MAD APRIL 2014

PROJECT ID: 5271-01-71

COUNTIES: SAUK

ORDER OF SHEETS

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

TOTAL SHEETS = 158

34

DESIGN DESIGNATION

A.A.D.T. 2008	=	6600
A.A.D.T. 2034	=	8200
D.H.V.	=	
D.D.	=	59/41
T.	=	5.6
DESIGN SPEED	=	45 M.P.H.
ESALS	=	985,500

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (955.36)
- 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

PRAIRIE DU SAC - LODI

WISCONSIN RIVER BRIDGE B-11-19

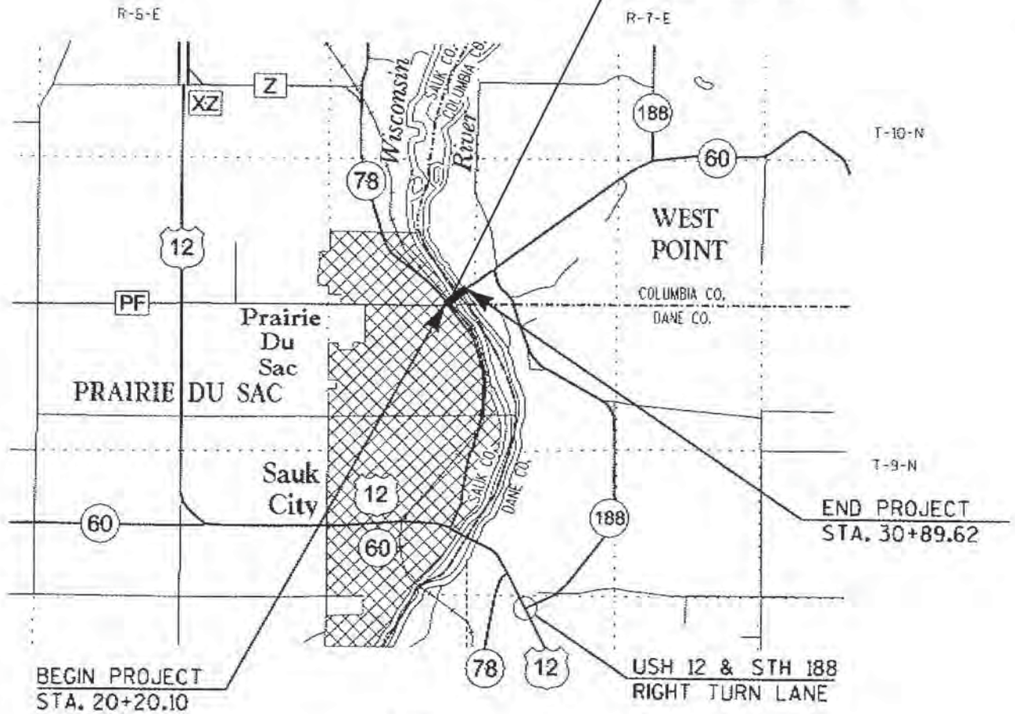
STH 60

SAUK COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5271-01-71	———	—

STATE PROJECT NUMBER
5271-01-71

STA. 20+78.17 TO STA. 28+30.83
EXCEPTION TO NET CENTERLINE LENGTH
STRUCTURE B-11-19



LAYOUT
SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.203 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), SAUK COUNTY.

ORIGINAL PLANS PREPARED BY

WISCONSIN PROFESSIONAL ENGINEER
GARY M. SASSMAN
E-27086
WHITEWATER, WIS

10/31/2013

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	DAAR ENGINEERING, INC.
Designer	DAAR ENGINEERING, INC.
Project Manager	MAHESH SHRESTHA
Regional Examiner	
Regional Supervisor	WILLIAM STROBEL
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 10/28/13 William Strobel (Signature)

E

FILE NAME : M:\CAD\Active\SW\5271-01-71 STH 60\010101_ti.dgn

PLOT DATE : 10/28/2013 PLOT BY : terry.walter PLOT NAME : PLOT SCALE : 200.0000 sf / IN.

WISDOT/CADDS SHEET 10

DIMENSIONS GIVEN FOR EXISTING FEATURES SHALL BE CONSIDERED AS APPROXIMATE AND MEASURED IN THE FIELD FOR MATCHING PURPOSES.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND MULCHED.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION.

6-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED IN THREE LAYERS.

5-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED IN TWO LAYERS.

4-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED IN TWO LAYERS.

3.5-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED IN TWO LAYERS.

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'S PAVING OPERATIONS SHALL BE CONSISTANT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, PASSING OR PARKING LANE.

DIGGERS HOTLINE

Dial 811 or (800) 242-8511

www.DiggersHotline.com

DESIGN CONSULTANT

Gary Sassman
1400 E Washington Ave, Suite 262
Madison, WI 53703
(608) 229-1446
gary.sassman@daarcorp.com

AGENCY CONTACTS

DNR Contact
Cathy Bleser
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Madison, WI 53711
(608) 275-3308

WisDOT Contact
Dena Dramm
Wisconsin SW Region Traffic Department
2101 Wright St.
Madison, WI 53704
(608) 246-5360

UTILITY CONTACTS

Brian Van Ooyen
Frontier North - Communication Line
100 Communications Drive
Sun Prairie, WI 53590
(608) 837-1151
brian.vanooyen@ftr.com

Brandon Suchla
Merrimac Communications Ltd. - Communication Line
327 Palisade St.
Merrimac, Wi. 53561
(608) 370-1608
Brandon.Suchla3@gmail.com

Pat Drone
Prarie Du Sac Public Works
335 Galena St.
Prarie Du Sac, Wi. 53578-1008
(608) 963-1164
pdrone@wppisys.org

Harlow Jarvis
Charter communications - Communication Line
2701 Daniels St.
Madison, Wi. 53718
(608) 235-1911
harlow.jarvis@chartercom.com

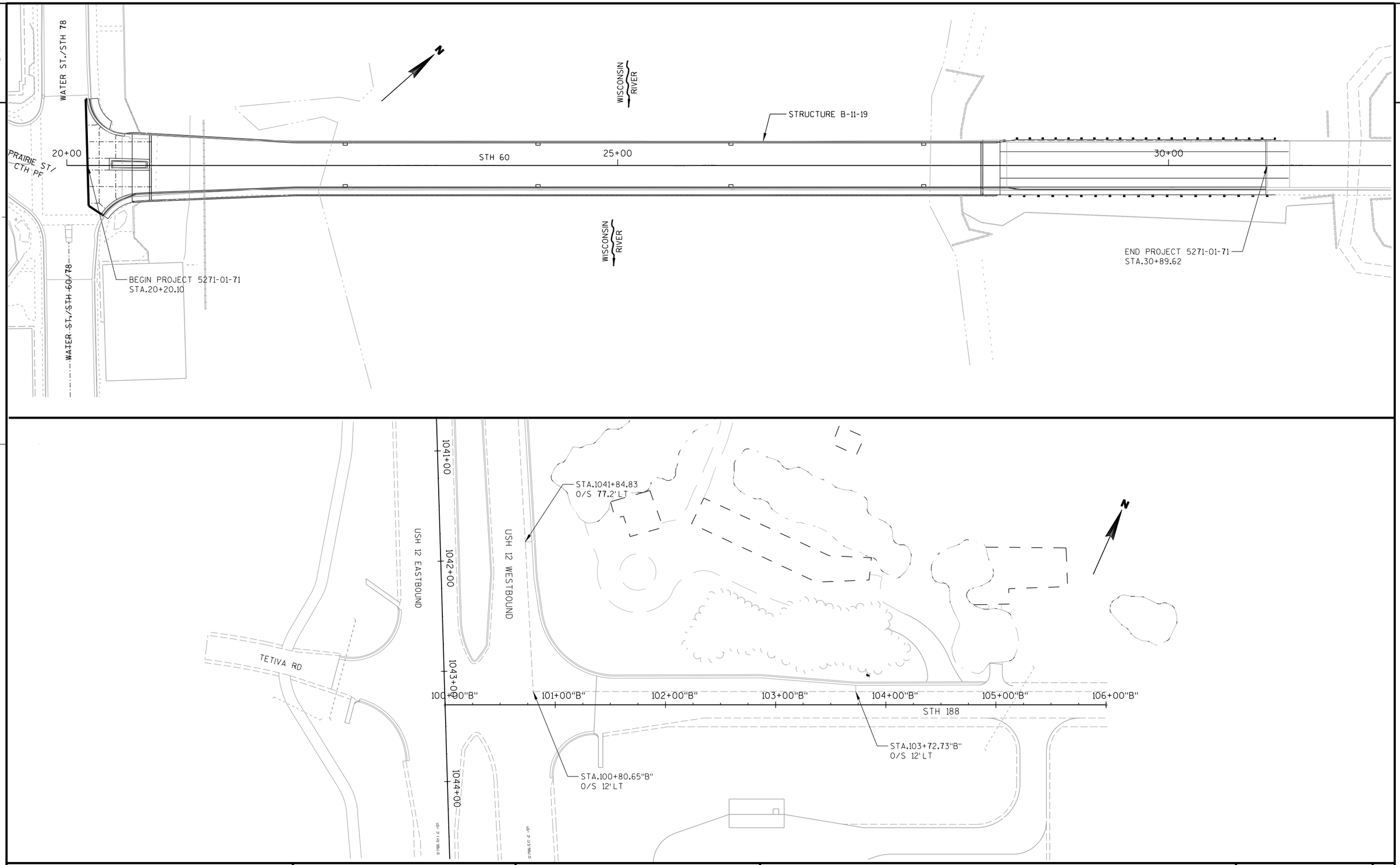
Donald MaClain
Madison Gas and Electric Company - Gas/Petroleum
P.O. Box 1231
Madison, Wi. 53701-1231
(608) 252-5618
dmacain@mge.com

ORDER OF DETAIL SHEETS

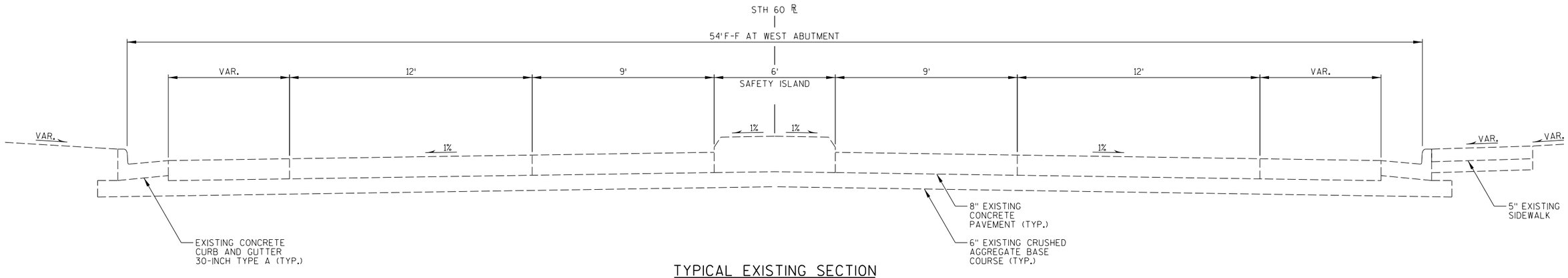
- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- LAYOUT DETAILS
- PERMANENT SIGNING, SIGNING REMOVALS AND PAVEMENT MARKING
- LIGHTING
- TRAFFIC CONTROL
- DETOUR PLAN

ABBREVIATIONS

ABUT	ABUTMENT
AC	ACRE
A.D.T.	AVERAGE DAILY TRAFFIC
AP	ACCESS POINT
B.F.	BACK FACE
B&B	BALLED AND BURLAPPED
B.M.	BENCH MARK
B.O.P.	BEGIN OF PROJECT
CL	CENTER LINE
CTR.	CENTER
CE	COMMERCIAL ENTRANCE
CY	CUBIC YARD
CPCS	CULVERT PIPE CORRUGATED STEEL
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CPRC	CULVERT PIPE REINFORCED CONCRETE
C&G	CURB AND GUTTER
D.H.V.	DESIGN HOURLY VOLUME
DIA.	DIAMETER
DIM.	DIMENSION
EL	ELEVATION
EW	END WALL
EBS	EXCAVATION BELOW SUBGRADE
E.O.P.	END OF PROJECT
EXC.	EXCAVATION
EXIST	EXISTING
F.F.	FRONT FACE
FE	FIELD ENTRANCE
FL	FLOW LINE
HT	HEIGHT
CWT	HUNDREDWEIGHT
IN DIA	INCH DIAMETER
INL	INLET
IEP	INSIDE EDGE OF PAVEMENT
INV	INVERT
IP	IRON PIPE
LT	LEFT
LHF	LEFT HAND FORWARD
MH	MANHOLE
ML	MATCH LINE
MAX.	MAXIMUM
MIN.	MINIMUM
NORM	NORMAL
O.H.	OVER HEAD POWER LINE
PLE	PERMANENT LIMITED EASEMENT
PACS	PIPE ARCH CORRUGATED STEEL
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PE	PRIVATE ENTRANCE
PL	PROPERTY LINE
PB	PULL BOX
RAD.	RADIUS
REQD	REQUIRED
RT	RIGHT
RHF	RIGHT HAND FORWARD
R/W	RIGHT OF WAY
STA.	STATION
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
SSPRCHE	STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
SE	SUPERELEVATION
STR.	STRUCTURE
TLE	TEMPORARY LIMITED EASEMENT
TYP.	TYPICAL
V.	DESIGN SPEED

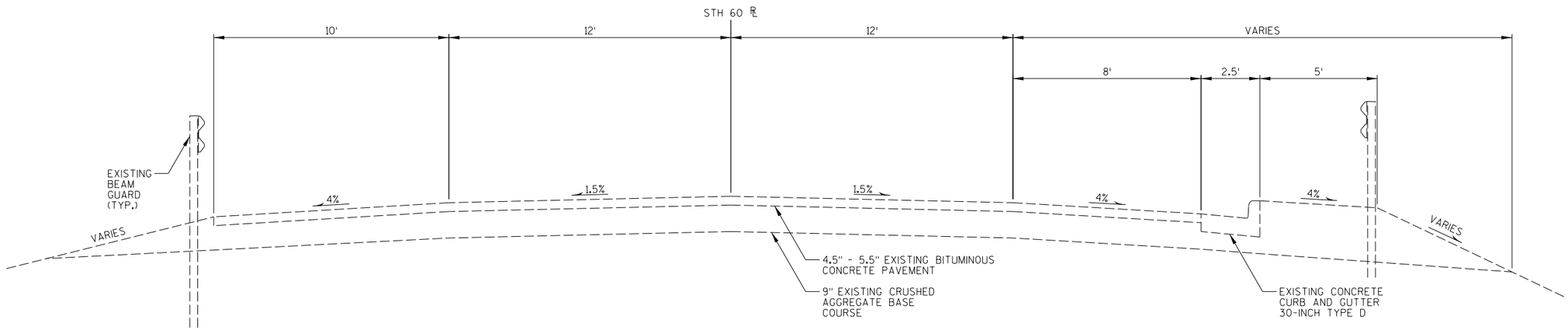


PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	PROJECT OVERVIEW	SHEET 3	E



TYPICAL EXISTING SECTION

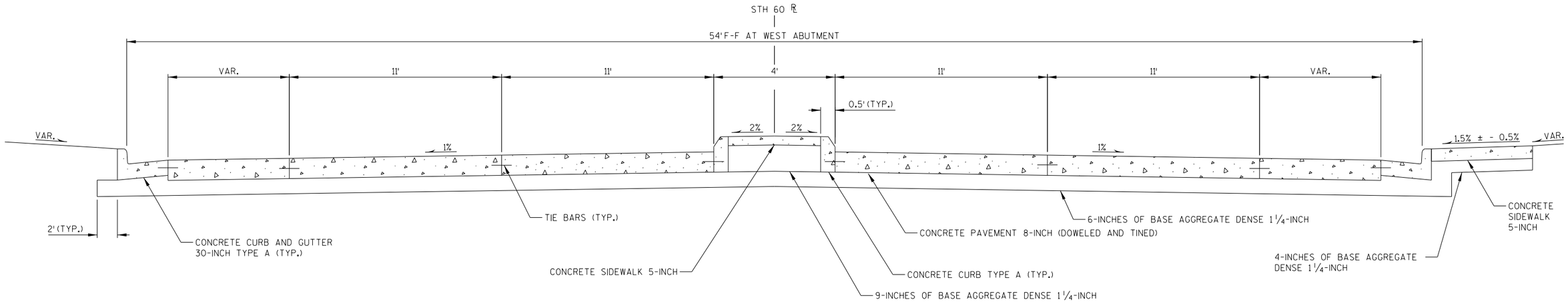
STA. 20+20.10 TO STA. 20+60.67



TYPICAL EXISTING SECTION

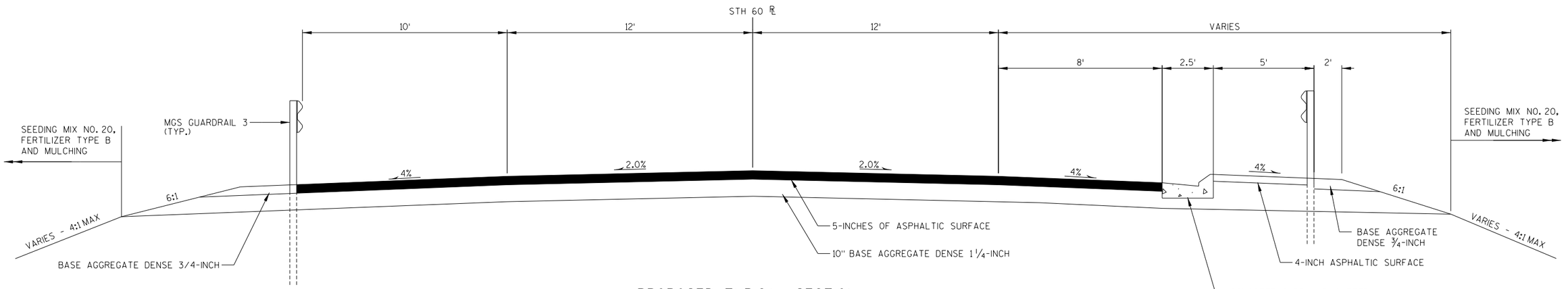
STA. 28+48.33 TO STA. 30+89.62

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	TYPICAL SECTIONS STH 60	SHEET 4	E



PROPOSED TYPICAL SECTION

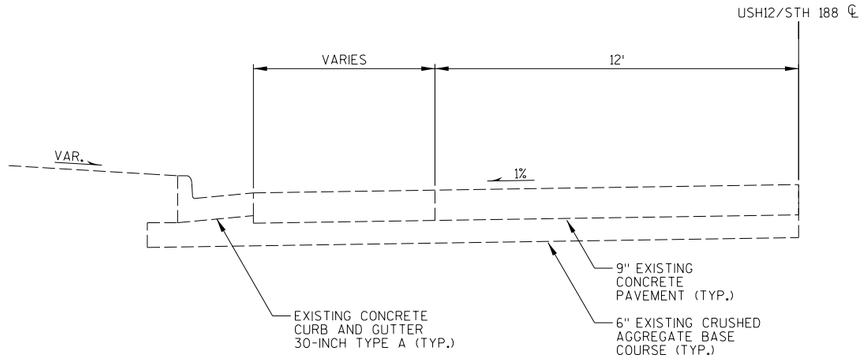
STA. 20+20.10 TO STA. 20+76.92



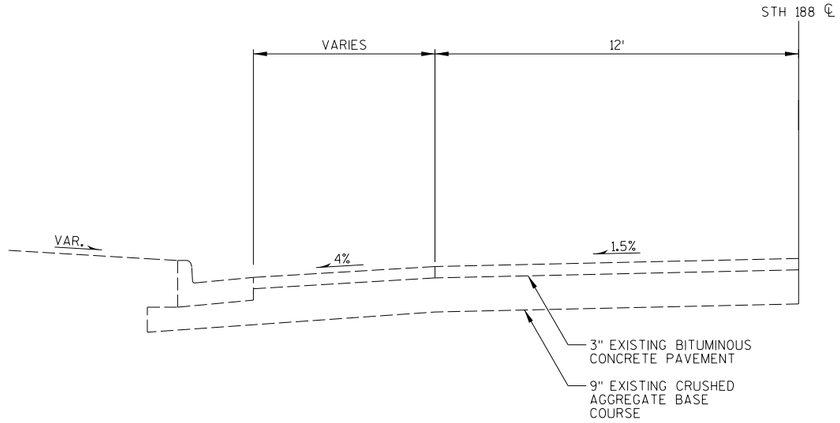
PROPOSED TYPICAL SECTION

STA. 28+32.67 TO STA. 30+89.62

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	TYPICAL SECTIONS STH 60	SHEET 5	E



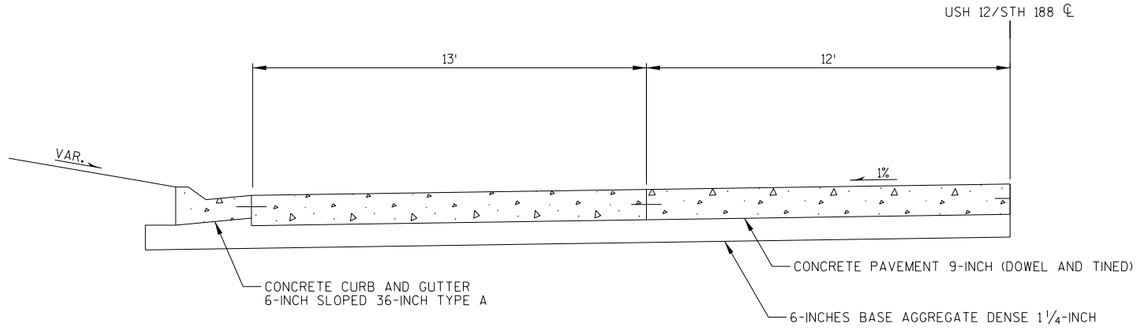
EXISTING TYPICAL SECTION
USH 12 & STH 188
STA. 1041+84.85 TO STA. 101+36.82"B"



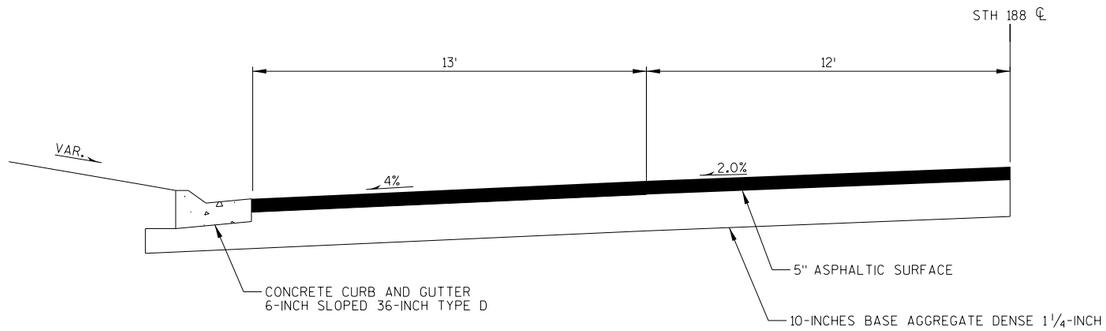
EXISTING TYPICAL SECTION
STH 188
STA. 101+36.82"B" TO STA. 103+72.73"B"

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	TYPICAL SECTIONS USH 12 AND STH 188	SHEET 6	E

2

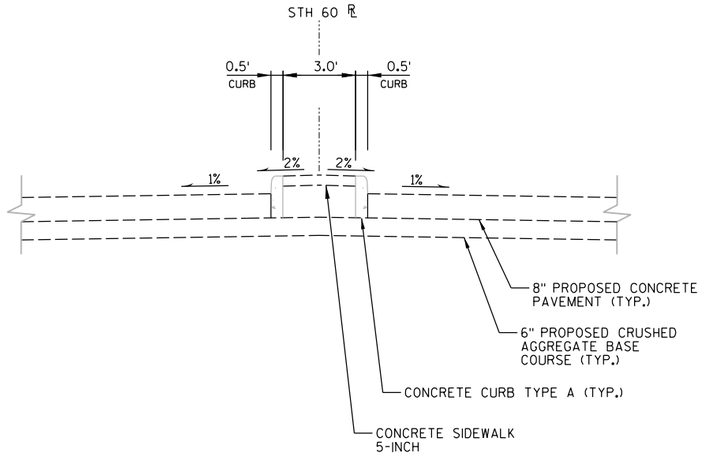


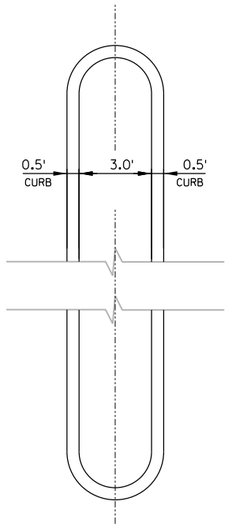
PROPOSED TYPICAL SECTION
USH 12 & STH 188
STA. 1041+84.85 TO STA. 101+36.82"B"



PROPOSED TYPICAL SECTION
STH 188
STA. 101+36.82"B" TO STA. 103+72.73"B"

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	TYPICAL SECTIONS USH 12 AND STH 188	SHEET 7	E





DETAIL FOR CONCRETE MEDIAN
STA. 20+39.00 TO STA. 20+77.00

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	CONSTRUCTION DETAIL	SHEET 8	E

2

2

N

SLOPE INTERCEPT

CHARTER COMMUNICATIONS

℄ STH 60

31+00 32+00 33+00 34+00 35+00 36+00 37+

BORE C-2

SLOPE INTERCEPT

FRONTIER NORTH

STA. 32+28 - 34+12 LT & RT
MGS GUARDRAIL 3 REQ'D.
MGS THRIE BEAM TRANSITION REQ'D.
MGS GUARDRAIL TERMINAL EAT REQ'D.

BENCH MARKS

NO.	LOCATION	DESCRIPTION	ELEVATION
1000	SEC. 36, T10N, R6E	CHISELED □, NW CORNER OF B-11-19	785.38
1003	SEC. 36, T10N, R6E	METAL DISK, SW CORNER OF B-11-87	764.29
---	---	---	---

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	STH 60 BEAM GUARD INSTALLATION 32+28 TO 34+12	SHEET 9	E

FILE NAME : M:\CAD\Active\SW\5271-01-71 STH 60\050103_pp.dgn PLOT DATE : 2/13/2014 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : 40.0016 ' / in.

WISDOT/CADDS SHEET 42

LAYOUT DETAIL LEGEND

APO1	ASPHALTIC SURFACE, 6-INCH
APO2	ASPHALTIC SURFACE, 3.5-INCH
CPO1	CONCRETE PAVEMENT, 9-INCH
CGO1	CONCRETE CURB AND GUTTER, 6-INCH SLOPED 36-INCH TYPE A
CGO2	CONCRETE CURB AND GUTTER, 6-INCH SLOPED 36-INCH TYPE D
SWO1	SAWING CONCRETE
SWO2	SAWING ASPHALT
XXXX	SAW CUT

USH 12 EASTBOUND

USH 12 WESTBOUND

1042+00

1043+00

STA 1041+84.83
O/S 77.2' LT

813.95

STA 1042+27.47
O/S 84.4' LT

814.83

33'

STA 1042+61.18
O/S 89.3' LT

2%

10'

PT 815.47

R = 50'

STA 101+37.94 "B"
O/S 75.8' LT

CONSTRUCTION LIMITS

0.96%

CATCH BASIN 2X3-FT

PCC 816.19

VARIES

STA 100+80.65'STH188'
O/S 12' LT

STA 101+36.82 "B"
O/S 25' LT

13'

2%

STA 103+86.82 "B"
O/S 25' LT

86'

819.97

829.11

6'

STA 103+72.73 "B"
O/S 12' LT

100+00"B"

101+00"B"

102+00"B"

103+00"B"

104+00"B"

1043+30.74
100+00 "B"

EXTEND 18-INCH SSPRC CL III
(CONCRETE COLLAR REQ'D)

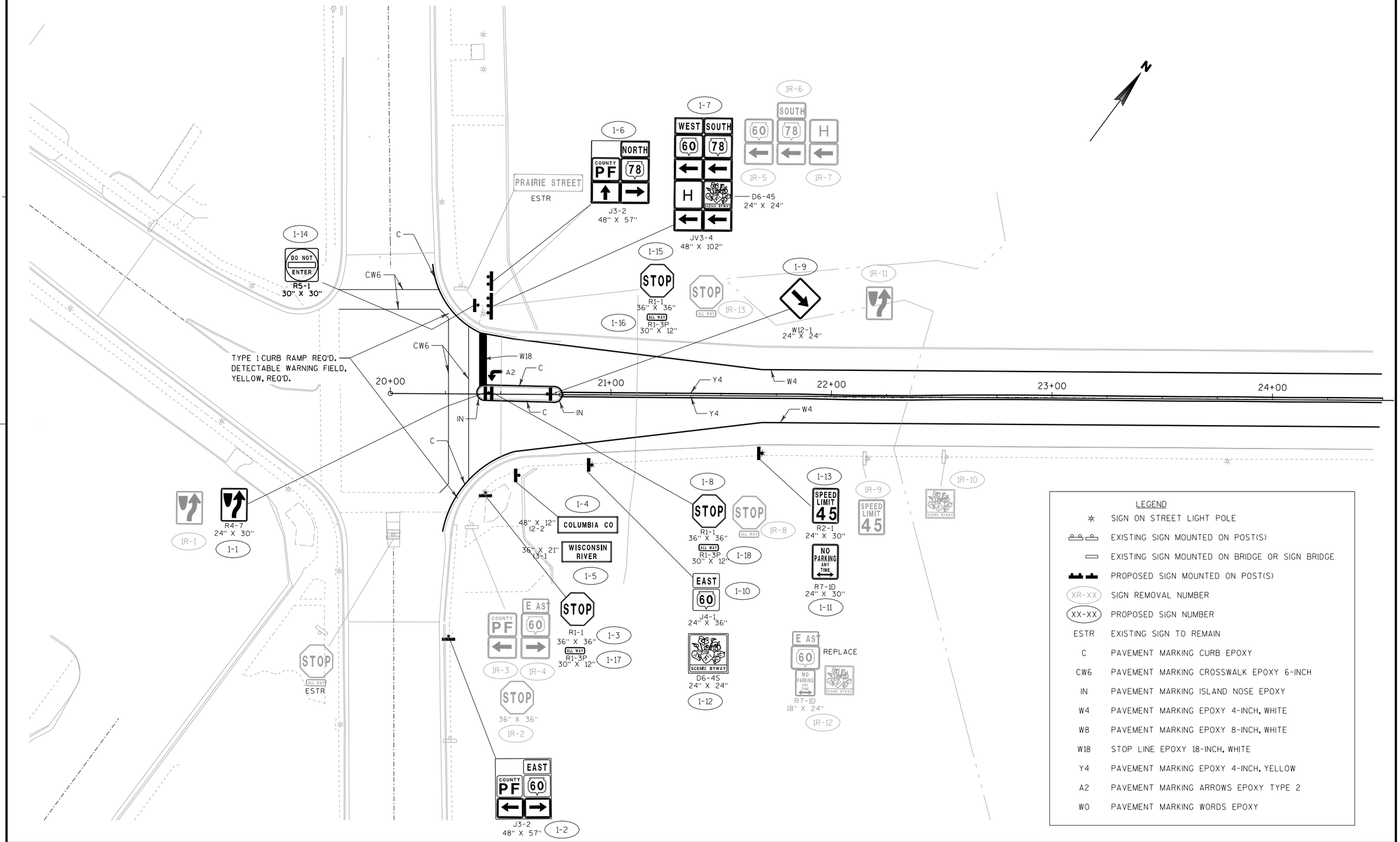
CONCRETE PAV'T
LIMITS

CONSTRUCTION LIMITS

STH 188

PROJECT NO: 5271-01-01	HWY: STH 60	COUNTY: SAUK	LAYOUT DETAIL - STH 188 & USH 12 INTERSECTION TURNING LANE	SHEET 10	E

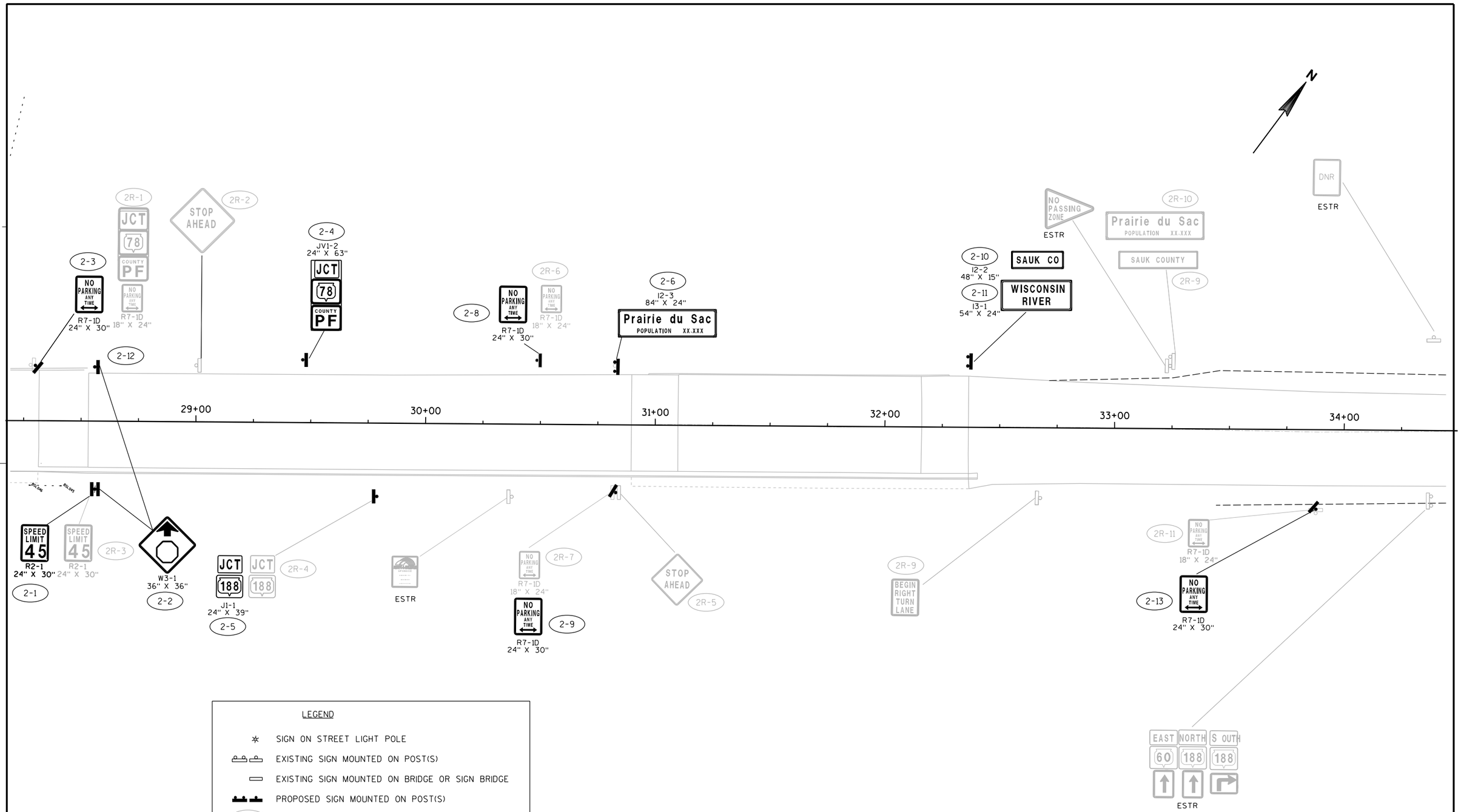
FILE NAME : M:\CAD\ACTIVE\SW\5271-01-71 STH 60\TURN LANE\LAYOUT_DETAIL.DWG PLOT DATE : 2/13/2014 7:56 AM PLOT BY : JASON LAUTERS PLOT NAME : PLOT SCALE : 1 IN: 30 FT



LEGEND

✲	SIGN ON STREET LIGHT POLE
▭▭	EXISTING SIGN MOUNTED ON POST(S)
▭	EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
▬▬	PROPOSED SIGN MOUNTED ON POST(S)
XR-XX	SIGN REMOVAL NUMBER
XX-XX	PROPOSED SIGN NUMBER
ESTR	EXISTING SIGN TO REMAIN
C	PAVEMENT MARKING CURB EPOXY
CW6	PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
IN	PAVEMENT MARKING ISLAND NOSE EPOXY
W4	PAVEMENT MARKING EPOXY 4-INCH, WHITE
W8	PAVEMENT MARKING EPOXY 8-INCH, WHITE
W18	STOP LINE EPOXY 18-INCH, WHITE
Y4	PAVEMENT MARKING EPOXY 4-INCH, YELLOW
A2	PAVEMENT MARKING ARROWS EPOXY TYPE 2
WO	PAVEMENT MARKING WORDS EPOXY

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	PERMANENT SIGNING, SIGNING REMOVALS AND PAVEMENT MARKING	SHEET 11	E



LEGEND

✲	SIGN ON STREET LIGHT POLE
	EXISTING SIGN MOUNTED ON POST(S)
	EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
	PROPOSED SIGN MOUNTED ON POST(S)
XR-XX	SIGN REMOVAL NUMBER
XX-XX	PROPOSED SIGN NUMBER
ESTR	EXISTING SIGN TO REMAIN

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	PERMANENT SIGNING, SIGNING REMOVALS AND PAVEMENT MARKING	SHEET 12	E

2

USH 12 EASTBOUND

USH 12 WESTBOUND

LEGEND

*	SIGN ON STREET LIGHT POLE
	EXISTING SIGN MOUNTED ON POST(S)
	EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
	PROPOSED SIGN MOUNTED ON POST(S)
XR-XX	SIGN REMOVAL NUMBER
M1	SIGN MOVING NUMBER
XR-XX	PROPOSED SIGN NUMBER
ESTR	EXISTING SIGN TO REMAIN
W4	PAVEMENT MARKING EPOXY 4-INCH, WHITE
W8	PAVEMENT MARKING EPOXY 8-INCH, WHITE
W18	STOP LINE EPOXY 18-INCH, WHITE
WO	PAVEMENT MARKING WORDS EPOXY
× × ×	REMOVING PAVEMENT MARKINGS

N

SPEED LIMIT 45
ESTR

W4

3R-1
M1-4
24"_X_24"
12
M_6-4
21"_X_21"
REMOVE

M2
STOP
R1-1
30"_X_30"
DIVIDED HIGHWAY
R6-3A
30"_X_24"
MOVE

3-1
EAST WEST
12 12
J3-2
48"_X_57"

M2
STOP
R1-1
36"_X_36"
DIVIDED HIGHWAY
R6-3
30"_X_24"

MADISON
SAUK CITY
ESTR

W18

A2

WO

A2

W4

W8

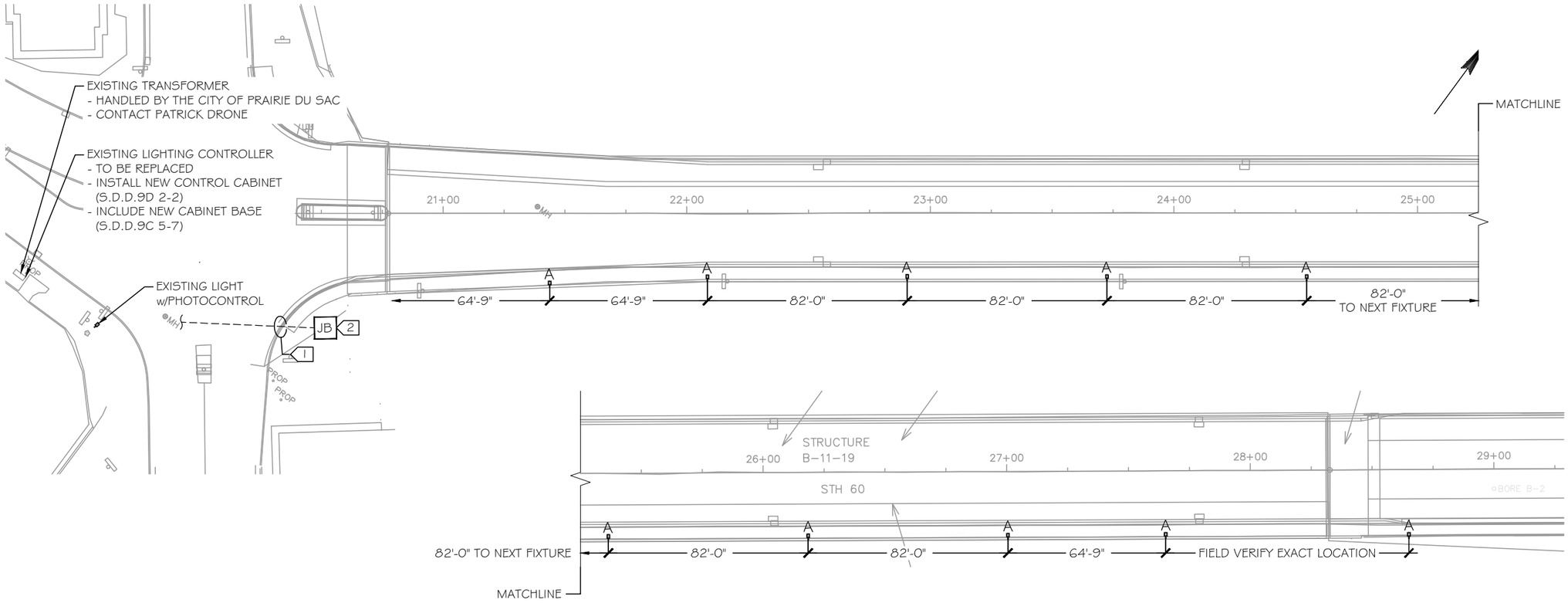
STH 188

NORTH
188
ESTR

ADOPT A HIGHWAY
SPONSOR
STEVE'S ARBORETUM
ESTR

PROJECT NO: 5271-01-01	HWY: STH 60	COUNTY: SAUK	PERMANENT SIGNING AND PAVEMENT MARKING - USH 12 & STH 188	SHEET 13	E

FILE NAME : PLOT DATE : PLOT BY : PLOT NAME : PLOT SCALE : 1 IN: 30 FT



1 LIGHTING PLAN

Scale: 1/4" = 1'2"

SHEET NOTES

1. EXISTING CONDUIT BENEATH STREET - TO REMAIN. EXACT LOCATION OF THE CONDUIT TO BE DETERMINED.

2. ADD NEW PULLBOX - EXACT LOCATION TO BE VERIFIED. FEED NEW BRIDGE LIGHTING DIRECTLY FROM THIS POINT.

FIXTURE SCHEDULE

TAG
A
MANUFACTURER
LITHONIA
MODEL
FIXTURE - MR2 LED 2 30B700/40K SR2 RPA MVOLT PER HS POLE - RSA 18 5C DM19AS
DESCRIPTION
- LED AREA LIGHT - 18'-0" POLE - TYPE II DISTRIBUTION - HOUSE SIDE SHIELD / BUILT-IN PHOTOCELL

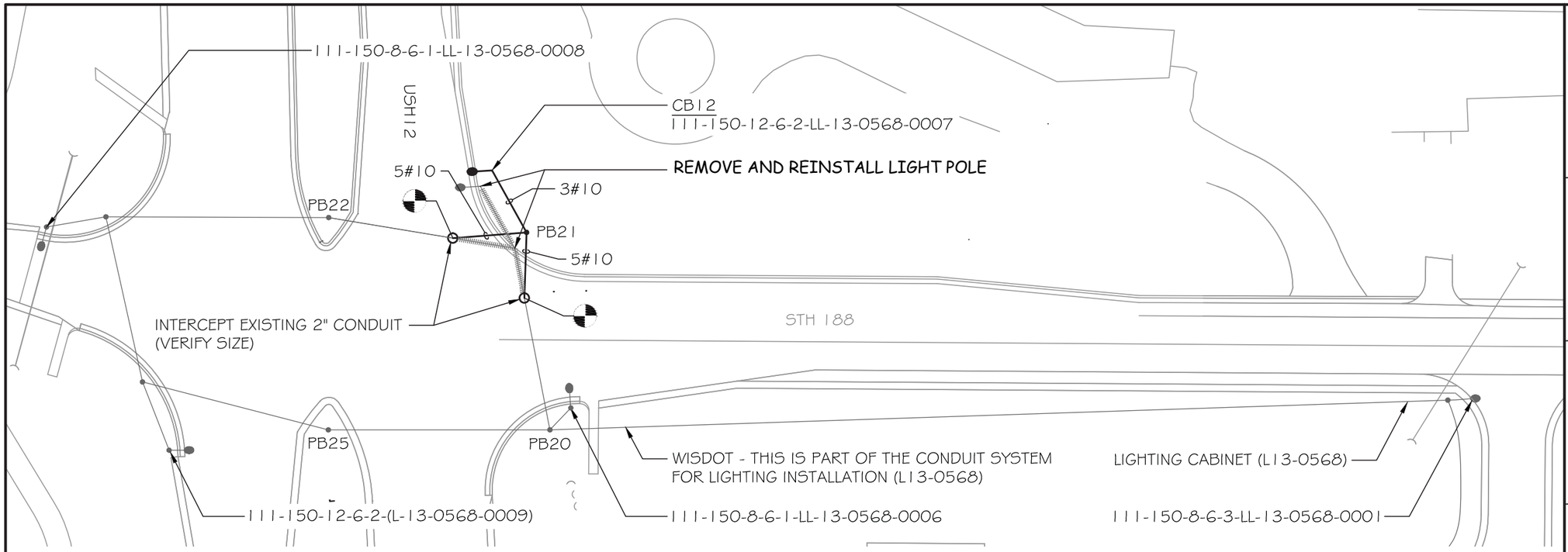
STATISTICS

LUMINAIRES (QTY.)	TOTAL POWER
9	1,323 watts
PARKING AREA	POWER DENSITY
40,655 ft.²	0.1 watt / ft.²

PHOTOMETRICS

AVERAGE	MAXIMUM	MINIMUM
1.7 f.c.	6.4 f.c.	0.1 f.c.
MAX. / MIN.		AVERAGE / MIN.
64:1		17:1

DRAWN BY: TJL CHECKED BY: JRR



1 LIGHTING PLAN

Scale: 1" = 50'

LEGEND

- CONTROL CABINET
- NON-METALLIC CONDUIT 2" UNLESS OTHERWISE NOTED
- PULL BOX 24" X 36"
- LUMINAIRE 150 WHPS

LP7
III-150-8-6-4-(L-13-568-0001)

- LIGHT UNIT NUMBER IN CIRCUIT
- CIRCUIT NUMBER
- BASE TYPE
- MAST ARM BRACKET LENGTH IN FEET
- LAMP WATTAGE
- DISTRIBUTION TYPE

RAMAKER & ASSOCIATES, INC.
1120 Dallas Street, Sauk City, WI 53583
Phone: 608-643-4100 Fax: 608-643-7999
www.Ramaker.com

Certification & Seal:

MARK	DATE	DESCRIPTION

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/18/2013

PROJECT TITLE:
STH 188 & USH 12
INTERSECTION TURNING LANE

PROJECT OWNER:
WISCONSIN DOT

SHEET TITLE:
LIGHTING PLAN

SCALE:
AS NOTED

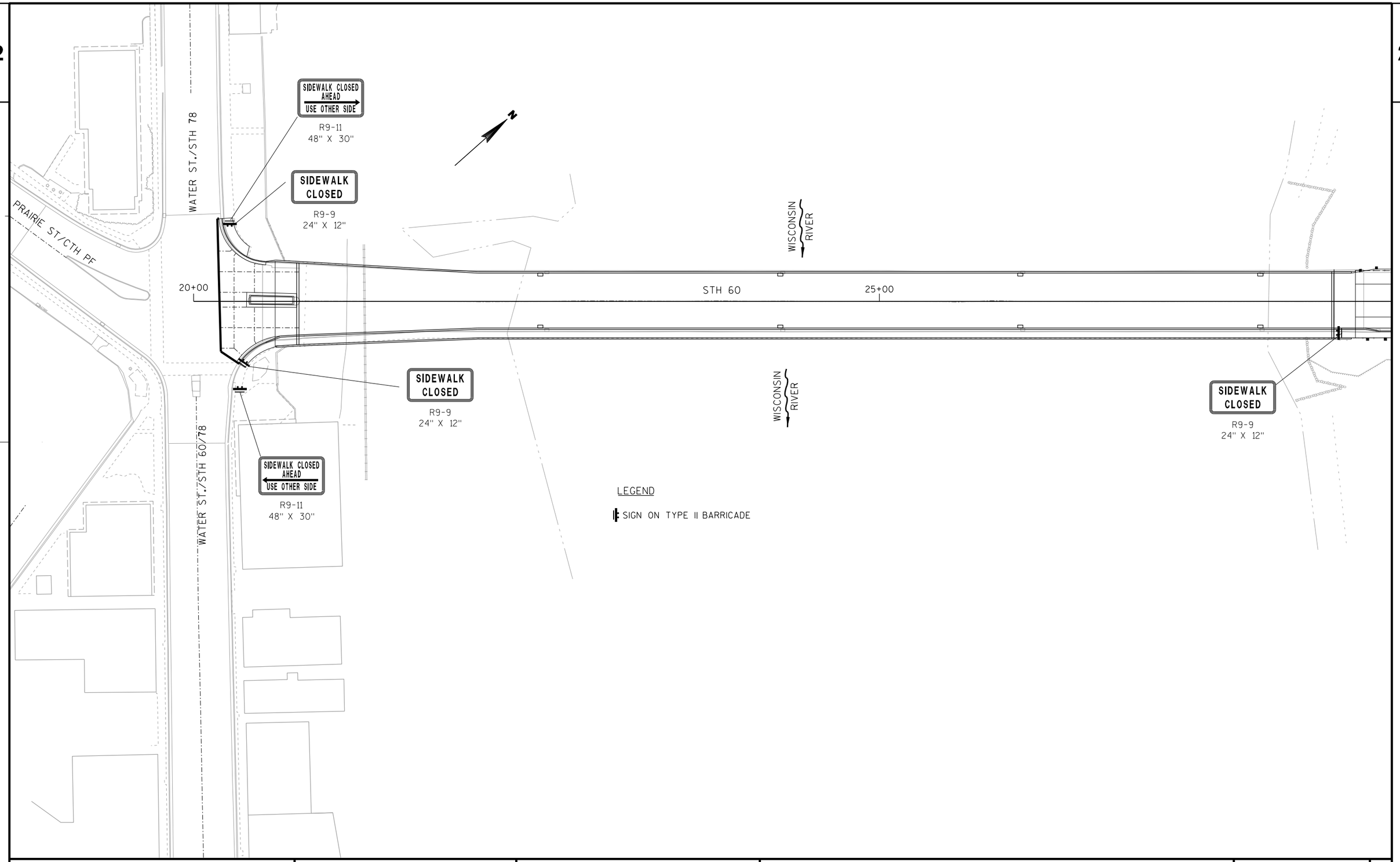
15

PROJECT NUMBER: 18060

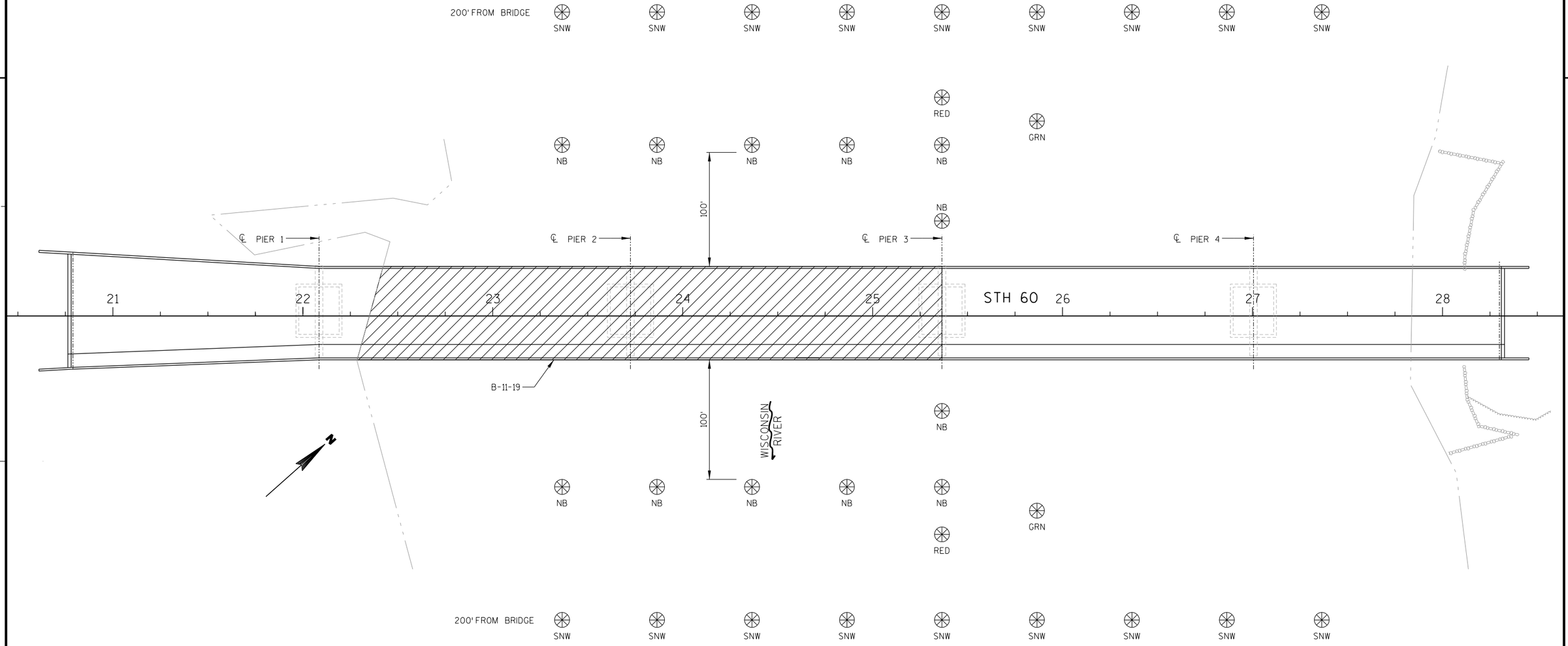
SHEET NUMBER: E1

I:\18000\18060\Design_Hwy 12 Intersection\18060 - E1 - Electrical Plan - HWY 12.dwg Printed by: tlobraco on Sep 18, 2013 - 11:11am

2



PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	DETAIL FOR SIDEWALK CLOSURE	SHEET 16	E



LEGEND					
DESCRIPTION	SLOW - NO WAKE BOUY W/ WARNING LIGHT	NO BOATS BOUY W/ WARNING LIGHT	RED BOUY W/ WARNING LIGHT	GREEN BOUY W/ WARNING LIGHT	CLOSED
SYMBOL	SNW	NB	RED	GRN	
DETAIL	SLOW NO WAKE	NO BOATS			

NOTES:

ALL BOUYS SHALL BE CYLINDRICAL IN SHAPE, A MINIMUM OF 36-INCHES ABOVE THE WATER LINE, AND A MINIMUM 7-INCHES IN DIAMETER.

ALL LETTERING SHALL BE BLACK.

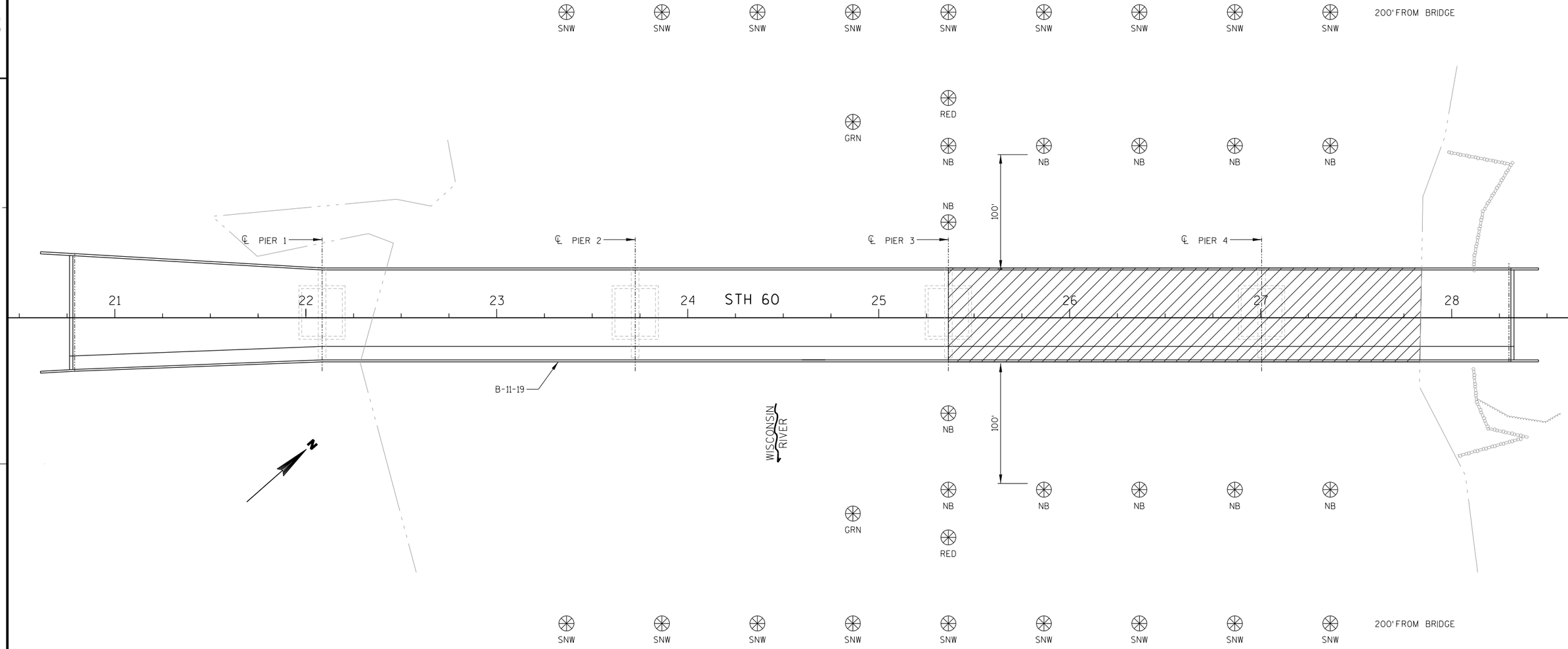
NO WAKE BOUYS SHALL BE WHITE WITH AN 11-INCH DIAMETER ORANGE CIRCLE.

NO BOAT BOUYS SHALL BE WHITE WITH AN 11-INCH WIDE BY 14 INCH TALL ORANGE DIAMOND/CROSS INSIDE.

ALL BOUYS SHALL HAVE WARNING LIGHTS.

ALL BOUYS SHALL HAVE ANCHORS CAPABLE OF KEEPING THE BOUY IN PLACE.

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	WI. RIVER BOAT TRAFFIC CONTROL PLAN - WEST X-INGS CLOSED	SHEET 17	E



LEGEND					
DESCRIPTION	SLOW - NO WAKE BOUY W/ WARNING LIGHT	NO BOATS BOUY W/ WARNING LIGHT	RED BOUY W/ WARNING LIGHT	GREEN BOUY W/ WARNING LIGHT	CLOSED
SYMBOL	SNW	NB	RED	GRN	
DETAIL	SLOW NO WAKE	NO BOATS			

NOTES:

ALL BOUYS SHALL BE CYLINDRICAL IN SHAPE, A MINIMUM OF 36-INCHES ABOVE THE WATER LINE, AND A MINIMUM 7-INCHES IN DIAMETER.

ALL LETTERING SHALL BE BLACK.

NO WAKE BOUYS SHALL BE WHITE WITH AN 11-INCH DIAMETER ORANGE CIRCLE.

NO BOAT BOUYS SHALL BE WHITE WITH AN 11-INCH WIDE BY 14 INCH TALL ORANGE DIAMOND/CROSS INSIDE.

ALL BOUYS SHALL HAVE WARNING LIGHTS.

ALL BOUYS SHALL HAVE ANCHORS CAPABLE OF KEEPING THE BOUY IN PLACE.

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	WI. RIVER BOAT TRAFFIC CONTROL PLAN - EAST X-INGS CLOSED	SHEET 18	E

GENERAL NOTES

SEE S.D.D. 15C2 "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAILS B & D AND "DETOUR SIGNING FOR MAINLINE CLOSURES" DETAIL F

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

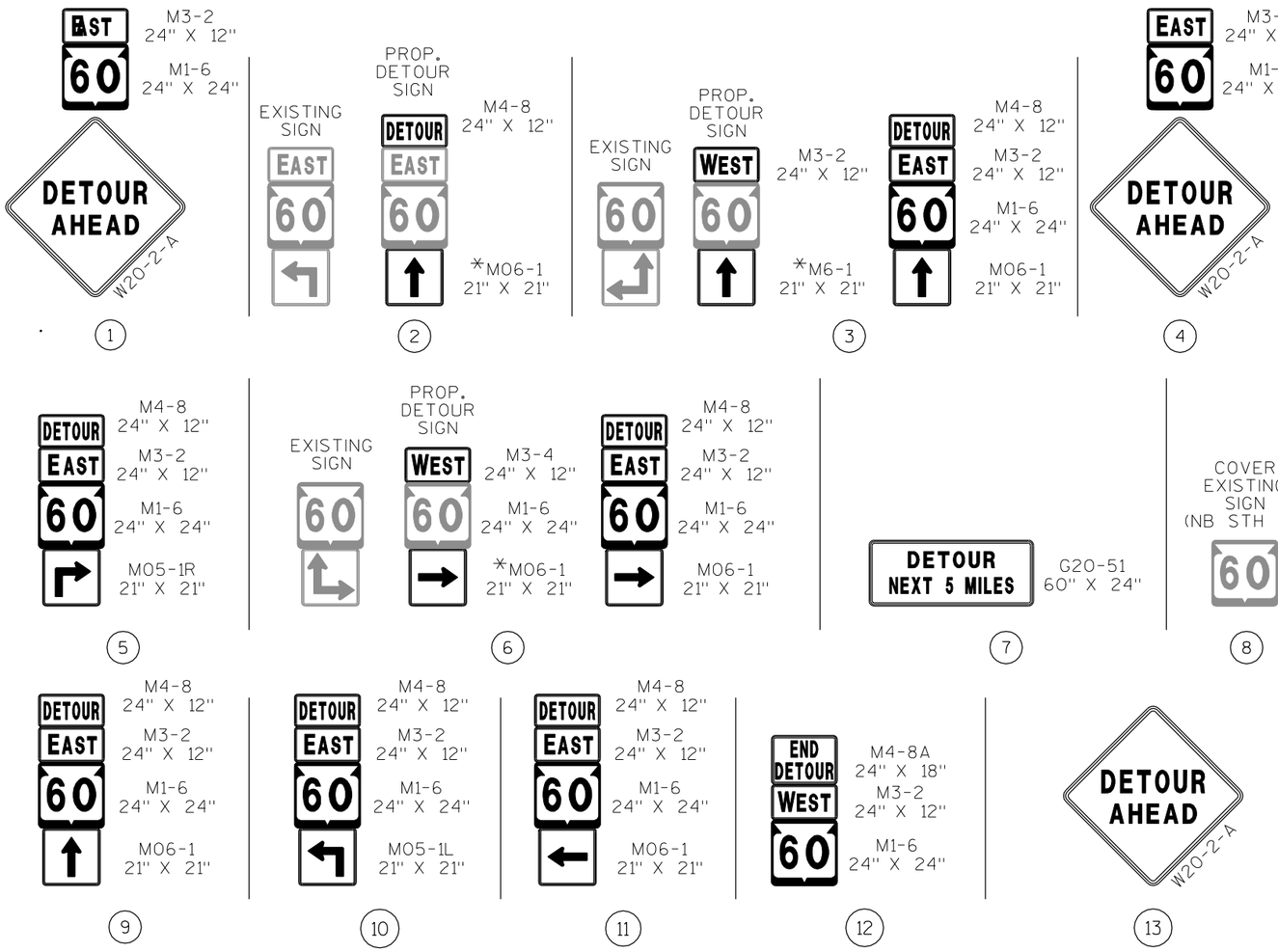
ANY SIGNS TEMPORARY OR EXISTING THAT CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE COVERED. THE COVERING OF WOOD POST MOUNTED SIGNS IS INCLUDED UNDER ITEM 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II. IN LIEU OF COVERING WOOD POST MOUNTED SIGNS, THE CONTRACTOR MAY CHOOSE TO REMOVE AND REINSTALL THEM.

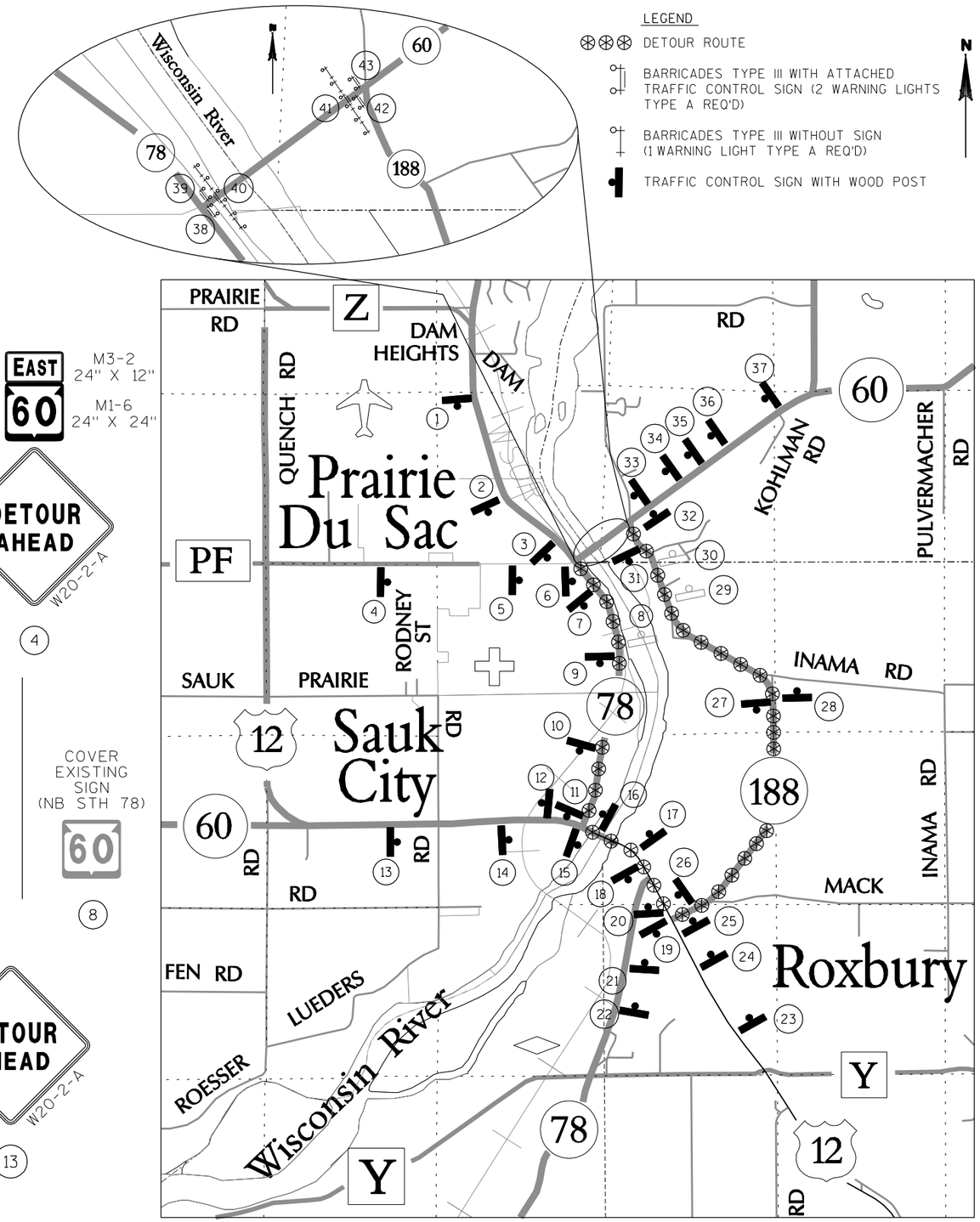
"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL WARNING, "W", SIGNS SHALL BE 48"X48" UNLESS OTHERWISE NOTED.

IMMEDIATELY RE-ESTABLISH "STOP" SIGNS THAT ARE REMOVED FOR CONSTRUCTION OPERATIONS.

*COVER EXISTING SIGN WITH PROPOSED DETOUR SIGN





PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	DETOUR ROUTE	SHEET 19	E

GENERAL NOTES

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*COVER EXISTING SIGN WITH PROPOSED DETOUR SIGN

14

EXISTING SIGN: EAST 60

PROP. DETOUR SIGN: DETOUR / EAST 60 — M4-8 24" X 12"; *M06-1 21" X 21"

15

EXISTING SIGN: EAST 60

PROP. DETOUR SIGN: DETOUR / EAST 60 — M4-8 24" X 12"; *M06-1 21" X 21"

16

EXISTING SIGN: EAST 60

PROP. DETOUR SIGN: DETOUR / WEST 60 — M4-8 24" X 12"; *M3-4 24" X 12"; *M06-1 21" X 21"

17

EXISTING SIGN: EAST 60

PROP. DETOUR SIGN: DETOUR / WEST 60 — M4-8 24" X 12"; *M3-4 24" X 12"; *M06-1 21" X 21"

18

DETOUR / EAST 60 — M4-8 24" X 12"; M3-2 24" X 12"; M1-6 24" X 24"; M05-1L 21" X 21"

19

DETOUR / EAST 60 — M4-8 24" X 12"; M3-2 24" X 12"; M1-6 24" X 24"; M06-1 21" X 21"

20

DETOUR / WEST 60 — M4-8 24" X 12"; M3-4 24" X 12"; M1-6 24" X 24"; M06-1 21" X 21"

DETOUR / EAST 60 — M4-8 24" X 12"; M3-2 24" X 12"; M1-6 24" X 24"; M06-1 21" X 21"

21

DETOUR / 60 — M4-8 24" X 12"; M1-6 24" X 24"

22

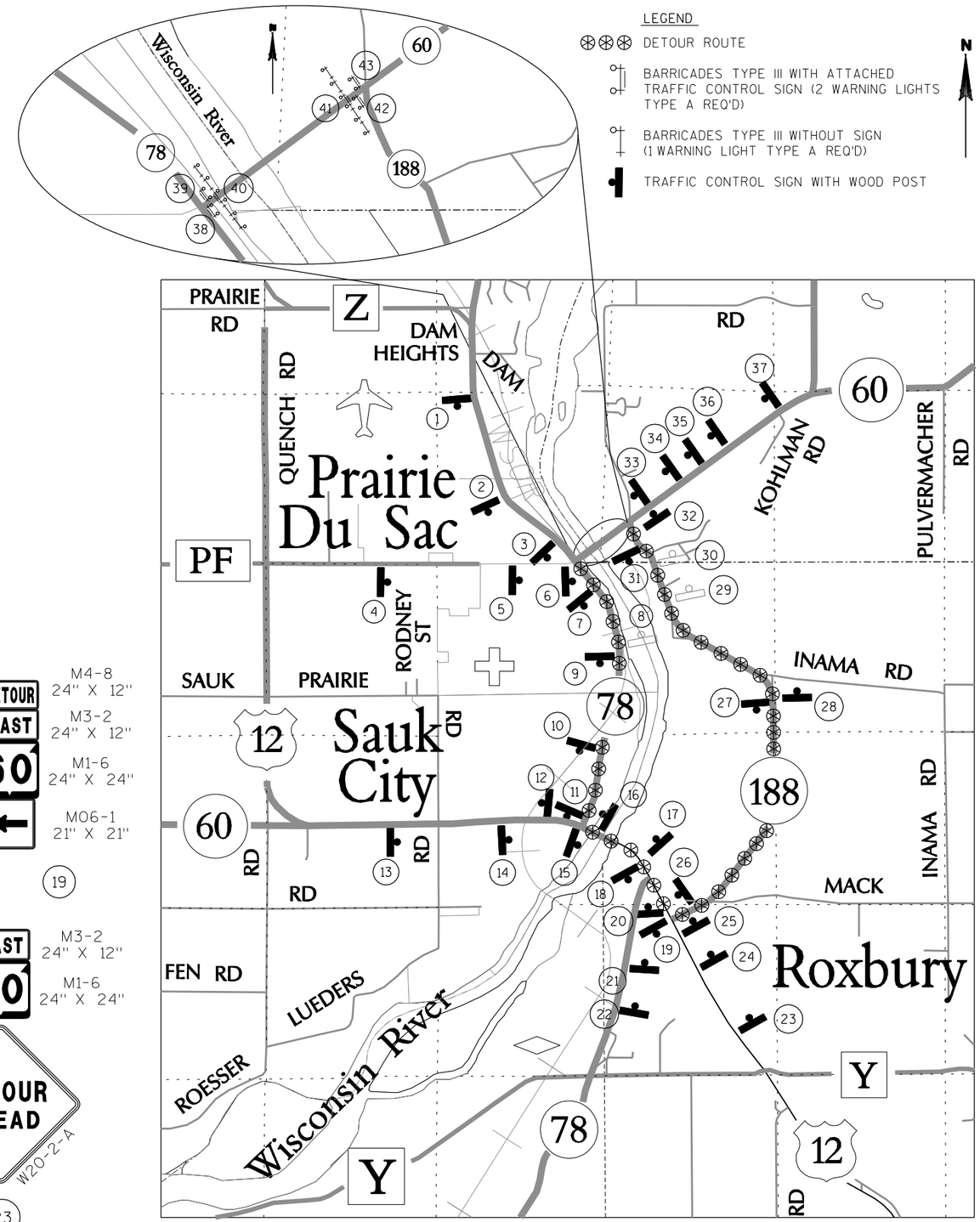
60 — M1-6 24" X 24"

DETOUR AHEAD W20-2-A

23

EAST 60 — M3-2 24" X 12"; M1-6 24" X 24"

DETOUR AHEAD W20-2-A



PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	DETOUR ROUTE	SHEET 20	E

GENERAL NOTES

SEE S.D.D. 15C2 "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAILS B & D AND "DETOUR SIGNING FOR MAINLINE CLOSURES" DETAIL F

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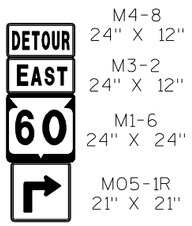
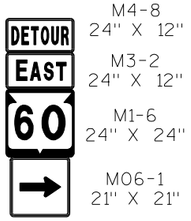
*COVER EXISTING SIGN WITH PROPOSED DETOUR SIGN



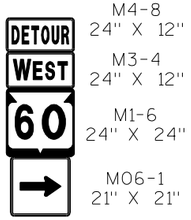
M4-8 24" X 12"
M3-2 24" X 12"
M1-6 24" X 24"
MO5-1R 21" X 21"

24



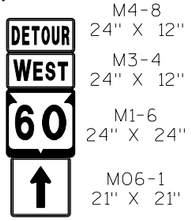
M4-8 24" X 12"
M3-2 24" X 12"
M1-6 24" X 24"
MO6-1 21" X 21"

25



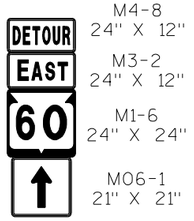
M4-8 24" X 12"
M3-4 24" X 12"
M1-6 24" X 24"
MO6-1 21" X 21"

26



M4-8 24" X 12"
M3-4 24" X 12"
M1-6 24" X 24"
MO6-1 21" X 21"

27



M4-8 24" X 12"
M3-2 24" X 12"
M1-6 24" X 24"
MO6-1 21" X 21"

28

COVER EXISTING SIGN (NB STH 188)

29

COVER TOP PORTION OF EXISTING SIGN (NB STH 188)

30

PROP. DETOUR SIGN

COVER EXISTING SIGN

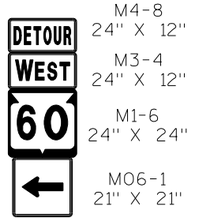
EXISTING SIGN

M4-8A 24" X 18"

G20-51 60" X 24"

31

32

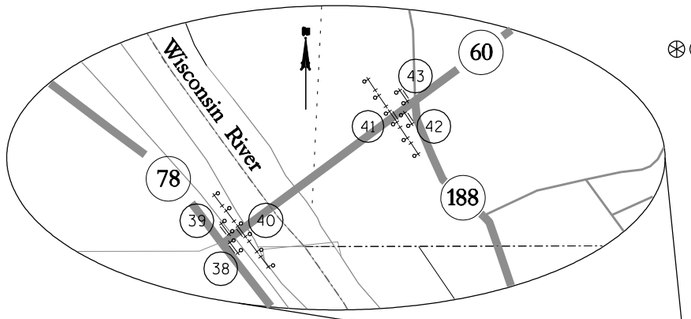


M4-8 24" X 12"
M3-4 24" X 12"
M1-6 24" X 24"
MO6-1 21" X 21"

33

W20-3-D

34



LEGEND

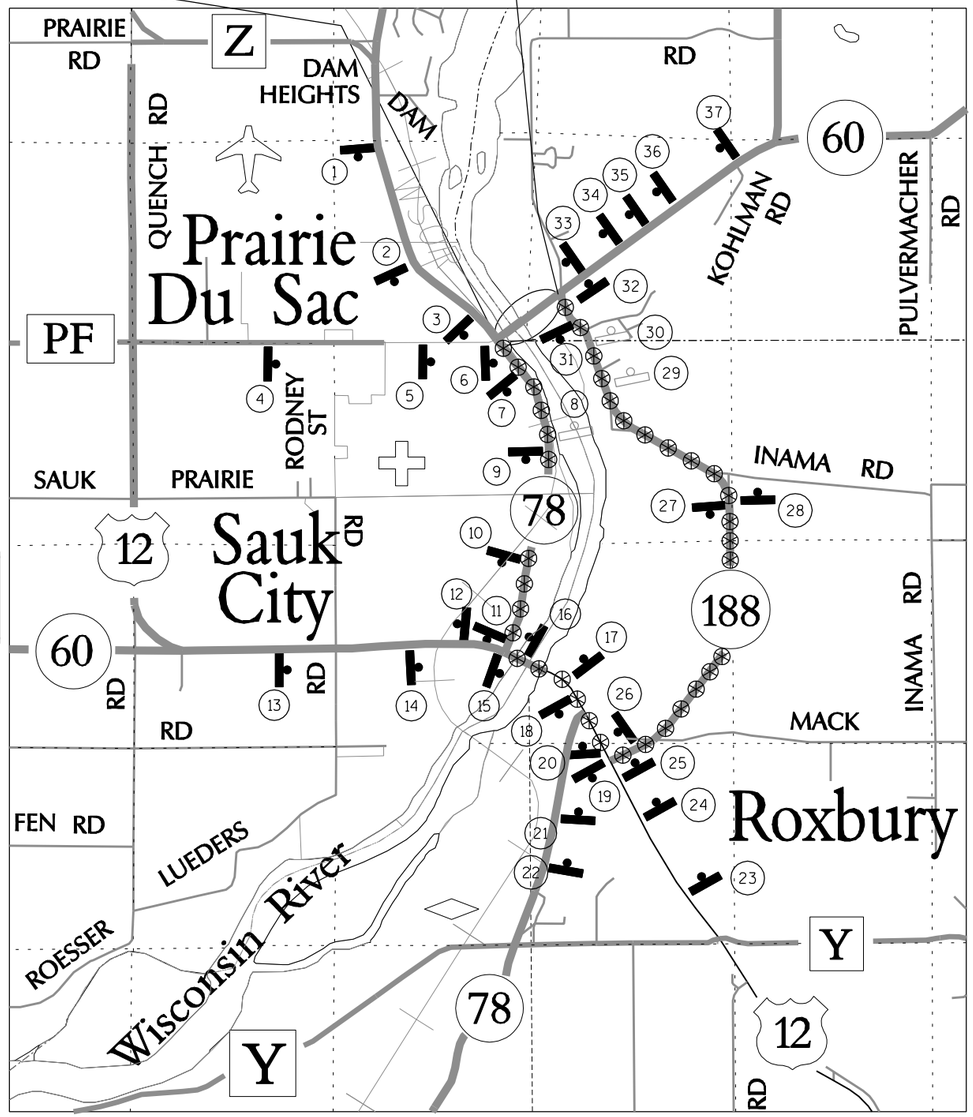
DETOUR ROUTE

BARRICADES TYPE III WITH ATTACHED TRAFFIC CONTROL SIGN (2 WARNING LIGHTS TYPE A REQ'D)

BARRICADES TYPE III WITHOUT SIGN (1 WARNING LIGHT TYPE A REQ'D)

TRAFFIC CONTROL SIGN WITH WOOD POST

N



PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	DETOUR ROUTE	SHEET 21	E

GENERAL NOTES

SEE S.D.D. 15C2 "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAILS B & D AND "DETOUR SIGNING FOR MAINLINE CLOSURES" DETAIL F

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IMMEDIATELY RE-ESTABLISH "STOP" SIGNS THAT ARE REMOVED FOR CONSTRUCTION OPERATIONS.

*COVER EXISTING SIGN WITH PROPOSED DETOUR SIGN

EXISTING SIGN

PROP. DETOUR SIGN

M4-8
24" X 12"

*M05-1L
21" X 21"

35

DETOUR AHEAD
W20-2-A

36

ROAD CLOSED AHEAD
W20-3-A

37

DETOUR
M4-9R
30" X 24"

38

BRIDGE OUT
R11-2B
48" X 30"

39

BRIDGE OUT
R11-2B
48" X 30"

40

BRIDGE OUT
R11-2B
48" X 30"

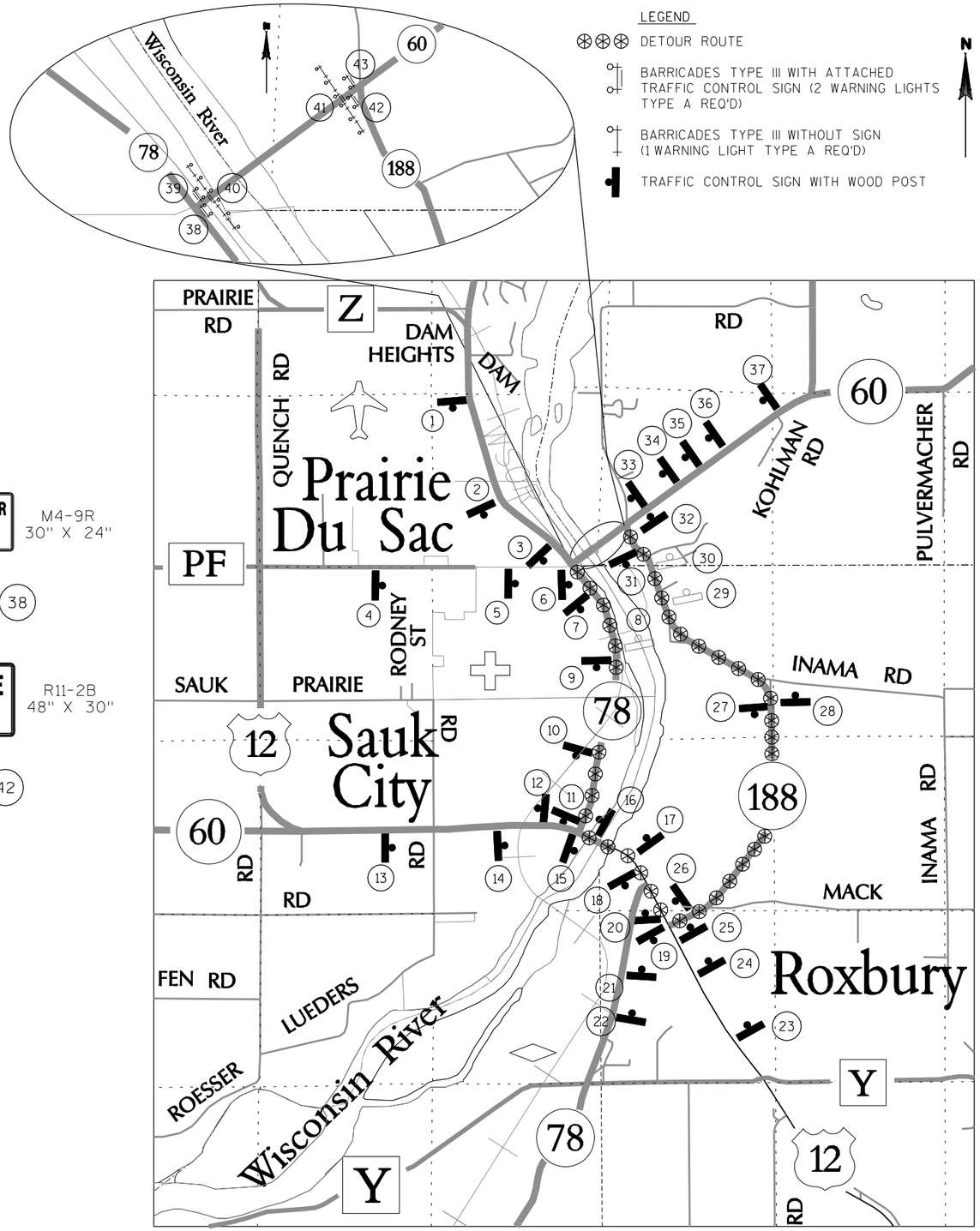
41

BRIDGE OUT
R11-2B
48" X 30"

42

DETOUR
M4-9L
30" X 24"

43



PROJECT NO:5271-01-71	HWY:STH 60	COUNTY:SAUK	DETOUR ROUTE	SHEET 22	E

FILE NAME : m:\CAD\Active\SW\5271-01-71 STH 60\5271-01-71 Detour Route 4.DGN PLOT DATE : 2/14/2014 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : 4000.0000 ' / IN.
WISDOT/CADDS SHEET 42

DATE 24FEB14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	5271-01-71 QUANTITY
0010	203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL (STRUCTURE) 01. B-11-19	LS	1.000	1.000
0020	203.0700.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH DEBRIS CAPTURE SYSTEM (STATION) 01. 24+54.50	LS	1.000	1.000
0030	204.0100	REMOVING PAVEMENT	SY	875.000	875.000
0040	204.0150	REMOVING CURB & GUTTER	LF	645.000	645.000
0050	204.0155	REMOVING CONCRETE SIDEWALK	SY	72.000	72.000
0060	204.0165	REMOVING GUARDRAIL	LF	712.000	712.000
0070	204.0195	REMOVING CONCRETE BASES	EACH	2.000	2.000
0080	204.0220	REMOVING INLETS	EACH	1.000	1.000
0090	205.0100	EXCAVATION COMMON	CY	893.000	893.000
0100	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-11-19	LS	1.000	1.000
0110	210.0100	BACKFILL STRUCTURE	CY	223.000	223.000
0120	213.0100	FINISHING ROADWAY (PROJECT) 01. 5271-01-71	EACH	1.000	1.000
0130	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	20.000	20.000
0140	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	1,200.000	1,200.000
0150	415.0080	CONCRETE PAVEMENT 8-INCH	SY	435.000	435.000
0160	415.0090	CONCRETE PAVEMENT 9-INCH	SY	235.000	235.000
0170	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	144.000	144.000
0180	416.0610	DRILLED TIE BARS	EACH	236.000	236.000
0190	416.0620	DRILLED DOWEL BARS	EACH	120.000	120.000
0200	416.1715	CONCRETE PAVEMENT REPAIR SHES	SY	60.000	60.000
0210	455.0605	TACK COAT	GAL	58.000	58.000
0220	465.0105	ASPHALTIC SURFACE	TON	455.000	455.000
0230	502.0100	CONCRETE MASONRY BRIDGES	CY	1,544.000	1,544.000
0240	502.3100	EXPANSION DEVICE (STRUCTURE) 01. B-11-19	LS	1.000	1.000
0250	502.3110.S	EXPANSION DEVICE MODULAR (STRUCTURE) 01. B-11-19	LS	1.000	1.000
0260	502.3200	PROTECTIVE SURFACE TREATMENT	SY	622.000	622.000
0270	502.5010	MASONRY ANCHORS TYPE L NO. 6 BARS	EACH	384.000	384.000
0280	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	373,480.000	373,480.000
0290	509.5100.S	POLYMER OVERLAY	SY	3,584.000	3,584.000
0300	514.0460	FLOOR DRAINS TYPE H	EACH	4.000	4.000
0310	514.2625	DOWNSPOUT 6-INCH	LF	32.000	32.000
0320	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	39.000	39.000
0330	517.0900.S	PREPARATION AND COATING OF TOP FLANGES (STRUCTURE) 01. B-11-19	LS	1.000	1.000
0340	517.1010.S	CONCRETE STAINING (STRUCTURE) 01. B-11-19	SF	11,741.000	11,741.000
0350	517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE (STRUCTURE) 01. B-11-19	LS	1.000	1.000
0360	517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS (STRUCTURE) 01. B-11-19	LS	1.000	1.000
0370	517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1.000	1.000
0380	520.8000	CONCRETE COLLARS FOR PIPE	EACH	1.000	1.000
0390	601.0105	CONCRETE CURB TYPE A	LF	80.000	80.000
0400	601.0409	CONCRETE CURB & GUTTER 30-INCH TYPE A	LF	130.000	130.000
0410	601.0411	CONCRETE CURB & GUTTER 30-INCH TYPE D	LF	32.000	32.000
0420	601.0415	CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE J	LF	243.000	243.000

3

DATE 24FEB14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	5271-01-71 QUANTITY
0430	601.0555	CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE A	LF	85.000	85.000
0440	601.0557	CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	LF	300.000	300.000
0450	602.0410	CONCRETE SIDEWALK 5-INCH	SF	764.000	764.000
0460	602.0505	CURB RAMP DETECTABLE WARNING FIELD YELLOW	SF	16.000	16.000
0470	606.0400	RIPRAP EXTRA-HEAVY	CY	461.000	461.000
0480	608.0318	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH	LF	8.000	8.000
0490	611.0624	INLET COVERS TYPE H	EACH	3.000	3.000
0500	611.1003	CATCH BASINS 3-FT DIAMETER	EACH	1.000	1.000
0510	611.1230	CATCH BASINS 2X3-FT	EACH	1.000	1.000
0520	611.8105	ADJUSTING CATCH BASIN COVERS	EACH	2.000	2.000
0530	611.9710	SALVAGED INLET COVERS	EACH	1.000	1.000
0540	612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	120.000	120.000
0550	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	165.000	165.000
0560	614.0010	BARRIER SYSTEM GRADING SHAPING FINISHING	EACH	2.000	2.000
0570	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2.000	2.000
0580	614.2300	MGS GUARDRAIL 3	LF	625.000	625.000
0590	614.2500	MGS THRIE BEAM TRANSITION	LF	126.000	126.000
0600	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	2.000	2.000
0610	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 5271-01-71	EACH	1.000	1.000
0620	619.1000	MOBILIZATION	EACH	1.000	1.000
0630	625.0500	SALVAGED TOPSOIL	SY	430.000	430.000
0640	627.0200	MULCHING	SY	200.000	200.000
0650	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	430.000	430.000
0660	628.7005	INLET PROTECTION TYPE A	EACH	4.000	4.000
0670	628.7010	INLET PROTECTION TYPE B	EACH	4.000	4.000
0680	629.0210	FERTILIZER TYPE B	CWT	12.600	12.600
0690	630.0120	SEEDING MIXTURE NO. 20	LB	11.160	11.160
0700	630.0200	SEEDING TEMPORARY	LB	4.860	4.860
0710	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	21.000	21.000
0720	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	3.000	3.000
0730	634.0620	POSTS WOOD 4X6-INCH X 20-FT	EACH	2.000	2.000
0740	637.2210	SIGNS TYPE II REFLECTIVE H	SF	258.000	258.000
0750	638.2102	MOVING SIGNS TYPE II	EACH	1.000	1.000
0760	638.2602	REMOVING SIGNS TYPE II	EACH	33.000	33.000
0770	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	17.000	17.000
0780	638.4000	MOVING SMALL SIGN SUPPORTS	EACH	1.000	1.000
0790	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0800	643.0100	TRAFFIC CONTROL (PROJECT) 01. 5271-01-71	EACH	1.000	1.000
0810	643.0300	TRAFFIC CONTROL DRUMS	DAY	268.000	268.000
0820	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	2,548.000	2,548.000
0830	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	3,768.000	3,768.000
0840	643.0900	TRAFFIC CONTROL SIGNS	DAY	56.000	56.000
0850	643.0910	TRAFFIC CONTROL COVERING SIGNS TYPE I	EACH	4.000	4.000
0860	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	4.000	4.000
0870	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01. 5271-01-71	EACH	1.000	1.000
0880	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	19,980.000	19,980.000
0890	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	739.000	739.000
0900	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	4,830.000	4,830.000

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DATE 24FEB14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	5271-01-71 QUANTITY
0910	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	200.000	200.000
0920	647.0166	PAVEMENT MARKING ARROWS EPOXY TYPE 2	EACH	3.000	3.000
0930	647.0356	PAVEMENT MARKING WORDS EPOXY	EACH	1.000	1.000
0940	647.0456	PAVEMENT MARKING CURB EPOXY	LF	190.000	190.000
0950	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	70.000	70.000
0960	647.0606	PAVEMENT MARKING ISLAND NOSE EPOXY	EACH	10.000	10.000
0970	647.0766	PAVEMENT MARKING CROSSWALK EPOXY 6-INCH	LF	300.000	300.000
0980	650.4000	CONSTRUCTION STAKING STORM SEWER	EACH	1.000	1.000
0990	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	615.000	615.000
1000	650.5000	CONSTRUCTION STAKING BASE	LF	372.000	372.000
1010	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	388.000	388.000
1020	650.7000	CONSTRUCTION STAKING CONCRETE PAVEMENT	LF	243.000	243.000
1030	650.8500	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) 01. 5271-01-71	LS	1.000	1.000
1040	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	558.000	558.000
1050	652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	21.000	21.000
1060	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	1,597.000	1,597.000
1070	653.0135	PULL BOXES STEEL 24X36-INCH	EACH	3.000	3.000
1080	653.0222	JUNCTION BOXES 18X12X6-INCH	EACH	9.000	9.000
1090	653.0905	REMOVING PULL BOXES	EACH	1.000	1.000
1100	654.0102	CONCRETE BASES TYPE 2	EACH	2.000	2.000
1110	654.0106	CONCRETE BASES TYPE 6	EACH	2.000	2.000
1120	654.0200	CONCRETE CONTROL CABINET BASES TYPE 6	EACH	1.000	1.000
1130	655.0615	ELECTRICAL WIRE LIGHTING 10 AWG	LF	1,650.000	1,650.000
1140	655.0620	ELECTRICAL WIRE LIGHTING 8 AWG	LF	450.000	450.000
1150	655.0625	ELECTRICAL WIRE LIGHTING 6 AWG	LF	600.000	600.000
1160	656.0100	ELECTRICAL SERVICE METER SOCKET (LOCATION) 01. SW QUADRANT WATER ST INTERSECTION	LS	1.000	1.000
1170	657.0310	POLES TYPE 3	EACH	10.000	10.000
1180	657.6005.S	ANCHOR ASSEMBLIES LIGHT POLES ON STRUCTURES	EACH	9.000	9.000
1190	659.1115	LUMINAIRES UTILITY LED A	EACH	10.000	10.000
1200	690.0150	SAWING ASPHALT	LF	274.000	274.000
1210	690.0250	SAWING CONCRETE	LF	438.000	438.000
1220	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	9,264.000	9,264.000
1230	SPV.0060	SPECIAL 01. CLEANING AND PAINTING BEARINGS	EACH	30.000	30.000
1240	SPV.0060	SPECIAL 02. LIGHTING CONTROL CABINET	EACH	1.000	1.000
1250	SPV.0105	SPECIAL 01. RAILING TYPE C3 GALVANIZED PED B-11-19	LS	1.000	1.000
1260	SPV.0105	SPECIAL 02. REMOVE AND REINSTALL LIGHT POLE	LS	1.000	1.000
1270	SPV.0105	SPECIAL 03. BOAT TRAFFIC CONTROL	LS	1.000	1.000
1280	SPV.0105	SPECIAL 04. UTILITY ADJUSTMENT MERRIMAC COMMUNICATIONS	LS	1.000	1.000
1290	SPV.0105	SPECIAL 05. UTILITY ADJUSTMENT CHARTER COMMUNICATION	LS	1.000	1.000
1300	SPV.0105	SPECIAL 06. UTILITY ADJUSTMENTS FRONTIER NORTH	LS	1.000	1.000

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REMOVING PAVEMENT

CATEGORY	STA	-	STA	LOCATION	204.0100 REMOVING PAVEMENT SY
0010	20+20.10	-	20+76.92	WATER STREET INTERSECTION	640
	28+32.08		30+89.62	MAINLINE	-
	1041+84.83	-	101"B"+36.82	USH 12 & STH 188 INTERSECTION	235
				TOTALS	**875**

REMOVING INLETS

CATEGORY	STA	LOCATION	204.0220 REMOVING INLETS EACH
0010	101+25"B"	USH 12 & STH 188 INTERSECTION	1
		TOTALS	**1**

REMOVING CURB AND GUTTER

CATEGORY	STA	-	STA	LOCATION	204.0150 REMOVING CURB & GUTTER LF
0010	28+32.08		30+89.62	MAINLINE - RIGHT	260
	1041+84.83	-	103+72.73"B"	USH 12 & STH 188 INTERSECTION	385
				TOTALS	**645**

REMOVING CONCRETE SIDEWALK

CATEGORY	STA	-	STA	LOCATION	204.0155 REMOVING CONCRETE SIDEWALK SY
0010	20+20.10	-	20+76.92	WATER STREET INTERSECTION	72
				TOTALS	**72**

REMOVING GUARDRAIL

CATEGORY	STA	-	STA	LOCATION	204.0165 REMOVING GUARDRAIL LF
0010	28+47.00	-	30+88.00	MAINLINE LT	241
	28+47.00	-	30+88.00	MAINLINE RT	241
	32+28.00	-	33+36.00	MAINLINE LT	115
	32+28.00	-	33+42.00	MAINLINE RT	115
				TOTALS	**712**

Division	From/To Station	205.0100 Excavation Common (1)		Salvaged/Unusable Pavement Material (3)	Available Material (4)	Unexpanded Fill	Expanded Fill (5)	Mass Ordinate +/- (6)	Waste	Borrow	Comment:
		Cut (2)	EBS Excavation				Factor 1.11			(item #208.0100)	
STH 60	20+21 - 20+77	91	0	10	81	0	0	81	81	0	
STH 60	28+32 - 32+35	409	0	23	386	10	11	375	375	0	
								0	0		
USH 12	1041+27.47 - 1042+63.30	90	0	0	90	0	0	90	90	0	
STH 188	100+85.65"B" - 103+72.73"B"	303	0	0	303	0	0	303	303	0	
Subtotal		893	0	33	860	10	11	849	849	0	
Grand Total		893	0	33	860	10	11	849	849	0	
Total Common Excavation = 893											

1) Excavation Common is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) Salvaged/Unusable Pavement Material
4) Available Material = Cut - Salvaged/Unusuable Pavement Material
5) Expanded Fill. Factor = 1.11
   Expanded Fill = Unexpanded Fill * Fill Factor
6) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BASE AGGREGATE DENSE 1 1/4-INCH

CATEGORY	STA	-	STA	LOCATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON
0010	20+20.10	-	20+76.92	WATER STREET INTERSECTION	250	-
	28+32.08		30+89.62	MAINLINE	700	20
	1041+84.33	-	103+72.73"B"	USH 12 & STH 188 INTERSECTION	250	-
				TOTALS	**1200**	**20**

CONCRETE PAVEMENT

CATEGORY	STA	-	STA	LOCATION	415.0080 CONCRETE PAVEMENT 8-INCH SY	415.0090 CONCRETE PAVEMENT 9-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	416.1715 CONCRETE PAVEMENT REPAIR SHES SY	416.0610 DRILLED TIE BARS EACH	416.1010 DRILLED DOWEL BARS EACH
0010	20+20.10	-	20+61.25	MAINLINE LT & RT	412	-	-	-	108	-
	-	-	-	STH 78/WATER ST INTERSECTION	-	-	-	50	-	100
	20+61.25	-	20+76.92	WEST APPROACH	-	-	102	-	-	-
	28+32.08	-	28+47.75	MAINLINE SHOULDERS	23	-	-	-	-	-
	28+32.08	-	28+47.75	EAST APPROACH	-	-	42	-	-	-
	1041+84.83	-	101"B"+36.82	USH 12 & STH 188 INTERSECTION	-	235	-	-	128	-
				UNDISTRIBUTED	-	-	-	10	-	20
				TOTALS	**435**	**235**	**144**	**60**	**236**	**120**

ASPHALTIC SURFACE

CATEGORY	STA	-	STA	LOCATION	**465.0105** ASPHALTIC SURFACE TON	**455.0605** TACK COAT GAL
0010	28+30.08	-	30+89.62	EAST APPROACH, MAINLINE	180	33
	28+30.08	-	30+89.62	EAST APPROACH, LT SHOULDER	74	7
	28+30.08	-	30+89.62	EAST APPROACH, RT SHOULDER	59	6
	28+30.08	-	30+89.62	EAST APPROACH, PEDESTRIAN PATH	32	4
	101+36.82"B'	-	103+72.73"B"	USH 12 & STH 188 INTERSECTION	110	8
				TOTALS	**455**	**58**

MISCELLANEOUS CONCRETE ITEMS

CATEGORY	STA	-	STA	LOCATION	**601.0409** CONCRETE CURB AND GUTTER 30-INCH TYPE A LF	**601.0411** CONCRETE CURB AND GUTTER 30-INCH TYPE D LF	**601.0415** CONCRETE CURB AND GUTTER 6-INCH SLOPED 30-INCH TYPE J LF	**601.0555** CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE A LF	**601.0557** CONCRETE CUR & GUTTER 6-INCH SLOP[ED 36-INCH TYPE D LF	**602.0410** CONCRETE SIDEWALK 5-INCH SF	**601.0105** CONCRETE CURB TYPE A LF	**602.0505** CURB RAMP DETECTABLE WARNING FIELD YELLOW SF
0010	20+20.10	-	20+76.92	WATER ST INTERSECTION, NE RADIUS	65	-	-	-	-	325	-	8
	20+20.10	-	20+76.92	WATER ST INTERSECTION, SE RADIUS	65	-	-	-	-	325	-	8
	20+39.00	-	20+77.00	CONCRETE MEDIAN LT & RT	-	-	-	-	-	114	80	-
	28+30.08	-	28+45.75	LT SHOULDER	-	16	-	-	-	-	-	-
	28+30.08	-	30+89.62	RT SHOULDER	-	16	243	-	-	-	-	-
	1041+84.83	-	103"B"+72.73	USH 12 & STH 188 INTERSECTION	-	-	-	85	300	-	-	-
				TOTALS	**130**	**32**	**243**	**85**	**300**	**764**	**80**	**16**

STORM SEWER, CATCH BASINS, AND INLET COVERS

CATEGORY	LOCATION	**608.0318** STORM SEWER PIPE REINFORCED CONCRETE TYPE III 18-INCH LF	**611.1003** CATCH BASINS 3-FT DIAMETER EACH	**611.1230** CATCH BASINS 2 X 3-FT EACH	**611.0624** INLET COVERS TYPE H EACH	**611.9710** SALVAGED INLET COVERS EACH	**611.8105** ADJUSTING CATCH BASIN COVERS EACH	**520.8000** CONCRETE COLLARS FOR PIPE EACH	**628.7005** INLET PROTECTION TYPE A EACH	**628.7010** INLET PROTECTION TYPE B EACH
0010	STA. 28+50.59, 23' LT	-	-	-	1	-	1	-	1	1
	STA. 28+50.59, 23' RT	-	1	-	1	-	-	-	1	1
	STA. 30+03.00, 23' RT	-	-	-	1	-	1	-	1	1
	STA 101+25"B", 19' LT	8	-	1	-	1	-	1	1	1
	TOTALS	**8**	**1**	**1**	**3**	**1**	**2**	**1**	**4**	**4**

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BEAM GUARD ITEMS

CATEGORY	STA	-	STA	LOCATION	**614.0010** BARRIER SYSTEM GRADING SHAPING FINISHING EACH	**614.2500** MSG THRIE BEAM TRANSITION LF	**614.2300** MSG GUARDRAIL 3 LF	**614.2610** MGS GUARDRAIL TERMINAL EAT EACH
0010	28+47.00	-	30+67.00	STRUCTURE B-11-19 - STRUCTURE B-11-87 LT	-	42	200	-
	28+47.00	-	30+67.00	STRUCTURE B-11-19 - STRUCTURE B-11-87 RT	-	42	200	-
	32+28.00	-	34+12.00	EAST APPROACH TO B-11-87, LT	1	21	112.5	1
	32+28.00	-	34+12.00	EAST APPROACH TO B-11-87, RT	1	21	112.5	1
				TOTALS	**2**	**126**	**625**	**2**

Barrier System Grading Shaping Finishing, Item 614.0010

Station Location	Excavation Common*	*Borrow	* Salvaged Topsoil	* Fertilizer Type A	* Seeding Mix # 20	* Mulching	Each
(Anchorage Post # 1)	CY	CY	SY	CWT	LB	SY	
34+12, LT	0	370	525	0.3	14.2	525	1
34+12, RT	0	230	325	0.2	8.7	325	1
Totals	**0**	**600**	**850**	**0.5**	**22.9**	**850**	**2**

*FOR INFORMATIONAL PURPOSES ONLY

FINISHING ITEMS

CATEGORY	STA	-	STA	LOCATION	**625.0100** SALVAGED TOPSOIL SY	**628.2006** EROSION MAT URBAN CLASS 1 TYPE A SY	**640.0120** SEEDING MIXTURE N0. 20 LB	**630.0200** SEEDING TEMPORARY LB	**627.0200** MULCHING SY	**629.0210** FERTILIZER TYPE B SY
0010	28+30.08	-	30+89.62	STH 60	250	250	6.3	-	-	-
	1041+84.83	-	103+72.73"B'	US 12/188 INTERSECTION	180	180	4.86	4.86	-	-
				UNDISTRIBUTED	-	-	-	-	200	12.6
				TOTALS	**430**	**430**	**11.16**	**4.86**	**200**	**12.6**

SIGNS REFLECTIVE TYPE II

CATEGORY	SIGN LOCATION NUMBER	APPROXIMATE LOCATION	SIGN PLATE NUMBER	SIGN SIZE (W X H) IN	**637.2210** SIGNS TYPE II REFLECTIVE H SF	**634.0614** POSTS WOOD 4X6-INCH X 14-FT EACH	**634.0616** POSTS WOOD 4X6-INCH X 16-FT EACH	**634.0620** POSTS WOOD 4X6-INCH X 20-FT EACH	Notes
0010	1-1	20+43, CL	R4-7	24 x 30	5.0	1	-	-	
	1-2	20+28,RT	J3-2	48 x 57	19.0	-	-	-	Attach to existing street light
	1-3	20+43, RT	R1-1	36 x 36	9.0	-	-	-	Attach to existing street light
	1-4	20+55, RT	I2-2	48 x 12	4.0	2	-	-	
	1-5	20+55, RT	I3-1	36 x 21	5.25	-	-	-	Same posts as sign 1-4
	1-6	20+50, LT	J3-2	48 x 57	19.0	-	2	-	
	1-7	20+50, LT	JV3-4	48 x 102	34.0	-	-	2	
	1-8	20+43, CL	R1-1	36 x 36	9.0	-	-	-	Same post as sign 1-1
	1-9	20+70, LT	W12-1	24 x 24	4.0	1	-	-	
	1-10	20+90, RT	J4-1	24 x 36	6.0	-	-	-	Attach to proposed street light
	1-11	20+90, RT	R7-1D	24 x 30	5.0	-	-	-	Attach to proposed street light
	1-12	20+90, RT	D6-4S	24 x 24	4.0	-	-	-	Attach to proposed street light
	1-13	21+67, RT	R2-1	24 x 30	5.0	-	-	-	Attach to proposed street light
	1-14	20+41, LT	R5-1	30 x 30	6.25	1	-	-	
	1-15	20+50, LT	R1-1	36 x 36	9.00	1	-	-	
	1-16	20+50, LT	R1-3P	30 x 12	2.50	-	-	-	Same post as sign 1-15
	1-17	20+43, RT	R1-3P	30 x 12	2.50	-	-	-	Same post as sign 1-3
	1-18	20+43, CL	R1-3P	30 x 12	2.50	-	-	-	Same post as sign 1-8
	2-1	28+50, RT	R2-1	24 x 30	5.0	1	-	-	
	2-2	28+50, RT	W3-1	36 x 36	9.0	1	-	-	
	2-3	28+30, LT	R7-1D	24 x 30	5.0	1	-	-	
	2-4	29+45, LT	JV1-2	24 x 63	10.5	-	1	-	
	2-5	29+75, RT	J1-1	24 X 39	6.5	1	-	-	
	2-6	30+75, LT	I2-3	84 x 24	14.0	3	-	-	
	2-8	30+45, LT	R7-1D	24 x 30	5	1	-	-	
	2-9	30+75, RT	R7-1D	24 x 30	5	1	-	-	
	2-10	32+30, LT	I2-2	48 x 15	5	2	-	-	
	2-11	32+30, LT	I3-1	54 x 24	9	-	-	-	Same posts as sign 2-10
	2-12	28+50, LT	W3-1	36 x 36	9	1	-	-	
	2-13	33+85,RT	R7-1D	24 x 30	5	1	-	-	
	3-1	101+20 "B", LT	J3-2	48 x 57	19	2	-	-	
				TOTALS	**258.00**	**21**	**3**	**2**	

REMOVING SIGNS AND SMALL SIGN SUPPORTS

CATEGORY	SIGN LOCATION NUMBER	LOCATION	**638.2602** REMOVING SIGNS TYPE II EACH	**638.3000** REMOVING SMALL SIGN SUPPORTS EACH	**638.2102** MOVING SIGNS TYPE II EACH	**638.4000** MOVING SMALL SIGN SUPPORTS EACH
0010	1R-1	20+43 C/L	1	1	-	-
	1R-2	20+55, RT	1	-	-	-
	1R-3	20+55, RT	1	-	-	-
	1R-4	20+55, RT	1	-	-	-
	1R-5	20+43, LT	1	1	-	-
	1R-6	20+43, LT	6	3	-	-
	1R-7	20+43, LT	1	1	-	-
	1R-8	20+43, CL	1	-	-	-
	1R-9	22+10, RT	1	-	-	-
	1R-10	22+50, RT	1	-	-	-
	1R-11	20+76, CL	1	1	-	-
	1R-12	20+83, RT	5	-	-	-
	2R-1	28+30, LT	1	1	-	-
	2R-2	29+00, LT	1	1	-	-
	2R-3	28+50, RT	1	1	-	-
	2R-4	29+75, RT	1	1	-	-
	2R-5	30+80, RT	1	1	-	-
	2R-6	30+75, LT	1	1	-	-
	2R-7	30+80, RT	1	-	-	-
	2R-8	32+55, RT	1	1	-	-
	2R-9	33+20, LT	1	2	-	-
	2R-10	33+20, LT	1	-	-	-
	2R-11	33+75, RT	1	1	-	-
	3R-1	101+20 "B", LT	1	-	-	-
	M2	101+20 "B", LT	-	-	1	1
		TOTALS	**33**	**17**	**1**	**1**

TRAFIC CONTROL ITEMS

CATEGORY	LOCATION	CALENDAR DAYS	**643.0300** TRAFFIC CONTROL DRUMS DAY	**643.0420 *** TRAFFIC CONTROL BARRICADES TYPE III DAY	**643.0705 *** TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	**643.0900** TRAFFIC CONTROL SIGNS DAY
0010	USH 12 & STH 188 SHOULDER CLOSURES	14	168	28	168	56
	PAVEMENT REPAIR DETOUR	5	100	-	100	-
			268	**28**	**268**	**56**

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

TRAFFIC CONTROL DETOUR ITEMS

CATEGORY	SIGN LOCATION NUMBER	CALENDAR DAYS	SIGNS	**643.3000** TRAFFIC CONTROL DETOUR SIGNS DAY	**643.0920** TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	**643.0420 *** TRAFFIC CONTROL BARRICADES TYPE III DAY	**643.0705 *** TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY
0010	1	180	3	540	-	-	-
	2	180	2	360	-	-	-
	3	180	6	1080	-	-	-
	4	180	3	540	-	-	-
	5	180	4	720	-	-	-
	6	180	6	1080	-	-	-
	7	180	1	180	-	-	-
	8	180	0	0	1	-	-
	9	180	4	720	-	-	-
	10	180	4	720	-	-	-
	11	180	4	720	-	-	-
	12	180	3	540	-	-	-
	13	180	1	180	-	-	-
	14	180	2	360	-	-	-
	15	180	2	360	-	-	-
	16	180	3	540	-	-	-
	17	180	3	540	-	-	-
	18	180	4	720	-	-	-
	19	180	4	720	-	-	-
	20	180	8	1440	-	-	-
	21	180	2	360	-	-	-
	22	180	2	360	-	-	-
	23	180	3	540	-	-	-
	24	180	4	720	-	-	-
	25	180	4	720	-	-	-
	26	180	4	720	-	-	-
	27	180	4	720	-	-	-
	28	180	4	720	-	-	-
	29	180	0	0	1	-	-
	30	180	0	0	1	-	-
	31	180	1	180	-	-	-
	32	180	1	180	1	-	-
	33	180	4	720	-	-	-
	34	180	1	180	-	-	-
	35	180	2	360	-	-	-
	36	180	1	180	-	-	-
	37	180	1	180	-	-	-
	38	180	1	180	-	180	360
	39	180	1	180	-	180	360
	40	180	1	180	-	900	1080
	41	180	1	180	-	900	1080
	42	180	1	180	-	180	260
	43	180	1	180	-	180	360
TOTALS	**-**	**111**	**19980**	**4**	**2520**	**3500**	

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

PAVEMENT MARKING ITEMS

CATEGORY	STA	-	STA	LOCATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW LF	646.0126 PAVEMENT MARKING EPOXY 8-INCH LF	647.0166 PAVEMENT MARKING ARROWS EPOXY TYPE 2 EACH	647.0356 PAVEMENT MARKING WORDS EPOXY EACH	647.0456 PAVEMENT MARKING CURB EPOXY LF	647.0566 PAVEMENT MARKING STOP LINE EPOXY 18-INCH LF	647.0606 PAVEMENT MARKING ISLAND NOSE EPOXY LF	647.0766 PAVEMENT MARKING CROSSWALK EPOXY 6-INCH LF
0010	20+20.10	-	20+76.92	EDGELINE LT & RT	200	-	-	1	-	190	30	10	300
	20+20.10	-	20+76.92	CENTERLINE		150							
	20+76.92	-	30+89.62	EDGELINE LT & RT	2025	-	-	-	-	-	-	-	-
	20+76.92	-	30+89.62	CENTERLINE		2025							
				USH 12 & STH 188 INTERSECTION	400	30	200	2	1	-	40	-	-
				TOTALS	**2625**	**2205**	**200**	**3**	**1**	**190**	**70**	**10**	**300**

CONSTRUCTION STAKING

CATEGORY	STA - STA	LOCATION	650.4000 CONSTRUCTION STAKING STORM SEWER EACH	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB AND GUTTER LF	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS PROJECT 5271-01-71 LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
0010	20+20 - 20+77	STH 60	-	57	-	-	57	-	-
	28+32 - 30+90	STH 60	-	158	142	158	16	-	158
	1041+85 - 103+73"B"	USH 12 & STH 188	1	400	230	230	170	1	400
		TOTALS	**1**	**615**	**372**	**388**	**243**	**1**	**558**

LIGHTING ITEMS

CATEGORY	LOCATION	204.0195 REMOVING CONCRETE BASES EACH	653.0905 REMOVING PULL BOXES EACH	653.0135 PULL BOXES STEEL 24X36-INCH EACH	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH L.F.	654.0102 CONCRETE BASES TYPE 2 EACH	654.0200 CONCRETE CONTROL CABINET BASES TYPE 6 EACH	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG LF	655.0620 ELECTRICAL WIRE LIGHTING 8 AWG LF	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG LF	657.0305 POLES TYPE 3 EACH	659.1115 LUMINAIRES UTILITY LED EACH	SPV.0105.02 REMOVE AND REINSTALL LIGHT POLE L.S.
0010	WATER ST INTERSECTION - STA. 28+50	1	1	1	800	1	1	1650	450	450	10	10	-
	USH 12 & STH 188 INTERSECTION	1		2	25	1	-	-	-	150	-	-	1
	TOTALS	**2**	**1**	**3**	**825**	**2**	**1**	**1650**	**450**	**600**	**10**	**10**	**1**

SAWING PAVEMENT

CATEGORY	STA	-	STA	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
0010	20+20.10	-	20+76.92	WATER STREET INTERSECTION	-	72
	1041+84.83	-	101"B"+36.82	USH 12 & STH 188 INTERSECTION	274	366
				TOTALS	**274**	**438**

UTILITY ADJUSTMENTS

CATEGORY	UTILITY	SPV.0105.04 UTILITY ADJUSTMENT MERRIMAC COMUICATIONS LS	SPV.0105.05 UTILITY ADJUSTMENT CHARTER COMUICATIONS LS	SPV.0105.06 UTILITY ADJUSTMENT FRONTIER NORTH LS
0030	Merrimac Communications	1	-	-
0040	Charter Communications	-	1	-
0050	Frontier North	-	-	1
	TOTALS	**1**	**1**	**1**

LOCATION OF CONCRETE PAVEMENT REPAIR SHES

CONCRETE PAVEMENT APPROACH SLAB

EXISTING R/W

CHARTER COMMUNICATIONS

MERRIMAC COMMUNICATIONS

℄ STH 60

STH 78

CTH PF

SAWCUT

POB STA 20+00.00

PI STA 20+76.92

20+00

21+00

22+00

23+00

STRUCTURE B-11-19

24+00

25+00

STH 60

FRONTIER NORTH

BEGIN PROJECT 5271-01-71

STATION 20+20.10

SLOPE INTERCEPTS (TYP.)

STH 60/78

WISCONSIN RIVER

BENCH MARKS

NO.	LOCATION	DESCRIPTION	ELEVATION
1000	SEC. 36, TION, R6E	CHISELED □ , NW CORNER OF B-11-19	785.38
1003	SEC. 36, TION, R6E	METAL DISK, SW CORNER OF B-11-87	764.29
---	---	---	---

EXISTING STRUCTURE B-11-19
PROPOSED DECK REPLACEMENT
AND GIRDER PAINTING

20+20.10
VPI EL 785.68

VPI STA 20+79.00
VPI ELA 784.93

-1.27%

-2.00%

EXISTING PROFILE ON ℄

PROPOSED PROFILE ON ℄

EXISTING GROUND ELEV.

PROPOSED ℄ ELEV.

788
786
784
782
780
778
776
774

785.88
764.25
784.51
735.84
782.51
780.51
778.51
776.52

20
21
22
23
24
25

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	PLAN AND PROFILE	SHEET 34	E

CONCRETE PAVEMENT APPROACH SLAB

ADJUST INLET COVER TYPE H
TYPE H INLET COVER REQ'D
STA. 28+50.59, LT

SLOPE INTERCEPT

MATCH EXISTING CONCRETE
APPROACH SLAB

℄ STH 60

CHARTER COMMUNICATIONS

MERRIMAC COMMUNICATIONS

26+00 STRUCTURE B-11-19 27+00 28+00 29+00 30+00 31+00

STH 60

BORE B-2 BORE C-1 BORE C-2

10'
12'
12'
8'

FRONTIER NORTH

SLOPE INTERCEPT

CATCH BASINS 3-FT DIAMETER REQ'D
TYPE H COVER REQ'D
STA. 28+50.59, RT

TYPE H COVER REQ'D
STA. 30+03, RT

WISCONSIN RIVER

BENCH MARKS

NO.	LOCATION	DESCRIPTION	ELEVATION
1000	SEC. 36, T10N, R6E	CHISELED □, NW CORNER OF B-11-19	785.38
1003	SEC. 36, T10N, R6E	METAL DISK, SW CORNER OF B-11-87	764.29
---	---	---	---

STA. 28+37 - 31+00 LT - RT
MGS GUARDRAIL 3 REQ'D.
MGS THRIE BEAM TRANSITION REQ'D. AT BOTH STRUCTURES

END PROJECT 5271-01-71
STATION 30+89.62

EXISTING STRUCTURE B-11-19
PROPOSED DECK REPLACEMENT
AND GIRDER PAINTING

-2.00%

VPI STA 28+30.00
VPI EL 769.92

PROPOSED PROFILE ON ℄

-2.03%

VPI STA 30+89.62
VPI EL 764.64

EXISTING GROUND ELEV. — PROPOSED ℄ ELEV. — EXISTING PROFILE ON ℄

776 774 772 770 768 766 764 762

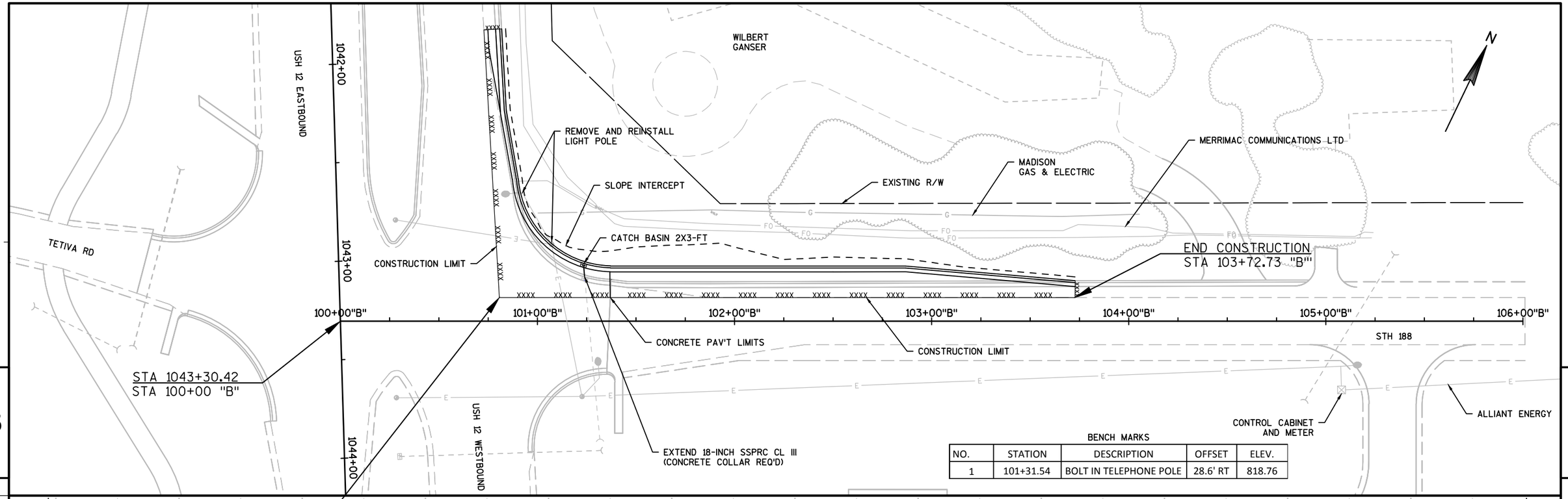
774.52 772.52 743.13 770.52 768.27 768.50 766.38 766.46 764.55

26 27 28 29 30 31

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	PLAN AND PROFILE	SHEET 35	E

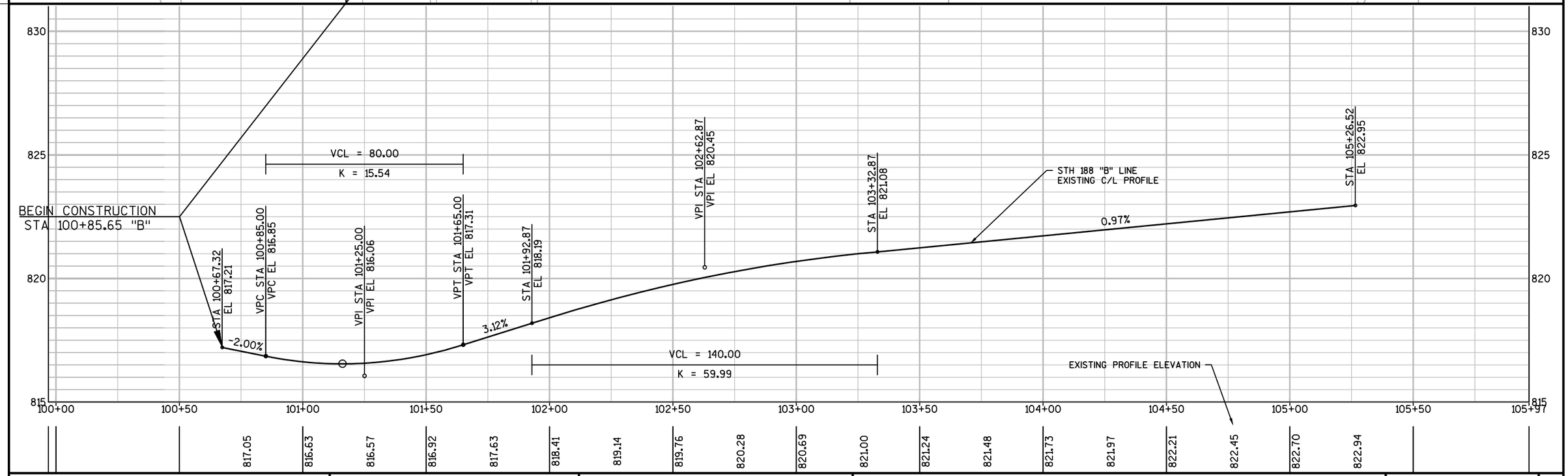
FILE NAME : M:\CAD\Active\SW\5271-01-71 STH 60\050102_pp.dgn PLOT DATE : 2/13/2014 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : 39.9999 ' / in.

WISDOT/CADDS SHEET 40



BENCH MARKS

NO.	STATION	DESCRIPTION	OFFSET	ELEV.
1	101+31.54	BOLT IN TELEPHONE POLE	28.6' RT	818.76

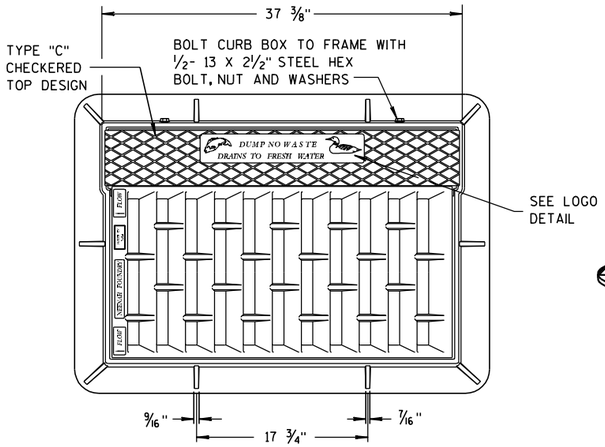


PROJECT NO: 5271-01-01	HWY: STH 60	COUNTY: SAUK	PLAN AND PROFILE: STH 188 & USH 12 INTERSECTION TURNING LANE	SHEET 36	E

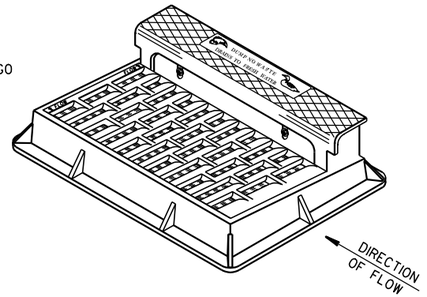
Standard Detail Drawing List

08A05-18A	INLET COVERS TYPE A, H, A-S, & H-S
08A08-01	CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER
08A09-01	CATCH BASINS 2X3-FT AND 2.5X3-FT
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPES 4A AND 4A1
08D05-15D	CURB RAMPS TYPE 4B AND 4B1
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-07	CONDUIT
09B04-10	PULL BOX
09C05-07	CONCRETE CONTROL CABINET BASES
09C07-04	CONCRETE BASE, TYPE 6
09D02-02	SIGNAL OR LIGHTING CONTROL CABINET
09E03-04	NON-FREEWAY LIGHTING UNIT POLE WIRING
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
13C01-16	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C04-16	URBAN NON-DOWELED CONCRETE PAVEMENT
13C09-10A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-10B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-10C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C11-11A	RURAL DOWELED CONCRETE PAVEMENT
13C11-11B	RURAL DOWELED CONCRETE PAVEMENT
13C13-08	URBAN DOWELED CONCRETE PAVEMENT
13C18-02A	CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02C	CONCRETE PAVEMENT JOINT TIES
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C08-16F	PAVEMENT MARKING (ISLANDS)
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D21-02	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE

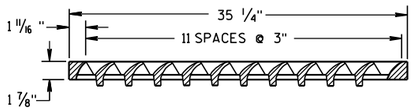
6

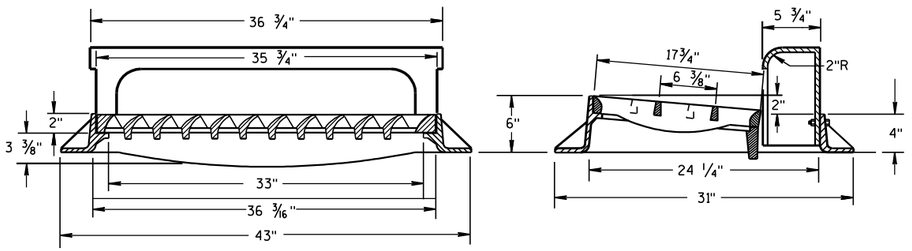


NOTE:
GRATE IS REVERSIBLE.



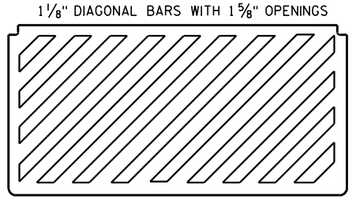
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"





TYPE "H"

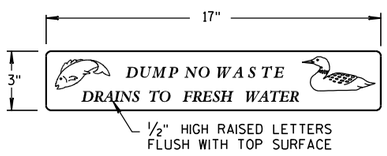
(APPROXIMATE WEIGHT 441 LBS.)
FRAME..... 181 LBS.
GRATE..... 146 LBS.
CURB BOX..... 114 LBS.



SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")
(APPROXIMATE WEIGHT 159 LBS.)
GRATE..... 159 LBS.

(NOTED AS TYPE H-S ON DRAINAGE TABLE)



LOGO DETAIL

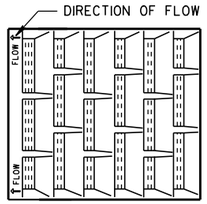
GENERAL NOTES

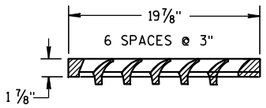
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

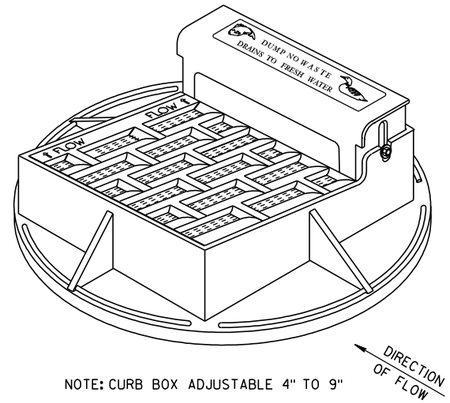
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

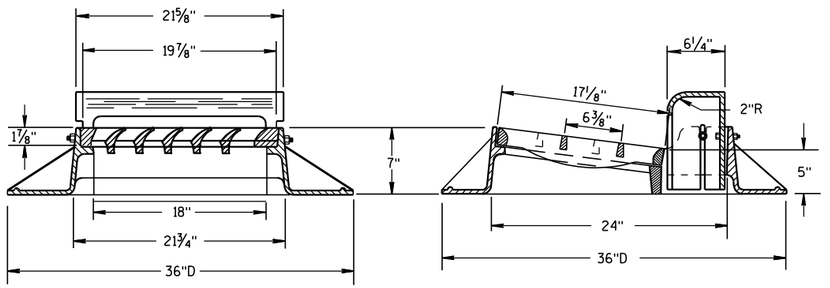
THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.





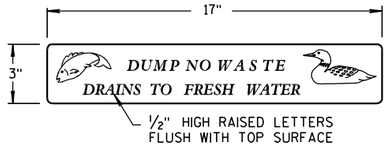


NOTE: CURB BOX ADJUSTABLE 4" TO 9"



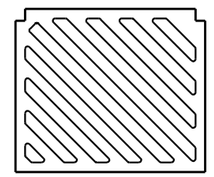
TYPE "A"

(APPROXIMATE WEIGHT 340 LBS.)
FRAME..... 185 LBS.
GRATE..... 71 LBS.
CURB BOX..... 84 LBS.



LOGO DETAIL

NOTE:
GRATE IS REVERSIBLE.



SPECIAL GRATE FOR TYPE "A" COVER

(MEASURES 19 3/4" X 17" X 1 7/8"
GRATE..... 84 LBS.

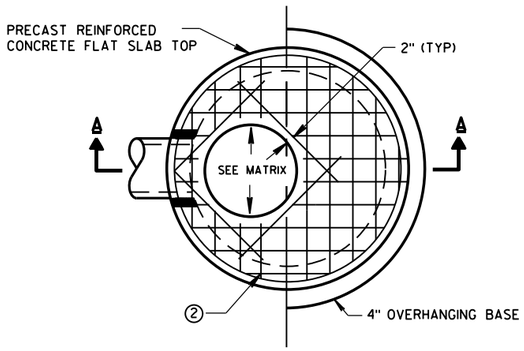
(NOTED AS TYPE A-S ON DRAINAGE TABLE)

INLET COVERS
TYPE A, H, A-S, & H-S

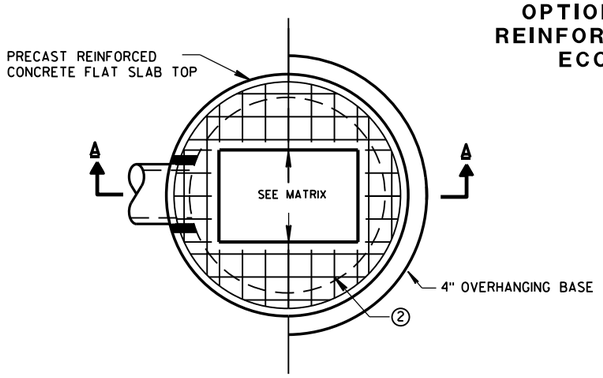
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

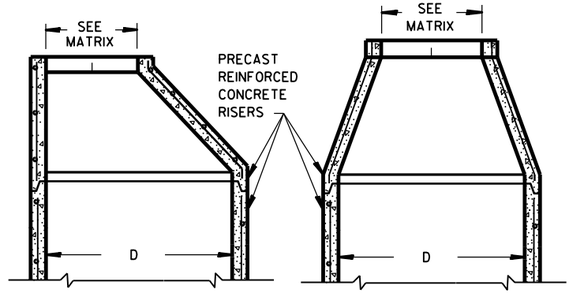
6
S.D.D. 8 A 5-18a



PLAN VIEW CIRCULAR OPENING

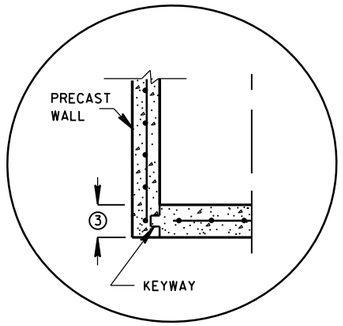


PLAN VIEW RECTANGULAR OPENING

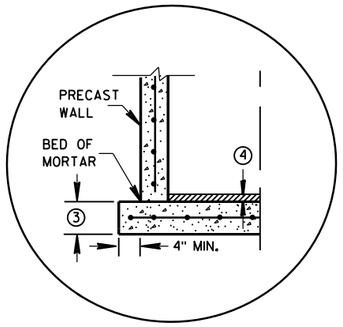


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

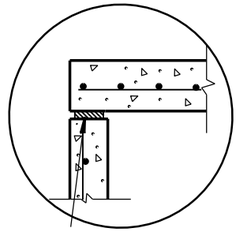


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



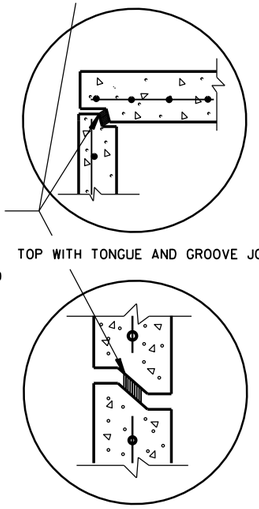
SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



TOP WITH PLAIN END JOINT

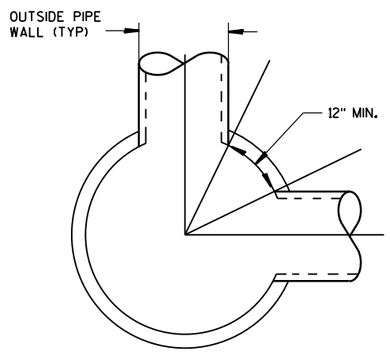
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



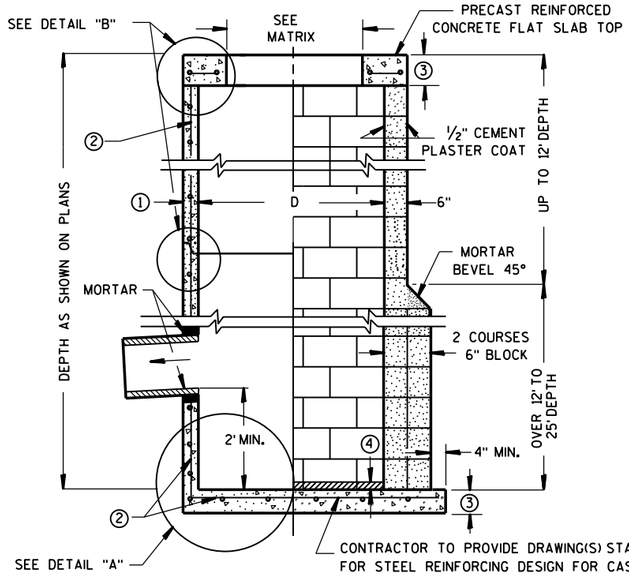
TOP WITH TONGUE AND GROOVE JOINT

RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"



DETAIL "C"



CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES

SECTION A-A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

GENERAL NOTES

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

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

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

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

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

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

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

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

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

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

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

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

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

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

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT AND 7 INCHES FOR 6-FT DIAMETER PRECAST CATCH BASINS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

④ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER OPENING MATRIX

CATCH BASIN SIZE	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
	OPENING SIZE (FT)											
3-FT	2X2	X	X					X		X		
	2 DIA.				X							X
4-FT-6-FT	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2 DIA.				X							X
	2X3						X					
	2.5X3					X						

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	30

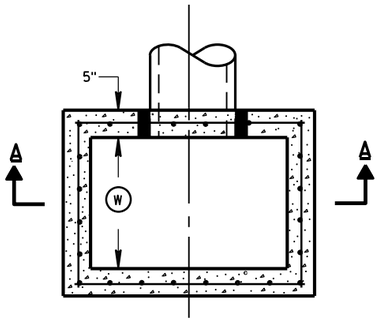
CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

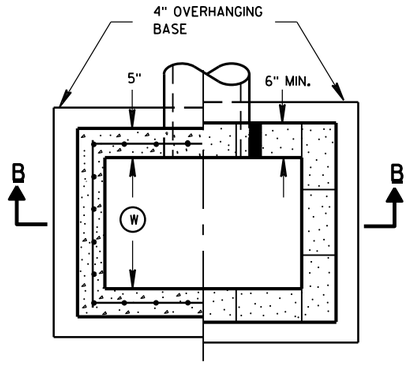
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

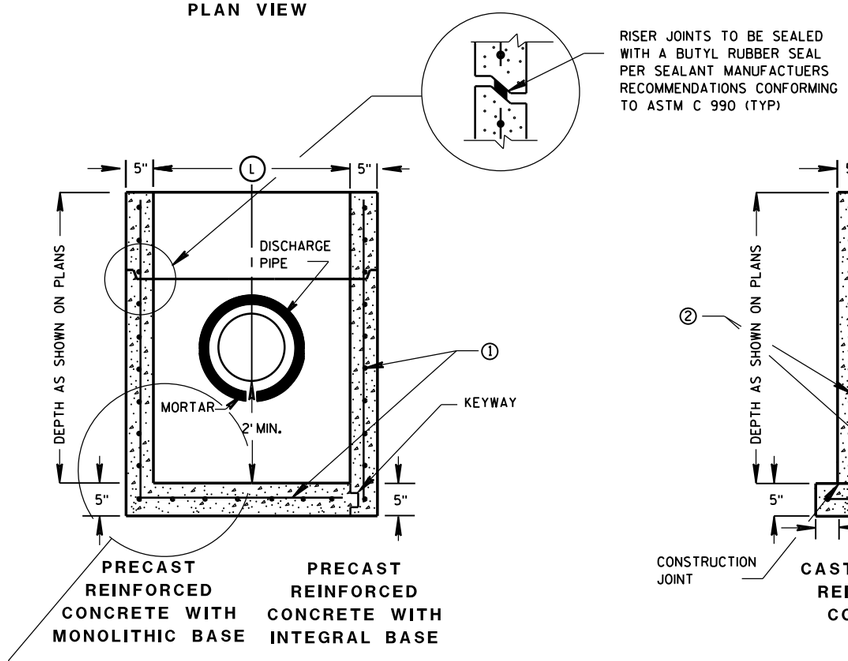
S.D.D. 8 A 8-1



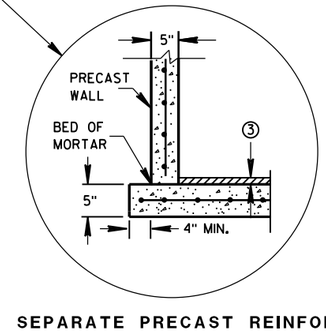
PLAN VIEW



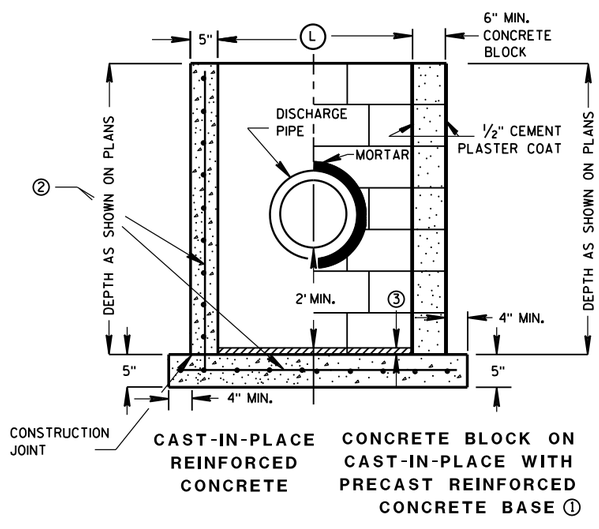
PLAN VIEW



SECTION A-A



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION



SECTION B-B

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

① FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

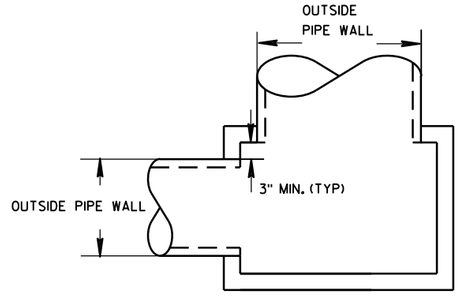
③ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER MATRIX

CATCH BASIN SIZE		INLET COVER TYPE	F	ALL H'S
	WIDTH (W) (FT)	LENGTH (L) (FT)		
2X3-FT	2	3		X
2.5X3-FT	2.5	3	X	

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	WIDTH (IN)	LENGTH (IN)
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

CATCH BASINS 2X3-FT AND 2.5X3-FT

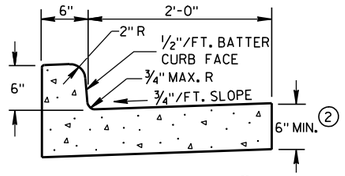
CATCH BASINS 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

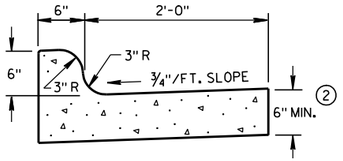
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA
NT

6

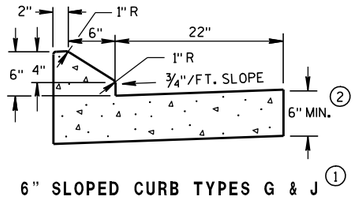
S.D.D. 8 A 9-1



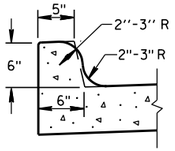
TYPES A & D (1)



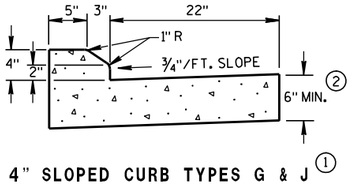
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

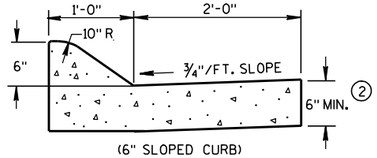


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

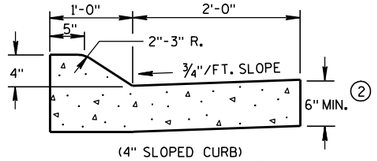


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

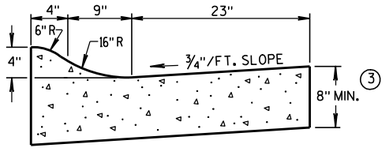


(6" SLOPED CURB)



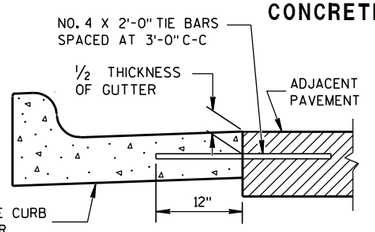
(4" SLOPED CURB)

TYPES A & D (1)

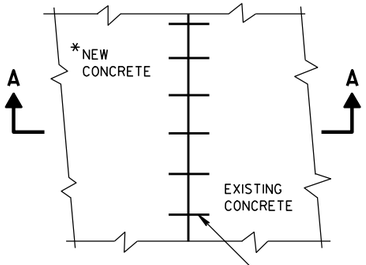


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"

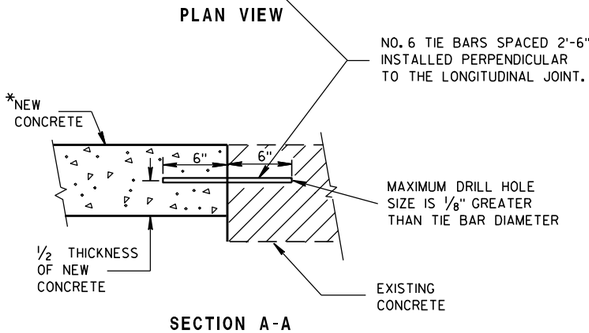


TYPICAL TIE BAR LOCATION (1)



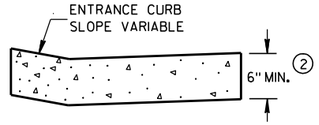
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW



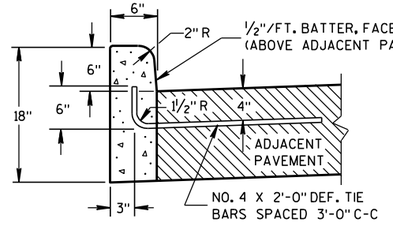
SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT



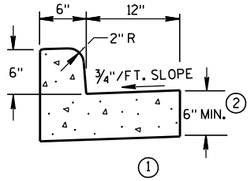
DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)



(1)

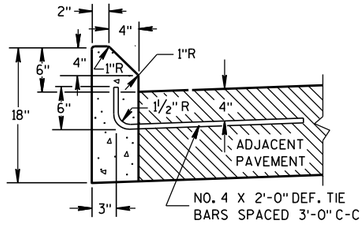
TYPES A & D



(1)

TYPES A & D

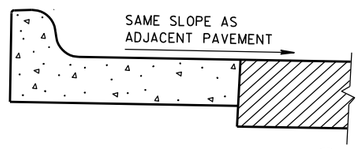
CONCRETE CURB & GUTTER 18"



(1)

TYPES G & J

CONCRETE CURB



(5)

REVERSE SLOPE GUTTER

(TYPICAL FOR ALL CURB & GUTTER TYPES)

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. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

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.

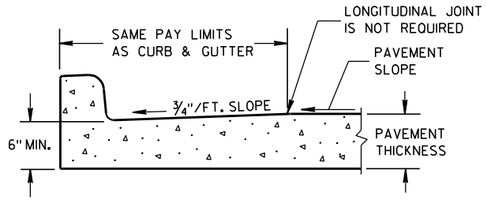
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(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.

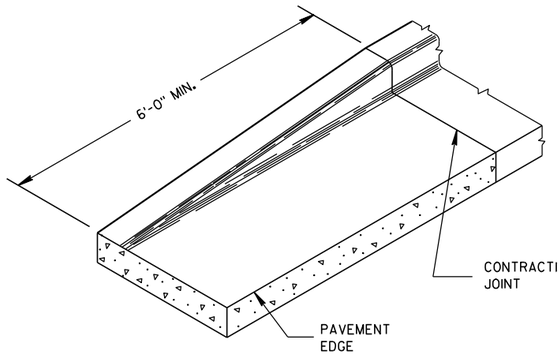
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

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

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



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 8 D 1-17

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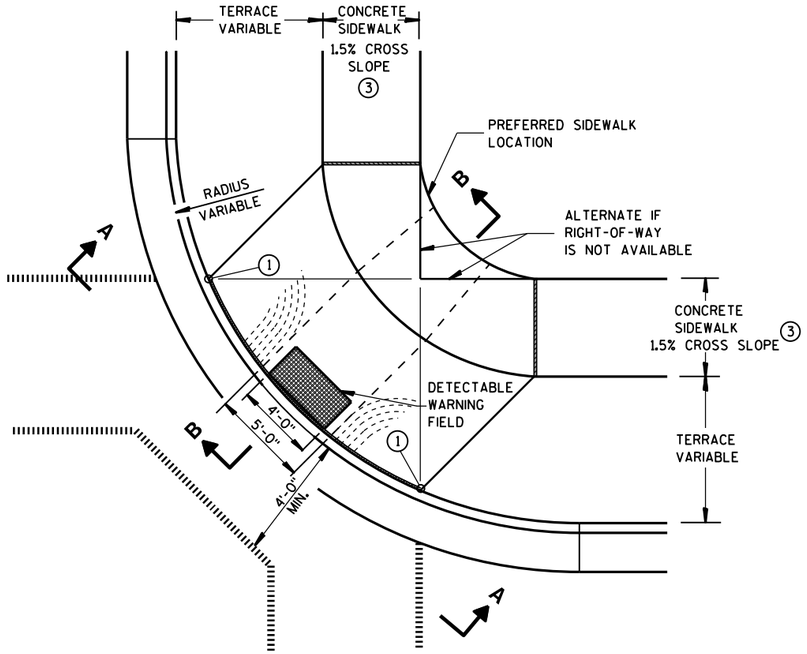
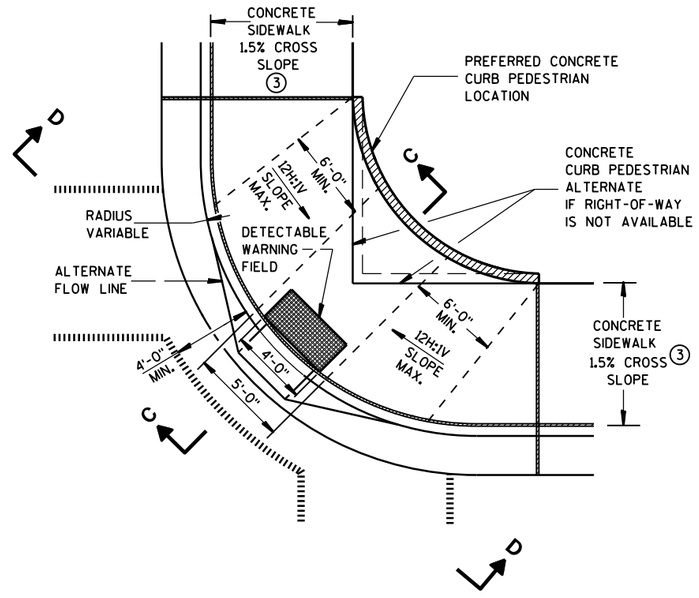
S.D.D. 8 D 1-17



PLAN VIEW

TYPE 1 RAMP

(CENTER OF CORNER RADIUS)



PLAN VIEW

TYPE 1-A RAMP

(NO TERRACE)

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.

RAMPS SHALL BE BUILT AT 12H:1V OR FLATTER. WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

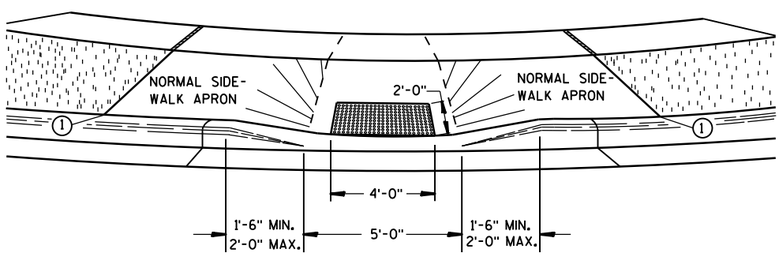
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

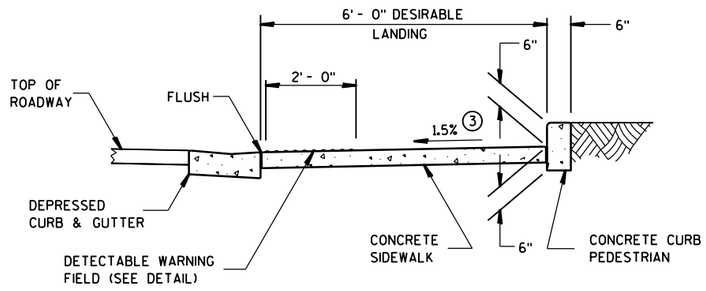
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

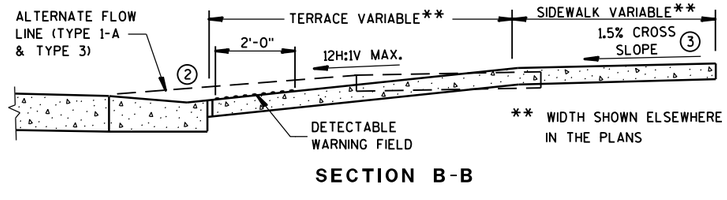
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



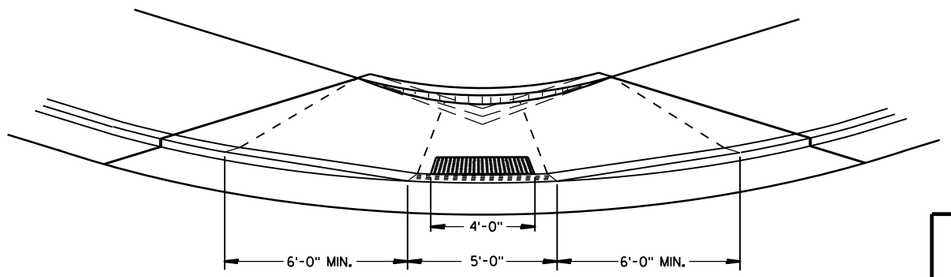
VIEW A-A



SECTION C-C



SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

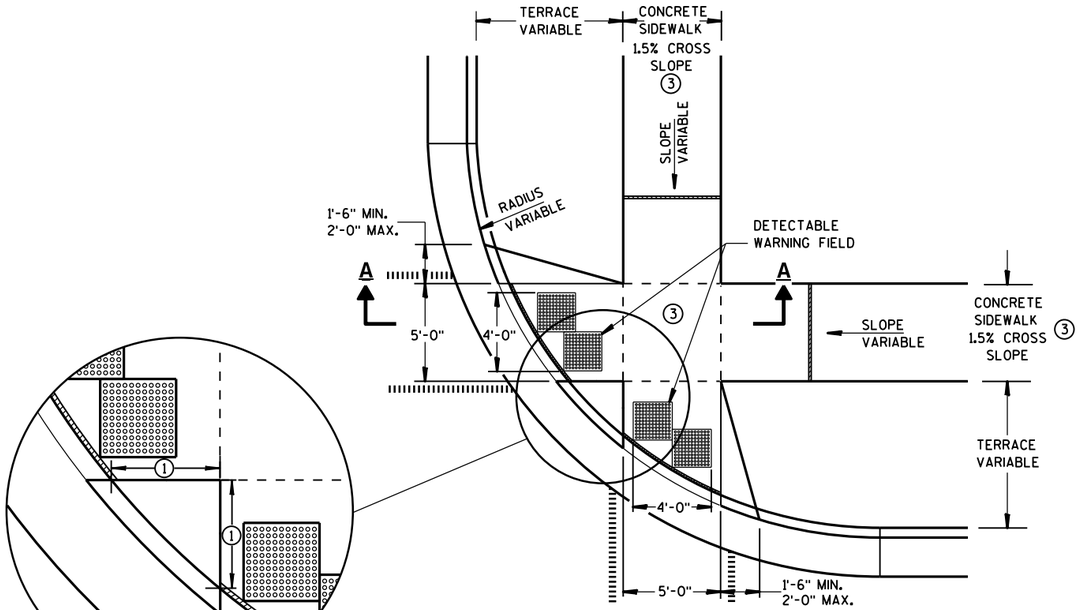
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15a

6

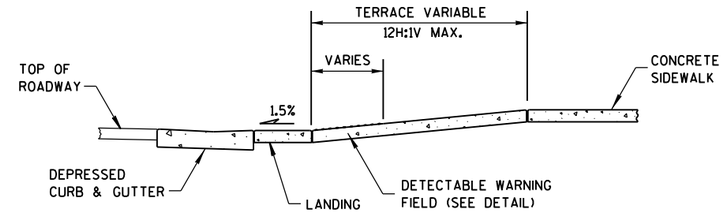
S.D.D. 8 D 5-15a



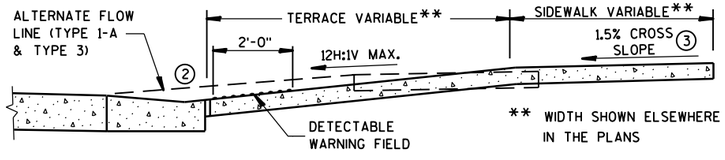
PLAN VIEW

TYPE 2 RAMP

(ON LINE WITH SIDEWALK)



SECTION A-A



SECTION B-B

GENERAL NOTES

USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

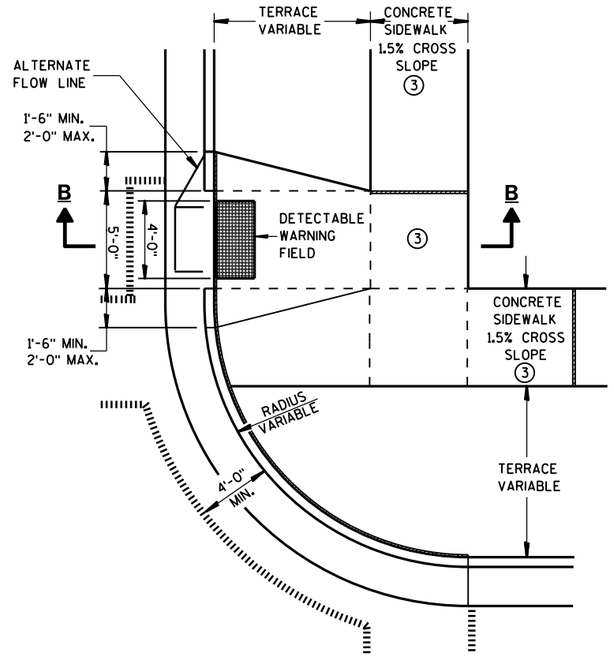
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



PLAN VIEW

TYPE 3 RAMP

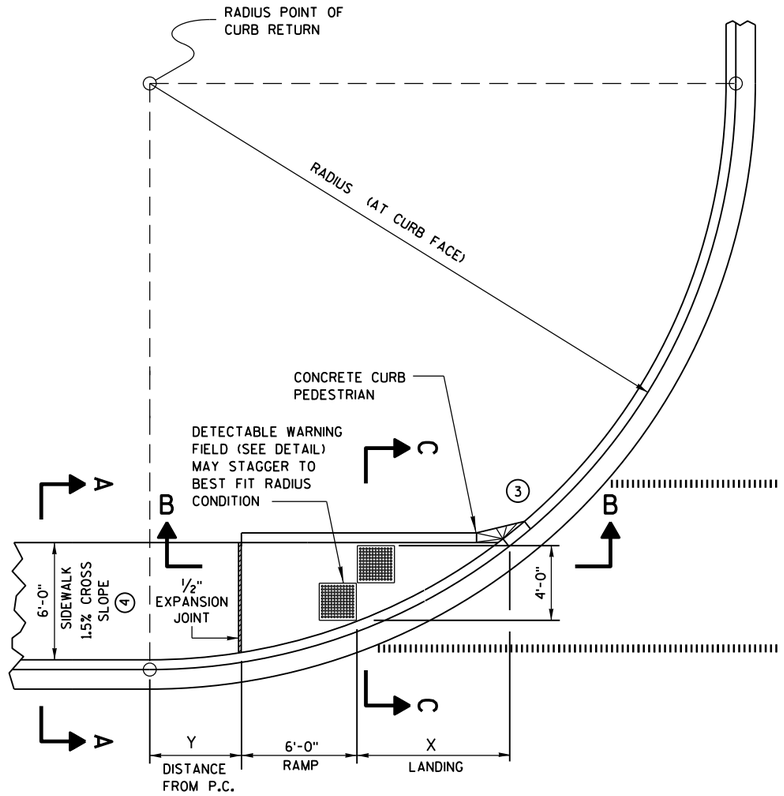
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS
TYPES 2 AND 3

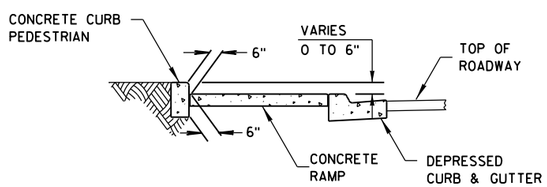
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

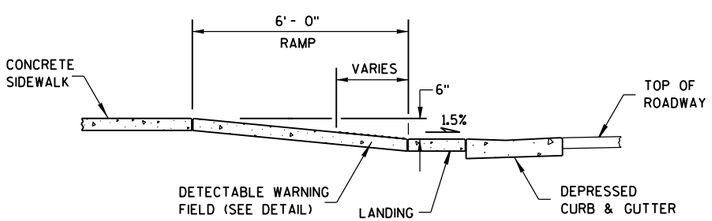
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



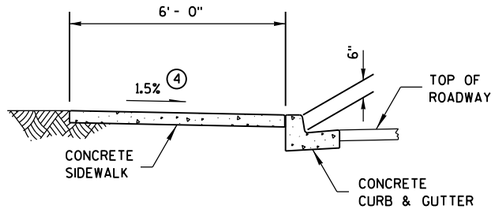
SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1¾"	2'-7¼"
30 FEET	7'-11¾"	4'-8¼"
40 FEET	9'-5¼"	6'-5"
50 FEET	10'-8¾"	7'-11¼"
60 FEET	11'-10¼"	9'-3½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

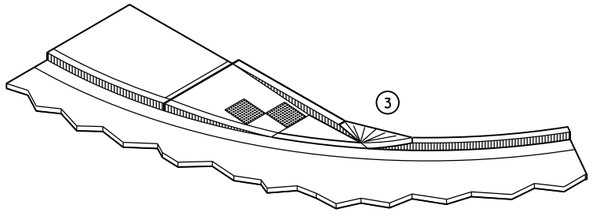
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

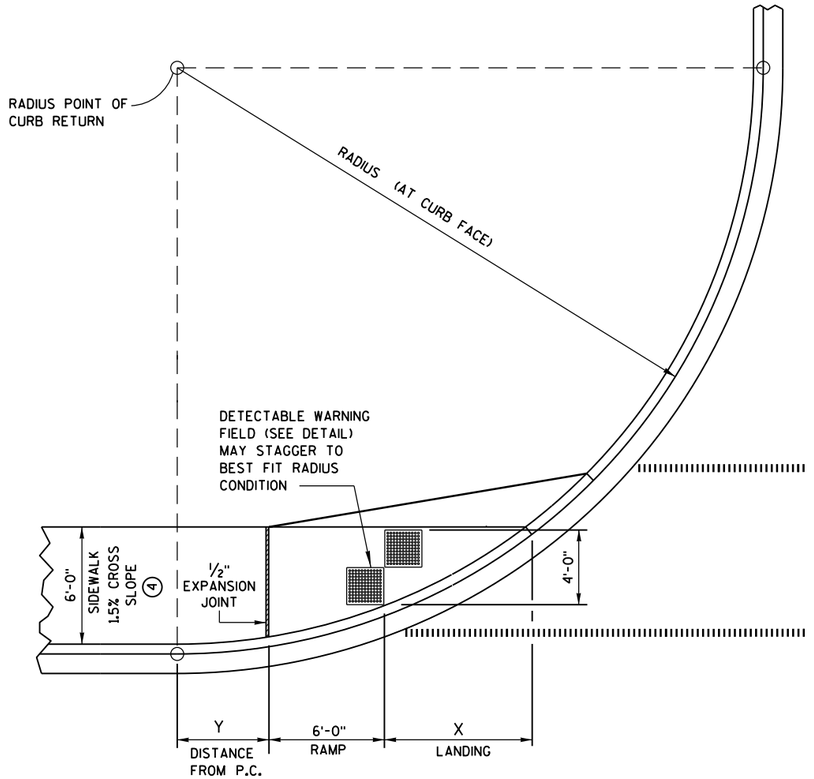
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

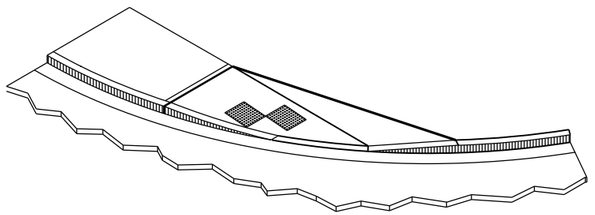
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

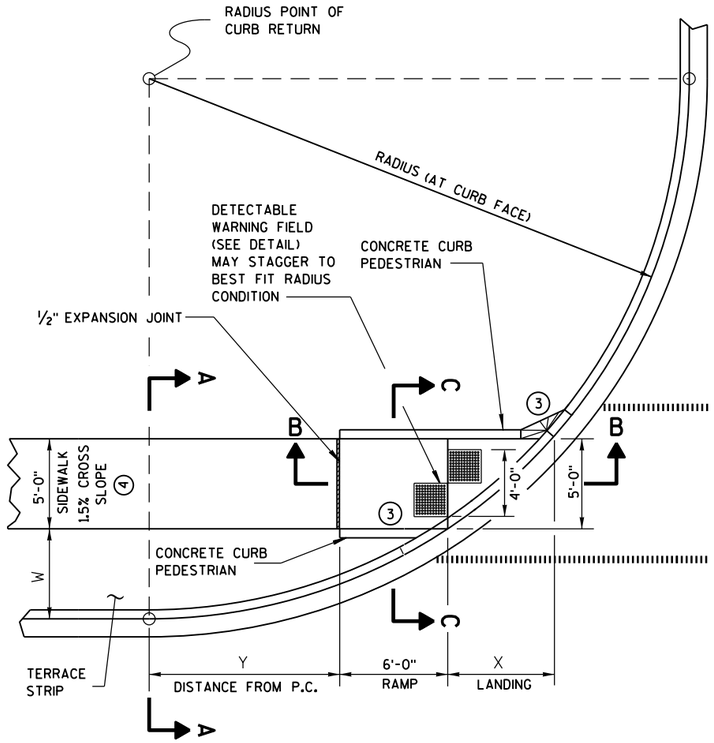
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

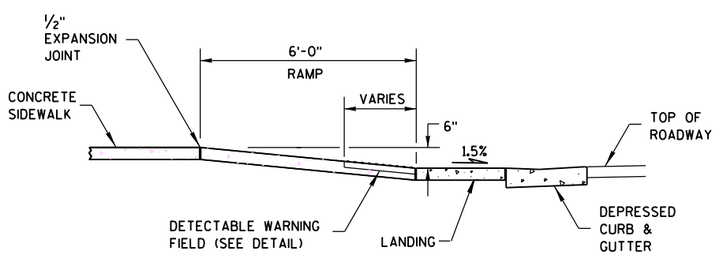
6

S.D.D. 8 D 5-15c

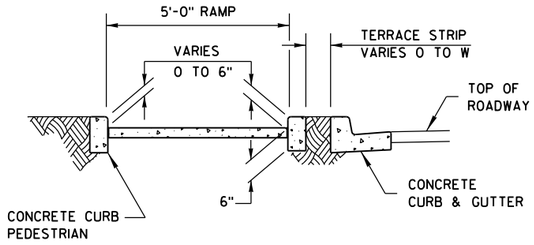


CURB RAMP TYPE 4B
PLAN VIEW

SECTION A-A FOR TYPE 4B



SECTION B-B FOR TYPE 4B



SECTION C-C FOR TYPE 4B

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-5½"	4'-6½"	4'-8½"	6'-0"	4'-1"	7'-2¾"	3'-7"	8'-3½"	3'-1½"	9'-2½"
30 FEET	7'-3¾"	7'-1"	6'-5½"	8'-11½"	5'-9¼"	10'-7"	5'-2½"	12'-0"	4'-8¾"	13'-3¼"
40 FEET	8'-9½"	9'-2½"	7'-10"	11'-5¼"	7'-1"	13'-4½"	6'-5¾"	15'-¾"	5'-11½"	16'-7¼"
50 FEET	10'-¾"	11'-¾"	9'-¼"	13'-7¼"	8'-2½"	15'-9½"	7'-6½"	17'-9"	6'-11¾"	19'-6¼"
60 FEET	11'-2½"	12'-8¾"	10'-¾"	15'-6½"	9'-2¼"	17'-11¾"	8'-5¾"	20'-1¾"	7'-10½"	22'-1½"

INTERMEDIATE RADII CAN BE INTERPOLATED

GENERAL NOTES

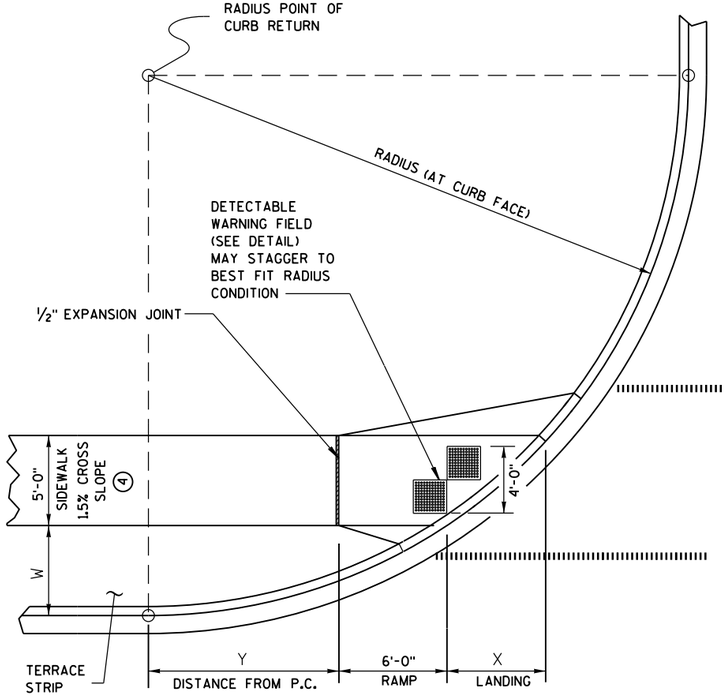
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

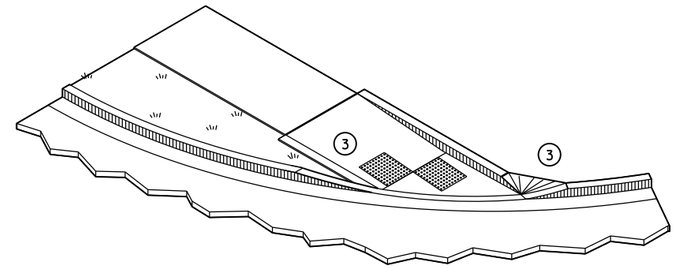
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

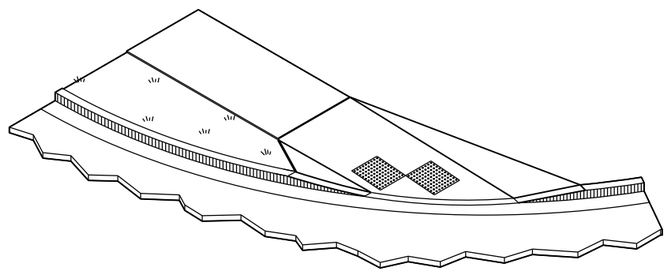
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



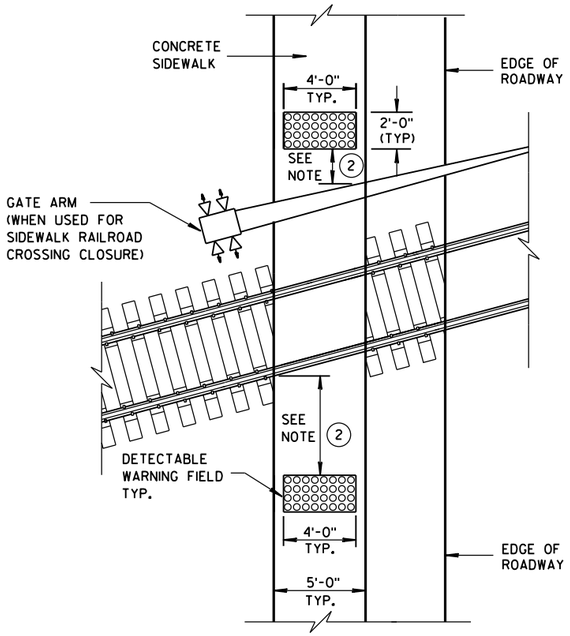
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

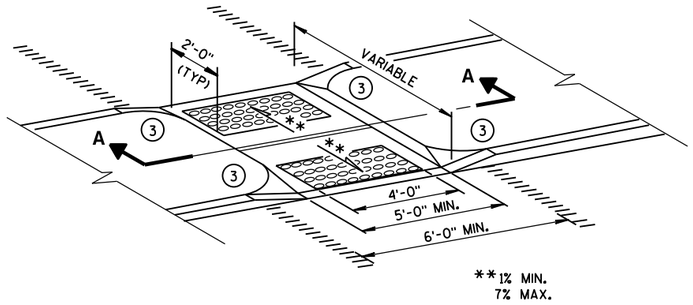
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15d



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

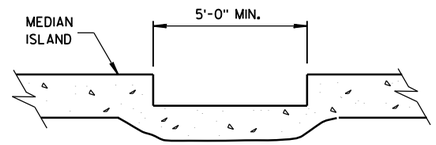
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(1) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

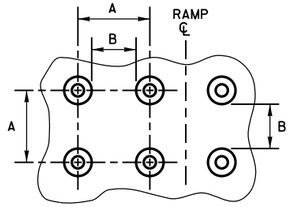
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



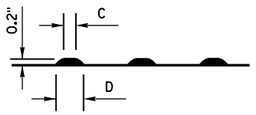
SECTION A-A



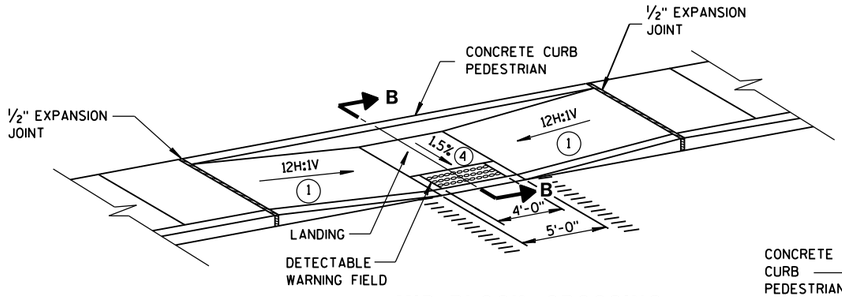
PLAN VIEW

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

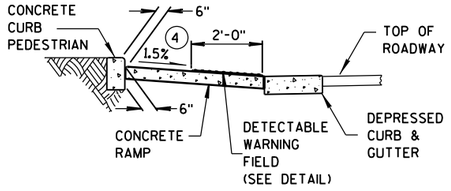
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

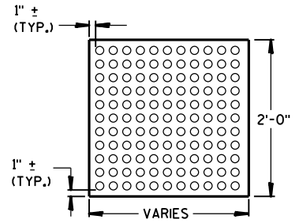


MID-BLOCK CROSSING
TYPE 7A



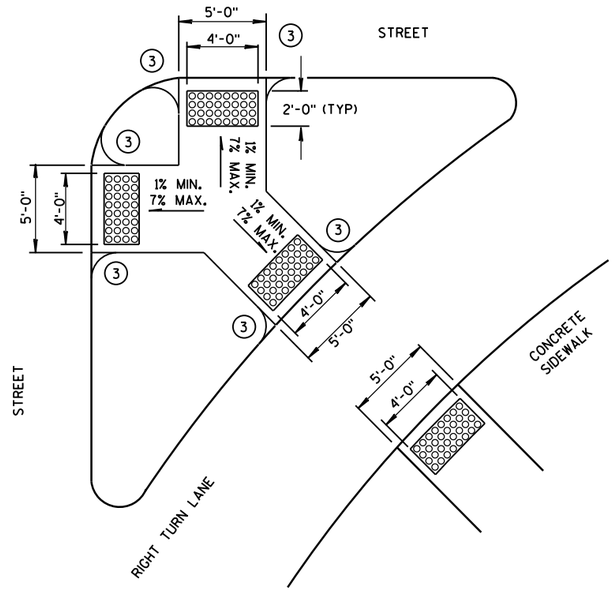
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

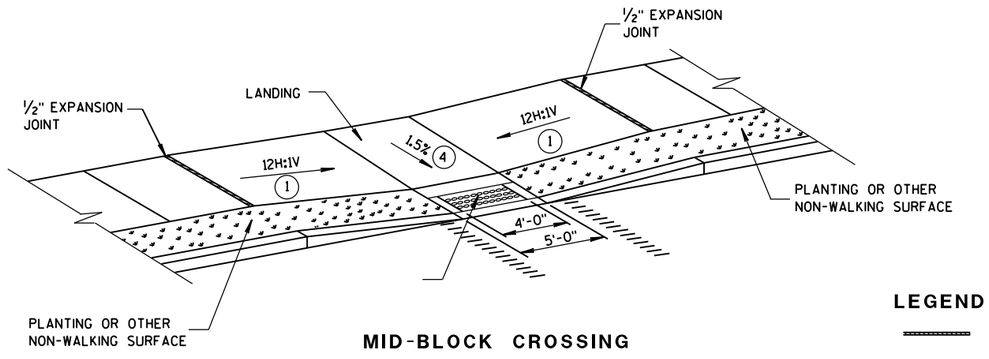


PLAN VIEW

DETECTABLE WARNING FIELD (TYPICAL)



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

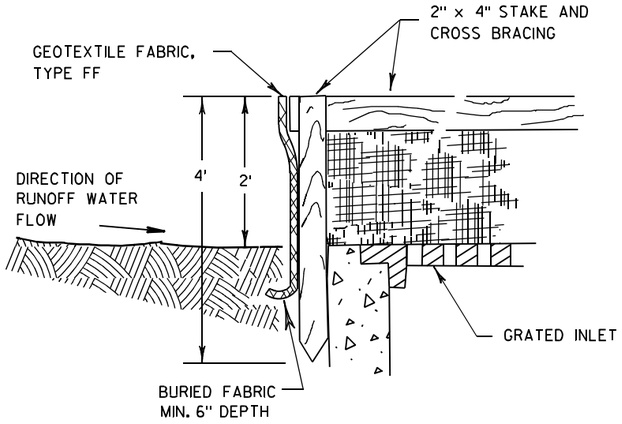
CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

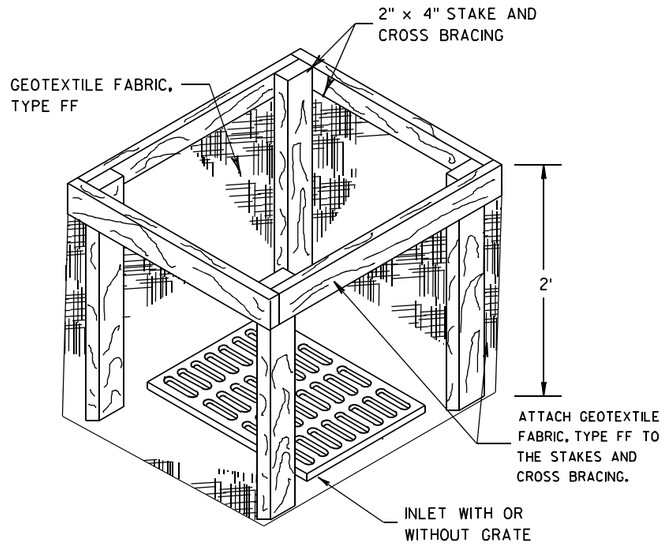
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2-6-2013 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS [illegible] ENGINEER
FHWA

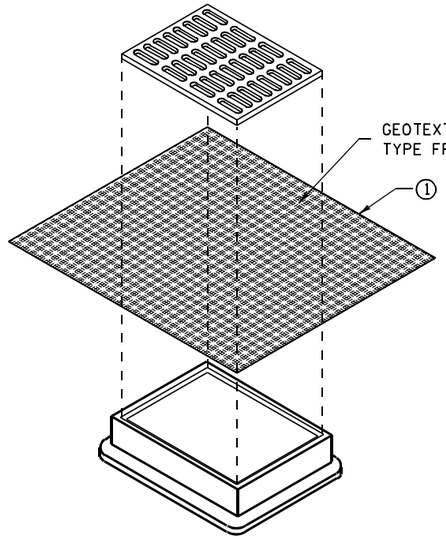
6

S.D.D. 8 D 5-15e



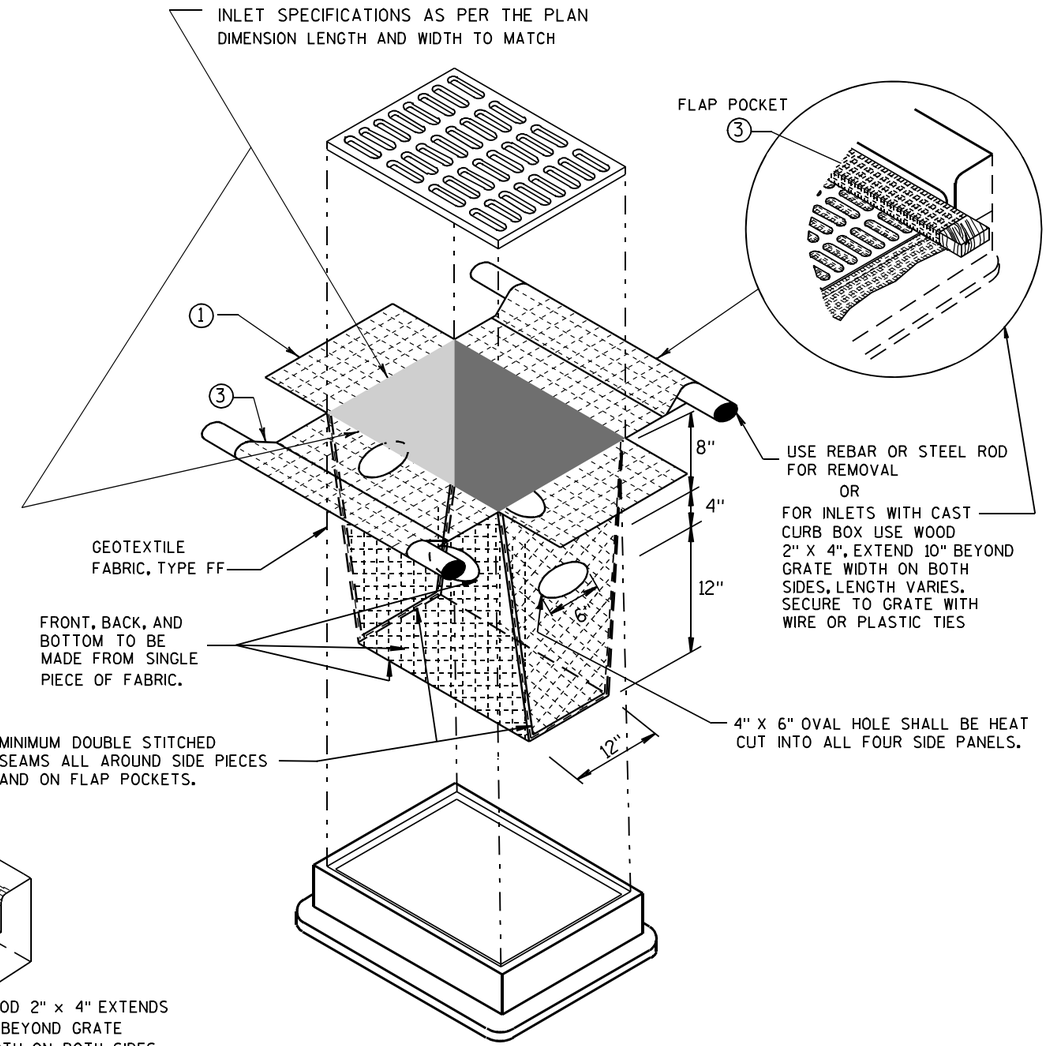


INLET PROTECTION, TYPE A



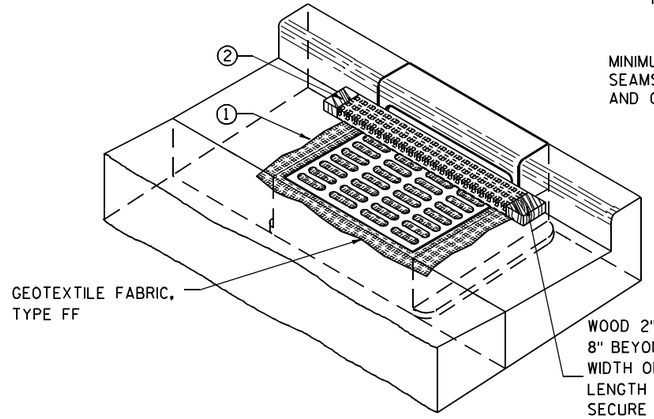
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE D

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

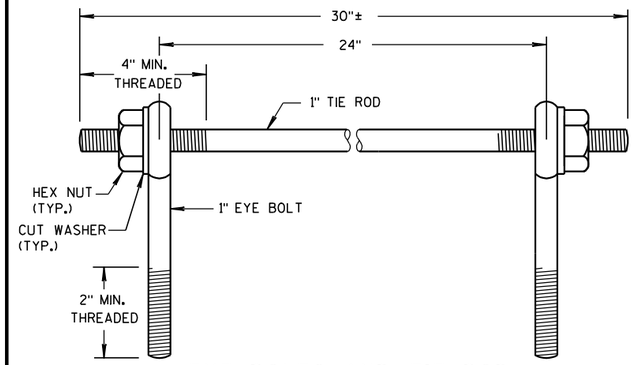
APPROVED

10/16/02
DATE

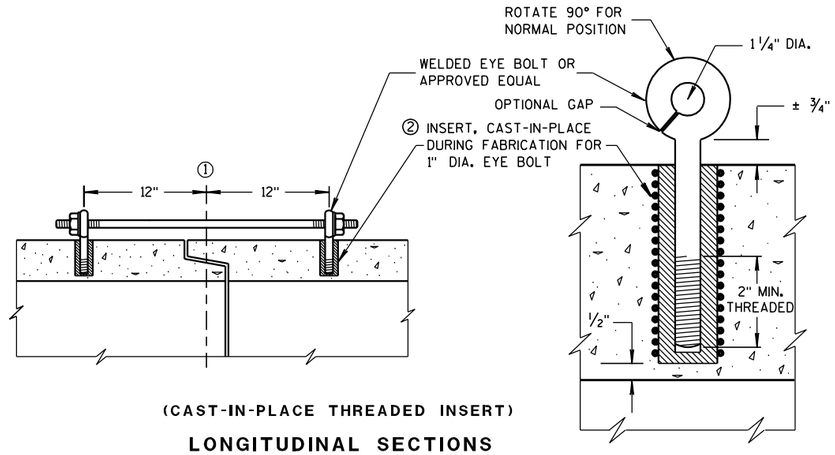
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

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

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

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

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

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

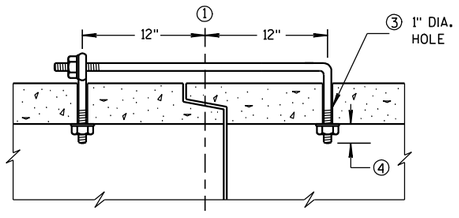
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

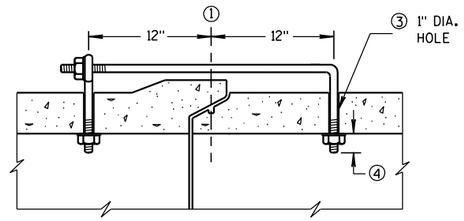
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

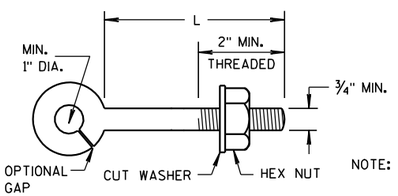


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

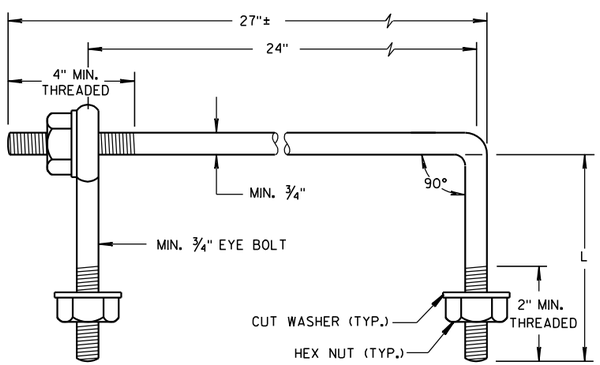
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

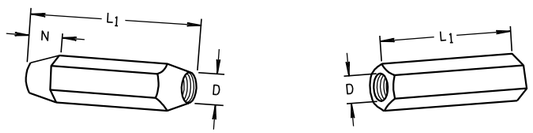
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 7/16

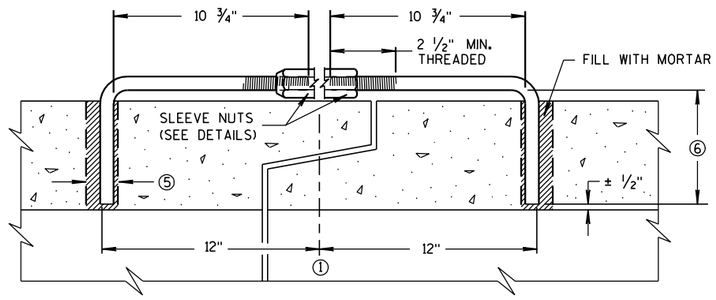
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

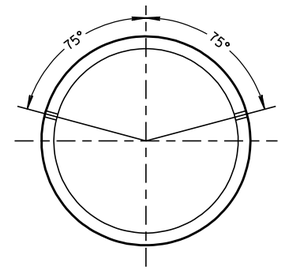
SLEEVE NUTS



LONGITUDINAL SECTION

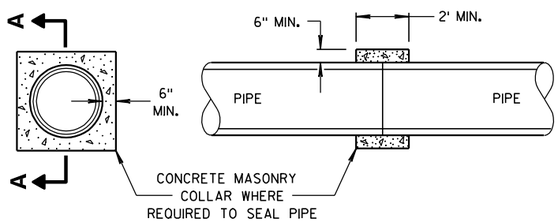
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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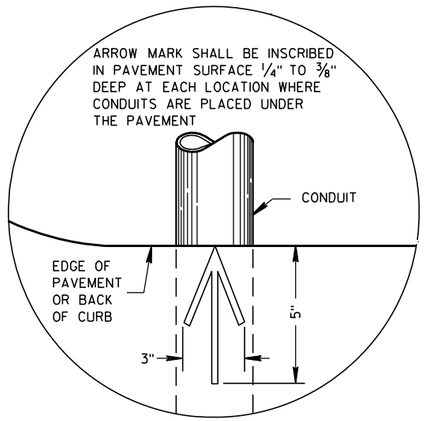
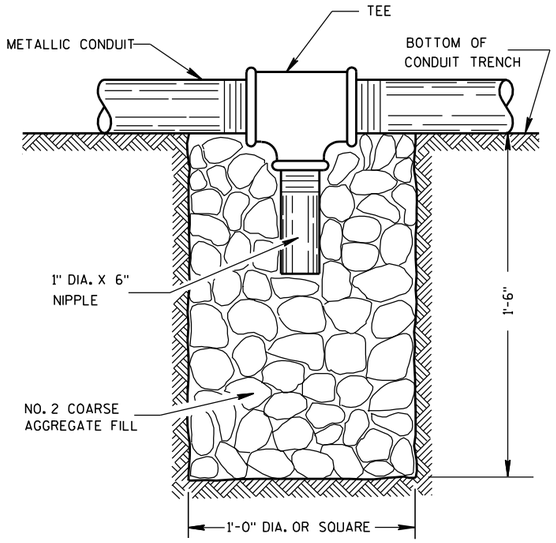


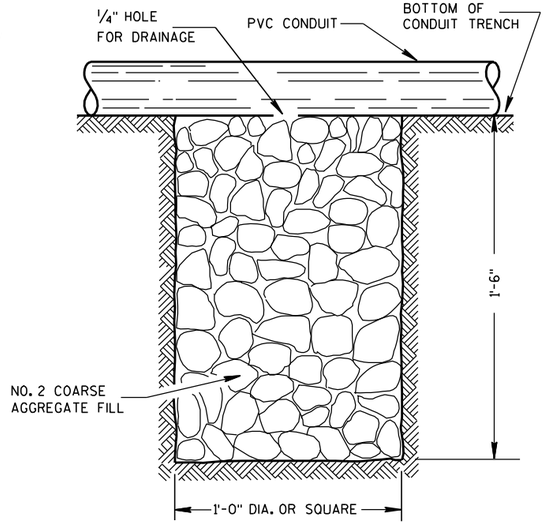
PLAN VIEW

ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

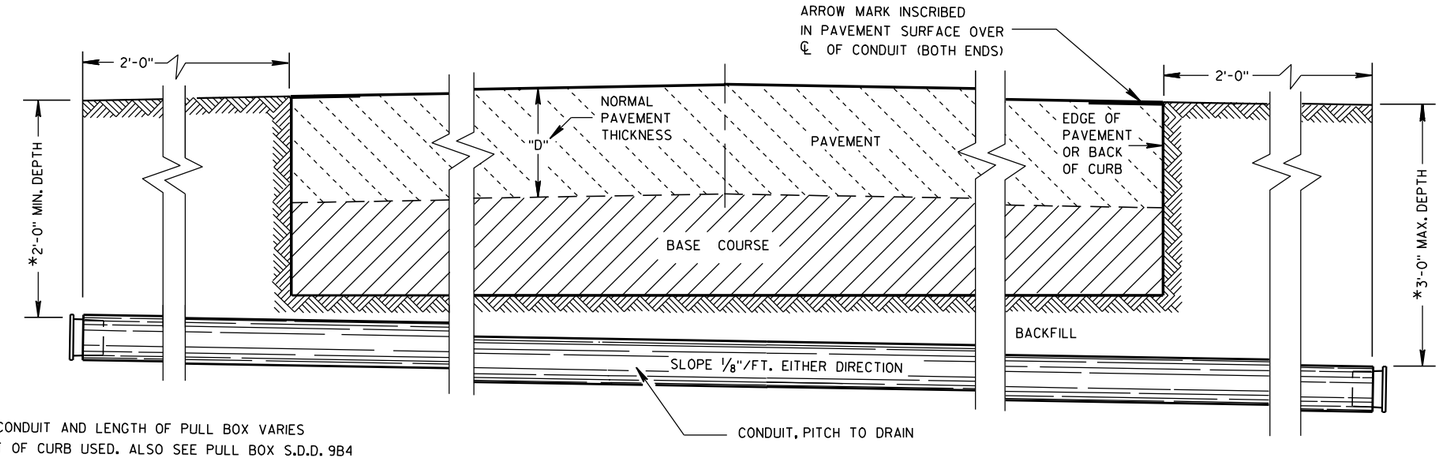
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/23/03 — DATE

/S/ Balu Ananthanarayanan — STATE ELECTRICAL ENGI — HWYS

FHWA

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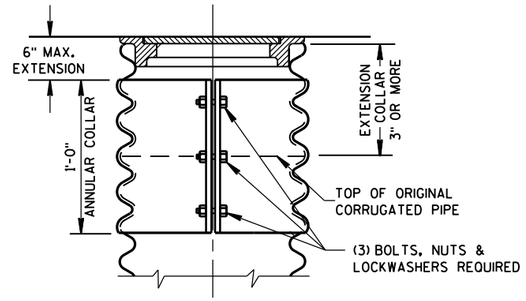
S.D.D. 9 B 2-7

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

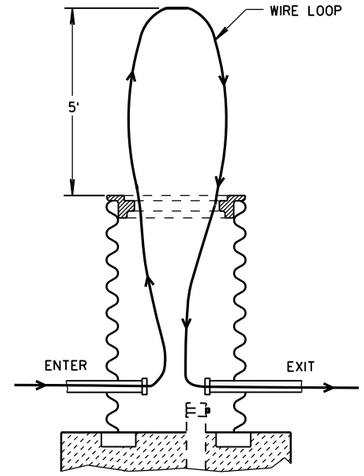
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

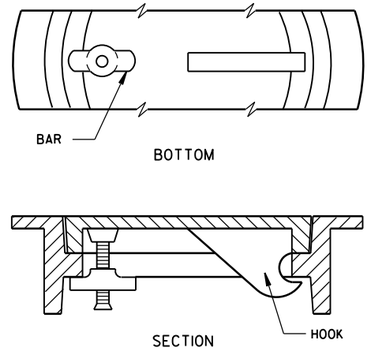
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

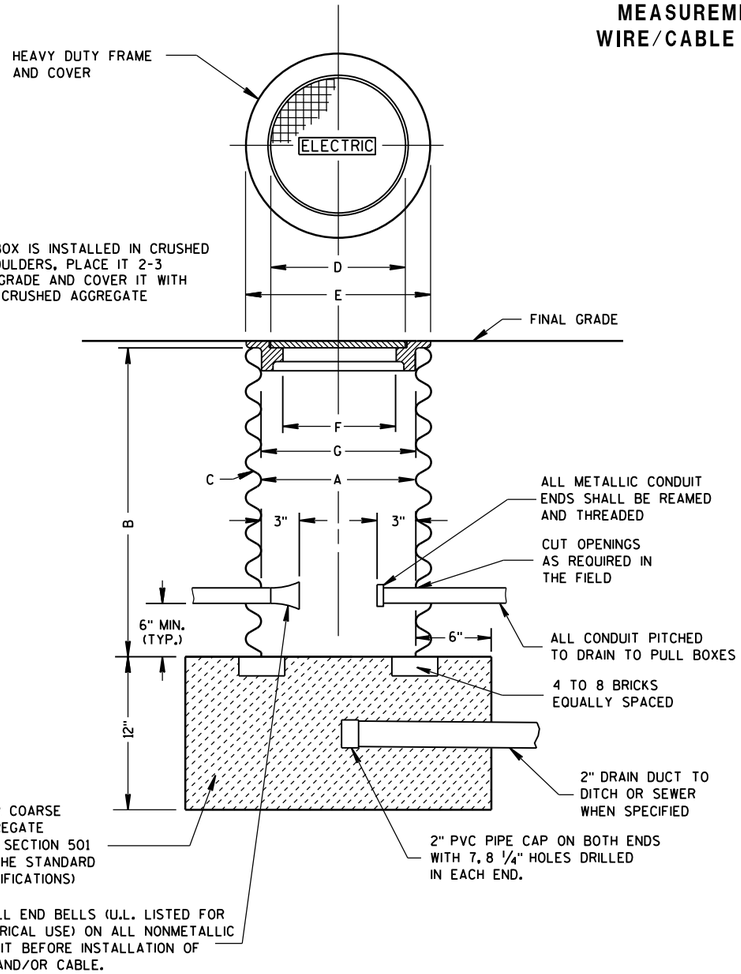


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



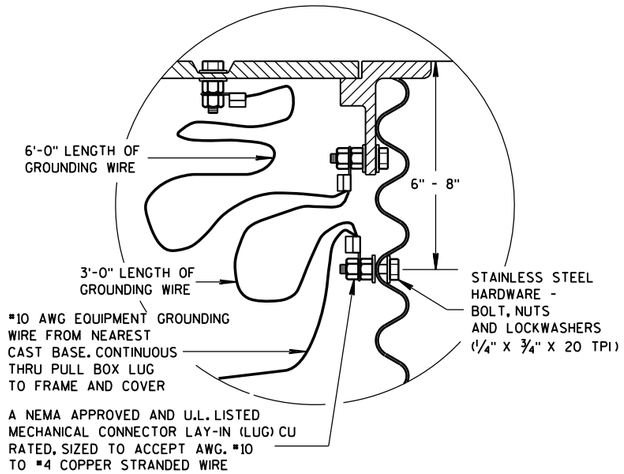
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

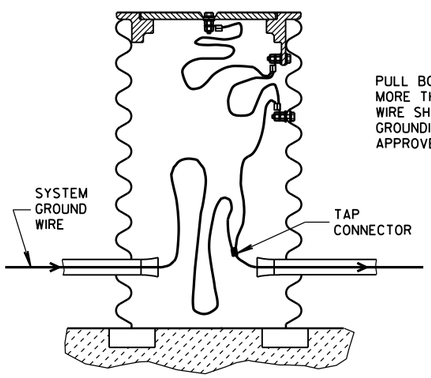


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

PULL BOX	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
2-7-2013 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL
FHWA	

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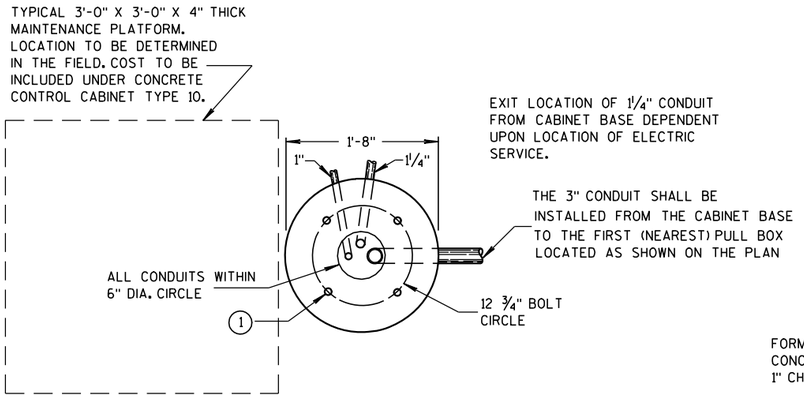
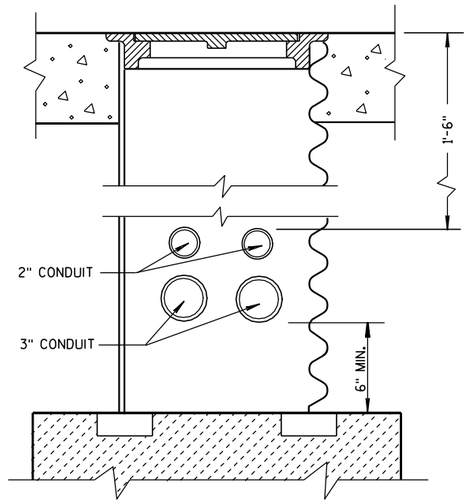
S.D.D. 9 B 4-10

CONTROL CABINET BASE TYPE	DIMENSIONS				C.Y. CONCRETE (APPROX.)
	H	I	J	K	
TYPE 6 - 30" CABINET	34"	60"	10"	17"	.64
TYPE 7 - 38" CABINET	42"	60"	10"	21"	.93
TYPE 8 - 38" CABINET	42"	72"	12"	21"	1.29
TYPE 9 - VARIABLE	54"	72"	14"	27"	1.56
TYPE 10 - POST MOUNT	AS SHOWN				.65 *

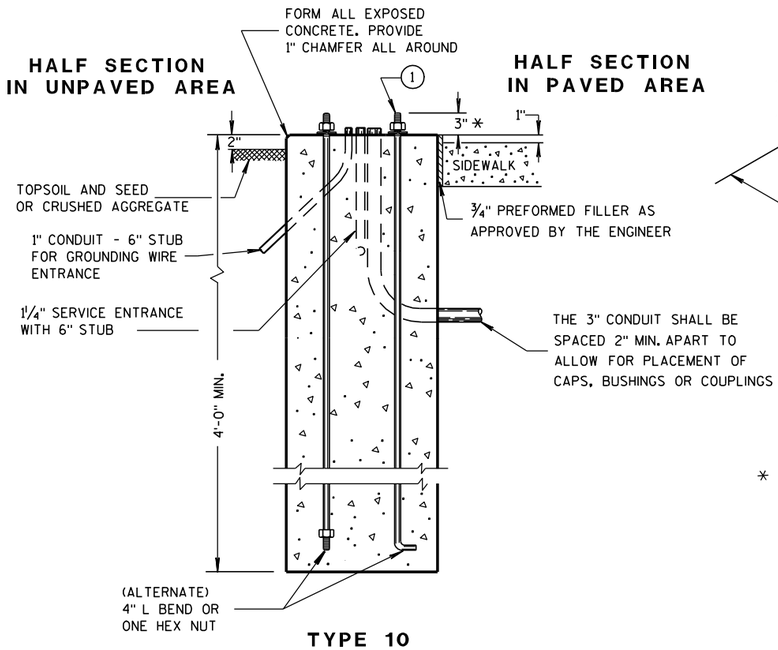
* INCLUDES MAINTENANCE PLATFORM.



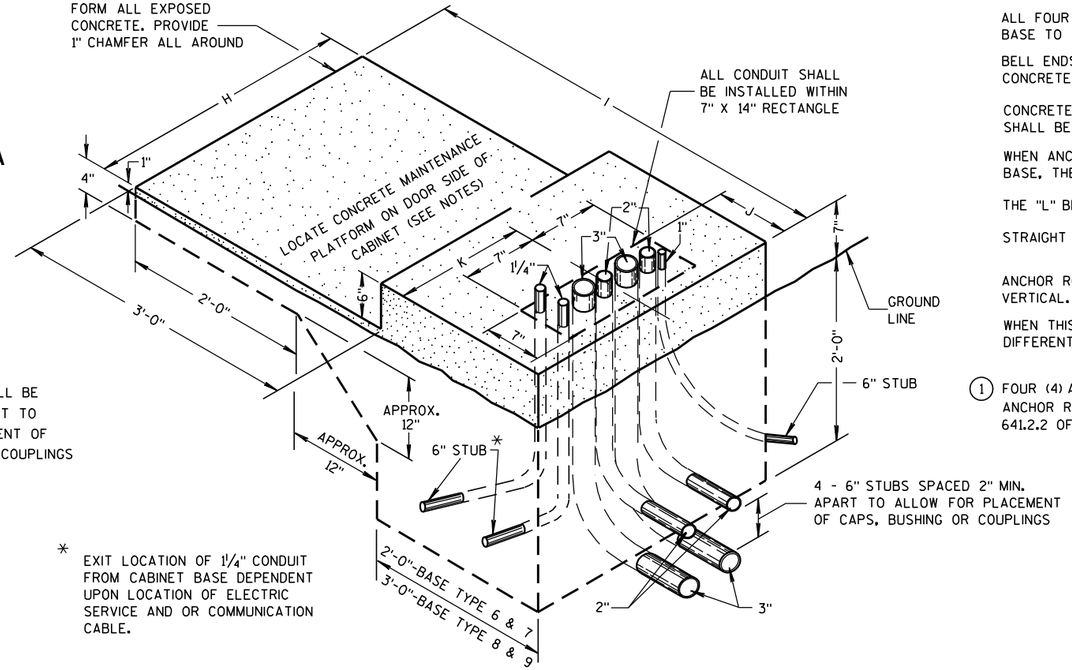


CONDUIT LOCATIONS IN 24" X 36" PULL BOX

(LEADING TO CONTROLLER CABINET BASE TYPE 6, 7, 8 AND 9)



TYPE 10



TYPE 6,7,8 AND 9 (ISOMETRIC VIEW)

* EXIT LOCATION OF 1¼" CONDUIT FROM CABINET BASE DEPENDENT UPON LOCATION OF ELECTRIC SERVICE AND OR COMMUNICATION CABLE.

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 3¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

GENERAL NOTES

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

INSTALL FOUR ½ INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

CONTROL CABINET BASE TOP SURFACES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

WHEN A TYPE 10 CONTROL CABINET BASE IS USED TO POST MOUNT A CONTROL CABINET, A 36" SQUARE 4" THICK CONCRETE MAINTENANCE PLATFORM SHALL BE REQUIRED ON THE DOOR SIDE OF THE CABINET. THE TOP 1 INCH SHALL BE ABOVE FINISHED GRADE AND BE BROOM FINISHED AND LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

ALL FOUR (TWO INCH AND THREE INCH) CONDUIT SHALL BE INSTALLED FROM THE CABINET BASE TO THE FIRST (NEAREST PULL BOX LOCATED AS SHOWN ON THE PLANS.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

WHEN ANCHOR RODS USING THE ALTERNATE L BEND ARE FURNISHED FOR THE TYPE 10 BASE, THE 4" L BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH.

THE "L" BEND SHALL NOT BE THREADED.

STRAIGHT ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WHEN THIS DRAWING IS USED FOR STREET LIGHTING CABINET BASES, CONDUIT MAY BE DIFFERENT AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

(1) FOUR (4) ANCHOR RODS, 1" DIA. X 3'-6"
ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS.

CONCRETE CONTROL CABINET BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/3/10
DATE

/S/ Joanna L.
STATE ELECTRICAL ENGI

HWYS

FHWA

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S.D.D. 9 C 5-7

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE 1" X 3'-6".

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

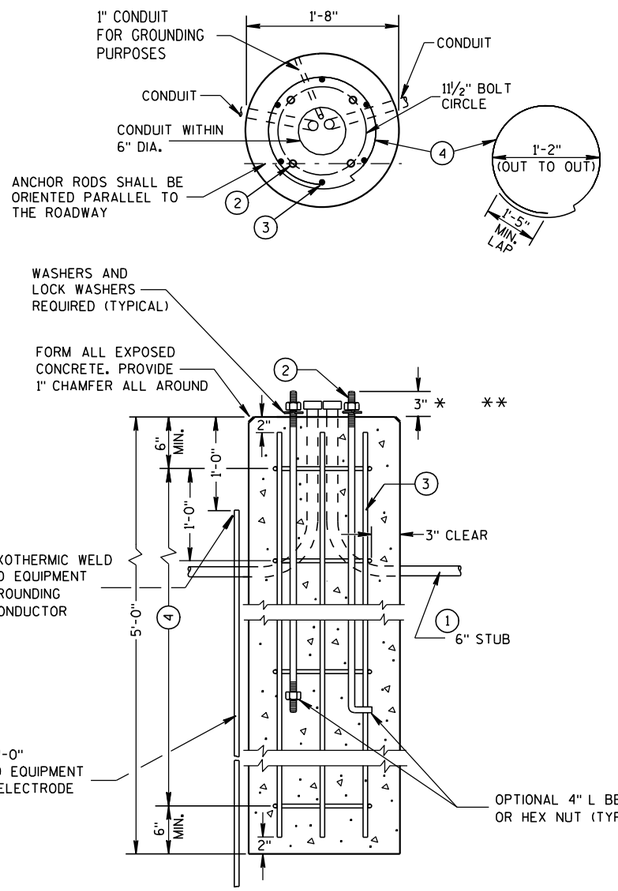
BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

(2) (4) 1" DIA. X 3'-6" ANCHOR RODS

(3) (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT.

(4) (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

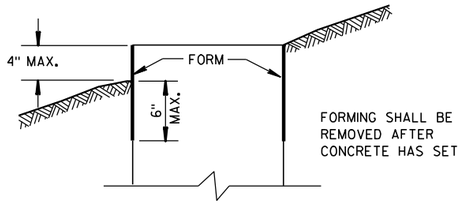


CONCRETE BASE, TYPE 6 (FOR 35' LIGHT POLES)

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 3¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWY INSTALLATIONS, 4½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	0.4
LBS. OF HOOP BAR STEEL	16
LBS. OF VERTICAL BAR STEEL	18

CONCRETE BASE, TYPE 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/3/10 DATE — /S/ Joanna L. Pi... STATE ELECTRICAL ENGI — HWYS

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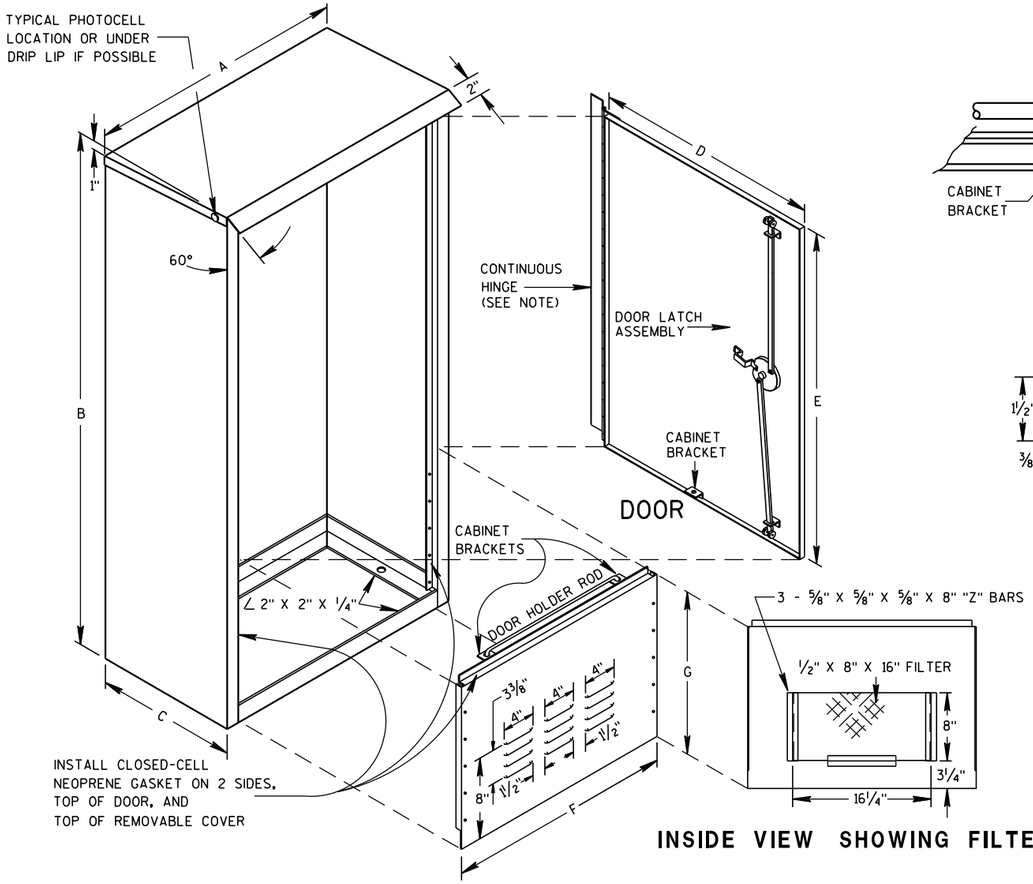
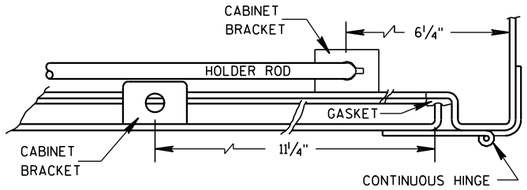
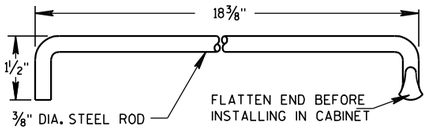


REMOVABLE COVER

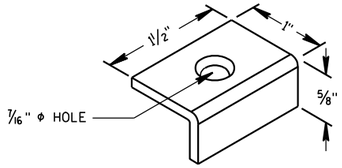
INSIDE VIEW SHOWING FILTER



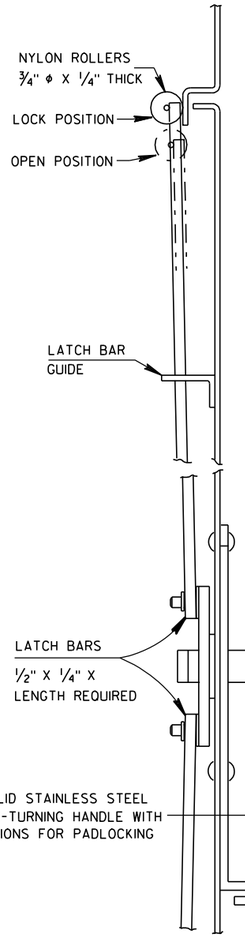
HINGE & DOOR HOLDER



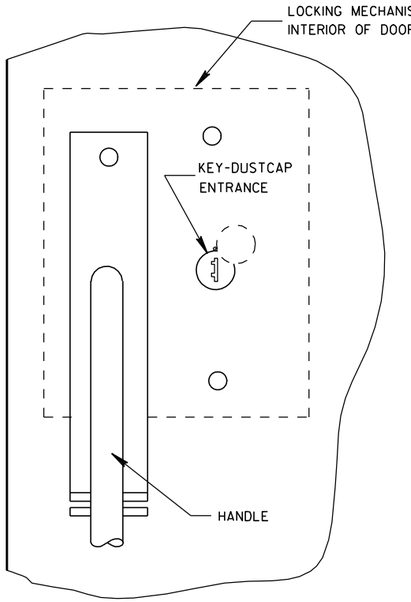
HOLDER ROD



CABINET BRACKET

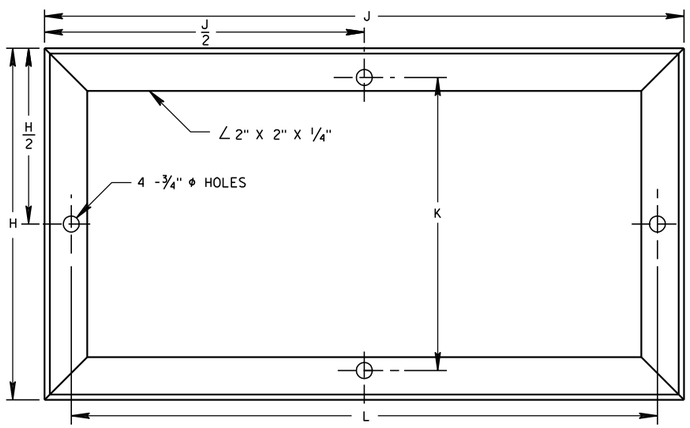


SIDE VIEW



FRONT VIEW

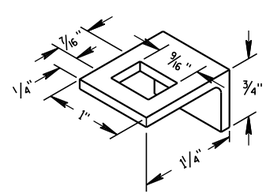
LATCH ASSEMBLY



MOUNTING BASE

TABLE OF DIMENSIONS (INCHES)

MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16 1/2	16 1/2	24
D	26 1/2	34 3/4	33 3/4
E	38 3/4	38 3/4	38 3/4
F	26 1/2	34 3/4	33 3/4
G	19	19	25
H	16 1/2	16 1/2	24
H/2	8 1/4	8 1/4	12
J	30	38	38
J/2	15	19	19
K	13 3/4	13 3/4	21 1/4
L	27 1/2	35 1/2	35 1/2



LATCH BAR GUIDE

GENERAL NOTES

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

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

FINISH EXTERIOR SURFACES WITH RUSTOLEUM #906 SILVER GRAY OR APPROVED EQUAL.

FINISH INTERIOR WITH RUSTOLEUM #2766 HIGH GLOSS WHITE ENAMEL OR APPROVED EQUAL.

ALL SHEET METAL PARTS SHALL BE .125 INCH THICK ALUMINUM.

ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH 1/4" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH 1/4" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH-NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE AN APPROVED TYPE.

DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.

SIGNAL OR LIGHTING CONTROL CABINET

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/21/96 — DATE
/S/ Balu Ananthanarayanan — STATE ELECTRICAL ENGI
FHWA — HWYS

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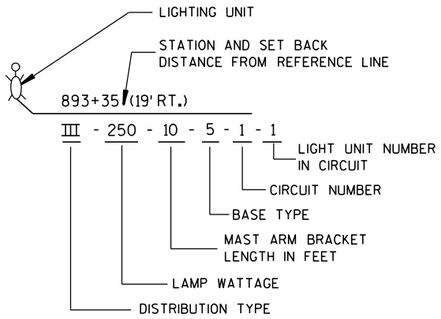
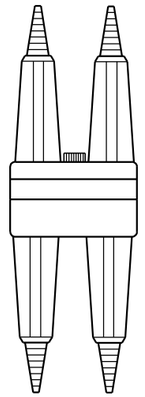
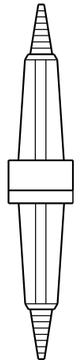


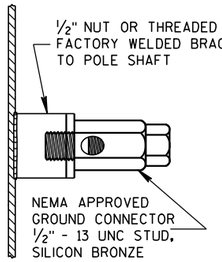
LIGHTING UNIT CODE
(TYPICAL)

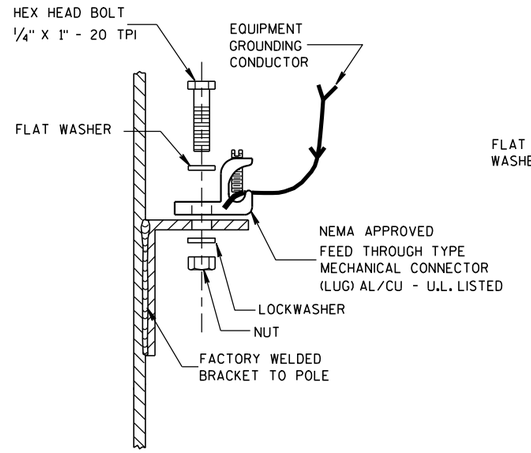


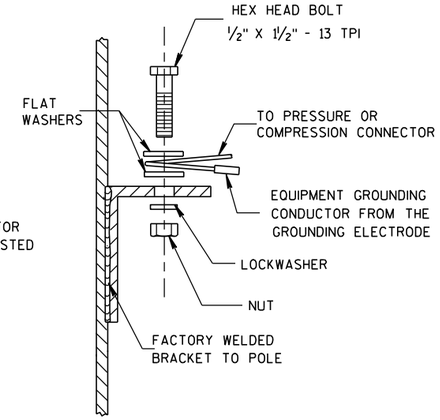
DETAIL "A"
BREAKAWAY
DOUBLE POLE WITH
WATERPROOF
INSULATING BOOT



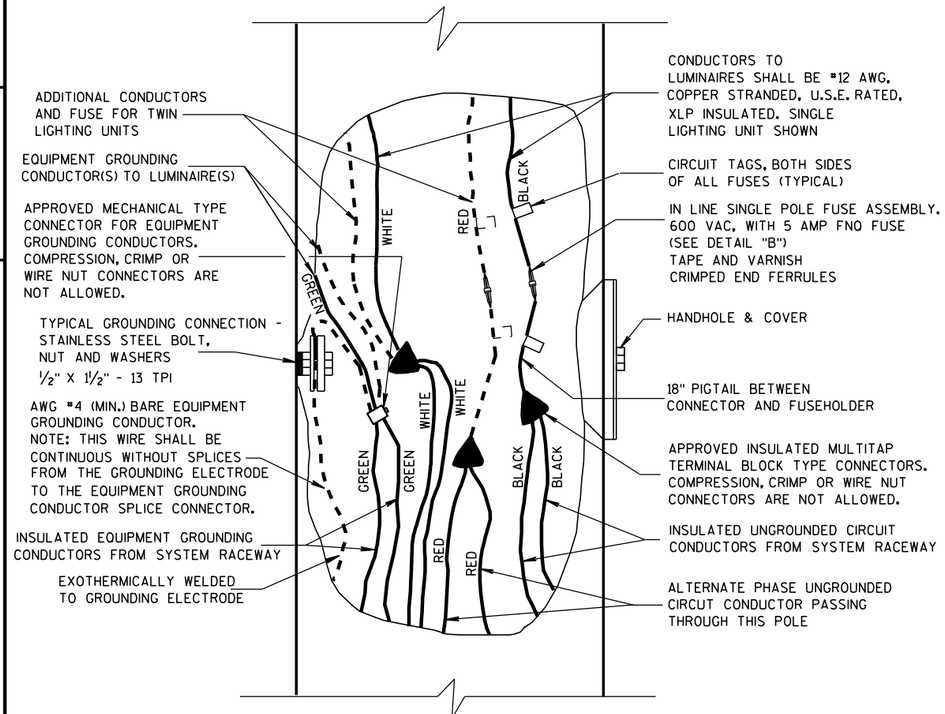
DETAIL "B"
BREAKAWAY
SINGLE POLE WITH
WATERPROOF
INSULATING BOOT



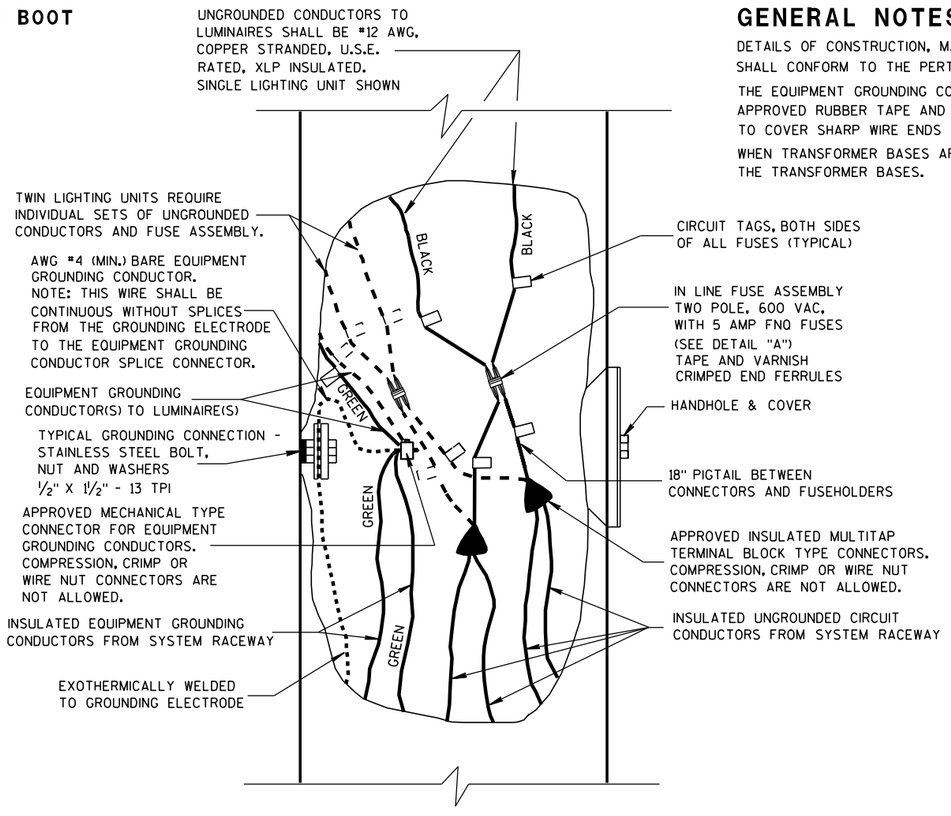




TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL



3 WIRE - 120, 240 OR 480 VAC (UNGROUNDED CONDUCTOR) WITH GROUNDED CONDUCTOR AND WITH EQUIPMENT GROUNDING CONDUCTOR



2 WIRE - 240 OR 480 VAC (UNGROUNDED CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR

GENERAL NOTES

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

THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

NON-FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 — DATE

/S/ Thomas J. Gosnine — STATE ELECTRICAL ENGI

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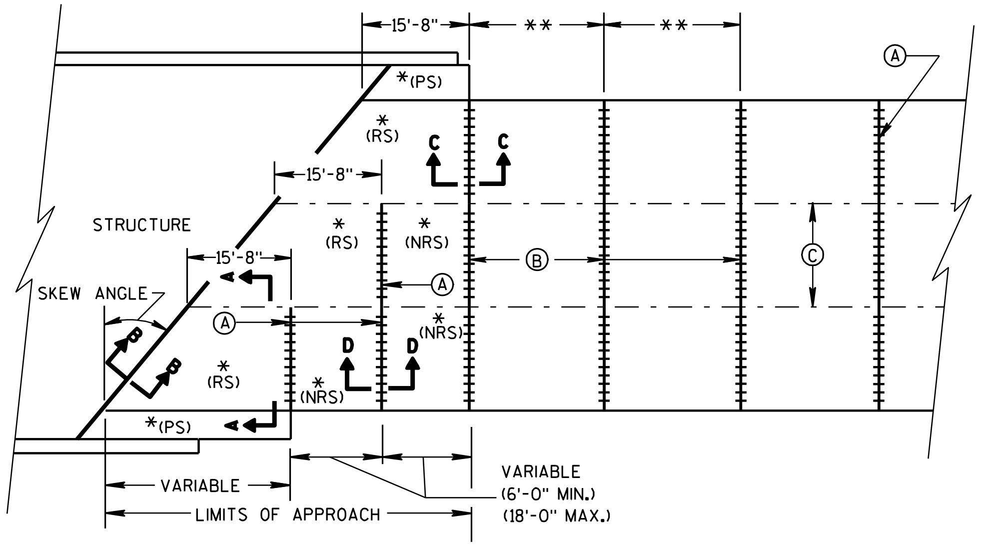
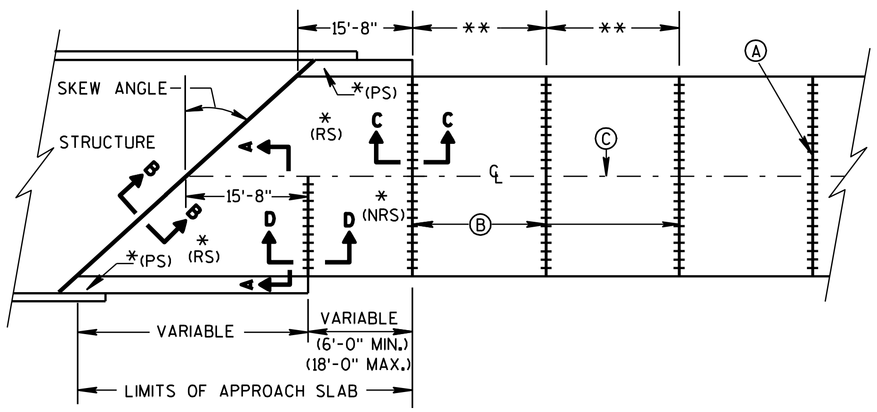
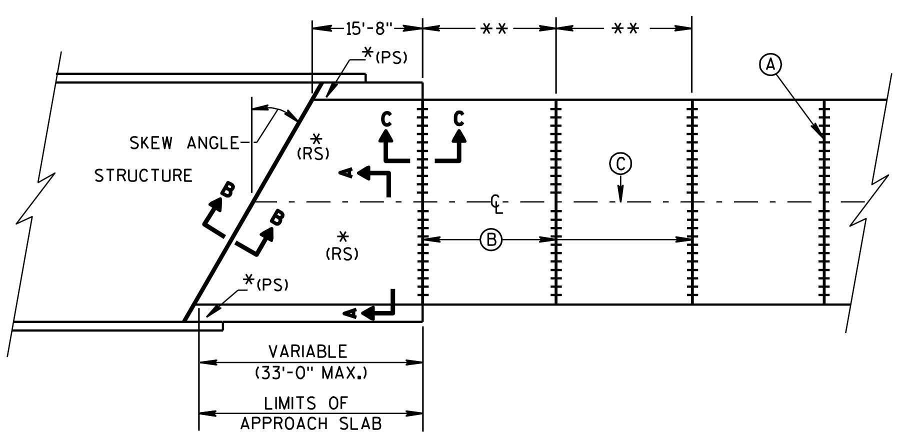


SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN (SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB
**STANDARD TRANSVERSE JOINT SPACING (SEE SDD 13C4, SDD 13C11, & SDD 13C13)

(A) STANDARD CONTRACTION JOINT NORMAL TO ℞ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℞ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.

GENERAL NOTES

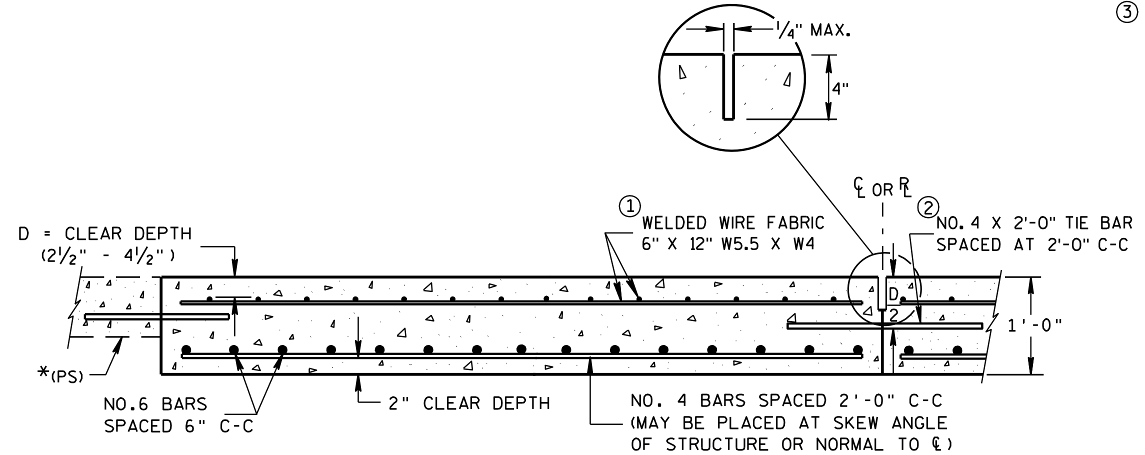
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

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

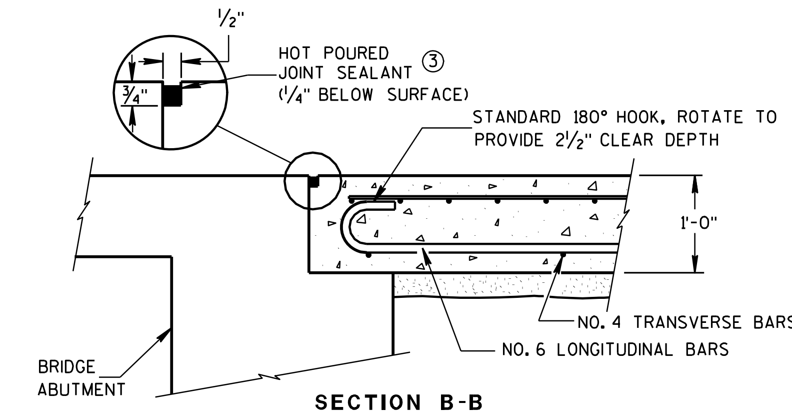
(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

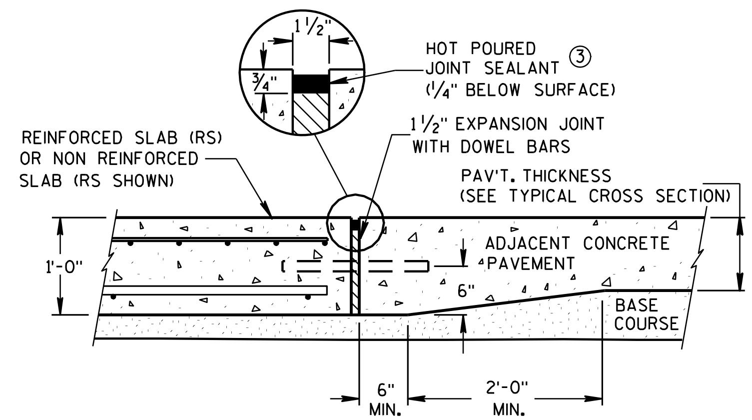
(3) USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



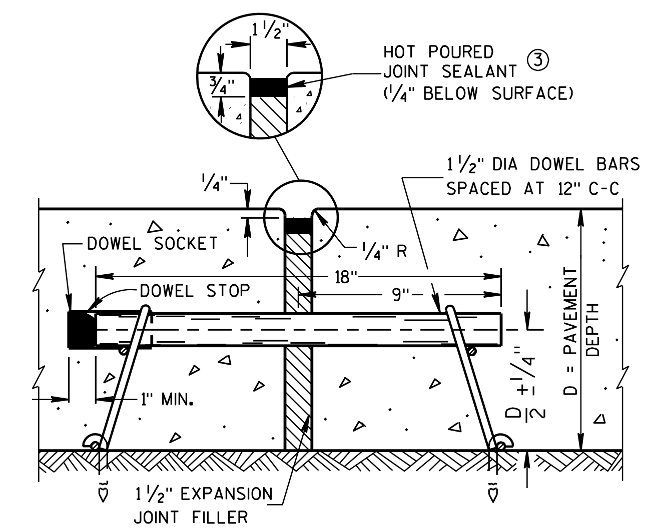
SECTION A-A
REINFORCEMENT POSITIONING DETAIL



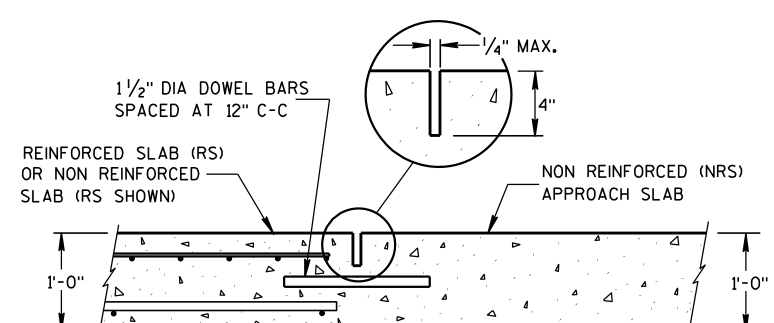
SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



EXPANSION JOINT



SECTION D-D
CONTRACTION JOINT

CONCRETE PAVEMENT APPROACH SLAB
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED 12/11/2009 DATE /S/ Deb Bischoff PAVEMENT POLICY & DE[SIGN ENGI]NEER FHWA

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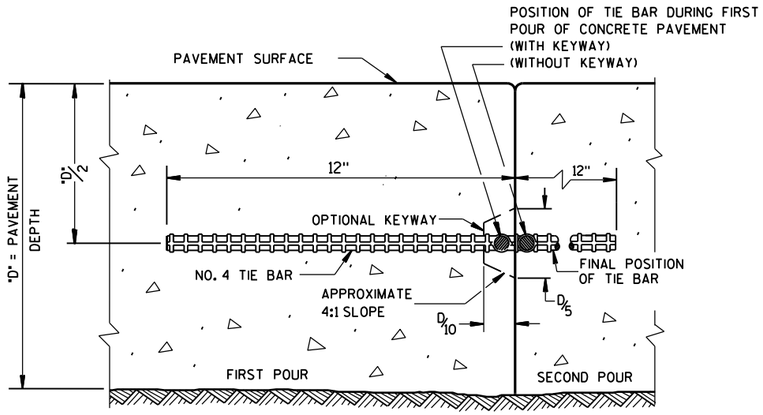
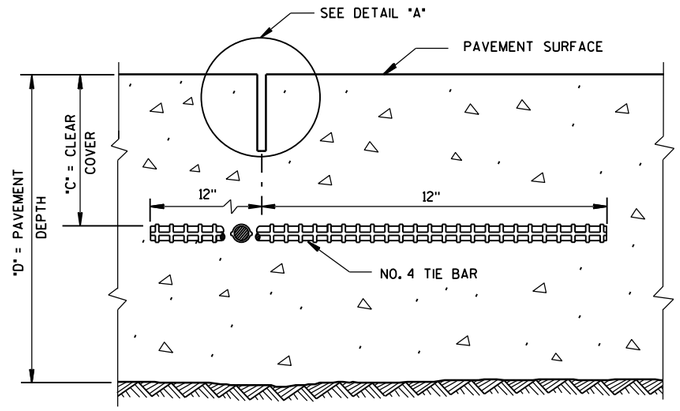
S.D.D. 13 B 2-6



CONSTRUCTION JOINT



SAWED JOINT

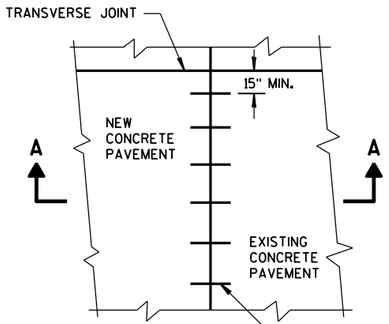
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

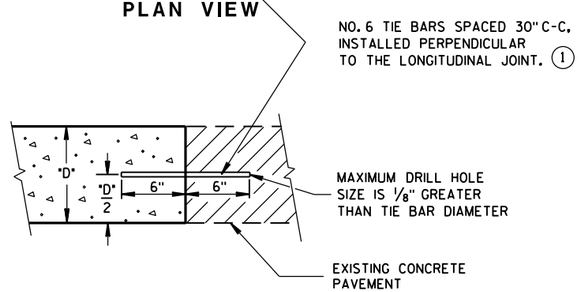
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

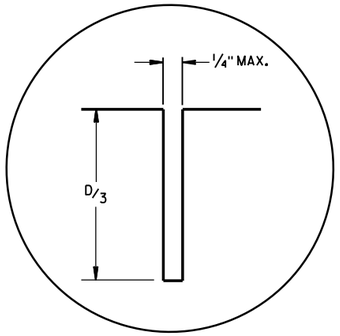


PLAN VIEW



SECTION A-A

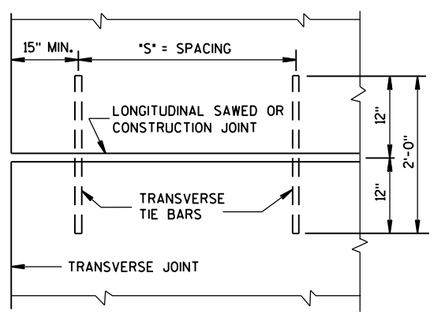
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"

TIE BAR TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 1/2"	3"±1/2"	48"	42"
7, 7 1/2"	3 1/4"±1"	45"	36"
8, 8 1/2"	3 3/4"±1"	39"	30"
9, 9 1/2"	4 1/4"±1"	33"	27"
10, 10 1/2"	4 3/4"±1"	30"	24"
11, 11 1/2"	5 1/4"±1"	27"	21"
12"	5 3/4"±1"	24"	21"



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-3-2013
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE

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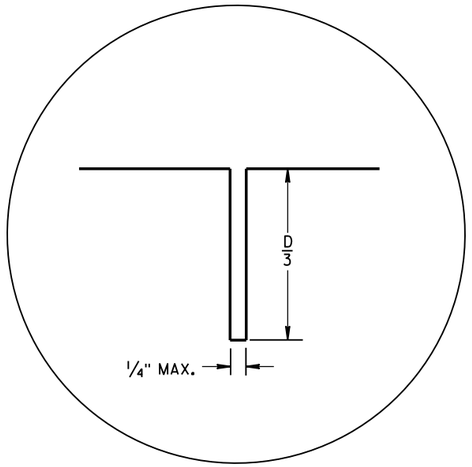
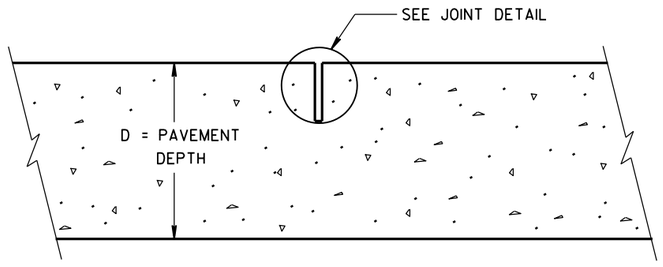


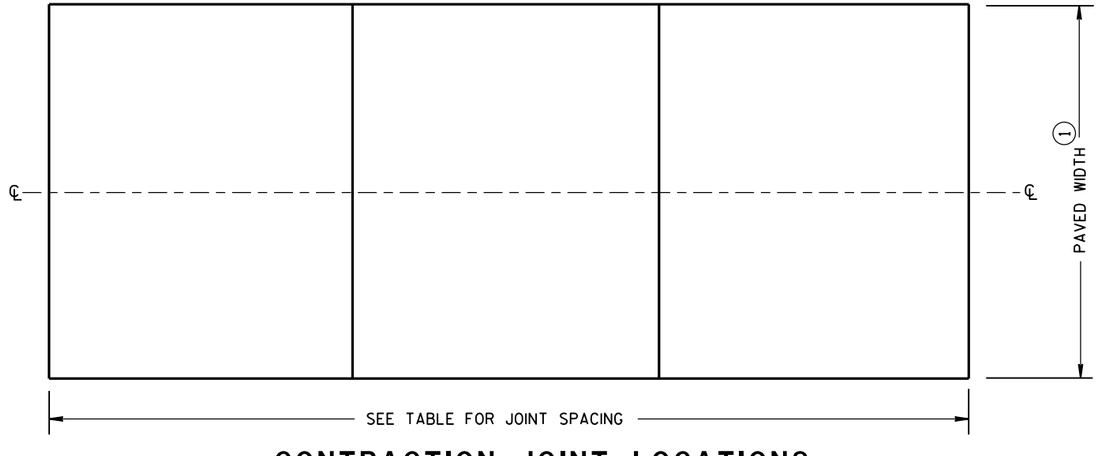
JOINT DETAIL



CONTRACTION JOINT

PAVEMENT DEPTH AND JOINT SPACING TABLE

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



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE.

LOCATE AND ORIENT CONTRACTION JOINTS THROUGH INTERSECTIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

CONSTRUCTION JOINTS

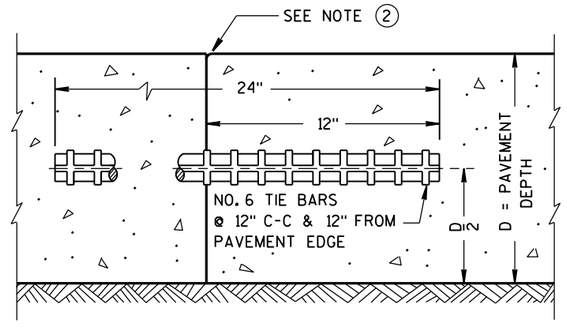
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.

FORM OR SAW CONSTRUCTION JOINTS.

THE CONTRACTOR MAY INSERT TIE BARS THROUGH THE HEADER BOARD AFTER THE CONCRETE HAS BEEN PLACED.

(1) REFER TO TYPICAL CROSS SECTIONS FOR PAVED WIDTH AND LOCATION OF LONGITUDINAL JOINTS.

(2) PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.



TIED TRANSVERSE CONSTRUCTION JOINT

6

6

S.D.D. 13 C 4-16

S.D.D. 13 C 4-16

URBAN NON-DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/3/2013 DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE

IEER

FHWA

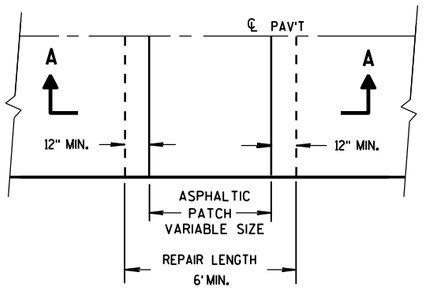
GENERAL NOTES

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. ADDITIONAL SAW CUTS ARE NOT PAID FOR BY THE DEPARTMENT.

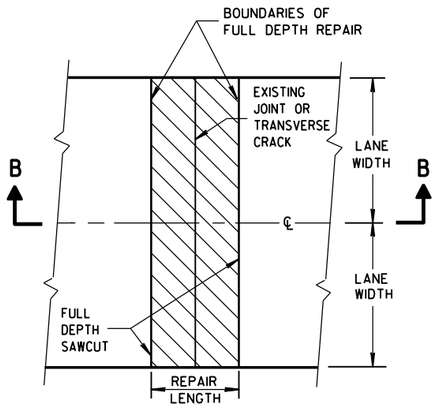
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

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.

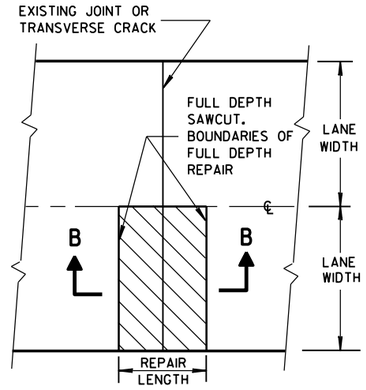
(1) DOWEL BARS MIGHT NOT EXIST.



PLAN VIEW



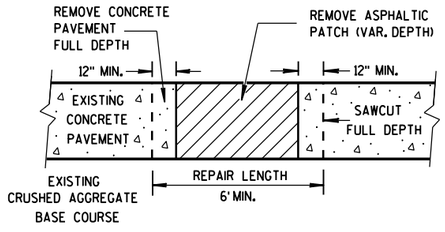
PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

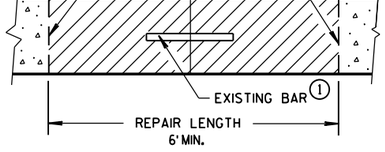
FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)



SECTION A-A

HMA PATCH REMOVAL



SECTION B-B

CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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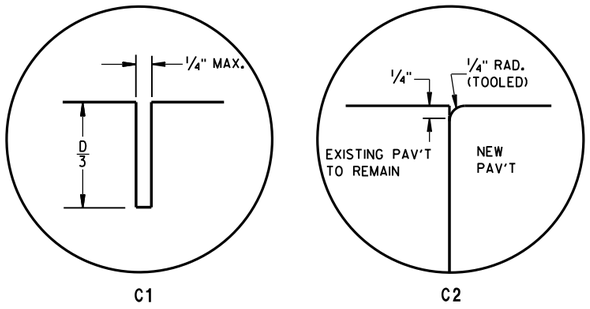
S.D.D. 13 C 9-10a

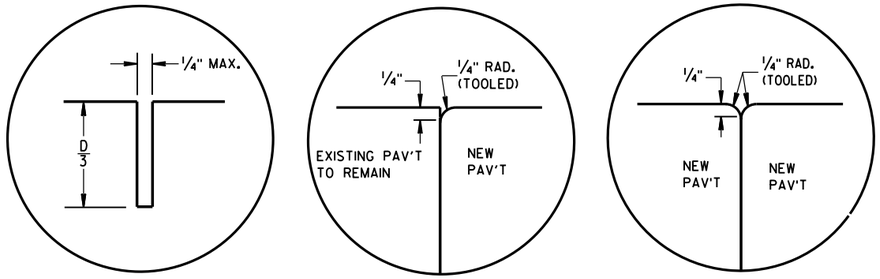


C1 C2

TRANSVERSE JOINTS

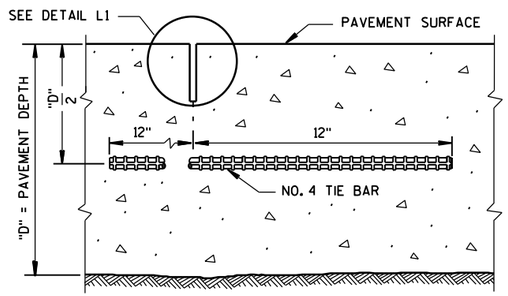
TIE BAR TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 1/2"	3"±1/2"	48"	42"
7, 7 1/2"	3 1/4"±1"	45"	36"
8, 8 1/2"	3 3/4"±1"	39"	30"
9, 9 1/2"	4 1/4"±1"	33"	27"
10, 10 1/2"	4 3/4"±1"	30"	24"
11, 11 1/2"	5 1/4"±1"	27"	21"
12"	5 3/4"±1"	24"	21"



L1 L2 L3

LONGITUDINAL JOINTS



SECTION C-C

SAWED LONGITUDINAL JOINT

GENERAL NOTES

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

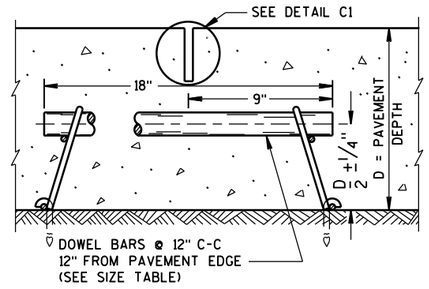
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

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

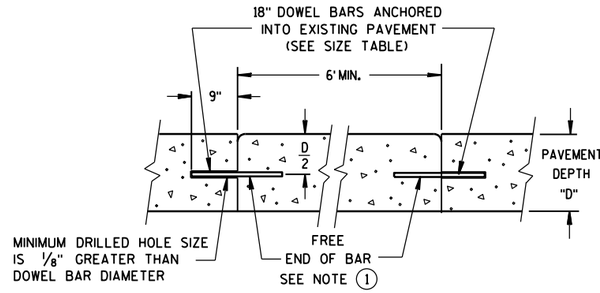
FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

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

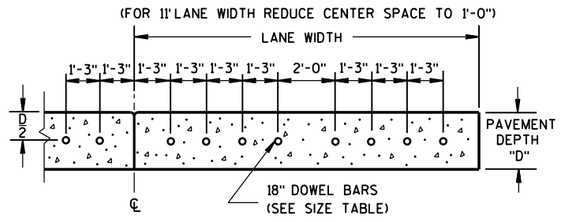


SECTION F-F

CONTRACTION JOINT



SECTION D-D

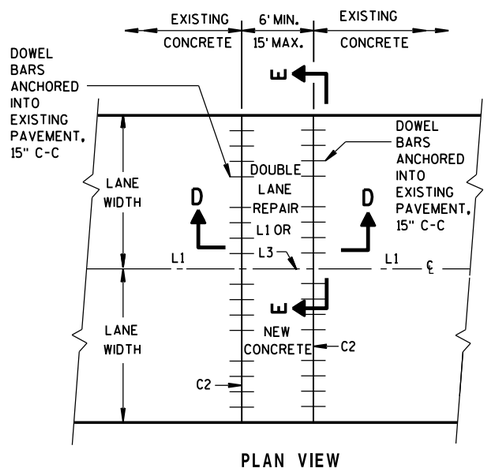


SECTION E-E

DRILLED DOWEL BAR CONSTRUCTION JOINT

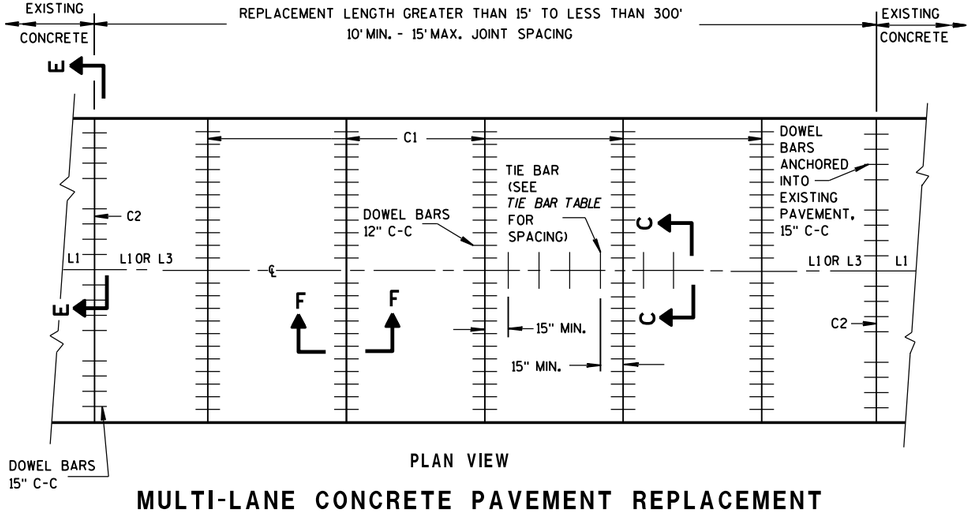
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

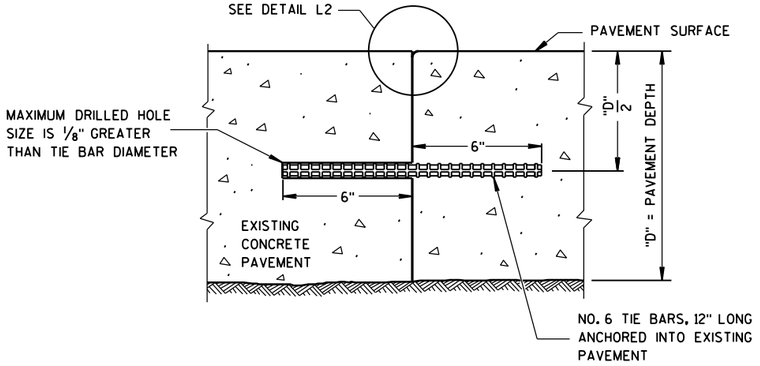
MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 13 C 9-10b



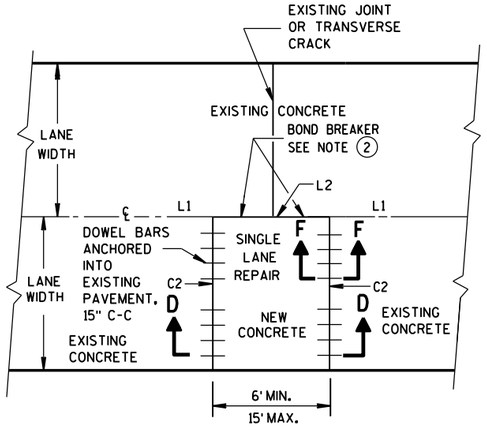
SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

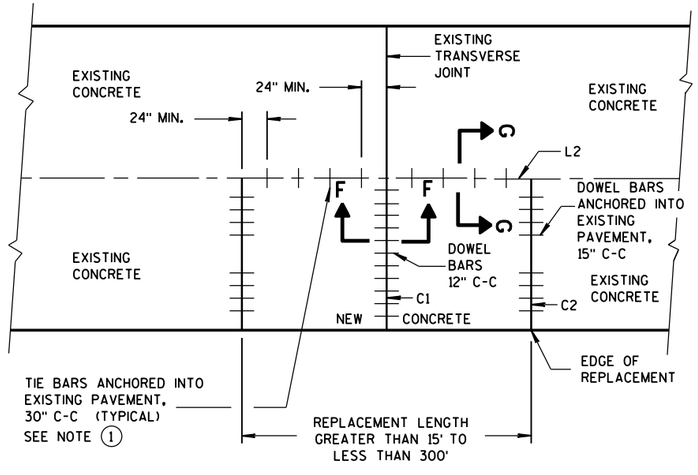
(1) WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES AND TO SUCH A DIAMETER AS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



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
5-3-2013 DATE
/S/ Deb Bischoff PAVEMENT POLICY & DE
FHWA

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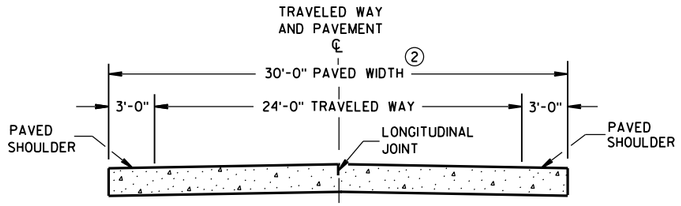
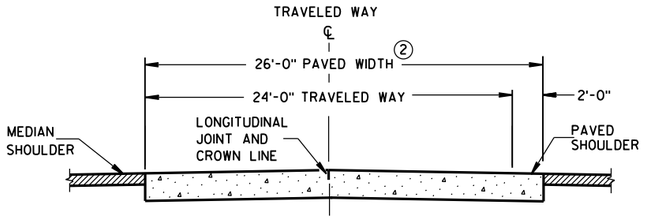
S.D.D. 13 C 9-10c

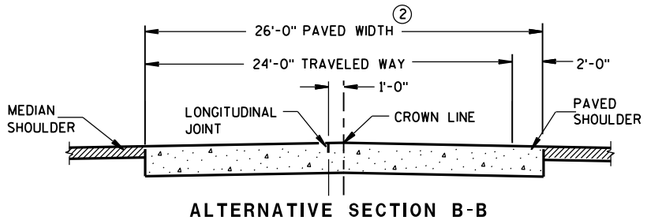


SECTION A-A ①

TWO-LANE TWO-WAY HIGHWAY



SECTION B-B



ALTERNATIVE SECTION B-B ①

DIVIDED HIGHWAY

GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

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

CONSTRUCTION JOINTS

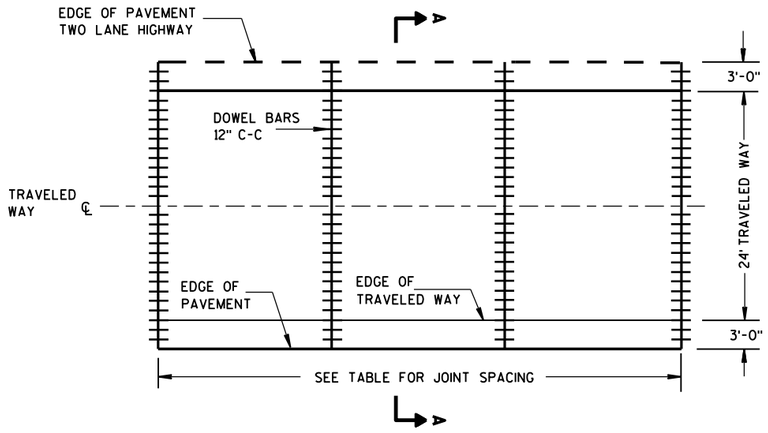
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

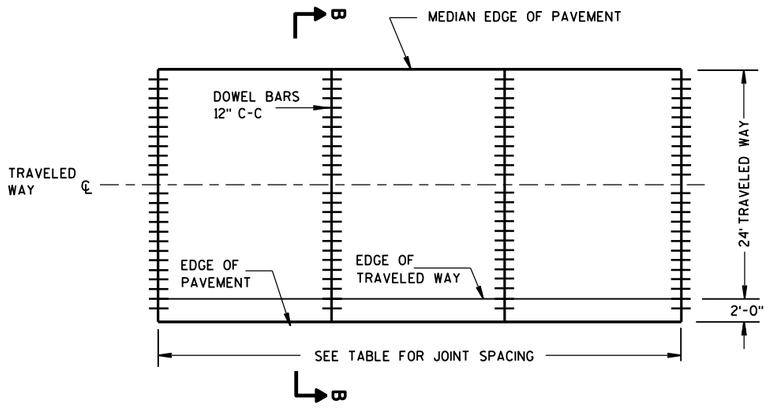
② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 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'



CONTRACTION JOINT LAYOUT
FOR TWO-LANE TWO-WAY HIGHWAY



CONTRACTION JOINT LAYOUT
FOR DIVIDED HIGHWAY

RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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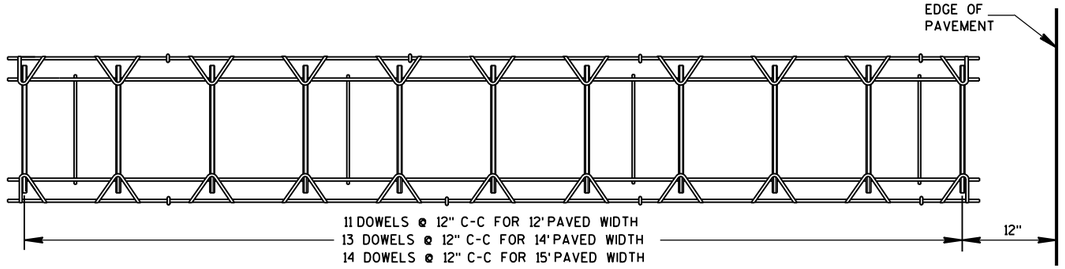
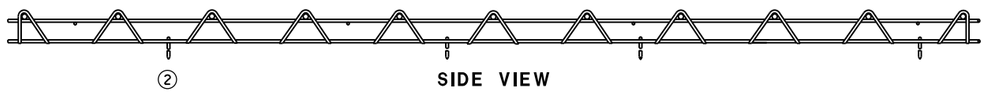
S.D.D. 13 C 11-11a



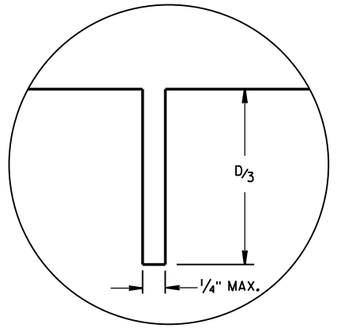
PLAN VIEW



SIDE VIEW

(NORMAL TO CENTERLINE)

CONTRACTION JOINT DOWEL ASSEMBLY ①



JOINT DETAIL

GENERAL NOTES

① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

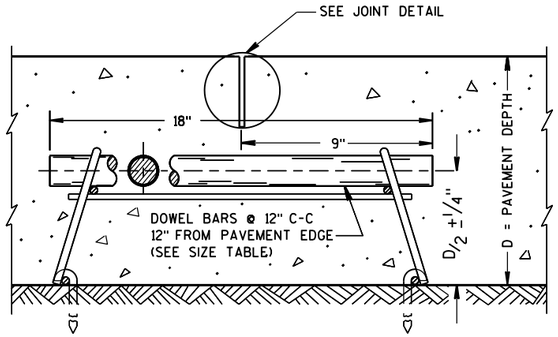
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

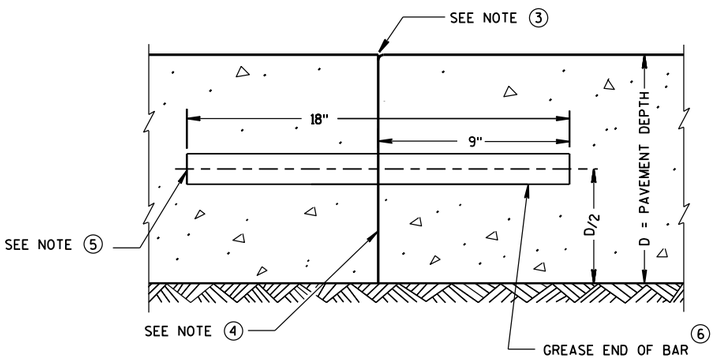
⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

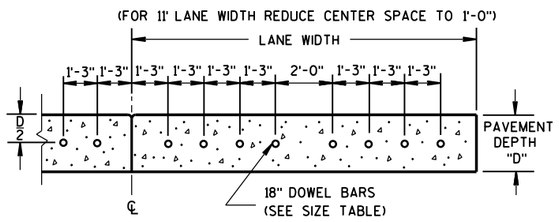
⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013 DATE
/S/ Deb Bischoff PAVEMENT POLICY & DE ENGINEER
FHWA

6

S.D.D. 13 C 11-11b

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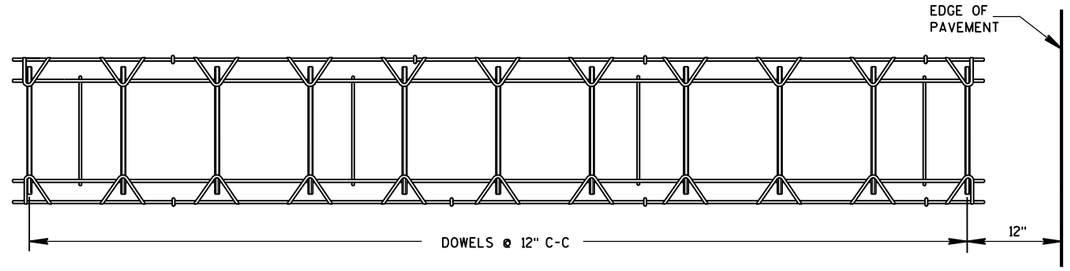
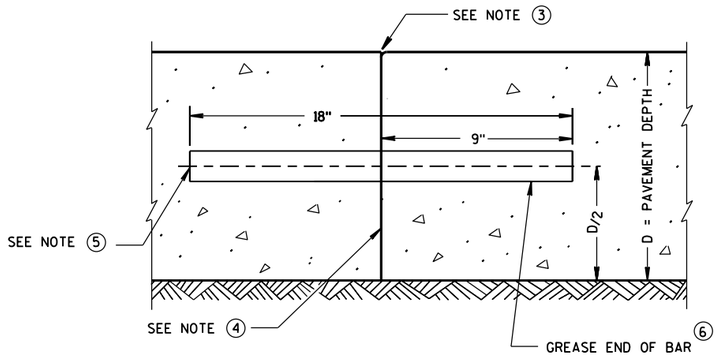
S.D.D. 13 C 11-11b



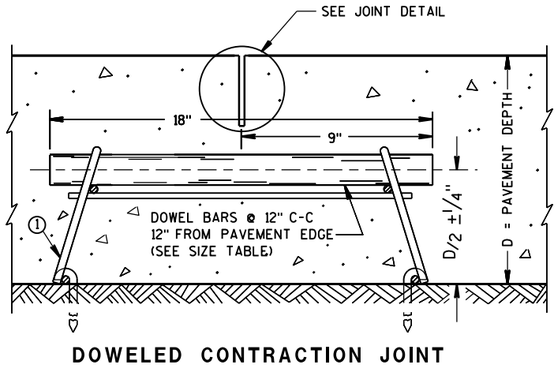
PLAN VIEW

SIDE VIEW

CONTRACTION JOINT DOWEL ASSEMBLY ①



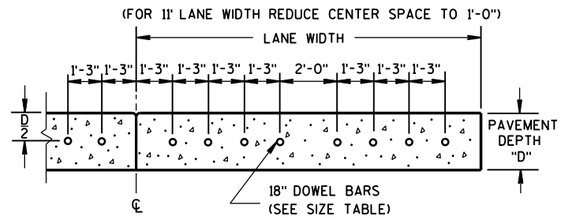
TRANSVERSE CONSTRUCTION JOINT



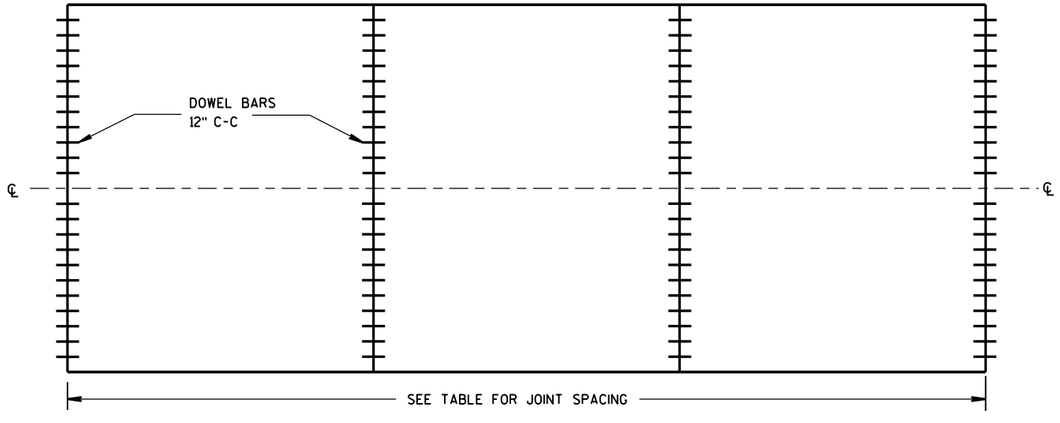
DOWELED CONTRACTION JOINT

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'



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

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

CONSTRUCTION JOINTS

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

① **OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.**

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

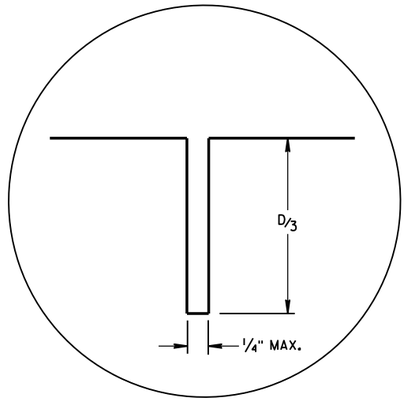
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



JOINT DETAIL

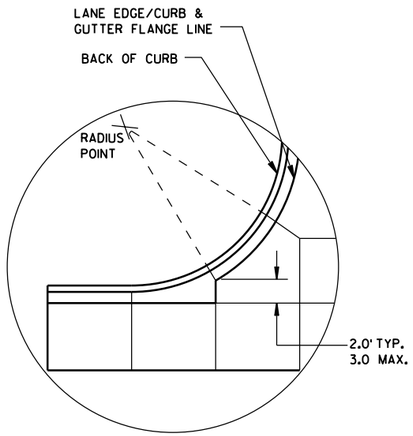
URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

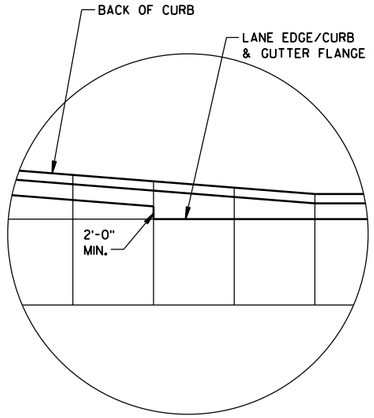
APPROVED
5/3/2013 DATE
/S/ Deb Bischoff
PAVEMENT POLICY & DE ENGINEER
FHWA

6

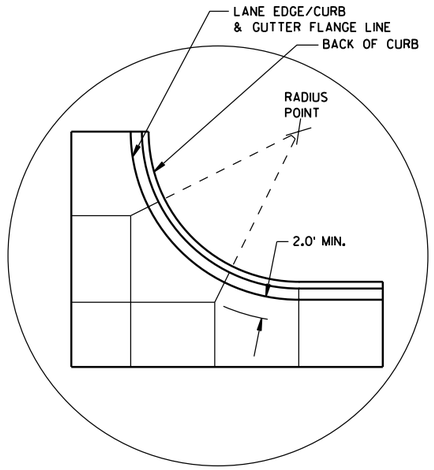
S.D.D. 13 C 13-8



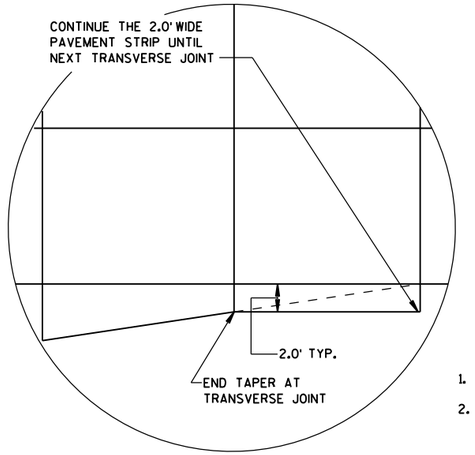
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

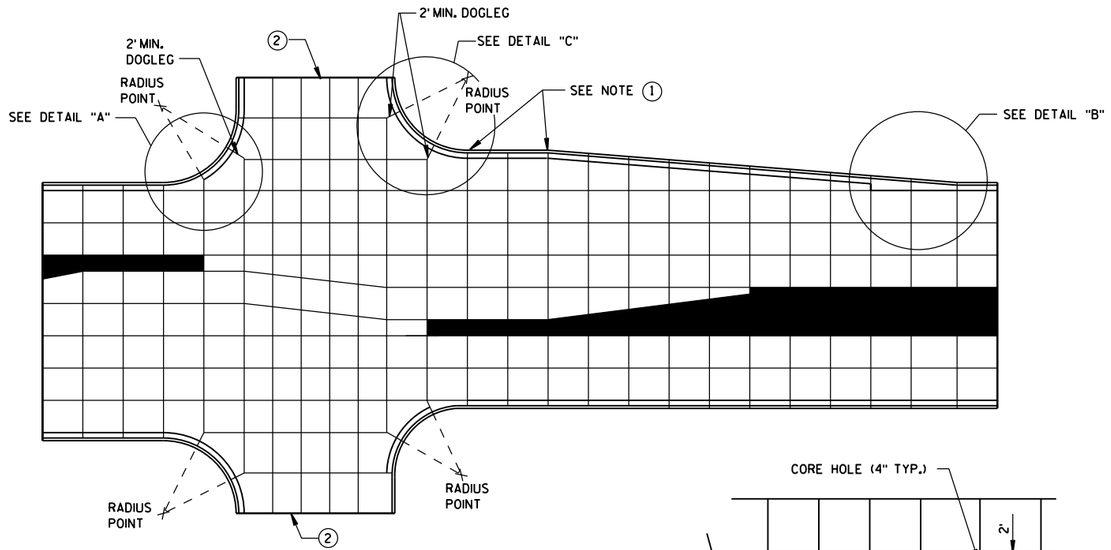
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

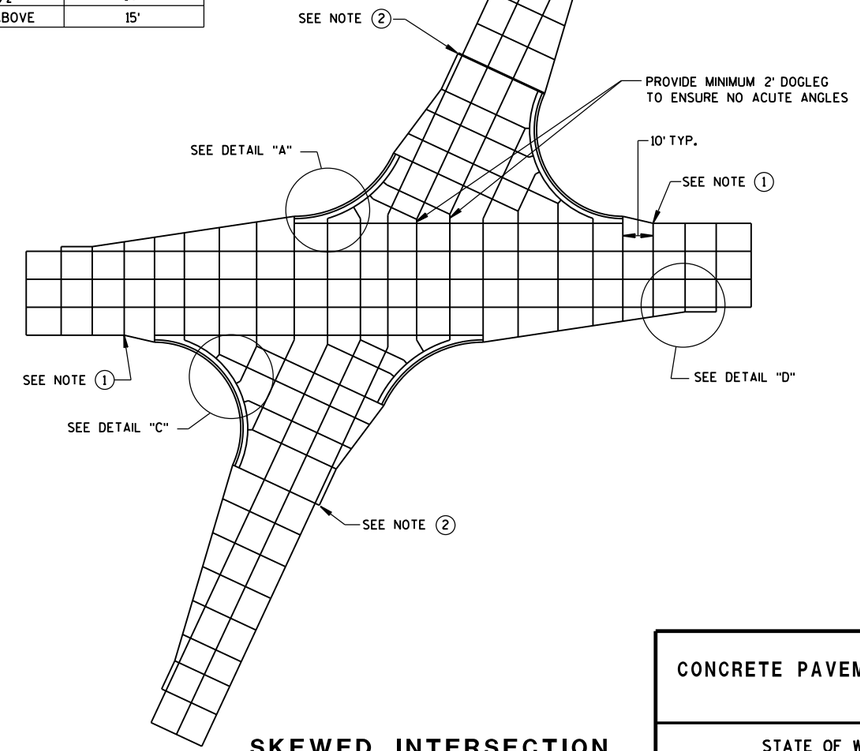
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



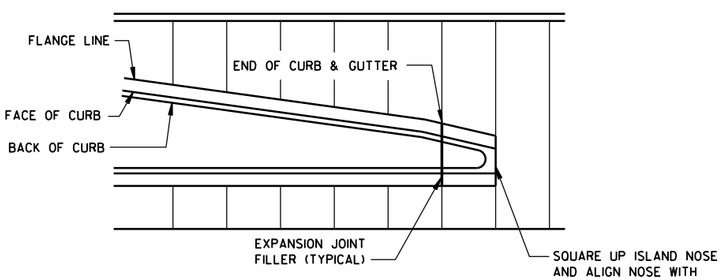
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

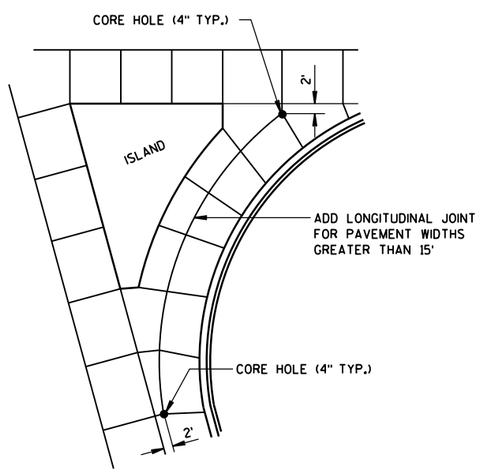
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

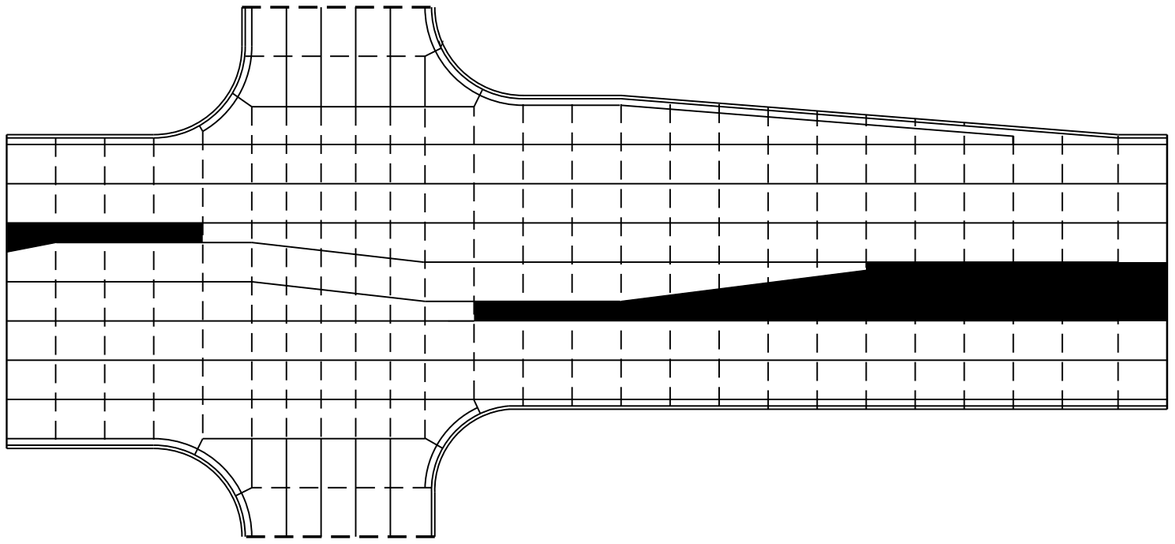
6
S.D.D. 13 C 18-2a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

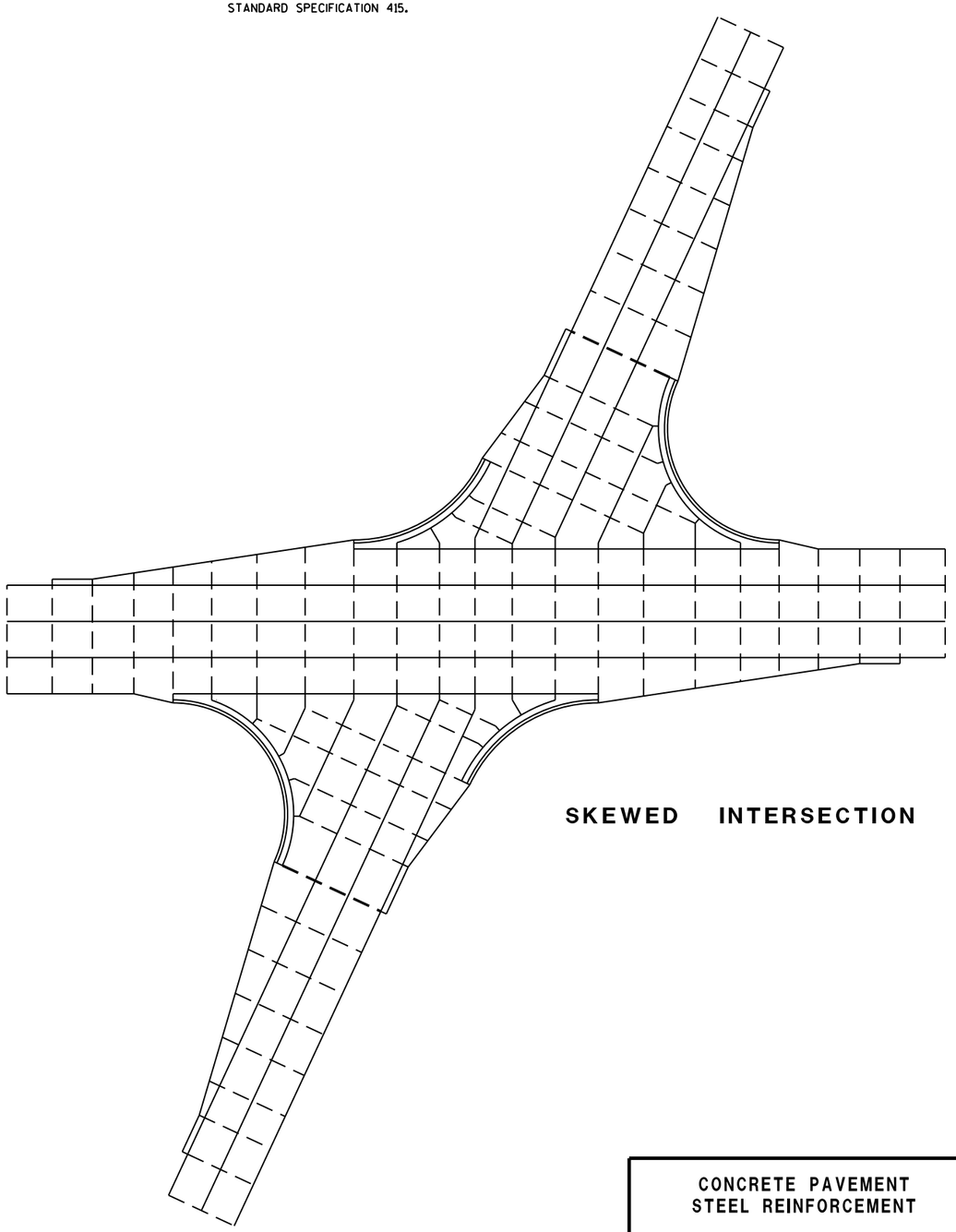
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

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



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

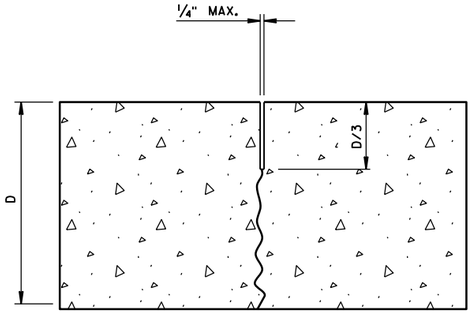
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

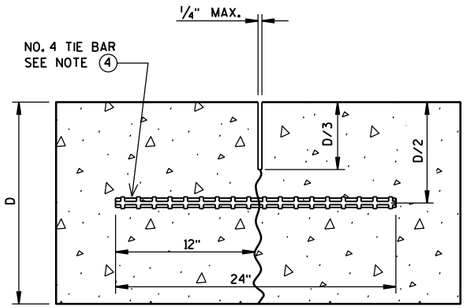
S.D.D. 13 C 18-2b

6

S.D.D. 13 C 18-2b



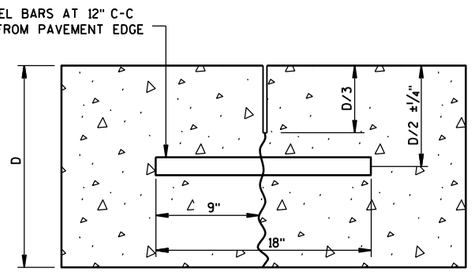
UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

GENERAL NOTES

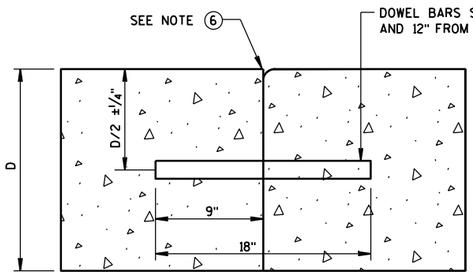
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. SPACE TIE BARS AT LONGITUDINAL CONSTRUCTION OR CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C1.
5. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
6. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.



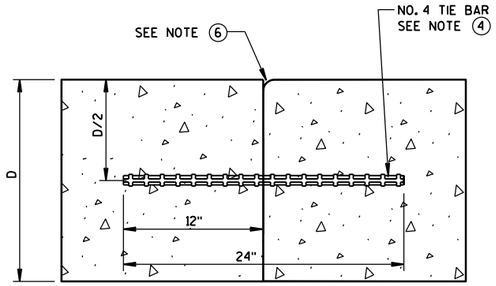
DOWELED-TRANSVERSE

CONTRACTION JOINTS

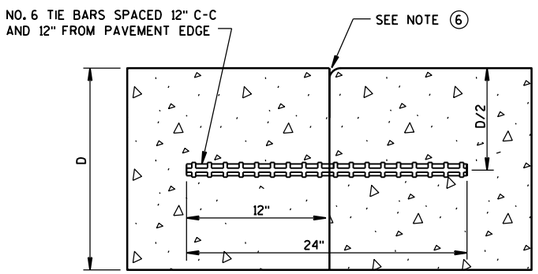
SEE NOTE (2)



DOWELED TRANSVERSE

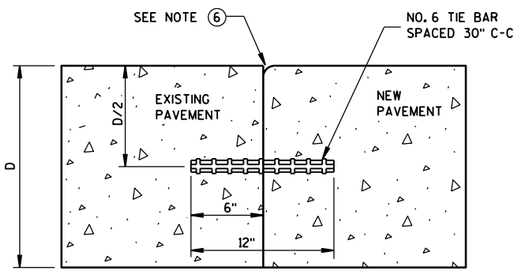


TIED LONGITUDINAL



TIED TRANSVERSE

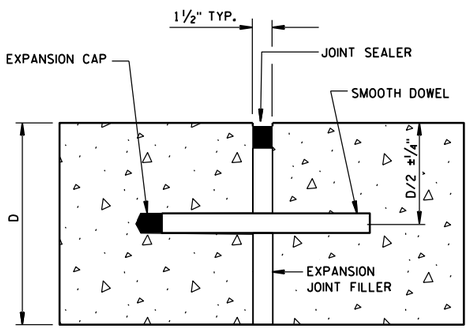
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

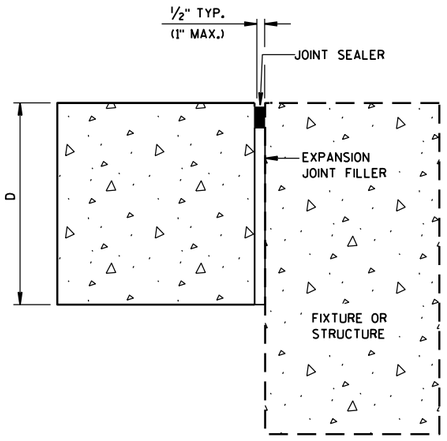
CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 13 C 18-2c

6

S.D.D. 13 C 18-2c

GENERAL NOTES

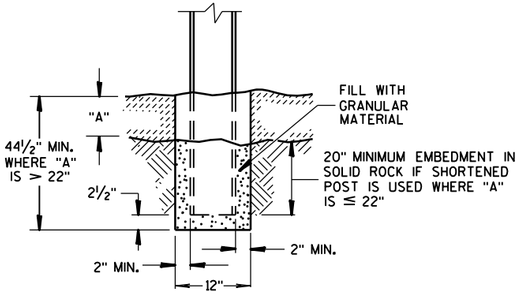
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

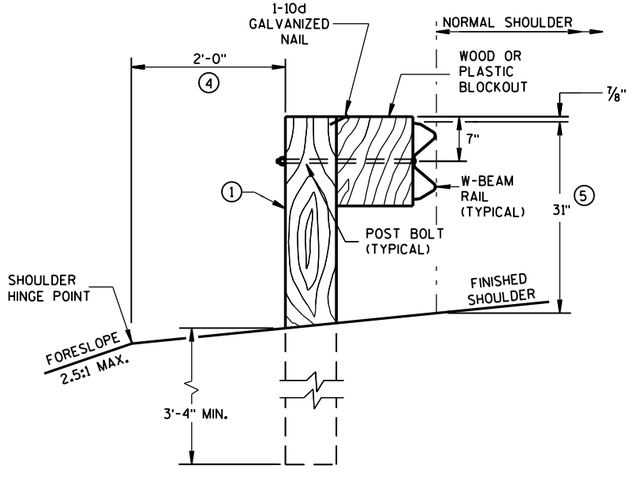
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

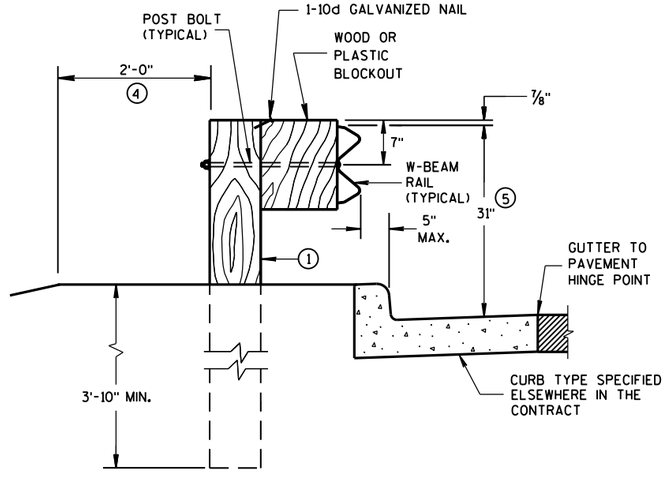
5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".



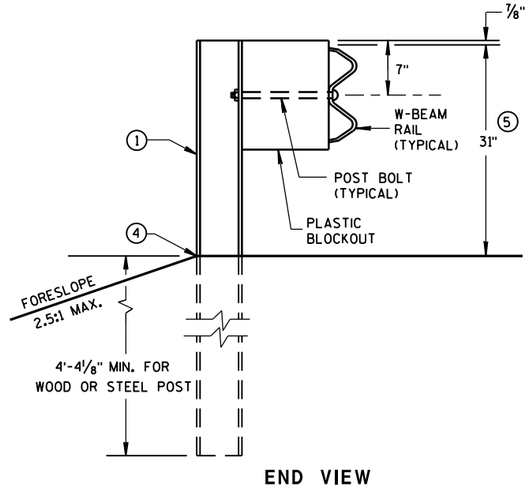
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



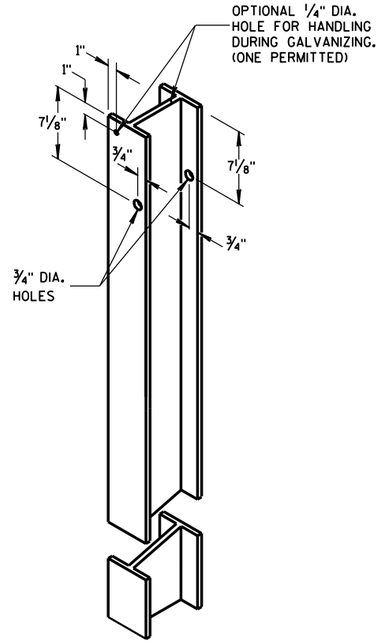
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



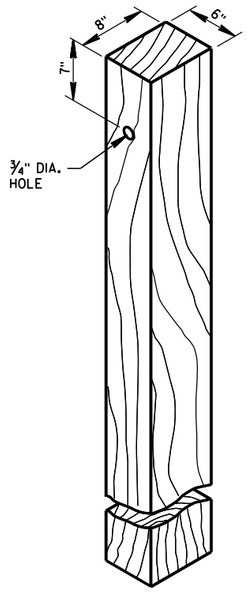
END VIEW
LOCATED ALONG A CURBED ROADWAY



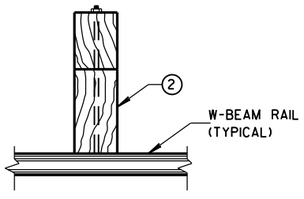
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



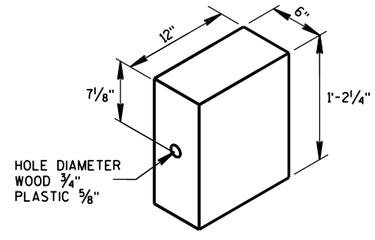
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



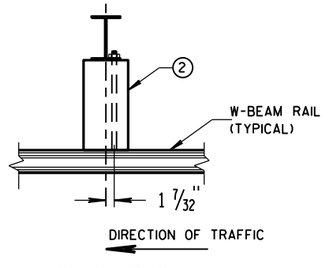
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)

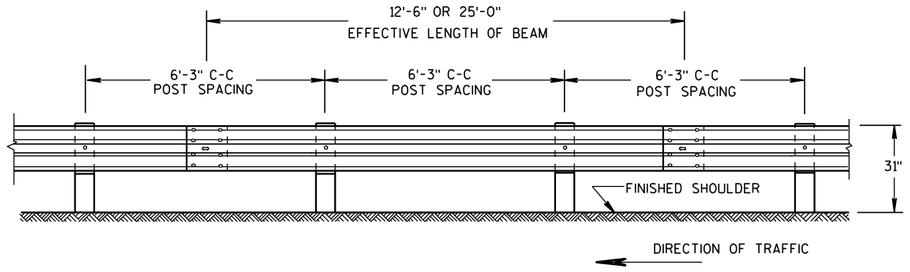


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

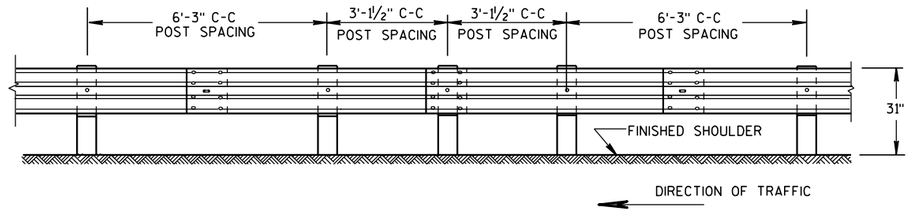
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6
S.D.D. 14 B 42-2a



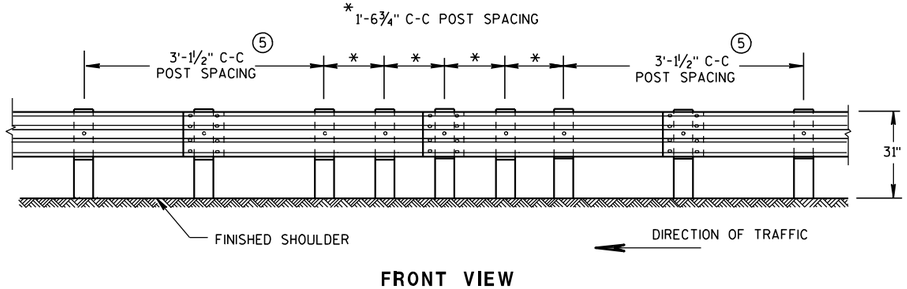
FRONT VIEW

POST SPACING STANDARD INSTALLATION



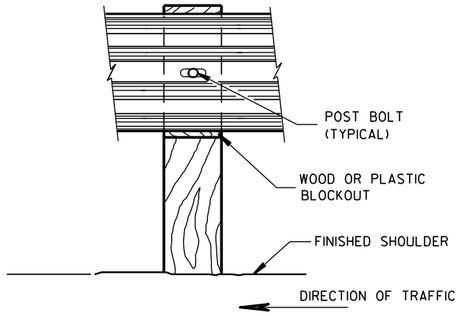
FRONT VIEW

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

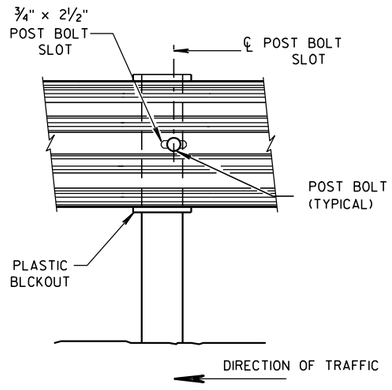


FRONT VIEW

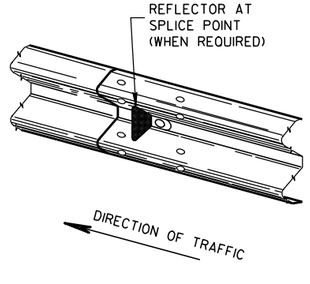
QUARTER POST SPACING (QS)

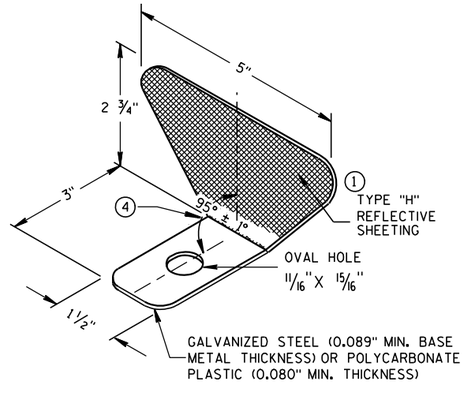


FRONT VIEW AT WOOD POST

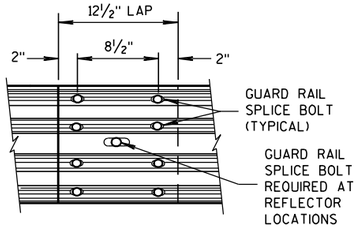


FRONT VIEW AT STEEL POST



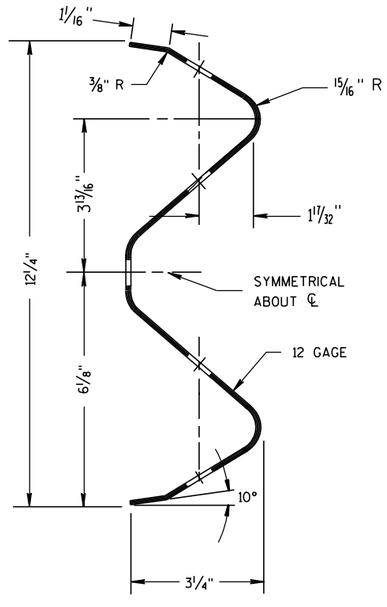


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①



FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL

GENERAL NOTES

① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.

② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

④ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

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

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

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

REFLECTOR SPACING ②

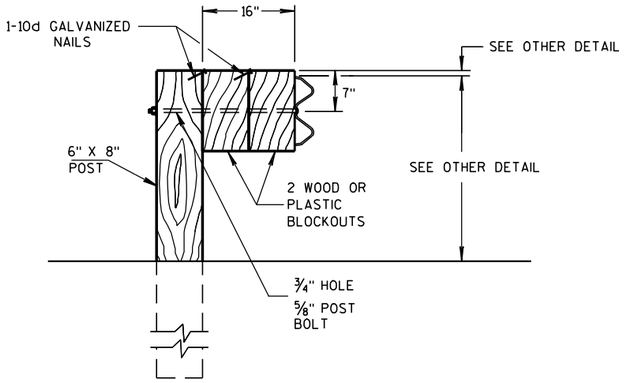
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ③ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 ④ 2	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

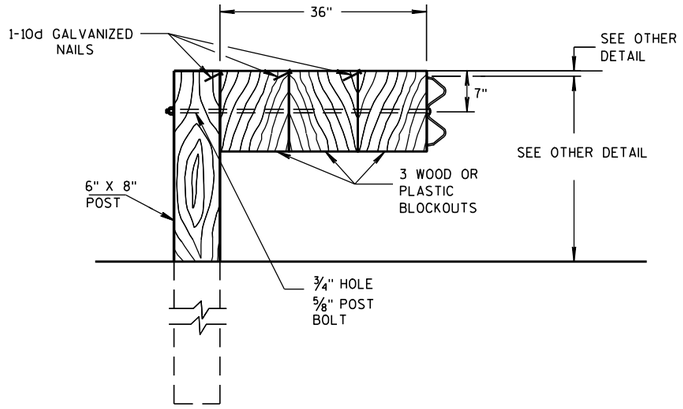
S.D.D. 14 B 42-2b

S.D.D. 14 B 42-2b



DETAIL FOR 16" BLOCKOUT DEPTH

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

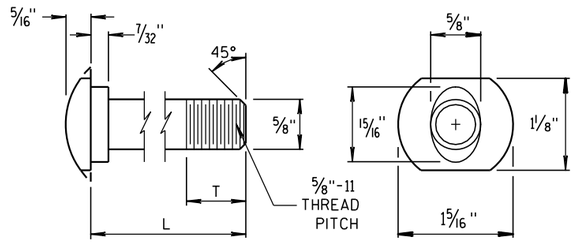


DETAIL FOR 36" BLOCKOUT DEPTH

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

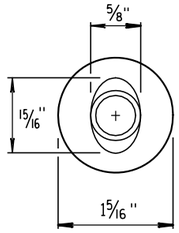
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

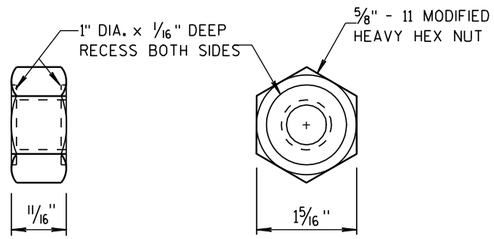


POST BOLT TABLE

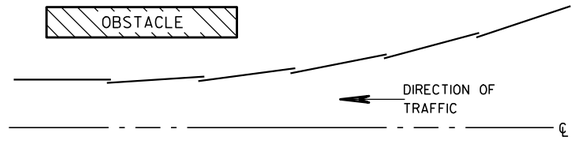
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

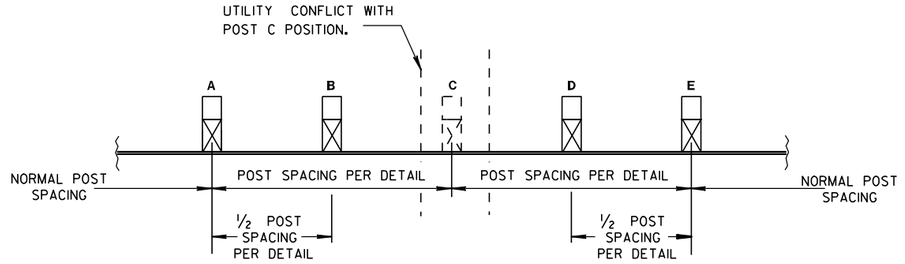


POST BOLT AND RECESS NUT

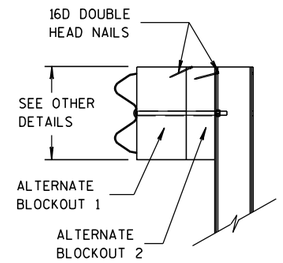


PLAN VIEW

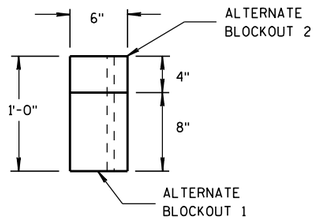
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

ENT

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL),AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

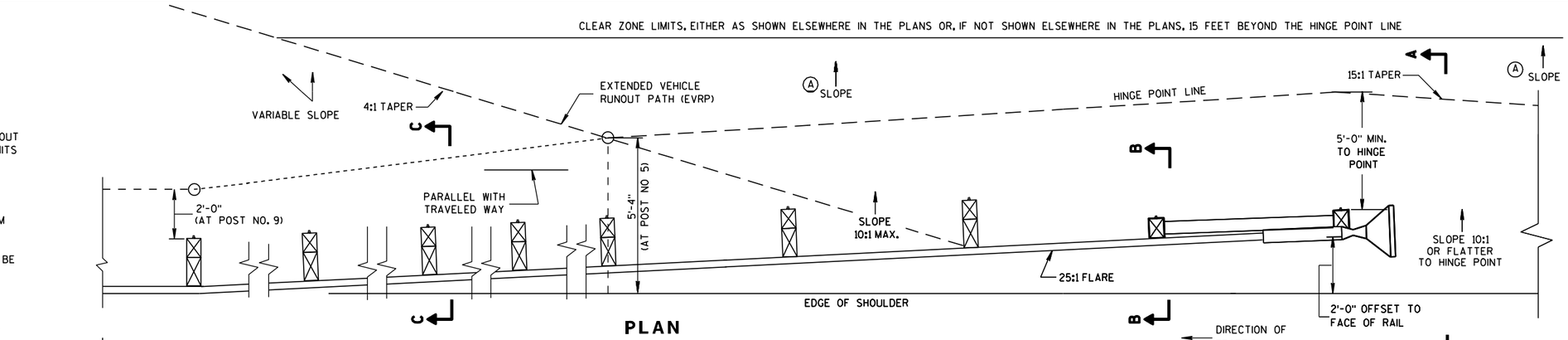
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

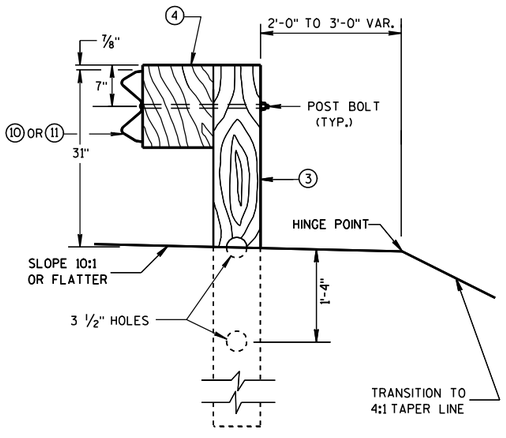
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

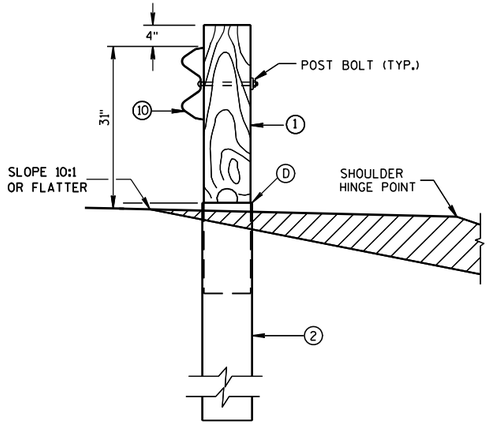
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

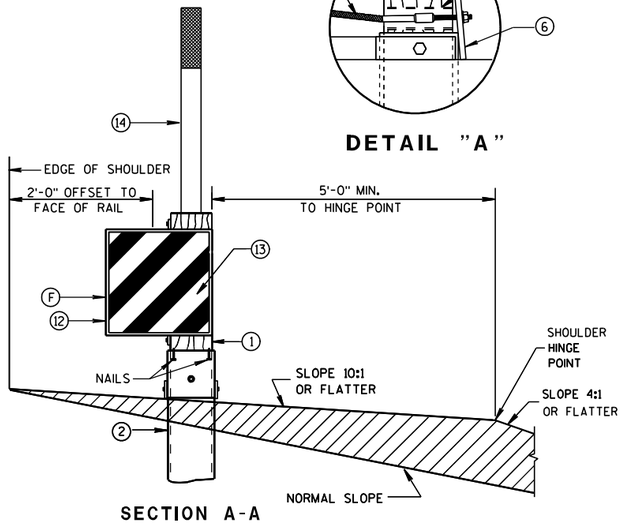




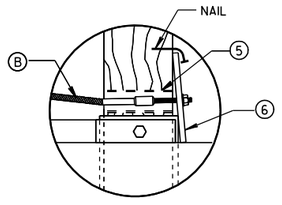
SECTION C-C
TYPICAL AT POST NOS. 3-9



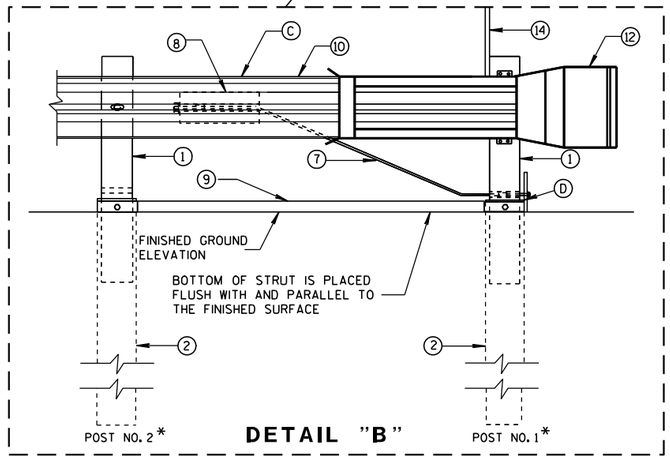
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"

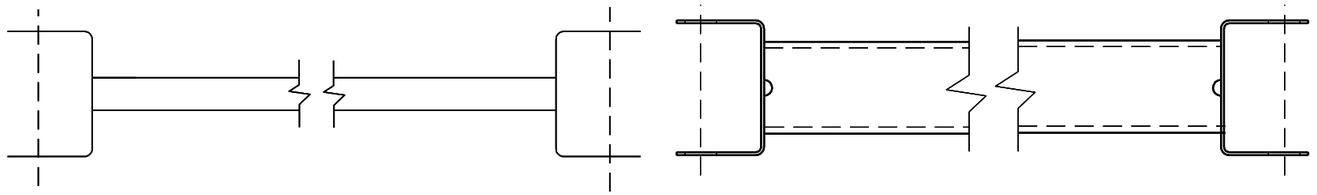


DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

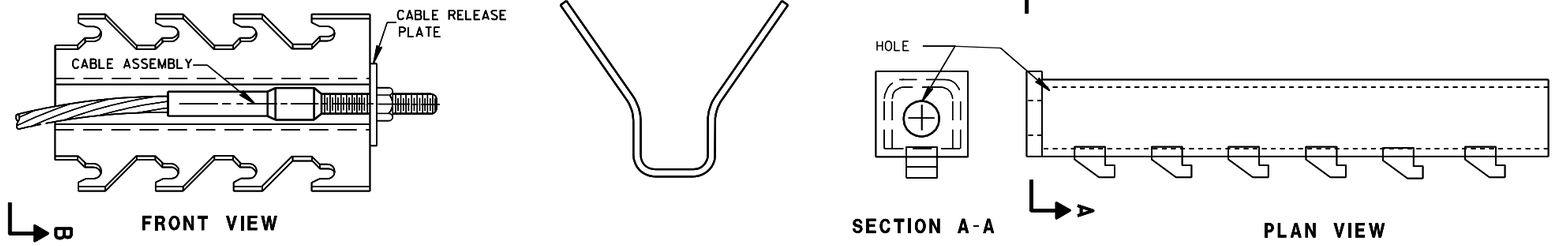
6
S.D.D. 14 B 44-1a



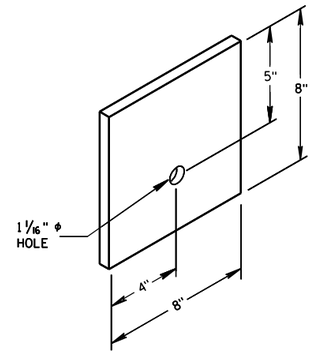
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



GENERIC ANCHOR CABLE BOX (8) (H)



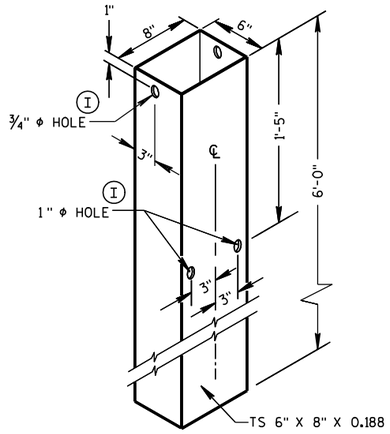
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

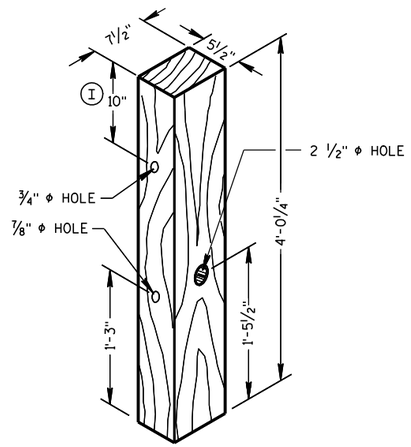
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

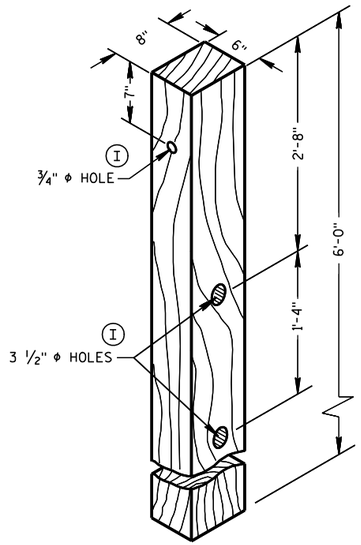


FOUNDATION TUBE (2)



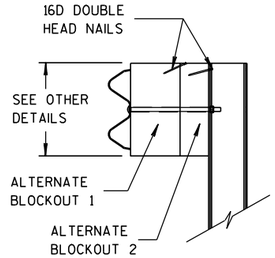
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

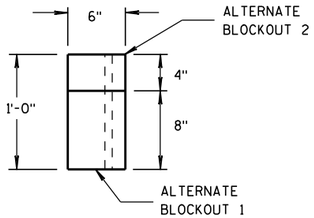


POSTS NUMBER 3-9

WOOD CRT POST (3)

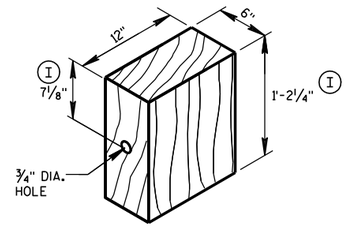


SIDE VIEW



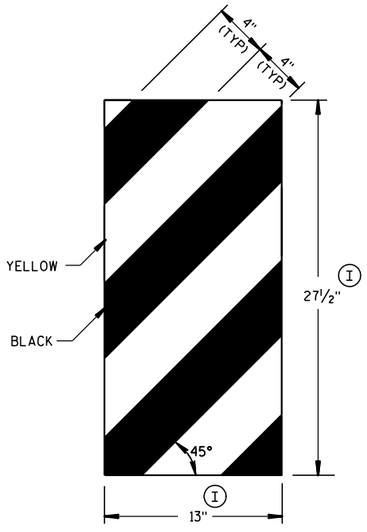
TOP VIEW

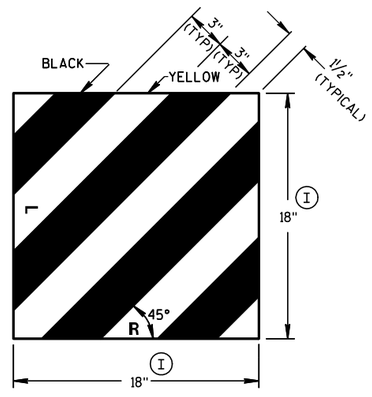
ALTERNATE WOOD BLOCKOUT DETAIL



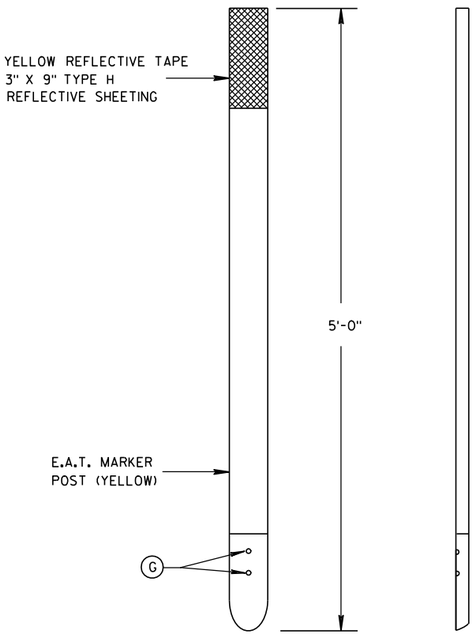
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



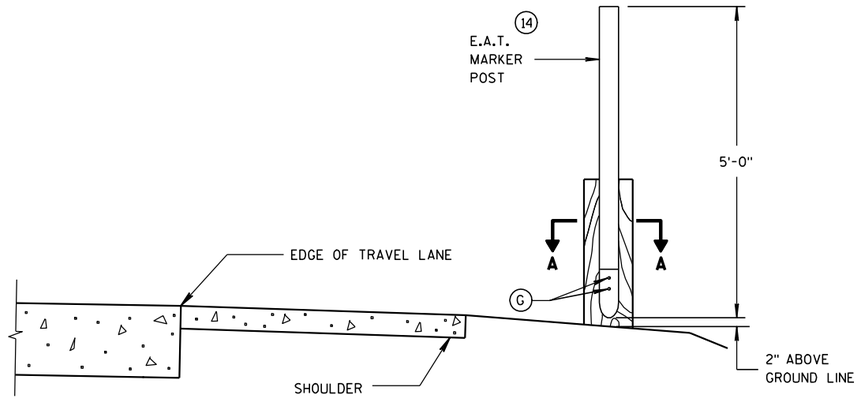


GENERIC REFLECTIVE SHEETING (13) (H)



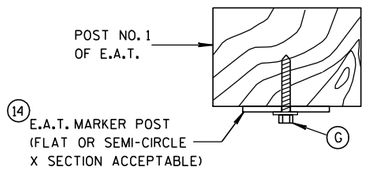
FRONT VIEW **SIDE VIEW**

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)

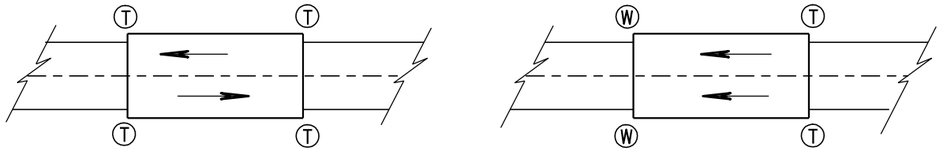


SECTION A-A

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

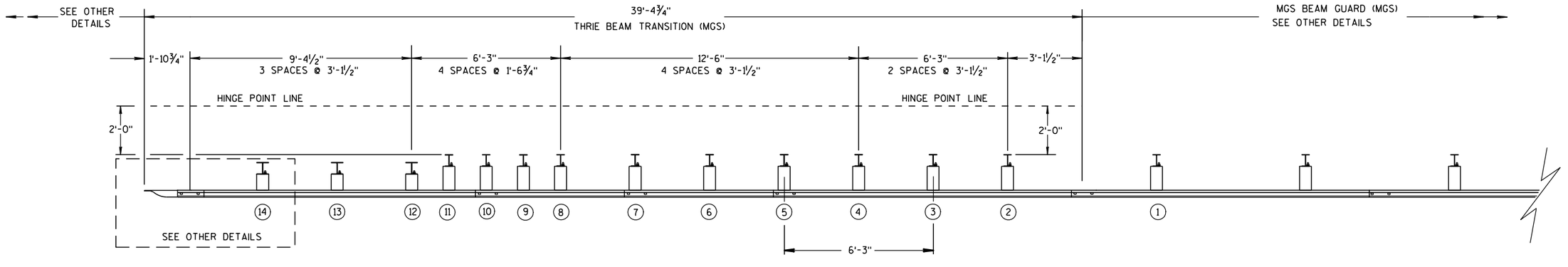
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

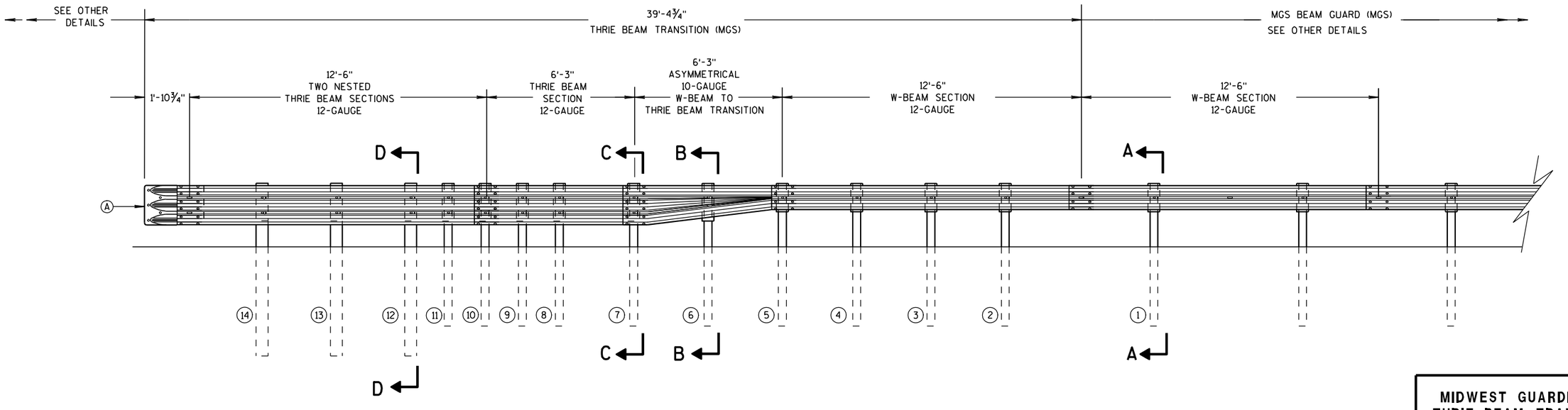
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

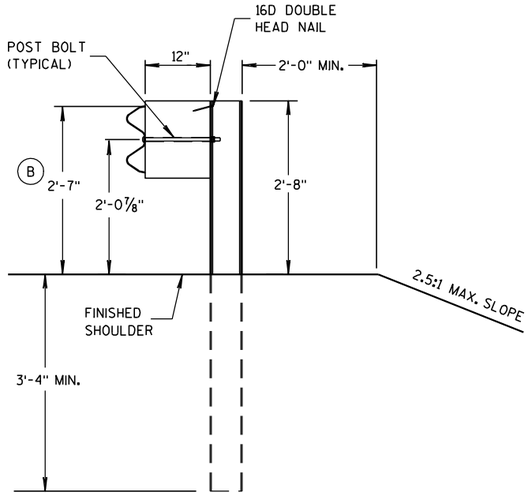
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3a

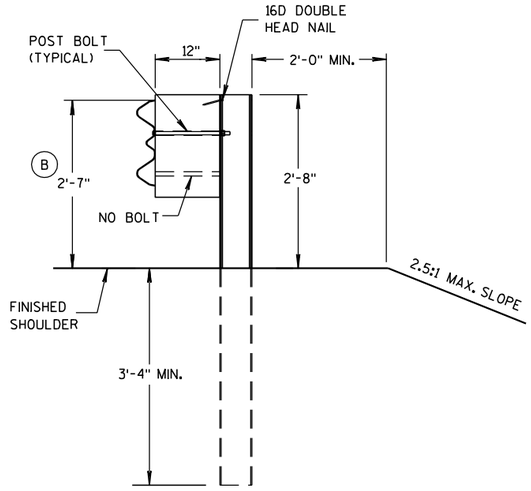
GENERAL NOTES

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



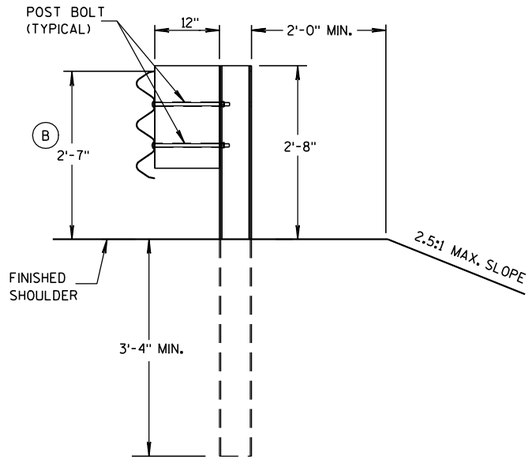
SECTION A-A

POSTS 1-5



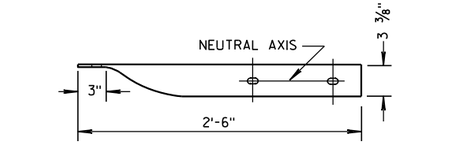
SECTION B-B

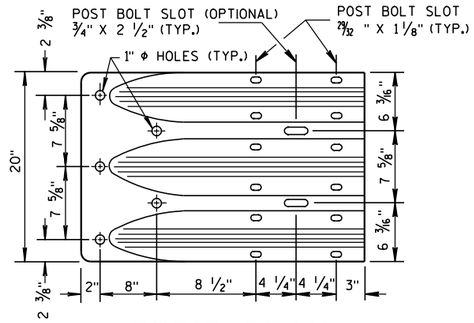
POST 6



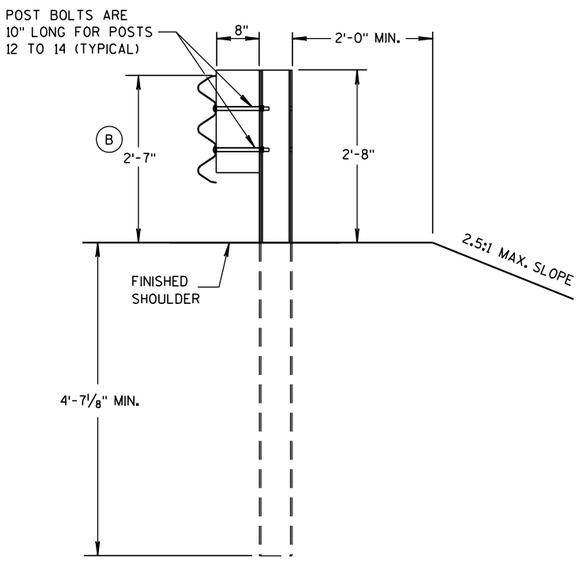
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

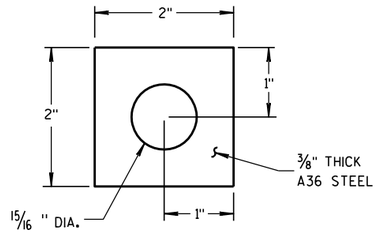
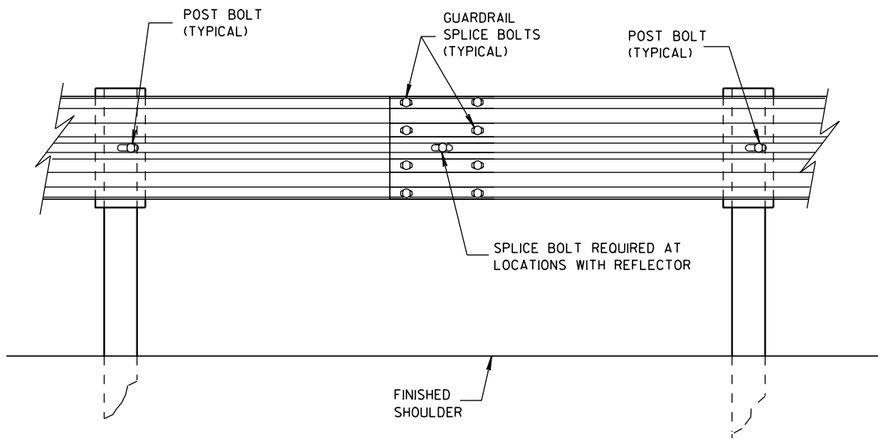
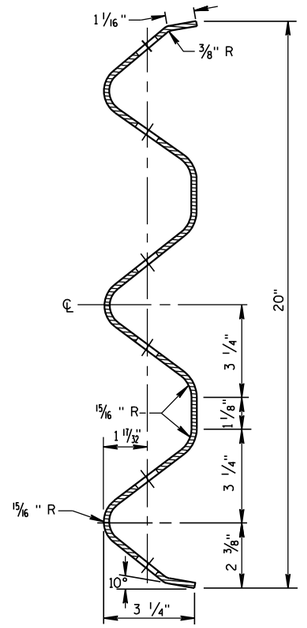


PLATE WASHER DETAIL



SPLICE DETAIL



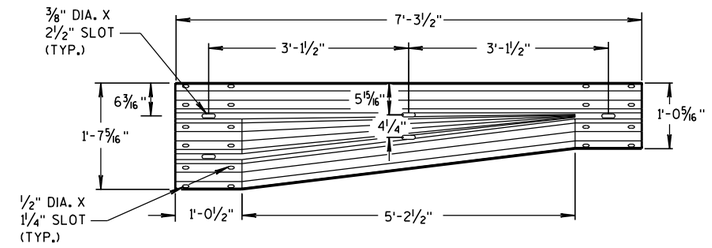
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

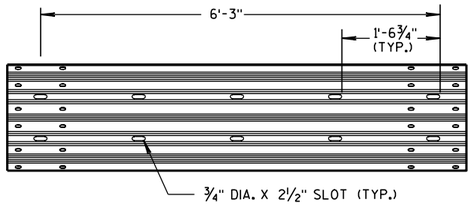
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

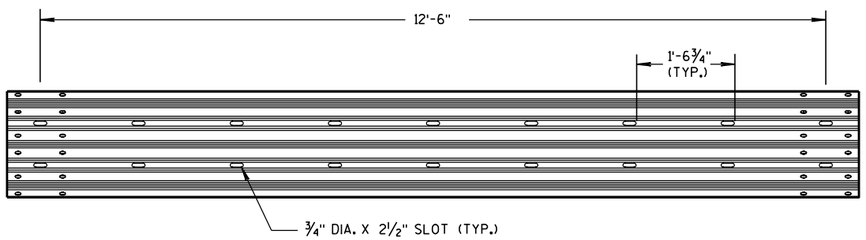
S.D.D. 14 B 45-3b



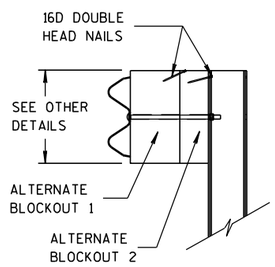
W-BEAM TO THRIE BEAM TRANSITION SECTION



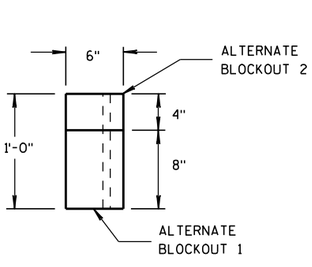
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

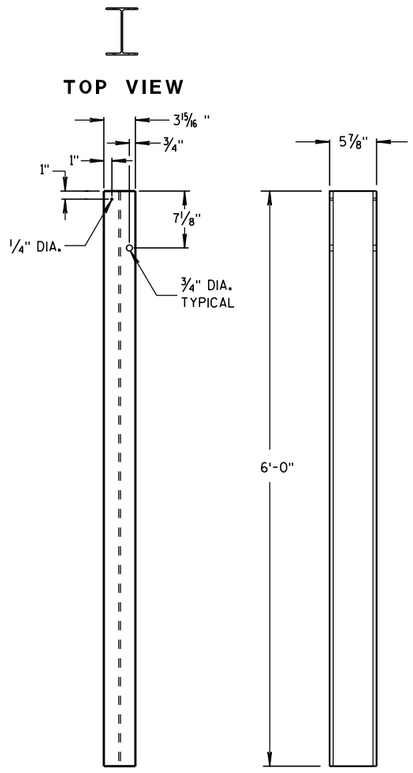


SIDE VIEW

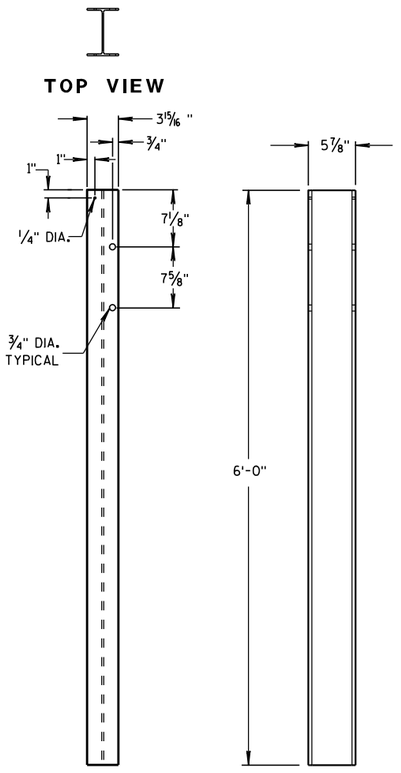


TOP VIEW

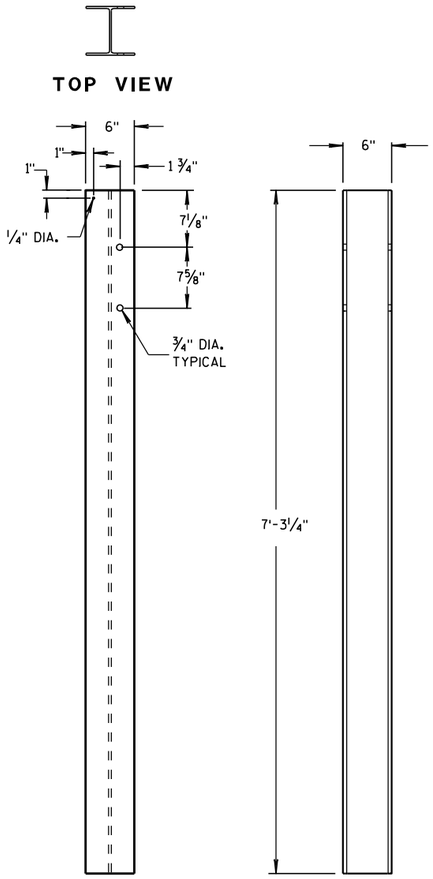
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

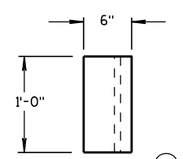


STEEL POSTS 6-11

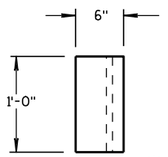


STEEL POSTS 12-14

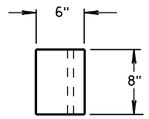
1 WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



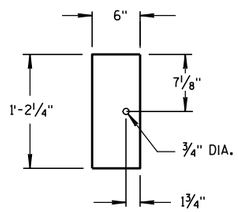
TOP VIEW (1)



TOP VIEW (1)

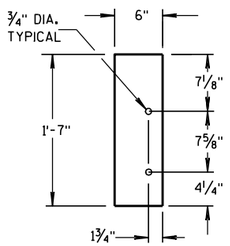


TOP VIEW



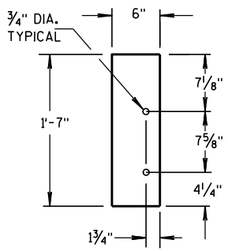
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

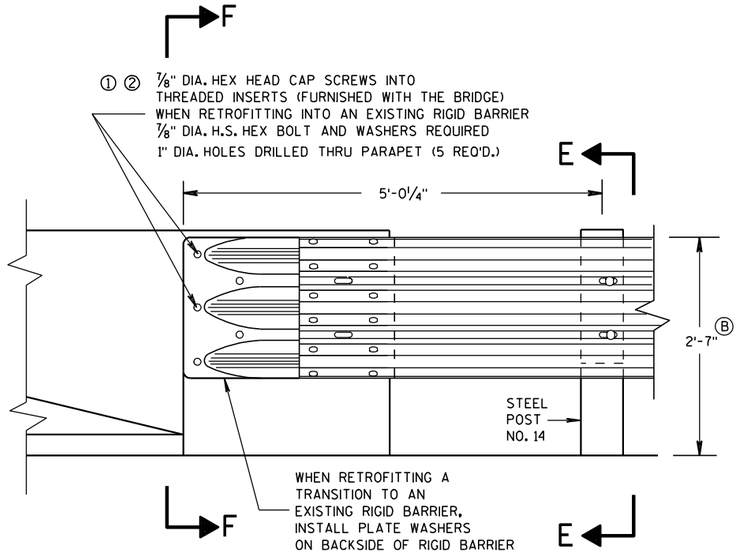
STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

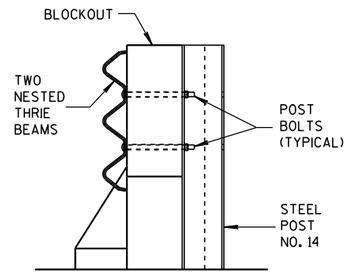
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3c



FRONT VIEW



SECTION E-E

GENERAL NOTES

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

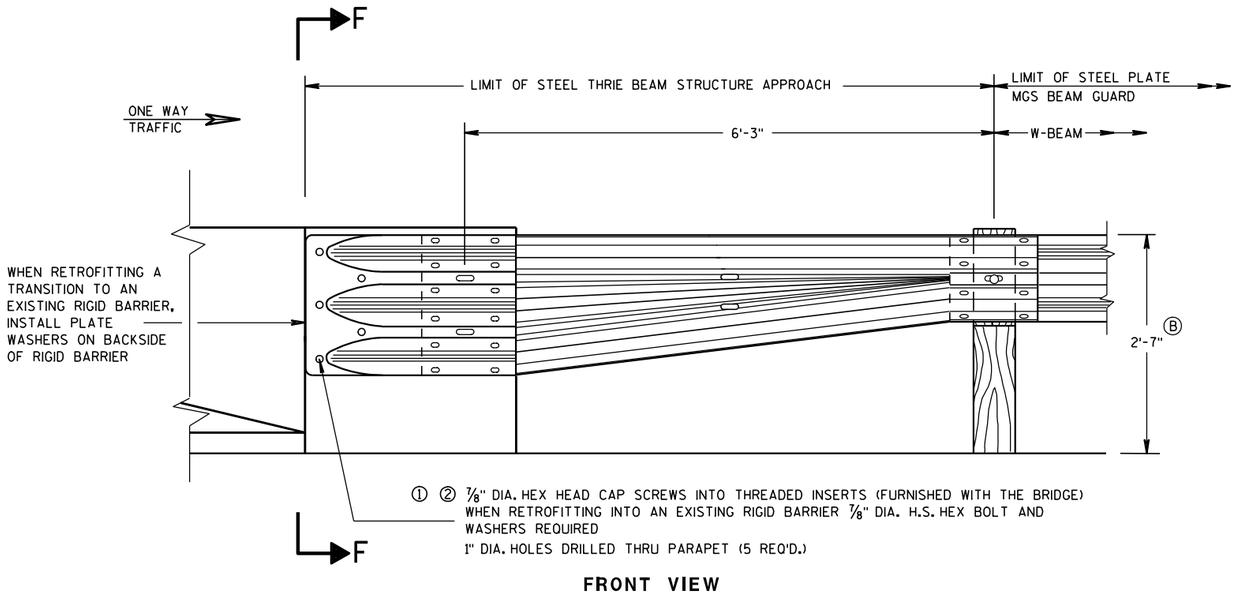
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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 CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

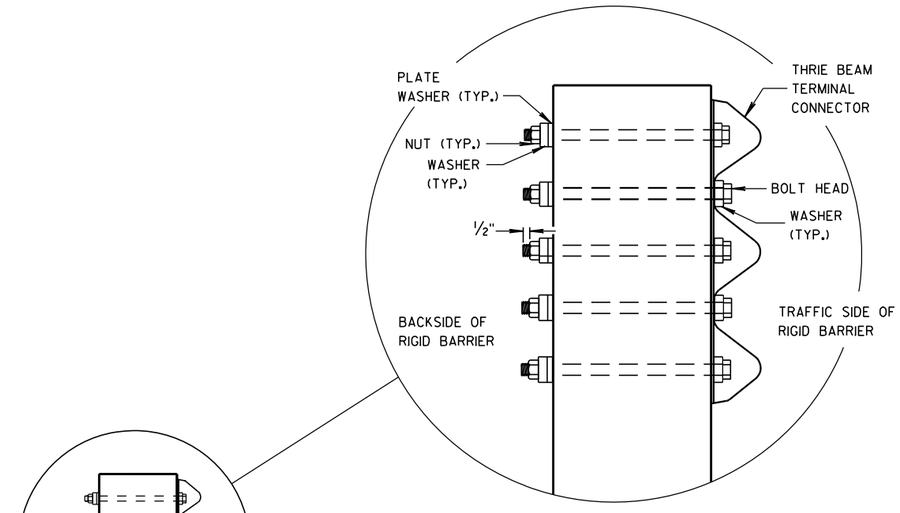
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

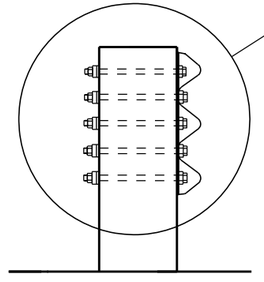
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW





SECTION F-F

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. [illegible] — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

6
S.D.D. 14 B 45-3d

GENERAL NOTES

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

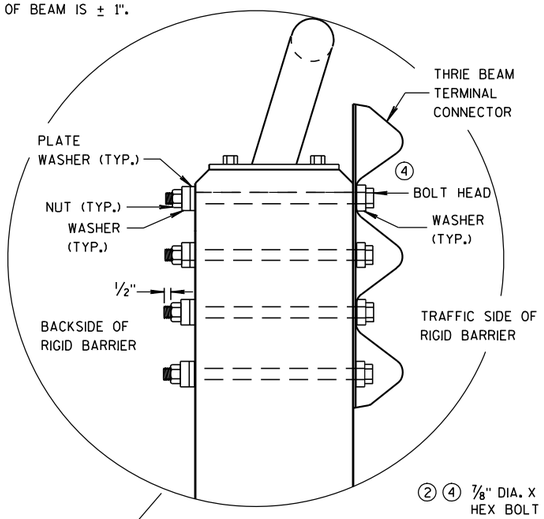
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

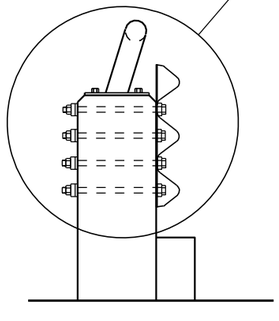
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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 1/2". BLOCK IS INCIDENTAL TO THE CONTRACT.

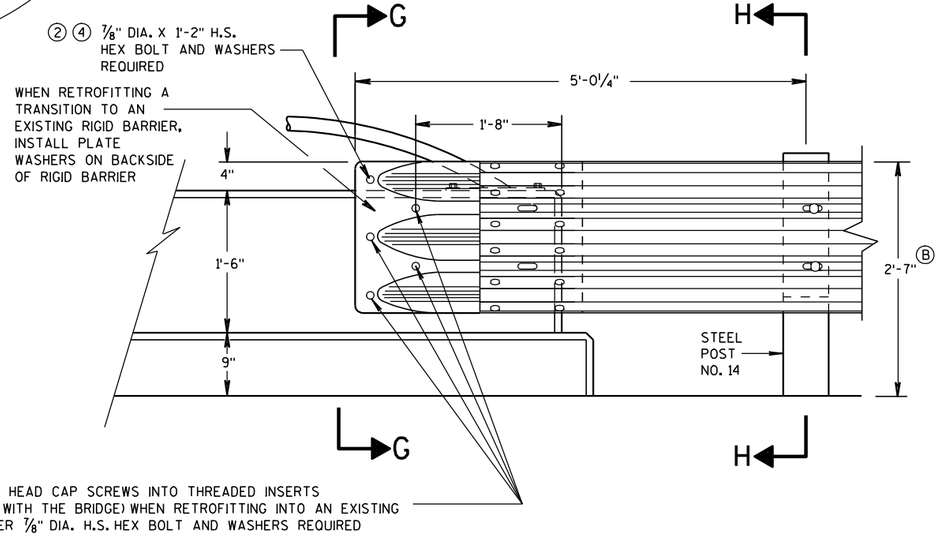
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

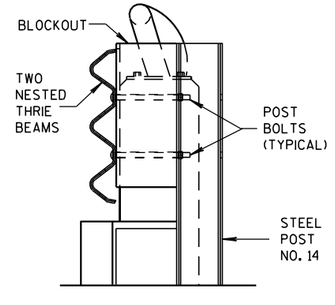




SECTION G-G

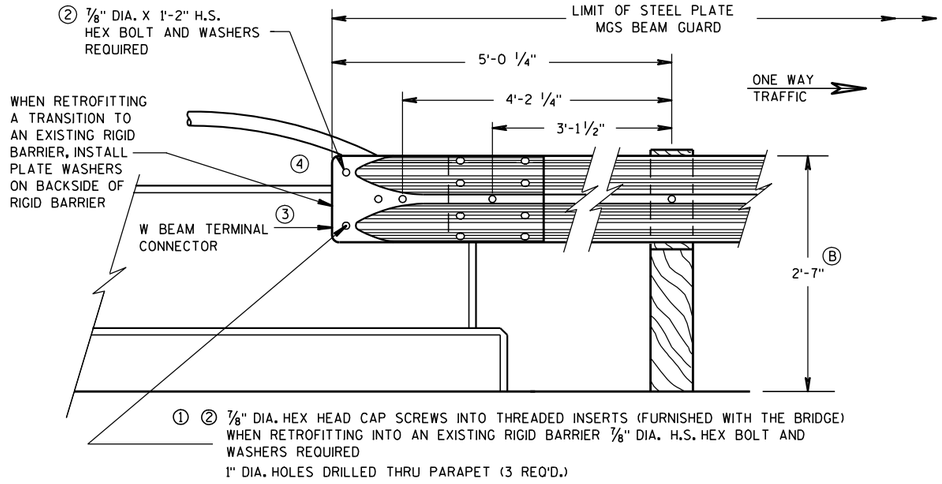


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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S.D.D. 14 B 45-3e

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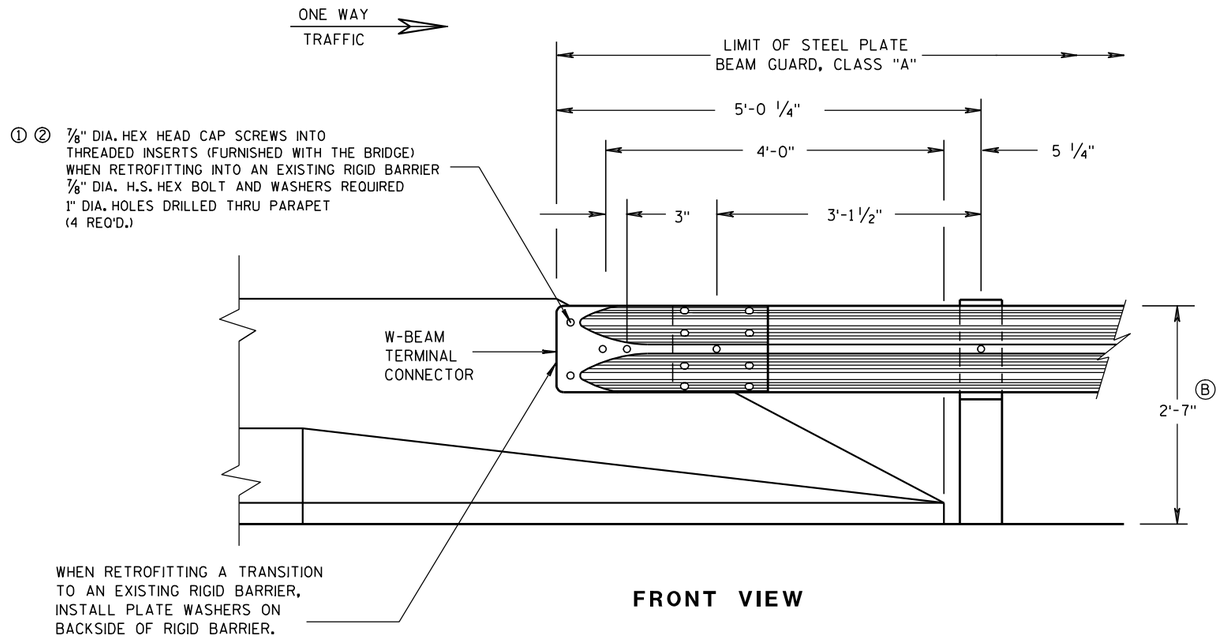


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

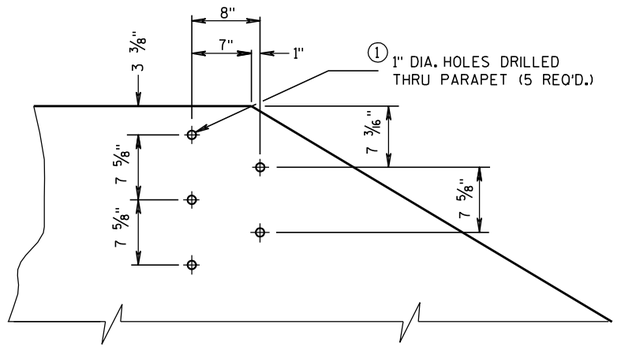
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

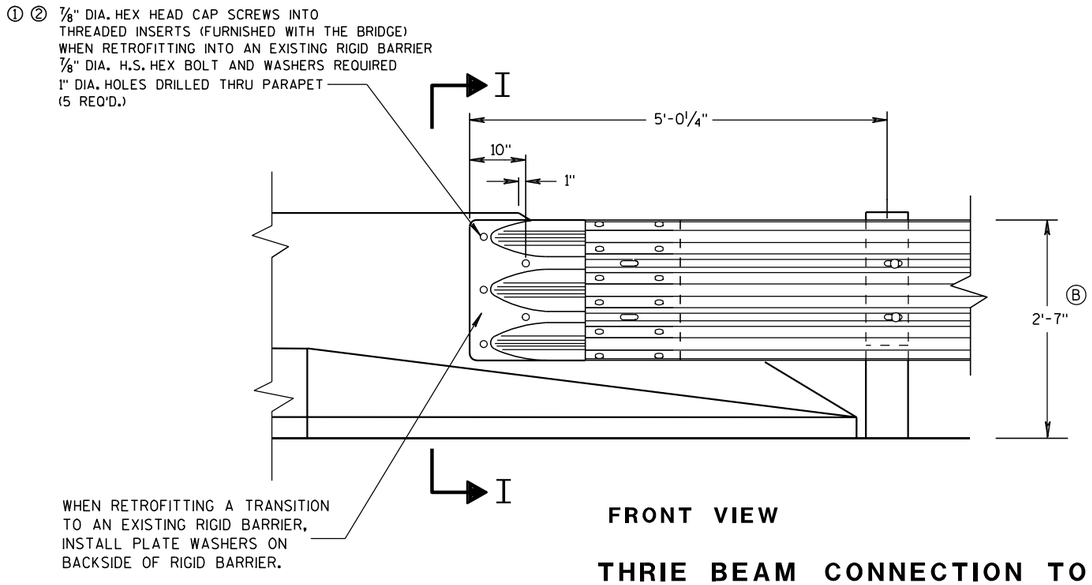
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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 CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

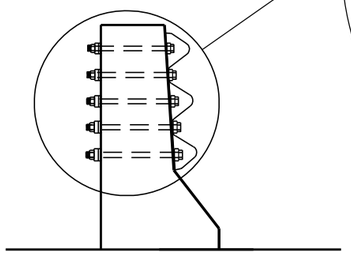
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



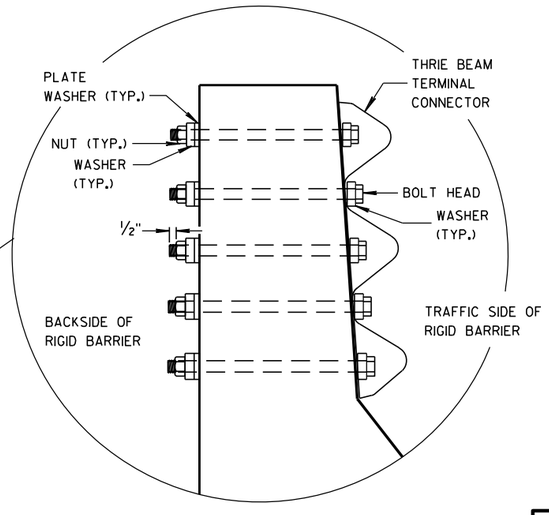
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

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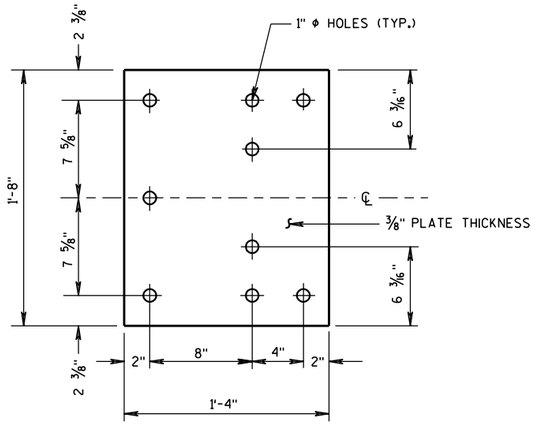
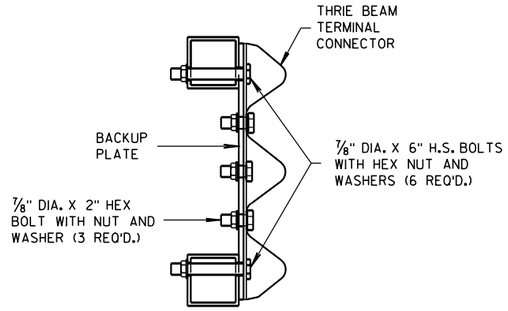
S.D.D. 14 B 45-3f



BACK-UP PLATE DETAIL

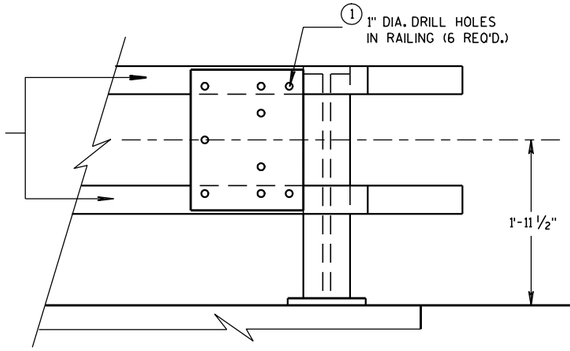


SECTION J-J

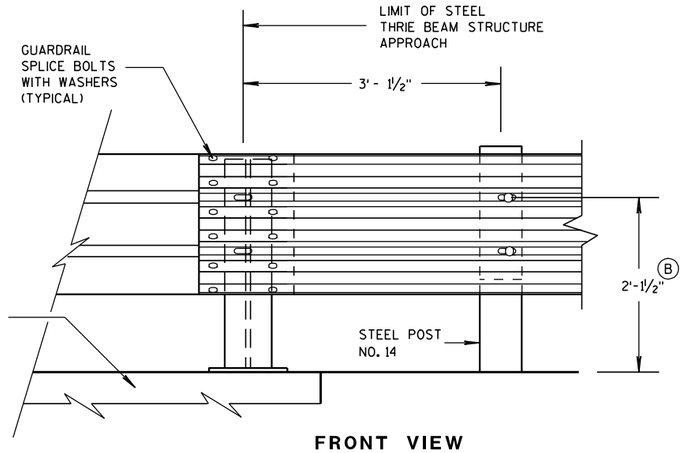
GENERAL NOTES

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

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

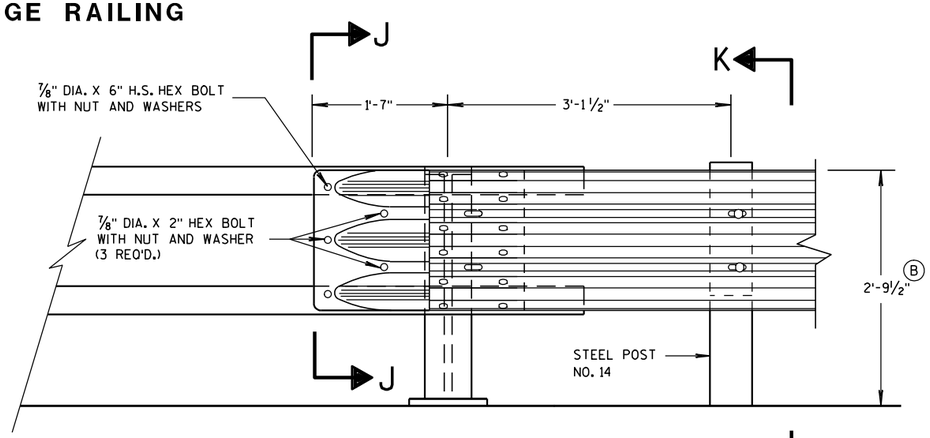


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

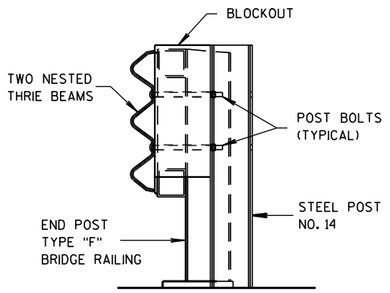


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



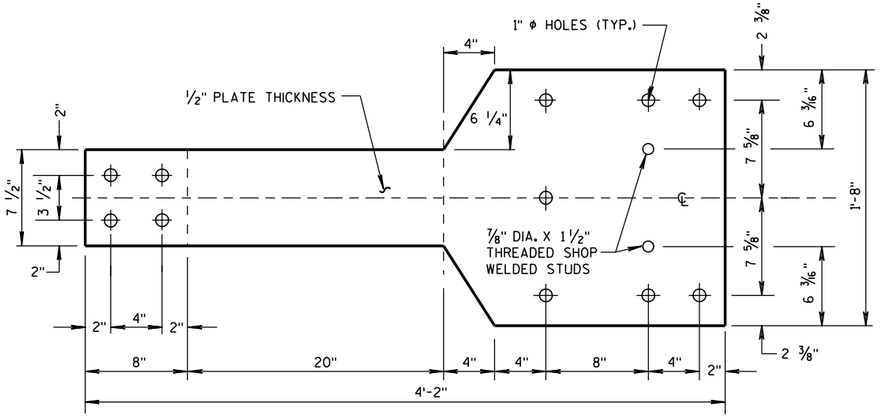
SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

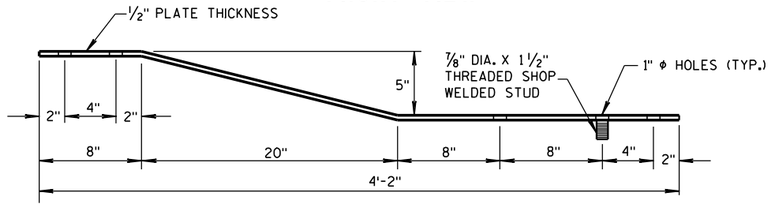
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
8/31/2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

GENERAL NOTES

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

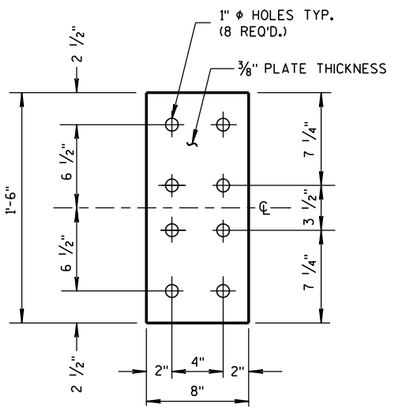


FRONT VIEW



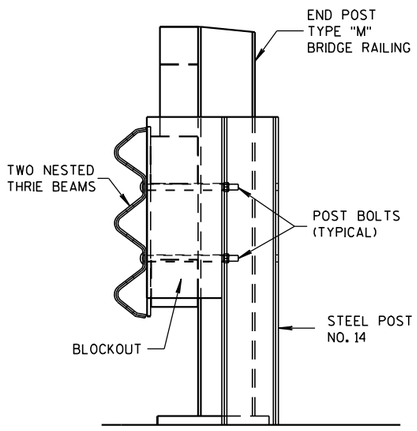
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

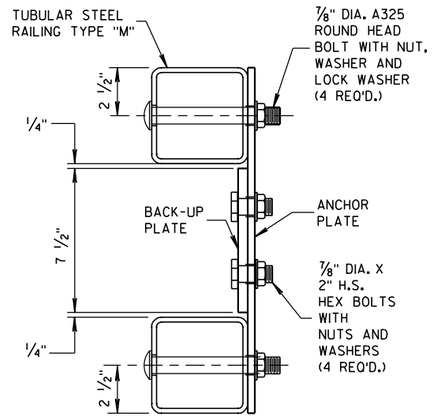


FRONT VIEW

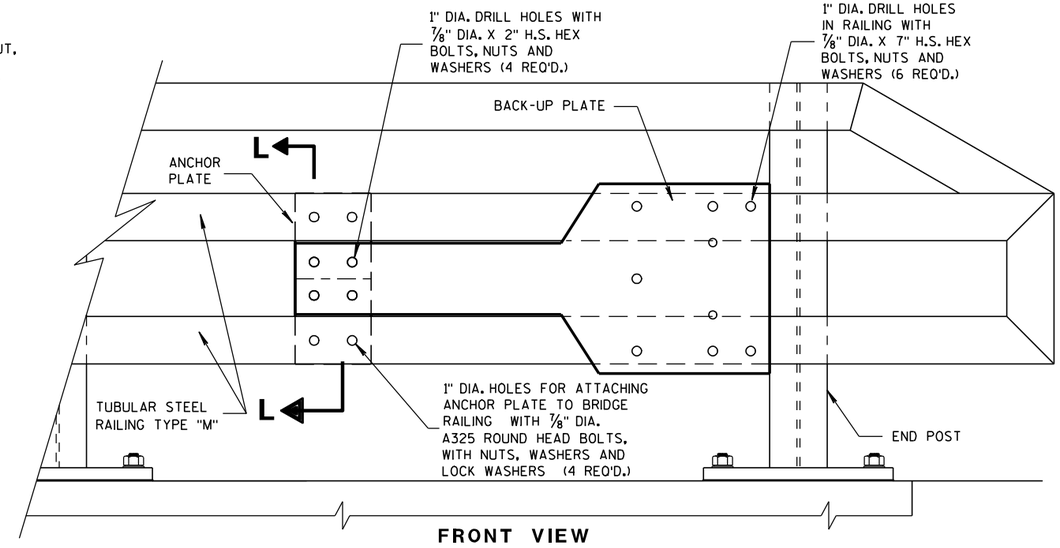
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

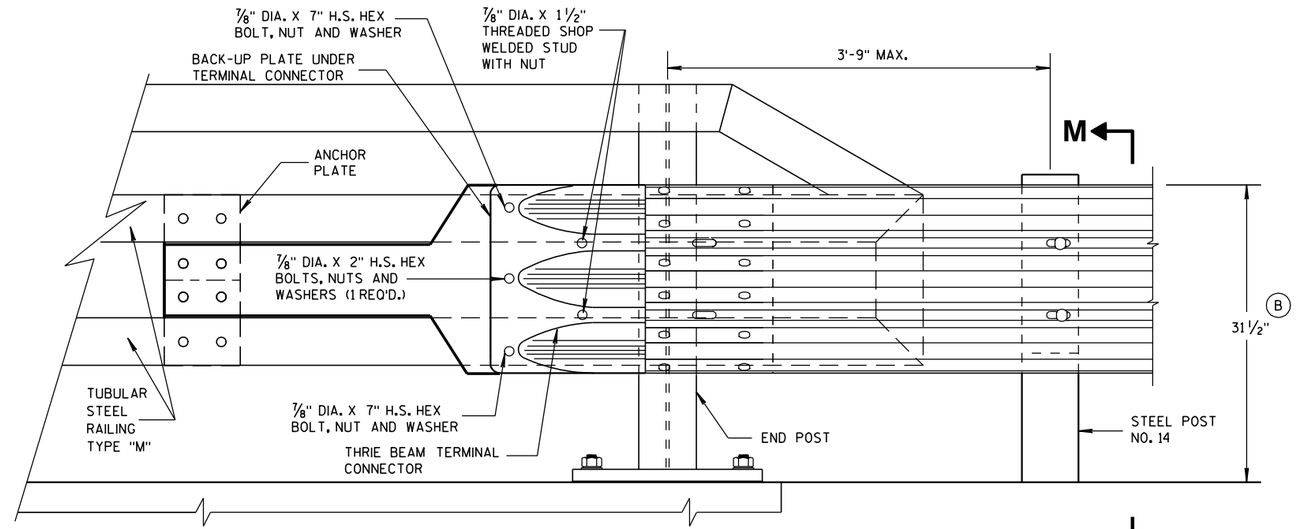


SECTION L-L

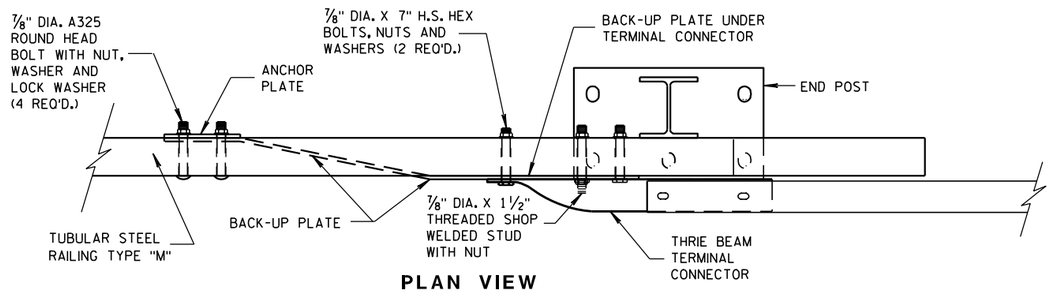


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-31-2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
80 ENT
FHWA

6

S.D.D. 14 B 45-3h

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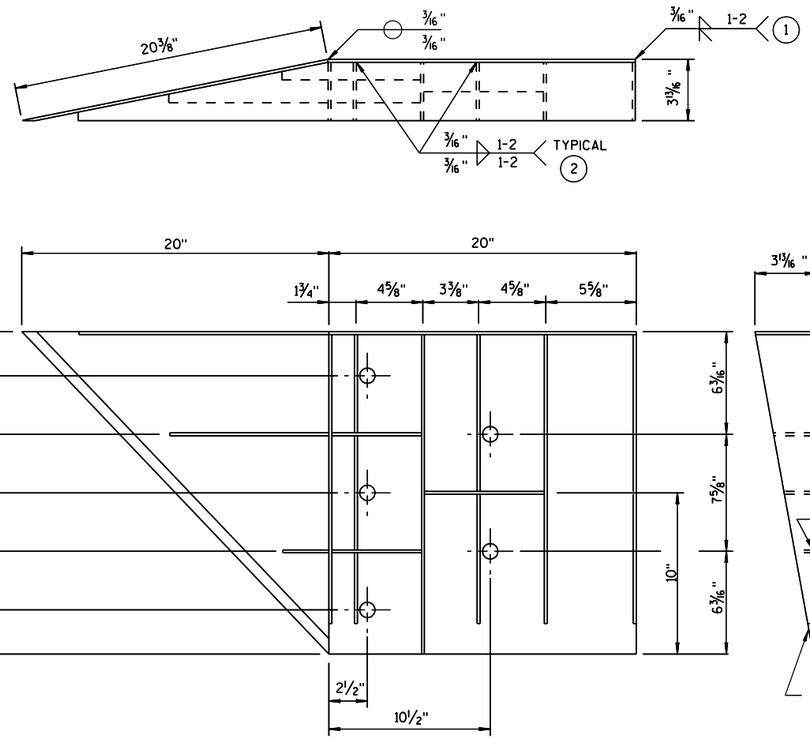
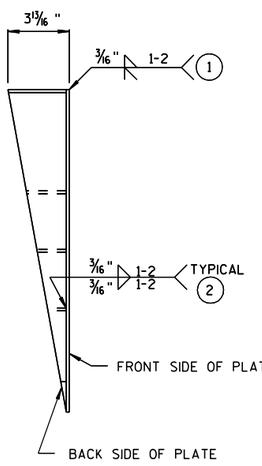
S.D.D. 14 B 45-3h





WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

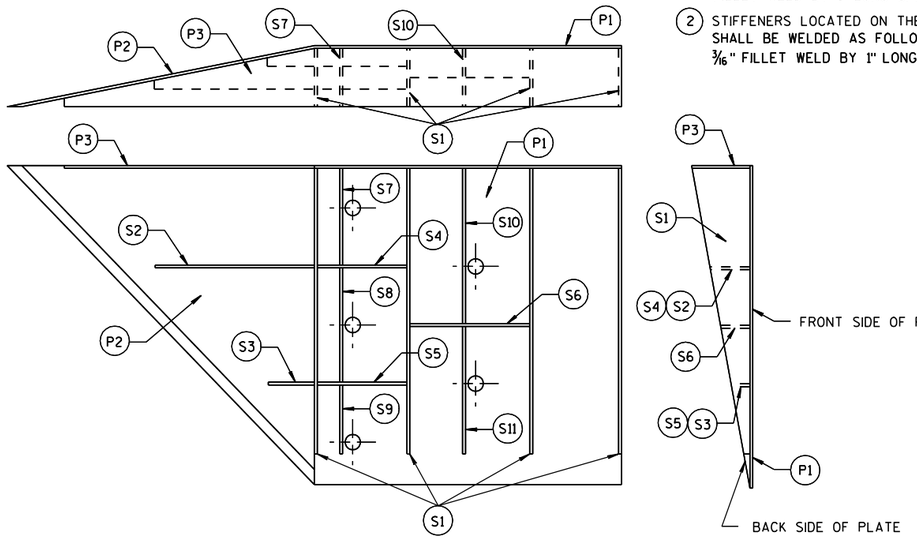


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE ⅜" THICK.

ALL STIFFENERS ARE ¼" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

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

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

① STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND ⅜" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

② STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
⅜" FILLET WELD BY 1" LONG SPACED AT 2".

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	⅜"
P2	1		20" x 20" x 28⁹⁄₁₆"	⅜"
P3	1		39" x 3⅝" x 20" x 19⁵⁄₁₆"	⅜"
S1	4		18⁷⁄₁₆" x 3⅝" x 18¾"	¼"
S2	1		10¼" x 2⁷⁄₁₆" x 10⅜" x ½"	¼"
S3	1		3" x 1¹⁄₁₆" x 3⅛" x ½"	¼"
S4	1		6⅛" x 2⁷⁄₁₆"	¼"
S5	1		6⅛" x 1¹⁄₁₆"	¼"
S6	1		7¾" x 1¾"	¼"
S7	1		2⁹⁄₁₆" x 6" x 3⅝" x 5⅞"	¼"
S8	1		1⁵⁄₃₂" x 7½" x 2½" x 7⅜"	¼"
S9	1		6¹⁄₁₆" x 6⅜" x 1³⁄₃₂"	¼"
S10	1		1⅞" x 9⅞" x 3⅝" x 9¹¹⁄₁₆"	¼"
S11	1		8½" x 8¾" x 1¹³⁄₁₆"	¼"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 14 B 45-3i

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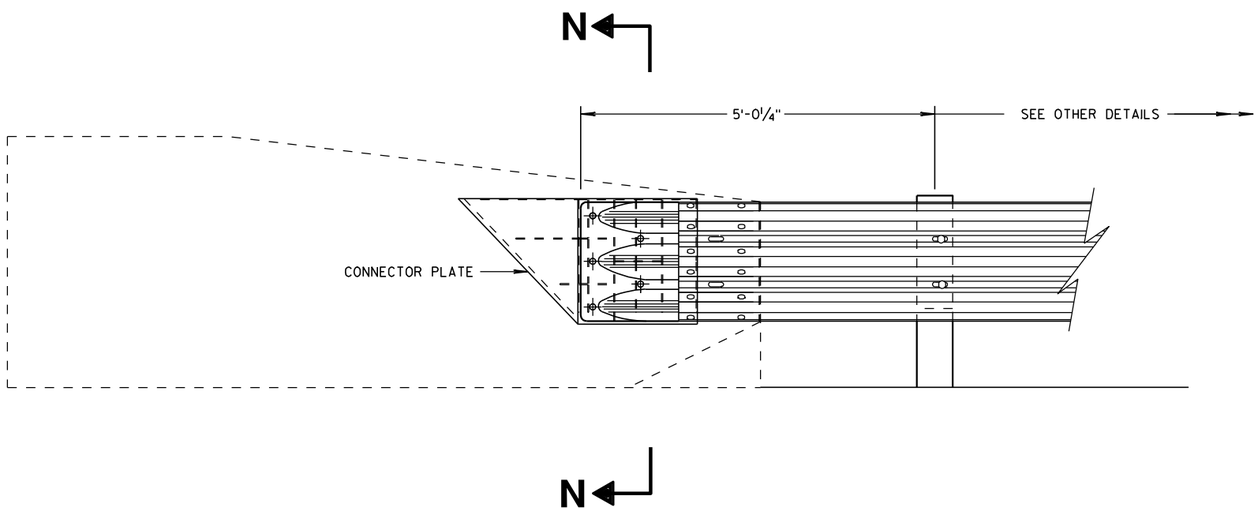
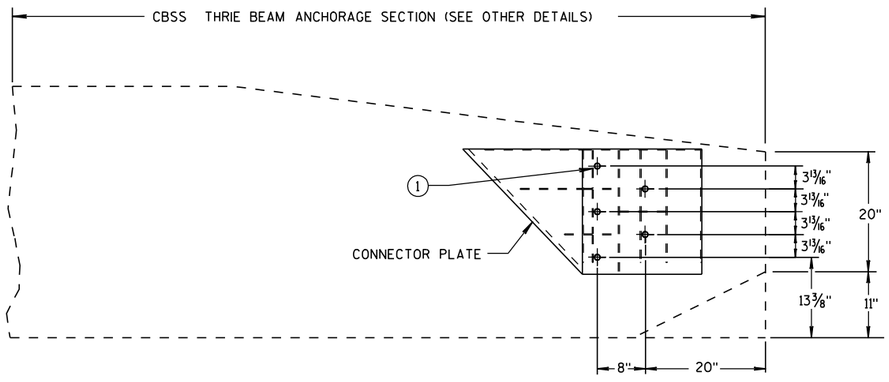
S.D.D. 14 B 45-3i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

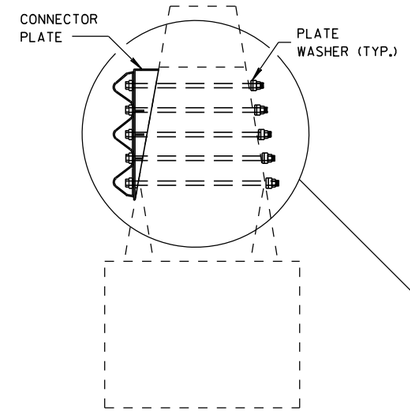


SINGLE SLOPE CONNECTION PLATE PLACEMENT

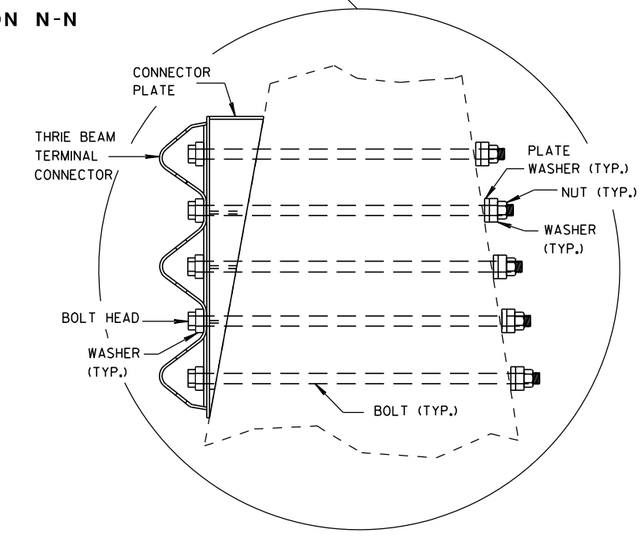
GENERAL NOTES

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 14 B 45-3j

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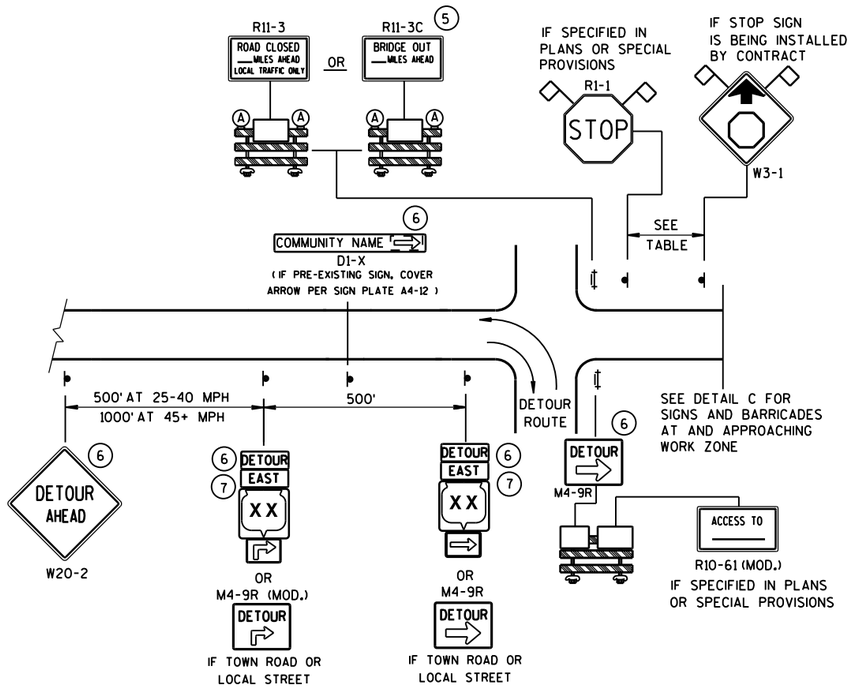
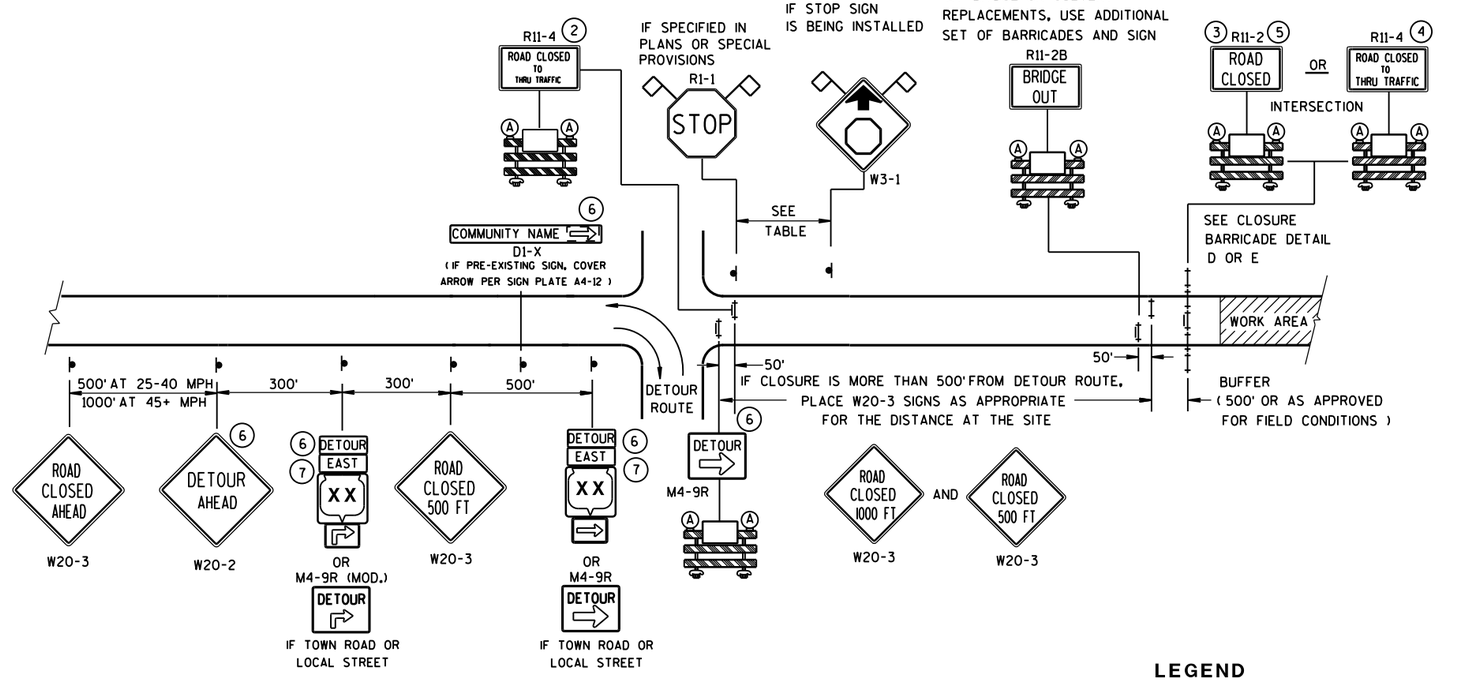
S.D.D. 14 B 45-3j



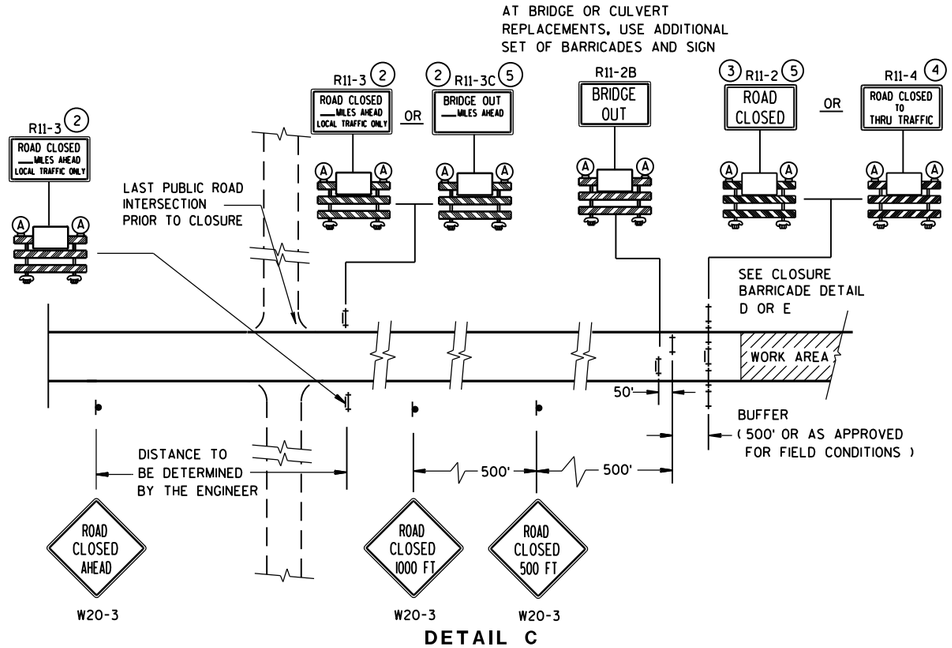
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 2-5a

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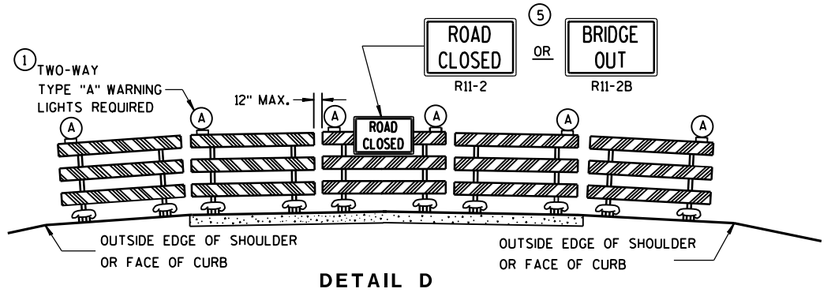
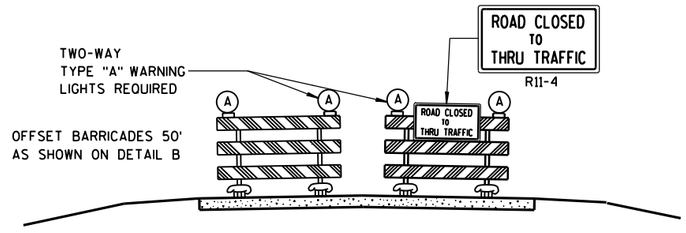
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

DESIGN

FHWA

6

S.D.D. 15 C 2-5b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

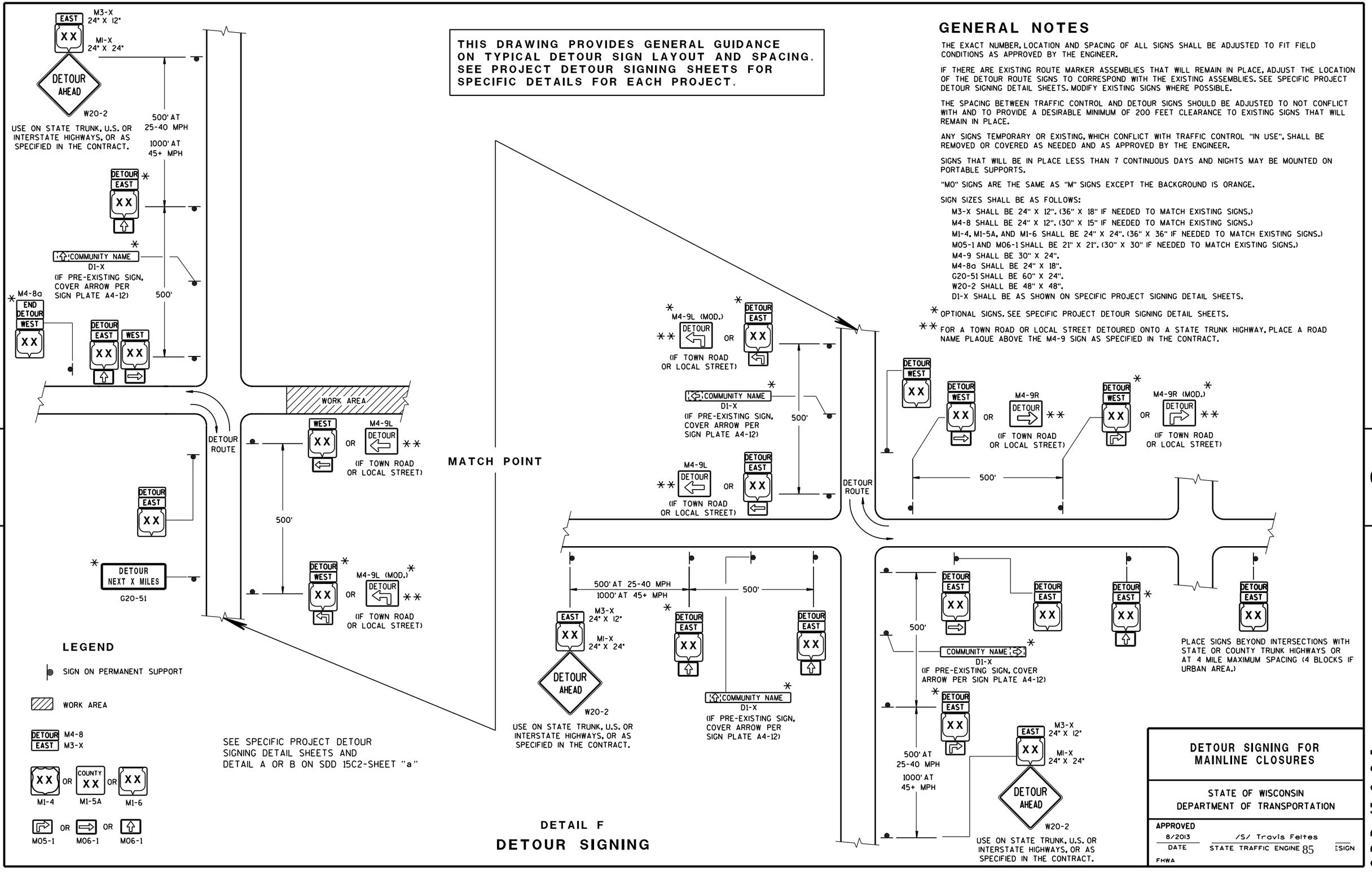
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- MO5-1 AND MO6-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST — M4-8 / M3-X
- XX OR COUNTY XX OR XX — M1-4 / M1-5A / M1-6
- MO5-1 OR MO6-1 OR MO6-1

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

DETAIL F

DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 DATE
/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

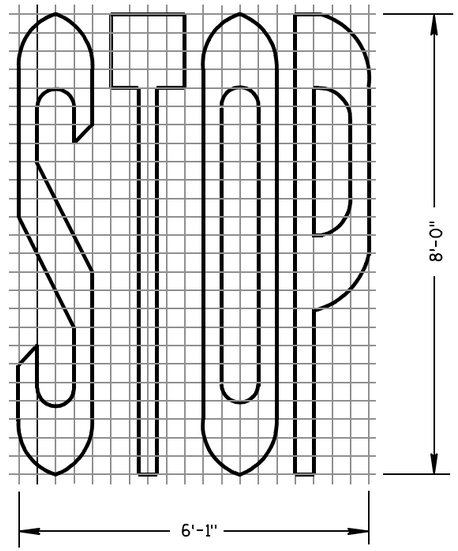
S.D.D. 15 C 2-5c

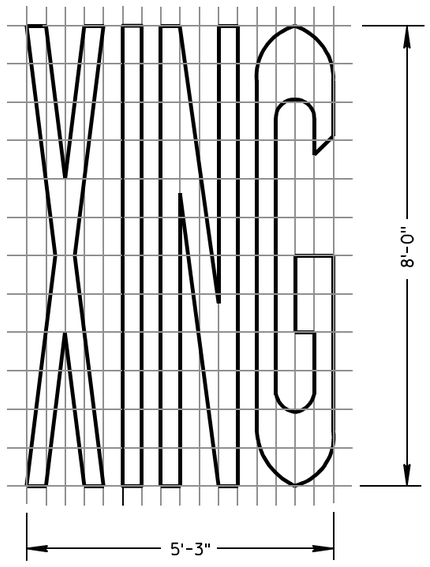
S.D.D. 15 C 2-5c

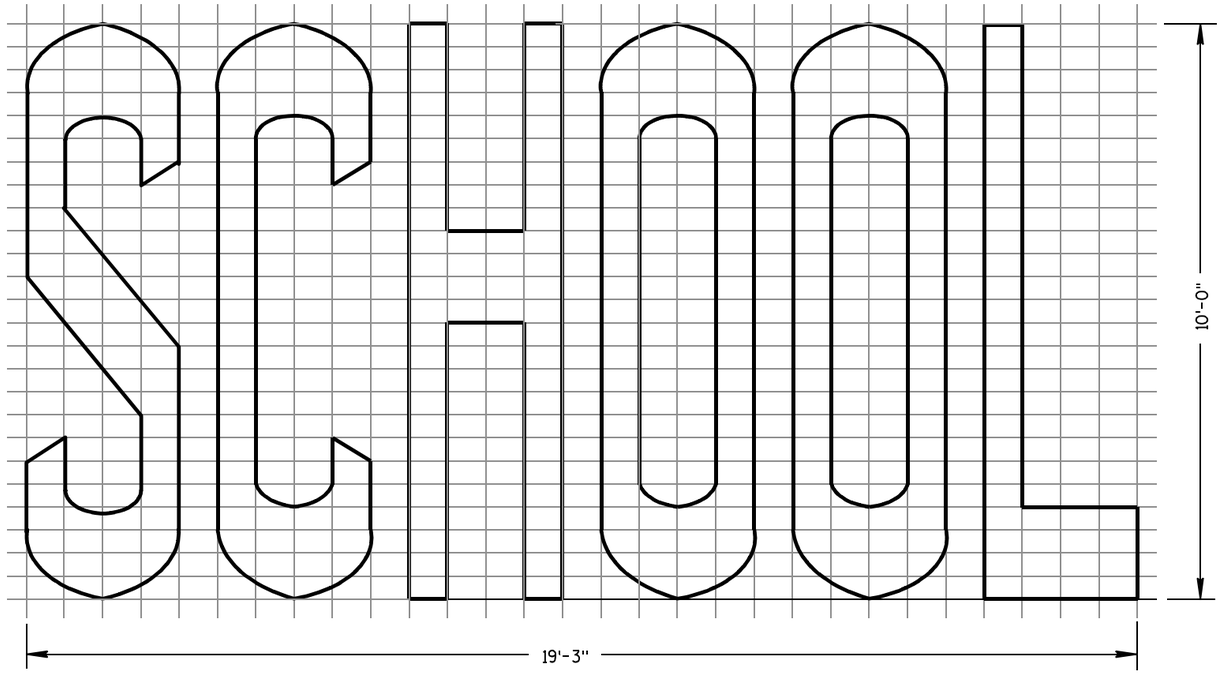
GENERAL NOTES

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

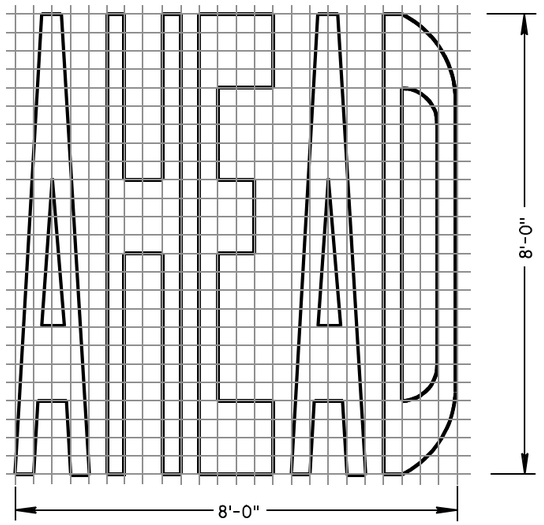
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

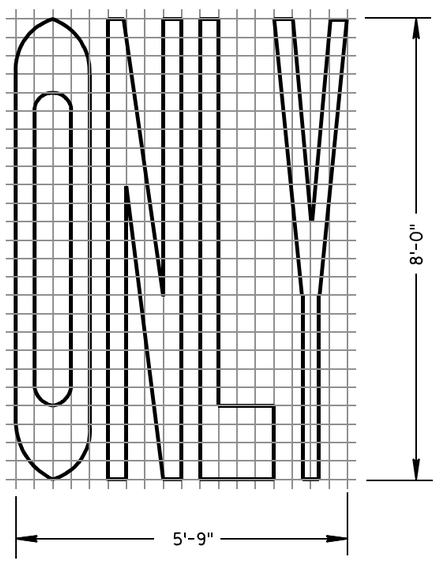


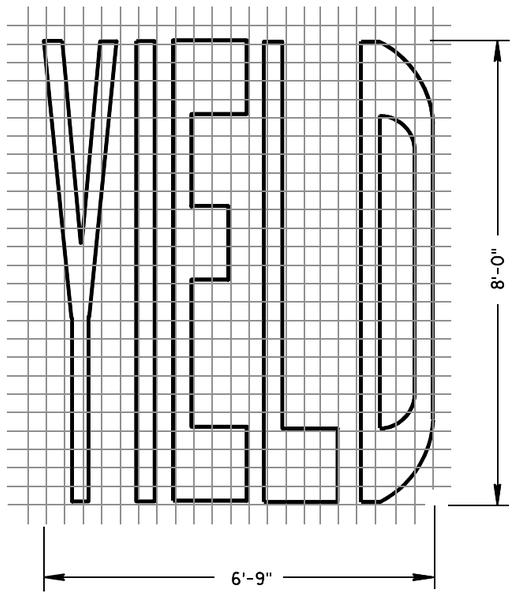


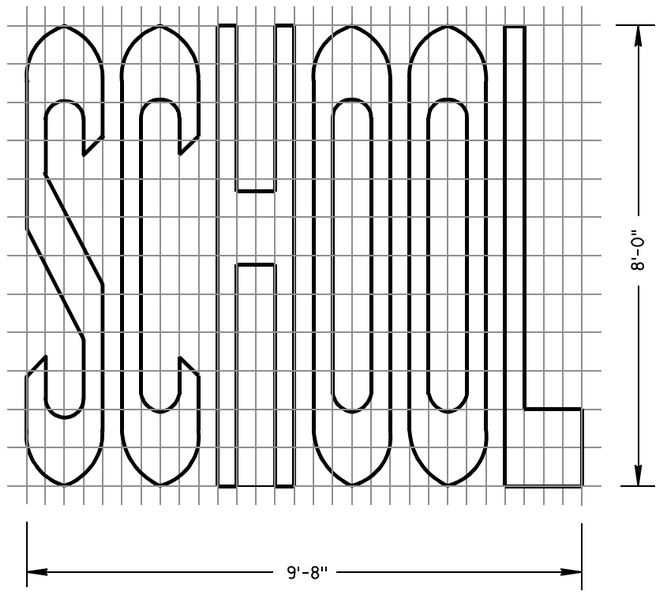


TWO-LANE









SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-1-11 — DATE

/S/ Thomas N. Nothohm — STATE TRAFFIC ENGINEER

FHWA

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S.D.D. 15 C 7-12b

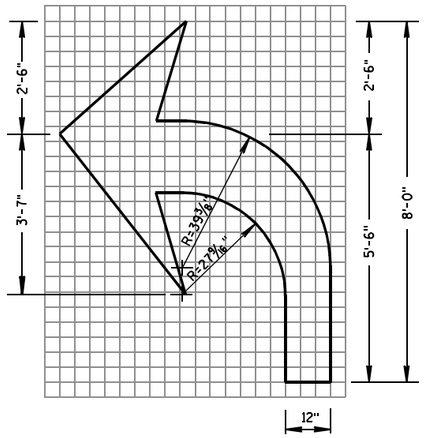
6

S.D.D. 15 C 7-12b

GENERAL NOTES

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

ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



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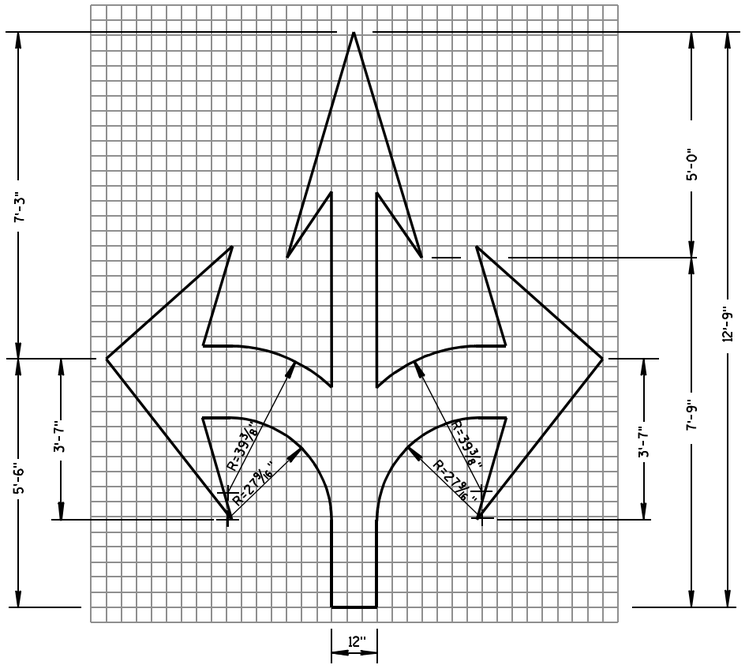

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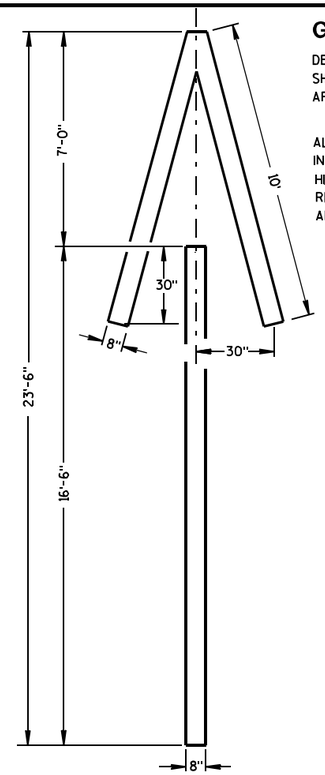

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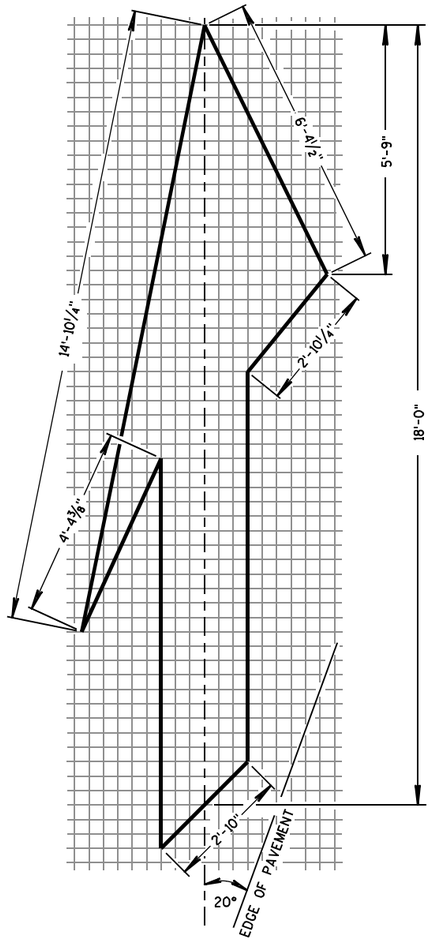
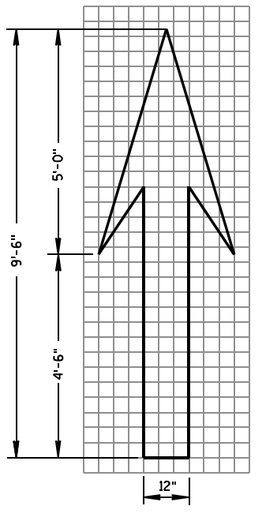
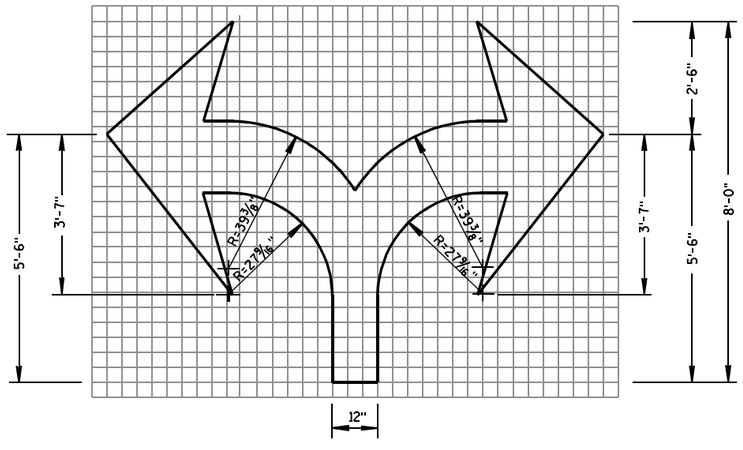


TYPE 5 LANE DROP ARROW



TYPE 1



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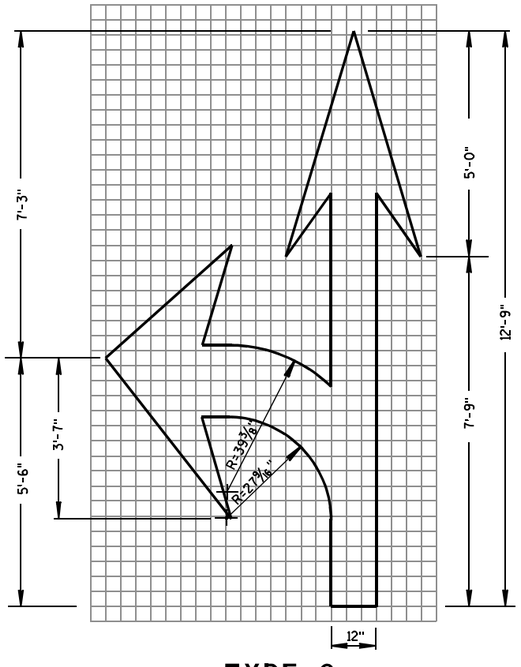

TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/1/11 — DATE

/S/ Thomas N. Nathaam — STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 7-12c

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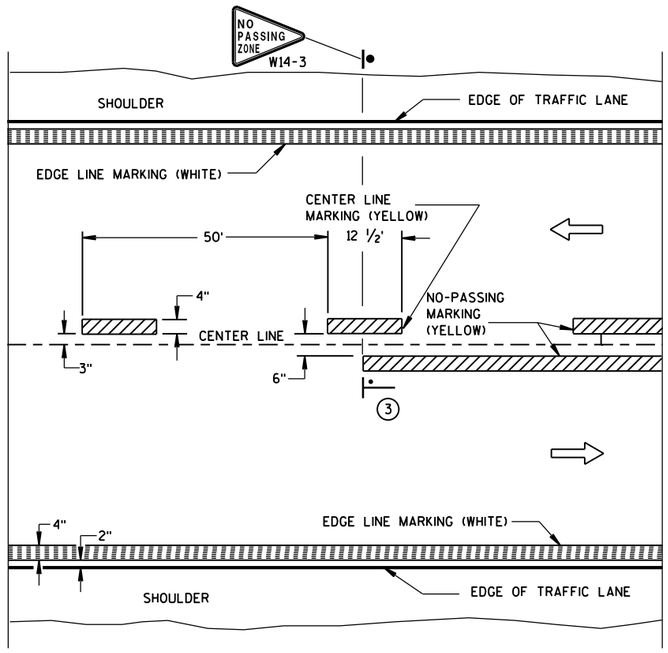
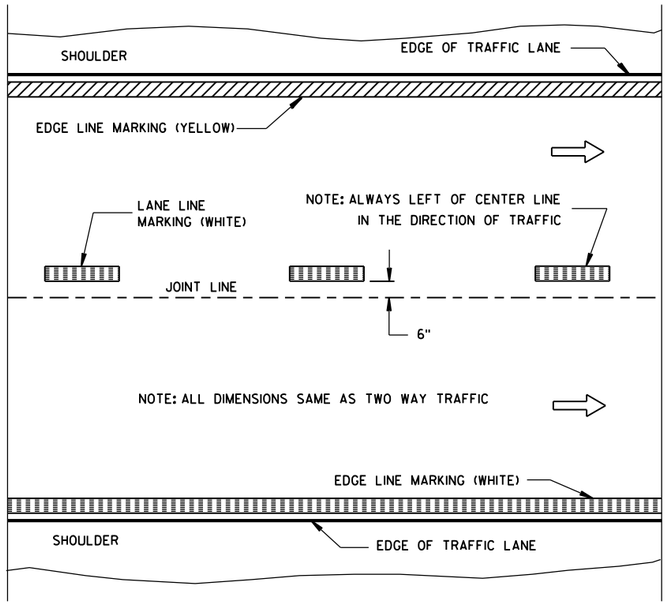
S.D.D. 15 C 7-12c

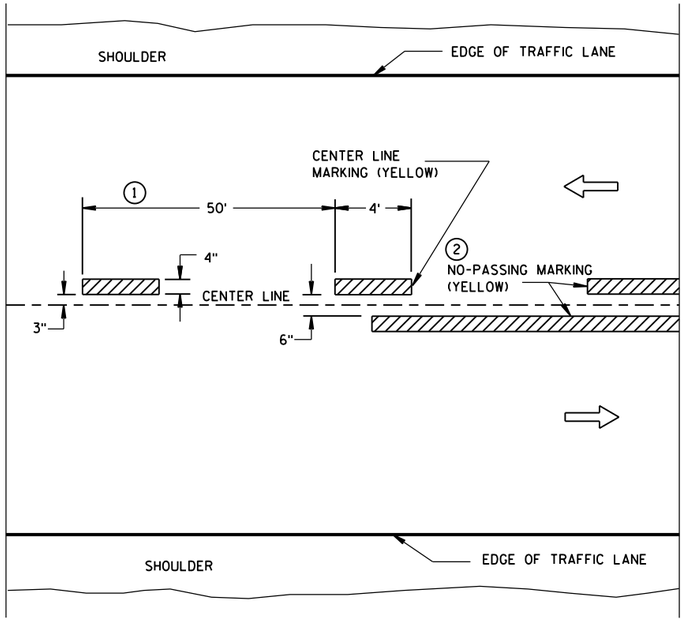


TWO WAY TRAFFIC

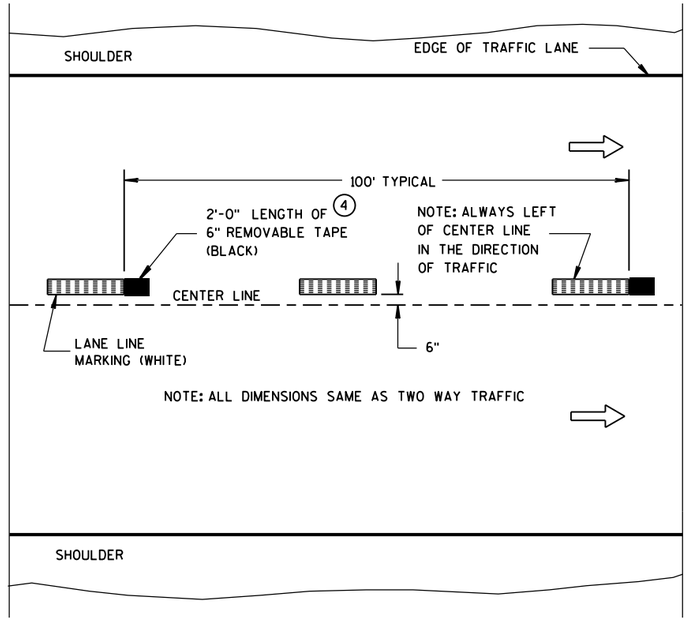


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

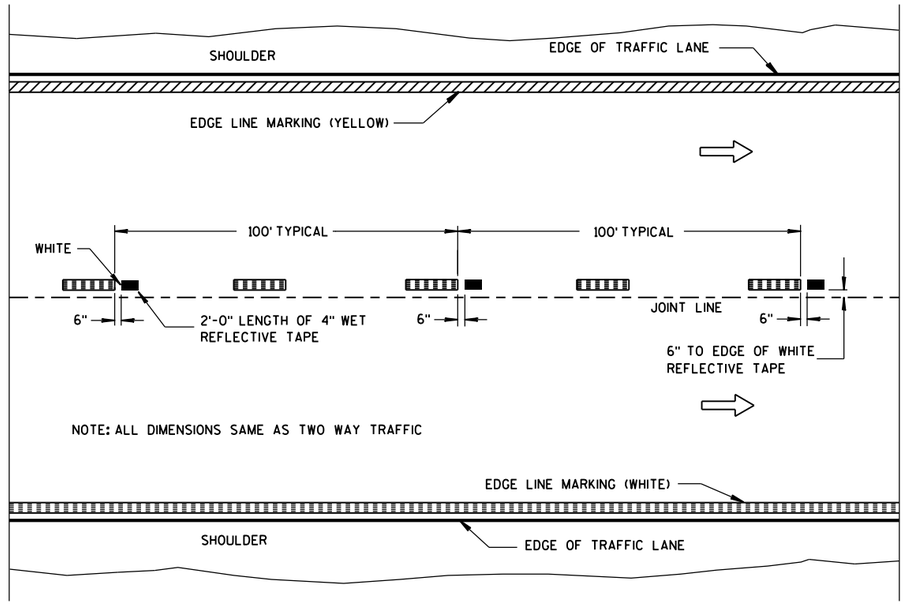
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

6

S.D.D. 15 C 8-16a

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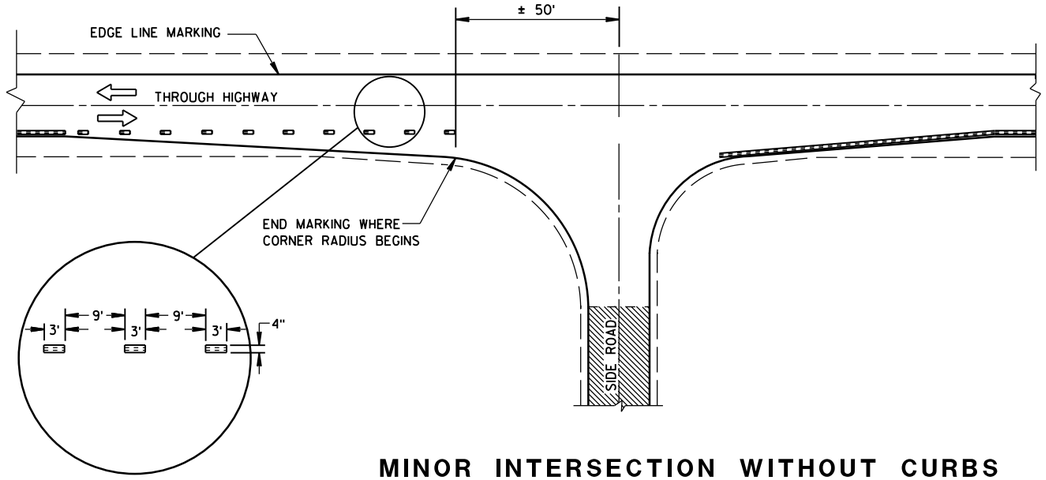
S.D.D. 15 C 8-16a



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

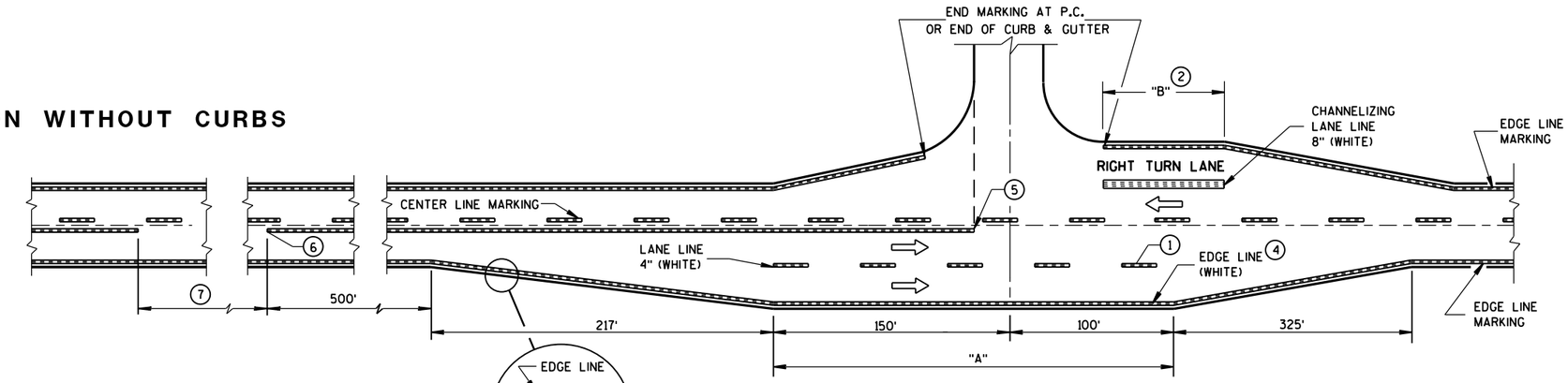
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

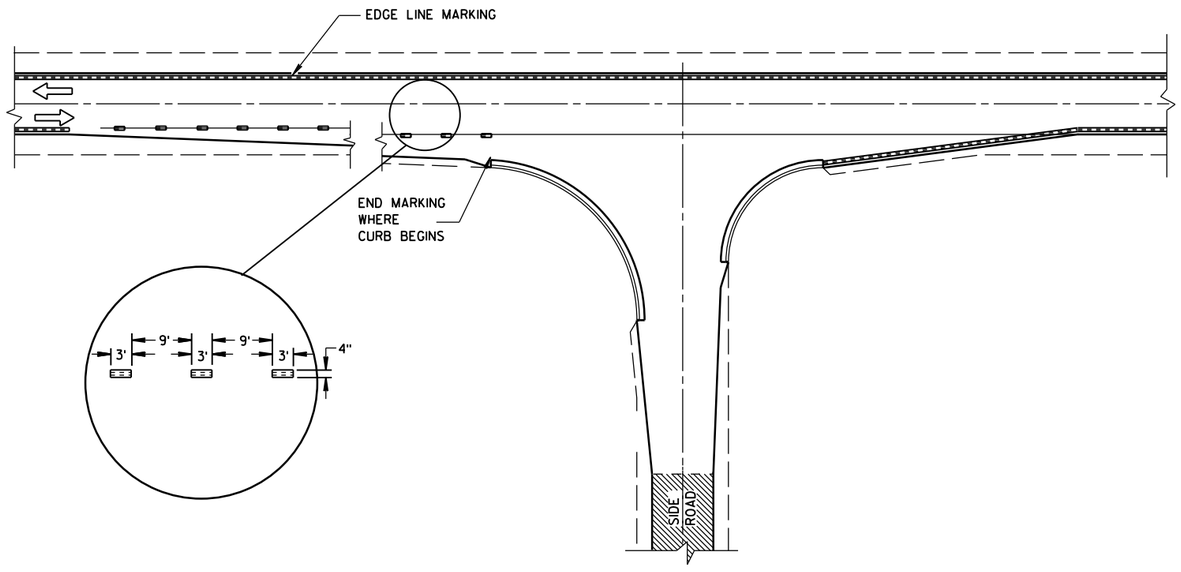
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



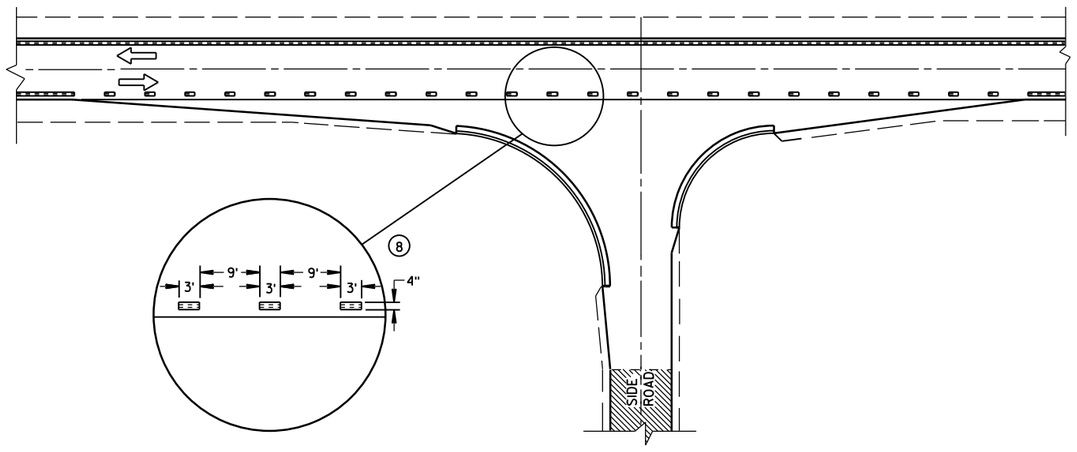
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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S.D.D. 15 C 8-16b

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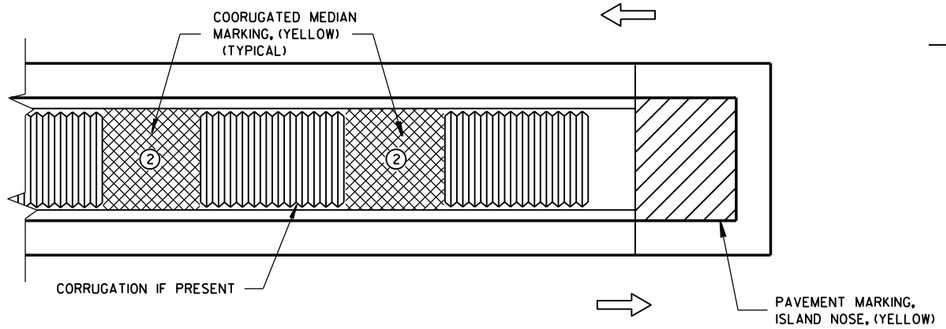
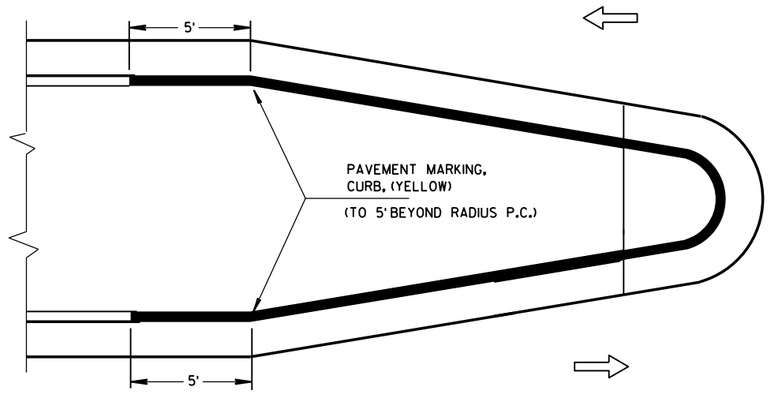
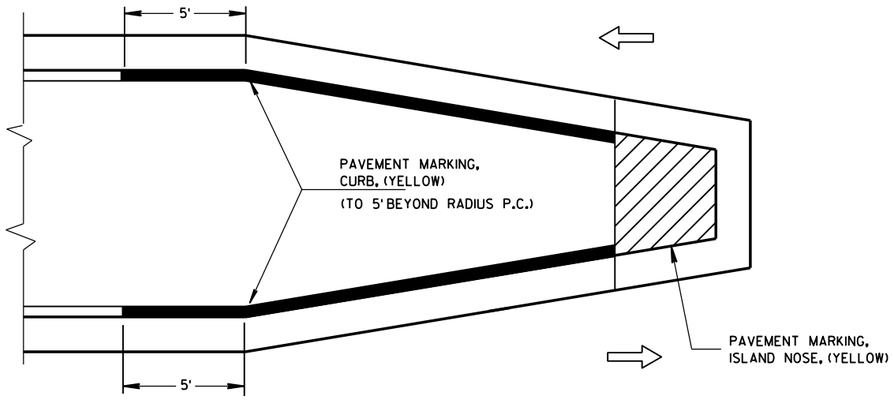
S.D.D. 15 C 8-16b



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

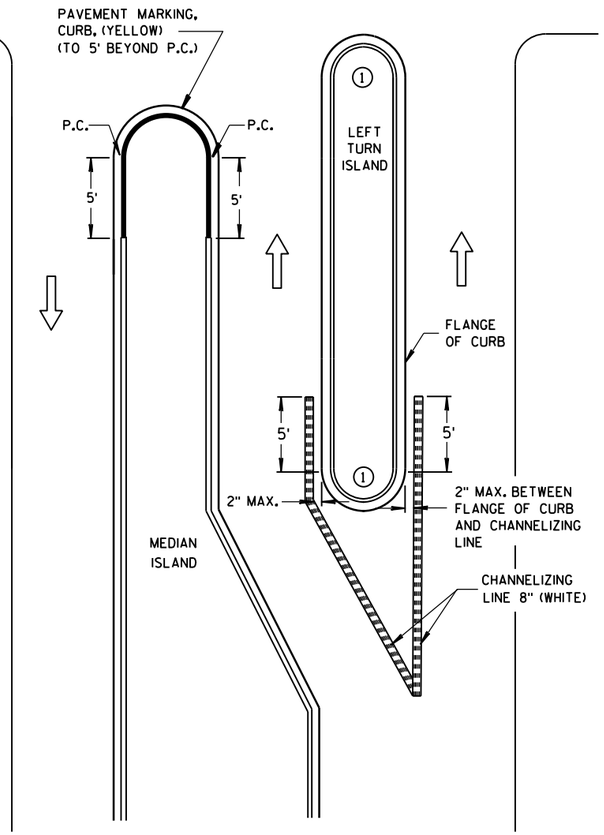


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

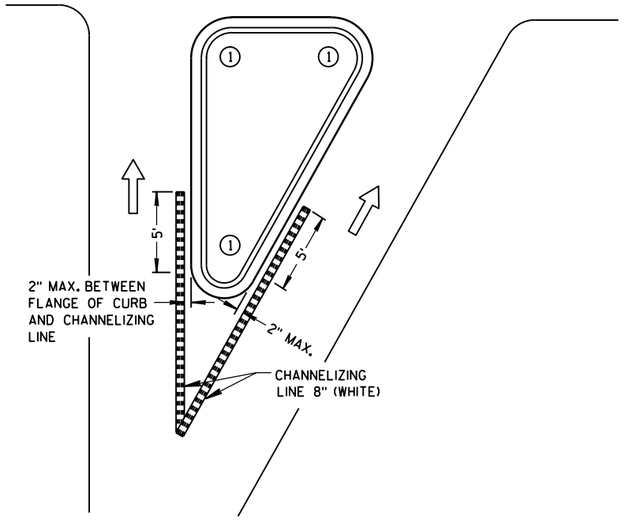


LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

1. DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.

2. WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



RIGHT TURN ISLAND

LEGEND

- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING
(ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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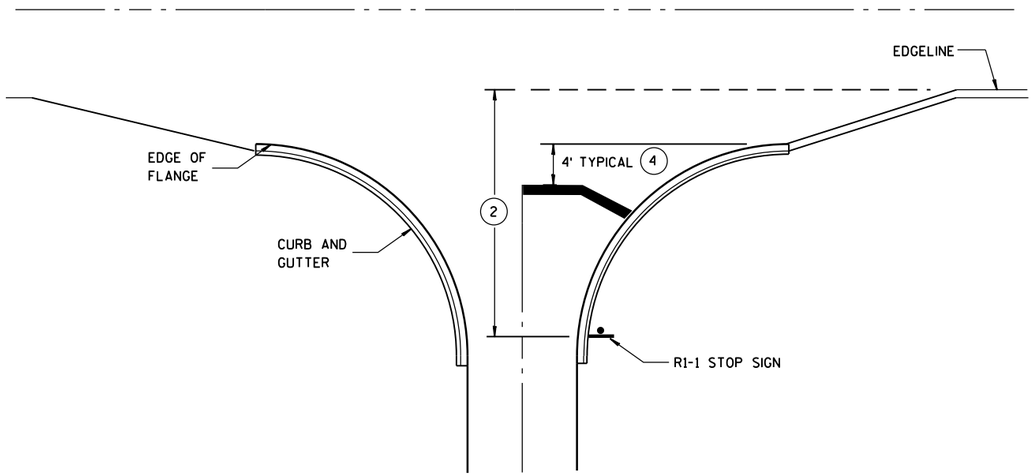
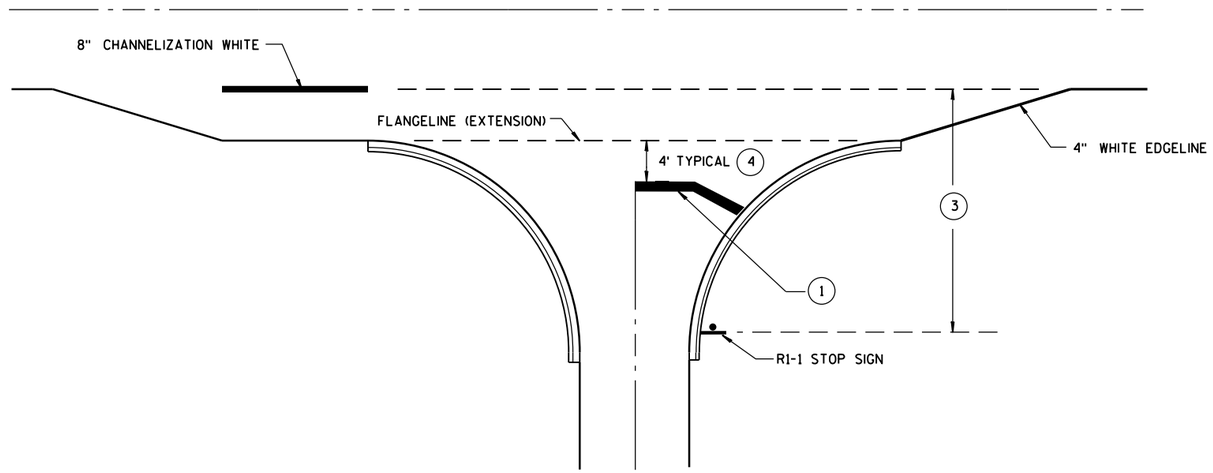
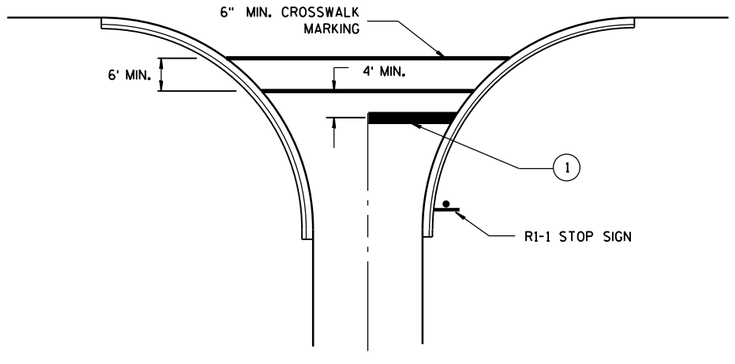
S.D.D. 15 C 8-16f



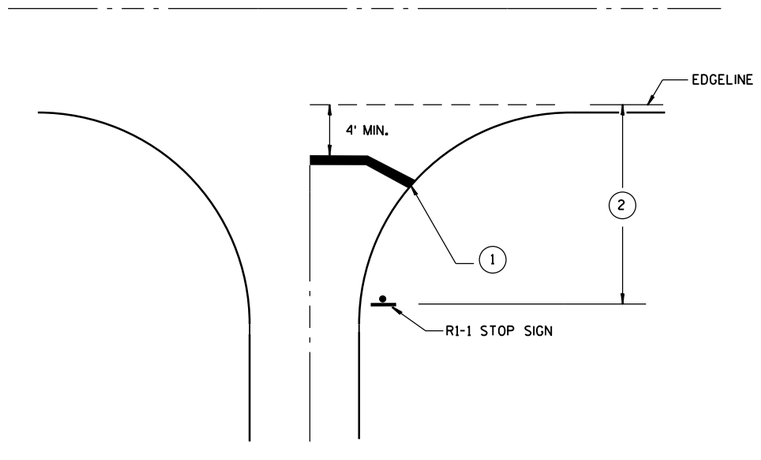
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.
3. IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
4. MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES.

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

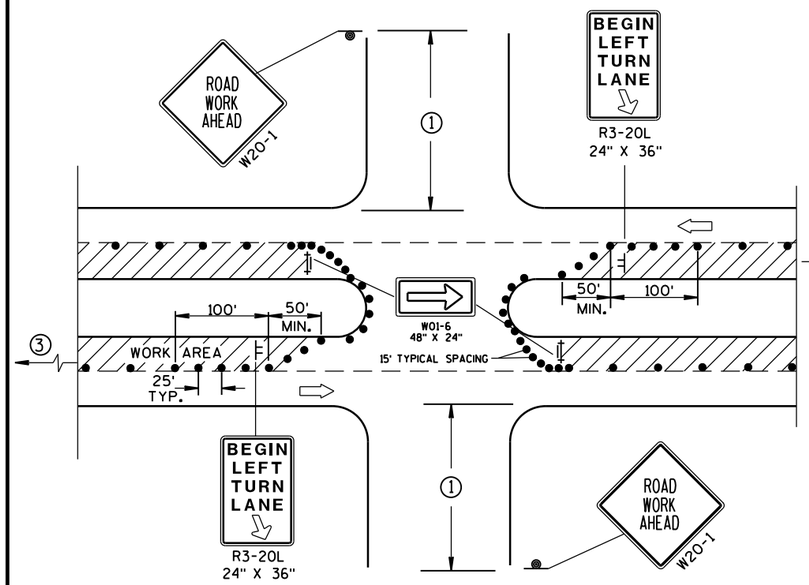
4/30/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

FHWA

6

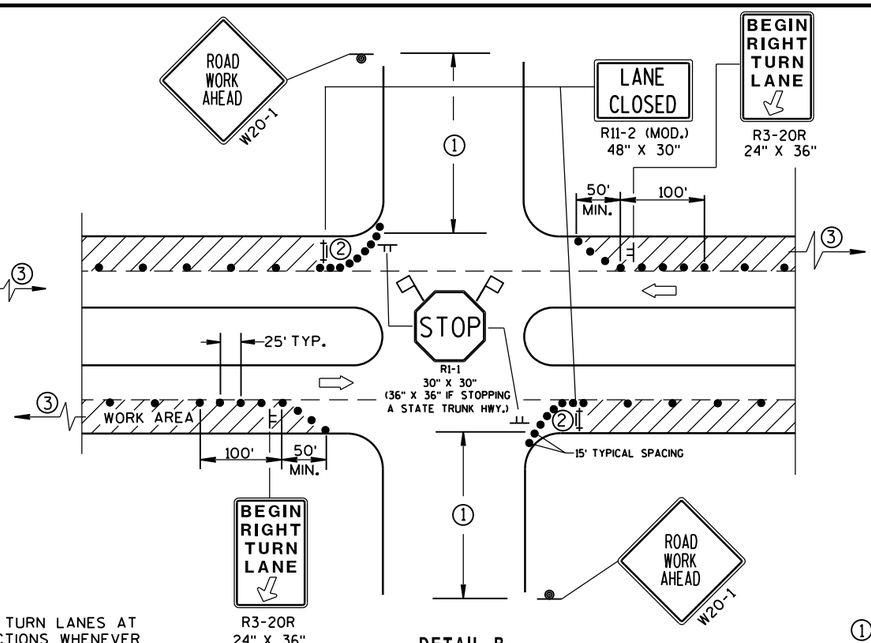
S.D.D. 15 C 33-1



DETAIL A

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

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



DETAIL B

FOR RIGHT LANE CLOSURE AT INTERSECTION

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 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.

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

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.

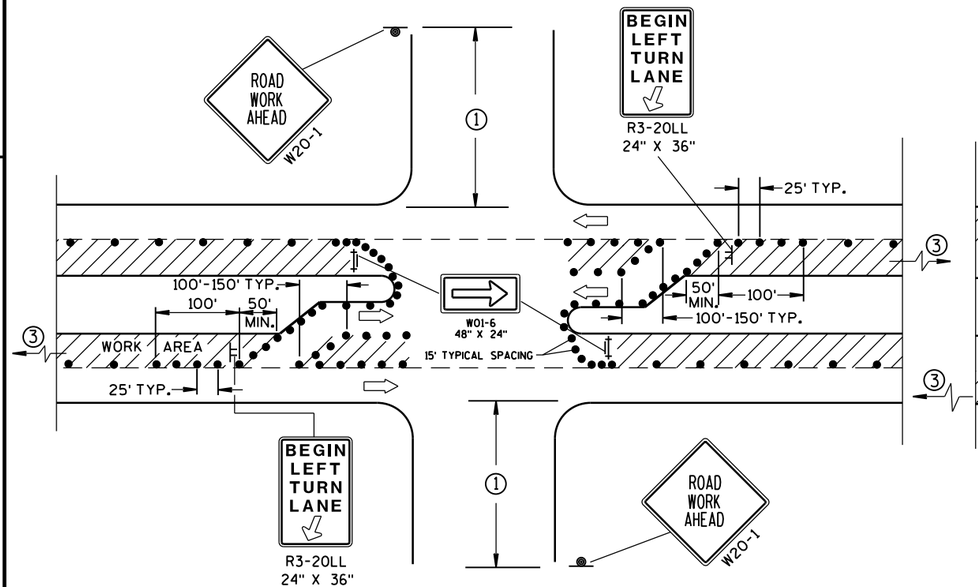
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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.

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

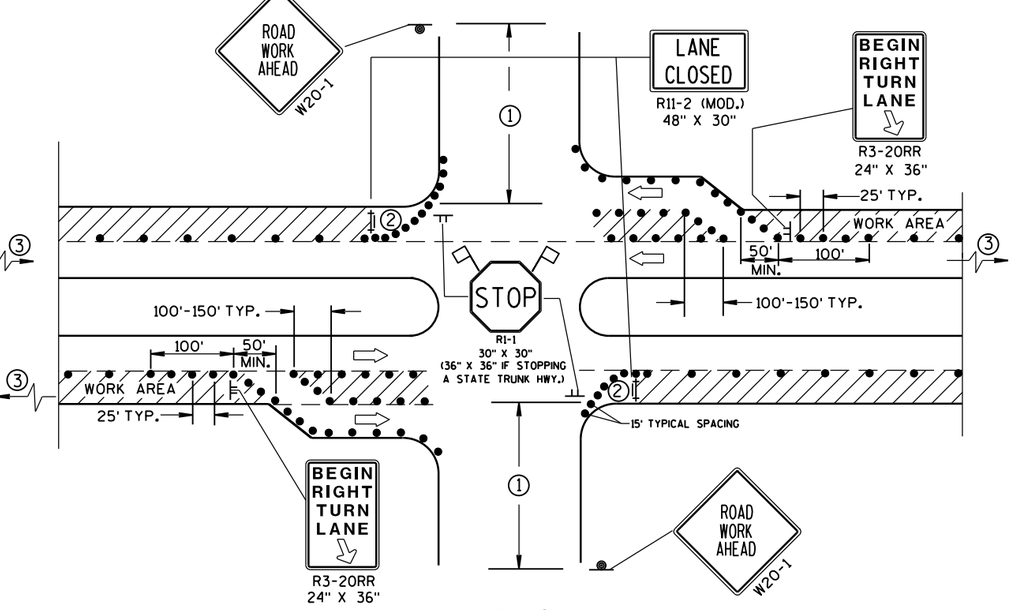
② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



DETAIL C

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



DETAIL D

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

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., (ORANGE)
- WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013	/S/ Travis Feltes
DATE	STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 D 21-2

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- WORK AREA

GENERAL NOTES

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

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

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

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

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

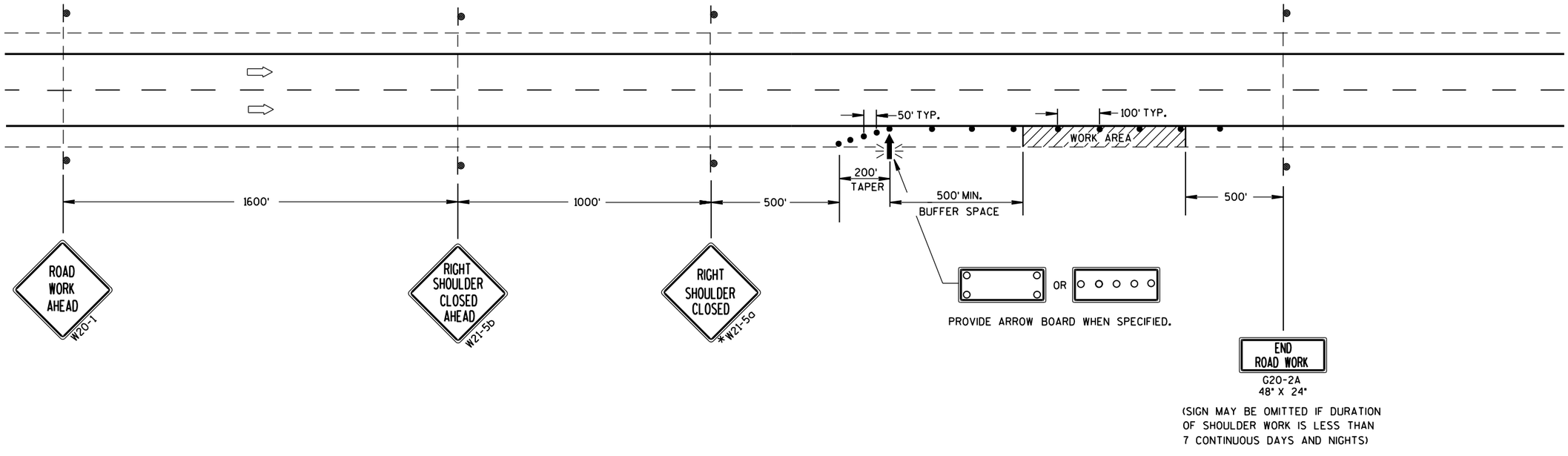
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

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

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

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

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S.D.D. 15 D 27-2

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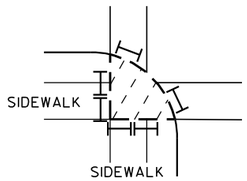
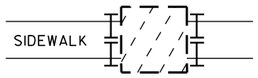
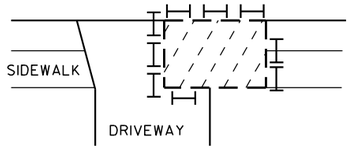
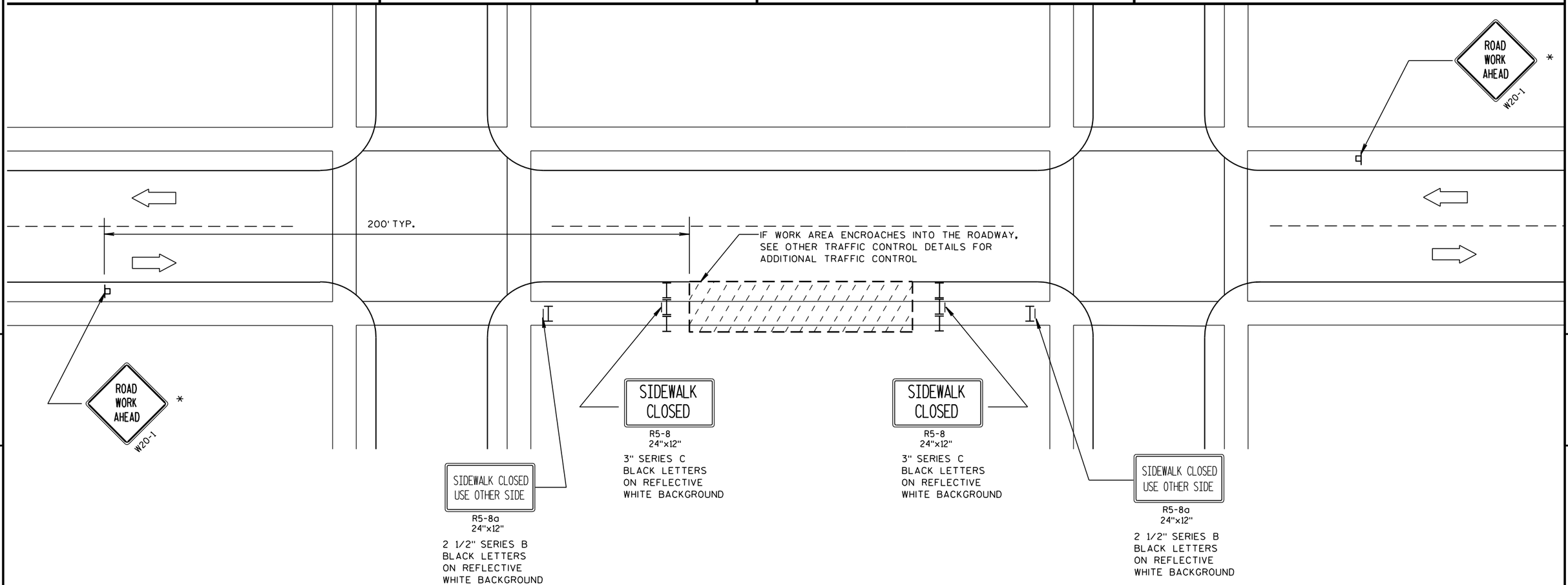
S.D.D. 15 D 27-2

WARNING OF LOCALIZED SIDEWALK WORK AREAS









LEGEND

- POST MOUNTED SIGN
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- WORK AREA
- DIRECTION OF TRAFFIC FLOW

GENERAL NOTES :

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS, IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

* "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.

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

TRAFFIC CONTROL, SIDEWALK CLOSURE

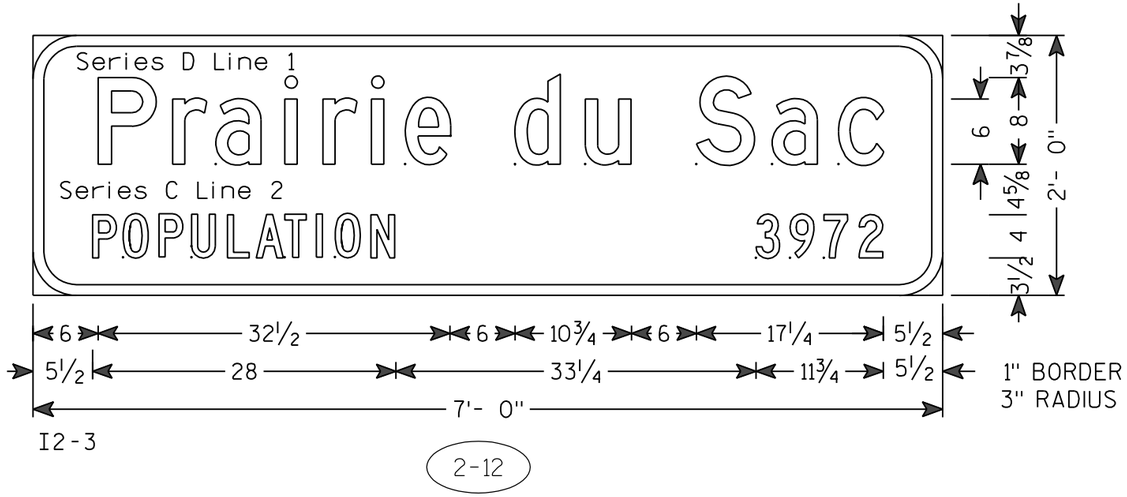
TRAFFIC CONTROL, SIDEWALK CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2000 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARK[illegible] ENGINEER
FHWA

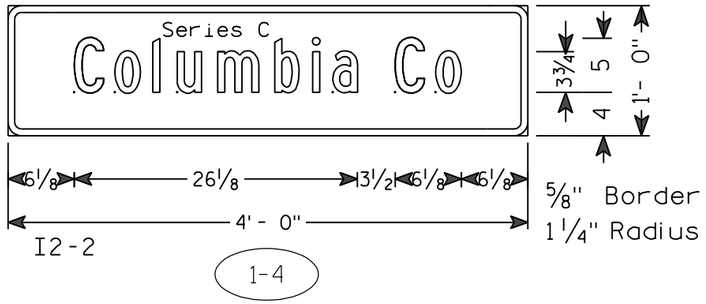
6

S.D.D. 15 D 30-1



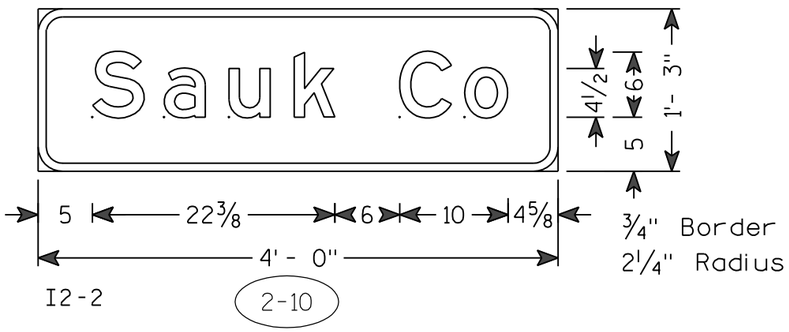
I2-3

2-12



I2-2

1-4

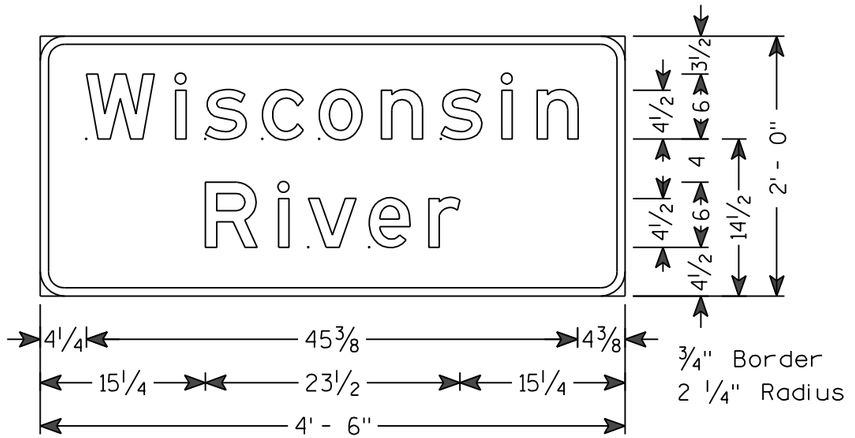


I2-2

2-10

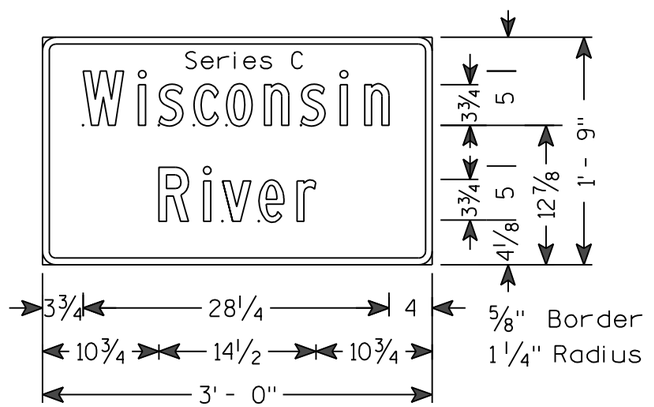
NOTES

1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E except as Shown



I3-1

2-11



1-5

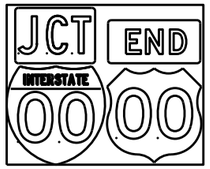
7

7

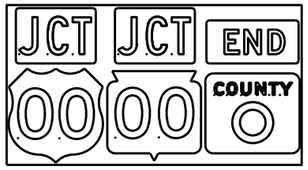
PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	PERMANENT SIGNING	SHEET NO: 95	E

TYPICAL ASSEMBLIES

J1-1

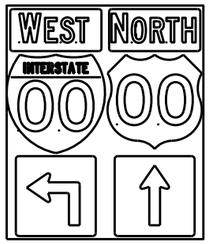


J1-2

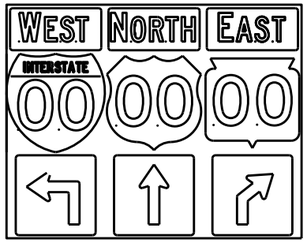


J1-3

J2-1



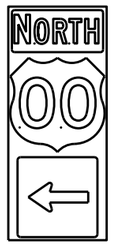
J2-2



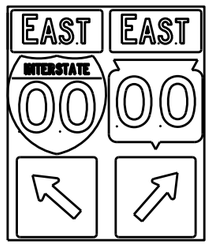
J2-3

JV

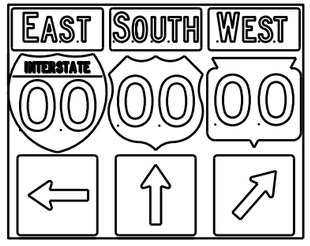
(Typical Vertical J-Assembly
See Note 10 and 11)



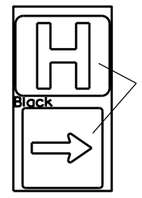
J3-1



J3-2



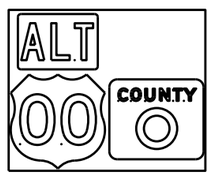
J3-3



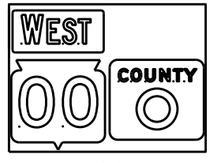
Blue Background

JH-1

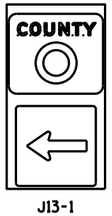
J4-1



J4-2



J4-2



J13-1

J12-1

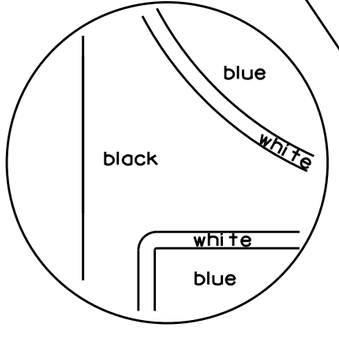
J32-1

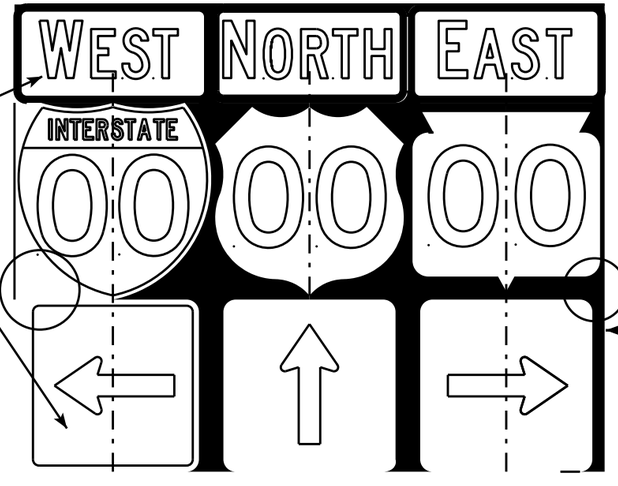
J33-1

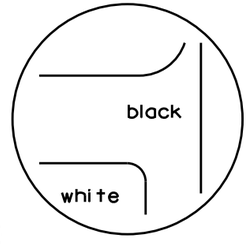
J23-1

J22-1

[blue background with interstate]







[black background]

NOTES

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

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

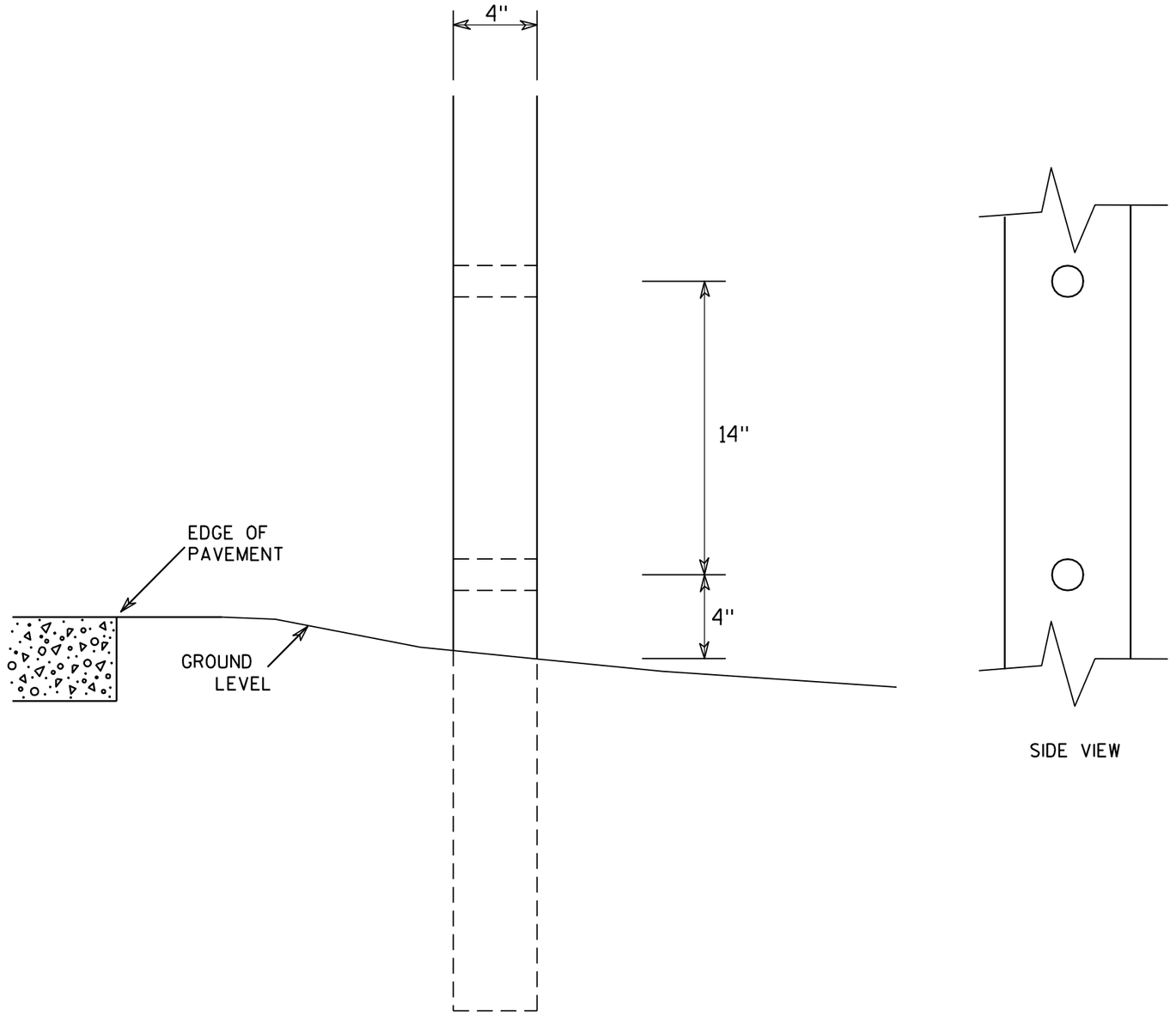
DATE 2/06/14 PL... A2-1S.8

PROJECT NO:

SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :

WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

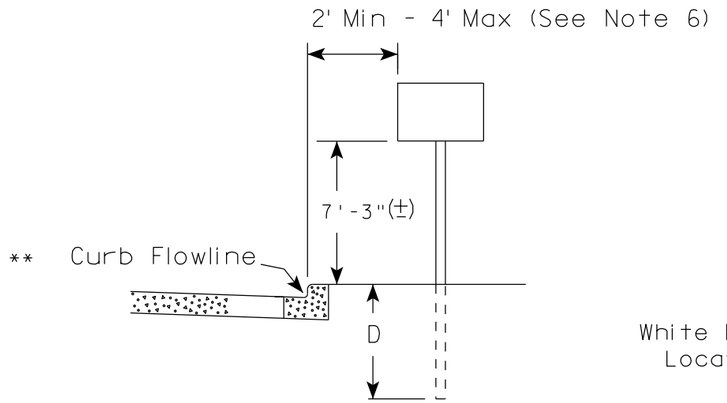
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

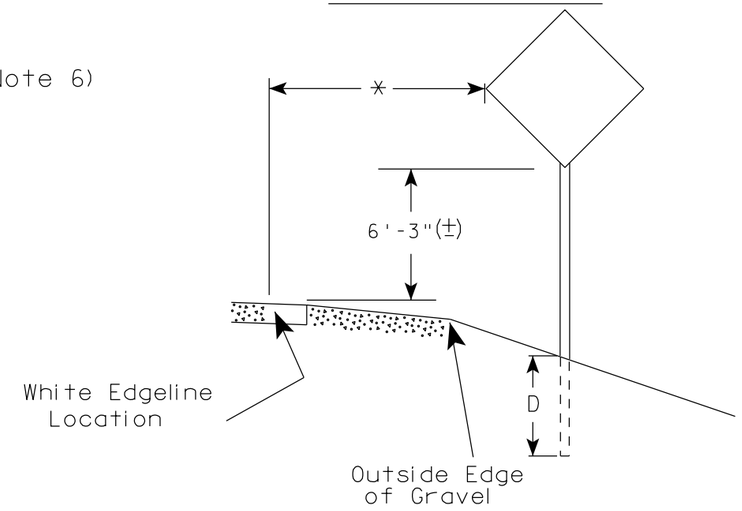
DATE 3/27/97 PLATE NO. A4-11.2

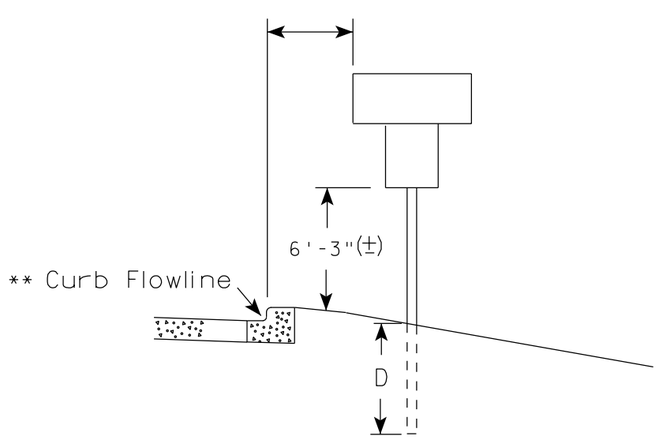
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 97	E

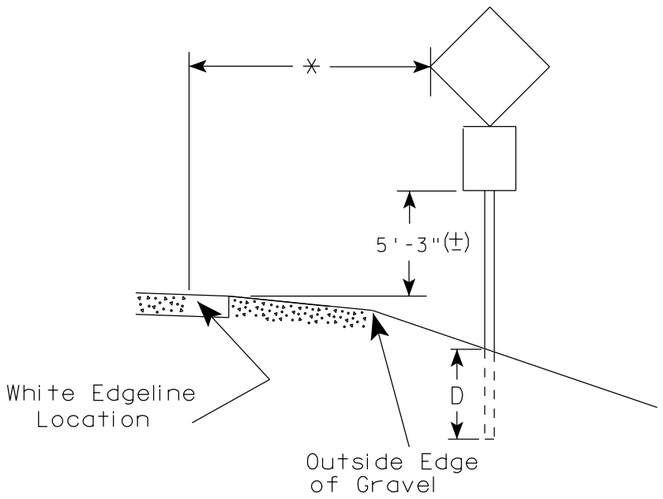
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

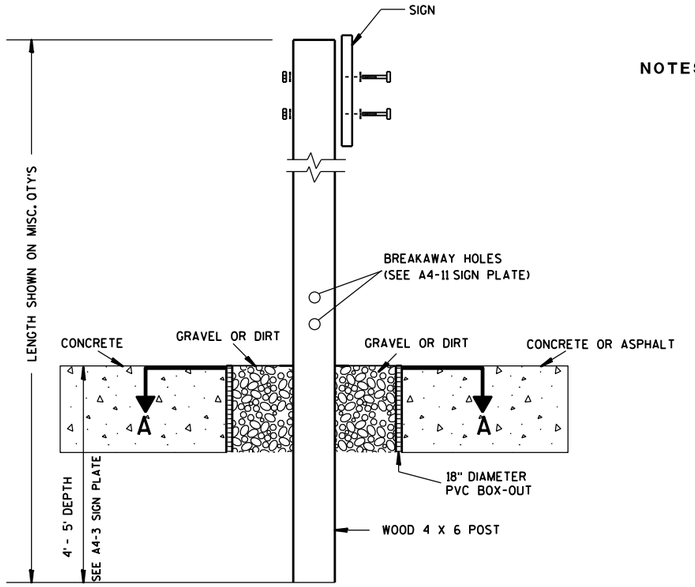
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

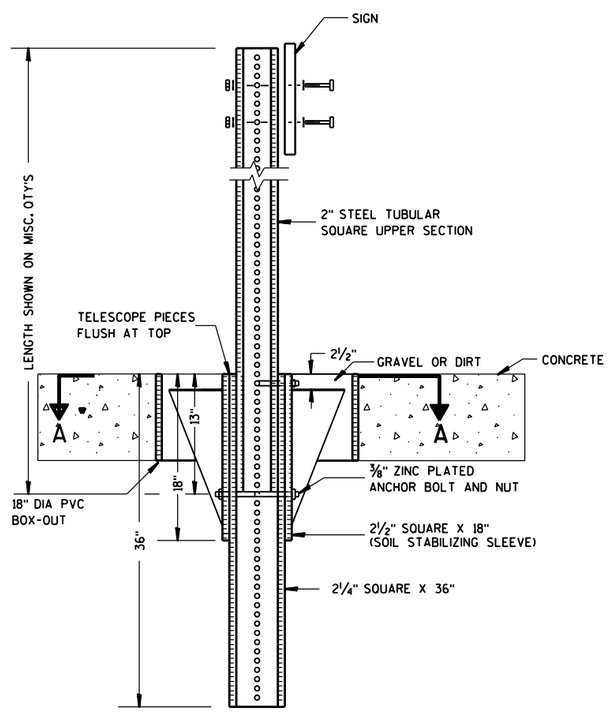
7



ELEVATION VIEW

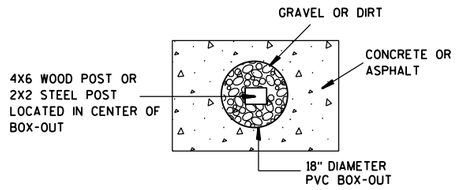
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

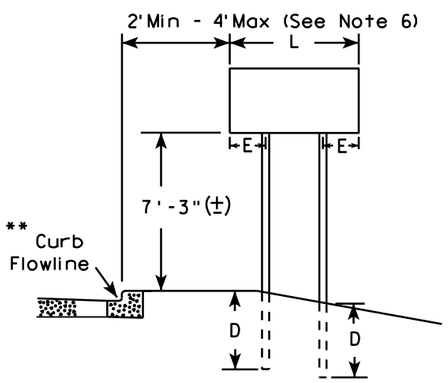
APPROVED Matthew R Rauch
for State Traffic Engineer

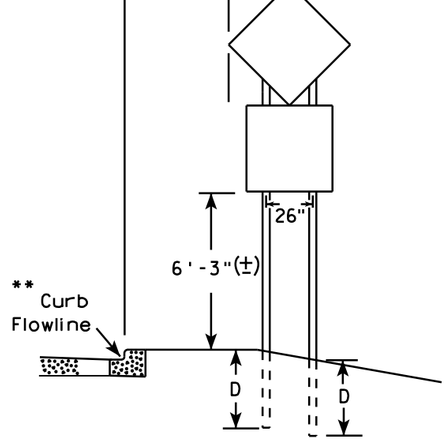
DATE 1/27/14 PLATE NO. A4-3B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

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

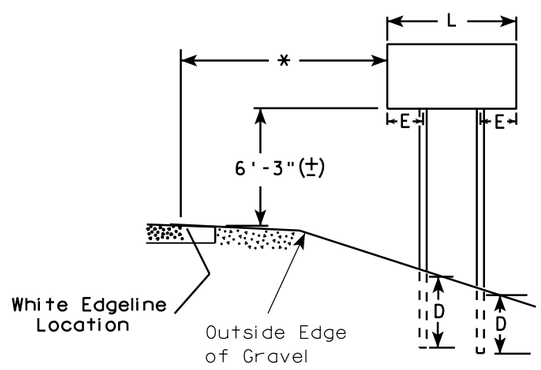
URBAN AREA

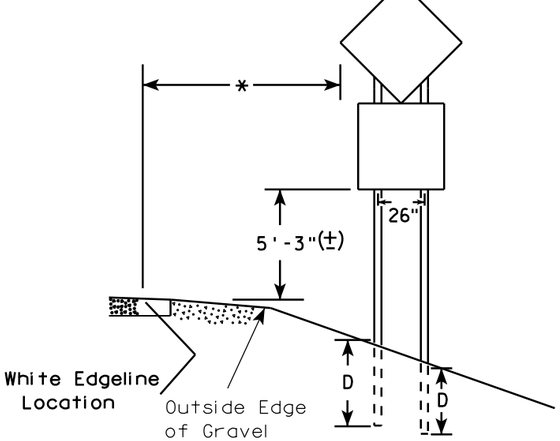




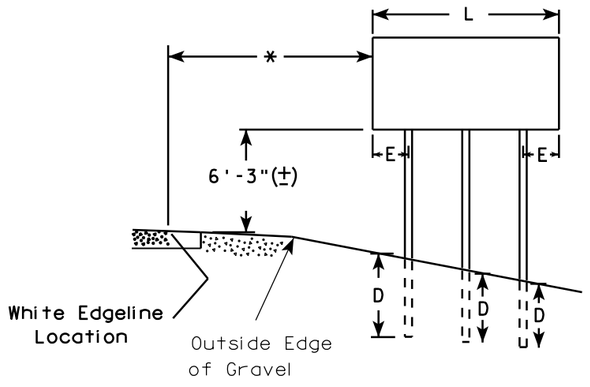
48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)





48" DIAMOND WARNING SIGN



GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

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

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

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

***

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

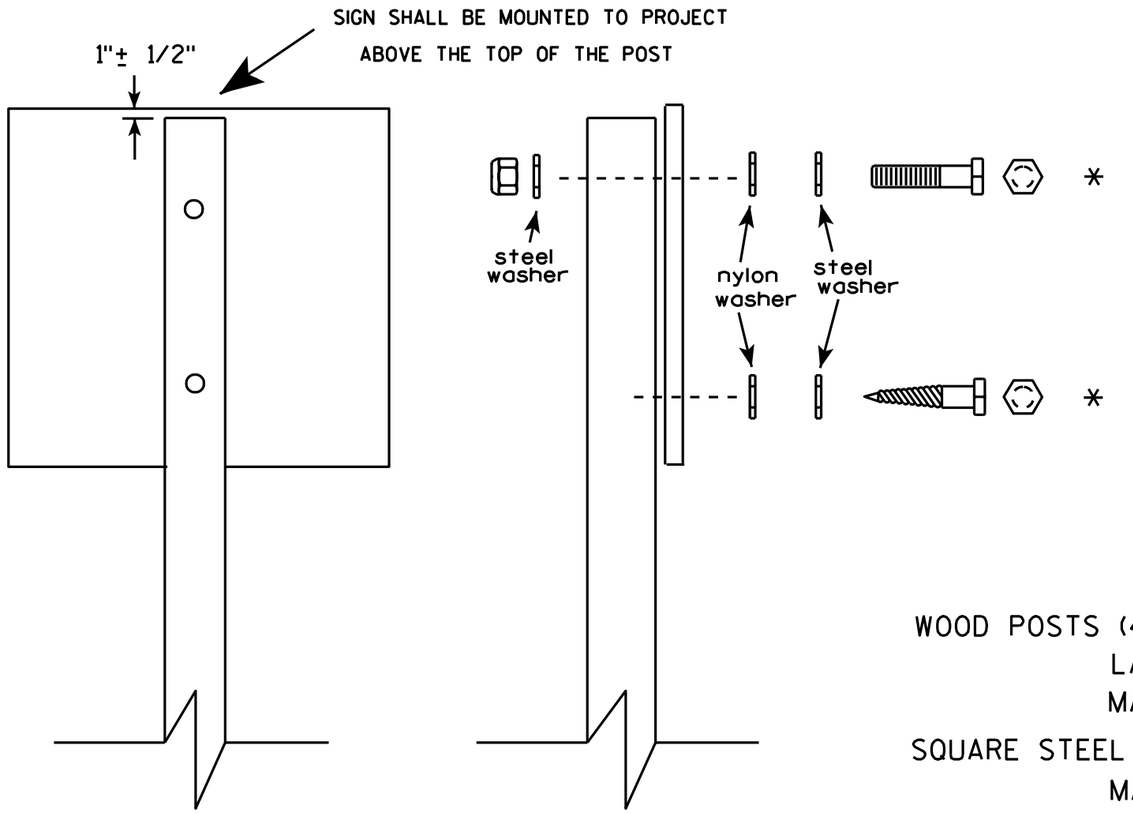
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-4 12/100

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

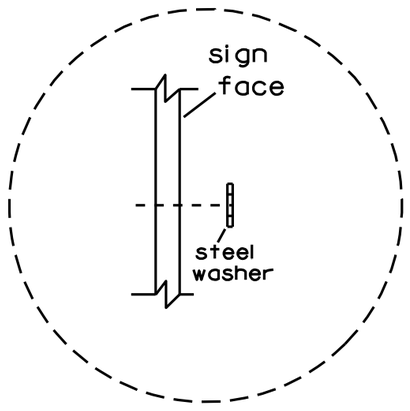
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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.



Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

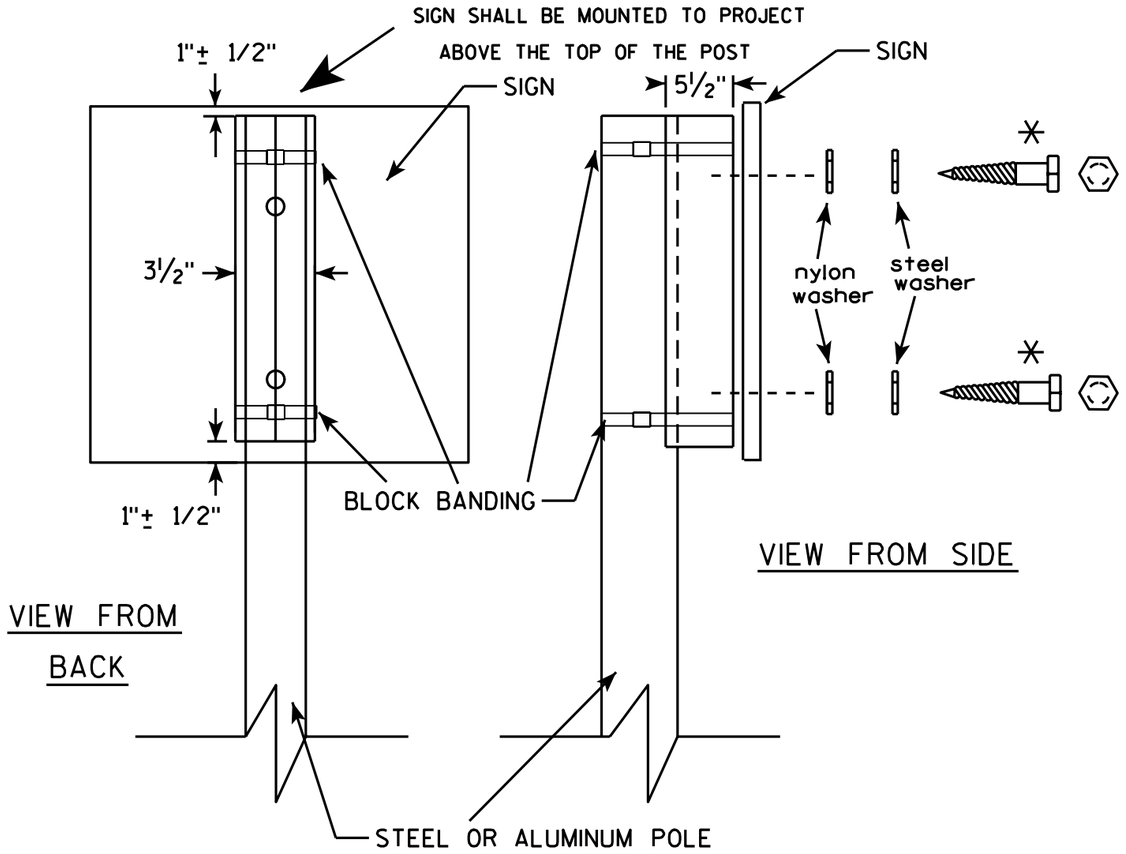
DATE 3/23/10 PLATE NO. A4-8.7

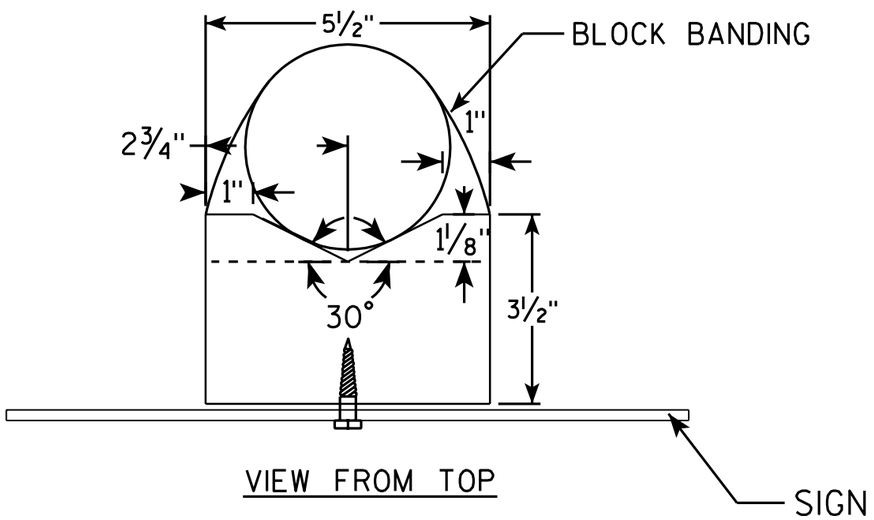
7

7

PROJECT NO:

SHEET NO: 101 E





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
   b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
   c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

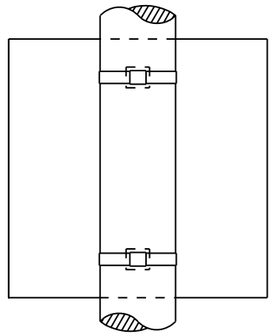
DATE 7/12/07 PLATE NO. A5-10.1

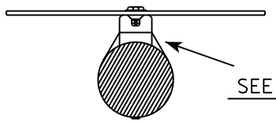
PROJECT NO:

SHEET NO: 102 E

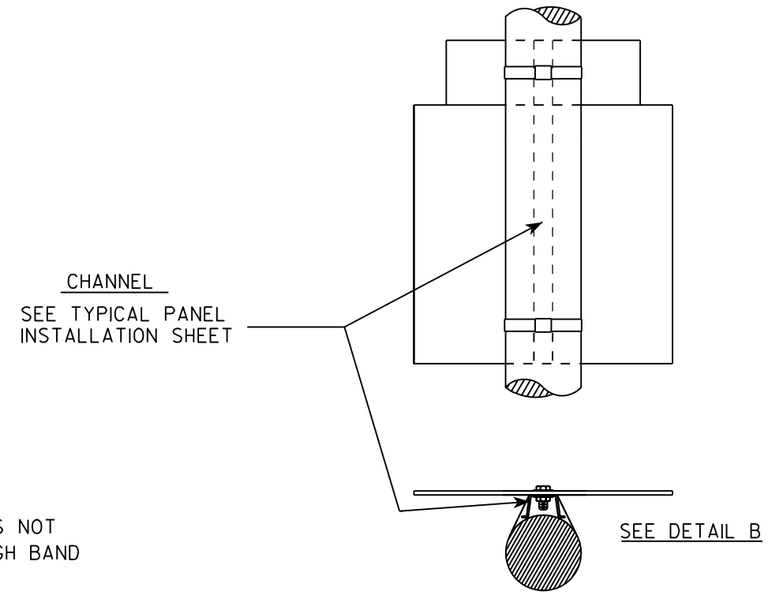
BANDING

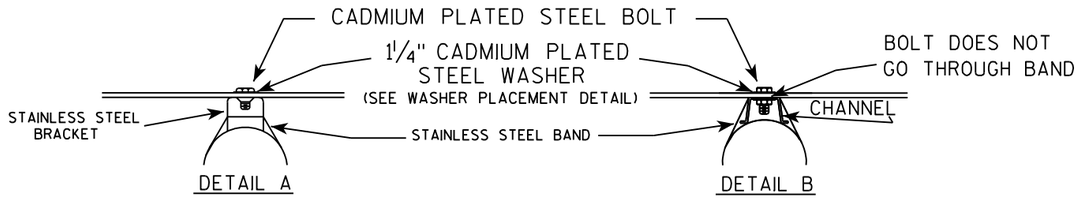
SINGLE SIGN



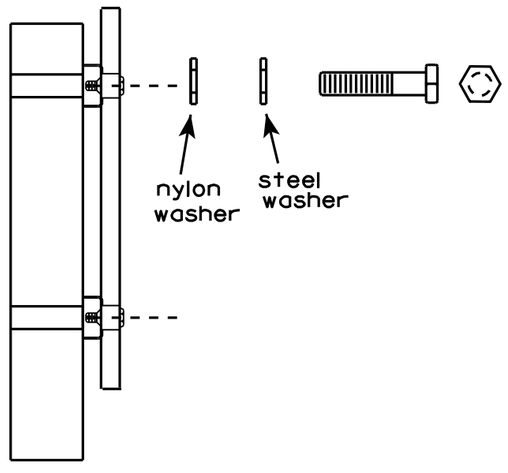


"J" ASSEMBLY





WASHER PLACEMENT



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

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

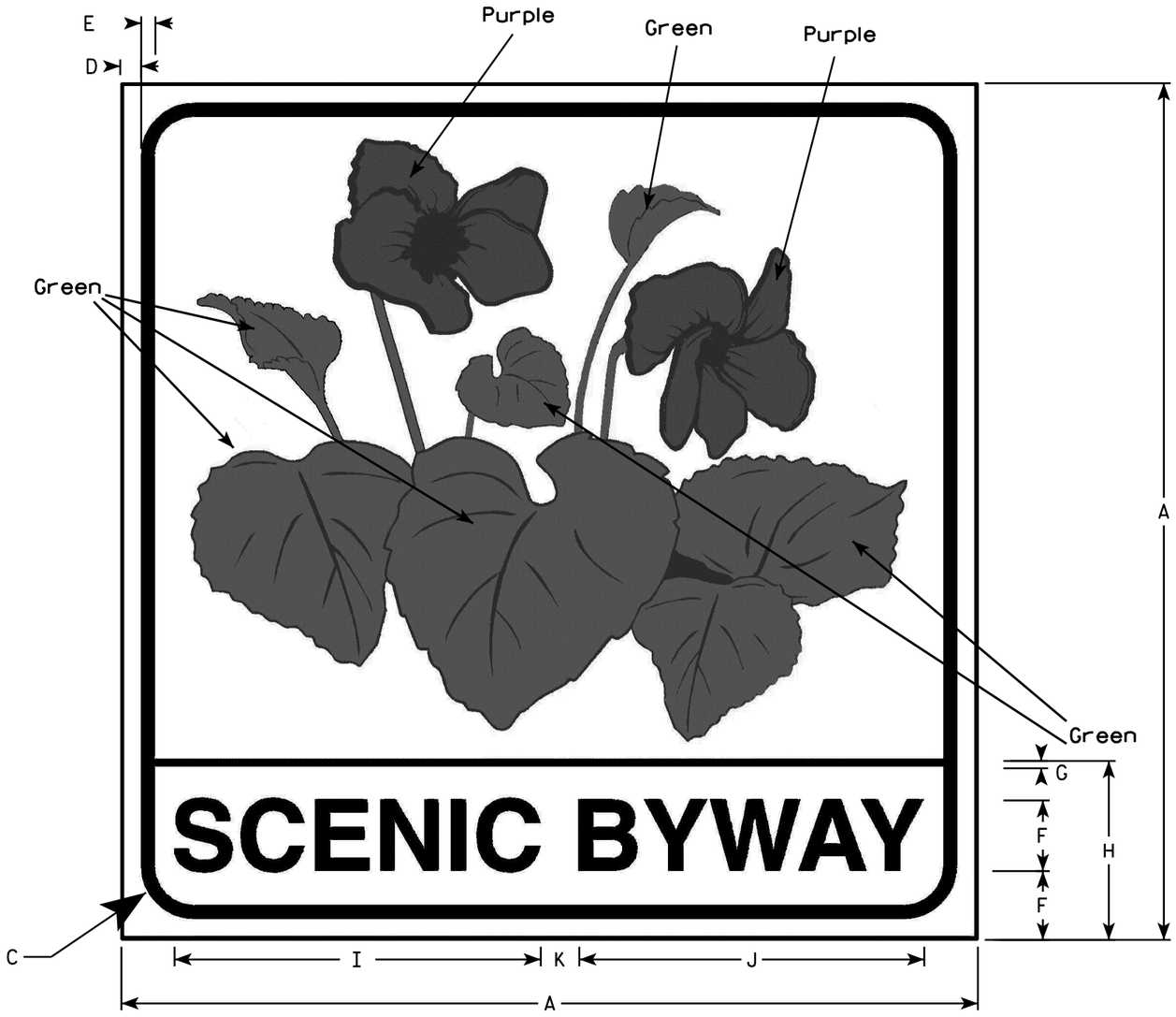
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 103	E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black Except as noted
   Border of Leaves and Flowers is Black
3. Message Series - Special
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Contact WisDOT with any questions.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24		1 1/2	5/8	3/8	2	1/4	5	10 1/4	9 5/8	1 1/8																4.0	.36
3																												
4	36		4	7/8	5/8	3	1/4	7 1/2	15 3/8	14 1/2	1 5/8																9.0	.81
5																												

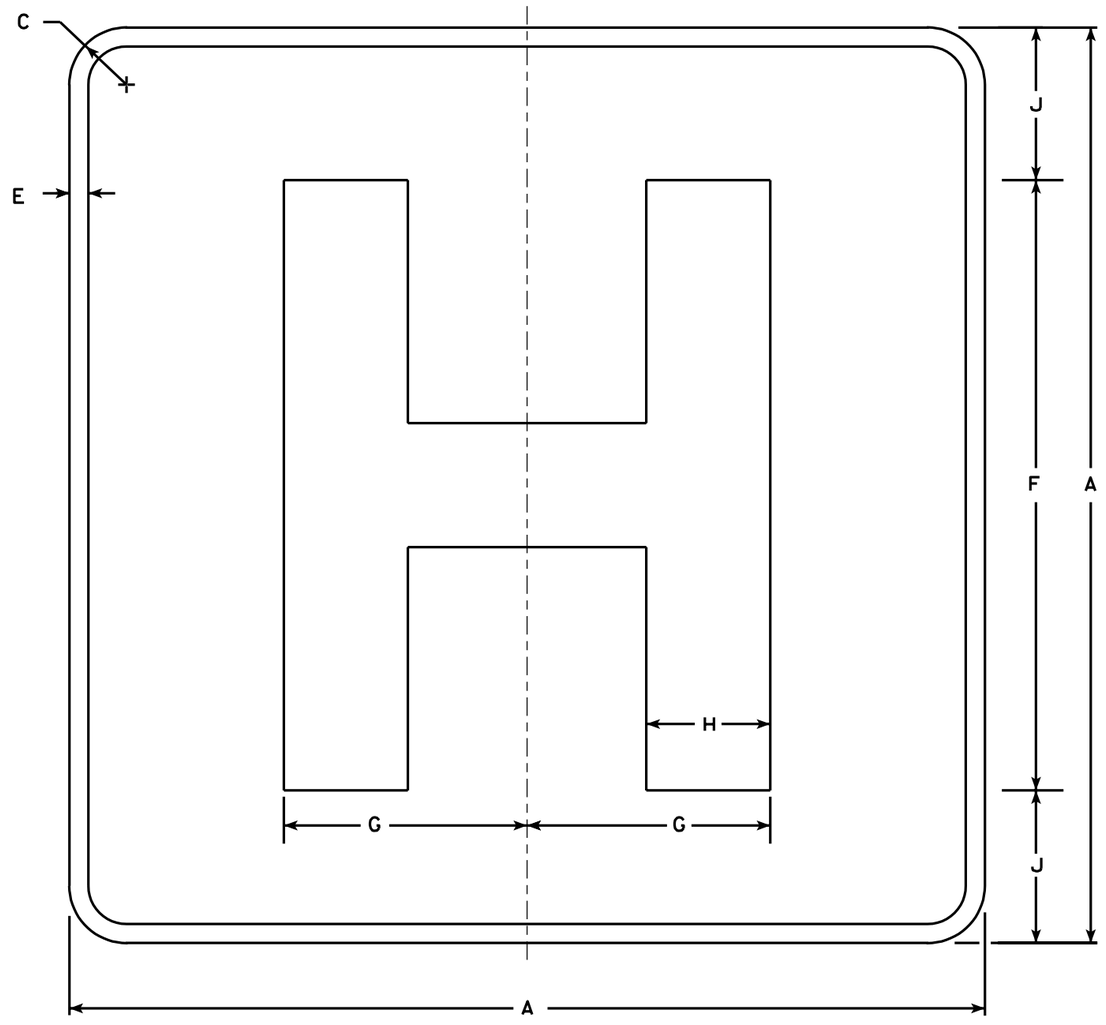
STANDARD SIGN
D6-4S

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 10/05/09 PLATE NO. D6-4S.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 104	E



D9-2

NOTES

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

Metric equivalent for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18		1 1/8		1/2	12	4 3/4	2 3/8		3																	4.0
2	24		1 1/2		1/2	16	6 3/8	3 1/4		4																	4.0
3	36		2 1/4		3/4	24	9 1/2	4 7/8		6																	9.0
4																											
5																											

STANDARD SIGN
D9-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spong for State Traffic Engineer

DATE 1/15/02 PLATE NO. D9-2.4

PROJECT NO:

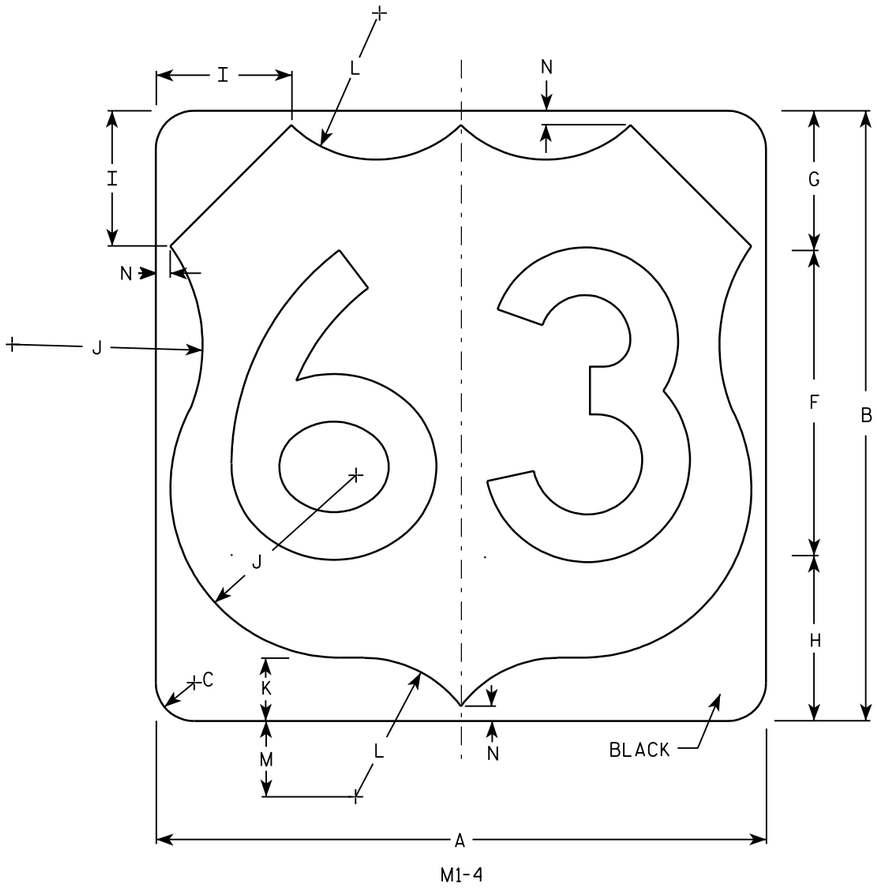
SHEET NO: 105 E

FILE NAME : C:\Users\Projects\tr_stdplate\D92.DGN PLOT DATE : 21-OCT-2005 10:28 PLOT BY : DOTSJA

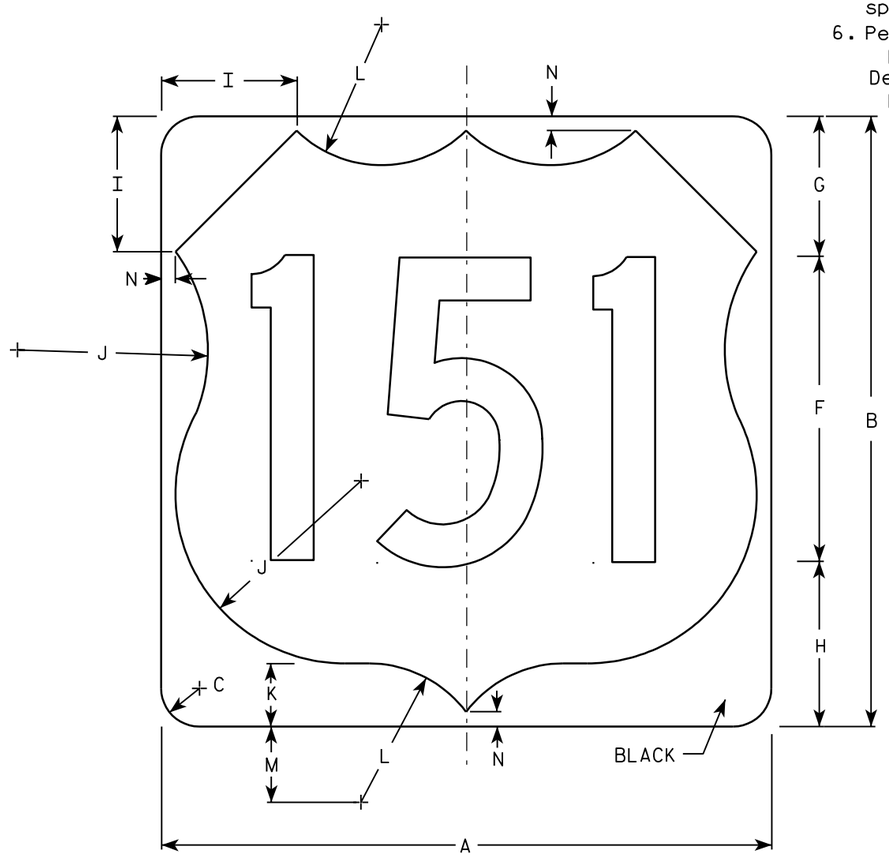
WISDOT/CADDS SHEET 42

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and adjust spacing as per Plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or other temporary signs
   Background - Reflective



M1-4



M1-4

Metric equivalent for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Areq sq. ft.	Area m2
1																												
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

USH MARKER
M1-4 FOR ASSEMBLIES

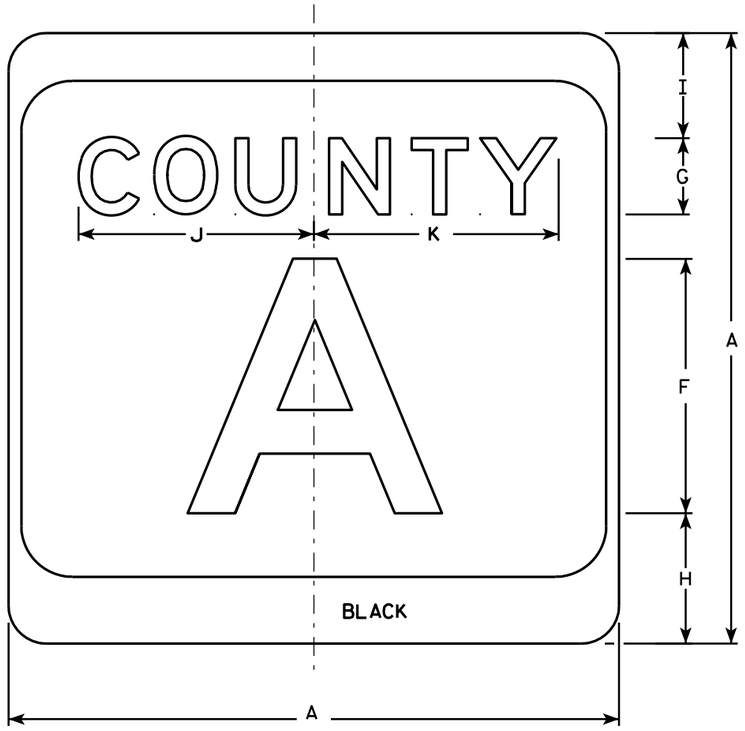
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

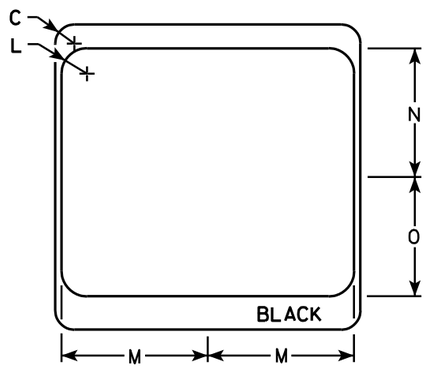
DATE 08/25/05 PLATE NO. M1-4.9

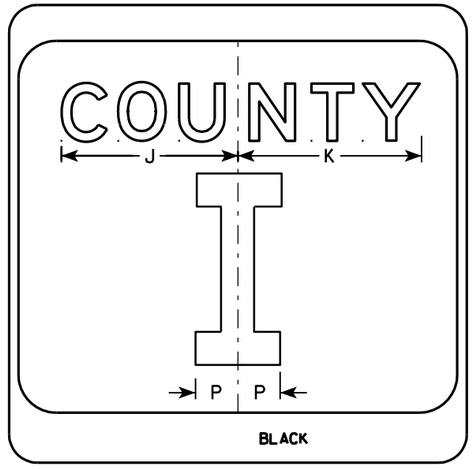
7 7

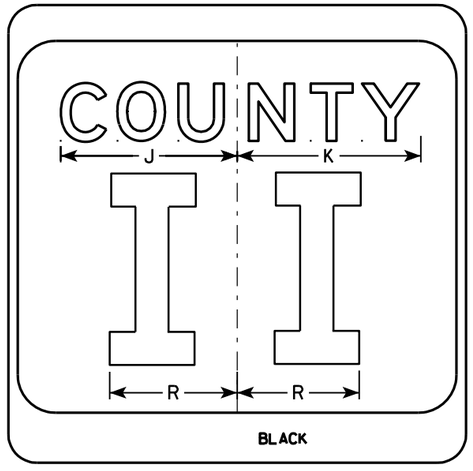
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 106 | E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

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

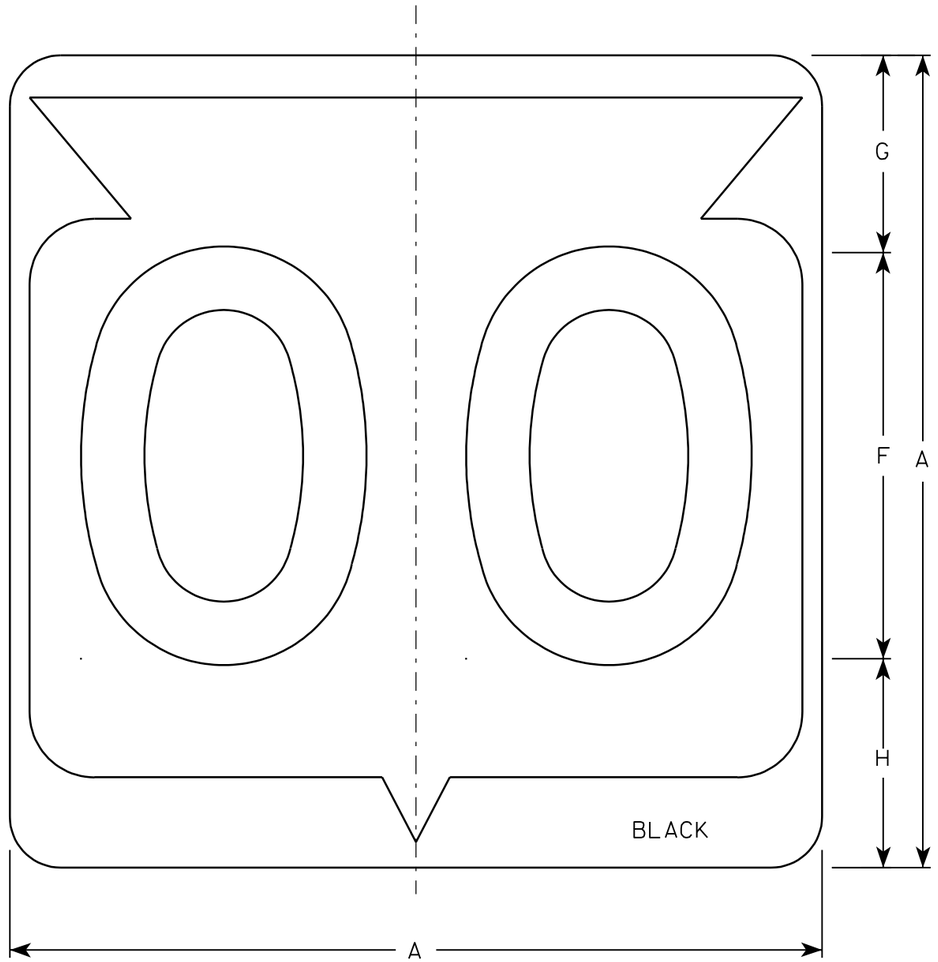
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

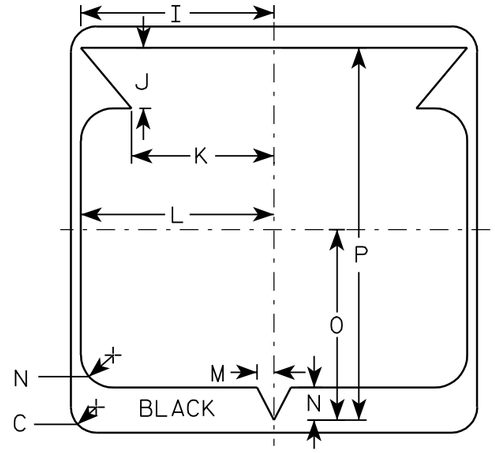
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 107	E



M1-6

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



Metric equivalent for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

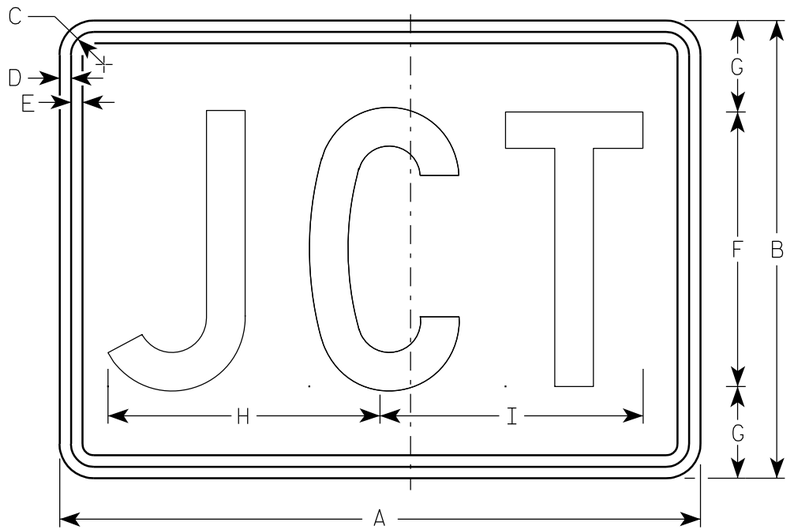
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

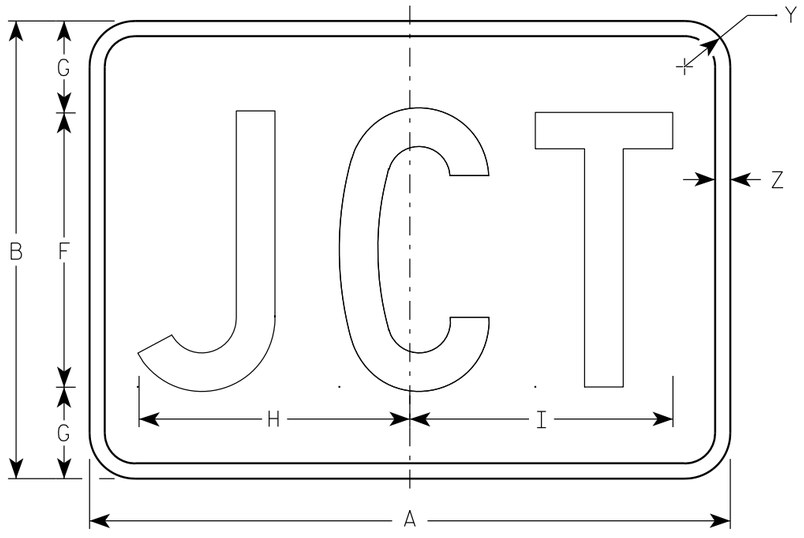
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 108	E



M2-1
MK2-1
MM2-1
MR2-1



MB2-1
MG2-1
MN2-1

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB2-1 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG2-1 Background - Green
   Message - White - Type H Reflective
   MK2-1 Background - Green
   Message - White - Type H Reflective
   MM2-1 Background - White - Type H Reflective
   Message - Green
   MN2-1 Background - Brown
   Message - White - Type H Reflective
   MR2-1 Background - Brown
   Message - Yellow - Type H Reflective

Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 375 mm
3	750 mm X 525 mm
4	750 mm X 525 mm
5	750 mm X 525 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20	0.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20

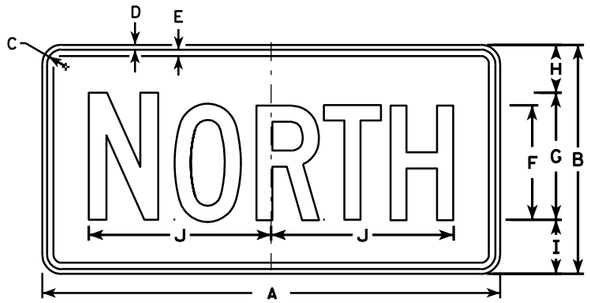
STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

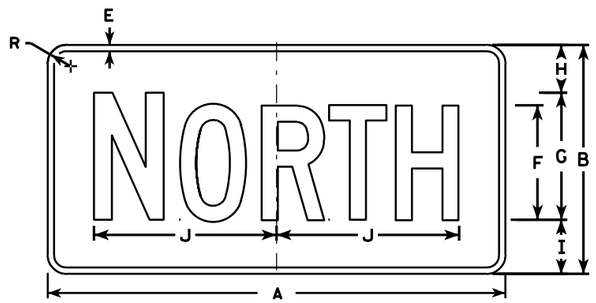
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M2-1.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 109	E

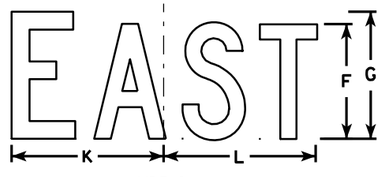


M3-1
MK3-1
MO3-1



MB3-1
MG3-1
MM3-1
MN3-1

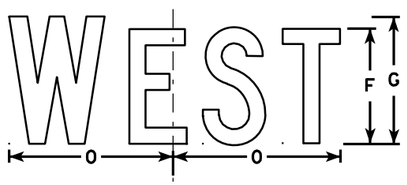
M3-2
MK3-2
MO3-2



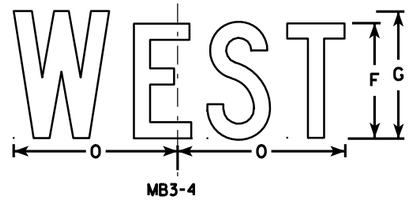
MB3-2
MG3-2
MM3-2
MN3-2

M3-3
MK3-3
MO3-3

MB3-3
MG3-3
MM3-3
MN3-3



M3-4
MK3-4
MO3-4



MB3-4
MG3-4
MM3-4
MN3-4

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White - Type H Reflective (Detour or temporary signs - Reflective) Message - Black
   MB3-1 thru MB3-4 Background - Blue Message - White - Type H Reflective (Detour or temporary signs - Reflective)
   MG3-1 thru MG3-4 Background - Green Message - White - Type H Reflective
   MK3-1 thru MK3-4 Background - Green Message - White - Type H Reflective
   MM3-1 thru MM3-4 Background - White - Type H Reflective Message - Green
   MN3-1 thru MN3-4 Background - Brown Message - White - Type H Reflective
   M03-1 thru M03-4 Background - Orange - Reflective Message - Black
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

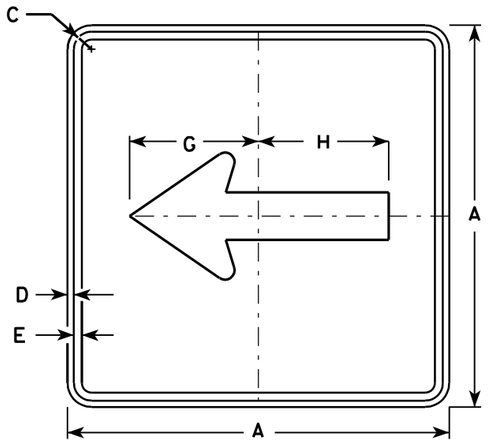
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

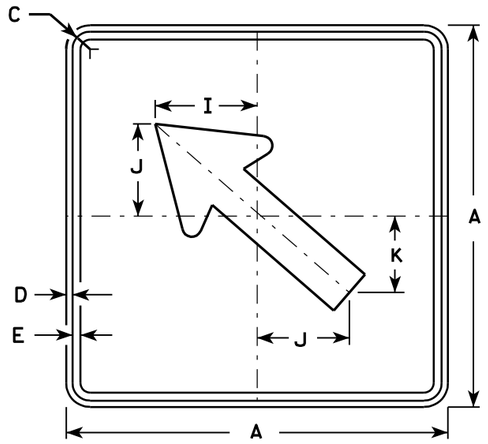
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/10/10 PLATE NO. M3-1.12

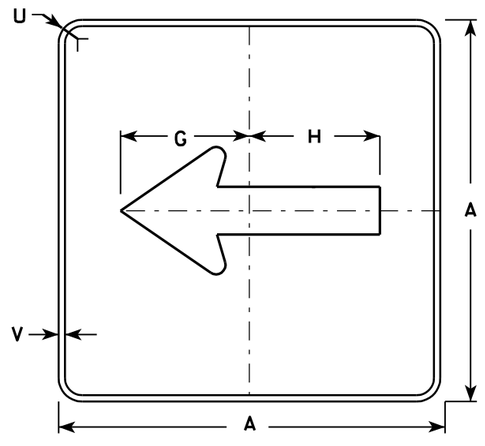
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 110	E



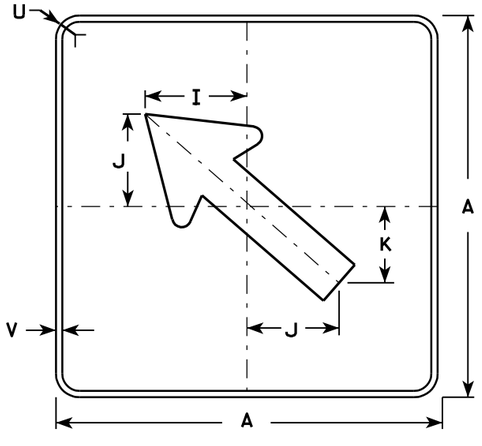
M6-1
MK6-1
MM6-1
MO6-1
MP6-1
MR6-1



M6-2
MK6-2
MM6-2
MO6-2
MP6-2
MR6-2



MB6-1
MG6-1
MN6-1



MB6-2
MG6-2
MN6-2

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White - Type H Reflective
   Message - Black

   MB6-1 and MB6-2 Background - Blue
   Message - White - Type H Reflective

   MG6-1 and MG6-2 Background - Green
   Message - White - Type H Reflective

   MK6-1 and MK6-2 Background - Green
   Message - White - Type H Reflective

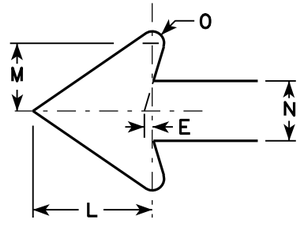
   MM6-1 and MM6-2 Background - White - Type H Reflective
   Message - Green

   MN6-1 and MN6-2 Background - Brown
   Message - White - Type H Reflective

   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black

   MP6-1 and MP6-2 Background - White - Type H Reflective
   Message - Blue

   MR6-1 and MR6-2 Background - Brown
   Message - Yellow - Type H Reflective



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2						3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25

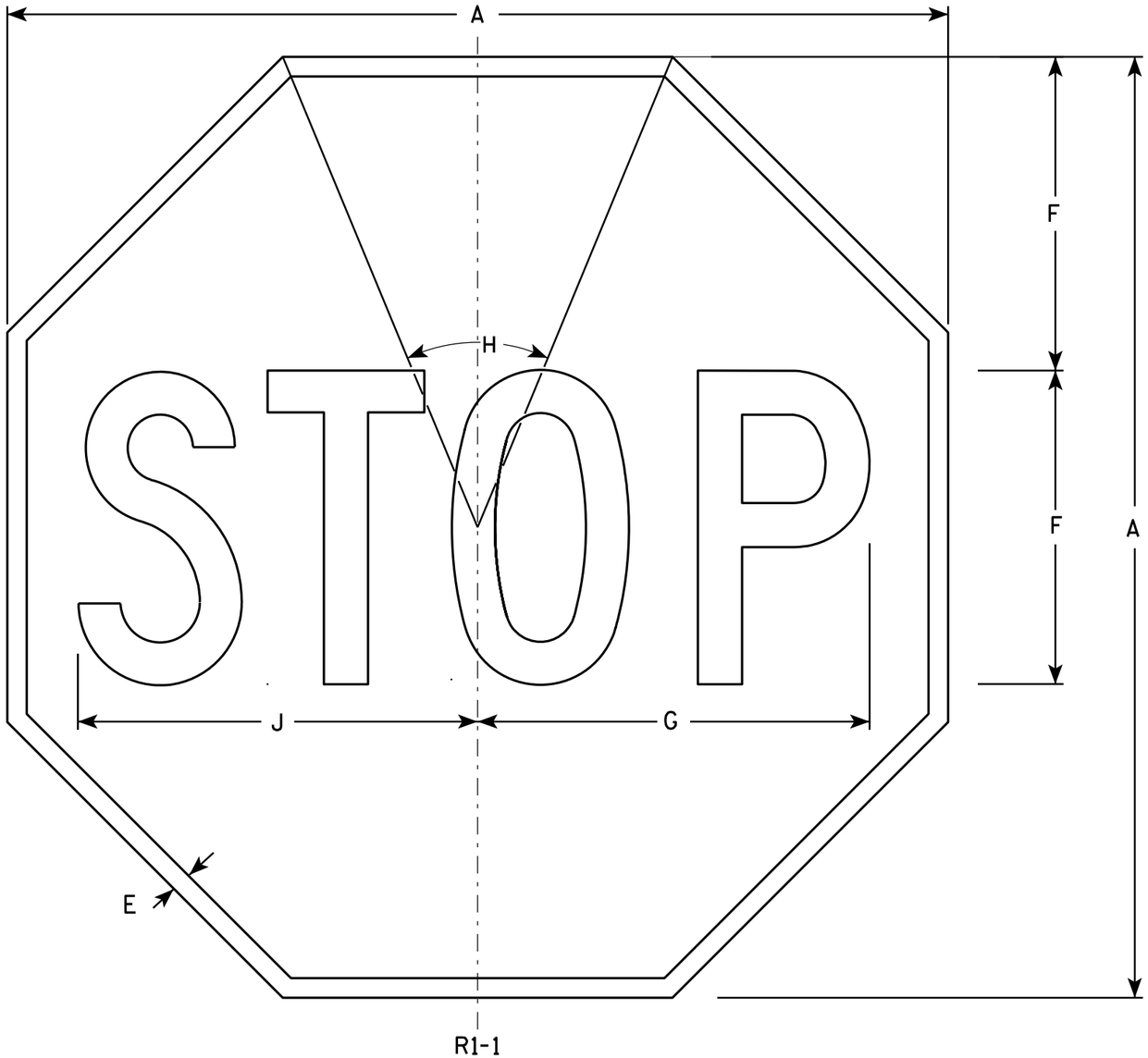
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M6-1.13

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 111	E



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

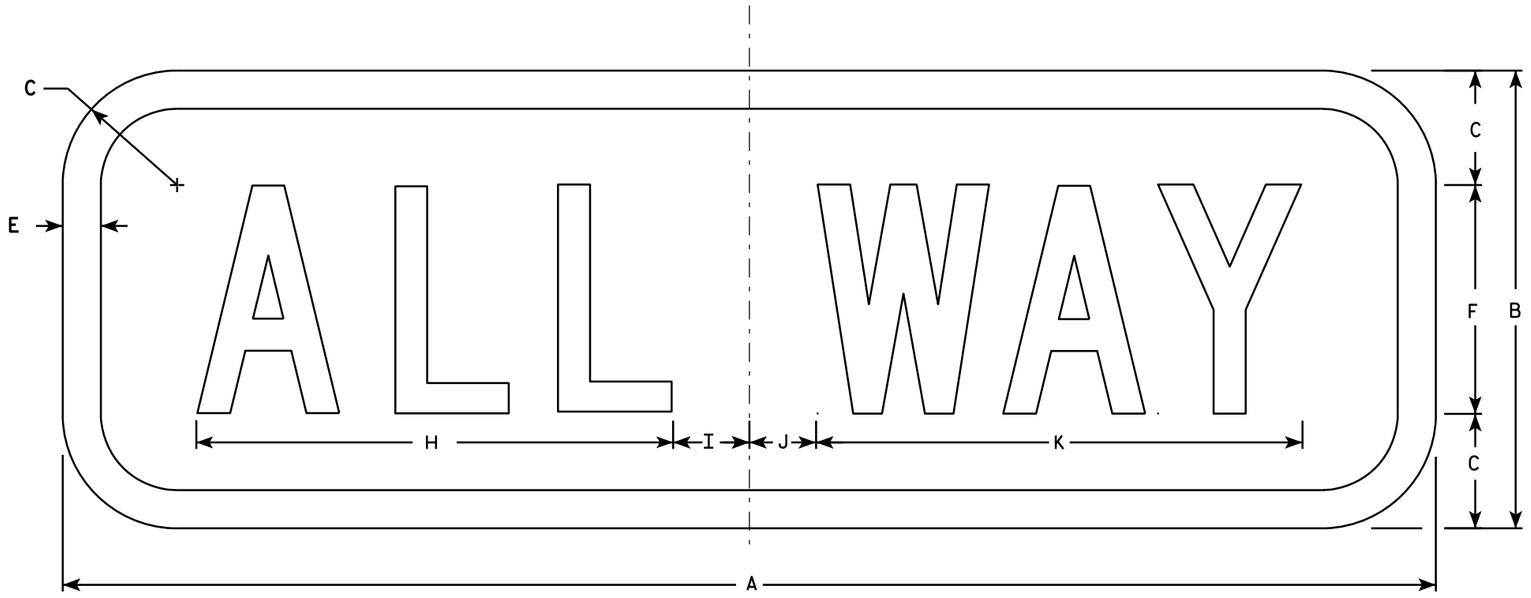
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 112	E



R1-3P

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																0.75
2S	18	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																1.5
2M	24	9	1 1/2		1/2	5		9 1/4	1 1/4	3/4	9 3/4																1.5
3	30	12	2 1/4		5/8	6		11	2 1/4	1 1/2	11 3/4																2.5
4																											
5																											

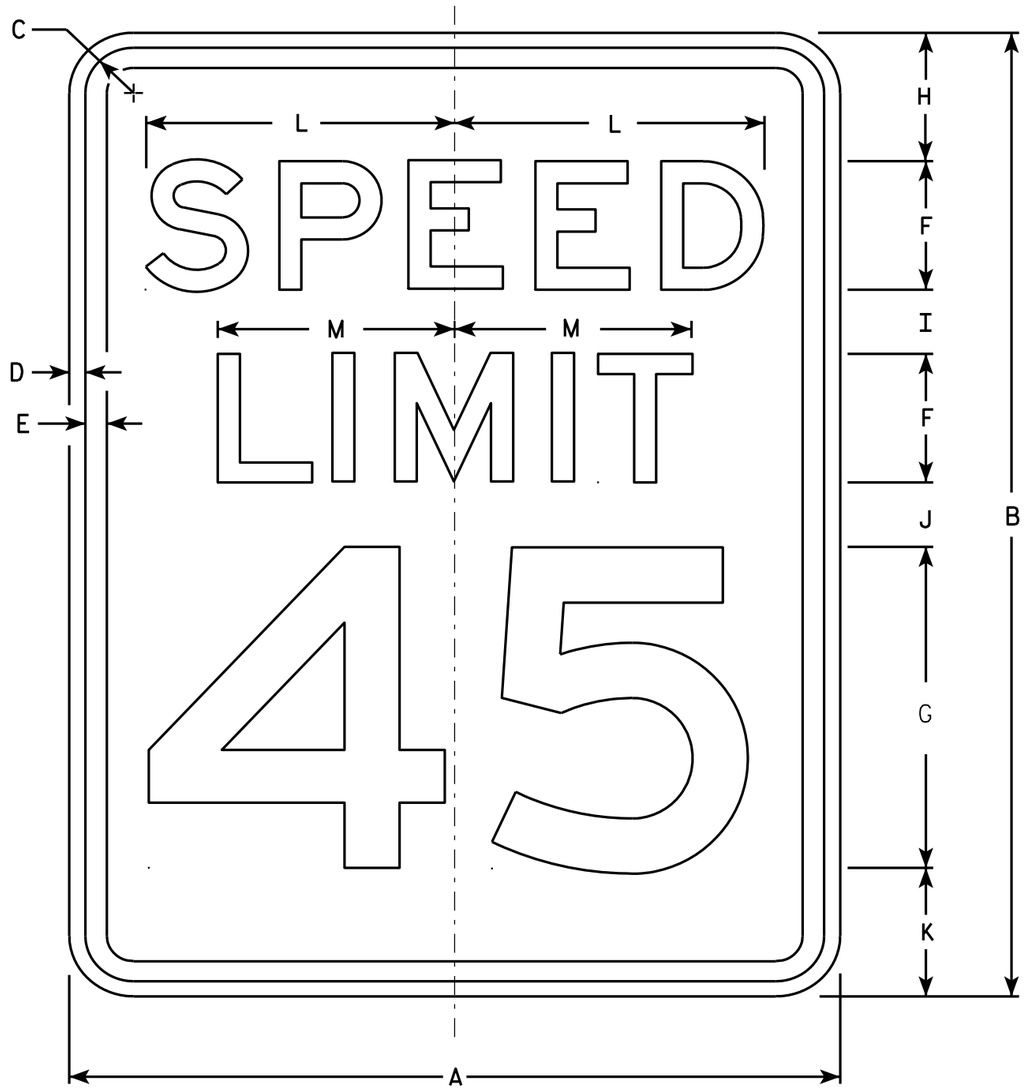
STANDARD SIGN
R1-3P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/02/10 PLATE NO. R1-3P.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 113	E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

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

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

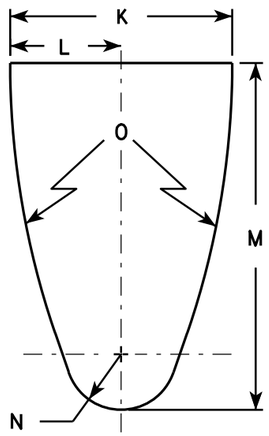
APPROVED Matthew R Rauch
for State Traffic Engineer

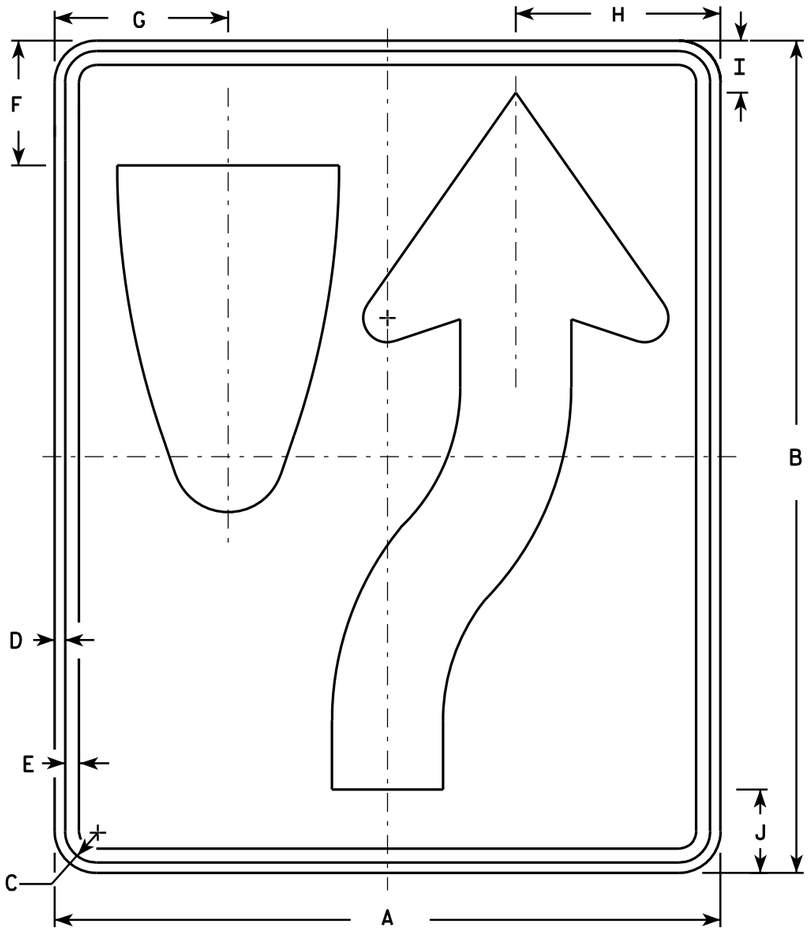
DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 114 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R21.DGN PLOT DATE : 28-MAY-2010 08:32 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 4.717577:1.000000

WISDOT/CADDS SHEET 42

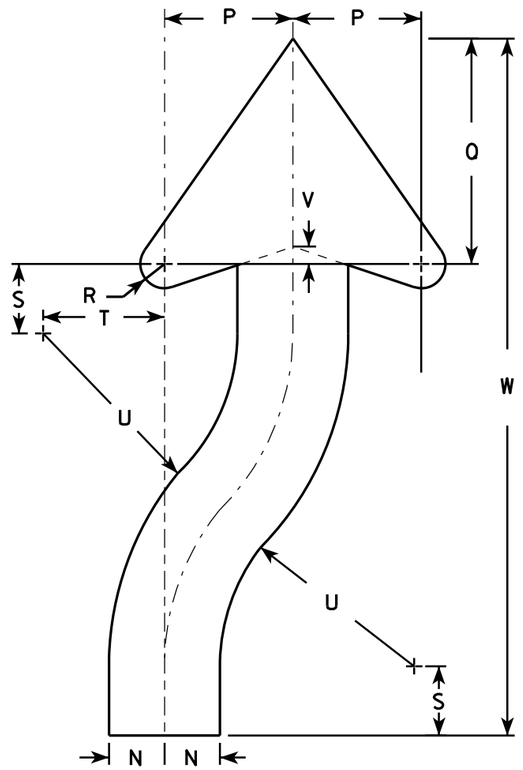




R4-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
   Background - White
   Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

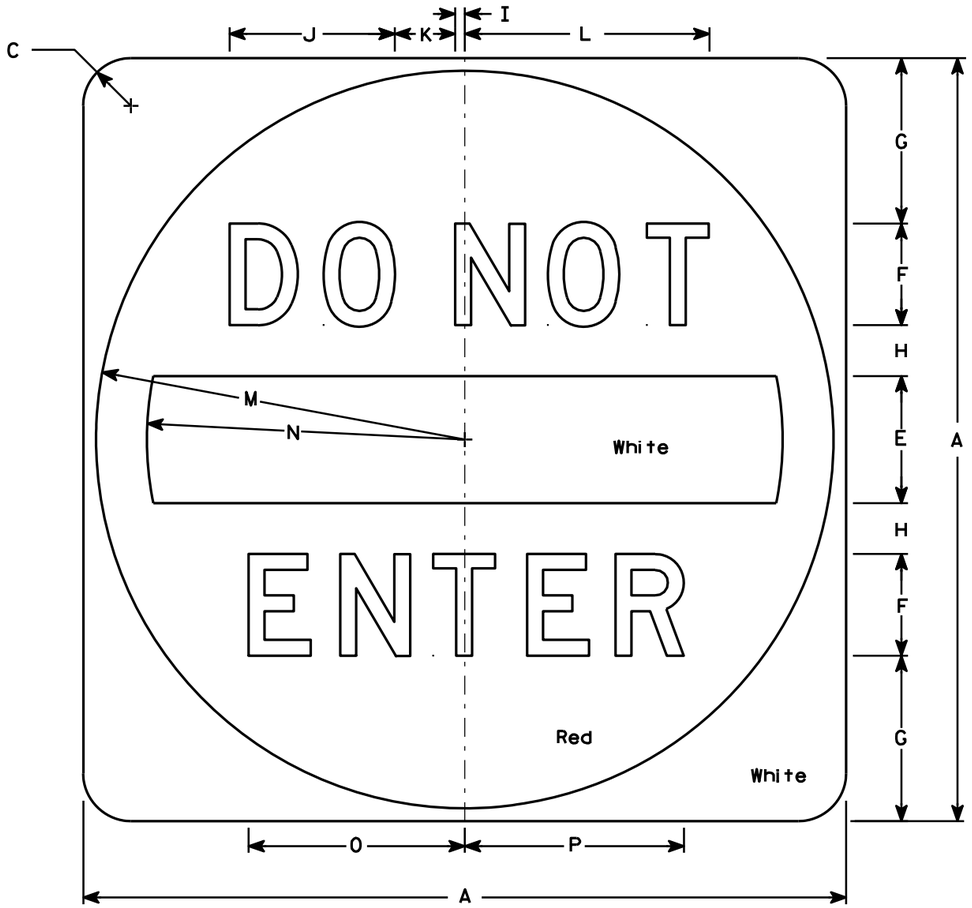
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 115	E



R5-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See detail
   Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but when base material is metal, the cornors shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8											6.26
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8											16.0

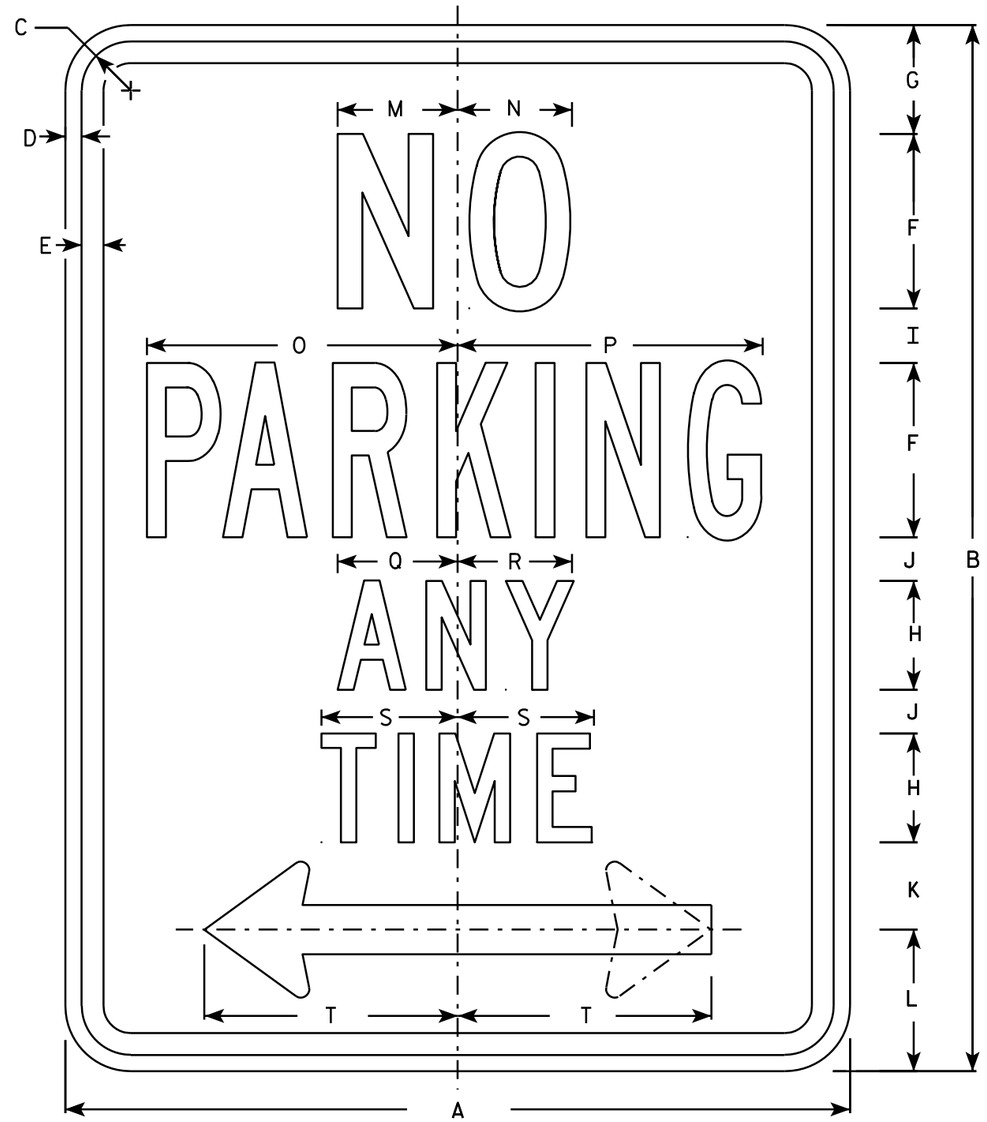
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15

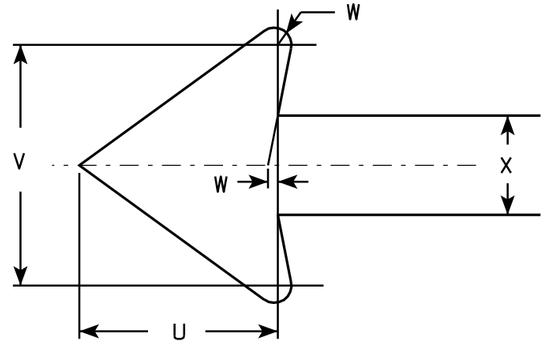
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 116 | E



R7-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Red
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
   R7-1L (left arrow)
   R7-1R (right arrow)



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

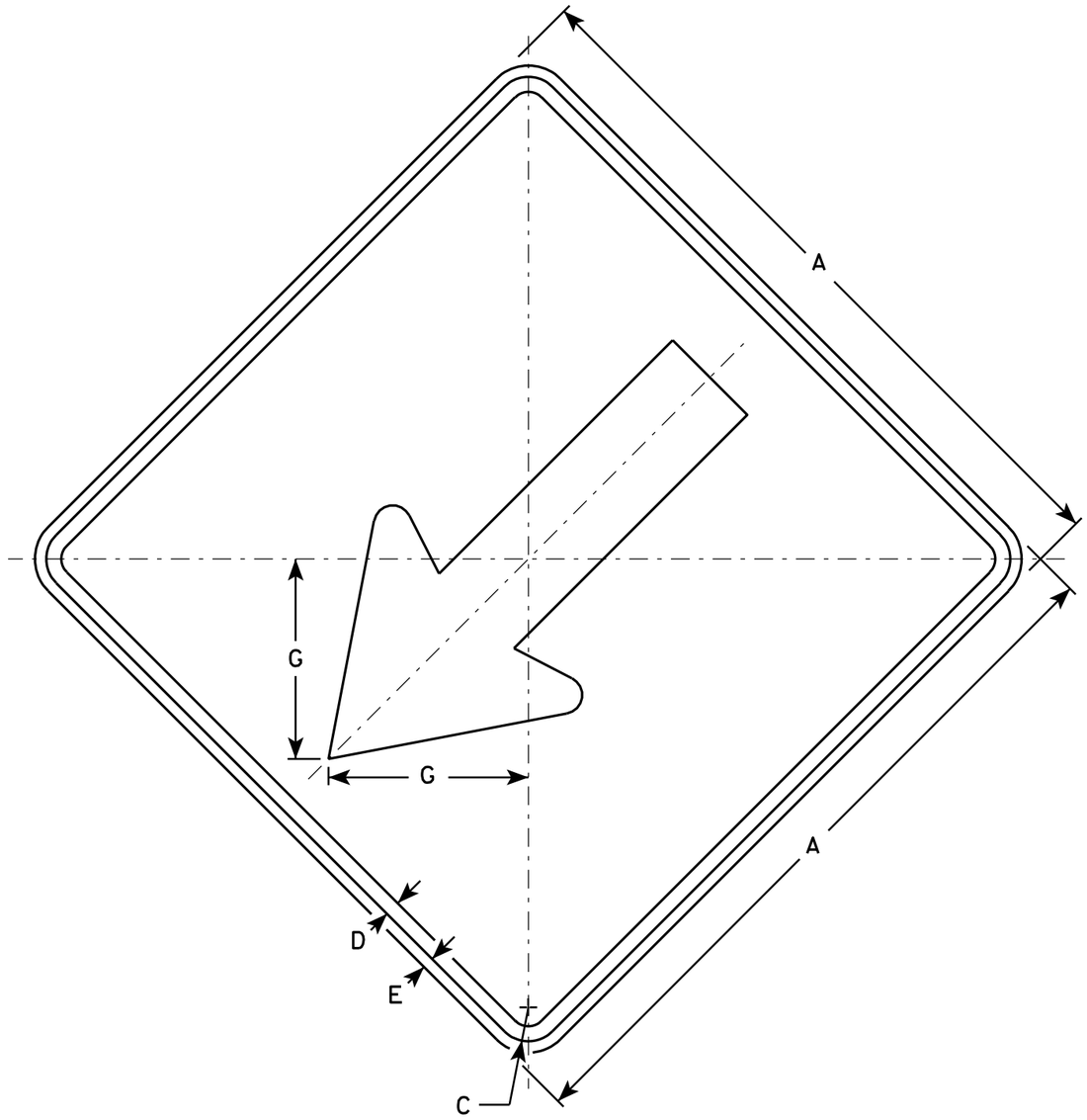
STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

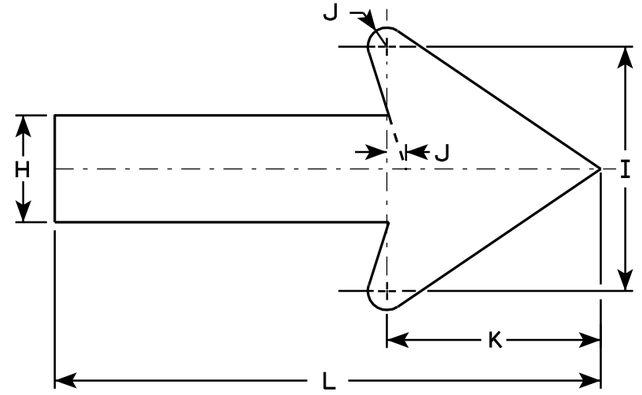
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 117	E



W12-1

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	1/2	3/8		6 5/8	3 1/2	8	5/8	7	18															4
2M	24		1 1/8	1/2	3/8		6 5/8	3 1/2	8	5/8	7	18															4
3	30		1 3/8	5/8	1/2		8 1/4	4 3/8	10	3/4	8 3/4	22 3/8															6.25
4	36		1 3/4	3/4	5/8		10 3/8	5 1/2	12 1/2	1	11	27 7/8															9.0
5	48		2 1/4	3/4	1		12 1/2	6 5/8	15	1 1/4	13 1/4	33 1/2															16

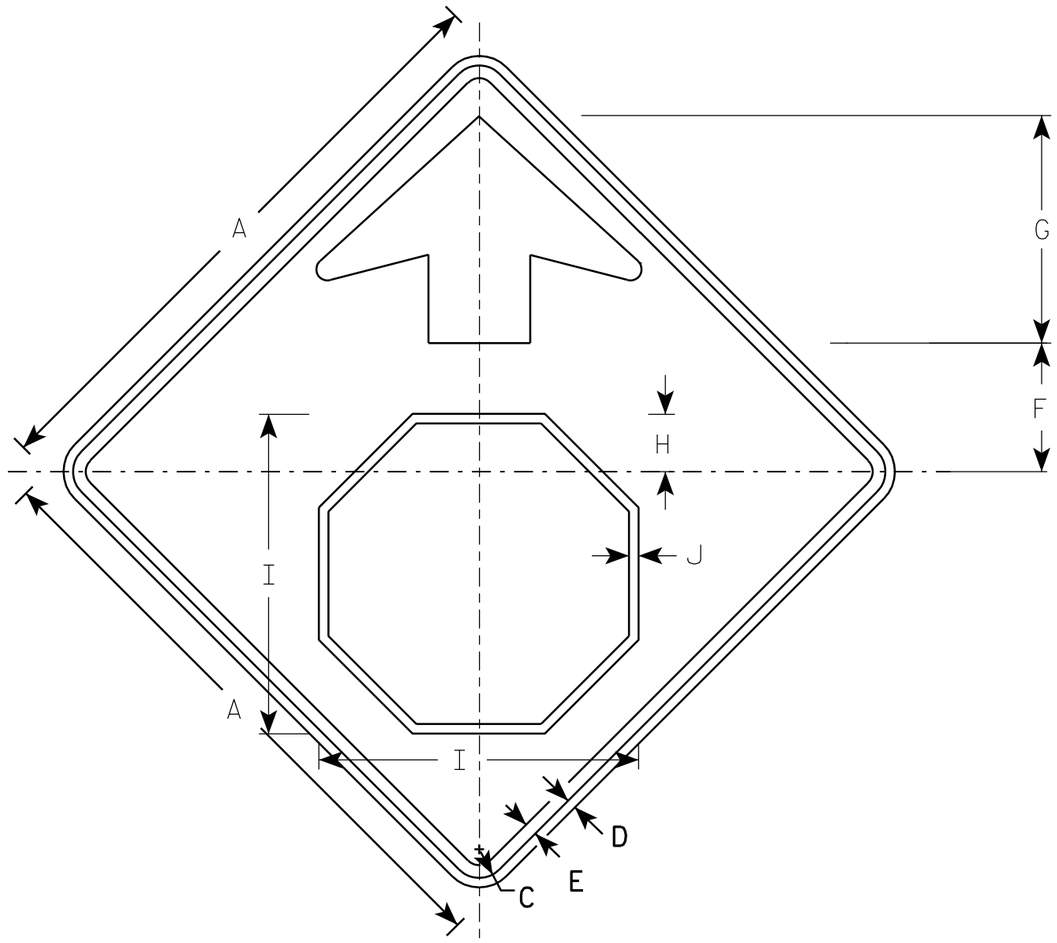
STANDARD SIGN
W12-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W12-1.12

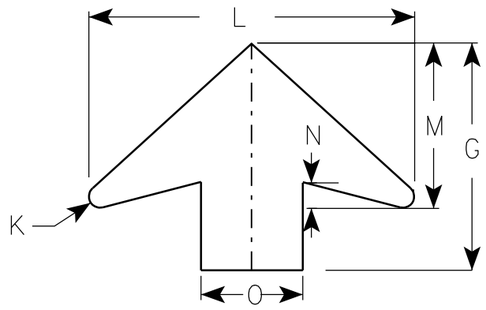
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 118 | E



W3-1

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

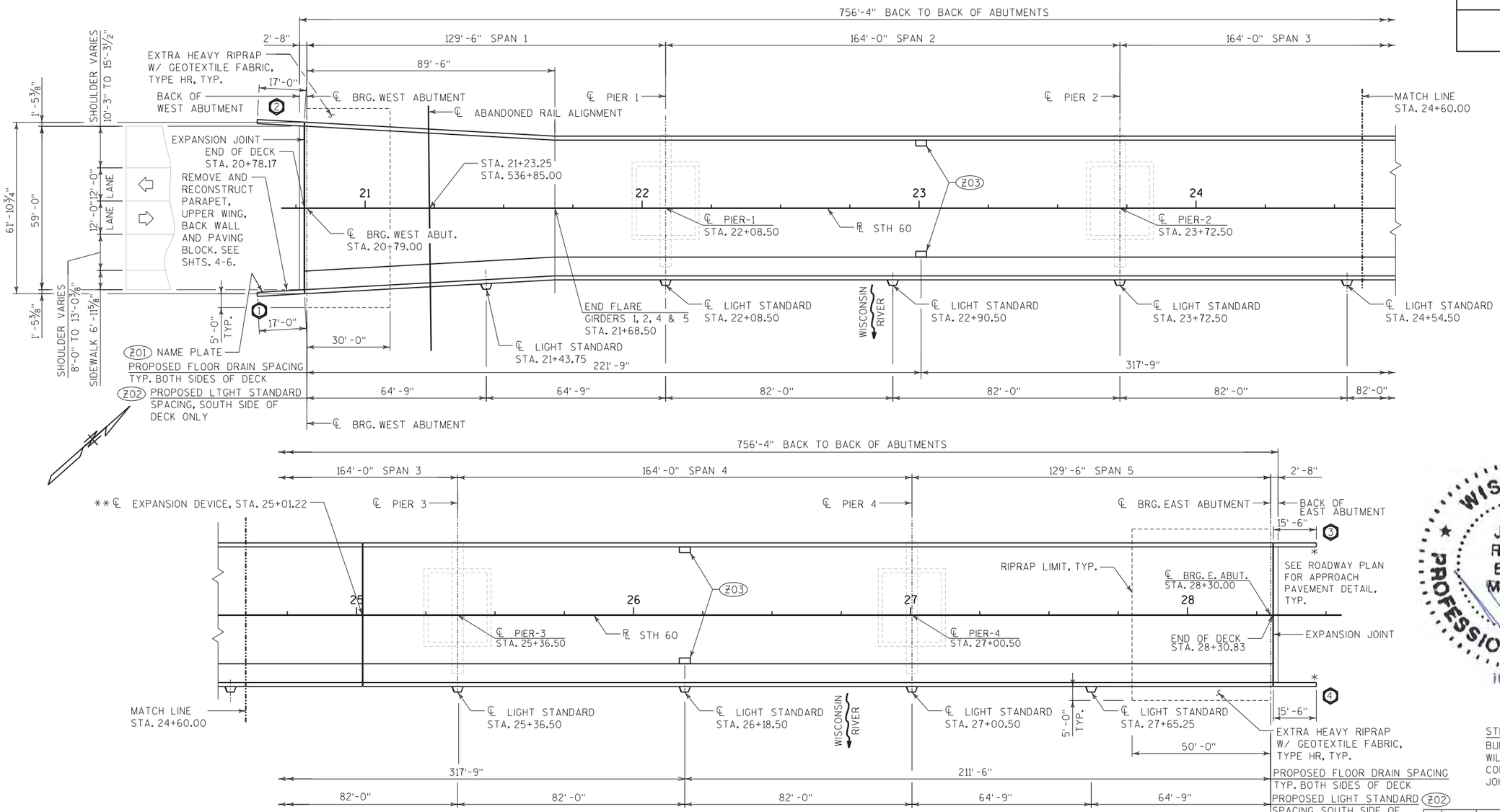
DATE 6/7/10 PLATE NO. W3-1.12

PROJECT NO:

SHEET NO: 119 E

STATE PROJECT NUMBER

5271-01-71



PLAN

(DECK REPLACEMENT)
5-SPAN STEEL DECK GIRDER

DESIGN DATA

LIVE LOAD:
- INVENTORY RATING — HS 13
- OPERATIONAL RATING — HS 21
- WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) — 190 KIPS

ULTIMATE DESIGN STRESSES (NEW WORK):
- CONCRETE MASONRY SLAB f 'c — 4,000 PSI
- ALL OTHER f 'c — 3,500 PSI
- HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) Fy — 60,000 PSI

ULTIMATE DESIGN STRESSES (EXISTING WORK):
- EXISTING CONCRETE MASONRY, GRADE "AA" f 'c — 1,400 PSI
- EXISTING STRUCTURAL CARBON STEEL fy — 36 KSI ASSUMED PER W.B.M. 45.5
- EXISTING BAR STEEL REINFORCEMENT fy — 33 KSI ASSUMED PER W.B.M. 45.5
- n — 10

THE DECK REPLACEMENT IS DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD 4TH EDITION. THE BRIDGE RATINGS ARE BASED ON THE AASHTO LOAD FACTOR RATING (LFR) METHOD, AASHTO MANUAL FOR BRIDGE EVALUATION , SECOND EDITION, 2011

LEGEND

- (X) INDICATES WING NUMBER
- * PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT
- ** EXPANSION DEVICE LOCATION AT 65° F.
- Z01 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.
- Z02 SEE SHT. 23 FOR LIGHT STD. AND ANCHORAGE DETAILS, LIGHT POLES AND FIXTURES ARE ROADWAY BID ITEMS.
- Z03 TYPE H FLOOR DRAIN, SEE SHT. 19 FOR DETAILS.

TRAFFIC VOLUME

STH 60
A.D.T. (2008) = 6,600
A.D.T. (2034) = 8,200
DESIGN SPEED = 45 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS-SECTIONS
3. ELEVATION, NOTES, & QUANTITIES
4. WEST ABUTMENT
5. EAST ABUTMENT
6. WINGWALL ELEVATIONS
7. SUPERSTRUCTURE CROSS-SECTION
8. SUPERSTRUCTURE CROSS-SECTION DETAILS
9. SUPERSTRUCTURE 1
10. SUPERSTRUCTURE 2
11. SUPERSTRUCTURE 3
12. SUPERSTRUCTURE 4
13. SUPERSTRUCTURE 5
14. SUPERSTRUCTURE ELEVATIONS
15. SUPERSTRUCTURE DIAGRAMS
16. STRIP SEAL EXPANSION JOINT DETAILS
17. STRIP SEAL COVER PLATE DETAILS
18. MODULAR EXPANSION JOINT DETAILS
19. COVER PLATES FOR SIDEWALK AND 32SS PARAPET AT MODULAR JOINT
20. FLOOR DRAIN TYPE "H"
21. SINGLE SLOPE PARAPET 32SS
22. TYPE C3 STEEL RAILING
23. LIGHTING DETAIL

WISCONSIN
JOHN F. RUBLEIN
E-38700
MADISON
WI
PROFESSIONAL ENGINEER
11/20/13

STRUCTURES DESIGN CONTACTS
BUREAU OF STRUCTURES:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
JOHN RUBLEIN (608) 229-1434

NO.	DATE	REVISION	BY

DAAR ENGINEERING, INC.
www.daarcorp.com
Madison, WI 53703
608-249-0140

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher 11/27/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-11-19

STH 60 OVER THE WISCONSIN RIVER

COUNTY	TOWN
SAUK/COLUMBIA	PRAIRE DU SAC/WEST POINT

DESIGN SPEC.
REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JFR	ACT	TRW	JFR

GENERAL PLAN

SHEET 120 OF 23

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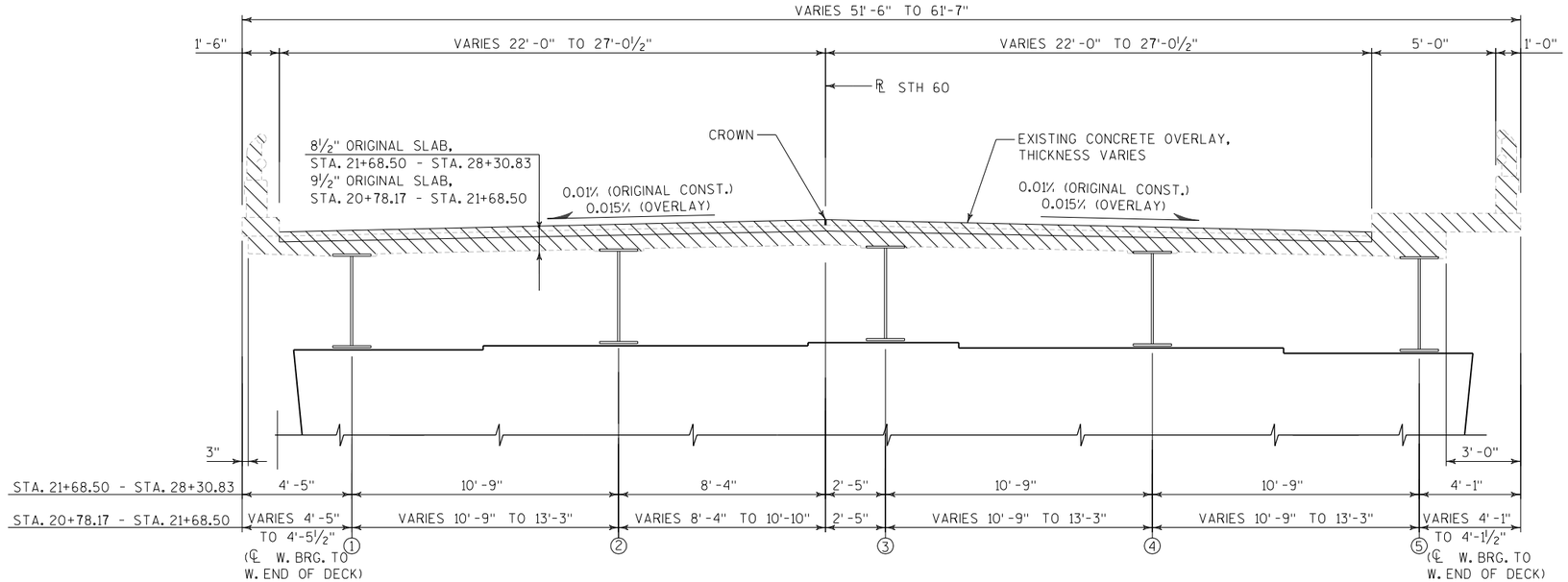
11/20/2013

STATE PROJECT NUMBER
5271-01-71



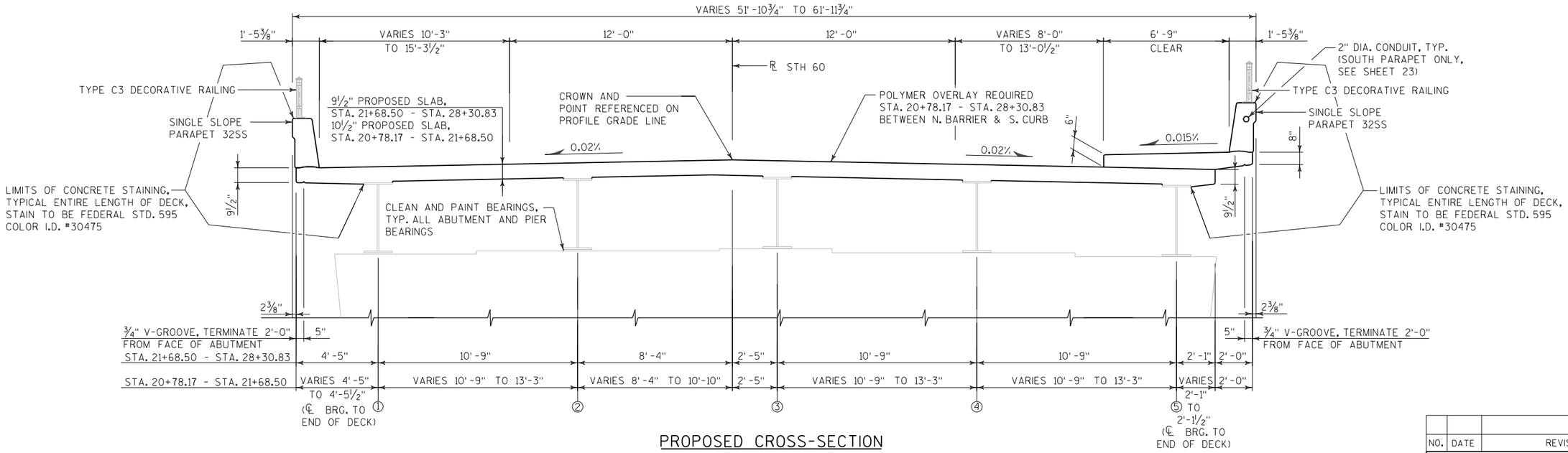
EXISTING CROSS-SECTION

(LOOKING EAST, SHOWING DECK, PARAPET AND RAILING REMOVAL)

LEGEND

DENOTES AREAS OF EXISTING STRUCTURE TO BE REMOVED. ALL OTHER ELEMENTS TO BE PRESERVED AND INCORPORATED INTO NEW WORK. SEE SHTS. 4 & 5 FOR FURTHER REMOVAL INFORMATION.

Ⓧ INDICATES GIRDER NUMBER.



PROPOSED CROSS-SECTION

(LOOKING EAST)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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CROSS-SECTIONS

SHEET 121 2 OF 23

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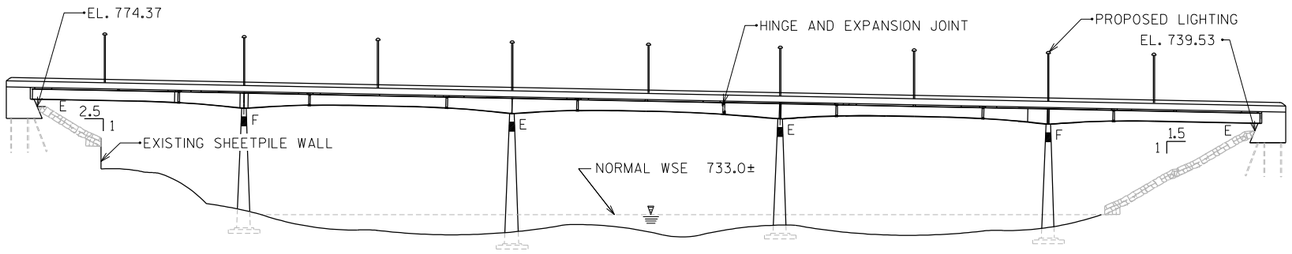
5271-01-71



ELEVATION

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER	TOTAL
203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-11-19	LS	-	-	-	1
203.0700.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH DEBRIS CAPTURE SYSTEM STA. 24+54.50	LS	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-11-19	LS	-	-	-	1
210.0100	BACKFILL STRUCTURE	CY	124	99	-	223
502.0100 *	CONCRETE MASONRY BRIDGES	CY	41	35	1468	1544
502.3100	EXPANSION DEVICE B-11-19	LS	-	-	1	1
502.3110.S	EXPANSION DEVICE MODULAR STRUCTURE B-11-19	LS	-	-	1	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	622	622
502.5010	MASONRY ANCHORS TYPE L NO. 6 BARS	EACH	206	178	-	384
505.0605 *	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	5193	4514	363765	373480
509.5100.S	POLYMER OVERLAY	SY	-	-	3584	3584
514.0460	FLOOR DRAINS TYPE H	EACH	-	-	4	4
514.2625	DOWNSPOUTS 6-INCH	LF	-	-	32	32
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	21	18	-	39
517.0900.S	PREPARATION AND COATING OF TOP FLANGES B-11-19	LS	-	-	-	1
517.1010.S	CONCRETE STAINING B-11-19	SF	297	271	11173	11741
517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE B-11-19	LS	-	-	-	1
517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-11-19	LS	-	-	-	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	-	-	1	1
606.0400	RIPRAP EXTRA-HEAVY	CY	180	281	-	461
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	60	60	-	120
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	90	75	-	165
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	2	-	2
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	288	451	-	739
652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	-	-	21	21
652.0225	CONDUIT NONMETALLIC SCHEDULE 40 2-INCH	LF	-	-	772	772
653.0222	JUNCTION BOX 18X12X6-INCH	EACH	-	-	9	9
657.6005.S	ANCHOR ASSEMBLIES LIGHT POLES ON STRUCTURES	EACH	-	-	9	9
SPV.0060.01	CLEANING AND PAINTING BEARINGS	EACH	-	-	30	30
SPV.0105.01	RAILING STEEL TYPE C3 GALVANIZED B-11-19	LS	-	-	1	1
	NON-BID ITEMS					
	FILLER	SIZE	-	-	-	1/2" & 3/4"

ALL BID ITEMS ARE CATEGORY 0020

* ALL CONCRETE AND REINFORCEMENT FOR THE PARAPETS IS INCLUDED WITH THE SUPERSTRUCTURE QUANTITIES.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

BEVEL EXPOSED CONCRETE EDGES 3/4" MIN. UNLESS NOTED OTHERWISE.

THE EXISTING STRUCTURE (B-11-19) IS A FIVE-SPAN, CONTINUOUS PLATE STEEL GIRDER BRIDGE WITH AN OVERALL LENGTH OF 756.33 FT. THE DECK AND PARAPETS ARE TO BE REPLACED.

THE PROPOSED REHABILITATION INCLUDES DECK REPLACEMENT, JOINT REPLACEMENT, POLYMER OVERLAY, REPLACEMENT OF ABUTMENT BACKWALLS, UPPER ABUTMENT WINGWALLS, AND PARAPETS ON ABUTMENTS, RIPRAP SLOPE PROTECTION, SUPERSTRUCTURE PAINTING, AND CLEANING AND PAINTING ALL BEARINGS. ALL PAINTING SHALL BE FEDERAL STD 595B COLOR ID #30475.

DIMENSIONS SHOWN ARE BASED ON ORIGINAL CONSTRUCTION DRAWINGS.

MINIMUM CONCRETE GIRDER HAUNCH OF 3 1/2" IS USED FOR RATING AND DESIGN CALCULATIONS. THE HAUNCH CONCRETE QUANTITY IS BASED ON AN AVERAGE DEPTH OF 2" WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE CONTRACTOR WILL BE PAID.

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

AT ABUTMENTS, ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

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

EXISTING ABUTMENTS AND PIERS TO REMAIN IN PLACE AS SHOWN AND INCORPORATED INTO NEW CONSTRUCTION.

INCORPORATE EXISTING BAR STEEL INTO NEW WORK WHERE SHOWN.

ALL CONCRETE REMOVAL LIMITS SHALL BE DEFINED BY A 1" DEEP SAW CUT.

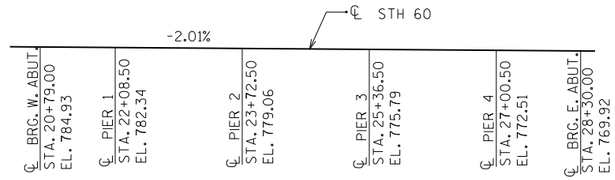
VARIATIONS TO THE NEW GRADE LINE OVER 1/4" MUST BE SUBMITTED TO THE STRUCTURE DESIGN SECTION FOR REVIEW.

EXISTING UTILITIES ATTACHED TO DECK OR SUPERSTRUCTURE SHALL BE PROTECTED DURING DECK REMOVAL, AND RELOCATED/REPLACED TO PERMIT PAINTING OF GIRDER ATTACHMENT POINTS. UTILITIES ARE NOT TO BE ATTACHED TO THE NEW DECK.

ALL HAUNCH HEIGHTS SHALL BE VERIFIED PRIOR TO FABRICATION OF S436 HAUNCH REINFORCEMENT BARS TO ENSURE CORRECT QUANTITY IS PROCURED.

TEMPORARY RELOCATION AND REATTACHMENT OF UTILITY LINES ATTACHED TO THE BRIDGE IS REQUIRED AS PART OF THIS CONTRACT. THIS WORK IS TO BE PAID FOR AS PART OF ROADWAY BID ITEMS SPV.0105.04, SPV.0105.05 AND SPV.0105.06. SEE ROADWAY SPECIAL PROVISIONS FOR DETAILS. DRILLING OR CUTTING OF BRIDGE COMPONENTS FOR UTILITY REMOVAL, RELOCATION, OR INSTALLATION IS NOT ALLOWED.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND ROADWAY FACE OF PARAPETS. DO NOT APPLY PROTECTIVE SURFACE TREATMENT TO AREAS RECEIVING POLYMER OVERLAY.



PROFILE GRADE LINE STH 60

BENCH MARKS

NO.	LOCATION	DESCRIPTION	ELEVATION
1000	SEC. 36, TION, R6E	CHISELED □, NW CORNER OF B-11-19	785.38
1003	SEC. 36, TION, R6E	METAL DISK, SW CORNER OF B-11-87	764.29
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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

DRAWN BY TRW | PLANS CK'D. JFR

ELEVATION, NOTES, & QUANTITIES

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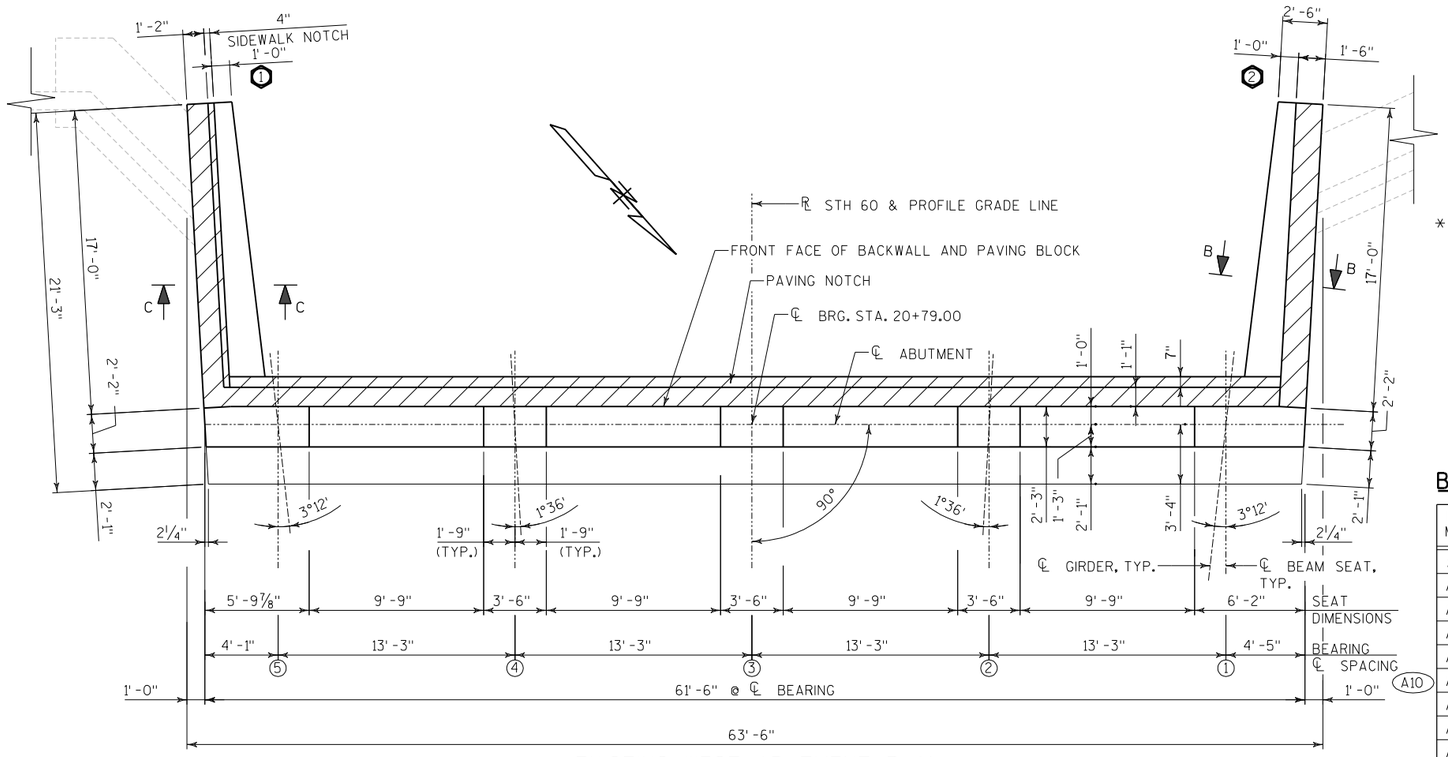
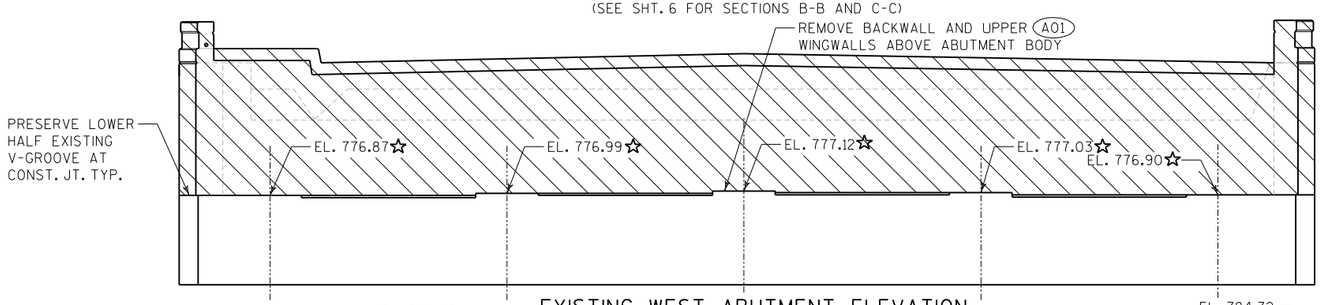
STATE PROJECT NUMBER

5271-01-71



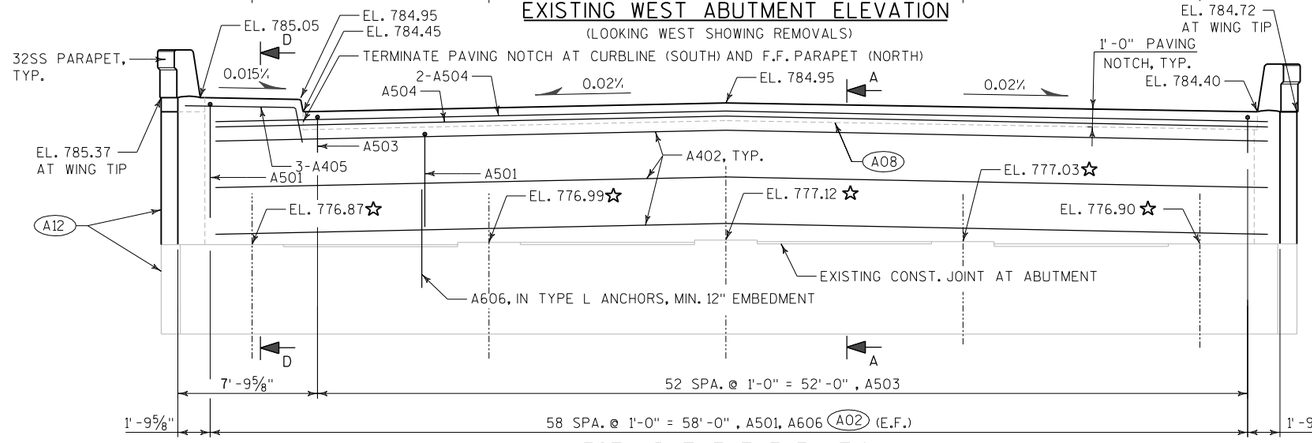
EXISTING WEST ABUTMENT PLAN

(SEE SHT. 6 FOR SECTIONS B-B AND C-C)



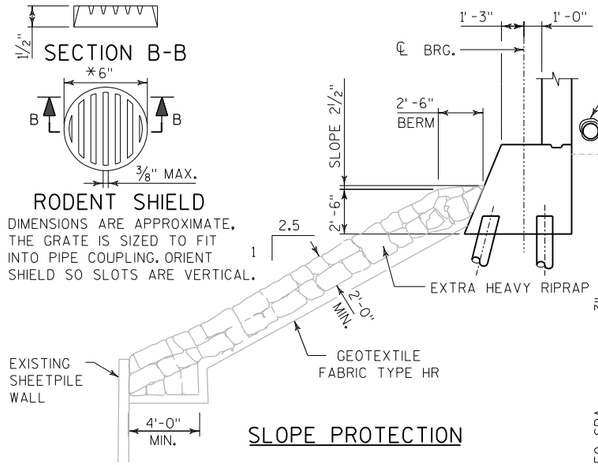
EXISTING WEST ABUTMENT ELEVATION

(LOOKING WEST SHOWING REMOVALS)

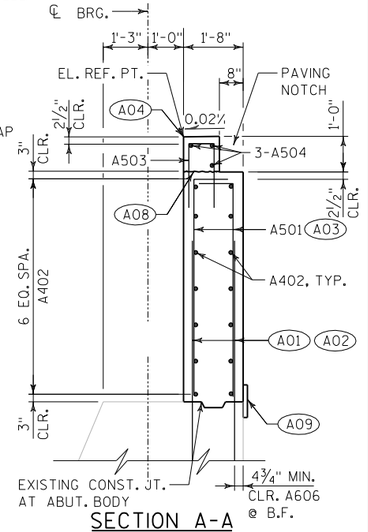


WEST ABUTMENT ELEVATION

(LOOKING WEST SHOWING RECONSTRUCTION)



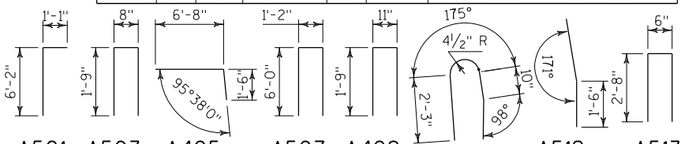
SLOPE PROTECTION



SECTION A-A

BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
A501	X	118	7'-2"	X	---	BACKWALL, VERT.
A402	X	14	61'-1"	-	---	BACKWALL, HORIZ.
A503	X	53	3'-11"	X	---	PAVING BLOCK, VERT.
A504	X	3	52'-6"	-	---	PAVING BLOCK, HORIZ.
A405	X	3	8'-1"	X	---	BACKWALL AT SIDEWALK, HORIZ.
A606	X	206	5'-6"	-	---	WINGWALLS, VERT.
A507	X	46	12'-11"	X	---	WINGWALLS, VERT.
A408	X	32	16'-8"	-	---	WINGWALLS, HORIZ.
A409	X	46	4'-4"	X	---	WINGWALLS, VERT.
A610	X	4	16'-8"	-	---	WINGWALLS, HORIZ.
A511	X	26	5'-10"	X	---	WINGWALLS, PARAPET TIES
A512	X	24	3'-0"	X	---	WINGWALLS, PARAPET TIES
A513	X	34	5'-7"	X	---	WINGWALLS, PARAPET TIES



NOTES & LEGEND

(A01) CUT AND PRESERVE EXISTING VERTICAL REINF. 4'-6" MIN. ABOVE ABUTMENT/WING BODY.

(A02) SPACE A606 BETWEEN EXISTING VERTICAL BARS.

(A03) TIE A501/B501 BARS INTO EXISTING VERTICAL REINF. AT EXISTING SPACING.

(A04) SEE JOINT DETAIL SHTS. 16 & 17.

(A08) CONST. JOINT STRIKE-OFF AS SHOWN AND LEAVE ROUGH.

(A09) 18" RUBBERIZED MEMBRANE WATERPROOFING, TYPICAL ALL SOIL-RETAINING CONST. JOINTS.

(A10) CONCRETE MASONRY ANCHOR, TYPE L NO. 6 BAR, EMBEDDED 12" IN CONCRETE.

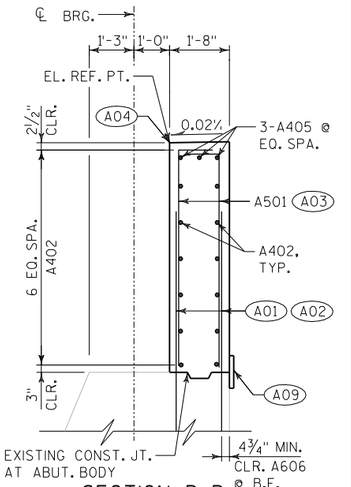
(A12) CONCRETE STAINING, TYP. EXPOSED SURFACES TO 1'-0" BELOW FINISHED GRADE OF ABUTMENT WINGS AND PARAPETS. TERMINATE AT OUTSIDE CORNER OF PARAPETS, TYP. STAIN TO BE FEDERAL COLOR STD. 595 I.D. #30475

☆ SEE GENERAL NOTES FOR INFORMATION ABOUT EXISTING ELEVATIONS.

(X) INDICATES WING NUMBER

(X) INDICATES GIRDER NUMBER

DENOTES AREAS OF ABUTMENT TO BE REMOVED. OTHER ELEMENTS TO BE PRESERVED AND INCORPORATED INTO NEW WORK.



SECTION D-D

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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WEST ABUTMENT

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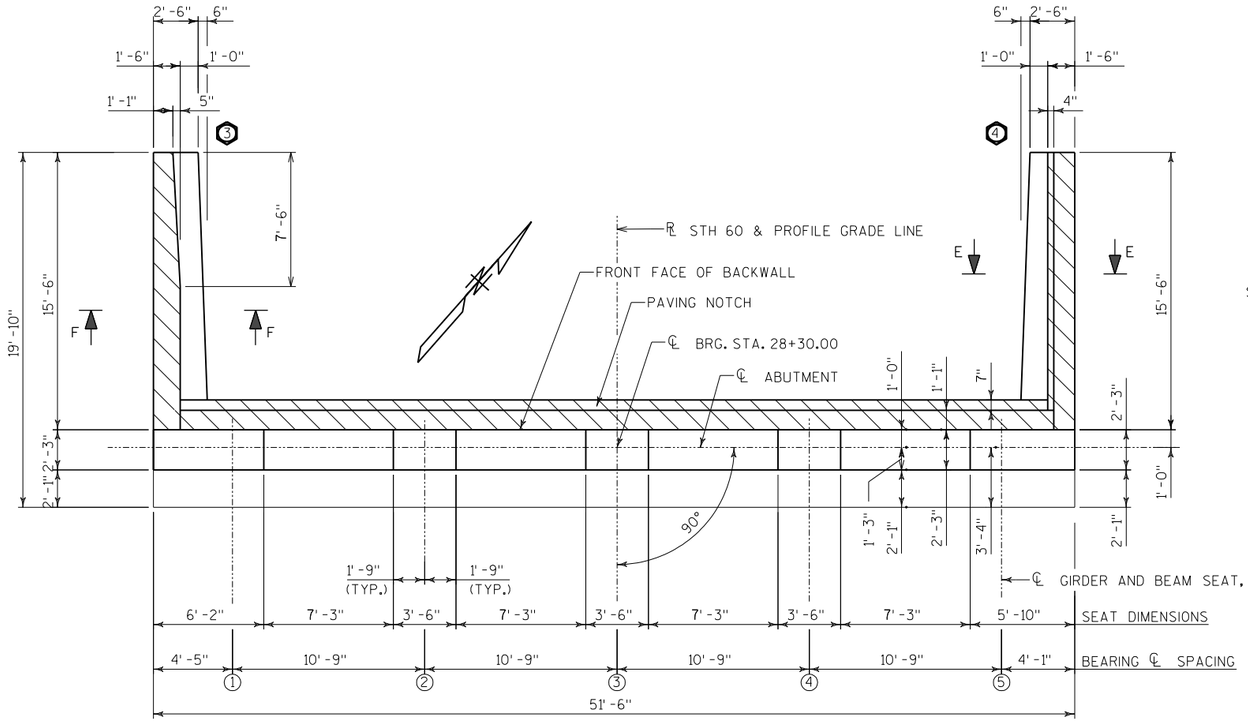
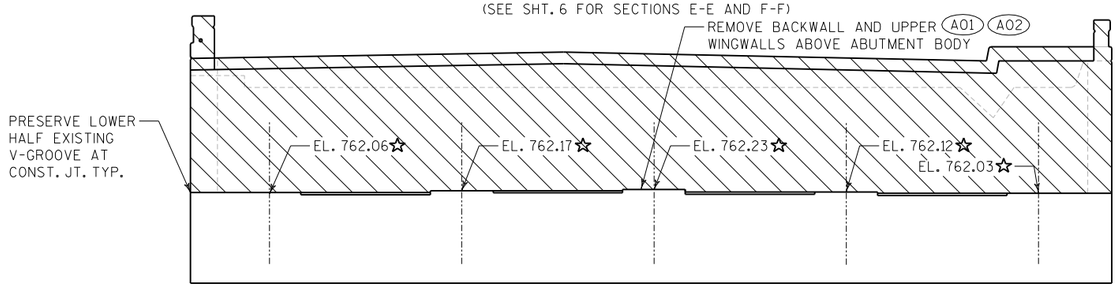


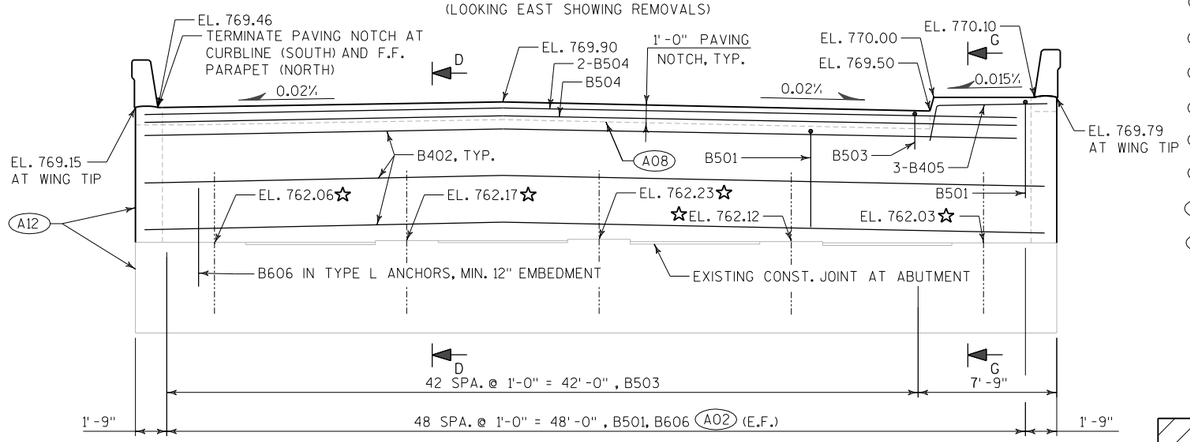
EAST ABUTMENT PLAN

(SEE SHT. 6 FOR SECTIONS E-E AND F-F)



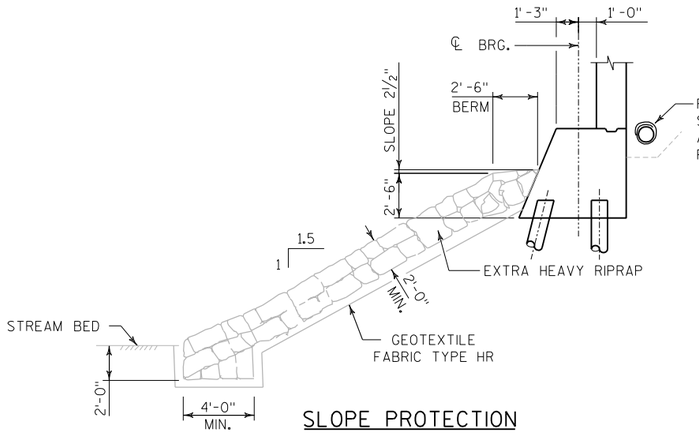
EXISTING EAST ABUTMENT ELEVATION

(LOOKING EAST SHOWING REMOVALS)



EAST ABUTMENT ELEVATION

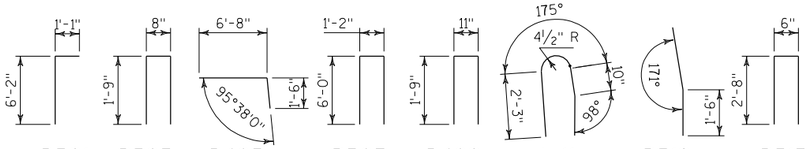
(LOOKING EAST SHOWING RECONSTRUCTION)



SLOPE PROTECTION

BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
B501	X	98	7'-2"	X	---	BACKWALL, VERT.
B402	X	14	51'-0"	-	---	BACKWALL, HORIZ.
B503	X	43	3'-11"	X	---	PAVING BLOCK, VERT.
B504	X	3	42'-3"	-	---	PAVING BLOCK, HORIZ.
B405	X	3	8'-1"	X	---	BACKWALL AT SIDEWALK, HORIZ.
(A10) B606	X	178	5'-6"	-	---	WINGWALLS, VERT.
B507	X	42	12'-11"	X	---	WINGWALLS, VERT.
B408	X	32	15'-2"	-	---	WINGWALLS, HORIZ.
B409	X	42	4'-4"	X	---	WINGWALLS, VERT.
B610	X	4	15'-2"	-	---	WINGWALLS, HORIZ.
B511	X	22	5'-10"	X	---	WINGWALLS, PARAPET TIES
B512	X	24	3'-0"	X	---	WINGWALLS, PARAPET TIES
B513	X	34	5'-7"	X	---	WINGWALLS, PARAPET TIES



NOTES & LEGEND

(A01) CUT AND PRESERVE EXISTING VERTICAL REINF. 4'-6" MIN. ABOVE ABUTMENT/WING BODY.

(A02) SPACE B606 BETWEEN EXISTING VERTICAL BARS.

(A03) TIE A501/B501 BARS INTO EXISTING VERTICAL REINF. AT EXISTING SPACING.

(A04) SEE JOINT DETAIL SHTS. 16 & 17.

(A08) CONST. JOINT STRIKE-OFF AS SHOWN AND LEAVE ROUGH.

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(A10) CONCRETE MASONRY ANCHOR, TYPE L NO. 6 BAR, EMBEDDED 12" IN CONCRETE.

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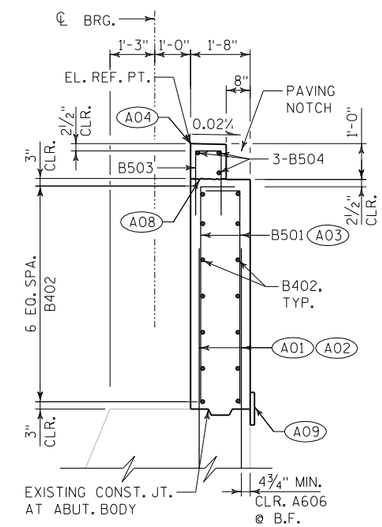
☆ SEE GENERAL NOTES FOR INFORMATION ABOUT EXISTING ELEVATIONS.

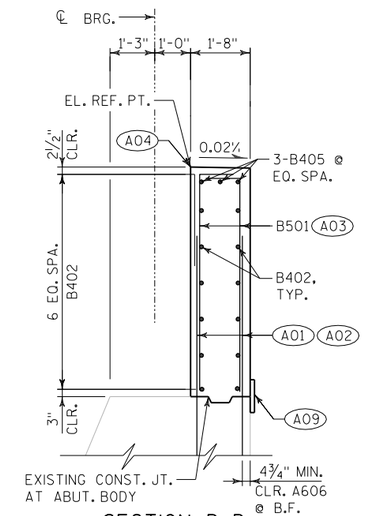
(X) INDICATES WING NUMBER

(X) INDICATES GIRDER NUMBER

DENOTES AREAS OF ABUTMENT TO BE REMOVED. OTHER ELEMENTS TO BE PRESERVED AND INCORPORATED INTO NEW WORK.



SECTION G-G



SECTION D-D

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

DRAWN BY TRW | PLANS CK'D. JFR

EAST ABUTMENT

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STATE PROJECT NUMBER

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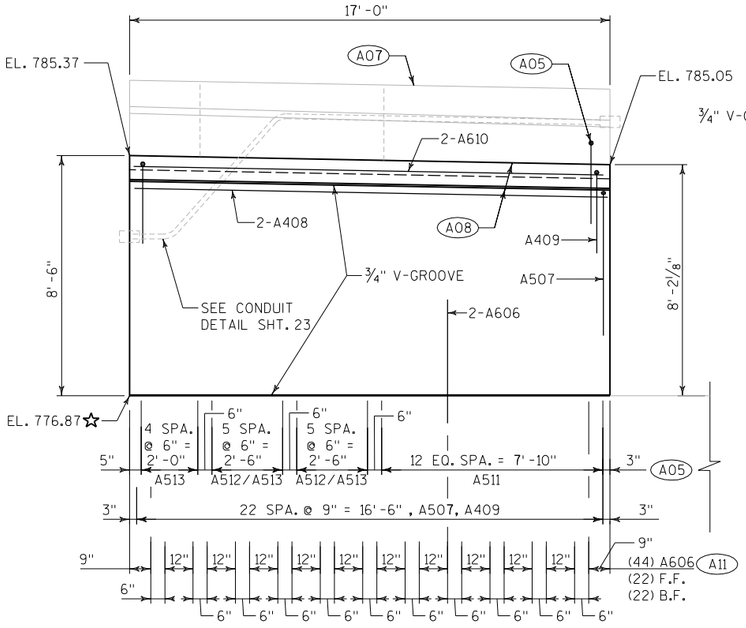
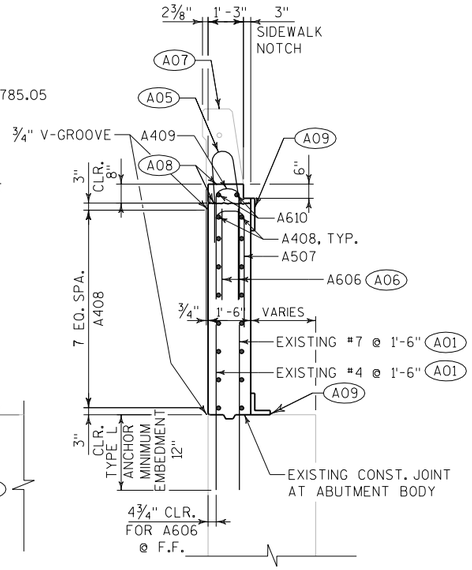
STATE PROJECT NUMBER

5271-01-71

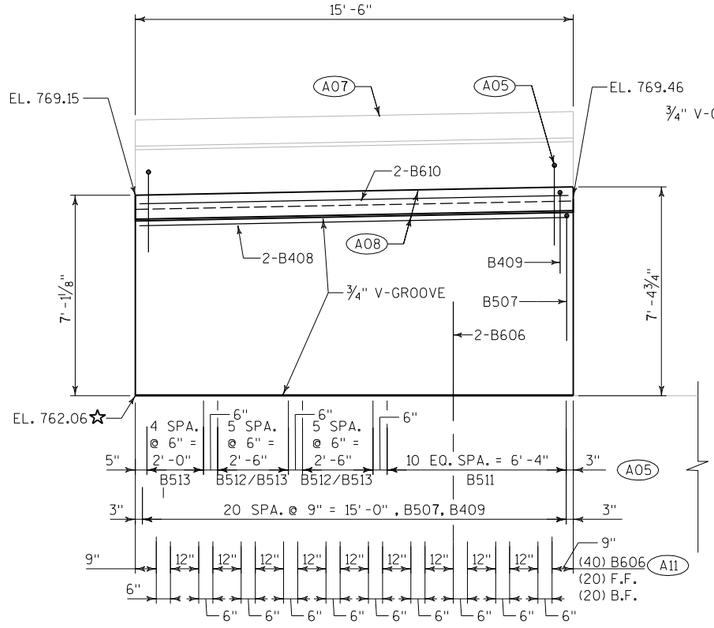


WING 1 OUTSIDE ELEVATION



SECTION C-C, RECONSTRUCTION

(WING 1)



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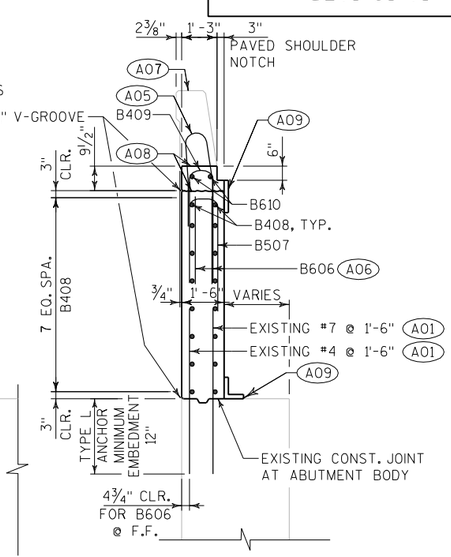
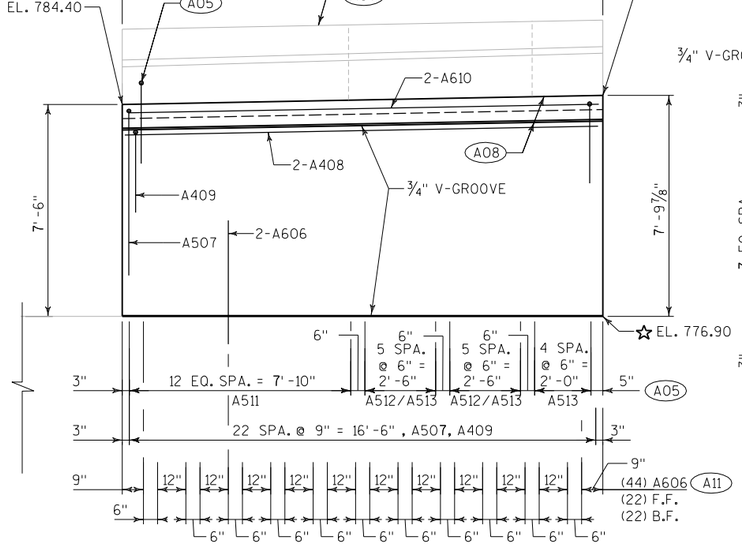
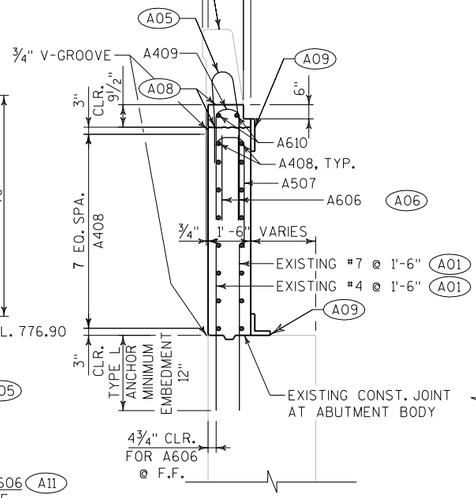


SECTION F-F, RECONSTRUCTION

(WING 3)

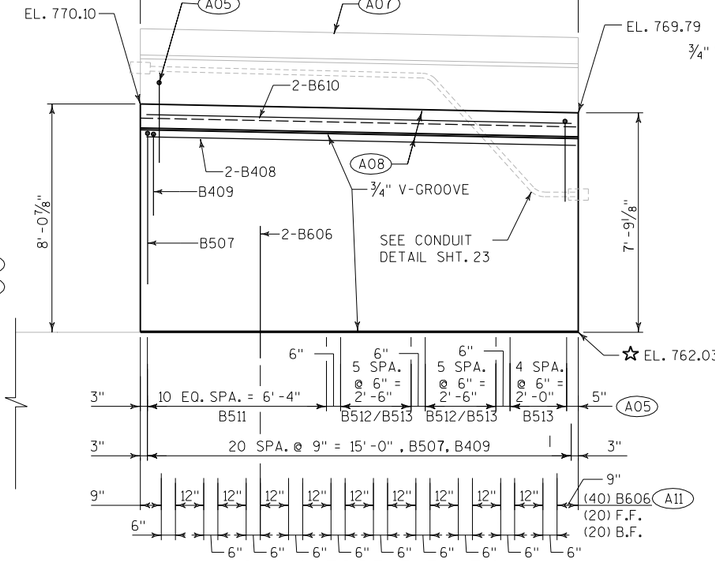


WING 2 OUTSIDE ELEVATION

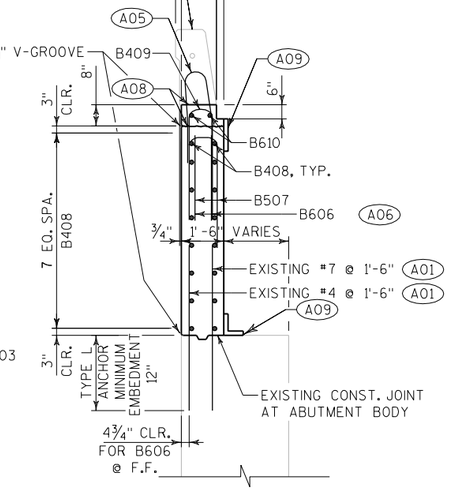


SECTION B-B, RECONSTRUCTION

(WING 2)



WING 4 OUTSIDE ELEVATION



SECTION E-E, RECONSTRUCTION

(WING 4)

LEGEND

☆ SEE GENERAL NOTES FOR INFORMATION ABOUT EXISTING ELEVATIONS.

NOTES

(A01) CUT AND PRESERVE EXISTING VERTICAL REINF. 4'-6" MIN. ABOVE ABUTMENT/WING BODY.

(A05) A/B 511, 512, 513, SEE SHT. 21 FOR PLACEMENT.

(A06) SPACE BARS AT @ 1'-6", IN TYPE L ANCHORS, PLACE BETWEEN EXISTING #7 & # 4, TYP. E.F.

NOTES (CONT'D)

(A07) SEE 32SS PARAPET DETAILS SHT. 21.

(A08) OPTIONAL CONSTRUCTION JOINT AND RUBBERIZED WATERPROOF MEMBRANE AT V-GROOVE. IF USED, STRIKE-OFF AS SHOWN AND LEAVE ROUGH.

(A09) 18" RUBBERIZED MEMBRANE WATERPROOFING, TYPICAL ALL SOIL-RETAINING CONST. JOINTS.

(A11) SPACE A606/B606 IN PAIRS AT 6" MIDWAY BETWEEN EXISTING VERTICAL WING REINFORCEMENT.

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

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WINGWALL ELEVATIONS

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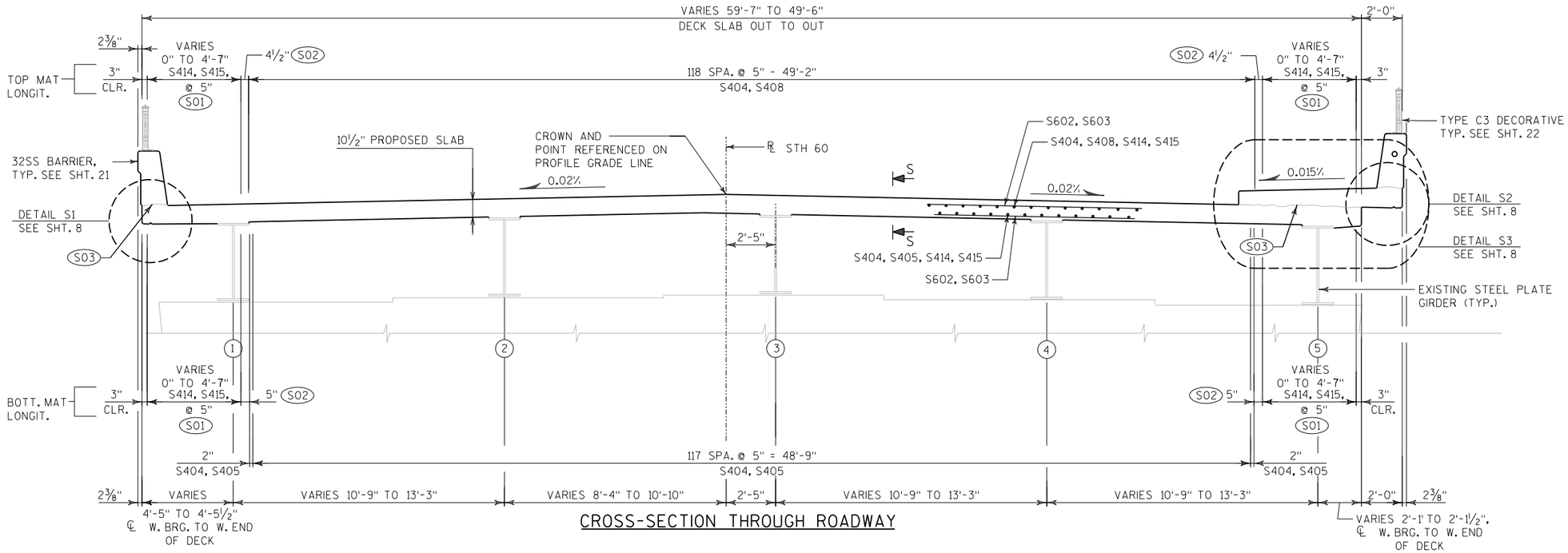
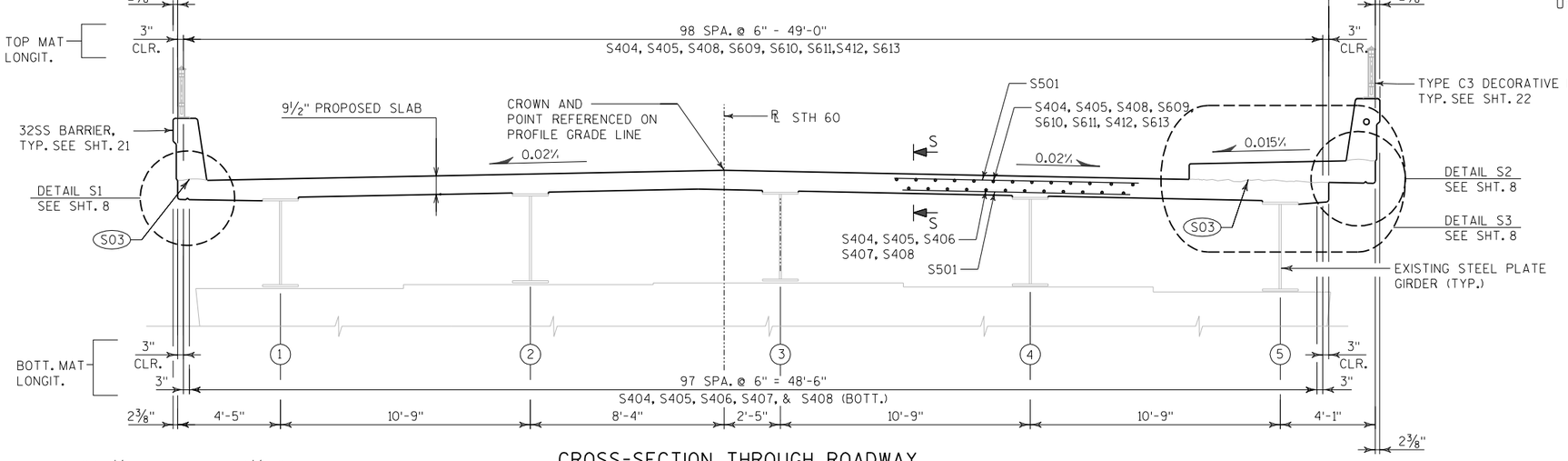
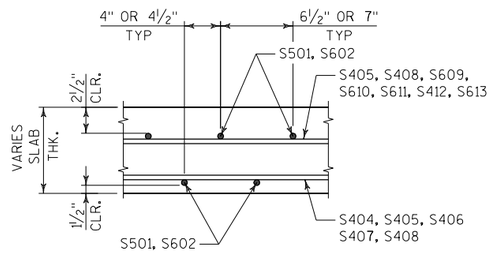


CROSS-SECTION THROUGH ROADWAY



CROSS-SECTION THROUGH ROADWAY

(LOOKING EAST FROM STA. 21+68.50 TO 28+30.83)



SECTION S-S

NOTES

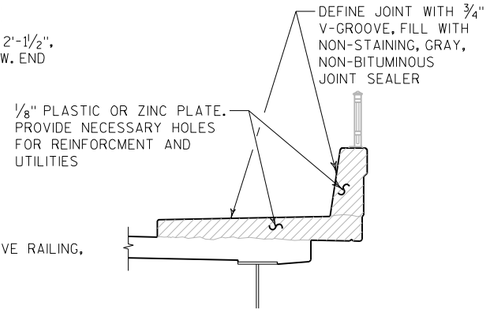
(S01) SEE SHEET 13.

(S02) AT STA. 20+78.17.

(S03) CONST. JOINT STRIKE-OFF AS SHOWN AND LEAVE ROUGH.

LEGEND

(X) INDICATES GIRDER NUMBER.



DEFLECTION JOINT DETAIL

SHOWING DEFLECTION JOINT IN PARAPET OR SIDEWALK.

RUN BAR STEEL THROUGH JOINT.

PLACE SIDEWALK DEFLECTION JOINTS ONLY AT DECK DEFLECTION JOINT LOCATIONS.

PLACE PARAPET DEFLECTION JOINTS AT DECK DEFLECTION JOINT LOCATIONS AND AT EQUAL SPACING BETWEEN THOSE LOCATIONS, MINIMUM 16'-0", MAXIMUM 20'-0".

WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 1/8" ZINC OR PLASTIC PLATE CUT AS SHOWN IN THE "DEFLECTION JOINT DETAIL". IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.

SEE SHT. 15 FOR CONTRUCTION JOINT LOCATIONS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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SUPERSTRUCTURE CROSS-SECTION

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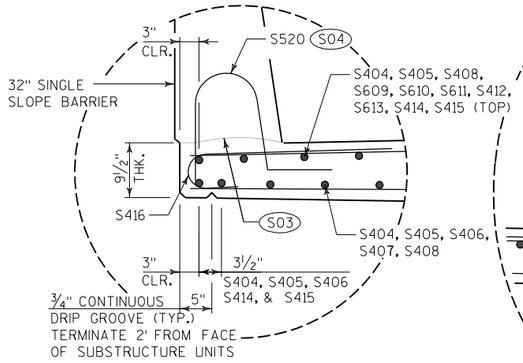
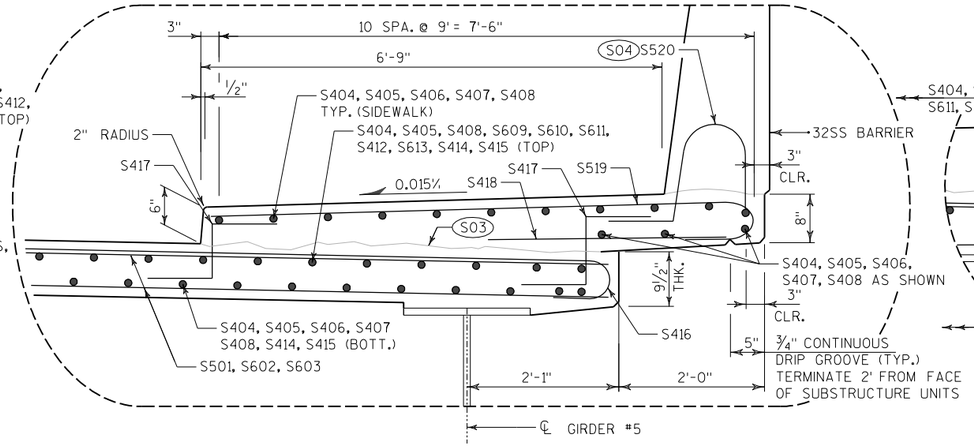
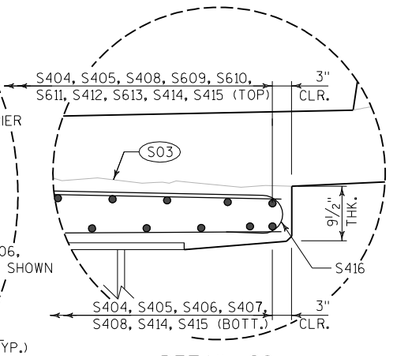


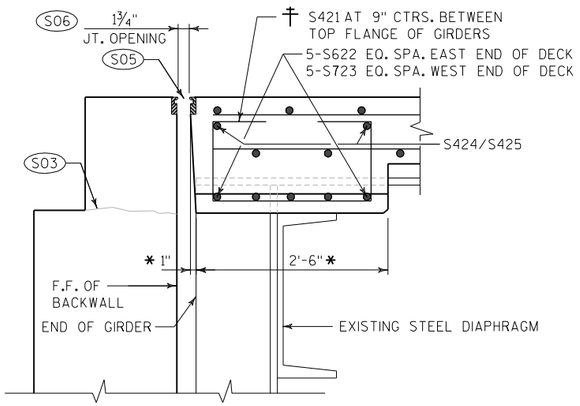
DETAIL S1



DETAIL S3/SECTION THRU SIDEWALK



DETAIL S2



SECTION B-B

DECK BAR LAP TABLE

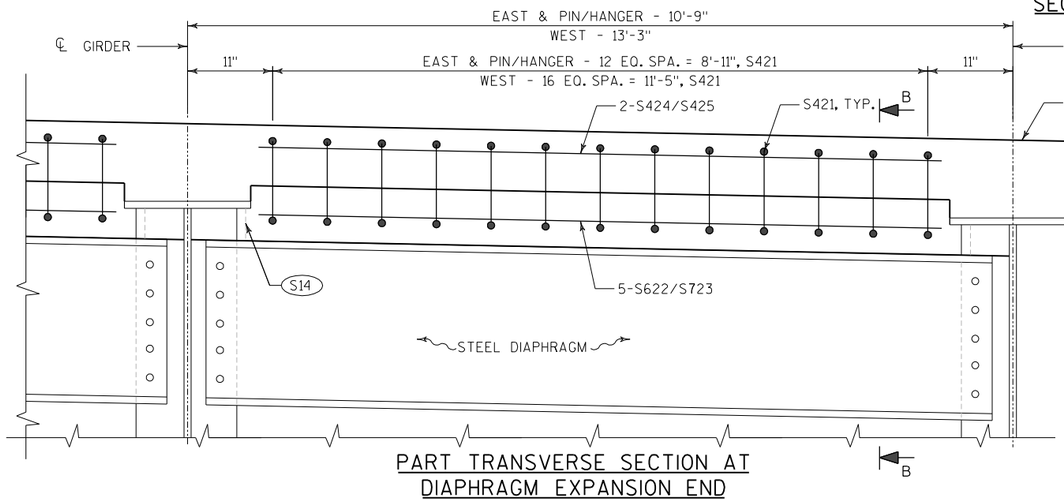
BAR SIZE	MIN. LAP LENGTH
#4	1'-8"
#5	2'-7"
#6	3'-1"

SMALLER BAR SIZE CONTROLS MINIMUM LAP LENGTH

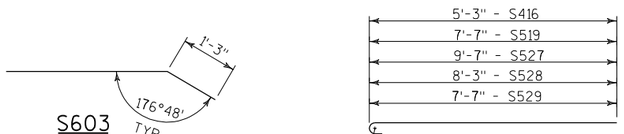
BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION	
S501	X	2440	49'-1"	-	-	SLAB - TOP & BOTT	TRANSVERSE
S602	X	306	54'-2"	-	X	SLAB - TOP & BOTT	TRANSVERSE
S603	X	2	59'-2"	X	-	SLAB - TOP & BOTT, WEST END	TRANSVERSE
S404	X	815	34'-3"	-	-	SLAB - TOP, SPANS 1, 2; BOTT, SPAN 1	LONGITUDINAL
S405	X	1214	34'-6"	-	-	SLAB - TOP, SPANS 3, 5; BOTT, SPANS 1, 2	LONGITUDINAL
S406	X	720	33'-8"	-	-	SLAB - BOTT, SPANS 2, 3	LONGITUDINAL
S407	X	480	38'-6"	-	-	SLAB - BOTT, SPANS 3, 4	LONGITUDINAL
S408	X	719	37'-9"	-	-	SLAB - TOP, SPAN 1; BOTT, SPANS 4, 5	LONGITUDINAL
S609	X	198	34'-2"	-	-	SLAB - TOP, PIER 1	LONGITUDINAL
S610	X	198	32'-9"	-	-	SLAB - TOP, PIER 2	LONGITUDINAL
S611	X	99	56'-1"	-	-	SLAB - TOP, PIER 3	LONGITUDINAL
S412	X	594	20'-3"	-	-	SLAB - TOP, SPAN 4	LONGITUDINAL
S613	X	198	35'-0"	-	-	SLAB - TOP, PIER 4	LONGITUDINAL
S414	X	24	22'-3"	-	X	SLAB - TOP & BOT., SPAN 1	LONGITUDINAL
S415	X	48	35'-7"	-	X	SLAB - TOP & BOT., SPAN 1	LONGITUDINAL
S416	X	2442	5'-9"	X	-	SLAB - TOP, SPANS 1-5	LONGITUDINAL
S417	X	3010	2'-11"	X	-	SIDEWALK, TIES	TRANSVERSE
S418	X	503	2'-10"	-	-	SIDEWALK, BOTT	TRANSVERSE
S519	X	1505	8'-2"	X	-	SIDEWALK, TOP	TRANSVERSE
S520	X	2256	4'-5"	X	-	PARAPET, TIES	TRANSVERSE
S421	X	224	4'-9"	X	-	SLAB, END DIAPHRAGMS	LONGITUDINAL
S622	X	60	9'-1"	-	-	SLAB, END DIAPHRAGMS EAST	TRANSVERSE
S723	X	20	11'-7"	-	-	SLAB, END DIAPHRAGMS WEST	TRANSVERSE
S424	X	24	9'-1"	-	-	SLAB, END DIAPHRAGMS	TRANSVERSE
S425	X	8	11'-7"	-	-	SLAB, END DIAPHRAGMS	TRANSVERSE
-	-		-	-	-	-	-
S527	X	18	10'-2"	X	-	SLAB, LIGHT STANDARD	TRANSVERSE
S528	X	18	8'-10"	X	-	SLAB, LIGHT STANDARD	TRANSVERSE
S529	X	54	8'-2"	X	-	SLAB, LIGHT STANDARD	TRANSVERSE
S530	X	18	9'-7"	-	-	SLAB, LIGHT STANDARD	TRANSVERSE
S531	X	18	8'-3"	-	-	SLAB, LIGHT STANDARD	TRANSVERSE
S532	X	54	7'-7"	-	-	SLAB, LIGHT STANDARD	TRANSVERSE
S533	X	36	7'-0"	X	-	SLAB, LIGHT STANDARD	TRANSVERSE
S634	X	18	10'-0"	X	-	SLAB, LIGHT STANDARD	LONGITUDINAL
S535	X	18	3'-4"	X	-	SLAB, LIGHT STANDARD	TRANSVERSE
⚠ S436	X	2259	3'-3"	X	-	HAUNCH GIRDERS 2,3, & 4	TRANSVERSE

⚠ VERIFY QUANTITY AND DIMENSION OF S436 WITH GIRDER SURVEY PRIOR TO FABRICATION.

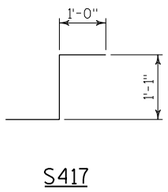


PART TRANSVERSE SECTION AT DIAPHRAGM EXPANSION END

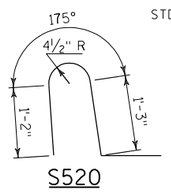


S416, S519 S527, S528, S529

S603



S417



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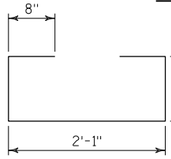

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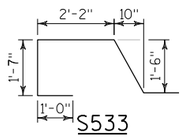

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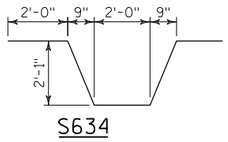
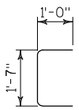


S634

BILL OF SERIES BARS

BAR MARK	NO. REQUIRED	LENGTH	LOCATION	
S602	2 SETS OF 153	49'-2" TO 59'-1"	SLAB - TOP & BOTT.	TRANSVERSE
S414	4 SETS OF 6	3'-7" TO 40'-11"	SLAB - TOP & BOTT., SPAN 1	LONGITUDINAL
S415	8 SETS OF 6	25'-1" TO 46'-0"	SLAB - TOP & BOTT., SPAN 1	LONGITUDINAL



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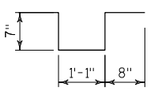


S436

NOTES

(S03) CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH.

(S04) SEE SHT. 20 FOR PLACEMENT

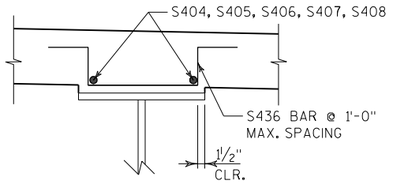
(S05) SEE JOINT DETAIL SHTS. 16 & 17.

(S06) AT 65°F, SEE TEMPERATURE TABLE SHT. 18.

(S14) DIAPHRAGM AND REINFORCEMENT SIMILAR BOTH SIDES OF PIN & HANGER EXPANSION JOINT, EXCEPT TERMINATE CONCRETE DIAPRHAGM AT EDGE OF GIRDER SHELF PLATE.

* DIMENSION IS TAKEN NORMAL TO ℄ ABUTMENT.

† BARS PLACED PARALLEL TO GIRDERS. SPACING IS PERPENDICULAR TO ℄ OF GIRDERS.



HAUNCH REINFORCEMENT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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SUPERSTRUCTURE CROSS-SECTION DETAILS

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11/20/2013

STATE PROJECT NUMBER

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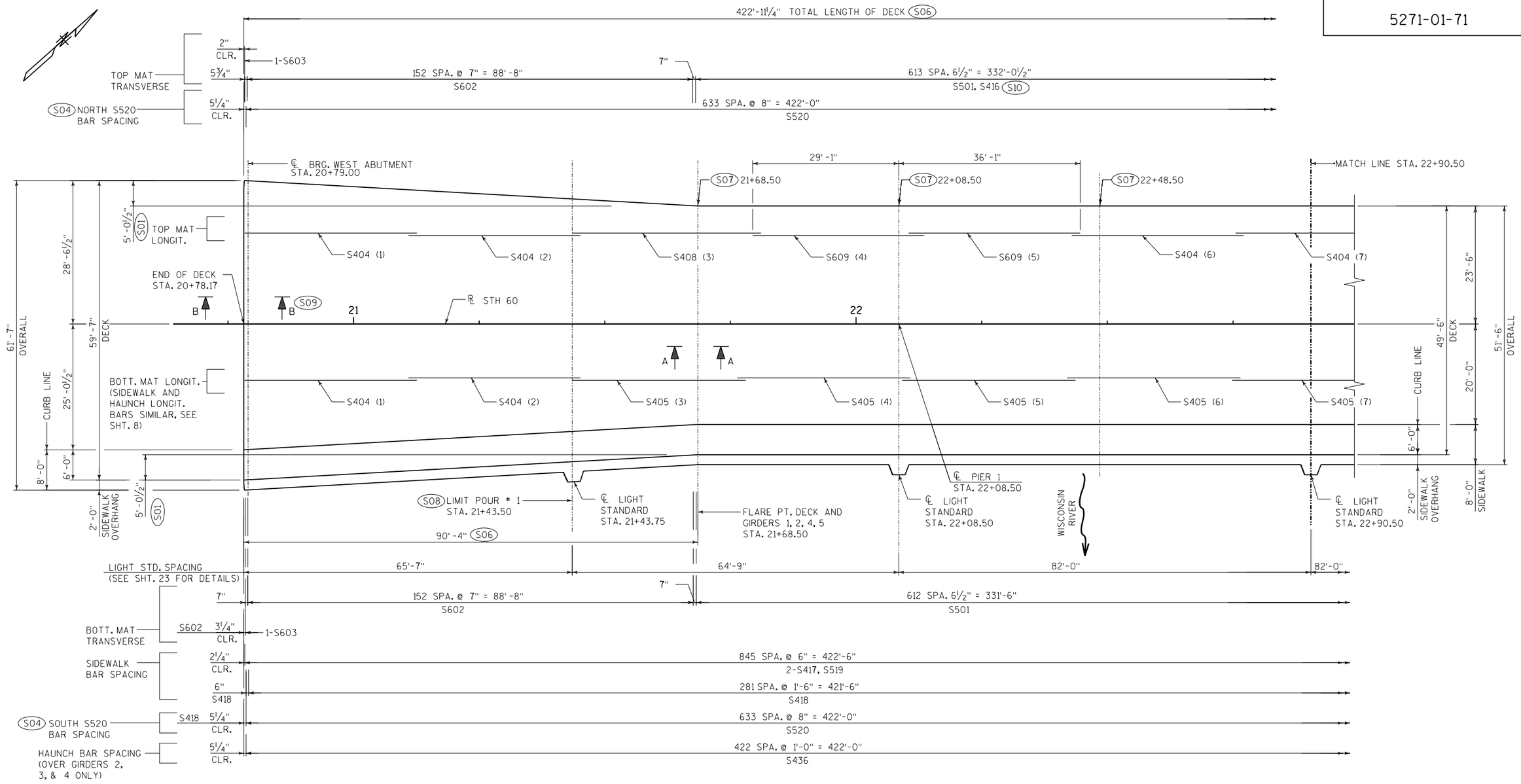
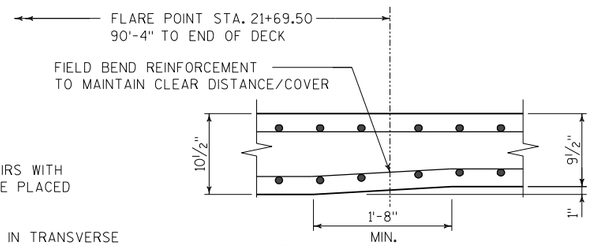


DECK REINFORCEMENT PLAN



SECTION A-A

DECK TRANSITION DETAIL

NOTES

SEE TABLE SHT. 8 FOR BAR LAP SCHEDULE.

ALL TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE PLACED NORMAL TO THE ℄.

THE BOTTOM TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS WITH A CENTER TO CENTER SPACING NOT TO EXCEED 4'-0". ONE LINE OF CONTINUOUS BAR CHAIRS SHALL BE PLACED NEAR EACH EDGE OF SLAB TO SUPPORT THE ENDS OF THE BOTTOM TRANSVERSE BAR STEEL.

THE TOP LONGITUDINAL BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS IN TRANSVERSE DIRECTION ON 4'-0" CENTERS.

LEGEND:

- (S01) SEE SHT. 13.
- (S04) SEE SHT. 21 FOR PLACEMENT.
- (S06) AT 65°F, SEE TEMPERATURE TABLE SHT. 18.
- (S07) DEFLECTION JOINT, STA., SEE SHT. 10.
- (S08) CONSTRUCTION JOINT, SEE SHT. 10.
- (S09) SEE SHT. 8.
- (S10) S416 REQ'D. BOTH EDGES OF DECK, SEE SHT. 8.
- (X) INDICATES LONGIT. BAR ROW NUMBER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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SUPERSTRUCTURE 1

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8

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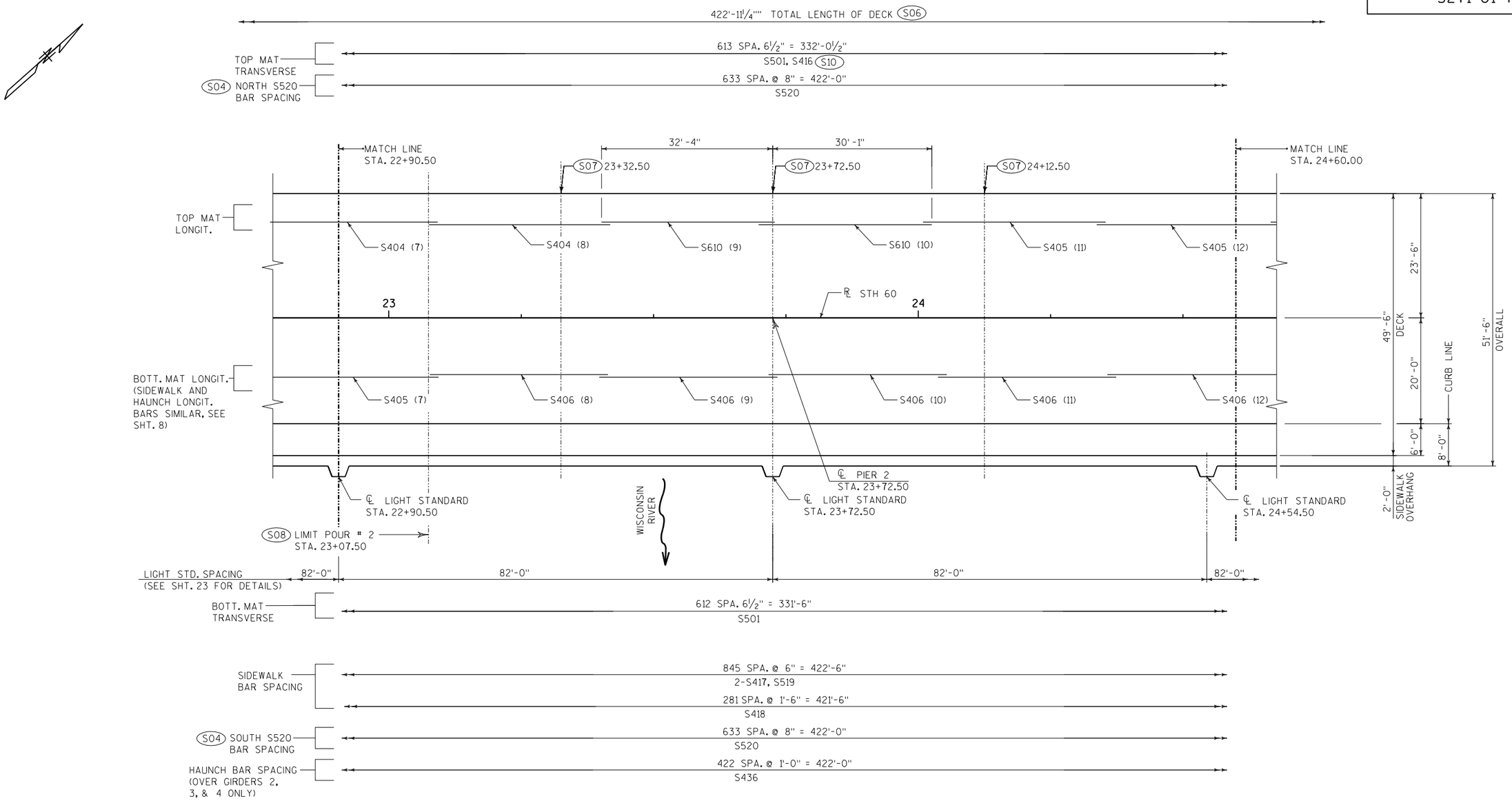
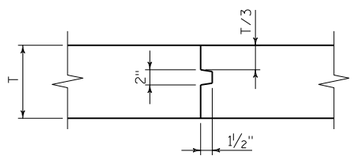
11/20/2013

STATE PROJECT NUMBER
5271-01-71

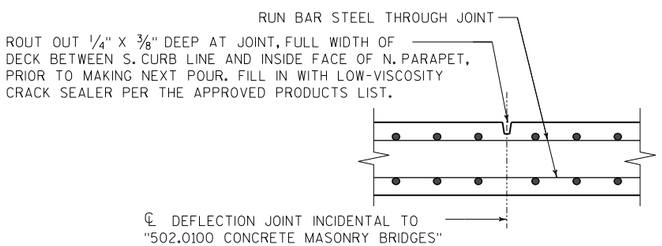


DECK REINFORCEMENT PLAN



CONSTRUCTION JOINT DETAIL

(RUN BAR STEEL THROUGH JOINT)



DEFLECTION JOINT DETAIL

(RUN BAR STEEL THROUGH JOINT)

NOTES

SEE TABLE SHT. 8 FOR BAR LAP SCHEDULE.

LEGEND

(S04) SEE SHT. 21 FOR PLACEMENT.

(S06) AT 65°F, SEE TEMPERATURE TABLE SHT. 18.

(S07) DEFLECTION JOINT, STA., SEE SHT. 10.

(S08) CONSTRUCTION JOINT, SEE SHT. 10.

(S10) S416 REQ'D. BOTH EDGES OF DECK, SEE SHT. 8.

(X) INDICATES LONGIT. BAR ROW NUMBER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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SUPERSTRUCTURE 2

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8

8

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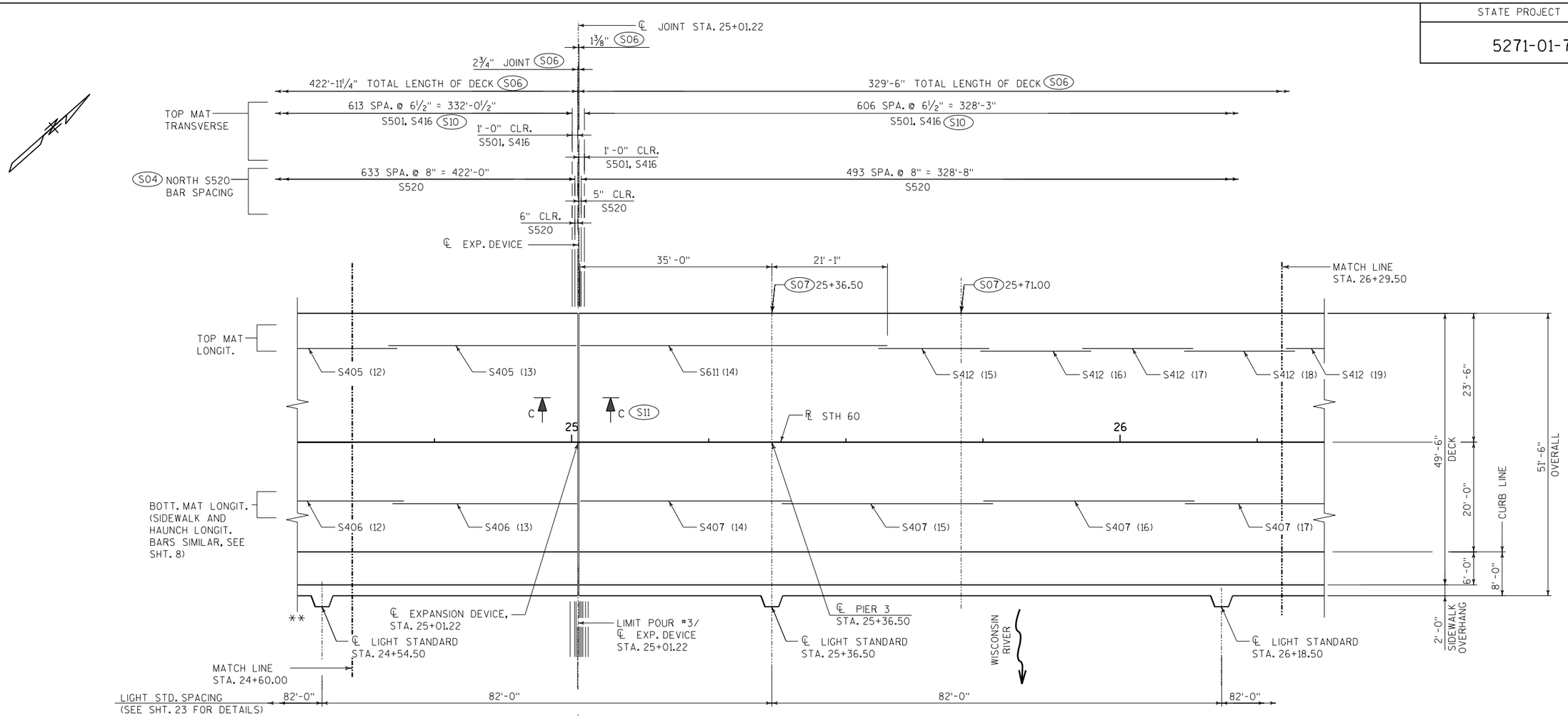
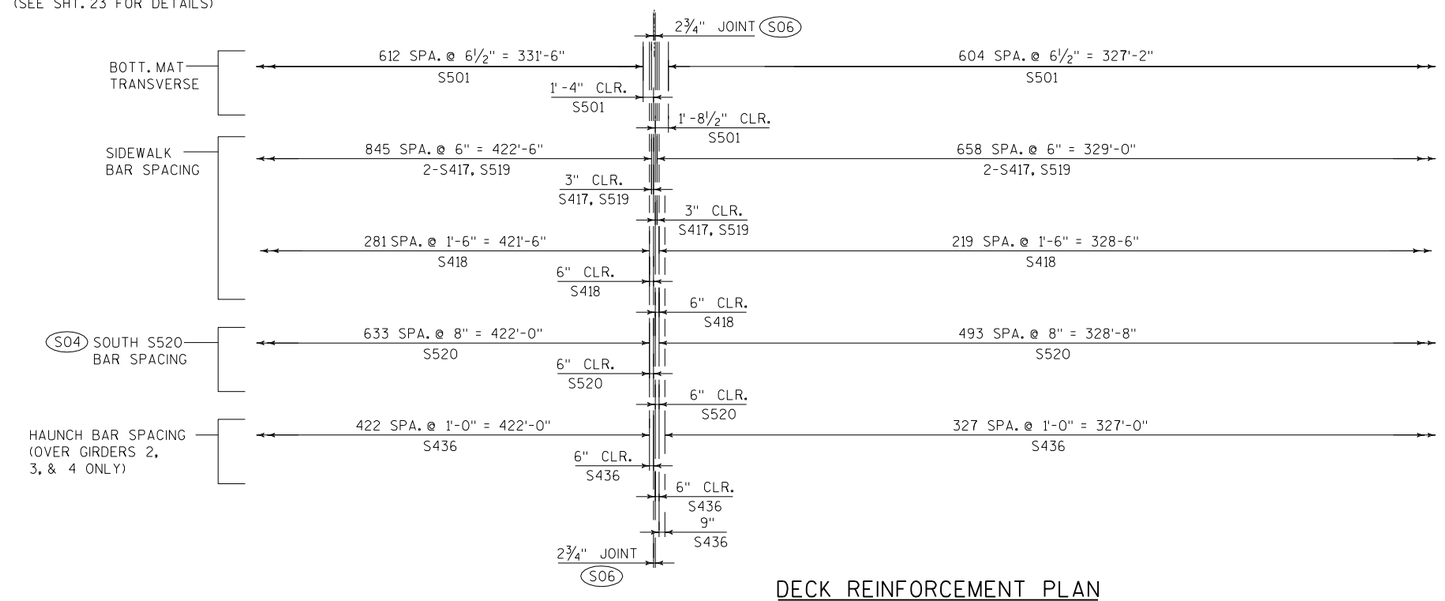
11/20/2013

STATE PROJECT NUMBER
5271-01-71





DECK REINFORCEMENT PLAN

NOTES

SEE TABLE SHT. 8 FOR BAR LAP SCHEDULE.

LEGEND

- (S04) SEE SHT. 21 FOR PLACEMENT.
- (S06) AT 65°F, SEE TEMPERATURE TABLE SHT. 18.
- (S07) DEFLECTION JOINT, STA., SEE SHT. 10.
- (S08) CONSTRUCTION JOINT, SEE SHT. 10.
- (S10) S416 REQ'D. BOTH EDGES OF DECK, SEE SHT. 8.
- (X) INDICATES LONGIT. BAR ROW NUMBER.

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STRUCTURE B-11-19

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SUPERSTRUCTURE 3

SHEET 130 11 OF 23

8

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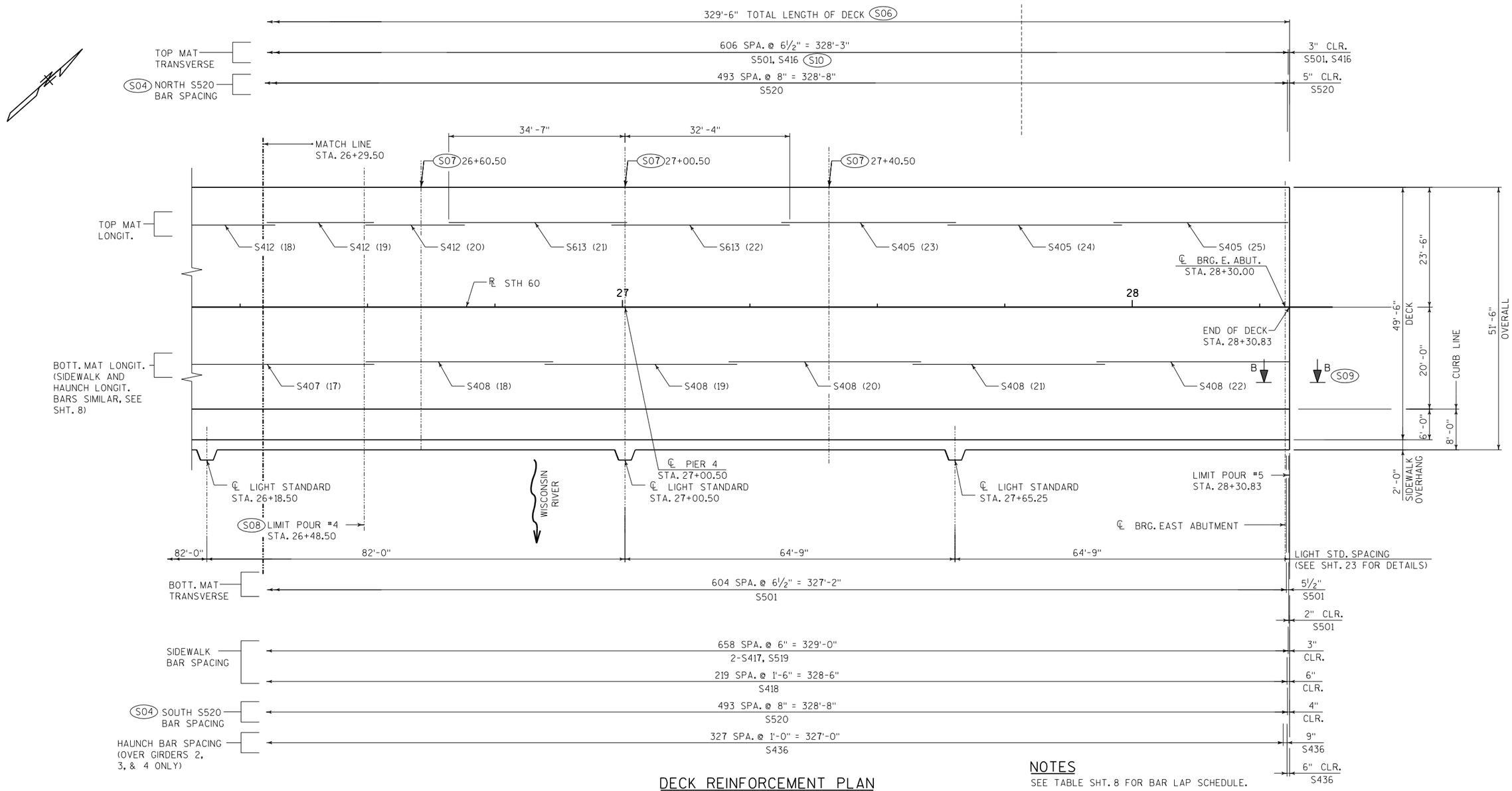
11/20/2013

STATE PROJECT NUMBER
5271-01-71



DECK REINFORCEMENT PLAN

NOTES

SEE TABLE SHT. 8 FOR BAR LAP SCHEDULE.

LEGEND

(S04) SEE SHT. 21 FOR PLACEMENT.

(S06) AT 65°F, SEE TEMPERATURE TABLE SHT. 18.

(S07) DEFLECTION JOINT, STA., SEE SHT. 10.

(S08) CONSTRUCTION JOINT, SEE SHT. 10.

(S09) SEE SHT. 8.

(S10) S416 REQ'D. BOTH EDGES OF DECK, SEE SHT. 8.

(X) INDICATES LONGIT. BAR ROW NUMBER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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SUPERSTRUCTURE 4

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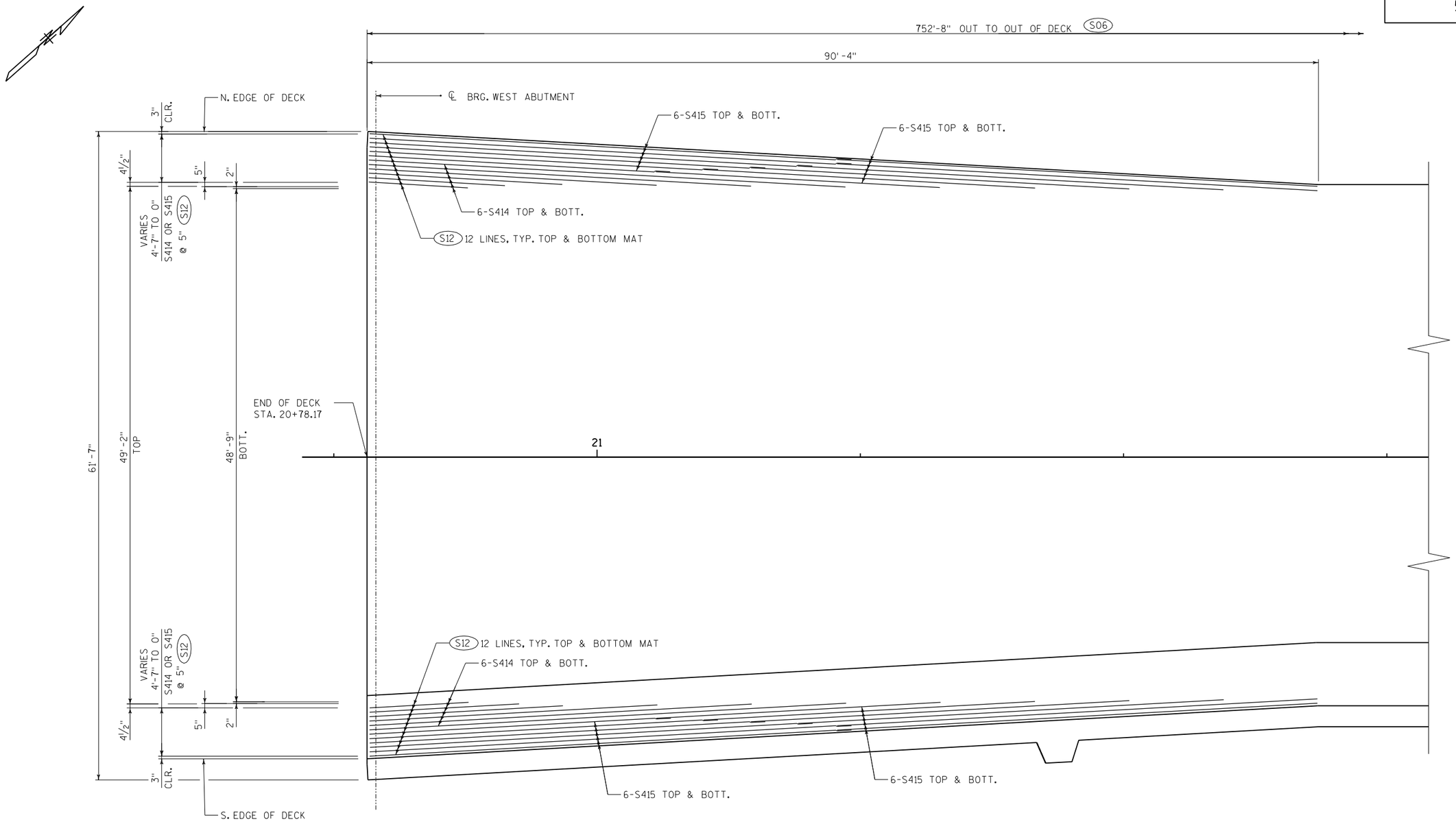
STATE PROJECT NUMBER

5271-01-71



DECK REINFORCEMENT PLAN

NOTES

SEE TABLE ON SHT. 8 FOR BAR LAP SCHEDULE.

LEGEND

(S06) AT 65°F, SEE TEMPERATURE TABLE SHT. 18.

(S12) FANNED BARS TERMINATE AT FIRST STRAIGHT LONGITUDINAL BAR. PLACE ALL STEEL ON THIS SHEET PARALLEL TO THE EDGE OF DECK.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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SUPERSTRUCTURE 5

SHEET 13 OF 23
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11/20/2013

TOP OF DECK ELEVATIONS SPAN 1

SPAN 1	ELEVATIONS AT TENTH POINTS										
LOCATION	0.0 PT. /W. ABUT.	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	1.0 PT. /PIER 1
FF N. PARAPET	784.39	784.14	783.90	783.65	783.41	783.16	782.92	782.67	782.41	782.16	781.90
G1	784.45	784.20	783.96	783.72	783.47	783.23	782.98	782.74	782.48	782.22	781.96
G2	784.71	784.46	784.21	783.96	783.71	783.46	783.20	782.95	782.69	782.43	782.18
PGL	784.93	784.67	784.41	784.15	783.89	783.64	783.38	783.12	782.86	782.60	782.34
G3	784.88	784.62	784.36	784.11	783.85	783.59	783.33	783.07	782.81	782.55	782.29
G4	784.62	784.36	784.11	783.86	783.61	783.36	783.11	782.85	782.60	782.34	782.08
S. CURB	784.43	784.19	783.94	783.70	783.45	783.21	782.96	782.72	782.46	782.20	781.94
G5	784.35	784.11	783.86	783.62	783.37	783.13	782.89	782.64	782.38	782.12	781.86

TOP OF DECK ELEVATIONS SPAN 2

SPAN 2	ELEVATIONS AT TENTH POINTS										
LOCATION	0.0 PT. /PIER 1	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	1.0 PT. /PIER 2
FF N. PARAPET	781.90	781.57	781.24	780.91	780.59	780.26	779.93	779.60	779.27	778.95	778.62
G1	781.96	781.63	781.30	780.98	780.65	780.32	779.99	779.67	779.34	779.01	778.68
G2	782.18	781.85	781.52	781.19	780.86	780.54	780.21	779.88	779.55	779.23	778.90
PGL	782.34	782.01	781.69	781.36	781.03	780.70	780.38	780.05	779.72	779.39	779.06
G3	782.29	781.97	781.64	781.31	780.98	780.65	780.33	780.00	779.67	779.34	779.02
G4	782.08	781.75	781.42	781.10	780.77	780.44	780.11	779.78	779.46	779.13	778.80
S. CURB	781.94	781.61	781.29	780.96	780.63	780.30	779.98	779.65	779.32	778.99	778.66
G5	781.86	781.54	781.21	780.88	780.55	780.22	779.90	779.57	779.24	778.91	778.59

TOP OF DECK ELEVATIONS SPAN 3

SPAN 3	ELEVATIONS AT TENTH POINTS										
LOCATION	0.0 PT. /PIER 2	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	1.0 PT. /PIER 3
FF N. PARAPET	778.62	778.29	777.96	777.64	777.31	776.98	776.65	776.32	776.00	775.67	775.34
G1	778.68	778.35	778.03	777.70	777.37	777.04	776.72	776.39	776.06	775.73	775.40
G2	778.90	778.57	778.24	777.91	777.59	777.26	776.93	776.60	776.28	775.95	775.62
PGL	779.06	778.74	778.41	778.08	777.75	777.43	777.10	776.77	776.44	776.11	775.79
G3	779.02	778.69	778.36	778.03	777.70	777.38	777.05	776.72	776.39	776.07	775.74
G4	778.80	778.47	778.15	777.82	777.49	777.16	776.83	776.51	776.18	775.85	775.52
S. CURB	778.66	778.34	778.01	777.68	777.35	777.03	776.70	776.37	776.04	775.71	775.39
G5	778.59	778.26	777.93	777.60	777.27	776.95	776.62	776.29	775.96	775.64	775.31

TOP OF DECK ELEVATIONS SPAN 4

SPAN 4	ELEVATIONS AT TENTH POINTS										
LOCATION	0.0 PT. /PIER 3	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	1.0 PT. /PIER 4
FF N. PARAPET	775.34	775.01	774.69	774.36	774.03	773.70	773.37	773.05	772.72	772.39	772.06
G1	775.40	775.08	774.75	774.42	774.09	773.77	773.44	773.11	772.78	772.45	772.13
G2	775.62	775.29	774.96	774.64	774.31	773.98	773.65	773.33	773.00	772.67	772.34
PGL	775.79	775.46	775.13	774.80	774.47	774.15	773.82	773.49	773.16	772.84	772.51
G3	775.74	775.41	775.08	774.75	774.43	774.10	773.77	773.44	773.12	772.79	772.46
G4	775.52	775.19	774.87	774.54	774.21	773.88	773.56	773.23	772.90	772.57	772.24
S. CURB	775.39	775.06	774.73	774.40	774.07	773.75	773.42	773.09	772.76	772.44	772.11
G5	775.31	774.98	774.65	774.32	774.00	773.67	773.34	773.01	772.69	772.36	772.03

TOP OF DECK ELEVATIONS SPAN 5

SPAN 5	ELEVATIONS AT TENTH POINTS										
LOCATION	0.0 PT. /PIER 4	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	1.0 PT. /E. ABUT.
FF N. PARAPET	772.06	771.80	771.55	771.29	771.03	770.77	770.51	770.25	769.99	769.73	769.48
G1	772.13	771.87	771.61	771.35	771.09	770.83	770.57	770.31	770.06	769.80	769.54
G2	772.34	772.08	771.82	771.57	771.31	771.05	770.79	770.53	770.27	770.01	769.75
PGL	772.51	772.25	771.99	771.73	771.47	771.21	770.96	770.70	770.44	770.18	769.92
G3	772.46	772.20	771.94	771.68	771.42	771.17	770.91	770.65	770.39	770.13	769.87
G4	772.24	771.99	771.73	771.47	771.21	770.95	770.69	770.43	770.17	769.92	769.66
S. CURB	772.11	771.85	771.59	771.33	771.07	770.81	770.56	770.30	770.04	769.78	769.52
G5	772.03	771.77	771.51	771.25	770.99	770.74	770.48	770.22	769.96	769.70	769.44

TOP OF GIRDER ELEVATIONS SPAN 1 (S13)

SPAN 1	ELEVATIONS AT TENTH POINTS										
LOCATION	0.0 PT. /W. ABUT.	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	1.0 PT. /PIER 1
FF N. PARAPET											
G1	783.43	783.18	782.93	782.67	782.42	782.16	781.91	781.67	781.46	781.30	781.08
G2	783.56	783.31	783.05	782.79	782.54	782.28	782.03	781.79	781.57	781.41	781.19
PGL											
G3	783.65	783.39	783.14	782.87	782.62	782.36	782.10	781.86	781.64	781.48	781.25
G4	783.52	783.27	783.01	782.75	782.49	782.24	781.98	781.74	781.53	781.36	781.14
S. CURB											
G5	783.40	783.15	782.90	782.64	782.39	782.13	781.88	781.64	781.43	781.27	781.05

TOP OF GIRDER ELEVATIONS SPAN 2 (S13)

SPAN 2	ELEVATIONS AT TENTH POINTS										
LOCATION	0.0 PT. /PIER 1	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	1.0 PT. /PIER 2
FF N. PARAPET											
G1	781.08	780.70	780.35	779.98	779.66	779.32	779.00	778.67	778.38	778.08	777.80
G2	781.19	780.81	780.46	780.09	779.77	779.43	779.11	778.78	778.49	778.19	777.91
PGL											
G3	781.25	780.87	780.52	780.15	779.83	779.49	779.17	778.84	778.55	778.25	777.97
G4	781.14	780.76	780.41	780.04	779.72	779.38	779.06	778.73	778.44	778.14	777.86
S. CURB											
G5	781.05	780.67	780.32	779.95	779.63	779.29	778.97	778.64	778.35	778.05	777.77

TOP OF GIRDER ELEVATIONS SPAN 3 (S13)

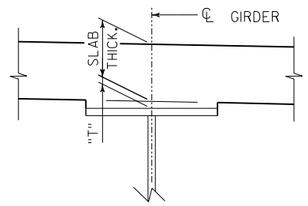
SPAN 3	ELEVATIONS AT TENTH POINTS										
LOCATION	0.0 PT. /PIER 2	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	1.0 PT. /PIER 3
FF N. PARAPET											
G1	777.80	777.40	777.03	776.69	776.38	776.06	775.75	775.44	775.15	774.82	774.50
G2	777.91	777.51	777.14	776.80	776.49	776.17	775.86	775.55	775.26	774.93	774.61
PGL											
G3	777.97	777.57	777.20	776.86	776.55	776.23	775.92	775.61	775.32	774.99	774.67
G4	777.86	777.46	777.09	776.75	776.44	776.12	775.81	775.50	775.21	774.88	774.56
S. CURB											
G5	777.77	777.37	777.00	776.66	776.35	776.03	775.72	775.41	775.12	774.79	774.47

TOP OF GIRDER ELEVATIONS SPAN 4 (S13)

SPAN 4	ELEVATIONS AT TENTH POINTS										
LOCATION	0.0 PT. /PIER 3	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	1.0 PT. /PIER 4
FF N. PARAPET											
G1	774.50	774.14	773.77	773.39	773.07	772.73	772.42	772.09	771.80	771.57	771.26
G2	774.61	774.25	773.87	773.49	773.18	772.84	772.52	772.19	771.90	771.67	771.36
PGL											
G3	774.67	774.31	773.93	773.55	773.24	772.90	772.58	772.25	771.96	771.73	771.42
G4	774.56	774.20	773.82	773.44	773.13	772.79	772.47	772.14	771.85	771.62	771.31
S. CURB											
G5	774.47	774.11	773.74	773.36	773.04	772.70	772.39	772.06	771.77	771.54	771.23

TOP OF GIRDER ELEVATIONS SPAN 5 (S13)

SPAN 5	ELEVATIONS AT TENTH POINTS										
LOCATION	0.0 PT. /PIER 4	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	1.0 PT. /E. ABUT.
FF N. PARAPET											
G1	771.26	771.00	770.66	770.34	770.09	769.83	769.56	769.31	769.07	768.82	768.58
G2	771.36	771.10	770.76	770.44	770.19	769.93	769.67	769.42	769.18	768.93	768.69
PGL											
G3	771.42	771.16	770.82	770.50	770.25	769.99	769.73	769.48	769.24	768.99	768.75
G4	771.31	771.05	770.71	770.39	770.14	769.88	769.62	769.37	769.13	768.88	768.64
S. CURB											
G5	771.23	770.97	770.63	770.31	770.06	769.80	769.53	769.28	769.04	768.79	768.55



HAUNCH DETAIL

'T' = HAUNCH HEIGHT AT CENTERLINE OF GIRDER.

TO DETERMINE 'T': AFTERALL STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES SHALL BE TAKEN AT CENTERLINE OF BEARINGS AND AT 0.1 POINTS.

TOP OF DECK ELEVATIONS AT FINAL GRADE.

- TOP OF STEEL ELEVATION AFTER STEEL ERECTION.

+ CONC. ONLY DEFLECTION; DOWNWARD DEFLECTION IS ADDED, UPWARD DEFLECTION IS SUBTRACTED.

- SLAB THICKNESS

= 'T' VALUE FOR SETTING HAUNCH

(S13) THEORETICAL TOP OF GIRDER ELEVATIONS ARE PROVIDED FOR ADVISORY AND QUANTITY PURPOSES ONLY. FIELD ELEVATIONS SHALL BE SURVEYED, AND HAUNCH HEIGHTS CALULATED PRIOR TO FABRICATING S4X4 "HAT" BARS. CONTACT THE DEPARTMENT IF ANY HAUNCHES CALCULATE NEGATIVE USING PROFILE PROVIDED. ELEVATIONS ARE TO TOP OF STEEL AS ERECTED INCLUDING SPLICE PLATES, IF ANY.

STATE PROJECT NUMBER

5271-01-71

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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SUPERSTRUCTURE ELEVATIONS

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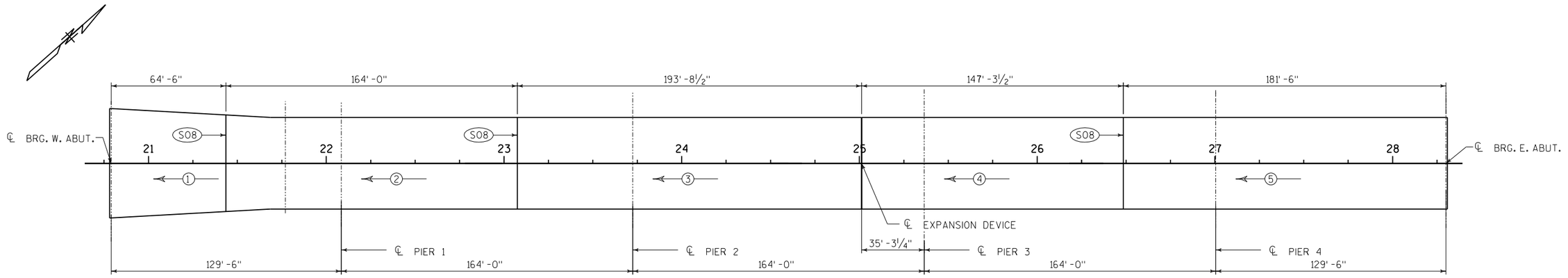
STATE PROJECT NUMBER
5271-01-71



POURING DIAGRAM

NOTE:

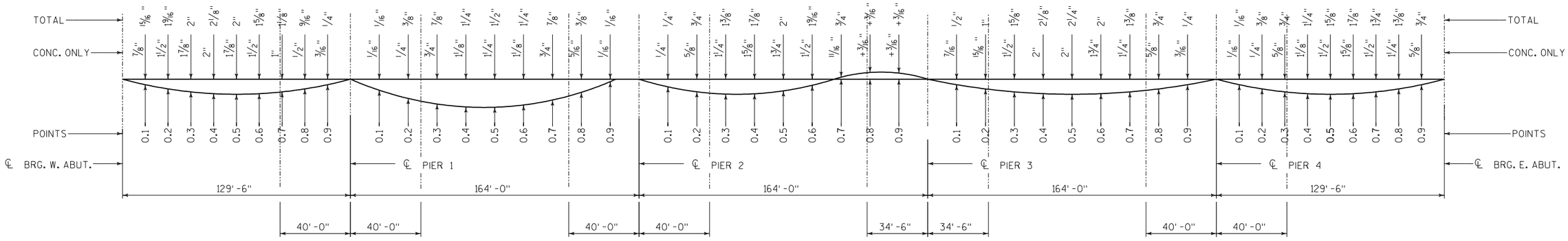
TWO OR MORE POURS MAY BE COMBINED AND THE TRANS. CONST. JOINTS OMITTED IF THE POUR FOR AN ENTIRE SPAN OR THE PORTION OF A SPAN TO A CONST. JOINT CAN BE COMPLETED WITHIN FOUR HOURS AFTER CONCRETE OVER THE ADJACENT PIER IS PLACED.

DIRECTION OF POUR MAY BE REVERSED IF PORTION OF POUR FROM THE PIER CAN BE COMPLETED IN A FOUR HOUR PERIOD.

NO OTHER POUR ALTERNATIVES ARE ALLOWED.

—○— INDICATES NUMBER & DIRECTION OF POUR

(S08) CONSTRUCTION JOINT, SEE SHT. 10.



DEAD LOAD DEFLECTION DIAGRAM

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

DRAWN BY TRW | PLANS CK'D. JFR

SUPERSTRUCTURE DIAGRAMS

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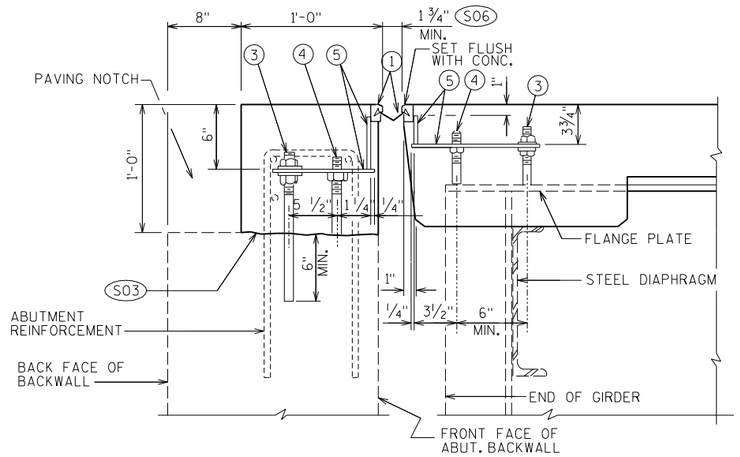
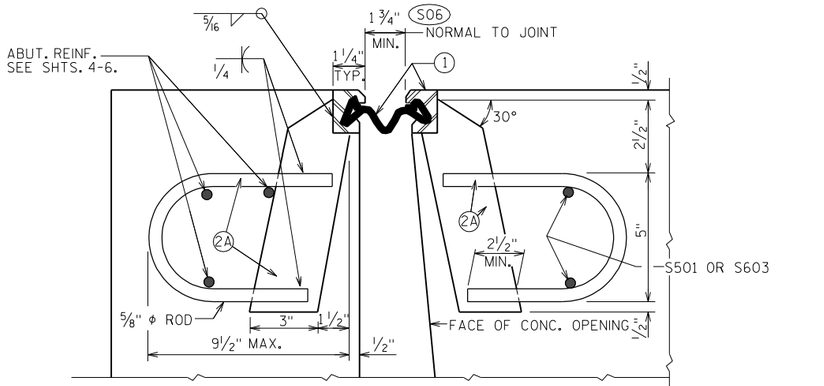


SECTION THRU JOINT AT ABUTMENT

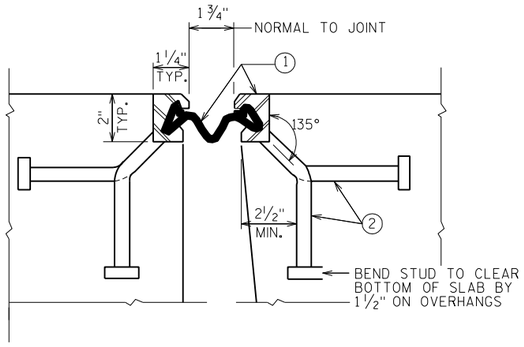
NORMAL TO ℄ SUBSTRUCTURE



SYM. ABOUT ℄ JOINT UNLESS OTHERWISE SHOWN OR NOTED

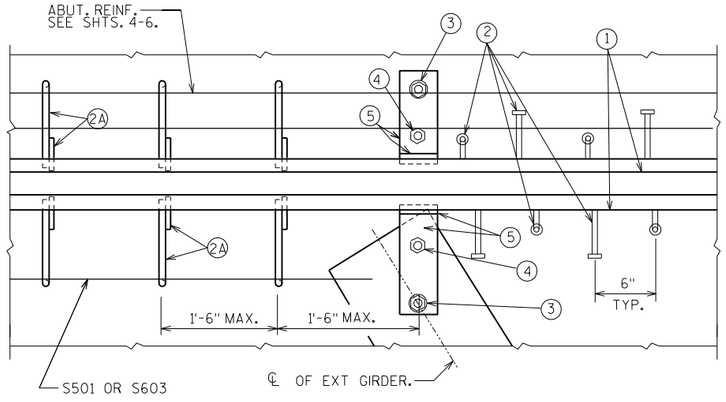
SECTION THRU JOINT

ROADWAY TRAFFIC AREA
BETWEEN EXTERIOR GIRDERS.

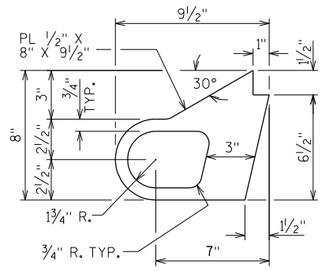


SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB &
AT PARAPETS, MEDIANS & SIDEWALKS



PART PLAN



ALTERNATE STRIP SEAL ANCHOR

STATE PROJECT NUMBER

5271-01-71

LEGEND

1. NEOPRENE STRIP SEAL (4-INCH) & STEEL EXTRUSIONS. SET JOINT OPENING PER TEMPERATURE TABLE ON SHT. 18. A SMALL JOINT OPENING DUE TO A HIGH TEMPERATURE AT TIME OF CONSTRUCTION MAY REQUIRE NEOPRENE STRIP SEAL INSTALLATION INTO STEEL EXTRUSIONS PRIOR TO SETTING THE EXPANSION JOINT.

2. STUDS 5/8" ϕ x 6 3/8" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.

2A. 1/2" THICK ANCHOR PLATE WITH 5/8" ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PL. TO NO. 1 AT 1'-6" CTRS. BETWEEN GIRDERS.

3. 3/4" ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.

4. 3/4" ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.

5. FABRICATE SUPPORT FROM 3" x 1/2" BAR AS SHOWN OR EQUIVALENT. ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1 1/2" ϕ HOLE FOR NO. 3 & 1" ϕ HOLE FOR NO. 4.

GENERAL NOTES

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

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

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

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

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

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-11-19".

(S03) CONST. JOINT. POUR CONC. ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE-OFF AS SHOWN AND LEAVE ROUGH.

(S06) AT 65°F, SEE TEMPERATURE TABLE SHT. 18.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

DRAWN BY TRW | PLANS CK'D. JFR

STRIP SEAL EXPANSION JOINT DETAILS

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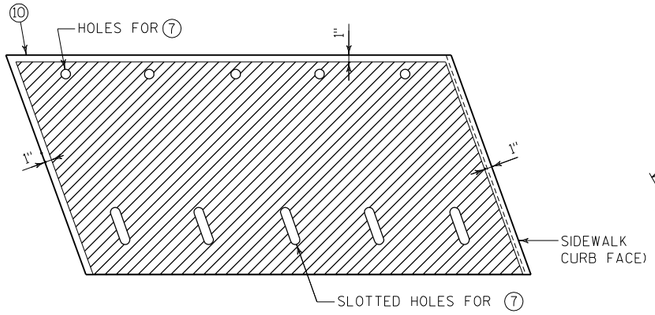
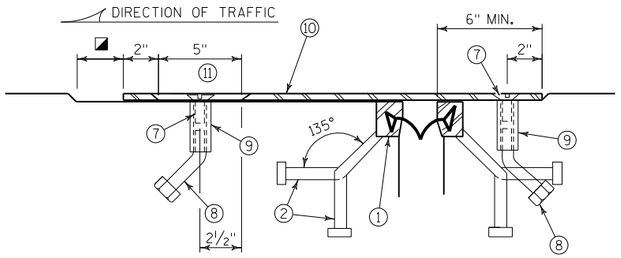
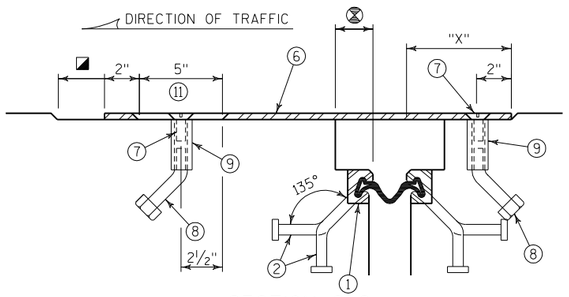


PLAN OF SIDEWALK COVER PLATE WITH SLIP-RESISTANT SURFACE

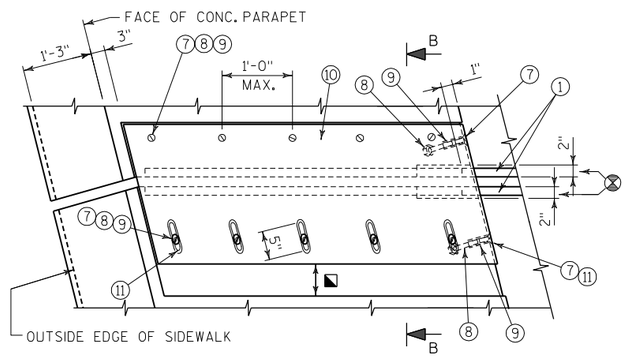
PLACE SLIP-RESISTANT SURFACE ON TOP WALKING SURFACE IN SHADED AREA ONLY (NOT ON CURB FACE).



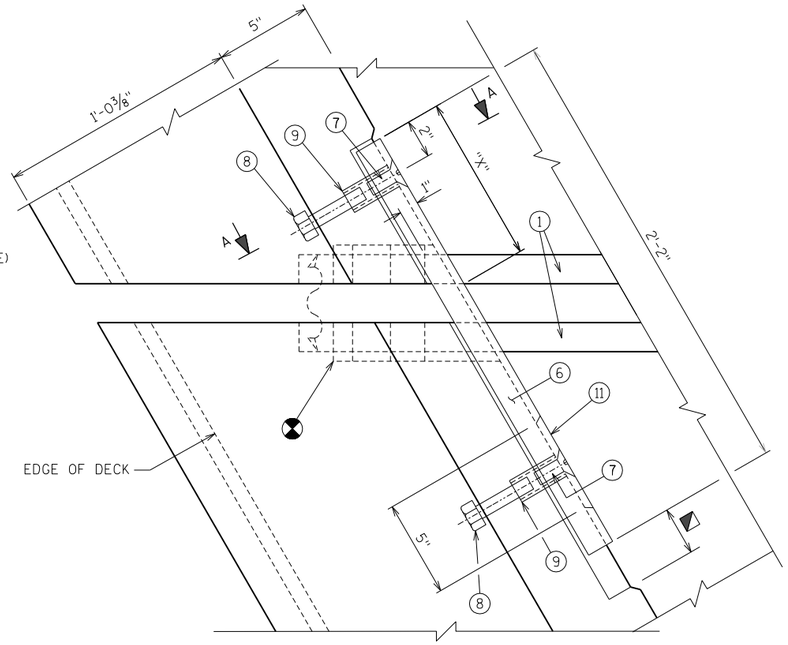
SECTION B-B



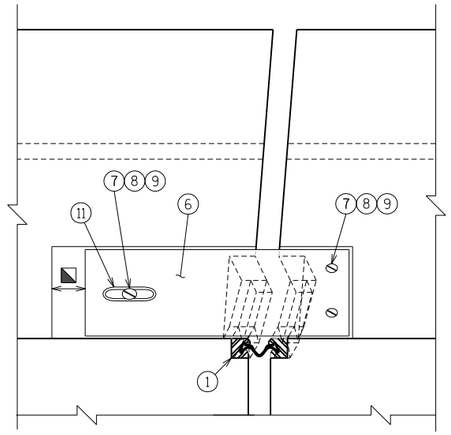
SECTION C-C



PLAN AT SIDEWALK



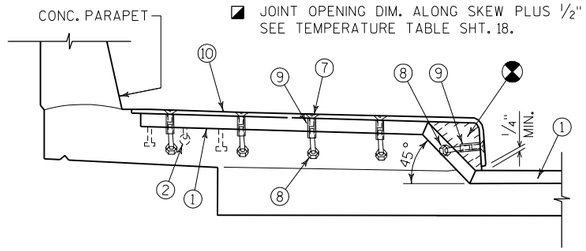
PLAN



VIEW OF PARAPET PLATE FROM ROADWAY

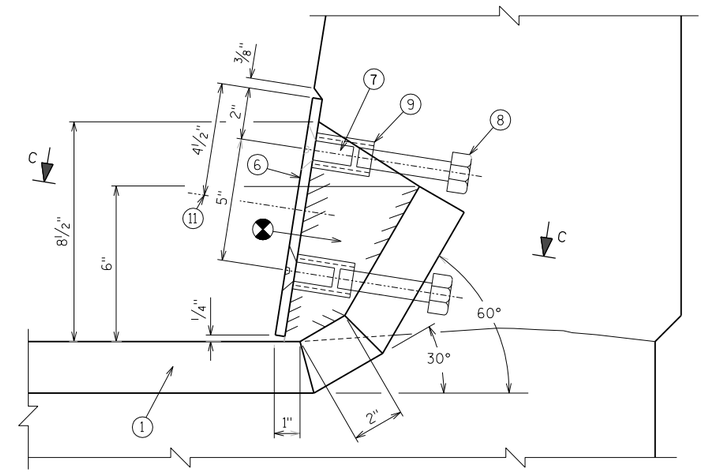
⊗ BLOCK OUT CONCRETE 2" EACH SIDE FOR JOINT OPENING.

◪ JOINT OPENING DIM. ALONG SKEW PLUS ½" SEE TEMPERATURE TABLE SHT. 18.



SECTION AT SIDEWALK

"X" VALUE IN INCHES	
SOUTH EDGE, WING 1	7
ALL OTHER LOCATIONS	6½



SECTION A-A

LEGEND

1. NEOPRENE STRIP SEAL (4-INCH) & STEEL EXTRUSIONS. SET JOINT OPENING PER TEMPERATURE TABLE ON SHT. 18. A SMALL JOINT OPENING DUE TO A HIGH TEMPERATURE AT TIME OF CONSTRUCTION MAY REQUIRE NEOPRENE STRIP SEAL INSTALLATION INTO STEEL EXTRUSIONS PRIOR TO SETTING THE EXPANSION JOINT.
2. STUDS ⅝" Φ × 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.

2A. ½" THICK ANCHOR PLATE WITH ⅝" Φ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PL. TO NO. 1 AT 1'-6" CTRS. BETWEEN GIRDERS.

3. ¾" Φ THREADED ROD WITH 2 NUTS AND WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE. GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. ¾" Φ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" × ½" BAR AS SHOWN OR EQUIVALENT. ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1½" Φ HOLE FOR NO. 3 & 1" Φ HOLE FOR NO. 4.
6. GALVANIZED PLATE ⅜" × 10" × 2'-2" WITH HOLES FOR NO. 7.
7. ¾" Φ × 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTER SUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾" Φ × 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾" Φ × 2¼" GALVANIZED THREADED COUPLING.
10. SIDEWALK COVER PLATE ⅜" X 2'-0" WIDE X LIMITS SHOWN. BEND DOWN FACE OF SIDEWALK WITH HOLES FOR NO. 7. GALVANIZE PLATE AFTER SLIP-RESISTANT SURRFACE IS APPLIED.
11. 1" × 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

APPROVED SLIP-RESISTANT APPLIED SURFACES FOR STEEL PLATES		
PRODUCT	MANUFACTURER	CONTACT AT
SLIPNOT GRADE 2, STEEL	W. S. MOLNAR COMPANY	1-800-SLIPNOT
ALGRIP, STEEL	ROSS TECHNOLOGY CORP.	1-800-345-8170

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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STRIP SEAL COVER PLATE DETAILS

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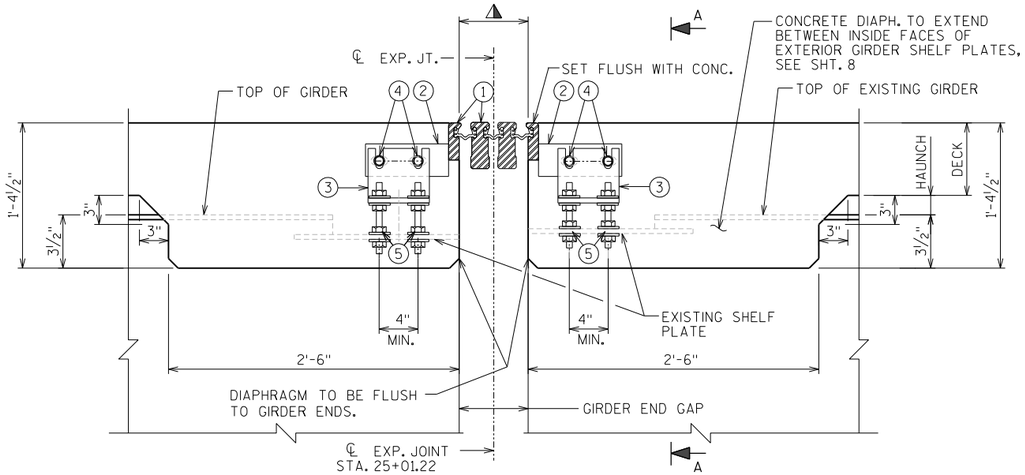
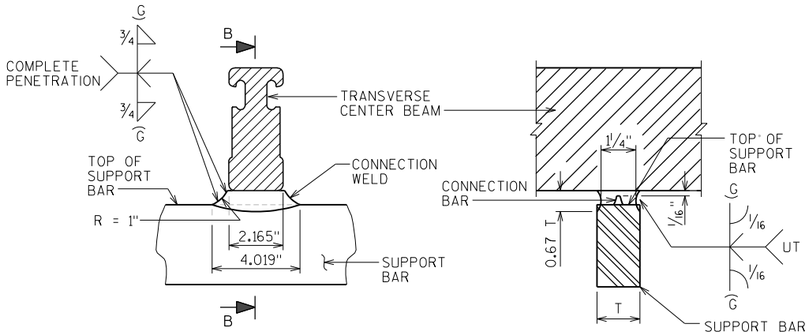


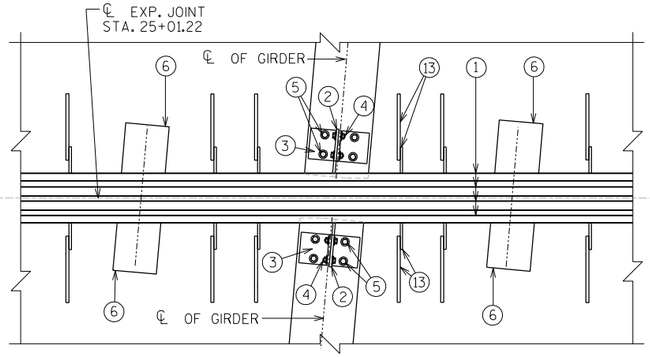
SECTION THRU JOINT @ PIN/HANGER

NORMAL TO ℄ SUBSTRUCTURE

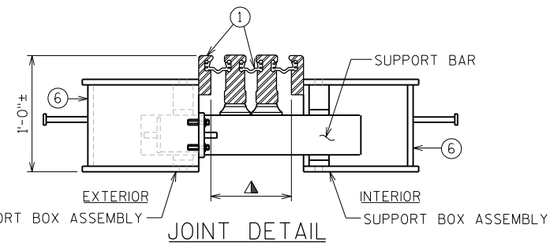


MODULAR EXPANSION JOINT CONNECTION DETAIL AND WELD SPECIFICATION

SECTION B-B

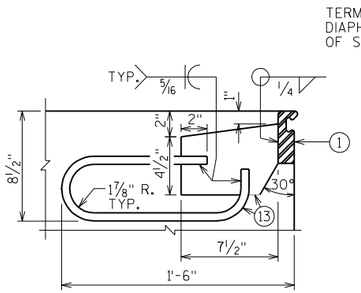


PART PLAN



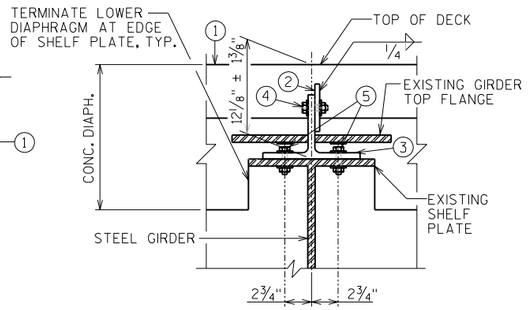
JOINT DETAIL

AT SUPPORT BAR & SUPPORT BOX ASSEMBLY



ANCHORAGE DETAIL

PLACE ADJACENT TO SUPPORT BOXES IN PAVING BLOCK @ ABUT. & IN DECK @ CONC. DIAPH.



SECTION A-A

NOTE:
MODULAR EXPANSION DEVICE DESIGN AND DETAILS ARE SPECIFIC TO THE MANUFACTURER SELECTED FROM THOSE LISTED IN THE SPECIAL PROVISIONS. FABRICATION DRAWING IS SUBJECT TO THE APPROVAL OF THE BUREAU OF STRUCTURES.

SUPPORT BOXES ARE SHOWN FOR GENERAL INFORMATION AND LOCATION MAY VARY ACCORDING TO FABRICATOR DESIGN. SPACE SUPPORT BOXES TO MISS GIRDER TOP FLANGES WHEN POSSIBLE, BUT NOT TO EXCEED MAXIMUM SPACING PER SPECIAL PROVISIONS.

GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE GLAND.

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

NO EXPANSION JOINT PROTRUSIONS PERMITTED ABOVE ROADWAY SURFACE, ON PARAPET ROADWAY FACE OR ABOVE SIDEWALK SURFACE (FOR RAISED SIDEWALK).

THE EXPANSION JOINT SEALS SHALL BE PLACED, BONDED & SEALED AS RECOMMENDED BY THE MANUFACTURER. FORM WORK SHALL BE PLACED BETWEEN THE SUPPORT BOXES TO PREVENT CONCRETE INTRUSION INTO THE SUPPORT BOX. A TECHNICAL REPRESENTATIVE OF THE MANUFACTURER SHALL BE PRESENT DURING INSTALLATION. PRIOR TO SETTING THE JOINT ASSEMBLY INTO POSITION, THE PROJECT ENGINEER SHALL DETERMINE THE PROPER EXPANSION JOINT OPENING.

EXPANSION JOINT EXTRUSIONS SHALL BE FABRICATED TO CONFORM TO ROADWAY CROWN & GRADE. FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST BARS, PLATES, WT-SECTION, ANCHORAGE LOOP, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERICAL BLAST CLEANING". AFTER BLAST CLEANING, THIS ASSEMBLY SHALL BE HOT DIPPED GALVANIZED. SLIP-RESISTANT SURFACE IS APPLIED TO SIDEWALK COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.

COST OF FURNISHING & PLACING OF THE EXPANSION JOINTS COMPLETE WITH PARAPET PLATES & SIDEWALK PLATES SHALL BE PAID FOR UNDER THE PRICE BID FOR "EXPANSION DEVICE MODULAR B-11-19".

BAR STEEL REINF. IN DECK AND CONC. DIAPHRAGM SHALL BE RESPACED AS NECESSARY TO ALLOW PLACEMENT OF JOINT ASSEMBLY. TOP TRANSVERSE BARS, ADJACENT TO MOD. JT., TO BE CUT AND PLACED BETWEEN JT. SUPPORT SYSTEM.

LEGEND

1. MODULAR EXPANSION JOINT DEVICE, 2 CELLS.
2. ½" PLATE, ONE PER GIRDER MIN. PROVIDE 2 - 1" X 2" MIN. SLOTTED HOLES PLACED HORIZONTALLY FOR NO. 4.
3. WT 6 X 29 (OR EQUIVALENT BUILT UP T-SECTION). ONE PER GIRDER. PROVIDE 2 - 1" X 3" MIN. SLOTTED HOLES PLACED VERTICALLY IN WEB OF WT FOR BOLTS NO. 4.
4. ¾" Φ HIGH STRENGTH BOLTS WITH NUTS & WASHERS. (A325 GALV.)
5. ¾" Φ HIGH STRENGTH BOLTS WITH NUTS & WASHERS. FIELD DRILL HOLES IN GIRDER SHELF PLATE PRIOR TO PAINTING. (A325 GALV.) DO NOT INSTALL BOLTS PRIOR TO PAINTING.
6. SUPPORT BOX ASSEMBLY FOR SUPPORT BAR (SPA. PER MANUFACTURER). FABRICATE BOX FROM ½" PLATES.
7. ⅜" BULKHEAD PLATE. WELD TO NO. 1, NO. 8 AND NO. 14. WHEN CONDUIT IS PRESENT IN PARAPET OR SIDEWALK, ACCOMMODATE FOR BY PROVIDING OPENING IN NO. 7.
8. INSIDE PLATE. FABRICATE FROM ⅜" PLATE.
9. OUTSIDE PLATE. FABRICATE FROM ⅝" PLATE.
10. ⅞" SQUARE BAR. WELD TO NO. 8 AS SHOWN.
11. ¾" Φ X 4" LONG STUDS. WELD TO NO. 8 , NO. 7 & NO. 14 AS SHOWN.
12. ¾" Φ X 2" STAINLESS STEEL FLAT CTSK. SLOTTED HEAD CAP SCREWS WITH ANTI-SEIZE LUBRICANT. RECESS 1/16" BELOW PLATE SURFACE.
13. ½" PLATE WITH ⅝" Φ LOOP ANCHOR FABRICATED AS SHOWN. SPACED AT MANUFACTURER'S SPEC.
14. INSIDE PLATE. FABRICATE FROM ⅝" PLATE
15. ADIPRENE BUTTON. SEE DETAIL. SET IN OUTSIDE PLATE.

⚠ MANUFACTURER'S RECOMMENDED JOINT OPENING BASED ON THE TEMPERATURE ON THE DAY OF PLACEMENT PER TEMPERATURE TABLE. THE MODULAR EXPANSION DEVICE SHALL HAVE THE NUMBER OF CELLS AS INDICATED IN ①.

TEMPERATURE TABLE

TEMP. ° F	JOINT SETTING (IN)	GIRDER END GAP (IN)
	STRIP SEAL	MODULAR
-5	2¾	5¼
5	2 11/16	4⅞
15	2 9/16	4½
25	2 7/16	4 1/16
35	2⅜	3 11/16
45	2¼	3 5/16
55	2⅛	2 15/16
65	2 1/16	2 9/16
75	1 15/16	2 3/16
85	1⅞	1 13/16
95	1¾	1 7/16

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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MODULAR EXPANSION JOINT DETAILS

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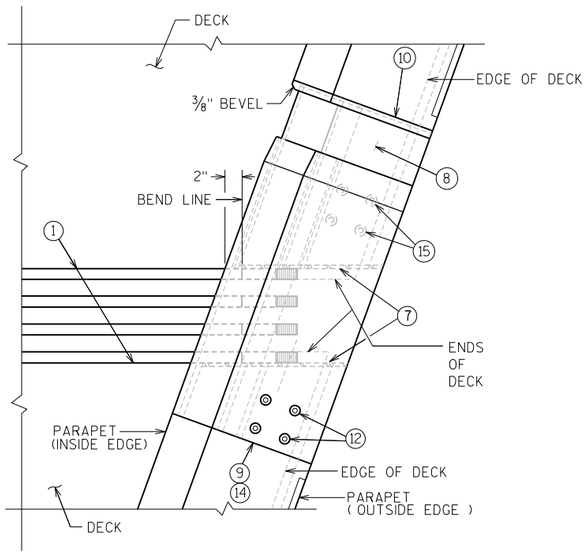
STATE PROJECT NUMBER

5271-01-71

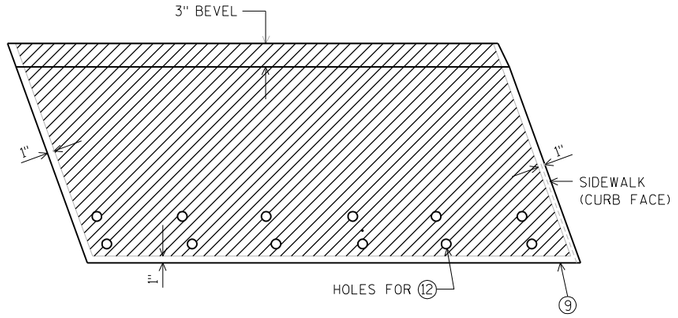
APPROVED SLIP-RESISTANT APPLIED SURFACES FOR STEEL PLATES		
PRODUCT	MANUFACTURER	CONTACT AT
SLIPNOT GRADE 2, STEEL	W. S. MOLNAR COMPANY	1-800-SLIPNOT
ALGRIP, STEEL	ROSS TECHNOLOGY CORP.	1-800-345-8170

◪ PLACE SLIP-RESISTANT SURFACE ON TOP WALKING SURFACE IN SHADED AREA ONLY (NOT ON CURB FACE). GALVANIZE PLATE AFTER SLIP-RESISTANT SURFACE IS APPLIED.

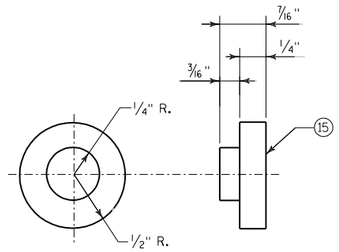


PLAN OF SINGLE SLOPE PARAPET

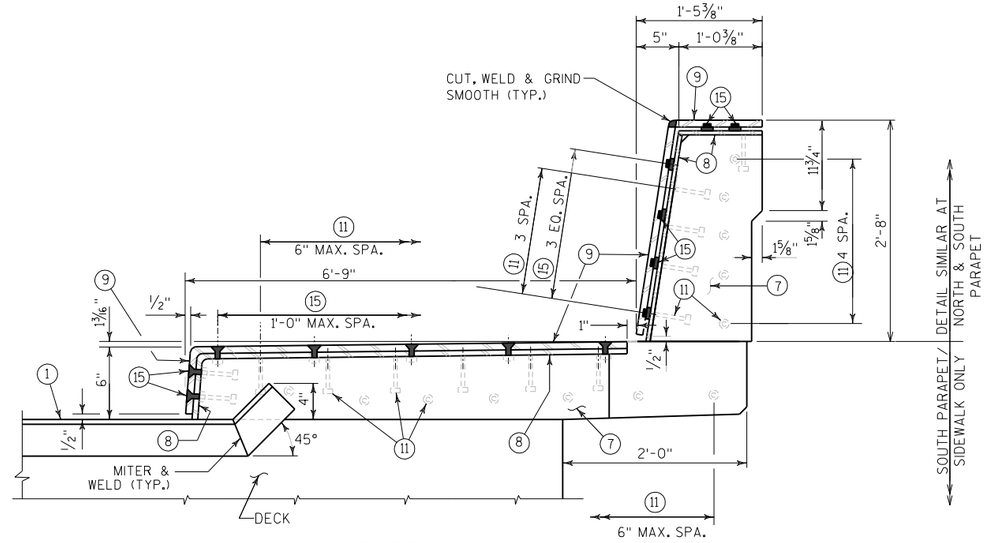
(NORTH EDGE)



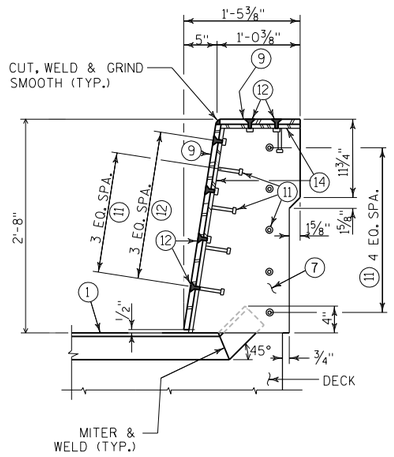
PLAN OF SIDEWALK COVER PLATE WITH SLIP-RESISTANT SURFACE ◪



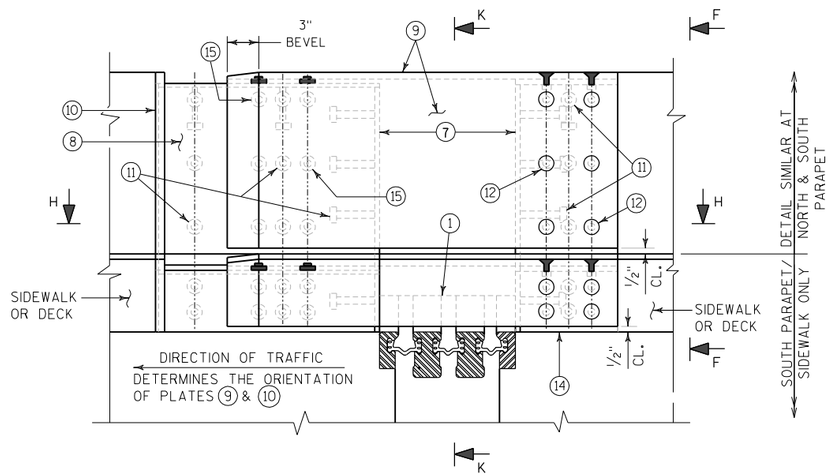
ADIPRENE BUTTON DETAIL



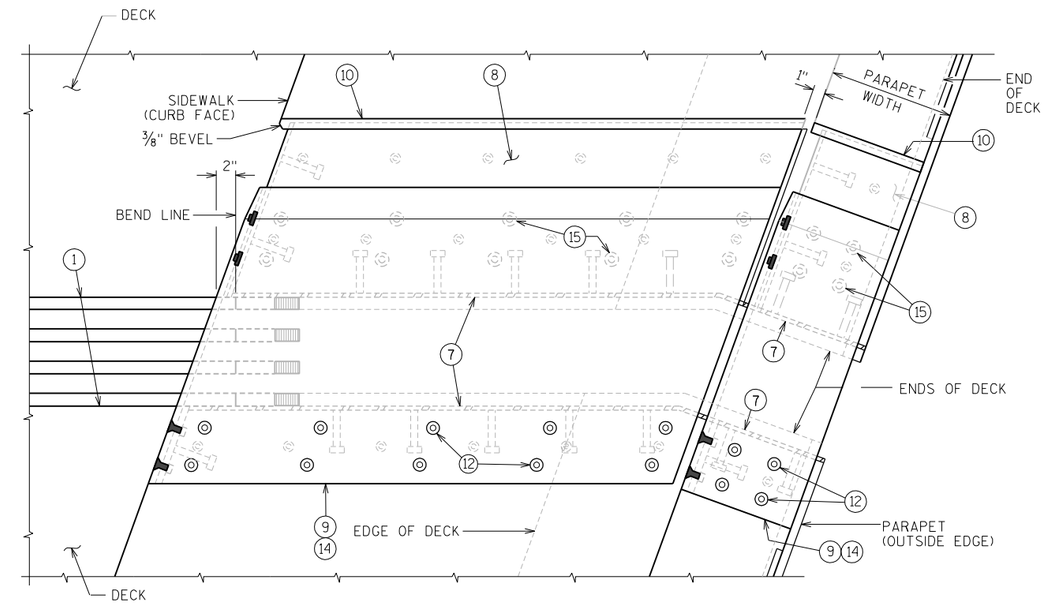
SECTION K-K



SECTION F-F

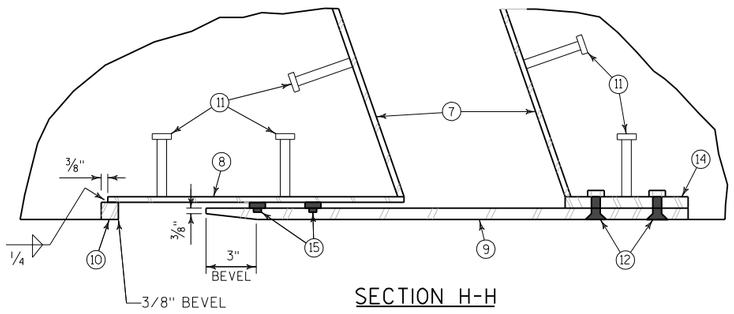


ELEVATION OF SINGLE SLOPE PARAPET



PLAN OF SIDEWALK W/ PARAPET

(SOUTH EDGE)



SECTION H-H

NOTE

SEE SHT. 18 FOR LEGEND

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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COVER PLATE FOR SIDEWALK & 32SS PARAPET AT MODULAR JOINT

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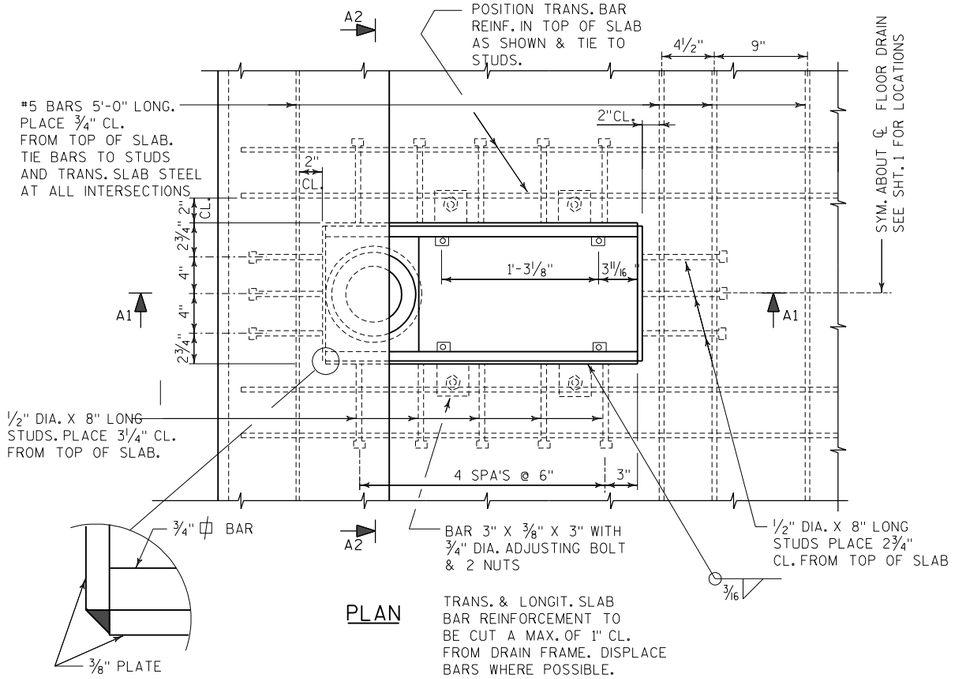
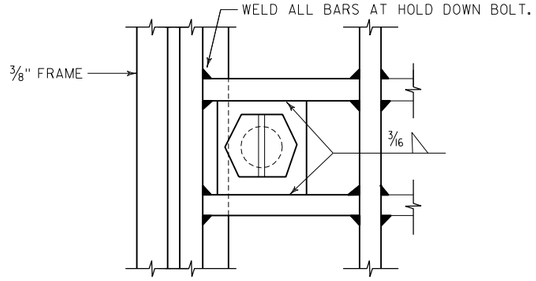
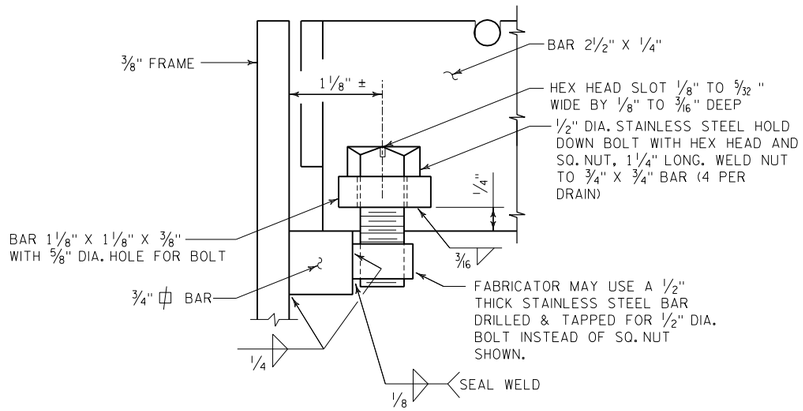


PLAN

TRANS. & LONGIT. SLAB BAR REINFORCEMENT TO BE CUT A MAX. OF 1" CL. FROM DRAIN FRAME. DISPLACE BARS WHERE POSSIBLE.



PART PLAN



SECTION AT HOLD DOWN BOLT

GENERAL NOTES

ALL DRAIN MATERIAL INCLUDING GRATE, EXCLUDING PIPE & GRATE HOLD DOWN BOLTS, SHALL BE ASTM A36 STEEL.

MATERIAL FOR BRACKETS SHALL CONFORM TO ASTM A36.

THE CONTRACTOR MAY PROPOSE AN ALTERNATE TYPE OF BRACKET. THE PROPOSED ALTERNATE DETAILS SHALL BE SUBMITTED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

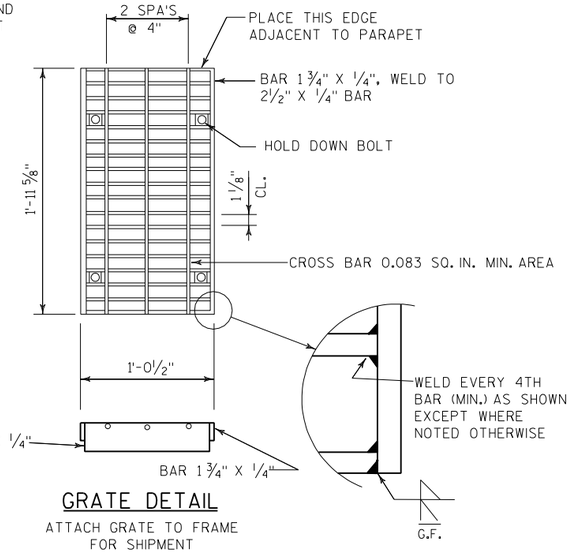
ALL STEEL SHALL BE GALVANIZED. WELDS SHALL BE MADE WITH LOW HYDROGEN ELECTRODES.

SEAL WELD INSIDE OF DRAIN.

PRIOR TO GALVANIZING A NO. 6 BLAST CLEANING IS REQ'D.

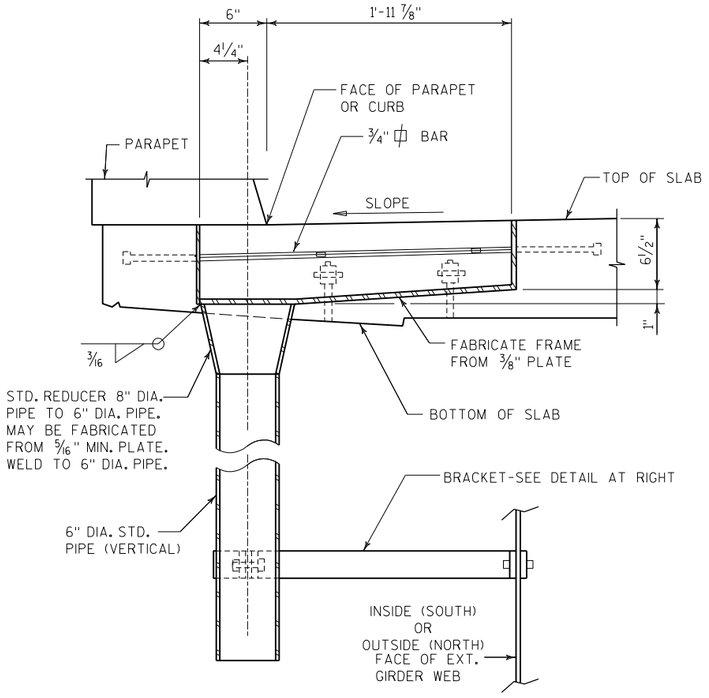
FLANGED 6" DIA. FIBERGLASS PIPE CONFORMING TO ASTM D2996, GRADE 1, CLASS A, MAY BE USED AS AN ALTERNATE TO GALVANIZED ST'D. PIPE CONFORMING TO ASTM A53.

ALL MATERIAL FOR FLOOR DRAINS AS SHOWN ON THIS SHEET SHALL BE INCLUDED IN THE BID ITEM "FLOOR DRAIN TYPE H".

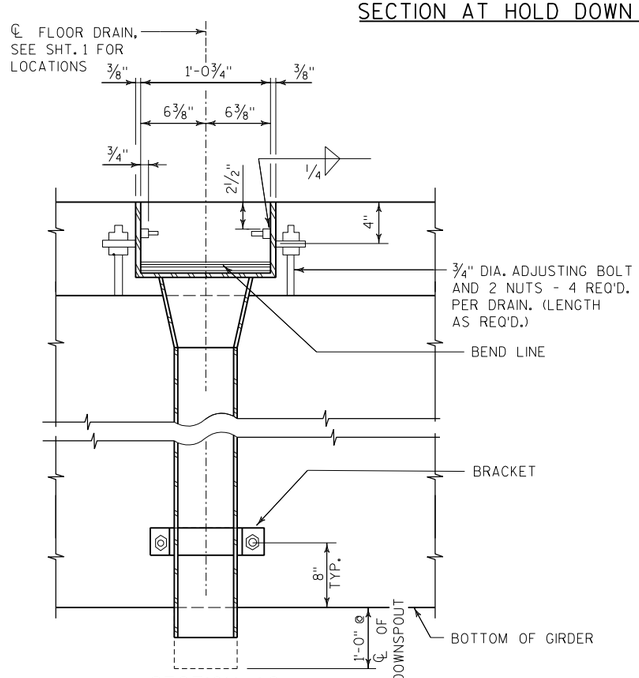


GRATE DETAIL

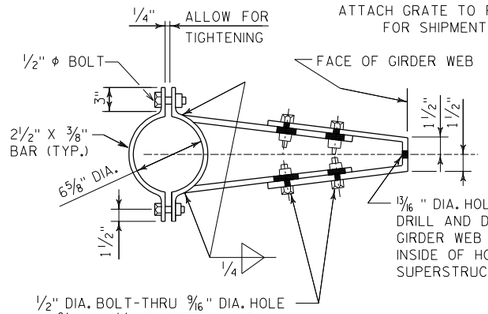
ATTACH GRATE TO FRAME FOR SHIPMENT



SECTION A1



SECTION A2



BRACKET DETAIL

NO.	DATE	REVISION	BY

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STRUCTURE B-11-19

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FLOOR DRAIN TYPE 'H'

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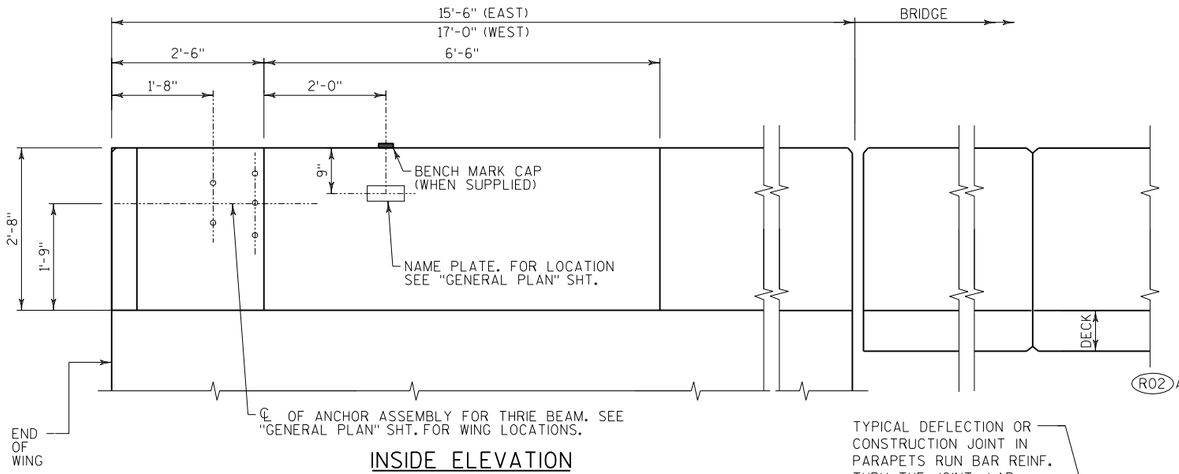
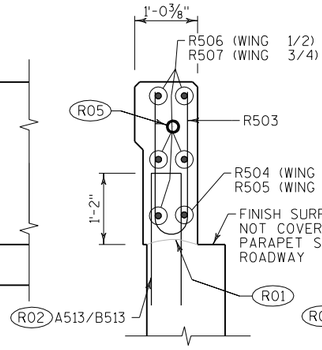
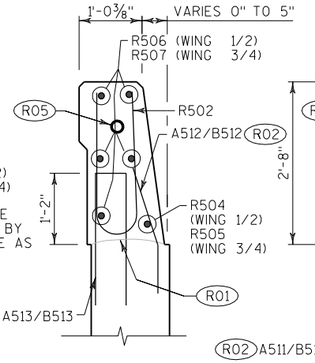


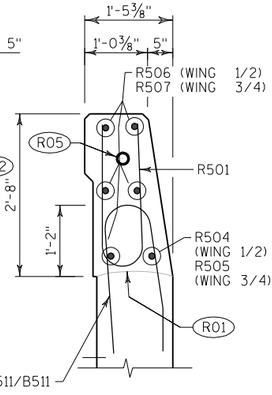
INSIDE ELEVATION



SECTION A



SECTION B



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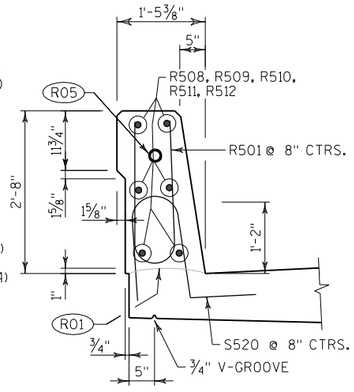
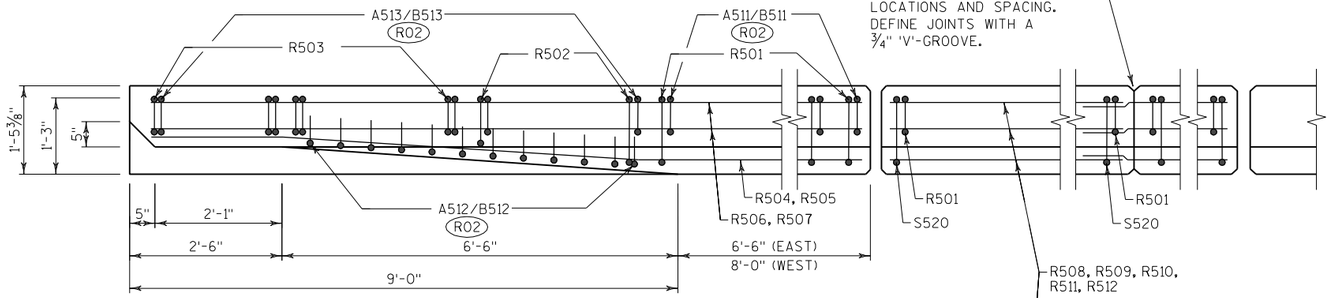
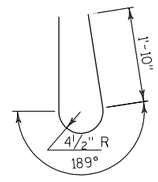


SECTION D-D THRU PARAPET ON BRIDGE

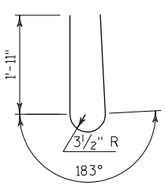


PLAN

TYPICAL DEFLECTION OR CONSTRUCTION JOINT IN PARAPETS RUN BAR REINF. THRU THE JOINT. LAP LONGITUDINAL BARS A MIN. OF 1'-9". SEE SHT. 7 FOR LOCATIONS AND SPACING. DEFINE JOINTS WITH A ¾" 'V'-GROOVE.



R501



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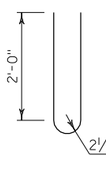

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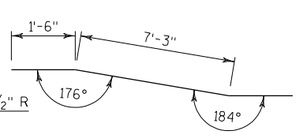
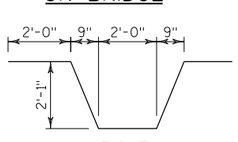
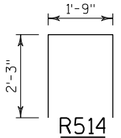


R504/R505



R613

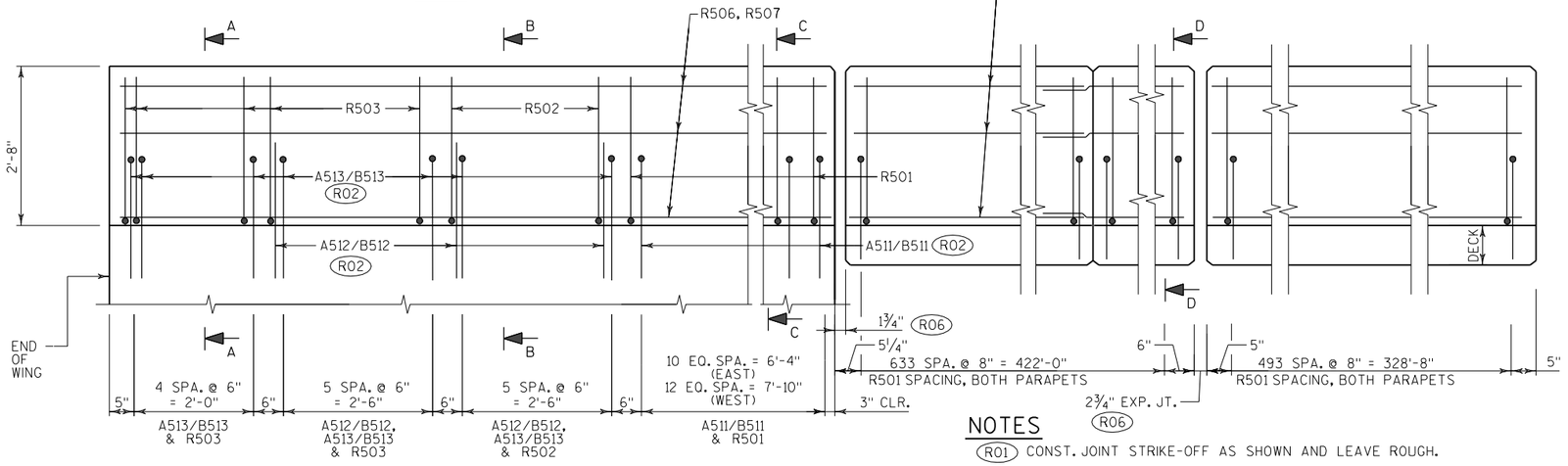


R514

R515

BILL OF BARS

BAR MARK	COAT	EAST NO. REQ'D.	WEST NO. REQ'D.	SUPER	LENGTH	BENT	BAR SERIES	LOCATION	
R501	X	22	26	2256	5'-0"	X	-	PARAPET	VERT.
R502	X	12	12	-	4'-10"	X	-	PARAPET	VERT.
R503	X	22	22	-	4'-9"	X	-	PARAPET	VERT.
R504	X	-	2	-	16'-4"	X	-	PARAPET	VERT.
R505	X	2	-	-	14'-10"	X	-	PARAPET	VERT.
R506	X	-	10	-	16'-8"	-	-	PARAPET WINGWALL 1&2	HORIZ.
R507	X	10	-	-	15'-2"	-	-	PARAPET WINGWALL 3&4	HORIZ.
(R03) R508	X	-	-	24	34'-4"	-	-	PARAPET	HORIZ.
(R03) R509	X	-	-	60	34'-7"	-	-	PARAPET	HORIZ.
(R03) R510	X	-	-	72	33'-9"	-	-	PARAPET	HORIZ.
(R03) R511	X	-	-	48	38'-7"	-	-	PARAPET	HORIZ.
(R03) R512	X	-	-	60	37'-10"	-	-	PARAPET	HORIZ.
R613	X	-	-	45	10'-0"	X	-	LIGHT STANDARD	VERT.
R514	X	-	-	36	7'-0"	X	-	LIGHT STANDARD	VERT.
R515	X	-	-	18	3'-2"	X	-	LIGHT STANDARD	VERT.



OUTSIDE ELEVATION

NOTES

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

(R02) A512/B512 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE A512/B512 BARS CORRECTLY ALONG TRANSITION OF PARAPET. A511/B511, A513/B513 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED. SEE SHT. 6 FOR PLACEMENT.

(R03) R508 - R512 BARS FOLLOW THE SAME LAYOUT PATTERN AS BOTTOM MAT LONGITUDINAL DECK BARS S404 - S408, SEE SHTS. 9 - 13.

(R04) SEE SHTS. 9-12 FOR PLACEMENT, SEE SHT. 8 FOR REINFORCEMENT DETAILS.

(R05) CONDUIT, SOUTH PARAPET ONLY SEE SHT. 22.

(R06) AT 65° F, SEE TEMPERATURE TABLE SHT. 18.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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SINGLE SLOPE PARAPET 32SS

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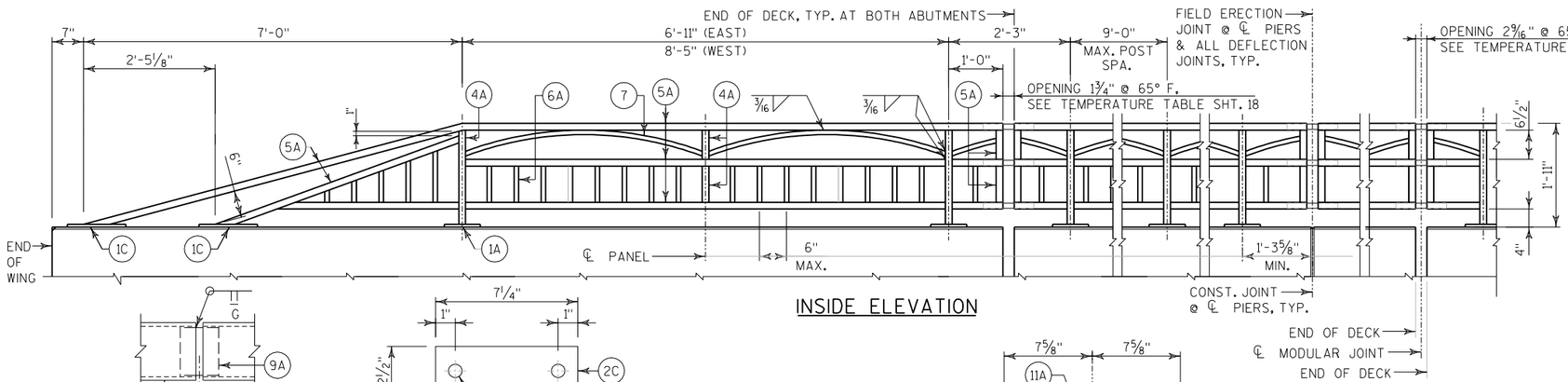
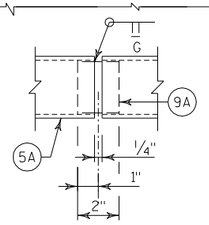
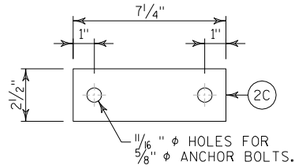


INSIDE ELEVATION



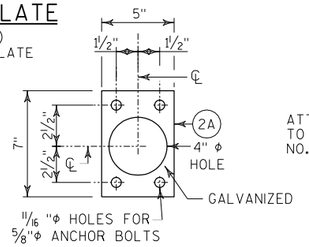
SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



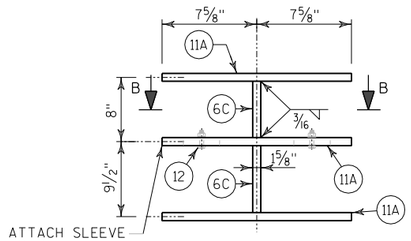
END RAIL ANCHOR PLATE

FOR END RAIL BASE PLATES (1C)
2 REQ'D. PER END RAIL BASE PLATE



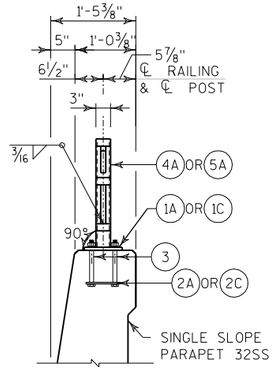
ANCHOR PLATE

FOR 3" X 1½" X 3/16" POSTS (4A)

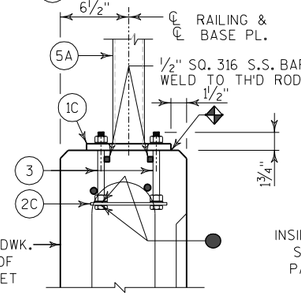


SECTION B-B

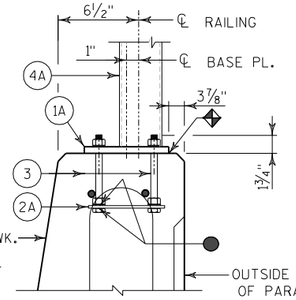
MODULAR JOINT SLEEVE DETAIL



TYPICAL SECTION



SECTION AT END RAIL



SECTION AT RAIL ON BRIDGE

LEGEND

(1A) PLATE ⅝" X 6" X 8" WITH ¾" X 1½" SLOTTED HOLES.

(1C) PLATE ⅝" X 8" X 1'-1" WITH ¾" X 1½" SLOTTED HOLES.

(2C) ¼" X 2½" X 7¼" ANCHOR PLATE WITH 11/16 " ϕ HOLES FOR THR'D. RODS NO.3.

(3) ⅝" ϕ X 9" LONG, TYPE 316 STAINLESS STEEL THR'D RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHERS OF SAME ALLOY GROUP. (ALTERNATE RAIL POST ANCHORAGE: 4 EQUIVALENT STAINLESS STEEL CONCRETE MASONRY ANCHORS TYPE S 5/8-INCH. EMBED 7" IN CONCRETE FOR RAIL POSTS. EMBED 5" IN CONCRETE FOR END RAILS.)

(4A) STRUCTURAL TUBING 3" X 1½" X 3/16". PLACE VERTICAL. WELD TO NO. 1 & 5.

(5A) STRUCTURAL TUBING 3" X 1½" X 3/16" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS

(6A) BAR 1" X 1" PICKETS. WELD TO NO. 5. (SPACE AT 6" MAX. ℄ TO ℄ SPACING). PLACE VERTICAL.

(6C) BAR 1" X 1½" PICKETS. WELD TO NO. 11. PLACE VERTICAL.

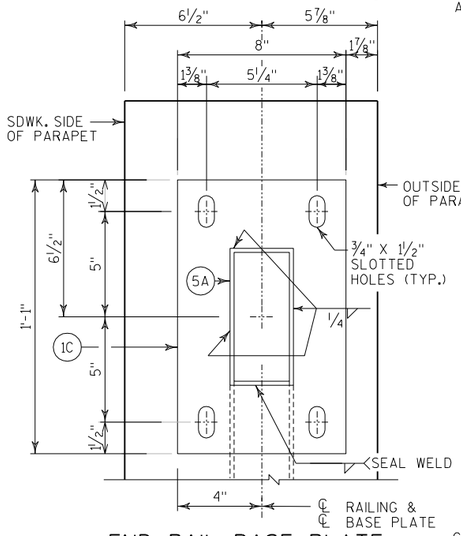
(7) BAR 1" X 1". BEND TO REQUIRED RADIUS. WELD TO NO. 4 & 5.

(9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. PROVIDE "SLIDING FIT".

(10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL EXP. JTS.)

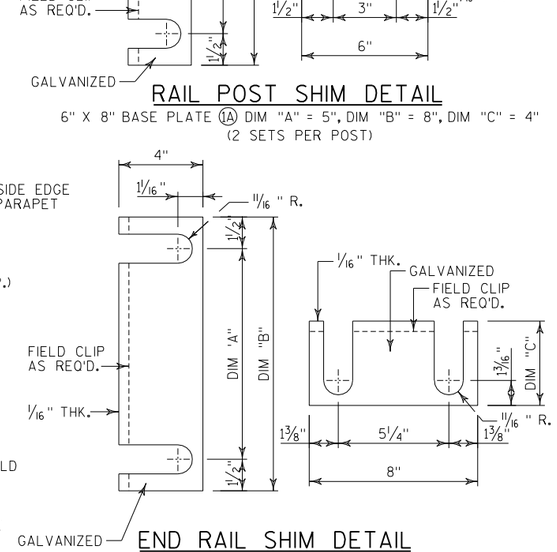
(11A) BAR 2½" X 1" X 1'-3¼".

(12) ½" ϕ STAINLESS STEEL BOLT WITH NUT AND LOCKWASHER.



END RAIL BASE PLATE

FOR 3" X 1½" X 3/16" RAIL (5A)

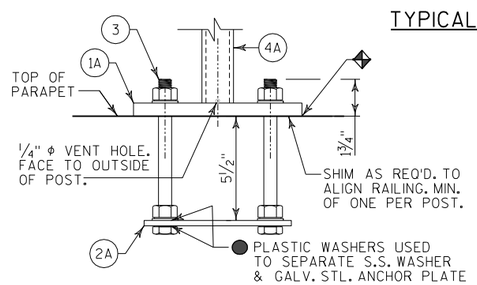


RAIL POST SHIM DETAIL

6" X 8" BASE PLATE (1A) DIM "A" = 5", DIM "B" = 8", DIM "C" = 4"
(2 SETS PER POST)

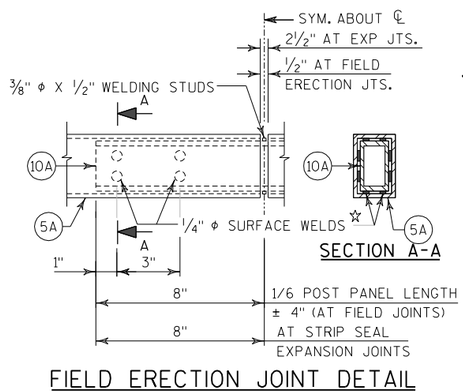
END RAIL SHIM DETAIL

8" X 1'-1" BASE PLATE (1C) DIM "A" = 10", DIM "B" = 1'-1",
DIM "C" = 6½" (2 SETS PER POST)



ANCHOR BOLTS FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED
WHEN TYPE S ANCHORS ARE USED.



SECTION A-A

FIELD ERECTION JOINT DETAIL

☆ MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE C3 B-19-11", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN, AND PAINTING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL PLATES, BARS, AND RECTANGULAR SLEEVES SHALL CONFORM TO ASTM A709 GRADE 36. ALL STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

◆ CAULK AROUND PERIMETER OF BASE PLATES, NO. 1, AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON- STAINING GRAY NON- BITUMINOUS JOINT SEALER.

ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

ALL MATERIAL (EXCEPT NO. 3 & 12) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, THE STEEL RAILING SHALL BE GIVEN A NO. 6 SANDBLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE "BRIDGE SPECIAL PROVISIONS". THE RAILING SHALL BE PAINTED FEDERAL STD. 595 COLOR I.D. NO. 17038.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

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TYPE C3 STEEL RAILING

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11/20/2013

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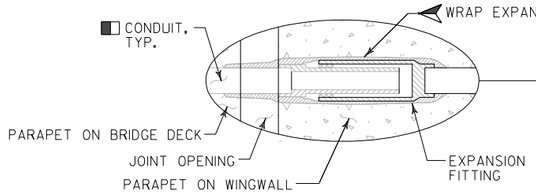
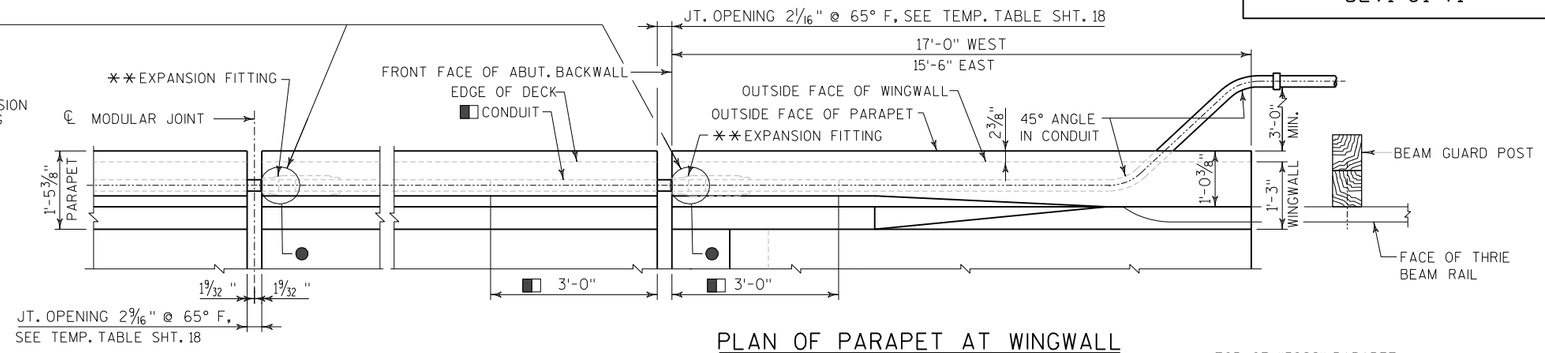
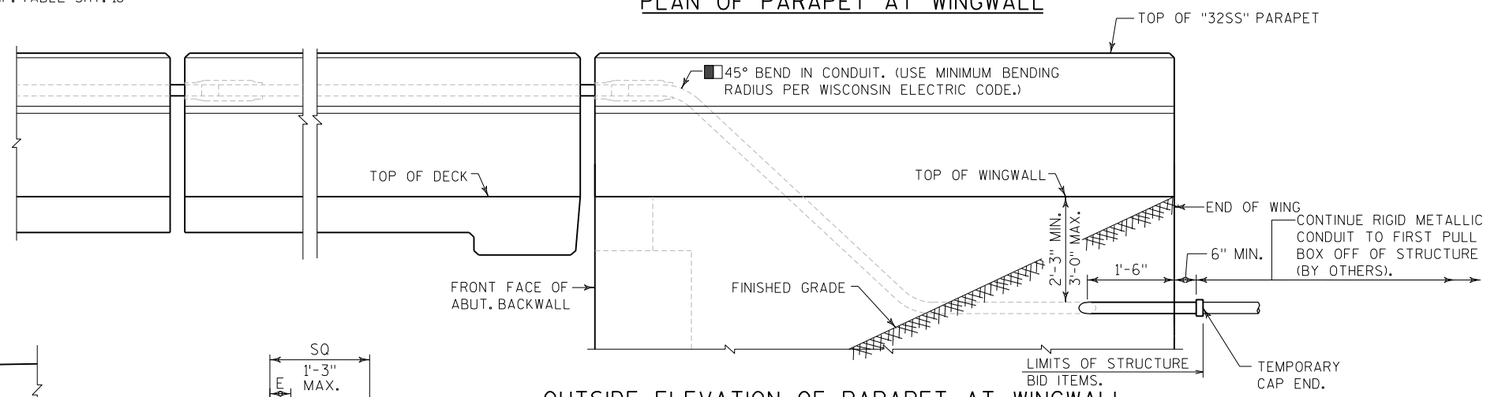


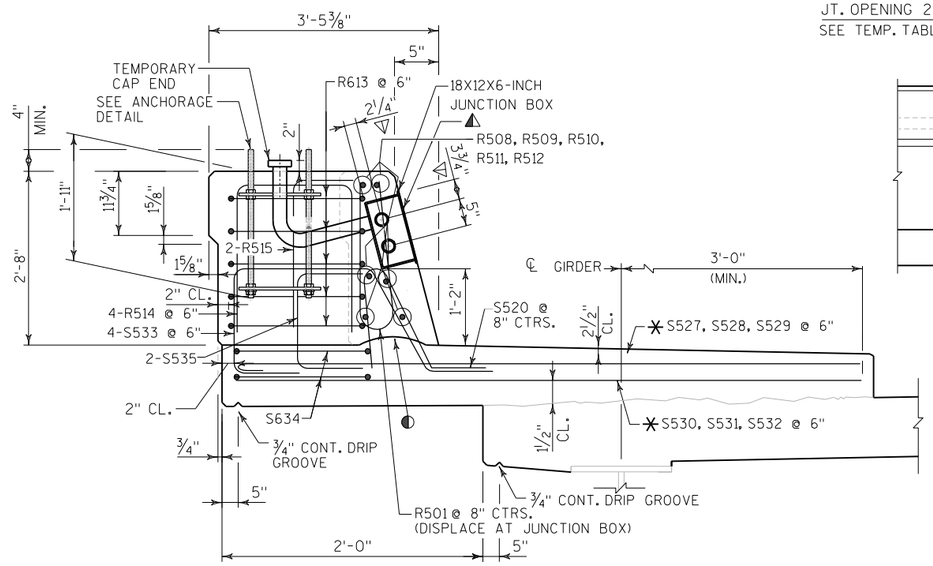


PLAN OF PARAPET AT WINGWALL

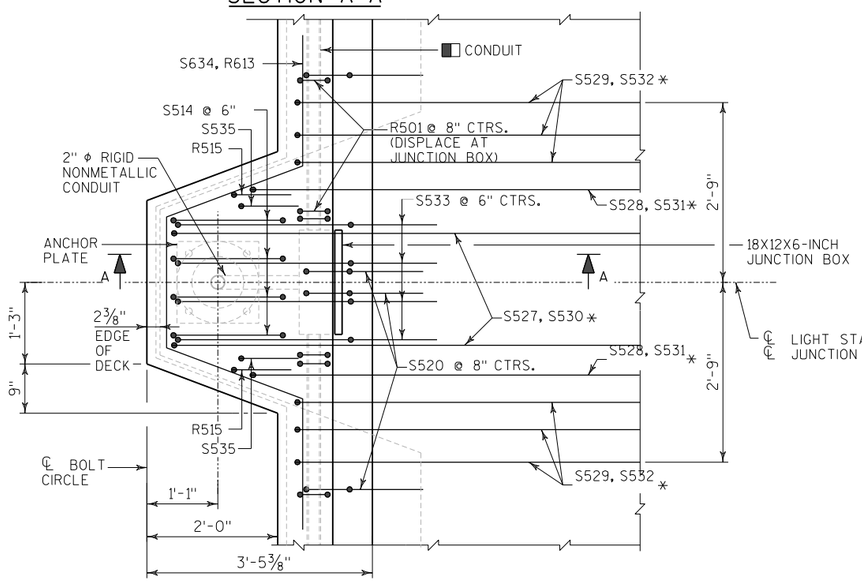


OUTSIDE ELEVATION OF PARAPET AT WINGWALL

CONDUIT SYSTEM

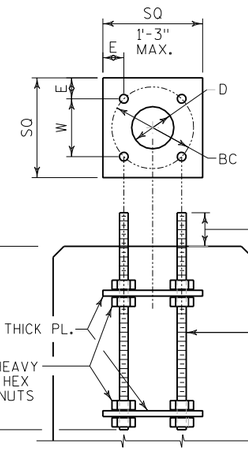


SECTION A-A



PLAN AT LIGHT STANDARD

LONGITUDINAL PARAPET BARS R508-R512 NOT SHOWN FOR CLARITY



ANCHORAGE DETAIL

TABLE FOR "TYPE 5 LIGHT POLE" FROM FACILITIES DEV. MANUAL WITH 1" ϕ ANCHOR BOLTS. (ANY OTHER LIGHT POLE TYPE MUST BE DESIGNED FOR.)

SQ	1'-1 1/2"
E	2 11/16"
W	8 1/8"
BC	11 1/2"
D	9 1/2"

W = 0.707 X BC
SQ = BC + 2D
D = ANCHOR BOLT DIA.
E = (SQ-W)/2
$D_{MAX.}$ = BC - 2D
$D_{MIN.}$ = 2 X CONDUIT DIA. + 1"

NOTES

** EXPANSION FITTINGS, ANGLES AND ADAPTER FITTINGS ARE INCIDENTAL TO "CONDUIT RIGID METALLIC 2-INCH". APPROVED MANUFACTURER OR EQUIVALENT: O-Z/GEDNEY TYPE AX-200 AND BONDING JUMPER.

● POSITION MOVABLE END OF CONDUIT INSIDE EXPANSION FITTING, SUCH THAT IT WILL HAVE THE SAME ALLOWANCE FOR MOVEMENT (EXPANSION/CONTRACTION) AS THE EXPANSION DEVICE SET IN PLACE IN THE DECK BELOW IT. TAKE CARE TO INSTALL EXPANSION FITTING AND CONDUIT EXACTLY PARALLEL TO BRIDGE MOVEMENT.

◐ CONSTR. JT. STRIKE OFF AS SHOWN

▮ USE 2"ϕ RIGID NONMETALLIC CONDUIT EXCEPT AT EXPANSION FITTINGS. AT EXPANSION FITTING USE RIGID METALLIC CONDUIT 3'-0" INTO PARAPET ON DECK AND WING SIDES OF ABUTMENT JOINTS, AND 3'-0" INTO BOTH PARAPETS AT MODULAR JOINT.

◭ CUT OUT ± 1" OF GASKET AT BOTTOM OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE.

* THESE BARS ARE IN ADDITION TO STANDARD TRANSVERSE BARS IN DECK.

⚠ LOCATION OF CONDUIT IS MEASURED FROM OUTSIDE EDGE OF JUNCTION BOX.

◀ SPONGE RUBBER WRAP TO BE AASHTO M153, TYPE 1 OR EQUIVALENT - 1/4" MINIMUM THICKNESS. SPONGE RUBBER WRAP INCIDENTAL TO "CONDUIT RIGID METALLIC 2-INCH".

SEE SHTS. 8 THRU 13 FOR SUPERSTRUCTURE REINFORCEMENT DETAILS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-19

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LIGHTING DETAIL

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11/20/2013

STH 60

Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) (Unadjusted) Fill	Cumulative Vol (CY) Cut 1.00	Cumulative Vol (CY) Expanded Fill 1.11	Mass Ordinate
20+21	0.00	78.23	0.00	0	0	0	0	0
20+50	29.00	51.64	0.00	70	0	70	0	70
20+60	10.00	64.33	0.41	21	0	91	0	91
STRUCTURE B-11-19		-	-	-	-	-	-	-
28+40	0.00	30.95	0.00	0	0	0	0	91
28+50	10.00	62.64	3.73	17	1	17	1	107
29+00	50.00	56.62	2.01	110	5	127	7	211
29+50	50.00	19.14	0.69	70	3	197	10	278
30+00	50.00	67.04	0.24	80	1	277	11	357
30+50	50.00	76.01	0.06	132	0	409	11	489
			TOTAL	500	10			

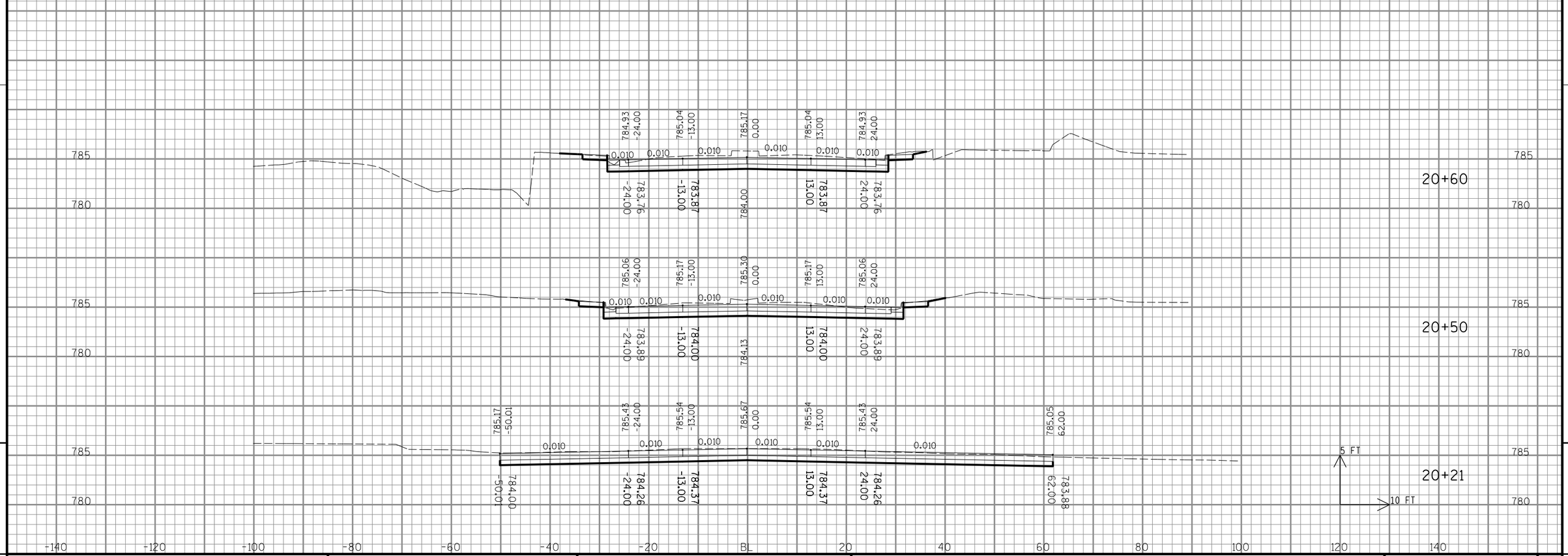
USH 12

Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) (Unadjusted) Fill	Cumulative Vol (CY) Cut 1.00	Cumulative Vol (CY) Expanded Fill 1.11	Mass Ordinate
1041+84.83	0.00	13.10	0.00	0	0	0	0	0
1042+34.83	50.00	14.62	0.00	26	0	26	0	26
1042+84.83	50.00	28.89	0.00	40	0	66	0	66
1043+29.83	45.00	0.00	0.00	24	0	90	0	90
			TOTAL	90	0			

STH 188

STATION	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) (Unadjusted) Fill	Cumulative Vol (CY) Cut 1.00	Cumulative Vol (CY) Expanded Fill 1.11	Mass Ordinate
100+85.55	0.00	8.77	0.00	0	0	0	0	0
101+00	14.45	28.50	0.00	10	0	10	0	10
101+50	50.00	35.32	0.00	59	0	69	0	69
102+00	50.00	34.24	0.00	64	0	133	0	133
102+50	50.00	29.90	0.00	59	0	192	0	192
103+00	50.00	29.72	0.00	55	0	247	0	247
103+50	50.00	16.21	0.04	43	0	290	0	290
103+72.73	22.73	14.15	0.00	13	0	303	0	303
			TOTAL	303	0			

STRUCTURE B-11-19



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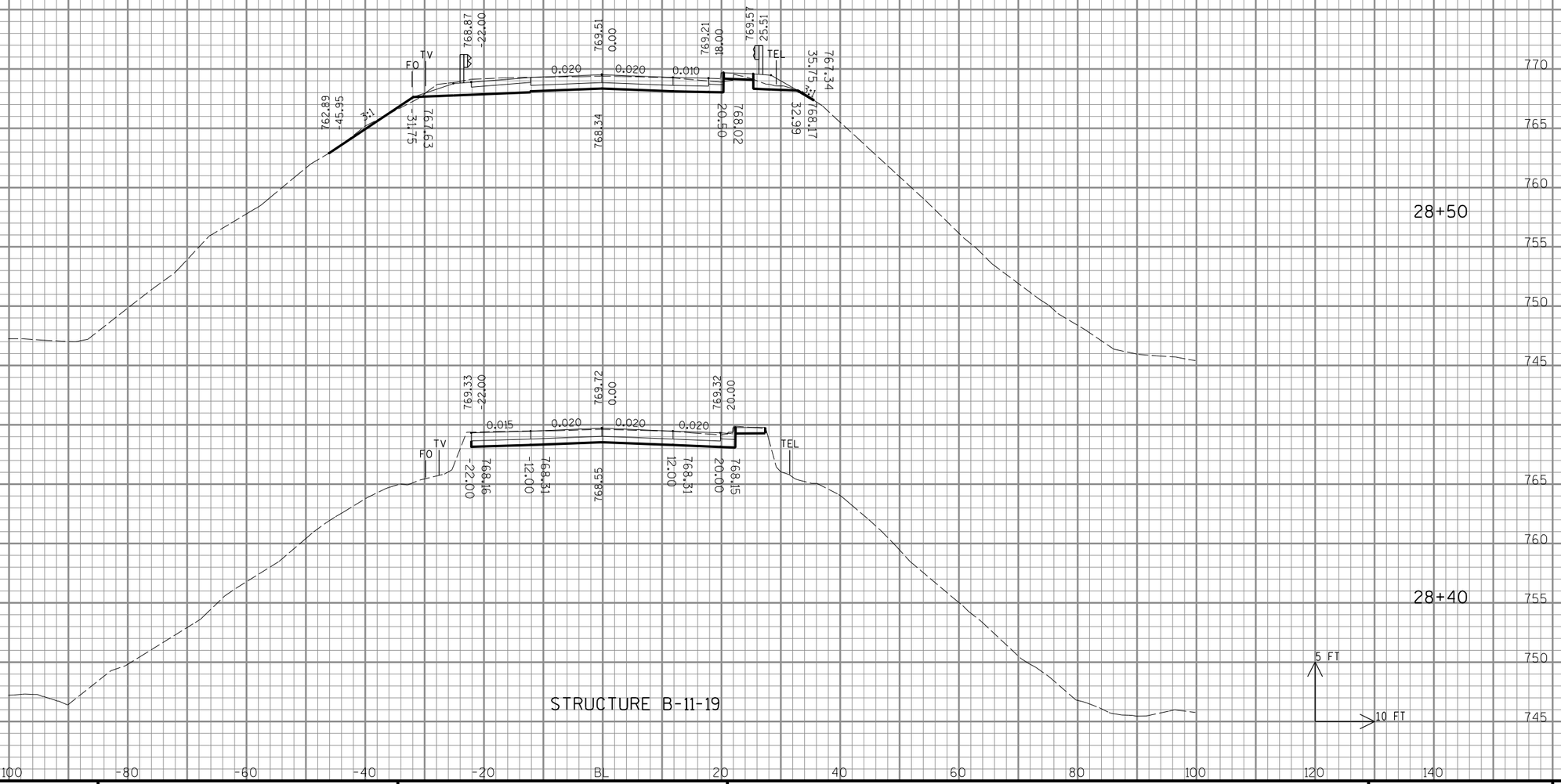
9

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	CROSS SECTIONS: STH 60	SHEET 144	E

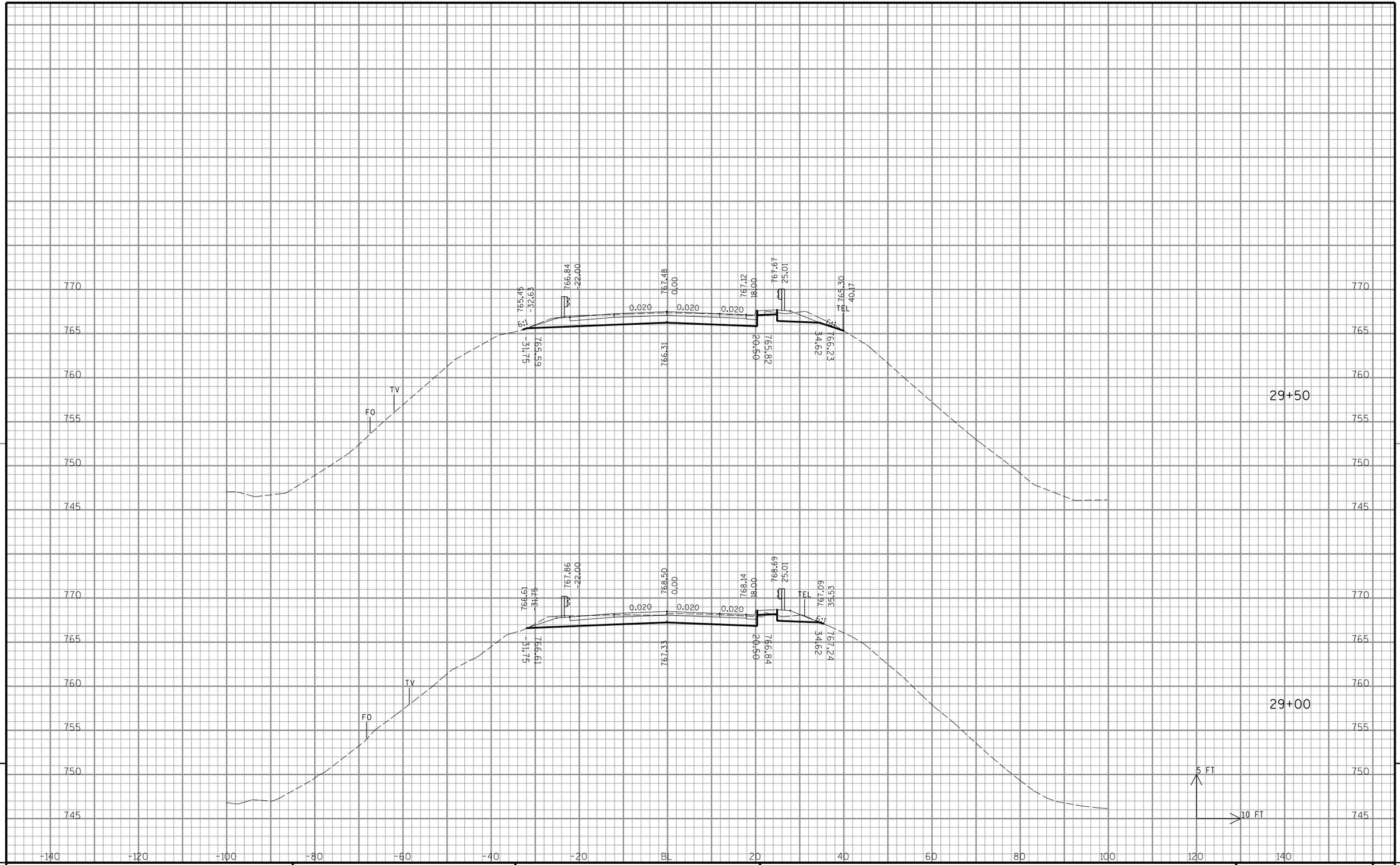
FILE NAME : M:\Design\Projects\SW\5271-01-01 STH 60\CAD\Main\X-SEC revisions 2-13-2014\NEWXSEC_2-13-14.DGN PLOT DATE : 2/13/2014 PLOT BY : $$...plotuser...$$ PLOT NAME : ..... PLOT SCALE : 2.0000 sf / IN.
WISDOT/CADDS SHEET 21



PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	CROSS SECTIONS: STH 60	SHEET 145	E

FILE NAME : M:\Design\Projects\SW\5271-01-01 STH 60\CAD\Main\X-SEC revisions 2-13-2014\NEWXSEC_2-13-14.DGN PLOT DATE : 2/13/2014 PLOT BY : $$...plotuser...$$ PLOT NAME : ---------- PLOT SCALE : 2.0000 sf / IN.

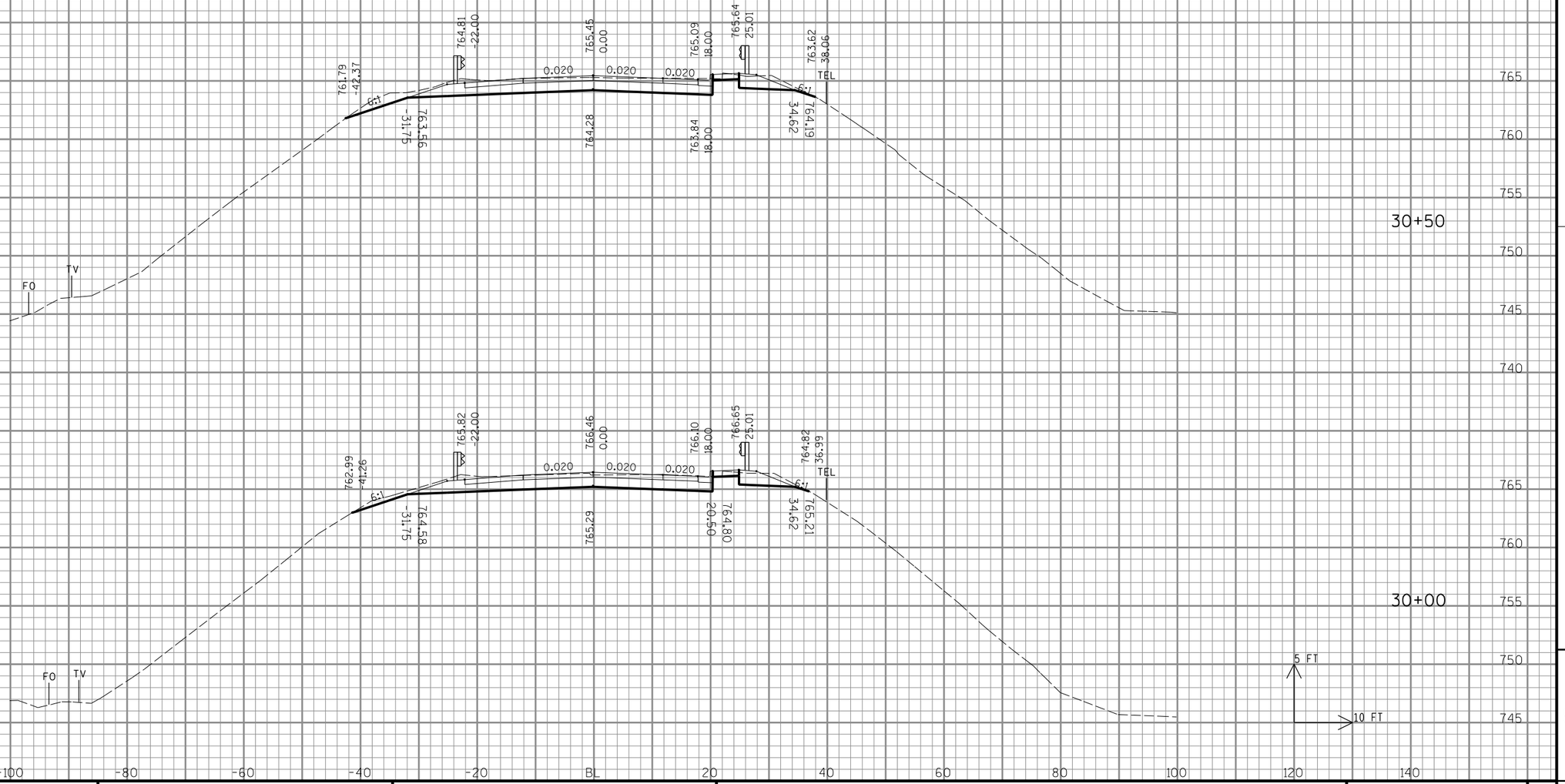
WISDOT/CADDS SHEET 21



PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	CROSS SECTIONS: STH 60	SHEET 146	E

FILE NAME : M:\Design\Projects\SW\5271-01-01 STH 60\CAD\Main\X-SEC revisions 2-13-2014\NEWXSEC_2-13-14.DGN PLOT DATE : 2/13/2014 PLOT BY : $$...plotuser...$$ PLOT NAME : ---------- PLOT SCALE : 2.0000 sf / IN.

WISDOT/CADDS SHEET 21



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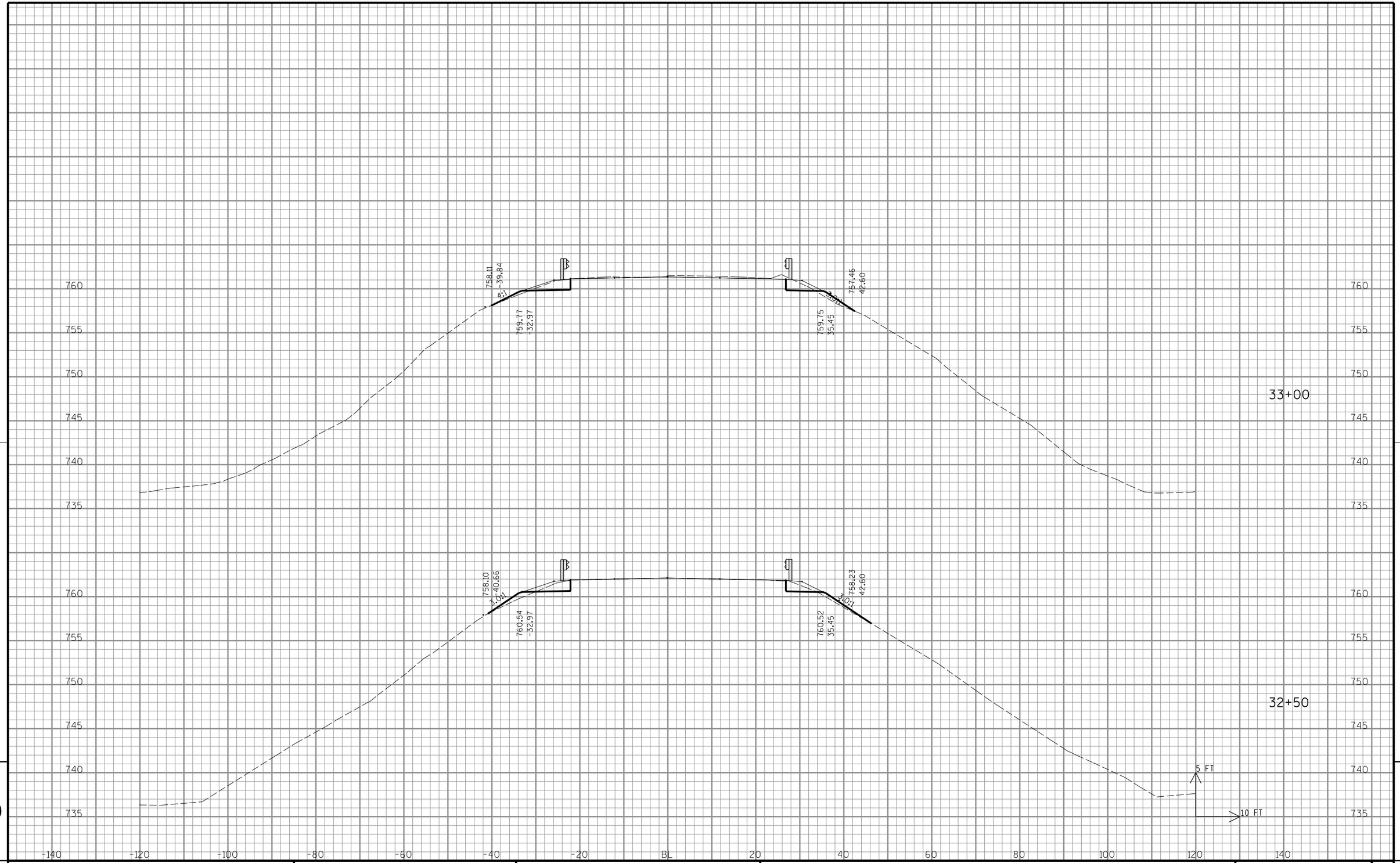
PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	CROSS SECTIONS: STH 60	SHEET 147	E

FILE NAME : M:\Design\Projects\SW\5271-01-01 STH 60\CAD\Main\X-SEC revisions 2-13-2014\NEWXSEC_2-13-14.DGN PLOT DATE : 2/13/2014 PLOT BY : $$...plotuser...$$ PLOT NAME : ---------- PLOT SCALE : 2.0000 sf / IN.

WISDOT/CADDS SHEET 21



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PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	CROSS SECTIONS: STH 60	SHEET 148	E

FILE NAME : M:\Design\Projects\SW\5271-01-01 STH 60\CAD\Main\X-SEC revisions 2-13-2014\NEWXSEC_2-13-14.DGN PLOT DATE : 2/13/2014 PLOT BY : $$...plotuser...$$ PLOT NAME : ---------- PLOT SCALE : 2.0000 sf / IN.

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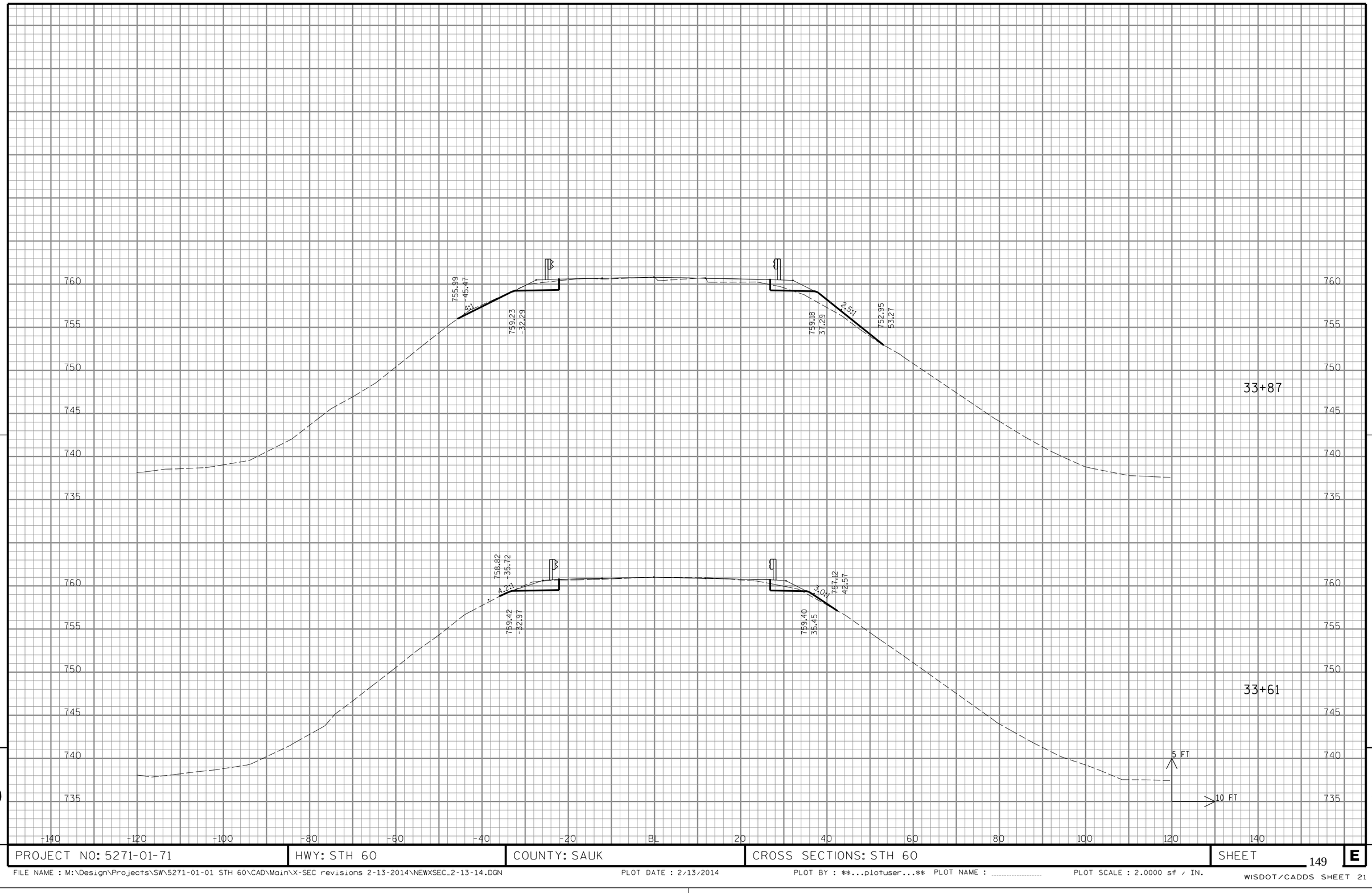

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PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	CROSS SECTIONS: STH 60	SHEET 149	E

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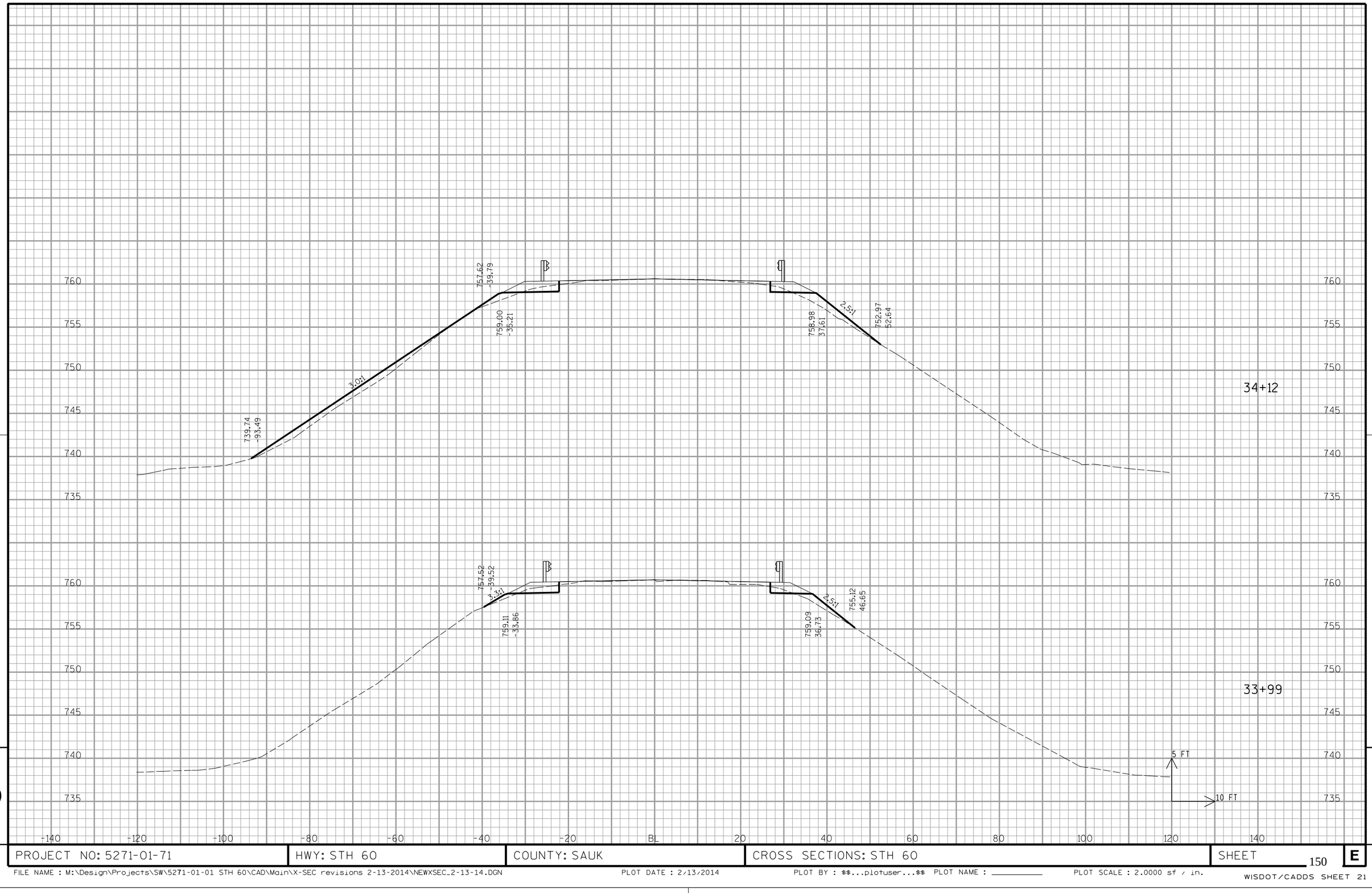

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PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	CROSS SECTIONS: STH 60	SHEET 150	E

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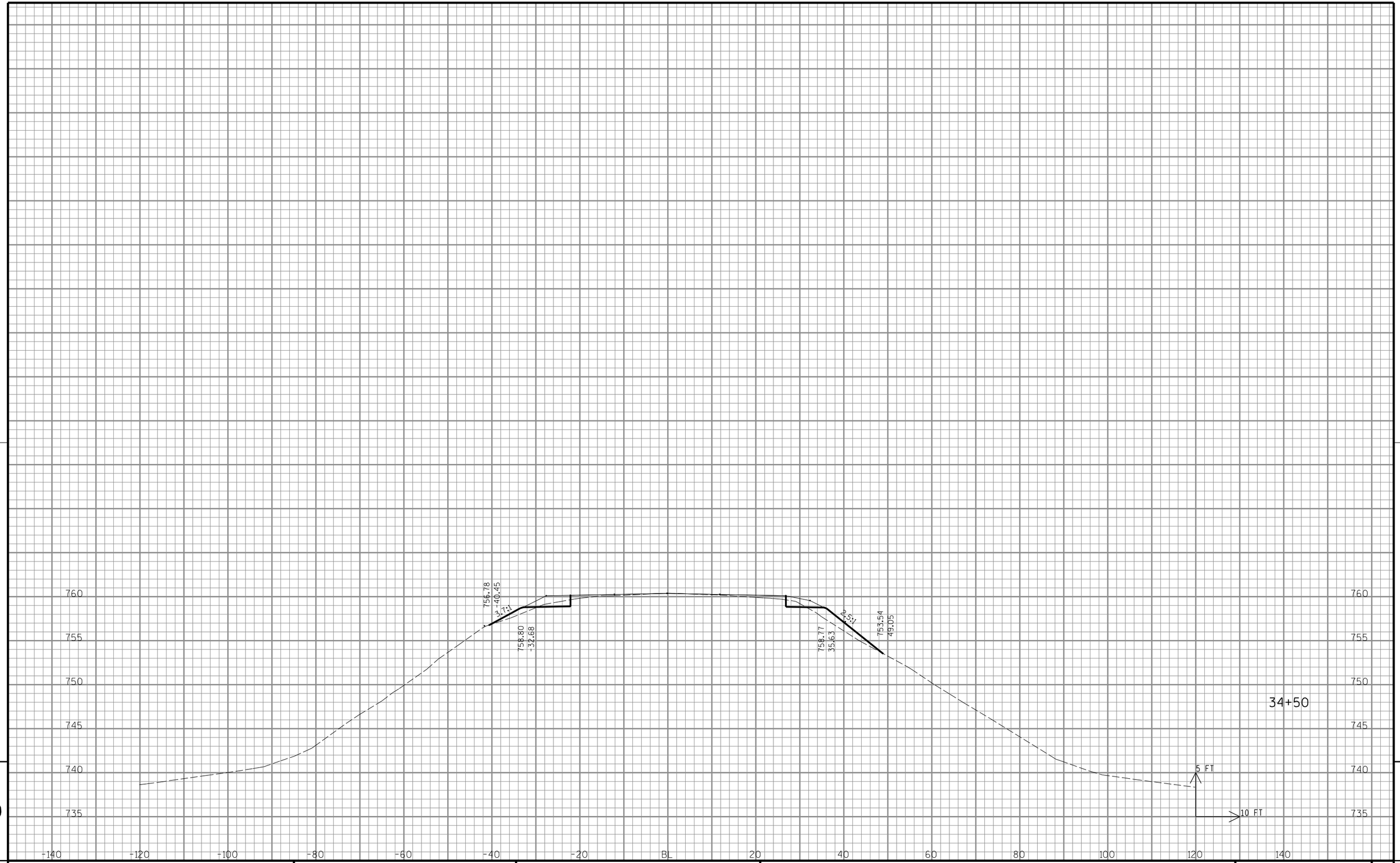
WISDOT/CADDS SHEET 21



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PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: SAUK	CROSS SECTIONS: STH 60	SHEET 151	E

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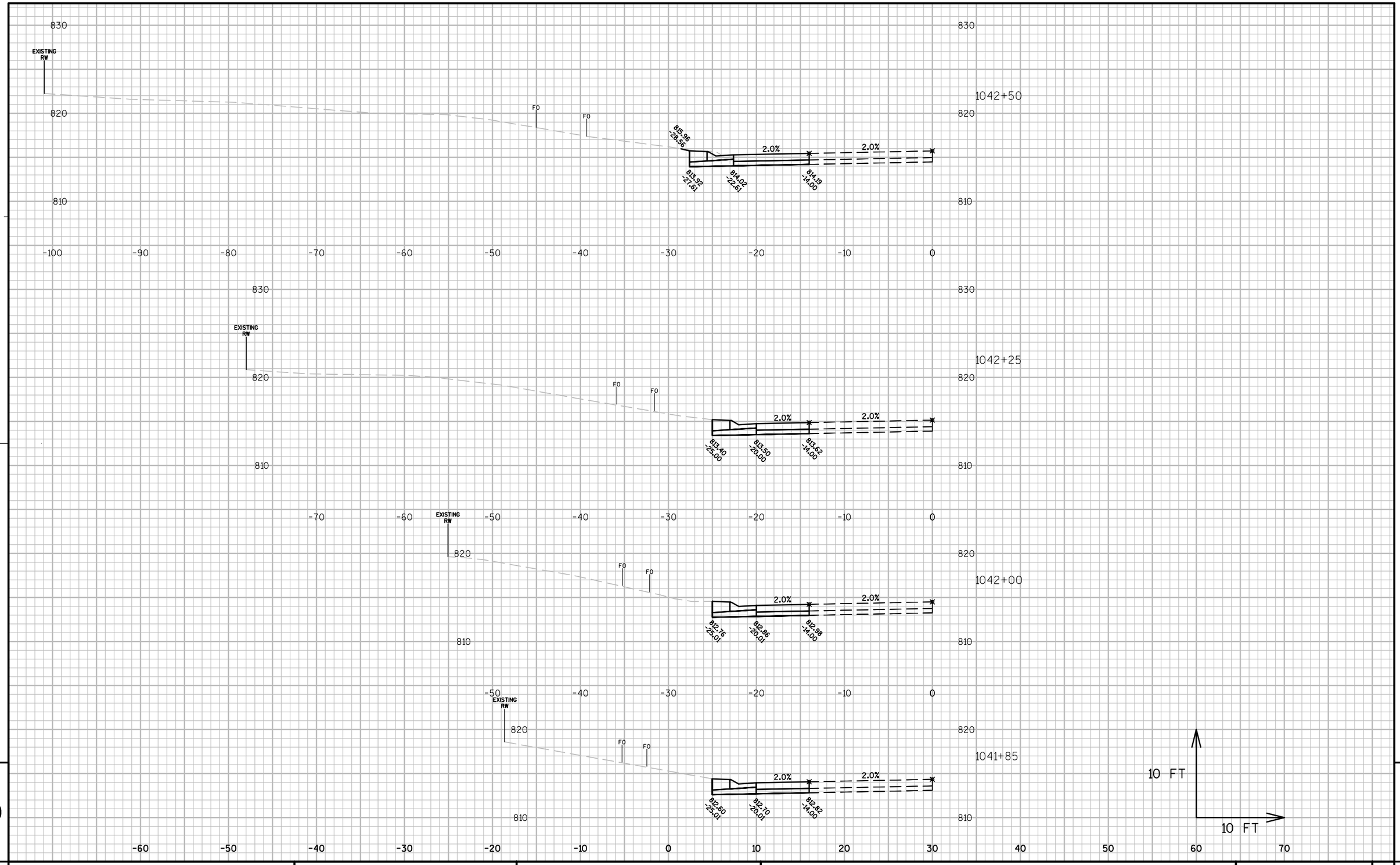
WISDOT/CADDS SHEET 21



PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: DANE & SAUK	CROSS SECTIONS: USH 12	SHEET	E

FILE NAME : PLOT DATE : PLOT BY : PLOT NAME : PLOT SCALE : 1 IN:10 FT

9

9

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: DANE & SAUK	CROSS SECTIONS: USH 12	SHEET	E

FILE NAME :

PLOT DATE :

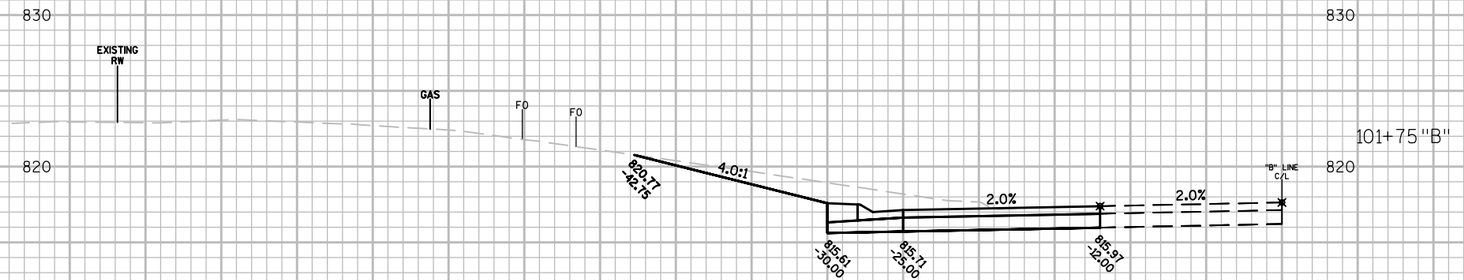
PLOT BY :

PLOT NAME :

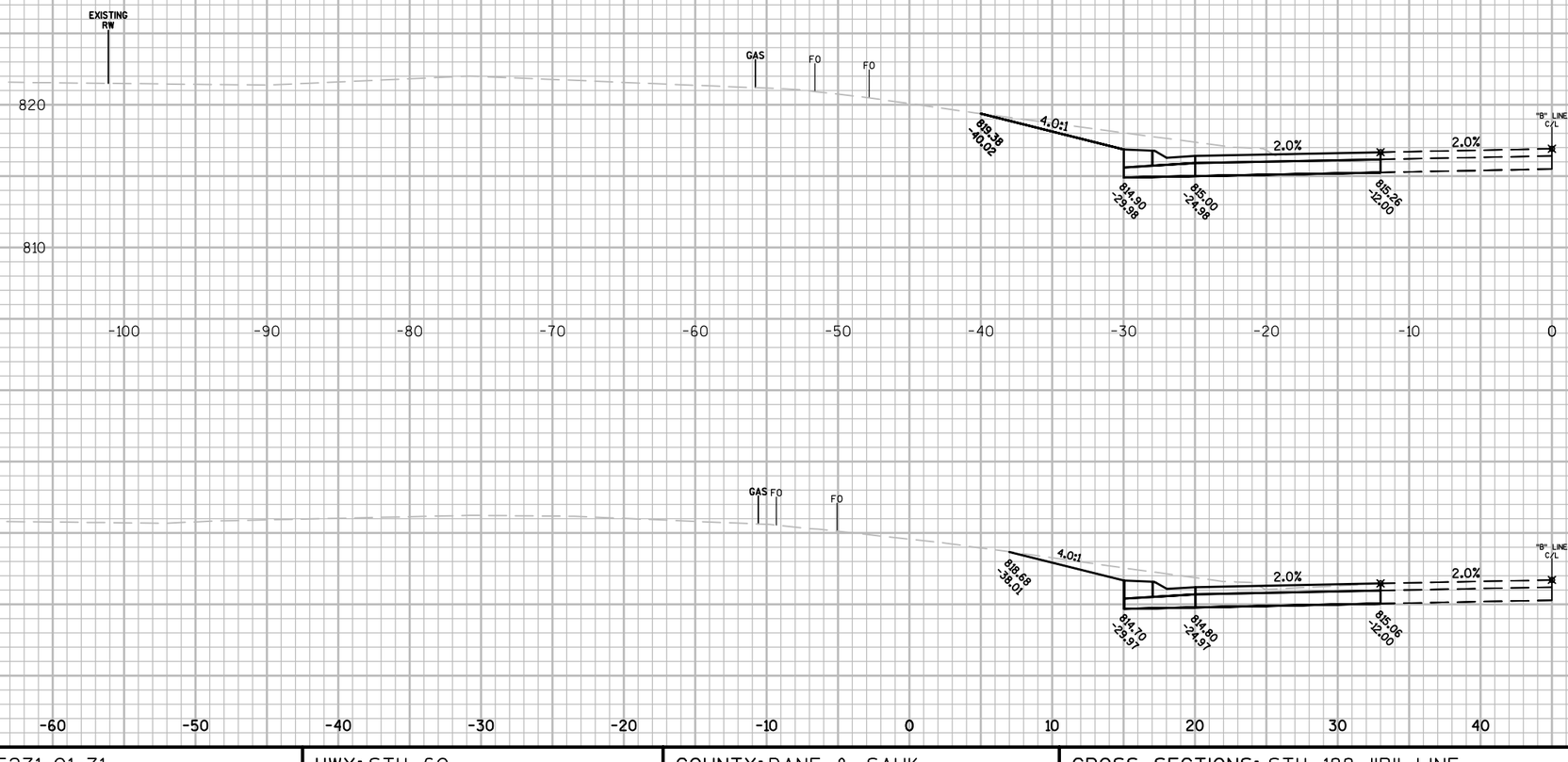
PLOT SCALE : 0.099800

WISDOT/CAI

EET 49



101+75 "B"



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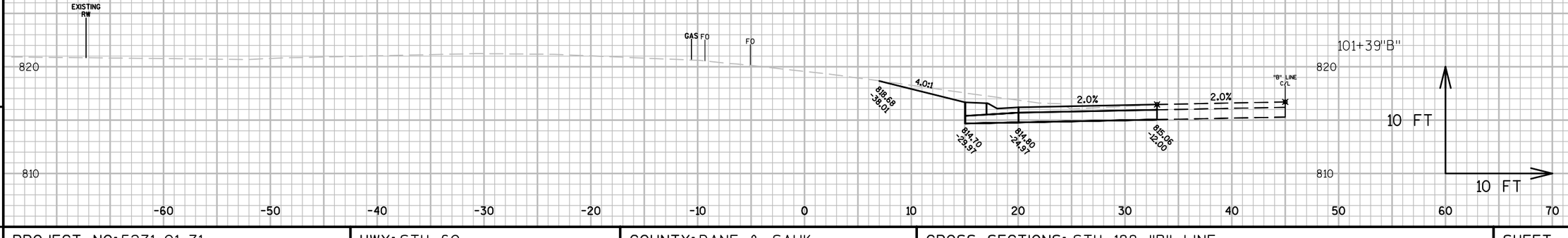


101+39 "B"

9

9

PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: DANE & SAUK	CROSS SECTIONS: STH 188 "B" LINE	SHEET	E

FILE NAME :

PLOT DATE :

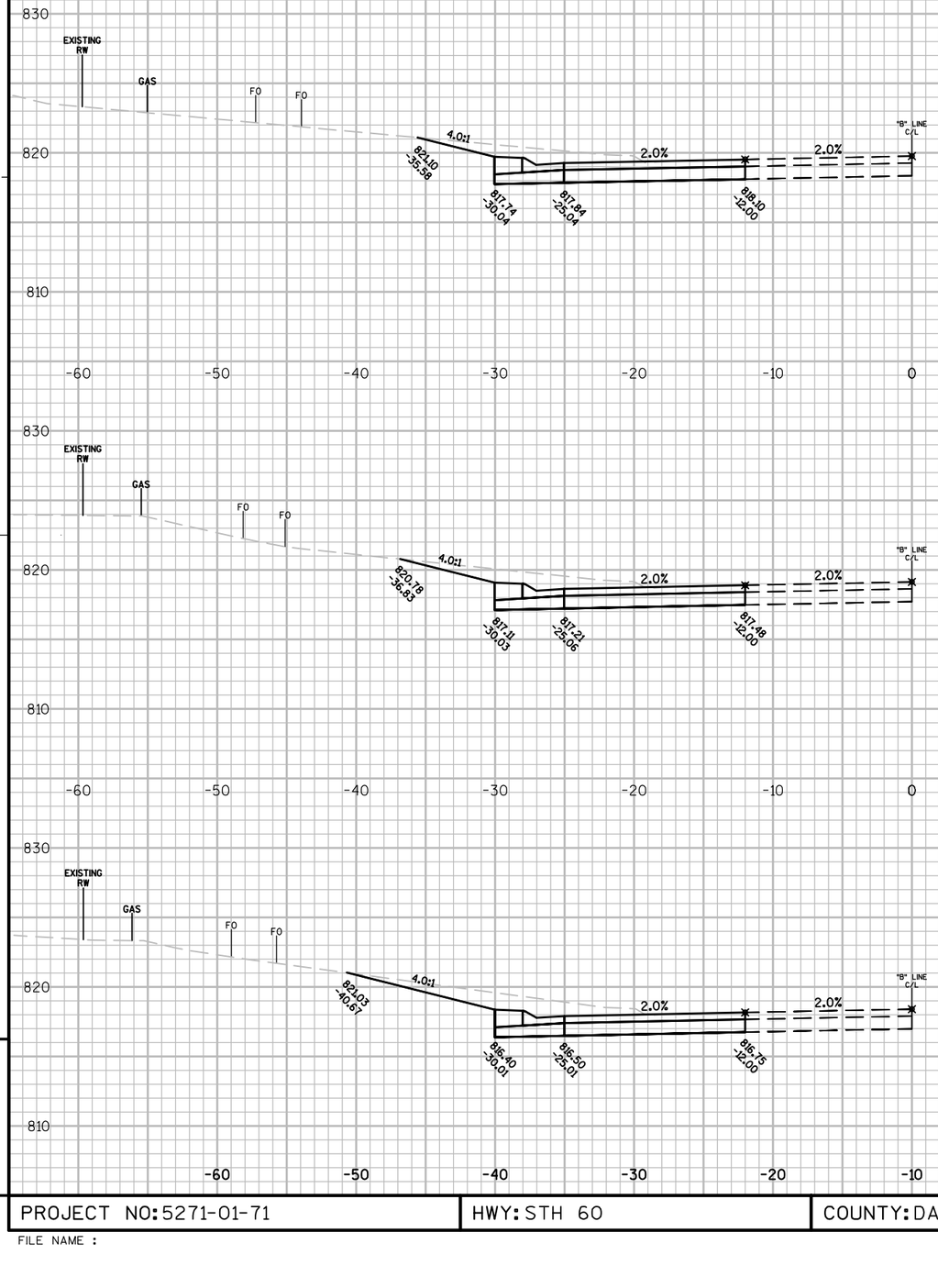
PLOT BY :

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CAI

EET 49



PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: DANE & SAUK	CROSS SECTIONS: STH 188 "B" LINE	SHEET	E

FILE NAME :

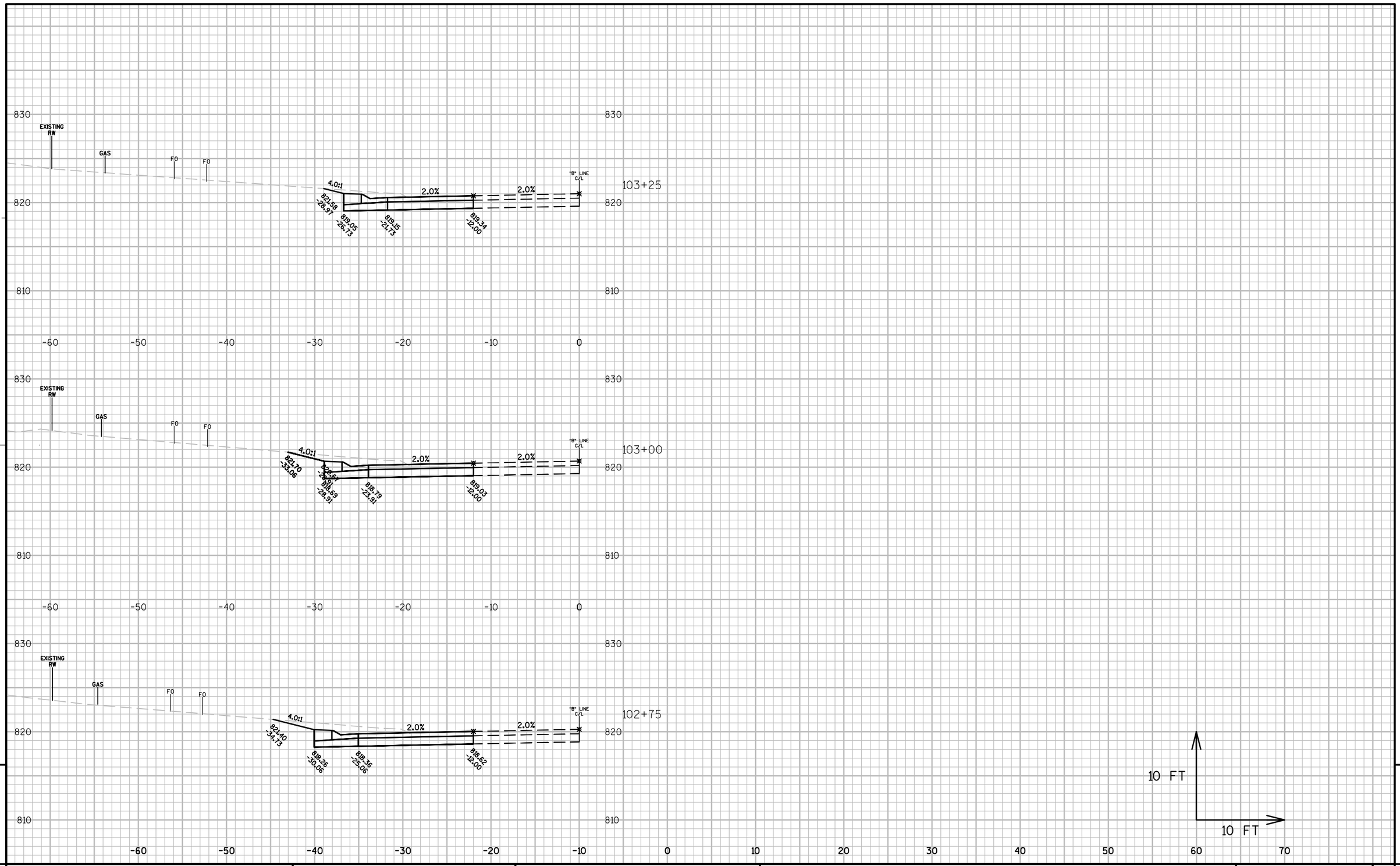
PLOT DATE :

PLOT BY :

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CAI



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PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: DANE & SAUK	CROSS SECTIONS: STH 188 "B" LINE	SHEET 156	E

FILE NAME :

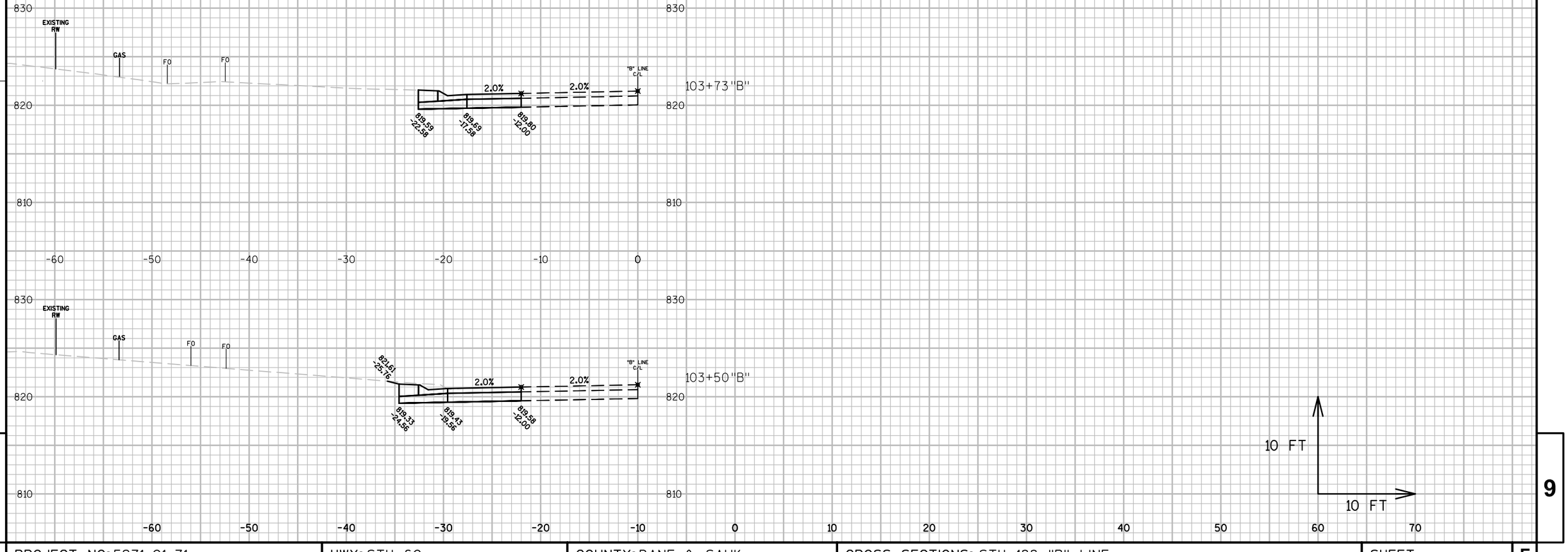
PLOT DATE :

PLOT BY :

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



PROJECT NO: 5271-01-71	HWY: STH 60	COUNTY: DANE & SAUK	CROSS SECTIONS: STH 188 "B" LINE	SHEET	E

FILE NAME : PLOT DATE : PLOT BY : PLOT NAME : PLOT SCALE : 1 IN:10 FT WISDOT/CAI

EET 49

Wisconsin Department of Transportation

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