MAD

APRIL 2019

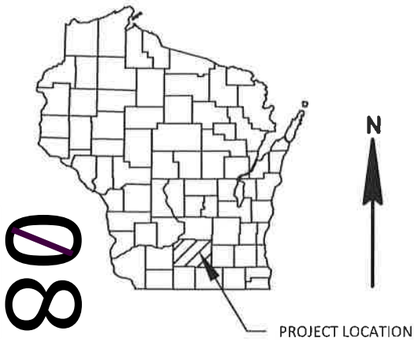
PROJECT ID: 5556-00-69

WITH: N/A

COUNTY: DANE

ORDER OF SHEETS

TOTAL SHEETS = 60



STRUCTURE NUMBER		IH 39 @ B-13-309	USH 51 @ B-13-386
A.A.D.T.	2019 =	81,900	18,460
D.H.V.	=	7,860	1,650
D.D.	=	52/48	51/49
T.	=	12.9%	6.9%
DESIGN SPEED	=	70 MPH	55 MPH
ESALS	=	N/A	N/A

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 (SCO'CB')
- 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

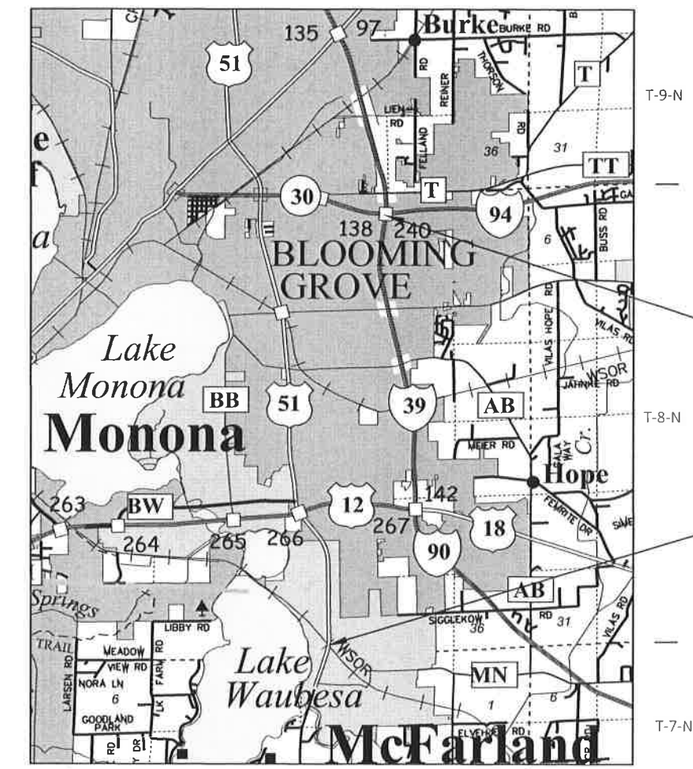
DANE COUNTY WINGWALL REPAIR

B-13-309 & B-13-386

IH 039

DANE COUNTY

STATE PROJECT NUMBER
5556-00-69



LAYOUT

SCALE 0 — 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.062 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, DANE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS NAVD 88 (2012 ADJUSTED).

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5556-00-69	———	—

ORIGINAL PLANS PREPARED BY

MSA

1230 SOUTH BOULEVARD, BARABOO, WI 53913

(608) 356-2771 www.msa-ps.com

WISCONSIN LEAH J. RHODES E-41726 BARABOO WI

Leah J. Rhodes

2/12/2019

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	N/A
Designer	MSA PROFESSIONAL SERVICES, INC.
Project Manager	BENJAMIN THOMPSON, P.E.
Regional Examiner	SW REGION
Regional Supervisor	BRENDA SCHOENFELD

APPROVED FOR THE DEPARTMENT

DATE: 2/26/2019 Benjamin Thompson (Signature)

E

GENERAL NOTES

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

ALL DISTURBED AREAS, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE RESTORED WITH TOPSOIL, FERTILIZER, SEEDING AND EROSION MAT AS DIRECTED BY THE ENGINEER.

PLACE SILT FENCE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER AND IN PLACE PRIOR TO CONSTRUCTION.

SECTION 2 ORDER

UTILITIES

COMMUNICATION:
AT&T LEGACY
866 ROCK CREEK RD.
PLANO, IL 60545
ATTN: WILLIAM KOENIG
PHONE: (608) 628-0575
wekoenig@att.net

AT&T WISCONSIN
316 W. WASHINGTON AVENUE
MADISON, WI 53701
ATTN: CAROL ANASON
PHONE: (608) 252-2385
ca2624@att.com

FRONTIER COMMUNICATIONS
1851 N. 14TH AVENUE
WAUSAU, WI 54401
ATTN: CAL KLADE
PHONE: (715) 573-2110
Calvin.Klade@ftr.com

SEWER:
VILLAGE OF MCFARLAND
5915 MILWAUKEE STREET
P.O. BOX 110
MCFARLAND, WI 53558
ATTN: ALLAN COVILLE
PHONE: (608) 838-3153
Allan.Coville@mcfarland.wi.us

MADISON METROPOLITAN SEWERAGE DISTRICT
1610 MOORLAND ROAD
MADISON, WI 53713
ATTN: RAY SCHNEIDER
PHONE: (608) 222-1201, EXT. 259
rays@madsewer.org

WATER:
VILLAGE OF MCFARLAND
5915 MILWAUKEE STREET
P.O. BOX 110
MCFARLAND, WI 53558
ATTN: ALLAN COVILLE
PHONE: (608) 838-3153
Allan.Coville@mcfarland.wi.us

ELECTRICITY
ALLIANT ENERGY
1521 PROGRESS LANE
STOUGHTON, WI 54589
ATTN: MATTHEW WEIR
PHONE: (608) 214-4441
matthewweir@alliantenergy.com

MADISON GAS AND ELECTRIC
133 S. BLAIR STREET
MADISON, WI 53788
ATTN: RICH PARKER
PHONE: (608) 252-7379
rparker@mge.com

GAS
ALLIANT ENERGY
1521 PROGRESS LANE
STOUGHTON, WI 54589
ATTN:MATTHEW WEIR
PHONE: (608) 214-4441
matthewweir@alliantenergy.com

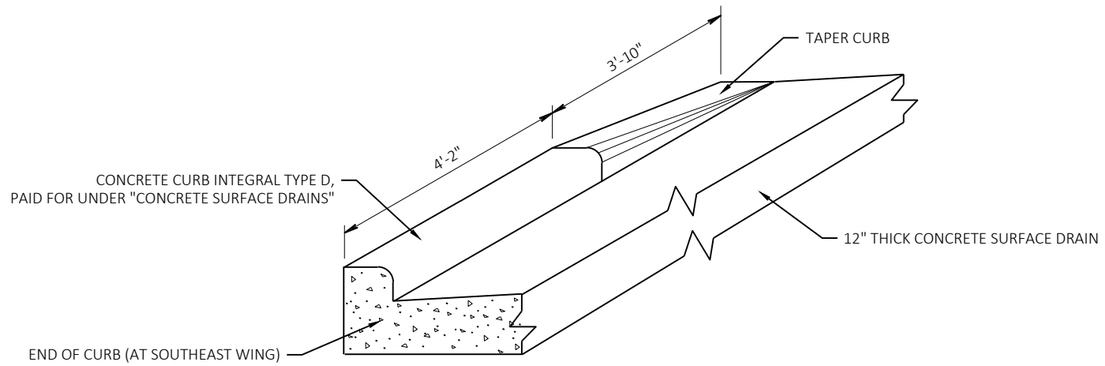
MADISON GAS AND ELECTRIC
623 RAILROAD STREET
MADISON, WI 53701
ATTN: ROGER AHLES
PHONE: (608) 252-5682
rahles@mge.com

*NOT A MEMBER OF DIGGERS HOTLINE

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

AS-BUILT REFERENCE (YEAR)

ID 1001-02-74 (1998)
ID 1001-02-76 (1998)
ID 5381-00-71 (1992)



DETAIL OF CURB TAPER

IH 39 NB/IH 90 WB (SOUTHEAST CONCRETE SURFACE DRAIN AT BRIDGE APPROACH)
NOTE: FACE OF CURB TO MATCH FACE OF GUARD RAIL

DESIGN CONTACT

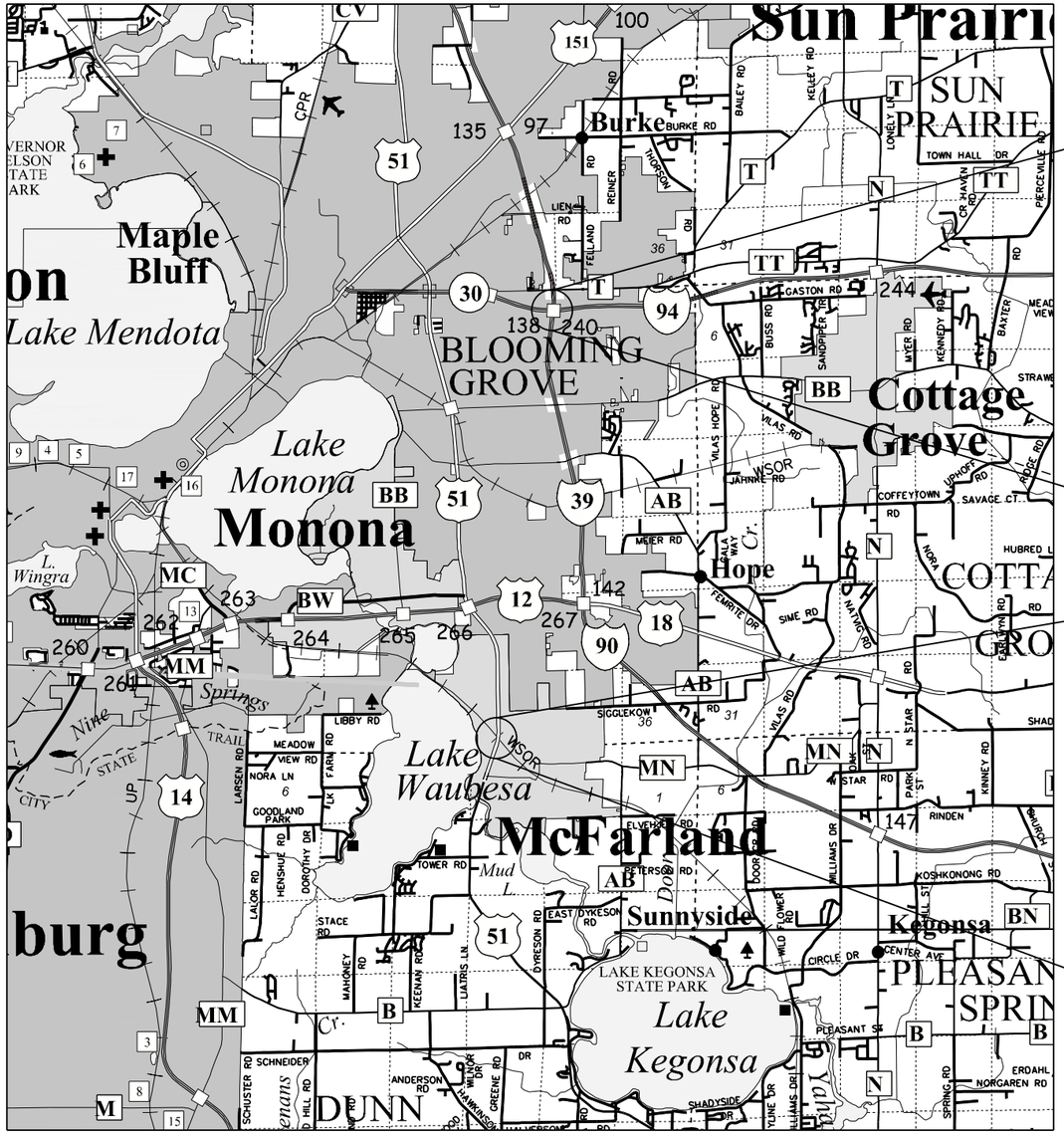
CONSULTANT
MSA PROFESSIONAL SERVICES, INC.
1230 SOUTH BOULEVARD
BARABOO, WI 53913
ATTN: JOLIE SNYDER
PHONE: (608) 355-8912
jsnyder@msa-ps.com

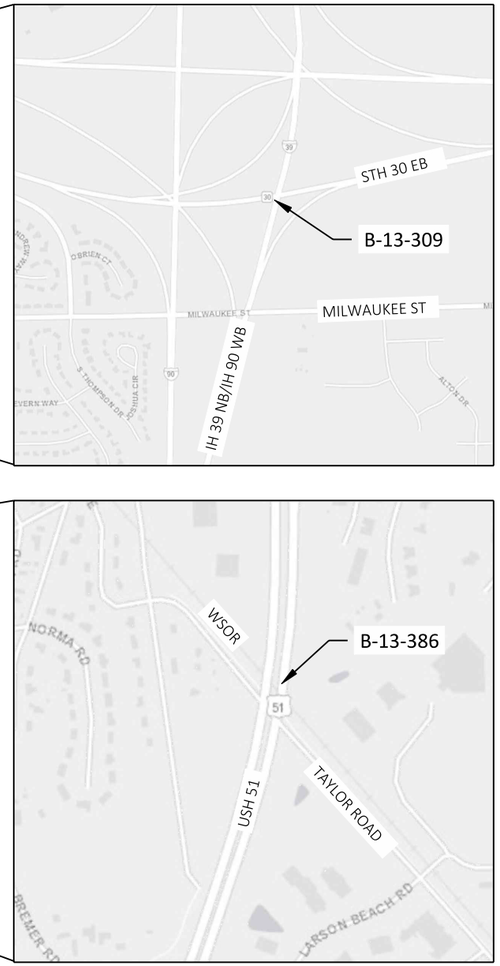
DEPARTMENT PROJECT MANAGER
WISCONSIN DEPARTMENT OF TRANSPORTATION
2101 WRIGHT STREET
MADISON, WI 53704
ATTN: BENJAMIN THOMPSON
PHONE: (608) 246-3856
Benjamin.Thompson@dot.wi.gov

DNR LIAISON

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
SOUTH CENTRAL REGION HEADQUARTERS
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
ATTN:ERIC HEGGELUND
PHONE: (608) 228-7927
eric.heggelund@wisconsin.gov

2





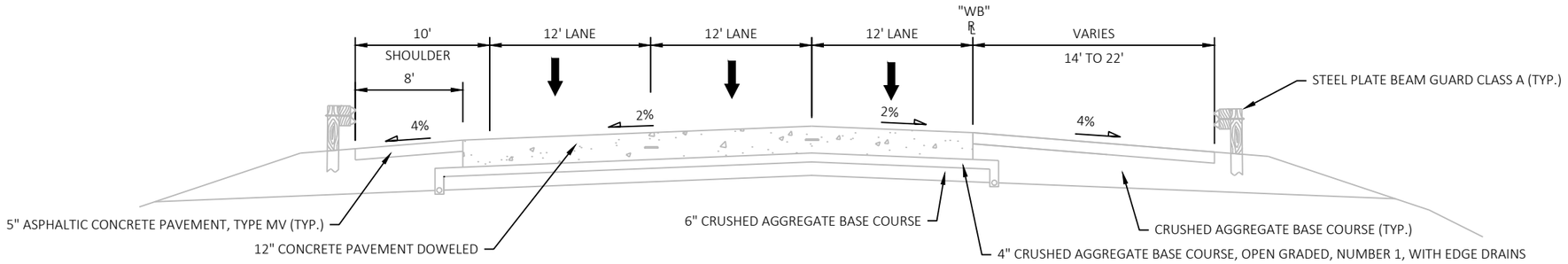
N

PROJECT NO: 5556-00-69	HWY: IH 39 NB/IH 90 WB & USH 51 NB	COUNTY: DANE	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : P:\90S\93\00093459\CADD\SHEETSPLAN\010101_TI.DWG
LAYOUT NAME - 020201-po

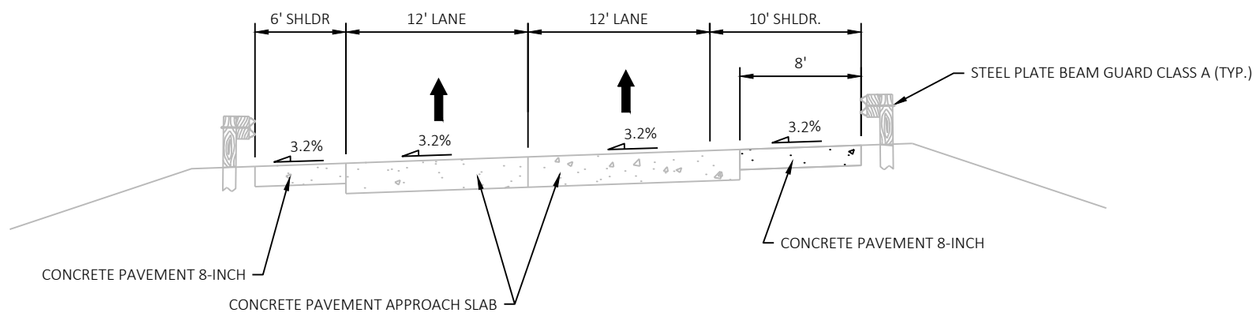
PLOT DATE : 10/10/2018 1:04 PM PLOT BY : JOLIE SNYDER PLOT NAME : _____ PLOT SCALE : 1 IN:2 MI

2



EXISTING TYPICAL SECTION

IH 39 NB/IH 90 WB
STA. 87+80 - STA. 91+98
STA. 93+75 - STA. 100+20

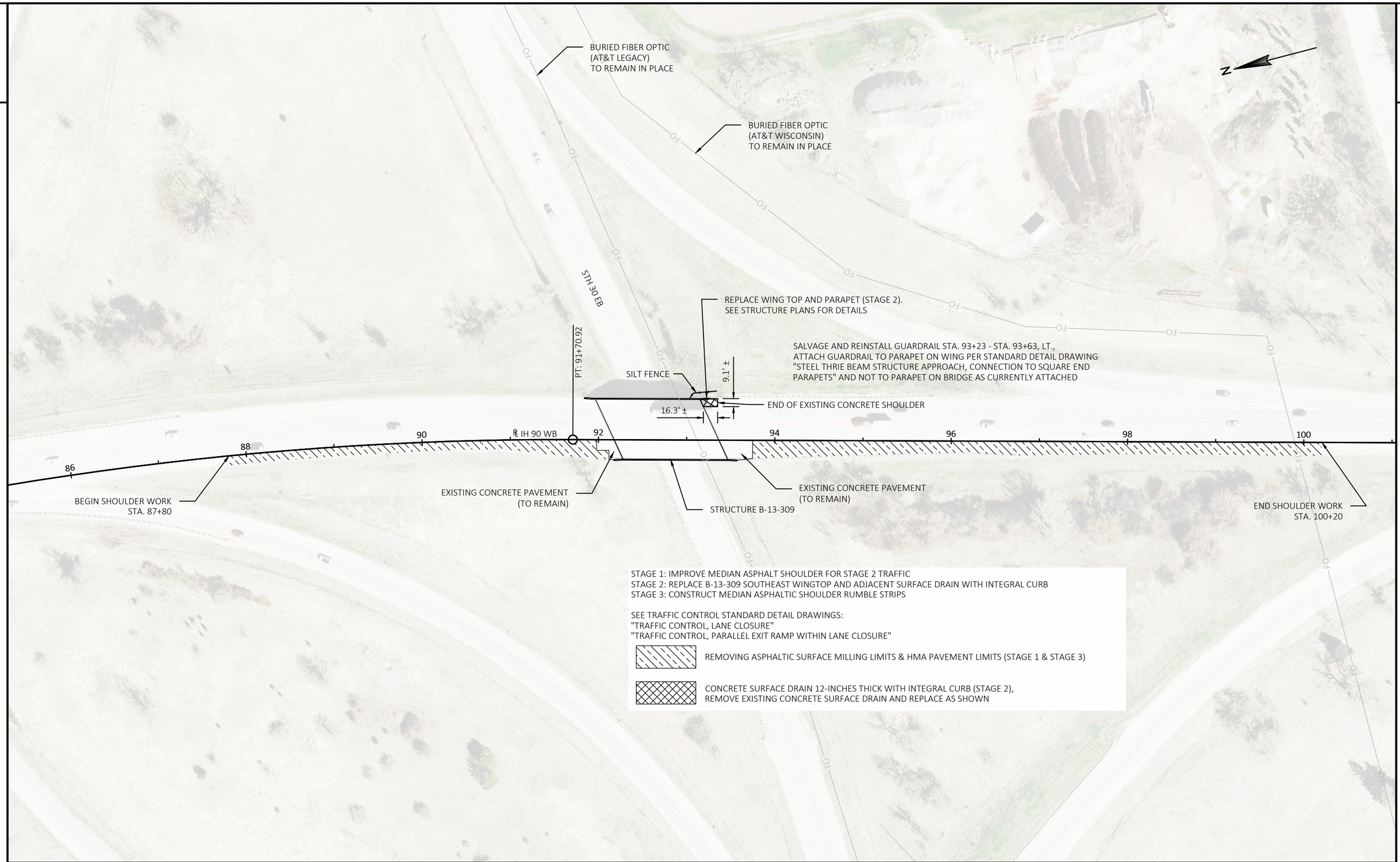


EXISTING TYPICAL SECTION

USH 51 NB
STA. 130 'NB'+87 - STA. 131 'NB'+38

PROJECT NO: 5556-00-69	HWY: IH 39 NB/IH 90 WB & USH 51 NB	COUNTY: DANE	TYPICAL SECTIONS (B-13-309 & B-13-386)	SHEET 4	E

2



PROJECT NO: 5556-00-69	HWY: IH 39 NB/IH 90 WB	COUNTY: DANE	PLAN DETAILS (B-13-309)	SHEET 5	E

2

GENERAL NOTES FOR CHANGEABLE MESSAGE BOARDS
PCMS = PORTABLE CHANGEABLE MESSAGE SIGN

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING MESSAGE SIGNS, PLACE THE SIGNS SO THE DRIVER HAS A CLEAR VIEW OF THE MESSAGE FOR A MINIMUM OF 1,000 FEET.

PLACE MESSAGE SIGNS AS FAR AWAY FROM LIVE TRAFFIC LANES AS POSSIBLE WITHOUT HAMPERING VISIBILITY. IN ADVANCE OF INTERSTATE CONSTRUCTION PROJECT, PLACE THE SIGNS ON THE BACKSLOPE BEYOND THE DITCH. SELECT A LOCATION AT OR SLIGHTLY ABOVE THE ELEVATION OF THE ROADWAY.

FOR INTERMITTENT WORK SUCH AS FREEWAY LANE CLOSURE, OR WHERE SITE CONDITIONS DO NOT ALLOW OTHERWISE, THE SIGNS MAY BE PLACED ON THE SHOULDER. VISIT THE SITE TO ASSURE VISIBILITY, SAFETY AND MAINTENANCE CONSIDERATIONS. PLACE A TAPER OF 5 DRUMS AHEAD OF A PCMS THAT IS PLACED ON THE SHOULDER IF IT IS NOT SHIELDED BY A BARRIER.

SITE 1 MESSAGE SIGN SHALL BE IN PLACE AND DISPLAYING THE "PRIOR TO CONSTRUCTION" MESSAGES FOR SEVEN DAYS PRIOR TO THE EXPECTED START OF WORK ON IH 39 NB/IH 90 WB (B-13-309).

SITE 2 MESSAGE SIGN SHALL BE IN PLACE AND DISPLAYING THE "PRIOR TO CONSTRUCTION" MESSAGES FOR SEVEN DAYS PRIOR TO THE EXPECTED START OF WORK ON USH 51 NB (B-13-386).

B-13-309 (IH 39 NB/IH 90 WB OVER STH 30 EB)
WEST SHOULDER MILL AND OVERLAY
SOUTHEAST WINGTOP AND ADJACENT SHOULDER PAVEMENT REPLACEMENT
RUMBLE STRIP INSTALLATION
MILE MARKER 138.4

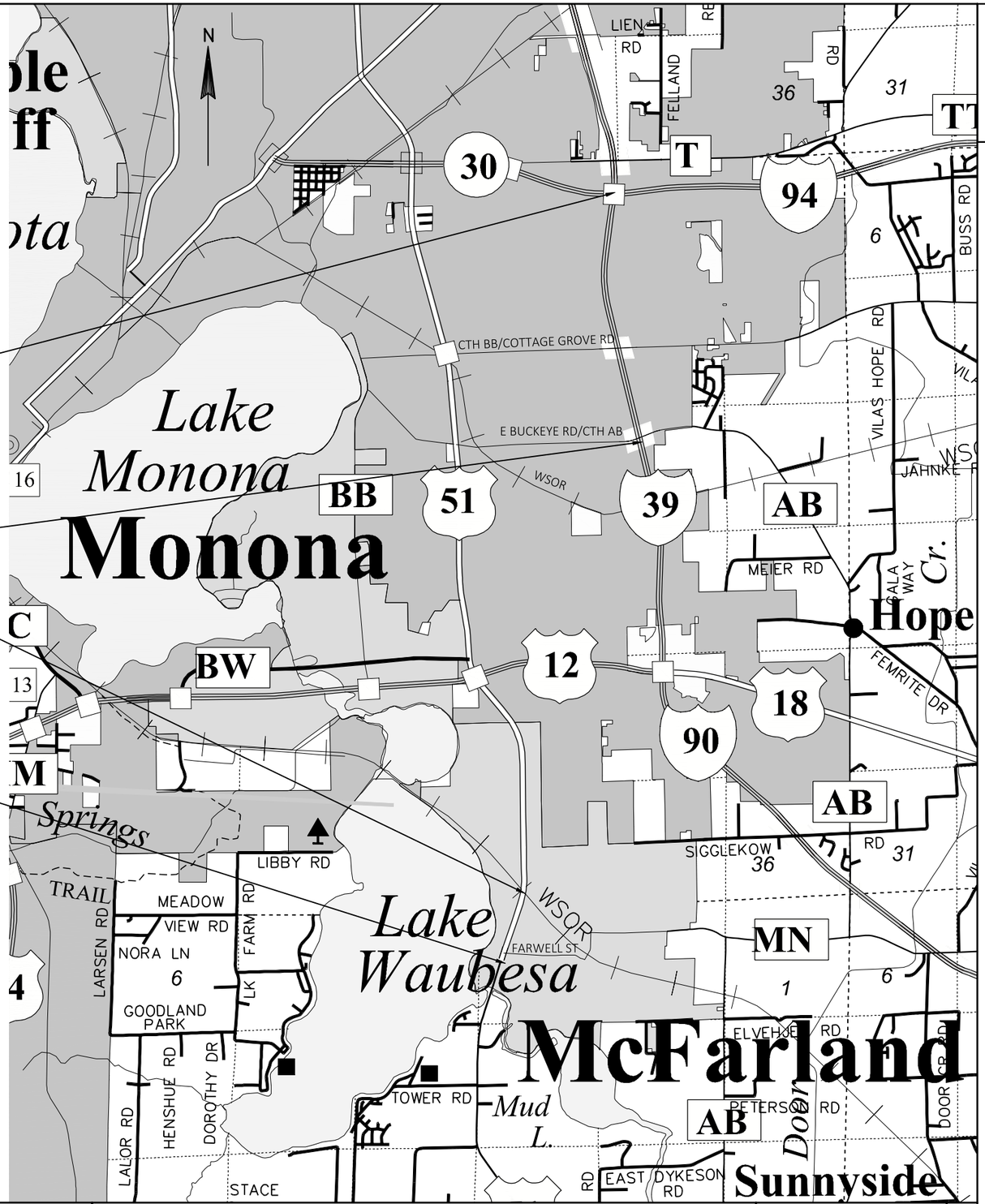
PCMS SITE 1

B-13-386 (USH 51 NB OVER TAYLOR RD & WSOR)
NORTHEAST WINGTOP AND ADJACENT SHOULDER PAVEMENT REPLACEMENT

PCMS SITE 2

MONTH DAY - MONTH DAY
XX PM - YY AM

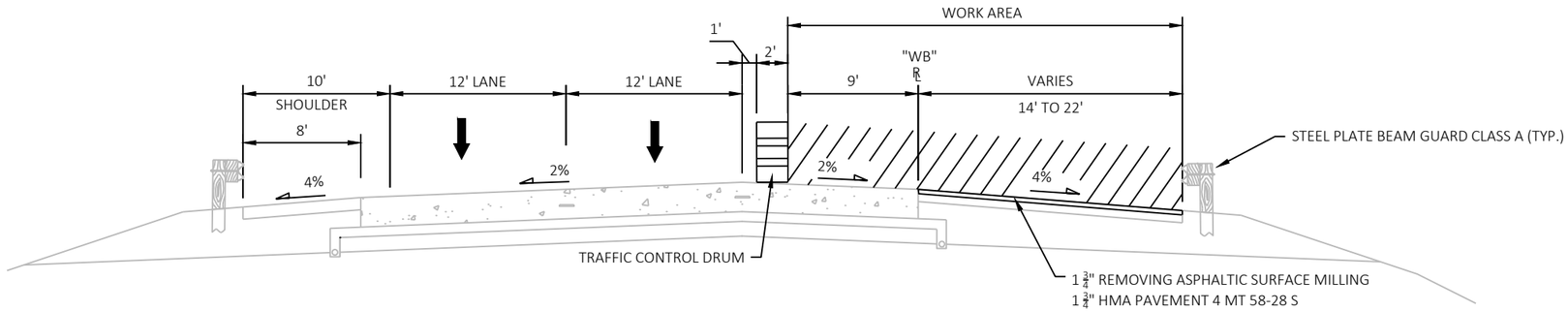
MESSAGE OVERVIEW								
SIGN OWNER	PCMS SITE NO. (DIR.)	MILE MARKER	7 DAYS PRIOR TO CONSTRUCTION		STAGE 1 & 3 (DURING LANE CLOSURE) NIGHT TIME		STAGE 1 & 3 (ALL LANES OPEN) DAY TIME	
			FRAME 1 (2 SEC)	FRAME 2 (2 SEC)	FRAME 1 (2 SEC)	FRAME 2 (2 SEC)	FRAME 1 (2 SEC)	FRAME 2 (2 SEC)
CONTRACTOR	1 (IH 39NB/ IH 90WB)	140.4	ROAD WORK	BEGINS MON. XX	LEFT LANE CLOSED	2 MILES AHEAD	NIGHTLY LANE CLOSURE	XXX YY - XXX YY XX PM - YY AM
CONTRACTOR	2 (USH 51 NB)	N/A S. OF FARWELL ST	ROAD WORK	BEGINS MON. XX	--	--	--	--



PROJECT NO: 5556-00-69	HWY: IH 39 NB/IH 90 WB & USH 51 NB	COUNTY: DANE	PCMS ADVANCE SIGNING	SHEET 6	E

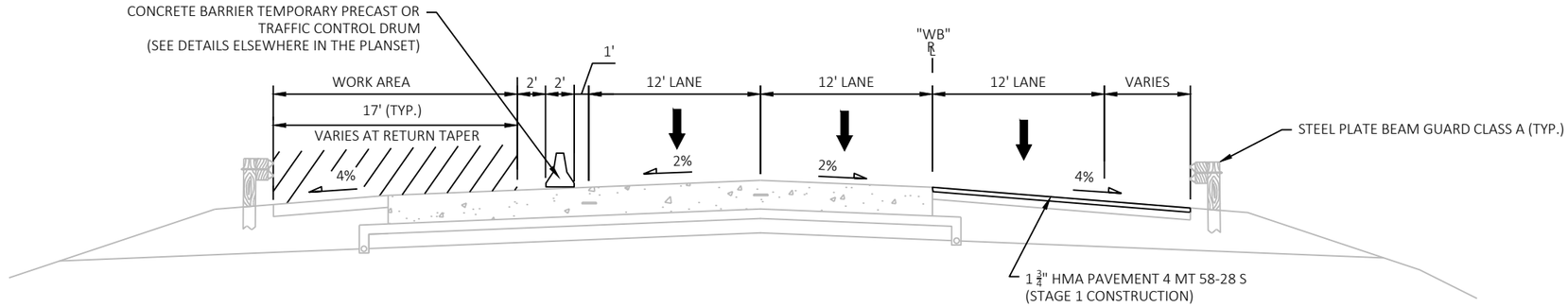
FILE NAME : P:\90S\93\00093459\CADD\SHEETSPLAN\025001-TC.DWG
LAYOUT NAME - Advance Signing
PLOT DATE : 10/18/2018 10:16 AM
PLOT BY : JOLIE SNYDER
PLOT NAME :
PLOT SCALE : 1 IN:1 MI
WISDOT/CADDS SHEET 42

2



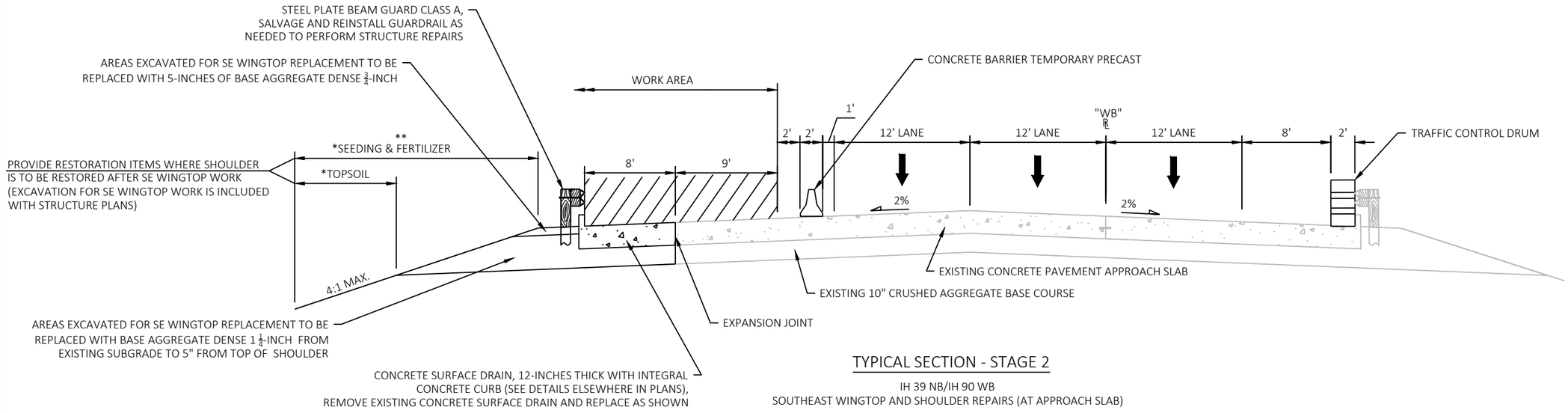
TYPICAL SECTION - STAGE 1

IH 39 NB/IH 90 WB
MEDIAN SHOULDER IMPROVEMENT
STA. 87+80 - STA. 91+98
STA. 93+75 - STA. 100+20



TYPICAL SECTION - STAGE 2

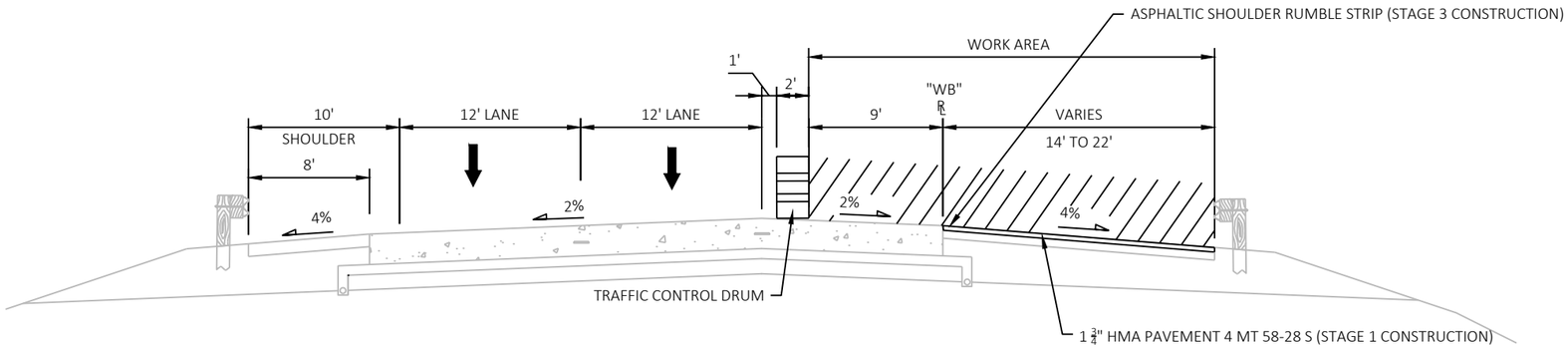
IH 39 NB/IH 90 WB
SOUTHEAST WINGTOP REPAIRS (AT APPROACH PAVEMENT)
STA. 87+80 - STA. 91+98
STA. 93+75 - STA. 100+20



TYPICAL SECTION - STAGE 2

IH 39 NB/IH 90 WB
SOUTHEAST WINGTOP AND SHOULDER REPAIRS (AT APPROACH SLAB)

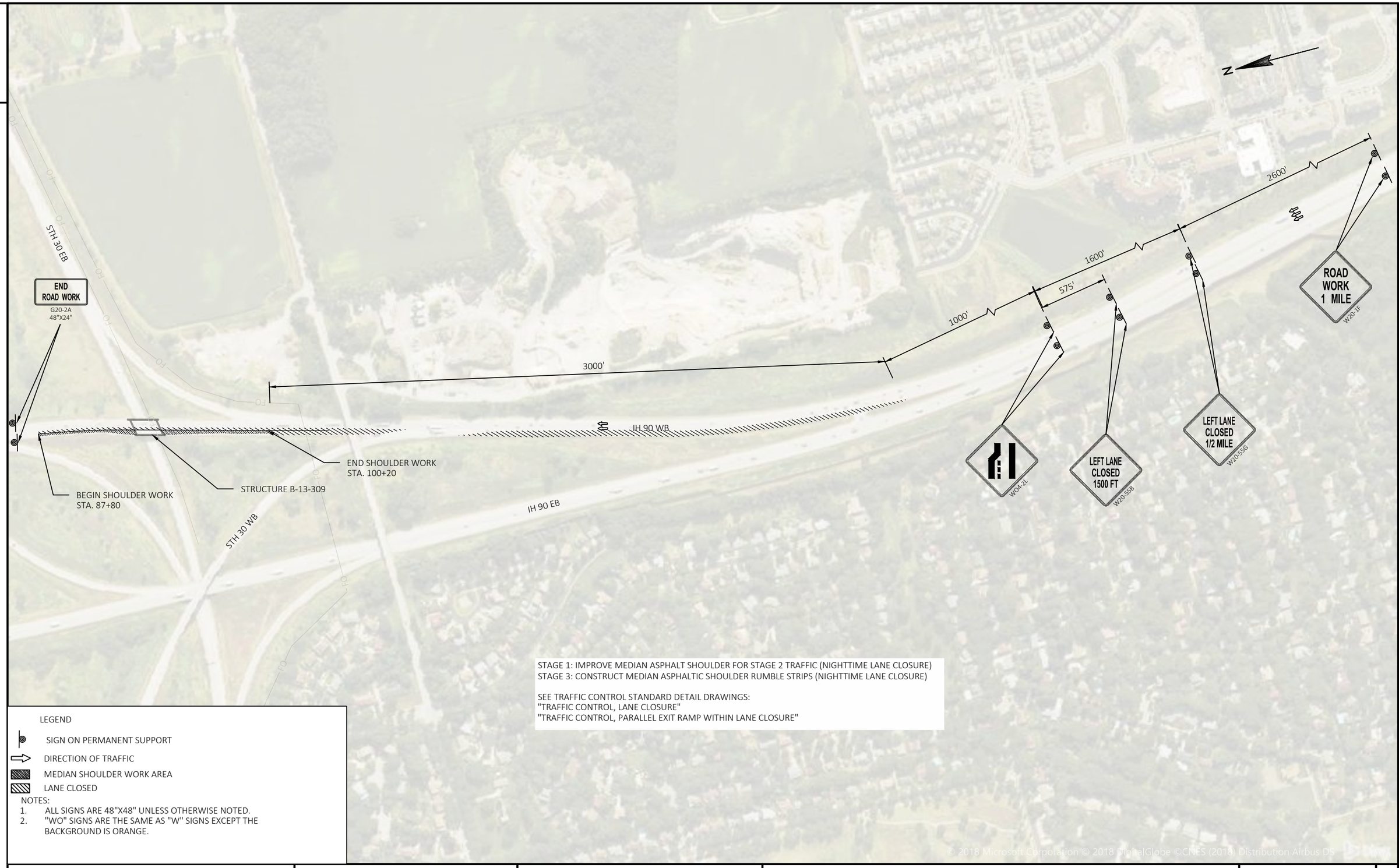
* - PAID FOR UNDER "BARRIER SYSTEM GRADING SHAPING AND FINISHING"
**- EROSION MAT URBAN CLASS I TYPE B REQUIRED WHERE SHOULDER IS TO BE RESTORED AFTER SE WINGTOP WORK.



TYPICAL SECTION - STAGE 3

IH 39 NB/IH 90 WB
MEDIAN SHOULDER RUMBLE STRIPS
STA. 87+80 - STA. 91+98
STA. 93+75 - STA. 100+20

2



STAGE 1: IMPROVE MEDIAN ASPHALT SHOULDER FOR STAGE 2 TRAFFIC (NIGHTTIME LANE CLOSURE)
STAGE 3: CONSTRUCT MEDIAN ASPHALTIC SHOULDER RUMBLE STRIPS (NIGHTTIME LANE CLOSURE)

SEE TRAFFIC CONTROL STANDARD DETAIL DRAWINGS:
"TRAFFIC CONTROL, LANE CLOSURE"
"TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE"

LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- MEDIAN SHOULDER WORK AREA
- LANE CLOSED

NOTES:
1. ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
2. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

PROJECT NO: 5556-00-69	HWY: IH 39 NB/IH 90 WB	COUNTY: DANE	TRAFFIC CONTROL (B-13-309) - STAGE 1 & 3 ADVANCE SIGNING	SHEET 9	E

2

END ROAD WORK
G20-2A
48"X24"

500'

420' RETURN TAPER

200'

50'
BUFFER

420' TRANSITION

CRASH CUSHION TEMPORARY

50'
(TYP.)

PT: 91+70.92

100'

150'

12'
12'
12'

86
88
90
92
94
96
98
100

12'
12'
12'

R IH 90 WB

EB. STH 30

TEMPORARY MARKING LINE
REMOVABLE TAPE 4-INCH YELLOW
STA. 87+80 - STA. 98+20

STRUCTURE B-13-309

WO5-52R
18"X54"
(SIGN MOUNTED ON BARRIER)

WO1-6
60"X30"

BEGIN TAPER
STA. 87+80

END TAPER
STA. 100+20

CONCRETE BARRIER
TEMPORARY PRECAST

TEMPORARY MARKING LINE
REMOVABLE TAPE 4-INCH WHITE
STA. 87+80 - STA. 100+20

MARKING REMOVAL LINE 4-INCH REQUIRED AT ALL LINES CONFLICTING WITH STAGE 2 TRAFFIC CONTROL THAT ARE NOT HIDDEN BY TEMPORARY MARKING LINE REMOVABLE TAPE

STAGE 2: REPAIR SE WING & SHOULDER APPROACH

SEE TRAFFIC CONTROL STANDARD DETAIL DRAWING:
"TRAFFIC CONTROL, LANE SHIFT, MULTI-LANE DIVIDED OR ONE-WAY ROAD"

LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA

NOTES:

1. ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
2. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THEY ARE ORANGE.

PROJECT NO: 5556-00-69	HWY: IH 39 NB/IH 90 WB	COUNTY: DANE	TRAFFIC CONTROL (B-13-309) - STAGE 2 OVERVIEW	SHEET 10	E

FILE NAME : P:\90S\93\00093459\CADD\SHEETSPLAN\025001-TC.DWG
LAYOUT NAME - 025004_tc
PLOT DATE : 2/12/2019 9:02 AM
PLOT BY : BRAD LEE
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

2

N

EB. STH 30

END
ROAD WORK
G20-2A
48"X24"

WORK AREA

STRUCTURE B-13-309

1000'

STA. 100+20

1640'

2640'

ROAD
WORK
1 MILE
W20-1F

WB. IH 90

EB. IH 90

W24-1BL

ROAD
WORK
1/2 MILE
W20-1G

STAGE 2: REPAIR SE WING & SHOULDER APPROACH

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

NOTES:

1. ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
2. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THEY ARE ORANGE.

PROJECT NO: 5556-00-69	HWY: IH 39 NB/IH 90 WB	COUNTY: DANE	TRAFFIC CONTROL (B-13-309) - STAGE 2 ADVANCE SIGNING	SHEET 11	E

2

BURIED TELEPHONE
(FRONTIER COMMUNICATIONS)
TO REMAIN IN PLACE

BURIED GAS
(ALLIANT ENERGY)
TO REMAIN IN PLACE

BURIED SANITARY SEWER
(MADISON METROPOLITAN SEWERAGE DISTRICT)
TO REMAIN IN PLACE

N

SEE STRUCTURE PLANS FOR DETAILS

127'NB'+00

128'NB'+00

129'NB'+00

130'NB'+00

131'NB'+00

132'NB'+00

STRUCTURE B-13-386

℄ NB LANE USH 51

44.4'±

7'±

SILT FENCE

SALVAGE AND REINSTALL BEAMGUARD STA. 130 'NB'+98 - STA. 131 'NB'+38, ATTACH GUARDRAIL TO PARAPET ON WING PER STANDARD DETAIL DRAWING "STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS".

STA. 130 'NB'+91, RT, FENCE CHAIN LINK SALVAGED 7-FT, 10 LF.

CONCRETE PAVEMENT 8-INCH,
REMOVE EXISTING CONCRETE
PAVEMENT AND REPLACE AS SHOWN

TAYLOR RD

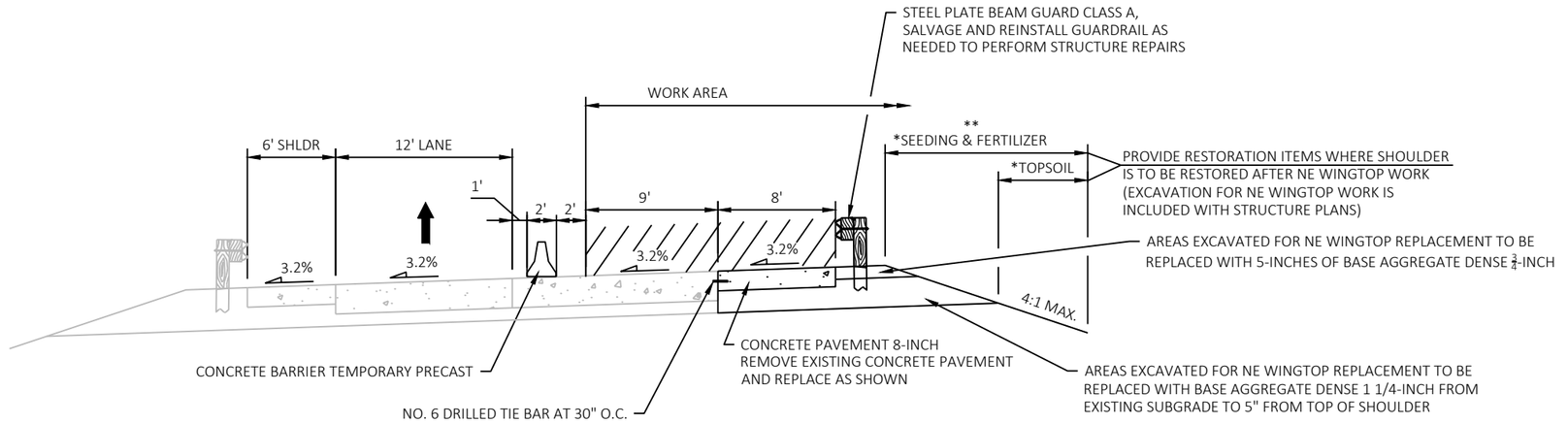
WSOR RR

BURIED ELECTRIC
(ALLIANT ENERGY)
TO REMAIN IN PLACE

BURIED SANITARY SEWER
(MADISON METROPOLITAN SEWERAGE DISTRICT)
TO REMAIN IN PLACE

PROJECT NO: 5556-00-69	HWY: USH 51 NB	COUNTY: DANE	PLAN DETAILS (B-13-386)	SHEET 12	E

2

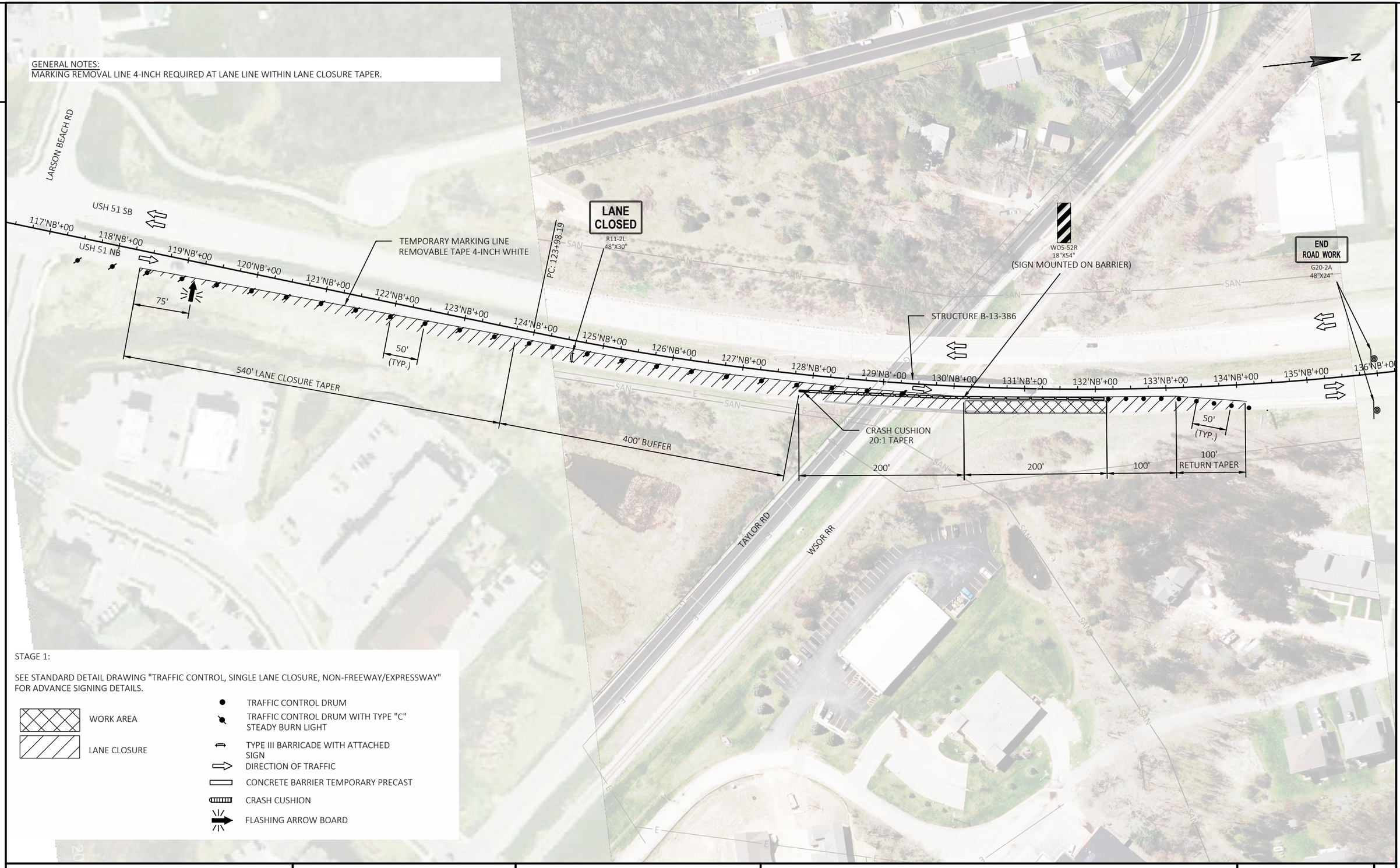


TYPICAL SECTION

USH 51 NB
NORTHEAST WINGTOP AND SHOULDER REPAIRS (AT NORTH APPROACH SLAB)

* - PAID FOR UNDER "BARRIER SYSTEM GRADING SHAPING AND FINISHING"
**- EROSION MAT URBAN CLASS I TYPE B REQUIRED WHERE SHOULDER IS TO BE RESTORED AFTER NE WINGTOP WORK.

GENERAL NOTES:
MARKING REMOVAL LINE 4-INCH REQUIRED AT LANE LINE WITHIN LANE CLOSURE TAPER.



STAGE 1:

SEE STANDARD DETAIL DRAWING "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY" FOR ADVANCE SIGNING DETAILS.

- WORK AREA
- LANE CLOSURE
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION
- FLASHING ARROW BOARD

PROJECT NO: 5556-00-69	HWY: USH 51 NB	COUNTY: DANE	TRAFFIC CONTROL (B-13-386)	PLOT SCALE : 1 IN:125 FT	SHEET 14	E

FILE NAME : P:\90S\93\00093459\CADD\SHEETSPLAN\025001-TC.DWG
LAYOUT NAME - 025001_tc (B-13-386)
PLOT DATE : 10/10/2018 1:05 PM PLOT BY : JOLIE SNYDER PLOT NAME :

5556-00-69

Line	Item	Item Description	Unit	Total	Qty
0002	203.0200	Removing Old Structure (station) 01. 93+15.06	LS	1.000	1.000
0004	203.0200	Removing Old Structure (station) 02. 130 'NB'+91.19	LS	1.000	1.000
0006	204.0100	Removing Pavement	SY	60.000	60.000
0008	204.0120	Removing Asphaltic Surface Milling	SY	1,680.000	1,680.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-13-309	LS	1.000	1.000
0012	206.1000	Excavation for Structures Bridges (structure) 02. B-13-386	LS	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	50.000	50.000
0016	211.0200	Prepare Foundation for Concrete Pavement (project) 01. 5556-00-69	LS	1.000	1.000
0018	213.0100	Finishing Roadway (project) 01. 5556-00-69	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	9.000	9.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	71.000	71.000
0024	415.0080	Concrete Pavement 8-Inch	SY	43.000	43.000
0026	416.0610	Drilled Tie Bars	EACH	19.000	19.000
0028	416.1010	Concrete Surface Drains	CY	4.000	4.000
0030	455.0605	Tack Coat	GAL	84.000	84.000
0032	460.2000	Incentive Density HMA Pavement	DOL	110.000	110.000
0034	460.6224	HMA Pavement 4 MT 58-28 S	TON	162.000	162.000
0036	465.0400	Asphaltic Shoulder Rumble Strips	LF	1,063.000	1,063.000
0038	502.0100	Concrete Masonry Bridges	CY	8.000	8.000
0040	502.3210	Pigmented Surface Sealer	SY	10.000	10.000
0042	502.4205	Adhesive Anchors No. 5 Bar	EACH	40.000	40.000
0044	502.4206	Adhesive Anchors No. 6 Bar	EACH	2.000	2.000
0046	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	1,180.000	1,180.000
0048	509.1500	Concrete Surface Repair	SF	40.000	40.000
0050	511.1200	Temporary Shoring (structure) 01. B-13-309	SF	130.000	130.000
0052	511.1200	Temporary Shoring (structure) 02. B-13-386	SF	250.000	250.000
0054	516.0500	Rubberized Membrane Waterproofing	SY	5.000	5.000
0056	603.8000	Concrete Barrier Temporary Precast Delivered	LF	650.000	650.000
0058	603.8125	Concrete Barrier Temporary Precast Installed	LF	650.000	650.000
0060	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	55.000	55.000
0062	614.0010	Barrier System Grading Shaping Finishing	EACH	2.000	2.000
0064	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	2.000	2.000
0066	614.0905	Crash Cushions Temporary	EACH	2.000	2.000
0068	616.0407	Fence Chain Link Salvaged 7-FT	LF	10.000	10.000
0070	619.1000	Mobilization	EACH	1.000	1.000
0072	624.0100	Water	MGAL	2.000	2.000
0074	628.1504	Silt Fence	LF	125.000	125.000

5556-00-69

Line	Item	Item Description	Unit	Total	Qty
0076	628.1520	Silt Fence Maintenance	LF	125.000	125.000
0078	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0080	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0082	628.2008	Erosion Mat Urban Class I Type B	SY	160.000	160.000
0084	642.5001	Field Office Type B	EACH	1.000	1.000
0086	643.0300	Traffic Control Drums	DAY	3,790.000	3,790.000
0088	643.0420	Traffic Control Barricades Type III	DAY	85.000	85.000
0090	643.0715	Traffic Control Warning Lights Type C	DAY	2,065.000	2,065.000
0092	643.0800	Traffic Control Arrow Boards	DAY	45.000	45.000
0094	643.0900	Traffic Control Signs	DAY	907.000	907.000
0096	643.1050	Traffic Control Signs PCMS	DAY	57.000	57.000
0098	643.5000	Traffic Control	EACH	1.000	1.000
0100	646.1020	Marking Line Epoxy 4-Inch	LF	3,060.000	3,060.000
0102	646.9000	Marking Removal Line 4-Inch	LF	3,060.000	3,060.000
0104	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	8,180.000	8,180.000
0106	650.5000	Construction Staking Base	LF	71.000	71.000
0108	650.7000	Construction Staking Concrete Pavement	LF	71.000	71.000
0110	650.8000	Construction Staking Resurfacing Reference	LF	1,063.000	1,063.000
0112	650.9910	Construction Staking Supplemental Control (project) 01. 5556-00-69	LS	1.000	1.000
0114	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0116	715.0502	Incentive Strength Concrete Structures	DOL	1,000.000	1,000.000
0118	SPV.0090	Special 01. Salvage and Reinstall Guardrail	LF	80.000	80.000

3

REMOVING PAVEMENT

CATEGORY	STRUCTURE	STATION	LOCATION	204.0100 REMOVING PAVEMENT SY
0010	B-13-309	93+15 - 93+35, LT	SE SHLDR	17
	B-13-386	130 'NB'+87 - 131 'NB'+38, RT	NE SHLDR*	43
		TOTAL:		60

*REMOVAL QUANTITY INCLUDES CONCRETE BLOCK BEHIND NE WINGWALL

REMOVING ASPHALTIC SURFACE MILLING

CATEGORY	STRUCTURE	STATION	LOCATION	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY
0010	B-13-309	87+80 - 92+12, RT	MEDIAN SHOULDER	569
	B-13-309	93+75 - 100+20, RT	MEDIAN SHOULDER	1111
		TOTAL:		1680

BASE AGGREGATE

CATEGORY	STRUCTURE	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
0010	B-13-309	93+15 - 93+35	SOUTHEAST SHOULDER	3	27	1
	B-13-386	130 'NB'+87 - 131 'NB'+38	NORTHEAST SHOULDER	6	44	1
		TOTALS:		9	71	2

CONCRETE PAVEMENT

CATEGORY	STRUCTURE	STATION	LOCATION	415.0080 CONCRETE PAVEMENT 8-INCH SY
0010	B-13-386	130 'NB'+87 - 131 'NB'+38, RT	NE SHLDR	43
		TOTALS:		43

CONCRETE SURFACE DRAINS

CATEGORY	STRUCTURE	LOCATION	416.1010 CONCRETE SURFACE DRAINS CY
0010	B-13-309	SE SHLDR*	4
		TOTAL:	4

*QUANTITY INCLUDES INTEGRAL CURB

ASPHALT ITEMS

CATEGORY	STRUCTURE	STATION	455.0605 TACK COAT GAL	460.6224 HMA PAVEMENT 4 MT 58-28 S TON	465.0400 ASPHALTIC SURFACE RUMBLE STRIPS LF
0010	B-13-309	87+80 - 92+12, RT	28	55	418
		93+75 - 100+20, RT	56	107	645
		TOTALS:	84	162	1063

DRILLED BARS

CATEGORY	STRUCTURE	STATION	LOCATION	416.0610 DRILLED TIE BARS EACH
0010	B-13-386	130 'NB'+93 - 131 'NB'+38, RT	NE SHLDR	19
		TOTAL:		19

FENCE

CATEGORY	STRUCTURE	LOCATION	616.0407 FENCE CHAIN LINK SALVAGED 7-FT LF
0010	B-13-386	130 'NB'+91, RT	10
		TOTAL:	10

GUARDRAIL ITEMS

CATEGORY	STRUCTURE	LOCATION	614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING** EACH
0010	B-13-309	SE WINGWALL	1
	B-13-386	NE WINGWALL	1
		TOTAL:	2

** SEE TABLE BELOW FOR ESTIMATED QUANTITIES

EROSION MAT

CATEGORY	STRUCTURE	LOCATION	628.2008 EROSION MAT URBAN CLASS I TYPE B SY
0010	B-13-309	SE SHLDR	30
	B-13-386	NE SHLDR	120
		UNDISTRIBUTED	10
		TOTAL:	160

SILT FENCE

CATEGORY	STRUCTURE	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
0010	B-13-309	SE SHLDR	45	45
	B-13-386	NE SHLDR	80	80
		TOTALS:	125	125

BARRIER SYSTEM GRADING SHAPING FINISHING

STRUCTURE	LOCATION	*TOPSOIL SY	*FERTILIZER TYPE B CWT	*SEEDING MIXTURE NO. 20 LB	*WATER MGAL	*CONSTRUCTION STAKING SLOPE STAKES LF
B-13-309	SE SHLDR	10	0.02	1.0	0.6	40
B-13-386	NE SHLDR	45	0.04	2.0	1.3	40
	TOTALS:	55	0.06	3.0	1.9	80

* FOR INFORMATION ONLY

TRAFFIC CONTROL ITEMS

CATEGORY	STAGE	DAYS	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	TRAFFIC CONTROL DRUMS EACH	643.0300 TRAFFIC CONTROL DRUMS DAYS	TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAYS	TRAFFIC CONTROL ARROW BOARDS EACH	643.0800 TRAFFIC CONTROL ARROW BOARDS DAYS	TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAYS	TRAFFIC CONTROL SIGNS PCMS EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS DAYS	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH YELLOW LF	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH WHITE LF	646.9000 MARKING REMOVAL LINE 4-INCH LF
0010	STAGE 1 - W. SHLDR IMPROVEMENT	2	-	-	75	150	2	4	30	60	2	4	13	26	1	9	840	-	-
	STAGE 2 - SE WINGWALL & SHLDR REPAIRS	40	250	250	55	2200	1	40	25	1000	-	-	10	400	1	40	1240	3720	2520
	STAGE 3 - W. SHLDR RUBMLE STRIPS	1	-	-	75	75	2	2	30	30	2	2	13	13	1	1	840	-	-
	SUBTOTAL B-13-309:		250	250	205	2425		46		1090		6		439		50	6640		2520
CATEGORY	STAGE	DAYS	LF	LF	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	LF	LF	LF
0010	STAGE 1 - NE WINGWALL & SHLDR REPAIRS	39	400	400	35	1365	1	39	25	975	1	39	12	468	1	7	-	1540	540
	SUBTOTAL B-13-386:		400	400		1365	1	39		975		39		468		7	1540		540
	PROJECT TOTALS:		650	650		3790		85		2065		45		907		57	8180		3060

CRASH CUSHIONS

CATEGORY	STRUCTURE	STAGE	LOCATION	614.0905 CRASH CUSHIONS TEMPORARY EACH	BACK WIDTH	OBJECT MARKER PATTERN	CRASH TEST LEVEL	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS
0010	B-13-309	STAGE 2 - SE WINGWALL & SHLDR REPAIRS	95+51, 44' LT	1	2'	OM-3R	TL-3	UNIDIRECTIONAL	L	CONCRETE BARRIER TEMPORARY PRECAST
	B-13-386	STAGE 1 - NE WINGWALL & SHLDR REPAIRS	127 'NB'+82, 24' RT	1	2'	OM-3R	TL-3	UNIDIRECTIONAL	L	CONCRETE BARRIER TEMPORARY PRECAST
	PROJECT TOTALS:			2						

MOBILIZATIONS EROSION CONTROL

DESCRIPTION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT 5556-00-69	4	4
TOTALS:	4	4

PAVEMENT MARKINGS

CATEGORY	STRUCTURE	STATION	646.1020 MARKING LINE EPOXY 4-INCH YELLOW LF	646.1020 MARKING LINE EPOXY 4-INCH WHITE LF	NOTES
0010	B-13-309	87+80 - 100+20	840	1680	MATCH EXISTING - ALL LINES, EXCEPT OUTSIDE SHLDR
	B-13-386	118 'NB'+35 - 123 'NB'+75	-	540	MATCH EXISTING - DASHED LANE LINE
	TOTAL:		3060		

SALVAGE AND REINSTALL GUARDRAIL

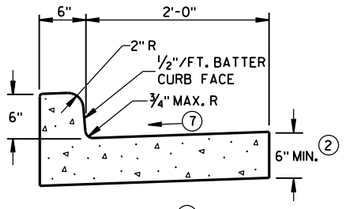
CATEGORY	STRUCTURE	LOCATION	SPV.0090.01 SALVAGE AND REINSTALL GUARDRAIL LF
0010	B-13-309	SE WINGWALL	40
	B-13-386	NE WINGWALL	40
		TOTAL:	80

CONSTRUCTION STAKING

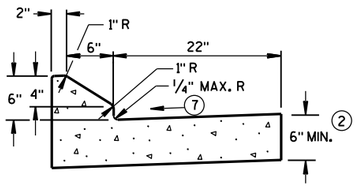
CATEGORY	STRUCTURE	STATION	LOCATION	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF	650.5000 CONSTRUCTION STAKING BASE LF
0010	B-13-309	93+15 - 93+35	SE SHLDR	20	-	20
		87+80 - 97+68	MEDIAN SHLDR	-	418	-
		93+75 - 100+20	MEDIAN SHLDR	-	645	-
	B-13-386	130 'NB'+87 - 131 'NB'+38	NE SHLDR	51	-	51
		TOTALS:		71	1063	71

Standard Detail Drawing List

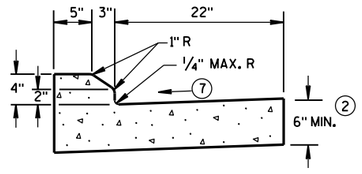
08D01-20A	CONCRETE CURB & GUTTER
08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
13A03-06	CONCRETE PAVEMENT SHOULDERS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C09-15A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-15B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-15C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
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
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
15B03-15A	FENCE CHAIN LINK
15B03-15B	FENCE CHAIN LINK
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D03-04	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D12-06A	TRAFFIC CONTROL, LANE CLOSURE
15D15-04E	TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D40-01	TRAFFIC CONTROL, LANE SHIFT, MULTILANE DIVIDED OR ONE WAY ROAD



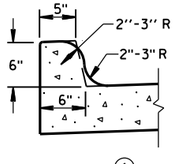
TYPES A (1) & D



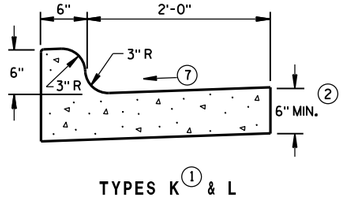
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

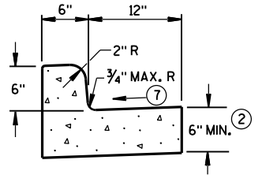


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



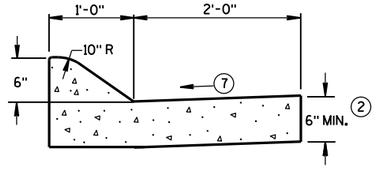
TYPES K (1) & L

CONCRETE CURB & GUTTER 30"

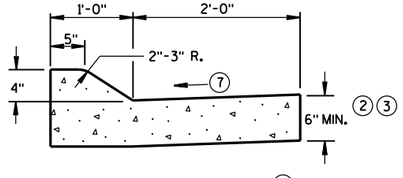


TYPES A (1) & D

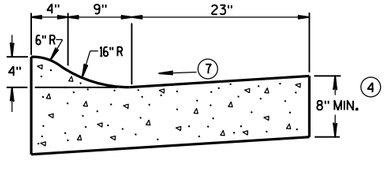
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A (1) & D

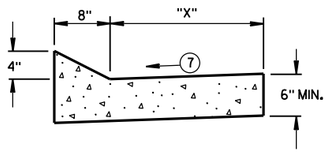


4" SLOPED CURB TYPES A (1) & D



4" SLOPED CURB TYPES R (1) & T (5)

CONCRETE CURB & GUTTER 36"



TYPES TBT & TBTT (1)

CONCRETE CURB & GUTTER

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

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS 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 & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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 GUTTER TYPES A, G, K, R AND TBTT.

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

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

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

(5) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

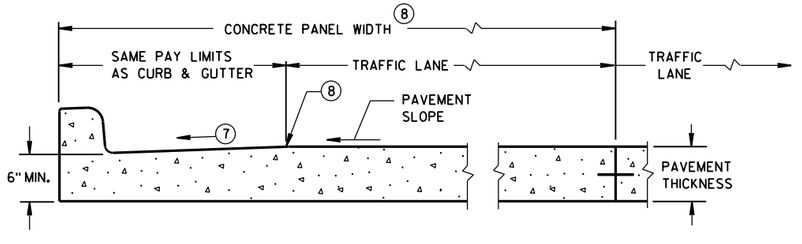
(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

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

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

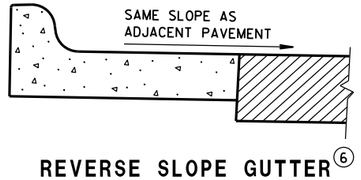
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB & GUTTER

* BIKE LANE IS NOT SHOWN.

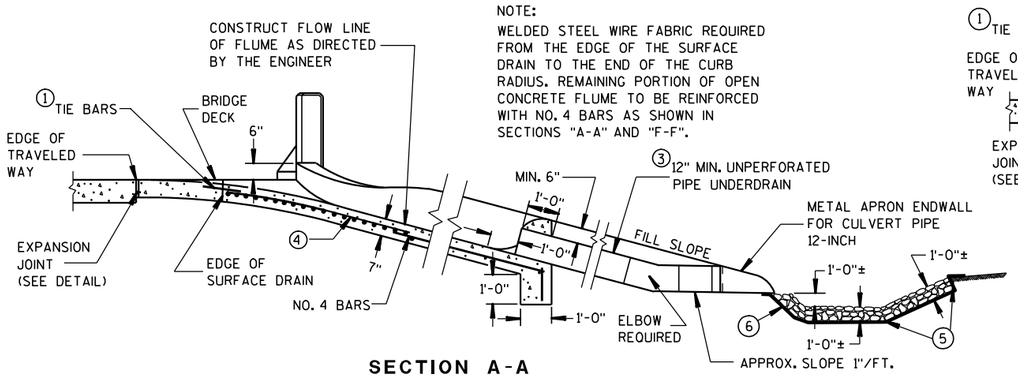


REVERSE SLOPE GUTTER (6)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

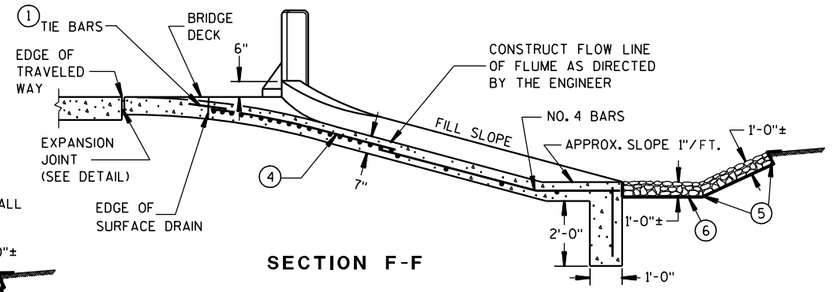
CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 8 D 1-20a



SECTION A-A



SECTION F-F

GENERAL NOTES

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

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

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

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

(3) PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.

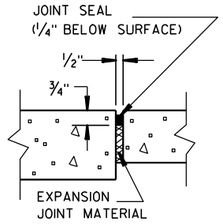
(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

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

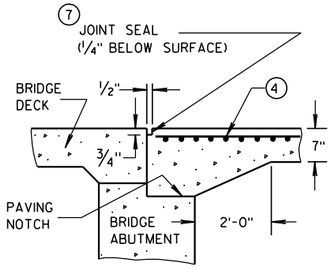
(6) GEOTEXTILE FABRIC, TYPE 'R"

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

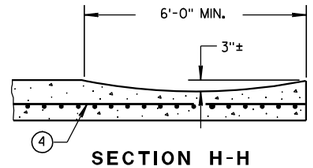
(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".



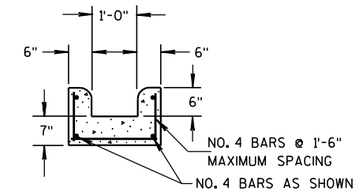
EXPANSION JOINT DETAIL



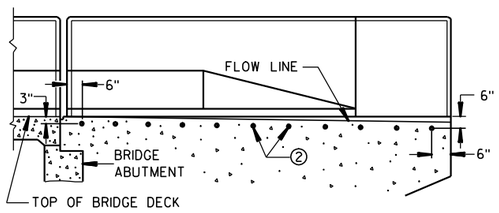
SECTION D-D



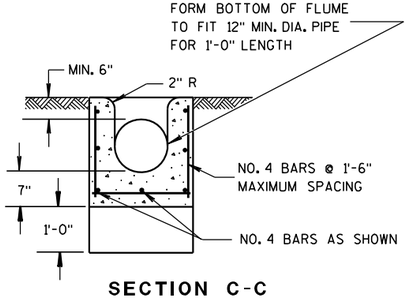
SECTION H-H



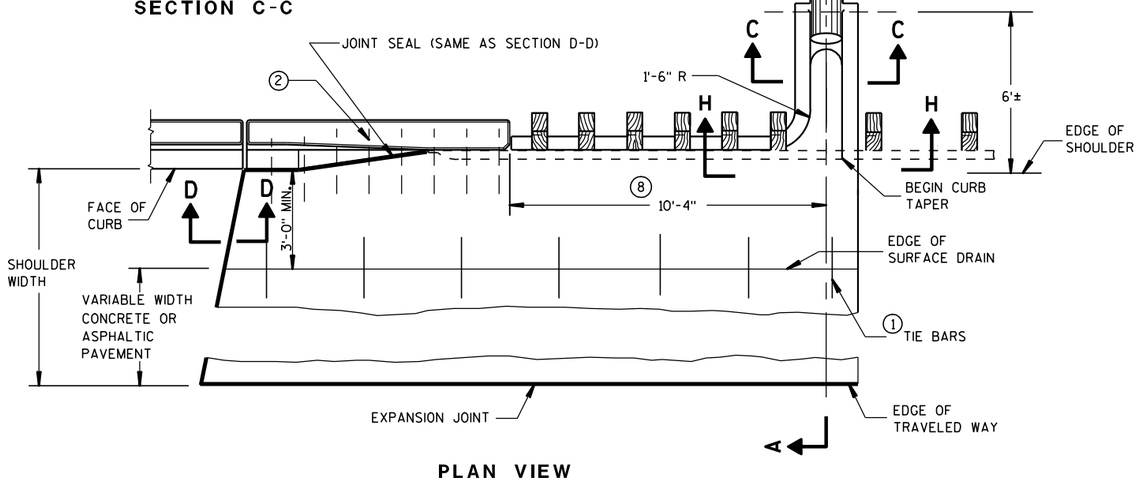
SECTION E-E



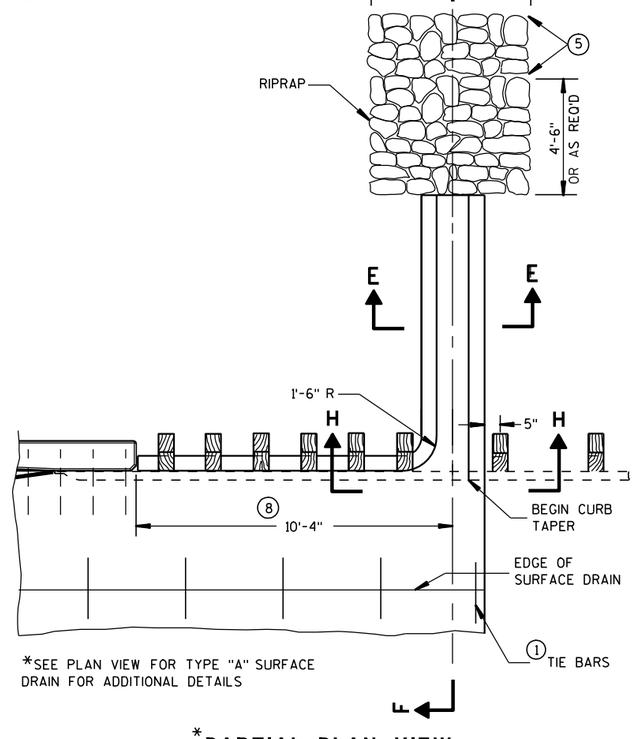
LOCATION OF TIE BARS IN WINGWALL



SECTION C-C



PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"



*SEE PLAN VIEW FOR TYPE "A" SURFACE DRAIN FOR ADDITIONAL DETAILS

***PARTIAL PLAN VIEW**
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

CONCRETE SURFACE DRAINS
FLUME TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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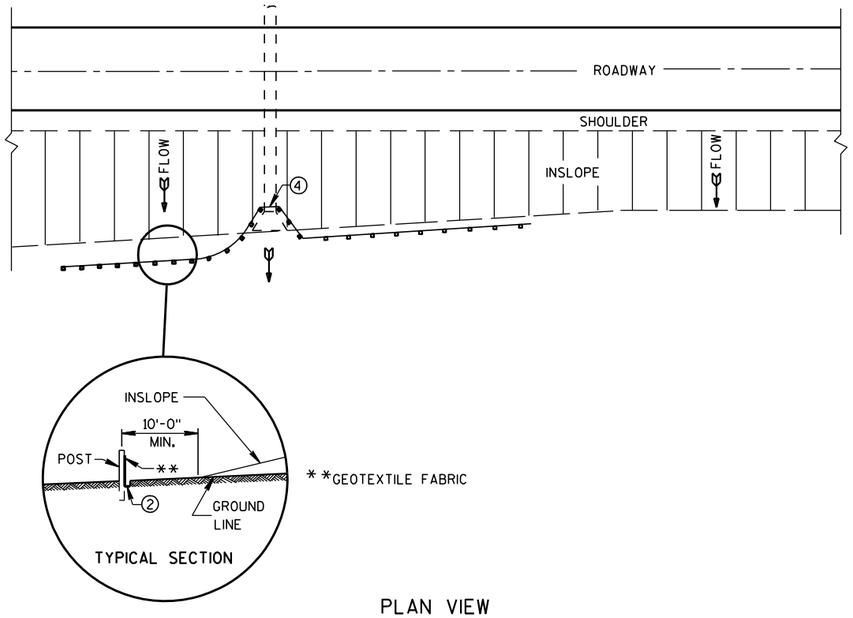
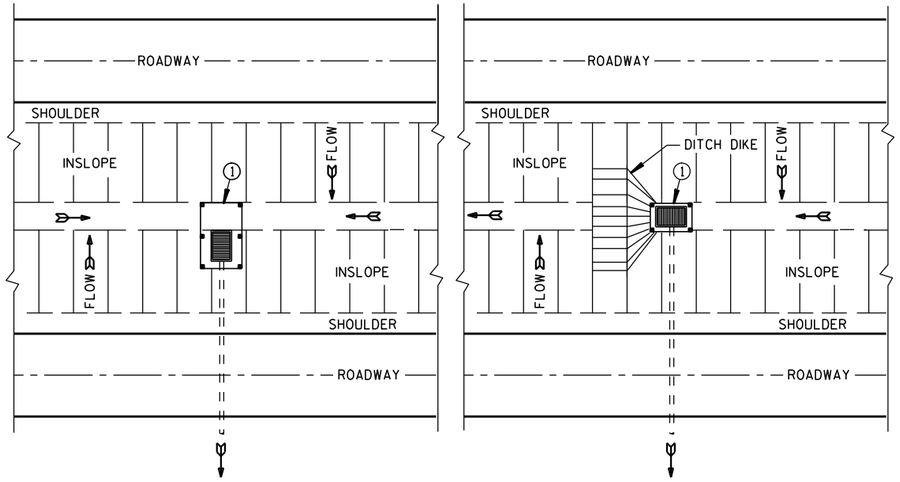
S.D.D. 8 D 2-6



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.

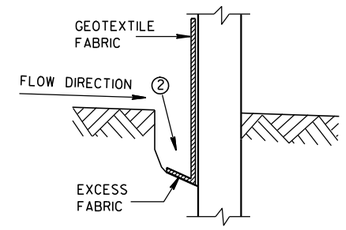
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

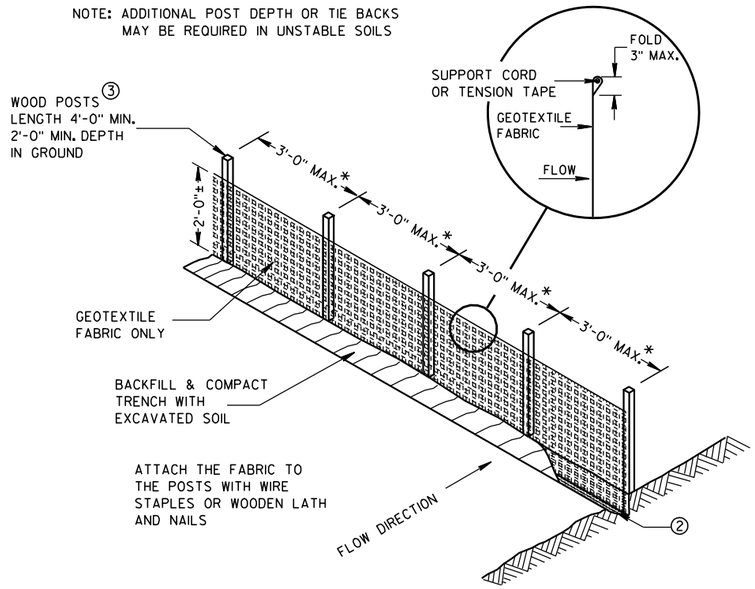
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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.

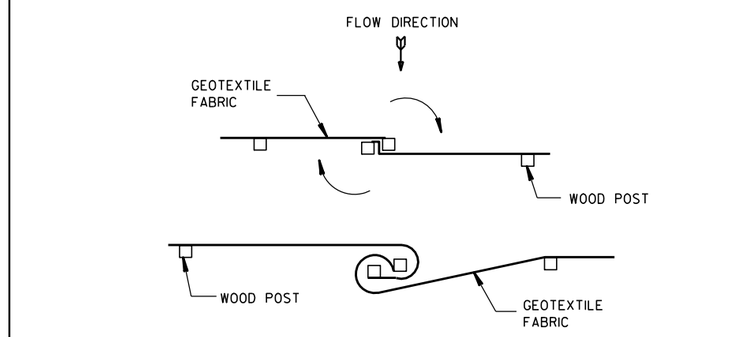


TRENCH DETAIL

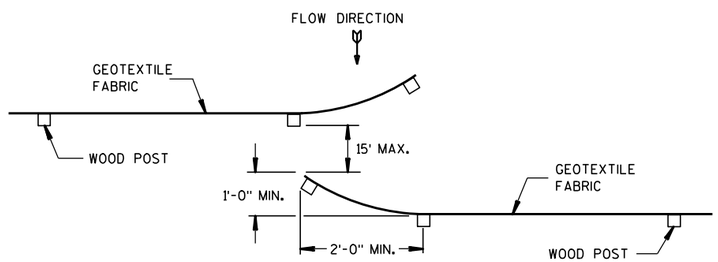


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

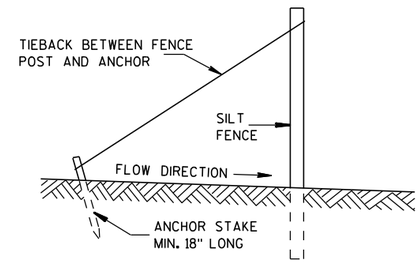


TWIST METHOD



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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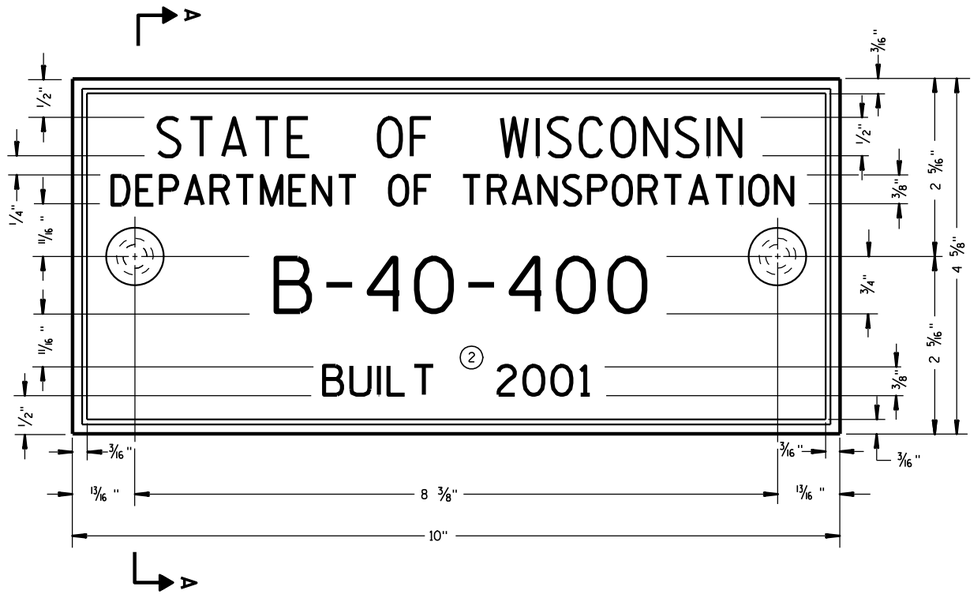
S.D.D. 8 E 9-6



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION MULTI-UNIT STRUCTURES

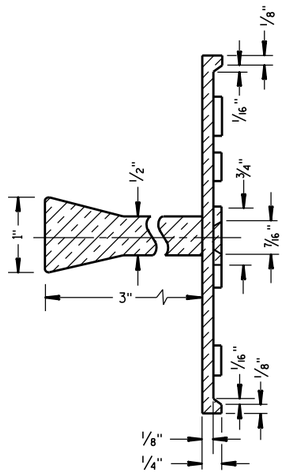
GENERAL NOTES

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

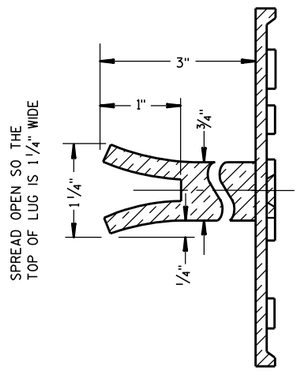
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

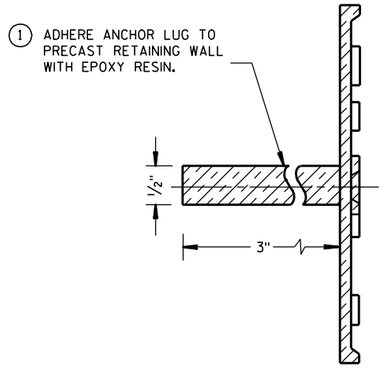
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

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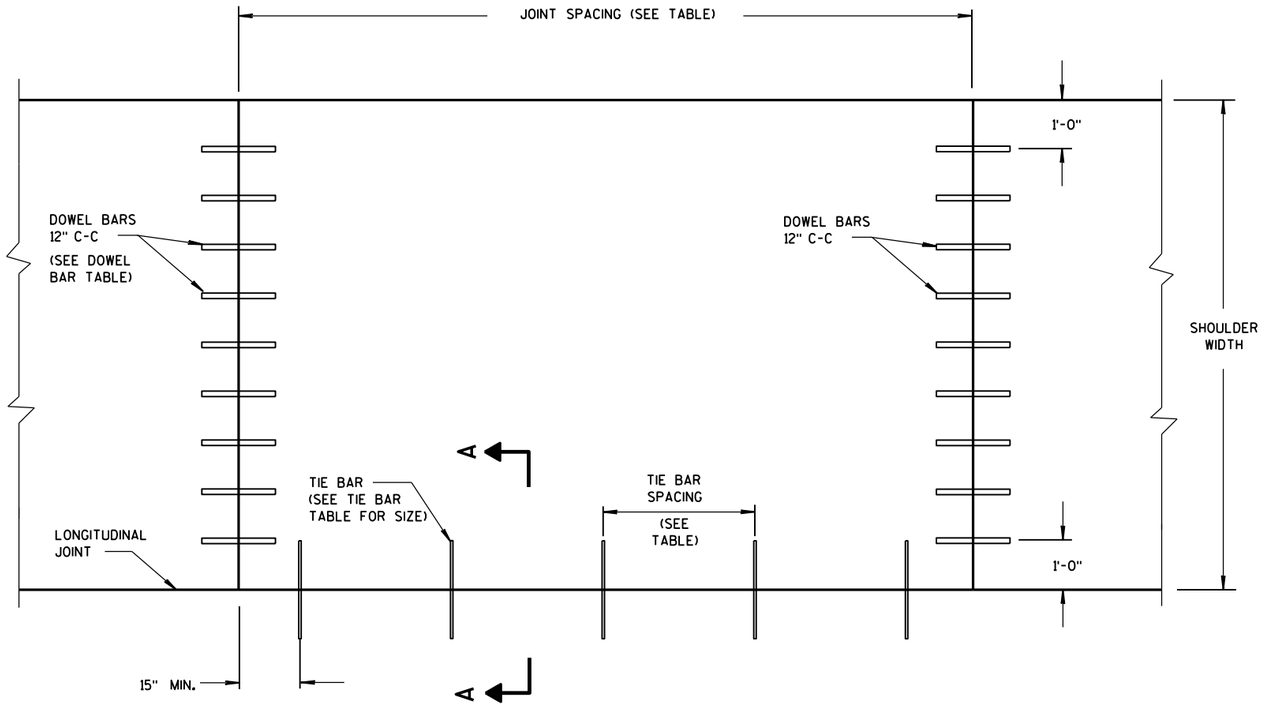
S.D.D. 12 A 3-10



PLAN VIEW

CONCRETE PAVEMENT SHOULDER

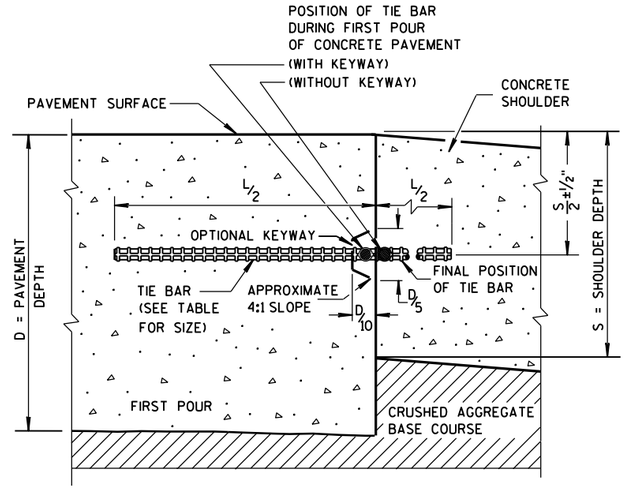
GENERAL NOTES

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

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

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

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



SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT

TIE BAR TABLE

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

* SUBSTITUTE BENT 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.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER***	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

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

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPER
FHWA

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S.D.D. 13 A 3-6

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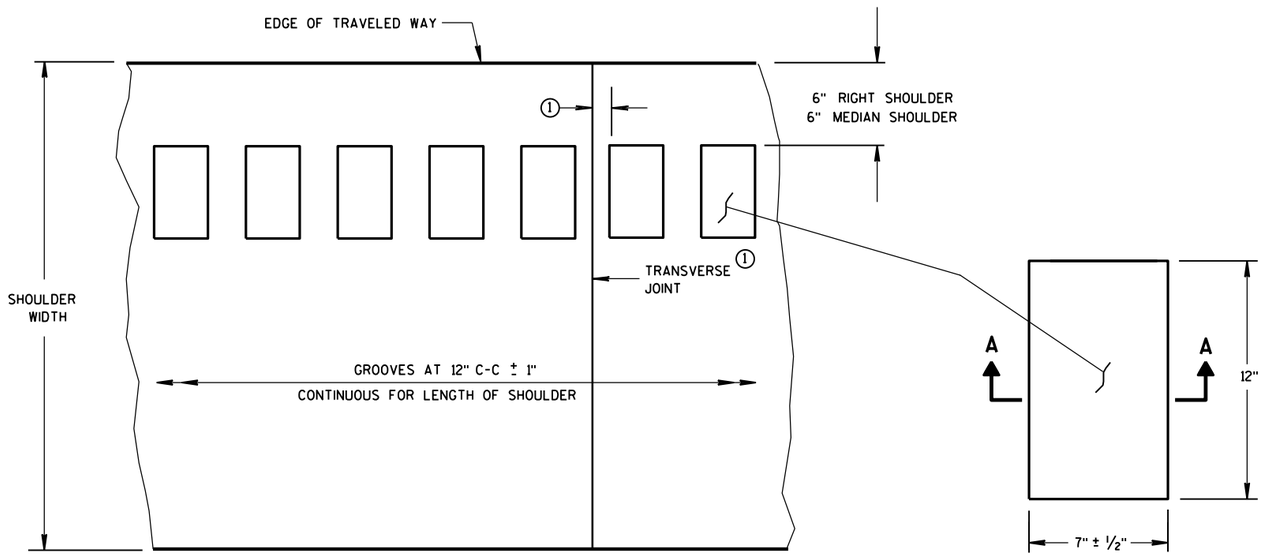
S.D.D. 13 A 3-6



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

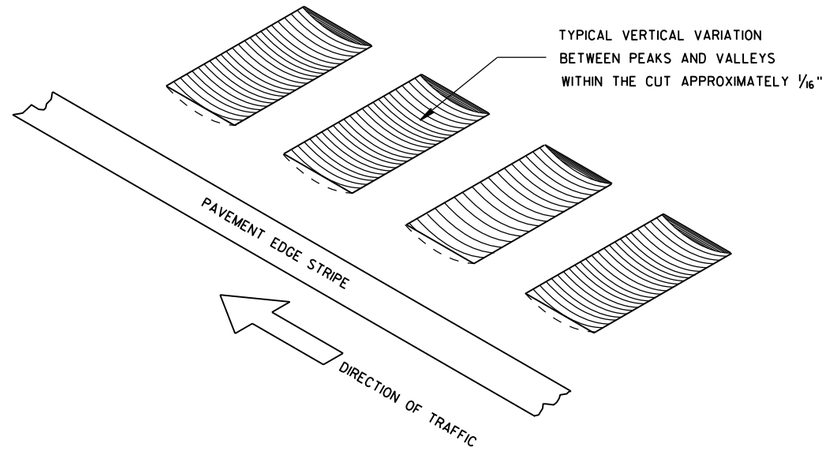
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

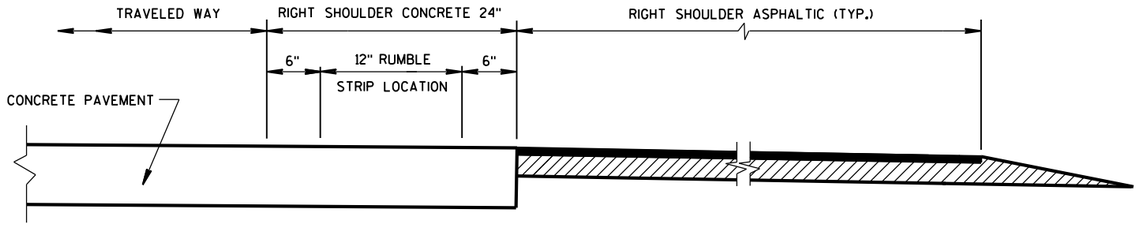
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

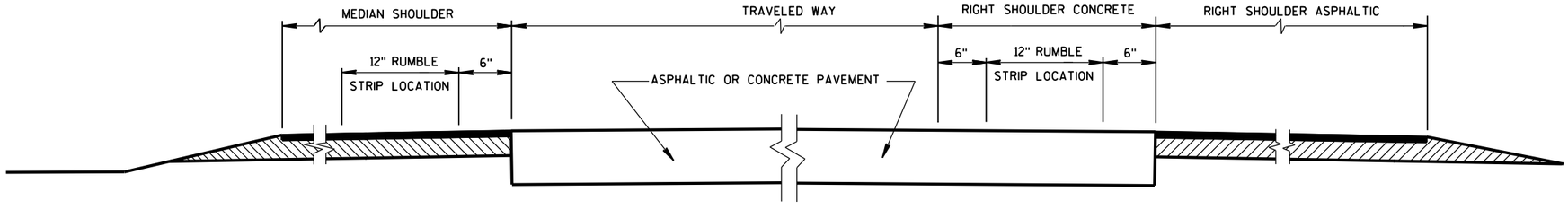
(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



ISOMETRIC



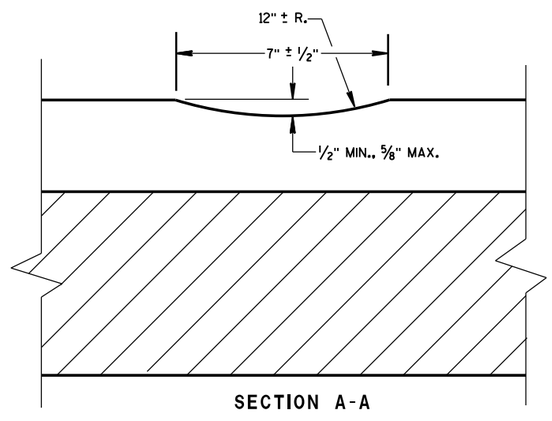
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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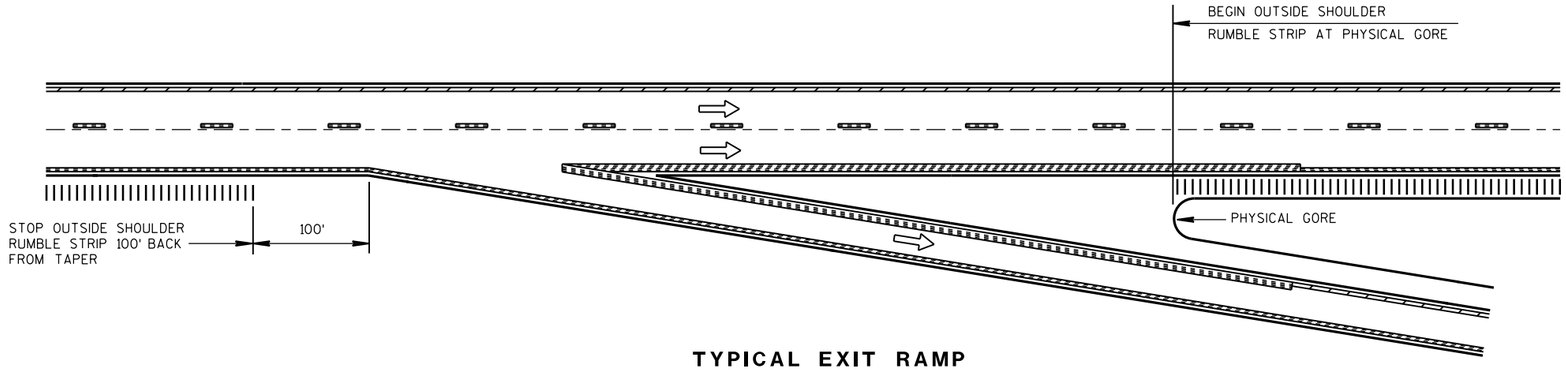
S.D.D. 13 A 5-5a



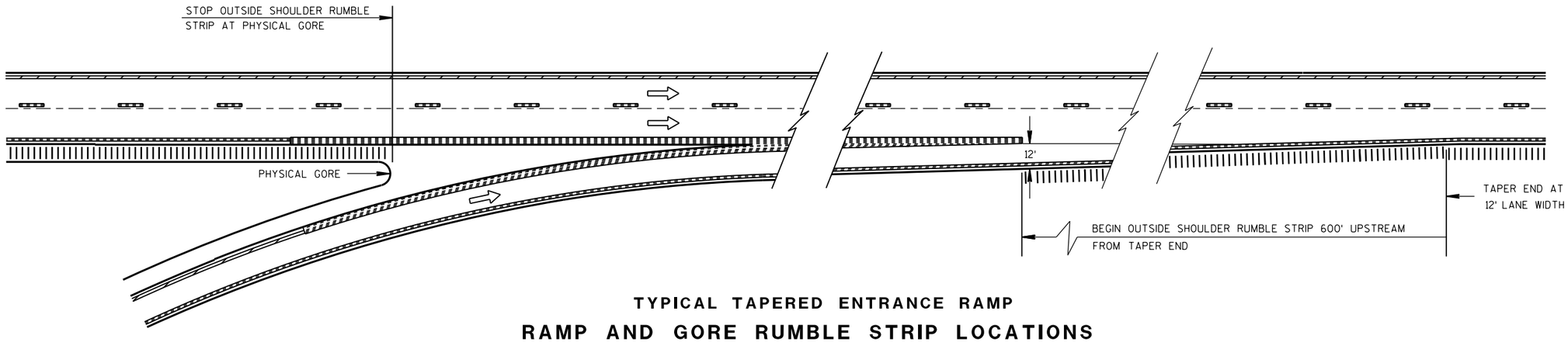
TYPICAL EXIT RAMP

NOTES:

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

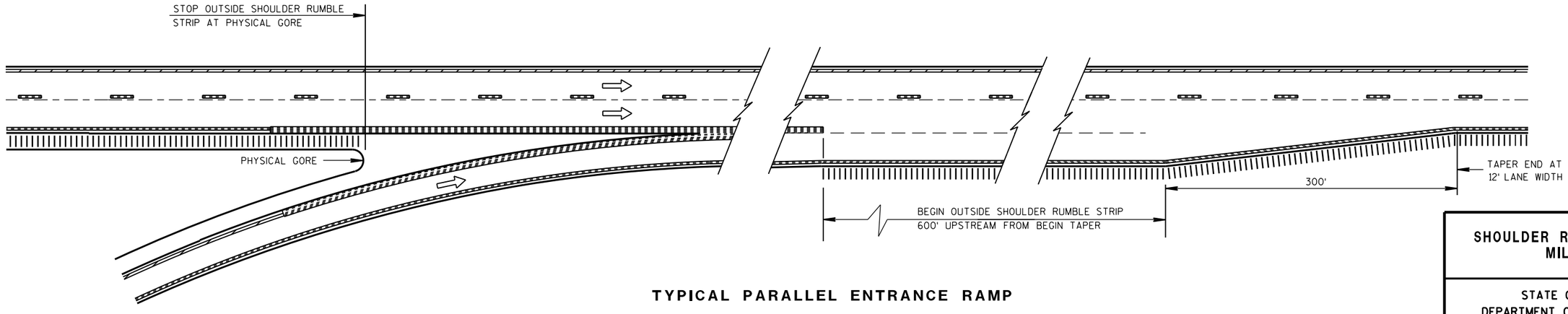
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/17/2012
DATE

/S/ Jerry H. Zoga
ROADWAY STANDARDS ENGINEER

FHWA

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S.D.D. 13 A 5-5b

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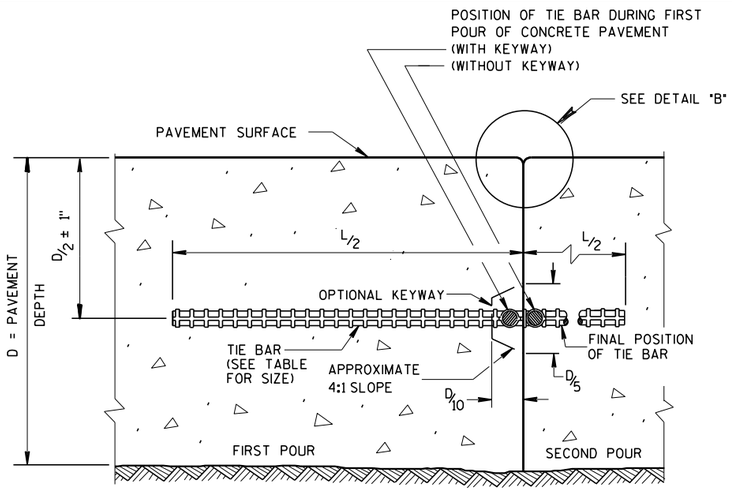
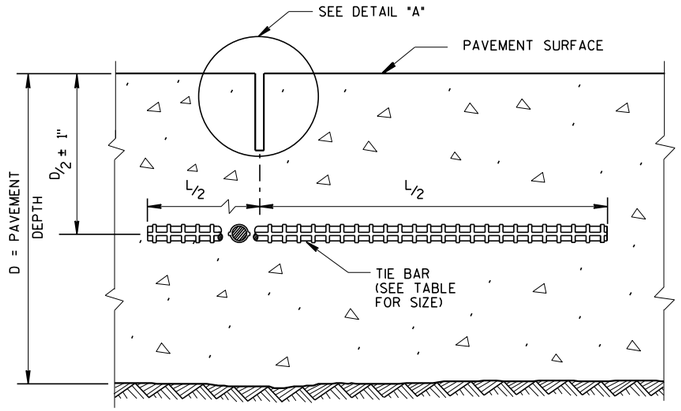
S.D.D. 13 A 5-5b



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 Kerr, P.E.
PAVEMENT SUPE
FHWA

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S.D.D. 13 C 1-19

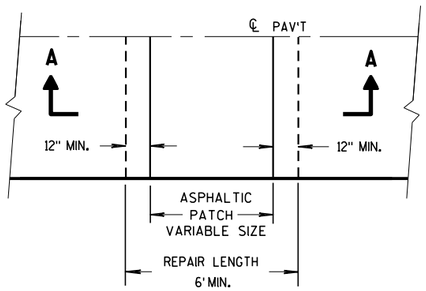
GENERAL NOTES

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

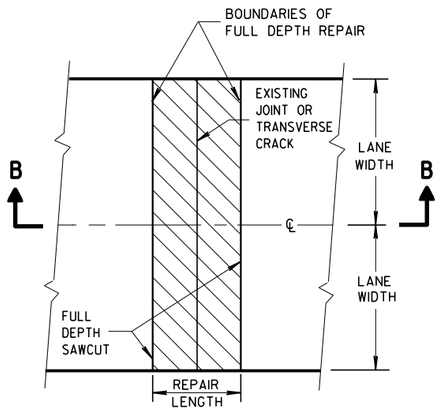
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

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

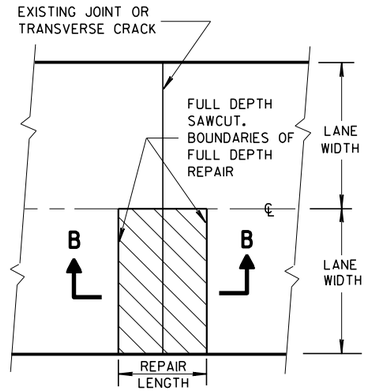
(1) DOWEL BARS MIGHT NOT EXIST.



PLAN VIEW

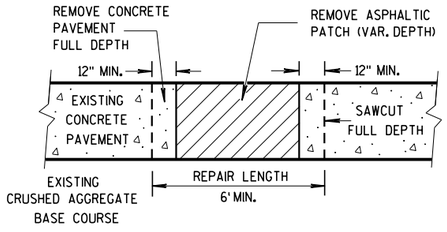


PLAN VIEW
(DOUBLE LANE REPAIR)



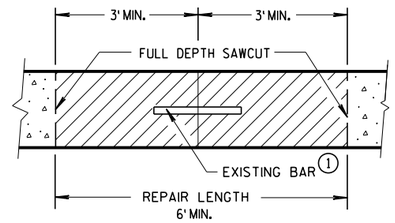
PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL



SECTION A-A

HMA PATCH REMOVAL



SECTION B-B

CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

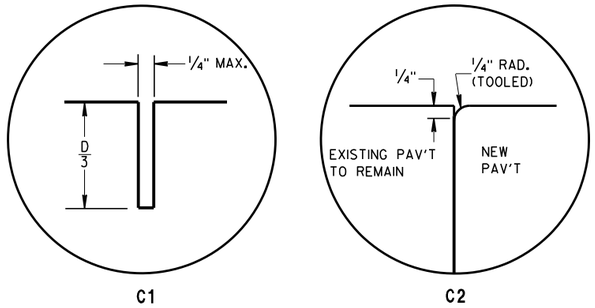
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 13 C 9-15a

6

S.D.D. 13 C 9-15a



C1 C2

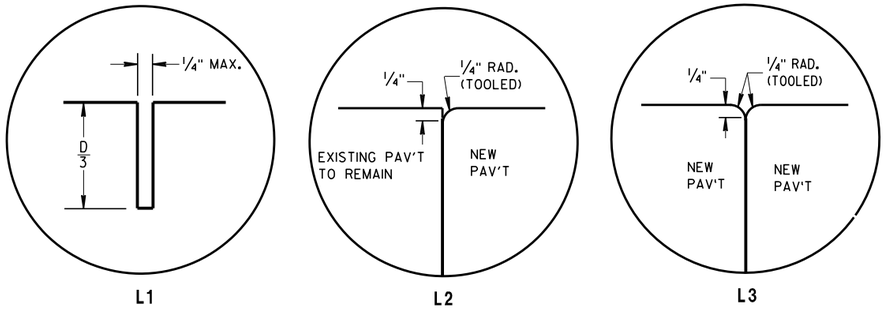
TRANSVERSE JOINTS

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" **

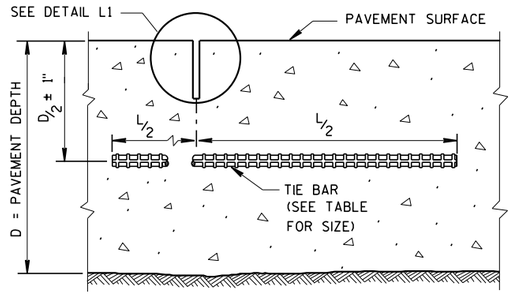
* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

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



L1 L2 L3

LONGITUDINAL JOINTS



SECTION C-C

SAWED LONGITUDINAL JOINT

GENERAL NOTES

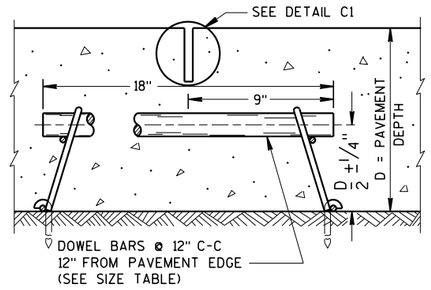
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

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

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

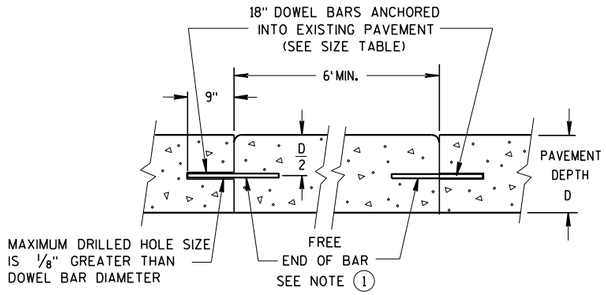
FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

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

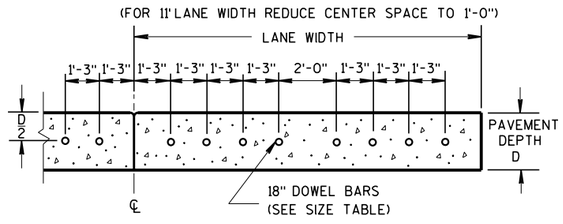


SECTION F-F

CONTRACTION JOINT



SECTION D-D

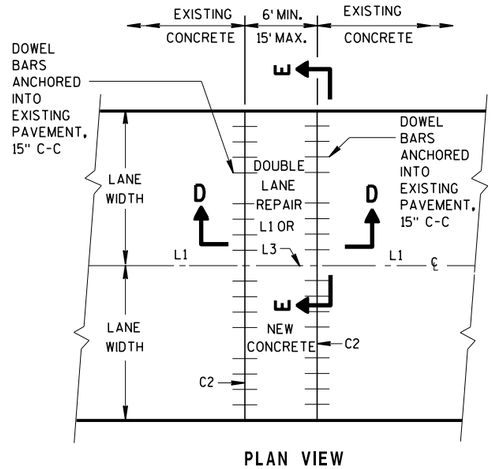


SECTION E-E

DRILLED DOWEL BAR CONSTRUCTION JOINT

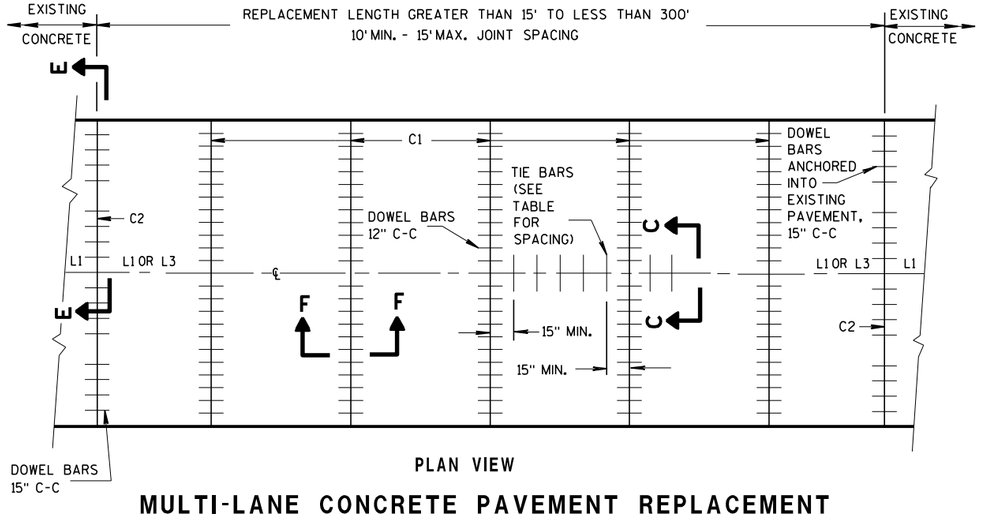
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

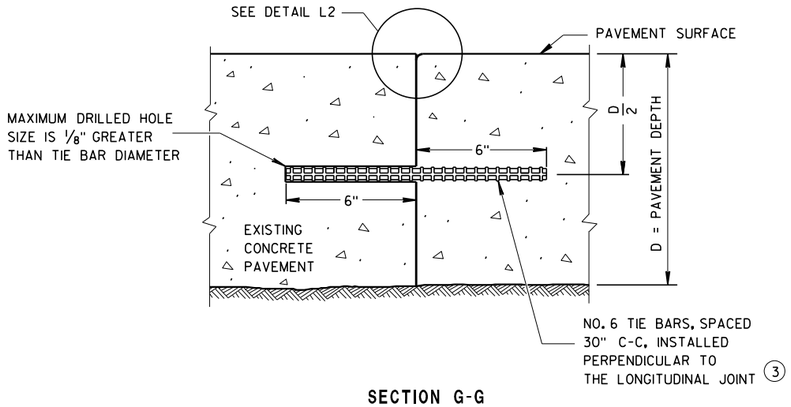
MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 13 C 9-15b



SECTION G-G

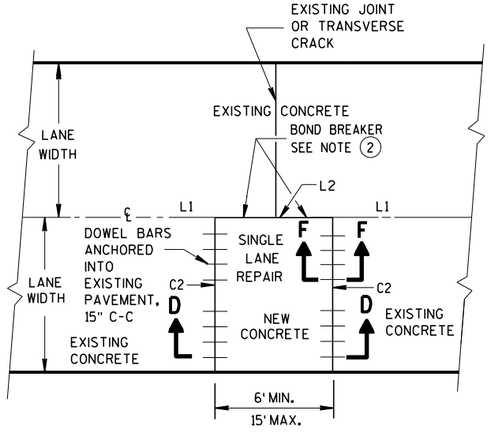
TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

(1) WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.

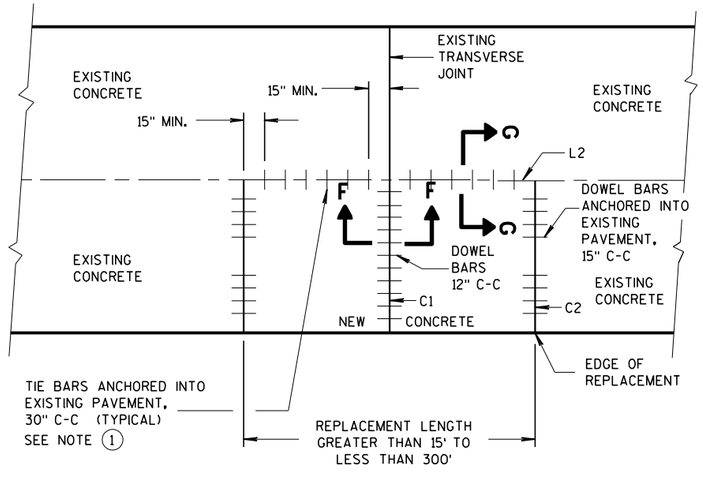
(2) USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.

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



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Peter Ken... — PAVEMENT SUPE...
FHWA

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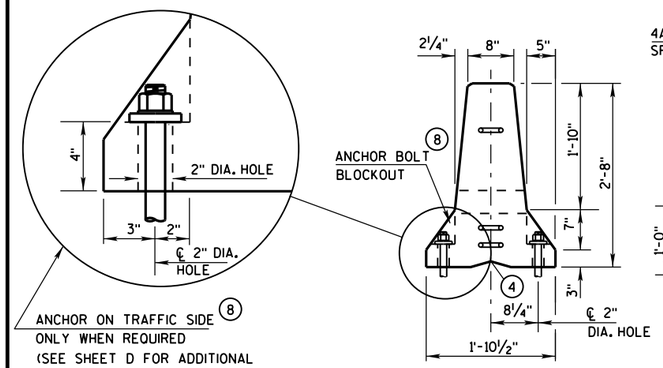
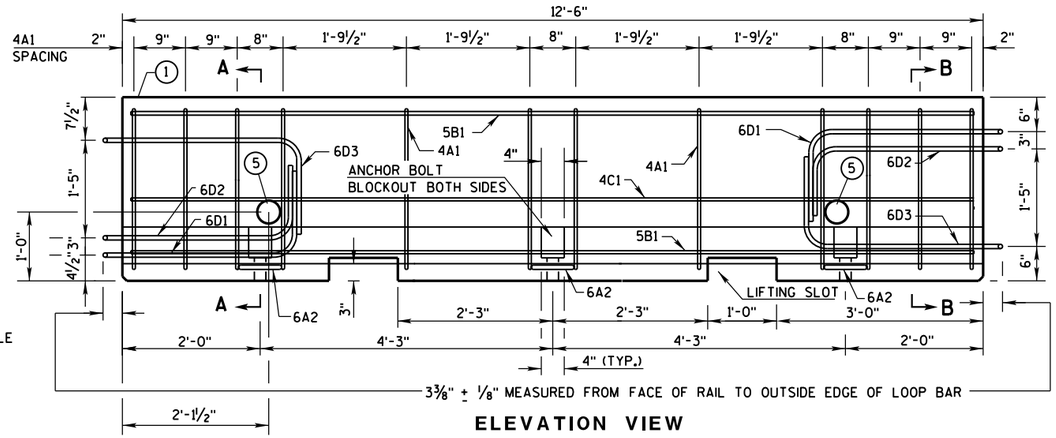
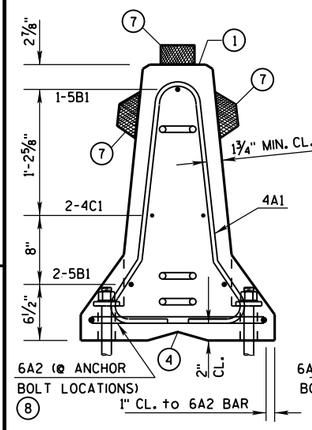
S.D.D. 13 C 9-15c



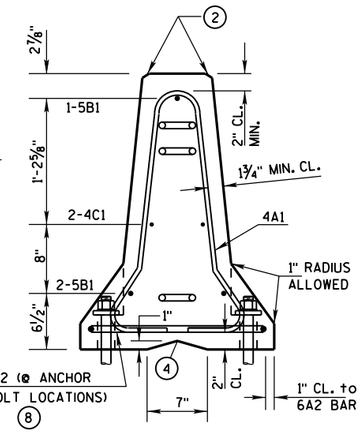
END VIEW



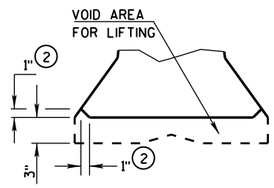
ELEVATION VIEW



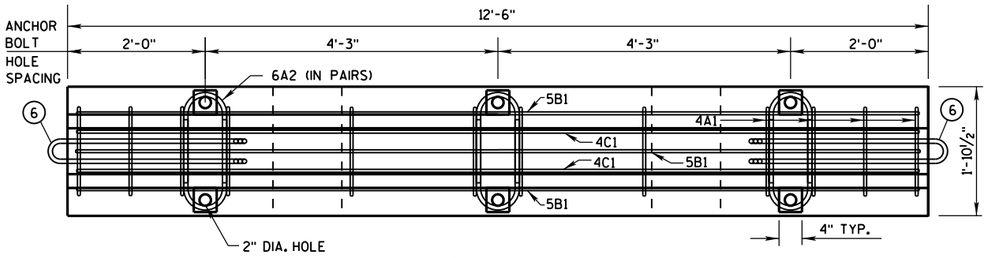
SECTION A-A
(STIRRUP PLACEMENT)



SECTION B-B
(STIRRUP PLACEMENT)



DETAIL "B"
LIFTING SLOT DETAIL



PLAN VIEW

DETAILS OF BARRIER SECTION

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).

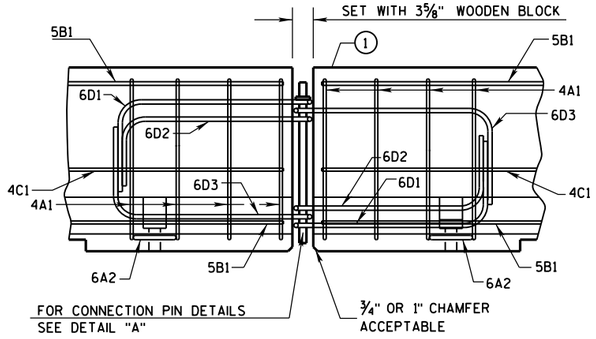
(6) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

(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.

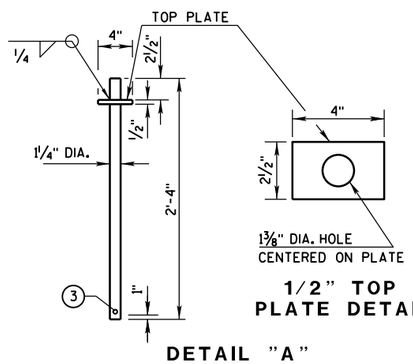
(8) SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.

(9) 1" CHAMFER OPTIONAL.

f'c = 4,000 psi

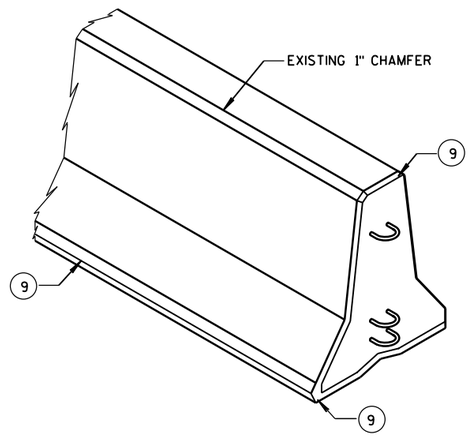


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

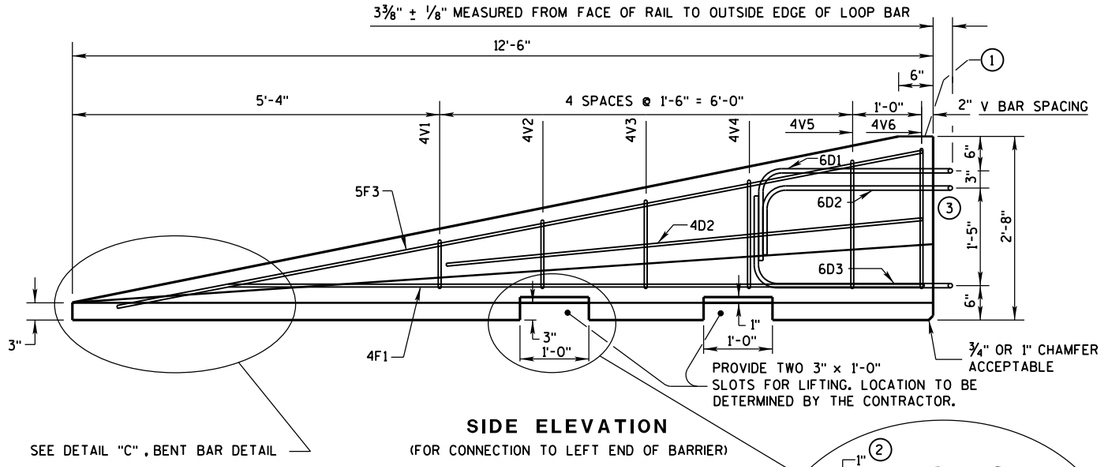
DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



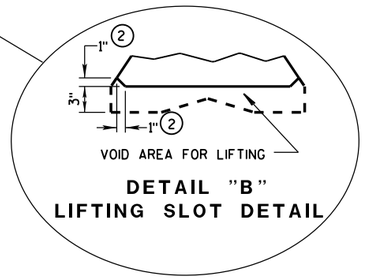
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

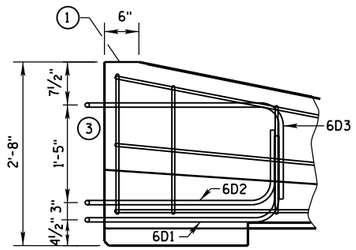
S.D.D. 14 B 7-15a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



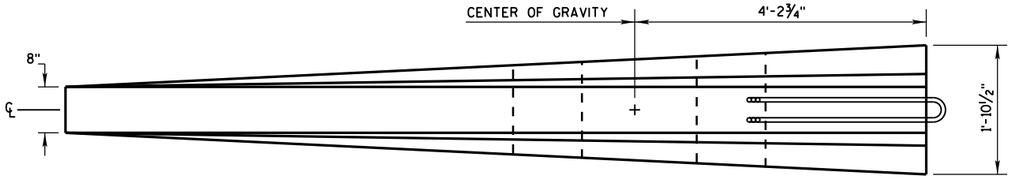
DETAIL "B"
LIFTING SLOT DETAIL



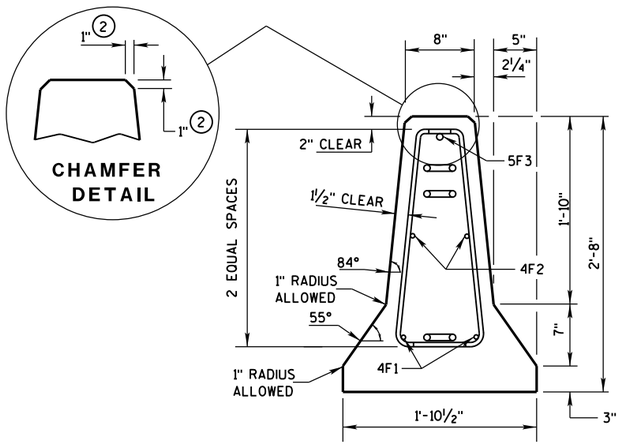
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

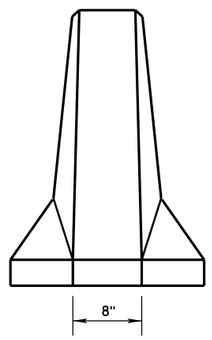
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



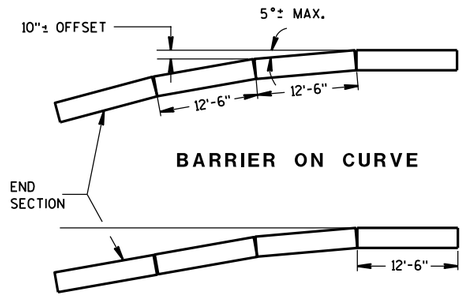
PLAN VIEW



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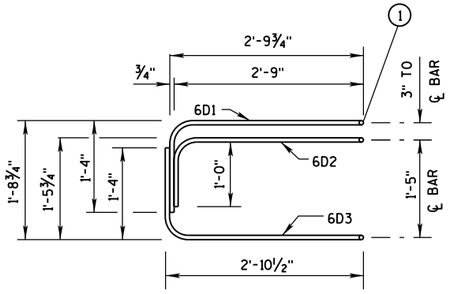
S.D.D. 14 B 7-15b

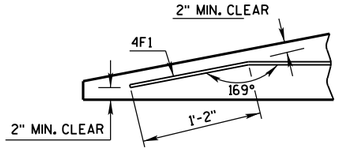
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

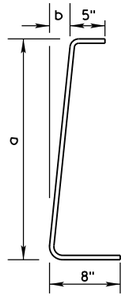
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



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

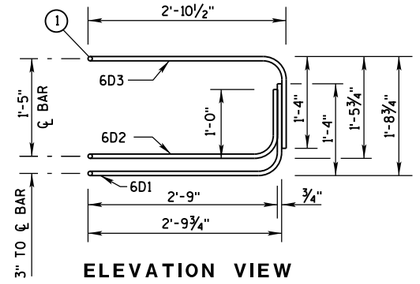
GENERAL NOTES

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

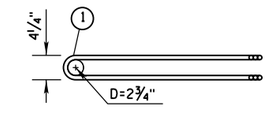
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

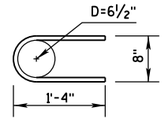
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



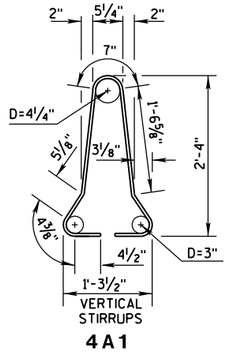
ELEVATION VIEW



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



6A2



4A1

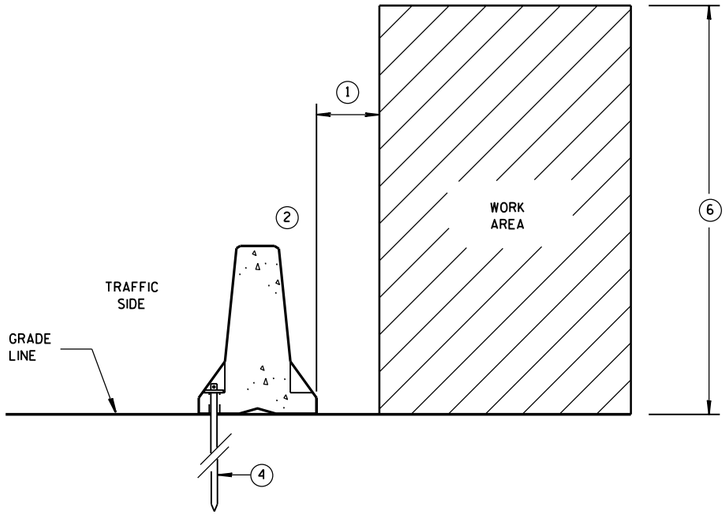
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

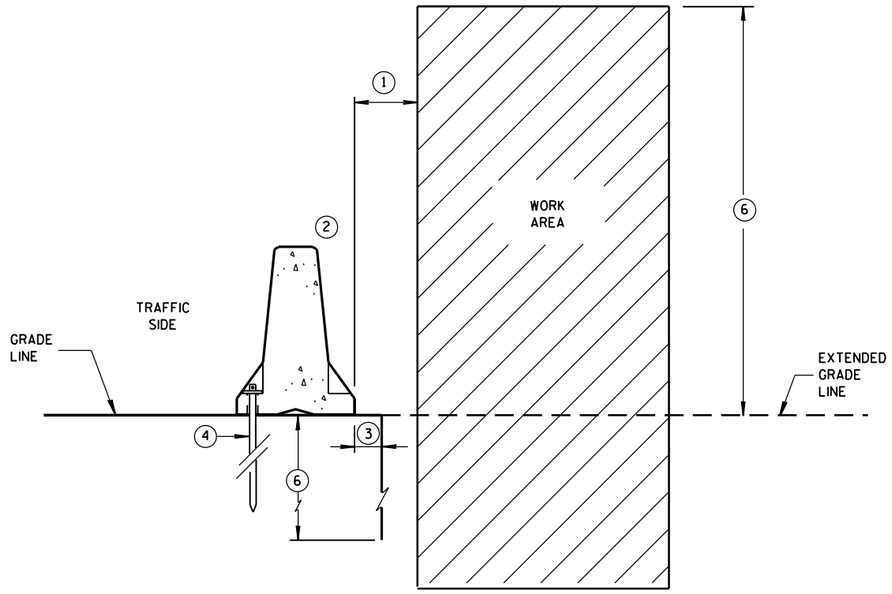
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

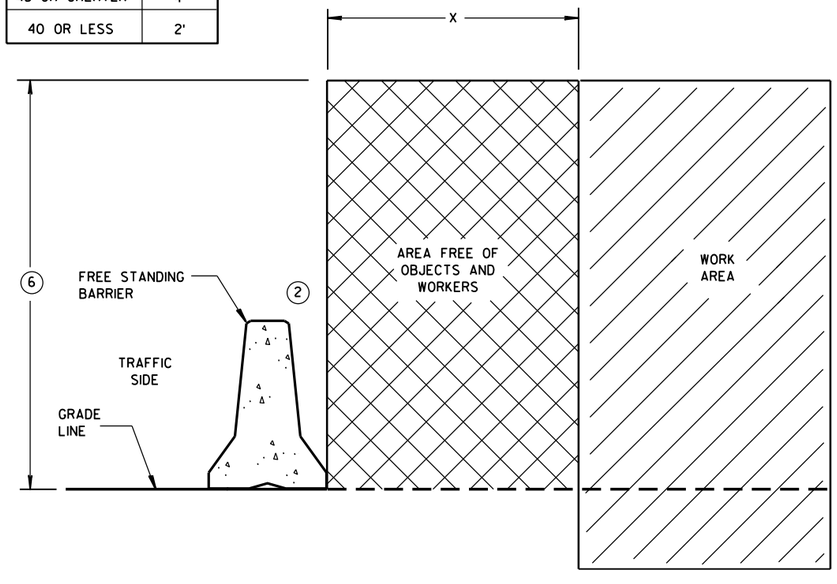


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

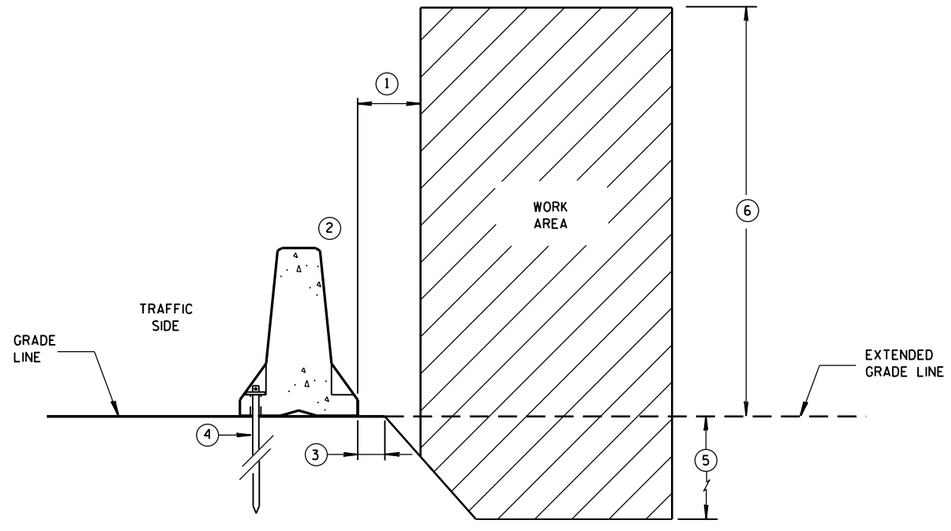
GENERAL NOTES

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"

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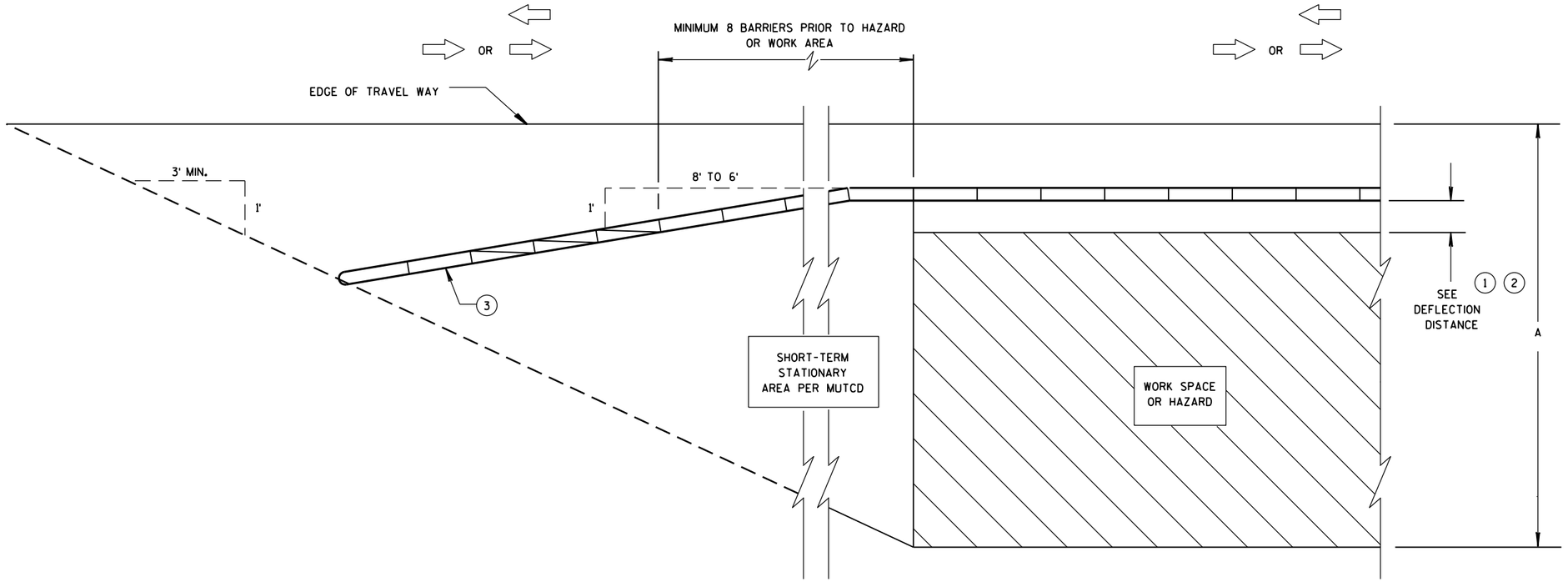
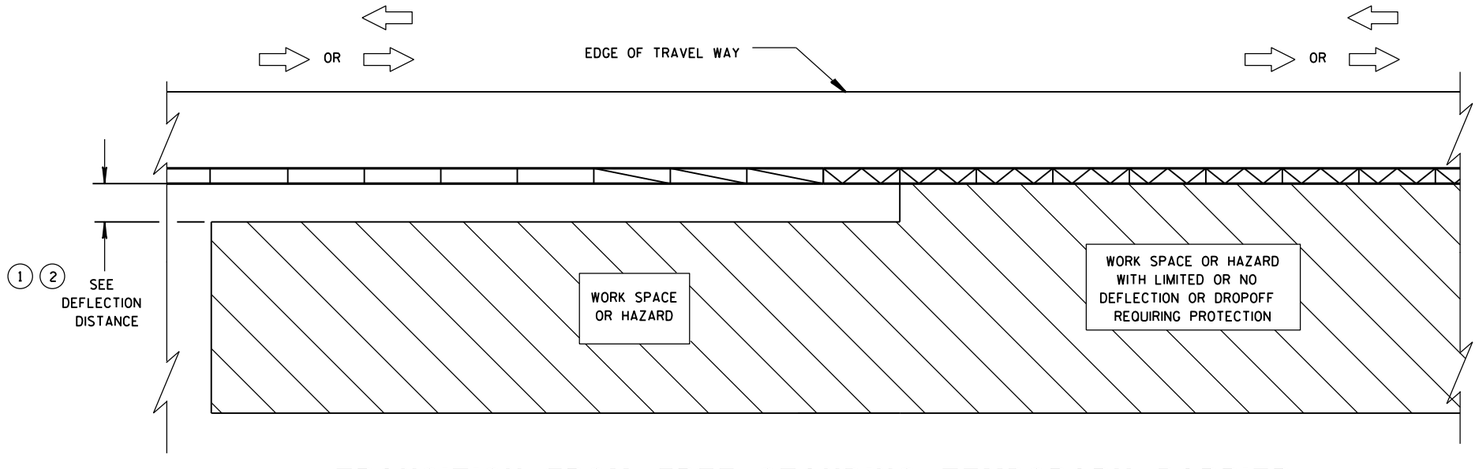


CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



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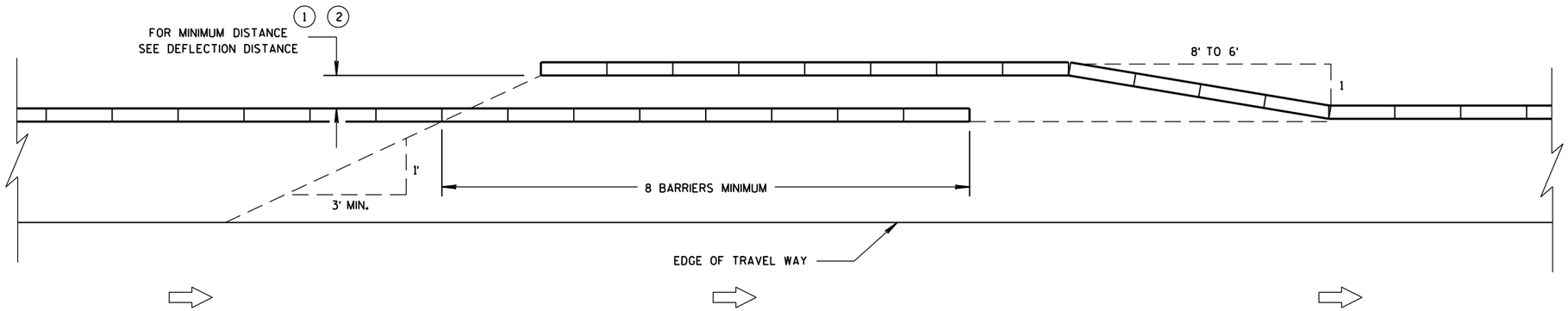
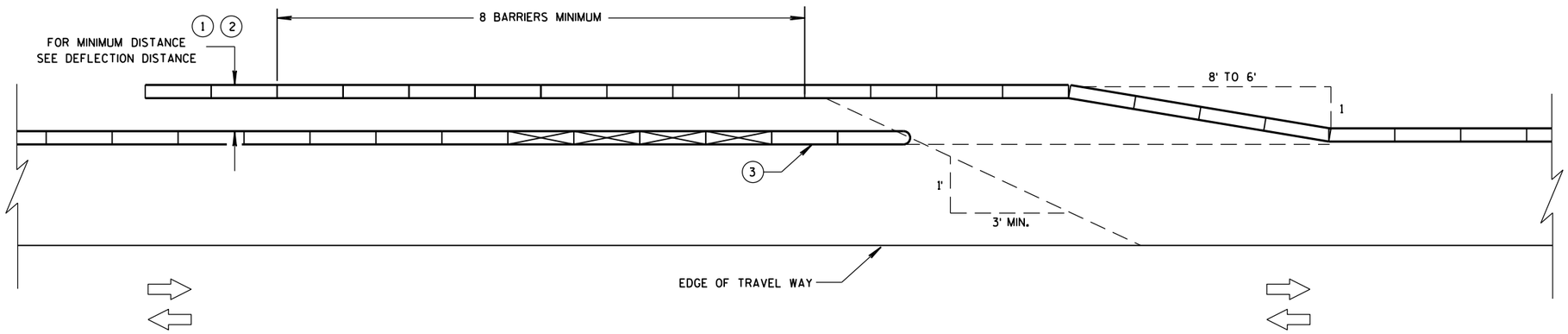
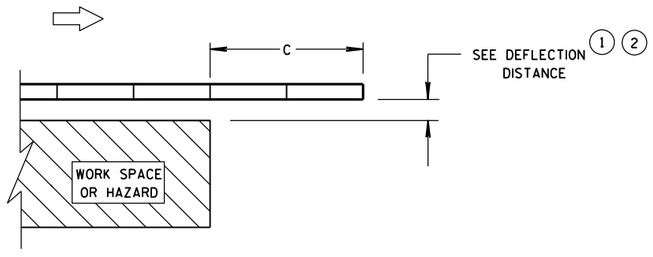
S.D.D. 14 B 8-2b



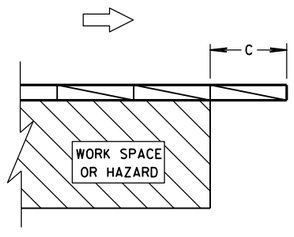
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



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

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

GENERAL NOTES

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

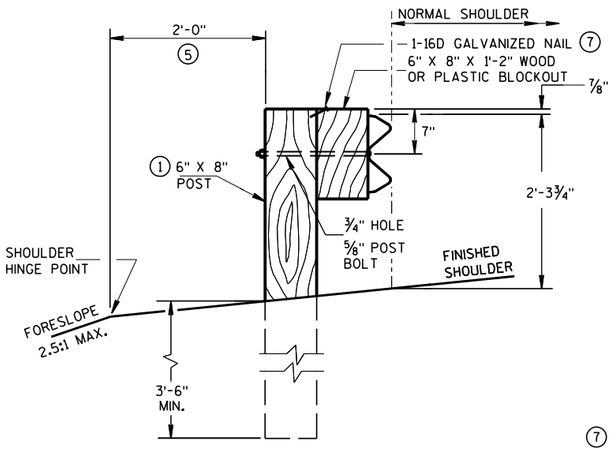
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

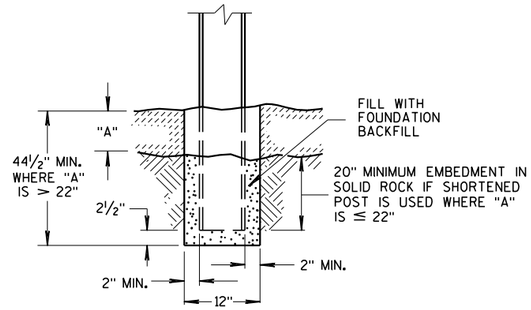
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

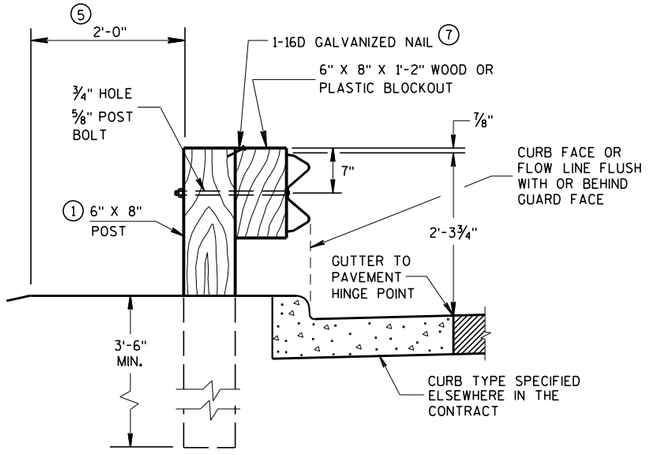
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



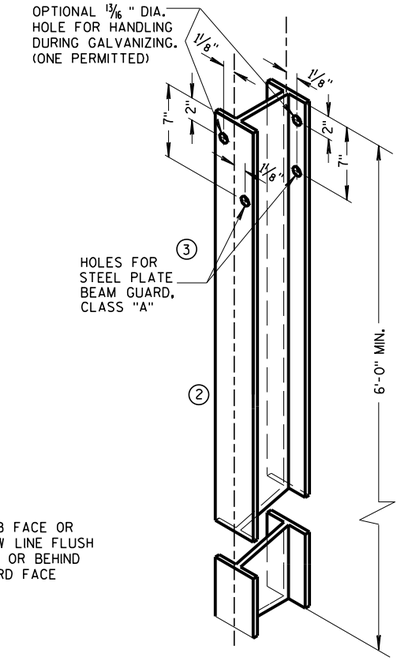
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)

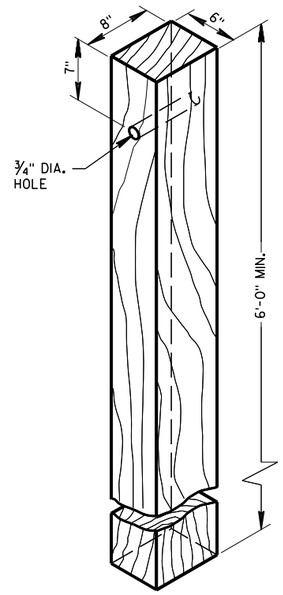


END VIEW
LOCATED ALONG A CURBED ROADWAY

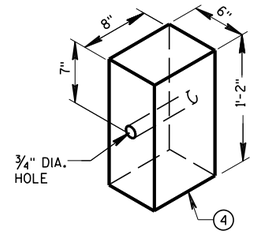


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

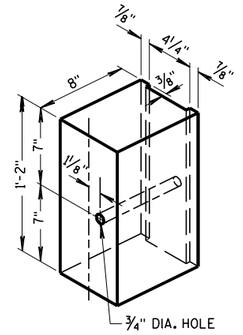
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



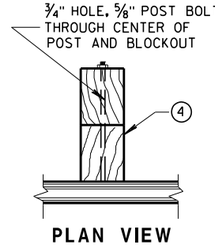
WOOD POST
(6"X8") NOMINAL



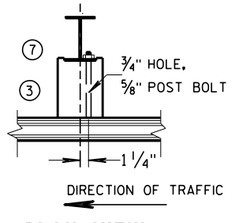
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



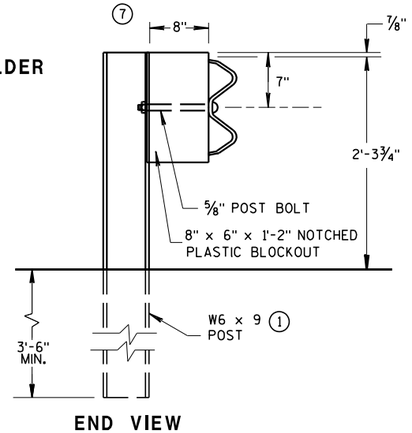
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



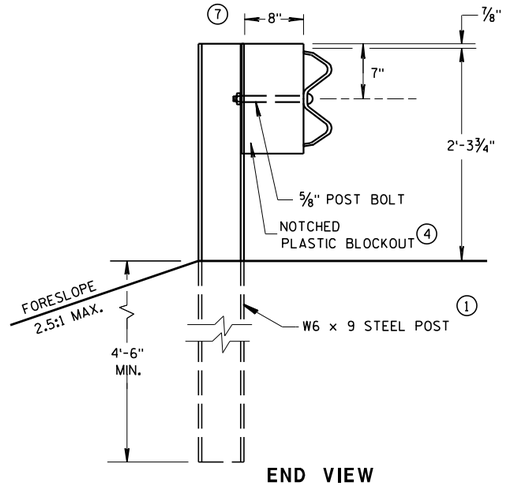
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



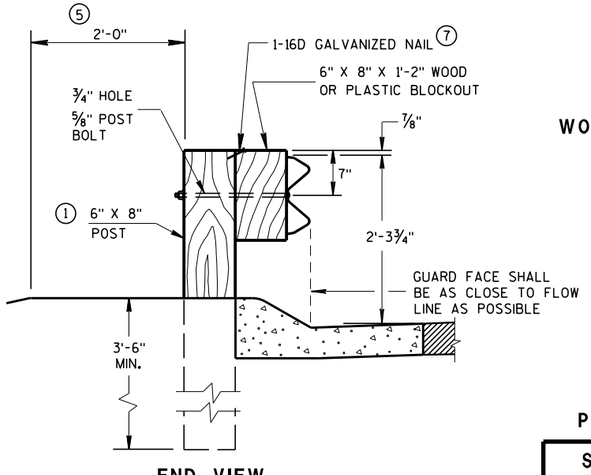
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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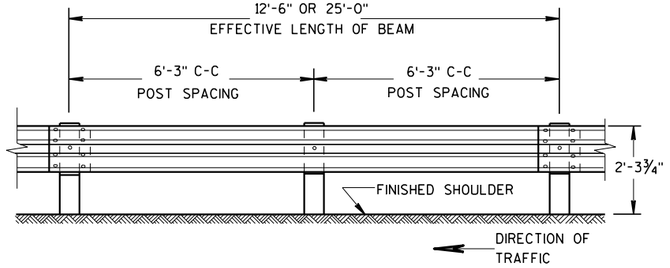
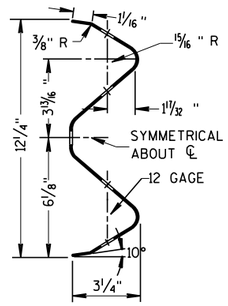
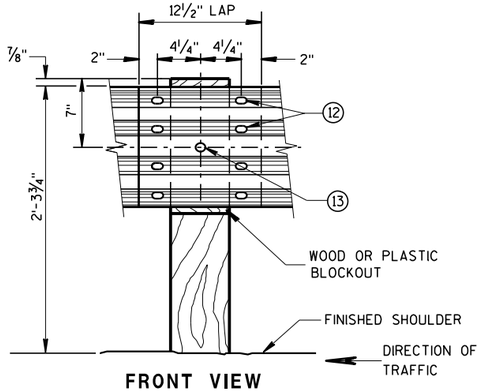


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

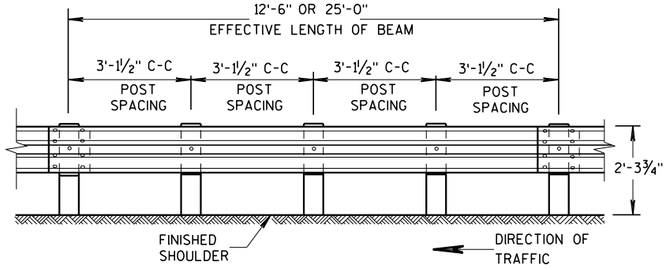
GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.

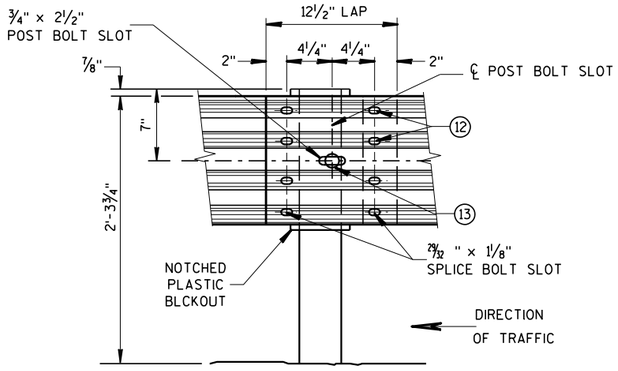
(12) 8 -5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



FRONT VIEW

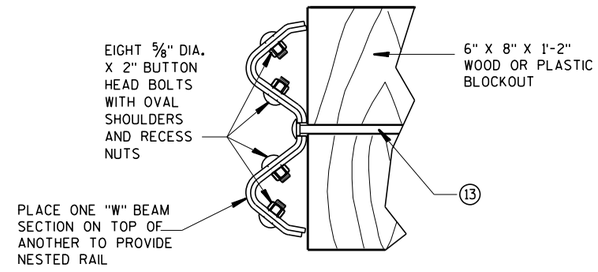
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

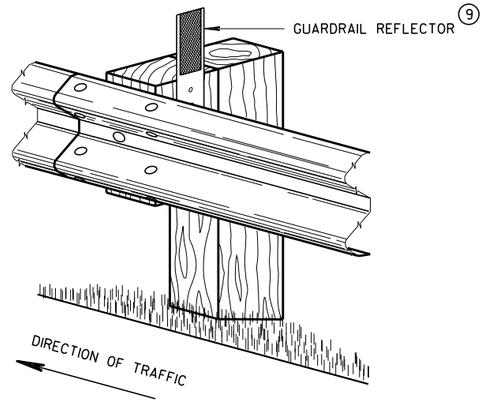
TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD



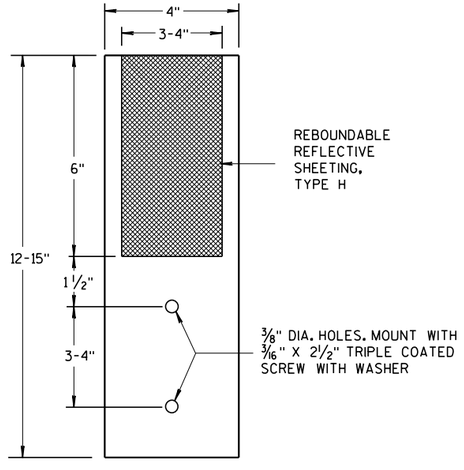
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUADRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



4" X 12" GUARDRAIL REFLECTOR DETAIL AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

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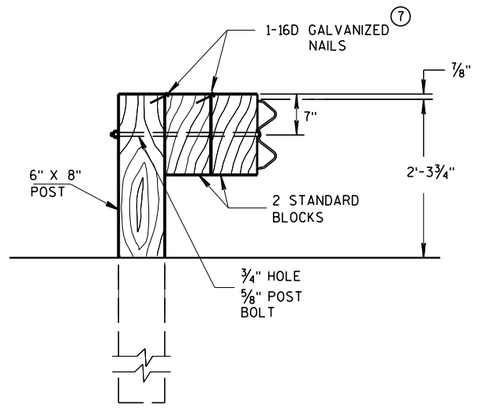
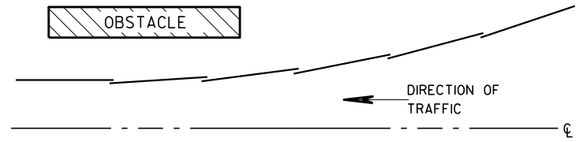


DETAIL FOR DOUBLE BLOCKS

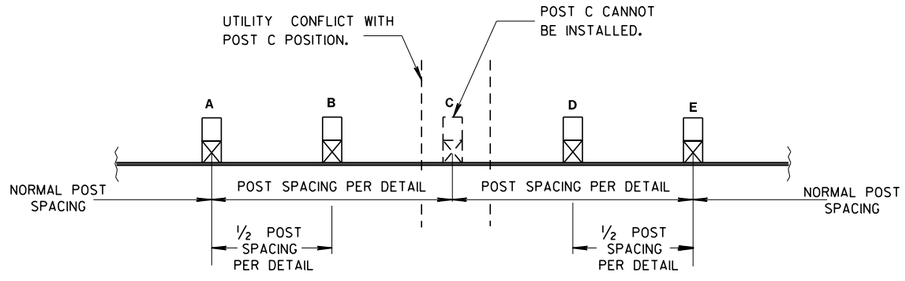
THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED



PLAN VIEW
BEAM LAPPING DETAIL

DETAIL FOR TRIPLE BLOCKS

TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

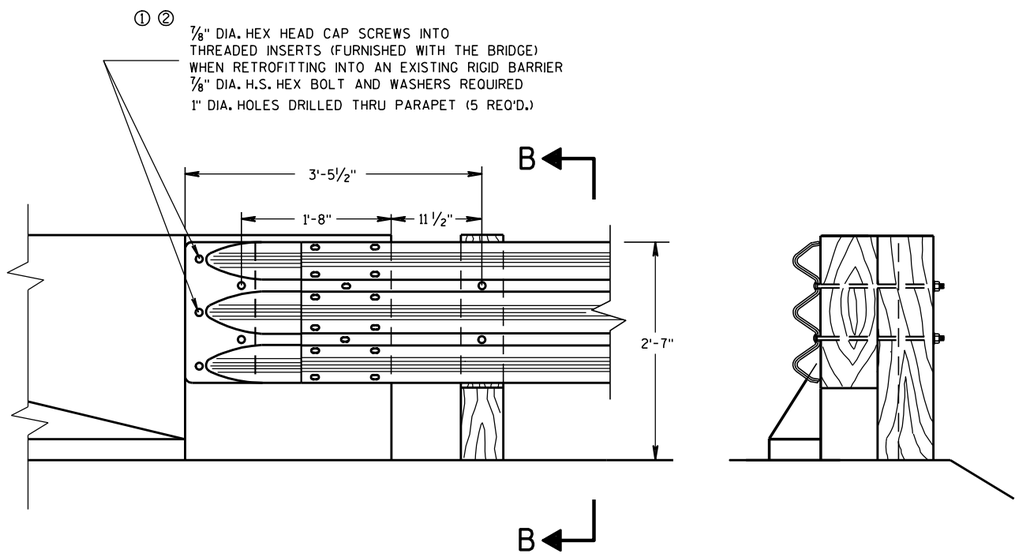
NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

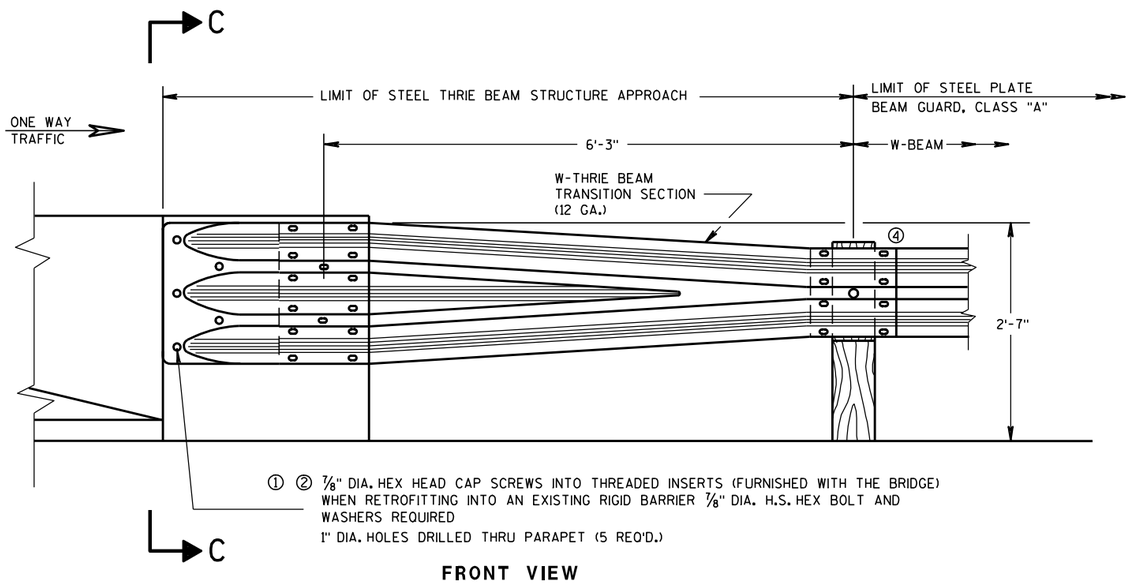
APPROVED
June 2017
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
FHWA



FRONT VIEW

SECTION B-B

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.)

FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

GENERAL NOTES

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

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

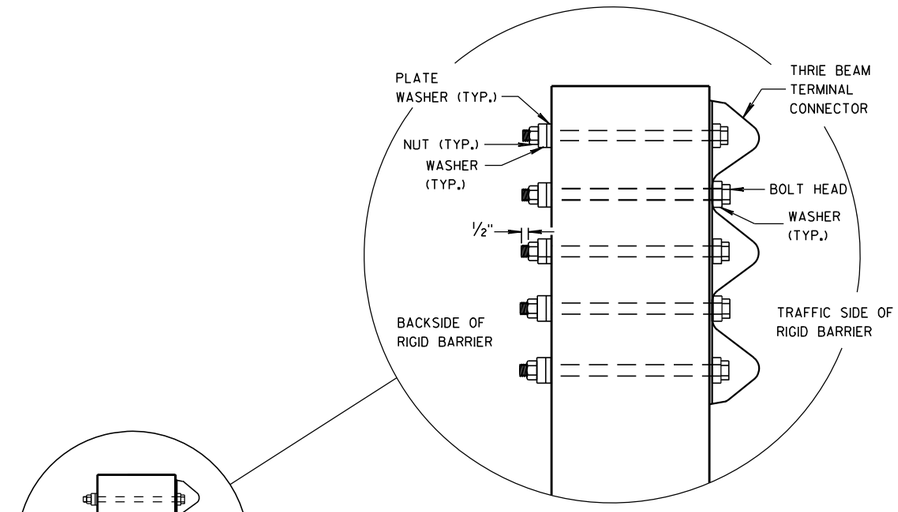
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

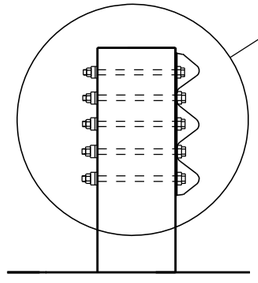
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ 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".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.





SECTION C-C

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

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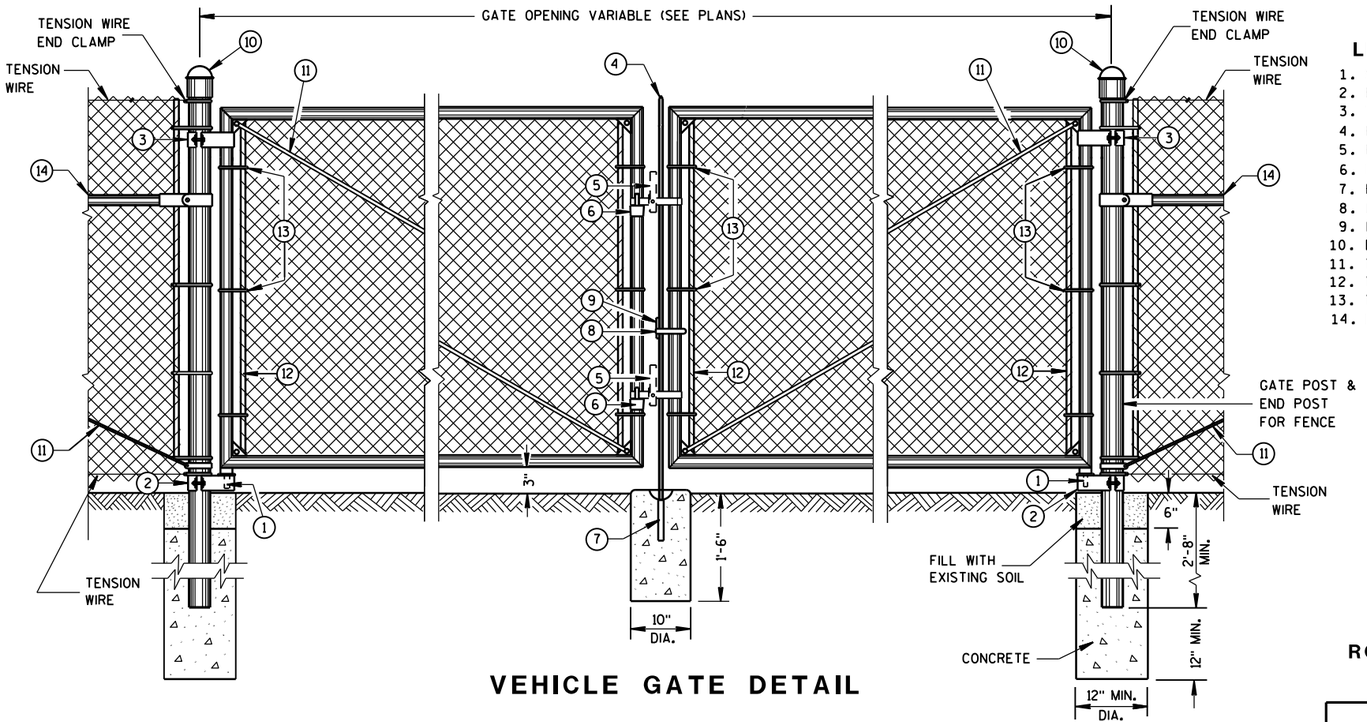
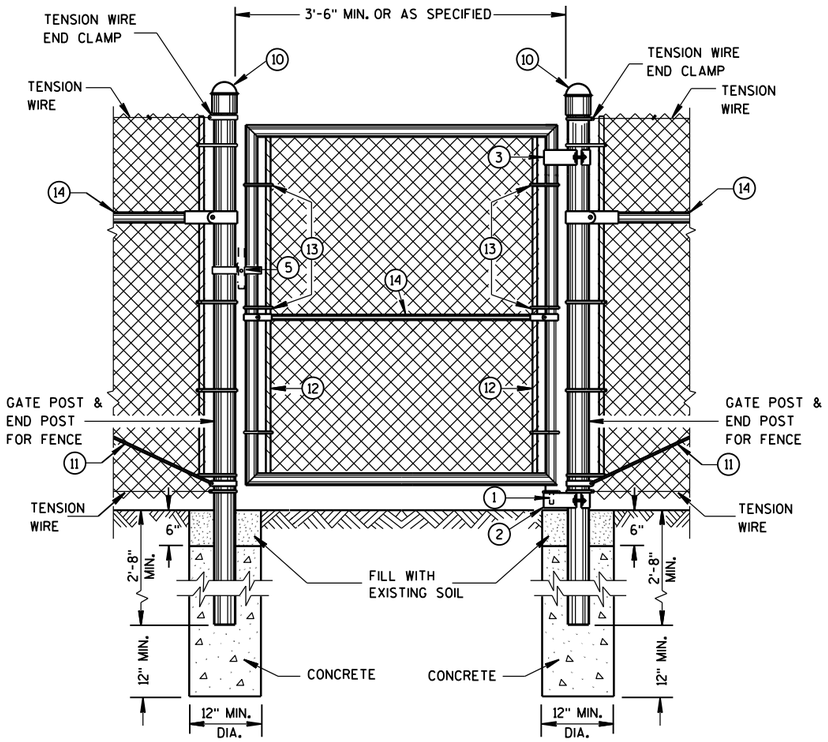
S.D.D. 14 B 20-11b



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH *
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

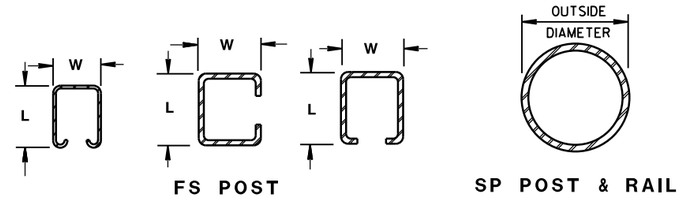
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

USE TYPE 2, CLASS 3, MARCELLED/CRIMPED, TENSION WIRE PER ASTM A 817.



CROSS SECTIONS OF POSTS AND RAILS

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EQUAL TO 8 FT.	FS3

BRACE RAIL TYPES

USE		TYPE
BRACE RAIL		SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

ROLLED-FORMED STEEL FENCE POST (2.0 OZ./SQ. FT. COATING)

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

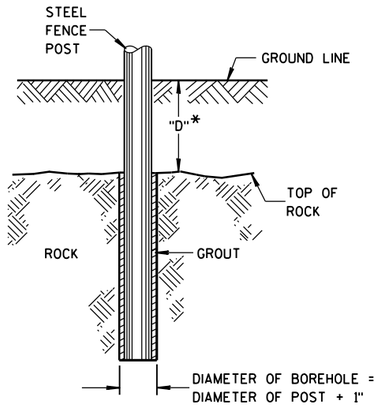
ROUND STEEL FENCE POST (1.8 OZ./SQ. FT. COATING)

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

FENCE CHAIN LINK

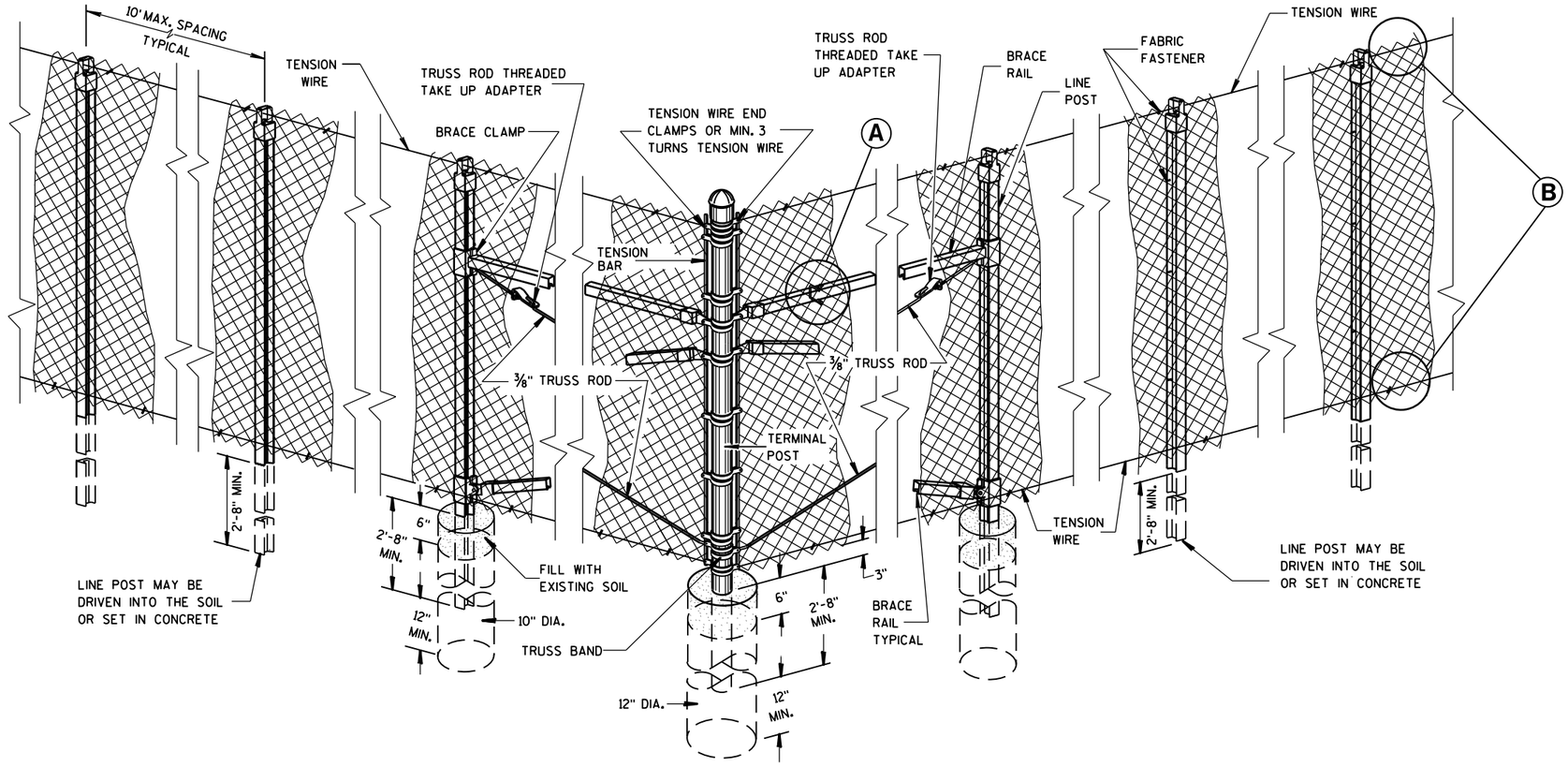
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 15 B 3-15a

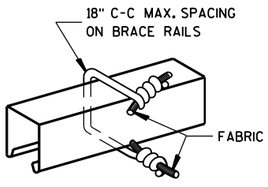


*IF "D" IS LESS THAN 2'-6", DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST



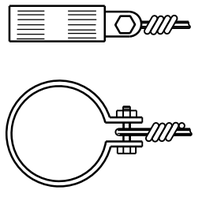
END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



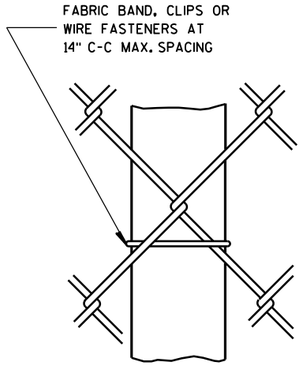
BRACE RAIL

FABRIC FASTENER

Ⓐ



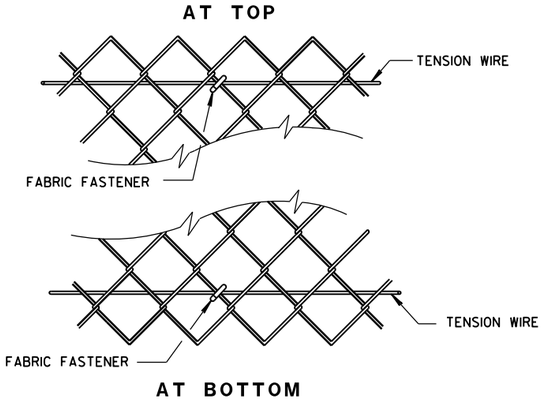
TENSION WIRE END CLAMP



LINE POST

FABRIC FASTENER

AT TOP



AT BOTTOM

SELVAGES

Ⓑ

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

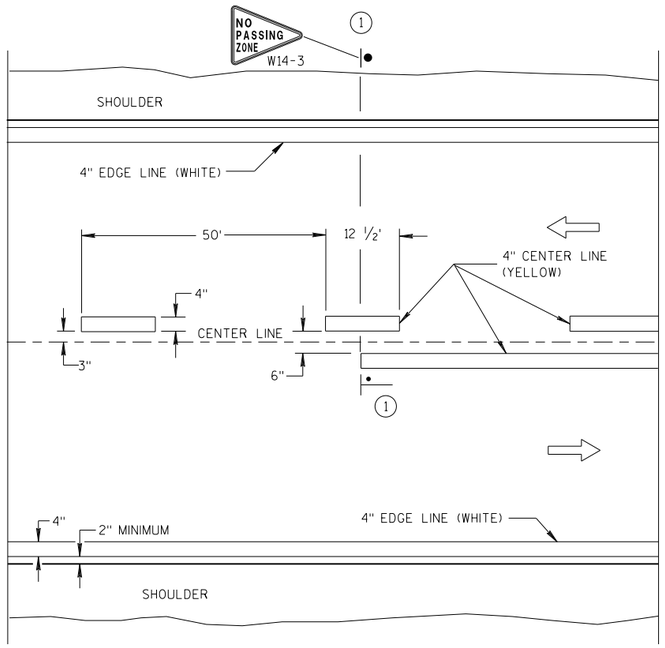
APPROVED
FEB. 2015 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

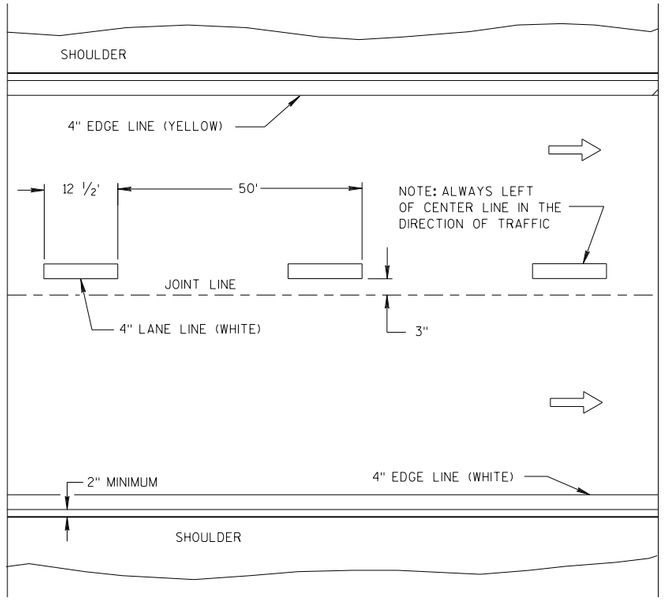
S.D.D. 15 B 3-15b

6

S.D.D. 15 B 3-15b



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

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

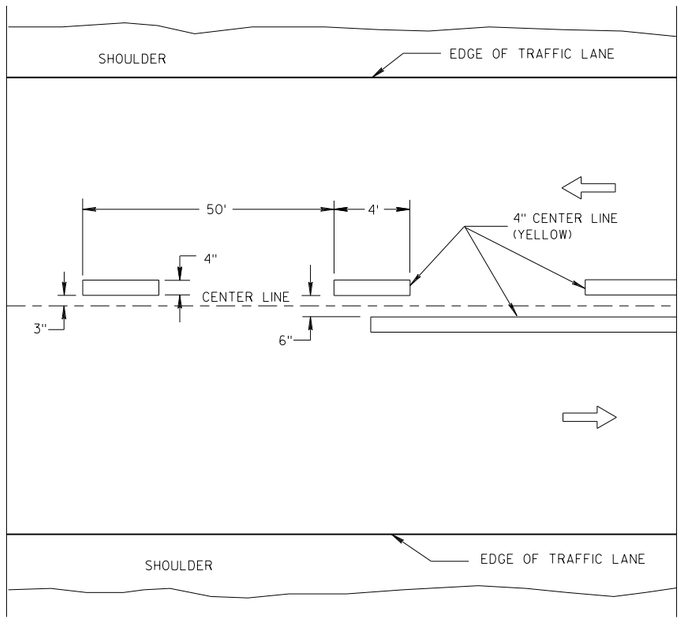
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

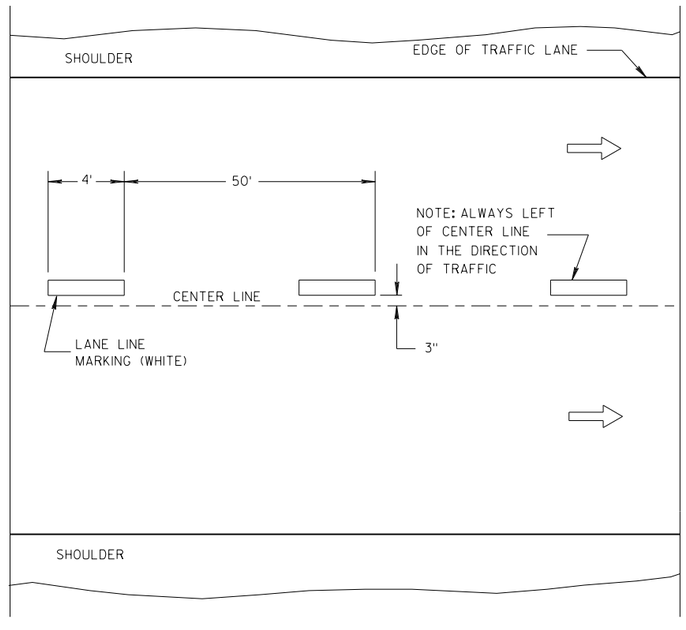
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 DATE

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

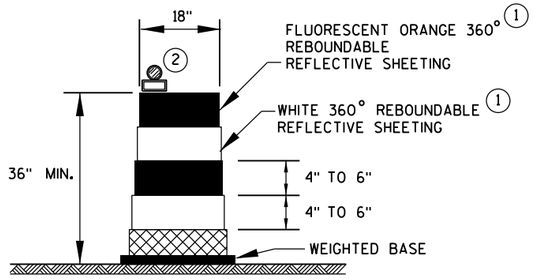
FHWA

6

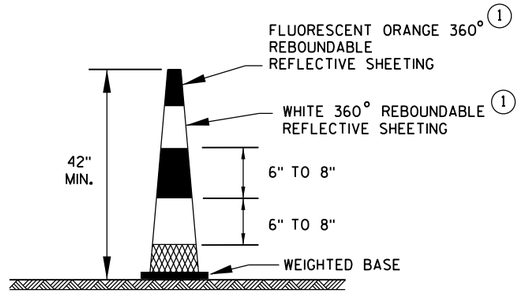
S.D.D. 15 C 8-19a

6

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



DRUM

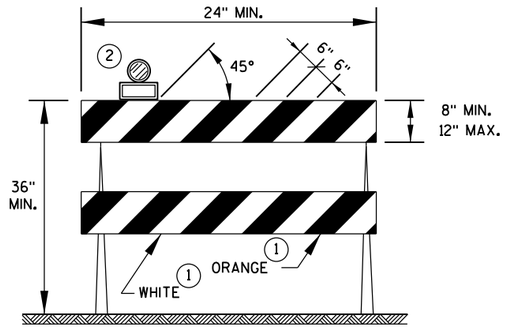


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

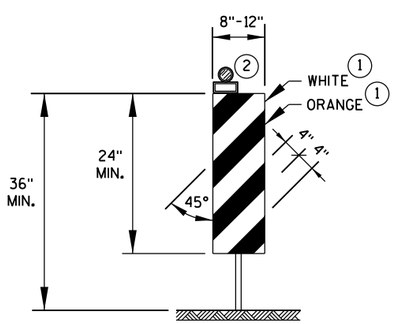
GENERAL NOTES

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.



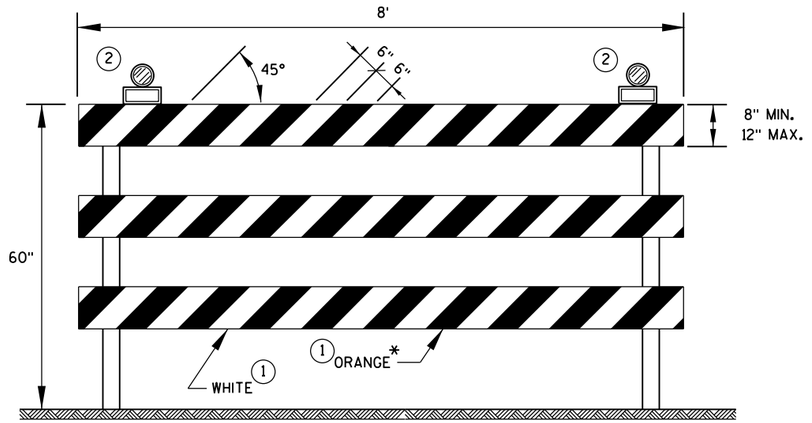
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017 — DATE

/S/ Andrew Heidtke — WORK ZONE ENG

FHWA

6

S.D.D. 15 C 11-7b

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- REMOVING PAVEMENT MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK AREA

L, TAPER LENGTH (MPH)							
SPEED (MPH)	W, LATERAL OFFSET (FT)						
	10	11	12	13	14	15	16
45	450	495	540	585	630	675	720
50	500	550	600	650	700	750	800
55	550	605	660	715	770	825	880
60	600	660	720	780	840	900	960
65	650	715	780	845	910	975	1040
70	700	770	840	910	980	1050	1120

XX MILES AHEAD — W057-52 48"x36"

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1 FOOT LESS THAN AVAILABLE WIDTH (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET).

OR

LOCATED 2600 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.

OR

R2-1 48"x60" (BLACK AND WHITE)

LOCATED 500 FEET BEYOND W20-5G SIGN.

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.

* INCLUDE RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.

GENERAL NOTES

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

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.

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.

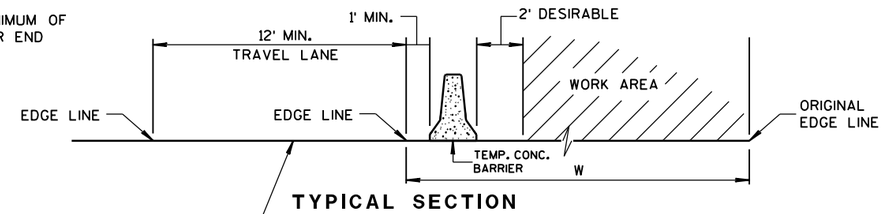
(1) CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

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

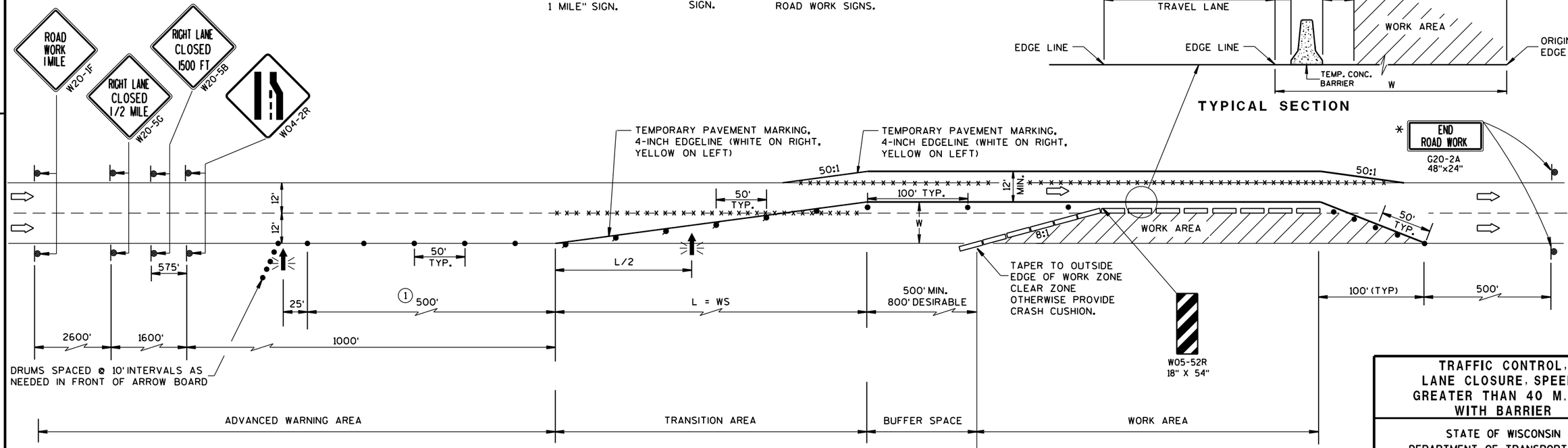
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

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



TYPICAL SECTION



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZOI SAFETY ENGIN IC
FHWA

6

S.D.D. 15 D 3-4

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

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 DESIREABLE) DISTANCE TO EXISTING SIGNS.

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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

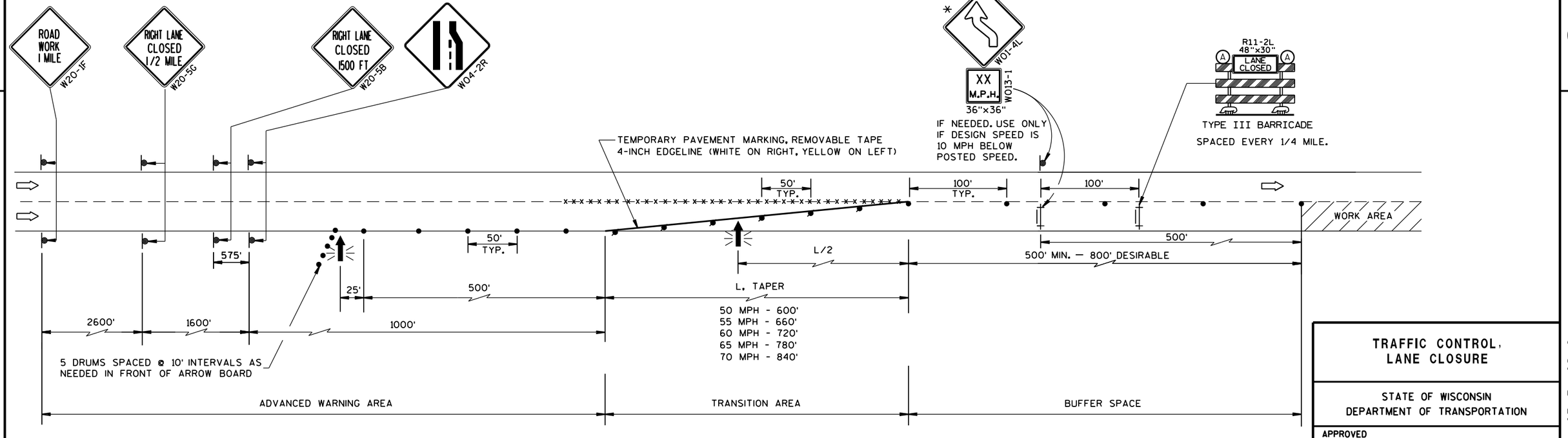
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

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

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

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2016 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI — IC
FHWA

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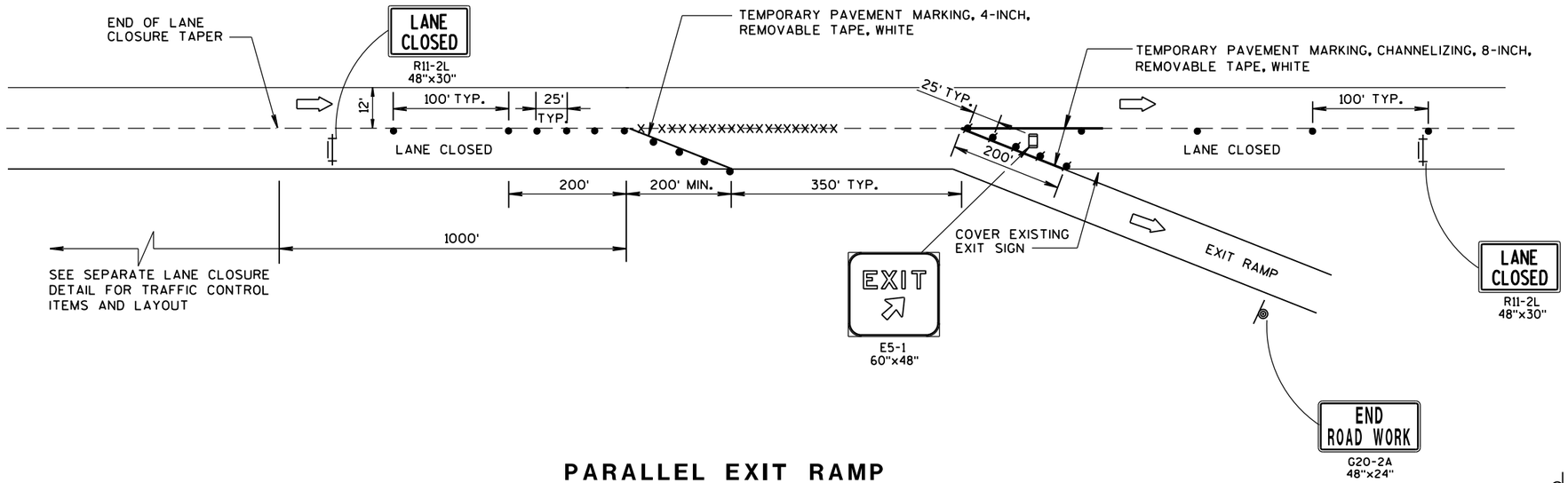
S.D.D. 15 D 12-6a



PARALLEL EXIT RAMP

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

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

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE WITH ATTACHED SIGN
- FLAGS, 16" x 16" MIN., (ORANGE)
- DIRECTION OF TRAFFIC

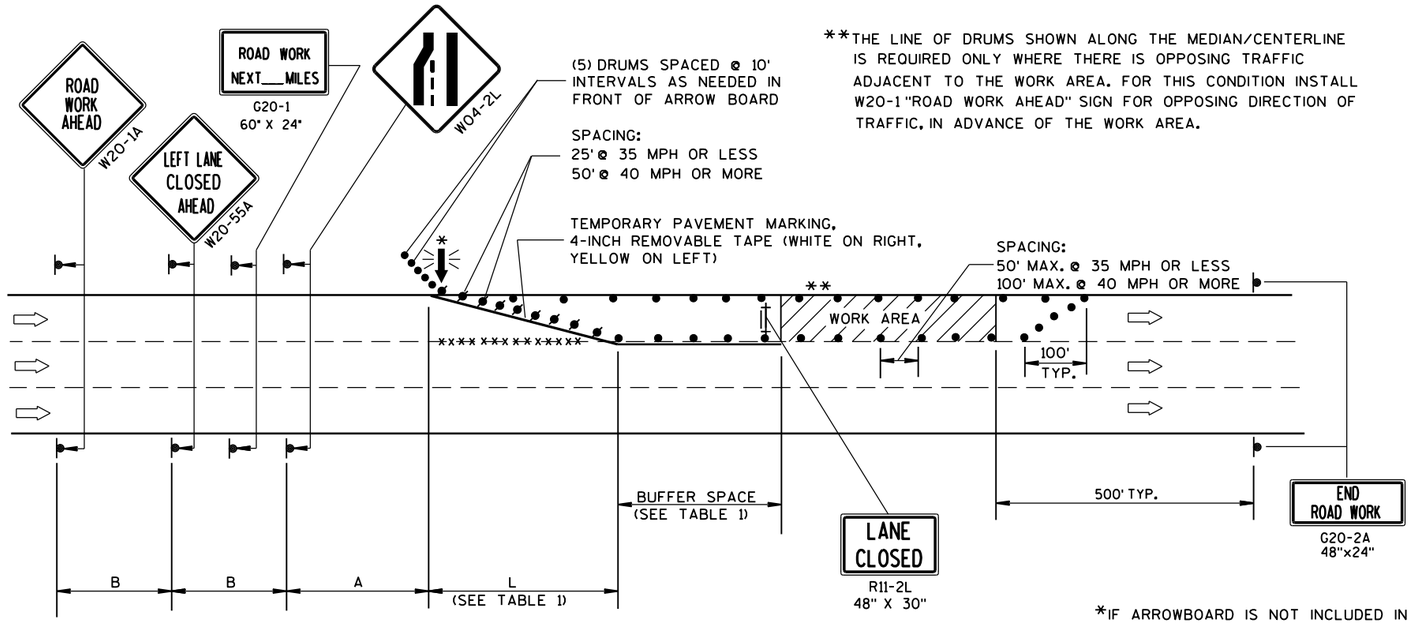
TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017 — DATE
/S/ Andrew Heidtke — WORK ZONE ENG
FHWA

6

S.D.D. 15 D 15-4e



**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF TRAFFIC, IN ADVANCE OF THE WORK AREA.

B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.

W01-6
48"x24"

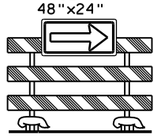


TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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 SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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.

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

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W20-1A, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA 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.

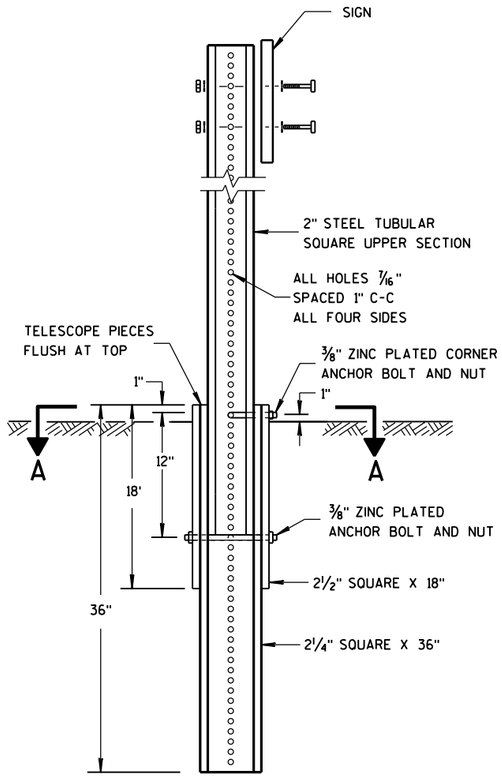
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

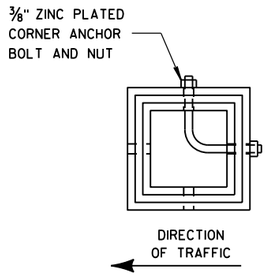
APPROVED
June 2016 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

6

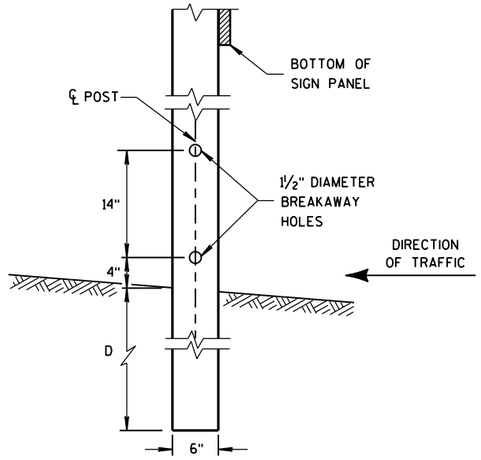
S.D.D. 15 D 20-4



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



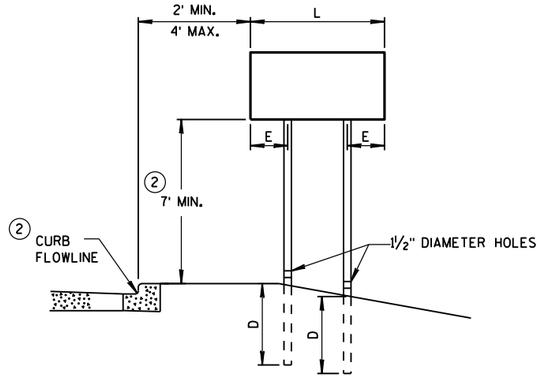
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

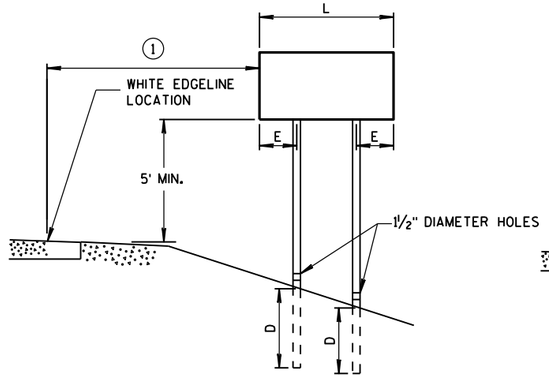
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

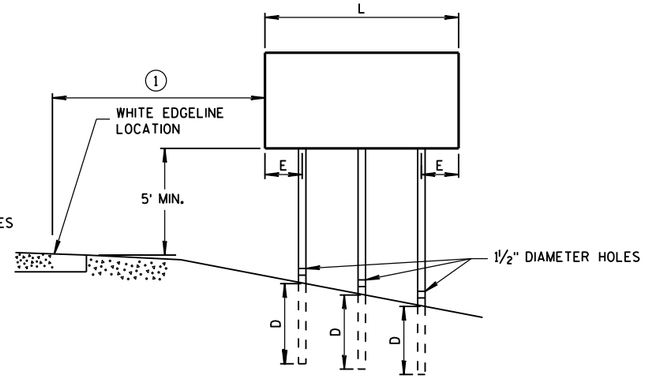
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

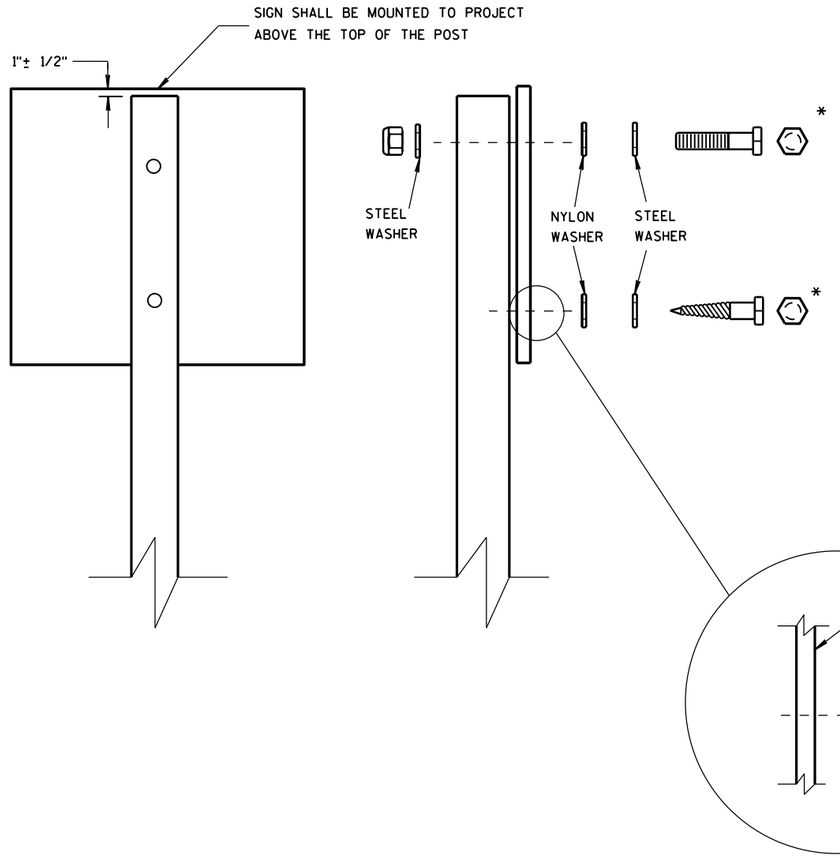
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



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

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

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

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

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

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

LAG SCREWS - 3/8" X 3"

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

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

6

6

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

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

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heldtke
WORK ZONE ENG

FHWA

LEGEND

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

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 DESIREABLE) DISTANCE TO EXISTING SIGNS.

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

ALL SIGNS ARE 48"×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 AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

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

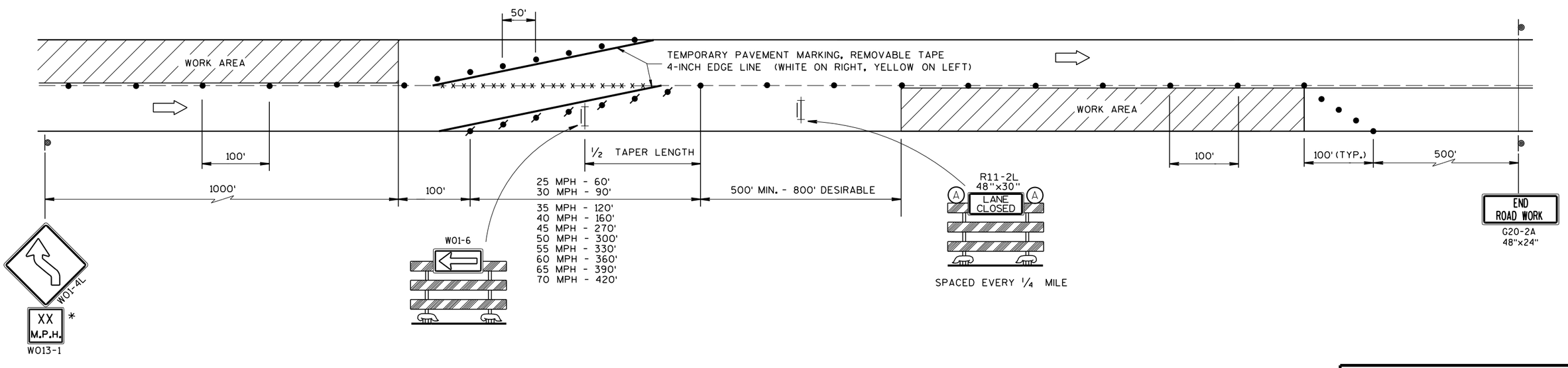
FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

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

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



* USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED

LANE SHIFT MULTI-LANE DIVIDED OR ONE WAY ROAD

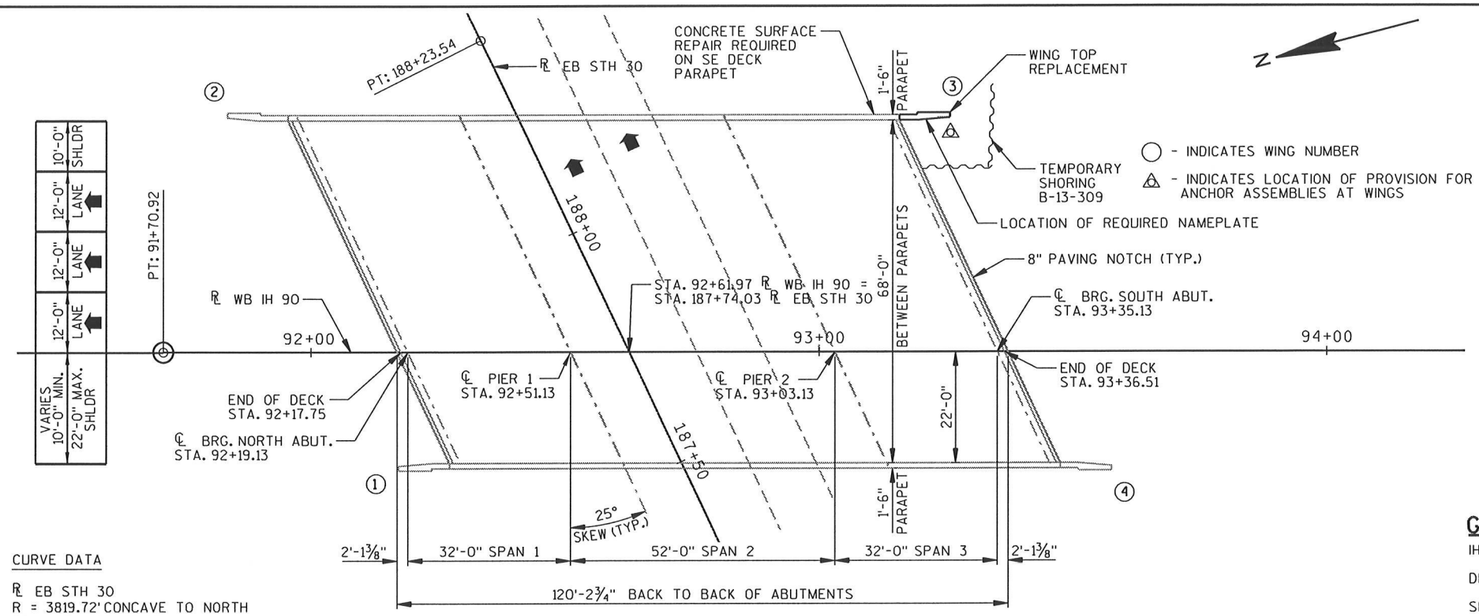
TRAFFIC CONTROL, LANE SHIFT, MULTI-LANE DIVIDED OR ONE WAY ROAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Andrew I — WORK ZONE E
FHWA

6

S.D.D. 15 D 40-1

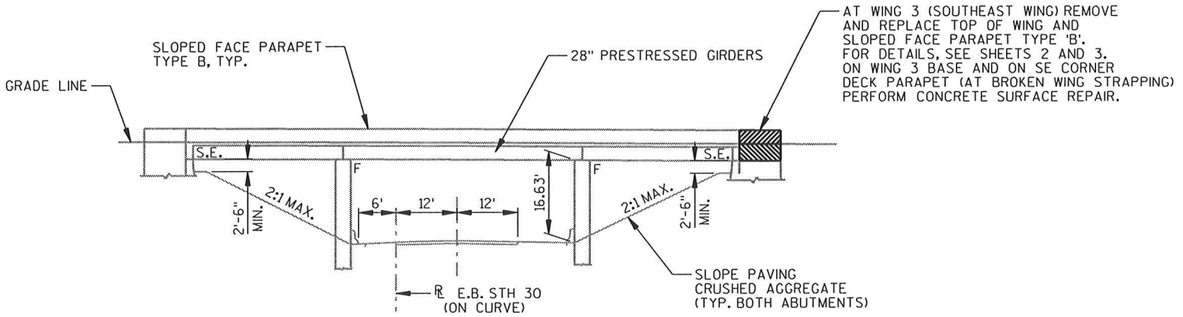


CURVE DATA

℄ EB STH 30
R = 3819.72' CONCAVE TO NORTH
PC = STA. 162+47.66
PT = STA. 188+23.54

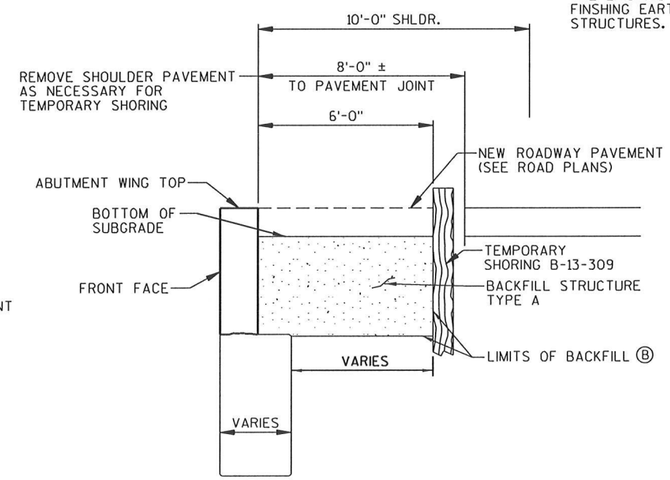
PLAN

(REHAB - WING REPAIRS ON EXISTING THREE SPAN 28" PRESTRESSED CONCRETE GIRDER BRIDGE)



ELEVATION

(LOOKING EAST)



STRUCTURE BACKFILL DETAIL

ESTIMATED QUANTITIES

	ITEM NUMBER	BID ITEM	UNIT	NORTH ABUT.	SOUTH ABUT.	SUPER	TOTAL
	203.0200.01	REMOVING OLD STRUCTURE STATION 93+15.06	LS	-	-	-	1
	206.1000.01	EXCAVATION FOR STRUCTURES BRIDGES B-13-309	LS	-	-	-	1
	210.1500	BACKFILL STRUCTURE TYPE A	TON	-	10	-	10
	502.0100	CONCRETE MASONRY BRIDGES	CY	-	2	1	3
	502.3210	PIGMENTED SURFACE SEALER	SY	-	-	4	4
	502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	-	26	-	26
	505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	-	290	200	490
*	509.1500	CONCRETE SURFACE REPAIR	SF	-	5	15	20
	511.1200.01	TEMPORARY SHORING B-13-309	SF	-	130	-	130
	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-	3	-	3
	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	-	25	-	25
	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	-	1	1
		NON-BID ITEMS					
		FILLER	SIZE				1/2"

* - THE CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION OF ALL SURFACE REPAIR LOCATIONS WITH THE ENGINEER.

GENERAL NOTES

IH 39 NB AND IH 90 WB RUN TOGETHER OVER THE BRIDGE. STATIONING IS REFERENCED TO IH 90 WB.

DRAWINGS SHALL NOT BE SCALED.

SEE ROAD PLANS FOR TRAFFIC CONTROL.

VERTICAL CLEARANCE TAKEN FROM HSI ON 8/29/2018.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE NOT SHOWN.

IMPROVEMENTS INCLUDE REPLACEMENT OF THE WING TOP AND PARAPET AT WING 3 (SOUTHEAST WING).

THIS PROJECT WILL REHABILITATE THE EXISTING STRUCTURE, B-13-309, A THREE SPAN, 120.2' LONG PRESTRESSED CONCRETE GIRDER BRIDGE SET ON CONCRETE SILL ABUTMENTS AND CONCRETE MULTI-COLUMN PIERS.

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

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

Ⓑ - BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO "EXCAVATION FOR STRUCTURES". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

AT THE BACK FACE OF WING ALL VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.

APPLY PIGMENTED SURFACE SEALER TO THE TOP AND ROADWAY FACE OF THE NEW PARAPET.

REMOVAL OF STRAPPING AT WING 3 SHALL BE PAID FOR UNDER REMOVING OLD STRUCTURE.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN UNLESS SPECIFIED OTHERWISE.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR, 1997.

THE EXISTING SHOULDER PAVEMENT SURFACE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE WING. FINSHING EARTH SLOPES AT F.F. OF WING AT 2:1 SLOPE TO WING TIP IS INCLUDED WITH EXCAVATION FOR STRUCTURES.

DESIGN DATA

LIVE LOAD:
- DESIGN LOADING: HS20 ★
- INVENTORY RATING : HS24 ★
- OPERATIONAL RATING : HS39 ★
- WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 KIPS ★

★ - TAKEN FROM HSI, 6/21/2018

TRAFFIC DATA:
- A.A.D.T. (2019) = 81,900

MATERIAL PROPERTIES:
- CONCRETE MASONRY, PARAPET ——— f'c = 4,000 P.S.I.
- ALL OTHER ——— f'c = 3,500 P.S.I.
- HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 ——— fy = 60,000 P.S.I.

LIST OF DRAWINGS

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608) 266-8489

DESIGN CONTACT:
JOLIE SNYDER
(608) 355-8912

WISCONSIN
JOLIE A. SNYDER
E-45364
LODI
WI
PROFESSIONAL ENGINEER
10/9/18

NO.	DATE	REVISION	BY

MSA
ENGINEERING | ARCHITECTURE | SURVEYING
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1230 SOUTH BLVD., BARABOO WI 53913
(608) 356-2771 www.msa-ps.com
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 12/05/18
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-13-309

IH 39 NB & 90 WB OVER STH 30 EB

COUNTY DANE | ~~TOWN/CITY/VILLAGE~~ MADISON

DESIGN SPEC. REHABILITATION - N/A

DESIGNED BY	KHB	DESIGN CK'D.	DHW	DRAWN BY	RLR	PLANS CK'D.	JAS

REHAB GENERAL PLAN

SHEET 1 OF 3
52

STATE PROJECT NUMBER
5556-00-69

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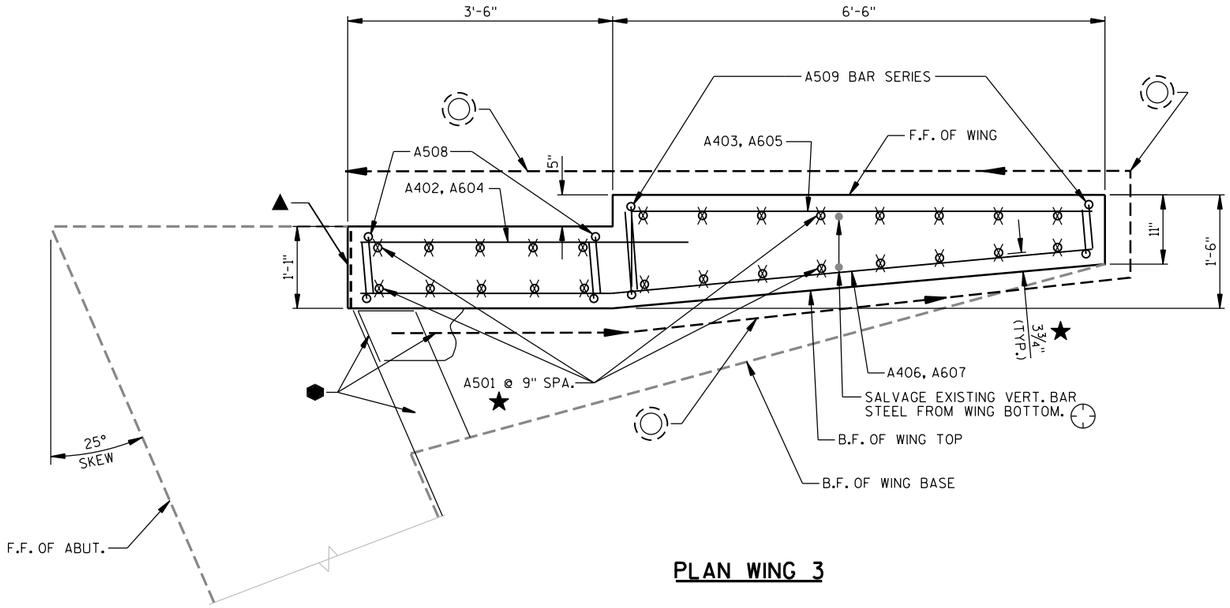
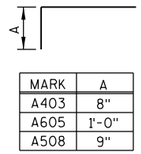
8

STATE PROJECT NUMBER
5556-00-69



PLAN WING 3



MARK	A
A403	8"
A605	1'-0"
A508	9"

A406, A607

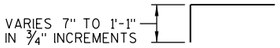
BILL OF BARS (COATED) 290 LBS.

MARK	NUMBER REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
★ A501	26	3'-9"			WING 3 - VERT. ANCHOR
A402	2	4'-9"			WING 3 - F.F. - HORIZ.
A403	2	6'-9"	X		WING 3 - F.F. - HORIZ.
A604	1	5'-5"			WING 3 - F.F. - TOP - HORIZ.
A605	1	7'-0"	X		WING 3 - F.F. - TOP - HORIZ.
A406	4	9'-8"	X		WING 3 - B.F. - HORIZ.
A607	1	9'-8"	X		WING 3 - B.F. - TOP - HORIZ.
A508	10	3'-6"	X		WING 3 - F.F. & B.F. - VERT.
A509	18	3'-6"	X	Ⓢ	WING 3 - F.F. & B.F. - VERT.
A410	10	1'-9"			WING 3 - TOP - DOWEL

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
EPOXY COAT ALL BARSTEEL REINFORCEMENT.

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

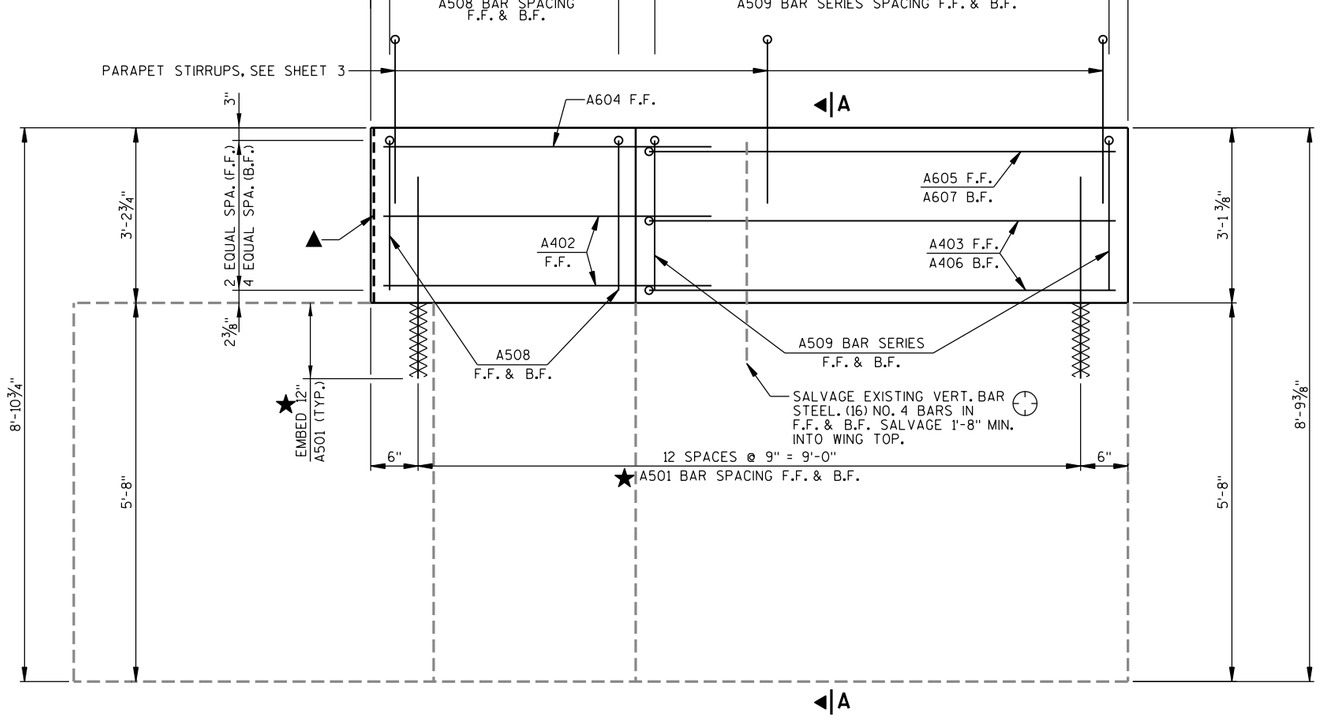
BENT BARS IF USED IN BAR SERIES TABLE SHALL BE BENT AFTER CUTTING.



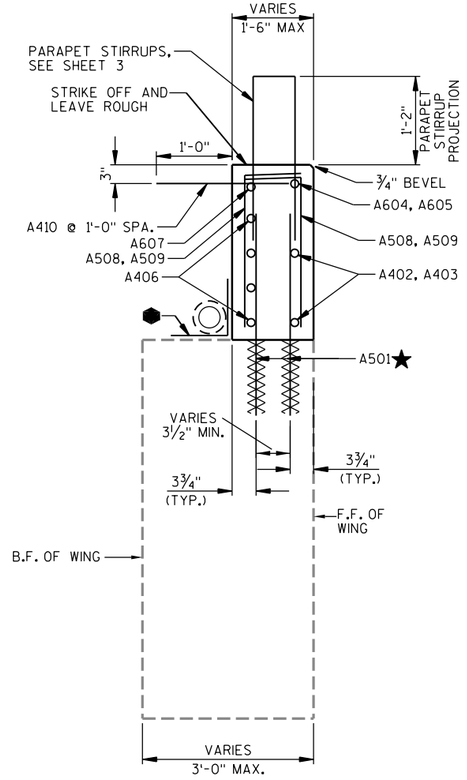
A509

BAR MARK	NO. REQ'D.	LENGTH
A509	2 SERIES OF 9	3'-3" TO 3'-9"

BAR SERIES TABLE



ELEVATION WING 3



SECTION A-A THRU WING 3

LEGEND

★ — ADHESIVE ANCHORS NO. 5 BAR. EMBED 12" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

⬢ — 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERTICAL JOINTS AT BACK FACE.

▲ — ½" FILLER (INCLUDED IN WING LENGTH). SEAL ALL EXPOSED HORIZONTAL & VERTICAL SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE).

◯ — PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN. SEE DETAIL, SHEET 3.

⊕ — EXISTING BAR STEEL IS UNCOATED. COAT EXPOSED BAR STEEL WITH EPOXY IN ACCORDANCE WITH SECTION 505.2.4.2 OF THE STANDARD SPECIFICATION. INCIDENTAL TO CONCRETE MASONRY BRIDGES.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-309

DRAWN BY RLR | PLANS CK'D. JAS

WING 3, WING TOP REPLACEMENT

SHEET 2 OF 3
53

FILE= 93459_B-13-309_02.DGN
DATE= 10/9/2018

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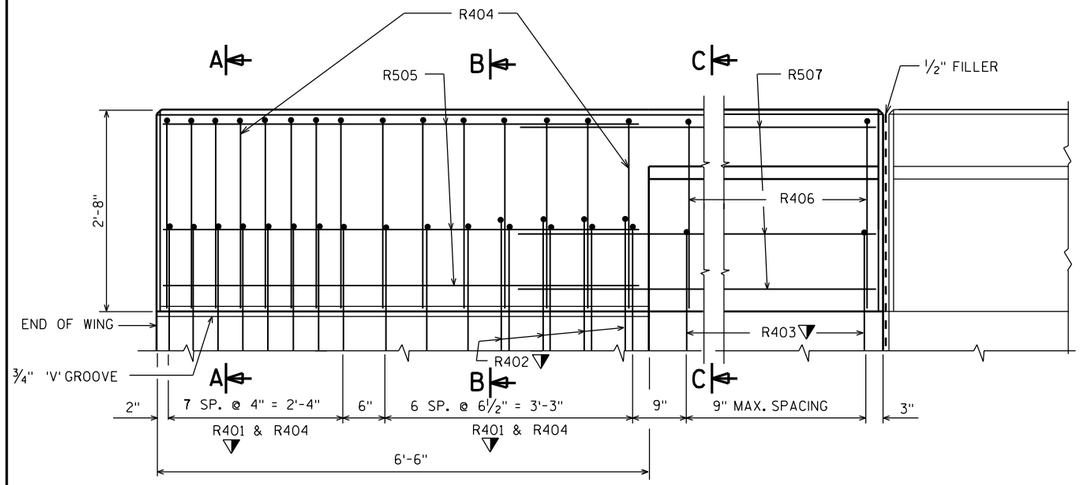
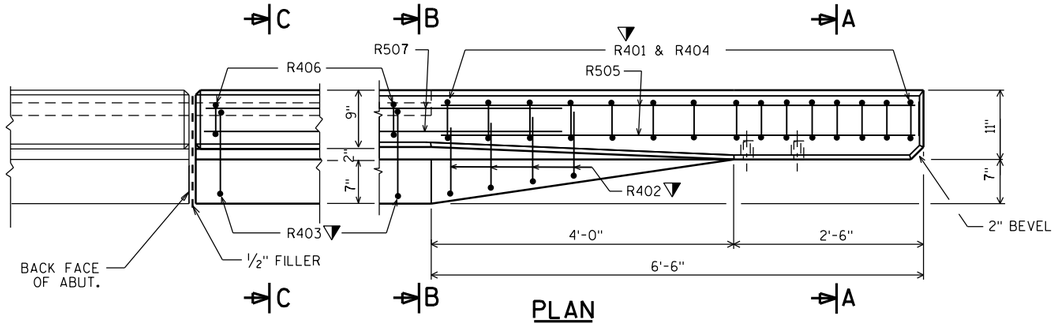
8

STATE PROJECT NUMBER

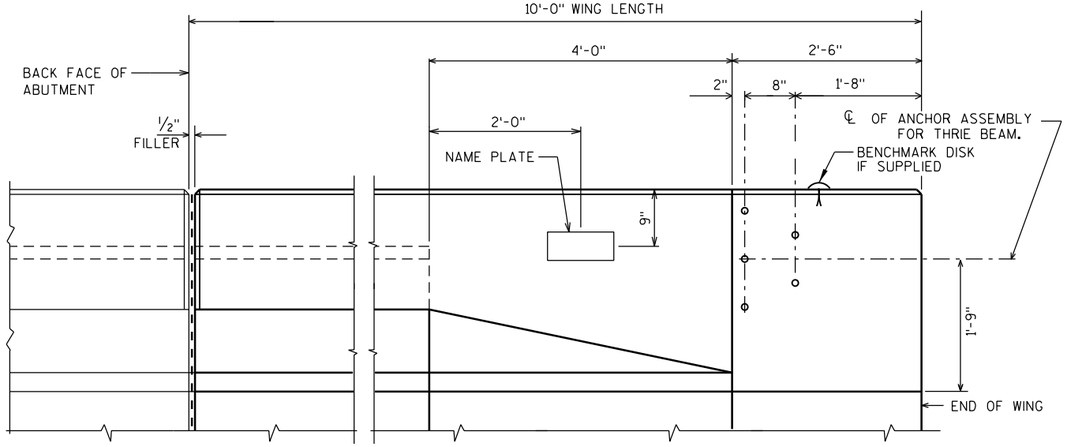
5556-00-69



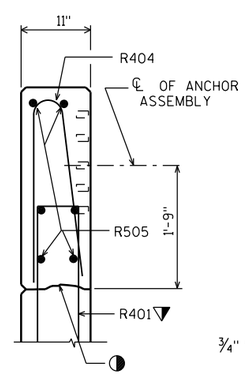
OUTSIDE ELEVATION



PLAN



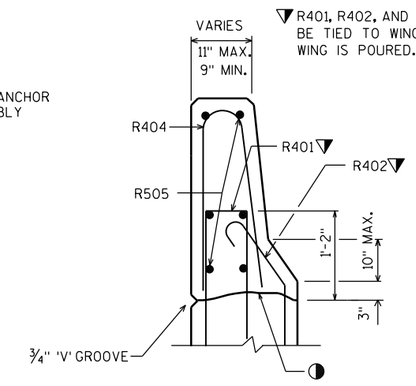
INSIDE ELEVATION



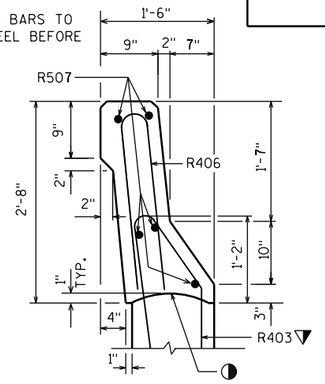
SECTION A

◑ CONST. JOINT - STRIKE OFF AS SHOWN.

▽ R401, R402, AND R403 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.



SECTION B



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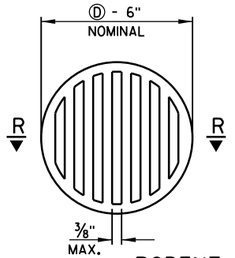
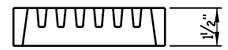


RODENT SHIELD DETAIL



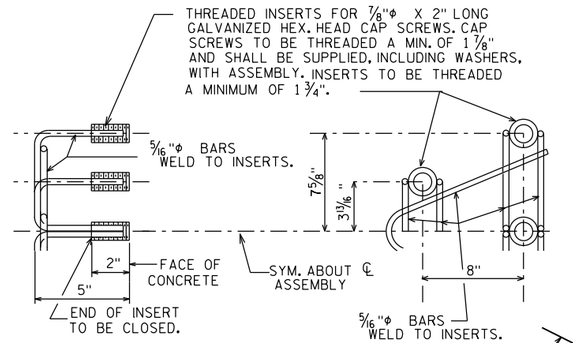
SECTION R-R

Ⓓ - DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

RODENT SHIELD NOTES:

ORIENT SHIELD SO SLOTS ARE VERTICAL.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS. THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".



DETAIL OF ANCHOR ASSEMBLY

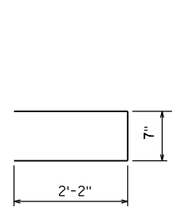
NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

BILL OF BARS (COATED) 200 LBS.

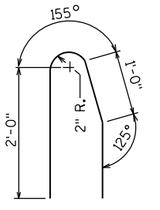
MARK	NO. REQ'D	LENGTH	BENT	LOCATION
R401	15	4'-9"	X	PARAPET END - STIRRUP - VERT.
R402	4	3'-1"	X	PARAPET END - TIE - VERT.
R403	5	4'-9"	X	PARAPET BOTTOM - STIRRUP - VERT.
R404	15	4'-9"	X	PARAPET - END - TOP - STIRRUP - VERT.
R505	6	6'-2"		PARAPET - END - LONGIT.
R406	5	4'-10"	X	PARAPET - TOP - STIRRUP - VERT.
R507	5	5'-6"		PARAPET - LONGIT.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

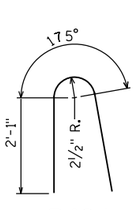
EPOXY COAT ALL BARSTEEL REINFORCEMENT.



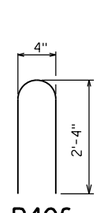
R401



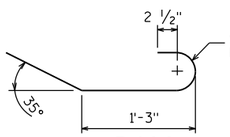
R403



R404



R406



R402

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-309

DRAWN BY RLR | PLANS CK'D. JAS

SLOPED FACE PARAPET 'B'

SHEET 3 OF 3
54

FILE= 93459_B-13-309_03.DGN
DATE= 8/30/2018

8

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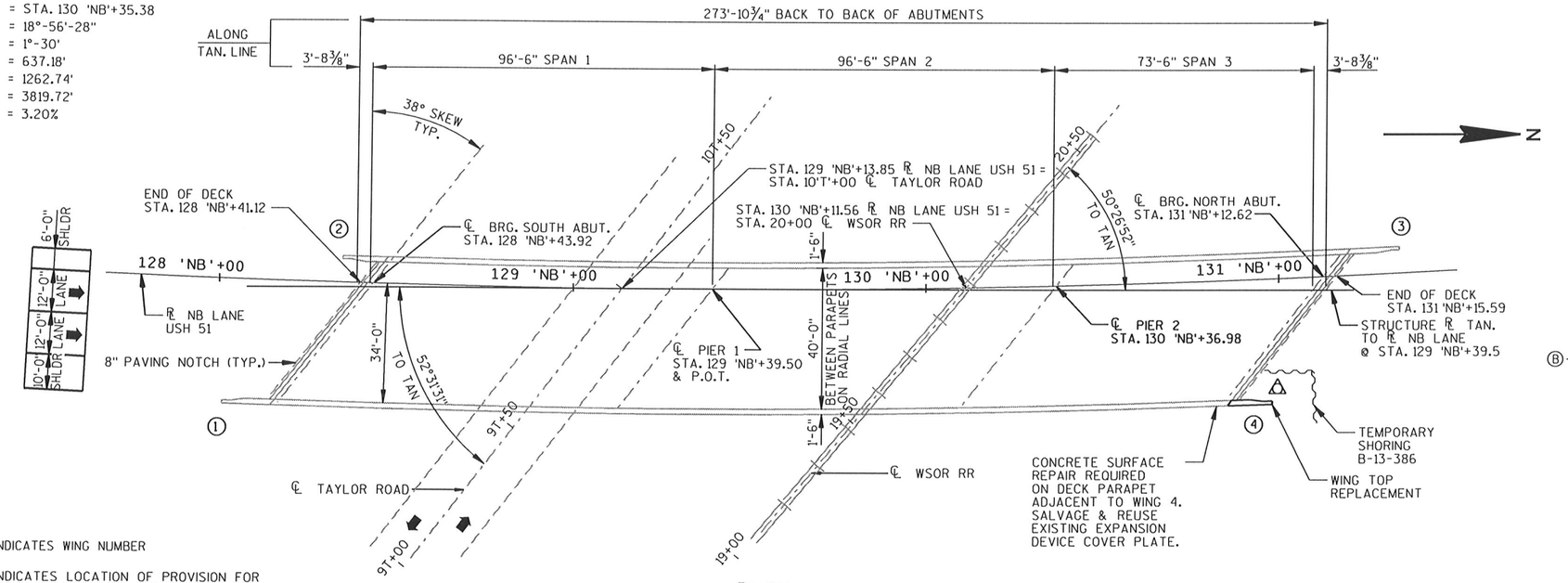
CURVE DATA

P.I. = STA. 130 'NB'+35.38
△ = 18°-56'-28"
D = 1°-30'
T = 637.18'
L = 1262.74'
R = 3819.72'
S.E. = 3.20%



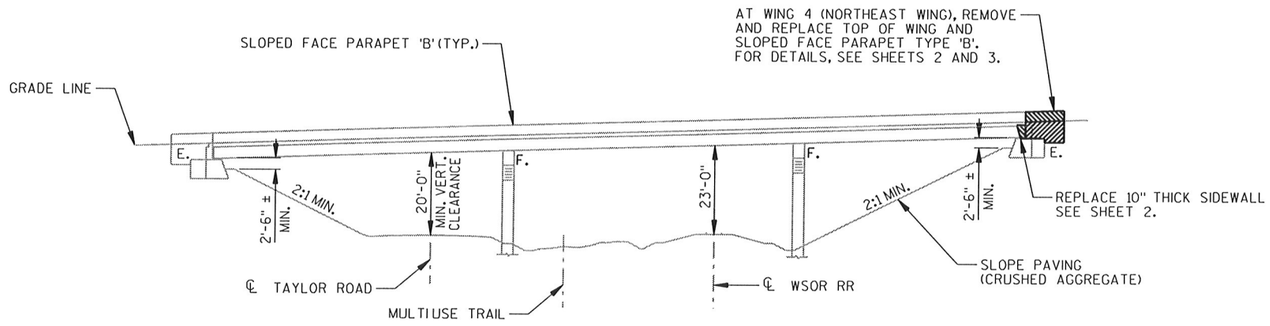
◯ — INDICATES WING NUMBER

△ — INDICATES LOCATION OF PROVISION FOR THRIE BEAM GUARD ATTACHMENT AT WINGS

TAN. — TANGENT

PLAN

(REHAB - WING AND PARAPET REPAIRS ON EXISTING CONTINUOUS THREE SPAN STEEL GIRDER BRIDGE)



ELEVATION

(LOOKING WEST)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

SEE ROAD PLANS FOR TRAFFIC CONTROL.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

VERTICAL CLEARANCES TAKEN FROM HSI ON 8/30/2018.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE NOT SHOWN.

IMPROVEMENTS INCLUDE REPLACEMENT OF THE WING TOP AND PARAPET AT WING 4 (NORTHEAST WING), EXPANSION DEVICE TO BE PRESERVED IN PLACE.

THIS PROJECT WILL REHABILITATE THE EXISTING STRUCTURE, B-13-386, A THREE SPAN, 273.9' LONG STEEL GIRDER BRIDGE SET ON CONCRETE SILL ABUTMENTS AND CONCRETE HAMMERHEAD PIERS. ABUTMENT AND PIERS ARE FOUNDED ON STEEL PILING.

ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1 INCH DEEP SAWCUT.

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

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

Ⓑ - BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO "EXCAVATION FOR STRUCTURES". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

AT THE BACK FACE OF WING ALL VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH "BACKFILL STRUCTURE TYPE A".

APPLY PIGMENTED SURFACE SEALER TO THE TOP AND ROADWAY FACE OF THE NEW PARAPET.

THE EXISTING SHOULDER PAVEMENT SURFACE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE WING. FINSHING EARTH SLOPES AT F.F. OF WING AT 2:1 SLOPE TO WING TIP IS INCLUDED WITH EXCAVATION FOR STRUCTURES.

REMOVAL OF STRAPPING AT WING 4 SHALL BE PAID FOR UNDER "REMOVING OLD STRUCTURE".

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN.

ESTIMATED QUANTITIES

	ITEM NUMBER	BID ITEM	UNIT	SOUTH ABUT.	NORTH ABUT.	SUPER	TOTAL
	203.0200.02	REMOVING OLD STRUCTURE STATION 130 'NB'+91.19	LS	-	-	-	1
	206.1000.02	EXCAVATION FOR STRUCTURES BRIDGES B-13-386	LS	-	-	-	1
	210.1500	BACKFILL STRUCTURE TYPE A	TON	-	40	-	40
	502.0100	CONCRETE MASONRY BRIDGES	CY	-	3	2	5
	502.3210	PIGMENTED SURFACE SEALER	SY	-	-	6	6
	502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	-	14	-	14
	502.4206	ADHESIVE ANCHORS NO. 6 BAR	EACH	-	2	-	2
	505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	-	440	250	690
*	509.1500	CONCRETE SURFACE REPAIR	SF	-	-	20	20
	511.1200.02	TEMPORARY SHORING B-13-386	SF	-	250	-	250
	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-	2	-	2
	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	-	30	-	30
	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	-	1	1

* - THE CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION OF ALL SURFACE REPAIR LOCATIONS WITH THE ENGINEER.

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HS20 ★
INVENTORY RATING : HS28 ★
OPERATIONAL RATING : HS47 ★
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 230 KIPS ★
★ - TAKEN FROM HSI, 6/21/2018

TRAFFIC DATA:
A.A.D.T. (2019) = 18,460

MATERIAL PROPERTIES:
CONCRETE MASONRY, PARAPET ——— f'c = 4,000 P.S.I.
ALL OTHER ——— f'c = 3,500 P.S.I.
HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 ——— fy = 60,000 P.S.I.

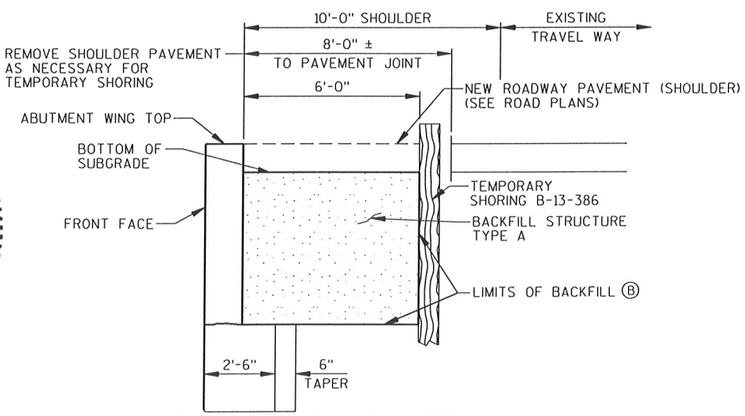
LIST OF DRAWINGS

1. REHAB GENERAL PLAN
2. WING 4, WING TOP REPLACEMENT
3. SLOPED FACE PARAPET 'B'
4. COVER PLATE DETAILS

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608) 266-8489

DESIGN CONTACT:
JOLIE SNYDER
(608) 355-8912

WISCONSIN ☆ JOLIE A. SNYDER E-45364 LODI WI ☆ PROFESSIONAL ENGINEER
10/9/18



STRUCTURE BACKFILL DETAIL

NO.	DATE	REVISION	BY

MSA — ENGINEERING | ARCHITECTURE | SURVEYING
FUNDING | PLANNING | ENVIRONMENTAL
1230 SOUTH BLVD., BARABOO WI 53913
(608) 356-2771 www.msa-ps.com
© MSA Professional Services, Inc.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher SDR 12/05/18
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-13-386

USH 51 NB OVER TAYLOR RD. & WSOR RR

COUNTY DANE
~~TOWN/CITY/~~VILLAGE MCFARLAND

DESIGN SPEC. REHABILITATION - N/A

DESIGNED BY	KHB	DESIGN CK'D.	DHW	DRAWN BY	RLR	PLANS CK'D.	JAS

REHAB GENERAL PLAN

SHEET 1 OF 4
55

STATE PROJECT NUMBER
5556-00-69

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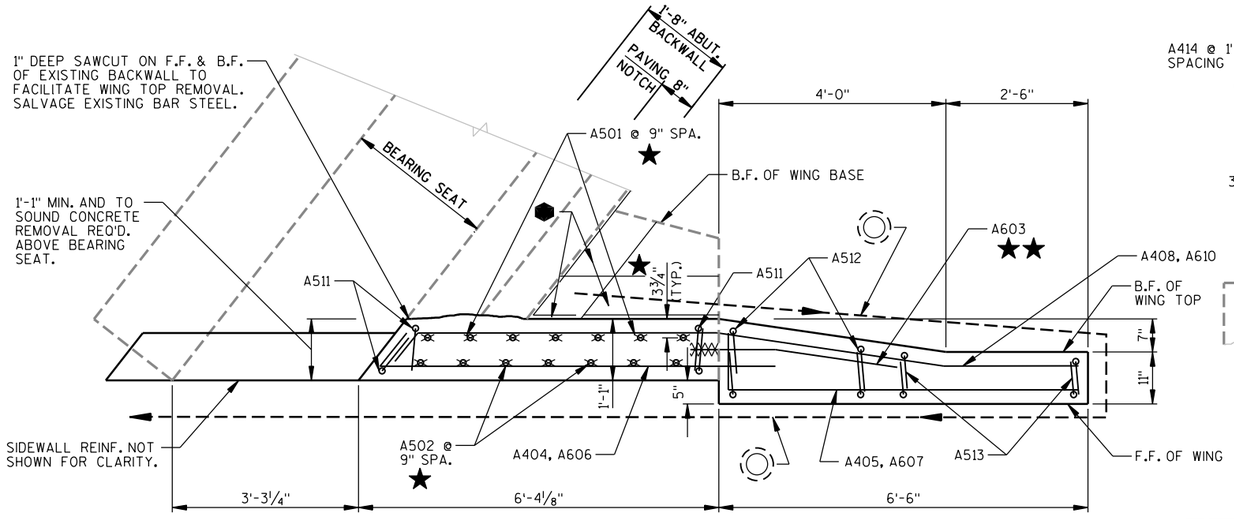
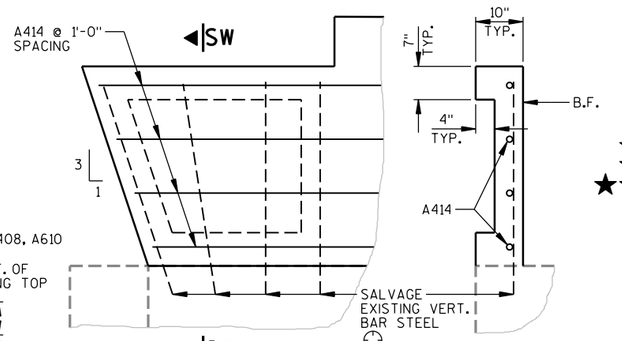
DATE= 10/9/2018

STATE PROJECT NUMBER

5556-00-69



PLAN WING 4



OUTSIDE ELEVATION

SECTION SW-SW

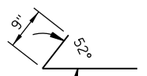
SIDEWALL DETAIL

BILL OF BARS

(COATED) 440 LBS.

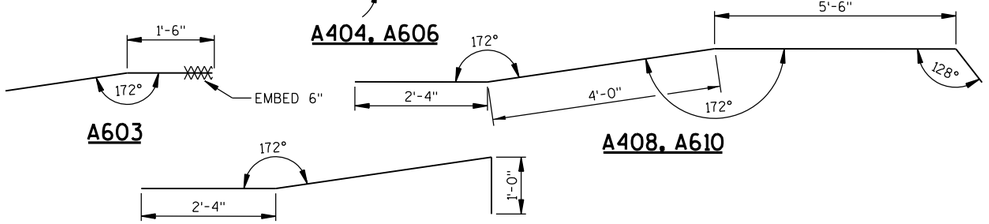
MARK	NUMBER REQ'D.	LENGTH	BENT	LOCATION
★ A501	7	3'-9"		WING 4 - B.F. - VERT. ANCHOR
★ A502	7	3'-9"		WING 4 - F.F. - VERT. ANCHOR
★★ A603	2	3'-8"	X	WING 4 - HORIZ. ANCHOR
A404	3	8'-1"	X	WING 4 - F.F. - HORIZ.
A405	5	7'-1"	X	WING 4 - F.F. - HORIZ.
A606	1	8'-8"	X	WING 4 - F.F. - TOP - HORIZ.
A607	1	7'-0"	X	WING 4 - F.F. - TOP - HORIZ.
A408	6	12'-6"	X	WING 4 - B.F. - HORIZ.
A409	3	7'-1"	X	WING 4 - B.F. - HORIZ.
A610	1	12'-5"	X	WING 4 - B.F. - TOP - HORIZ.
A511	18	4'-9"	X	WING 4 - F.F. & B.F. - VERT.
A512	8	6'-10"	X	WING 4 - F.F. & B.F. - VERT.
A513	10	6'-8"	X	WING 4 - F.F. & B.F. - VERT.
A414	4	5'-8"		WING 4 - SIDEWALL - HORIZ.

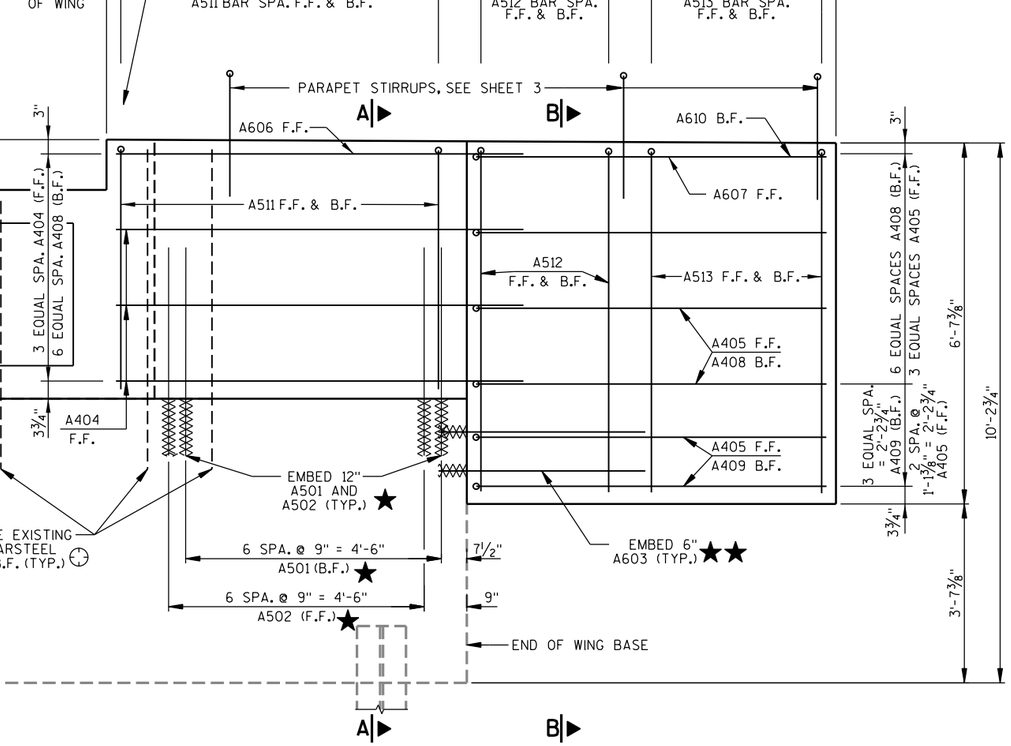
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
EPOXY COAT ALL BARSTEEL REINFORCEMENT.



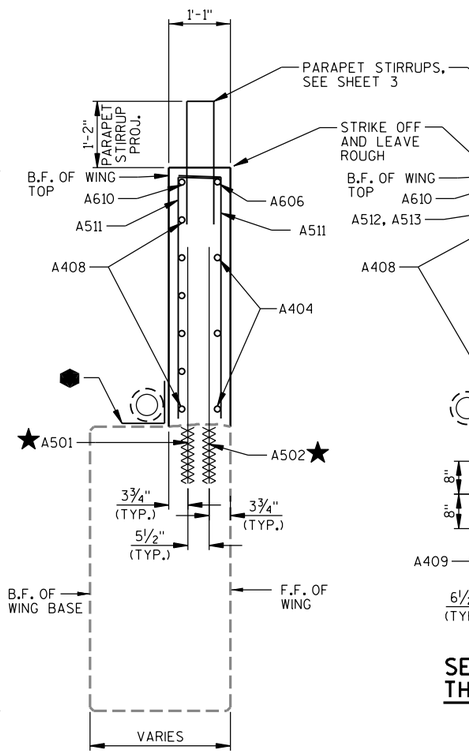
A404, A606

MARK	A
A405 A607	1'-0"
A511 A512	9"
A513	7"

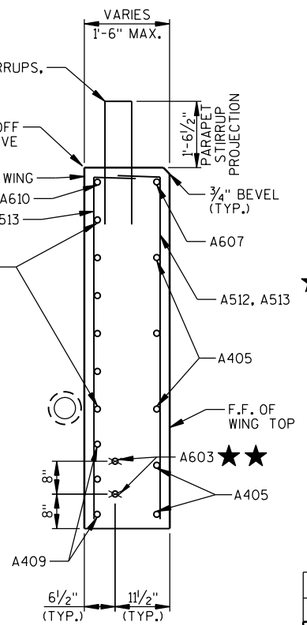




ELEVATION WING 4



SECTION A-A THRU WING 4



SECTION B-B THRU WING 4

LEGEND

- ○ — PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN. SEE DETAIL, SHEET 3.
- ★ — ADHESIVE ANCHORS NO. 5 BAR. EMBED 12" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.
- ★★ — ADHESIVE ANCHORS NO. 6 BAR. EMBED 6" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.
- ⬢ — 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERTICAL JOINTS AT BACK FACE.
- ⊕ — EXISTING BAR STEEL IS UNCOATED. COAT EXPOSED BAR STEEL WITH EPOXY IN ACCORDANCE WITH SECTION 505.2.4.2 OF THE STANDARD SPECIFICATION. INCIDENTAL TO CONCRETE MASONRY BRIDGES.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-386

DRAWN BY RLR | PLANS CK'D. JAS

WING 4, WING TOP REPLACEMENT

SHEET 2 OF 4
56

8

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DATE= 8/31/2018

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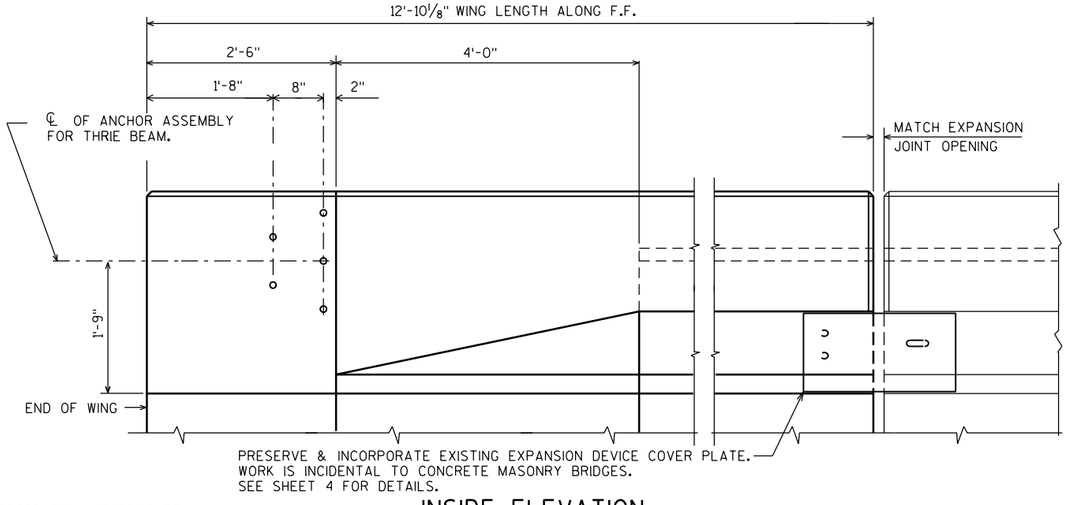
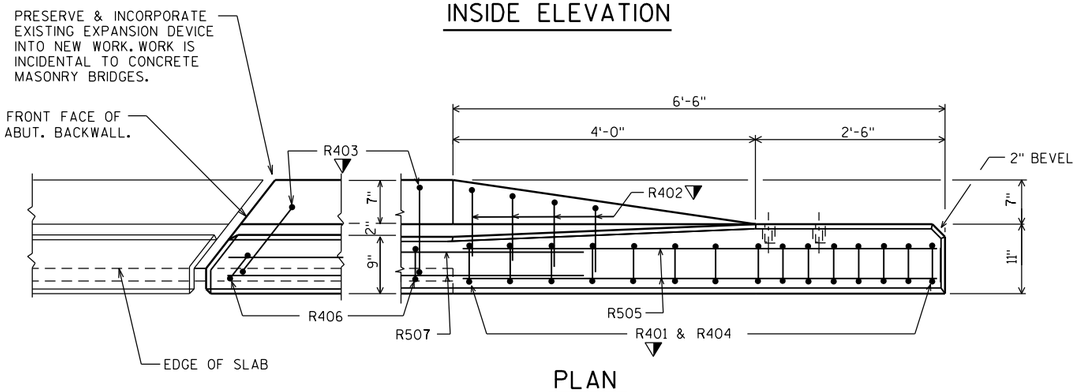
STATE PROJECT NUMBER
5556-00-69

◑ CONST. JOINT - STRIKE OFF AS SHOWN.

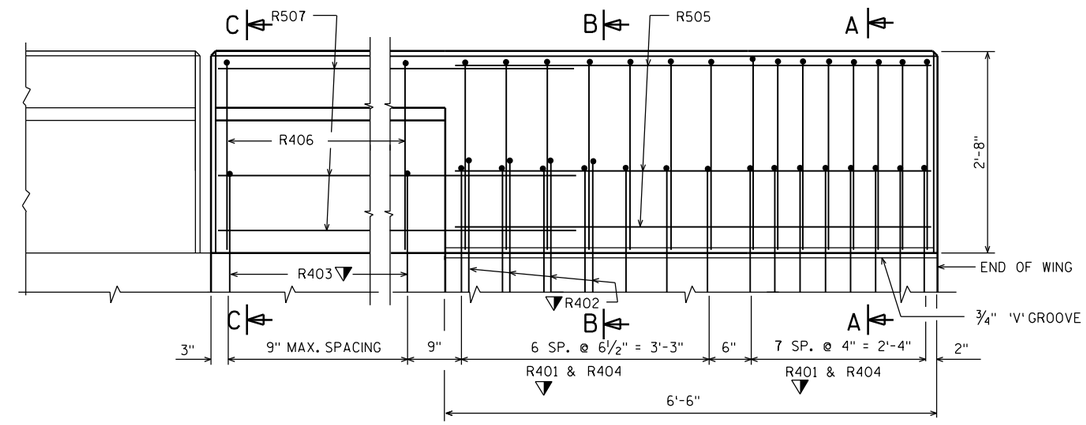
▽ R401, R402, AND R403 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.



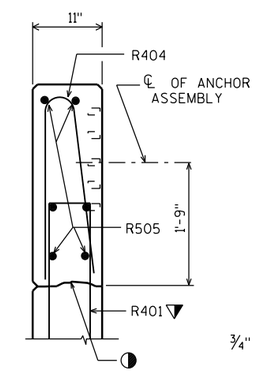
INSIDE ELEVATION



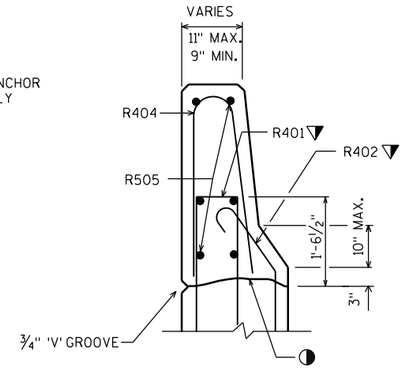
PLAN



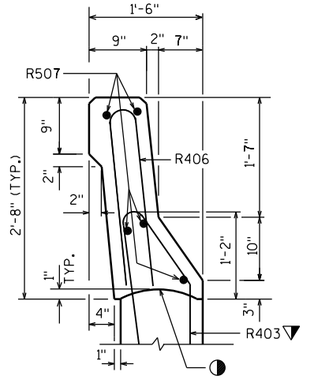
OUTSIDE ELEVATION



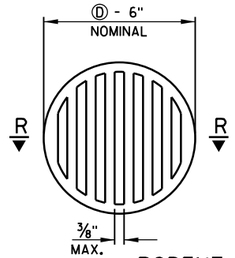
SECTION A



SECTION B



SECTION C



RODENT SHIELD DETAIL

Ⓓ - DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

RODENT SHIELD NOTES:

ORIENT SHIELD SO SLOTS ARE VERTICAL.

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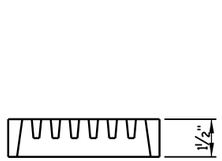
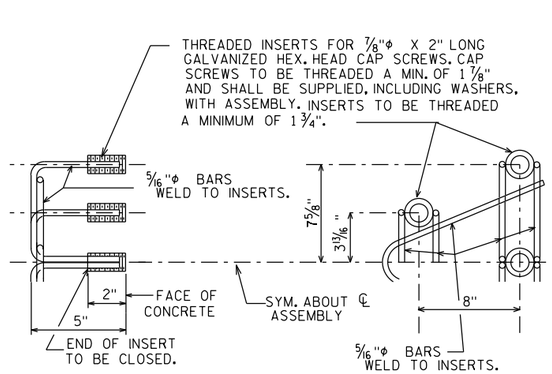


SECTION R-R



DETAIL OF ANCHOR ASSEMBLY

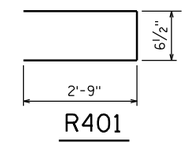
NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

BILL OF BARS (COATED) 250 LBS.

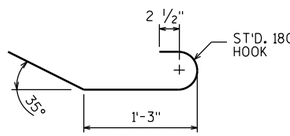
MARK	NO. REQ'D	LENGTH	BENT	LOCATION
R401	15	5'-10"	X	PARAPET BOTTOM - STIRRUP - VERT.
R402	4	3'-1"	X	PARAPET BOTTOM - TIE - VERT.
R403	9	4'-7"	X	PARAPET BOTTOM - STIRRUP - VERT.
R404	15	4'-9"	X	PARAPET - END - TOP - STIRRUP - VERT.
R505	6	6'-2"		PARAPET - END - LONGIT.
R406	9	4'-10"	X	PARAPET - TOP - STIRRUP - VERT.
R507	5	7'-6"		PARAPET - LONGIT.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

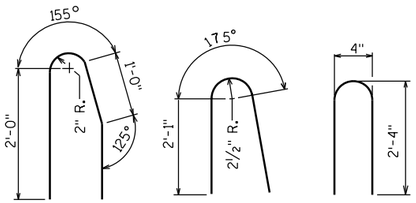
EPOXY COAT ALL BARSTEEL REINFORCEMENT.



R401



R402



R403 R404 R406

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-386

DRAWN BY RLR | PLANS CK'D. JAS

SLOPED FACE PARAPET 'B'

SHEET 3 OF 4
57

FILE= 93459_B-13-386_03.DGN
DATE= 8/31/2018

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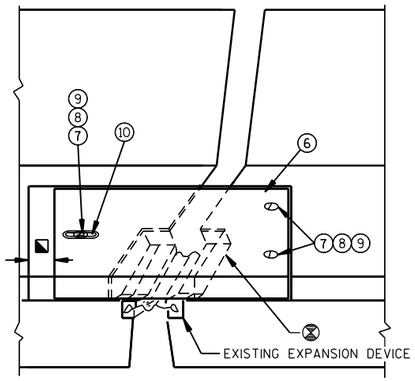
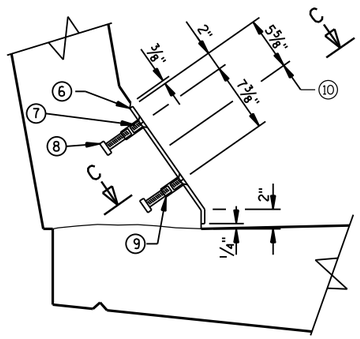
8

STATE PROJECT NUMBER

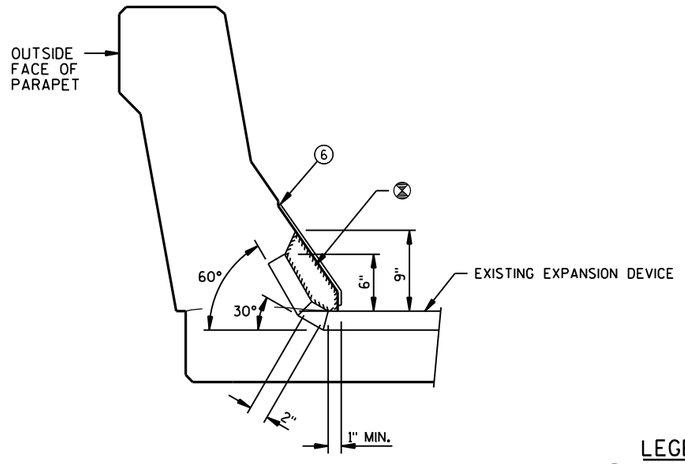
5556-00-69



VIEW OF PARAPET PLATES FROM ROADWAY



SECTION A-A



SECTION B-B

LEGEND

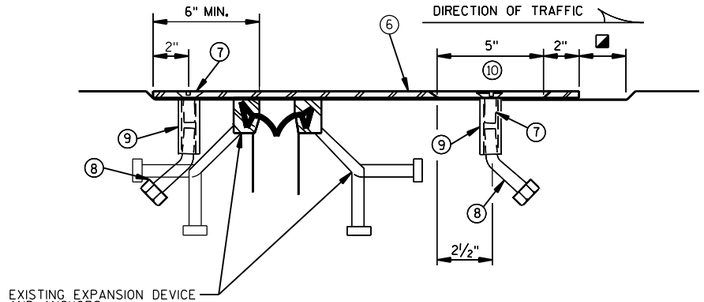
⑥ REUSE EXISTING GALVANIZED PLATE 3/8" x 1'-2" x 2'-0" LONG WITH HOLES FOR NO. 7.

⑦ 3/4" ϕ x 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. RECESS 1/16" BELOW PLATE SURFACE.

⑧ 3/4" ϕ x 4" GALV. HEX HEAD BOLT. BEND 45°.

⑨ 3/4" ϕ x 2 1/4" GALV. THREADED COUPLING.

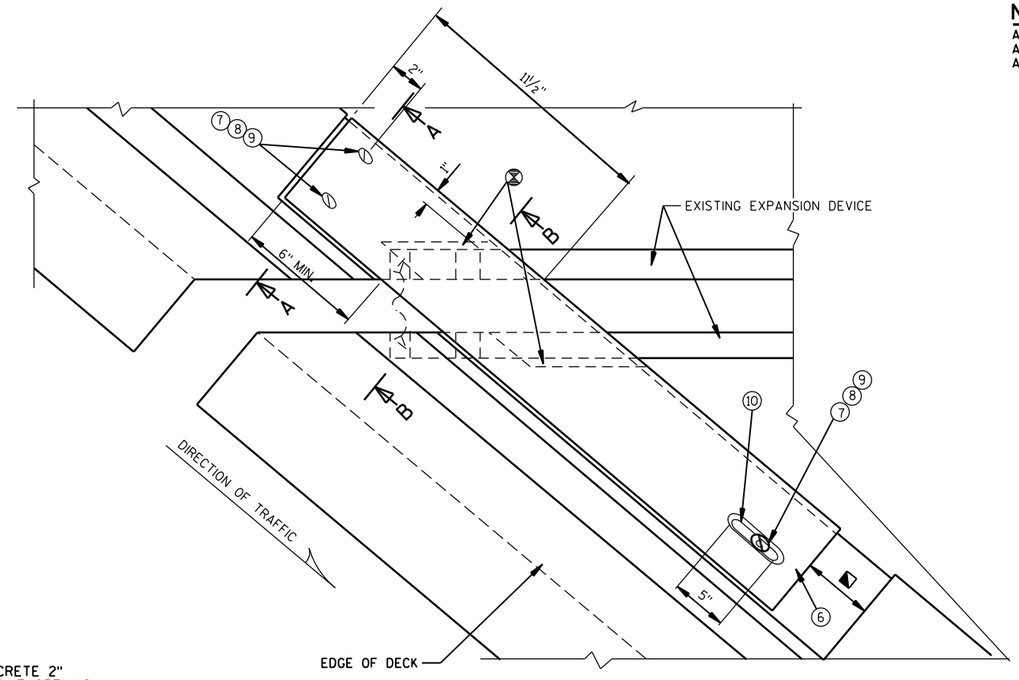
⑩ 1" x 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.



SECTION C-C

NOTES

ANCHOR SYSTEM NO. 8 & NO. 9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C & D. 1.24 MILS. MIN.



PLAN AT PARAPET

⊗ — BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING

◪ — JOINT OPENING DIMENSION ALONG SKEW PLUS 1/2"

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-386

DRAWN BY RLR | PLANS CK'D. JAS

COVER PLATE DETAILS

SHEET 4 OF 4
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Notes

Wisconsin Department of Transportation

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