EAU

NOVEMBER 2021

PROJECT ID: 7070-06-61

WITH: N/A

COUNTY: CHIPPEWA

ORDER OF SHEETS

TOTAL SHEETS = 90

30

N

DESIGN DESIGNATION

A.A.D.T.	(2022)	= 3600
A.A.D.T.	(2042)	= 4200
D.H.V.	(2042)	= 285
D.D.		= 60/40
T.		= 25.3%
DESIGN SPEED		= 60 MPH
ESALS		= 1,800,000

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (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

CADOTT - CORNELL

BIG DRYWOOD CREEK BRIDGE B-09-0127

STH 27

CHIPPEWA COUNTY

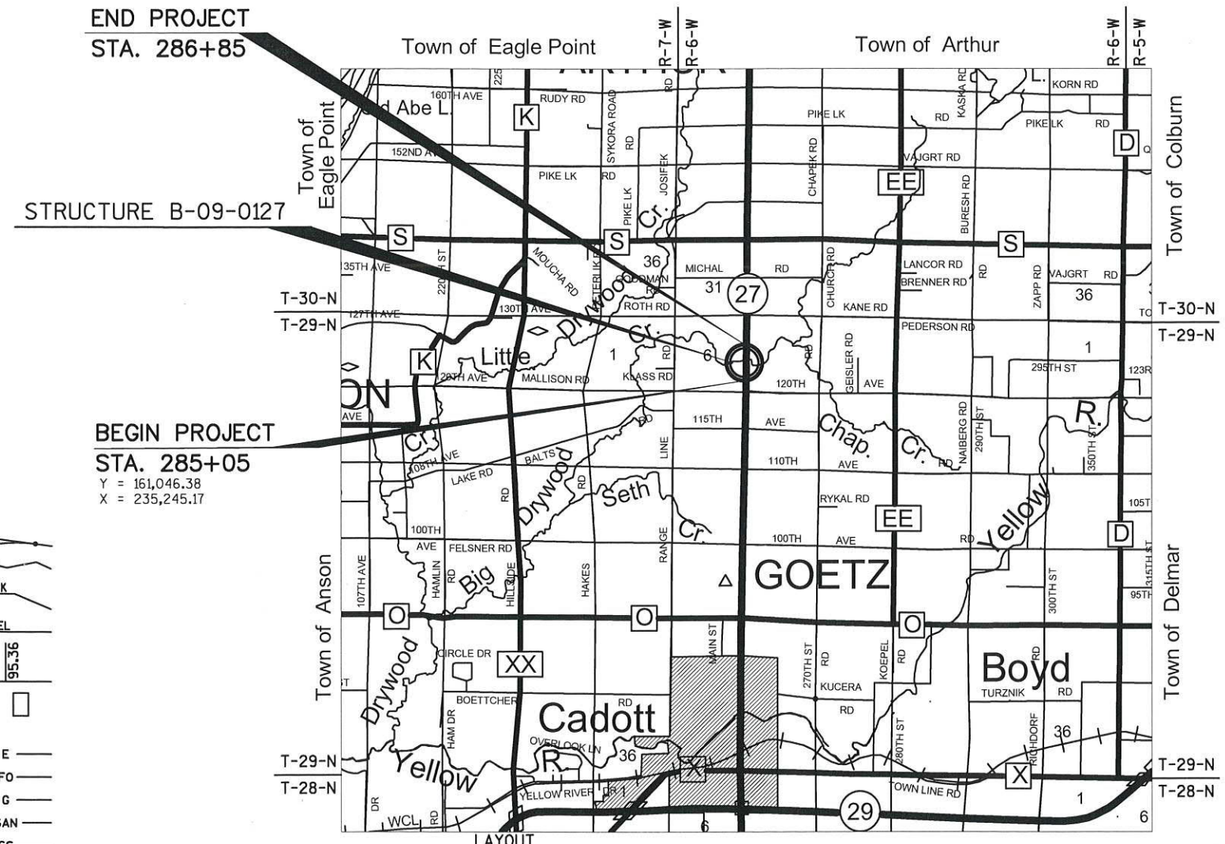
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7070-06-61	WISC 2022024	1

STATE PROJECT NUMBER
7070-06-61

END PROJECT
STA. 286+85

STRUCTURE B-09-0127

BEGIN PROJECT
STA. 285+05
Y = 161,046.38
X = 235,245.17



LAYOUT SCALE 0 2 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.034 MILES

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

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

ORIGINAL PLANS PREPARED BY

JEWELL
associates engineers, inc.
Engineers - Architects - Surveyors

WISCONSIN
ANGELA L. CLARY
E-32243
LONE ROCK, WI
PROFESSIONAL ENGINEER

7/8/21 (Date) Angela L Clary (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	JEWELL ASSOCIATES ENGINEERS, INC.
Designer	JEWELL ASSOCIATES ENGINEERS, INC.
Project Manager	TYLER RONGSTAD, P.E.
Regional Examiner	TOU YANG, P.E.
Regional Supervisor	JAMES KOENIG, P.E.

APPROVED FOR THE DEPARTMENT

DATE: Tyler Rongstad (Digitally signed by Tyler Rongstad DN: C=US, E=tyler.rongstad@dot.wi.gov, O=WisDOT NW Region, OU=PDS Unit 5, CN=Tyler Rongstad Date: 2021.07.12 08:44:50-05'00') (Signature)

E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\SHEETSPLAN\70700631_TITLE.DWG
LAYOUT NAME - TITLE SHEET 1 IN EQ 2 MI

PLOT DATE : 3/2/2021 2:23 PM PLOT BY : JONAH DRAKE PLOT NAME :

WISDOT/CADDS SHEET 10

2

LIST OF STANDARD ABBREVIATIONS

ABUT	Abutment	INV	Invert	SALV	Salvaged
AC	Acre	IP	Iron Pipe or Pin	SAN S	Sanitary Sewer
AGG	Aggregate	IRS	Iron Rod Set	SEC	Section
AH	Ahead	JT	Joint	SHLDR	Shoulder
<	Angle	JCT	Junction	SHR	Shrinkage
ASPH	Asphaltic	LHF	Left-Hand Forward	SW	Sidewalk
AVG	Average	L	Length of Curve	S	South
ADT	Average Daily Traffic	LIN FT or LF	Linear Foot	SQ	Square
BAD	Base Aggregate Dense	LC	Long Chord of Curve	SF or SQ FT	Square Feet
BK	Back	MH	Manhole	SY or SQ YD	Square Yard
BF	Back Face	MB	Mailbox	STD	Standard
BM	Bench Mark	ML or M/L	Match Line	SDD	Standard Detail Drawings
BR	Bridge	N	North	STH	State Trunk Highways
C or C/L	Center Line	Y	North Grid Coordinate	STA	Station
CC	Center to Center	OD	Outside Diameter	SS	Storm Sewer
CTH	County Trunk Highway	PLE	Permanent Limited Easement	SG	Subgrade
CR	Creek			SE	Superelevation
CR	Crushed	PT	Point	SL or S/L	Survey Line
CY or CU YD	Cubic Yard	PC	Point of Curvature	SV	Septic Vent
CP	Culvert Pipe	PI	Point of Intersection	T	Tangent
C & G	Curb and Gutter	PRC	Point of Reverse Curvature	TEL	Telephone
D	Degree of Curve	PT	Point of Tangency	TEMP	Temporary
DHV	Design Hour Volume	POC	Point On Curve	TI	Temporary Interest
DIA	Diameter	POT	Point on Tangent	TLE	Temporary Limited Easement
E	East	PVC	Polyvinyl Chloride		
X	East Grid Coordinate	PCC	Portland Cement Concrete	t	Ton
ELEC	Electric (al)	LB	Pound	T or TN	Town
EL or ELEV	Elevation	PSI	Pounds Per Square Inch	TRANS	Transition
ESALS	Equivalent Single Axle Loads	PE	Private Entrance	TL or T/L	Transit Line
		R	Radius	T	Trucks (percent of)
EBS	Excavation Below Subgrade	RR	Railroad	TYP	Typical
FF	Face to Face	R	Range	UNCL	Unclassified
FE	Field Entrance	RL or R/L	Reference Line	UG	Underground Cable
F	Fill	RP	Reference Point	USH	United States Highway
FG	Finished Grade	RCCP	Reinforced Concrete Culvert Pipe	VAR	Variable
FL or F/L	Flow Line			V	Velocity or Design Speed
FT	Foot	REQ'D	Required	VERT	Vertical
FTG	Footing	RES	Residence or Residential	VC	Vertical Curve
GN	Grid North	RW	Retaining Wall	VOL	Volume
HT	Height	RT	Right	WM	Water Main
CWT	Hundredweight	RHF	Right-Hand Forward	WV	Water Valve
HYD	Hydrant	R/W	Right-of-Way	W	West
INL	Inlet	R	River	WB	Westbound
ID	Inside Diameter	RD	Road	YD	Yard
		RDWY	Roadway		

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

TOTAL PROJECT AREA= 1.31 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.57 ACRES

GENERAL NOTES

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

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE, AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION. EXACT LOCATIONS OF EBS WILL BE DETERMINED BY THE ENGINEER.

DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEED MIX NO. 30), AND MULCHED AS DIRECTED BY THE ENGINEER.

WHEN THE QUANTITY OF THE ITEM OF BASE AGGREGATE DENSE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER IN THE FIELD.

SILT FENCE AND TEMPORARY DITCH CHECKS SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER IN THE FIELD. SILT FENCE SHALL BE PLACED PRIOR TO CONSTRUCTION.

MULCH ALL MAINLINE SLOPES AS DIRECTED BY THE ENGINEER IN THE FIELD.

FILL EXPANSION IS VARIABLE AND IS ESTIMATED AT 25%.

ADJUST DITCH GRADING AS NECESSARY TO FIT FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER.

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

HMA PAVEMENT QUANTITIES WERE CALCULATED USING 112 LB/SY/IN. CONSTRUCT 7.25" OF HMA PAVEMENT WITH A 2.75" LOWER LAYER, A 2.5" MIDDLE LAYER, AND A 2" UPPER LAYER.

CONTACTS

WISCONSIN DEPARTMENT OF TRANSPORTATION:

WISCONSIN DEPARTMENT OF TRANSPORTATION
718 W. CLAIREMONT AVE
EAU CLAIRE, WI 54701
ATTN: TYLER RONGSTAD, P.E.
PH: (715) 461-0372
EMAIL: tyler.rongstad@dot.wi.gov

DESIGN CONSULTANT:

JEWELL ASSOCIATES ENGINEERS, INC.
560 SUNRISE DRIVE
SPRING GREEN, WI 53588
ATTN: ANGIE CLARY, P.E.
PH: (608) 459-6061
CELL: (608) 574-3333
EMAIL: angie.clary@jewellassoc.com

DNR LIAISON:

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
1300 W. CLAIREMONT AVE
EAU CLAIRE, WI 54701
ATTN: LEAH NICOL
PH: (715) 934-9014
EMAIL: leah.nicol@wisconsin.gov

UTILITIES

COMMUNICATION

CENTURYLINK
ATTN: BRIAN HUHN
P.O. BOX 78
HAWKINS, WI 54530
PH: (608) 615-7347
CELL: (715) 563-8294
EMAIL: brian.huhn@centurylink.com

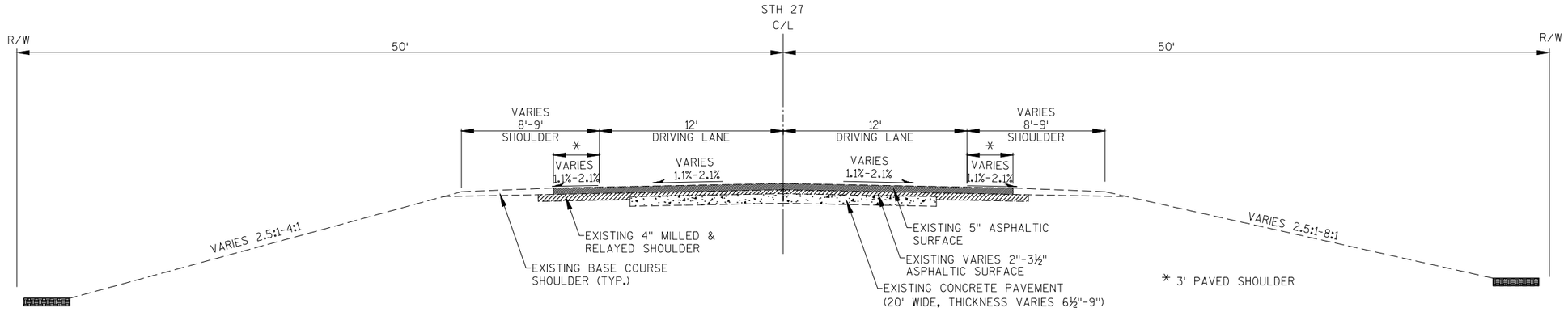
ELECTRIC

CHIPPEWA VALLEY ELECTRIC COOP
ATTN: NICHOLAS ALBERSON
317 S. 8TH ST.
CORNELL, WI 54732
PH: (715) 239-6800
CELL: (715) 202-0823
EMAIL: nalberson@cve.coop

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

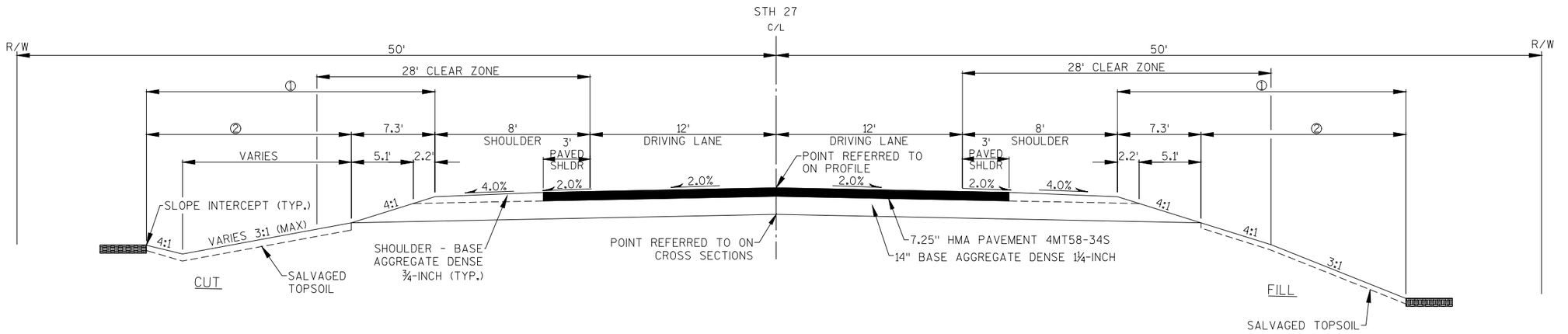
* DENOTES UTILITY IS NOT A MEMBER OF DIGGERS HOTLINE

2



TYPICAL EXISTING SECTION

STA. 282+30 - STA. 288+00



① LIMITS OF SEEDING MIXTURE NO. 30 & FERTILIZER TYPE B (AS DIRECTED BY ENGINEER)

② LIMITS OF SALVAGED TOPSOIL & MULCH (AS DIRECTED BY ENGINEER)

TYPICAL FINISHED SECTION

STA. 285+05 - STA. 286+85

NOTE: SEE CONSTRUCTION DETAILS, PLAN & PROFILE, & CROSS SECTIONS FOR DETAILS OF SHOULDER WORK FROM STA. 282+30 - STA. 285+05 & STA. 286+85 - STA. 288+00

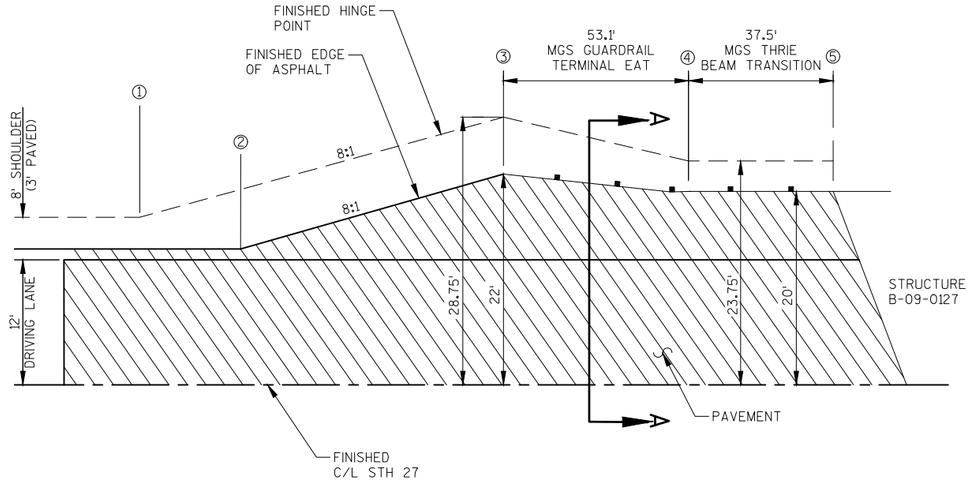
PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	TYPICAL SECTIONS	SHEET 3	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\SHEETSPLAN\TYPICALS\70700631_TYPICAL SECTIONS.DWG
LAYOUT : TYPICAL EXISTING SECTIONS

PLOT DATE : 6/14/2021
PLOT TIME : 1:20:32 PM

PLOT BY : RYAN SCHMITZ

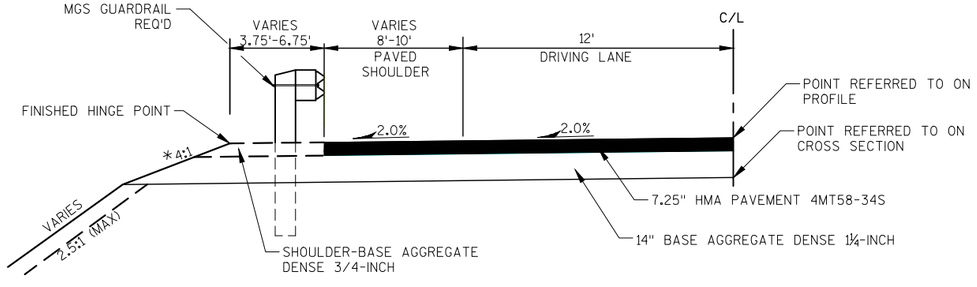
PLOT SCALE : 1" = 1'



BEAMGUARD LAYOUT TABLE

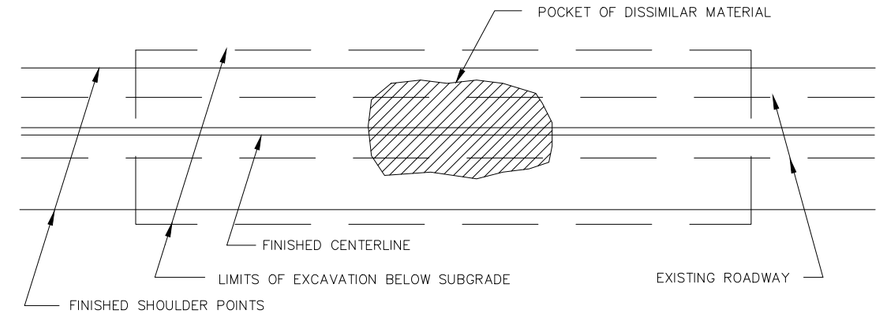
QUADRANT	LOCATION	STATION ①	②	③	④	⑤
SOUTHWEST	MAINLINE, LT.	283+75	283+96	284+54	285+06	285+44
SOUTHEAST	MAINLINE, RT.	284+10	284+16	284+72	285+26	285+63
NORTHEAST	MAINLINE, RT.	287+76	287+93	287+34	286+81	286+43
NORTHWEST	MAINLINE, LT.	287+64	287+64	287+14	286+61	286+24

BEAMGUARD LAYOUT DETAIL

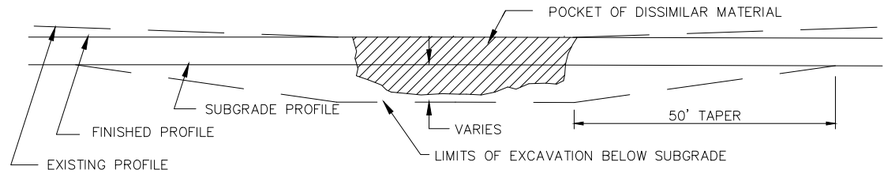


SECTION A–A

* 3:1 - STA. 284+54, LT.
- STA. 286+33 - STA. 286+75, RT.

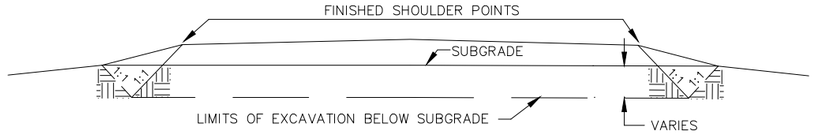


PLAN VIEW



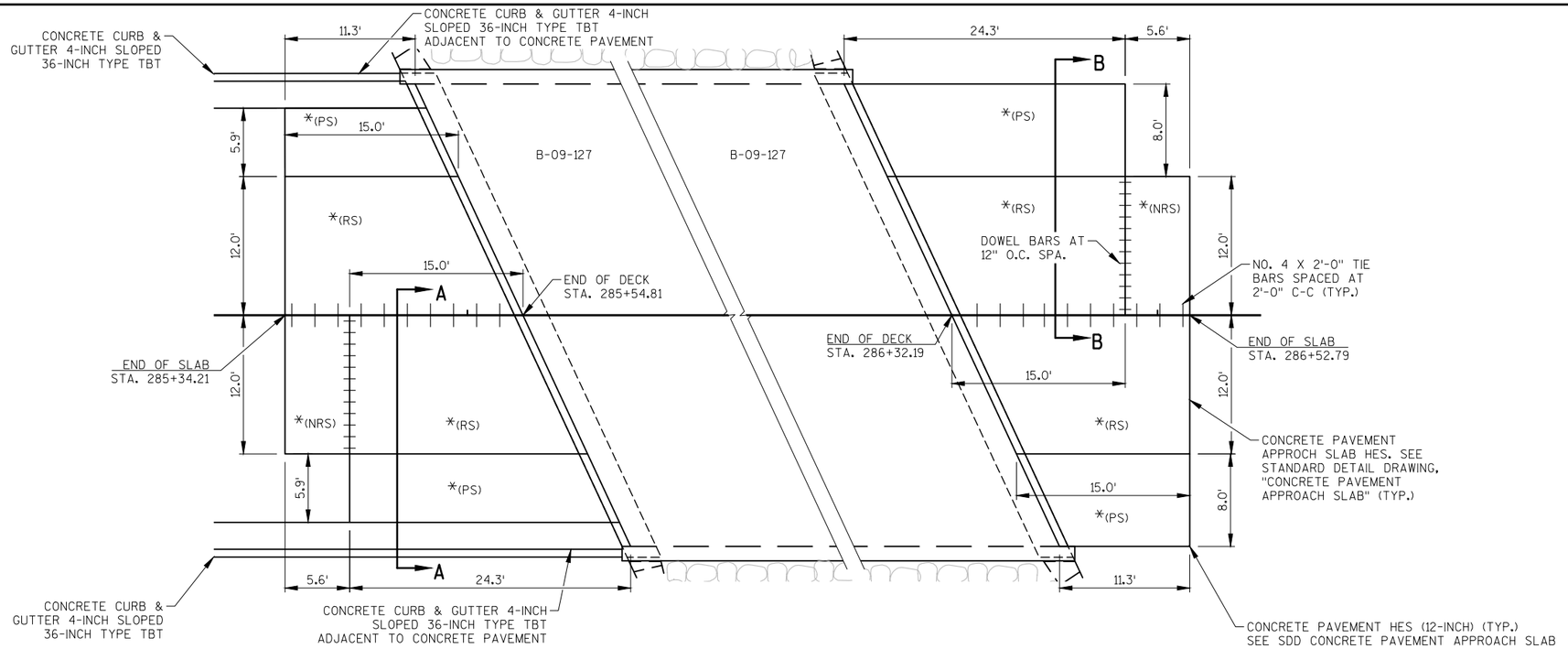
PROFILE VIEW

RURAL EXCAVATION BELOW SUBGRADE (E.B.S.)



CROSS SECTION VIEW

1. EXACT LOCATION OF E.B.S. (EXCAVATION BELOW SUBGRADE) SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
2. E.B.S. AREA TO BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE ENGINEER. BACKFILL MUST BE HOMOGENEOUS WITH ADJOINING FILL MATERIAL.
3. THE FILL SECTION WITHIN 100' OF THE MOUTH OF THE CUT MUST BE KEPT 2' BELOW SUBGRADE UNTIL E.B.S. IS COMPLETED. LATERAL LIMITS OF EXCAVATION SHALL BE THE SUBGRADE SHOULDER POINTS.



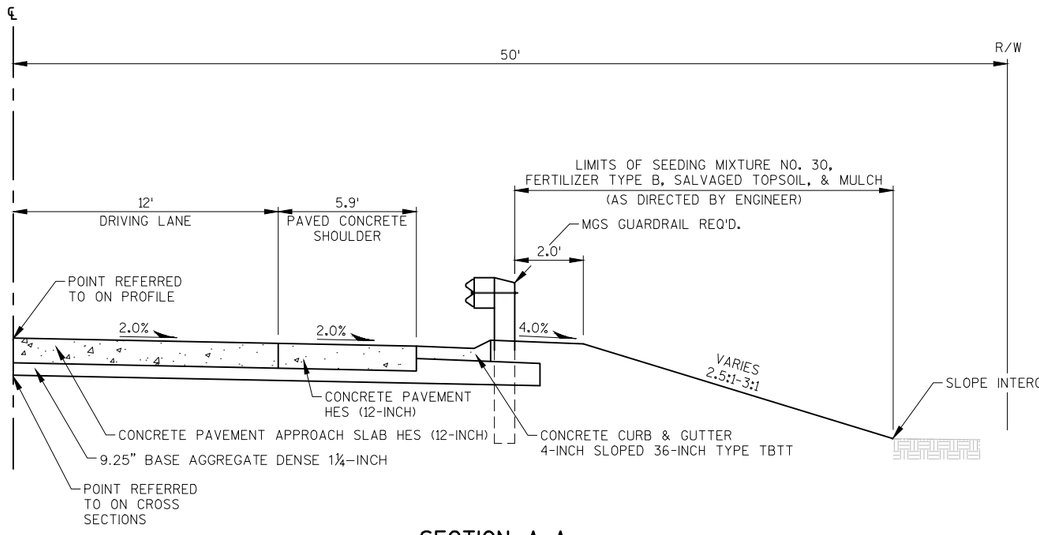
LEGEND

*(RS) = REINFORCED CONCRETE SLAB

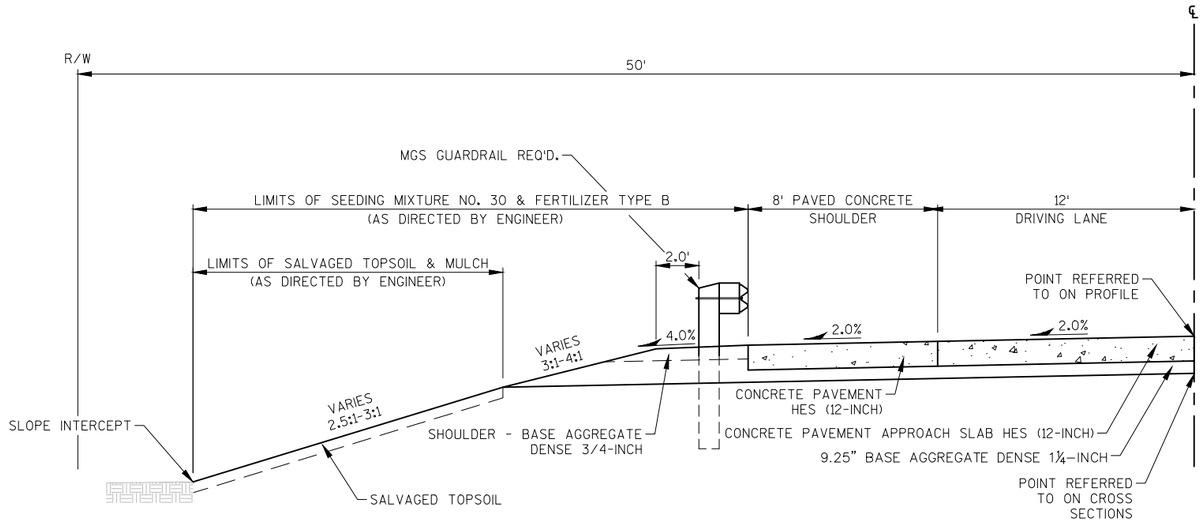
*(NRS) = NON-REINFORCED CONCRETE SLAB

*(PS) = PAVED CONCRETE SHOULDER

STRUCTURE APPROACH DETAILS



SECTION A-A



SECTION B-B

PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	CONSTRUCTION DETAILS	SHEET 5	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\SHEETSPLAN\DETAILS\W11588_CONSTRUCTION DETAILS.DWG
LAYOUT :

PLOT DATE : 6/14/2021
PLOT TIME : 1:20:35 PM
PLOT BY : RYAN SCHMITZ
PLOT SCALE : 1" = 1'

2

LEGEND

- POST MOUNTED SIGN
- MARKING REMOVAL LINE 4-INCH
- TYPE III BARRICADE WITH ATTACHED SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION TEMPORARY
- TRAILER MOUNTED TRAFFIC SIGNAL (TEMPORARY SIGNAL FOR BRIDGE B-9-127)
- DIRECTION OF TRAFFIC FLOW
- FLAGS, 16" X 16" MIN. (ORANGE)

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.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

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.

PROVIDE AND MAINTAIN ALL NECESSARY BARRICADES, SIGNS, LIGHTS, TEMPORARY MARKINGS, FLAGGERS, AND SUCH OTHER SAFETY DEVICES AS CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

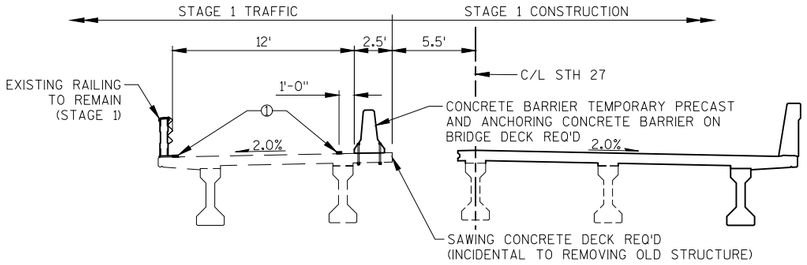
ALL SIGN LAYOUT SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS.

ADDITIONAL DRUMS OR TYPE III BARRICADES MAY BE REQUIRED ADJACENT TO DROP-OFFS, OPEN TRENCHES, OR PROTRUSIONS. COST TO BE INCLUDED WITH OPERATION WHICH CREATES THE HAZARD.

DRUMS PLACED ADJACENT TO WORK AREAS SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

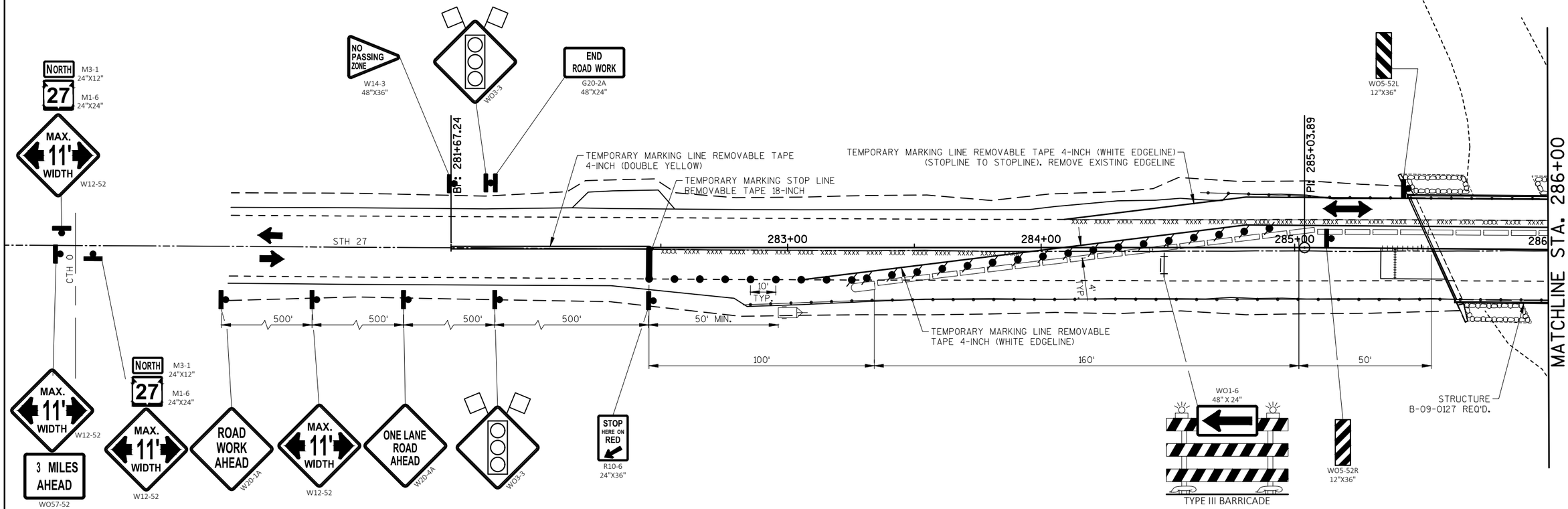
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.



TYPICAL STAGING SECTION AT B-09-127

STAGE 1 (LOOKING NORTH)

① TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE EDGELINE)



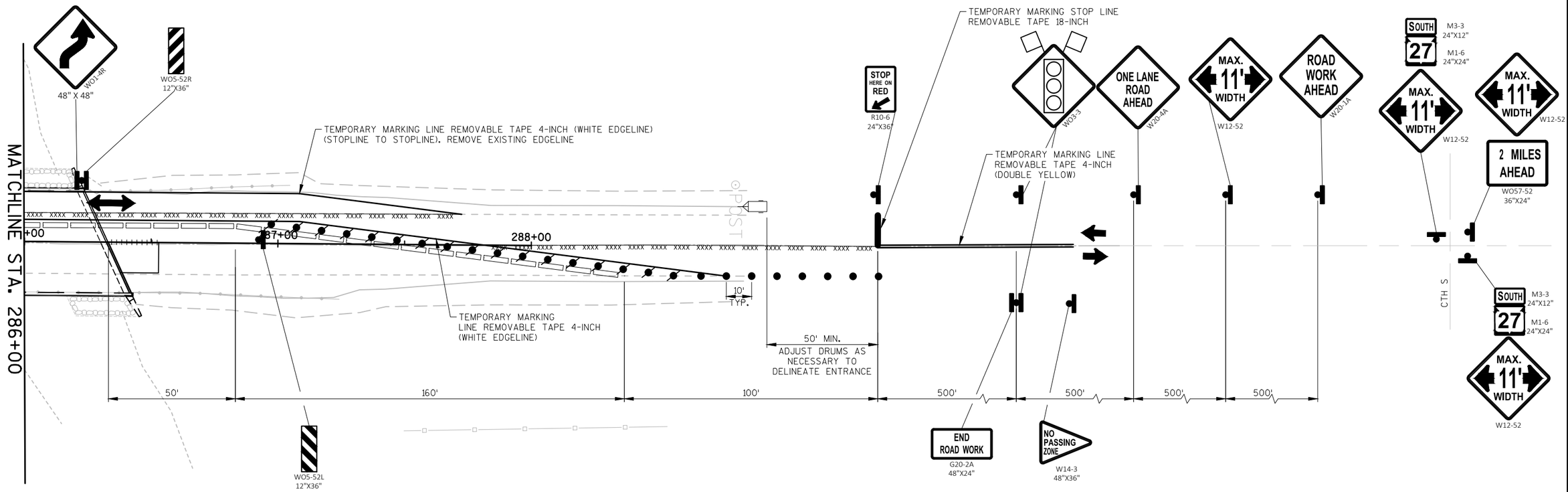
PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	TRAFFIC CONTROL - STAGE 1	SHEET 6	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\SHEETSPLAN\DETAILS\W11588_STAGING DETAILS.DWG
LAYOUT :

PLOT DATE : 8/9/2021
PLOT TIME : 4:19:25 PM
PLOT BY : ETHAN KAAT
PLOT SCALE : 1" = 1'

LEGEND

- POST MOUNTED SIGN
- xxxx MARKING REMOVAL LINE 4-INCH
- TYPE III BARRICADE WITH ATTACHED SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION TEMPORARY
- TRAILER MOUNTED TRAFFIC SIGNAL (TEMPORARY SIGNAL FOR BRIDGE B-9-127)
- DIRECTION OF TRAFFIC FLOW
- FLAGS, 16" X 16" MIN. (ORANGE)



PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	TRAFFIC CONTROL - STAGE 1	SHEET 7	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\SHEETS\PLAN\DETAILS\W11588_STAGING DETAILS.DWG
LAYOUT :

PLOT DATE : 6/14/2021
PLOT TIME : 1:20:38 PM
PLOT BY : RYAN SCHMITZ
PLOT SCALE : 1" = 1'

2

LEGEND

- POST MOUNTED SIGN
- xxxx MARKING REMOVAL LINE 4-INCH
- TYPE III BARRICADE WITH ATTACHED SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION TEMPORARY
- TRAILER MOUNTED TRAFFIC SIGNAL (TEMPORARY SIGNAL FOR BRIDGE B-9-127)
- DIRECTION OF TRAFFIC FLOW
- FLAGS, 16" X 16" MIN. (ORANGE)

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.

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PROVIDE AND MAINTAIN ALL NECESSARY BARRICADES, SIGNS, LIGHTS, TEMPORARY MARKINGS, FLAGGERS, AND SUCH OTHER SAFETY DEVICES AS CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

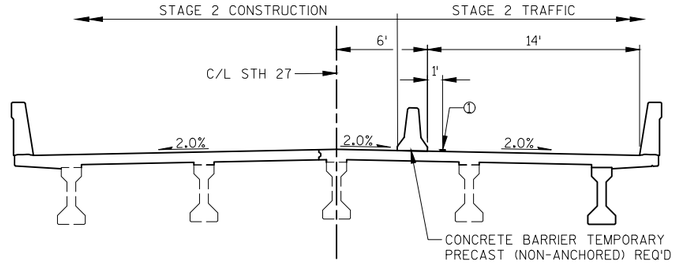
ALL SIGN LAYOUT SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS.

ADDITIONAL DRUMS OR TYPE III BARRICADES MAY BE REQUIRED ADJACENT TO DROP-OFFS, OPEN TRENCHES, OR PROTRUSIONS. COST TO BE INCLUDED WITH OPERATION WHICH CREATES THE HAZARD.

DRUMS PLACED ADJACENT TO WORK AREAS SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

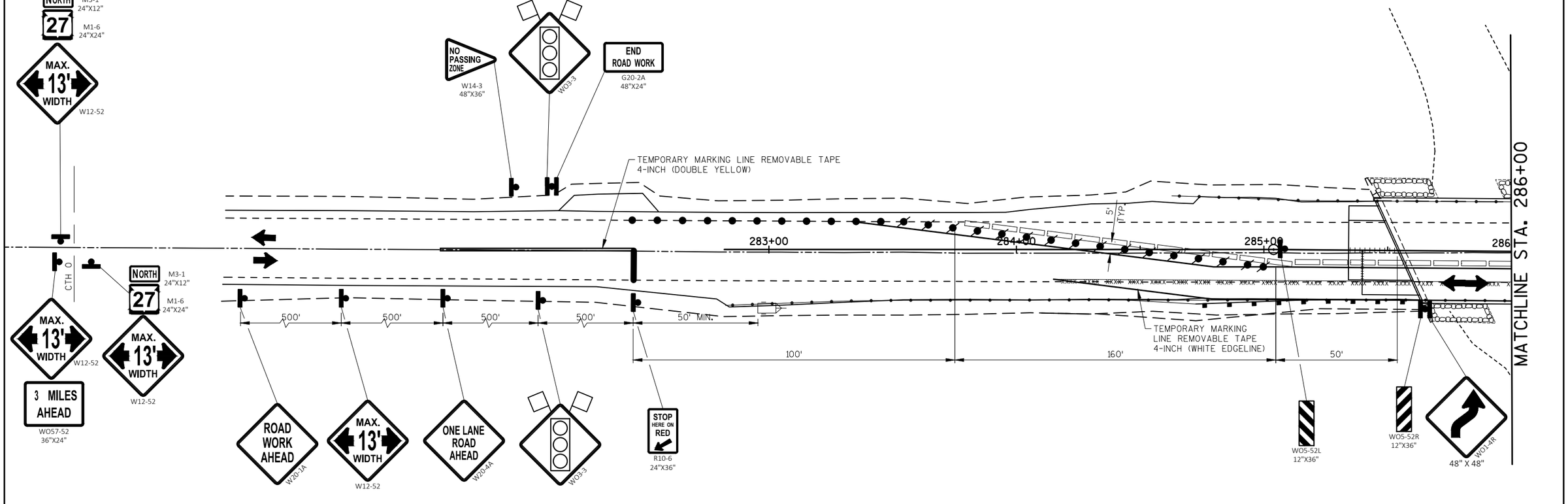
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.



TYPICAL STAGING SECTION AT B-09-127

STAGE 2 (LOOKING NORTH)

① TEMPORARY PAVEMENT MARKING LINE REMOVABLE TAPE 4-INCH (WHITE EDGELINE)



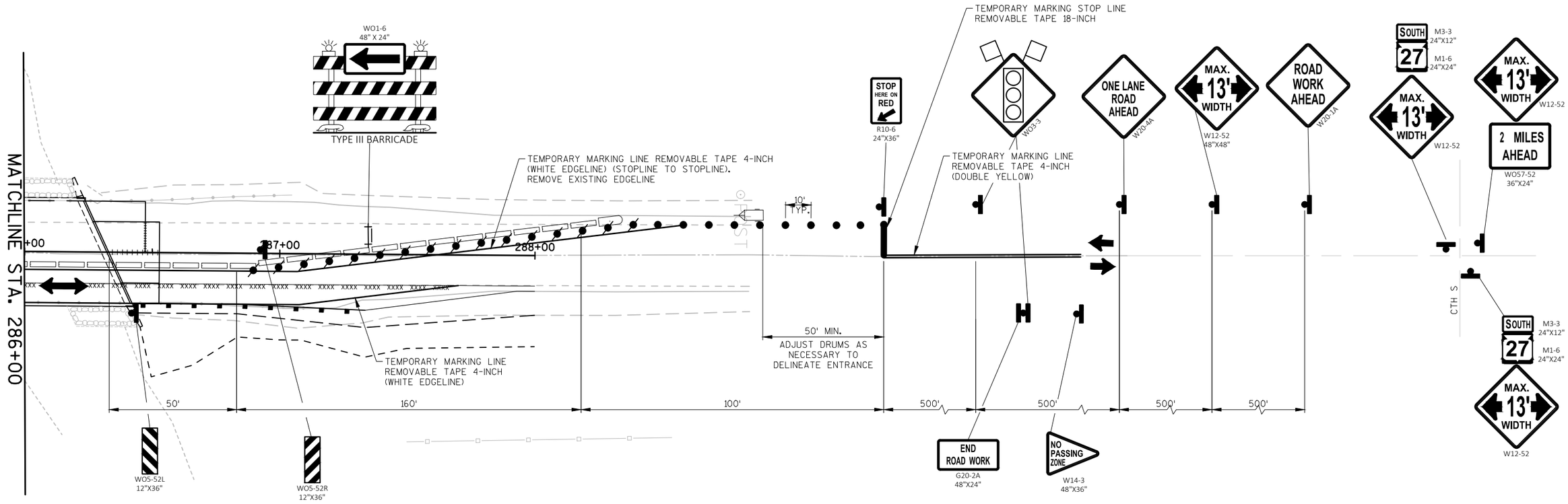
PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	TRAFFIC CONTROL - STAGE 2	SHEET 8	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\SHEETSPLAN\DETAILS\W11588_STAGING DETAILS2.DWG
LAYOUT :

PLOT DATE : 8/9/2021
PLOT TIME : 4:19:26 PM
PLOT BY : ETHAN KAAT
PLOT SCALE : 1" = 1'

LEGEND

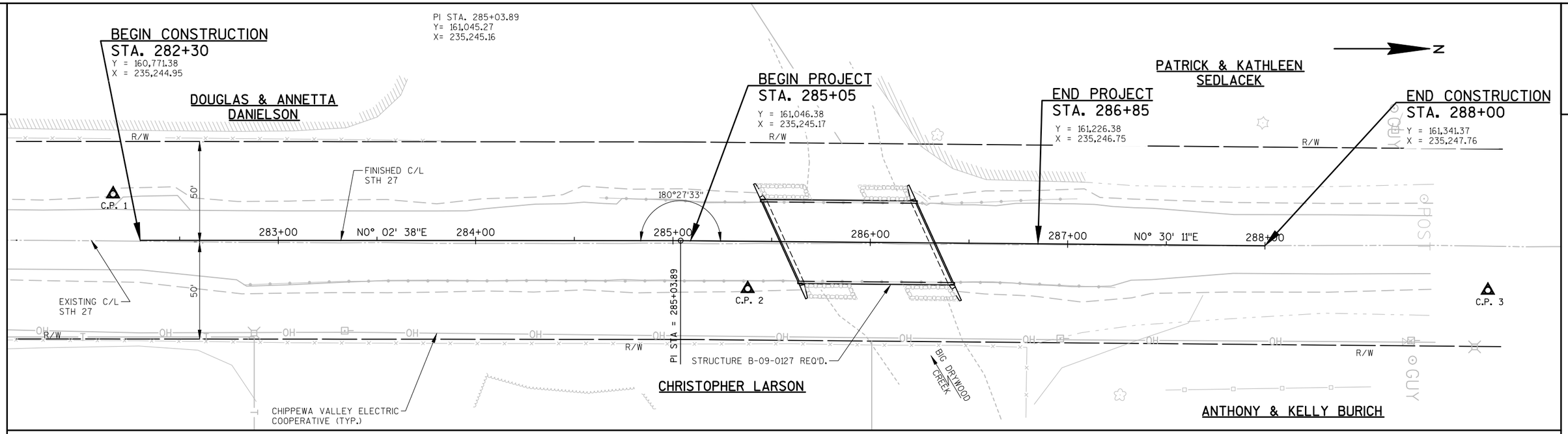
- POST MOUNTED SIGN
- xxxx MARKING REMOVAL LINE 4-INCH
- TYPE III BARRICADE WITH ATTACHED SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION TEMPORARY
- TRAILER MOUNTED TRAFFIC SIGNAL (TEMPORARY SIGNAL FOR BRIDGE B-9-127)
- DIRECTION OF TRAFFIC FLOW
- FLAGS, 16" X 16" (ORANGE)



PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	TRAFFIC CONTROL - STAGE 2	SHEET 9	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\SHEETS\PLAN\DETAILS\W11588_STAGING DETAILS2.DWG
LAYOUT : 2

PLOT DATE : 6/14/2021
PLOT TIME : 1:20:41 PM
PLOT BY : RYAN SCHMITZ
PLOT SCALE : 1" = 1'

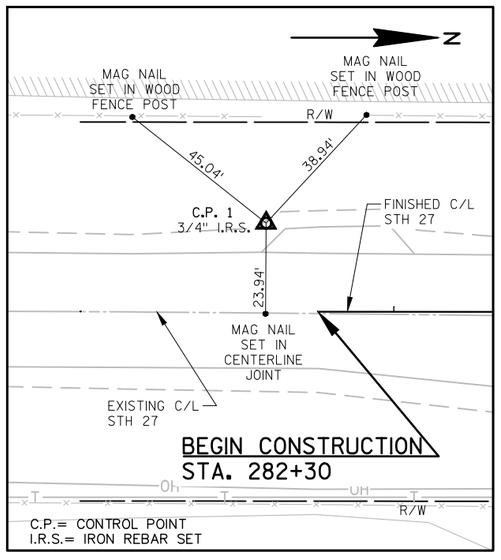


CONTROL POINTS

NO.	STA.	DESCRIPTION	Y	X
1	282+16.29	¾" I.R.S., 23.40' LT.	160,757.66	235,221.56
2	285+38.06	¾" I.R.S., 24.03' RT.	161,079.23	235,269.50
3	289+13.14	¾" I.R.S., 21.58' RT.	161,454.31	235,270.32

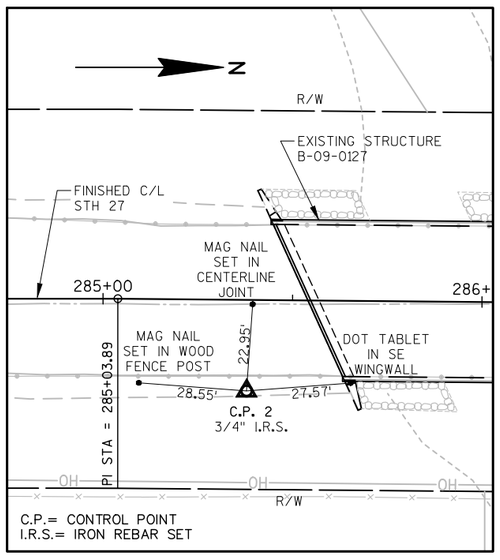
MAINLINE STATION LAYOUT

STATION	Y	X	COMMENTS
282+30	160,771.38	235,244.95	BEGIN CONSTRUCTION
282+50	160,791.38	235,244.97	–
283+00	160,841.38	235,245.01	–
283+50	160,891.38	235,245.04	–
284+00	160,941.38	235,245.08	–
284+50	160,991.38	235,245.12	–
285+00	161,041.38	235,245.16	–
285+05	161,046.38	235,245.17	BEGIN PROJECT
285+50	161,091.38	235,245.57	–
285+54.81	161,096.19	235,245.61	END DECK
286+00	161,141.38	235,246.01	–
286+32.19	161,173.57	235,246.29	END DECK
286+50	161,191.38	235,246.44	–
286+85	161,226.38	235,246.75	END PROJECT
287+00	161,241.38	235,246.88	–
287+50	161,291.37	235,247.32	–
288+00	161,341.37	235,247.76	END CONSTRUCTION



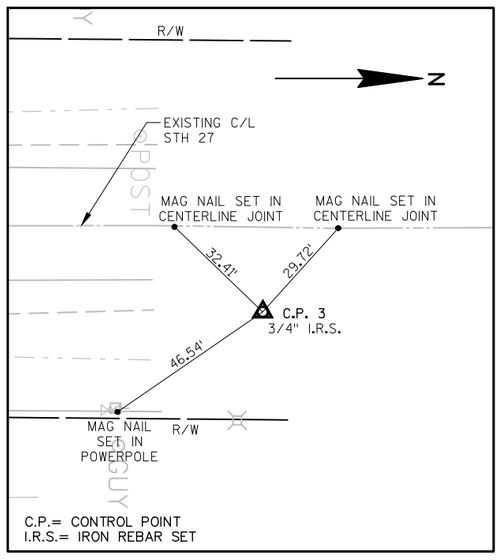
TIES TO C.P.#1

STA. 282+16.29; 23.40' LT.
Y = 160,757.66
X = 235,221.56



TIES TO C.P.#2

STA. 285+38.06; 24.03' RT.
Y = 161,079.23
X = 235,269.50



TIES TO C.P.#3

STA. 289+13.14; 21.58' RT.
Y = 161,454.31
X = 235,270.32

PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	ALIGNMENT AND TIES	SHEET 10	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\SHEETSPLAN\DETAILS\ALIGN
LAYOUT : 8A TIES.DWG
PLOT DATE : 6/14/2021
PLOT TIME : 1:21:14 PM
PLOT BY : RYAN SCHMITZ
PLOT SCALE : 0.830110

Estimate Of Quantities

7070-06-61

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	4.000	4.000
0004	201.0205	Grubbing	STA	4.000	4.000
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-09-127	EACH	1.000	1.000
0008	204.0100	Removing Concrete Pavement	SY	230.000	230.000
0010	204.0165	Removing Guardrail	LF	525.000	525.000
0012	205.0100	Excavation Common	CY	835.000	835.000
0014	206.1000	Excavation for Structures Bridges (structure) 01. B-09-127	LS	1.000	1.000
0016	210.1500	Backfill Structure Type A	TON	160.000	160.000
0018	213.0100	Finishing Roadway (project) 01. 7070-06-61	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	280.000	280.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,340.000	1,340.000
0024	415.0410	Concrete Pavement Approach Slab	SY	112.000	112.000
0026	415.1120	Concrete Pavement HES 12-Inch	SY	56.000	56.000
0028	416.1010	Concrete Surface Drains	CY	3.400	3.400
0030	450.4000	HMA Cold Weather Paving	TON	55.000	55.000
0032	455.0605	Tack Coat	GAL	54.000	54.000
0034	460.2000	Incentive Density HMA Pavement	DOL	140.000	140.000
0036	460.6244	HMA Pavement 4 MT 58-34 S	TON	215.000	215.000
0038	502.0100	Concrete Masonry Bridges	CY	147.000	147.000
0040	502.3200	Protective Surface Treatment	SY	360.000	360.000
0042	502.3210	Pigmented Surface Sealer	SY	80.000	80.000
0044	503.0145	Prestressed Girder Type I 45-Inch	LF	76.000	76.000
0046	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	28,250.000	28,250.000
0048	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	2.000	2.000
0050	506.4000	Steel Diaphragms (structure) 01. B-09-127	EACH	1.000	1.000
0052	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0054	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	69.000	69.000
0056	601.0590	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBTT	LF	39.000	39.000
0058	603.8000	Concrete Barrier Temporary Precast Delivered	LF	513.000	513.000
0060	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,026.000	1,026.000
0062	603.8505	Anchoring Concrete Barrier Temporary Precast on Bridge Decks	LF	78.000	78.000
0064	606.0300	Riprap Heavy	CY	10.000	10.000
0066	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0068	614.0905	Crash Cushions Temporary	EACH	2.000	2.000
0070	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0072	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0074	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7070-06-61	EACH	1.000	1.000
0076	619.1000	Mobilization	EACH	1.000	1.000
0078	624.0100	Water	MGAL	24.000	24.000
0080	625.0500	Salvaged Topsoil	SY	1,180.000	1,180.000
0082	627.0200	Mulching	SY	2,160.000	2,160.000
0084	628.1504	Silt Fence	LF	950.000	950.000
0086	628.1520	Silt Fence Maintenance	LF	1,900.000	1,900.000
0088	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0090	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0092	628.7504	Temporary Ditch Checks	LF	60.000	60.000
0094	629.0210	Fertilizer Type B	CWT	1.400	1.400
0096	630.0130	Seeding Mixture No. 30	LB	54.000	54.000
0098	630.0200	Seeding Temporary	LB	54.000	54.000

7070-06-61

Line	Item	Item Description	Unit	Total	Qty
0100	630.0500	Seed Water	MGAL	45.000	45.000
0102	642.5001	Field Office Type B	EACH	1.000	1.000
0104	643.0300	Traffic Control Drums	DAY	5,600.000	5,600.000
0106	643.0420	Traffic Control Barricades Type III	DAY	100.000	100.000
0108	643.0705	Traffic Control Warning Lights Type A	DAY	200.000	200.000
0110	643.0715	Traffic Control Warning Lights Type C	DAY	3,380.000	3,380.000
0112	643.0900	Traffic Control Signs	DAY	3,700.000	3,700.000
0114	643.5000	Traffic Control	EACH	1.000	1.000
0116	645.0120	Geotextile Type HR	SY	38.000	38.000
0118	646.1020	Marking Line Epoxy 4-Inch	LF	1,290.000	1,290.000
0120	646.9000	Marking Removal Line 4-Inch	LF	850.000	850.000
0122	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	2,145.000	2,145.000
0124	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	30.000	30.000
0126	650.4500	Construction Staking Subgrade	LF	495.000	495.000
0128	650.5000	Construction Staking Base	LF	495.000	495.000
0130	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	108.000	108.000
0132	650.6500	Construction Staking Structure Layout (structure) 01. B-09-127	LS	1.000	1.000
0134	650.9910	Construction Staking Supplemental Control (project) 01. 7070-06-61	LS	1.000	1.000
0136	650.9920	Construction Staking Slope Stakes	LF	495.000	495.000
0138	661.0100	Temporary Traffic Signals for Bridges (structure) 01. B-09-127	LS	1.000	1.000
0140	690.0150	Sawing Asphalt	LF	620.000	620.000
0142	690.0250	Sawing Concrete	LF	40.000	40.000
0144	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0146	715.0502	Incentive Strength Concrete Structures	DOL	882.000	882.000
0148	999.2000.S	Installing and Maintaining Bird Deterrent System (Station) 01. STA 285+94	EACH	1.000	1.000
0150	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	300.000	300.000
0152	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000

ALL ITEMS CATEGORY 010 UNLESS OTHERWISE NOTED

3

CLEARING & GRUBBING

STATION-STATION	LOCATION	201.0105 CLEARING (STA)	201.0205 GRUBBING (STA)
285+00 - 287+00	MAINLINE - STAGE 1	2	2
285+00 - 287+00	MAINLINE - STAGE 2	2	2
	TOTALS =	4	4

REMOVING CONCRETE PAVEMENT

STATION-STATION	LOCATION	204.0100 (SY)
285+00 - 285+55	MAINLINE - STAGE 1	60
286+22 - 286+85	MAINLINE - STAGE 1	55
285+00 - 285+55	MAINLINE - STAGE 2	55
286+22 - 286+85	MAINLINE - STAGE 2	60
	TOTALS =	230

REMOVING GUARDRAIL

STATION - STATION	LOCATION	204.0165 REMOVING GUARDRAIL (LF)
282+82 - 285+63	MAINLINE, RT.	281
284+63 - 285+45	MAINLINE, LT.	82
286+43 - 287+24	MAINLINE, RT.	81
286+24 - 287+05	MAINLINE, LT.	81
	TOTAL =	525

CONCRETE SURFACE DRAINS

STATION - STATION	LOCATION	416.1010 CONCRETE SURFACE DRAINS (CY)
285+06	MAINLINE, LT.	1.7
285+26	MAINLINE, RT.	1.7
	TOTAL =	3.4

CONCRETE BARRIER TEMPORARY PRECAST

STATION - STATION	LOCATION	603.8000 DELIVERED (LF)	603.8125 INSTALLED (LF)	603.8505 ANCHORING ON BRIDGE DECKS (LF)
282+30 - 288+00	MAINLINE - STAGE 1	513	513	78
282+30 - 288+00	MAINLINE - STAGE 2	--	513	-
	TOTALS =	513	1026	78

EARTHWORK SUMMARY

CATEGORY	FROM/TO STA	LOCATION	205.0100 COMMON EXCAVATION CUT (1) (CY)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (CY) (2)	AVAILABLE MATERIAL (CY) (3)	UNEXPANDED FILL (CY)	EXPANDED FILL (CY) FACTOR 1.25 (4)	MASS ORDINATE +/- (CY) (5)	WASTE (CY)
010	282+30 - 288+00	MAINLINE - STAGE 1	435	24	411	90	112	299	299
010	282+30 - 288+00	MAINLINE - STAGE 2	400	24	376	85	106	270	270
		TOTALS =	835	48	787	175	218	569	569

NOTES:
1.) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT
2.) SALVAGED/UNUSABLE PAVEMENT MATERIAL
3.) AVAILABLE MATERIAL = CUT - SALVAGE/UNUSABLE PAVEMENT MATERIAL
4.) EXPANDED FILL FACTOR 1.25: EXPANDED FILL = (UNEXPANDED FILL)*1.25
5.) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE CATEGORY. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE CATEGORY.

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON)	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)
282+30 - 288+00	MAINLINE - STAGE 1	175	770
284+00 - 288+00	MAINLINE - STAGE 2	105	570
	TOTALS =	280	1340

CONCRETE PAVEMENT APPROACH SLAB

STATION - STATION	LOCATION	CONCRETE PAVEMENT HES 12-INCH 415.1120 (SY)	CONCRETE PAVEMENT APPROACH SLAB HES 415.1410 (SY)
285+34 - 285+54	MAINLINE - STAGE 1	15	32
285+34 - 285+54	MAINLINE - STAGE 2	9	24
286+33 - 286+53	MAINLINE - STAGE 1	12	24
286+33 - 286+53	MAINLINE - STAGE 2	20	32
	TOTALS =	56	112

HMA PAVEMENT

STATION - STATION	LOCATION	455.0605 TACK COAT (GAL)	460.6244 4MT 58-34 S (TON)
282+30 - 288+00	MAINLINE - STAGE 1	28	110
284+00 - 288+00	MAINLINE - STAGE 2	26	105
	TOTALS =	54	215

CONCRETE CURB & GUTTER

STATION - STATION	LOCATION	601.0588 CONCRETE C&G 4-INCH SLOPED 36-INCH TBT (LF)	601.0590 CONCRETE C&G 4-INCH SLOPED 36-INCH TBTT (LF)
284+90 - 285+34	MAINLINE, LT.	44	-
285+34 - 285+44	MAINLINE, LT.	-	10
285+09 - 285+34	MAINLINE, RT.	25	-
285+34 - 285+63	MAINLINE, RT.	-	29
	TOTALS =	69	39

CRASH CUSHION TEMPORARY

LOCATION	614.0905 (EACH)	BACK WIDTH (FT)	OBJECT MARKING PATTERN	CRASH TEST LEVEL	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS
MAINLINE - STAGE 1	1	2	OM-3R (W05-58R)	TL-3	BIDIRECTIONAL	LT	TEMPORARY CONCRETE BARRIER ON SHOULDER
MAINLINE - STAGE 2	1	2	OM-3R (W05-58R)	TL-3	BIDIRECTIONAL	LT	TEMPORARY CONCRETE BARRIER ON SHOULDER
TOTALS =	2						

RIPRAP HEAVY & GEOTEXTILE TYPE HR

STATION - STATION	LOCATION	606.0300 RIPRAP HEAVY (CY)	645.0120 GEOTEXTILE TYPE HR (SY)
285+06	MAINLINE, LT.	4	15
285+26	MAINLINE, RT.	4	15
	UNDISTRIBUTED	2	8
	TOTALS =	10	38

WATER

PROJECT	624.0100 WATER (MGAL)
7070-06-61	24
TOTAL =	24

3

MGS GUARDRAIL

STATION - STATION	LOCATION	614.2500 MGS THRIE BEAM TRANSISITON (LF)	614.2610 MGS GUARDRAIL TERMINAL EAT (EACH)
285+06 - 285+44	SW QUADRANT	40	1
282+26 - 285+63	SE QUADRANT	40	1
286+24 - 286+61	NW QUADRANT	40	1
286+43 - 286+81	SE QUADRANT	40	1
TOTALS =		160	4

FINISHING ITEMS

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	627.0200 MULCHING (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0130 SEEDING MIXTURE NO. 30 (LB)	630.0200 SEEDING TEMPORARY (LB)	630.0500 SEED WATER (MGAL)
282+30 - 288+00	MAINLINE, RT - STAGE 1	490	960	0.6	24	24	20
282+30 - 288+00	MAINLINE, LT - STAGE 2	450	770	0.5	19	19	16
-	UNDISTRIBUTED	240	430	0.3	11	11	9
TOTALS =		1,180	2,160	1.4	54	54	45

ALL ITEMS CATEGORY 010 UNLESS OTHERWISE NOTED

TEMPORARY DITCH CHECKS

STATION	LOCATION	628.7504 (EACH)
286+50	MAINLINE , LT	12
286+60	MAINLINE , RT	12
287+30	MAINLINE , RT	12
287+50	MAINLINE , LT	12
	UNDISTRIBUTED	12
TOTALS =		60

3

SILT FENCE

STATION - STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)
283+60 - 285+54	MAINLINE, LT.	180	360
282+30 - 285+54	MAINLINE, RT.	360	720
286+33 - 286+50	MAINLINE, LT.	40	80
286+33 - 288+00	MAINLINE, RT.	180	360
-	UNDISTRIBUTED	190	380
TOTALS =		950	1,900

MOBILIZATION EROSION CONTROL

PROJECT	628.1905 MOBILIZATION EROSION CONTROL (EACH)	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL (EACH)
7070-06-61	6	2
TOTALS =	6	2

PAVEMENT MARKING

STATION - STATION	LOCATION	DESCRIPTION	MARKING LINE 646.1020 EPOXY 4-INCH (LF)	MARKING LINE 646.9000 REMOVAL 4-INCH (LF)
282+30 - 288+00	MAINLINE	DASHED YELLOW CENTERLINE	150	100
282+30 - 288+00	MAINLINE, RT.	WHITE EDGELINE	570	385
282+30 - 288+00	MAINLINE, LT.	WHITE EDGELINE	570	365
TOTALS =			1290	850

TRAFFIC CONTROL

LOCATION	643.0300 TRAFFIC CONTROL DRUMS (DAY)	643.0420 BARRICADES TYPE III (DAY)	643.0705 WARNING LIGHTS TYPE A (DAY)	643.0715 WARNING LIGHTS TYPE C (DAY)	643.0900 TRAFFIC CONTROL SIGNS (DAY)	643.5000 TRAFFIC CONTROL (EACH)	661.0100 TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (B-09-127) (LS)
STAGE 1	3360	60	120	2,100	2,220	--	--
STAGE 2	2240	40	80	1,280	1,480	--	--
PROJECT	--	--	--	--	--	1	1
TOTALS =	5600	100	200	3380	3700	1	1

TEMPORARY PAVEMENT MARKING

STATION - STATION	LOCATION	DESCRIPTION	649.0150 REMOVABLE TAPE 4-INCH (LF)	649.0850 REMOVABLE TAPE 18-INCH (LF)
281+65 - 282+45	MAINLINE - STAGE 1 & 2	YELLOW DOUBLE CENTERLINE	160	--
282+45	MAINLINE, RT. - STAGE 1 & 2	STOP LINE	--	15
284+09 - 287+73	MAINLINE, LT. - STAGE 1	WHITE EDGELINE	365	--
283+05 - 288+77	MAINLINE - STAGE 1	WHITE EDGELINE	575	--
283+33 - 288+59	MAINLINE - STAGE 2	WHITE EDGELINE	530	--
284+15 - 287+70	MAINLINE, LT. - STAGE 2	WHITE EDGELINE	355	--
289+37	MAINLINE, LT. - STAGE1 & 2	STOP LINE	--	15
289+35 - 290+15	MAINLINE - STAGE 1 & 2	YELLOW DOUBLE CENTERLINE	160	--
TOTALS =			2,145	30

CONSTRUCTION STAKING

STATION -STATION	LOCATION	650.4500 SUBGRADE (L.F.)	650.5000 BASE (L.F.)	650.5500 CURB GUTTER AND CURB & GUTTER (L.F.)	*650.6500 STRUCTURE LAYOUT (L.S.)	650.9910 SUPPLEMENTAL CONTROL (7070-06-61) (L.S.)	650.9920 SLOPES STAKES (L.F.)
282+30 - 285+54	MAINLINE	325	325	-	--	--	325
284+90 - 285+63	MAINLINE			108			
286+33 - 288+00	MAINLINE	170	170	-	--	--	170
-	MAINLINE	--	--	--	1	1	--
	TOTAL =	495	495	108	1	1	495

*CATEGORY 020

SAWING

STATION - STATION	LOCATION	690.0150 ASPHALT (LF)	690.0250 CONCRETE (LF)
282+30 - 285+05	MAINLINE, RT	275	-
285+05	MAINLINE	10	20
283+95 - 285+05	MAINLINE, LT	110	-
286+85 - 288+00	MAINLINE, RT	115	-
286+85	MAINLINE	10	20
286+85 - 287+85	MAINLINE, LT	100	-
	TOTAL =	620	40

LEGEND

DIRECTION OF FLOW
XXXXXXXXX SAWING ASPHALT/SAWING CONCRETE
SILT FENCE
TEMPORARY DITCH CHECK
EXISTING RIPRAP TO REMAIN
RIPRAP HEAVY OVER GEOTEXTILE TYPE HR

DOUGLAS & ANNETTA DANIELSON

EXISTING FIELD TO REMAIN

STA. 284+63 - STA. 285+45, LT.
REMOVING GUARDRAIL REQ'D
STA. 284+90 - STA. 285+44, LT.
CONCRETE CURB & GUTTER 4-INCH
SLOPED 36-INCH TYPE TBT/TBTT REQ'D.

STA. 282+35, LT.
EXISTING F.E. TO REMAIN

P.L.

EDGE OF EXISTING LAWN

PATRICK & KATHLEEN SEDLACEK

STA. 286+24 - STA. 287+05, LT.
REMOVING GUARDRAIL REQ'D

SLOPE INTERCEPTS

MGS GUARDRAIL TERMINAL E.A.T. REQ'D (TYP.)

MGS THRIE BEAM TRANSITION (TYP.)

FINISHED HINGE POINT (TYP.)

FINISHED EDGE OF ASPHALT (TYP.)

CONCRETE PAVEMENT APPROACH SLAB HES REQ'D (TYP.)

CONCRETE PAVEMENT 12-INCH HES (TYP.)

6'X9'

CONCRETE SURFACE DRAIN REQ'D. SEE SDD

R/W

EXISTING C/L STH 27

BEGIN CONSTRUCTION
STA. 282+30
Y= 160,771.38
X= 235,244.95

FINISHED C/L STH 27

8:1

180°21'33"

283+00 284+00 N00°02'38"E 285+00 286+00 N00°30'11"E 287+00 288+00

STH 27

(ASPHALT OVER CONCRETE)

(ASPHALT OVER CONCRETE)

15' 15.7' 14'

50' 50'

END OF DECK
STA. 285+54.81

END OF DECK
STA. 286+32.19

STA. 282+30
15.0' RT.

STA. 284+16
15.0' RT.

BM 5

BM 2

BM 4

BM 6

CENTURYLINK (TYP.)

STRUCTURE B-09-127
SKEW = 25° RHF

PI: 285+03.89

6'X9'

CONCRETE SURFACE DRAIN REQ'D. SEE SDD

STA. 282+82 - STA. 285+63, RT.
REMOVING GUARDRAIL REQ'D

BEGIN PROJECT
STA. 285+05
Y= 161,046.38
X= 235,245.17

PI STA. 285+03.89
Y = 161,045.27
X = 235,245.16

STA. 285+09 - STA. 285+63, RT.
CONCRETE CURB & GUTTER 4-INCH
SLOPED 36-INCH TYPE TBT/TBTT REQ'D.

CHRISTOPHER LARSON

P.L.

BIG DRYWOOD CREEK

END PROJECT
STA. 286+85
Y= 161,226.38
X= 235,246.75

STA. 286+43 - STA. 287+24, RT.
REMOVING GUARDRAIL REQ'D

ANTHONY & KELLY BURICH

END CONSTRUCTION
STA. 288+00
Y= 161,341.37
X= 235,247.76

CHIPPEWA VALLEY ELECTRIC COOPERATIVE (TYP.)

R/W

5 5

1012 1010 1008 1006 1004 1002 1000 998 996

VPI STA. = 285+54.62
VPI EL. = 1007.22

VPI STA. = 286+32.38
VPI EL. = 1007.77

FINISHED C/L PROFILE STH 27

EXISTING C/L PROFILE STH 27

1.09% 0.71% 0.48%

MATCH EXISTING
STA. 285+05
EL. = 1006.68

END OF DECK
STA. 285+54.81

END OF DECK
STA. 286+32.19

MATCH EXISTING
STA. 286+85
EL. = 1008.02

STA. 285+93.50
STRUCTURE B-09-127 TO REMAIN
SEE STRUCTURE PLANS FOR DETAILS

EXISTING C/L ELEVATION
FINISHED C/L ELEVATION

1005.28 1005.46 1005.60 1005.74 1005.89 1005.98 1006.06 1006.16 1006.26 1006.39 1006.53 1006.65 1006.68 1006.68 1006.77 1006.84 1006.92 1007.06 1007.10 1007.26 1007.30 1007.40 1007.45 1007.54 1007.57 1007.68 1007.63 1007.81 1007.81 1007.90 1007.97 1008.00 1008.02 1008.02 1008.12 1008.27 1008.43 1008.61 1008.79 1008.96 1009.12 1009.27

282+80 283+00 283+20 283+40 283+60 283+80 284+00 284+20 284+40 284+60 284+80 285+00 285+20 285+40 285+60 285+80 286+00 286+20 286+40 286+60 286+80 287+00 287+20 287+40 287+60 287+80 288+00 288+20 288+40

BENCH MARKS

NO.	STA.	DESCRIPTION	ELEV.
1	282+16	¾" IRON REBAR SET, 23.4' LT.	1004.22
2	285+38	¾" IRON REBAR SET, 24.0' RT.	1005.79
4	285+66	TABLET IN SE WINGWALL, 21.7' RT.	1006.72
5	283+34	SPINDLE IN POWER POLE, 45.7' RT.	1001.21
6	286+97	SPINDLE IN POWER POLE, 47.7' RT.	1002.93

EARTHWORK SUMMARY

SEE MISCELLANEOUS QUANTITIES SHEET FOR EARTHWORK SUMMARY.

PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	PLAN AND PROFILE	SHEET 15	E

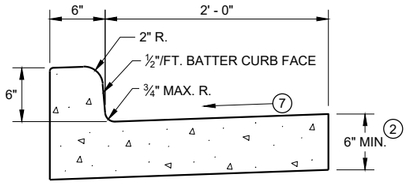
FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\SHEETSPLAN\PLAN & PROFILE SHEETS\W11588_PLAN&PROFILE.DWG
LAYOUT :

PLOT DATE : 6/14/2021
PLOT TIME : 1:21:20 PM
PLOT BY : RYAN SCHMITZ
PLOT SCALE : 1" = 1'

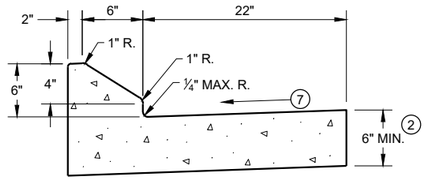
Standard Detail Drawing List

08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-07A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
09G02-05A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08F	ADVANCED WIDTH RESTRICTION SIGNING
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D33-06	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

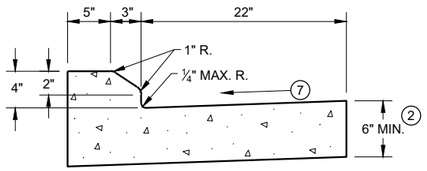
6



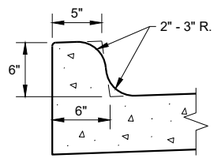
TYPES A (1) & D



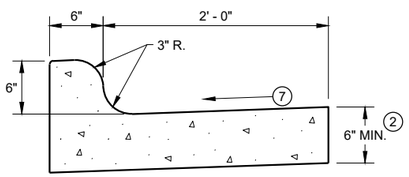
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

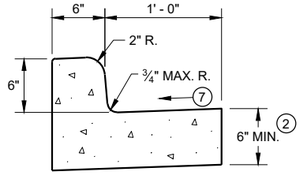


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



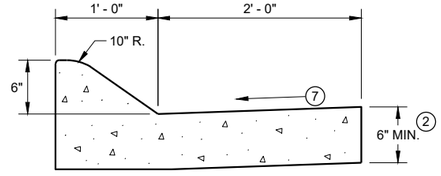
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"

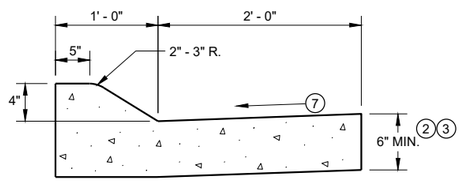


TYPES A (1) & D

CONCRETE CURB AND GUTTER 18"

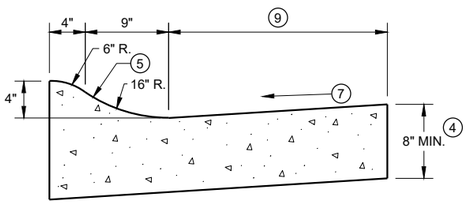


6" SLOPED CURB TYPES A (1) & D



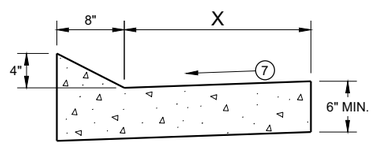
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

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

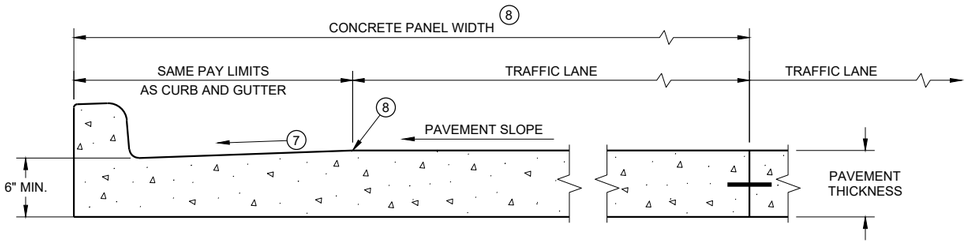


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

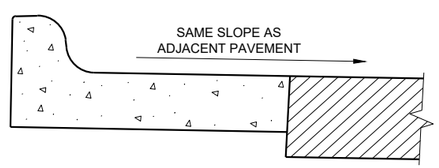
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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.

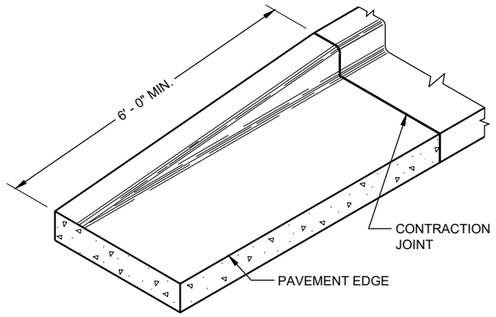
(9) CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

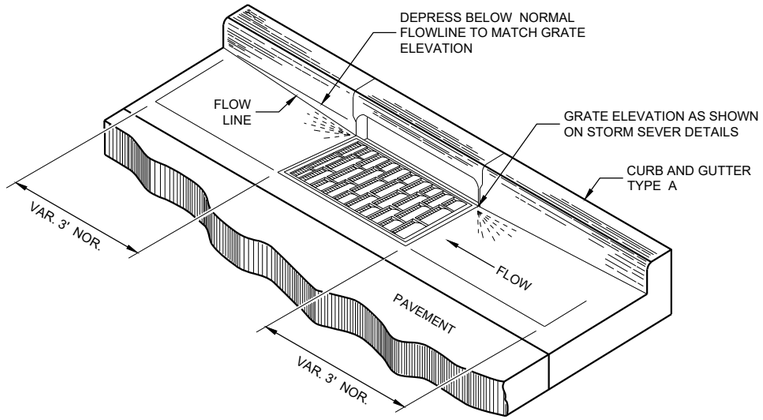
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D01 - 22a



END SECTIONCURB 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.

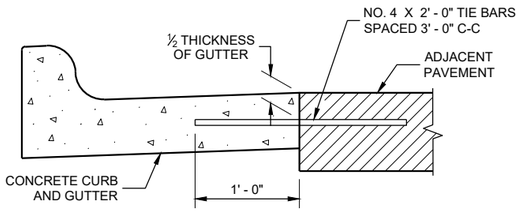
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

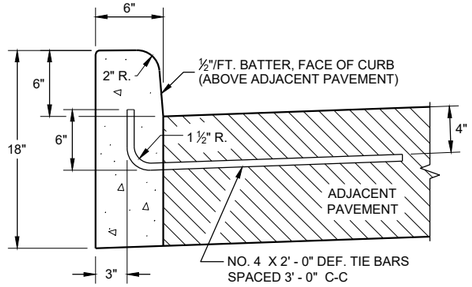
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(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.

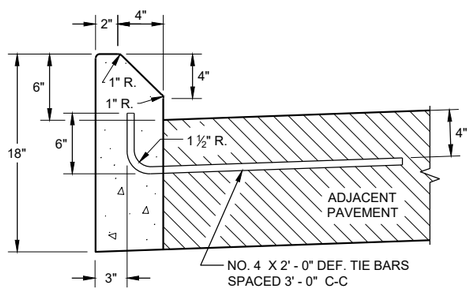
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

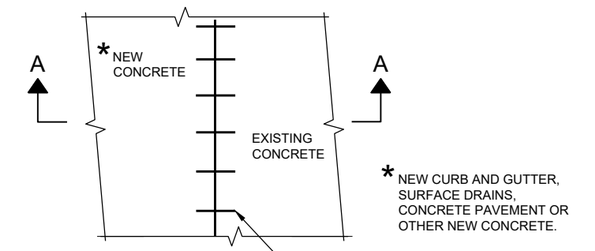


TYPES A (1) & D

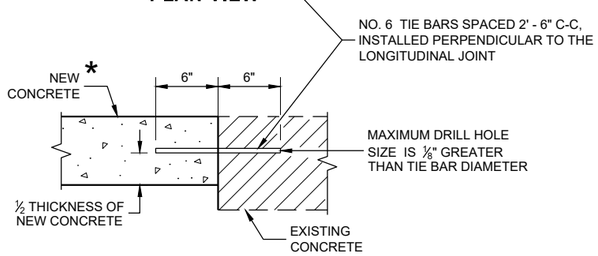


TYPES G (1) & J

CONCRETE CURB

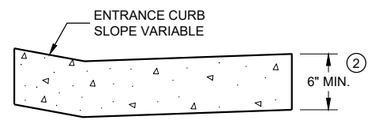


PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

6

SDD08D01 - 22b

SDD08D01 - 22b

GENERAL NOTES

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

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

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

(2) NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.

(4) CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.

(5) PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

(6) CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' -0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

(7) PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)

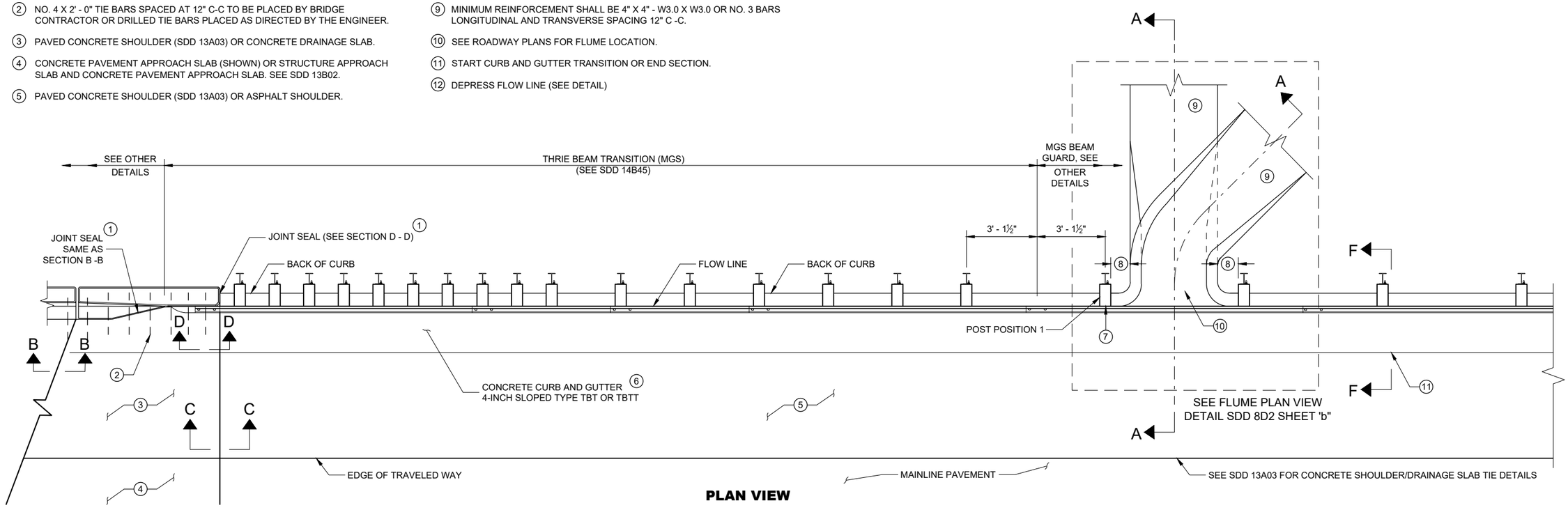
(8) CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.

(9) MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C -C.

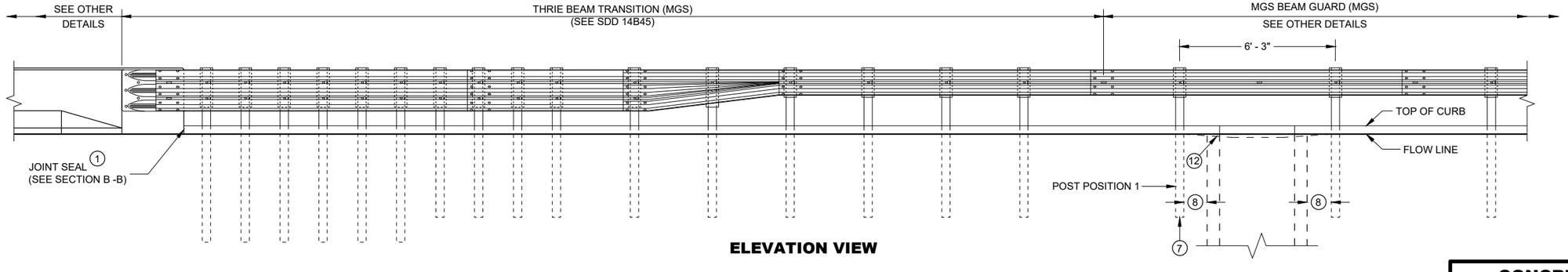
(10) SEE ROADWAY PLANS FOR FLUME LOCATION.

(11) START CURB AND GUTTER TRANSITION OR END SECTION.

(12) DEPRESS FLOW LINE (SEE DETAIL)



PLAN VIEW



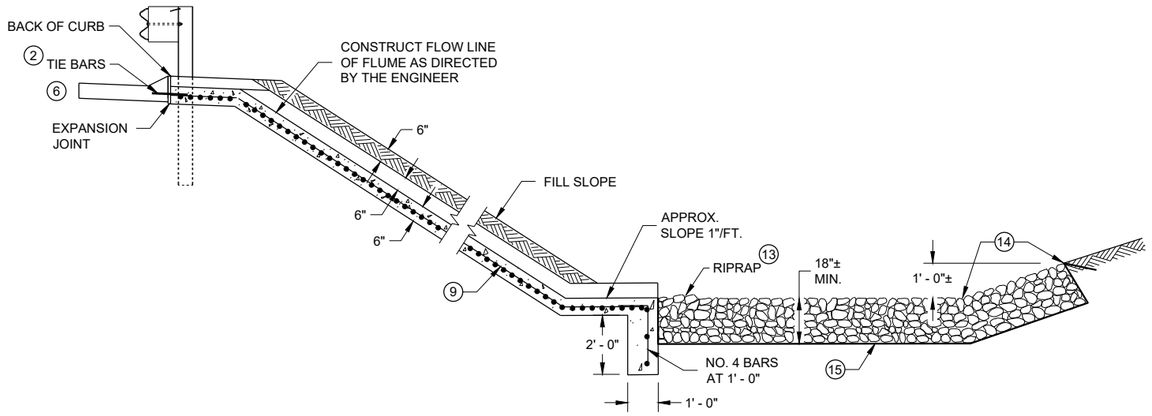
ELEVATION VIEW

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

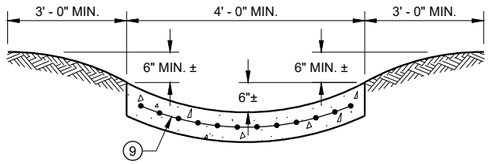
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D02 - 07a

SDD 08D02 - 07a



SECTION A - A



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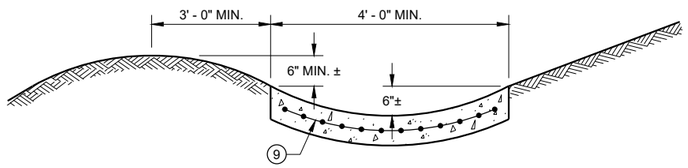

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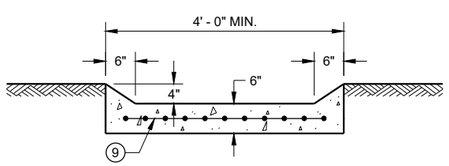
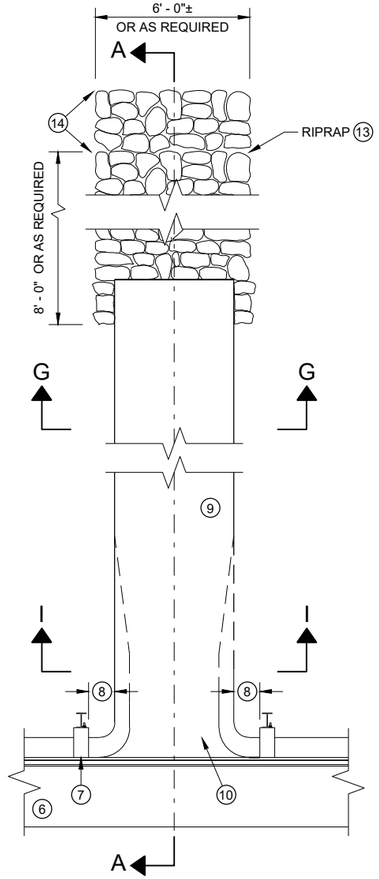
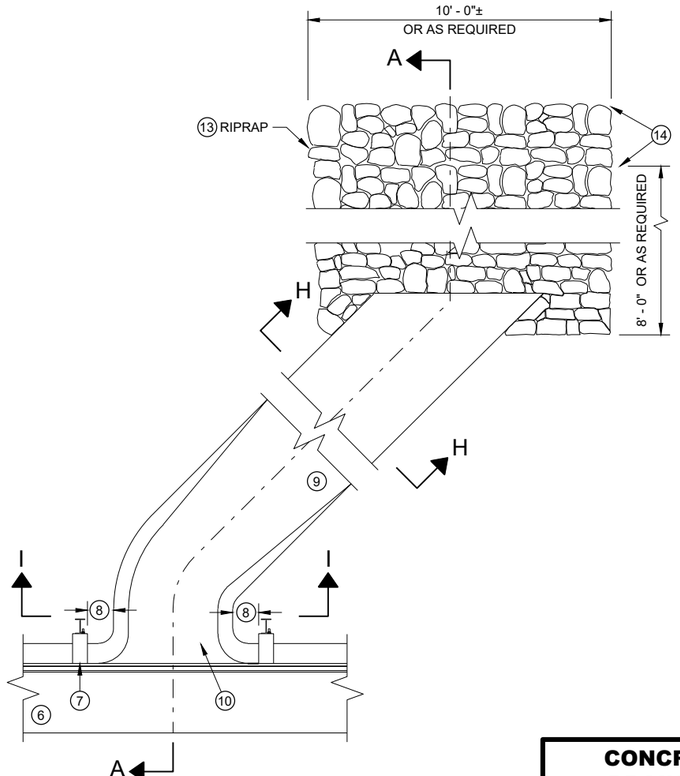


SECTION I - I



PLAN VIEW PERPENDICULAR FLUME



PLAN VIEW SKEWED FLUME

GENERAL NOTES

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

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

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

(2) NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.

(4) CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.

(5) PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

(6) CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' -0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

(7) PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)

(8) CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.

(9) MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C -C.

(10) SEE ROADWAY PLANS FOR FLUME LOCATION.

(11) START CURB AND GUTTER TRANSITION OR END SECTION.

(12) DEPRESS FLOW LINE (SEE DETAIL)

(13) MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.

(14) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.

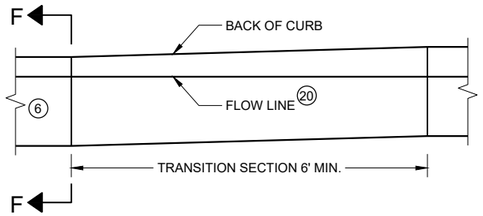
(15) GEOTEXTILE FABRIC TYPE HR.

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

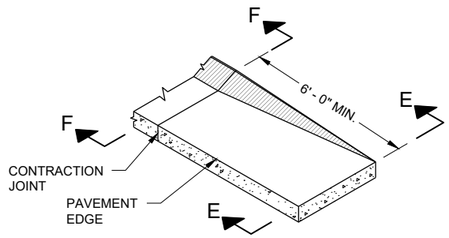
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

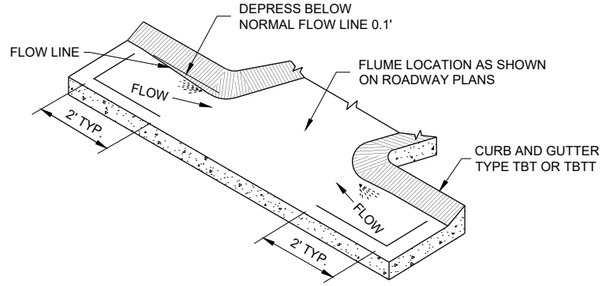
SDD 08D02 - 07b
SDD 08D02 - 07b



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



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



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

GENERAL NOTES

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

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

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

(2) NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.

(4) CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.

(5) PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

(6) CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' -0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

(7) PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)

(8) CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.

(9) MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C -C.

(10) SEE ROADWAY PLANS FOR FLUME LOCATION.

(11) START CURB AND GUTTER TRANSITION OR END SECTION.

(12) DEPRESS FLOW LINE (SEE DETAIL)

(13) MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.

(14) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

(15) GEOTEXTILE FABRIC TYPE HR.

(16) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.

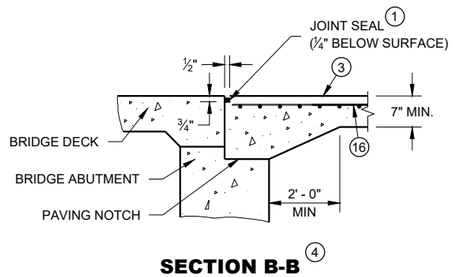
(17) MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.

(18) MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.

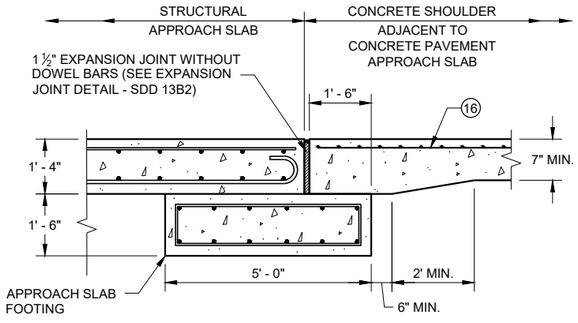
(19) ALIGN FACE OF POST BLOCK WITH FLOW LINE.

(20) MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.

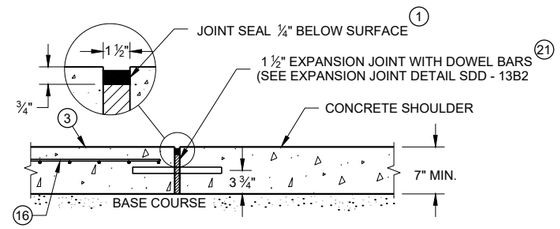
(21) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.



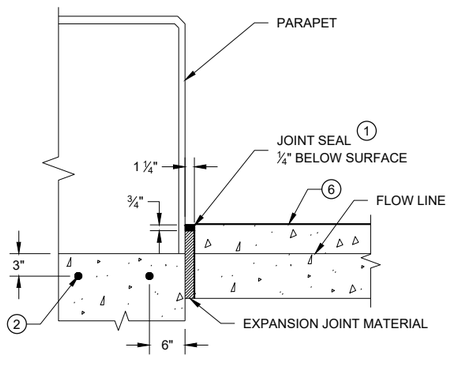
SECTION B-B (4)



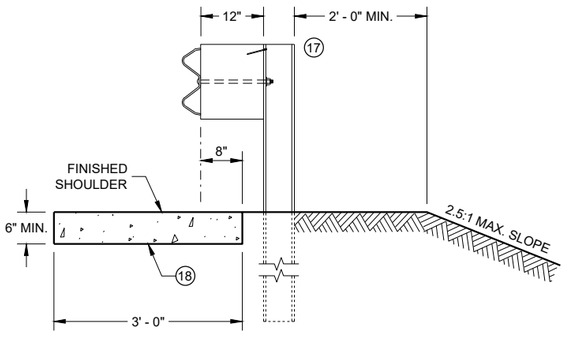
SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL APPROACH SLAB AND CONCRETE APPROACH SLAB



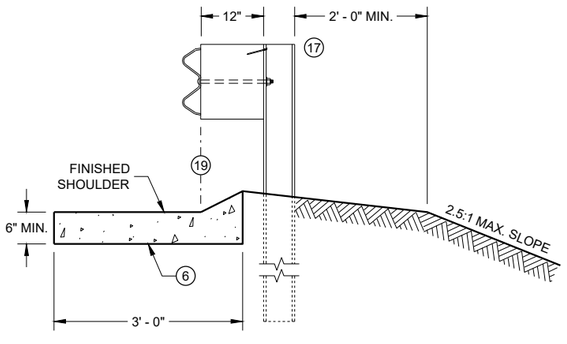
SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH WITH CONCRETE SHOULDERS



SECTION D - D



SECTION E - E



SECTION F - F

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

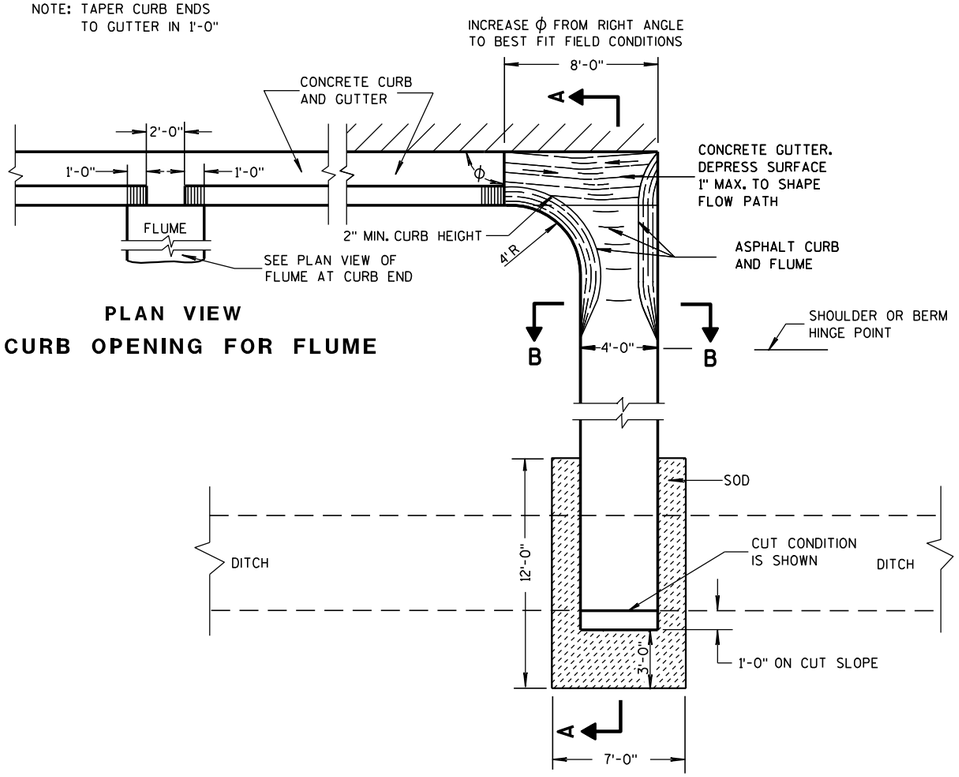
APPROVED
February 2020 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

SDD 08D02 - 07c

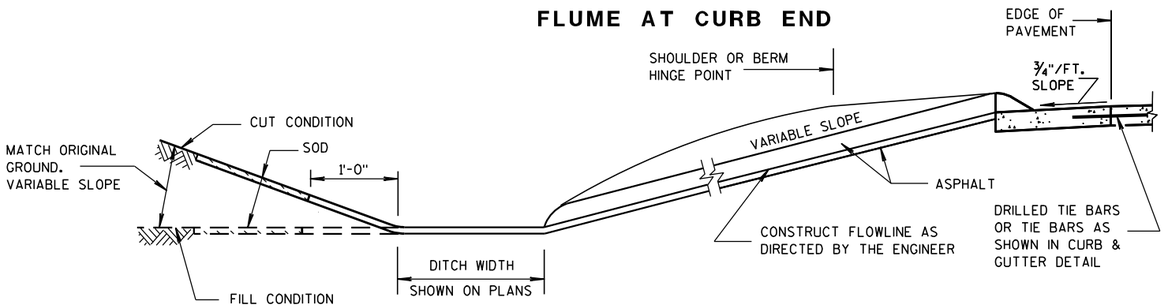
SDD 08D02 - 07c

ASPHALTIC FLUME

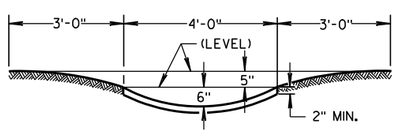


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

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.

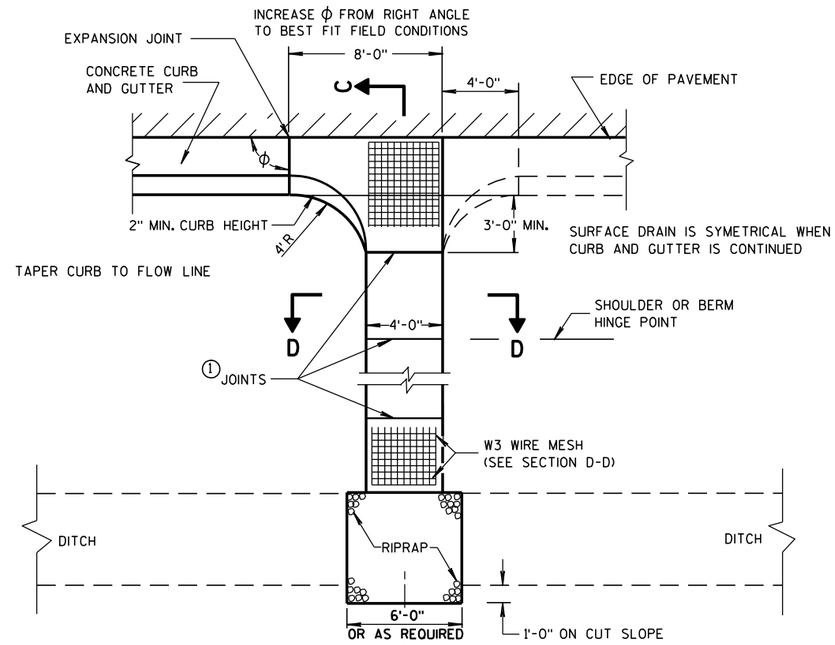
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

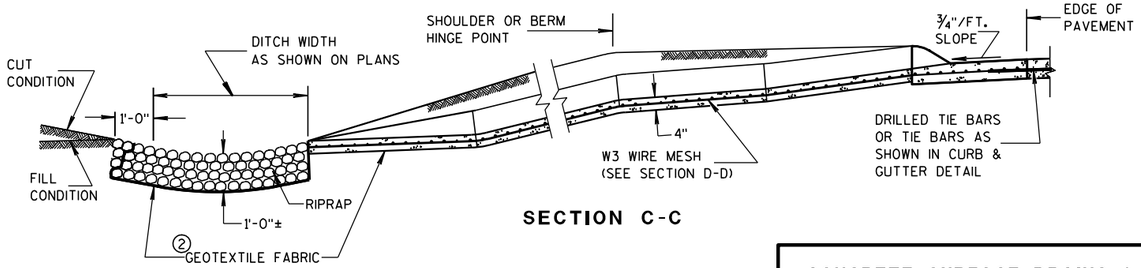
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

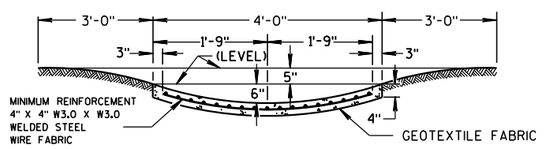
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT

FHWA

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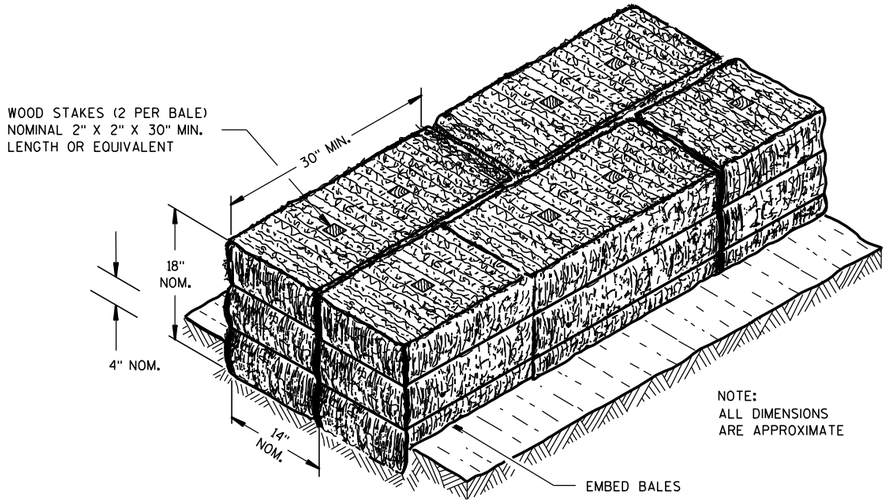
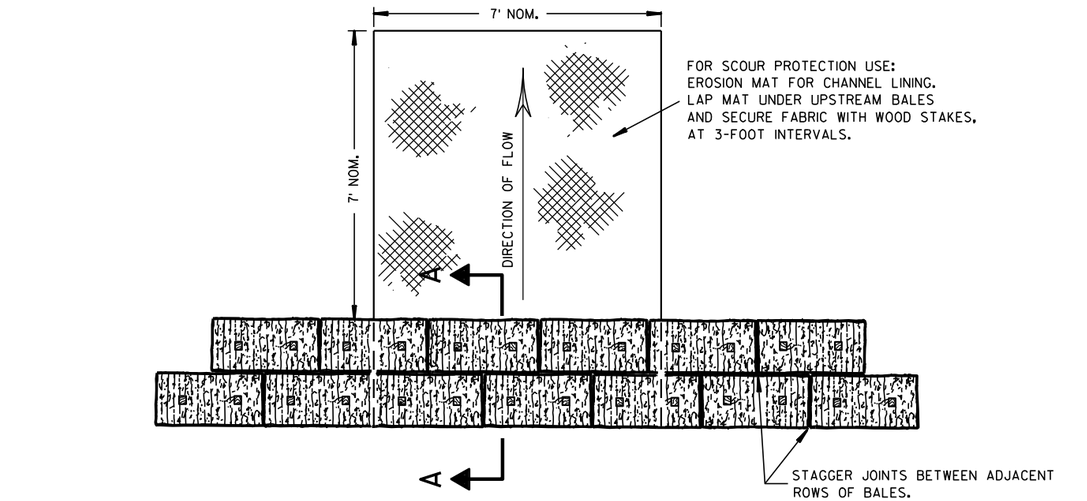
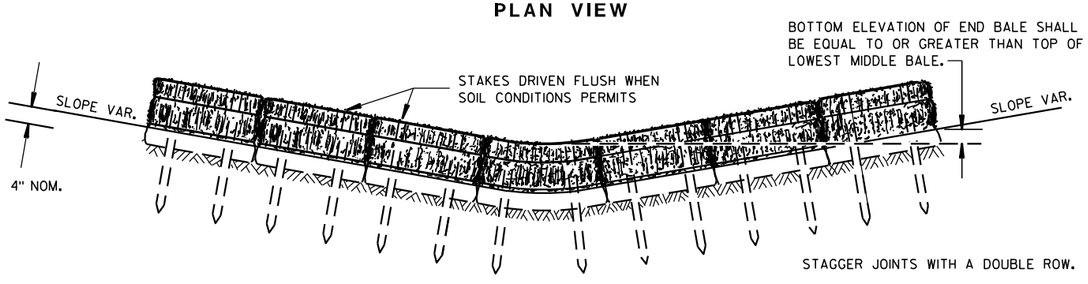
S.D.D. 8 D 4-5



SECTION A-A



PLAN VIEW



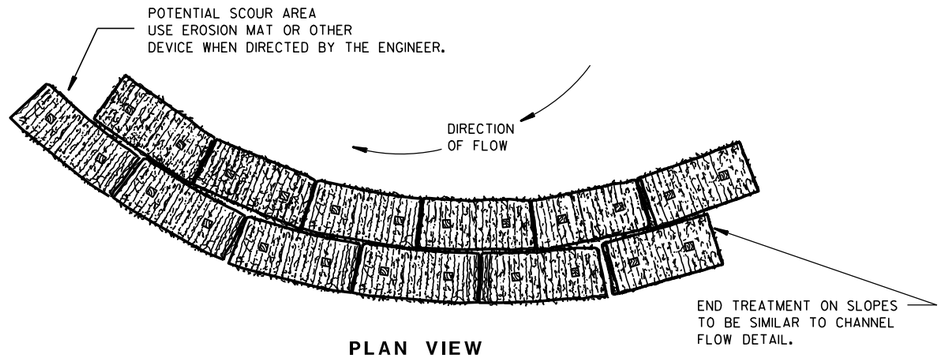
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

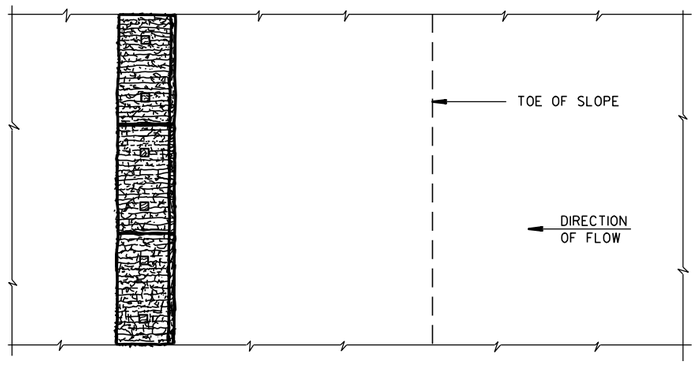
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

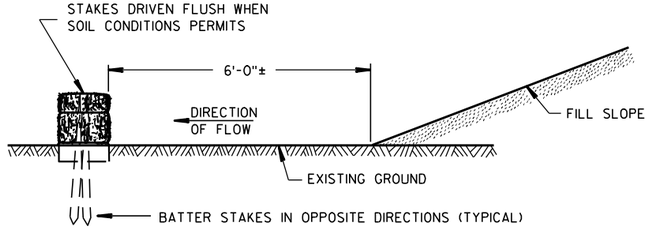


PLAN VIEW

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

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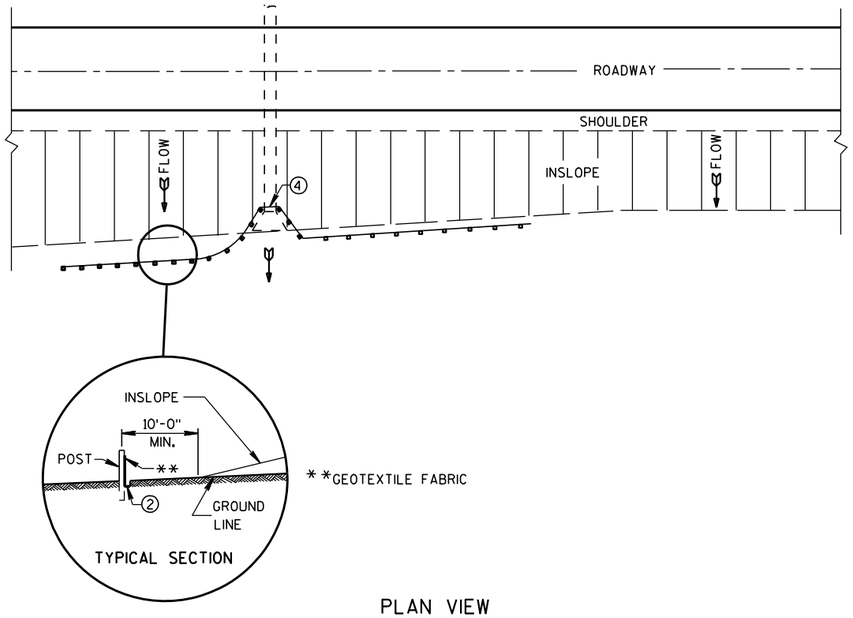
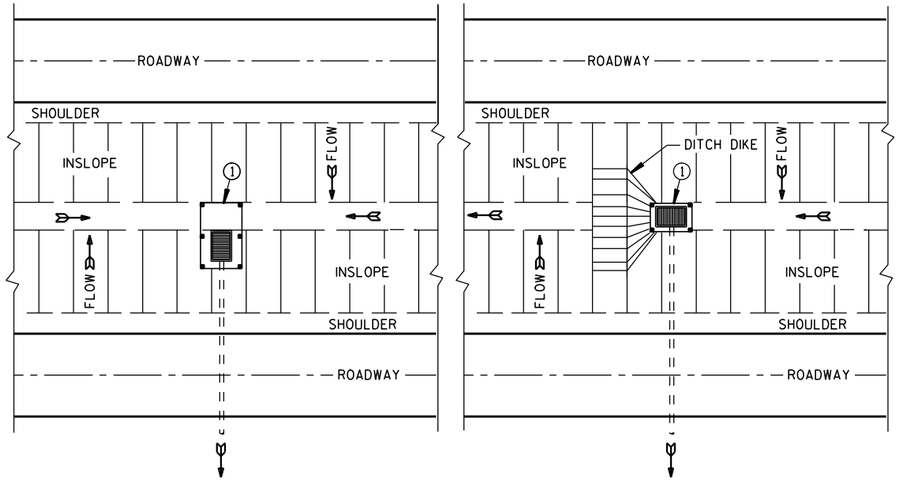
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



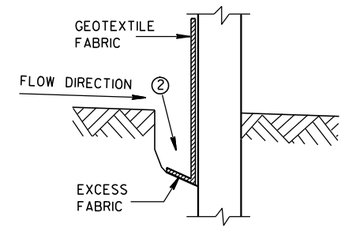
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

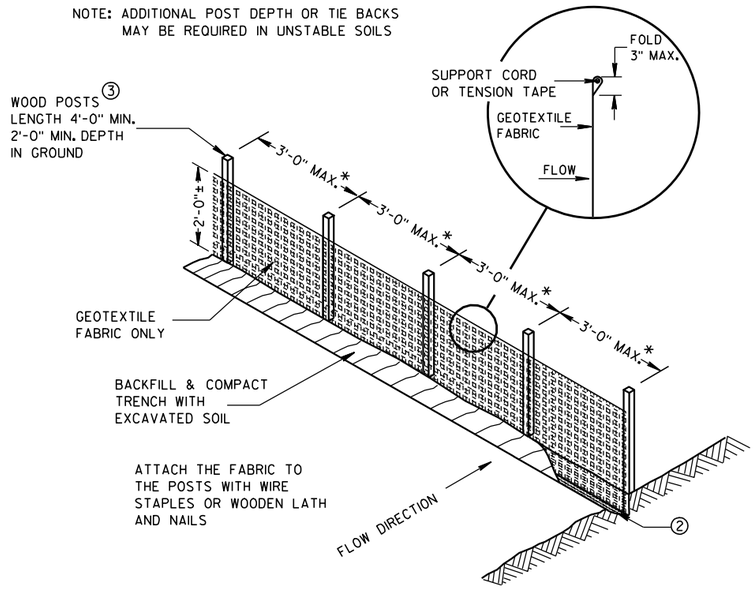
GENERAL NOTES

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

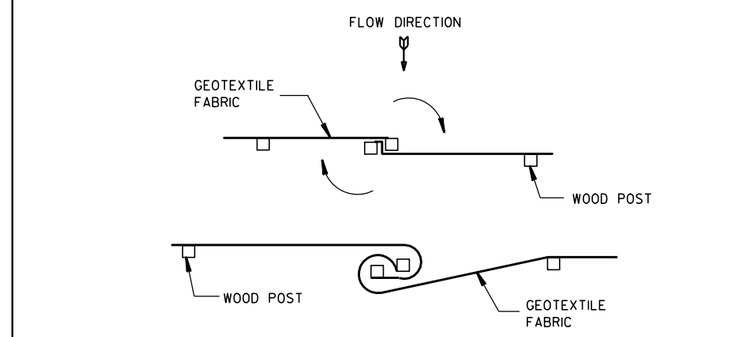
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



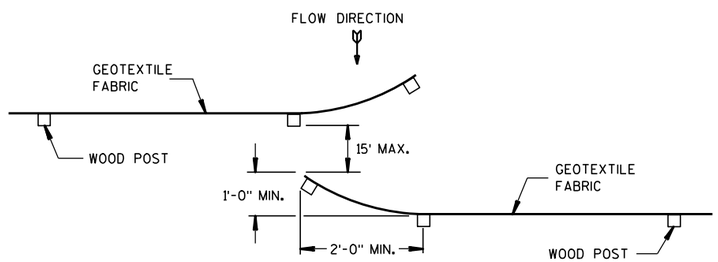
TRENCH DETAIL



SILT FENCE

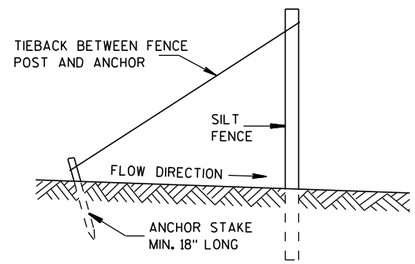


TWIST METHOD



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

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S.D.D. 8 E 9-6

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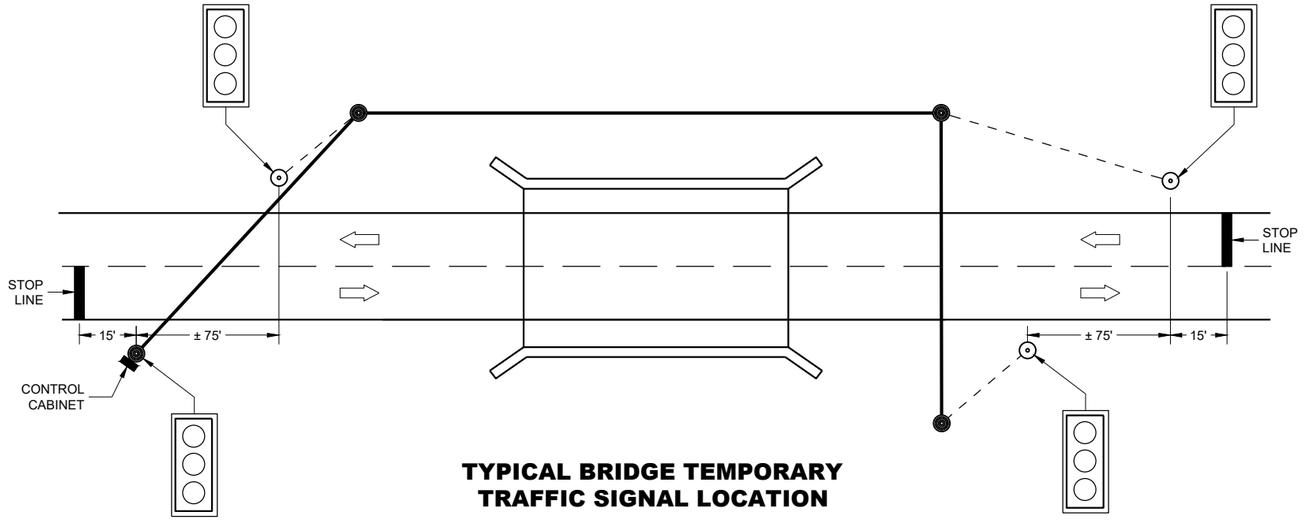


TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

LEGEND

- WOOD POLE (NON-BREAKAWAY)
- WOOD POST (BREADAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- DIRECTION OF TRAFFIC
- LED TRAFFIC SIGNAL WITH BACKPLATE (3-12")

GENERAL NOTES

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

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAY BE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY POLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

WOOD POLES (NON-BREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAM GUARD, ETC.).

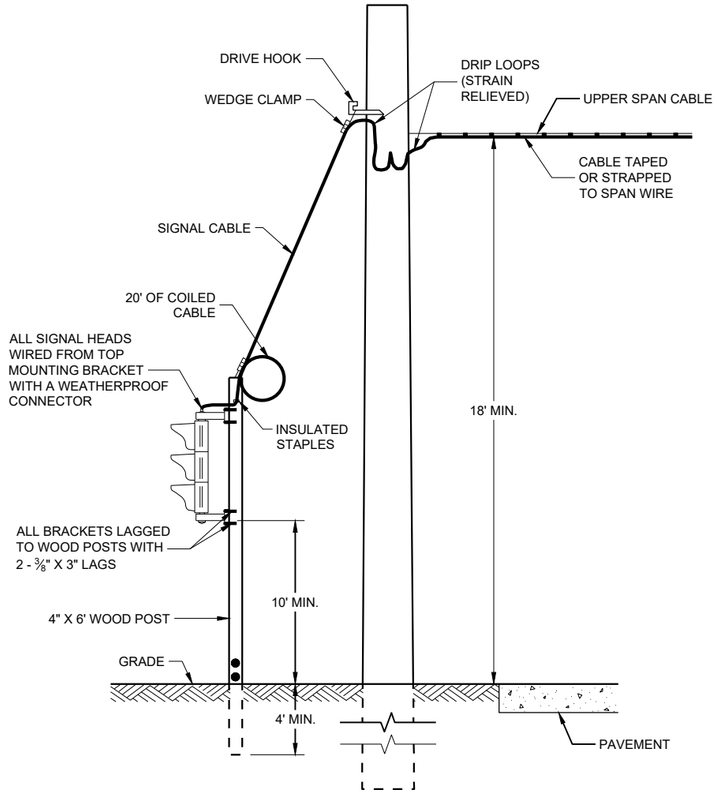
WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

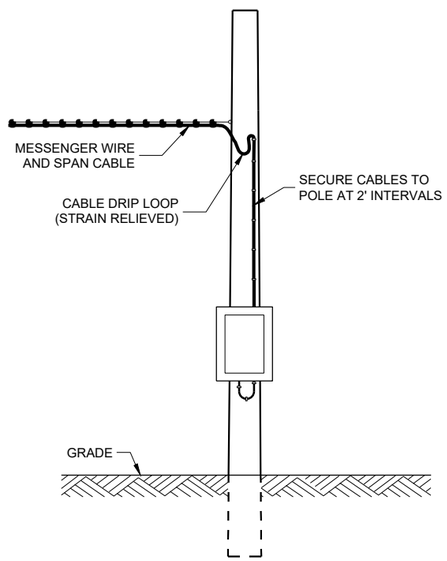
TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

EACH TRAFFIC SIGNAL SHALL HAVE A BACKPLATE.

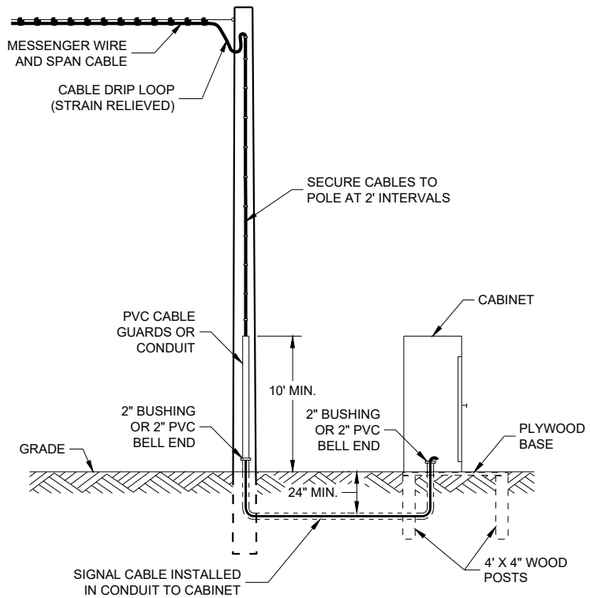
SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15D33.



TYPICAL DROP TO TRAFFIC SIGNAL FACE



POLE MOUNT CABINET INSTALLATION



GROUND MOUNT CABINET INSTALLATION

MINIMUM POLE LENGTHS	CLASS	POLE BURIAL DEPTHS
25'	V	5'
30'	V	6'
35'	IV	7'
40'	IV	8'
45'	IV	9'

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE*
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/CURBS	2 FT

* NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Ahmet Demirbilek — ROADWAY STANDARDS DEVE ENGINEER
FHWA

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SDD09G02 - 05a

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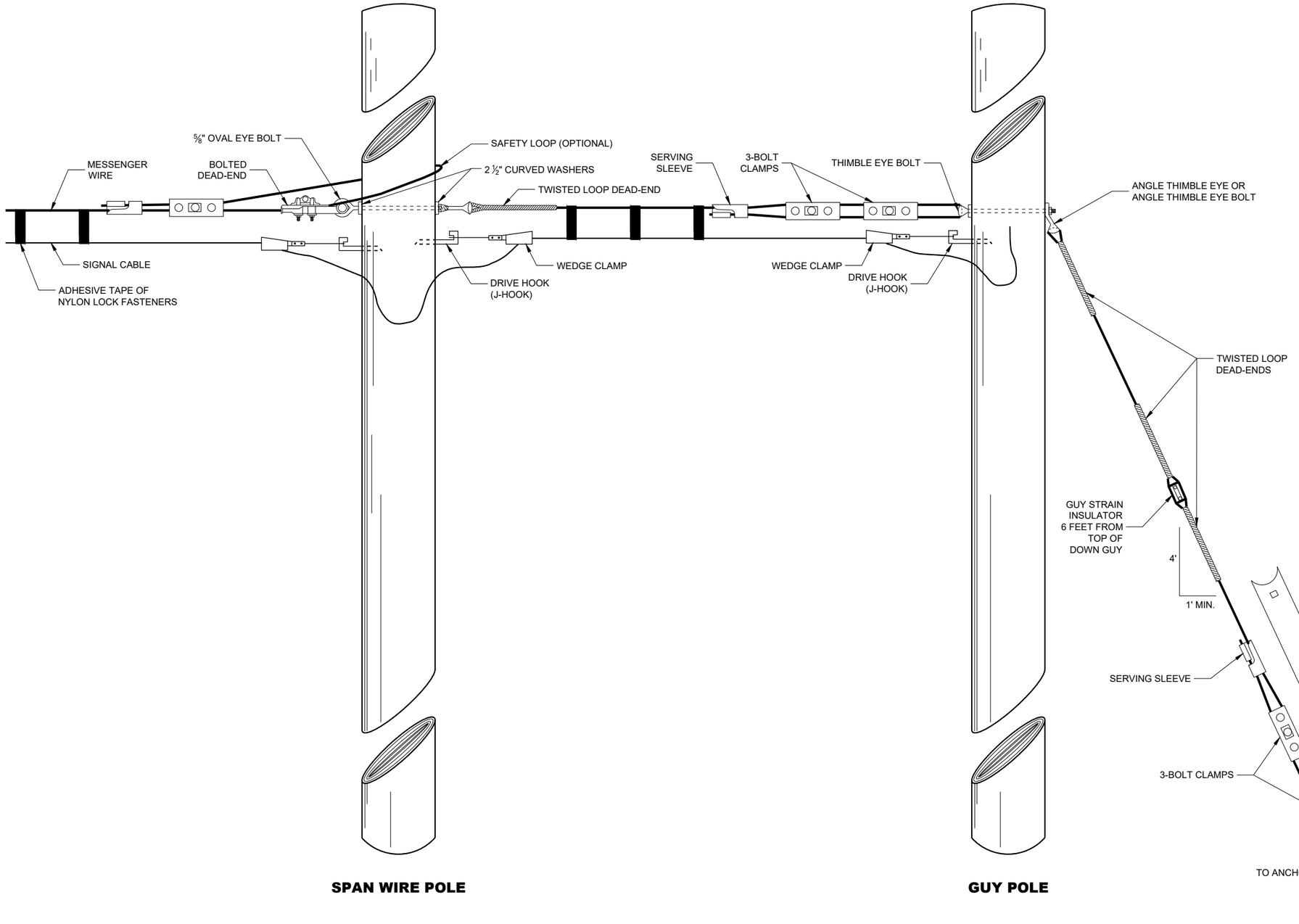
GENERAL NOTES

USE ¾" DRILL IN WOOD POLE TO PROVIDE FOR ⅝" BOLTS.



SPAN WIRE POLE

GUY POLE

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2015 — DATE
/S/ Ahmet Demerbilek — ROADWAY STANDARDS DEVE ENGINEER

FHWA

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SDD09G02 - 05b

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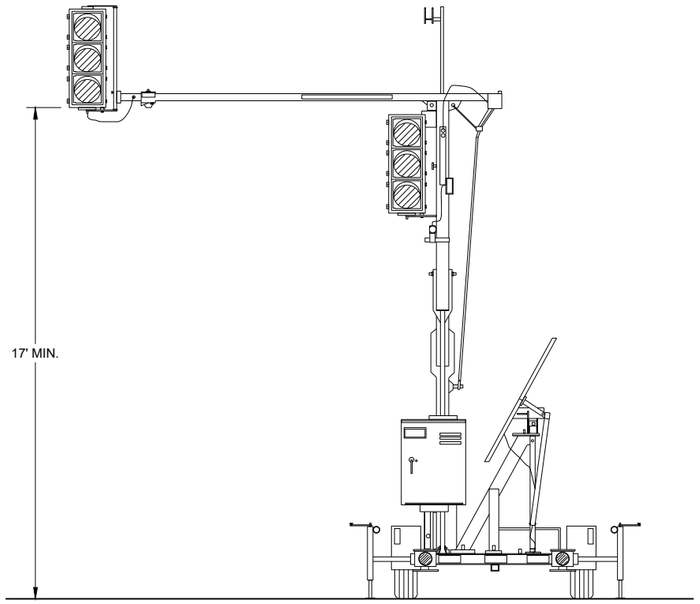
SDD09G02 - 05b

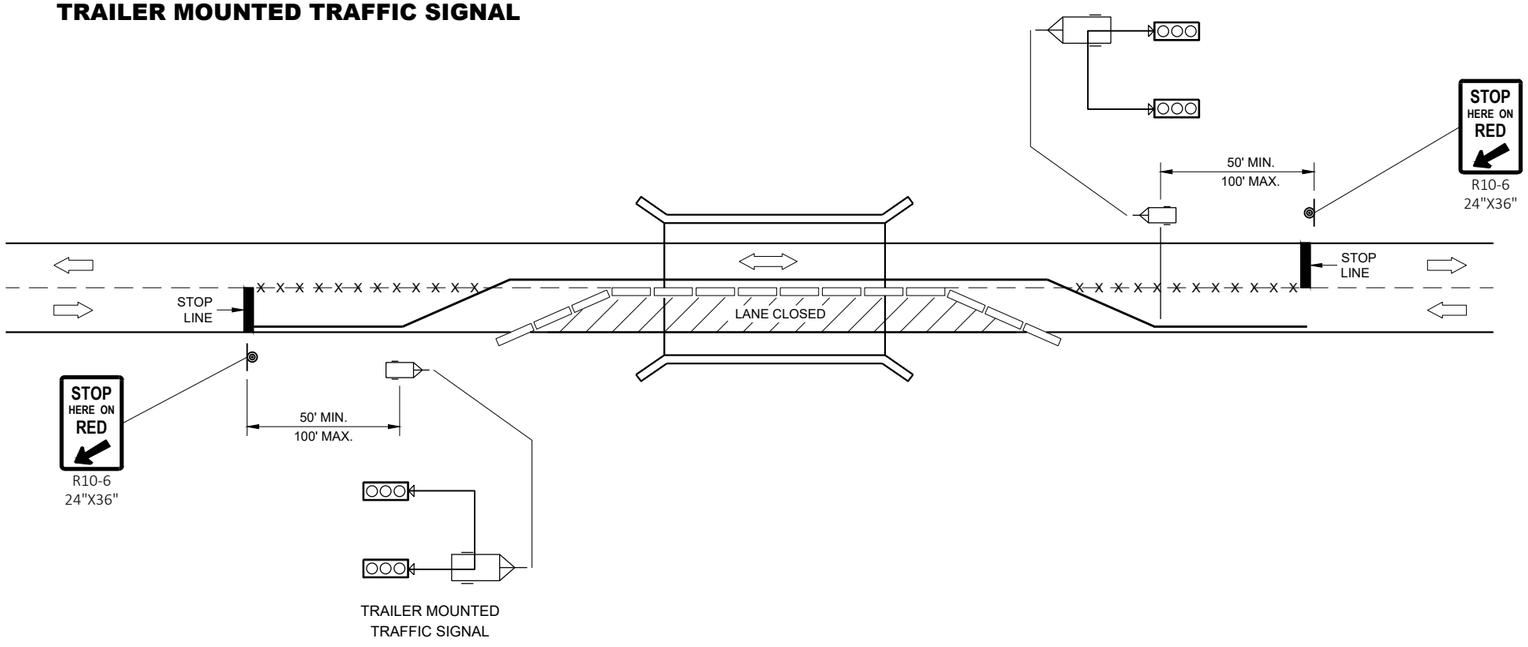


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15D33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

- POST MOUNTED SIGN
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- REMOVE PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

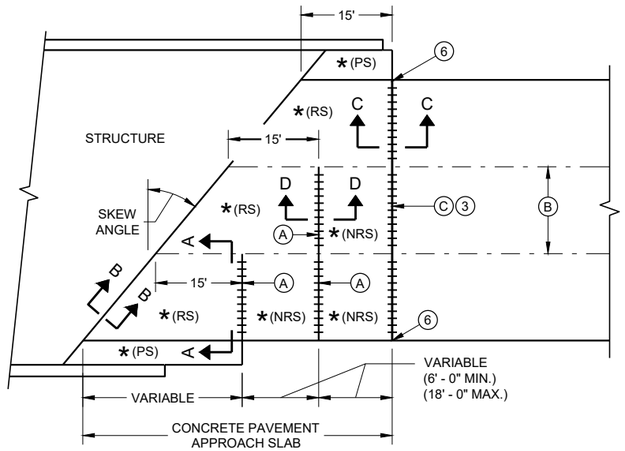
June 2015
DATE

/S/ Ahmet Demerbilek
ROADWAY STANDARDS DEVE ENGINEER

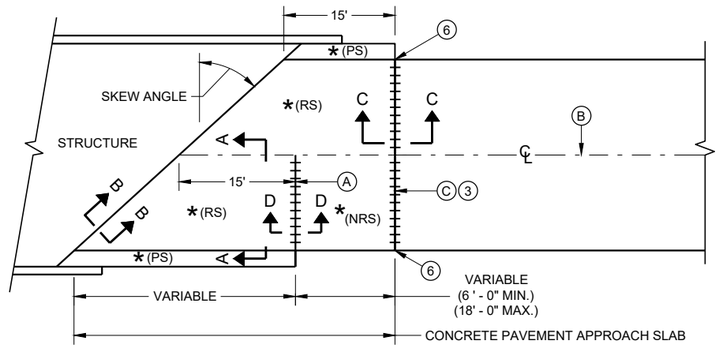
FHWA

SDD09G02 - 05c

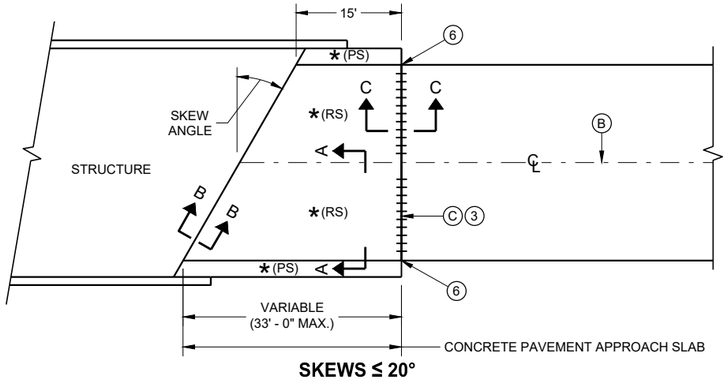
SDD09G02 - 05c



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

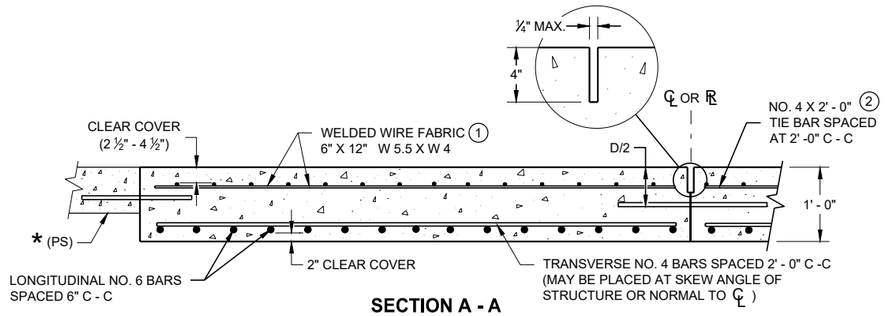
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

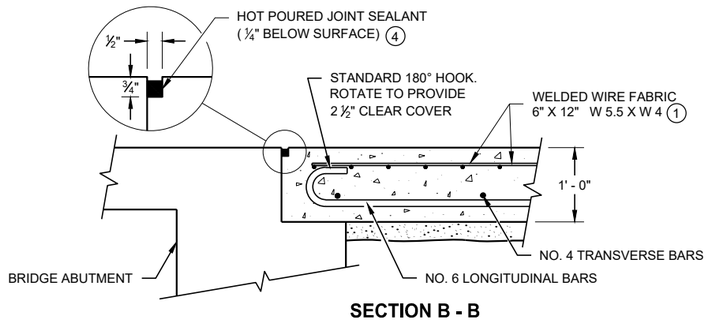
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

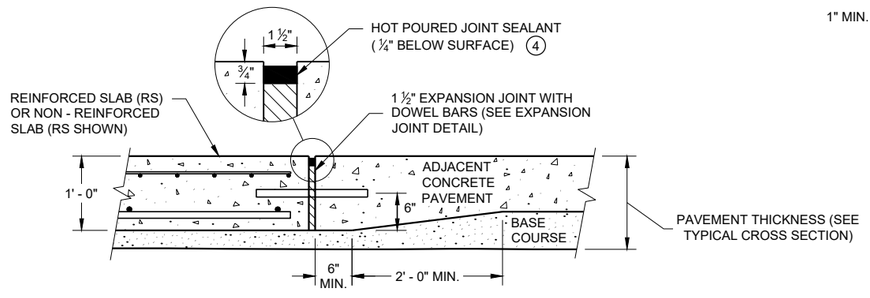
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



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.

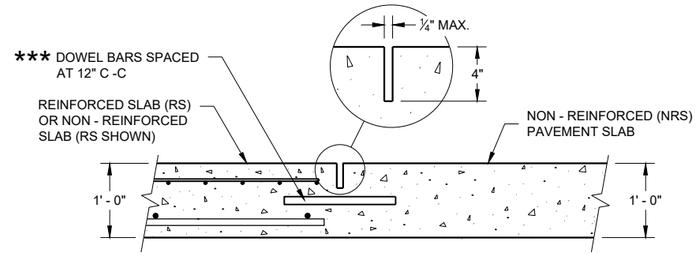
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

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

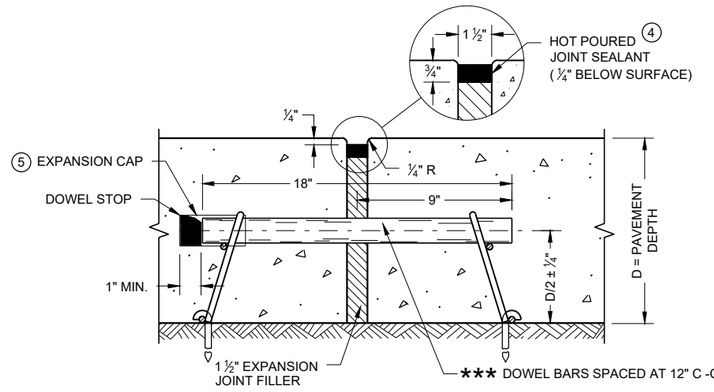
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(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 SUPERVISO

FHWA

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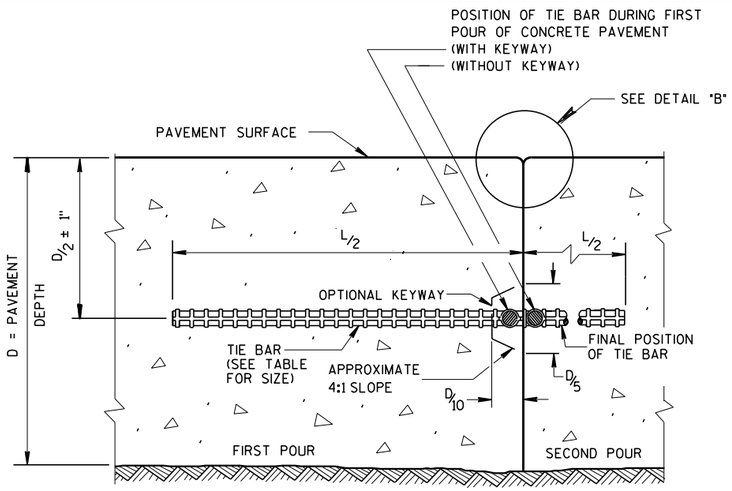
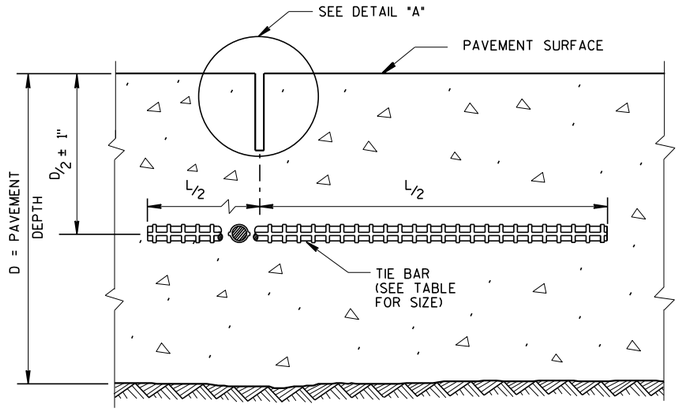
SDD 13B02 - 09a



CONSTRUCTION JOINT



SAWED JOINT

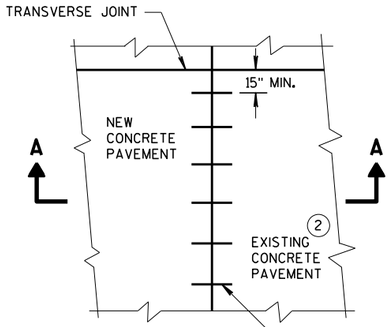
GENERAL NOTES

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

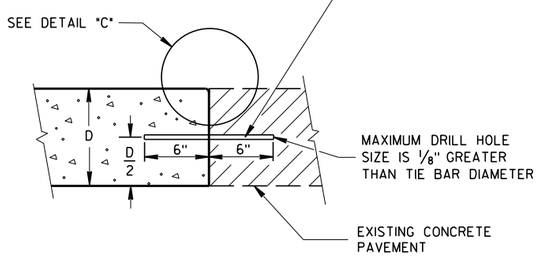
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

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

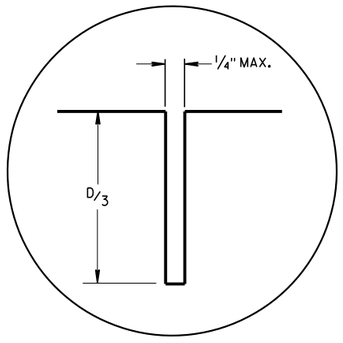


PLAN VIEW

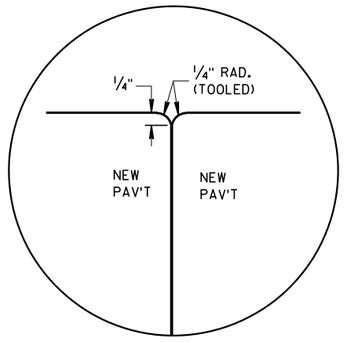


SECTION A-A

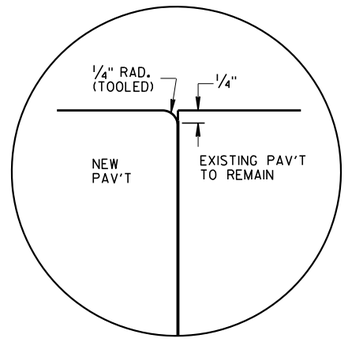
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



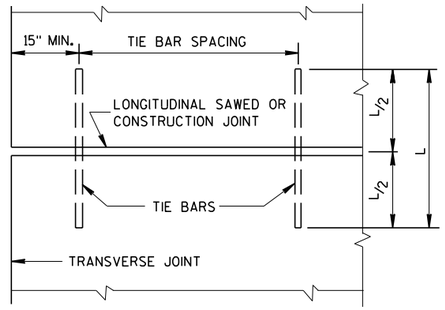
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 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 PE — PAVEMENT SUPE
FHWA

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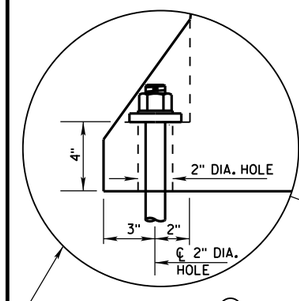
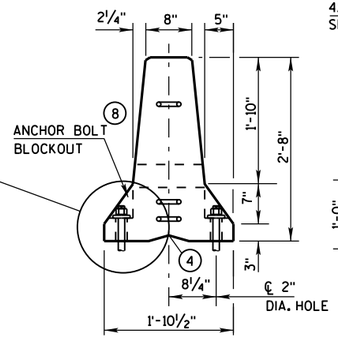
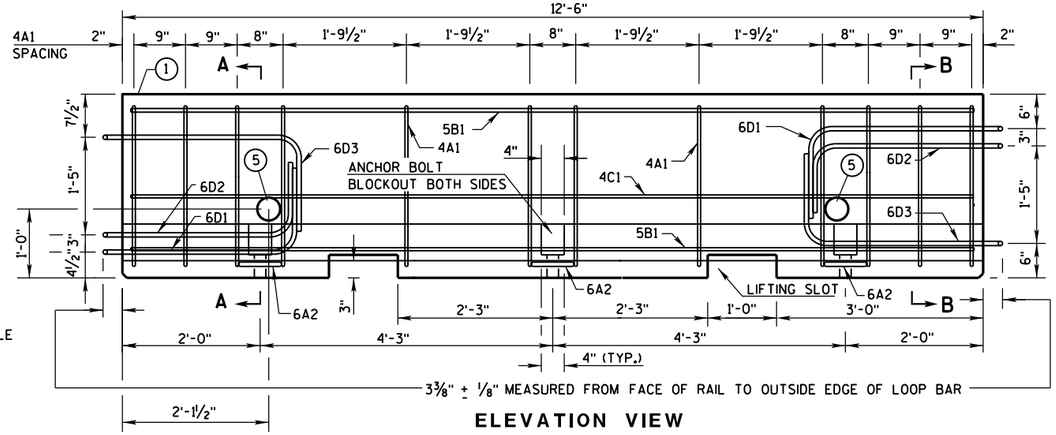


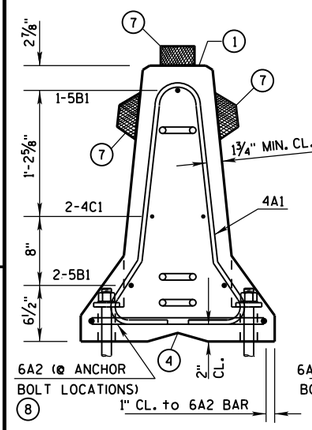
ANCHOR ON TRAFFIC SIDE (8) ONLY WHEN REQUIRED (SEE SHEET D FOR ADDITIONAL ANCHOR DETAIL)



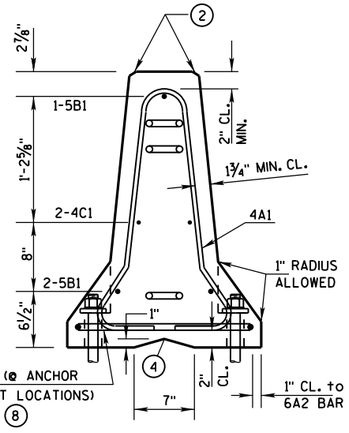
END VIEW



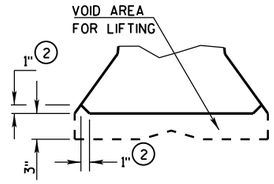
ELEVATION VIEW



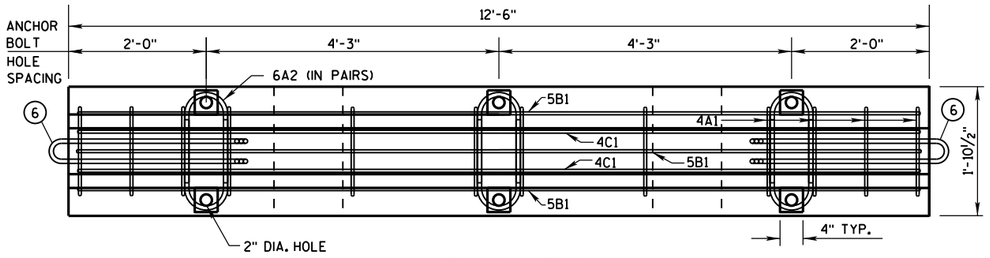
SECTION A-A
(STIRRUP PLACEMENT)



SECTION B-B
(STIRRUP PLACEMENT)

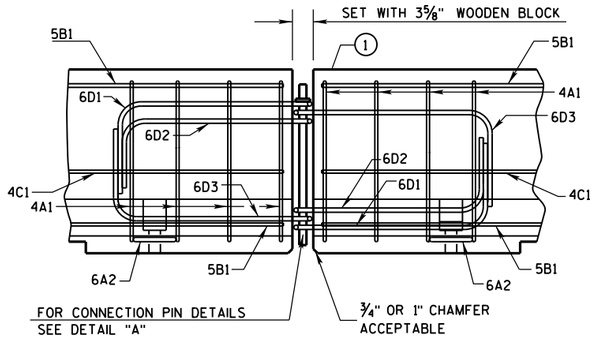


DETAIL "B"
LIFTING SLOT DETAIL

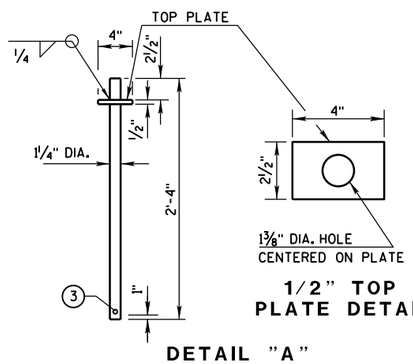


PLAN VIEW

DETAILS OF BARRIER SECTION

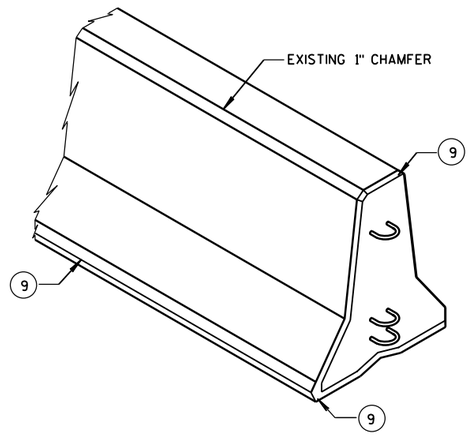


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

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



GENERAL NOTES

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

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

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

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

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

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

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

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

(2) 1" CHAMFER TO PREVENT SPALLING.

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

(4) "V" NOTCH IS OPTIONAL.

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

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

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

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

(9) 1" CHAMFER OPTIONAL.

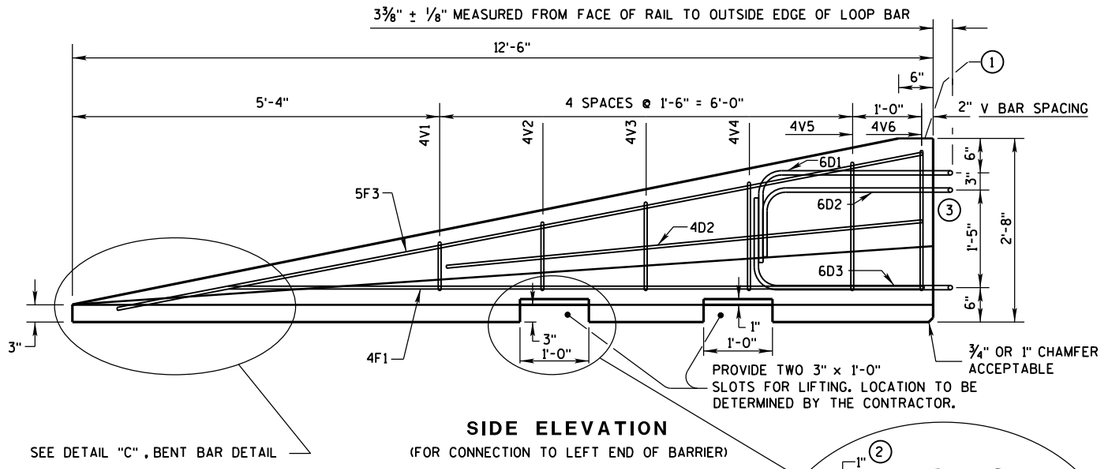
f'c = 4,000 psi

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

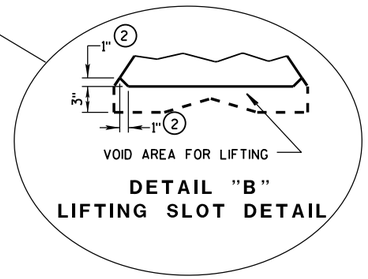
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

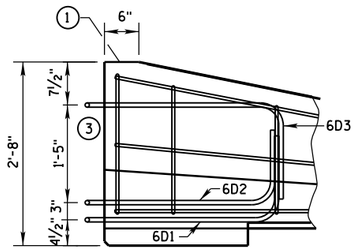
S.D.D. 14 B 7-15a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



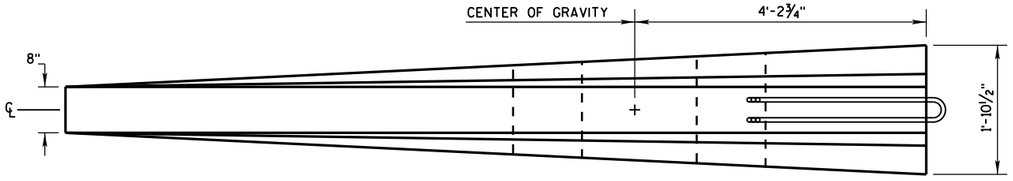
DETAIL "B"
LIFTING SLOT DETAIL



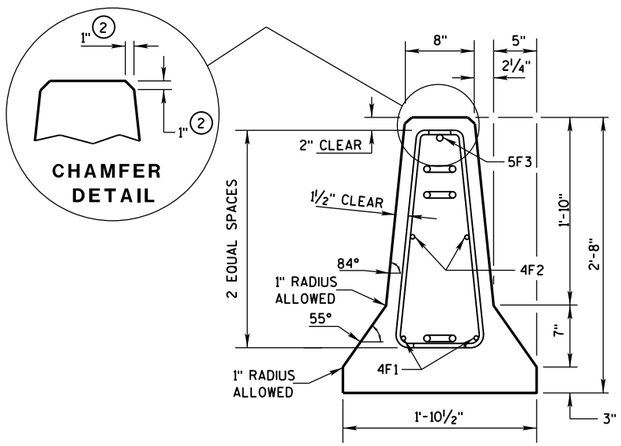
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

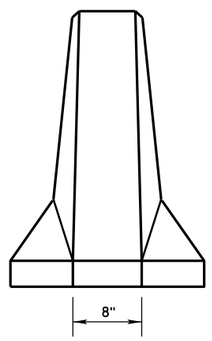
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



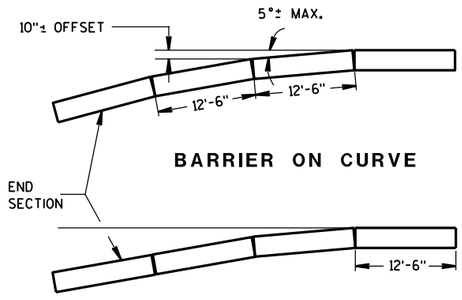
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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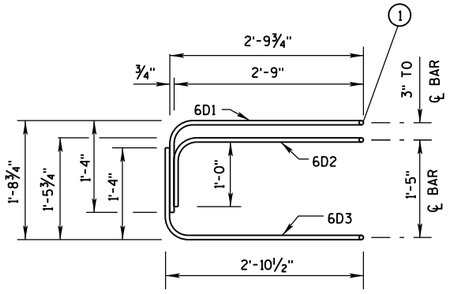
S.D.D. 14 B 7-15b

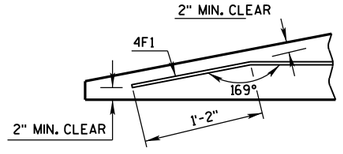
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

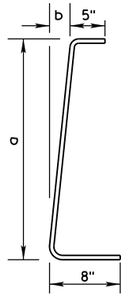
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



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

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

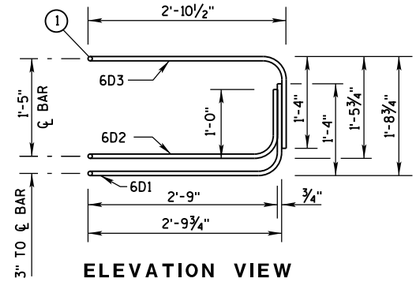
GENERAL NOTES

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

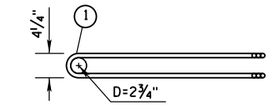
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

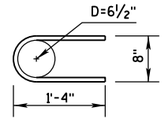
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



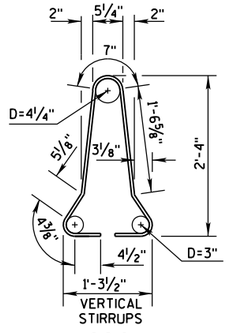
ELEVATION VIEW



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



6A2



4A1

BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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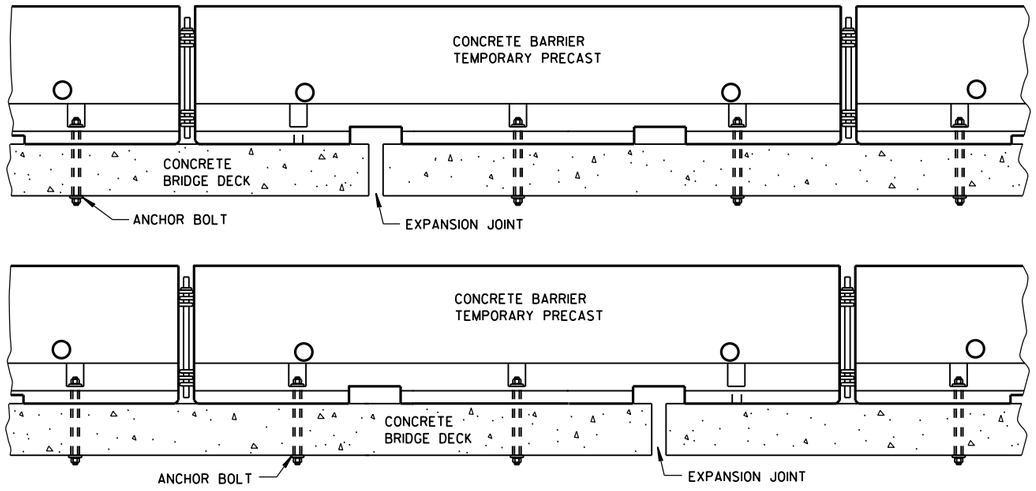
S.D.D. 14 B 7-15c



TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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

GENERAL NOTES

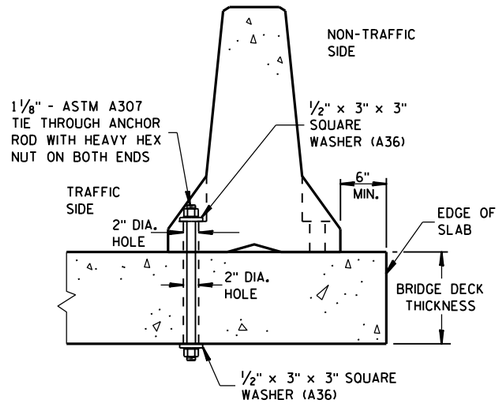
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

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

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

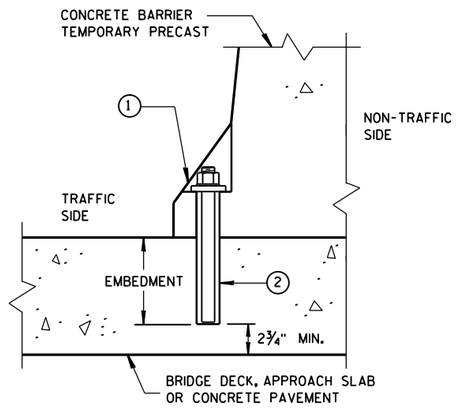
(2) ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

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



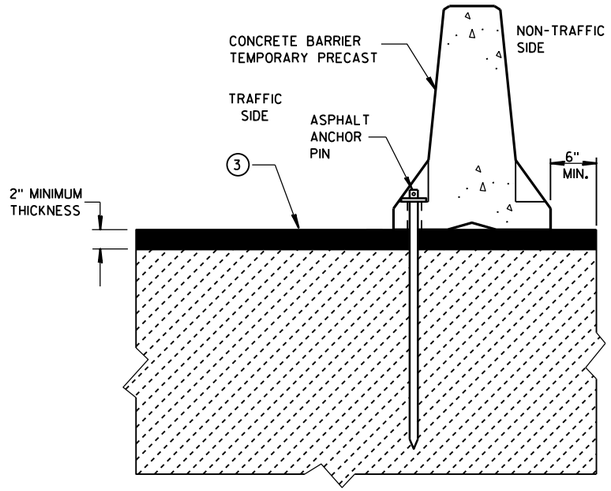
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)

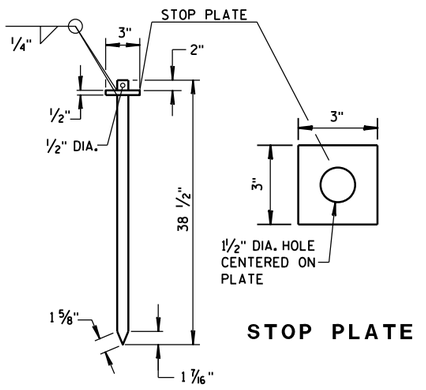


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



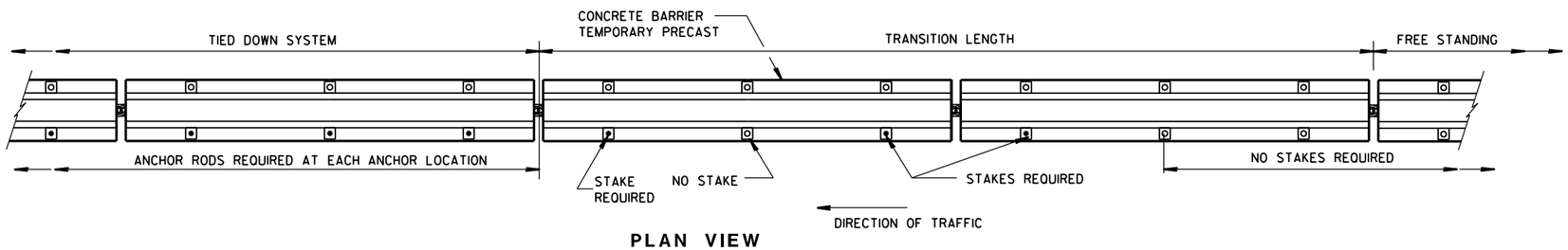
STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



STOP PLATE

ASPHALT ANCHOR PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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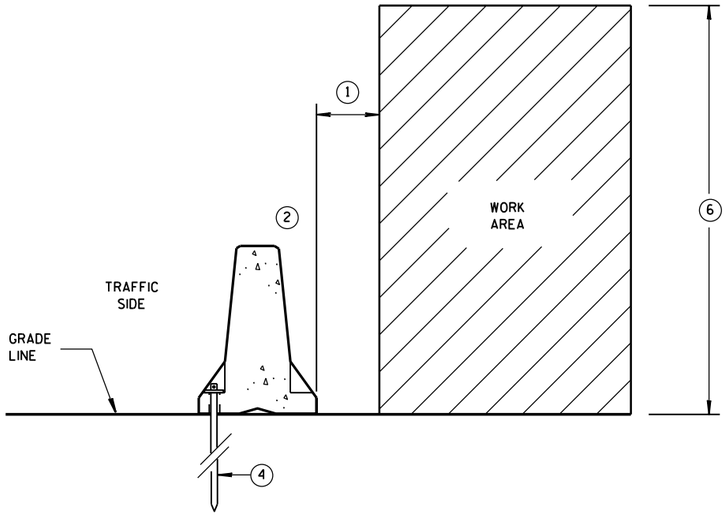
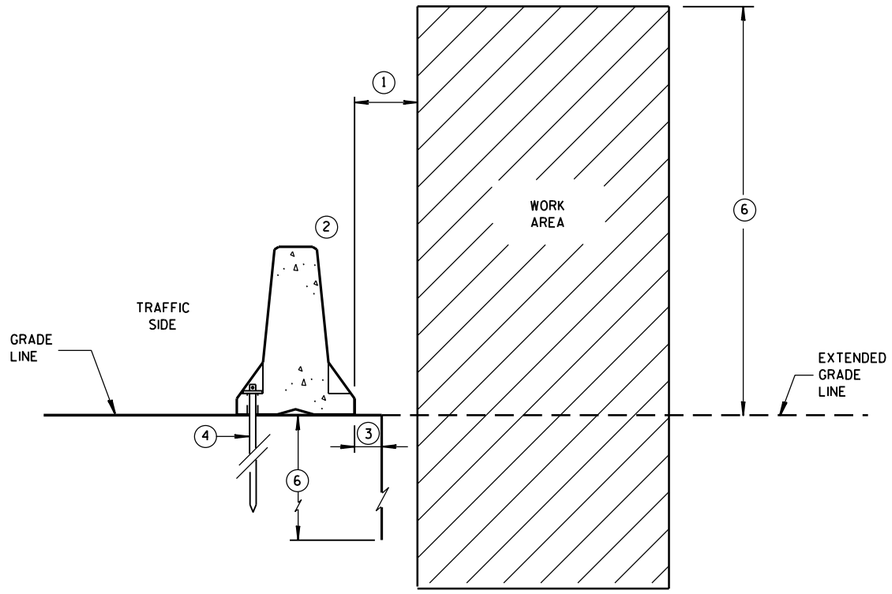
S.D.D. 14 B 7-15d



ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

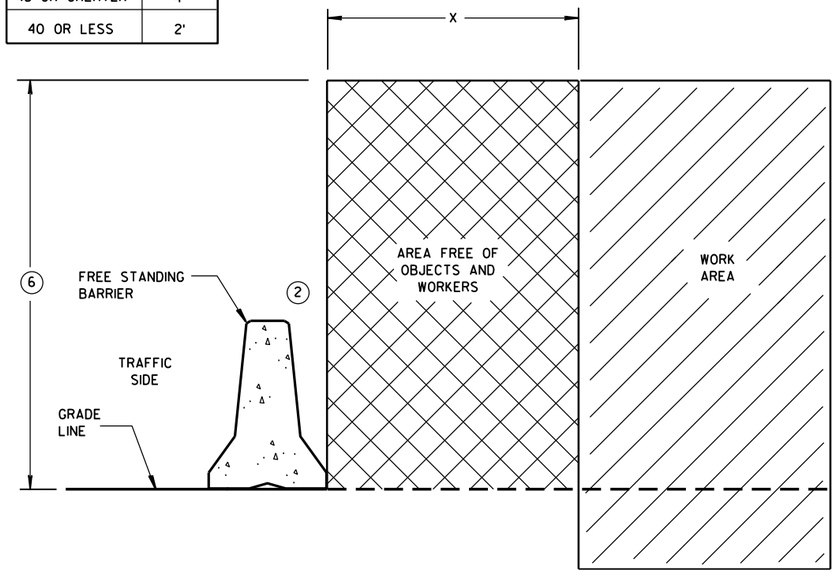


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

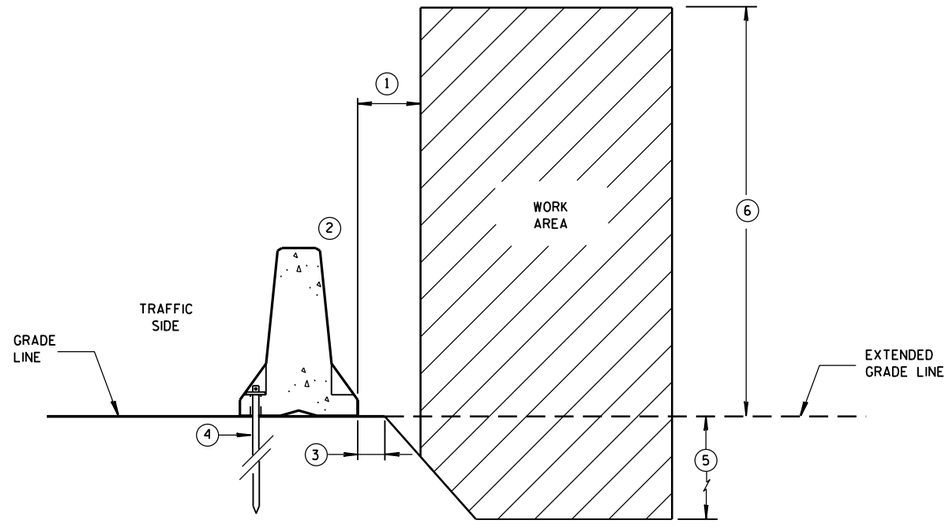
GENERAL NOTES

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

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



FREE STANDING BARRIER SPACE REQUIREMENTS



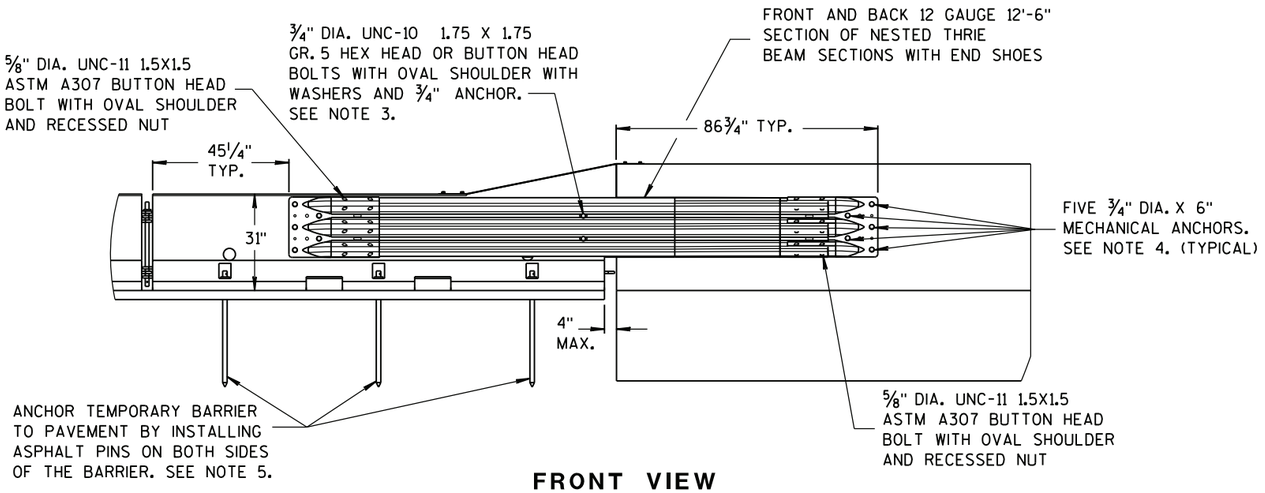
ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

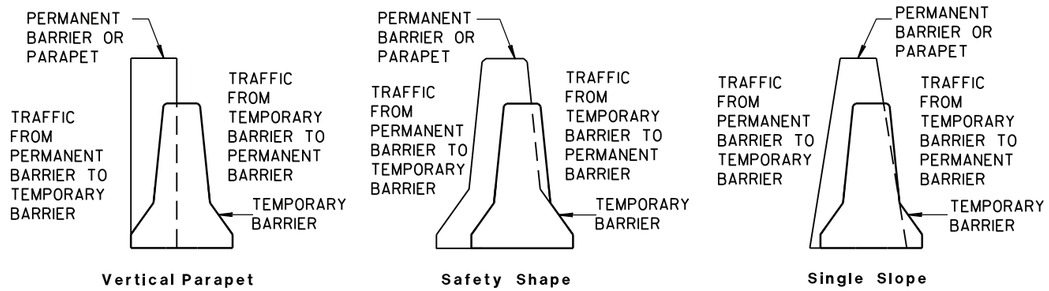
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

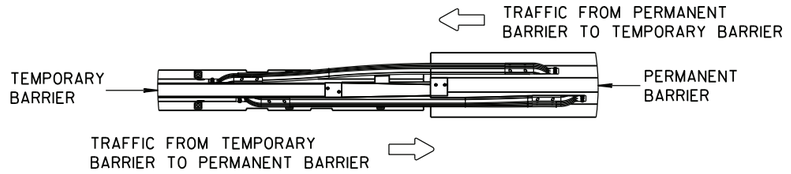
6

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



FRONT VIEW



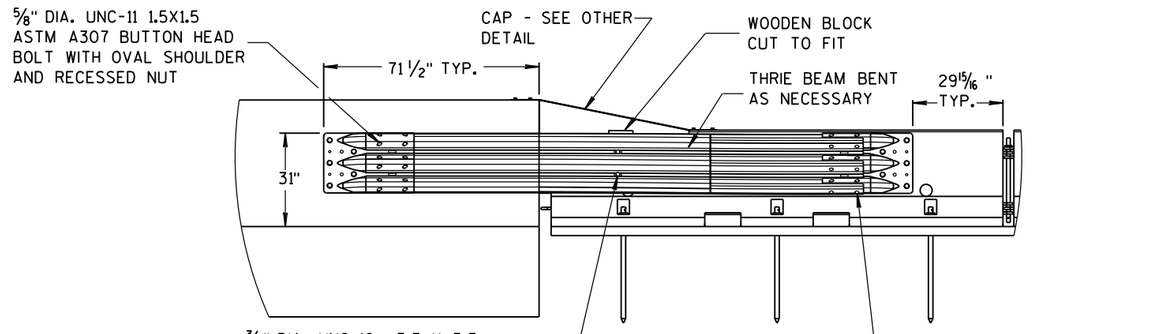


TEMPORARY BARRIER PLACEMENT FOR TRANSITION TO TIED DOWN SYSTEM

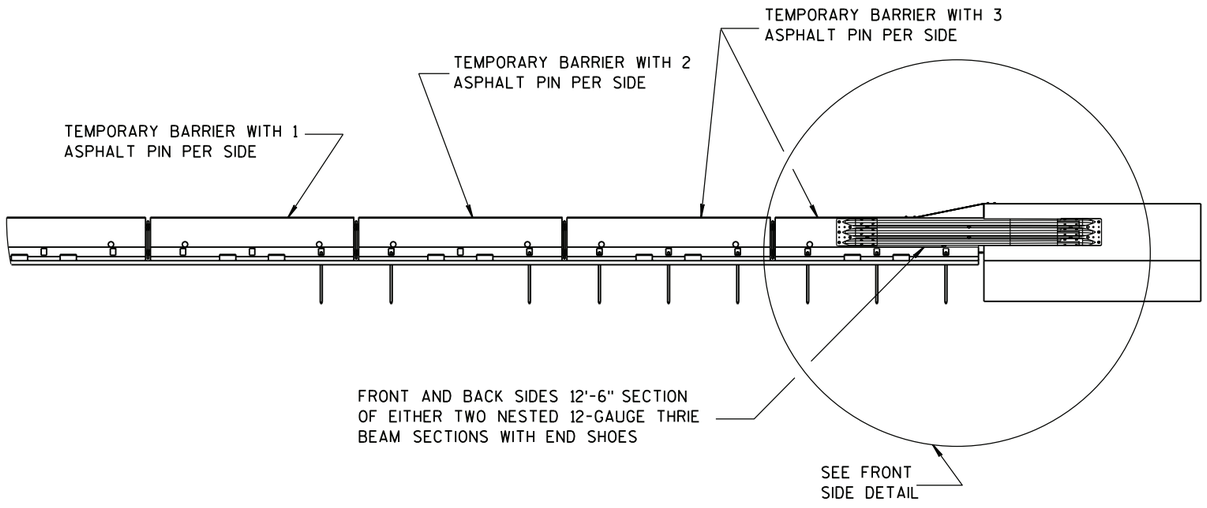
NOTES

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

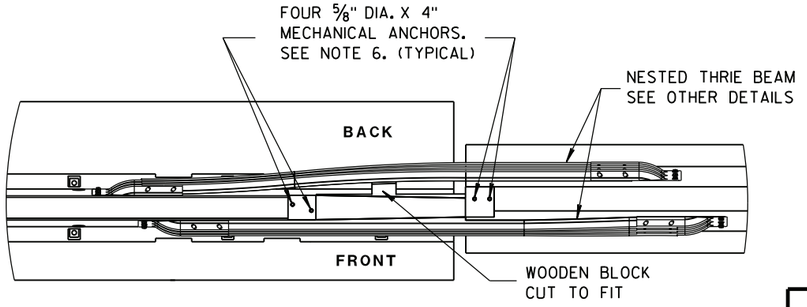
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



BACK VIEW



FRONT VIEW



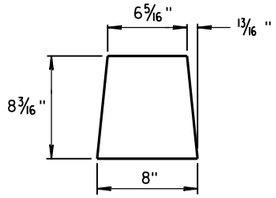
PLAN VIEW

TRANSITION TO TIED DOWN SYSTEM

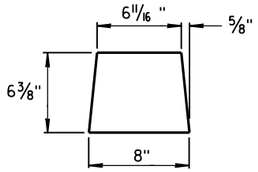
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

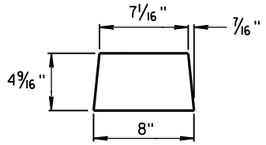
6
S.D.D. 14 B 7-15f



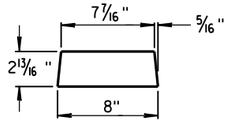
GUSSET 1



GUSSET 2

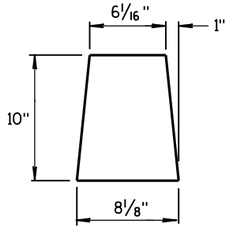


GUSSET 3

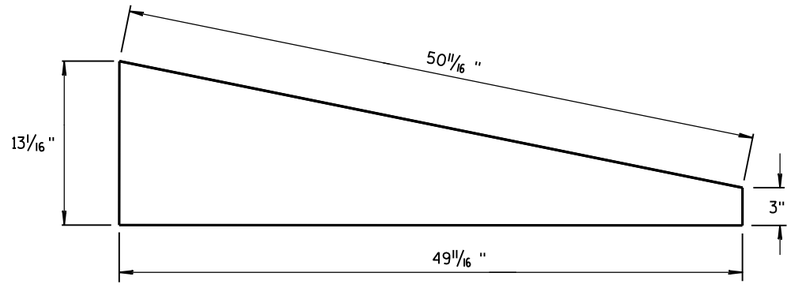


GUSSET 4

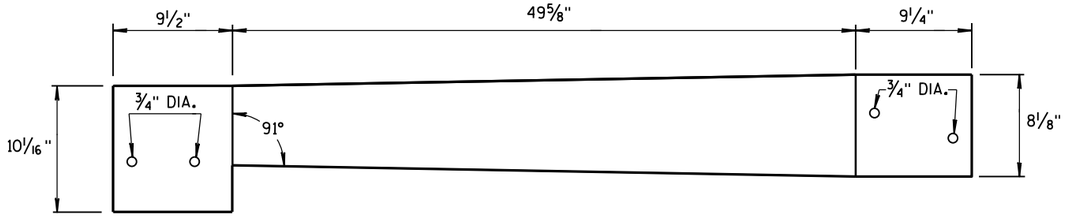
GUSSETS

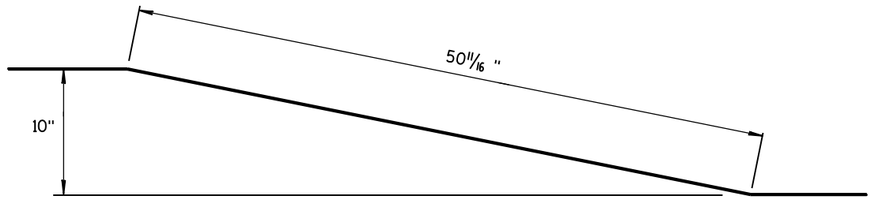


END PLATE



SIDE PLATE

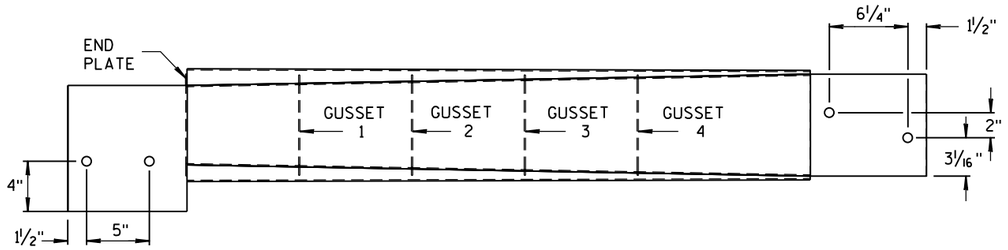


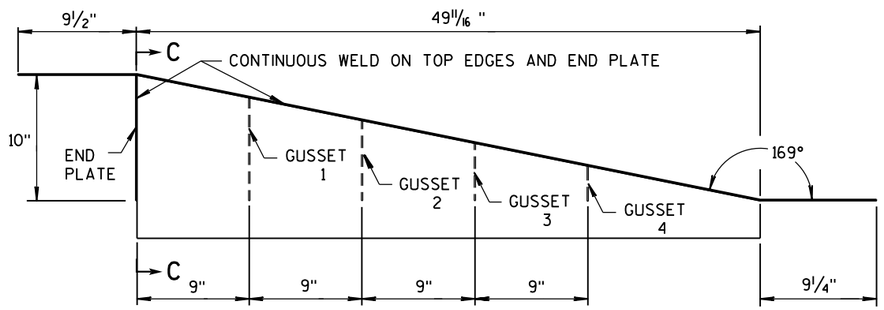


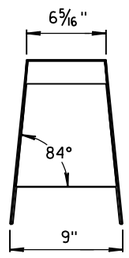
TOP PLATE

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

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







SECTION C-C

NOTES

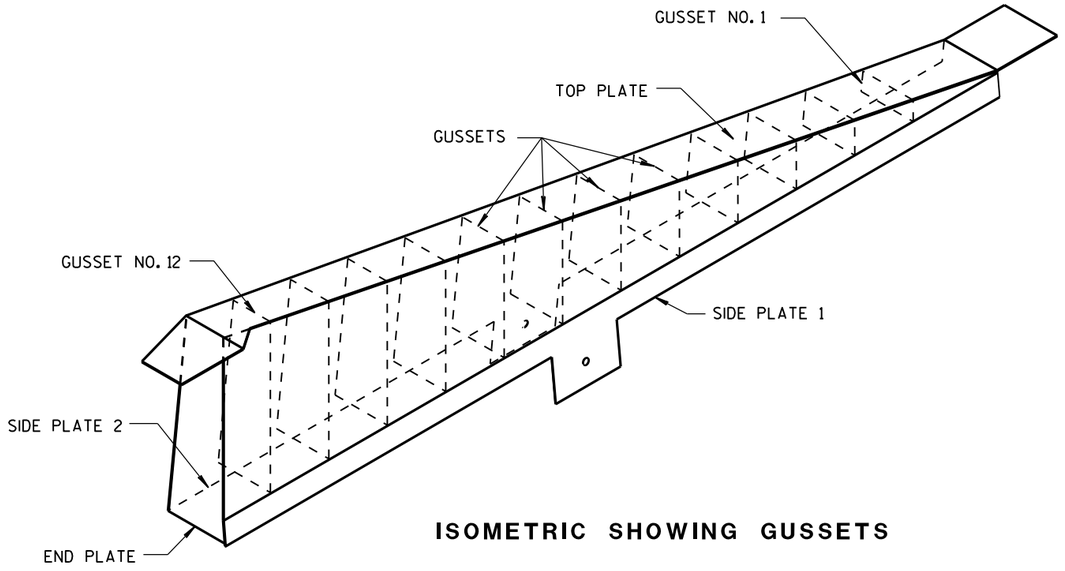
1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

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

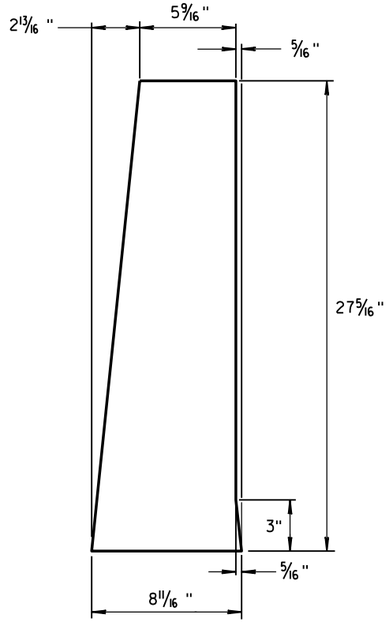
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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

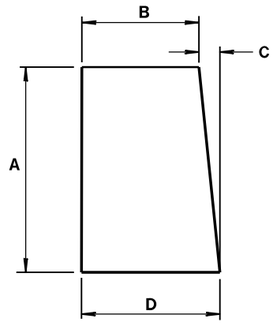


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



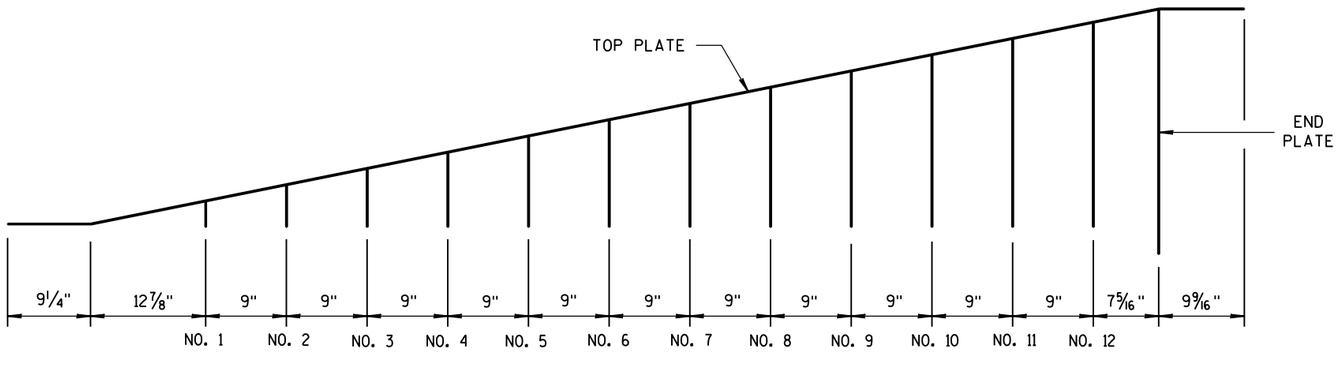
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

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

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

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



GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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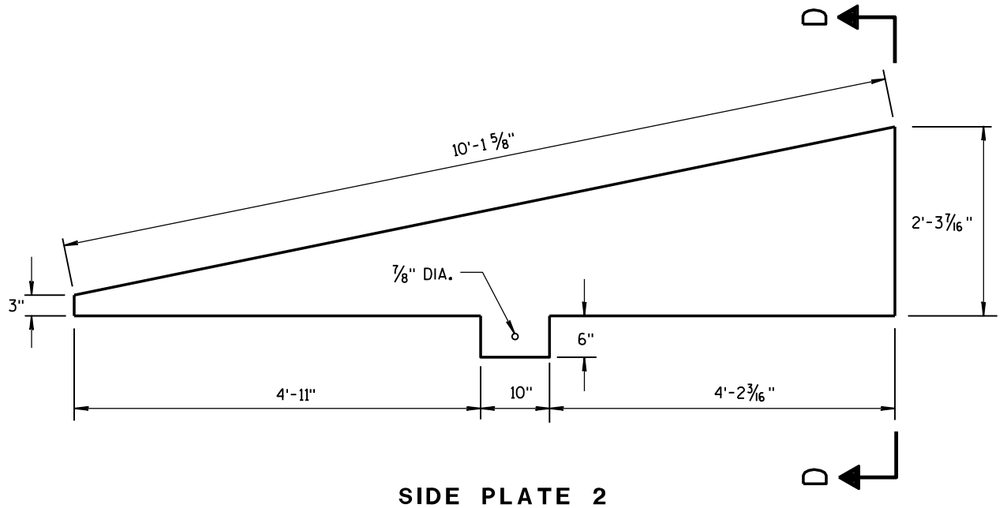
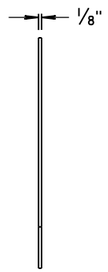
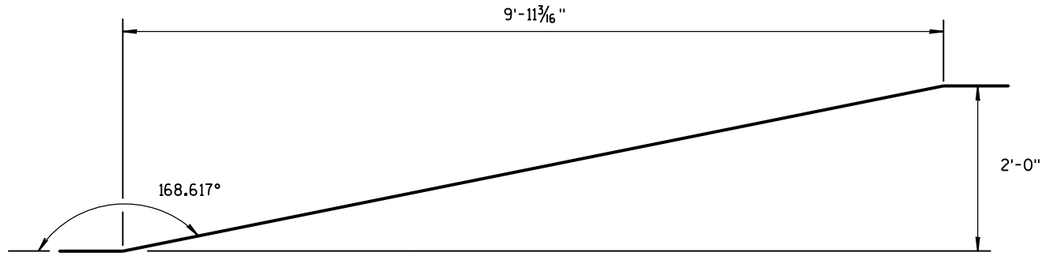
S.D.D. 14 B 7-15h



SIDE PLATE 2

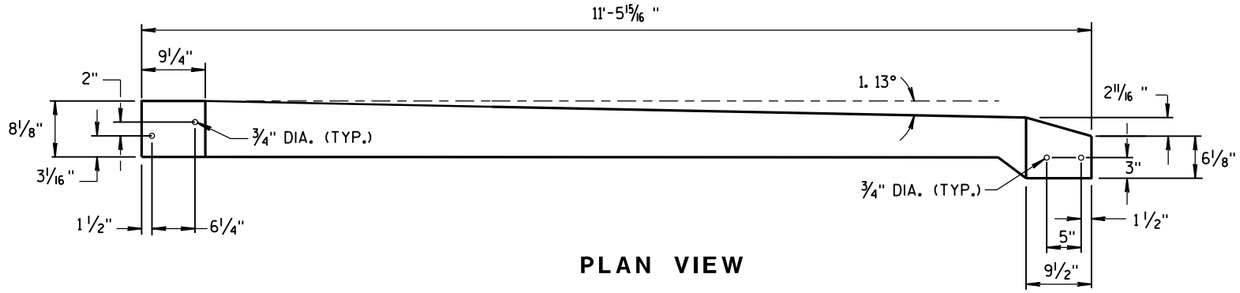


END VIEW



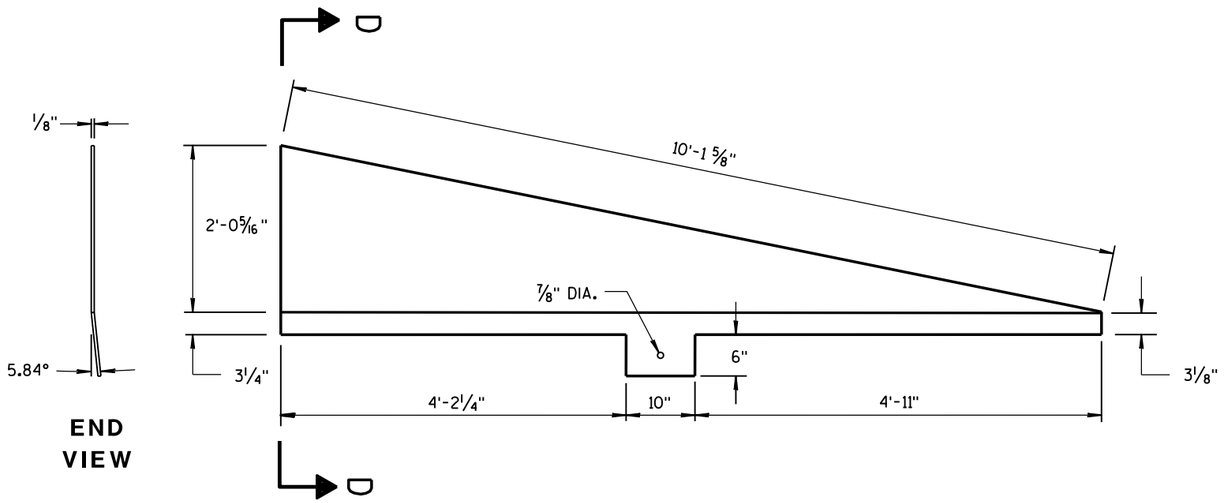
SIDE VIEW

TOP PLATE



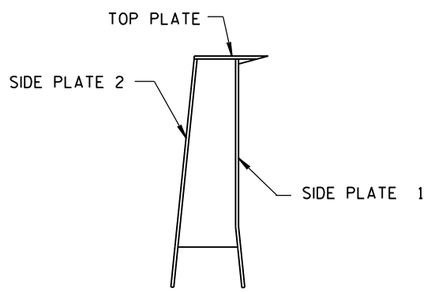
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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

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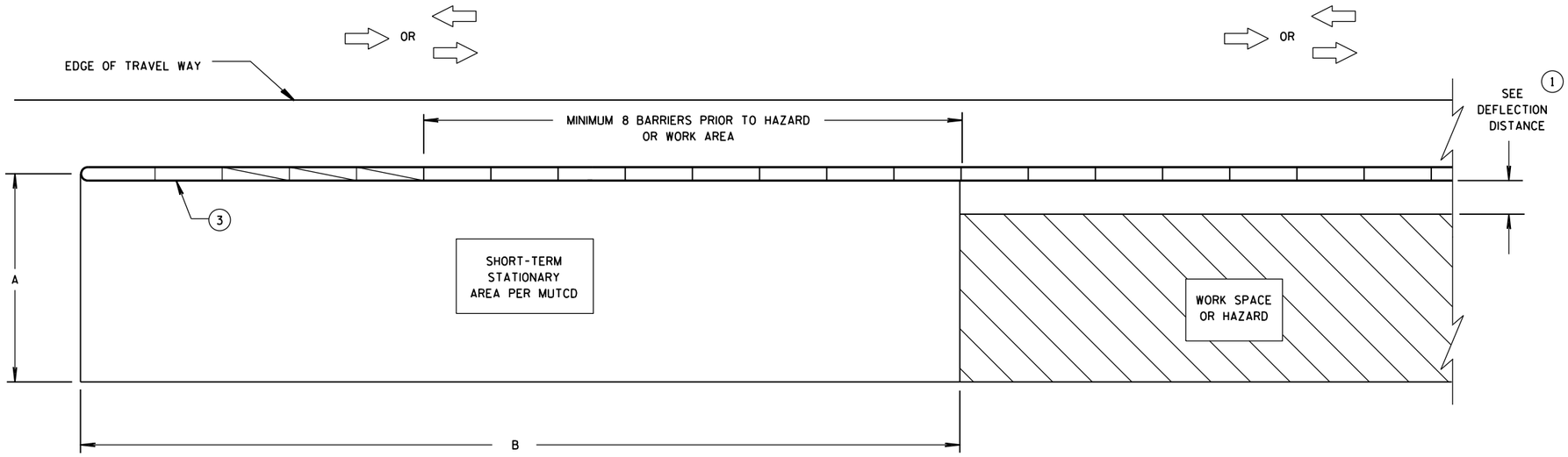
S.D.D. 14 B 7-15i



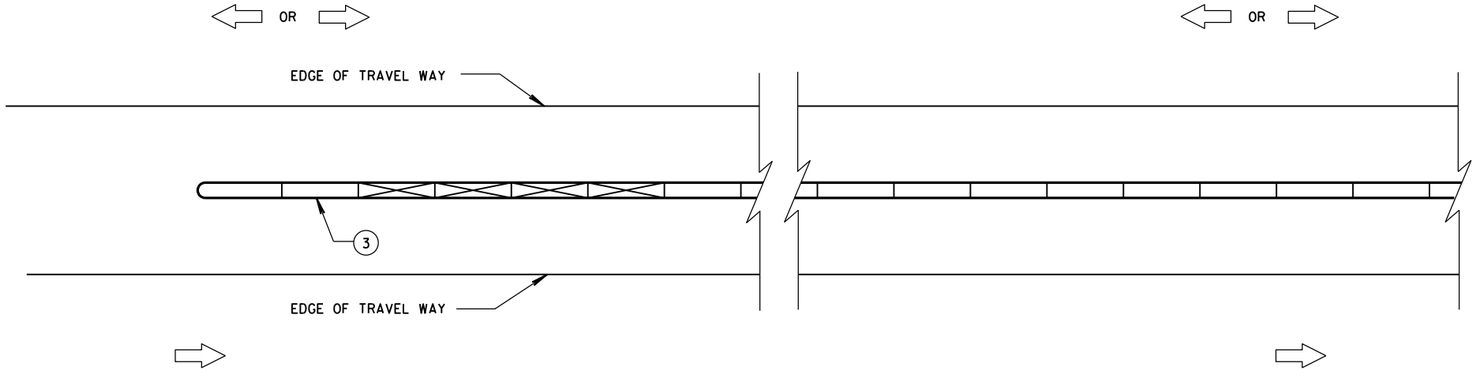
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

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

DIMENSION B TABLE (2)

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



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

LEGEND

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

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

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

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

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

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

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

(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

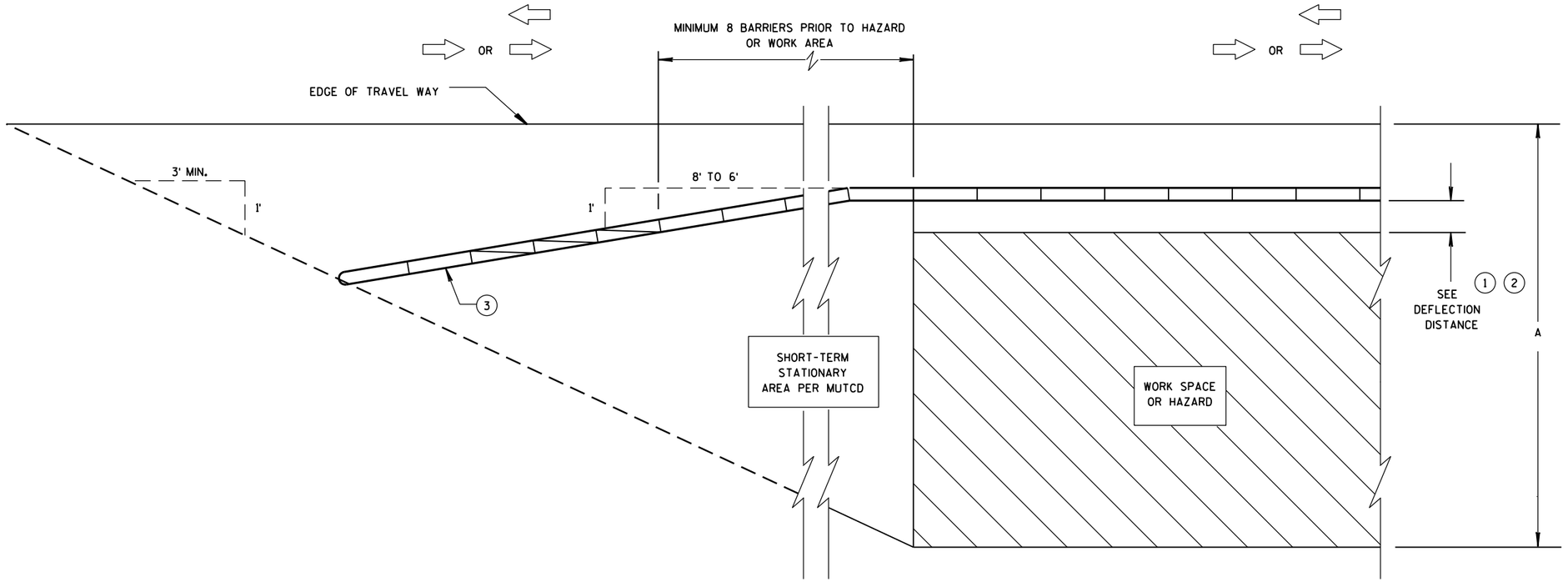
(3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

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

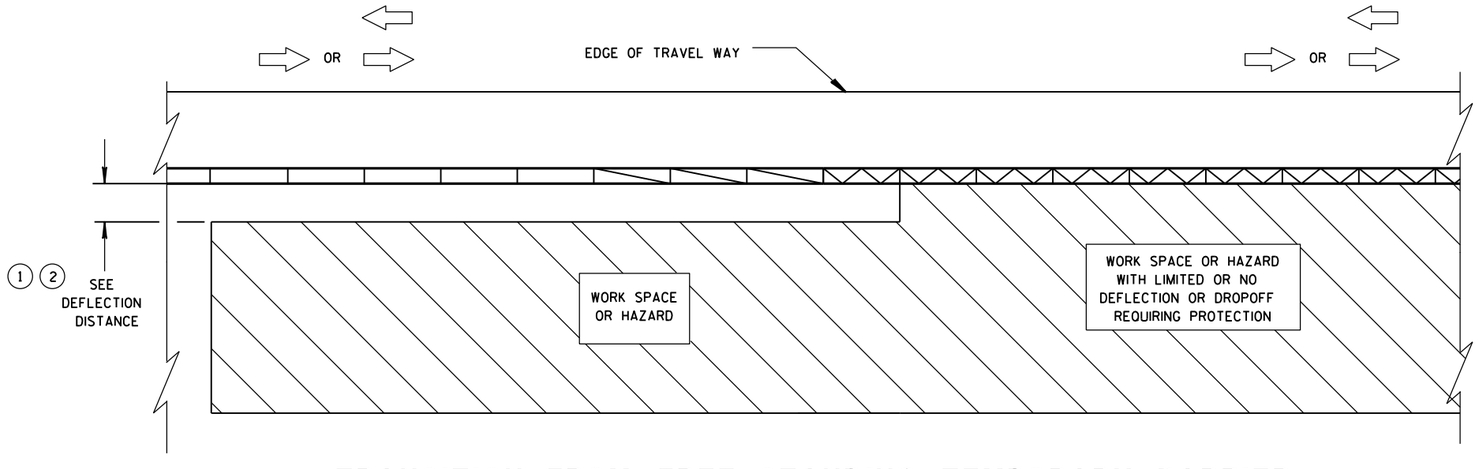
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



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



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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

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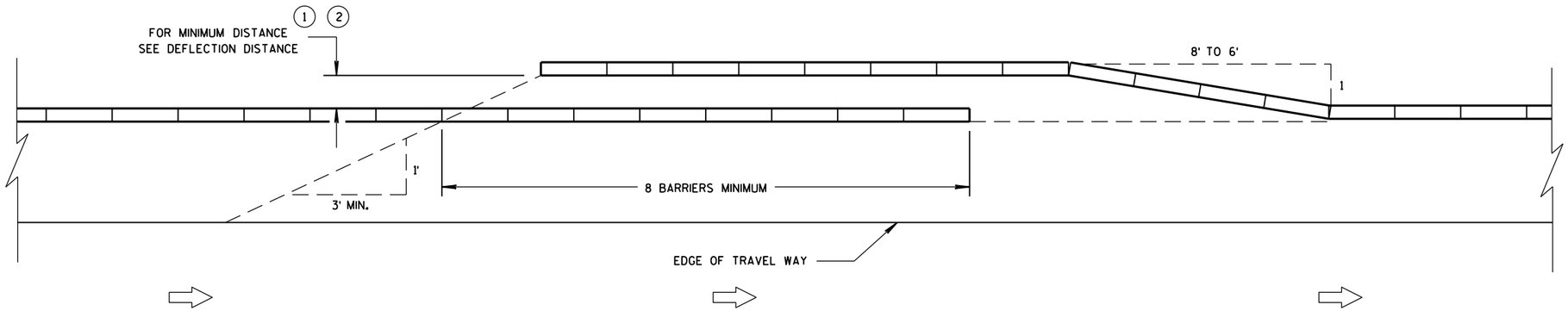
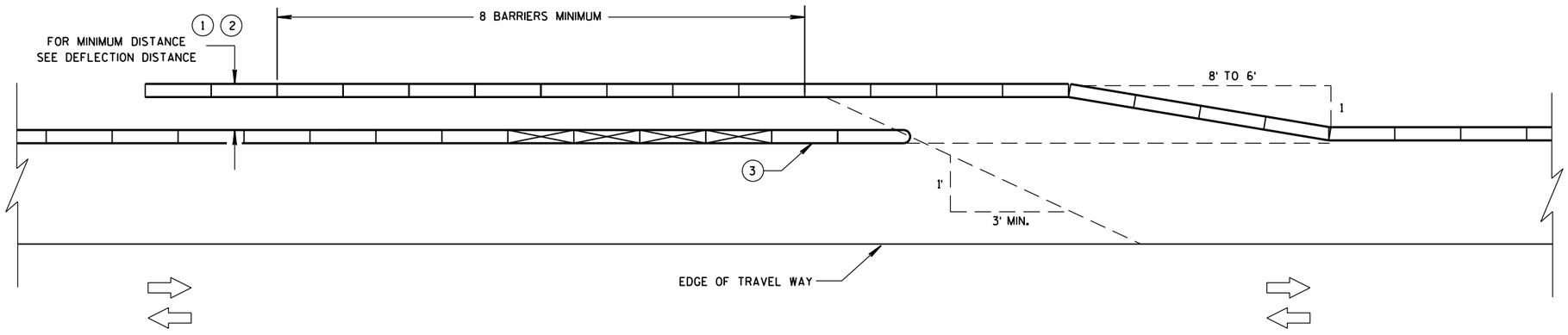
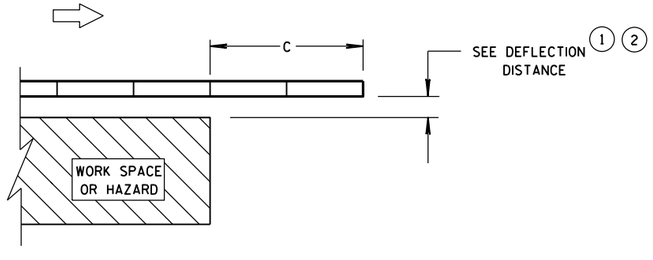
S.D.D. 14 B 8-2b



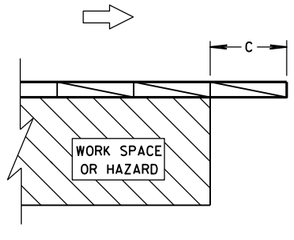
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

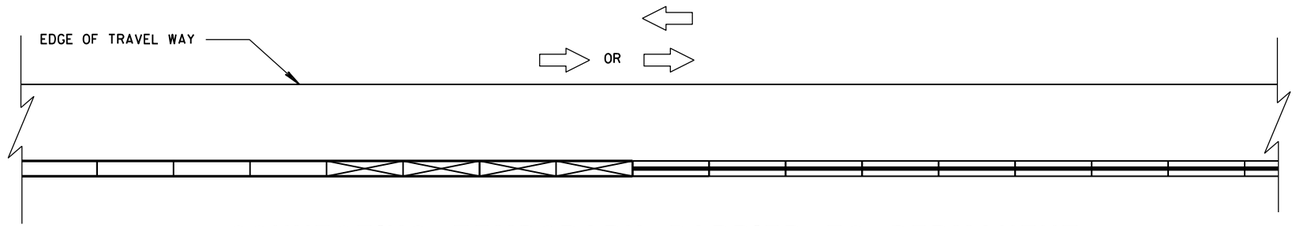
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

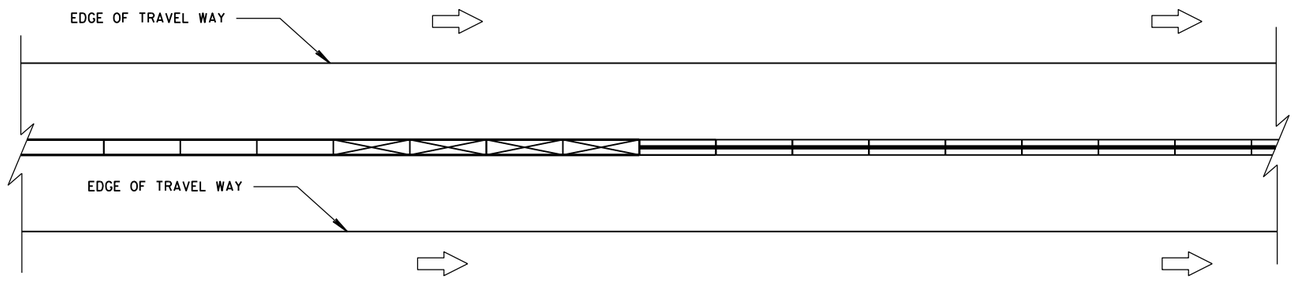
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



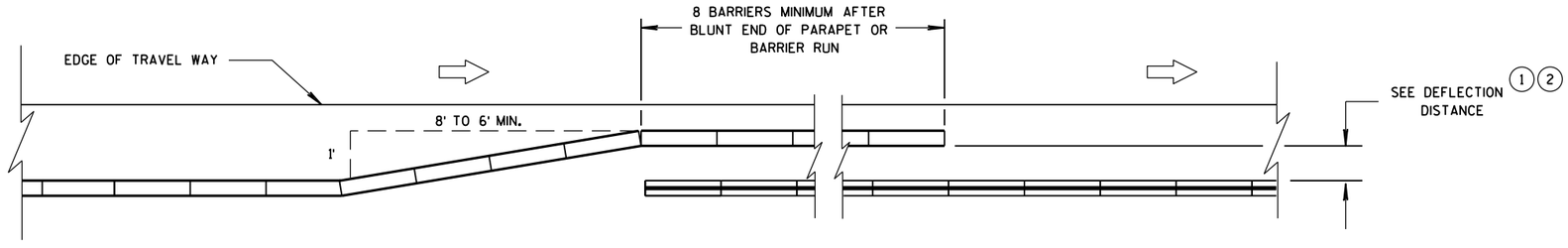
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



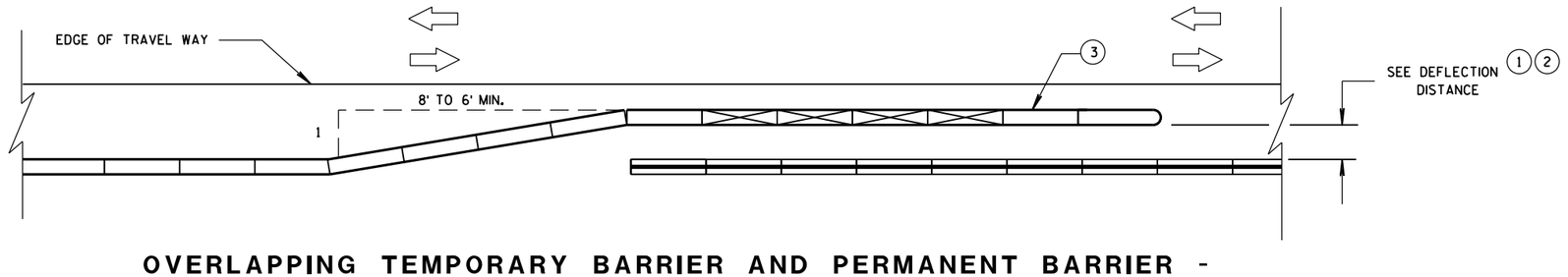
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

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



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

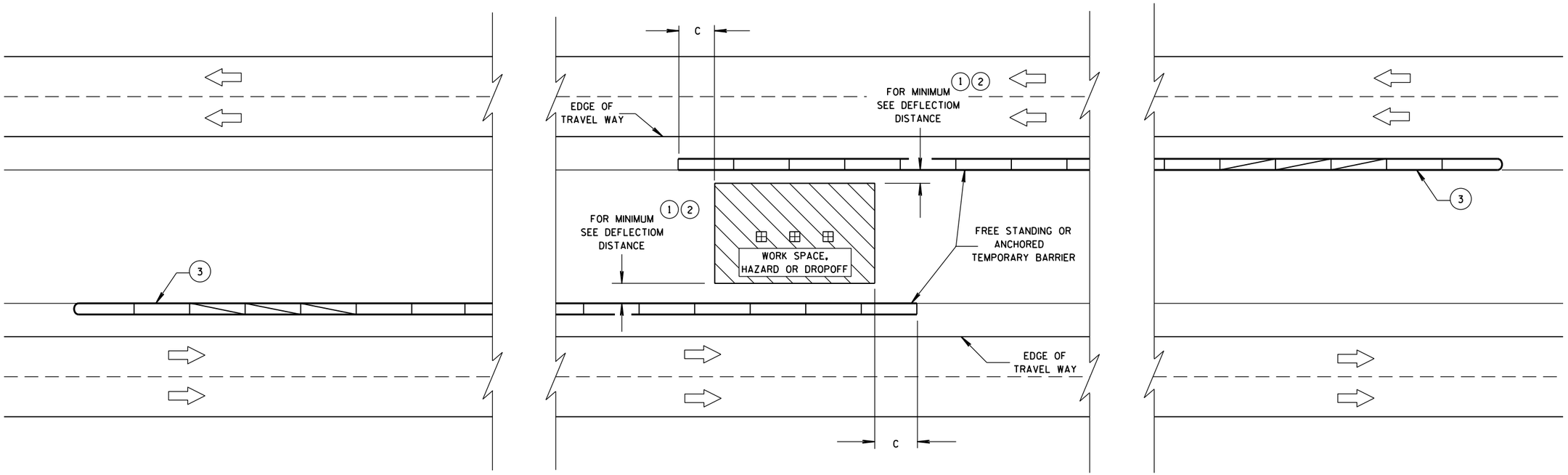
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

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



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINNER
FHWA

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

6

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

(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.

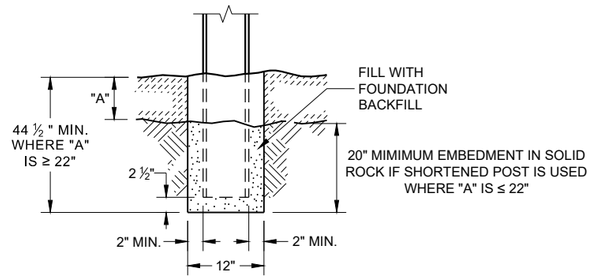
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

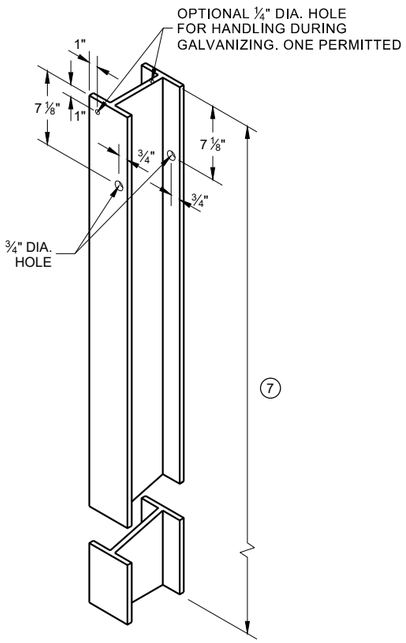
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

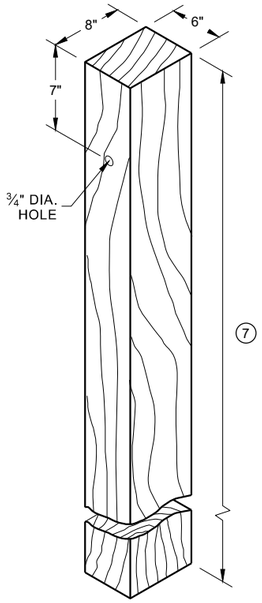
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



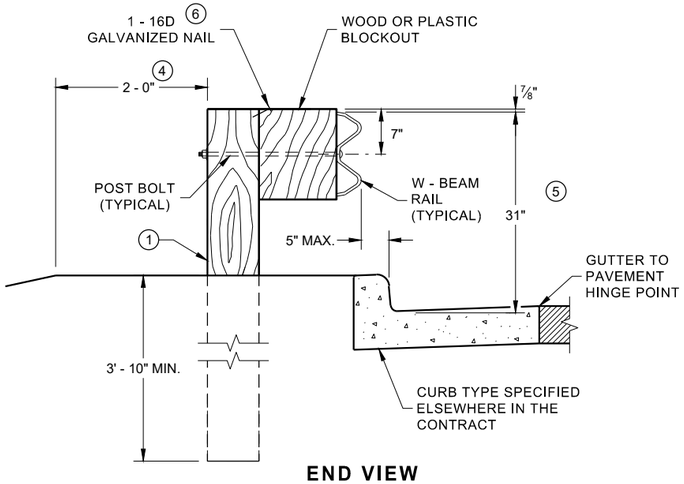
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



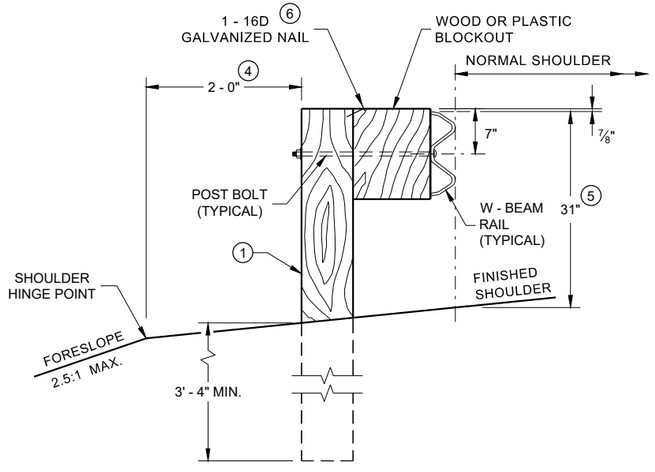
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



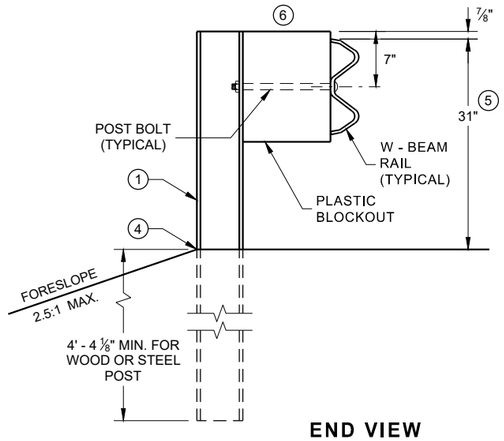
WOOD POST (6" X 8") NOMINAL (1)



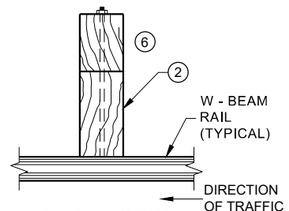
END VIEW
LOCATED ALONG A CURBED ROADWAY



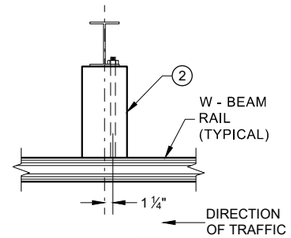
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



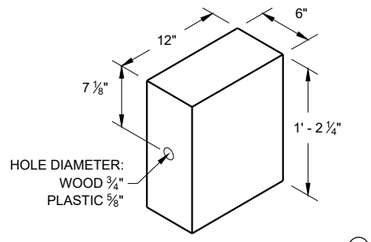
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW WOOD POST, BLOCKOUT & BEAM

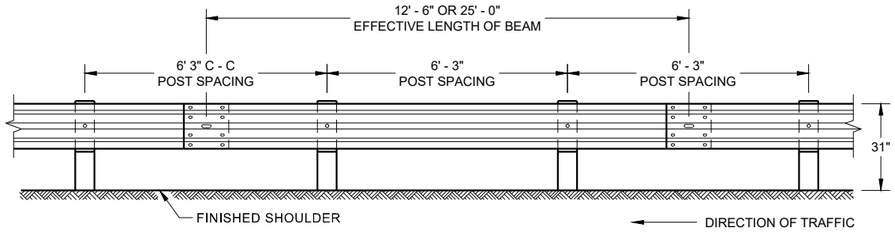


PLAN VIEW STEEL POST, PLASTIC BLOCKOUT & BEAM

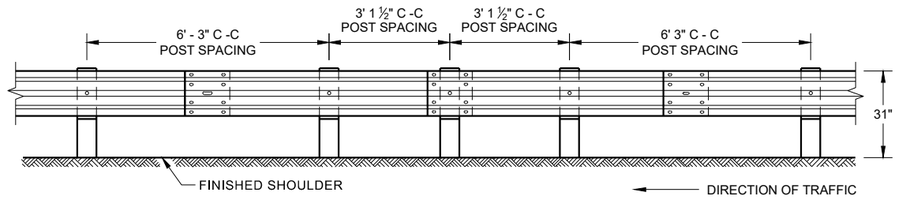


WOOD OR PLASTIC BLOCKOUT (2)

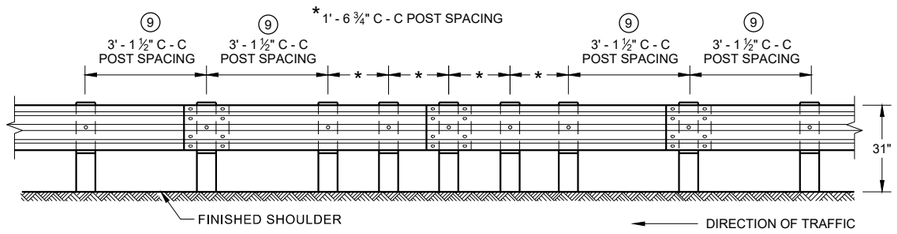
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



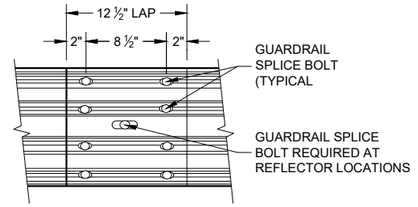
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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

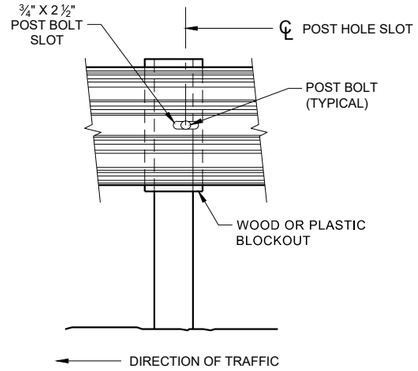
GENERAL NOTES

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

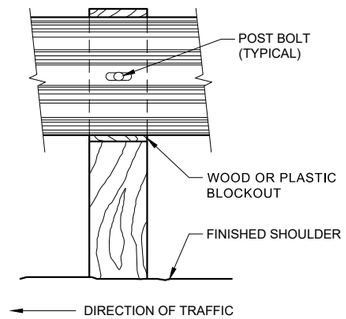
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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.

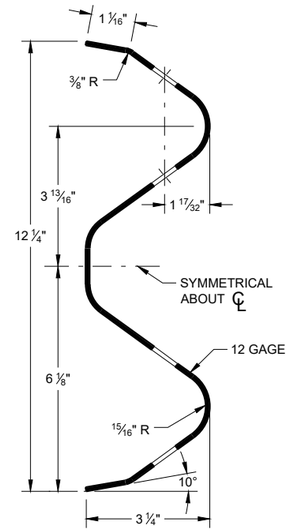
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



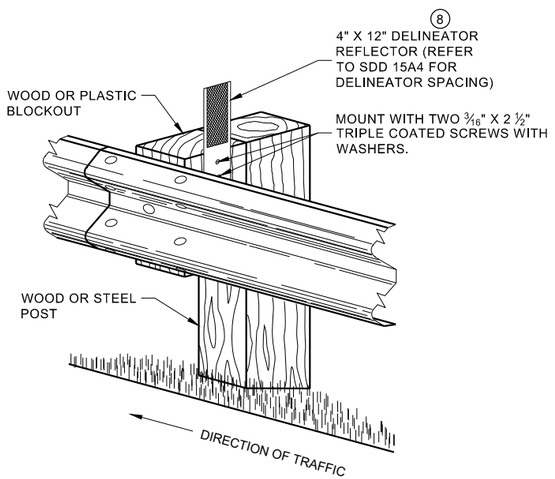
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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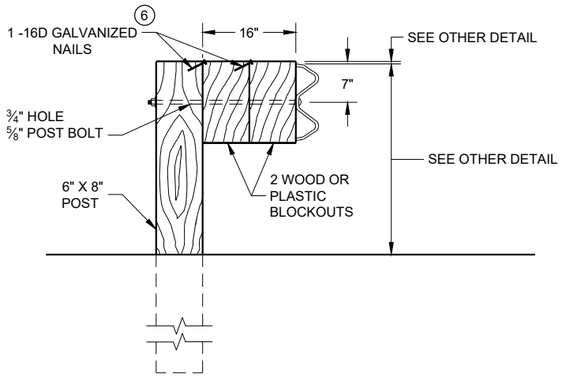
SDD 14B42 - 07b

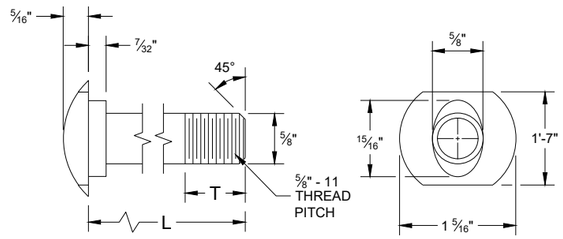


DETAIL FOR 16" BLOCKOUT DEPTH

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.

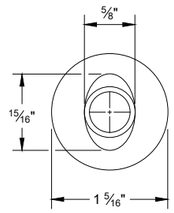
NOTE:

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

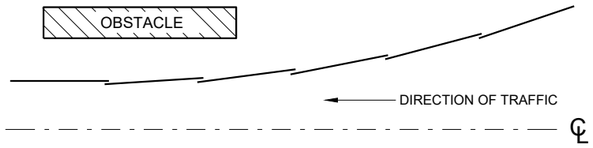


POST BOLT TABLE

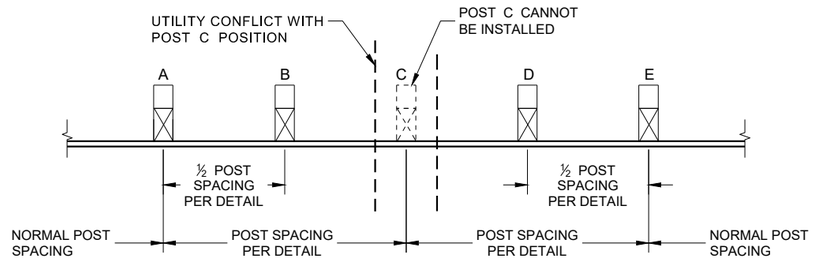
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



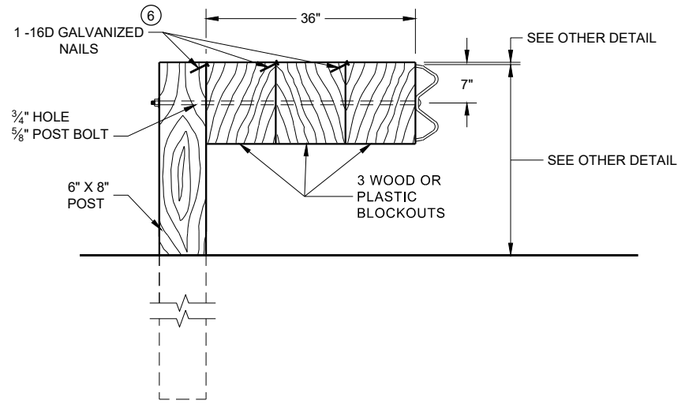
ALTERNATE BOLT HEAD



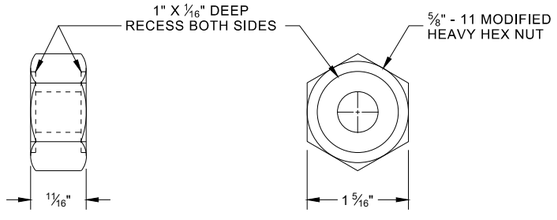
PLAN VIEW
BEAM LAPPING DETAIL



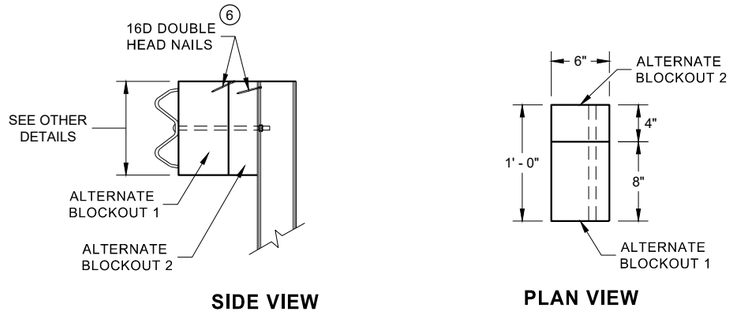
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW

PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

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

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

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

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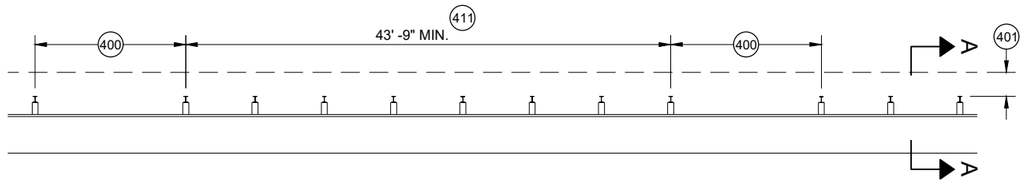
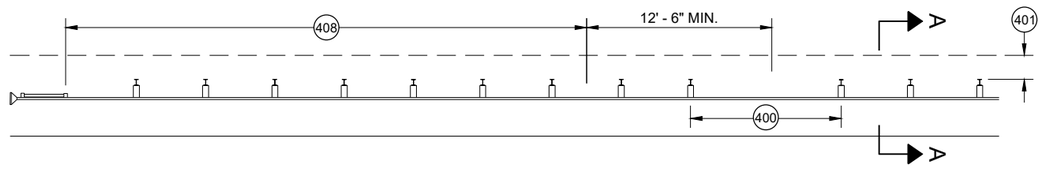
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

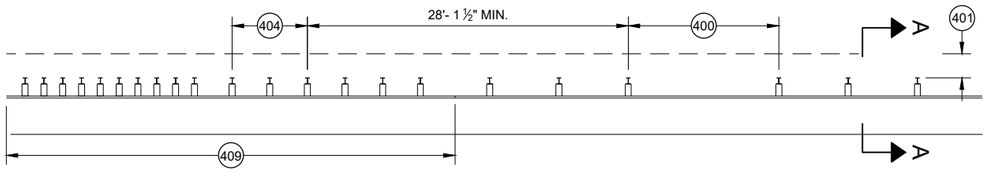
SDD 14B42 - 07c



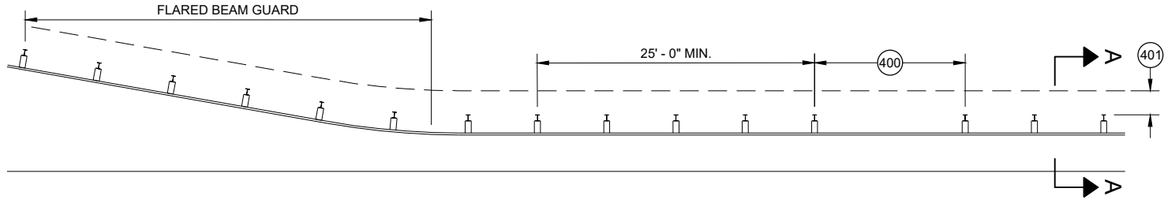
MISSING POST IN MGS GUARDRAIL



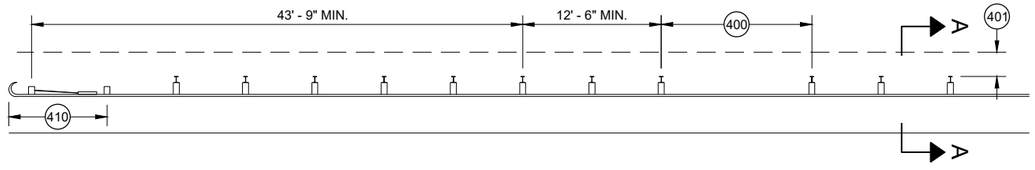
MISSING POST IN MGS GUARDRAIL NEAR EAT



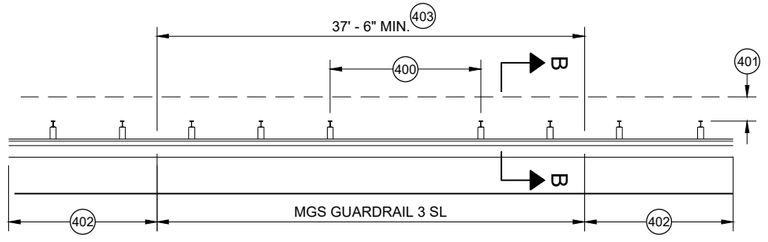
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

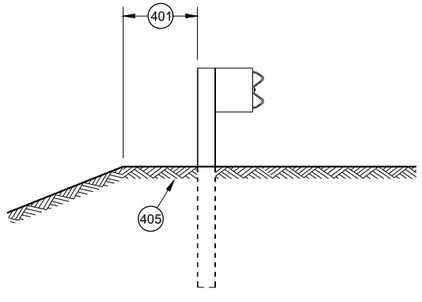


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

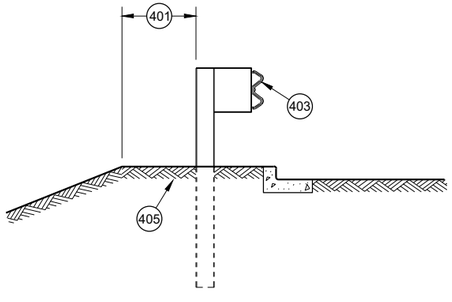


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

(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

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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.

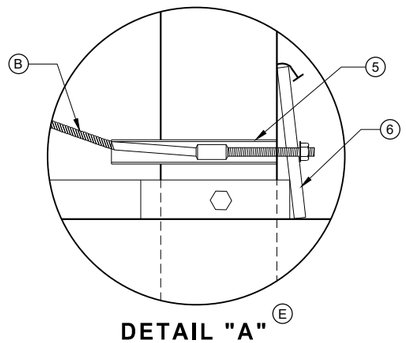
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

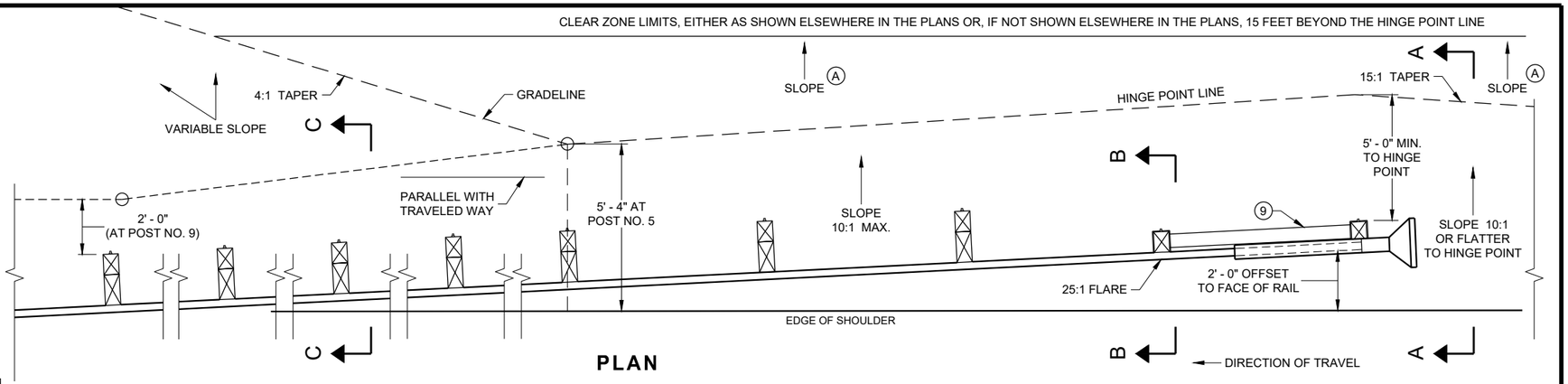
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

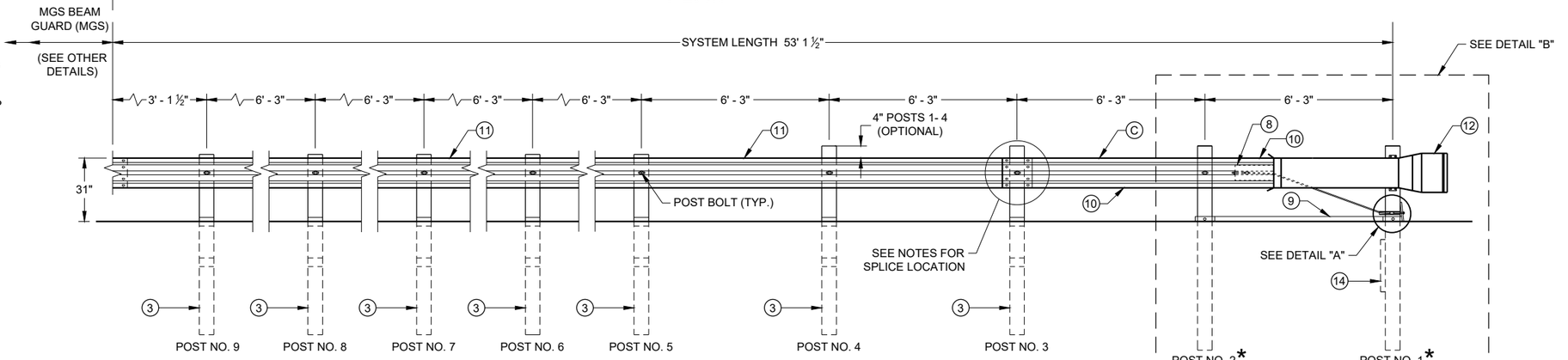
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



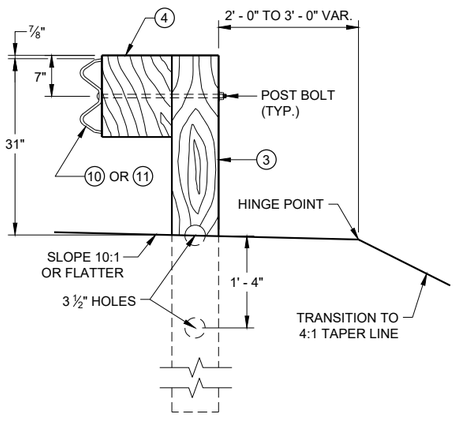
DETAIL "A" (E)



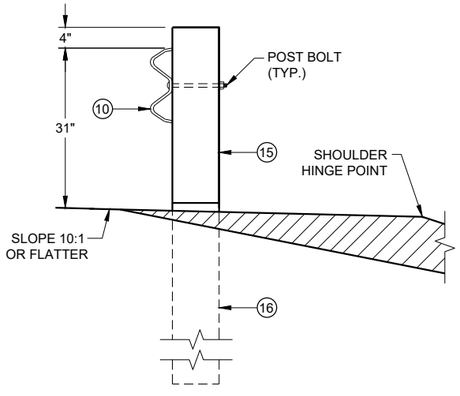
PLAN



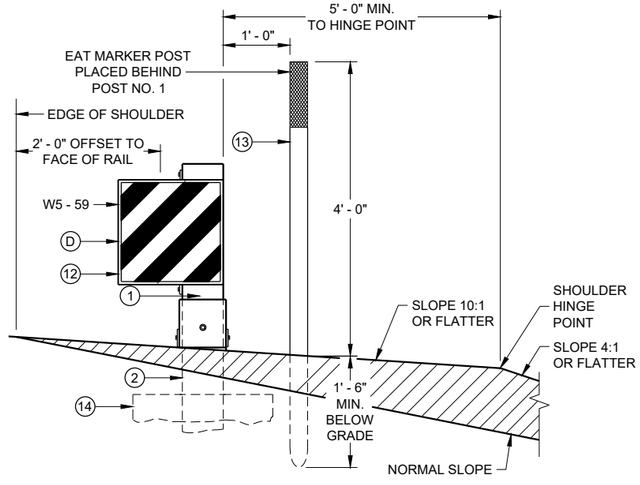
ELEVATION



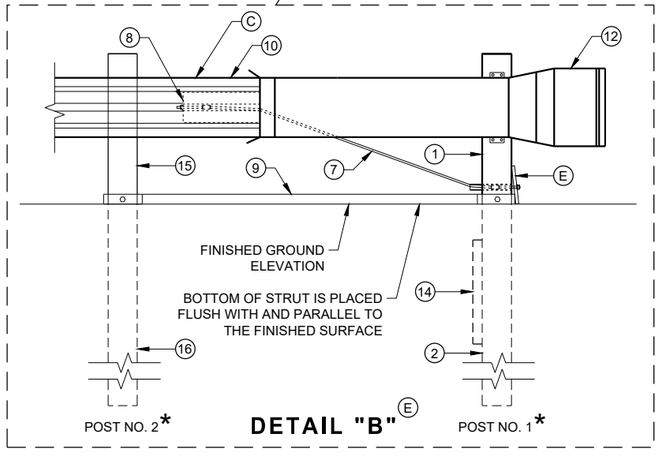
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



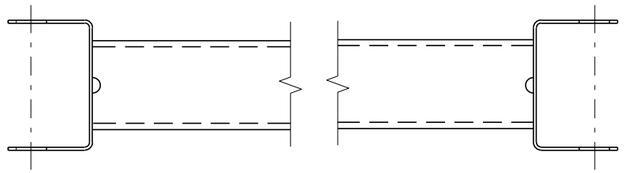
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

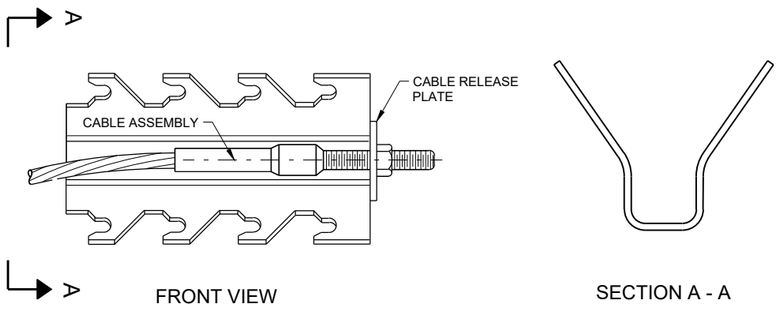
SDD 14B44 - 04a



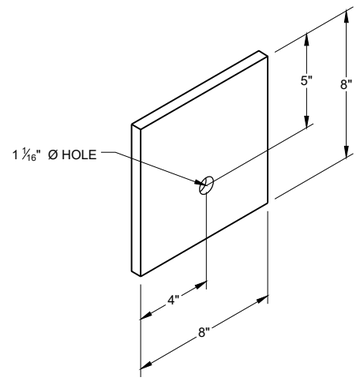
GENERIC GROUND STRUT (9) (E)

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) (E)



BEARING PLATE (6) (E)

6

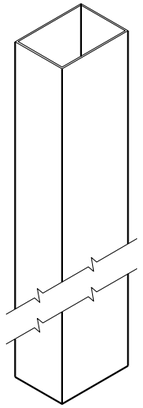
6

SDD 14B44 - 04b

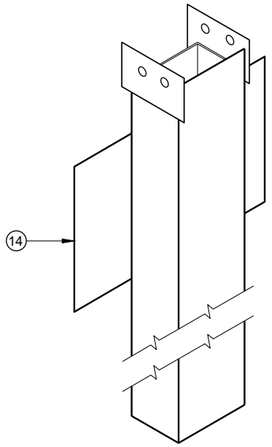
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

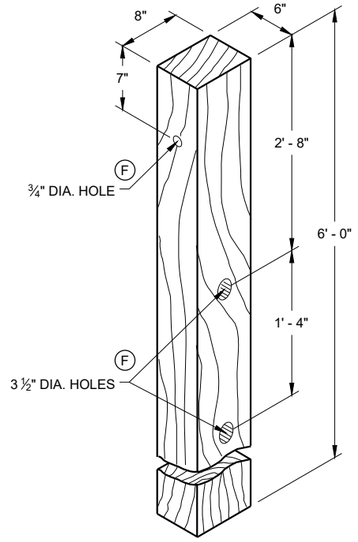
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



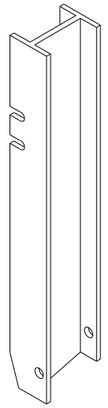
UPPER POST NO. 1 (1) (E)



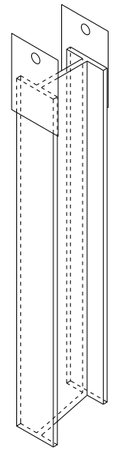
LOWER POST NO. 1 (2) (E)



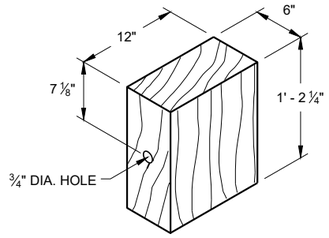
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



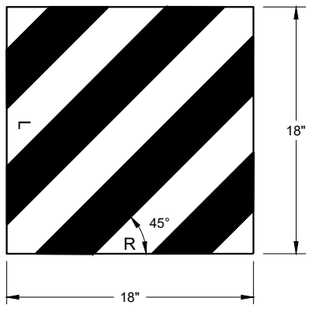
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

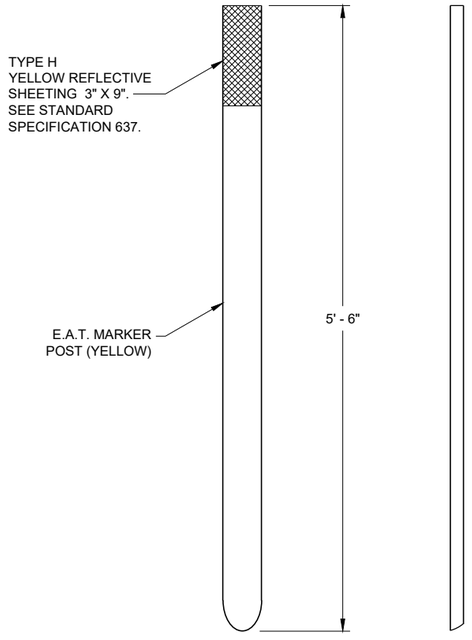


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



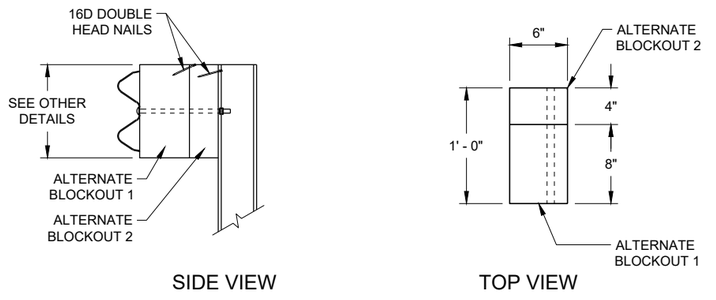
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

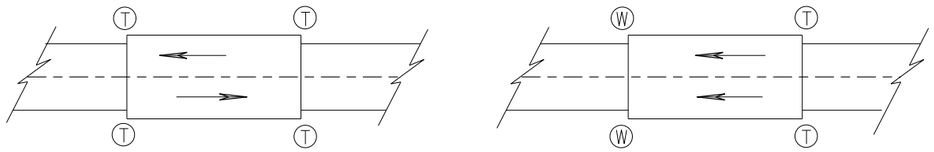
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

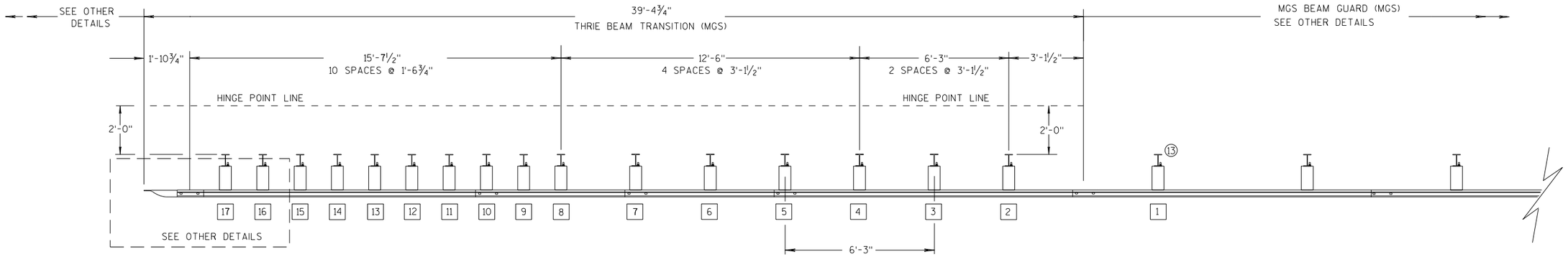
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

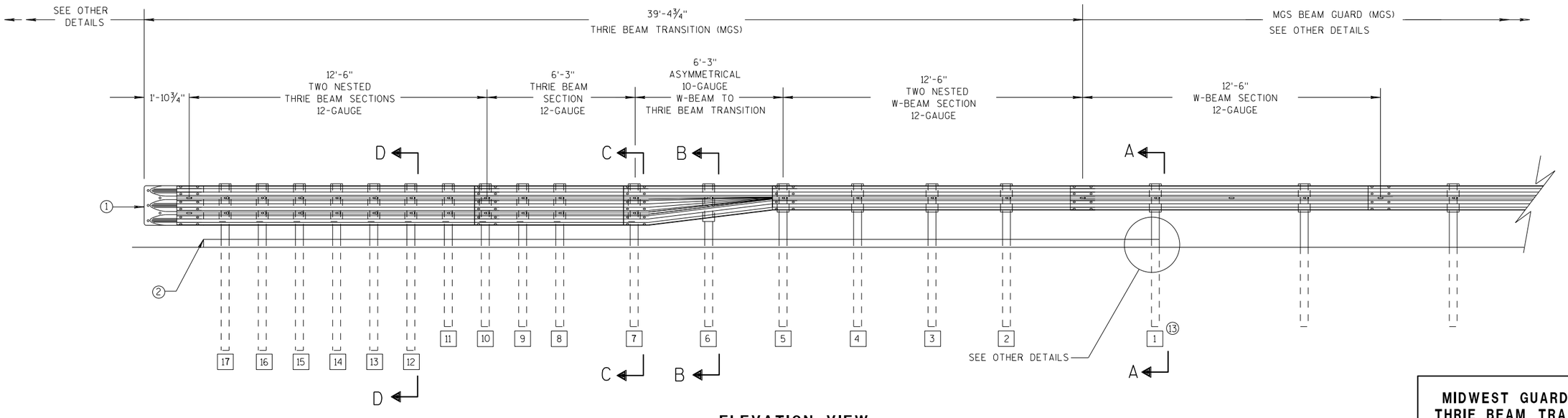
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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

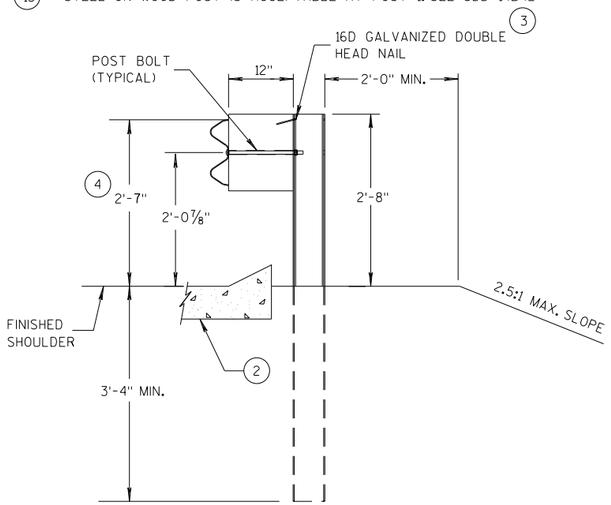
GENERAL NOTES

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

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

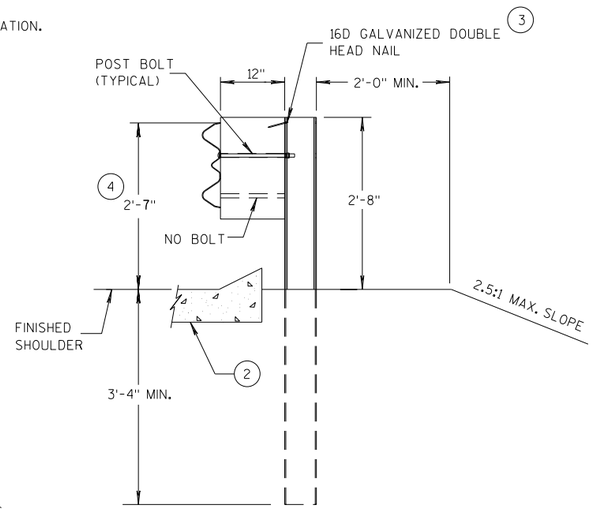
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



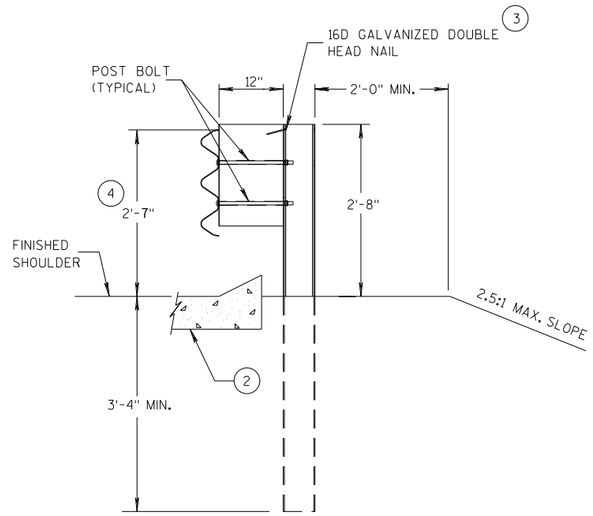
SECTION A-A (13)

POSTS 1-5



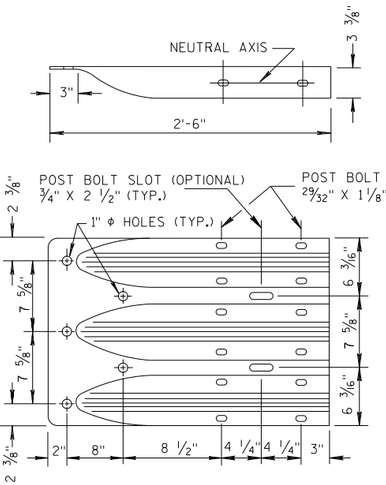
SECTION B-B

POST 6

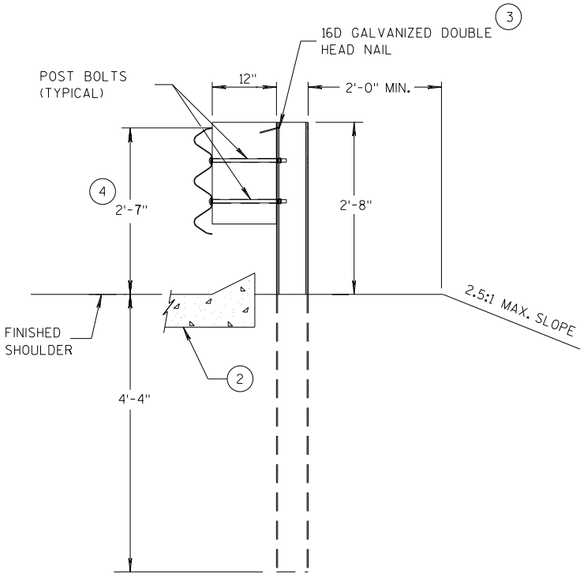


SECTION C-C

POSTS 7-11

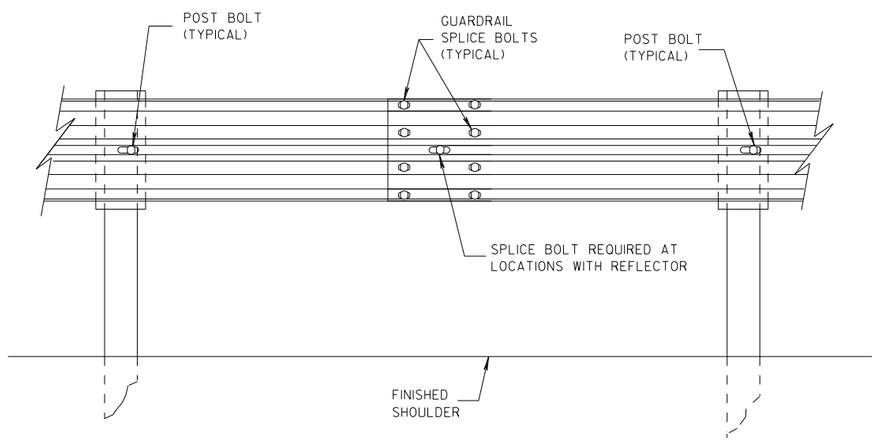


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

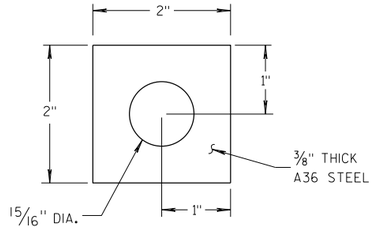
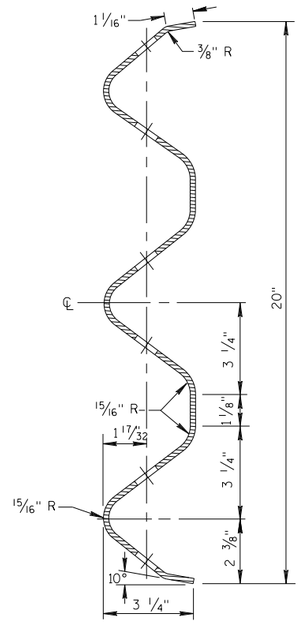


PLATE WASHER DETAIL



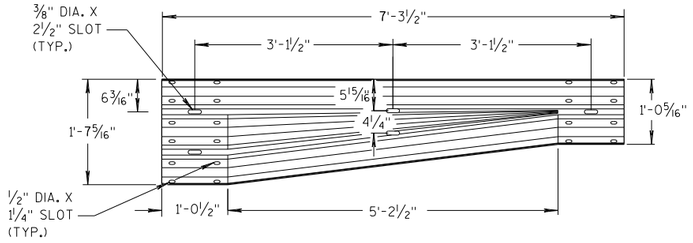
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

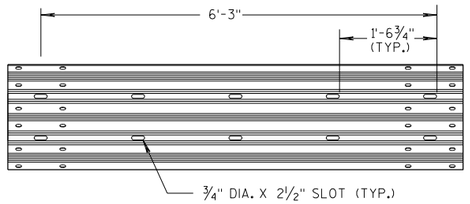
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOF

6

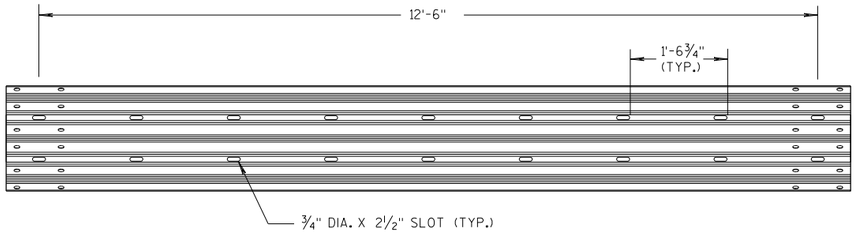
S.D.D. 14 B 45-5b



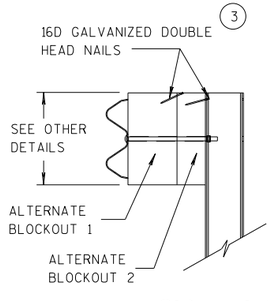
W-BEAM TO THRIE BEAM TRANSITION SECTION



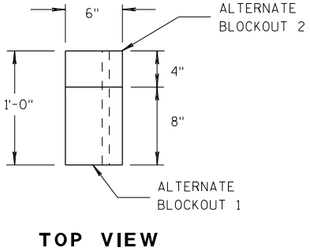
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

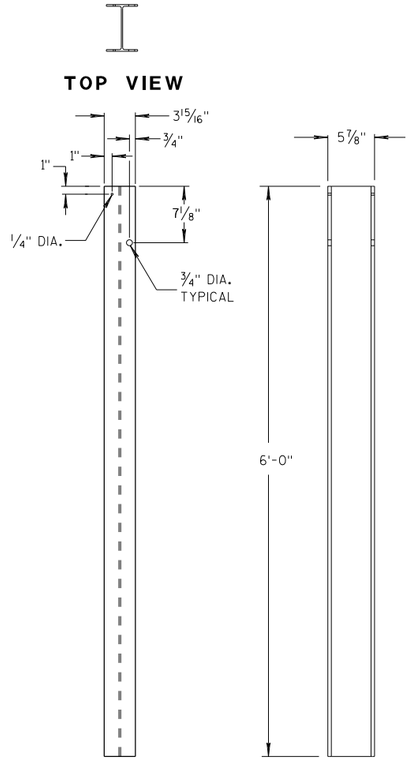


SIDE VIEW



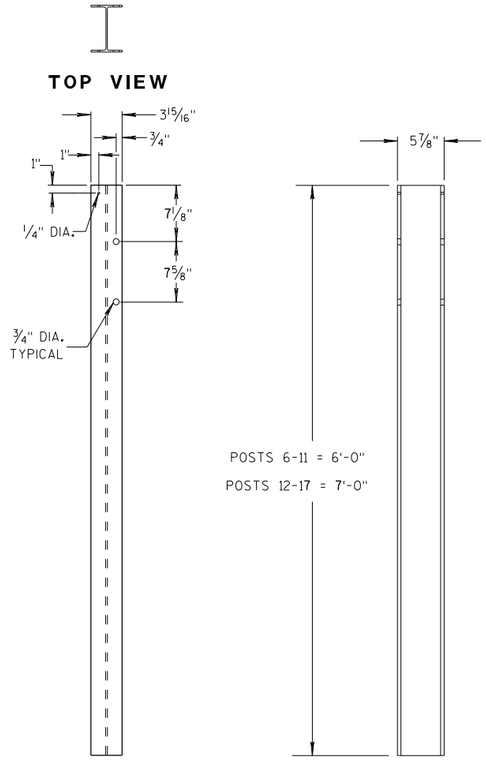
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



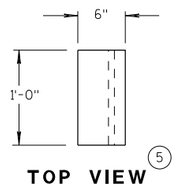
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

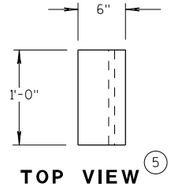


FRONT VIEW SIDE VIEW

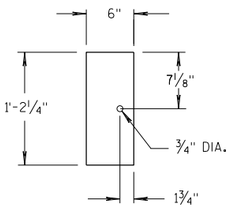
STEEL POSTS 6-17



TOP VIEW (5)

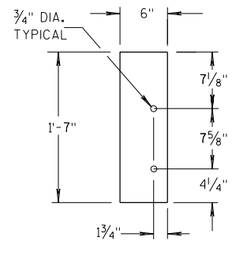


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

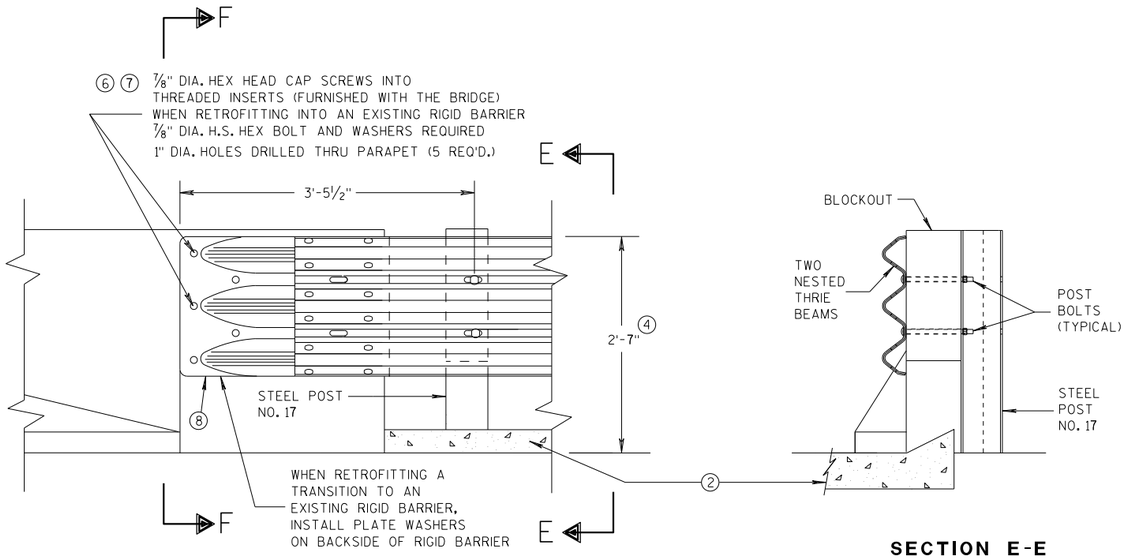
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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.

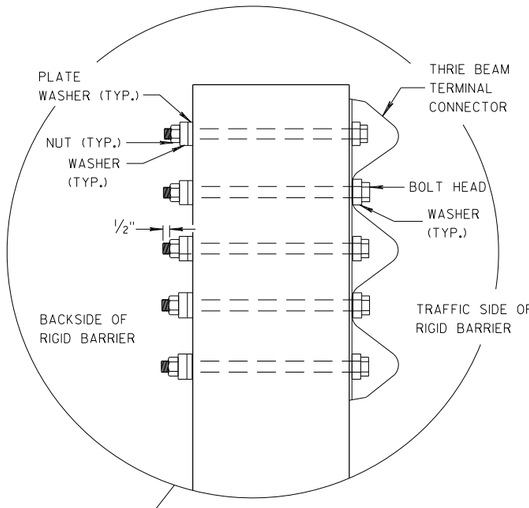
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

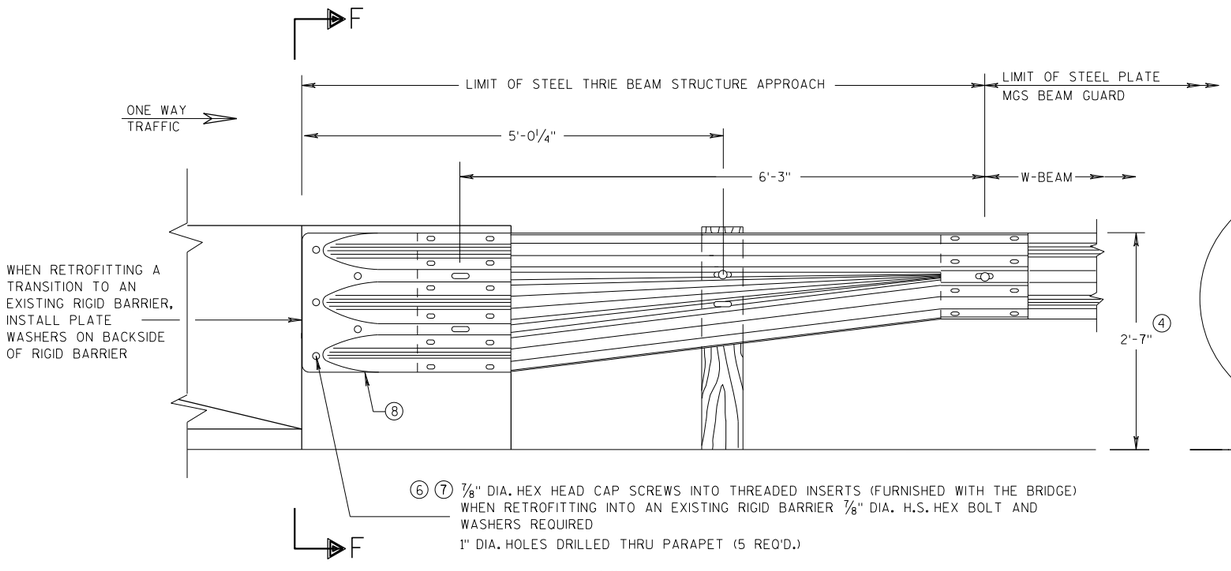
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

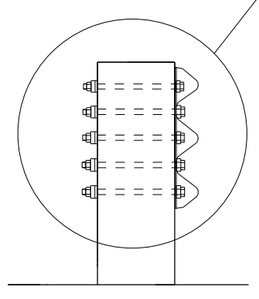
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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".

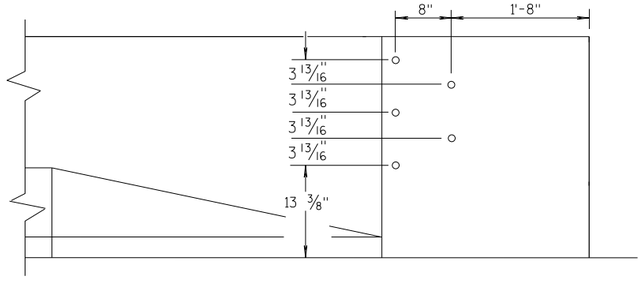




FRONT VIEW



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

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.

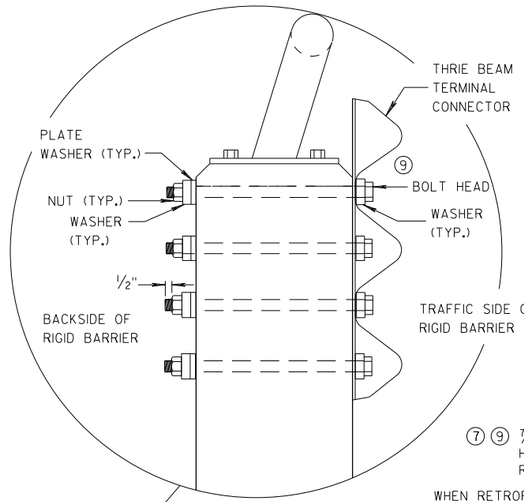
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

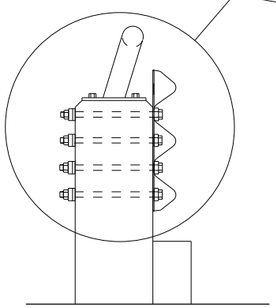
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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.

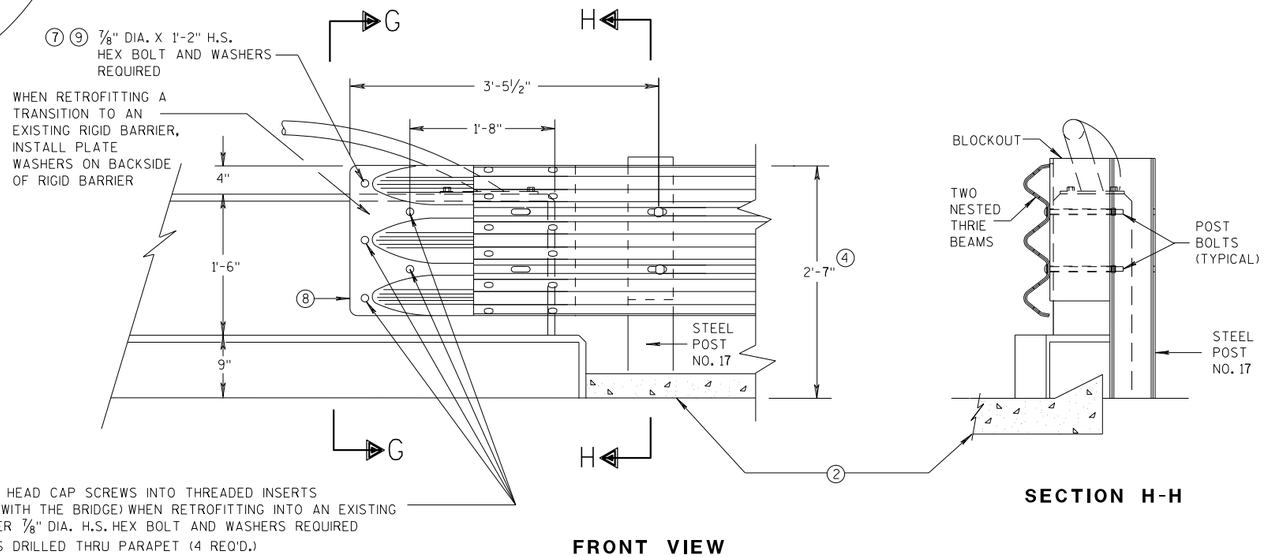
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

(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.





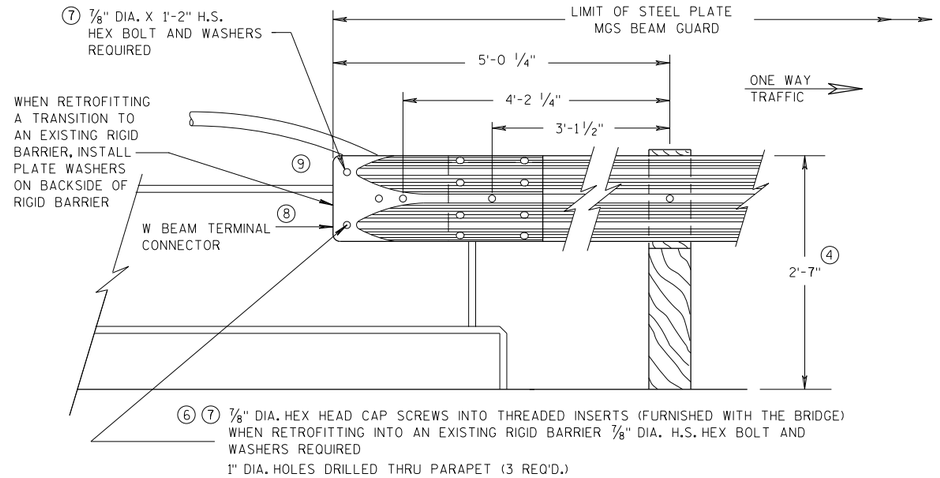
SECTION G-G



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(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

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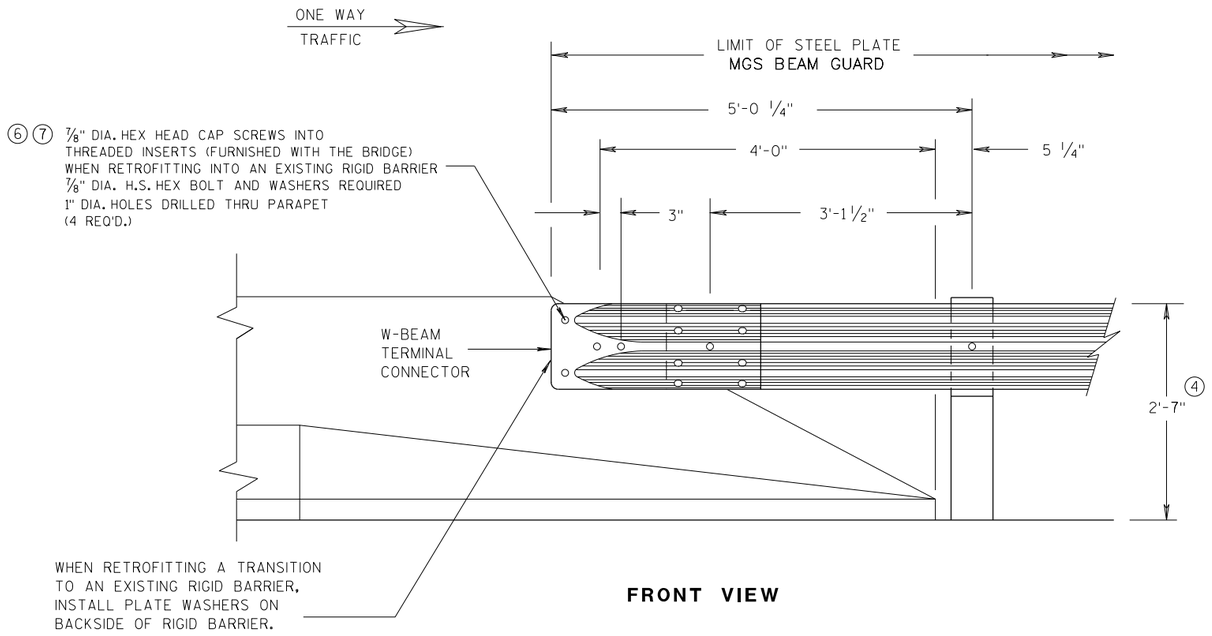
S.D.D. 14 B 45-5e

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)

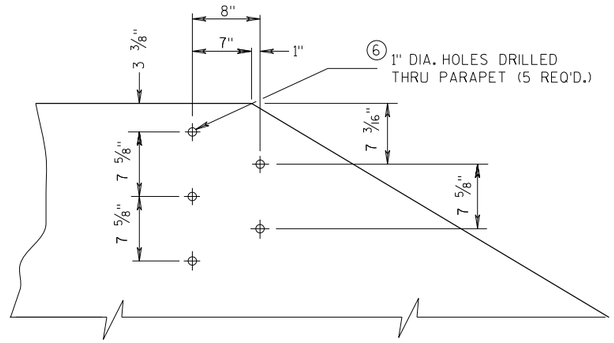
GENERAL NOTES

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

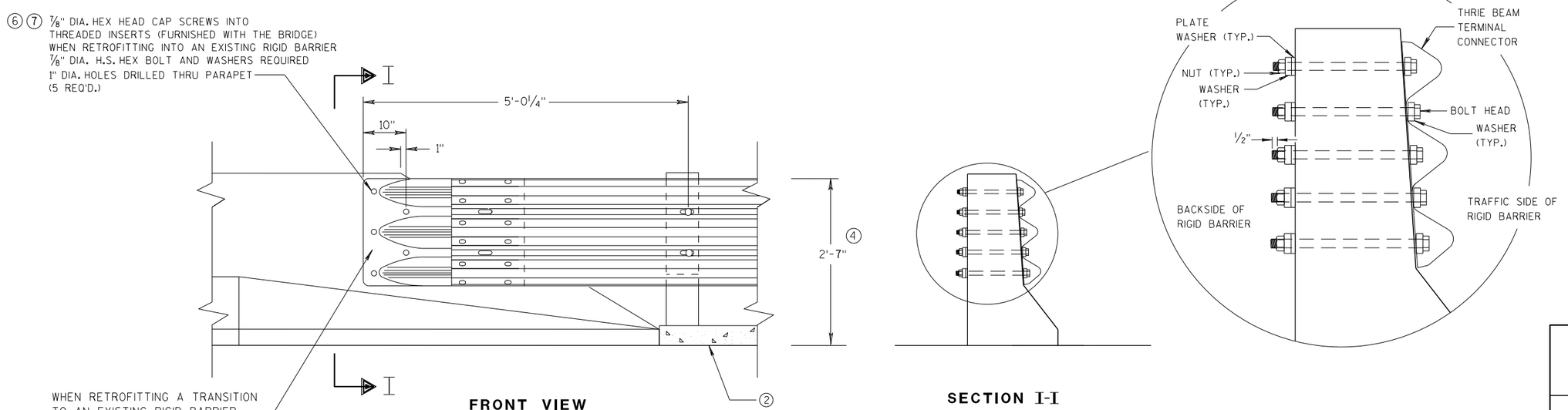
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

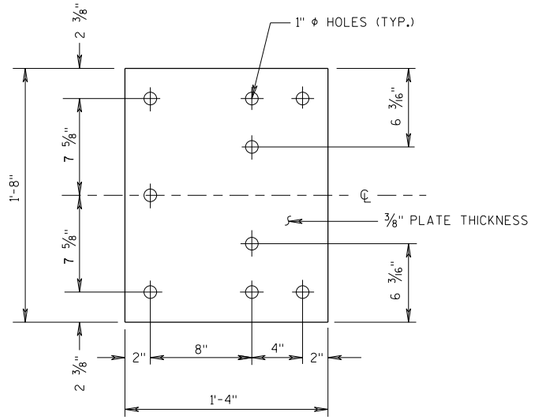
APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS [illegible] UNIT SUPERVI[illegible]ENT
FHWA

6

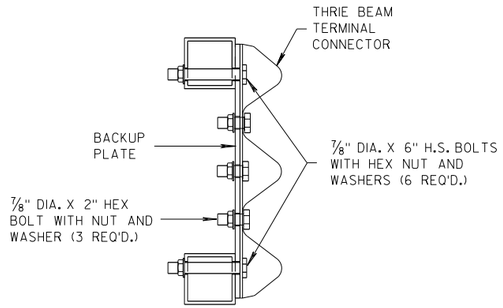
S.D.D. 14 B 45-5f

6

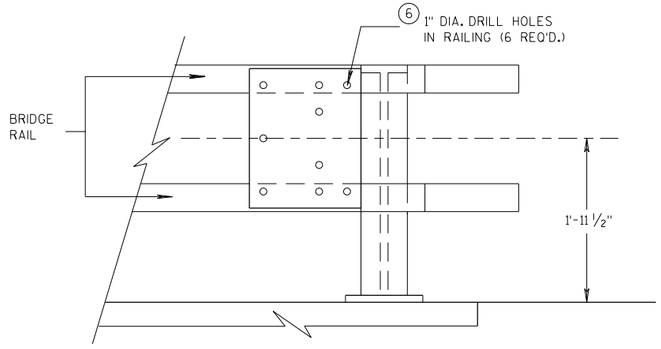
S.D.D. 14 B 45-5f



BACK-UP PLATE DETAIL



SECTION J-J

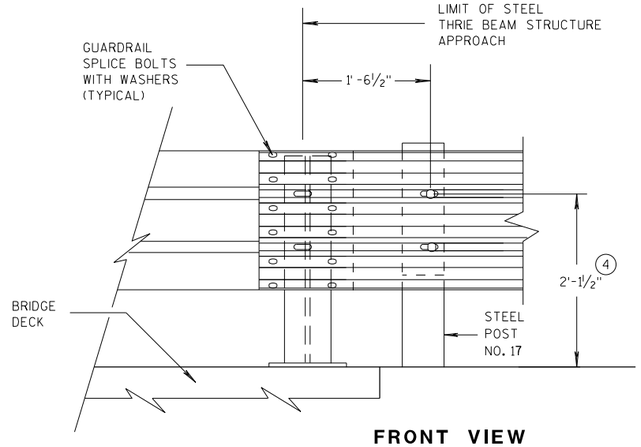


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

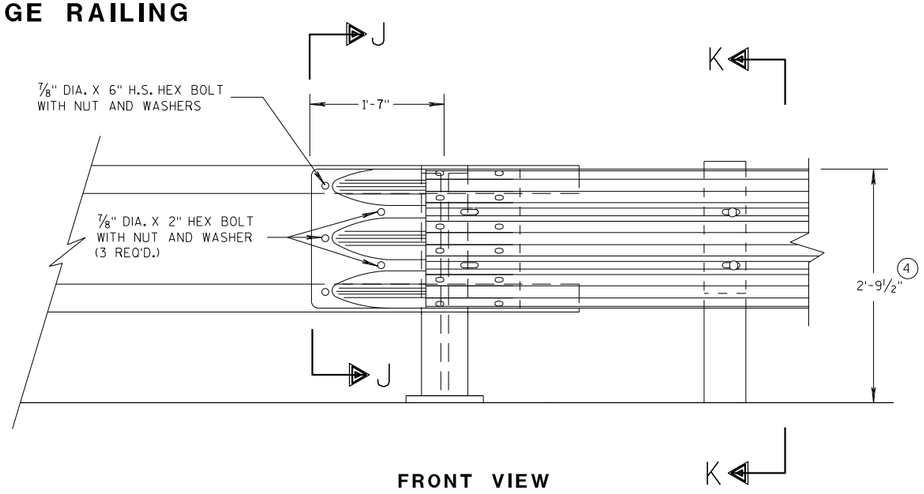
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

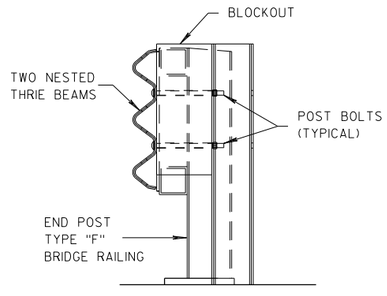


FRONT VIEW

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

57

6

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

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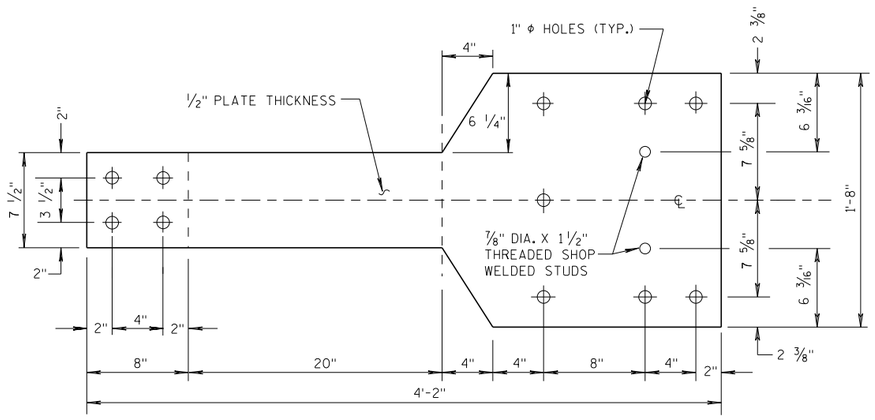
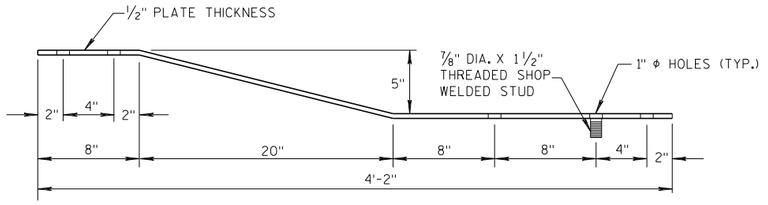
S.D.D. 14 B 45-5g

GENERAL NOTES

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

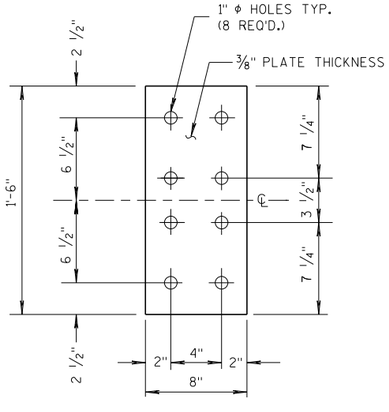


FRONT VIEW



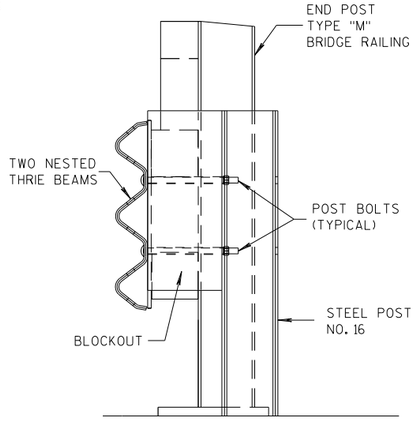
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

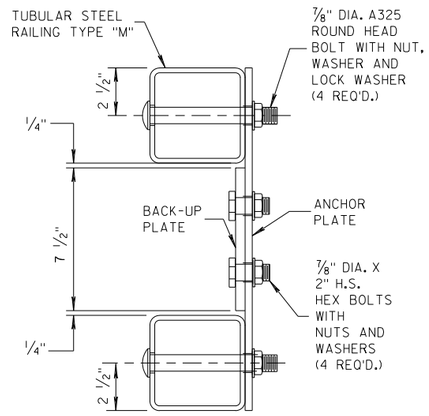


FRONT VIEW

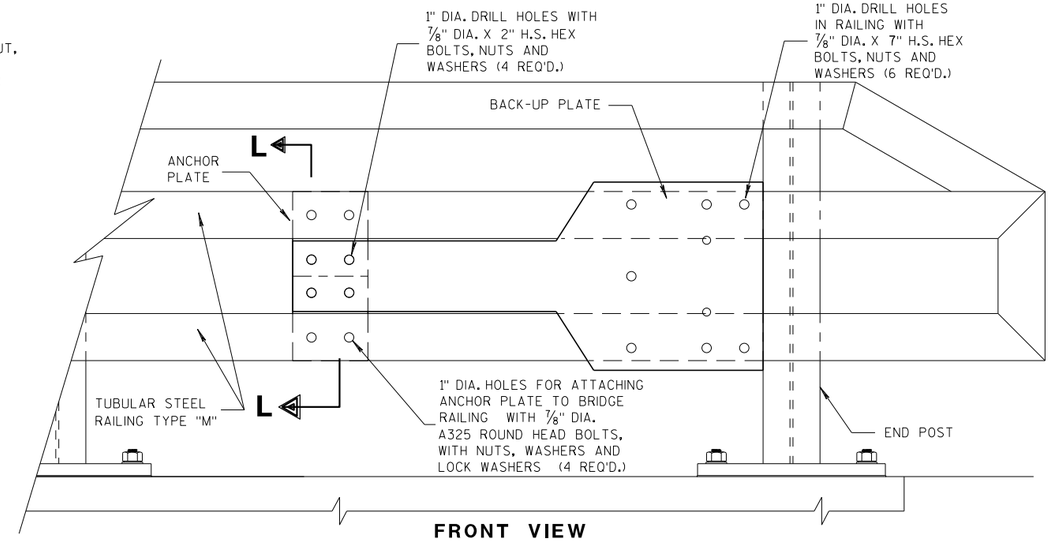
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

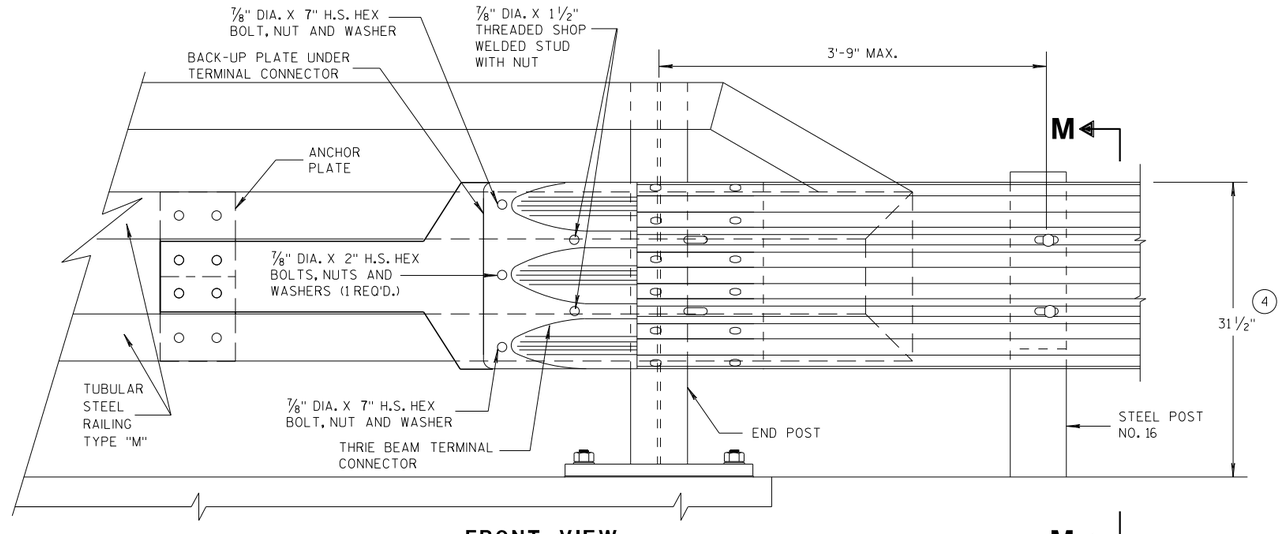


SECTION L-L

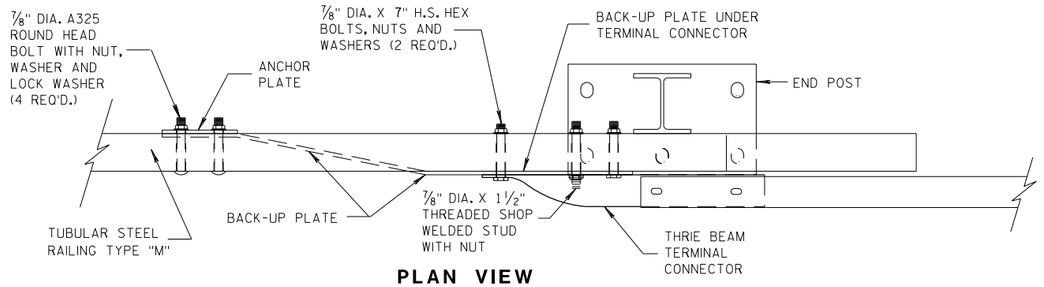


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

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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.

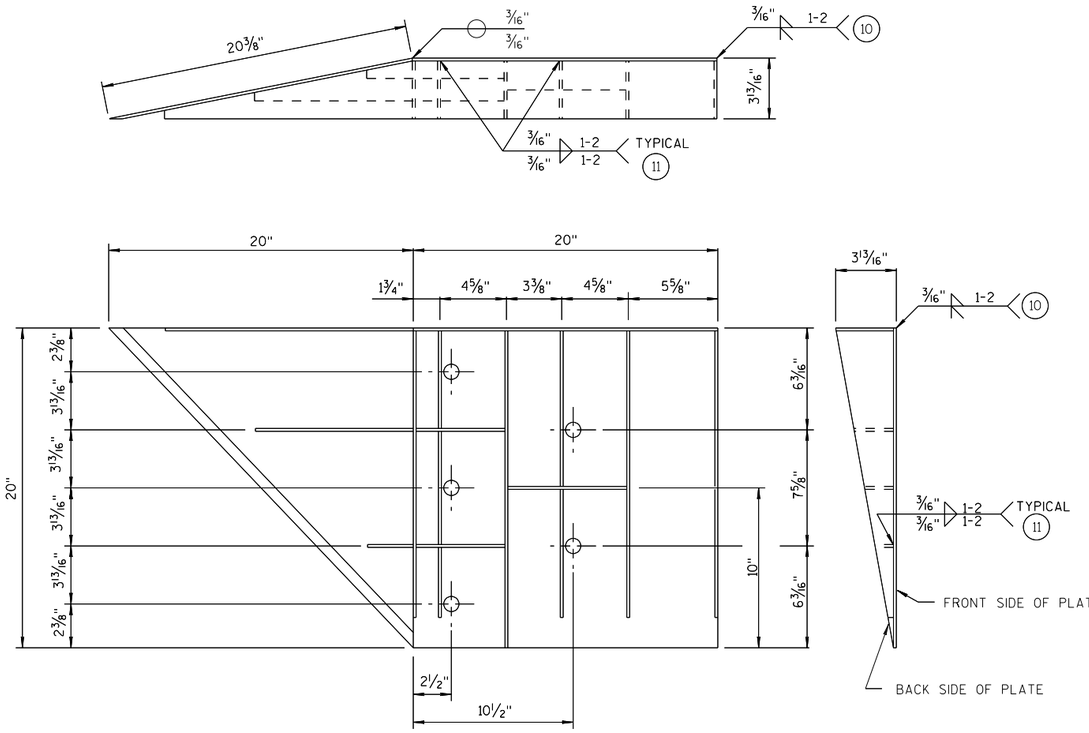
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

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)

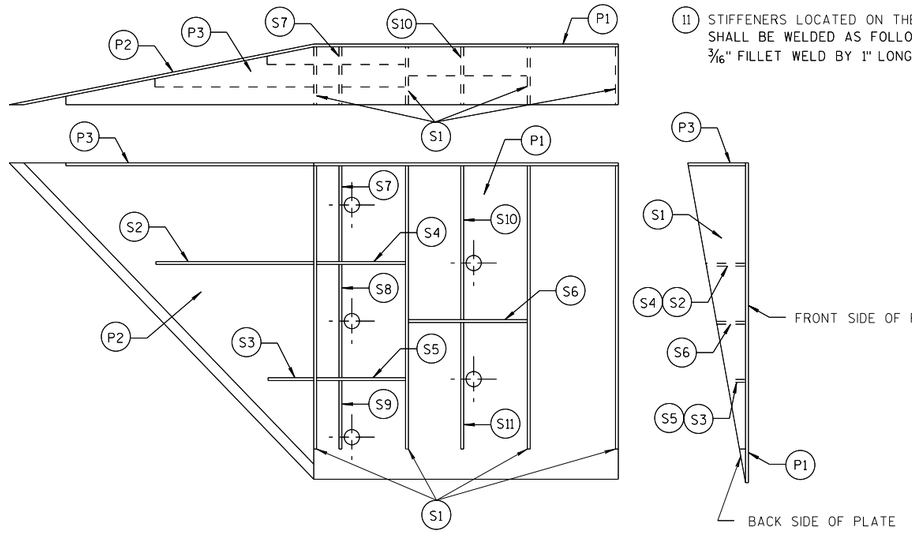


PLATE AND STIFFENER IDENTIFICATION

(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
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DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS I
UNIT SUPERVI

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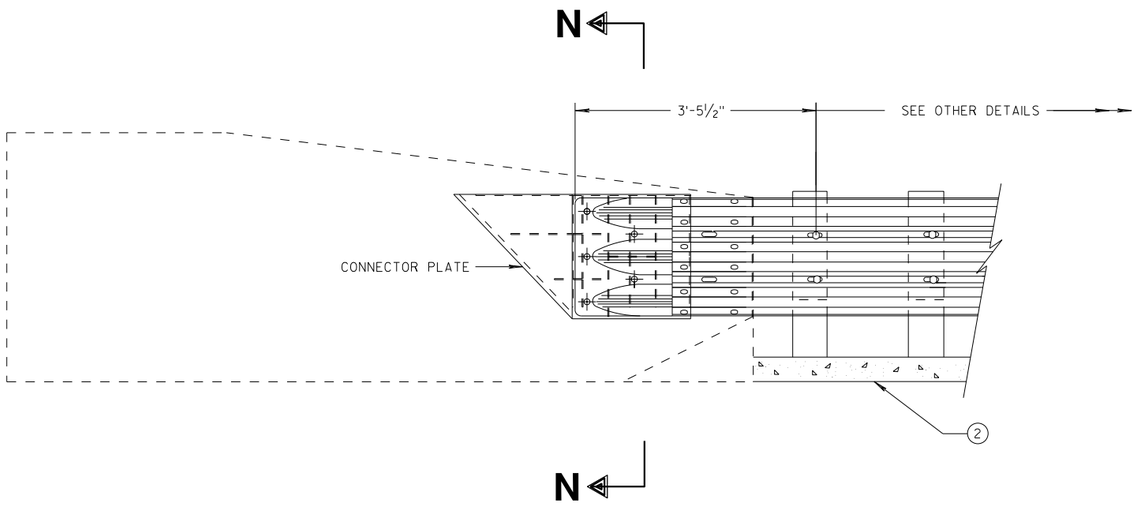
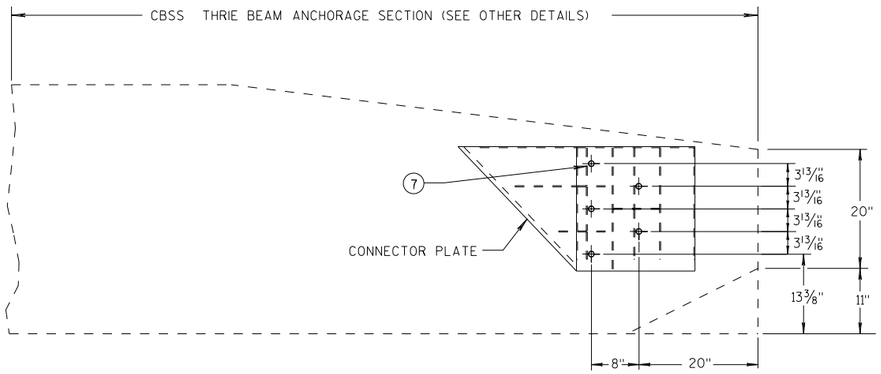
S.D.D. 14 B 45-5i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



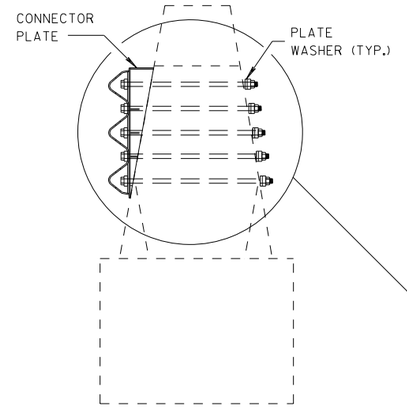
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

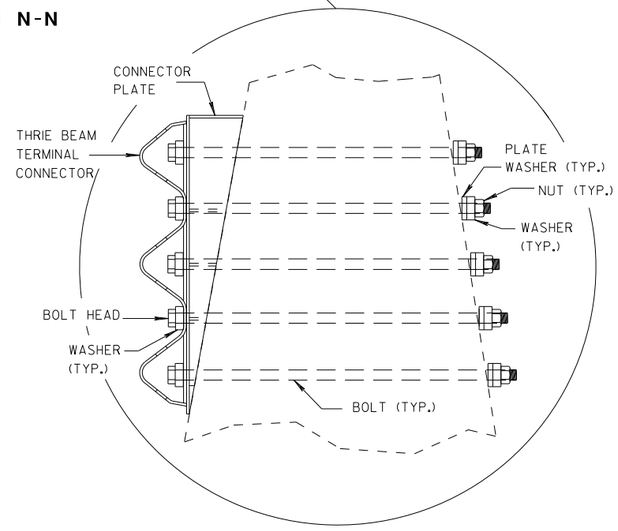
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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
/S/ Rodney Taylor
ROADWAY STANDARDS DI UNIT SUPERVIS NT
FHWA

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

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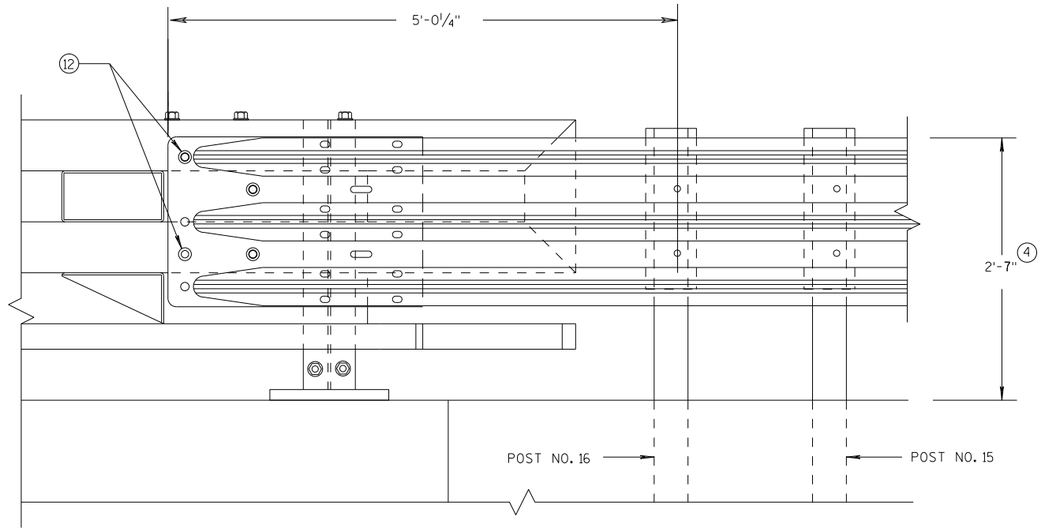
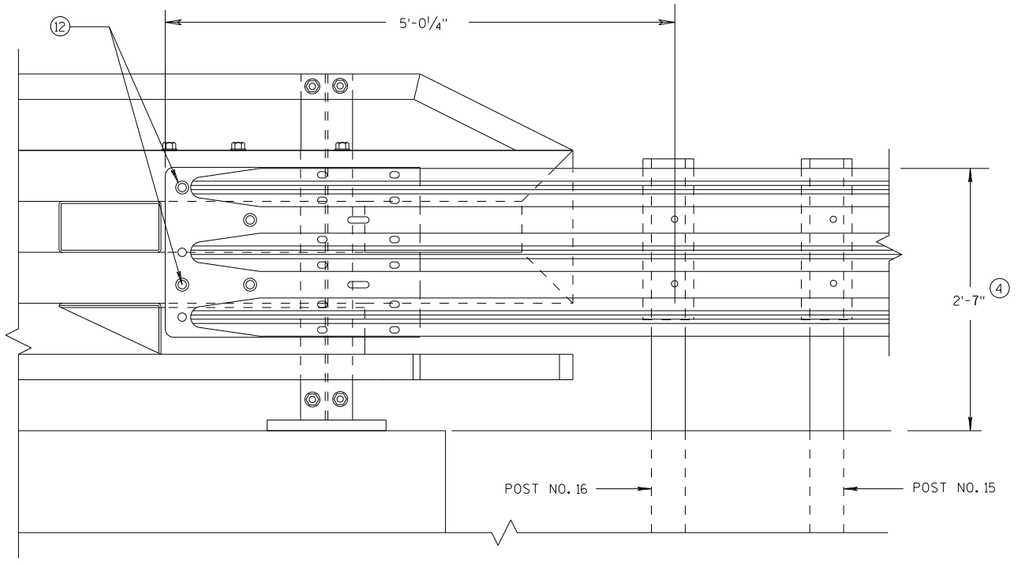


ELEVATION OF DETAIL AT NY3 END POST

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
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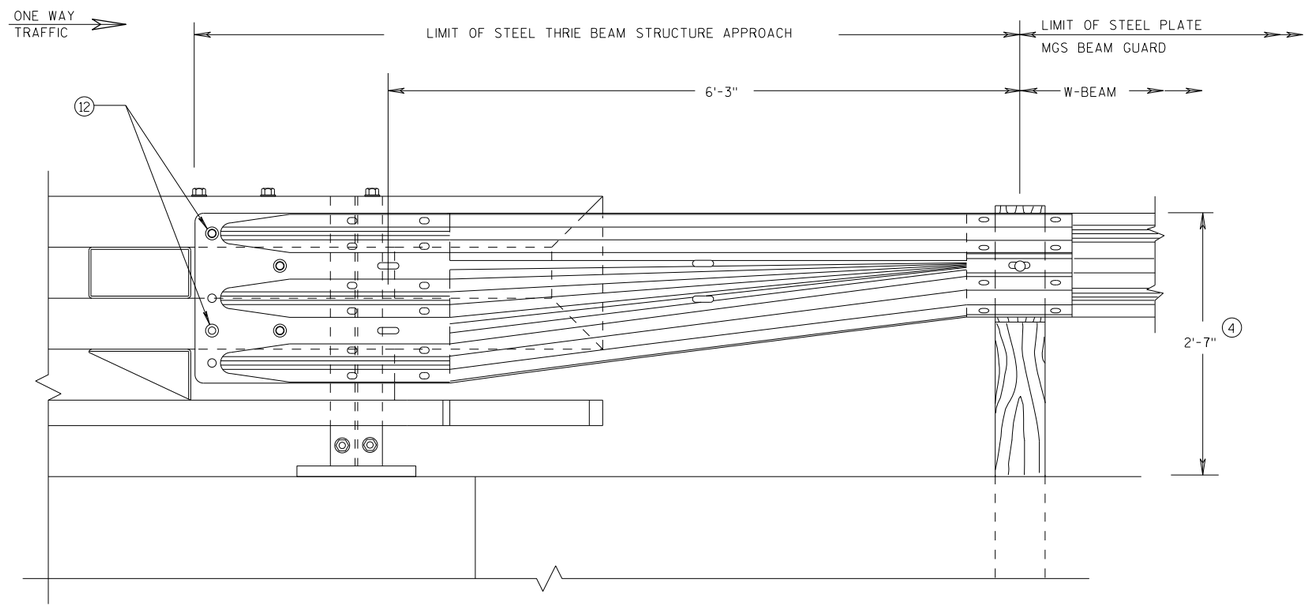


FRONT VIEW

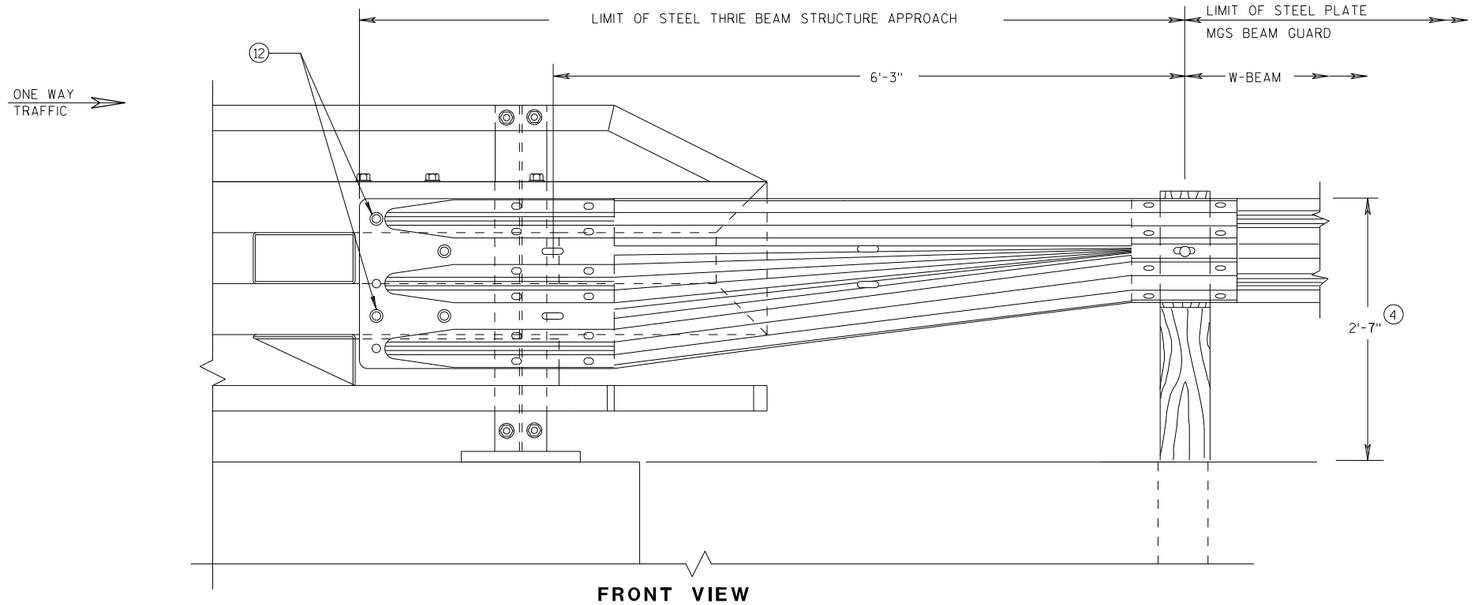
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

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

GENERAL NOTES

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

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



FRONT VIEW

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

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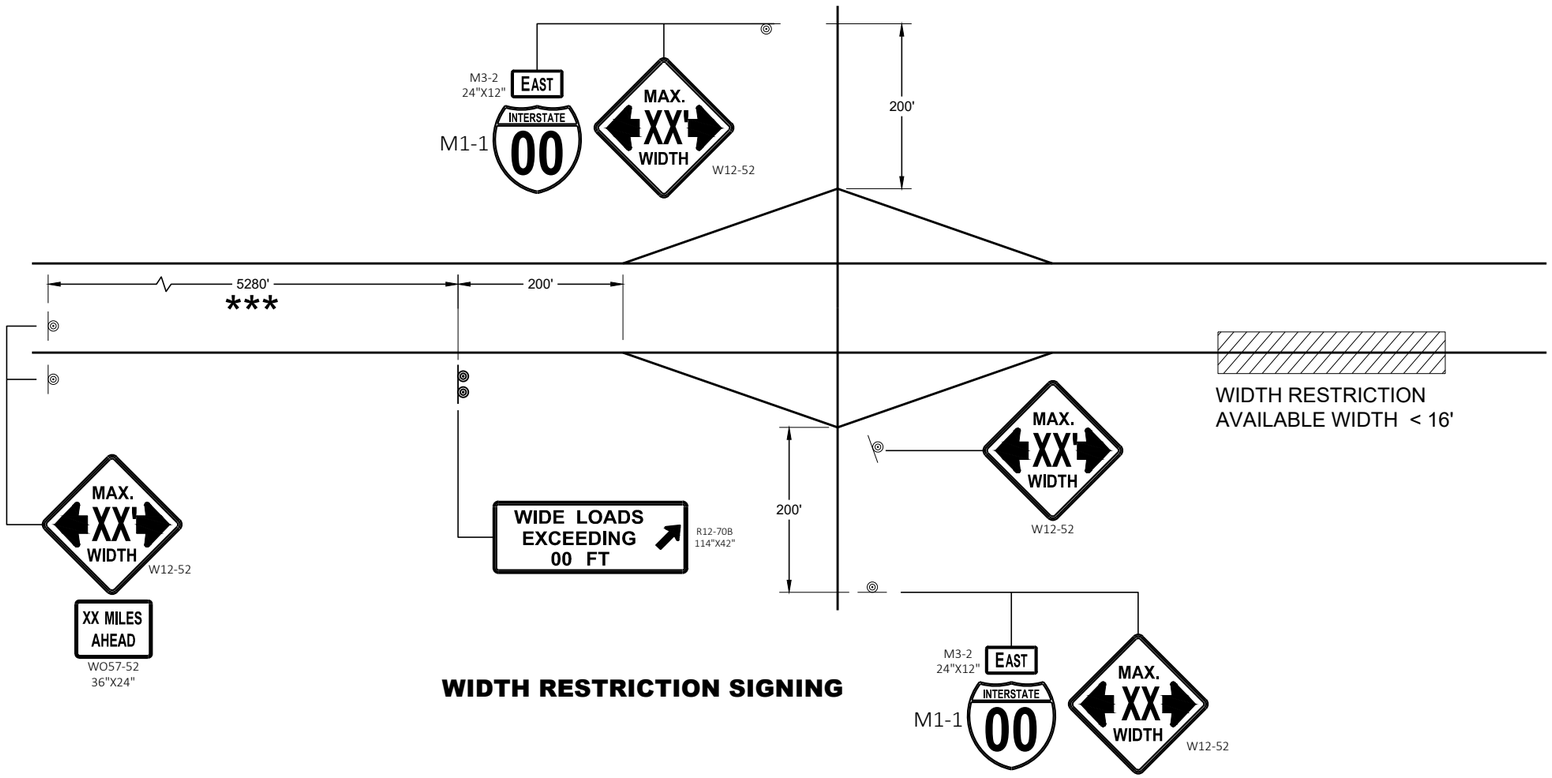


WIDTH RESTRICTION SIGNING

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.

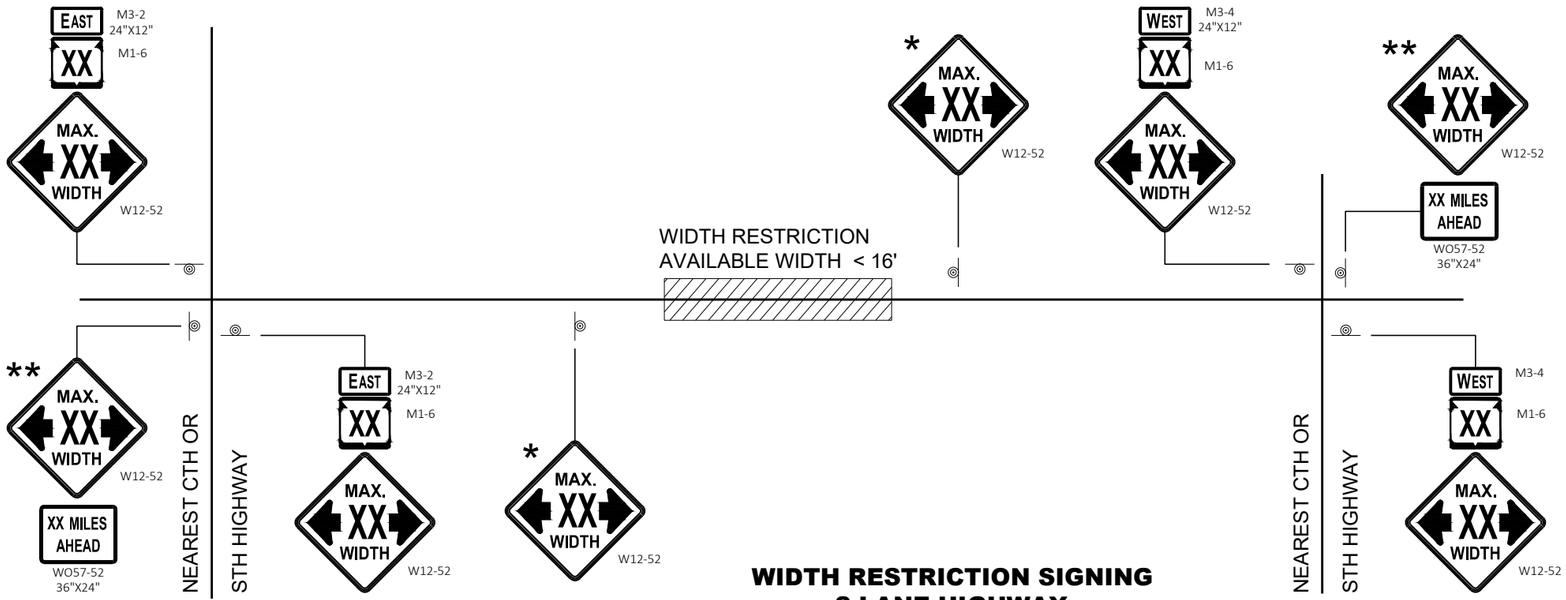
WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

* 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
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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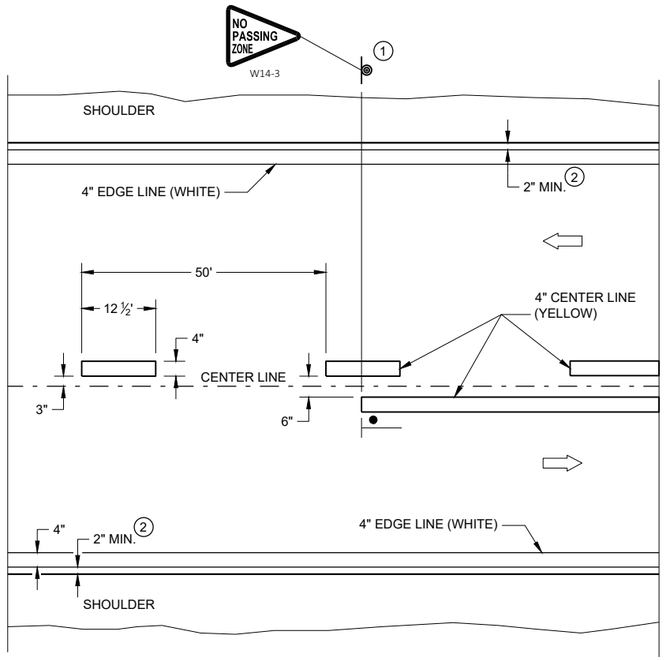
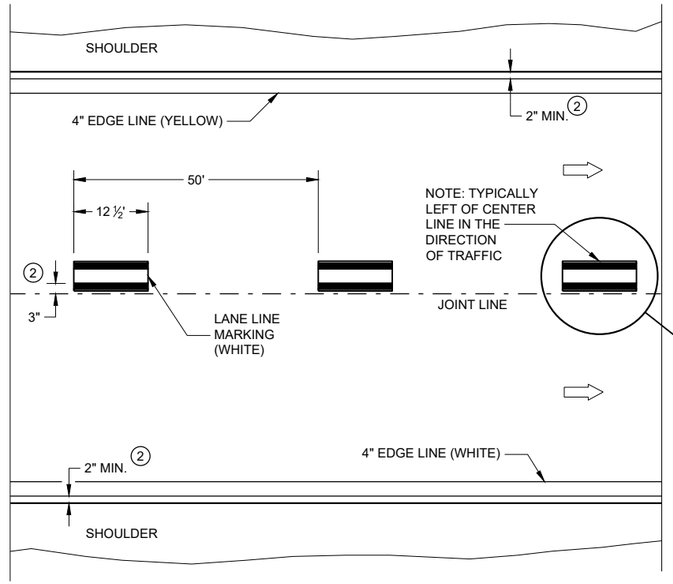
SDD 15C02 - 08f

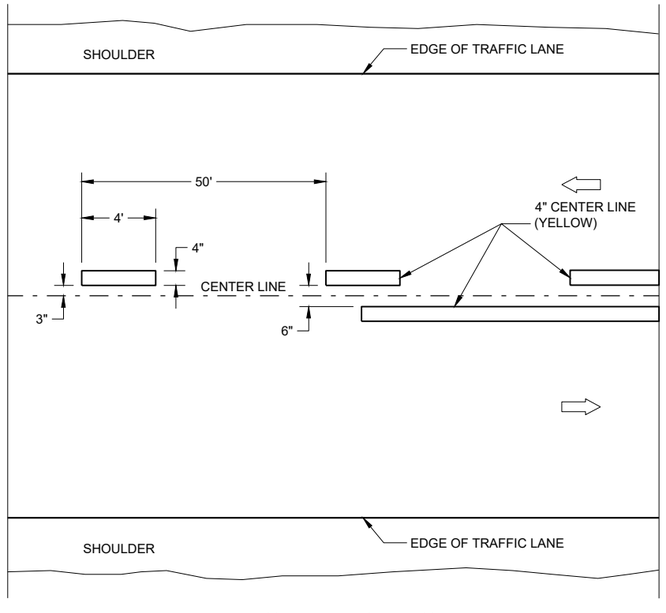


TWO WAY TRAFFIC

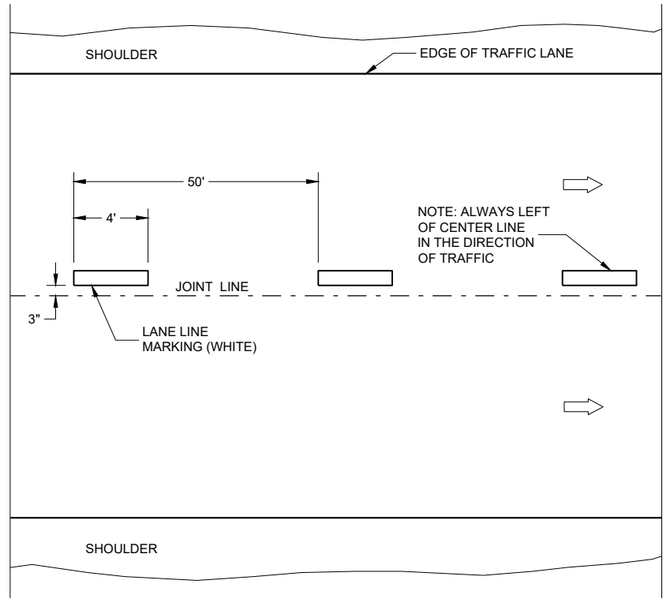


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

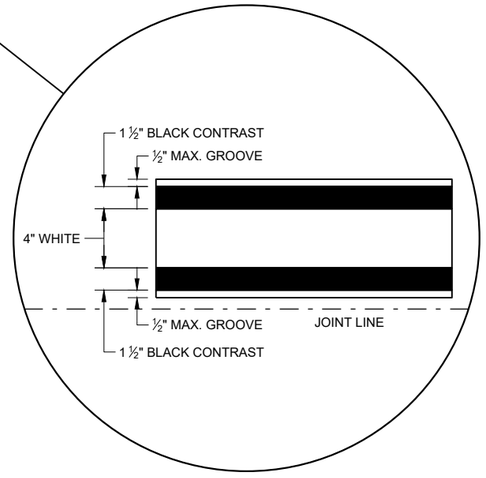
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Matthew Rauch
STATEWIDE SIGNING AND M ENGINEER

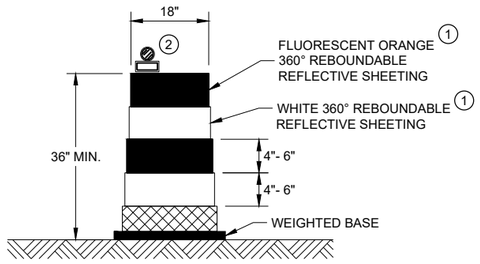
FHWA

SDD 15C08 - 20a

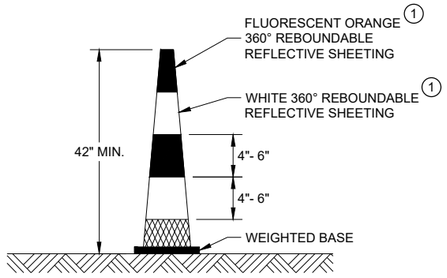
SDD 15C08 - 20a

GENERAL NOTES

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

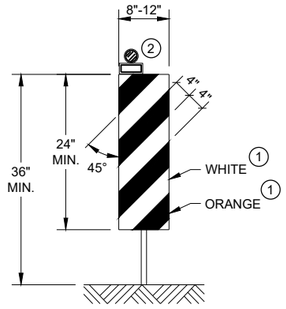


DRUM



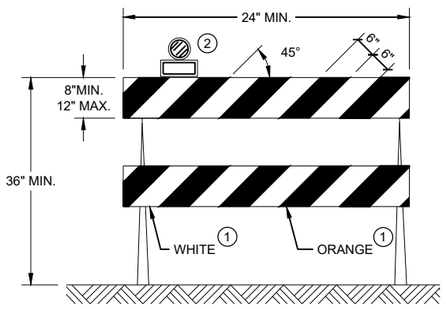
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



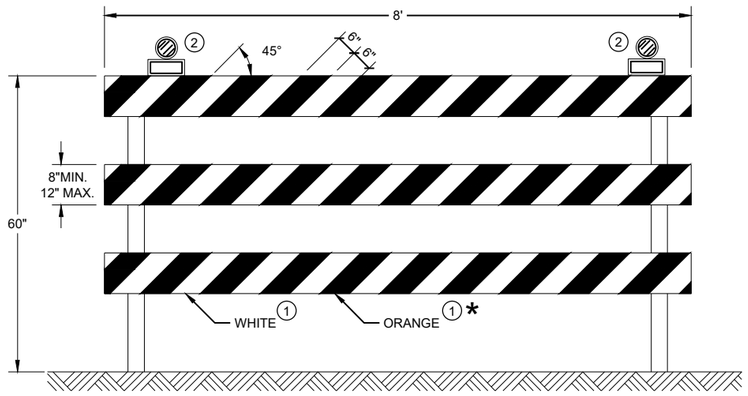
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C11 - 09b

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SDD 15C11 - 09b

LEGEND

- SIGN ON PORTABLE OR PERMANENT SUPPORT
- TEMPORARY PORTABLE RUMBLE STRIP ARRAY
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

(1) FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

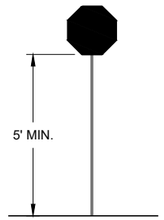
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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



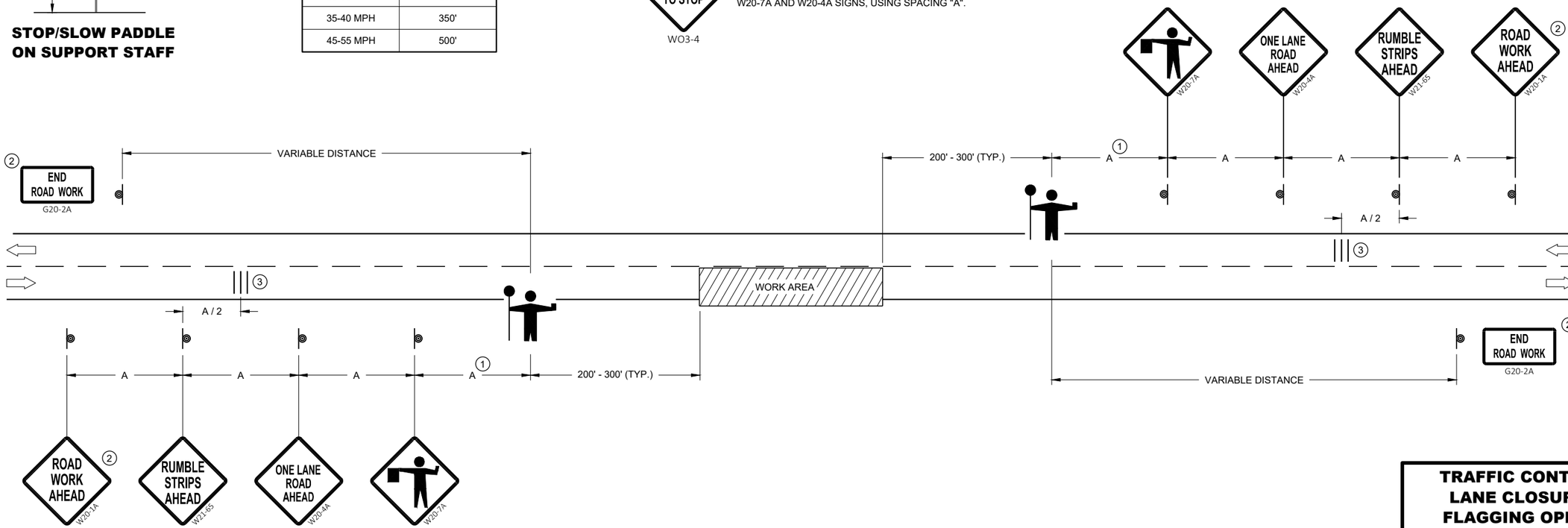
STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'

WO3-4

USE OF WO3-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C12 - 07

LEGEND

TYPE III BARRICADE WITH ATTACHED SIGN

SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT

TRAFFIC CONTROL DRUM

FLAGS, 16" X 16" MIN. (ORANGE)

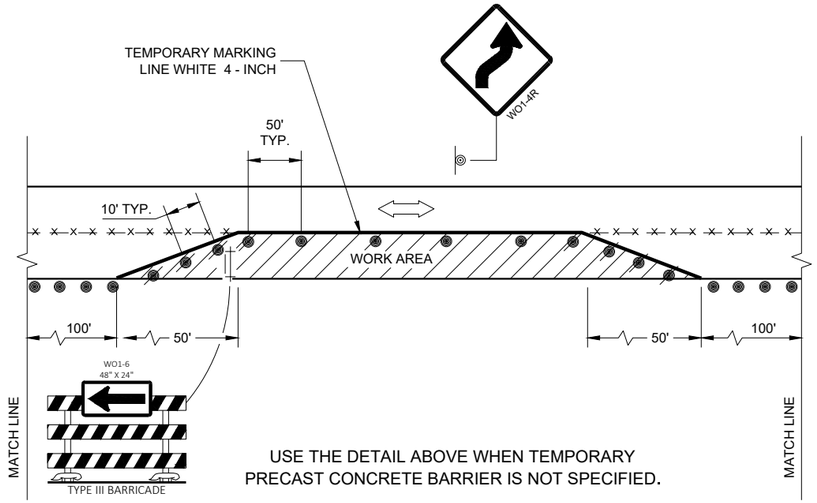
REMOVING PAVEMENT MARKING

DIRECTION OF TRAFFIC

ASPHALTIC PAVEMENT WIDENING

CONCRETE BARRIER TEMPORARY PRECAST

TEMPORARY SIGNAL. SEE SDD 09G02 FOR EXACT PLACEMENT



USE THE DETAIL ABOVE WHEN TEMPORARY PRECAST CONCRETE BARRIER IS NOT SPECIFIED.

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

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

ALL SIGNS ARE 48" x 48" 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 OR AS APPROVED BY THE ENGINEER.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

(1) 500 FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY 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.

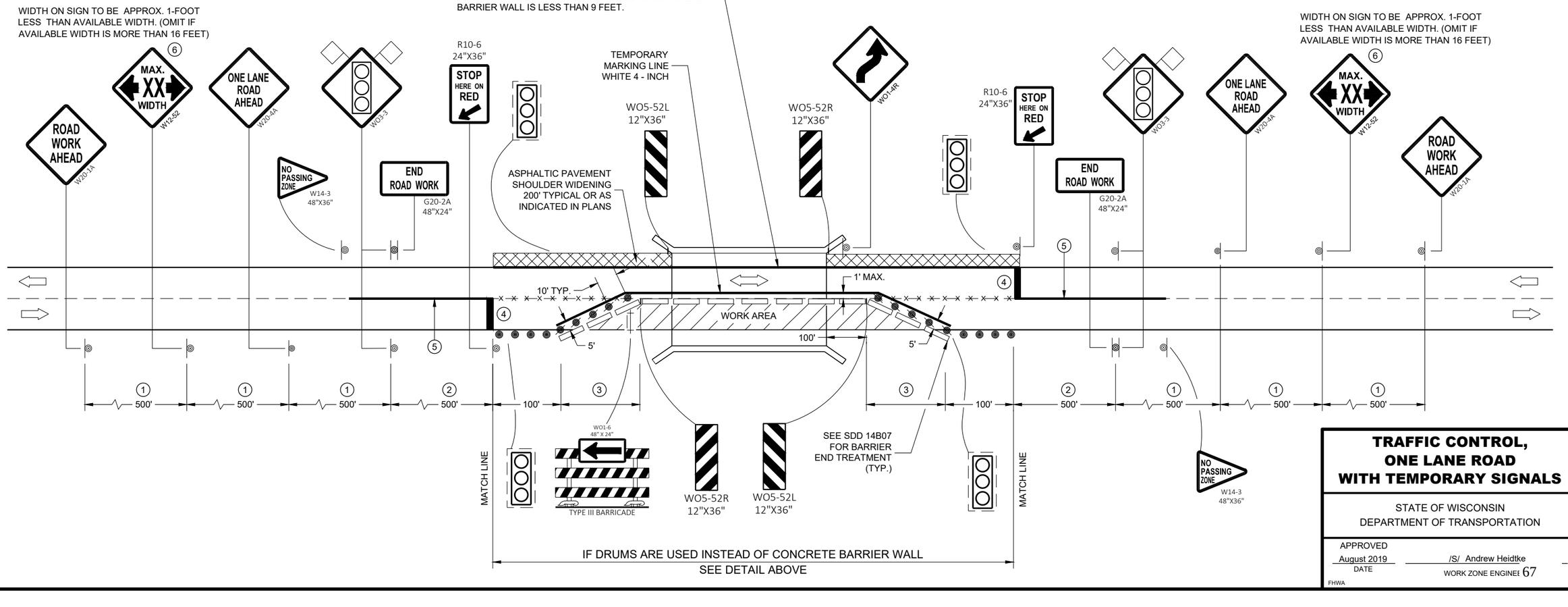
(2) USE 300 FOOT SPACING IF THE PRE - CONSTRUCTION REGULATORY SPEED IS 35 MPH OR LESS.

(3) DIMENSION DETERMINED BY CBTP TAPER FROM EDGE LINE TO TANGENT SECTION OF THE ROAD.

(4) TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18 - INCH.

(5) 700 FOOT TEMPORARY MARKING LINE, DOUBLE YELLOW 4 - INCH . WHEN THE DISTANCE FOR THE PRECEDING NO - PASSING ZONE IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES AS INDICATED IN THE SPECIFICATIONS, THE TWO ZONES SHALL BE CONNECTED.

(6) SEE SDD 15C02 - SHEET "F" FOR ADVANCED WIDTH RESTRICTION SIGNING.



TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

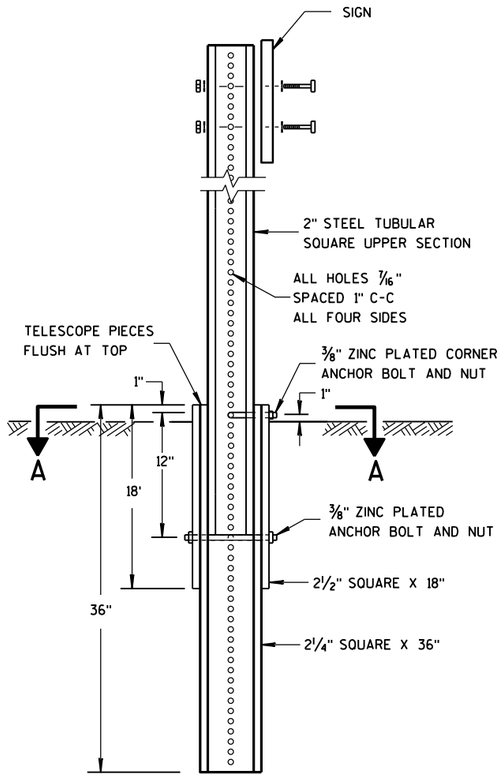
APPROVED
August 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

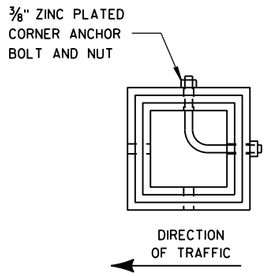
FHWA

SDD 15D33 - 06

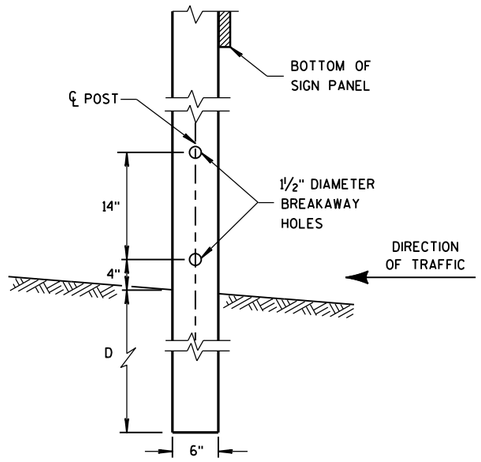
SDD 15D33 - 06



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



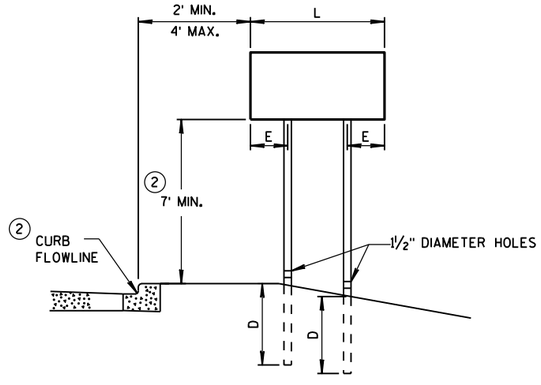
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

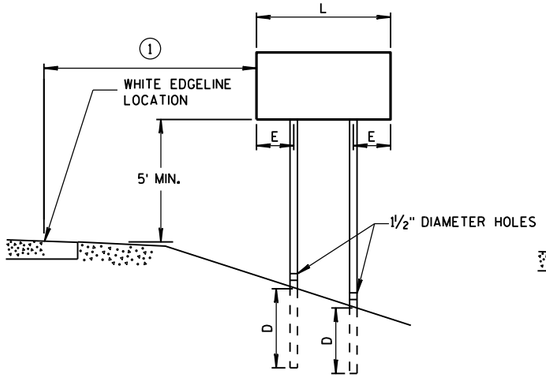
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

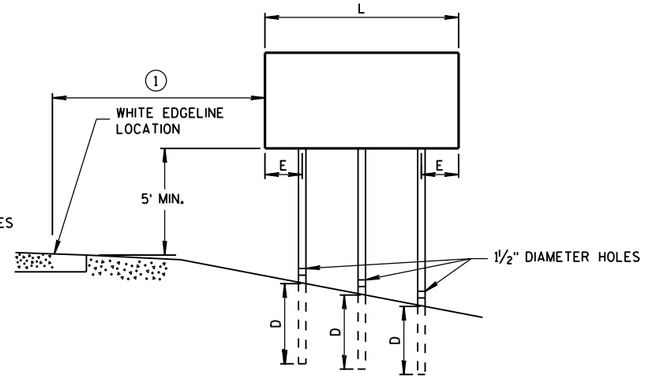
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

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

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

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

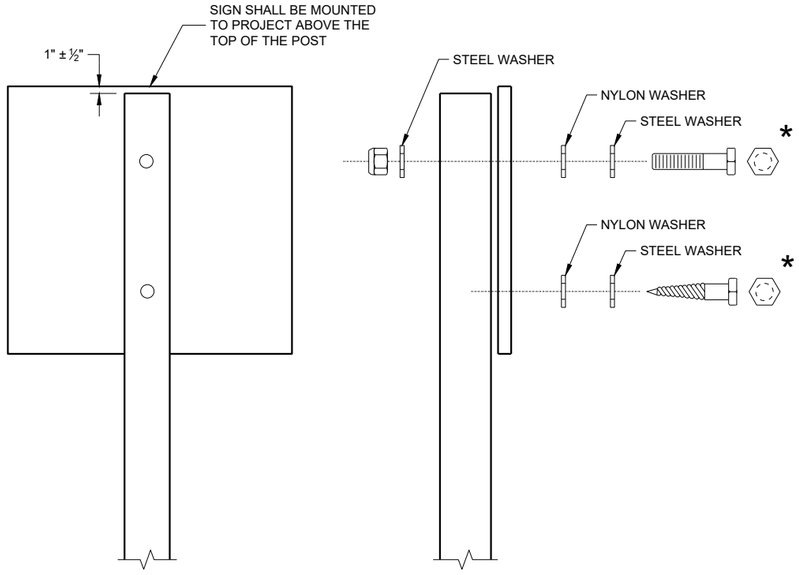
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



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

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

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

WOOD POST (4" x 6")
LAG SCREWS - ⅜" x 3"
MACHINE BOLTS - 5/16" x 6 ½" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ⅜" x 3 ¼" LENGTH W/NUTS
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH, GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x 1/16" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 NYLON

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

6

6

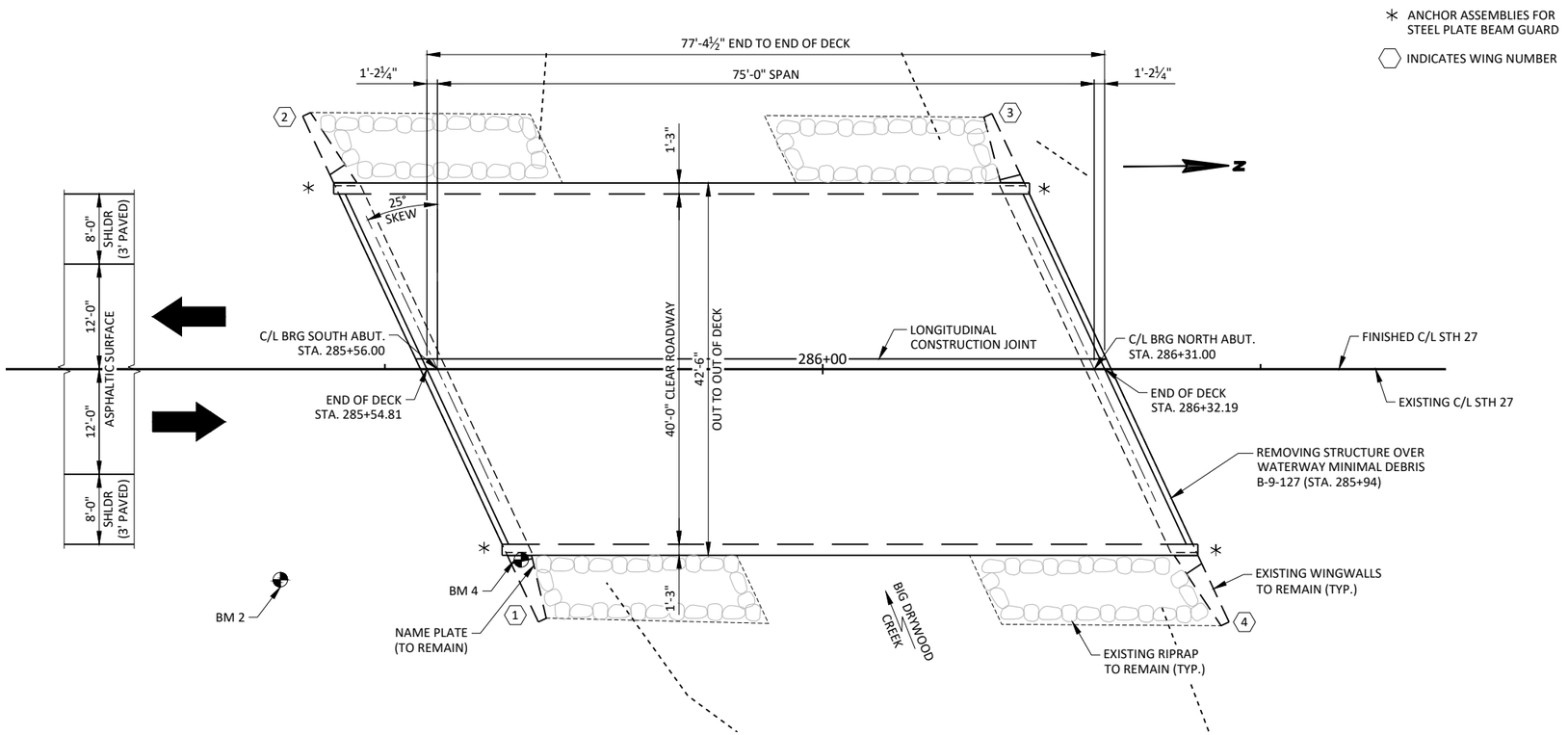
SDD 15D38 - 02b

SDD 15D38 - 02b

ATTACHMENT OF SIGNS TO POSTS

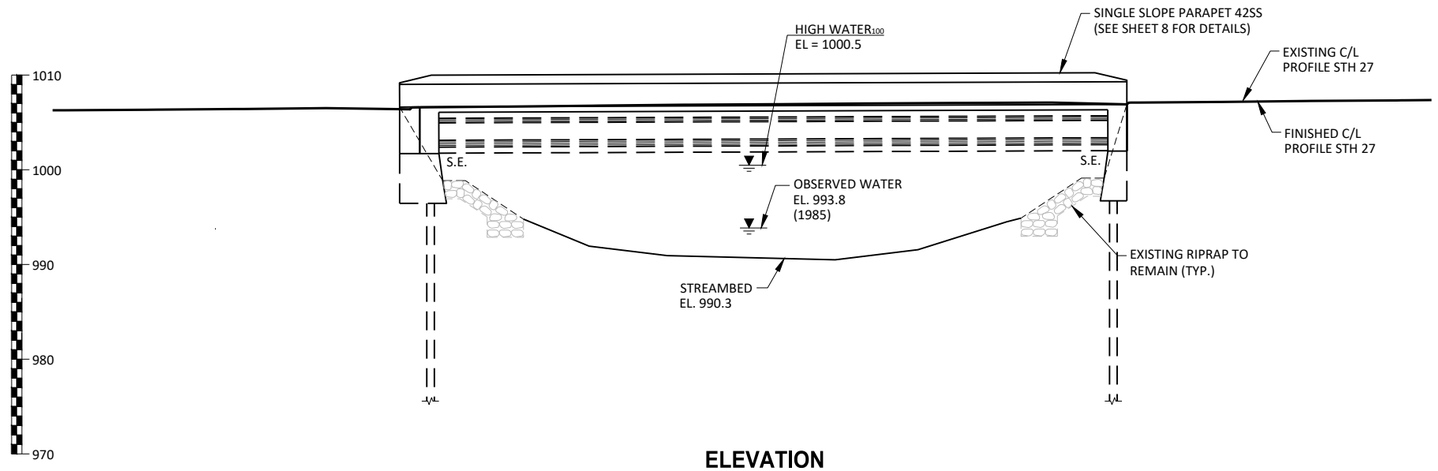
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA



PLAN B-9-127

(SINGLE-SPAN 45" PRESTRESSED CONCRETE GIRDER STRUCTURE)
(REDECK AND EAST GIRDER REPLACEMENT)



ELEVATION

(NORMAL TO BIG DRYWOOD CREEK)

STATE PROJECT NUMBER

7070-06-61

DESIGN DATA

LIVE LOAD:

DESIGN LOADING	HS-20
INVENTORY RATING	HS-24
OPERATING RATING	HS-49
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV)	250 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY, SUPERSTRUCTURE	f'c = 4,000 P.S.I.
HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy = 60,000 P.S.I.
45-INCH PRESTRESSED GIRDER CONCRETE MASONRY	f'c = 6,000 P.S.I.
STRANDS 0.5 INCH DIA. ULTIMATE TENSILE STRENGTH	fy = 270,000 P.S.I.

TRAFFIC DATA

A.D.T. (2022)	3,600
A.D.T. (2042)	4,200
DESIGN SPEED	60 M.P.H.

LIST OF DRAWINGS

BENCH MARKS

NO.	STA.	DESCRIPTION	ELEV.
5	283+34	STAR SPIKE IN POWER POLE, 46' RT.	1001.21
2	285+38	3/4" IRON ROD SET, 24' RT.	1005.79
4	285+65	TABLET IN SE WINGWALL, 21' RT.	1006.72
6	286+97	STAR SPIKE IN POWER POLE, 47' RT.	1002.93

WISCONSIN
PATRICK T. BOLAND E-36303 HILLPOINT WIS
PROFESSIONAL ENGINEER
Patrick Boland 7-12-21

NO.	DATE	REVISION	BY

JEWELL associates engineers, inc.
Engineers - Architects - Surveyors
560 SUNRISE DRIVE
SPRING GREEN, WI 53588
OFFICE: (608) 588-7484
www.jewellassoc.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 07/13/21
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-9-127

STH 27 OVER BIG DRYWOOD CREEK

COUNTY	TOWN/~~CITY/VILLAGE~~
CHIPPEWA	GOETZ

DESIGN SPEC. REHAB N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
PMF	PTB	PMF	PTB

GENERAL PLAN

SHEET 1 OF 8
70

DESIGN CONSULTANT
PATRICK BOLAND, PE
(608) 588-7484

BRIDGE OFFICE CONTACT
AARON BONK, PE
(608) 261-0261

8

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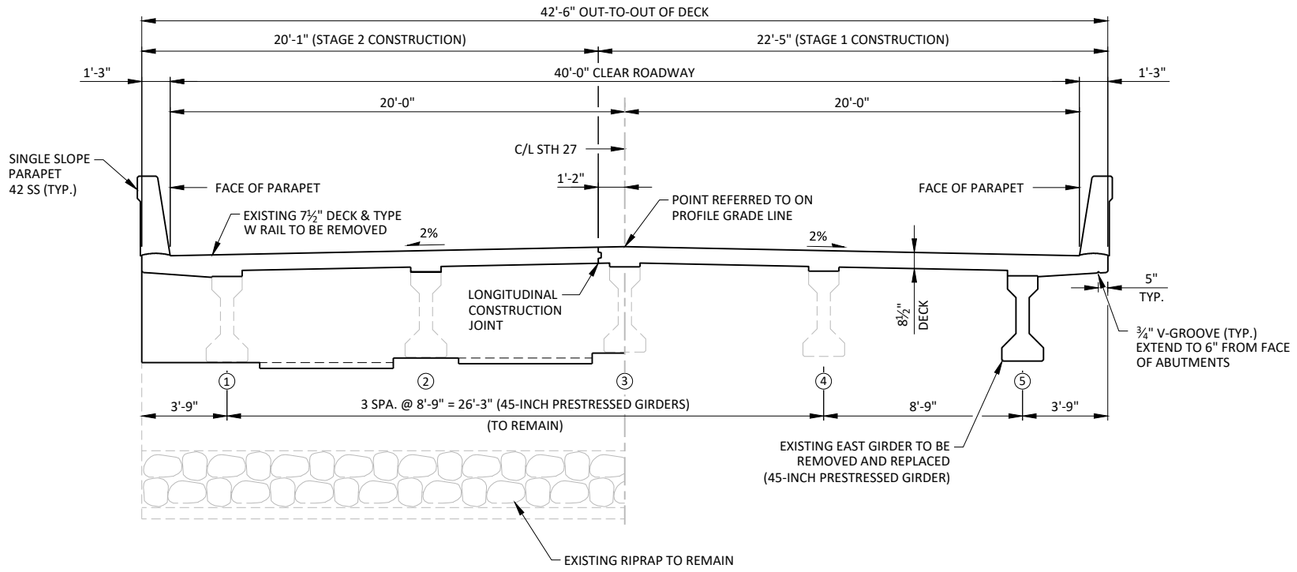
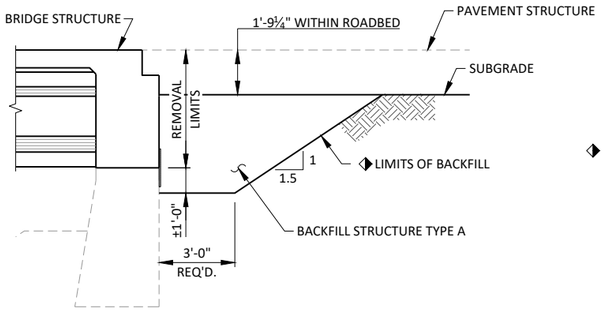


PROPOSED CROSS-SECTION THROUGH ROADWAY

LOOKING NORTH



◆ BACKFILL STRUCTURE TYPE A PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES B-9-127". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

BACKFILL STRUCTURE DETAIL

ABUTMENT BODY SHOWN
(TYPICAL AT BOTH ABUTMENTS)

GENERAL NOTES

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

DRAWINGS SHALL NOT BE SCALED.

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD 88).

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

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

JOINT FILLER SHALL CONFORM TO A.A.S.H.T.O. DESIGNATION MI53, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M213.

VARIATION TO THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

AT THE BACK FACE OF ABUTMENT DIAPHRAGMS, ALL VOLUME WHICH CANNOT BE PLACED BEFORE CONCRETE PLACEMENT AND IS NOT OCCUPIED BY THE DIAPHRAGMS SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A. SEE THIS SHEET FOR DETAIL.

APPLY PROTECTIVE SURFACE TREATMENT TO THE TOP OF THE DECK.

APPLY PIGMENTED SURFACE SEALER TO THE INSIDE AND TOP FACES OF PARAPETS (CONCRETE MATERIAL ONLY).

THE EXISTING STRUCTURE IS A SINGLE-SPAN PRESTRESSED CONCRETE GIRDER STRUCTURE WITH A CONCRETE DECK SUPPORTED ON FULL RETAINING CONCRETE ABUTMENTS. THE STRUCTURE HAS A 41.9' OVERALL WIDTH AND IS 78.9' LONG. THE DECK, RAIL, ABUTMENT DIAPHRAGMS, AND EASTERN GIRDER SHALL BE REMOVED AND REPLACED IN STAGES TO ACCOMMODATE TRAFFIC DURING CONSTRUCTION.

SEE ROADWAY PLANS FOR STAGING DETAILS AND LOCATION OF SAWCUT AT EXISTING DECK. SAWCUT AT EXISTING DECK IS INCIDENTAL TO THE REMOVING OLD STRUCTURE BID ITEM.

DURING REMOVAL OF THE EXISTING DECK, TAKE CARE TO PRESERVE THE EXISTING GIRDER STIRRUP BARS FOR INCORPORATION INTO THE NEW WORK.

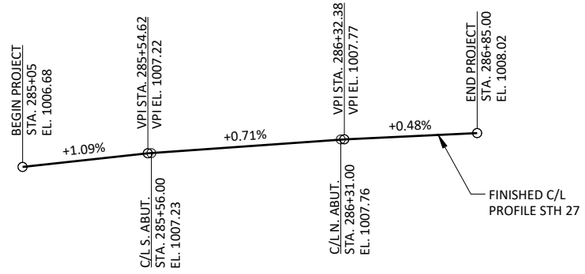
ALL STATIONS AND ELEVATIONS SHOWN ARE IN FEET.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-9-127" SHALL BE THE EXISTING GROUNDLINE.

HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON SHEET 6, SUPERSTRUCTURE DETAILS (2 OF 2), WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE CONTRACTOR WILL BE PAID.

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	S. ABUT.	SUPER.	N. ABUT.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-9-127	EACH	--	--	--	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-9-127	LS	--	--	--	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	80	--	80	160
502.0100	CONCRETE MASONRY BRIDGES	CY	--	147	--	147
502.3200	PROTECTIVE SURFACE TREATMENT	SY	--	360	--	360
502.3210	PIGMENTED SURFACE SEALER	SY	--	80	--	80
503.0145	PRESTRESSED GIRDER TYPE I 45-INCH	LF	--	76	--	76
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	--	28,250	--	28,250
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	--	2	--	2
506.4000	STEEL DIAPHRAGM B-9-127	EACH	--	1	--	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	--	10	20
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	--	4	--	4
	NON-BID ITEMS					
	FILLER	SIZE	--	--	--	½"



PROFILE GRADE LINE

STH 27

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-9-127

DRAWN BY PMF | PLANS CK'D. PTB

QUANTITIES AND NOTES

SHEET 2 OF 8

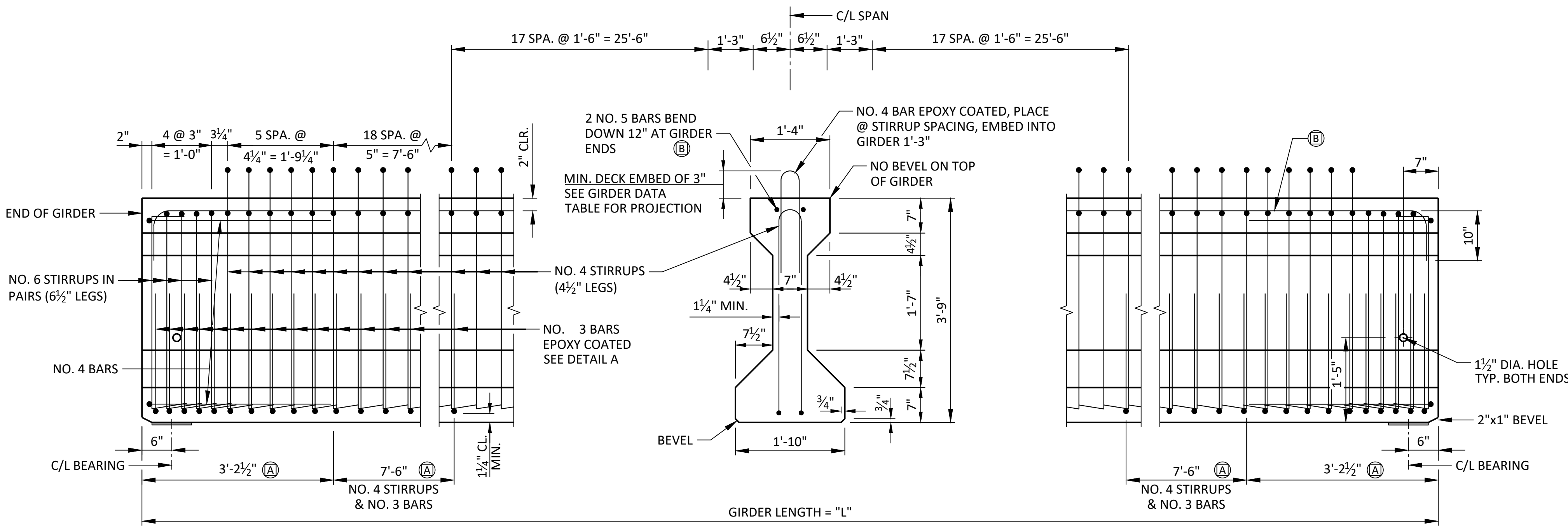
71

8

8

STATE PROJECT NUMBER

7070-06-61



45-INCH GIRDER - SIDE VIEW & TYP. SECTION IN SPAN

(A) DETAIL TYP. AT EACH END

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 2" OF THE TOP FLANGE.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

PRESTRESSING STRANDS SHALL BE 0.5-INCH DIAMETER 7-WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270 KSI.

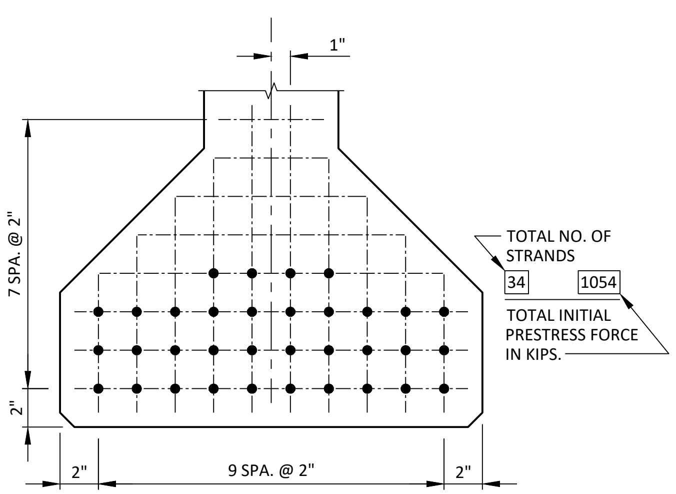
STRANDS SHALL BE FLUSH WITH THE ENDS OF THE GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINEOUS JOINT SEALER.

SPACING SHOWN FOR NO. 4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

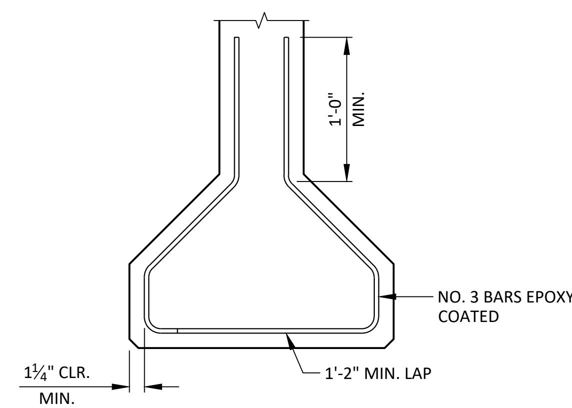
AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE SHEET 4.

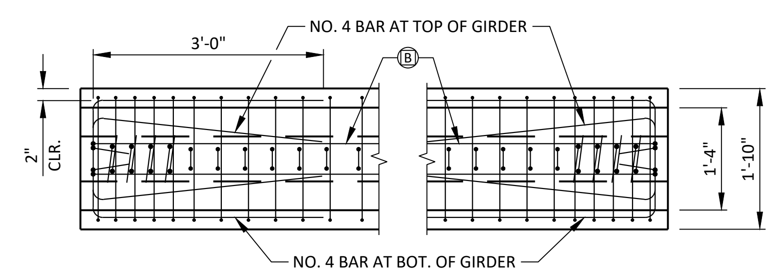
DATA SHOWN IN DEFLECTION DATA IS THEORETICAL AND MAY VARY WITH CONCRETE STRENGTH, VARIABLE PRESTRESS CONDITIONS AND PRESTRESS LOSES.



TYP. STRAND PATTERN



DETAIL A



TOP VIEW OF GIRDER ENDS

THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN

SPAN	CAMBER (IN.)
1	1.91"

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

GIRDER DATA																(B) NO. 5 "B" BARS MAY BE SPLICED, USE 44" MIN. LAP.								
GIRDER LENGTH "L"	QUANT.	DEAD LOAD DEFLECTION									CONC. STRENGTH f'c Ksi	STIRRUP PROJECTION "P"			DIA. OF STRAND (IN.)	DRAPED PATTERN						UNDRAPED PATTERN		GIRDER NO.
		0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90		1ST ⅓	MID. ⅓	END ⅓		TOTAL NO. OF STRANDS	f'ci Ksi *	(INCHES) "A"	"B" MIN.	"B" MAX.	"C"	TOTAL NO. OF STRANDS	f'ci Ksi *	
76'-0"	1	0.3"	0.6"	0.9"	1.0"	1.1"	1.0"	0.9"	0.6"	0.3"	6	7"	7"	7"	0.5	34	5.2	40	13¾	16¾	5	--	--	5

* MIN. CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-9-127

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45-INCH PRESTRESSED GIRDER DETAILS

SHEET 3 OF 8

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STATE PROJECT NUMBER

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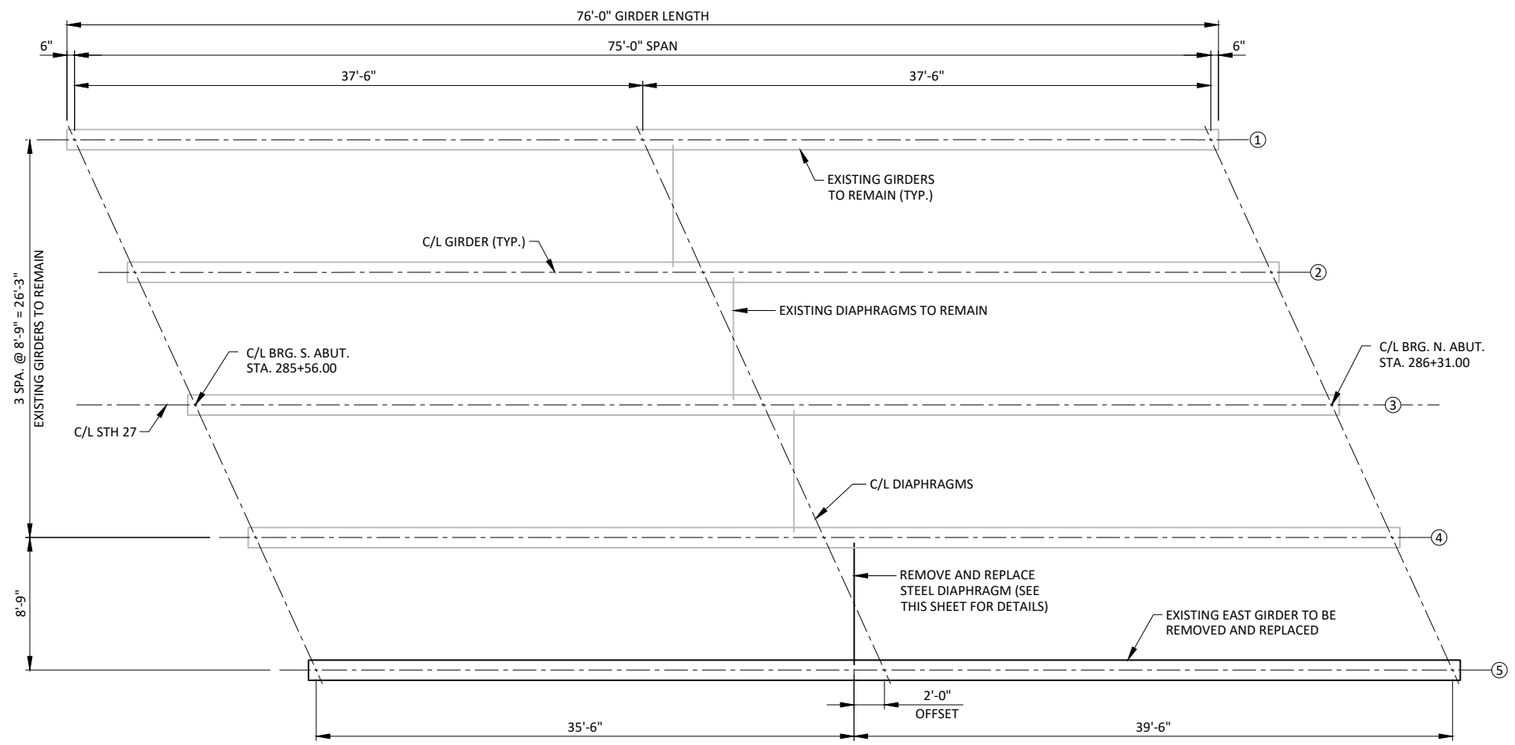
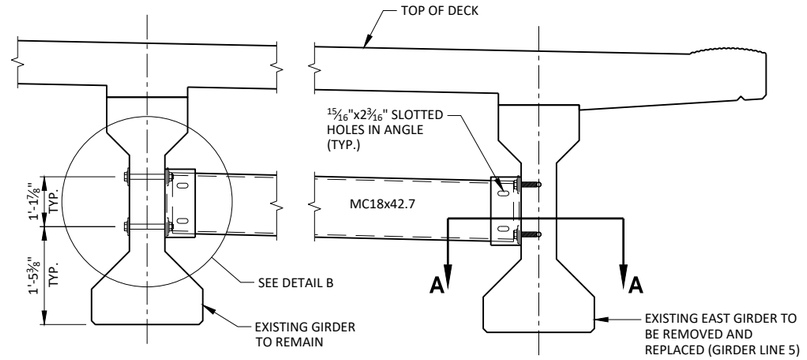


GIRDER LAYOUT



INTERIOR GIRDER **EXTERIOR GIRDER**

PART TRANSVERSE SECTION AT DIAPHRAGM

LOOKING NORTH

NOTES

ALL DIAPHRAGM MATERIAL SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-9-127", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

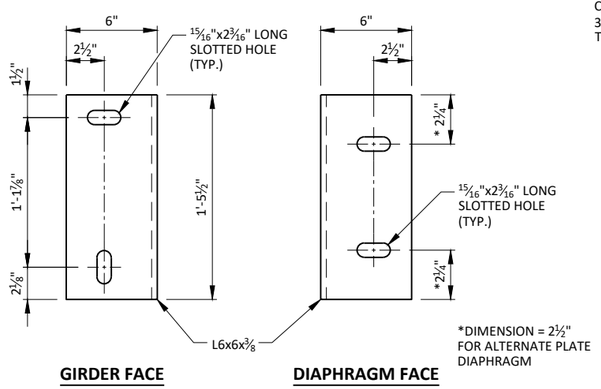
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

THE COST OF DRILLING HOLES THROUGH THE EXISTING CONCRETE GIRDER WEBS SHALL BE INCLUDED IN THE BID ITEM "STEEL DIAPHRAGMS B-9-127".

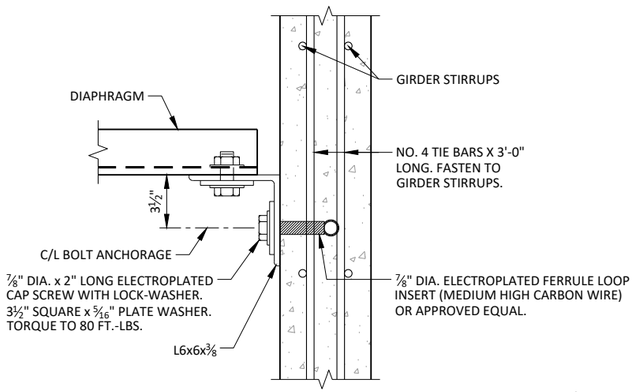
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

PLACE ONE DIAPHRAGM AT MID-LENGTH OF GIRDER AS INDICATED ON THIS SHEET.



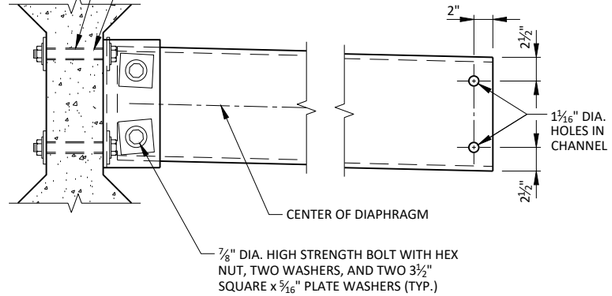
GIRDER FACE **DIAPHRAGM FACE**

DIAPHRAGM SUPPORT



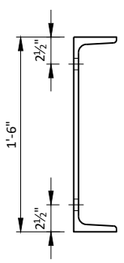
SECTION A-A

(FOR EXTERIOR ATTACHMENT)

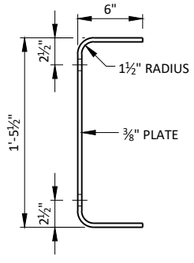


DETAIL B

(FOR STAGGERED DIAPHRAGMS)



MC 18x42.7



ALTERNATE DIAPHRAGM

SECTION THROUGH DIAPHRAGM

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-9-127

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STEEL DIAPHRAGM

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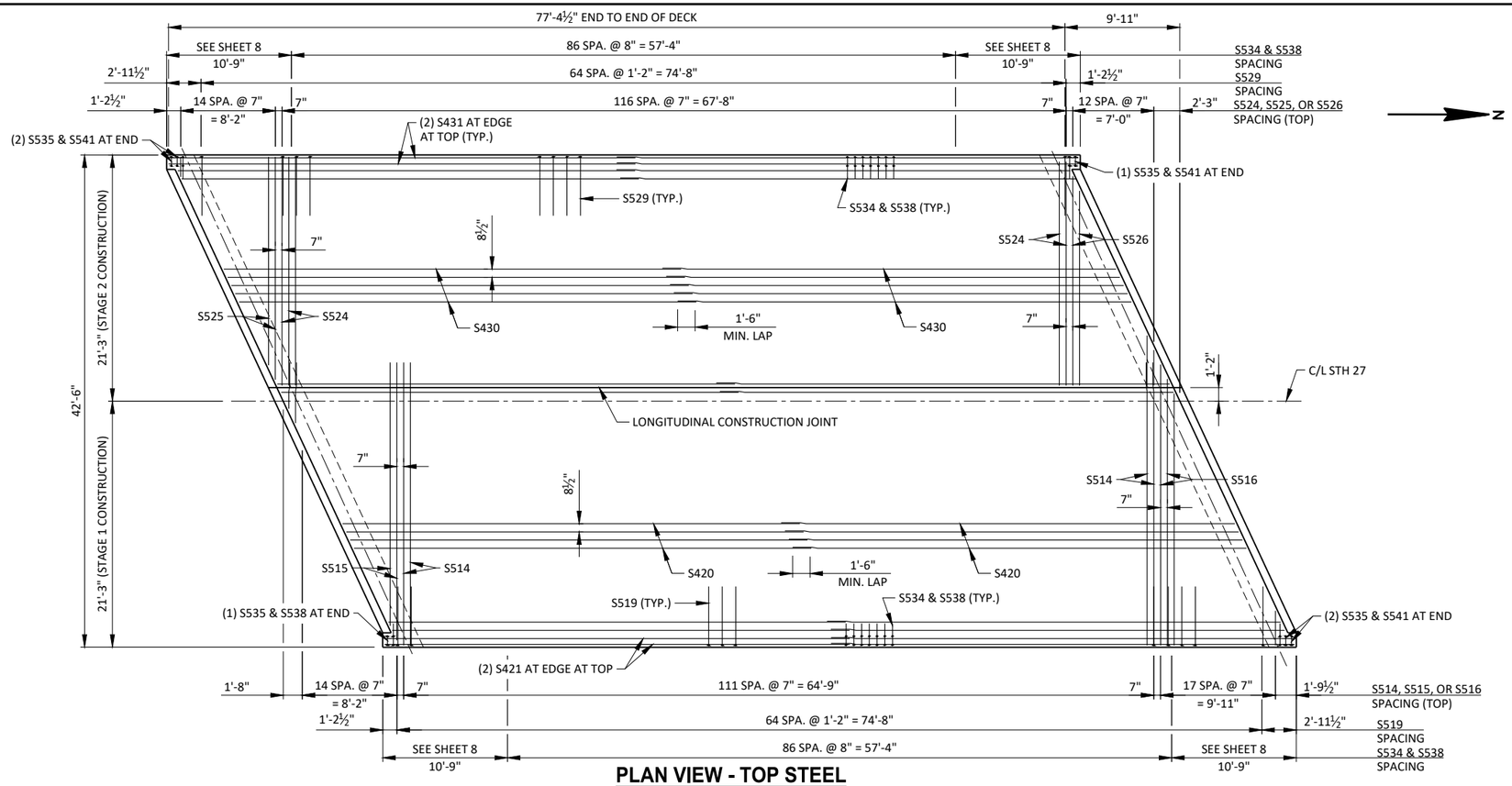
FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\STRUCTURE\CAD FILES\FINALS\03 STEEL DIAPHRAGM.DWG PLOT DATE : 7/12/2021 7:53:41 AM PLOT BY : BOLAND, PATRICK PLOT SCALE : 1" = 1' LAYOUT : DIAPHRAGM

STATE PROJECT NUMBER
7070-06-61

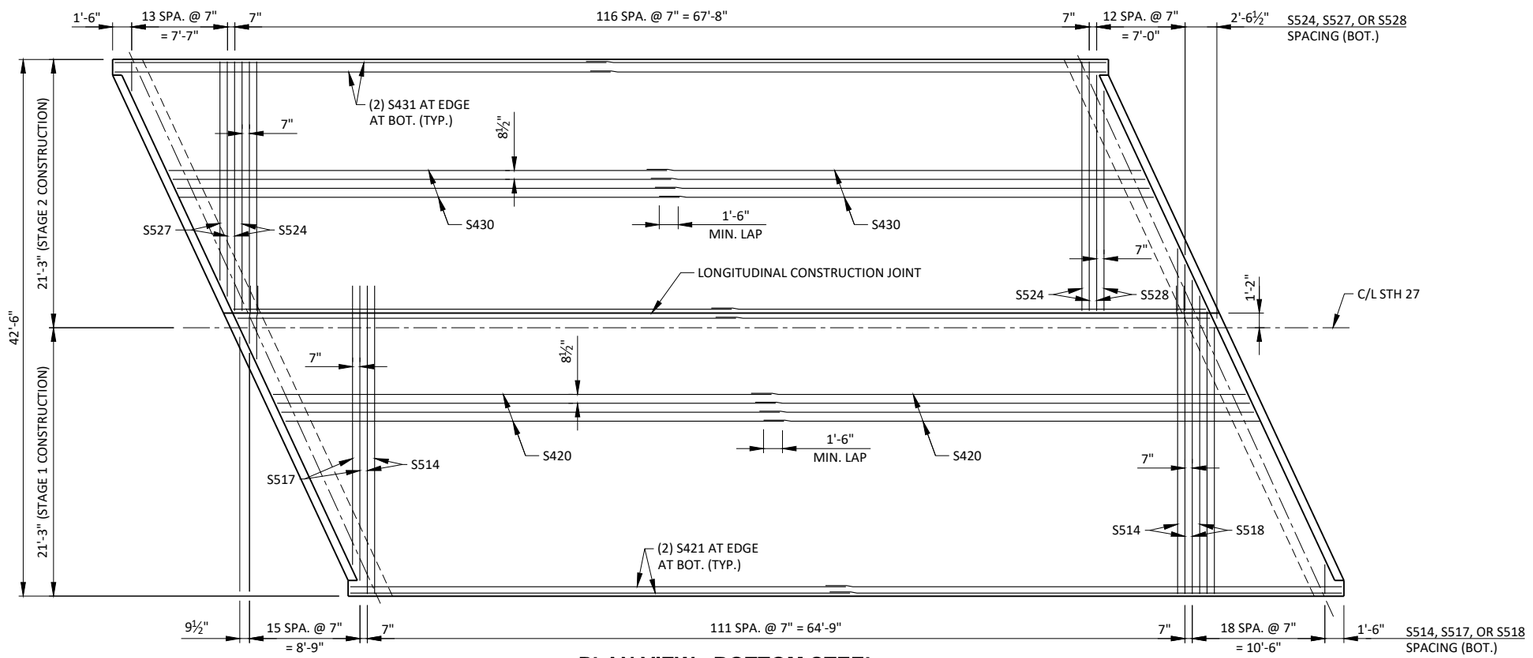
NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY.
SEE SHEET 6 FOR BAR SPACING IN THE DECK
AND SHEET 7 FOR BILL OF BARS.

T.D. - TOP OF DECK



PLAN VIEW - TOP STEEL



PLAN VIEW - BOTTOM STEEL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-9-127

DRAWN BY PMF | PLANS CK'D. PTB

SUPERSTRUCTURE

SHEET 5 OF 8

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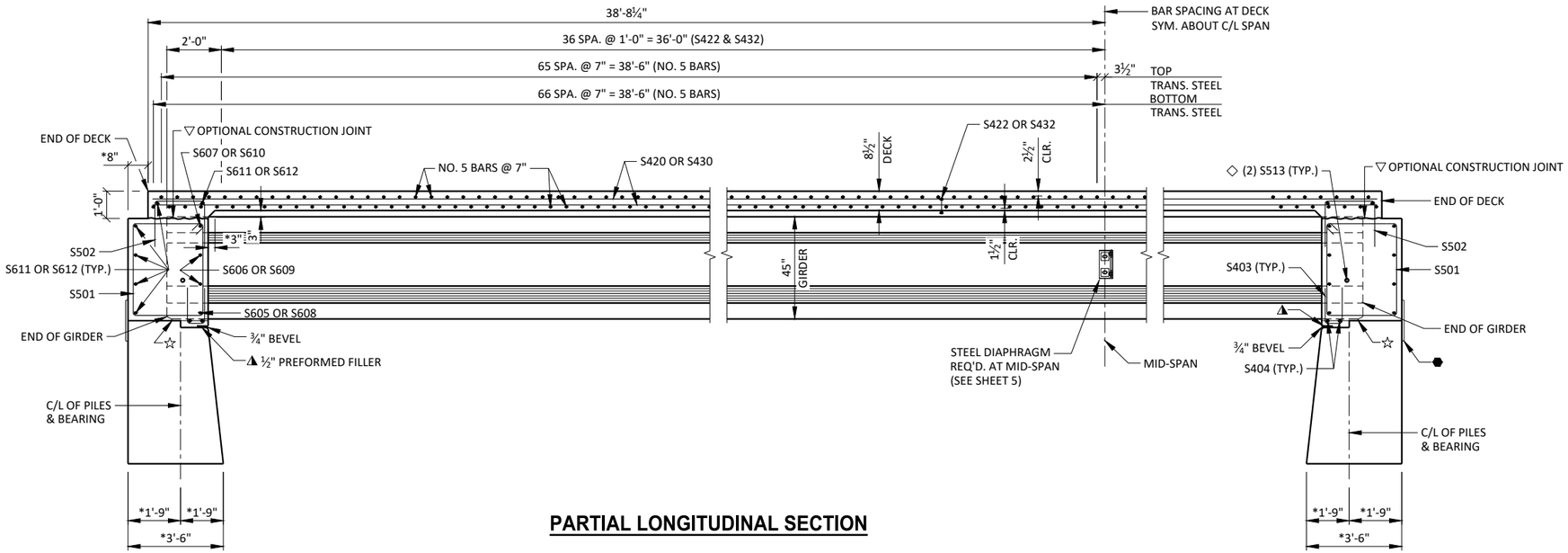
8

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\STRUCTURE\CAD FILES\FINALS\03 STEEL DIAPHRAGM.DWG
PLOT DATE : 7/12/2021 7:53:42 AM
PLOT BY : BOLAND, PATRICK
PLOT SCALE : 1" = 1'
LAYOUT : SUPERSTRUCTURE

STATE PROJECT NUMBER

7070-06-61



PARTIAL LONGITUDINAL SECTION

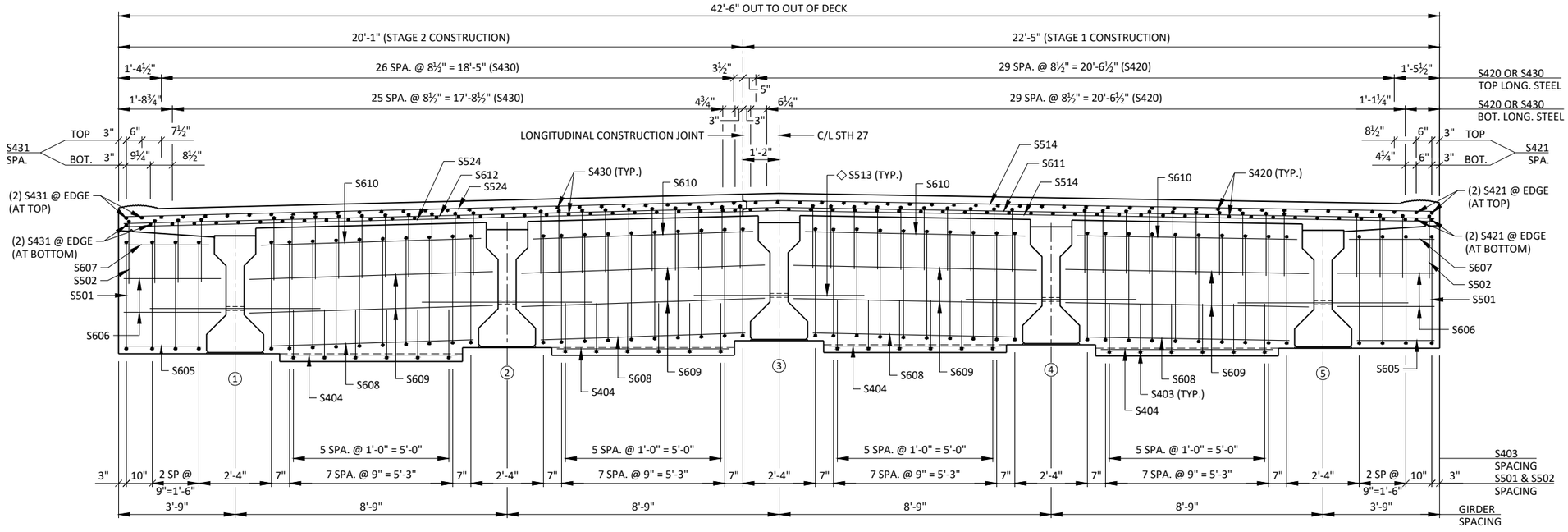
NOTES

SEE SHEET 5 FOR TRANSVERSE BAR STEEL DETAILS AND LOCATIONS NOT SHOWN ON THIS SHEET.

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 7 FOR BILL OF BARS.

LEGEND

- ⬣ 18" RUBBERIZED MEMBRANE WATERPROOFING (HORIZONTAL)
- ☆ ½" NON-LAMINATED ELASTOMERIC BEARING PAD AND ½" PREFORMED FILLER. BEARING PAD AND FILLER UNDER EXISTING GIRDERS TO REMAIN.
- ◭ 4"x½" PREFORMED FILLER, EXTEND FULL LENGTH OF ABUTMENTS.
- ◇ (1) 1½" DIAMETER HOLE IN WEB FOR (2) S513 HORIZONTAL BARS. BARS TO BE PLACED SYMMETRICAL ABOUT C/L OF GIRDERS. FIELD BEND BARS ALONG SKEW.
- ▽ OPTIONAL CONSTRUCTION JOINT. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.
- * DIMENSION IS TAKEN NORMAL TO C/L OF SUBSTRUCTURE.



CROSS SECTION THROUGH ROADWAY

BAR SPACING IN DIAPHRAGM SYM. ABOUT C/L STRUCTURE

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-9-127

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SUPERSTRUCTURE DETAILS (1 OF 2)

SHEET 6 OF 8

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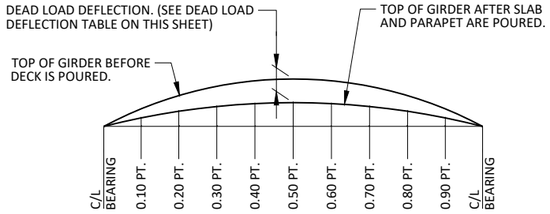
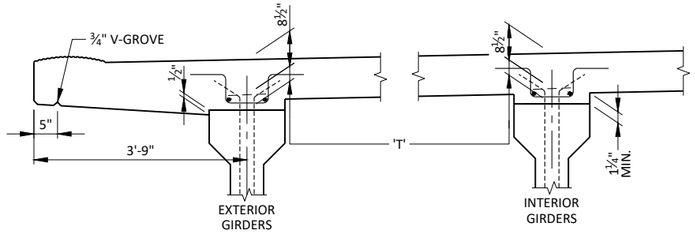
ELEVATIONS AT TOP OF DECK

GIRDER LINE		C/L BRG. S. ABUT.	0.10 PT.	0.20 PT.	0.30 PT.	0.40 PT.	0.50 PT.	0.60 PT.	0.70 PT.	0.80 PT.	0.90 PT.	C/L BRG. N. ABUT.
W. EDGE	T.D.	1006.73	1006.81	1006.87	1006.92	1006.98	1007.03	1007.08	1007.14	1007.19	1007.24	1007.30
①	T.D.	1006.79	1006.87	1006.93	1006.98	1007.03	1007.09	1007.14	1007.20	1007.25	1007.30	1007.36
②	T.D.	1007.01	1007.08	1007.13	1007.18	1007.24	1007.29	1007.35	1007.40	1007.45	1007.51	1007.56
③	T.D.	1007.23	1007.28	1007.33	1007.39	1007.44	1007.50	1007.55	1007.60	1007.66	1007.71	1007.76
④	T.D.	1007.08	1007.14	1007.19	1007.24	1007.30	1007.35	1007.40	1007.46	1007.51	1007.56	1007.61
⑤	T.D.	1006.94	1006.99	1007.04	1007.10	1007.15	1007.20	1007.26	1007.31	1007.37	1007.42	1007.46
E. EDGE	T.D.	1006.89	1006.95	1007.00	1007.06	1007.11	1007.16	1007.22	1007.27	1007.32	1007.38	1007.41

	0.10 PT.	0.20 PT.	0.30 PT.	0.40 PT.	0.50 PT.	0.60 PT.	0.70 PT.	0.80 PT.	0.90 PT.
DEAD LOAD DEFL.	0.3"	0.6"	0.9"	1.0"	1.1"	1.0"	0.9"	0.6"	0.3"



DEAD LOAD DEFLECTION DIAGRAM



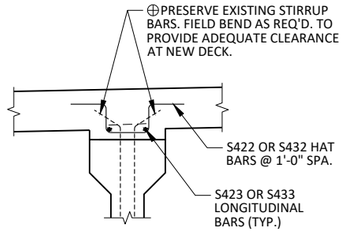
SLAB HAUNCH DETAIL

IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½".

TO DETERMINE 'T'. ELEVATION OF TOP OF GIRDERS AT THE C/L OF SUBSTRUCTURE UNITS AND AT THE 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH HEIGHT ('T') OF 2½" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



HAUNCH REINFORCING DETAIL

AT EXISTING GIRDERS ONLY

⊕ DURING REMOVAL OF THE DECK, TAKE CARE TO PRESERVE THE EXISTING GIRDER STIRRUP BARS FOR INCORPORATION INTO THE NEW WORK.

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
S515	1 SERIES OF 15	24-0 TO 4-0
S516	1 SERIES OF 18	24-2 TO 3-0
S517	1 SERIES OF 16	23-4 TO 4-8
S518	1 SERIES OF 19	24-10 TO 2-4
S525	1 SERIES OF 15	19-2 TO 1-8
S526	1 SERIES OF 13	18-1 TO 3-1
S527	1 SERIES OF 14	18-7 TO 2-3
S528	1 SERIES OF 13	18-8 TO 3-8
S541	4 SERIES OF 6	6-1 TO 4-9

BUNDLE AND TAG EACH SERIES SEPARATELY.

BILL OF BARS SUPERSTRUCTURE

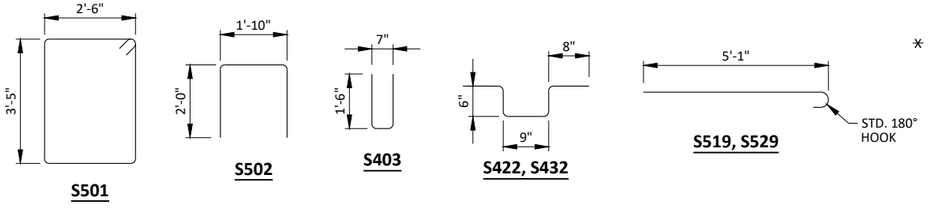
28,250 LB (COATED)

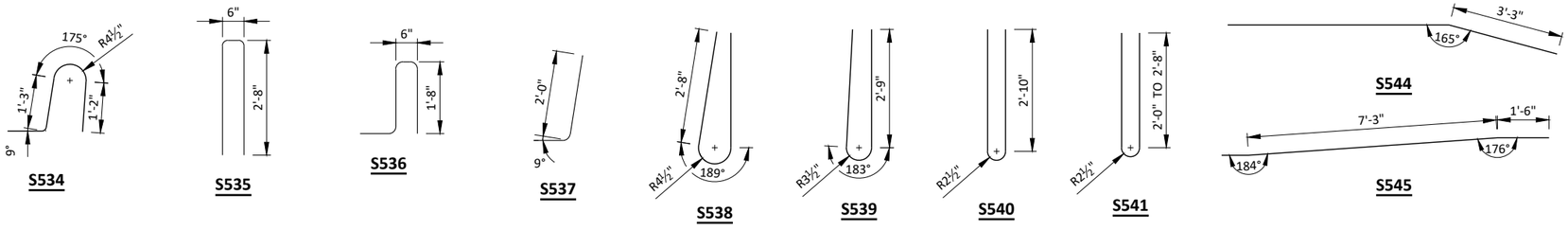
BAR MARK	NO. REQ'D. STAGE 1	NO. REQ'D. STAGE 2	LENGTH	BENT	COAT	BAR SERIES	LOCATION
S501	48	48	12-4	X	X		ABUT. DIAPHRAGM - VERT. STIRRUP
S502	48	48	5-7	X	X		ABUT. DIAPHRAGM - VERT. - TOP
S403	24	24	3-5	X	X		ABUT.DIAPHRAGM - VERT. - BOTTOM
S404	8	8	6-0		X		ABUT.DIAPHRAGM - HORIZ. - BOTTOM
S605	2	2	2-9		X		ABUT. DIAPHRAGM - HORIZ. - FRONT - ENDS
S606	4	4	3-5		X		ABUT. DIAPHRAGM - HORIZ. - FRONT - ENDS
S607	2	2	3-0		X		ABUT. DIAPHRAGM - HORIZ. - FRONT - ENDS
S608	4	4	7-3		X		ABUT. DIAPHRAGM - HORIZ. - FRONT
S609	8	8	8-7		X		ABUT. DIAPHRAGM - HORIZ. - FRONT
S610	4	4	7-9		X		ABUT. DIAPHRAGM - HORIZ. - FRONT
S611	12	0	27-10		X		ABUT. DIAPHRAGM - HORIZ. - BACK
S612	0	12	21-9		X		ABUT. DIAPHRAGM - HORIZ. - BACK
S513	12	8	6-0		X		ABUT. DIAPHRAGM - HORIZ. - GIRDER WEBS
S514	224	0	24-5		X		DECK - TOP & BOT. - TRANSVERSE
S515	15	0	14-0		X	✳	DECK - TOP - TRANSVERSE AT END
S516	18	0	13-7		X	✳	DECK - TOP - TRANSVERSE AT END
S517	16	0	14-0		X	✳	DECK - BOT. - TRANSVERSE AT END
S518	19	0	13-7		X	✳	DECK - BOT. - TRANSVERSE AT END
S519	65	0	5-8	X	X		DECK - TOP - TRANSVERSE AT EDGES
S420	122	0	39-4		X		DECK - TOP & BOT. - LONGITUDINAL
S421	8	0	40-0		X		DECK - TOP & BOT. - LONGITUDINAL AT EDGE
S422	146	0	2-9	X	X		DECK - HAT BARS (GIRDER 3 & 4)
S423	8	0	37-6		X		DECK - LONGITUDINAL AT HAT BARS
S524	0	234	19-9		X		DECK - TOP & BOT. - TRANSVERSE
S525	0	15	10-5		X	✳	DECK - TOP - TRANSVERSE AT END
S526	0	13	10-7		X	✳	DECK - TOP - TRANSVERSE AT END
S527	0	14	10-5		X	✳	DECK - BOT. - TRANSVERSE AT END
S528	0	13	11-2		X	✳	DECK - BOT. - TRANSVERSE AT END
S529	0	65	5-8	X	X		DECK - TOP - TRANSVERSE AT EDGES
S430	0	108	39-4		X		DECK - TOP & BOT. - LONGITUDINAL
S431	0	8	40-0		X		DECK - TOP & BOT. - LONGITUDINAL AT EDGE
S432	0	146	2-9	X	X		DECK - HAT BARS (GIRDER 1 & 2)
S433	0	8	37-6		X		DECK - LONGITUDINAL AT HAT BARS
S534	93	93	4-5	X	X		PARAPET - VERT. AT DECK
S535	3	3	5-7	X	X		PARAPET - VERT. - AT CORNERS
S536	31	31	4-4	X	X		PARAPET - VERT.
S537	24	24	2-9	X	X		PARAPET - VERT. - TRANSITION
S538	93	93	6-8	X	X		PARAPET - VERT.
S539	12	12	6-6	X	X		PARAPET - VERT.
S540	10	10	6-5	X	X		PARAPET - VERT.
S541	12	12	5-5	X	X	✳	PARAPET - VERT.
S542	16	16	32-0		X		PARAPET - HORIZ.
S543	10	10	12-2		X		PARAPET - HORIZ. - TRANSITION
S544	4	4	12-4	X	X		PARAPET - HORIZ. - TRANSITION - TOP
S545	2	2	12-2	X	X		PARAPET - HORIZ. - TRANSITION - BOTTOM

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

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

✳ LENGTH SHOWN IS AN AVERAGE LENGTH ONLY. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.





NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURE B-9-127

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SUPERSTRUCTURE DETAILS (2 OF 2)

SHEET 7 OF 8

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STATE PROJECT NUMBER

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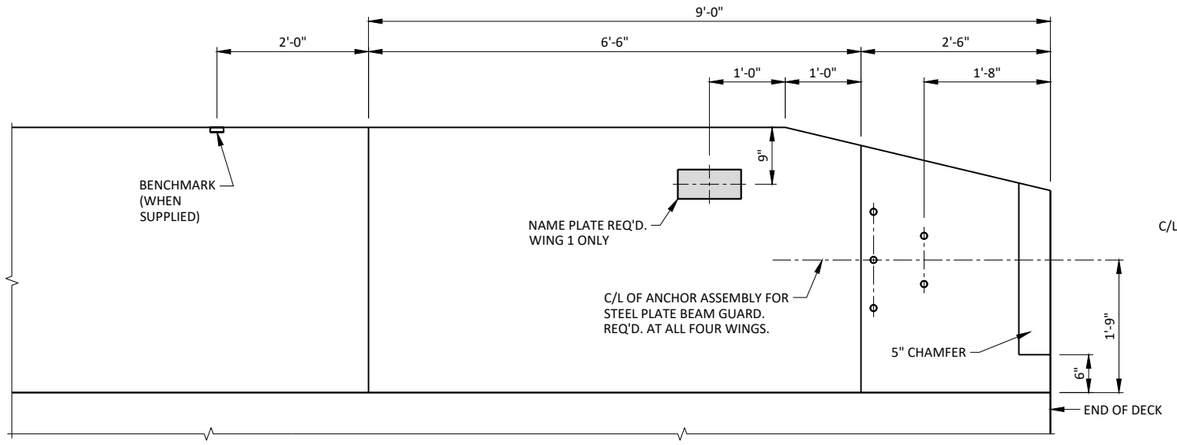
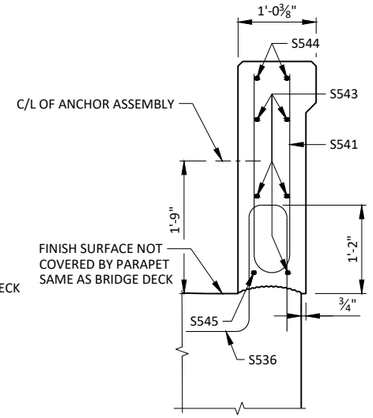
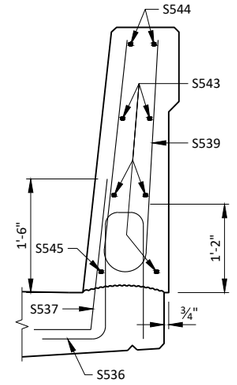


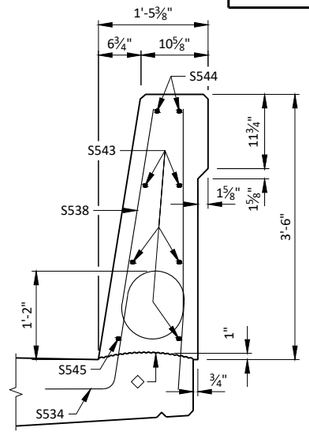
INSIDE ELEVATION



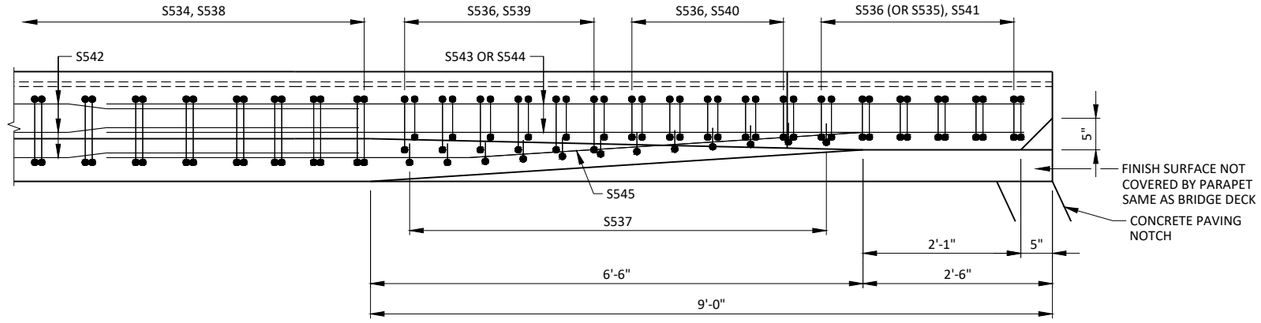
SECTION A



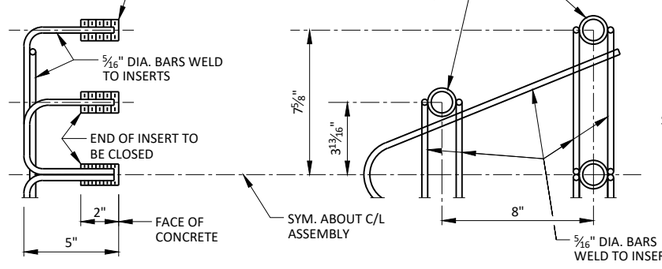
SECTION B



SECTION C



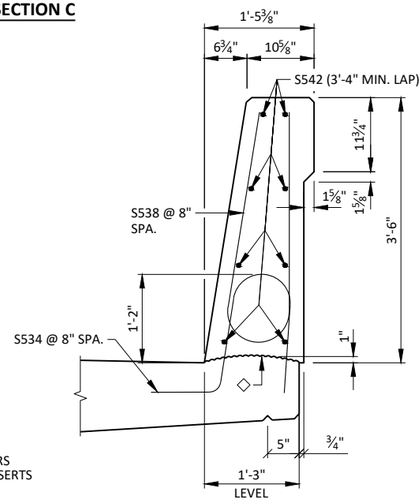
PLAN



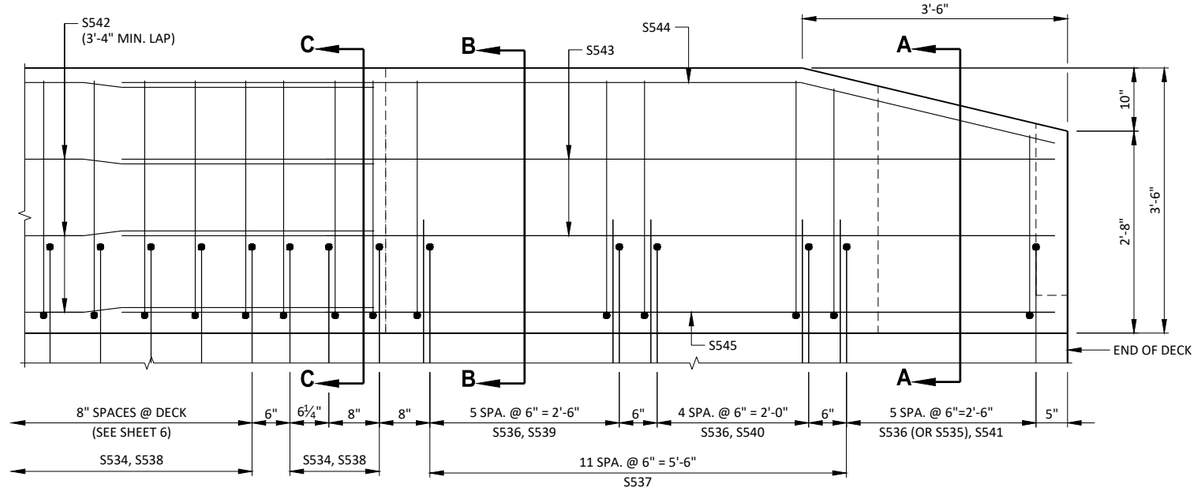
DETAIL OF ANCHOR ASSEMBLY

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

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



SECTION THROUGH PARAPET ON BRIDGE



STEEL LAYOUT

LEGEND

◇ CONSTRUCTION JOINT. STRIKE OFF AS SHOWN.

NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 7 FOR BILL OF BARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-9-127

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SINGLE SLOPE PARAPET 42SS

SHEET 8 OF 8

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EARTHWORK - STAGE 1

STATION	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOLUME (CY) CUT NOTE 1	INCREMENTAL VOLUME (CY) FILL NOTE 2	INCREMENTAL VOLUME (CY) FILL (25%) NOTE 3	CUMULATIVE VOLUME (CY) CUT 1.00 NOTE 1	CUMULATIVE VOLUME (CY) FILL NOTE 2	CUMULATIVE VOLUME (CY) FILL (25%) NOTE 3	CUMULATIVE VOLUME (CY) MASS ORDINATE NOTE 4
282+30	0	0	0	0	0	0	0	0	0
282+50	18	0	7	0	0	7	0	0	7
283+00	26	0	41	0	0	48	0	0	48
283+50	20	0	43	0	0	91	0	0	91
284+00	19	0	36	0	0	127	0	0	127
284+50	17	2	33	2	3	160	2	3	157
285+00	17	3	31	5	6	191	7	9	182
285+05	47	3	6	1	1	197	8	10	187
285+50	36	17	69	17	21	266	25	31	235
285+54	34	19	5	3	4	271	28	35	236
285+54	0	0	0	0	0	271	28	35	236
286+33	0	0	0	0	0	271	28	35	236
286+33	35	44	0	0	0	271	28	35	236
286+50	35	44	22	28	35	293	56	70	223
286+85	46	1	53	29	36	346	85	106	240
287+00	25	2	20	1	1	366	86	107	259
287+50	25	1	46	3	4	412	89	111	301
288+00	0	0	23	1	1	435	90	112	323
MAINLINE COLUMN SUBTOTALS =			435	90	112				

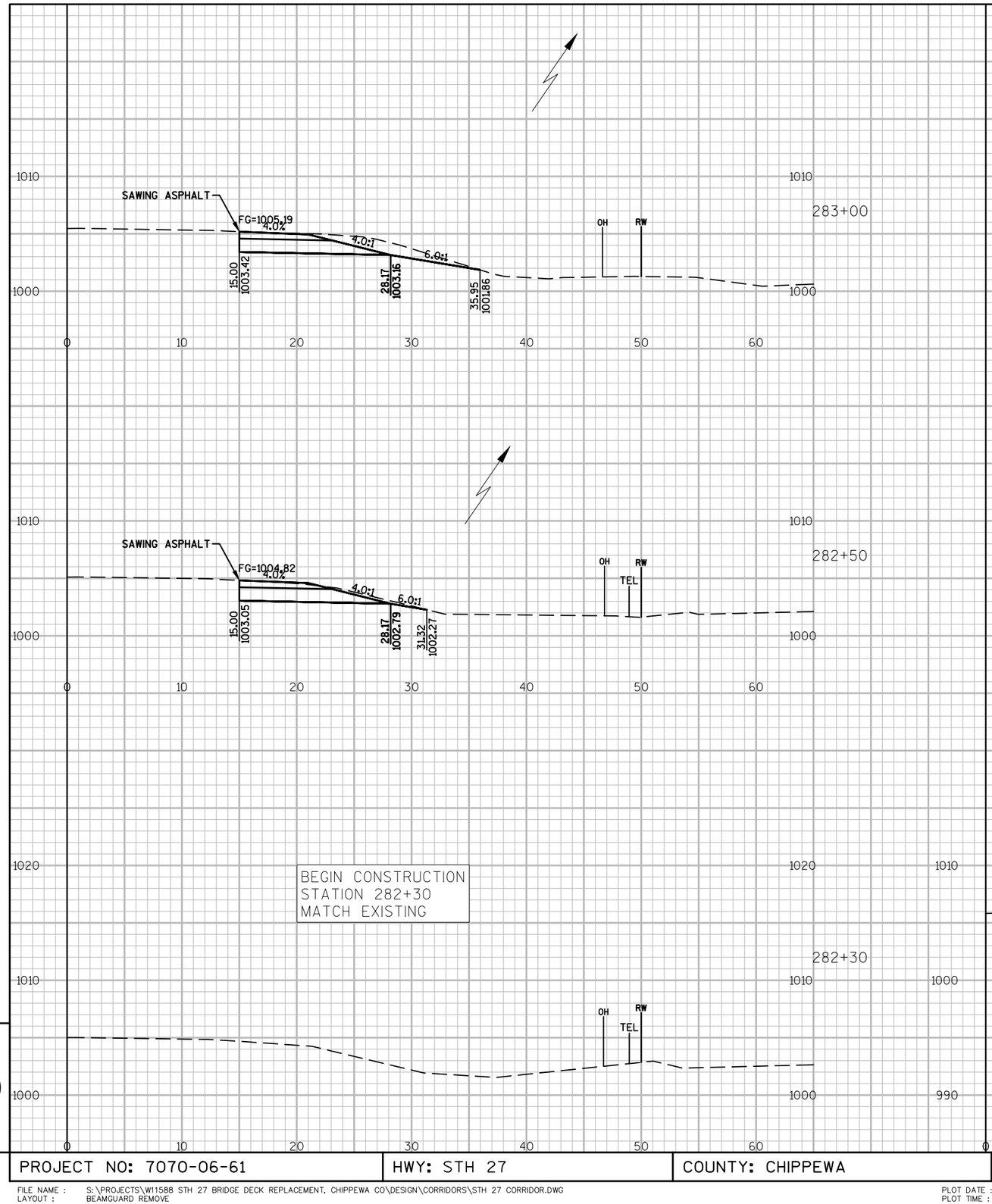
EARTHWORK - STAGE 2

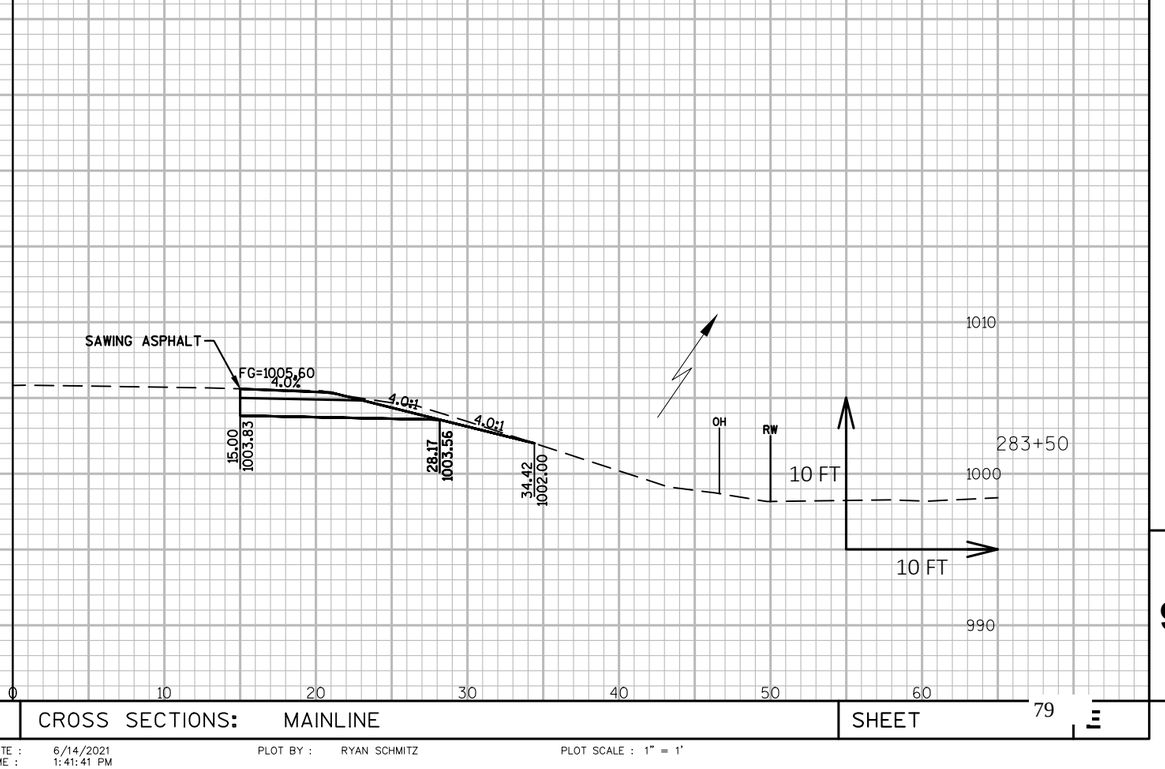
STATION	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOLUME (CY) CUT NOTE 1	INCREMENTAL VOLUME (CY) FILL NOTE 2	INCREMENTAL VOLUME (CY) FILL (25%) NOTE 3	CUMULATIVE VOLUME (CY) CUT 1.00 NOTE 1	CUMULATIVE VOLUME (CY) FILL NOTE 2	CUMULATIVE VOLUME (CY) FILL (25%) NOTE 3	CUMULATIVE VOLUME (CY) MASS ORDINATE NOTE 4
282+30	0	0	0	0	0	0	0	0	0
282+50	0	0	0	0	0	0	0	0	0
283+00	0	0	0	0	0	0	0	0	0
283+50	0	0	0	0	0	0	0	0	0
284+00	13	13	12	12	15	12	12	15	-3
284+50	19	23	30	33	41	42	45	56	-14
285+00	19	11	35	31	39	77	76	95	-18
285+05	47	8	6	2	3	83	78	98	-15
285+50	58	0	88	7	9	171	85	107	64
285+54	0	0	4	0	0	175	85	107	68
285+54	0	0	0	0	0	175	85	107	68
286+33	0	0	0	0	0	175	85	107	68
286+33	47	0	0	0	0	175	85	107	68
286+50	47	0	30	0	0	205	85	107	98
286+85	65	0	73	0	0	278	85	107	171
287+00	43	0	30	0	0	308	85	107	201
287+50	28	0	66	0	0	374	85	107	267
288+00	0	0	26	0	0	400	85	107	293
MAINLINE COLUMN SUBTOTALS =			400	85	107				

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
3 - FILL (25%)	FILL 25%: (UNEXPANDED FILL)*1.25
4 - MASS ORDINATE	(CUT - FILL (25%))

9

9





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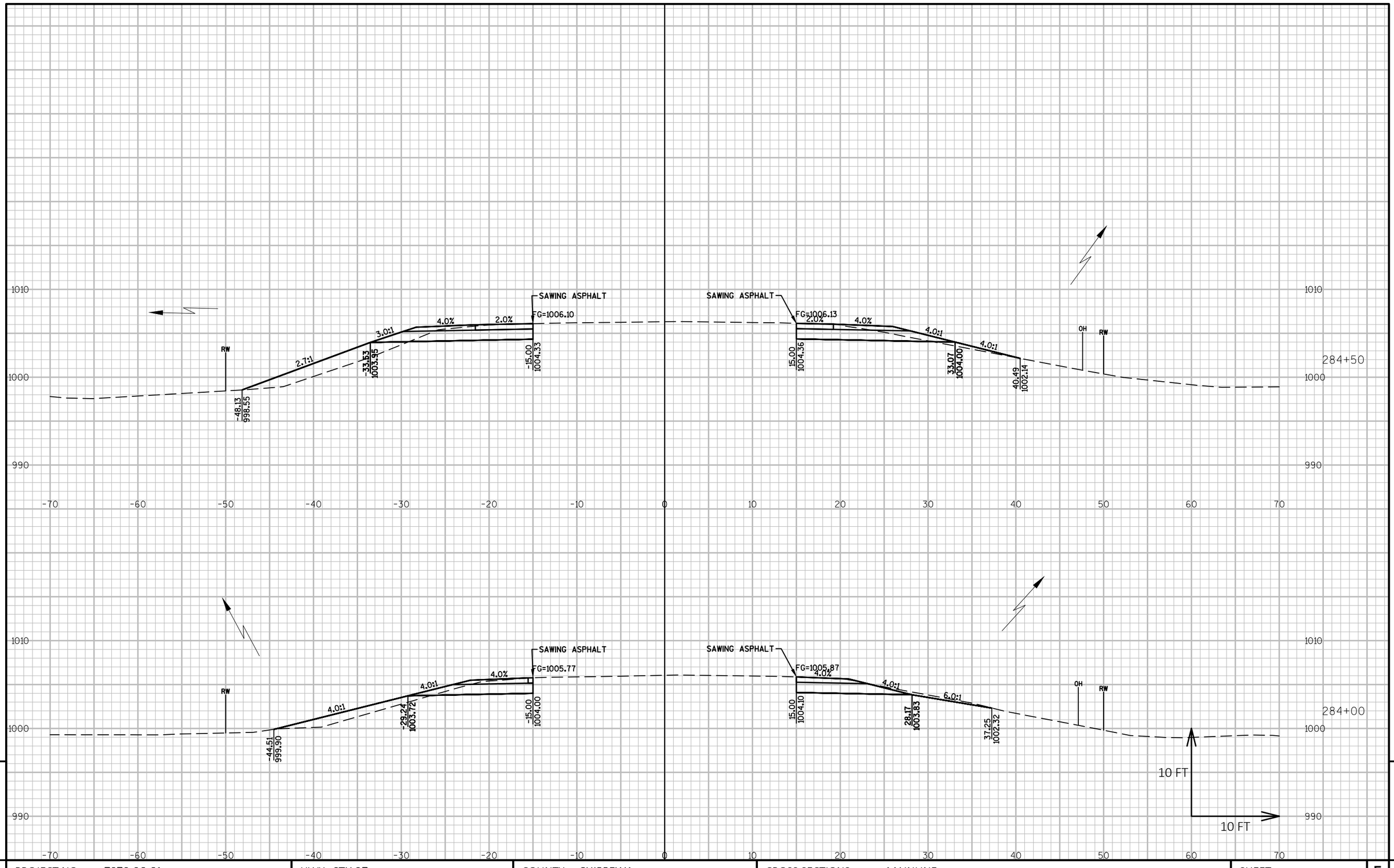
PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	CROSS SECTIONS: MAINLINE	SHEET 79

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\DESIGN\CORRIDORS\STH 27 CORRIDOR.DWG
LAYOUT : BEAMGUARD REMOVE

PLOT DATE : 6/14/2021
PLOT TIME : 1:41:41 PM

PLOT BY : RYAN SCHMITZ

PLOT SCALE : 1" = 1'



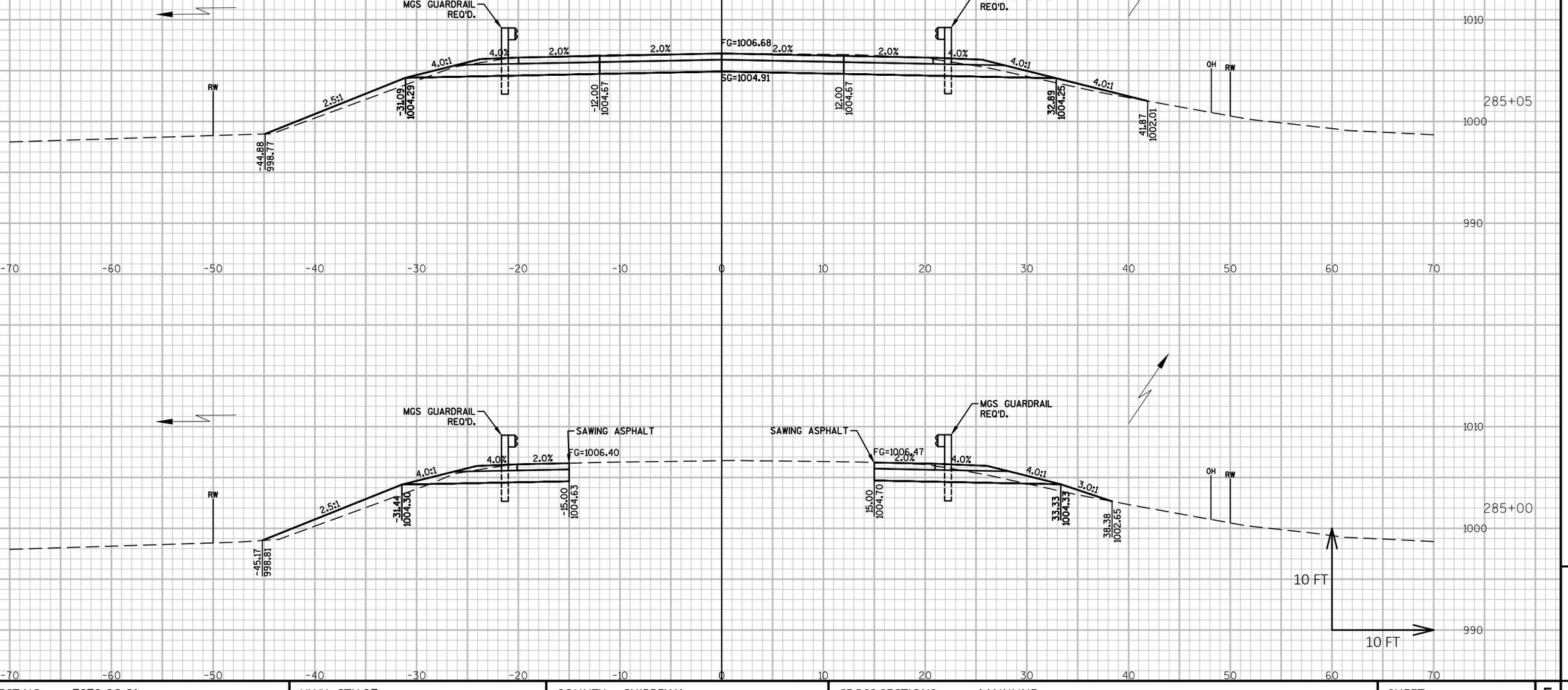
PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	CROSS SECTIONS: MAINLINE	SHEET 80	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\DESIGN\CORRIDORS\STH 27 CORRIDOR.DWG
LAYOUT NAME - Mainline - (1)

PLOT DATE : 6/14/2021 1:41 PM PLOT BY : RYAN SCHMITZ PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

BEGIN PROJECT
STATION 285+05
MATCH EXISTING



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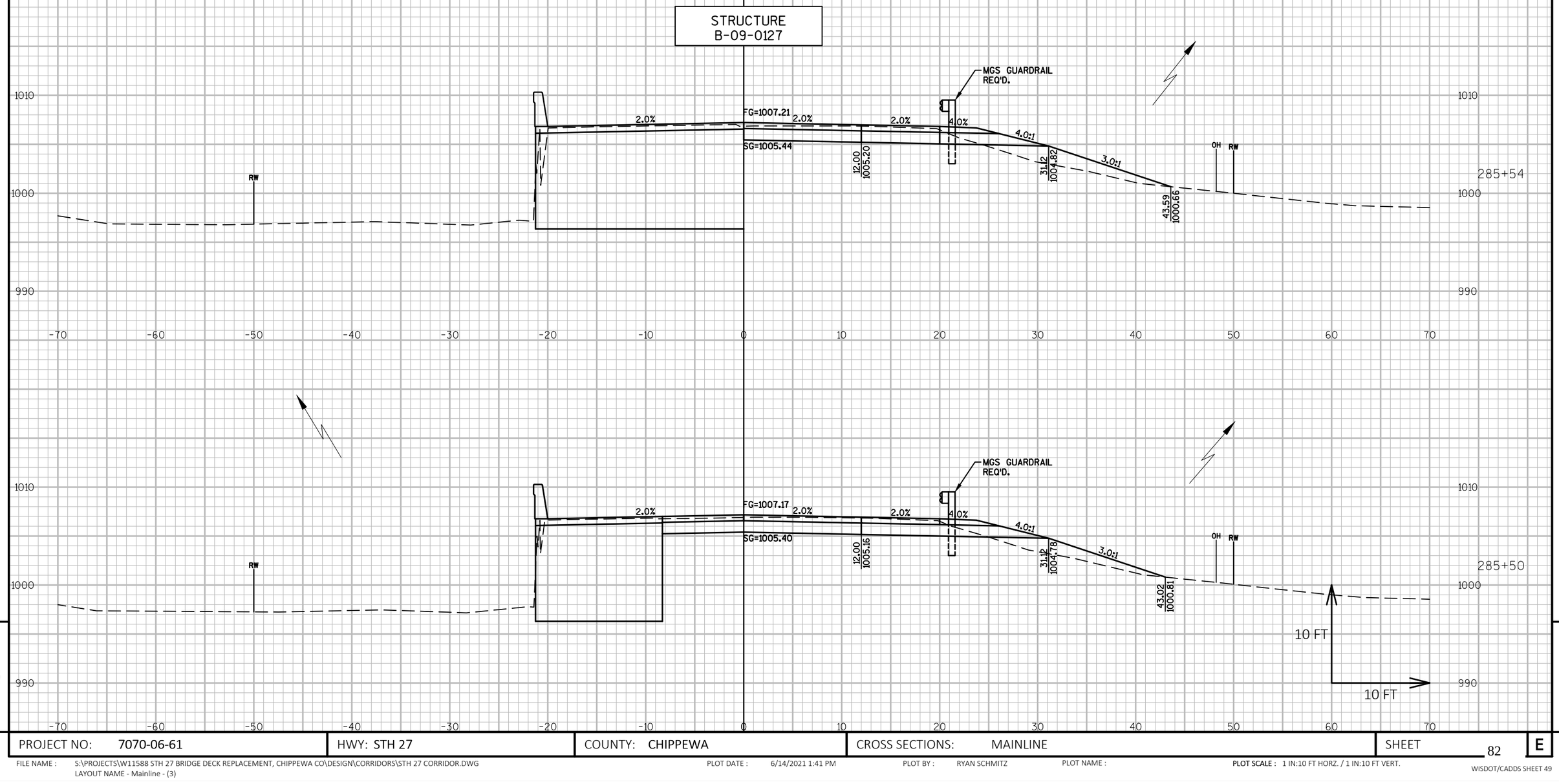
PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	CROSS SECTIONS: MAINLINE	SHEET 81	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\DESIGN\CORRIDORS\STH 27 CORRIDOR.DWG
LAYOUT NAME - Mainline - (2)

PLOT DATE : 6/14/2021 1:41 PM PLOT BY : RYAN SCHMITZ PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

STRUCTURE
B-09-0127



9

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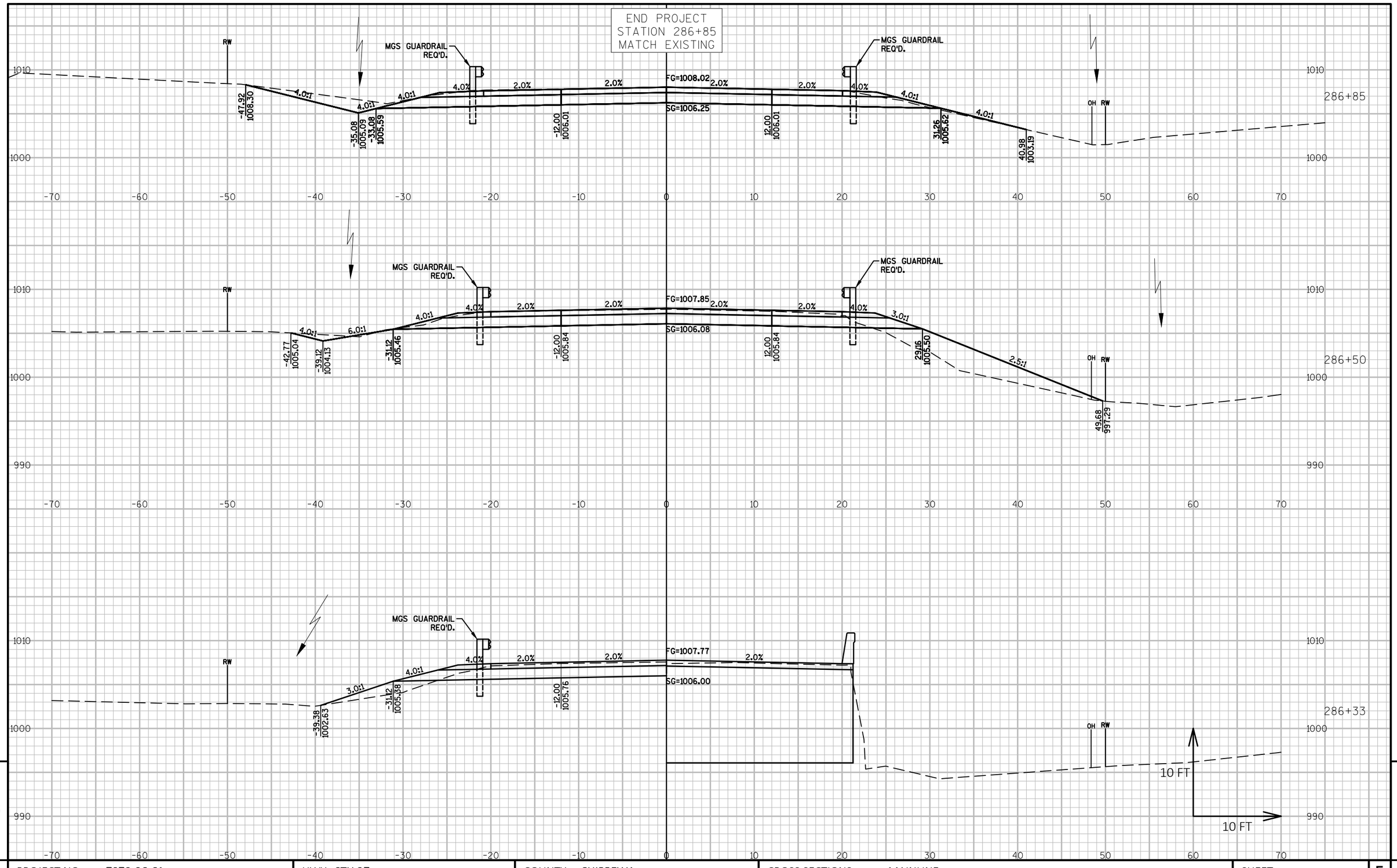
PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	CROSS SECTIONS: MAINLINE	SHEET 82	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\DESIGN\CORRIDORS\STH 27 CORRIDOR.DWG
LAYOUT NAME - Mainline - (3)

PLOT DATE : 6/14/2021 1:41 PM PLOT BY : RYAN SCHMITZ PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

END PROJECT
STATION 286+85
MATCH EXISTING



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PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	CROSS SECTIONS: MAINLINE	SHEET 83	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\DESIGN\CORRIDORS\STH 27 CORRIDOR.DWG
LAYOUT NAME - Mainline - (4)

PLOT DATE : 6/14/2021 1:41 PM PLOT BY : RYAN SCHMITZ PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

END CONSTRUCTION
STATION 288+00
MATCH EXISTING

288+00

287+50

287+00

RW
OH
SAWING ASPHALT
FG=1008.22
FG=1008.24
FG=1007.88
FG=1007.89
MGS GUARDRAIL REQ'D.
4.0%
2.0%
4.0:1
3.0:1
-45.95 1009.91
-30.89 1006.15
-15.70 1006.45
14.00 1006.47
33.69 1006.08
36.60 1005.35
-49.99 1009.02
-34.51 1005.73
-35.51 1005.40
-15.70 1006.11
14.00 1006.12
32.68 1005.75
46.21 1002.37
10 FT
10 FT

9

9

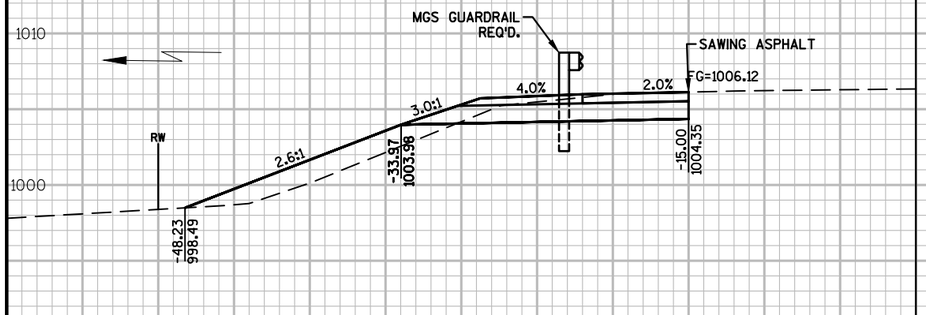
PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	CROSS SECTIONS: MAINLINE	SHEET 84	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\DESIGN\CORRIDORS\STH 27 CORRIDOR.DWG
LAYOUT NAME - Mainline - (5)

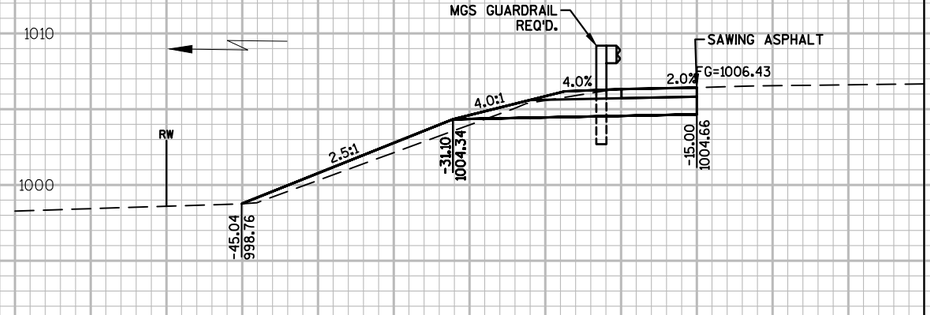
PLOT DATE : 6/14/2021 1:41 PM PLOT BY : RYAN SCHMITZ PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

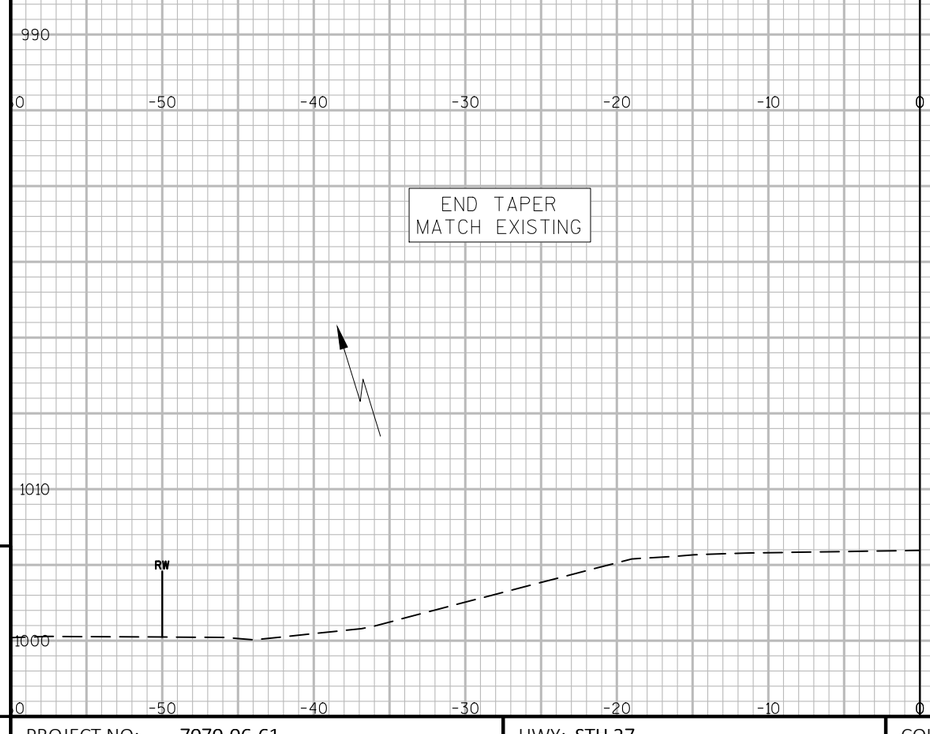
POST 1



POST 9



END TAPER
MATCH EXISTING



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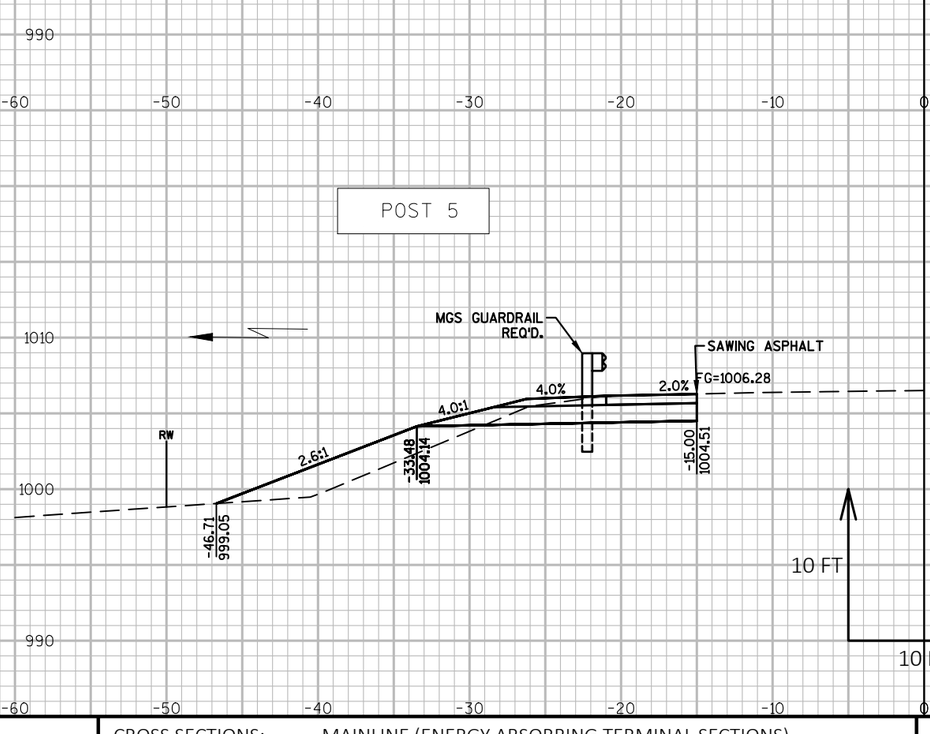


9

9

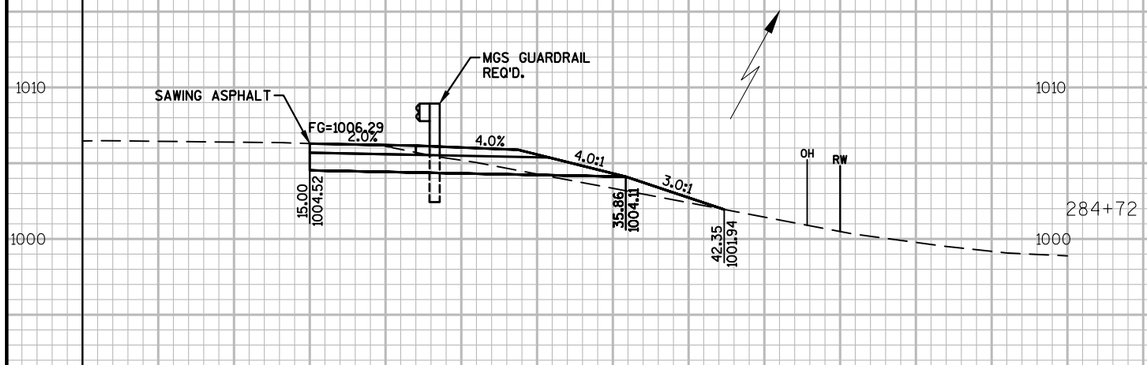
PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET 85	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\DESIGN\CORRIDORS\STH 27 CORRIDOR.DWG
LAYOUT NAME - SW Quadrant - (1)

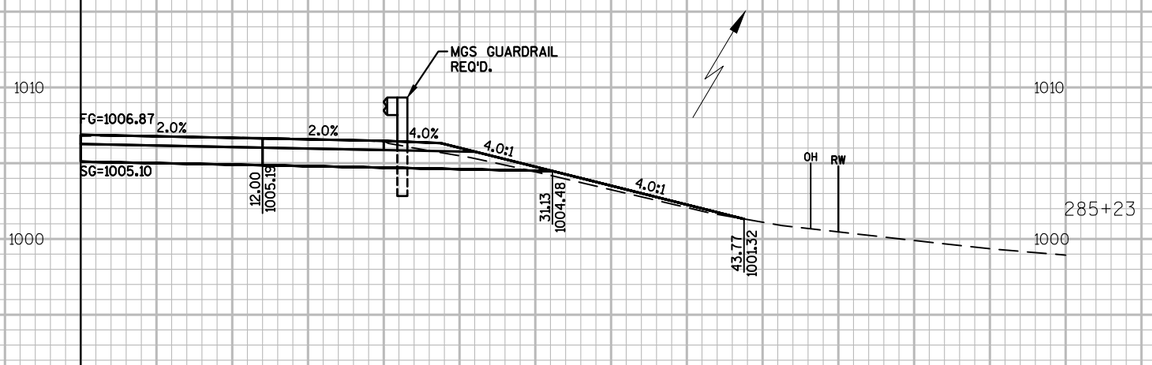
PLOT DATE : 6/14/2021 1:41 PM PLOT BY : RYAN SCHMITZ PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

POST 1



POST 9



END TAPER

POST 5

9

9

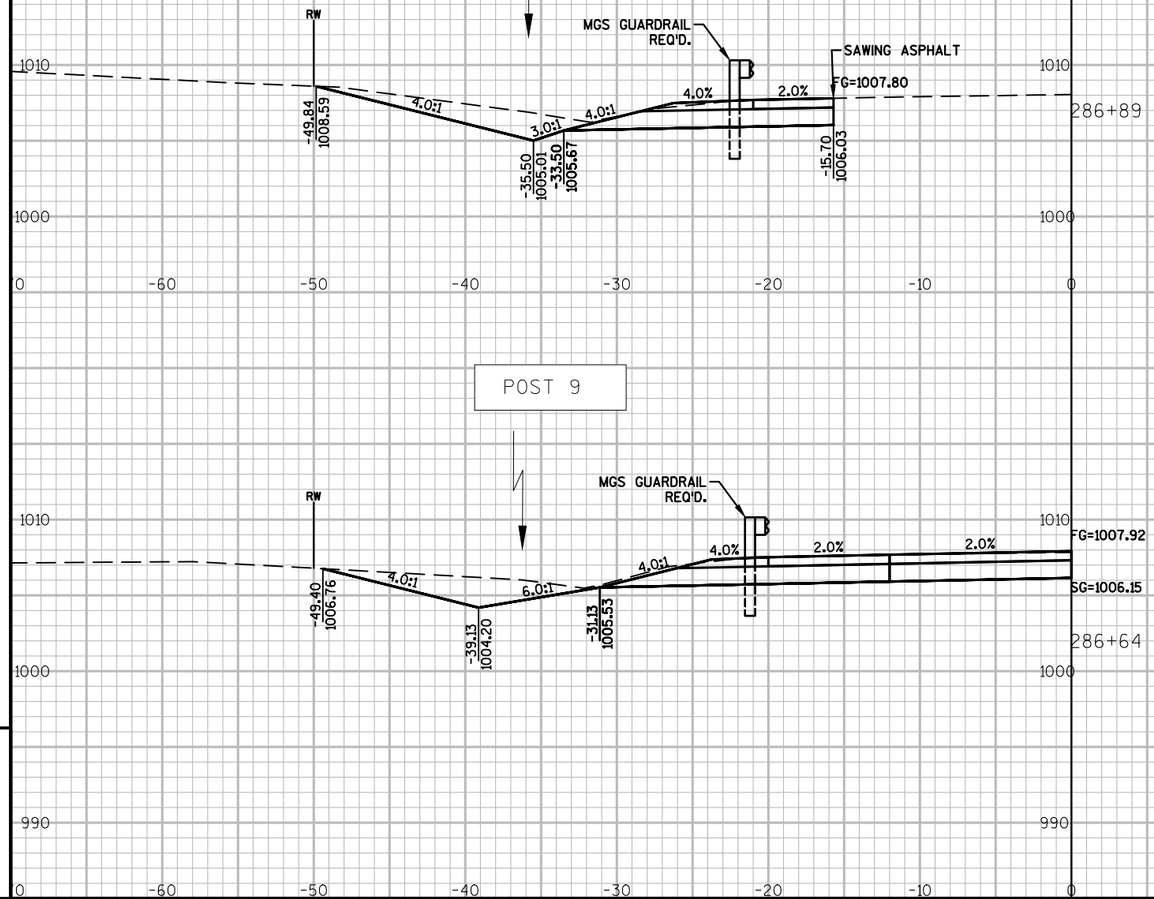
PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET 86	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\DESIGN\CORRIDORS\STH 27 CORRIDOR.DWG
LAYOUT NAME - SE Quadrant - (1)

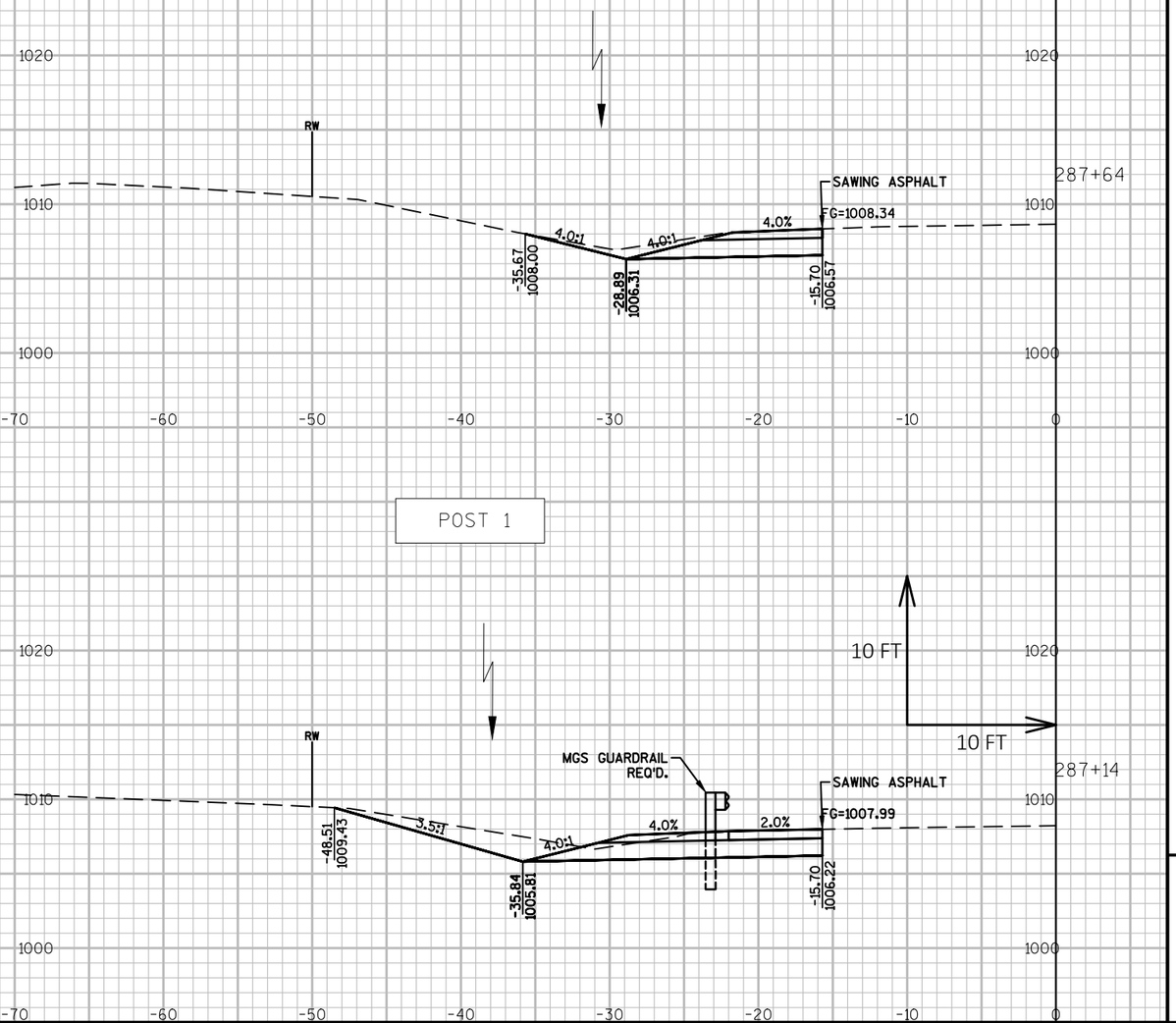
PLOT DATE : 6/14/2021 1:41 PM PLOT BY : RYAN SCHMITZ PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

POST 5



END TAPER



POST 9

POST 1

9

9

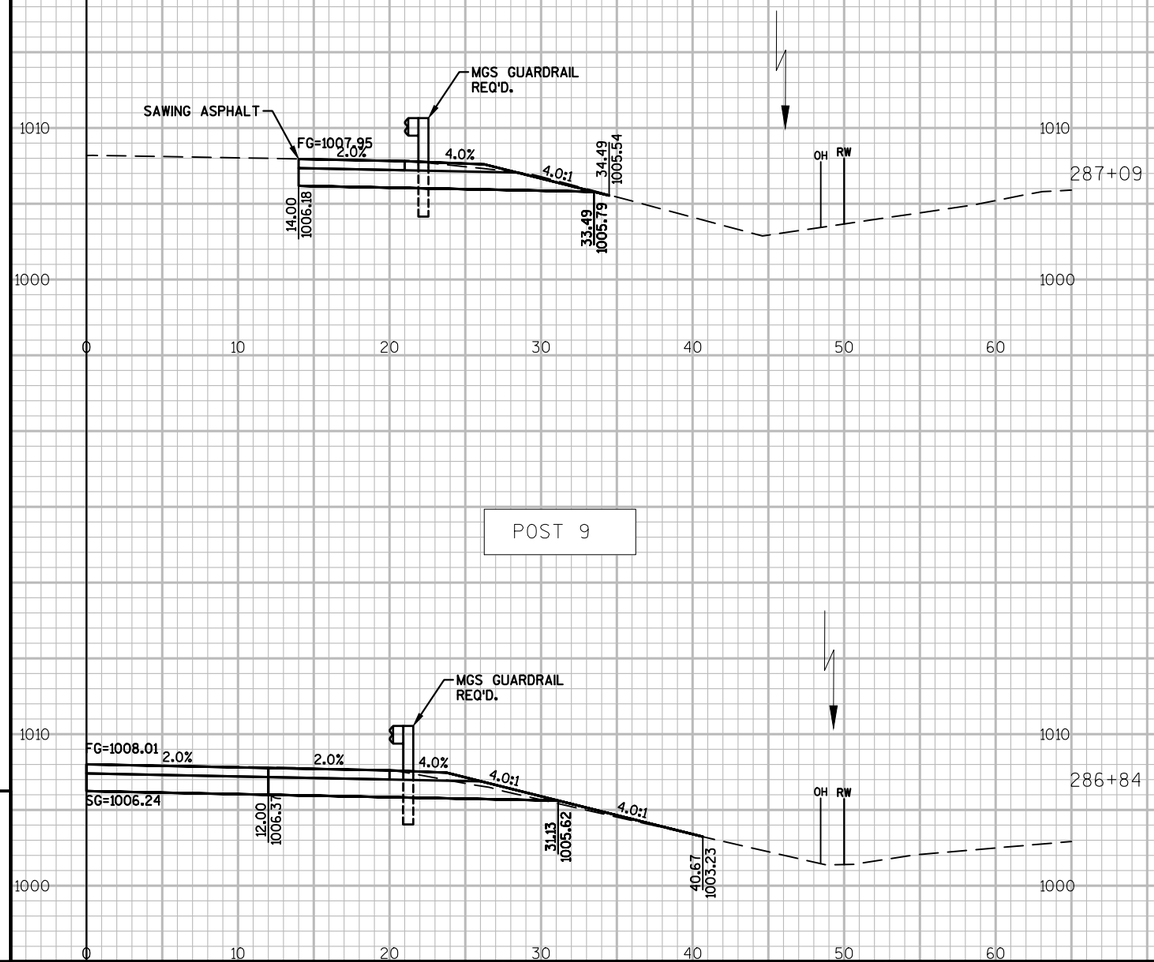
PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET 87	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\DESIGN\CORRIDORS\STH 27 CORRIDOR.DWG
LAYOUT NAME - NW Quadrant - (1)

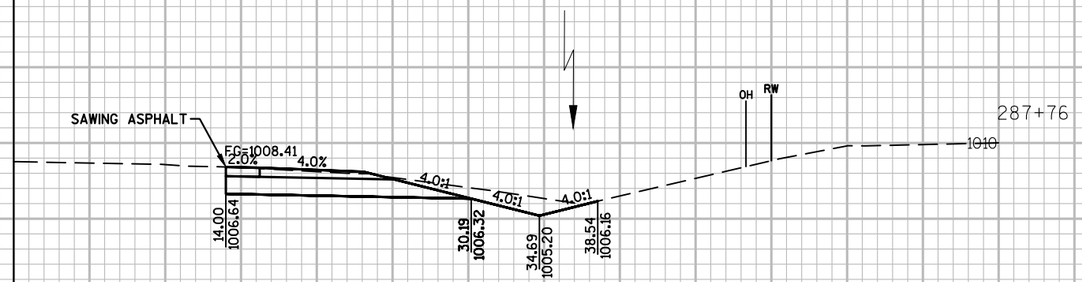
PLOT DATE : 6/14/2021 1:41 PM PLOT BY : RYAN SCHMITZ PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

POST 5

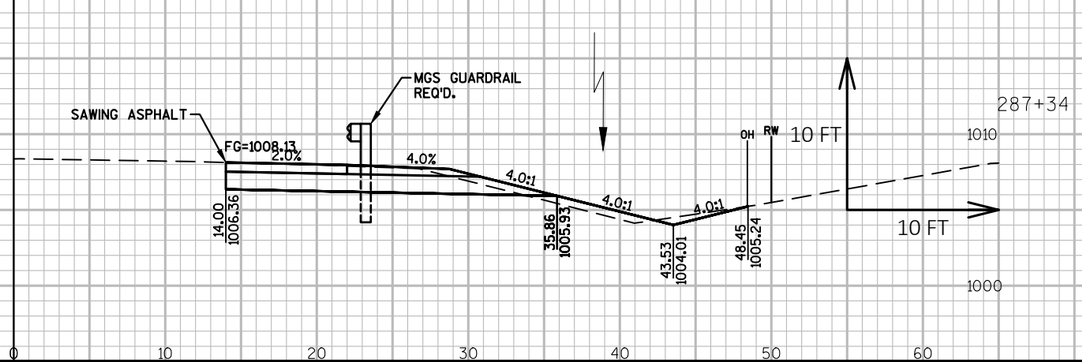


END TAPER



POST 9

POST 1



9

9

PROJECT NO: 7070-06-61	HWY: STH 27	COUNTY: CHIPPEWA	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET 88	E

FILE NAME : S:\PROJECTS\W11588 STH 27 BRIDGE DECK REPLACEMENT, CHIPPEWA CO\DESIGN\CORRIDORS\STH 27 CORRIDOR.DWG
LAYOUT NAME - NE Quadrant - (1)

PLOT DATE : 6/14/2021 1:41 PM PLOT BY : RYAN SCHMITZ PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

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through innovation and exceptional service.

http://www.dot.wisconsin.gov