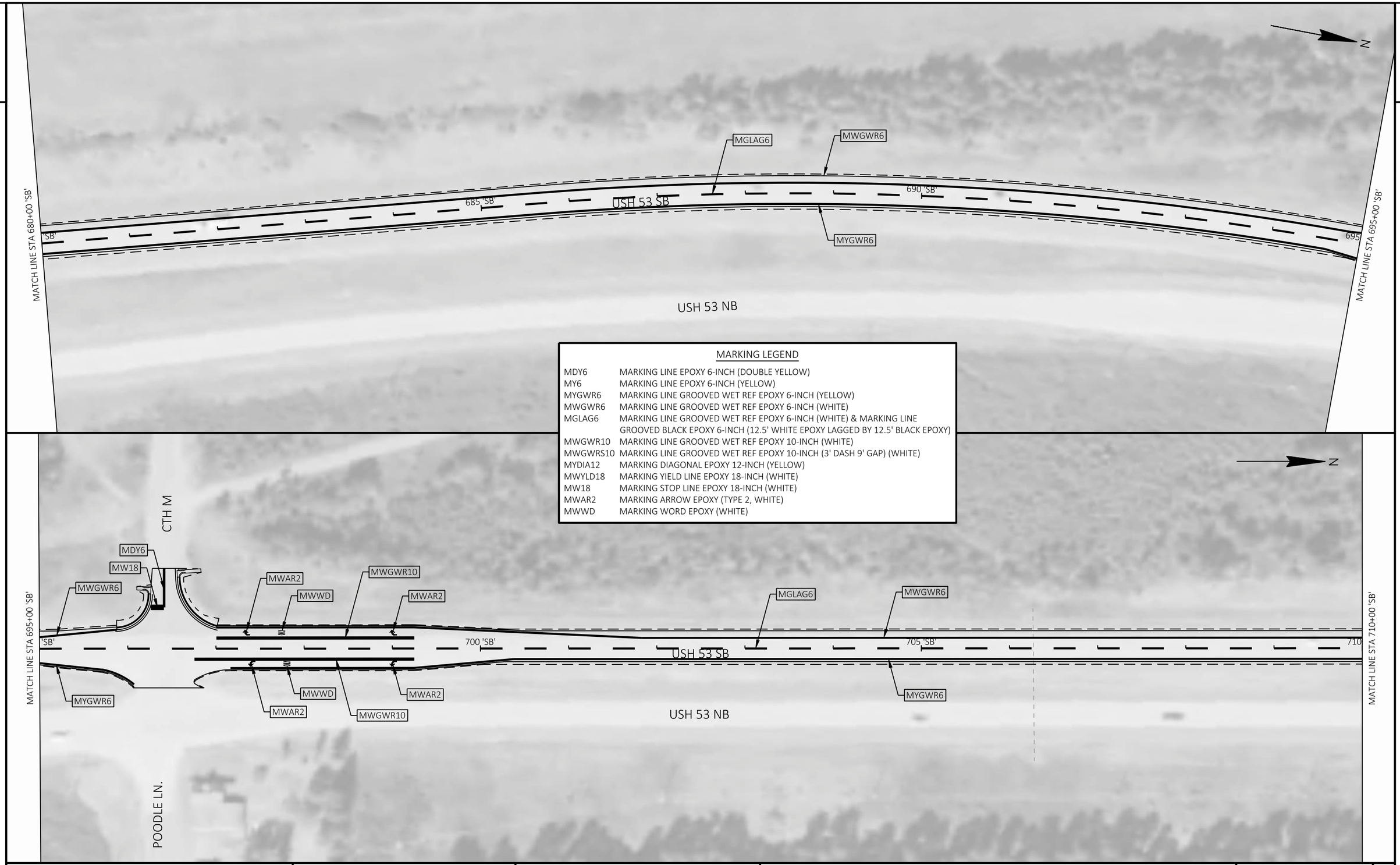
APPROX. R/W

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PAVEMENT MARKING	SHEET 24 E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 024506-pm

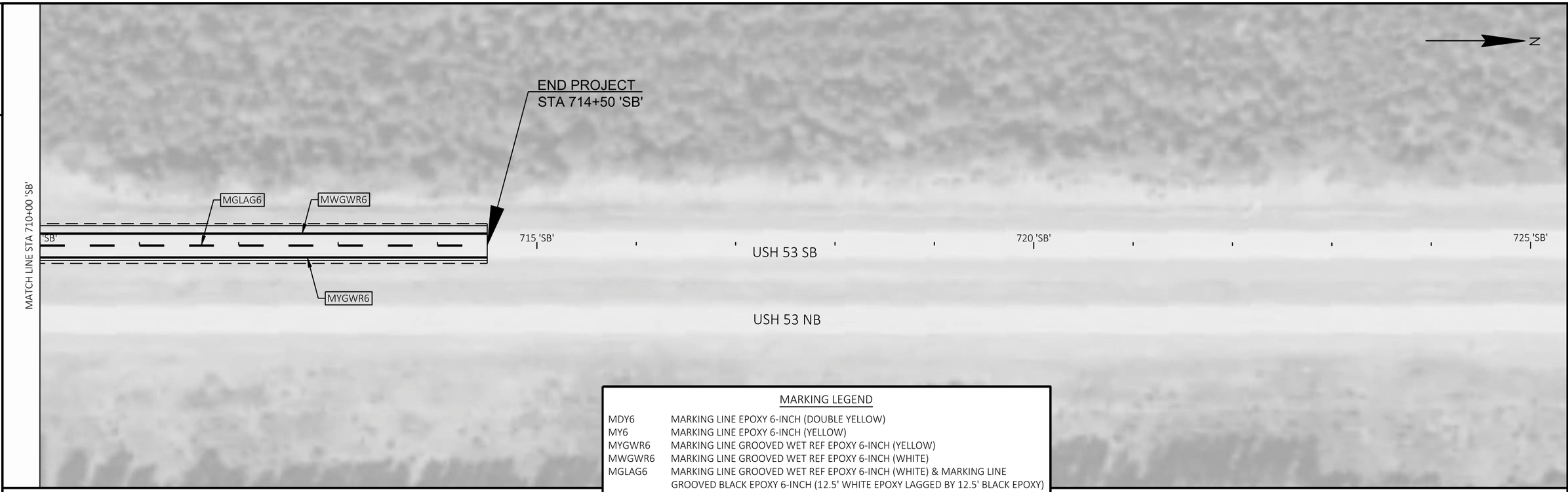
PLOT DATE : 4/30/2026 12:36 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:100 FT

2



MARKING LEGEND

MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MY6	MARKING LINE EPOXY 6-INCH (YELLOW)
MYGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
MWGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
MGLAG6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) & MARKING LINE GROOVED BLACK EPOXY 6-INCH (12.5' WHITE EPOXY LAGGED BY 12.5' BLACK EPOXY)
MWGWR10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MWGWRS10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (3' DASH 9' GAP) (WHITE)
MYDIA12	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
MWYLD18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)
MW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
MWAR2	MARKING ARROW EPOXY (TYPE 2, WHITE)
MWWD	MARKING WORD EPOXY (WHITE)

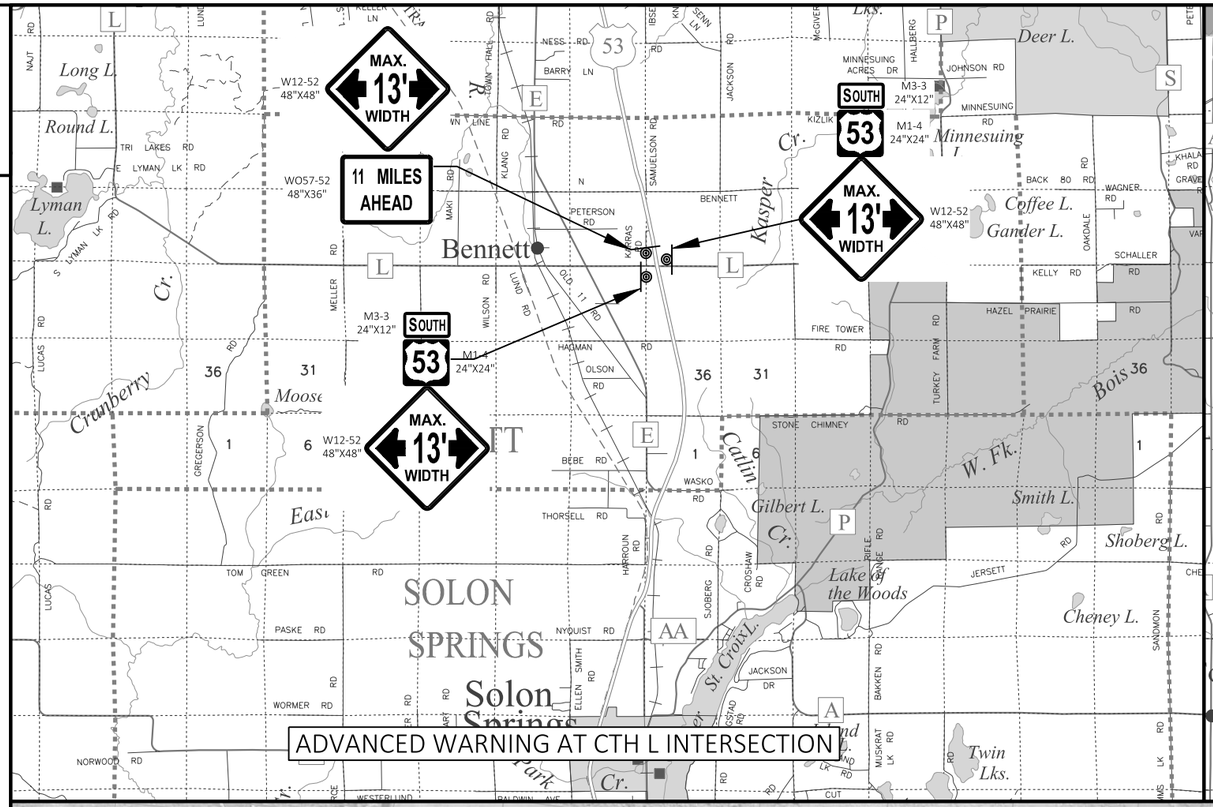


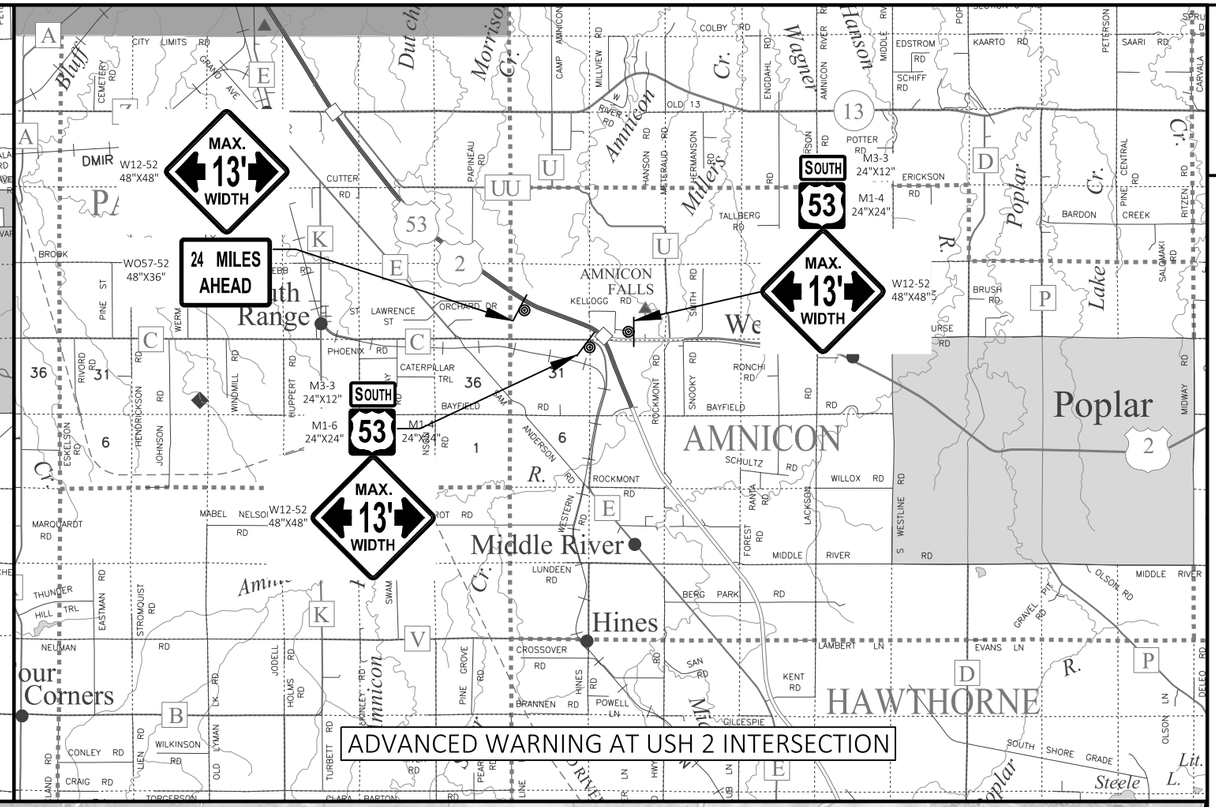
2

MARKING LEGEND

MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MY6	MARKING LINE EPOXY 6-INCH (YELLOW)
MYGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
MWGWR6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
MGLAG6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) & MARKING LINE GROOVED BLACK EPOXY 6-INCH (12.5' WHITE EPOXY LAGGED BY 12.5' BLACK EPOXY)
MWGWR10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MWGWRS10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (3' DASH 9' GAP) (WHITE)
MYDIA12	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
MWYLD18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)
MW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
MWAR2	MARKING ARROW EPOXY (TYPE 2, WHITE)
MWWD	MARKING WORD EPOXY (WHITE)

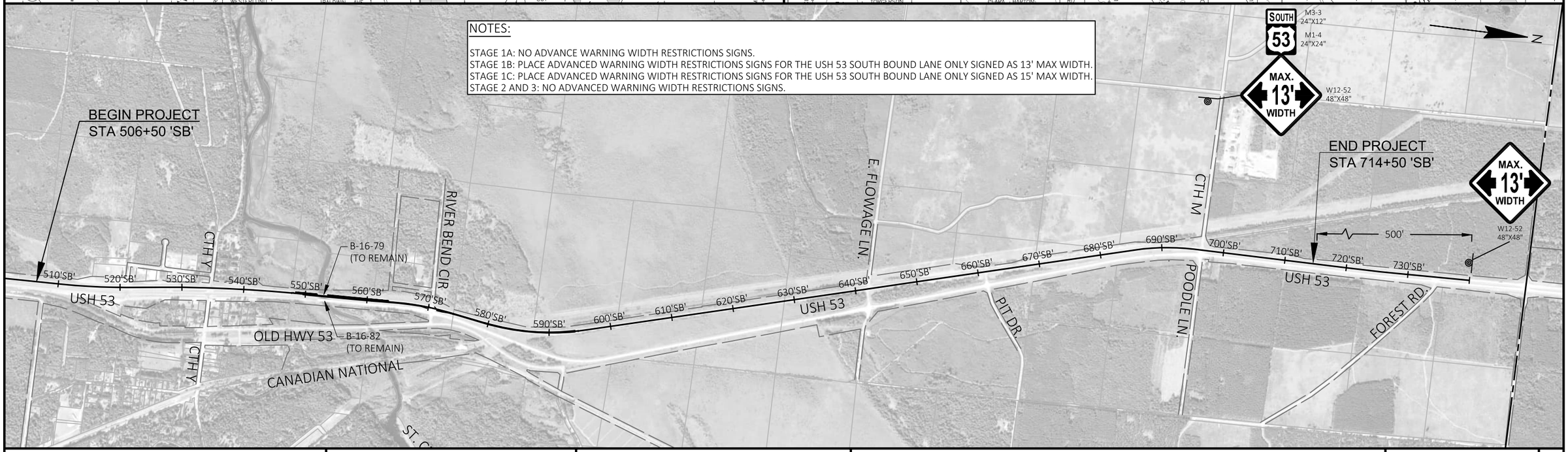
2





NOTES:

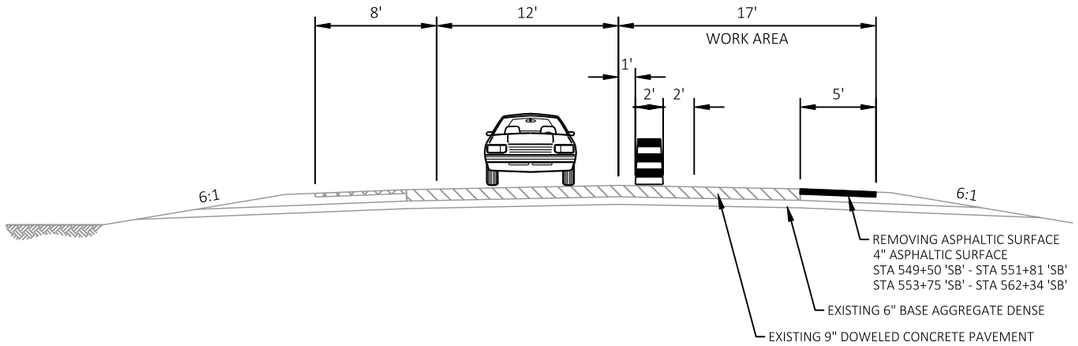
STAGE 1A: NO ADVANCE WARNING WIDTH RESTRICTIONS SIGNS.
STAGE 1B: PLACE ADVANCED WARNING WIDTH RESTRICTIONS SIGNS FOR THE USH 53 SOUTH BOUND LANE ONLY SIGNED AS 13' MAX WIDTH.
STAGE 1C: PLACE ADVANCED WARNING WIDTH RESTRICTIONS SIGNS FOR THE USH 53 SOUTH BOUND LANE ONLY SIGNED AS 15' MAX WIDTH.
STAGE 2 AND 3: NO ADVANCED WARNING WIDTH RESTRICTIONS SIGNS.



PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	ADVANCED WIDTH RESTRICTION	SHEET 27	E

2

SB USH 53
R/L



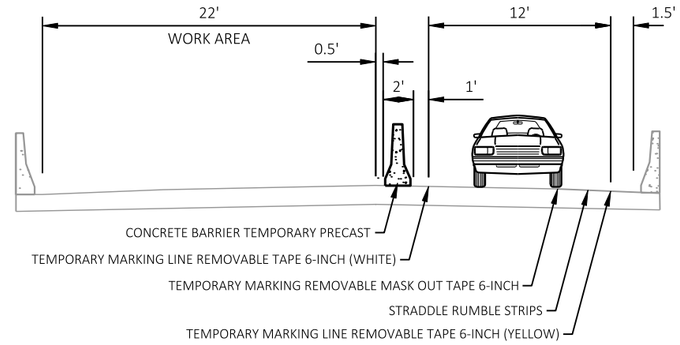
TRANSITION AREA, BUFFER SPACE, AND LANE CLOSURE

TRAFFIC CONTROL - STAGE 1A

USH 53 SB - LOOKING NORTH
STA 549+50 'SB' - STA 562+34 'SB'

STAGE 1 NOTES:
1. SEE PLAN SHEET "TRAFFIC CONTROL STAGE 1A"
2. INSTALL INSIDE ASPHALT SHOULDER WIDENING

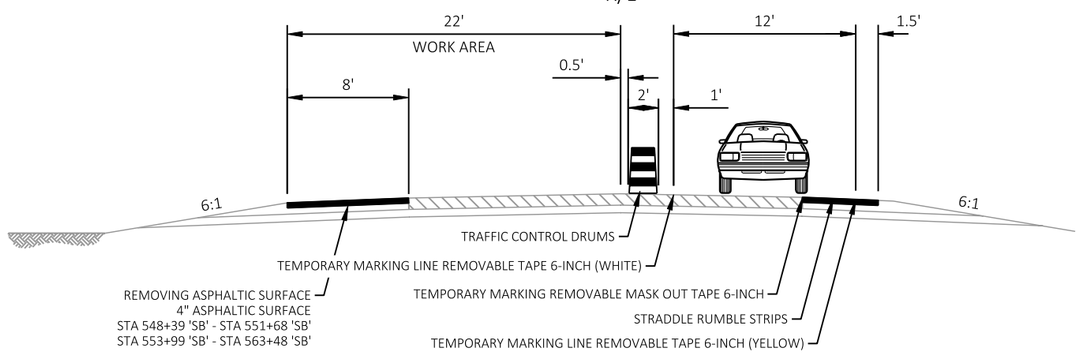
SB USH 53
R/L



TRAFFIC CONTROL - STAGE 1B

WORK AREA ON BRIDGE B-16-79
STA 551+63 'SB' - STA 553+90 'SB'

SB USH 53
R/L



TRANSITION AREA, BUFFER SPACE, AND LANE CLOSURE

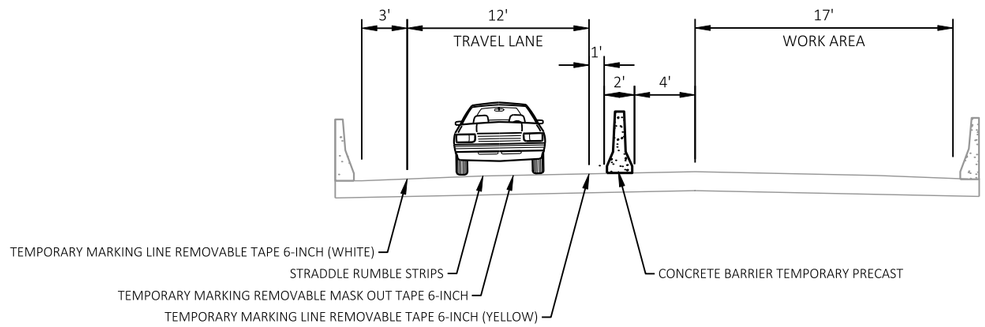
TRAFFIC CONTROL - STAGE 1B

USH 53 SB - LOOKING NORTH
STA 548+39 'SB' - STA 561+63 'SB'
STA 553+90 'SB' - STA 563+48 'SB'

STAGE 1B NOTES:
1. SEE PLAN SHEET "TRAFFIC CONTROL STAGE 1B"
2. REPLACE OUTSIDE LANE APPROACH SLAB, CONCRETE PAVEMENT SHOULDER AND CONSTRUCT ASPHALT SHOULDER WIDENING

2

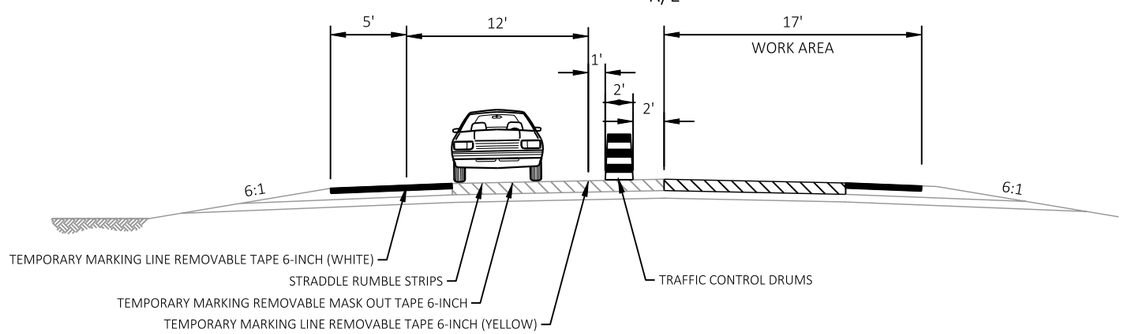
SB USH 53
R/L



TRAFFIC CONTROL - STAGE 1C

WORK AREA ON BRIDGE B-16-79
STA 551+63 'SB' - STA 553+71 'SB'

SB USH 53
R/L

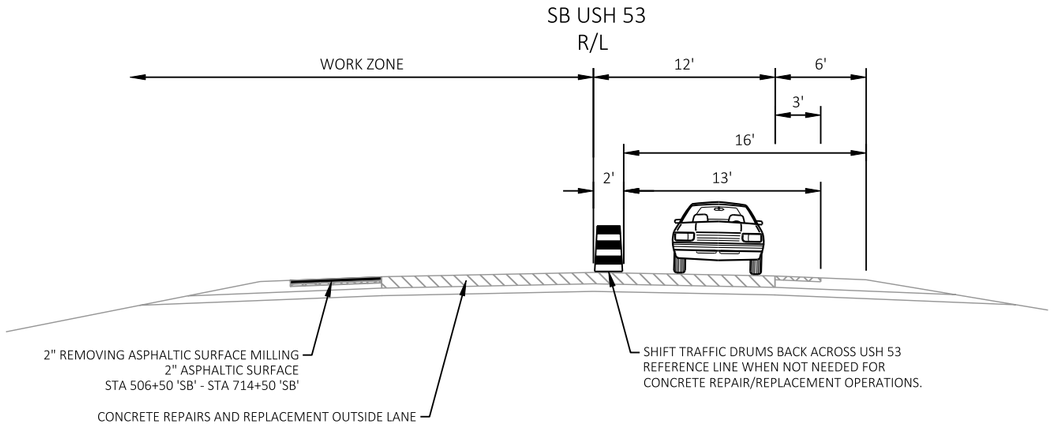


TRANSITION AREA, BUFFER SPACE, AND LANE CLOSURE

TRAFFIC CONTROL - STAGE 1C

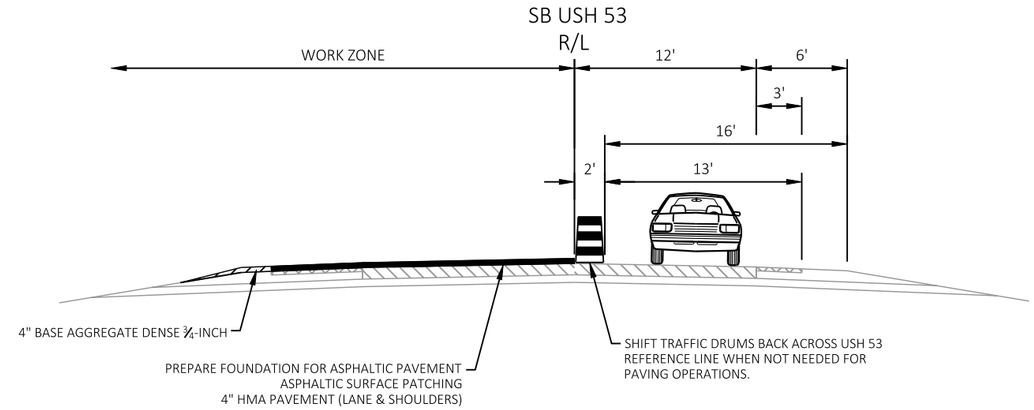
USH 53 SB - LOOKING NORTH
STA 548+39 'SB' - STA 551+63 'SB'
STA 553+71 'SB' - STA 563+48 'SB'

STAGE 1C NOTES:
1. SEE PLAN SHEET "TRAFFIC CONTROL STAGE 1C"
2. REPLACE INSIDE LANE APPROACH SLAB AND CONCRETE PAVEMENT SHOULDER



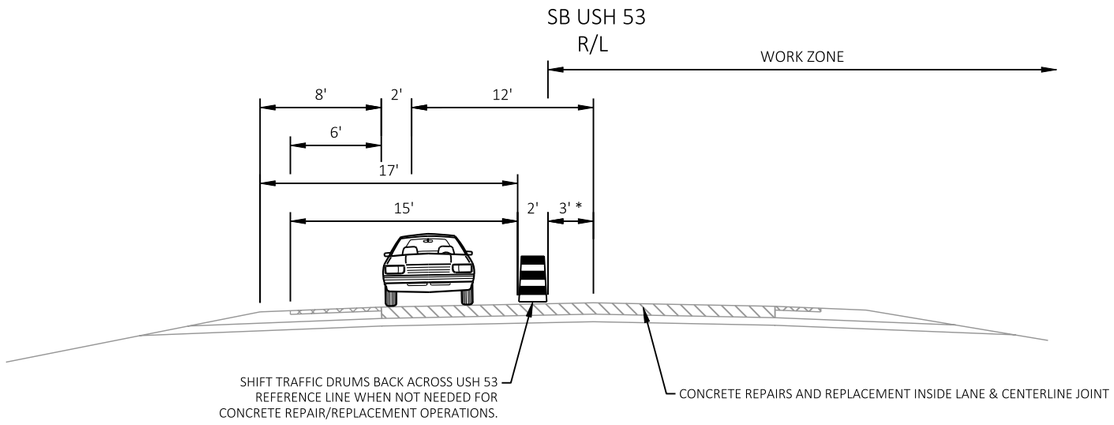
TRAFFIC CONTROL STAGE 2A - OUTSIDE LANE CLOSED

STA 506+50 'SB' - STA 714+50 'SB'



TRAFFIC CONTROL STAGE 3A - OUTSIDE LANE CLOSED

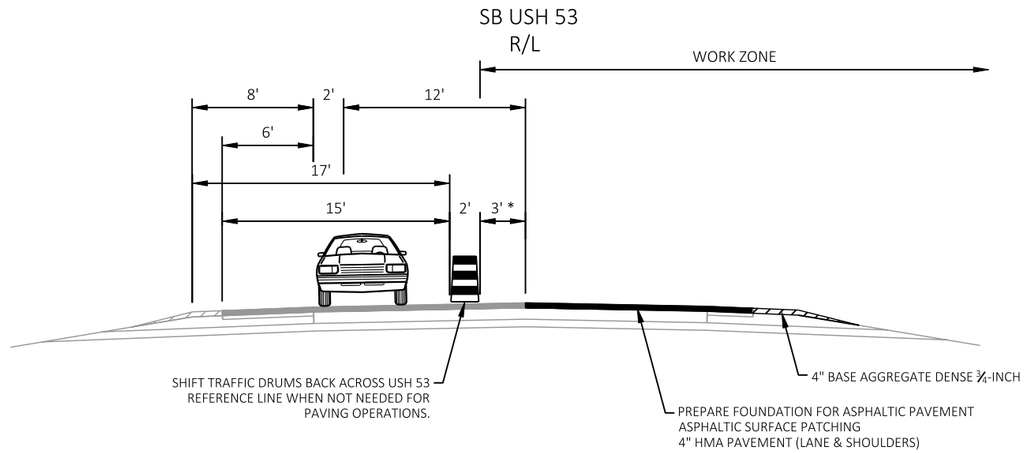
STA 506+50 'SB' - STA 714+50 'SB'



* NOTE
- 0' TYP
- UP TO 3' FOR CENTERLINE JOINT REPAIR

TRAFFIC CONTROL STAGE 2B - INSIDE LANE CLOSED

STA 506+50 'SB' - STA 714+50 'SB'



* NOTE
- 0' TYP
- UP TO 3' FOR CENTERLINE JOINT REPAIR

TRAFFIC CONTROL STAGE 3B - INSIDE LANE CLOSED

STA 506+50 'SB' - STA 714+50 'SB'

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	TRAFFIC CONTROL - TYPICAL SECTIONS	SHEET 30	E

2

2

SPEED LIMIT 65
R2-1
48"X60"

END ROAD WORK
G20-2A
48"X24"

(E)

544 'SB'

546 'SB'

500'

548 'SB'

550 'SB'

552 'SB'

554 'SB'

556 'SB'

558 'SB'

USH 53 SB

USH 53 NB

CONSTRUCT SHOULDER WIDENING SEE STAGE 1A TYPICAL SECTION FOR DETAILS

CONSTRUCT SHOULDER WIDENING SEE STAGE 1A TYPICAL SECTION FOR DETAILS

MATCH LINE STA 559+00 'SB'

ST. CROIX RIVER

N

TRAFFIC CONTROL LEGEND

DIRECTION OF TRAFFIC	TRAFFIC CONTROL BARRICADES TYPE III WITH SIGN
TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL BARRICADES TYPE III
TRAFFIC CONTROL DRUMS WITH WARNING LIGHTS TYPE C	SIGN ON PERMANENT SUPPORT
WORK ZONE	CONNECTED ARROW BOARD
DIGITAL SPEED LIMIT TRAILER (DSLT)	(S) WZ START LOCATION MARKER
	(E) WZ END LOCATION MARKER
	MARKING REMOVAL LINE
	CONCRETE BARRIER TEMPORARY PRECAST

MATCH LINE STA 559+00 'SB'

560 'SB'

562 'SB'

564 'SB'

566 'SB'

568 'SB'

570 'SB'

572 'SB'

574 'SB'

E. RIVER BEND CR.

R11-2L
48" X 30"
LANE CLOSED
TYPE III BARRICADE

USH 53 SB

USH 53 NB

BEGIN LEFT TURN LANE
R3-20L
36"X54"

E. ACCESS RD

MATCH LINE STA 574+50 'SB'

N

NOTE: SEE APPLICABLE STANDARD DETAIL DRAWINGS FOR ADDITIONAL DETAILS.

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	TRAFFIC CONTROL STAGE 1A	SHEET 31	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\026001-S1.DWG
LAYOUT NAME - 026001-s1a

PLOT DATE : 8/25/2026 3:18 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

MATCH LINE STA 574+50 'SB'

MATCH LINE STA 590+00 'SB'

2

N

576 'SB'

578 'SB'

580 'SB'

582 'SB'

584 'SB'

586 'SB'

588 'SB'

590

USH 53 SB

USH 53 NB

TRAFFIC CONTROL LEGEND

DIRECTION OF TRAFFIC	TRAFFIC CONTROL BARRICADES TYPE III WITH SIGN
TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL BARRICADES TYPE III
TRAFFIC CONTROL DRUMS WITH WARNING LIGHTS TYPE C	SIGN ON PERMANENT SUPPORT
WORK ZONE	CONNECTED ARROW BOARD
DIGITAL SPEED LIMIT TRAILER (DSLT)	(S) WZ START LOCATION MARKER
	(E) WZ END LOCATION MARKER
	MARKING REMOVAL LINE
	CONCRETE BARRIER TEMPORARY PRECAST

N

MATCH LINE STA 590+00 'SB'

'SB'

592 'SB'

594 'SB'

596 'SB'

598 'SB'

600 'SB'

602 'SB'

604 'SB'

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH YELLOW

780' TAPER

1000'

500'

1100'

1/2 MILE

SPEED LIMIT XX

USH 53 SB

(S)

W04-2L

LEFT LANE CLOSED 1/2 MILE
W20-5Sc

ROAD WORK 1 MILE
W20-1F

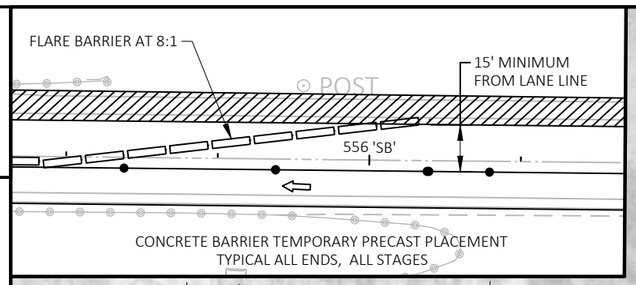
NOTE: SEE APPLICABLE STANDARD DETAIL DRAWINGS FOR ADDITIONAL DETAILS.

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	TRAFFIC CONTROL STAGE 1A	SHEET 32	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\026001-S1.DWG
LAYOUT NAME - 026002-s1a

PLOT DATE : 8/25/2026 3:18 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42



2

CONSTRUCT SHOULDER WIDENING SEE STAGE 1B TYPICAL SECTION FOR DETAILS

CONSTRUCT OUTSIDE LANE APPROACH SLAB AND CONCRETE PAVEMENT SEE DETAIL SHEET

SEE DETAIL FOR CONCRETE BARRIER TEMPORARY PRECAST PLACEMENT

WO5-52R
12"X36"

N

500'

544 'SB'

546 'SB'

548 'SB'

550 'SB'

552 'SB'

USH 53 SB

554 'SB'

556 'SB'

558 'SB'

MATCH LINE STA 559+00 'SB'

(E)

SPEED LIMIT 65
R2-1
48"X60"

END ROAD WORK
G20-2A
48"X24"

114' SHIFTING TAPER

USH 53 NB

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (WHITE)

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (YELLOW)

500' BUFFER FROM END OF TEMP BARRIER TO LANE SHIFT

CONSTRUCT SHOULDER WIDENING SEE STAGE 1B TYPICAL SECTION FOR DETAILS

ST. CROIX RIVER

TRAFFIC CONTROL LEGEND

DIRECTION OF TRAFFIC	TRAFFIC CONTROL BARRICADES TYPE III WITH SIGN
TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL BARRICADES TYPE III
TRAFFIC CONTROL DRUMS WITH WARNING LIGHTS TYPE C	SIGN ON PERMANENT SUPPORT
WORK ZONE	CONNECTED ARROW BOARD
DIGITAL SPEED LIMIT TRAILER (DSLT)	(S) WZ START LOCATION MARKER
	(E) WZ END LOCATION MARKER
	MARKING REMOVAL LINE
	CONCRETE BARRIER TEMPORARY PRECAST

WO1-6
48" X 24"

TYPE III BARRICADE

R11-2L
48" X 30"
LANE CLOSED

TYPE III BARRICADE

N

E. RIVER BEND CR.

BEGIN RIGHT TURN LANE
R3-20R
24"X36"

MATCH LINE STA 559+00 'SB'

560 'SB'

562 'SB'

400'

564 'SB'

566 'SB'

568 'SB'

570 'SB'

USH 53 SB

572 'SB'

574 'SB'

114' SHIFTING TAPER

USH 53 NB

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (YELLOW)

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (WHITE)

WO1-4R

55 MPH
WO13-1
36"X36"

WO1-4L

55 MPH
WO13-1
36"X36"

E. ACCESS RD

MATCH LINE STA 574+50 'SB'

NOTE: SEE APPLICABLE STANDARD DETAIL DRAWINGS FOR ADDITIONAL DETAILS.

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	TRAFFIC CONTROL STAGE 1B	SHEET 33	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\026001-S1.DWG
LAYOUT NAME - 026003-s1b
PLOT DATE : 8/25/2026 3:18 PM
PLOT BY : SHAWN DOLENS
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

MATCH LINE STA 574+50 'SB'

MAX. 13' WIDTH — W12-52 48"X48"

1/2 MILE AHEAD — W057-52 48"X36"

576 'SB' 578 'SB' 580 'SB' 582 'SB' 584 'SB' 586 'SB' 588 'SB' 590

USH 53 SB

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (YELLOW)

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (WHITE)

USH 53 NB

N

MATCH LINE STA 590+00 'SB'

2

TRAFFIC CONTROL LEGEND

DIRECTION OF TRAFFIC	TRAFFIC CONTROL BARRICADES TYPE III WITH SIGN
TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL BARRICADES TYPE III
TRAFFIC CONTROL DRUMS WITH WARNING LIGHTS TYPE C	SIGN ON PERMANENT SUPPORT
WORK ZONE	CONNECTED ARROW BOARD
DIGITAL SPEED LIMIT TRAILER (DSLT)	(S) WZ START LOCATION MARKER
	(E) WZ END LOCATION MARKER
	MARKING REMOVAL LINE
	CONCRETE BARRIER TEMPORARY PRECAST

MATCH LINE STA 590+00 'SB'

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (WHITE)

780' TAPER

592 'SB' 594 'SB' 596 'SB' 598 'SB' 600 'SB' 602 'SB' 604 'SB'

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (YELLOW)

W04-2R

SPEED LIMIT XX

USH 53 SB

RIGHT LANE CLOSED 1/2 MILE — W20-5G

ROAD WORK 1 MILE — W20-1F

(S)

1000' 500' 1100' 1/2 mile

N

NOTE: SEE APPLICABLE STANDARD DETAIL DRAWINGS FOR ADDITIONAL DETAILS.

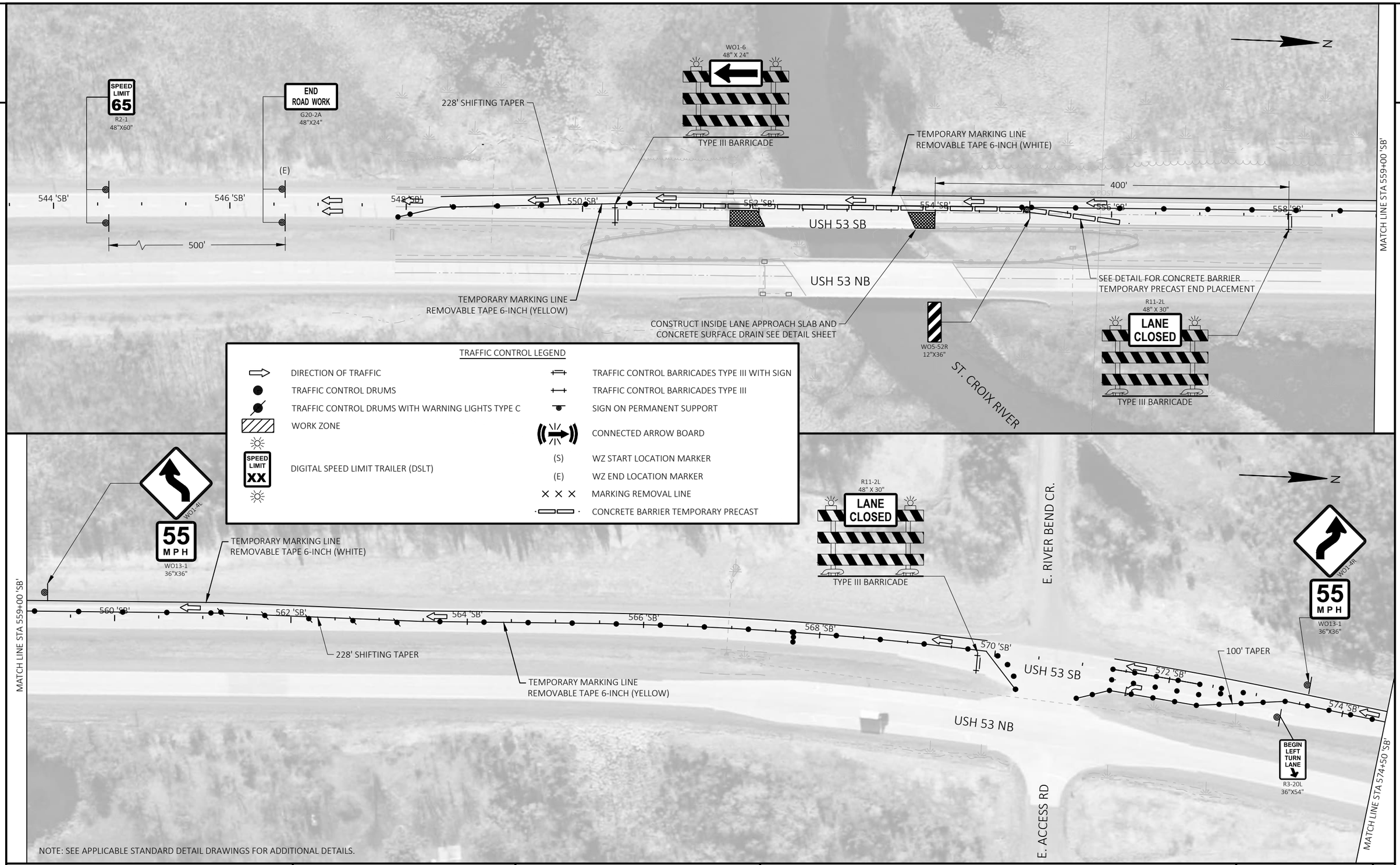
PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	TRAFFIC CONTROL STAGE 1B	SHEET 34	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\026001-S1.DWG
LAYOUT NAME - 026004-s1b

PLOT DATE : 8/25/2026 3:18 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2



NOTE: SEE APPLICABLE STANDARD DETAIL DRAWINGS FOR ADDITIONAL DETAILS.

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	TRAFFIC CONTROL STAGE 1C	SHEET 35	E

2

2

MATCH LINE STA 574+50 'SB'

MATCH LINE STA 590+00 'SB'

MAX. 13' WIDTH — W12-52 48"X48"

1/2 MILE AHEAD — WO57-52 48"X36"

576 'SB' 578 'SB' 580 'SB' 582 'SB' 584 'SB' 586 'SB' 588 'SB' 590

USH 53 SB

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (WHITE)

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (YELLOW)

USH 53 NB

N

TRAFFIC CONTROL LEGEND

DIRECTION OF TRAFFIC	TRAFFIC CONTROL BARRICADES TYPE III WITH SIGN
TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL BARRICADES TYPE III
TRAFFIC CONTROL DRUMS WITH WARNING LIGHTS TYPE C	SIGN ON PERMANENT SUPPORT
WORK ZONE	CONNECTED ARROW BOARD
DIGITAL SPEED LIMIT TRAILER (DSLT)	(S) WZ START LOCATION MARKER
	(E) WZ END LOCATION MARKER
	MARKING REMOVAL LINE
	CONCRETE BARRIER TEMPORARY PRECAST

N

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (WHITE)

TEMPORARY MARKING LINE
REMOVABLE TAPE 6-INCH (YELLOW)

592 'SB' 594 'SB' 596 'SB' 598 'SB' 600 'SB' 602 'SB' 604 'SB'

1000' 500' 1100' 1/2 MILE

780' TAPER

USH 53 SB

(S)

W04-2L

LEFT LANE CLOSED 1/2 MILE — W20-5Sc

ROAD WORK 1 MILE — W20-1F

NOTE: SEE APPLICABLE STANDARD DETAIL DRAWINGS FOR ADDITIONAL DETAILS.

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	TRAFFIC CONTROL STAGE 1C	SHEET 36	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\026001-S1.DWG
LAYOUT NAME - 026006-s1c

PLOT DATE : 8/25/2026 3:19 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

Estimate Of Quantities

1196-00-60

Line	Item	Item Description	Unit	Total	Qty
0002	202.0105	Roadside Clearing	STA	96.000	96.000
0004	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0006	203.0335	Debris Containment Over Waterway (structure) 01. B-16-79	EACH	1.000	1.000
0008	204.0100	Removing Concrete Pavement	SY	190.000	190.000
0010	204.0105	Removing Concrete Pavement Butt Joints	SY	1,738.000	1,738.000
0012	204.0110	Removing Asphaltic Surface	SY	621.000	621.000
0014	204.0115	Removing Asphaltic Surface Butt Joints	SY	1,335.000	1,335.000
0016	204.0120	Removing Asphaltic Surface Milling	SY	13,540.000	13,540.000
0018	204.0150	Removing Curb & Gutter	LF	486.000	486.000
0020	204.0165	Removing Guardrail	LF	1,093.000	1,093.000
0022	205.0100	Excavation Common	CY	285.000	285.000
0024	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 1196-00-60	EACH	1.000	1.000
0026	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	30.000	30.000
0028	213.0100	Finishing Roadway (project) 01. 1196-00-60	EACH	1.000	1.000
0030	305.0110	Base Aggregate Dense 3/4-Inch	TON	4,400.000	4,400.000
0032	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,290.000	1,290.000
0034	415.0090	Concrete Pavement 9-Inch	SY	80.000	80.000
0036	415.0410	Concrete Pavement Approach Slab	SY	111.000	111.000
0038	416.0610	Drilled Tie Bars	EACH	3,700.000	3,700.000
0040	416.0620	Drilled Dowel Bars	EACH	4,500.000	4,500.000
0042	455.0605	Tack Coat	GAL	13,030.000	13,030.000
0044	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0046	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0048	460.0115.S	HMA Pavement Test Strip Volumetrics	EACH	1.000	1.000
0050	460.0120.S	HMA Test Strip Density	EACH	1.000	1.000
0052	460.2000	Incentive Density HMA Pavement	DOL	3,100.000	3,100.000
0054	460.2005	Incentive Density PWL HMA Pavement	DOL	4,840.000	4,840.000
0056	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	3,100.000	3,100.000
0058	460.2010	Incentive Air Voids HMA Pavement	DOL	12,216.000	12,216.000
0060	460.6244	HMA Pavement 4 MT 58-34 S	TON	12,216.000	12,216.000
0062	460.8644	HMA Pavement 4 SMA 58-34 V	TON	7,240.000	7,240.000
0064	460.9000.S	Material Transfer Vehicle	EACH	1.000	1.000
0066	465.0105	Asphaltic Surface	TON	2,085.000	2,085.000
0068	465.0110	Asphaltic Surface Patching	TON	390.000	390.000
0070	465.0315	Asphaltic Flumes	SY	58.000	58.000
0072	465.0510	Asphaltic Rumble Strips, Shoulder Divided Roadway	LF	38,160.000	38,160.000
0074	509.0301	Preparation Decks Type 1	SY	6.000	6.000
0076	509.0302	Preparation Decks Type 2	SY	6.000	6.000
0078	509.0310.S	Sawing Pavement Deck Preparation Areas	LF	180.000	180.000
0080	509.2100.S	Concrete Masonry Deck Repair	CY	2.000	2.000
0082	520.8700	Cleaning Culvert Pipes	EACH	7.000	7.000
0084	521.1018	Apron Endwalls for Culvert Pipe Steel 18-Inch	EACH	3.000	3.000
0086	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	84.000	84.000
0088	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	434.000	434.000
0090	601.0590	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBTT	LF	32.000	32.000
0092	603.8000	Concrete Barrier Temporary Precast Delivered	LF	563.000	563.000
0094	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,126.000	1,126.000
0096	611.8115	Adjusting Inlet Covers	EACH	2.000	2.000
0098	614.2300	MGS Guardrail 3	LF	500.000	500.000

1196-00-60

Line	Item	Item Description	Unit	Total	Qty
0100	614.2500	MGS Thrie Beam Transition	LF	118.200	118.200
0102	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0104	618.0100	Maintenance and Repair of Haul Roads (project) 01. 1196-00-60	EACH	1.000	1.000
0106	619.1000	Mobilization	EACH	1.000	1.000
0108	624.0100	Water	MGAL	58.000	58.000
0110	625.0100	Topsoil	SY	2,070.000	2,070.000
0112	628.1504	Silt Fence	LF	3,250.000	3,250.000
0114	628.1520	Silt Fence Maintenance	LF	3,250.000	3,250.000
0116	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0118	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0120	628.2008	Erosion Mat Urban Class I Type B	SY	2,070.000	2,070.000
0122	628.7005	Inlet Protection Type A	EACH	2.000	2.000
0124	628.7015	Inlet Protection Type C	EACH	3.000	3.000
0126	628.7504	Temporary Ditch Checks	LF	45.000	45.000
0128	628.7555	Culvert Pipe Checks	EACH	23.000	23.000
0130	628.7570	Rock Bags	EACH	215.000	215.000
0132	629.0210	Fertilizer Type B	CWT	2.000	2.000
0134	630.0130	Seeding Mixture No. 30	LB	92.000	92.000
0136	630.0500	Seed Water	MGAL	120.000	120.000
0138	633.5200	Markers Culvert End	EACH	20.000	20.000
0140	634.0616	Posts Wood 4x6-Inch x 16-FT	EACH	5.000	5.000
0142	634.0620	Posts Wood 4x6-Inch x 20-FT	EACH	2.000	2.000
0144	638.2102	Moving Signs Type II	EACH	7.000	7.000
0146	638.3000	Removing Small Sign Supports	EACH	7.000	7.000
0148	638.4000	Moving Small Sign Supports	EACH	4.000	4.000
0150	642.5001	Field Office Type B	EACH	1.000	1.000
0152	643.0300	Traffic Control Drums	DAY	113,860.000	113,860.000
0154	643.0370.S	Digital Speed Reduction System (DSRS)	DAY	520.000	520.000
0156	643.0420	Traffic Control Barricades Type III	DAY	1,480.000	1,480.000
0158	643.0705	Traffic Control Warning Lights Type A	DAY	2,700.000	2,700.000
0160	643.0715	Traffic Control Warning Lights Type C	DAY	3,050.000	3,050.000
0162	643.0810	Traffic Control Connected Arrow Boards	DAY	170.000	170.000
0164	643.0900	Traffic Control Signs	DAY	7,890.000	7,890.000
0166	643.0920	Traffic Control Covering Signs Type II	EACH	6.000	6.000
0168	643.1000	Traffic Control Signs Fixed Message	SF	32.000	32.000
0170	643.1220	Traffic Control Connected Work Zone Start and End Location Markers	DAY	170.000	170.000
0172	643.3165	Temporary Marking Line Paint 6-Inch	LF	2,000.000	2,000.000
0174	643.3180	Temporary Marking Line Removable Tape 6-Inch	LF	27,700.000	27,700.000
0176	643.3280	Temporary Marking Line Removable Tape 10-Inch	LF	800.000	800.000
0178	643.3960	Temporary Marking Removable Mask Out Tape 6-Inch	LF	10,900.000	10,900.000
0180	643.5000	Traffic Control	EACH	1.000	1.000
0182	646.2020	Marking Line Epoxy 6-Inch	LF	1,210.000	1,210.000
0184	646.2025	Marking Line Grooved Black Epoxy 6-Inch	LF	5,200.000	5,200.000
0186	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	46,007.000	46,007.000
0188	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	2,253.000	2,253.000
0190	646.5020	Marking Arrow Epoxy	EACH	15.000	15.000
0192	646.5120	Marking Word Epoxy	EACH	6.000	6.000
0194	646.6120	Marking Stop Line Epoxy 18-Inch	LF	67.000	67.000
0196	646.6220	Marking Yield Line Epoxy 18-Inch	EACH	14.000	14.000

Estimate Of Quantities

1196-00-60

Line	Item	Item Description	Unit	Total	Qty
0198	646.6466	Cold Weather Marking Epoxy 6-Inch	LF	52,417.000	52,417.000
0200	646.6470	Cold Weather Marking Epoxy 10-Inch	LF	2,253.000	2,253.000
0202	646.7120	Marking Diagonal Epoxy 12-Inch	LF	190.000	190.000
0204	646.9002	Marking Removal Line 6-Inch	LF	500.000	500.000
0206	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	466.000	466.000
0208	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0210	650.8000	Construction Staking Resurfacing Reference	LF	20,983.000	20,983.000
0212	650.9911	Construction Staking Supplemental Control (project) 01. 1196-00-60	EACH	1.000	1.000
0214	650.9920	Construction Staking Slope Stakes	LF	878.000	878.000
0216	690.0150	Sawing Asphalt	LF	11,830.000	11,830.000
0218	690.0250	Sawing Concrete	LF	47,800.000	47,800.000
0220	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0222	740.0440	Incentive IRI Ride	DOL	7,800.000	7,800.000
0224	SPV.0180	Special 01. Concrete Pavement Repair Doweled	SY	7,700.000	7,700.000
0226	SPV.0180	Special 02. Concrete Pavement Replacement Doweled	SY	5,900.000	5,900.000
0228	SPV.0180	Special 03. Concrete Pavement Centerline Joint Repair	SY	800.000	800.000

STATION	TO	STATION	LOCATION	202.0105 ROADSIDE CLEARING STA
589+00	-	625+50	LT	37
590+50	-	624+00	RT	34
627+00	-	629+25	LT	3
627+00	-	627+50	RT	1
628+50	-	629+50	RT	1
630+00	-	631+00	RT	1
635+00	-	639+00	RT	4
635+25	-	639+00	LT	4
644+00	-	648+00	RT	4
646+00	-	648+00	LT	2
658+00	-	659+00	RT	1
660+50	-	663+00	LT	3
690+00	-	691+00	LT	1
			TOTAL 0010	96

STATION	TO	STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY	204.0105 REMOVING CONCRETE PAVEMENT BUTT JOINTS SY	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	REMARKS
506+50	--	509+20	USH 53	--	390	--	135	--	
506+50	--	714+50	USH 53	--	--	--	--	12,410	OUTSIDE SHOULDER
520+92	--	521+54	RT	--	--	--	71	--	SNOWBERRY LN CROSS OVER
521+24	--	521+49	LT	--	--	--	27	--	SNOWBERRY LN
527+77	--	528+26	RT	--	--	--	50	--	REDUCED CONFLICT U-TURN
534+60	--	534+88	LT	--	--	--	33	390	CTH Y
539+11	--	539+28	LT	--	--	--	18	--	SPRUCE DR
541+02	--	541+52	RT	--	--	--	54	--	REDUCED CONFLICT U-TURN
548+39	--	563+48	LT	--	--	193	--	--	STAGE 1B
548+47	--	552+00	USH 53 NB LT	--	--	136	--	--	SHOULDER ALONG GUARDRAIL
549+07	--	551+77	USH 53	94	390	--	320	--	
549+53	--	562+34	RT	--	--	80	--	--	STAGE 1A
553+90	--	556+60	USH 53	96	390	--	311	--	
570+17	--	571+12	RT	--	94	--	--	--	E. RIVER BEND CR CROSS OVER
570+38	--	570+59	LT	--	--	--	22	--	E. RIVER BEND CR
641+69	--	642+02	RT	--	--	--	35	--	E. FLOWAGE LN CROSS OVER
642+20	--	642+49	LT	--	--	--	34	430	E. FLOWAGE LN
661+01	--	661+33	RT	--	--	--	35	--	PIT DR CROSS OVER
696+03	--	696+75	RT	--	84	--	--	--	CTH M CROSS OVER
696+27	--	695+56	LT	--	--	--	35	310	CTH M
711+80	--	714+50	USH 53	--	390	--	135	--	
			SIDE ROADS	--	--	130	--	--	CURB AND GUTTER REPLACEMENTS
			CULVERT REPLACEMENTS	--	--	82	--	--	
			USH 53 MEDIAN	--	--	--	20	--	ASPHALT PATHS AT CTH Y
			TOTAL 0010	190	1,738	621	1,335	13,540	

3

STATION	TO	STATION	LOCATION	205.0100 EXCAVATION COMMON CY	(1)UNUSABLE MATERIAL CY	UNEXPANDED FILL CY	(2) EXPANDED FILL CY	(3) MASS ORDINATE (+/-) CY
548+00	-	552+00	RT	30	0	25	31	-1
553+69	-	558+24	LT & RT	121	0	68	85	36
			CTH Y	56	7	21	26	23
			E FLOWAGE LN	48	9	44	55	-16
			CTH M	30	9	6	8	14
			TOTAL 0010	285				

(1) EXISTING CURB AND GUTTER IS ASSUMED TO BE UNUSABLE MATERIAL
(2) EXPANDEDN FILL FACTOR = 1.25
(3) THE MASS ORDINATE + OR - QUANTITY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

STATION	TO	STATION	LOCATION	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA	211.0101.01 PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) (01. 1196-00-60) EACH	REMARKS
506+50	-	714+50	PROJECT	--	1	
549+50	-	551+81	RT	3	--	STAGE 1A
553+99	-	562+34	RT	9	--	STAGE 1A
548+39	-	551+68	LT	4	--	STAGE 1B
553+99	-	563+48	LT	10	--	STAGE 1B
548+47	-	552+00	USH 53 NB LT	4	--	SHOULDER ALONG GUARDRAIL
			TOTAL 0010	30	1	

STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL	REMARKS
			SHOULDERS	3,500	--	35	
			CULVERTS	10	90	1	
			CURB AND GUTTER	--	300	3	
			CONCRETE REPAIRS	--	800	8	
548+47	-	556+50	USH 53 NB LT	260	--	3	SHOULDER ALONG GUARDRAIL
553+69	-	558+23	USH 53 SB	160	--	2	SHOULDER ALONG GUARDRAIL
			UNDISTRIBUTED	470	100	6	
			TOTAL 0010	4,400	1,290	58	

STATION	TO	STATION	LOCATION	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	SPV.0180.01 SPECIAL (01. CONCRETE PAVEMENT REPAIR DOWELED) SY	SPV.0180.02 SPECIAL (02. CONCRETE PAVEMENT REPLACEMENT DOWELED) SY	SPV.0180.03 SPECIAL (03. CONCRETE PAVEMENT CENTERLINE JOINT REPAIR) SY
506+50	-	714+50	USH 53	3,700	4,500	7,700	5,900	800
			TOTAL 0010	3,700	4,500	7,700	5,900	800

STATION	TO	STATION	LOCATION	415.0090 CONCRETE PAVEMENT 9-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
551+77	-	552+07	SB USH 53	39	56
553+58	-	553+90	SB USH 53	41	55
			TOTAL 0010	80	111

CATEGORY	STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	460.6244 HMA PAVEMENT 4 MT 58-34 S TON	460.8644 HMA PAVEMENT 4 SMA 58-34 V TON	465.0105 ASPHALTIC SURFACE TON	465.0110 ASPHALTIC SURFACE PATCHING TON	465.0510 ASPHALTIC SHOULDER RUMBLE STRIPS DIVIDED ROADWAY LF	REMARKS
0010	506+50	-	551+77	MAINLINE	2,010	1,740	1,510	--	--	7,720	
	506+50	-	551+77	SHOULDER LT	480	780	--	--	--	--	
	553+90	-	714+50	MAINLINE	7,210	5,920	5,730	--	--	30,090	
	553+90	-	714+50	SHOULDER LT	1,570	2,520	--	--	--	--	
				SIDEROADS	740	1,200	--	--	--	--	
	549+53	-	562+34	SHOULDER WIDENINGS	50	--	--	140	--	--	STAGE 1A
	548+39	-	563+48	SHOULDER WIDENINGS	80	--	--	260	--	--	STAGE 1B
	506+50	-	714+50	OUTSIDE SHOULDER	870	--	--	1,410	--	--	STAGE 2A
	548+47	-	552+00	USH 53 NB LT	20	56	--	--	--	350	SHOULDER ALONG GUARDRAIL
				CURB AND GUTTER	--	--	--	30	--	--	
				CULVERTS	--	--	--	40	--	--	
				CONCRETE REPAIRS	--	--	--	--	290	--	
				USH 53 MEDIAN	--	--	--	5	--	--	ASPHALT PATHS AT CTH Y
				UNDISTRIBUTED	--	--	--	200	100	--	
				TOTAL 0010	13,030	12,216	7,240	2,085	390	38,160	

LOCATION	465.0315 ASPHALTIC FLUMES SY
NW CTH Y	8
SW EAST FLOWAGE LN	18
NW EAST FLOWAGE LN	9
SW CTH M	9
NW CTH M	14
TOTAL 0010	58

LOCATION	509.0301 PREPARATION DECKS TYPE 1 SY	509.0302 PREPARATION DECKS TYPE 2 SY	509.0310.S SAWING PAVEMENT DECK PREPARATION AREAS LF	509.2100.S CONCRETE MASONRY DECK REPAIR CY
SOUTH END B-16-79	3	3	90	1
NORTH END B-16-79	3	3	90	1
TOTAL 0010	6	6	180	2

HMA MIXTURE ACCEPTANCE								
1196-00-60								
							QUALITY MANAGEMENT PROGRAM TO BE USED	
LOCATION	STA - STA	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12 FOOT DRIVING LANE LT	506+50 - 551+77, 553+90 - 583+00, 634+00 - 714+50	UPPER LAYER	4 MT 58-34 S	4 SMA 58-34 V	2,420	2"	QMP AS PER SS 460	INCENTIVE DENSITY HMA PAVEMENT 460.2000
12 FOOT DRIVING LANE RT	506+50 - 551+77, 553+90 - 583+00, 634+00 - 714+50	UPPER LAYER	4 MT 58-34 S	4 SMA 58-34 V	2,420	2"	QMP AS PER SS 460	INCENTIVE DENSITY HMA PAVEMENT 460.2000
12 FOOT DRIVING LANE LT	583+00 - 634+00	UPPER LAYER	4 MT 58-34 S	4 SMA 58-34 V	840	2"	QMP AS PER SS 460	ACCEPTED BY ORDINARY COMPACTION
12 FOOT DRIVING LANE RT	583+00 - 634+00	UPPER LAYER	4 MT 58-34 S	4 SMA 58-34 V	840	2"	QMP AS PER SS 460	ACCEPTED BY ORDINARY COMPACTION
SHOULDERS LT	583+00 - 634+00	UPPER LAYER	4 MT 58-34 S	4 MT 58-34 S	390	2"	QMP AS PER SS 460	ACCEPTED BY ORDINARY COMPACTION
SHOULDERS RT	583+00 - 634+00	UPPER LAYER	4 MT 58-34 S	4 SMA 58-34 V	190	2"	QMP AS PER SS 460	ACCEPTED BY ORDINARY COMPACTION
SHOULDER LT	506+50 - 551+77, 553+90 - 583+00, 634+00 - 714+50	UPPER LAYER	4 MT 58-34 S	4 MT 58-34 S	1,260	2"	QMP AS PER SS 460	ACCEPTED BY DEPARTMENT TESTING, NOT ELIGIBLE FOR INCENTIVE
SHOULDER RT	506+50 - 527+95, 536+29 - 551+77, 553+90 - 571+40, 575+06 - 583+00, 634+00 - 697+08, 700+38 - 714+50	UPPER LAYER	4 MT 58-34 S	4 SMA 58-34 V	530	2"	QMP AS PER SS 460	ACCEPTED BY DEPARTMENT TESTING, NOT ELIGIBLE FOR INCENTIVE
SHOULDER RT	527+95 - 536+29, 571+40 - 575+06, 697+08 - 700+38	UPPER LAYER	4 MT 58-34 S	4 MT 58-34 S	210	2"	QMP AS PER SS 460	ACCEPTED BY DEPARTMENT TESTING, NOT ELIGIBLE FOR INCENTIVE
SIDEROADS	VARIOUS	UPPER LAYER	4 MT 58-34 S	4 MT 58-34 S	600	2"	QMP AS PER SS 460	ACCEPTED BY DEPARTMENT TESTING, NOT ELIGIBLE FOR INCENTIVE
USH 53 NB LT	548+74 - 552+00	UPPER LAYER	4 MT 58-34 S	4 MT 58-34 S	28	2"	QMP AS PER SS 460	ACCEPTED BY DEPARTMENT TESTING, NOT ELIGIBLE FOR INCENTIVE
12 FOOT DRIVING LANE LT	506+50 - 551+77, 553+90 - 583+00, 634+00 - 714+50	LOWER LAYER	EXISTING CONCRETE PAVEMENT	4 MT 58-34 S	2,420	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	PWL INCENTIVE DENSITY HMA PAVEMENT 460.2005
12 FOOT DRIVING LANE RT	506+50 - 551+77, 553+90 - 583+00, 634+00 - 714+50	LOWER LAYER	EXISTING CONCRETE PAVEMENT	4 MT 58-34 S	2,420	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	PWL INCENTIVE DENSITY HMA PAVEMENT 460.2005
12 FOOT DRIVING LANE LT	583+00 - 634+00	LOWER LAYER	EXISTING CONCRETE PAVEMENT	4 MT 58-34 S	840	2"	QMP AS PER SS 460	ACCEPTED BY ORDINARY COMPACTION
12 FOOT DRIVING LANE RT	583+00 - 634+00	LOWER LAYER	EXISTING CONCRETE PAVEMENT	4 MT 58-34 S	840	2"	QMP AS PER SS 460	ACCEPTED BY ORDINARY COMPACTION
SHOULDERS LT	583+00 - 634+00	LOWER LAYER	EXISTING CONCRETE PAVEMENT	4 MT 58-34 S	390	2"	QMP AS PER SS 460	ACCEPTED BY ORDINARY COMPACTION
SHOULDERS RT	583+00 - 634+00	LOWER LAYER	EXISTING CONCRETE PAVEMENT	4 MT 58-34 S	190	2"	QMP AS PER SS 460	ACCEPTED BY ORDINARY COMPACTION
SHOULDERS LT	506+50 - 551+77, 553+90 - 583+00, 634+00 - 714+50	LOWER LAYER	EXISTING CONCRETE PAVEMENT	4 MT 58-34 S	1,260	2"	QMP AS PER SS 460	ACCEPTED BY DEPARTMENT TESTING, NOT ELIGIBLE FOR INCENTIVE
SHOULDERS RT	506+50 - 551+77, 553+90 - 583+00, 634+00 - 714+50	LOWER LAYER	EXISTING CONCRETE PAVEMENT	4 MT 58-34 S	740	2"	QMP AS PER SS 460	ACCEPTED BY DEPARTMENT TESTING, NOT ELIGIBLE FOR INCENTIVE
SIDEROADS	506+50 - 551+77, 553+90 - 583+00, 634+00 - 714+50	LOWER LAYER	EXISTING CONCRETE PAVEMENT	4 MT 58-34 S	600	2"	QMP AS PER SS 460	ACCEPTED BY DEPARTMENT TESTING, NOT ELIGIBLE FOR INCENTIVE
USH 53 NB LT	548+74 - 552+00	LOWER LAYER	EXISTING CONCRETE PAVEMENT	4 MT 58-34 S	28	2"	QMP AS PER SS 460	ACCEPTED BY DEPARTMENT TESTING, NOT ELIGIBLE FOR INCENTIVE
ASPHALTIC SURFACE	VARIOUS	LOWER & UPPER LAYERS	HMA SURFACE OR BASE AGGREGATE	ASPHALTIC SURFACE	2,085	VARIES	QMP AS PER SS 460	ACCEPTED BY ORDINARY COMPACTION
PATCHING	VARIOUS	LOWER LAYER	EXISTING HMA OR CONCRETE PAVEMENT	ASPHALTIC SURFACE PATCHING	390	VARIES	QMP AS PER SS 460	ACCEPTED BY ORDINARY COMPACTION

STATION	LOCATION	MIN THICKNESS (INCHES) STEEL	203.0100 REMOVING SMALL PIPE CULVERTS EACH	520.8700 CLEANING CULVERT PIPES EACH	521.1018 APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH EACH	521.3118 CULVERT PIPE CORRUGATED STEEL 18-INCH LF	611.8115 ADJUSTING INLET COVERS EACH	633.5200 MARKERS CULVERT END EACH	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	REMARKS
521+25	RT	--	--	1	--	--	--	2	--	
534+35	LT	--	--	1	--	--	--	--	--	
534+75	LT	--	--	1	--	--	--	--	--	
539+20	LT	--	--	--	--	--	--	2	--	
541+30	RT	--	--	1	--	--	--	--	--	
551+68	LT	--	--	--	--	--	1	--	--	
551+85	RT	--	--	--	--	--	1	--	--	
566+95	USH 53	--	--	--	--	--	--	2	--	
567+40	RT	0.064	1	--	1	4	--	2	1	SAW CUT REQUIRED 4' FROM END OF EXISTING PIPE
589+54	USH 53	--	--	--	--	--	--	2	--	
611+96	USH 53	--	--	1	--	--	--	--	--	
628+97	USH 53	--	--	--	--	--	--	2	--	
641+88	RT	0.064	1	--	2	80	--	2	1	
642+31	LT	--	--	--	--	--	--	2	--	
645+74	USH 53	--	--	1	--	--	--	2	--	
664+93	USH 53	--	--	1	--	--	--	2	--	
	TOTAL 0010		2	7	3	84	2	20	2	

LOCATION	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF
STAGE 1B	563	563
STAGE 1C	--	563
TOTAL 0010	563	1,126

STATION	LOCATION	204.0150 REMOVING CURB & GUTTER LF	601.0557 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D LF	601.0590 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBTT LF	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF
551+70	LT	15	--	15	15
551+85	RT	13	--	17	17
	CTH Y SW CORNER	56	50	--	50
	CTH NW CORNER	97	96	--	96
	E FLOWAGE LN SW CORNER	54	52	--	52
	E FLOWAGE LN NW CORNER	103	100	--	100
	CTH M SW CORNER	63	59	--	59
	CTH M NW CORNER	85	77	--	77
	TOTAL 0010	486	434	32	466

STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
548+99	-	552+17	NB LT	--	225	39.4	1
550+00	-	552+17	SB RT	424	--	--	--
550+84	-	551+78	SB LT	93	--	--	--
553+88	-	556+31	SB RT	451	250	39.4	1
553+88	-	555+14	SB LT	125	25	39.4	1
			TOTAL 0010	1,093	500	118.2	3

3

STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.7005 INLET PROTECTION TYPE A EACH	628.7015 INLET PROTECTION TYPE C EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH	628.7570 ROCK BAGS EACH
547+75	-	552+00	LT & RT	800	800	--	--	--	4	15
		551+67	LT	--	--	--	1	--	--	--
		551+86	RT	--	--	--	1	--	--	--
		552+07	USH 53 NB LT	--	--	--	1	--	--	--
553+69	-	558+49	LT & RT	1,050	1,050	--	--	--	--	45
		555+56	RT	--	--	1	--	--	--	--
		567+40	RT	100	100	--	--	--	--	--
			CTH Y	250	250	--	--	--	4	30
			E FLOWAGE LN	500	500	--	--	--	7	30
			CTH M	300	300	--	--	--	--	30
			UNDISTRIBUTED	250	250	1	--	45	8	65
			TOTAL 0010	3,250	3,250	2	3	45	23	215

STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0500 SEED WATER MGAL
548+00	-	552+00	RT	370	370	0.3	16.4	21
553+69	-	558+49	LT & RT	850	850	0.6	38.1	48
567+25	-	567+50	RT	40	40	0.1	1.5	2
			CTH Y	160	160	0.1	7.2	9
			E FLOWAGE LN	340	340	0.3	15.2	20
			CTH M	110	110	0.1	4.6	6
			UNDISTRIBUTED	200	200	0.5	9.0	14
			TOTAL 0010	2,070	2,070	2.0	92.0	120

STATION	LOCATION	634.0616 POSTS WOOD 4X6-INCH X 16-FT EACH	634.0620 POSTS WOOD 4X6-INCH X 20-FT EACH	638.2102 MOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	638.4000 MOVING SMALL SIGN SUPPORTS EACH	REMARKS
553+90	LT	--	--	1	--	1	BRIDGE HASH MARKS SIGN
554+00	RT	--	--	1	--	1	BRIDGE HASH MARKS SIGN
554+05	LT	2	--	1	2	--	"ST. CROIX RIVER" SIGN
556+75	RT	--	2	1	2	--	"WATCH FOR TURNING VEHICLES NEXT 1/2 MILE" SIGN
642+15	RT	1	--	1	1	--	"STOP" SIGN & 2 "ONE WAY" SIGNS
	UNDISTRIBUTED	2	--	2	2	2	
	TOTAL 0010	5	2	7	7	4	

LOCATION	DRUMS NO. DEVICES	643.0300 TRAFFIC CONTROL DRUMS DAY	BARRICADES NO. DEVICES	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	WARNING LIGHTS TYPE A NO. DEVICES	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	WARNING LIGHTS TYPE C NO. DEVICES	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	SIGNS NO. DEVICES	643.0900 TRAFFIC CONTROL SIGNS DAY	COVERING SIGNS NO. CYCLES	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	* 643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	DURATION DAYS
STAGE 1A	148	2,220	2	30	16	240	4	60	15	225	--	--	32	15
STAGE 1B	148	2,220	4	60	16	240	8	120	43	645	--	--	--	15
STAGE 1C	148	1,332	4	36	16	144	8	72	44	396	--	--	--	9
STAGE 2A	913	31,035	10	340	16	544	20	680	51	1,734	1	1	--	34
STAGE 2B	913	31,035	10	340	16	544	20	680	51	1,734	--	--	--	34
STAGE 3A	913	20,082	10	220	16	352	20	440	51	1,122	--	--	--	22
STAGE 3B	913	20,082	10	220	16	352	20	440	51	1,122	--	--	--	22
USH 53 NB BEAMGUARD REPLACEMENT	50	350	1	7	2	14	15	105	13	91	--	--	--	7
ROADSIDE CLEARING	50	500	--	--	--	--	--	--	5	50	--	--	--	10
UNDISTRIBUTED	--	5,004	--	227	--	270	--	453	--	771	--	5	--	--
TOTAL 0010		113,860		1,480		2,700		3,050		7,890		6	32	

* G20-57 SIGNS TO BE PLACED AT PROJECT TERMINI 7 DAYS PRIOR TO CONSTRUCTION AND REMOVED WHEN CONSTRUCTION BEGINS.

LOCATION	DURATION DAYS	DIGITAL SPEED LIMIT TRAILERS EA	643.0370.S DIGITAL SPEED REDUCTION SYSTEM (DSRS) DAY	CONNECTED ARROW BOARD EA	643.0810 CONNECTED ARROW BOARD DAY	CONNECTED WORK ZONE START AND END LOCATION MARKERS EA	643.1220 CONNECTED WORK ZONE START AND END LOCATION MARKERS DAY
STAGE 1A	15	1	15	1	15	2	15
STAGE 1B	15	1	15	1	15	2	15
STAGE 1C	9	1	9	1	9	2	9
STAGE 2A	34	4	136	1	34	2	34
STAGE 2B	34	4	136	1	34	2	34
STAGE 3A	22	4	88	1	22	2	22
STAGE 3B	22	4	88	1	22	2	22
USH 53 NB BEAMGUARD REPLACEMENT	7	1	7	1	7	2	7
UNDISTRIBUTED	--	--	26	--	12	--	12
TOTAL 0010			520		170		170

LOCATION	643.3960 TEMPORARY MARKING REMOVABLE MASK OUT TAPE 6-INCH LF	643.3280 TEMPORARY MARKING LINE REMOVABLE TAPE 10-INCH LF	643.3180 TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH LF	643.3165 TEMPORARY MARKING LINE PAINT 6-INCH LF	646.9002 MARKING REMOVAL LINE 6-INCH LF	REMARKS
USH 53	780	100	980	--	200	STAGE 1A
USH 53	2,300	--	9,700	--	--	STAGE 1B
USH 53	2,300	100	9,900	--	--	STAGE 1C
USH 53	860	--	1,260	--	--	STAGE 2A
USH 53	860	200	1,260	--	--	STAGE 2B
USH 53	860	--	1,260	--	--	STAGE 3A
USH 53	860	200	1,260	--	--	STAGE 3B
UNDISTRIBUTED	2,080	200	2,080	2,000	300	
TOTAL 0010	10,900	800	27,700	2,000	500	

STATION	TO	STATION	LOCATION	646.2020 MARKING LINE EPOXY 6-INCH LF	646.2025 MARKING LINE GROOVED BLACK EPOXY 6-INCH LF	646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH LF	646.4040 MARKING LINE GROOVED WET REF EPOXY 10-INCH LF	646.5020 MARKING ARROW EPOXY EACH	646.5120 MARKING WORD EPOXY EACH	646.6120 MARKING STOP LINE EPOXY 18-INCH LF	646.6220 MARKING YIELD LINE EPOXY 18-INCH EACH	646.6466 COLD WEATHER MARKING EPOXY 6-INCH LF	646.6470 COLD WEATHER MARKING EPOXY 10-INCH LF	646.7120 MARKING DIAGONAL EPOXY 12-INCH LF	REMARKS
506+50	-	714+50	R/L	--	5,200	5,200	--	--	--	--	--	10,400	--	--	
506+50	-	520+88	LT	--	--	1,437	--	--	--	--	--	1,437	--	--	WHITE
506+50	-	520+88	RT	--	--	1,445	--	--	--	--	--	1,445	--	--	YELLOW
522+05	-	534+18	LT	--	--	1,214	--	--	--	--	--	1,214	--	--	WHITE
522+05	-	527+39	RT	--	--	625	--	--	--	--	--	625	--	--	YELLOW
527+39	-	534+76	RT	--	--	--	740	2	1	--	--	--	740	70	
528+53	-	540+82	RT	--	--	1,259	--	--	--	--	--	1,259	--	--	YELLOW
535+47	-	541+80	LT	--	--	--	633	4	2	--	--	--	633	--	
535+50	-	538+77	LT	--	--	333	--	--	--	--	--	333	--	--	WHITE
539+62	-	570+00	LT	--	--	3,038	--	--	--	--	--	3,038	--	--	WHITE
540+82	-	541+50	RT	--	--	200	--	--	--	--	14	200	--	120	YELLOW
542+00	-	570+28	RT	--	--	2,820	79	--	--	--	--	2,820	79	--	YELLOW
571+18	-	641+65	LT	--	--	7,047	--	--	--	--	--	7,047	--	--	WHITE
571+35	-	641+39	RT	--	--	7,004	--	--	--	--	--	7,004	--	--	YELLOW
571+35	-	573+61	RT	--	--	--	226	2	1	--	--	--	226	--	
642+45	-	660+70	RT	--	--	1,825	--	--	--	--	--	1,825	--	--	YELLOW
642+99	-	695+87	LT	--	--	5,288	--	--	--	--	--	5,288	--	--	WHITE
642+99	-	643+99	LT	--	--	--	100	2	--	--	--	--	100	--	
661+80	-	695+86	RT	--	--	3,430	--	--	--	--	--	3,430	--	--	YELLOW
697+08	-	714+50	RT	--	--	1,742	--	--	--	--	--	1,742	--	--	YELLOW
697+08	-	699+25	RT	--	--	--	250	2	1	--	--	--	250	--	
697+12	-	699+25	LT	--	--	--	225	2	1	--	--	--	225	--	
697+12	-	714+50	LT	--	--	1,750	--	--	--	--	--	1,750	--	--	WHITE
548+47	-	552+00	USH 53 NB LT	--	--	350	--	--	--	--	--	350	--	--	YELLOW
			SNOWBERRY LN	150	--	--	--	--	--	--	--	150	--	--	
			CTH Y	150	--	--	--	1	--	25	--	150	--	--	
			SPRUCE DR.	100	--	--	--	--	--	22	--	100	--	--	
			E. RIVER BEND CR.	--	--	--	--	--	--	--	--	--	--	--	
			E. FLOWAGE LN.	480	--	--	--	--	--	--	--	480	--	--	
			PIT DR.	230	--	--	--	--	--	--	--	230	--	--	
			CTH M	100	--	--	--	--	--	20	--	100	--	--	
			TOTAL 0010	1,210	5,200	46,007	2,253	15	6	67	14	52,417	2,253	190	

STATION	TO	STATION	LOCATION	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
506+50	-	552+02	USH 53 SB	4,552	--
553+72	-	558+50	USH 53 SB	--	478
553+72	-	714+50	USH 53 SB	16,078	--
548+00	-	552+00	USH 53 NB LT	--	400
548+47	-	552+00	USH 53 NB LT	353	--
			TOTAL 0010	20,983	878

STATION	TO	STATION	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	REMARKS
506+50	-	714+50	PROJECT	10,800	47,800	CONCRETE REPAIR/REPLACEMENT AREAS
548+47	-	552+00	USH 53 NB LT	360	--	SHOULDER ALONG GUARDRAIL
			CULVERTS	90	--	
			SIDE ROADS	580	--	CURB AND GUTTER REPLACEMENTS
			TOTAL 0010	11,830	47,800	

BEGIN PROJECT
STA 506+50 'SB'
MATCH EXISTING
BUTT JOINT REQ'D
BEGIN HMA OVERLAY

APPROX. R/W

BURIED COMMUNICATIONS
(ASTREA)

101'
96'
114'
109'
101'
144'

FO FO FO FO FO FO FO FO FO FO FO FO FO

N1°13'03"W

505 'SB'

USH 53 SB

510 'SB'

515

MATCH LINE STA 515+00 'SB'

BP: 500+00.00 'SB'
Y = 128336.255
X = 223381.227

CULVERT 16053028874
STA. 502+23 'SB'
EXISTING 24" RCCP (TO REMAIN)

USH 53 NB

PC: 510+72.36 'SB'

APPROX. R/W

5

5

LEGEND

- SENSITIVE AREA
- DOUGLAS COUNTY WILDLIFE AREA
- REMOVING CONCRETE PAVEMENT BUTT JOINT
- REMOVING ASPHALTIC PAVEMENT BUTT JOINT
- ROADSIDE CLEARING AREA (LIMITS ARE 50' FROM C/L)
- SPECIAL CONCRETE PAVEMENT REPAIR DOWELED
- SPECIAL CONCRETE PAVEMENT CENTERLINE JOINT REPAIR
- SPECIAL CONCRETE PAVEMENT REPLACEMENT DOWELED
- XXXXXXX SAWING ASPHALT
- SAWING CONCRETE

NOTE: LIMITS OF CONCRETE PAVEMENT IMPROVEMENTS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

PI STA = 515+85.36
Y = 129921.258
X = 223347.537
DELTA = 5°58'47" LT
D = 0°35'00"
T = 513.00'
L = 1025.07'
R = 9822.00'
PC STA = 510+72.36
Y = 129408.373
X = 223358.439
PT STA = 520+97.43
Y = 130430.217
X = 223283.265
SE = 2.1%

APPROX. R/W

SNOWBERRY LN.

CULVERT 16053028871
STA. 521+25 'SB'
EXISTING 18" CMCP (TO REMAIN)

APPROX. R/W

BURIED COMMUNICATIONS
(ASTREA)

CULVERT 16053028873
STA. 516+96 'SB'
EXISTING 18" RCCP (TO REMAIN)

PT: 520+97.43 'SB'

CULVERT 16053086774
STA. 522+93 'SB'
EXISTING 24" RCCP (TO REMAIN)

PC: 526+57.16 'SB'

164'
159'
90'
105'
114'
87'

FO FO FO FO FO FO FO FO FO FO FO FO FO

MATCH LINE STA 515+00 'SB'

'SB

520 'SB'

N7°11'50"W 525 'SB'

530

MATCH LINE STA 530+00 'SB'

USH 53 SB

USH 53 NB

210'
236'
203'
206'

CULVERT 16053028872
STA. 521+25 'SB'
EXISTING 18" CMCP (TO REMAIN)
1 EA - CLEANING CULVERT PIPES
2 EA - MARKERS CULVERT END

SEE CROSS OVER PAVING DETAIL

CULVERT 16053028870
STA. 528+00 'SB'
EXISTING 24" RCCP (TO REMAIN)

SEE REDUCED CONFLICT
U-TURN PAVING DETAIL

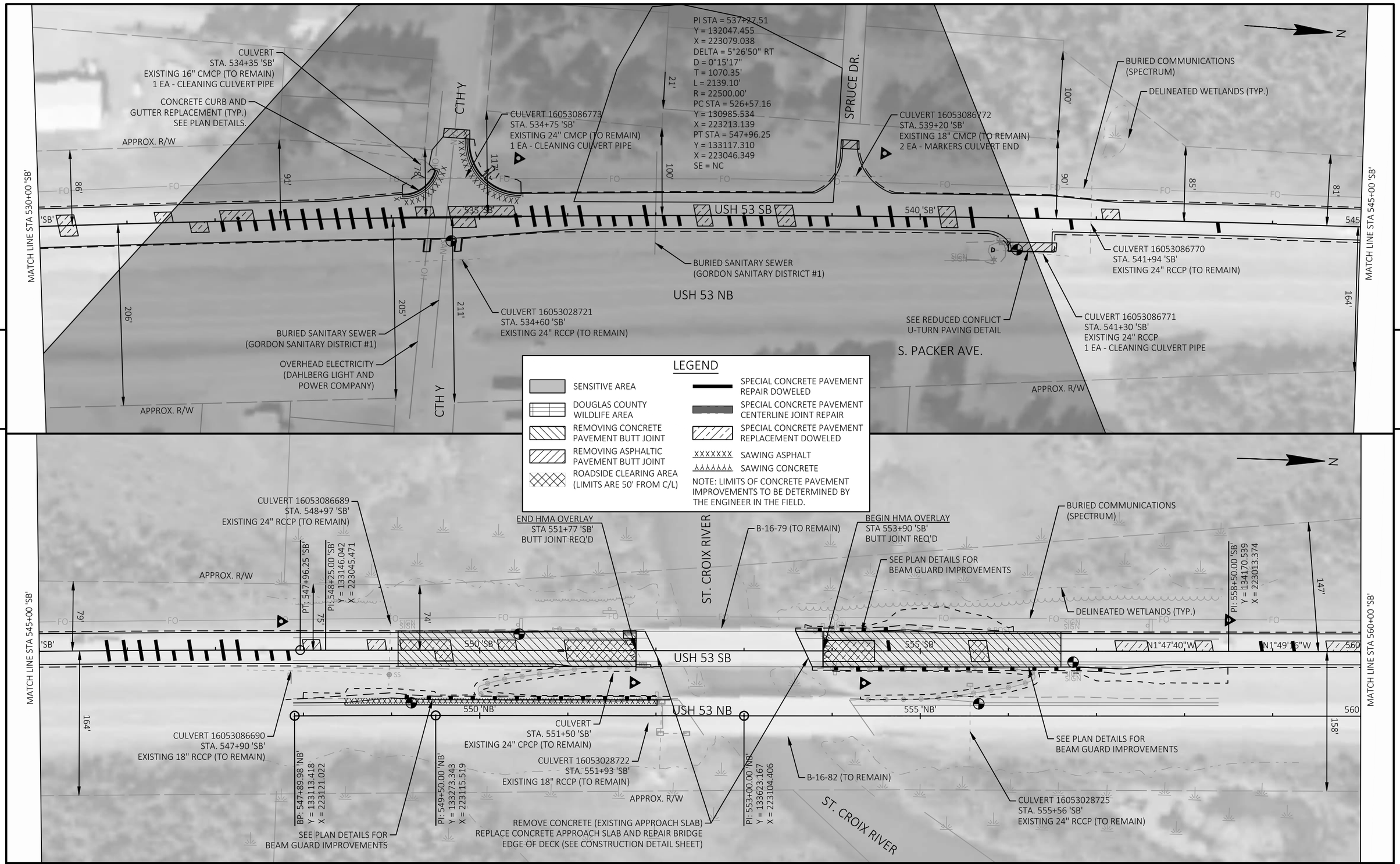
S. PACKER AVE.

APPROX. R/W

APPROX. R/W

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN	SHEET 48	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-pn
PLOT DATE : 4/28/2026 12:52 PM
PLOT BY : SHAWN DOLENS
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

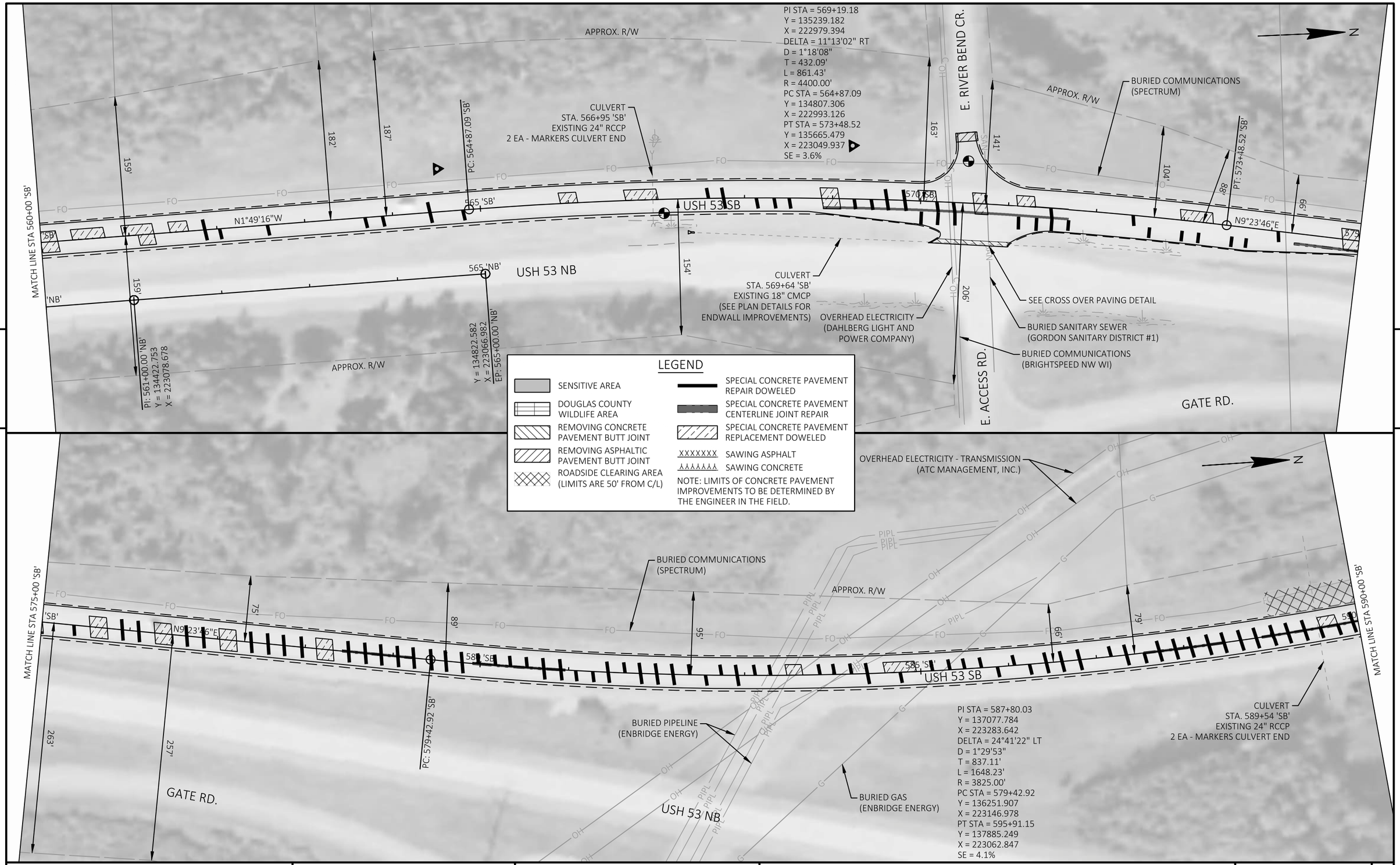


PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN	SHEET 49 E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050202-pn

PLOT DATE : 4/28/2026 12:52 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

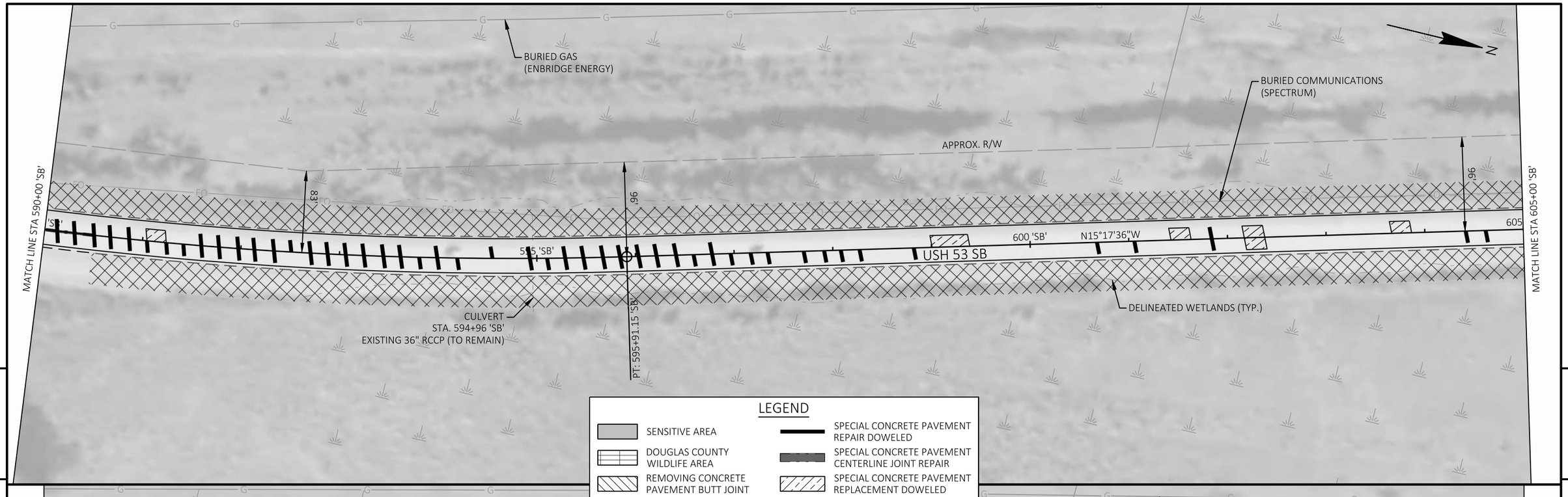


PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN	SHEET 50 E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050203-pn

PLOT DATE : 4/28/2026 12:52 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN	SHEET 51	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050204-pn

PLOT DATE : 4/28/2026 12:53 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:100 FT

MATCH LINE STA 620+00 'SB'

MATCH LINE STA 635+00 'SB'

BURIED GAS
(ENBRIDGE ENERGY)

N

APPROX. R/W

BURIED COMMUNICATIONS
(SPECTRUM)

108'

107'

SB'

625 'SB'

N15°17'36"W

630 'SB'

635

USH 53 SB

DELINEATED WETLANDS (TYP.)

CULVERT 16053028879
STA. 628+97 'SB'
EXISTING 24" RCCP (TO REMAIN)
2 EA - MARKER CULVERT PIPE

5

5

LEGEND

- SENSITIVE AREA
- DOUGLAS COUNTY WILDLIFE AREA
- REMOVING CONCRETE PAVEMENT BUTT JOINT
- REMOVING ASPHALTIC PAVEMENT BUTT JOINT
- ROADSIDE CLEARING AREA (LIMITS ARE 50' FROM C/L)
- SPECIAL CONCRETE PAVEMENT REPAIR DOWELED
- SPECIAL CONCRETE PAVEMENT CENTERLINE JOINT REPAIR
- SPECIAL CONCRETE PAVEMENT REPLACEMENT DOWELED
- XXXXXXX SAWING ASPHALT
- XXXXXXX SAWING CONCRETE

NOTE: LIMITS OF CONCRETE PAVEMENT IMPROVEMENTS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

E. FLOWAGE LN.

APPROX. R/W

BURIED GAS
(ENBRIDGE ENERGY)

OVERHEAD ELECTRICITY - TRANSMISSION
(ATC MANAGEMENT, INC.)

CULVERT 16053028878
STA. 642+31 'SB'
EXISTING 18" CMCP (TO REMAIN)
2 EA - MARKERS CULVERT END

CONCRETE CURB AND GUTTER REPLACEMENT (TYP.)
SEE PLAN DETAILS.

114'

221'

199'

198'

108'

PI: 638+00.00 'SB'
Y = 141945.060
X = 221952.722

PI: 640+00.00 'SB'
Y = 142138.239
X = 221900.935

PI: 645+50.00 'SB'
Y = 142668.762
X = 221755.868

PI: 647+50.00 'SB'
Y = 142861.414
X = 221702.152

BURIED COMMUNICATIONS
(SPECTRUM)

'SB'

N15°17'36"W

USH 53 SB

N15°00'24"W

640 'SB'

N15°17'36"W

645 'SB'

N15°34'47"W

N15°17'36"W

650

CULVERT 16053086688
STA. 641+88 'SB'
EXISTING 18" CMCP
(SEE PLAN DETAILS FOR IMPROVEMENTS)

BURIED COMMUNICATIONS
(BRIGHTSPEED NW WI)

SEE CROSS OVER PAVING DETAIL

CULVERT
STA. 645+74 'SB'
EXISTING 24" RCCP (TO REMAIN)
1 EA - CLEANING CULVERT PIPE
2 EA - MARKERS CULVERT END

E. FLOWAGE LN.

MATCH LINE STA 635+00 'SB'

MATCH LINE STA 650+00 'SB'

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN	SHEET 52	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050205-pn

PLOT DATE : 4/28/2026 12:53 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

MATCH LINE STA 650+00 'SB'

APPROX. R/W

BURIED GAS
(ENBRIDGE ENERGY)

OVERHEAD ELECTRICITY - TRANSMISSION
(ATC MANAGEMENT, INC.)

BURIED COMMUNICATIONS
(SPECTRUM)

199'

199'

83'

83'

655 'SB'

N15°17'36"W

660 'SB'

665

USH 53 SB

MATCH LINE STA 665+00 'SB'

CULVERT
STA. 664+93 'SB'
EXISTING 24" RCCP (TO REMAIN)
1 EA - CLEANING CULVERT PIPE
2 EA - MARKERS CULVERT END

PIT DR.

CULVERT
STA. 661+17 'SB'
EXISTING 24" CMCP (TO REMAIN)

SEE CROSS OVER PAVING DETAIL

USH 53 NB

5

5

LEGEND

- SENSITIVE AREA
- DOUGLAS COUNTY WILDLIFE AREA
- REMOVING CONCRETE PAVEMENT BUTT JOINT
- REMOVING ASPHALTIC PAVEMENT BUTT JOINT
- ROADSIDE CLEARING AREA (LIMITS ARE 50' FROM C/L)
- SPECIAL CONCRETE PAVEMENT REPAIR DOWELED
- SPECIAL CONCRETE PAVEMENT CENTERLINE JOINT REPAIR
- SPECIAL CONCRETE PAVEMENT REPLACEMENT DOWELED
- XXXXXXX SAWING ASPHALT
- SAWING CONCRETE

NOTE: LIMITS OF CONCRETE PAVEMENT IMPROVEMENTS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

MATCH LINE STA 665+00 'SB'

BURIED GAS
(ENBRIDGE ENERGY)

APPROX. R/W

OVERHEAD ELECTRICITY - TRANSMISSION
(ATC MANAGEMENT, INC.)

BURIED COMMUNICATIONS
(SPECTRUM)

82'

129'

127'

'SB'

670 'SB'

N15°17'36"W

675 'SB'

680

USH 53 SB

MATCH LINE STA 680+00 'SB'

244'

214'

USH 53 NB

APPROX. R/W

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN	SHEET 53	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050206-pn

PLOT DATE : 4/28/2026 12:53 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

5

5

OVERHEAD ELECTRICITY - TRANSMISSION
(ATC MANAGEMENT, INC.)

APPROX. R/W

BURIED GAS
(ENBRIDGE ENERGY)

BURIED COMMUNICATIONS
(SPECTRUM)

MATCH LINE STA 680+00 'SB'

127'

209'

200'

128'

N15°17'36"W

685 'SB'

PC: 685+65.12 'SB'

USH 53 NB

USH 53 SB

690 'SB'

82'

200'

173'

194'

190'

696

MATCH LINE STA 695+00 'SB'

PI STA = 690+45.69
Y = 147004.987
X = 220569.123
DELTA = 15°12'25" RT
D = 1°35'30"
T = 480.57'
L = 955.49'
R = 3600.00'
PC STA = 685+65.12
Y = 146541.436
X = 220695.878
PT STA = 695+20.61
Y = 147485.555
X = 220568.400
SE = 4.3%

APPROX. R/W

LEGEND

- SENSITIVE AREA
- DOUGLAS COUNTY WILDLIFE AREA
- REMOVING CONCRETE PAVEMENT BUTT JOINT
- REMOVING ASPHALTIC PAVEMENT BUTT JOINT
- ROADSIDE CLEARING AREA (LIMITS ARE 50' FROM C/L)
- SPECIAL CONCRETE PAVEMENT REPAIR DOWELED
- SPECIAL CONCRETE PAVEMENT CENTERLINE JOINT REPAIR
- SPECIAL CONCRETE PAVEMENT REPLACEMENT DOWELED
- XXXXXXX SAWING ASPHALT
- XXXXXXX SAWING CONCRETE

NOTE: LIMITS OF CONCRETE PAVEMENT IMPROVEMENTS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

BURIED COMMUNICATIONS
(BRIGHTSPEED NW WI)

CTH M

WILD RIVERS STATE TRAIL

CONCRETE CURB AND GUTTER REPLACEMENT (TYP.) SEE PLAN DETAILS.

MATCH LINE STA 695+00 'SB'

196'

PT: 695+19.02 'SB'

220'

239'

175'

98'

77'

700 'SB'

USH 53 SB

N0°05'10"W 705 'SB'

710

MATCH LINE STA 710+00 'SB'

184'

139'

138'

158'

USH 53 NB

35'

154'

CULVERT 16053028732
STA. 706+28 'SB'
EXISTING 24" RCCP

APPROX. R/W

POODLE LN.

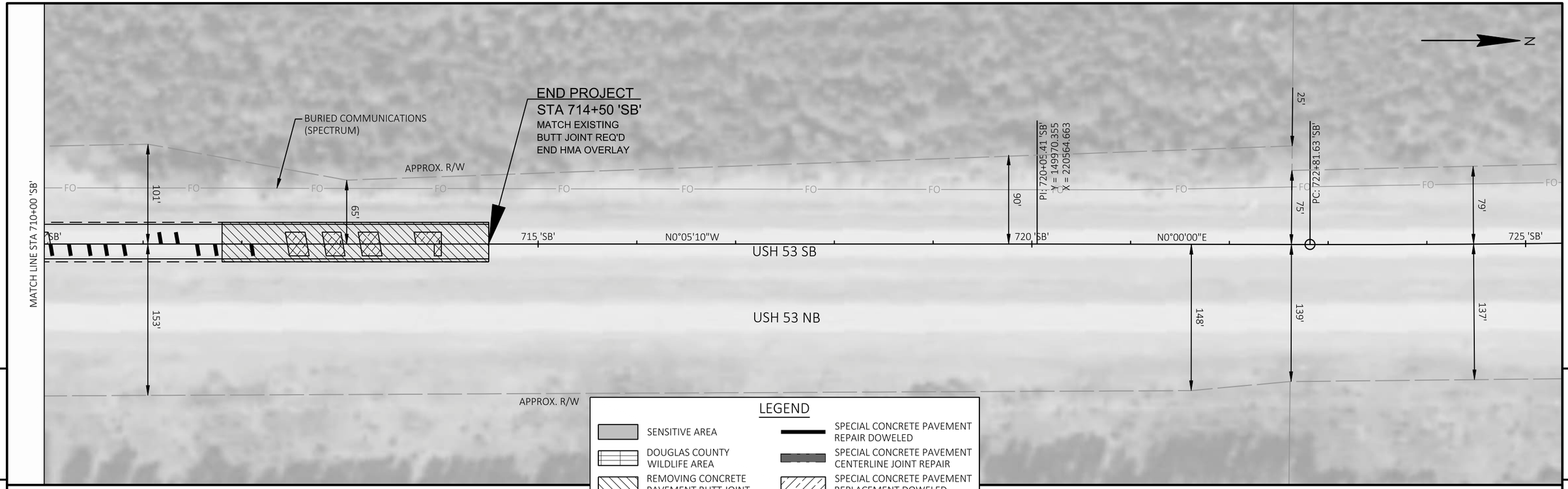
SEE CROSS OVER PAVING DETAIL

OVERHEAD ELECTRICITY
(DAHLBERG LIGHT AND POWER COMPANY)

NOTE: THE WILD RIVERS STATE TRAIL CROSSES USH 53 AT THE CTH M INTERSECTION. MAINTAIN ACCESS TO TRAIL USERS AT ALL TIMES.

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	PLAN	SHEET 54	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050207-pn
PLOT DATE : 4/28/2026 12:53 PM
PLOT BY : SHAWN DOLENS
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



LEGEND

- SENSITIVE AREA
- DOUGLAS COUNTY WILDLIFE AREA
- REMOVING CONCRETE PAVEMENT BUTT JOINT
- REMOVING ASPHALTIC PAVEMENT BUTT JOINT
- ROADSIDE CLEARING AREA (LIMITS ARE 50' FROM C/L)
- SPECIAL CONCRETE PAVEMENT REPAIR DOWELED
- SPECIAL CONCRETE PAVEMENT CENTERLINE JOINT REPAIR
- SPECIAL CONCRETE PAVEMENT REPLACEMENT DOWELED
- XXXXXXX SAWING ASPHALT
- XXXXXXX SAWING CONCRETE

NOTE: LIMITS OF CONCRETE PAVEMENT IMPROVEMENTS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

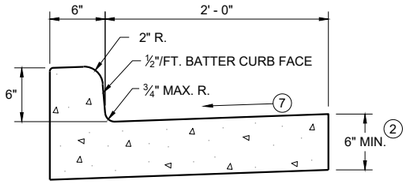
Standard Detail Drawing List

08D01-24A	CONCRETE CURB & GUTTER
08D01-24B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-14A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
09A01-14B	AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"
13A03-07	CONCRETE PAVEMENT SHOULDERS
13A05-06A	SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY
13A05-06B	SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY
13A07-02	CONTINUOUSLY REINFORCED CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C09-18A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-18B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-18C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-18D	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C11-15A	RURAL DOWELED CONCRETE PAVEMENT
13C11-15B	RURAL DOWELED CONCRETE PAVEMENT
13C19-03	HMA LONGITUDINAL JOINTS
14B07-16A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16J	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16K	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16L	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16M	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16N	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-10F	ADVANCED WIDTH RESTRICTION SIGNING
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-16B	PAVEMENT MARKING WORDS
15C07-16C	PAVEMENT MARKING ARROWS
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-24B	TEMPORARY LONGITUDINAL PAVEMENT MARKING

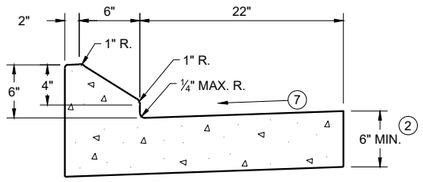
6

Standard Detail Drawing List

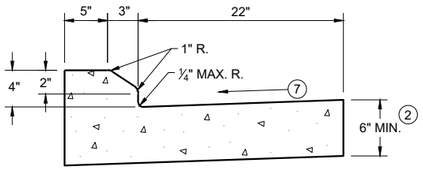
15C08-24C	PAVEMENT MARKING (TURN LANES)
15C08-24D	PAVEMENT MARKING (TURN LANES)
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C19-11C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C20-02	YIELD MARKING
15C33-05	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D12-16G	TRAFFIC CONTROL, LANE CLOSURE , DIGITAL SPEED REDUCTION SYSTEM
15D21-07A	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D21-07B	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D27-05	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D29-06	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD
15D39-03	TRAFFIC CONTROL, DROP-OFF SIGNING
15D40-07D	TRAFFIC CONTROL, PARTIAL LANE SHIFT MULTILANE DIVIDED 50 MPH AND GREATER
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL



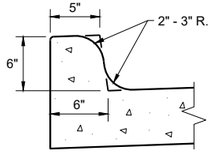
TYPES A (1) & D



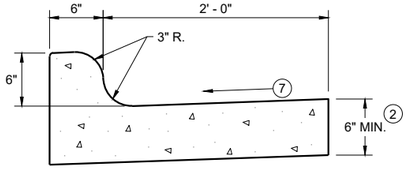
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

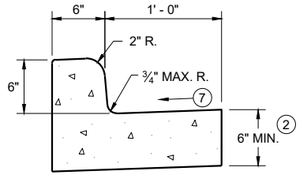


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



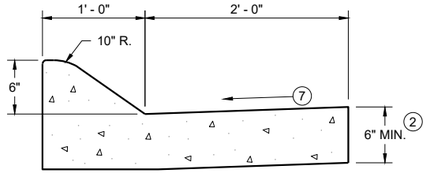
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"

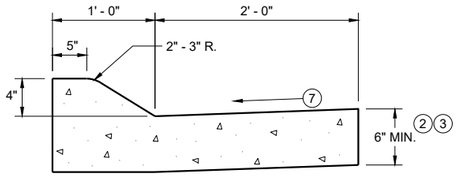


TYPES A (1) & D

CONCRETE CURB AND GUTTER 18"

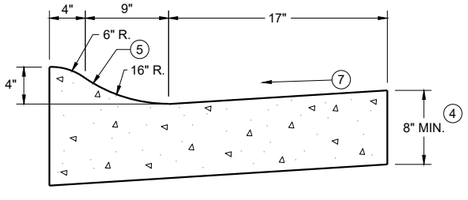


6" SLOPED CURB TYPES A (1) & D



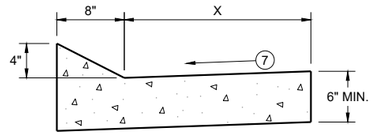
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T
CONCRETE CURB AND GUTTER 30"

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

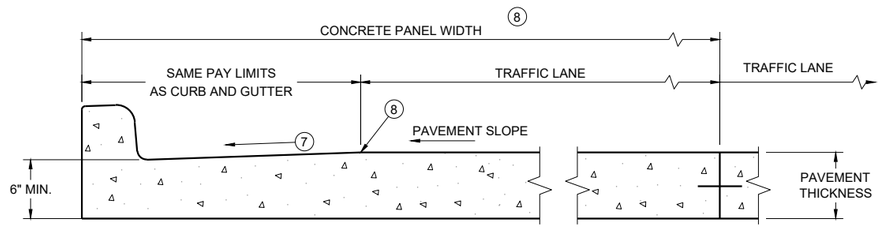


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

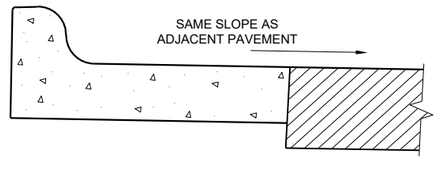
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

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

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

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(3) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

(4) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

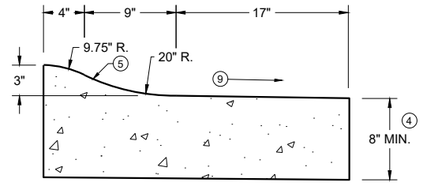
(5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

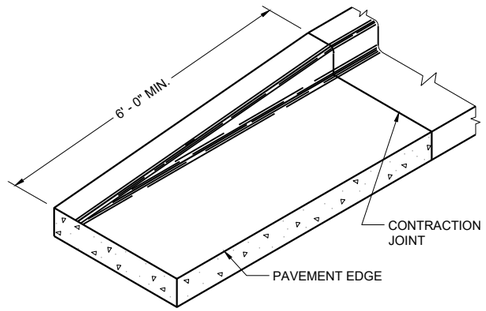
(9) SLOPE TO BE REVERSE SLOPE MATCHING THE SLOPE OF THE PAVEMENT AND THE CIRCULATORY ROADWAY



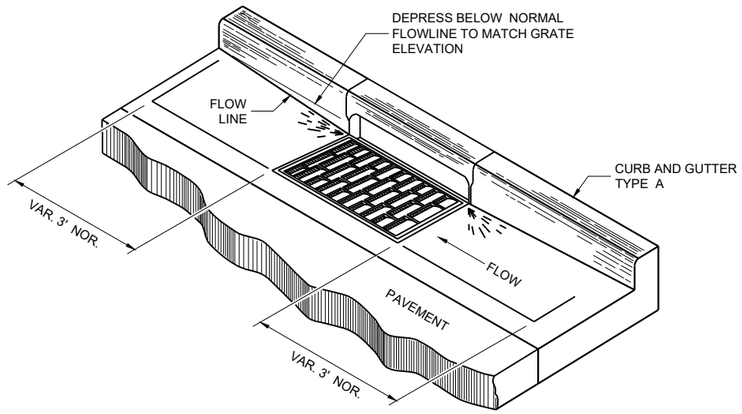
3" SLOPED CURB TYPES R (1) & T

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



END SECTION CURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS

(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

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

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

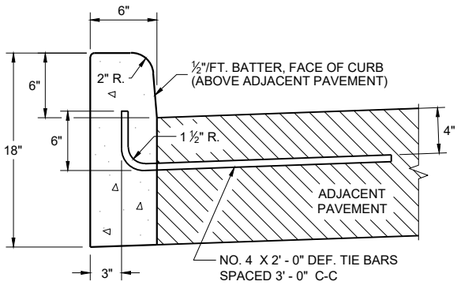
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

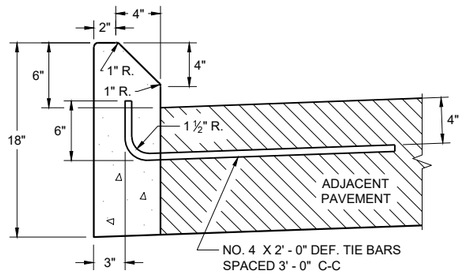
(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(10) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

(11) PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.

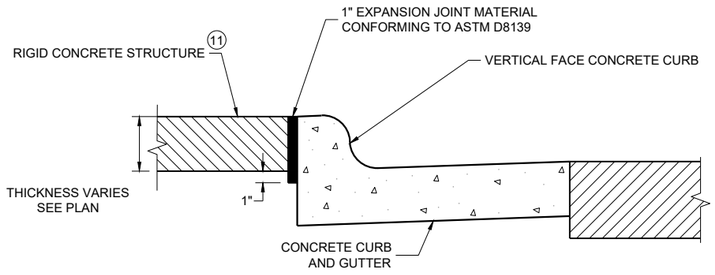


TYPES A (1) & D

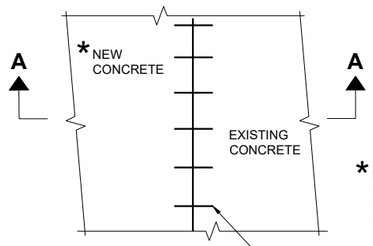


TYPES G (1) & J

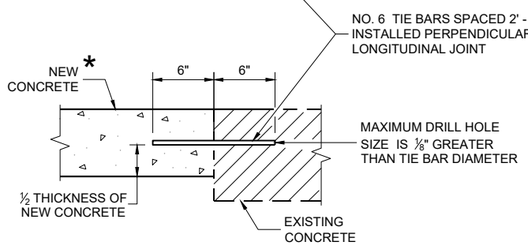
CONCRETE CURB



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE (11)

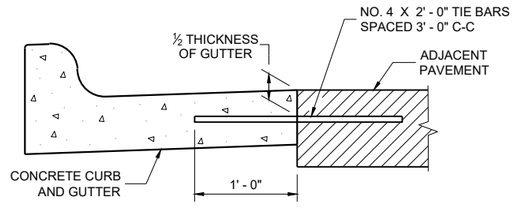


PLAN VIEW

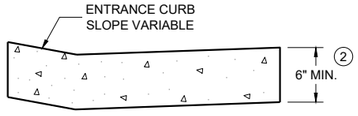


SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (10)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

6

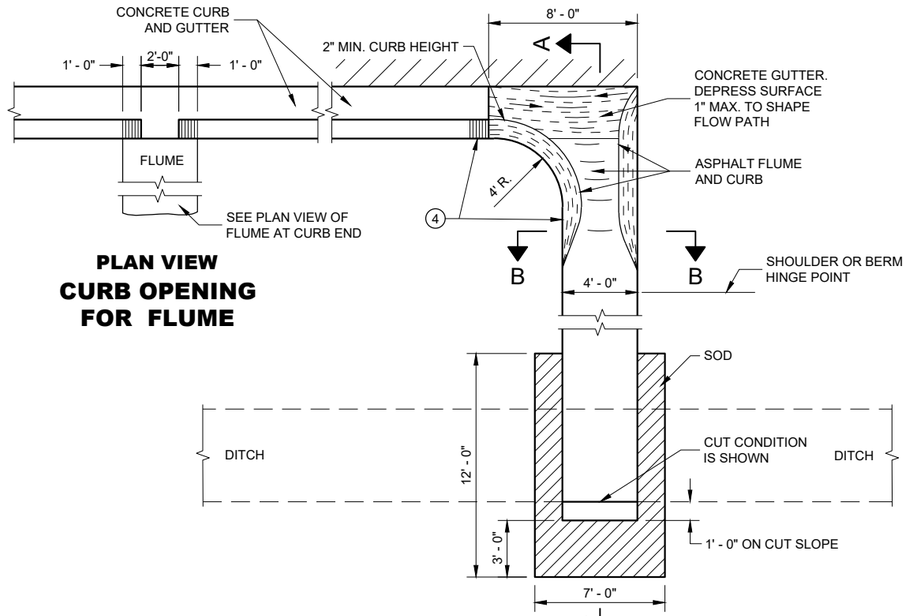
SDD 08D01-24b

6

SDD 08D01-24b

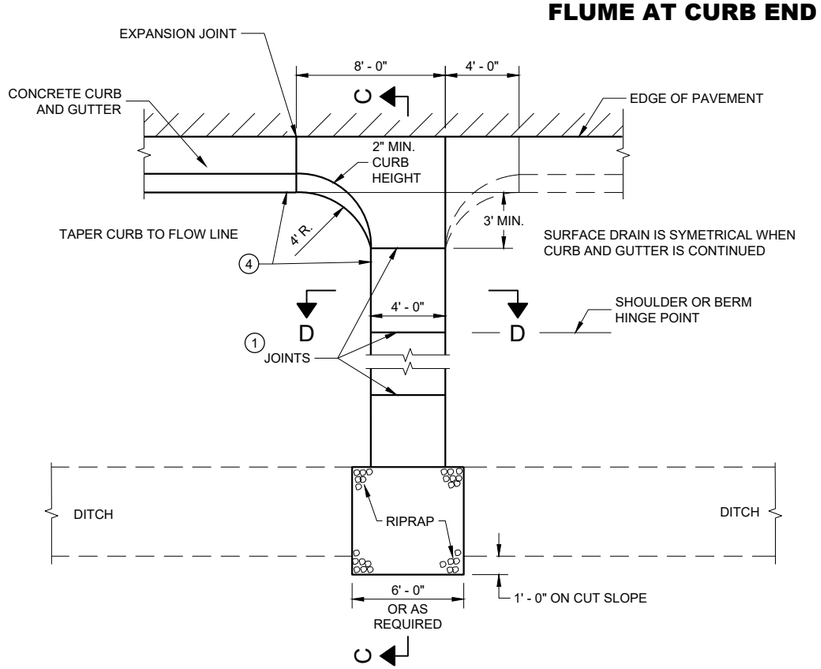
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



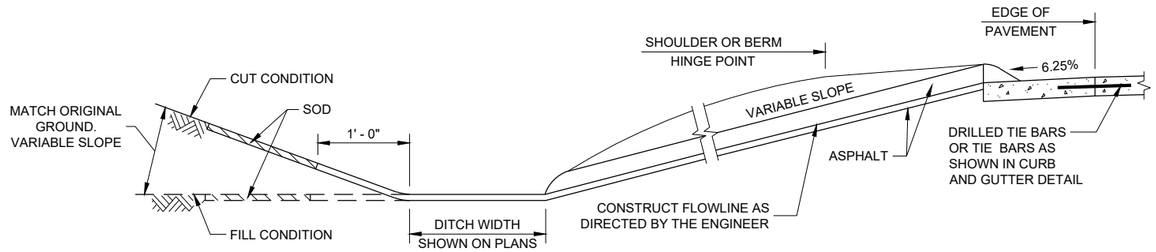
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

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

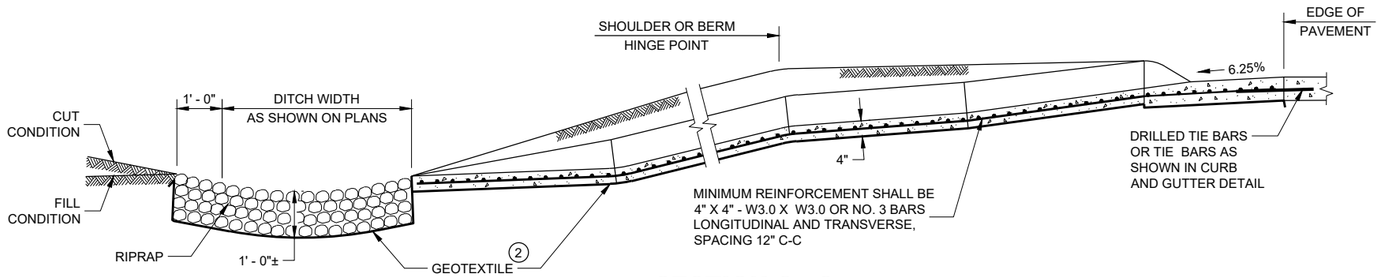
4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

1. JOINTS SHALL BE ⅛" TO ¼" WIDE BY 1½" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
2. GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
3. CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
4. ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.

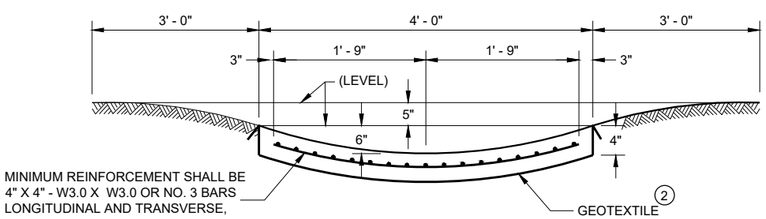


SECTION A - A

SECTION B - B



SECTION C - C



SECTION D - D

CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

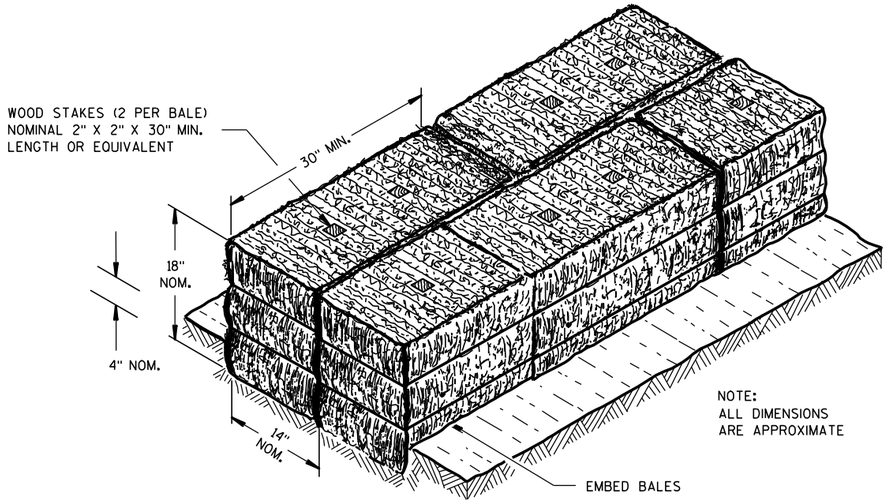
FHWA

6

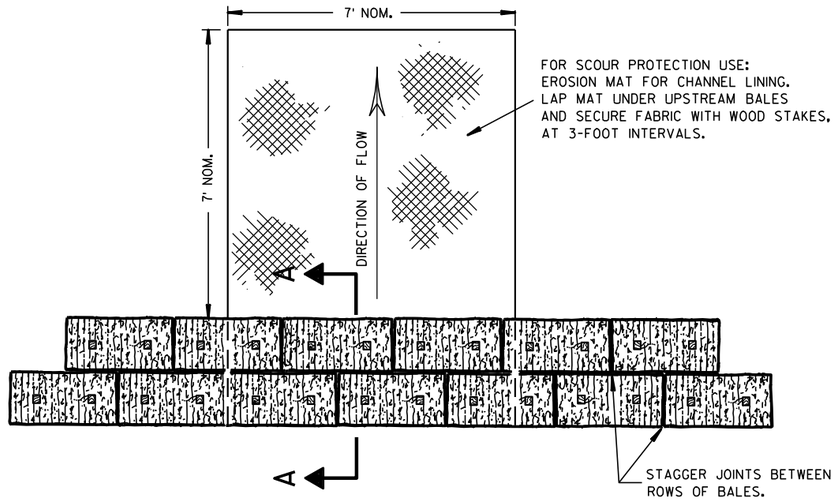
SDD 08D04 - 07

6

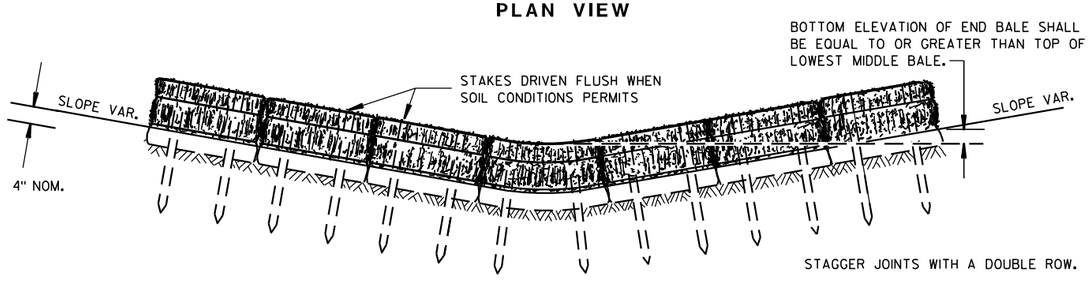
SDD 08D04 - 07



SECTION A-A



PLAN VIEW



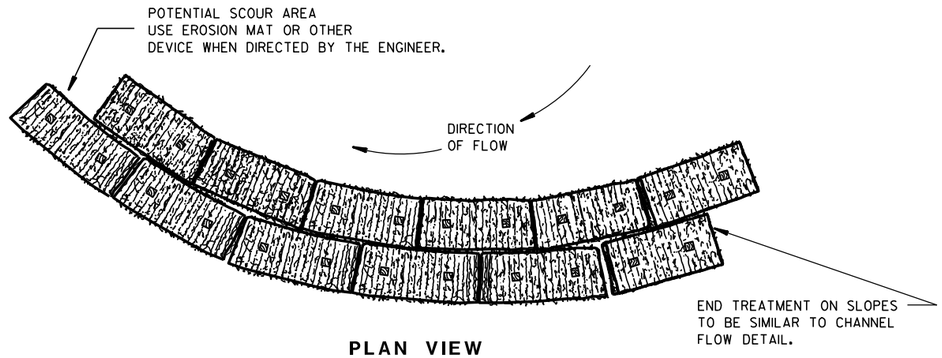
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

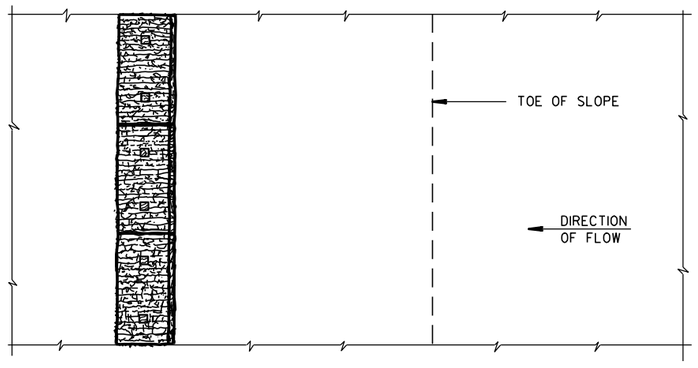
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

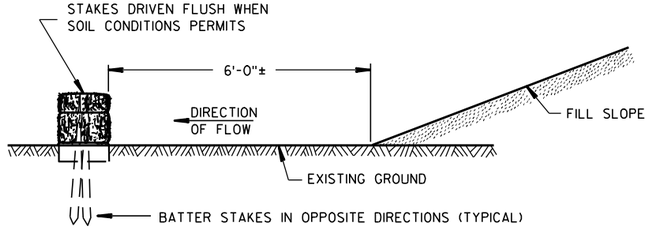


PLAN VIEW

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

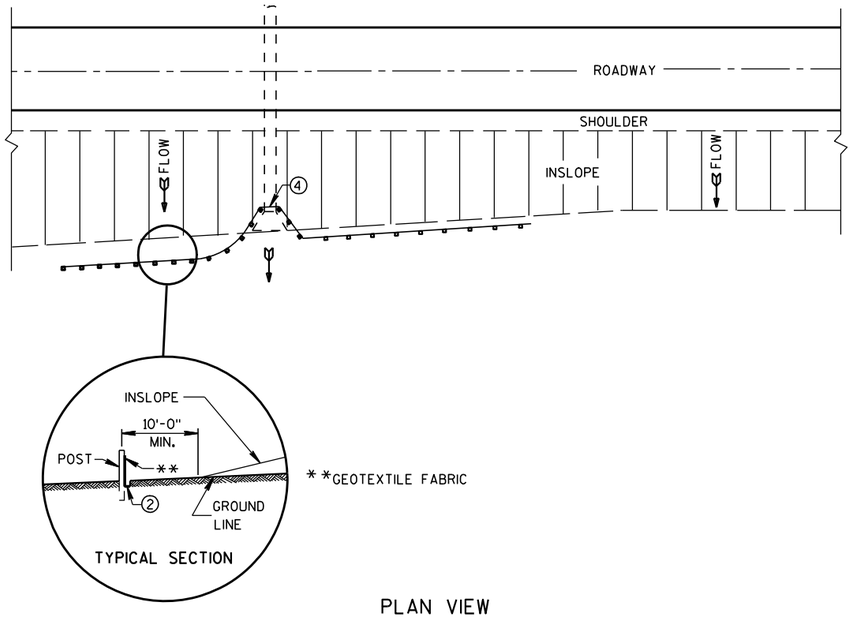
APPROVED

6/04/02 DATE — /S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

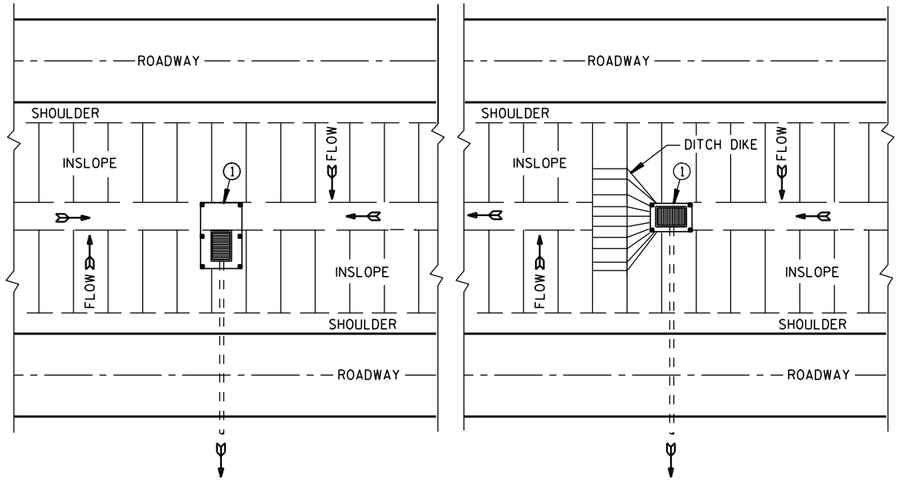
6

S.D.D. 8 E 8-3



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.

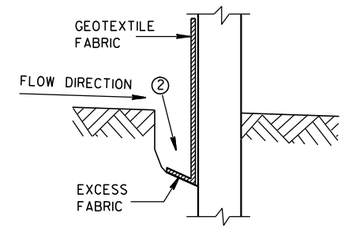
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

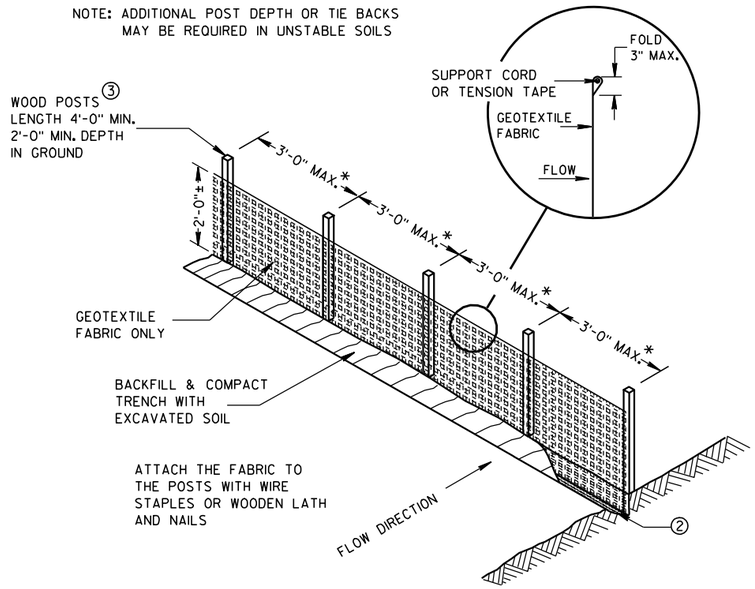
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

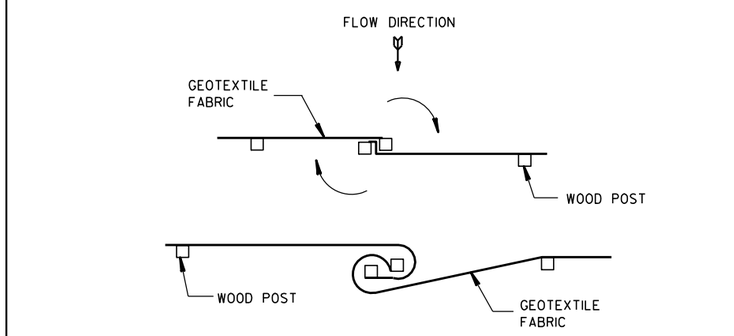
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



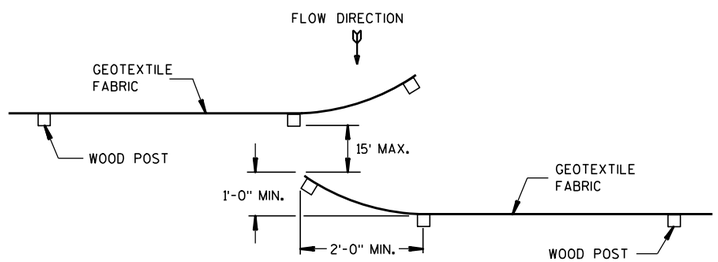
TRENCH DETAIL



SILT FENCE

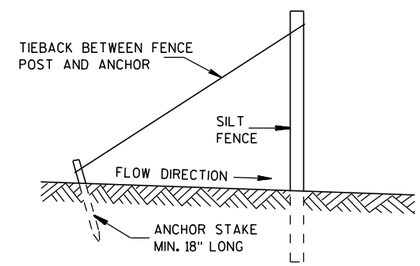


TWIST METHOD



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

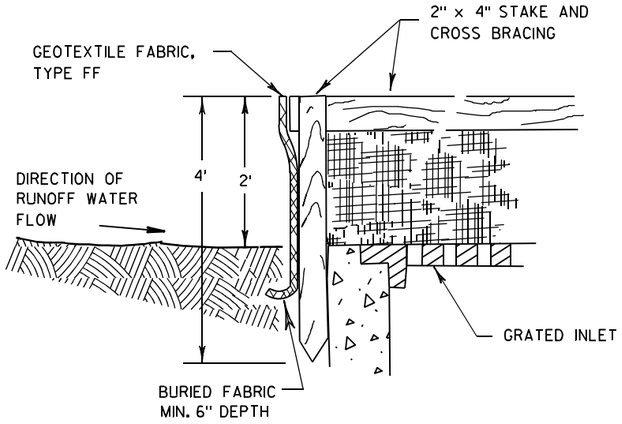
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

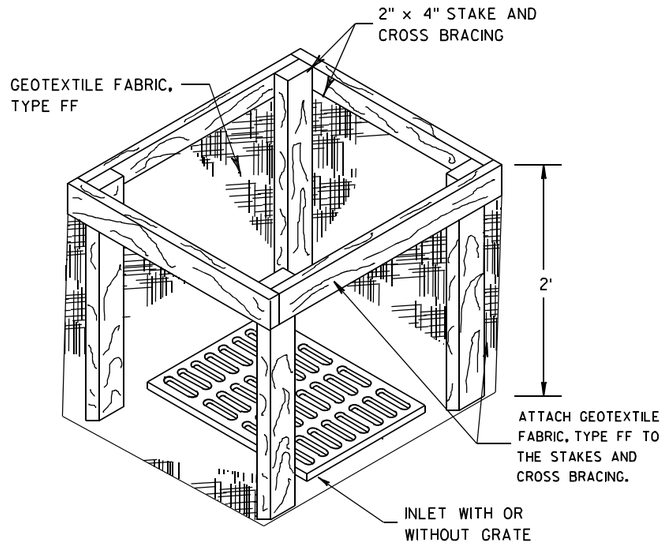
6

S.D.D. 8 E 9-6

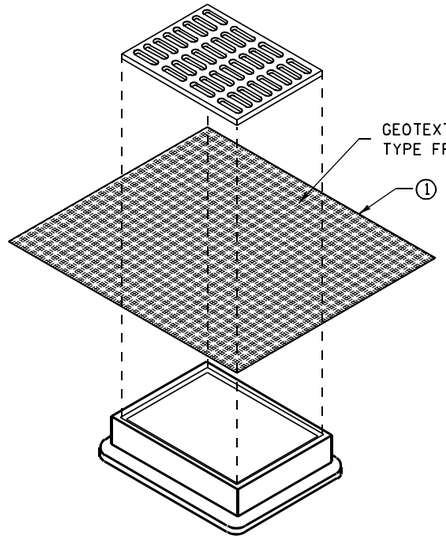
6

S.D.D. 8 E 9-6



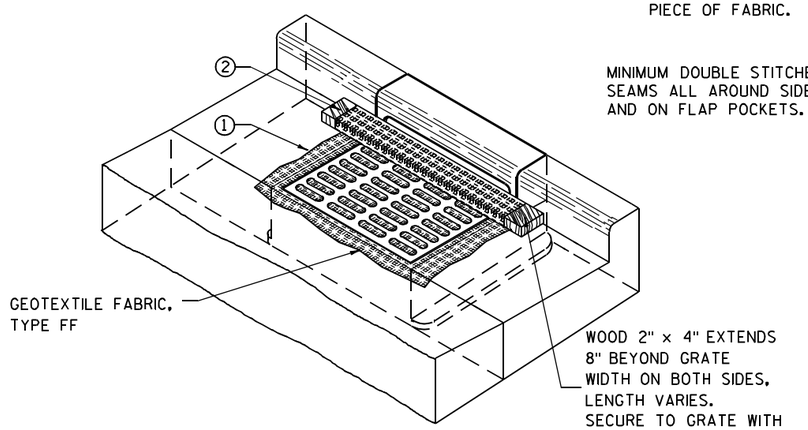


INLET PROTECTION, TYPE A

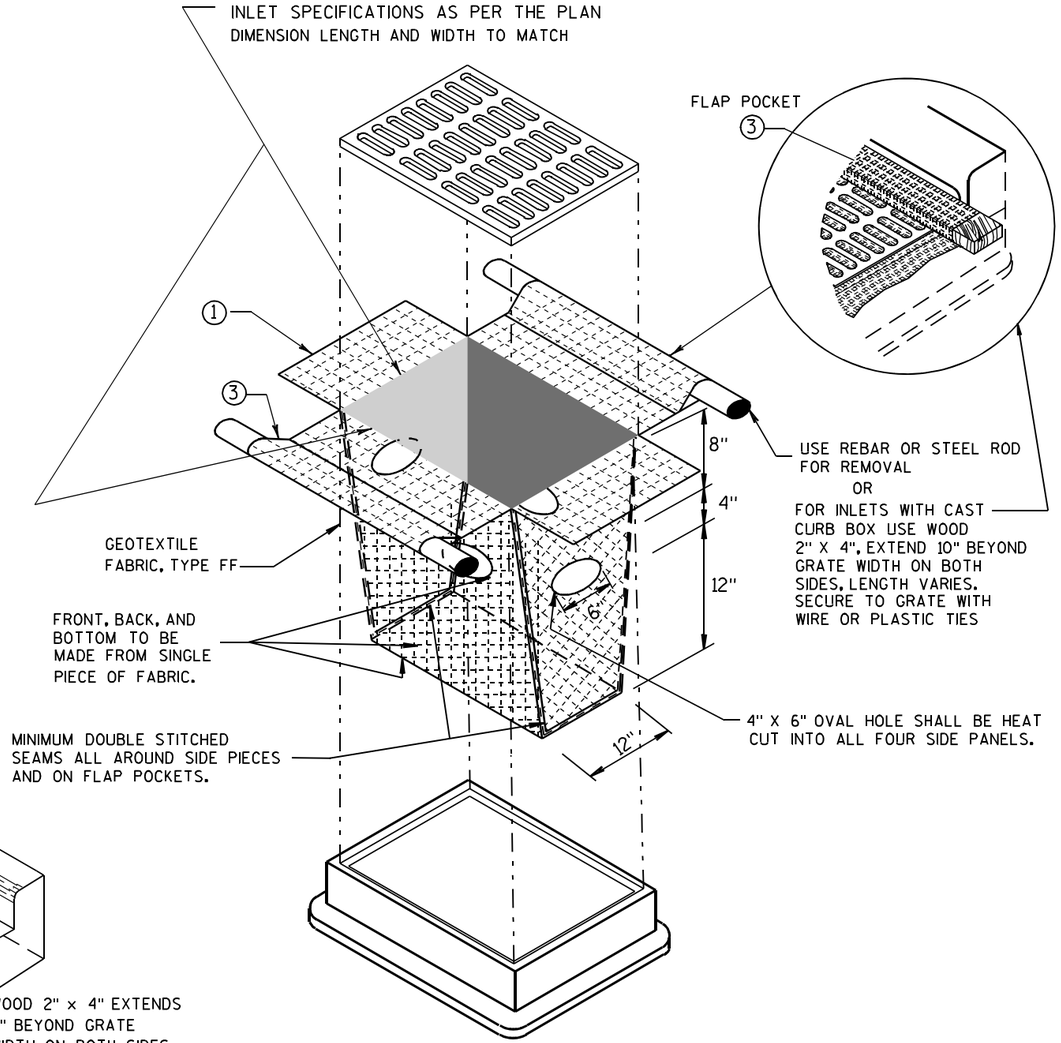


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

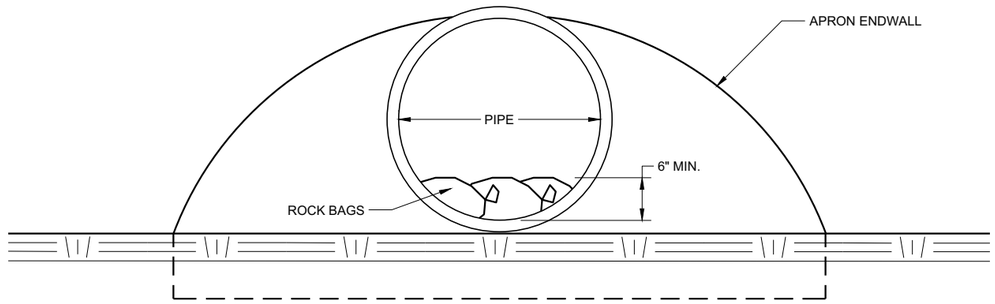
APPROVED

10/16/02
DATE

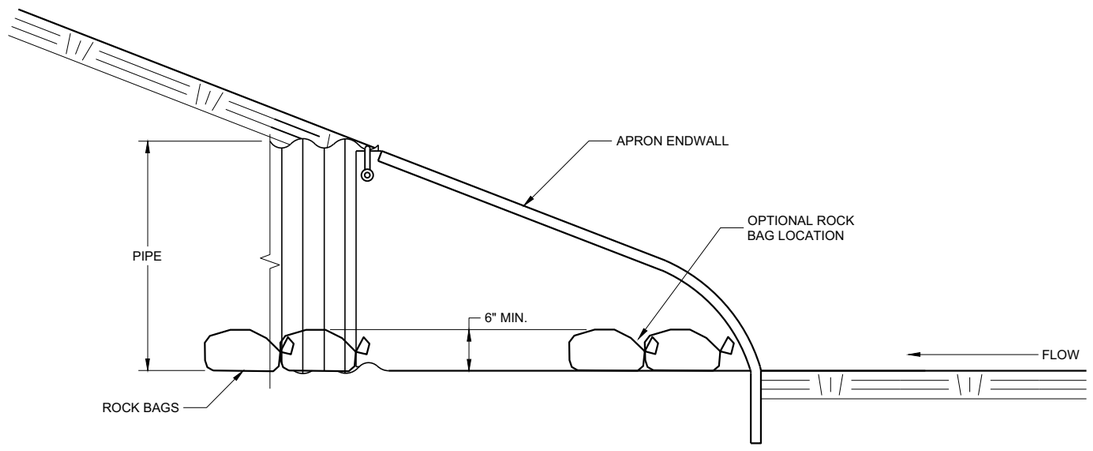
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6
S.D.D. 8 E 10-2



END VIEW



SIDE VIEW

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 — DATE
/S/ Daniel Schave — EROSION CONTROL ENGI
FHWA

6

SDD 08E15 - 01

6

SDD 08E15 - 01

METAL APRON ENDWALLS

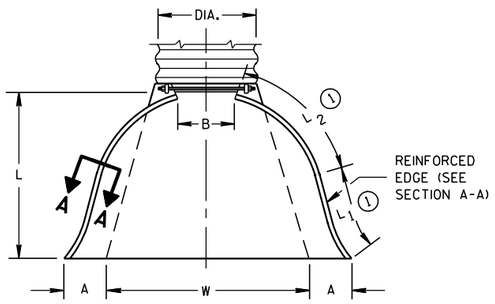
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

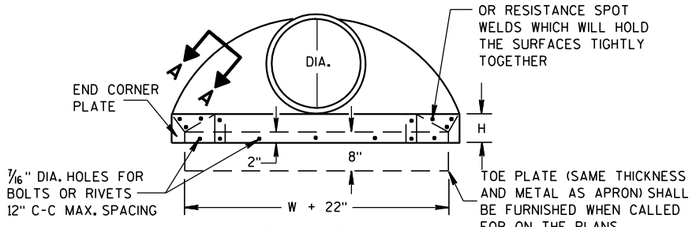
REINFORCED CONCRETE APRON ENDWALLS

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

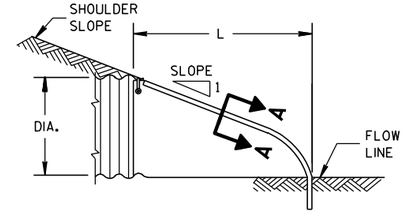
*MINIMUM
**MAXIMUM



PLAN VIEW

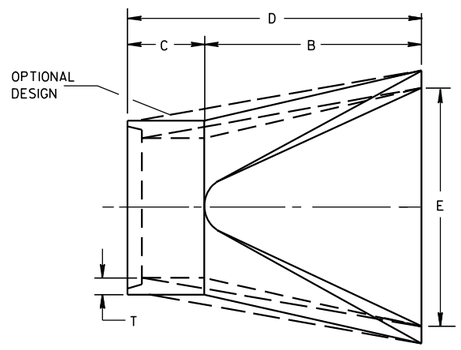


END VIEW

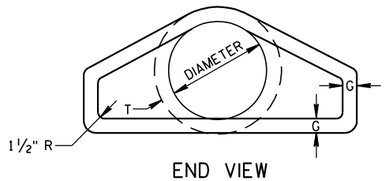


SIDE ELEVATION

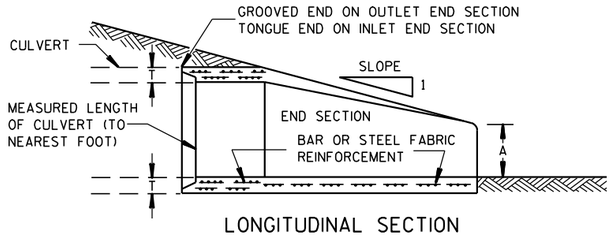
METAL ENDWALLS



PLAN

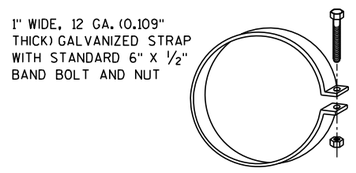


END VIEW



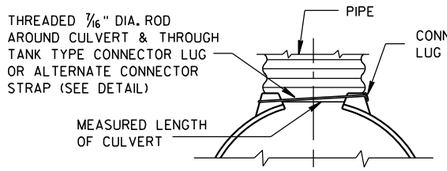
LONGITUDINAL SECTION

CONCRETE ENDWALLS

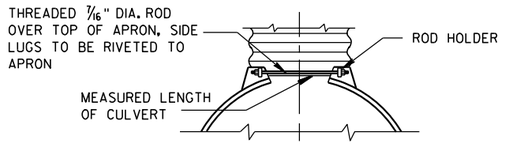


ALTERNATE FOR TYPE 1 CONNECTION

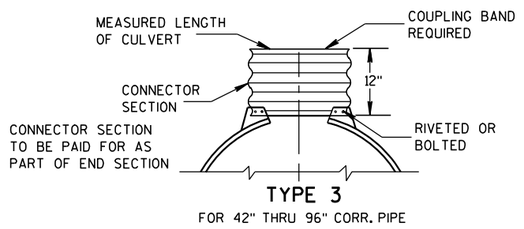
END SECTION CONNECTOR STRAP



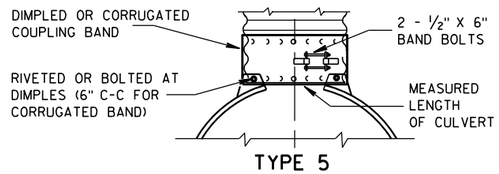
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

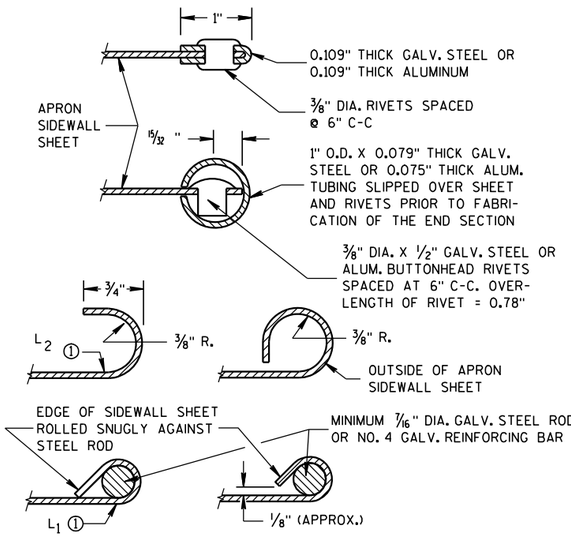
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

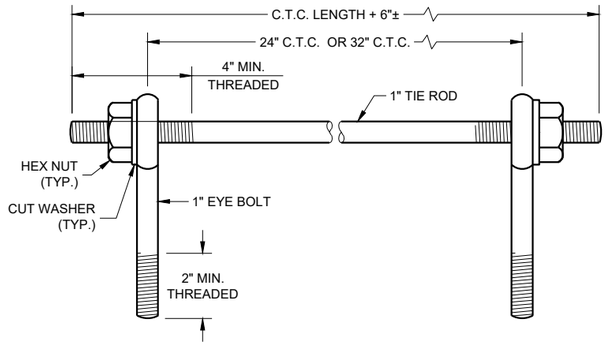
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

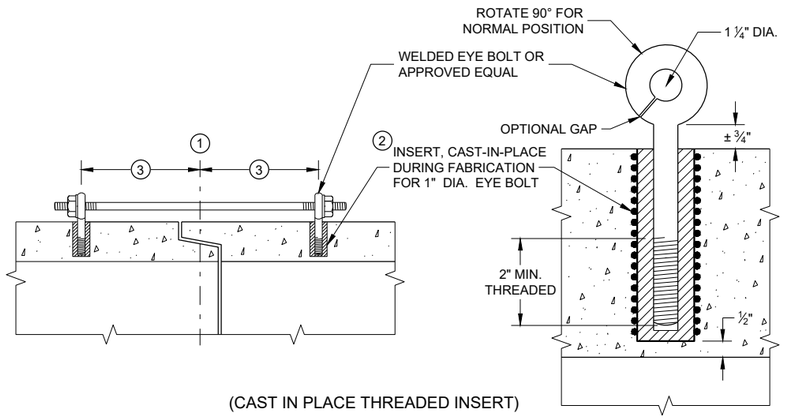
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 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 APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

(1) CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

(2) THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

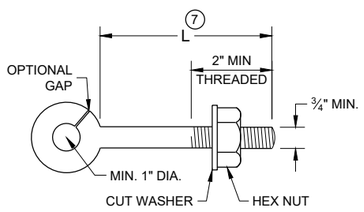
(3) HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.

(4) BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

(5) OPENING TO BE ROD DIAMETER PLUS 1 INCH.

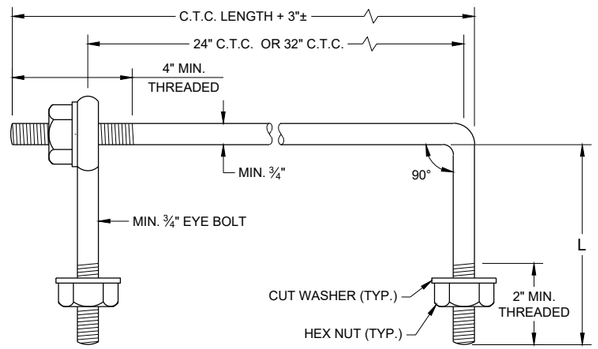
(6) LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.

(7) EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

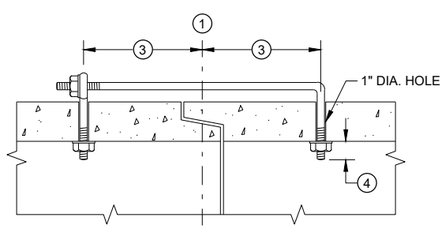


EYE BOLT (7)

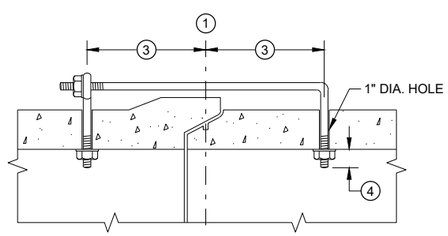
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

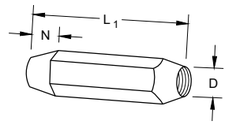
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

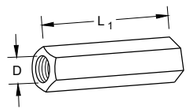
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12 - 60	⅝	⅝	5	½
66 - 84	¾	¾	5	½
90 - 144	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES



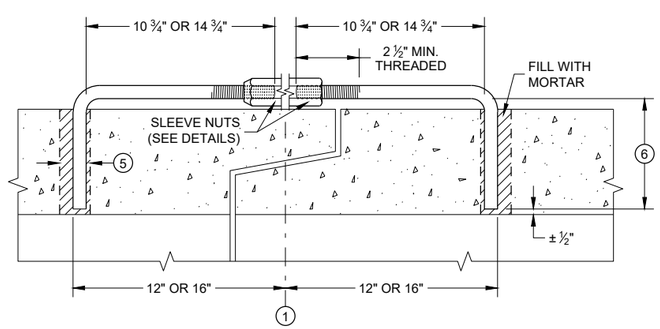
TAPERED



PLAIN

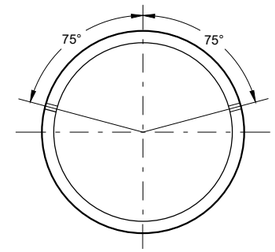
RIGHT AND LEFT THREADS

SLEEVE NUTS



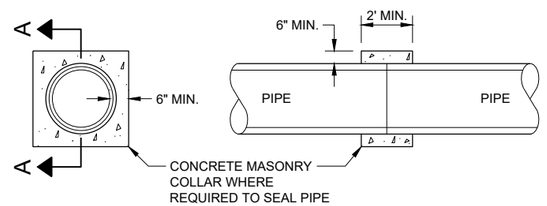
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

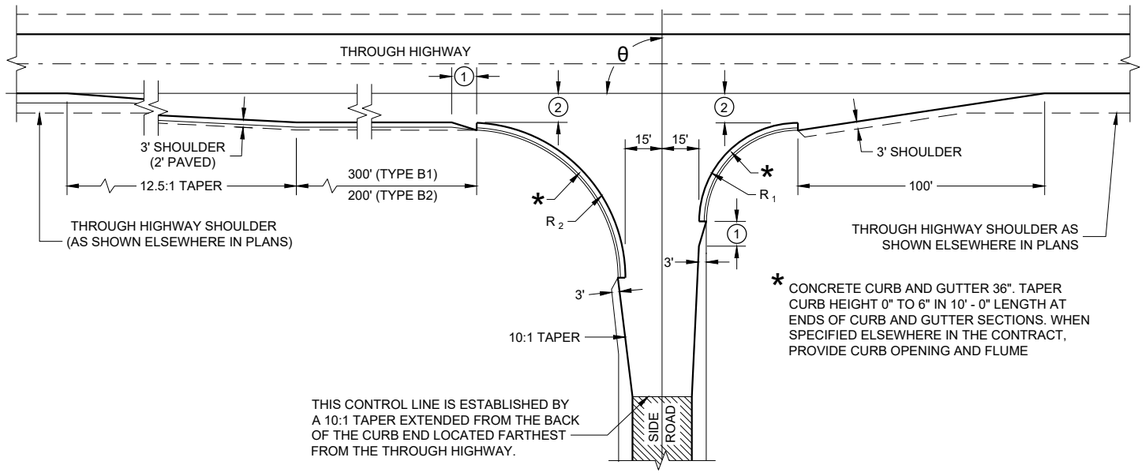
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

SDD 08F04 - 08

SDD 08F04 - 08



* CONCRETE CURB AND GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10' - 0" LENGTH AT ENDS OF CURB AND GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME

TYPE "B1" AND "B2"

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65 - 70	35	70
71 - 80	40	70
81 - 90	40	60
91 - 100	50	55
101 - 110	60	45

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

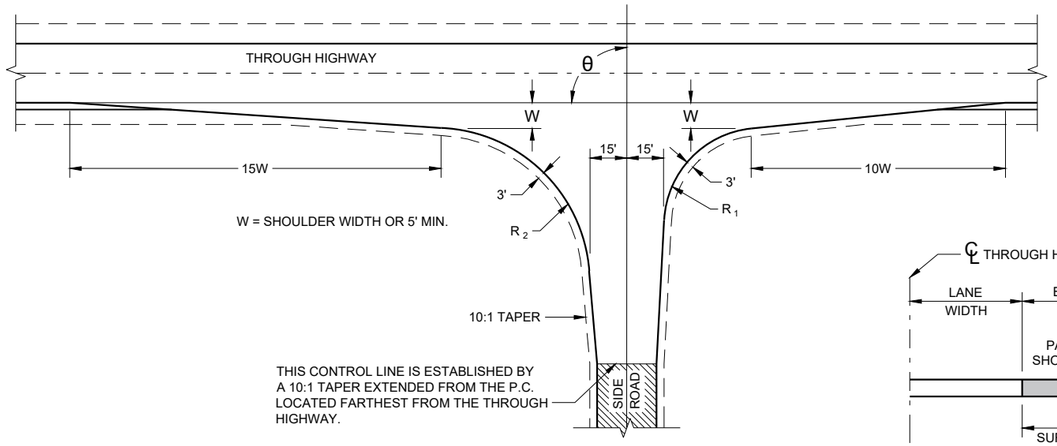
(1) 10-FT TYPICAL.

(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

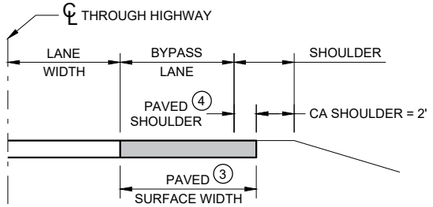
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
- ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH
- PC CONCRETE = 13-FT PLUS PAVED SHOULDER WIDTH

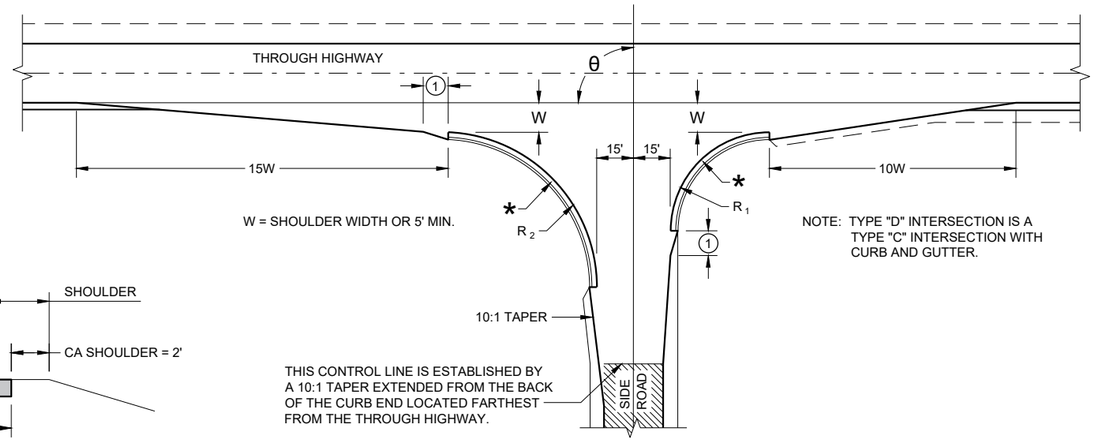
(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



TYPE "C"

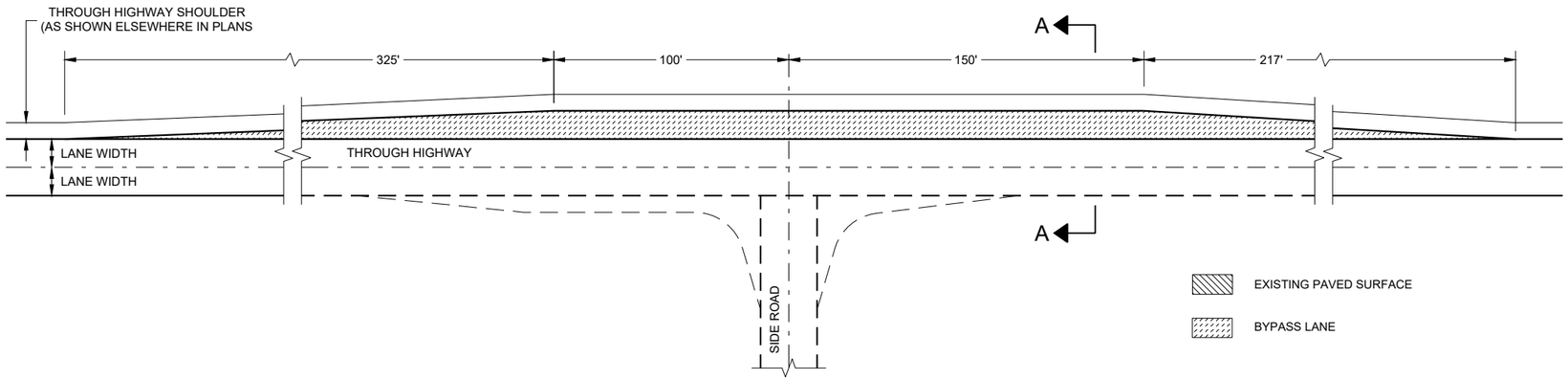


SECTION A - A
(SHOWING BYPASS LANE AND SHOULDER)



NOTE: TYPE "D" INTERSECTION IS A TYPE "C" INTERSECTION WITH CURB AND GUTTER.

TYPE "D"



TEE INTERSECTION BYPASS LANE DETAIL

AT GRADE SIDE ROAD INTERSECTION TYPES "B1", "B2", "C", "D" AND TEE INTERSECTION BYPASS LANE

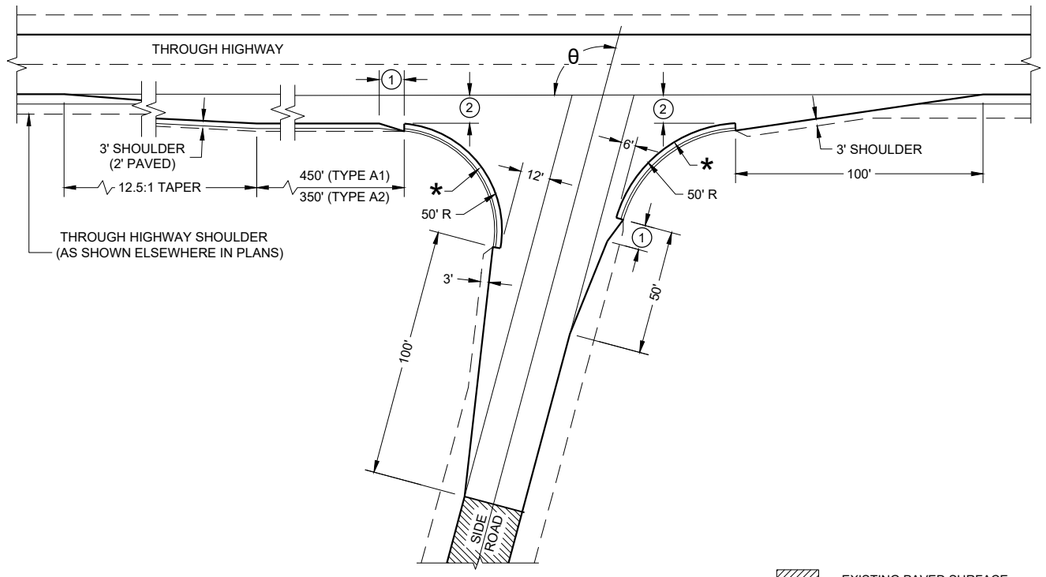
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

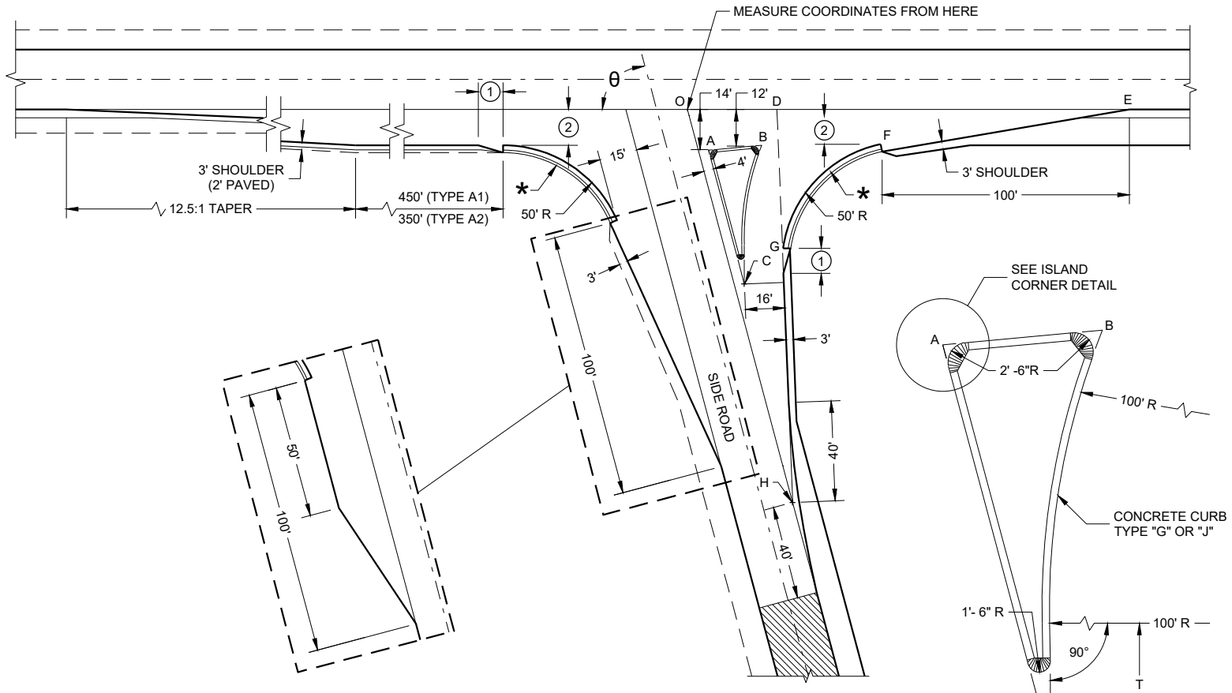
SDD 09A01 - 14a

6

SDD 09A01 - 14a

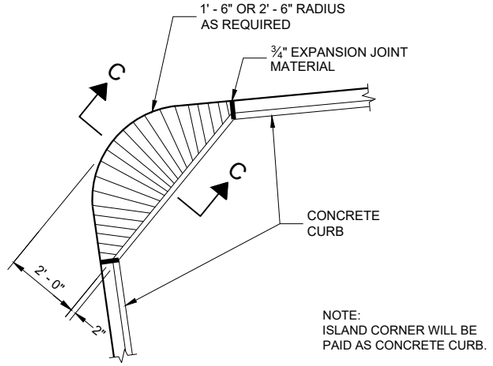


θ = MORE THAN 80°



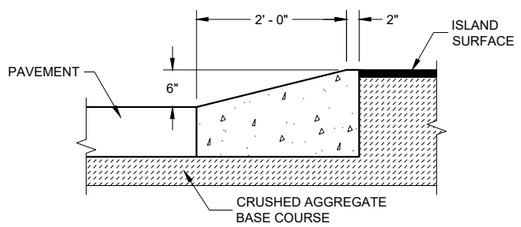
SIDE ROAD WIDENING AND TAPER REQUIRED WHERE THE THROUGH HIGHWAY CARRIES TWO-WAY TRAFFIC
θ = ACUTE ANGLES 70° OR LESS

θ = ACUTE ANGLES 80° OR LESS



PLAN VIEW

NOTE:
ISLAND CORNER WILL BE
PAID AS CONCRETE CURB.



SECTION C - C

ISLAND CORNER DETAIL

(TO BE CONSTUCTED AT ALL ISLAND CORNERS)

TABLE OF DIMENSIONS FOR VARIABLE SIDE ROAD INTERSECTION ANGLES

(INTERPOLATE VALUES FOR ANGLES NOT SHOWN)

ANGLE θ DEGREES	COORDINATES IN FEET (MEASURED FROM POINT 'O') X / Y								LENGTH IN FEET				
	A	B	C	D	E	F	G	H	AB	AC	T	OJ	OH
60	12.7 / -14.0	44.9 / -12.0	46.4 / -72.4	41.9 / 0.0	205.0 / 0.0	104.6 / -12.0	64.0 / -75.5	85.0 / -147.1	32.3	67.4	4.9	85.9	169.9
65	10.9 / -14.0	39.0 / -12.0	37.8 / -71.6	39.4 / 0.0	196.1 / 0.0	95.7 / -12.0	54.1 / -71.5	70.5 / -151.3	28.2	63.6	8.5	80.9	166.9
70	9.4 / -14.0	33.9 / -12.0	29.8 / -70.1	37.4 / 0.0	188.3 / 0.0	87.8 / -12.0	45.6 / -67.5	56.1 / -154.2	24.6	59.7	11.5	76.1	164.1
75	7.9 / -14.0	29.3 / -12.0	22.3 / -67.9	35.7 / 0.0	181.2 / 0.0	80.7 / -12.0	38.2 / -63.4	41.8 / -155.9	21.5	55.8	13.8	71.4	161.4
80	6.5 / -14.0	25.4 / -12.0	15.6 / -65.2	34.4 / 0.0	174.8 / 0.0	74.4 / -12.0	31.8 / -59.3	27.6 / -156.5	18.9	52.0	15.6	66.9	158.9

TYPE 'A1" AND "A2" SIDE ROAD INTERSECTION DETAILS

AT GRADE SIDE ROAD INTERSECTIONS
TYPES "A1" AND "A2"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

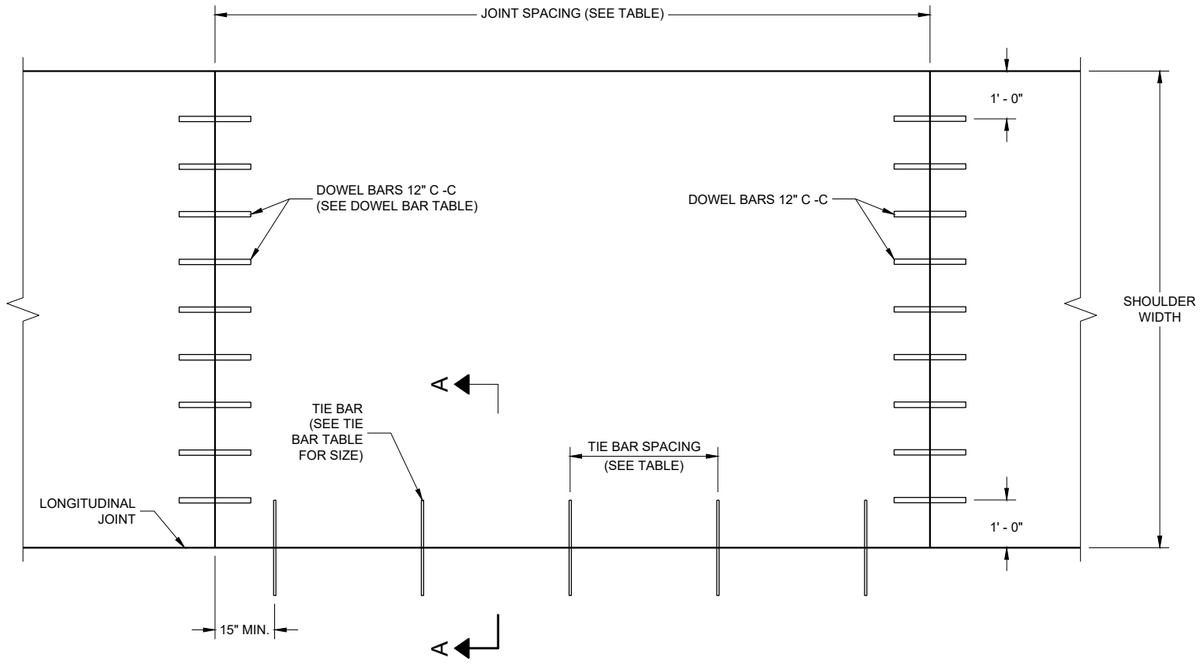
APPROVED
November 2022 — DATE
/S/ John Jenkins — ROADWAY STANDARDS DEVE ENGINEER

FHWA

SDD 09A01 - 14b

6

SDD 09A01 - 14b



PLAN VIEW

CONCRETE PAVEMENT SHOULDER

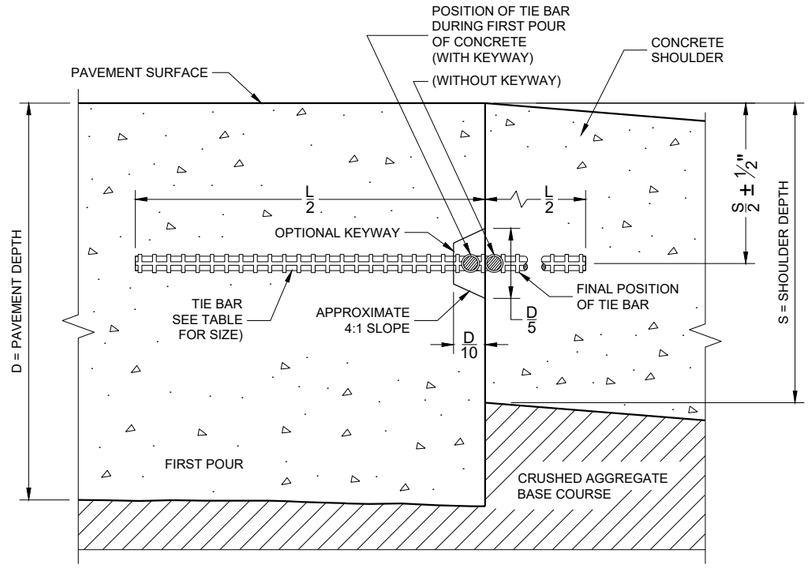
GENERAL NOTES

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

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A - A

LONGITUDINAL CONSTRUCTION JOINT

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
<10 ½"	NO. 4	30"	36"
>10 ½"	NO. 5	36"	36"
	NO. 4*	30"	24"**

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

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

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER ***	CONTRACTION JOINT SPACING
6", 6 ½"	NONE	12"
7", 7 ½"	1"	14"
8" & ABOVE	1 ¼"	15"

*** FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FRO THE AVERAGE THICKNESS OF THE CROSS SECTION.

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Peter Kemp
PAVEMENT SUPERVIS

FHWA

6

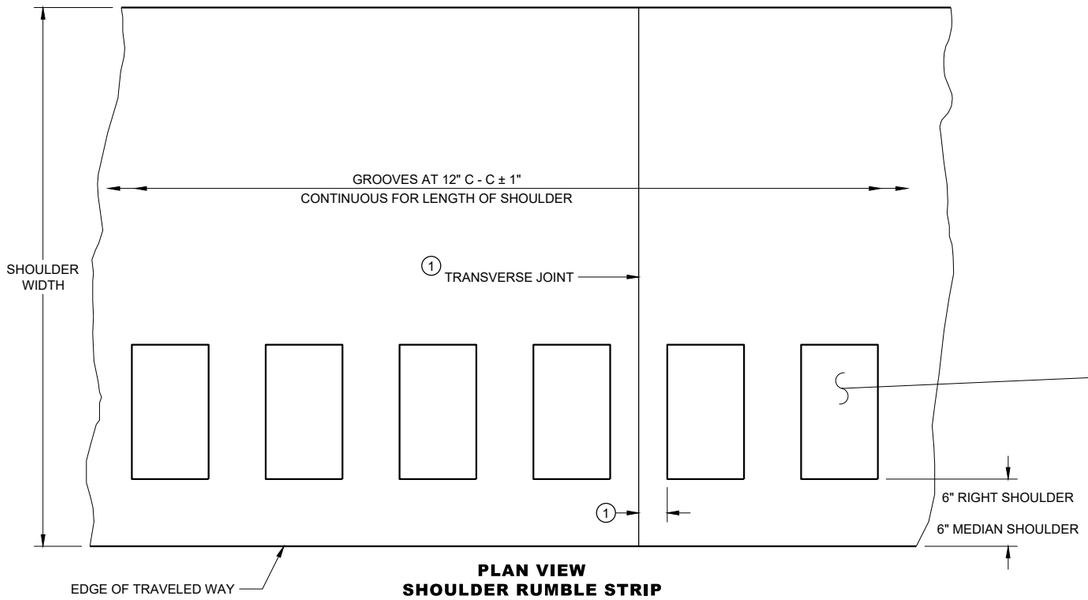
SDD 13A03 - 07

GENERAL NOTES

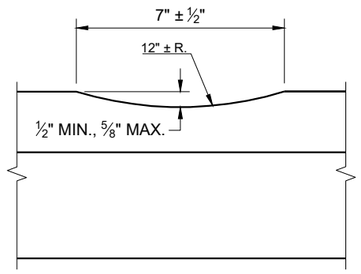
SDD 13A5, SHEET "b" SHOWS THE LOCATION OF THE RUMBLE STRIPS AT RAMP AND GORE LOCATIONS.

RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL AND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

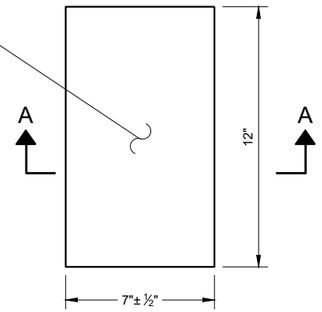
(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6 INCHES AWAY FROM TRANSVERSE JOINTS.



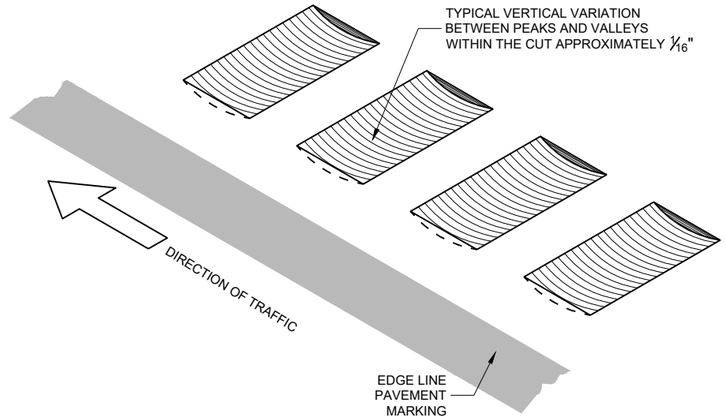
PLAN VIEW
SHOULDER RUMBLE STRIP



SECTION A - A

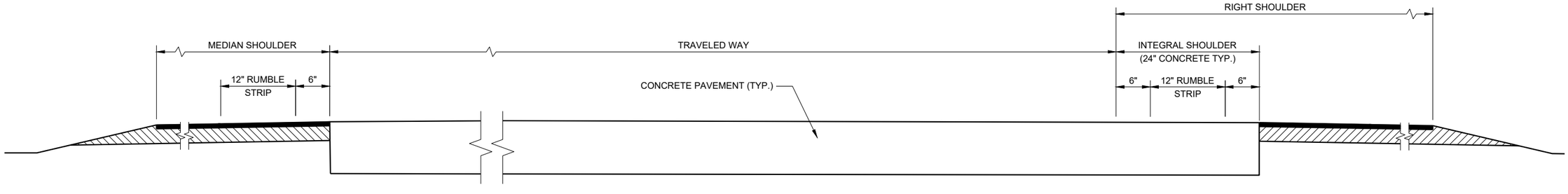


PLAN VIEW
(SINGLE GROOVE)



ISOMETRIC

PLACEMENT DETAIL FOR RUMBLE STRIP



SECTION VIEW

TYPICAL SHOULDER RUMBLE STRIPS
(ONE ROADWAY IS SHOWN)

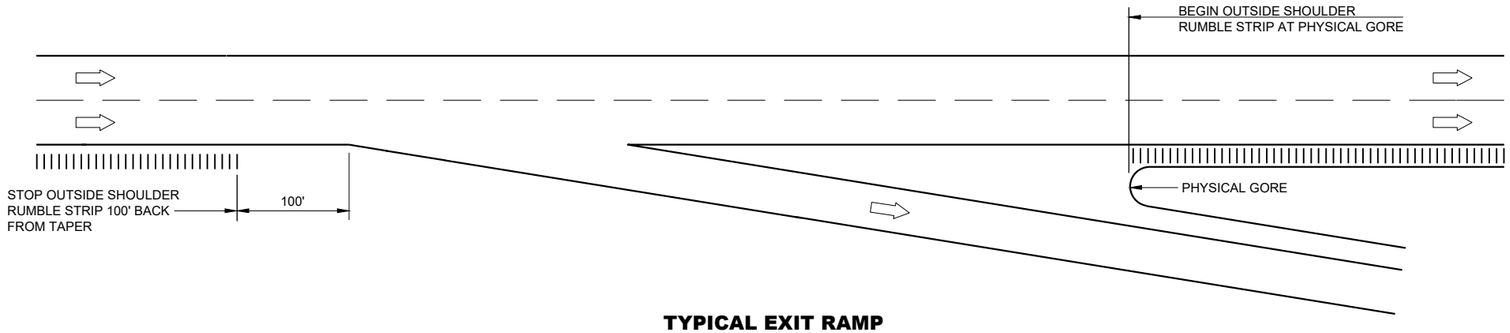
SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

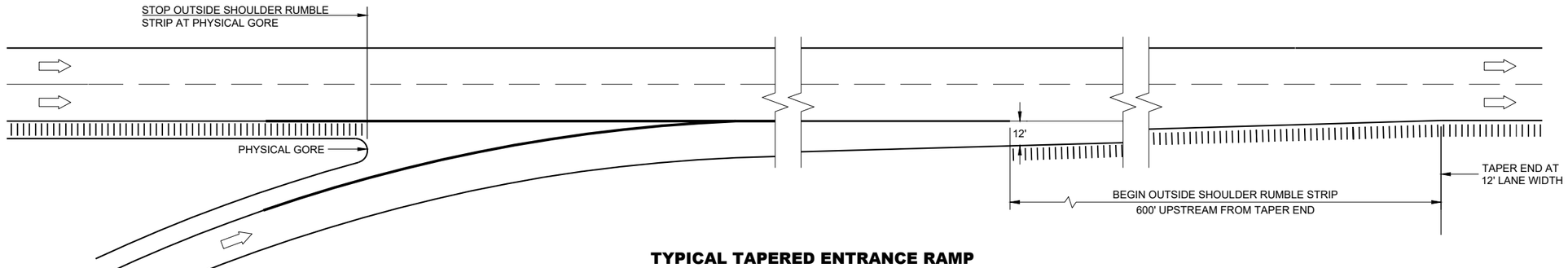
6

SDD 13A05-06a

SDD 13A05-06a

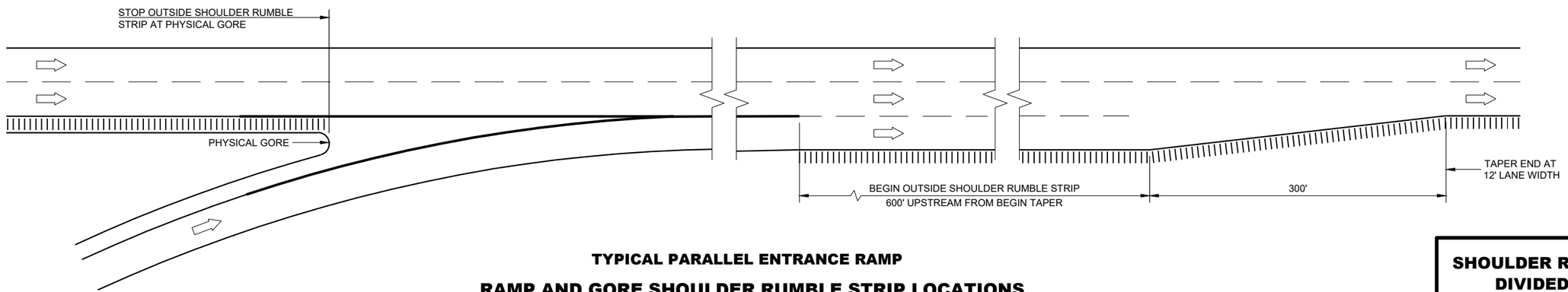


TYPICAL EXIT RAMP



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS

GENERAL NOTES

NO RUMBLE STRIP ON EXIT, DIRECTIONAL OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIALAND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

LEGEND

DIRECTION OF TRAFFIC

SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY

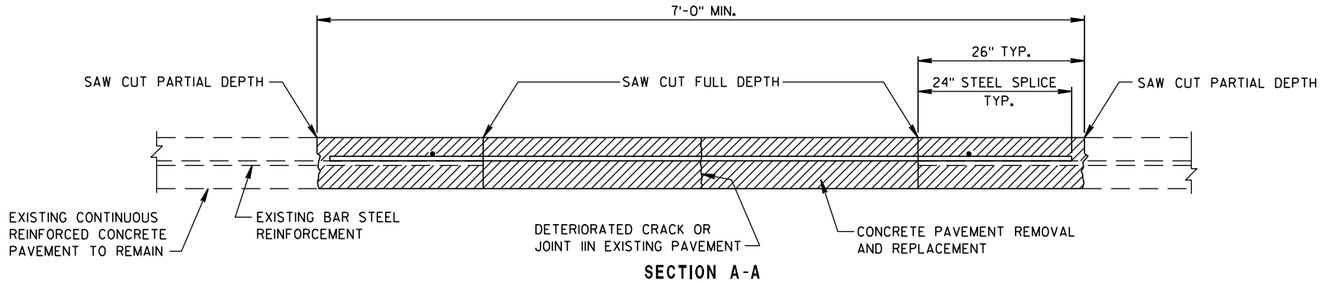
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 — DATE
/S/ Rodney Taylor — ROADWAY DESIGN STANDARDS UNIT SUPERVISOR

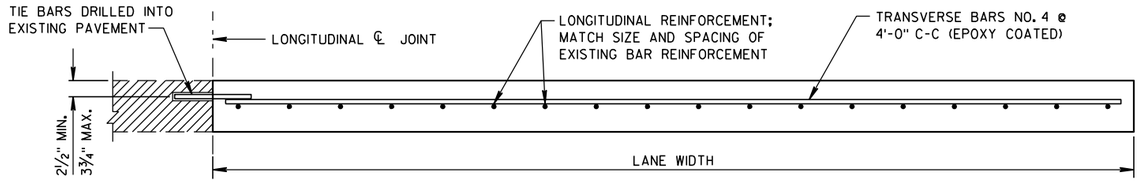
FHWA

6

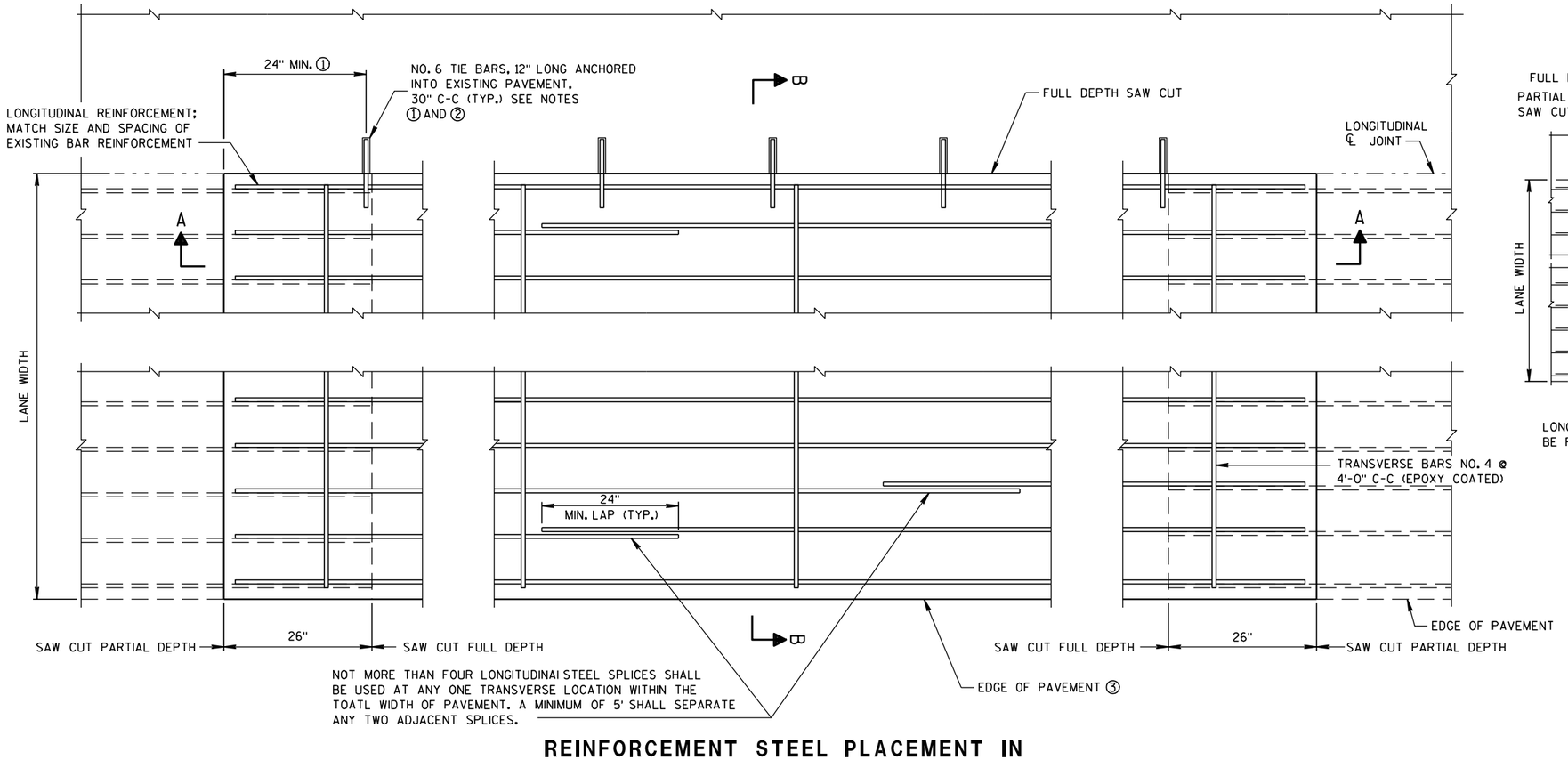
SDD 13A05-06b



SECTION A-A



SECTION B-B



NOT MORE THAN FOUR LONGITUDINAI STEEL SPLICES SHALL BE USED AT ANY ONE TRANSVERSE LOCATION WITHIN THE TOATL WIDTH OF PAVEMENT. A MINIMUM OF 5' SHALL SEPARATE ANY TWO ADJACENT SPLICES.

REINFORCEMENT STEEL PLACEMENT IN CONTINUOUSLY REINFORCED CONCRETE PAVEMENT REPLACEMENT

GENERAL NOTES

PLACE ALL BAR STEEL REINFORCEMENT AT MID PAVEMENT DEPTH UNLESS OTHERWISE NOTED.

PAY FOR THE TRANSVERSE AND LONGITUDINAL JOINT SAW CUT AS LINEAR FEET OF "SAWING CONCRETE".

WHEN THE PASSING AND TRAVELING LANES ARE TO BE REPLACED, REPLACE THE PASSING LANE FIRST.

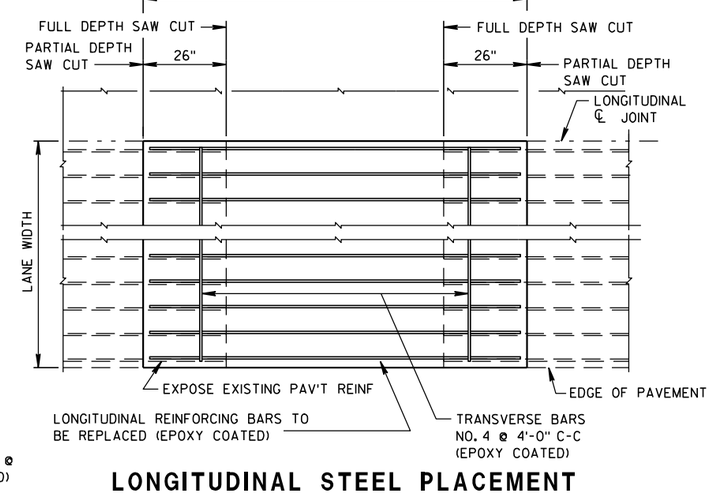
ADD TRANSVERSE STEEL BARS TO REPAIRS GREATER THAN 6'IN LENGTH, USE NO. 4 BARS PLACED TRANSVERSELY AND SPACED 4'C-C. PAYMENT SHALL BE INCIDENTAL TO "CONCRETE PAVEMENT CONTINUOUS REINFORCEMENT".

TIE ALL CONCRETE PAVEMENT REPAIRS WHICH ARE GREATER THAN 15'IN LENGTH, AND ARE ADJACENT TO EXISING CONCRETE PAVEMENT, TO THE EXISTING PAVEMENT USING TIE BARS. DETAILS FOR TIE BAR CONSTRUCTION SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND STANDARD DETAIL DRAWINGS.

① PROVIDE A MINIMUM DISTANCE OF 24 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

② ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

③ SAW CUT THE LONGITUDINAL EDGE JOINT IF THE ADJACENT SHOULDER IS CONCRETE.



LONGITUDINAL STEEL PLACEMENT IN CRCP REPAIRS

PLAN VIEW

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

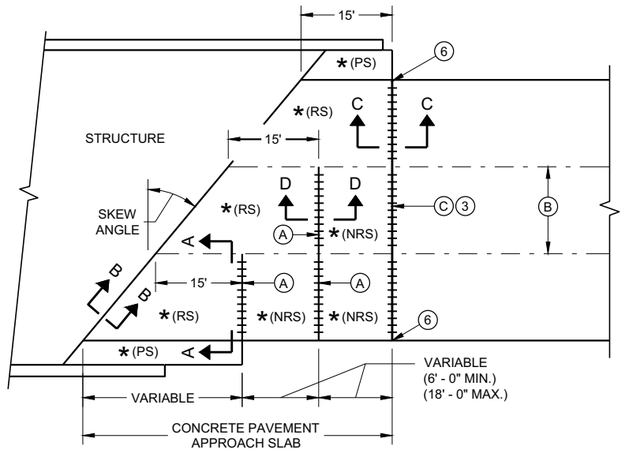
11/1/2011 — DATE

/S/ Deb Bischoff — PAVEMENT POLICY & DE NEER

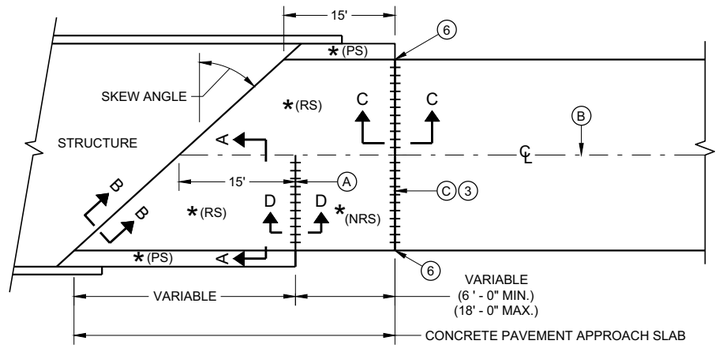
FHWA

6

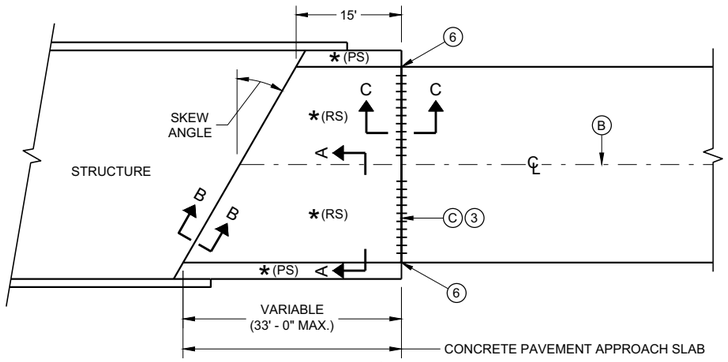
S.D.D. 13 A 7-2



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

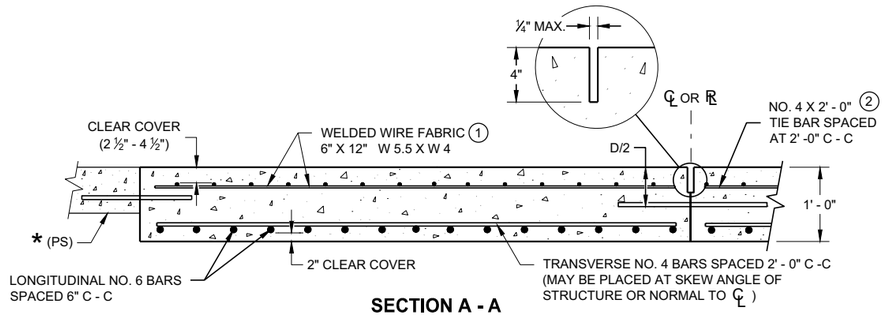
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

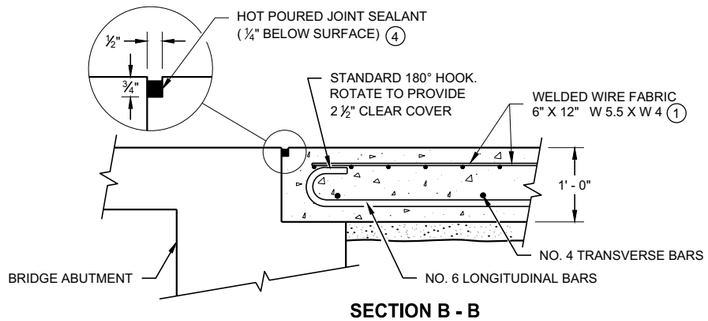
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

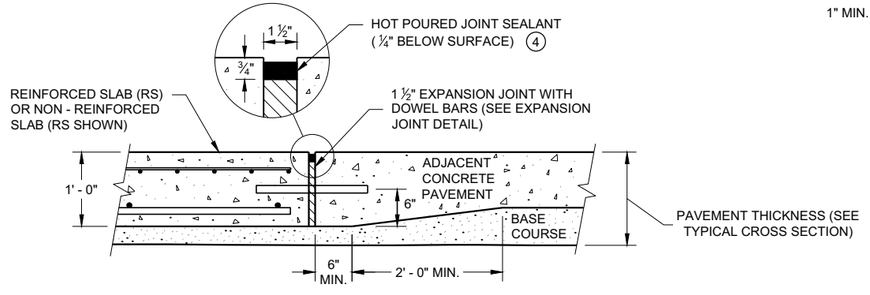
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



SECTION A - A
REINFORCEMENT POSITIONING DETAIL



SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0 " C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

(2) THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

(3) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

(4) USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.

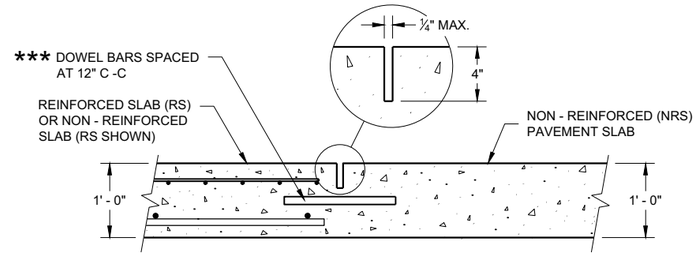
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

(6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

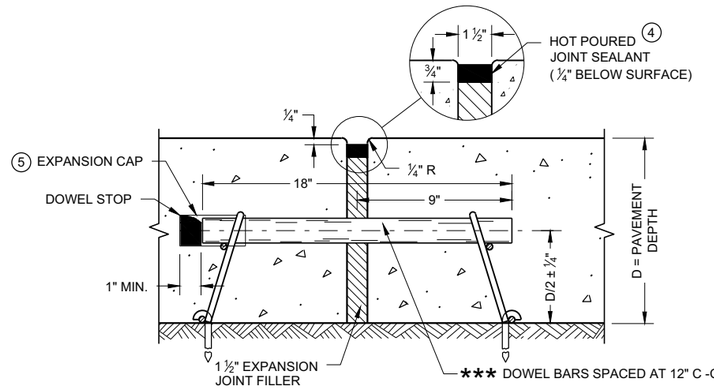
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞ .



SECTION D - D
CONTRACTION JOINT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

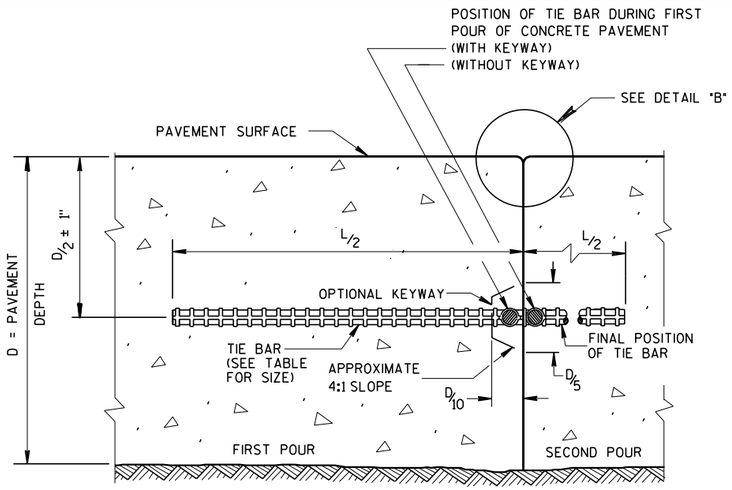
APPROVED
November 2018
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPERVIS

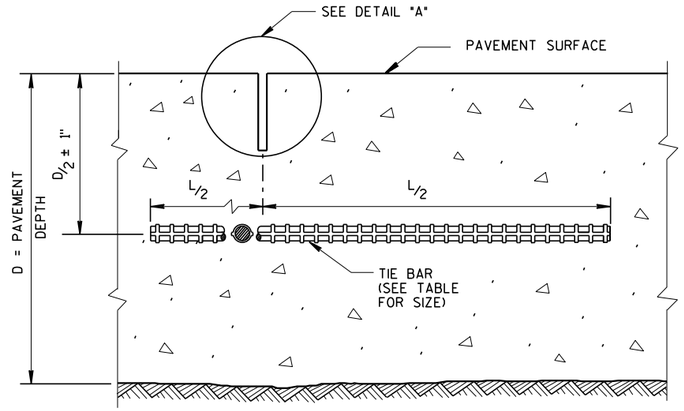
FHWA

6

SDD 13B02 - 09a



CONSTRUCTION JOINT



SAWED JOINT

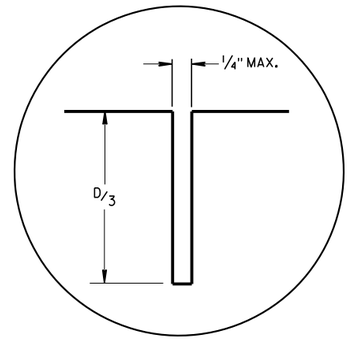
GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

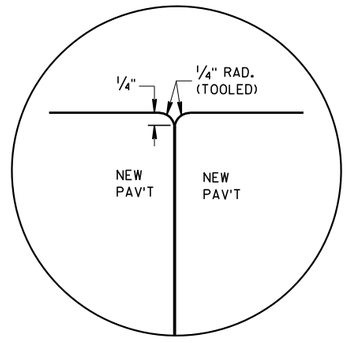
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

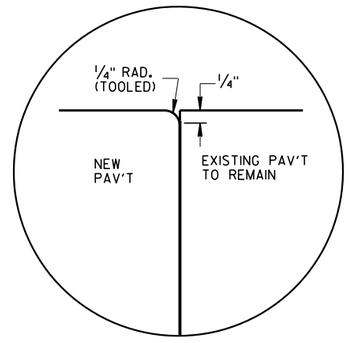
(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



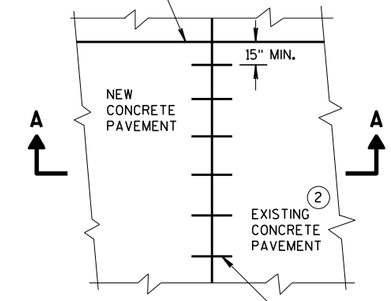
DETAIL "A"



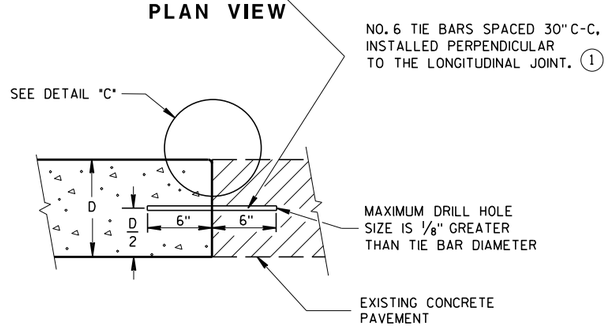
DETAIL "B"



DETAIL "C"



PLAN VIEW



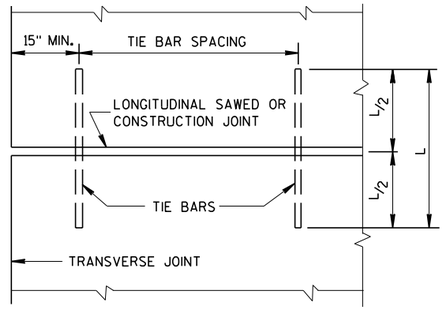
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT

TIE BAR TABLE

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

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

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



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

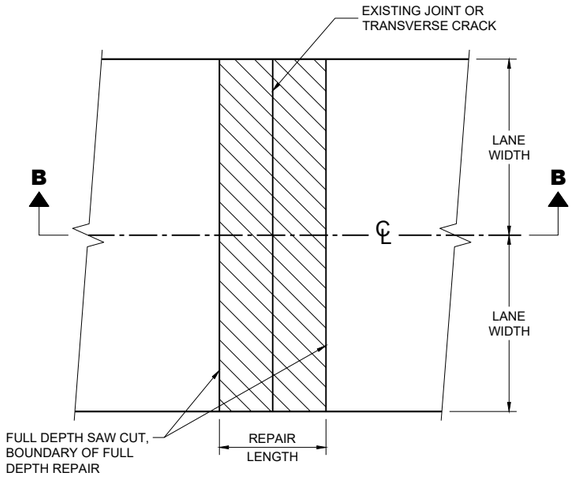
APPROVED
March 2018 — DATE
/S/ Peter Kemp — PAVEMENT SUPE
FHWA

6

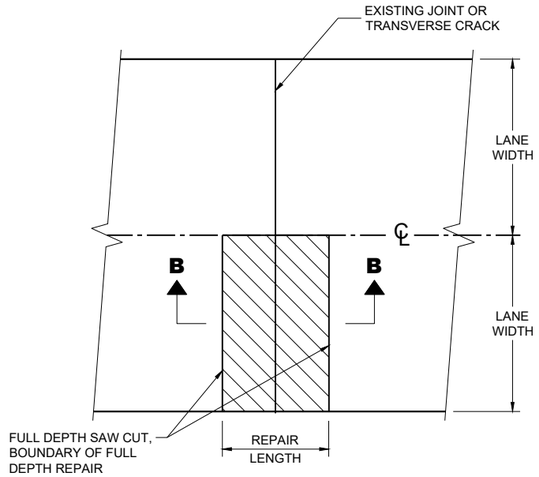
S.D.D. 13 C 1-19

6

S.D.D. 13 C 1-19



PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

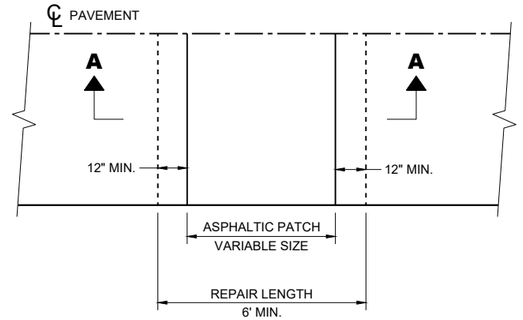
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

PROVIDE A 6 FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREA TO ADJACENT TRANSVERSE JOINT OR CRACK.

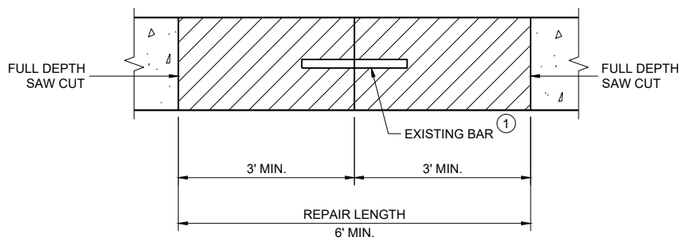
THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NON-DOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

(1) DOWEL BARS MAY NOT BE PRESENT.



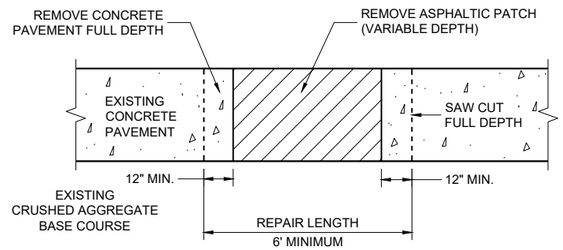
PLAN VIEW

FULL DEPTH CONCRETE PAVEMENT REMOVAL



SECTION B - B

CONCRETE REMOVAL

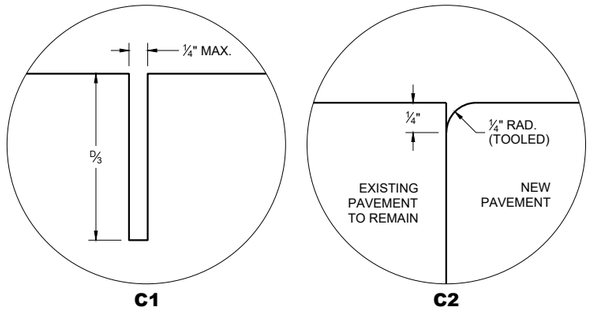


SECTION A - A

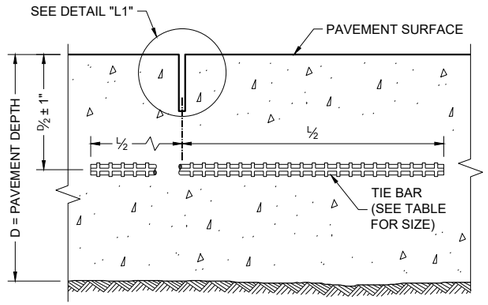
HMA PATCH REMOVAL

CONCRETE PAVEMENT
REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

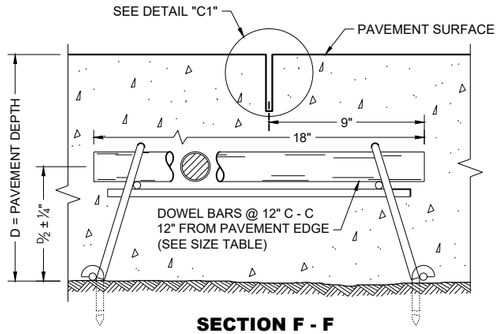


TRANSVERSE JOINTS



SECTION C - C

SAWED LONGITUDINAL JOINT



SECTION F - F

DOWELED CONTRACTION JOINT

GENERAL NOTES

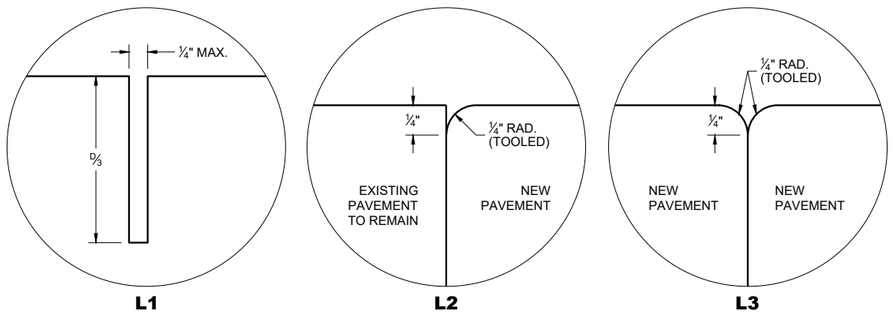
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

CONCRETE PAVEMENT REPAIRS OF EXISTING NON-DOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

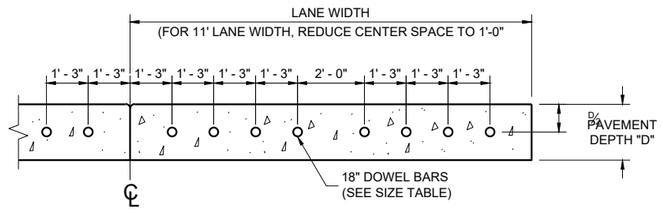
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

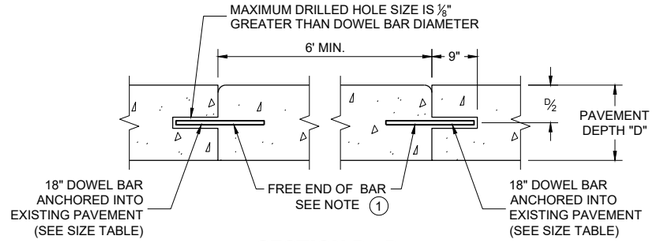


LONGITUDINAL JOINTS



SECTION E - E

DRILLED DOWEL BAR CONSTRUCTION JOINT



SECTION D - D

TIE BAR TABLE

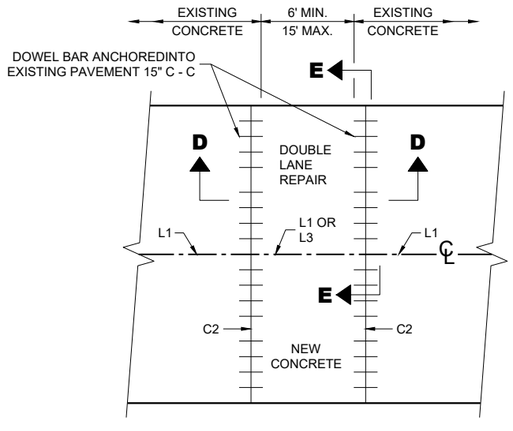
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4*	30"	24" **

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

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

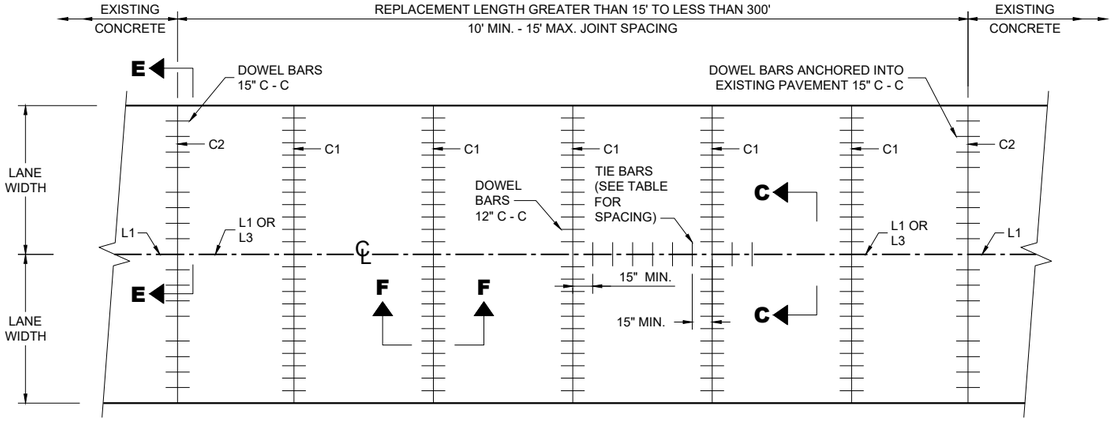
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	DRILLED DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
6", 6 ½"	NONE	NONE	12'
7", 7 ½"	1"	1"	14'
8" & ABOVE	1 ¼"	1 ¼"	15'



PLAN VIEW

MULTILANE CONCRETE PAVEMENT REPAIR

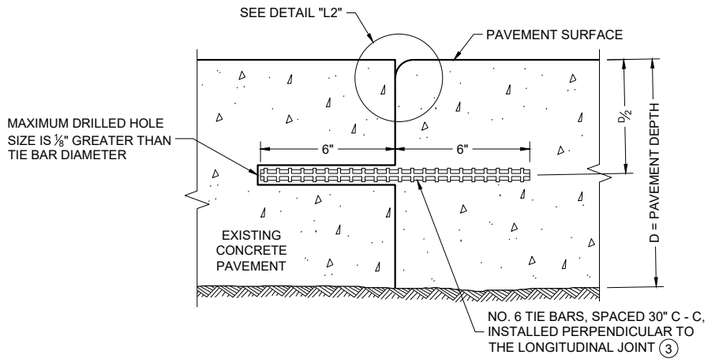


PLAN VIEW

MULTILANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

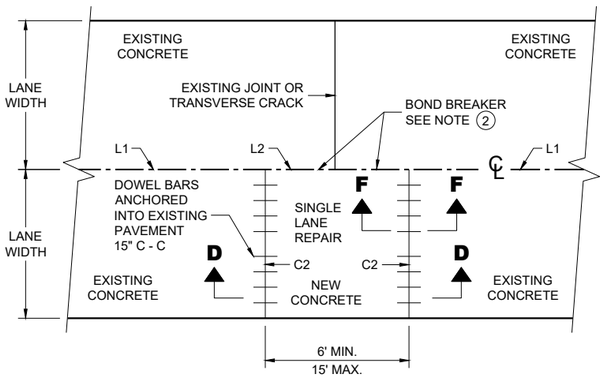


SECTION G - G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

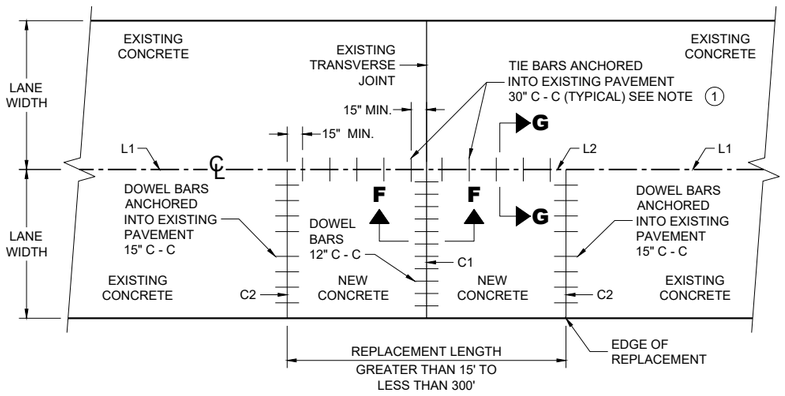
GENERAL NOTES

1. WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
2. USE AN ENGINEER APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
3. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPAIR



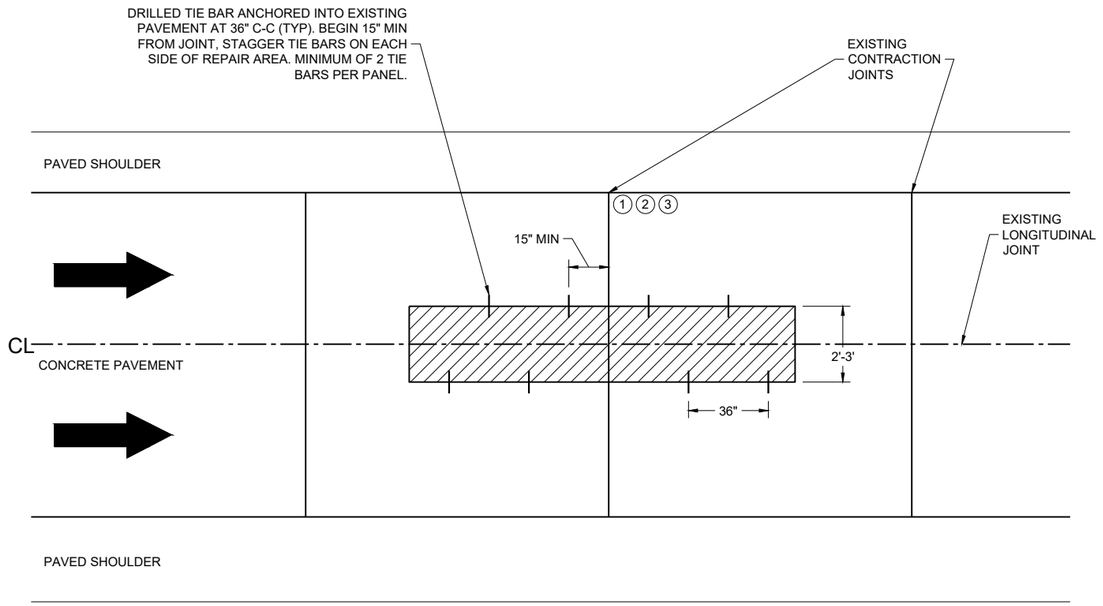
PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

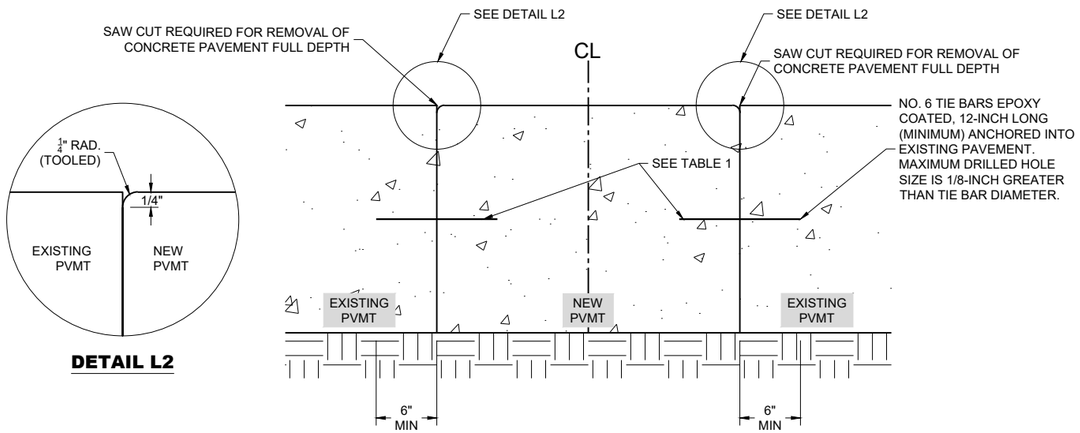
6
SDD 13C09-18c

CONCRETE REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW



DETAIL L2

SECTION VIEW

GENERAL NOTES

1. TIE BARS MIN 15" FROM JOINT.
2. LOCATION AND WIDTH OF PATCH ARE VARIABLE DEPENDING ON FIELD CONDITION
3. PRESERVE OR REESTABLISH EXISTING CONTRACTION JOINTS, KEEPING PATCH MATERIALS OUT OF REMAINING CONTRACTION JOINT.

TABLE 1	
PATCH WIDTH	TIE BAR LENGTH
24"	12"
36"	18"

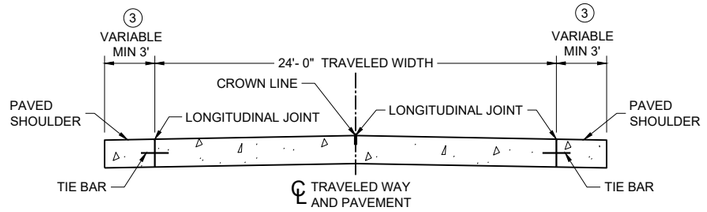
CONCRETE PAVEMENT CENTERLINE JOINT REPAIR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
NOVEMBER 2025 — DATE
/S/ Peter Kemp P.E. — PAVEMENT SUPERVISOR

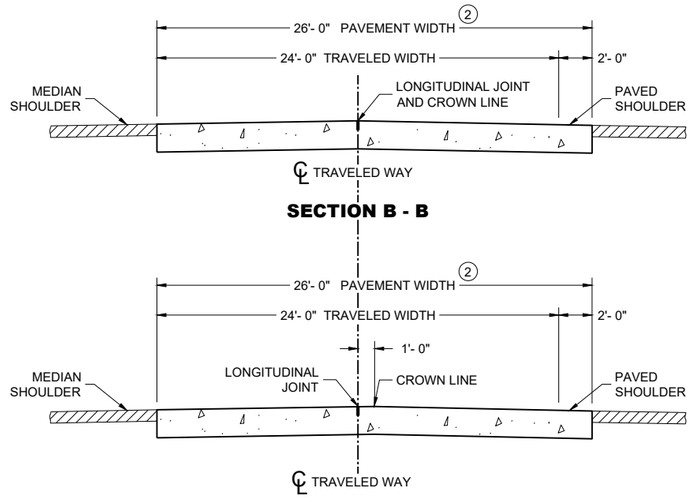
FHWA

6
SDD 13C09-18d



SECTION A - A

TWO-LANE TWO-WAY HIGHWAY (1)



SECTION B - B

ALTERNATIVE SECTION B - B

DIVIDED HIGHWAY (1)

GENERAL NOTES

CONTRACTION JOINTS

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

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

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

CONSTRUCTION JOINTS

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

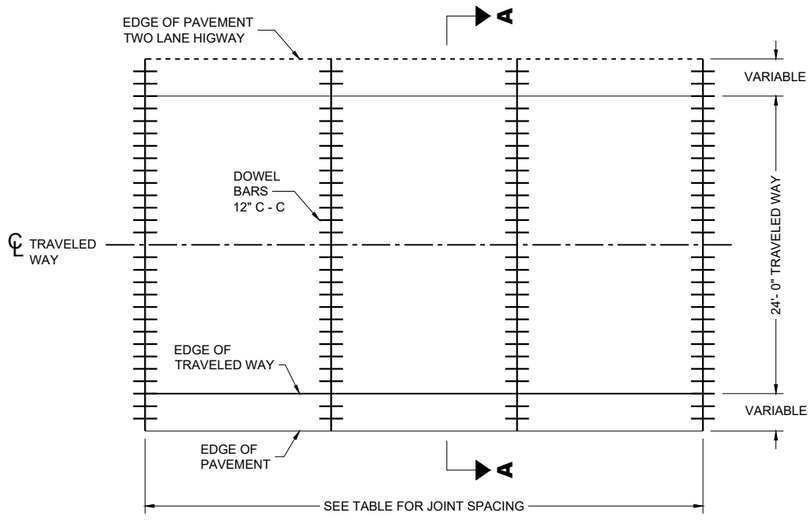
(1) REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

(2) MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED "PAVED SHOULDER" AS CONCRETE PAVEMENT.

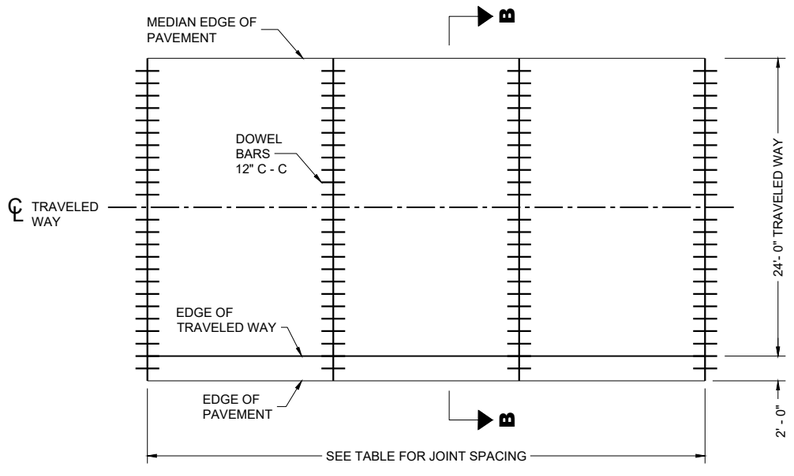
(3) SHOULDER WIDTHS LESS THAN 3 FEET SHALL BE PAVED INTEGRAL TO THE MAINLINE CONCRETE PAVEMENT, SEE SECTION B-B.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8" & ABOVE	1 ¼"	15'



CONTRACTION JOINT LAYOUT FOR TWO-LANE TWO-WAY HIGHWAY



CONTRACTION JOINT LAYOUT FOR DIVIDED HIGHWAY

6

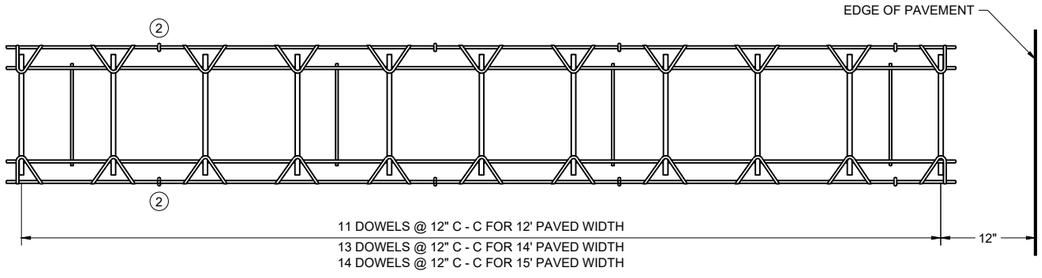
SDD 13C11-15a

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 13C11-15a



PLAN VIEW

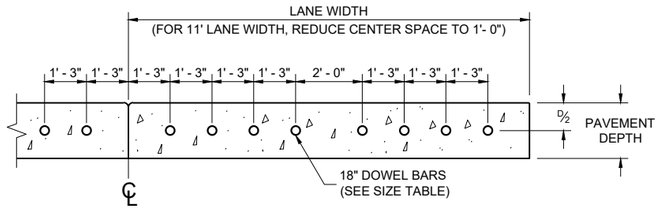
SIDE VIEW

(NORMAL TO CENTERLINE)

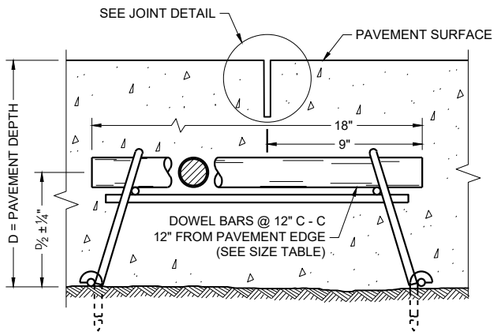
CONTRACTION JOINT DOWEL ASSEMBLY (1)

GENERAL NOTES

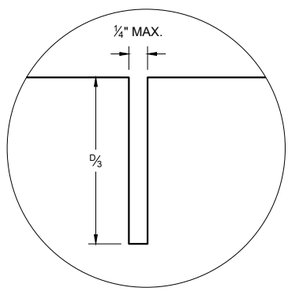
1. OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTION CONTRACTION JOINTS.
2. SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.
3. FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼" RADIUS AT FORMED JOINTS.
4. PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.
5. INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C - C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO THE "DRILLED DOWEL BAR CONSTRUCTION JOINT" DETAIL.
6. APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
7. ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛" GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



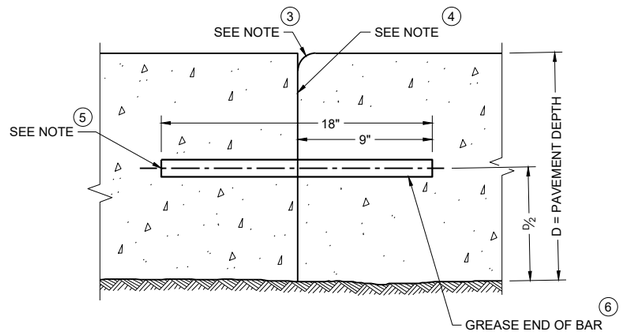
DRILLED DOWEL BAR CONSTRUCTION JOINT (7)



DOWELED CONTRACTION JOINT



JOINT DETAIL



TRANSVERSE CONSTRUCTION JOINT

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

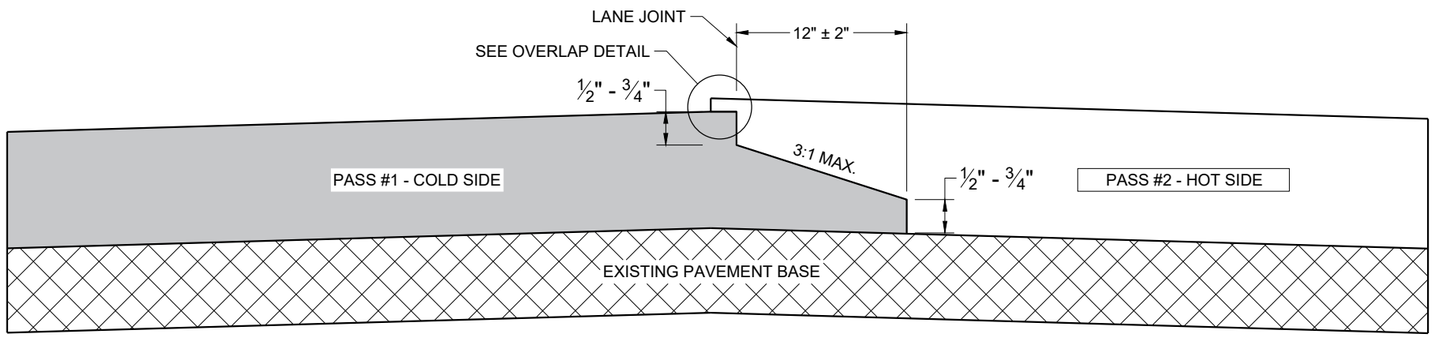
APPROVED
November 2025 — DATE
/S/ Peter Kemp P.E. — PAVEMENT SUPERVISOR

FHWA

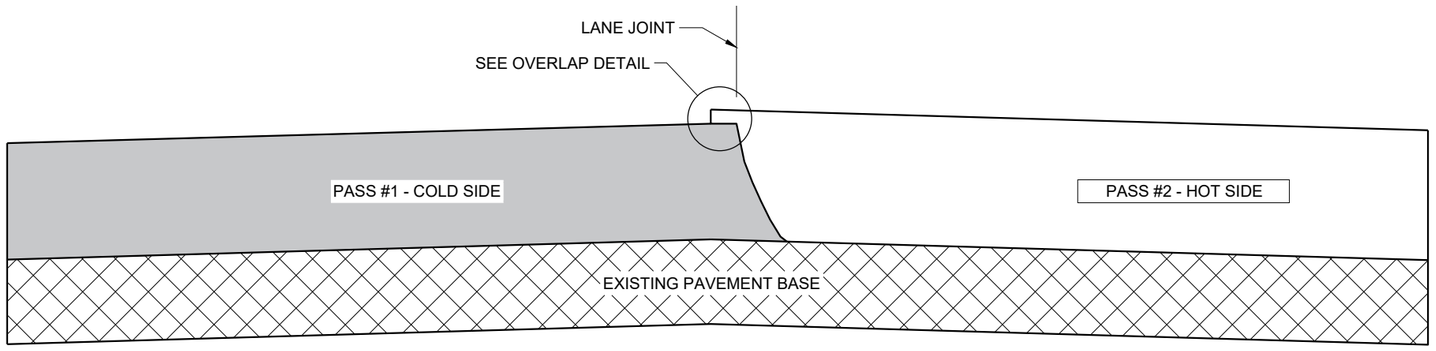
6

SDD 13C11-15b

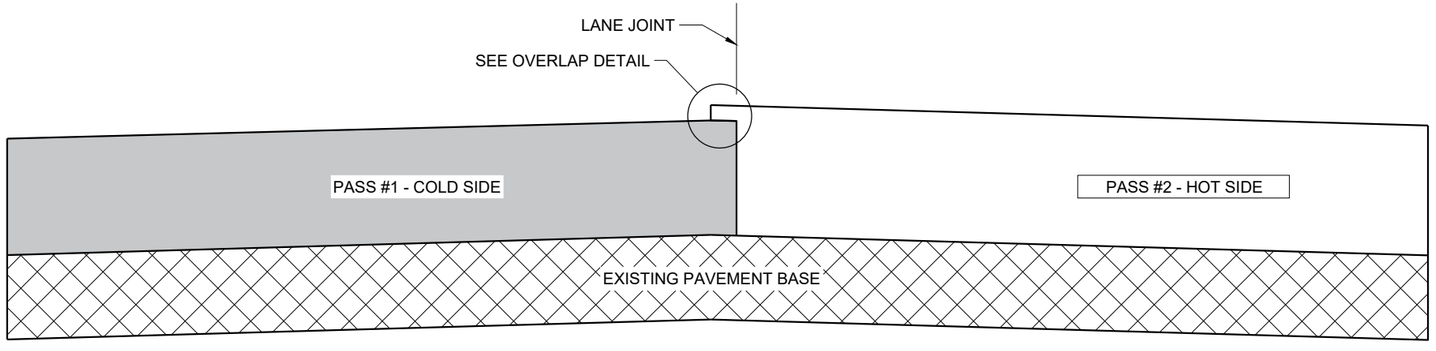
SDD 13C11-15b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

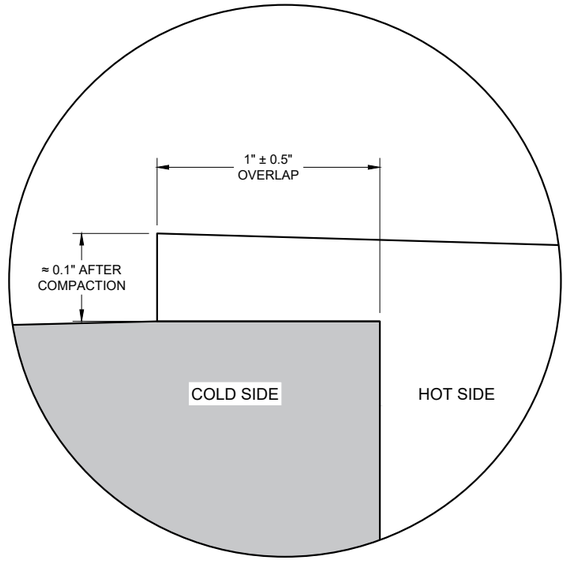
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

6

SDD 13C19 - 03

SDD 13C19 - 03

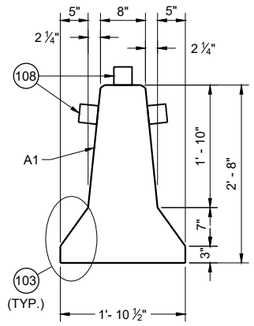
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

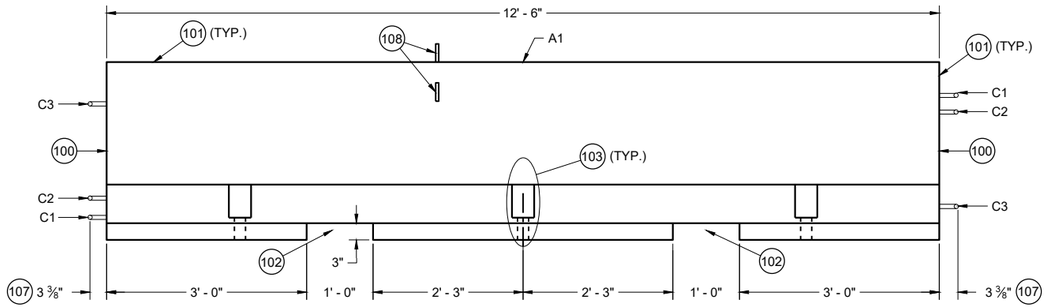
APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA



CROSS SECTION



PROFILE VIEW

GENERAL NOTES

PLACE BARRIER ON PAVED SURFACE. BEFORE PLACEMENT OF TEMPORARY BARRIER, REMOVE ALL LOOSE MATERIAL FROM PAVED SURFACE.

LOOP BARS C1, C2 AND C3 ARE NOT FOR PLACEMENT OR MOVEMENT OF BARRIER.

(100) PERMANENTLY FORM INTO ONE END OF BARRIER THE FOLLOWING INFORMATION:
- A. TYPE OF BARRIER: WI-CBTP
- B. MANUFACTURER
- C. DATE OF MANUFACTURE (MONTH AND YEAR)

(101) 1" OPTIONAL CHAMFER

(102) SEE LIFTING SLOT DETAIL

(103) SEE ANCHOR BLOCK DETAIL

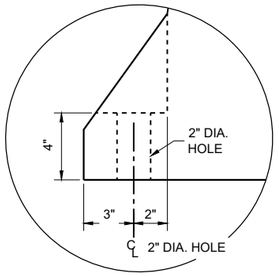
(104) 1 ¾" MIN. CLEAR COVER

(105) 2" MIN. CLEAR COVER

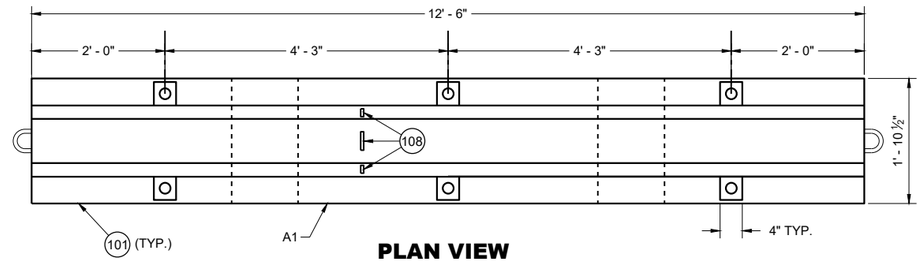
(106) 1" MIN. CLEAR COVER

(107) ± ⅛" MEASURED FROM FACE OF CONCRETE BARRIER TO OUTSIDE OF LOOP BAR (TYP.)

(108) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURERS INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED LEFT OF TRAFFIC AND WHITE WHEN BARRIER IS LOCATED RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART, PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO SIDE MOUNTED DELINEATORS ON BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAT 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

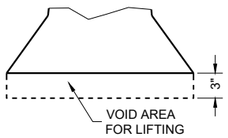


ANCHOR BLOCK DETAIL

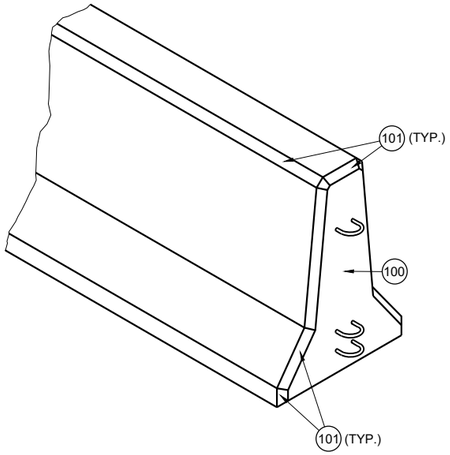


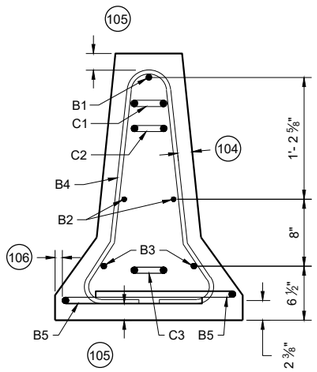
PLAN VIEW

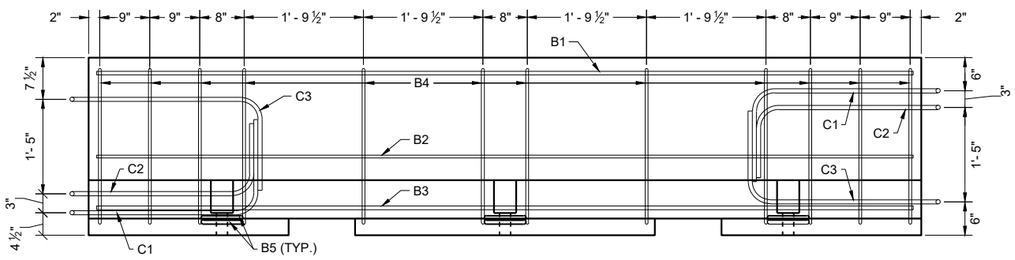
TEMPORARY BARRIER



LIFTING SLOT DETAIL (TYP.)







PROFILE VIEW

TEMPORARY BARRIER REINFORCEMENT

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

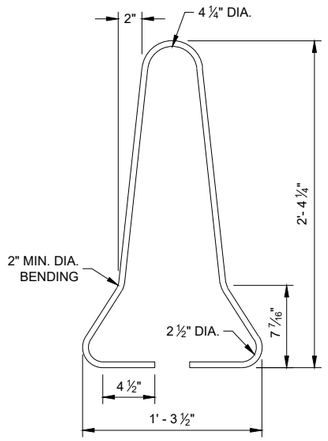
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

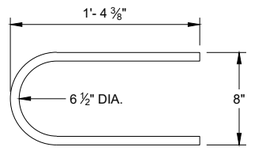
SDD 14B07-16a

6

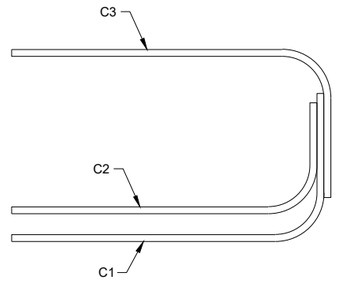
SDD 14B07-16a



B4 BAR DETAIL

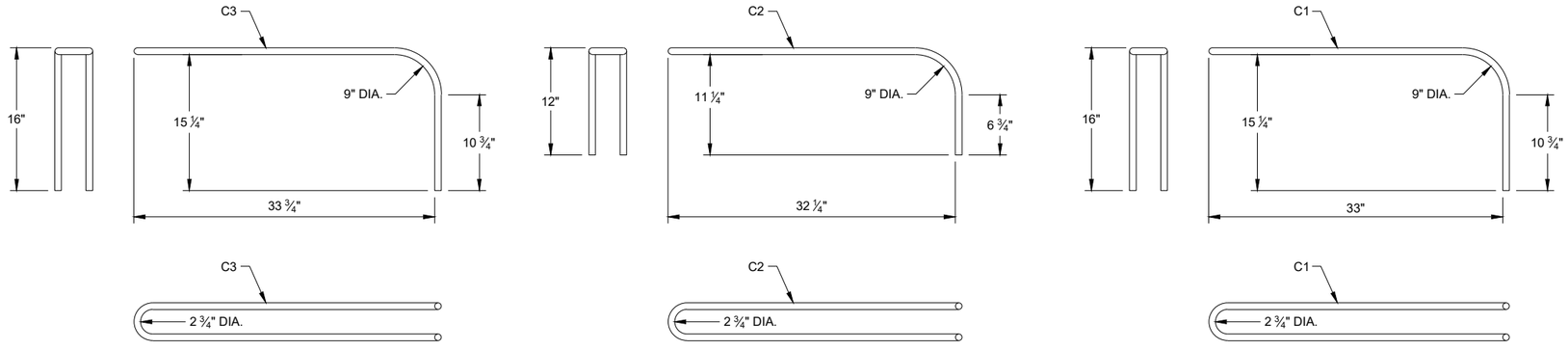


B5 BAR DETAIL



PROFILE VIEW

LOOP BAR ASSEMBLY



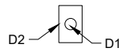
C BAR DETAILS

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

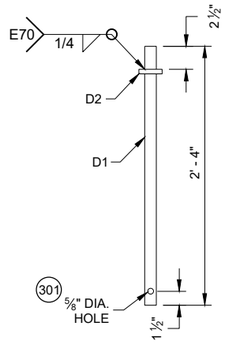
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B07-16b

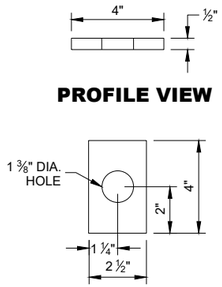


TOP VIEW



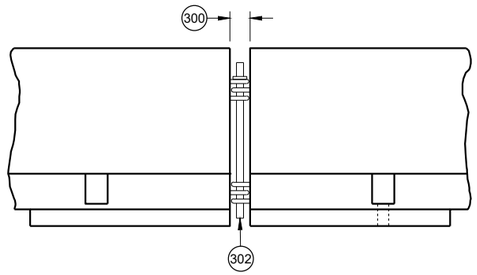
PROFILE VIEW

CONNECTOR PIN ASSEMBLY



PROFILE VIEW

TOP VIEW D2



CONNECTING TEMPORARY BARRIER SECTIONS

GENERAL NOTES

300 SET WITH 3 ⅝" WOOD BLOCK.

301 HOLE IS OPTIONAL.

302 CONNECTOR PIN ASSEMBLY.

303 CONCRETE PAVEMENT, APPROACH SLAB, OR DECK.

304 CONCRETE DECK.

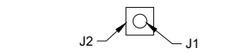
305 DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY OR CONCRETE PAVEMENT WITH ASPHALT OVERLAY.

306 MINIMUM OF 2" OF ASPHALT.

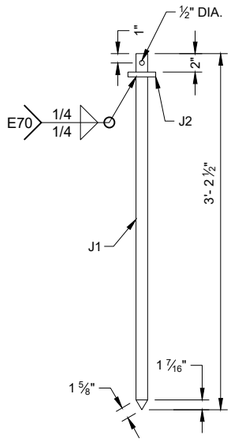
307 ASPHALT ANCHOR PIN ASSEMBLY

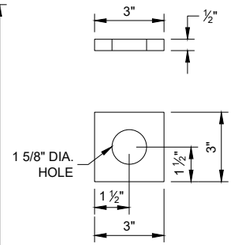
308 IF DRILLING A PILOT HOLE, THE MAX, DIA. OF THE HOLE IS 3/4"

309 WHEN THERE IS ASPHALT OVERLAYING CONCRETE PAVEMENT, A 1 5/8" DIA. PILOT HOLE CAN BE DRILLED INTO THE OVERLAY AND CONCRETE. IF NEEDED DRILL A 3/4" PILOT HOLE IN BASE COURSE.



TOP VIEW

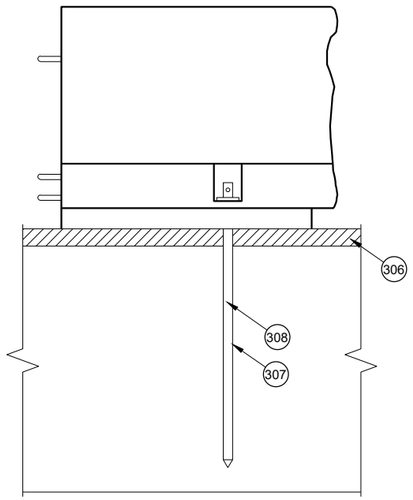




PROFILE VIEW

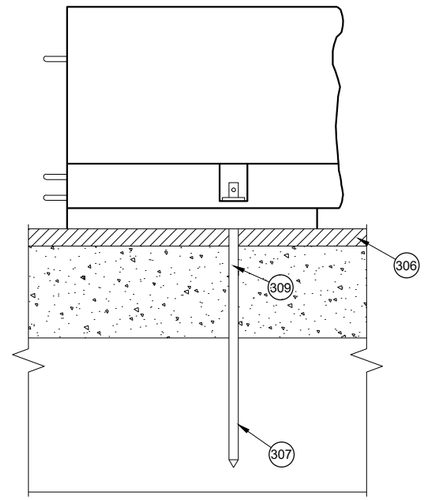
TOP VIEW J2

ASPHALT ANCHOR PIN ASSEMBLY



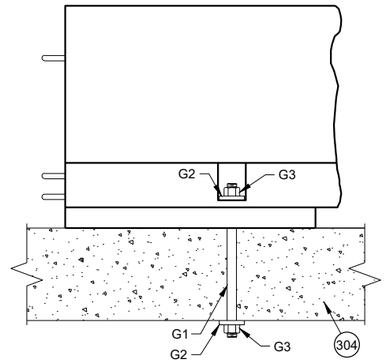
SIDE VIEW

ASPHALT ANCHOR INSTALLATION THROUGH ASPHALT PAVEMENT



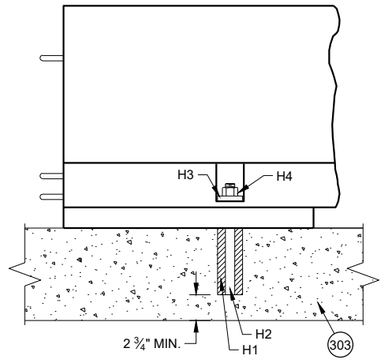
SIDE VIEW

ASPHALT ANCHOR INSTALLATION THROUGH ASPHALT OVERLAY ON TOP OF CONCRETE PAVEMENT



SIDE VIEW

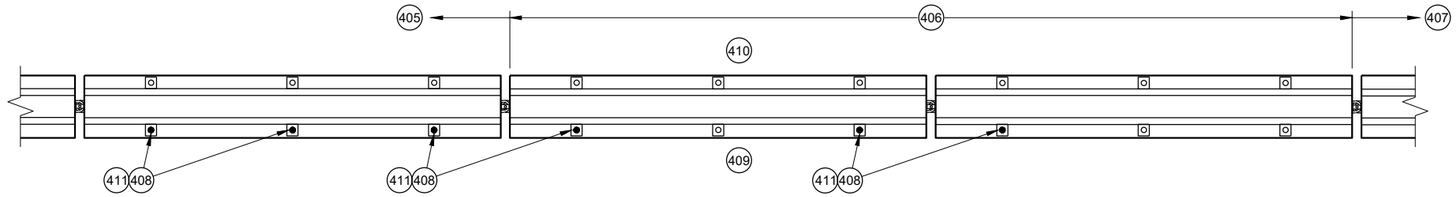
THROUGH BOLT ANCHOR INSTALLATION (305)



SIDE VIEW

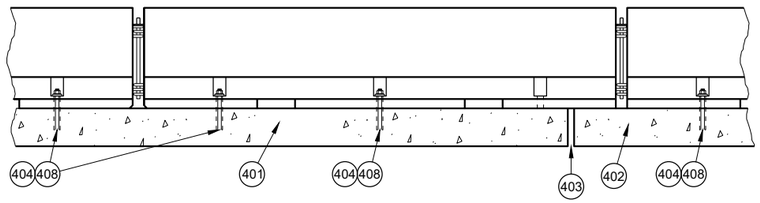
ADHESIVE ANCHOR INSTALLATION (305)

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"



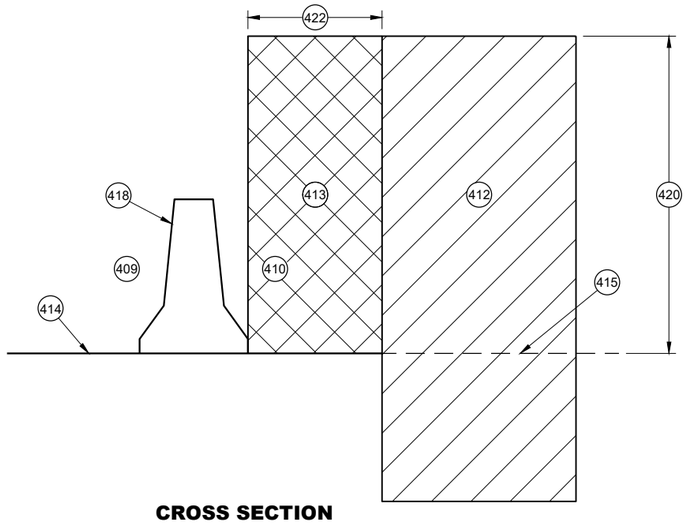
PLAN VIEW

TRANSITION FROM FREE STANDING TO ANCHORED BARRIER



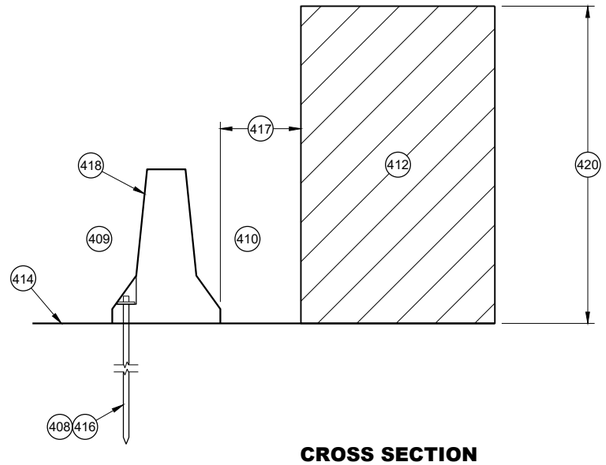
PROFILE VIEW

ANCHORED BARRIER NEAR EXPANSION JOINT (400)



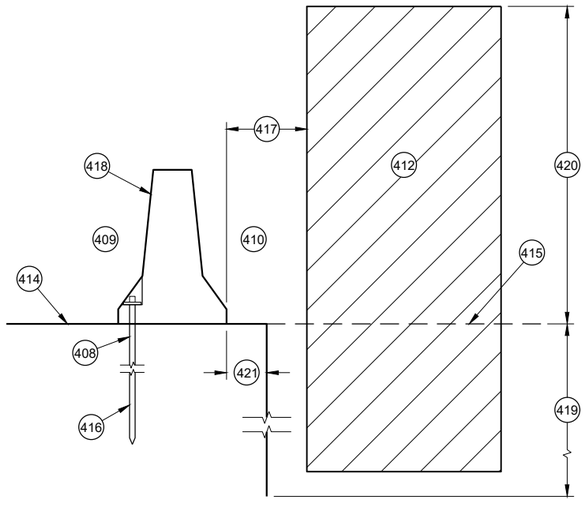
CROSS SECTION

FREE STANDING BARRIER



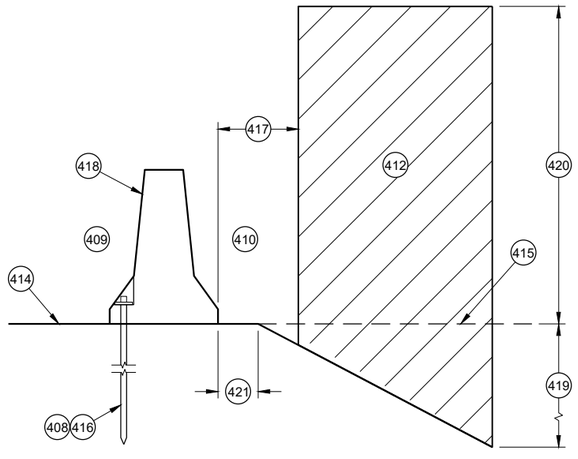
CROSS SECTION

ANCHORED BARRIER FOR OBJECTS ABOVE THE GRADE LINE AND NEAR THE BARRIER



CROSS SECTION

ANCHORED BARRIER NEAR VERTICAL DROP OFF



CROSS SECTION

ANCHORED BARRIER NEAR A SLOPE

GENERAL NOTES

(400) 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.

(401) CONCRETE DECK

(402) CONCRETE DECK OR APPROACH SLAB.

(403) EXPANSION JOINT

(404) ADHESIVE ANCHOR SHOWN. SEE ANCHOR DETAILS.

(405) ANCHORED TEMPORARY BARRIER

(406) TRANSITION FROM ANCHORED TEMPORARY BARRIER TO FREE STANDING

(407) FREE STANDING BARRIER

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

(409) TRAFFIC SIDE

(410) NON-TRAFFIC SIDE

(411) ANCHOR LOCATION. SEE ANCHORING DETAILS.

(412) WORK AREA

(413) AREA FREE OF OBJECTS AND WORKERS

(414) GRADE LINE

(415) EXTENDED GRADE LINE

(416) ANCHORED TEMPORARY BARRIER. SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR AN ASPHALT ANCHOR ROD DETAILS FOR MORE INFORMATION. ASPHALT ANCHOR ROD SHOWN.

(417) WHEN OBJECTS EXTEND ABOVE THE GRADE. A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT.

(418) OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR ALLOWED TO LEAN AGAINST THE BARRIER WITHOUT WRITTEN PERMISSION OF THE PROJECT ENGINEER.

(419) DEPTHS OF 3 FEET OR MORE.

(420) Y = 6.5'

(421) OFFSET FROM BACK OF BARRIER EDGE:

CONCRETE PAVEMENT	0.5'
ASPHALT	0.5'

(422) POSTED SPEED (MPH):

45 OR GREATER	4.0'
40 OR LOWER	2.0'

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16d

GENERAL NOTES

(500) EXISTING RIGID BARRIERS (VARIES)

(501) TEMPORARY BARRIER

(502) SEE OTHER DETAIL ON HOW TO ANCHOR TEMPORARY BARRIER (BARRIER ASPHALT ANCHOR SHOWN).

(503) ANCHORS ARE REQUIRED ON BOTH SIDE OF THE TEMPORARY BARRIER.

(504) NESTED RAILS ARE REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

(505) TRAFFIC TRAVELS FROM PERMANENT BARRIER TO TEMPORARY BARRIER.

(506) TRAFFIC TRAVELS FROM TEMPORARY BARRIER TO PERMANENT BARRIER.

(507) VERTICAL BARRIER

(508) SAFETY SHAPE BARRIER

(509) SINGLE SLOPE BARRIER

(510) CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF RIGID BARRIER.

(511) BENT THRIE BEAM TO FIT.

(512) THRIE BEAM PIECES ARE OFFSET 15 ¼" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.

(513) TWO (2) P1, P2 AND P3 ARE REQUIRED

(514) FIVE (5) N1, N2 AND N3 ARE REQUIRED

(515) TWO (2) R1, R2 AND R3 ARE REQUIRED

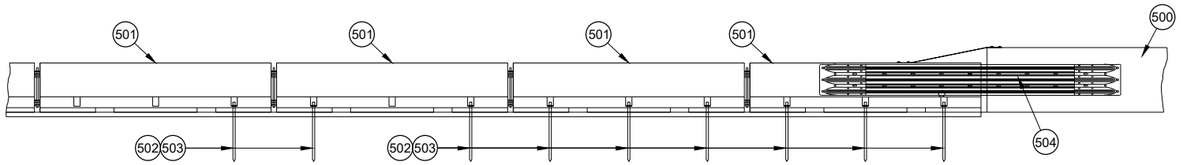
(516) CUT WOOD BLOCK TO FIT.

(517) SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL ASSEMBLY.

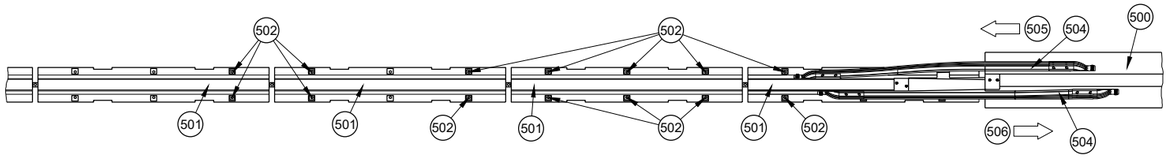
(518) CAP ASSEMBLY

(519) 4" MAX. GAP BETWEEN TEMPORARY BARRIER AND RIGID BARRIER.

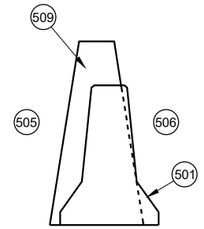
(520) ALL TWELVE SPLICE HOLES REQUIRE M1 AND M2



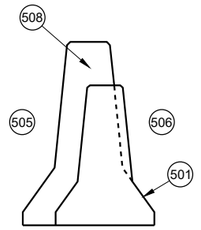
PROFILE VIEW



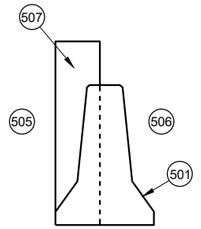
PLAN VIEW



CROSS SECTION TEMPORARY BARRIER PLACEMENT SINGLE SLOPE

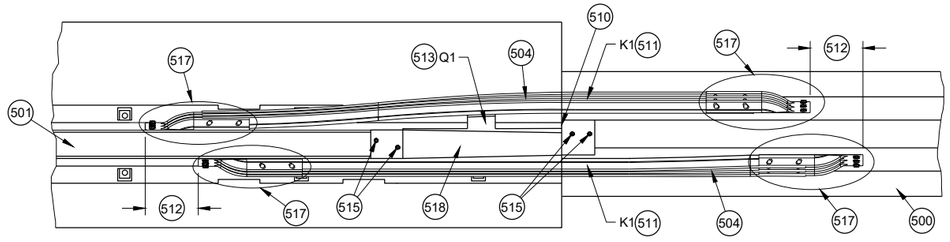


CROSS SECTION TEMPORARY BARRIER PLACEMENT SAFETY SHAPE

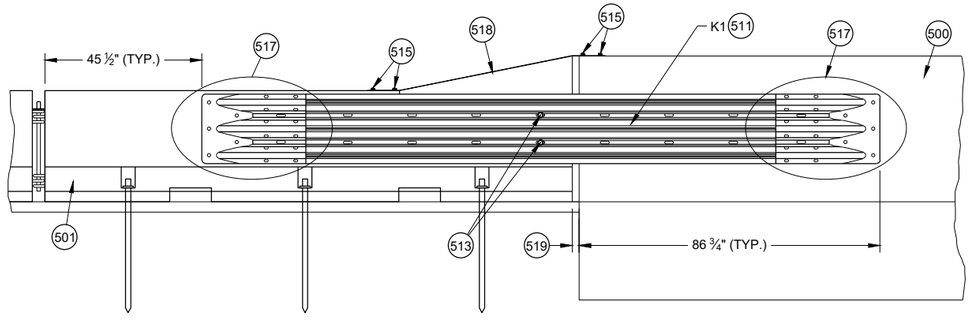


CROSS SECTION TEMPORARY BARRIER PLACEMENT VERTICAL

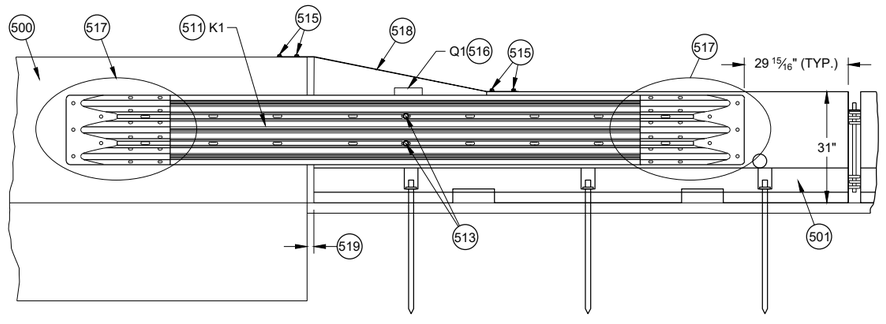
PLAN VIEW
TRANSITION TO RIGID BARRIER



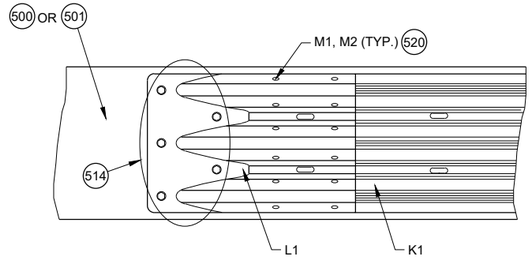
PLAN DETAIL VIEW
TRANSITION TO RIGID BARRIER



FRONT DETAIL VIEW
TRANSITION TO RIGID BARRIER



BACK DETAIL VIEW
TRANSITION TO RIGID BARRIER

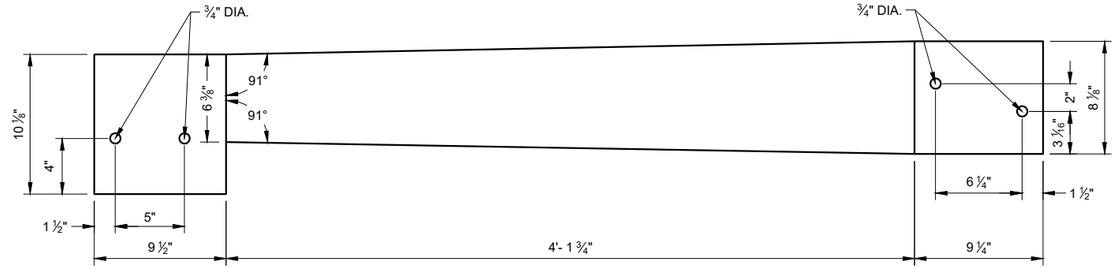


(517) DETAIL PLAN VIEW
THRIE BEAM RAIL TERMINAL CONNECTOR ASSEMBLY

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

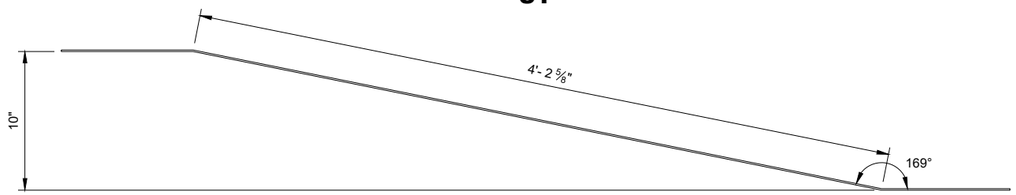
6

SDD 14B07-16e



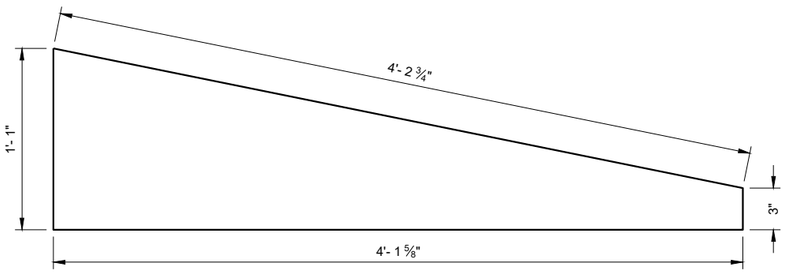
TOP VIEW

S1



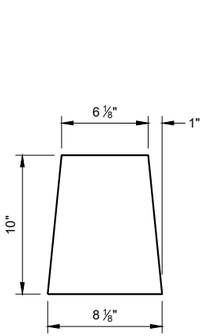
ELEVATION VIEW

S1

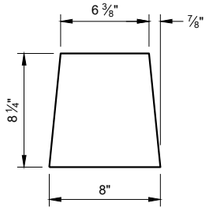


SIDE VIEW

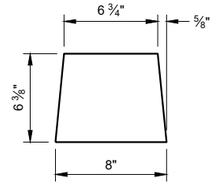
S3



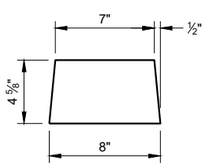
S2



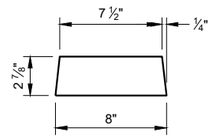
S4



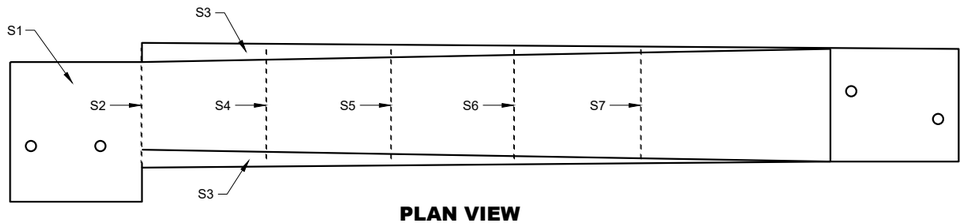
S5



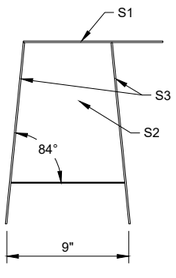
S6



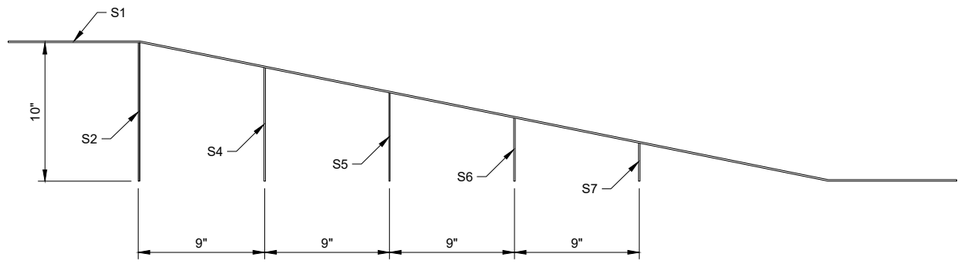
S7



PLAN VIEW



BACK VIEW



SIDE VIEW (600)

42" TOP CAP ASSEMBLY

GENERAL NOTES

STITCH WELD GUSSET PLATES AND END PLATES ON THREE SIDES

STITCH WELD TWO SIDE PLATES TO TOP PLATE, END PLATE AND GUSSETS.

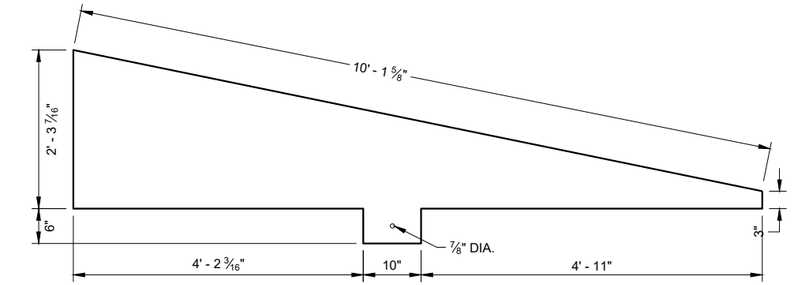
(600) SIDE PLATES (S3) NOT SHOWN FOR CLARITY.

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

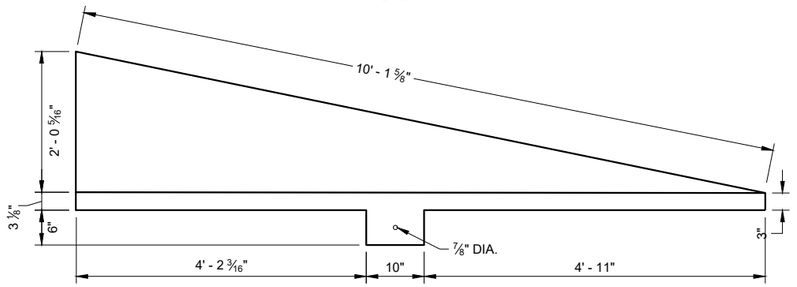
6

SDD 14B07-16f



SIDE VIEW
T4

END VIEW



SIDE VIEW
T3

END VIEW

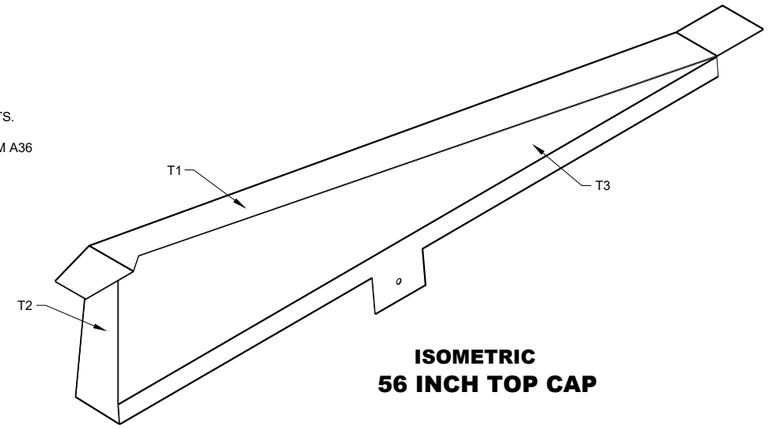
GENERAL NOTES

STITCH WELD GUSSET PLATES AND END PLATES ON THRIE SIDES

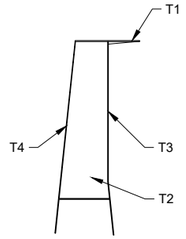
STITCH WELD TWO SIDE PLATES TO TOP PLATE, END PLATE AND GUSSETS.

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

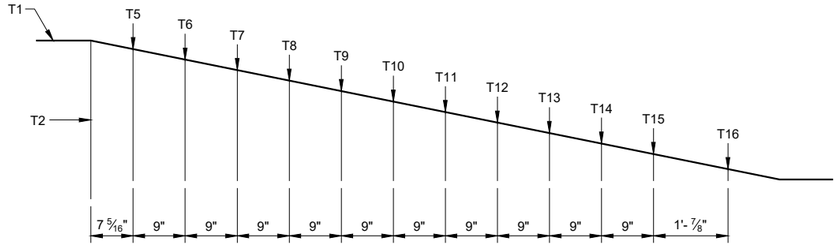
(700) SIDE PLATES (T3 AND T4) NOT SHOWN FOR CLARITY.



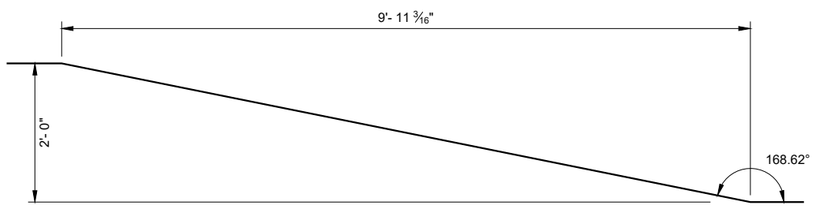
ISOMETRIC
56 INCH TOP CAP



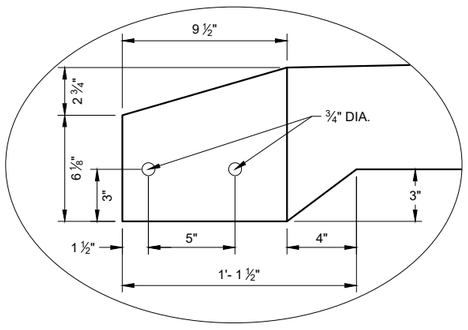
END VIEW
56 INCH TOP CAP



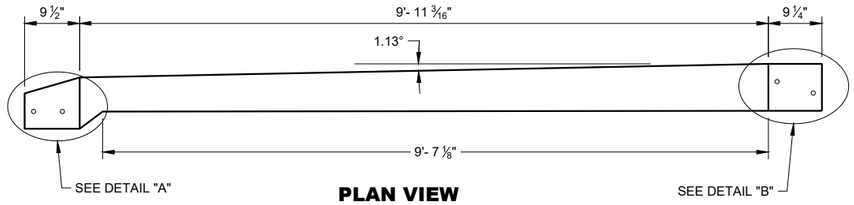
SIDE VIEW (700)
56 INCH TOP CAP



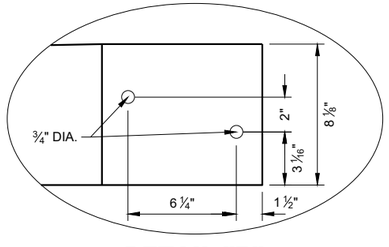
SIDE VIEW
TOP PLATE T1



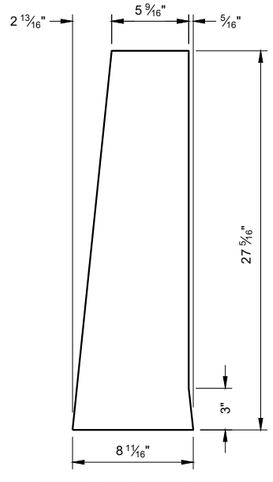
DETAIL "A"



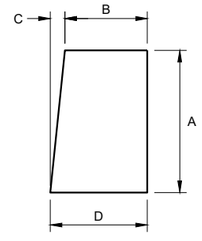
PLAN VIEW
TOP PLATE T1



DETAIL "B"



END PLATE T2



GUSSET PLATES
T5 - T16

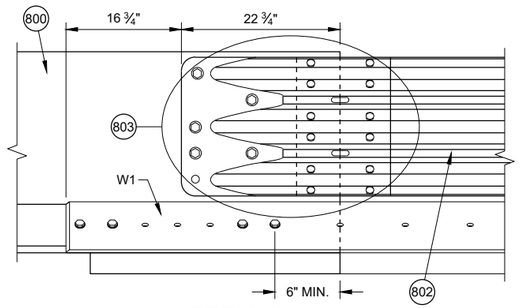
GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
T5	22 13/16"	5 1/16"	2 5/16"	8 1/16"
T6	21"	5 7/8"	2 3/16"	8 1/16"
T7	19 3/16"	6 1/16"	1 15/16"	8 1/16"
T8	17 3/8"	6 1/4"	1 13/16"	8 1/16"
T9	15 5/16"	6 7/16"	1 9/16"	8 1/16"
T10	13 3/4"	6 5/8"	1 7/16"	8 1/16"
T11	11 15/16"	6 13/16"	1 1/4"	8 1/16"
T12	10 1/8"	7"	1 1/16"	8 1/16"
T13	8 5/16"	7 3/16"	7/8"	8 1/16"
T14	6 1/2"	7 3/8"	1 1/16"	8 1/16"
T15	4 11/16"	7 9/16"	1/2"	8"
T16	2 7/8"	7 3/4"	1/4"	8"

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

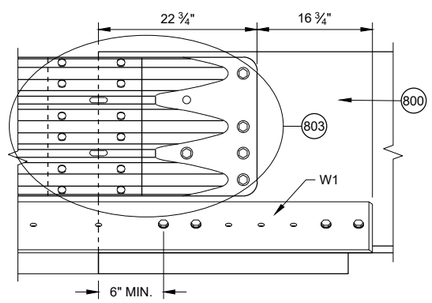
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

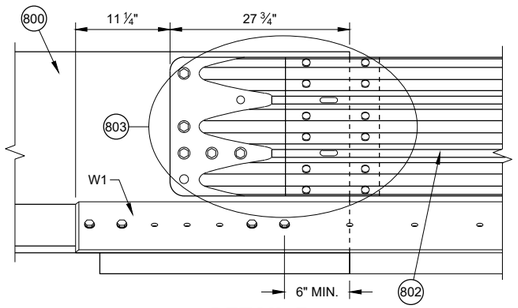
SDD 14B07-16g



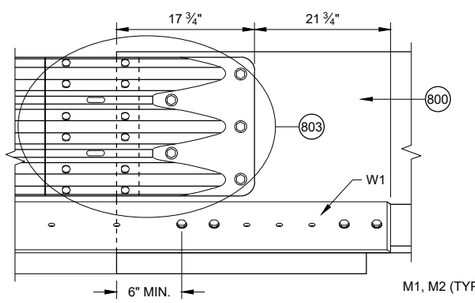
DETAIL D



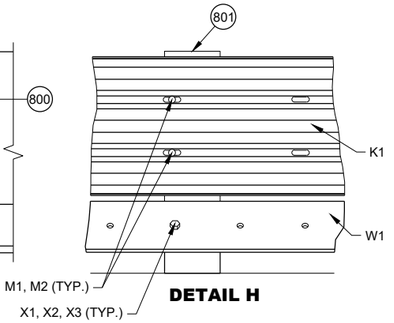
DETAIL E



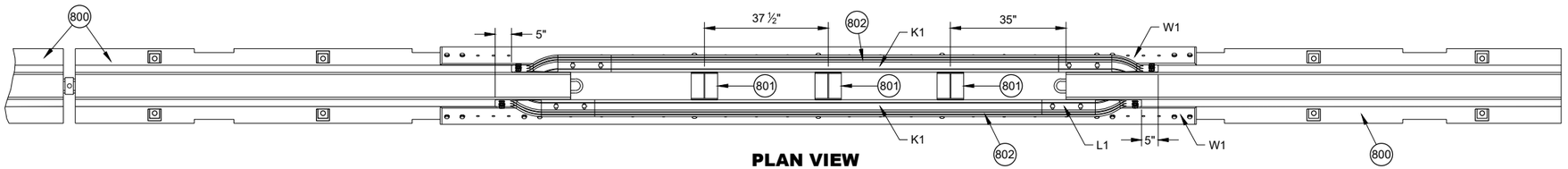
DETAIL F



DETAIL G



DETAIL H



PLAN VIEW

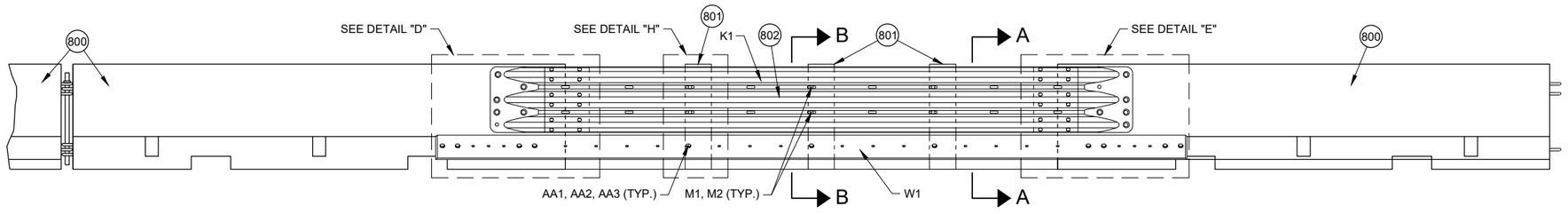
GENERAL NOTES

(800) FREE STANDING TEMPORARY BARRIER

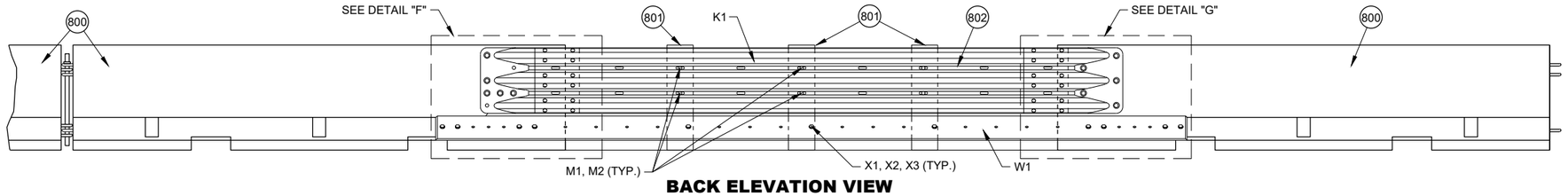
(801) GAP STIFFENER ASSEMBLY

(802) THRIE BEAMS ARE NESTED ON BOTH SIDES OF THE TEMPORARY BARRIER.

(803) SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL



FRONT ELEVATION VIEW



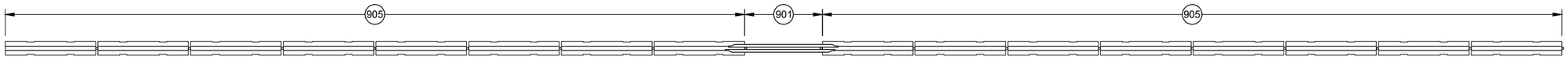
BACK ELEVATION VIEW

PORTABLE CONCRETE BARRIER GAP THRIE BEAM COVER

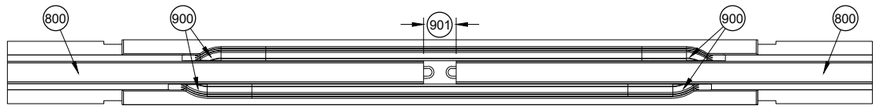
CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16h



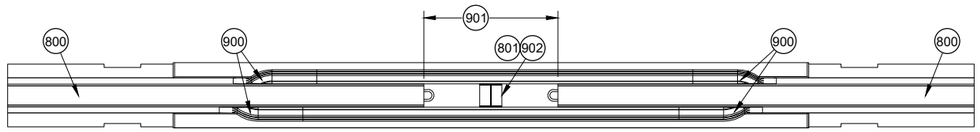
PLAN VIEW
GAP WITHIN SPACING



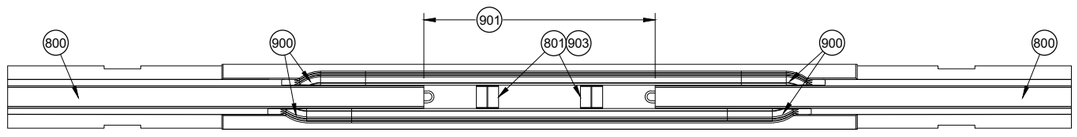
PLAN VIEW
TEMPORARY BARRIER GAP OVER 4" TO 1' MAX. (904)

GENERAL NOTES

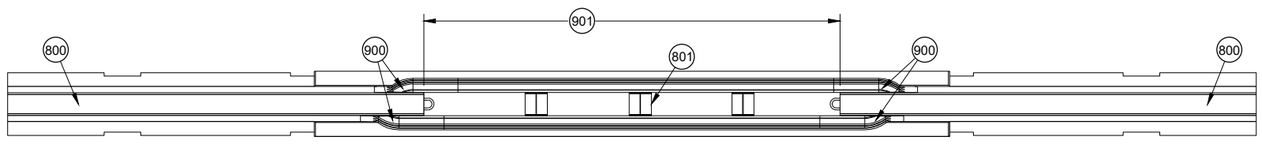
(900) SEE OTHER DETAILS FOR TEMPORARY GAP HARDWARE (TYP.)
(901) TEMPORARY BARRIER GAP
(902) GAP STIFFENER ASSEMBLY CENTERED IN THE GAP.
(903) GAP STIFFENER ASSEMBLY IS OFFSET 18 ¾" FROM CENTER
(904) MINIMUM NUMBER OF GAP STIFFENERS SHOWN FOR THE GAP RANGE SHOWN.
(905) MINIMUM OF 8 CONTINUOUS FREE STANDING TEMPORARY BARRIERS



PLAN VIEW
TEMPORARY BARRIER GAP OVER 1' TO 4' MAX. (904)



PLAN VIEW
TEMPORARY BARRIER GAP OVER 4' TO 7' MAX. (904)

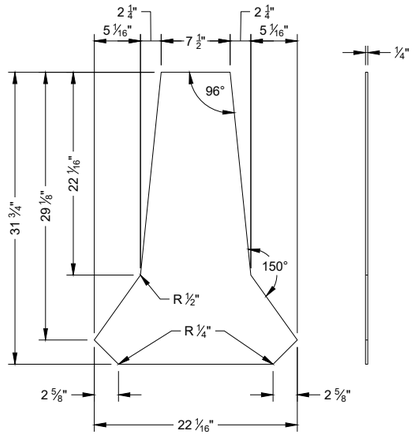


PLAN VIEW
TEMPORARY BARRIER GAP OVER 7' TO 12.5' MAX. (904)

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

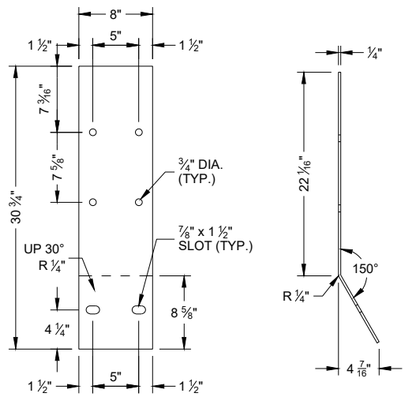
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16i



PROFILE VIEW SIDE VIEW

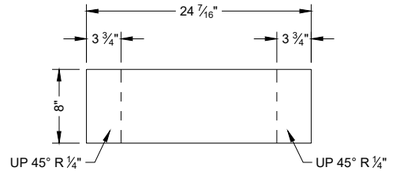
STIFFENER ASSEMBLY CENTER PANEL U1



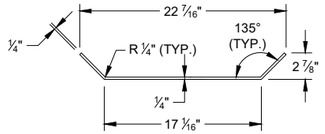
FLAT PATTERN

SIDE VIEW

STIFFENER ASSEMBLY SIDE PANEL U2

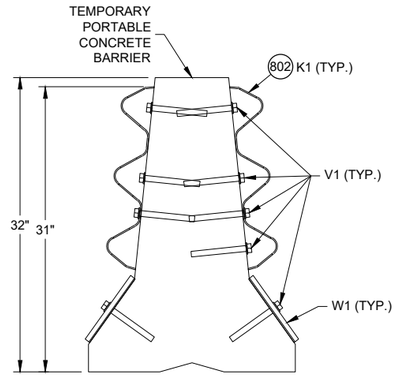


FLAT PATTERN

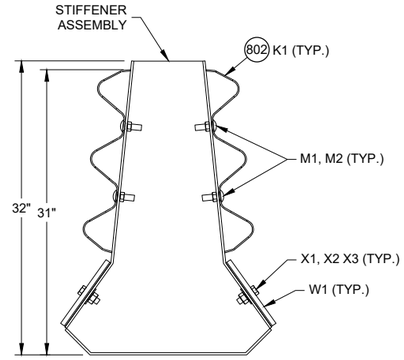


PROFILE VIEW

STIFFENER ASSEMBLY BOTTOM PANEL U3

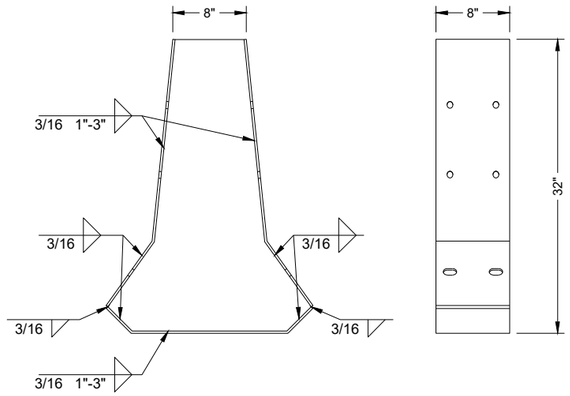


SECTION A - A



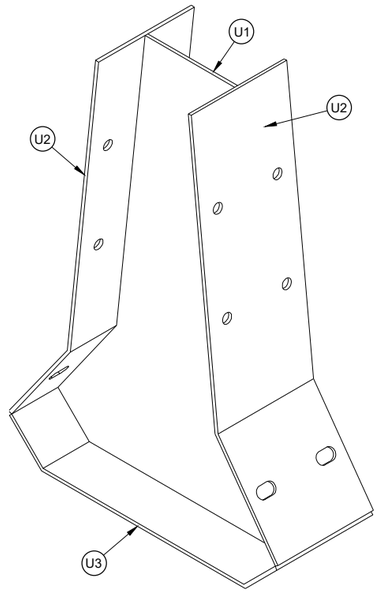
SECTION B - B

PLAN VIEW



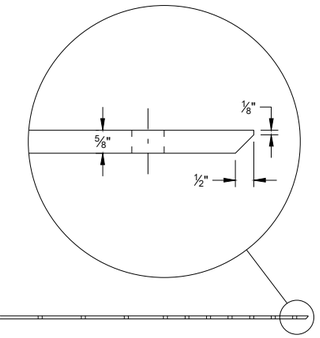
PROFILE VIEW

SIDE VIEW

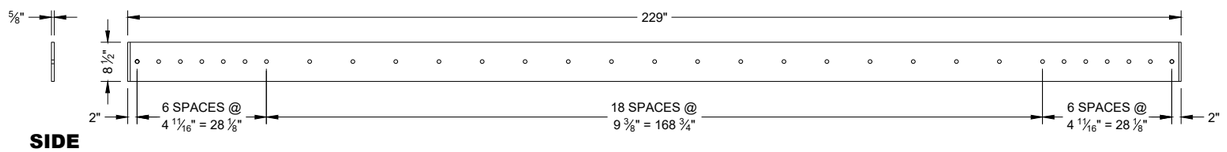


ISOMETRIC

GAP STIFFENER ASSEMBLY



PLAN VIEW



SIDE VIEW

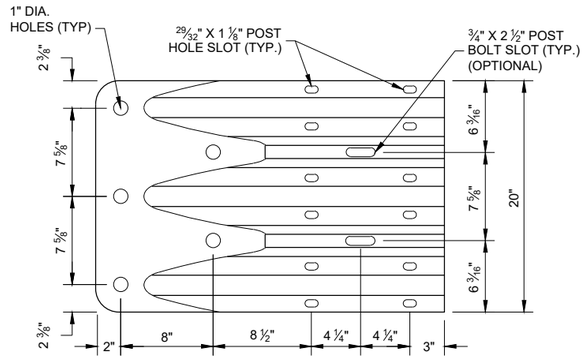
ELEVATION VIEW

W1 TOE PLATE

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

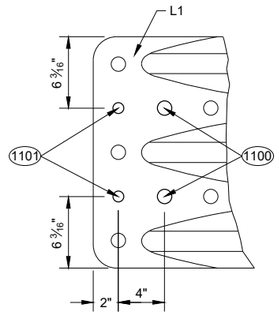
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16j



ELEVATION VIEW

THRIE BEAM TERMINAL CONNECTOR



ELEVATION VIEW

ADDITIONAL THRIE BEAM (1102) TERMINAL CONNECTOR HOLE DETAIL

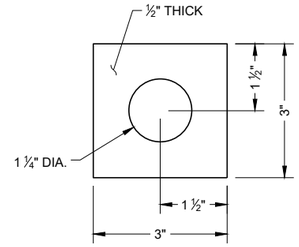


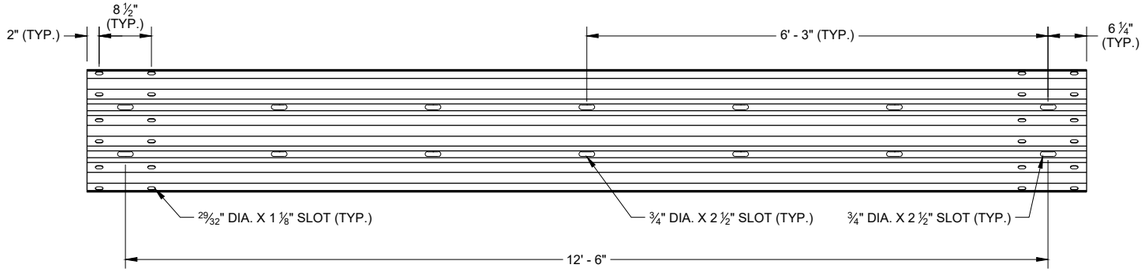
PLATE WASHER DETAIL G2, H3

GENERAL NOTES

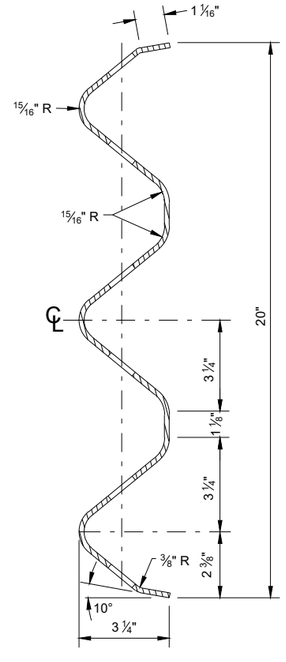
(1100) 1" DIA. HOLE

(1101) 3/4" DIA. HOLE

(1102) PROVIDE HOLES IN THRIE BEAM TERMINAL CONNECTOR TO LIMIT STEEL REINFORCEMENT OR LOOP BAR CONFLICT. CONTRACTOR MAY FIELD DRILL ADDITIONAL HOLE OR PROVIDE THRIE BEAM TERMINAL CONNECTOR WITH ADDITIONAL HOLES FROM SUPPLIER.



SLOTTED THRIE BEAM RAIL K1

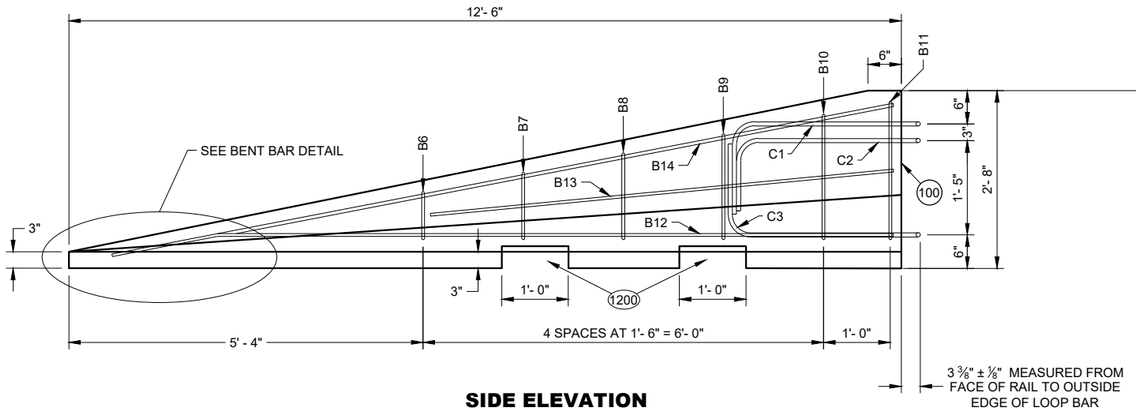


SECTION THROUGH BEAM K1

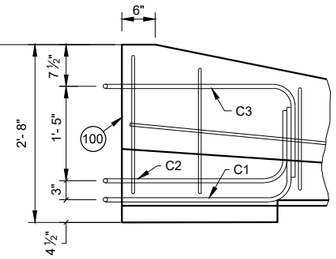
CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16k



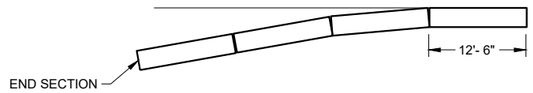
SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



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

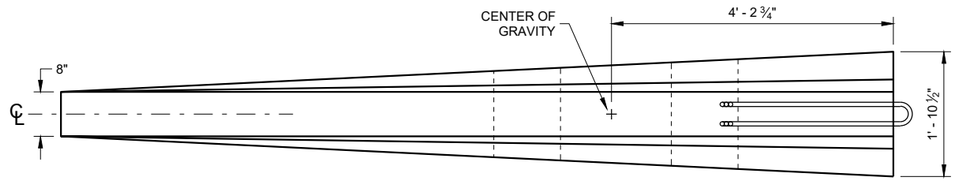
GENERAL NOTES

(1200) SEE LIFTING SLOT DETAIL. LOCATION OF LIFTING SLOTS DETERMINED BY CONTRACTOR.

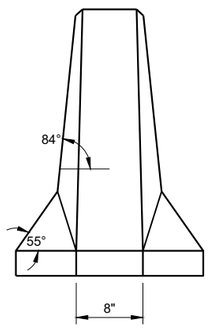


FLARE AT BARRIER END

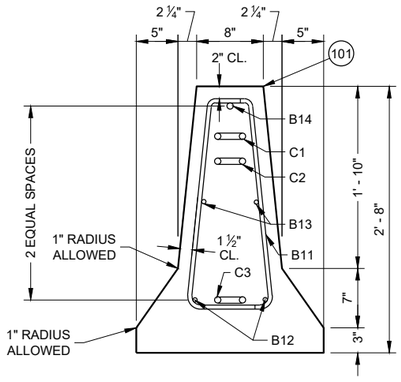
POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1



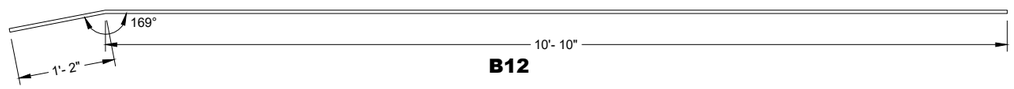
PLAN VIEW



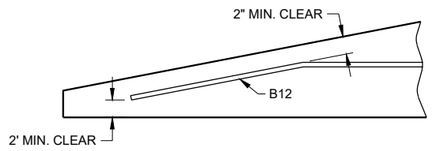
FRONT ELEVATION



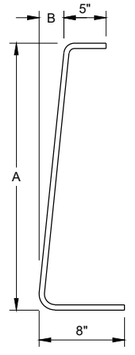
END SECTION



B12



BENT BAR DETAIL



BAR	A	B
B6	10"	1"
B7	1'- 1"	1 ¼"
B8	1'- 5"	1 ⅝"
B9	1'- 8"	1 ⅞"
B10	2'- 0 ½"	2 ⅜"
B11	2'- 3"	2 ¾"

B BARS
2 OF EACH SIZE REQUIRED FOR STIRRUP ASSEMBLY

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16I

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	PRECAST TEMPORARY BARRIER - CONCRETE	MIN. = f'c 5000 PSI	
B1	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B2	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-2"
B3	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B4	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 6'-0"
B5	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#6 REBAR, LENGTH 2'-11"
B6	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 1'-11"
B7	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-2"
B8	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-6"
B9	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-9"
B10	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-2"
B11	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-4"
B12	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-0"
B13	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 7'-9"
B14	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 11'-9"
C1	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C2	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C3	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
D1	CONNECTION PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ¼" DIA.
D2	CONNECTION PIN - TOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G1	BOLT THROUGH ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A OR SAE J429 GRADE 2 UNC	1 ⅛" DIA.
G2	BOLT THROUGH ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G3	BOLT THROUGH ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
H1	ADHESIVE ANCHOR - ADHESIVE	ICC-ES-AC308 5 ¼" EMBEDMENT WITH A MIN. BOND STRENGTH OF 1,650 PSI. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
H2	ADHESIVE ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A / SAE J429 GRADE 2 UNC	1 ⅛" DIA.
H3	ADHESIVE ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
H4	ADHESIVE ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
J1	ASPHALT ANCHOR PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ½" DIA.
J2	ASPHALT ANCHOR PIN - STOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
K1	THRIE BEAM RAIL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE
L1	THRIE BEAM RAIL - TERMINAL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
M1	SPLICE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	⅝" DIA.
M2	SPLICE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
N1	THRIE BEAM RAIL TERMINAL - MECHANICAL ANCHOR	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	¾" DIA. LENGTH 6"
N2	THRIE BEAM RAIL TERMINAL - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
N3	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
P1	THRIE BEAM RAIL CONNECTION 1-BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	¾" DIA.
P2	THRIE BEAM RAIL CONNECTION 1-WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
P3	THRIE BEAM RAIL CONNETION 1- MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
Q1	BLOCK WOOD	SEE STANDARD SPEC. 614	
R1	CAP - BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	⅝" DIA.
R2	CAP- BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
R3	CAP - BOLT - MECHANICAL ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	12 GAUGE
S1	CAP 42-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S2	CAP 42-INCH END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S3	CAP 42-INCH SIDE PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S4	CAP 42-INCH GUSSET 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S5	CAP 42-INCH GUSSET 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S6	CAP 42-INCH GUSSET 3	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S7	CAP 42-INCH GUSSET 4	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE

6

SDD 14B07-16m

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B07-16m

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
T1	CAP 56-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T2	CAP 56-INCH END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T3	CAP 56-INCH SIDE PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T4	CAP 56-INCH SIDE PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T5	CAP 56-INCH GUSSET 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T6	CAP 56-INCH GUSSET 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T7	CAP 56-INCH GUSSET 3	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T8	CAP 42-INCH GUSSET 4	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T9	CAP 42-INCH GUSSET 5	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T10	CAP 42-INCH GUSSET 6	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T11	CAP 42-INCH GUSSET 7	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T12	CAP 42-INCH GUSSET 8	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T13	CAP 42-INCH GUSSET 9	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T14	CAP 42-INCH GUSSET 10	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T15	CAP 42-INCH GUSSET 11	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T16	CAP 42-INCH GUSSET 12	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
U1	GAP STIFFENER	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
U2	GAP STIFFENER - CONNECTOR PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
U3	GAP STIFFENER - CONNECTOR PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
V1	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 24.0 KIPS AND ULTIMATE SHEAR LOAD 21.5 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	¾" DIA.
V2	GAP STIFFENER - BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C O R MECHANICAL GALVANIZE TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
W1	TOE PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
X1	TOE PLATE - CONNECTION BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC HEAVY HEX HEAD OR AASTHO M180 HEAD, ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED. PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT.	¾" DIA.
X2	TOE PLATE - CONNECTION BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1 (HARDEN WASHER ONLY)	
X3	TOE PLATE - CONNECTION BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	

6

SDD 14B07-16n

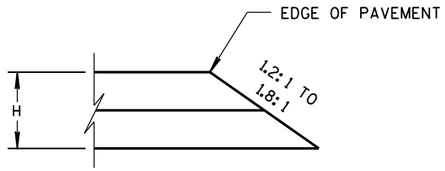
CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2023 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

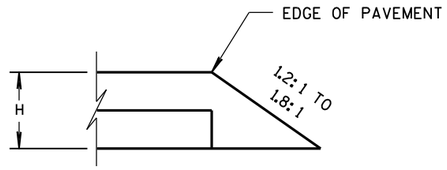
6

SDD 14B07-16n



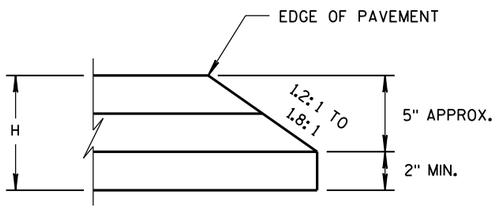
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



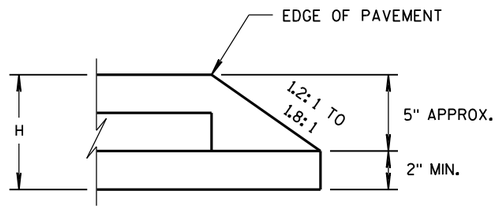
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

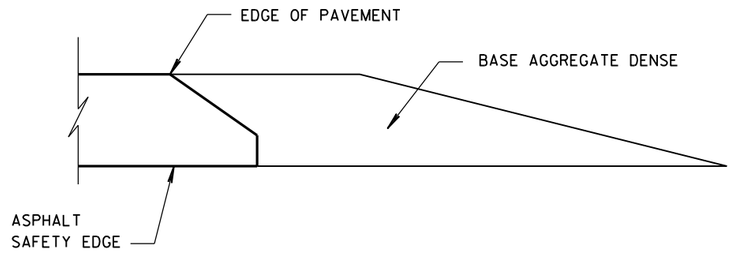
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

6

S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

SAFETY EDGE SM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

(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.

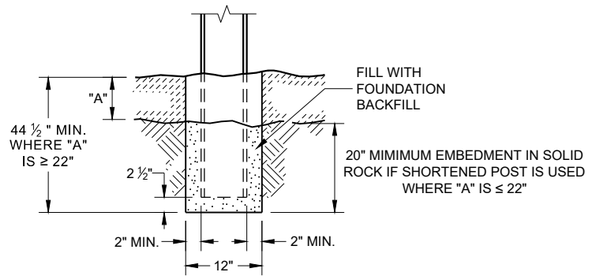
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

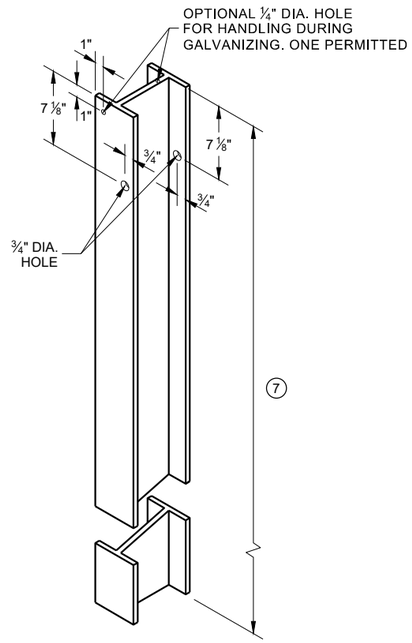
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

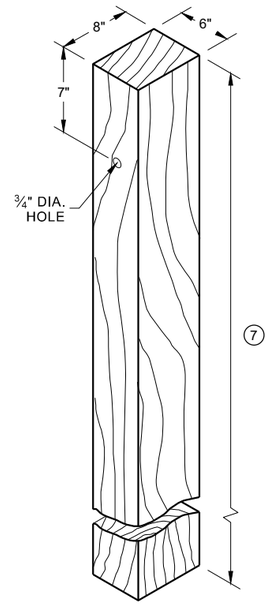
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



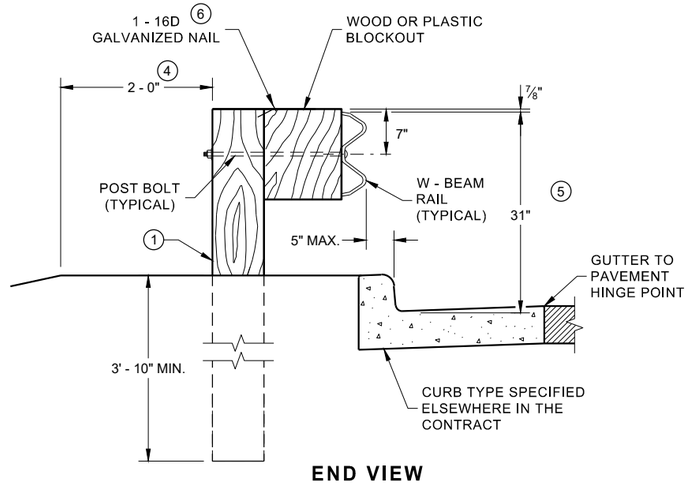
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



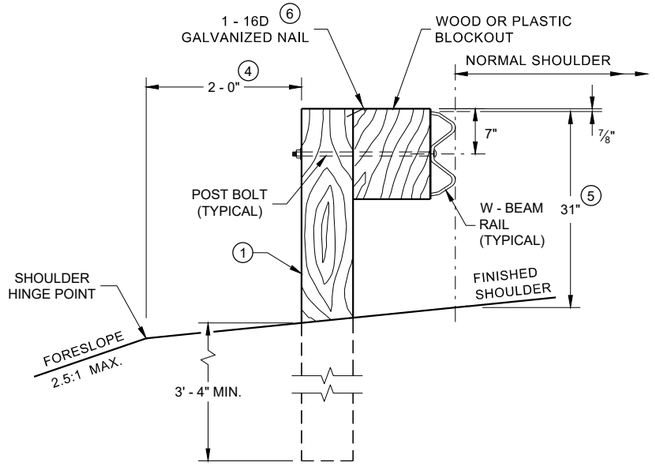
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



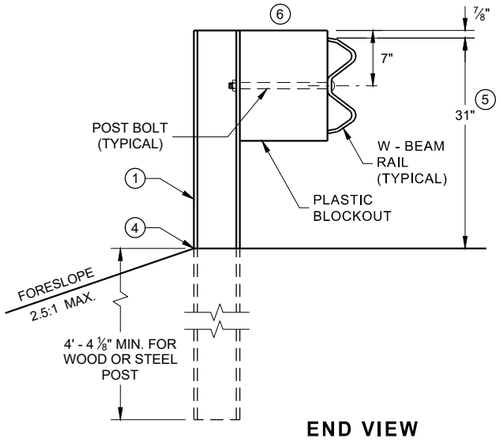
WOOD POST (6" X 8") NOMINAL (1)



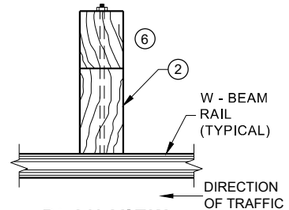
END VIEW
LOCATED ALONG A CURBED ROADWAY



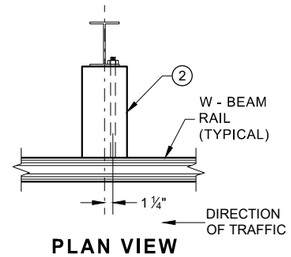
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



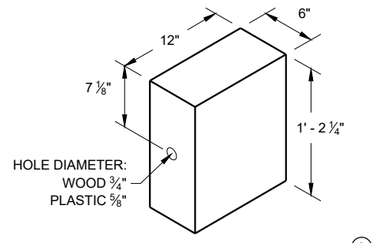
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



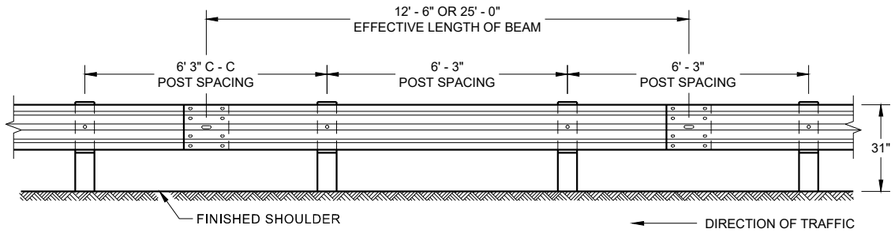
PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



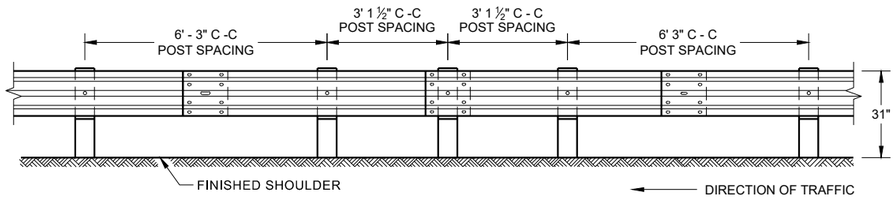
WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

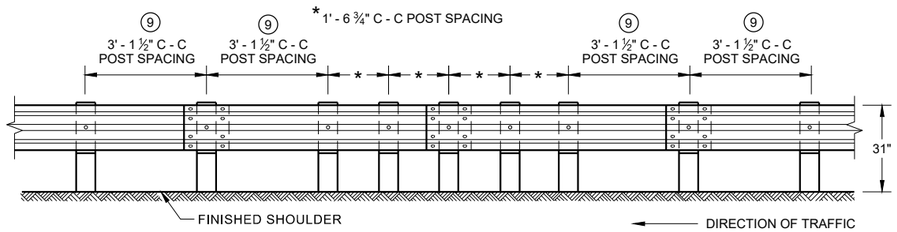
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



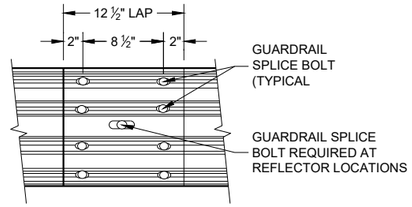
FRONT VIEW
POST SPACING STANDARD INSTALLATION



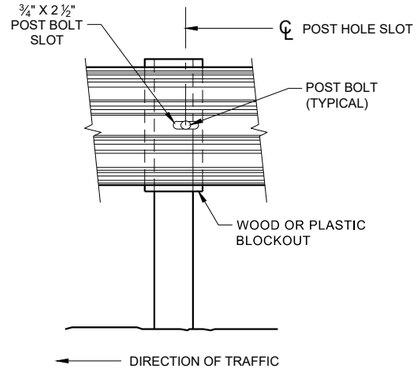
FRONT VIEW
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



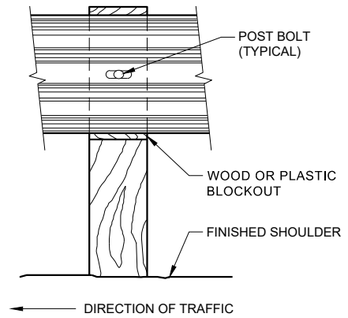
FRONT VIEW
QUARTER POST SPACING (QS)



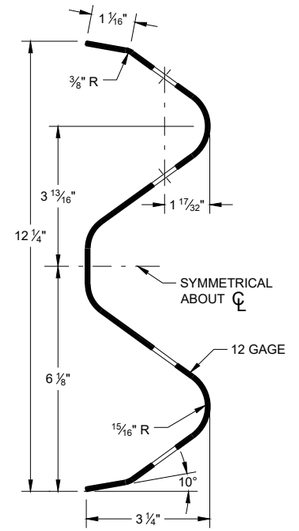
FRONT VIEW
MID-SPAN BEAM SPLICE



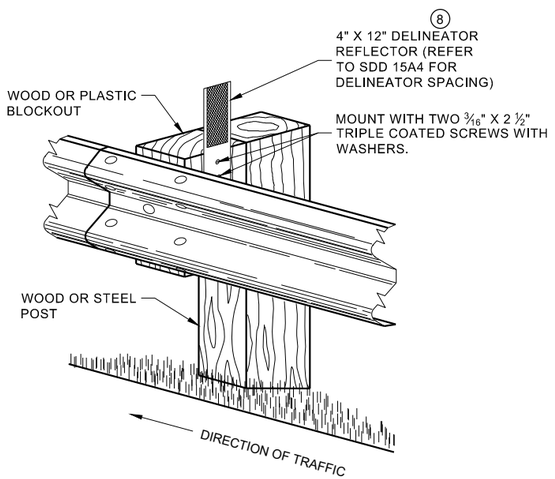
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

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

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

POST BOLTS ARE A ⅝" 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.

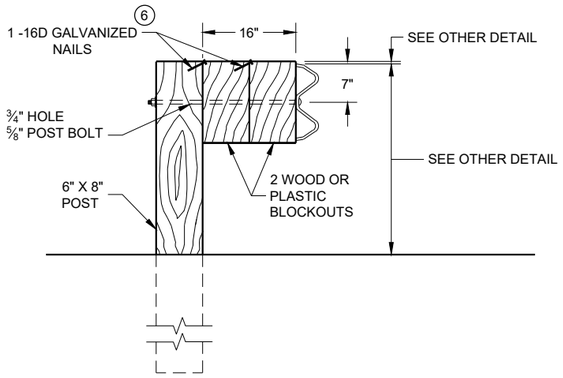
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

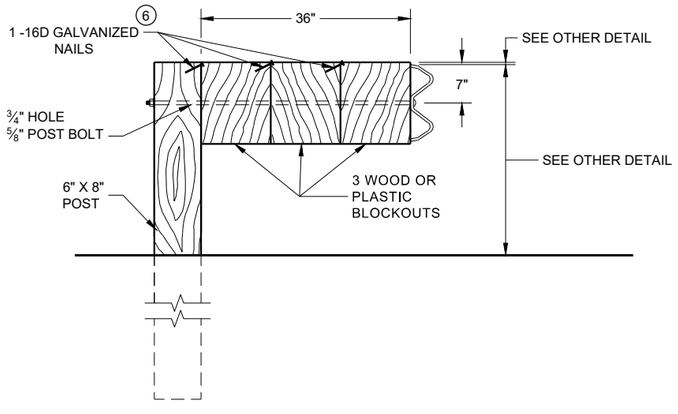
6

SDD 14B42 - 07b
SDD 14B42 - 07b



DETAIL FOR 16" BLOCKOUT DEPTH

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



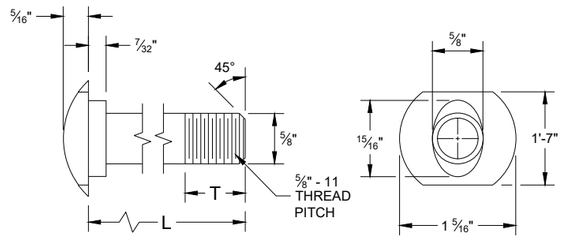
DETAIL FOR 36" BLOCKOUT DEPTH

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

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

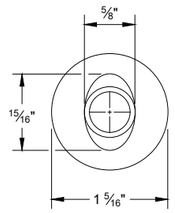
NOTE:

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

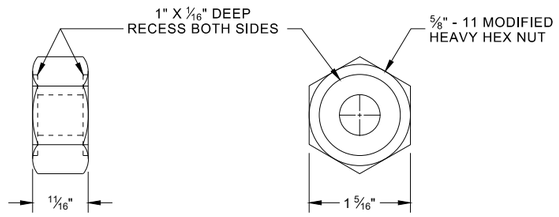


POST BOLT TABLE

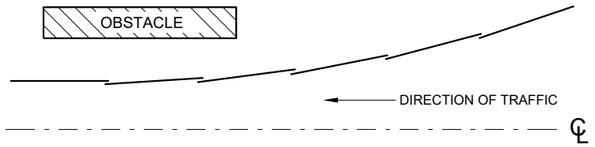
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



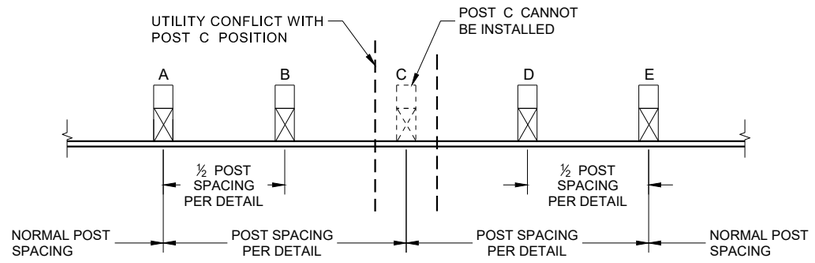
ALTERNATE BOLT HEAD



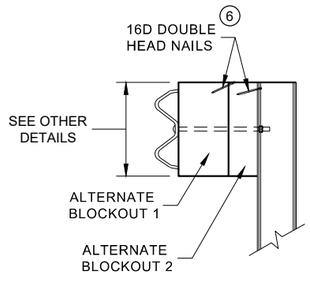
POST BOLT, SPLICE BOLT AND RECESS NUT



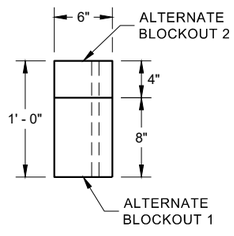
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

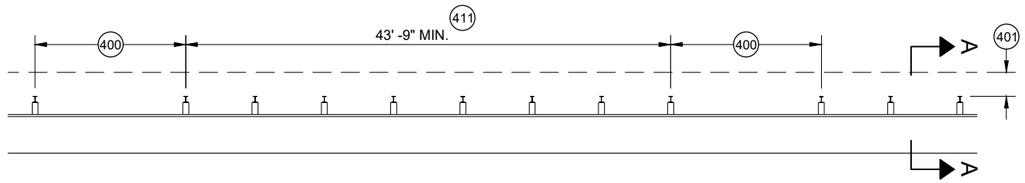


PLAN VIEW

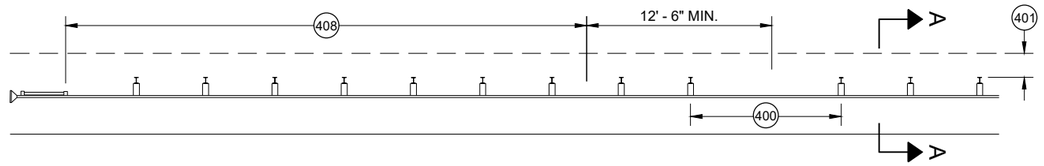
ALTERNATE WOOD BLOCKOUT DETAIL

(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.

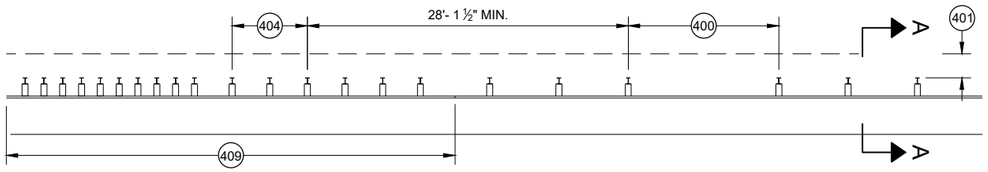
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



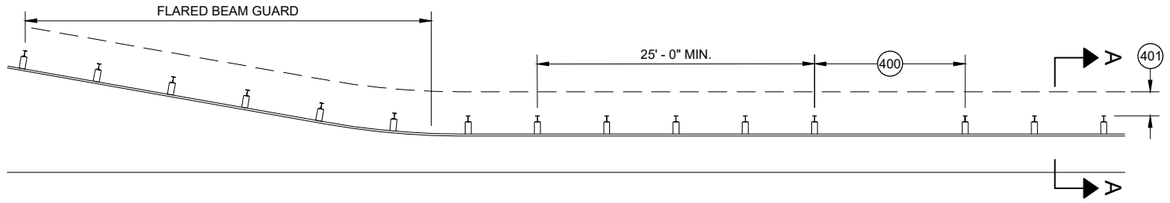
MISSING POST IN MGS GUARDRAIL



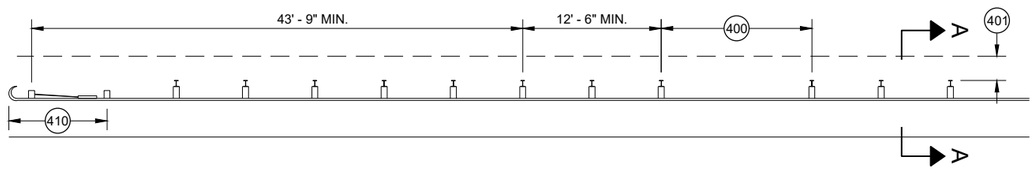
MISSING POST IN MGS GUARDRAIL NEAR EAT



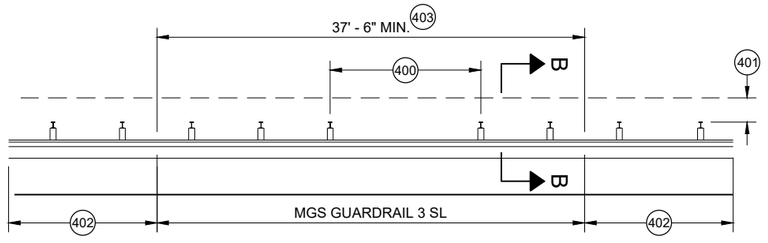
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

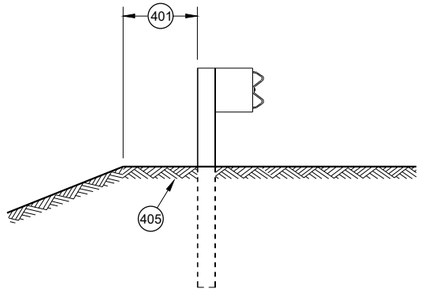


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

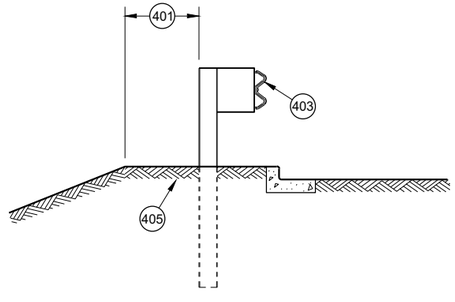


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

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



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B42 - 07d

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.

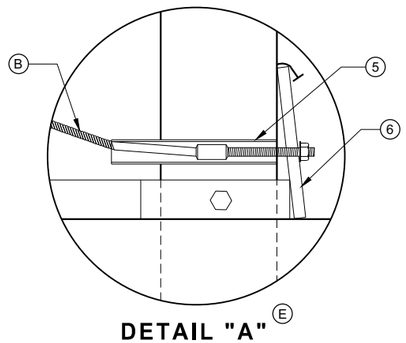
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

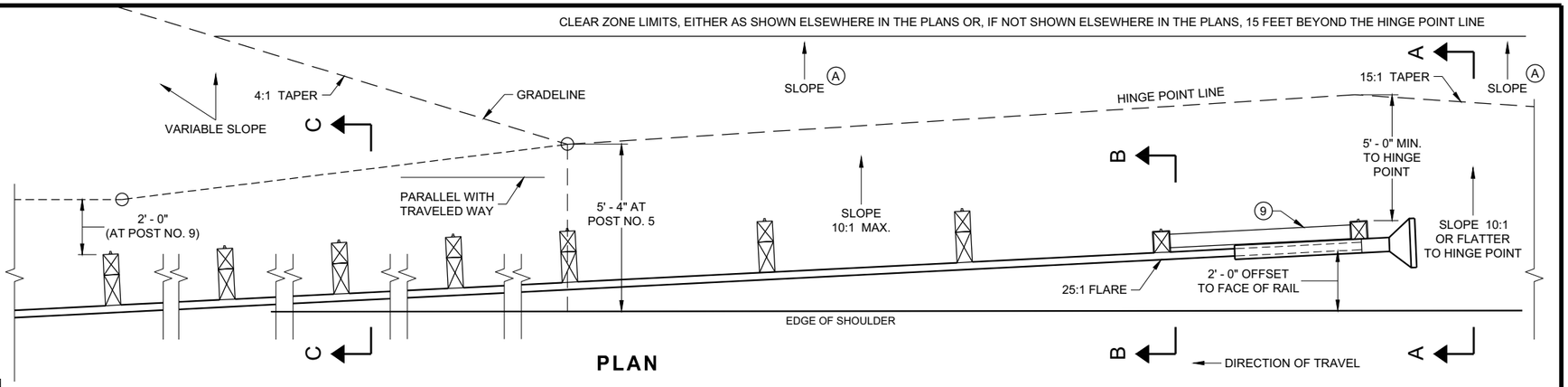
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

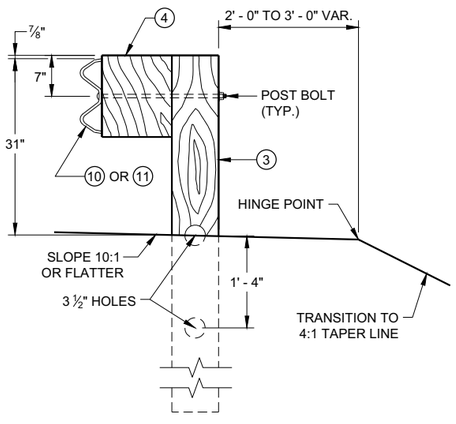
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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.

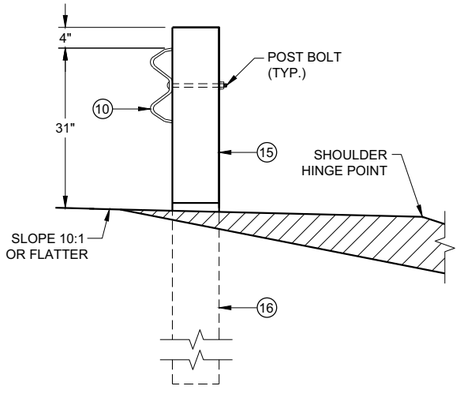


DETAIL "A" (E)

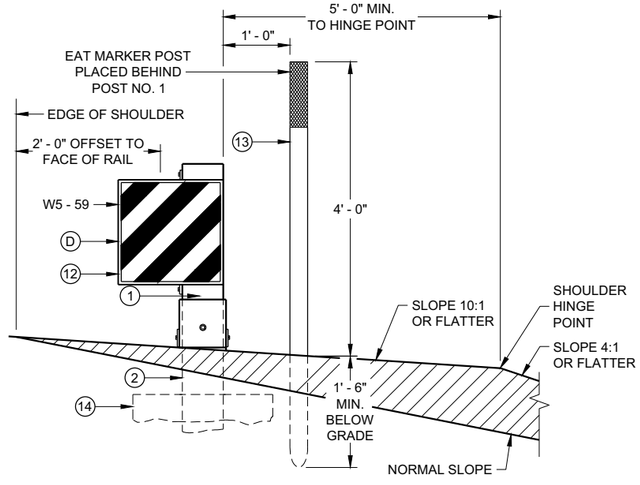




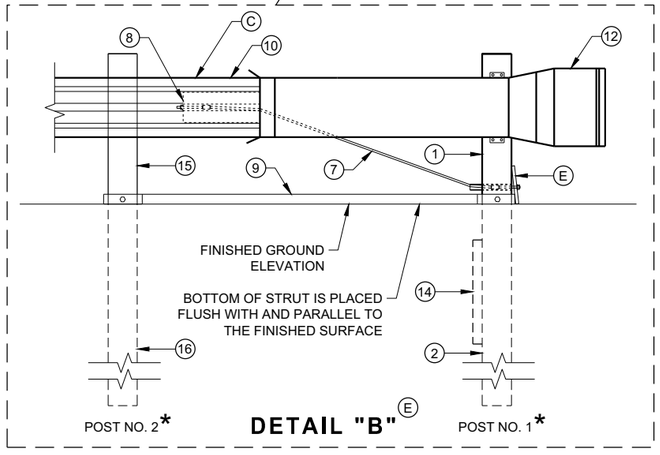
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



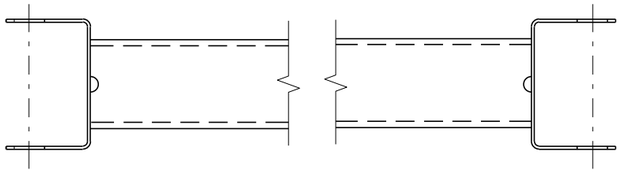
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

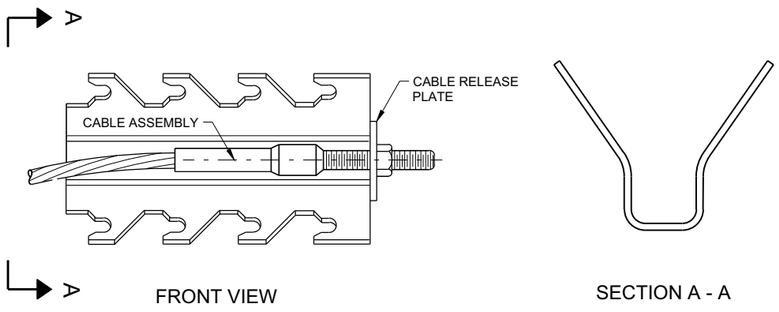
SDD 14B44 - 04a



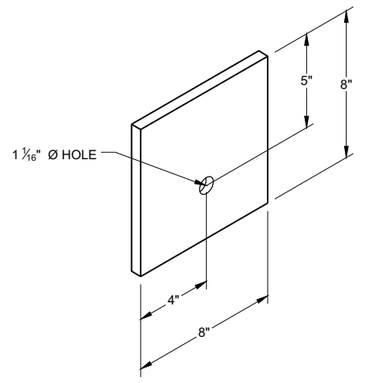
GENERIC GROUND STRUT ⑨ Ⓔ

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 ⑨ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

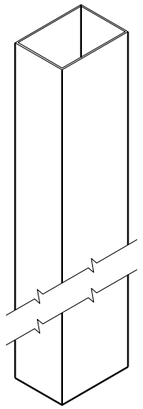
6

SDD 14B44 - 04b

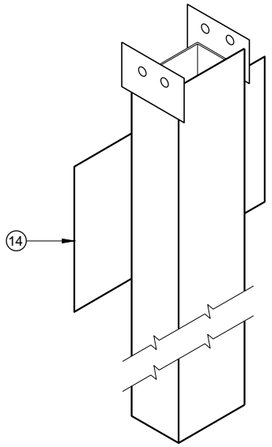
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

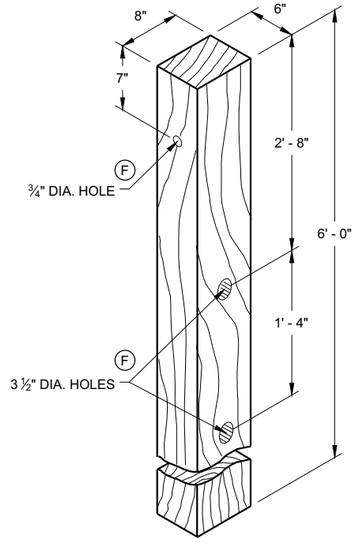
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



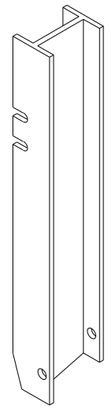
UPPER POST NO. 1 (1) (E)



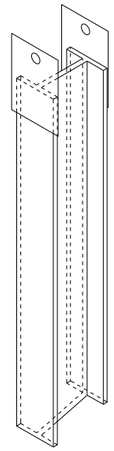
LOWER POST NO. 1 (2) (E)



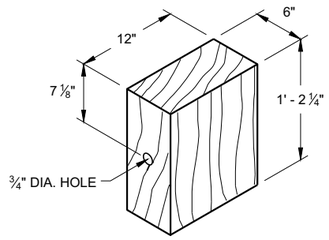
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



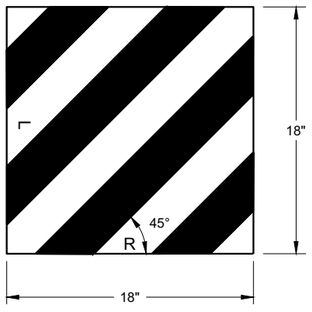
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

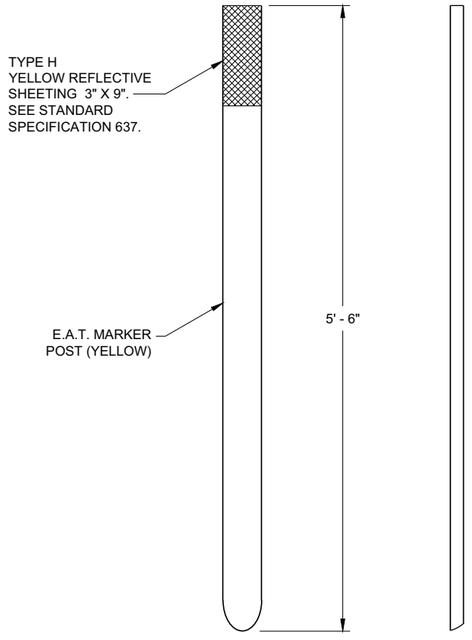


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



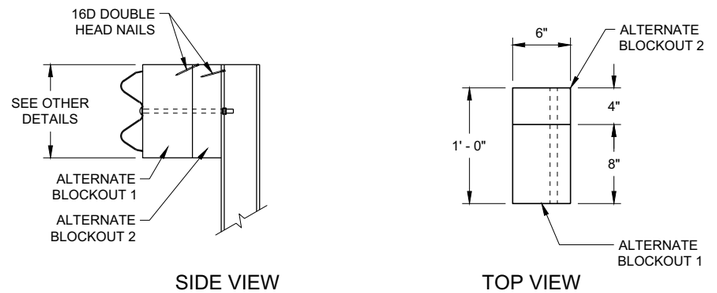
W5 - 59

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)

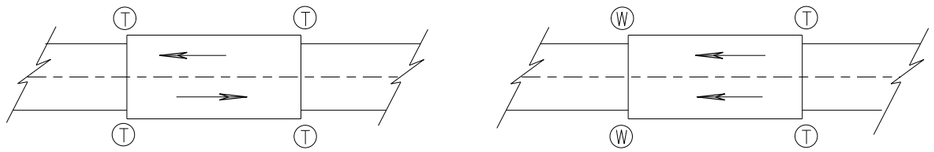
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B44 - 04c
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.

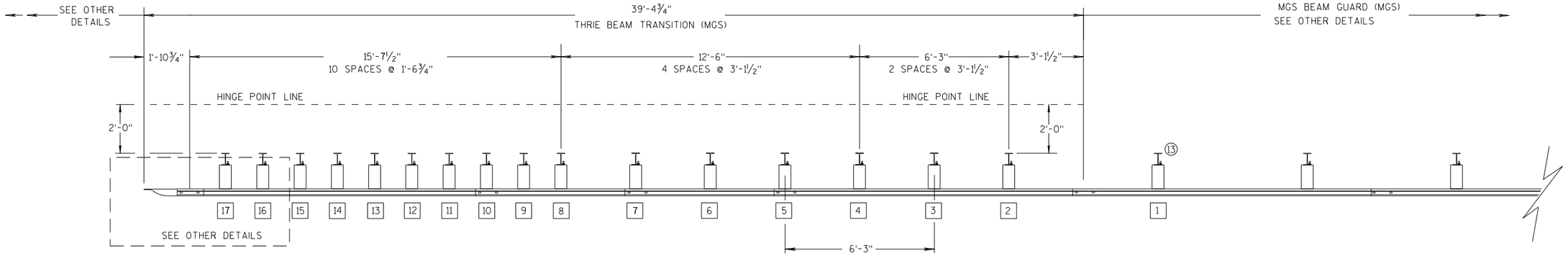
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

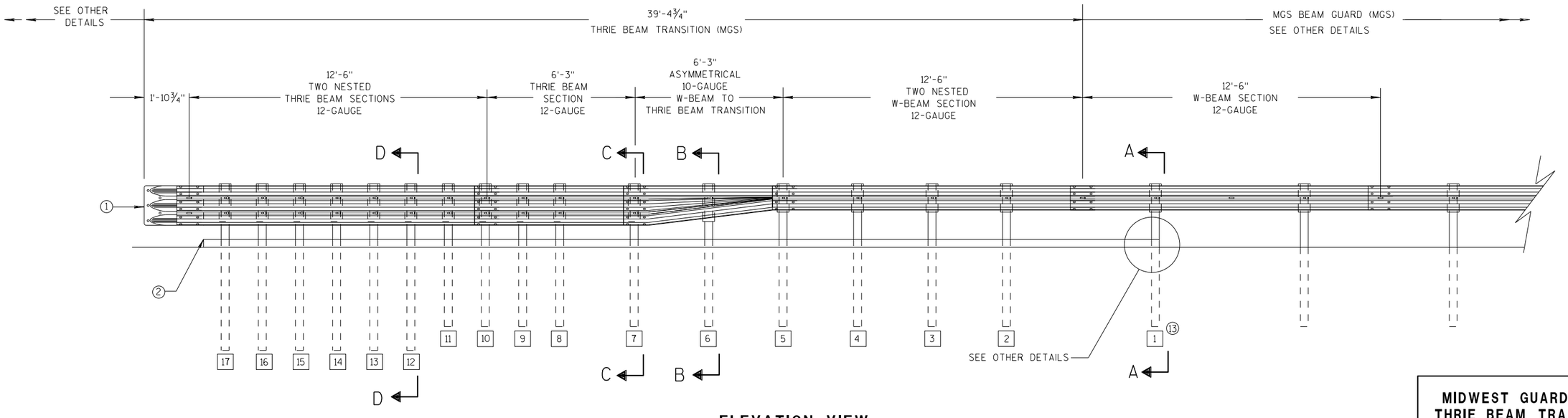
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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

6

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

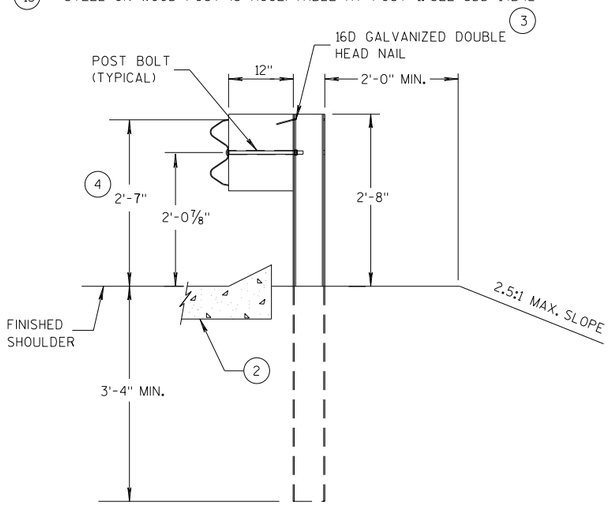
GENERAL NOTES

(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.

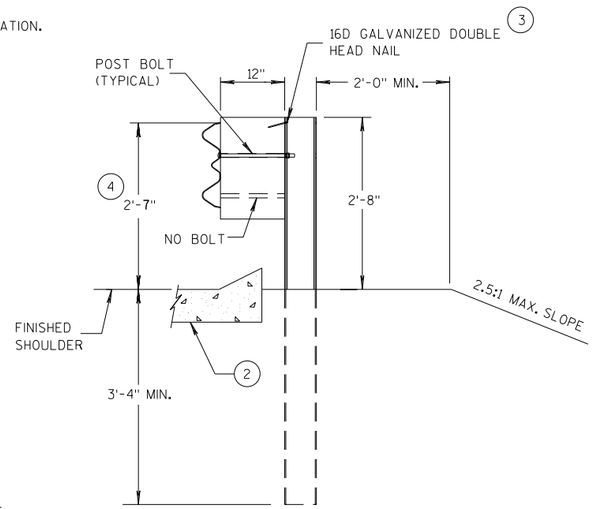
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



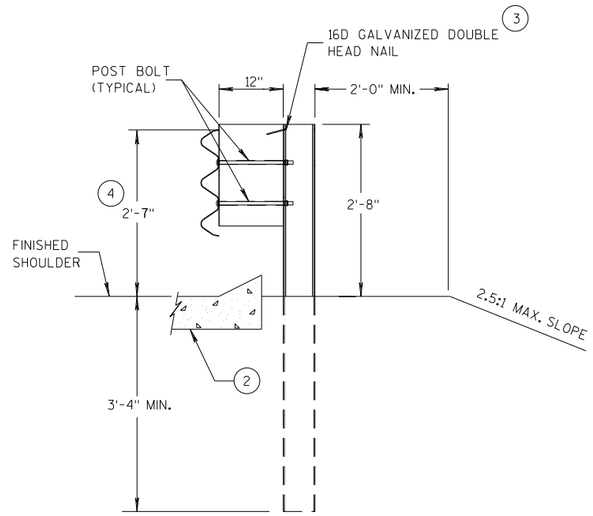
SECTION A-A (13)

POSTS 1-5



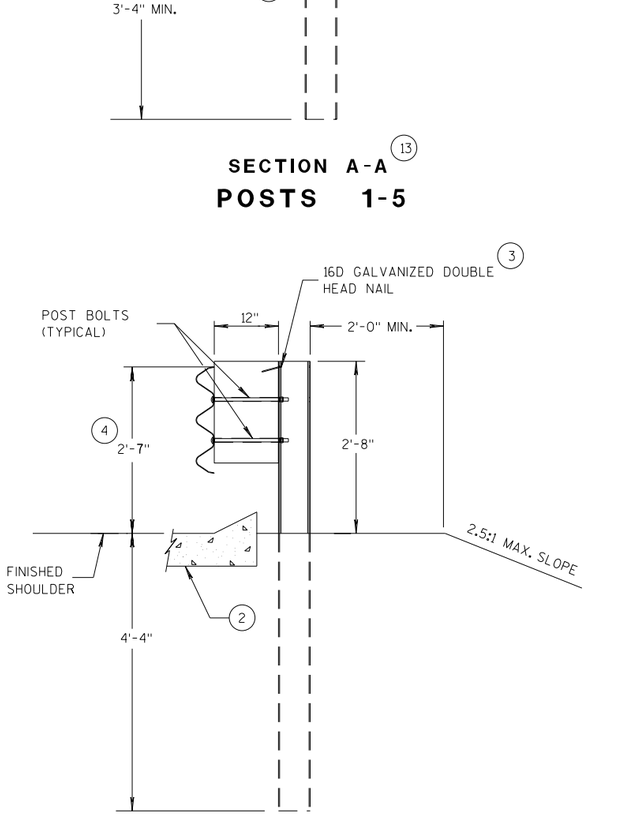
SECTION B-B

POST 6



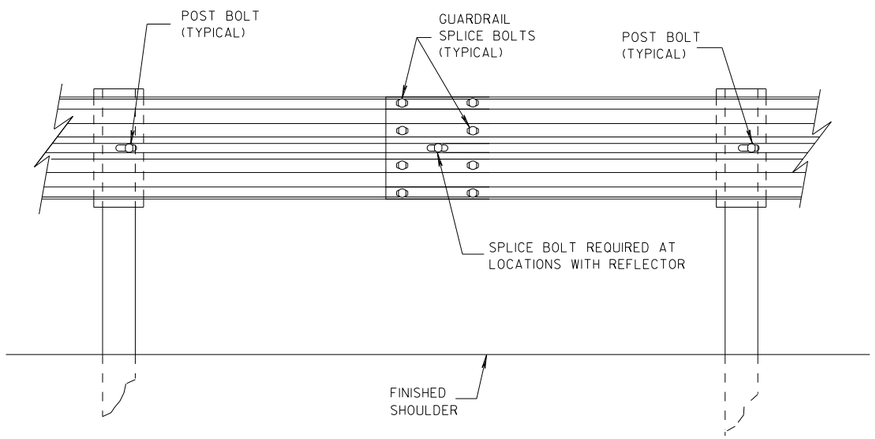
SECTION C-C

POSTS 7-11



SECTION D-D

POSTS 12-17



SPLICE DETAIL

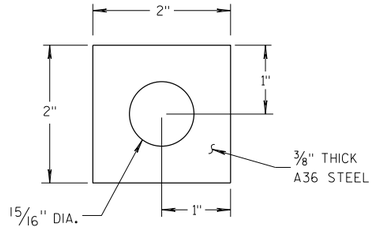
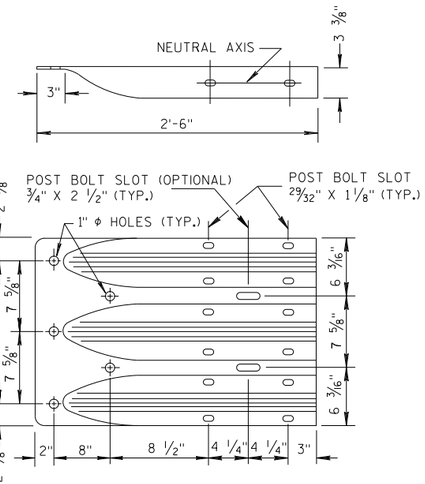
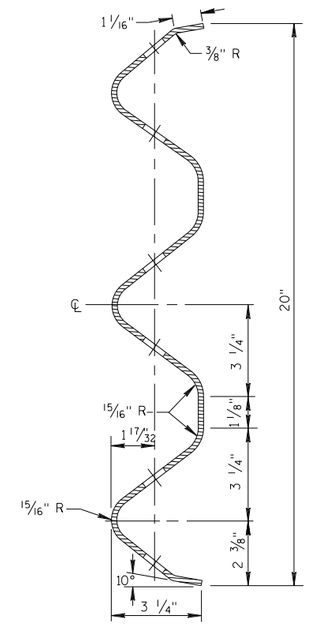


PLATE WASHER DETAIL



THRIE BEAM TERMINAL CONNECTOR



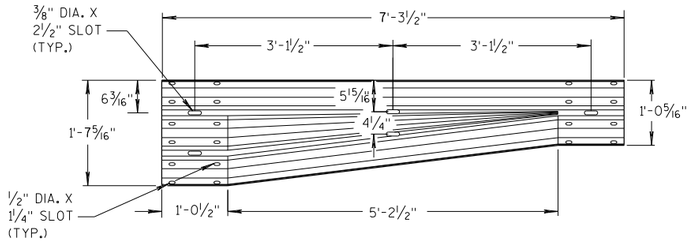
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

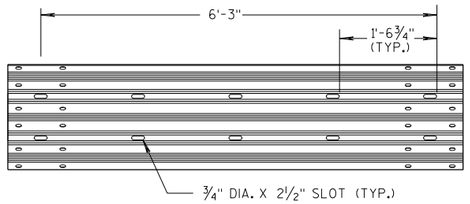
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

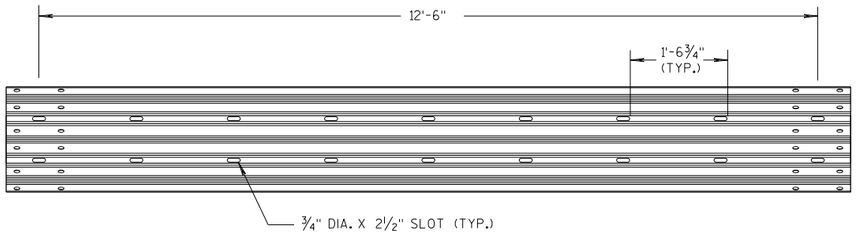
S.D.D. 14 B 45-5b



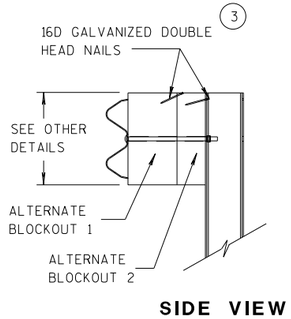
W-BEAM TO THRIE BEAM TRANSITION SECTION



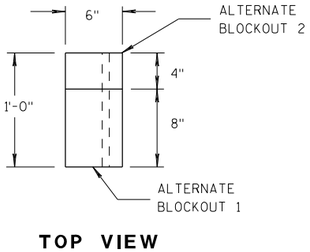
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

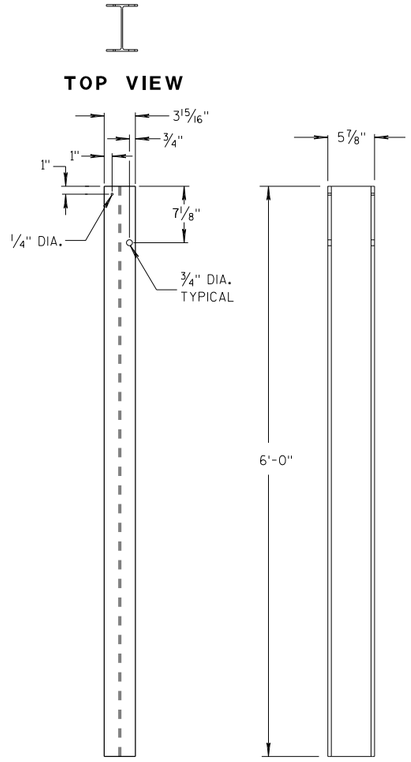


SIDE VIEW



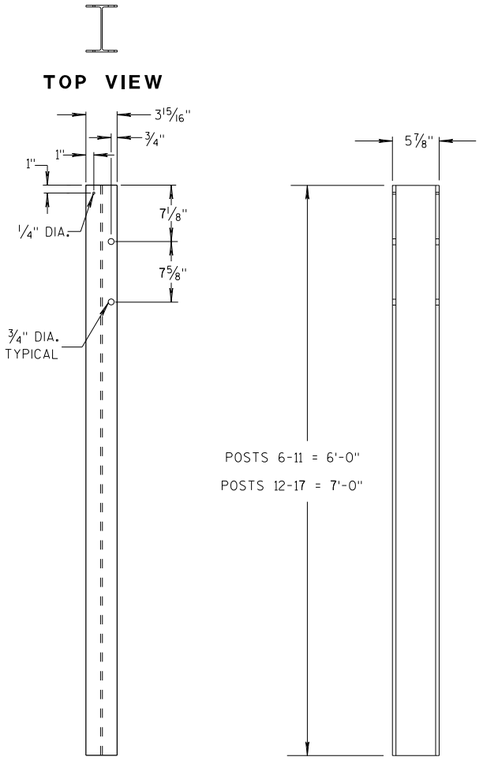
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



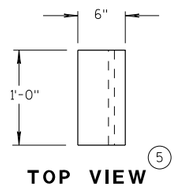
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

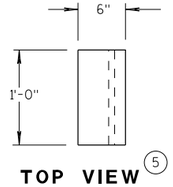


FRONT VIEW SIDE VIEW

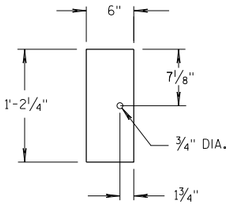
STEEL POSTS 6-17



TOP VIEW (5)

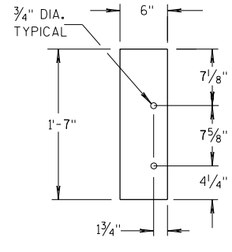


TOP VIEW (5)



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.

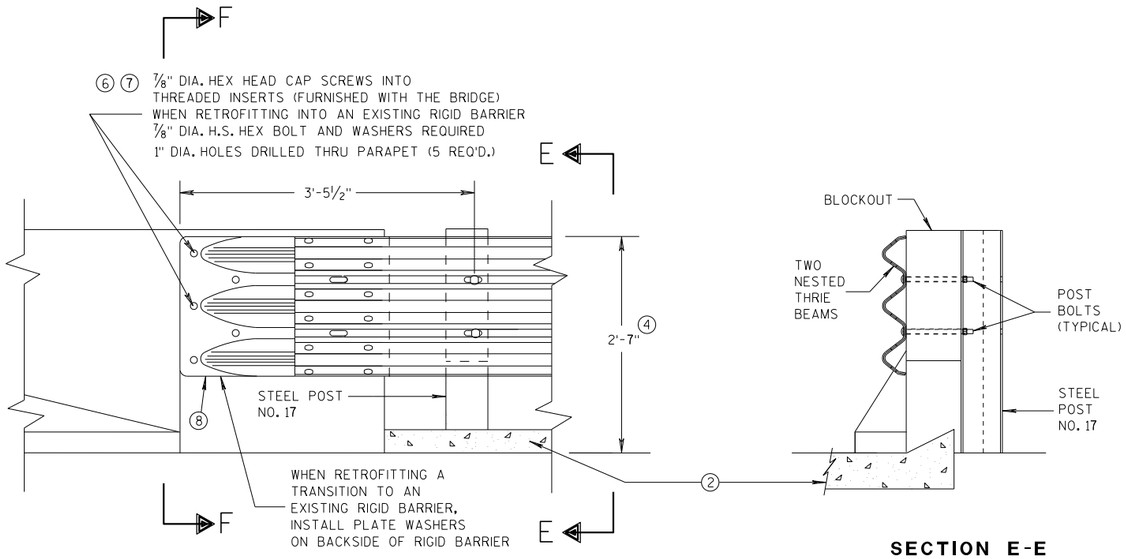
(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

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.

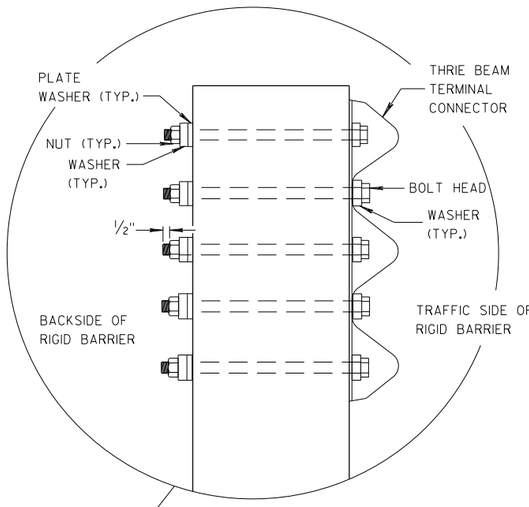
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

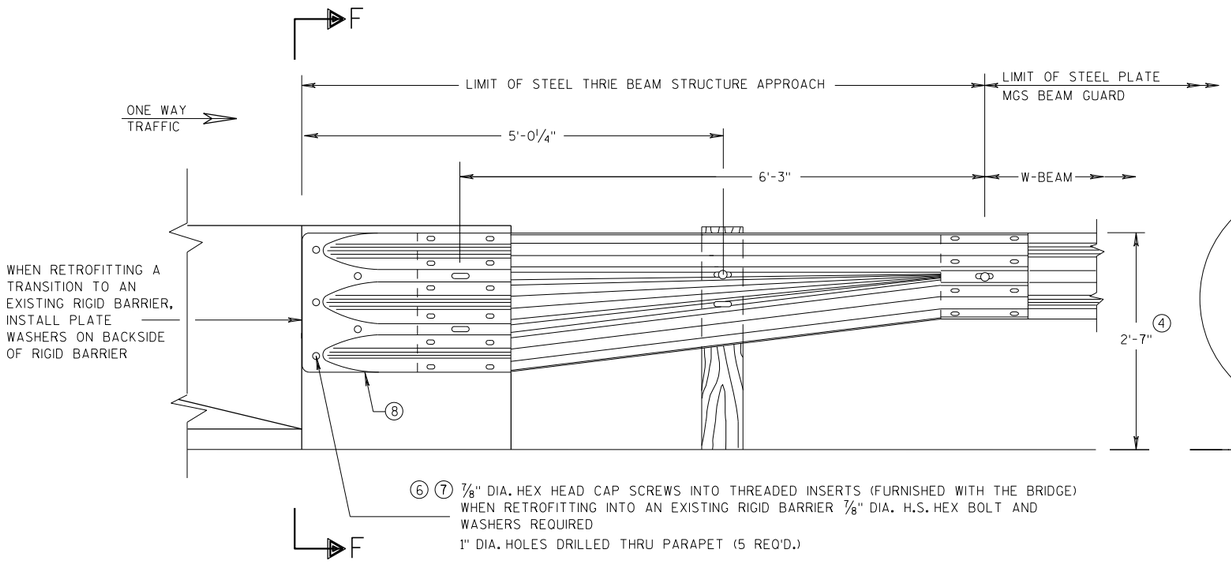
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

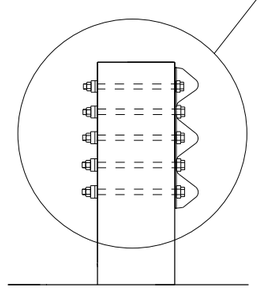
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

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

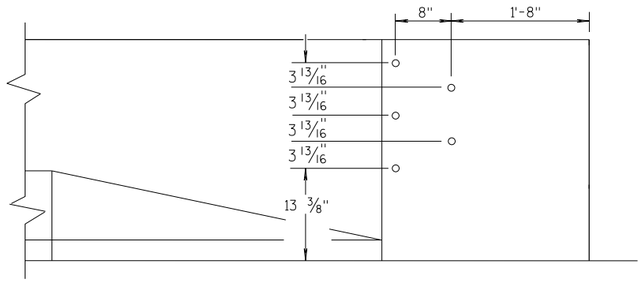




FRONT VIEW



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.

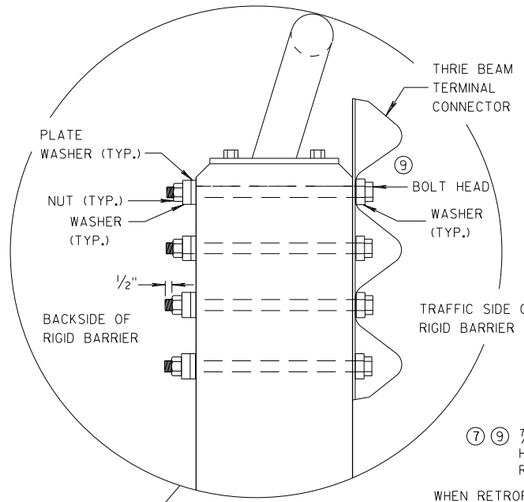
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

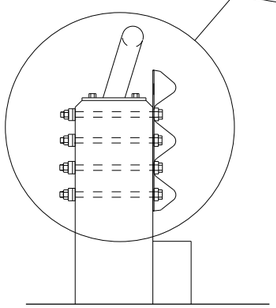
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

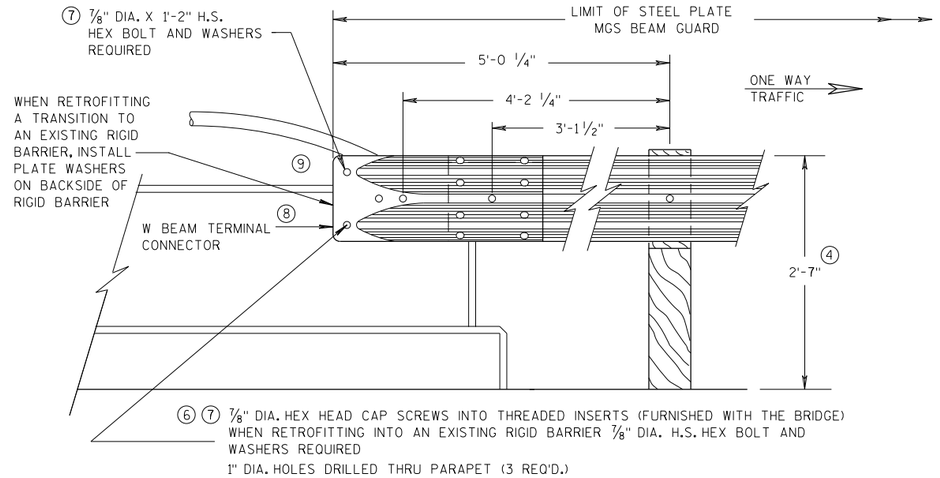
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

(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.





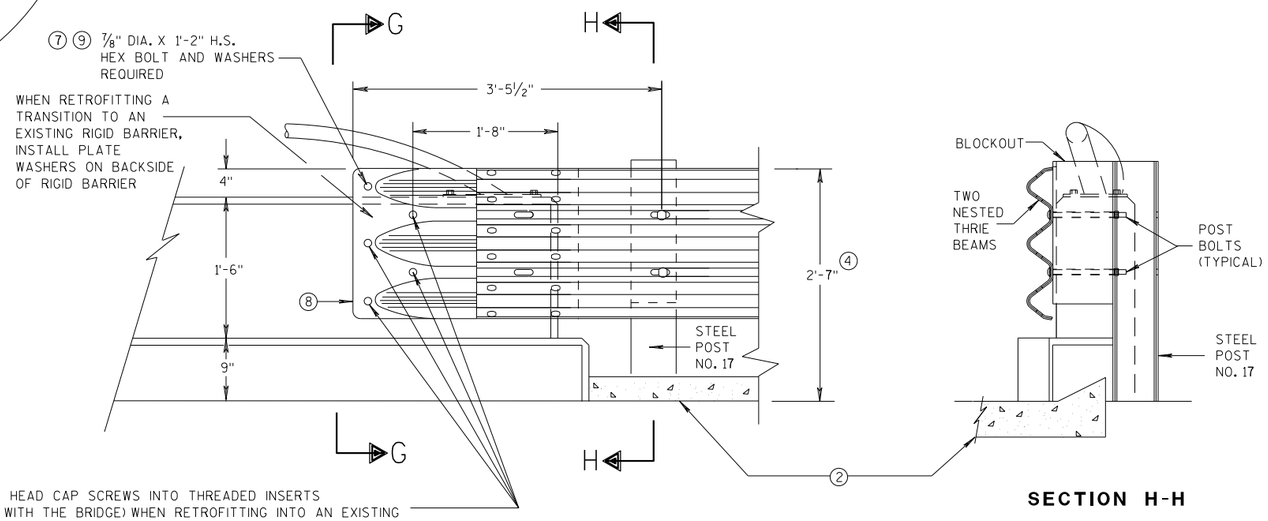
SECTION G-G



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

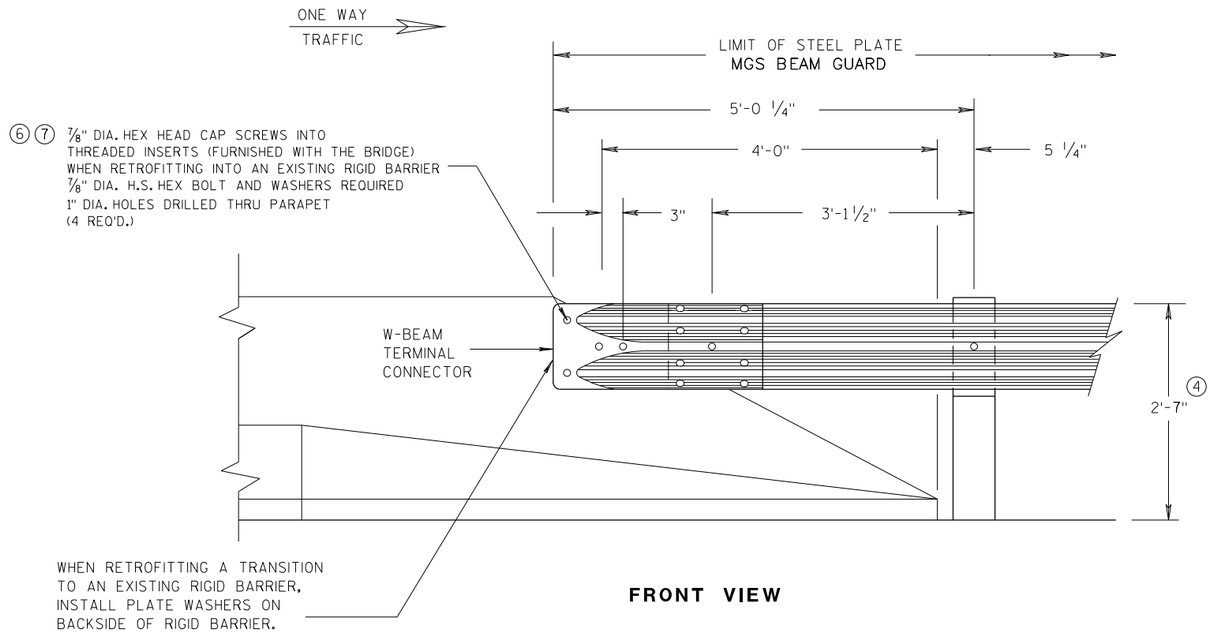
APPROVED
07/2018 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVIS — NT
FHWA

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)

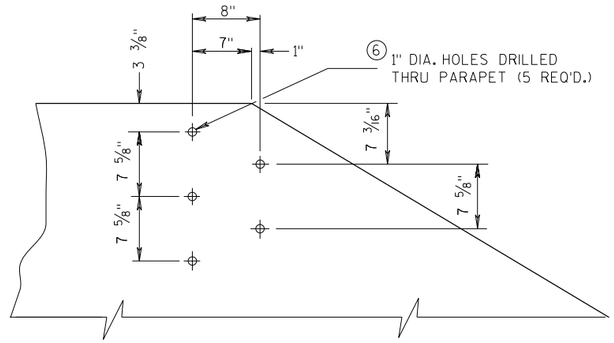
GENERAL NOTES

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

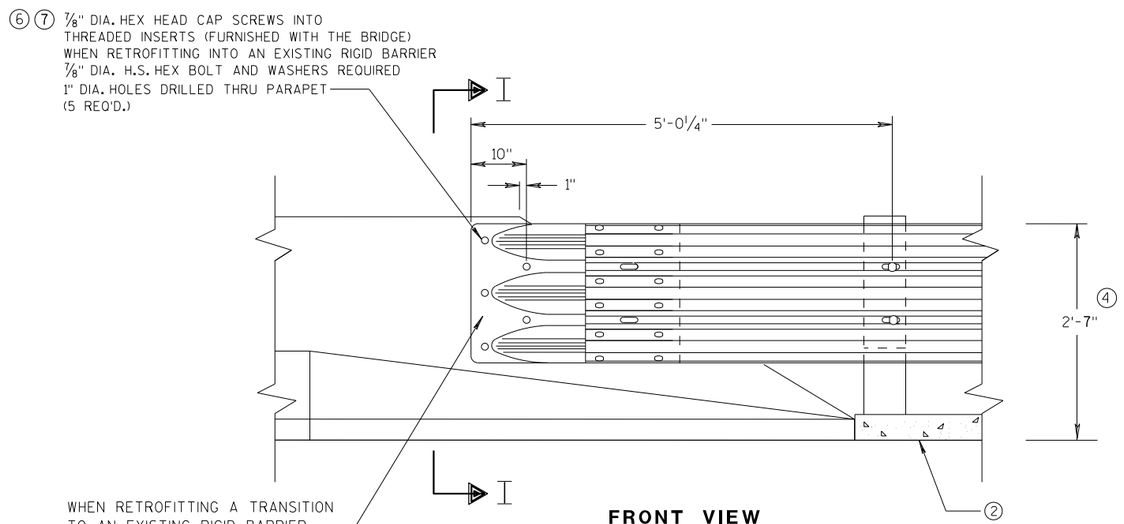
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

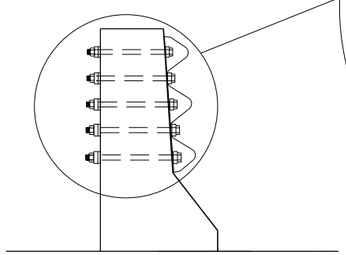
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



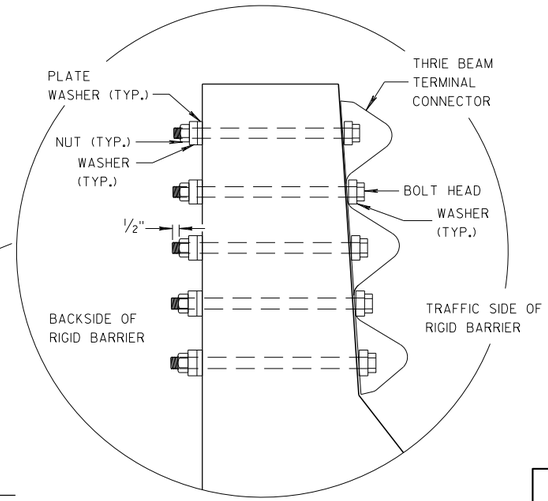
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



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

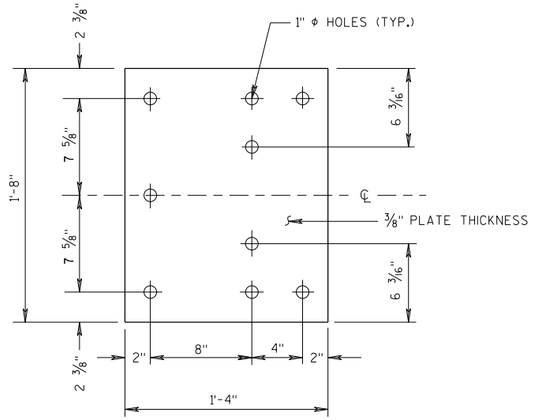
APPROVED
07/2018 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS [illegible] UNIT SUPERVI[illegible]ENT
FHWA

6

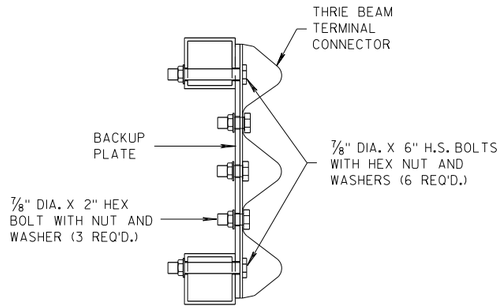
S.D.D. 14 B 45-5f

6

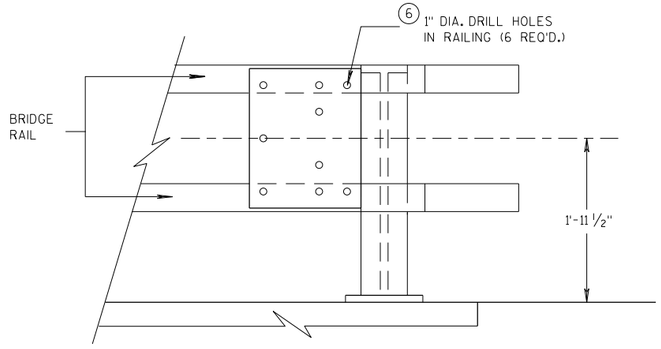
S.D.D. 14 B 45-5f



BACK-UP PLATE DETAIL



SECTION J-J

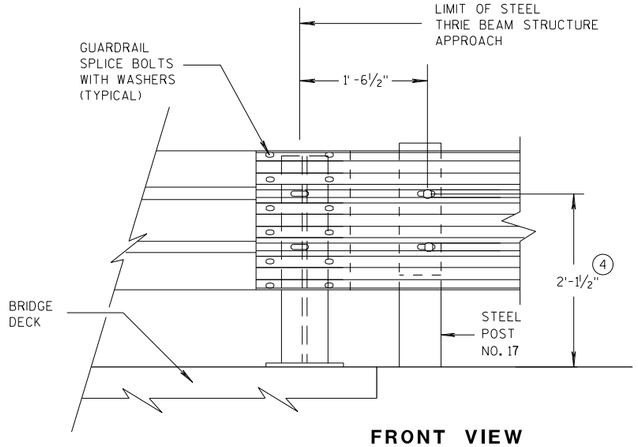


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

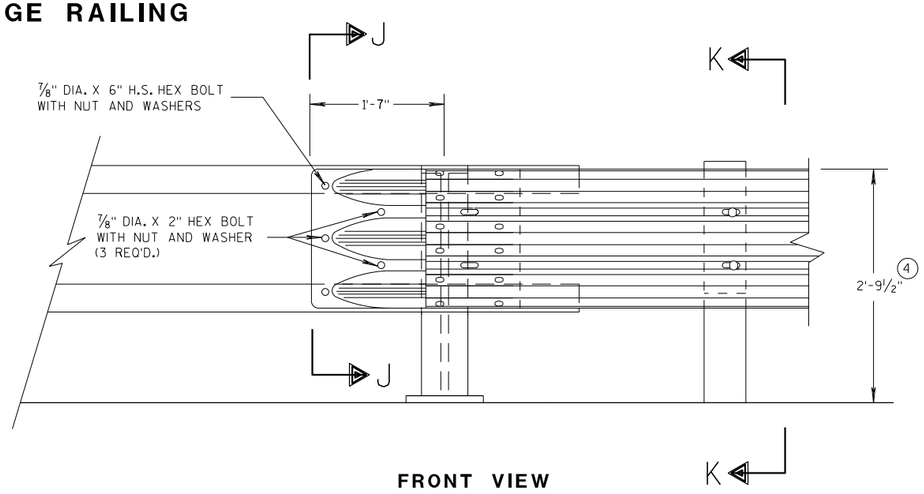
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

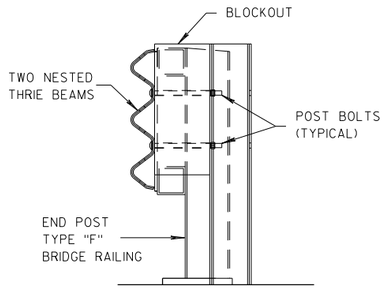


FRONT VIEW

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

110

6

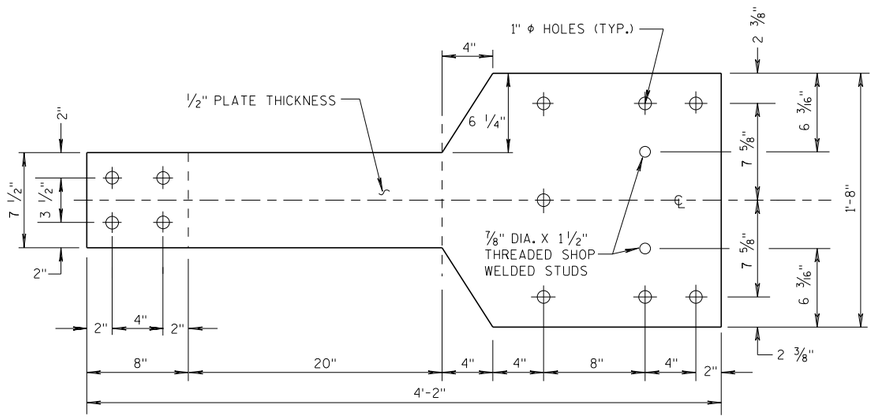
S.D.D. 14 B 45-5g

6

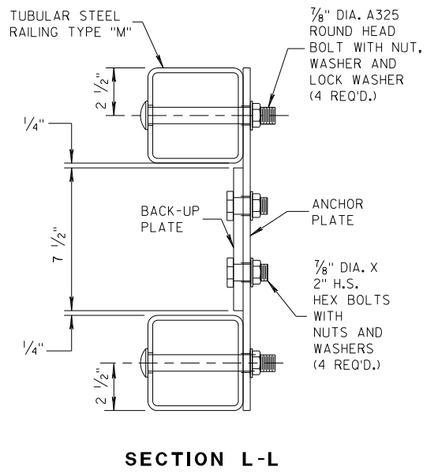
S.D.D. 14 B 45-5g

GENERAL NOTES

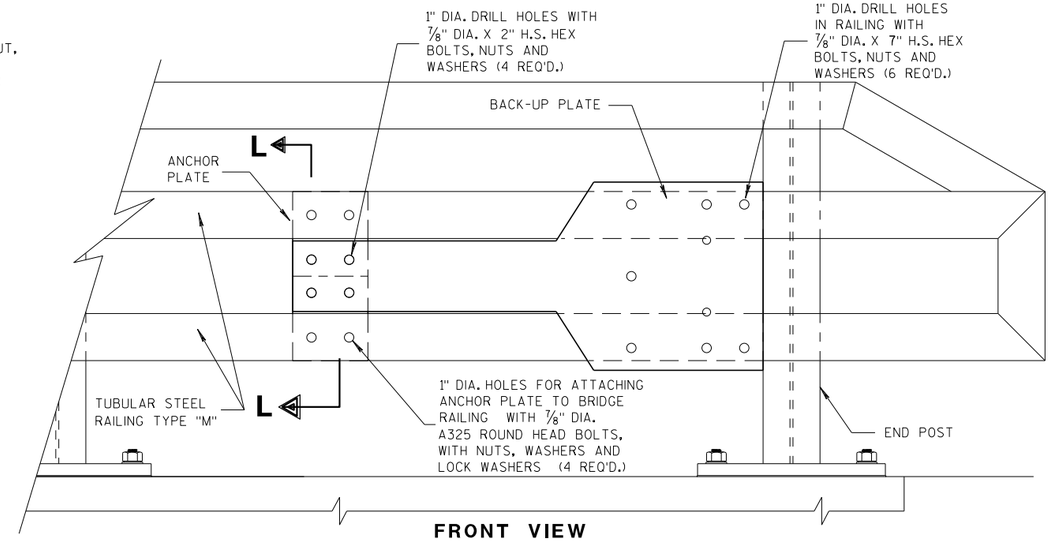
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

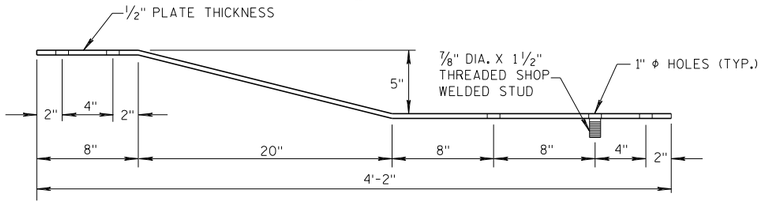


SECTION L-L



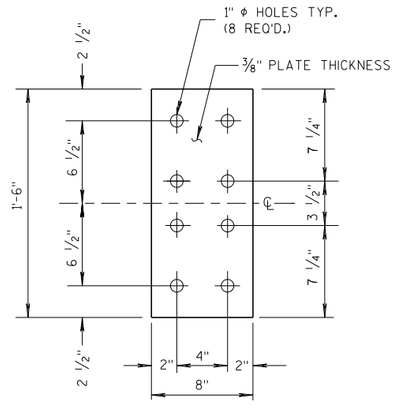
FRONT VIEW

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



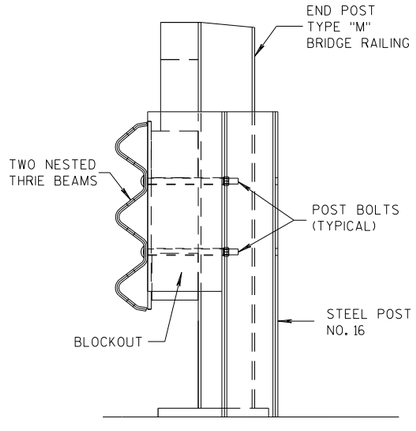
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

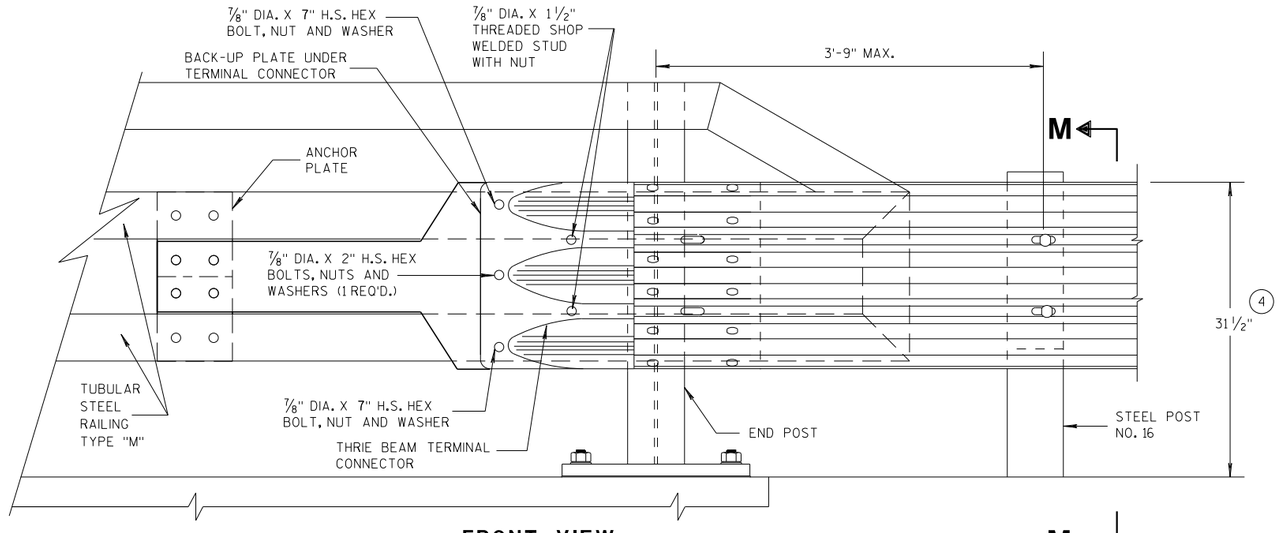


FRONT VIEW

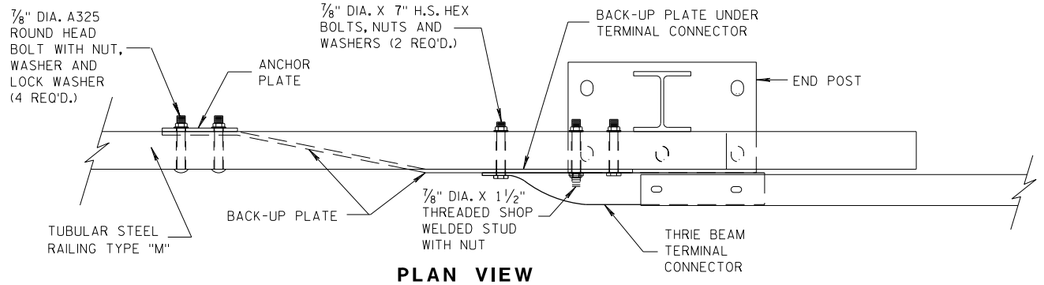
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-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

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.

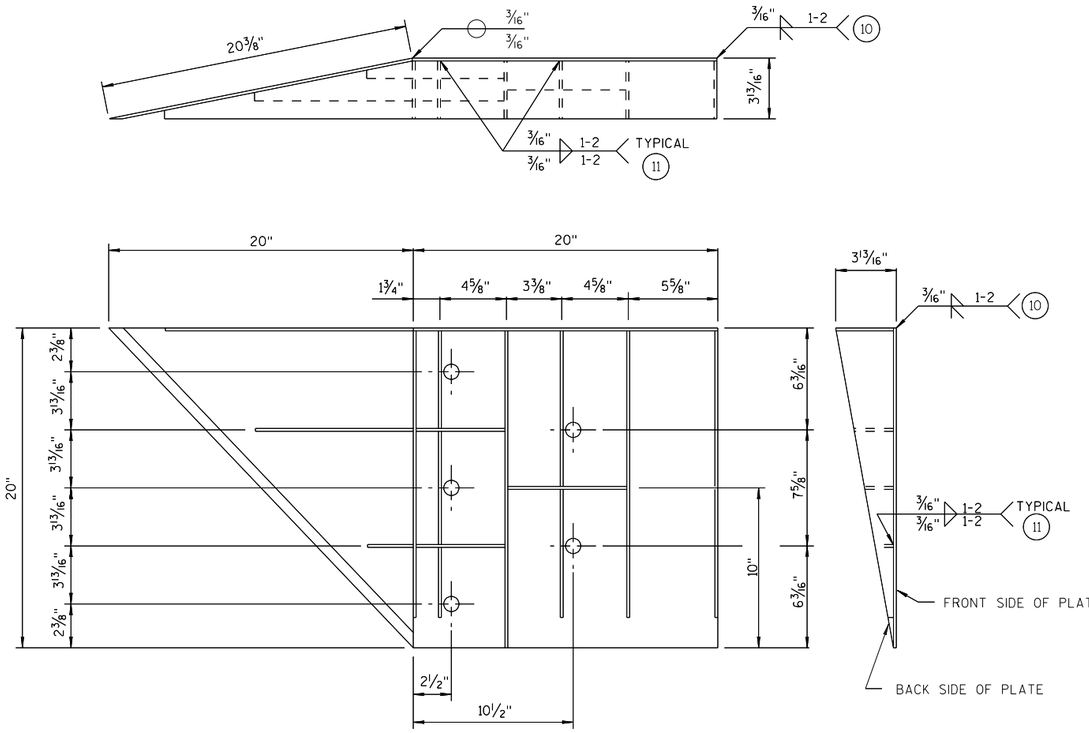
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

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".



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

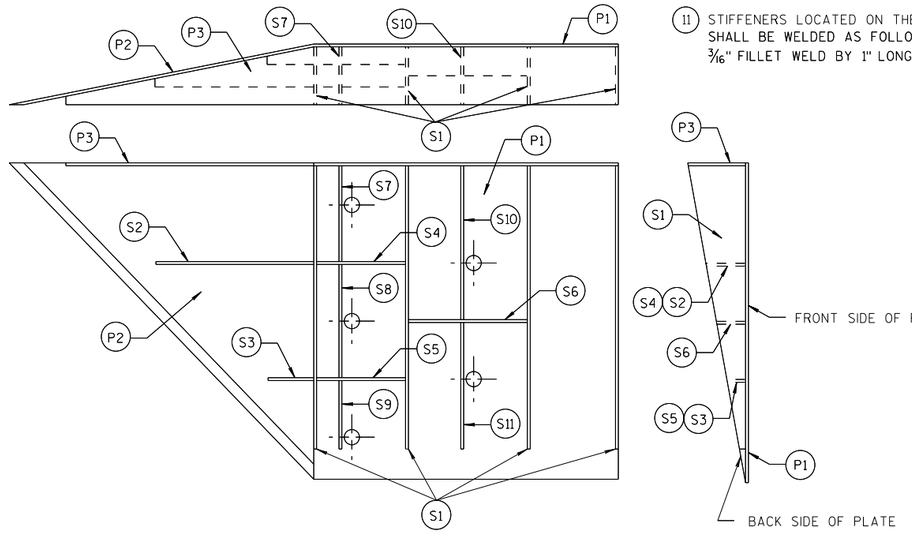


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 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)

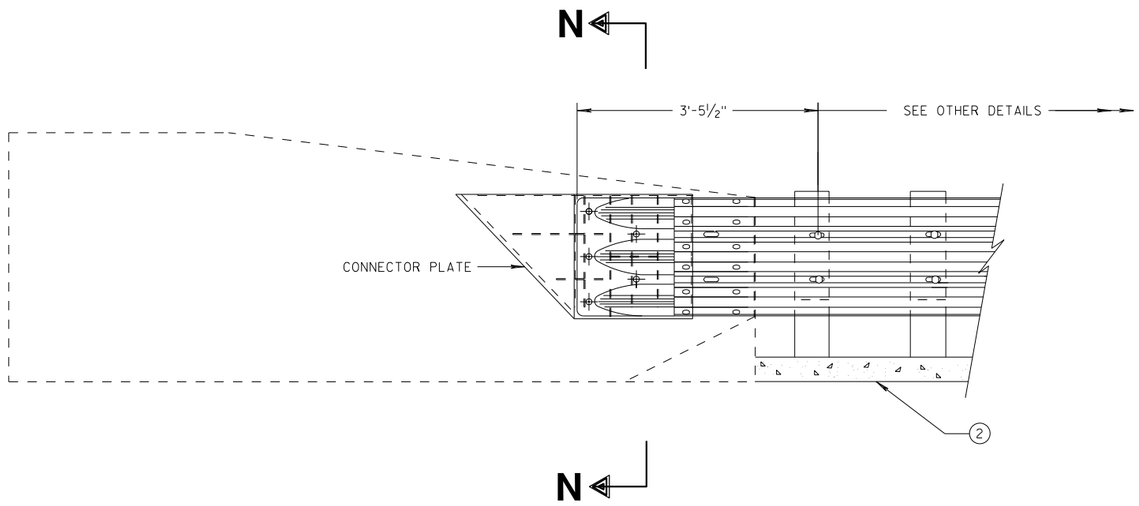
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

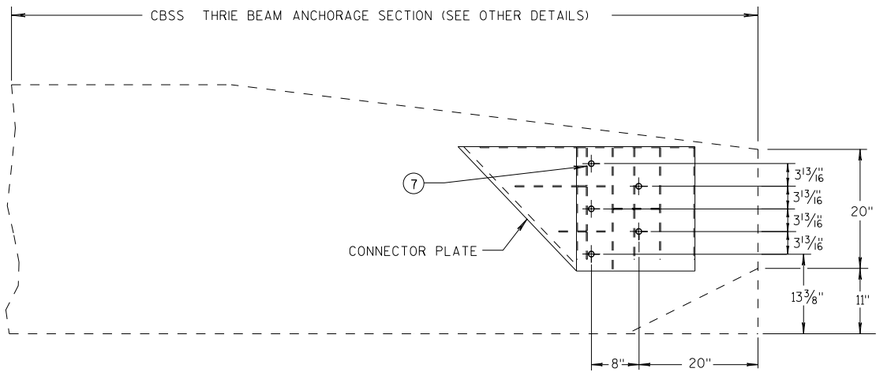
/S/ Rodney Taylor
ROADWAY STANDARDS I
UNIT SUPERVI ENT

6

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



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



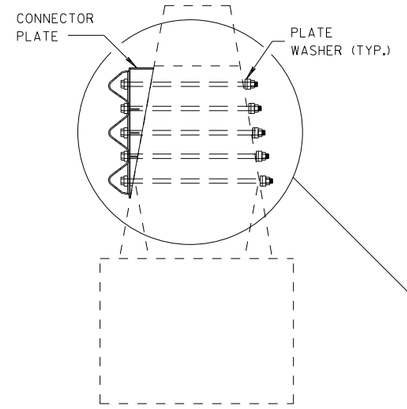
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

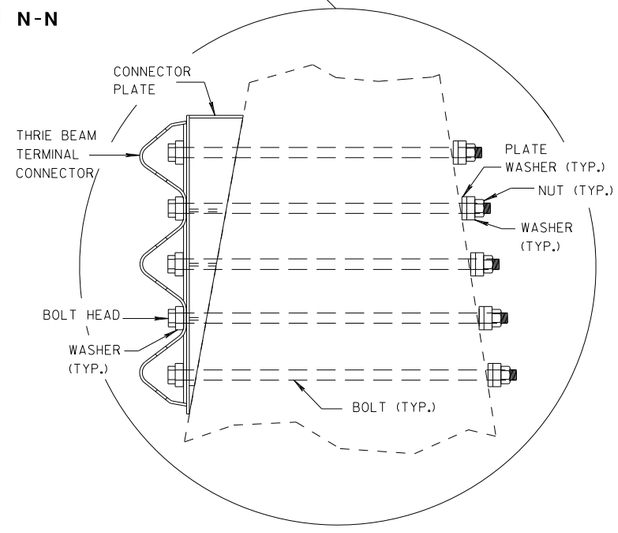
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

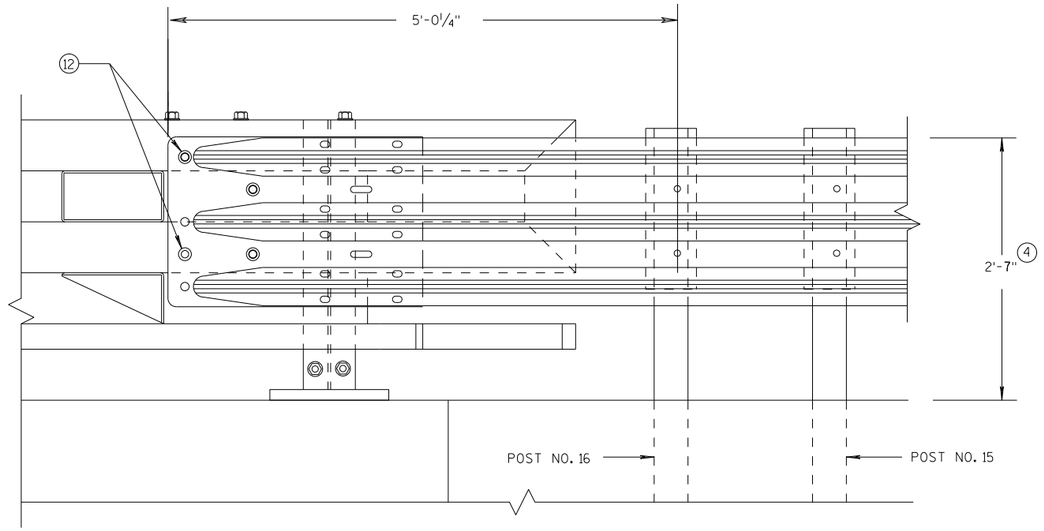
/S/ Rodney Taylor
ROADWAY STANDARDS DI
UNIT SUPERVIS

6

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

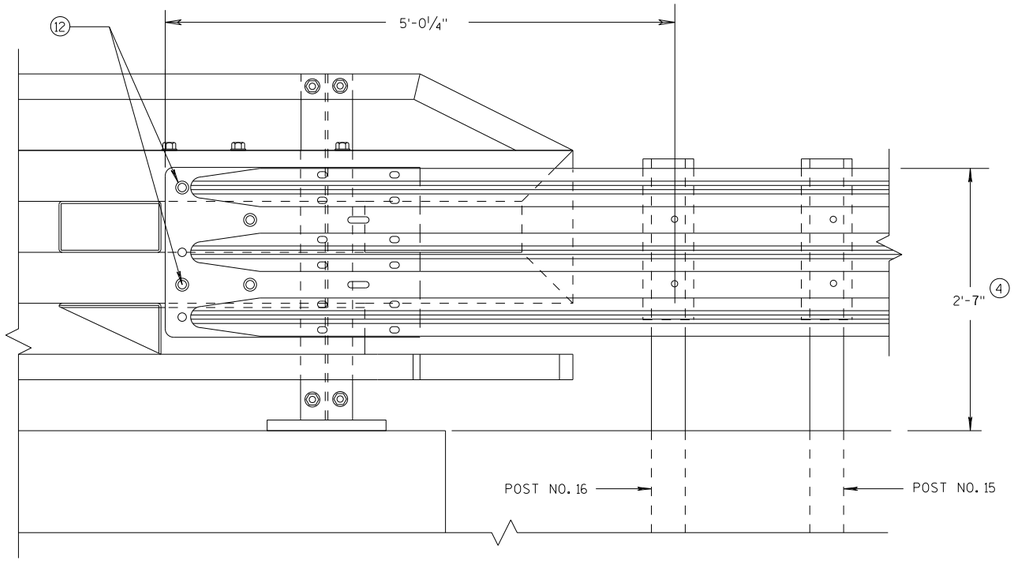
6

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

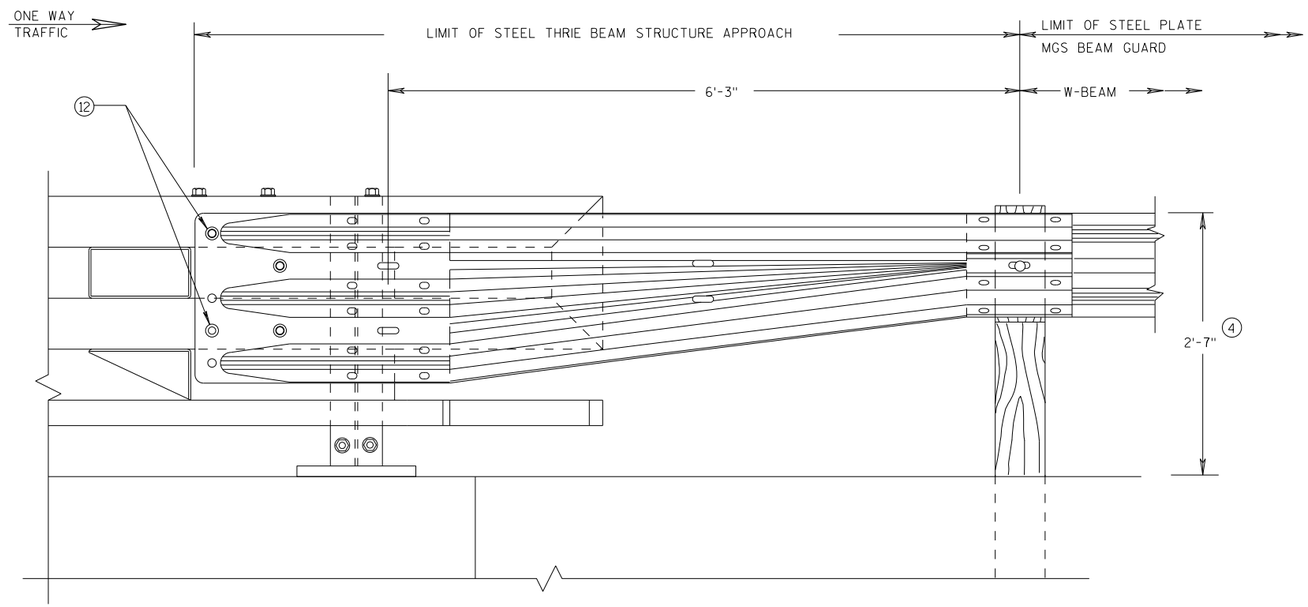
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D
UNIT SUPERVIS
NT
FHWA

6

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

6

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



FRONT VIEW

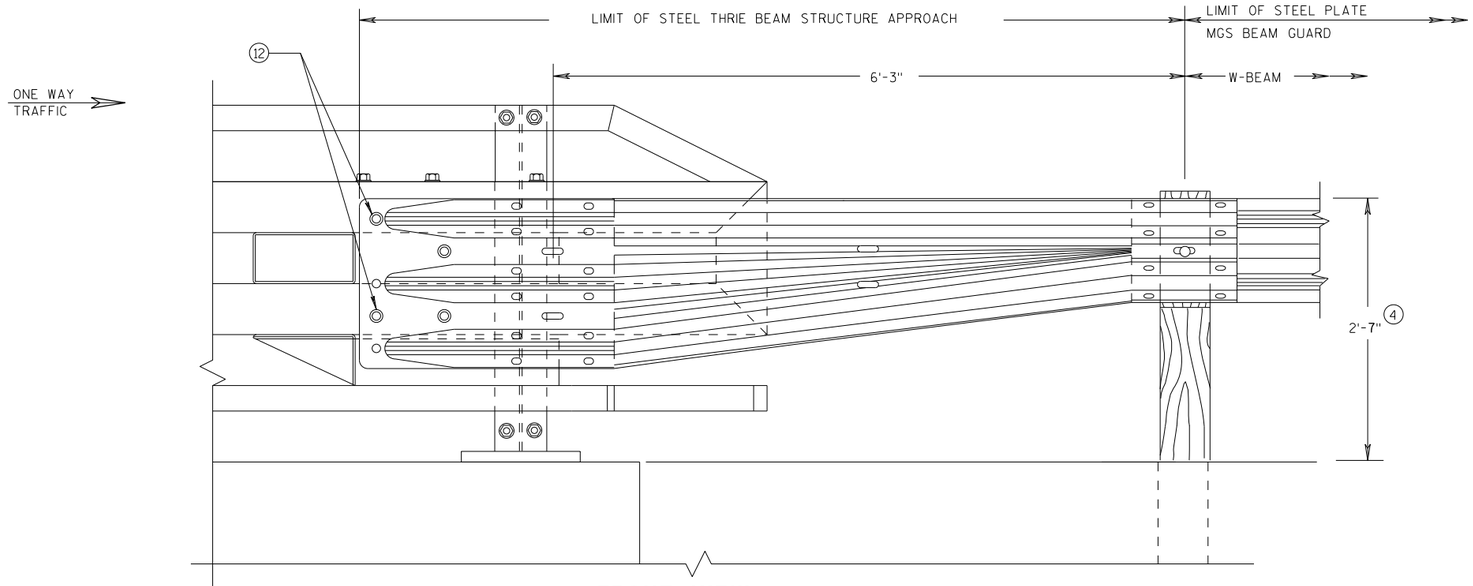
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

(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 $\frac{1}{2}$-INCH BEYOND NUT.



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY4"

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS D
UNIT SUPERVIS

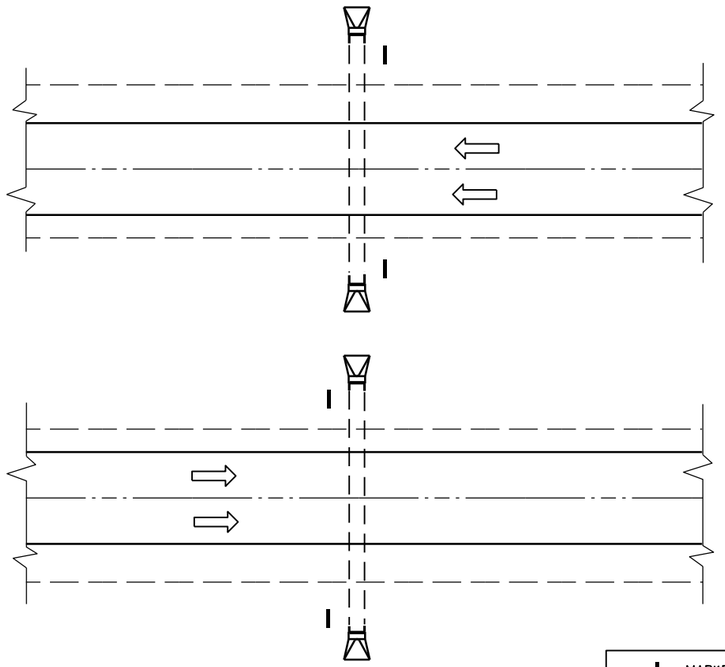
NT

6

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

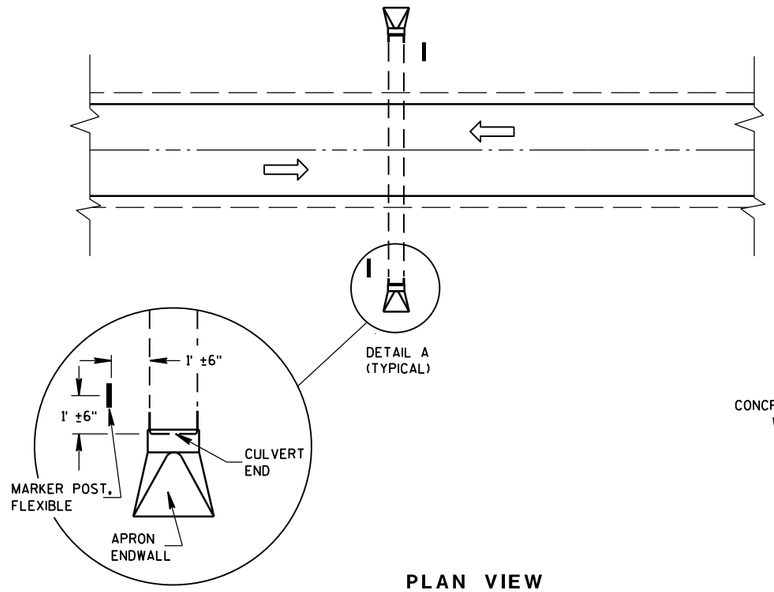
6

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



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

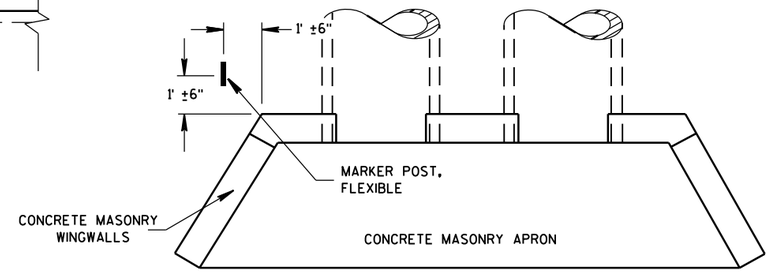
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

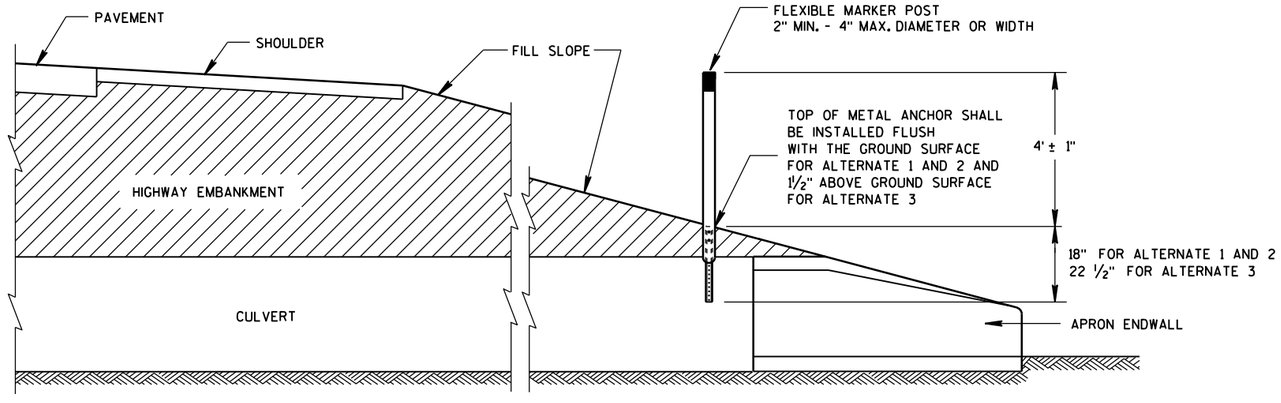
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

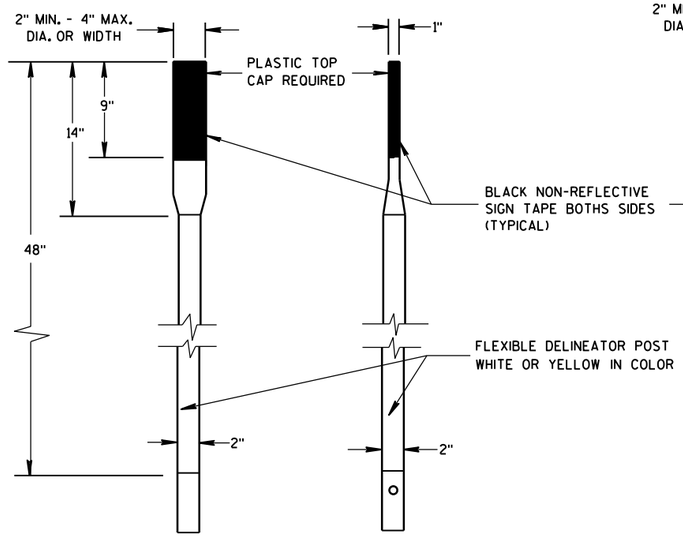
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

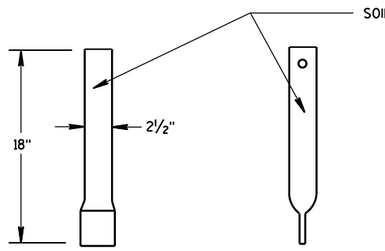
6

S.D.D. 15 A 3-2a

6

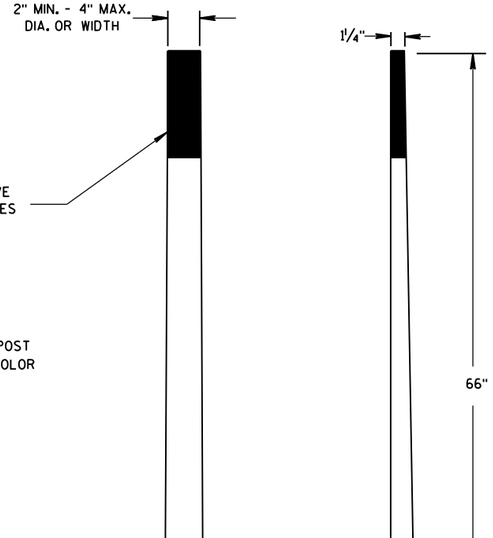
S.D.D. 15 A 3-2a





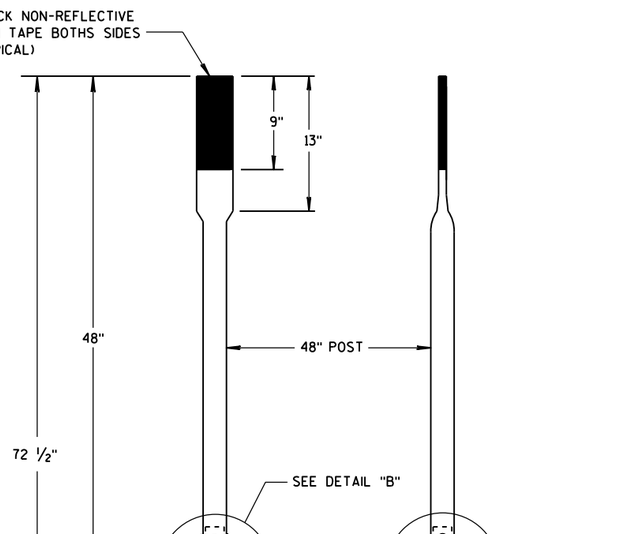
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

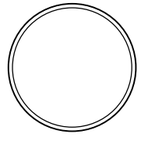
ALTERNATE 2



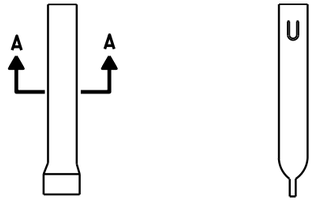
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POSTS

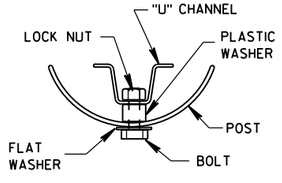


SECTION A-A

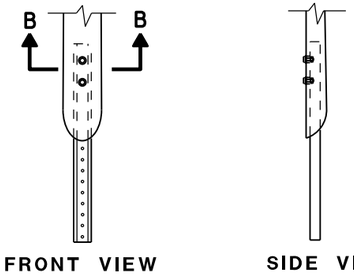


FRONT VIEW SIDE VIEW

ALTERNATE 1

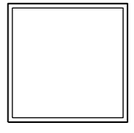


SECTION B-B

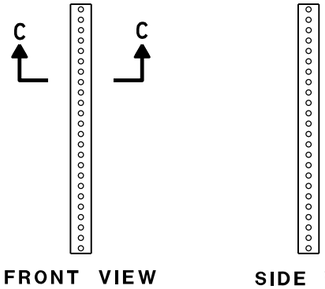


FRONT VIEW SIDE VIEW

ALTERNATE 2



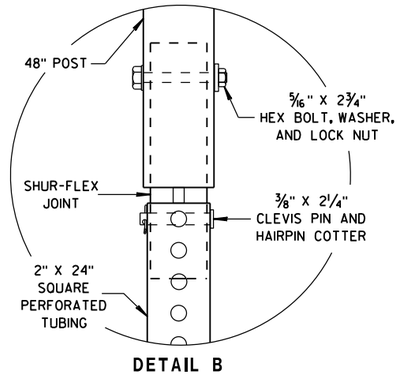
SECTION C-C



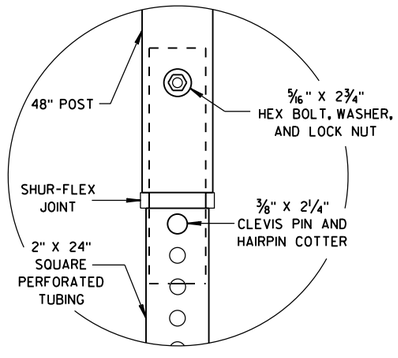
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

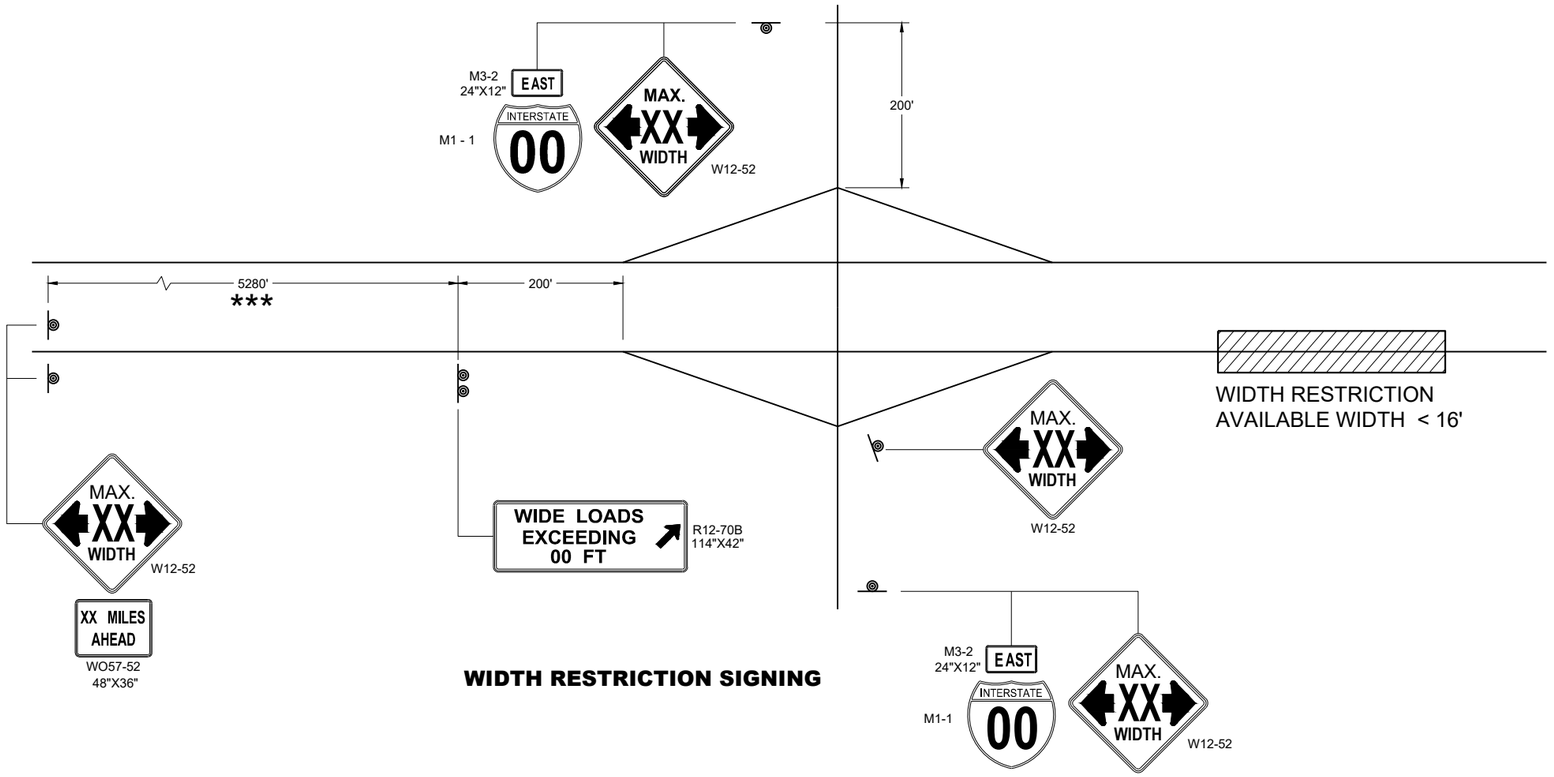
APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 A 3-2b

6

S.D.D. 15 A 3-2b



WIDTH RESTRICTION SIGNING

LEGEND

SIGN ON PERMANENT SUPPORT

GENERAL NOTES

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

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

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

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

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

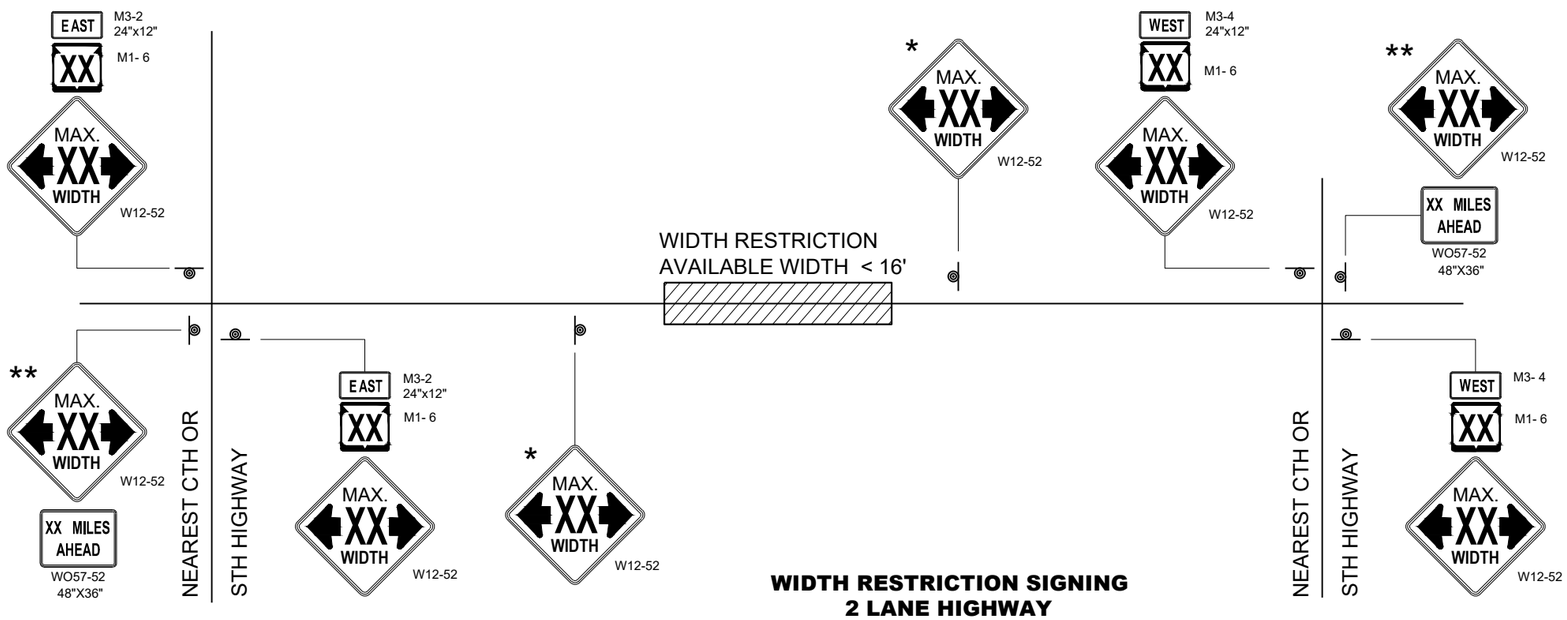
WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

* PLACE 500 FEET AFTER THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.

** SIGN SHALL BE VISIBLE FROM ROADWAY.

*** ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.

WIDTH ON SIGN TO BE APPROX. 1 - FOOT LESS THAN AVAILABLE WIDTH



WIDTH RESTRICTION SIGNING
2 LANE HIGHWAY

ADVANCED WIDTH RESTRICTION SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 15C02-10f

SDD 15C02-10f

GENERAL NOTES

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

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

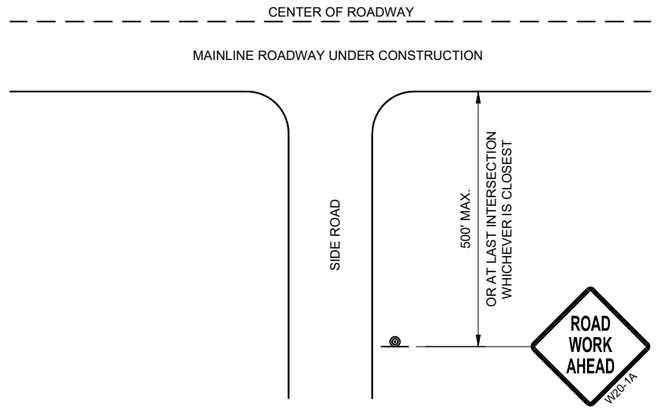
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS

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



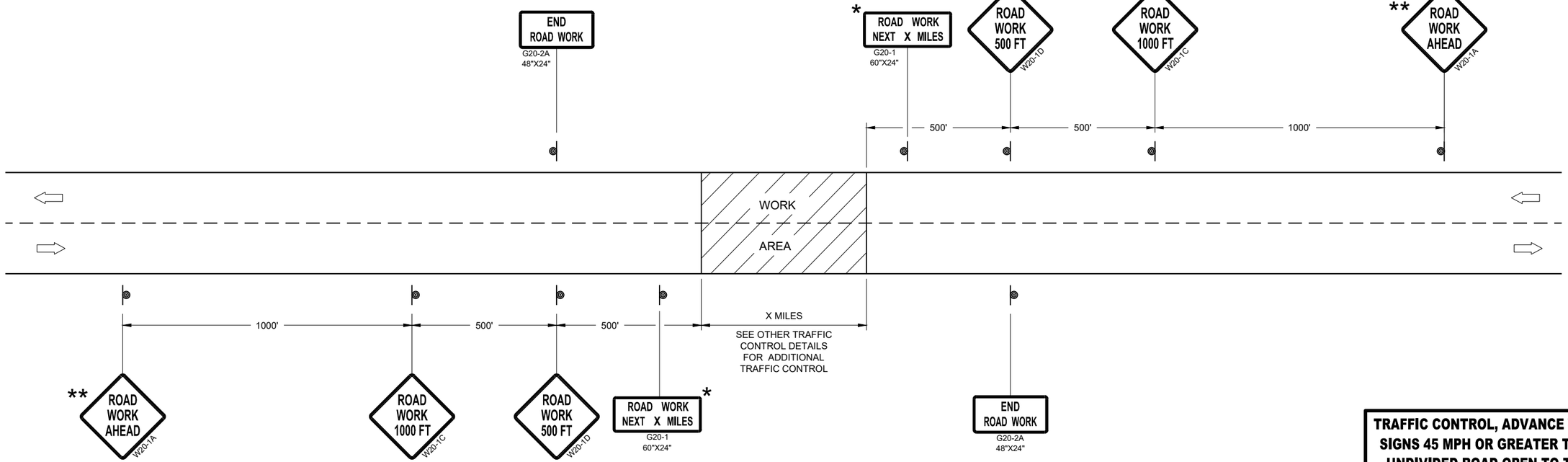
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

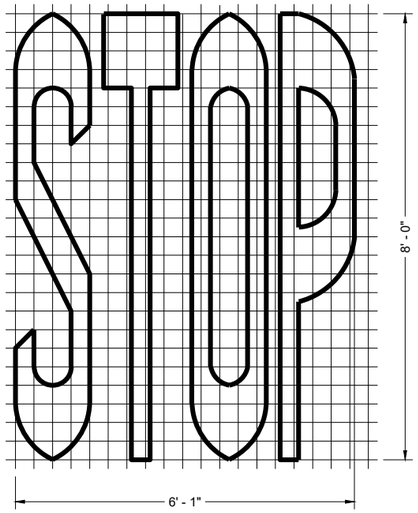
APPROVED
July 2018
DATE

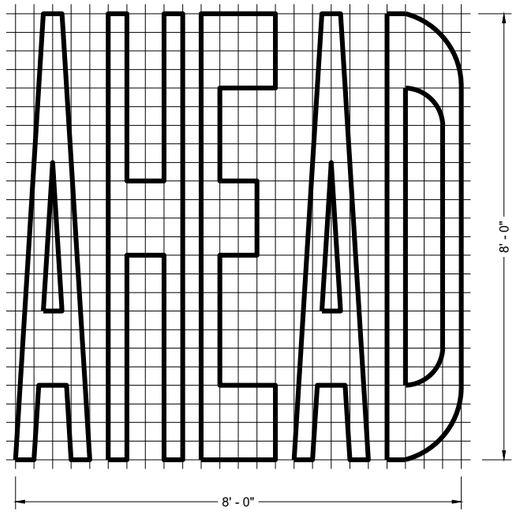
/S/ Andrew Heidtke
WORK ZONE ENGINEE

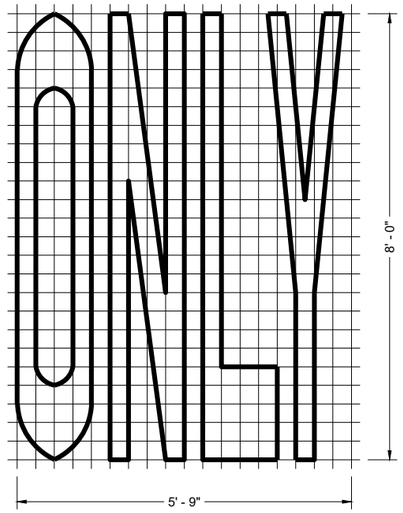
FHWA

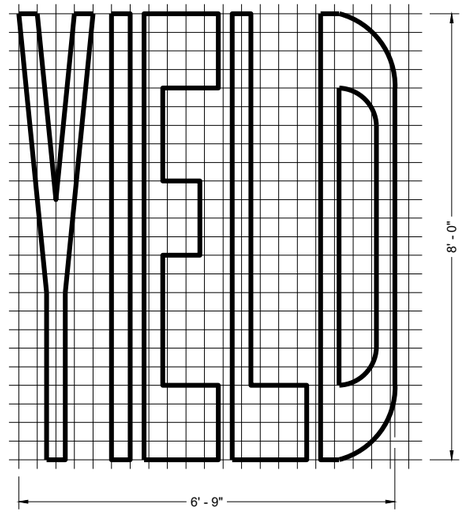
6

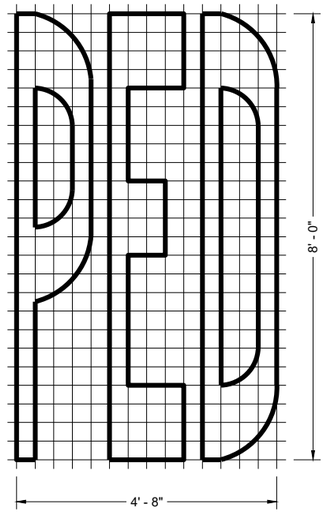
SDD 15C04 - 05

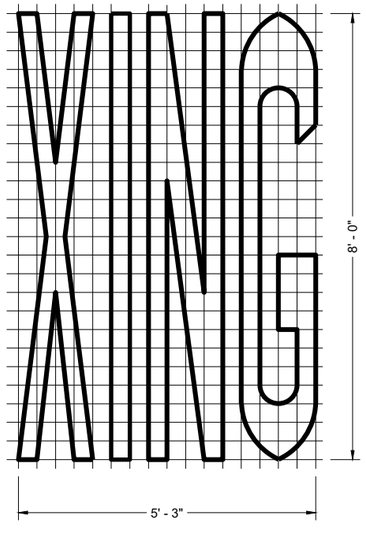


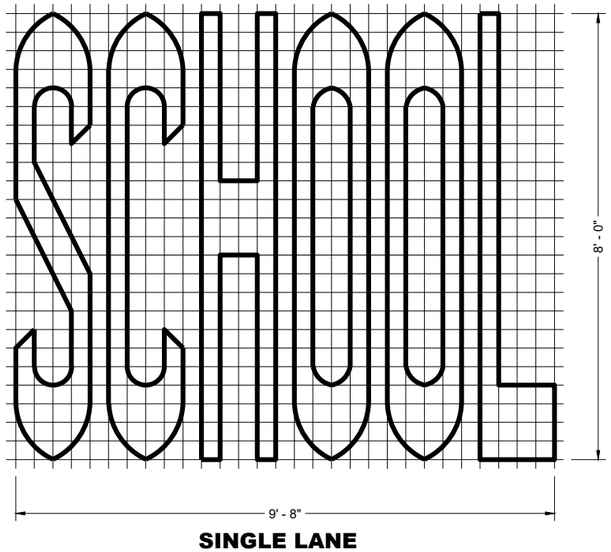




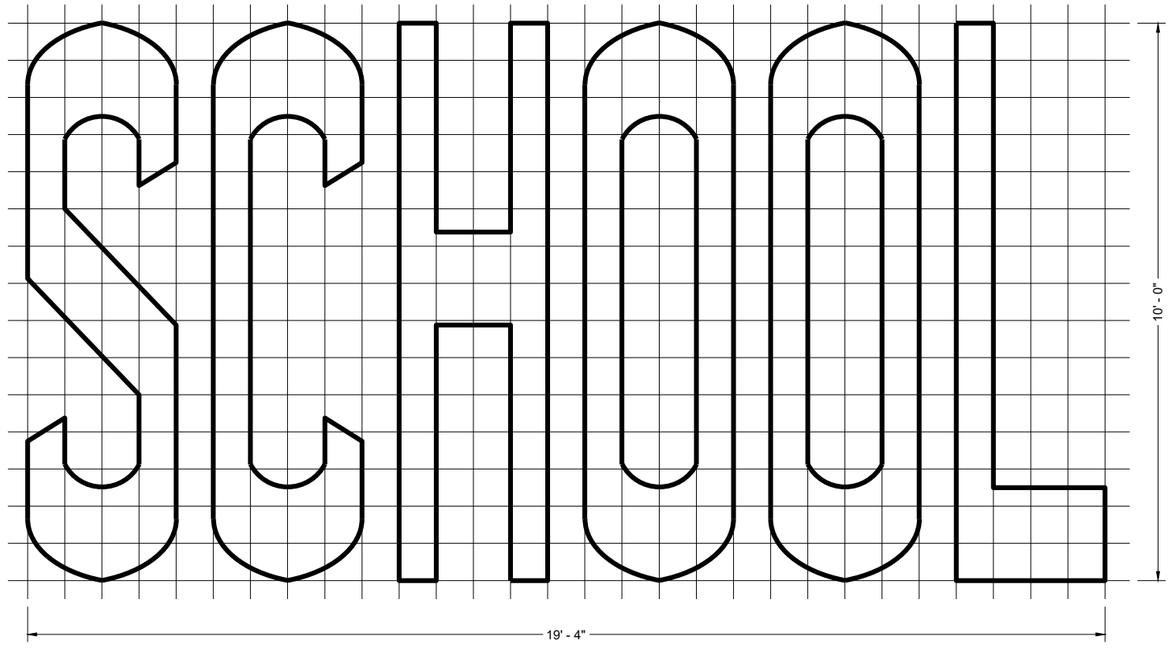








SINGLE LANE



TWO - LANE

GENERAL NOTES

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

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 — DATE
/S/ Jeannie Silver — STATE SIGNING AND MARKING ENGINEER

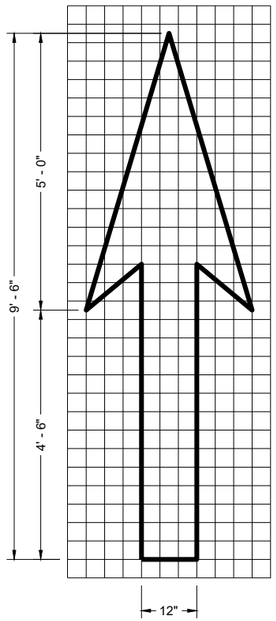
FHWA

6

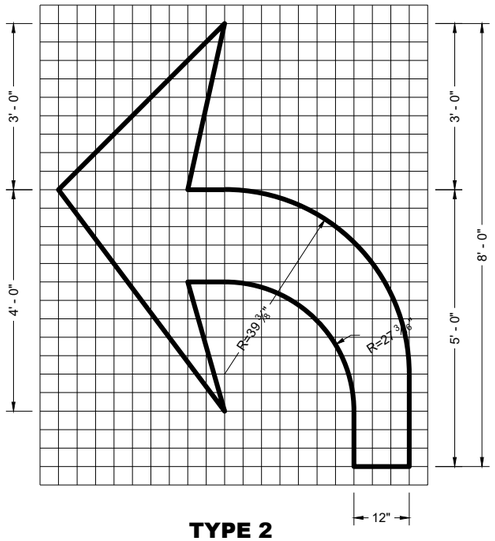
SDD 15C07-16b

GENERAL NOTES

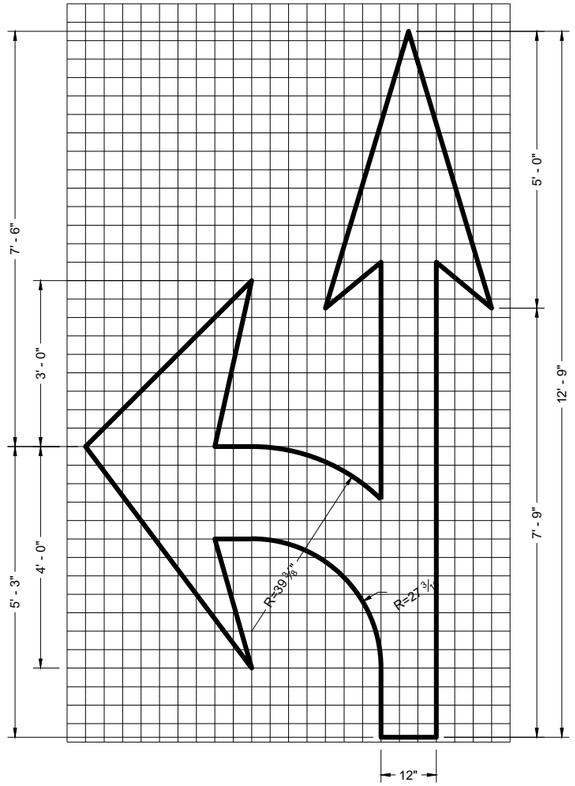
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



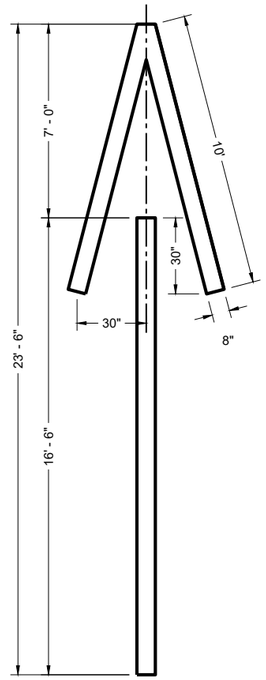
TYPE 1



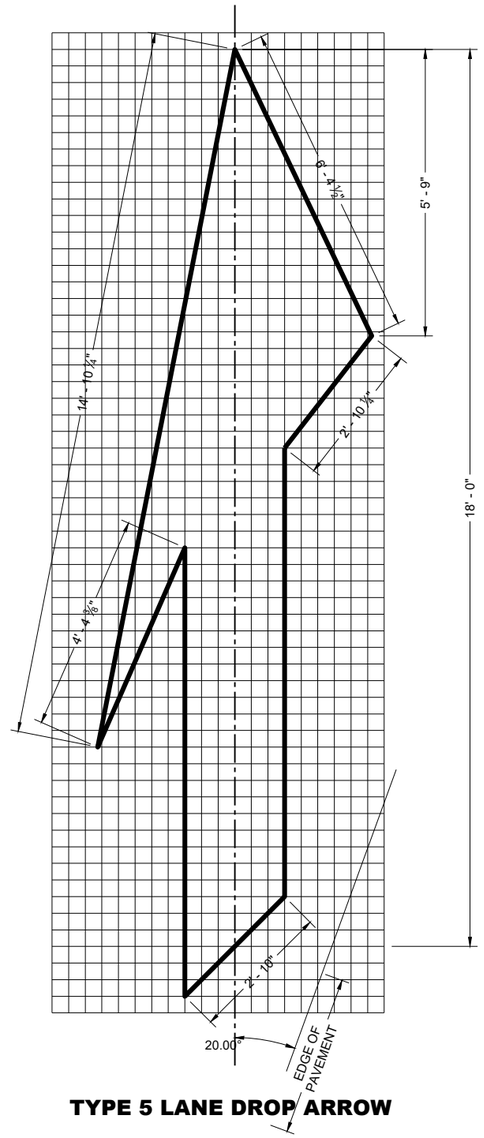
TYPE 2



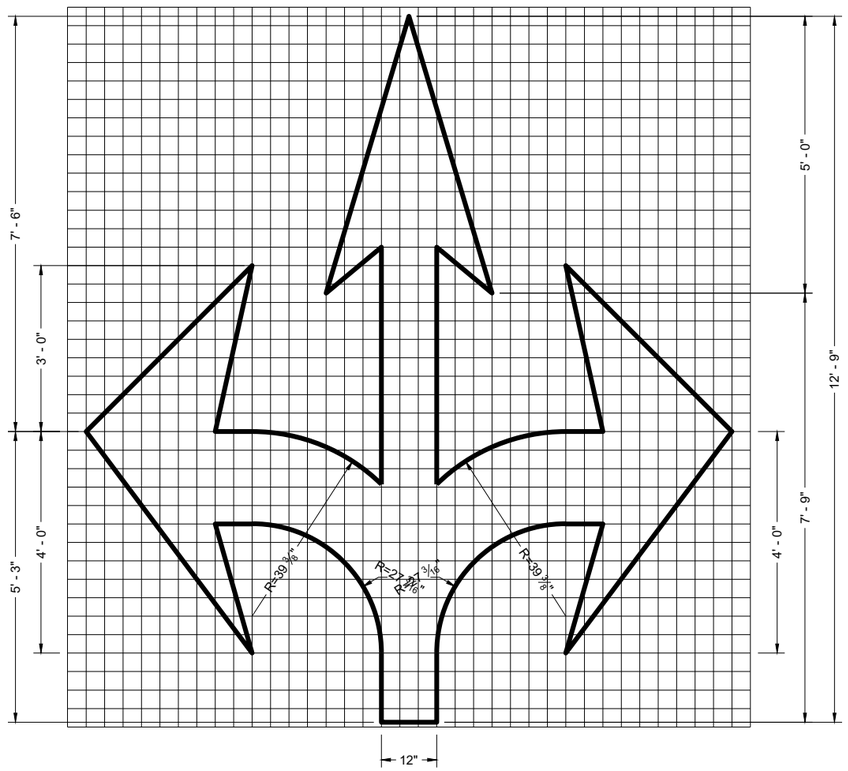
TYPE 3



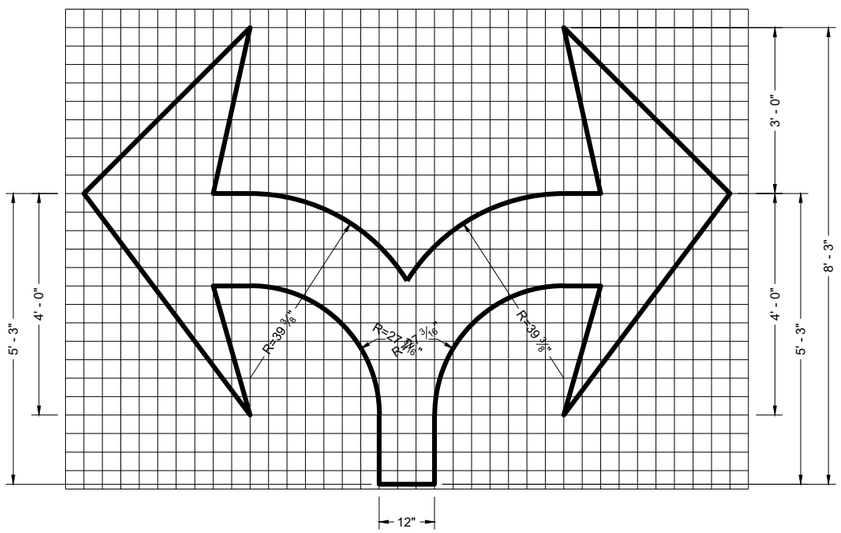
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 — DATE
/S/ Jeannie Silver — STATE SIGNING AND MARKING ENGINEER

FHWA

6
SDD 15C07-16c

GENERAL NOTES

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

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

(2) MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

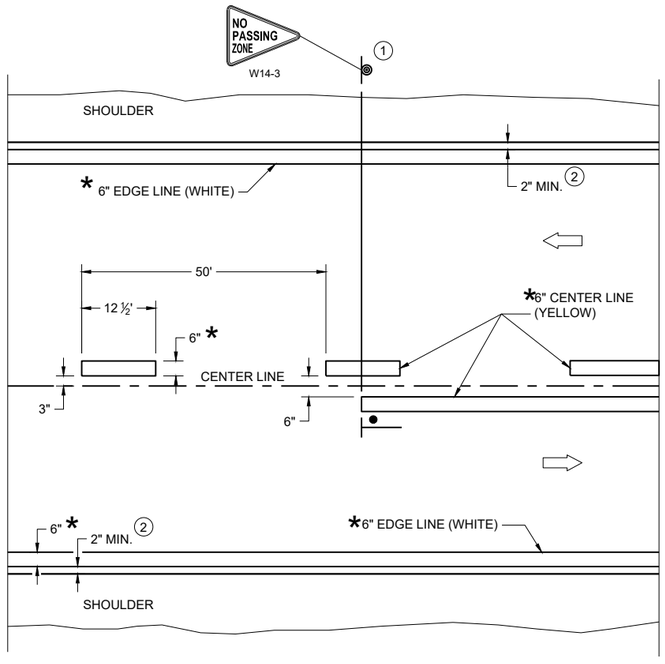
LEGEND

"T" MARKING

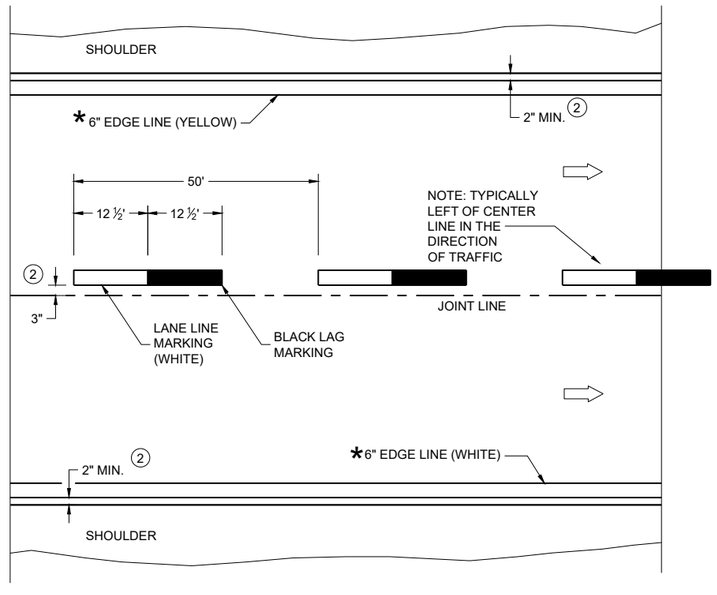
SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

6

SDD 15C08-24a

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

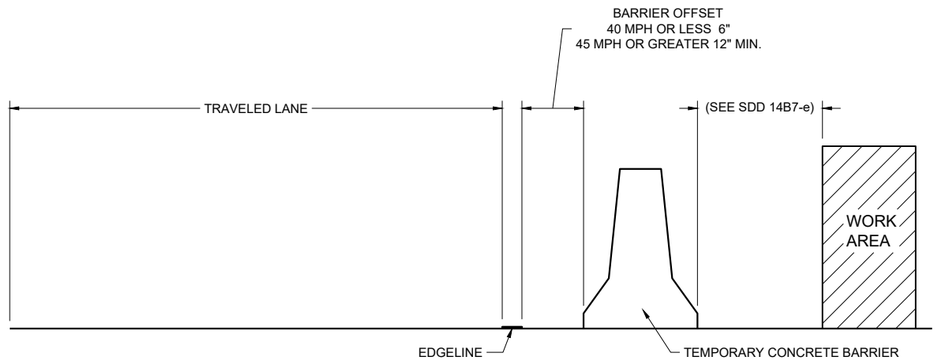
APPROVED
December 2024
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA

6

SDD 15C08-24a



TEMPORARY BARRIER OFFSET FROM EDGELINE

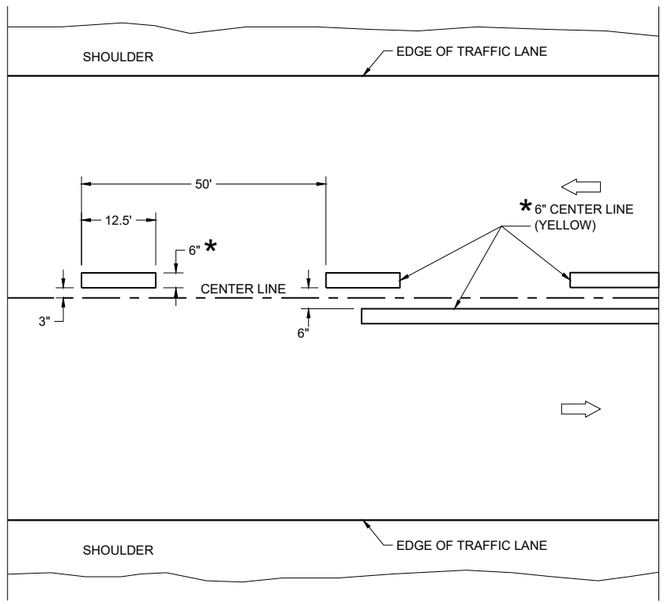
GENERAL NOTES

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

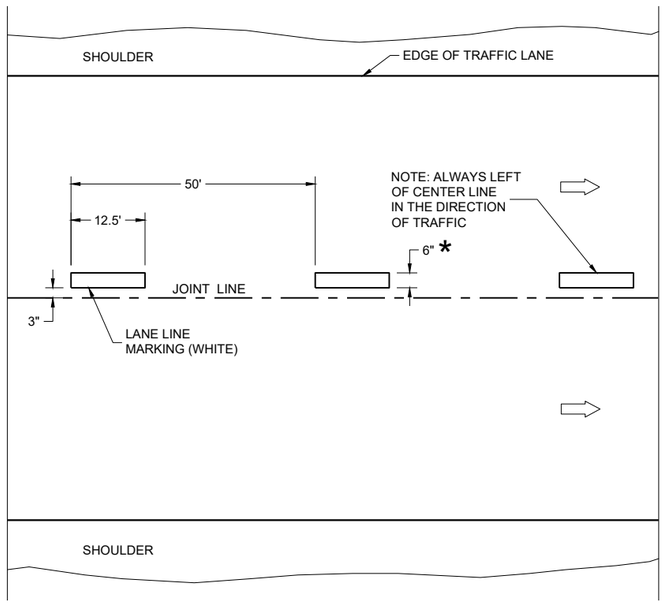
LEGEND

⇨ DIRECTION OF TRAFFIC

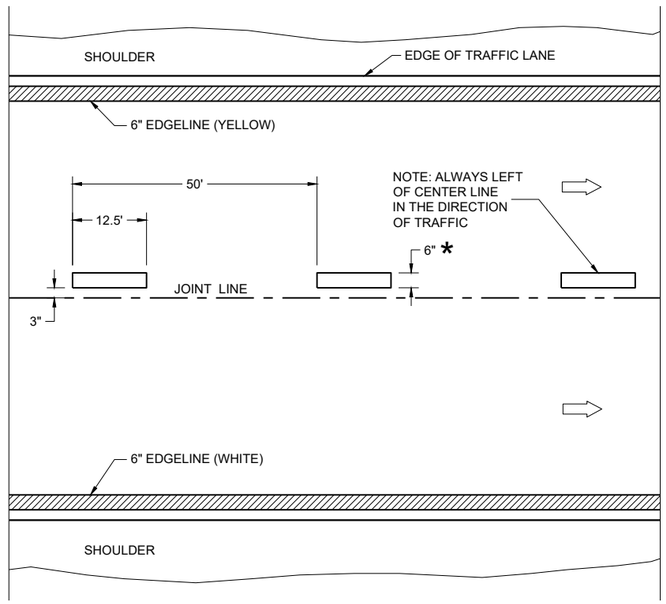
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2024
DATE
/S/ Jeannie Silver
Statewide Pavement Marking Engineer
FHWA

6

SDD 15C08-24b

6

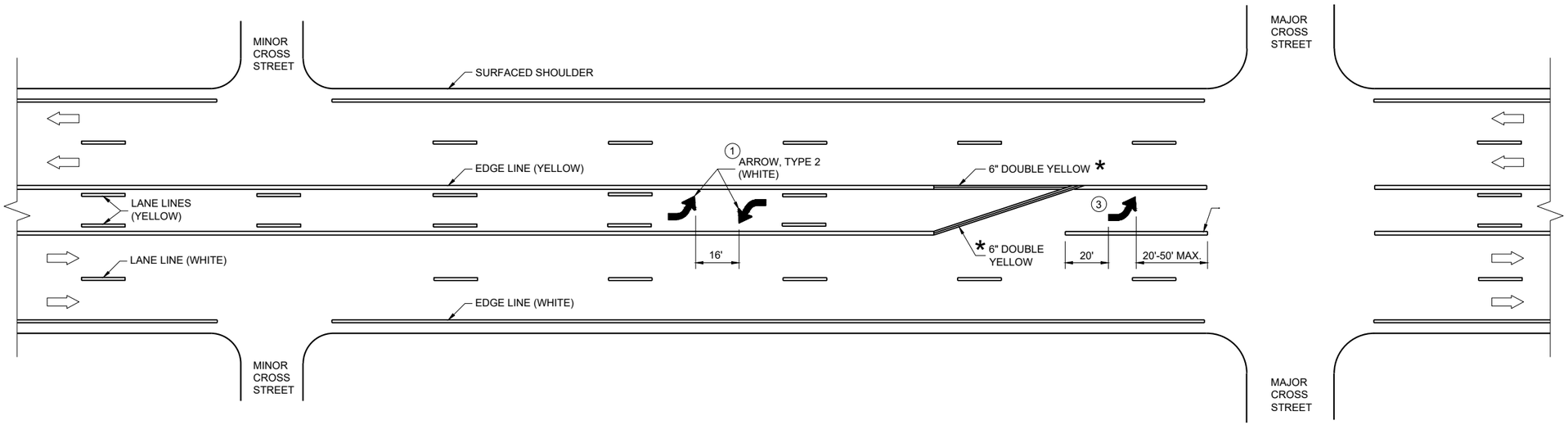
SDD 15C08-24b

GENERAL NOTES

1. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
2. 10" WHITE
3. TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

⇨ DIRECTION OF TRAFFIC

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY LEFT TURN LANE

6

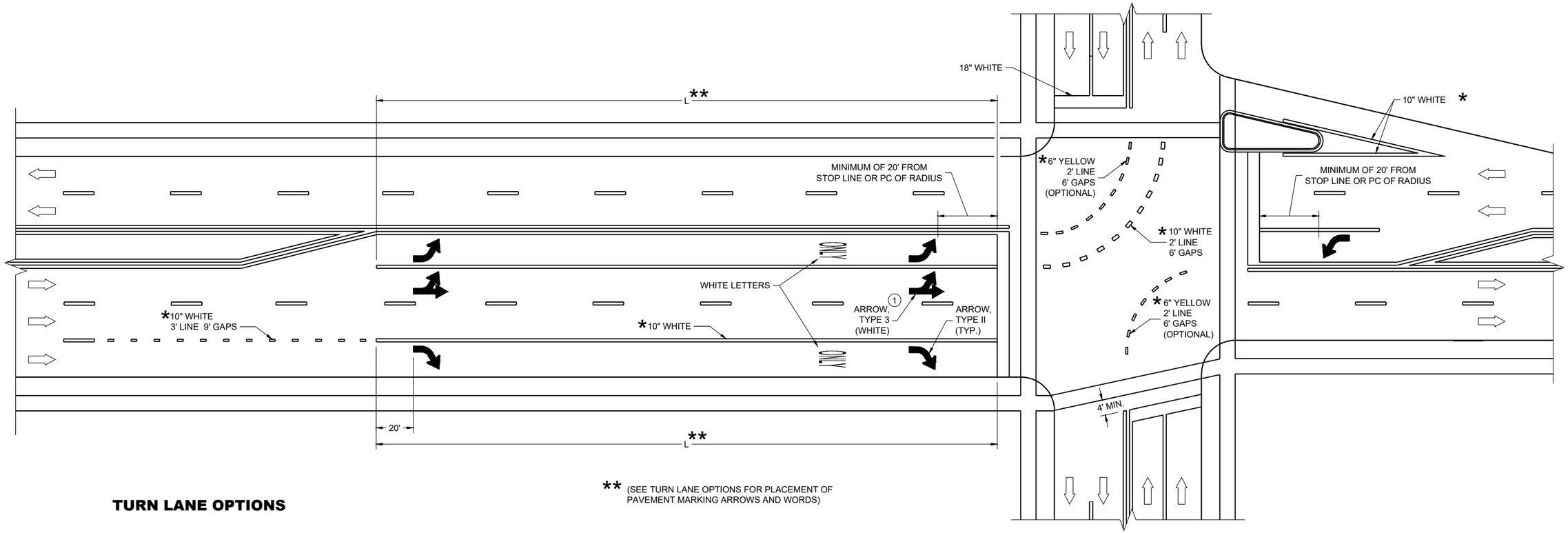
6

SDD 15C08-24c

SDD 15C08-24c

PAVEMENT MARKING (TURN LANES)

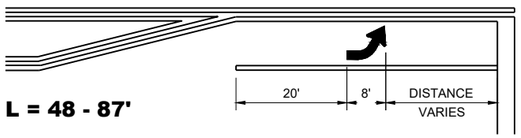
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



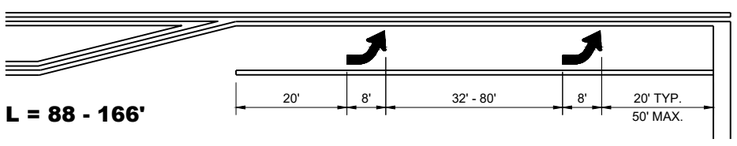
** (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

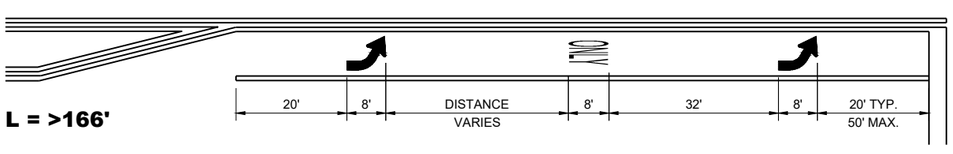
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT
REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

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

DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

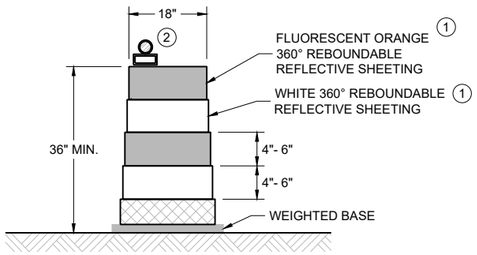
PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

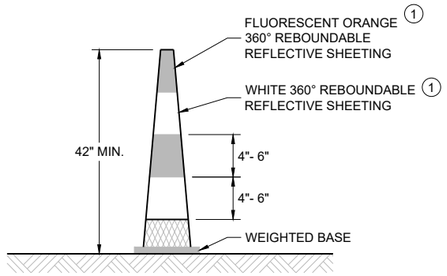
(1) REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

(2) LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



DRUM

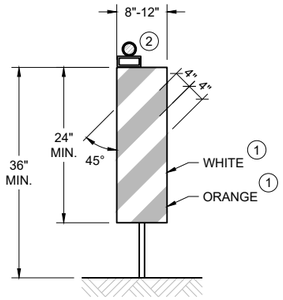
BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

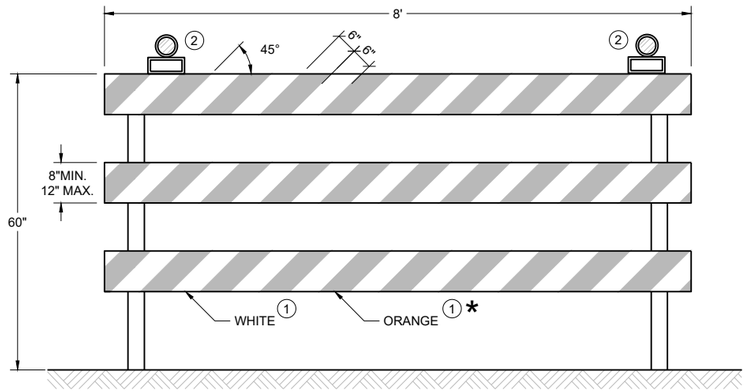
DO NOT USE IN TAPERS
½ SPACING OF DRUMS

BALLAST WIDTHS
RANGE FROM 14"-20"



VERTICAL PANEL

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2026 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

6
SDD 15C11-11b

LEGEND

V1 MARKING VEHICLE

V2 SHADOW VEHICLE

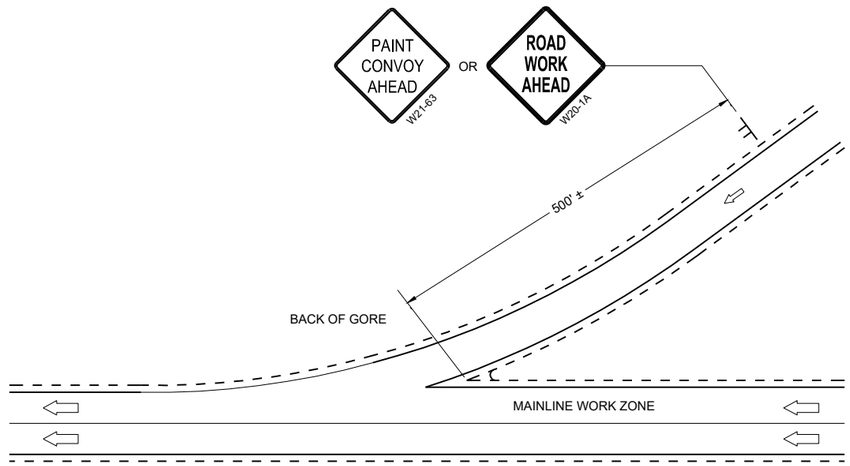
V3 TRAIL VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

ARROW PANEL (CAUTION)



GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

IF THE SHOULDER IS TOO NARROW TO ACCOMMODATE THE LAST TRAILING VEHICLE, THE VEHICLE SHOULD STRADDLE THE EDGE LINE.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC

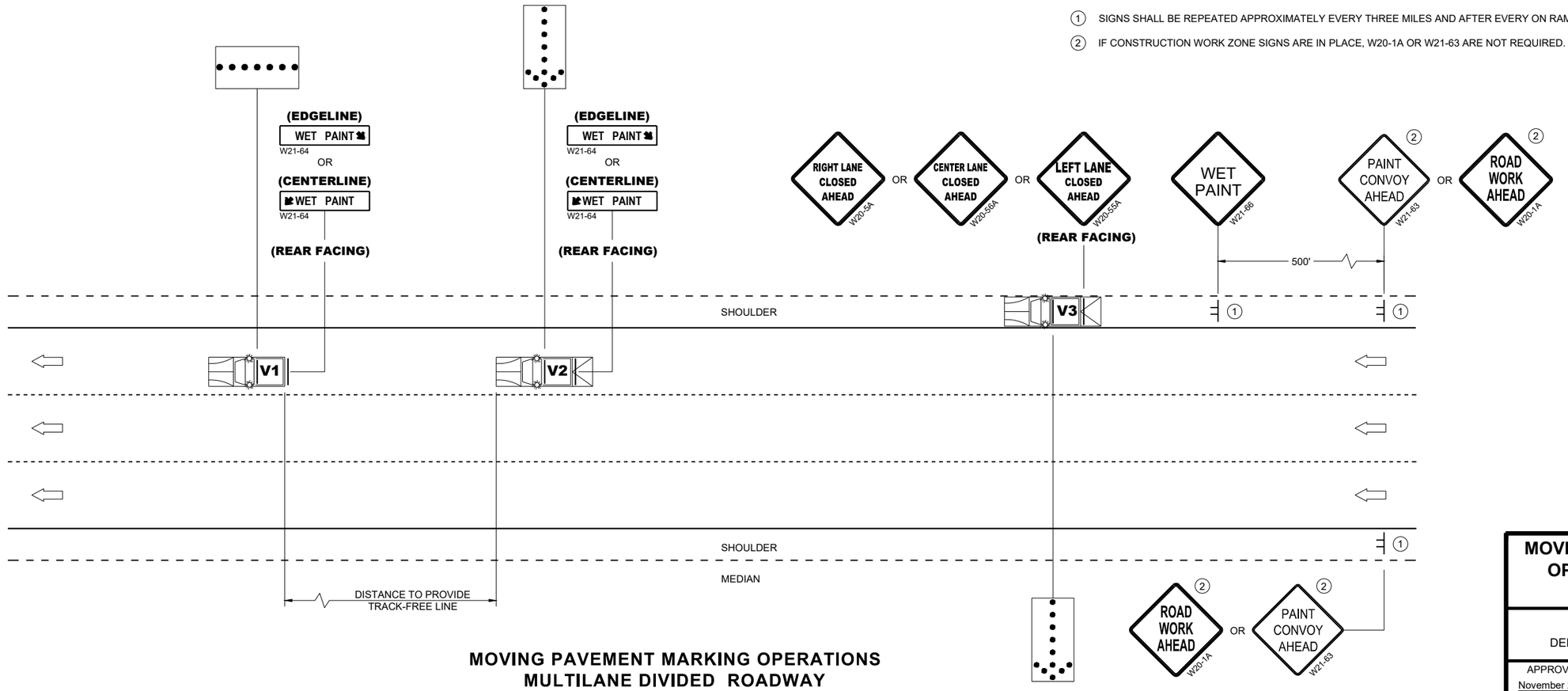
CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL BE A MINIMUM HEIGHT OF 28" FOR WET PAVEMENT MARKINGS

WORKERS SHALL NOT PERFORM WORK FROM ANY SHADOW OR PROTECTION VEHICLES.

(1) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY ON RAMP.

(2) IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.



MOVING PAVEMENT MARKING OPERATIONS MULTILANE DIVIDED ROADWAY

MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 — DATE
/S/ Andrew Heidtke — STATE ELECTRICAL ENGINEER

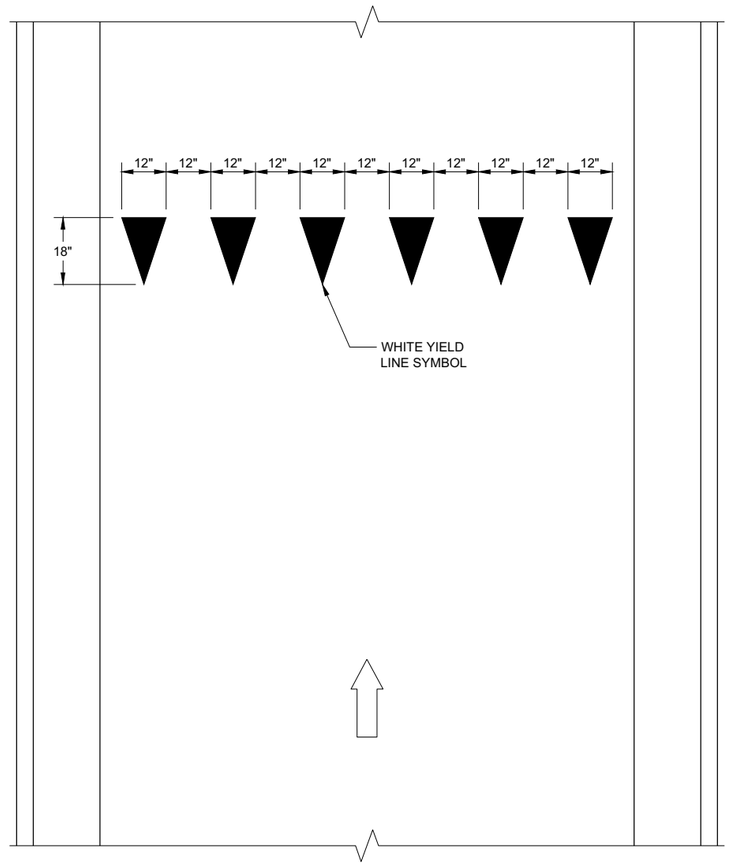
FHWA

6

SDD 15C19-11c

6

SDD 15C19-11c

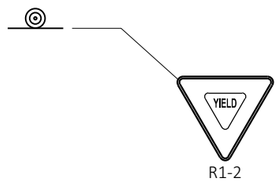


YIELD LINE

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAVEL



R1-2

YIELD MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-81-2016
DATE

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

FHWA

SDD 15C20 - 02

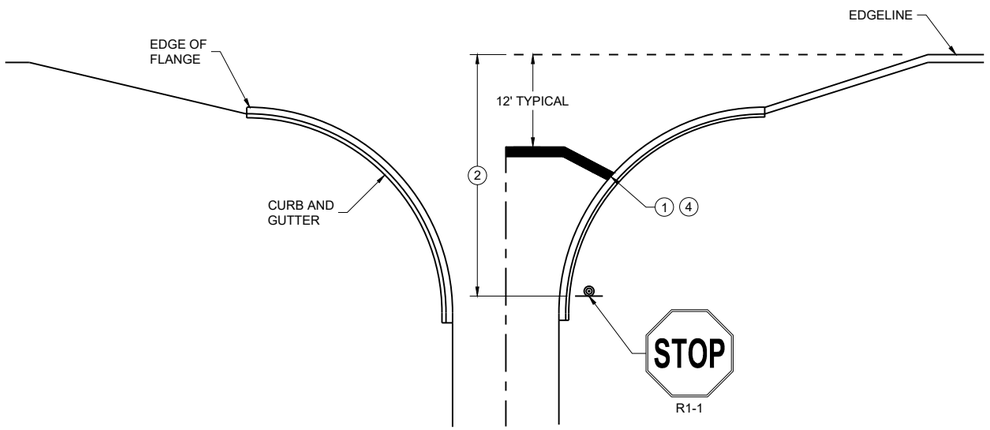
6

SDD 15C20 - 02

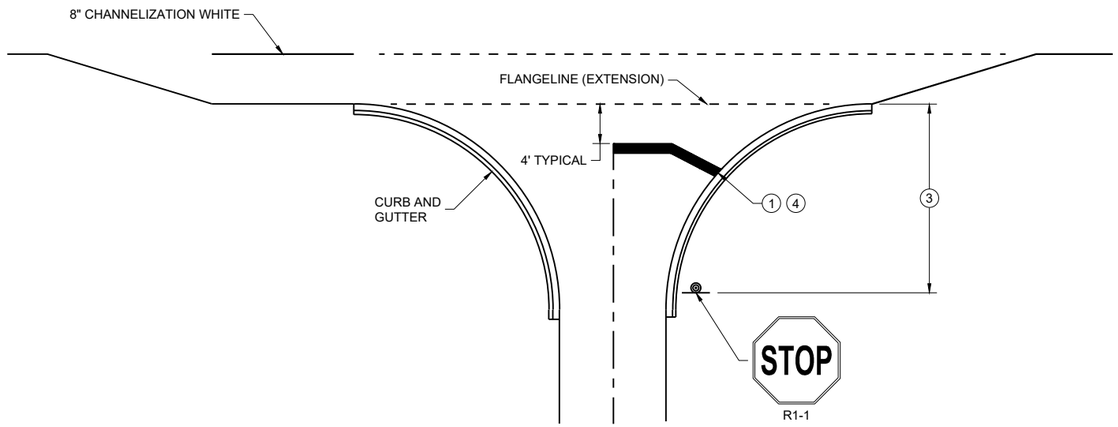
GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

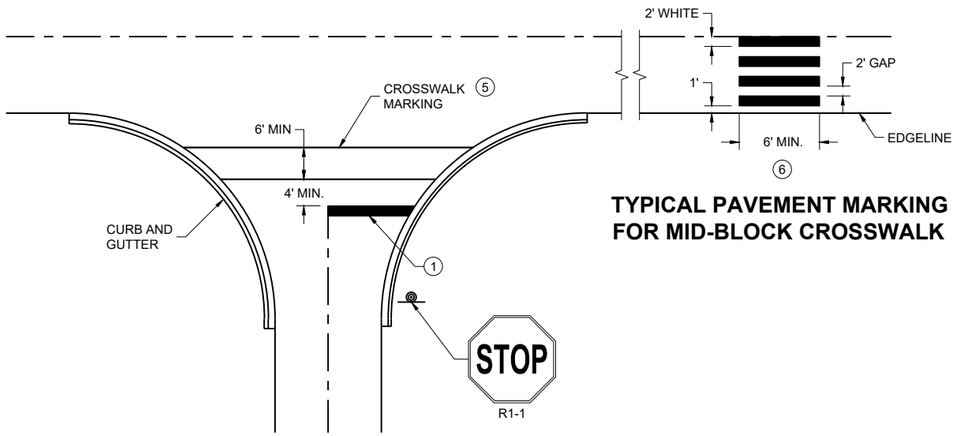
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGE LINE EXTENSION.
4. MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
5. LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES.
6. POSTED SPEED LIMITS OF 40 MPH OR GREATER USE A MINIMUM WIDTH OF 8' FOR MIDBLOCK CROSSWALKS



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

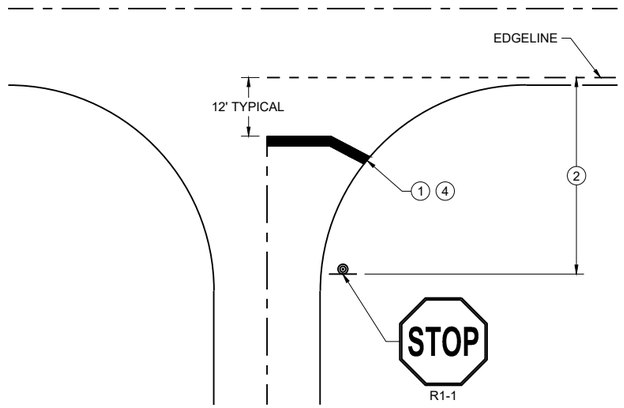


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH RIGHT TURN LANE



TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK (5)

TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

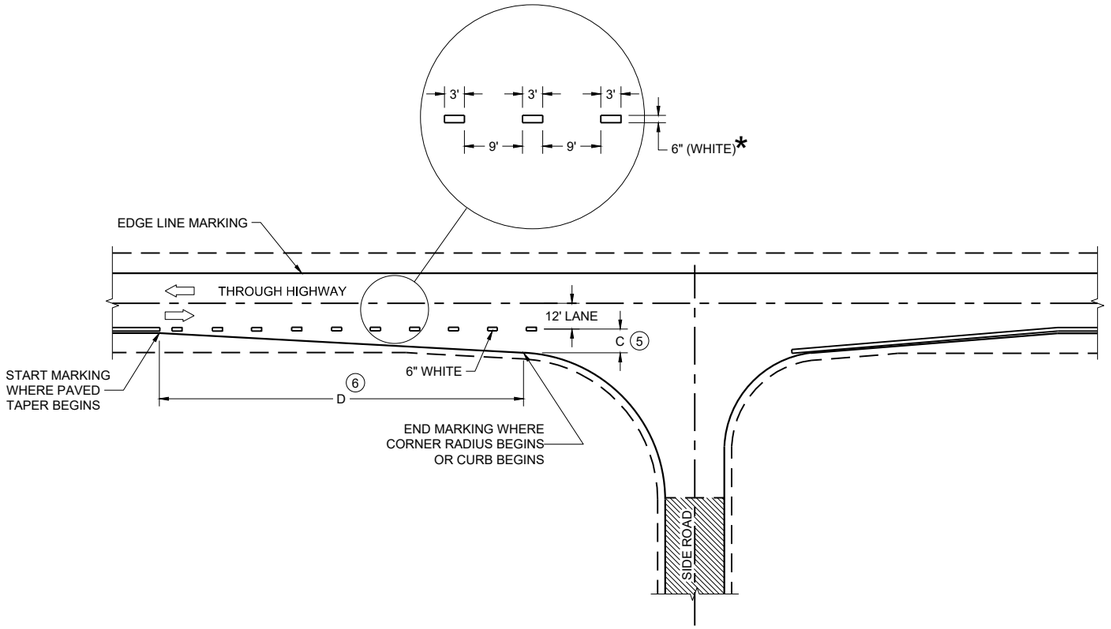
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

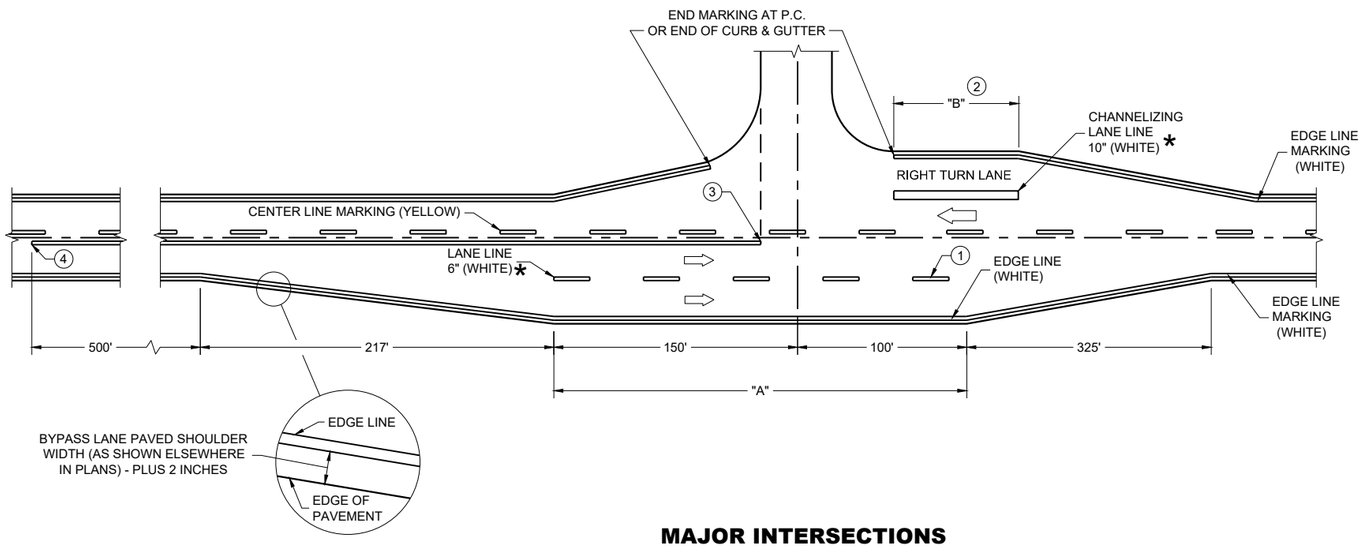
March 2024 — DATE

/S/ Matthew Rauch — STATE SIGNING AND MARKING ENGINEER

FHWA



MINOR INTERSECTION



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

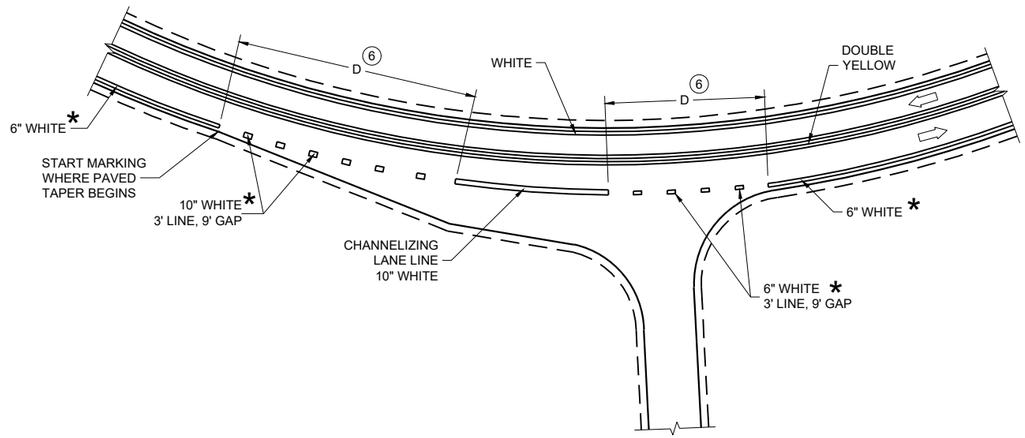
GENERAL NOTES

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

1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
5. WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
6. WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING (INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

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

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

IF THE SPEED LIMIT WILL CHANGE BASED ON THE PRESENCE OF WORKERS, USE THE TAPER LENGTH THAT MATCHES THE HIGHER OF THE TWO SPEEDS FOR A CONTINUOUS LANE CLOSURE.

EXISTING POST MOUNTED SPEED LIMIT SIGNS SHOULD BE COVERED OR REMOVED.

(1) POST NON-CONSTRUCTION SPEED LIMIT.

(2) IF THE LANE CLOSURE MOVES DOWNSTREAM, LEAVE DSLT IN PLACE.

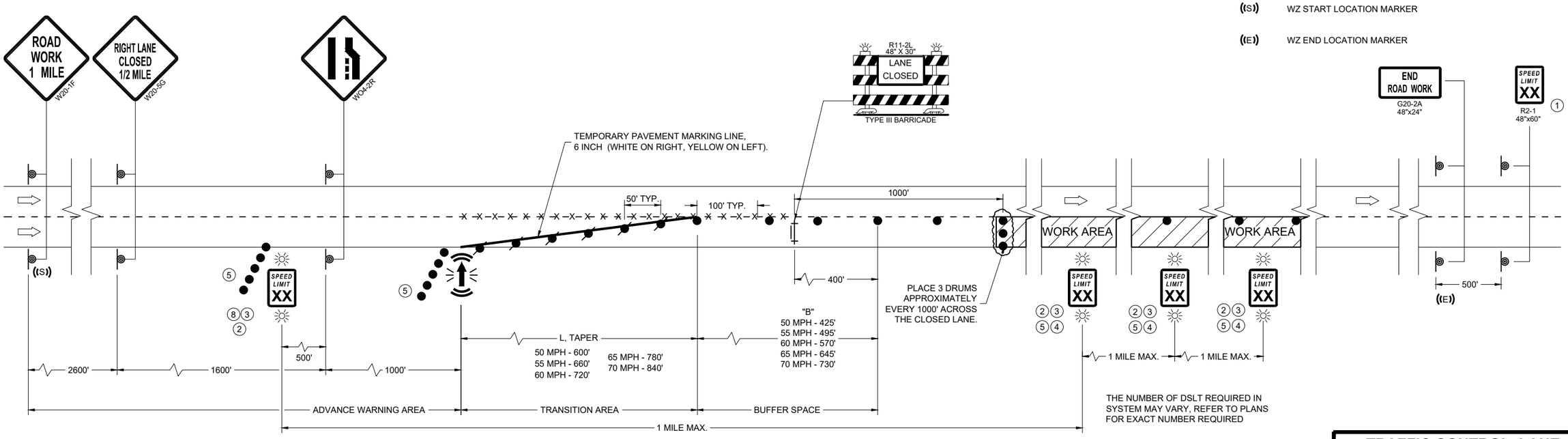
(3) PLACE DSLT AT EXISTING POST MOUNTED SPEED LIMIT SIGN AFTER THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. IF THERE IS NOT AN EXISTING SIGN, PLACE 1,500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP

(4) FOR LEFT LANE CLOSURES, DSLT REMAINS ON RIGHT SHOULDER.

(5) 5 DRUMS SPACED @ 10' INTERVALS AS NEEDED.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- DIGITAL SPEED LIMIT TRAILER (DSLT)
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER



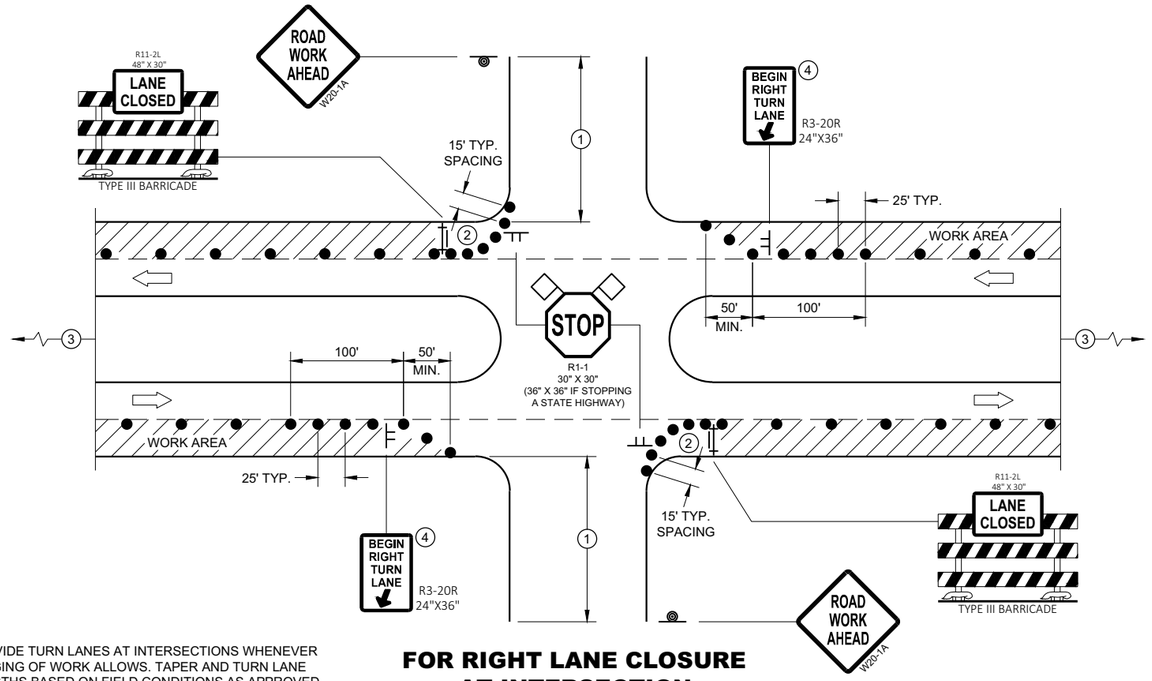
TRAFFIC CONTROL, LANE CLOSURE, DIGITAL SPEED REDUCTION SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 — DATE
/S/ Andrew Heidtke — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

6
SDD 15D12-16g



FOR RIGHT LANE CLOSURE AT INTERSECTION

PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" MAY BE USED IF APPROVED BY THE DISTRICT TRAFFIC UNIT.

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

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

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

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL REMAIN IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON PORTABLE SUPPORTS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

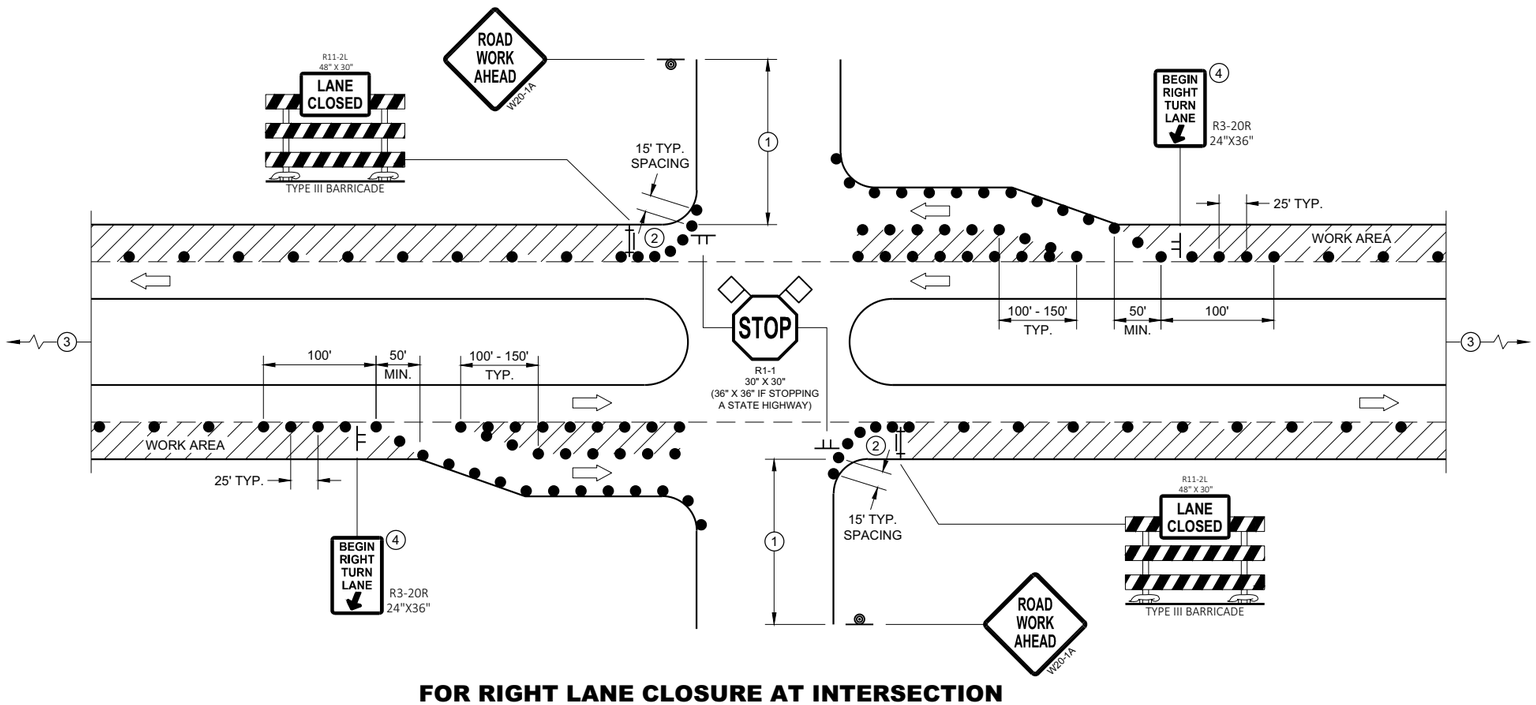
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

(1) 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35 - 40 MPH.
200' IF 25 - 30 MPH.

(2) ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS

(3) SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

(4) MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.



FOR RIGHT LANE CLOSURE AT INTERSECTION (WITH RIGHT TURN BAY OPEN)

LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., ORANGE
- WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE RIGHT LANE CLOSURE

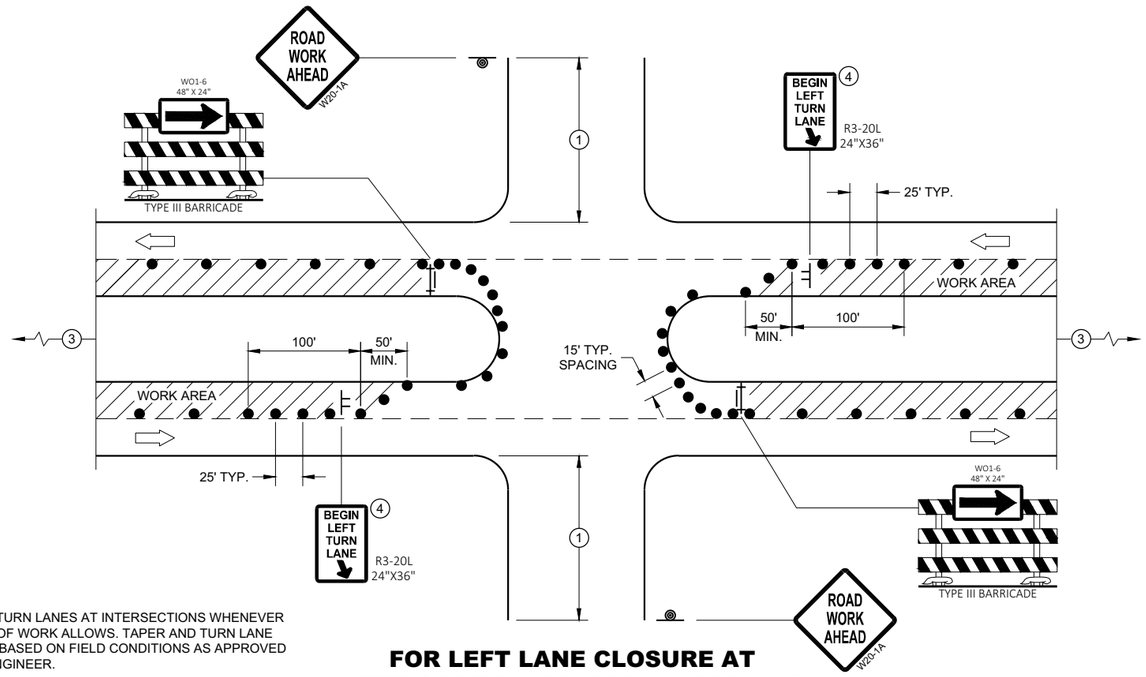
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 15D21 - 07a

6

SDD 15D21 - 07a



PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" MAY BE USED IF APPROVED BY THE DISTRICT TRAFFIC UNIT.

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

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

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

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL REMAIN IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON PORTABLE SUPPORTS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

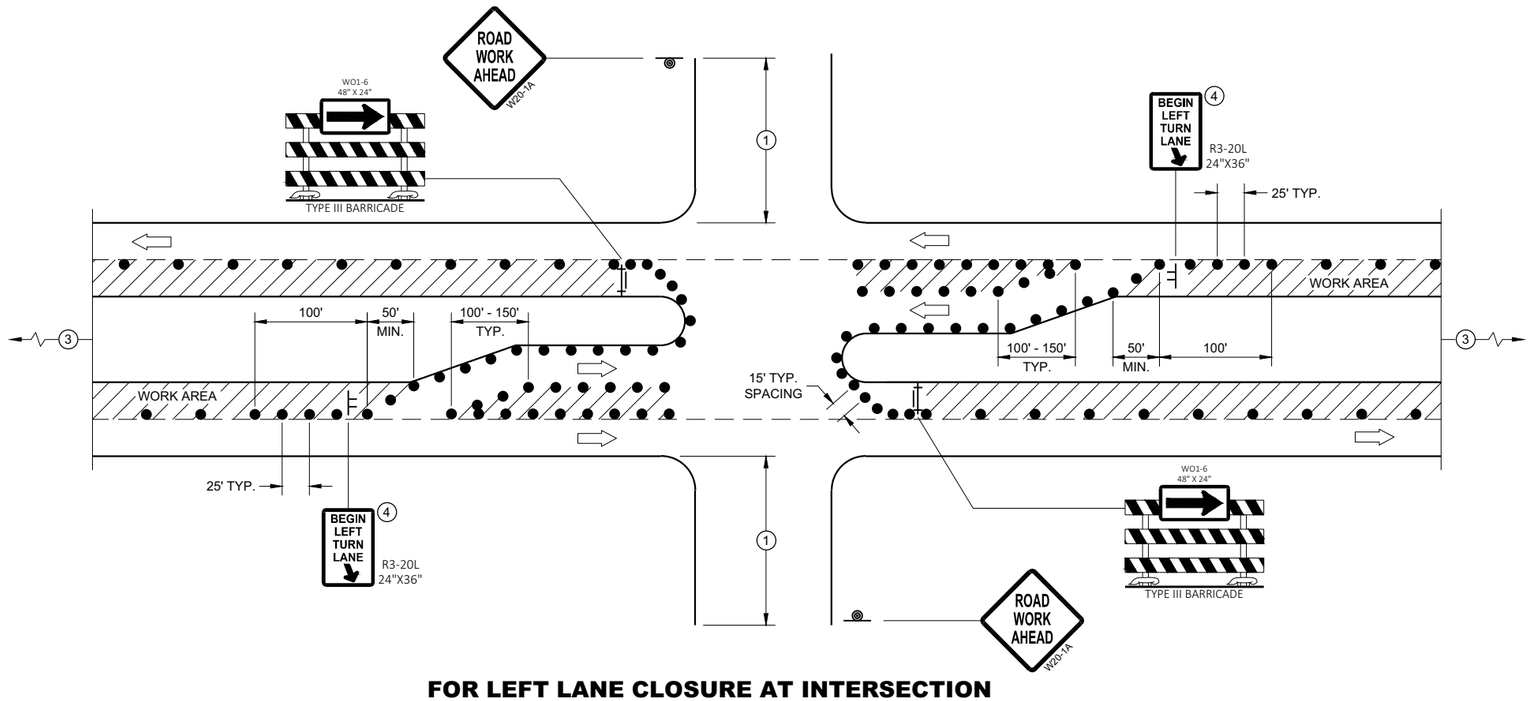
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

(1) 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35 - 40 MPH.
200' IF 25 - 30 MPH.

(2) ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS

(3) SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

(4) MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.



FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING (WITH LEFT TURN BAY OPEN)

LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., ORANGE
- WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LEFT LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

6
SDD 15D21 - 07b

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- DIRECTION OF TRAFFIC
- CONNECTED ARROW BOARD
- WORK AREA
- (S) WZ START LOCATION MARKER
- (E) WZ END LOCATION MARKER

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

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

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

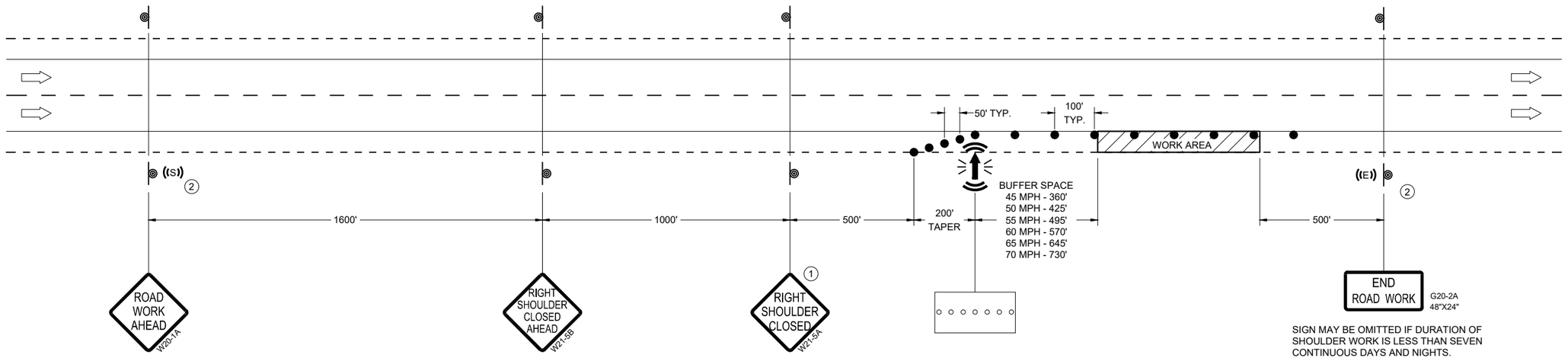
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

(1) FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR THE W21-5A SIGN MAY BE OMITTED.

(2) IF ALREADY PRESENT WITHIN PROJECT , DO NOT INCLUDE ADDITIONAL DEVICE.



TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Noveber 2025
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

FHWA

6
SDD 15D27-05

LEGEND

SIGN ON TEMPORARY SUPPORT

SIGN ON PERMANENT SUPPORT

TYPE III BARRICADE

TYPE III BARRICADE WITH ATTACHED SIGN

TYPE "A" WARNING LIGHT (FLASHING)

DIRECTION OF TRAFFIC

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

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET
0-30	200'
35-40	350'
45-55	500'

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

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

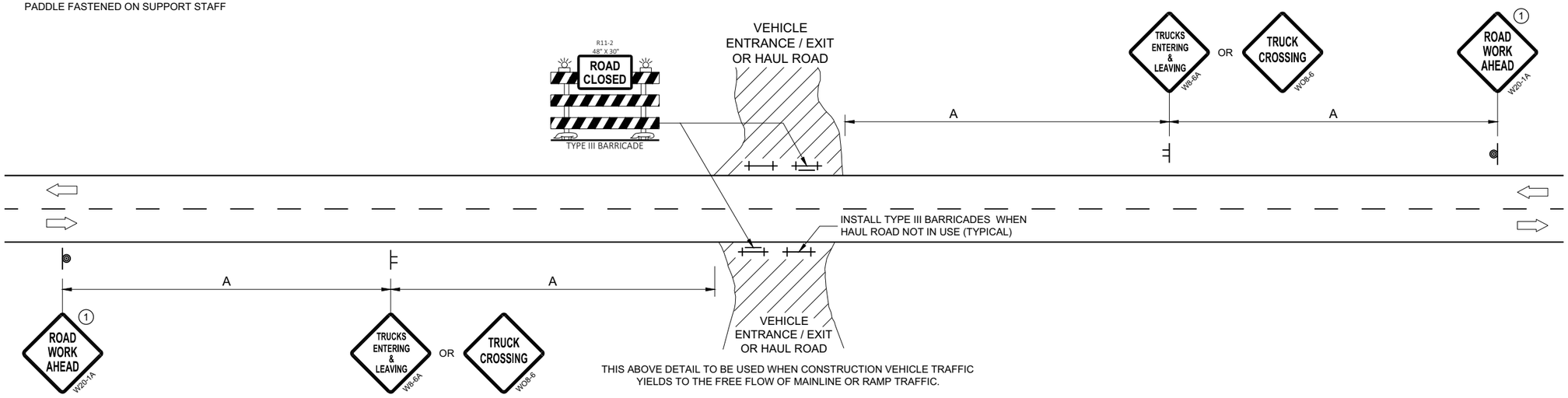
WARNING SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

WHEN ACTIVITY REFLECTED BY THE SIGN IS NOT CURRENTLY TAKING PLACE, THE HIGHWAY SHALL BE RESTORED TO NORMAL CONDITION AND THE SIGNS SHALL BE REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC.

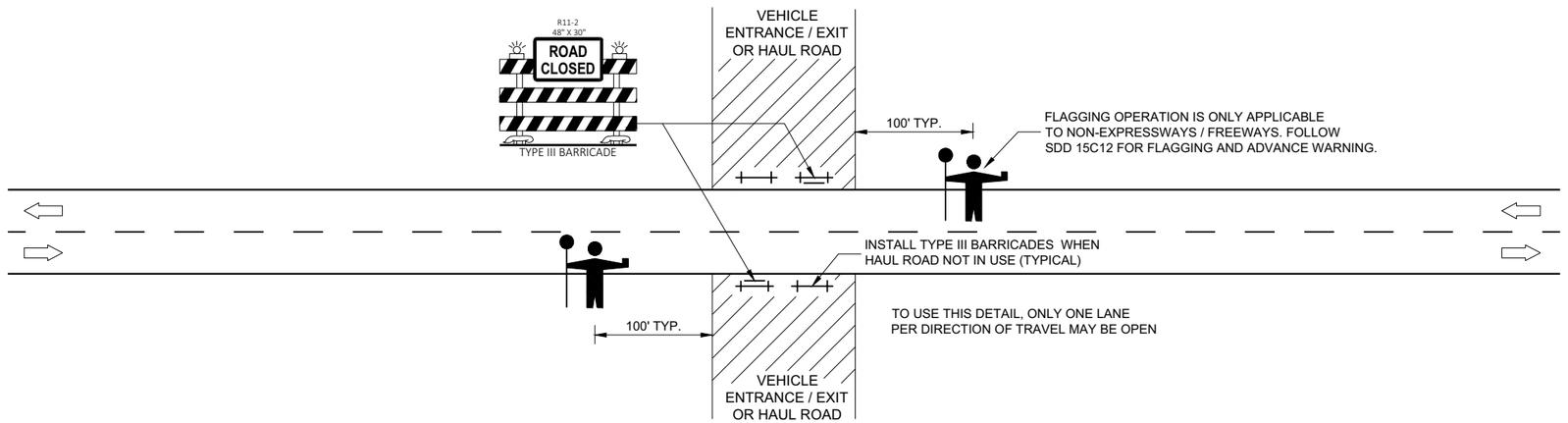
WHEN A SIDE ROAD OR RAMP INTERSECTS WITHIN THE ADVANCE SIGNING AREA, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND / OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

PLACE SIGNS ON BOTH SIDES IF USED ON DIVIDED HIGHWAY.

(1) THESE SIGNS ARE TO BE USED ONLY WHEN VEHICLE ENTRANCE / EXIT CONDITIONS ARE SEPARATED BY MORE THAN TWO MILES FROM PREVIOUS WORK AREA OR SIGNING OR AS DIRECTED BY THE ENGINEER.



THIS ABOVE DETAIL TO BE USED WHEN CONSTRUCTION VEHICLE TRAFFIC YIELDS TO THE FREE FLOW OF MAINLINE OR RAMP TRAFFIC.



TO USE THIS DETAIL, ONLY ONE LANE PER DIRECTION OF TRAVEL MAY BE OPEN

THIS DETAIL TO BE USED WHEN CONSTRUCTION WORK INCLUDING TRUCKING ACTIVITY REQUIRES MAINLINE TRAFFIC TO BE TEMPORARILY STOPPED IN ONE OR BOTH DIRECTIONS. DELAY TO HIGHWAY TRAFFIC SHALL BE MINIMIZED.

TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

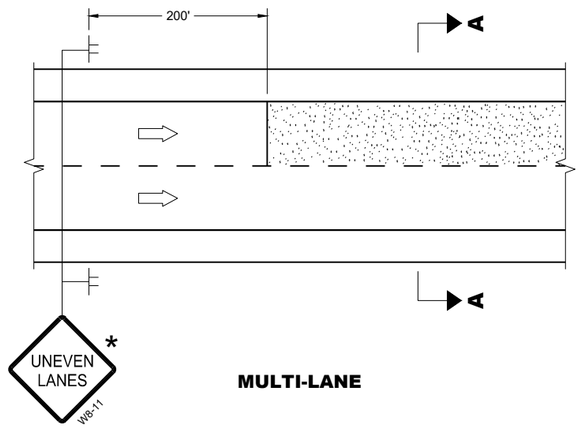
APPROVED
May 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

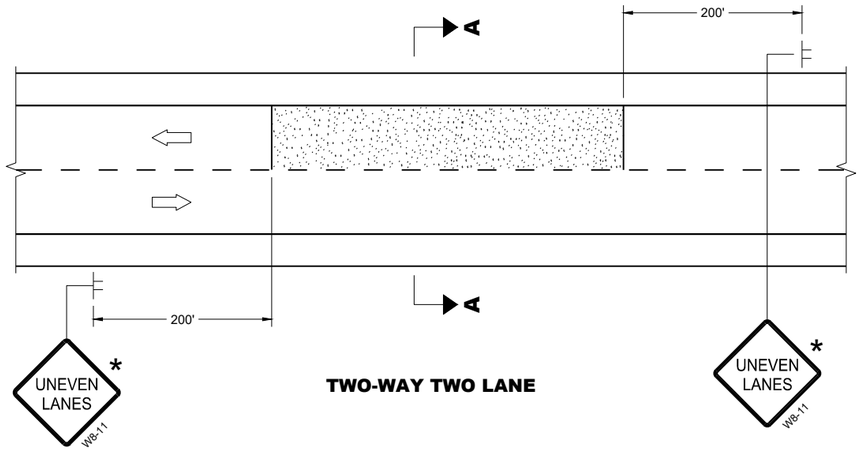
FHWA

6

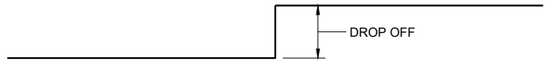
SDD 15D29 - 06



MULTI-LANE

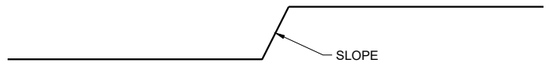


TWO-WAY TWO LANE

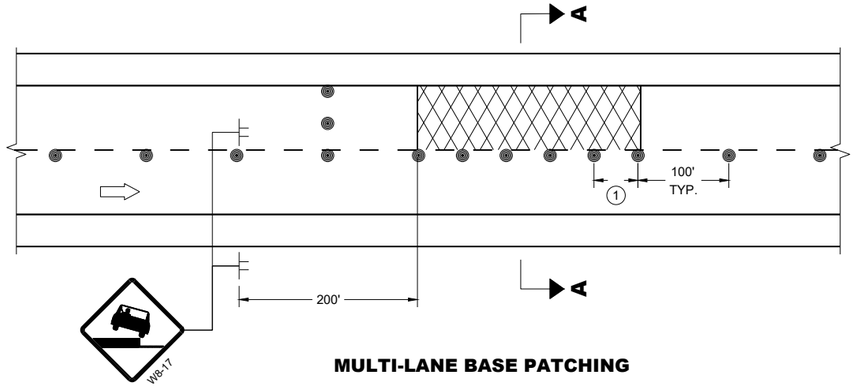


SECTION A - A

OR



SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

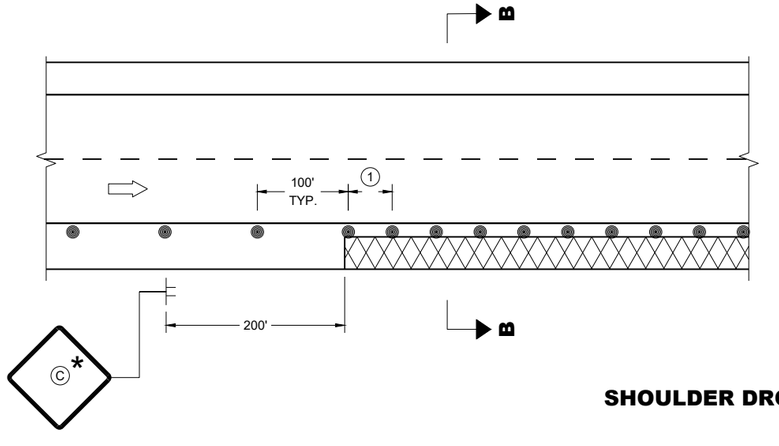
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.

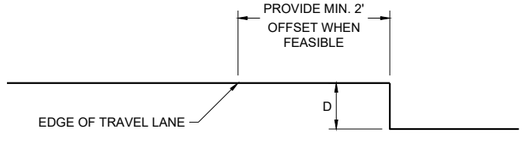
(1) USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE



SHOULDER DROP-OFFS



SECTION B - B

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER WO8-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP - OFF W8-9A
	PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

FHWA

6
SDD 15D39-03

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- CONCRETE BARRIER TEMPORARY PRECAST

GENERAL NOTES

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

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

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT LEFT - REVERSE FOR SHIFTING RIGHT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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. NO WARNING LIGHTS SHALL BE WORKING ON ANY "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

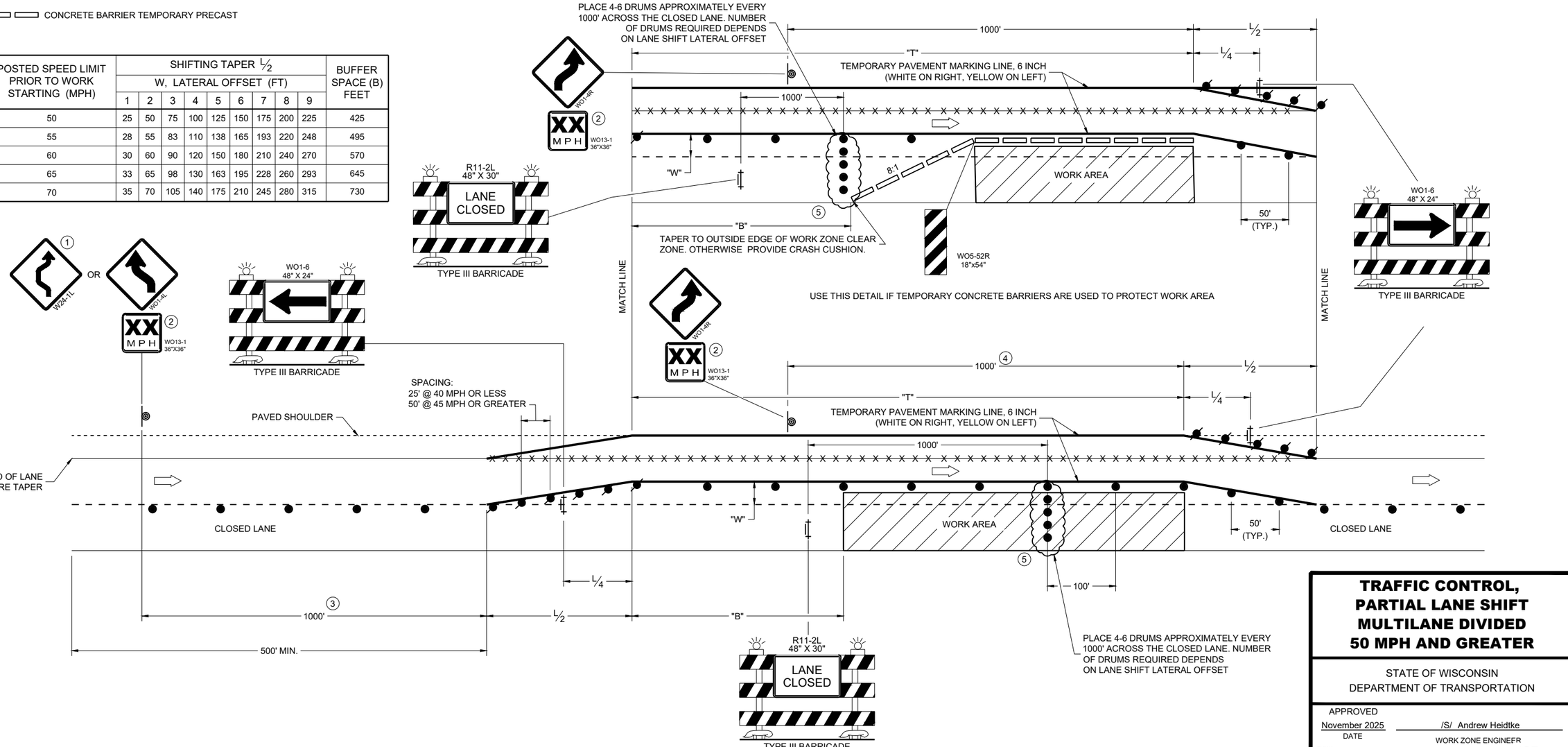
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

1. USE ONLY WHEN T<600', OMIT WO1-4R.
2. IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.
3. IF THE BEGINNING OF LANE SHIFT TAPER IS 1200 FEET OR LESS FROM END OF LANE CLOSURE TAPER, PLACE THE WO1-4L SIGN 200 FEET AFTER THE END OF THE LANE CLOSURE TAPER.
4. IF THE BEGINNING OF THE SECOND LANE SHIFT TAPER IS 1200 FEET OR LESS FROM END OF THE FIRST LANE CLOSURE TAPER, PLACE THE WO1-4L SIGN 200 FEET AFTER THE END OF THE FIRST LANE CLOSURE TAPER.
5. DRUMS IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	SHIFTING TAPER 1/2 W, LATERAL OFFSET (FT)									BUFFER SPACE (B) FEET
	1	2	3	4	5	6	7	8	9	
50	25	50	75	100	125	150	175	200	225	425
55	28	55	83	110	138	165	193	220	248	495
60	30	60	90	120	150	180	210	240	270	570
65	33	65	98	130	163	195	228	260	293	645
70	35	70	105	140	175	210	245	280	315	730



TRAFFIC CONTROL, PARTIAL LANE SHIFT MULTILANE DIVIDED 50 MPH AND GREATER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6
SDD 15D40-07d

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

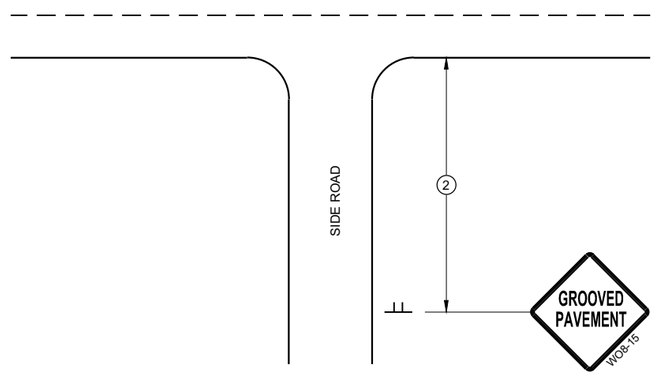
(1) PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

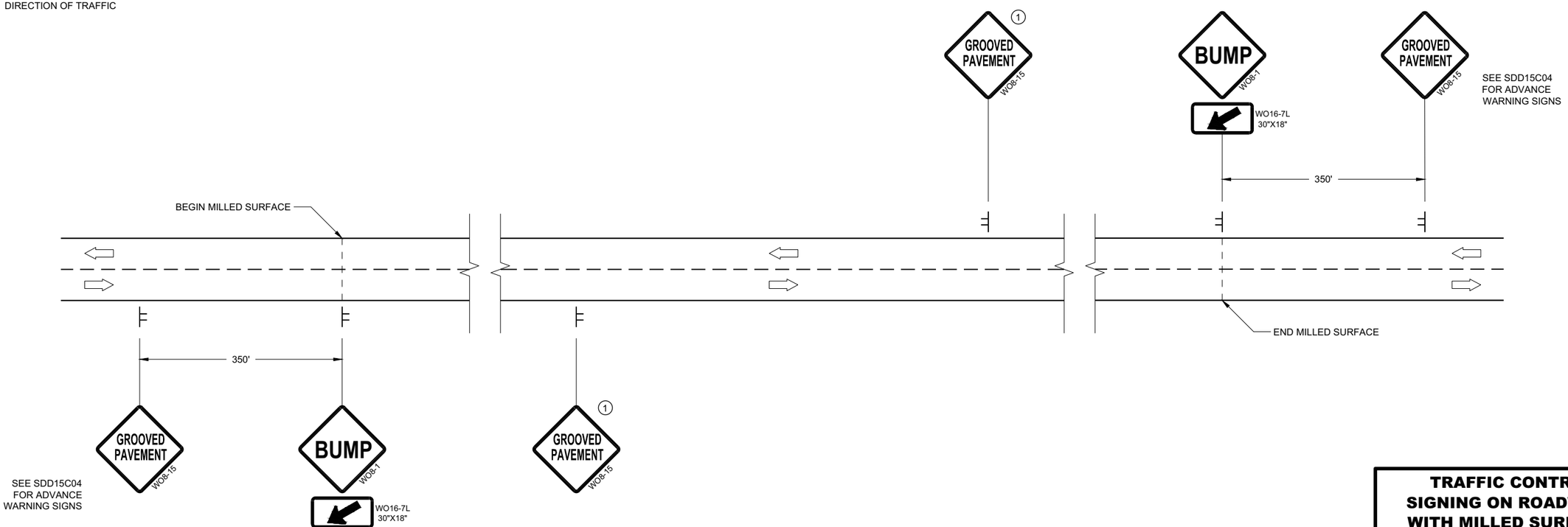
LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15D44 - 02

SDD 15D44 - 02

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

(1) PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

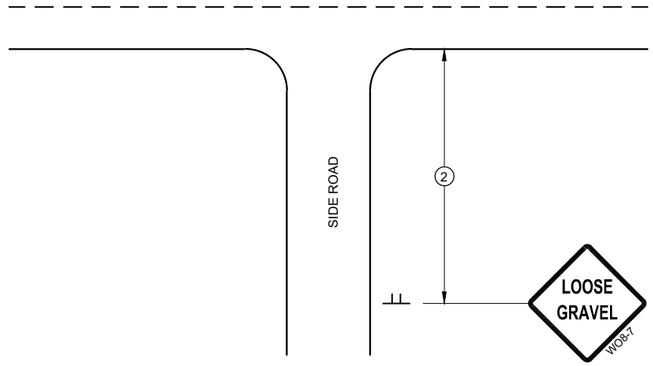
(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

(3) ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

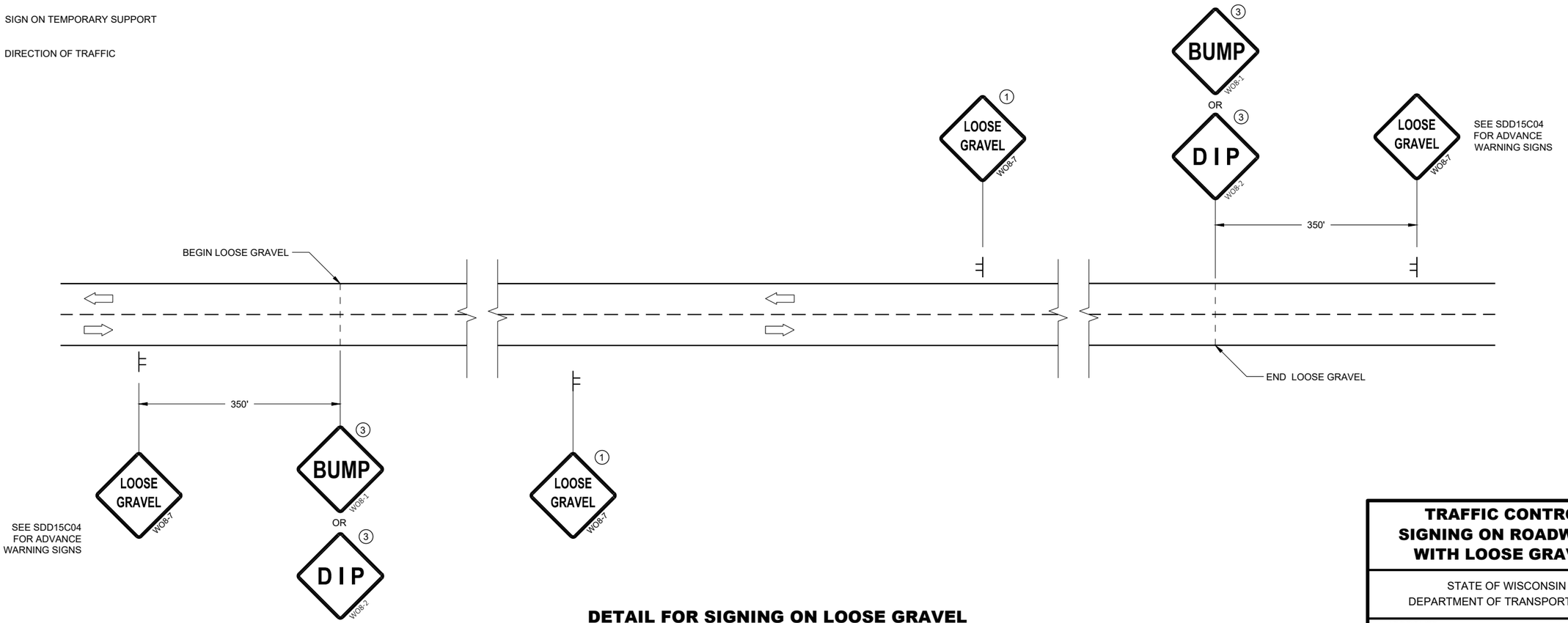
LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON LOOSE GRAVEL OR CHIP SEALED SURFACES

TRAFFIC CONTROL SIGNING ON ROADWAYS WITH LOOSE GRAVEL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

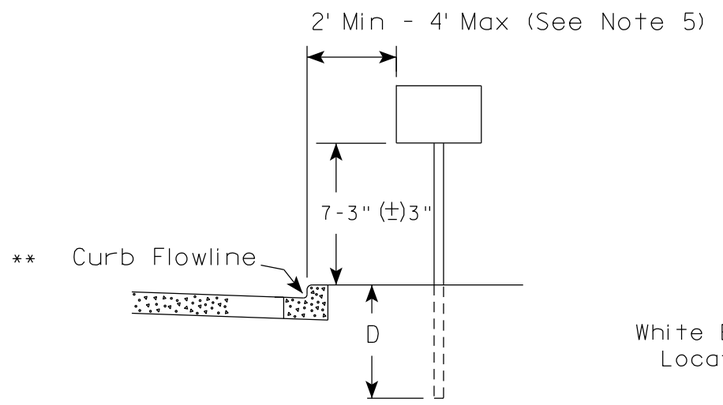
/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

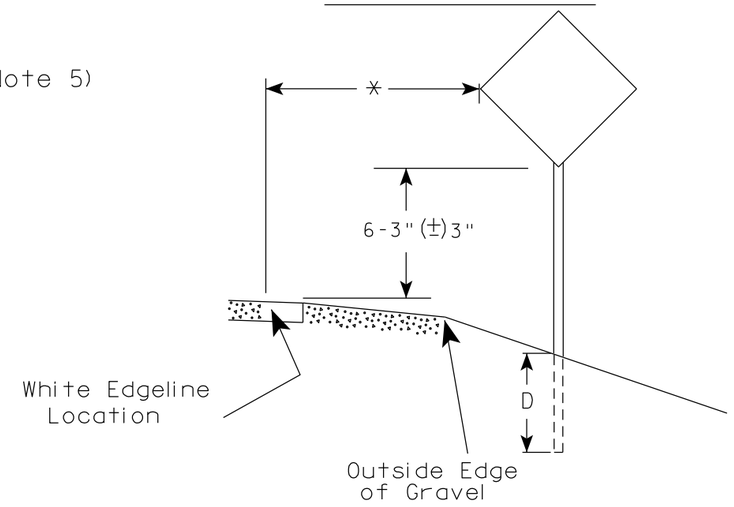
6

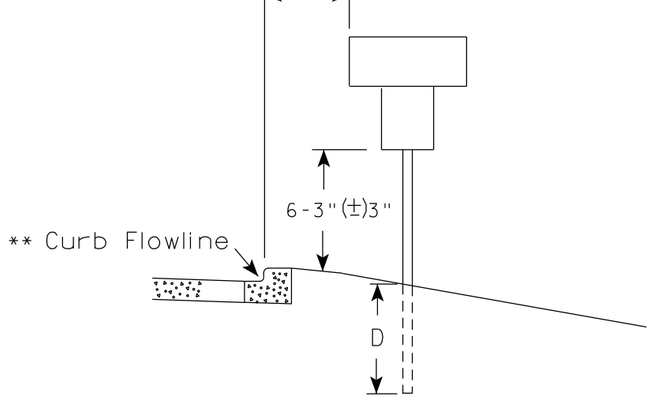
SDD 15D45 - 03

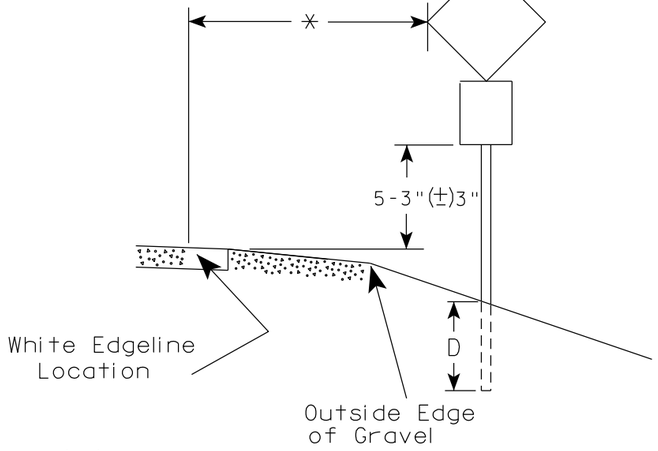
URBAN AREA



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

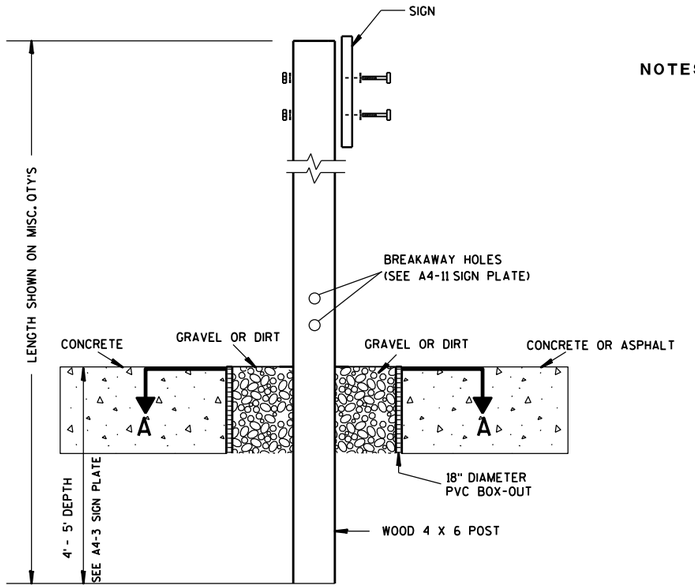
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

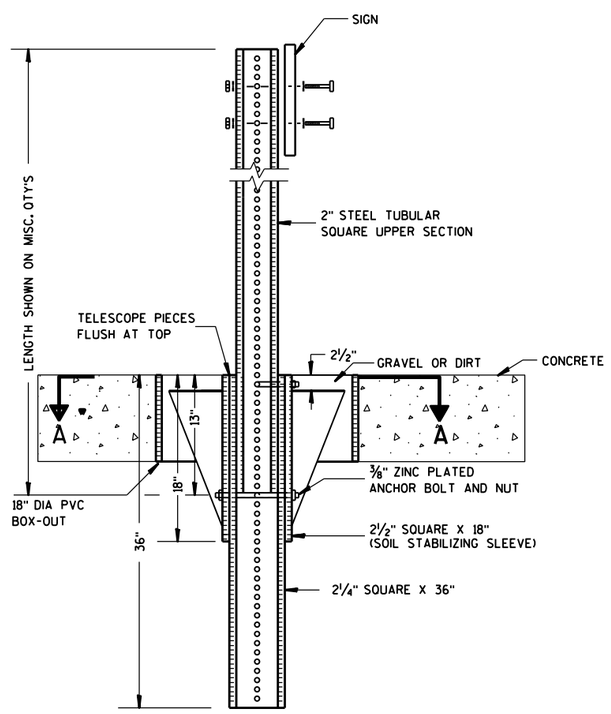
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 140	E



ELEVATION VIEW

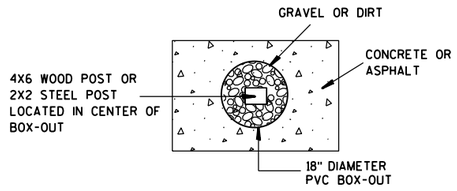
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

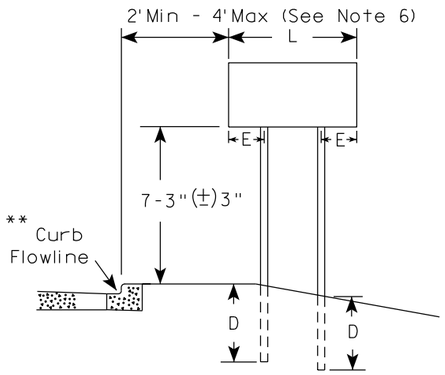
APPROVED Matthew R Rauch
for State Traffic Engineer

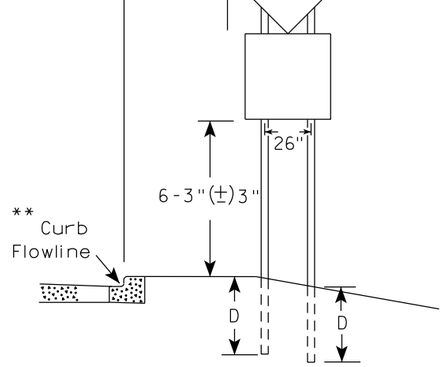
DATE 1/27/14 PLATE NO. A4-3B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

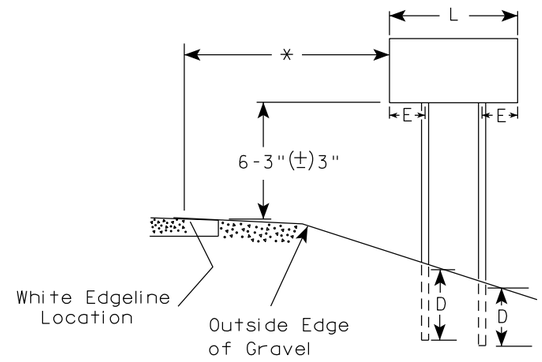
URBAN AREA

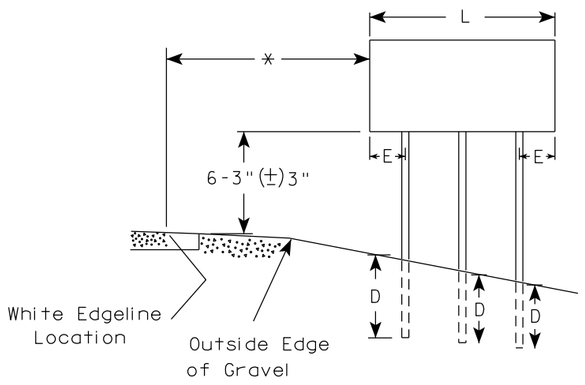


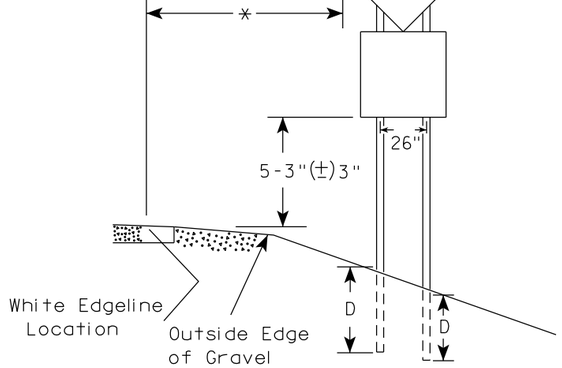


48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN

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

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

GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±) 3".

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

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

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

POST EMBEDMENT DEPTH

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

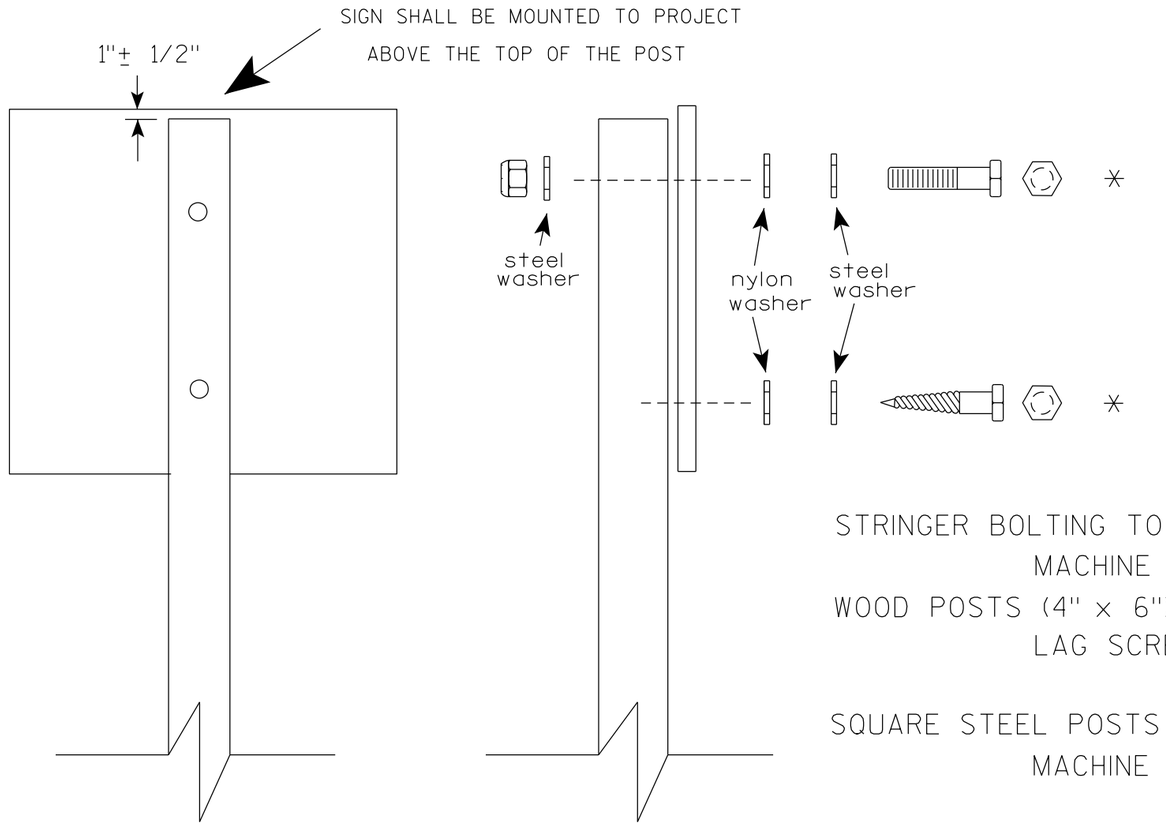
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 142	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 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

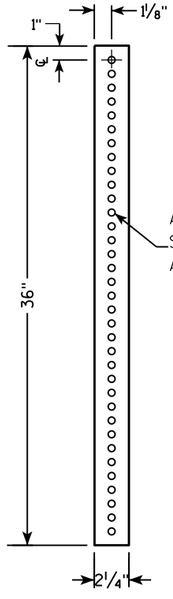
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

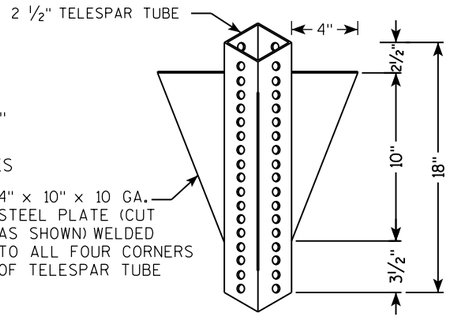
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

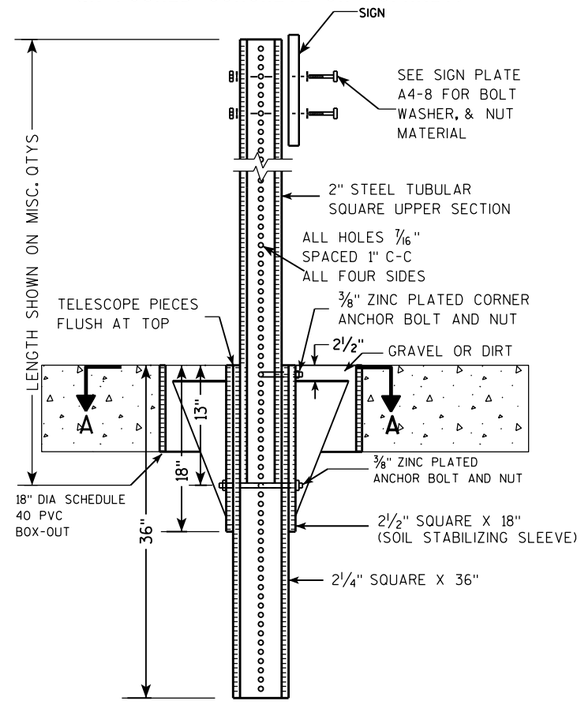
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



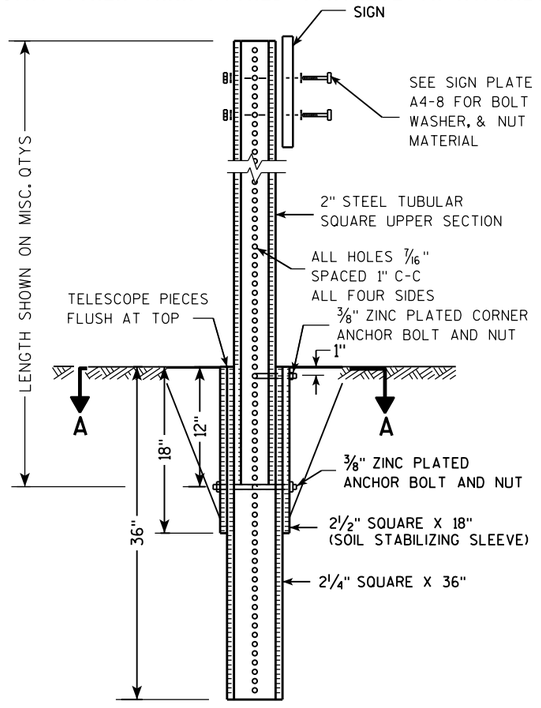
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

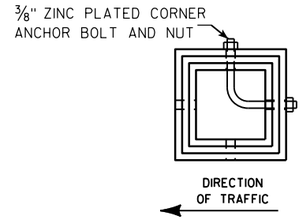


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

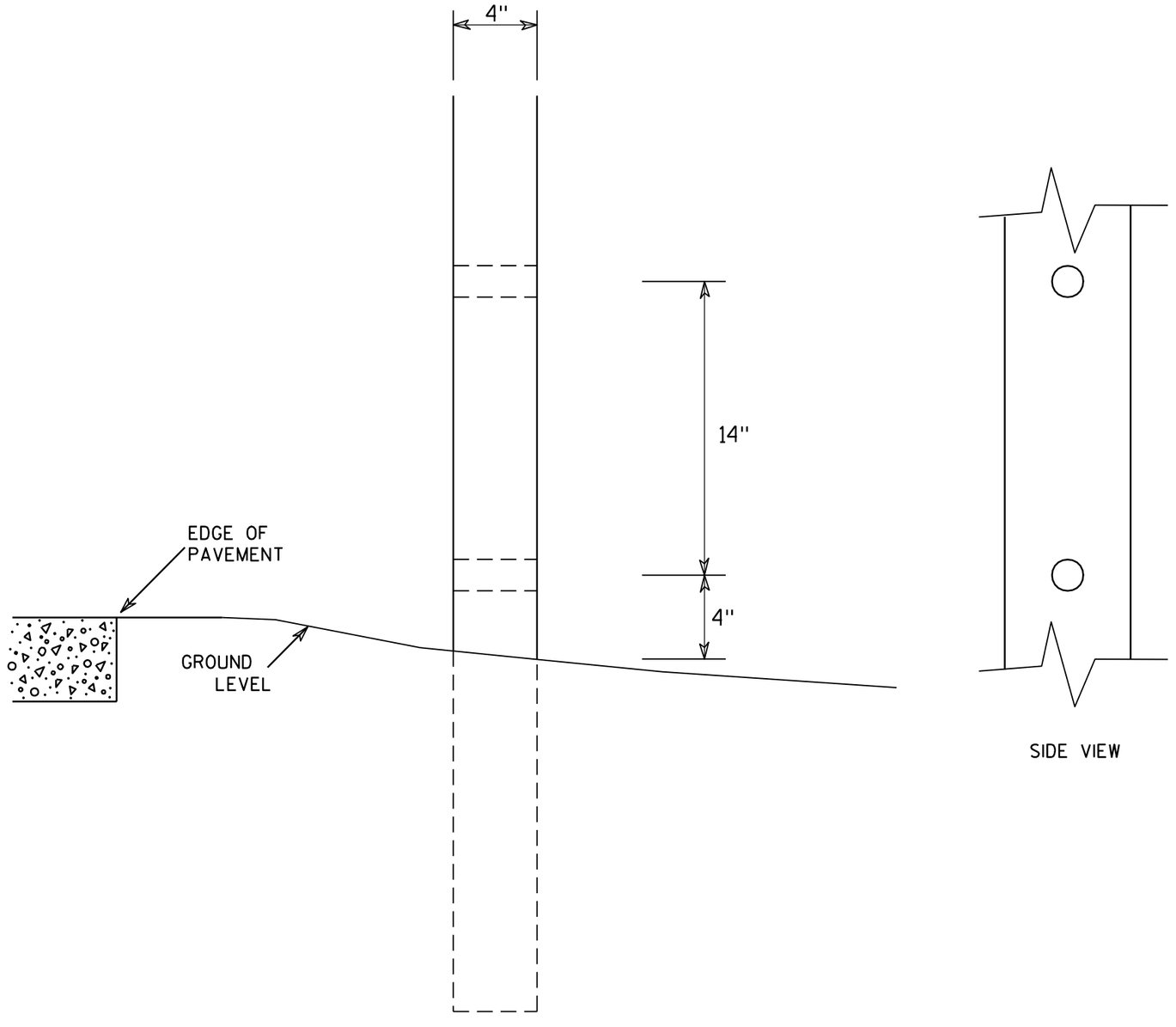
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000
WISDOT/CADDS SHEET 42



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

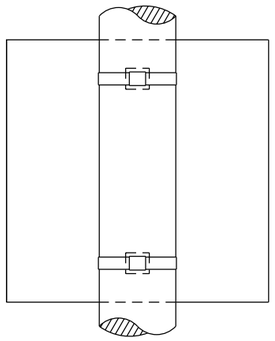
APPROVED Chester J Spang for State Traffic Engineer

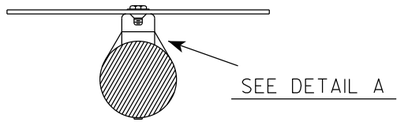
DATE 3/27/97 PLATE NO. A4-11.2

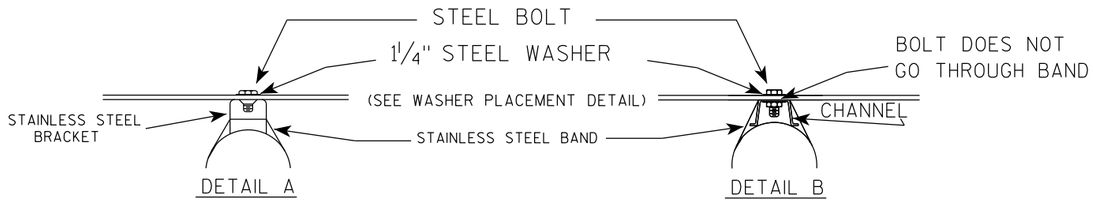
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 145	E

BANDING

SINGLE SIGN



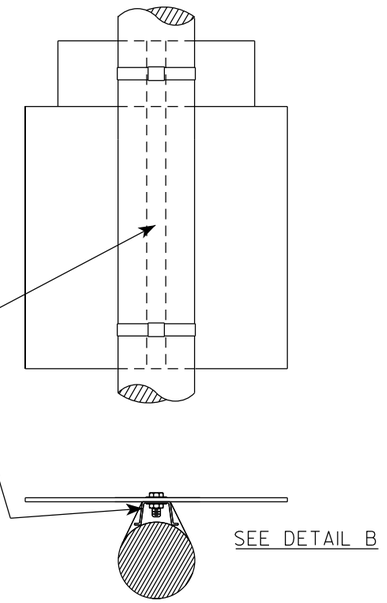




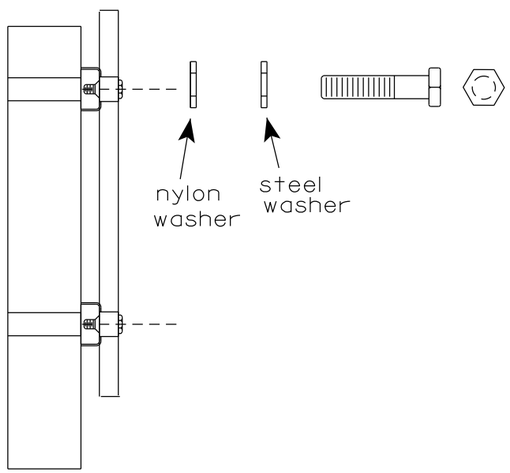
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X ⅜" I.D. X 1/16" STEEL
1-1/4" O.D. X ⅜" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

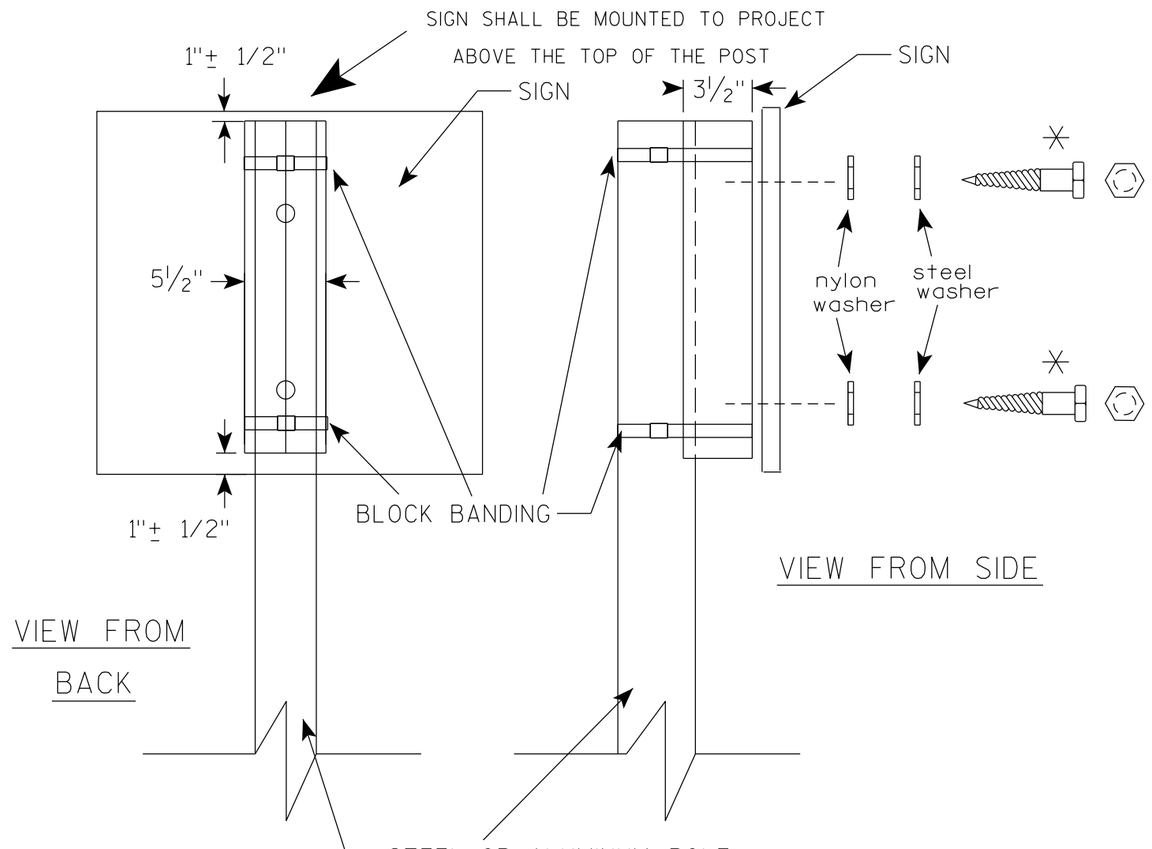
DATE 6/10/19 PLATE NO. A5-9.4

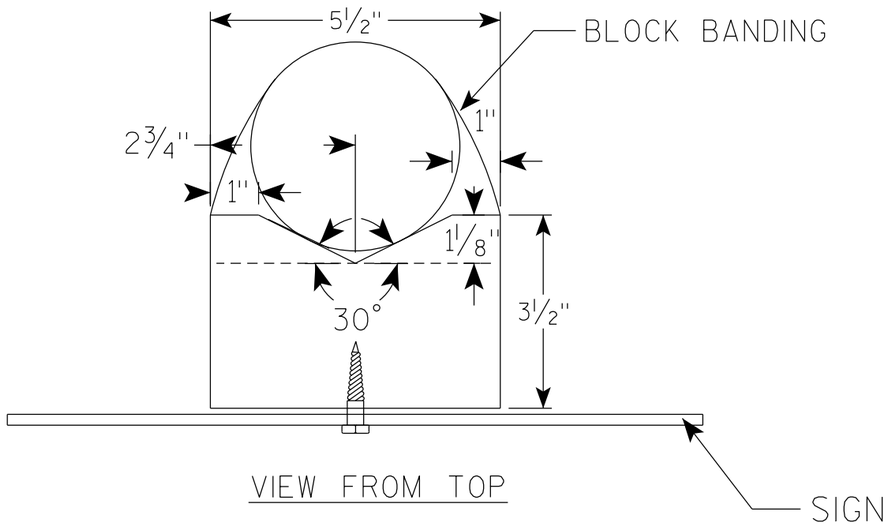
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 146	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7

7





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

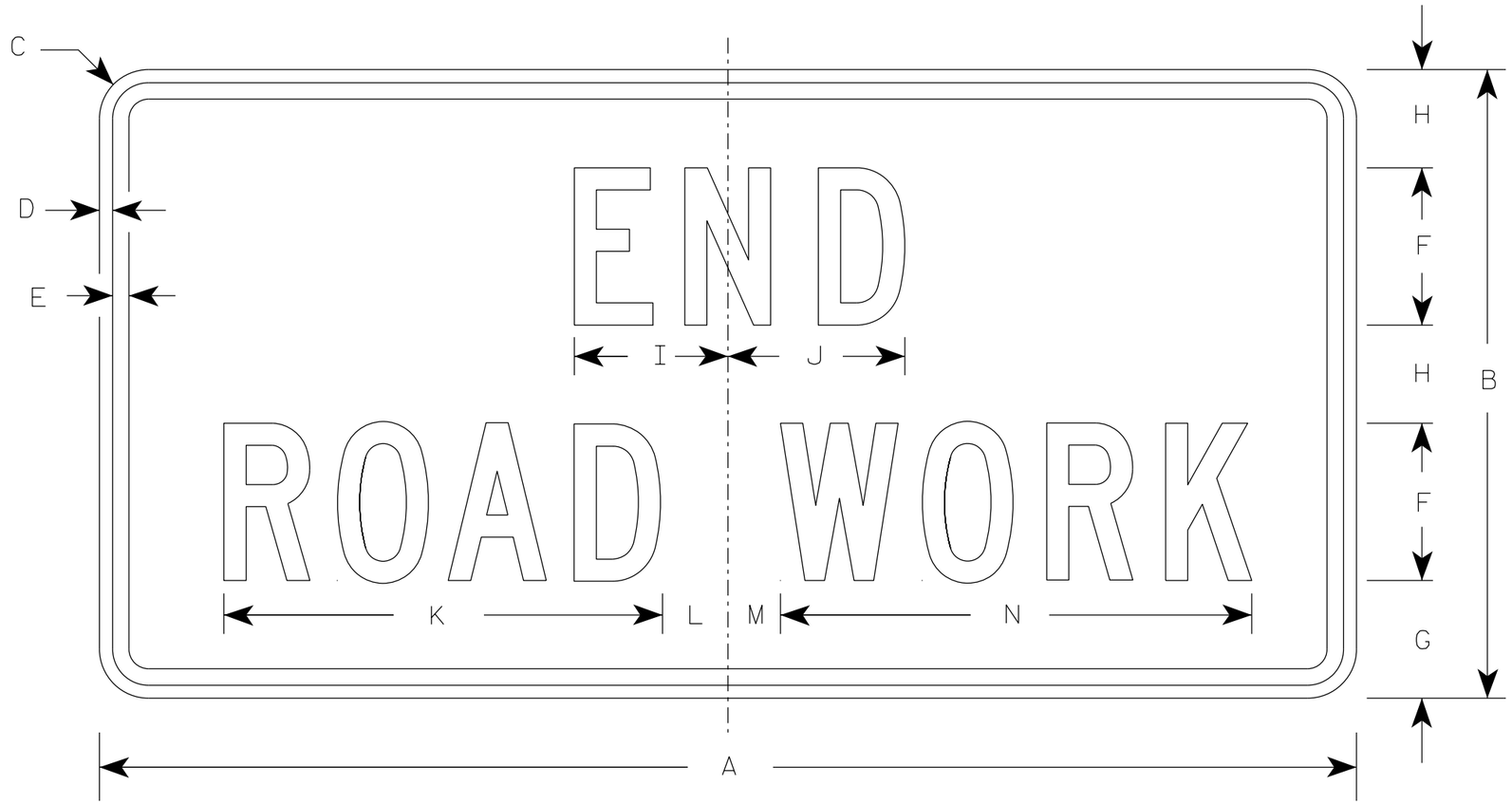
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 147 E



G20-2A

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/2	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5
2	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
2M	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
3	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
4	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
5	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0

STANDARD SIGN

G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

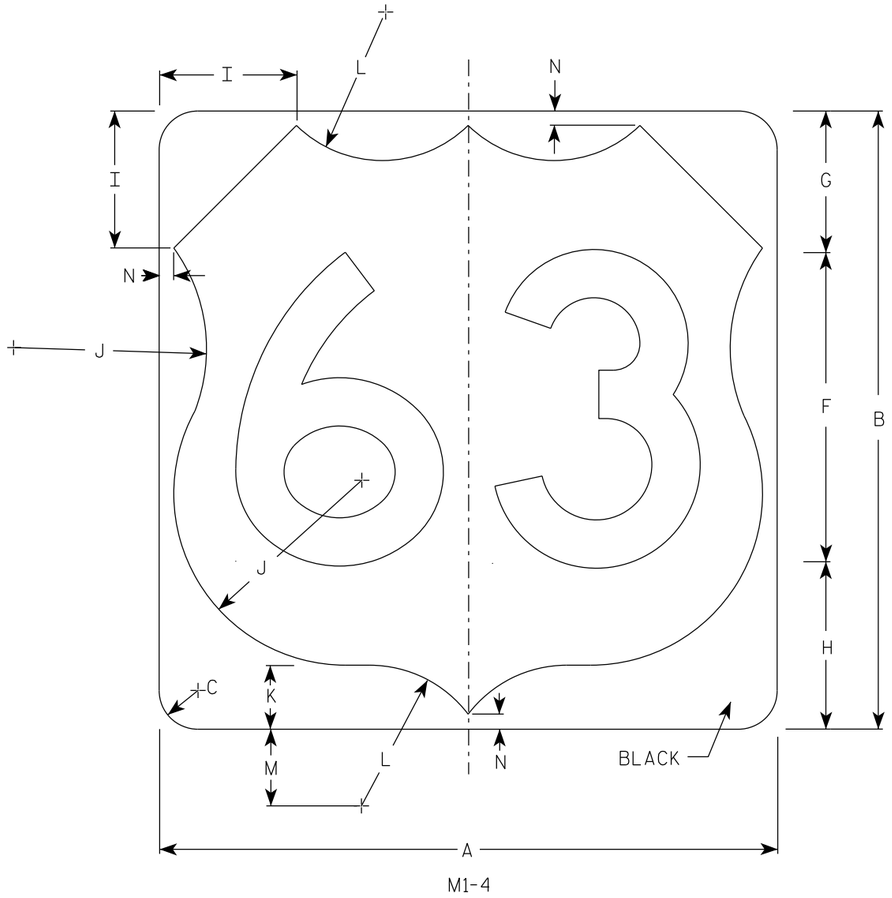
DATE 1/26/2023 PLATE NO. G20-2A.10

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

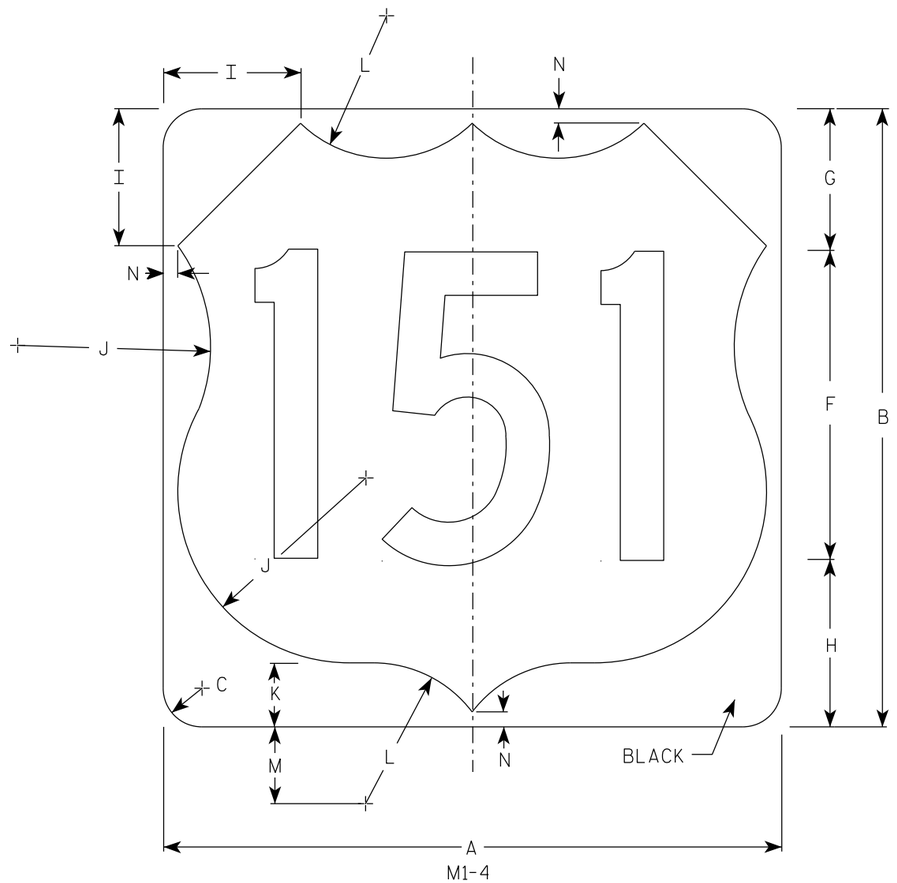
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\G202A.dgn PLOT DATE : 26-JAN 2023 8:27 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

NOTES

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



M1-4



M1-4

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
2M	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

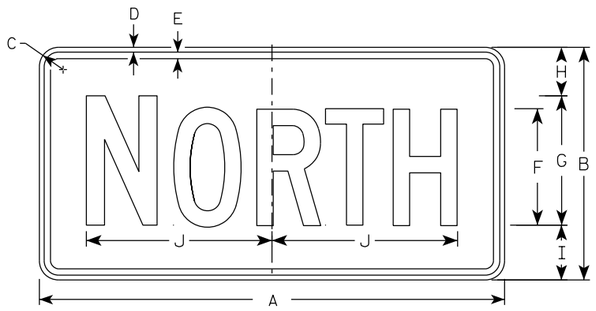
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

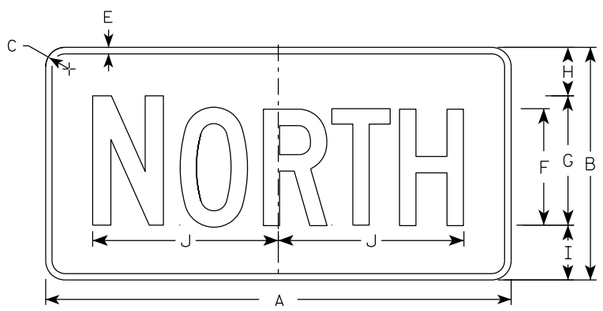
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/20/22 PLATE NO. M1-4.11

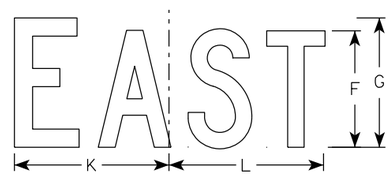
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 149 E



M3-1
MM3-1
MP3-1

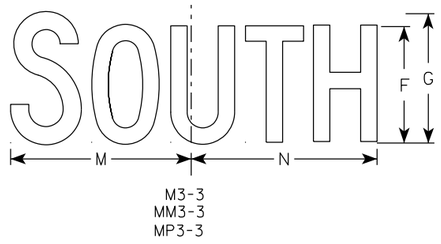


MB3-1
MK3-1
MN3-1

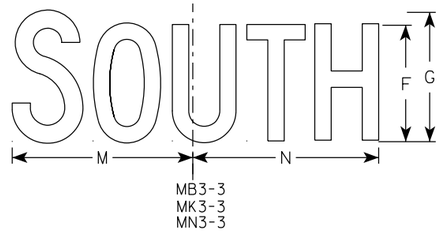


M3-2
MM3-2
MP3-2

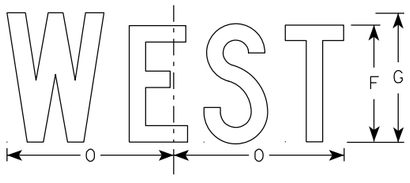
MB3-2
MK3-2
MN3-2



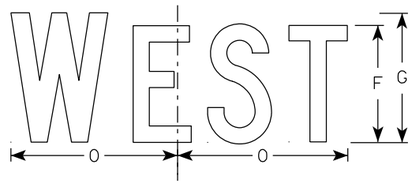
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H Reflective
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
2M	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
3	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
4	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
5	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5

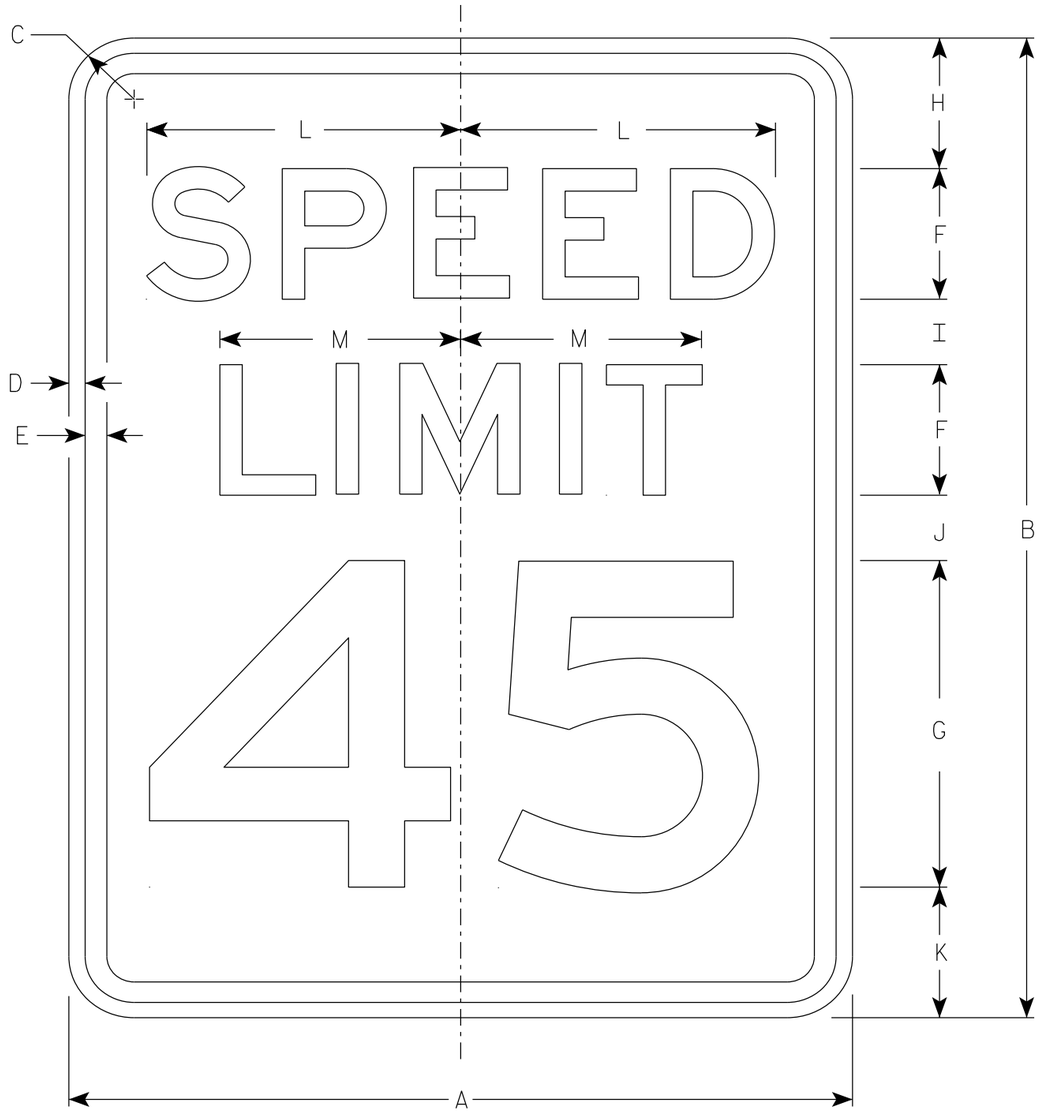
STANDARD SIGNS
M3-1 THRU M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 150 | E



R2-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. 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 1/2	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/2	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 7/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	3	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

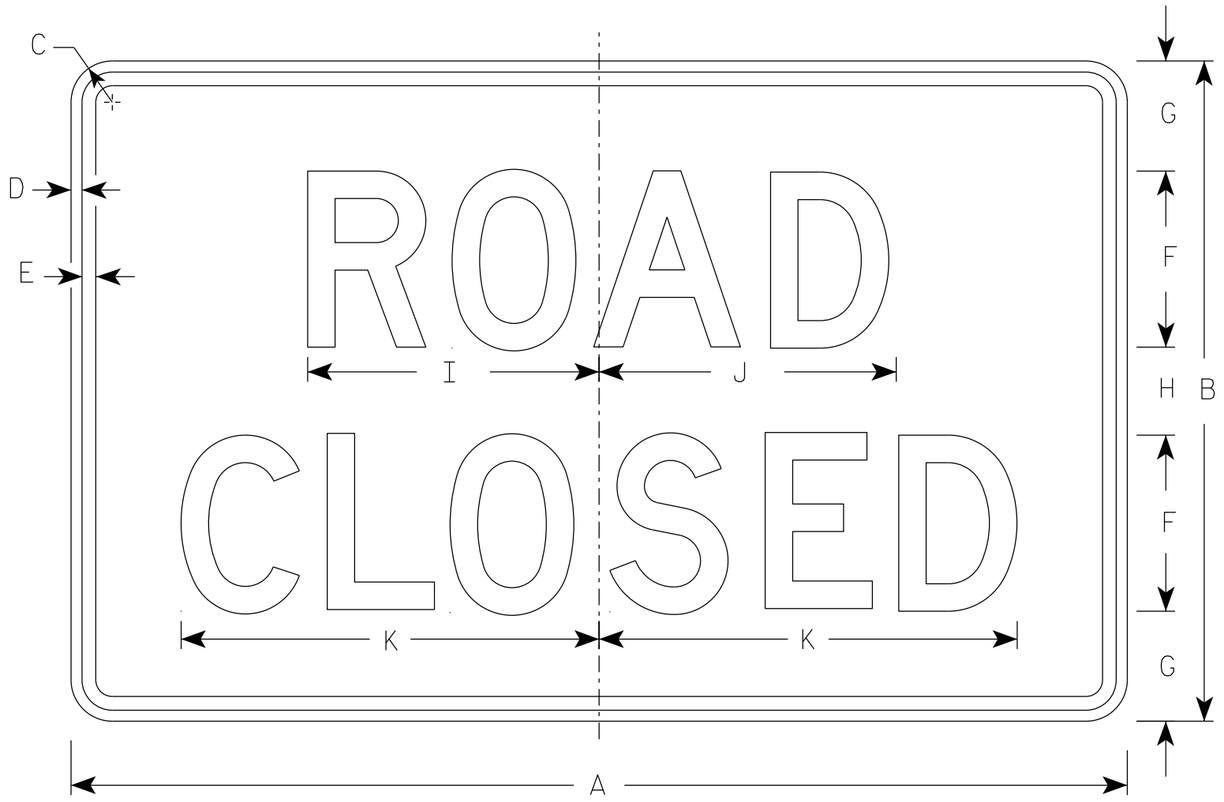
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/1/23 PLATE NO. R2-1.14

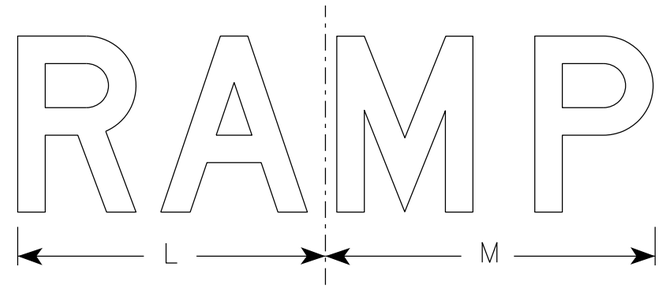
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 151 | E



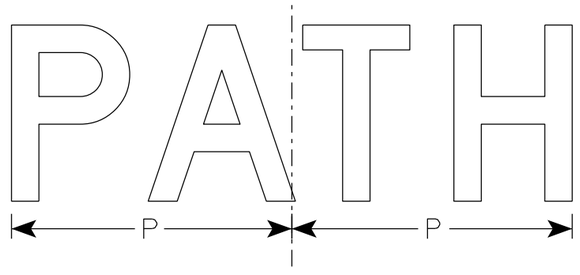
R11-2

NOTES

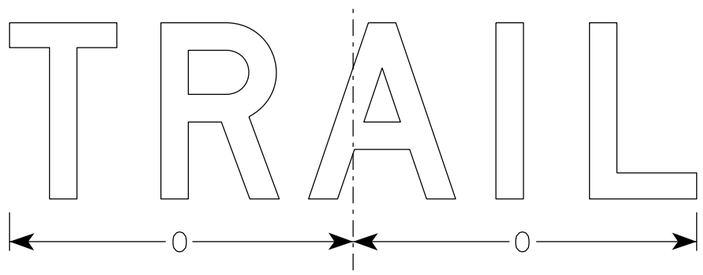
1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.



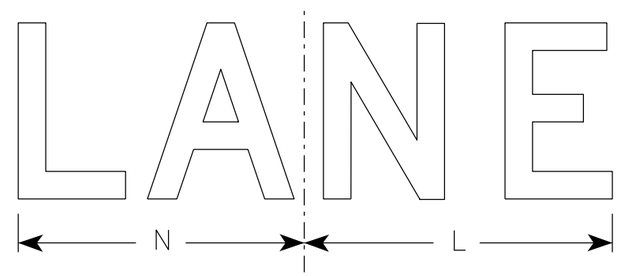
R11-2R



R11-2C



R11-2T



R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8	12 3/4											10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8	12 3/4											10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8	12 3/4											10.0
4	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8	12 3/4											10.0
5	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8	12 3/4											10.0

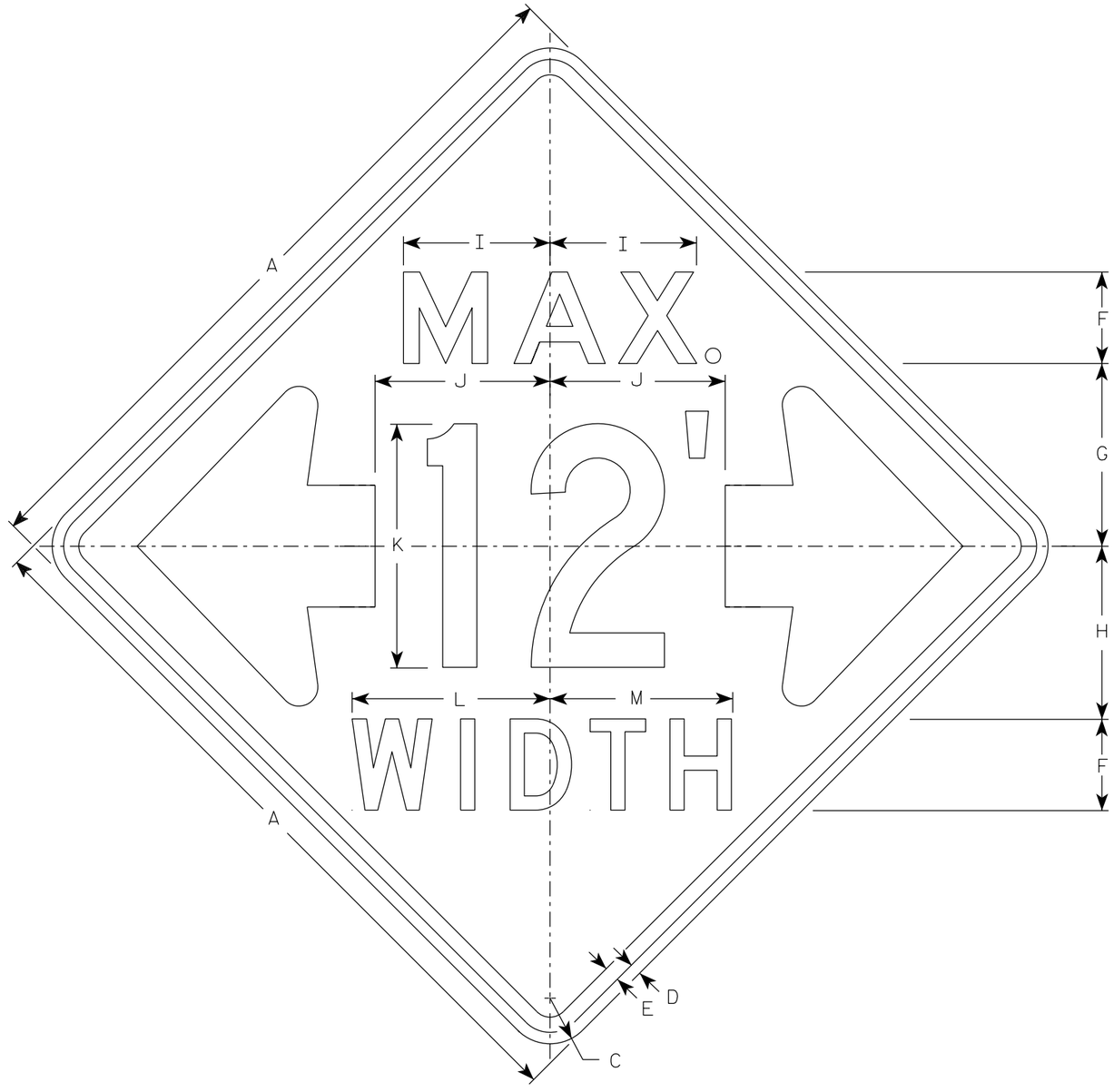
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/3/26 PLATE NO. R11-2.13

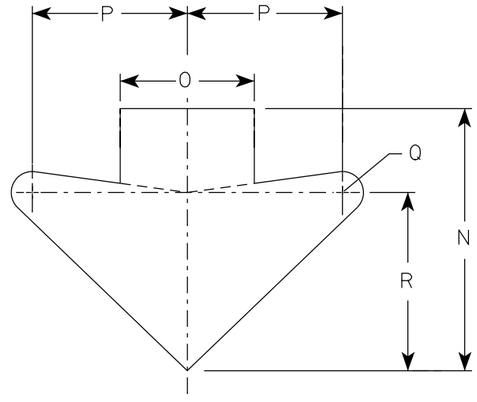
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



W12-52

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
4. The top line is series E, the numerals are series C, and the bottom line is series D.
5. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

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

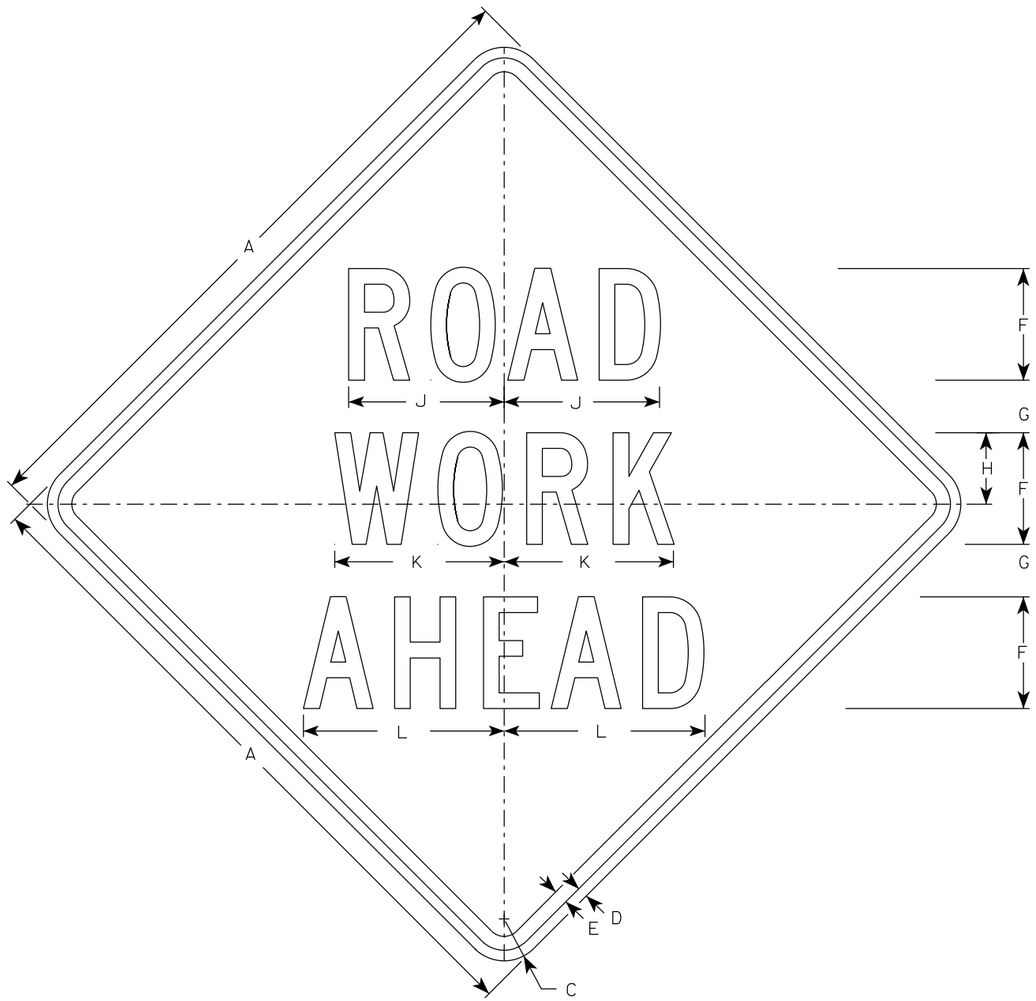
STANDARD SIGN
W12-52

WISCONSIN DEPT OF TRANSPORTATION

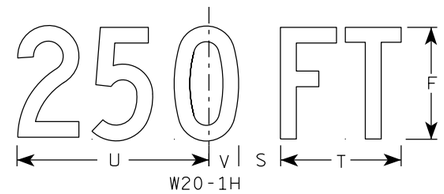
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/10/2024 PLATE NO. W12-52.8

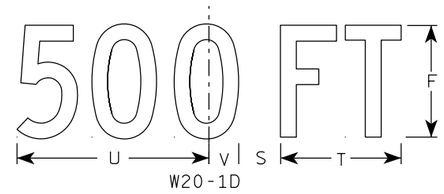
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 153 E



W20-1A



W20-1H



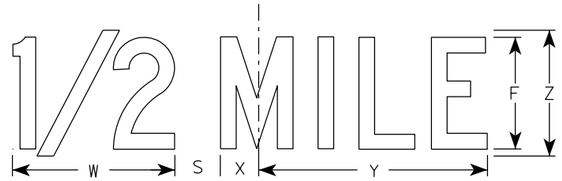
W20-1D

W20-1C

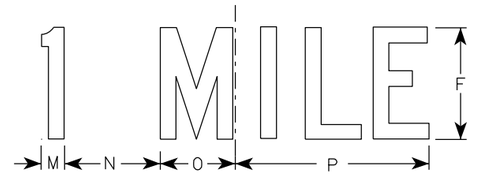
W20-1B

NOTES

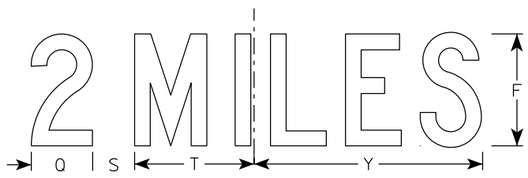
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



W20-1F



W20-1E

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

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

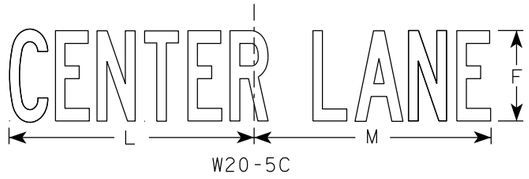
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-1.12

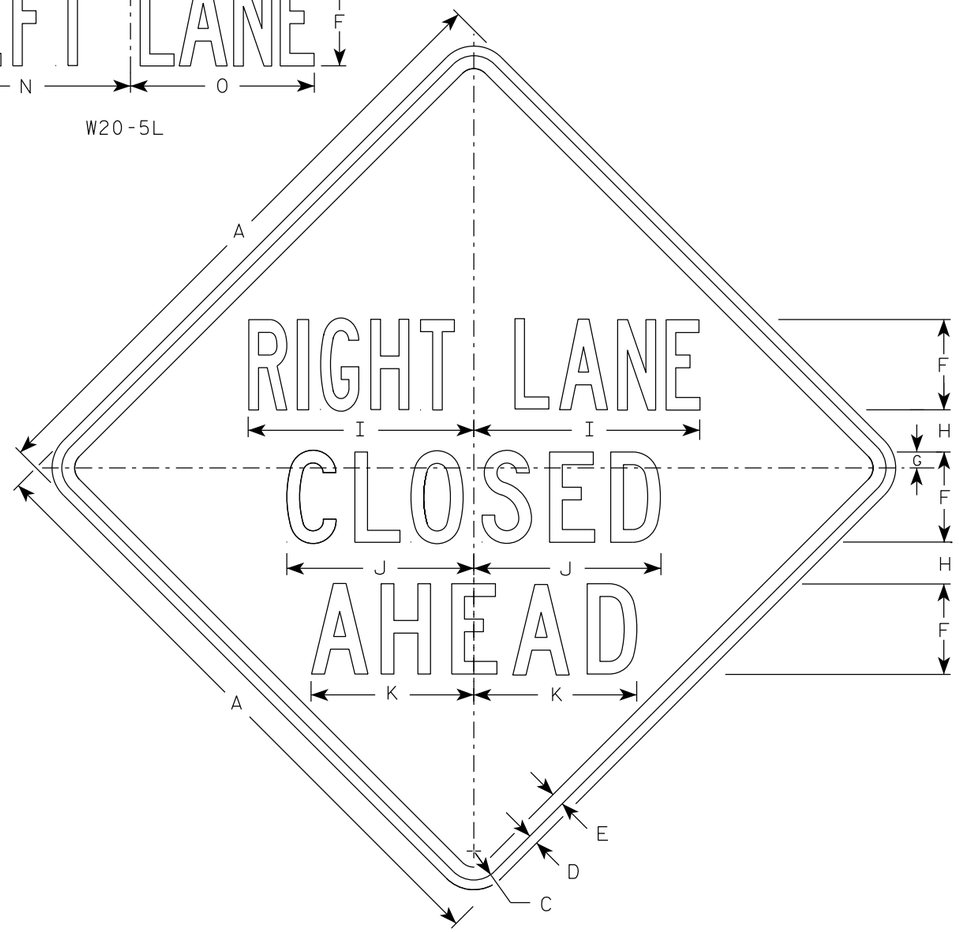
PROJECT NO:

SHEET NO: 154 E

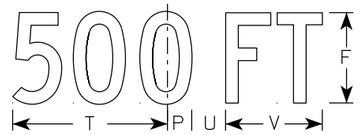


W20-5C

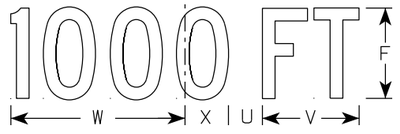
W20-5L



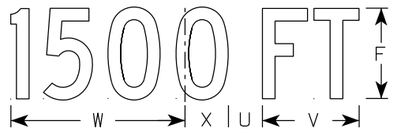
W20-5R



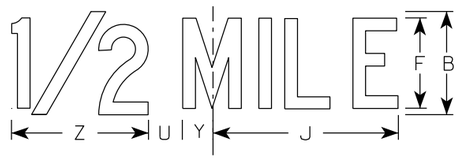
W20-5CD
W20-5LD
W20-5RD



W20-5CE
W20-5LE
W20-5RE



W20-5CB
W20-5LB
W20-5RB



W20-5CG
W20-5LG
W20-5RG

W20-5CF
W20-5LF
W20-5RF

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. " _____ LANE" is Series B.
   All other copy is Series C.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	2 1/4	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

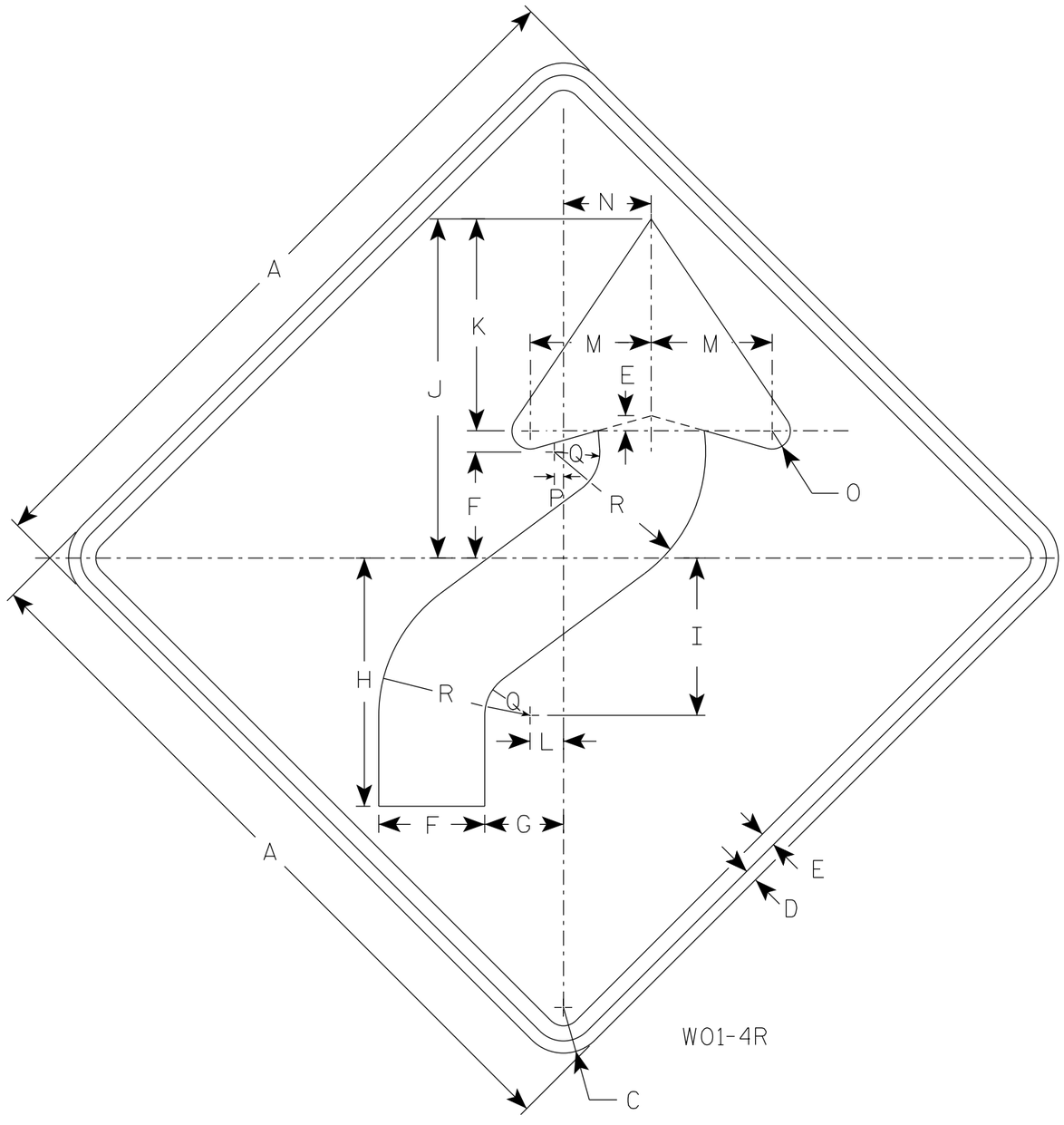
STANDARD SIGN
W20-5C,L,R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/26 PLATE NO. W20-5.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 155 E



W01-4R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

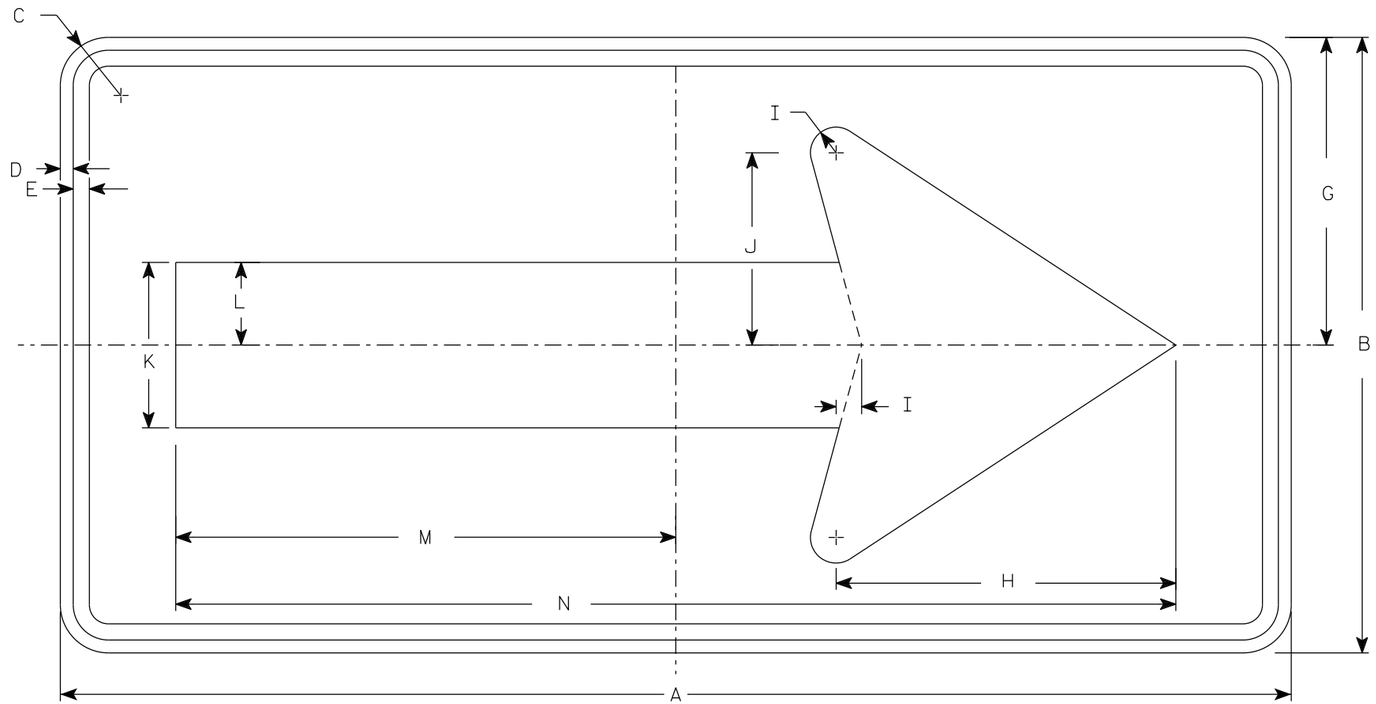
STANDARD SIGN
W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-4.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 156 | E



WO1-6

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 7/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 7/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 7/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 7/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 7/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

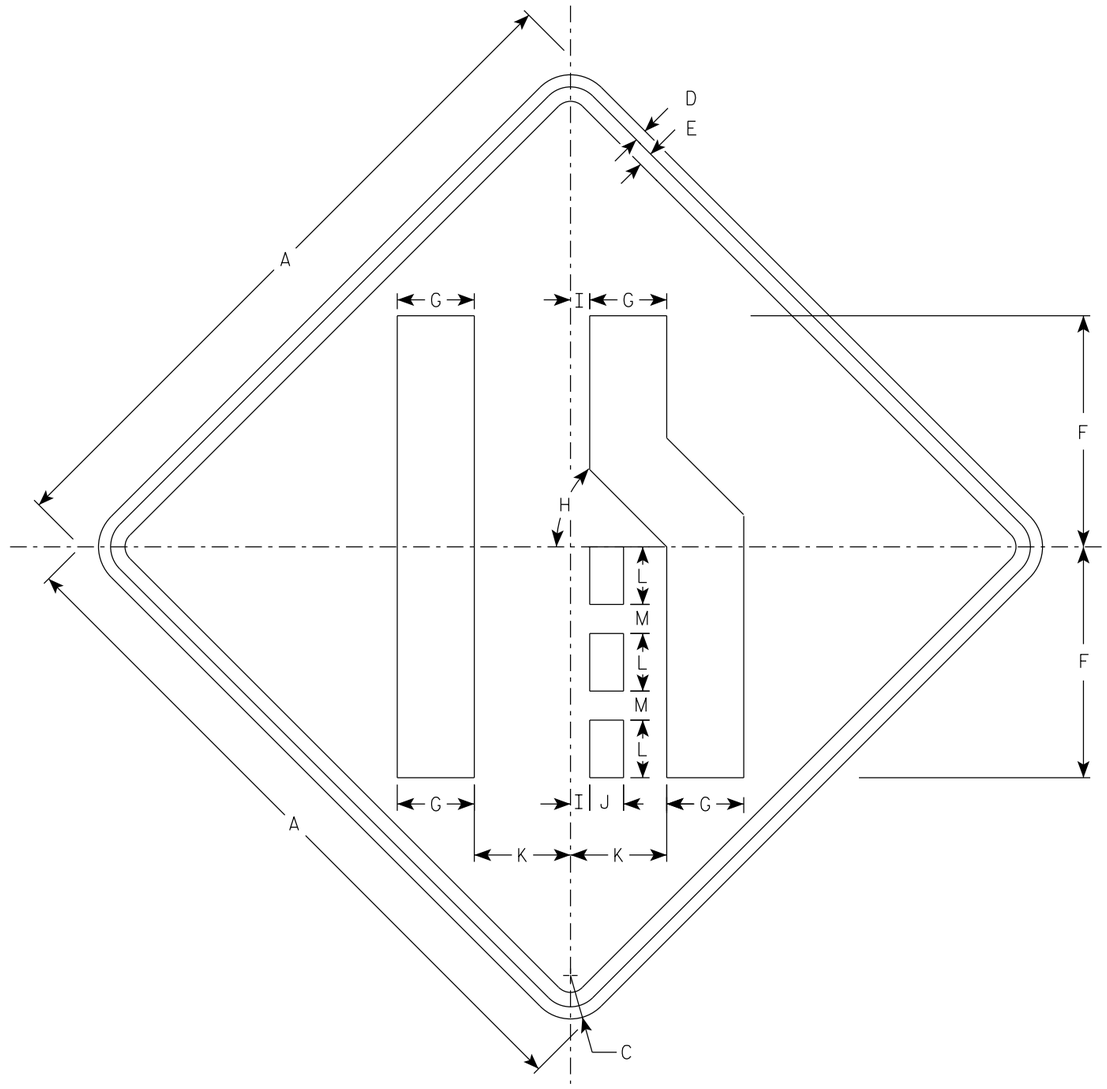
STANDARD SIGN
WO1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. WO1-6.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



W04-2R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-2L is the same as W04-2R except the symbol is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN
W04-2

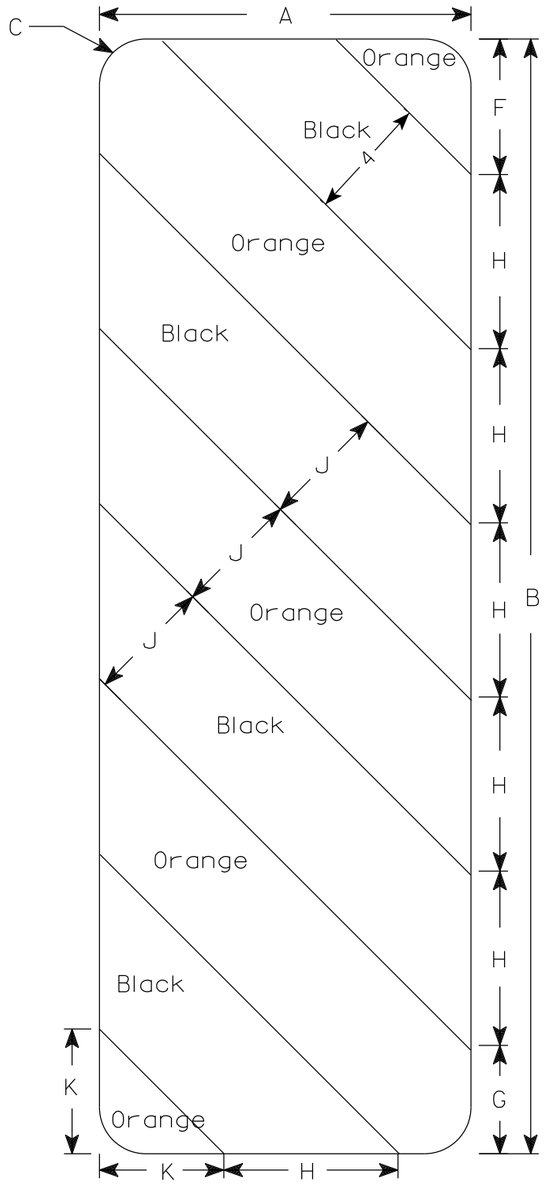
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

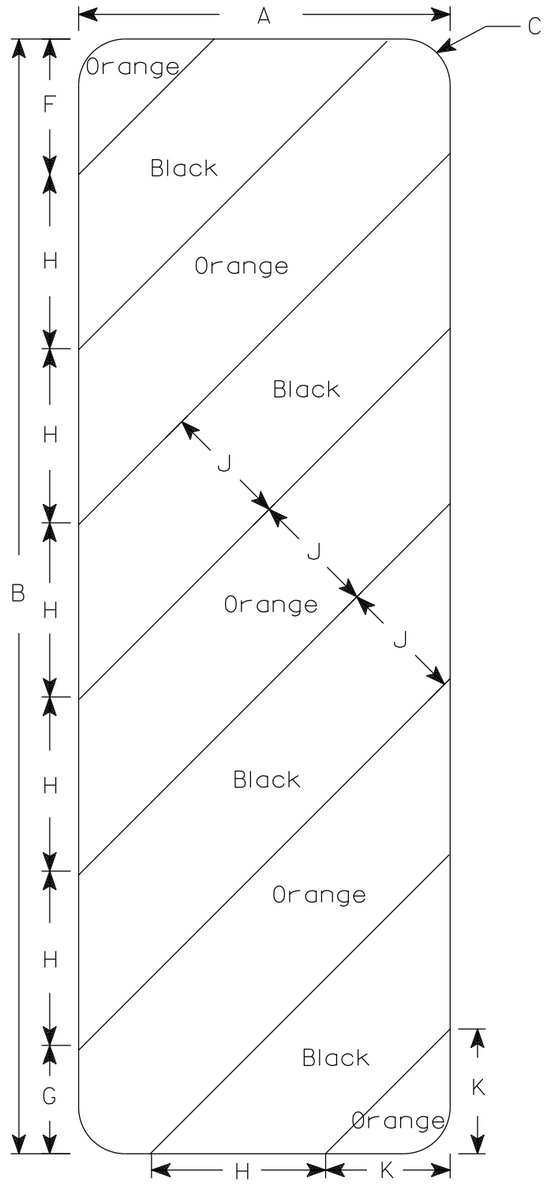
DATE 1/25/2024 PLATE NO. W04-2.2

PROJECT NO:

SHEET NO: E



W05-52L



W05-52R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
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	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54	1 1/2			6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

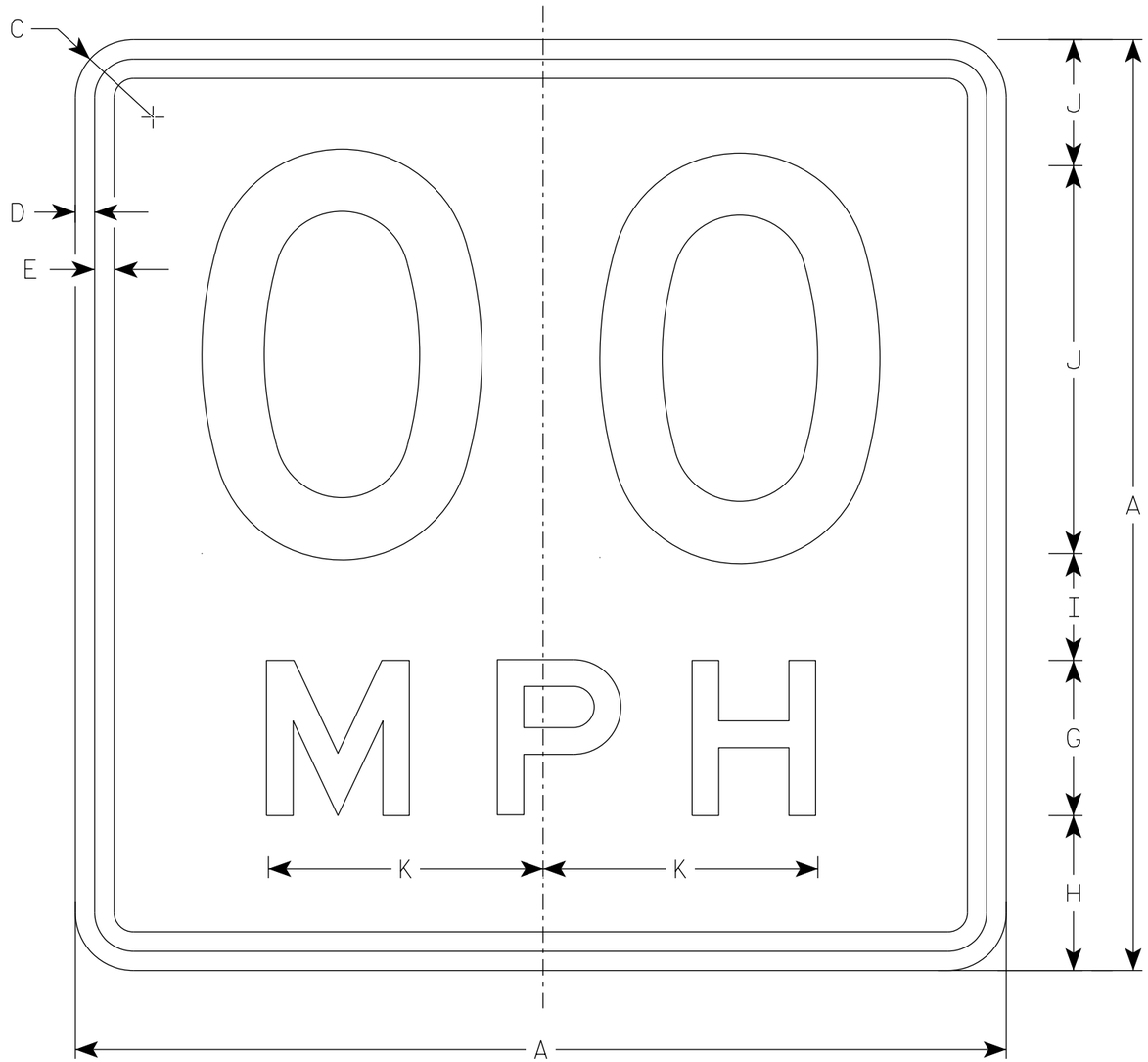
W05-52L & W05-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/2024 PLATE NO. W05-52.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 159 | E



W013-1

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

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

STANDARD SIGN

W013-1

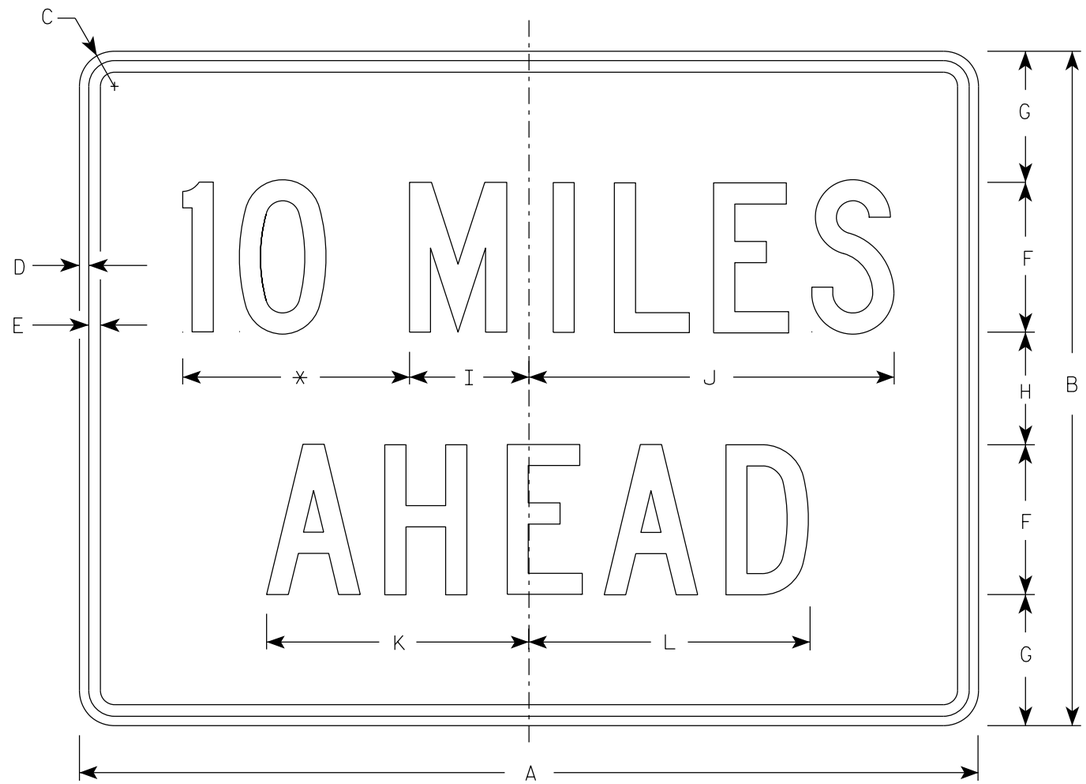
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

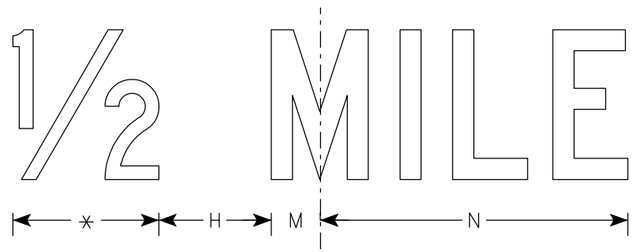
DATE 2/1/2024 PLATE NO. W013-1.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W0131.dgn PLOT DATE : 1-FEB 2024 9:56 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42



W057-52



NOTES

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

* See note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	24	1 1/2	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2S	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
2M	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
3	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
4	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

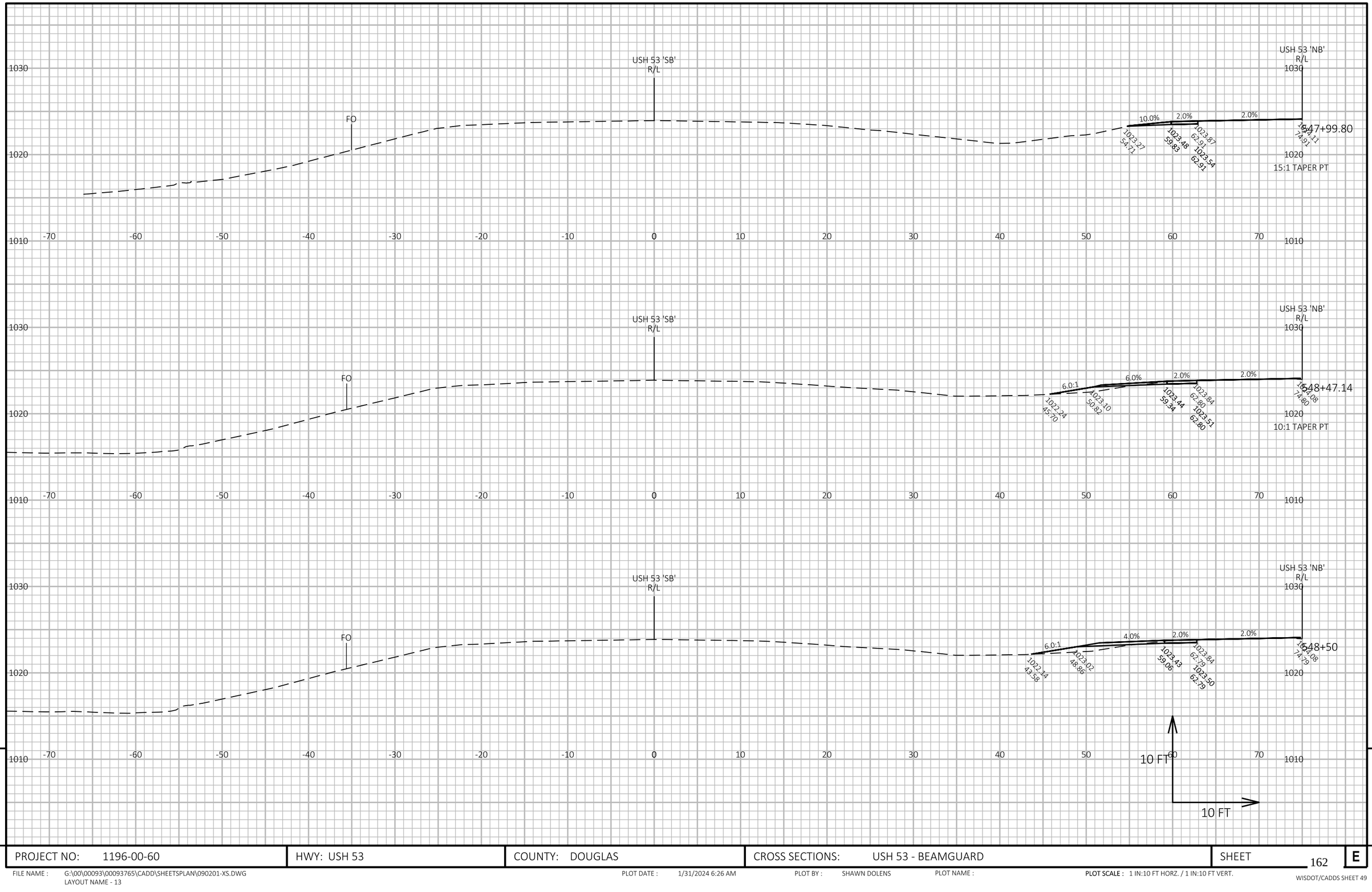
STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/1/2024 PLATE NO. W057-52.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 161 E



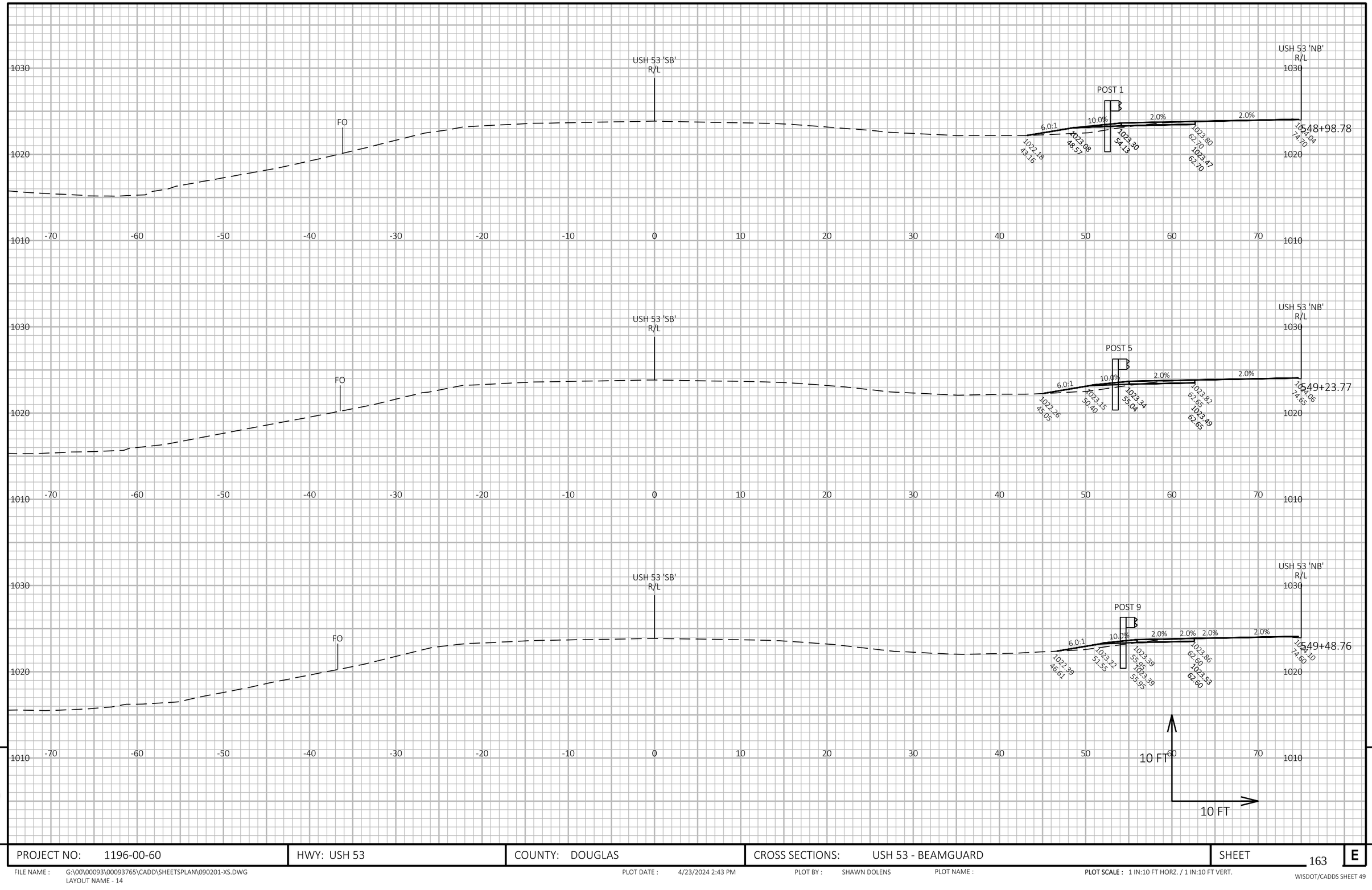
9

9

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CROSS SECTIONS: USH 53 - BEAMGUARD	SHEET 162	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 13

PLOT DATE : 1/31/2024 6:26 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



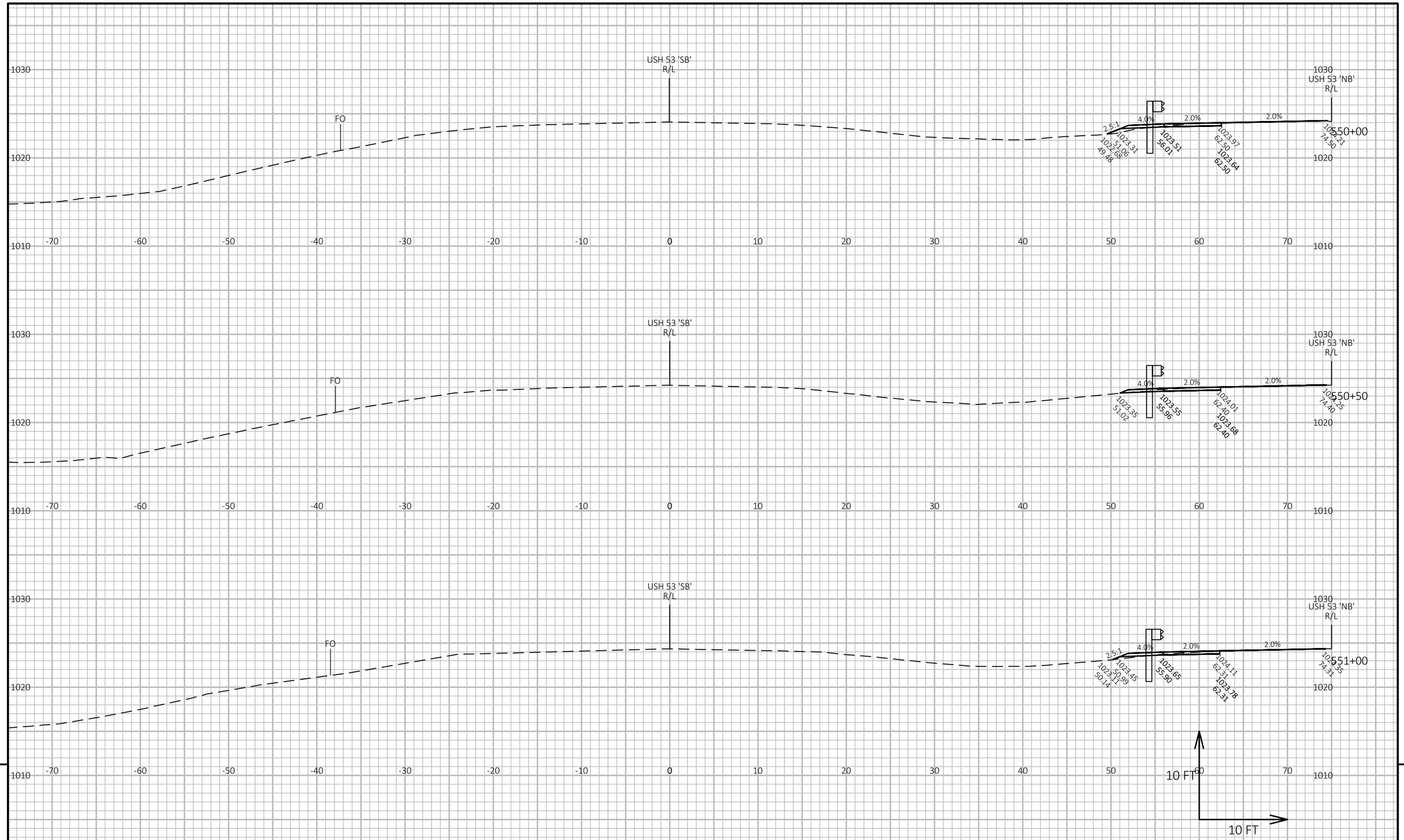
9

9

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CROSS SECTIONS: USH 53 - BEAMGUARD	SHEET 163	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 14

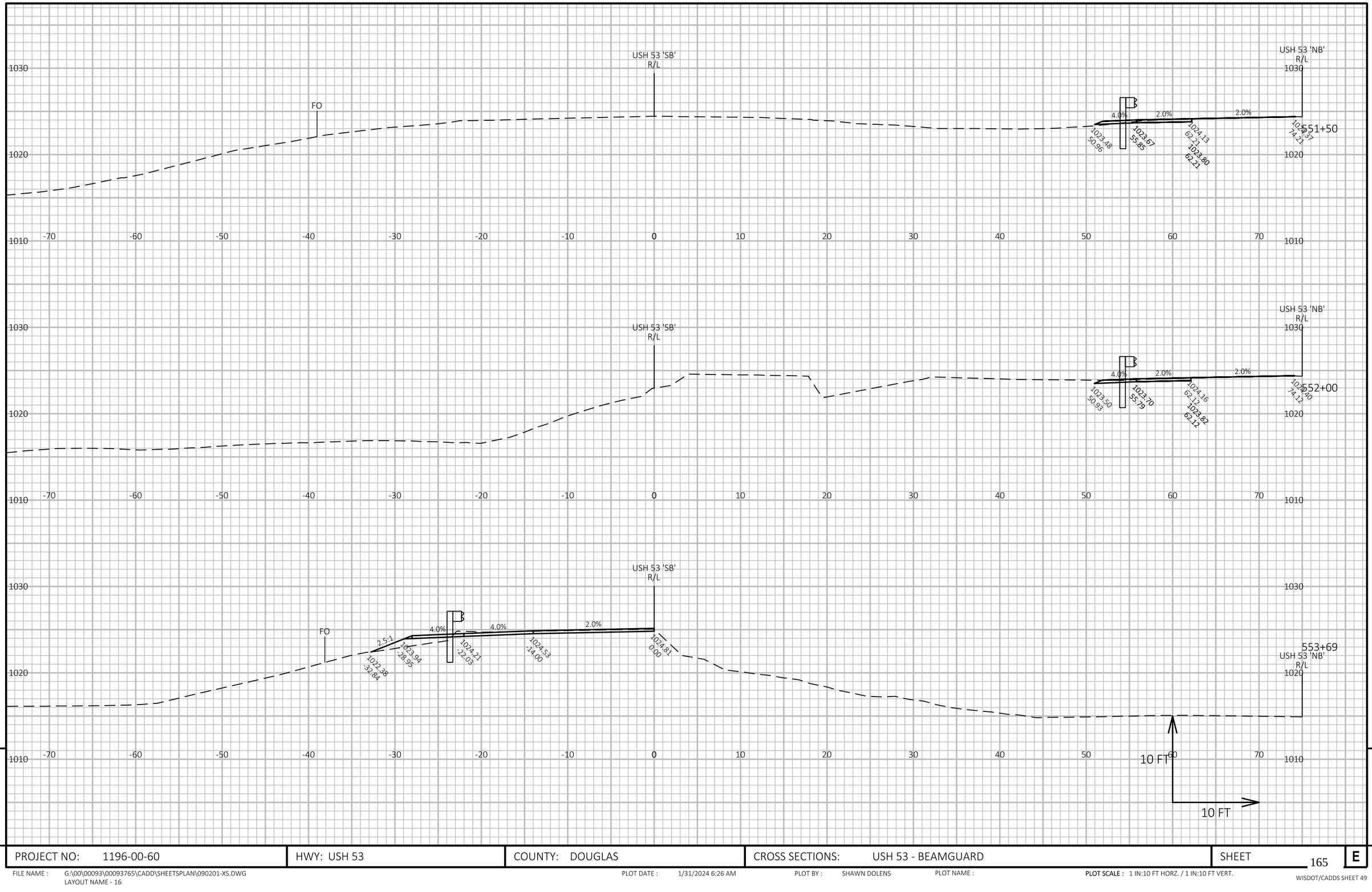
PLOT DATE : 4/23/2024 2:43 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CROSS SECTIONS: USH 53 - BEAMGUARD	SHEET 164	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 15

PLOT DATE : 1/31/2024 6:26 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



9

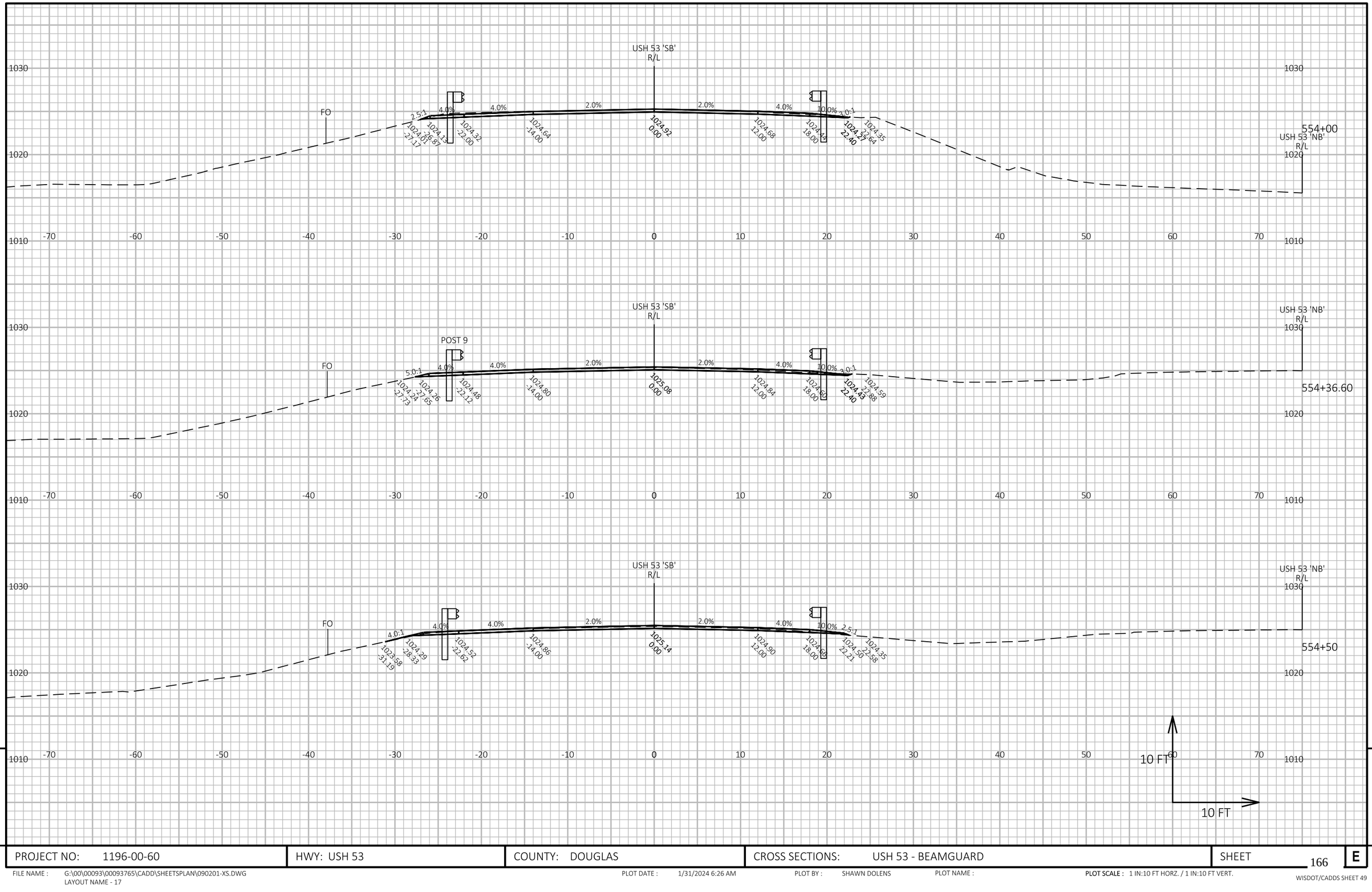
9

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CROSS SECTIONS: USH 53 - BEAMGUARD	SHEET 165	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 16

PLOT DATE : 1/31/2024 6:26 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



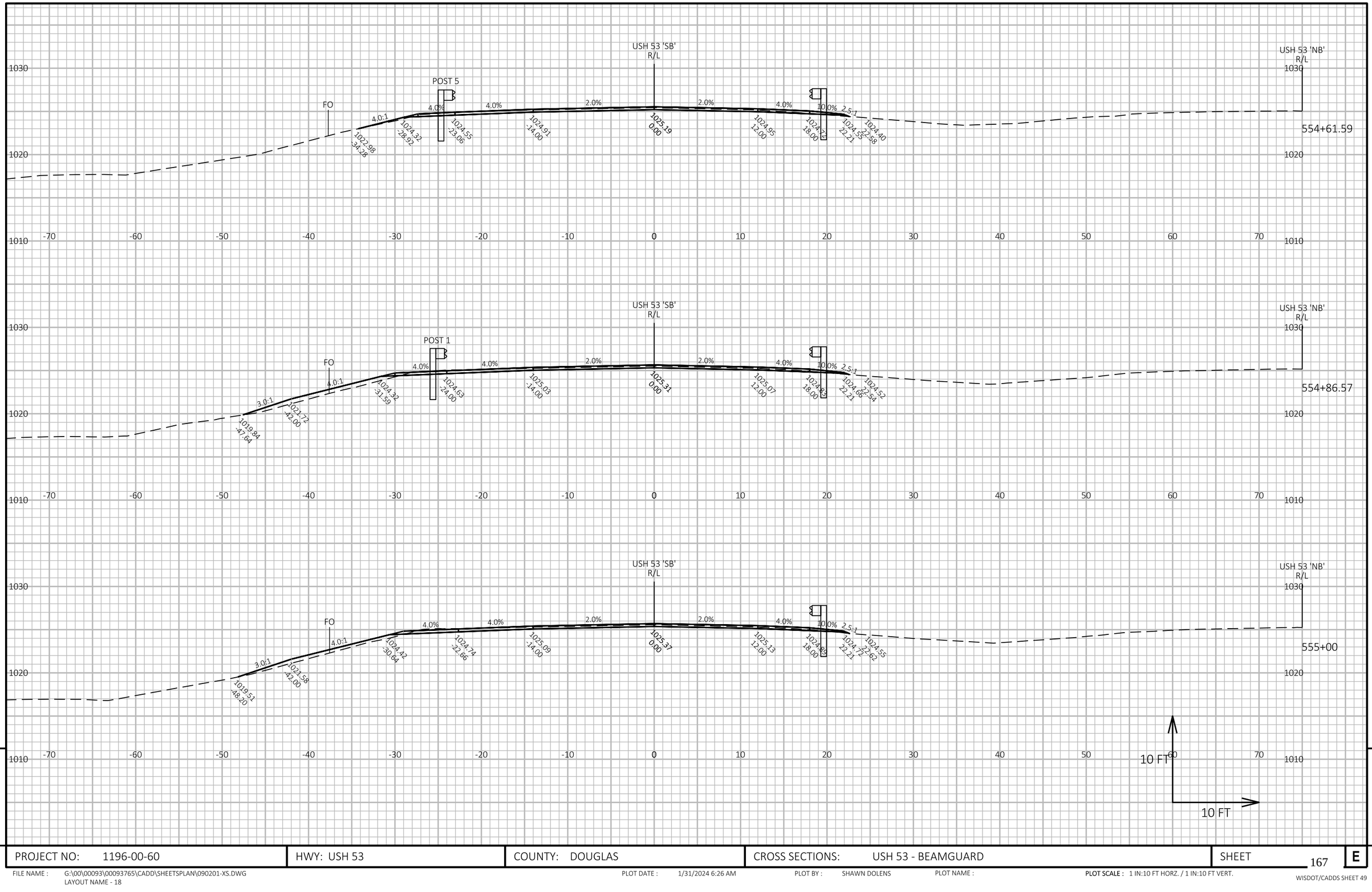
9

9

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CROSS SECTIONS: USH 53 - BEAMGUARD	SHEET 166	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 17

PLOT DATE : 1/31/2024 6:26 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



9

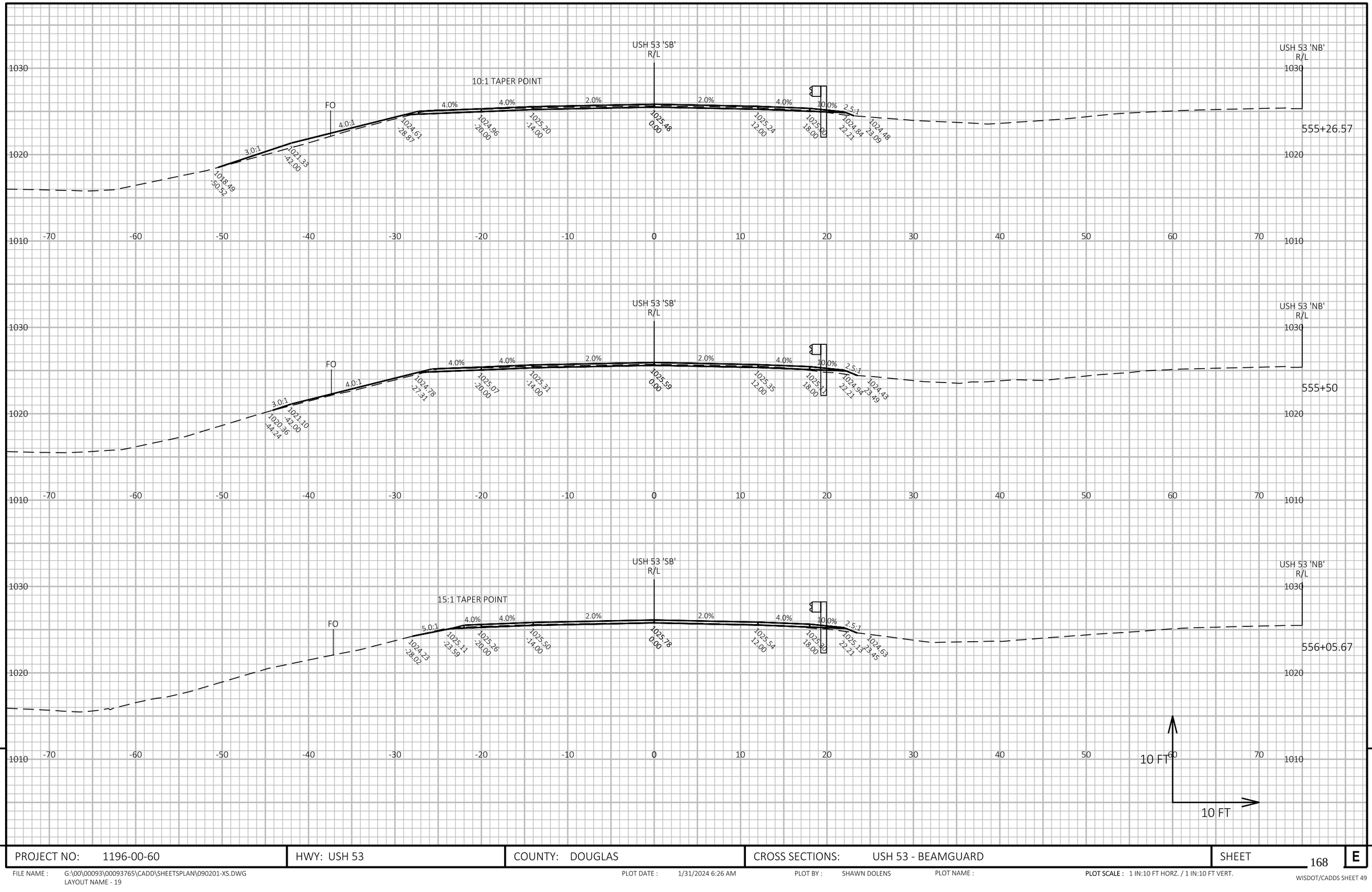
9

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CROSS SECTIONS: USH 53 - BEAMGUARD	SHEET 167	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 18

PLOT DATE : 1/31/2024 6:26 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

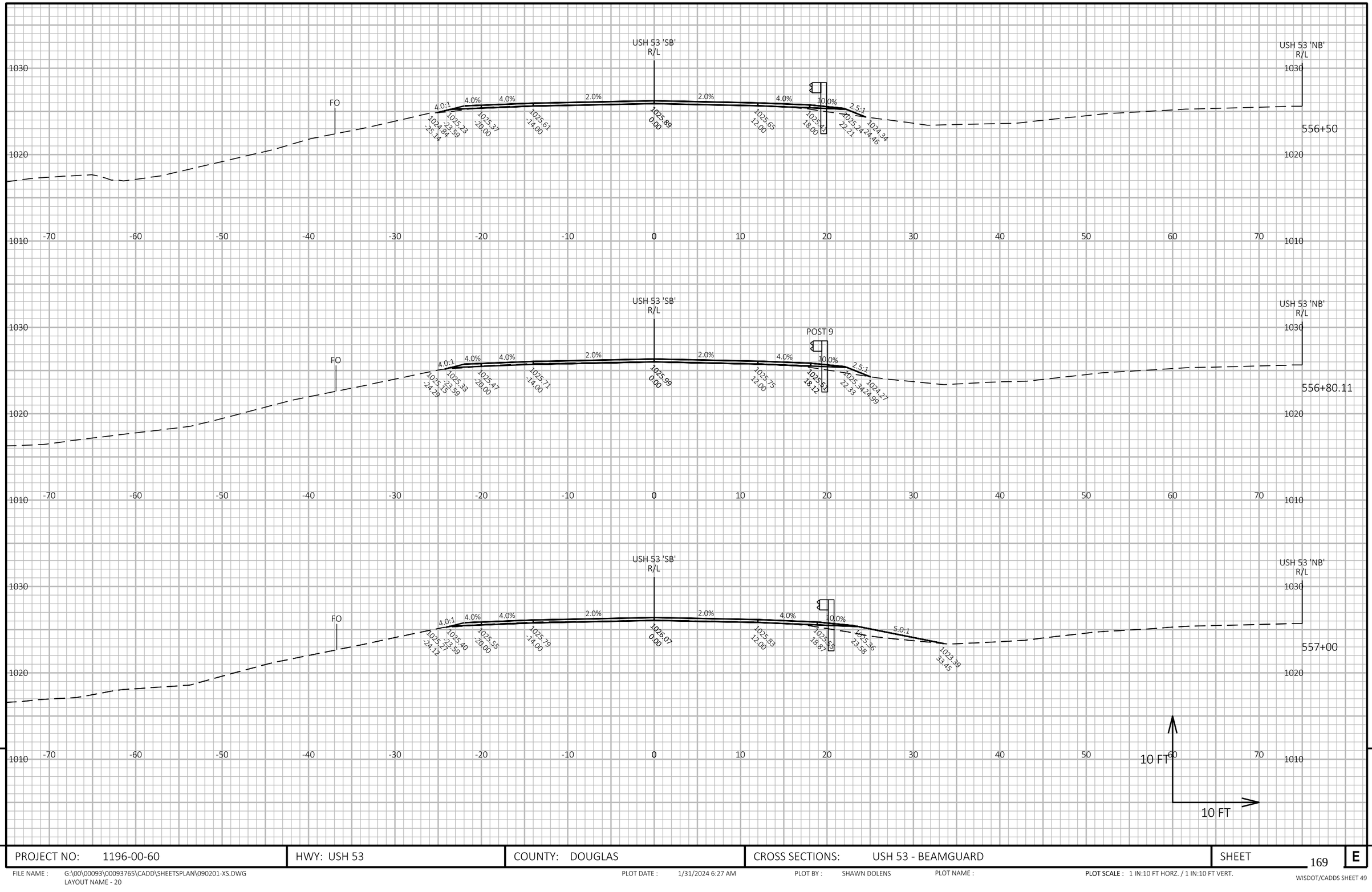
WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CROSS SECTIONS: USH 53 - BEAMGUARD	SHEET 168	E



9

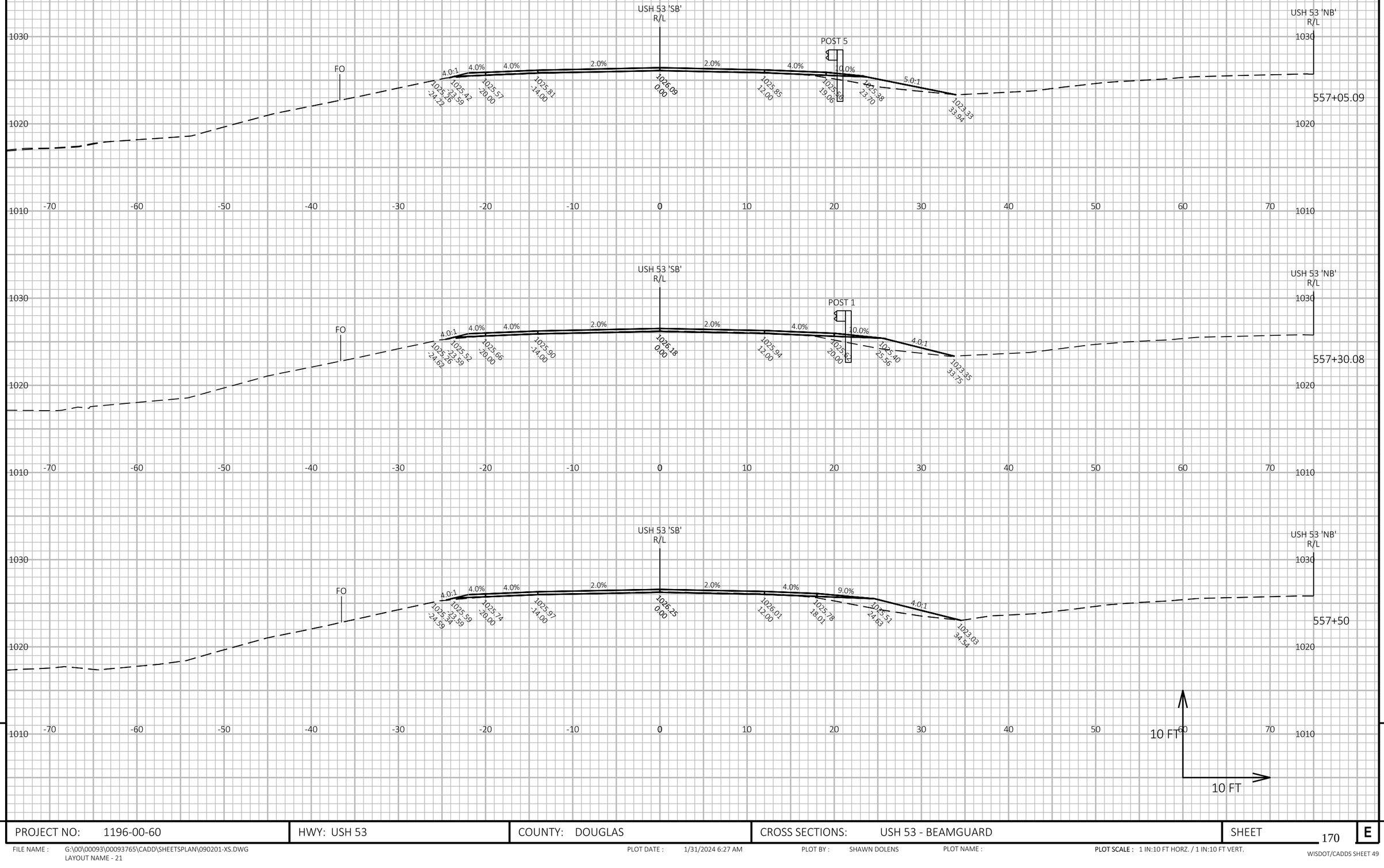
9

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CROSS SECTIONS: USH 53 - BEAMGUARD	SHEET 169	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 20

PLOT DATE : 1/31/2024 6:27 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

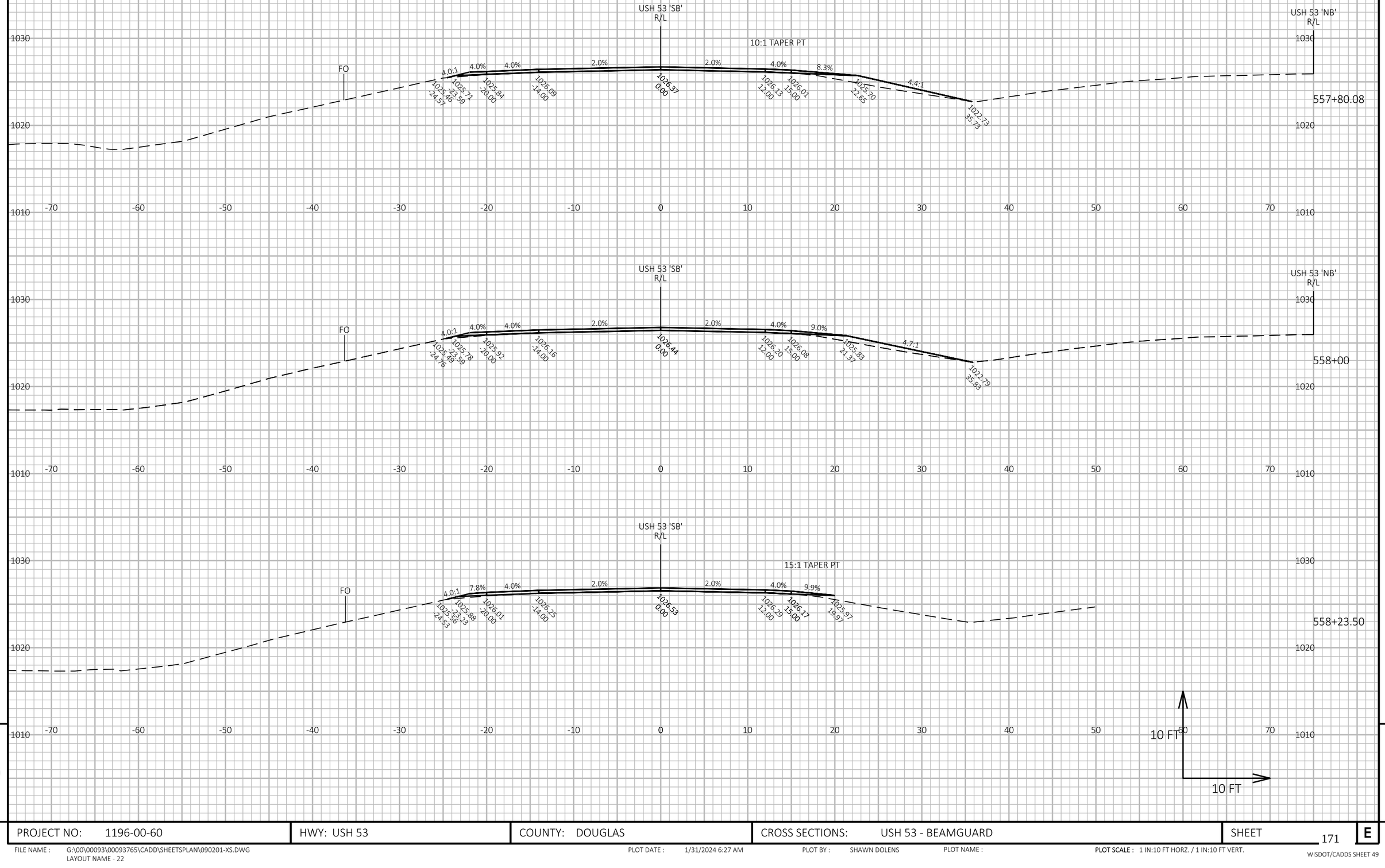
9

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CROSS SECTIONS: USH 53 - BEAMGUARD	SHEET 170	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 21

PLOT DATE : 1/31/2024 6:27 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1196-00-60	HWY: USH 53	COUNTY: DOUGLAS	CROSS SECTIONS: USH 53 - BEAMGUARD	SHEET 171	E

FILE NAME : G:\00\00093\00093765\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 22

PLOT DATE : 1/31/2024 6:27 AM

PLOT BY : SHAWN DOLENS

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov