

RHI

PROJECT ID: 9474-01-70

WITH: N/A

COUNTY: MARATHON

DECEMBER 2018

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details (Including Erosion Control)
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



DESIGN DESIGNATION

A.A.D.T.	2019	=	3,900
A.A.D.T.	2039	=	4,400
D.H.V.		=	580
D.D.		=	59/41
T.		=	2.9%
DESIGN SPEED		=	50 MPH
ESALS		=	N/A

CONVENTIONAL SYMBOLS

PLAN

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

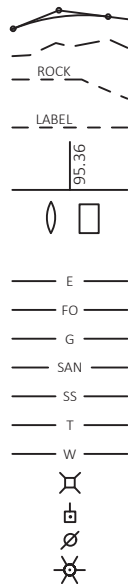
PROFILE

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

GRADE ELEVATION
CULVERT (Profile View)

UTILITIES

ELECTRIC
FIBER OPTIC
GAS
SANITARY SEWER
STORM SEWER
TELEPHONE
WATER
UTILITY PEDESTAL
POWER POLE
TELEPHONE POLE
LIGHT POLE



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

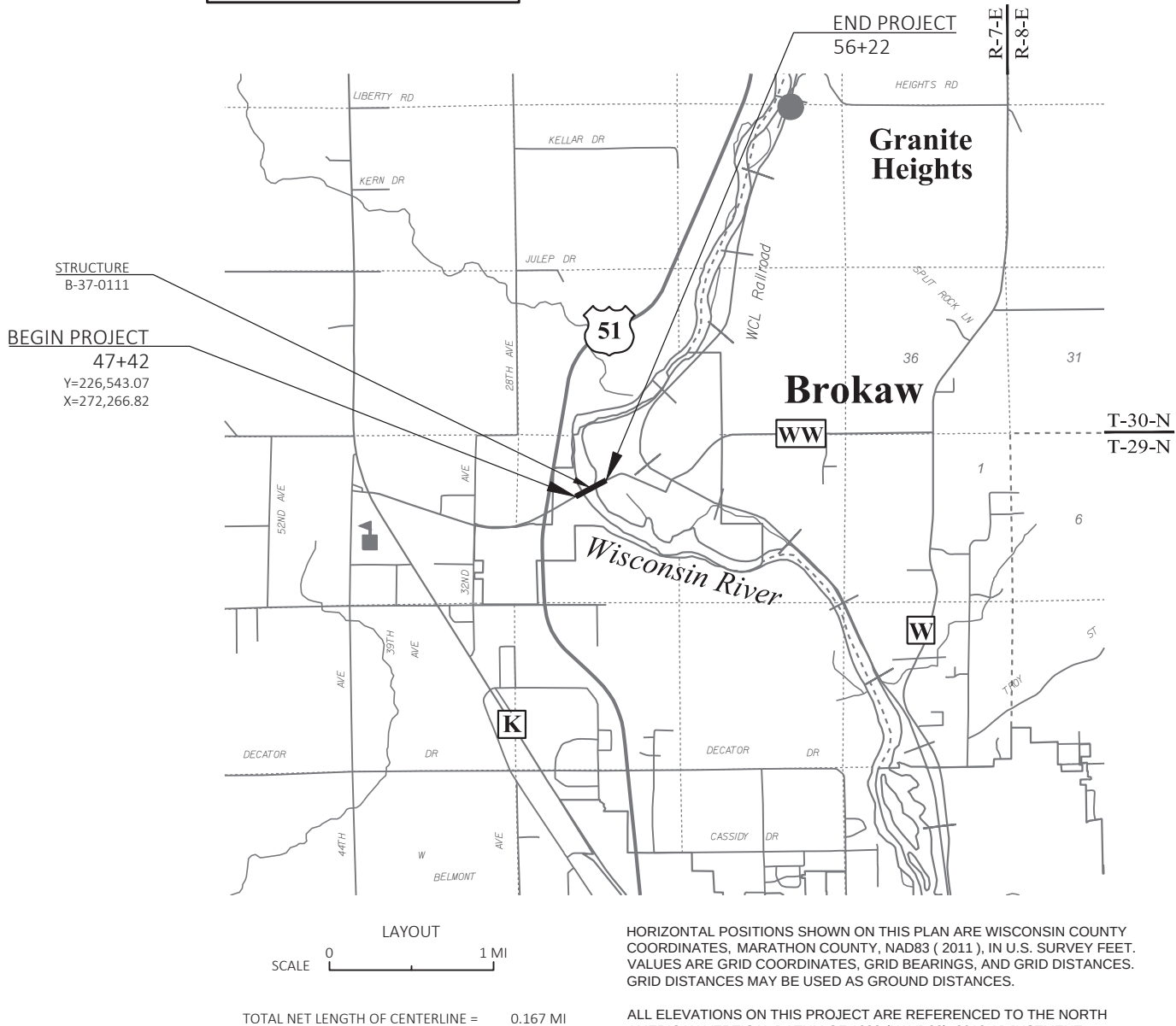
V BROKAW, CTH WW

WISCONSIN RIVER BRIDGE, B-37-0111

CTH WW

MARATHON COUNTY

STATE PROJECT NUMBER
9474-01-70



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

ALL ELEVATIONS ON THIS PROJECT ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), 2012 ADJUSTMENT.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9474-01-70	WISC 2019014	1

emcs inc

500 North 17th Avenue
Wausau, WI 54401
715.845.1081 Fax 715.845.1099



11-17-17 (Date) *Stephane G. Christensen* (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	EMCS, INC.
Designer	EMCS, INC.
Project Manager	MIKE GRAGE
Regional Examiner	CHERYL SIMON
Regional Supervisor	ROBIN STAFFORD

APPROVED FOR THE DEPARTMENT
DATE: 11/17/17 *Mike Grage* (Signature)

E

GENERAL NOTES

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

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.

EXISTING RIGHT-OF-WAY IS APPROXIMATE AND IS BASED ON AVAILABLE RIGHT-OF-WAY PLATS. NO WORK SHALL OCCUR OUTSIDE OF EXISTING RIGHT-OF-WAY.

AS-BUILTS USED FOR PLAN DEVELOPMENT

PROJECT NO: S014(6), CONSTRUCTION YEAR: 1967
PROJECT NO: S014(7), CONSTRUCTION YEAR: 1967
PROJECT NO: 1163-44-66, CONSTRUCTION YEAR: 1998
PROJECT NO: 1170-00-73, CONSTRUCTION YEAR: 2004
PROJECT NO: 9474-00-60, CONSTRUCTION YEAR: 2005

ORDER OF SECTION 2 SHEETS

- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PAVING DETAILS
- EROSION CONTROL
- PERMANENT SIGNING AND MARKING
- TRAFFIC CONTROL
- DETOUR

UTILITIES

ELECTRIC DISTRIBUTION

WISCONSIN PUBLIC SERVICE
CLAYTON VIRCKS
P.O. BOX 1166
WAUSAU, WI 54402
OFFICE PHONE: (715) 848-7317
MOBILE PHONE: (715) 573-7806
CHVIRCKS@WISCONSINPUBLICSERVICE.COM

ELECTRIC TRANSMISSION

WISCONSIN PUBLIC SERVICE
CLAYTON VIRCKS
P.O. BOX 1166
WAUSAU, WI 54402
OFFICE PHONE: (715) 848-7317
MOBILE PHONE: (715) 573-7806
CHVIRCKS@WISCONSINPUBLICSERVICE.COM

SEWER & WATER

BROKAW WATER UTILITY
CLAYTON LASZEWSKI
P.O. BOX 134
BROKAW, WI 54417
MOBILE PHONE: (715) 573-1252
BROKAWWT@AIRNETISP.COM



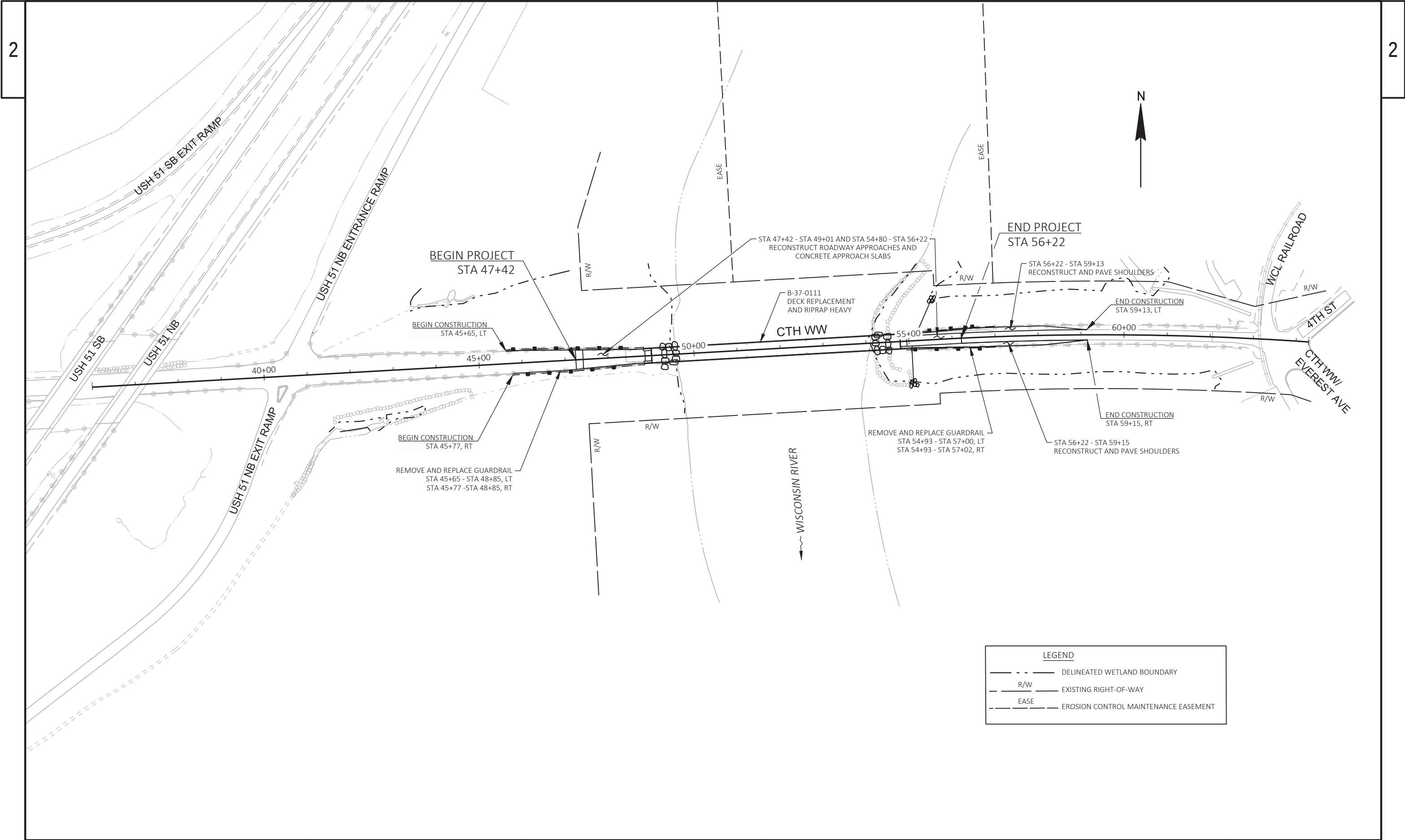
Dial  or (800)242-8511
www.DiggersHotline.com

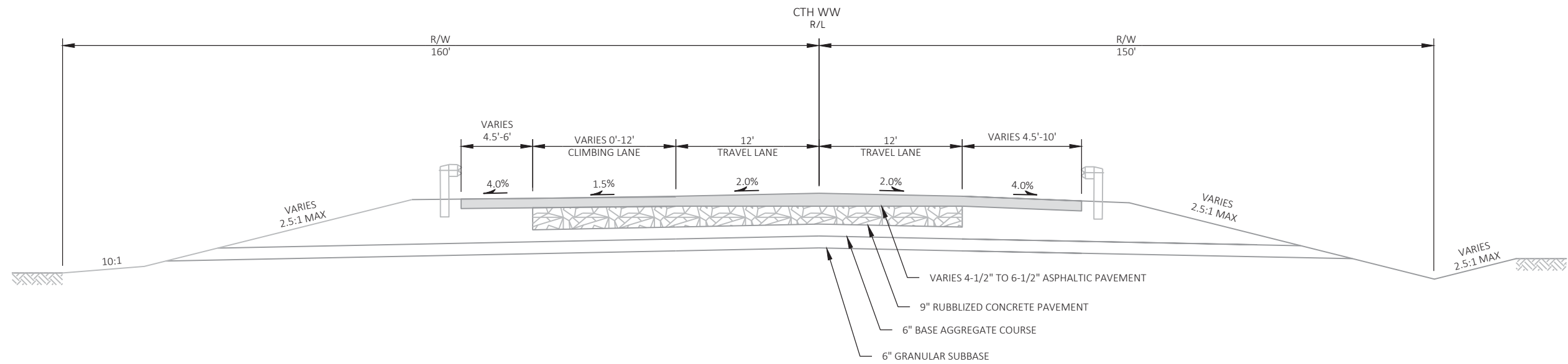
ARMY CORPS OF ENGINEERS

ERIC NORTON
1314 CONTRACTORS BLVD
PLOVER, WI 54467
(715) 345-7911
ERIC.M.NORTON@USACE.ARMY.MIL

DNR LIAISON

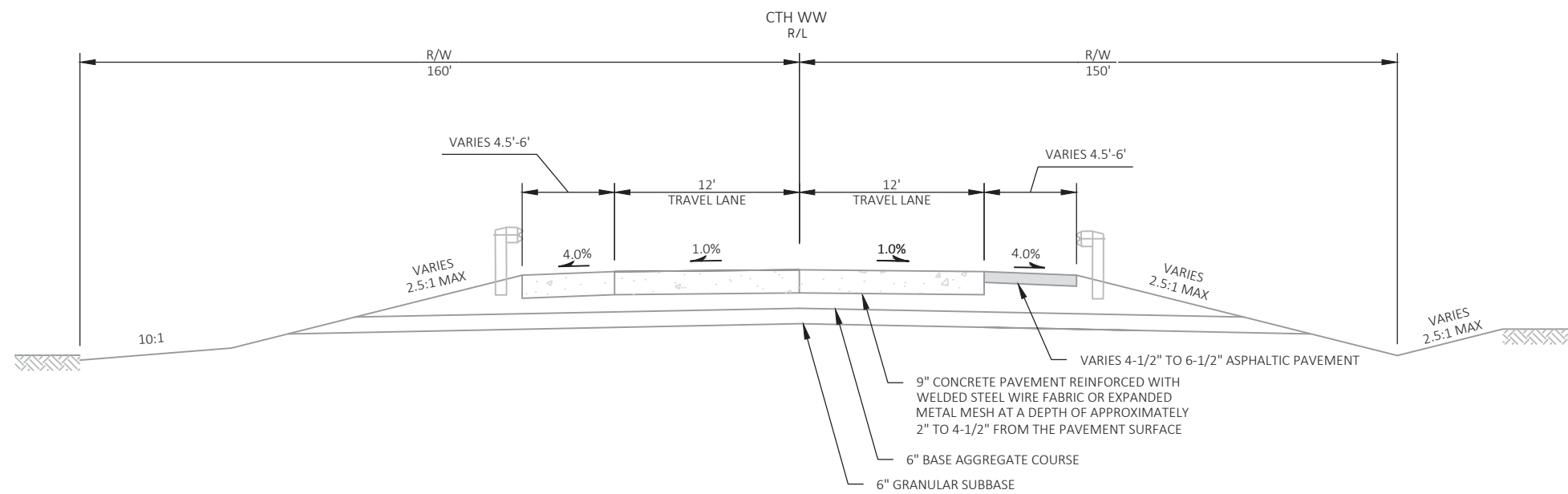
CASEY JONES
DNR WISCONSIN RAPIDS SERVICE CENTER
473 GRIFFITH DRIVE
WISCONSIN RAPIDS, WI 54494
(715) 421-7867
CASEY.JONES@WISCONSIN.GOV





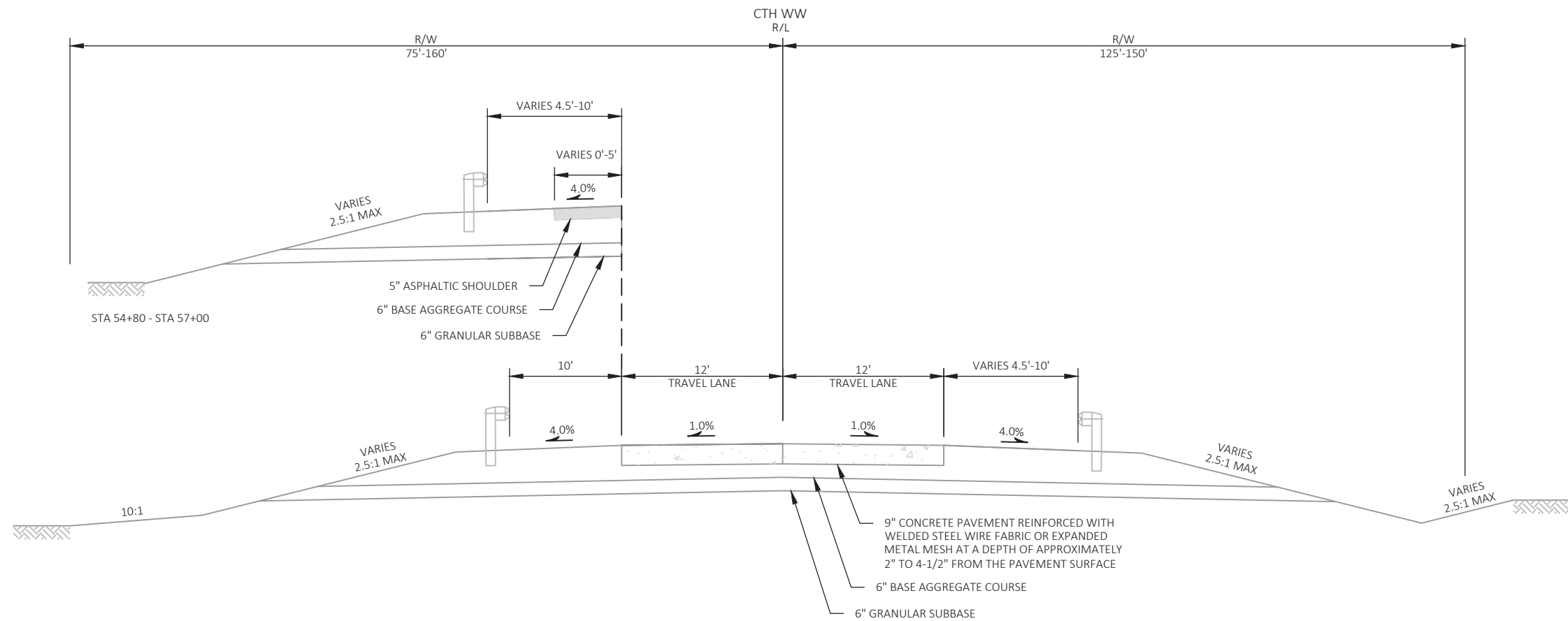
TYPICAL EXISTING SECTION
CTH WW

STA 45+65 - STA 48+41

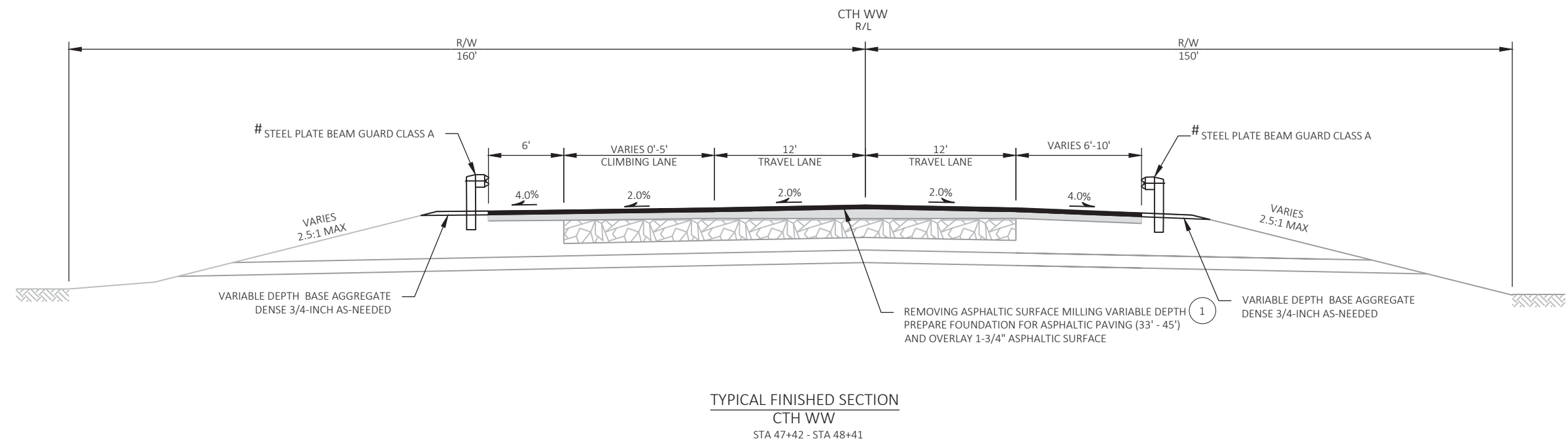
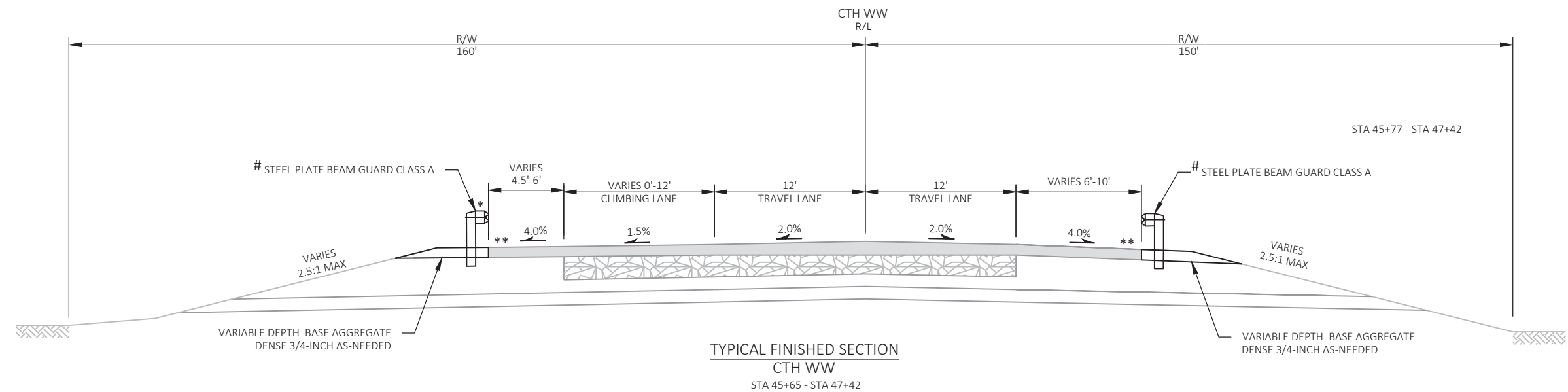


TYPICAL EXISTING SECTION
CTH WW

STA 48+41- STA 49+01 (B-37-0111)

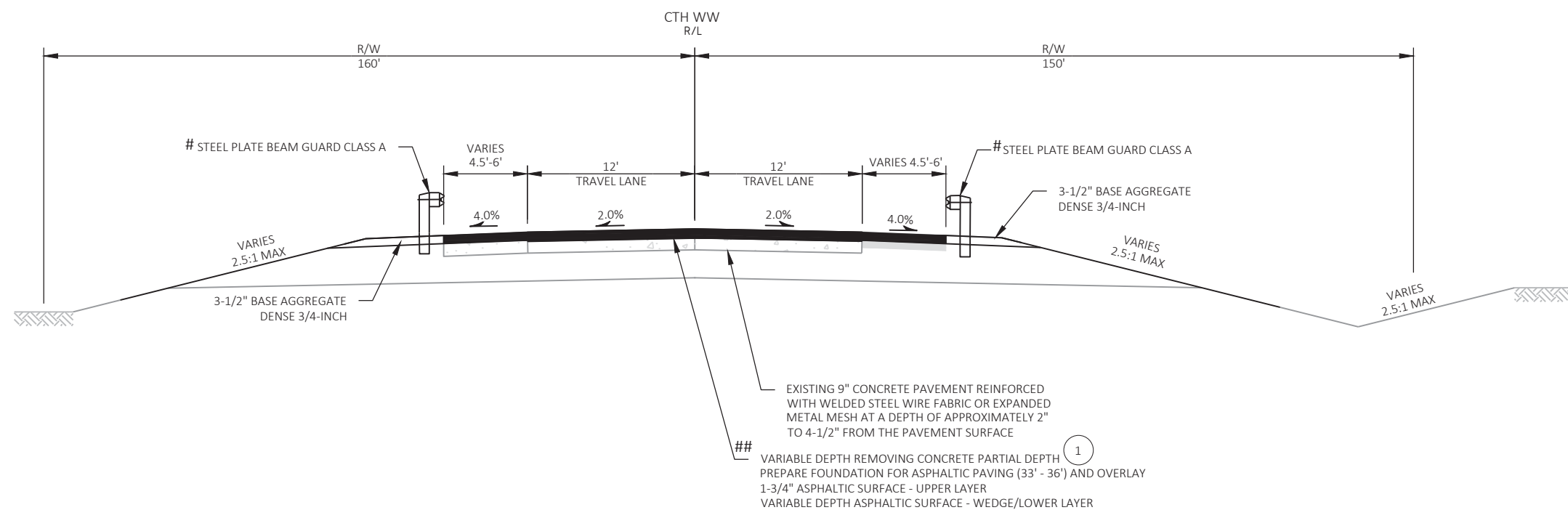


TYPICAL EXISTING SECTION
CTH WW
STA 54+80 (B-37-0111) - STA 59+15

**NOTES**

- * GUARDRAIL STIFFENED LHW LOCATED BETWEEN STA 45+65 - STA 46+50.
- ** SAWCUT AT PROPOSED FACE OF GUARDRAIL. MATCH EXISTING SHOULDER TO THE PROPOSED GUARDRAIL LAYOUT.
- # SEE SECTION 5 PLAN SHEETS FOR LIMITS OF PROPOSED GUARDRAIL, GRADING AND ASPHALTIC SURFACE.

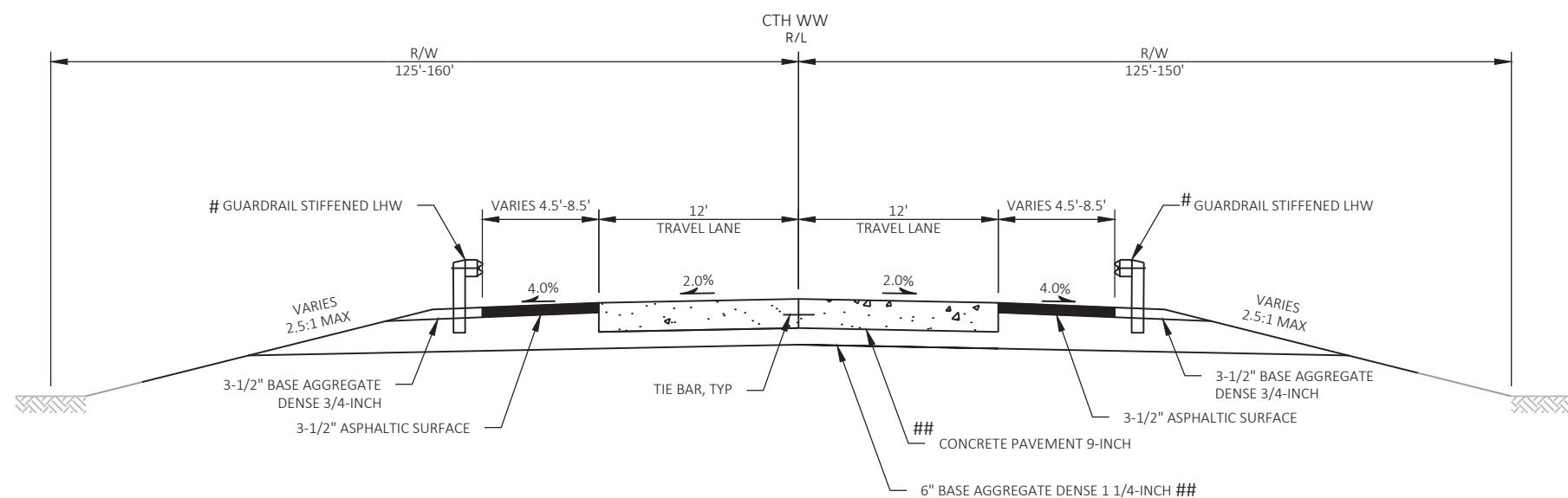
- 1 COMPLETE VARIABLE DEPTH MILLING ALONG PROFILE TO ACHIEVE DESIGNATED MINIMUM ASPHALTIC SURFACE LAYER THICKNESS.



TYPICAL FINISHED SECTION

CTH WW

STA 48+41 - STA 49+01 (B-37-0111)



TYPICAL FINISHED SECTION

CTH WW

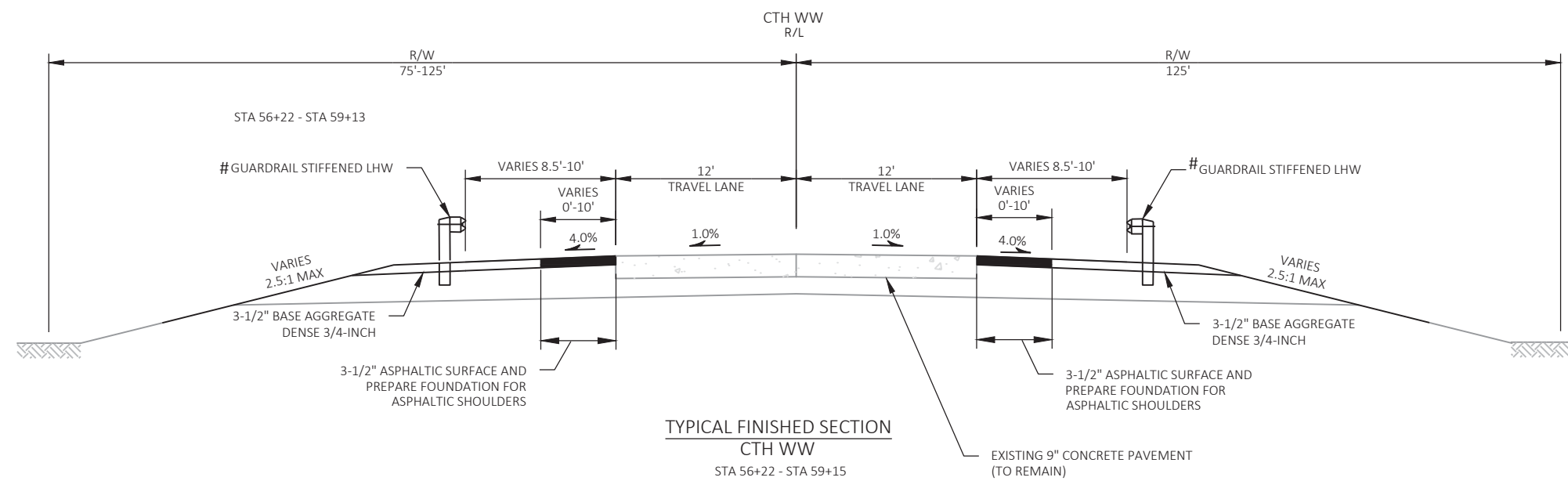
STA 54+80 (B-37-0111) - STA 56+22

NOTES

SEE SECTION 5 PLAN SHEETS FOR LIMITS OF PROPOSED GUARDRAIL AND GRADING.

STA 48+86 - STA 49+01 AND STA 54+80 - STA 54+95 PLACE CONCRETE PAVEMENT APPROACH SLAB, SEE SDD "CONCRETE PAVEMENT APPROACH SLAB" FOR ADDITIONAL DETAILS. 12" BASE AGGREGATE DENSE 1 1/4-INCH UNDER CONCRETE PAVEMENT APPROACH SLAB.

1 COMPLETE VARIABLE DEPTH MILLING ALONG PROFILE TO ACHIEVE DESIGNATED MINIMUM ASPHALTIC SURFACE LAYER THICKNESS.



NOTES

SEE SECTION 5 PLAN SHEETS FOR LIMITS OF PROPOSED GUARDRAIL AND GRADING.

PROJECT NO: 9474-01-70

HWY: CTH WW

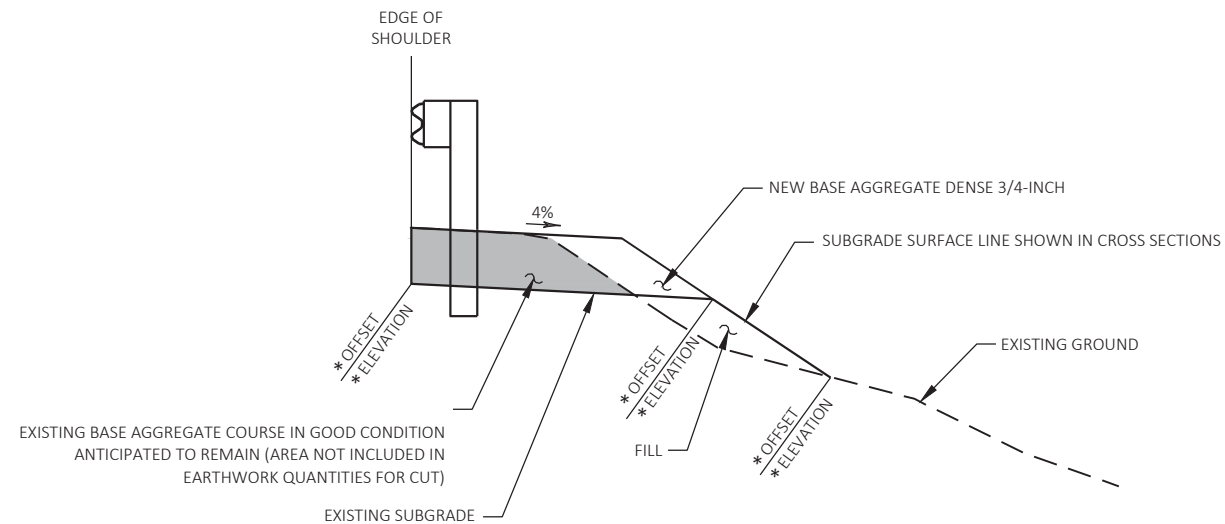
COUNTY: MARATHON

TYPICAL SECTIONS

SHEET

8

E

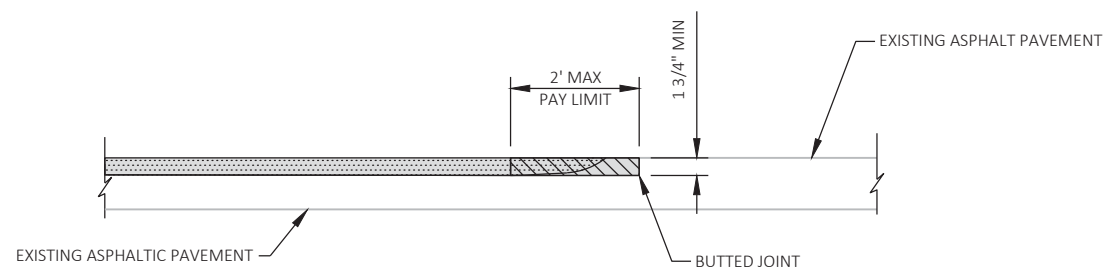


SHOULDER WIDENING EARTHWORK & BASE AGGREGATE FOR GUARDRAIL DETAIL

STA 45+65 - STA 48+85, LT
STA 45+77 - STA 48+85, RT
STA 56+22 - STA 59+13, LT
STA 56+22 - STA 59+15, RT

NOTES

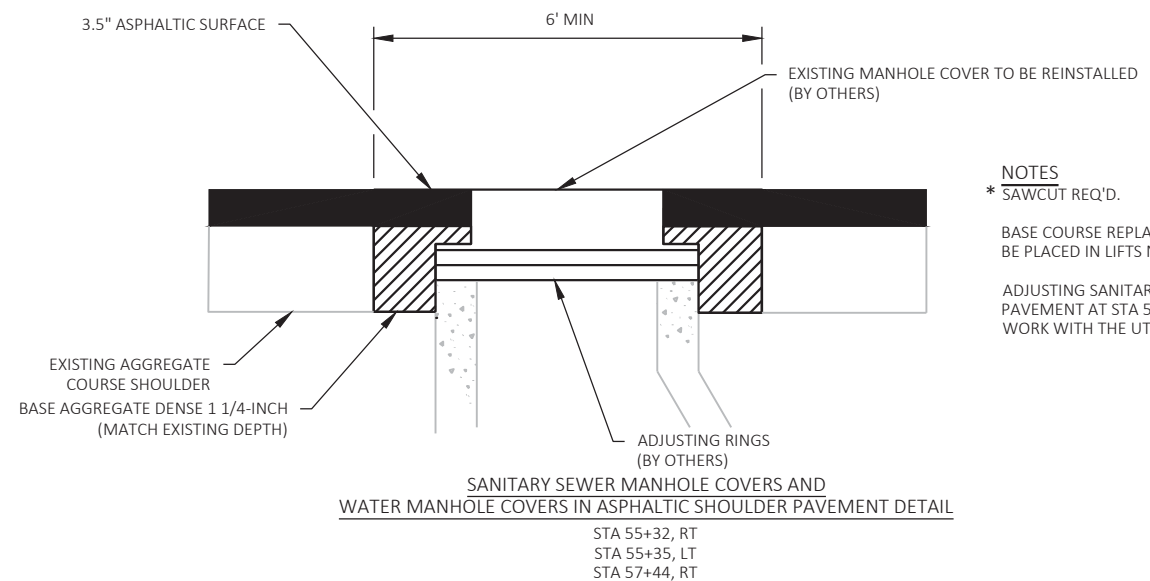
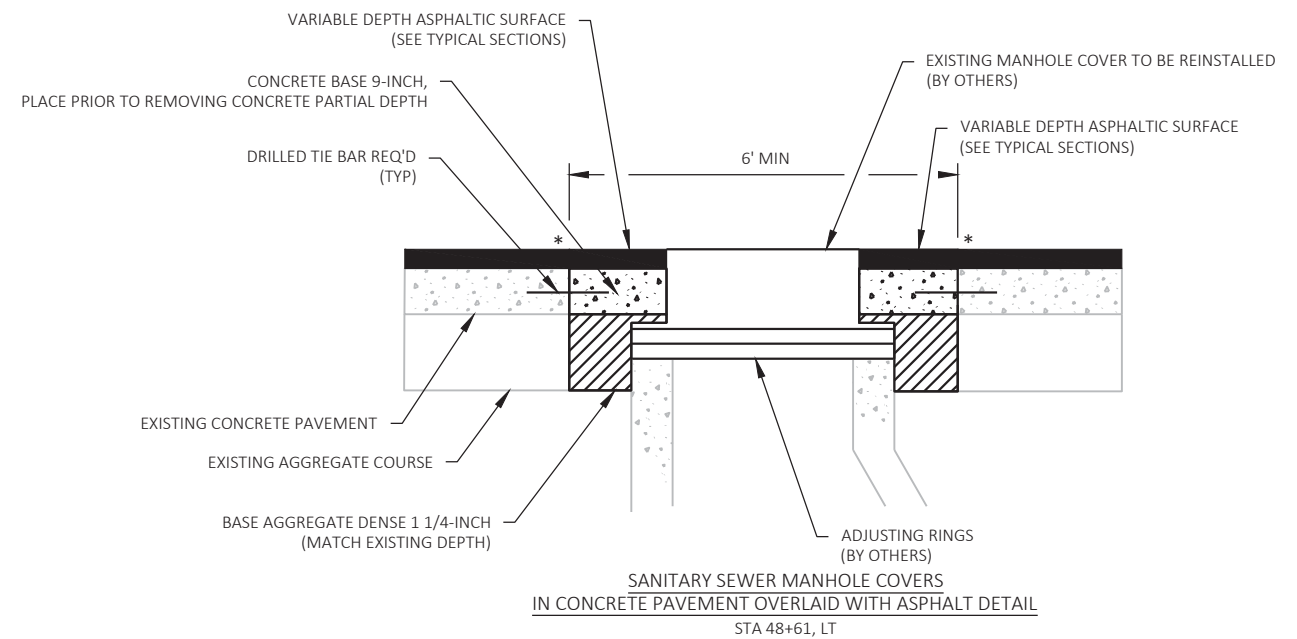
* OFFSET AND ELEVATION PROVIDED TO THESE POINTS ON THE CROSS SECTIONS.



-  REMOVING ASPHALTIC SURFACE BUTT JOINTS (TRAVEL LANES & SHOULDERS)
DO NOT REMOVE MATERIAL UNDER THIS ITEM UNTIL 24 HOURS BEFORE PAVING
-  REMOVING ASPHALTIC SURFACE MILLING
-  PROPOSED ASPHALTIC SURFACE OVERLAY

ASPHALTIC SURFACE BUTT JOINT DETAIL

STA 47+42



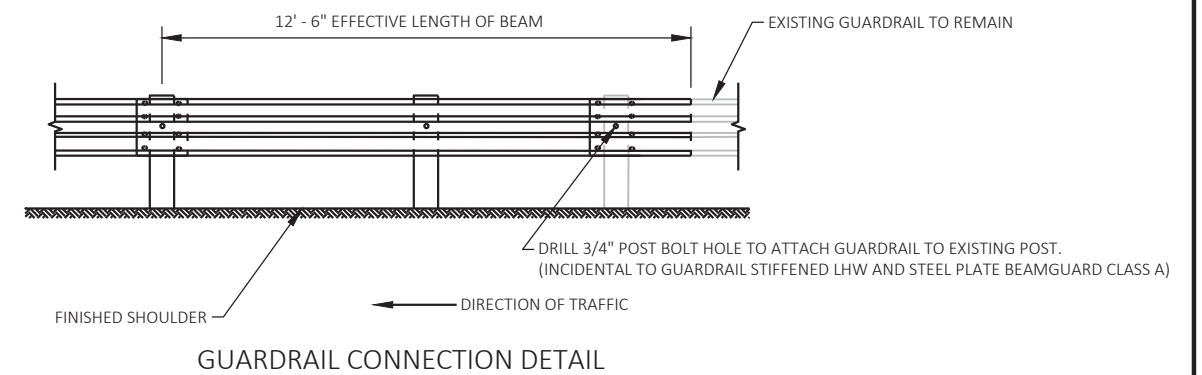
NOTES

* SAWCUT REQ'D.

BASE COURSE REPLACED AROUND THE CASTING SHALL BE PLACED IN LIFTS NOT EXCEEDING 4-INCHES.

ADJUSTING SANITARY SEWER MANHOLE IN CONCRETE PAVEMENT AT STA 55+27 NOT SHOWN. COORDINATE WORK WITH THE UTILITY.

PAVEMENT RESTORATION AT MANHOLES



NOTE

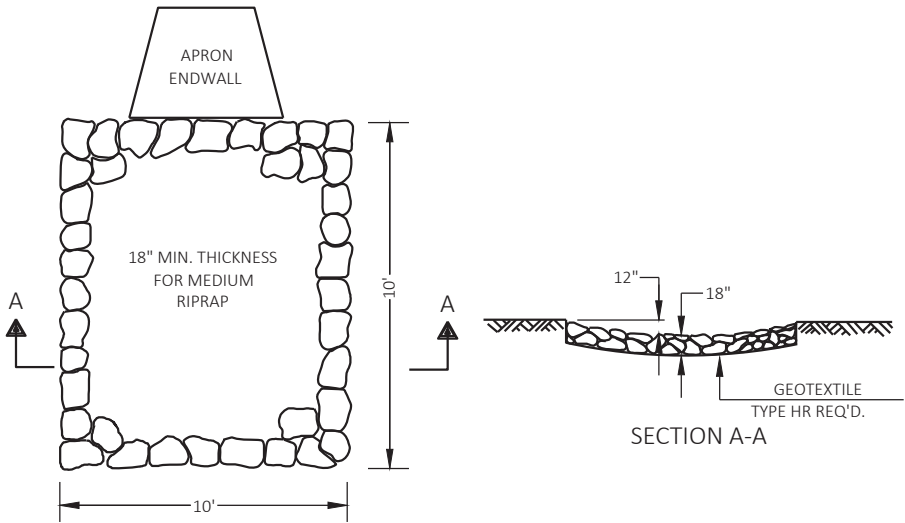
OVERLAP PROPOSED GUARDRAIL AND THE EXISTING GUARDRAIL AT THE CONNECTION POINTS.

STA 45+65, LT
STA 45+77, RT
STA 57+00, LT
STA 57+02, RT

RUNOFF COEFFICIENT TABLE

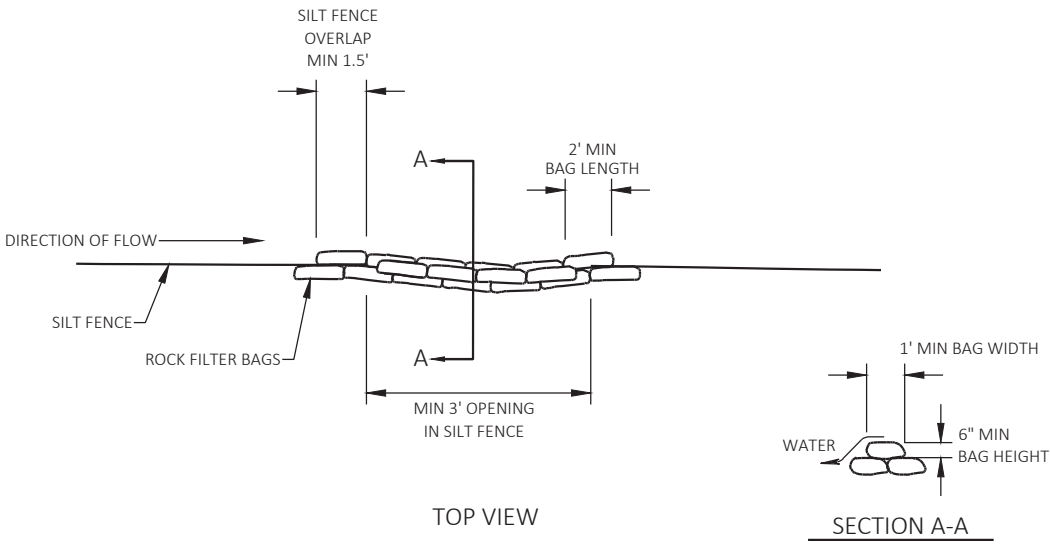
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34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

TOTAL PROJECT AREA = 9.17 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.04 ACRES



MEDIUM RIPRAP TREATMENT DETAIL AT CONCRETE SURFACE DRAINS

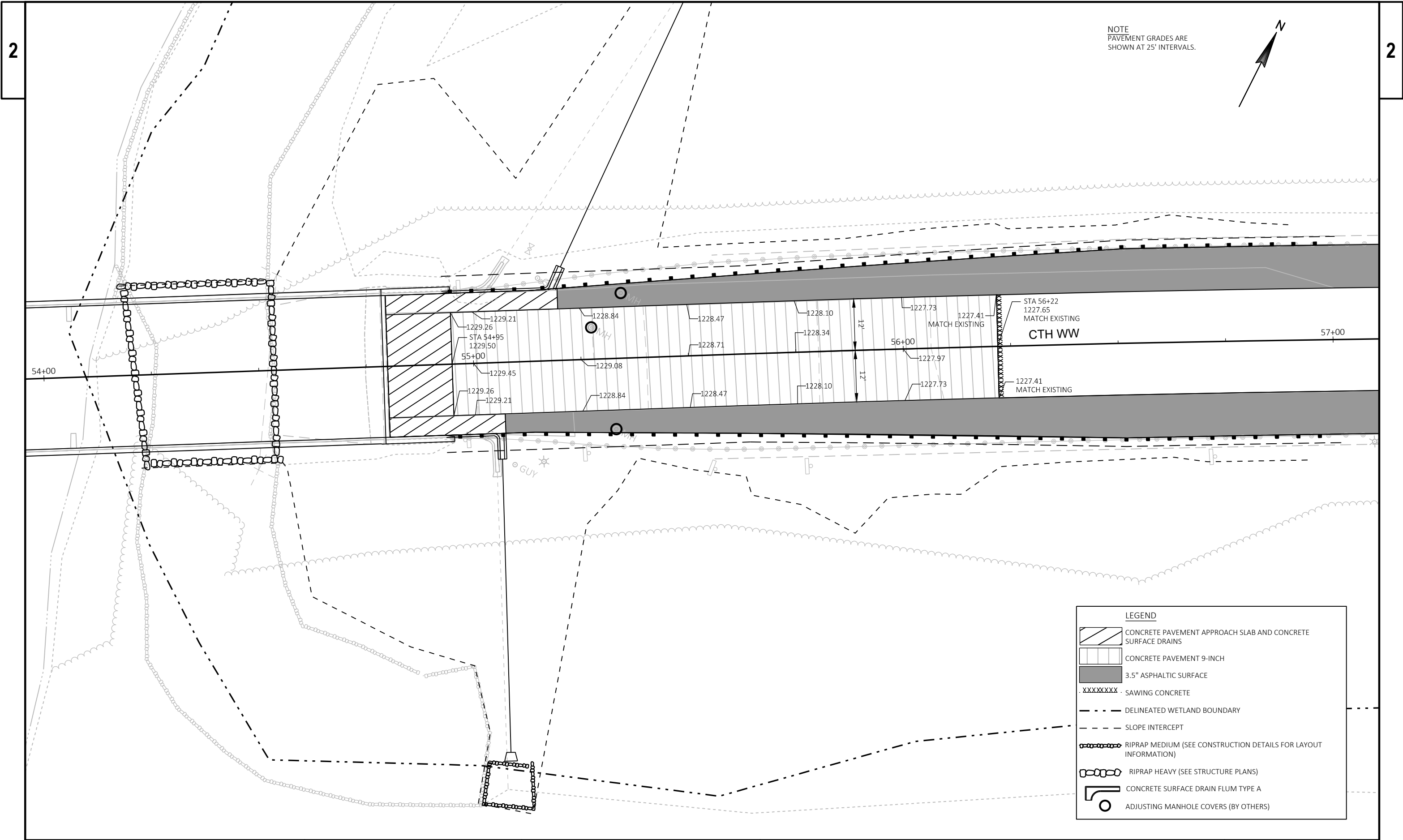
STA 55+06, RT
STA 55+55, LT

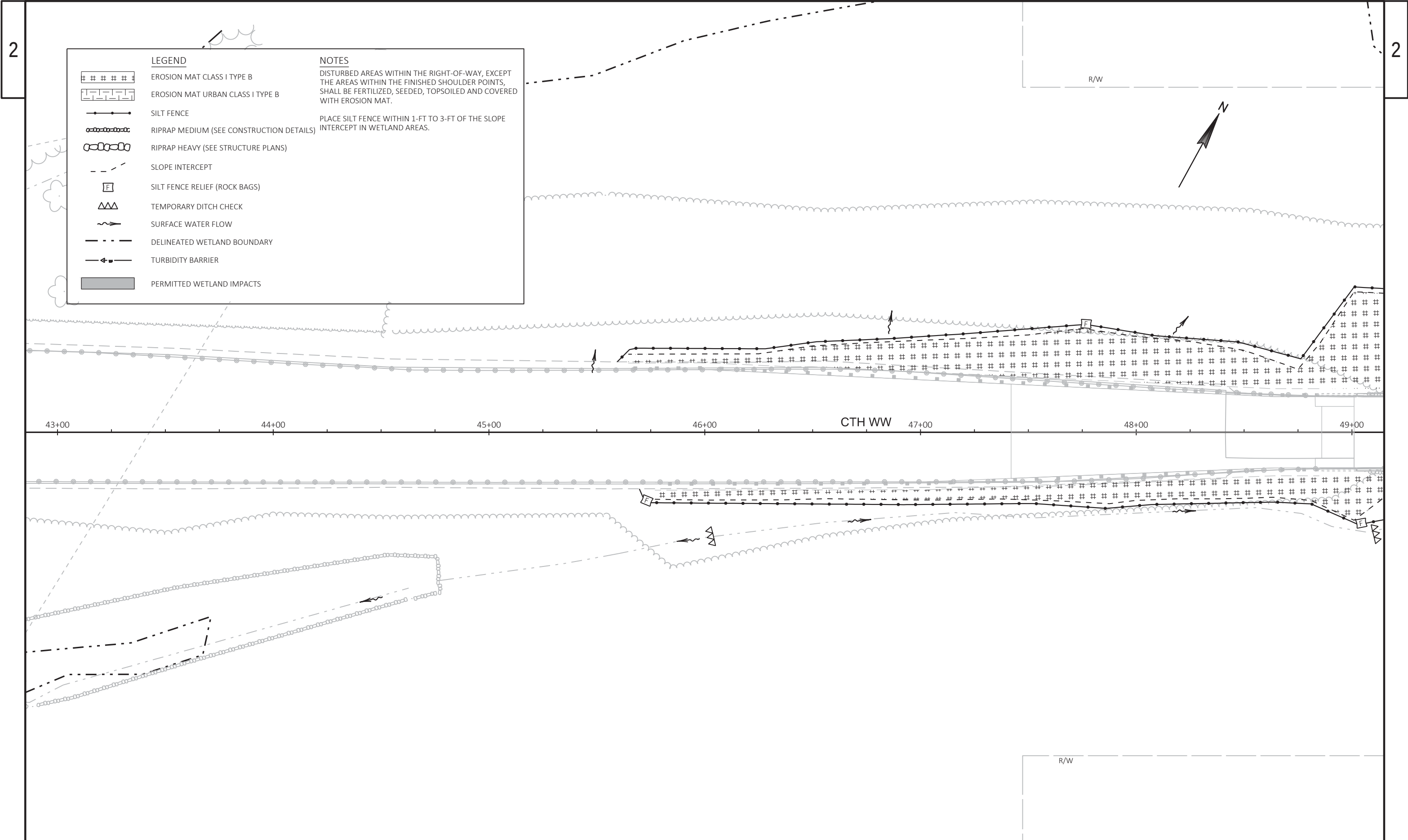


NOTE
SEE EROSION CONTROL PLANS FOR LOCATIONS.

DETAIL OF ROCK BAGS USED FOR SILT FENCE RELIEF

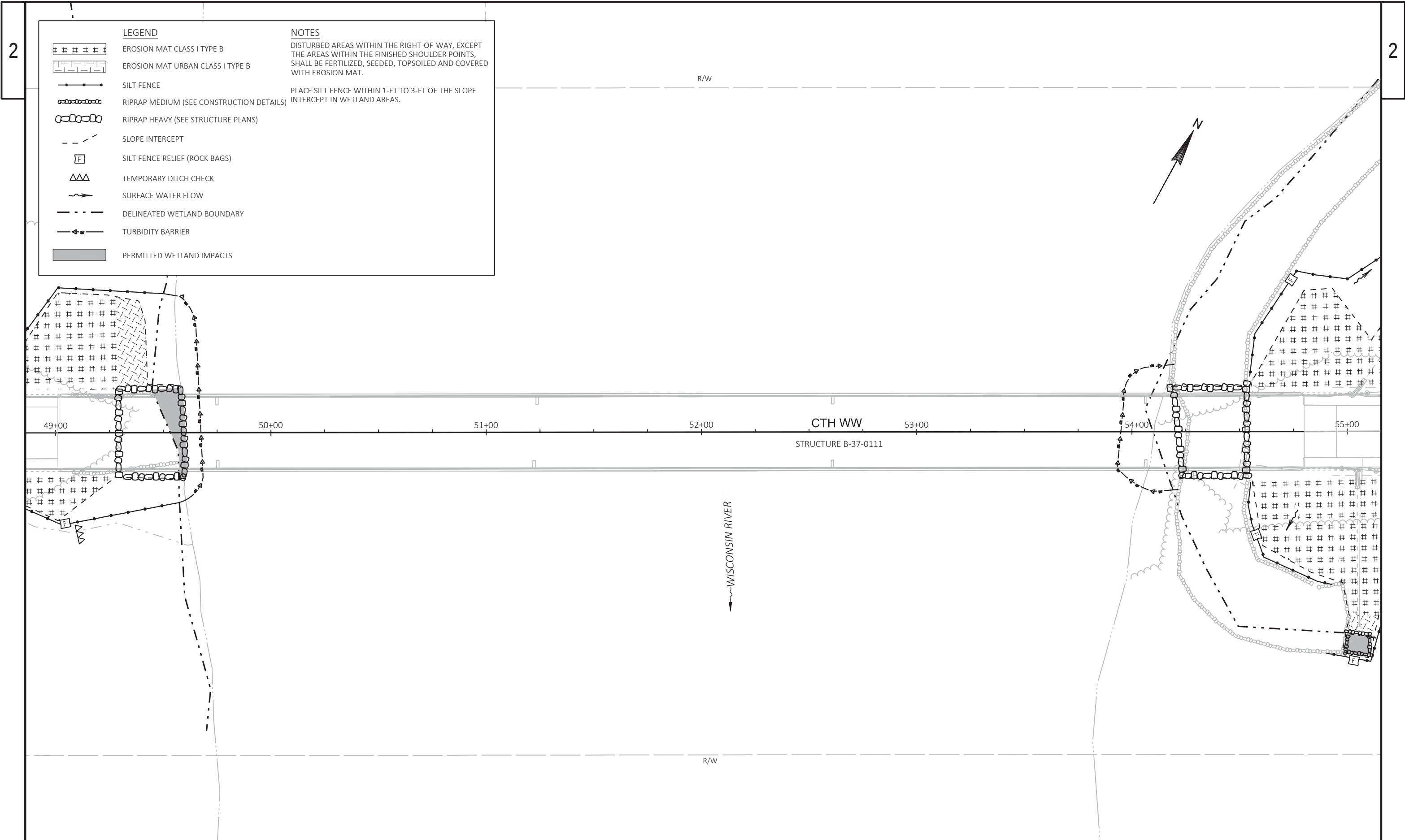
PAID AS ROCK BAGS

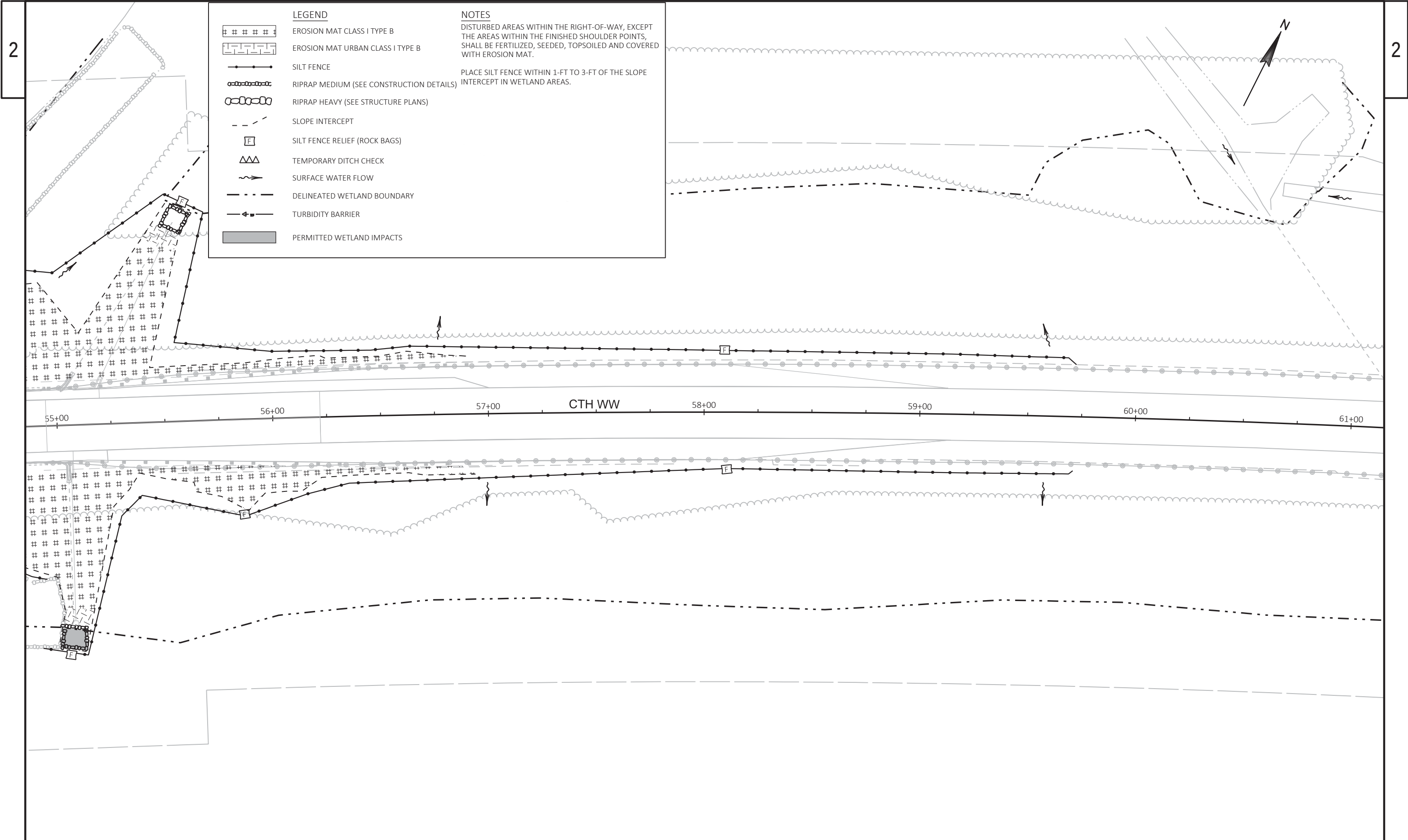




2

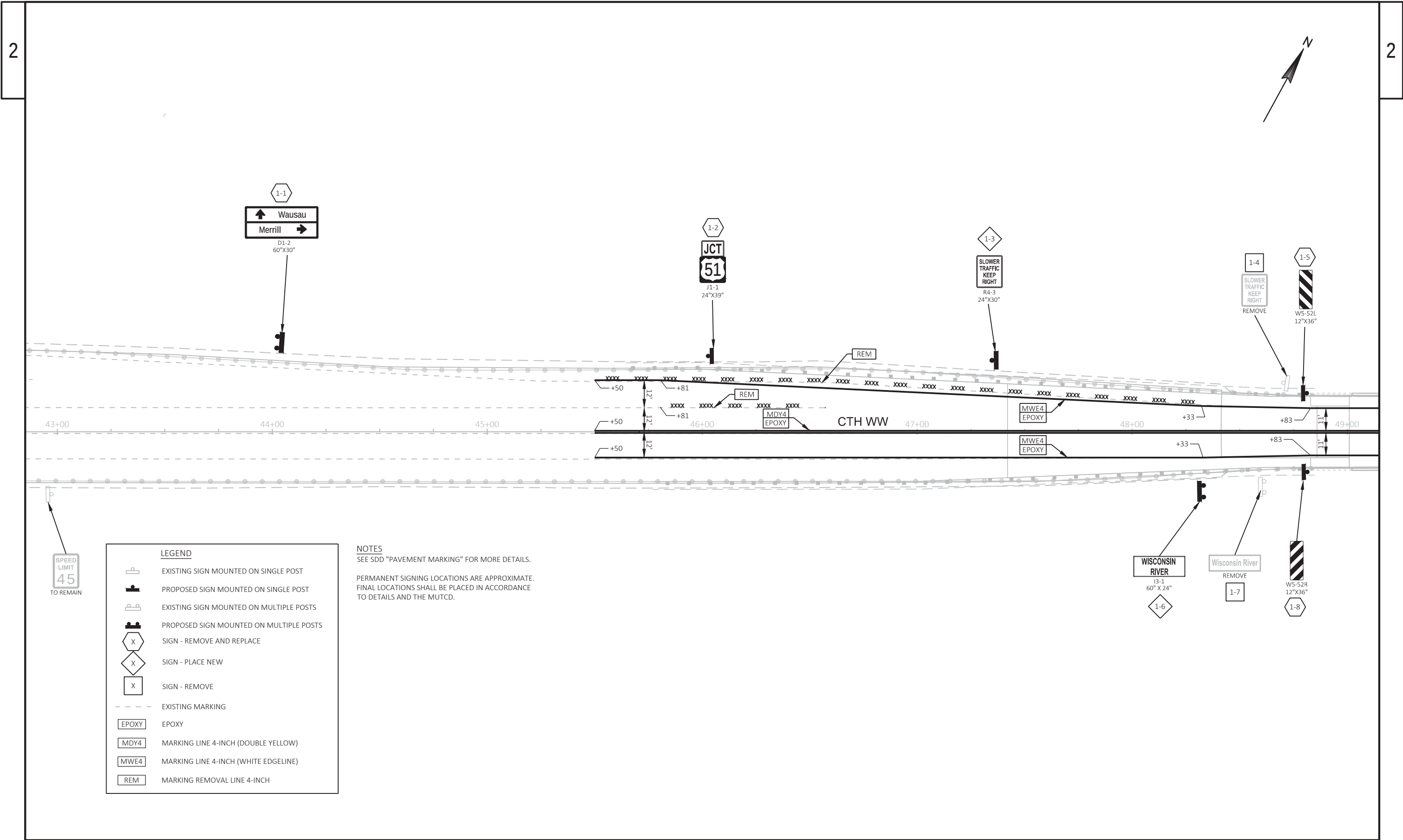
2





2

2

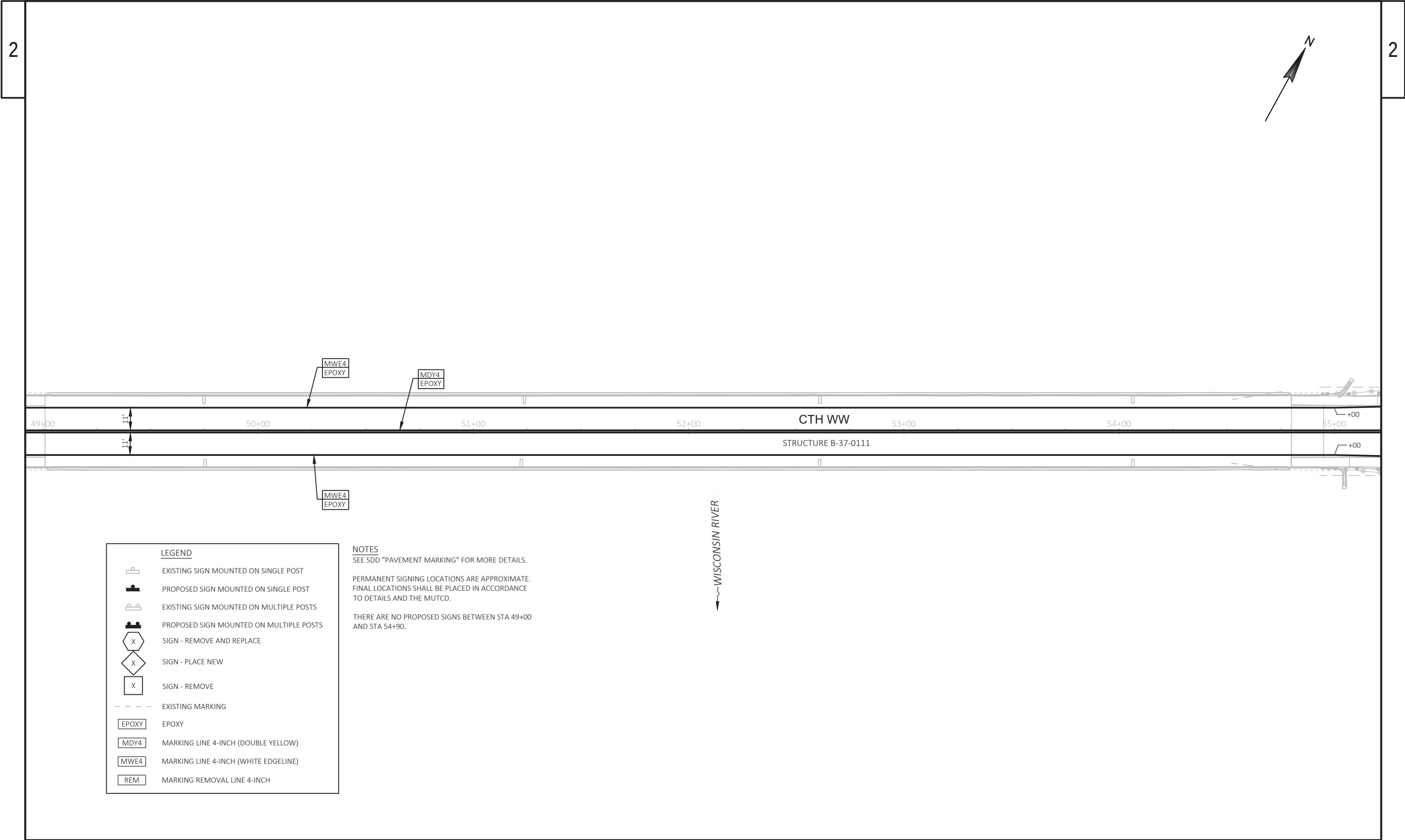


LEGEND

- EXISTING SIGN MOUNTED ON SINGLE POST
- PROPOSED SIGN MOUNTED ON SINGLE POST
- EXISTING SIGN MOUNTED ON MULTIPLE POSTS
- PROPOSED SIGN MOUNTED ON MULTIPLE POSTS
- SIGN - REMOVE AND REPLACE
- SIGN - PLACE NEW
- SIGN - REMOVE
- EXISTING MARKING
- EPOXY
- MARKING LINE 4-INCH (DOUBLE YELLOW)
- MARKING LINE 4-INCH (WHITE EDGELINE)
- MARKING REMOVAL LINE 4-INCH

NOTES

SEE SDD "PAVEMENT MARKING" FOR MORE DETAILS.
PERMANENT SIGNING LOCATIONS ARE APPROXIMATE.
FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE
TO DETAILS AND THE MUTCD.



LEGEND

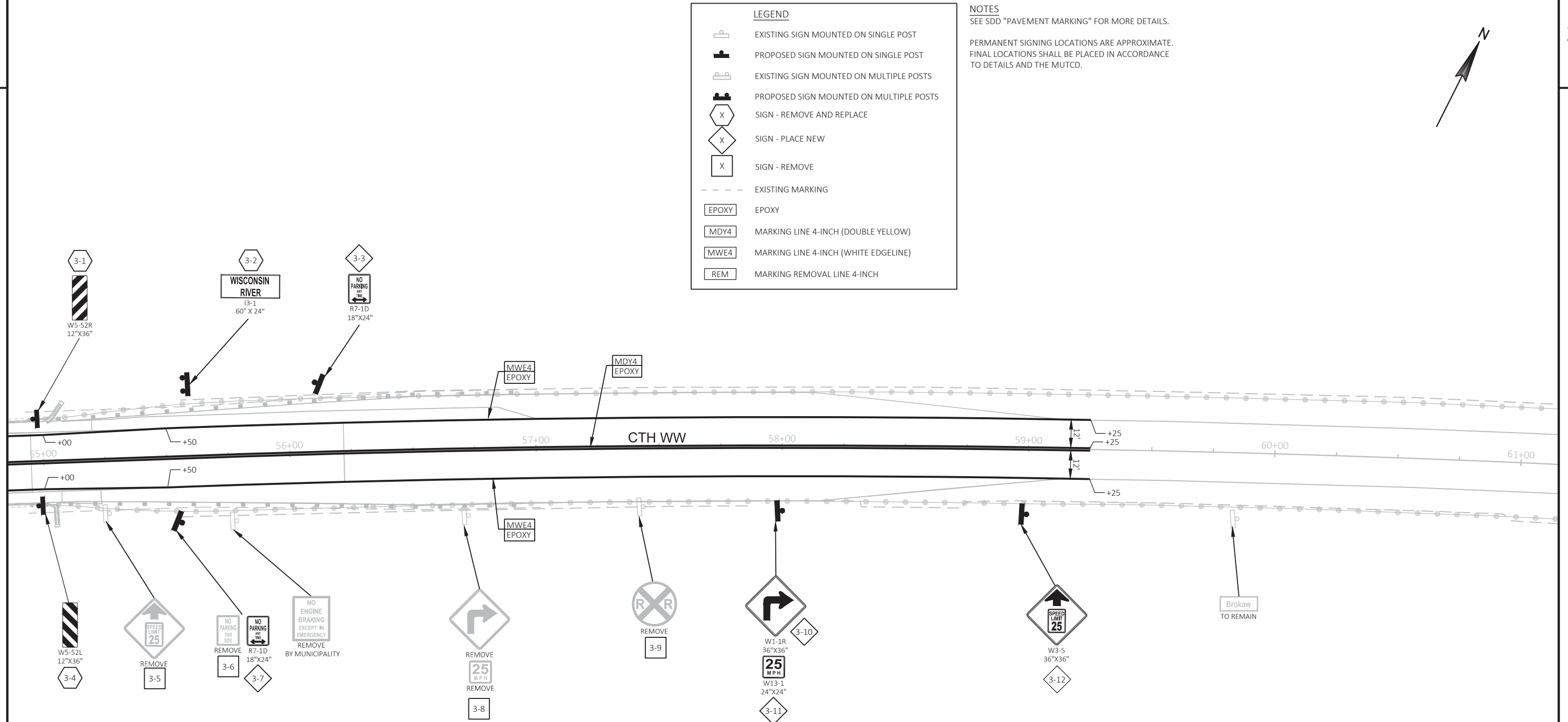
-  EXISTING SIGN MOUNTED ON SINGLE POST
-  PROPOSED SIGN MOUNTED ON SINGLE POST
-  EXISTING SIGN MOUNTED ON MULTIPLE POSTS
-  PROPOSED SIGN MOUNTED ON MULTIPLE POSTS
-  SIGN - REMOVE AND REPLACE
-  SIGN - PLACE NEW
-  SIGN - REMOVE
-  EXISTING MARKING
-  EPOXY
-  MARKING LINE 4-INCH (DOUBLE YELLOW)
-  MARKING LINE 4-INCH (WHITE EDGELINE)
-  MARKING REMOVAL LINE 4-INCH

NOTES

SEE SDD "PAVEMENT MARKING" FOR MORE DETAILS.

PERMANENT SIGNING LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.

THERE ARE NO PROPOSED SIGNS BETWEEN STA 49+00 AND STA 54+90.



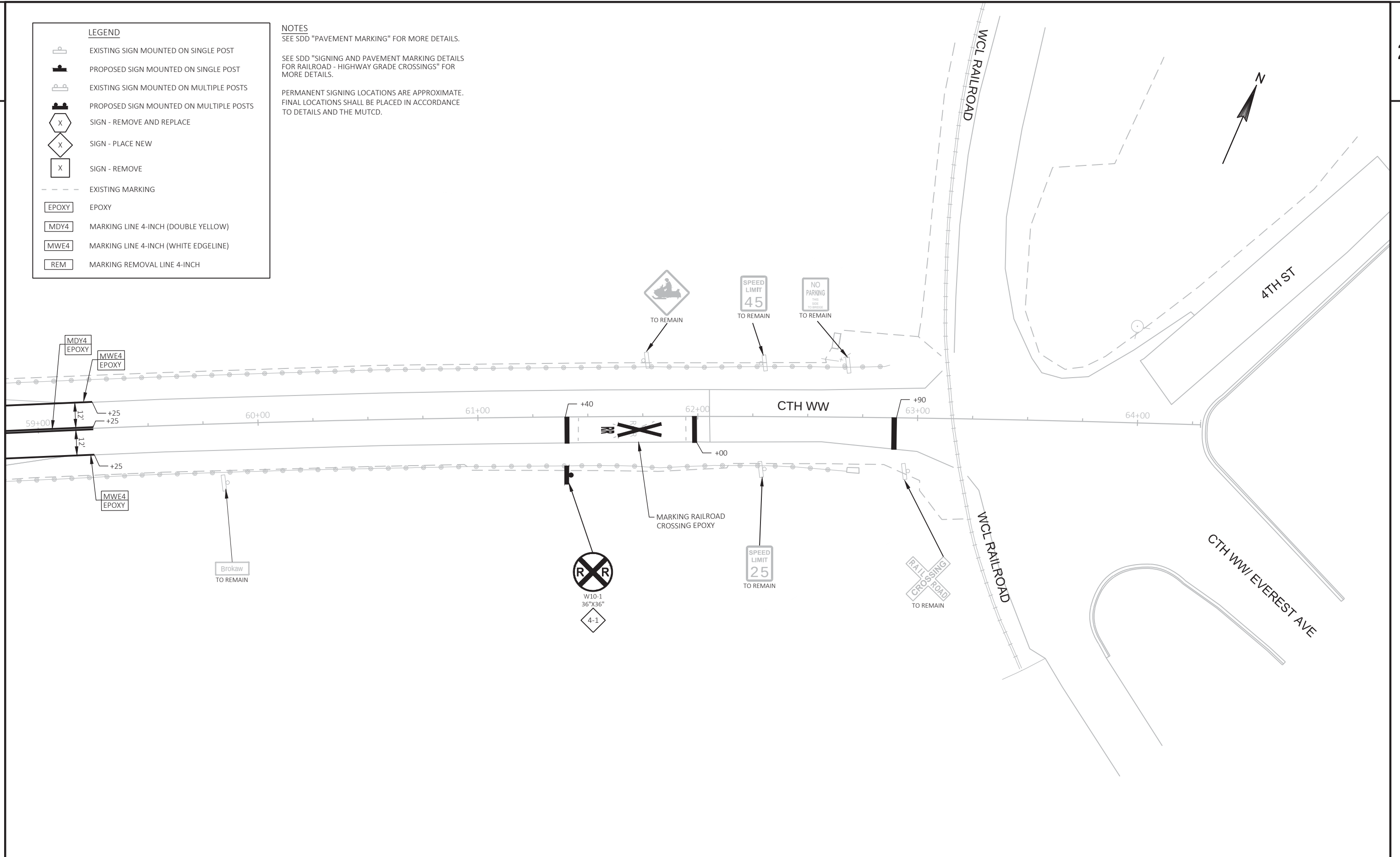
LEGEND

- EXISTING SIGN MOUNTED ON SINGLE POST
- PROPOSED SIGN MOUNTED ON SINGLE POST
- EXISTING SIGN MOUNTED ON MULTIPLE POSTS
- PROPOSED SIGN MOUNTED ON MULTIPLE POSTS
- SIGN - REMOVE AND REPLACE
- SIGN - PLACE NEW
- SIGN - REMOVE
- EXISTING MARKING
- EPOXY
- MARKING LINE 4-INCH (DOUBLE YELLOW)
- MARKING LINE 4-INCH (WHITE EDGELINE)
- MARKING REMOVAL LINE 4-INCH

NOTES

SEE SDD "PAVEMENT MARKING" FOR MORE DETAILS.
SEE SDD "SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD - HIGHWAY GRADE CROSSINGS" FOR MORE DETAILS.

PERMANENT SIGNING LOCATIONS ARE APPROXIMATE.
FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.



TRAFFIC CONTROL GENERAL NOTES
1. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

ADVANCED WARNING FOR LANE WIDTH RESTRICTIONS

IN ADDITION TO THE W12-52 SIGNS SHOWN ON SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" PLACE THE FOLLOWING ADVANCED WARNING SIGNS AT THE FOLLOWING LOCATIONS.

** EAST

M3-2
36"x18"

*** WEST

M3-4
24"x12"

* COUNTY
WW

M1-5A
24"x24"



W12-52
48"x48"

XX MILES
AHEAD

W57-52
36"x24"

PLACE ABOVE SIGNS AT ALL LOCATIONS DURING STAGE 1 AND STAGE 2

** EAST

M3-2
36"x18"

*** WEST

M3-4
24"x12"

* COUNTY
WW

M1-5A
24"x24"



W12-52
48"x48"

XX MILES
AHEAD

W57-52
36"x24"

PLACE ABOVE SIGNS AT ALL LOCATIONS DURING STAGE 3

1 USH 51 NB/CTH U - 3 1/2 MILES

2 USH 51 SB/STH 64 - 12 MILES

3 USH 51 SB/CTH Q - 8 3/4 MILES

4 CTH WW EB - 1/2 MILE

5 CTH W NB - 2 1/4 MILES

6 CTH W SB - 2 1/4 MILES

7 CTH WW WB - 1/2 MILE

NOTES

ADJUST TRAFFIC CONTROL PCMS MESSAGE AS NEEDED BASED ON CONSTRUCTION SCHEDULE.

CONSIDER GEOMETRICS WHEN LOCATING MESSAGE BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE BOARD FOR A MINIMUM OF 1,000 FEET IN FRONT OF THE MESSAGE BOARD. PLACE MESSAGE BOARDS AS FAR AWAY FROM LIVE TRAFFIC LANES AS POSSIBLE WITHOUT HAMPERING VISIBILITY.

PLACE TRAFFIC CONTROL SIGNS PCMS AND DISPLAY THE "PRIOR TO CONSTRUCTION" MESSAGE 7 DAYS PRIOR TO THE EXPECTED START OF THE PROPOSED WORK THAT WILL REQUIRE LANE CLOSURES.

PLACE TRAFFIC CONTROL SIGNS PCMS AND DISPLAY THE "PRIOR TO DETOUR" MESSAGE 7 DAYS PRIOR TO THE EXPECTED START OF DECK POURS THAT WILL REQUIRE FULL BRIDGE CLOSURE.

PLACE TRAFFIC CONTROL SIGNS PCMS AND DISPLAY THE "DURING DETOUR" MESSAGE DURING THE DECK POURS THAT WILL REQUIRE FULL BRIDGE CLOSURE.

*PLACE SIGN M1-5A WHEN ASSEMBLY IS MOUNTED ON ALL ROADWAYS OTHER THAN CTH WW. SIGN M1-5A SIZE IS 36" X 36" ON THE FOLLOWING ASSEMBLIES:

1 2 3

**PLACE SIGN M3-2 ON THE FOLLOWING ASSEMBLIES:

1 2 3

*** PLACE SIGN M3-4 ON THE FOLLOWING ASSEMBLIES:

5 6

LEGEND

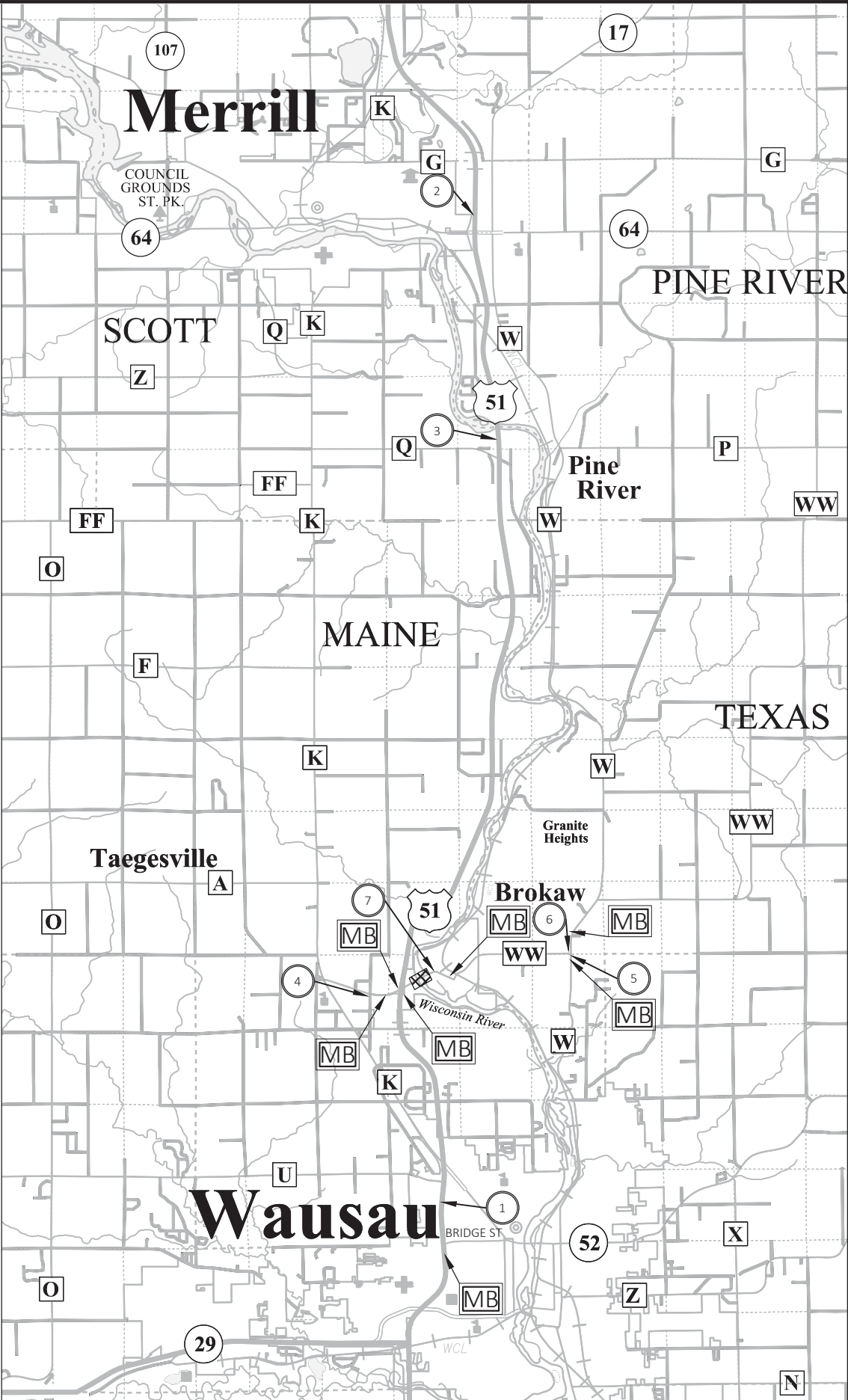


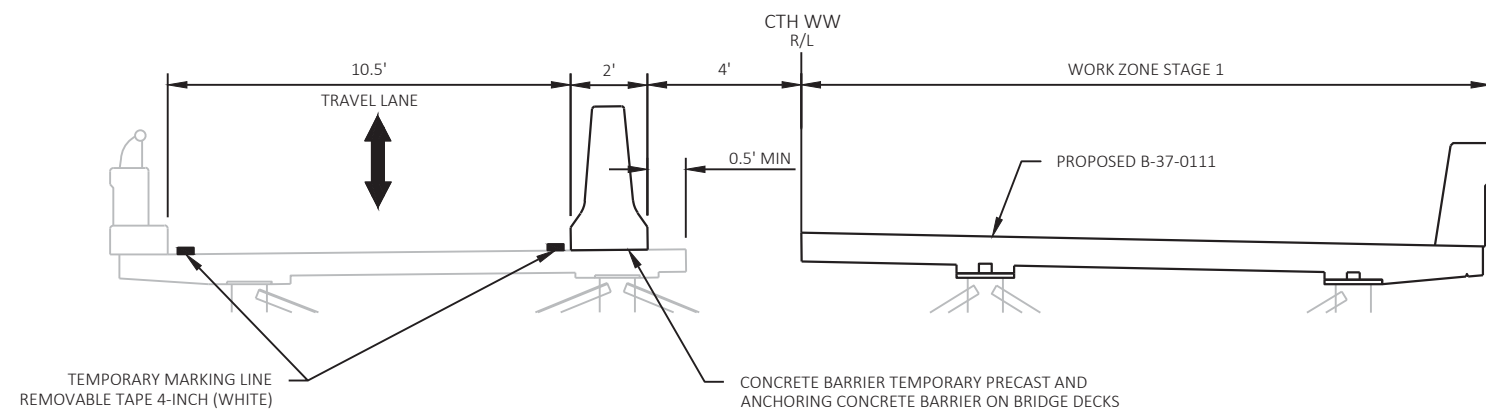
TRAFFIC CONTROL SIGN PCMS



WORK ZONE

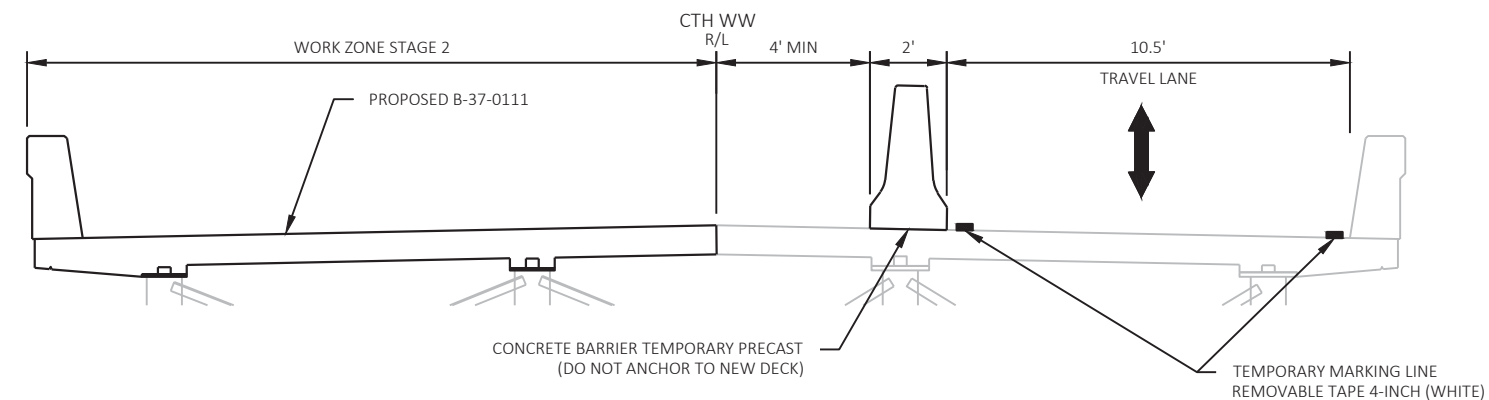
TRAFFIC CONTROL SIGNS PCMS MESSAGES								
	PRIOR TO CONSTRUCTION		DURING CONSTRUCTION		PRIOR TO DETOUR		DURING DETOUR	
PCMS SIGN LOCATION	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)
CTH WW 0.2 MILES WEST OF USH 51	BRIDGE WORK STARTS	# DATE	TRAFFIC SIGNAL AHEAD	BE PREPARED TO STOP	TRAFFIC SIGNAL AHEAD	BE PREPARED TO STOP	CTH WW BRIDGE CLOSED	FOLLOW DETOUR
CTH WW 0.4 MILES EAST OF USH 51	BRIDGE WORK STARTS	# DATE	TRAFFIC SIGNAL AHEAD	BE PREPARED TO STOP	TRAFFIC SIGNAL AHEAD	BE PREPARED TO STOP	CTH WW BRIDGE CLOSED	FOLLOW DETOUR
USH 51 NB EXIT RAMP TO CTH WW	CTH WW WORK STARTS	# DATE	--	--	CTH WW WI RIVER BRIDGE	# CLOSING DATE	CTH WW BRIDGE CLOSED	FOLLOW DETOUR
USH 51 SB EXIT RAMP TO CTH WW	CTH WW WORK STARTS	# DATE	--	--	CTH WW WI RIVER BRIDGE	# CLOSING DATE	CTH WW BRIDGE CLOSED	FOLLOW DETOUR
USH 51 NB 0.6 MILES SOUTH OF BRIDGE STREET	--	--	--	--	--	--	CTH WW BRIDGE CLOSED	FOLLOW BRIDGE ST
CTH W 0.1 MILE SOUTH CTH WW INTERSECTION	--	--	--	--	CTH WW WI RIVER BRIDGE	# CLOSING DATE	CTH WW BRIDGE CLOSED	FOLLOW DETOUR
CTH W 0.1 MILE NORTH CTH WW INTERSECTION	--	--	--	--	CTH WW WI RIVER BRIDGE	# CLOSING DATE	CTH WW BRIDGE CLOSED	FOLLOW DETOUR





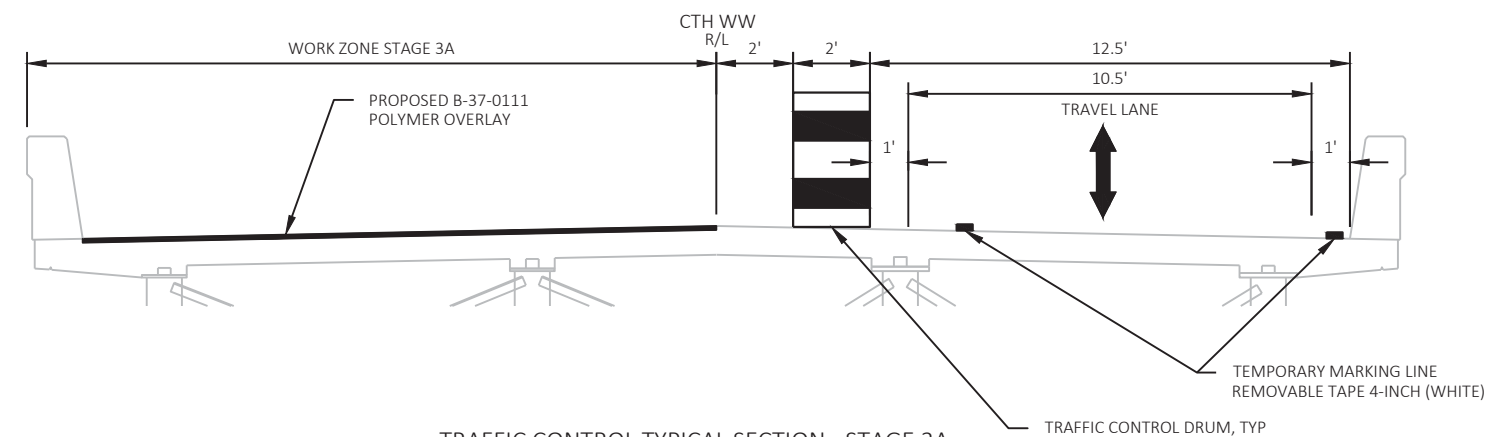
TRAFFIC CONTROL TYPICAL SECTION - STAGE 1
CTH WW

CONSTRUCT RIGHT SIDE B-37-0111 AND APPROACHES



TRAFFIC CONTROL TYPICAL SECTION - STAGE 2
CTH WW

CONSTRUCT LEFT SIDE B-37-0111 AND APPROACHES

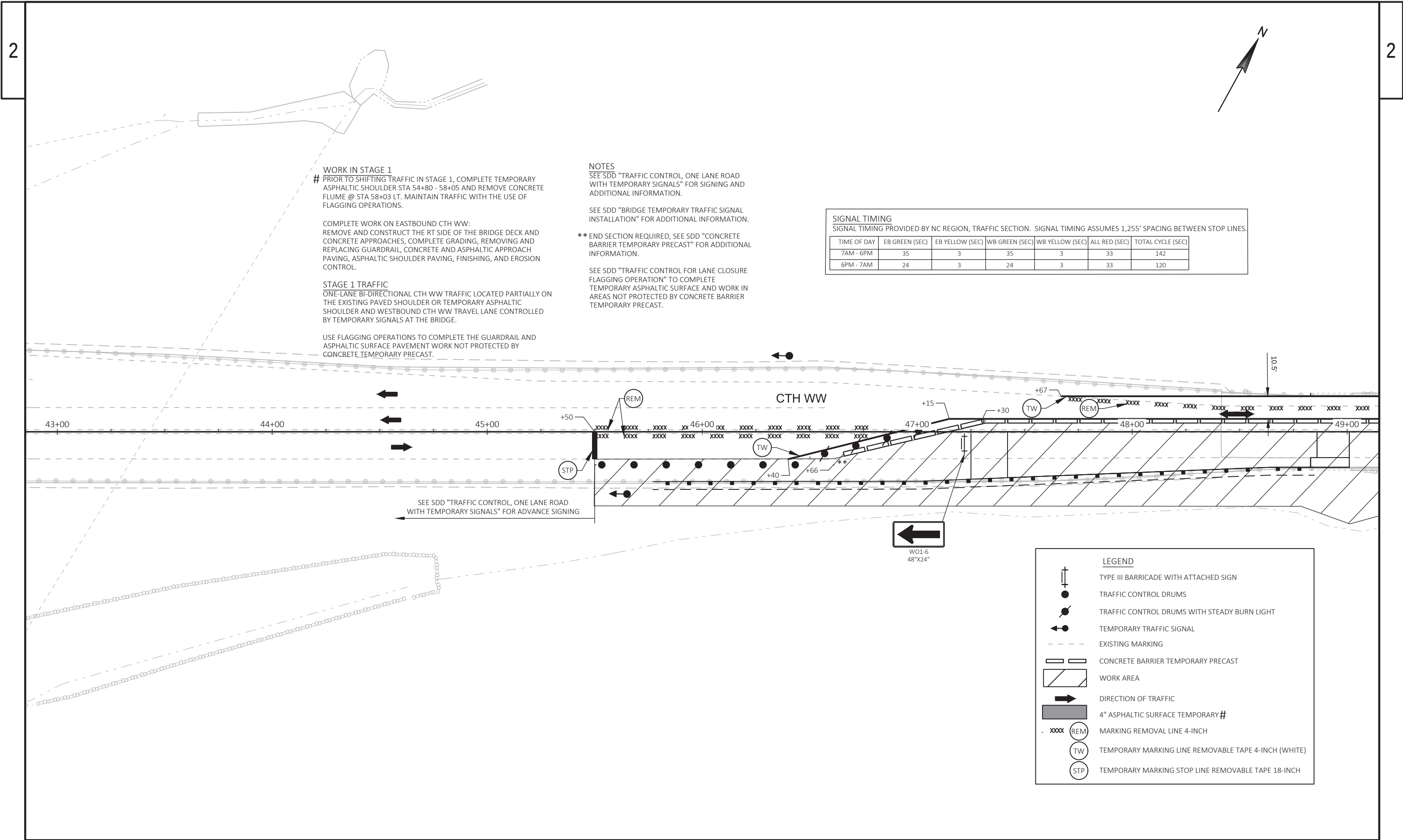


TRAFFIC CONTROL TYPICAL SECTION - STAGE 3A
CTH WW

MIRROR FOR STAGE 3B (NOT SHOWN)
CONSTRUCT POLYMER OVERLAY

NOTES
SEE TRAFFIC CONTROL PLAN SHEETS FOR PROPOSED WORK AND ADDITIONAL INFORMATION.

SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL INFORMATION.



WORK IN STAGE 1
PRIOR TO SHIFTING TRAFFIC IN STAGE 1, COMPLETE TEMPORARY ASPHALTIC SHOULDER STA 54+80 - 58+05 AND REMOVE CONCRETE FLUME @ STA 58+03 LT. MAINTAIN TRAFFIC WITH THE USE OF FLAGGING OPERATIONS.

COMPLETE WORK ON EASTBOUND CTH WW:
REMOVE AND CONSTRUCT THE RT SIDE OF THE BRIDGE DECK AND CONCRETE APPROACHES, COMPLETE GRADING, REMOVING AND REPLACING GUARDRAIL, CONCRETE AND ASPHALTIC APPROACH PAVING, ASPHALTIC SHOULDER PAVING, FINISHING, AND EROSION CONTROL.

STAGE 1 TRAFFIC
ONE-LANE BI-DIRECTIONAL CTH WW TRAFFIC LOCATED PARTIALLY ON THE EXISTING PAVED SHOULDER OR TEMPORARY ASPHALTIC SHOULDER AND WESTBOUND CTH WW TRAVEL LANE CONTROLLED BY TEMPORARY SIGNALS AT THE BRIDGE.

USE FLAGGING OPERATIONS TO COMPLETE THE GUARDRAIL AND ASPHALTIC SURFACE PAVEMENT WORK NOT PROTECTED BY CONCRETE TEMPORARY PRECAST.

NOTES
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR SIGNING AND ADDITIONAL INFORMATION.

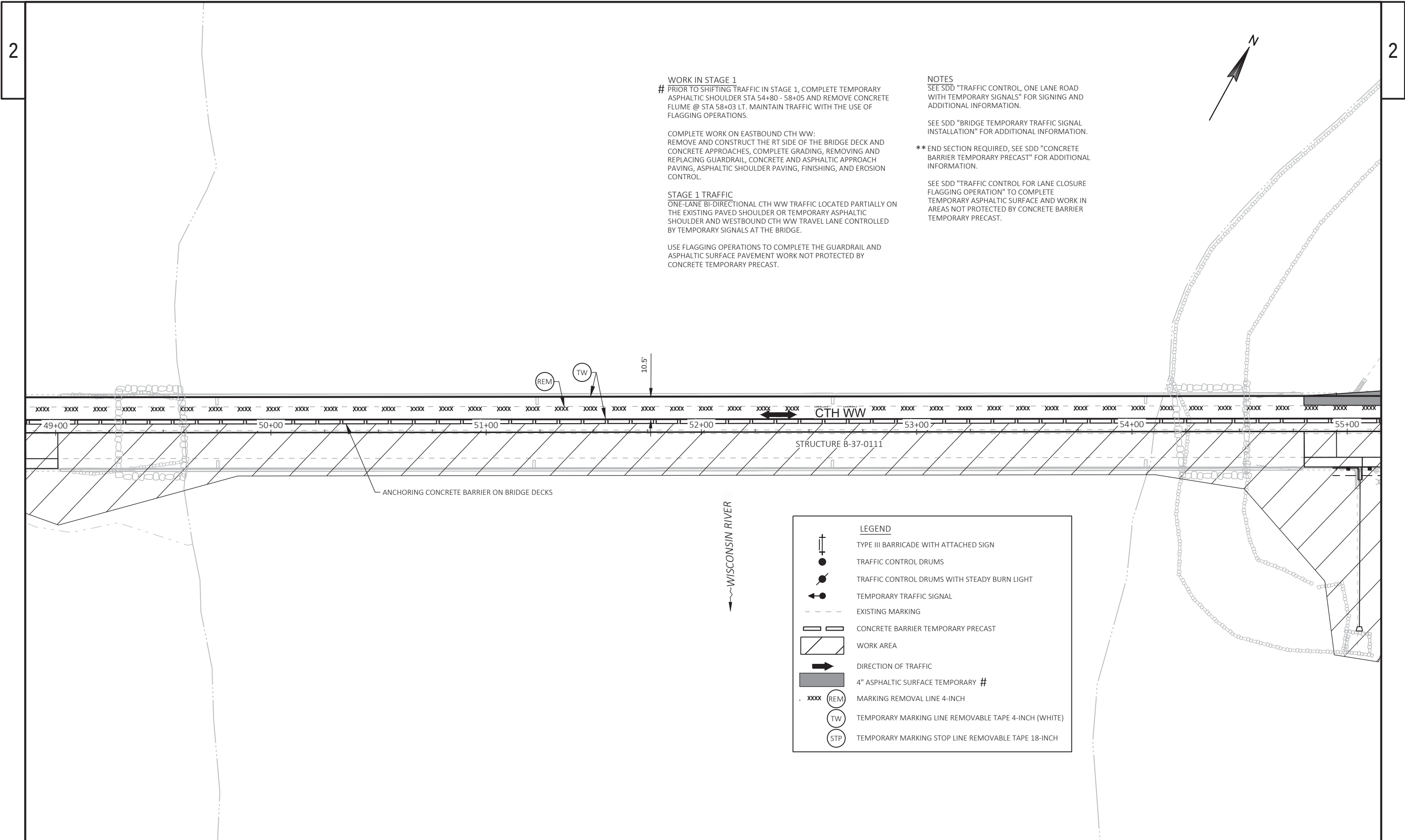
SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION.

** END SECTION REQUIRED, SEE SDD "CONCRETE BARRIER TEMPORARY PRECAST" FOR ADDITIONAL INFORMATION.

SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE FLAGGING OPERATION" TO COMPLETE TEMPORARY ASPHALTIC SURFACE AND WORK IN AREAS NOT PROTECTED BY CONCRETE BARRIER TEMPORARY PRECAST.

SIGNAL TIMING						
SIGNAL TIMING PROVIDED BY NC REGION, TRAFFIC SECTION. SIGNAL TIMING ASSUMES 1,255' SPACING BETWEEN STOP LINES.						
TIME OF DAY	EB GREEN (SEC)	EB YELLOW (SEC)	WB GREEN (SEC)	WB YELLOW (SEC)	ALL RED (SEC)	TOTAL CYCLE (SEC)
7AM - 6PM	35	3	35	3	33	142
6PM - 7AM	24	3	24	3	33	120

LEGEND	
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUMS
	TRAFFIC CONTROL DRUMS WITH STEADY BURN LIGHT
	TEMPORARY TRAFFIC SIGNAL
	EXISTING MARKING
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	DIRECTION OF TRAFFIC
	4" ASPHALTIC SURFACE TEMPORARY #
	MARKING REMOVAL LINE 4-INCH
	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
	TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH



WORK IN STAGE 1
PRIOR TO SHIFTING TRAFFIC IN STAGE 1, COMPLETE TEMPORARY ASPHALTIC SHOULDER STA 54+80 - 58+05 AND REMOVE CONCRETE FLUME @ STA 58+03 LT. MAINTAIN TRAFFIC WITH THE USE OF FLAGGING OPERATIONS.

COMPLETE WORK ON EASTBOUND CTH WW:
REMOVE AND CONSTRUCT THE RT SIDE OF THE BRIDGE DECK AND CONCRETE APPROACHES, COMPLETE GRADING, REMOVING AND REPLACING GUARDRAIL, CONCRETE AND ASPHALTIC APPROACH PAVING, ASPHALTIC SHOULDER PAVING, FINISHING, AND EROSION CONTROL.

STAGE 1 TRAFFIC
ONE-LANE BI-DIRECTIONAL CTH WW TRAFFIC LOCATED PARTIALLY ON THE EXISTING PAVED SHOULDER OR TEMPORARY ASPHALTIC SHOULDER AND WESTBOUND CTH WW TRAVEL LANE CONTROLLED BY TEMPORARY SIGNALS AT THE BRIDGE.

USE FLAGGING OPERATIONS TO COMPLETE THE GUARDRAIL AND ASPHALTIC SURFACE PAVEMENT WORK NOT PROTECTED BY CONCRETE TEMPORARY PRECAST.

NOTES
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR SIGNING AND ADDITIONAL INFORMATION.

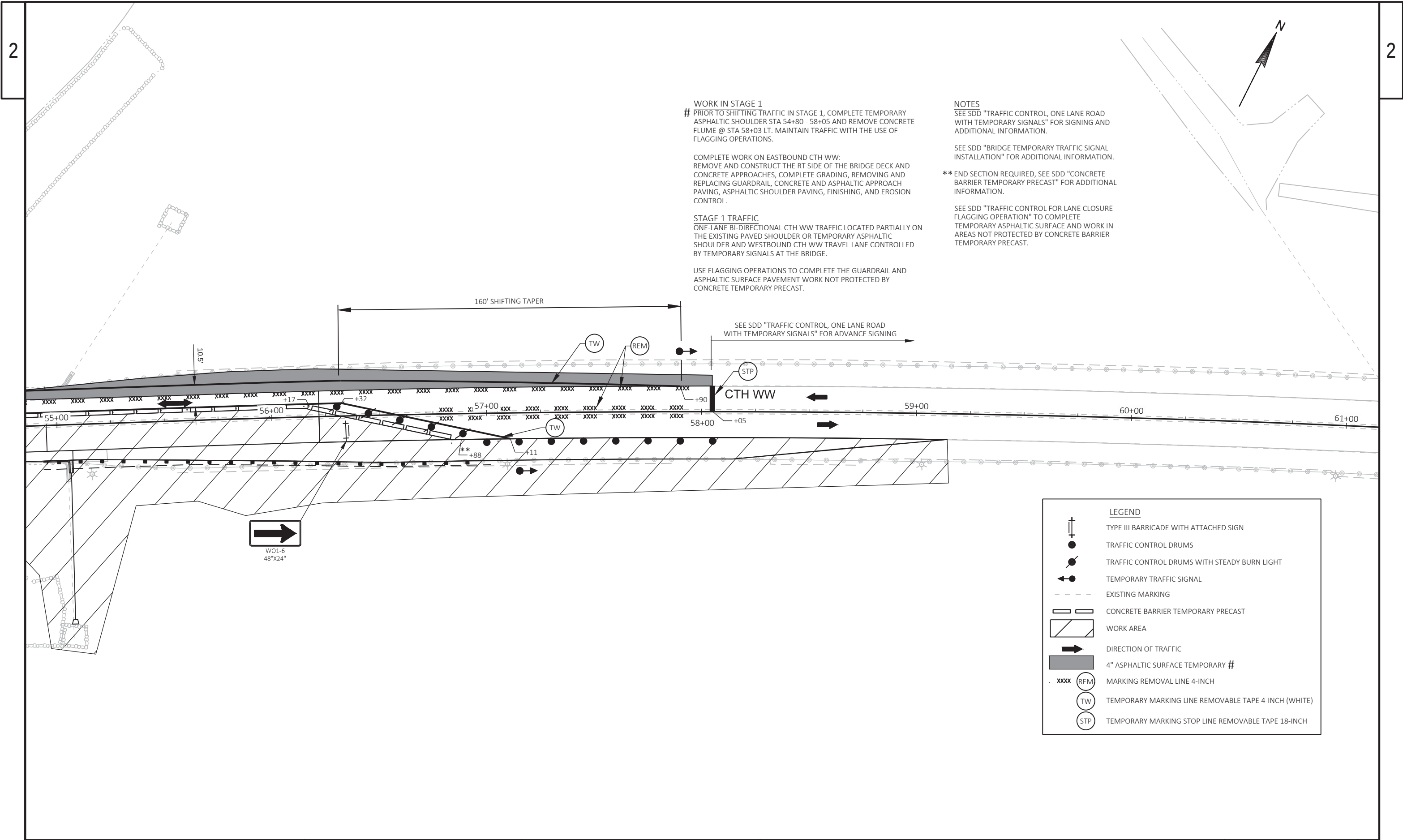
SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION.

** END SECTION REQUIRED, SEE SDD "CONCRETE BARRIER TEMPORARY PRECAST" FOR ADDITIONAL INFORMATION.

SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE FLAGGING OPERATION" TO COMPLETE TEMPORARY ASPHALTIC SURFACE AND WORK IN AREAS NOT PROTECTED BY CONCRETE BARRIER TEMPORARY PRECAST.

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUMS
- TRAFFIC CONTROL DRUMS WITH STEADY BURN LIGHT
- TEMPORARY TRAFFIC SIGNAL
- EXISTING MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- 4" ASPHALTIC SURFACE TEMPORARY #
- MARKING REMOVAL LINE 4-INCH
- TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
- TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH



WORK IN STAGE 1
PRIOR TO SHIFTING TRAFFIC IN STAGE 1, COMPLETE TEMPORARY ASPHALTIC SHOULDER STA 54+80 - 58+05 AND REMOVE CONCRETE FLUME @ STA 58+03 LT. MAINTAIN TRAFFIC WITH THE USE OF FLAGGING OPERATIONS.

COMPLETE WORK ON EASTBOUND CTH WW: REMOVE AND CONSTRUCT THE RT SIDE OF THE BRIDGE DECK AND CONCRETE APPROACHES, COMPLETE GRADING, REMOVING AND REPLACING GUARDRAIL, CONCRETE AND ASPHALTIC APPROACH PAVING, ASPHALTIC SHOULDER PAVING, FINISHING, AND EROSION CONTROL.

STAGE 1 TRAFFIC
ONE-LANE BI-DIRECTIONAL CTH WW TRAFFIC LOCATED PARTIALLY ON THE EXISTING PAVED SHOULDER OR TEMPORARY ASPHALTIC SHOULDER AND WESTBOUND CTH WW TRAVEL LANE CONTROLLED BY TEMPORARY SIGNALS AT THE BRIDGE.

USE FLAGGING OPERATIONS TO COMPLETE THE GUARDRAIL AND ASPHALTIC SURFACE PAVEMENT WORK NOT PROTECTED BY CONCRETE TEMPORARY PRECAST.

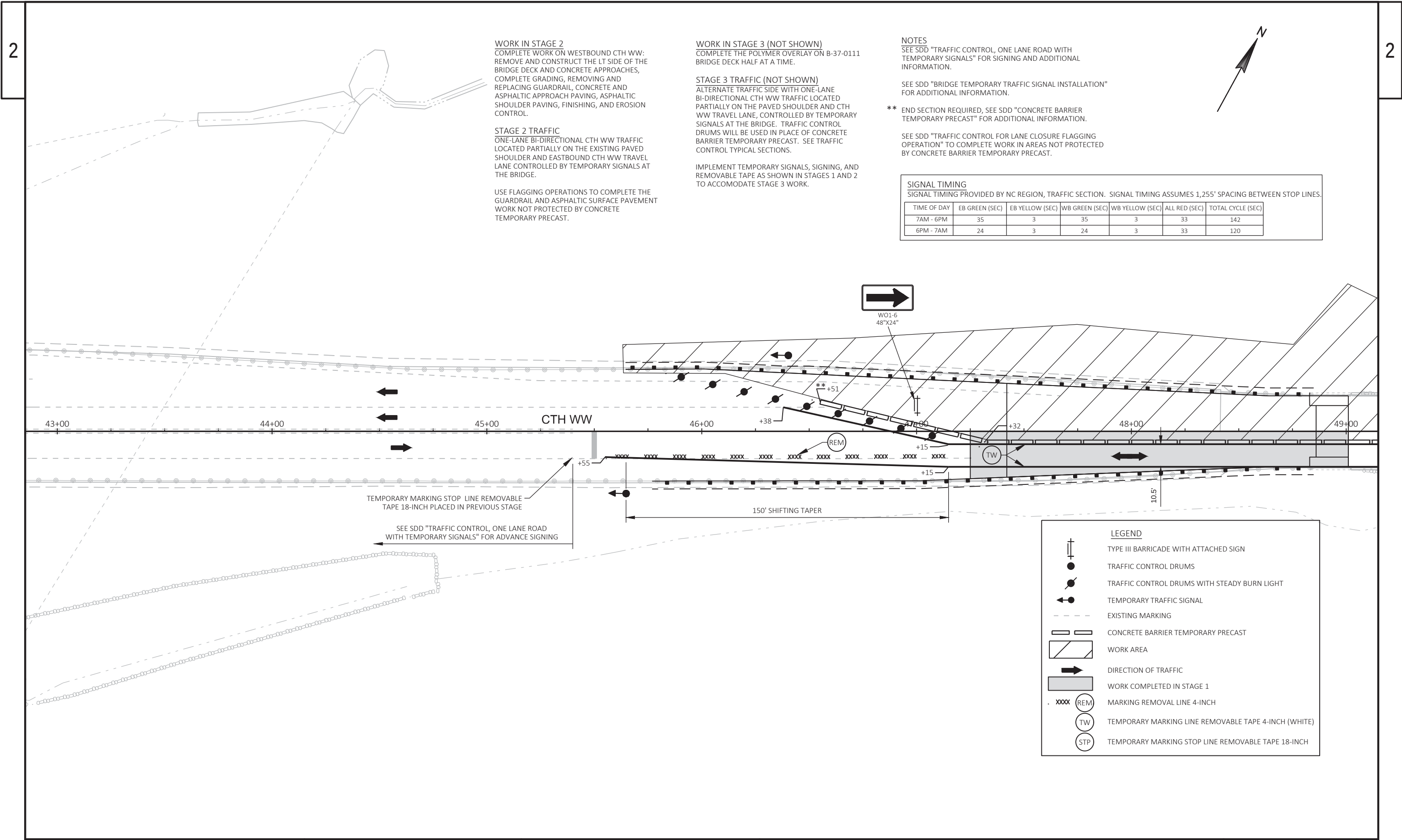
NOTES
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR SIGNING AND ADDITIONAL INFORMATION.

SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION.

**** END SECTION REQUIRED, SEE SDD "CONCRETE BARRIER TEMPORARY PRECAST" FOR ADDITIONAL INFORMATION.**

SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE FLAGGING OPERATION" TO COMPLETE TEMPORARY ASPHALTIC SURFACE AND WORK IN AREAS NOT PROTECTED BY CONCRETE BARRIER TEMPORARY PRECAST.

LEGEND	
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUMS
	TRAFFIC CONTROL DRUMS WITH STEADY BURN LIGHT
	TEMPORARY TRAFFIC SIGNAL
	EXISTING MARKING
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	DIRECTION OF TRAFFIC
	4" ASPHALTIC SURFACE TEMPORARY #
	MARKING REMOVAL LINE 4-INCH
	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
	TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH



WORK IN STAGE 2
COMPLETE WORK ON WESTBOUND CTH WW:
REMOVE AND CONSTRUCT THE LT SIDE OF THE
BRIDGE DECK AND CONCRETE APPROACHES,
COMPLETE GRADING, REMOVING AND
REPLACING GUARDRAIL, CONCRETE AND
ASPHALTIC APPROACH PAVING, ASPHALTIC
SHOULDER PAVING, FINISHING, AND EROSION
CONTROL.

STAGE 2 TRAFFIC
ONE-LANE BI-DIRECTIONAL CTH WW TRAFFIC
LOCATED PARTIALLY ON THE EXISTING PAVED
SHOULDER AND EASTBOUND CTH WW TRAVEL
LANE CONTROLLED BY TEMPORARY SIGNALS AT
THE BRIDGE.

USE FLAGGING OPERATIONS TO COMPLETE THE
GUARDRAIL AND ASPHALTIC SURFACE PAVEMENT
WORK NOT PROTECTED BY CONCRETE
TEMPORARY PRECAST.

WORK IN STAGE 3 (NOT SHOWN)
COMPLETE THE POLYMER OVERLAY ON B-37-0111
BRIDGE DECK HALF AT A TIME.

STAGE 3 TRAFFIC (NOT SHOWN)
ALTERNATE TRAFFIC SIDE WITH ONE-LANE
BI-DIRECTIONAL CTH WW TRAFFIC LOCATED
PARTIALLY ON THE PAVED SHOULDER AND CTH
WW TRAVEL LANE, CONTROLLED BY TEMPORARY
SIGNALS AT THE BRIDGE. TRAFFIC CONTROL
DRUMS WILL BE USED IN PLACE OF CONCRETE
BARRIER TEMPORARY PRECAST. SEE TRAFFIC
CONTROL TYPICAL SECTIONS.

IMPLEMENT TEMPORARY SIGNALS, SIGNING, AND
REMOVABLE TAPE AS SHOWN IN STAGES 1 AND 2
TO ACCOMODATE STAGE 3 WORK.

NOTES
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH
TEMPORARY SIGNALS" FOR SIGNING AND ADDITIONAL
INFORMATION.

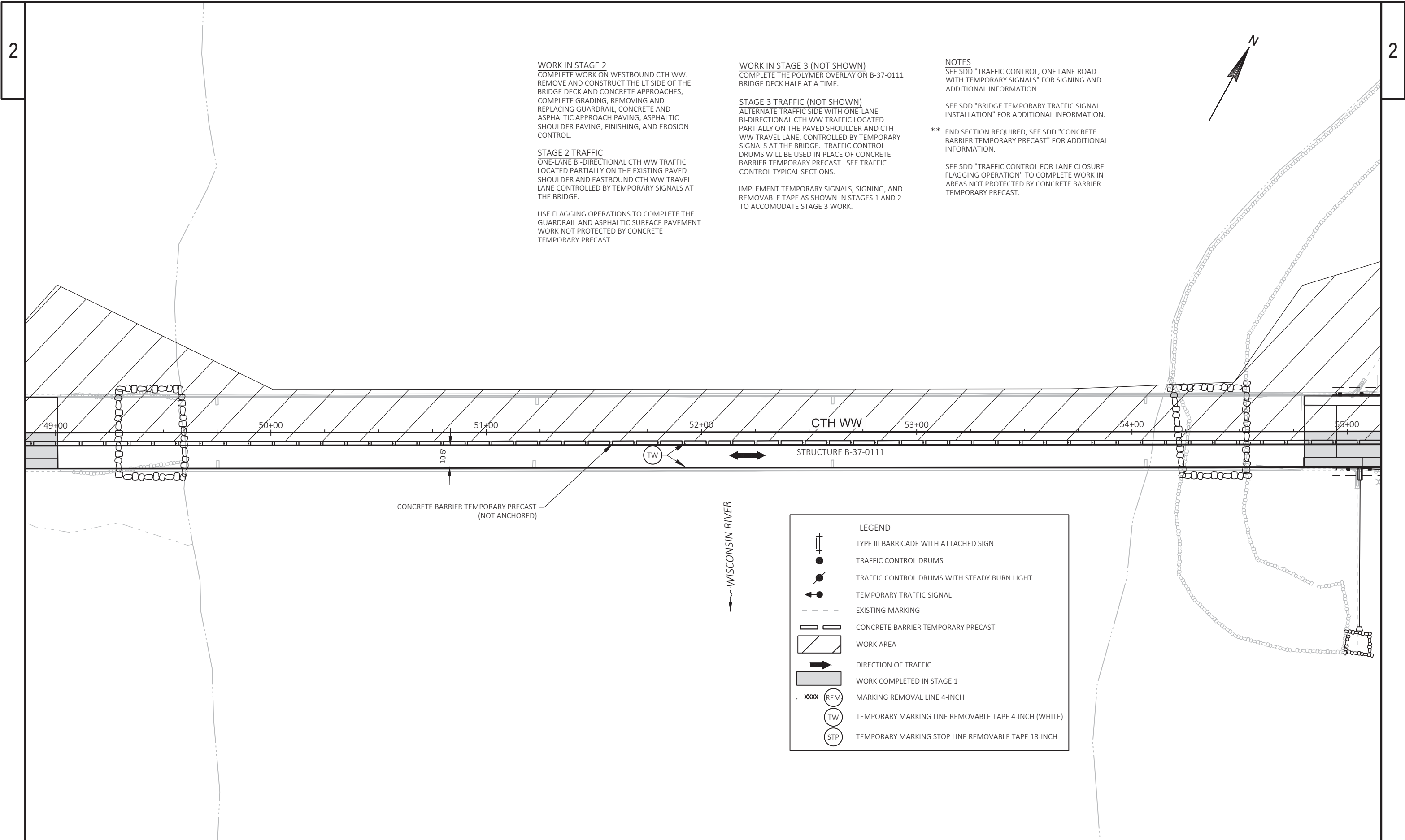
SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION"
FOR ADDITIONAL INFORMATION.

****** END SECTION REQUIRED, SEE SDD "CONCRETE BARRIER
TEMPORARY PRECAST" FOR ADDITIONAL INFORMATION.

SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE FLAGGING
OPERATION" TO COMPLETE WORK IN AREAS NOT PROTECTED
BY CONCRETE BARRIER TEMPORARY PRECAST.

SIGNAL TIMING						
SIGNAL TIMING PROVIDED BY NC REGION, TRAFFIC SECTION. SIGNAL TIMING ASSUMES 1,255' SPACING BETWEEN STOP LINES.						
TIME OF DAY	EB GREEN (SEC)	EB YELLOW (SEC)	WB GREEN (SEC)	WB YELLOW (SEC)	ALL RED (SEC)	TOTAL CYCLE (SEC)
7AM - 6PM	35	3	35	3	33	142
6PM - 7AM	24	3	24	3	33	120

LEGEND	
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUMS
	TRAFFIC CONTROL DRUMS WITH STEADY BURN LIGHT
	TEMPORARY TRAFFIC SIGNAL
	EXISTING MARKING
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	DIRECTION OF TRAFFIC
	WORK COMPLETED IN STAGE 1
	MARKING REMOVAL LINE 4-INCH
	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
	TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH



WORK IN STAGE 2
COMPLETE WORK ON WESTBOUND CTH WW:
REMOVE AND CONSTRUCT THE LT SIDE OF THE
BRIDGE DECK AND CONCRETE APPROACHES,
COMPLETE GRADING, REMOVING AND
REPLACING GUARDRAIL, CONCRETE AND
ASPHALTIC APPROACH PAVING, ASPHALTIC
SHOULDER PAVING, FINISHING, AND EROSION
CONTROL.

STAGE 2 TRAFFIC
ONE-LANE BI-DIRECTIONAL CTH WW TRAFFIC
LOCATED PARTIALLY ON THE EXISTING PAVED
SHOULDER AND EASTBOUND CTH WW TRAVEL
LANE CONTROLLED BY TEMPORARY SIGNALS AT
THE BRIDGE.

USE FLAGGING OPERATIONS TO COMPLETE THE
GUARDRAIL AND ASPHALTIC SURFACE PAVEMENT
WORK NOT PROTECTED BY CONCRETE
TEMPORARY PRECAST.

WORK IN STAGE 3 (NOT SHOWN)
COMPLETE THE POLYMER OVERLAY ON B-37-0111
BRIDGE DECK HALF AT A TIME.

STAGE 3 TRAFFIC (NOT SHOWN)
ALTERNATE TRAFFIC SIDE WITH ONE-LANE
BI-DIRECTIONAL CTH WW TRAFFIC LOCATED
PARTIALLY ON THE PAVED SHOULDER AND CTH
WW TRAVEL LANE, CONTROLLED BY TEMPORARY
SIGNALS AT THE BRIDGE. TRAFFIC CONTROL
DRUMS WILL BE USED IN PLACE OF CONCRETE
BARRIER TEMPORARY PRECAST. SEE TRAFFIC
CONTROL TYPICAL SECTIONS.

IMPLEMENT TEMPORARY SIGNALS, SIGNING, AND
REMOVABLE TAPE AS SHOWN IN STAGES 1 AND 2
TO ACCOMMODATE STAGE 3 WORK.

NOTES
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD
WITH TEMPORARY SIGNALS" FOR SIGNING AND
ADDITIONAL INFORMATION.

SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL
INSTALLATION" FOR ADDITIONAL INFORMATION.

** END SECTION REQUIRED, SEE SDD "CONCRETE
BARRIER TEMPORARY PRECAST" FOR ADDITIONAL
INFORMATION.

SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE
FLAGGING OPERATION" TO COMPLETE WORK IN
AREAS NOT PROTECTED BY CONCRETE BARRIER
TEMPORARY PRECAST.

LEGEND

TYPE III BARRICADE WITH ATTACHED SIGN

TRAFFIC CONTROL DRUMS

TRAFFIC CONTROL DRUMS WITH STEADY BURN LIGHT

TEMPORARY TRAFFIC SIGNAL

EXISTING MARKING

CONCRETE BARRIER TEMPORARY PRECAST

WORK AREA

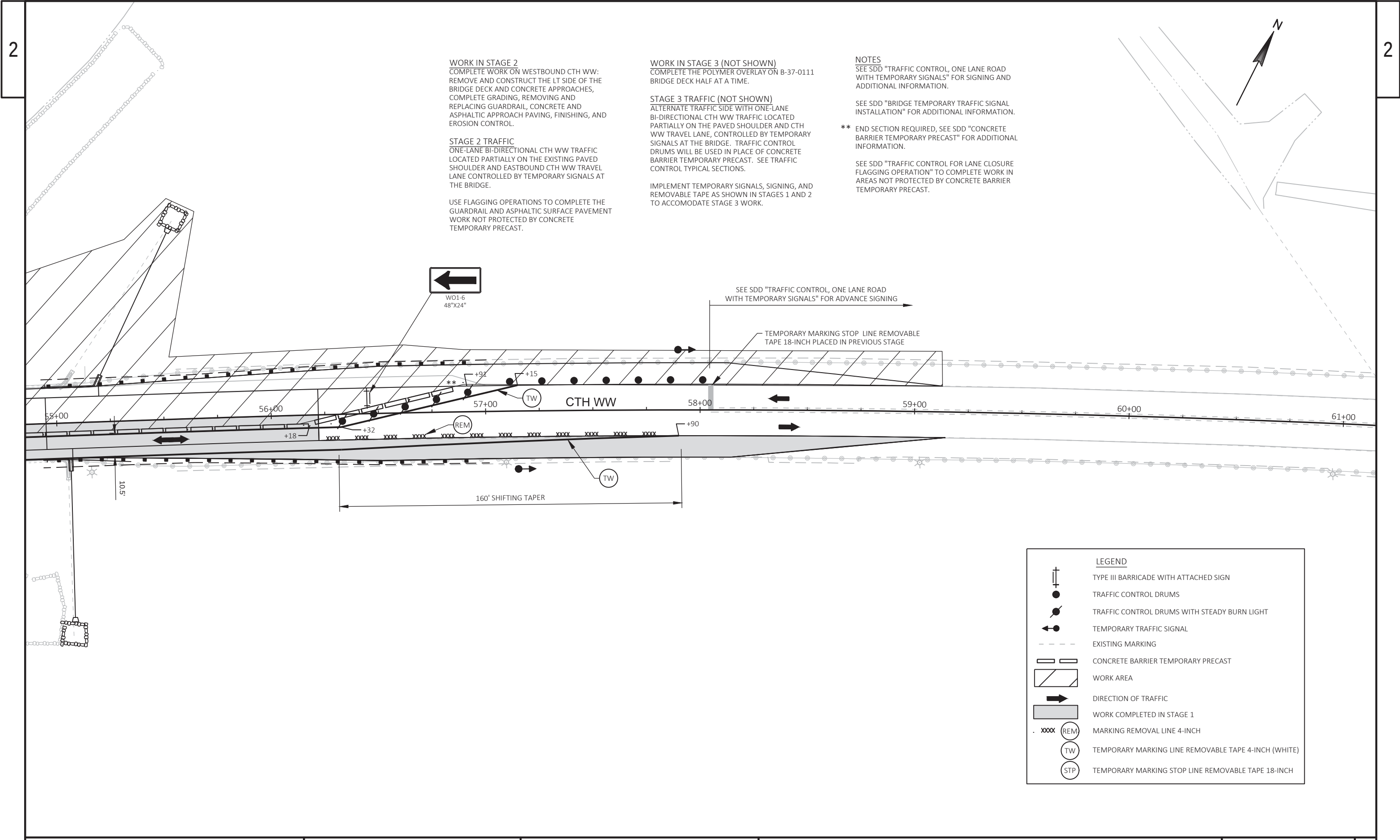
DIRECTION OF TRAFFIC

WORK COMPLETED IN STAGE 1

MARKING REMOVAL LINE 4-INCH

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)

TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH



LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUMS
- TRAFFIC CONTROL DRUMS WITH STEADY BURN LIGHT
- TEMPORARY TRAFFIC SIGNAL
- EXISTING MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- WORK COMPLETED IN STAGE 1
- MARKING REMOVAL LINE 4-INCH
- TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
- TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH

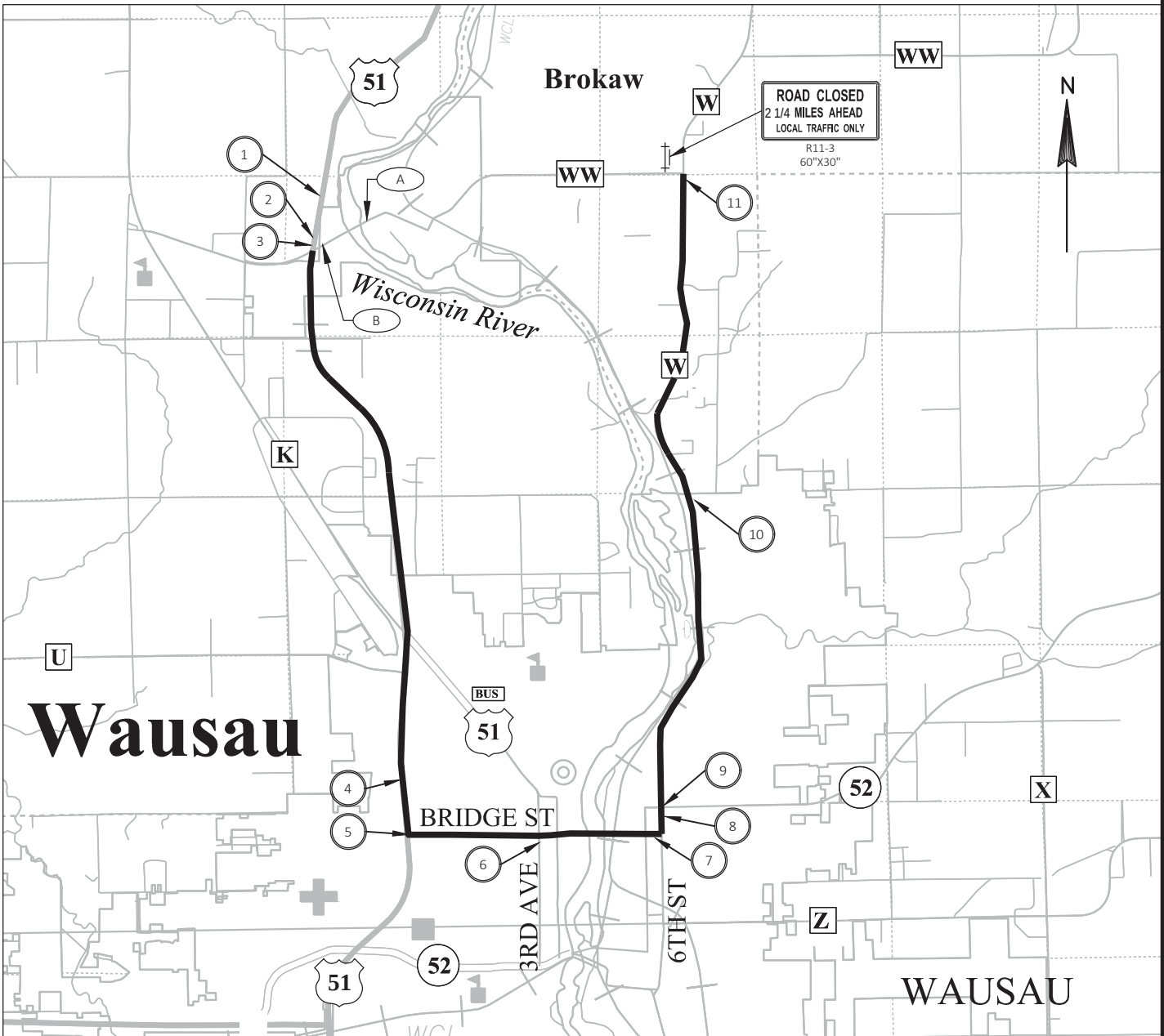
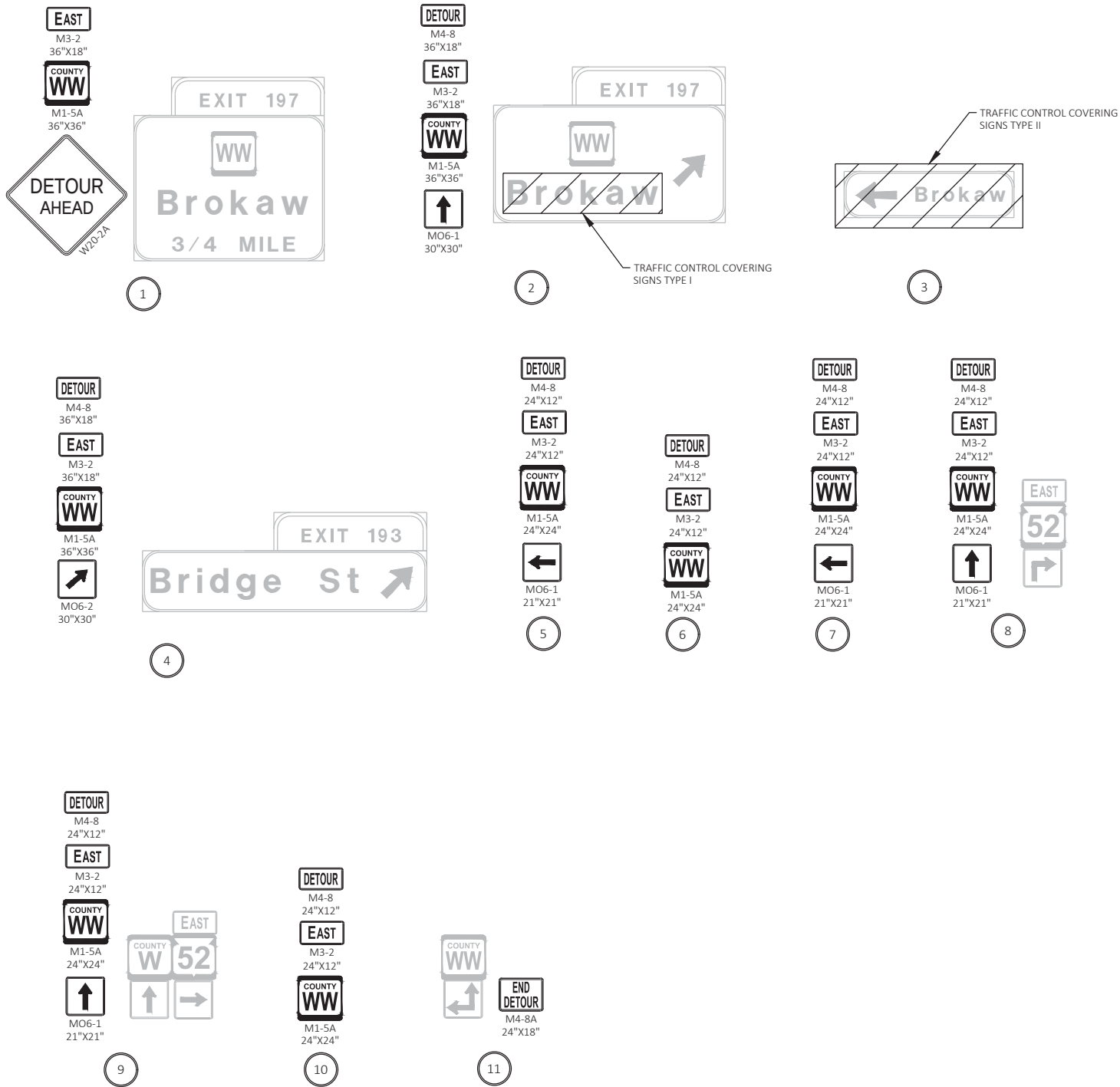
NOTES
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

SEE TRAFFIC CONTROL - WIDTH RESTRICTIONS AND PCMS OVERVIEW FOR TRAFFIC CONTROL SIGNS PCMS MESSAGES DURING THE DETOUR.

INSTALL TRAFFIC CONTROL DEVICES PER DETAIL A OF SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" EAST OF THE WISCONSIN RIVER AND INSTALL TRAFFIC CONTROL DEVICES PER DETAIL B OF SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" WEST OF THE WISCONSIN RIVER.

LEGEND

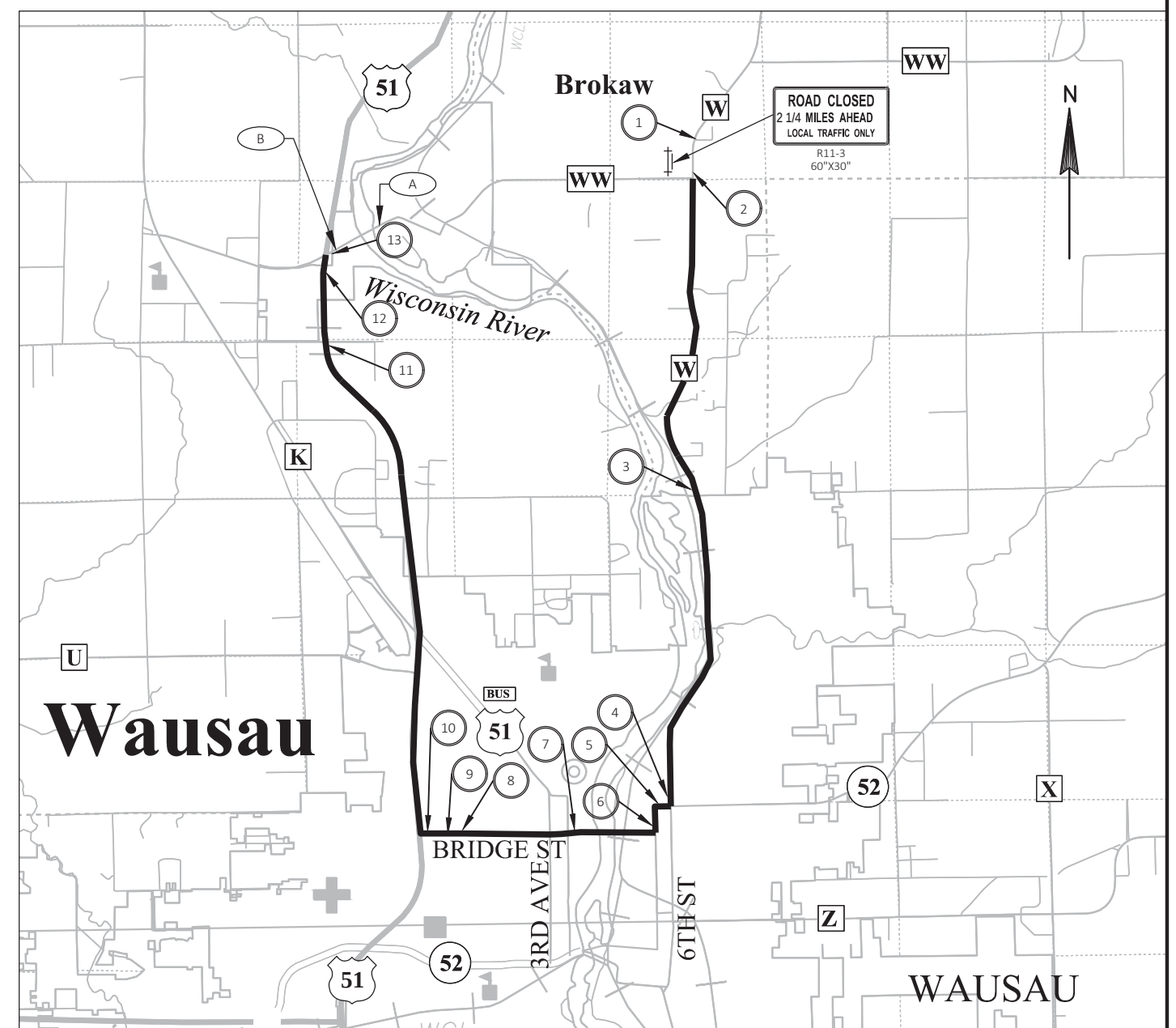
- DETOUR ROUTE - CTH WW
- A SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL A
- B SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL B
- TRAFFIC CONTROL BARRICADES TYPE III WITH ATTACHED SIGN



SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL A

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL B

TRAFFIC CONTROL BARRICADES TYPE III WITH ATTACHED SIGN



Estimate Of Quantities

9474-01-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	4.000	4.000
0004	201.0205	Grubbing	STA	4.000	4.000
0006	203.0210.S	Abatement of Asbestos Containing Material (structure) 01. B-37-111	LS	1.000	1.000
0008	203.0225.S	Debris Containment (structure) 01. B-37-111	LS	1.000	1.000
0010	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. STA. 50+00.00	LS	1.000	1.000
0012	204.0100	Removing Pavement	SY	440.000	440.000
0014	204.0109.S	Removing Concrete Surface Partial Depth	SF	1,280.000	1,280.000
0016	204.0110	Removing Asphaltic Surface	SY	355.000	355.000
0018	204.0115	Removing Asphaltic Surface Butt Joints	SY	10.000	10.000
0020	204.0120	Removing Asphaltic Surface Milling	SY	460.000	460.000
0022	204.0165	Removing Guardrail	LF	1,045.000	1,045.000
0024	204.0190	Removing Surface Drains	EACH	2.000	2.000
0026	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	160.000	160.000
0028	204.0280	Sealing Pipes	EACH	1.000	1.000
0030	205.0100	Excavation Common	CY	373.000	373.000
0032	206.1000	Excavation for Structures Bridges (structure) 01. B-37-111	LS	1.000	1.000
0034	210.1500	Backfill Structure Type A	TON	260.000	260.000
0036	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 9474-01-70	LS	1.000	1.000
0038	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	8.000	8.000
0040	213.0100	Finishing Roadway (project) 01. 9474-01-70	EACH	1.000	1.000
0042	305.0110	Base Aggregate Dense 3/4-Inch	TON	140.000	140.000
0044	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	420.000	420.000
0046	415.0070	Concrete Pavement 7-Inch	SY	36.000	36.000
0048	415.0090	Concrete Pavement 9-Inch	SY	340.000	340.000
0050	415.0410	Concrete Pavement Approach Slab	SY	80.000	80.000
0052	415.5110.S	Concrete Pavement Joint Layout	LS	1.000	1.000
0054	416.0610	Drilled Tie Bars	EACH	60.000	60.000
0056	416.0620	Drilled Dowel Bars	EACH	22.000	22.000
0058	416.1010	Concrete Surface Drains	CY	7.000	7.000
0060	455.0605	Tack Coat	GAL	80.000	80.000
0062	465.0105	Asphaltic Surface	TON	210.000	210.000
0064	465.0125	Asphaltic Surface Temporary	TON	55.000	55.000
0066	502.0100	Concrete Masonry Bridges	CY	786.000	786.000
0068	502.3100	Expansion Device (structure) 01. B-37-111	LS	1.000	1.000
0070	502.3200	Protective Surface Treatment	SY	2,121.000	2,121.000
0072	502.3210	Pigmented Surface Sealer	SY	604.000	604.000
0074	502.4205	Adhesive Anchors No. 5 Bar	EACH	138.000	138.000

Estimate Of Quantities

9474-01-70

Line	Item	Item Description	Unit	Total	Qty
0076	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	171,710.000	171,710.000
0078	506.3025	Welded Stud Shear Connectors 7/8x8-Inch	EACH	4,656.000	4,656.000
0080	509.1500	Concrete Surface Repair	SF	46.000	46.000
0082	509.5100.S	Polymer Overlay	SY	2,123.000	2,123.000
0084	509.9025.S	Epoxy Injection Crack Repair	LF	60.000	60.000
0086	509.9026.S	Cored Holes 2-Inch Diameter	EACH	2.000	2.000
0088	514.0445	Floor Drains Type GC	EACH	4.000	4.000
0090	517.0900.S	Preparation and Coating of Top Flanges (structure) 01. B-37-111	LS	1.000	1.000
0092	517.3000.S	Structure Overcoating Cleaning and Priming (structure) 01. B-37-111	LS	1.000	1.000
0094	517.4000.S	Containment and Collection of Waste Materials (structure) 01. B-37-111	LS	1.000	1.000
0096	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	2.000	2.000
0098	603.8000	Concrete Barrier Temporary Precast Delivered	LF	2,060.000	2,060.000
0100	603.8125	Concrete Barrier Temporary Precast Installed	LF	2,060.000	2,060.000
0102	603.8505	Anchoring Concrete Barrier on Bridge Decks	LF	580.000	580.000
0104	604.0500	Slope Paving Crushed Aggregate	SY	224.000	224.000
0106	606.0200	Riprap Medium	CY	12.000	12.000
0108	606.0300	Riprap Heavy	CY	175.000	175.000
0110	612.0212	Pipe Underdrain Unperforated 12-Inch	LF	146.000	146.000
0112	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0114	614.0200	Steel Thrie Beam Structure Approach	LF	84.000	84.000
0116	614.0305	Steel Plate Beam Guard Class A	LF	500.000	500.000
0118	614.0515	Guardrail Stifened LHW	LF	462.500	462.500
0120	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9474-01-70	EACH	1.000	1.000
0122	619.1000	Mobilization	EACH	1.000	1.000
0124	624.0100	Water	MGAL	4.000	4.000
0126	625.0100	Topsoil	SY	2,550.000	2,550.000
0128	628.1504	Silt Fence	LF	2,500.000	2,500.000
0130	628.1520	Silt Fence Maintenance	LF	2,500.000	2,500.000
0132	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0134	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0136	628.2004	Erosion Mat Class I Type B	SY	2,430.000	2,430.000
0138	628.2008	Erosion Mat Urban Class I Type B	SY	120.000	120.000
0140	628.6005	Turbidity Barriers	SY	300.000	300.000
0142	628.7504	Temporary Ditch Checks	LF	40.000	40.000
0144	628.7570	Rock Bags	EACH	225.000	225.000
0146	629.0210	Fertilizer Type B	CWT	2.000	2.000
0148	630.0120	Seeding Mixture No. 20	LB	35.000	35.000

Estimate Of Quantities

9474-01-70

Line	Item	Item Description	Unit	Total	Qty
0150	630.0130	Seeding Mixture No. 30	LB	25.000	25.000
0152	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	11.000	11.000
0154	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	5.000	5.000
0156	634.0620	Posts Wood 4x6-Inch X 20-FT	EACH	1.000	1.000
0158	637.2210	Signs Type II Reflective H	SF	50.000	50.000
0160	637.2230	Signs Type II Reflective F	SF	41.070	41.070
0162	638.2602	Removing Signs Type II	EACH	13.000	13.000
0164	638.3000	Removing Small Sign Supports	EACH	16.000	16.000
0166	642.5001	Field Office Type B	EACH	1.000	1.000
0168	643.0300	Traffic Control Drums	DAY	4,423.000	4,423.000
0170	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000
0172	643.0420	Traffic Control Barricades Type III	DAY	492.000	492.000
0174	643.0705	Traffic Control Warning Lights Type A	DAY	60.000	60.000
0176	643.0715	Traffic Control Warning Lights Type C	DAY	2,162.000	2,162.000
0178	643.0900	Traffic Control Signs	DAY	8,166.000	8,166.000
0180	643.0910	Traffic Control Covering Signs Type I	EACH	4.000	4.000
0182	643.0920	Traffic Control Covering Signs Type II	EACH	4.000	4.000
0184	643.1050	Traffic Control Signs PCMS	DAY	548.000	548.000
0186	643.5000	Traffic Control	EACH	1.000	1.000
0188	645.0120	Geotextile Type HR	SY	301.000	301.000
0190	646.1020	Marking Line Epoxy 4-Inch	LF	10,560.000	10,560.000
0192	646.5320	Marking Railroad Crossings Epoxy	EACH	1.000	1.000
0194	646.9000	Marking Removal Line 4-Inch	LF	4,350.000	4,350.000
0196	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	8,840.000	8,840.000
0198	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	50.000	50.000
0200	650.4500	Construction Staking Subgrade	LF	157.000	157.000
0202	650.6500	Construction Staking Structure Layout (structure) 01. B-37-111	LS	1.000	1.000
0204	650.7000	Construction Staking Concrete Pavement	LF	157.000	157.000
0206	650.8000	Construction Staking Resurfacing Reference	LF	1,350.000	1,350.000
0208	650.9910	Construction Staking Supplemental Control (project) 01. 9474-01-70	LS	1.000	1.000
0210	650.9920	Construction Staking Slope Stakes	LF	558.000	558.000
0212	661.0100	Temporary Traffic Signals for Bridges (structure) 01. B-37-111	LS	1.000	1.000
0214	690.0150	Sawing Asphalt	LF	458.000	458.000
0216	690.0250	Sawing Concrete	LF	292.000	292.000
0218	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0220	715.0502	Incentive Strength Concrete Structures	DOL	4,716.000	4,716.000
0222	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000

Estimate Of Quantities

9474-01-70					
0224	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

3

CLEARING AND GRUBBING ITEMS

CATEGORY	STAGE	STATION	TO	STATION	OFFSET	201.0105	201.0205
						CLEARING STA	GRUBBING STA
0010							
	1	48+85	-	49+40	RT	1	1
	1	54+15	-	55+25	RT	1	1
	2	48+70	-	49+35	LT	1	1
	2	54+20	-	55+60	LT	1	1
TOTALS						4	4

3

REMOVAL ITEMS

						204.0100	204.0109.S	204.0110	204.0115	204.0120	204.0165	204.0190	204.0245
						REMOVING PAVEMENT SY	REMOVING CONCRETE SURFACE PARTIAL DEPTH SF	REMOVING ASPHALTIC SURFACE SY	REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	REMOVING ASPHALTIC SURFACE MILLING SY	REMOVING GUARDRAIL LF	REMOVING SURFACE DRAINS EACH	REMOVING STORM SEWER (12-INCH) LF
0010													
	1	45+77	-	48+85	RT	-	--	-	-	-	308	-	--
	1	47+42	-	48+83	RT	-	--	-	5	240	-	-	--
	1	48+41	-	48+86	RT	-	540	-	-	-	-	-	--
	1	48+86	-	49+01	RT	28	--	-	-	-	-	-	--
	1	54+80	-	56+22	RT	191	--	-	-	-	-	-	--
	1	54+80	-	57+00	LT	-	--	115	-	-	-	1	--
	1	54+93	-	57+02	RT	-	--	-	-	-	208	-	--
	1	54+93	-	55+07	RT	-	--	-	-	-	-	1	75
	2	45+64	-	48+85	LT	-	--	-	-	-	321	-	--
	2	47+42	-	48+41	LT	-	--	-	5	220	-	-	--
	2	48+41	-	48+86	LT	3	740	-	-	-	-	-	--
	2	48+86	-	49+01	LT	29	--	-	-	-	-	-	--
	2	54+80	-	55+22	LT	189	--	240	-	-	-	-	--
	2	54+93	-	57+00	LT	-	--	-	-	-	208	-	--
	2	55+07	-	55+57	LT	-	--	-	-	-	-	-	85
TOTALS						440	1,280	355	10	460	1,045	2	160

SEALING PIPES

				204.0280
CATEGORY	STATION	OFFSET		EACH
0010	55+10	LT		1
TOTAL				1

EARTHWORK SUMMARY

DIVISION	LOCATION	ITEM #205.0100 EXCAVATION COMMON (CY) (NOTE 1)	SALVAGED / UNUSEABLE PAVEMENT MATERIAL (NOTE 2)	AVAILABLE MATERIAL (NOTE 3)	UNEXPANDED FILL	EXPANDED FILL (NOTE 4) FACTOR 1.25	MASS ORDINATE +/- (NOTE 5)
CTH WW							
1	STA 45+65 - STA 49+01 RT (STAGE 1)	23	10	13	2	3	10
2	STA 54+80 - STA 57+02 RT (STAGE 1)	125	50	75	36	45	30
3	STA 45+65 - STA 49+01 LT (STAGE 2)	87	10	77	11	14	63
4	STA 54+80 - STA 57+02 LT (STAGE 2)	138	50	88	54	68	20
TOTALS		373	120	253	103	130	123

- 1) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT
- 2) SALVAGED/UNUSABLE PAVEMENT MATERIAL = (AREA OF PROJECT PAVEMENT REMOVAL) * (TYPICAL DEPTH)
- 3) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
- 4) EXPANDED FILL FACTOR = (UNEXPANDED FILL) * (FILL FACTOR)
- 5) MASS ORDINATE = AVAILABLE MATERIAL - (EXPANDED FILL); POSITIVE INDICATES AN EXCESS OF MATERIAL

PREPARE FOUNDATION ITEMS

						211.0100	211.0400
						PREPARE FOUNDATION FOR ASPHALTIC PAVING (9474-01-70)	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
CATEGORY	STAGE	STATION	TO	STATION	OFFSET	LS	STA
0010							
	1	56+22	-	59+15	RT	--	4
	2	56+22	-	59+13	LT	--	4
	--	47+42	-	48+86	LT & RT	1	-
TOTALS						1	8

CONCRETE PAVEMENT AND CONCRETE SURFACE DRAIN ITEMS

						415.0070	415.0090	415.0410	416.1010
						CONCRETE PAVEMENT 7-INCH	CONCRETE PAVEMENT 9-INCH	CONCRETE PAVEMENT APPROACH SLAB	CONCRETE SURFACE DRAINS
CATEGORY	STAGE	STATION	TO	STATION	OFFSET	SY	SY	SY	CY
0010									
	1	48+83	-	49+01	RT	18	-	20	-
	1	54+80	-	56+22	RT	-	170	20	3
	2	48+83	-	49+01	LT	18	-	20	-
	2	54+80	-	56+22	LT	-	170	20	4
TOTALS						36	340	80	7

BASE AGGREGATE ITEMS

						305.0110	305.0120
						BASE AGGREGATE DENSE 3/4-INCH	BASE AGGREGATE DENSE 1 1/4-INCH
CATEGORY	STAGE	STATION	TO	STATION	OFFSET	TON	TON
0010							
	1	45+77	-	48+85	RT	34	70
	1	54+93	-	59+15	RT	36	138
	2	45+65	-	48+85	LT	35	74
	2	54+93	-	59+13	LT	35	138
TOTALS						140	420

DRILLED TIE BAR AND DOWEL BAR ITEMS

						416.0610	416.0620
						DRILLED TIE BARS	DRILLED DOWEL BARS
CATEGORY		STATION	TO	STATION	OFFSET	EACH	EACH
0010							
	1	48+83	-	49+01	RT	16	-
	1	54+80	-	54+95	RT	14	-
	1	56+22	-	-	RT	--	11
	2	48+83	-	49+01	LT	16	-
	2	54+80	-	54+95	LT	14	-
	2	56+22	-	-	LT	--	11
TOTALS						60	22

ASPHALTIC ITEMS

						455.0605	465.0105	465.0125
						TACK COAT	ASPHALTIC SURFACE	ASPHALTIC SURFACE TEMPORARY
CATEGORY	STAGE	STATION	TO	STATION	OFFSET	GAL	TON	TON
0010								
	1	47+42	-	48+86	RT	15	37	--
	1	54+80	-	58+05	LT	--	-	55
	1	55+06	-	59+15	RT	25	68	--
	2	47+42	-	48+86	LT	15	38	--
	2	55+20	-	59+13	LT	25	67	--
TOTALS						80	210	55

DRAINAGE ITEMS

				521.1012	612.0212
				APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH	PIPE UNDERDRAIN UNPERFORATED 12-INCH
CATEGORY	STAGE	STATION	OFFSET		
				EACH	LF
0010					
	1	55+05	RT	1	70
	2	55+56	LT	1	76
TOTALS				2	146

TEMPORARY BARRIER ITEMS

			603.8000	603.8125	603.8505
			CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	ANCHORING CONCRETE BARRIER ON BRIDGE DECKS
CATEGORY	STAGE	LOCATION	LF	LF	LF
0010					
	1	PROJECT	1,030	1,030	580
	2	PROJECT	1,030	1,030	--
TOTALS			2,060	2,060	580

RIPRAP ITEMS

				606.0200	645.0120*
				RIPRAP MEDIUM	GEOTEXTILE TYPE HR
CATEGORY	STAGE	STATION	OFFSET		
				CY	SY
0010					
	1	55+05	RT	6	18
	2	55+56	LT	6	18
TOTALS				12	36

*ADDITIONAL QUANTITIES SHOWN IN STRUCTURE PLAN

GUARDRAIL ITEMS

						614.0200	614.0305	614.0515
						STEEL THRIE BEAM STRUCTURE APPROACH	STEEL PLATE BEAM GUARD CLASS A	GUARDRAIL STIFFENED LHW
CATEGORY	STAGE	STATION TO	STATION	OFFSET		LF	LF	LF
0010								
	1	45+77	-	48+85	RT	21	287.5	--
	1	54+93	-	57+02	RT	21	--	187.5
	2	45+65	-	48+85	LT	21	212.5	87.5
	2	54+93	-	57+00	LT	21	--	187.5
TOTALS						84	500.0	462.5

EROSION CONTROL ITEMS

						628.1504	628.1520	628.2004	628.2008	628.6005	628.7504	628.7570
						SILT FENCE	SILT FENCE	EROSION MAT	EROSION MAT	TURBIDITY	TEMPORARY	ROCK BAGS
CATEGORY	STAGE	STATION	TO	STATION	OFFSET	LF	MAINTENANCE	CLASS I TYPE B	URBAN CLASS I	BARRIERS	DITCH CHECKS	EACH
							LF	SY	TYPE B	SY	LF	
0010	1	45+70	-	49+70	RT	390	390	300	—	—	30	40
	1	49+50	-	49+70	LT & RT	—	—	—	—	130	—	—
	1	59+90	-	54+25	LT & RT	—	—	—	—	110	—	—
	1	54+50	-	59+75	RT	530	530	480	20	—	—	60
	2	45+60	-	49+70	LT	410	410	710	50	—	—	20
	2	54+50	-	59+75	LT	640	640	470	20	—	—	60
UNDISTRIBUTED					—	530	530	470	30	60	10	45
TOTALS						2,500	2,500	2,430	120	300	40	225

WATER		
CATEGORY	LOCATION	624.0100 MGAL
0010	PROJECT	4
TOTAL		4

RESTORATION ITEMS									
CATEGORY	STAGE	STATION	TO	STATION	OFFSET	625.0100	629.0210	630.0120	630.0130
						TOPSOIL SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEEDING MIXTURE NO. 30 LB
0010									
	1	45+70	-	49+70	RT	300	0.2	0.5	5.0
	1	54+50	-	57+05	RT	500	0.4	8.0	4.0
	2	45+60	-	49+70	LT	750	0.6	9.0	7.5
	2	54+50	-	57+05	LT	490	0.4	8.5	3.0
UNDISTRIBUTED					--	510	0.4	9.0	5.5
TOTALS						2,550	2.0	35.0	25.0

EROSION CONTROL MOBILIZATION ITEMS			
CATEGORY	LOCATION	628.1905	628.1910
		MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
0010	PROJECT	4	4
TOTALS		4	4

TYPE II SIGNS AND SUPPORTS														
CATEGORY	SIGN NUMBER	SIGN CODE	SIGN DIMENSION W X H			DESCRIPTION	634.0614	634.0616	634.0620	637.2210	637.2230	638.2602	638.3000	COMMENTS
			IN	X	IN		POSTS WOOD 4X6-INCH X 14-FT EACH	POSTS WOOD 4X6-INCH X 16-FT EACH	POSTS WOOD 4X6-INCH X 20-FT EACH	SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
0010	1-1	D1-2	60	X	30	WAUSAU/MERRILL	1	1	--	12.50	--	1	2	
	1-2	J1-1	24	X	39	STH 51 JCT	--	1	--	6.50	--	1	1	
	1-3	R4-3	24	X	30	SLOWER TRAFFIC KEEP RIGHT	1	--	--	5.00	--	--	--	
	1-4	--	--	X	--	SLOWER TRAFFIC KEEP RIGHT	--	--	--	--	--	1	1	
	1-5	W5-52L	12	X	36	BRIDGE MARKER	1	--	--	--	3.00	1	1	
	1-6	I3-1	60	X	24	WISCONSIN RIVER	1	1	--	10.00	--	--	--	
	1-7	--	--	X	--	WISCONSIN RIVER	--	--	--	--	--	1	2	
	1-8	W5-52R	12	X	36	BRIDGE MARKER	1	--	--	--	3.00	1	1	
	3-1	W5-52R	12	X	36	BRIDGE MARKER	1	--	--	--	3.00	1	1	
	3-2	I3-1	60	X	24	WISCONSIN RIVER	2	--	--	10.00	--	1	2	
	3-3	R7-1D	18	X	24	NO PARKING ANY TIME	1	--	--	3.00	--	--	--	
	3-4	W5-52R	12	X	36	BRIDGE MARKER	1	--	--	--	3.00	1	1	
	3-5	--	--	X	--	REDUCED SPEED LIMIT AHEAD	--	--	--	--	--	1	1	
	3-6	--	--	X	--	NO PARKING ON THIS SIDE	--	--	--	--	--	1	1	
	3-7	R7-1D	18	X	24	NO PARKING ANY TIME	1	--	--	3.00	--	--	--	
	3-8	--	--	X	--	CURVE WARNING/25 MPH WARNING	--	--	--	--	--	1	1	
	3-9	--	--	X	--	RAILROAD CROSSING	--	--	--	--	--	1	1	
	3-10	W1-1R	36	X	36	CURVE WARNING	--	--	1	--	9.00	--	--	
	3-11	W13-1	24	X	24	25 MPH WARNING	--	--	--	--	4.00	--	--	MOUNT ON SAME POST AS SIGN NO. 3-12
	3-12	W3-5	36	X	36	REDUCED SPEED LIMIT AHEAD	--	1	--	--	9.00	--	--	
	4-1	W10-1	36	X	36	RAILROAD CROSSING	--	1	--	--	7.07	--	--	
TOTALS							11	5	1	50.00	41.07	13	16	

TEMPORARY MARKING ITEMS

						646.9000	649.0150	649.0850
						MARKING REMOVAL LINE 4-INCH	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH WHITE	TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH
CATEGORY	STAGE	STATION	TO	STATION	OFFSET	LF	LF	LF
0010	1	45+50	-	58+05	LT & RT	1,760	2,100	25
	2	45+50	-	58+05	LT & RT	640	2,320	--
	3A	45+50	-	58+05	LT & RT	1,600	2,100	25
	3B	45+50	-	58+05	LT & RT	350	2,320	--
	TOTALS					4,350	8,840	50

TRAFFIC CONTROL ITEMS

		STAGE DURATION	643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES		643.0705 TRAFFIC CONTROL WARNING LIGHTS		643.0715 TRAFFIC CONTROL WARNING LIGHTS		643.0900 TRAFFIC CONTROL SIGNS		643.0910 TRAFFIC CONTROL COVERING SIGNS	643.0920 TRAFFIC CONTROL COVERING SIGNS	643.1050 TRAFFIC CONTROL SIGNS PCMS		643.0310.S TEMPORARY PORTABLE RUMBLE	643.5000 TRAFFIC CONTROL	661.0100 TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (B-37-111)	
CATEGORY	STAGE	DAYS	NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY	TYPE I EACH	TYPE II EACH	NO.	DAY	LS	EACH	LS	COMMENTS
0010	PRIOR TO STAGE 1	7	--	--	--	--	--	--	--	--	--	--	--	--	4	28	--	--	--	PRIOR TO CONSTRUCTION
	1	90	24	2,160	2	180	--	--	10	900	42	3,780	--	--	2	180	--	--	--	DECK REPLACEMENT
	PRIOR TO STAGE 1 DETOUR	7	--	--	--	--	--	--	--	--	--	--	--	--	6	42	--	--	--	PRIOR TO DETOUR
	1	3	--	--	21	63	10	30	--	--	80	240	2	2	7	21	--	--	--	DETOUR
	2	83	21	1,743	2	166	--	--	14	1,162	42	3,486	--	--	2	166	--	--	--	DECK REPLACEMENT
	PRIOR TO STAGE 2 DETOUR	7	--	--	--	--	--	--	--	--	--	--	--	--	6	42	--	--	--	PRIOR TO DETOUR
	2	3	--	--	21	63	10	30	--	--	80	240	2	2	7	21	--	--	--	DETOUR
	PRIOR TO STAGE 3	7	--	--	--	--	--	--	--	--	--	--	--	--	4	28	--	--	--	PRIOR TO POLYMER OVERLAY
	3	10	52	520	2	20	--	--	10	100	42	420	--	--	2	20	--	--	--	POLYMER OVERLAY
	PROJECT	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	1	
	TOTALS			4,423		492		60		2,162		8,166		4		4	548	1	1	1

LONG LINE MARKING ITEMS

						646.1020
						MARKING LINE EPOXY 4-INCH
						<u>SOLID WHITE</u> <u>SOLID YELLOW</u>
<u>CATEGORY</u>	<u>STATION</u>	<u>TO</u>	<u>STATION</u>	<u>OFFSET</u>		<u>LF</u> <u>LF</u> <u>COMMENTS</u>
0010						
	45+40	-	59+25	LT & RT	2,750	2,750
	45+40		58+05	LT & RT	2,530	2,530
						COMPLETED AFTER POLYMER OVERLAY
TOTAL						<u>5,280</u> <u>5,280</u>
						10,560

MARKING RAILROAD CROSSING EPOXY

					646.5320
					EACH
<u>CATEGORY</u>	<u>STATION</u>	<u>TO</u>	<u>STATION</u>	<u>OFFSET</u>	
0010					
	61+40	-	62+00	RT	1
TOTAL					1

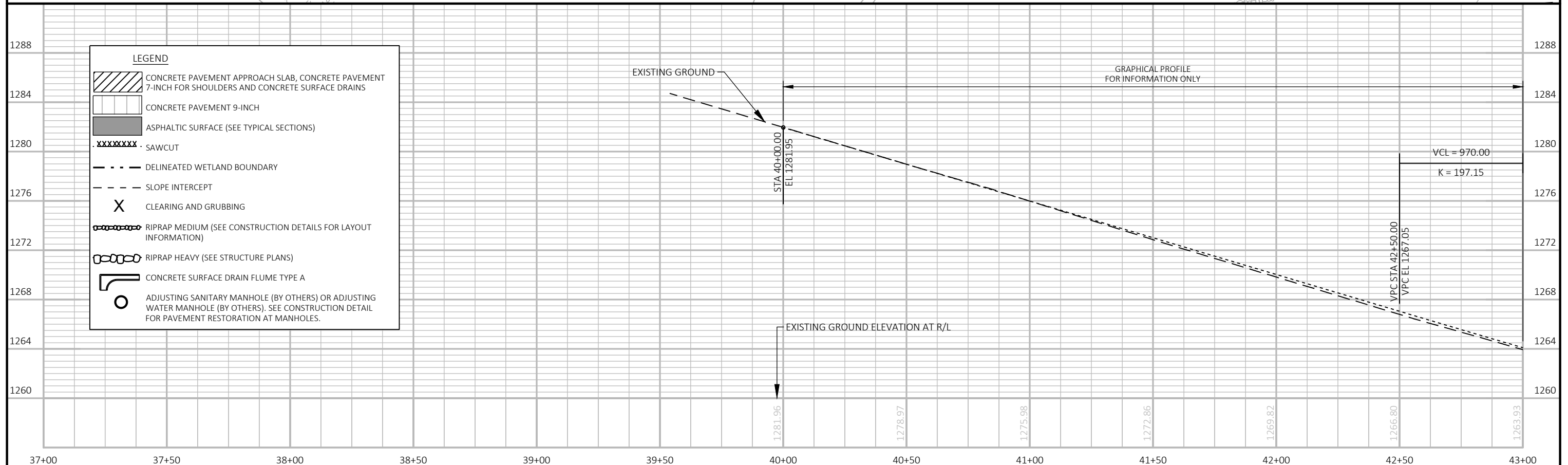
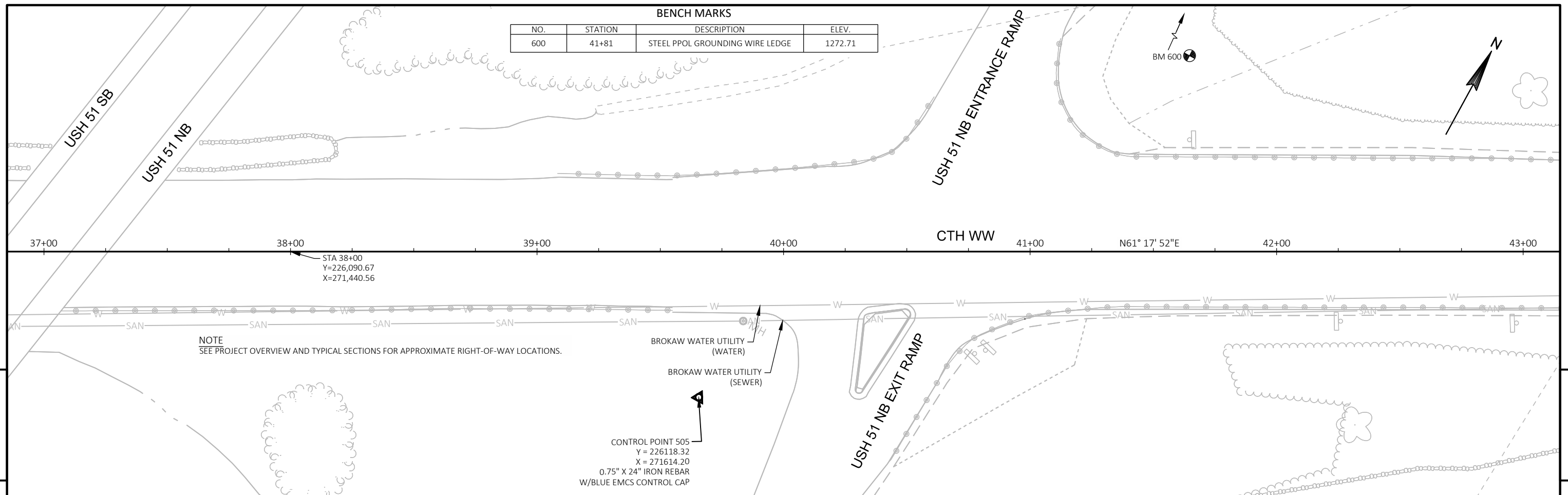
SAWING ITEMS

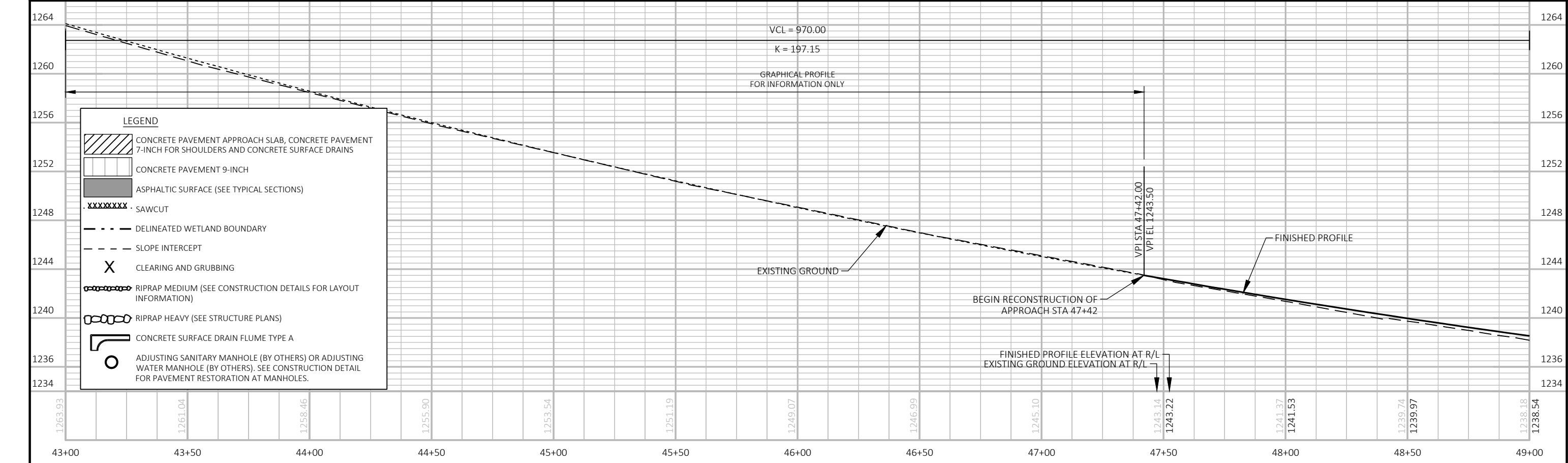
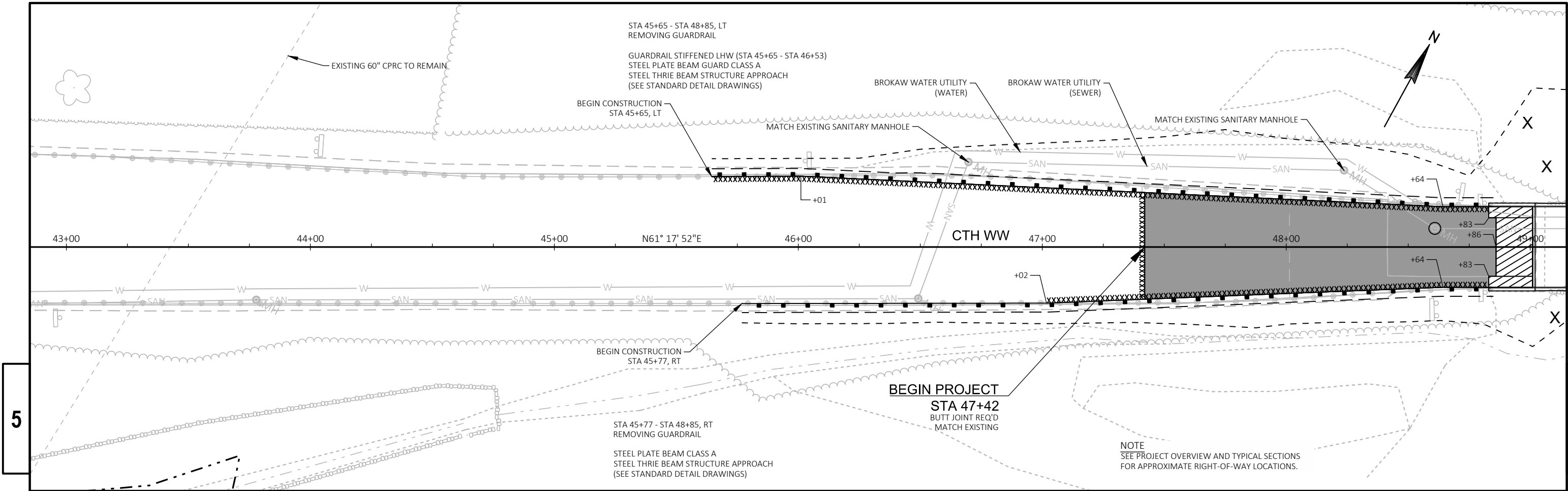
						690.0150	690.0250
						SAWING	SAWING
						ASPHALT	CONCRETE
<u>CATEGORY</u>	<u>STAGE</u>	<u>STATION</u>	<u>TO</u>	<u>STATION</u>	<u>OFFSET</u>	<u>LF</u>	<u>LF</u>
0010							
	1	47+01	-	48+41	RT	160	--
	1	48+41	-	48+84	RT	--	67
	1	48+85	-	49+01	RT	--	16
	1	54+80	-	56+22	RT	--	154
	2	45+65	-	48+41	LT	298	--
	2	48+41	-	48+84	LT	--	43
	2	56+22	-	--	LT	--	12
TOTALS						458	292

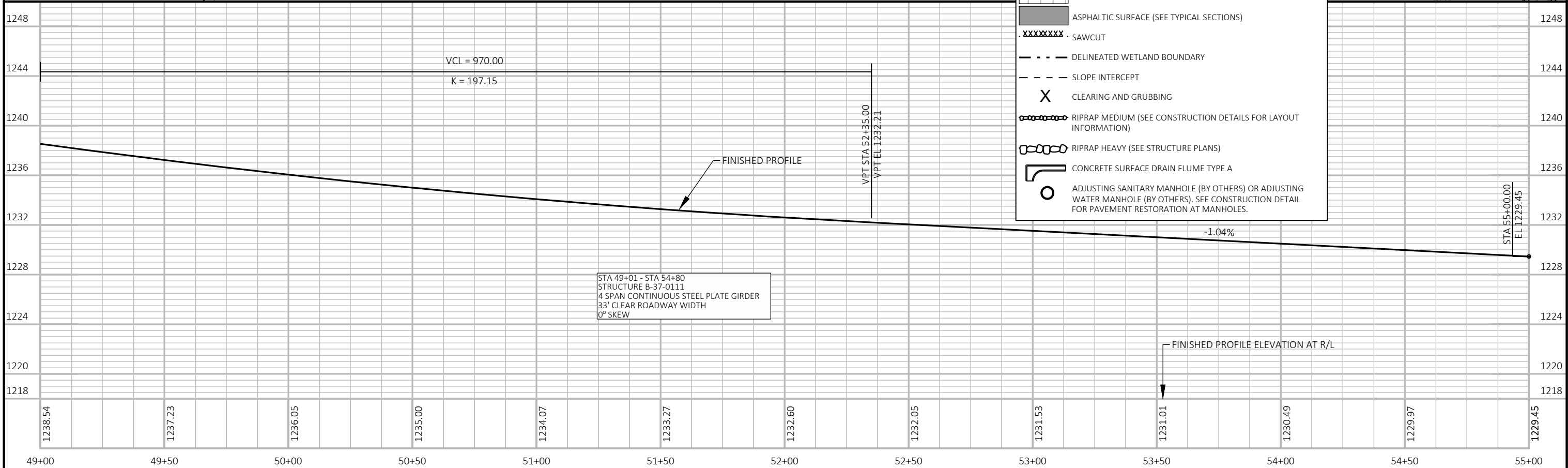
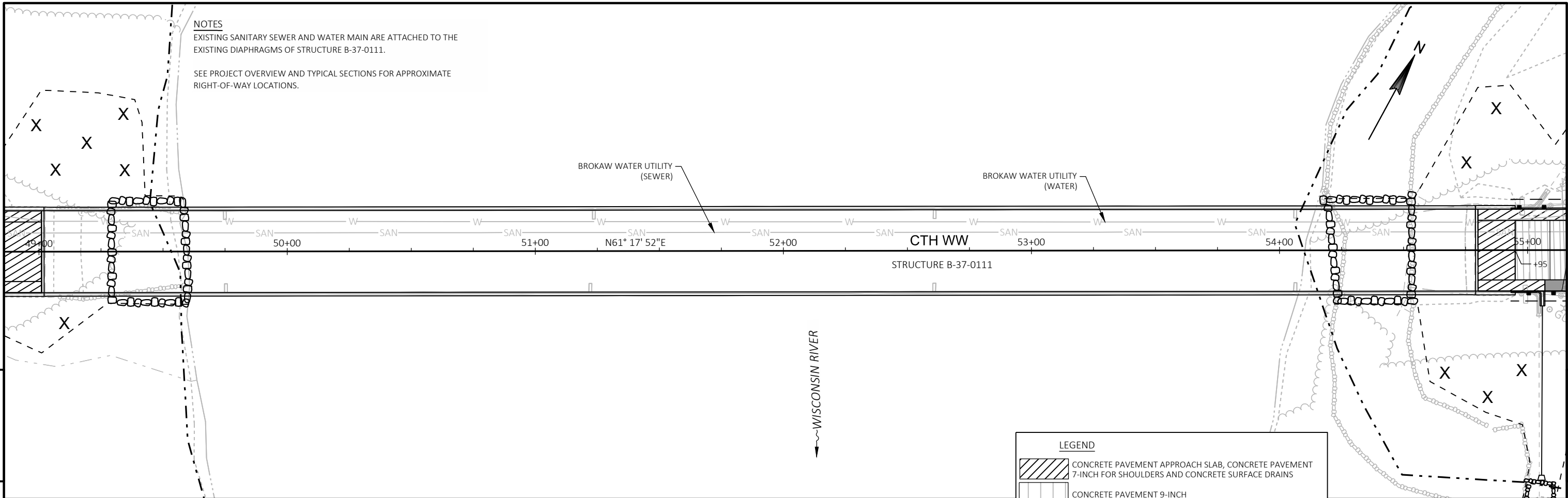
CONSTRUCTION STAKING ITEMS

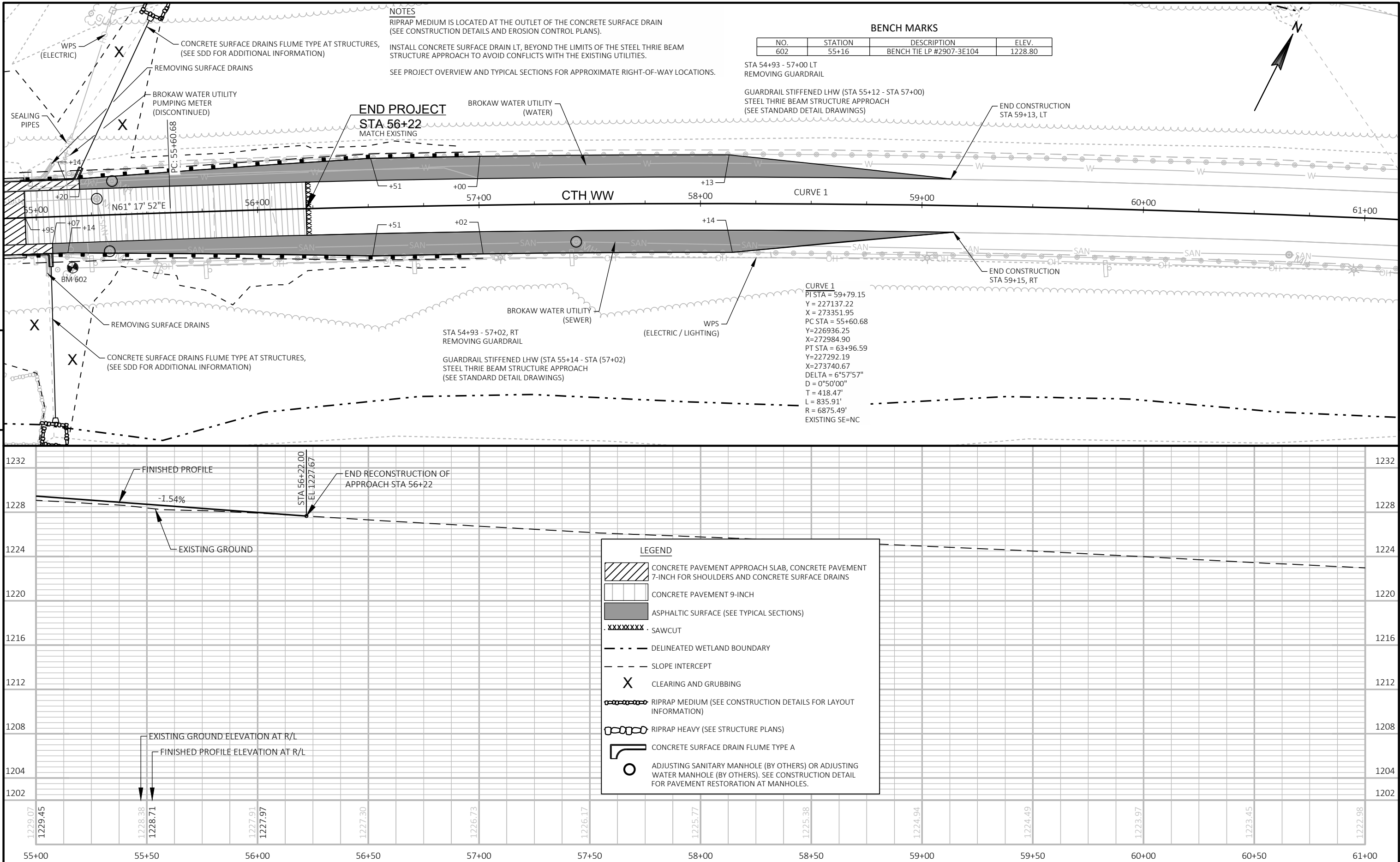
					415.5110.S	650.4500	650.6500	650.7000	650.8000	650.9910	650.9920
					CONCRETE PAVEMENT JOINT LAYOUT	CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING STRUCTURE LAYOUT (B-37-111)	CONSTRUCTION STAKING CONCRETE PAVEMENT	CONSTRUCTION STAKING RESURFACING REFERENCE	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (9474-01-70)	CONSTRUCTION STAKING SLOPE STAKES
CATEGORY	STATION	TO	STATION	OFFSET	LS	LF	LS	LF	LF	LS	LF
0010	45+65	-	59+15	LT & RT	--	--	--	--	1,350	--	--
	45+65	-	49+01	LT & RT	--	--	--	--	--	--	336
	48+86	-	49+01	LT & RT	--	15	--	15	--	--	--
	54+80	-	56+22	LT & RT	--	142	--	142	--	--	--
	54+80	-	57+02	LT & RT	--	--	--	--	--	--	222
	PROJECT				--	1	--	1	--	1	--
	TOTALS				1	157	1	157	1,350	1	558

NO.	STATION	DESCRIPTION	ELEV.
600	41+81	STEEL PPOL GROUNDING WIRE LEDGE	1272.71









PROJECT NO: 9474-01-70

HWY: CTH WW

COUNTY: MARATHON

PLAN AND PROFILE

SHEET

42

E

FILE NAME : P:\49XX\4963.DP.16.CTHWW.MAR\CADD\94740170\050201-PN.DWG
LAYOUT NAME - 050104-pp

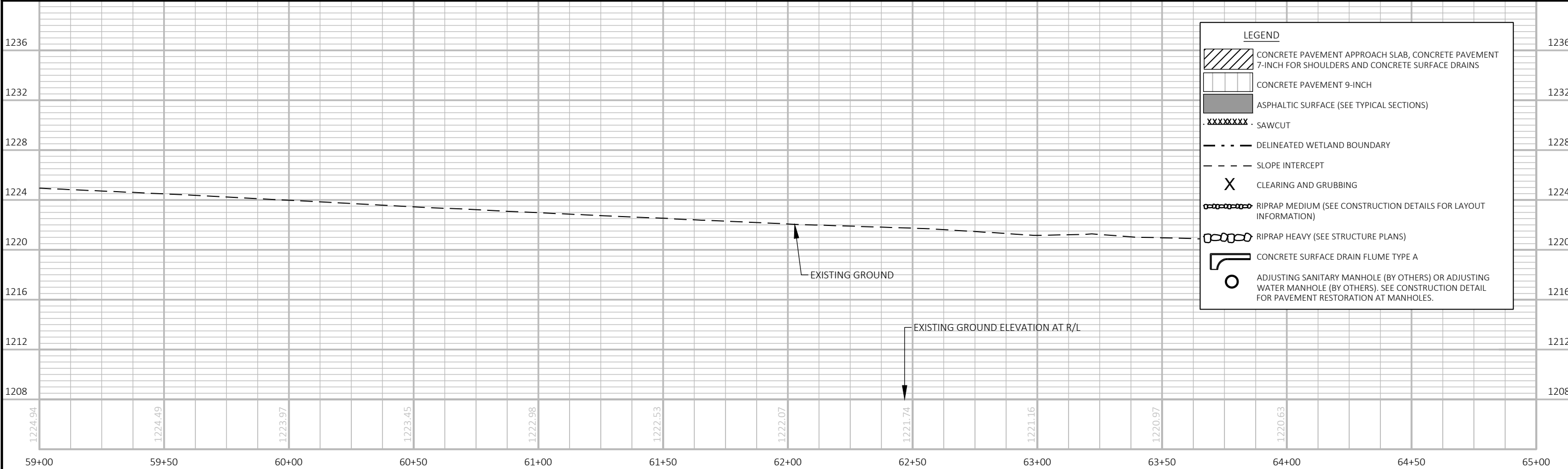
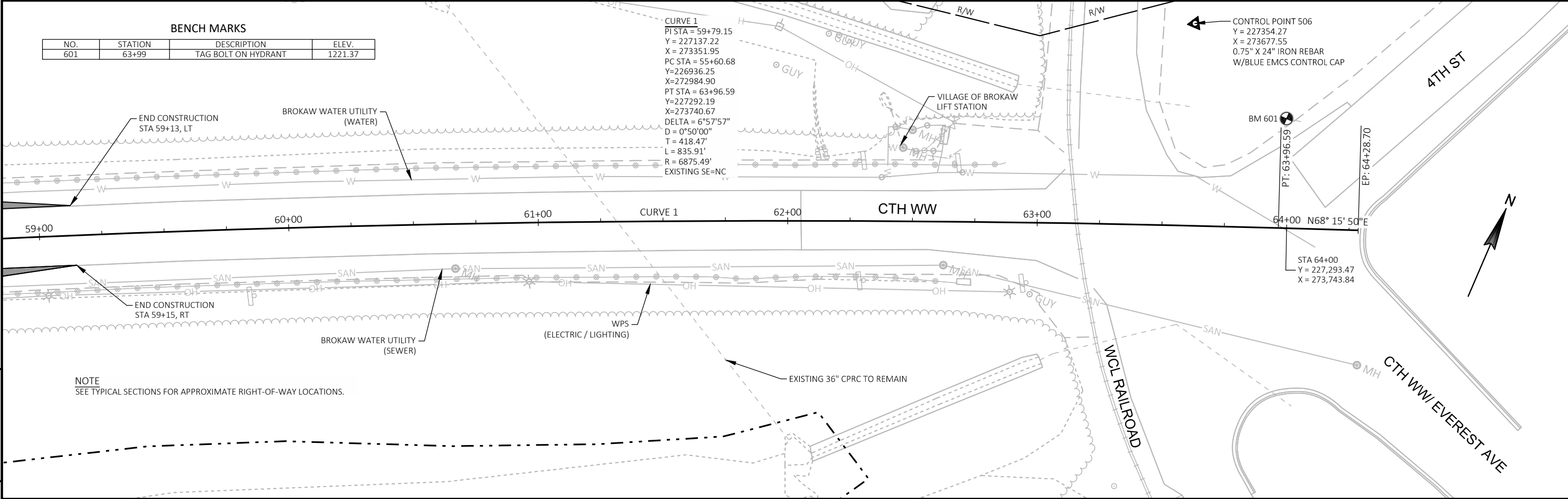
PLOT DATE : 9/21/2018 10:13 AM

PLOT BY : SCOTT KAISER

PLOT NAME :

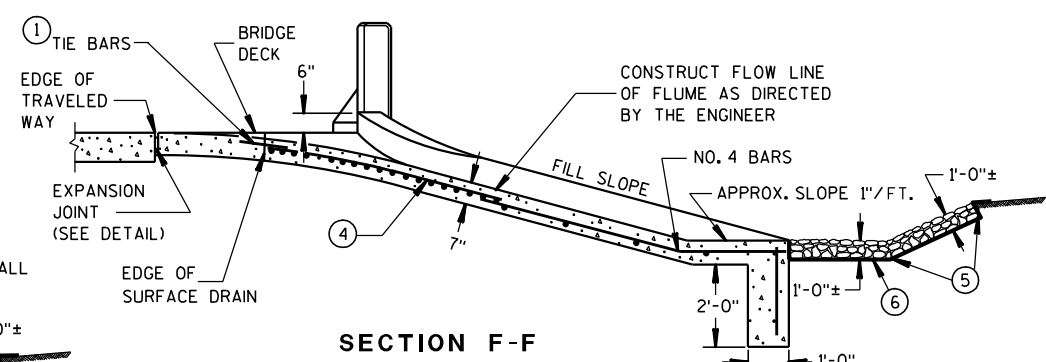
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WISDOT/CADD\ SHEET 44

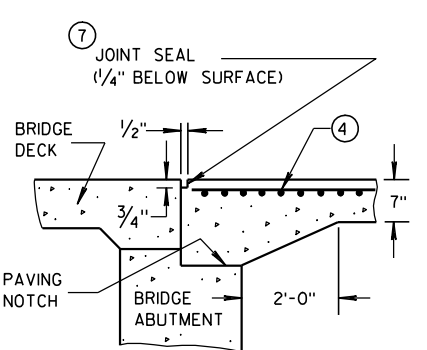


Standard Detail Drawing List

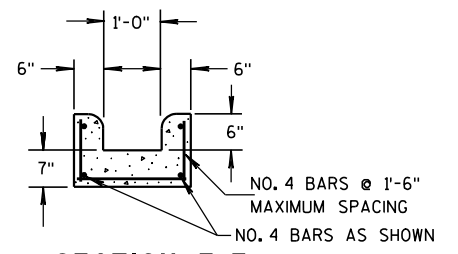
08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
09G02-05A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
13A03-06	CONCRETE PAVEMENT SHOULDERS
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C11-12A	RURAL DOWELED CONCRETE PAVEMENT
13C11-12B	RURAL DOWELED CONCRETE PAVEMENT
13C18-06A	CONCRETE PAVEMENT JOINTING
13C18-06B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-06C	CONCRETE PAVEMENT JOINT TYPES
13C18-06D	CONCRETE PAVEMENT JOINT TYPES AT UTILITY FIXTURES
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
14B20-11C	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS
14B20-11D	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS
14B20-11E	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"
14B20-11F	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B20-11H	STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C09-11A	SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD-HIGHWAY GRADE CROSSINGS
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-05A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D33-04	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING



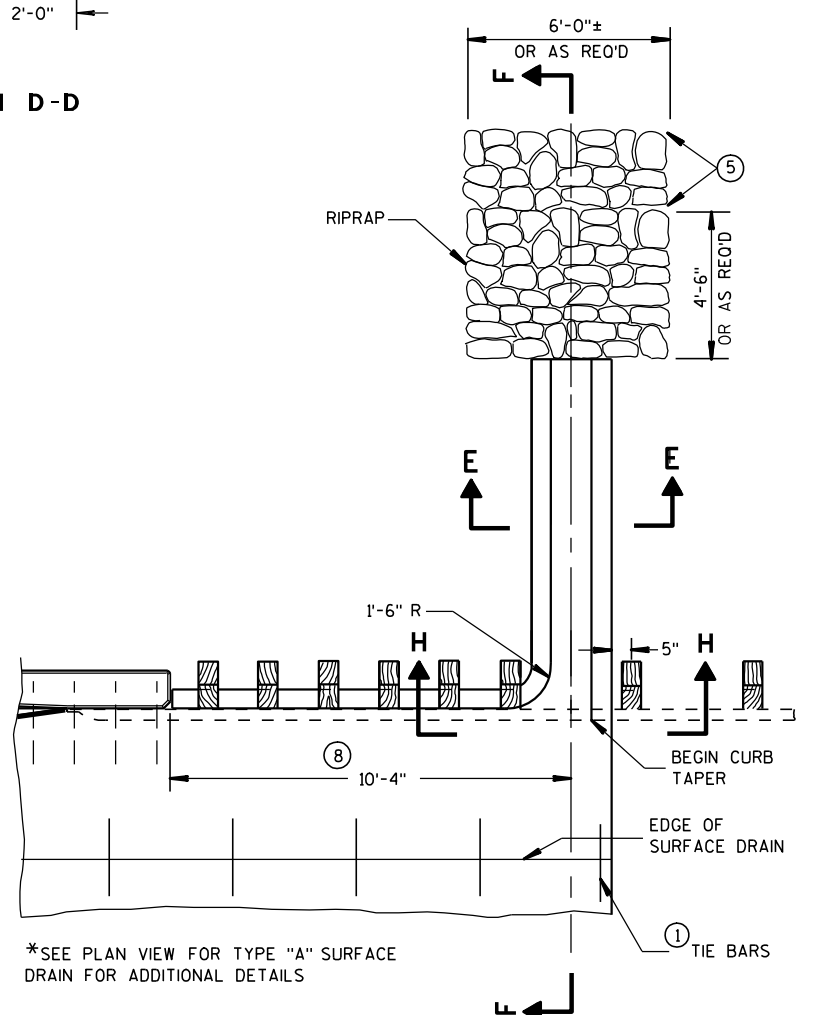
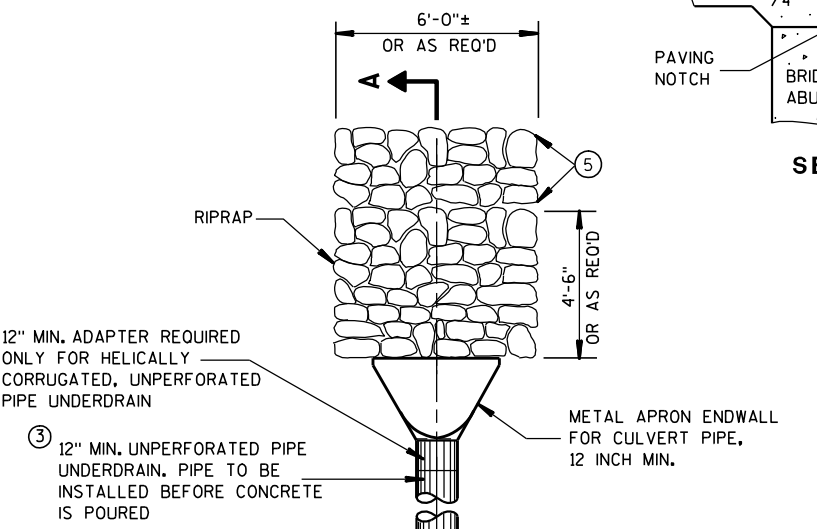
SECTION F-F



SECTION D-D

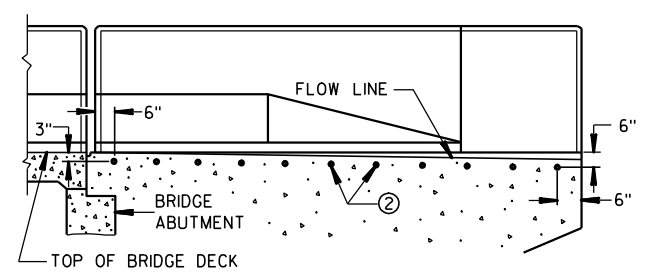


SECTION E-E



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

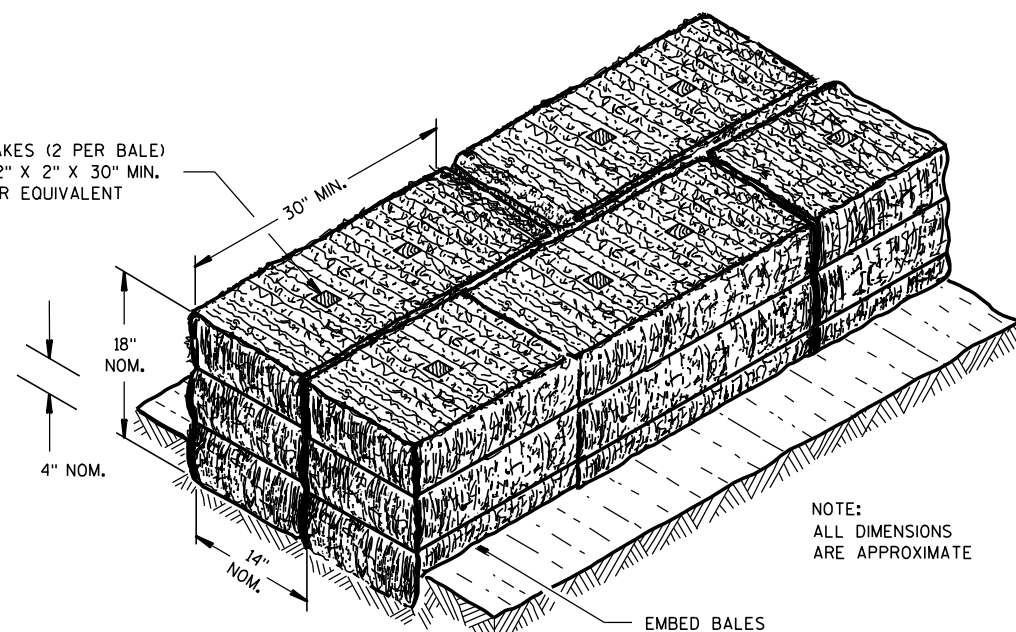
⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".



LOCATION OF TIE BARS IN WINGWALL

APPROVED
9/4/08 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 45
ENGINEER

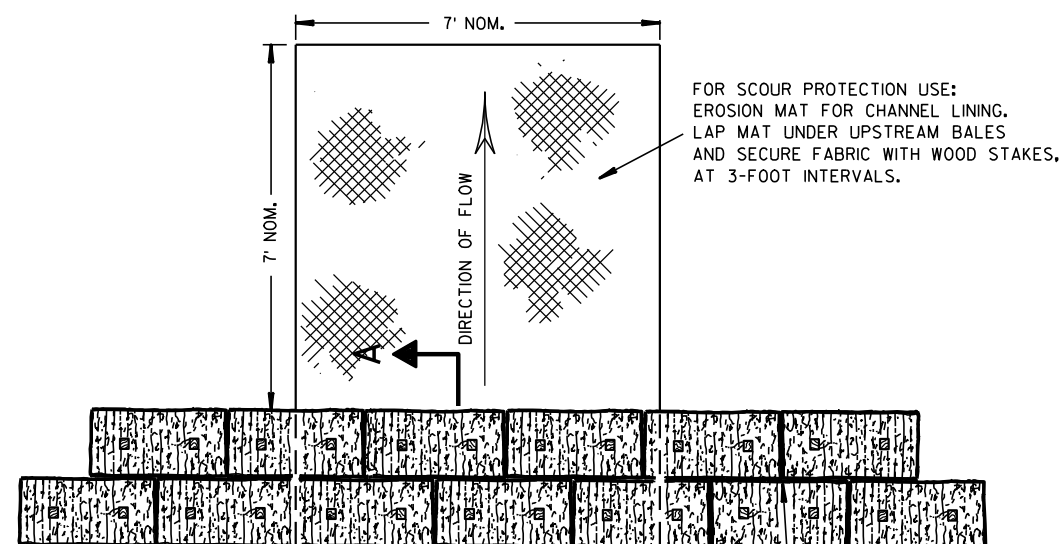
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

SECTION A-A

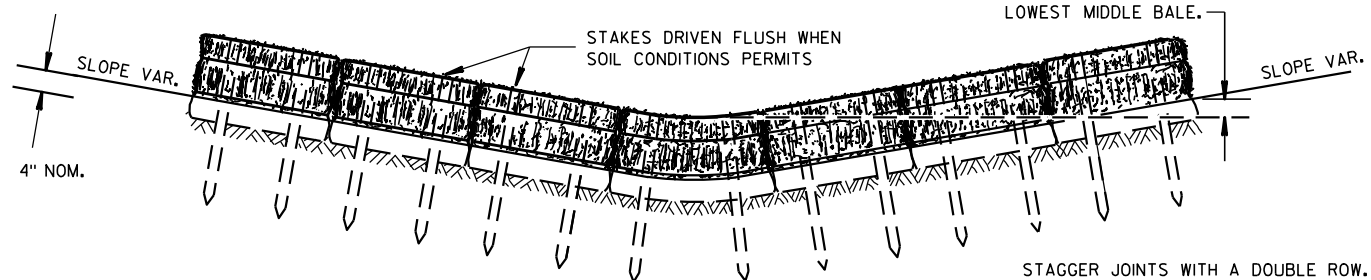


FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.

PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



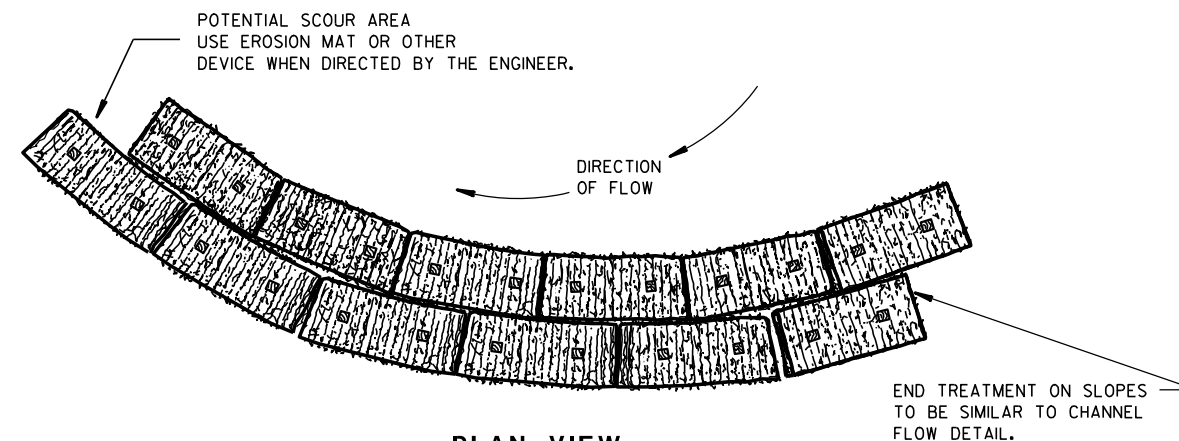
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

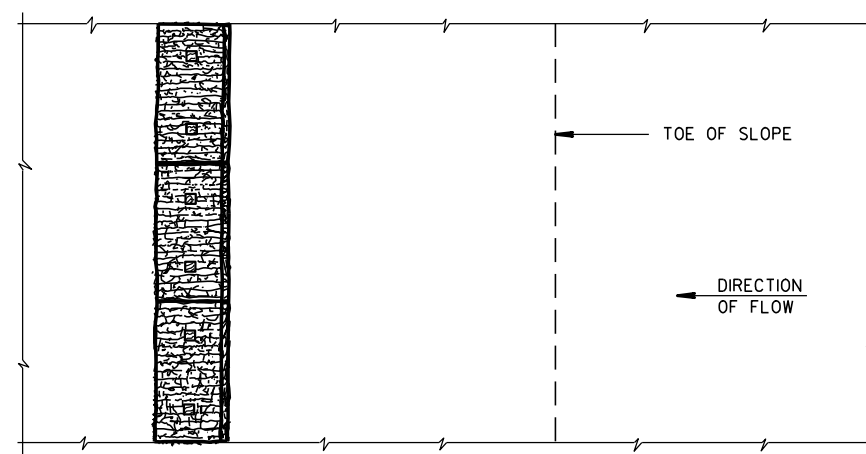
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

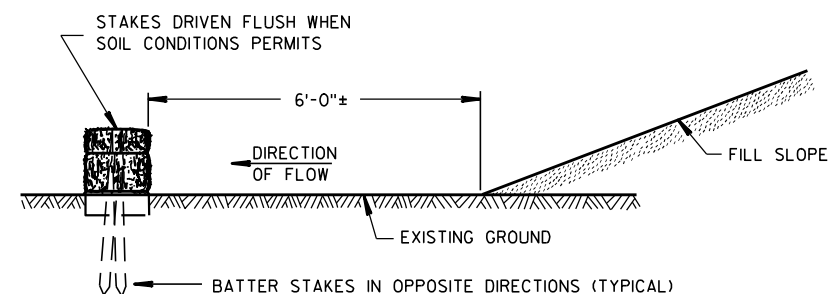


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

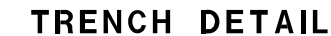
6/04/02
DATE

/S/ Beth Connors
CHIEF ROADWAY DEVELOPER 46 ENGINEER

FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

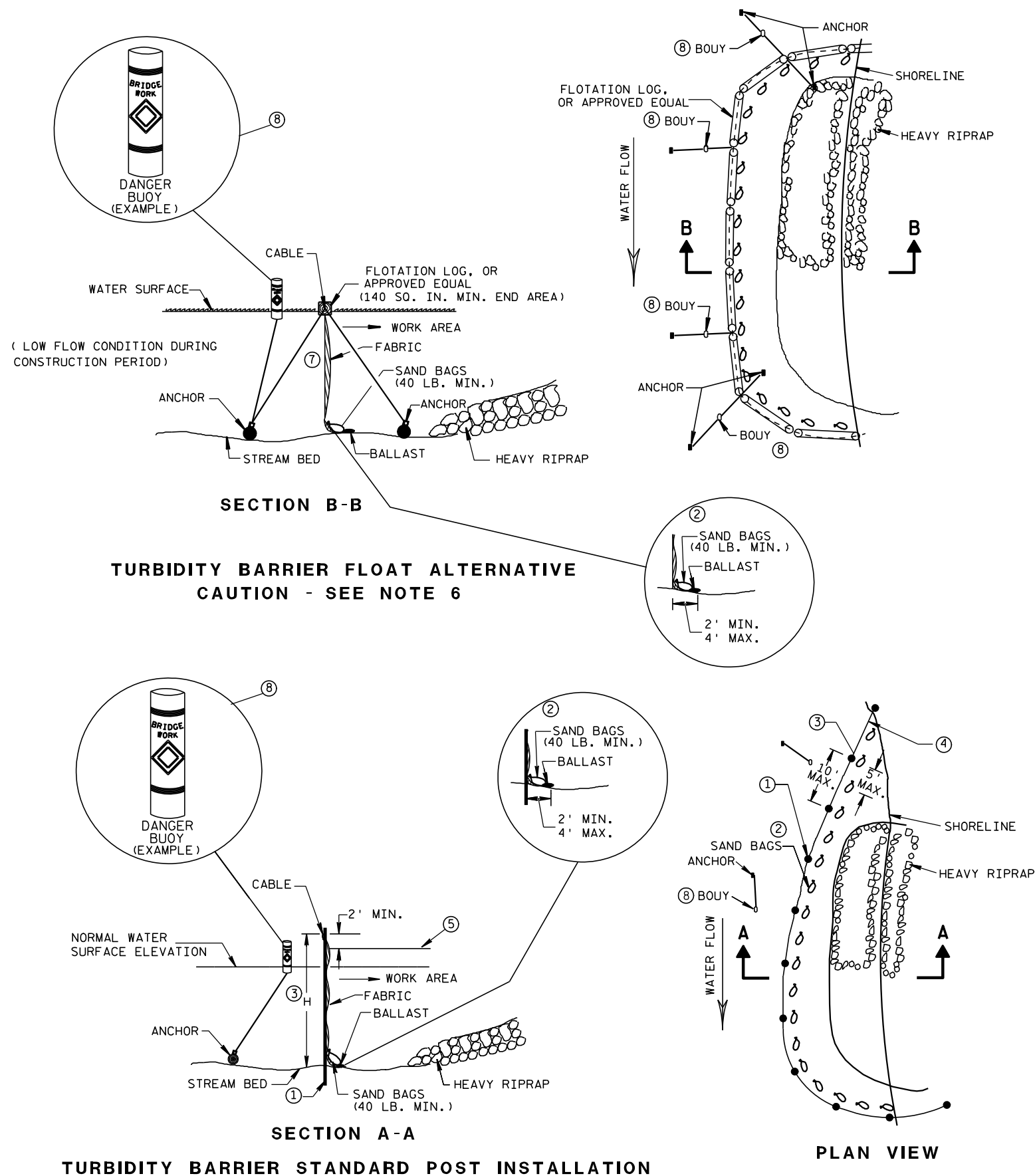


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE /S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT 47 INCHES

FHWA

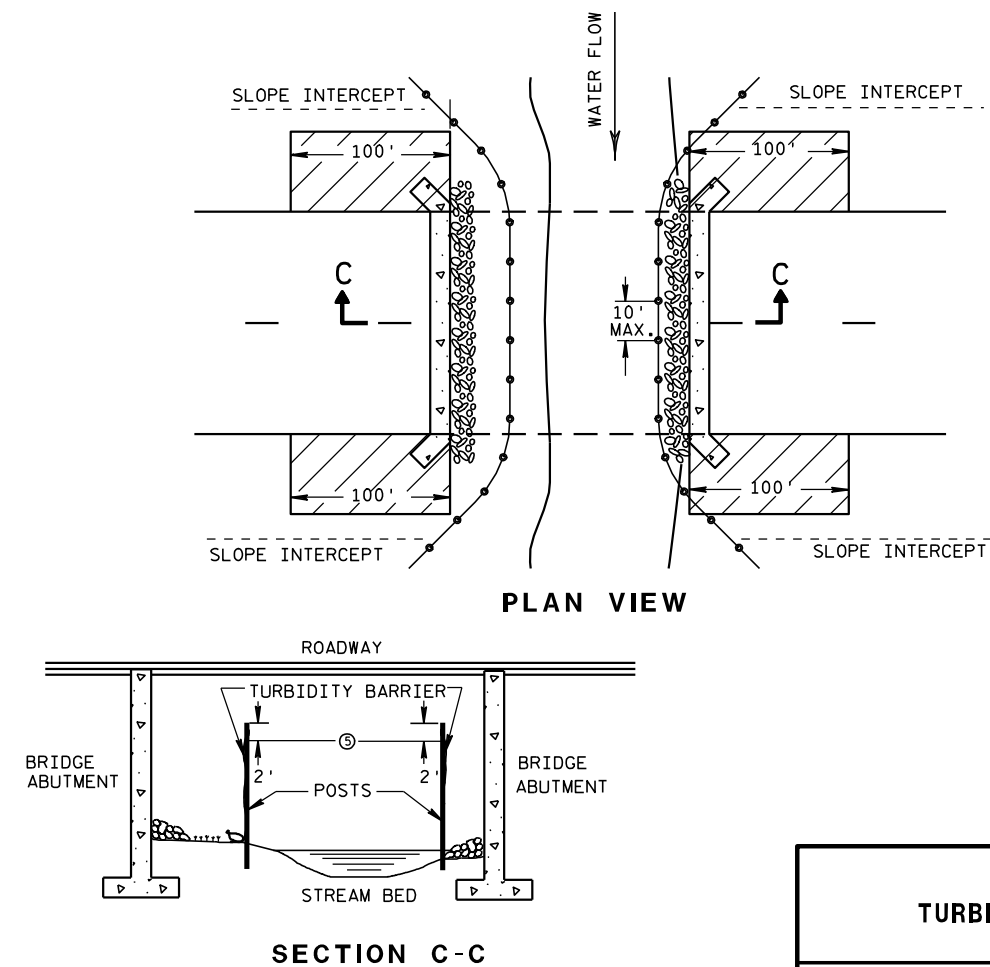


GENERAL NOTES

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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

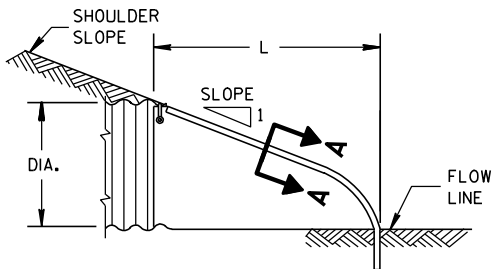
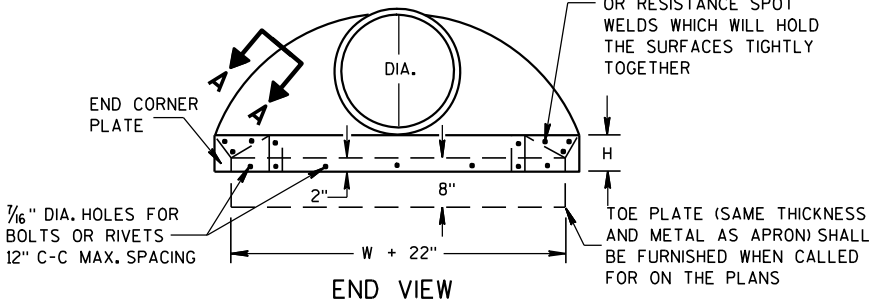
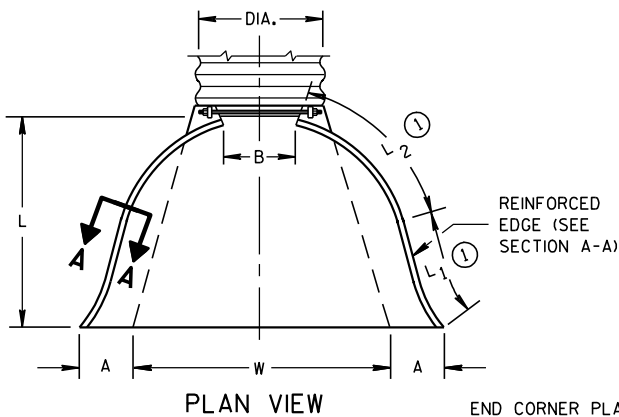
FHWA

/S/ Beth Conn
CHIEF ROADWAY DEVELOPER

INEER

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

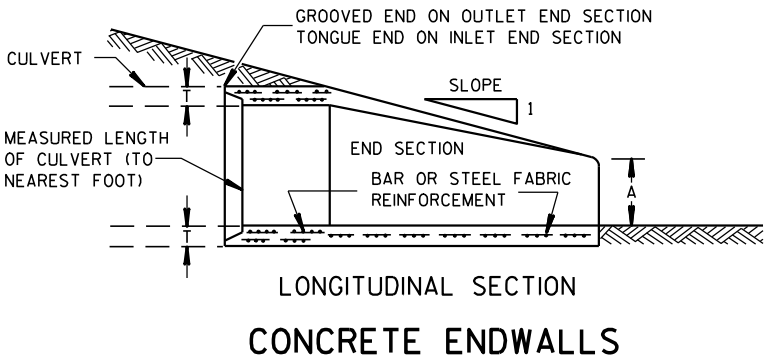
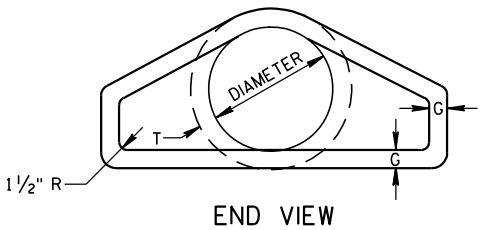
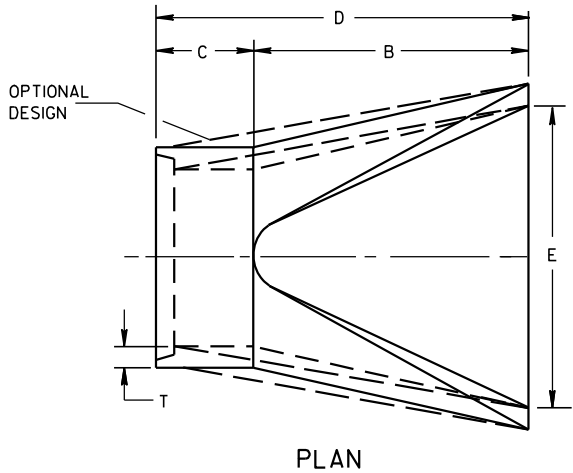
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



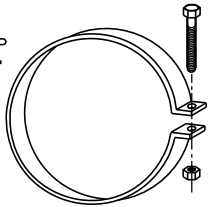
METAL ENDWALLS

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

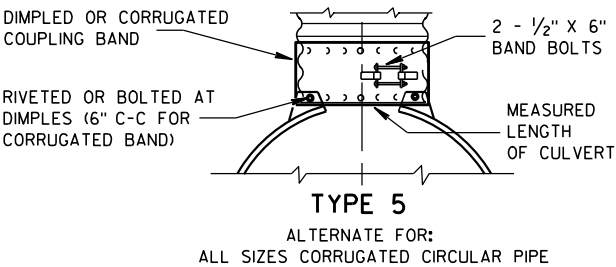
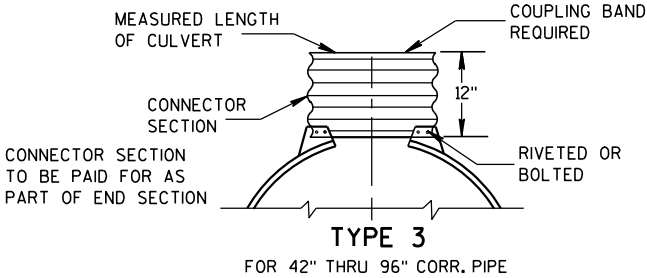
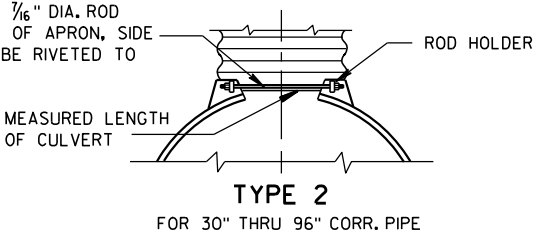
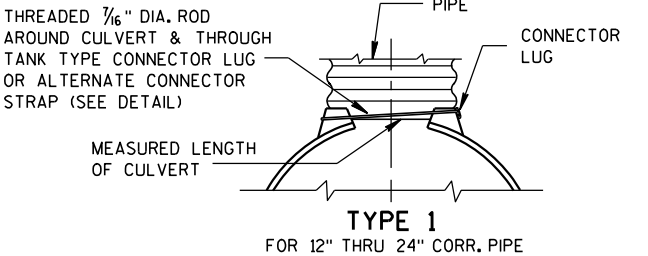
* MINIMUM
** MAXIMUM



1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



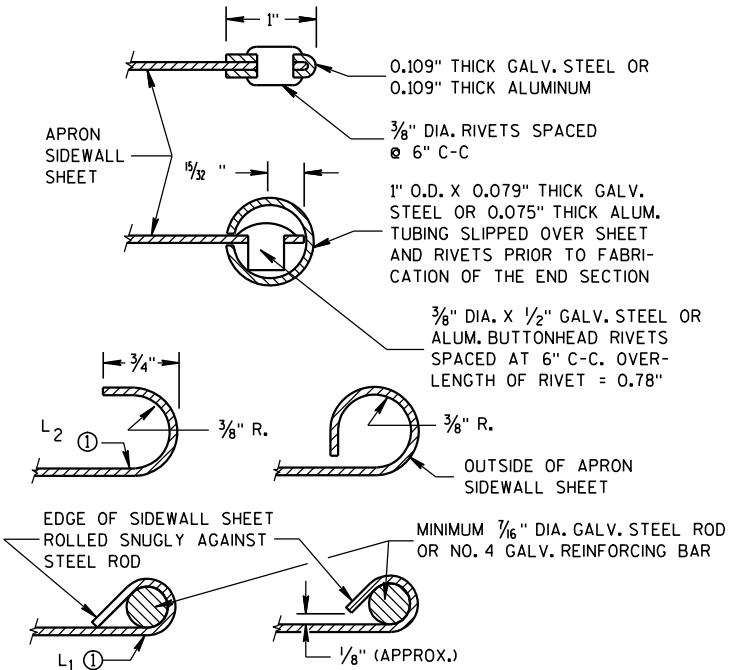
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



GENERAL NOTES

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

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

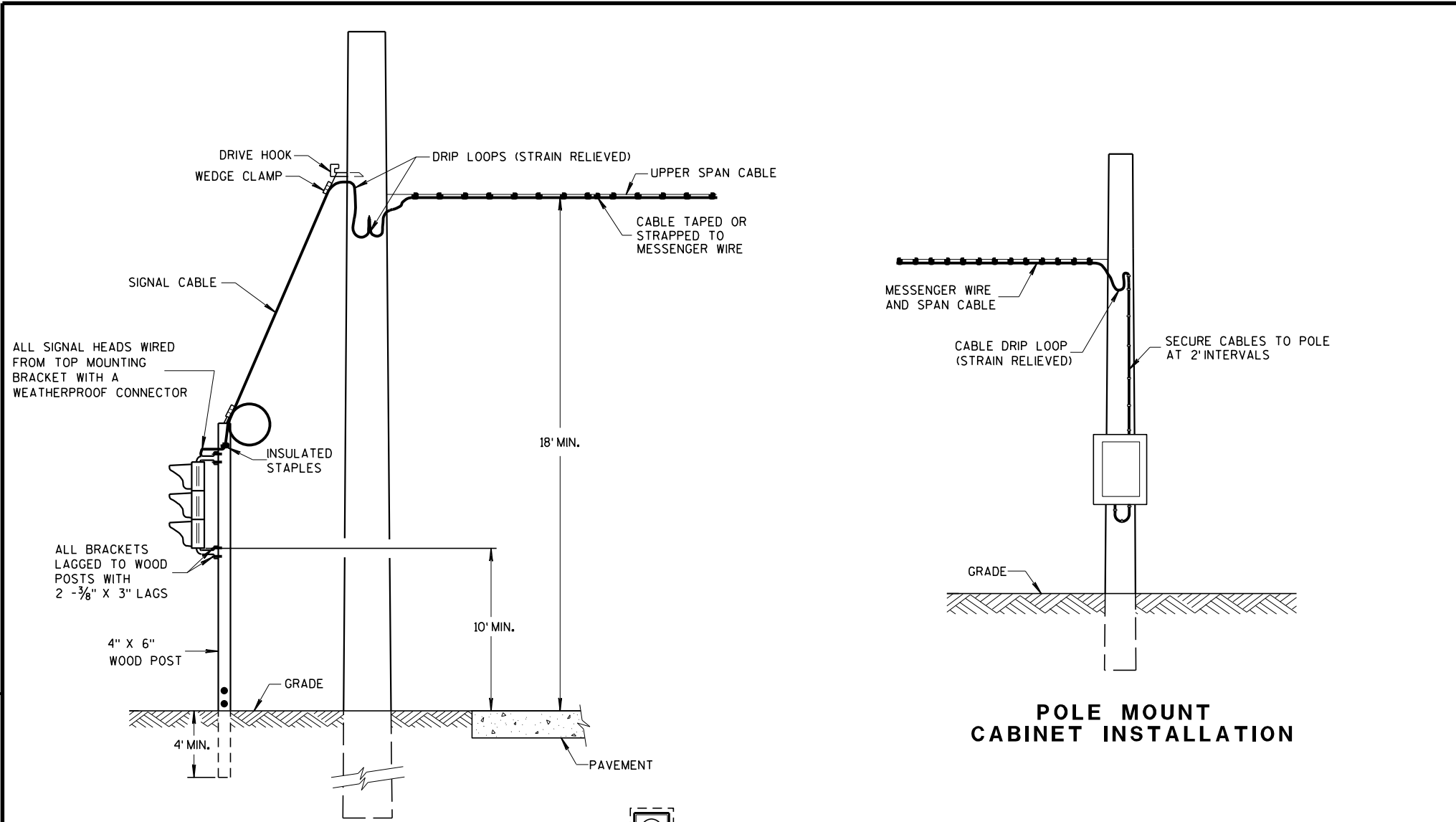
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

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

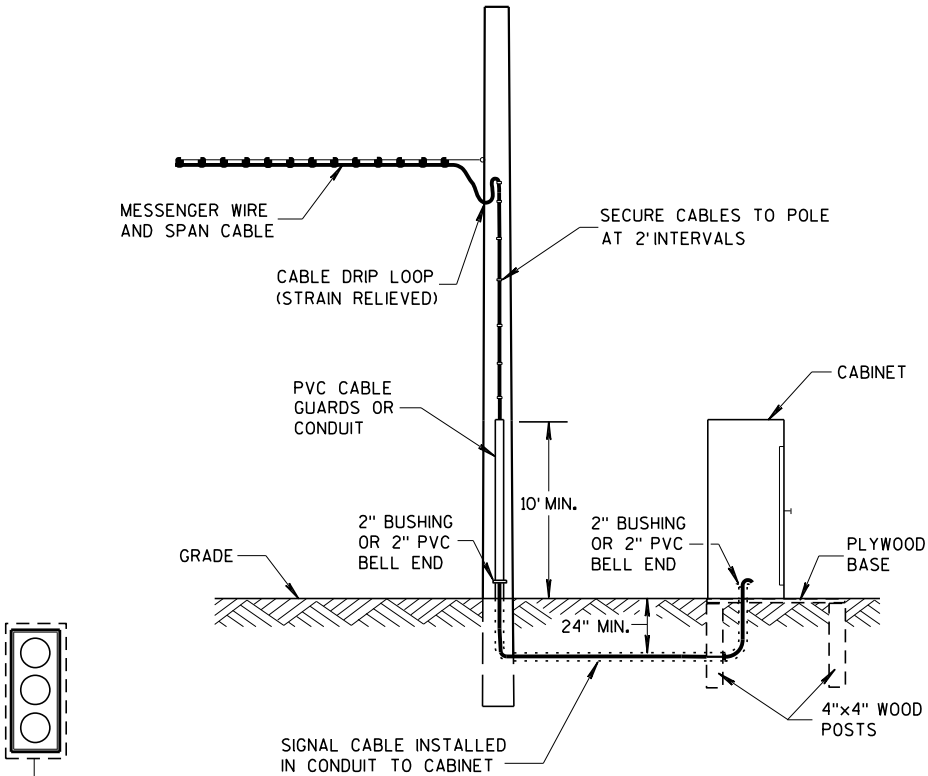
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinehart CHIEF ROADWAY DEVELOP	49	NEER
FHWA			



TYPICAL DROP TO TRAFFIC SIGNAL FACE

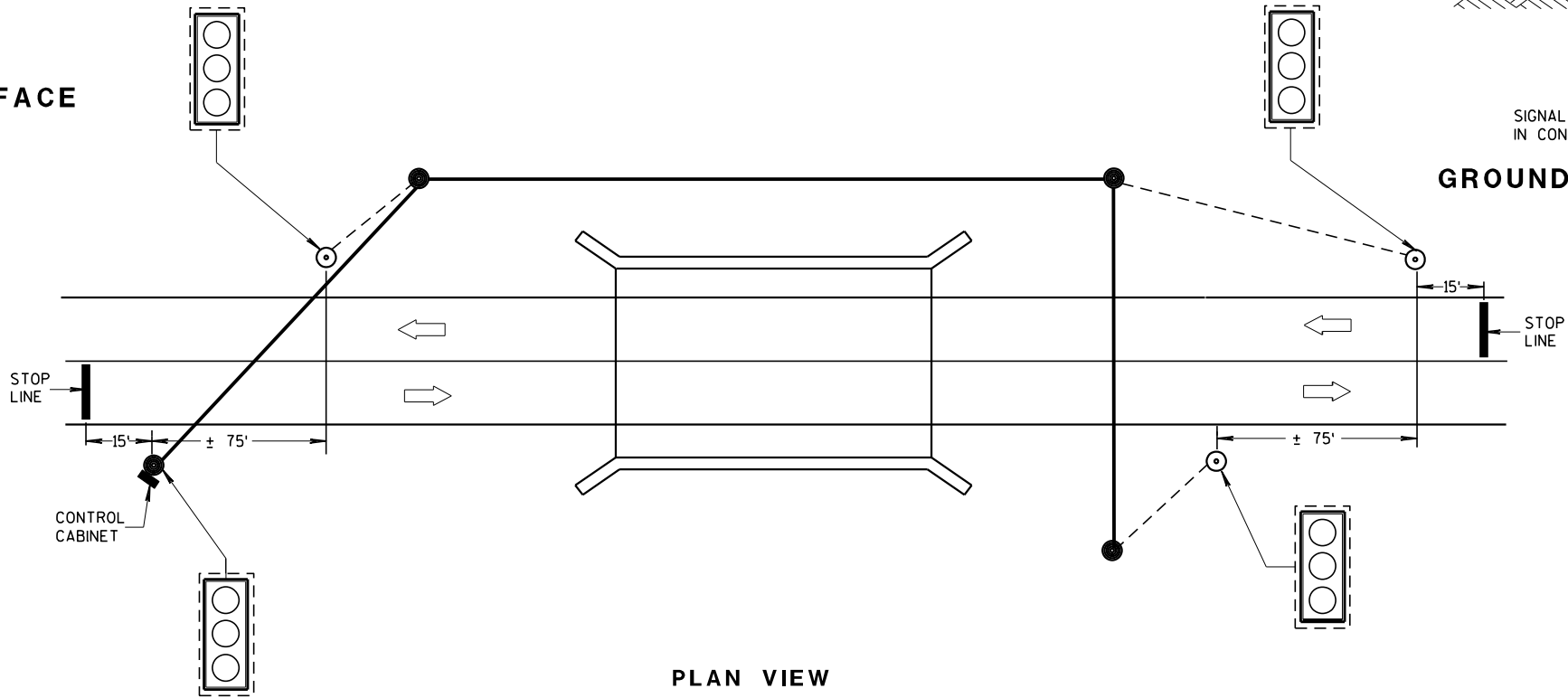
POLE MOUNT CABINET INSTALLATION



GROUND MOUNT CABINET INSTALLATION

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT
**NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.	

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



PLAN VIEW
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

GENERAL NOTES

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

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

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

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

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

VERTICAL CLEARANCE ETC. PER NEC.

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

EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.

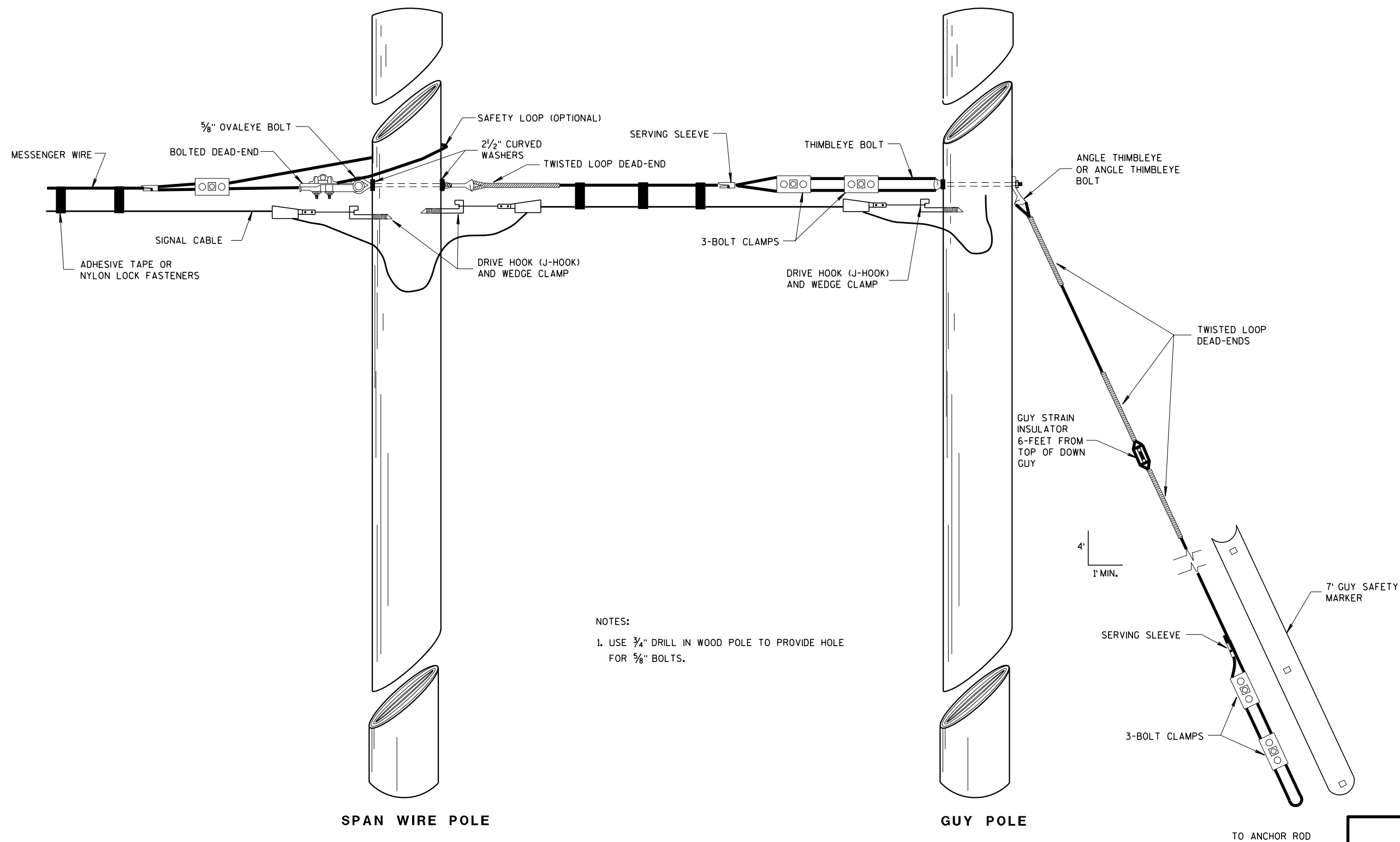
LEGEND

- WOOD POLE (NON-BREAKAWAY)
- WOOD POST (BREAKAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- LED TRAFFIC SIGNAL FACE WITH BACKPLATE
- DIRECTION OF TRAFFIC

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

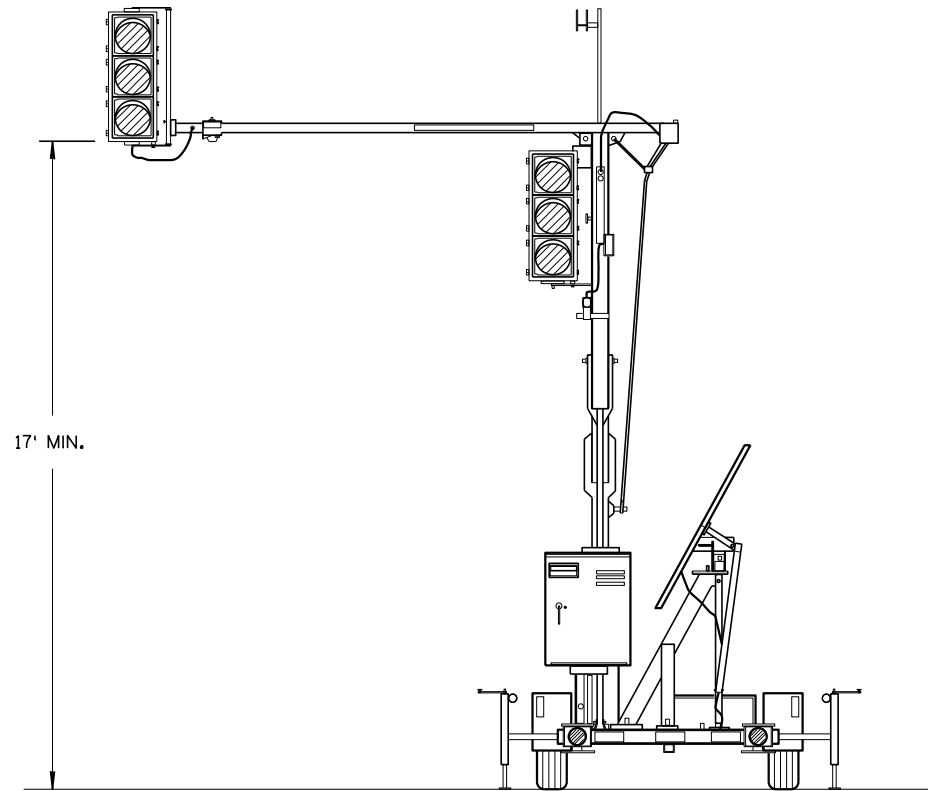
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Ahmet Demirel
DATE STATE ELECTRICAL 50 R
FHWA



TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2018 DATE	/S/ Ahmet Demirelli STATE ELECTRICAL 51 R
FHWA	

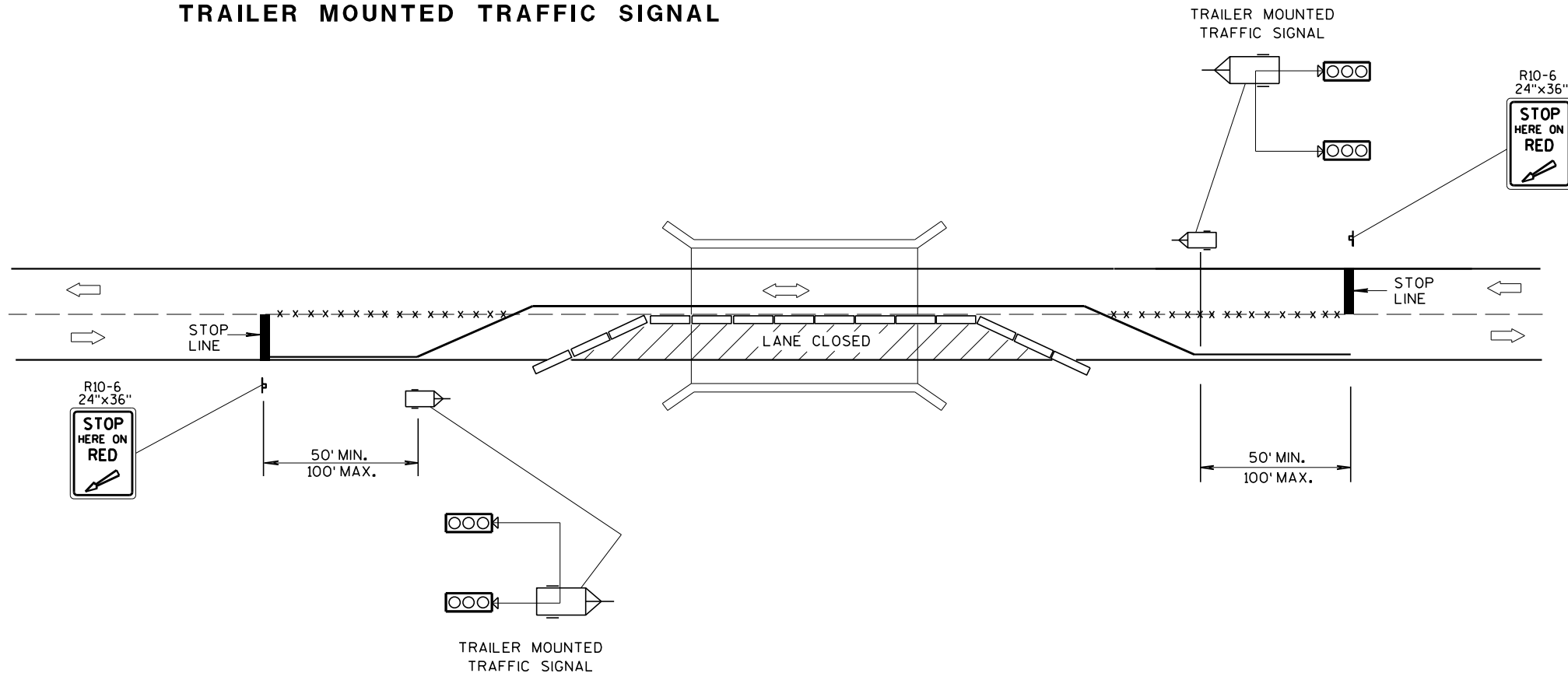


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

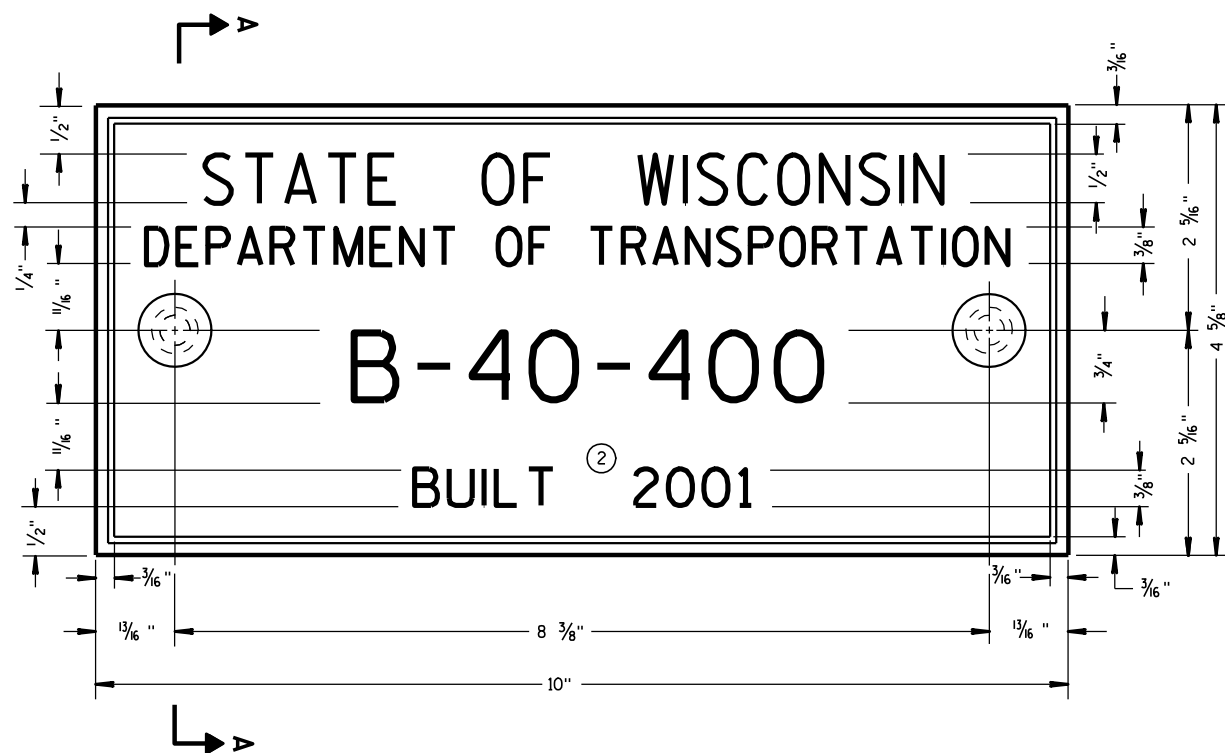
LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

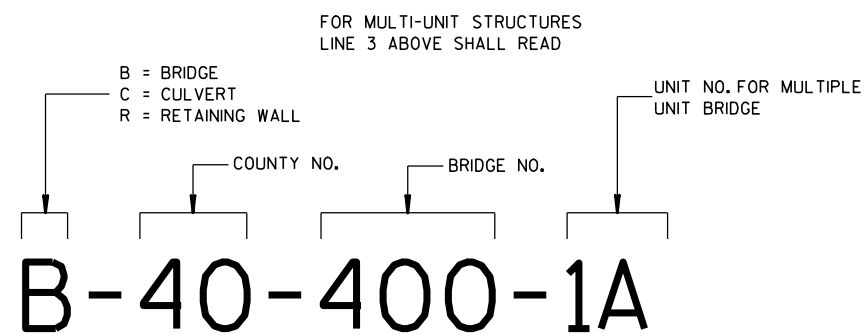
BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Ahmet Demirel
DATE STATE ELECTRICAL 52 R
FHWA



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



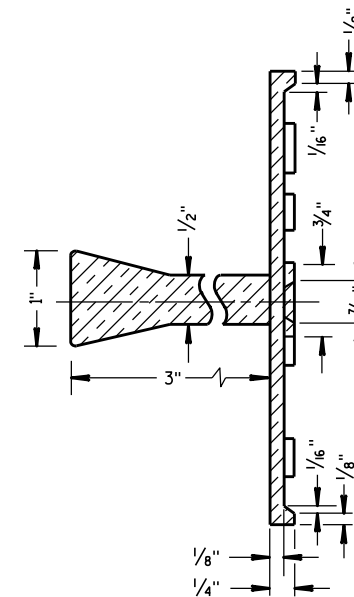
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

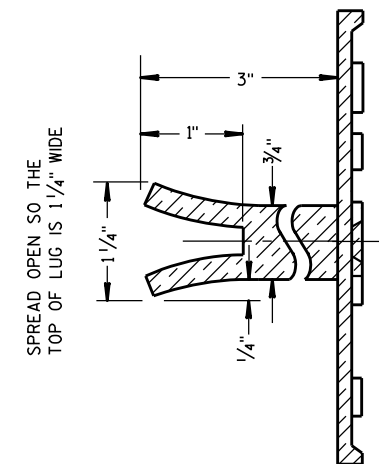
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

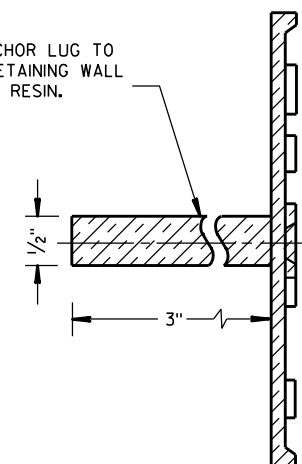


SECTION A-A



ALTERNATE LUG

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

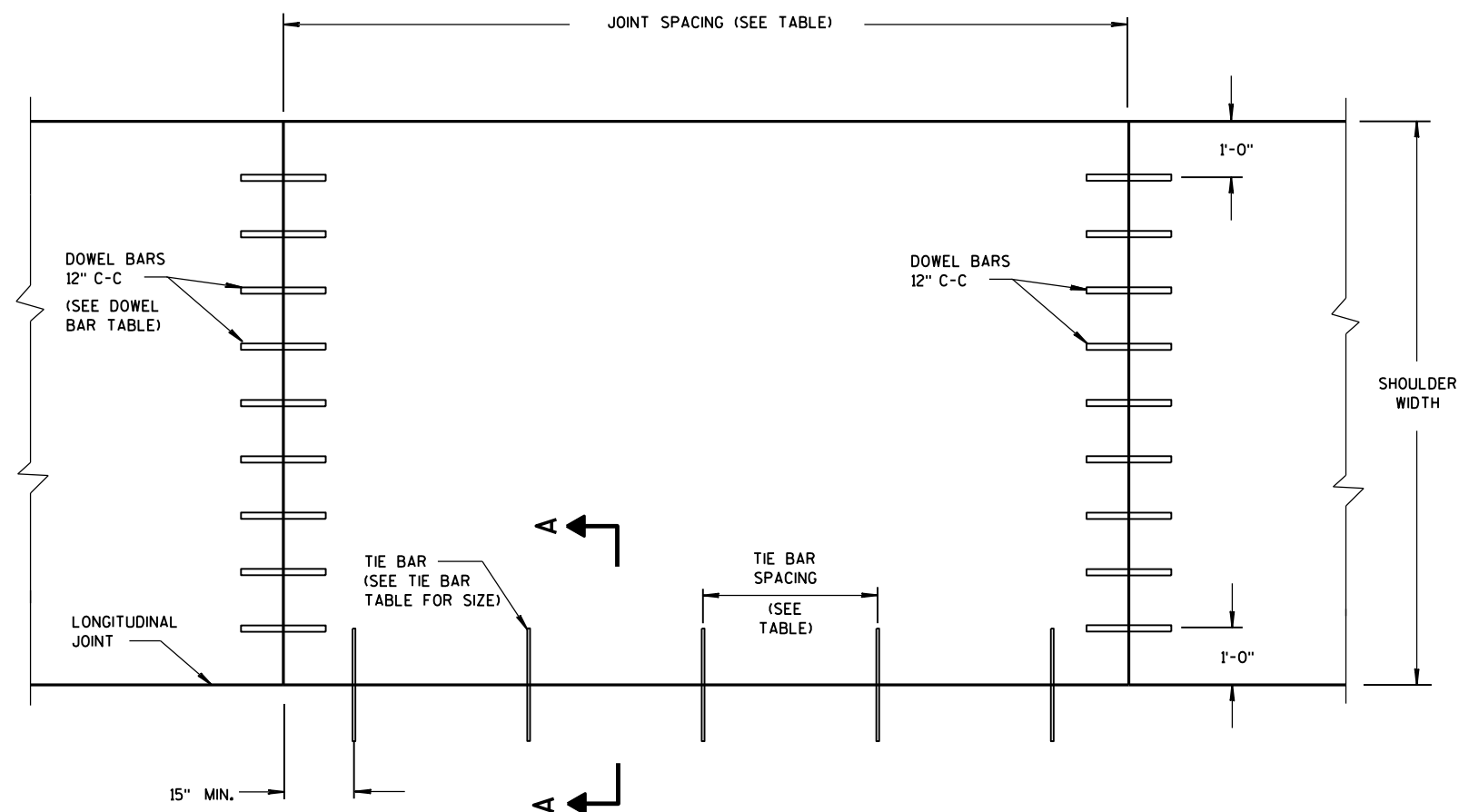
DATE

3/26/10

FHWA

/S/ Scot Beck
CHIEF STRUCTURAL DEVELOPER

JEER



PLAN VIEW
CONCRETE PAVEMENT SHOULDER

TIE BAR TABLE

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

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

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

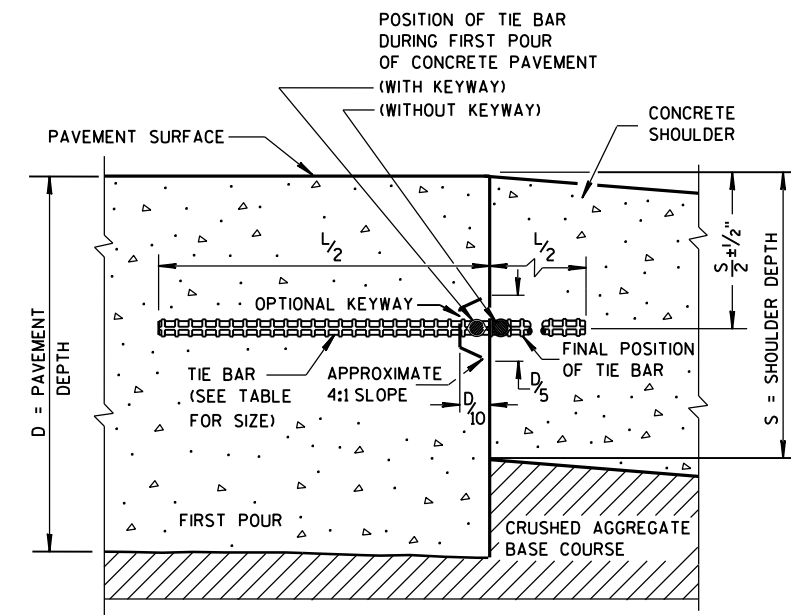
GENERAL NOTES

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

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

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

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



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT

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'

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

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

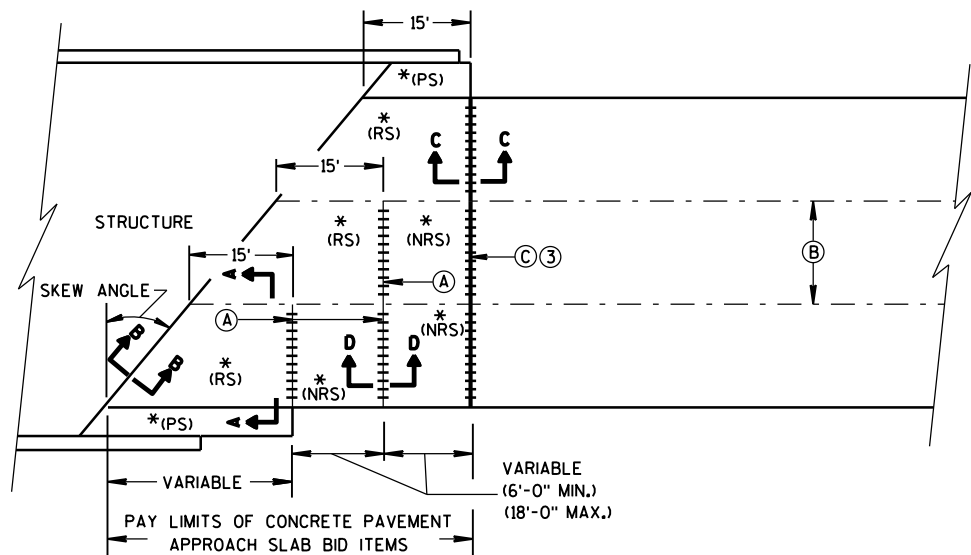
June, 2015

DATE

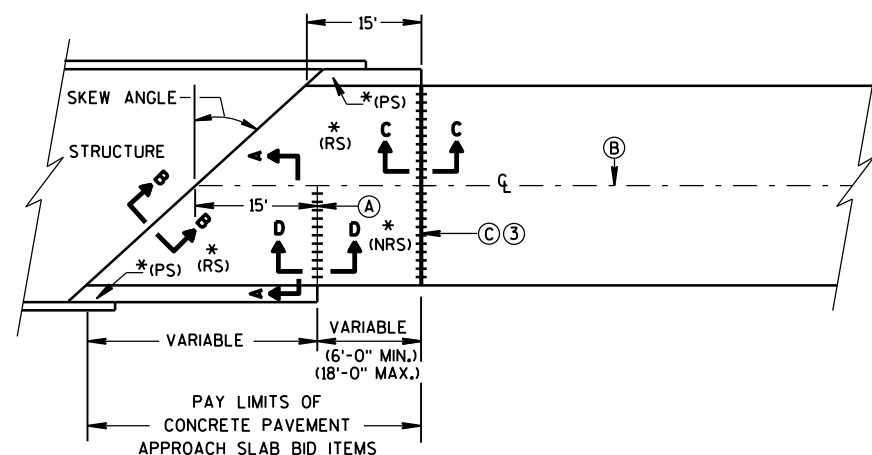
FHWA

/S/ Peter Kemp, P.E.

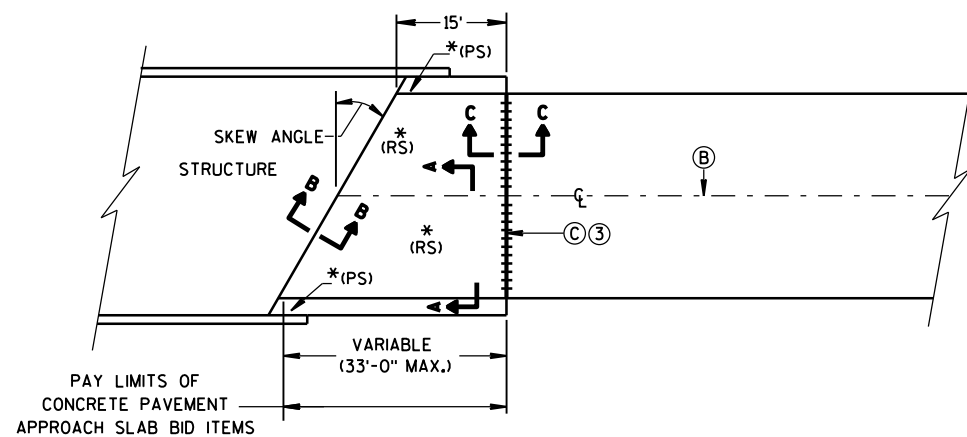
PAVEMENT SUPEF 54



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**



**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

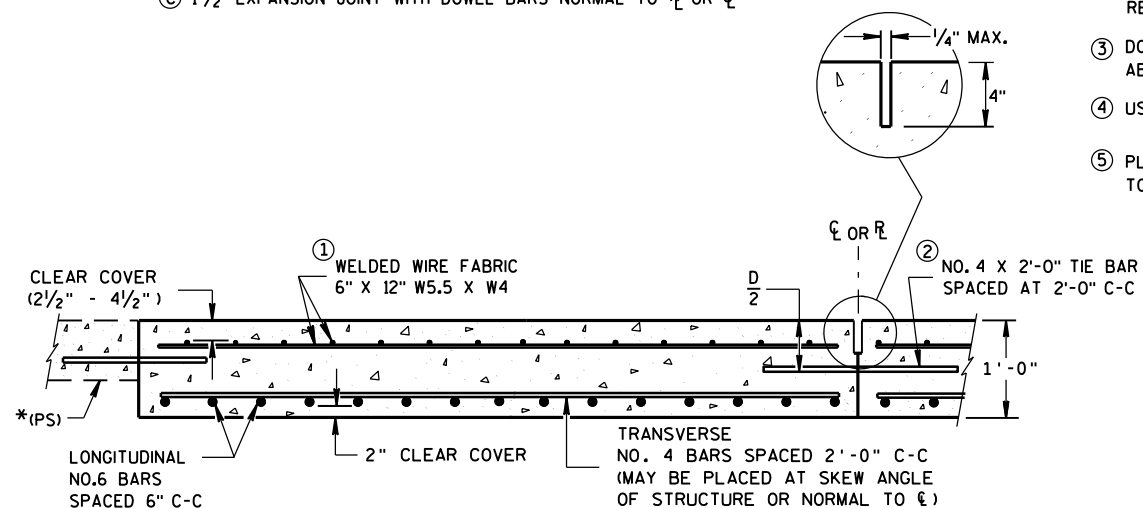


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

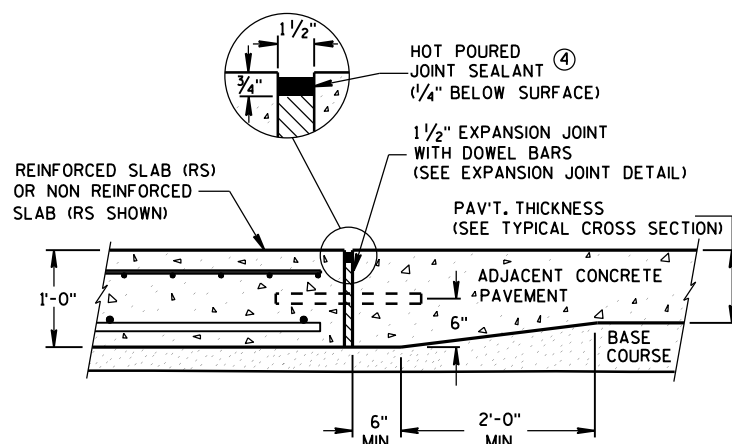
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

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

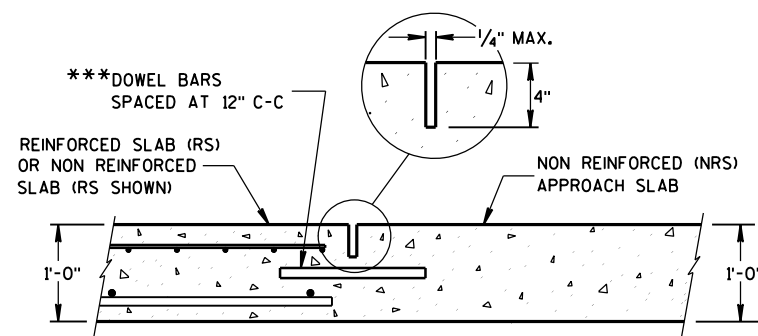
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



**SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**



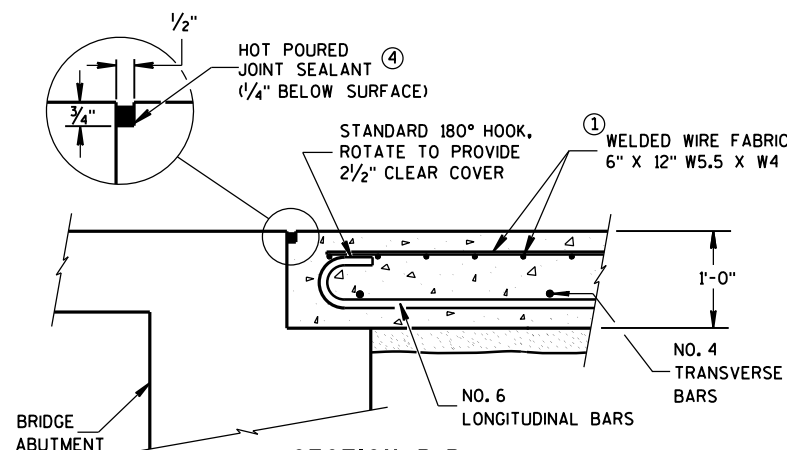
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

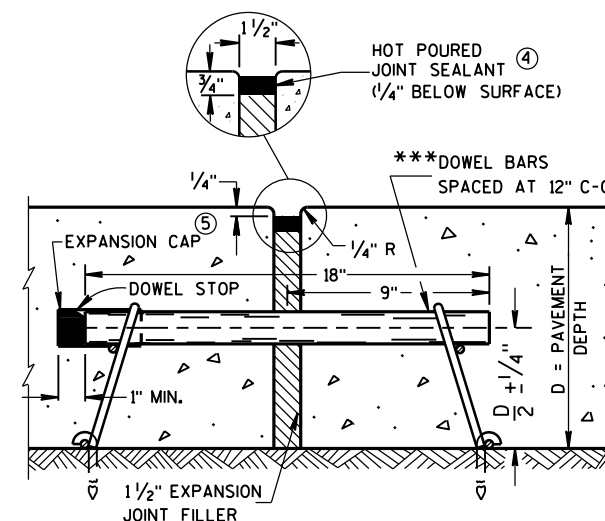
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- 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.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



**SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT**

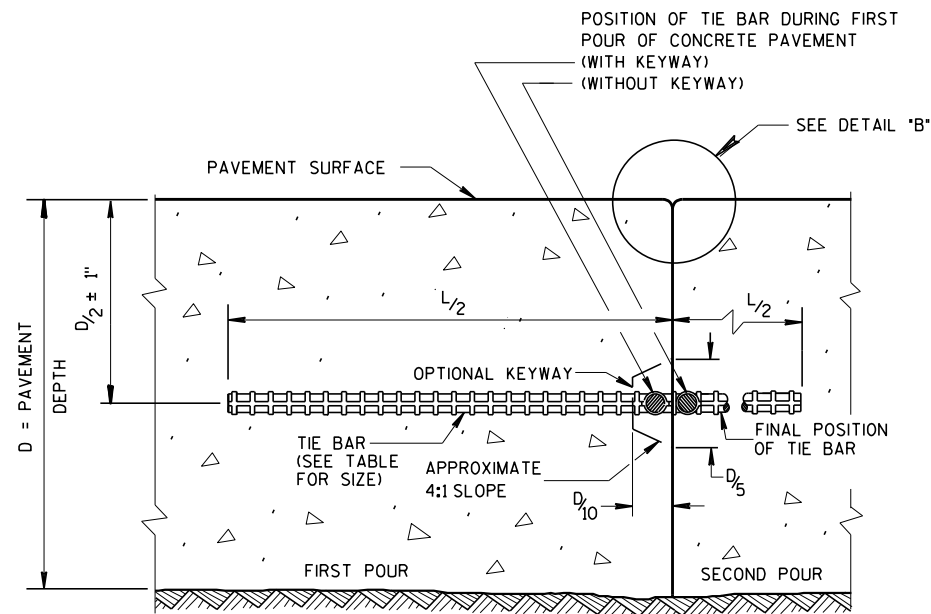


EXPANSION JOINT DETAIL

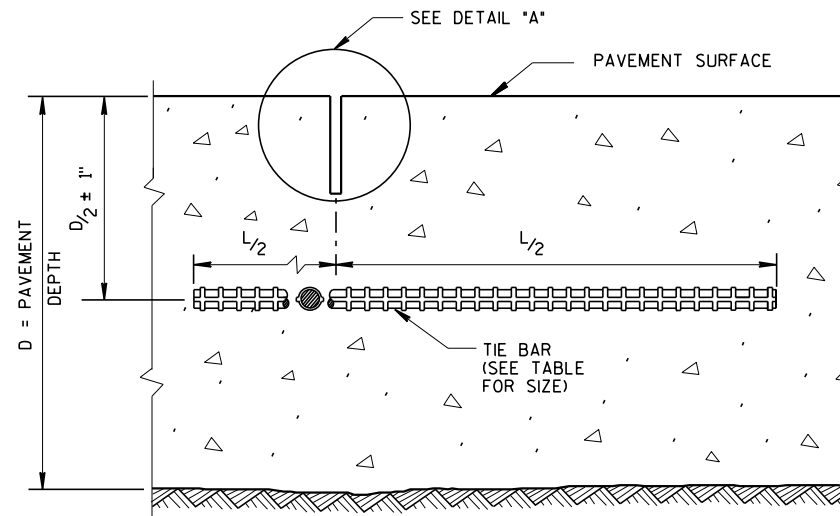
**CONCRETE PAVEMENT
APPROACH SLAB**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE
PAVEMENT SUPER 55
FHWA



CONSTRUCTION JOINT



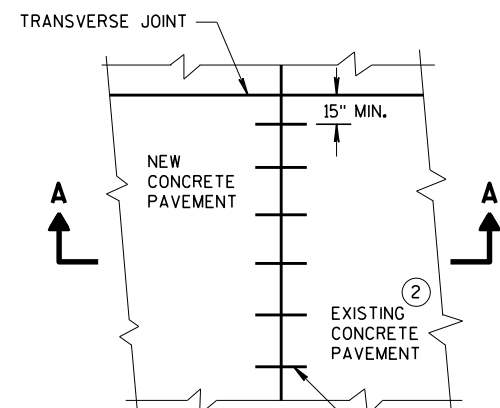
SAWED JOINT

GENERAL NOTES

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

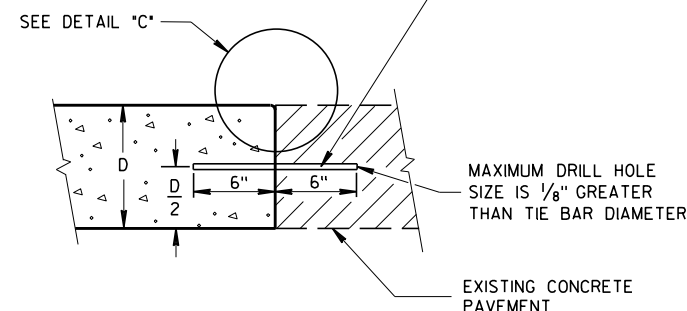
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

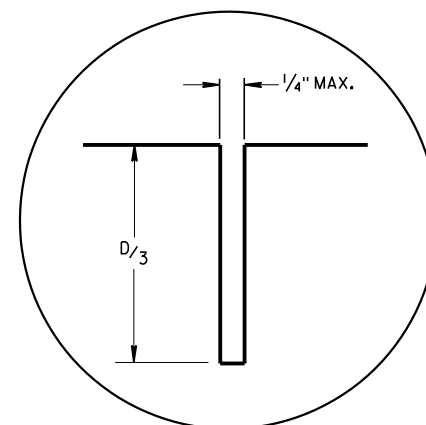


PLAN VIEW

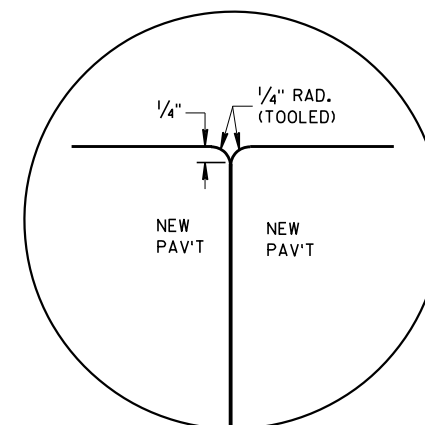
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



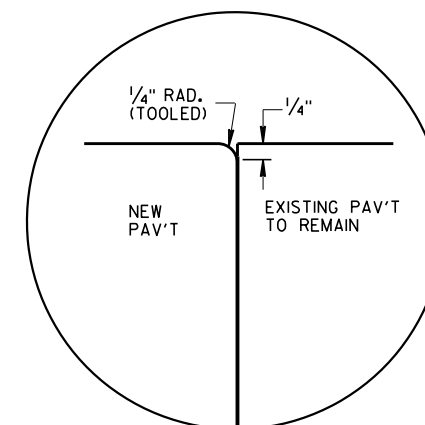
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



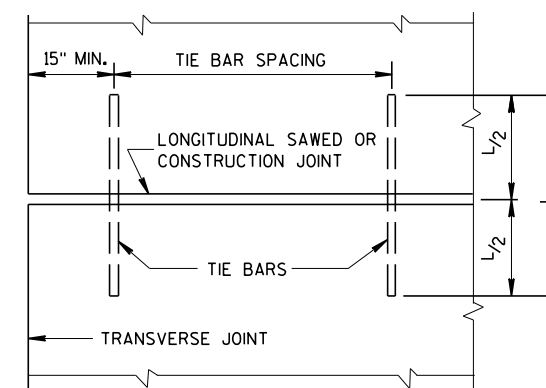
DETAIL "C"

TIE BAR TABLE

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

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

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

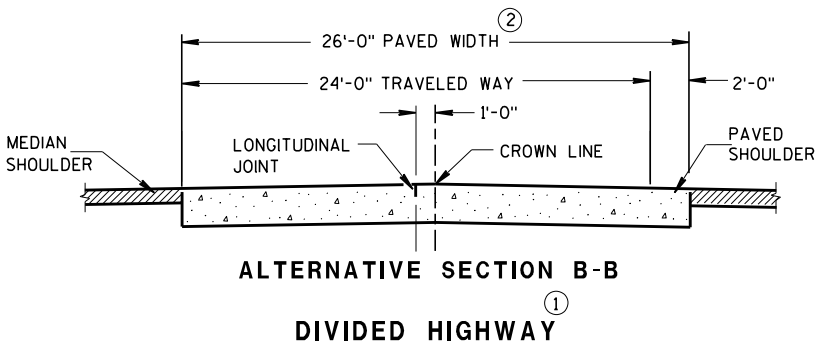
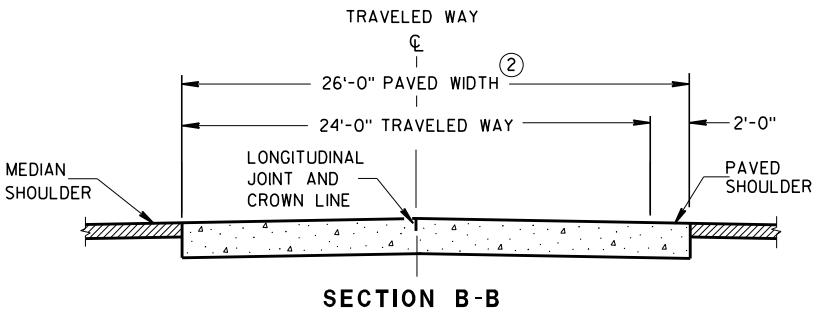
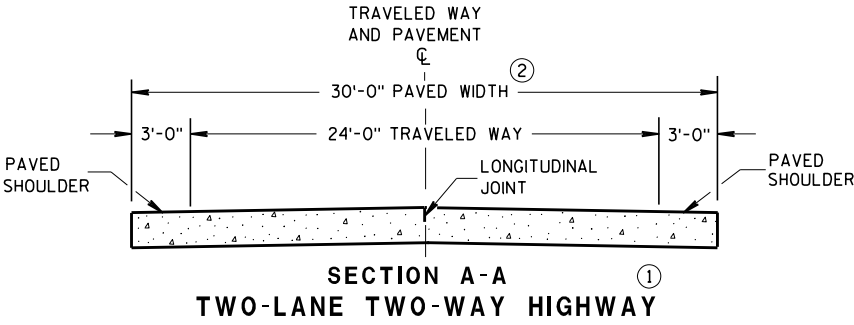


PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Peter Kern
DATE PAVEMENT SUPE 56
FHWA



GENERAL NOTES

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

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

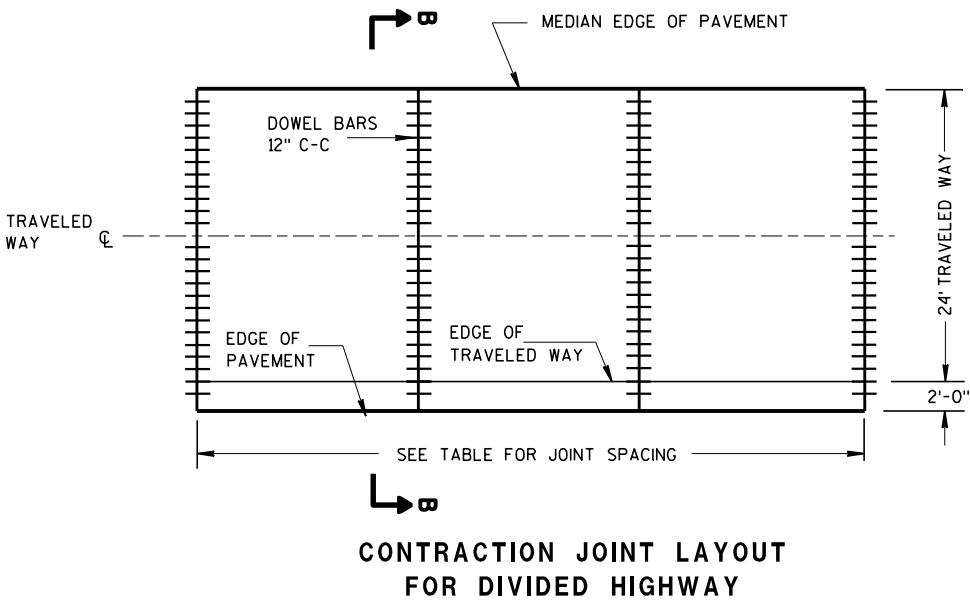
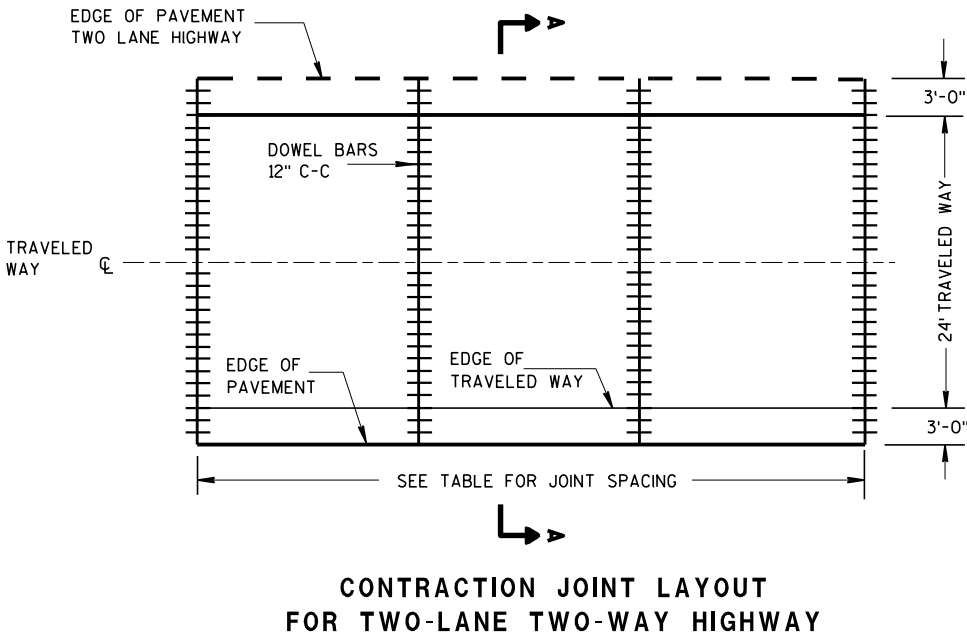
FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

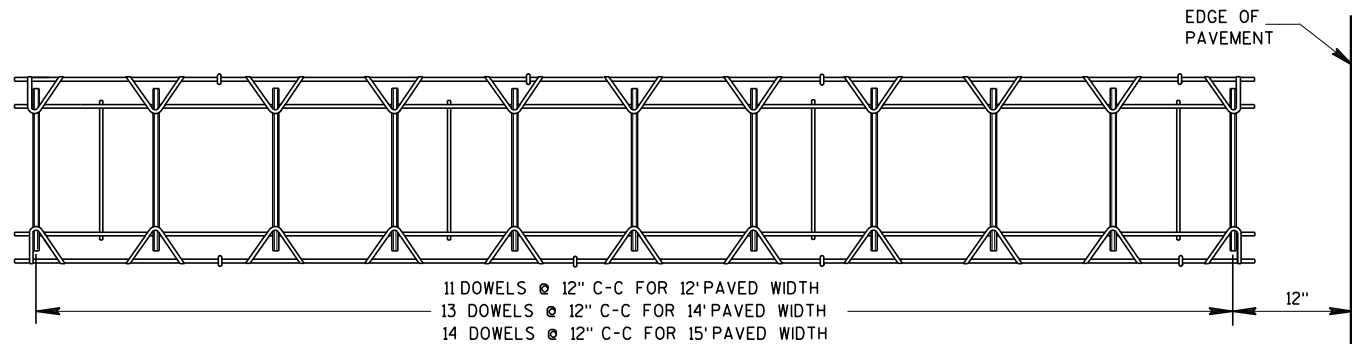
CONSTRUCTION JOINTS
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

- 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.

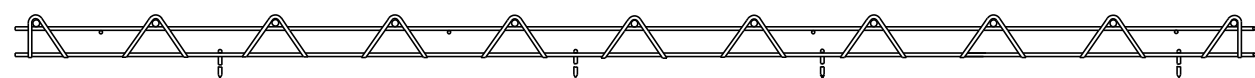
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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





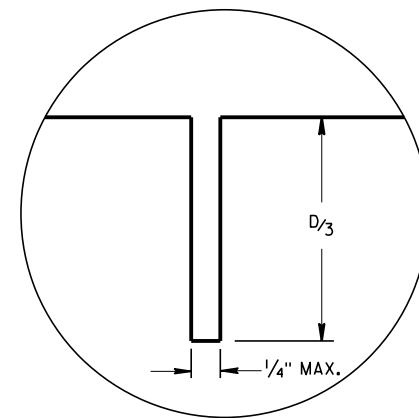
PLAN VIEW



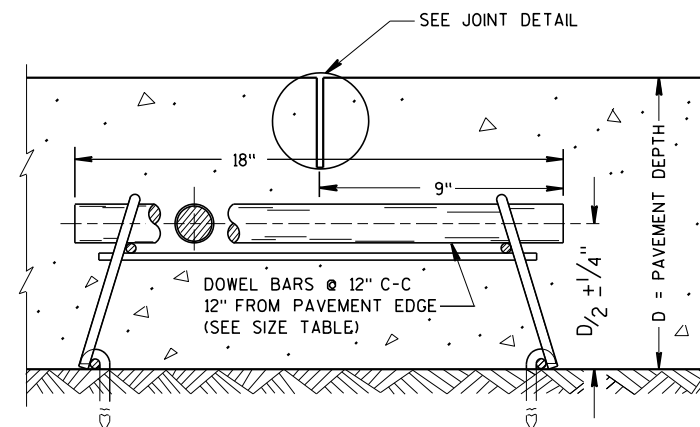
SIDE VIEW

(NORMAL TO CENTERLINE)

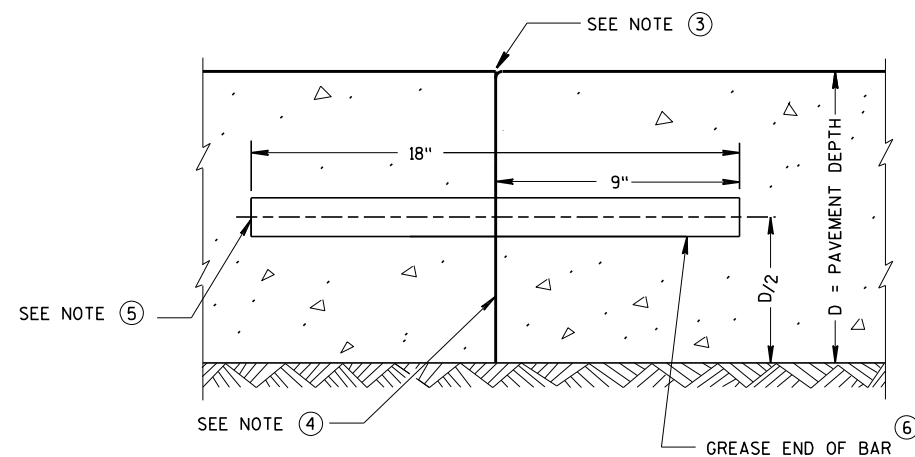
CONTRACTION JOINT DOWEL ASSEMBLY ①



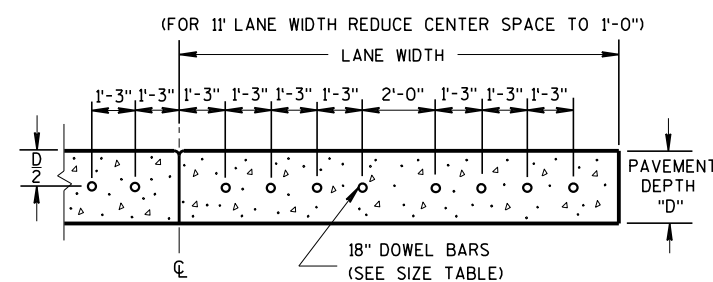
JOINT DETAIL



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

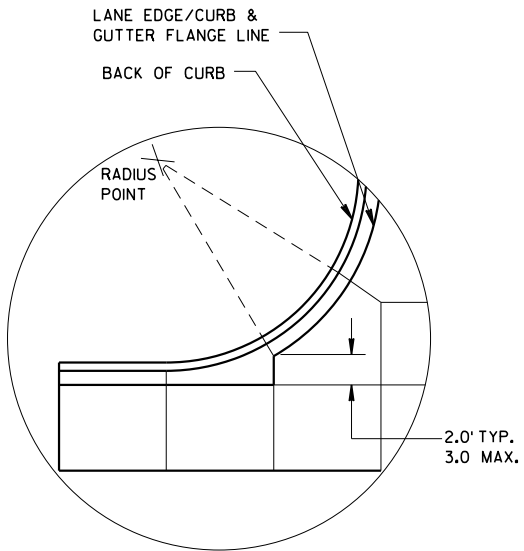
GENERAL NOTES

- 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.

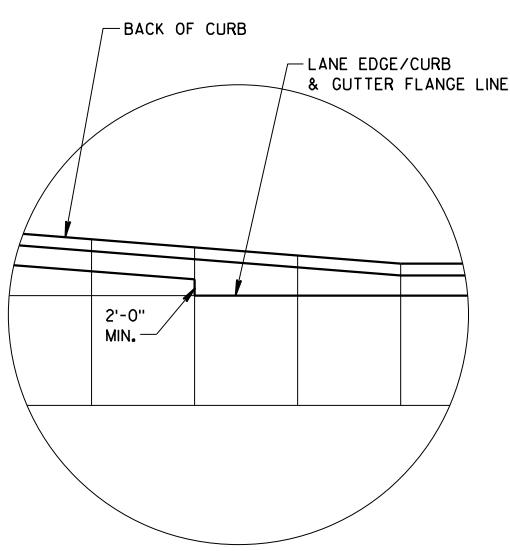
RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

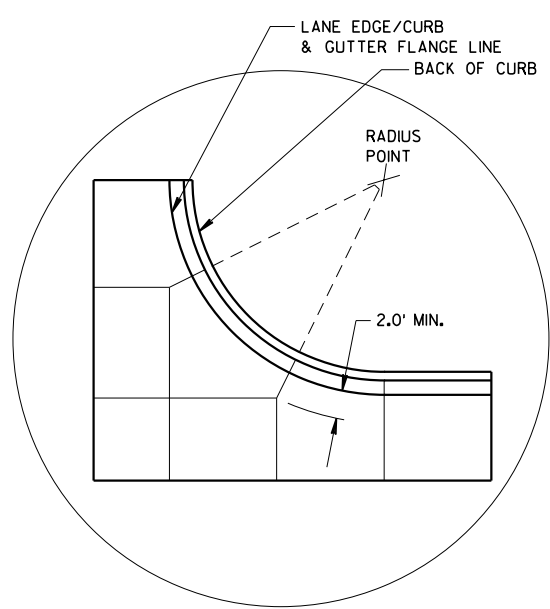
APPROVED
March 2018 /S/ Peter Kemmerer
DATE PAVEMENT SUP 58
FHWA



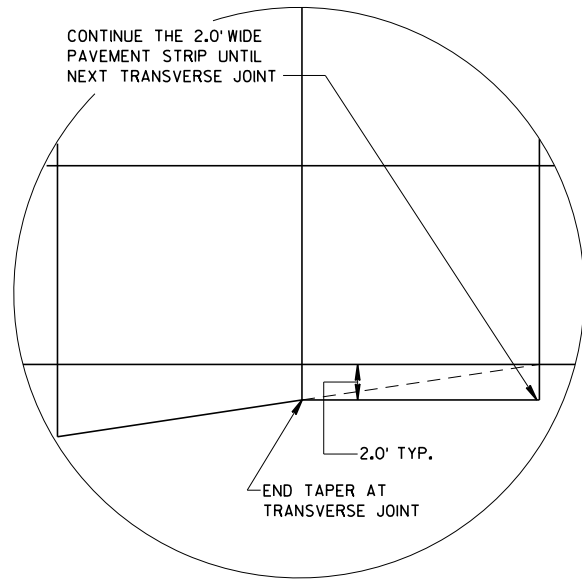
DETAIL "A"



DETAIL "B"



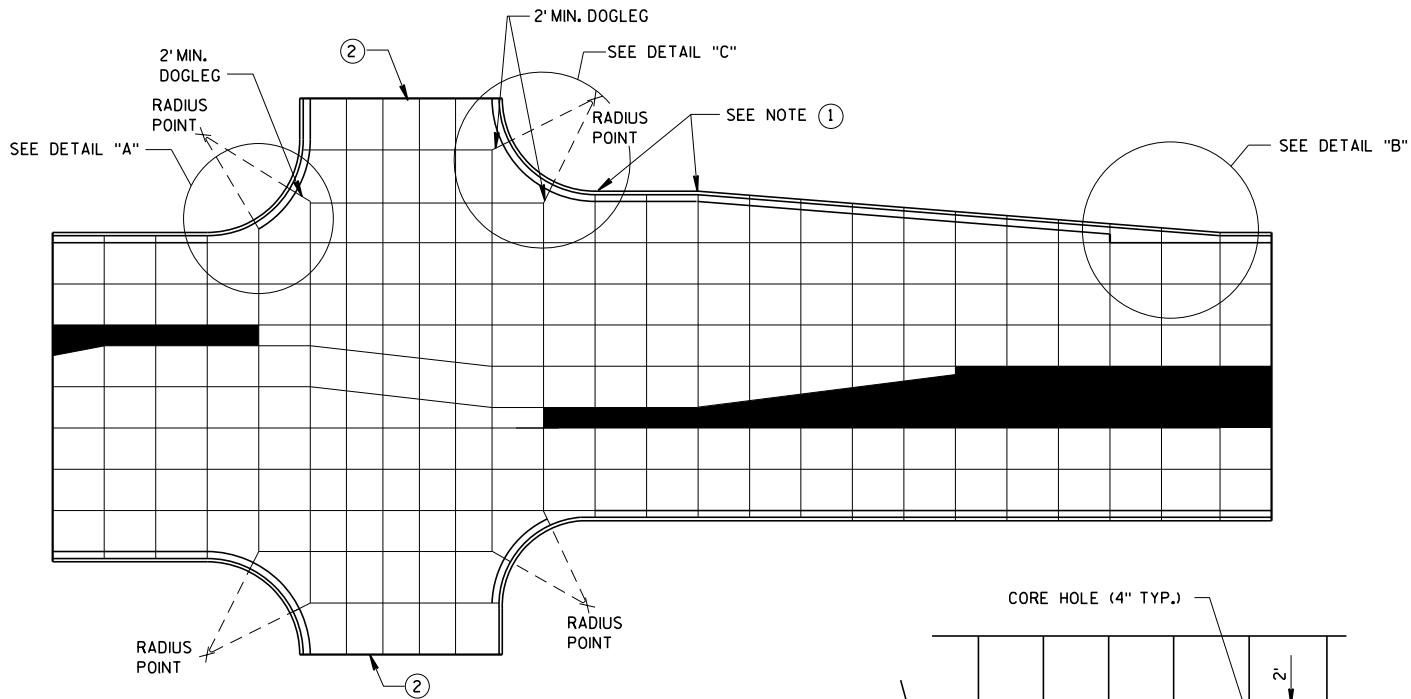
DETAIL "C"



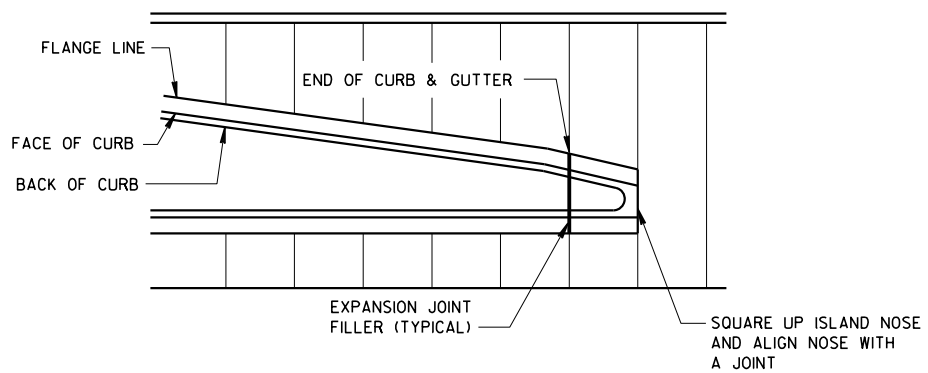
DETAIL "D"

GENERAL NOTES

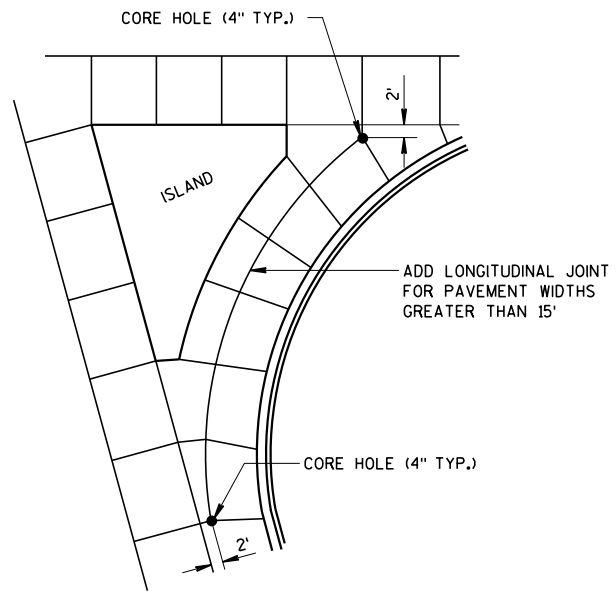
- THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.
- ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.
- ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER 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



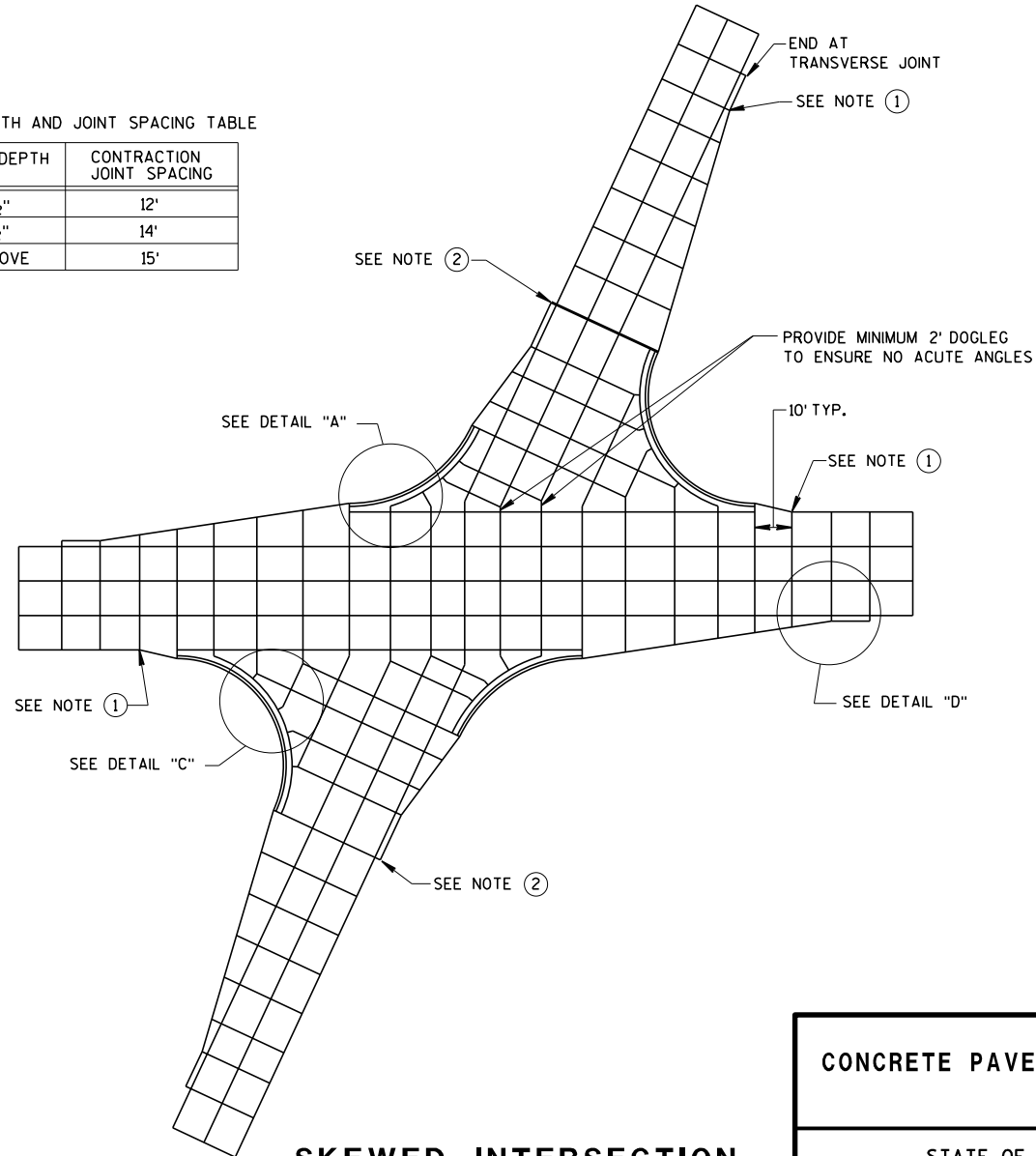
APPROACH TO MEDIAN



LARGE RIGHT TURN

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'



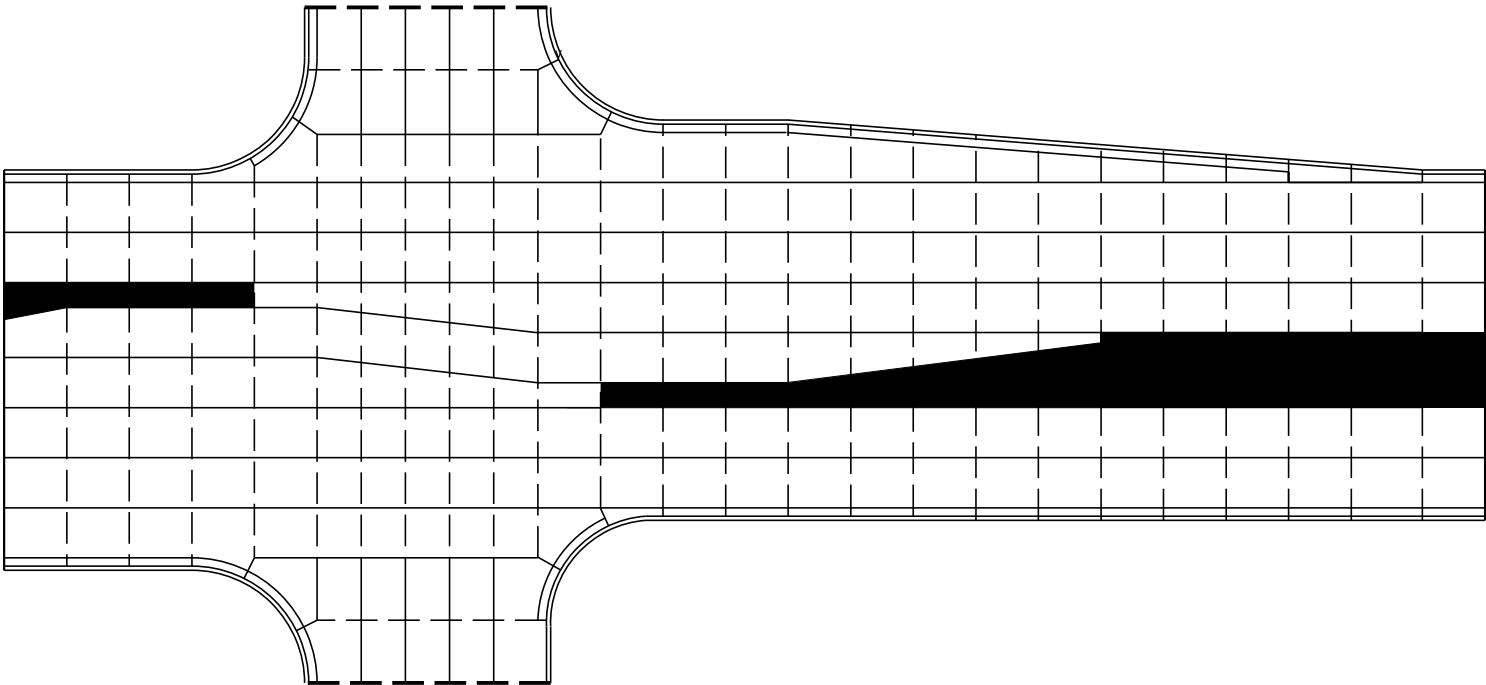
SKEWED INTERSECTION

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

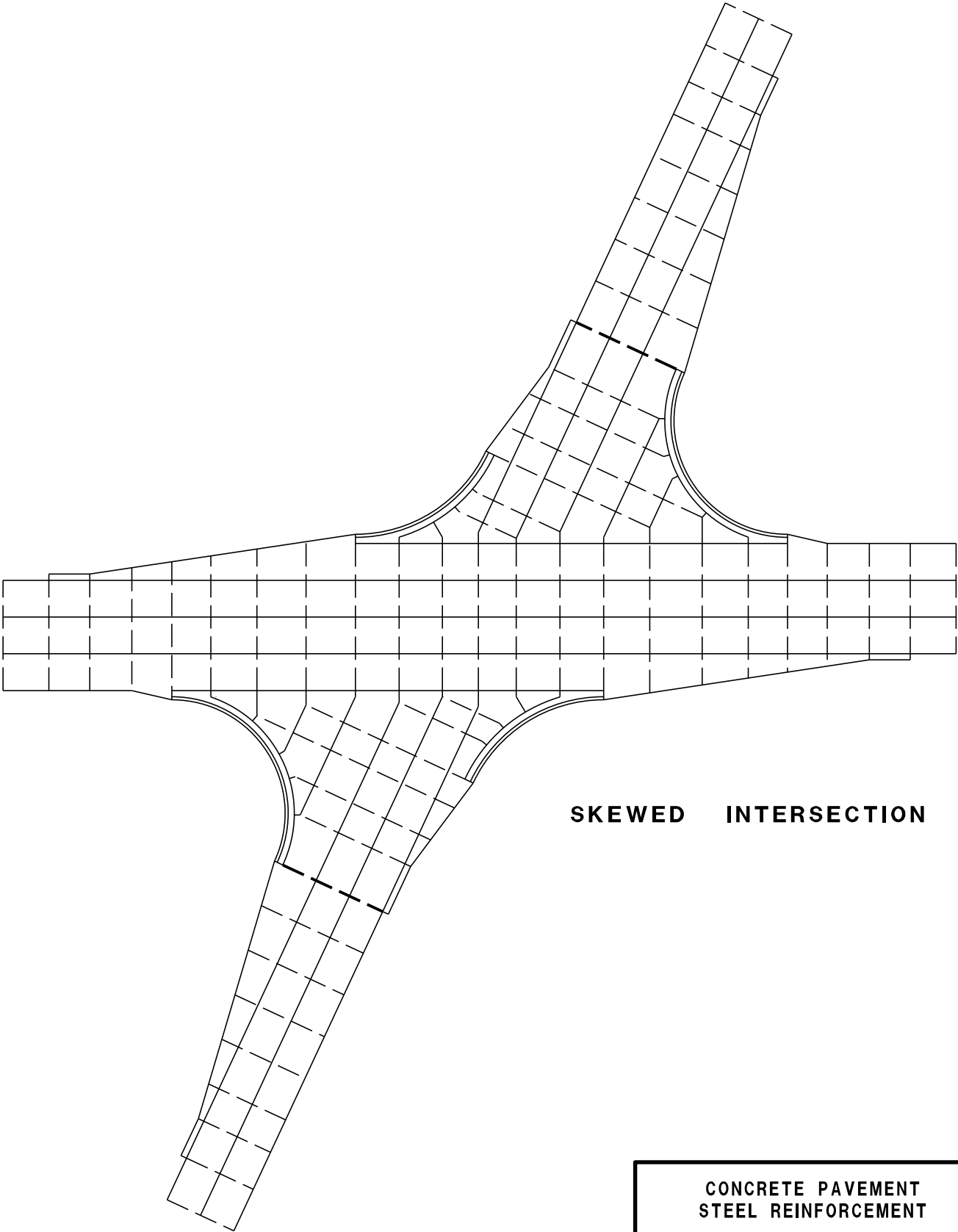
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT



STANDARD INTERSECTION

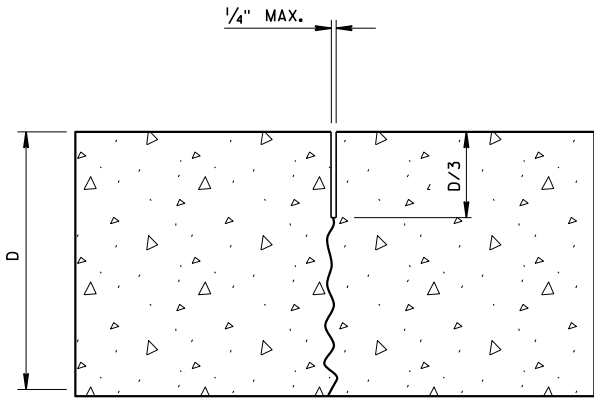
GENERAL NOTES

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

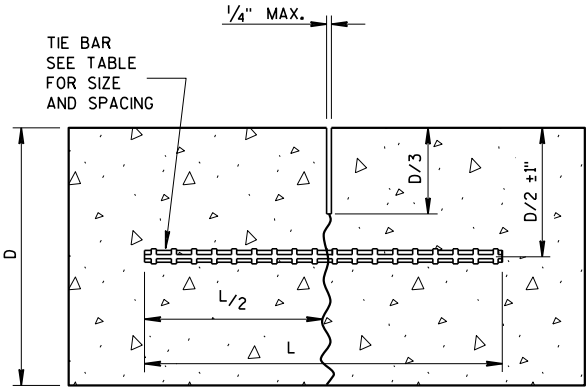


SKEWED INTERSECTION

CONCRETE PAVEMENT STEEL REINFORCEMENT
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

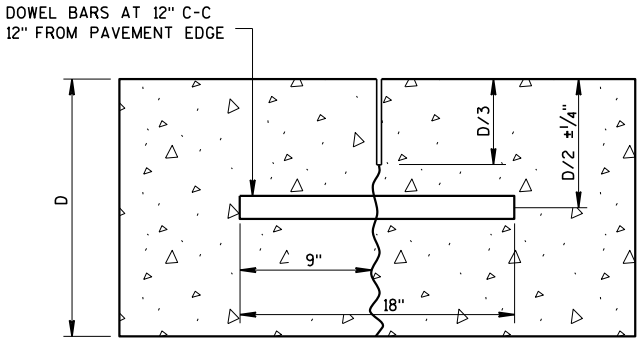
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

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

GENERAL NOTES

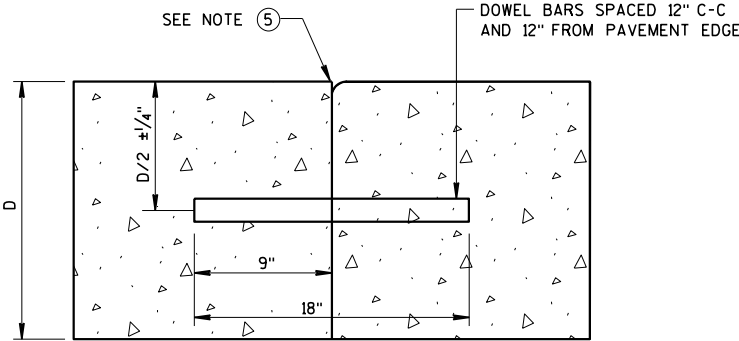
- 1 USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
- 2 SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
- 3 LOCATE CONSTRUCTION JOINTS A MINIMUM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



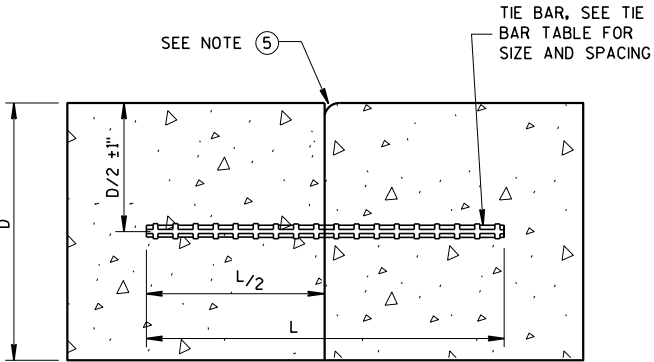
DOWELED-TRANSVERSE

CONTRACTION JOINTS

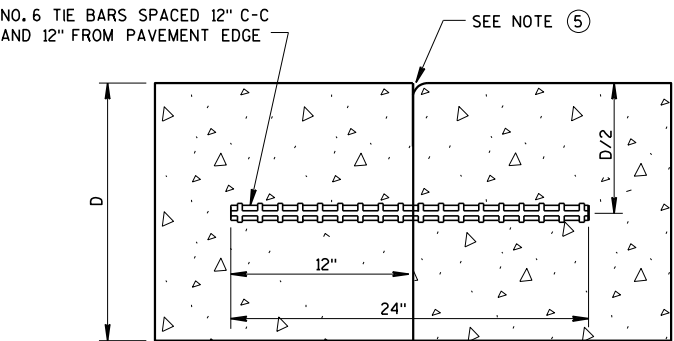
SEE NOTE 2



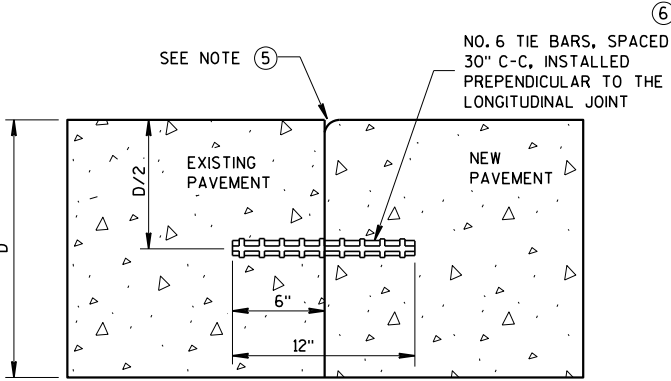
DOWELED TRANSVERSE 3



TIED LONGITUDINAL



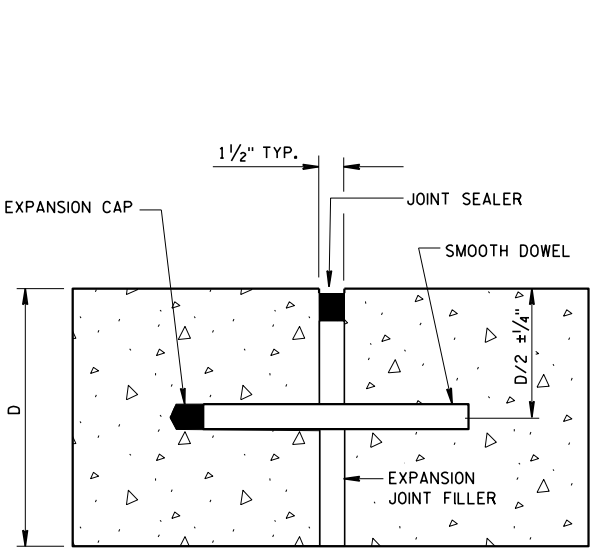
TIED TRANSVERSE 3
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

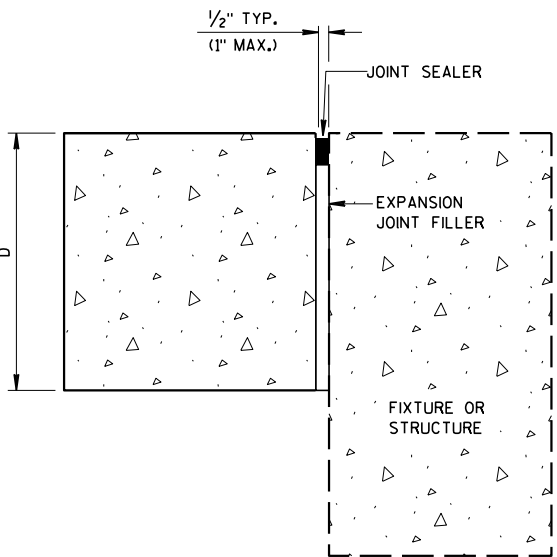
CONSTRUCTION JOINTS

SEE NOTE 4



DOWELED-TRANSVERSE

SEE NOTE 1

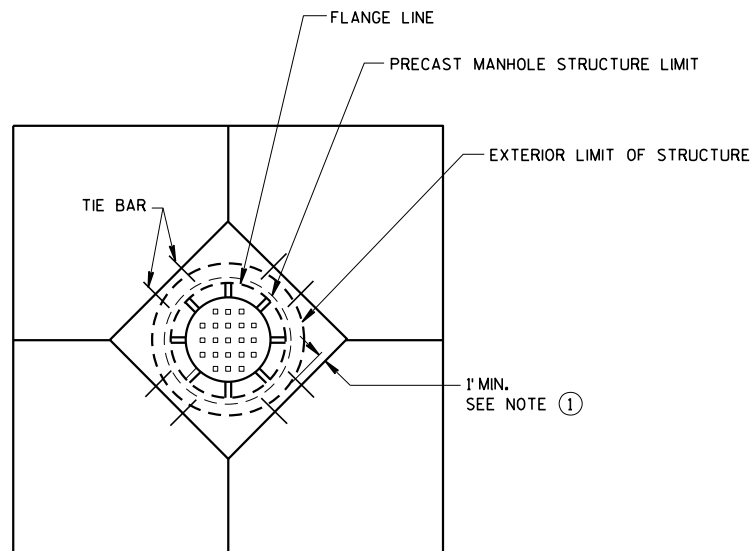


UNTIED-LONGITUDINAL

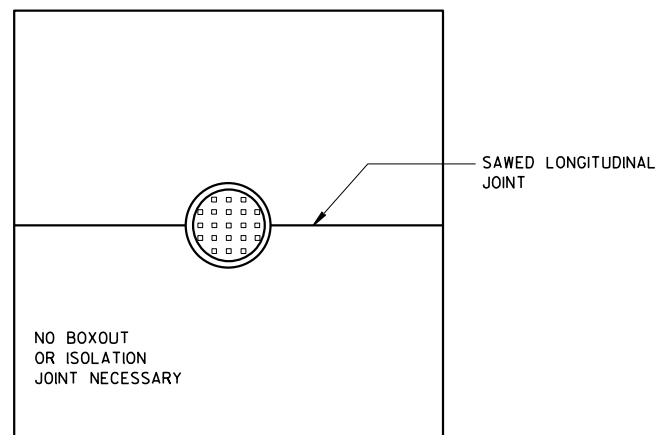
EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

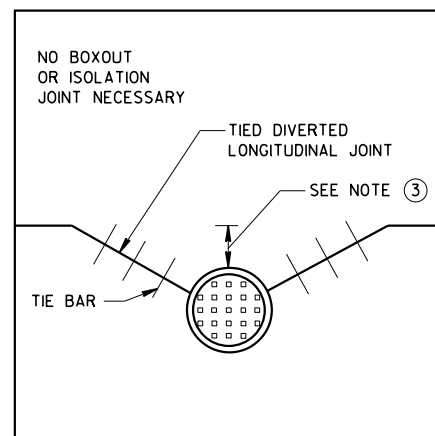
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



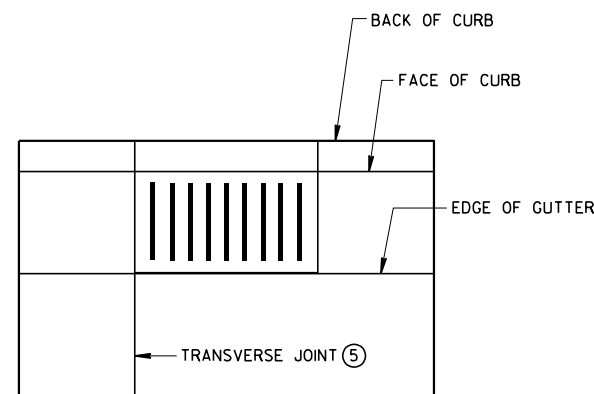
**DIAGONAL MANHOLE BOXOUT
FOR CONSTRUCTION JOINTS**



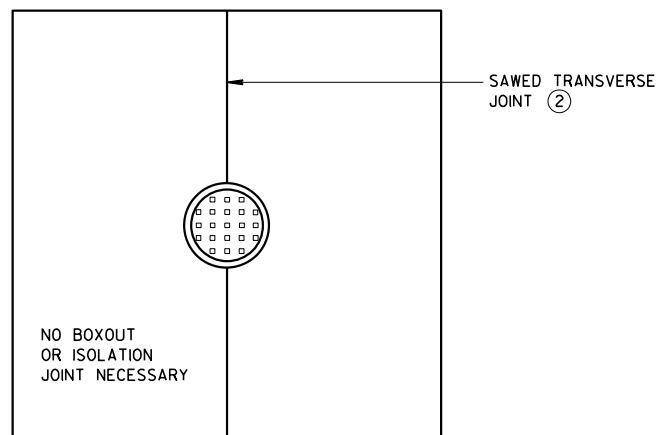
**MANHOLE WITH
LONGITUDINAL JOINT**



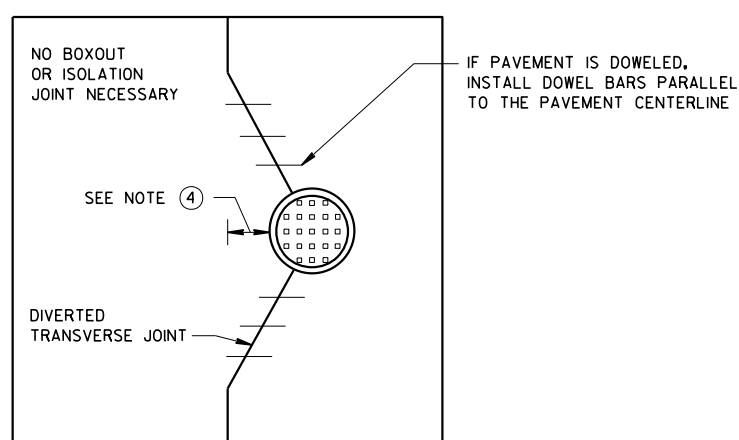
**MANHOLE WITH DIVERTED
LONGITUDINAL CONTRACTION JOINT**



**INLET WITH
TRANSVERSE JOINT**



**MANHOLE WITH
TRANSVERSE JOINT**



**MANHOLE WITH DIVERTED
TRANSVERSE CONTRACTION JOINT**

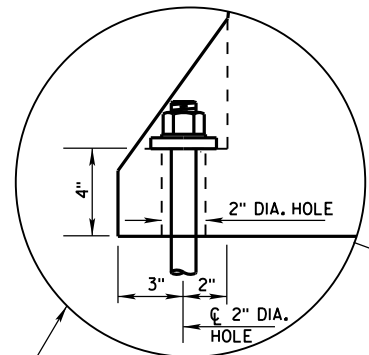
GENERAL NOTES

- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ④ IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ⑤ ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

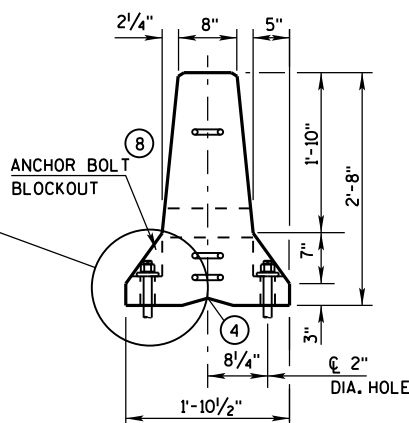
**CONCRETE PAVEMENT
JOINTING AT UTILITY FIXTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

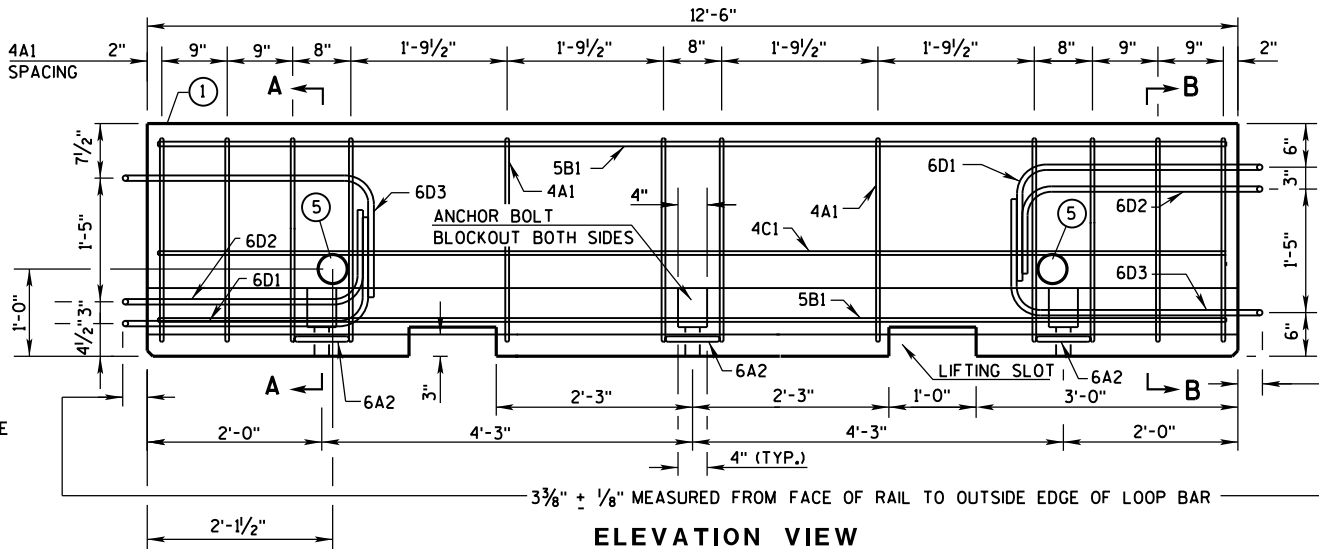
APPROVED
March 2018 /S/ Peter K...
DATE PAVEMENT SUP...
FHWA



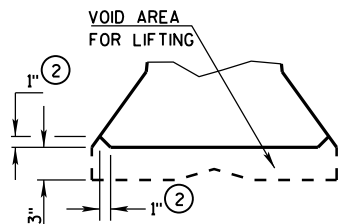
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



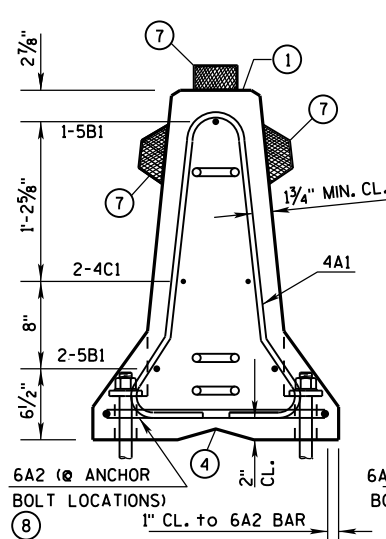
END VIEW



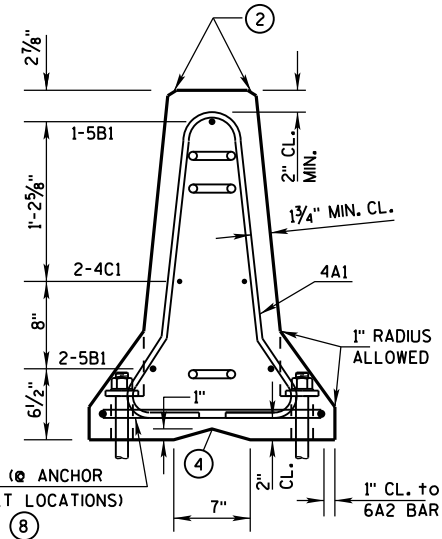
ELEVATION VIEW



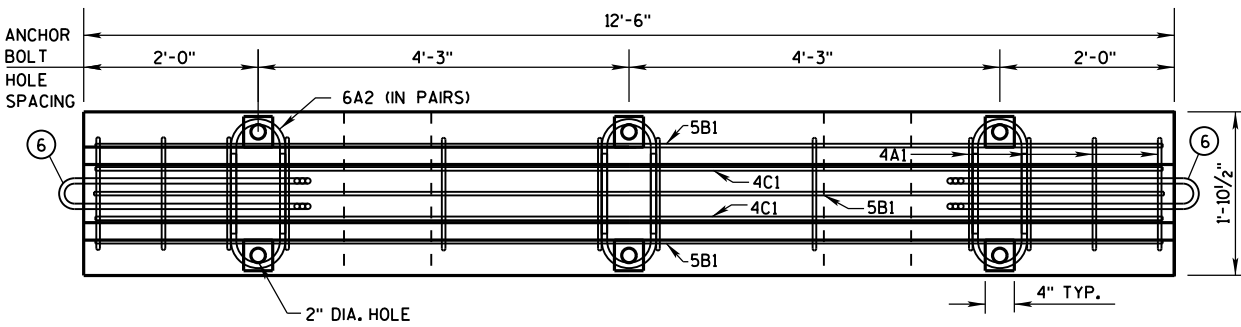
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

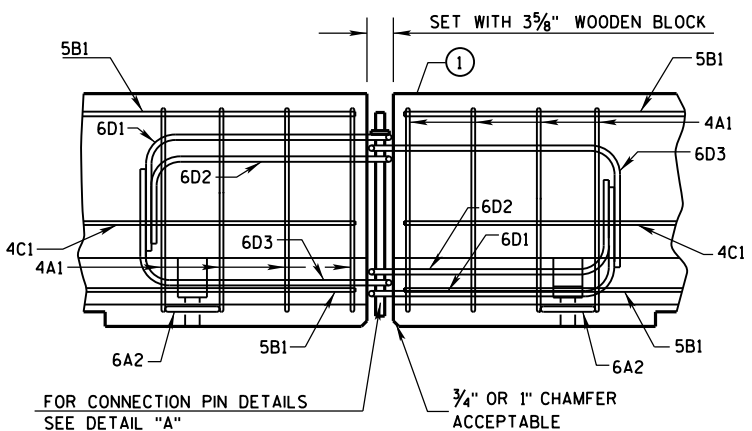


SECTION B-B
(STIRRUP PLACEMENT)

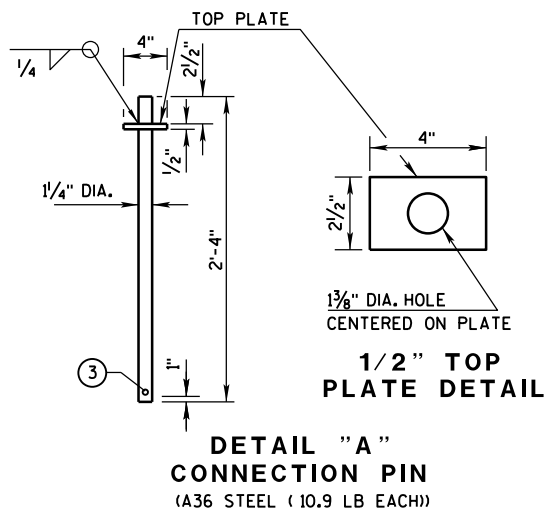


PLAN VIEW

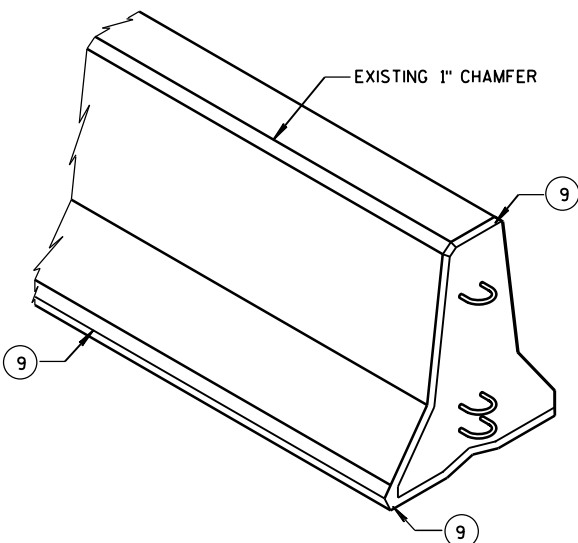
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



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



GENERAL NOTES

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

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

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

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

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

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

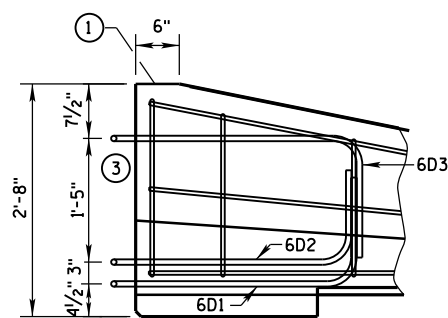
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - TYPE: WICBTP
 - MANUFACTURER
 - DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- "V" NOTCH IS OPTIONAL.
- THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURER'S INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.
- 1" CHAMFER OPTIONAL.

f'c = 4,000 psi

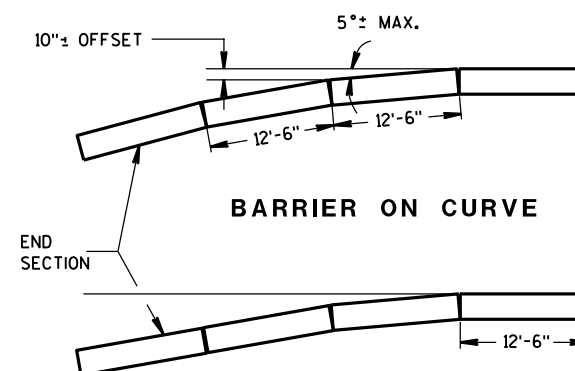
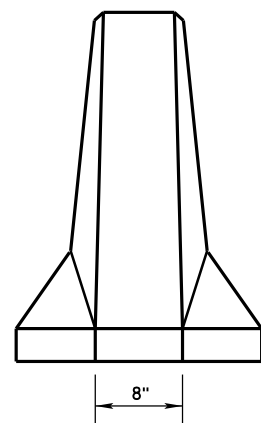
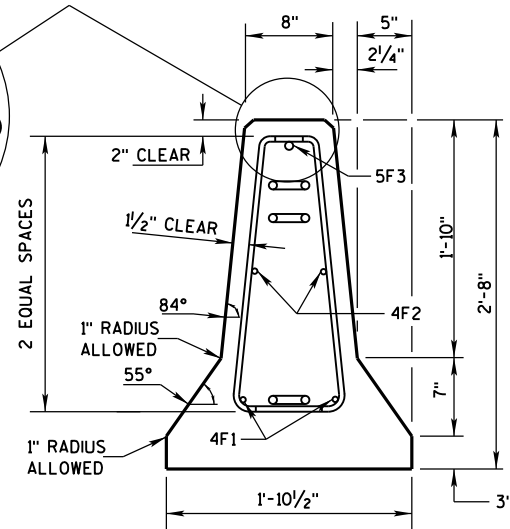
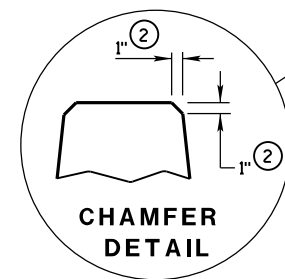
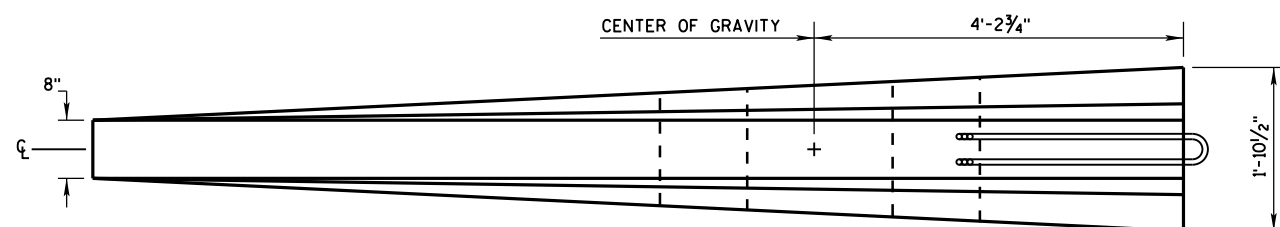
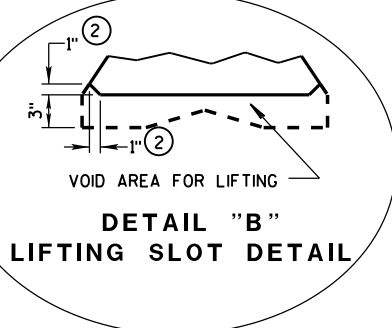
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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



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

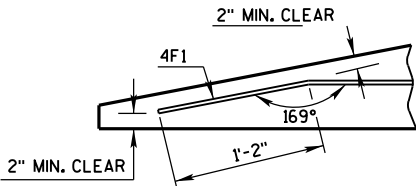
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁶⁴

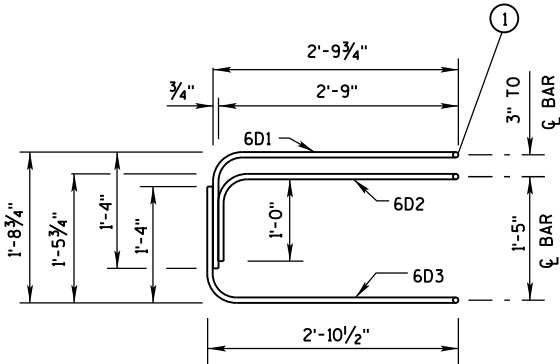
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

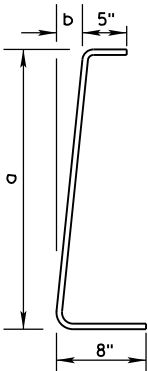
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

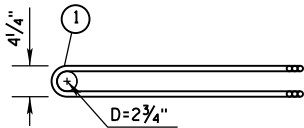
GENERAL NOTES

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

BARRIER SECTION
BILL OF MATERIALS

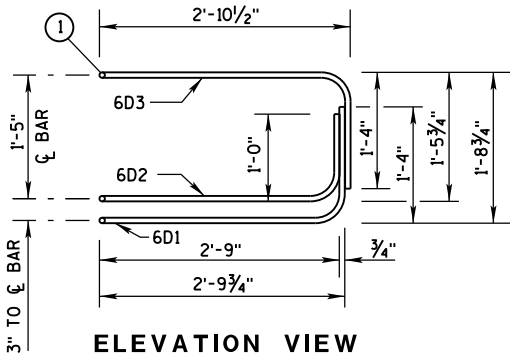
(PER 12'-6" BARRIER SECTION)

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

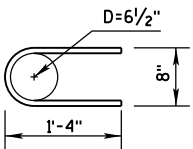


PLAN VIEW
LOOP BAR ASSEMBLY

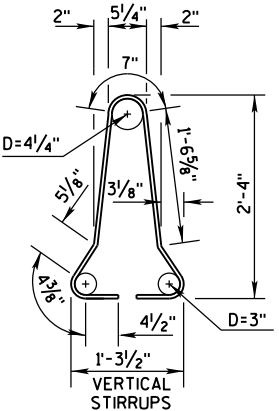
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

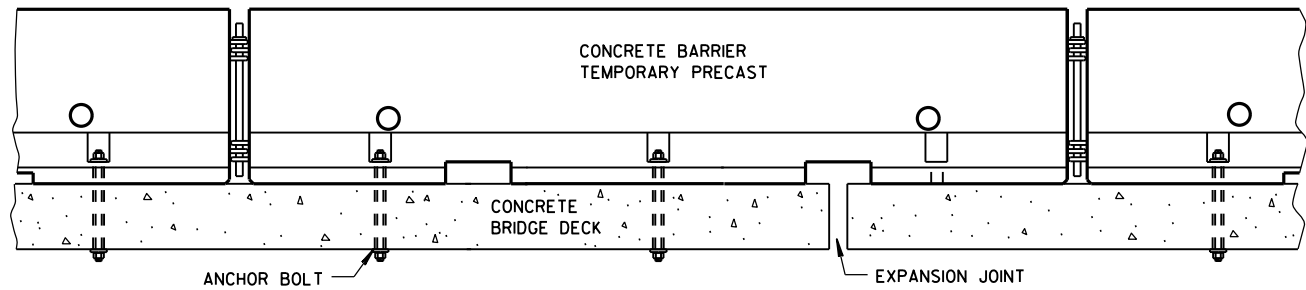
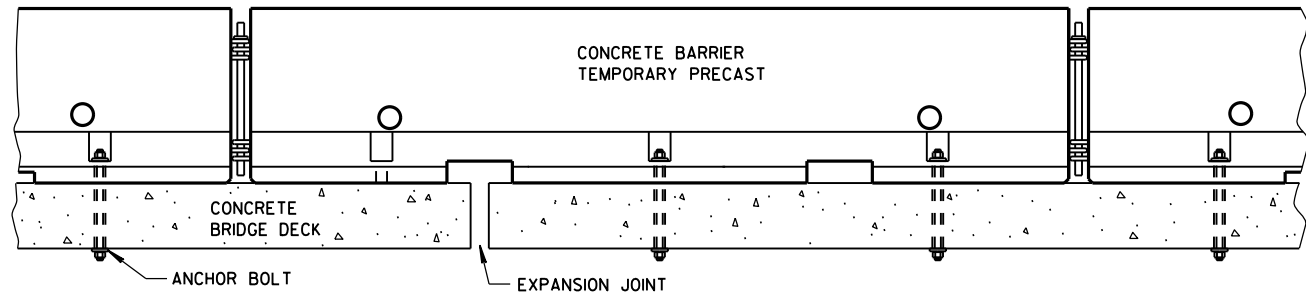


4A1

BARRIER SECTION

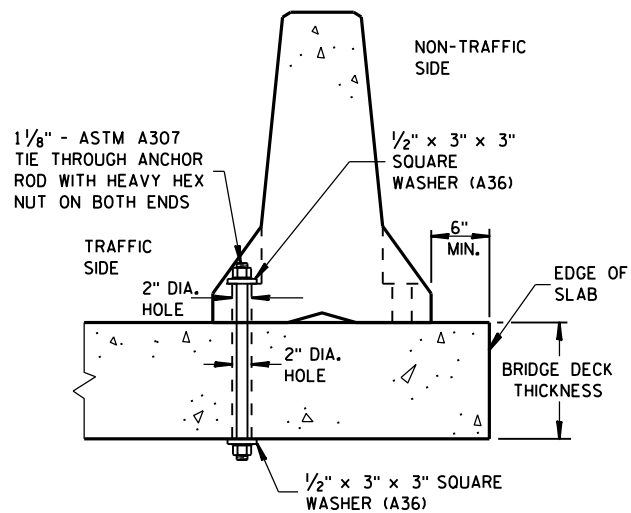
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



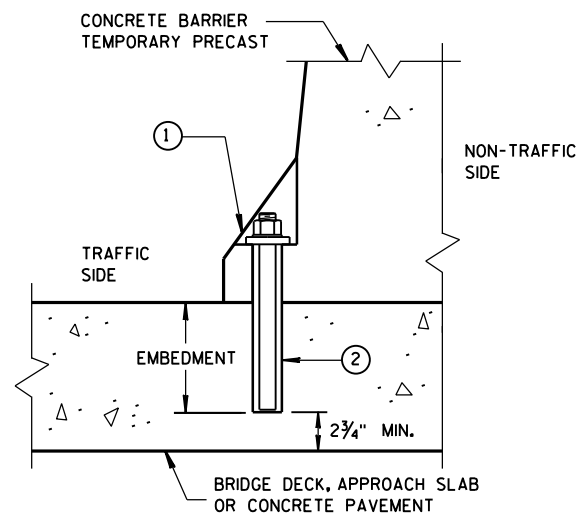
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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



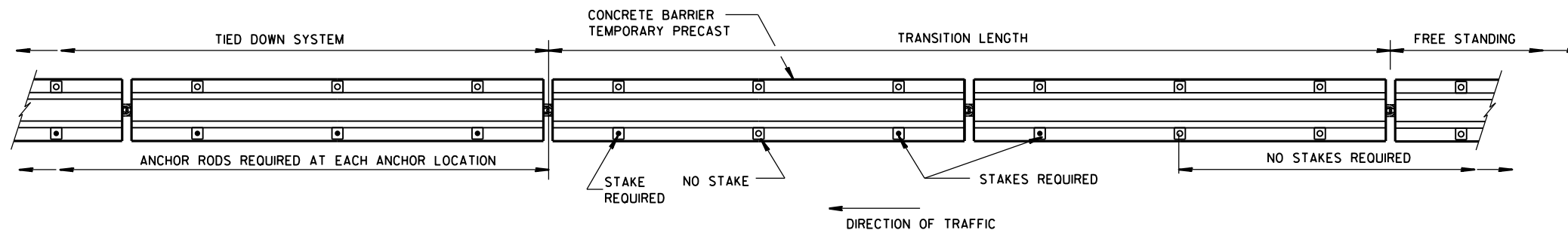
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



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

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

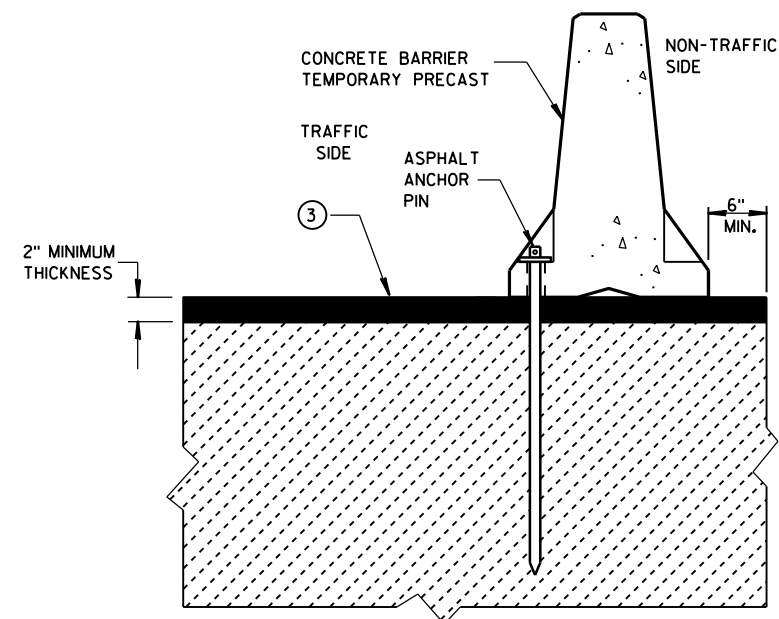
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

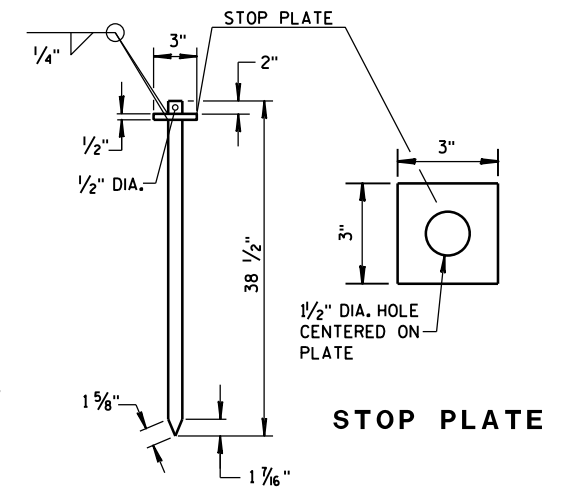
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

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

- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.12 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



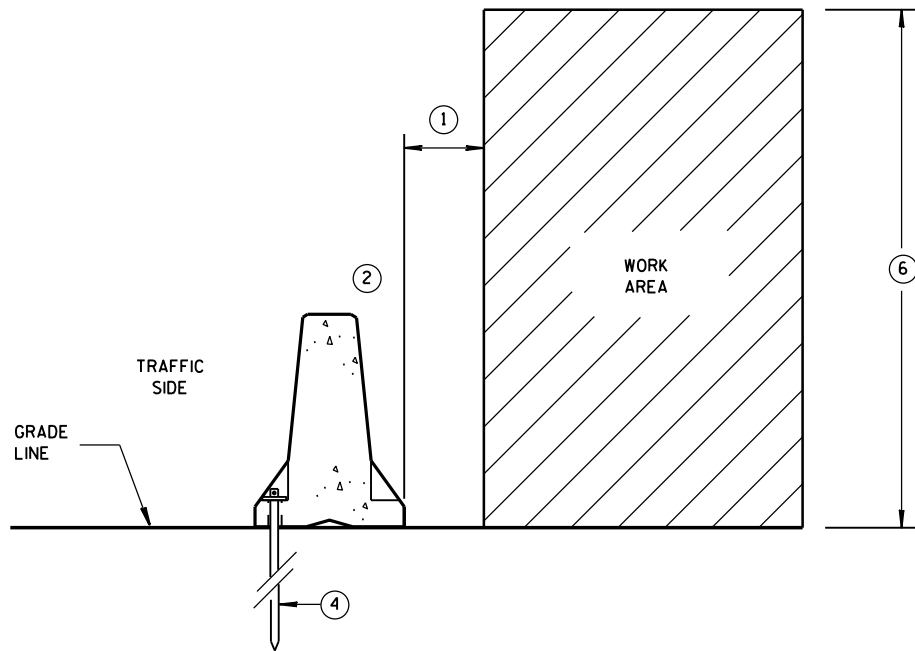
STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



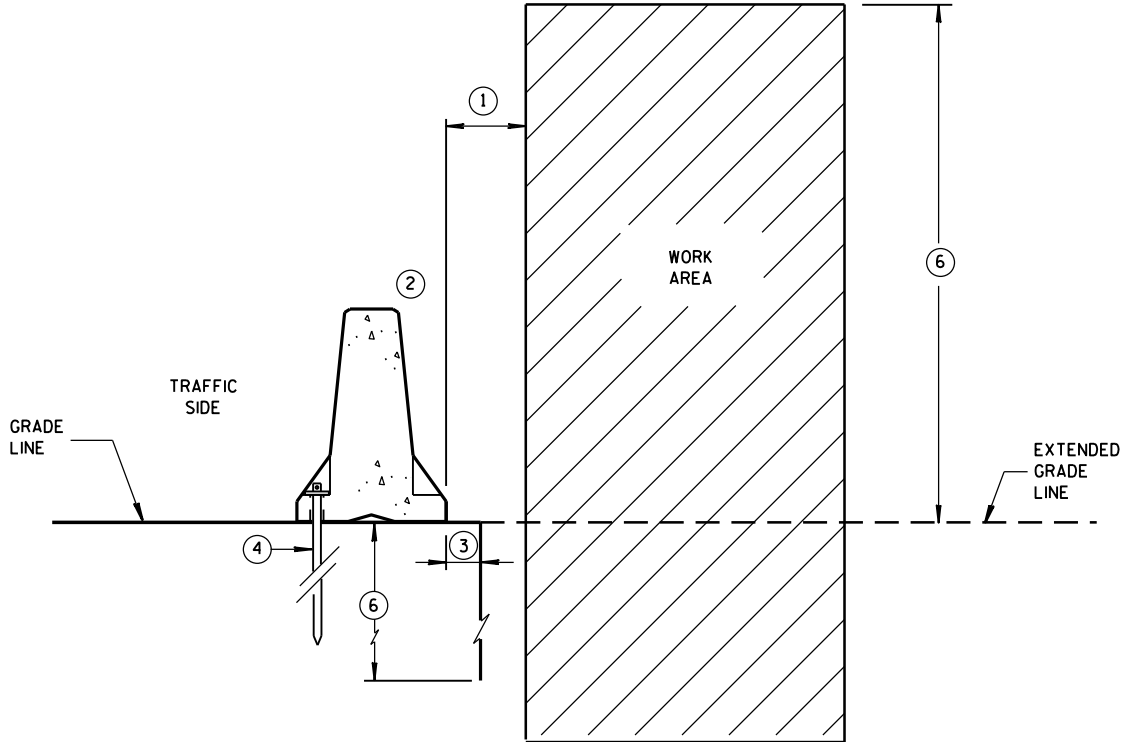
ASPHALT ANCHOR PIN (ASTM A36 STEEL)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



ANCHORED BARRIER SPACE REQUIREMENTS
FOR HAZARDS EXTENDED
ABOVE THE GRADE LINE

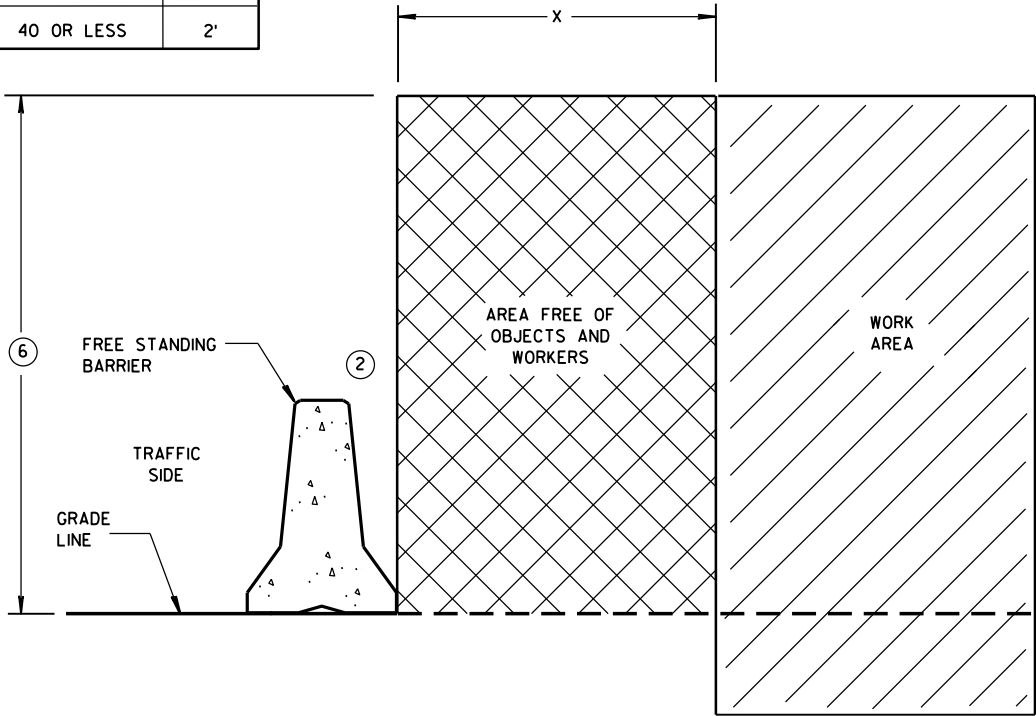


ANCHORED BARRIER SPACE REQUIREMENTS
ON VERTICAL DROP OFFS

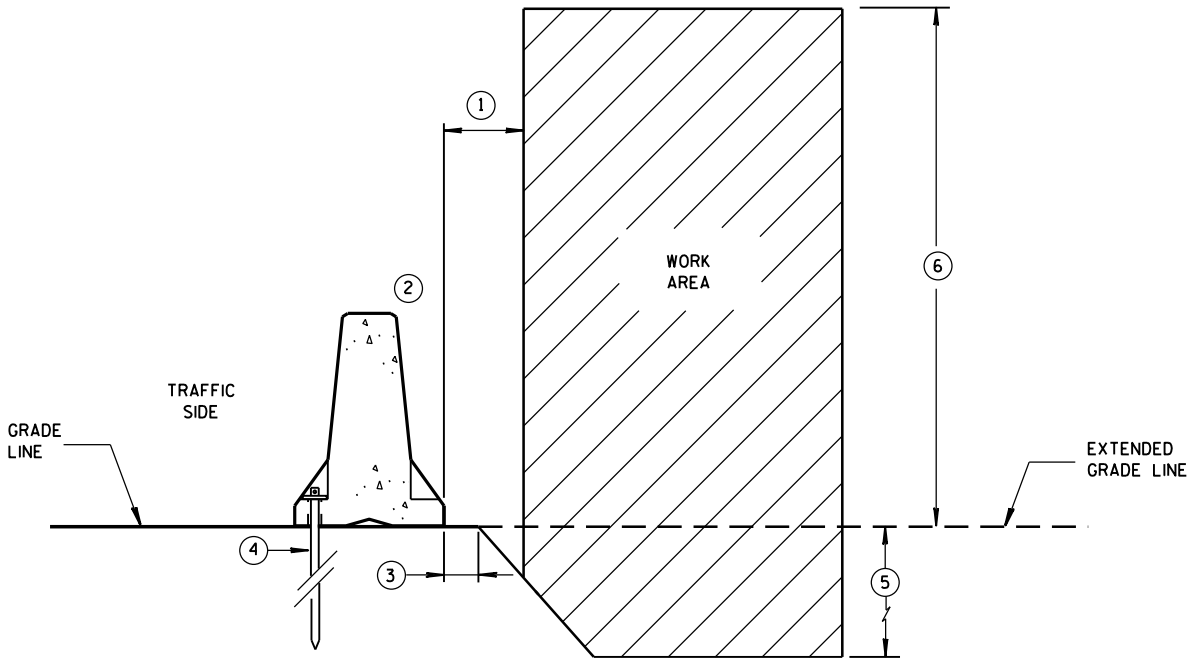
GENERAL NOTES

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

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



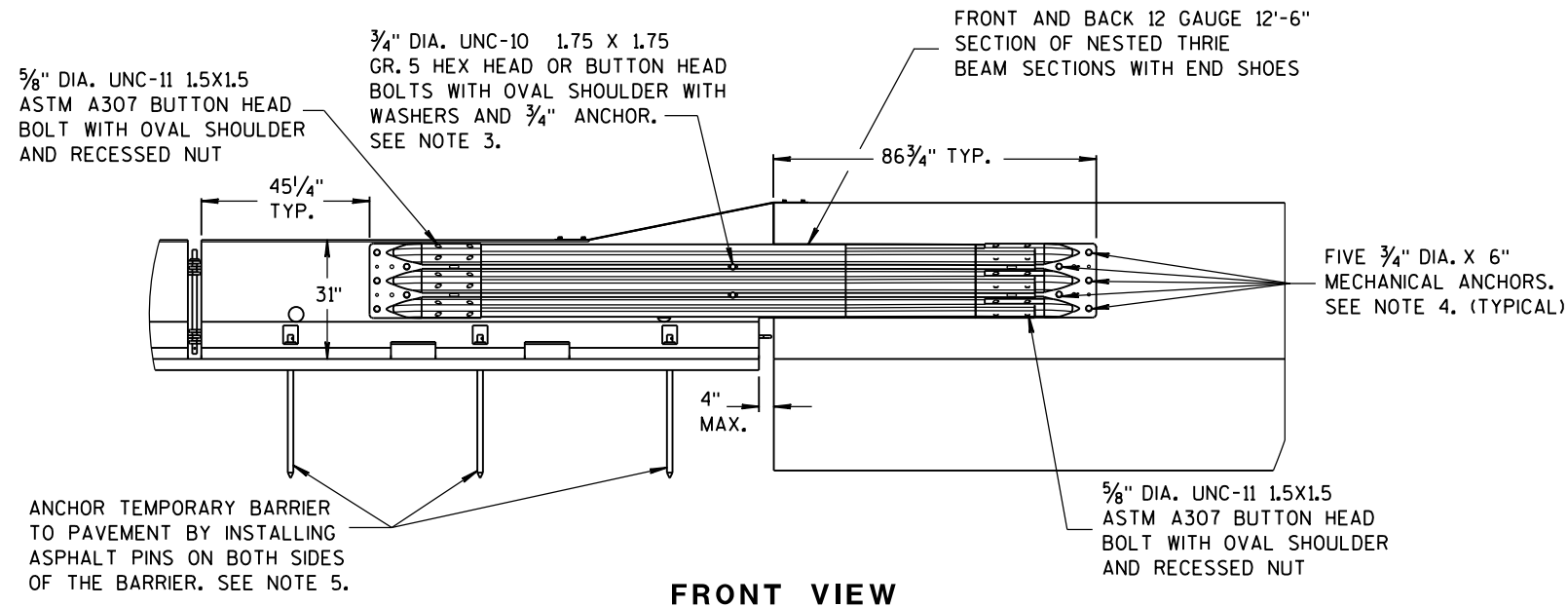
FREE STANDING BARRIER SPACE REQUIREMENTS



ANCHORED BARRIER SPACE REQUIREMENTS
ON SLOPES

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



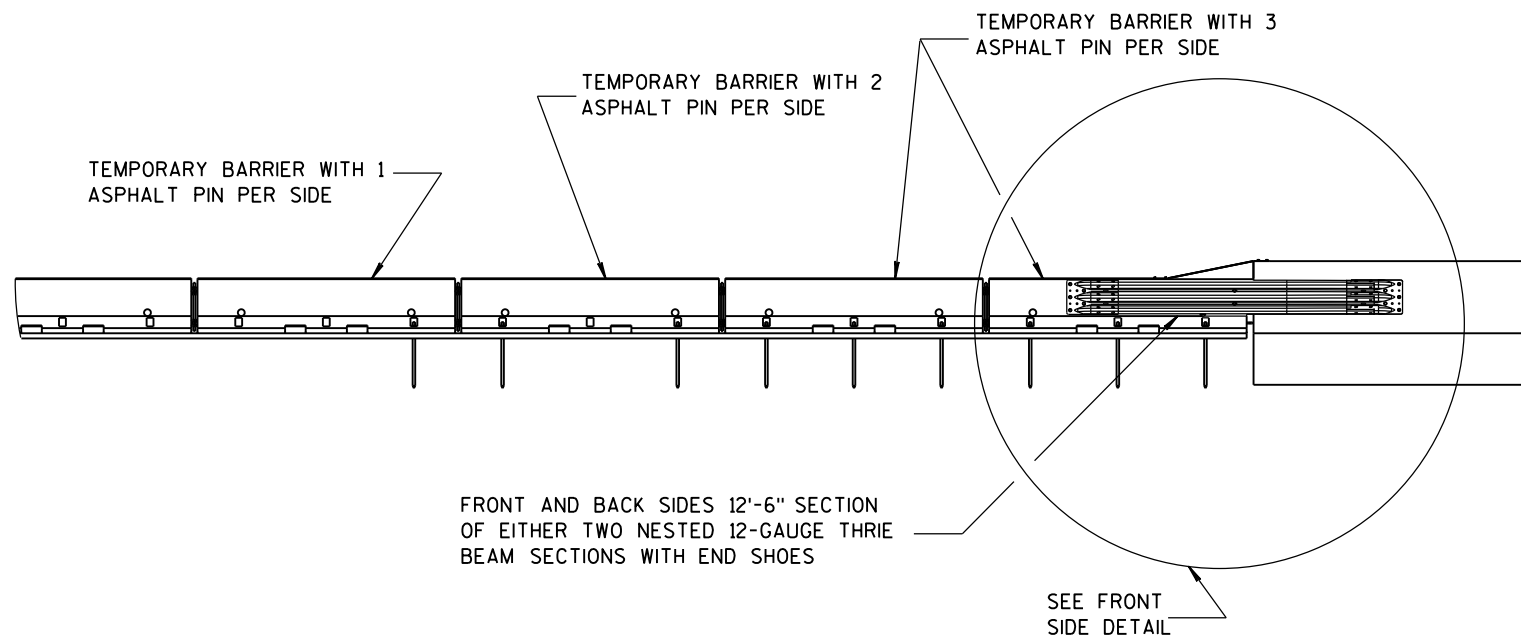
FRONT VIEW

NOTES

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

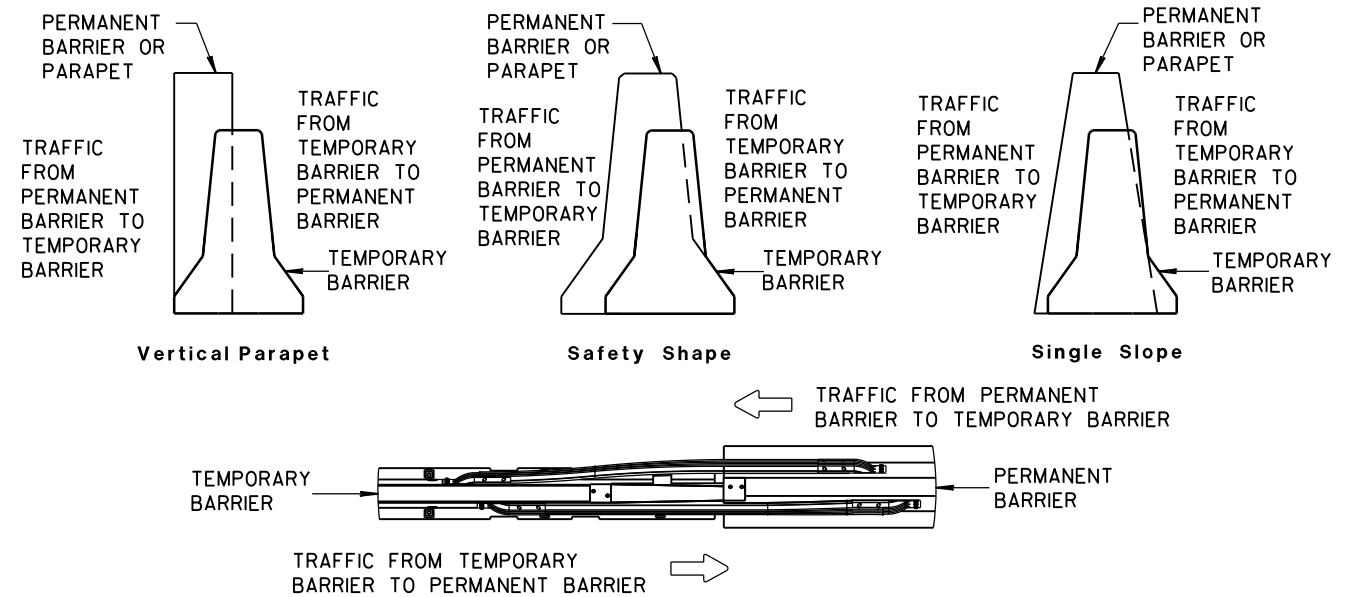
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.

4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

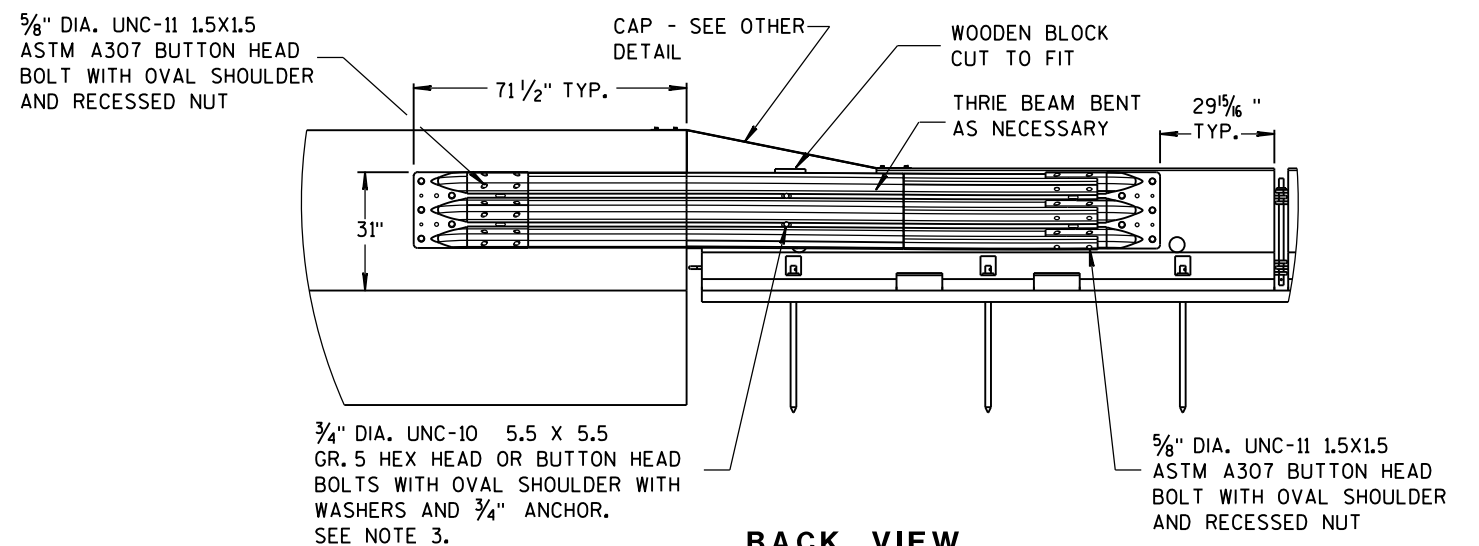


FRONT VIEW

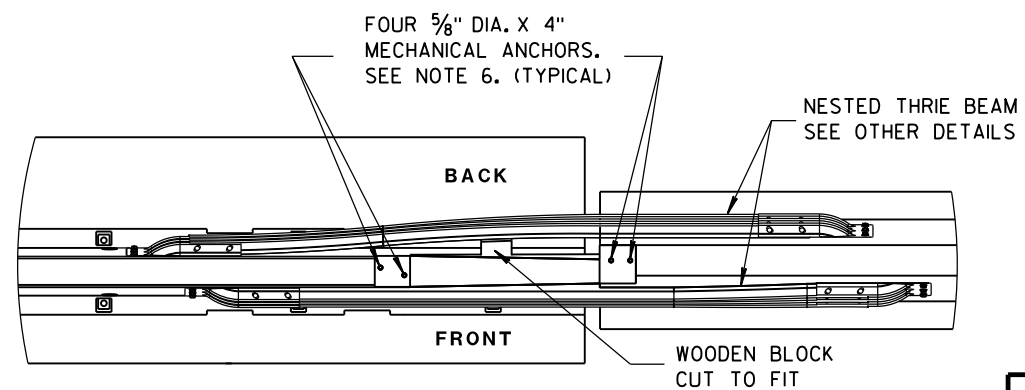
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



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



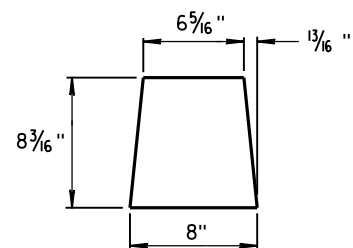
BACK VIEW



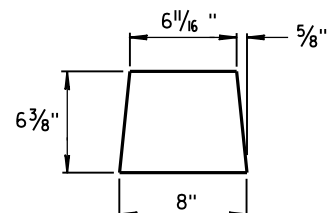
PLAN VIEW

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

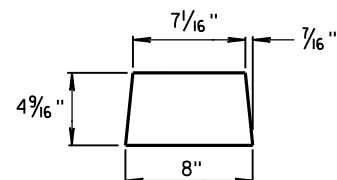
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



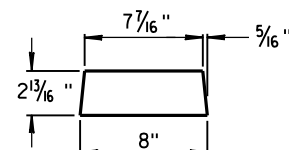
GUSSET 1



GUSSET 2

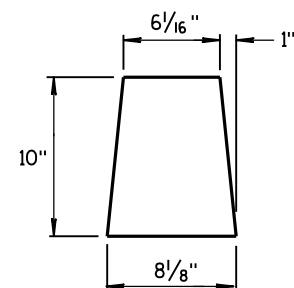


GUSSET 3

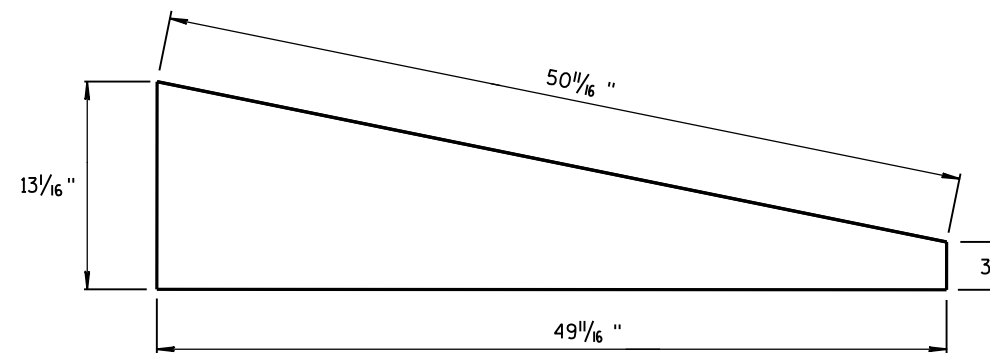


GUSSET 4

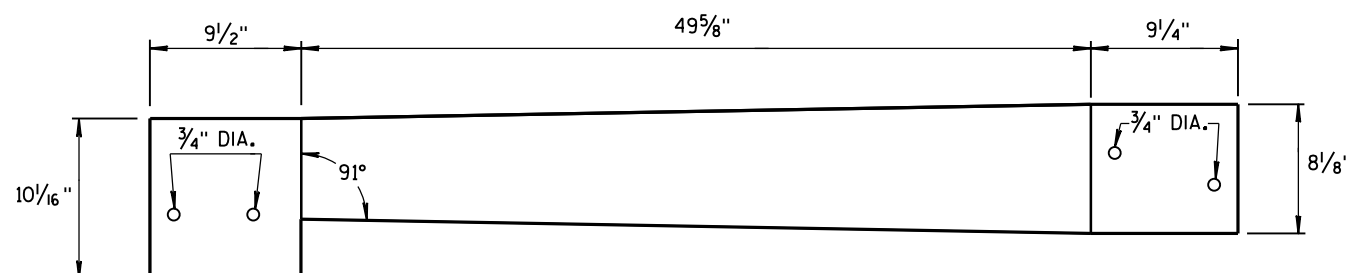
GUSSETS



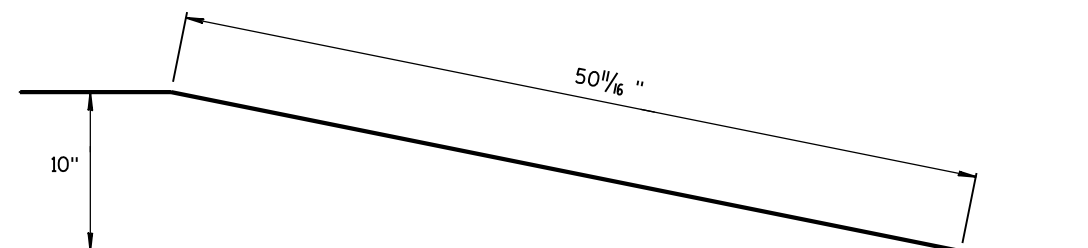
END PLATE



SIDE PLATE

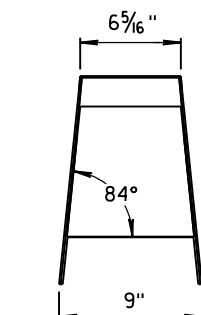
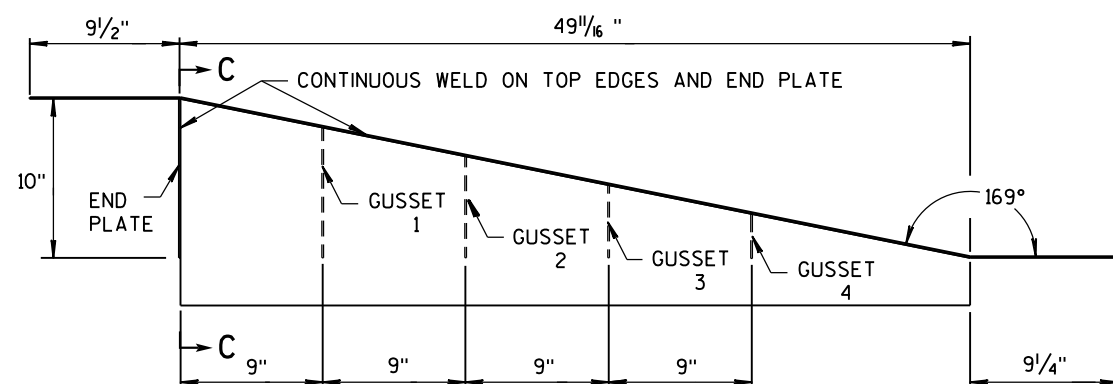
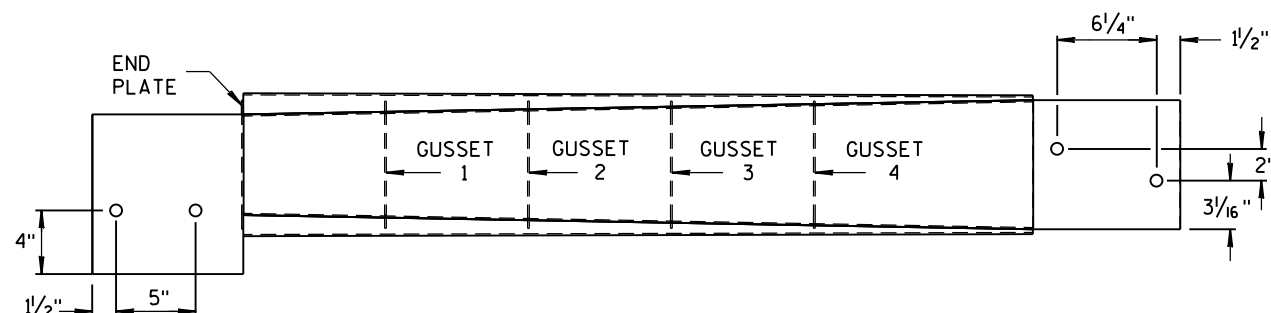


TOP PLATE



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

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



SECTION C-C

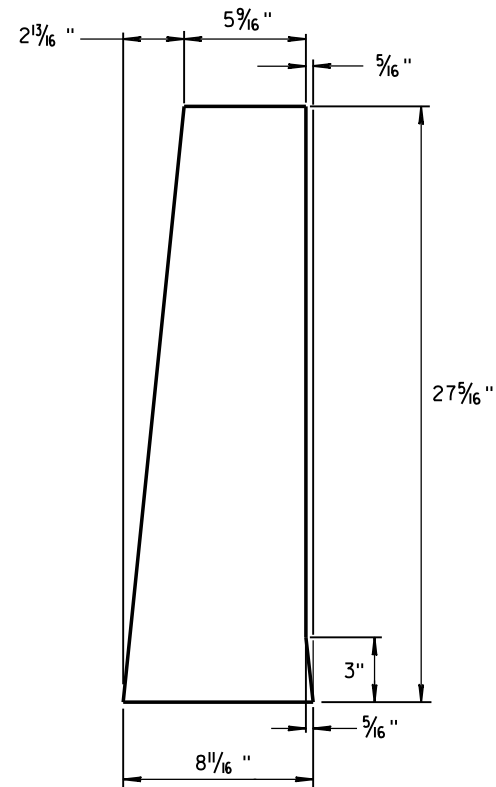
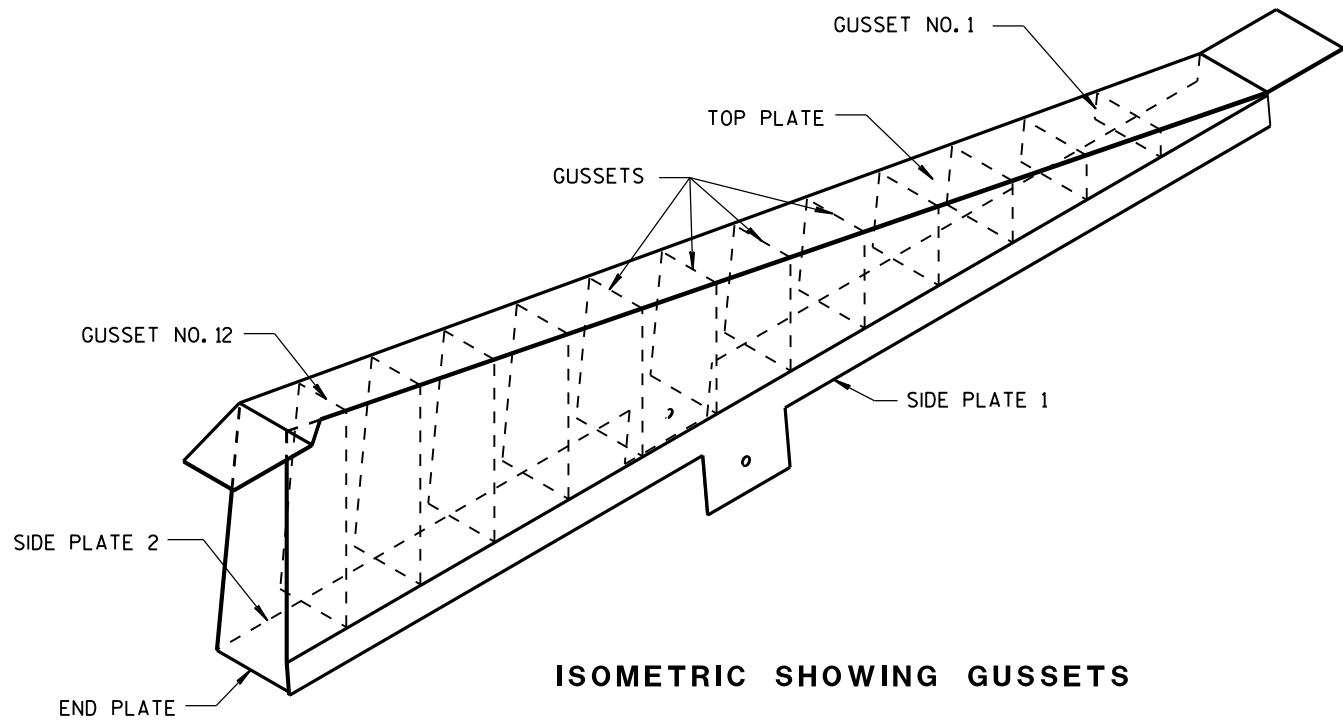
NOTES

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

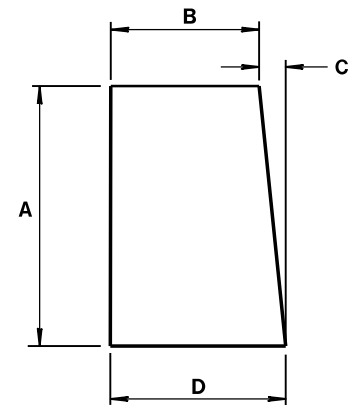
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



END PLATE
1/8" STEEL PLATE

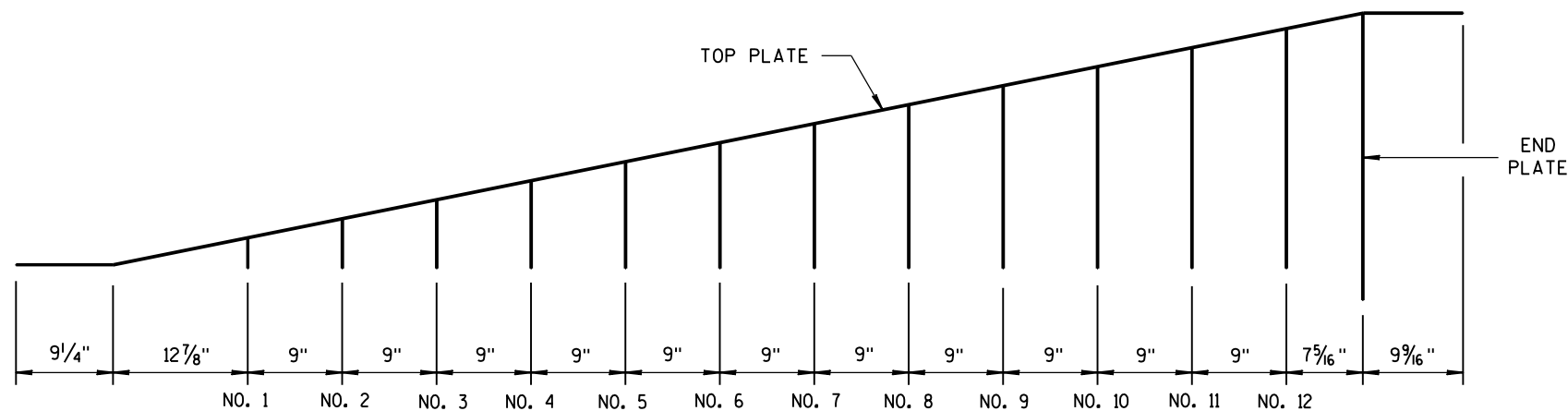


GUSSETS 1 - 12
ALL GUSSETS 1/8" STEEL PLATE

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

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

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

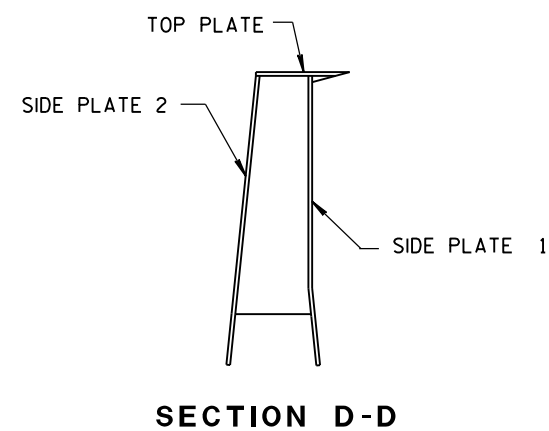
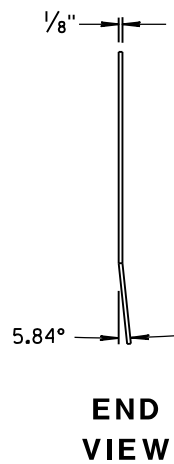
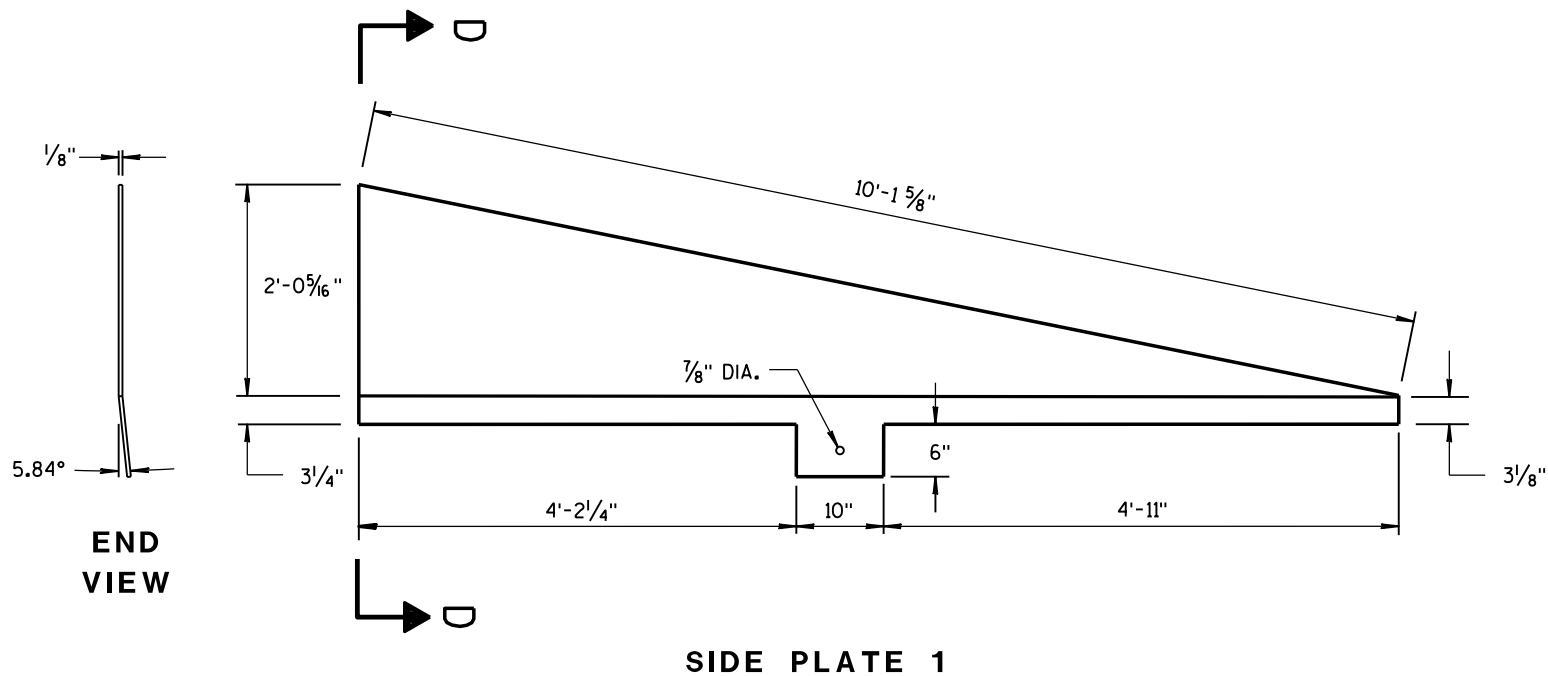
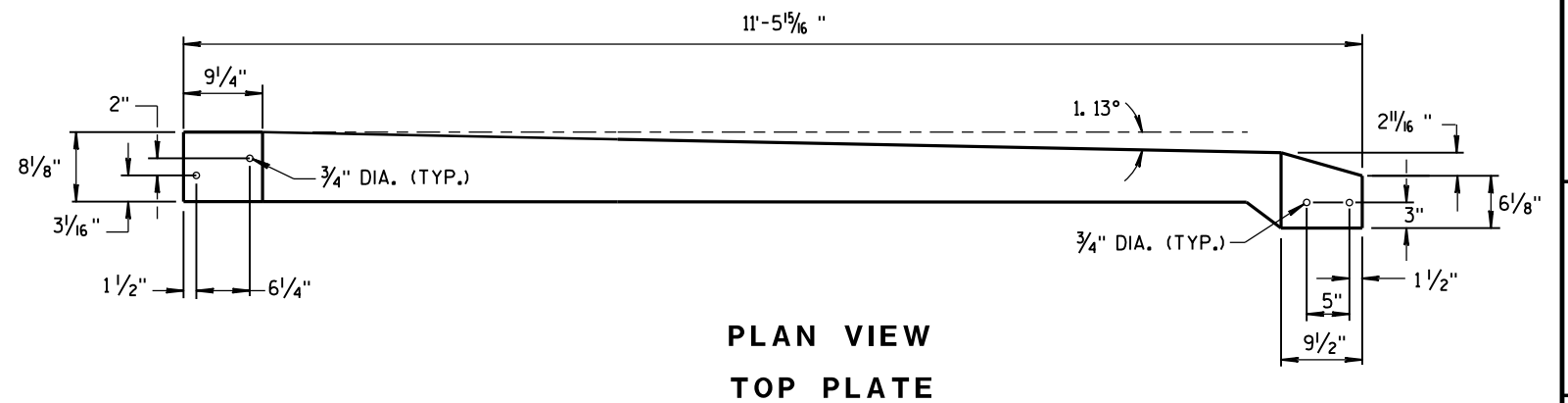
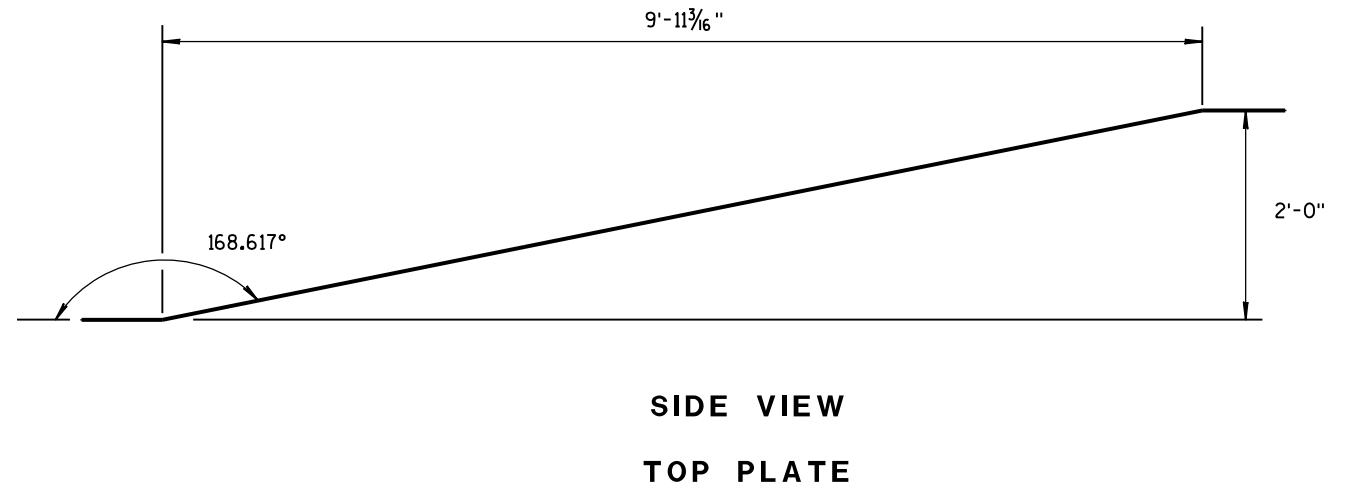
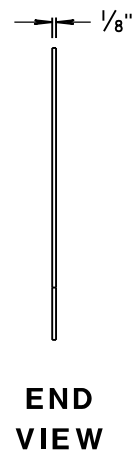
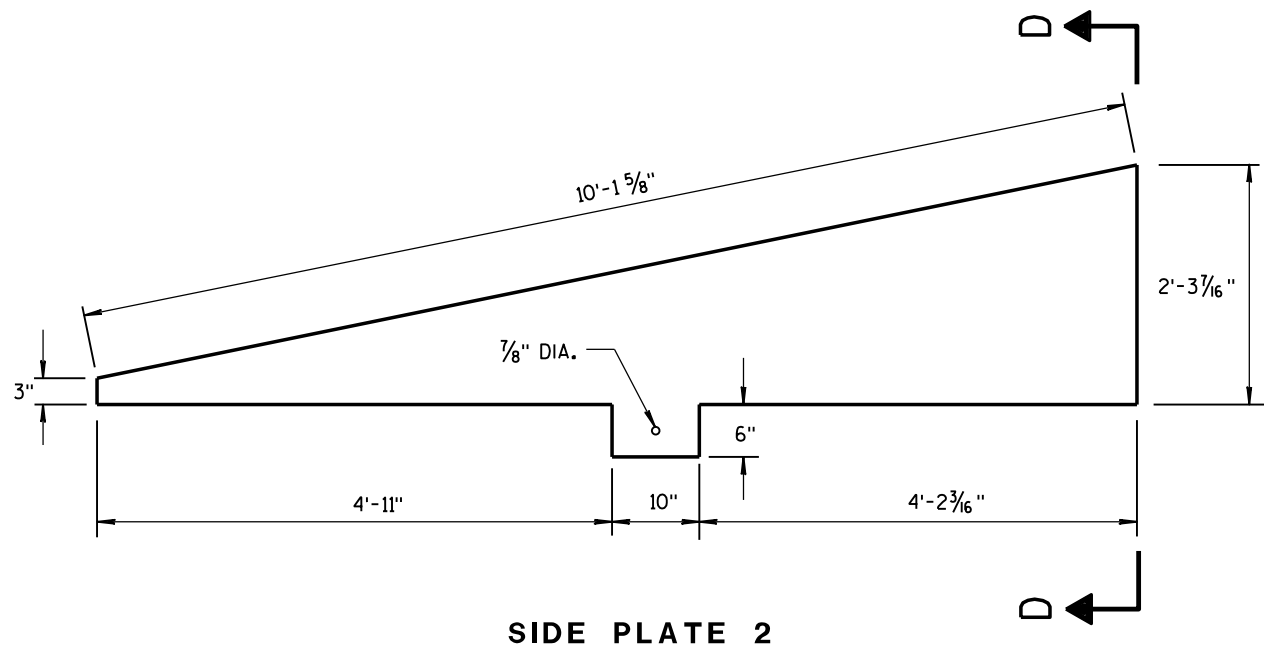


GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED June 2017	/S/ Rodney Taylor		
DATE	ROADWAY STANDARD	71	ENT
FHWA	UNIT SUPERV		

6

- S.D.D. 14 B 15-11a**

S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



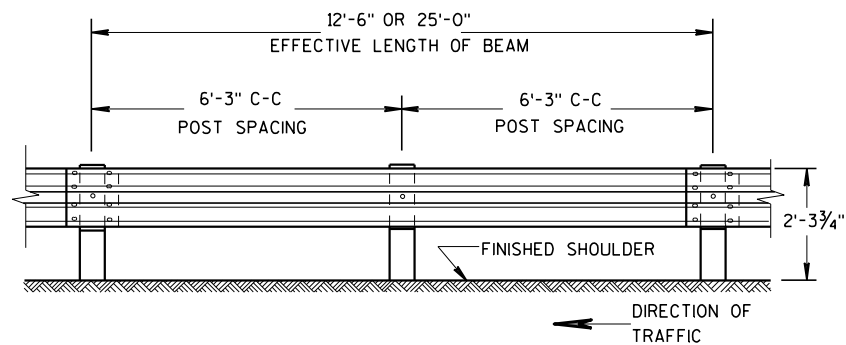
S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a

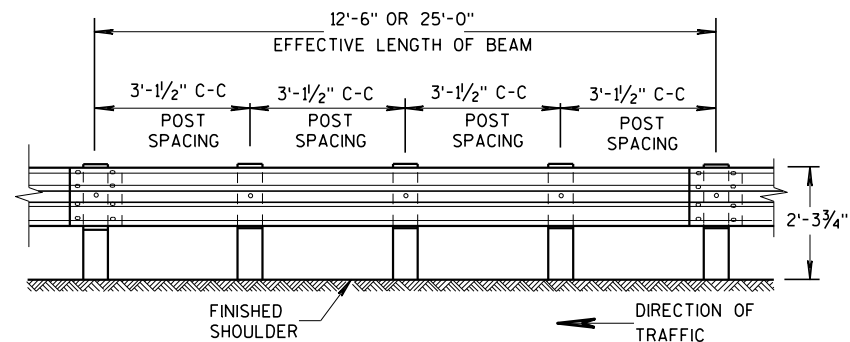
S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a



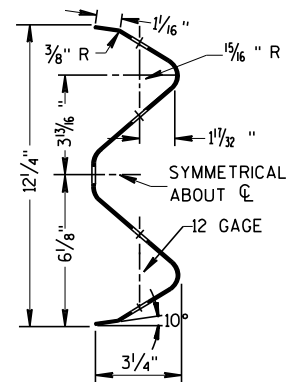
FRONT VIEW

POST SPACING STANDARD INSTALLATION

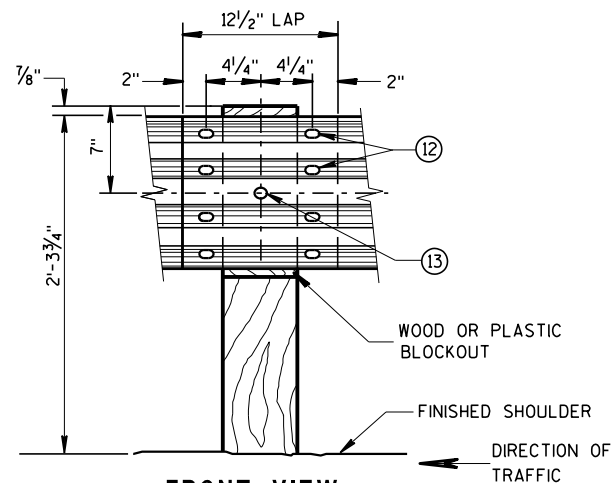


FRONT VIEW

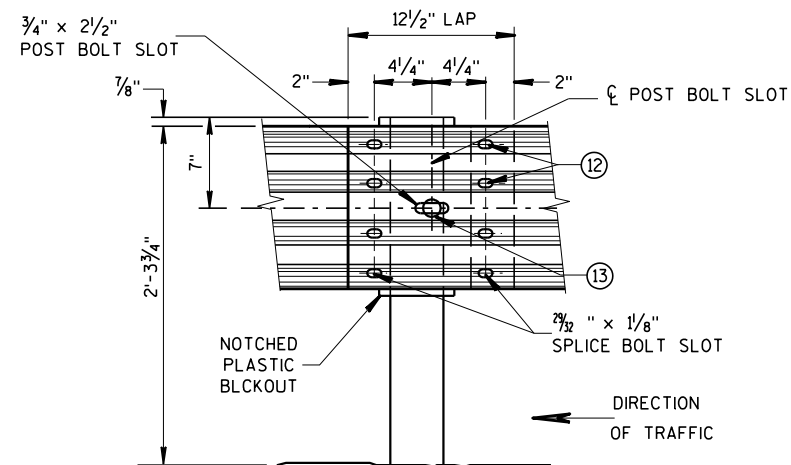
POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL

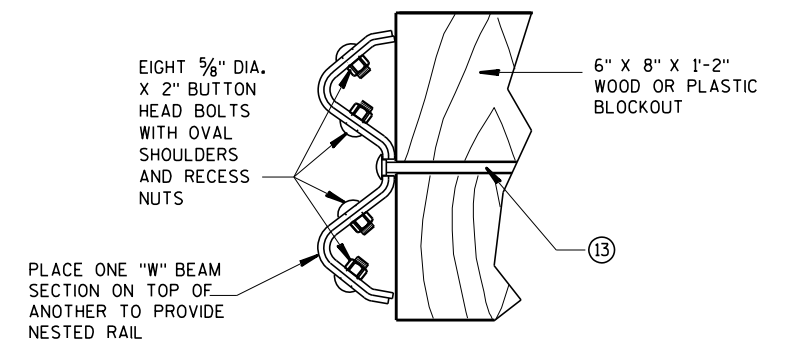


FRONT VIEW
BEAM SPLICE AT STEEL POST
TYPICAL SPlicing DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

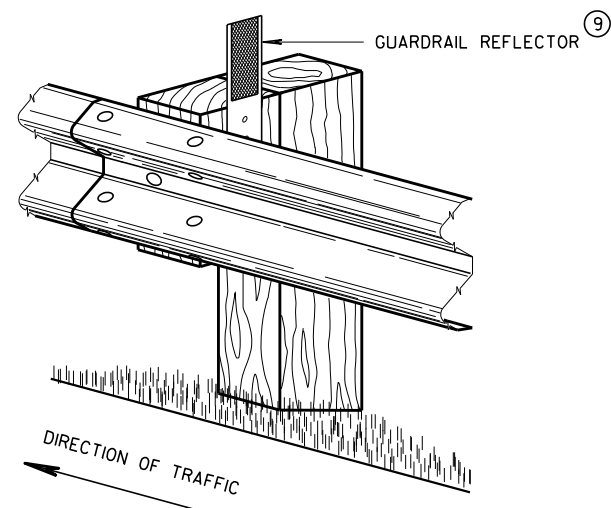
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



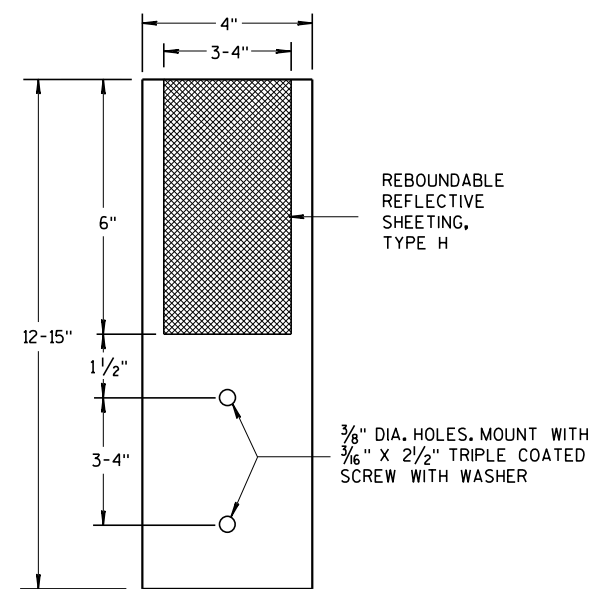
NESTED W BEAM (NW)

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

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



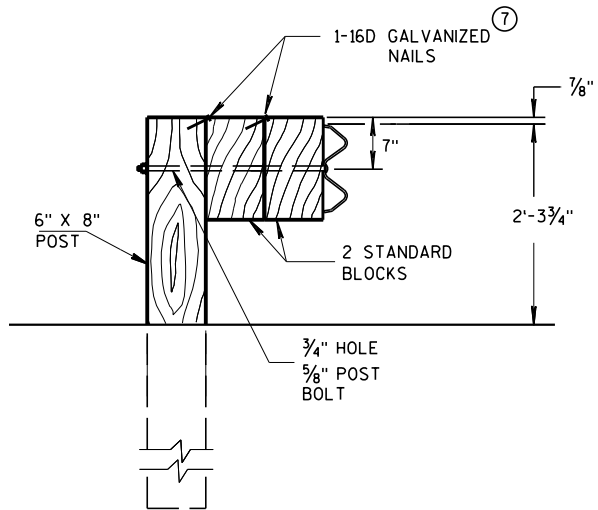
4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

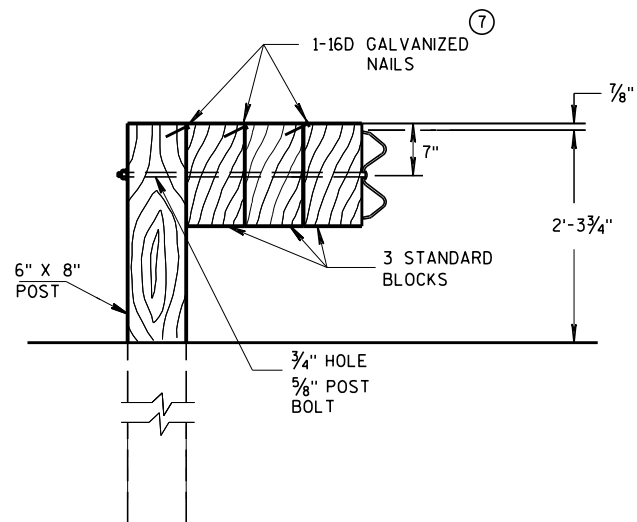
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCO⁷³
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

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

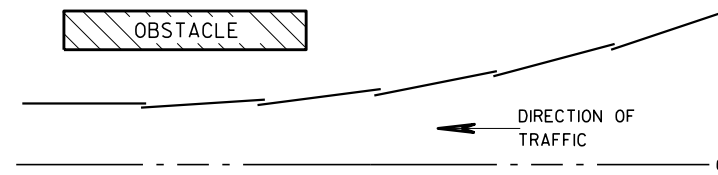


DETAIL FOR TRIPLE BLOCKS

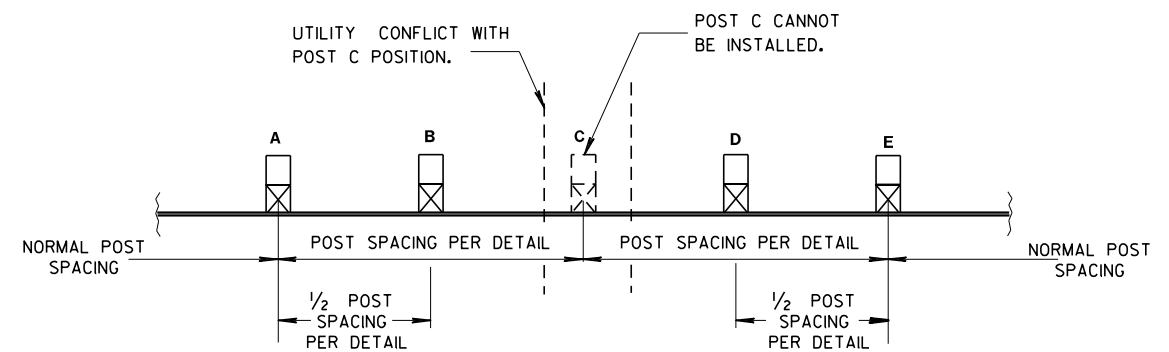
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW BEAM LAPPING DETAIL

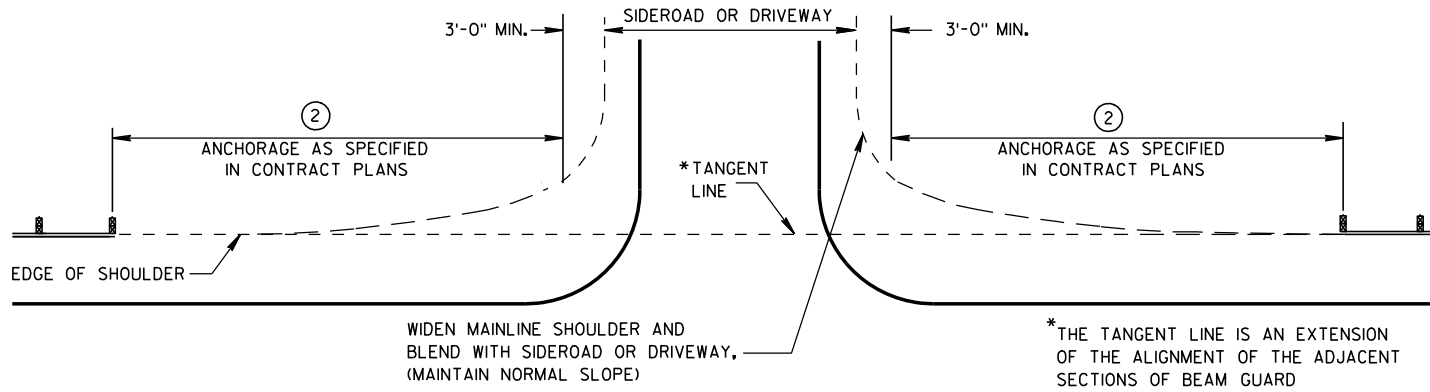


POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

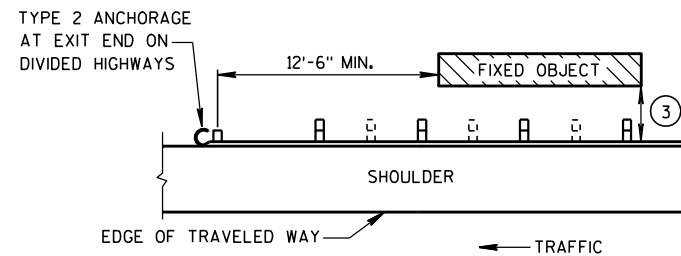
STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

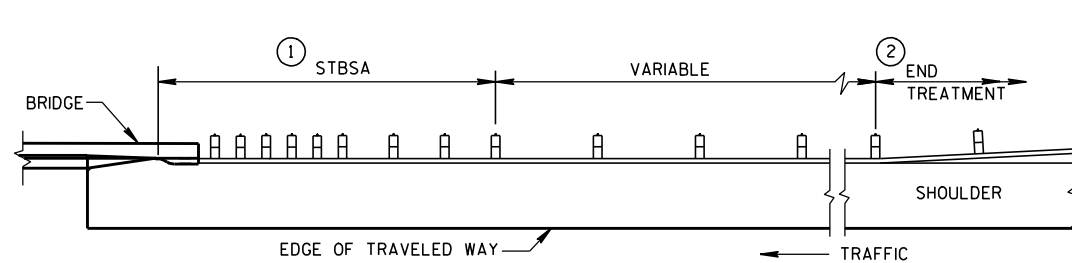
APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 74 UNIT SUPERVISOR
FHWA



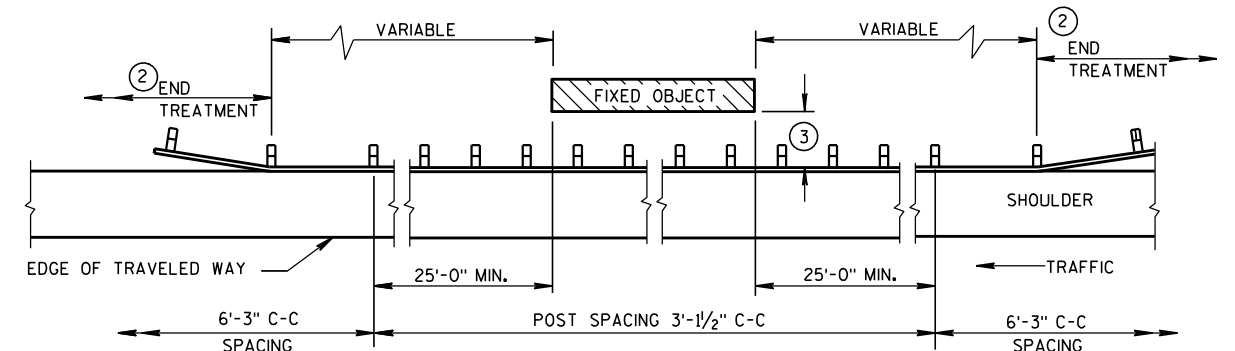
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES

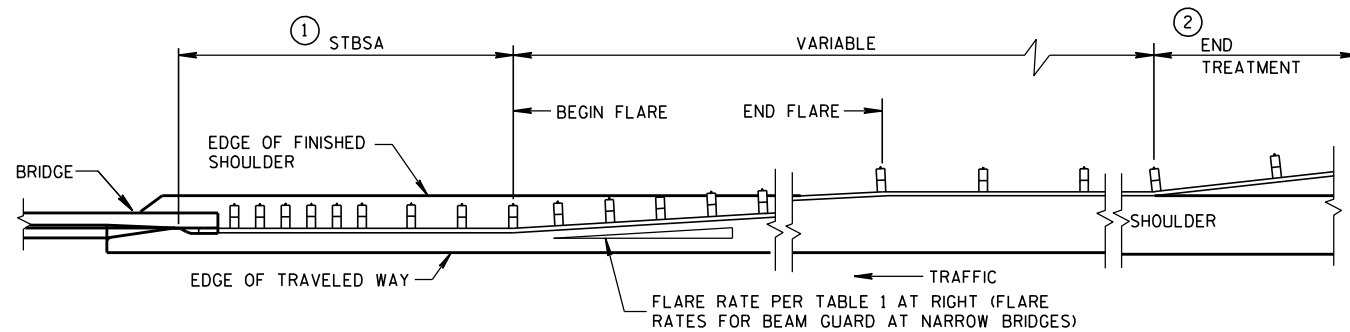


BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1



BEAM GUARD AT NARROW BRIDGES (FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

- STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1 1/2"
4'-6"	6' - 3"

STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-21-07

DATE

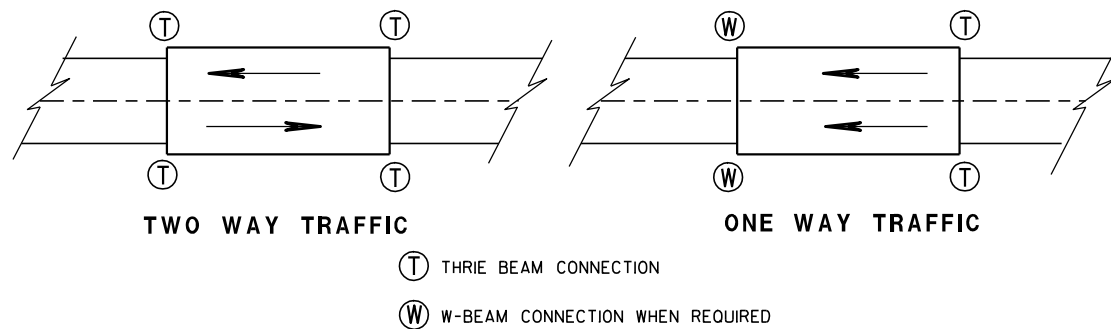
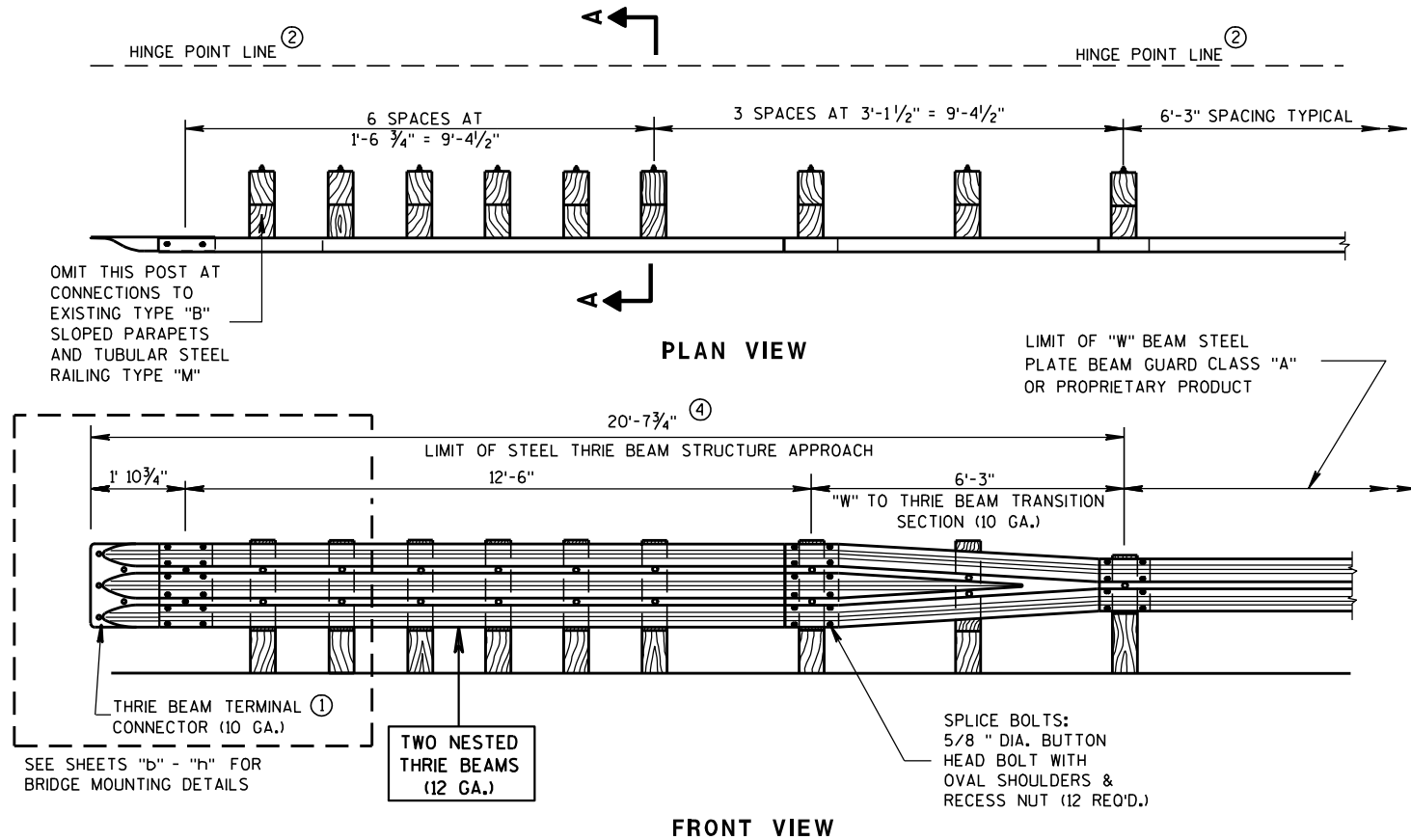
FHWA

/s/ Jerry H. Zoon

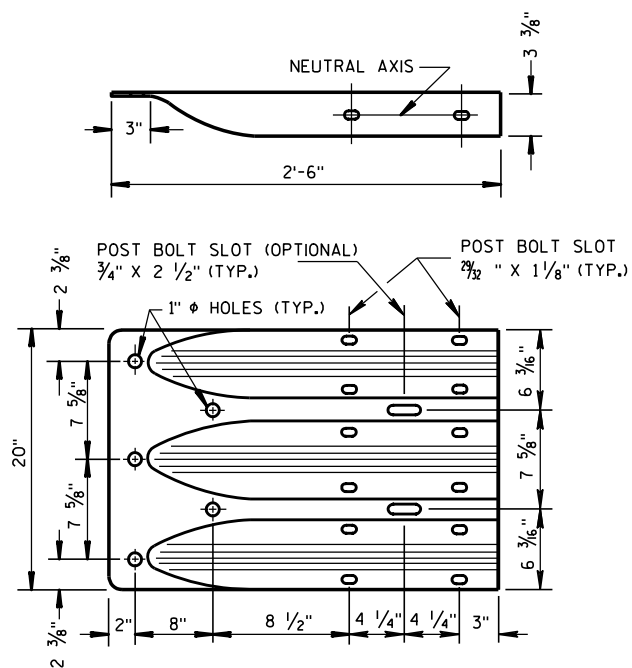
ROADWAY STANDARDS

ENGINEER

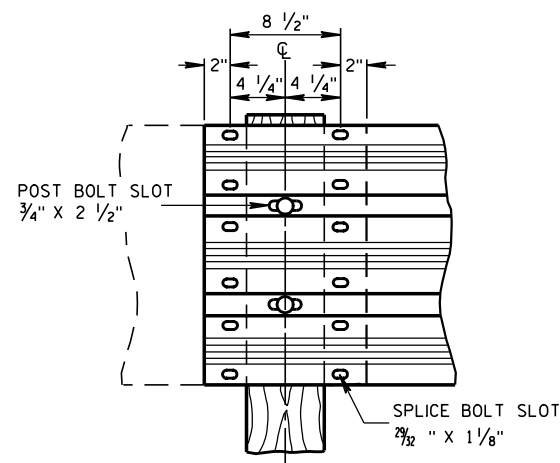
INT



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



THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

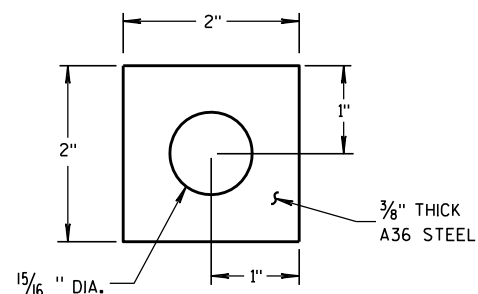
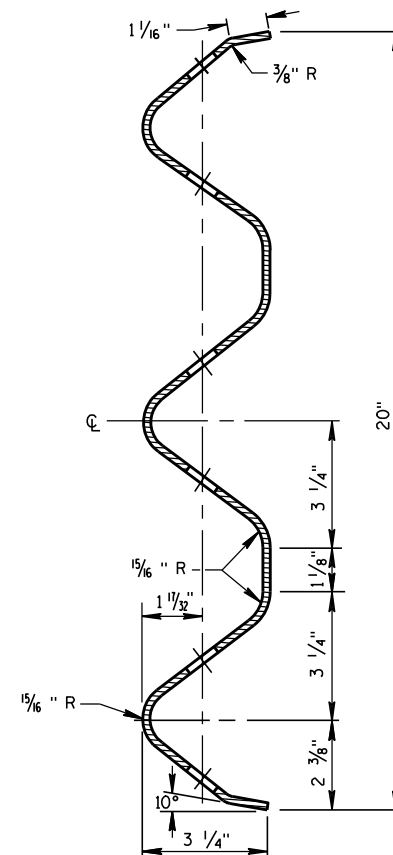


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

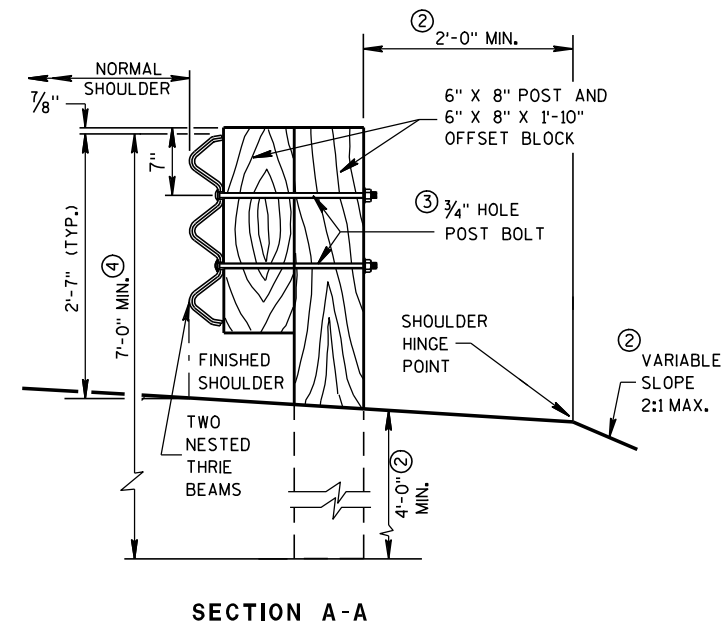
GENERAL NOTES

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".

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

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
- ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

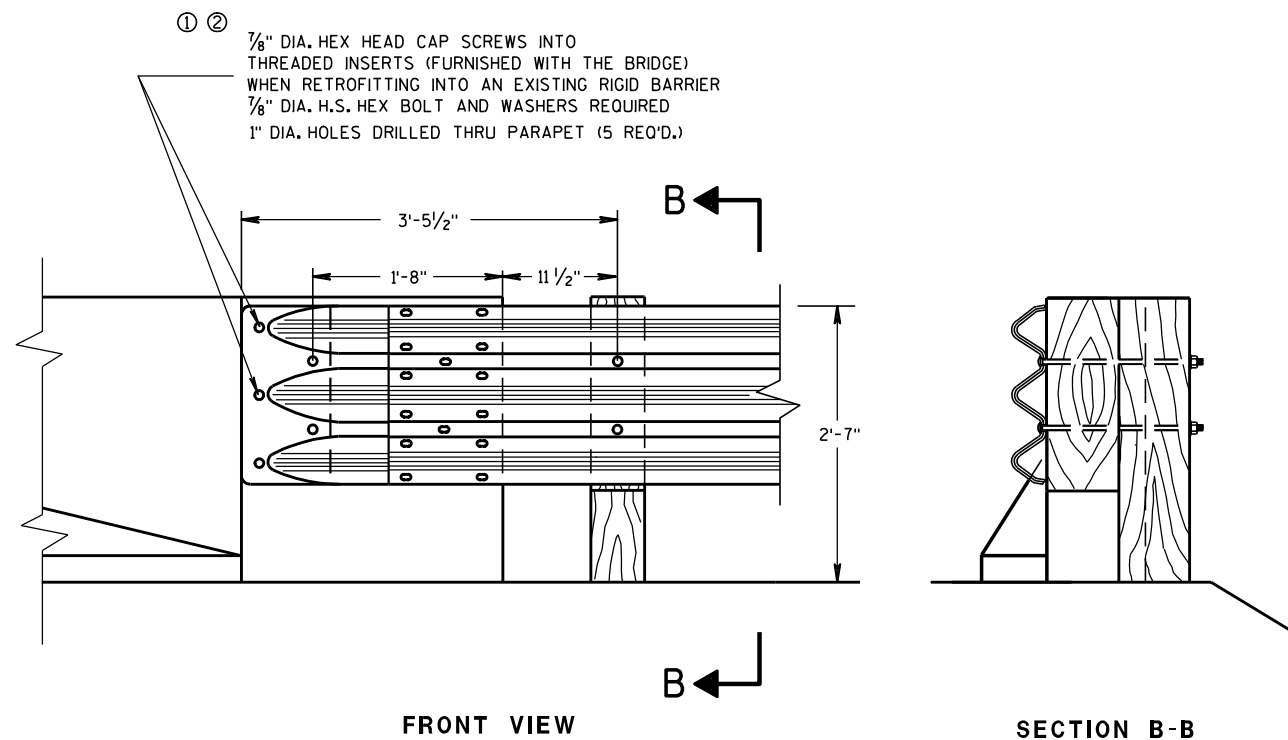
FHWA

/s/ Jerry H. Zoon

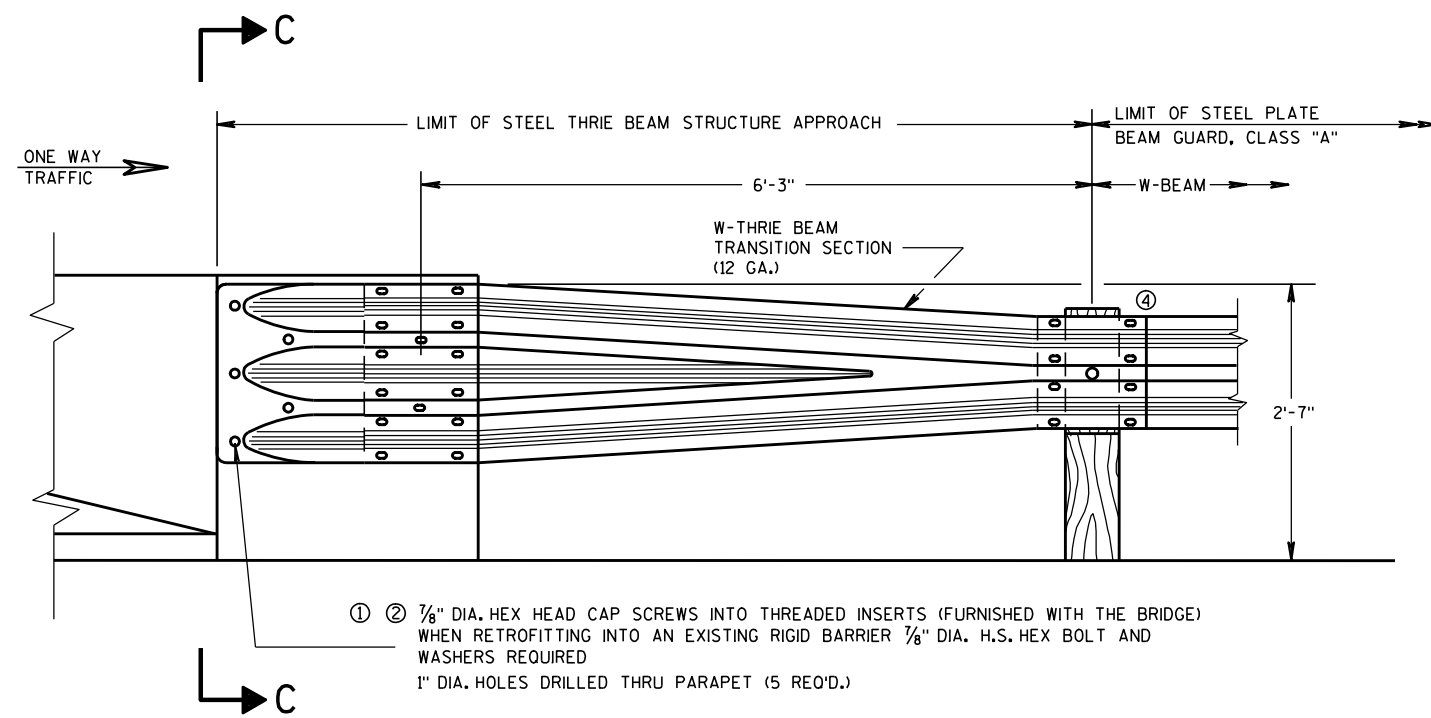
ROADWAY STANDARDS 176

ENGINEER

INT



THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS



W BEAM TRANSITION AND CONNECTION TO
BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

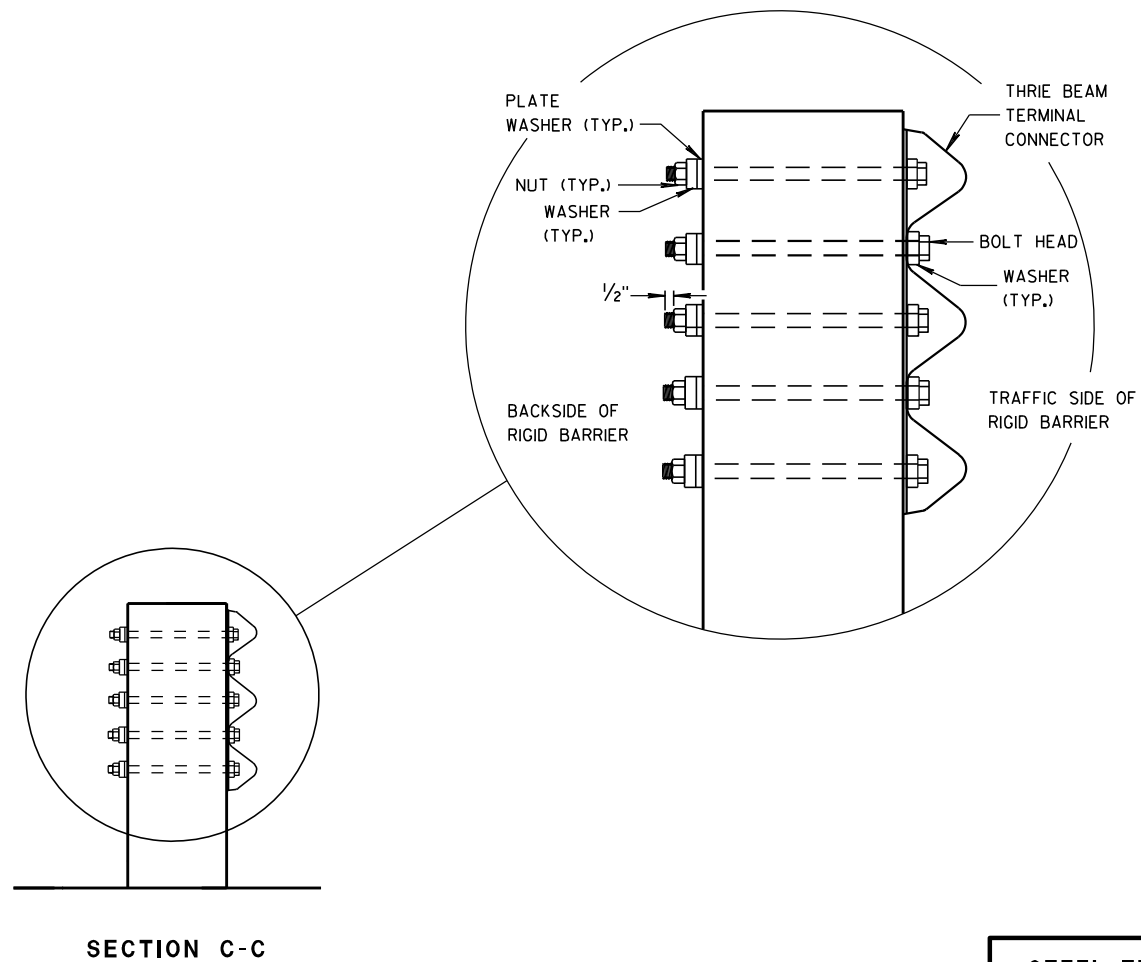
GENERAL NOTES

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

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

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 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".
- ④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

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



STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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8/31/2012
DATE

FHWA

/S/ Jerry H. Zapp
ROADWAY STANDARDS
ENGINEER

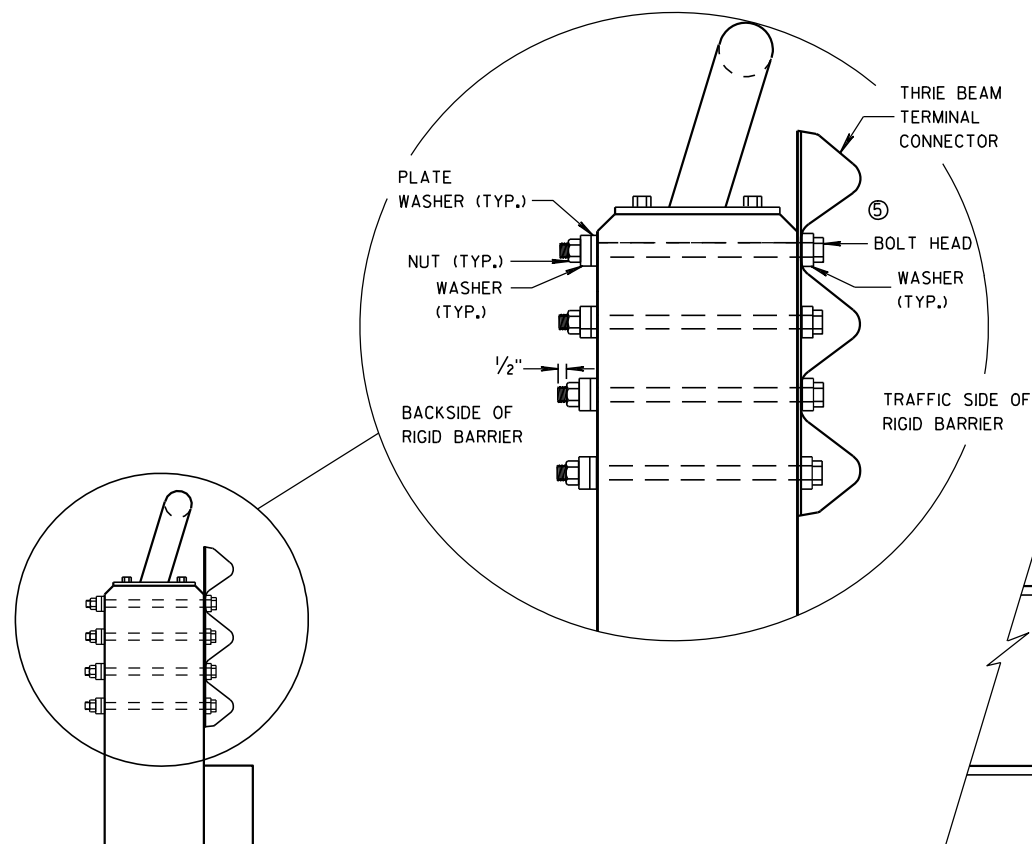
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GENERAL NOTES

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

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

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 - 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 $\frac{1}{2}$ ".
 - ④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.
 - ⑤ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PARAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.
- DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

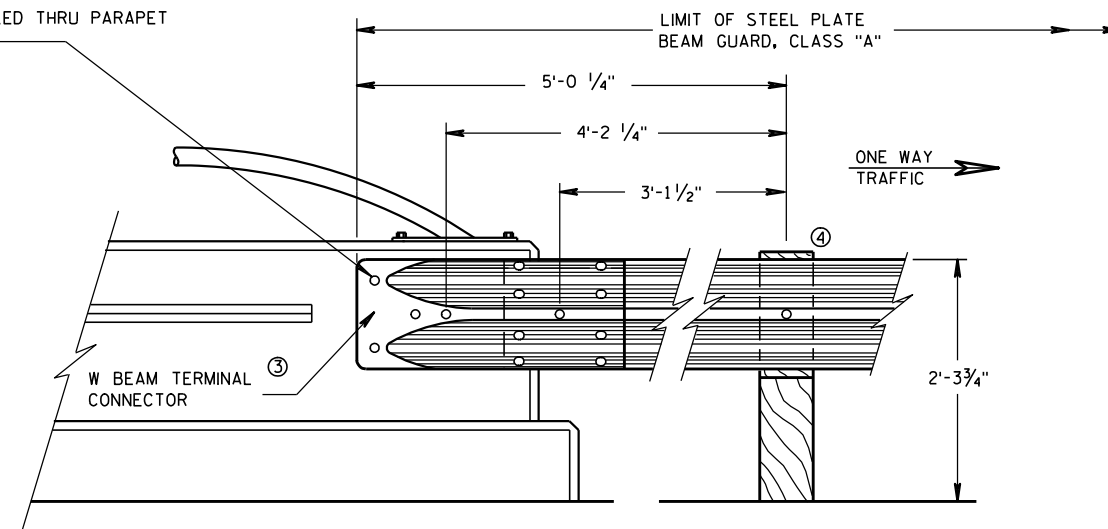


SECTION E-E

- ① ② $\frac{7}{8}$ " DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER $\frac{7}{8}$ " DIA. H.S. HEX BOLT AND WASHERS REQUIRED
- 1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

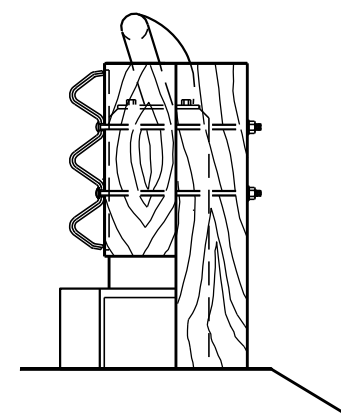
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

- ① ② $\frac{7}{8}$ " DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER $\frac{7}{8}$ " DIA. H.S. HEX BOLT AND WASHERS REQUIRED
- 1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)



FRONT VIEW

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



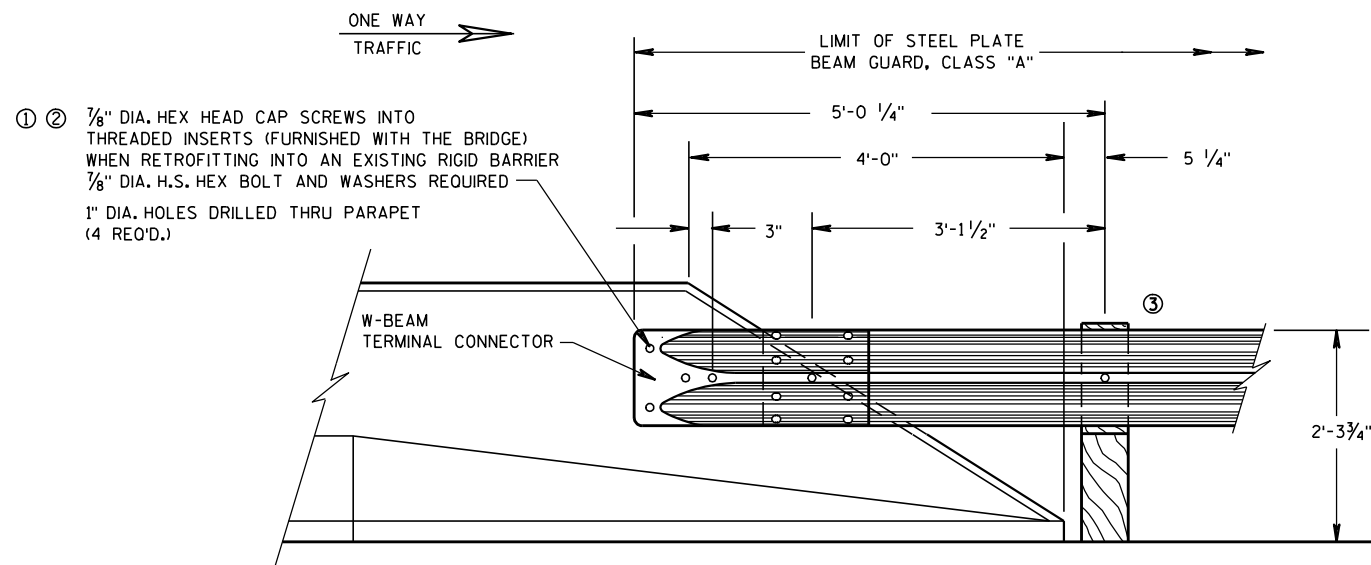
SECTION D-D

FRONT VIEW

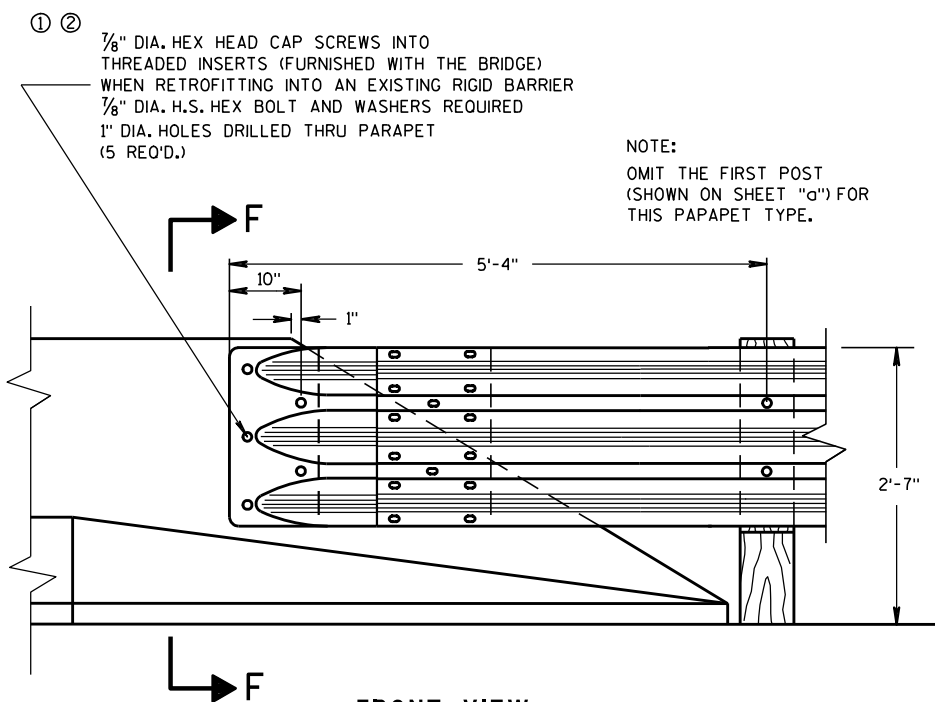
STEEL THRIE BEAM STRUCTURE
APPROACH CONNECTION TO
VERTICAL FACED PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

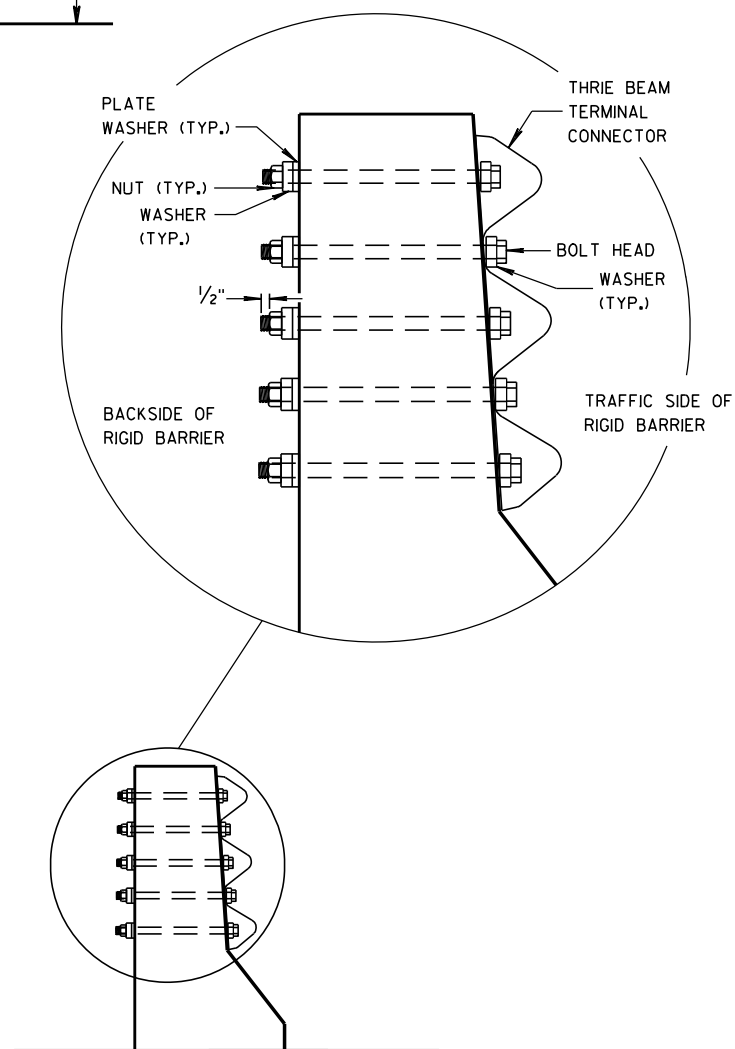
APPROVED
8/31/2012 DATE /S/ Jerry H. Zoon
DATE ROADWAY STANDARDS 178 INT
FHWA ENGINEER



FRONT VIEW
W BEAM CONNECTION TO
PARAPETS WITH SLOPED ENDS
 (USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)



THRIE BEAM CONNECTION TO BRIDGE
PARAPETS WITH SLOPED ENDS



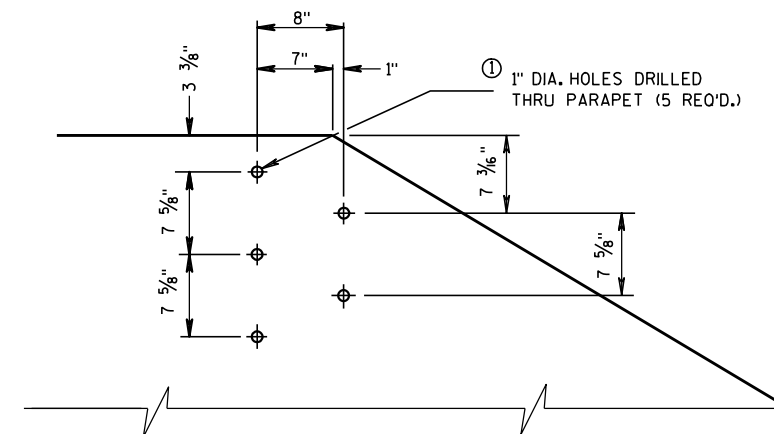
SECTION F-F

GENERAL NOTES

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

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

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

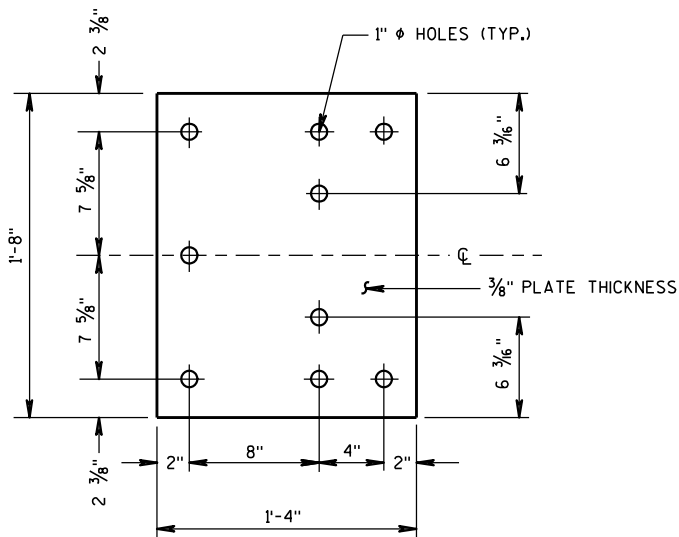


DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION

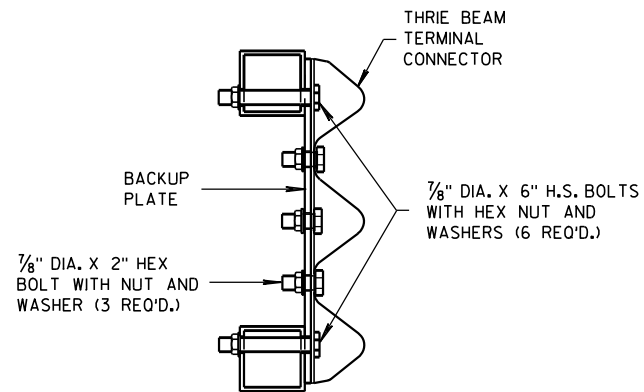
STEEL THRIE BEAM STRUCTURE APPROACH CONNECTION TO SLOPED END PARAPETS

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

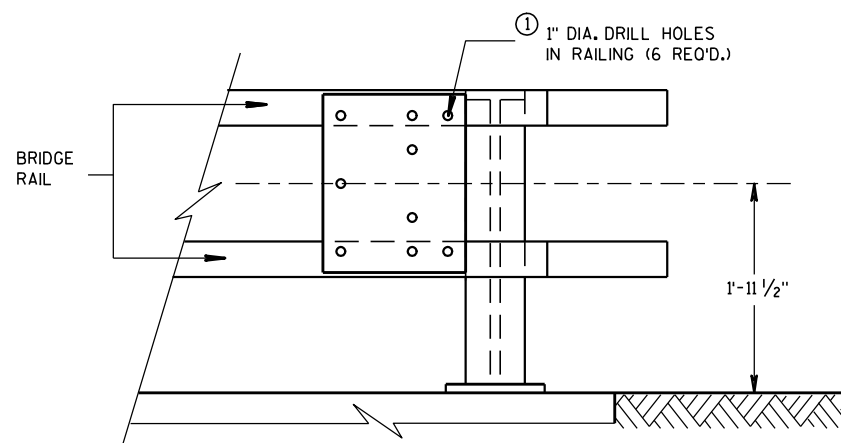
APPROVED
 8/31/2012 DATE /S/ Jerry H. Zoppo
 ROADWAY STANDARDS (79) ENT
 FHWA ENGINEER



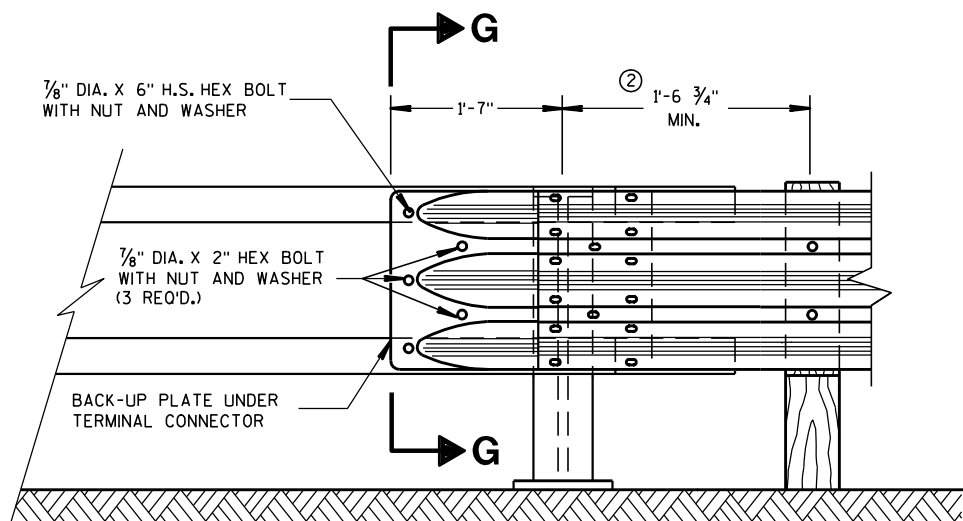
BACK-UP PLATE DETAIL



SECTION G-G

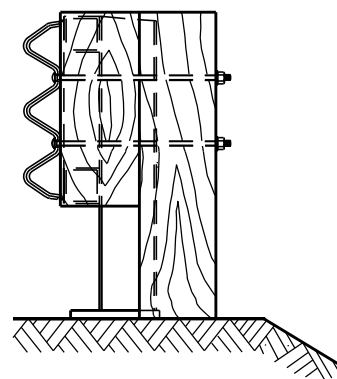


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

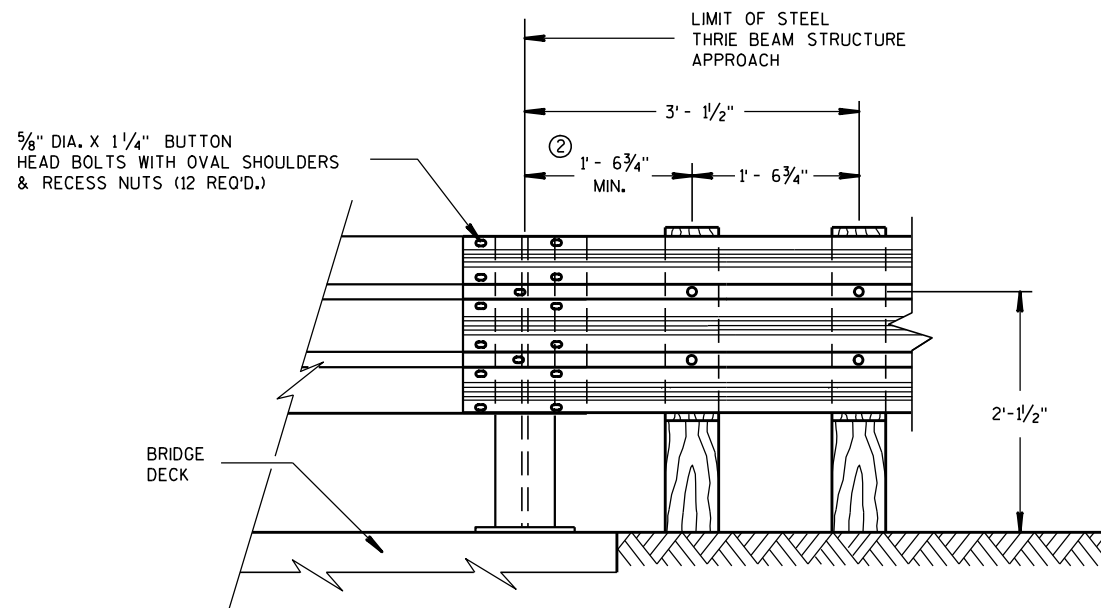


END VIEW

GENERAL NOTES

BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL AS CLOSE AS FEASIBLE TO THE STEEL END POST.



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

STEEL THRIE BEAM STRUCTURE
APPROACH, CONNECTION TO BRIDGE
RAILING TYPES "F" AND "W"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

FHWA

/S/ Jerry H. Zapp
ROADWAY STANDARDS 80 ENT
ENGINEER

6

- S.D.D. 14 B 20-11f**



PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"



BACK-UP PLATE DETAIL, TYPE "M"



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



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



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



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



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



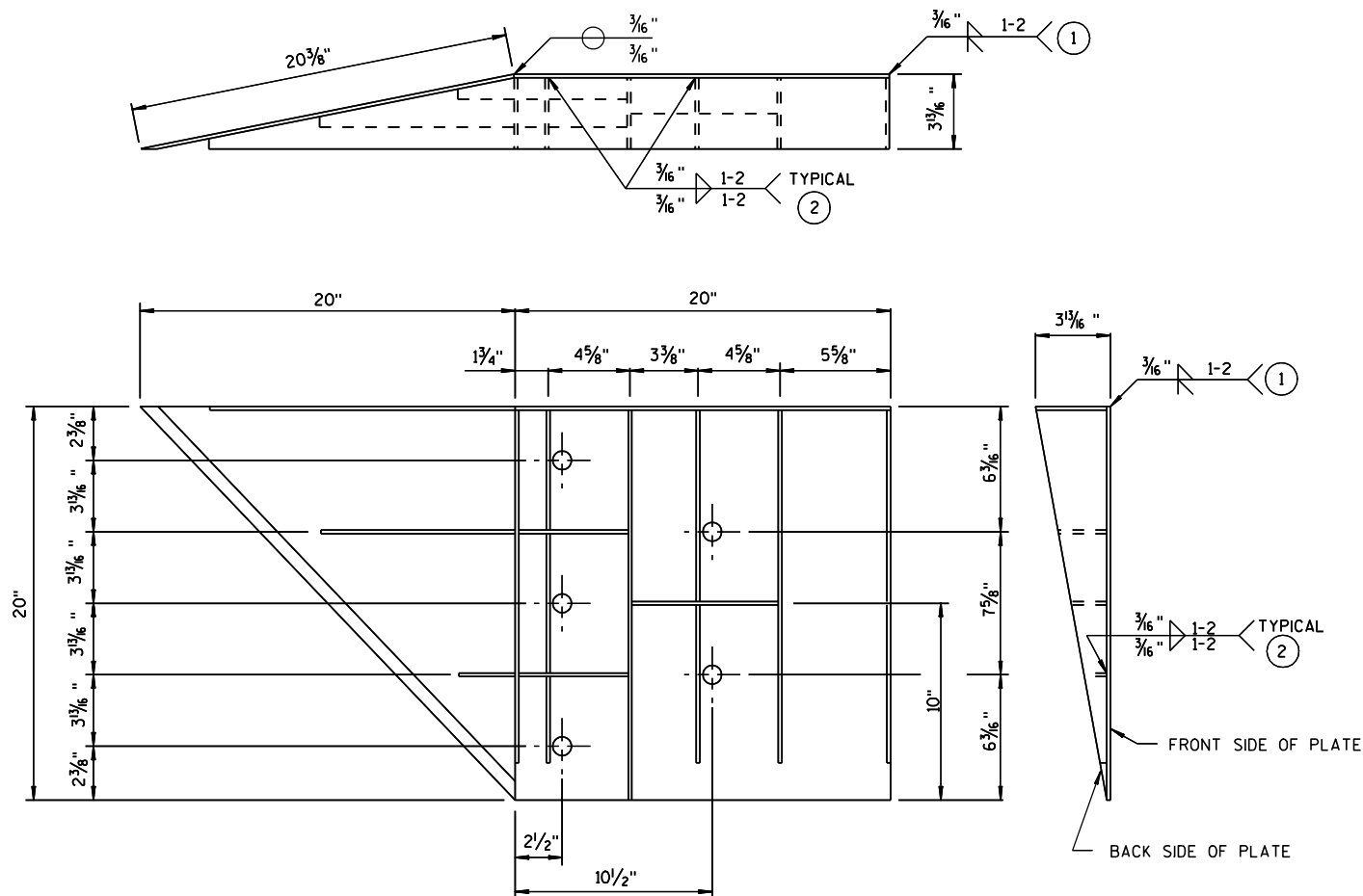
S.D.D. 14 B 20-11f

6

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

6

S.D.D. 14 B 20-111



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 5/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 1/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 7/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 1/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/16"	1/4"

STEEL THRIE BEAM STRUCTURE APPROACH

GENERAL NOTES

- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

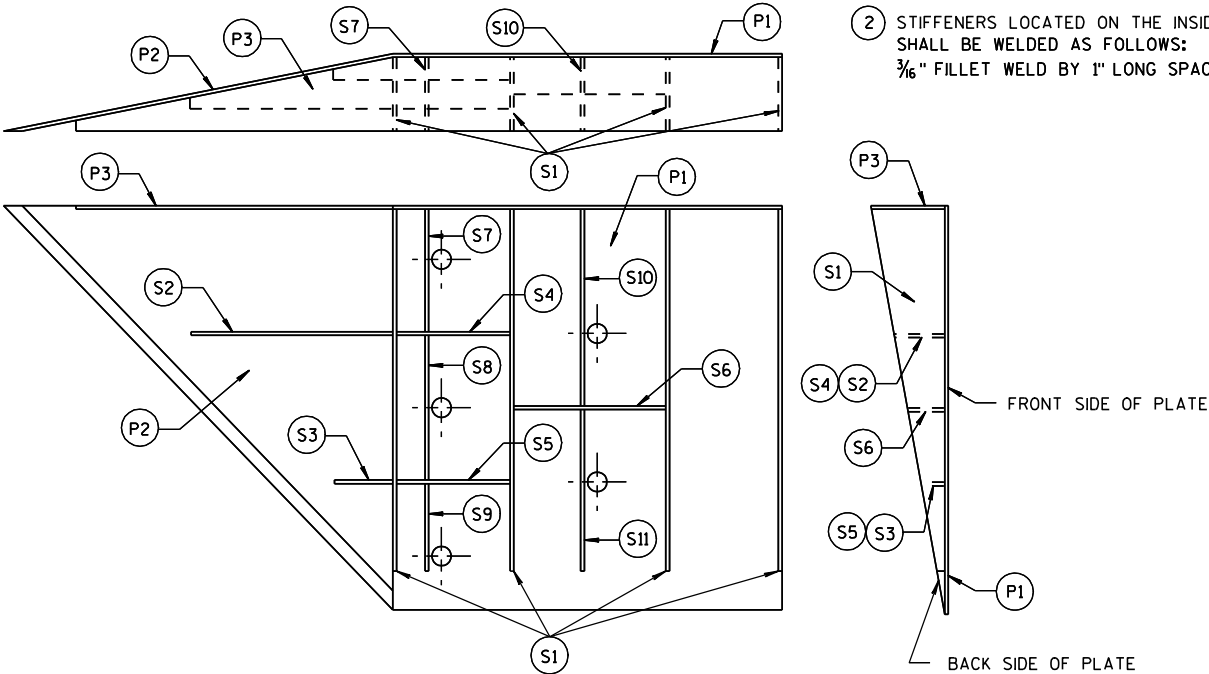
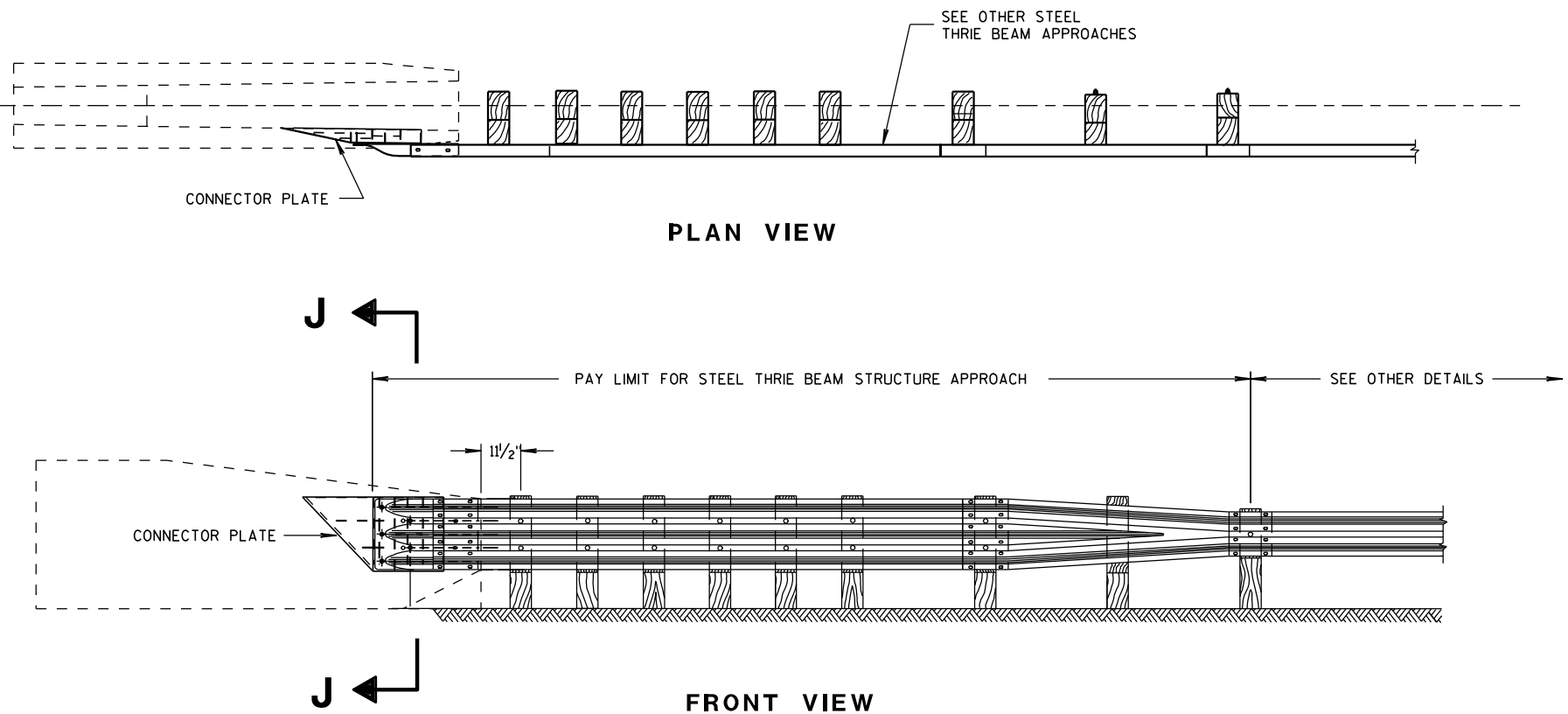
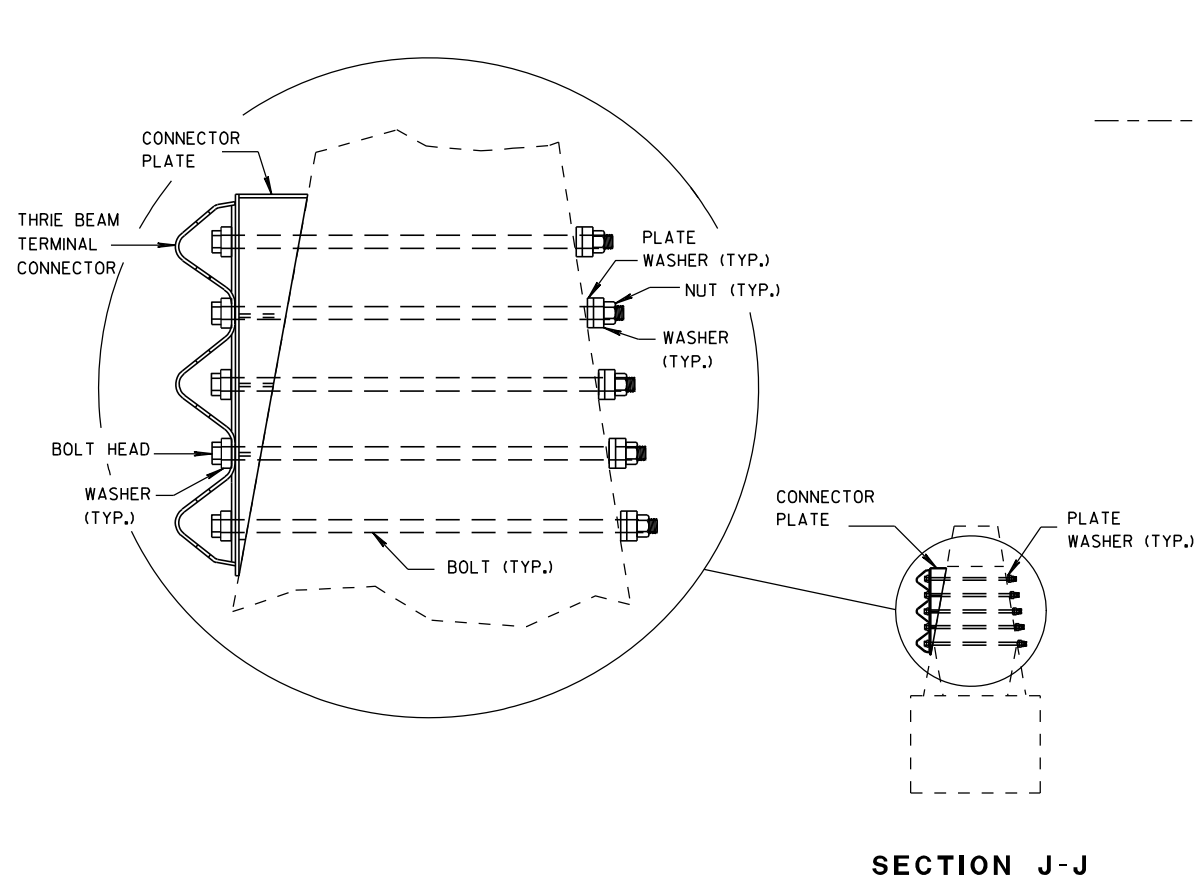


PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

**STEEL THRIE BEAM
STRUCTURE APPROACH,
CONNECTOR PLATE DETAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
/S/ Jerry H. Zopp
ROADWAY STANDARDS 82
ENGINEER
FHWA

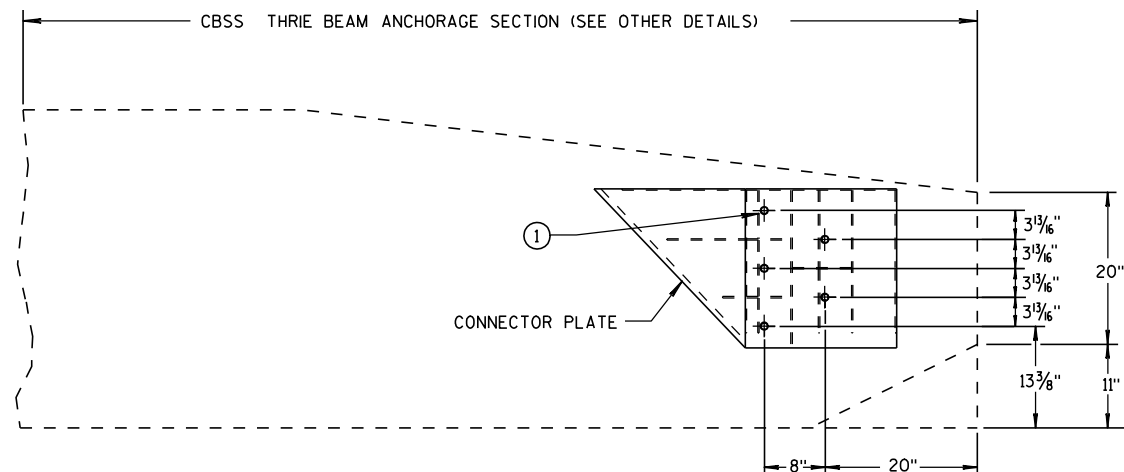


GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 614.

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

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CONNECTOR PLATE LOCATION

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM
STRUCTURE APPROACH,
SINGLE SLOPE ATTACHMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

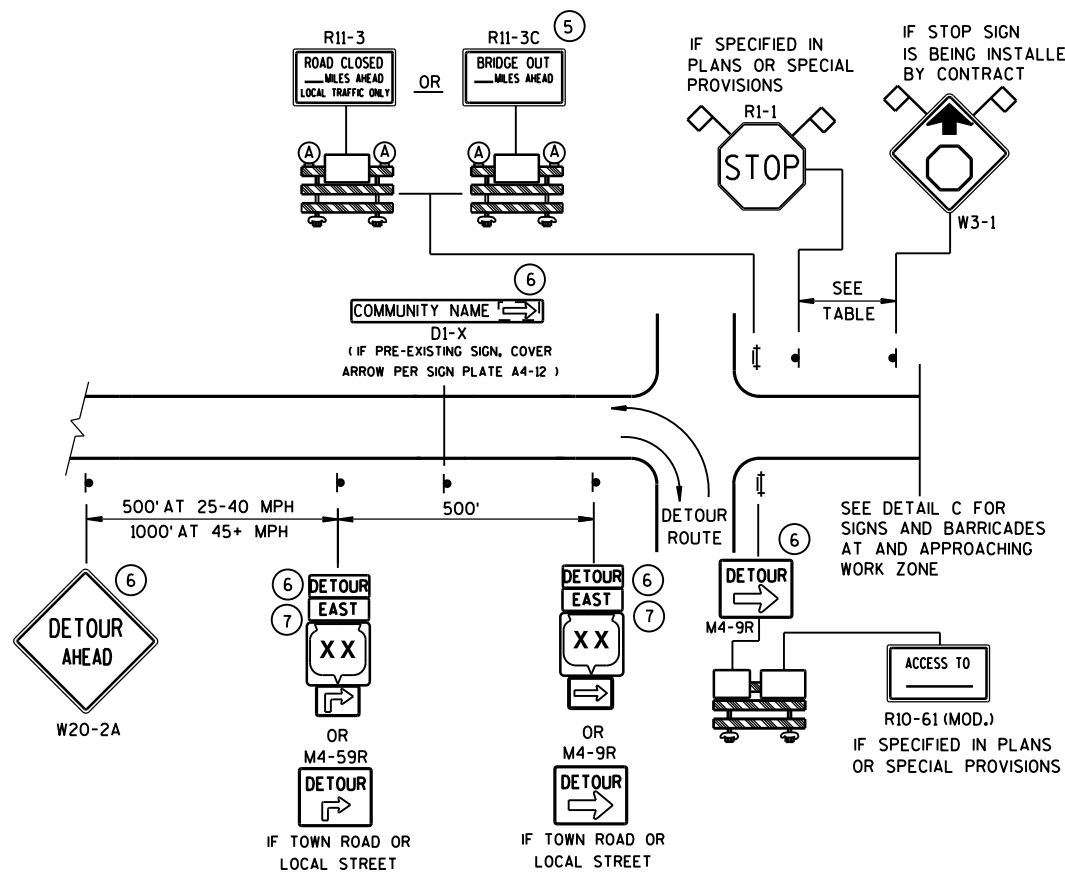
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/S/ Jerry H. Zacc

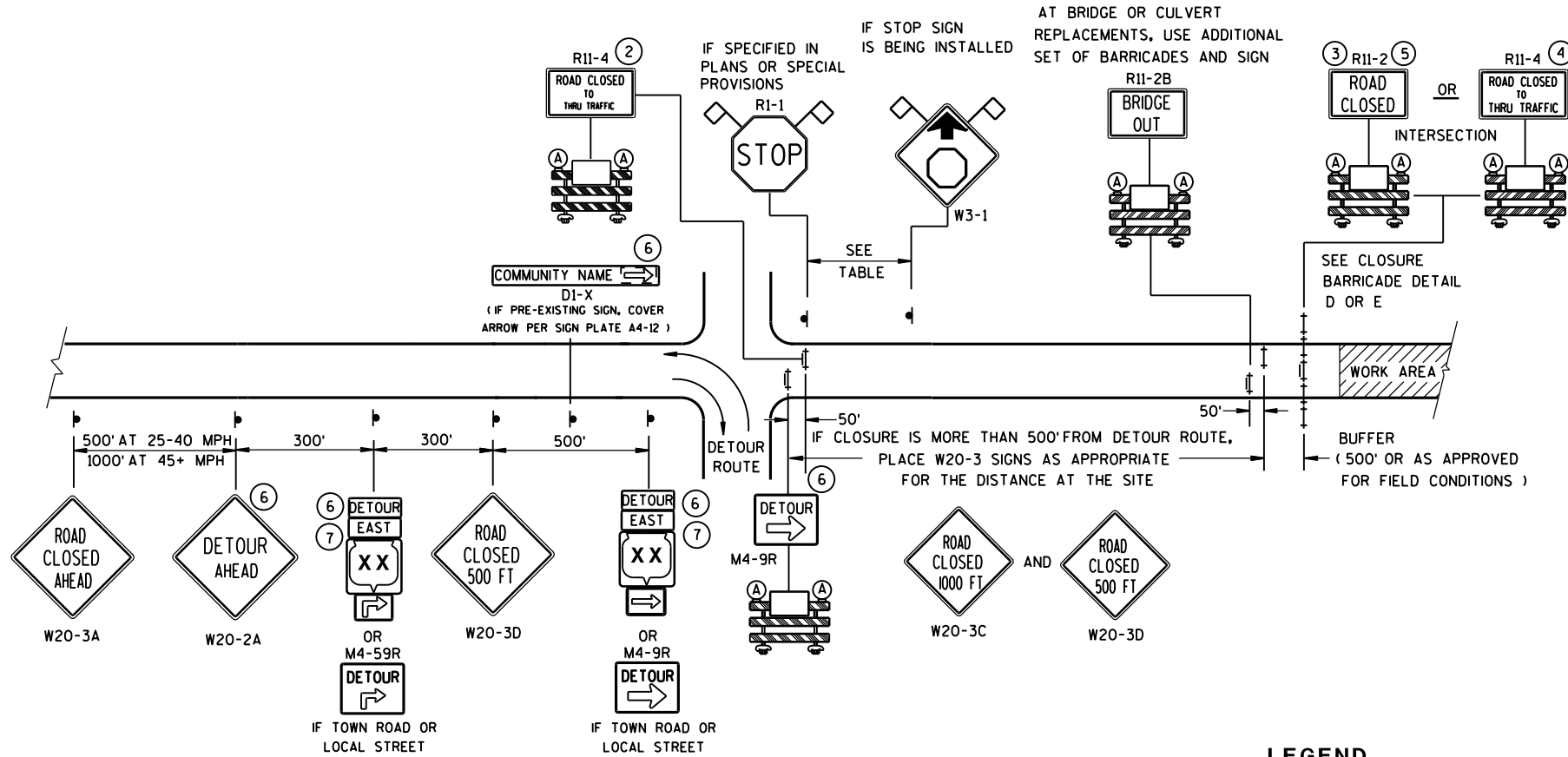
ROADWAY STANDARDS 83

ENGINEER

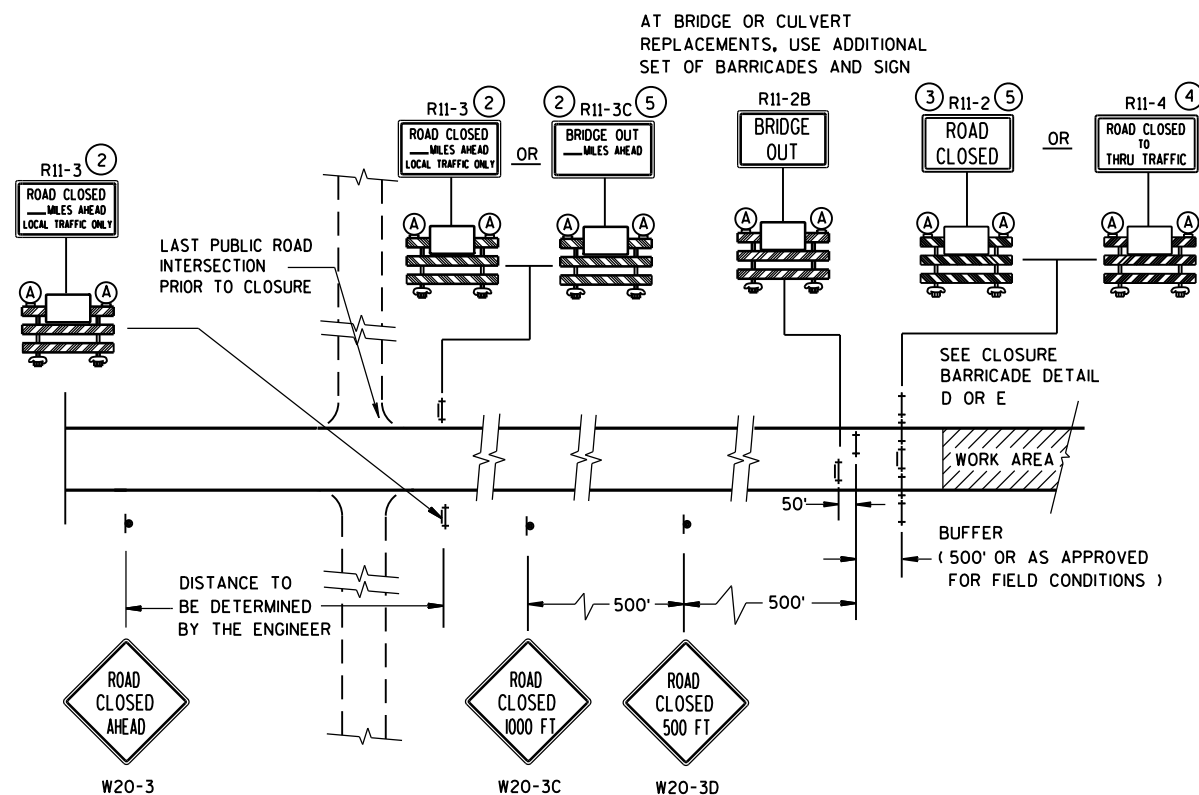
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DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

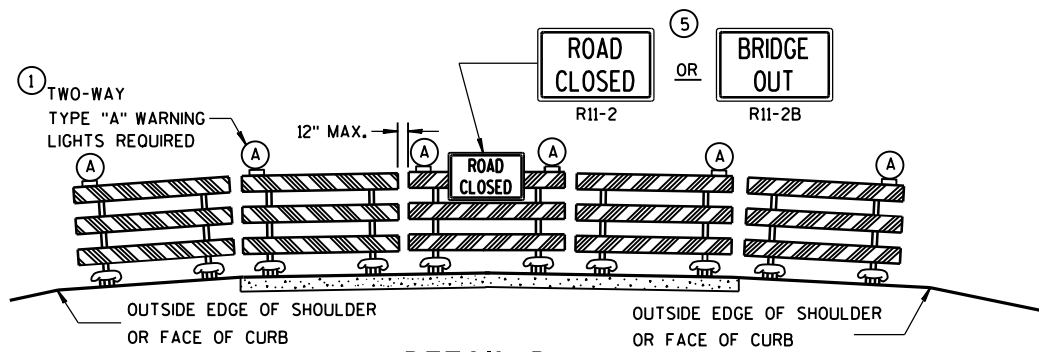


DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

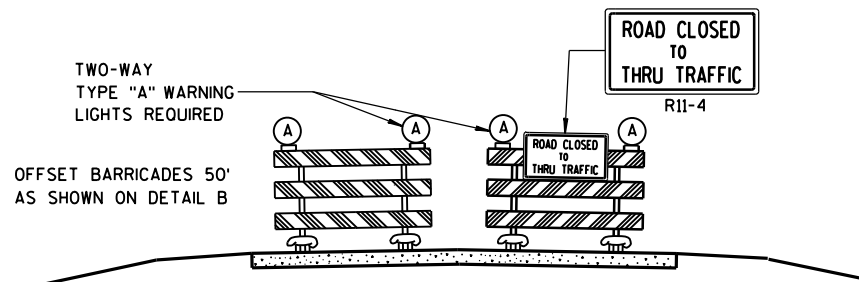
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
Sept. 2015 DATE	/S/ Peter Amokobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER	FIC



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.

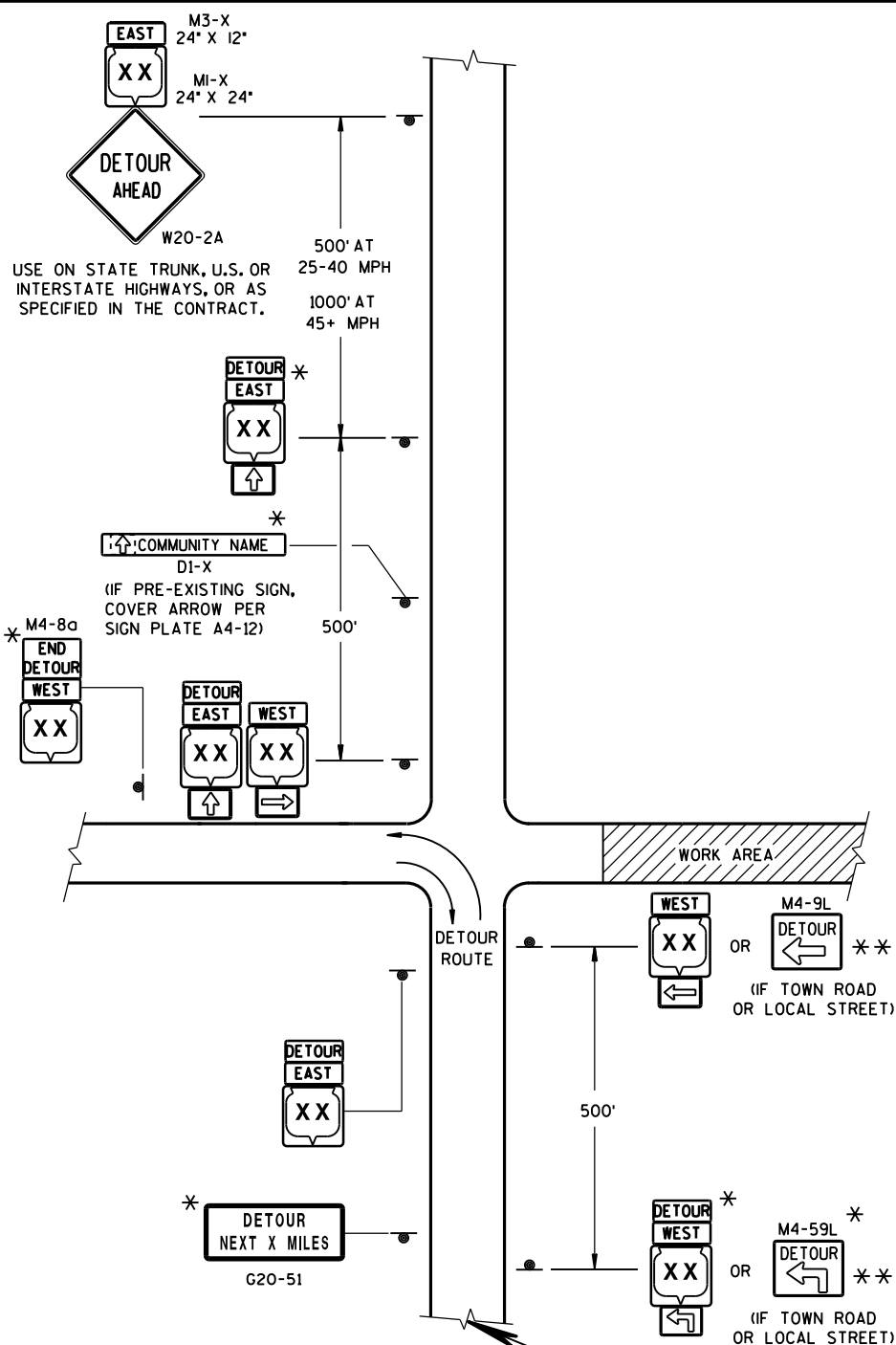
R1-1 SHALL BE 36" X 36".

- 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

Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWORK 2085 FIC
FHWA SAFETY ENGI



LEGEND

SIGN ON PERMANENT SUPPORT

WORK AREA

M4-8
M3-X

COUNTY
MI-4 MI-5A MI-6

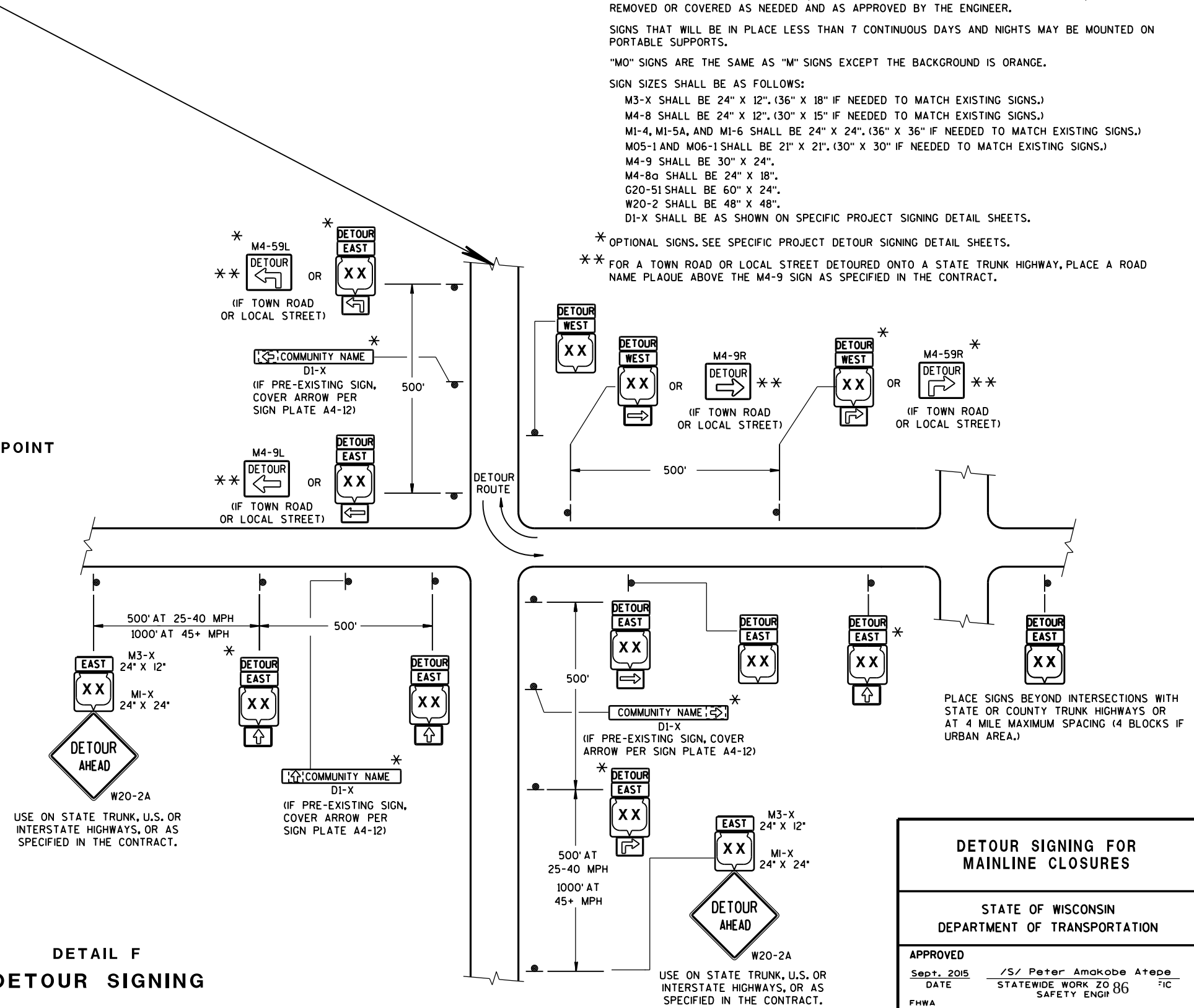
M05-1 M06-1 M06-1

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

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

MATCH POINT

DETAIL F
DETOUR SIGNING



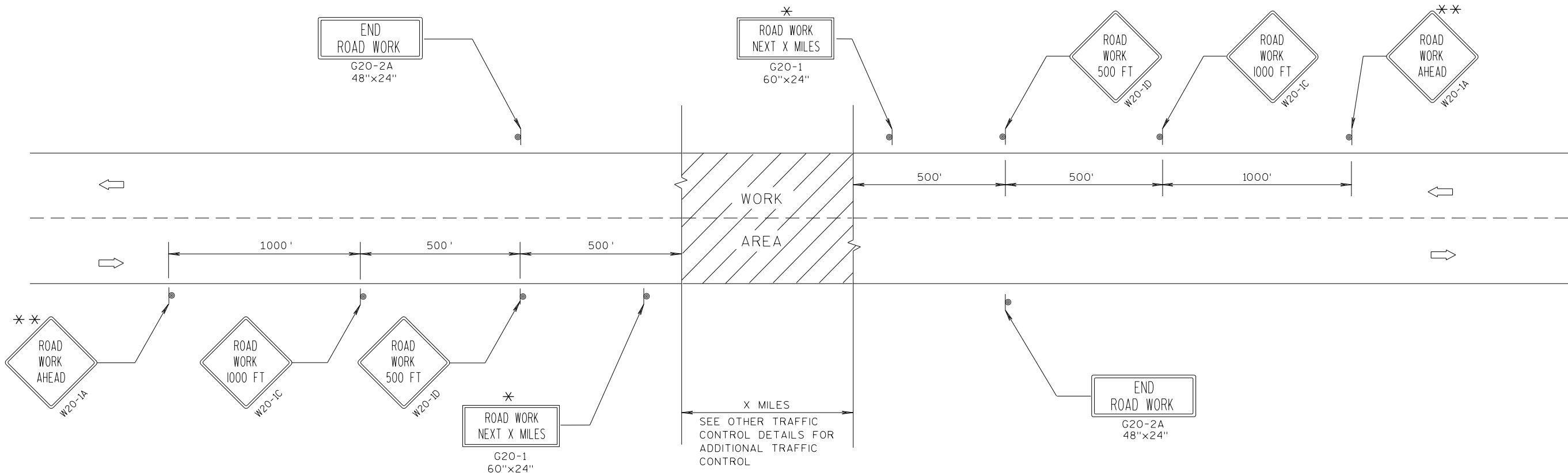
GENERAL NOTES

- 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.)
 - M05-1 AND M06-1 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.

**DETOUR SIGNING FOR
MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE Sept. 2015 /S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

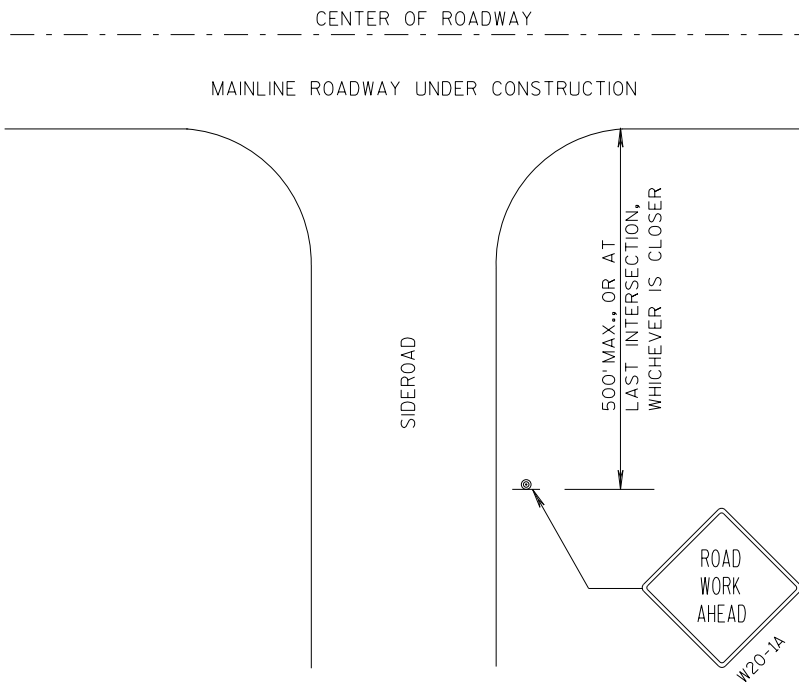
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



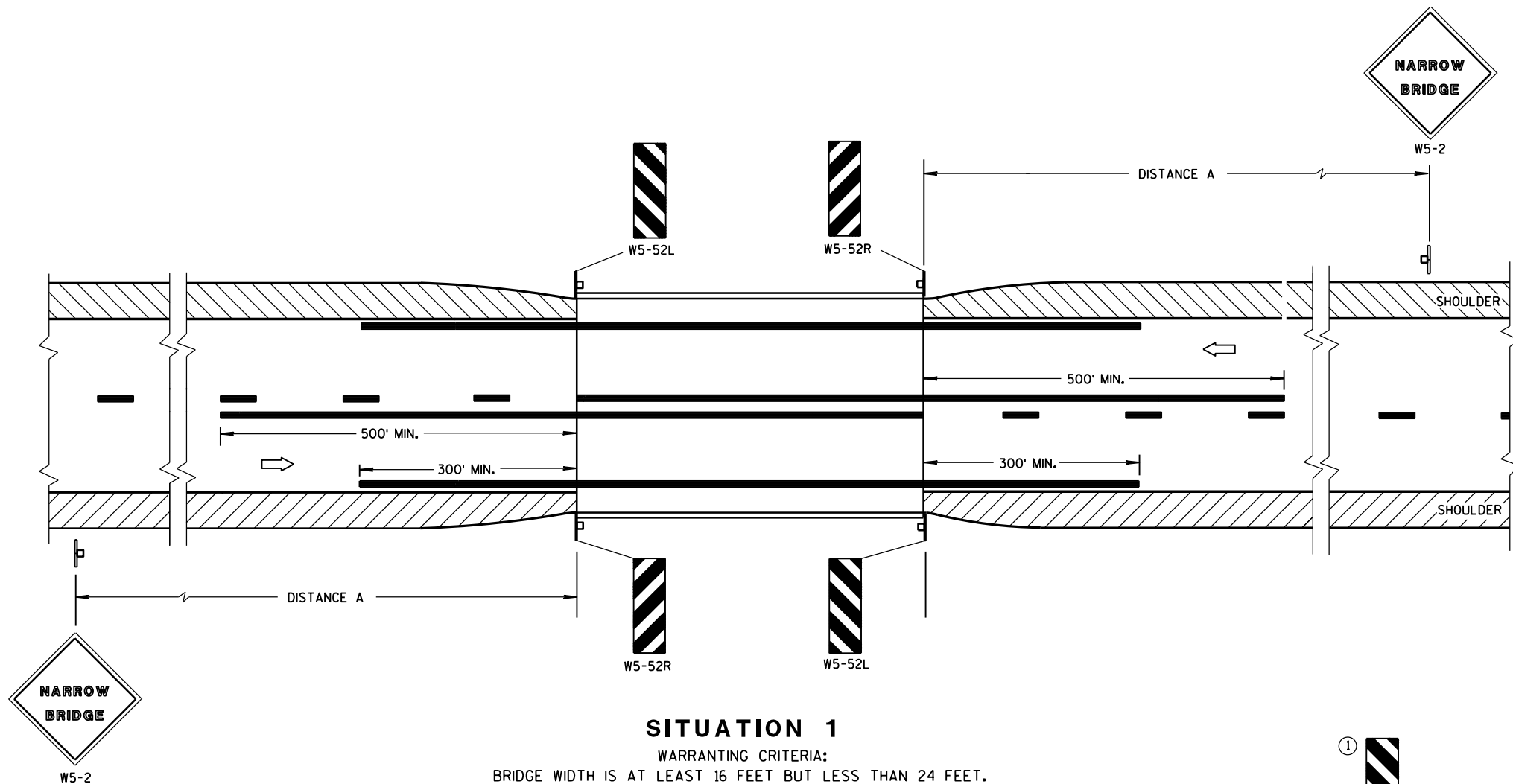
LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGR
FHWA 87



SITUATION 1
WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.

DISTANCE TABLE

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

GENERAL NOTES

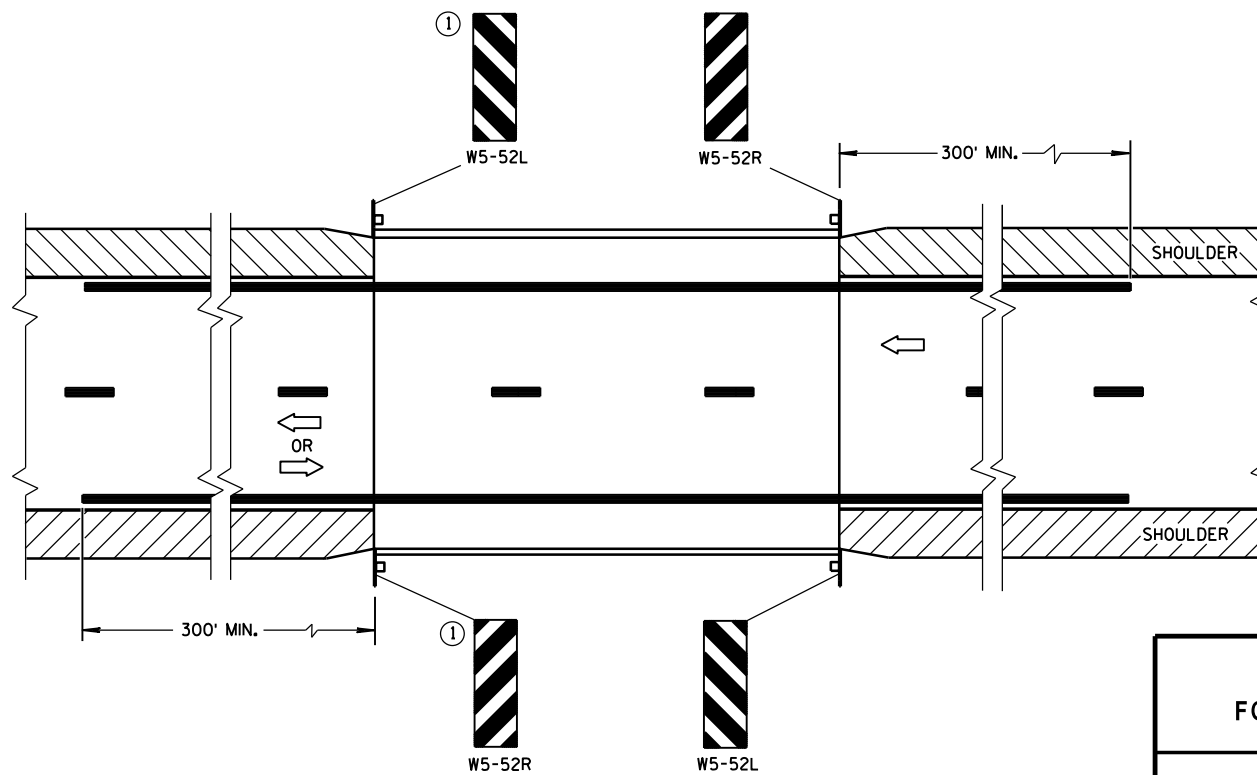
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 2
WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

SIGNING & MARKING FOR TWO LANE BRIDGES

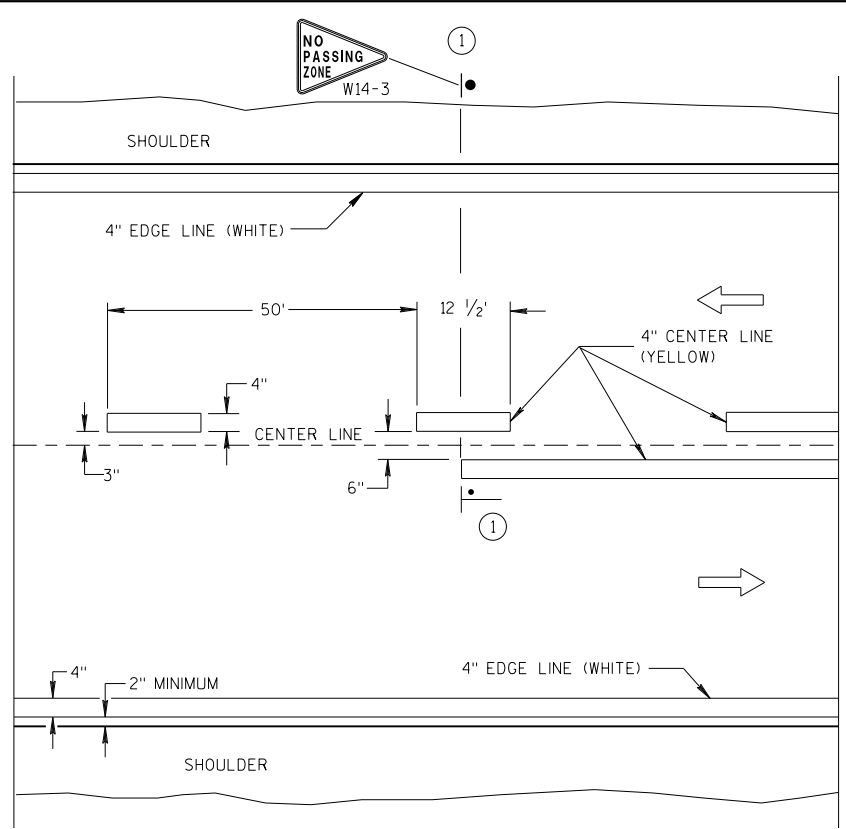
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

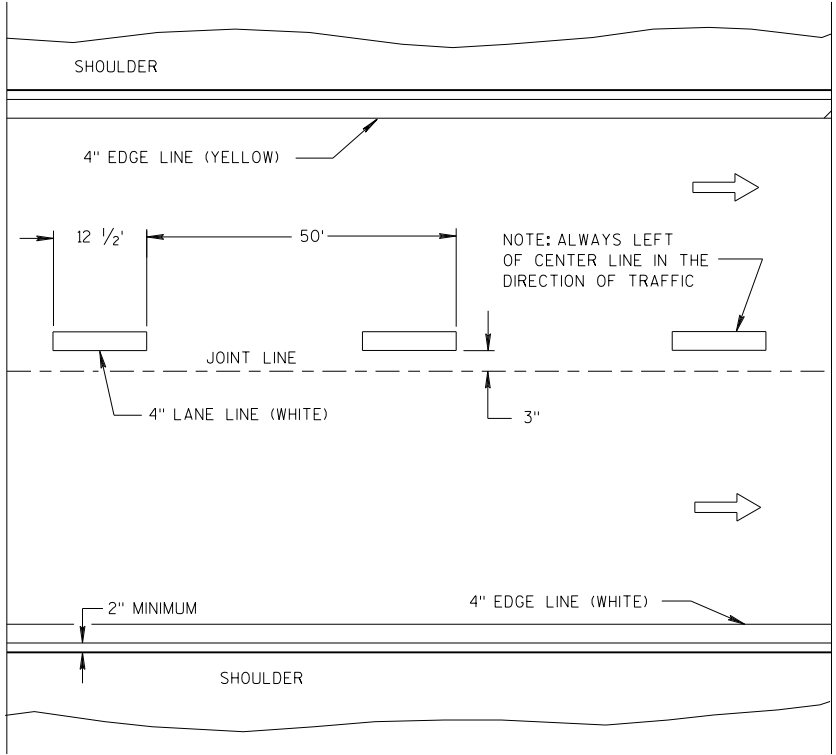
June 2017
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MAR 88 JEER

FHWA

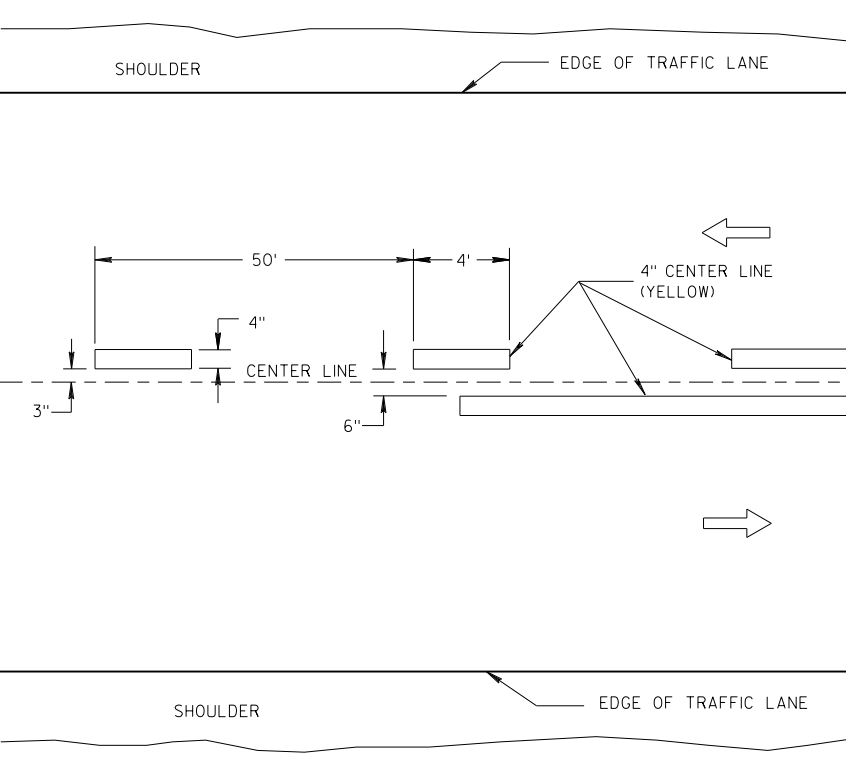


TWO WAY TRAFFIC

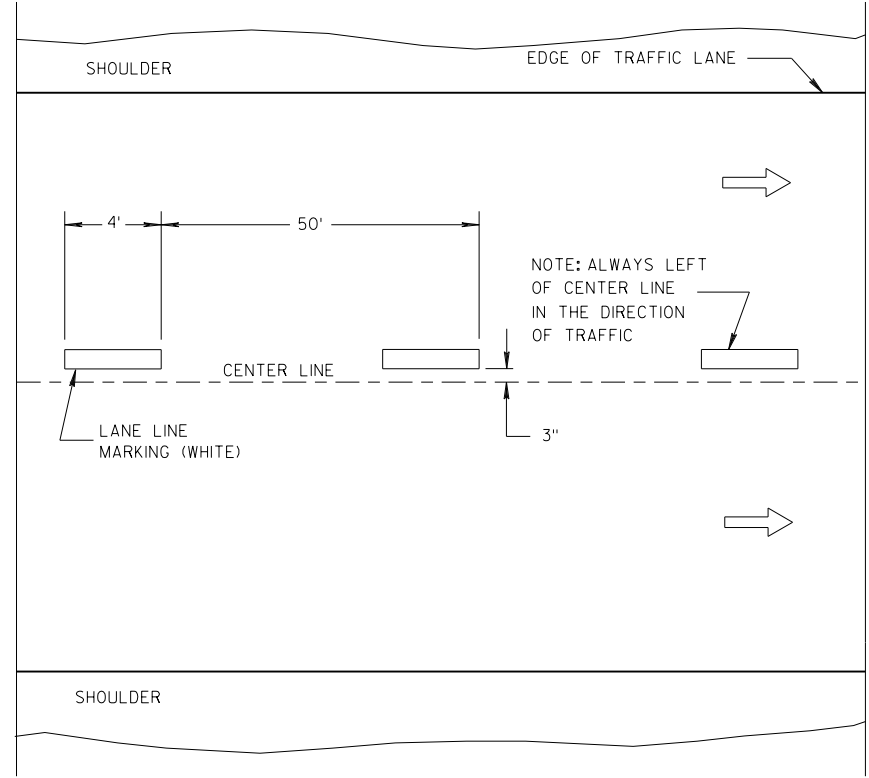


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

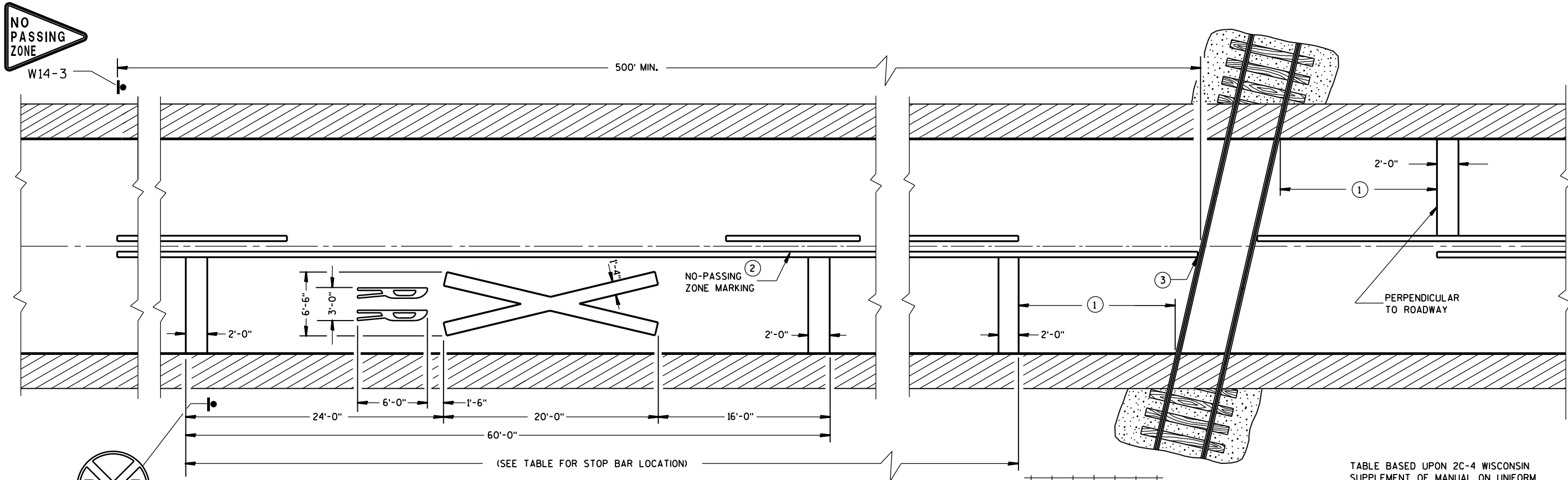
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 89 INEER
FHWA



PAVEMENT MARKING

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.

ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.

CENTER OR LANE LINES AND NO-PASSING ZONE MARKINGS SHOWN ON THIS DRAWING ARE REQUIRED AND PAID FOR UNDER OTHER ITEMS IN THE CONTRACT.

RETRACE EXISTING SYMBOL WHERE EXISTING SYMBOLS ARE PLACED.

- ① MINIMUM 8' FROM ANY RAILROAD WARNING DEVICES (SIGNALS, GATES, ETC.) OR 25' FROM THE NEAREST RAIL, WHICHEVER DISTANCE IS GREATER.
- ② 500' MINIMUM. MARKING LIMITS MAY BE EXTENDED AS DIRECTED BY THE ENGINEER TO MEET ADJACENT NO-PASSING ZONE MARKINGS.
- ③ FOR MULTIPLE TRACK CROSSINGS, THE BARRIER LINE SHALL EXTEND TO THE NEAR RAIL OF THE FURTHEST TRACK IN THE DIRECTION OF HIGHWAY TRAVEL.

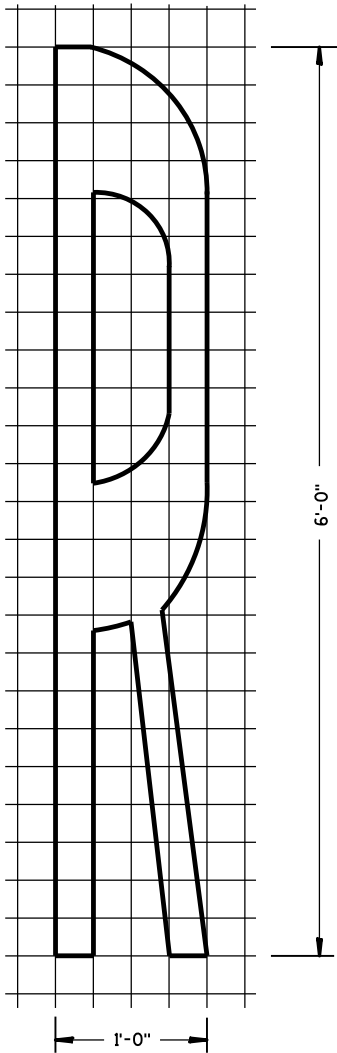


TABLE BASED UPON 2C-4 WISCONSIN SUPPLEMENT OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

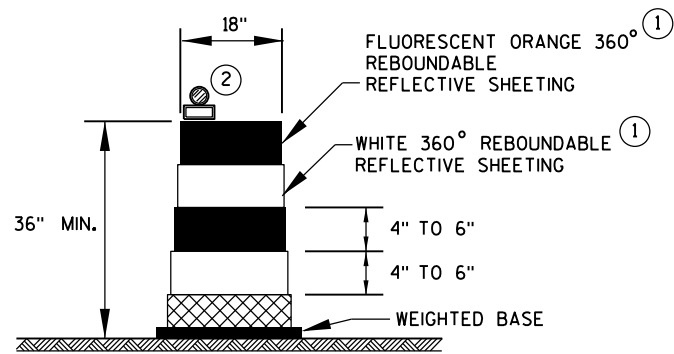
Posted Speed (M.P.H.)	Dimension Range (Feet)
25	150*- 250
30	200*- 300
35	250*- 450
40	300*- 500
45	400*- 650
50	550*- 800
55	750*- 1000
60	1000*- 1250
65	1000*- 1250

* THE MINIMUM DISTANCES IN THE TABLE ARE DESIRABLE AND SHOULD BE USED. THE DISTANCES MAY BE INCREASED UP TO THE MAXIMUM TO ALLOW FOR FIELD CONDITIONS SUCH AS THE CLOSE PROXIMITY OF DRIVEWAYS, BRIDGES, SIDEROADS OR OTHER FEATURES THAT WOULD PROHIBIT THE MINIMUM DISTANCES FROM BEING USED.

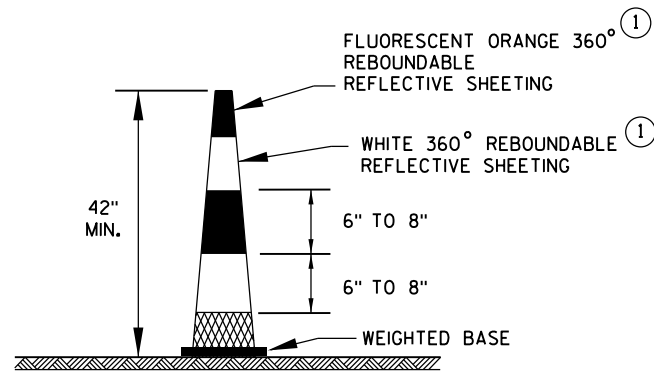
SIGNING AND PAVEMENT MARKING
DETAILS FOR RAILROAD-HIGHWAY
GRADE CROSSINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE Sept., 2017 /S/ Matthew R. Rauch
STATE SIGNING AND MAINTENANCE ENGINEER
FHWA



DRUM

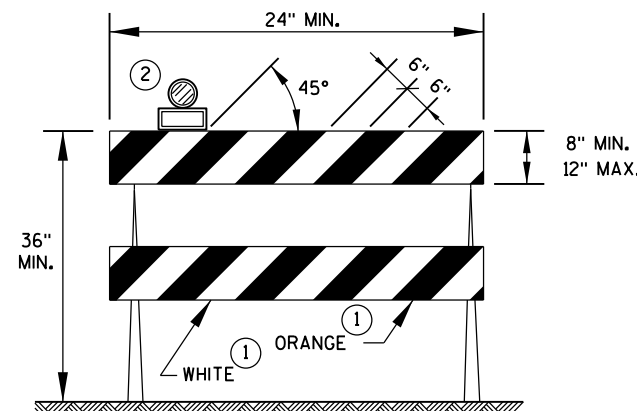


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

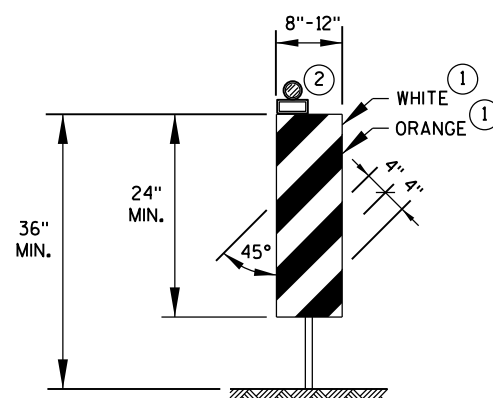
GENERAL NOTES

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



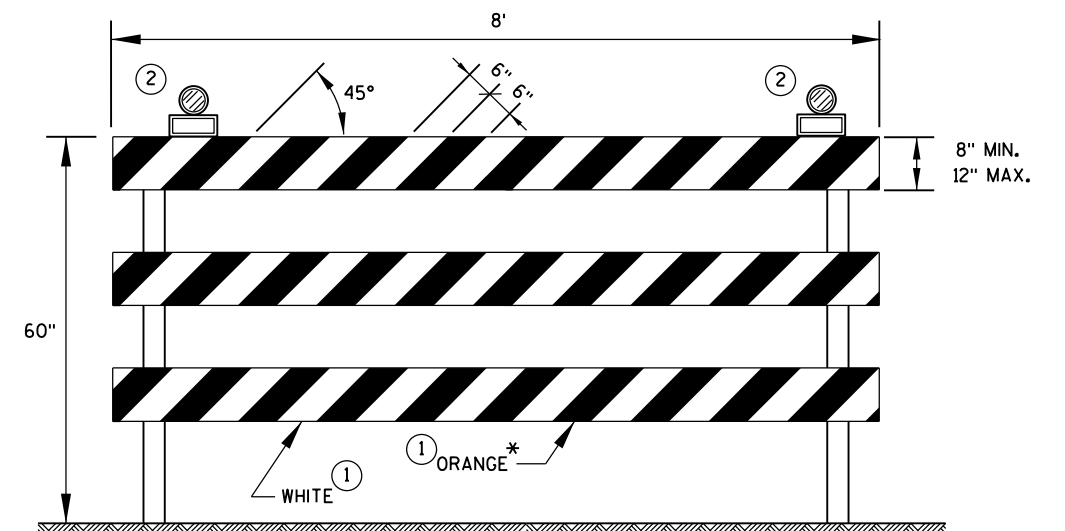
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

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

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heidtke
WORK ZONE ENG 91

FHWA

LEGEND

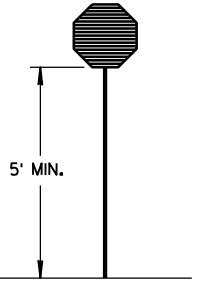
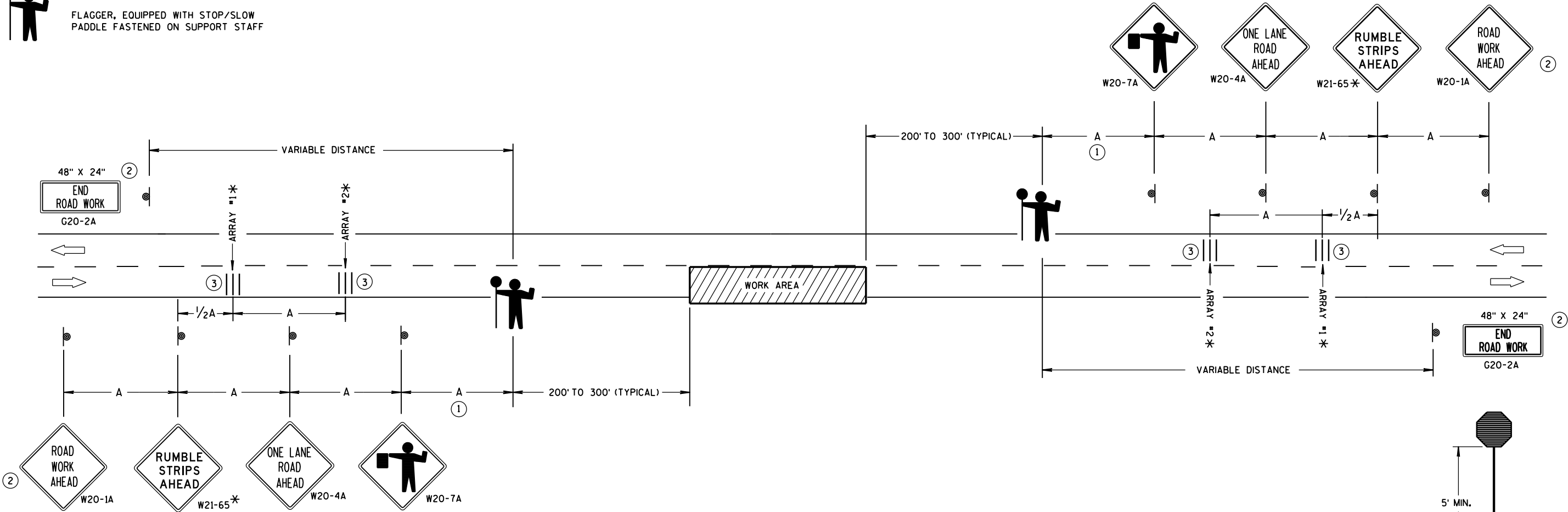
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

GENERAL NOTES

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

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

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

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

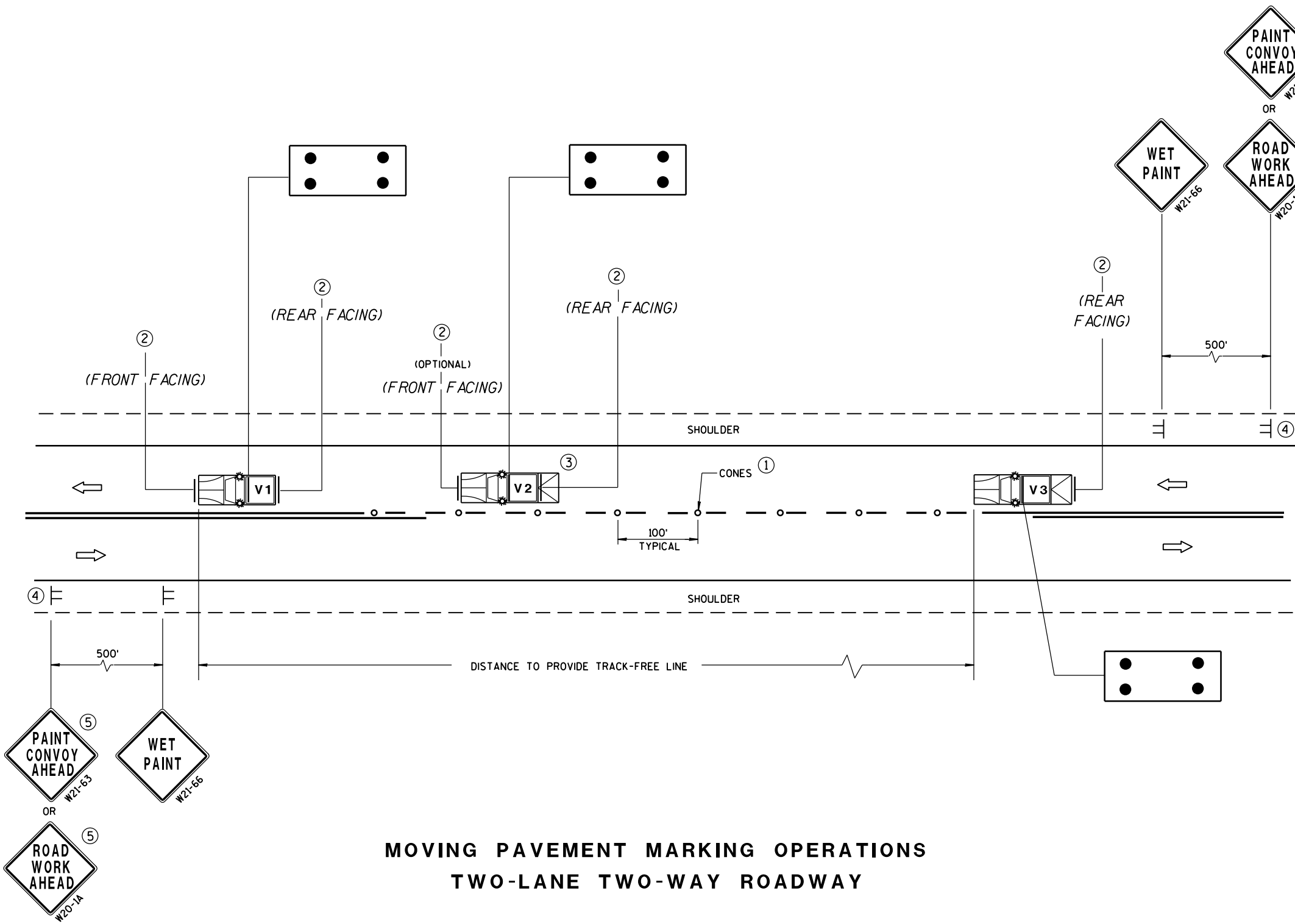
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- * UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.
- ① FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ③ EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

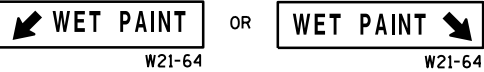
APPROVED
June 2017 /S/ Andrew Heldtke
DATE WORK ZONE ENC 92
FHWA



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.
- IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.
- ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.
- DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.
- THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.
- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.
- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.



OR



LEGEND

- V1 LEAD VEHICLE
- V2 SHADOW VEHICLE
- V3 TRAIL VEHICLE WITH TMA
- TMA TRUCK-MOUNTED ATTENUATOR

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

CONES

FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGR 93
FHWA

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.

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS 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.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

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

TABLE A

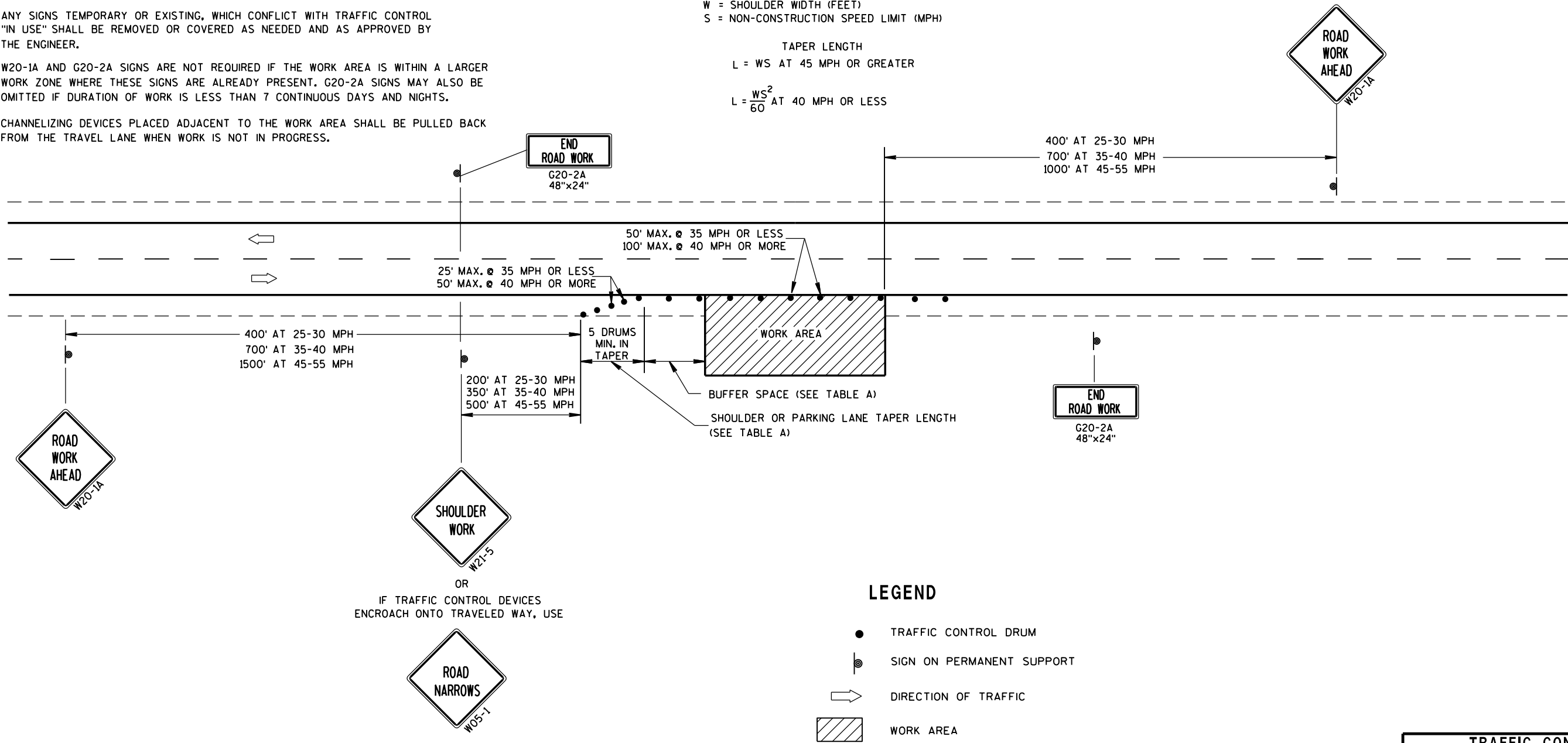
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH
L = WS AT 45 MPH OR GREATER

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

SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED July 14, 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER	IC
FHWA		

TEMPORARY SIGNAL WITH BACKPLATE
AND 12-INCH LENSES ON BREAKAWAY
POLE

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.

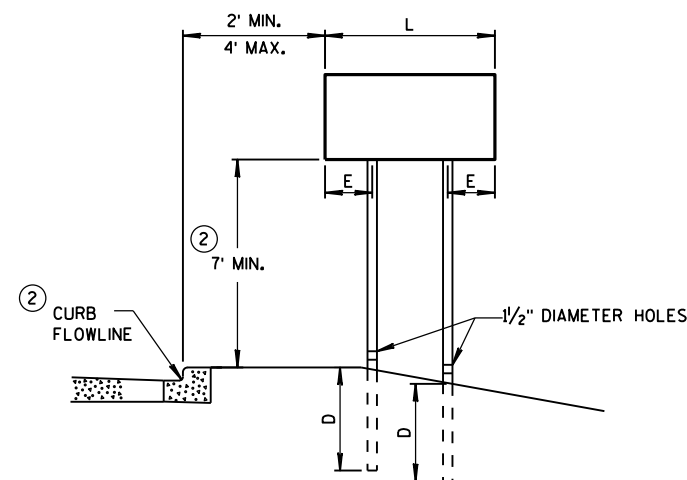
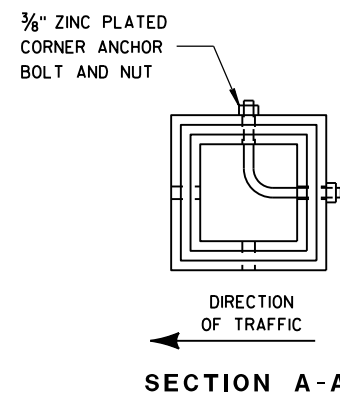




TUBULAR STEEL POSTS

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

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

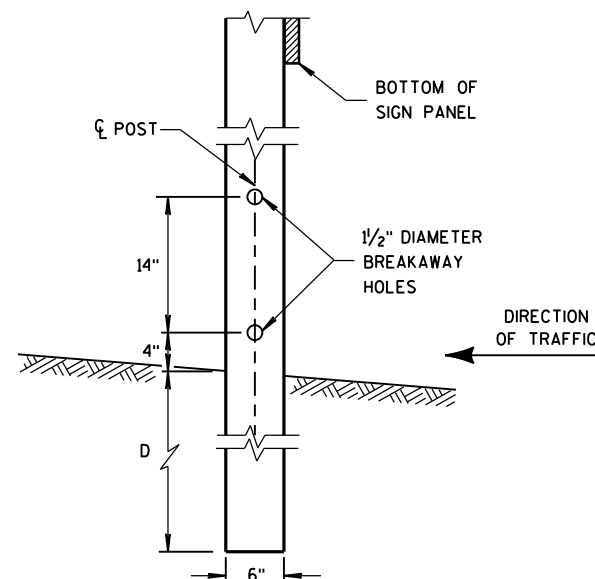


URBAN AREA

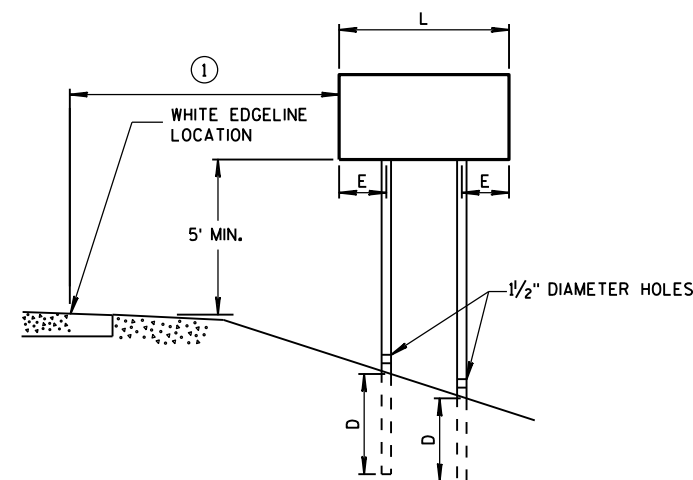
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

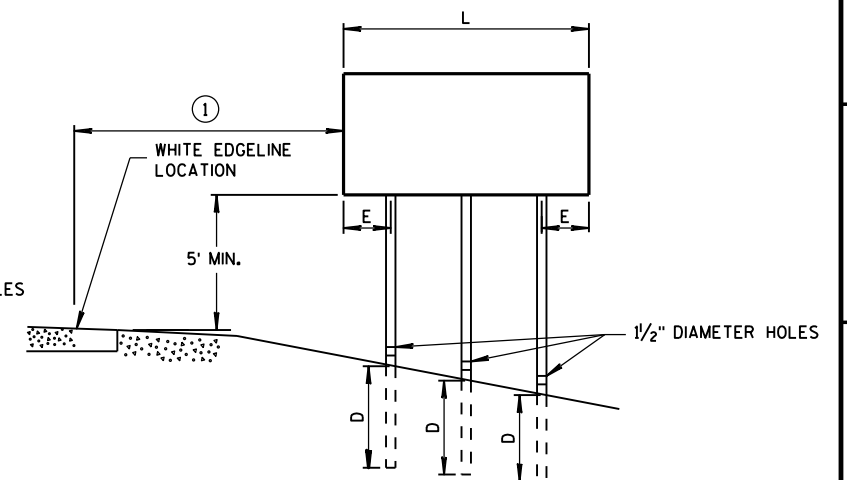
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4"x6" WOOD POST MODIFICATION



RURAL AREA



GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

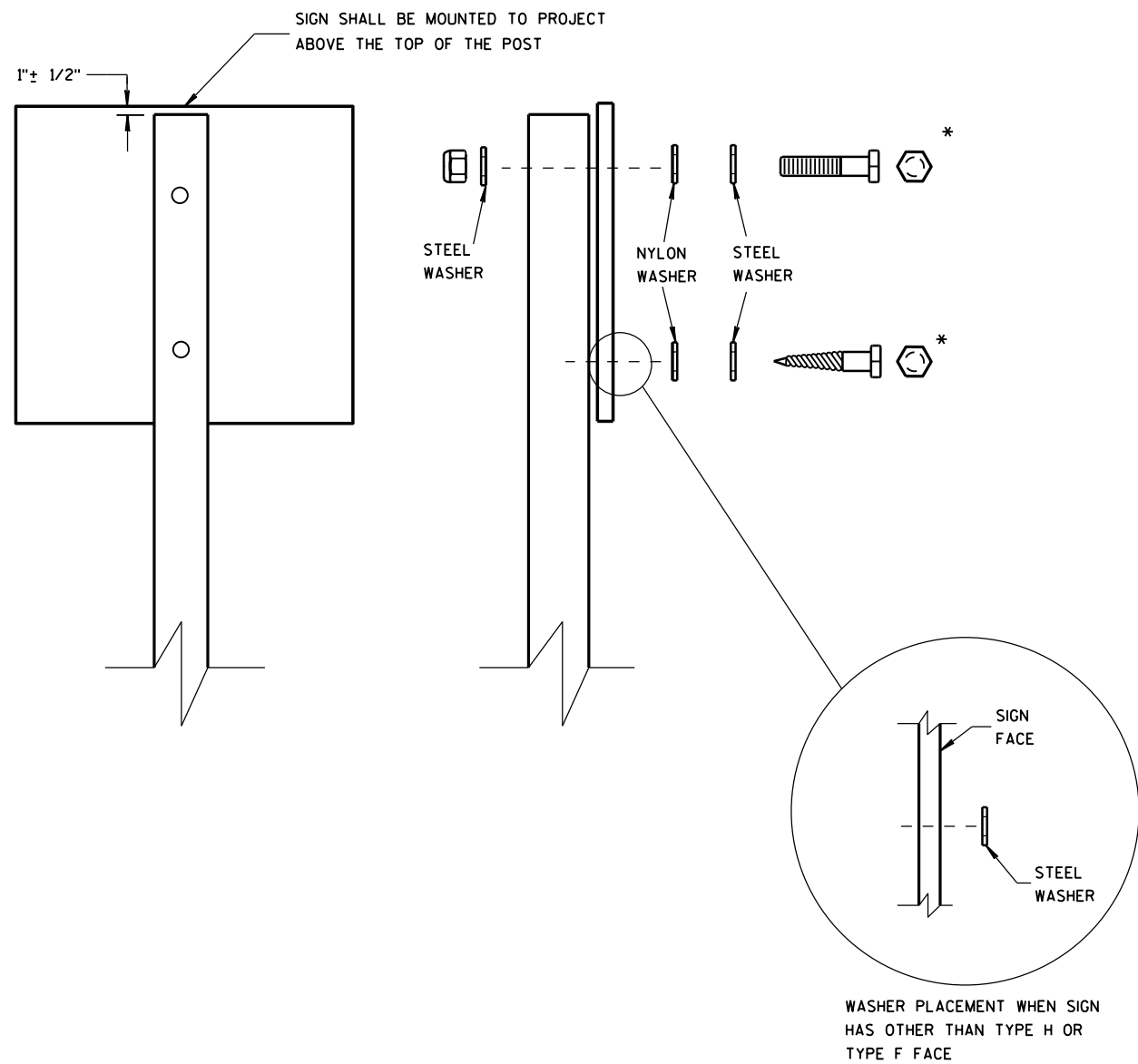
4" X 6" WOOD POST

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

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁹⁶



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

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

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

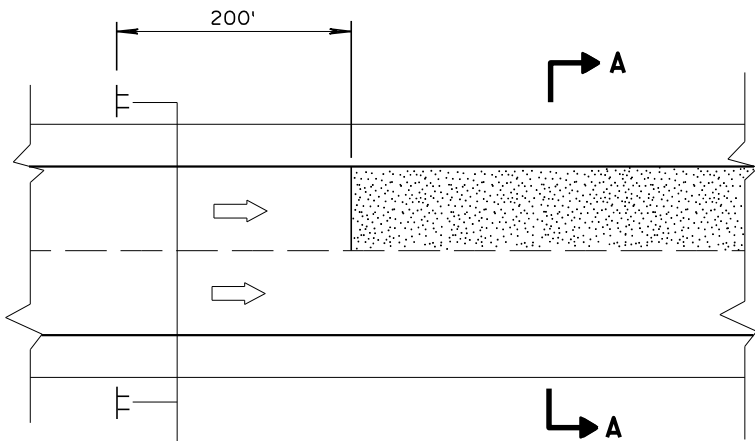
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

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

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENC 97
FHWA	

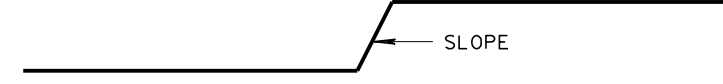


MULTI-LANE

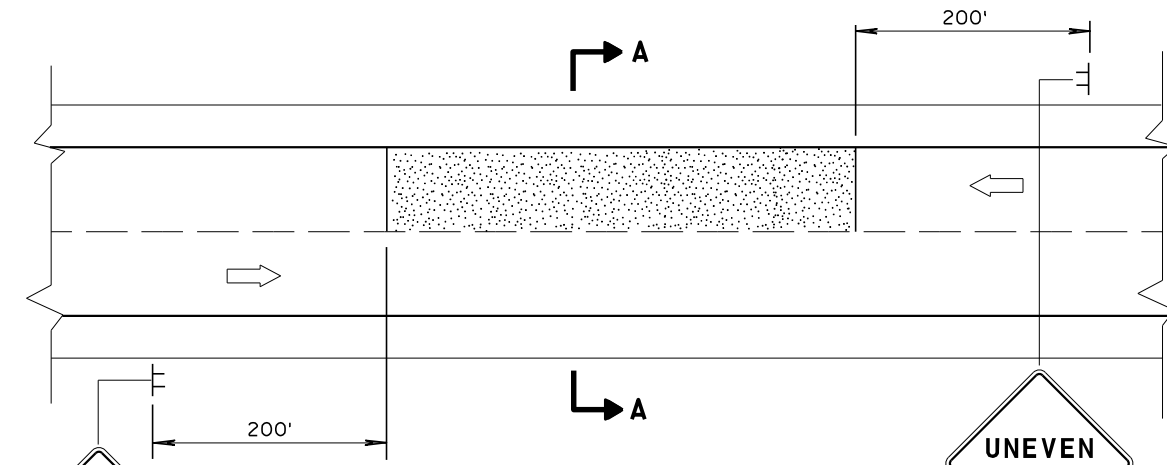


SECTION A-A

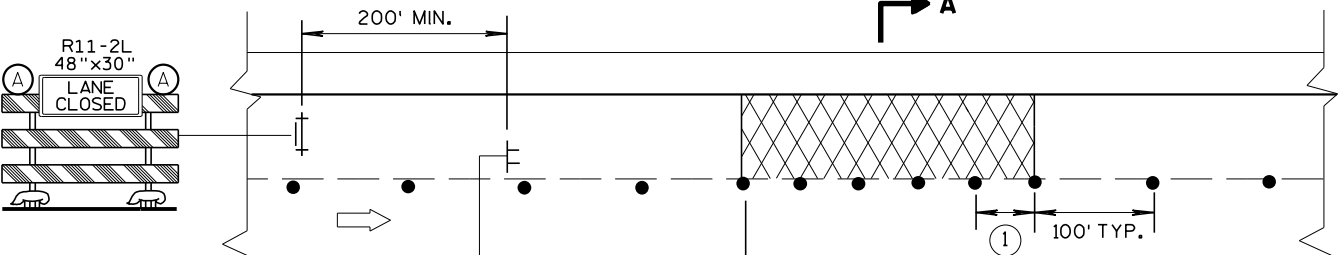
OR



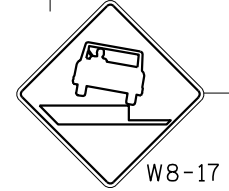
SECTION A-A



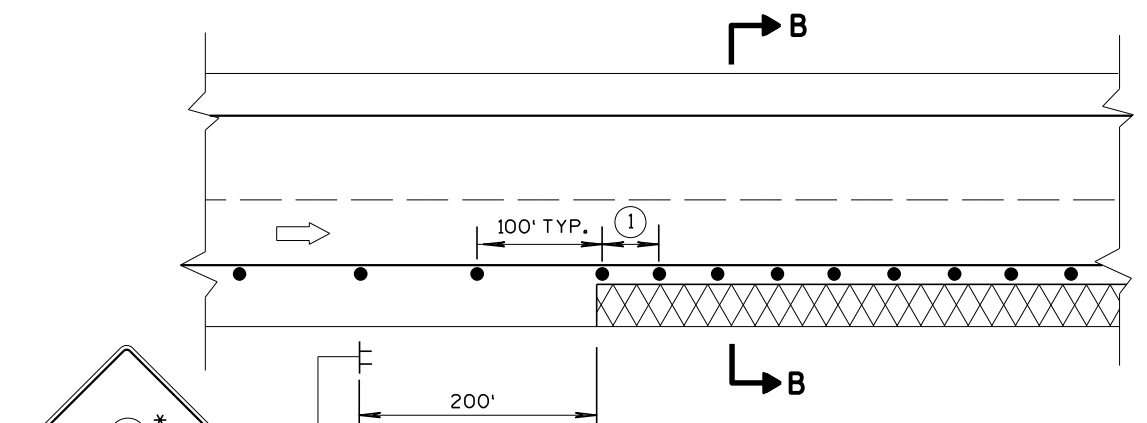
TWO-WAY TWO LANE



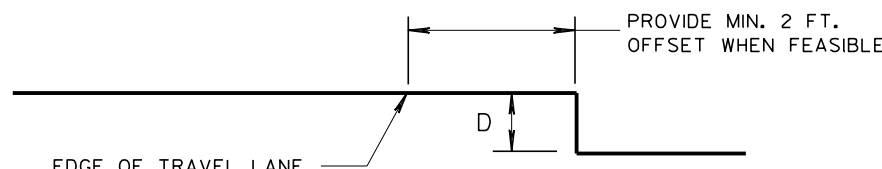
MULTI-LANE BASE PATCHING



ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B-B

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

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

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

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

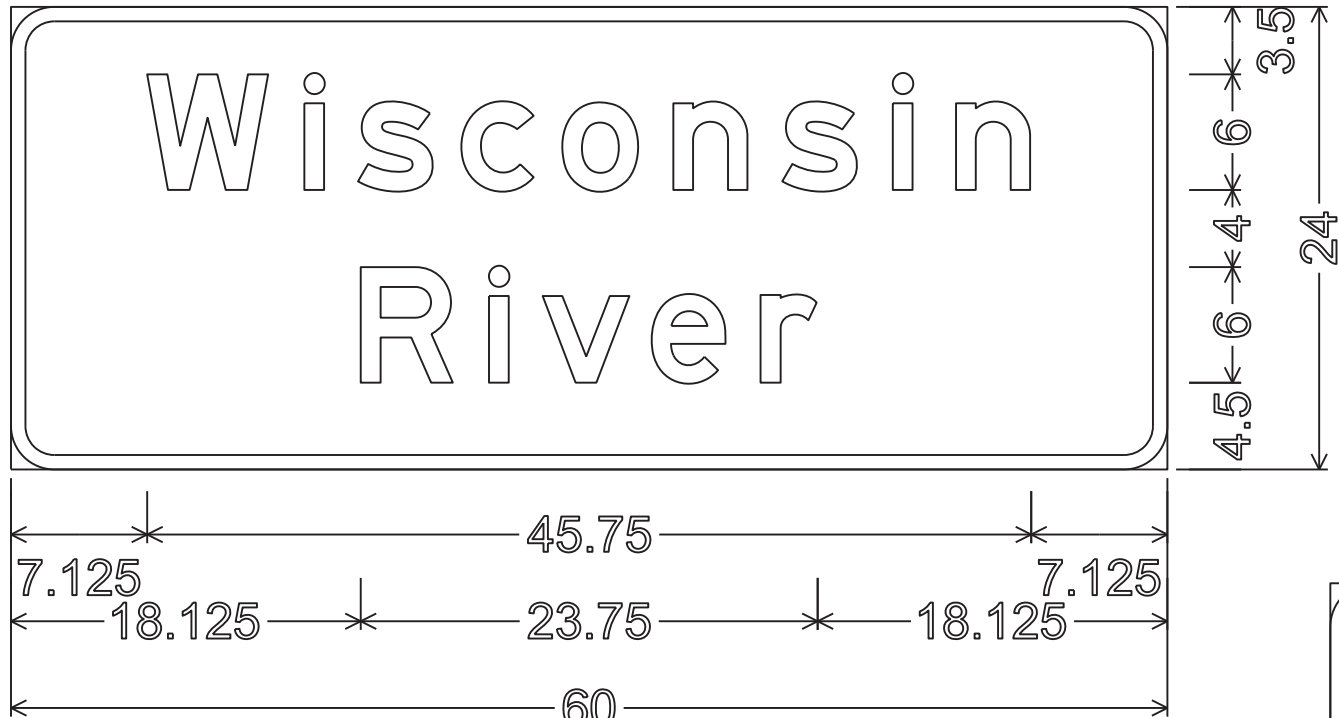
- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	 W08-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	 W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

TRAFFIC CONTROL,
DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

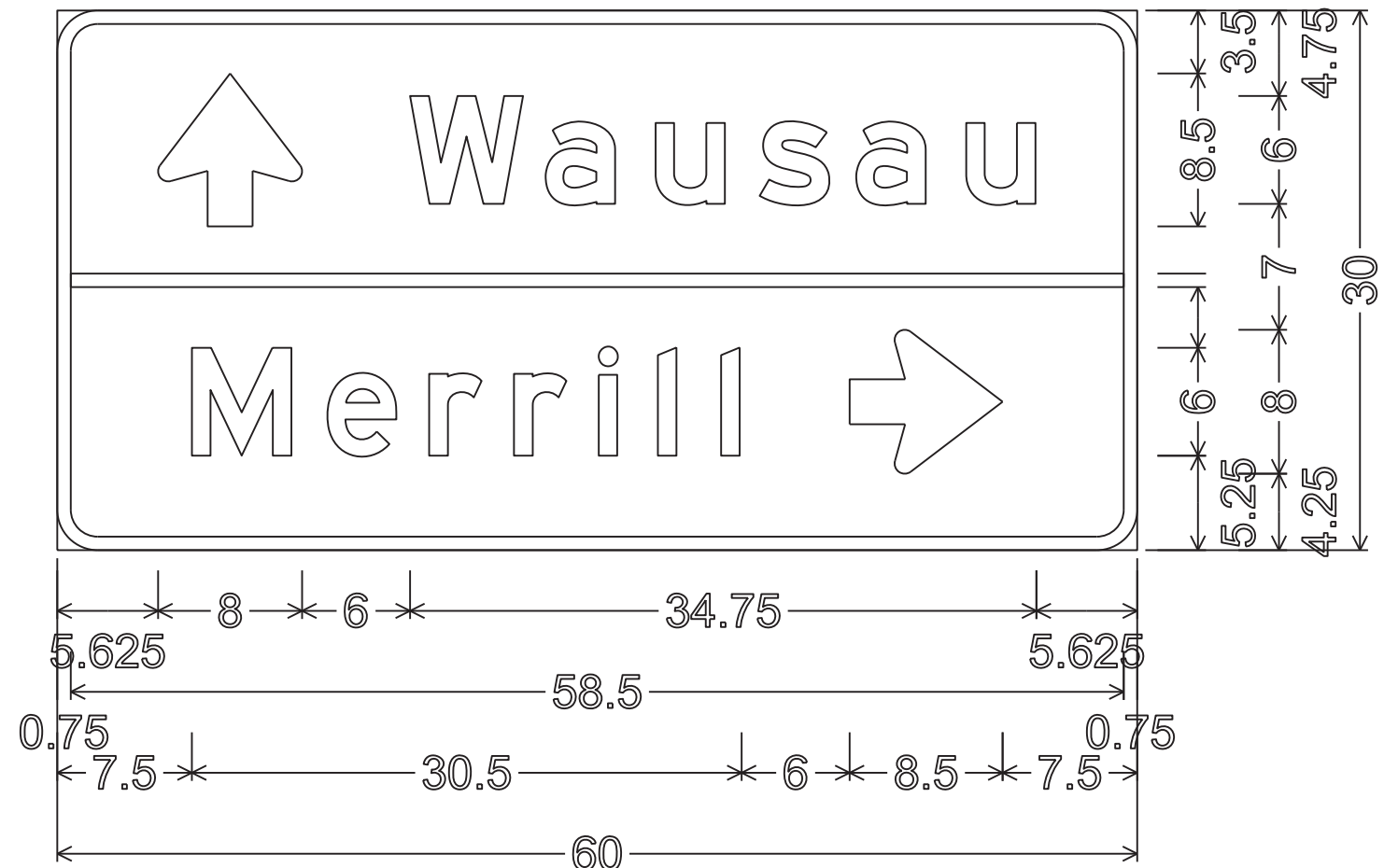
APPROVED
March 2018 /S/ Andrew H
DATE WORK ZONE EN 98
FHWA



I3-1;
2.250" Radius, 0.750" Border

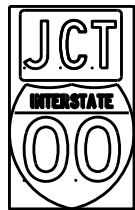
NOTES

1. All Signs Type II - Type H Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E

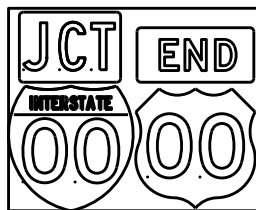


D1-2;
2.250" Radius, 0.750" Border

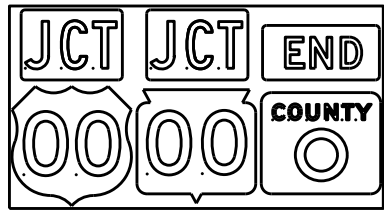
TYPICAL ASSEMBLIES



J1-1



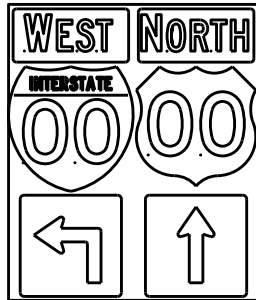
J1-2



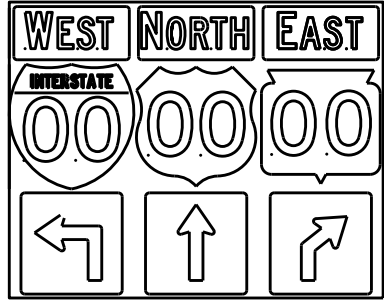
J1-3



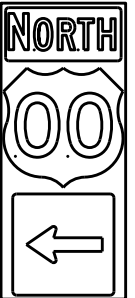
J2-1



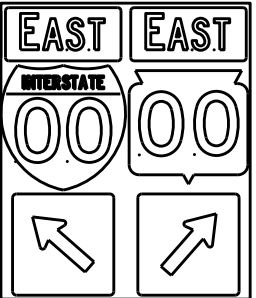
J2-2



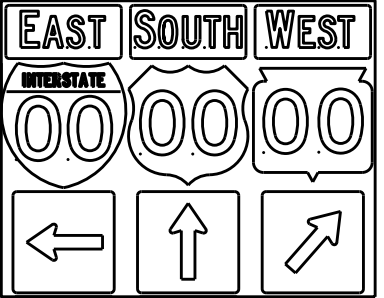
J2-3



J3-1



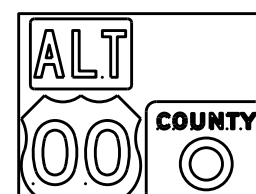
J3-2



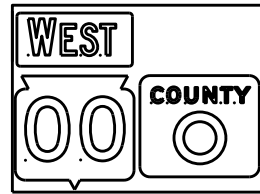
J3-3



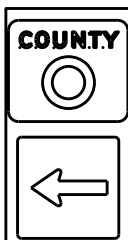
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

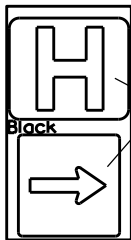


J22-1



JV

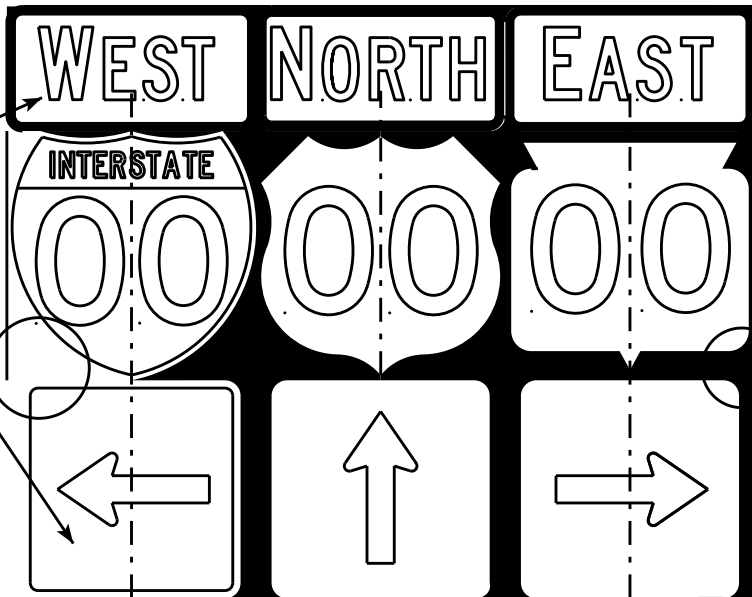
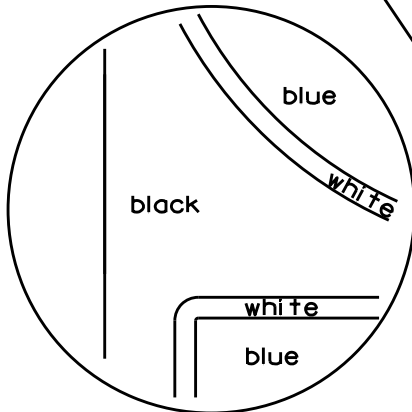
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

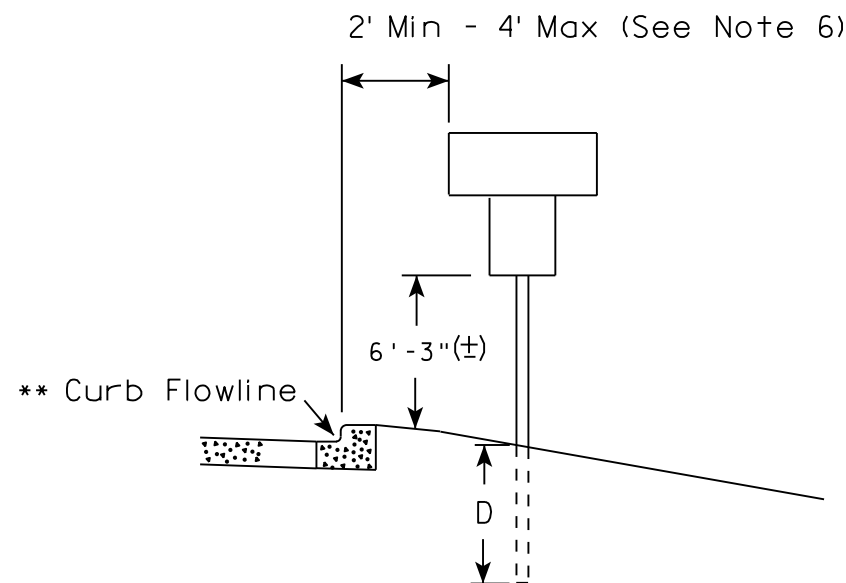
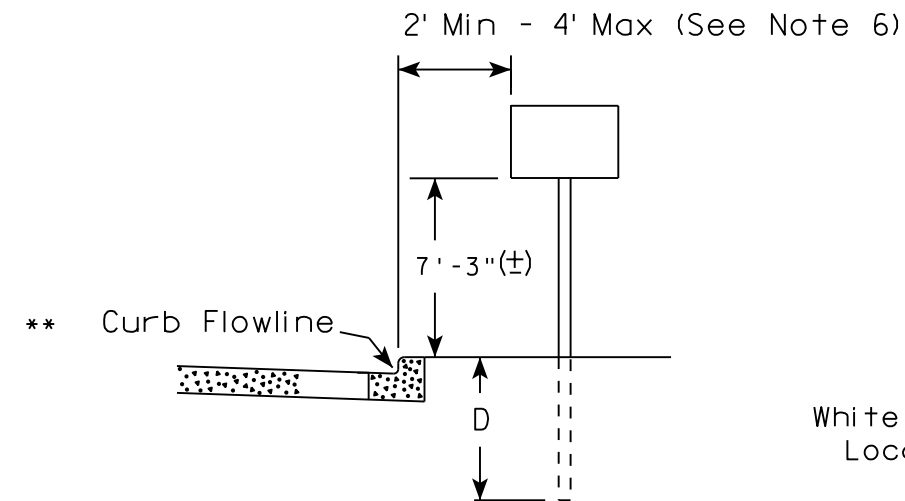
DATE 2/06/14 PL 100 A2-1S.8

SHEET NO: E

NOTES

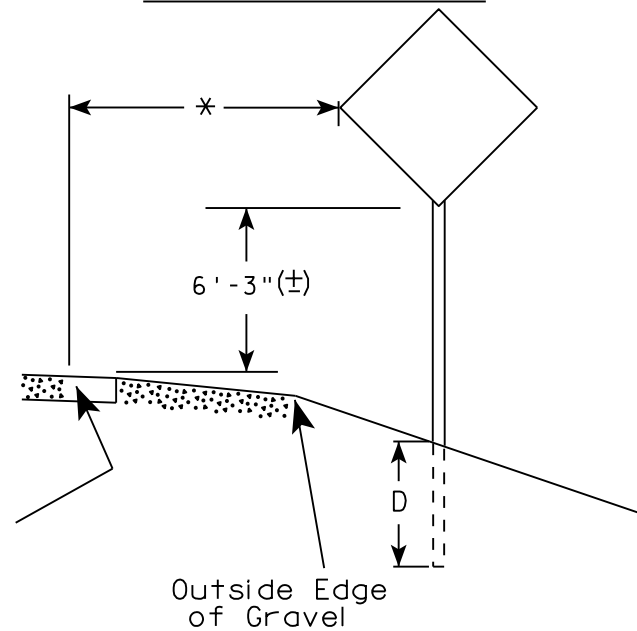
1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Black Non-reflective
Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. 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 inches (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.

URBAN AREA

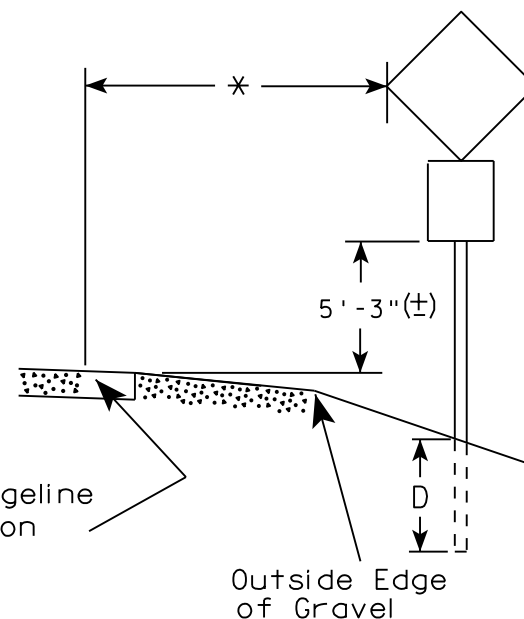


White Edgeline
Location

RURAL AREA (See Note 2)



White Edgeline
Location



Outside Edge
of Gravel

POST EMBEDMENT DEPTH

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

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as 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), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

✱✱ 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.

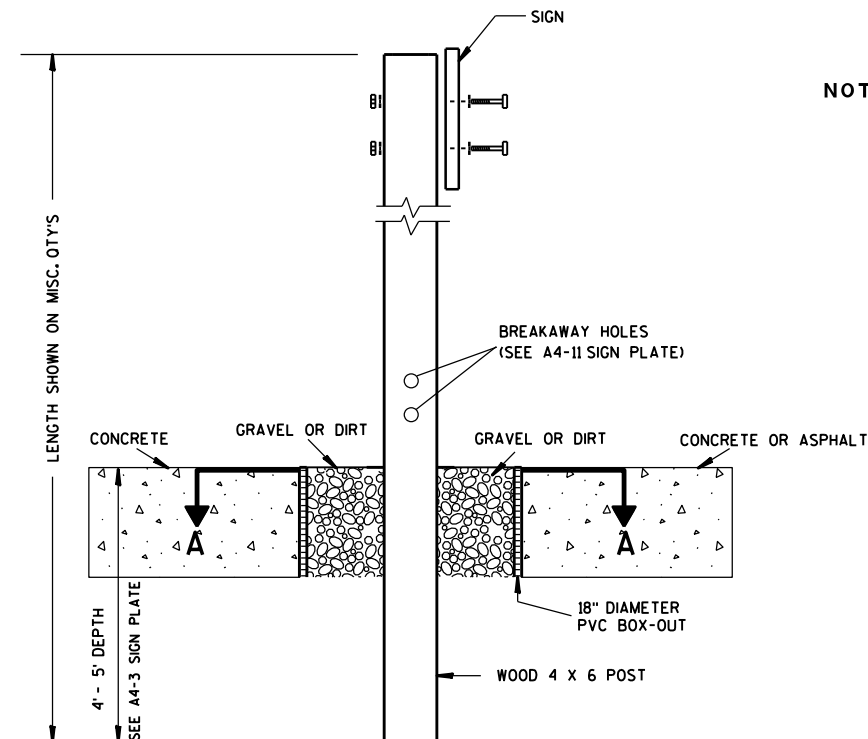
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

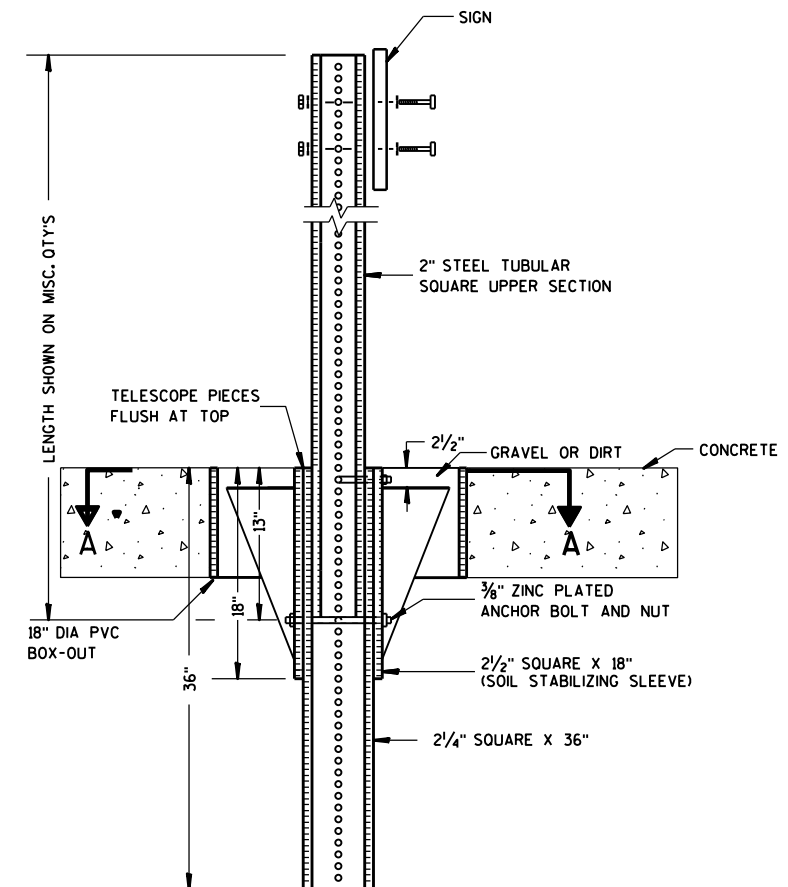
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

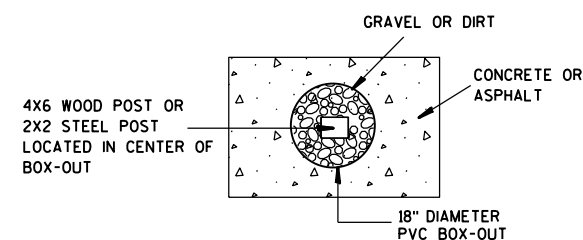
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 PLAT 102 A4-3B.1

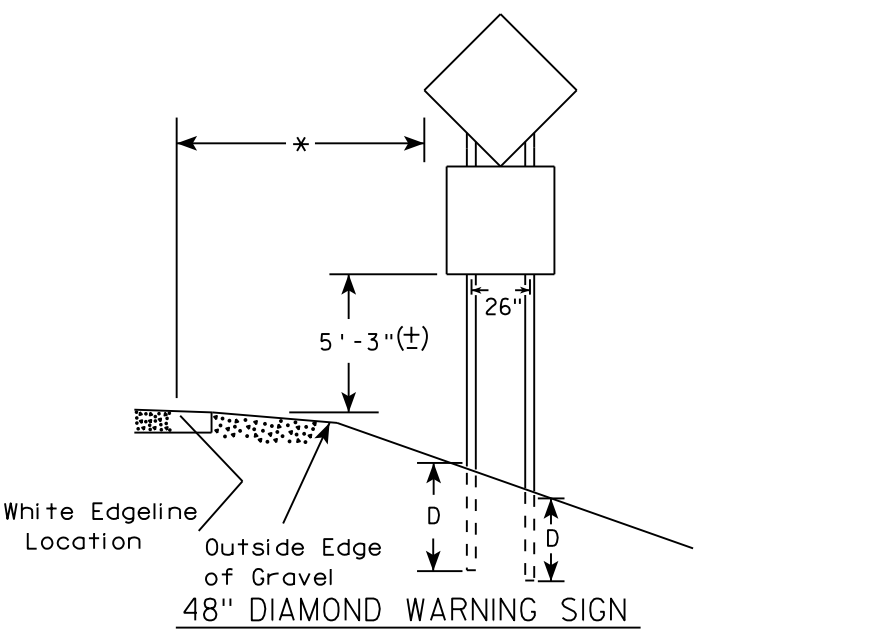
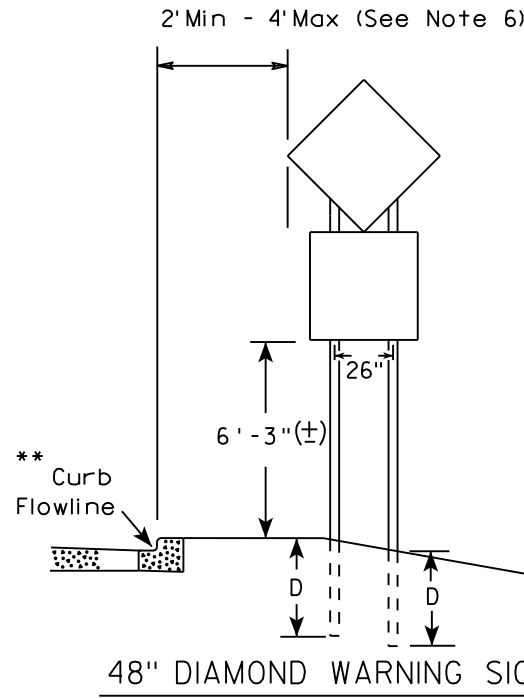
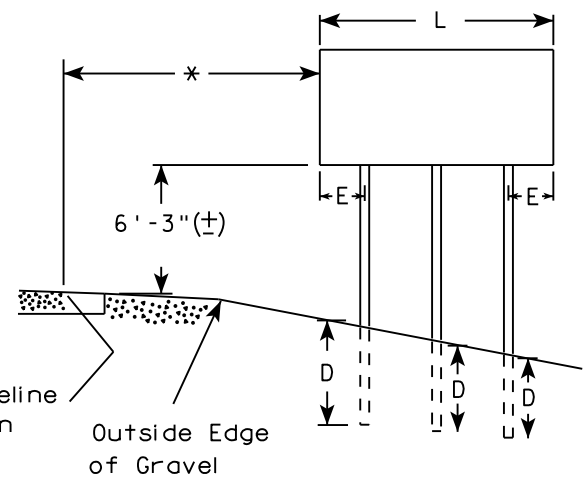
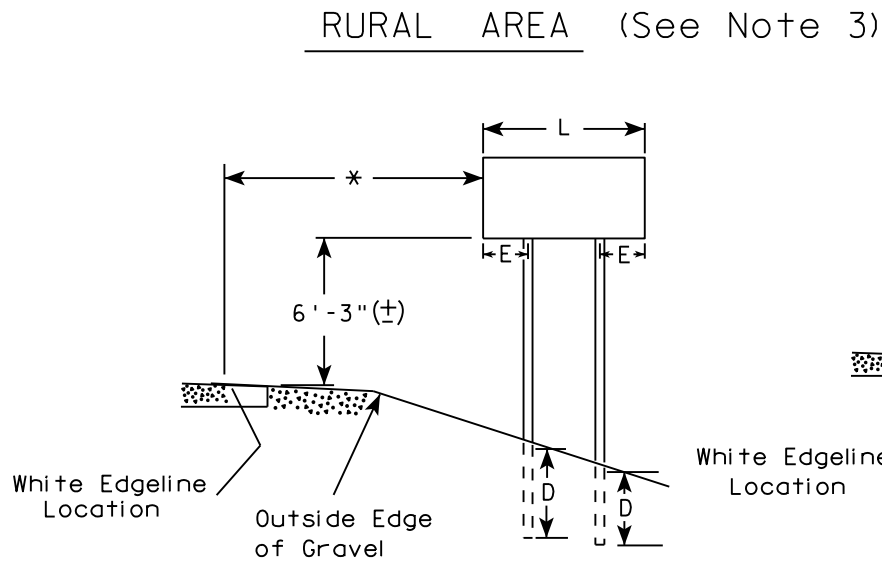
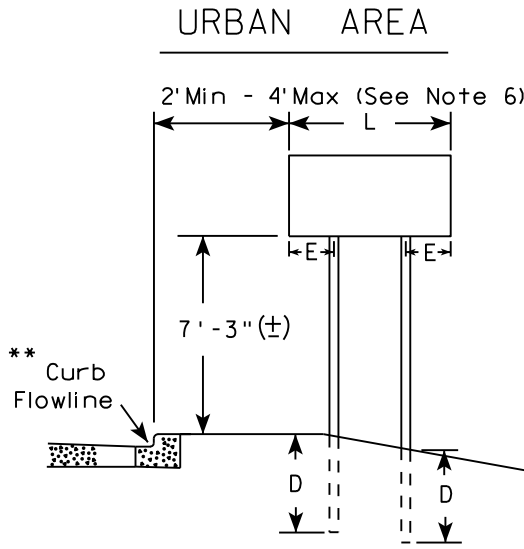
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

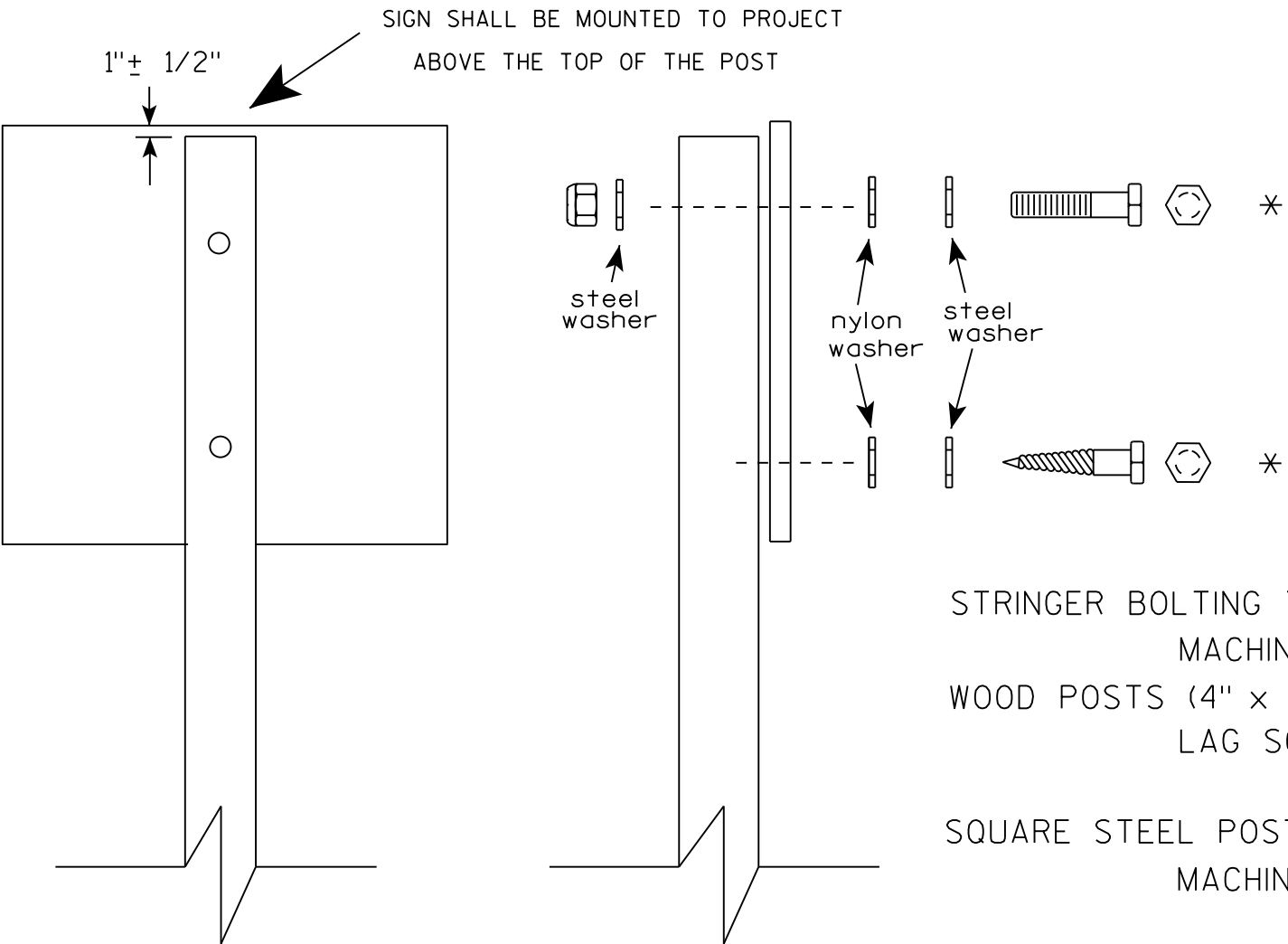
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 8/21/17	PLATE NO. A4-4.15

- 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. J-Assemblies are considered to be one sign for mounting height.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) 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), In Road Object Markers (W5-54) & End of Road Markers (W5-56) 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 and less than 20 S.F. in area.



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

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

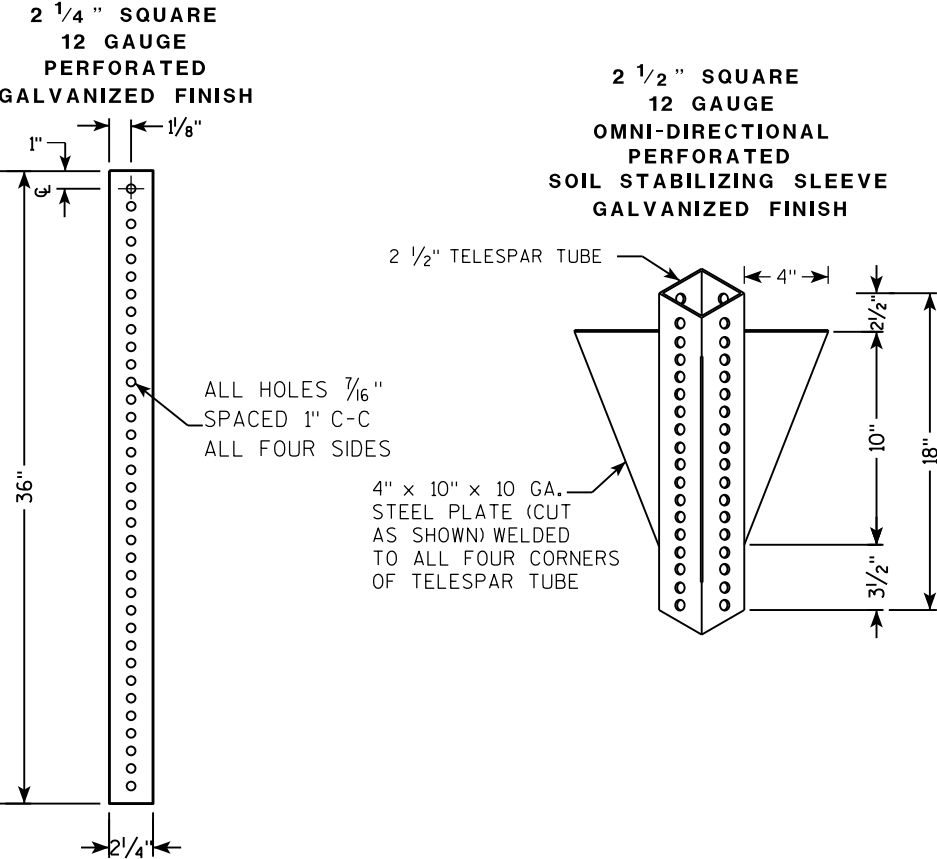
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

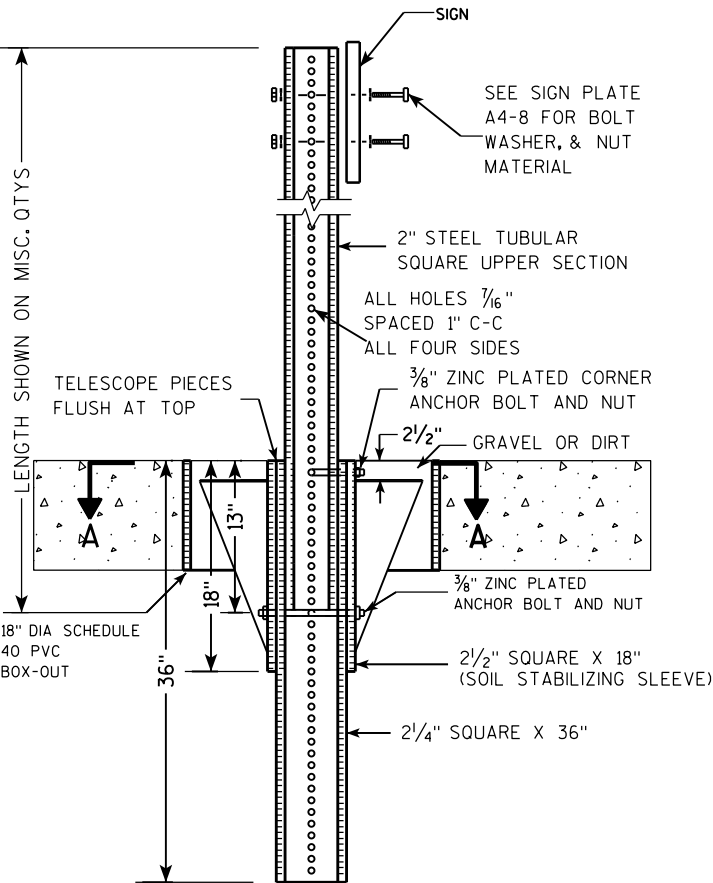
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8 104

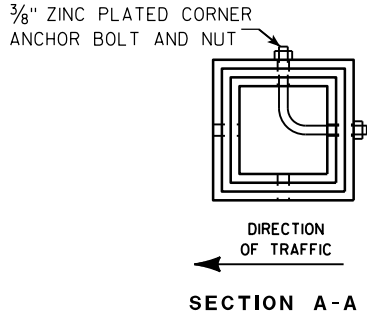
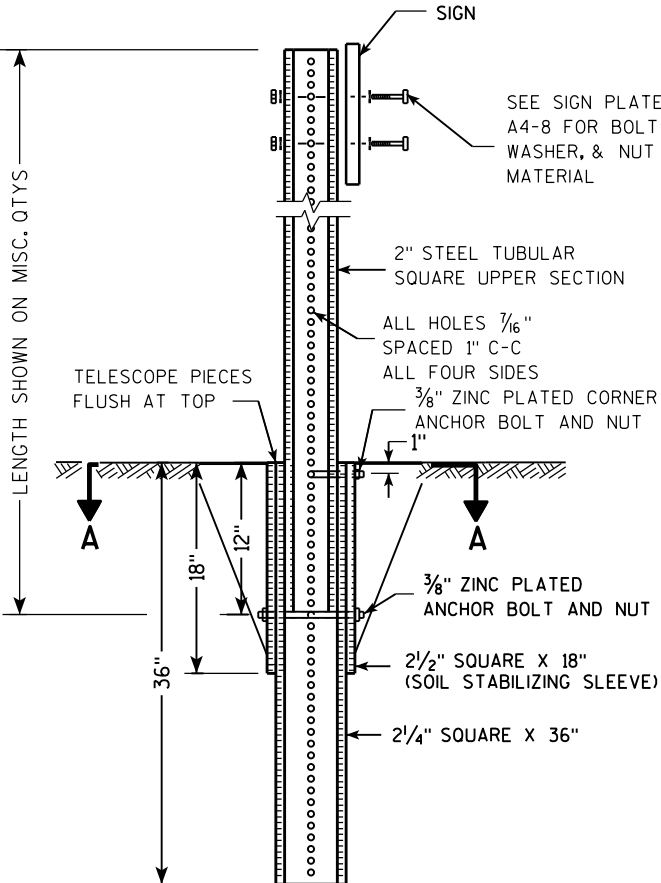
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

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

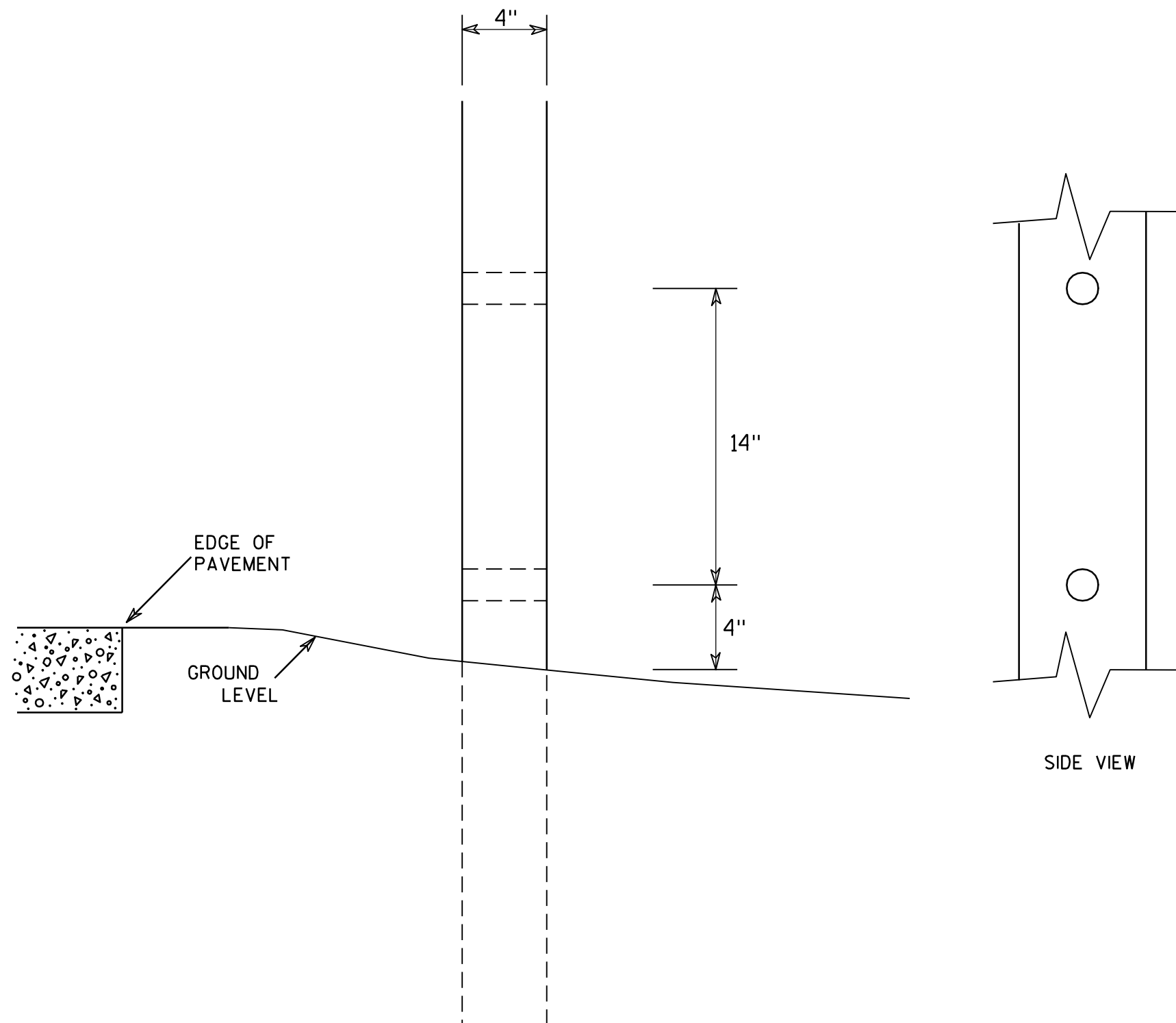
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 105 14-9.9

7



GENERAL NOTES

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

7

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

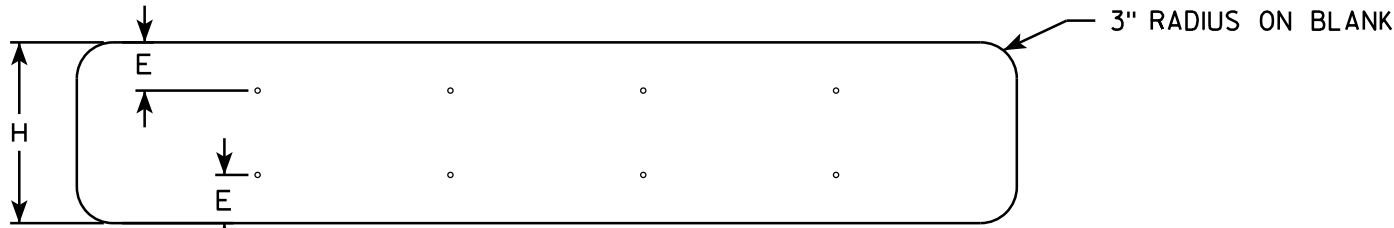
PROJECT NO:

HWY:

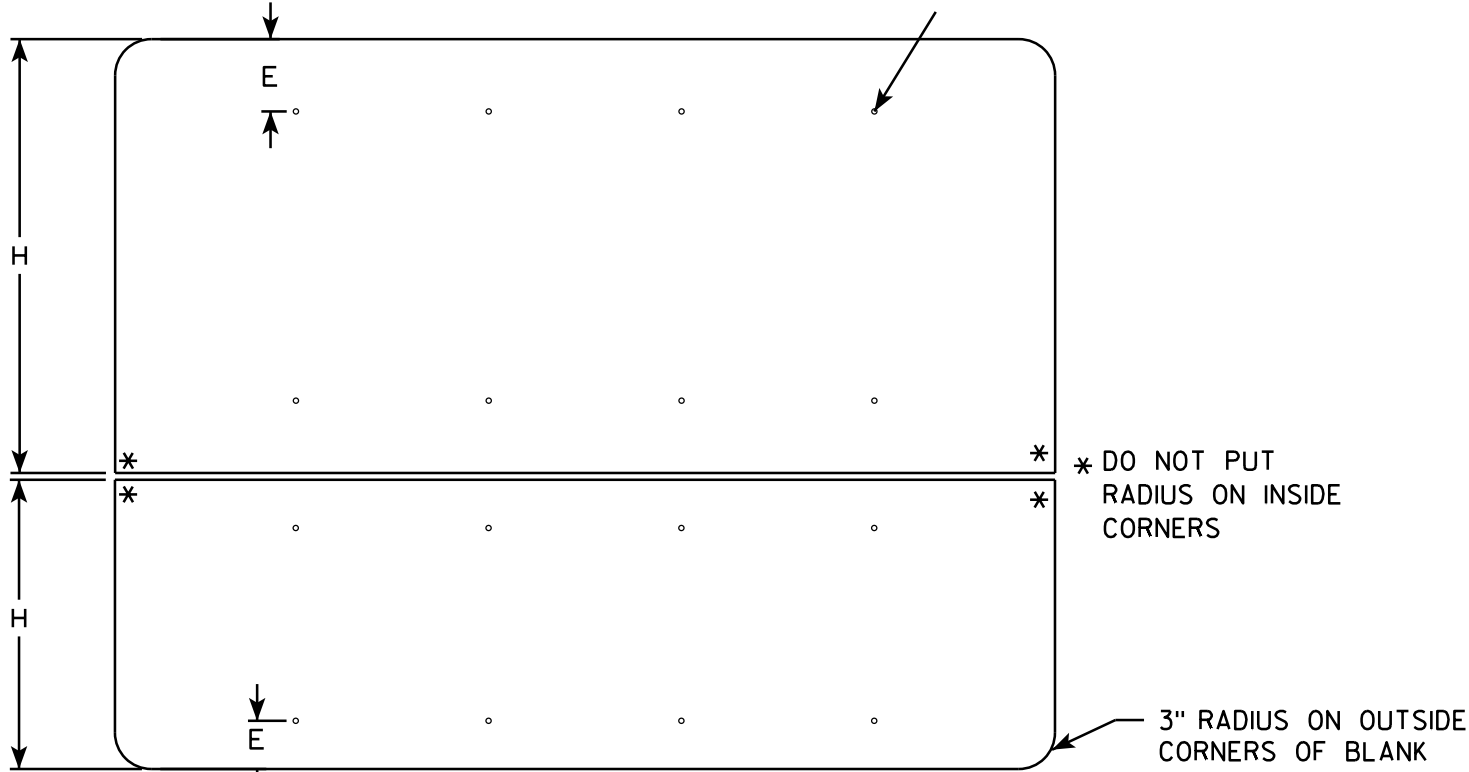
COUNTY:

SHEET NO: 106

E



SINGLE PIECE ALUMINUM SIGN 1/16" MOUNTING HOLES

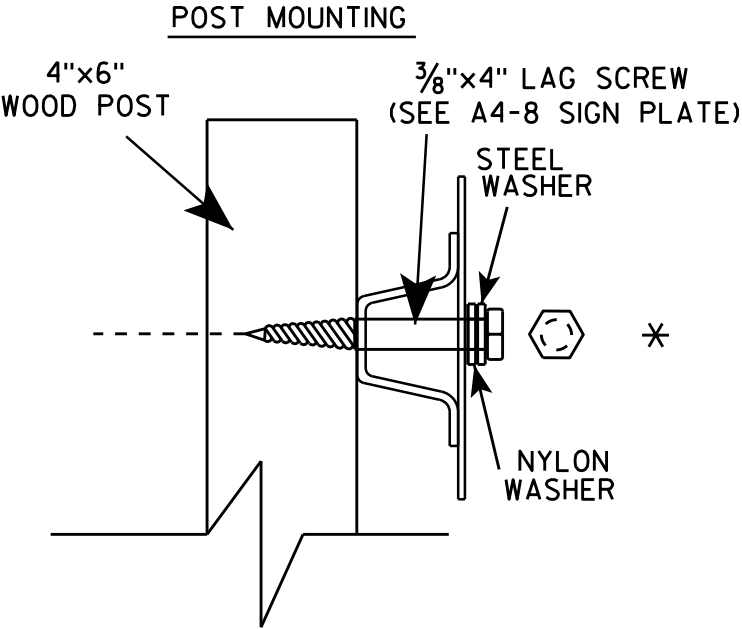
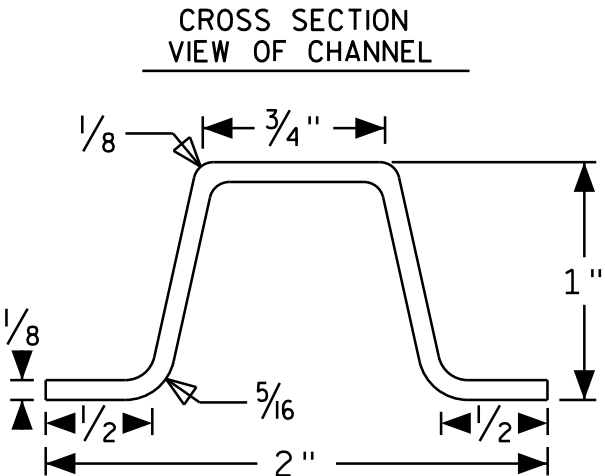
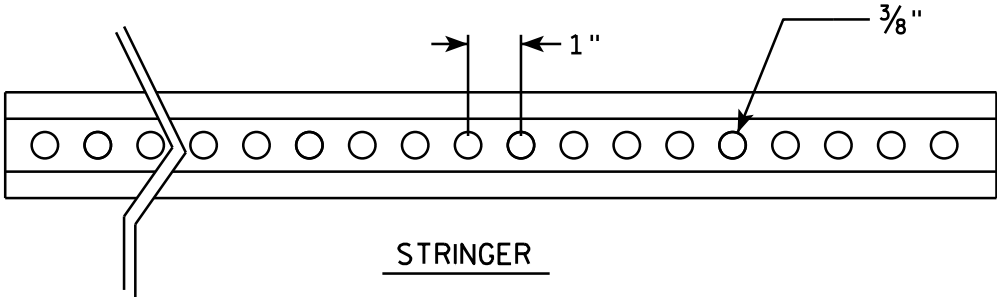


MULTI-PIECE ALUMINUM SIGN

GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES			
78"	72"	2	16"	15"	31"	47"	63"
84"	72"	2	17"	16 1/2"	33 1/2"	50 1/2"	67 1/2"
90"	72"	2	18"	18"	36"	54"	72"
96"	90"	2	19"	19 1/2"	38 1/2"	57 1/2"	76 1/2"
102"	90"	2	20"	21"	41"	61"	81"
108"	90"	2	21"	22 1/2"	43 1/2"	64 1/2"	85 1/2"
114"	108"	3	15"	12"	27"	42"	57" 72" 87" 102"
120"	108"	3	16"	12"	28"	44"	60" 76" 92" 108"
126"	108"	3	17"	12"	29"	46"	63" 80" 97" 114"
132"	126"	3	18"	12"	30"	48"	66" 84" 102" 120"
138"	126"	3	19"	12"	31"	50"	69" 88" 107" 126"
144"	126"	3	20"	12"	32"	52"	72" 92" 112" 132"



SIGN STRINGER
MOUNTING REQUIREMENTS

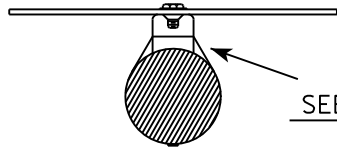
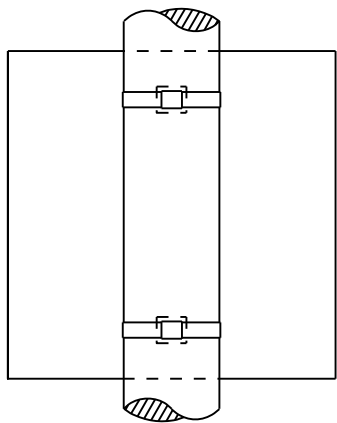
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE No A4-18.1
107

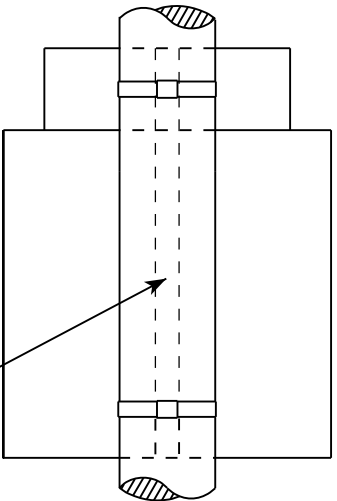
BANDING

SINGLE SIGN

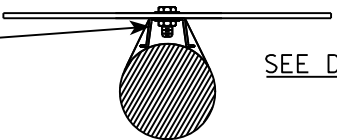


SEE DETAIL A

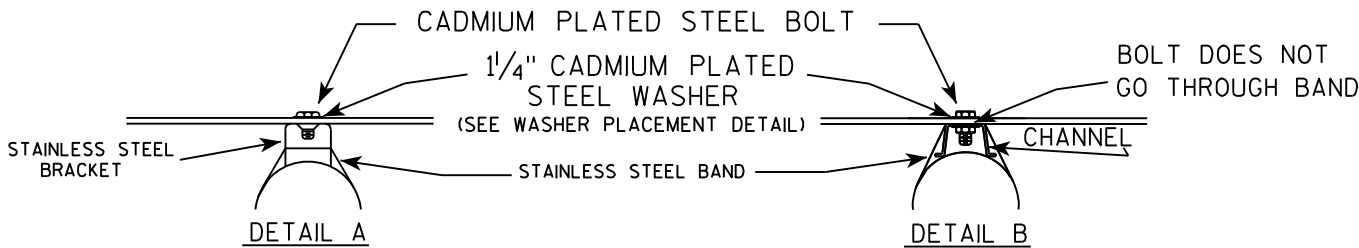
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



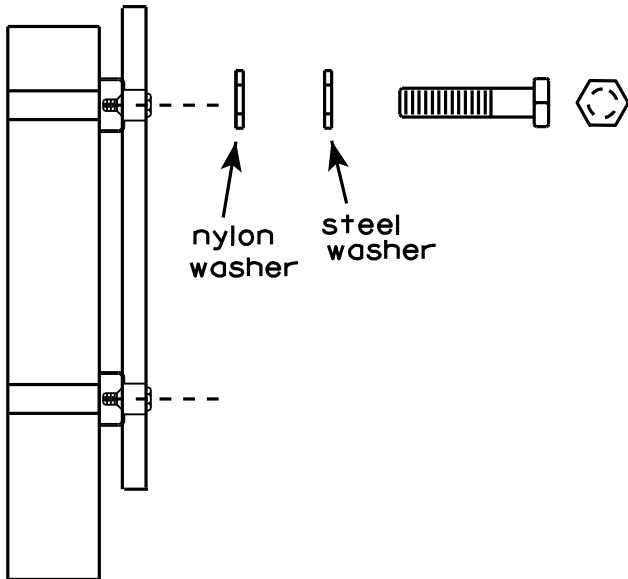
SEE DETAIL B



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 $\frac{3}{4}$ " in width and 0.025" thickness.

WASHER PLACEMENT



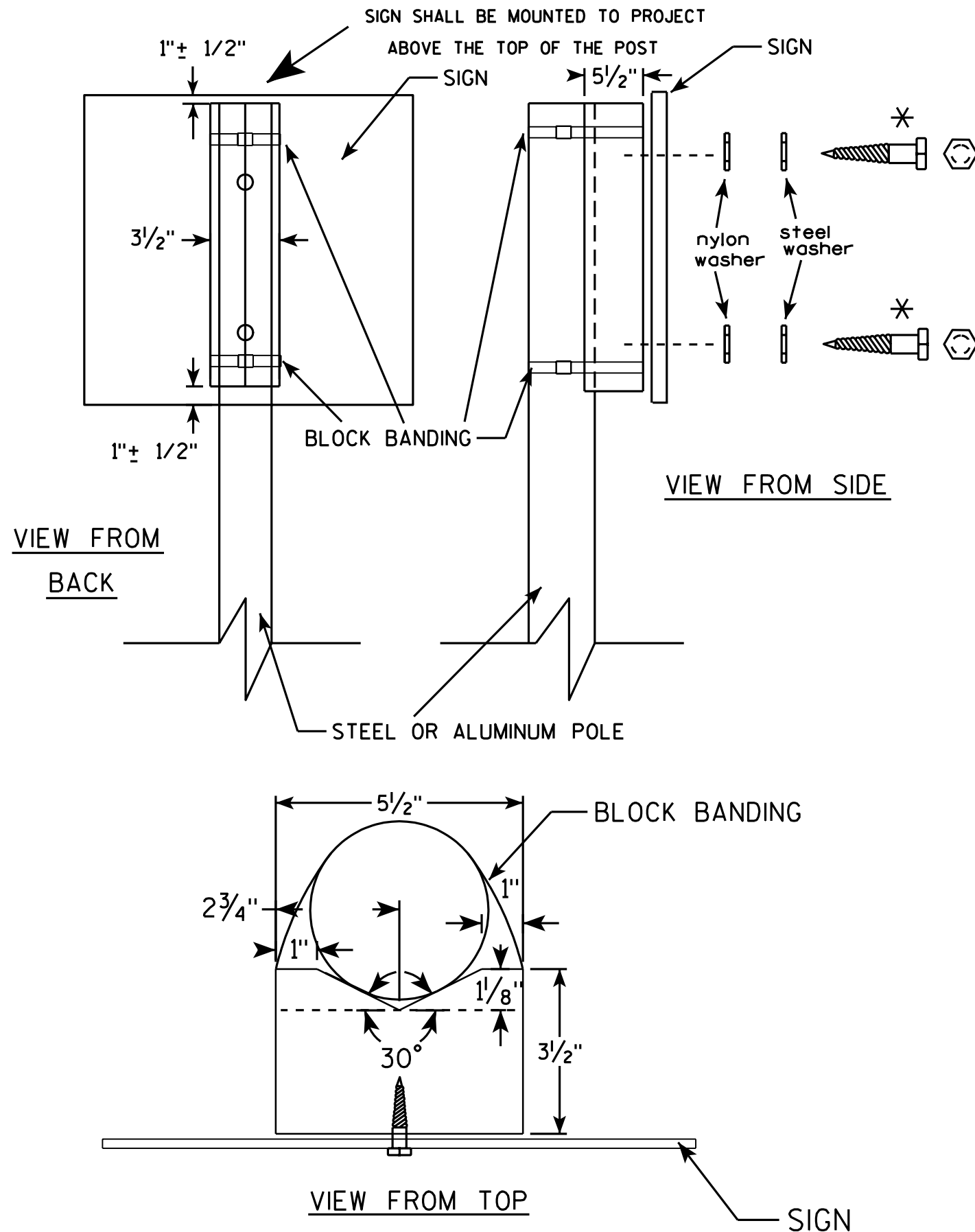
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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, $\frac{3}{4}$ " 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 NORMALLY 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 $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

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

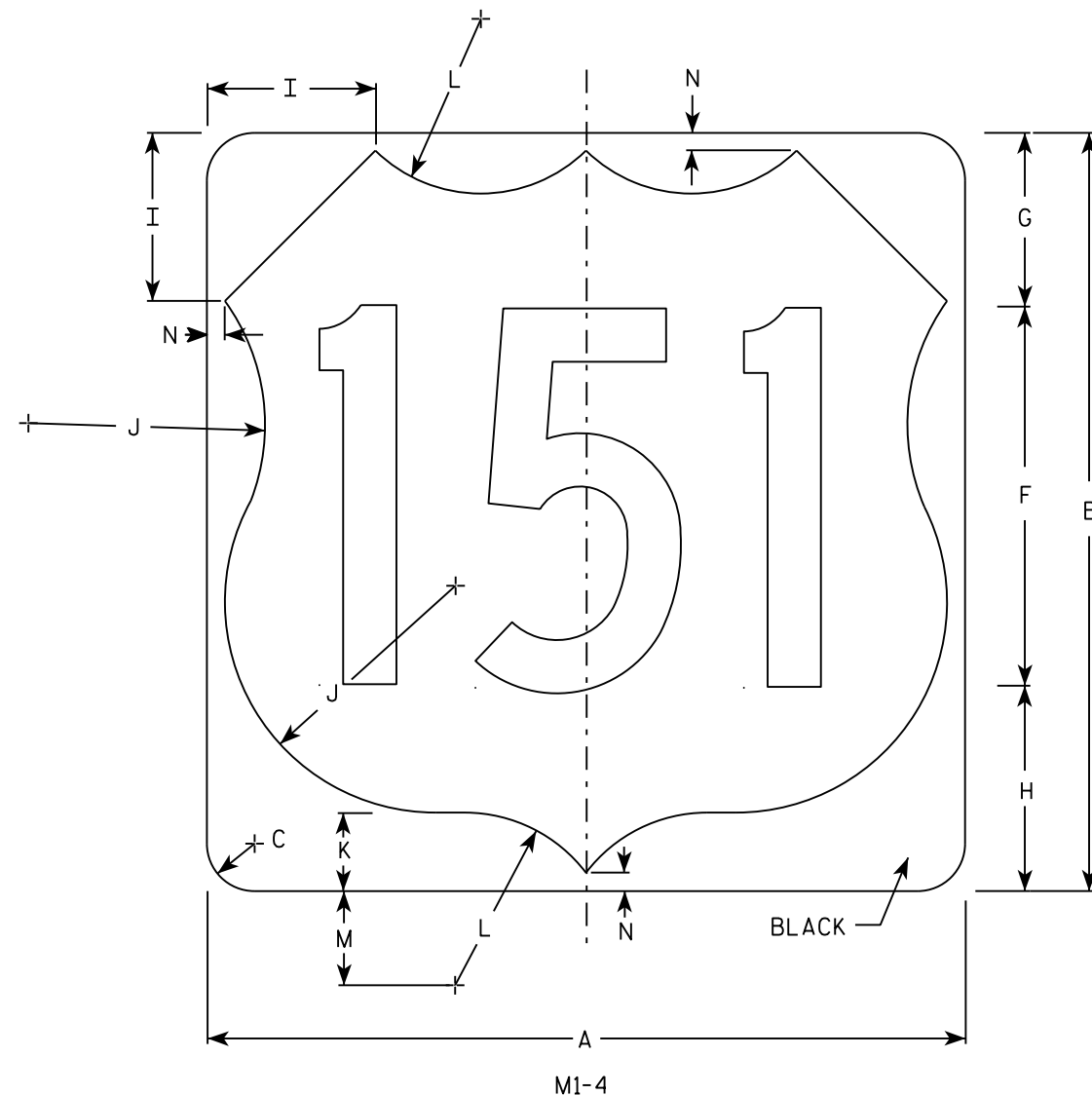
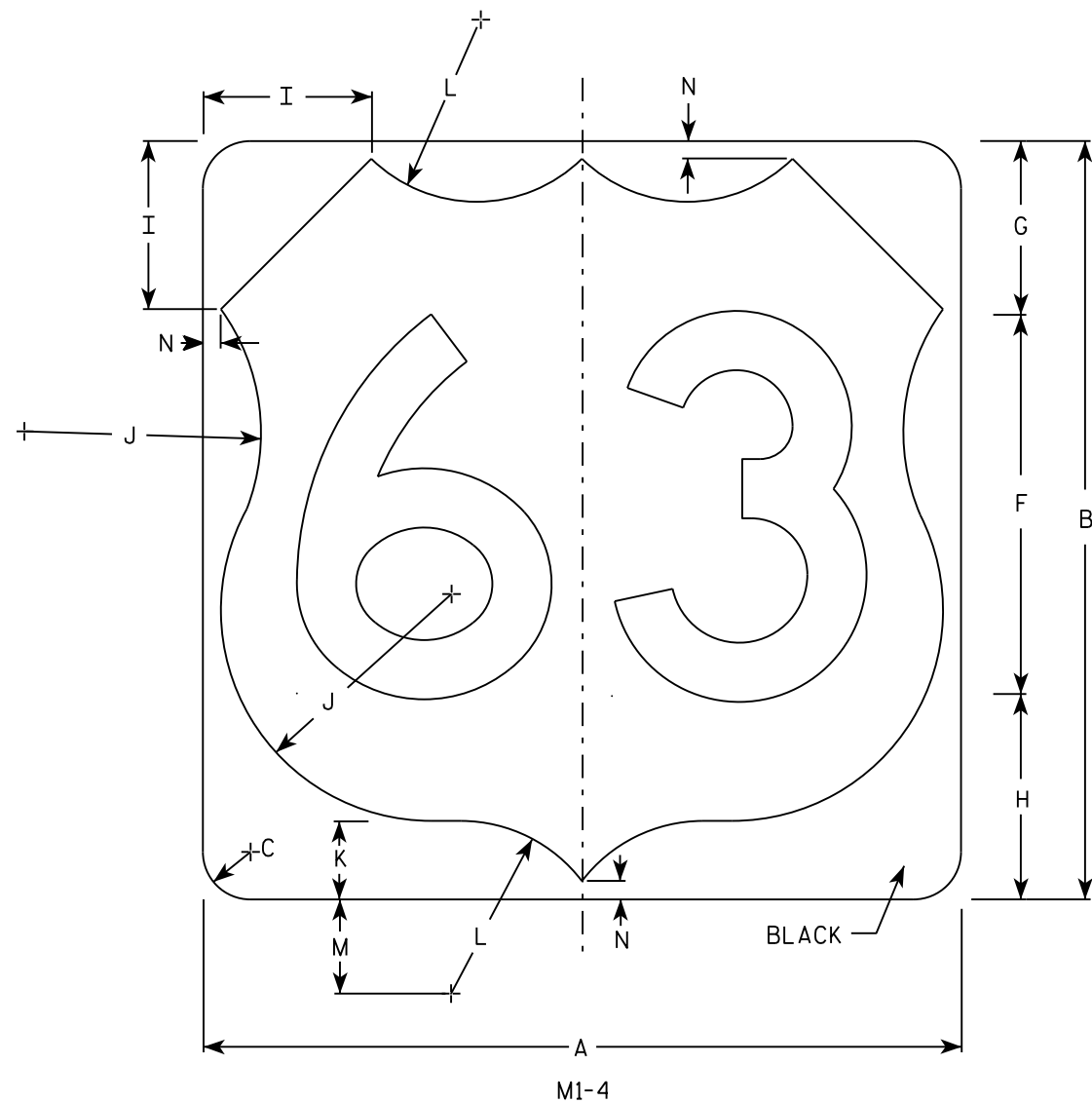
PROJECT NO:

SHEET NO: 109

E

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs Series C
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	Areq. sq. ft.
1																											
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 110	E
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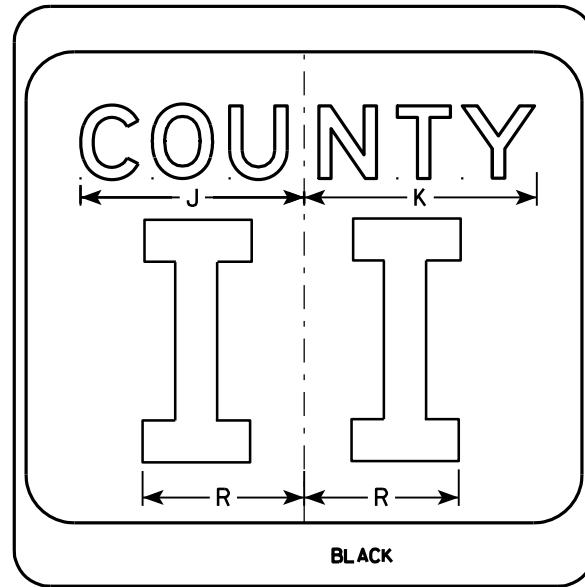
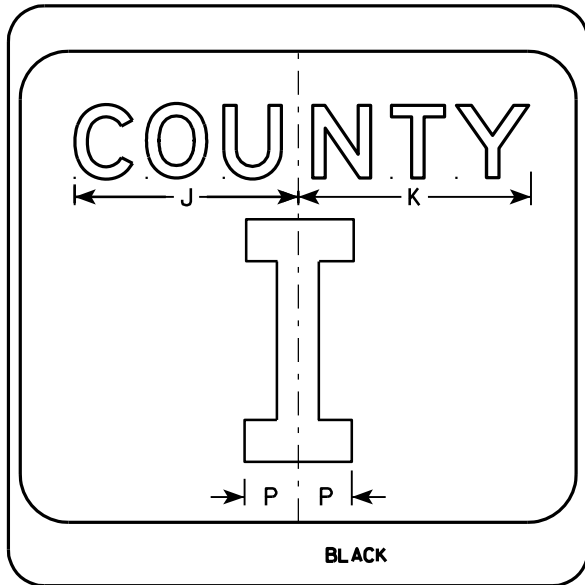
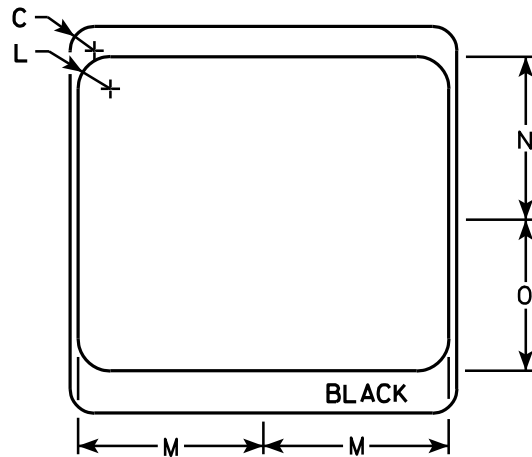
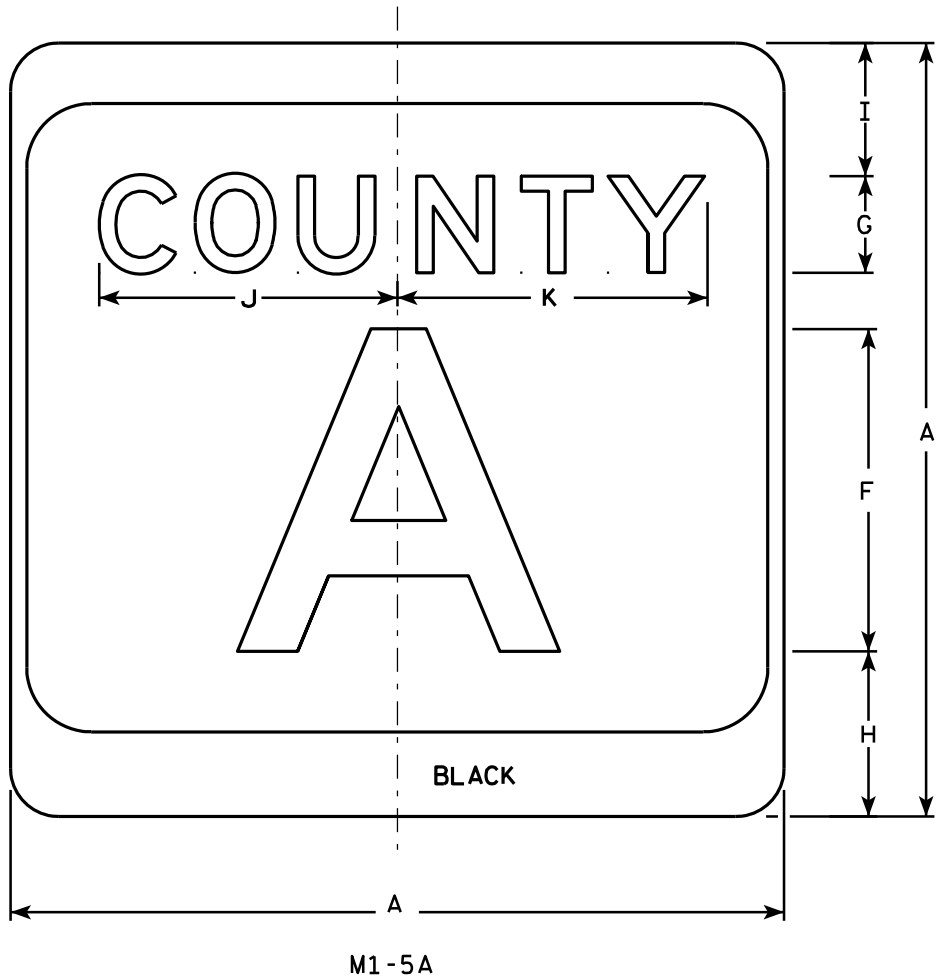
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-4.10

7



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

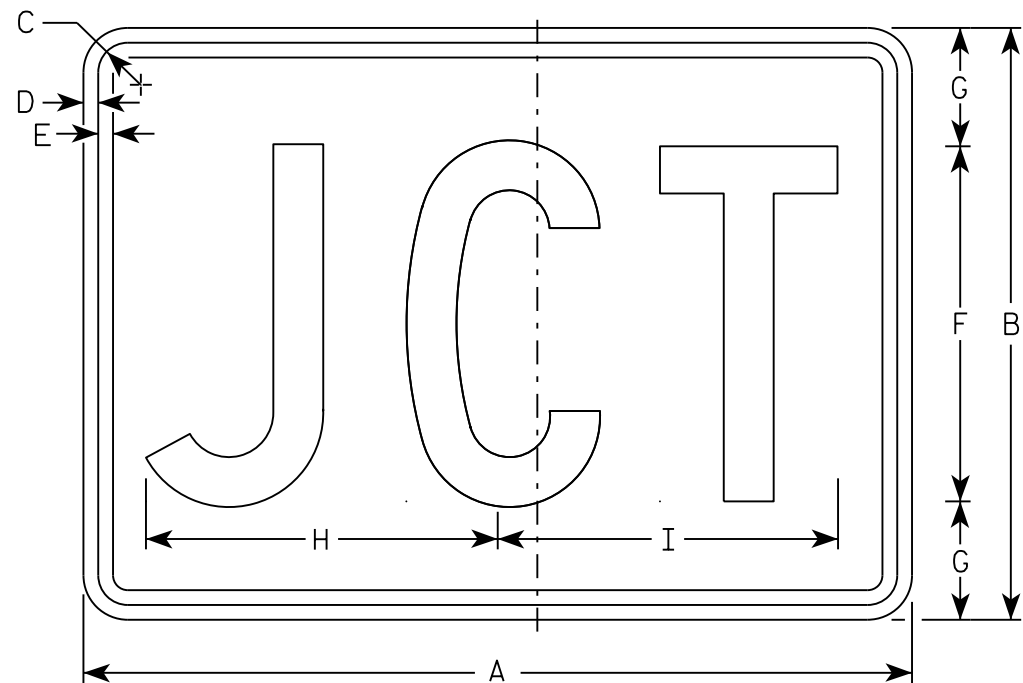
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 111	E
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CTH MARKER
M1-5A FOR ASSEMBLIES

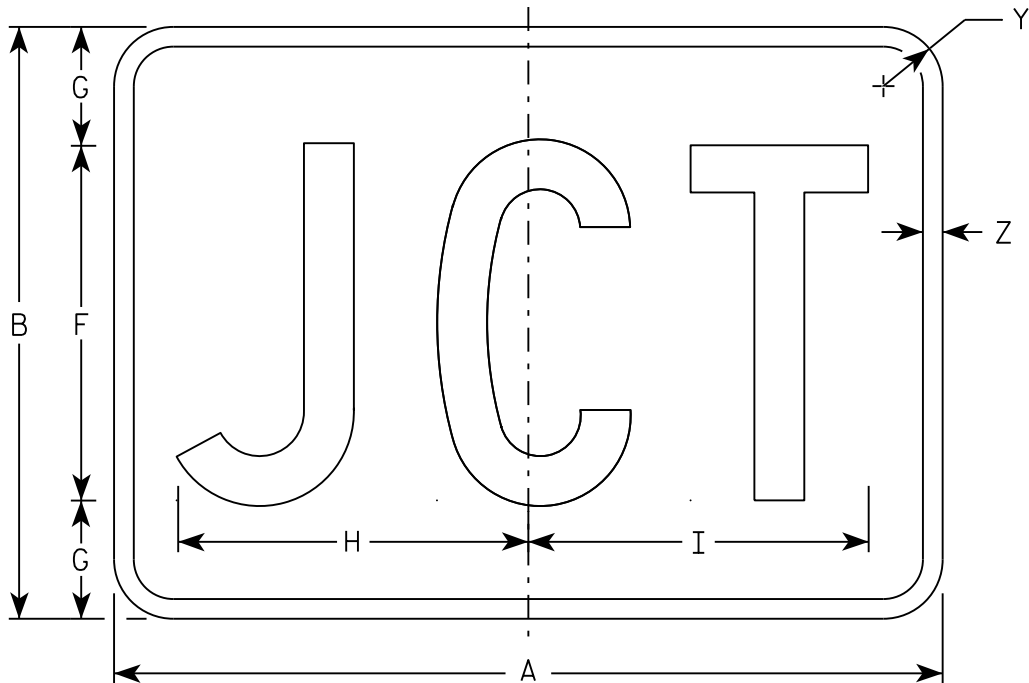
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

NOTES

- 1. Sign is Type II - Type H
- 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
 Message - Black
 MB2-1 Background - Blue
 Message - White
 MK2-1 Background - Green
 Message - White
 MM2-1 Background - White
 Message - Green
 MN2-1 Background - Brown
 Message - White
 MP2-1 Background - White
 Message - Blue
 MR2-1 Background - Brown
 Message - Yellow

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	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
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
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
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

STANDARD SIGN

M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

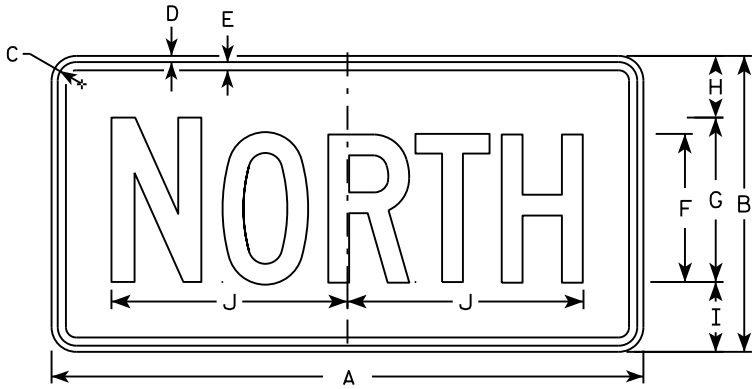
Matthew R. Rauch

For State Traffic Engineer

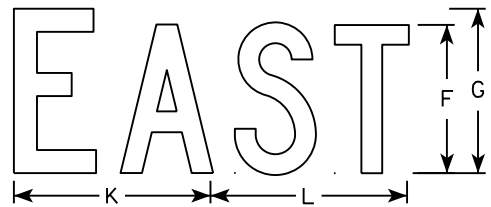
DATE 10/15/15

PLATE 112

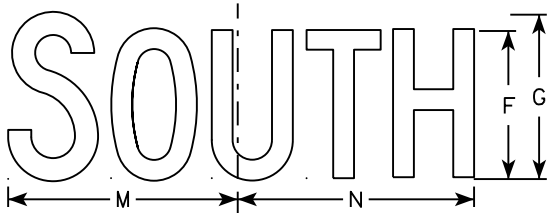
'2-1.12



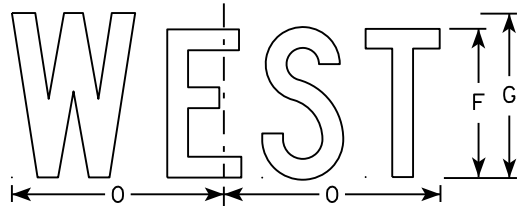
M3-1
MM3-1
MP3-1



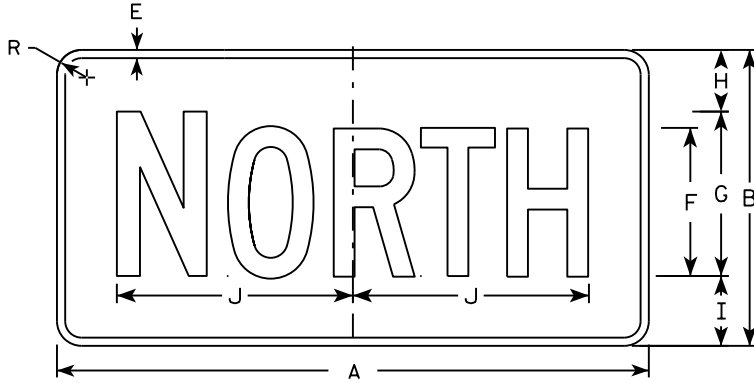
M3-2
MM3-2
MP3-2



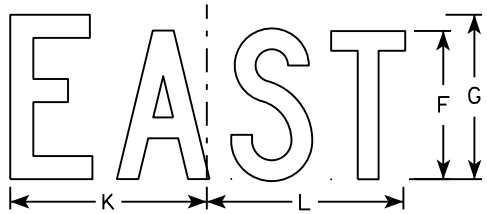
M3-3
MM3-3
MP3-3



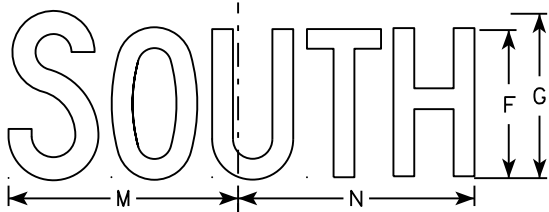
M3-4
MM3-4
MP3-4



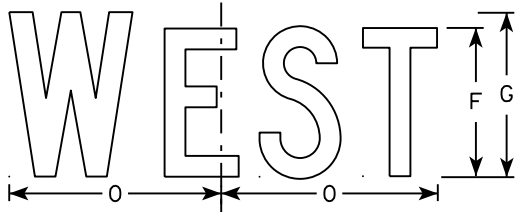
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
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 thru M3-4
SERIES

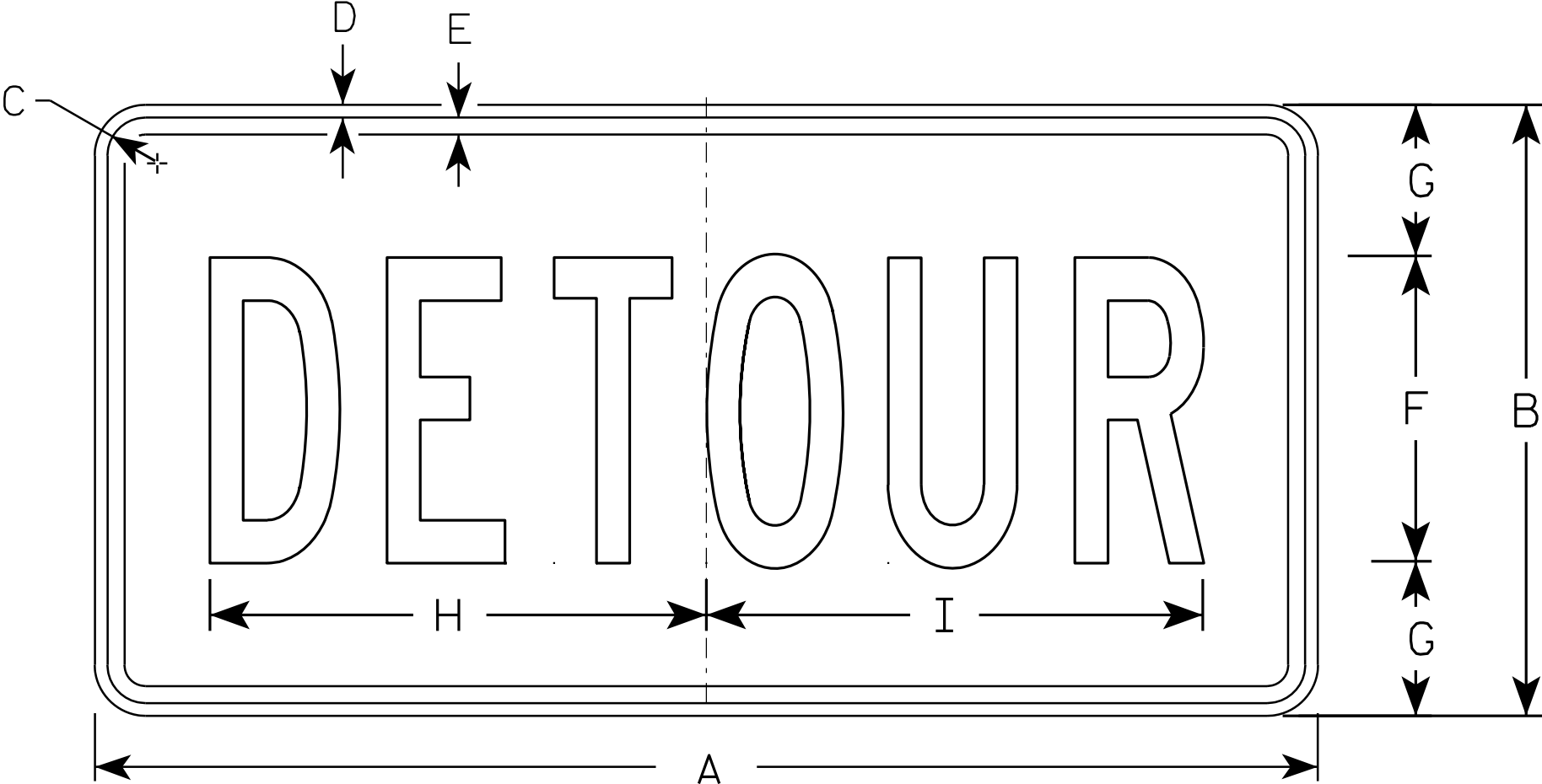
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 113 M3-1.14

NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - B
- 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.



M4 - 8

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	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

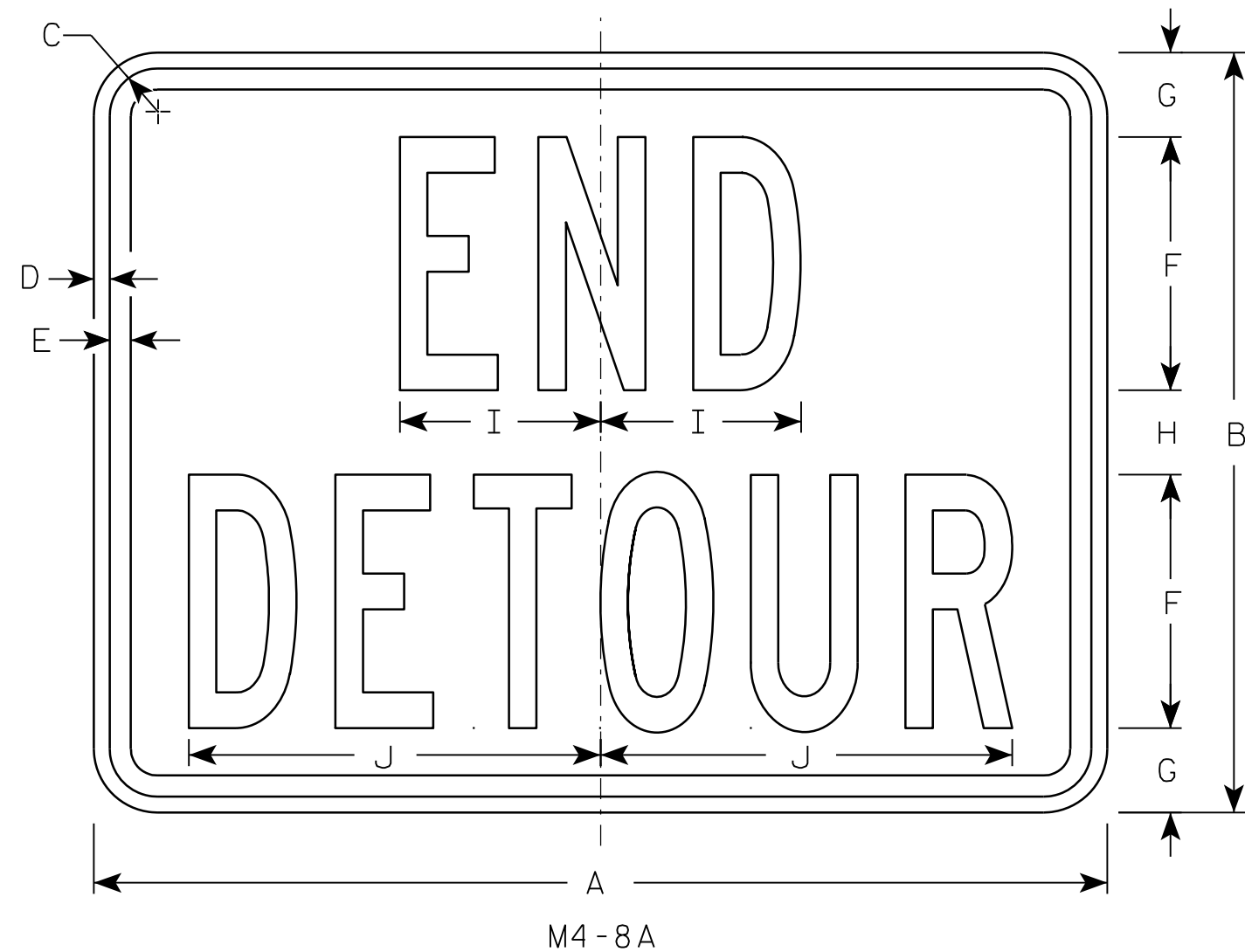
STANDARD SIGN
M4 - 8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

7



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - B
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.

7

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	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

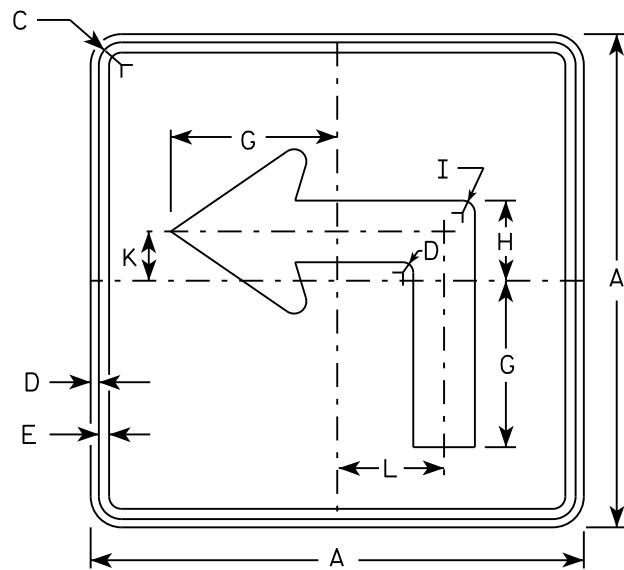
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 115	E
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STANDARD SIGN
M4-8A

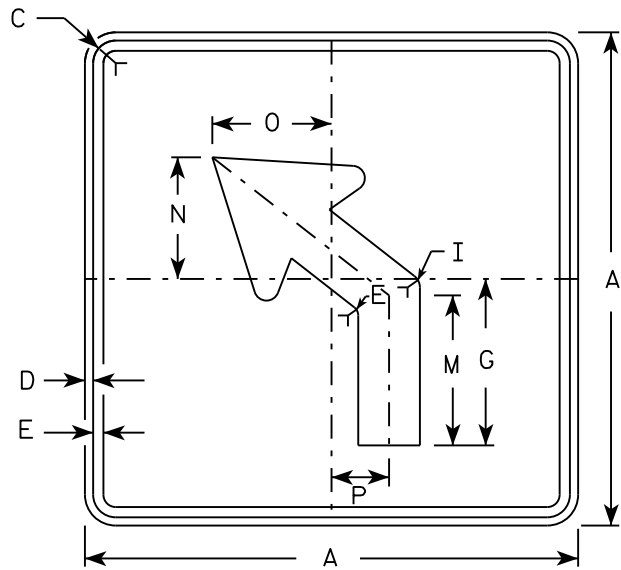
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

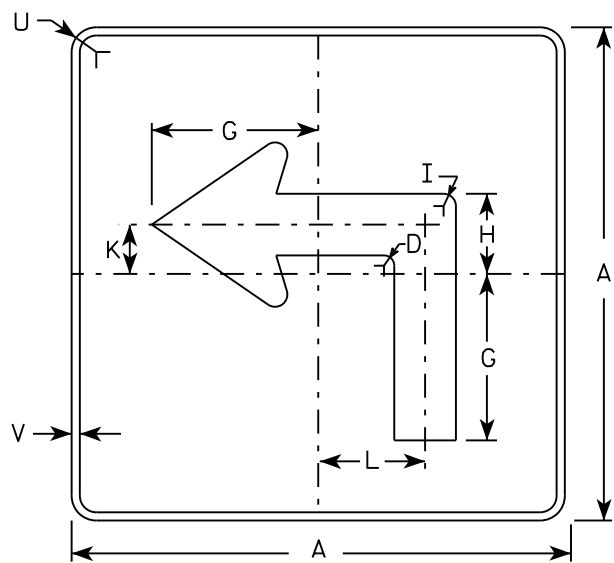
DATE 3/9/11 PLATE NO. M4-8A.2



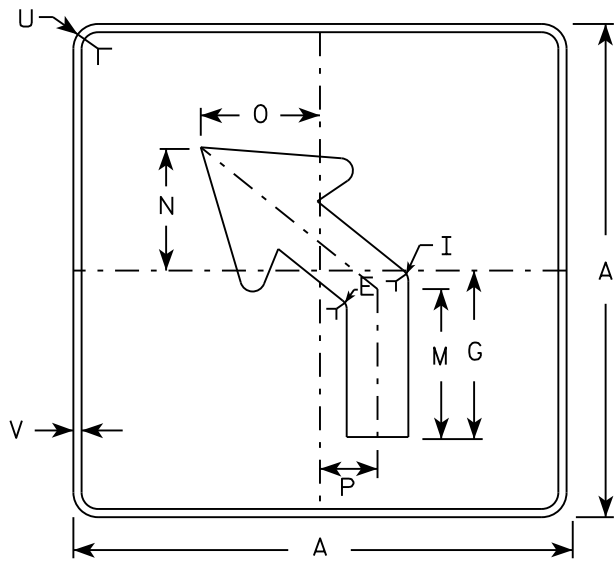
M5-1L
MM5-1L
M05-1L
MP5-1L



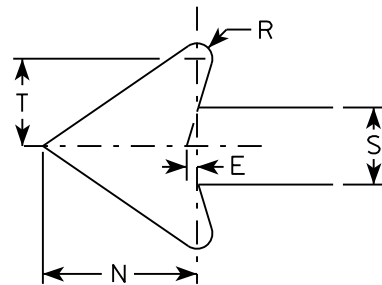
M5-2L
MM5-2L
M05-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 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.
- | | |
|-----------------|---|
| M5-1 and M5-2 | Background - White |
| | Message - Black |
| MB5-1 and MB5-2 | Background - Blue |
| | Message - White |
| MK5-1 and MK5-2 | Background - Green |
| | Message - White |
| MM5-1 and MM5-2 | Background - White |
| | Message - Green |
| MN5-1 and MN5-2 | Background - Brown |
| | Message - White |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
| | Message - Black |
| MP5-1 and MP5-2 | Background - White - Type H Reflective |
| | Message - Blue |
| MR5-1 and MR5-2 | Background - Brown |
| | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

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	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

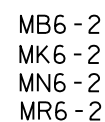
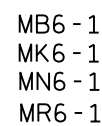
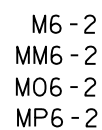
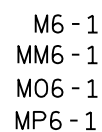
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE 116 M5-1.13



MR6-1 and MR6-2 Background - Brown
Message - Yellow



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R4-3

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 3/4	10	6 1/4	6 3/4	7 1/8	7 5/8													5.0
2M	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 3/4	10	6 1/4	6 3/4	7 1/8	7 5/8													5.0
3	36	48	1 5/8	5/8	3/4	6	6	4	14 5/8	15	9 3/8	10	10 3/4	11 3/8													12.0
4	36	48	1 5/8	5/8	3/4	6	6	4	14 5/8	15	9 3/8	10	10 3/4	11 3/8													12.0
5	48	60	2 1/4	3/4	1	8	7 1/4	4 1/2	19 1/2	20	12 1/2	13 1/2	14 1/4	15 1/4													20.0

STANDARD SIGN R4-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-3.8

PROJECT NO:

SHEET NO: 118

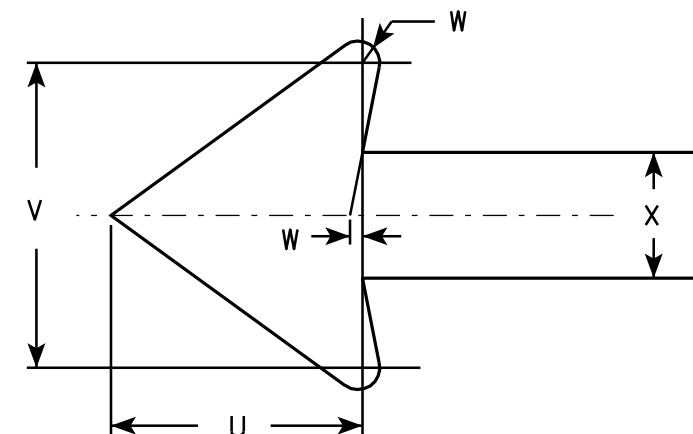
E



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																											

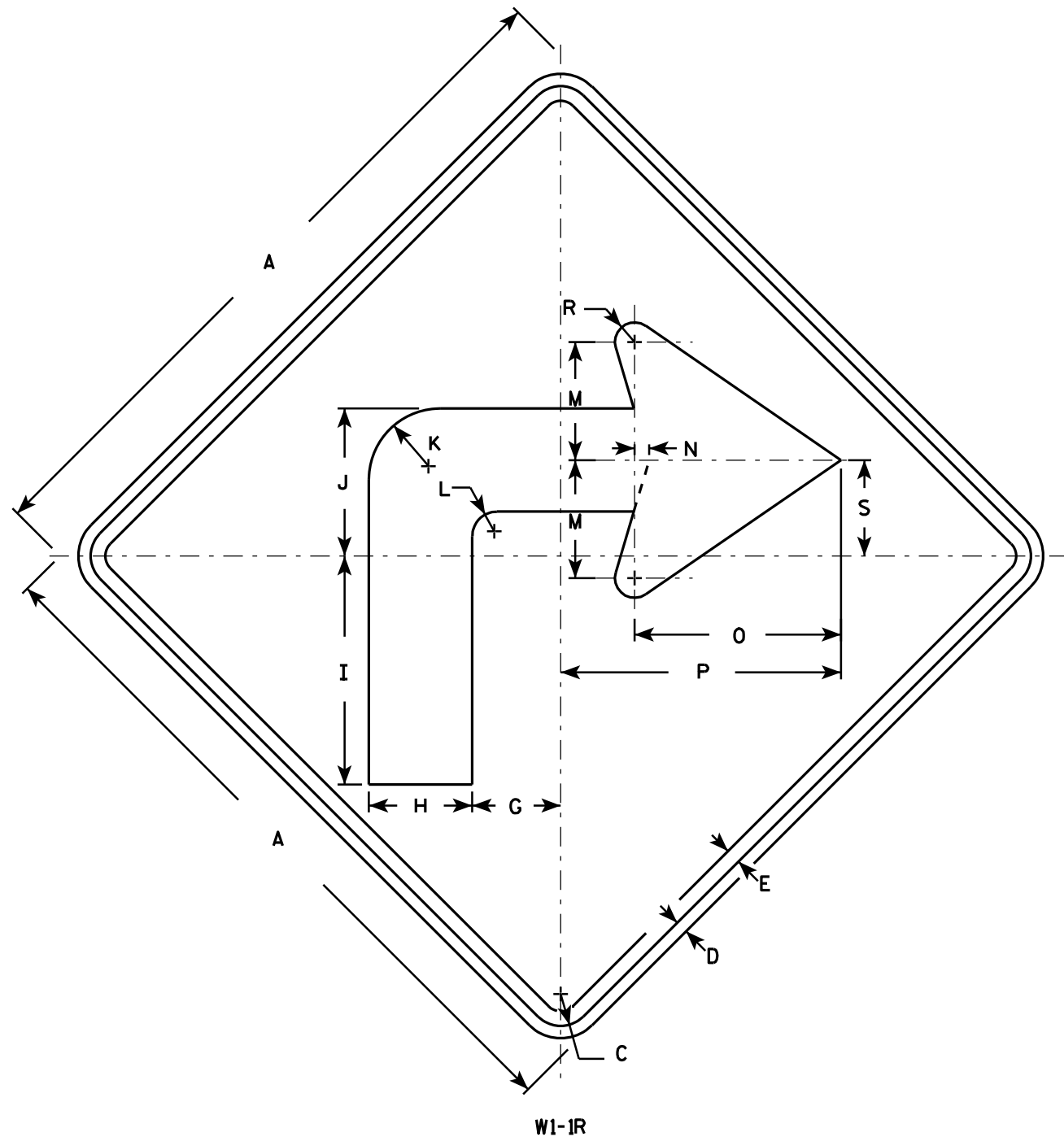
STANDARD SIGN
R7-1

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: 119 E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-1L is the same as W1-1R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		3	3 1/2	7 3/4	5	2 1/2	7/8	4	1/2	7	9 1/2		5/8	3 1/4								4.0
2S	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
2M	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
3	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
4	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0
5	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0

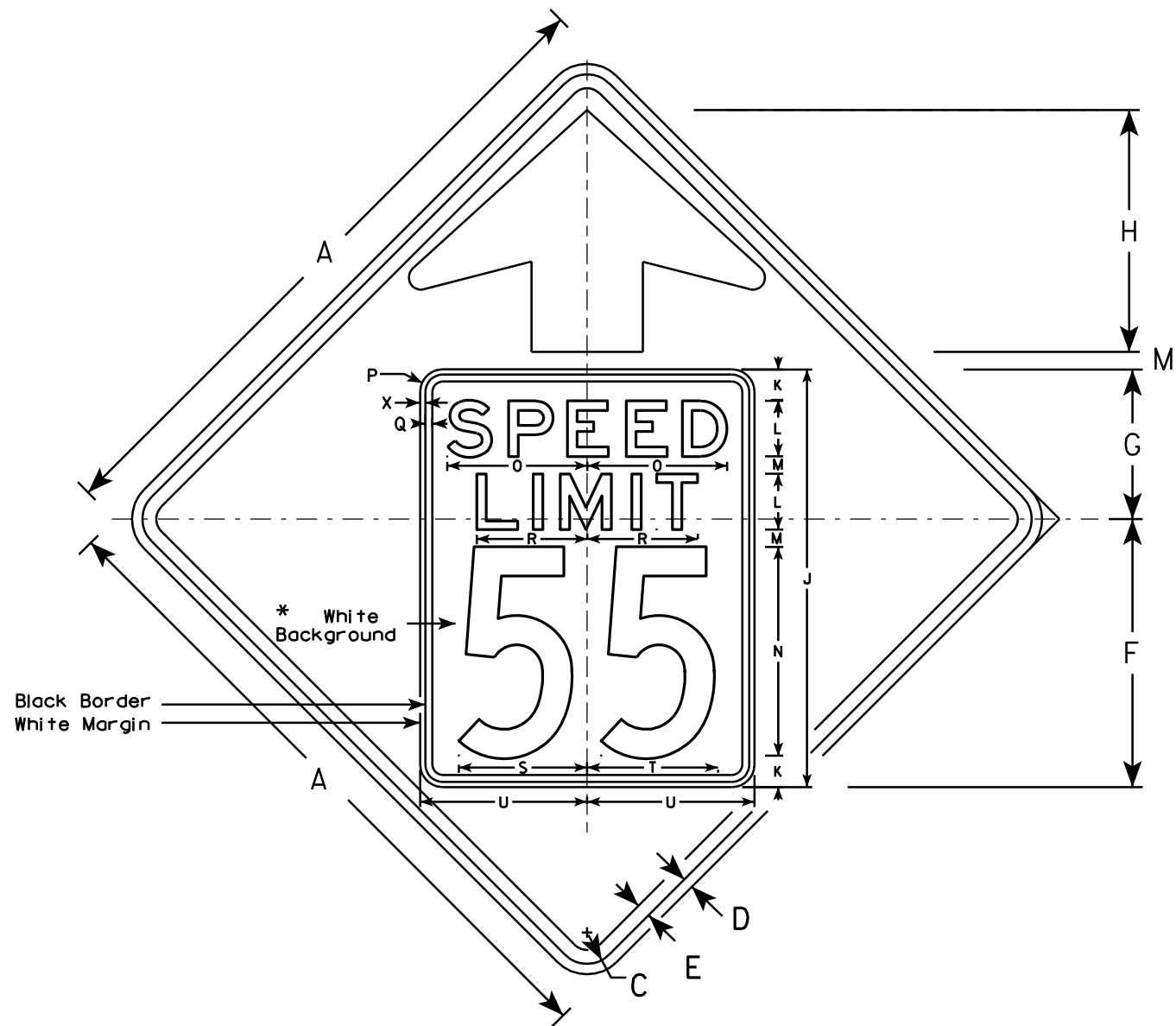
STANDARD SIGN

W1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-1.11

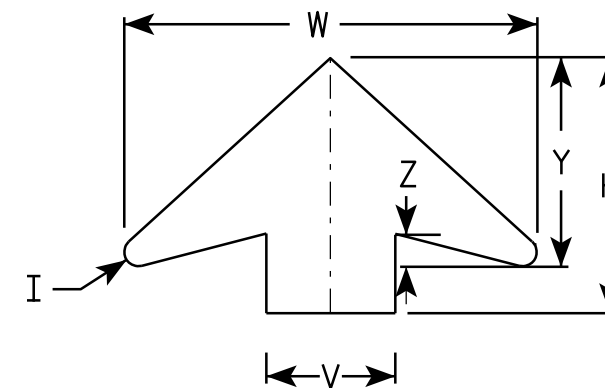


W3-5

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. Message Series - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White 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																											
2S	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
2M	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
3	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
4	48		2 1⁄4	3⁄4	1	19 1⁄4	10 3⁄4	17 3⁄8	7⁄8	30	2 1⁄4	4	1 1⁄4	15	10	1 5⁄8	1⁄2	8	9 1⁄4	9 3⁄8	12	8	25 5⁄8	3⁄8	13	2	16.0
5	48		2 1⁄4	3⁄4	1	19 1⁄4	10 3⁄4	17 3⁄8	7⁄8	30	2 1⁄4	4	1 1⁄4	15	10	1 5⁄8	1⁄2	8	9 1⁄4	9 3⁄8	12	8	25 5⁄8	3⁄8	13	2	16.0

STANDARD SIGN

W3-5

WISCONSIN DEPT OF TRANSPORTATION

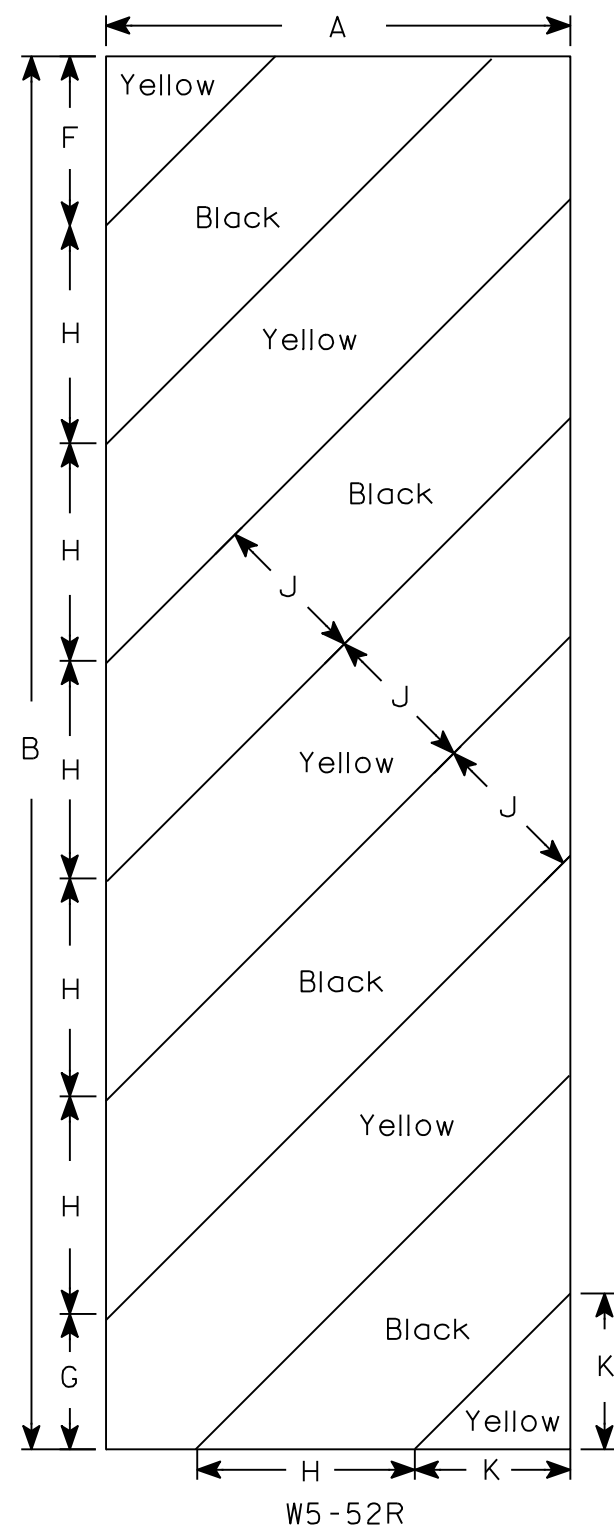
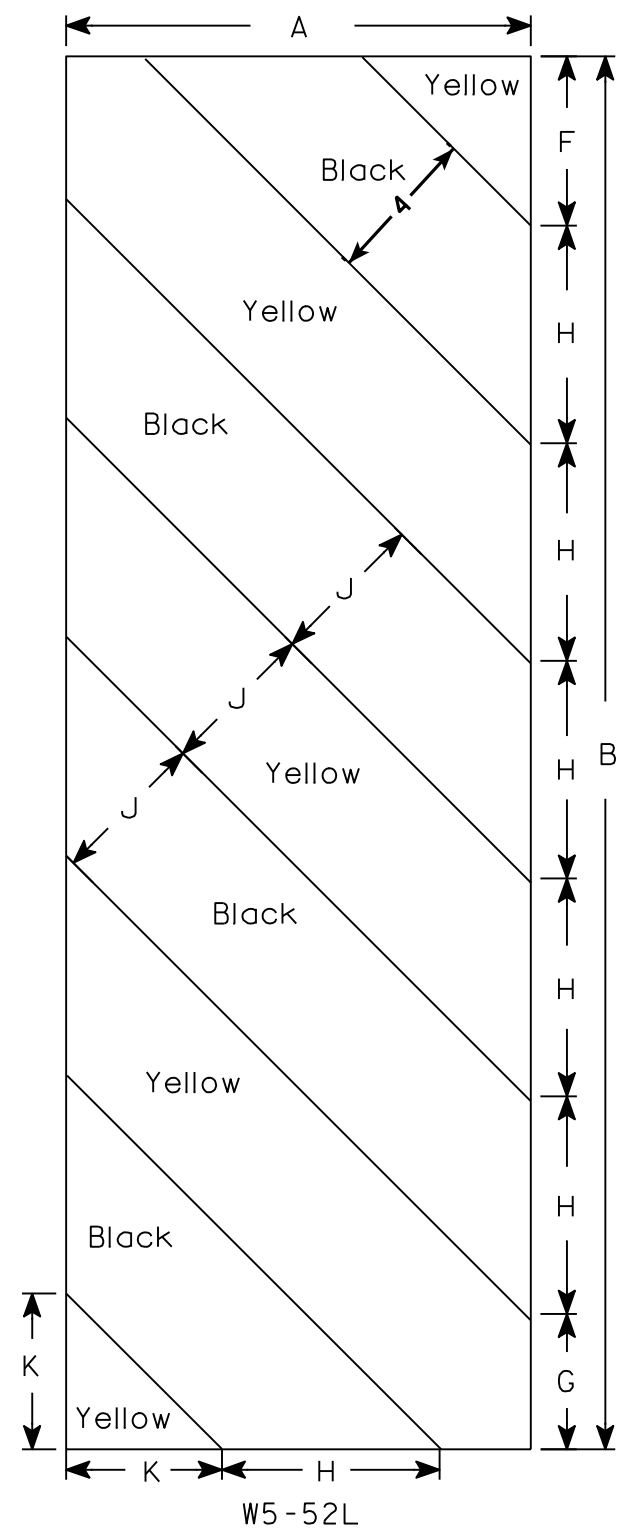
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W3-5.5

PROJECT NO:

SHEET NO: 121

E



NOTES

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

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

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

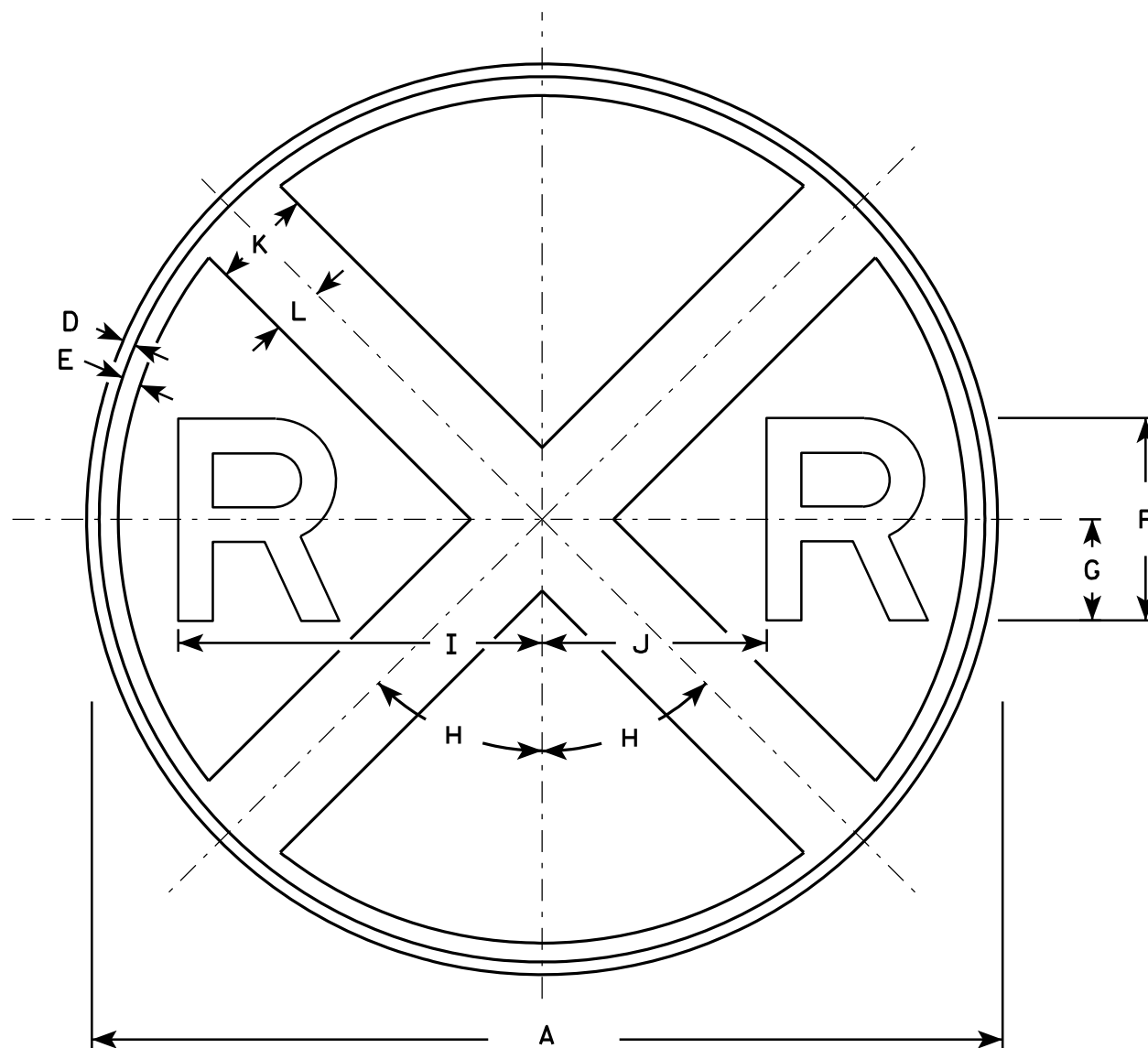
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 122

E



W10-1

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. Message Series - E

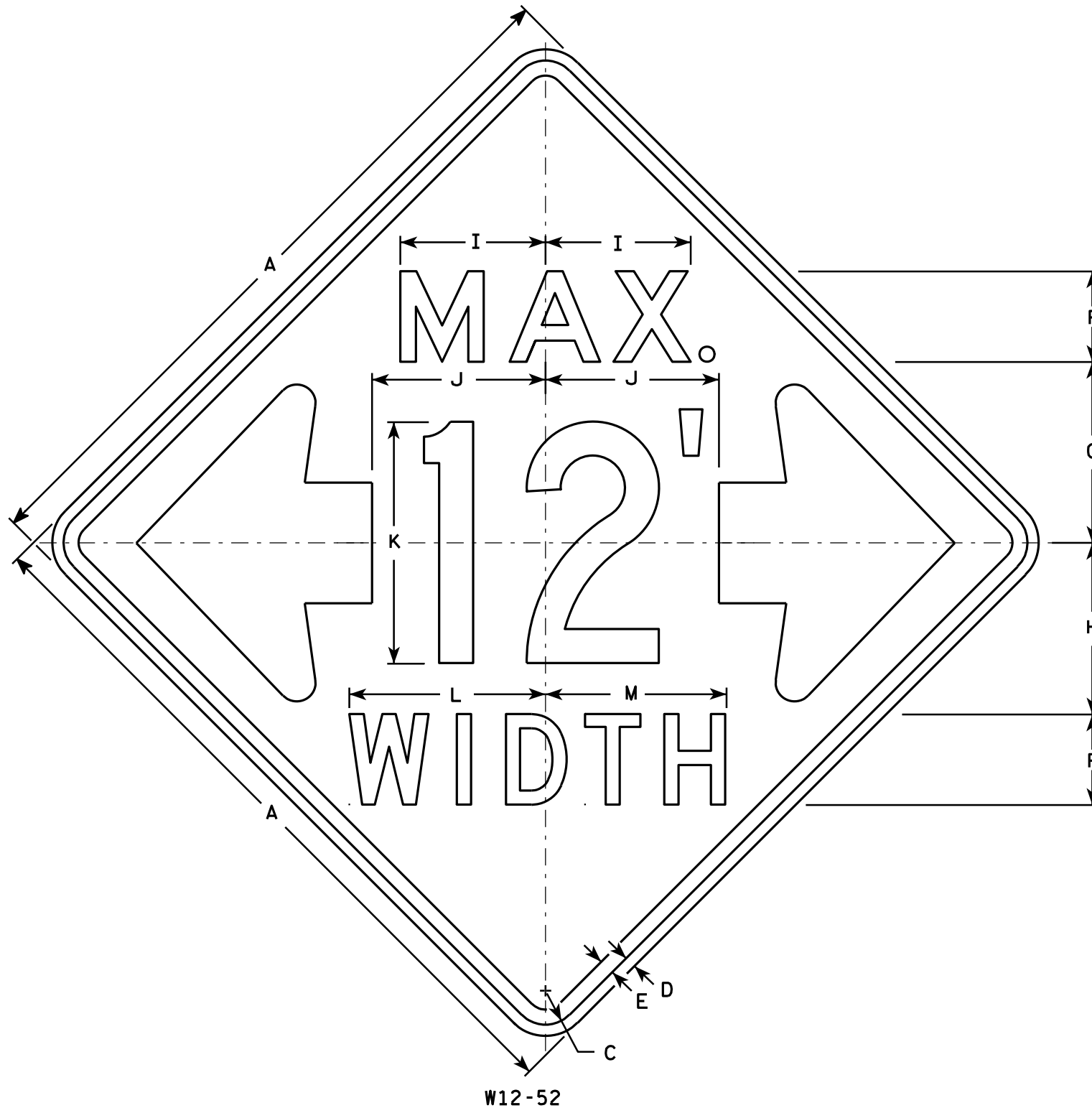
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30			3/8	5/8	7	3 1/2	45°	12 3/8	7 1/8	3	1 1/2															4.91
2S	36			5/8	3/4	8	4	45°	14 3/8	8 5/8	4	2															7.07
2M	36			5/8	3/4	8	4	45°	14 3/8	8 5/8	4	2															7.07
3																											
4	48			3/4	1 1/4	10	5	45°	18 3/8	11 5/8	5	2 1/2															12.57
5																											

STANDARD SIGN
W10-1

WISCONSIN DEPT OF TRANSPORTATION

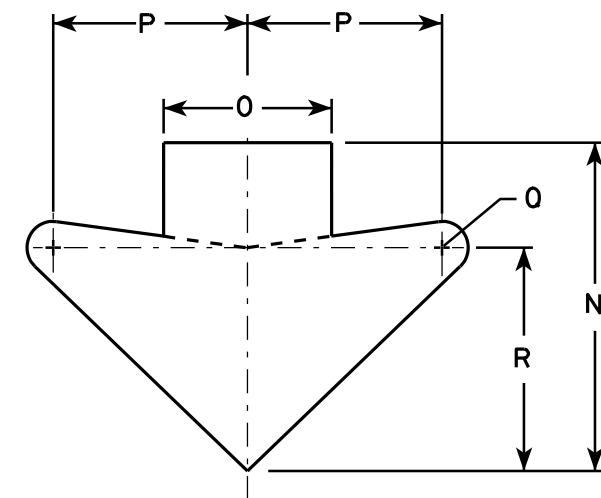
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/13/13 PLATE NO. W10-1.8

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 123	E
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NOTES

- Sign Is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Orange
Message - Black
- Message Series - See note 5
- 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.
- The top line is series E, the numerals are series C, and the bottom line is series D.
- Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN W12-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

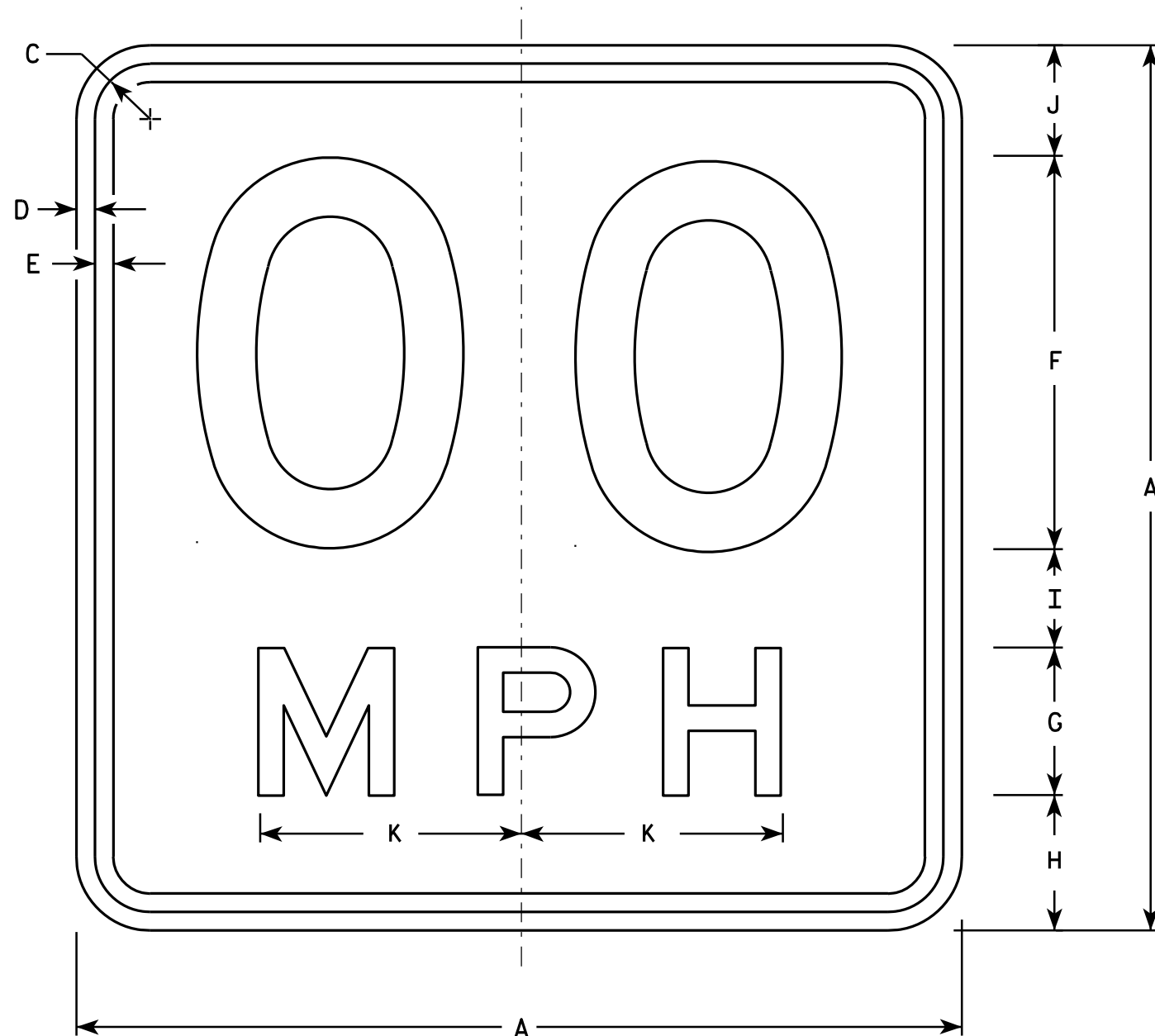
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 124

E



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. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

W13-1

- * For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

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	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

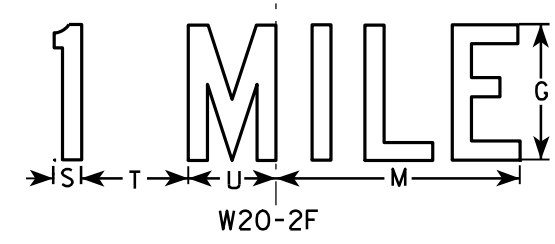
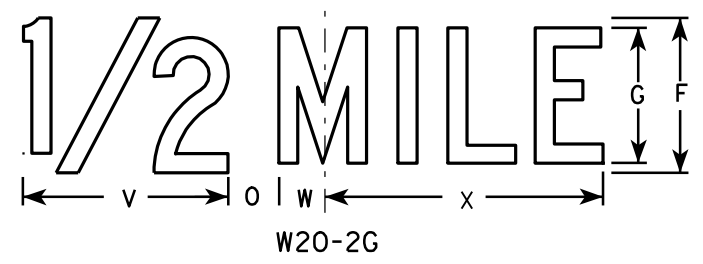
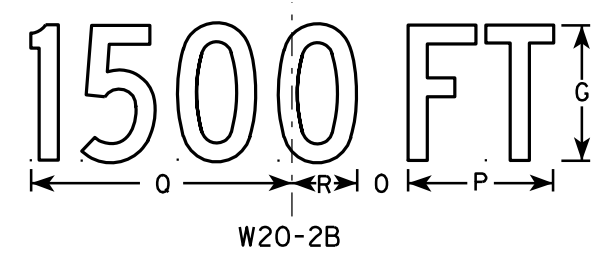
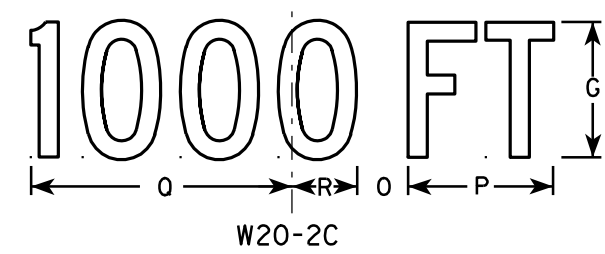
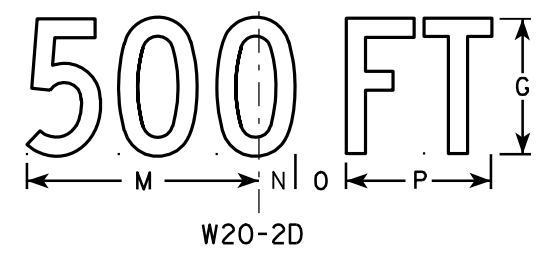
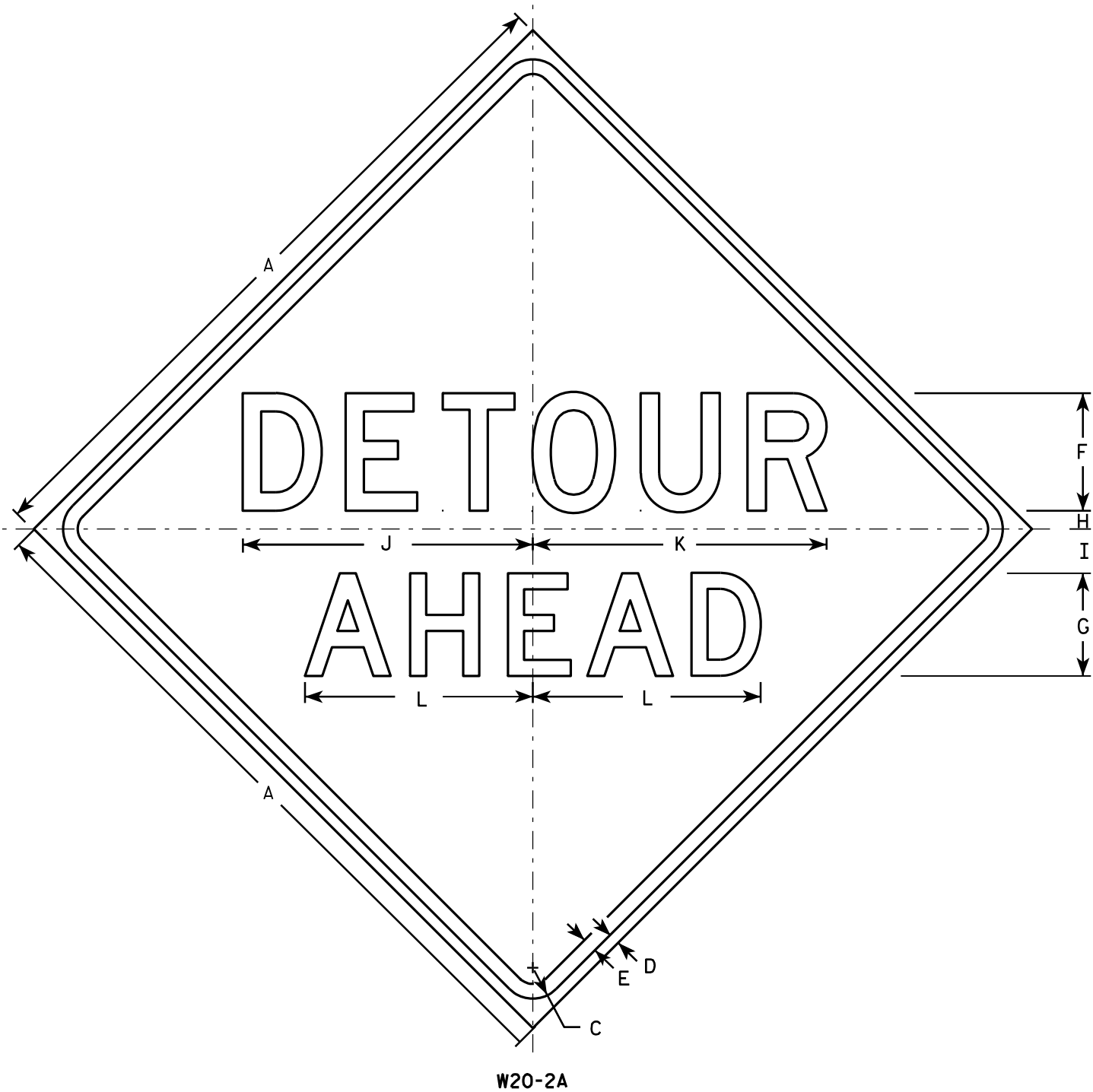
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 125

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

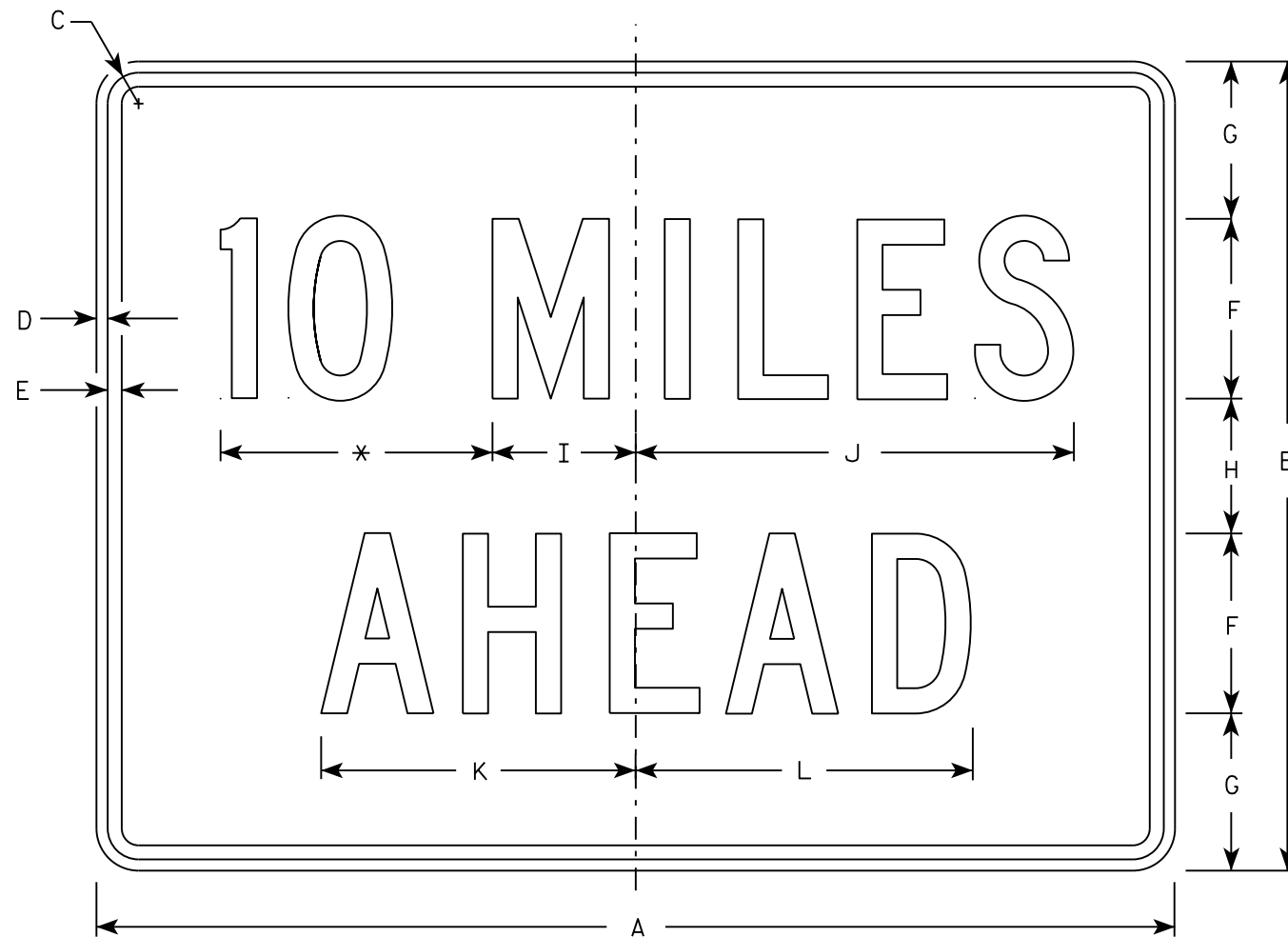
PROJECT NO:

HWY:

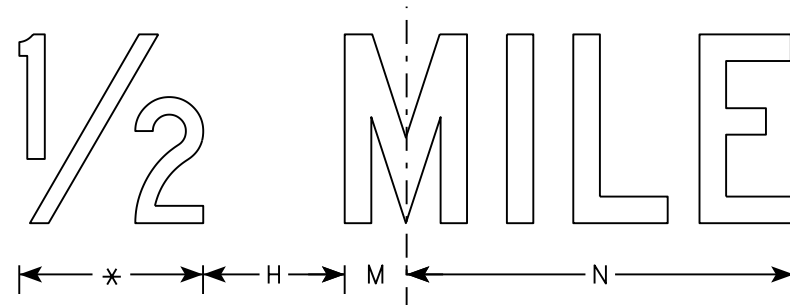
COUNTY:

SHEET NO: 126

E



W57-52



* See note 5

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Yellow
Message - Black
3. Message Series - C
4. Corners and borders shall be rounded.
5. Substitute appropriate numerals to the nearest quarter mile 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	24	18	1 1/8	3/8	1/2	4	3 1/2	3	3 1/8	9 3/4	7	7 1/2	1 3/8	8 1/4													3.0
2S	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2M	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
3	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

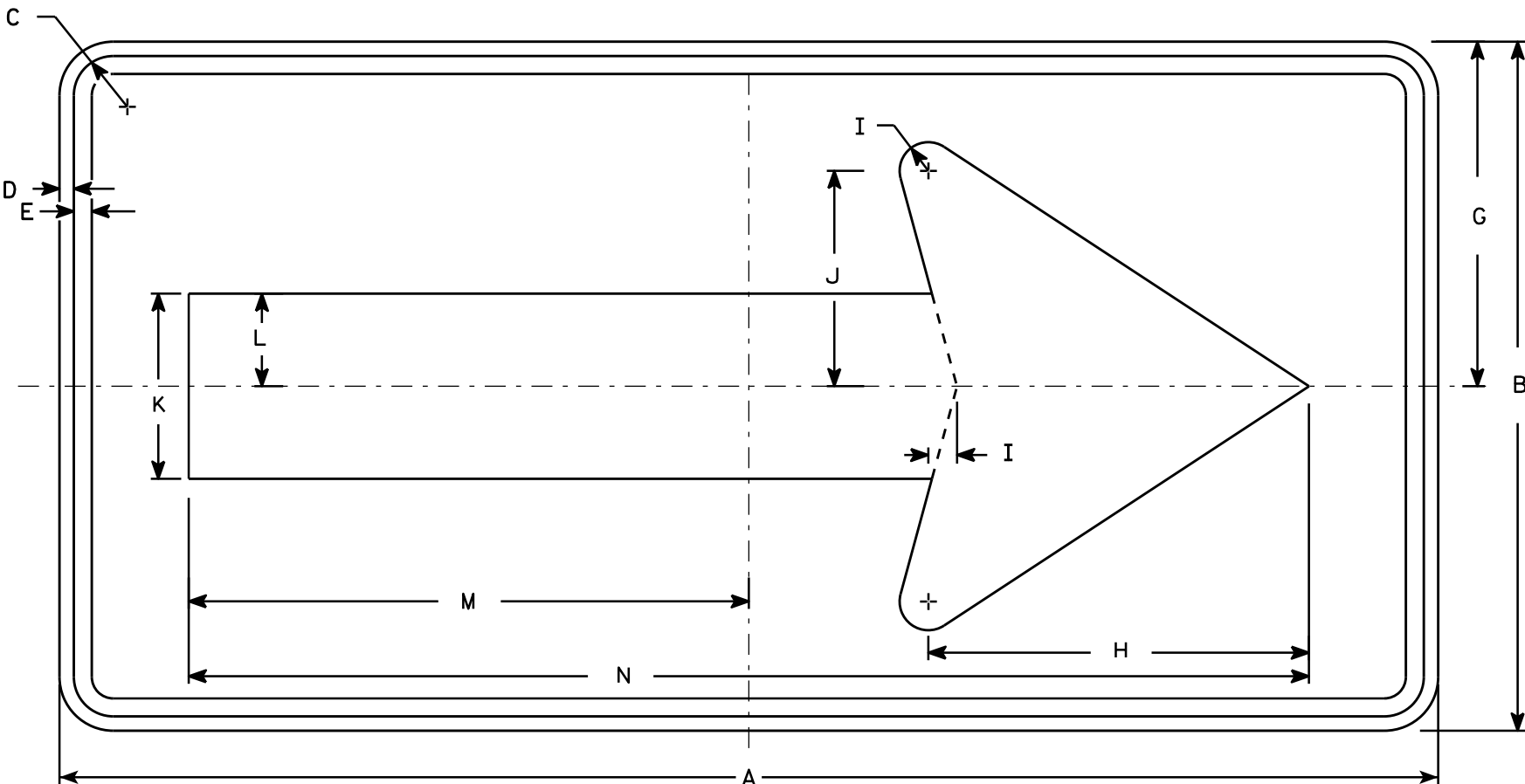
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 127	E
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STANDARD SIGN
W57-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W57-52.8



W01-6

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. 128 W01-6.1

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

NOTES

- (A) NEW NAME PLATE. THE ORIGINAL CONSTRUCTION YEAR IS 1967.
- (X) DENOTES WINGWALL NUMBER.
- THRIE BEAM RAIL CONNECTION (SEE ROADWAY PLANS FOR GUARDRAIL DETAILS).
- NEW BENCH MARK CAP TO BE ESTABLISH IN FIELD. PLACE ON TOP OF NEW PARAPET AS DETAILED ON "WEST ABUTMENT" SHEET.
- * CLEAN AND REPAINT GIRDERS A LENGTH OF 5'-0" FROM ENDS INCLUDING END DIAPHRAGMS, STIFFENERS, AND BEARINGS AT ABUTMENTS AS DIRECTED BY THE FIELD ENGINEER. WORK TO BE PAID FOR UNDER BID ITEMS "STRUCTURE OVERCOATING CLEANING AND PRIMING B-37-111" AND "CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-37-111".
- ▲ LONGITUDINAL JOINT. SEE SHEET 2 FOR LONGITUDINAL CONSTRUCTION JOINT DETAIL.
- CONCRETE SURFACE DRAIN PROVIDED FOR DRAINAGE. SEE ROADWAY PLANS FOR DETAILS.
- * * WILDLIFE PASSAGE. 2'-0" MINIMUM TO REMAIN NATURALLY FILLED, NO RIPRAP
- ☆ SEE "SLOPE PAVING AND RIPRAP DETAILS" SHEET FOR DETAILS. REMOVE ALL EXISTING CONCRETE RIPRAP PRIOR TO INSTALLING NEW RIPRAP. NEW CONCRETE RIPRAP NOT ALLOWED. REUSE OF EXISTING NATURAL RIPRAP PERMITTED.

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. CROSS SECTION AND QUANTITIES
3. CONSTRUCTION STAGING
4. WEST ABUTMENT
5. EAST ABUTMENT
6. WINGWALL AND PARAPET DETAILS
7. SUPERSTRUCTURE PLAN & CROSS SECTION
8. EXISTING GIRDER ELEVATION
9. DECK ELEV. & DEAD LOAD DEFLECTIONS
10. EXPANSION JOINT DETAILS
11. STRIP SEAL COVER PLATES
12. FLOOR DRAIN TYPE 'GC'
13. SLOPE PAVING AND RIPRAP DETAILS

BENCH MARK

BENCHMARKS 600 AND 601 NOT VISIBLE ON PLAN VIEW

NO.	STATION	DESCRIPTION	ELEV.
600	41+81 (137' LT)	GROUNDING WIRE LEDGE ON STEEL POWERPOLE	1272.71
601	63+99 (44' LT)	TAGBOLT HYDRANT	1221.37
602	55+15 (23.5' RT)	BENCHTIE IN LIGHTPOLE #2907	1228.80

ELEVATION

(LOOKING UPSTREAM)

TRAFFIC DATA

ADT = 3,900 (2019)
ADT = 4,400 (2039)
RDS = 50 MPH

HYDRAULIC DATA

(TAKEN FROM HSI 09/27/2016)
NORMAL WATER = EL. 1189.0
HIGH WATER = EL. 1208.0
Q = 54,000 C.F.S.
MAX V = 4.6 F.P.S.
AREA = 3,000 SQ. MI.

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING: 0.83
OPERATING RATING: 1.08
WISCONSIN STD. PERMIT VEHICLE (WIS-SPV) = 210 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY
SUPERSTRUCTURE f'c = 4,000 psi
ALL OTHER..... f'c = 3,500 psi
BAR STEEL REINFORCEMENT,
HIGH STRENGTH, GRADE 60 fy = 60,000 psi

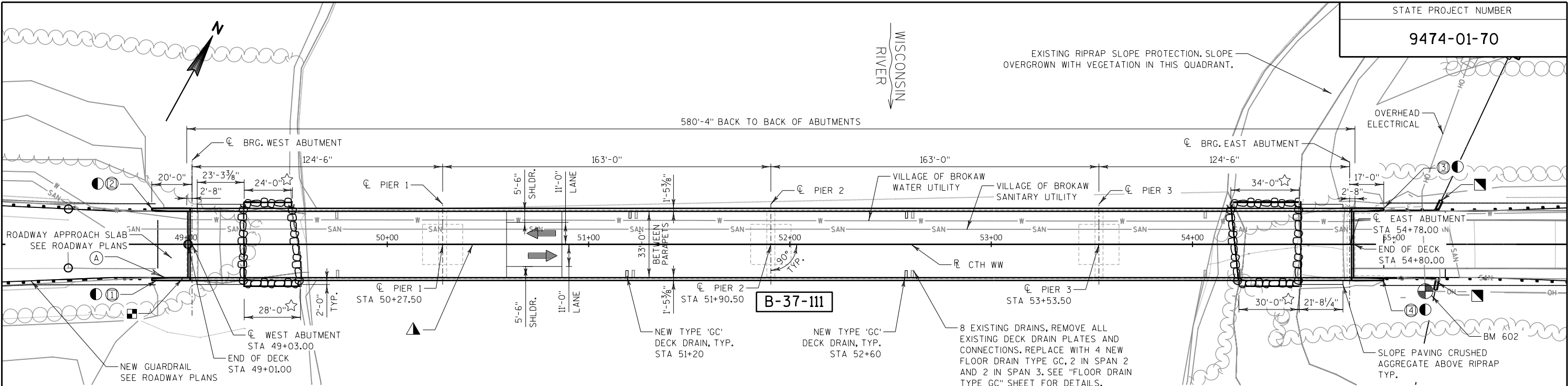
STRUCTURE DESIGN CONTACTS

BRIDGE OFFICE: WILLIAM DREHER (608) 266-8489
CONSULTANT: MIKE RADTKE (414) 347-1607

PLOT DATE : 12/20/2017

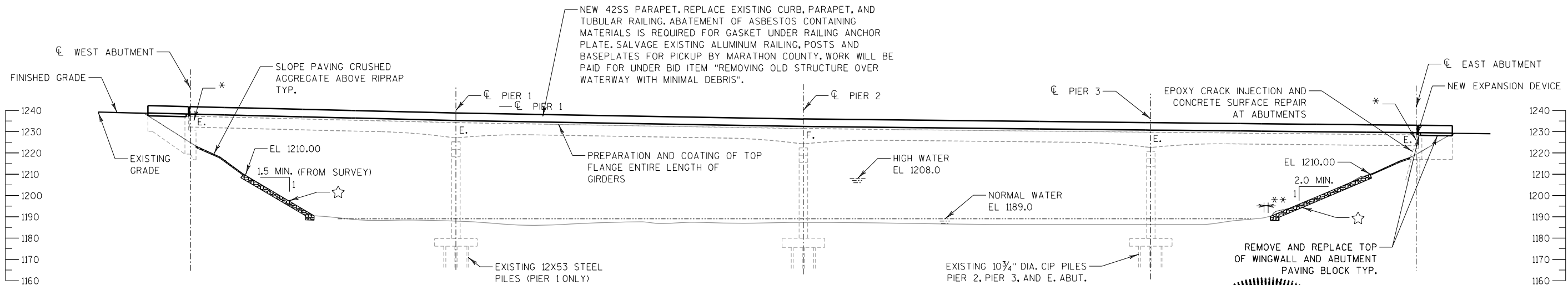
NO.	DATE	REVISION	BY
emcs inc 1300 W. Canal Street, Suite 200 Milwaukee, WI 53233 414.347.1607 Fax 414.347.1347			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Dreher</i> ^{SR} 02/06/18 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-37-111			
CTH WW OVER WISCONSIN RIVER			
COUNTY	MARATHON	VILLAGE	BROKAW
DESIGN SPEC.	REHABILITATION	N/A	
DESIGNED BY	MDR	DESIGN CK'D.	AJC
DRAWN BY	MDR	PLANS CK'D.	AJC
GENERAL PLAN & ELEVATION			SHEET 1 OF 13 129

PLOT BY : mdr



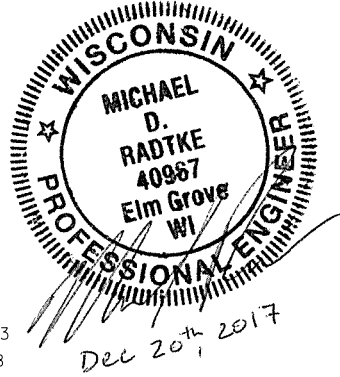
PLAN

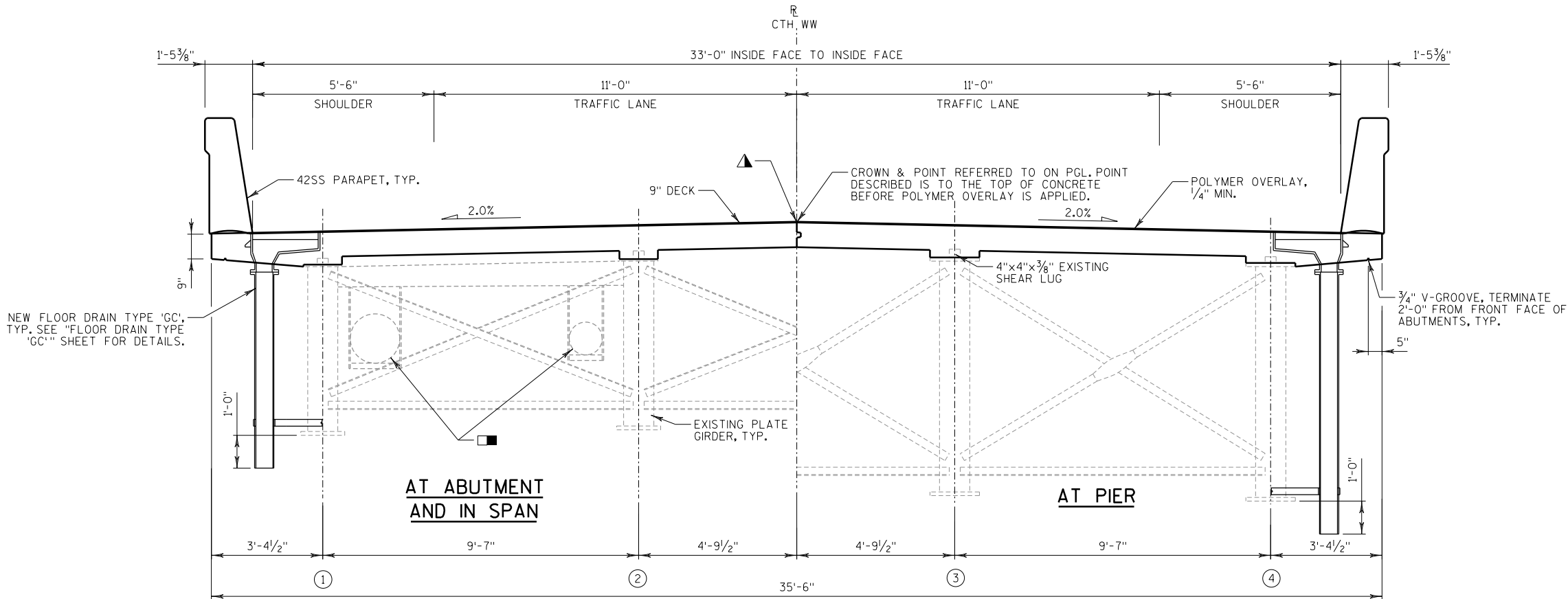
4-SPAN CONTINUOUS STEEL PLATE GIRDER, DECK REPLACEMENT AND POLYMER OVERLAY



ELEVATION

(LOOKING UPSTREAM)





GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET. ELEVATIONS REFERENCED TO NAVD 88, 2012 ADJUSTMENT.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

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

ALL REINFORCING BARS ARE ENGLISH DESIGNATION AND THE FIRST DIGIT OF A 3-DIGIT BAR MARK OR FIRST TWO DIGITS OF A 4-DIGIT BAR MARK SIGNIFY THE BAR SIZE.

INFORMATION SHOWN IN THESE PLANS RELATING TO THE EXISTING BRIDGE IS BASED UPON DRAWINGS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

THE CONTRACTOR MUST PROTECT THE EXISTING REINFORCEMENT STEEL THAT REMAINS, EXISTING STEEL GIRDERS, AND THE EXISTING SHEAR LUGS DURING DEMOLITION. REPLACEMENT OF BRIDGE COMPONENTS DAMAGED DURING THE REMOVAL OF THE EXISTING DECK, EXISTING PAVING BLOCK, AND EXISTING WINGWALL WILL BE THE CONTRACTOR'S RESPONSIBILITY AND REPLACED AT NO ADDITIONAL COST TO THE OWNER.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

CONSTRUCTION STAGES 1 AND 2 SHOWN FOR DECK REPLACEMENT. SEE ROADWAY PLANS FOR DETAILS.

ALL REMOVAL LINES SHALL BE DEFINED BY A 1" DEEP SAW CUT AT THE CONCRETE SURFACES.

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 OF 1967.

APPLY PROTECTIVE SURFACE TREATMENT TO THE TOP OF THE BRIDGE DECK AND ALL SURFACES OF THE PAVING NOTCH. APPLY PIGMENTED SURFACE SEALER TO TOP AND INSIDE FACE OF PARAPETS.

▲ LONGITUDINAL JOINT. SEE LONGITUDINAL CONSTRUCTION JOINT DETAIL FOR DETAILS.

⊗ DENOTES GIRDER NUMBER

● CONCRETE SURFACE REPAIR AND EPOXY INJECTION CRACK REPAIR AS DIRECTED BY THE FIELD ENGINEER. QUANTITIES SHOWN ON THE PLANS ARE APPROXIMATE.

MATCH THE COLOR OF THE EXISTING GIRDERS WHICH IS MEDIUM SKY BLUE TONE #25240 FROM FEDERAL STANDARD 595 COLOR CHART.

DECK SURFACE PREPARATION IS INCLUDED IN THE COST OF BID ITEM "POLYMER OVERLAY".

VARIATIONS TO THE NEW GRADE LINE OVER 1/4" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

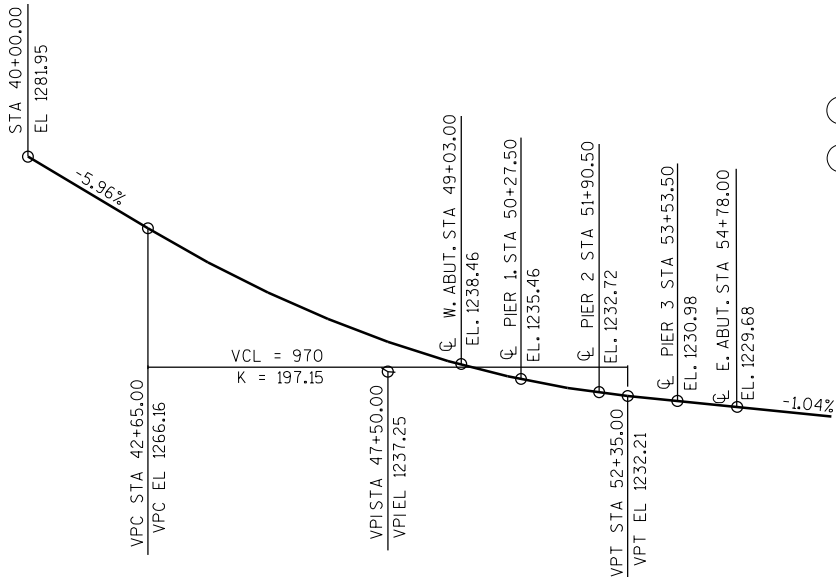
■ EXISTING WATER AND SANITARY UTILITY LINES TO REMAIN. PROTECT DURING DECK REMOVAL.

PROPOSED SECTION

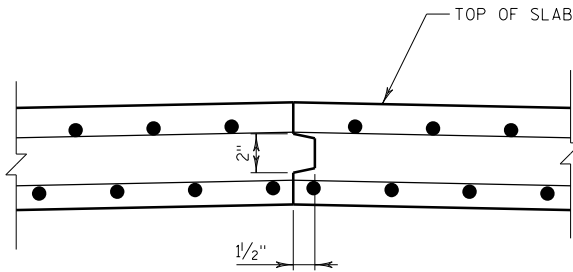
(LOOKING EAST)

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	TOTAL
203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-37-111	LS	1
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 50+00.00	LS	1
203.0225.S	DEBRIS CONTAINMENT B-37-111	LS	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-37-111	LS	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	260
502.0100	CONCRETE MASONRY BRIDGES	CY	786
502.3100	EXPANSION DEVICE B-37-111	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	2121
502.3210	PIGMENTED SURFACE SEALER	SY	604
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	138
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	171710
506.3025	WELDED STUD SHEAR CONNECTORS 7/8X8-INCH	EACH	4656
509.1500	CONCRETE SURFACE REPAIR	SF	46
509.5100.S	POLYMER OVERLAY	SY	2123
509.9025.S	EPOXY INJECTION CRACK REPAIR	LF	60
509.9026.S	CORED HOLES 2-INCH DIAMETER	EACH	2
514.0445	FLOOR DRAINS TYPE GC	EACH	4
517.0900.S	PREPARATION AND COATING OF TOP FLANGES B-37-111	LS	1
517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING B-37-111	LS	1
517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-37-111	LS	1
604.0500	SLOPE PAVING CRUSHED AGGREGATE	SY	224
606.0300	RIPRAP HEAVY	CY	175
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4
645.0120	GEOTEXTILE TYPE HR	SY	265
NON-BID ITEMS			
	PREFORMED JOINT FILLER	SIZE 1/2" & 3/4"	



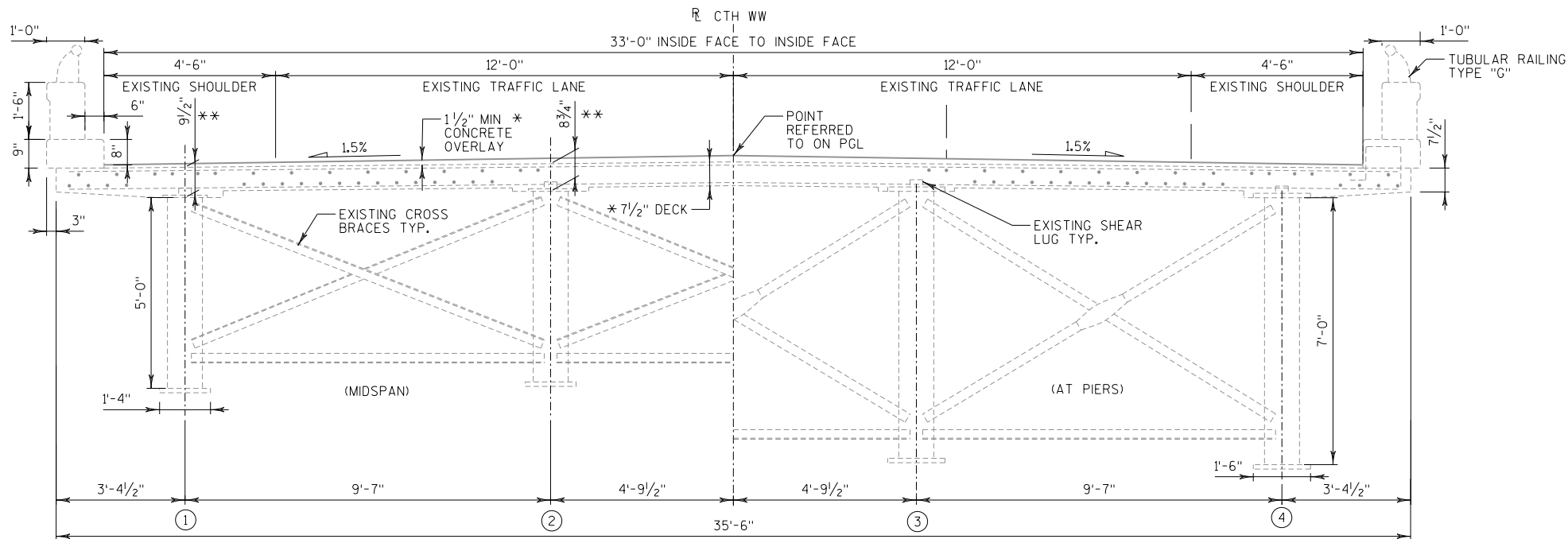
PROFILE GRADE LINE - CTH WW



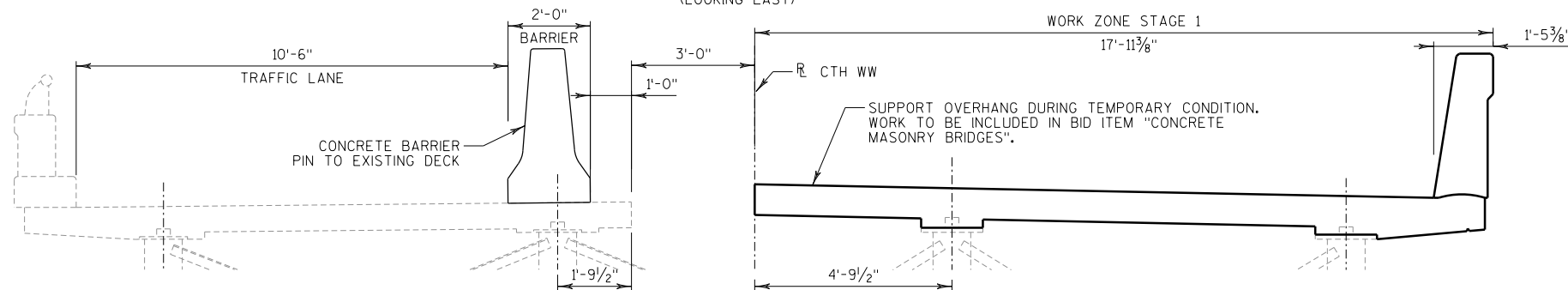
LONGITUDINAL CONST.

JOINT DETAIL ▲

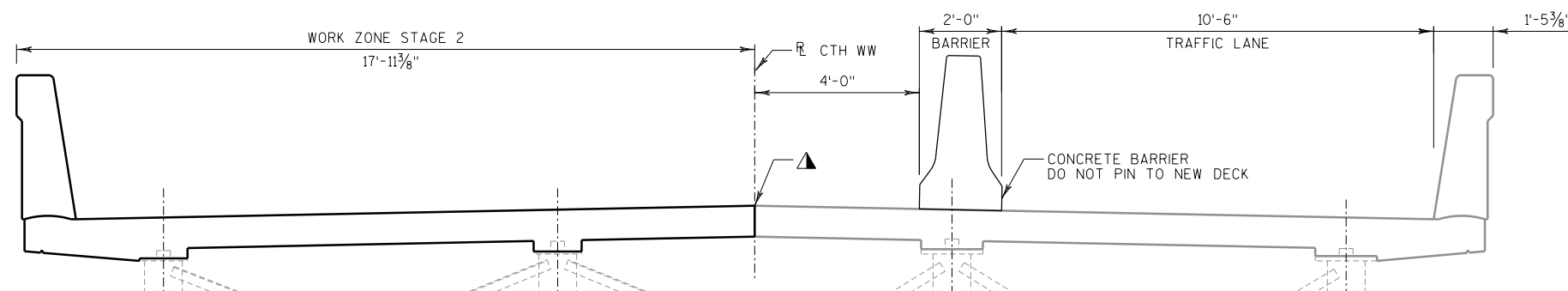
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-111			
DRAWN BY PLR		PLANS CK'D. MDR	
CROSS SECTION AND QUANTITIES			SHEET 2 OF 13 130

**EXISTING SECTION**

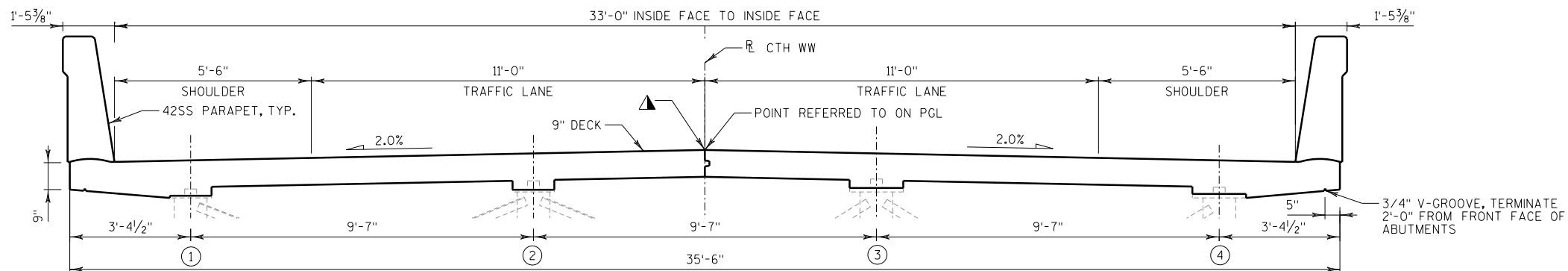
(LOOKING EAST)

**STAGE 1 SECTION**

(LOOKING EAST)

**STAGE 2 SECTION**

(LOOKING EAST)

**PROPOSED SECTION**

(LOOKING EAST)

NOTES

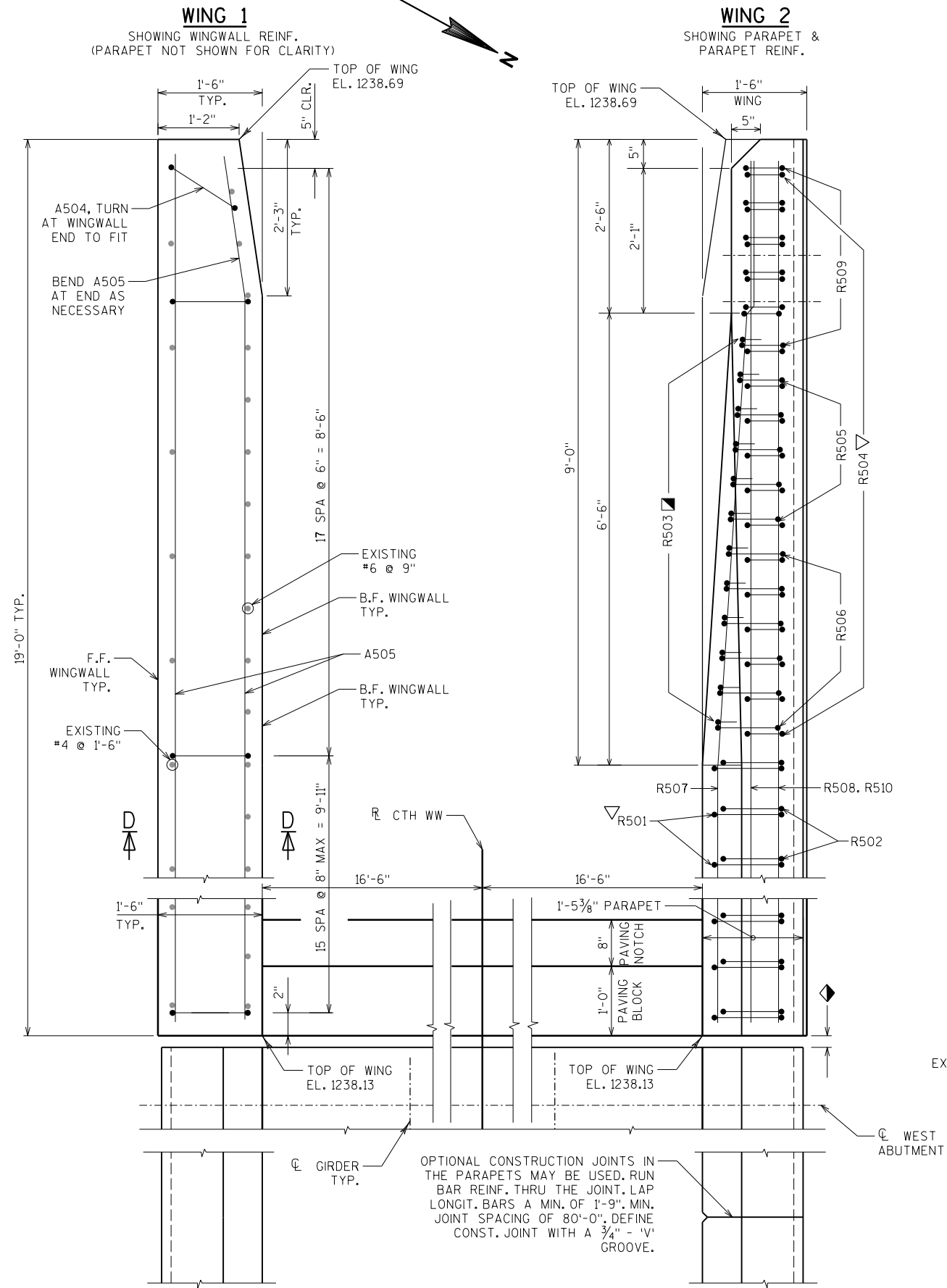
* ORIGINAL DECK THICKNESS PRIOR TO OVERLAY IS 7/2". THE DECK OVERLAY CONSISTED OF AN APPROXIMATE 1" REMOVAL AND A MINIMUM OF 1/2" OVERLAY.

** DEPTH IS FROM BOTTOM OF FLANGE TO THE ORIGINAL DECK SURFACE.

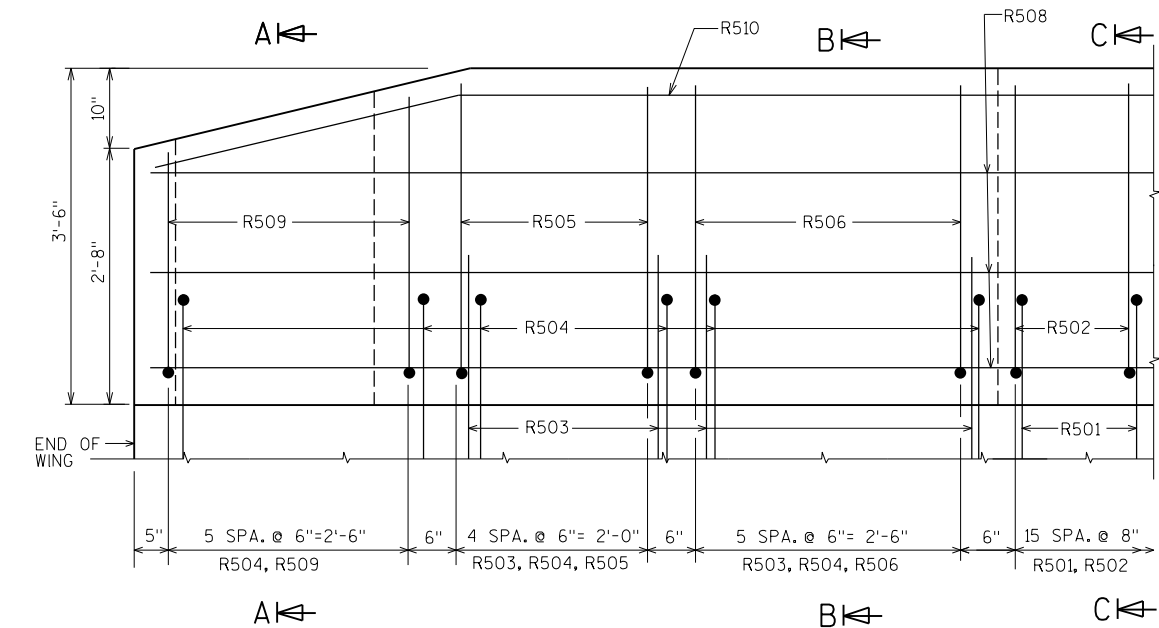
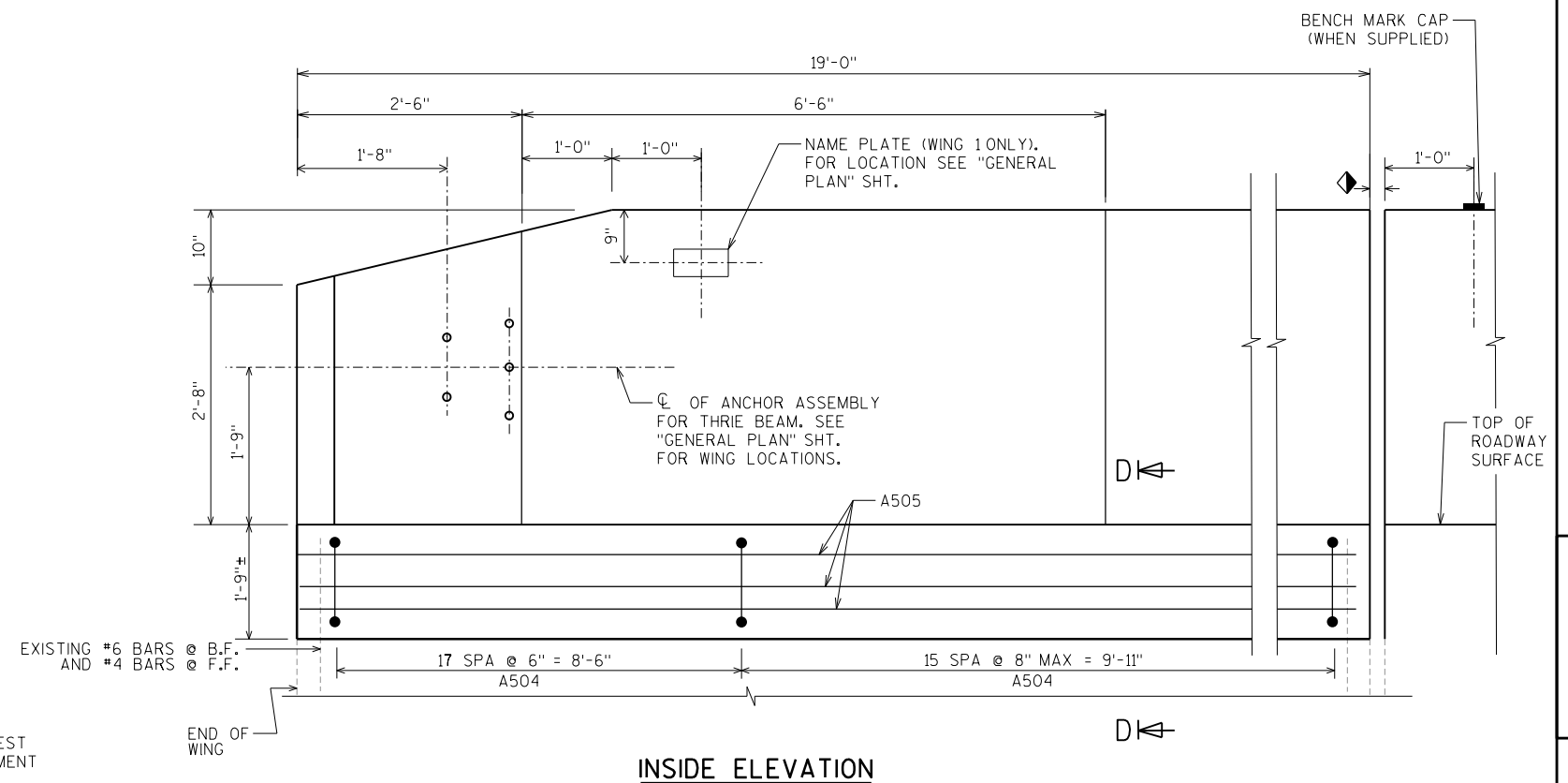
▲ LONGITUDINAL CONSTRUCTION JOINT. SEE DETAIL SHEET 2.

POLYMER OVERLAY TO BE APPLIED TO DECK SURFACE AFTER BRIDGE DECK IS COMPLETE. STAGING FOR POLYMER OVERLAY NOT SHOWN FOR CLARITY. POLYMER OVERLAY WILL BE APPLIED IN HALF DECK WIDTH APPLICATIONS. SEE ROADWAY PLANS FOR OVERLAY STAGING.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-111			
DRAWN BY PLR		PLANS CK'D. MDR	
CONSTRUCTION STAGING			SHEET 3 OF 13 131

**PLAN****NOTE:**

SEE "WINGWALL AND PARAPET DETAILS" SHEET FOR BILL OF BARS, BEND DIAGRAMS, AND SECTION CUTS.

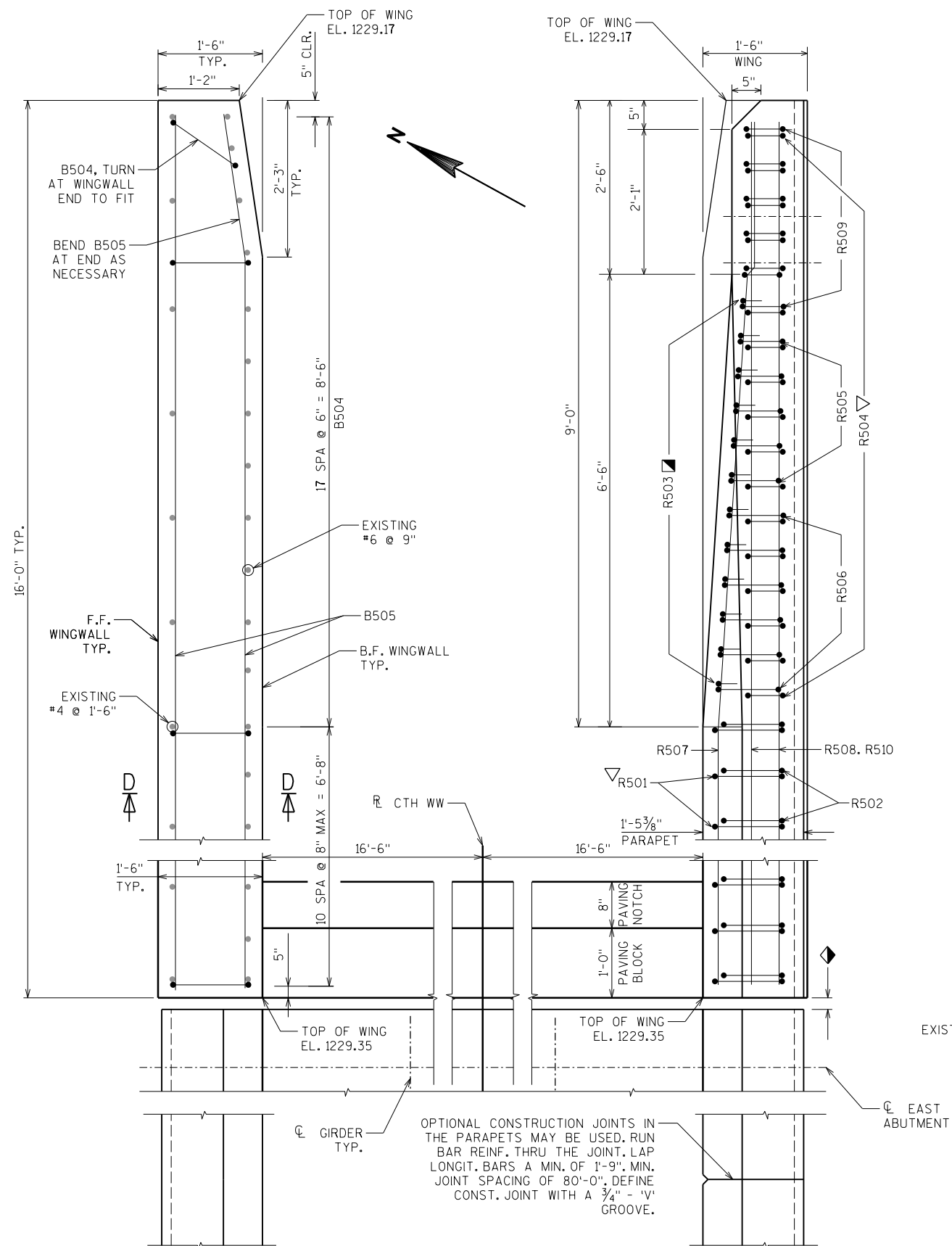
**OUTSIDE ELEVATION****INSIDE ELEVATION****LEGEND:**

▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

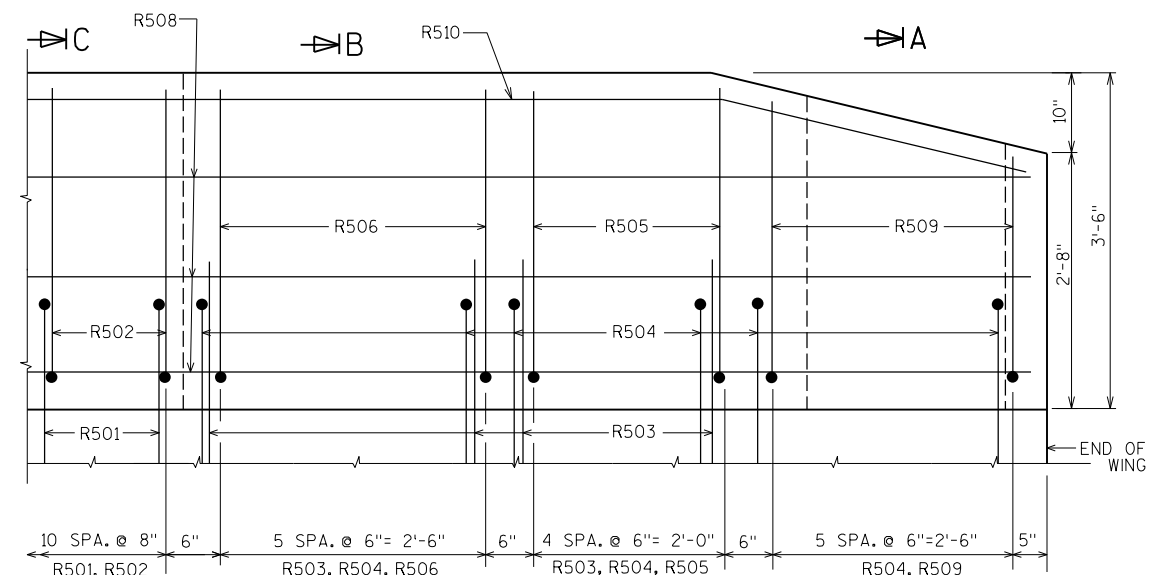
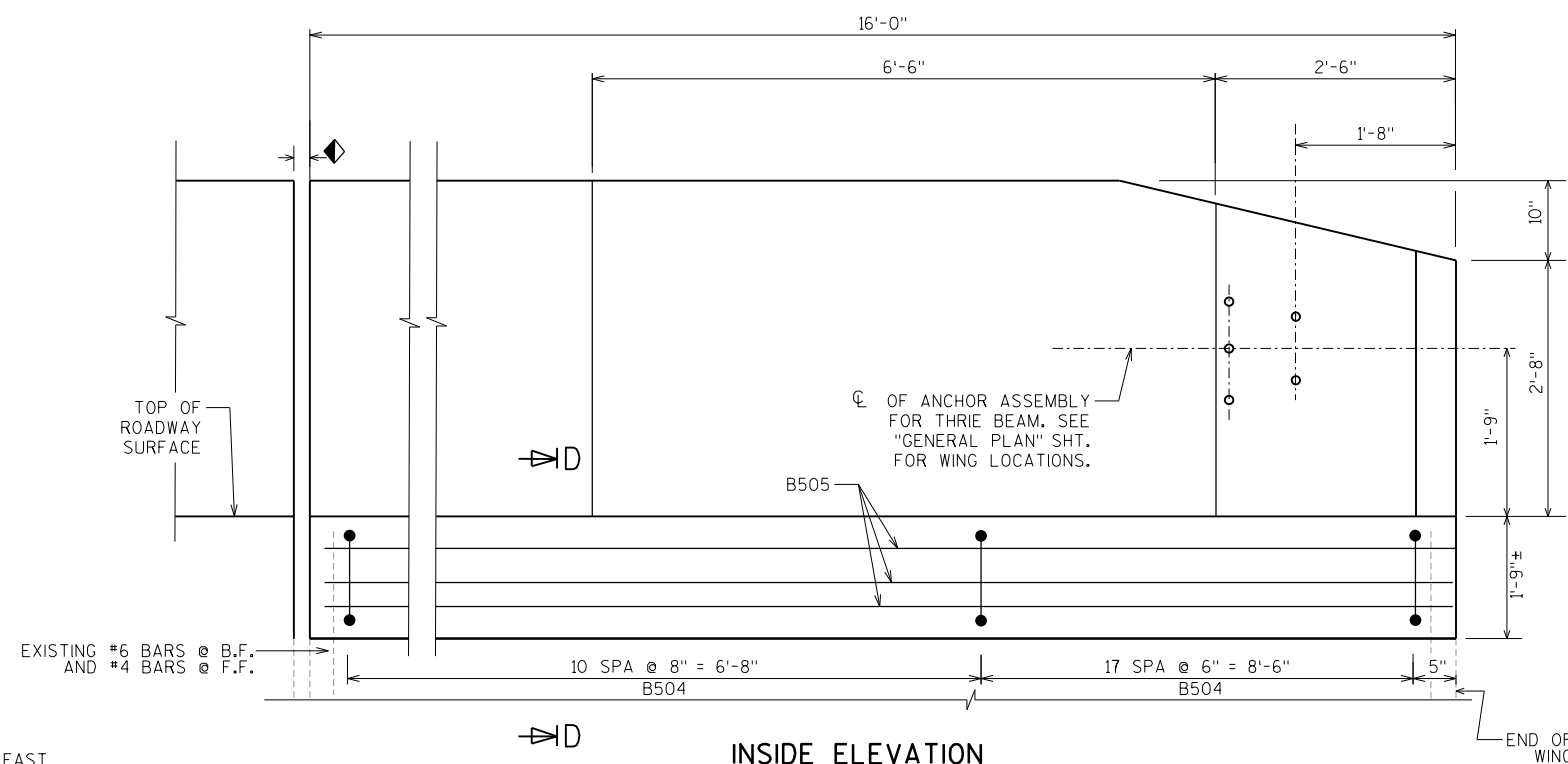
◆ EXPANSION JOINT OPENING. SEE SHEET 10.

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-111			
DRAWN BY PLR		PLANS CK'D. MDR	
WEST ABUTMENT		SHFFT 4 OF 13 132	

WING 3SHOWING WINGWALL REINF.
(PARAPET NOT SHOWN FOR CLARITY)**WING 4**SHOWING PARAPET &
PARAPET REINF.**PLAN****NOTE:**

SEE "WINGWALL AND PARAPET DETAILS" SHEET FOR BILL OF BARS, BEND DIAGRAMS, AND SECTION CUTS.

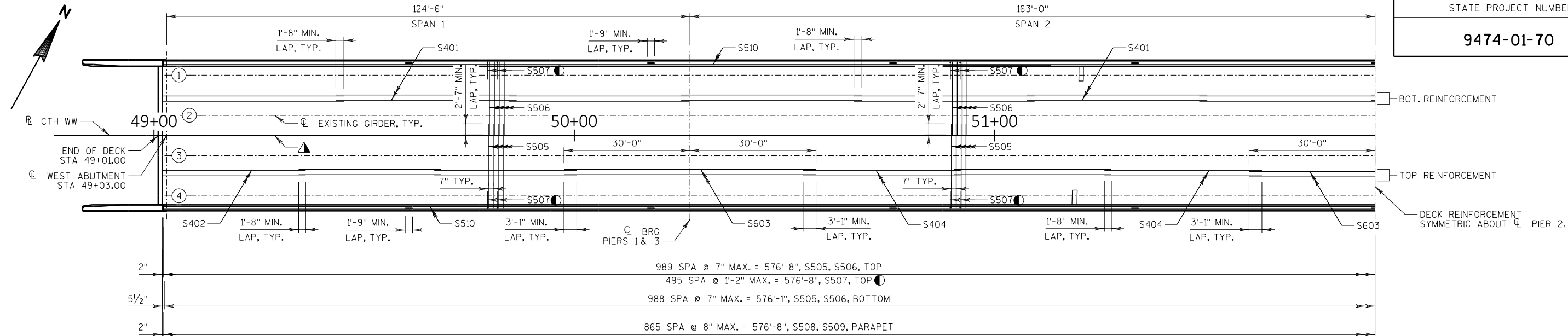
**OUTSIDE ELEVATION****INSIDE ELEVATION****LEGEND:**

▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

◆ EXPANSION JOINT OPENING. SEE SHEET 10

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-111			
DRAWN BY PLR		PLANS CK'D. MDR	
EAST ABUTMENT			SHEET 5 OF 13 133



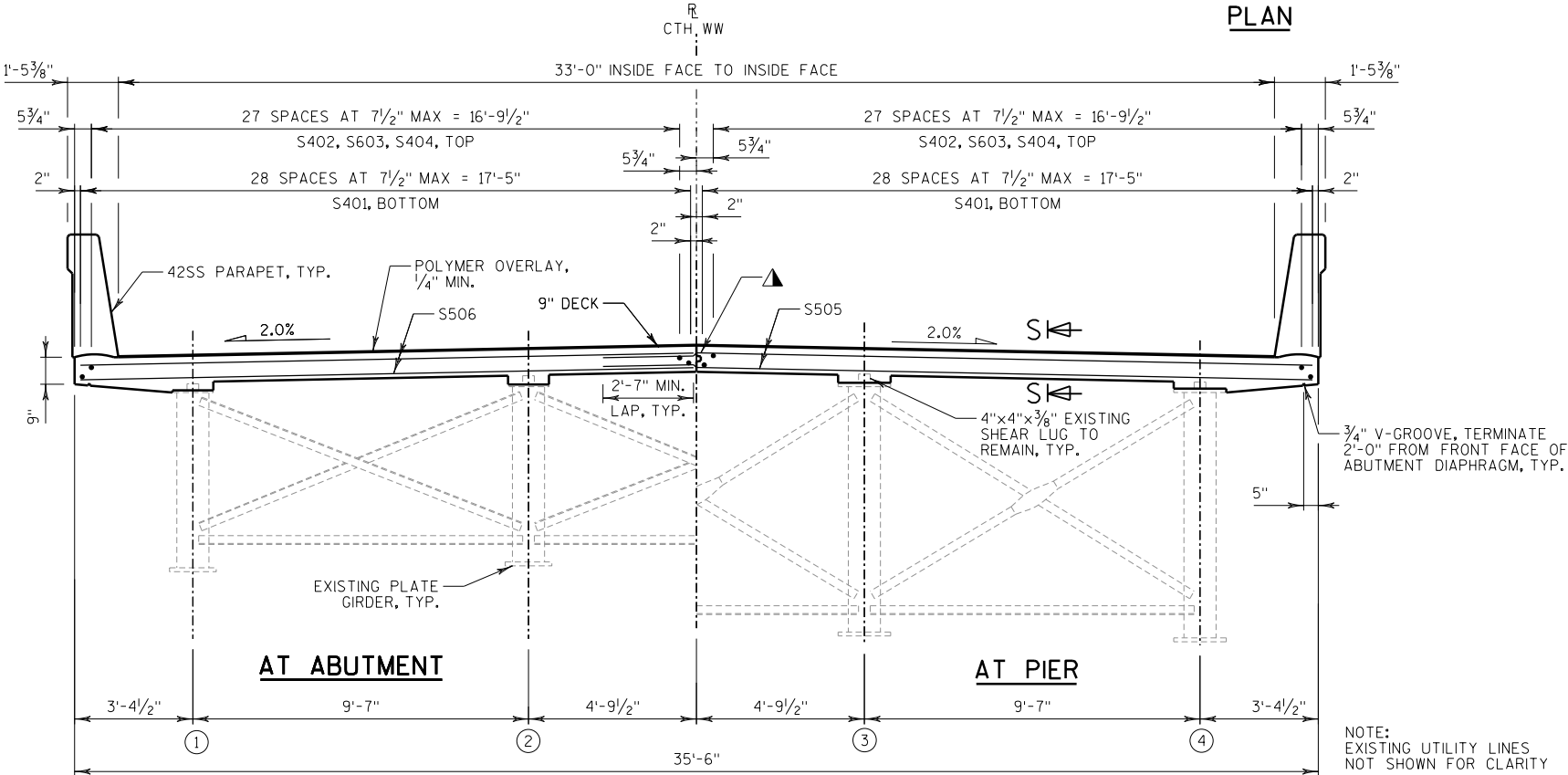
PLAN

LEGEND:

- LAP S507 ONTO EVERY OTHER TRANSVERSE BAR IN THE TOP MAT AS SHOWN.
- (X) GIRDER NUMBER
- CONST. JOINT - STRIKE OFF AS SHOWN.
- ▲ LONGITUDINAL JOINT, SEE "CROSS SECTION AND QUANTITIES" SHEET FOR DETAILS.

NOTES:

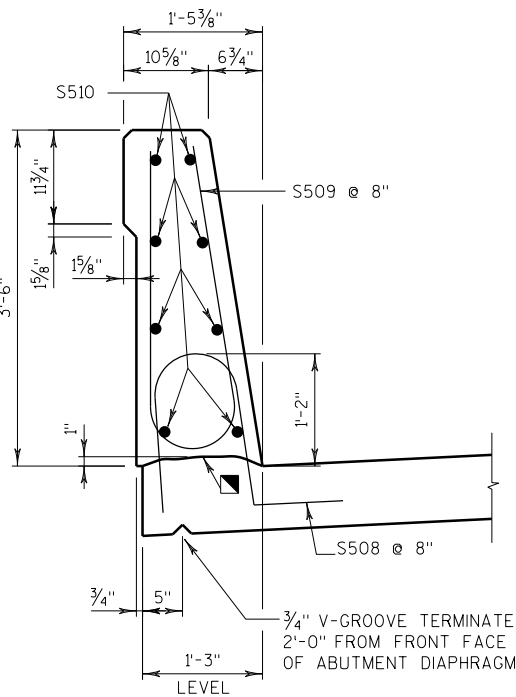
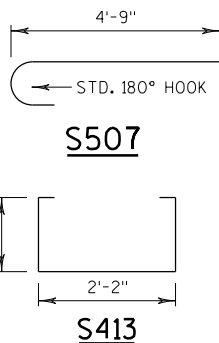
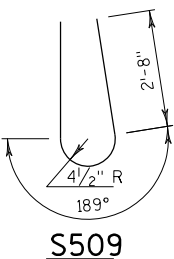
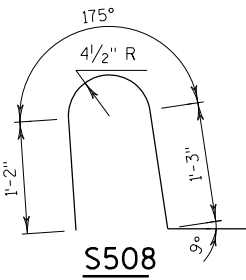
- SEE "EXISTING GIRDER ELEVATION" SHEET FOR NEW SHEAR CONNECTOR DETAILS.
- SEE "DECK ELEV. & DEAD LOAD DEFLECTIONS" SHEET FOR TOP OF DECK ELEVATIONS AND DEAD LOAD DEFLECTIONS.
- SEE "FLOOR DRAIN TYPE 'GC'" SHEET FOR FLOOR DRAIN DETAILS.
- SEE "EXPANSION JOINT DETAILS" AND "STRIP SEAL COVER PLATES" SHEETS FOR JOINT REPLACEMENT AND COVER PLATE DETAILS.



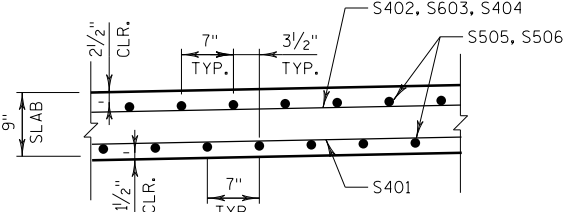
TYPICAL CROSS SECTION THRU DECK

BILL OF BARS:

BAR MARK	COAT	NO.	LENGTH	BENT	LOCATION
S401	X	812	42'-9"		SLAB LONG. BOTTOM
S402	X	336	33'-11"		SLAB LONG. TOP SPAN 1 & 4
S603	X	168	60'-0"		SLAB LONG. TOP OVER PIER
S404	X	336	37'-6"		SLAB LONG. TOP SPAN 2 & 3
S505	X	1979	20'-4"		SLAB TRANS. TOP & BOT. STAGE 1
S506	X	1979	17'-5"		SLAB TRANS. TOP & BOT. STAGE 2
S507	X	990	5'-4"	X	SLAB TRANS. TOP OVERHANG
S508	X	1732	4'-5"	X	PARAPET VERT.
S509	X	1732	6'-8"	X	PARAPET VERT.
S510	X	160	59'-4"		PARAPET HORIZ.
S611	X	30	9'-3"		DIAPHRAGM HORIZ.
S412	X	16	9'-3"		DIAPHRAGM HORIZ.
S413	X	72	4'-3"	X	DIAPHRAGM STIRRUPS BETWEEN GIRDERS
S414	X	8	6'-6"		DIAPHRAGM HORIZ. - STAGE 1
S415	X	8	4'-5"		DIAPHRAGM HORIZ. - STAGE 2
S516	X	16	5'-0"		DRAIN REINFORCEMENT



SECTION THRU PARAPET ON BRIDGE



SECTION S-S

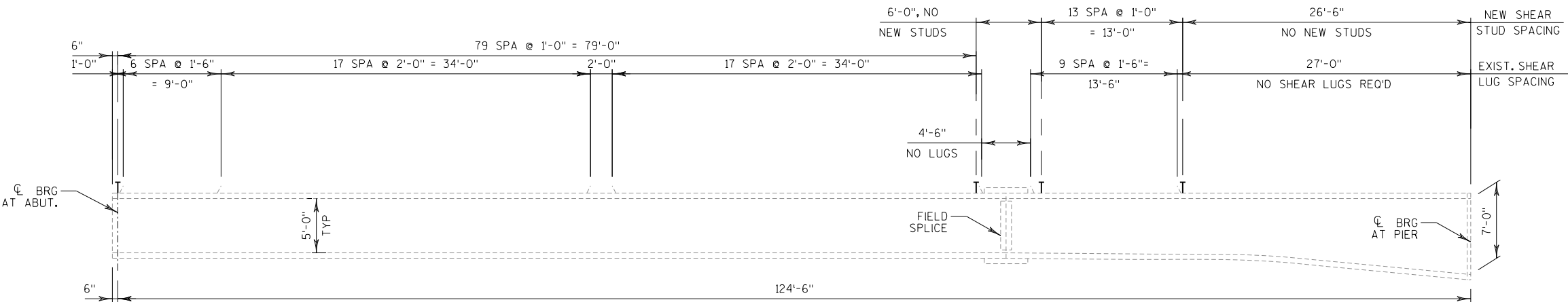
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-111			
DRAWN BY		AJC	PLANS CK'D. MDR
SUPERSTRUCTURE PLAN & CROSS SECTION		SHEET 7 OF 13 135	

NOTES

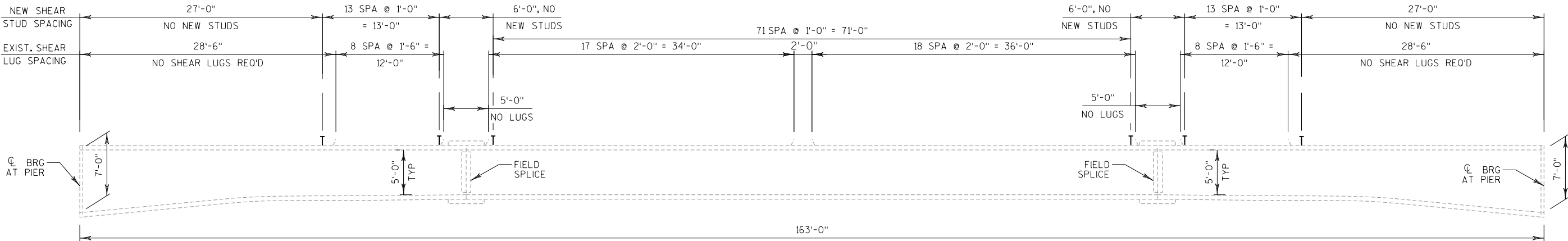
EXISTING GIRDERS HAVE 4"x4"x3/8"x3" SHEAR LUGS. LEAVE EXISTING SHEAR LUGS IN PLACE. IF THE NEW SHEAR STUD LOCATIONS ARE LOCATED AT THESE SHEAR LUGS, SHIFT SHEAR STUD SPACING ACCORDINGLY.

STATE PROJECT NUMBER

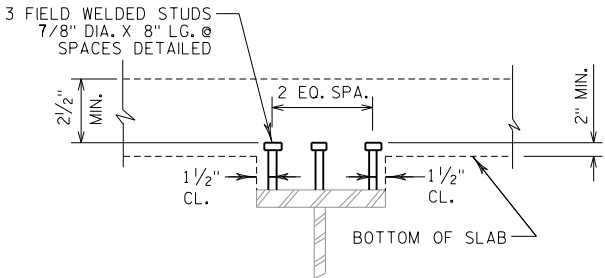
9474-01-70



GIRDER ELEVATION - SPANS 1 & 4



GIRDER ELEVATION - SPANS 2 & 3



SHEAR CONNECTOR DETAIL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-111			
DRAWN BY		AJC	PLANS CK'D. MDR
EXISTING GIRDER ELEVATION		SHFFT 8 OF 13 136	

TOP OF DECK ELEVATIONS

LOCATION	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	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	PIER 2
N. EDGE DECK	1238.13	1237.80	1237.47	1237.15	1236.84	1236.53	1236.24	1235.95	1235.67	1235.40	1235.13	1234.80	1234.48	1234.17	1233.88	1233.59	1233.33	1233.07	1232.83	1232.61	1232.39
GIRDER 1	1238.17	1237.84	1237.51	1237.19	1236.88	1236.58	1236.28	1235.99	1235.71	1235.44	1235.17	1234.84	1234.52	1234.21	1233.92	1233.64	1233.37	1233.12	1232.88	1232.65	1232.44
GIRDER 2	1238.37	1238.03	1237.70	1237.38	1237.07	1236.77	1236.47	1236.18	1235.90	1235.63	1235.37	1235.03	1234.71	1234.40	1234.11	1233.83	1233.56	1233.31	1233.07	1232.84	1232.63
PGL	1238.46	1238.13	1237.80	1237.48	1237.17	1236.86	1236.57	1236.28	1236.00	1235.73	1235.46	1235.13	1234.81	1234.50	1234.21	1233.92	1233.66	1233.40	1233.16	1232.94	1232.72
GIRDER 3	1238.37	1238.03	1237.70	1237.38	1237.07	1236.77	1236.47	1236.18	1235.90	1235.63	1235.37	1235.03	1234.71	1234.40	1234.11	1233.83	1233.56	1233.31	1233.07	1232.84	1232.63
GIRDER 4	1238.17	1237.84	1237.51	1237.19	1236.88	1236.58	1236.28	1235.99	1235.71	1235.44	1235.17	1234.84	1234.52	1234.21	1233.92	1233.64	1233.37	1233.12	1232.88	1232.65	1232.44
S. EDGE DECK	1238.13	1237.80	1237.47	1237.15	1236.84	1236.53	1236.24	1235.95	1235.67	1235.40	1235.13	1234.80	1234.48	1234.17	1233.88	1233.59	1233.33	1233.07	1232.83	1232.61	1232.39

LOCATION	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	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	E. ABUT.
N. EDGE DECK	1232.39	1232.19	1232.01	1231.83	1231.66	1231.49	1231.32	1231.16	1230.99	1230.82	1230.65	1230.52	1230.39	1230.26	1230.13	1230.00	1229.87	1229.74	1229.61	1229.48	1229.35
GIRDER 1	1232.44	1232.24	1232.05	1231.88	1231.71	1231.54	1231.37	1231.20	1231.03	1230.86	1230.69	1230.56	1230.43	1230.30	1230.17	1230.04	1229.91	1229.78	1229.65	1229.52	1229.39
GIRDER 2	1232.63	1232.43	1232.24	1232.07	1231.90	1231.73	1231.56	1231.39	1231.22	1231.05	1230.88	1230.75	1230.62	1230.49	1230.36	1230.23	1230.10	1229.97	1229.84	1229.71	1229.58
PGL	1232.72	1232.52	1232.34	1232.16	1231.99	1231.82	1231.65	1231.49	1231.32	1231.15	1230.98	1230.85	1230.72	1230.59	1230.46	1230.33	1230.20	1230.07	1229.94	1229.81	1229.68
GIRDER 3	1232.63	1232.43	1232.24	1232.07	1231.90	1231.73	1231.56	1231.39	1231.22	1231.05	1230.88	1230.75	1230.62	1230.49	1230.36	1230.23	1230.10	1229.97	1229.84	1229.71	1229.58
GIRDER 4	1232.44	1232.24	1232.05	1231.88	1231.71	1231.54	1231.37	1231.20	1231.03	1230.86	1230.69	1230.56	1230.43	1230.30	1230.17	1230.04	1229.91	1229.78	1229.65	1229.52	1229.39
S. EDGE DECK	1232.39	1232.19	1232.01	1231.83	1231.66	1231.49	1231.32	1231.16	1230.99	1230.82	1230.65	1230.52	1230.39	1230.26	1230.13	1230.00	1229.87	1229.74	1229.61	1229.48	1229.35

NOTES

CONTRACTOR TO SURVEY CENTERLINE OF BEARINGS, CENTERLINE OF FIELD SPLICES, AND AT 0.1POINTS ALONG TOP OF EXISTING GIRDERS AFTER REMOVAL OF EXISTING DECK AND PRIOR TO NEW DECK POUR AND REPORT VALUES TO ENGINEER OF RECORD TO EVALUATE VERTICAL RESPONSE OF EXISTING GIRDERS. NEW DECK SHALL NOT BE POURED UNTIL GIVEN APPROVAL TO PROCEED BY ENGINEER OF RECORD. CONTRACTOR TO GIVE ENGINEER A MINIMUM OF 1WEEK NOTICE WHEN MEASUREMENTS WILL BE TAKEN.

'T' = HAUNCH HEIGHT AT CENTERLINE OF GIRDER.

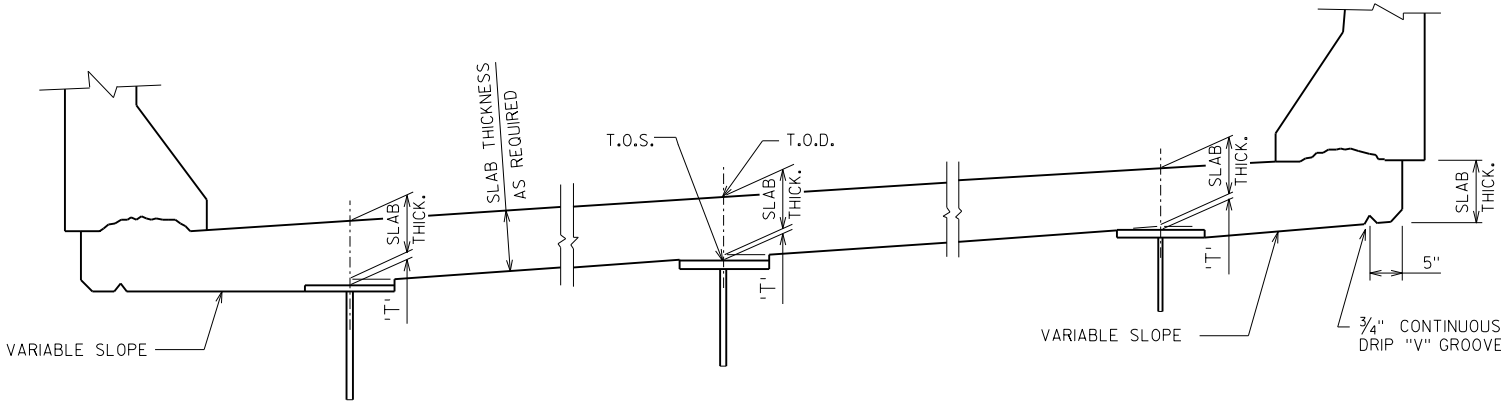
(TO DETERMINE 'T': AFTER EXISTING DECK HAS BEEN REMOVED. ELEVATIONS OF THE TOP FLANGES, TOP OF SPLICE PLATES, OR TOP OF COVER PLATES, WHICHEVER APPLIES, SHALL BE TAKEN AT CENTERLINE OF BEARINGS, CENTERLINE OF FIELD SPLICES, AND AT 0.1POINTS.

TOP OF DECK ELEV. AT FINAL GRADE.

- TOP OF STEEL ELEV. AFTER EXISTING DECK REMOVAL.
- + CONC. ONLY DEFLECTION; DOWNWARD DEFLECTION IS ADDED, UPWARD DEFLECTION IS SUBTRACTED.

- SLAB THICKNESS

= 'T' VALUE FOR SETTING HAUNCH.

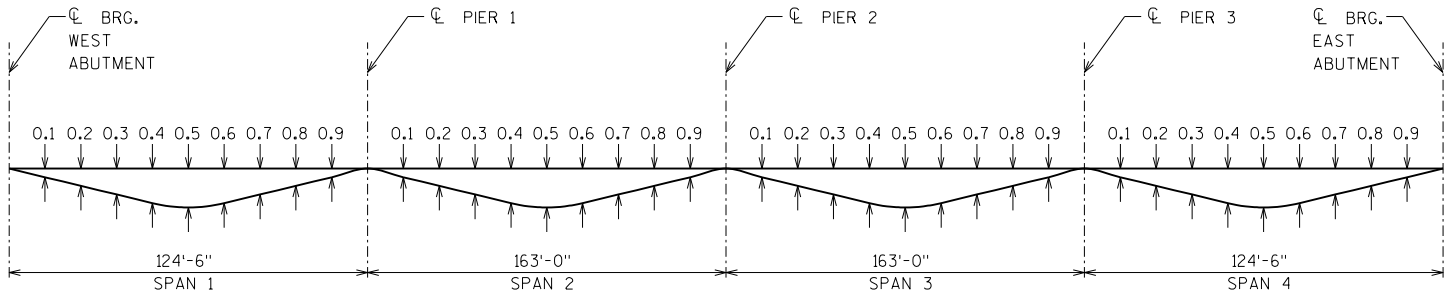


SECTION THRU SLAB

DEAD LOAD DEFLECTIONS

LOCATION	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	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	PIER 2
TOTAL	0.0	1.0	1.8	2.3	2.4	2.3	1.8	1.2	0.6	0.2	0.0	0.3	0.9	1.7	2.4	2.6	2.4	1.7	0.9	0.3	0.0
CONC. ONLY	0.0	0.9	1.5	2.0	2.1	1.9	1.5	1.0	0.5	0.2	0.0	0.2	0.8	1.5	2.0	2.2	2.0	1.5	0.8	0.2	0.0

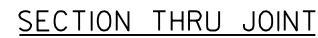
LOCATION	PIER 2	0.1 PT	0.2 PT	0.3 PT	0.4 PT	0.5 PT	0.6 PT	0.7 PT	0.8 PT	0.9 PT	PIER 3	0.1 PT	0.2 PT	0.3 PT	0.4 PT	0.5 PT	0.6 PT	0.7 PT	0.8 PT	0.9 PT	E. ABUT.
TOTAL	0.0	0.3	0.9	1.7	2.4	2.6	2.4	1.7	0.9	0.3	0.0	0.2	0.6	1.2	1.8	2.3	2.4	2.3	1.8	1.0	0.0
CONC. ONLY	0.0	0.2	0.8	1.5	2.0	2.2	2.0	1.5	0.8	0.2	0.0	0.2	0.5	1.0	1.5	1.9	2.1	2.0	1.5	0.9	0.0



NOTES

- DEFLECTIONS ARE GIVEN IN INCHES.
- NEGATIVE DEFLECTION VALUE DENOTES UPWARD DEFLECTION.
- "CONC. ONLY" DEFLECTIONS INCLUDE WEIGHT OF CONCRETE SLAB, HAUNCHES, PARAPETS, AND POLYMER OVERLAY ONLY. "TOTAL" DEFLECTIONS INCLUDE WEIGHT OF STEEL GIRDERS, SECONDARY STEEL MEMBERS, AND ALL ITEMS LISTED IN "CONC. ONLY" DEFLECTIONS.
- DEFLECTIONS ARE THEORETICAL AND MAY VARY IN FIELD.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-111			
DRAWN BY		AJC	PLANS CK'D. MDR
DECK ELEV. & DEAD LOAD DEFLECTIONS		SHFFT 9 OF 13 137	



LEGEND

- NOTES

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND
HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR
"EXPANSION DEVICE B-37-111".

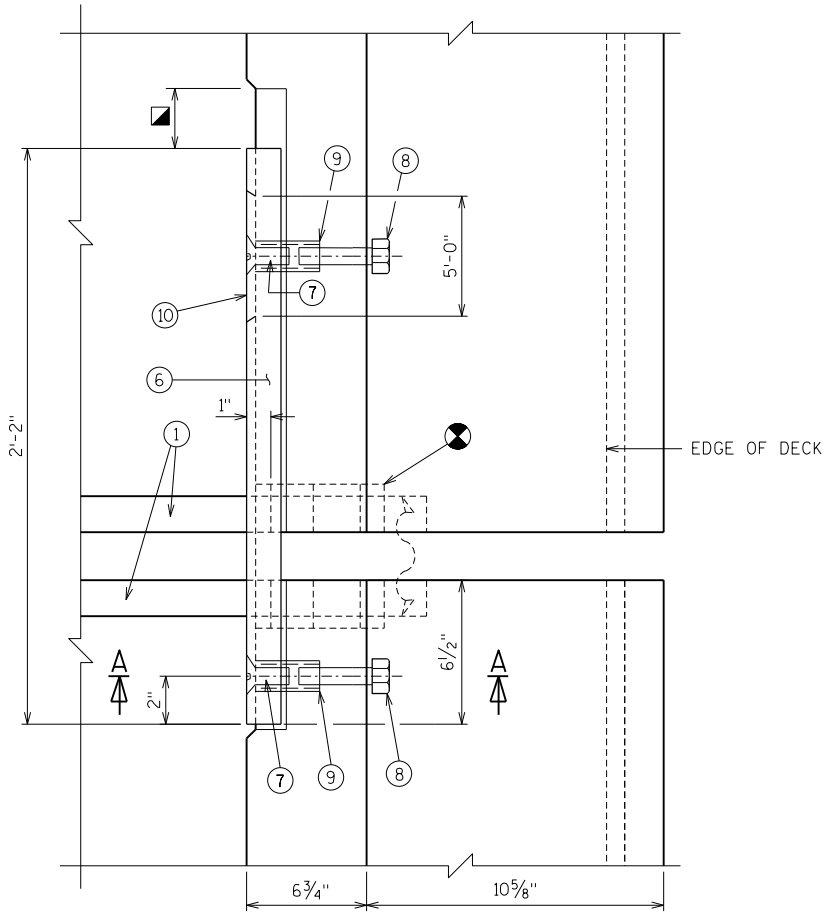


TEMPERATURE TABLE

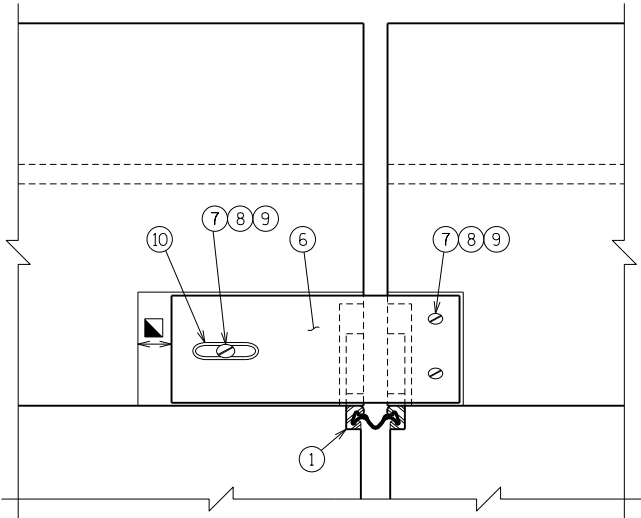
TEMPERATURE TABLE IS AN APPROXIMATION
BASED ON FIELD MEASUREMENTS AND
VALUES LISTED ON EXISTING PLANS.
A SMALL JOINT OPENING DUE TO A HIGH
TEMPERATURE AT TIME OF CONSTRUCTION
MAY REQUIRE NEOPRENE STRIP SEAL
INSTALLATION INTO STEEL EXTRUSIONS
PRIOR TO SETTING THE EXPANSION JOINT.

LEGEND

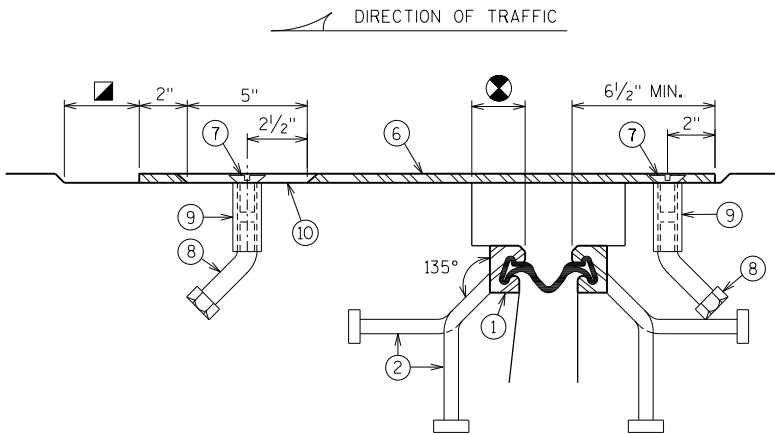
- ① NEOPRENE STRIP SEAL (4 - INCH) AND STEEL EXTRUSIONS.
- ② STUDS $\frac{5}{8}$ " DIA. X $6\frac{3}{8}$ " LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- ②A $\frac{1}{2}$ " THICK ANCHOR PLATE WITH $\frac{5}{8}$ " DIA. ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- ⑥ GALVANIZED PLATE $\frac{3}{8}$ " X 10" X 2'-2" LONG WITH HOLES FOR NO. 7.
- ⑦ $\frac{3}{4}$ " DIA. X $1\frac{1}{2}$ " STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS $\frac{1}{16}$ " BELOW PLATE SURFACE.
- ⑧ $\frac{3}{4}$ " DIA. X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
- ⑨ $\frac{3}{4}$ " DIA. X $2\frac{1}{4}$ " GALVANIZED THREADED COUPLING.
- ⑩ 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.



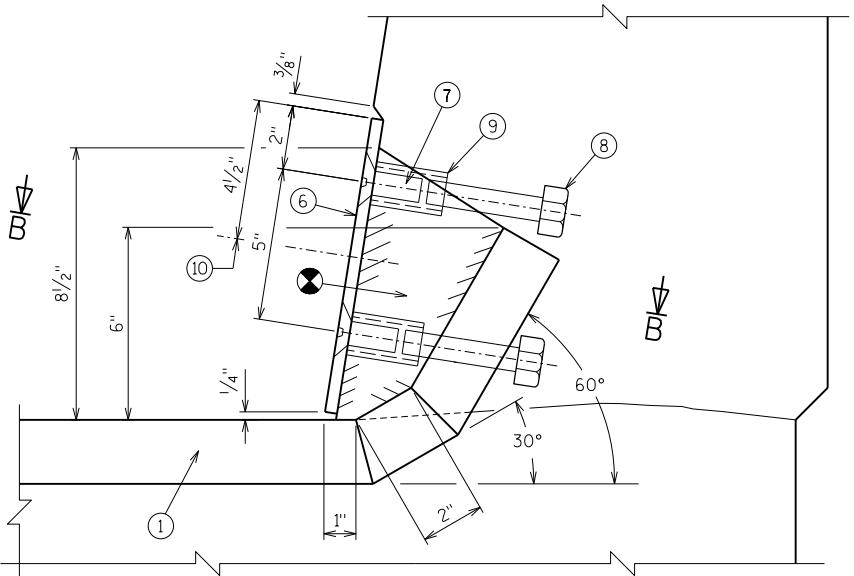
PLAN



VIEW OF PARAPET PLATE
FROM ROADWAY



SECTION B-B



SECTION A-A

- ⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- ▣ JOINT OPENING DIMENSION ALONG SKEW PLUS $\frac{1}{2}$ ".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-111			
DRAWN BY PLR		PLANS CK'D. MDR	
STRIP SEAL COVER PLATES		SHFFT 11 OF 13 139	

NOTES

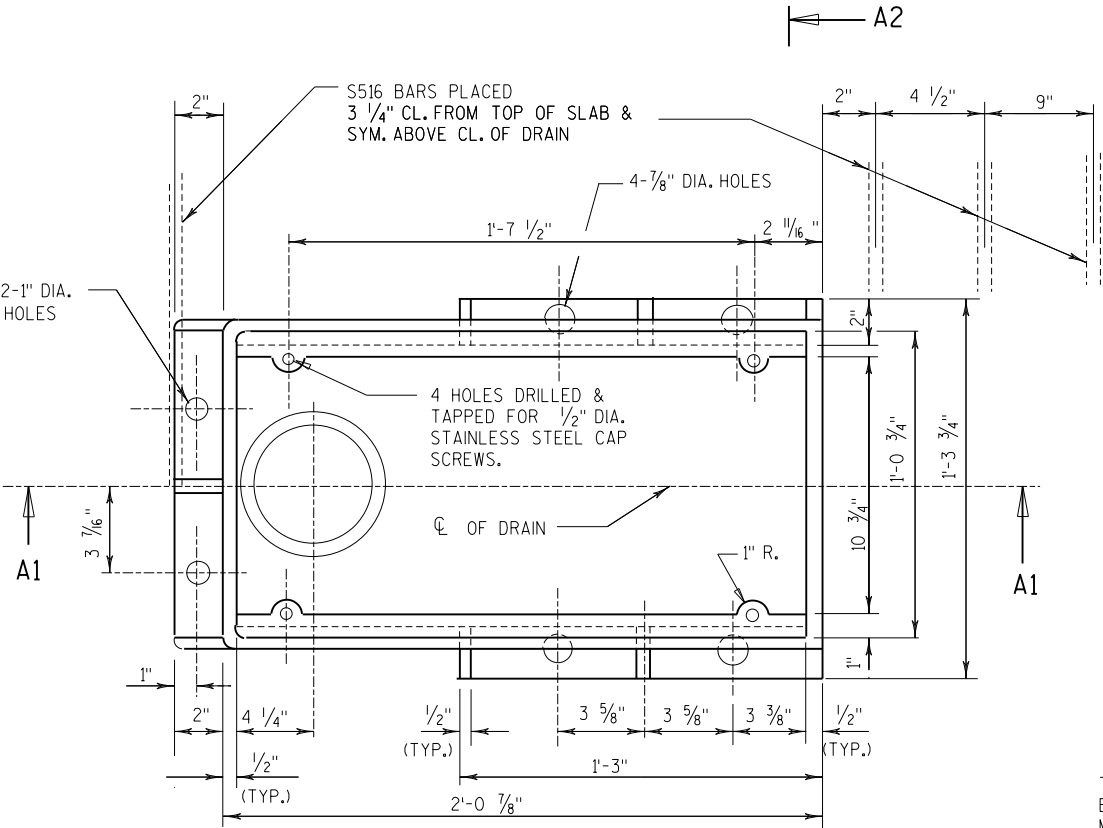
ALL MATERIAL FOR TYPE "GC" CASTING, EXCLUDING GRATE HOLD DOWN SCREWS, SHALL BE GRAY IRON CONFORMING TO ASTM A48, CLASS 30. (APPROXIMATE WEIGHT = 225#)

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.

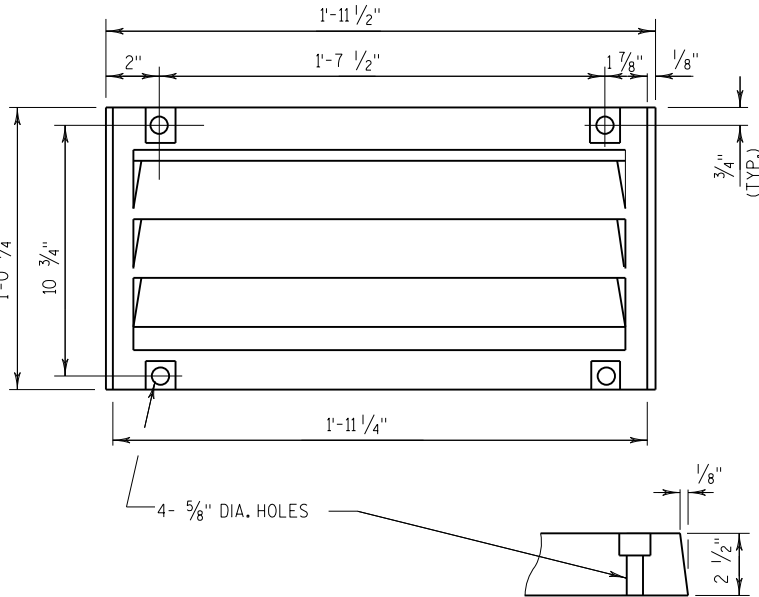
FLANGED 6" DIA. DOWNSPOUTS SHALL BE REINFORCED THERMOSETTING RESIN PIPE (RTRP) OR GALVANIZED STANDARD PIPE CONFORMING TO ASTM A53.

EXISTING DECK DRAIN BRACKETS ARE WELDED TO WEB. REMOVE EXISTING BRACKETS AND WELDS VIA GRINDING METHODS ONLY. FLAME CUTTING OF EXISTING BRACKETS IS NOT ALLOWED. PRIME AND PAINT AREA AFTER REMOVAL. FILL ANY REMAINING EXISTING BOLT HOLES WITH GALVANIZED BOLTS UNLESS UTILIZED FOR NEW BRACKET CONNECTION. FIELD DRILL NEW BOLT HOLES AS REQUIRED. ALL WORK TO BE INCLUDED IN BID ITEM "FLOOR DRAIN TYPE 'GC'".

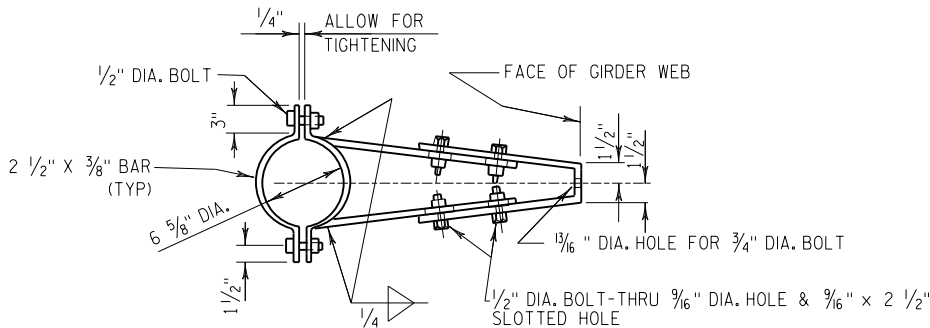
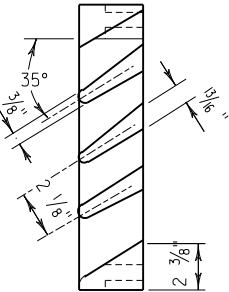


PLAN

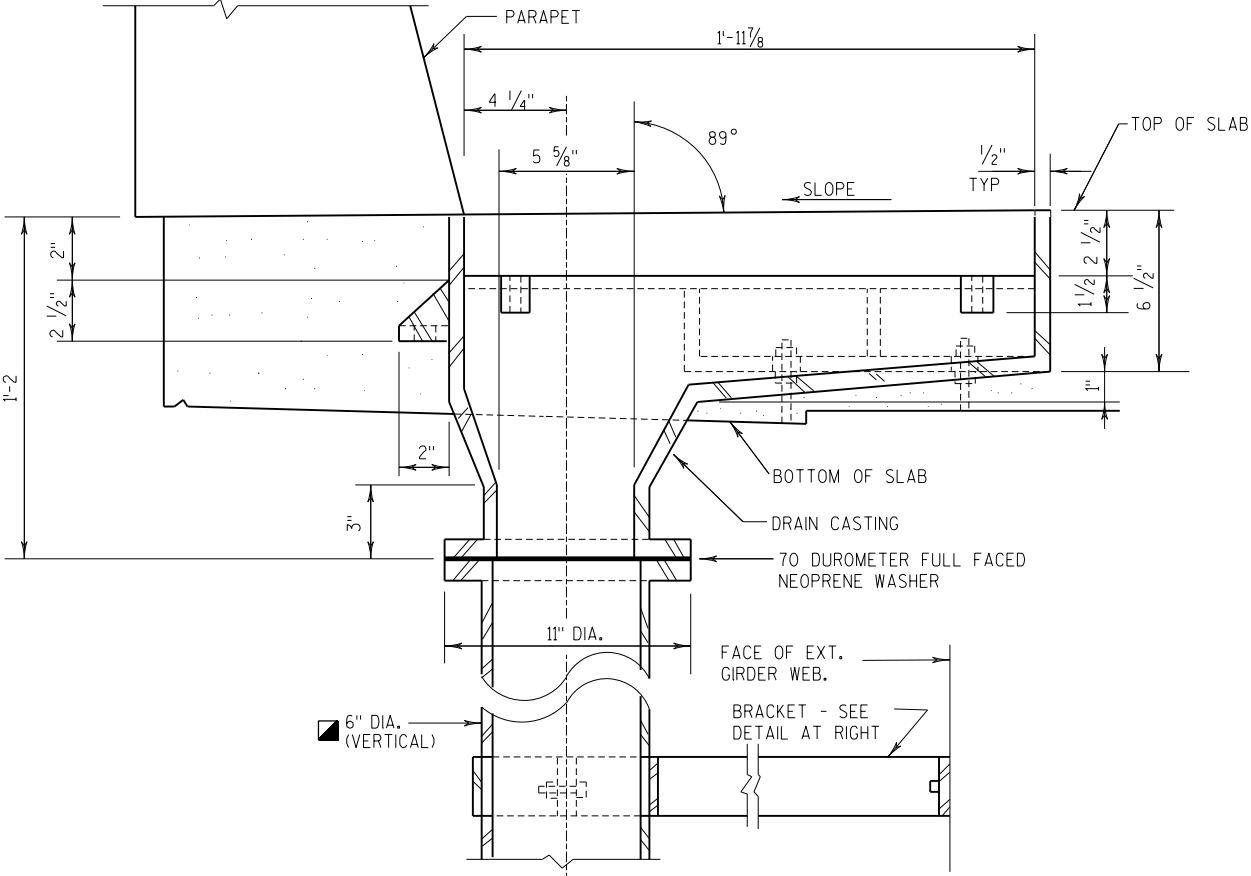
TRANS. AND LONGIT. SLAB BAR REINF. TO BE CUT A MAX. 1" CL. FROM DRAIN DISPLACE BARS WHERE POSSIBLE



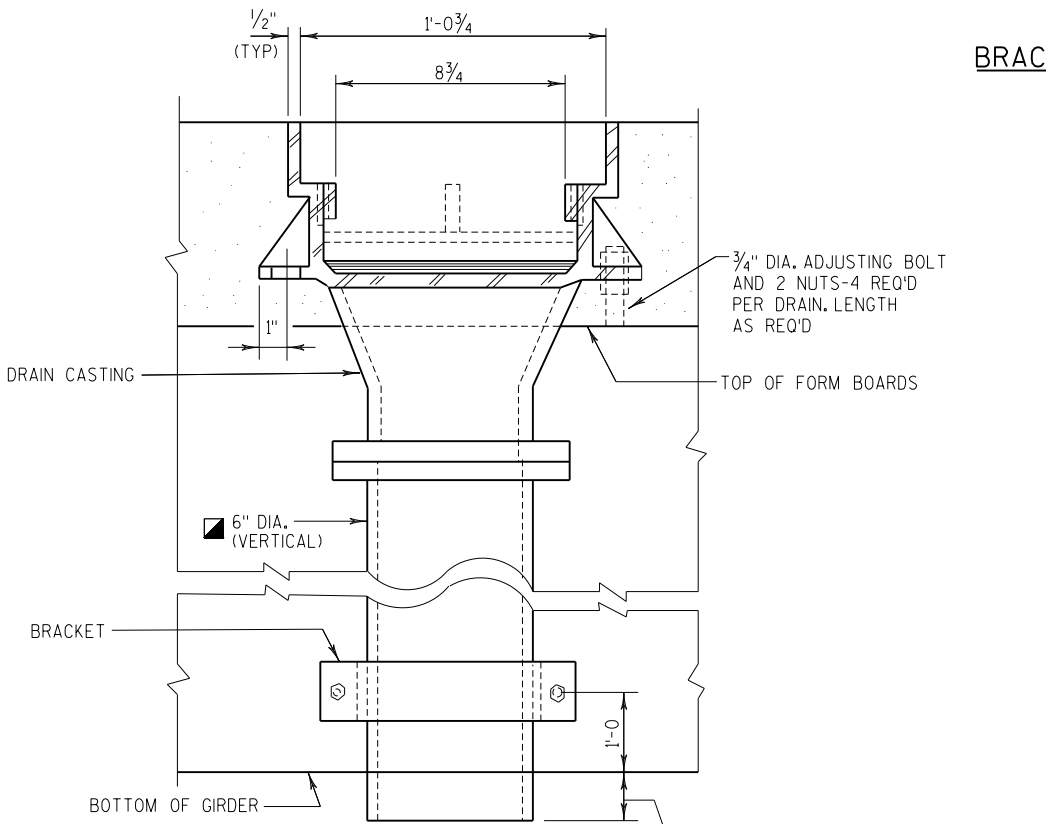
GRATE CASTING DETAIL



BRACKET DETAIL

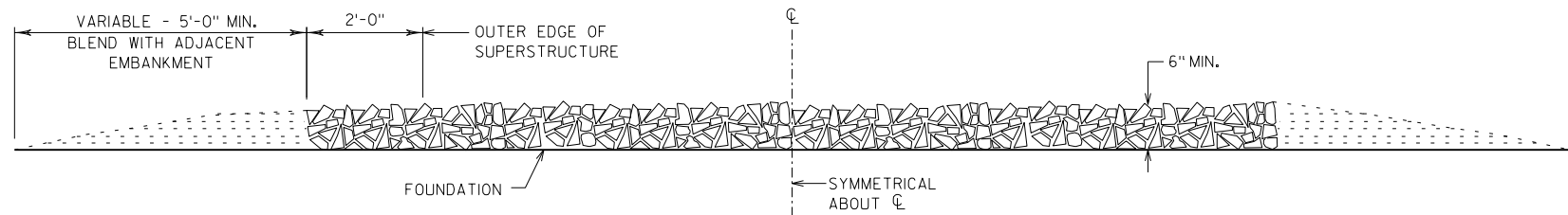


SECTION A1

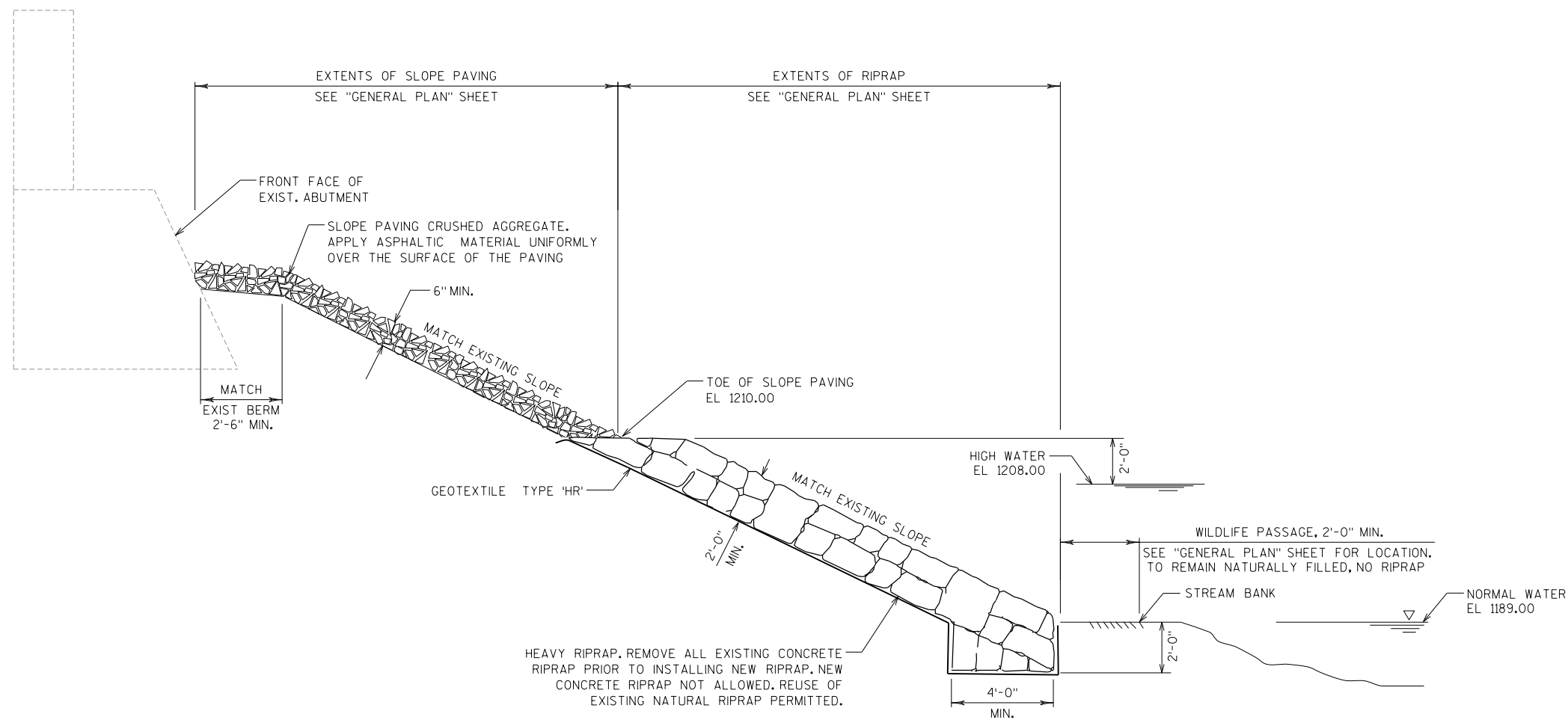


SECTION A2

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-111			
DRAWN BY PLR		PLANS CK'D. MDR	
FLOOR DRAIN TYPE 'GC'			SHEET 12 OF 13 140



SLOPE PAVING TYPICAL CROSS SECTION



STANDARD CROSS SECTION

GENERAL NOTES

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

WOOD FORMS MAY BE LEFT IN PLACE WHEN OF A QUALITY ACCEPTABLE TO THE ENGINEER.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-111			
DRAWN BY		AJC	PLANS CK'D. MDR
SLOPE PAVING AND RIPRAP DETAILS		SHEET 13 OF 13 141	

CTH WW STA 45+65 - STA 49+01 RT (STAGE 1)

STATION	DISTANCE	AREA SF		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
		CUT	FILL	CUT	FILL	CUT 1.00	EXPANDED FILL 1.25	
				NOTE 1	NOTE 2	NOTE 1	NOTE 3	
45+65	0	0.0	0.0	0	0	0	0	0
45+77	12	0.0	0.0	0	0	0	0	0
46+00	23	0.3	0.0	1	0	1	0	1
46+50	50	0.2	0.5	1	1	2	2	0
47+00	50	0.1	0.0	1	1	3	3	0
47+42	42	0.1	0.0	1	0	4	3	1
47+50	8	0.1	0.0	1	0	5	3	2
48+00	50	0.0	0.0	1	0	6	3	3
48+41	41	0.0	0.0	0	0	6	3	3
48+64	23	0.0	0.0	0	0	6	3	3
48+85	21	0.0	0.0	0	0	6	3	3
48+85	0	28.8	0.0	0	0	6	3	3
49+01	16	26.7	0.0	17	0	23	3	20
COLUMN TOTALS				23	2			

CTH WW STA 54+80 - STA 57+02 RT (STAGE 1)

STATION	DISTANCE	AREA SF		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
		CUT	FILL	CUT	FILL	CUT 1.00	EXPANDED FILL 1.25	
				NOTE 1	NOTE 2	NOTE 1	NOTE 3	
54+80	0	17.5	107.0	0	2	0	3	-3
54+95	15	21.4	0.2	11	30	11	40	-29
55+00	5	17.2	2.2	4	1	15	42	-27
55+14	14	18.5	0.2	10	1	25	43	-18
55+50	36	21.4	0.1	27	1	52	44	8
56+00	50	24.5	0.0	43	1	95	45	50
56+22	22	26.7	0.0	21	0	116	45	71
56+22	0	1.0	0.0	0	0	116	45	71
56+50	28	1.8	0.0	2	0	118	45	73
57+00	50	4.1	0.0	6	0	124	45	79
57+02	2	0.0	0.0	1	0	125	45	80
COLUMN TOTALS				125	36			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET IN SECTION 3 OF THE PLANS.
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME. SALVAGED UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
3 - EXPANDED FILL	(UNEXPANDED FILL) * (FILL FACTOR)
4 - MASS ORDINATE	CUT - (EXPANDED FILL); PLUS INDICATES AN EXCESS OF MATERIAL. SEE SUMMARY SHEET IN SECTION 3 FOR MASS ORDINATE ACCOUNTING FOR SALVAGED UNUSABLE PAVEMENT MATERIAL.

CTH WW STA 45+65 - STA 49+01 LT (STAGE 2)

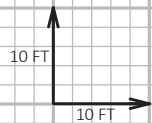
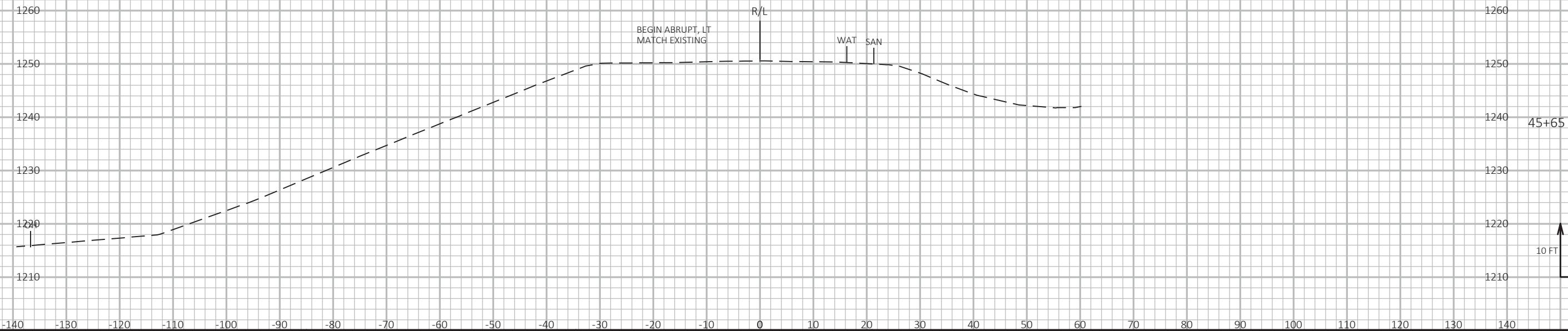
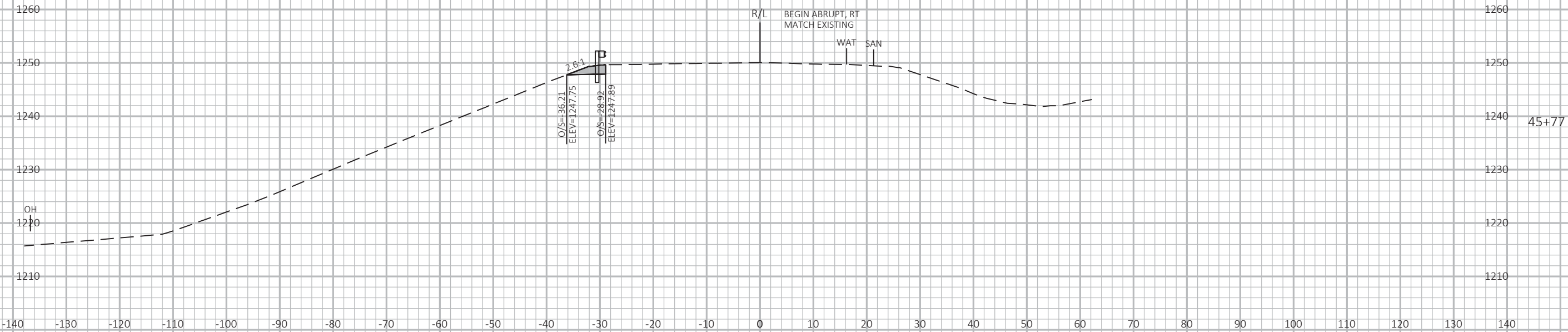
STATION	DISTANCE	AREA SF		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
		CUT	FILL	CUT	FILL	CUT 1.00	EXPANDED FILL 1.25	
				NOTE 1	NOTE 2	NOTE 1	NOTE 3	
45+65	0	0.0	0.0	0	0	0	0	0
45+77	12	0.0	0.0	0	0	0	0	0
46+00	23	0.0	0.0	0	0	0	0	0
46+50	50	3.5	0.0	4	0	4	0	4
47+00	50	7.6	0.0	11	0	15	0	15
47+42	42	12.5	0.0	16	0	31	0	31
47+50	8	16.2	0.0	5	0	36	0	36
48+00	50	7.5	0.0	22	0	58	0	58
48+41	41	3.6	0.0	9	0	67	0	67
48+64	23	1.8	0.0	3	0	70	0	70
48+85	21	0.0	13.8	1	6	71	8	63
48+85	0	24.8	14.3	0	0	71	8	63
49+01	16	26.6	0.0	16	5	87	14	73
COLUMN TOTALS				87	11			

CTH WW STA 54+80 - STA 57+02 LT (STAGE 2)

STATION	DISTANCE	AREA SF		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
		CUT	FILL	CUT	FILL	CUT 1.00	EXPANDED FILL 1.25	
				NOTE 1	NOTE 2	NOTE 1	NOTE 3	
54+80	0	17.9	158.6	0	3	0	4	-4
54+95	15	17.6	7.3	10	47	10	63	-53
55+00	5	19.5	3.3	4	1	14	64	-50
55+14	14	18.6	0.1	10	1	24	65	-41
55+50	36	23.3	0.0	29	1	53	67	-14
56+00	50	28.8	0.0	49	0	102	67	35
56+22	22	30.2	0.1	25	1	127	68	59
56+22	0	3.6	0.0	0	0	127	68	59
56+50	28	2.9	0.0	4	0	131	68	63
57+00	50	3.2	0.0	6	0	137	68	69
57+02	2	0.0	0.0	1	0	138	68	70
COLUMN TOTALS				138	54			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET IN SECTION 3 OF THE PLANS.
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME. SALVAGED UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
3 - EXPANDED FILL	(UNEXPANDED FILL) * (FILL FACTOR)
4 - MASS ORDINATE	CUT - (EXPANDED FILL); PLUS INDICATES AN EXCESS OF MATERIAL. SEE SUMMARY SHEET IN SECTION 3 FOR MASS ORDINATE ACCOUNTING FOR SALVAGED UNUSABLE PAVEMENT MATERIAL.

EXISTING BASE AGGREGATE DENSE IN GOOD
CONDITION ANTICIPATED TO REMAIN.



9

9

PROJECT NO: 9474-01-70

HWY: CTH WW

COUNTY: MARATHON

CROSS SECTIONS

SHEET

144

E

FILE NAME : P:\49XX\4963.DP.16.CTHWW.MAR\CADD\94740170\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090209-XS

PLOT DATE : 7/9/2018 8:11 AM

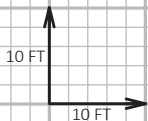
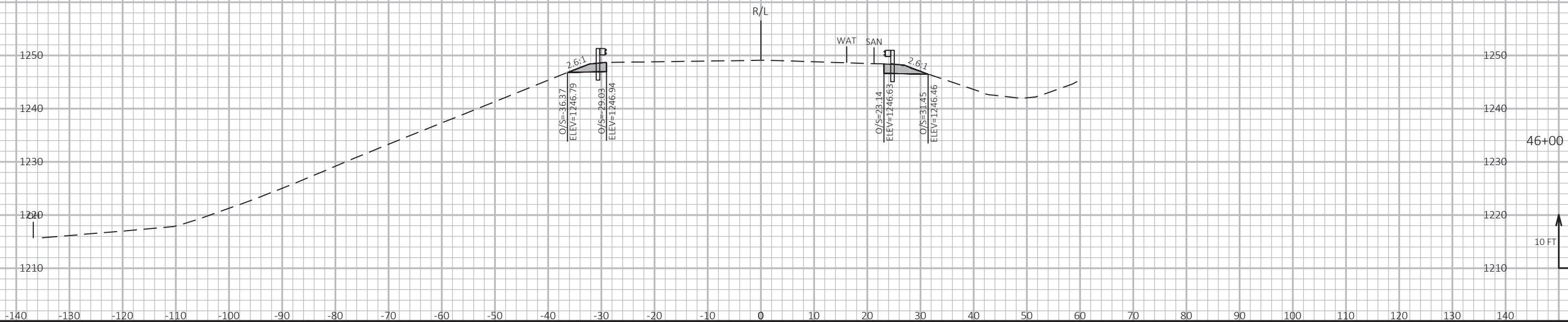
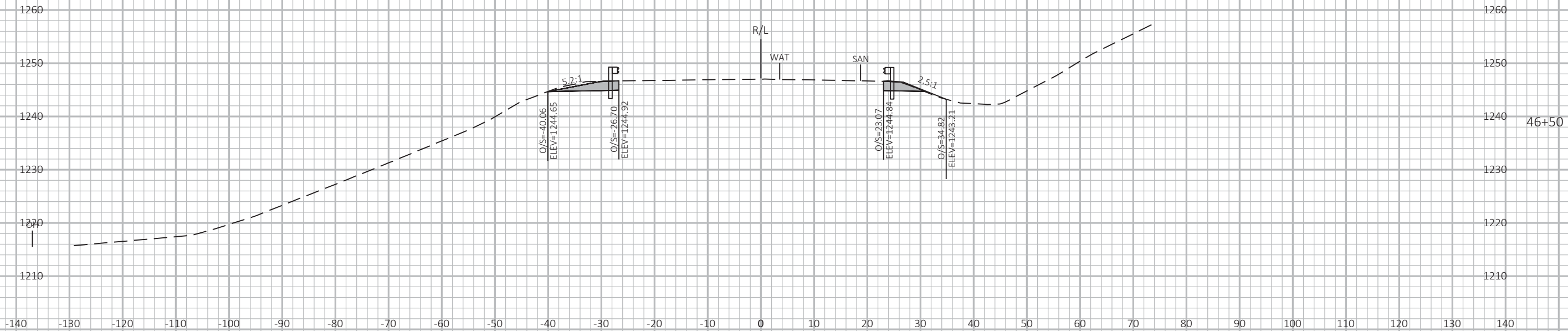
PLOT BY : SCOTT KAISER

PLOT NAME :

PLOT SCALE : 1 IN:20 FT_1

WISDOT/CADDs SHEET 49

EXISTING BASE AGGREGATE DENSE IN GOOD
CONDITION ANTICIPATED TO REMAIN.



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PROJECT NO: 9474-01-70

HWY: CTH WW

COUNTY: MARATHON

CROSS SECTIONS

SHEET

145

E

FILE NAME : P:\49XX\4963.DP.16.CTHWW\MAR\CADD\94740170\090201-S.DWG
LAYOUT NAME - 090210-XS

PLOT DATE : 7/9/2018 8:11 AM

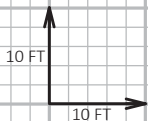
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PLOT NAME :

PLOT SCALE : 1 IN:20 FT.1

WISDOT/CADDs SHEET 49

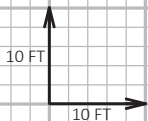
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WISDOT/CADDS SHEET 49

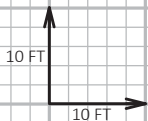
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147

WISDOT/CADDS SHEET 49

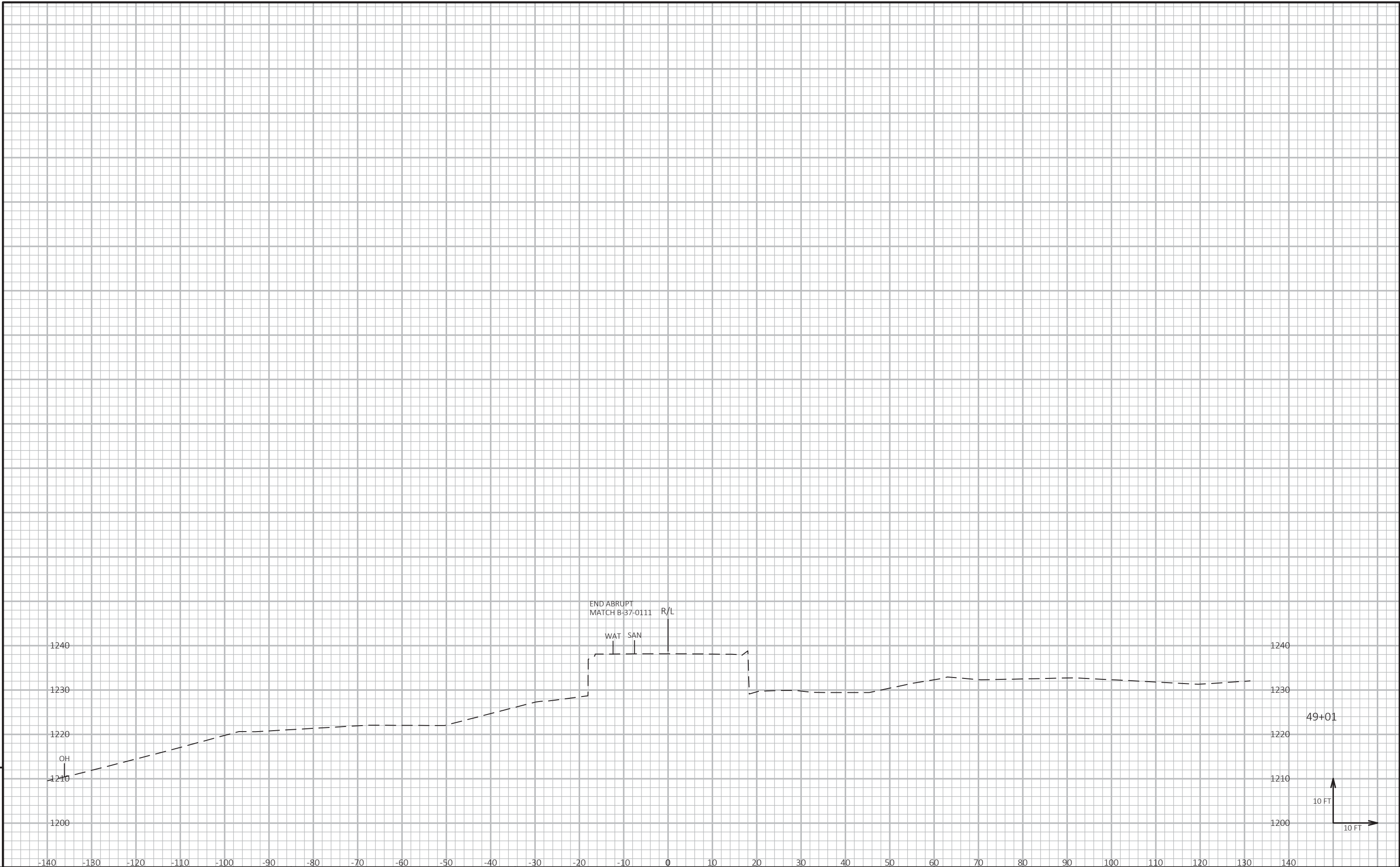
114



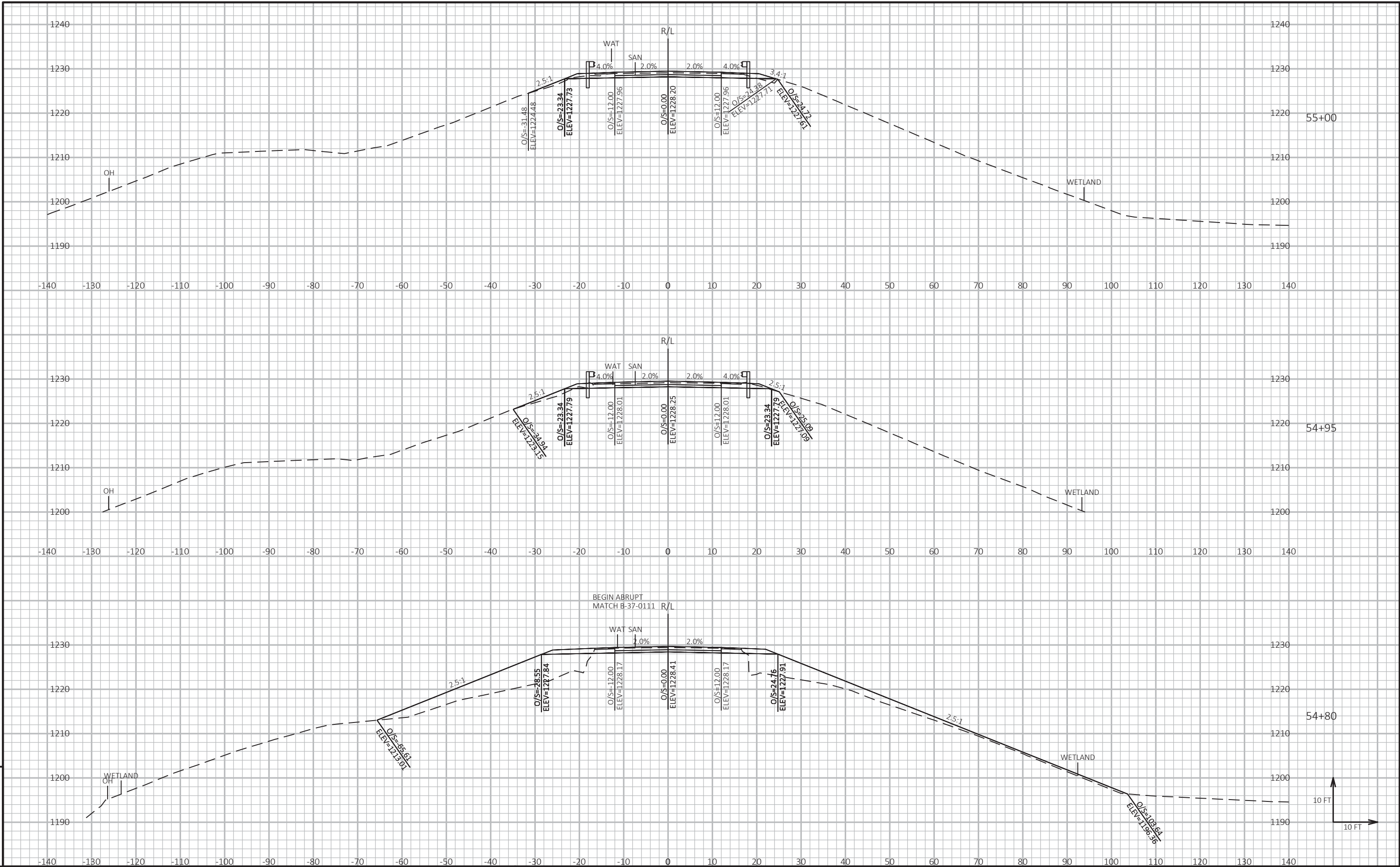
148

WISDOT/CADDS SHEET 49

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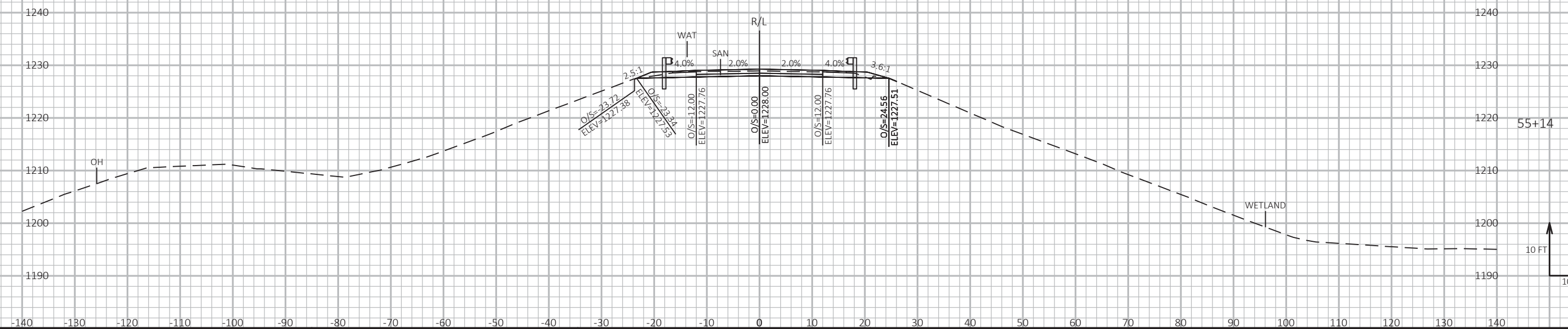
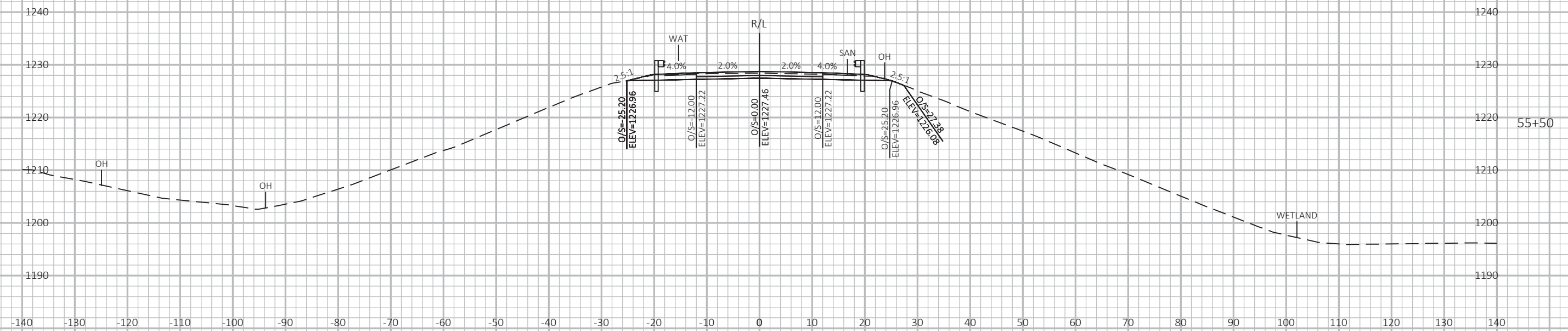


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PROJECT NO: 9474-01-70

HWY: CTH WW

COUNTY: MARATHON

CROSS SECTIONS

SHEET

53

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FILE NAME : P:\49XX\4963.DP.16.CTHWW.MAR\CADD\94740170\SHEET\PLAN\090201-XS.DWG
LAYOUT NAME - 090220-XS

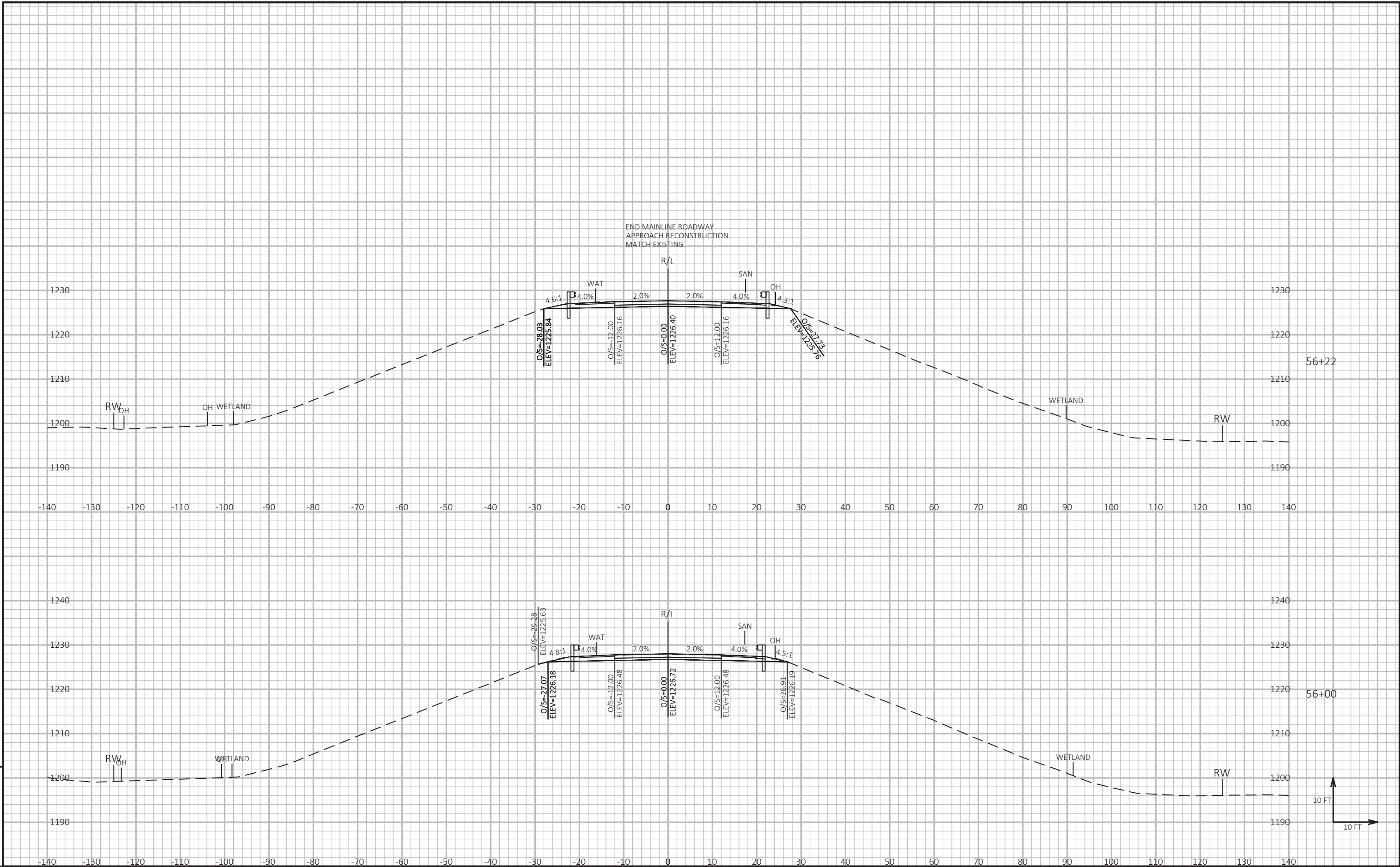
PLOT DATE : 7/9/2018 8:12 AM

PLOT BY : SCOTT KAISER

PLOT NAME :

PLOT SCALE : 1 IN:20 FT_1

WISDOT/CADDS SHEET 49



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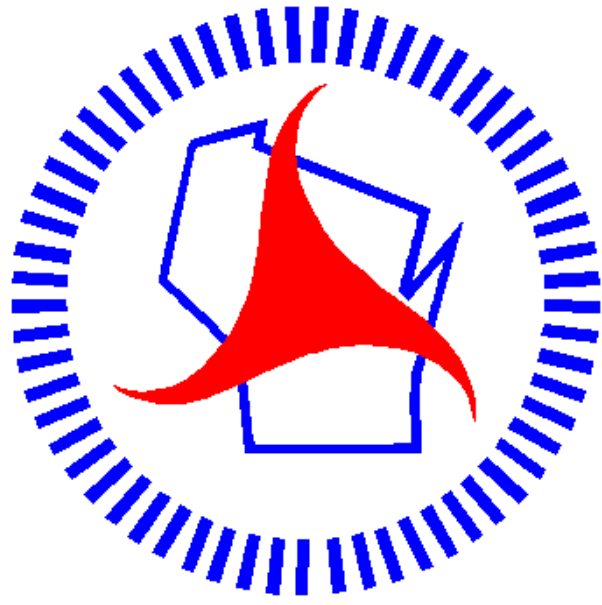


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155

WISDOT/CADDS SHEET 49

Notes



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