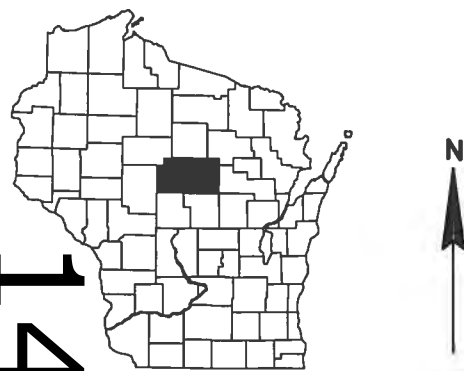


RHI
PROJECT ID: 1053-02-65
WITH: N/A

JUN 2016
ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details (Inc. Erosion Cntrl)
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 = 204



DESIGN DESIGNATION	BUS 51- CTH X	CTH X- CTH J
A.A.D.T. (2020)	= 28,700	14,400
A.A.D.T. (2040)	= 37,800	19,100
D.H.V.	= 3,970	2010
D.O.	= 51/49	51/49
T.	= 13.7%	13.7%
DESIGN SPEED	= 60-70 MPH	60-70 MPH
ESALS	= N/A	N/A

CONVENTIONAL SYMBOLS

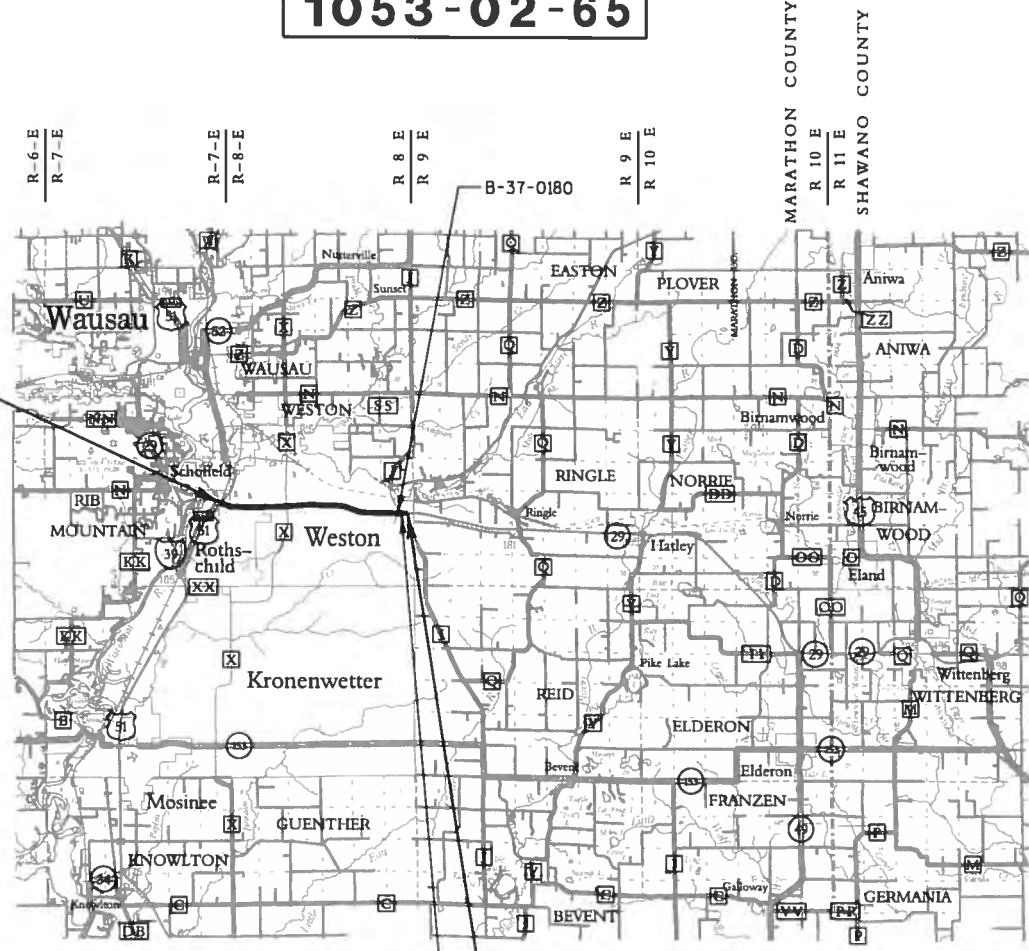
PLAN	
CORPORATE LIMITS	////
PROPERTY LINE	---
LOT LINE	- - -
LIMITED HIGHWAY EASEMENT	---
EXISTING RIGHT OF WAY	---
PROPOSED OR NEW R/W LINE	---
SLOPE INTERCEPT	---
REFERENCE LINE	---
EXISTING CULVERT	---
PROPOSED CULVERT (Box or Pipe)	---
COMBUSTIBLE FLUIDS	CAUTION
MARSH AREA	---
WOODED OR SHRUB AREA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

PROFILE	
GRADE LINE	---
ORIGINAL GROUND	---
MARSH OR ROCK PROFILE (To be noted as such)	---
SPECIAL DITCH	---
GRADE ELEVATION	---
CULVERT (Profile View)	---
UTILITIES	
ELECTRIC	---
FIBER OPTIC	---
GAS	---
SANITARY SEWER	---
STORM SEWER	---
TELEPHONE	---
WATER	---
UTILITY PEDESTAL	---
POWER POLE	---
TELEPHONE POLE	---

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
WAUSAU - WITTENBERG
BUS 51 TO CTH J
STH 29
MARATHON COUNTY

STATE PROJECT NUMBER
1053-02-65

BEGIN PROJECT
STA 135'EB'+18.00
Y=178,559.66
X=286,025.60



END PROJECT
STA 455'EB'+00.00

B-37-0179
EXCEPTION TO NET CENTERLINE
STA 426'EB'+74 - STA 429'EB'+00

LAYOUT
SCALE 0 3 MI.

TOTAL NET LENGTH OF CENTERLINE = 6.014 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MARATHON COUNTY (NAD 83), 1991 ADJUSTMENT
ALL ELEVATIONS ON THIS PROJECT ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88)

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1053-02-65	WISC 2016272	1

ORIGINAL PLANS PREPARED BY

emcs inc

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



5/19/15
(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	WISDOT / EMCS, INC.
Designer	EMCS, INC.
Project Manager	JED PETERS
Regional Examiner	CHERYL SIMON
Regional Supervisor	ROBIN STAFFORD

APPROVED FOR THE DEPARTMENT
DATE: 5/29/2015
(Signature)

E

GENERAL NOTES

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

THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. EXISTING UTILITIES WERE ONLY SURVEYED IN AREAS OF POTENTIAL EXCAVATION.

CONCRETE REPAIR ITEMS IN THIS PLAN ARE BASED ON A CRACK SURVEY COMPLETED IN 2012. THE TYPES OF REPAIRS AND LIMITS OF PAVEMENT REMOVAL ARE APPROXIMATE AND SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

MATCH EXISTING CONCRETE JOINTS FOR REPAIR AND REPLACEMENT AREAS. CONCRETE JOINT LAYOUT WILL NOT BE PAID FOR SEPERATELY.

EXISTING RIGHT-OF-WAY IS APPROXIMATE AND IS BASED ON AVAILABLE RIGHT-OF-WAY PLATS.

AS-BUILTS USED FOR PLAN DEVELOPMENT

PROJECT NO: 1054-07-77, CONSTRUCTION YEAR: 1989
PROJECT NO: 1054-07-74, CONSTRUCTION YEAR: 1989
PROJECT NO: 1054-07-75, CONSTRUCTION YEAR: 1989

ORDER OF SECTION 2 SHEETS

- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PERMANENT SIGNING AND PAVEMENT MARKING
- TRAFFIC CONTROL
- ALIGNMENT DATA

OTHER CONTACTS

DNR LIAISON
MARC HERSHFELD
NORTH CENTRAL REGION
473 GRIFFITH DRIVE
WISCONSIN RAPIDS, WI 54494
(715) 421-7867
MARC.HERSHFELD@WISCONSIN.GOV

U.S. ARMY CORPS OF ENGINEERS
ERIC NORTON
STEVENS POINT FIELD OFFICE
1314 CONTRACTORS BLVD
PLOVER, WI 54467
(715) 345-7911

UTILITIES

ANR PIPELINE COMPANY

(GAS/PETROLIUM)
DUANE PRONDZINSKI
2629 SUNSET DRIVE
STEVENS POINT, WI 54482
(715) 295-3143
CELL (715) 460-4322
duane.prondzinski@transcanada.com

NET LEC, LLC

(COMMUNICATIONS)
DENNIS LAFAVE
1700 INDUSTRIAL DRIVE
GREEN BAY, WI 54302
CELL (920) 619-9774
dlafave@mi-tech.us

VILLAGE OF WESTON

(SEWER & WATER)
MICHEAL WODALSKI
5500 SCHOFIELD AVE
WESTON, WI 54476
(715) 241-2624
CELL (715) 241-2636
mwodalski@westonwi.org

WISCONSIN PUBLIC SERVICE

(ELECTRIC)
CLAYTON VIRCKS
P.O. BOX 1166
WAUSAU, WI 54402
(715) 848-7317
CELL (715) 573-7806
chvircks@wisconsinpublicservice.com

ATC MANAGEMENT INC.

(ELECTRIC)
MIKE OLSEN
801 O'KEEFE RD
P.O. BOX 6113
DE PERE, WI 54115-6113
(920) 338-6582
molсен@atcinc.com

PACKERLAND BROADBAND

(COMMUNICATIONS)
WAYNE CRETTON
105 KENT ST
P.O. BOX 190
IRON MOUNTAIN, MI 49801
CELL (906) 282-3768
wayne.cretton@packerlandbroadband.com

WINDSTREAM, KDL

(COMMUNICATIONS)
DENNIS RUESS
8531 CTH FF
WISCONSIN RAPIDS, WI 54494
(812) 456-1249
CELL (608) 512-5587
dennis.ruess@windstream.com

FRONTIER COMMUNICATIONS OF WILLC

(COMMUNICATIONS)
CALVIN KLADE
1851 N. 14TH AVE
WAUSAU, WI 54401
(715) 847-1525
CELL (715) 573-2110
calvin.klade@ftr.com

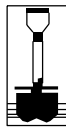
QWEST

(COMMUNICATIONS)
BOB SAMPSON
1310 EAST MARY ST
OTTUMWA, WI 52501
(636) 887-5367
robert.sampson@centurylink.com

WISCONSIN PUBLIC SERVICE

(GAS)
MICHAEL BOSI
1700 SHERMAN STREET
WAUSAU, WI 54402
(715) 848-7471
CELL (715) 803-8009
mabosi@wisconsinpublicservice.com

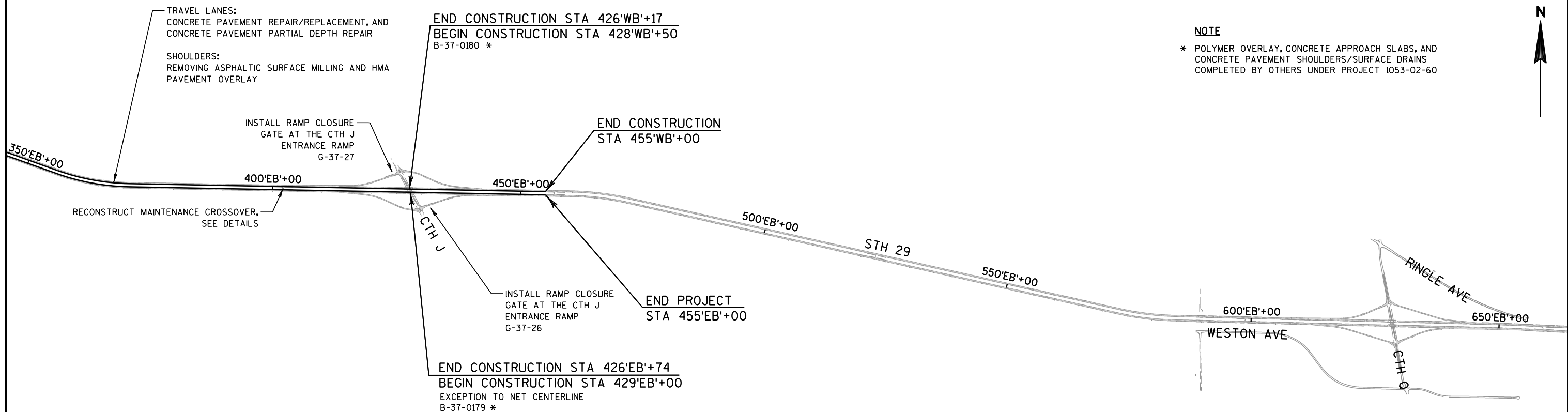
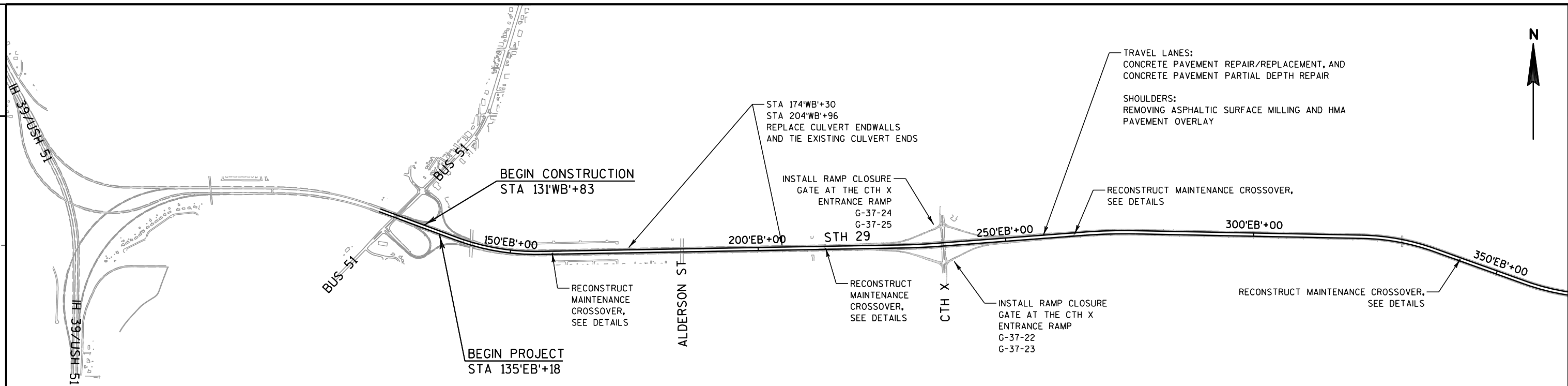
DIGGERS



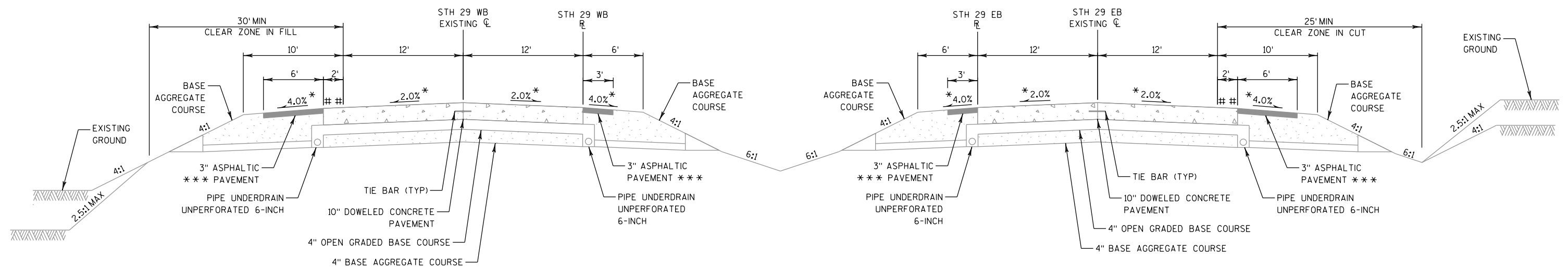
HOTLINE

Dial  or (800) 242-8511

www.DiggersHotline.com

**NOTE**

* POLYMER OVERLAY, CONCRETE APPROACH SLABS, AND
CONCRETE PAVEMENT SHOULDERS/SURFACE DRAINS
COMPLETED BY OTHERS UNDER PROJECT 1053-02-60



TYPICAL EXISTING SECTION

STH 29

STA 135'EB'+18 - STA 455'EB'+00
STA 131'WB'+83 - STA 455'WB'+00

NOTES

- * CROSS SLOPE VARIES DUE TO SUPERELEVATION
- *** EXISTING ASPHALT SHOULDERS HAVE SETTLED LOWER THAN EXISTING CONCRETE PAVEMENT IN SOME LOCATIONS
- ## EXISTING RUMBLE STRIP CORRUGATION; 6' LONG, 60' CENTER TO CENTER

PROJECT NO:1053-02-65

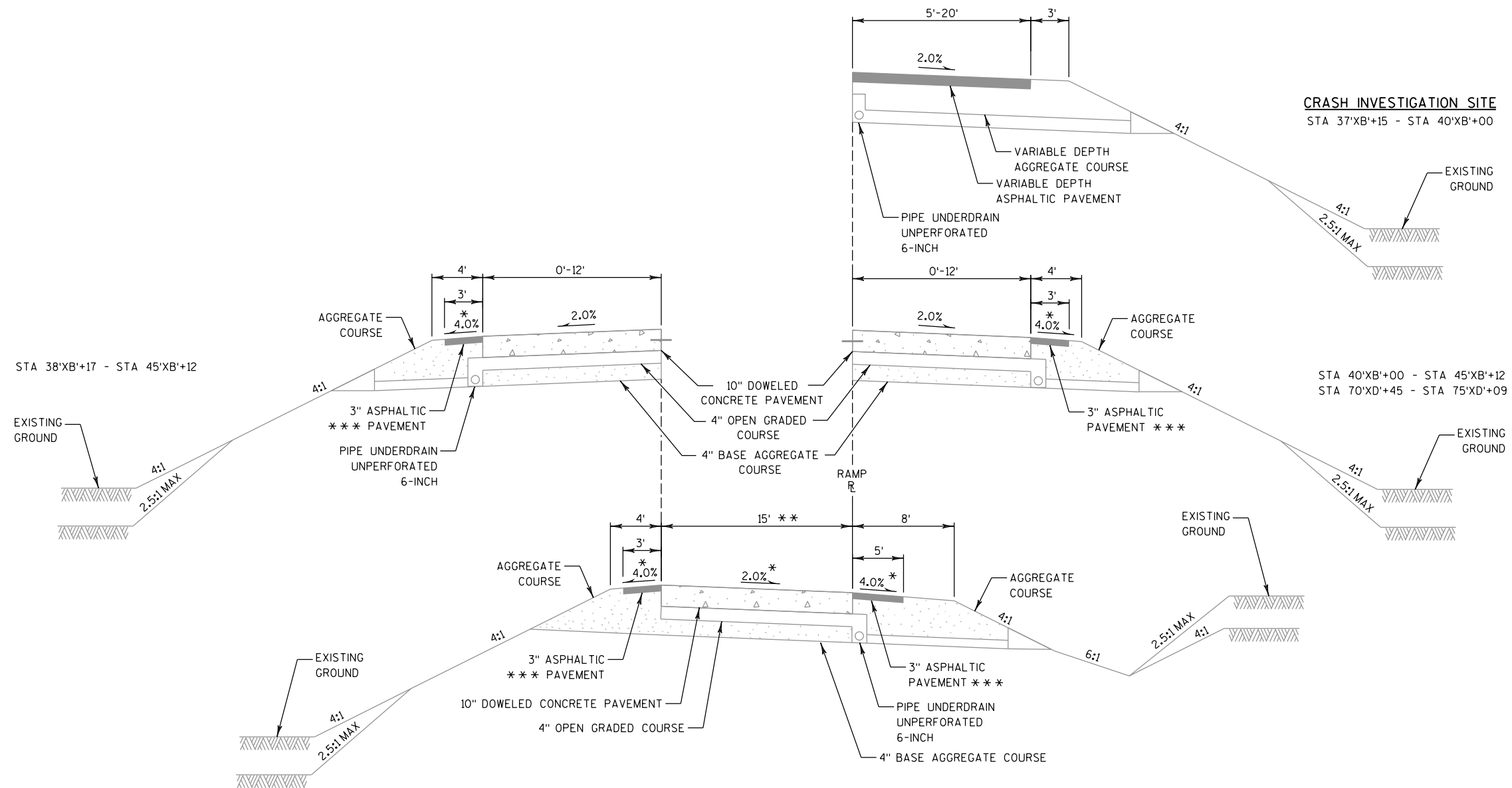
HWY:STH 29

COUNTY:MARATHON

TYPICAL SECTIONS

SHEET

E



TYPICAL EXISTING SECTION
STH 29 EXIT AND ENTRANCE RAMPS
 (EB RAMPS SHOWN, FOR WB RAMPS MIRROR AROUND R)

CTH X

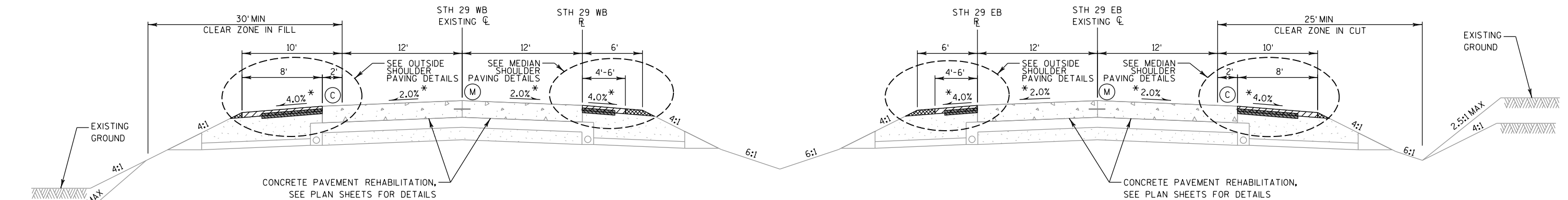
STA 10'XA'+47 - STA 23'XA'+37
 STA 31'XB'+94 - STA 45'XB'+12
 STA 58'XC'+44 - STA 73'XC'+61
 STA 70'XD'+45 - STA 83'XD'+20

CTH J

STA 10'JA'+34 - STA 24'JA'+51
 STA 31'JB'+39 - STA 46'JB'+93
 STA 58'JC'+40 - STA 72'JC'+42
 STA 70'JD'+37 - STA 85'JD'+49

NOTES

- * CROSS SLOPE VARIES DUE TO SUPERELEVATION
- ** PAVEMENT WIDTH VARIES AT TURN LANES AND RAMP TERMINALS
- *** EXISTING ASPHALT SHOULDERS HAVE SETTLED LOWER THAN EXISTING CONCRETE PAVEMENT IN SOME LOCATIONS



TYPICAL FINISHED SECTION

STH 29

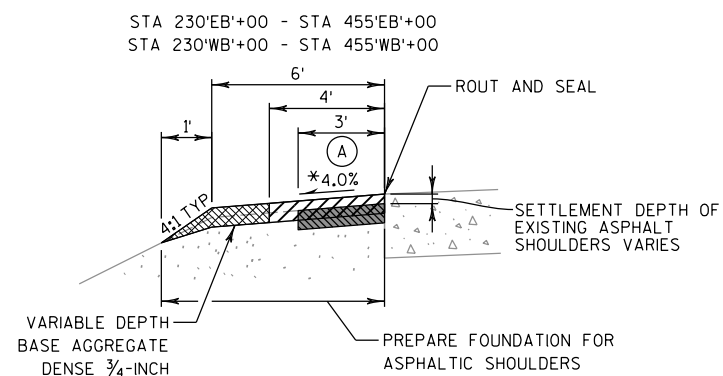
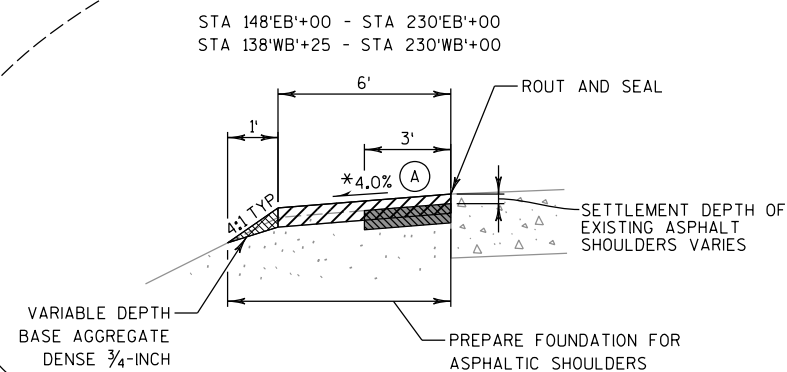
STA 135'EB'+18 - STA 455'EB'+00
STA 131'WB'+83 - STA 455'WB'+00

NOTES

- * CROSS SLOPE VARIES DUE TO SUPERELEVATION
- (C) MILL CONTINUOUS CONCRETE SHOULDER RUMBLE STRIPS BETWEEN EXISTING RUMBLE STRIP CORRUGATIONS, SEE SDD "SHOULDER RUMBLE STRIP, MILLING" FOR ADDITIONAL INFORMATION
- (A) ASPHALTIC SHOULDER RUMBLE STRIP, SEE SDD "SHOULDER RUMBLE STRIP, MILLING" FOR ADDITIONAL INFORMATION
- (M) REMOVING RAISED PAVEMENT MARKER AND FILLING VOID ALONG STH 29 CENTERLINE AND ENTRANCE RAMP GORE AREAS

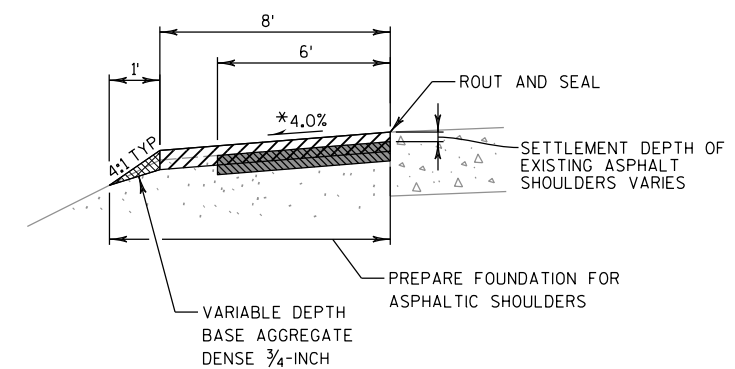
STH 29 MEDIAN SHOULDER PAVING DETAILS

(EB SHOWN, MIRROR DETAIL FOR WB SHOULDER)



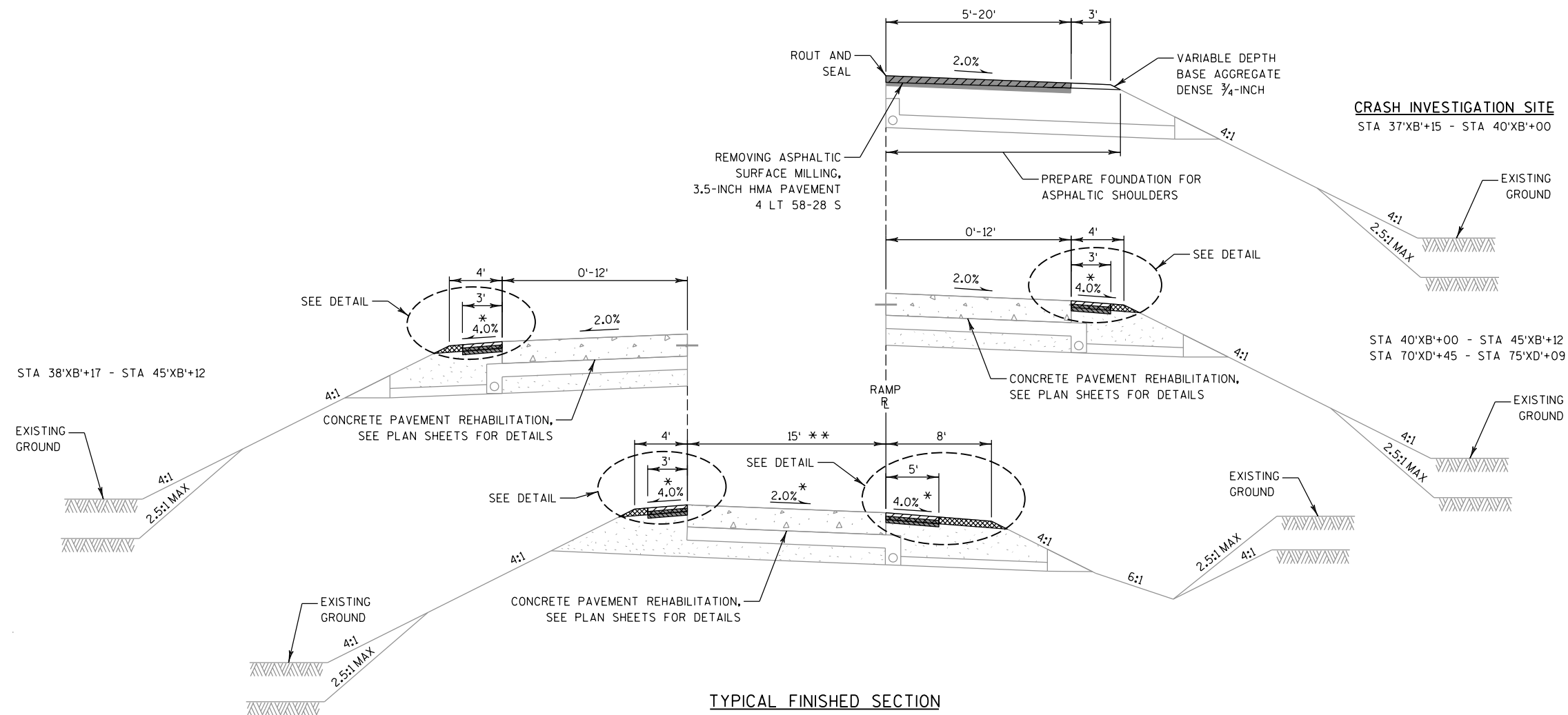
STH 29 OUTSIDE SHOULDER PAVING DETAIL

(WB SHOWN, MIRROR DETAIL FOR EB SHOULDER)
STA 135'EB'+18 - STA 455'EB'+00
STA 135'WB'+75 - STA 455'WB'+00



LEGEND

- REMOVING ASPHALTIC SURFACE MILLING FULL DEPTH, PLACE BASE AGGREGATE DENSE 3/4-INCH AS NEEDED
- 3.5-INCH HMA PAVEMENT 4 LT 58-28 S



TYPICAL FINISHED SECTION
STH 29 EXIT AND ENTRANCE RAMP
 (EB RAMP SHOWN, FOR WB RAMP MIRROR AROUND $\bar{R}$)

CTH X

STA 10'XA'+47 - STA 32'XA'+73
 STA 30'XB'+00 - STA 45'XB'+12
 STA 50'XC'+00 - STA 73'XC'+61
 STA 70'XD'+45 - STA 85'XD'+09

CTH J

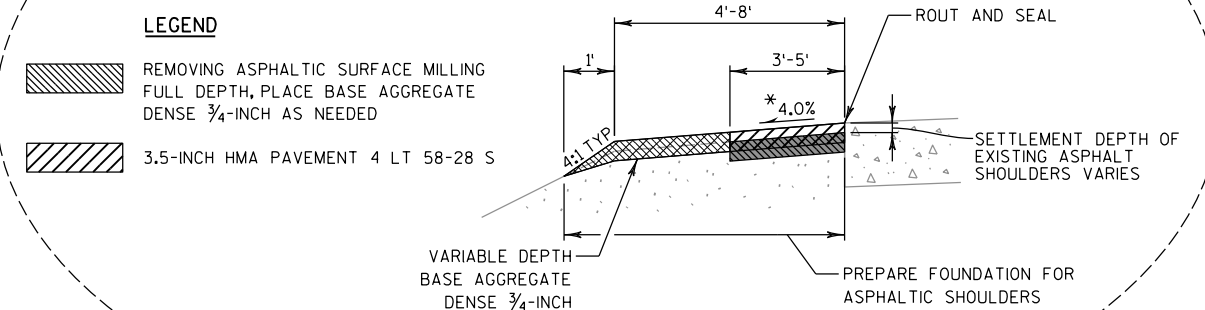
STA 10'JA'+34 - STA 32'JA'+74
 STA 30'JB'+00 - STA 46'JB'+93
 STA 50'JC'+00 - STA 72'JC'+42
 STA 70'JD'+37 - STA 87'JD'+41

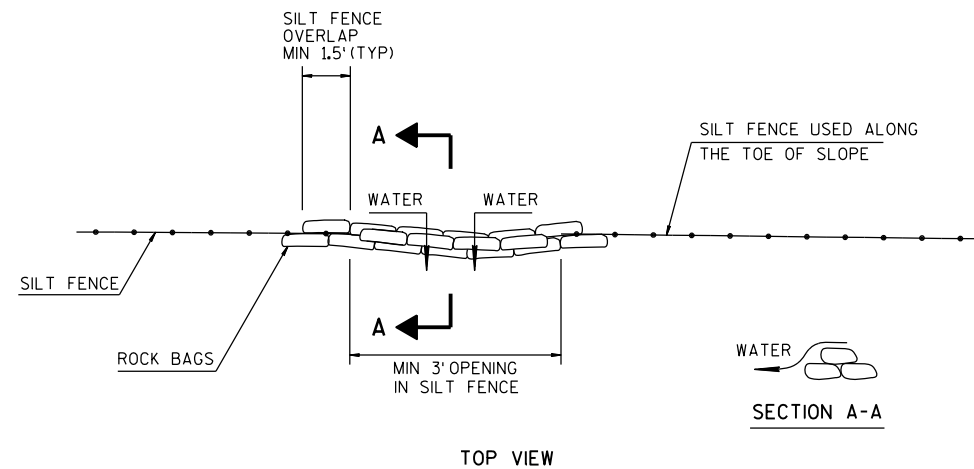
NOTES

- * CROSS SLOPE VARIES DUE TO SUPERELEVATION
- ** PAVEMENT WIDTH VARIES AT TURN LANES AND RAMP TERMINALS

STH 29 RAMP SHOULDER
PAVING DETAIL

(LEFT SHOULDER SHOWN, MIRROR DETAIL FOR RIGHT SHOULDER)

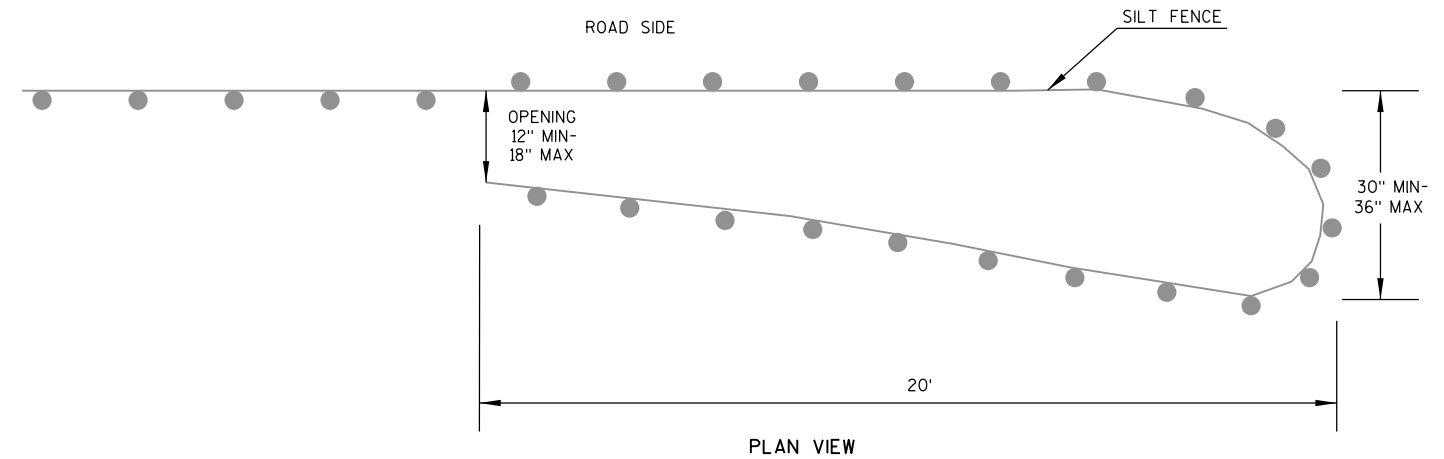




ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL
PAID AS ROCK BAGS

NOTE

SEE RAMP GATE DETAILS, MEDIAN CROSSOVER DETAIL, AND PLAN SHEETS FOR ADDITIONAL INFORMATION

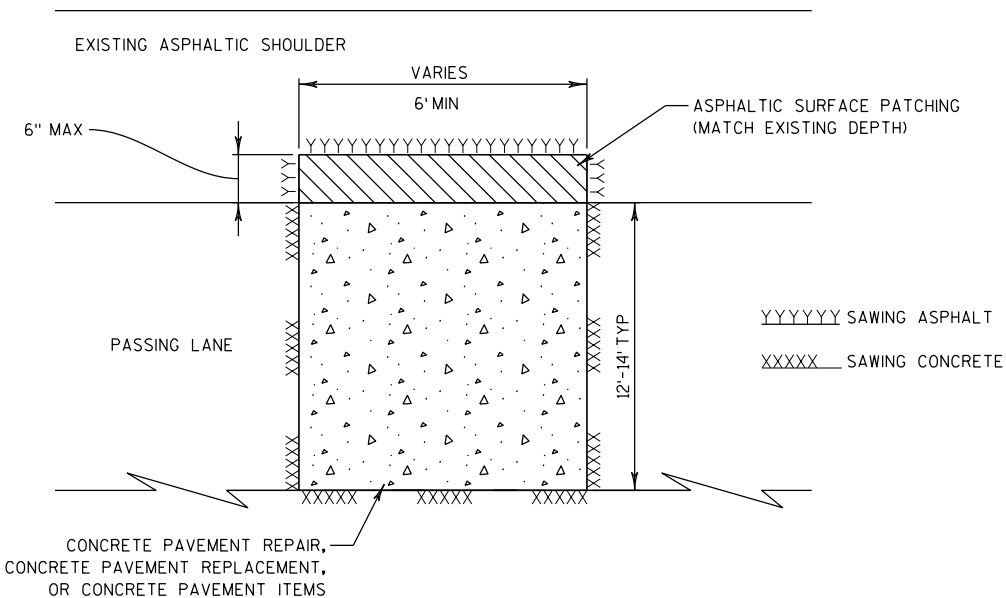


TEMPORARY SMALL ANIMAL TURN-AROUND

NOTES

SEE PLAN SHEETS FOR ADDITIONAL INFORMATION

SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.



**ASPHALTIC SHOULDER DETAIL ADJACENT TO CONCRETE
REPAIR/REPLACEMENT/PAVEMENT**
MEDIAN SHOULDER

NOTES

DAMAGE TO EITHER EXISTING PAVEMENTS OR EXISTING SHOULDERS OUTSIDE OF THE LIMITS TO BE REMOVED DUE TO CONTRACTOR OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AND NO ADDITIONAL PAYMENT WILL BE MADE

PLACE ASPHALTIC PATCH BEFORE OPENING ADJACENT LANE TO TRAFFIC IN ALL AREAS

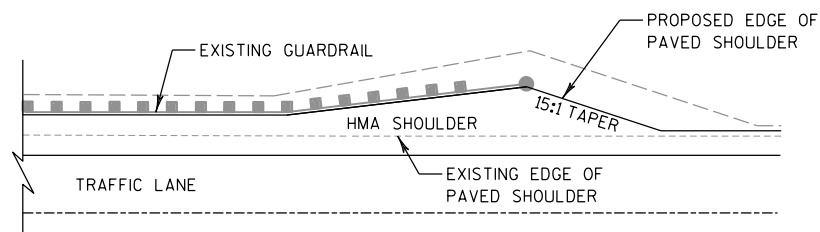
NO ASPHALTIC SURFACE PATCHING IS PROPOSED FOR OUTSIDE SHOULDER. MILL AND OVERLAY OUTSIDE SHOULDER PRIOR TO OPENING THE DRIVING LANE TO TRAFFIC

RUNOFF COEFFICIENT TABLE

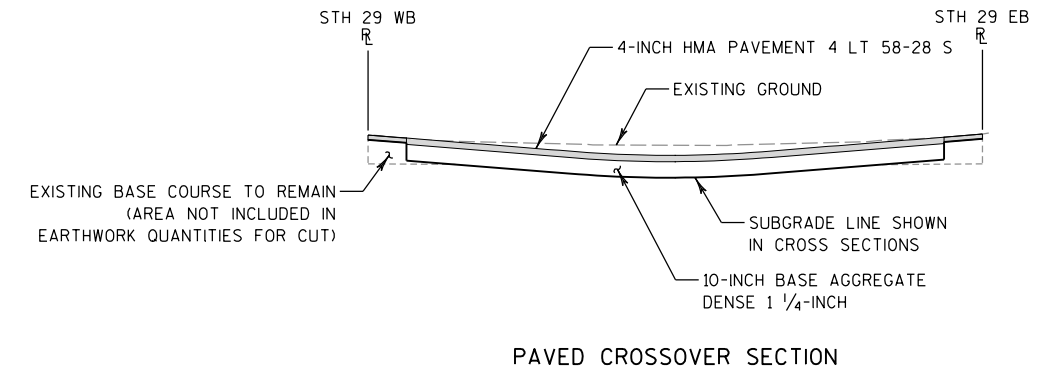
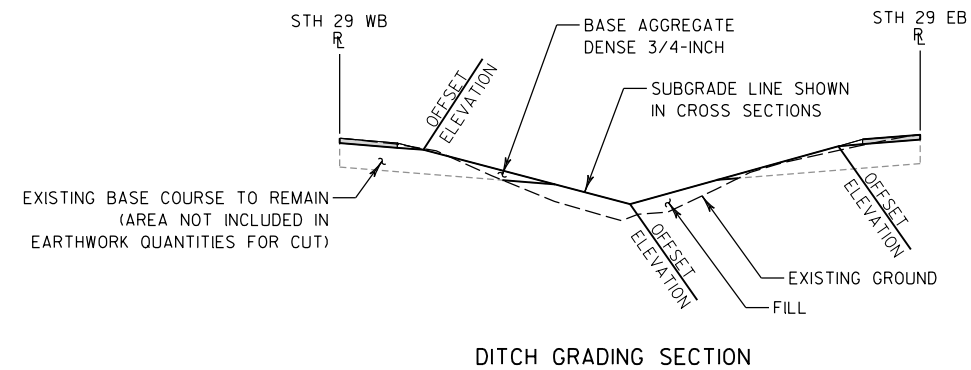
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

TOTAL PROJECT AREA = 225.6 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 33.5 ACRES



DETAIL FOR ASPHALTIC SHOULDER AT EXISTING GUARDRAIL



EARTHWORK & BASE AGGREGATE FOR CROSSOVER GRADING DETAIL

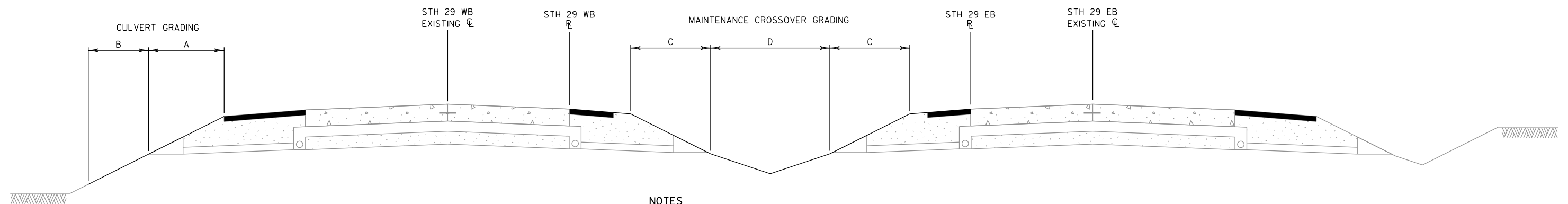
*OFFSET AND ELEVATION PROVIDED FOR ON CROSS SECTIONS

NOTES

ANY CUT AND FILL REQUIRED IS INCIDENTAL TO THE GRADING, SHAPING AND FINISHING CROSSTOVERS ITEM

BENCH FILL AS REQUIRED PER STANDARD SPECIFICATION 205.3.2(4)

SEE CONSTRUCTION DETAILS - CROSSOVER RECONSTRUCTION FOR ADDITIONAL INFORMATION



NOTES

A= SEEDING MIXTURE NO. 30

B= TOPSOIL, SEEDING MIXTURE NO. 30 & EROSION MAT

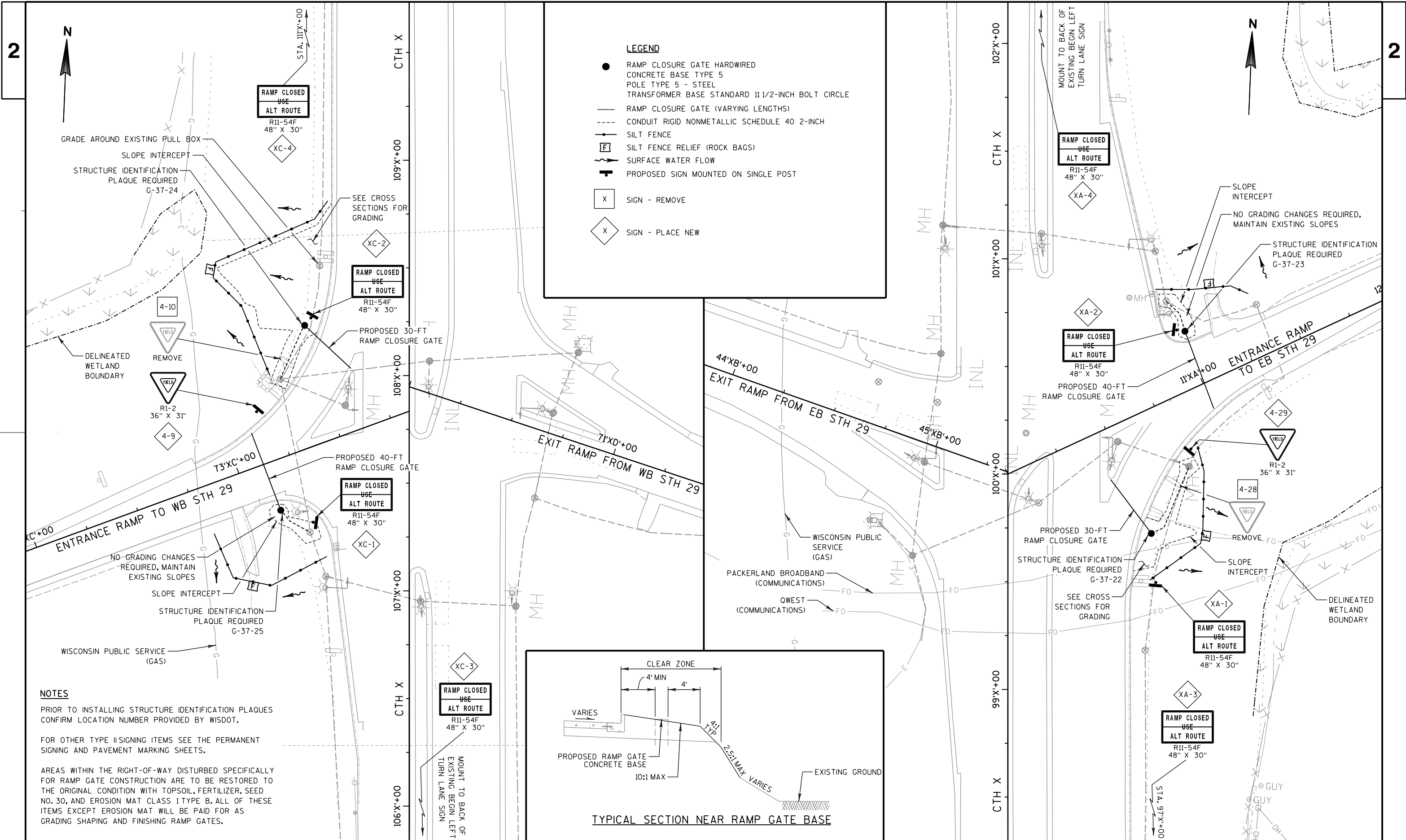
C= FERTILIZER TYPE B & SEEDING MIXTURE NO. 30

D= TOPSOIL, FERTILIZER TYPE B, SEEDING MIXTURE NO. 30 & EROSION MAT

TOPSOIL, FERTILIZER TYPE B, AND SEEDING MIXTURE NO. 30 ARE INCIDENTAL TO THE GRADING, SHAPING AND FINISHING MAINTENANCE CROSSOVER ITEM (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)

FINISHING ITEMS AT MAINTENANCE CROSSOVER GRADING AREAS

STH 29

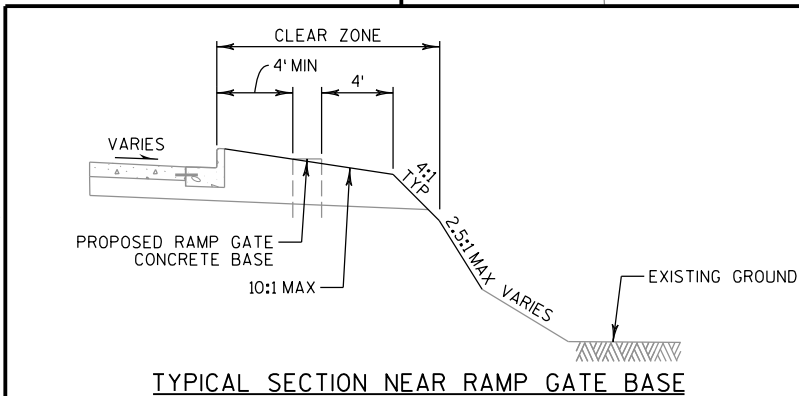


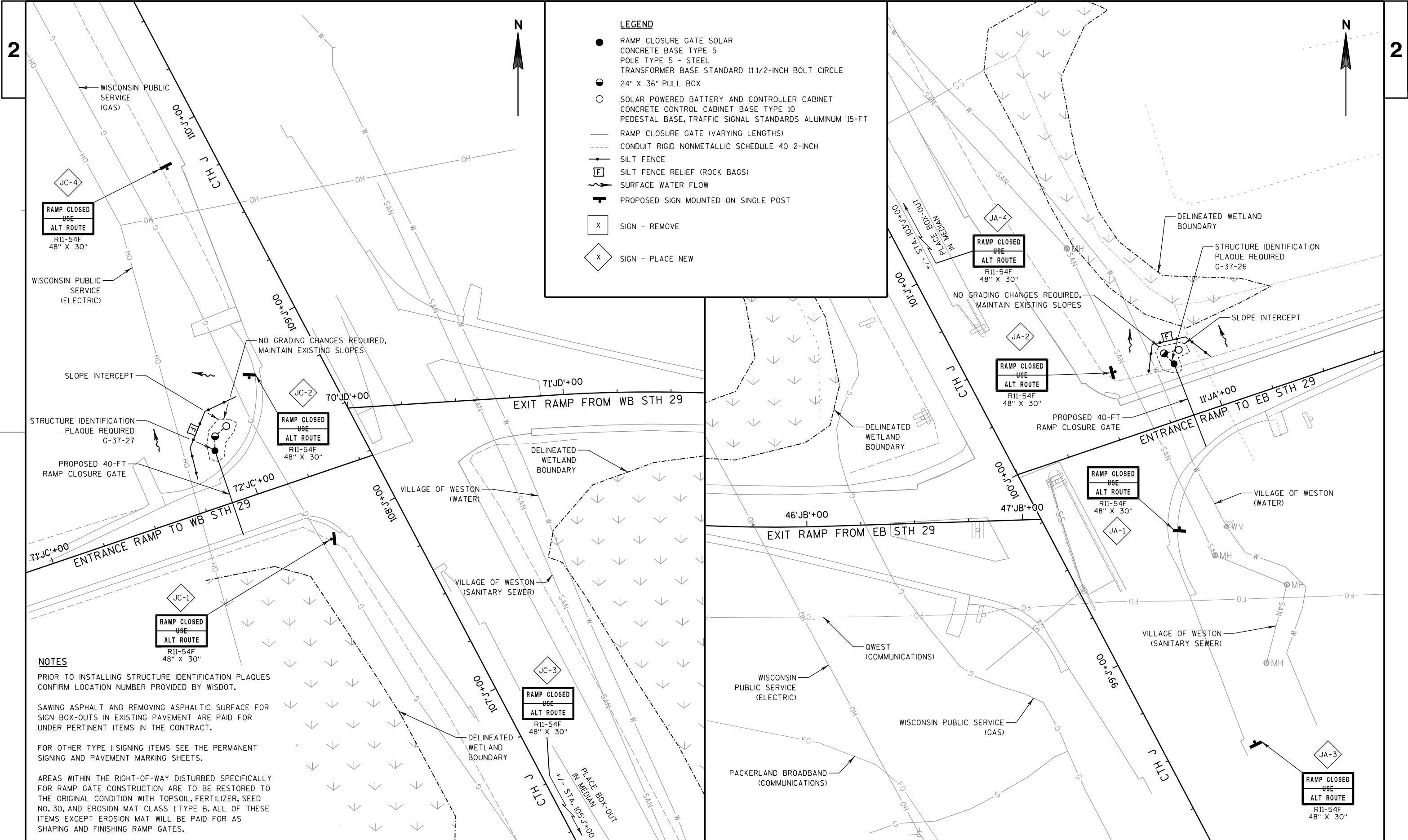
NOTES

PRIOR TO INSTALLING STRUCTURE IDENTIFICATION PLAQUES CONFIRM LOCATION NUMBER PROVIDED BY WISDOT.

FOR OTHER TYPE II SIGNING ITEMS SEE THE PERMANENT SIGNING AND PAVEMENT MARKING SHEETS.

AREAS WITHIN THE RIGHT-OF-WAY DISTURBED SPECIFICALLY FOR RAMP GATE CONSTRUCTION ARE TO BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED NO. 30, AND EROSION MAT CLASS 1 TYPE B. ALL OF THESE ITEMS EXCEPT EROSION MAT WILL BE PAID FOR AS GRADING SHAPING AND FINISHING RAMP GATES.





NOTES

PRIOR TO INSTALLING STRUCTURE IDENTIFICATION PLAQUES CONFIRM LOCATION NUMBER PROVIDED BY WISDOT.

SAWING ASPHALT AND REMOVING ASPHALTIC SURFACE FOR SIGN BOX-OUTS IN EXISTING PAVEMENT ARE PAID FOR UNDER PERTINENT ITEMS IN THE CONTRACT.

FOR OTHER TYPE II SIGNING ITEMS SEE THE PERMANENT SIGNING AND PAVEMENT MARKING SHEETS.

AREAS WITHIN THE RIGHT-OF-WAY DISTURBED SPECIFICALLY FOR RAMP GATE CONSTRUCTION ARE TO BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED NO. 30, AND EROSION MAT CLASS 1 TYPE B. ALL OF THESE ITEMS EXCEPT EROSION MAT WILL BE PAID FOR AS SHAPING AND FINISHING RAMP GATES.

NOTES

FOR GRADING SHAPING AND FINISHING CROSSOVER LIMITS AND ADDITIONAL PAVEMENT SLOPE INFORMATION, SEE CROSS SECTIONS.

FOR TYPE II SIGNING ITEMS, SEE THE PERMANENT SIGNING AND PAVEMENT MARKING SHEETS.

SEE SDD "MAINTENANCE CROSSOVER FOR FREEWAYS" FOR INFORMATION NOT SHOWN.

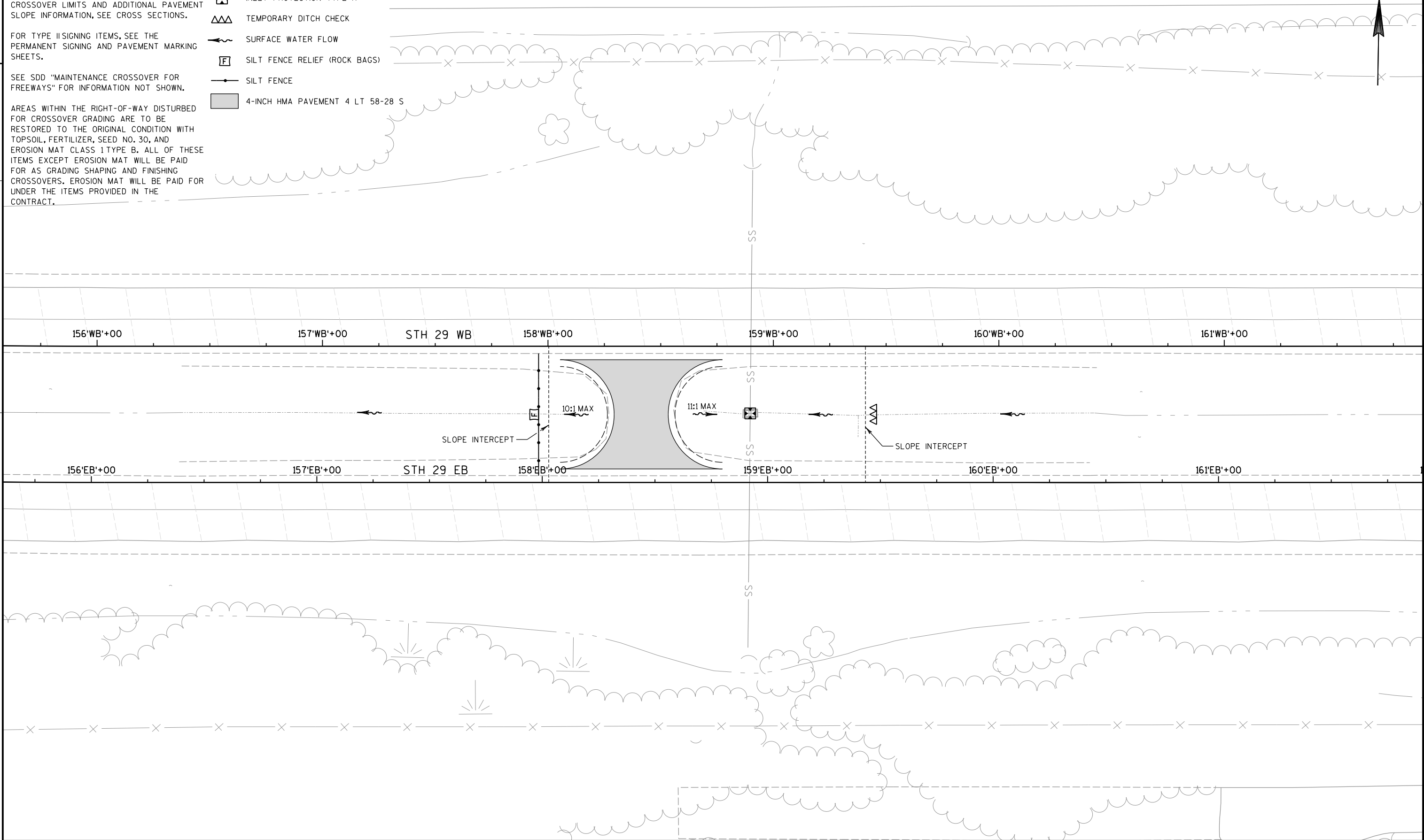
AREAS WITHIN THE RIGHT-OF-WAY DISTURBED FOR CROSSOVER GRADING ARE TO BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED NO. 30, AND EROSION MAT CLASS 1 TYPE B. ALL OF THESE ITEMS EXCEPT EROSION MAT WILL BE PAID FOR AS GRADING SHAPING AND FINISHING CROSSOVERS. EROSION MAT WILL BE PAID FOR UNDER THE ITEMS PROVIDED IN THE CONTRACT.

LEGEND

- INLET PROTECTION TYPE A
- TEMPORARY DITCH CHECK
- SURFACE WATER FLOW
- SILT FENCE RELIEF (ROCK BAGS)
- SILT FENCE
- 4-INCH HMA PAVEMENT 4 LT 58-28 S

HIGHLAND AVE

N



NOTES

FOR GRADING SHAPING AND FINISHING CROSSOVER LIMITS AND ADDITIONAL PAVEMENT SLOPE INFORMATION, SEE CROSS SECTIONS.

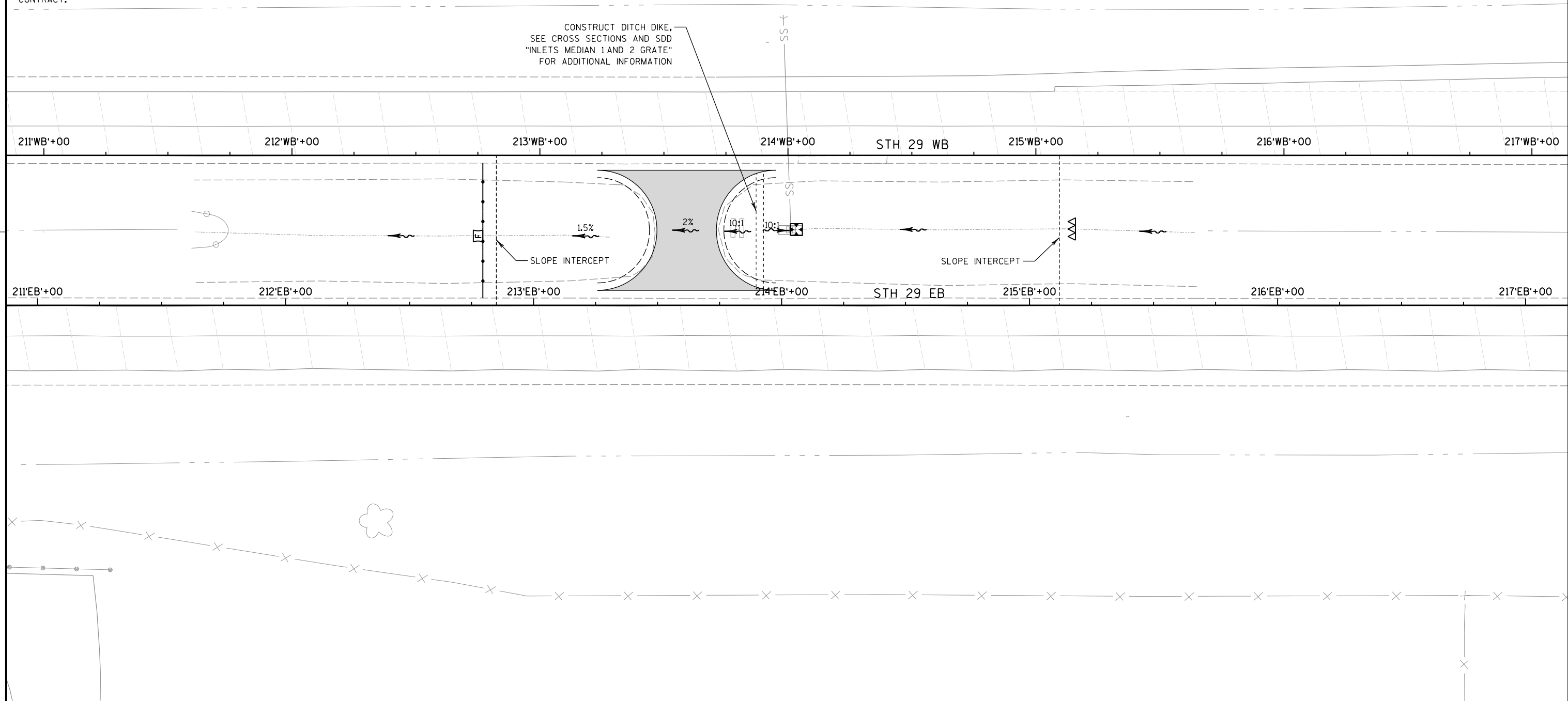
FOR TYPE II SIGNING ITEMS, SEE THE PERMANENT SIGNING AND PAVEMENT MARKING SHEETS.

SEE SDD "MAINTENANCE CROSSOVER FOR FREEWAYS" FOR INFORMATION NOT SHOWN.

AREAS WITHIN THE RIGHT-OF-WAY DISTURBED FOR CROSSOVER GRADING ARE TO BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED NO. 30, AND EROSION MAT CLASS 1 TYPE B. ALL OF THESE ITEMS EXCEPT EROSION MAT WILL BE PAID FOR AS GRADING SHAPING AND FINISHING CROSSOVERS. EROSION MAT WILL BE PAID FOR UNDER THE ITEMS PROVIDED IN THE CONTRACT.

LEGEND

-  INLET PROTECTION TYPE A
-  TEMPORARY DITCH CHECK
-  SURFACE WATER FLOW
-  SILT FENCE RELIEF (ROCK BAGS)
-  SILT FENCE
-  4-INCH HMA PAVEMENT 4 LT 58-28 S



NOTES

FOR GRADING SHAPING AND FINISHING CROSSOVER LIMITS AND ADDITIONAL PAVEMENT SLOPE INFORMATION, SEE CROSS SECTIONS.

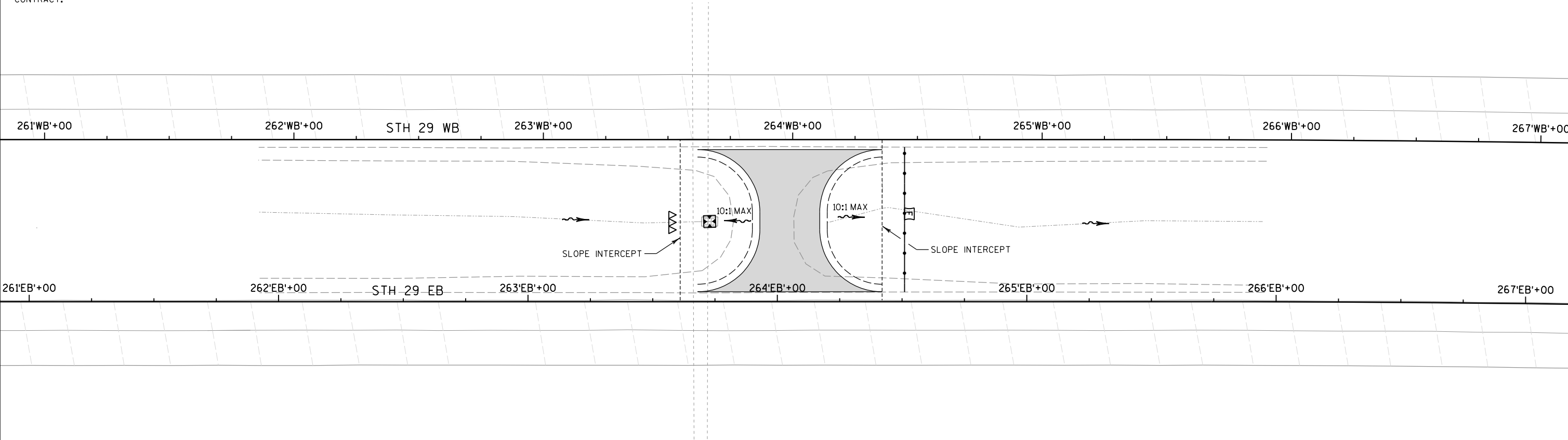
FOR TYPE II SIGNING ITEMS, SEE THE PERMANENT SIGNING AND PAVEMENT MARKING SHEETS.

SEE SDD "MAINTENANCE CROSSOVER FOR FREEWAYS" FOR INFORMATION NOT SHOWN.

AREAS WITHIN THE RIGHT-OF-WAY DISTURBED FOR CROSSOVER GRADING ARE TO BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED NO. 30, AND EROSION MAT CLASS 1 TYPE B. ALL OF THESE ITEMS EXCEPT EROSION MAT WILL BE PAID FOR AS GRADING SHAPING AND FINISHING CROSSOVERS. EROSION MAT WILL BE PAID FOR UNDER THE ITEMS PROVIDED IN THE CONTRACT.

LEGEND

- INLET PROTECTION TYPE A
- TEMPORARY DITCH CHECK
- SURFACE WATER FLOW
- SILT FENCE RELIEF (ROCK BAGS)
- SILT FENCE
- 4-INCH HMA PAVEMENT 4 LT 58-28 S



NOTES

FOR GRADING SHAPING AND FINISHING CROSSOVER LIMITS AND ADDITIONAL PAVEMENT SLOPE INFORMATION, SEE CROSS SECTIONS.

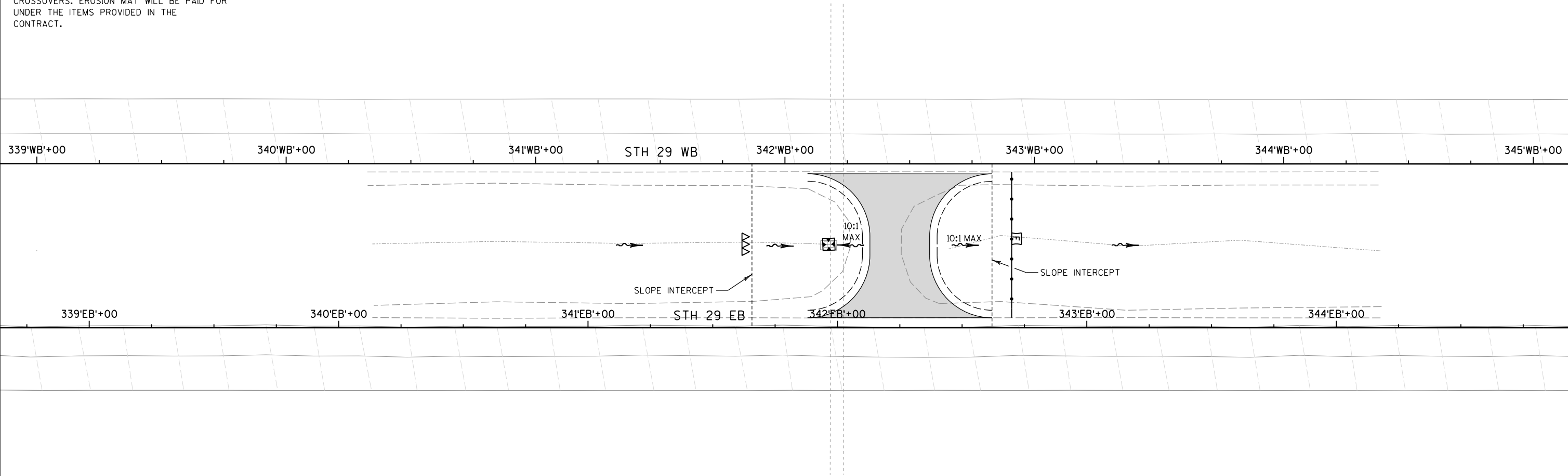
FOR TYPE II SIGNING ITEMS, SEE THE PERMANENT SIGNING AND PAVEMENT MARKING SHEETS.

SEE SDD "MAINTENANCE CROSSOVER FOR FREEWAYS" FOR INFORMATION NOT SHOWN.

AREAS WITHIN THE RIGHT-OF-WAY DISTURBED FOR CROSSOVER GRADING ARE TO BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED NO. 30, AND EROSION MAT CLASS 1 TYPE B. ALL OF THESE ITEMS EXCEPT EROSION MAT WILL BE PAID FOR AS GRADING SHAPING AND FINISHING CROSSOVERS. EROSION MAT WILL BE PAID FOR UNDER THE ITEMS PROVIDED IN THE CONTRACT.

LEGEND

- INLET PROTECTION TYPE A
- TEMPORARY DITCH CHECK
- SURFACE WATER FLOW
- SILT FENCE RELIEF (ROCK BAGS)
- SILT FENCE
- 4-INCH HMA PAVEMENT 4 LT 58-28 S



NOTES

FOR GRADING SHAPING AND FINISHING CROSSOVER LIMITS AND ADDITIONAL PAVEMENT SLOPE INFORMATION, SEE CROSS SECTIONS.

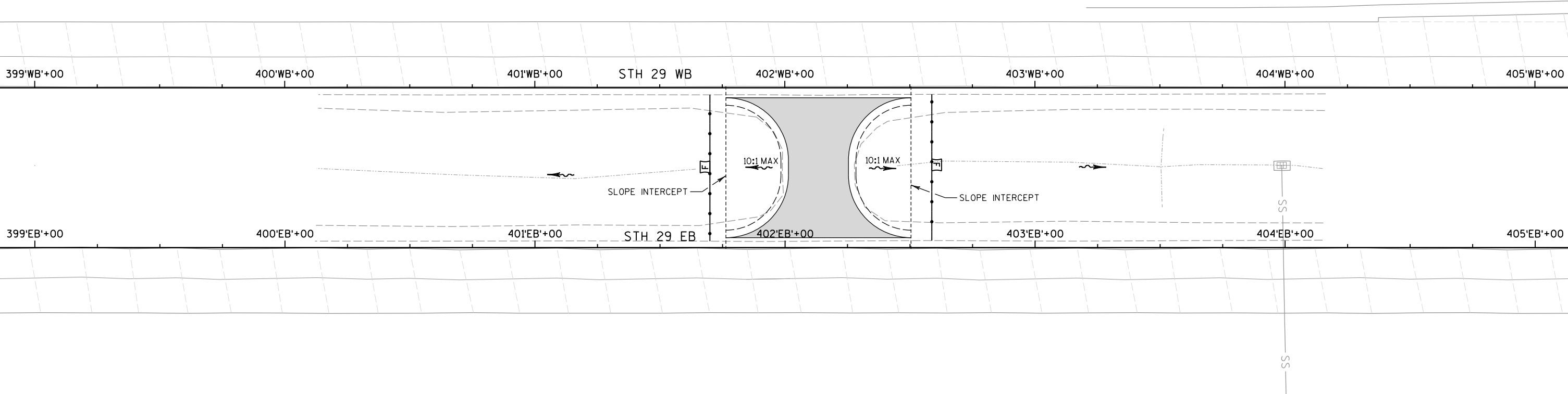
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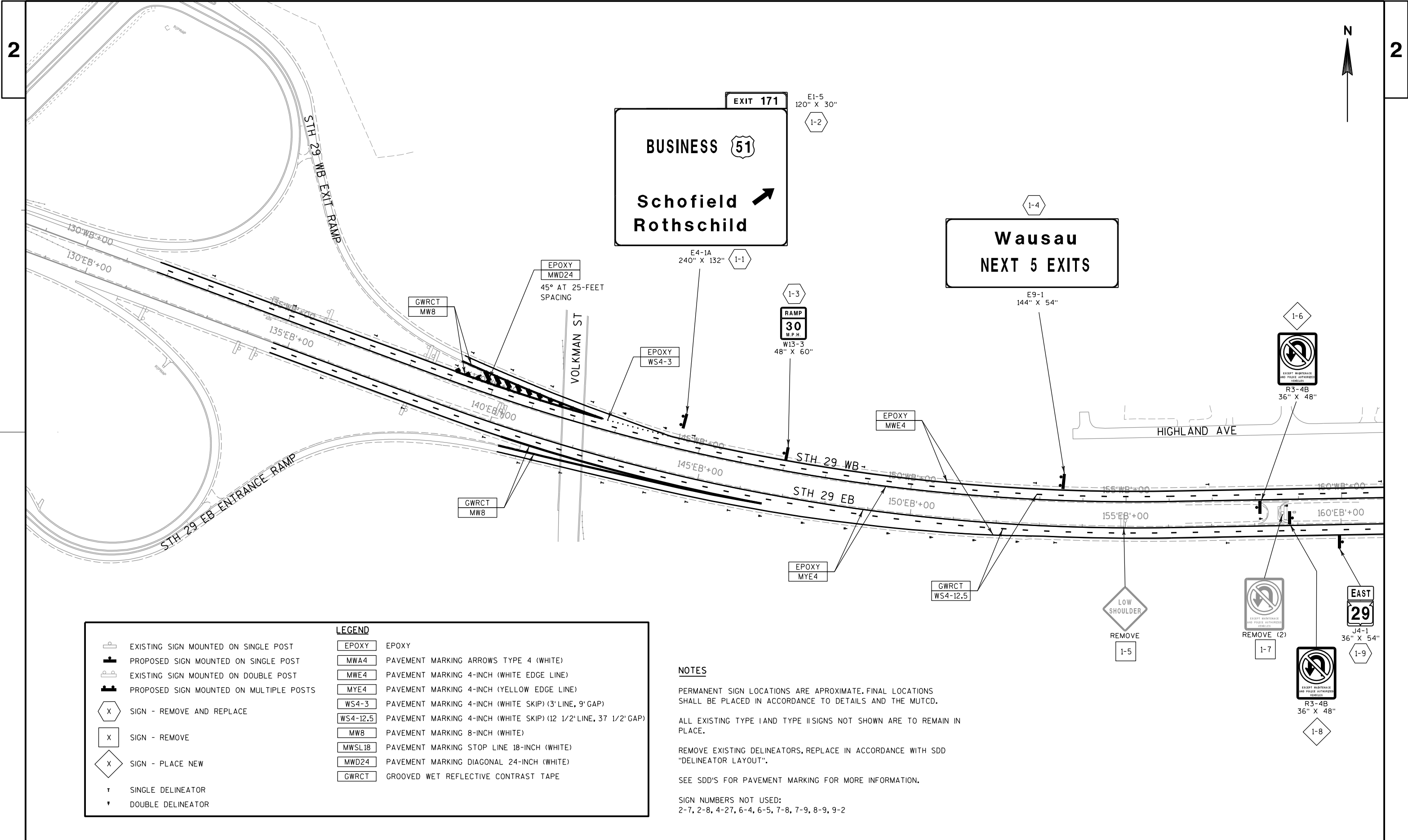
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- INLET PROTECTION TYPE A
- TEMPORARY DITCH CHECK
- SURFACE WATER FLOW
- SILT FENCE RELIEF (ROCK BAGS)
- SILT FENCE
- 4-INCH HMA PAVEMENT 4 LT 58-28 S





EXISTING SIGN MOUNTED ON SINGLE POST

EXISTING SIGN MOUNTED ON DOUBLE POST

SIGN - REMOVE AND REPLACE

SIGN - REMOVE

SIGN - PLACE NEW

SINGLE DELINEATOR

DOUBLE DELINEATOR

EPOXY

EPOXY

MWA4

PAVEMENT MARKING ARROWS TYPE 4 (WHITE)

MWE4

PAVEMENT MARKING 4-INCH (WHITE EDGE LINE)

MYE4

PAVEMENT MARKING 4-INCH (YELLOW EDGE LINE)

WS4-3

PAVEMENT MARKING 4-INCH (WHITE SKIP) (3' LINE, 9' GAP)

WS4-12.5

PAVEMENT MARKING 4-INCH (WHITE SKIP) (12 1/2' LINE, 37 1/2' GAP)

MW8

PAVEMENT MARKING 8-INCH (WHITE)

MWSL18

PAVEMENT MARKING STOP LINE 18-INCH (WHITE)

MWD24

PAVEMENT MARKING DIAGONAL 24-INCH (WHITE)

GWRCT

GROOVED WET REFLECTIVE CONTRAST TAPE

NOTES

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

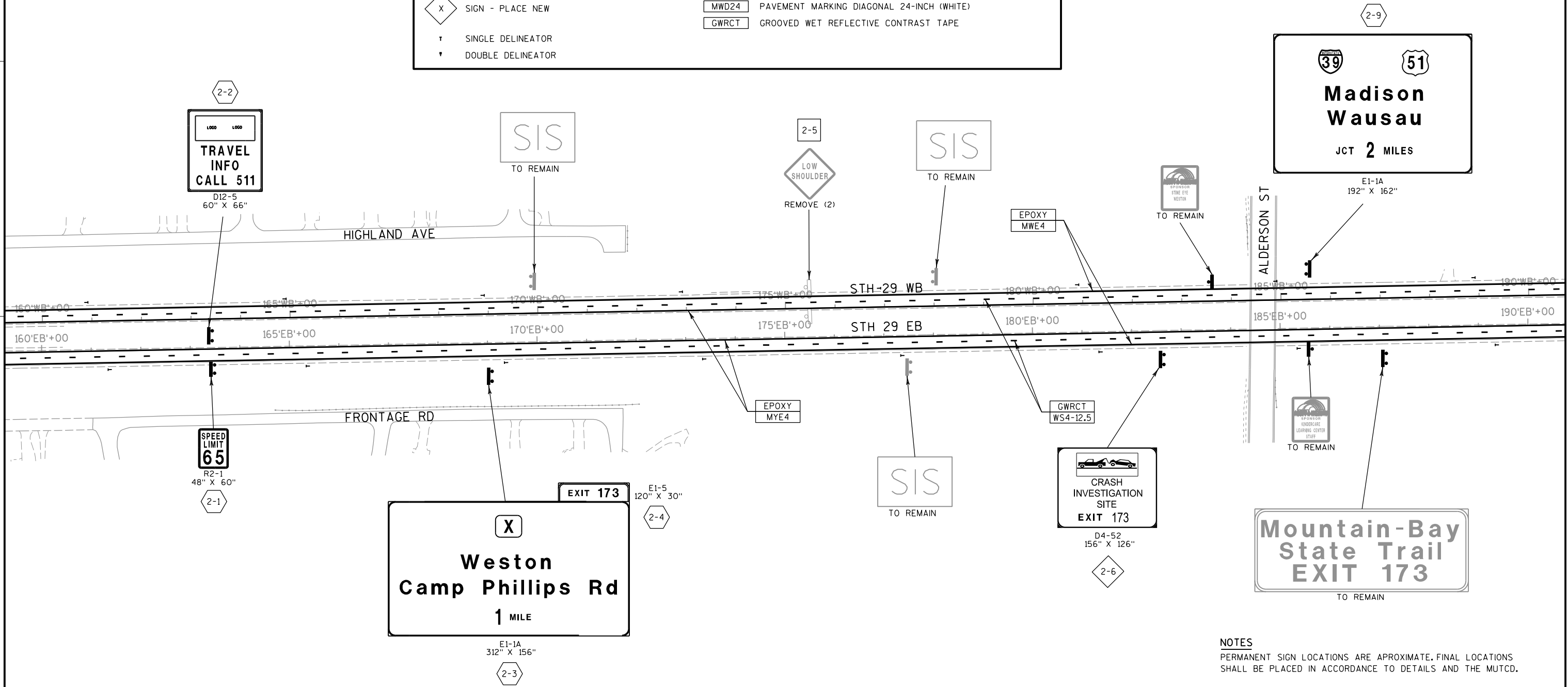
ALL EXISTING TYPE I AND TYPE II SIGNS NOT SHOWN ARE TO REMAIN IN PLACE.

REMOVE EXISTING DELINEATORS, REPLACE IN ACCORDANCE WITH SDD "DELINEATOR LAYOUT".

SEE SDD'S FOR PAVEMENT MARKING FOR MORE INFORMATION.

SIGN NUMBERS NOT USED:
2-7, 2-8, 4-27, 6-4, 6-5, 7-8, 7-9, 8-9, 9-2

LEGEND	
	EXISTING SIGN MOUNTED ON SINGLE POST
	PROPOSED SIGN MOUNTED ON SINGLE POST
	EXISTING SIGN MOUNTED ON DOUBLE POST
	PROPOSED SIGN MOUNTED ON MULTIPLE POSTS
	SIGN - REMOVE AND REPLACE
	SIGN - REMOVE
	SIGN - PLACE NEW
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	PAVEMENT MARKING STOP LINE 18-INCH (WHITE)
	PAVEMENT MARKING DIAGONAL 24-INCH (WHITE)
	GROOVED WET REFLECTIVE CONTRAST TAPE



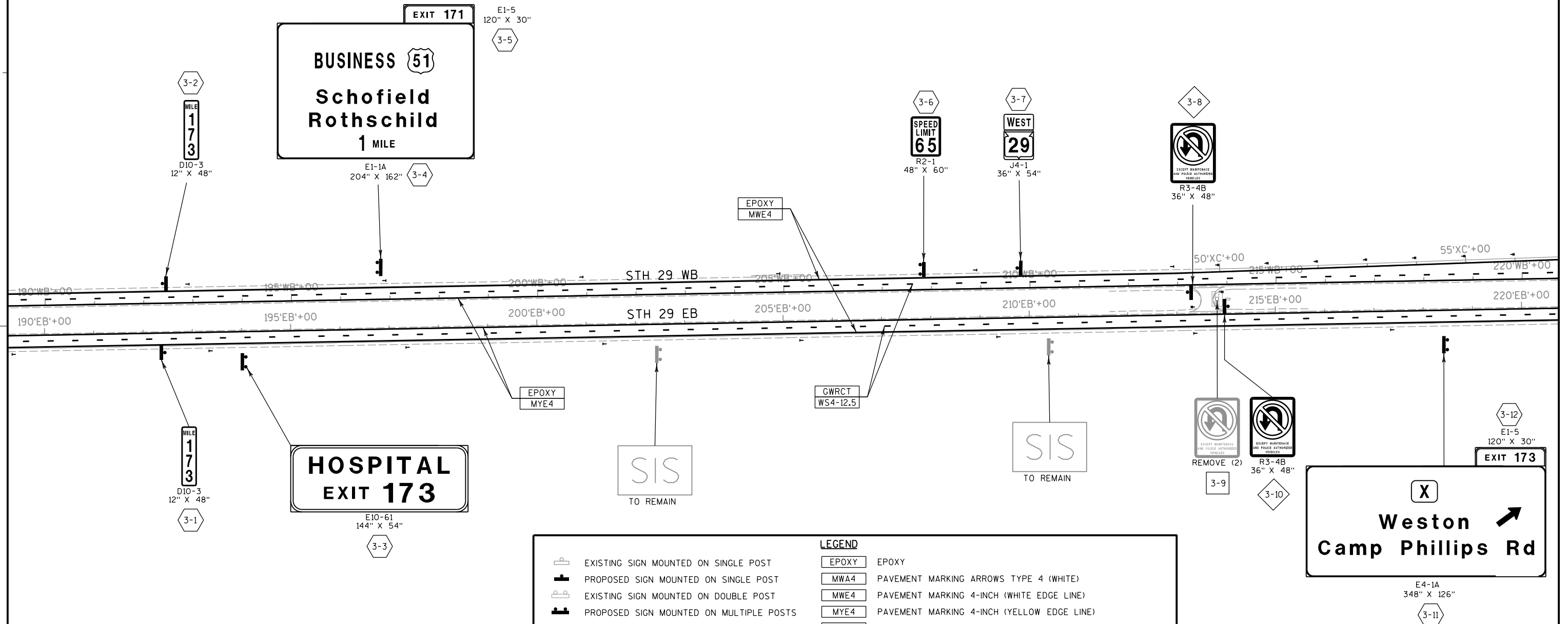
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LEGEND	
	EXISTING SIGN MOUNTED ON SINGLE POST
	PROPOSED SIGN MOUNTED ON SINGLE POST
	EXISTING SIGN MOUNTED ON DOUBLE POST
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	PAVEMENT MARKING STOP LINE 18-INCH (WHITE)
	PAVEMENT MARKING DIAGONAL 24-INCH (WHITE)
	GROOVED WET REFLECTIVE CONTRAST TAPE

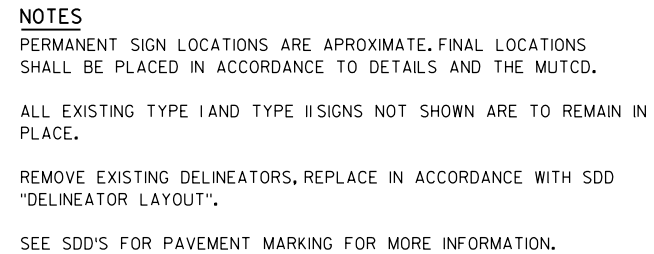
NOTES

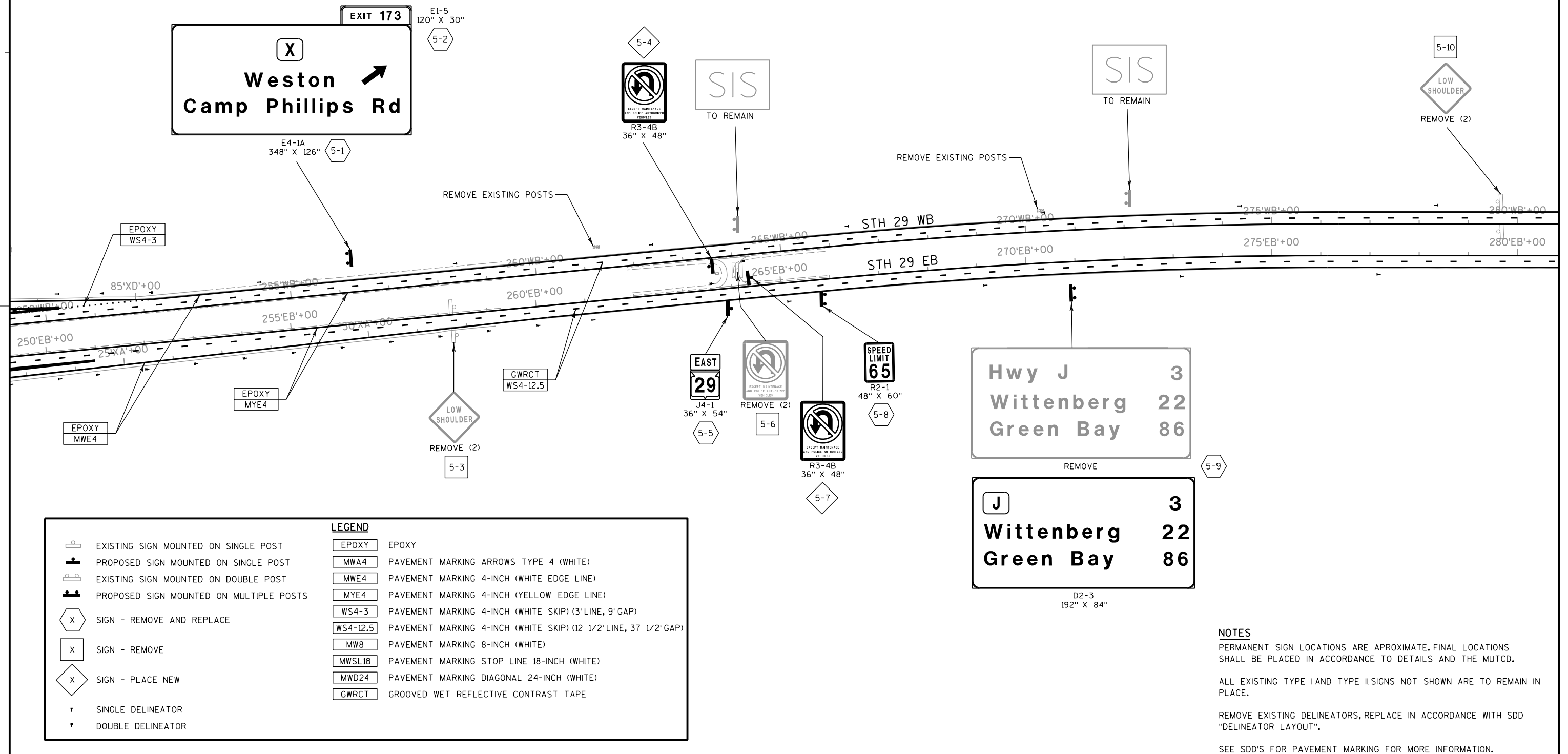
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.

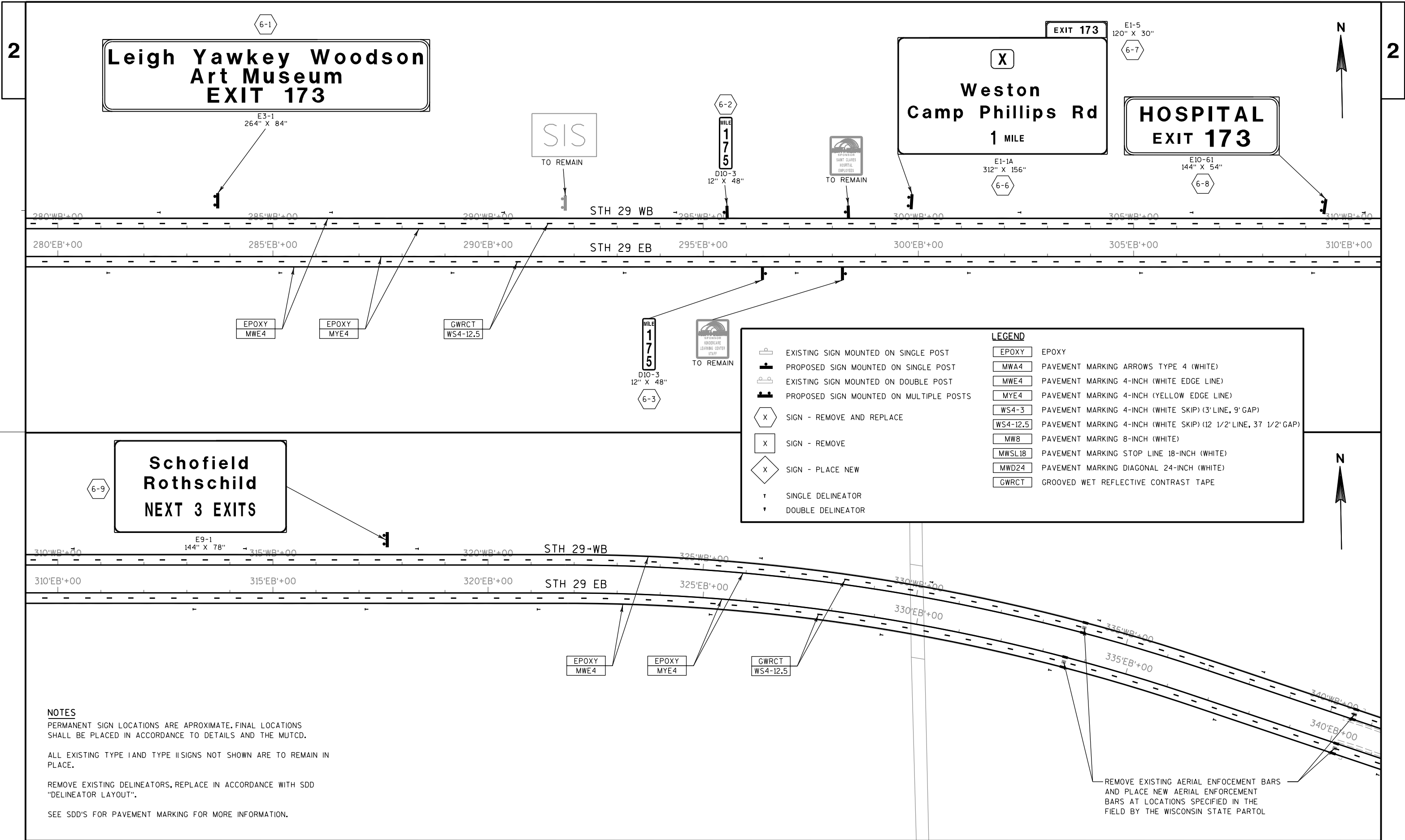
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SEE SDD'S FOR PAVEMENT MARKING FOR MORE INFORMATION.







NOTES

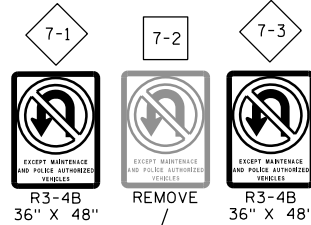
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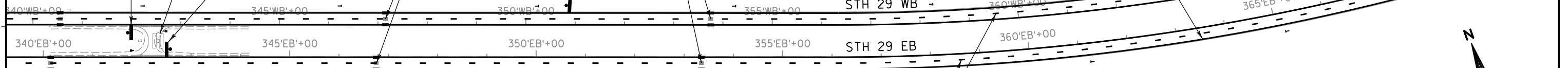
SEE SDD'S FOR PAVEMENT MARKING FOR MORE INFORMATION.

REMOVE EXISTING AERIAL
ENFORCEMENT BARS AND PLACE NEW
AERIAL ENFORCEMENT BARS AT
LOCATIONS SPECIFIED IN THE FIELD
BY THE WISCONSIN STATE PARTOL



EPOXY
MWE4

EPOXY
MYE4



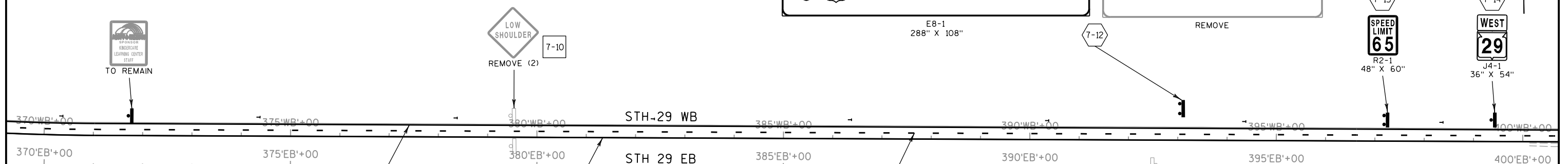
- EXISTING SIGN MOUNTED ON SINGLE POST
PROPOSED SIGN MOUNTED ON SINGLE POST
EXISTING SIGN MOUNTED ON DOUBLE POST
PROPOSED SIGN MOUNTED ON MULTIPLE POSTS
SIGN - REMOVE AND REPLACE
SIGN - REMOVE
SIGN - PLACE NEW
SINGLE DELINEATOR
DOUBLE DELINEATOR

LEGEND

- EPOXY EPOXY
MWA4 PAVEMENT MARKING ARROWS TYPE 4 (WHITE)
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MWSL18 PAVEMENT MARKING STOP LINE 18-INCH (WHITE)
MWD24 PAVEMENT MARKING DIAGONAL 24-INCH (WHITE)
GWRCT GROOVED WET REFLECTIVE CONTRAST TAPE

X Camp Phillips Rd 3
Bus 51 Grand Ave 5
39 51 8

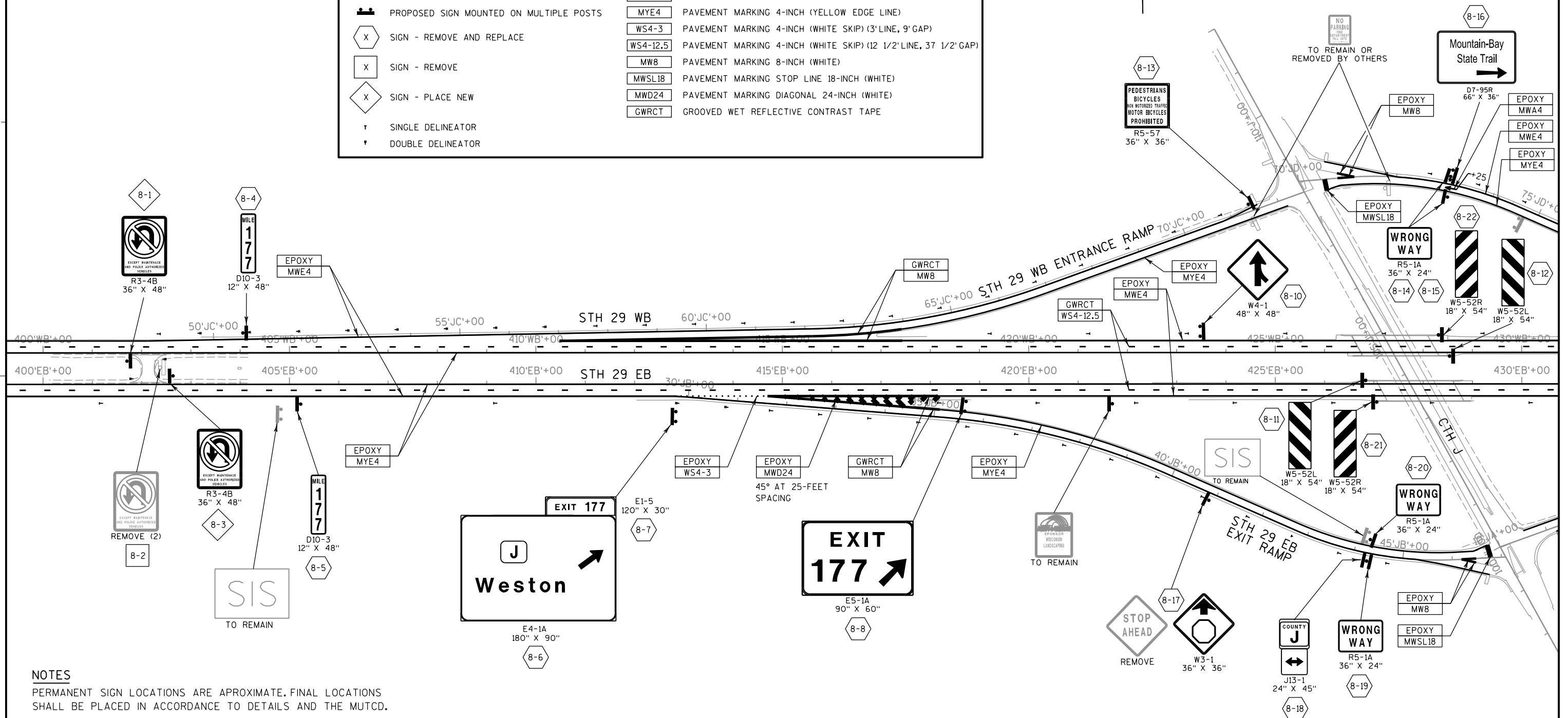
Hwy X 3
Business 51 5
Hwy 51 8



NOTES

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- REMOVE EXISTING DELINEATORS, REPLACE IN ACCORDANCE WITH SDD "DELINEATOR LAYOUT".
- SEE SDD'S FOR PAVEMENT MARKING FOR MORE INFORMATION.

LEGEND	
	EXISTING SIGN MOUNTED ON SINGLE POST
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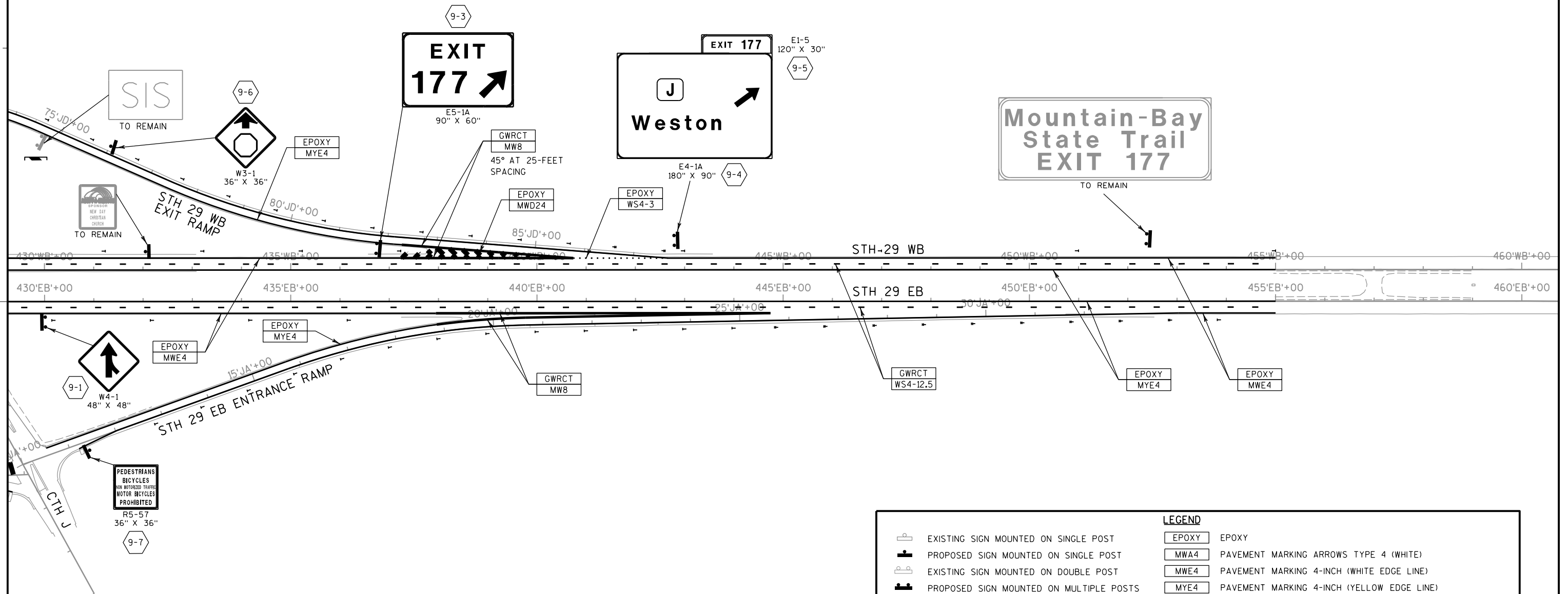
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SEE SDD'S FOR PAVEMENT MARKING FOR MORE INFORMATION.

LEGEND

	EXISTING SIGN MOUNTED ON SINGLE POST		EPOXY
	PROPOSED SIGN MOUNTED ON SINGLE POST		PAVEMENT MARKING ARROWS TYPE 4 (WHITE)
	EXISTING SIGN MOUNTED ON DOUBLE POST		PAVEMENT MARKING 4-INCH (WHITE EDGE LINE)
	PROPOSED SIGN MOUNTED ON MULTIPLE POSTS		PAVEMENT MARKING 4-INCH (YELLOW EDGE LINE)
	SIGN - REMOVE AND REPLACE		PAVEMENT MARKING 4-INCH (WHITE SKIP) (3' LINE, 9' GAP)
	SIGN - REMOVE		PAVEMENT MARKING 4-INCH (WHITE SKIP) (12 1/2' LINE, 37 1/2' GAP)
	SIGN - PLACE NEW		PAVEMENT MARKING 8-INCH (WHITE)
	SINGLE DELINEATOR		PAVEMENT MARKING STOP LINE 18-INCH (WHITE)
	DOUBLE DELINEATOR		PAVEMENT MARKING DIAGONAL 24-INCH (WHITE)
			GROOVED WET REFLECTIVE CONTRAST TAPE

TRAFFIC CONTROL GENERAL NOTES

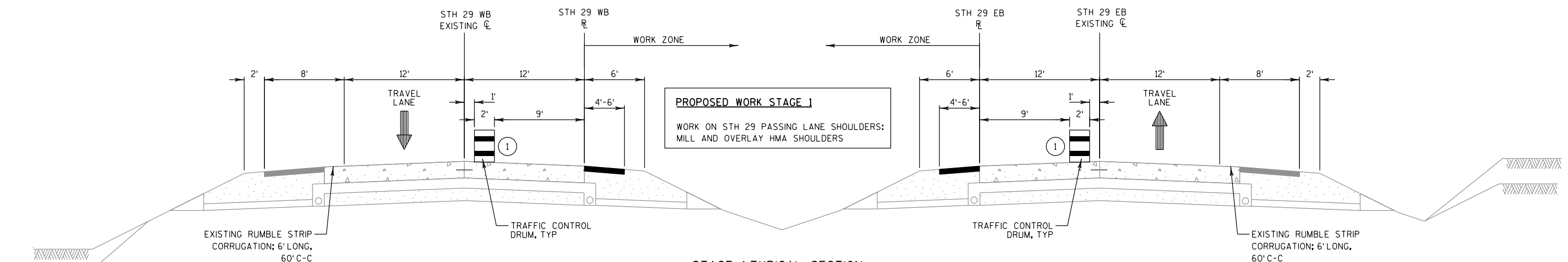
- 1) ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- 2) "WO" SIGNS ARE THE SAME A "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- 3) FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS SHALL HAVE A TYPE C WARNING LIGHT.
- 4) ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED. EQUIP WITH TYPE "A" (LOW INTENSITY FLASHING) LIGHTS PER SDDS.
- 5) FOR LANE CLOSURES SEE SDD "TRAFFIC CONTROL, LANE CLOSURE AND TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION".
- 6) FOR EXIT AND ENTRANCE RAMPs SEE SDD "TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE".
- 7) FOR SHOULDER CLOSURES SEE SDD "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAT 40 M.P.H."

SPEED REDUCTION

FOR STAGE 2 AND STAGE 3 REDUCE THE SPEED LIMIT ON STH 29 TO 55 MPH WHEN WORK IS BEING PERFORMED ON STH 29. SEE SDD "TRAFFIC CONTROL LANE CLOSURE, SPEED REDUCTION" FOR TRAFFIC CONTROL DEVICES REQUIRED. INSTALL TEMPORARY LANE CLOSURE TAPERS FOR 65 MPH PER SSD "TRAFFIC CONTROL, LANE CLOSURE". REMOVE EXISTING EDGE LINE ADJACENT TO LANE CLOSURE TAPERS ON STH 29 TO ALLOW TRAFFIC TO SHIFT ONTO THE PAVED SHOULDER.

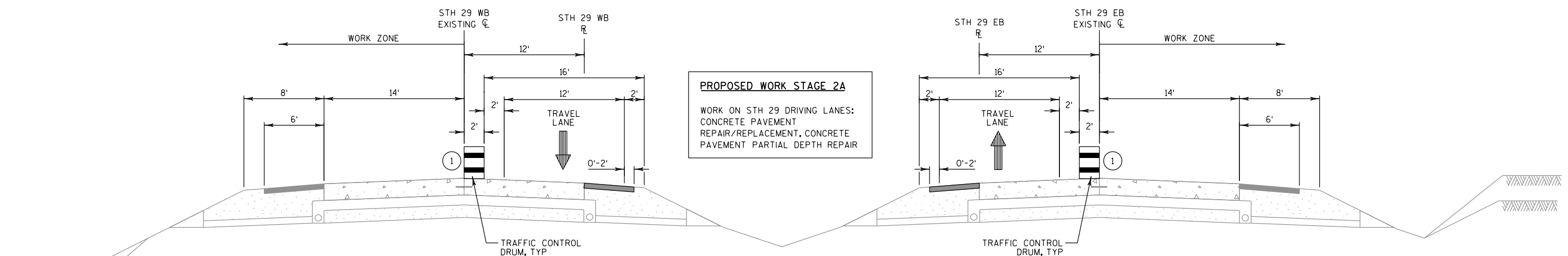
NOTE

TRAFFIC MAY ONLY BE SHIFTED ONTO NEW ASPHALTIC SHOULDER DUE TO EXISTING PAVEMENT CONDITIONS AND SHOULDER SETTLEMENT



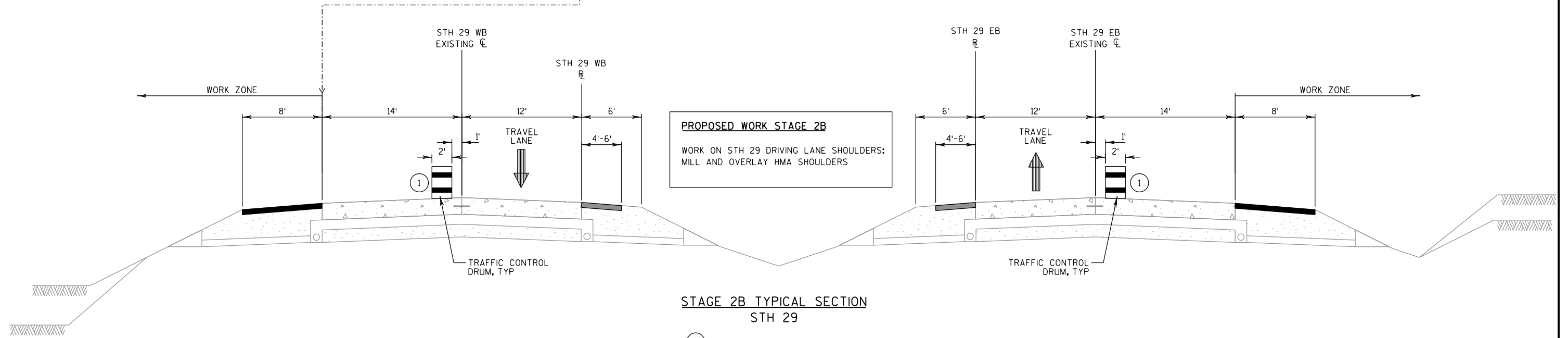
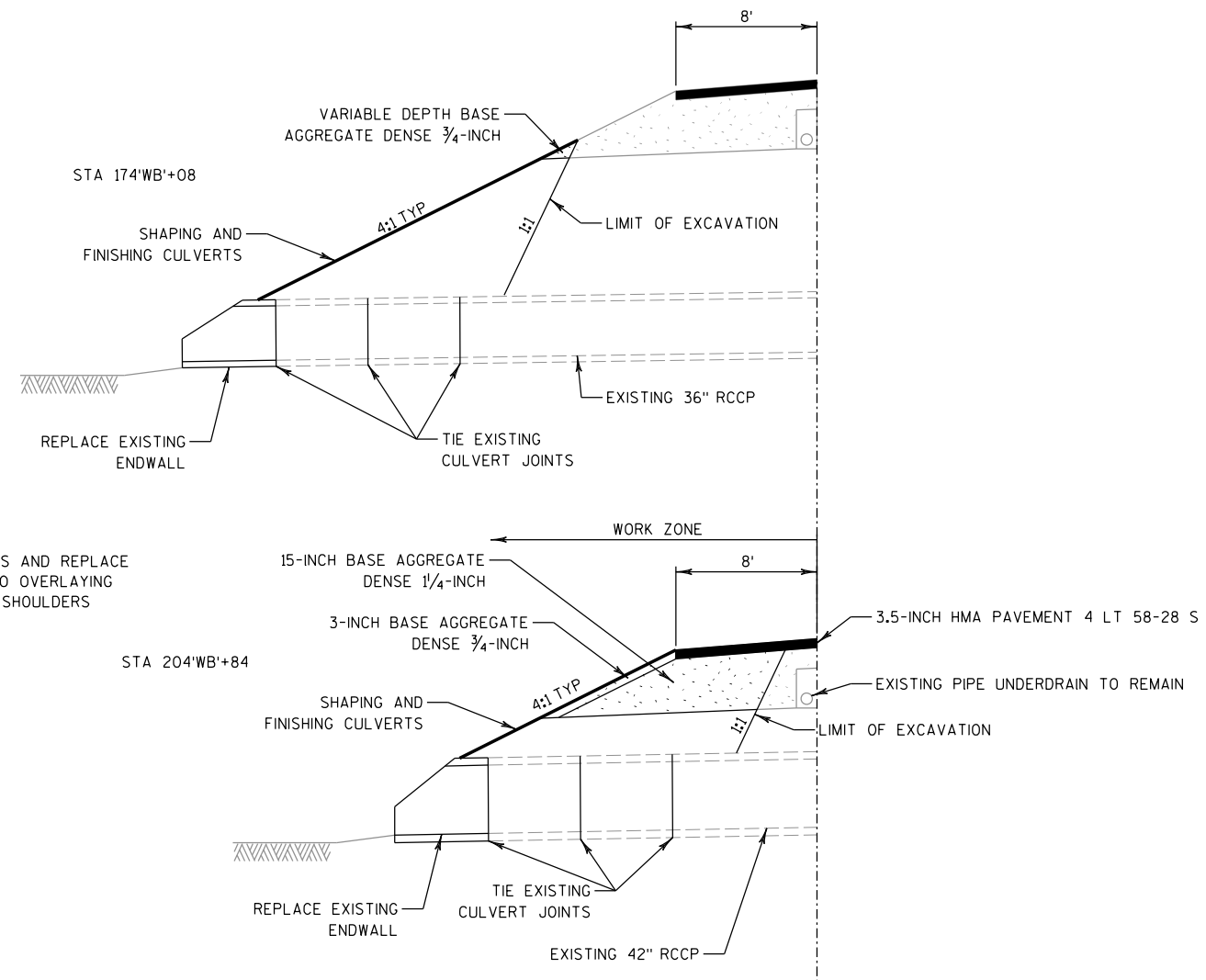
STAGE 1 TYPICAL SECTION
STH 29

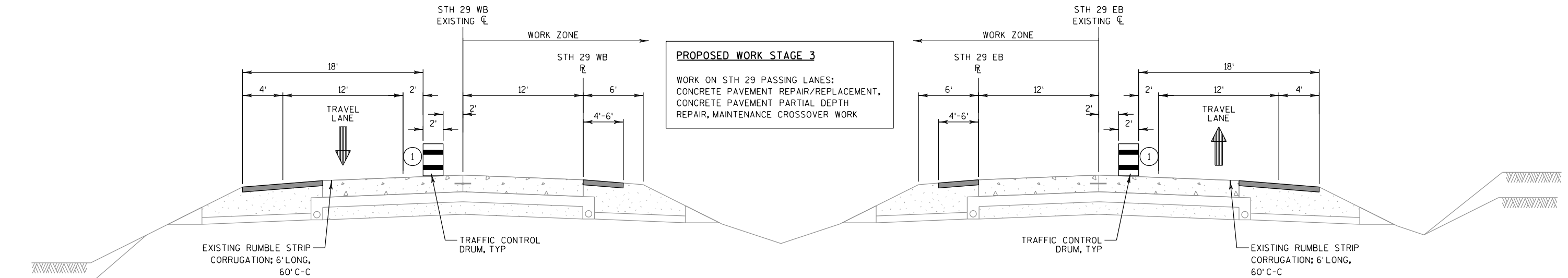
- 1 LANE CLOSURE SHOWN. PLACE TRAFFIC CONTROL DRUMS OUTSIDE OF SHOULDER WHILE LANE IS OPEN TO TRAFFIC.



STAGE 2A TYPICAL SECTION
STH 29

- 1 LANE CLOSURE SHOWN. PLACE TRAFFIC CONTROL DRUMS OUTSIDE OF SHOULDER WHILE LANE IS OPEN TO TRAFFIC.





STAGE 3 TYPICAL SECTION STH 29

- ① LANE CLOSURE SHOWN. PLACE TRAFFIC CONTROL DRUMS OUTSIDE OF SHOULDER WHILE LANE IS OPEN TO TRAFFIC.

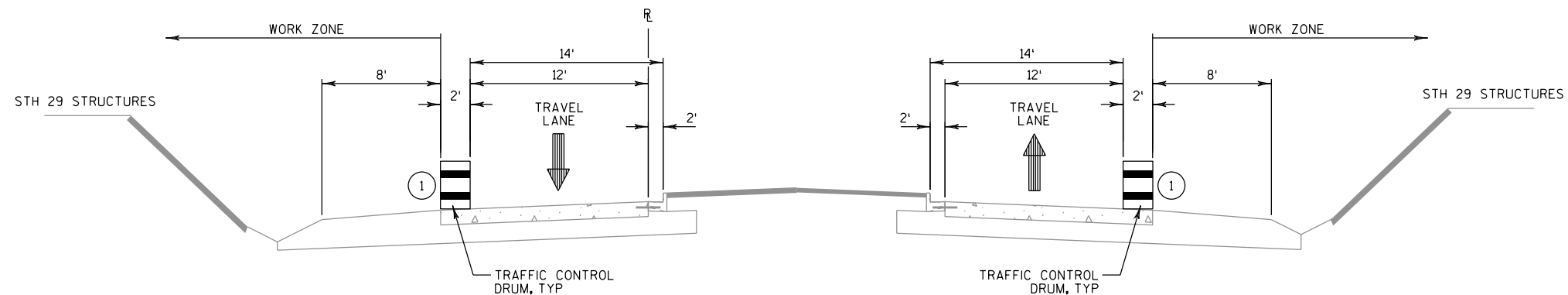
PROPOSED WORK STAGE 4 (NOT SHOWN)

WORK ON STH 29 DRIVING LANE SHOULDERS:
INSTALL OUTSIDE SHOULDER RUMBLE STIPS

SEE STAGE 2B TYPICAL SECTION FOR TRAFFIC CONTROL SCENARIO

PROPOSED WORK ON CTH J RAMPS

WORK ON STH 29 EXIT AND ENTRANCE RAMPS:
CONCRETE PAVEMENT REPAIR/REPLACEMENT,
CONCRETE PAVEMENT PARTIAL DEPTH REPAIR, MILL AND OVERLAY HMA SHOULDERS, RAMP GATE WORK



CTH J TYPICAL SECTION (THROUGH EXIT AND ENTRANCE RAMPS DURING RAMP WORK)

- ① SHOULDER CLOSURE SHOWN. PLACE TRAFFIC CONTROL DRUMS OUTSIDE OF SHOULDER WHILE SHOULDER IS OPEN.

NOTES

SEE TRAFFIC CONTROL PLAN SHEETS FOR CTH X STAGING INFORMATION

SEE SDD "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H." FOR ADDITIONAL INFORMATION AT CTH J

ADVANCED WARNING PCMS MESSAGES								
PCMS SIGN LOCATION	PRIOR TO CONSTRUCTION		DURING DRIVING LANE CLOSURE		DURING PASSING LANE CLOSURE		EMERGENCY MESSAGE	
	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)
EB STH 29 EAST OF SUNRISE DRIVE	ROAD WORK STARTS	DATE	RIGHT LANE CLOSED	- MILES MERGE LEFT	LEFT LANE CLOSED	- MILES MERGE RIGHT	TRAFFIC STOPPED AHEAD	WATCH FOR FLAGGER
WB STH 29 1 MILE EAST OF CTH J	ROAD WORK STARTS	DATE	RIGHT LANE CLOSED	- MILES MERGE LEFT	LEFT LANE CLOSED	- MILES MERGE RIGHT	TRAFFIC STOPPED AHEAD	WATCH FOR FLAGGER

NOTES

ADJUST TRAFFIC CONTROL PCMS MESSAGE AS NEEDED BASED ON WORK ZONE AREAS AND CONSTRUCTION SCHEDULE.

CONSIDER GEOMETRICS WHEN LOCATING MESSAGE BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE BOARD FOR A MINIMUM OF 1000 FEET IN FRONT OF THE MESSAGE BOARD.

PLACE MESSAGE BOARDS AS FAR AWAY FROM LIVE TRAFFIC LANES AS POSSIBLE WITHOUT HAMPERING VISIBILITY. IN ADVANCE OF FREEWAY CONSTRUCTION PROJECTS THE SIGNS SHOULD BE PLACED ON THE BACKSLOPE BEYOND THE DITCH. THE LOCATION SELECTED SHOULD BE AT OR SLIGHTLY ABOVE THE ELEVATION OF THE ROADWAY. FOR INTERMITTENT WORK SUCH AS FREEWAY LANE CLOSURE, OR WHERE SITE CONDITIONS DO NOT ALLOW OTHERWISE, THE SIGNS MAY BE PLACED ON THE SHOULDER. THE SITE SHOULD BE VISITED TO ASSURE VISIBILITY, SAFETY AND MAINTENANCE CONSIDERATIONS. A TAPER OF REFLECTORIZED DRUMS OR BARRICADES SHOULD BE PLACED AHEAD OF PCMS PLACED ON THE SHOULDER IF IT IS NOT SHIELDED BY A BARRIER.

PLACE TRAFFIC CONTROL SIGNS PCMS THAT DISPLAY THE "PRIOR TO CONSTRUCTION" MESSAGE 10 DAYS PRIOR TO THE EXPECTED START OF THE PROPOSED WORK THAT WILL REQUIRE LANE OR RAMP CLOSURES. ADJUST THE MESSAGE DATE ACCORDINGLY.

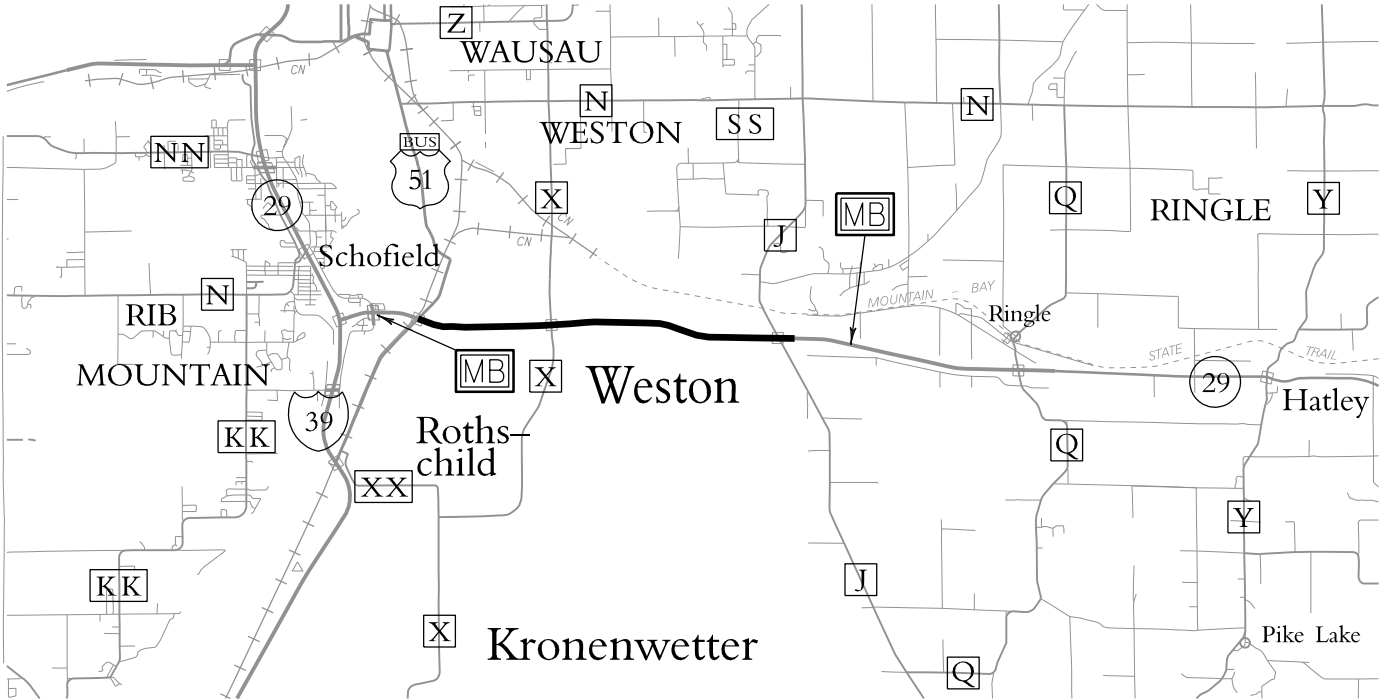
TRAFFIC CONTROL SIGNS PCMS ARE ALSO FOR WORK ZONE INCIDENT MANAGEMENT.

MB

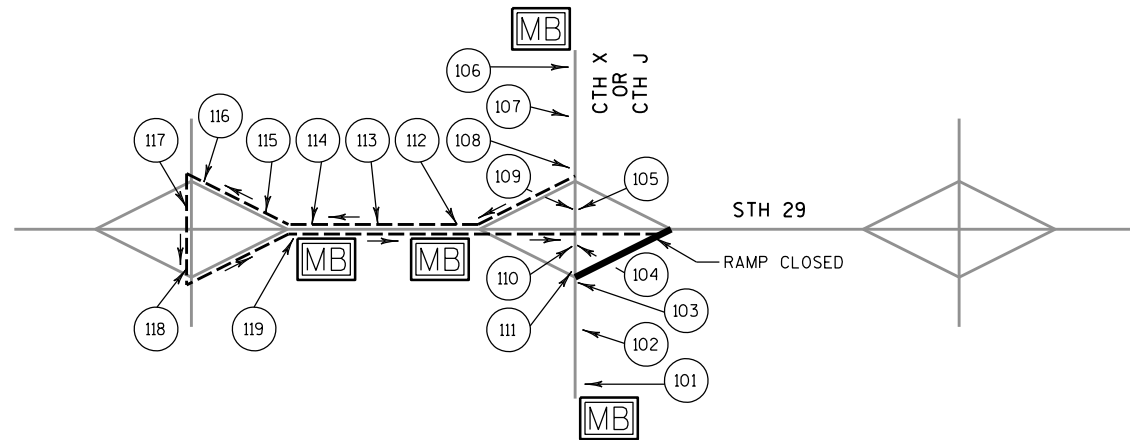
WORK ZONE

LEGEND

TRAFFIC CONTROL SIGNS PCMS, WITH CELLULAR COMMUNICATION

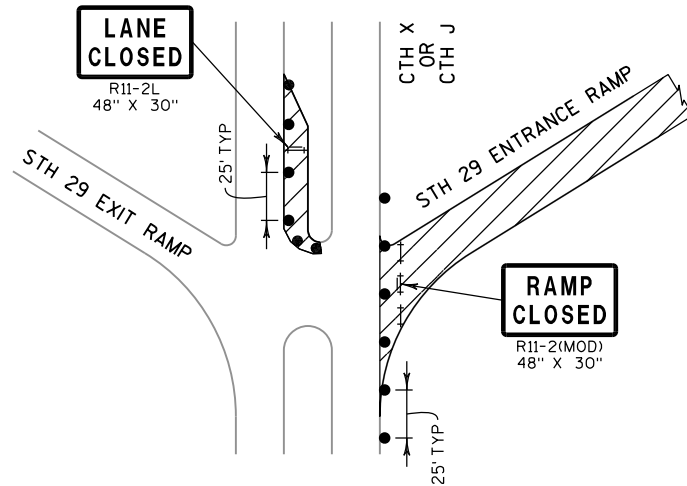


ADVANCED WARNING PCMS LOCATIONS



ENTRANCE RAMP CLOSURE TRAFFIC CONTROL DETOUR

TYPICAL STH 29 EB ENTRANCE RAMP CLOSURE SHOWN,
MIRROR DETAIL FOR STH 29 WB ENTRANCE RAMP CLOSURE
MESSAGES AND SIGNS ARE SHOWN FOR CTH X AND CTH J;
IMPLEMENT THE APPROPRIATE MESSAGE BASED ON THE
INTERCHANGE RAMP UNDER CONSTRUCTION



ENTRANCE RAMP CLOSURE TRAFFIC CONTROL DETAIL



LEGEND

TRAFFIC CONTROL SIGNS PCMS



TRAFFIC CONTROL DRUM



TRAFFIC CONTROL BARRICADE TYPE III WITH/WITHOUT SIGN



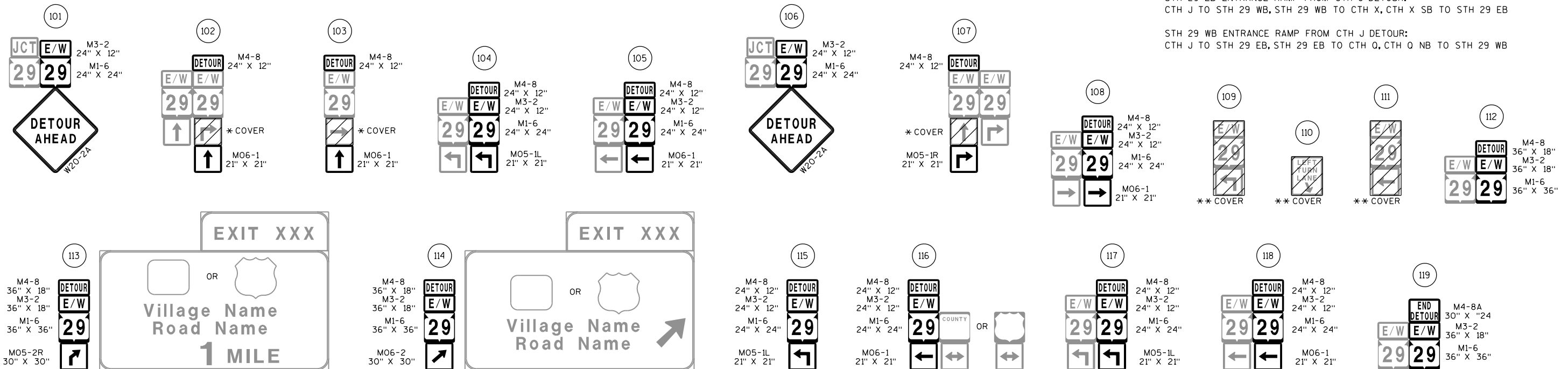
WORK ZONE



DETOUR ROUTE



LANE CLOSURE/RAMP CLOSURE



ENTRANCE RAMP CLOSURE PCMS MESSAGES

PCMS SIGN APPROXIMATE LOCATION	PRIOR TO CONSTRUCTION		DURING RAMP CLOSURE	
	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)
STH 29 EB ADVANCED WARNING (CTH X: 0.4 MILES EAST OF VOLKMAN ST) (CTH J: 0.4 MILES WEST OF RYAN ST) STH 29 WB ADVANCED WARNING (CTH X: 0.2 MILES WEST OF RYAN ST) (CTH J: 0.3 MILES EAST OF SHADY LN)	HWY X/J RAMP WORK	STARTING DATE	HWY X/J RAMP WORK	NO E/WB HWY 29 RE-ENTRY
STH 29 AT CLOSED RAMP (NEAR RAMP EXIT SIGN)	HWY X/J RAMP WORK	STARTING DATE	HWY X/J RAMP WORK	NO E/WB HWY 29 RE-ENTRY
NB CTH X/J PRIOR TO INTERCHANGE (HWY X: NORTH OF WESTVIEW BLVD) (HWY J: NORTH OF WESTON AVE)	HWY 29 E/WB ENT RAMP	CLOSED STARTING DATE	EASTBND/ WESTBND ENTRANCE RAMP	CLOSED FOLLOW DETOUR
SB CTH X/J PRIOR TO INTERCHANGE (HWY X: SOUTH OF EAST EVEREST AVE) (HWY J: SOUTH OF CTH JJ)	HWY 29 E/WB ENT RAMP	CLOSED STARTING DATE	EASTBND/ WESTBND ENTRANCE RAMP	CLOSED FOLLOW DETOUR

NOTES

NOT ALL EXISTING SIGNS ARE SHOWN. SIGNS NOT SHOWN ARE TO REMAIN.

SEE TRAFFIC CONTROL SHEETS FOR CTH X FOR ADDITIONAL INFORMATION
DURING THE CTH X ENTRANCE RAMP CLOSURES.

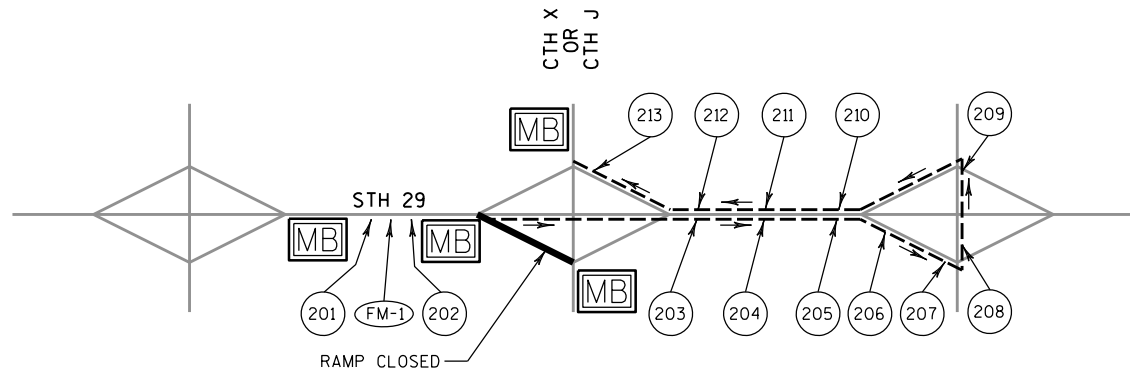
* PAID FOR AS TRAFFIC CONTROL DETOUR SIGN.

** PAID FOR AS TRAFFIC CONTROL COVERING SIGNS TYPE II.

SEE MAINLINE PCMS OVERVIEW SHEET FOR ADDITIONAL PCMS NOTES.

THE "E/W" DETOUR SIGNS ARE "EAST" OR "WEST".

THE DETOUR ROUTE SIGNING PROVIDED IS TYPICAL FOR ENTRANCE RAMP
CLOSURES. THE DETOUR ROUTES FOR EACH ENTRANCE RAMP ARE AS FOLLOWS:STH 29 EB ENTRANCE RAMP FROM CTH X DETOUR:
CTH X TO STH 29 WB, STH 29 WB TO BUS 51, BUS 51 SB TO STH 29 EBSTH 29 WB ENTRANCE RAMP FROM CTH X DETOUR:
CTH X TO STH 29 EB, STH 29 EB TO CTH J, CTH J NB TO STH 29 WBSTH 29 EB ENTRANCE RAMP FROM CTH J DETOUR:
CTH J TO STH 29 WB, STH 29 WB TO CTH X, CTH X SB TO STH 29 EBSTH 29 WB ENTRANCE RAMP FROM CTH J DETOUR:
CTH J TO STH 29 EB, STH 29 EB TO CTH Q, CTH Q NB TO STH 29 WB



EXIT RAMP CLOSURE TRAFFIC CONTROL DETOUR

TYPICAL STH 29 EB EXIT RAMP CLOSURE SHOWN, MIRROR
DETAIL FOR STH 29 WB EXIT RAMP CLOSURE
MESSAGES AND SIGNS ARE SHOWN FOR CTH X AND CTH J;
IMPLEMENT THE APPROPRIATE MESSAGE BASED ON THE
INTERCHANGE RAMP UNDER CONSTRUCTION

LEGEND

TRAFFIC CONTROL SIGNS PCMS

WORK ZONE

DETOUR ROUTE

EXIT RAMP CLOSURE PCMS MESSAGES				
PCMS SIGN APPROXIMATE LOCATION	PRIOR TO CONSTRUCTION		DURING RAMP CLOSURE	
	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)
STH 29 EB ADVANCED WARNING (CTH X: 0.4 MILES EAST OF VOLKMAN ST) (CTH J: 0.4 MILES WEST OF RYAN ST) STH 29 WB ADVANCED WARNING (CTH X: 0.2 MILES WEST OF RYAN ST) (CTH J: 0.3 MILES EAST OF SHADY LN)	HWY X/J RAMP WORK	STARTING DATE	HWY X/J RAMP WORK	NO E/WB HWY 29 RE-ENTRY
STH 29 AT CLOSED RAMP (NEAR RAMP EXIT SIGN)	HWY X/J RAMP WORK	STARTING DATE	HWY X/J RAMP WORK	NO E/WB HWY 29 RE-ENTRY
NB CTH X/J PRIOR TO INTERCHANGE (HWY X: NORTH OF WESTVIEW BLVD) (HWY J: NORTH OF WESTON AVE)	HWY 29 E/WB ENT RAMP	CLOSED STARTING DATE	EASTBND/WESTBND ENTRANCE RAMP	CLOSED FOLLOW DETOUR
SB CTH X/J PRIOR TO INTERCHANGE (HWY X: SOUTH OF EAST EVEREST AVE) (HWY J: SOUTH OF CTH JJ)	HWY 29 E/WB ENT RAMP	CLOSED STARTING DATE	EASTBND/WESTBND ENTRANCE RAMP	CLOSED FOLLOW DETOUR

NOTES

NOT ALL EXISTING SIGNS ARE SHOWN. SIGNS NOT SHOWN ARE TO REMAIN.

SEE TRAFFIC CONTROL SHEETS FOR CTH X FOR ADDITIONAL INFORMATION DURING THE CTH X EXIT RAMP CLOSURES.

PAID FOR AS TRAFFIC CONTROL SIGNS FIXED MESSAGE.

FIXED MESSAGE SIGN APPLIES TO WORK ON CTH X EXIT RAMP ONLY.

* PAID FOR AS TRAFFIC CONTROL DETOUR SIGN.

*** PAID FOR AS TRAFFIC CONTROL COVERING SIGNS TYPE I.

SEE "TRAFFIC CONTROL, EXIT RAMP CLOSURE" FOR ADDITIONAL INFORMATION.

THE "E/W" DETOUR SIGNS ARE "EAST" OR "WEST".

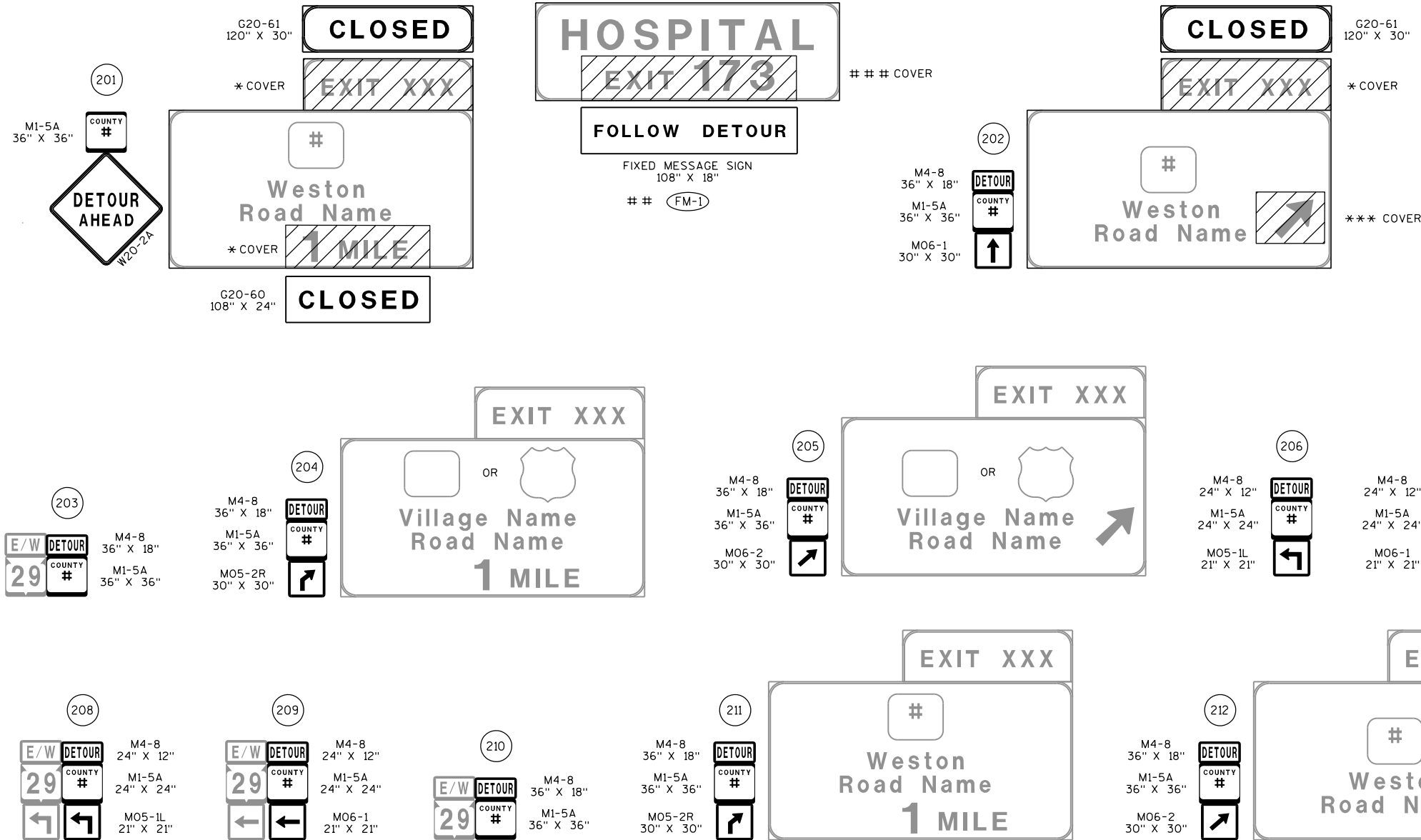
THE DETOUR ROUTE SIGNING PROVIDED IS TYPICAL FOR EXIT RAMP CLOSURES. THE DETOUR ROUTES FOR EACH EXIT RAMP ARE AS FOLLOWS:

STH 29 EB EXIT RAMP TO CTH X DETOUR:
STH 29 EB TO CTH J, CTH J NB TO STH 29 WB, STH 29 WB TO CTH X

STH 29 WB EXIT RAMP TO CTH X DETOUR:
STH 29 WB TO BUS 51, BUS 51 SB TO STH 29 EB, STH 29 EB TO CTH X

STH 29 EB EXIT RAMP TO CTH J DETOUR:
STH 29 EB TO CTH Q, CTH Q NB TO STH 29 WB, STH 29 WB TO CTH J

STH 29 WB EXIT RAMP TO CTH J DETOUR:
STH 29 WB TO CTH X, CTH X SB TO STH 29 EB, STH 29 EB TO CTH J



LEGEND

- ↑ TRAFFIC FLOW ARROW
● TRAFFIC CONTROL DRUM
● TRAFFIC CONTROL DRUM WITH WARNING LIGHT, TYPE C
T/F TRAFFIC CONTROL SIGN
T/F TRAFFIC CONTROL BARRICADE TYPE III WITH/WITHOUT SIGN
TRAFFIC CONTROL ARROW BOARD
MB TRAFFIC CONTROL SIGN PCMS, SEE "TRAFFIC CONTROL RAMP DETOURS" SHEET FOR ADDITIONAL INFORMATION
WORK ZONE/LANE CLOSURE

NOTES

NOT ALL EXISTING SIGNS ARE SHOWN. SIGNS NOT SHOWN ON THIS SHEET OR THE RAMP DETOUR SHEETS ARE TO REMAIN.

SEE TRAFFIC CONTROL RAMP DETOUR SHEETS FOR ADDITIONAL INFORMATION ON TRAFFIC CONTROL DETOUR SIGNS, COVERING SIGNS, AND PCMS MESSAGES.

CONSTRUCTION

CONCRETE PAVEMENT REHABILITATION ON ENTRANCE RAMP FROM CTH X TO STH 29 EB.

INSTALL RAMP CLOSURE GATE ON ENTRANCE RAMP FROM CTH X TO STH 29 EB.

TRAFFIC

MAINTAIN TRAFFIC ON CTH X. CLOSE CTH X ENTRANCE RAMP TO STH 29 EB. CLOSE INSIDE TURN LANE FROM STH 29 EB EXIT RAMP TO CTH X NB. CLOSE OUTSIDE TRAVEL LANE ON CTH X NB AT STH 29 EB ENTRANCE RAMP. CLOSE CTH X NB AND SB TURN LANES TO STH 29 EB ENTRANCE RAMP.

SEE DETAIL OF
ADDITIONAL
RAMP STORAGE

LANE
CLOSED

R11-2L
48" X 30"

LANE
CLOSED

R11-2L
48" X 30"

LANE
CLOSED

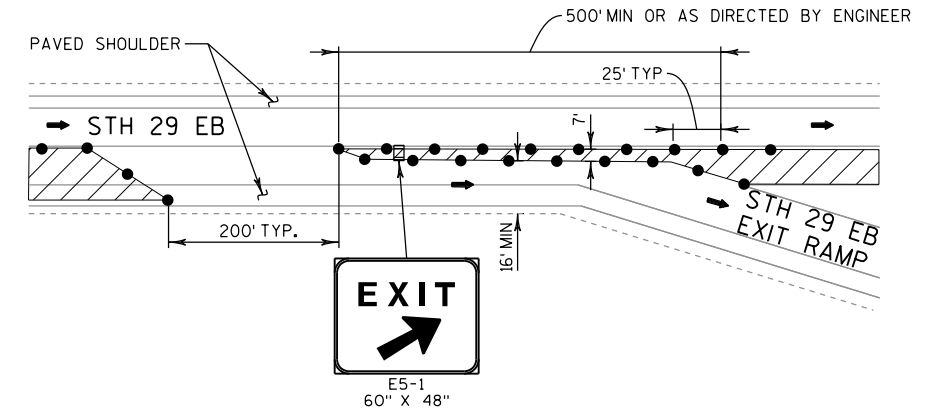
R11-2L
48" X 30"

LANE
CLOSED

R11-2L
48" X 30"

RAMP
CLOSED

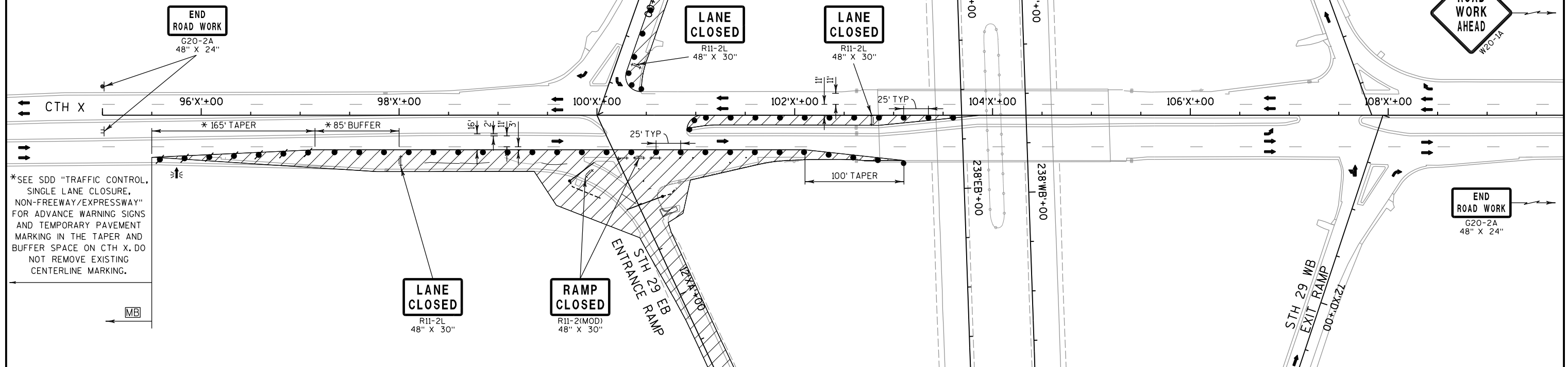
R11-2(MOD)
48" X 30"



DETAIL OF ADDITIONAL RAMP STORAGE

NOTE

FOR INFORMATION NOT SHOWN SEE SDD "TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE".



SEE SDD "TRAFFIC CONTROL, EXIT RAMP CLOSURE" FOR ADVANCED WARNING SIGNS AND ADDITIONAL TRAFFIC CONTROL DEVICES ON STH 29 EB

LEGEND

- ↑ TRAFFIC FLOW ARROW
- TRAFFIC CONTROL DRUM
- ⦿ TRAFFIC CONTROL DRUM WITH WARNING LIGHT, TYPE C
- ⦿ TRAFFIC CONTROL SIGN
- ⦿ TRAFFIC CONTROL BARRICADE TYPE III WITH/WITHOUT SIGN
- ⦿ TRAFFIC CONTROL ARROW BOARD
- MB TRAFFIC CONTROL SIGN PCMS, SEE "TRAFFIC CONTROL RAMP DETOURS" SHEET FOR ADDITIONAL INFORMATION
- ▨ WORK ZONE/LANE CLOSURE

NOTES

NOT ALL EXISTING SIGNS ARE SHOWN. SIGNS NOT SHOWN ON THIS SHEET OR THE RAMP DETOUR SHEETS ARE TO REMAIN.

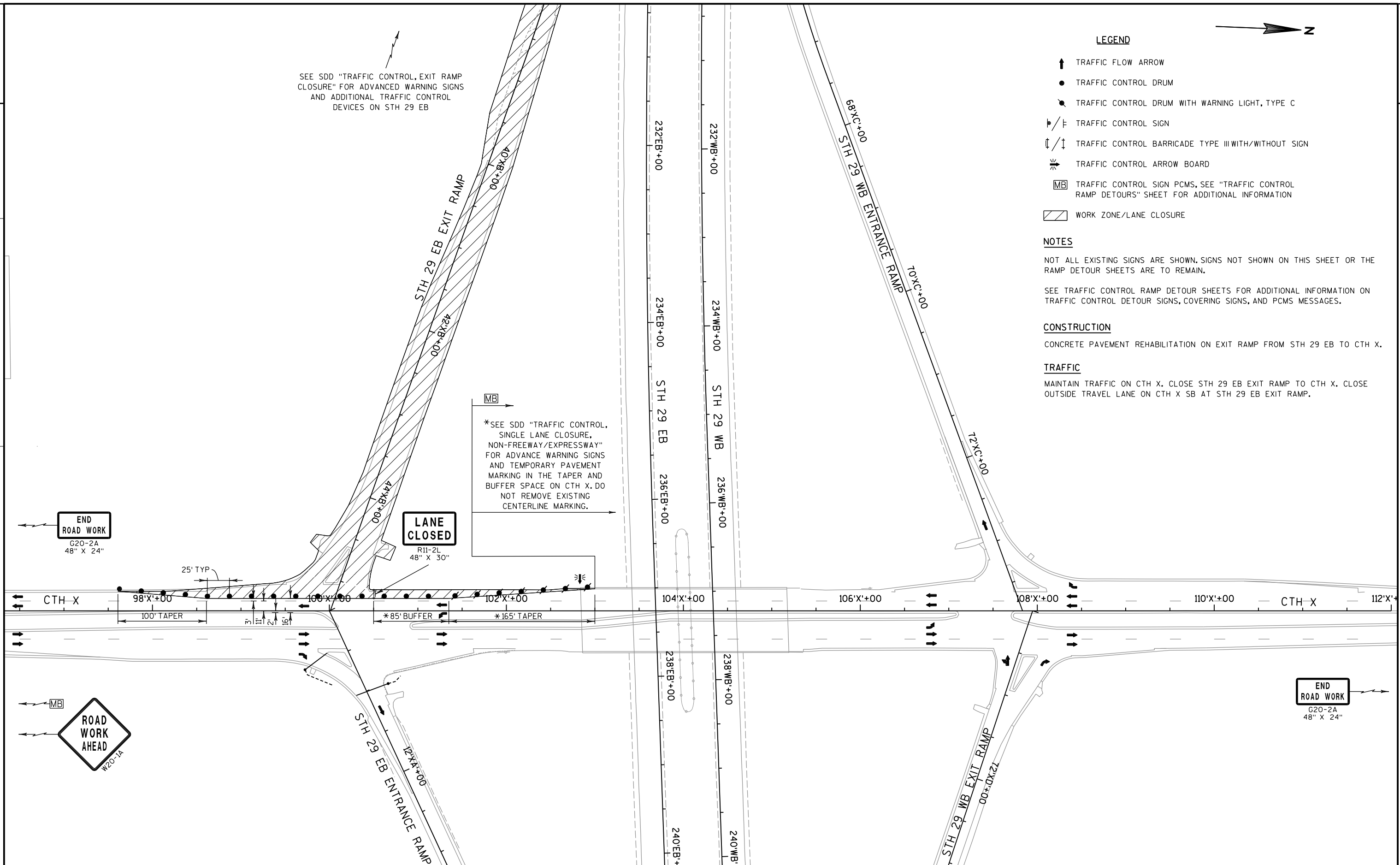
SEE TRAFFIC CONTROL RAMP DETOUR SHEETS FOR ADDITIONAL INFORMATION ON TRAFFIC CONTROL DETOUR SIGNS, COVERING SIGNS, AND PCMS MESSAGES.

CONSTRUCTION

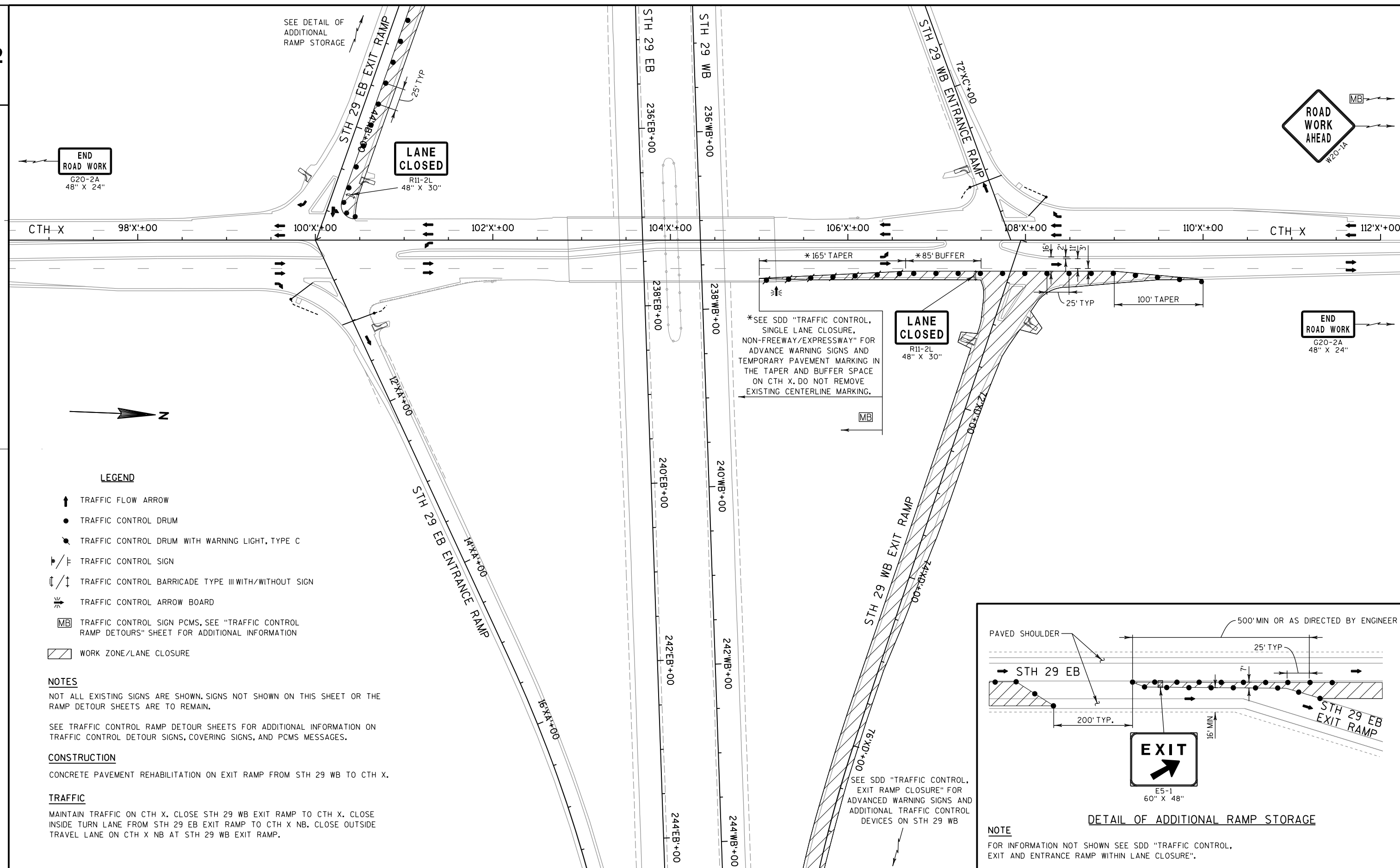
CONCRETE PAVEMENT REHABILITATION ON EXIT RAMP FROM STH 29 EB TO CTH X.

TRAFFIC

MAINTAIN TRAFFIC ON CTH X. CLOSE STH 29 EB EXIT RAMP TO CTH X. CLOSE OUTSIDE TRAVEL LANE ON CTH X SB AT STH 29 EB EXIT RAMP.







NOTE
CURVE LOCATIONS AND PI COORDINATE DATA
ARE SHOWN ON SECTION 5 SHEETS

STH 29 'WB' ALIGNMENT DATA

CURVE 1 DATA	CURVE 2 DATA	CURVE 3 DATA	CURVE 4 DATA	CURVE 5 DATA
STH 29 WB	STH 29 WB	STH 29 WB	STH 29 WB	STH 29 WB
PI= 147'WB'+54.45 Y = 178194.439 X = 287187.630 PC = 138'WB'+88.81 Y = 178494.665 X = 286375.723 PT = 156'WB'+00.07 Y = 178209.887 X = 288053.13 T = 865.64 L = 1711.26 R = 4599.77 DELTA = 21°18'57.06" LT D = 01°14'44.24" SE = 3.5%	PI= 232'WB'+10.59 Y = 178345.703 X = 295662.43 PC = 228'WB'+95.45 Y = 178340.079 X = 295347.347 PT = 235'WB'+25.54 Y = 178369.467 X = 295976.666 T = 315.13 L = 630.09 R = 10932.46 DELTA = 03°18'08.06" LT D = 00°31'26.72" SE = RC	PI= 270'WB'+86.73 Y = 178638.016 X = 299527.713 PC = 265'WB'+35.92 Y = 178596.480 X = 298978.471 PT = 276'WB'+36.71 Y = 178627.181 X = 300078.417 T = 550.81 L = 1100.79 R = 11568.45 DELTA = 05°27'07.02" LT D = 00°29'42.99" SE = RC	PI= 329'WB'+45.35 Y = 178522.752 X = 305386.03 PC = 321'WB'+79.60 Y = 178537.816 X = 304620.427 PT = 336'WB'+97.61 Y = 178264.166 X = 306106.798 T = 765.75 L = 1518.02 R = 4673.85 DELTA = 18°36'32.55" RT D = 01°13'33.17" SE = 3.5%	PI= 363'WB'+75.34 Y = 177359.925 X = 308627.223 PC = 356'WB'+34.54 Y = 177610.084 X = 307929.947 PT = 371'WB'+03.04 Y = 177345.737 X = 309367.88 T = 740.79 L = 1468.50 R = 4514.17 DELTA = 18°38'19.61" LT D = 01°16'09.28" SE = 3.5%

STH 29 'EB' ALIGNMENT DATA

CURVE 1 DATA	CURVE 2 DATA	CURVE 3 DATA	CURVE 4 DATA	CURVE 5 DATA
STH 29 EB	STH 29 EB	STH 29 EB	STH 29 EB	STH 29 EB
PI= 147'EB'+46.04 Y = 178133.746 X = 287177.416 PC = 138'EB'+65.83 Y = 178439.026 X = 286351.841 PT = 156'EB'+05.90 Y = 178149.454 X = 288057.487 T = 880.21 L = 1740.07 R = 4677.21 DELTA = 21°18'57.06" LT D = 01°13'30" SE = 3.5%	PI= 232'EB'+93.13 Y = 178286.639 X = 295743.487 PC = 229'EB'+61.14 Y = 178280.714 X = 295411.551 PT = 236'EB'+24.93 Y = 178311.674 X = 296074.531 T = 331.99 L = 663.79 R = 11517.23 DELTA = 03°18'08.06" LT D = 00°29'50.92" SE = RC	PI= 270'EB'+94.17 Y = 178573.289 X = 299533.891 PC = 265'EB'+73.93 Y = 178534.058 X = 299015.13 PT = 276'EB'+13.62 Y = 178563.025 X = 300054.031 T = 520.24 L = 1039.7 R = 10919.71 DELTA = 05°27'19.07" RT D = 00°31'28.92" SE = RC	PI= 329'EB'+31.22 Y = 178458.109 X = 305370.592 PC = 321'EB'+85.29 Y = 178472.826 X = 304624.803 PT = 336'EB'+64.05 Y = 178206.418 X = 306072.782 T = 745.93 L = 1478.76 R = 4557.89 DELTA = 18°35'20.52" RT D = 01°15'25.45" SE = 3.5%	PI= 363'EB'+61.65 Y = 177296.202 X = 308612.188 PC = 356'EB'+07.55 Y = 177550.649 X = 307902.308 PT = 371'EB'+02.46 Y = 177281.759 X = 309366.155 T = 754.10 L = 1494.91 R = 4599.47 DELTA = 18°37'19.64" LT D = 01°14'44.53" SE = 3.5%

CTH X RAMP ALIGNMENT DATA

CURVE 1 DATA	CURVE 2 DATA	CURVE 3 DATA	CURVE 4 DATA
RAMP XA	RAMP XB	RAMP XC	RAMP XD
PI= 18'XA'+22.59 Y = 178326.461 X = 296922.002 PC = 15'XA'+21.99 Y = 178189.169 X = 296654.583 PT = 21'XA'+15.84 Y = 178353.991 X = 297221.342 T = 300.60 L = 593.85 R = 1552.16 DELTA = 21°55'16.59" RT D = 03°41'28.88" SE = 5.6%	PI= 36'XB'+94.19 Y = 178200.222 X = 295384.807 PC = 35'XB'+26.56 Y = 178210.310 X = 295217.485 PT = 38'XB'+60.22 Y = 178150.808 X = 295544.985 T = 167.63 L = 333.66 R = 1395.97 DELTA = 13°41'40.00" RT D = 04°06'15.74" SE = 5.6%	PI= 64'XC'+94.55 Y = 178392.223 X = 295331.084 PC = 62'XC'+42.57 Y = 178383.217 X = 295079.267 PT = 67'XC'+41.21 Y = 178488.323 X = 295564.016 T = 251.98 L = 498.64 R = 1402.47 DELTA = 20°22'15.66" LT D = 04°05'07.25" SE = 5.6%	PI= 78'XD'+02.86 Y = 178523.535 X = 296929.682 PC = 75'XD'+98.25 Y = 178579.957 X = 296733.008 PT = 80'XD'+04.87 Y = 178522.869 X = 297134.288 T = 204.61 L = 406.61 R = 1472.59 DELTA = 15°49'13.97" LT D = 03°53'26.97" SE = 5.6%

CTH J RAMP ALIGNMENT DATA

CURVE 1 DATA	CURVE 2 DATA	CURVE 3 DATA	CURVE 4 DATA
RAMP JA	RAMP JB	RAMP JC	RAMP JD
PI= 18'JA'+21.04 Y = 177102.354 X = 315989.932 PC = 15'JA'+72.57 Y = 177022.681 X = 315754.581 PT = 20'JA'+65.07 Y = 177102.096 X = 316238.404 T = 248.47 L = 492.50 R = 1504.00 DELTA = 18°45'42.94" RT D = 03°48'34.43" SE = 5.6%	PI= 37'JB'+54.23 Y = 177100.662 X = 314322.256 PC = 35'JB'+14.42 Y = 177124.276 X = 314083.616 PT = 39'JB'+89.56 Y = 177000.125 X = 314539.968 T = 239.80 L = 475.14 R = 1422.66 DELTA = 19°08'08.99" RT D = 04°01'38.57" SE = 5.6%	PI= 64'JC'+56.63 Y = 177308.277 X = 314067.431 PC = 62'JC'+14.61 Y = 177308.567 X = 313825.419 PT = 66'JC'+94.28 Y = 177386.035 X = 314296.612 T = 242.01 L = 479.67 R = 1461.09 DELTA = 18°48'35.71" LT D = 03°55'17.16" SE = 5.6%	PI= 72'JD'+78.66 Y = 177605.998 X = 315095.586 PC = 70'JD'+96.33 Y = 177594.523 X = 314913.614 PT = 74'JD'+53.47 Y = 177529.428 X = 315261.063 T = 182.33 L = 357.15 R = 719.54 DELTA = 28°26'21.77" RT D = 07°57'46.38" SE = 5.6%

DATE 02MAY16		E S T I M A T E O F Q U A N T I T I E S			
LINE		1053-02-65			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0020	204.0100	Removing Pavement	SY	500.000	500.000
0030	204.0110	Removing Asphaltic Surface	SY	190.000	190.000
0040	204.0120	Removing Asphaltic Surface Milling	SY	71,770.000	71,770.000
0050	204.0180	Removing Delineators and Markers	EACH	345.000	345.000
0060	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	1,452.000	1,452.000
0070	213.0100	Finishing Roadway (project) 01. 1053-02-65	EACH	1.000	1.000
0080	305.0110	Base Aggregate Dense 3/4-Inch	TON	6,810.000	6,810.000
0090	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	780.000	780.000
0100	310.0110	Base Aggregate Open-Graded	TON	150.000	150.000
0110	415.0100	Concrete Pavement 10-Inch	SY	500.000	500.000
0120	415.6000.S	Rout and Seal	LF	145,270.000	145,270.000
0130	416.0610	Drilled Tie Bars	EACH	3,150.000	3,150.000
0140	416.0620	Drilled Dowel Bars	EACH	4,250.000	4,250.000
0150	416.0750.S	Concrete Pavement Partial Depth Repair Joint Repair	LF	1,900.000	1,900.000
0160	416.0752.S	Concrete Pavement Partial Depth Repair Crack Repair	LF	1,460.000	1,460.000
0170	416.0754.S	Concrete Pavement Partial Depth Repair Surface Repair	SF	1,370.000	1,370.000
0180	416.0756.S	Concrete Pavement Partial Depth Repair Edge Repair	LF	120.000	120.000
0190	416.0758.S	Concrete Pavement Partial Depth Repair Full Depth Adjustment	SF	1,000.000	1,000.000
0200	416.1110	Concrete Shoulder Rumble Strips	LF	57,140.000	57,140.000
0210	416.1710	Concrete Pavement Repair	SY	580.000	580.000
0220	416.1720	Concrete Pavement Replacement	SY	11,420.000	11,420.000
0230	460.2000	Incentive Density HMA Pavement	DOL	11,920.000	11,920.000
0240	460.5224	HMA Pavement 4 LT 58-28 S	TON	18,620.000	18,620.000
0250	465.0110	Asphaltic Surface Patching	TON	50.000	50.000
0260	465.0315	Asphaltic Flumes	SY	195.000	195.000
0270	465.0400	Asphaltic Shoulder Rumble Strips	LF	61,950.000	61,950.000
0280	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	1.000	1.000
0290	522.1042	Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch	EACH	1.000	1.000
0300	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1053-02-65	EACH	1.000	1.000
0310	619.1000	Mobilization	EACH	1.000	1.000
0320	624.0100	Water	MGAL	95.000	95.000
0330	628.1504	Silt Fence	LF	1,300.000	1,300.000
0340	628.1520	Silt Fence Maintenance	LF	1,300.000	1,300.000
0350	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0360	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0370	628.2004	Erosion Mat Class I Type B	SY	3,120.000	3,120.000
0380	628.2006	Erosion Mat Urban Class I Type A	SY	170.000	170.000
0390	628.7005	Inlet Protection Type A	EACH	5.000	5.000
0400	628.7015	Inlet Protection Type C	EACH	4.000	4.000
0410	628.7504	Temporary Ditch Checks	LF	60.000	60.000
0420	628.7570	Rock Bags	EACH	260.000	260.000
0430	631.0300	Sod Water	MGAL	75.000	75.000
0440	633.0100	Delineator Posts Steel	EACH	345.000	345.000
0450	633.0500	Delineator Reflectors	EACH	410.000	410.000

DATE 02MAY16		E S T I M A T E O F Q U A N T I T I E S			
LINE					1053-02-65
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0460	633.5200	Markers Culvert End	EACH	2.000	2.000
0470	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0480	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	40.000	40.000
0490	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	37.000	37.000
0500	634.0620	Posts Wood 4x6-Inch X 20-FT	EACH	21.000	21.000
0510	635.0200	Sign Supports Structural Steel HS	LB	16,785.000	16,785.000
0520	636.0100	Sign Supports Concrete Masonry	CY	28.000	28.000
0530	636.0500	Sign Supports Steel Reinforcement	LB	1,676.000	1,676.000
0540	637.1220	Signs Type I Reflective SH	SF	3,379.000	3,379.000
0550	637.2210	Signs Type II Reflective H	SF	725.760	725.760
0560	637.2215	Signs Type II Reflective H Folding	SF	160.000	160.000
0570	637.2230	Signs Type II Reflective F	SF	147.000	147.000
0580	638.2601	Removing Signs Type I	EACH	17.000	17.000
0590	638.2602	Removing Signs Type II	EACH	73.000	73.000
0600	638.3000	Removing Small Sign Supports	EACH	81.000	81.000
0610	638.3100	Removing Structural Steel Sign Supports	EACH	34.000	34.000
0620	642.5201	Field Office Type C	EACH	1.000	1.000
0630	643.0200	Traffic Control Surveillance and Maintenance (project) 01. 1053-02-65	DAY	135.000	135.000
0640	643.0300	Traffic Control Drums	DAY	75,523.000	75,523.000
0650	643.0420	Traffic Control Barricades Type III	DAY	4,816.000	4,816.000
0660	643.0705	Traffic Control Warning Lights Type A	DAY	9,632.000	9,632.000
0670	643.0715	Traffic Control Warning Lights Type C	DAY	4,048.000	4,048.000
0680	643.0800	Traffic Control Arrow Boards	DAY	360.000	360.000
0690	643.0900	Traffic Control Signs	DAY	8,620.000	8,620.000
0700	643.0910	Traffic Control Covering Signs Type I	EACH	4.000	4.000
0710	643.0920	Traffic Control Covering Signs Type II	EACH	60.000	60.000
0720	643.1000	Traffic Control Signs Fixed Message	SF	13.500	13.500
0730	643.1050	Traffic Control Signs PCMS	DAY	430.000	430.000
0740	643.3000	Traffic Control Detour Signs	DAY	1,840.000	1,840.000
0750	646.0106	Pavement Marking Epoxy 4-Inch	LF	143,815.000	143,815.000
0760	646.0126	Pavement Marking Epoxy 8-Inch	LF	1,095.000	1,095.000
0770	646.0600	Removing Pavement Markings	LF	6,390.000	6,390.000
0780	646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF	16,100.000	16,100.000
0790	646.0843.S	Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch	LF	9,945.000	9,945.000
0800	647.0166	Pavement Marking Arrows Epoxy Type 2	EACH	5.000	5.000
0810	647.0176	Pavement Marking Arrows Epoxy Type 3	EACH	2.000	2.000
0820	647.0186	Pavement Marking Arrows Epoxy Type 4	EACH	2.000	2.000
0830	647.0356	Pavement Marking Words Epoxy	EACH	5.000	5.000
0840	647.0566	Pavement Marking Stop Line Epoxy 18-Inch	LF	110.000	110.000
0850	647.0716	Pavement Marking Diagonal Epoxy 8-Inch	LF	55.000	55.000
0860	647.0746	Pavement Marking Diagonal Epoxy 24-Inch	LF	1,180.000	1,180.000
0870	647.0803	Pavement Marking Aerial Enforcement Bars Epoxy 24-Inch	LF	96.000	96.000
0880	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	19,290.000	19,290.000
0890	649.0403	Temporary Pavement Marking Epoxy 4-Inch	LF	6,320.000	6,320.000
0900	649.0506	Temporary Pavement Marking Removable Mask-Out Tape 6-Inch	LF	12,885.000	12,885.000
0910	649.0801	Temporary Pavement Marking Removable Tape 8-Inch	LF	3,000.000	3,000.000
0920	650.8000	Construction Staking Resurfacing Reference	LF	82,780.000	82,780.000

DATE 02MAY16		E S T I M A T E O F Q U A N T I T I E S			
LINE					1053-02-65
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0930	650.9910	Construction Staking Supplemental Control (project) 01.1053-02-65	LS	1.000	1.000
0940	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	155.000	155.000
0950	653.0135	Pull Boxes Steel 24x36-Inch	EACH	2.000	2.000
0960	654.0105	Concrete Bases Type 5	EACH	6.000	6.000
0970	654.0220	Concrete Control Cabinet Bases Type 10	EACH	2.000	2.000
0980	657.0100	Pedestal Bases	EACH	2.000	2.000
0990	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	6.000	6.000
1000	657.0321	Poles Type 5-Steel	EACH	6.000	6.000
1010	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	2.000	2.000
1020	662.1030.S	Ramp Closure Gates Hardwired 30-FT	EACH	2.000	2.000
1030	662.1040.S	Ramp Closure Gates Hardwired 40-FT	EACH	2.000	2.000
1040	662.2040.S	Ramp Closure Gates Solar 40-FT	EACH	2.000	2.000
1050	662.3030.S	Ramp Closure Gate Arms Stockpile 30-FT	EACH	2.000	2.000
1060	662.3040.S	Ramp Closure Gate Arms Stockpile 40-FT	EACH	4.000	4.000
1070	662.4000.S	Ramp Closure Gate Flashers Stockpile	EACH	18.000	18.000
1080	690.0150	Sawing Asphalt	LF	3,070.000	3,070.000
1090	690.0250	Sawing Concrete	LF	14,130.000	14,130.000
1100	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
1110	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
1120	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,260.000	1,260.000
1130	SPV.0045	Special 01. Portable Changeable Message Sign (PCMS) Cellular Communications	DAY	270.000	270.000
1140	SPV.0060	Special 01. Removing Raised Pavement Marker and Filling Void	EACH	725.000	725.000
1150	SPV.0060	Special 02. Grading, Shaping and Finishing Ramp Gates	EACH	6.000	6.000
1160	SPV.0060	Special 03. Grading, Shaping and Finishing Maintenance Crossovers	EACH	5.000	5.000
1170	SPV.0060	Special 04. Shaping and Finishing Culverts	EACH	2.000	2.000
1180	SPV.0060	Special 05. Joint Ties for Concrete Pipes	EACH	12.000	12.000
1190	SPV.0180	Special 01. Diamond Grinding Concrete Pavement	SY	12,000.000	12,000.000

REMOVING SMALL PIPE CULVERTS

		203.0100
STATION	LOCATION	EACH
CAT 0010		
174'EB'+08	LT	1
204'EB'+84	LT	1
TOTAL		2

NOTE: ONLY REMOVE APRON ENDWALLS

REMOVING PAVEMENT

		204.0100
STATION - STATION	LOCATION	SY
CAT 0010		
UNDISTRIBUTED	--	500
TOTAL		500

REMOVING ASPHALTIC SURFACE MILLING

		204.0120	
STATION - STATION	LOCATION	SY	COMMENTS
CAT 0010			
135'EB'+18 - 142'EB'+76	RT	590	DRIVING LANE SHOULDER
140'EB'+80 - 152'EB'+84	RT	670	STH 29 EB ENTRANCE RAMP SHOULDER
148'EB'+00 - 426'EB'+74	LT	9,300	PASSING LANE SHOULDER
152'EB'+84 - 222'EB'+41	RT	4,640	DRIVING LANE SHOULDER
227'EB'+07 - 246'EB'+12	RT	1,270	DRIVING LANE SHOULDER
259'EB'+29 - 413'EB'+09	RT	10,260	DRIVING LANE SHOULDER
417'EB'+63 - 426'EB'+88	RT	620	DRIVING LANE SHOULDER
429'EB'+00 - 455'EB'+00	LT	870	PASSING LANE SHOULDER
429'EB'+00 - 438'EB'+45	RT	630	DRIVING LANE SHOULDER
451'EB'+85 - 455'EB'+00	RT	210	DRIVING LANE SHOULDER
135'WB'+75 - 141'WB'+97	LT	600	DRIVING LANE SHOULDER
138'WB'+25 - 426'WB'+43	RT	9,610	PASSING LANE SHOULDER
139'WB'+60 - 144'WB'+13	LT	260	STH 29 WB EXIT RAMP SHOULDER
144'WB'+13 - 213'WB'+86	LT	4,650	DRIVING LANE SHOULDER
227'WB'+55 - 247'WB'+37	LT	1,330	DRIVING LANE SHOULDER
251'WB'+94 - 403'WB'+46	LT	10,110	DRIVING LANE SHOULDER
416'WB'+91 - 426'WB'+26	LT	630	DRIVING LANE SHOULDER
428'WB'+50 - 455'WB'+00	RT	890	PASSING LANE SHOULDER
428'WB'+50 - 437'WB'+37	LT	600	DRIVING LANE SHOULDER
442'WB'+38 - 455'WB'+00	LT	850	DRIVING LANE SHOULDER
11'XA'+27 - 32'XA'+73	RT	1,200	OUTSIDE RAMP SHOULDER
11'XA'+39 - 21'XA'+67	LT	480	INSIDE RAMP SHOULDER AND RAMP GORE
30'XB'+00 - 44'XB'+77	RT	830	OUTSIDE RAMP SHOULDER
32'XB'+28 - 44'XB'+41	LT	650	INSIDE RAMP SHOULDER AND RAMP GORE
50'XC'+00 - 72'XC'+82	LT	1,270	OUTSIDE RAMP SHOULDER
61'XC'+29 - 72'XC'+90	RT	520	INSIDE RAMP SHOULDER AND RAMP GORE
70'XD'+88 - 85'XD'+09	LT	790	INSIDE RAMP SHOULDER AND RAMP GORE
71'XD'+28 - 82'XD'+81	RT	620	OUTSIDE RAMP SHOULDER
10'JA'+56 - 22'JA'+06	LT	540	INSIDE RAMP SHOULDER AND RAMP GORE
11'JA'+26 - 32'JA'+74	RT	1,200	OUTSIDE RAMP SHOULDER
30'JB'+00 - 46'JB'+70	RT	930	OUTSIDE RAMP SHOULDER
32'JB'+27 - 46'JB'+70	LT	720	INSIDE RAMP SHOULDER AND RAMP GORE
50'JC'+00 - 71'JC'+51	LT	1,200	OUTSIDE RAMP SHOULDER
59'JC'+87 - 72'JC'+16	RT	580	INSIDE RAMP SHOULDER AND RAMP GORE
70'JD'+64 - 87'JD'+41	LT	940	OUTSIDE RAMP SHOULDER
70'JD'+84 - 85'JD'+02	RT	710	INSIDE RAMP SHOULDER AND RAMP GORE
TOTAL		71,770	

REMOVING ASPHALTIC SURFACE

		204.0110
STATION	LOCATION	SY
CAT 0010		
11'XA'+18	LT	25
44'XB'+55	LT	20
44'XB'+73	RT	25
72'XC'+92	RT	30
70'XD'+83	LT	15
71'XD'+25	RT	15
+/- 103'J'+00	RT	1
+/- 105'J'+00	RT	1
11'JA'+22	RT	10
46'JB'+70	RT	15
71'JC'+54	LT	18
70'JD'+60	LT	15
TOTAL		190

REMOVING DELINEATORS AND MARKERS

		204.0180
STATION - STATION	LOCATION	EACH
CAT 0010		
135'EB'+18 - 455'EB'+00	LT & RT	98
131'WB'+83 - 455'WB'+00	LT & RT	97
10'XA'+47 - 32'XA'+73	RT	22
30'XB'+00 - 45'XB'+12	RT	14
50'XC'+00 - 73'XC'+61	LT	23
70'XD'+45 - 85'XD'+09	LT	15
10'JA'+34 - 32'JA'+74	RT	22
30'JB'+00 - 46'JB'+93	RT	16
50'JC'+00 - 72'JC'+42	LT	22
70'JD'+37 - 87'JD'+41	LT	16
TOTAL		345

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

STATION - STATION		LOCATION	21L0400 STA	COMMENTS
CAT 0010				
135'EB'+18 - 142'EB'+76	LT	8	DRIVING LANE SHOULDER	
140'EB'+80 - 152'EB'+84	RT	13	STH 29 EB ENTRANCE RAMP SHOULDER	
148'EB'+00 - 426'EB'+74	LT	279	PASSING LANE SHOULDER	
152'EB'+84 - 222'EB'+41	RT	70	DRIVING LANE SHOULDER	
227'EB'+07 - 246'EB'+12	RT	20	DRIVING LANE SHOULDER	
259'EB'+29 - 413'EB'+09	RT	154	DRIVING LANE SHOULDER	
417'EB'+63 - 426'EB'+88	RT	10	DRIVING LANE SHOULDER	
429'EB'+00 - 455'EB'+00	LT	26	PASSING LANE SHOULDER	
429'EB'+00 - 438'EB'+45	RT	10	DRIVING LANE SHOULDER	
451'EB'+85 - 455'EB'+00	RT	4	DRIVING LANE SHOULDER	
135'WB'+75 - 141'WB'+97	LT	7	DRIVING LANE SHOULDER	
138'WB'+25 - 426'WB'+43	RT	289	PASSING LANE SHOULDER	
139'WB'+60 - 144'WB'+13	LT	5	STH 29 WB EXIT RAMP SHOULDER	
144'WB'+13 - 213'WB'+86	LT	70	DRIVING LANE SHOULDER	
227'WB'+55 - 247'WB'+37	LT	20	DRIVING LANE SHOULDER	
251'WB'+94 - 403'WB'+46	LT	152	DRIVING LANE SHOULDER	
416'WB'+91 - 426'WB'+26	LT	10	DRIVING LANE SHOULDER	
428'WB'+50 - 455'WB'+00	RT	27	PASSING LANE SHOULDER	
428'WB'+50 - 437'WB'+37	LT	9	DRIVING LANE SHOULDER	
442'WB'+38 - 455'WB'+00	LT	13	DRIVING LANE SHOULDER	
11'XA'+27 - 32'XA'+73	RT	22	OUTSIDE RAMP SHOULDER	
11'XA'+39 - 21'XA'+67	LT	11	INSIDE RAMP SHOULDER	
30'XB'+00 - 44'XB'+77	RT	15	OUTSIDE RAMP SHOULDER	
32'XB'+28 - 44'XB'+41	LT	13	INSIDE RAMP SHOULDER	
50'XC'+00 - 72'XC'+82	LT	23	OUTSIDE RAMP SHOULDER	
61'XC'+29 - 72'XC'+90	RT	12	INSIDE RAMP SHOULDER	
70'XD'+88 - 85'XD'+09	LT	15	OUTSIDE RAMP SHOULDER	
71'XD'+28 - 82'XD'+81	RT	12	INSIDE RAMP SHOULDER	
10'JA'+56 - 22'JA'+06	LT	12	INSIDE RAMP SHOULDER	
11'JA'+26 - 32'JA'+74	RT	22	OUTSIDE RAMP SHOULDER	
30'JB'+00 - 46'JB'+70	RT	17	OUTSIDE RAMP SHOULDER	
32'JB'+27 - 46'JB'+70	LT	15	INSIDE RAMP SHOULDER	
50'JC'+00 - 71'JC'+51	LT	22	OUTSIDE RAMP SHOULDER	
59'JC'+87 - 72'JC'+16	RT	13	INSIDE RAMP SHOULDER	
70'JD'+64 - 87'JD'+41	LT	17	OUTSIDE RAMP SHOULDER	
70'JD'+84 - 85'JD'+02	RT	15	INSIDE RAMP SHOULDER	
TOTAL			1,452	

BASE AGGREGATE ITEMS

STATION - STATION		LOCATION	305.0110 DENSE 3/4-INCH TON	305.0120 DENSE 1 1/4-INCH TON	310.0110 OPEN GRADED TON	COMMENTS
CAT 0010						
135'EB'+18 - 140'EB'+80	LT	20	--	--	--	DRIVING LANE SHOULDER
140'EB'+80 - 152'EB'+84	RT	510	--	--	--	STH 29 EB ENTRANCE RAMP SHOULDER
148'EB'+00 - 230'EB'+00	LT	40	--	--	--	PASSING LANE SHOULDER
152'EB'+84 - 222'EB'+41	RT	200	--	--	--	DRIVING LANE SHOULDER
158'EB'+08 - 158'EB'+80	LT	60	140	--	--	MAINTENANCE CROSSOVER
213'EB'+26 - 213'EB'+98	LT	1,100	140	--	--	MAINTENANCE CROSSOVER
227'EB'+07 - 246'EB'+12	RT	430	--	--	--	DRIVING LANE SHOULDER
230'EB'+00 - 426'EB'+74	LT	30	--	--	--	PASSING LANE SHOULDER
259'EB'+29 - 413'EB'+09	RT	150	--	--	--	DRIVING LANE SHOULDER
263'EB'+68 - 264'EB'+42	LT	30	160	--	--	MAINTENANCE CROSSOVER
341'EB'+88 - 342'EB'+62	LT	40	160	--	--	MAINTENANCE CROSSOVER
401'EB'+76 - 402'EB'+50	LT	20	160	--	--	MAINTENANCE CROSSOVER
417'EB'+63 - 426'EB'+88	RT	100	--	--	--	DRIVING LANE SHOULDER
429'EB'+00 - 455'EB'+00	LT	460	--	--	--	PASSING LANE SHOULDER
429'EB'+00 - 438'EB'+45	RT	200	--	--	--	DRIVING LANE SHOULDER
451'EB'+85 - 455'EB'+00	RT	20	--	--	--	DRIVING LANE SHOULDER
135'WB'+75 - 139'WB'+60	LT	20	--	--	--	DRIVING LANE SHOULDER
138'WB'+25 - 230'WB'+00	RT	60	--	--	--	PASSING LANE SHOULDER
139'WB'+60 - 144'WB'+13	LT	1,100	--	--	--	STH 29 WB EXIT RAMP SHOULDER
144'WB'+13 - 213'WB'+86	LT	430	20	--	--	DRIVING LANE SHOULDER AND ENDWALL REPLACEMENTS
227'WB'+55 - 247'WB'+37	LT	20	--	--	--	DRIVING LANE SHOULDER
230'WB'+00 - 426'WB'+43	RT	20	--	--	--	PASSING LANE SHOULDER
251'WB'+94 - 403'WB'+46	LT	20	--	--	--	DRIVING LANE SHOULDER
416'WB'+91 - 426'WB'+26	LT	30	--	--	--	DRIVING LANE SHOULDER
428'WB'+50 - 455'WB'+00	RT	150	--	--	--	PASSING LANE SHOULDER
428'WB'+50 - 437'WB'+37	LT	30	--	--	--	DRIVING LANE SHOULDER
442'WB'+38 - 455'WB'+00	LT	10	--	--	--	DRIVING LANE SHOULDER
11'XA'+27 - 32'XA'+73	RT	170	--	--	--	OUTSIDE RAMP SHOULDER
11'XA'+39 - 19'XA'+56	LT	30	--	--	--	INSIDE RAMP SHOULDER
30'XB'+00 - 44'XB'+77	RT	120	--	--	--	OUTSIDE RAMP SHOULDER
34'XB'+67 - 44'XB'+41	LT	40	--	--	--	INSIDE RAMP SHOULDER
50'XC'+00 - 72'XC'+82	LT	180	--	--	--	OUTSIDE RAMP SHOULDER
63'XC'+69 - 72'XC'+90	RT	40	--	--	--	INSIDE RAMP SHOULDER
70'XD'+88 - 85'XD'+09	LT	110	--	--	--	INSIDE RAMP SHOULDER
71'XD'+28 - 80'XD'+49	RT	40	--	--	--	OUTSIDE RAMP SHOULDER
10'JA'+56 - 19'JA'+36	LT	40	--	--	--	INSIDE RAMP SHOULDER
11'JA'+26 - 32'JA'+74	RT	170	--	--	--	OUTSIDE RAMP SHOULDER
30'JB'+00 - 46'JB'+70	RT	130	--	--	--	OUTSIDE RAMP SHOULDER
34'JB'+60 - 46'JB'+70	LT	50	--	--	--	INSIDE RAMP SHOULDER
50'JC'+00 - 71'JC'+51	LT	170	--	--	--	OUTSIDE RAMP SHOULDER
63'JC'+45 - 72'JC'+16	RT	40	--	--	--	INSIDE RAMP SHOULDER
70'JD'+64 - 87'JD'+41	LT	130	--	--	--	OUTSIDE RAMP SHOULDER
70'JD'+84 - 82'JD'+79	RT	50	--	--	--	INSIDE RAMP SHOULDER
PROJECT		--	--	--	150	CONCRETE REPAIR/REPLACEMENT AREAS
TOTALS			6,810	780	150	

NOTE: BASE AGGREGATE OPEN GRADED ITEM IS FOR CONCRETE REPAIR/REPLACEMENT AREAS REQUIRING SUBGRADE IMPROVEMENTS

CONCRETE PAVEMENT REHABILITATION ITEMS

STATION - STATION	LOCATION	415.0100	416.0610	416.0620	416.0750.S	416.0752.S	416.0754.S	416.0756.S	416.0758.S	416.1710	416.1720	465.0110	690.0150*	690.0250
		CONCRETE	DRILLED	DRILLED	PARTIAL DEPTH REPAIR					CONCRETE	CONCRETE	ASPHALTIC	690.0150*	690.0250
		PAVEMENT	TIE	DOWEL	JOINT	CRACK	SURFACE	EDGE	FULL DEPTH	PAVEMENT	PAVEMENT	SURFACE	SAWING	SAWING
		10-INCH	BARS	BARS	REPAIR	REPAIR	REPAIR	REPAIR	ADJUSTMENT	REPAIR	REPLACEMENT	PATCHING	ASPHALT	CONCRETE
		SY	EACH	EACH	LF	LF	SF	LF	SF	SY	SY	TON	LF	LF
CAT 0010														
135'EB'+18 - 185'EB'+00	DRIVING LANE	--	120	120	10	--	13	10	6	--	250	--	--	470
135'EB'+18 - 185'EB'+00	PASSING LANE	--	32	80	94	10	43	--	45	--	330	2	190	200
185'EB'+00 - 239'EB'+00	DRIVING LANE	--	96	100	10	10	23	--	8	--	300	--	--	380
185'EB'+00 - 239'EB'+00	PASSING LANE	--	40	64	240	43	55	--	38	20	230	2	210	200
239'EB'+00 - 293'EB'+00	DRIVING LANE	--	498	378	17	79	71	--	27	--	1,330	--	--	1,775
239'EB'+00 - 293'EB'+00	PASSING LANE	--	176	240	142	124	59	--	77	--	860	7	720	800
293'EB'+00 - 347'EB'+00	DRIVING LANE	--	208	340	10	38	72	--	26	--	750	--	--	1,000
293'EB'+00 - 347'EB'+00	PASSING LANE	--	80	144	147	100	30	10	69	--	350	3	295	420
347'EB'+00 - 401'EB'+00	DRIVING LANE	--	8	20	10	--	--	--	3	--	30	--	--	50
347'EB'+00 - 401'EB'+00	PASSING LANE	--	--	--	135	29	10	--	9	--	--	--	--	--
401'EB'+00 - 455'EB'+00	DRIVING LANE	--	240	220	10	70	18	--	14	--	690	--	--	910
401'EB'+00 - 455'EB'+00	PASSING LANE	--	128	192	87	11	19	--	35	--	500	4	420	610
131'WB'+83 - 185'WB'+00	DRIVING LANE	--	152	200	17	95	46	--	24	--	570	--	--	660
131'WB'+83 - 185'WB'+00	PASSING LANE	--	8	64	234	61	29	--	79	--	130	1	105	120
185'WB'+00 - 239'WB'+00	DRIVING LANE	--	304	240	--	38	31	10	11	--	750	--	--	1,100
185'WB'+00 - 239'WB'+00	PASSING LANE	--	48	176	16	37	16	--	10	--	460	4	380	385
239'WB'+00 - 293'WB'+00	DRIVING LANE	--	88	100	11	10	18	--	7	--	340	--	--	360
239'WB'+00 - 293'WB'+00	PASSING LANE	--	16	48	127	30	31	--	13	--	110	1	85	115
293'WB'+00 - 347'WB'+00	DRIVING LANE	--	40	100	22	26	113	--	46	--	150	--	--	240
293'WB'+00 - 347'WB'+00	PASSING LANE	--	--	16	68	21	60	--	44	--	30	1	25	25
347'WB'+00 - 401'WB'+00	DRIVING LANE	--	88	120	29	57	10	--	24	--	330	--	--	390
347'WB'+00 - 401'WB'+00	PASSING LANE	--	8	16	27	24	10	--	12	--	60	1	45	45
401'WB'+00 - 455'WB'+00	DRIVING LANE	--	80	60	10	24	22	--	8	--	180	--	--	285
401'WB'+00 - 455'WB'+00	PASSING LANE	--	16	16	13	10	23	--	14	--	100	1	85	65
10'XA'+00 - 32'XA'+73	LT & RT	--	--	--	29	157	30	--	60	--	--	--	--	--
30'XB'+00 - 45'XB'+35	LT & RT	--	8	154	22	13	22	--	15	--	230	--	--	240
50'XC'+00 - 73'XC'+84	LT & RT	--	100	190	25	25	58	--	22	--	550	--	--	580
70'XD'+00 - 85'XD'+09	LT & RT	--	40	22	41	26	42	--	30	20	40	--	--	125
10'JA'+00 - 32'JA'+74	LT & RT	--	96	154	18	13	77	--	31	20	430	--	--	465
30'JB'+00 - 47'JB'+09	LT & RT	--	8	66	10	48	26	--	12	--	110	--	--	120
50'JC'+00 - 72'JC'+56	LT & RT	--	--	--	10	17	76	--	28	--	--	--	--	--
70'JD'+00 - 87'JD'+41	LT & RT	--	24	20	10	22	37	10	18	20	100	--	--	145
UNDISTRIBUTED	--	500	400	590	249	192	180	80	135	500	1,130	23	380	1,850
TOTALS		500	3,150	4,250	1,900	1,460	1,370	120	1,000	580	11,420	50	2,940	14,130

*ADDITIONAL QUANTITIES LOCATED ELSEWHERE
NOTES: QUANTITIES FOR MAINLINE PAVEMENT REPAIRS ARE DIVIDED INTO APPROXIMATELY 5000+ FOOT SEGMENTS
DRILLED TIE BARS FOR ADJACENT LANES ARE INCLUDED WITHIN DRIVING LANE QUANTITIES

RUMBLE STRIP ITEMS

STATION - STATION	LOCATION	416.1110	465.0400	COMMENTS
		CONCRETE SHOULDER	ASPHALTIC SHOULDER	
		RUMBLE STRIPS	RUMBLE STRIPS	
		LF	LF	
CAT 0010				
135'EB'+18 - 140'EB'+80	RT	570	--	DRIVING LANE SHOULDER
146'EB'+84 - 221'EB'+41	RT	7,460	--	DRIVING LANE SHOULDER
148'EB'+00 - 426'EB'+74	LT	--	27,880	PASSING LANE SHOULDER
227'EB'+07 - 246'EB'+12	RT	1,910	--	DRIVING LANE SHOULDER
253'EB'+29 - 412'EB'+09	RT	15,880	--	DRIVING LANE SHOULDER
417'EB'+63 - 426'EB'+88	RT	930	--	DRIVING LANE SHOULDER
429'EB'+00 - 455'EB'+00	LT	--	2,600	PASSING LANE SHOULDER
429'EB'+00 - 438'EB'+45	RT	950	--	DRIVING LANE SHOULDER
445'EB'+85 - 455'EB'+00	RT	920	--	DRIVING LANE SHOULDER
135'WB' +75 - 139'WB'+60	LT	390	--	DRIVING LANE SHOULDER
138'WB'+25 - 426'WB'+43	RT	--	28,820	PASSING LANE SHOULDER
145'WB'+13 - 219'WB'+86	LT	7,480	--	DRIVING LANE SHOULDER
227'WB'+55 - 247'WB'+37	LT	1,990	--	DRIVING LANE SHOULDER
252'WB'+94 - 409'WB'+46	LT	15,660	--	DRIVING LANE SHOULDER
416'WB'+91 - 426'WB'+26	LT	940	--	DRIVING LANE SHOULDER
428'WB'+50 - 455'WB'+00	RT	--	2,650	PASSING LANE SHOULDER
428'WB'+50 - 437'WB'+37	LT	890	--	DRIVING LANE SHOULDER
443'WB'+38 - 455'WB'+00	LT	1,170	--	DRIVING LANE SHOULDER
TOTALS		57,140	61,950	

DIAMOND GRINDING CONCRETE PAVEMENT

STATION - STATION		LOCATION	SPV.0180.01 SY
CAT 0010			
135'EB'+18 - 185'EB'+00	DRIVING LANE	250	
135'EB'+18 - 185'EB'+00	PASSING LANE	330	
185'EB'+00 - 239'EB'+00	DRIVING LANE	300	
185'EB'+00 - 239'EB'+00	PASSING LANE	250	
239'EB'+00 - 293'EB'+00	DRIVING LANE	1,330	
239'EB'+00 - 293'EB'+00	PASSING LANE	860	
293'EB'+00 - 347'EB'+00	DRIVING LANE	750	
293'EB'+00 - 347'EB'+00	PASSING LANE	350	
347'EB'+00 - 401'EB'+00	DRIVING LANE	30	
401'EB'+00 - 455'EB'+00	DRIVING LANE	690	
401'EB'+00 - 455'EB'+00	PASSING LANE	500	
131'WB'+83 - 185'WB'+00	DRIVING LANE	570	
131'WB'+83 - 185'WB'+00	PASSING LANE	130	
185'WB'+00 - 239'WB'+00	DRIVING LANE	750	
185'WB'+00 - 239'WB'+00	PASSING LANE	460	
239'WB'+00 - 293'WB'+00	DRIVING LANE	340	
239'WB'+00 - 293'WB'+00	PASSING LANE	110	
293'WB'+00 - 347'WB'+00	DRIVING LANE	150	
293'WB'+00 - 347'WB'+00	PASSING LANE	30	
347'WB'+00 - 401'WB'+00	DRIVING LANE	330	
347'WB'+00 - 401'WB'+00	PASSING LANE	60	
401'WB'+00 - 455'WB'+00	DRIVING LANE	180	
401'WB'+00 - 455'WB'+00	PASSING LANE	100	
30'XB'+00 - 45'XB'+35	LT & RT	230	
50'XC'+00 - 73'XC'+84	LT & RT	550	
70'XD'+00 - 85'XD'+09	LT & RT	60	
10'JA'+00 - 32'JA'+74	LT & RT	450	
30'JB'+00 - 47'JB'+09	LT & RT	110	
70'JD'+00 - 87'JD'+41	LT & RT	120	
UNDISTRIBUTED	--	1,630	
TOTAL		12,000	

NOTE: DIAMOND GRINDING BID ITEM FOR CONCRETE PAVEMENT REPAIR
AND CONCRETE PAVEMENT REPLACEMENT AREAS

HMA AND ASPHALTIC ITEMS

		415.6000.S		460.5224	465.0315	
		ROUT AND SEAL		HMA PAVEMENT	ASPHALTIC FLUMES	
		LF	TON	4 LT 58-28 S	SY	
STATION - STATION		LOCATION				COMMENTS
CAT 0010						
135'EB'+18 - 142'EB'+76		RT	570	140	--	DRIVING LANE SHOULDER
140'EB'+80 - 152'EB'+84		RT	1,210	130	--	STH 29 EB ENTRANCE RAMP SHOULDER
148'EB'+00 - 230'EB'+00		LT	8,200	1,060	--	PASSING LANE SHOULDER
152'EB'+84 - 222'EB'+41		RT	6,960	1,200	--	DRIVING LANE SHOULDER
158'EB'+08 - 158'EB'+80		LT	--	50	--	MAINTENANCE CROSSOVER
213'EB'+26 - 213'EB'+98		LT	--	50	--	MAINTENANCE CROSSOVER
227'EB'+07 - 246'EB'+12		RT	2,460	330	--	DRIVING LANE SHOULDER
230'EB'+00 - 426'EB'+74		LT	19,680	1,690	--	PASSING LANE SHOULDER
259'EB'+29 - 413'EB'+09		RT	15,380	2,640	--	DRIVING LANE SHOULDER
263'EB'+68 - 264'EB'+42		LT	--	50	--	MAINTENANCE CROSSOVER
341'EB'+88 - 342'EB'+62		LT	--	50	--	MAINTENANCE CROSSOVER
401'EB'+76 - 402'EB'+50		LT	--	50	--	MAINTENANCE CROSSOVER
417'EB'+63 - 426'EB'+88		RT	1,160	160	--	DRIVING LANE SHOULDER
429'EB'+00 - 455'EB'+00		LT	2,600	230	--	PASSING LANE SHOULDER
429'EB'+00 - 438'EB'+45		RT	1,220	170	--	DRIVING LANE SHOULDER
451'EB'+85 - 455'EB'+00		RT	320	60	--	DRIVING LANE SHOULDER
135'WB'+75 - 141'WB'+97		LT	390	140	--	DRIVING LANE SHOULDER
138'WB'+25 - 230'WB'+00		RT	9,180	1,180	--	PASSING LANE SHOULDER
139'WB'+60 - 144'WB'+13		LT	460	50	--	STH 29 WB EXIT RAMP SHOULDER
144'WB'+13 - 213'WB'+86		LT	6,980	1,200	--	DRIVING LANE SHOULDER
227'WB'+55 - 247'WB'+37		LT	2,450	340	--	DRIVING LANE SHOULDER
230'WB'+00 - 426'WB'+43		RT	19,650	1,690	--	PASSING LANE SHOULDER
251'WB'+94 - 403'WB'+46		LT	15,160	2,600	--	DRIVING LANE SHOULDER
416'WB'+91 - 426'WB'+26		LT	1,300	160	--	DRIVING LANE SHOULDER
428'WB'+50 - 455'WB'+00		RT	2,650	230	--	PASSING LANE SHOULDER
428'WB'+50 - 437'WB'+37		LT	1,150	160	--	DRIVING LANE SHOULDER
442'WB'+38 - 455'WB'+00		LT	1,270	220	--	DRIVING LANE SHOULDER
11'XA'+18 - 21'XA'+67		LT	1,050	100	25	INSIDE RAMP SHOULDER AND RAMP GORE
11'XA'+27 - 32'XA'+73		RT	2,150	230	--	OUTSIDE RAMP SHOULDER
30'XB'+00 - 44'XB'+77		RT	1,480	160	25	OUTSIDE RAMP SHOULDER
32'XB'+28 - 44'XB'+55		LT	1,230	130	20	INSIDE RAMP SHOULDER AND RAMP GORE
50'XC'+00 - 72'XC'+82		LT	2,290	250	--	OUTSIDE RAMP SHOULDER
61'XC'+29 - 72'XC'+92		RT	1,170	100	30	INSIDE RAMP SHOULDER AND RAMP GORE
70'XD'+83 - 85'XD'+09		LT	1,430	160	15	INSIDE RAMP SHOULDER AND RAMP GORE
71'XD'+25 - 82'XD'+81		RT	1,160	120	15	OUTSIDE RAMP SHOULDER
10'JA'+56 - 22'JA'+06		LT	1,150	110	--	INSIDE RAMP SHOULDER AND RAMP GORE
11'JA'+22 - 32'JA'+74		RT	2,150	230	15	OUTSIDE RAMP SHOULDER
30'JB'+00 - 46'JB'+70		RT	1,670	180	15	OUTSIDE RAMP SHOULDER
32'JB'+27 - 46'JB'+70		LT	1,450	140	--	INSIDE RAMP SHOULDER AND RAMP GORE
50'JC'+00 - 71'JC'+54		LT	2,160	240	20	OUTSIDE RAMP SHOULDER
59'JC'+87 - 72'JC'+16		RT	1,230	120	--	INSIDE RAMP SHOULDER AND RAMP GORE
70'JD'+60 - 87'JD'+41		LT	1,680	180	15	OUTSIDE RAMP SHOULDER
70'JD'+84 - 85'JD'+02		RT	1,420	140	--	INSIDE RAMP SHOULDER AND RAMP GORE
TOTALS			145,270	18,620	195	

NOTE: FOR ASPHALTIC SURFACE PATCHING ITEM, REFER TO CONCRETE PAVEMENT REHABILITATION ITEMS

3

APRON ENDWALLS FOR CULVERT PIPE

STATION	LOCATION	522.1036	522.1042	633.5200	SPV.0060.05	COMMENTS
		REINFORCED CONCRETE	REINFORCED CONCRETE	MARKERS	JOINT TIES FOR	
		36-INCH	42-INCH	CULVERT END	CONCRETE PIPES	
		EACH	EACH	EACH	EACH	
CAT 0010						
174'WB'+08	LT	1	--	1	6	TIE LAST THREE JOINTS
204'WB'+84	LT	--	1	1	6	TIE LAST THREE JOINTS
TOTALS		1	1	2	12	

WATER

LOCATION	624.0100
	MGAL
CAT 0010	
PROJECT	95
TOTAL	95

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1905	628.1910
	EACH	EMERGENCY EACH
CAT 0010		
PROJECT	6	4
TOTALS	6	4

3

EROSION CONTROL ITEMS

STATION - STATION	LOCATION	628.1504	628.1520	628.2004	628.2006	628.7005	628.7015	628.7504	628.7570	COMMENTS
		SILT FENCE	SILT FENCE	EROSION MAT	EROSION MAT	INLET	INLET	TEMPORARY	ROCK	
		LF	LF	CLASS I	URBAN CLASS I	PROTECTION	PROTECTION	DITCH	BAGS	
		LF	LF	TYPE B	TYPE A	TYPE A	TYPE C	CHECKS	EACH	
CAT 0010										
158'EB'+03 - 159'EB'+43	LT	50	50	467	--	1	--	12	15	MAINTENANCE CROSSOVER
212'EB'+85 - 215'EB'+12	LT	50	50	856	--	1	--	12	15	MAINTENANCE CROSSOVER
263'EB'+61 - 264'EB'+42	LT	50	50	245	--	1	--	12	15	MAINTENANCE CROSSOVER
341'EB'+66 - 342'EB'+62	LT	50	50	334	--	1	--	12	15	MAINTENANCE CROSSOVER
401'EB'+76 - 402'EB'+50	LT	100	100	200	--	--	--	--	30	MAINTENANCE CROSSOVER
173'WB'+60 - 174'WB'+10	LT	150	150	--	78	--	--	--	15	APRON ENDWALL REPLACEMENT
204'WB'+71 - 205'WB'+21	LT	150	150	--	56	--	--	--	15	APRON ENDWALL REPLACEMENT
99'X'+50 - 100'X'+15	RT	75	75	52	--	--	--	--	15	CTH X RAMP GATE
107'X'+20	LT	--	--	--	--	--	1	--	--	CURB INLET LOCATION
11'XA'+00 - 11'XA'+40	LT	50	50	14	--	--	--	--	15	CTH X RAMP GATE
11'XA'+17	LT	--	--	8	--	--	--	--	--	ASPHAL TIC FLUME
108'X'+00 - 108'X'+80	LT	125	125	16	--	--	--	--	15	RAMP GATE
44'XB'+55	LT	--	--	5	--	--	--	--	--	ASPHAL TIC FLUME
44'XB'+73	RT	--	--	4	--	--	--	--	--	ASPHAL TIC FLUME
72'XC'+80 - 73'XC'+25	RT	75	75	206	--	--	--	--	15	RAMP GATE
72'XC'+72	RT	--	--	13	--	--	--	--	--	ASPHAL TIC FLUME
70'XD'+83	LT	--	--	3	--	--	--	--	--	ASPHAL TIC FLUME
71'XD'+25	RT	--	--	7	--	--	--	--	--	ASPHAL TIC FLUME
10'JA'+75 - 11'JA'+05	LT	50	50	14	--	--	--	--	15	RAMP GATE
11'JA'+22	RT	--	--	5	--	--	--	--	--	ASPHAL TIC FLUME
46'JB'+70	RT	--	--	8	--	--	--	--	--	ASPHAL TIC FLUME
71'JC'+54	LT	--	--	10	--	--	--	--	--	ASPHAL TIC FLUME
71'JC'+75 - 72'JC'+05	LT	50	50	18	--	--	--	--	15	RAMP GATE
70'JD'+60	LT	--	--	7	--	--	--	--	--	ASPHAL TIC FLUME
UNDISTRIBUTED	--	275	275	628	36	1	3	12	50	
TOTALS		1,300	1,300	3,120	170	5	4	60	260	

NOTE: ROCK BAGS ARE FOR SILT FENCE RELIEF

SOD WATER

LOCATION	631.0300
	MGAL
CAT 0010	
PROJECT	75
TOTAL	75

DELINEATOR ITEMS

		633.0100	633.0500		
		POSTS STEEL EACH	REFLECTORS		
STATION - STATION	LOCATION		(WHITE)	(YELLOW)	
CAT 0010					
135'EB'+18 - 455'EB'+00	LT & RT	98	101	10	
131'WB'+83 - 455'WB'+00	LT & RT	97	96	10	
10'XA'+47 - 32'XA'+73	RT	22	32	--	
30'XB'+00 - 45'XB'+12	RT	14	16	--	
50'XC'+00 - 73'XC'+61	LT	23	31	--	
70'XD'+45 - 85'XD'+09	LT	15	17	--	
10'JA'+34 - 32'JA'+74	RT	22	31	--	
30'JB'+00 - 46'JB'+93	RT	16	18	--	
50'JC'+00 - 72'JC'+42	LT	22	30	--	
70'JD'+37 - 87'JD'+41	LT	16	18	--	
TOTALS		345	390	20	
			410		

410

TYPE II SIGNS AND SUPPORTS

					637.2210	637.2230	634.0614	634.0616*	634.0618	634.0620	638.2602	638.3000	
SIGN NO.	SIGN CODE	W	X	H	SIGNS	SIGNS	POSTS	POSTS	POSTS	POSTS	REMOVING	REMOVING	COMMENTS
					TYPE II	TYPE II	WOOD	WOOD	WOOD	WOOD	SIGNS	SMALL SIGN	
CAT 0010													
					REFLECTIVE H	REFLECTIVE F	4x6x14	4x6x16	4x6x18	4x6x20	TYPE II	SUPPORTS	
					SF	SF	EACH	EACH	EACH	EACH	EACH	EACH	
1-3	W13-3	48	X	60	--	20.00	--	--	--	1	1	1	
1-5	--	--	X	--	--	--	--	--	--	--	1	1	
1-6	R3-4B	36	X	48	12.00	--	--	--	1	--	--	--	
1-7	--	--	X	--	--	--	--	--	--	--	1	1	
1-8	R3-4B	36	X	48	12.00	--	--	--	1	--	--	--	
1-9	J4-1	36	X	54	13.50	--	--	--	1	--	1	1	
2-1	R2-1	48	X	60	20.00	--	--	--	--	2	1	1	
2-2	D12-5	60	X	66	27.50	--	--	--	--	2	1	2	
2-5	--	--	X	--	--	--	--	--	--	--	2	2	
3-1	D10-3	12	X	48	4.00	--	--	--	1	--	1	1	
3-2	D10-3	12	X	48	4.00	--	--	--	1	--	1	1	
3-6	R2-1	48	X	60	20.00	--	--	--	--	2	1	1	
3-7	J4-1	36	X	54	13.50	--	--	--	1	--	1	1	
3-8	R3-4B	36	X	48	12.00	--	--	--	1	--	--	--	
3-9	--	--	X	--	--	--	--	--	--	--	1	1	
3-10	R3-4B	36	X	48	12.00	--	--	--	1	--	--	--	
4-1	D4-54R	60	X	48	20.00	--	--	--	1	1	--	--	
4-2	E5-1A	90	X	60	37.50	--	--	--	--	2	1	2	
4-3	W4-1	48	X	48	--	16.00	--	--	2	--	1	1	
4-4	W4-1	48	X	48	--	16.00	--	--	2	--	1	1	
4-5	D10-3	12	X	48	4.00	--	--	--	1	--	1	1	
4-6	D10-3	12	X	48	4.00	--	--	--	1	--	1	1	
4-7	E5-1A	90	X	60	37.50	--	--	--	--	2	1	2	
4-8	R5-57	36	X	36	9.00	--	--	1	--	--	1	1	
4-9	R1-2	36	X	31	3.88	--	--	1	--	--	--	--	
4-10	--	--	X	--	--	--	--	--	--	--	1	1	
4-11	R5-1A	36	X	24	6.00	--	--	1	--	--	1	1	
4-12	R5-1A	36	X	24	6.00	--	--	--	--	--	--	--	MOUNT ON SAME POST AS 4-14
4-13	D7-95R (MDD)	102	X	36	25.50	--	--	--	1	1	1	2	
4-14	J13-1	24	X	45	7.50	--	--	1	--	--	1	1	MOUNT ON SAME POST AS 4-12
4-15	W3-3	36	X	36	--	9.00	--	--	1	--	1	1	
4-16	W3-3	36	X	36	--	9.00	--	--	1	--	1	1	
4-17	D4-56L	36	X	36	9.00	--	--	1	--	--	--	--	
4-18	R8-55	42	X	36	10.50	--	--	1	--	--	1	1	
4-19	R8-55	42	X	36	10.50	--	--	1	--	--	1	1	
4-20	D4-56R	36	X	36	9.00	--	--	1	--	--	--	--	
4-21	R3-8P	54	X	30	11.25	--	--	2	--	--	1	2	
4-22	R3-8P	54	X	30	11.25	--	--	2	--	--	1	2	
4-23	D7-95L	66	X	36	16.50	--	--	1	1	--	1	2	MOUNT ON SAME POST AS 4-24
4-24	R5-1A	36	X	24	6.00	--	--	--	--	--	--	--	MOUNT ON SAME POST AS 4-23
4-25	R5-1A	36	X	24	6.00	--	--	1	--	--	1	--	
4-26	JH-1	24	X	45	7.50	--	--	1	--	--	1	1	
4-28	--	--	X	--	--	--	--	--	--	--	1	1	
4-29	R1-2	36	X	31	3.88	--	--	1	--	--	--	--	
4-30	R5-57	36	X	36	9.00	--	--	1	--	--	1	1	
5-3	--	--	X	--	--	--	--	--	--	--	2	2	
5-4	R3-4B	36	X	48	12.00	--	--	--	1	--	--	--	
SUBTOTALS					433.76	70.00	0	17	20	13	37	43	
* ADDITIONAL QUANTITIES LOCATED ELSEWHERE													

TYPE II SIGNS AND SUPPORTS (CONTINUED)

SIGN NO.	SIGN CODE	W	X	H	637.2210	637.2230	634.0614	634.0616*	634.0618	634.0620	638.2602	638.3000	COMMENTS
					SIGNS	SIGNS	POSTS	POSTS	POSTS	POSTS	REMOVING	REMOVING	
					TYPE II REFLECTIVE H SF	TYPE II REFLECTIVE F SF	WOOD 4x6x14 EACH	WOOD 4x6x16 EACH	WOOD 4x6x18 EACH	WOOD 4x6x20 EACH	SIGNS TYPE II EACH	SMALL SIGN SUPPORTS EACH	
CAT 0010													
5-5	J4-1	36	X	54	13.50	--	--	--	1	--	1	1	
5-6	--	--	X	--	--	--	--	--	--	--	1	1	
5-7	R3-4B	36	X	48	12.00	--	--	--	1	--	--	--	
5-8	R2-1	48	X	60	20.00	--	--	--	--	2	1	1	
5-10	--	--	X	--	--	--	--	--	--	--	2	2	
6-2	D10-3	12	X	48	4.00	--	--	--	1	--	1	1	
6-3	D10-3	12	X	48	4.00	--	--	--	1	--	1	1	
7-1	R3-4B	36	X	48	12.00	--	--	--	1	--	--	--	
7-2	--	--	X	--	--	--	--	--	--	--	1	1	
7-3	R3-4B	36	X	48	12.00	--	--	--	1	--	--	--	
7-4	D10-3	12	X	48	4.00	--	--	--	1	--	1	1	
7-5	D10-3	12	X	48	4.00	--	--	--	1	--	1	1	
7-10	--	--	X	--	--	--	--	--	--	--	2	2	
7-11	--	--	X	--	--	--	--	--	--	--	2	2	
7-13	R2-1	48	X	60	20.00	--	--	--	--	2	1	1	
7-14	J4-1	36	X	54	13.50	--	--	--	1	--	1	1	
8-1	R3-4B	36	X	48	12.00	--	--	--	1	--	--	--	
8-2	--	--	X	--	--	--	--	--	--	--	1	1	
8-3	R3-4B	36	X	48	12.00	--	--	--	1	--	--	--	
8-4	D10-3	12	X	48	4.00	--	--	--	1	--	1	1	
8-5	D10-3	12	X	48	4.00	--	--	--	1	--	1	1	
8-8	E5-1A	90	X	60	37.50	--	--	--	--	2	1	2	
8-10	W4-1	48	X	48	--	16.00	--	--	2	--	1	1	
8-11	W5-52L	18	X	54	--	6.75	1	--	--	--	1	1	
8-12	W5-52L	18	X	54	--	6.75	1	--	--	--	1	1	
8-13	R5-57	36	X	36	9.00	--	--	1	--	--	1	1	
8-14	R5-1A	36	X	24	6.00	--	--	1	--	--	1	1	
8-15	R5-1A	36	X	24	6.00	--	--	--	--	--	1	--	MOUNT ON SAME POST AS 8-16
8-16	D7-95R	66	X	36	16.50	--	--	2	--	--	1	2	MOUNT ON SAME POST AS 8-15
8-17	W3-1	36	X	36	--	9.00	--	1	--	--	1	1	
8-18	J13-1	24	X	45	7.50	--	--	1	--	--	1	1	MOUNT ON SAME POST AS 8-19
8-19	R5-1A	36	X	24	6.00	--	--	--	--	--	--	--	MOUNT ON SAME POST AS 8-18
8-20	R5-1A	36	X	24	6.00	--	--	1	--	--	1	1	
8-21	W5-52R	18	X	54	--	6.75	1	--	--	--	1	1	
8-22	W5-52R	18	X	54	--	6.75	1	--	--	--	1	1	
9-1	W4-1	48	X	48	--	16.00	--	--	2	--	1	1	
9-3	E5-1A	90	X	60	37.50	--	--	--	--	2	1	2	
9-6	W3-1	36	X	36	--	9.00	--	1	--	--	1	1	
9-7	R5-57	36	X	36	9.00	--	--	1	--	--	1	1	
SUBTOTALS					292.00	77.00	4	9	17	8	36	38	
PROJECT TOTALS					725.76	147.00	4	26	37	21	73	81	

* ADDITIONAL QUANTITIES LOCATED ELSEWHERE

TYPE I SIGNS AND SUPPORTS

			635.0200			636.0100	636.0500			638.3100		
			SIGN			SIGN	SIGN	637.1220	638.2601	REMOVING		
			SUPPORTS			SUPPORTS	SUPPORTS	SIGNS	REMOVING	STRUCTURAL		
			STEEL HS			CONCRETE	STEEL	TYPE I	SIGNS	STEEL SIGN		
			LB			MASONRY	REINFORCEMENT	REFLECTIVE SH	TYPE I	SUPPORTS		
SIGN	SIGN		W	X	H			SF	EACH	EACH		
NO.	CODE					CY	LB					
CAT 0010												
1-1	E4-1A	240	X	132	1,030	1.6	98	220.00	1	2	MOUNT WITH 1-2	
1-2	E1-5	120	X	30	--	--	--	25.00	--	--	MOUNT WITH 1-1	
1-4	E9-1	144	X	54	525	1.2	68	54.00	1	2		
2-3	E1-1A	312	X	156	1,455	1.8	112	338.00	1	2	MOUNT WITH 2-4	
2-4	E1-5	120	X	30	--	--	--	25.00	--	--	MOUNT WITH 2-3	
2-6	D4-52	156	X	126	705	1.6	98	136.50	--	--		
2-9	E1-1A	192	X	162	800	1.6	98	216.00	1	2		
3-3	E10-61	144	X	54	530	1.2	68	54.00	1	2		
3-4	E1-1A	204	X	162	1,030	1.6	98	229.50	1	2	MOUNT WITH 3-5	
3-5	E1-5	120	X	30	--	--	--	25.00	--	--	MOUNT WITH 3-4	
3-11	E4-1A	348	X	126	1,080	1.8	100	304.50	1	2	MOUNT WITH 3-12	
3-12	E1-5	120	X	30	--	--	--	25.00	--	--	MOUNT WITH 3-11	
5-1	E4-1A	348	X	126	1,230	1.8	100	304.50	1	2	MOUNT WITH 5-2	
5-2	E1-5	120	X	30	--	--	--	25.00	--	--	MOUNT WITH 5-1	
5-9	D2-3	192	X	84	965	1.6	98	112.00	1	2		
6-1	E3-1	264	X	84	865	1.6	98	154.00	1	2		
6-6	E1-1A	312	X	156	1,590	1.8	112	338.00	1	2	MOUNT WITH 6-7	
6-7	E1-5	120	X	30	--	--	--	25.00	--	--	MOUNT WITH 6-6	
6-8	E10-61	144	X	54	545	1.2	68	54.00	1	2		
6-9	E9-1	144	X	78	610	1.2	68	78.00	1	2		
7-6	E1-1A	144	X	120	1,000	1.6	98	120.00	1	2	MOUNT WITH 7-7	
7-7	E1-5	120	X	30	--	--	--	25.00	--	--	MOUNT WITH 7-6	
7-12	E8-1	288	X	108	990	1.6	98	216.00	1	2		
8-6	E4-1A	180	X	90	925	1.6	98	112.50	1	2	MOUNT WITH 8-7	
8-7	E1-5	120	X	30	--	--	--	25.00	--	--	MOUNT WITH 8-6	
9-4	E4-1A	180	X	90	910	1.6	98	112.50	1	2	MOUNT WITH 9-5	
9-5	E1-5	120	X	30	--	--	--	25.00	--	--	MOUNT WITH 9-4	
TOTALS						16,785	28.0	1676	3,379.00	17	34	

FOLDING SIGN ITEMS

					637.2215	634.0616*		
					SIGNS TYPE II	POSTS		
					REFLECTIVE H	WOOD		
					FOLDING	4x6x16		
SIGN	SIGN	W	X	H	SF	EACH	COMMENTS	
NO.	CODE							
CAT 0010								
XA-1	R11-54F	48	X	30	10.00	1	CTH X ENTRANCE RAMP TO STH 29 EB	
XA-2	R11-54F	48	X	30	10.00	1	CTH X ENTRANCE RAMP TO STH 29 EB	
XA-3	R11-54F	48	X	30	10.00	1	RIGHT TURN ADVANCE FOR CTH X ENTRANCE RAMP TO STH 29 EB	
XA-4	R11-54F	48	X	30	10.00	--	LEFT TURN ADVANCE FOR CTH X ENTRANCE RAMP TO STH 29 WB	
XC-1	R11-54F	48	X	30	10.00	1	CTH X ENTRANCE RAMP TO STH 29 WB	
XC-2	R11-54F	48	X	30	10.00	1	CTH X ENTRANCE RAMP TO STH 29 WB	
XC-3	R11-54F	48	X	30	10.00	--	LEFT TURN ADVANCE FOR CTH X ENTRANCE RAMP TO STH 29 EB	
XC-4	R11-54F	48	X	30	10.00	1	RIGHT TURN ADVANCE FOR CTH X ENTRANCE RAMP TO STH 29 WB	
JA-1	R11-54F	48	X	30	10.00	1	CTH J ENTRANCE RAMP TO STH 29 EB	
JA-2	R11-54F	48	X	30	10.00	1	CTH J ENTRANCE RAMP TO STH 29 EB	
JA-3	R11-54F	48	X	30	10.00	1	RIGHT TURN ADVANCE FOR CTH J ENTRANCE RAMP TO STH 29 EB	
JA-4	R11-54F	48	X	30	10.00	1	LEFT TURN ADVANCE FOR CTH J ENTRANCE RAMP TO STH 29 EB	
JC-1	R11-54F	48	X	30	10.00	1	CTH J ENTRANCE RAMP TO STH 29 WB	
JC-2	R11-54F	48	X	30	10.00	1	CTH J ENTRANCE RAMP TO STH 29 WB	
JC-3	R11-54F	48	X	30	10.00	1	LEFT TURN ADVANCE FOR CTH J ENTRANCE RAMP TO STH 29 WB	
JC-4	R11-54F	48	X	30	10.00	1	RIGHT TURN ADVANCE FOR CTH J ENTRANCE RAMP TO STH 29 WB	
TOTALS					160.00	14		

* ADDITIONAL QUANTITIES LOCATED ELSEWHERE

TRAFFIC CONTROL ITEMS

		643.0200																SPV.0045.01				
		SURVEILLANCE AND MAINTENANCE (1053-02-65)		643.0300 DRUMS		643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0715 WARNING LIGHTS TYPE C		643.0800 ARROW BOARDS		643.0900 SIGNS		643.1050 SIGNS PCMS		643.3000 DETOUR SIGNS		PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) CELLULAR COMMUNICATIONS		
LOCATION	DAYS	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS
CAT 0010																						
STH 29 EB - STAGE 1	10	--	359	3,590	24	242	48	485	16	160	2	20	44	440	--	--	--	--	--	--		
STH 29 WB - STAGE 1	10	--	359	3,590	24	242	48	485	16	160	2	20	44	440	--	--	--	--	--	--		
STH 29 EB - STAGE 2A	25	--	436	10,905	28	706	56	1,412	26	655	2	50	48	1,200	--	--	--	--	--	--		
STH 29 WB - STAGE 2A	25	--	436	10,905	28	706	56	1,412	26	655	2	50	48	1,200	--	--	--	--	--	--		
STH 29 EB - STAGE 2B	30	--	436	13,086	28	847	56	1,695	26	786	2	60	48	1,440	--	--	--	--	--	--		
STH 29 WB - STAGE 2B	30	--	436	13,086	28	847	56	1,695	26	786	2	60	48	1,440	--	--	--	--	--	--		
STH 29 EB - STAGE 3	15	--	356	5,343	24	364	48	727	13	198	2	30	48	720	--	--	--	--	--	--		
STH 29 WB - STAGE 3	15	--	356	5,343	24	364	48	727	13	198	2	30	48	720	--	--	--	--	--	--		
STH 29 EB - STAGE 4	5	--	439	2,195	28	141	56	282	29	145	2	10	44	220	--	--	--	--	--	--		
STH 29 WB - STAGE 4	5	--	439	2,195	28	141	56	282	29	145	2	10	44	220	--	--	--	--	--	--		
CTH X - RAMP A	5	--	119	595	8	40	16	80	8	40	1	5	20	100	4	20	54	270	--	--		
CTH X - RAMP B	5	--	54	270	5	25	10	50	8	40	1	5	25	125	4	20	38	190	--	--		
CTH X - RAMP C	5	--	46	230	7	35	14	70	8	40	1	5	20	100	4	20	54	270	--	--		
CTH X - RAMP D	5	--	98	490	5	25	10	50	8	40	1	5	25	125	4	20	38	190	--	--		
CTH J - RAMP A	5	--	25	125	5	25	10	50	--	--	--	--	8	40	4	20	54	270	--	--		
CTH J - RAMP B	5	--	10	50	4	20	8	40	--	--	--	--	5	25	4	20	38	190	--	--		
CTH J - RAMP C	5	--	25	125	5	25	10	50	--	--	--	--	8	40	4	20	54	270	--	--		
CTH J - RAMP D	5	--	10	50	4	20	8	40	--	--	--	--	5	25	4	20	38	190	--	--		
PROJECT	135	135	10	1,350	--	--	--	--	--	--	--	--	--	--	2	270	--	--	2	270		
TOTALS		135		73,523		4,816		9,632		4,048		360		8,620		430		1,840		270		

TRAFFIC CONTROL COVERING SIGNS

LOCATION	NUMBER OF CYCLES	NUMBER OF	643.0910	NUMBER OF	643.0920
		TYPE I SIGNS	TYPE I EACH	TYPE II SIGNS	TYPE II EACH
CAT 0010					
STH 29 EB - STAGE 1	1	--	--	4	4
STH 29 WB - STAGE 1	1	--	--	4	4
STH 29 EB - STAGE 2A	1	--	--	4	4
STH 29 WB - STAGE 2A	1	--	--	4	4
STH 29 EB - STAGE 2B	1	--	--	4	4
STH 29 WB - STAGE 2B	1	--	--	4	4
STH 29 EB - STAGE 3	1	--	--	4	4
STH 29 WB - STAGE 3	1	--	--	4	4
STH 29 EB - STAGE 4	1	--	--	4	4
STH 29 WB - STAGE 4	1	--	--	4	4
CTH X - RAMP A	1	--	--	5	5
CTH X - RAMP B	1	1	1	1	1
CTH X - RAMP C	1	--	--	3	3
CTH X - RAMP D	1	1	1	3	3
CTH J - RAMP A	1	--	--	3	3
CTH J - RAMP B	1	1	1	1	1
CTH J - RAMP C	1	--	--	3	3
CTH J - RAMP D	1	1	1	1	1
TOTALS			4		60

TRAFFIC CONTROL SIGNS FIXED MESSAGE

SIGN NO.	LOCATION	W	X	H	643.1000 SF	COMMENTS
CAT 0010						
FM-1	STH 29 EB & WB	108	X	18	13.5	COVER HOSPITAL EXIT SIGN
TOTAL					13.5	

NOTE: USE FOR STH 29 EB RAMP B CLOSURE AND THE STH 29 WB RAMP D CLOSURE

PAVEMENT MARKING ITEMS

STATION - STATION	LOCATION	646.0600* REMOVING PAVEMENT MARKINGS LF	646.0106 EPOXY 4-INCH		646.0126 EPOXY 8-INCH	646.0841.S 646.0843.S GROOVED WET REFLECTIVE CONTRAST TAPE		647.0166 ARROWS	647.0176 ARROWS	647.0186 ARROWS	647.0356 WORDS EPOXY	647.0566 STOP LINE	647.0716 DIAGONAL	647.0746 DIAGONAL	647.0803 AERIAL ENFORCEMENT BARS
			(WHITE)	(YELLOW)	(WHITE)	4-INCH	8-INCH	EPOXY TYPE 2	EPOXY TYPE 3	EPOXY TYPE 4	(ONLY)	EPOXY 18-INCH	EPOXY 8-INCH	EPOXY 24-INCH	EPOXY 24-INCH
			LF	LF	LF	LF	LF	(WHITE)	(WHITE)	(WHITE)	(WHITE)	(WHITE)	(YELLOW)	(YELLOW)	(WHITE)
CAT 0010															
134'EB'+64 - 455'EB'+00	LT & RT	--	--	32,040	--	8,012.5	--	--	--	--	--	--	--	--	--
134'EB'+64 - 140'EB'+34	RT	--	570	--	--	--	--	--	--	--	--	--	--	--	--
140'EB'+34 - 222'EB'+17	RT	--	8,195	--	--	--	--	--	--	--	--	--	--	--	--
140'EB'+34 - 146'EB'+56	RT	--	--	--	--	--	1,255	--	--	--	--	--	--	--	--
222'EB'+17 - 224'EB'+09	RT	--	50	--	--	--	--	--	--	--	--	--	--	--	--
227'EB'+58 - 245'EB'+52	RT	--	1,795	--	--	--	--	--	--	--	--	--	--	--	--
260'EB'+22 - 412'EB'+81	RT	--	15,260	--	--	--	--	--	--	--	--	--	--	--	--
412'EB'+81 - 414'EB'+70	RT	--	50	--	--	--	--	--	--	--	--	--	--	--	--
418'EB'+15 - 437'EB'+95	RT	--	1,980	--	--	--	--	--	--	--	--	--	--	--	--
453'EB'+02 - 455'EB'+00	RT	--	200	--	--	--	--	--	--	--	--	--	--	--	--
131'WB'+75 - 455'WB'+00	LT & RT	--	--	32,325	--	8,087.5	--	--	--	--	--	--	--	--	--
131'WB'+75 - 139'WB'+05	LT	--	730	--	--	--	--	--	--	--	--	--	--	--	--
139'WB'+05 - 212'WB'+93	LT	--	7,390	--	--	--	--	--	--	--	--	--	--	--	--
139'WB'+05 - 142'WB'+64	LT	--	--	--	--	--	710	--	--	--	--	--	--	240	--
142'WB'+64 - 144'WB'+31	LT	--	45	--	--	--	--	--	--	--	--	--	--	--	--
228'WB'+06 - 246'WB'+87	LT	--	1,885	--	--	--	--	--	--	--	--	--	--	--	--
250'WB'+29 - 252'WB'+20	LT	--	50	--	--	--	--	--	--	--	--	--	--	--	--
252'WB'+20 - 402'WB'+12	LT	--	14,995	--	--	--	--	--	--	--	--	--	--	--	--
417'WB'+44 - 437'WB'+24	LT	--	1,980	--	--	--	--	--	--	--	--	--	--	--	--
440'WB'+74 - 442'WB'+66	LT	--	50	--	--	--	--	--	--	--	--	--	--	--	--
442'WB'+66 - 455'WB'+00	LT	--	1,235	--	--	--	--	--	--	--	--	--	--	--	--
11'XA'+14 - 24'XA'+42	LT	--	--	800	--	--	1,085	--	--	--	--	--	--	--	--
11'XA'+27 - 33'XA'+66	LT & RT	--	2,240	--	--	--	--	--	--	--	--	--	--	--	--
29'XB'+76 - 45'XB'+00	LT & RT	--	1,360	--	690	--	--	5	2	--	5	30	55	--	--
31'XB'+68 - 44'XB'+59	LT	--	--	950	--	--	700	--	--	--	--	--	--	240	--
49'XC'+07 - 72'XC'+83	LT & RT	--	2,380	--	--	--	--	--	--	--	--	--	--	--	--
57'XC'+45 - 72'XC'+96	RT	--	--	885	--	--	1,355	--	--	--	--	--	--	--	--
70'XD'+79 - 85'XD'+35	LT & RT	--	1,460	--	270	--	--	--	--	--	--	--	--	--	--
70'XD'+57 - 83'XD'+45	RT	--	--	910	--	--	690	--	--	--	--	30	--	230	--
10'JA'+56 - 25'JA'+63	LT	--	--	835	--	--	1,360	--	--	--	--	--	--	--	--
11'JA'+18 - 33'JA'+90	LT & RT	--	2,275	--	--	--	--	--	--	--	--	--	--	--	--
29'JB'+71 - 46'JB'+75	LT & RT	--	1,710	--	65	--	--	--	--	--	--	--	--	--	--
31'JB'+60 - 46'JB'+72	LT	--	--	1,165	--	--	695	--	--	--	--	25	--	240	--
48'JC'+66 - 71'JC'+58	LT & RT	--	2,295	--	--	--	--	--	--	--	--	--	--	--	--
57'JC'+02 - 72'JC'+16	RT	--	--	825	--	--	1,395	--	--	--	--	--	--	--	--
70'JD'+56 - 87'JD'+70	LT & RT	--	1,725	--	70	--	--	--	--	1	--	--	--	--	--
70'JD'+57 - 85'JD'+78	RT	--	--	1,175	--	--	700	--	--	--	--	25	--	230	--
UNDISTRIBUTED	--	70	--	--	--	--	--	--	--	1	--	--	--	--	96
TOTALS		70	71,905	71,910	1,095	16,100	9,945	5	2	2	5	110	55	1,180	96
				143,815											

*ADDITIONAL QUANTITIES LOCATED ELSEWHERE

3

TEMPORARY PAVEMENT MARKING ITEMS

LOCATION	646.0600*	649.0403		649.0400		649.0506		649.0801	COMMENTS
	REMOVING	EPOXY 4-INCH		REMOVABLE TAPE		REMOVABLE MASK-OUT		REMOVABLE	
	PAVEMENT			4-INCH		TAPE 6-INCH		TAPE 8-INCH	
	MARKINGS	(WHITE)	(YELLOW)	(WHITE)	(YELLOW)	(BLACK)	(WHITE)		
	LF	LF	LF	LF	LF	LF	LF	LF	
CAT 0010									
STH 29 EB	--	--	--	--	2,340	625	--	--	LANE CLOSURE TAPER - STAGE 1
STH 29 WB	--	--	--	--	2,340	625	--	--	LANE CLOSURE TAPER - STAGE 1
STH 29 EB	--	--	--	2,340	--	2,640	--	--	LANE CLOSURE TAPER - STAGE 2
STH 29 WB	--	--	--	2,340	--	2,640	--	--	LANE CLOSURE TAPER - STAGE 2
STH 29 EB	--	--	--	--	2,340	2,640	--	--	LANE CLOSURE TAPER - STAGE 3
STH 29 WB	--	--	--	--	2,340	2,640	--	--	LANE CLOSURE TAPER - STAGE 3
STH 29 EB	--	--	--	450	--	115	200	--	BUS 51 RAMPS WITHIN LANE CLOSURE
STH 29 WB	--	--	--	200	--	100	400	--	BUS 51 RAMPS WITHIN LANE CLOSURE
STH 29 EB	--	--	--	650	--	215	600	--	CTH X RAMPS WITHIN LANE CLOSURE
STH 29 WB	--	--	--	650	--	215	600	--	CTH X RAMPS WITHIN LANE CLOSURE
STH 29 EB	--	--	--	650	--	215	600	--	CTH J RAMPS WITHIN LANE CLOSURE
STH 29 WB	--	--	--	650	--	215	600	--	CTH J RAMPS WITHIN LANE CLOSURE
CTH X - RAMP A	--	--	--	250	--	--	--	--	ENTRANCE RAMP CLOSURE
CTH X - RAMP B	--	--	--	500	--	--	--	--	EXIT RAMP CLOSURE
CTH X - RAMP C	--	--	--	250	--	--	--	--	ENTRANCE RAMP CLOSURE
CTH X - RAMP D	--	--	--	500	--	--	--	--	EXIT RAMP CLOSURE
CTH J - RAMP B	--	--	--	250	--	--	--	--	EXIT RAMP CLOSURE
CTH J - RAMP D	--	--	--	250	--	--	--	--	EXIT RAMP CLOSURE
PROJECT	6,320	3,900	2,420	--	--	--	--	--	
TOTALS	6,320	3,900	2,420	9,930	9,360	12,885	3,000		
		6,320		19,290					

*ADDITIONAL QUANTITIES LOCATED ELSEWHERE
NOTE: TEMPORARY PAVEMENT MARKING 4-INCH IS FOR USE ON CONCRETE PAVEMENT REPAIR/REPLACEMENT AREAS PRIOR TO OPENING A LANE TO TRAFFIC

3

CONSTRUCTION STAKING ITEMS

STATION - STATION	LOCATION	650.8000	650.9910
		RESURFACING	SUPPLEMENTAL
		REFERENCE	CONTROL
		LF	(1053-02-65)
CAT 0010			
135'EB'+18 - 455'EB'+00	LT & RT	31,982	--
131'WB'+83 - 455'WB'+00	LT & RT	32,317	--
96'X'+00 - 112'X'+00	LT & RT	1,600	--
10'XA'+00 - 32'XA'+73	LT & RT	2,273	--
30'XB'+00 - 45'XB'+35	LT & RT	1,535	--
50'XC'+00 - 73'XC'+84	LT & RT	2,384	--
70'XD'+00 - 85'XD'+09	LT & RT	1,509	--
98'J'+00 - 110'J'+00	LT & RT	1,200	--
10'JA'+00 - 32'JA'+74	LT & RT	2,274	--
30'JB'+00 - 47'JB'+09	LT & RT	1,709	--
50'JC'+00 - 72'JC'+56	LT & RT	2,256	--
70'JD'+00 - 87'JD'+41	LT & RT	1,741	--
PROJECT	--	--	1
TOTALS		82,780	1

RAMP CLOSURE GATE ASSEMBLY ITEMS

STATION	LOCATION	652.0225	653.0135	654.0105	654.0220	657.0100	657.0255	657.0321	657.0425	662.1030.S	662.1040.S	662.2040.S	662.3030.S	662.3040.S	662.4000.S
		CONDUIT RIGID	PULL BOXES	CONCRETE	CONCRETE		TRANSFORMER	POLES	TRAFFIC	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP
		NONMETALLIC	STEEL	BASES	CONTROL		BASES	STEEL	SIGNAL	CLOSURE	CLOSURE	CLOSURE	CLOSURE	CLOSURE	CLOSURE
		SCHEDULE	24X36-INCH	TYPE 5	CABINET BASES	PEDESTAL	BREAKAWAY	TYPE 5	ALUMINUM	GATES	GATES	GATES	GATE ARMS	GATE ARMS	GATE
		40 2-INCH				BASES	11 1/2-INCH			HARDWIRED	HARDWIRED	SOLAR	STOCKPILE	STOCKPILE	FLASHERS
		LF	EACH	EACH	TYPE 10	EACH	BOLT CIRCLE	STEEL	15-FT	30-FT	40-FT	40-FT	30-FT	40-FT	STOCKPILE
CAT 0010															
10'XA'+49	53' RT	45	--	1	--	--	1	1	--	1	--	--	1	--	3
11'XA'+03	26' LT	25	--	1	--	--	1	1	--	--	1	--	--	1	3
73'XC'+12	23' RT	25	--	1	--	--	1	1	--	--	1	--	--	1	3
73'XC'+52	54' LT	30	--	1	--	--	1	1	--	1	--	--	1	--	3
10'JA'+85	25' LT	15	1	1	1	1	1	1	1	--	--	1	--	1	3
71'JC'+88	25' LT	15	1	1	1	1	1	1	1	--	--	1	--	1	3
TOTALS		155	2	6	2	2	6	6	2	2	2	2	2	4	18

3

3

SAWING ASPHALT				
690.0150*				
STATION - STATION	LOCATION	LF	COMMENTS	
CAT 0010				
135'EB'+18 - 426'EB'+74	RT	15	DRIVING LANE SHOULDER	
140'EB'+80	RT	10	STH 29 EB ENTRANCE RAMP SHOULDER	
148'EB'+00 - 426'EB'+74	LT	10	PASSING LANE SHOULDER	
429'EB'+00 - 455'EB'+00	RT & LT	20	PASSING & DRIVING LANE SHOULDER	
135'WB'+75 - 426'WB'+17	LT	15	DRIVING LANE SHOULDER	
138'WB'+25 - 426'WB'+17	RT	10	PASSING LANE SHOULDER	
139'WB'+60	LT	10	STH 29 WB EXIT RAMP SHOULDER	
428'WB'+50 - 455'WB'+00	RT & LT	20	PASSING & DRIVING LANE SHOULDER	
+/- 103'J'+00	RT	10	SIGN JA-4 BOX-OUT	
+/- 105'J'+00	RT	10	SIGN JC-3 BOX-OUT	
TOTALS		130		
*ADDITIONAL QUANTITIES LOCATED ELSEWHERE				

GRADING, SHAPING AND FINISHING RAMP GATES									
		SPV.0060.02	**COMMON	**BORROW	**FERTILIZER			**SEEDING #30	
STATION - STATION	LOCATION	EACH	EXC. CY	**FILL CY	EXC. CY	**TOPSOIL SY	TYPE B CWT	LB	
CAT 0010									
99'X'+50 - 100'X'+15	RT	1	--	10	10	52	0.1	1.0	
11'XA'+00 - 11'XA'+40	LT	1	--	--	--	14	0.1	0.3	
108'X'+00 - 108'X'+80	LT	1	11	95	85	16	0.1	0.3	
72'XC'+80 - 73'XC'+25	RT	1	--	--	--	206	0.2	3.7	
10'JA'+75 - 11'JA'+05	LT	1	--	--	--	14	0.1	0.3	
71'JC'+75 - 72'JC'+05	LT	1	--	--	--	18	0.1	0.4	
TOTALS		6	11	105	95	320	0.7	6.0	
**NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY									

REMOVING RAISED PAVEMENT MARKERS AND FILLING VOID				SHAPING AND FINISHING CULVERTS				
STATION - STATION		LOCATION	SPV.0060.01 EACH	STATION - STATION		LOCATION	SPV.0060.04 EACH	**TOPSOIL SY
CAT 0010				CAT 0010				
135'EB'+18 - 455'EB'+00		RT	320	174'EB'+30		LT	1	80
224'EB'+69 - 227'EB'+07		RT	20	204'EB'+96		LT	1	60
415'EB'+37 - 417'EB'+65		RT	20	TOTALS				
131'WB'+83 - 455'WB'+00		LT	325				2	140
247'WB'+36 - 249'WB'+66		LT	20					3
437'WB'+73 - 440'WB'+00		LT	20					
TOTAL			725	**NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY				

GRADING, SHAPING AND FINISHING MAINTENANCE CROSSTOVERS									
STATION - STATION		LOCATION	SPV.0060.03 EACH	**COMMON EXC. CY	**FILL CY	**BORROW EXC. CY	**TOPSOIL SY	**FERTILIZER TYPE B CWT	**SEEDING #30 LB
CAT 0010									
158'EB'+03 - 159'EB'+43		LT	1	91	58	--	467	0.3	8
212'EB'+85 - 215'EB'+12		LT	1	79	59	--	856	0.5	15
263'EB'+61 - 264'EB'+42		LT	1	81	5	--	245	0.2	4
341'EB'+66 - 342'EB'+62		LT	1	103	3	--	334	0.2	6
401'EB'+76 - 402'EB'+50		LT	1	95	0	--	200	0.1	4
TOTALS			5	449	125	0	2,102	1.3	38
**NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY									

PROJECT NO:1053-02-65	HWY:STH 29	COUNTY:MARATHON	MISCELLANEOUS QUANTITIES	SHEET	E
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STH 29 MAINLINE AND RAMP SHOULDERS:
REMOVING ASPHALTIC SURFACE MILLING, PREPARE FOUNDATION
FOR ASPHALTIC SHOULDERS, AND HMA PAVEMENT 4 LT 58-28 S

STH 29 MAINLINE:
CONCRETE PAVEMENT REHABILITATION (SEE LEGEND)

— STA 131'WB'+00
Y=178768.246
X=285635.873

BEGIN CONSTRUCTION
STA 131'WB'+83

BEGIN PROJECT 1053-02-65
STA 135'EB'+18

CONTROL POINT 1
Y=178870.48
X=285271.31
ELEV=1210.59
0.75"x24" REBAR
W/BUE EMCS CAP

— STA 131'WB'+00
Y=178704.636
X=285633.545

— STRUCTURE
S-37-077

BEGIN SHOULDER MILL AND
OVERLAY, SAWCUT REQ'D
STA 135'WB'+75, LT

BEGIN SHOULDER MILL AND
OVERLAY, SAWCUT REQ'D STA
138'WB'+25, RT

BEGIN SHOULDER MILL AND
OVERLAY, SAWCUT REQ'D
STA 135'EB'+18, RT

BEGIN SHOULDER MILL AND
OVERLAY, SAWCUT REQ'D
STA 139'WB'+60, LT

STH 29 WB

~~STH 29 EB~~

PC STA138'EB'+65.83

STA138+EB+65.83
STH 29 EB ENTRANCE RAMP

BEGIN SHOULDER
MILL AND OVERLAY,
SAWCUT REQ'D STA
140'+B'+80, RT

STRUCTURE B-37-81

CONCRETE PAVEMENT REHABILITATION LEGEND

- | | |
|---|--|
|  | CONCRETE PAVEMENT PARTIAL DEPTH REPAIR
(JOINT, CRACK, SURFACE, EDGE, FULL DEPTH ADJUSTMENT) |
|  | CONCRETE PAVEMENT REPAIR/REPLACEMENT |
|  | CONCRETE PAVEMENT APPROACH SLAB AND
CONCRETE PAVEMENT SHOULDERS/SURFACE DRAINS |

NOTE

THE FIELD ENGINEER WILL DETERMINE LOCATIONS OF CONCRETE PAVEMENT REPAIR AND REPLACEMENT. REPAIR CRACKS IN OTHER AREAS ACCORDING TO THE FOLLOWING GUIDANCE:

CRACK SIZE	TREATMENT
LESS THAN 1-INCH	NONE - CRACKS WILL REMAIN
1-INCH OR LARGER	CONCRETE PAVEMENT PARTIAL DEPTH REPAIR ITEMS

HIGHLAND AVE

PT STA156'WB'+00.07

RECONSTRUCT MAINTENANCE -
CROSSOVER, SEE DETAILS

SLOPE INTERCEPT

N 88°58'39" E

N 88°58'39" E

VILLAGE OF WESTON-
(SANITARY SEWER)

PROJECT NO:1053-02-65

HWY: STH 29

COUNTY: MARATHON

PLAN

SHEET

1

PROPOSED WORK

STH 29 MAINLINE SHOULDERS:
REMOVING ASPHALTIC SURFACE MILLING, PREPARE FOUNDATION
FOR ASPHALTIC SHOULDERS, AND HMA PAVEMENT 4 LT 58-28 S

STH 29 MAINLINE:
CONCRETE PAVEMENT REHABILITATION (SEE LEGEND)

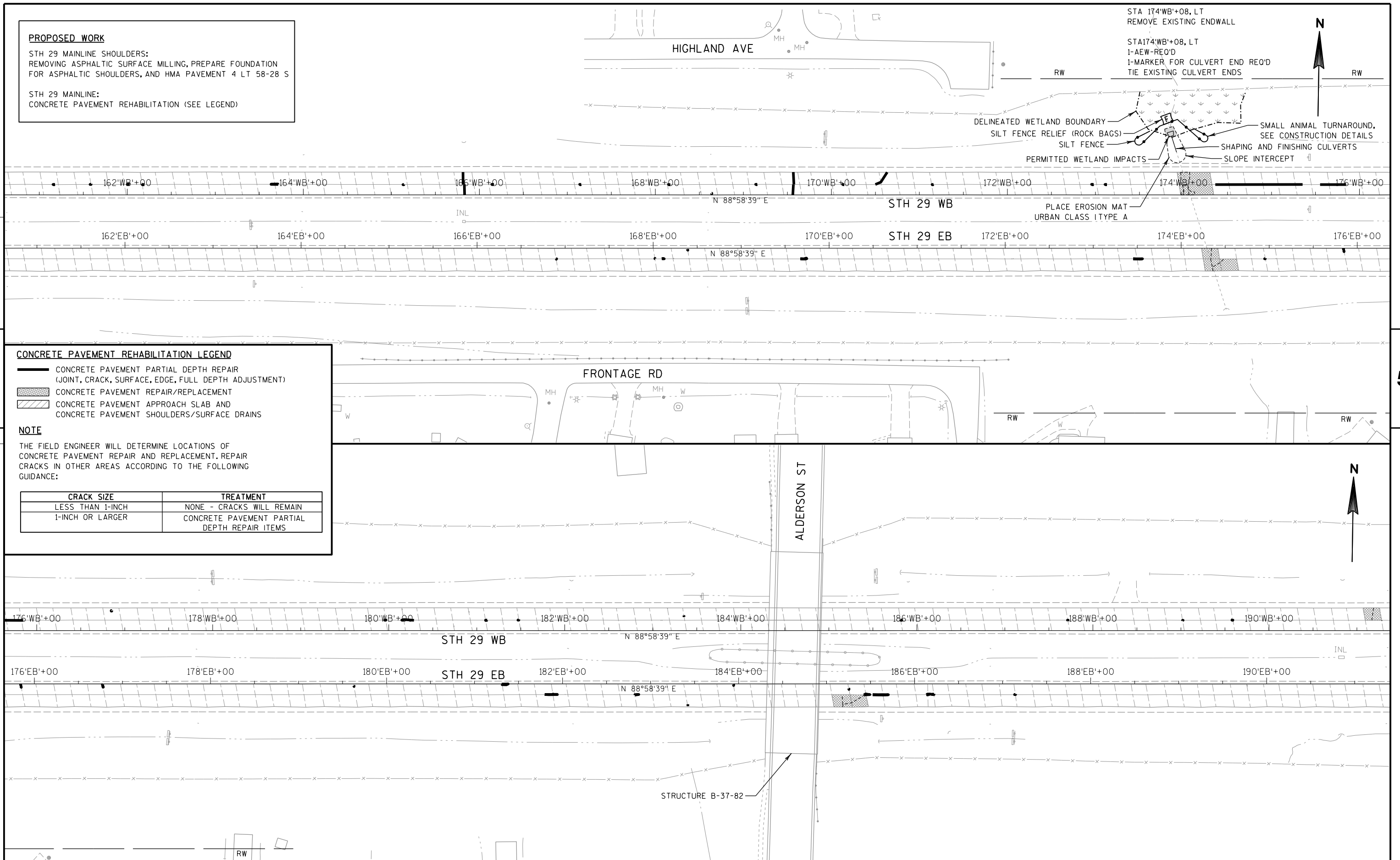
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PROPOSED WORK

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STH 29 MAINLINE:
CONCRETE PAVEMENT REHABILITATION (SEE LEGEND)



STA 204'WB'+84, LT
REMOVE EXISTING ENDWALL

STA 204'WB'+84, LT
1-AEW-REQ'D
1-MARKER FOR CULVERT END REQ'D
TIE EXISTING CULVERT ENDS

SILT FENCE RELIEF
(ROCK BAGS)
SILT FENCE

SMALL ANIMAL
TURNAROUND, SEE
CONSTRUCTION
DETAILS

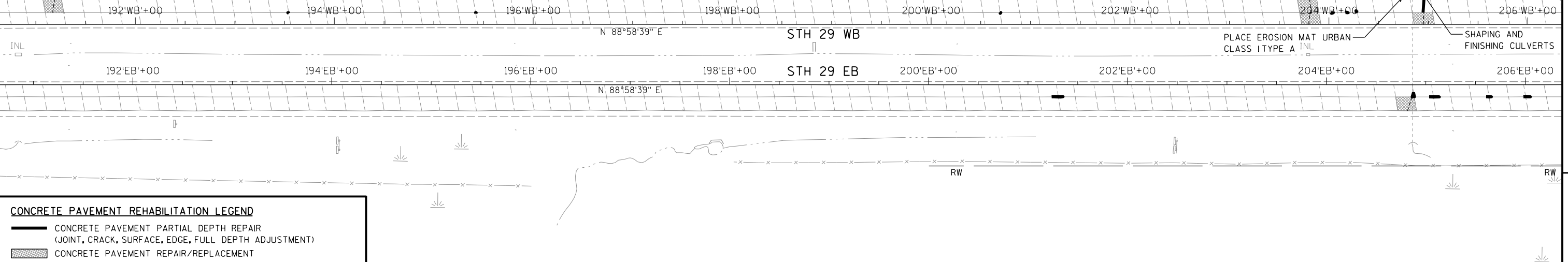
DELINEATED WETLAND BOUNDARY

SLOPE INTERCEPT

PERMITTED WETLAND
IMPACTS

PLACE EROSION MAT URBAN
CLASS I TYPE A

SHAPING AND
FINISHING CULVERTS



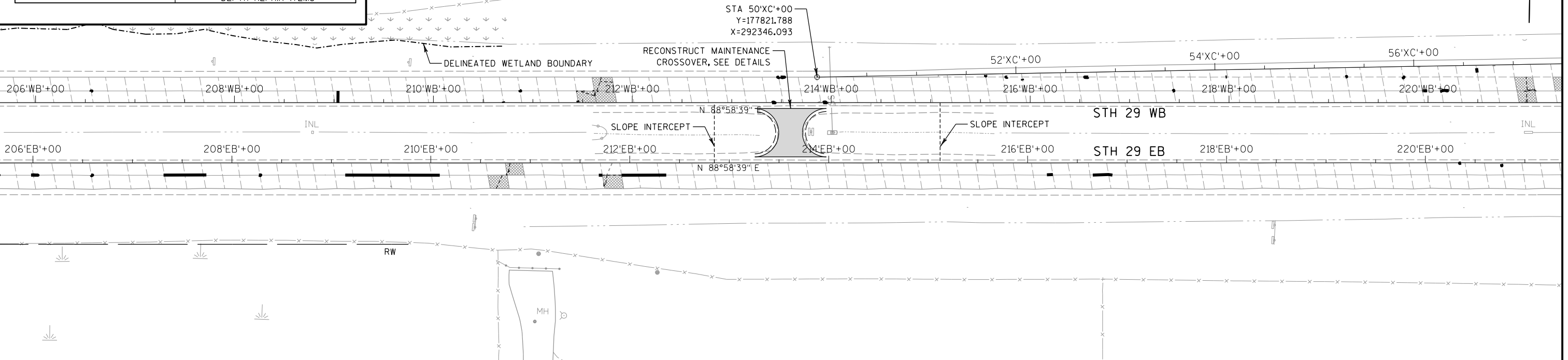
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PROJECT NO: 1053-02-65

HWY: STH 29

COUNTY: MARATHON

PLAN

SHEET

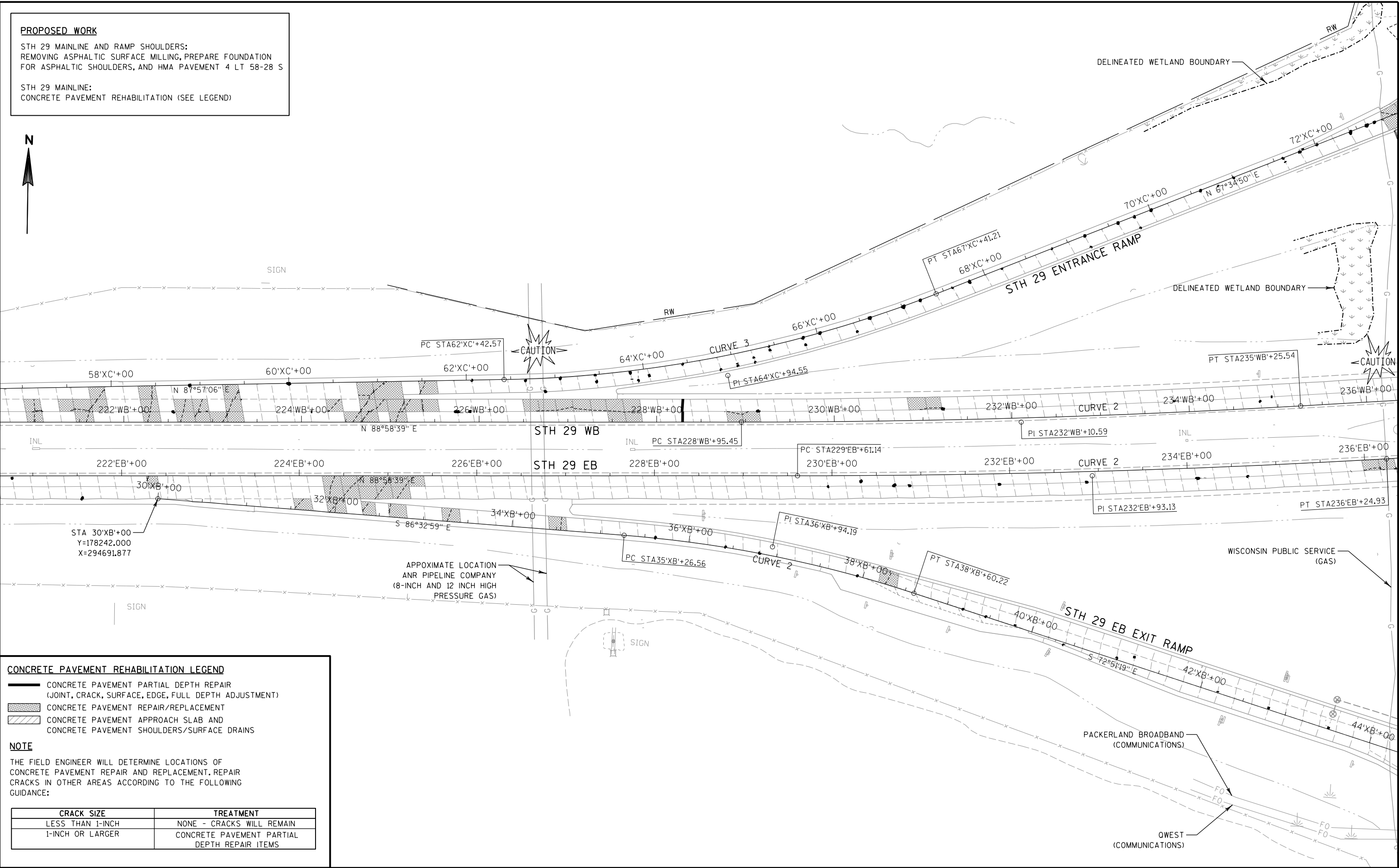
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PROPOSED WORK
STH 29 MAINLINE AND RAMP SHOULDERS:
REMOVING ASPHALTIC SURFACE MILLING, PREPARE FOUNDATION
FOR ASPHALTIC SHOULDERS, AND HMA PAVEMENT 4 LT 58-28 S

STH 29 MAINLINE:
CONCRETE PAVEMENT REHABILITATION (SEE LEGEND)



5



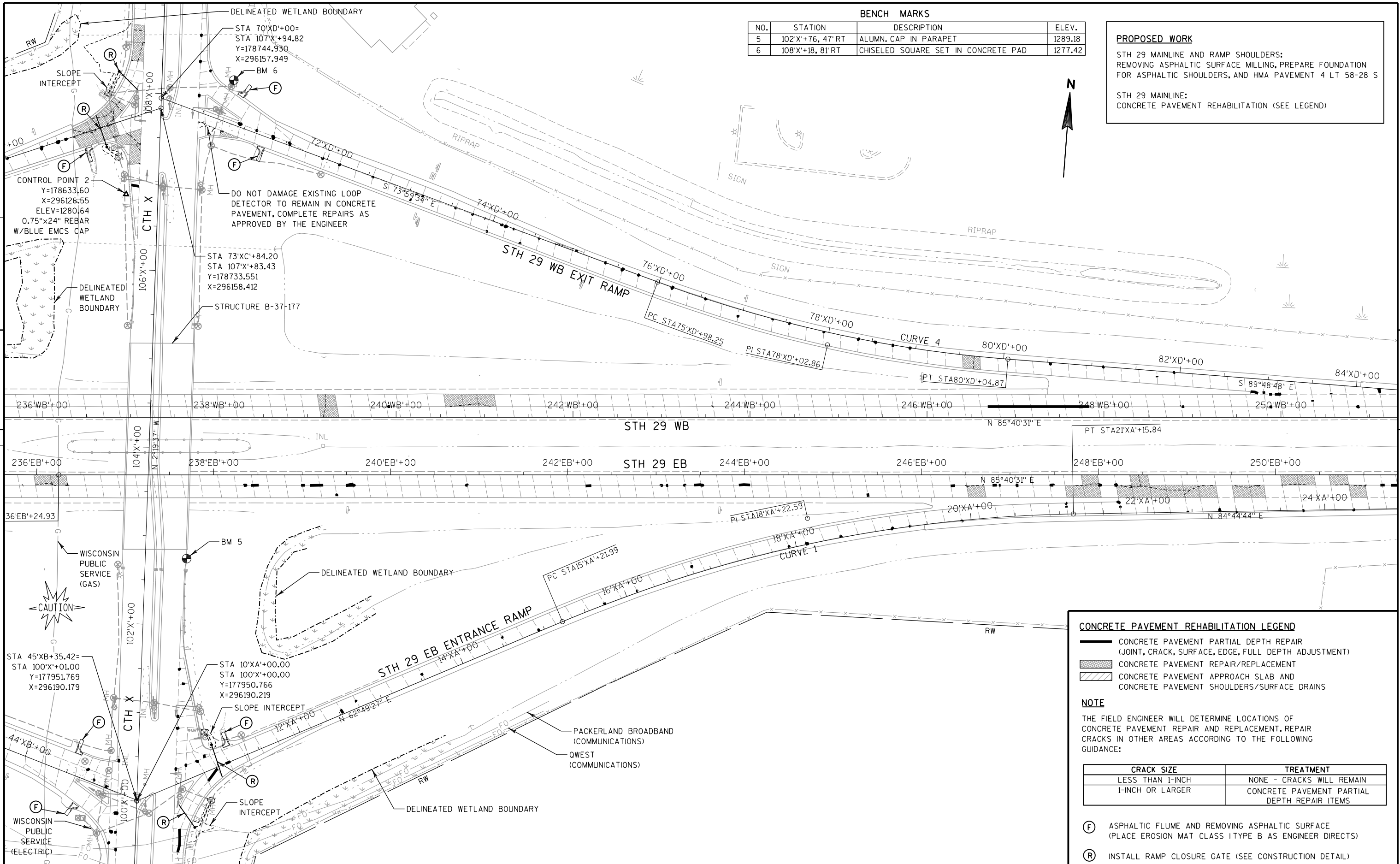
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1-INCH OR LARGER	CONCRETE PAVEMENT PARTIAL DEPTH REPAIR ITEMS



BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
5	102'X'+76, 47'RT	ALUMN. CAP IN PARAPET	1289.18
6	108'X'+18, 81'RT	CHISELED SQUARE SET IN CONCRETE PAD	1277.42

PROPOSED WORK

STH 29 MAINLINE AND RAMP SHOULDERS:
REMOVING ASPHALTIC SURFACE MILLING, PREPARE FOUNDATION
FOR ASPHALTIC SHOULDERS, AND HMA PAVEMENT 4 LT 58-28 S

STH 29 MAINLINE:
CONCRETE PAVEMENT REHABILITATION (SEE LEGEND)

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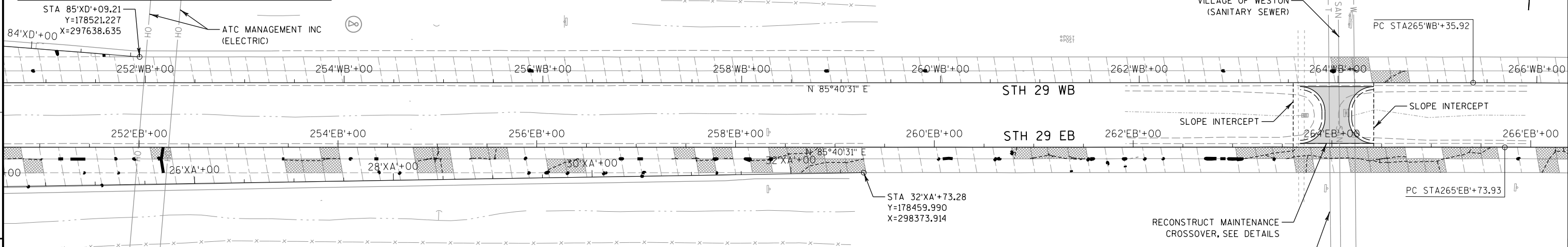
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1-INCH OR LARGER	CONCRETE PAVEMENT PARTIAL DEPTH REPAIR ITEMS

- (F) ASPHALTIC FLUME AND REMOVING ASPHALTIC SURFACE
(PLACE EROSION MAT CLASS I TYPE B AS ENGINEER DIRECTS)
- (R) INSTALL RAMP CLOSURE GATE (SEE CONSTRUCTION DETAIL)

PROPOSED WORK

STH 29 MAINLINE AND RAMP SHOULDERS:
REMOVING ASPHALTIC SURFACE MILLING, PREPARE FOUNDATION
FOR ASPHALTIC SHOULDERS, AND HMA PAVEMENT 4 LT 58-28 S

STH 29 MAINLINE:
CONCRETE PAVEMENT REHABILITATION (SEE LEGEND)



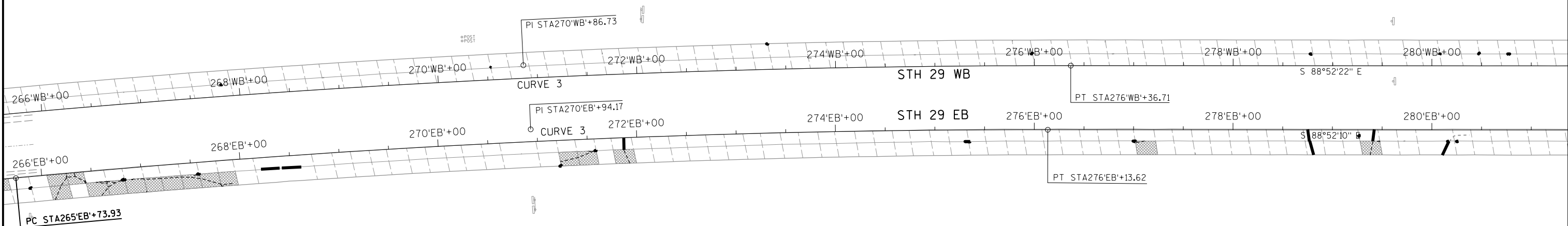
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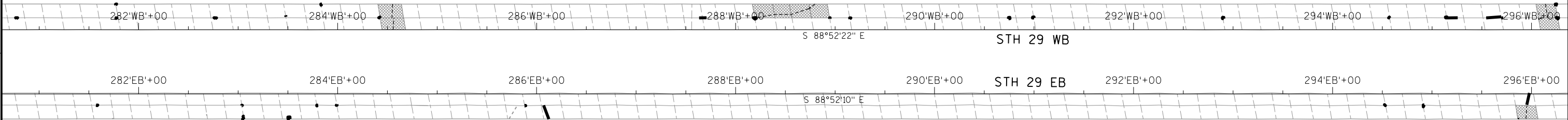
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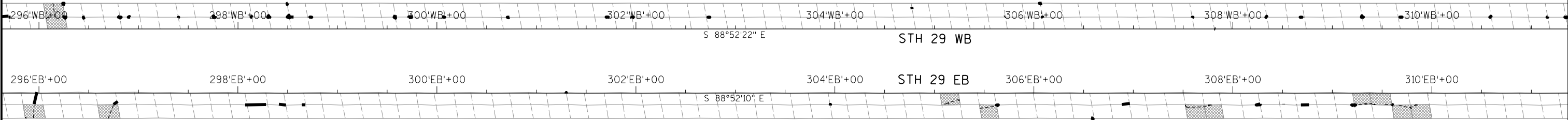
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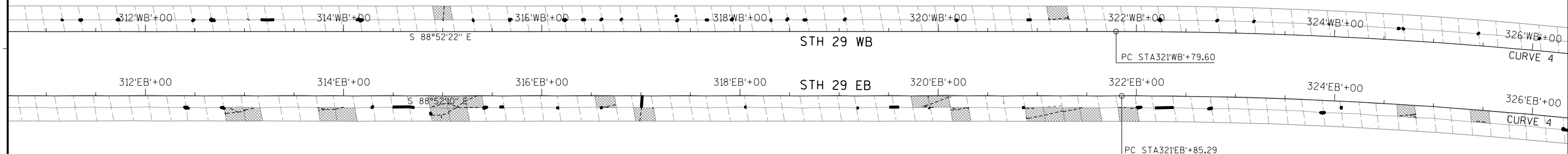
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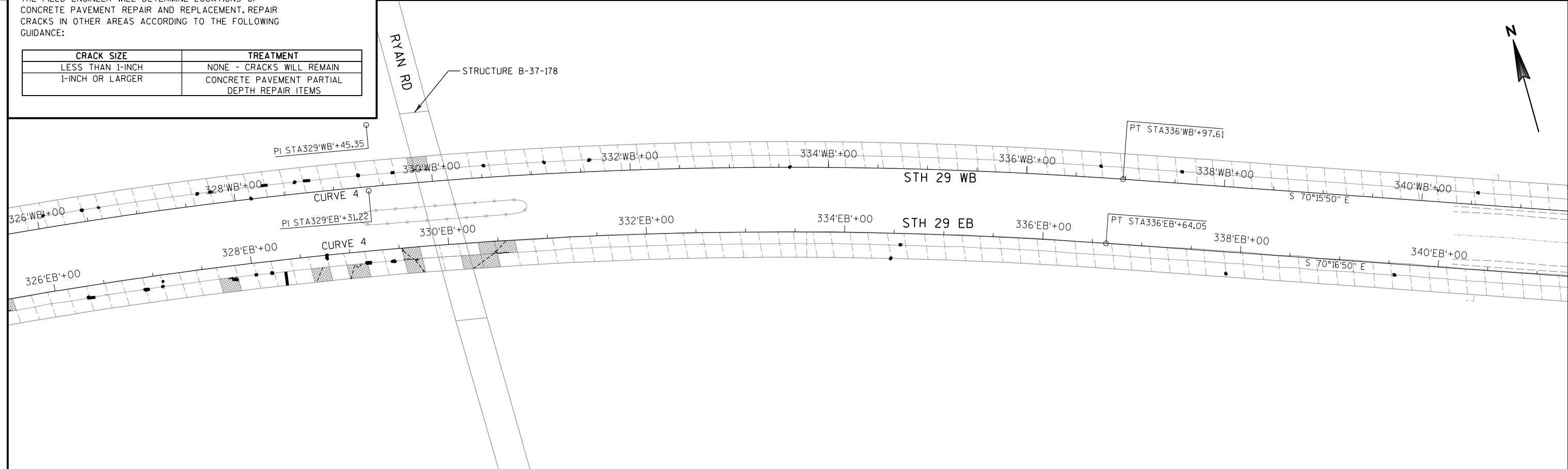


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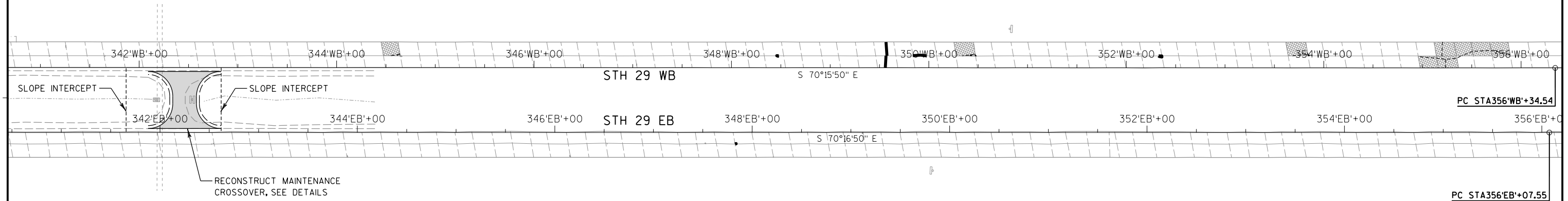
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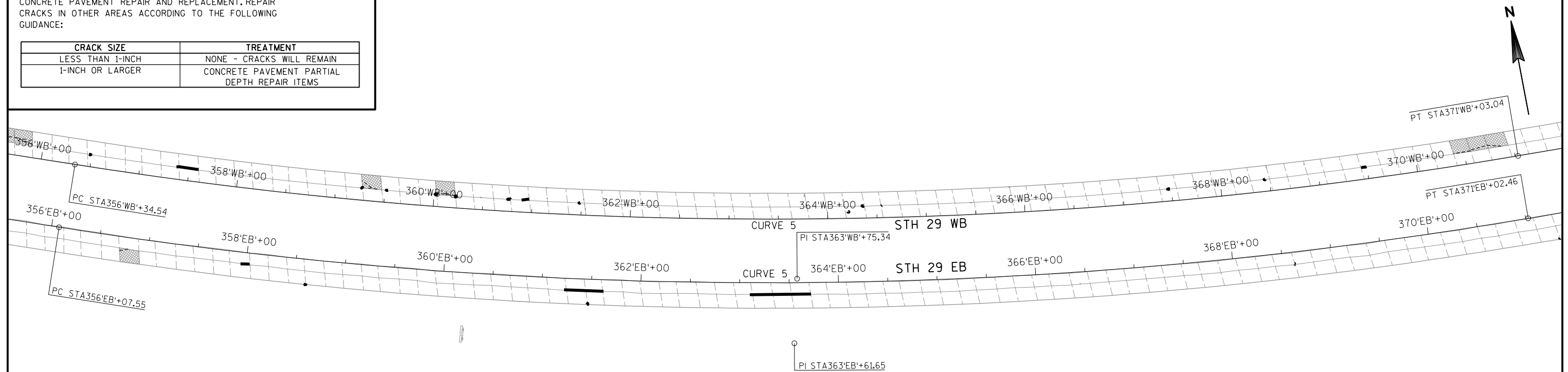
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STH 29 MAINLINE:
CONCRETE PAVEMENT REHABILITATION (SEE LEGEND)



PT STA371'WB'+03.04



STH 29 WB

S 88°54'09" E

PT STA371'EB'+02.46



STH 29 EB

S 88°54'09" E

CONCRETE PAVEMENT REHABILITATION LEGEND

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5



STH 29 WB

S 88°54'09" E



STH 29 EB

S 88°54'09" E

PROJECT NO:1053-02-65

HWY:STH 29

COUNTY:MARATHON

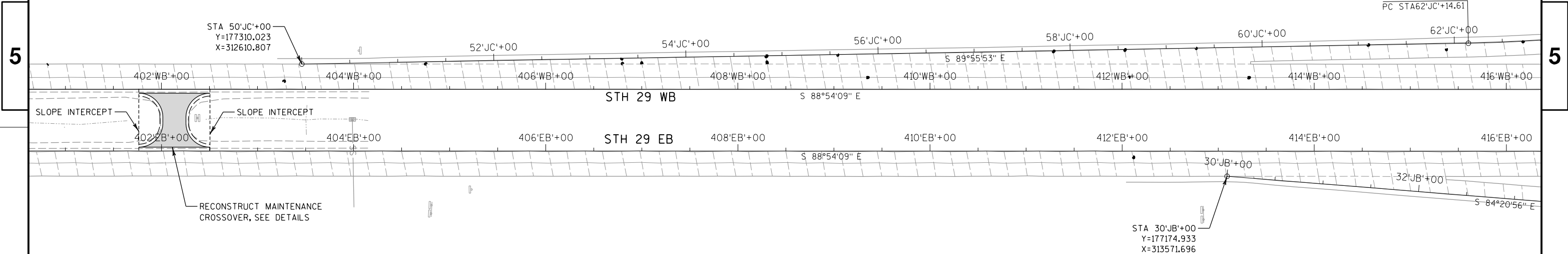
PLAN

SHEET

E

PROPOSED WORK
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REMOVING ASPHALTIC SURFACE MILLING, PREPARE FOUNDATION
FOR ASPHALTIC SHOULDERS, AND HMA PAVEMENT 4 LT 58-28 S

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CONCRETE PAVEMENT REHABILITATION (SEE LEGEND)



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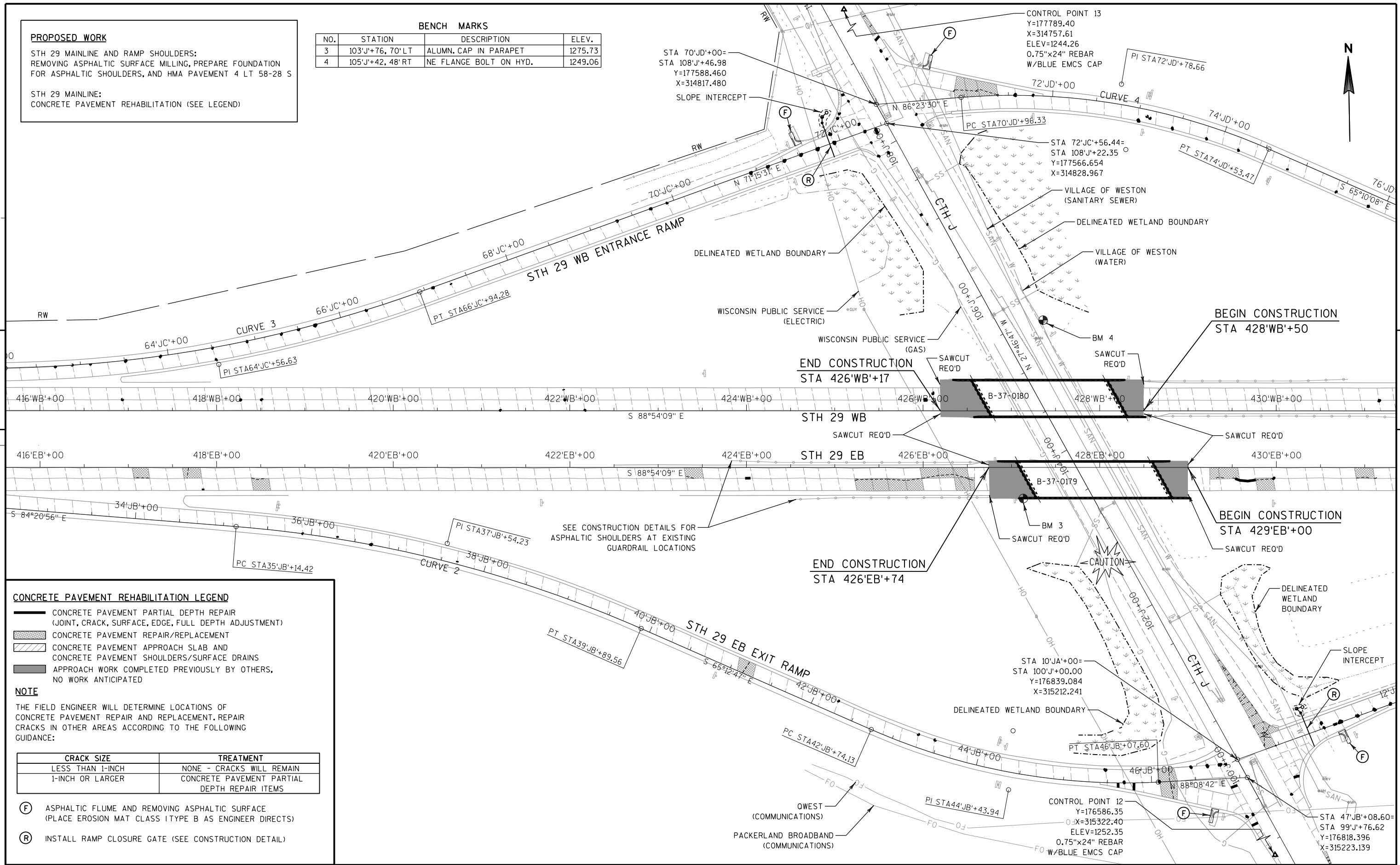
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STH 29 MAINLINE:
CONCRETE PAVEMENT REHABILITATION (SEE LEGEND)

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
3	103'J'+76, 70'LT	ALUMN. CAP IN PARAPET	1275.73
4	105'J'+42, 48'RT	NE FLANGE BOLT ON HYD.	1249.06





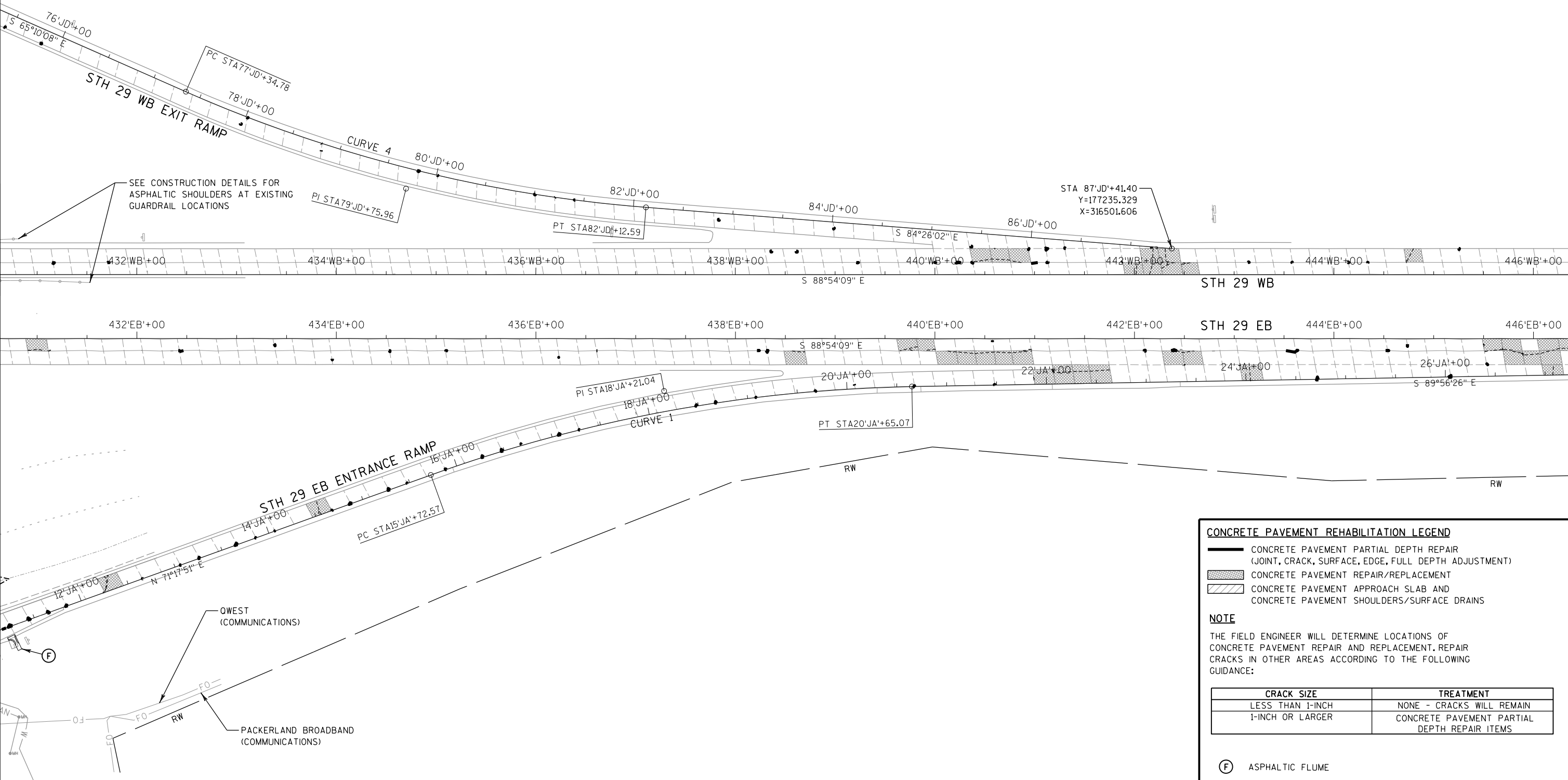
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5

5



CONCRETE PAVEMENT REHABILITATION LEGEND

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ⓕ ASPHALTIC FLUME

PROJECT NO:1053-02-65

HWY:STH 29

COUNTY:MARATHON

PLAN

SHEET

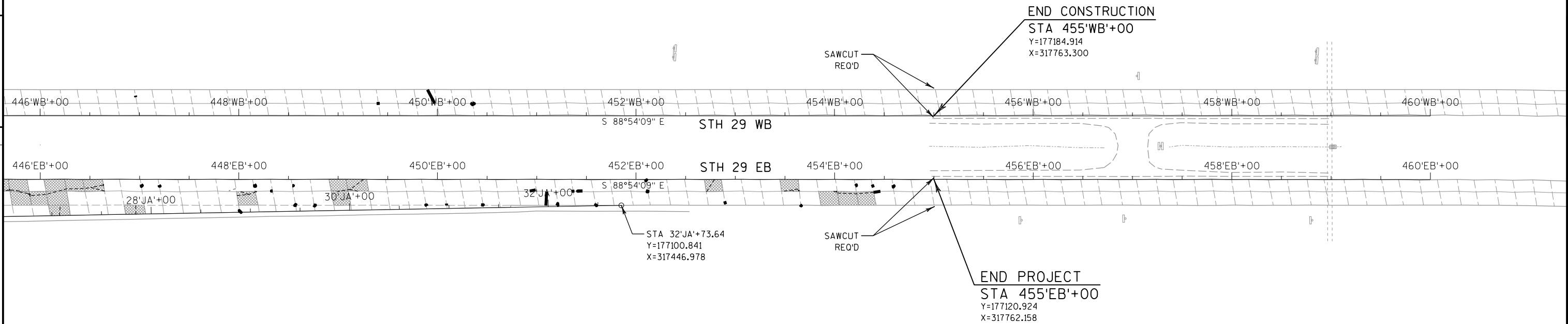
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CONCRETE PAVEMENT REHABILITATION (SEE LEGEND)



5



5

CONCRETE PAVEMENT REHABILITATION LEGEND

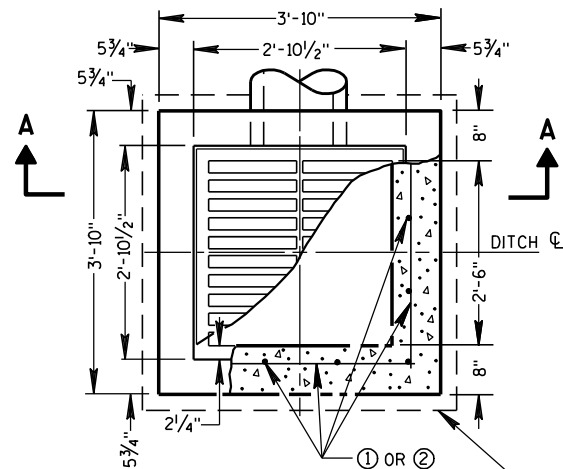
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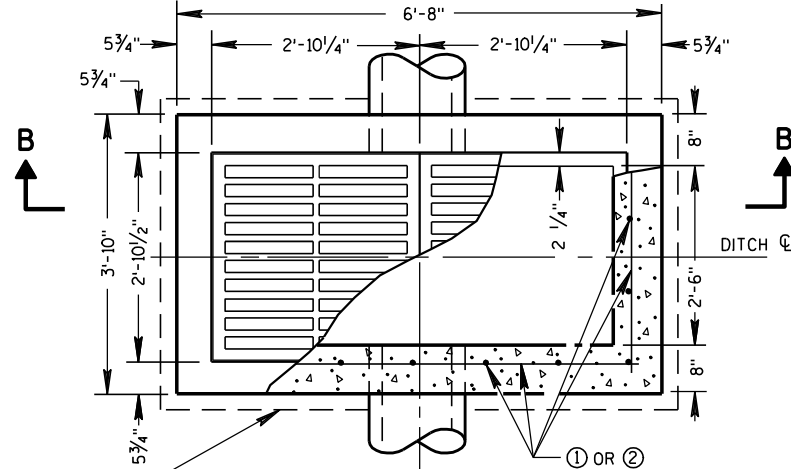
Standard Detail Drawing List

08C08-01	INLETS MEDIAN 1 AND 2 GRATE
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C05-09	CONCRETE CONTROL CABINET BASES
11A01-05	MAINTENANCE CROSSOVER FOR FREEWAYS
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C08-02	CONCRETE PAVEMENT PARTIAL DEPTH REPAIR
13C09-13A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-13B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-13C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C11-11A	RURAL DOWELED CONCRETE PAVEMENT
13C11-11B	RURAL DOWELED CONCRETE PAVEMENT
13C17-01A	CONCRETE JOINT DETAIL FOR EXIT RAMP TERMINI
13C17-01B	CONCRETE JOINT DETAIL FOR ENTRANCE RAMP TERMINI
13C18-03A	CONCRETE PAVEMENT JOINTING
13C18-03B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-03C	CONCRETE PAVEMENT JOINT TIES
13C18-03D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
15A02-08	DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15A06-02	DELINEATOR LAYOUT
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16F	PAVEMENT MARKING (ISLANDS)
15C14-01	AERIAL ENFORCEMENT BARS PAVEMENT MARKING DETAILS
15C19-03C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C31-01A	PAVEMENT MARKING (RAMPS AND GORES)
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D12-06A	TRAFFIC CONTROL, LANE CLOSURE
15D12-06B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D15-02	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D16-03	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D20-03	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-03	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D34-02A	RAMP GATE SOLAR POWER
15D34-02B	RAMP GATE SOLAR POWER
15D34-02C	RAMP GATE SOLAR POWER
15D34-02D	RAMP GATE SOLAR POWER
15D35-02A	RAMP GATE HARD WIRED
15D35-02B	RAMP GATE HARD WIRED
15D35-02C	RAMP GATE HARD WIRED
15D35-02D	RAMP GATE HARD WIRED
15D38-01A	TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS
15D38-01B	ATTACHMENT OF SIGNS TO POSTS

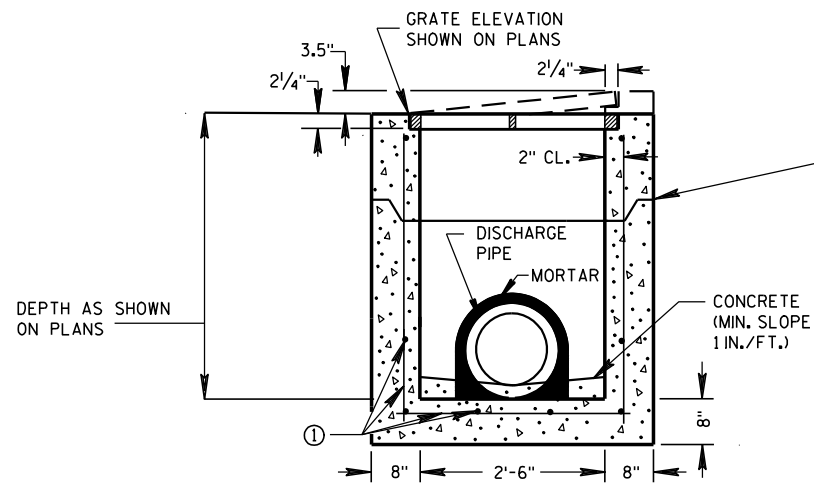


PLAN VIEW

4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS

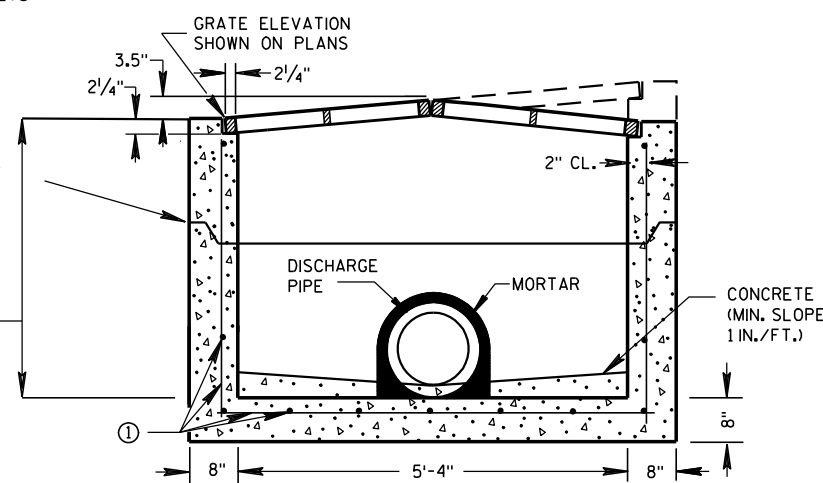


PLAN VIEW

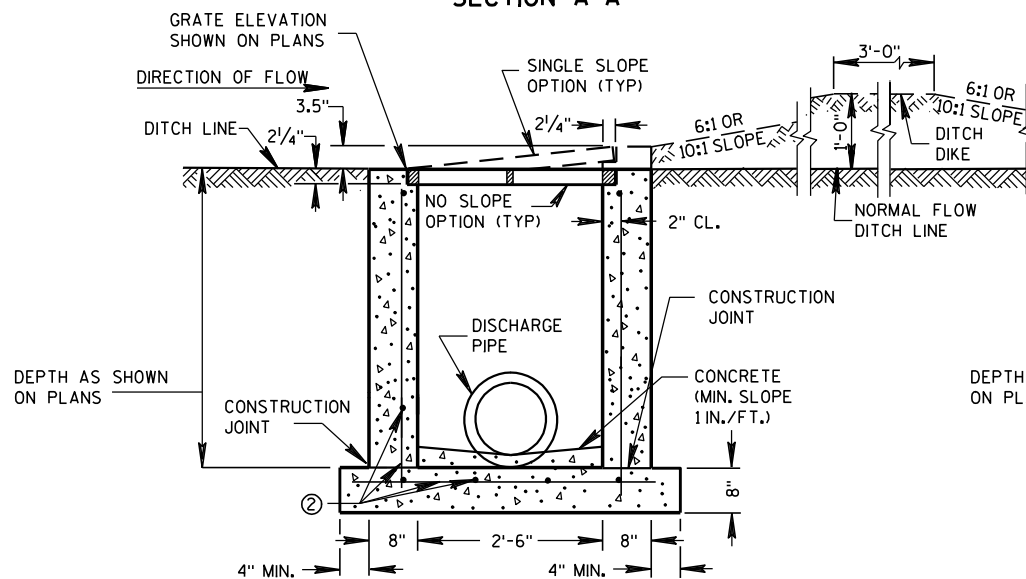


PRECAST REINFORCED CONCRETE SECTION A-A

SEE DETAIL "B"

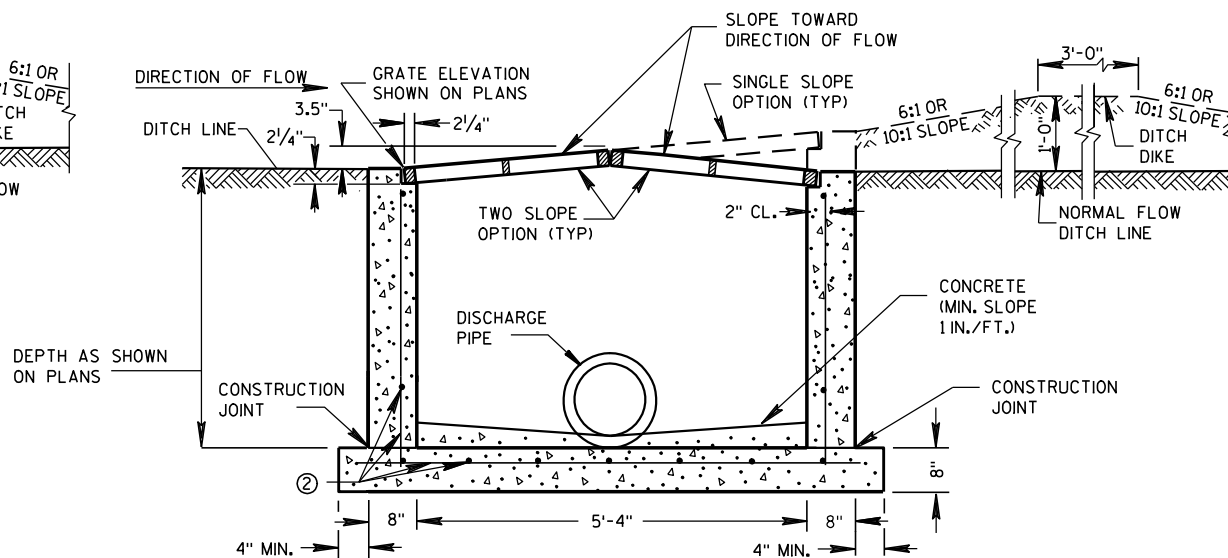


PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A

INLETS MEDIAN 1 GRATE



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 2 GRATE

GENERAL NOTES

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

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

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, IG-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

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

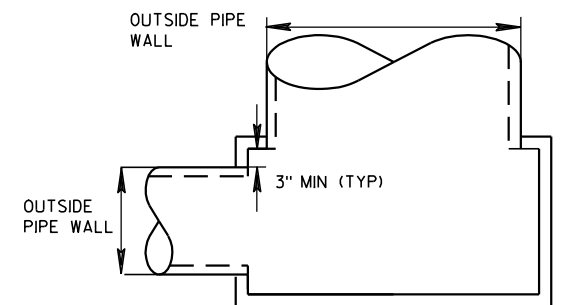
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

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

- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

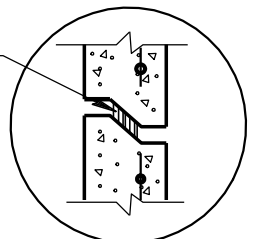
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

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



DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012

DATE

FHWA

/s/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER

6



PLAN VIEW
FLUME AT CURB END

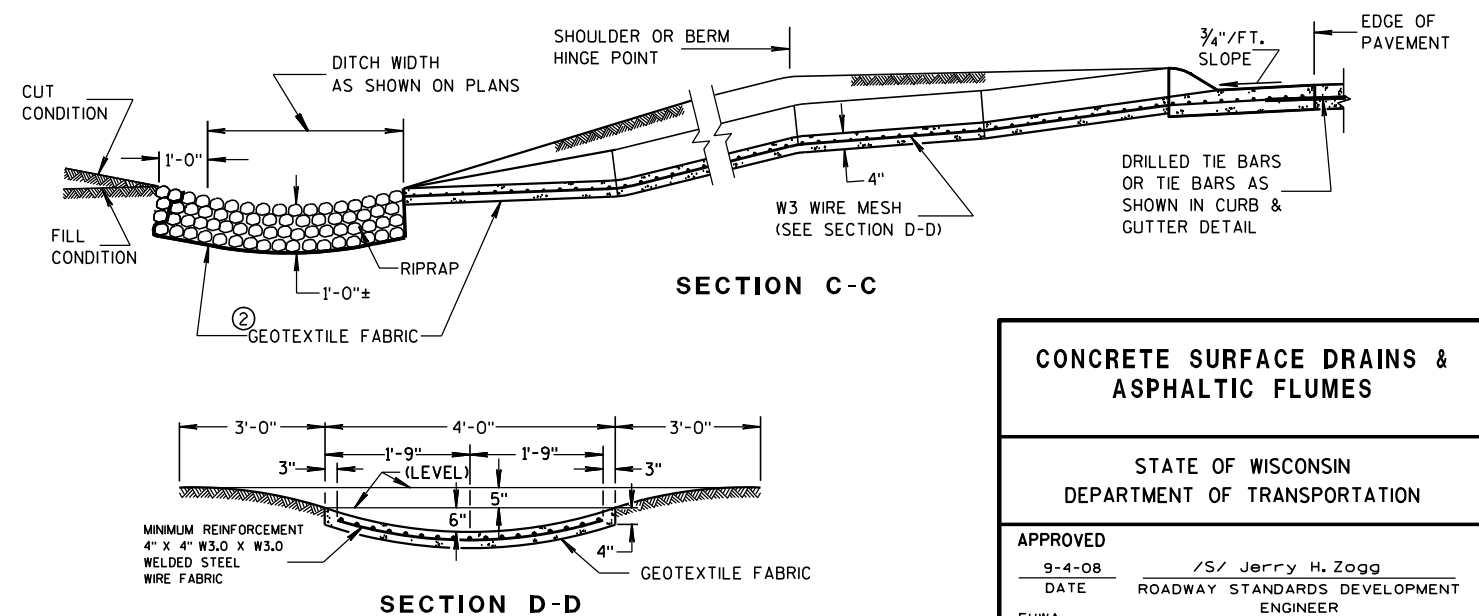


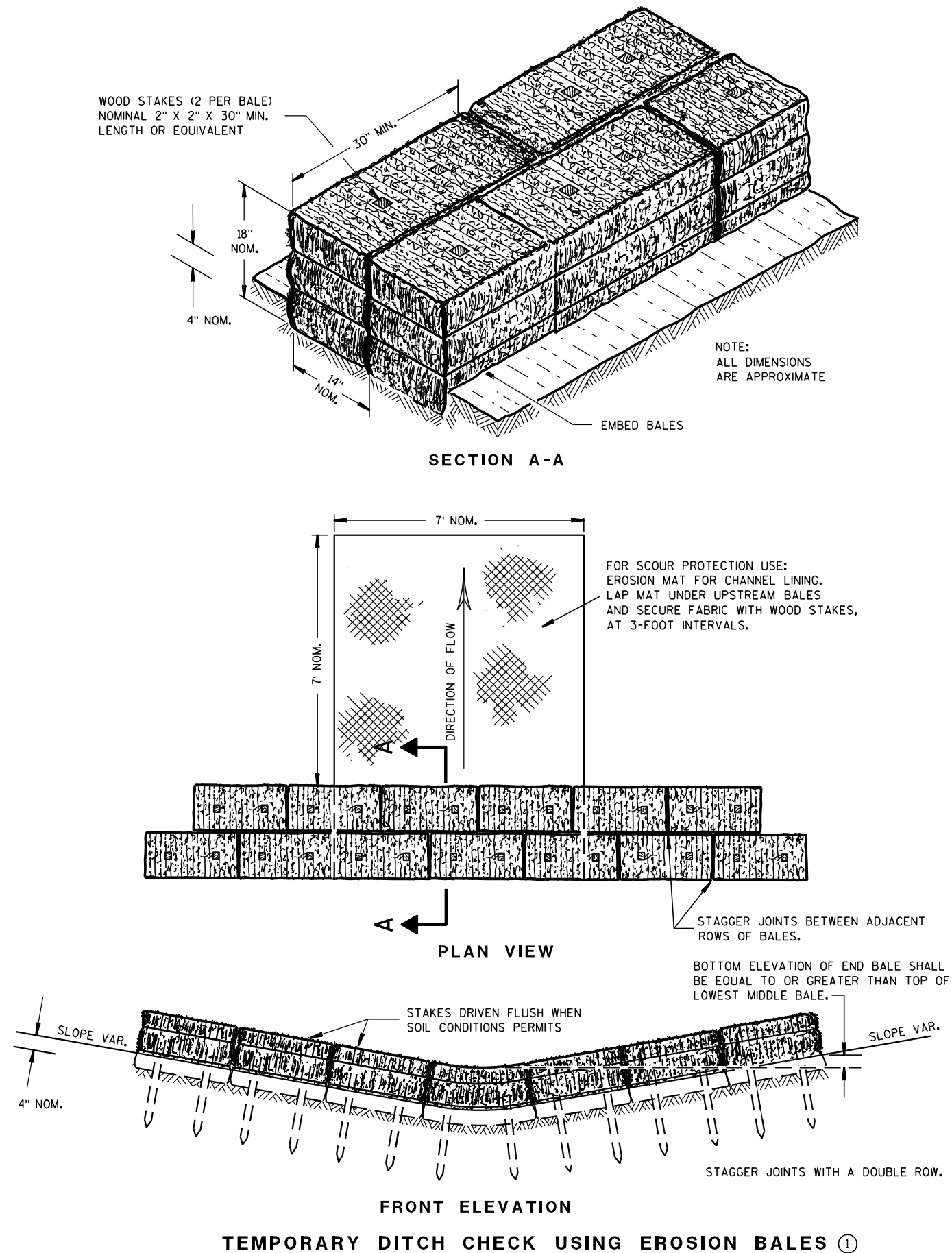
6

S.D.D. 8 D 4-5

- ① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

SECTION C-C

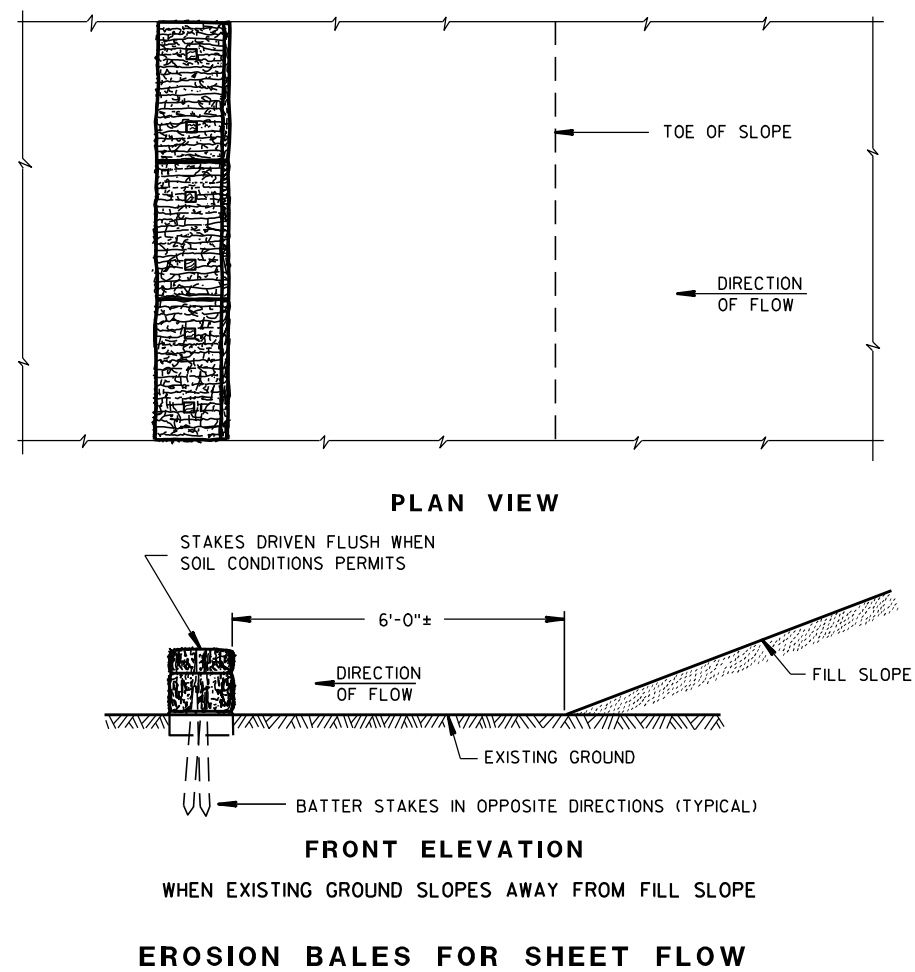
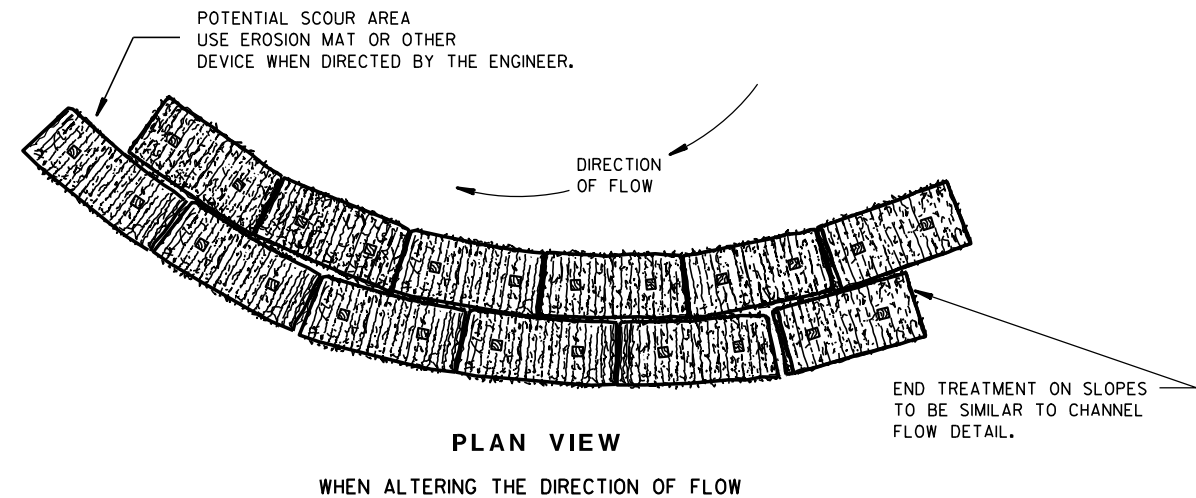




GENERAL NOTES

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.

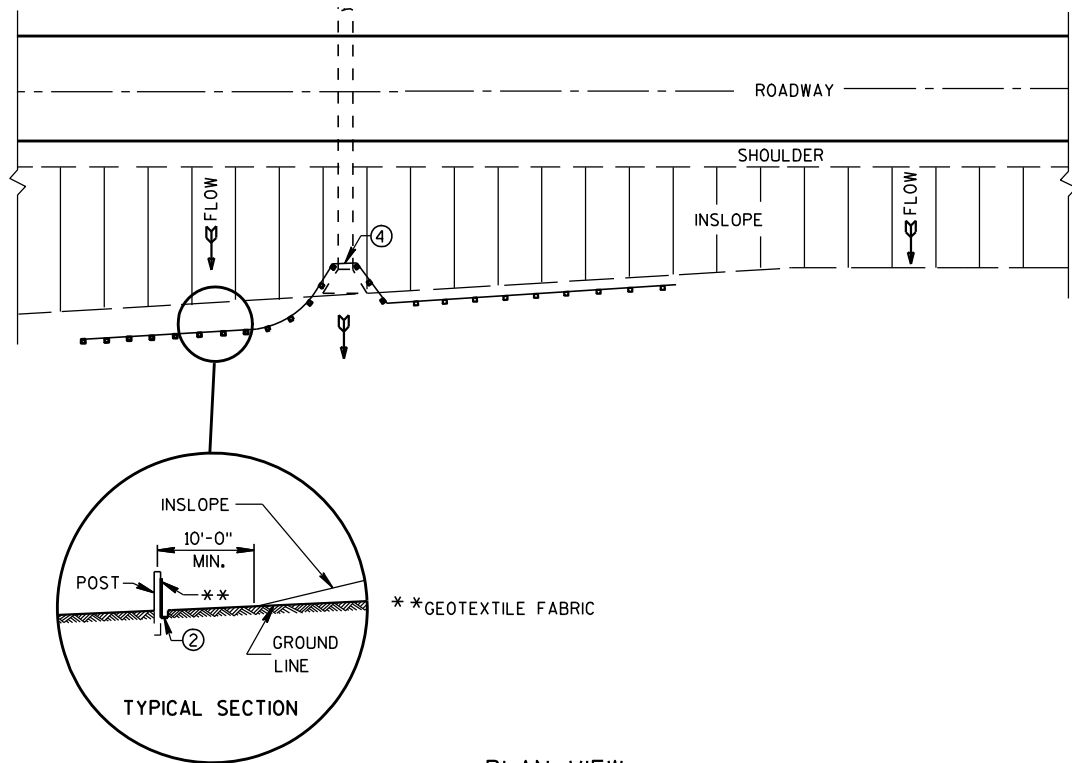
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

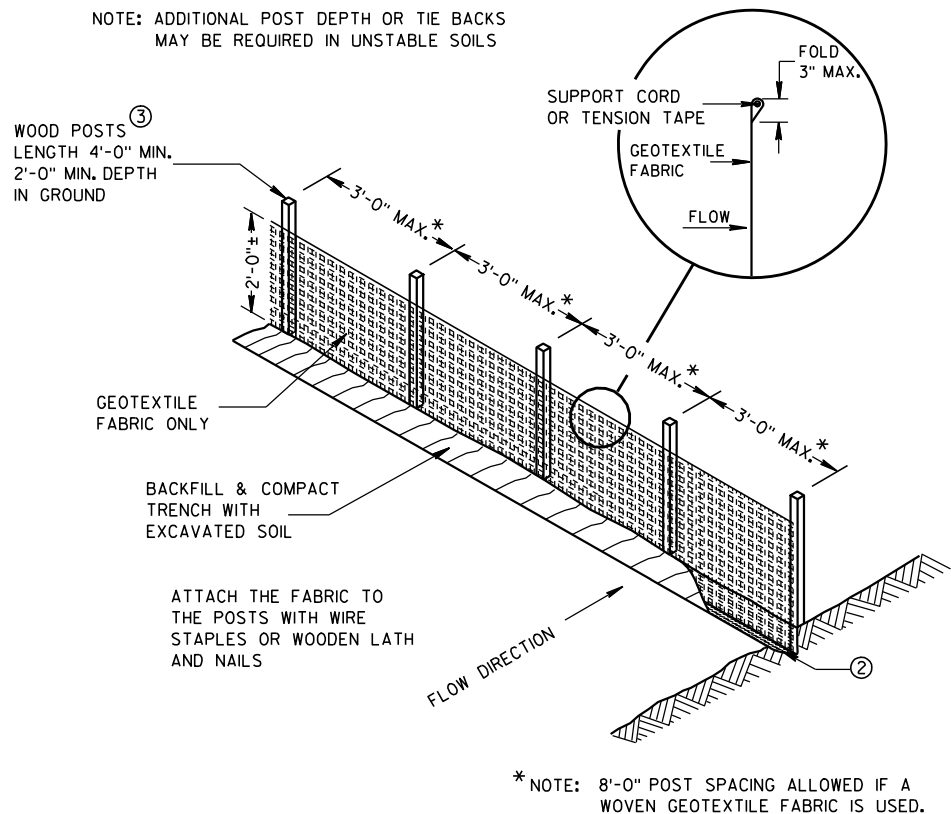
APPROVED

6/04/02
DATE/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

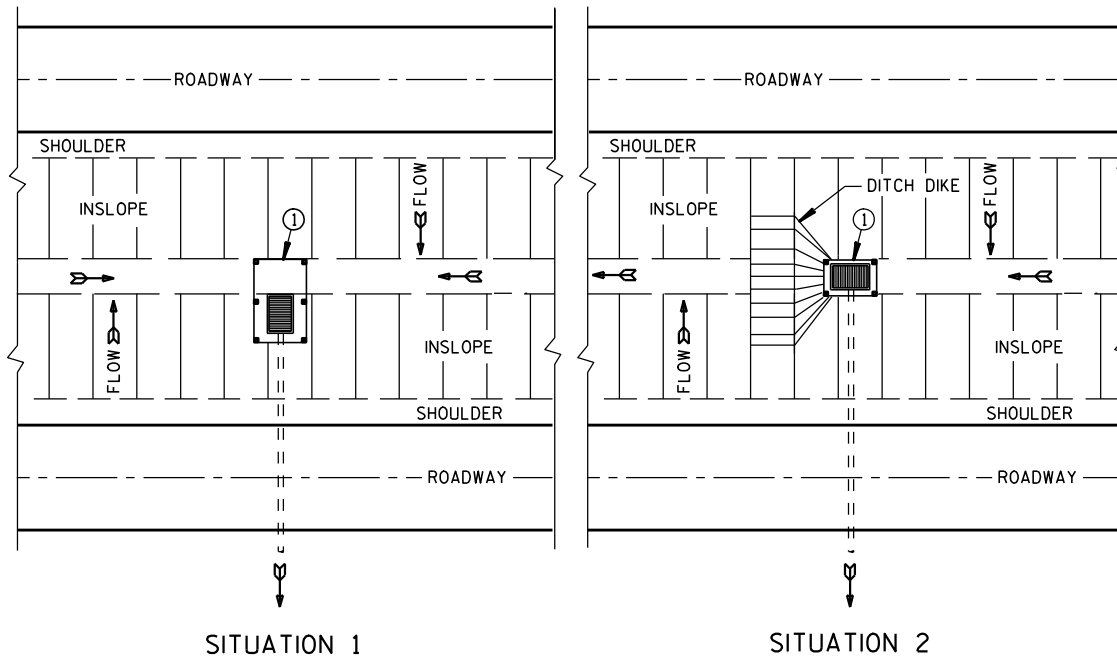
FHWA



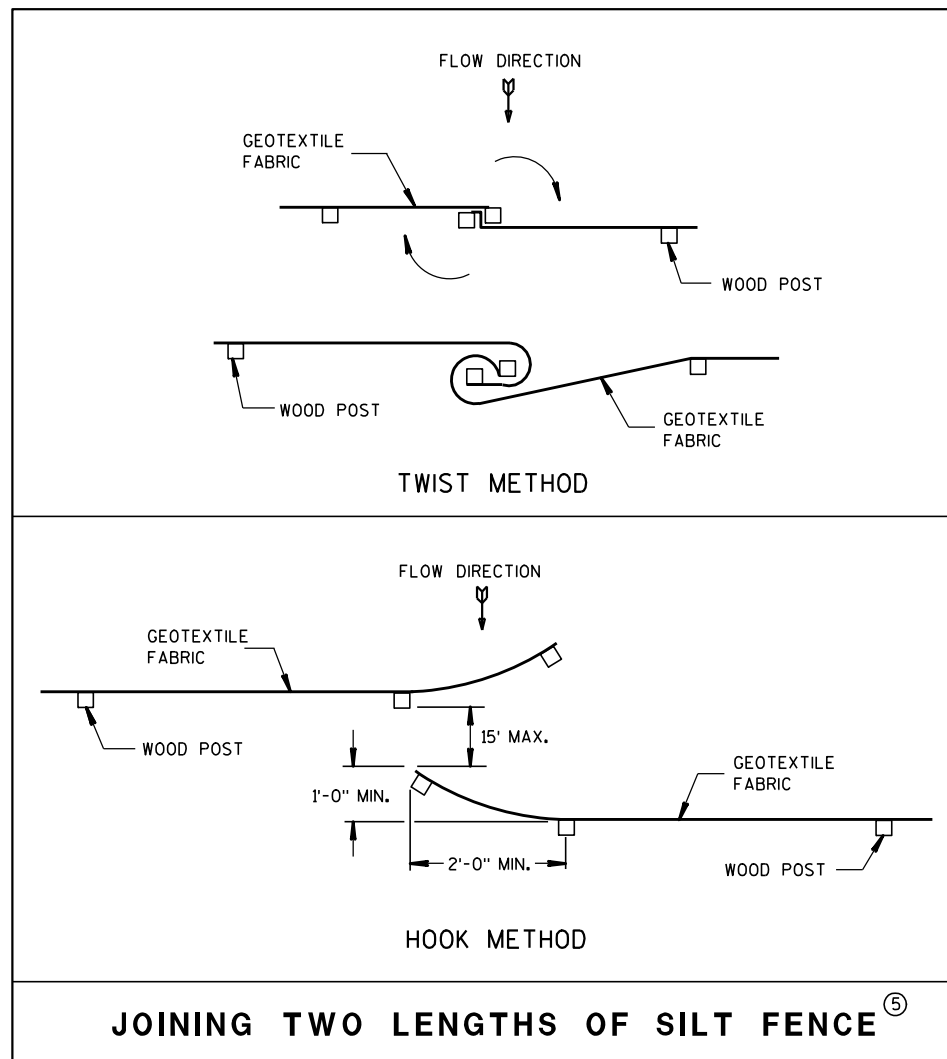
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

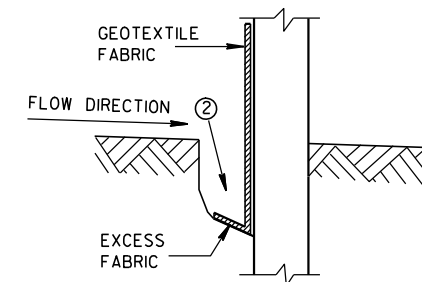


JOINING TWO LENGTHS OF SILT FENCE^⑤

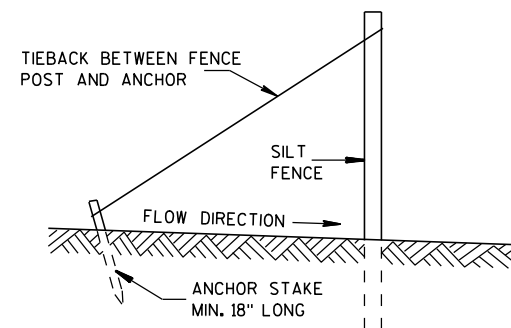
GENERAL NOTES

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

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

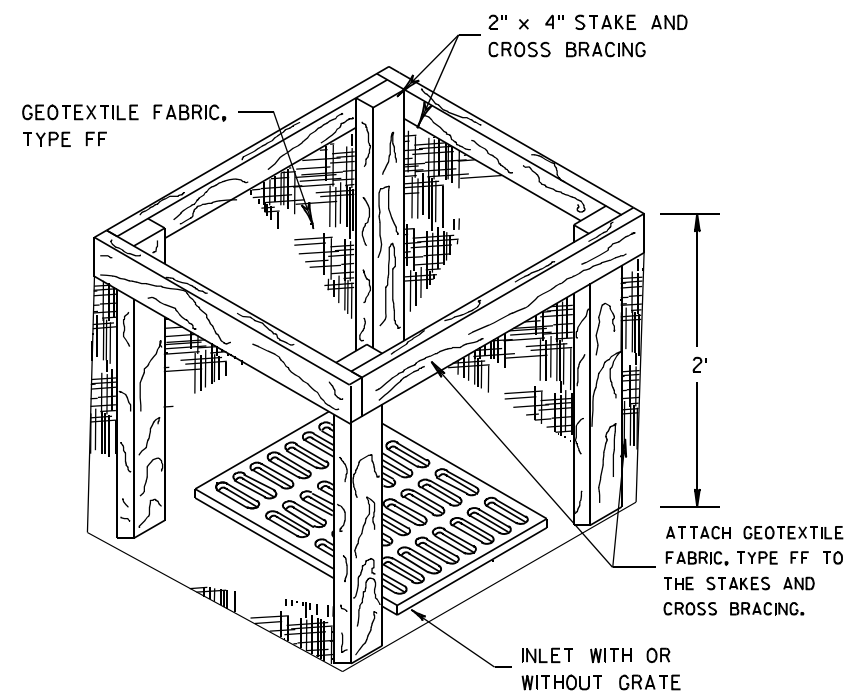
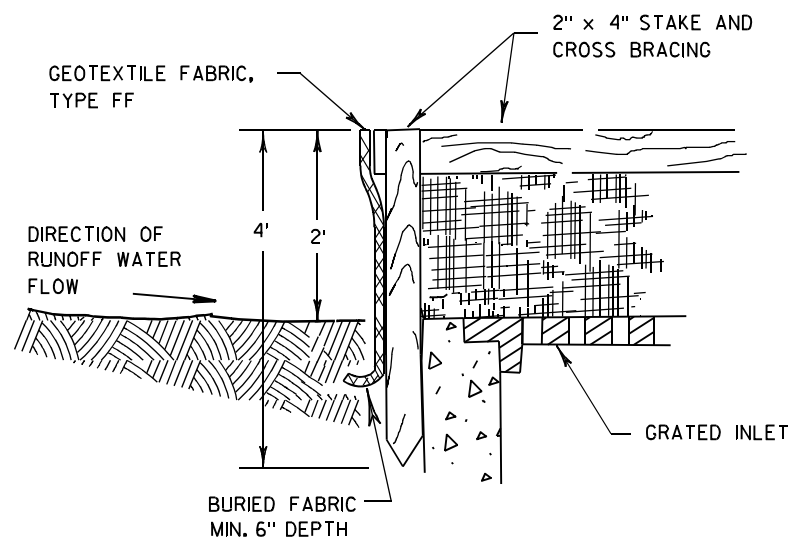


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



INLET PROTECTION, TYPE A

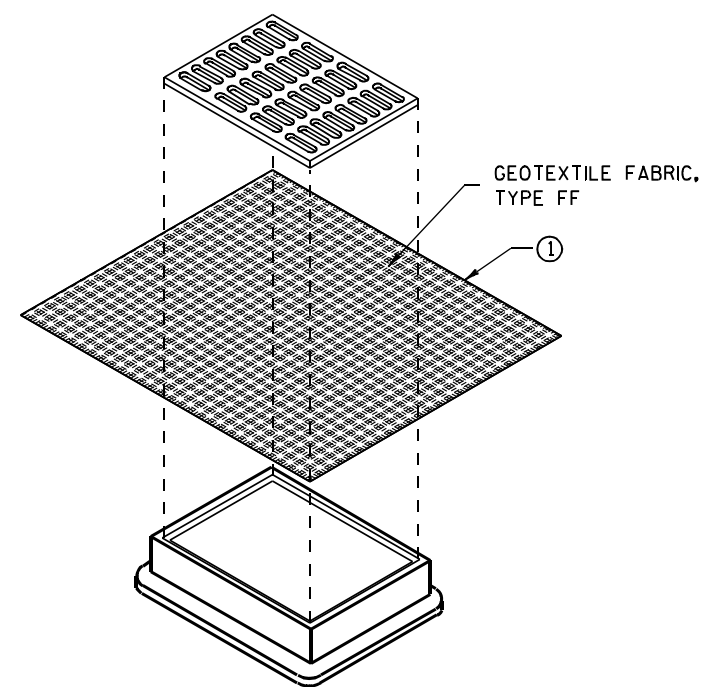
GENERAL NOTES

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

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

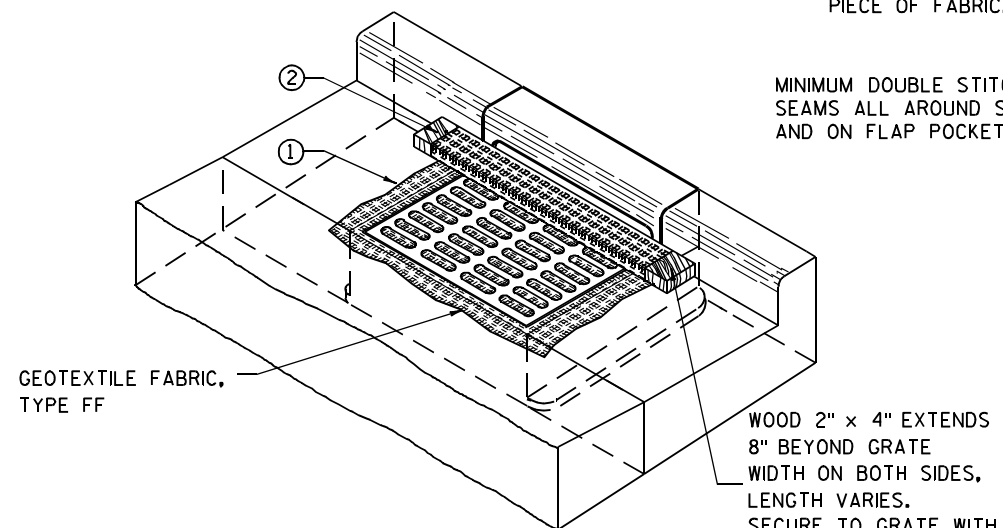
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

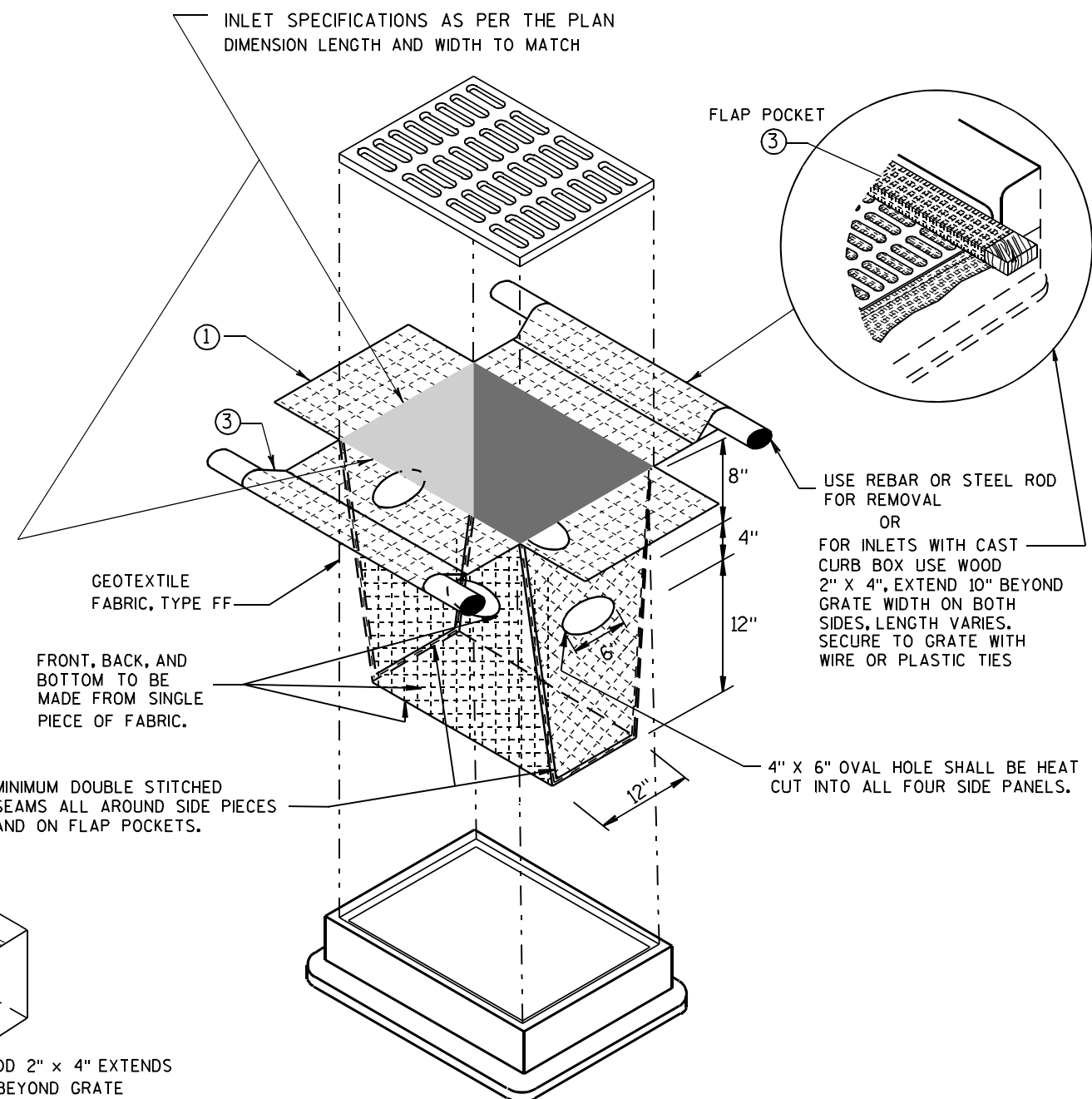
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



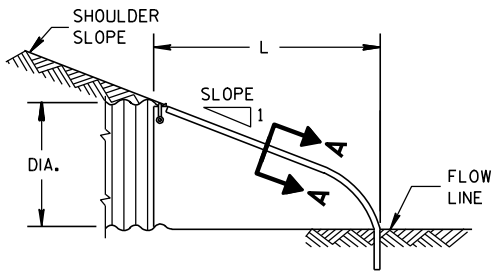
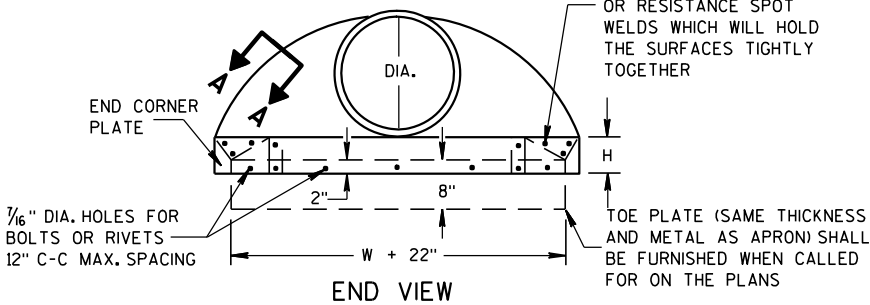
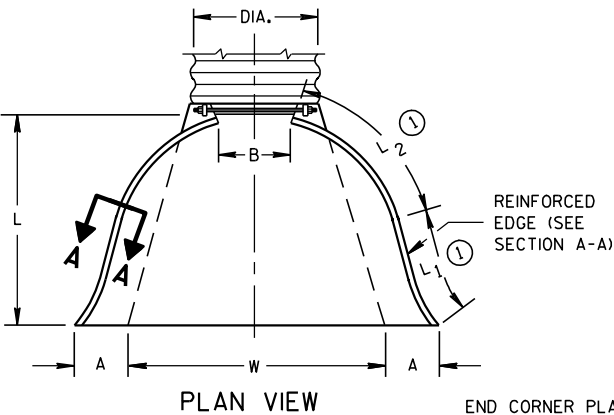
INLET PROTECTION, TYPE D

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

INLET PROTECTION TYPE A, B, C, AND D	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/16/02 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

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	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3	3 Pc.

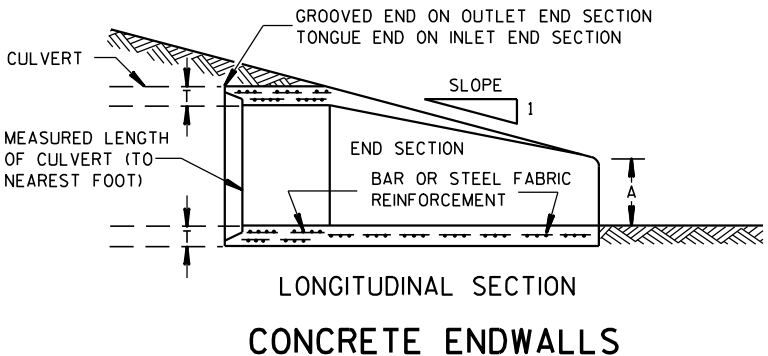
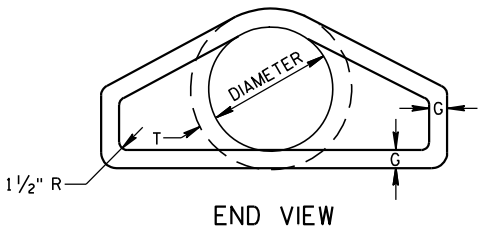
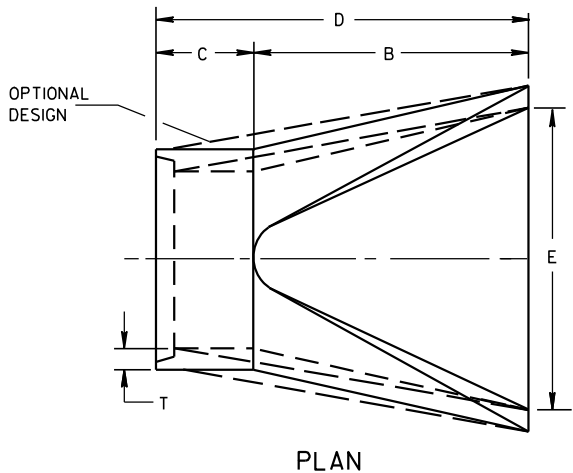
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

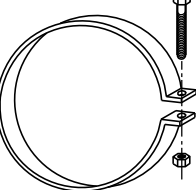
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 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 1/4-35	98 1/4-100	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

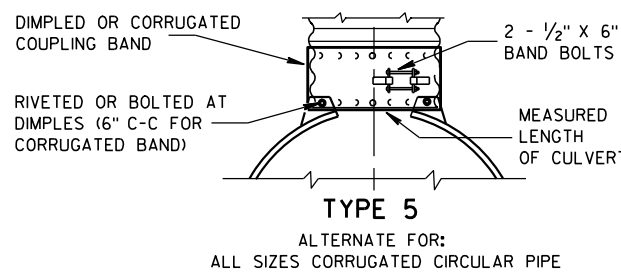
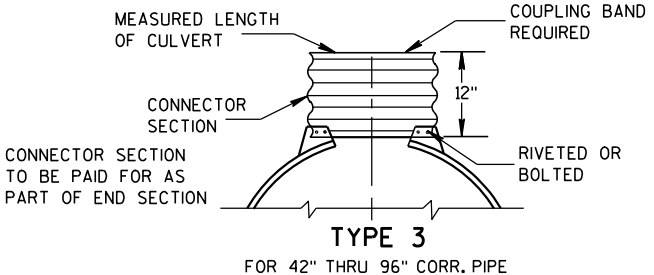
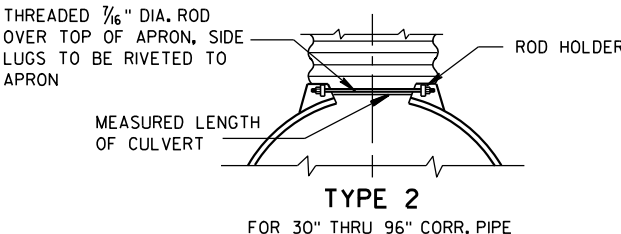
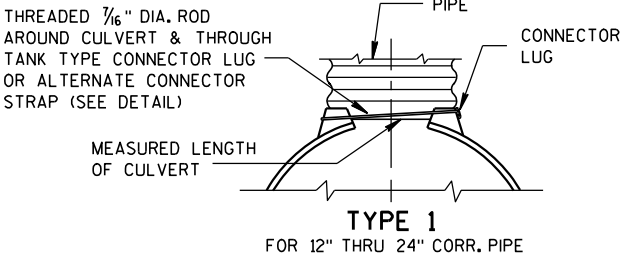


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



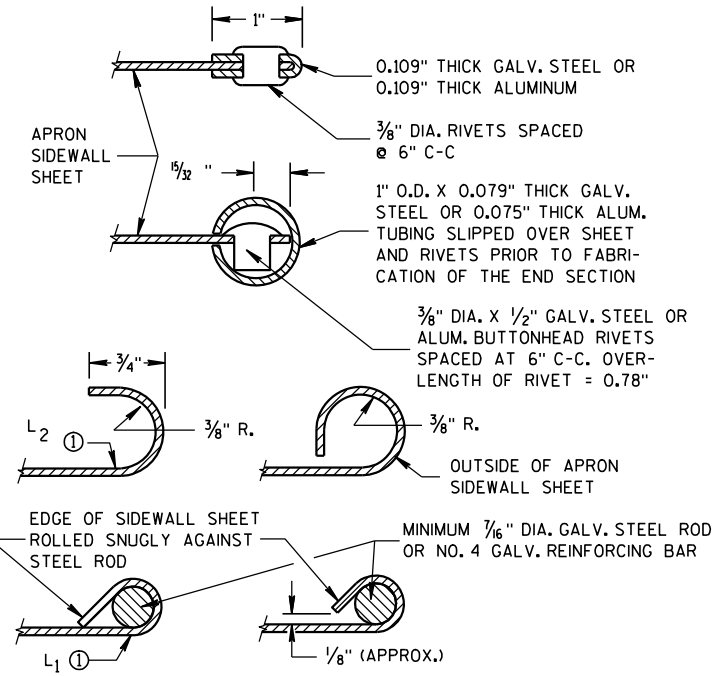
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

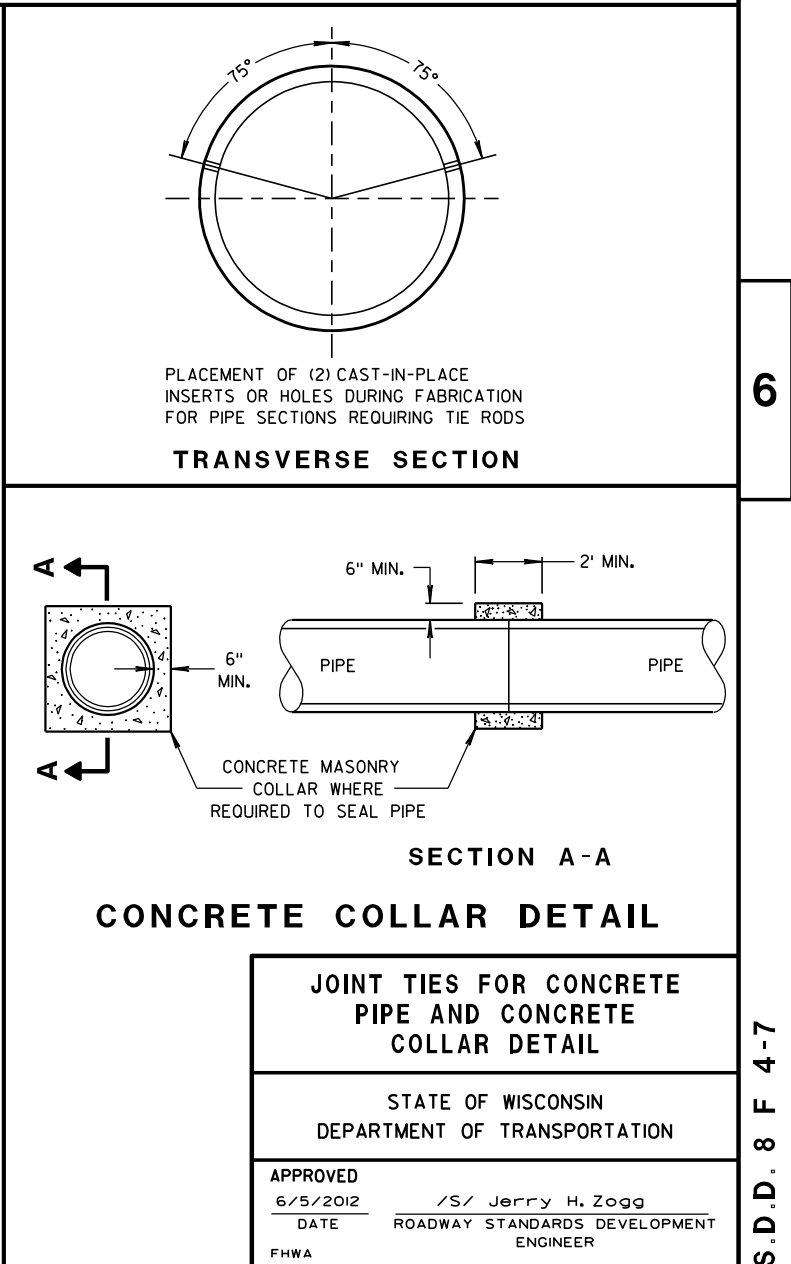
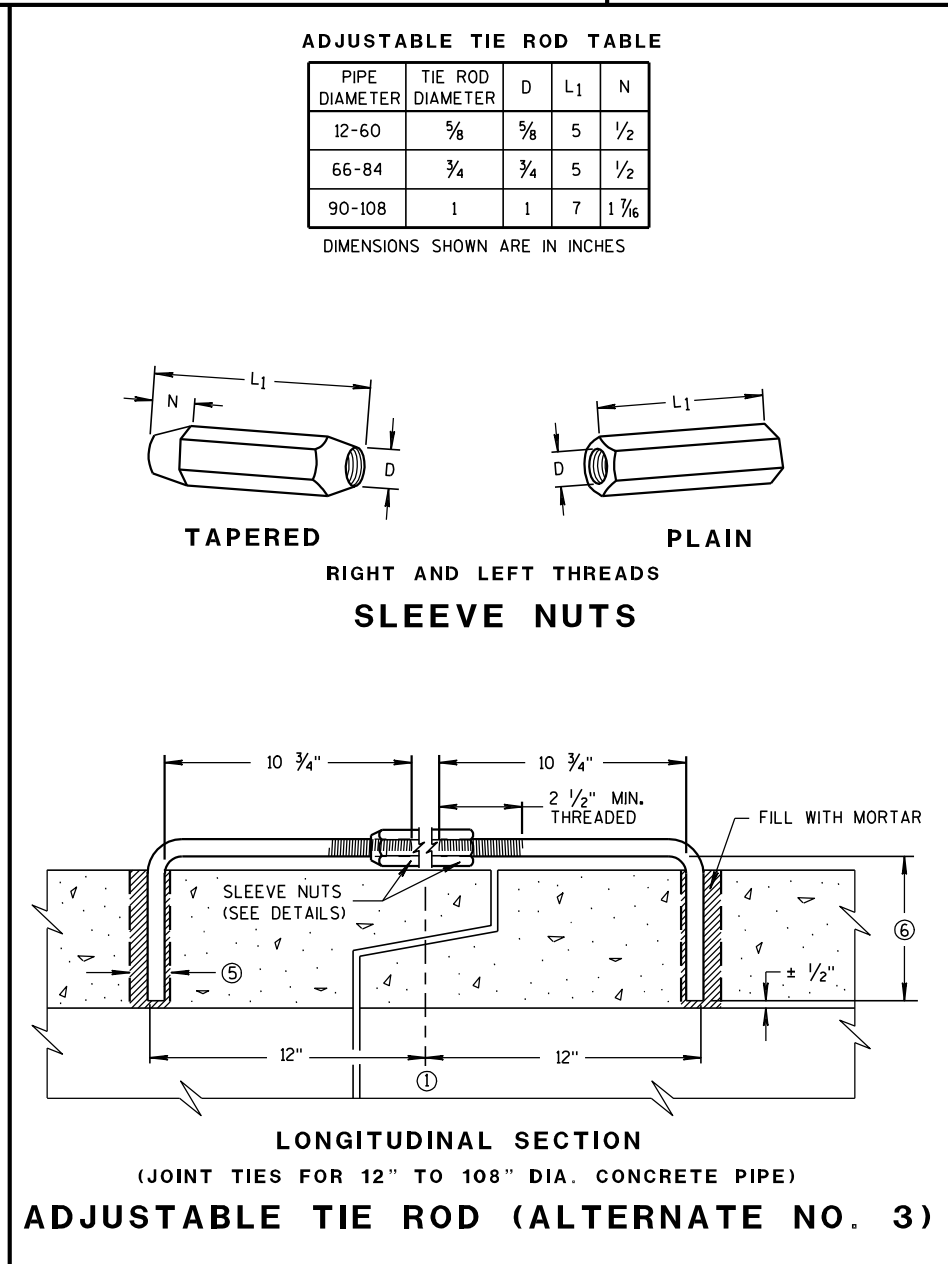
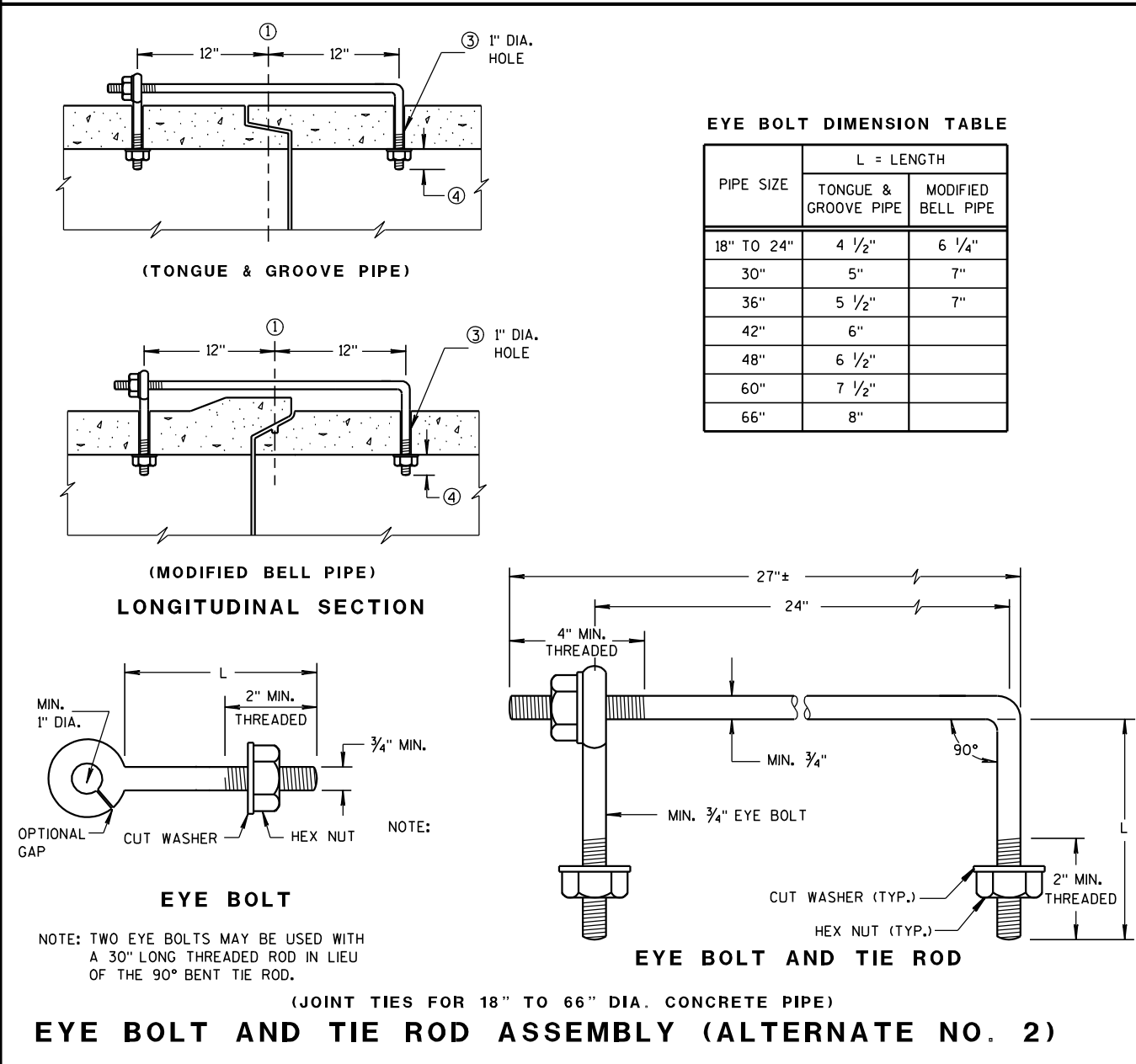
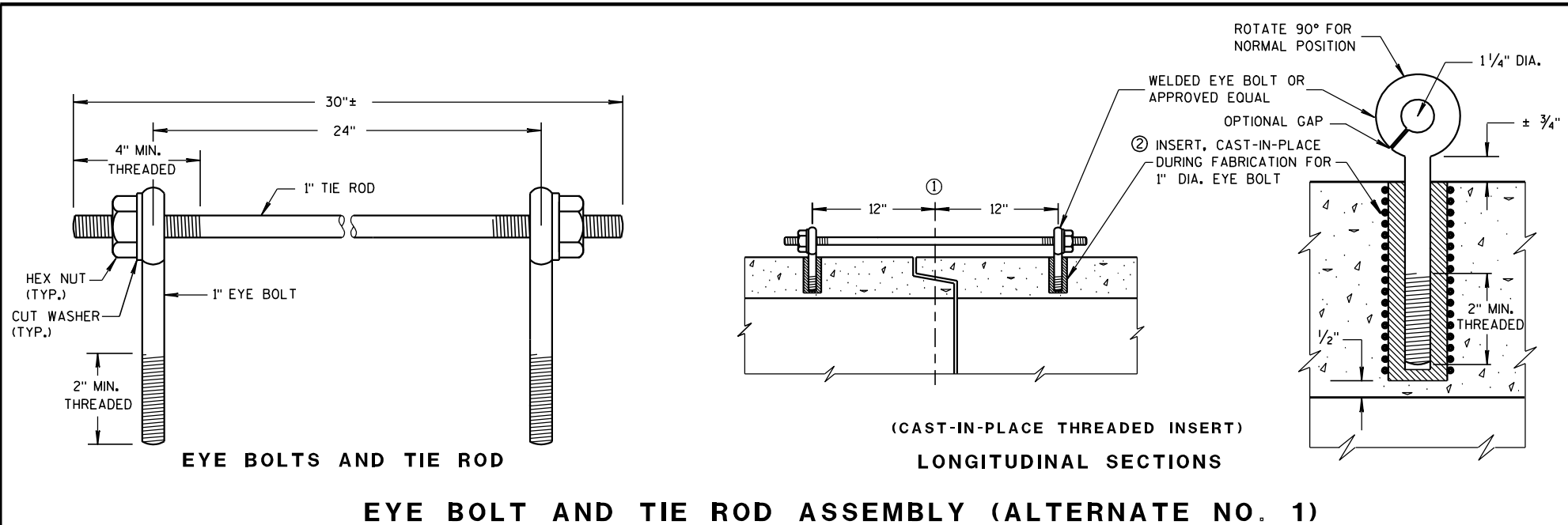


TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

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

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

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

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

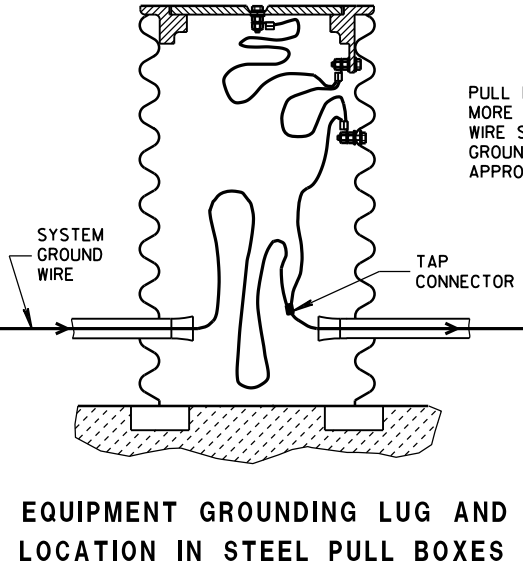
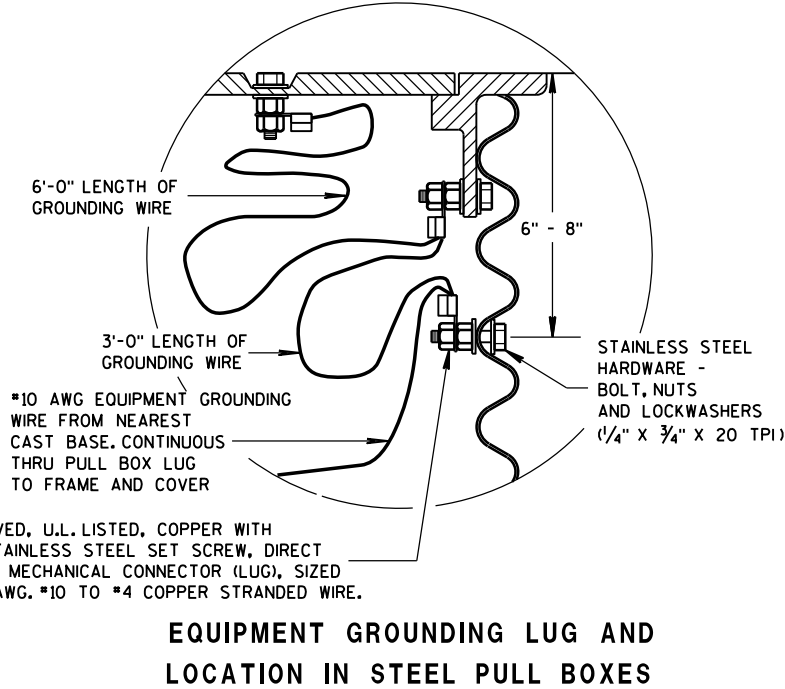
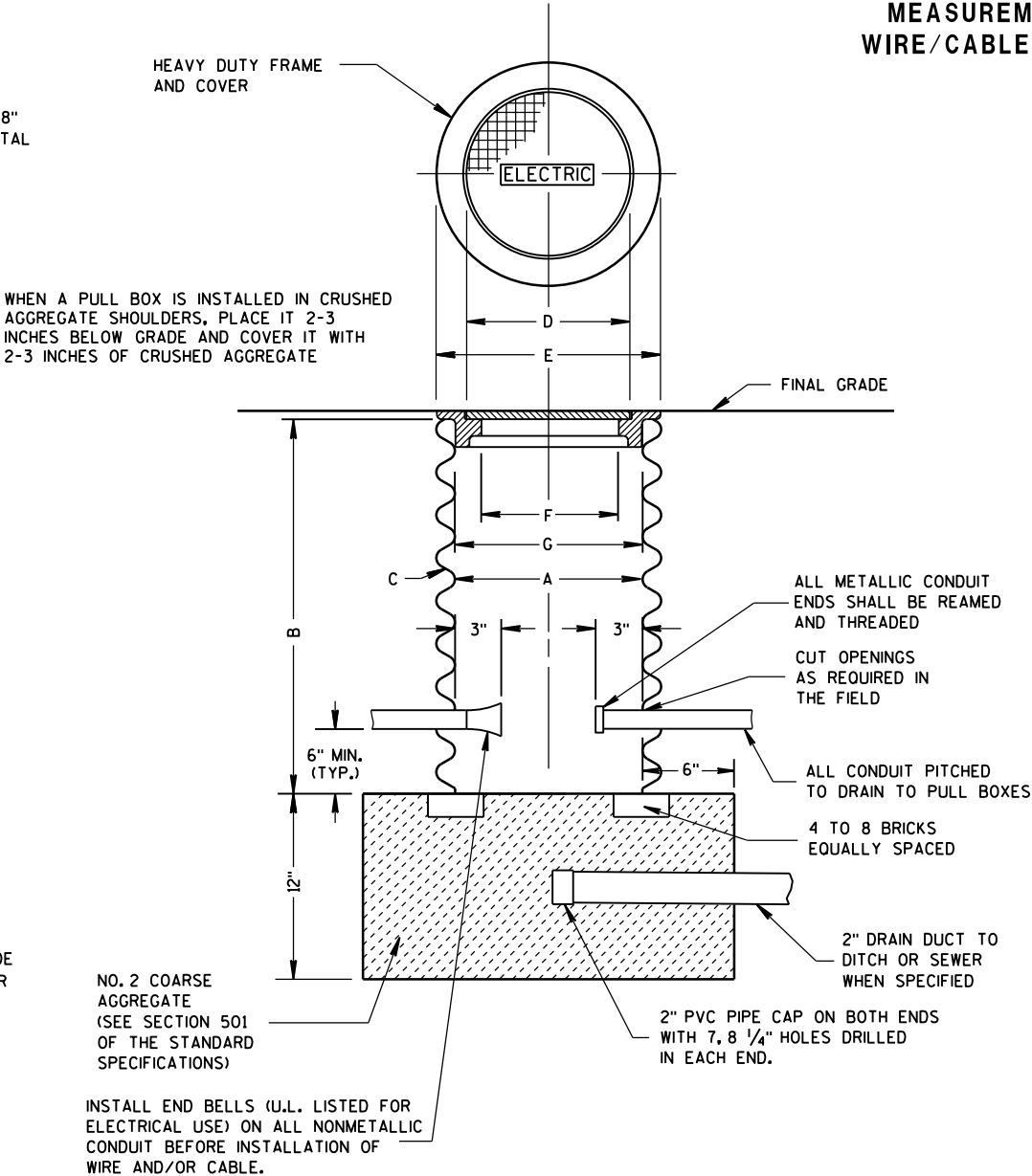
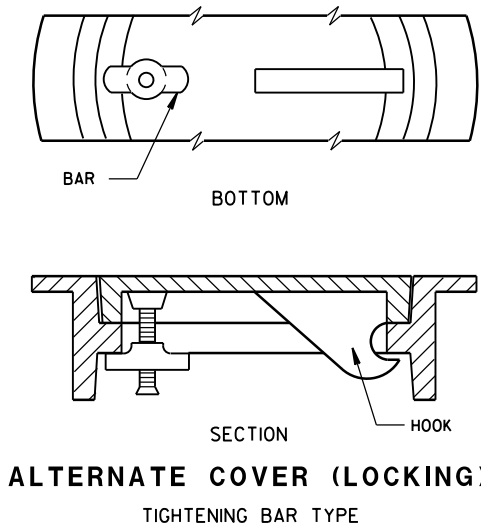
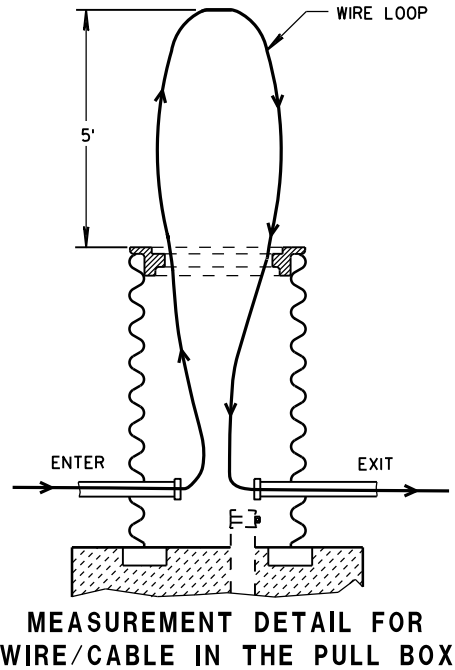
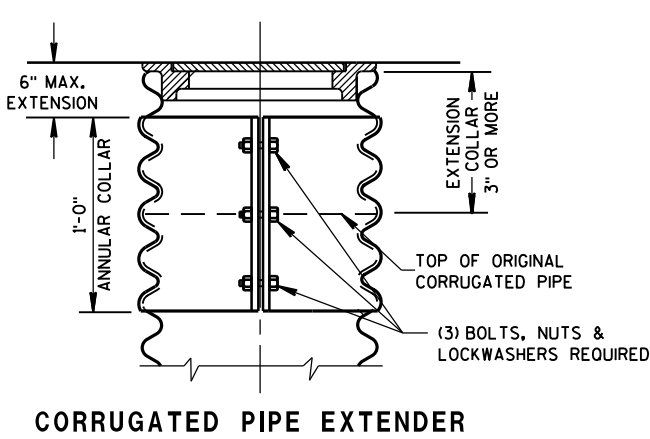
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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

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

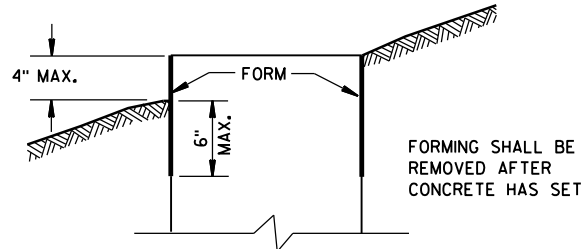
ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

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



PULL BOX	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

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



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

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

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

GENERAL NOTES (CONTINUED)

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

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

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

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

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 1, TYPE 2, TYPE 5, AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

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

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

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

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

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

3 (4) 1" DIA. X 5'-0" ANCHOR RODS.

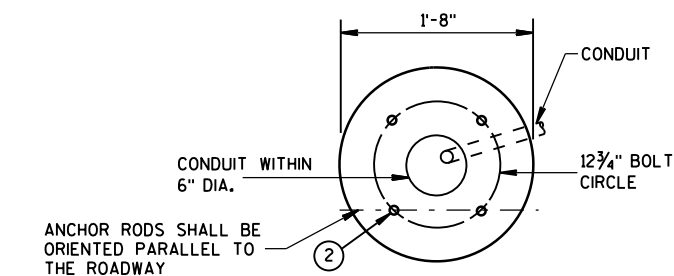
4 (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

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

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

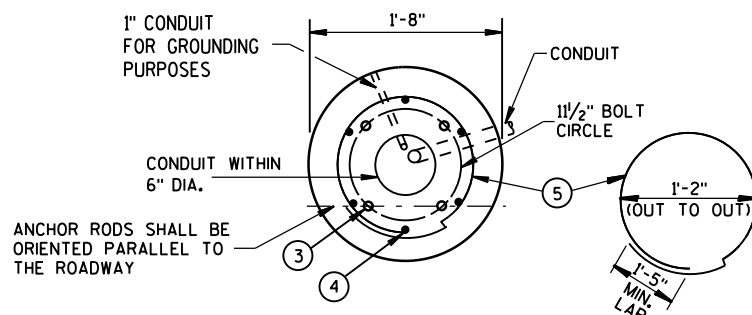
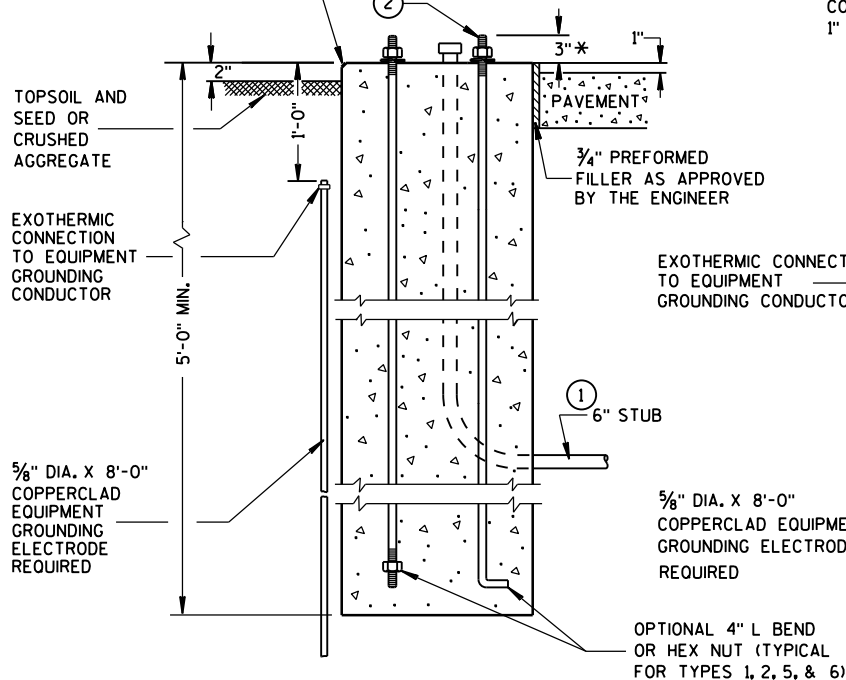
7 (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT.

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

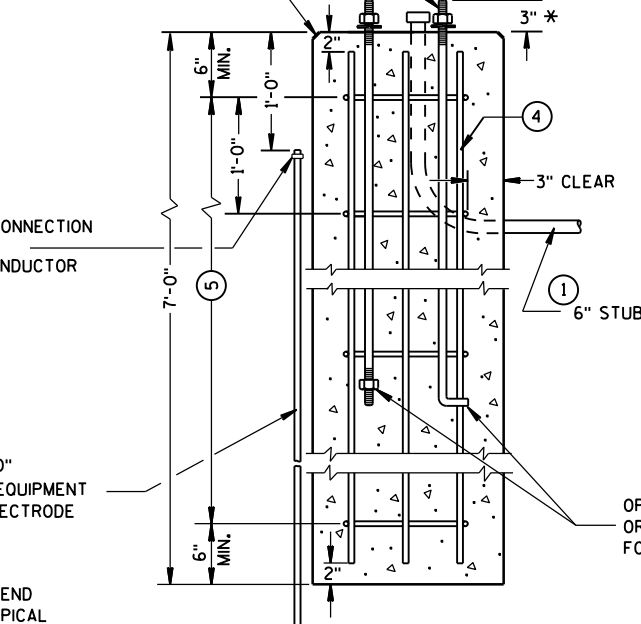


FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

HALF SECTION IN UNPAVED AREA (TYPICAL FOR TYPES 1, 2, 5, & 6)

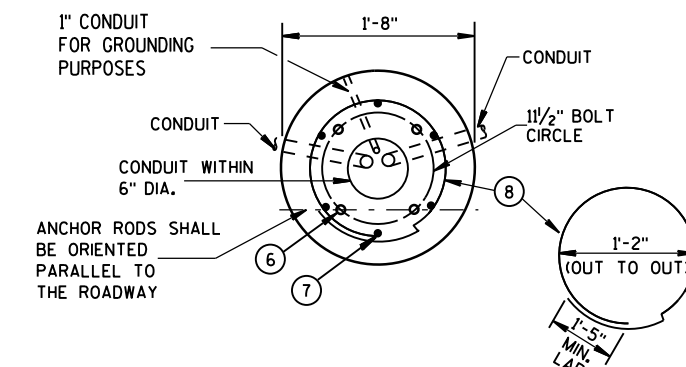


FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

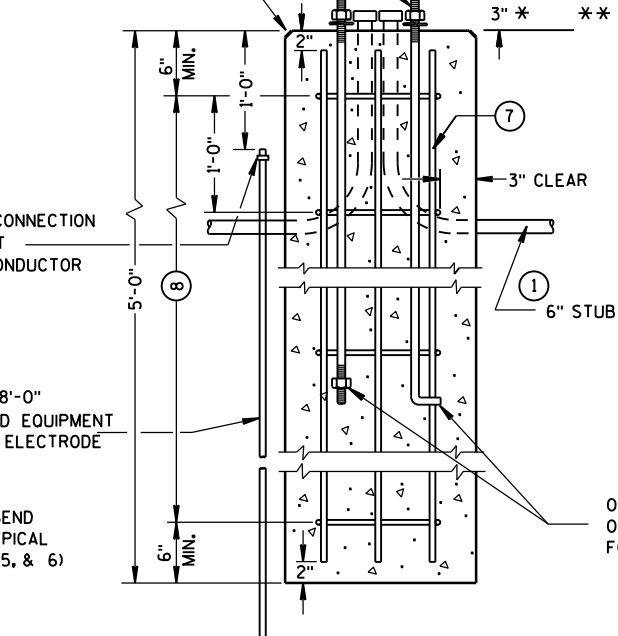


TYPE 2

CONCRETE BASES



FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



TYPE 5 & 6

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 3/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

CONCRETE BASES, TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014

DATE

/S/ Ahmet Demirbilek

STATE ELECTRICAL ENGINEER

FHWA

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

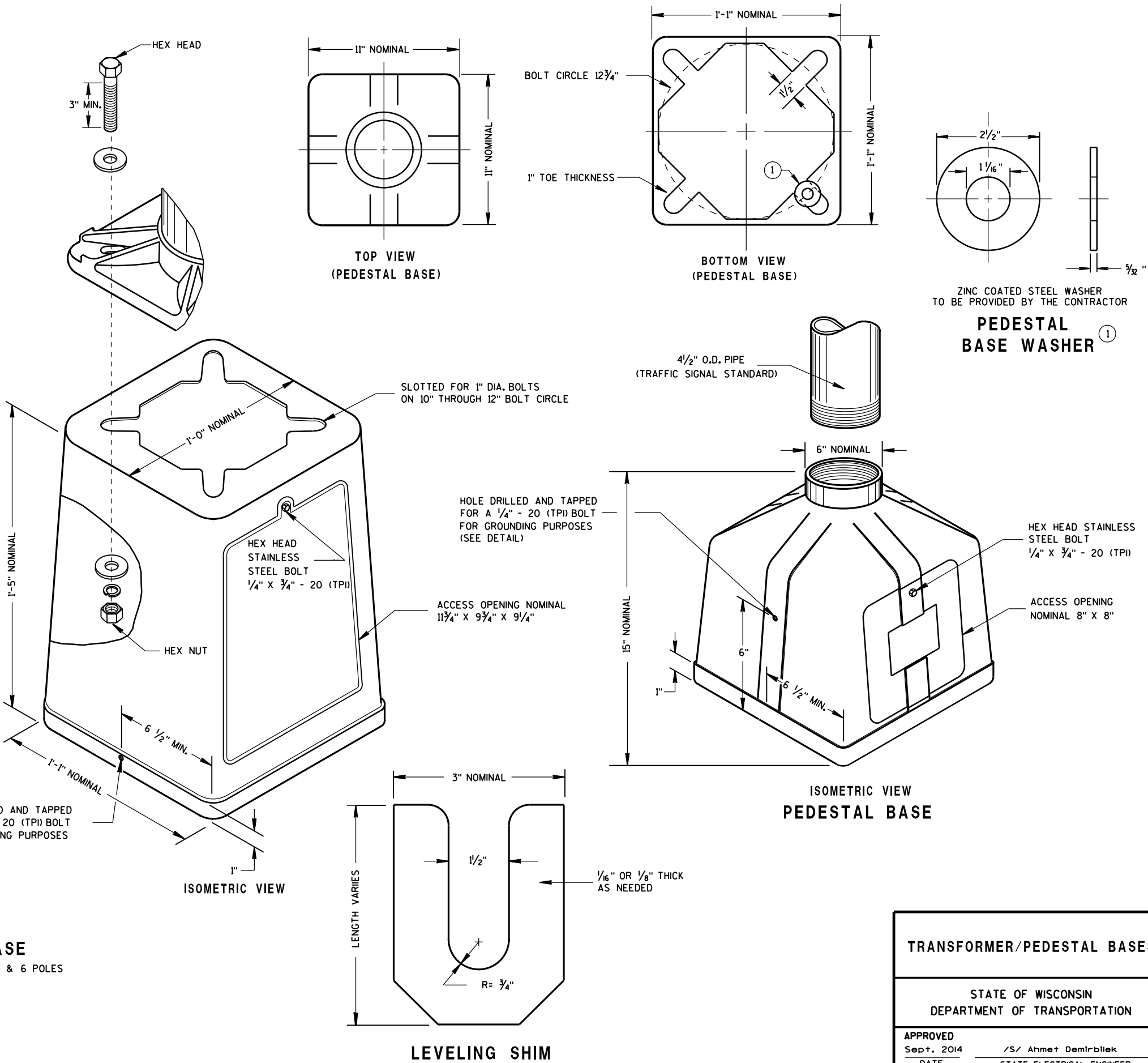
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.



TYPICAL MECHANICAL
CONNECTOR LUG
TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE
INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES

ISOMETRIC VIEW
PEDESTAL BASE

LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

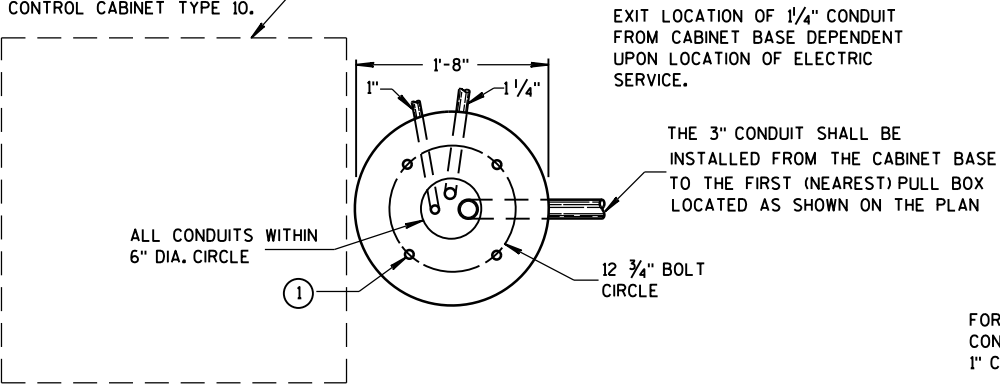
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA

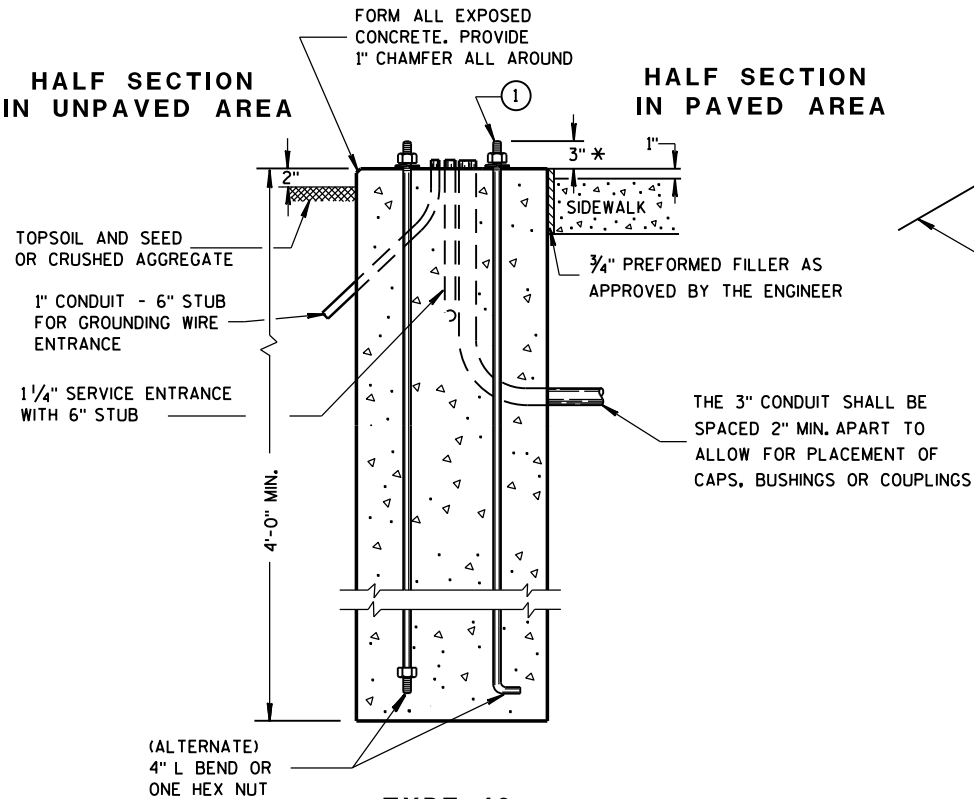
CONTROL CABINET BASE TYPE	DIMENSIONS				C.Y. CONCRETE (APPROX.)
	H	I	J	K	
TYPE 6 - 30" CABINET	34"	60"	10"	17"	.64
TYPE 7 - 38" CABINET	42"	60"	10"	21"	.93
TYPE 8 - 38" CABINET	42"	72"	12"	21"	1.29
TYPE 9 - VARIABLE	54"	72"	14"	27"	1.56
TYPE 10 - POST MOUNT	AS SHOWN				.65 *

* INCLUDES MAINTENANCE PLATFORM.

TYPICAL 3'-0" X 3'-0" X 4" THICK MAINTENANCE PLATFORM. LOCATION TO BE DETERMINED IN THE FIELD. COST TO BE INCLUDED UNDER CONCRETE CONTROL CABINET TYPE 10.

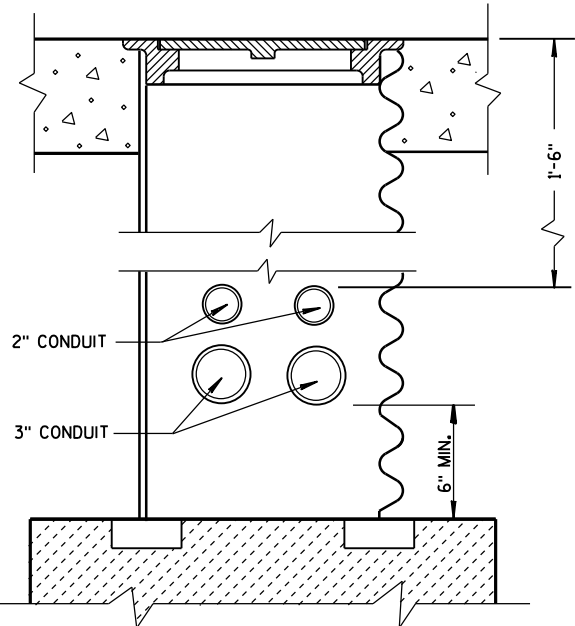
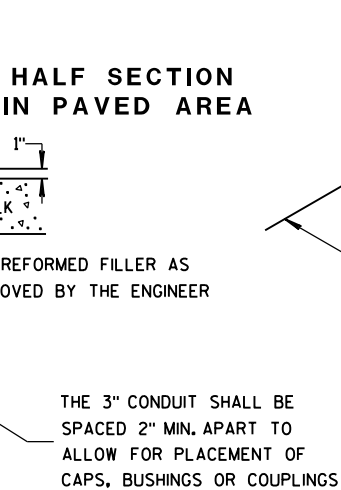


HALF SECTION IN UNPAVED AREA

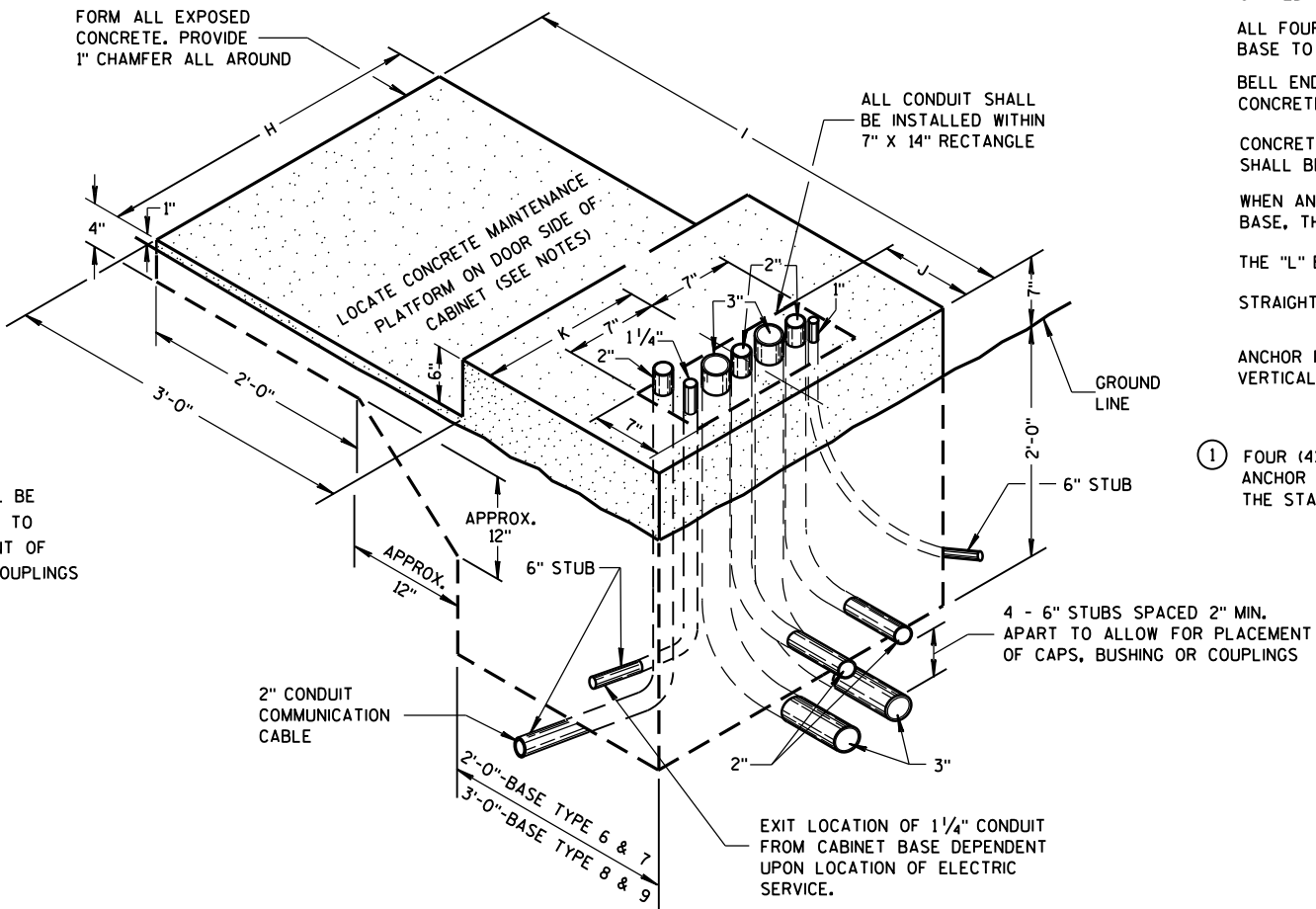


TYPE 10

HALF SECTION IN PAVED AREA



CONDUIT LOCATIONS IN 24" X 36" PULL BOX (LEADING TO CONTROLLER CABINET BASE TYPE 6, 7, 8 AND 9)



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

GENERAL NOTES

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

INSTALL FOUR 1/2 INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH APPROVED CONCRETE MASONRY ANCHORS WITH A PULLOUT STRENGTH OF 9,000 LBS. TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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

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

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

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

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

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

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

THE "L" BEND SHALL NOT BE THREADED.

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

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

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

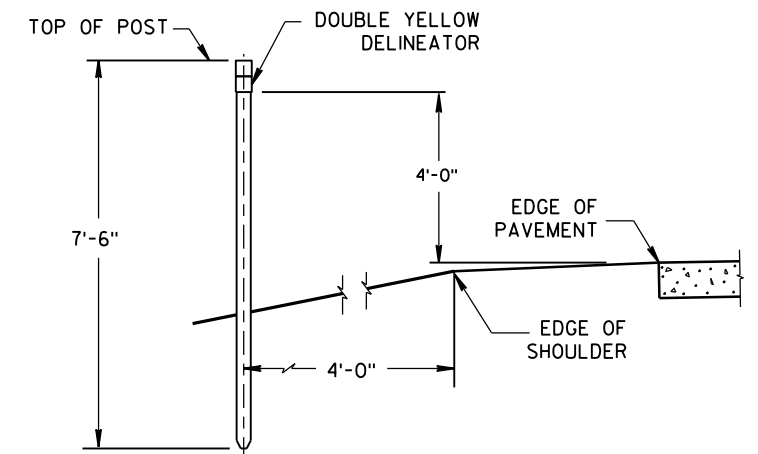
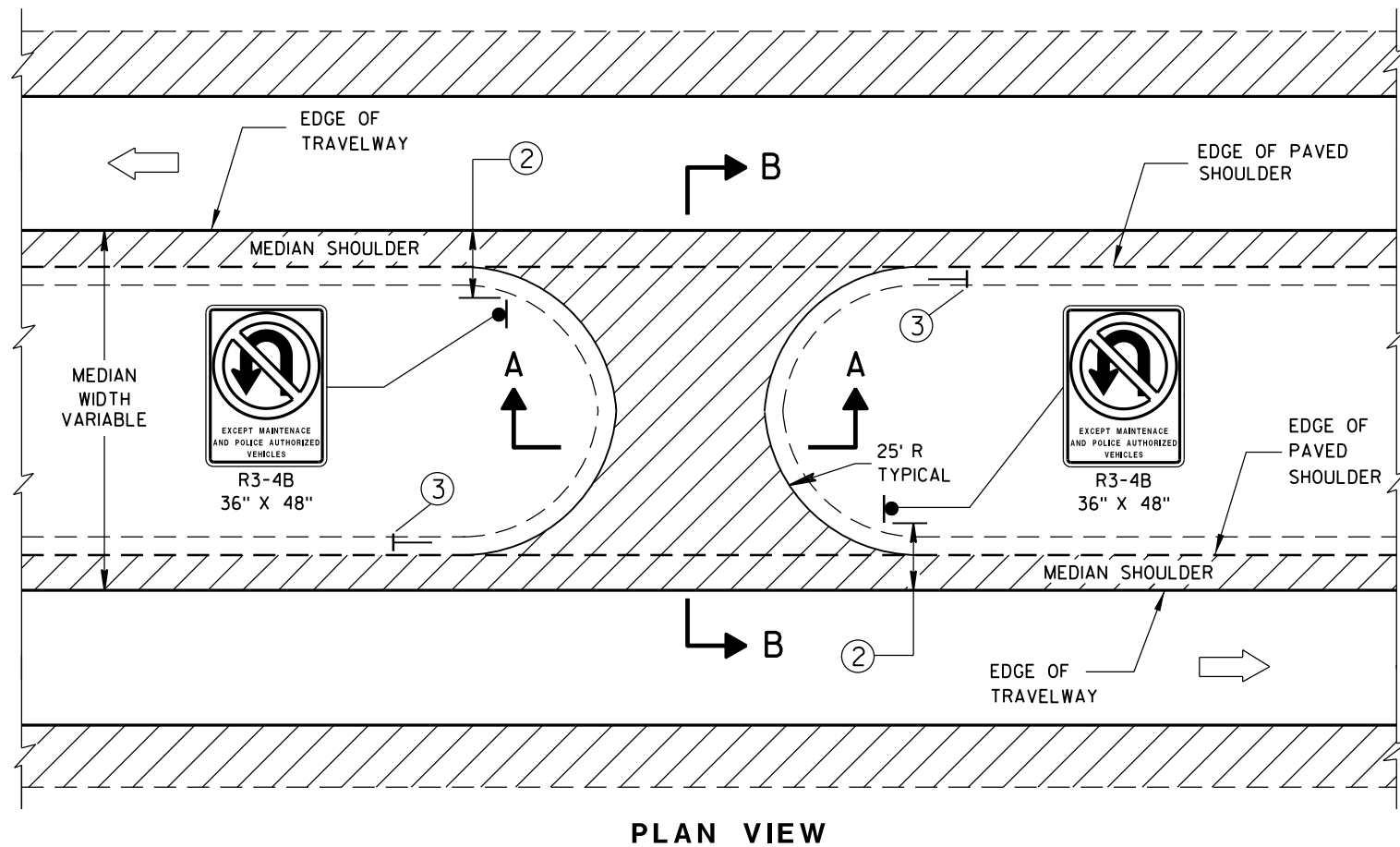
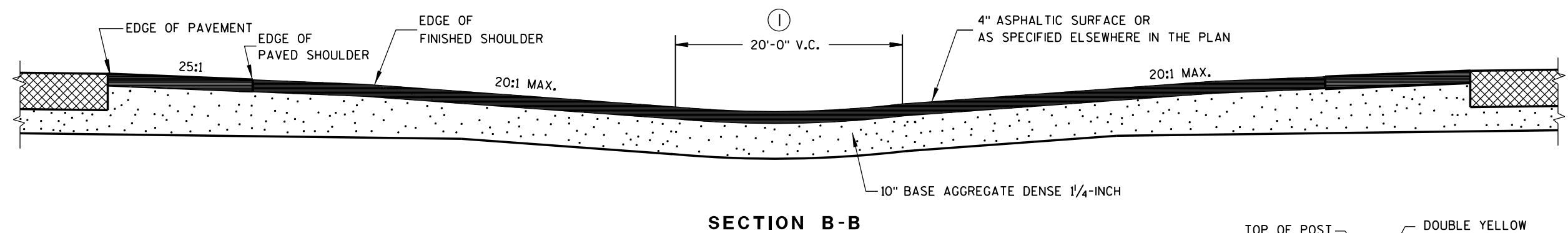
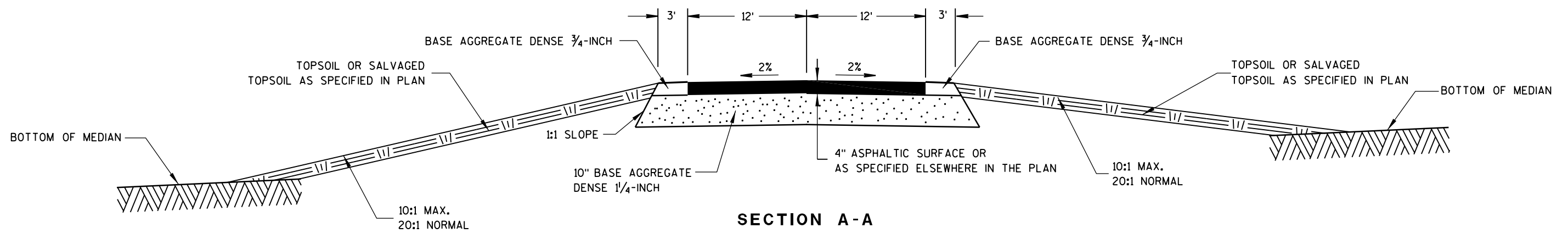
CONCRETE CONTROL CABINET BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA

CONCRETE CONTROL CABINET BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 3/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.



GENERAL NOTES

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

- ① ADJUST VERTICAL CURVE LOCATION Laterally TO MAINTAIN 20:1 MAX.
- ② SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.
- ③ INSTALL DOUBLE YELLOW DELINEATOR. SEE STANDARD DETAIL DRAWING 15A2.

MAINTENANCE CROSSOVER
FOR FREEWAYS

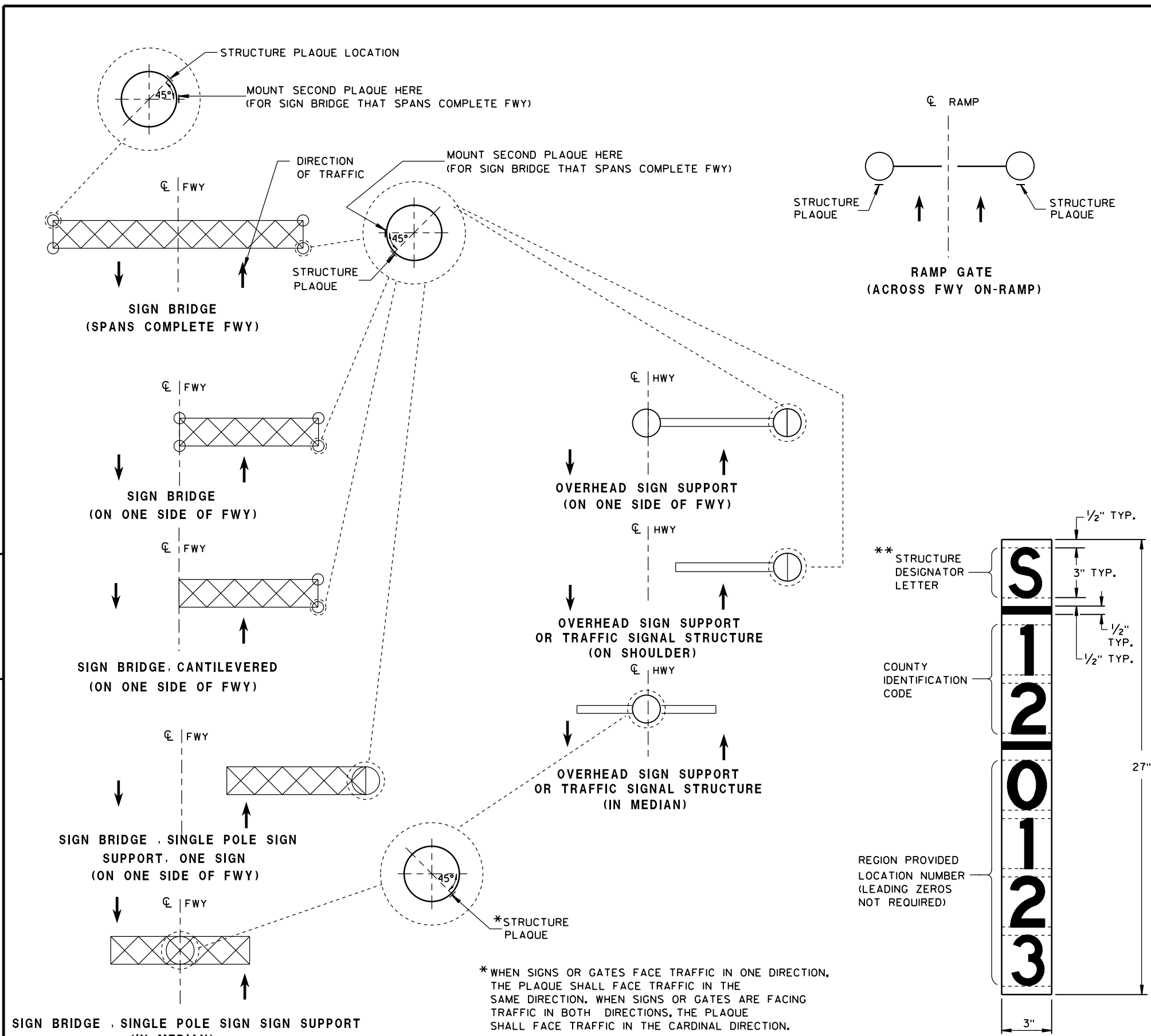
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



LOCATION OF RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT & TRAFFIC SIGNAL STRUCTURE PLAQUES

RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT AND TRAFFIC SIGNAL STRUCTURE PLAQUE FOR SIGN BRIDGES AND OVERHEAD SIGN SUPPORT WHICH ARE NOT STRUCTURE MOUNTED

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

IF THE PROPOSED SIGN BRIDGE OR OVERHEAD SIGN SUPPORT IS REPLACING AN EXISTING SIGN BRIDGE OR OVERHEAD SIGN SUPPORT, A NEW IDENTIFICATION PLAQUE WILL BE REQUIRED.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

- GALVANIZED STEEL SHAFT - 3 STAINLESS STEEL POP RIVETS
- A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS; FASTEN WITH STAINLESS SELF-TAPPING SCREWS
- ALUMINUM SHAFTS - 3 ALUMINUM POP RIVETS

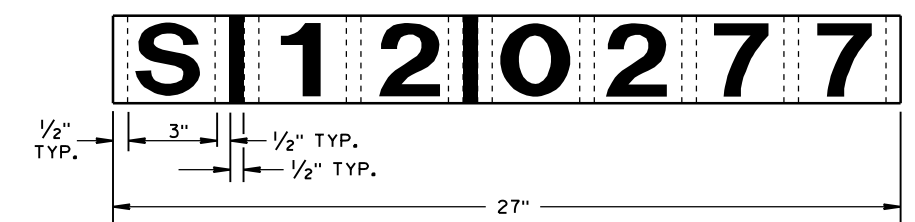
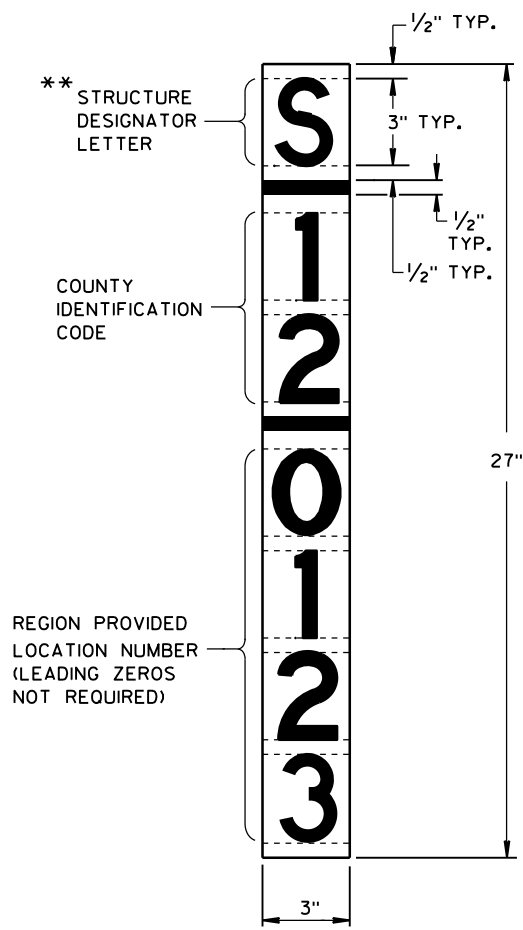
MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

- BASE - SHEET ALUMINUM, 0.060" THICK.
- FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE
- LINES - BLACK, 1/2" WIDE, SELF-ADHESIVE
- CHARACTERS:- BLACK, SELF ADHESIVE, SERIES "D", SIZE AS SHOWN.

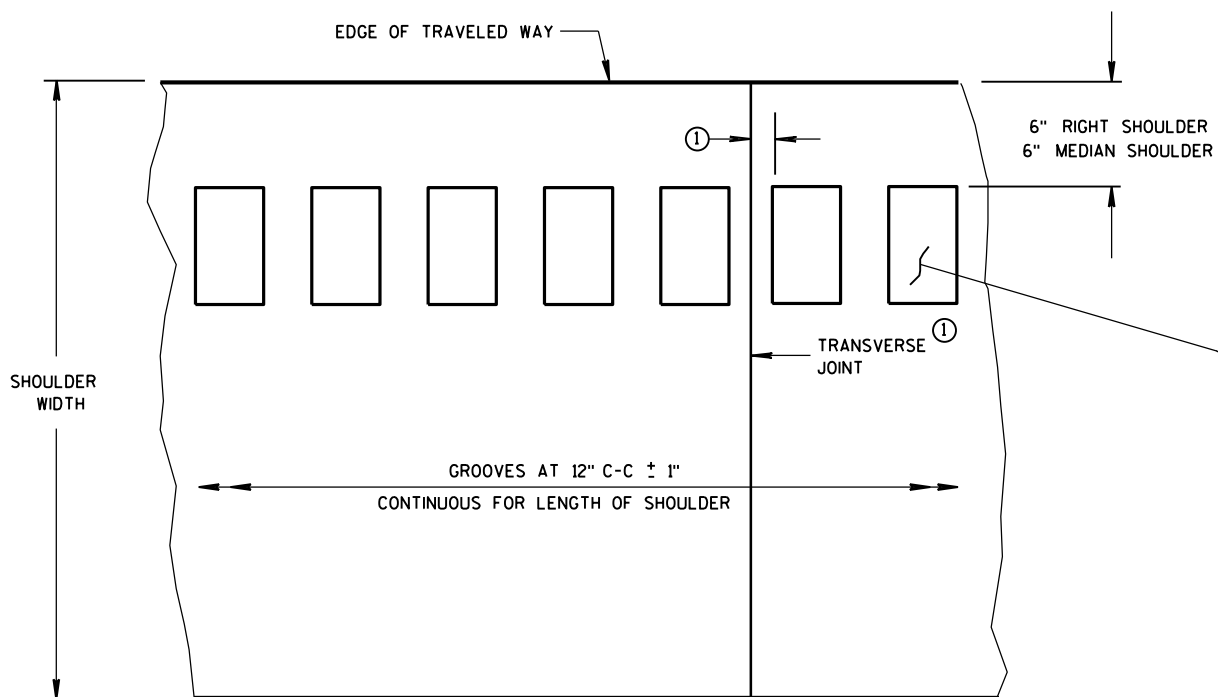
FOR SIGN BRIDGES, STRUCTURE MOUNTED, THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY AS SHOWN ON THE DRAWING. THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY TO THE BACK OF THE SIGN, BETWEEN THE ALUMINUM EXTRUSIONS, NEAR THE TOP LEFT HAND CORNER OF THE SIGN. THE BASE MATERIAL SHALL BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE ALUMINUM SURFACE. PRIOR TO ADHERING THE MATERIAL, THE ALUMINUM SURFACE SHALL BE SMOOTH, CLEAN AND DRY.

WHERE SIGN BRIDGE ILLUMINATION IS PROVIDED, THE STRUCTURE MUST ALSO HAVE A SIGN BRIDGE CIRCUIT PLAQUE AS SHOWN IN THE ELECTRICAL DETAILS.

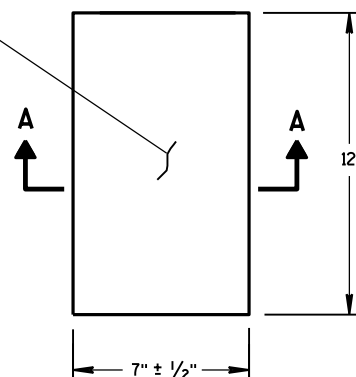


** LETTER "G" UTILIZED FOR RAMP GATES. LETTER "S" UTILIZED FOR SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, AND TRAFFIC SIGNALS.

STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, & TRAFFIC SIGNALS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 12/4/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



PLAN VIEW
SHOULDER WITH GROOVES



PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

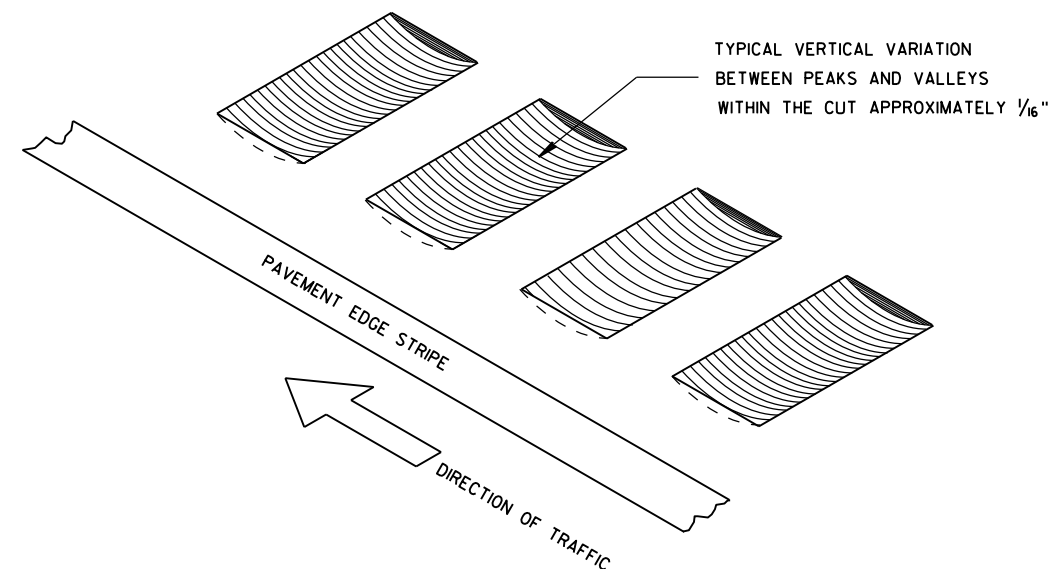
GENERAL NOTES

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

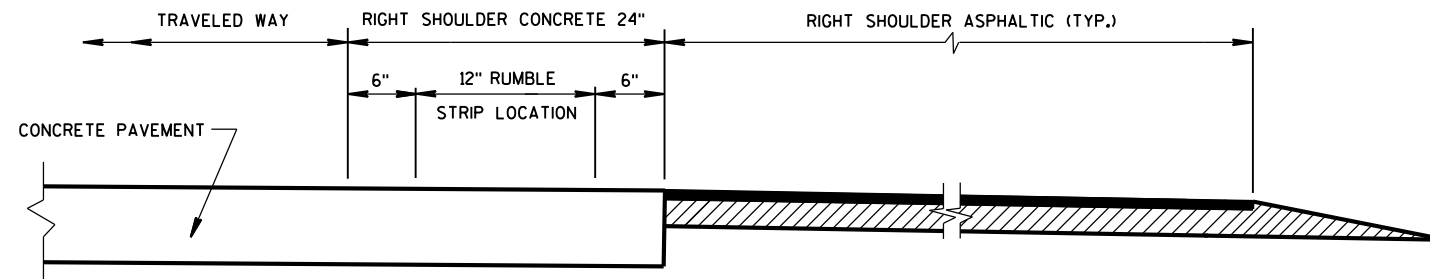
RUMBLE STRIPS ON EXPRESSWAYS

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

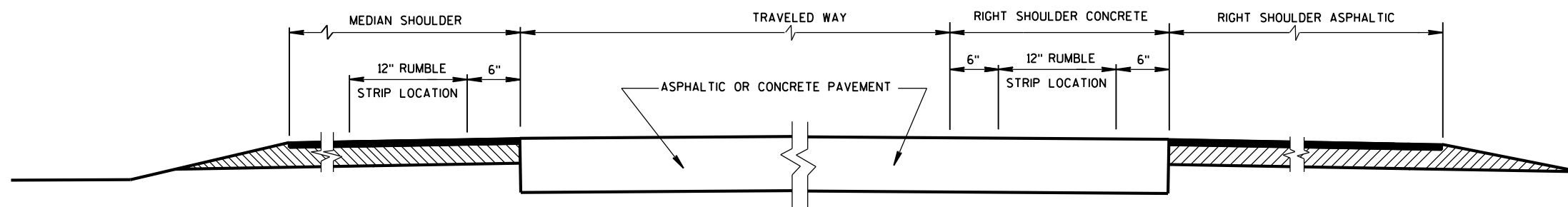
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



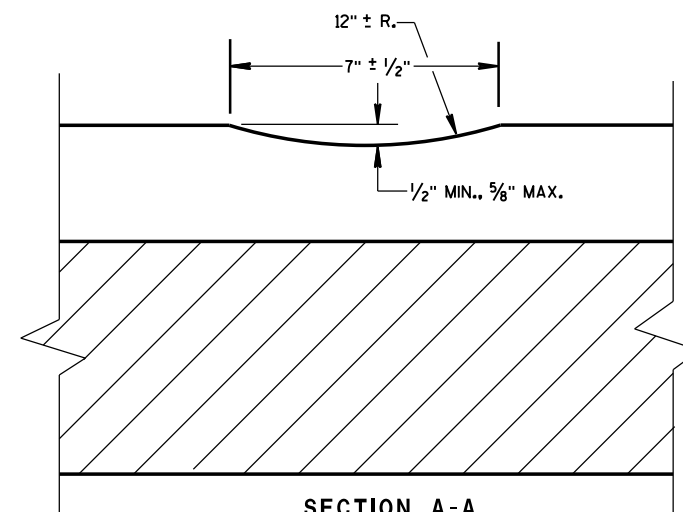
ISOMETRIC



SECTION VIEW
(CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



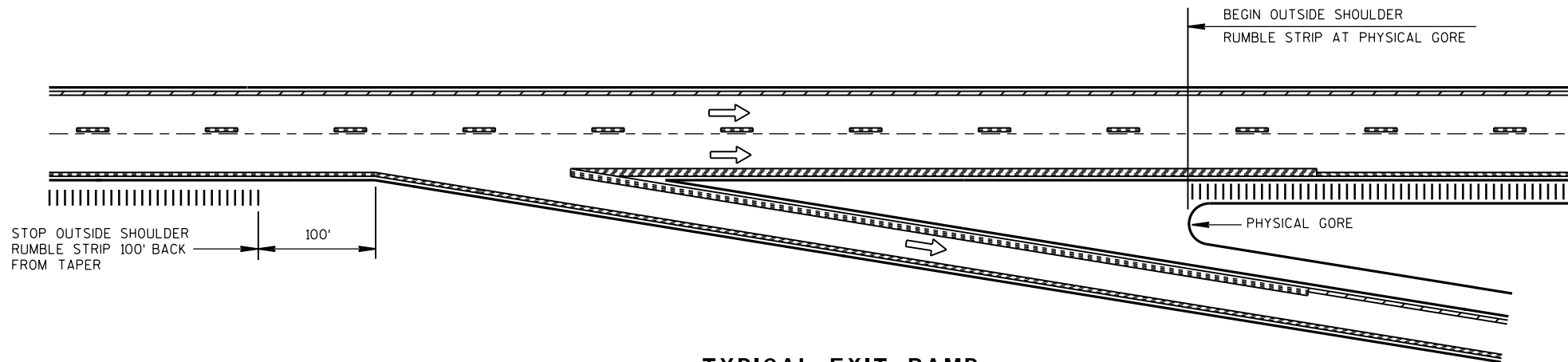
SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



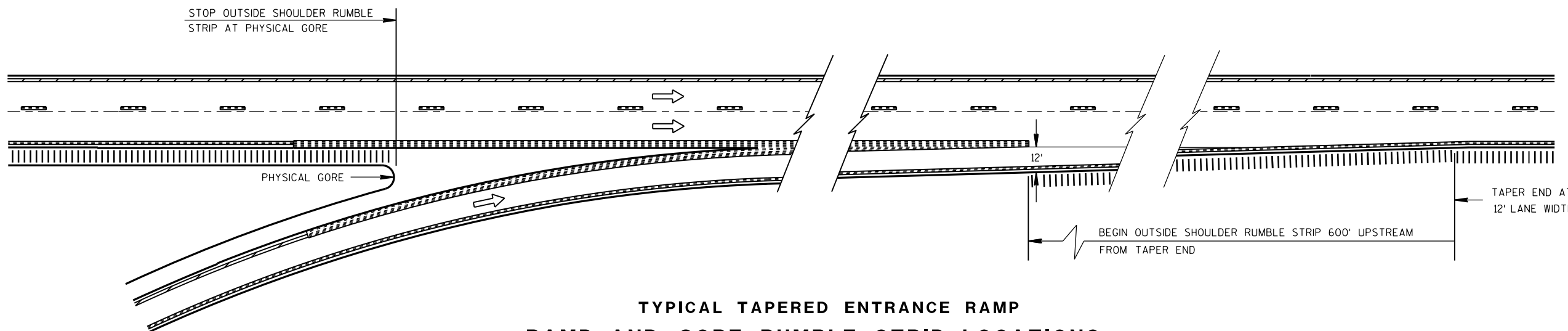
TYPICAL EXIT RAMP

NOTES:

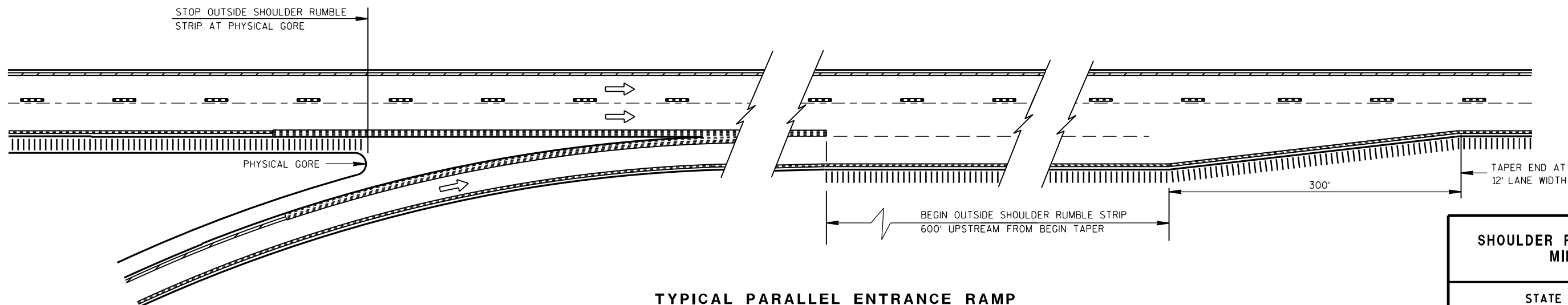
NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

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

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL



**TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**



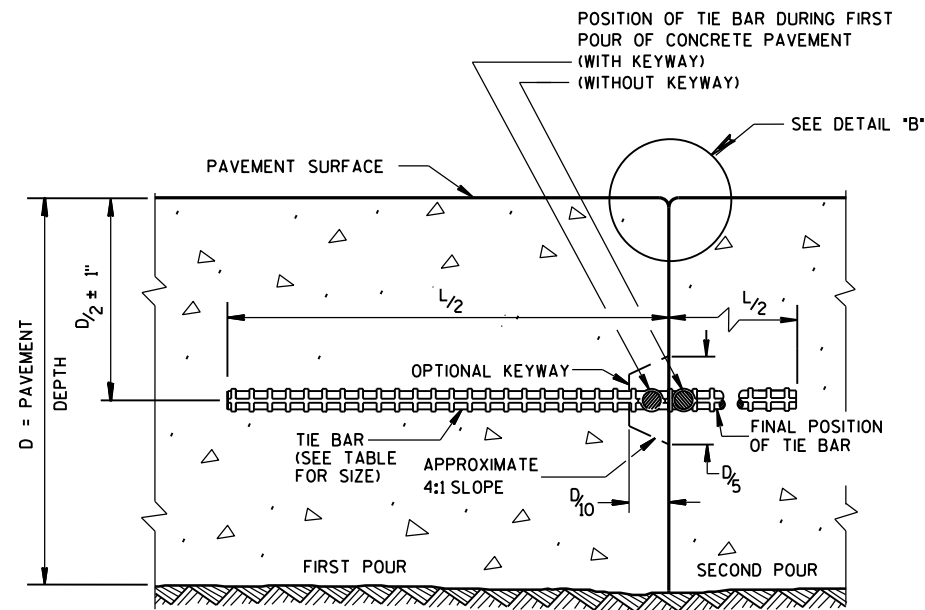
**TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**

**SHOULDER RUMBLE STRIP,
MILLING**

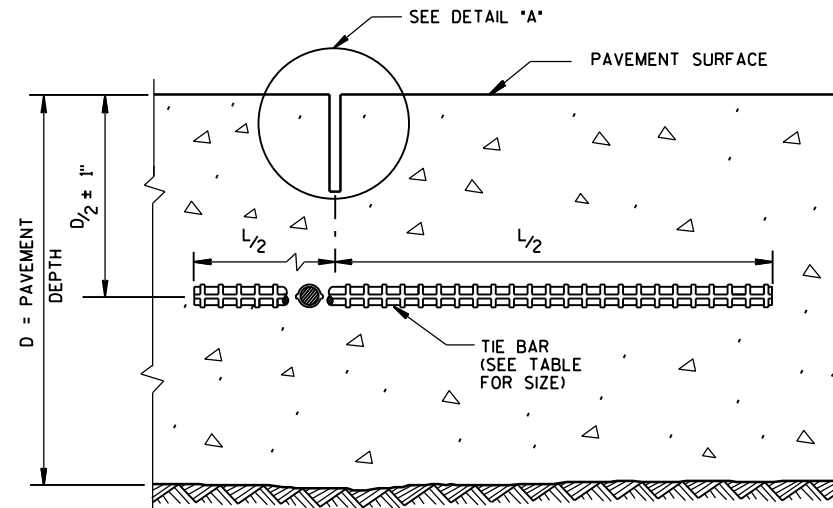
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/17/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



CONSTRUCTION JOINT



SAWED JOINT

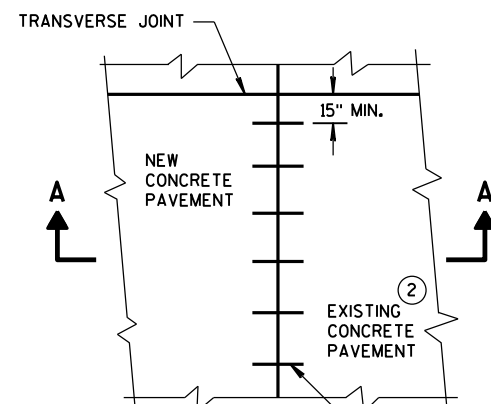
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

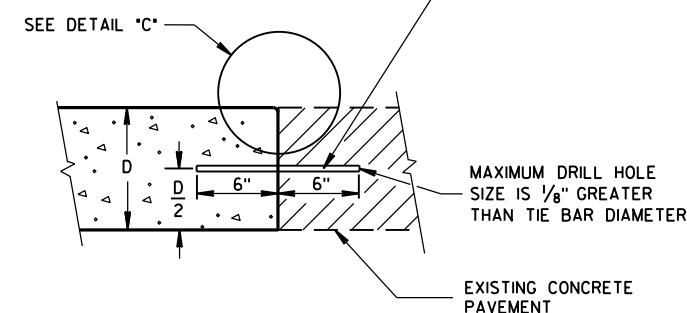
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

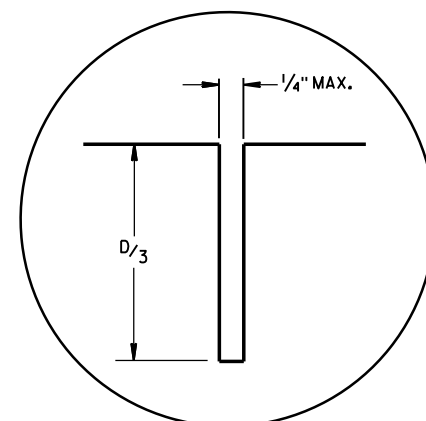
- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



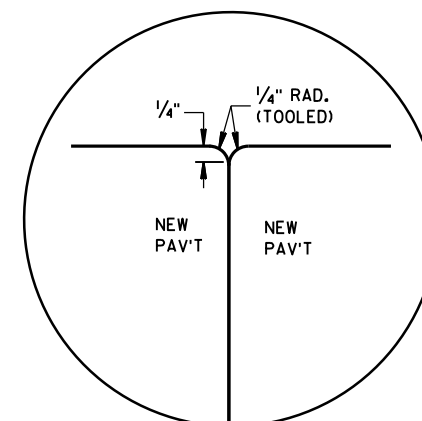
PLAN VIEW



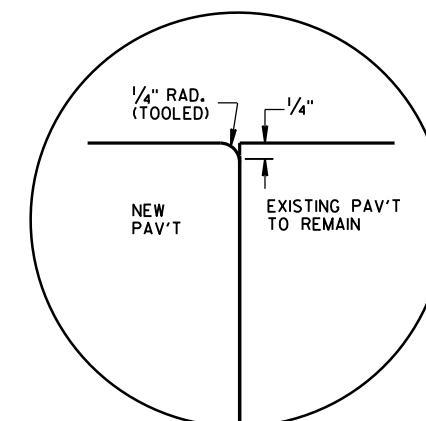
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



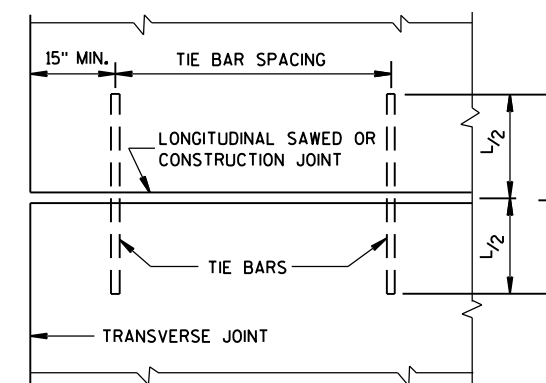
DETAIL "C"

TIE BAR TABLE

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

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

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



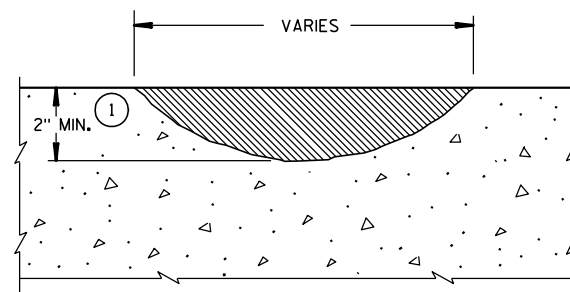
PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

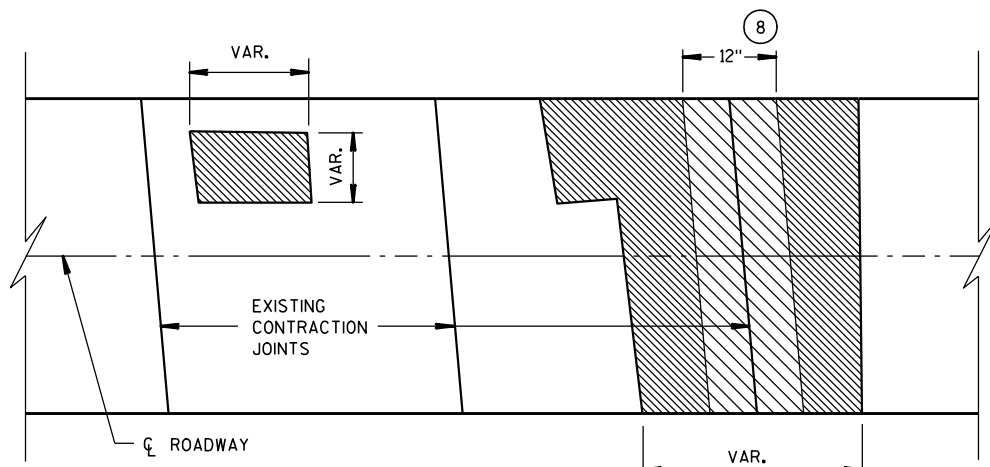
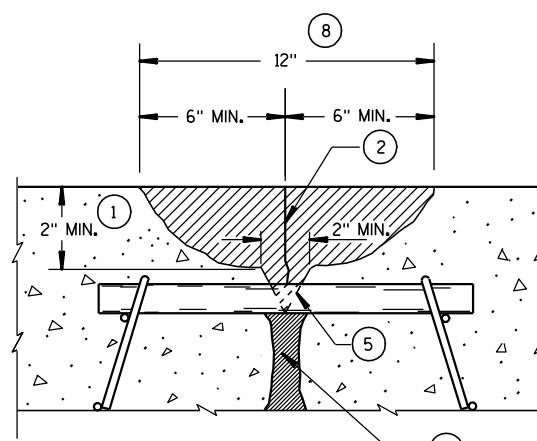
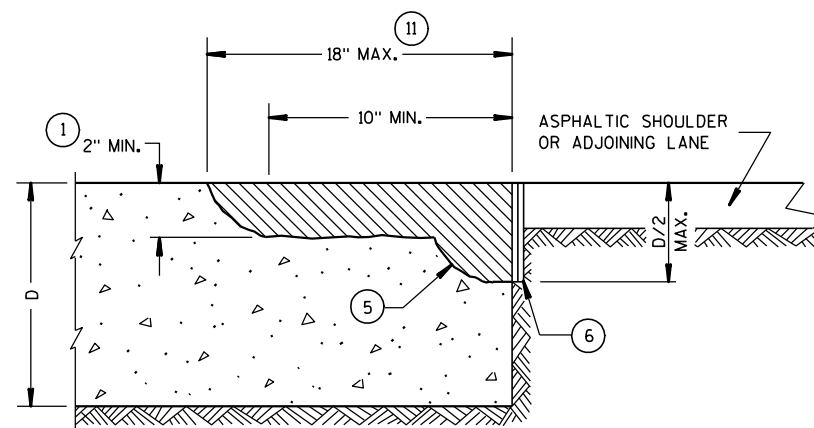
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
FHWA

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

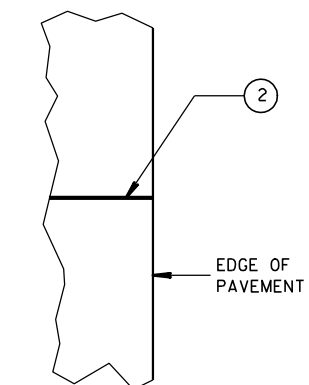


PROFILE VIEW

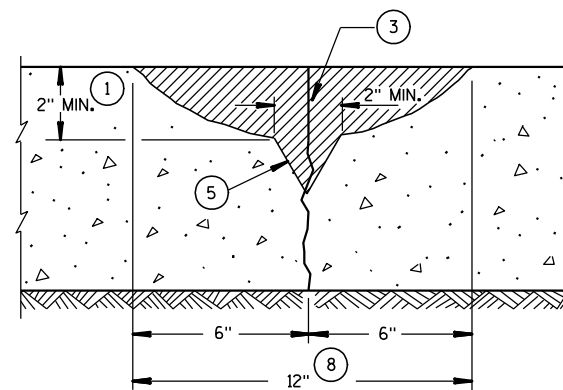
PLAN VIEW
SURFACE REPAIRPROFILE VIEW
JOINT REPAIR

PROFILE VIEW

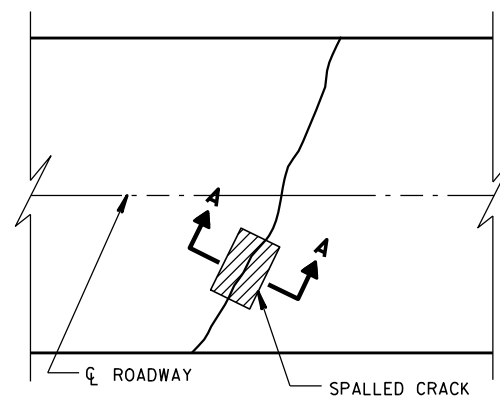
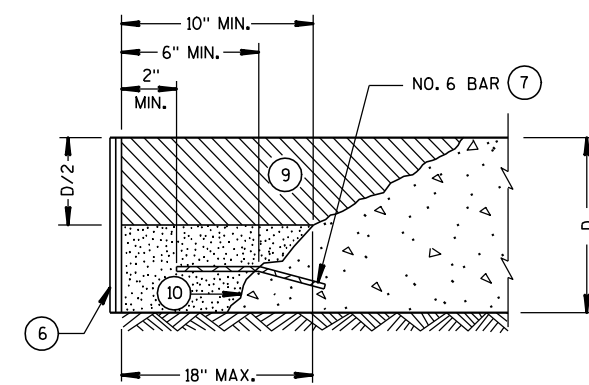
EDGE REPAIR



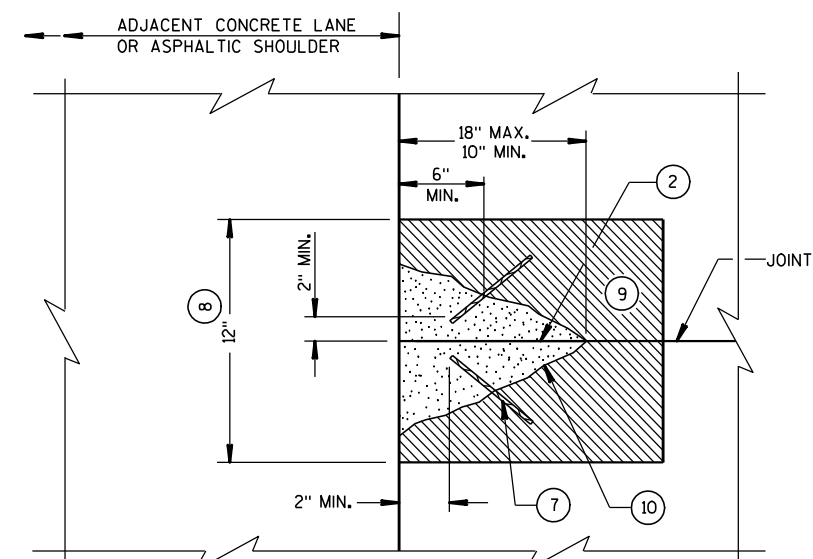
PLAN VIEW



SECTION A-A

PLAN VIEW
CRACK REPAIR

PROFILE VIEW

PLAN VIEW
FULL DEPTH REPAIR ADJUSTMENT

GENERAL NOTES

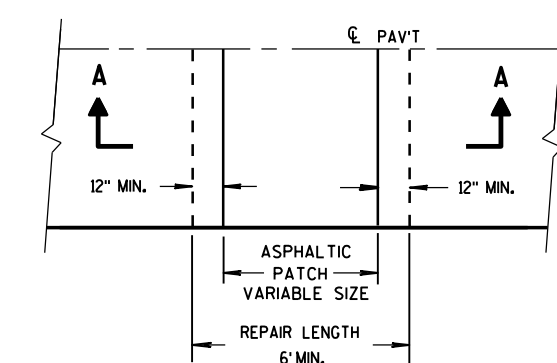
- ① REMOVE ALL CONCRETE, TO LIMITS SHOWN, TO A MAXIMUM OF $\frac{1}{2}$ THE PAVEMENT DEPTH OR TOP OF DOWELS.
- ② IF REPAIR IS DEEPER THAN ANTICIPATED SAWCUT, COMPRESSION RELIEF MATERIAL MUST BE USED. THE THICKNESS OF COMPRESSION RELIEF MATERIAL MUST BE EQUAL TO OR GREATER THAN THE WIDTH OF THE JOINT OR CRACK ($\frac{1}{4}$ "). THIS MATERIAL SHOULD EXTEND FULL DEPTH OF THE REPAIR.
- ③ COMPRESSION RELIEF MATERIAL MUST BE USED. THE THICKNESS OF COMPRESSION RELIEF MATERIAL MUST BE EQUAL TO OR GREATER THAN THE WIDTH OF THE JOINT OR CRACK ($\frac{1}{4}$ "). THIS MATERIAL SHOULD EXTEND FULL DEPTH OF THE REPAIR.
- ④ CLEAN, DRY SAND WHEN NECESSARY.
- ⑤ REMOVE UNSOUND MATERIAL BY CHIPPING AT 1:1 SLOPE.
- ⑥ $\frac{1}{4}$ " MINIMUM PREFORMED JOINT FILLER IF ADJACENT TO CONCRETE. EDGING REQUIRED, FULLY FORMED EDGE IF ADJACENT TO SHOULDER.
- ⑦ PAVEMENT TIES AS SHOWN. ALL EMBEDMENTS 6" MINIMUM AND INSTALLED WITH GROUT.
- ⑧ OVER 12" (NOMINAL WIDTH) WILL BE PAID AS SURFACE REPAIR.
- ⑨ PAID AS JOINT OR CRACK REPAIR.
- ⑩ FULL-DEPTH ADJUSTMENT SHALL BE CHIPPED TO BOTTOM OF PCC PAVEMENT AT 1:1 SLOPE.
- ⑪ BEYOND 18" WILL BE PAID AS SURFACE REPAIR.

CONCRETE PAVEMENT
PARTIAL DEPTH REPAIRSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

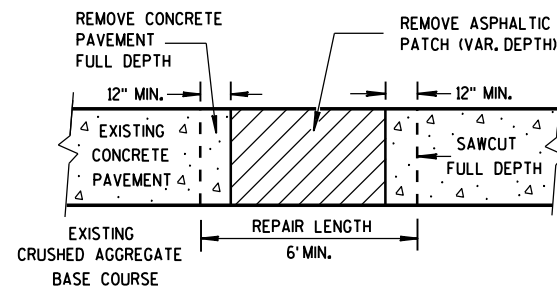
APPROVED

3/21/03
DATE/S/ Bill Duckert
PAVEMENT ENGINEER

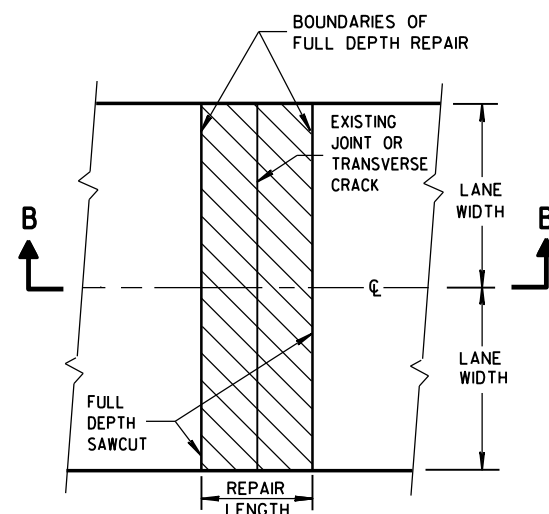
FHWA



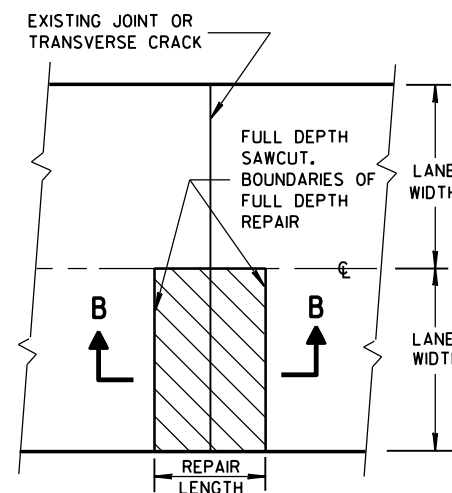
PLAN VIEW



SECTION A-A
HMA PATCH REMOVAL



PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

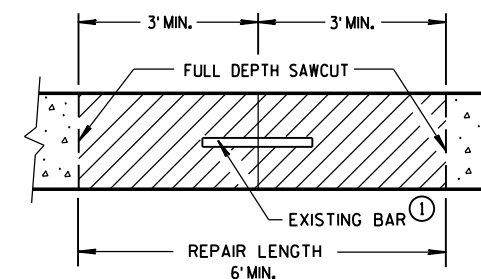
GENERAL NOTES

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

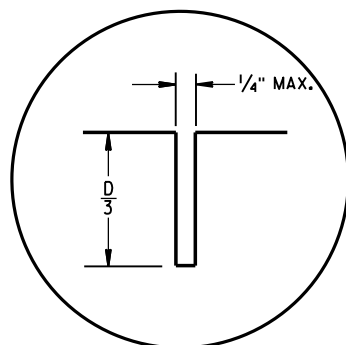
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

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

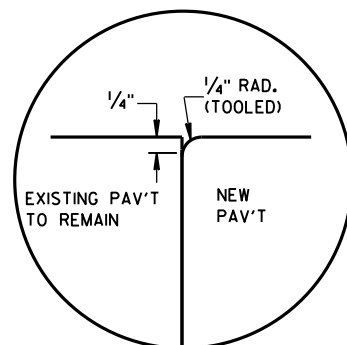
① DOWEL BARS MIGHT NOT EXIST.



SECTION B-B
CONCRETE REMOVAL

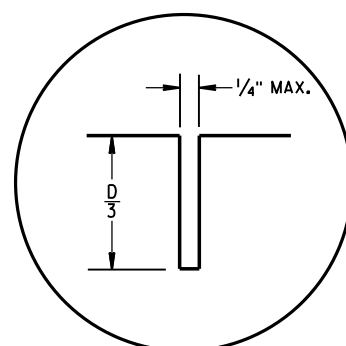


C1

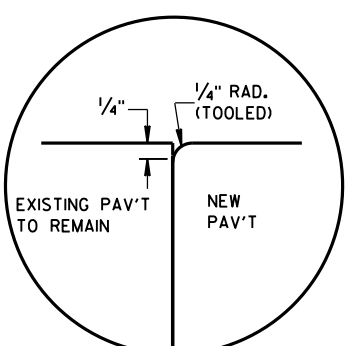


C2

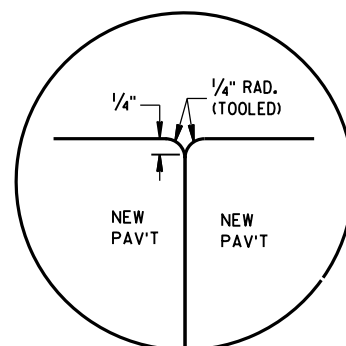
TRANSVERSE JOINTS



L1



L2



L3

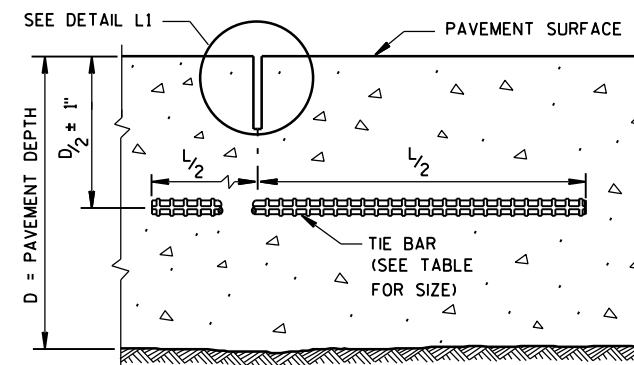
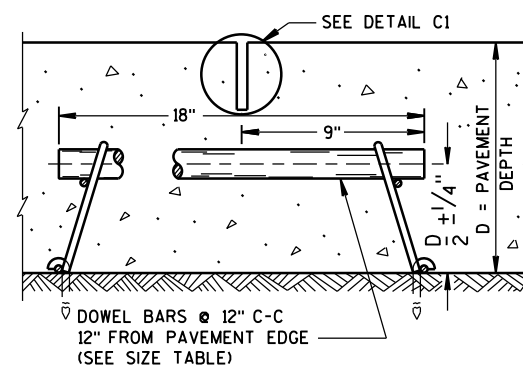
LONGITUDINAL JOINTS

TIE BAR TABLE

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

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

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

SECTION C-C
SAWED LONGITUDINAL JOINTSECTION F-F
CONTRACTION JOINT

GENERAL NOTES

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

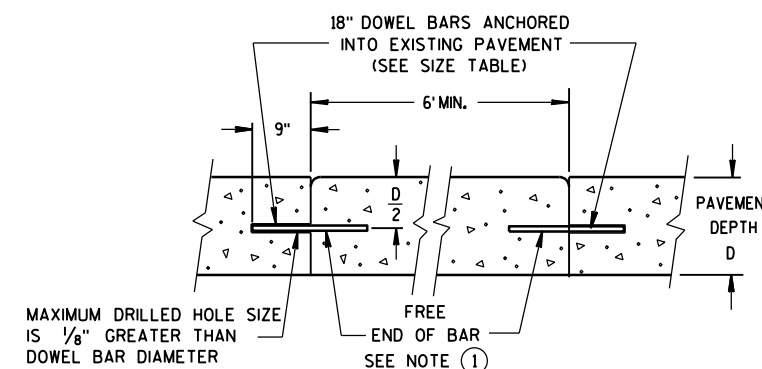
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

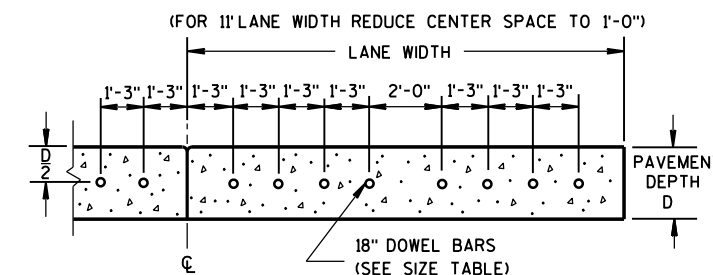
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

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

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



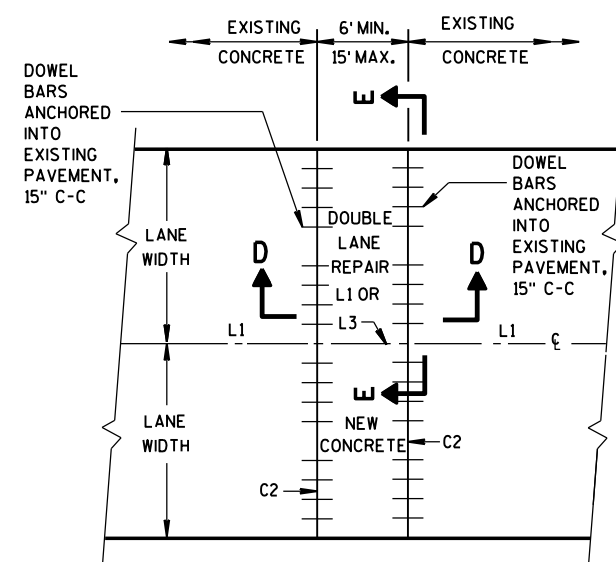
SECTION D-D

SECTION E-E
DRILLED DOWEL BAR CONSTRUCTION JOINTPAVEMENT 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'

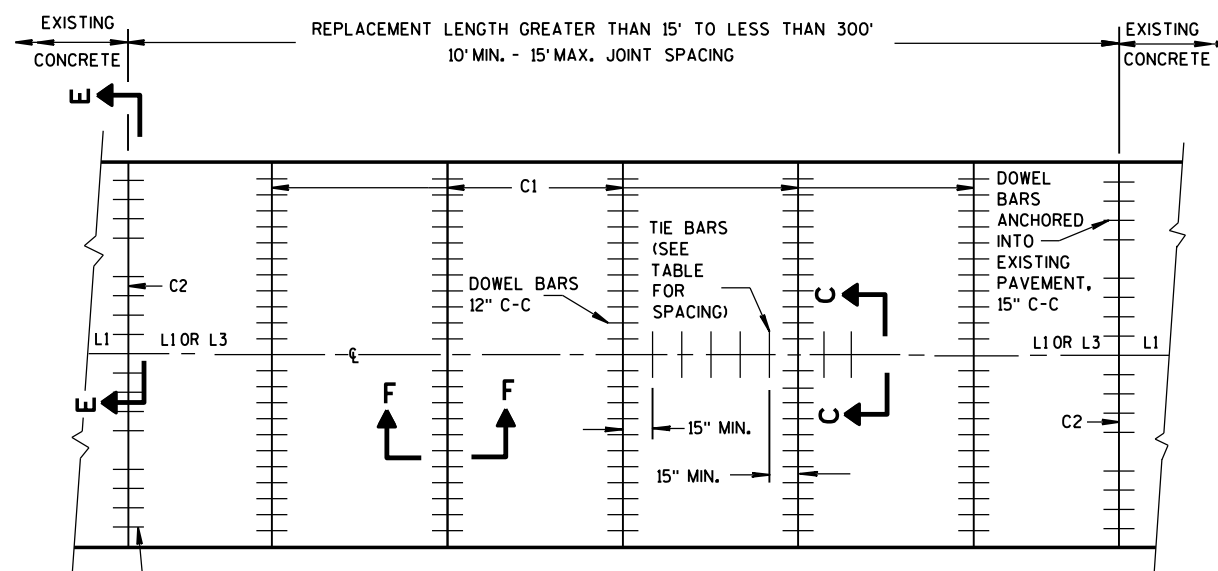
CONCRETE PAVEMENT
REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



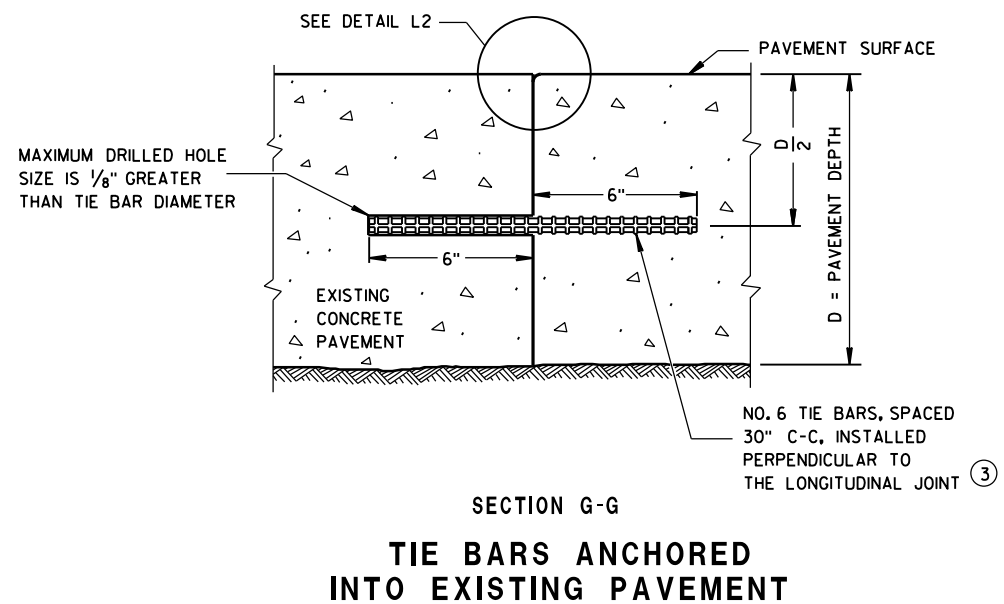
PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



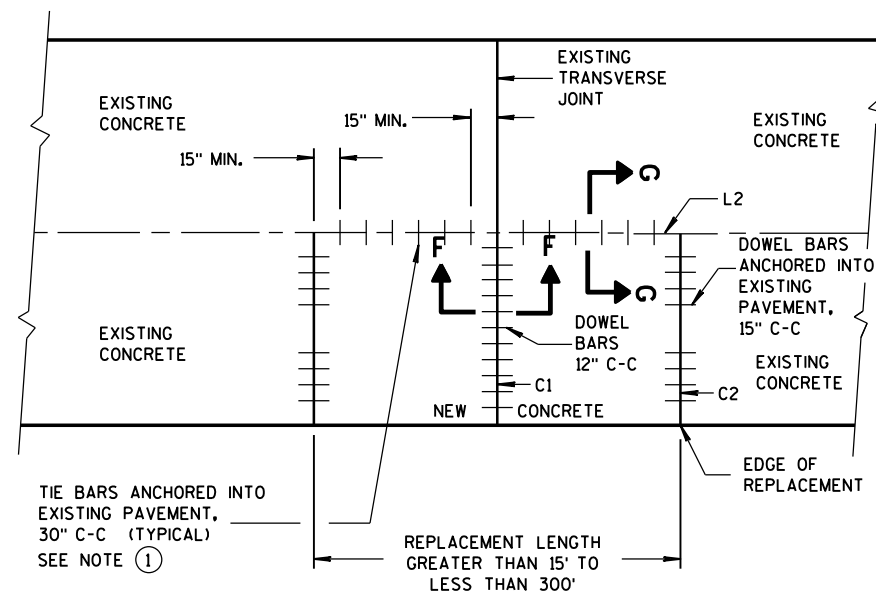
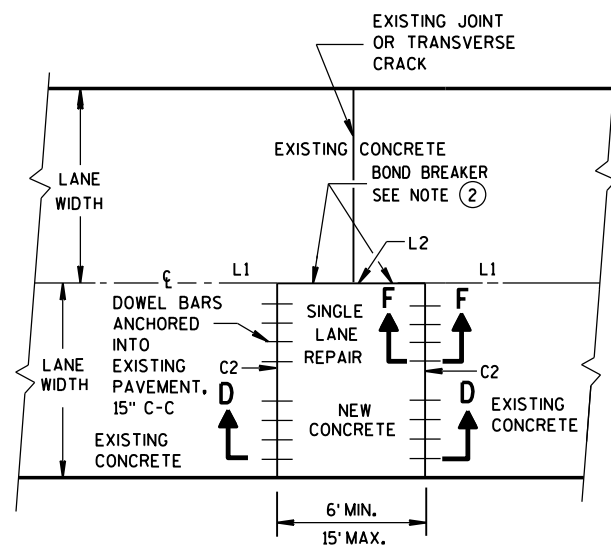
PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPLACEMENT



GENERAL NOTES

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

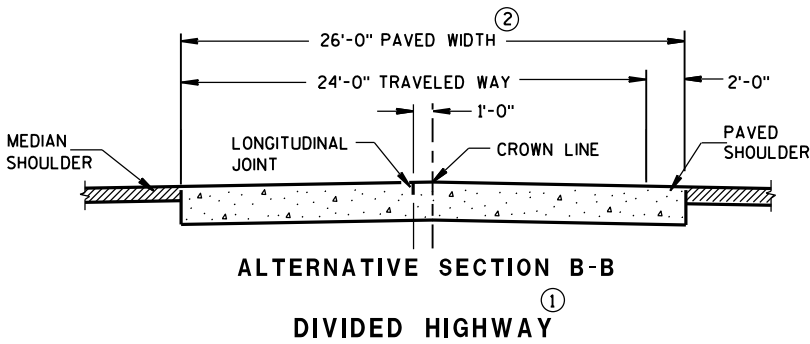
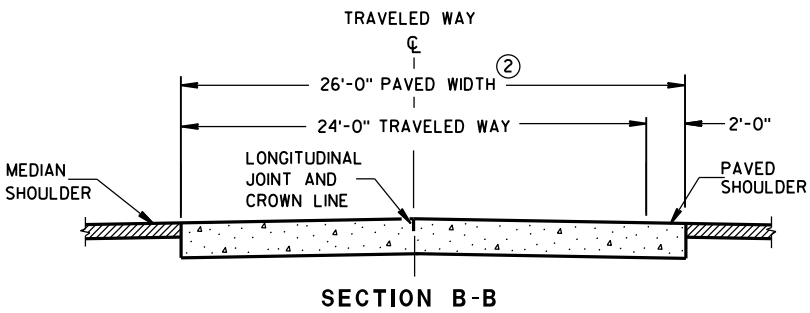
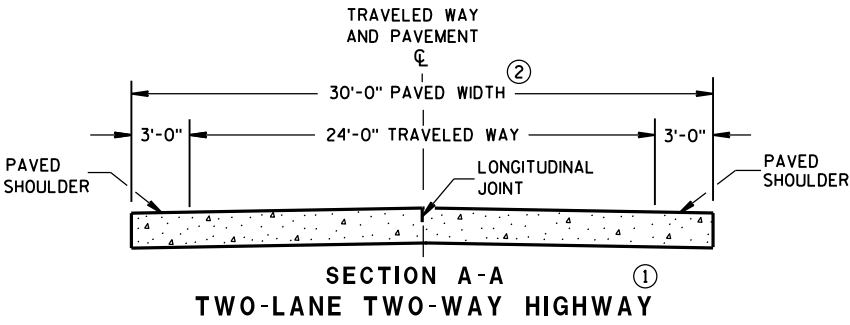


**CONCRETE PAVEMENT
REPAIR AND REPLACEMENT**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
Sept., 2015
DATE
FHWA

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



GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

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

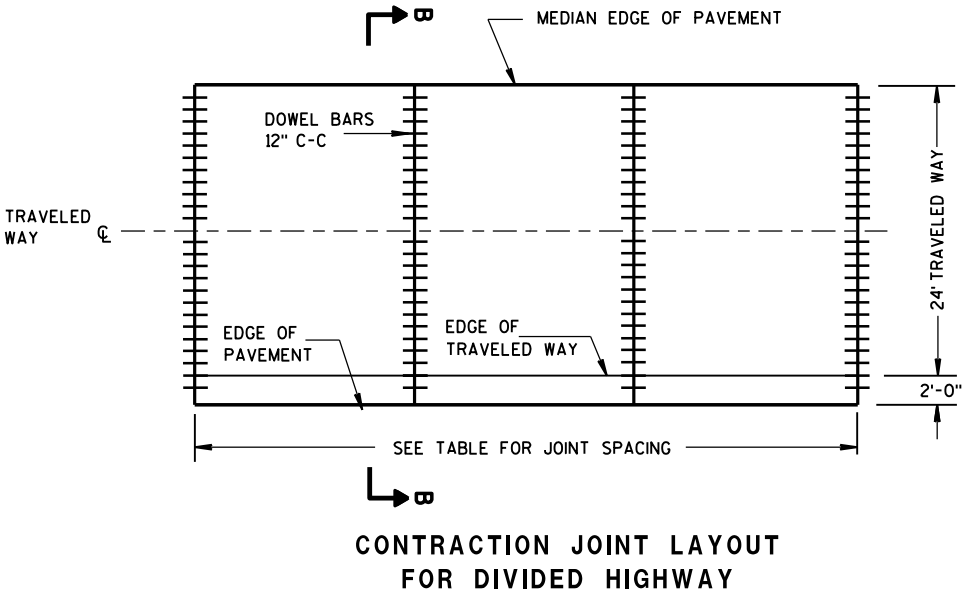
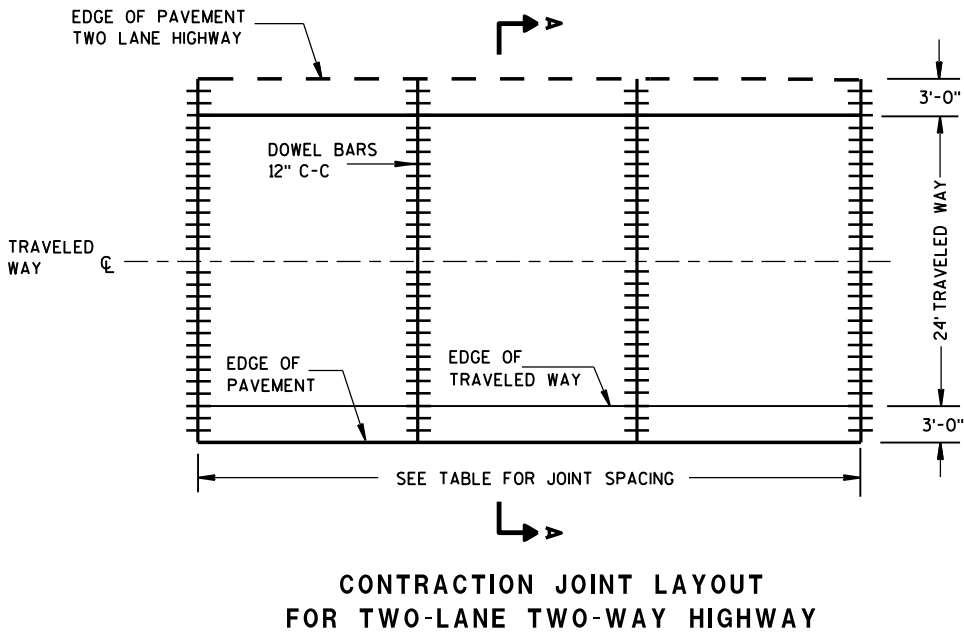
CONSTRUCTION JOINTS

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

- ① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.
- ② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

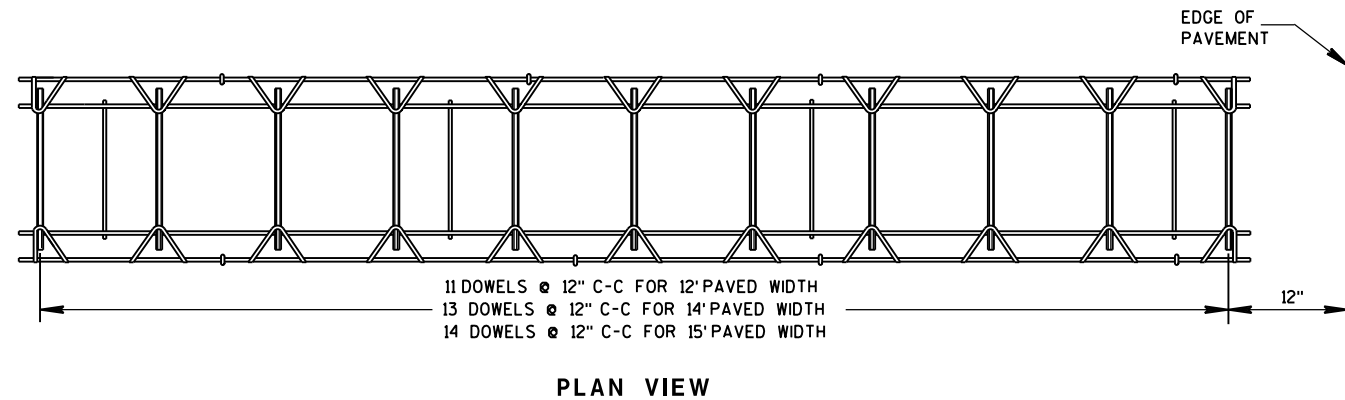
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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

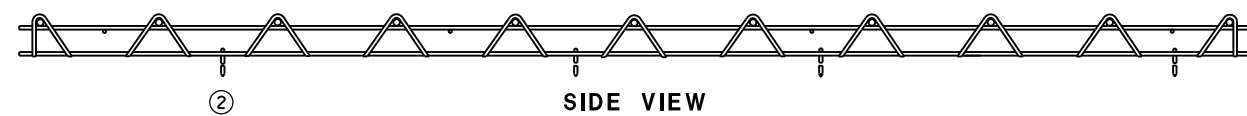


RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

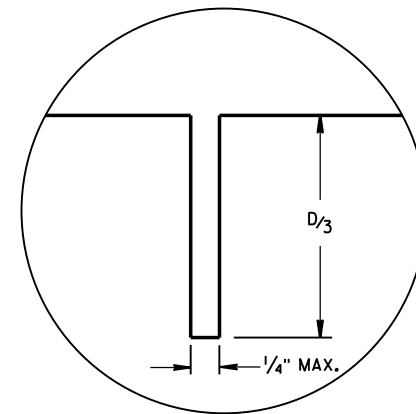


PLAN VIEW

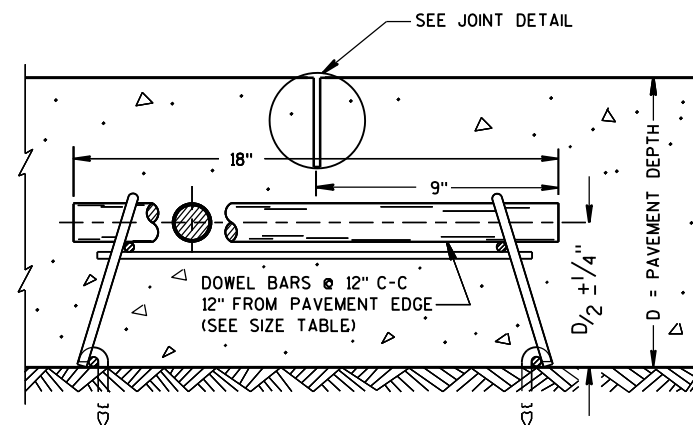


SIDE VIEW

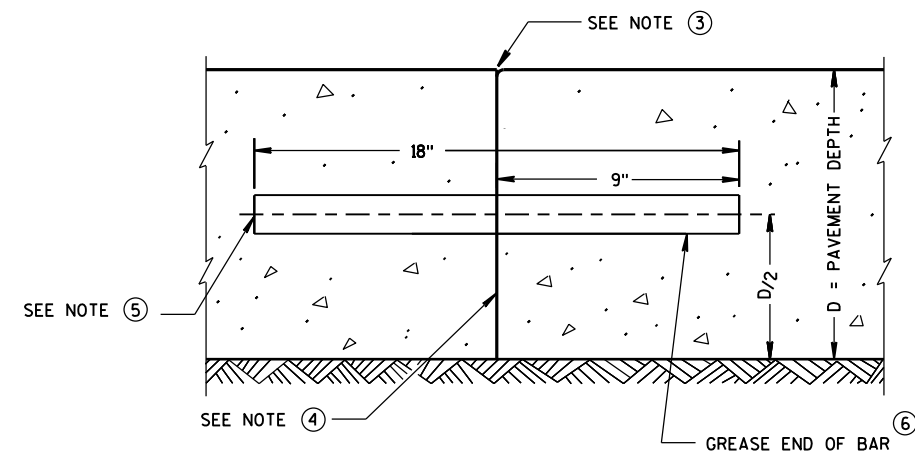
(NORMAL TO CENTERLINE)

CONTRACTION JOINT DOWEL ASSEMBLY^①

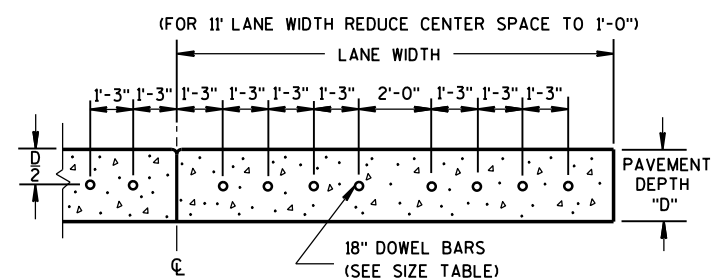
JOINT DETAIL



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.

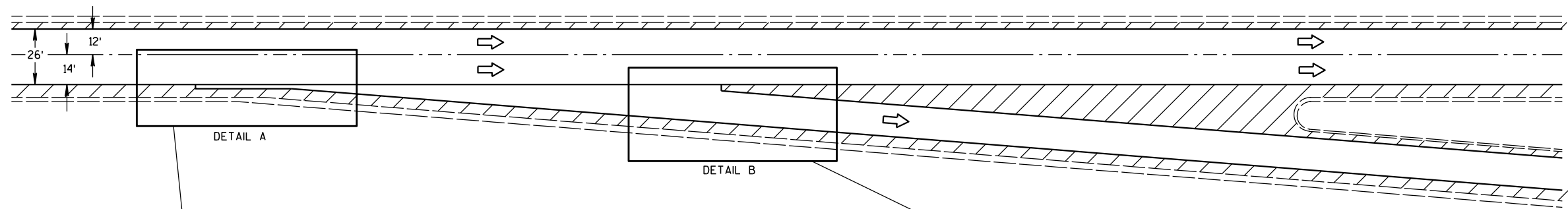
RURAL DOWELED
CONCRETE PAVEMENTSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

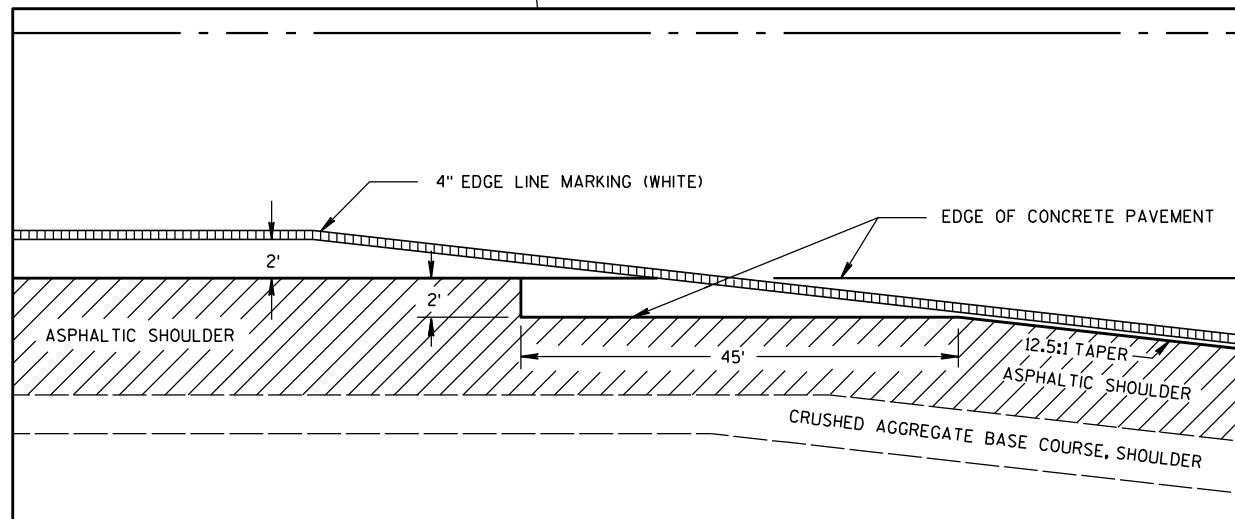
5/3/2013
DATE

FHWA

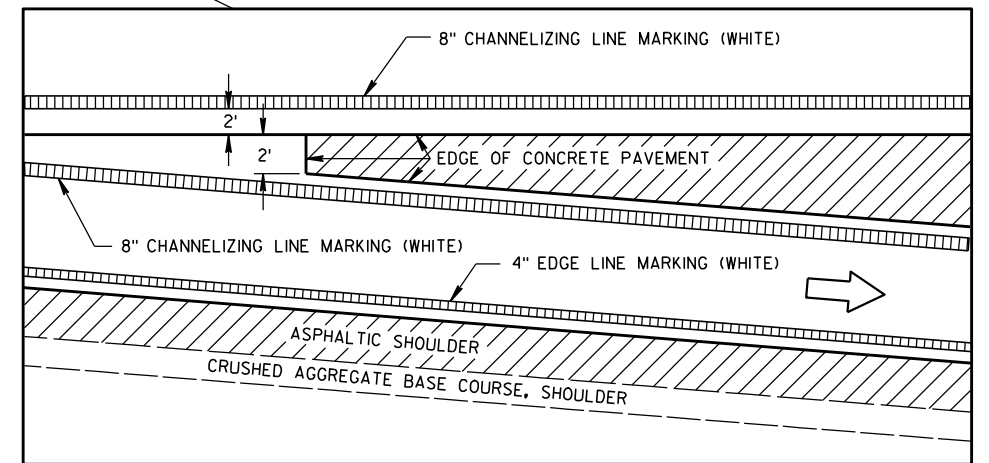
/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER



EXIT RAMP DETAIL



DETAIL A



DETAIL B

CONCRETE JOINT PAVING DETAILS

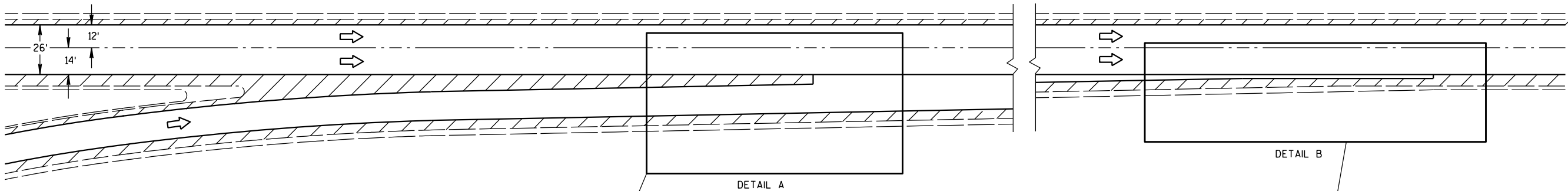
GENERAL NOTES

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

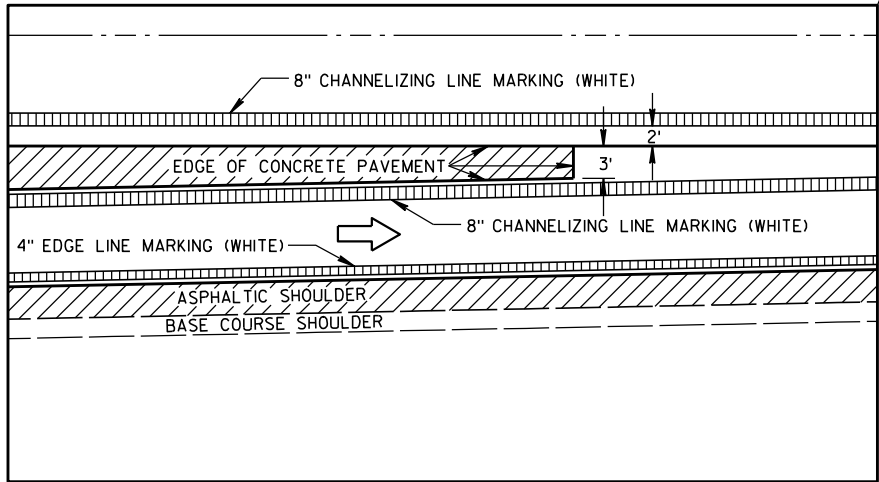
SEE SDD 13 A 4-4c OR SDD 13 A 5-1b FOR RAMP AND GORE RUMBLE STRIP LOCATION.

CONCRETE JOINT DETAIL FOR
EXIT RAMP TERMINI

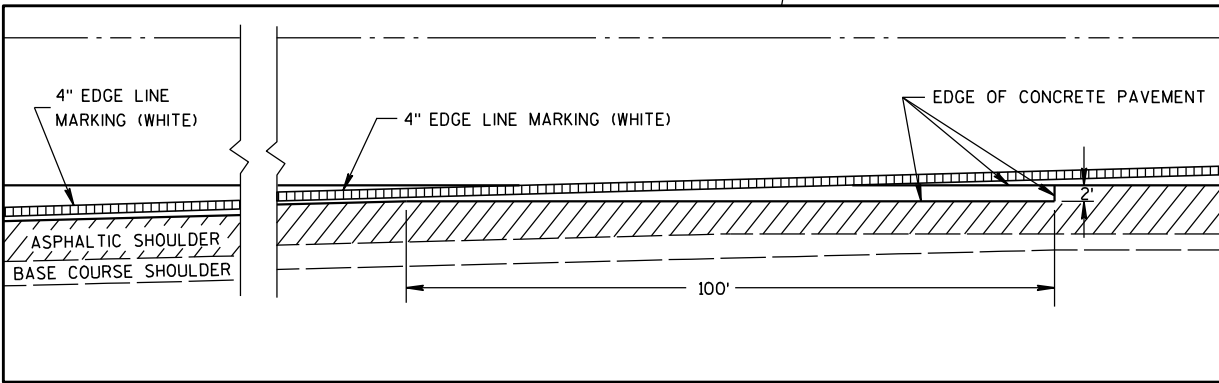
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL A
ENTRANCE RAMP DETAIL



DETAIL A



DETAIL B

CONCRETE JOINT PAVING DETAILS

GENERAL NOTES

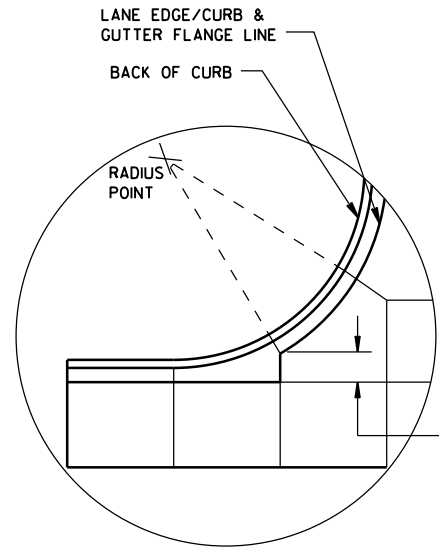
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

SEE SDD 13 A 4-4c OR SDD 13 A 5-1b FOR RAMP AND GORE RUMBLE STRIP LOCATION.

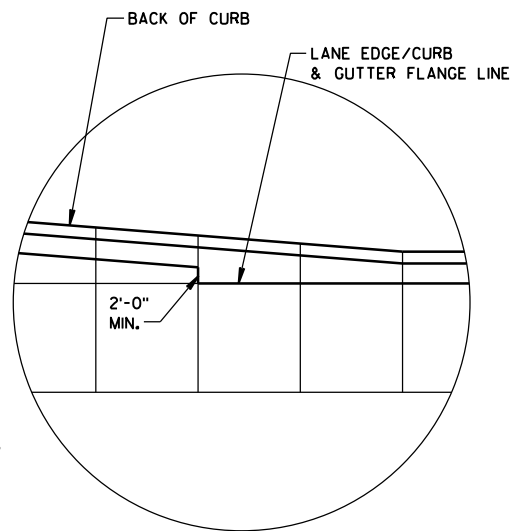
CONCRETE JOINT DETAIL FOR
ENTRANCE RAMP TERMINI

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

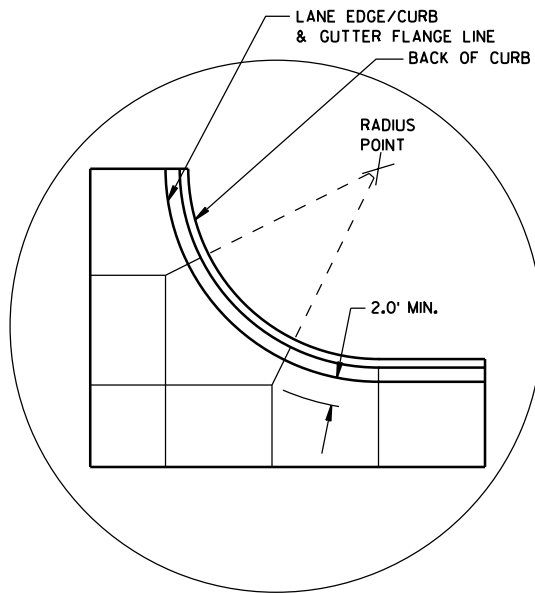
APPROVED
5/27/98 /S/ Rory L. Rhinesmith
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



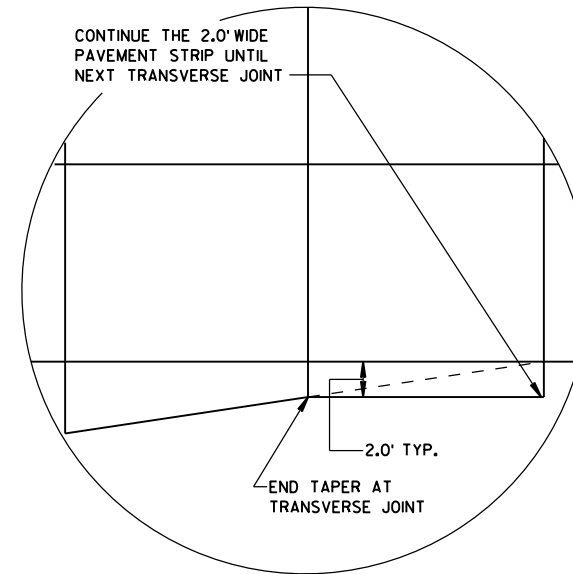
DETAIL "A"



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.

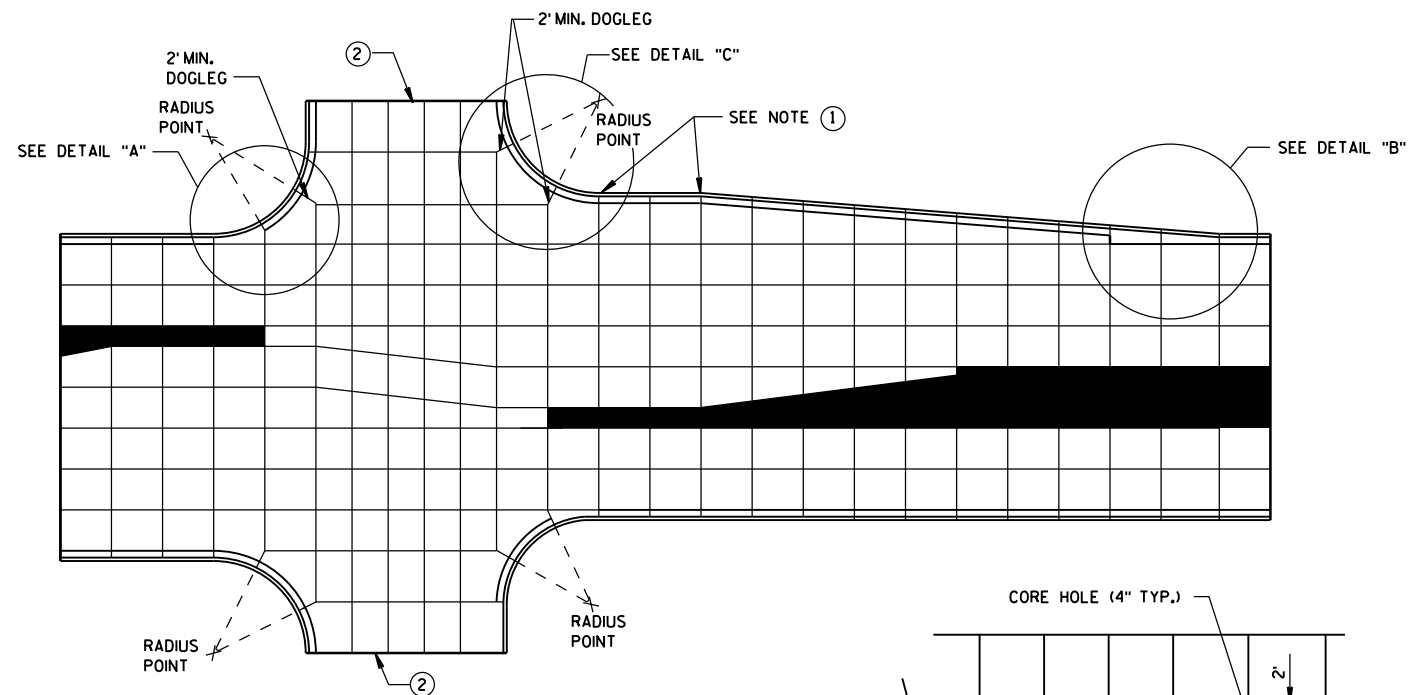
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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

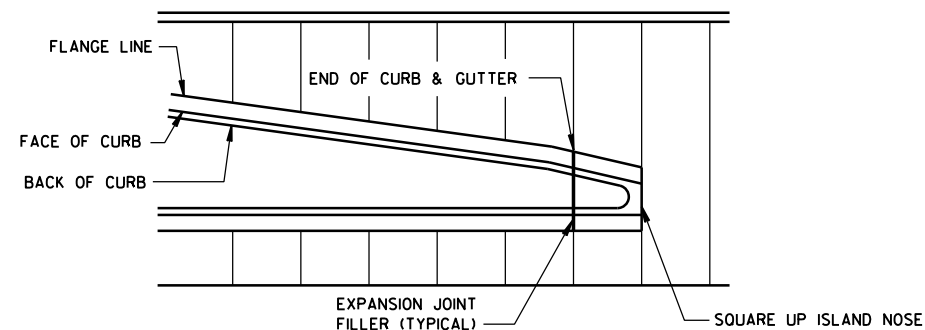
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

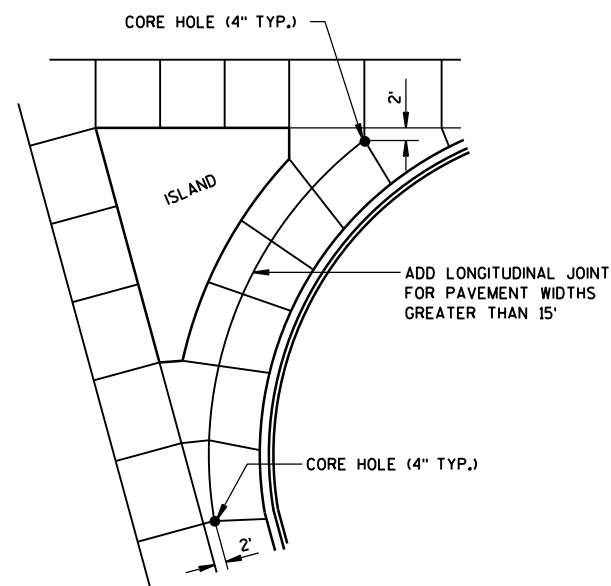
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



STANDARD INTERSECTION



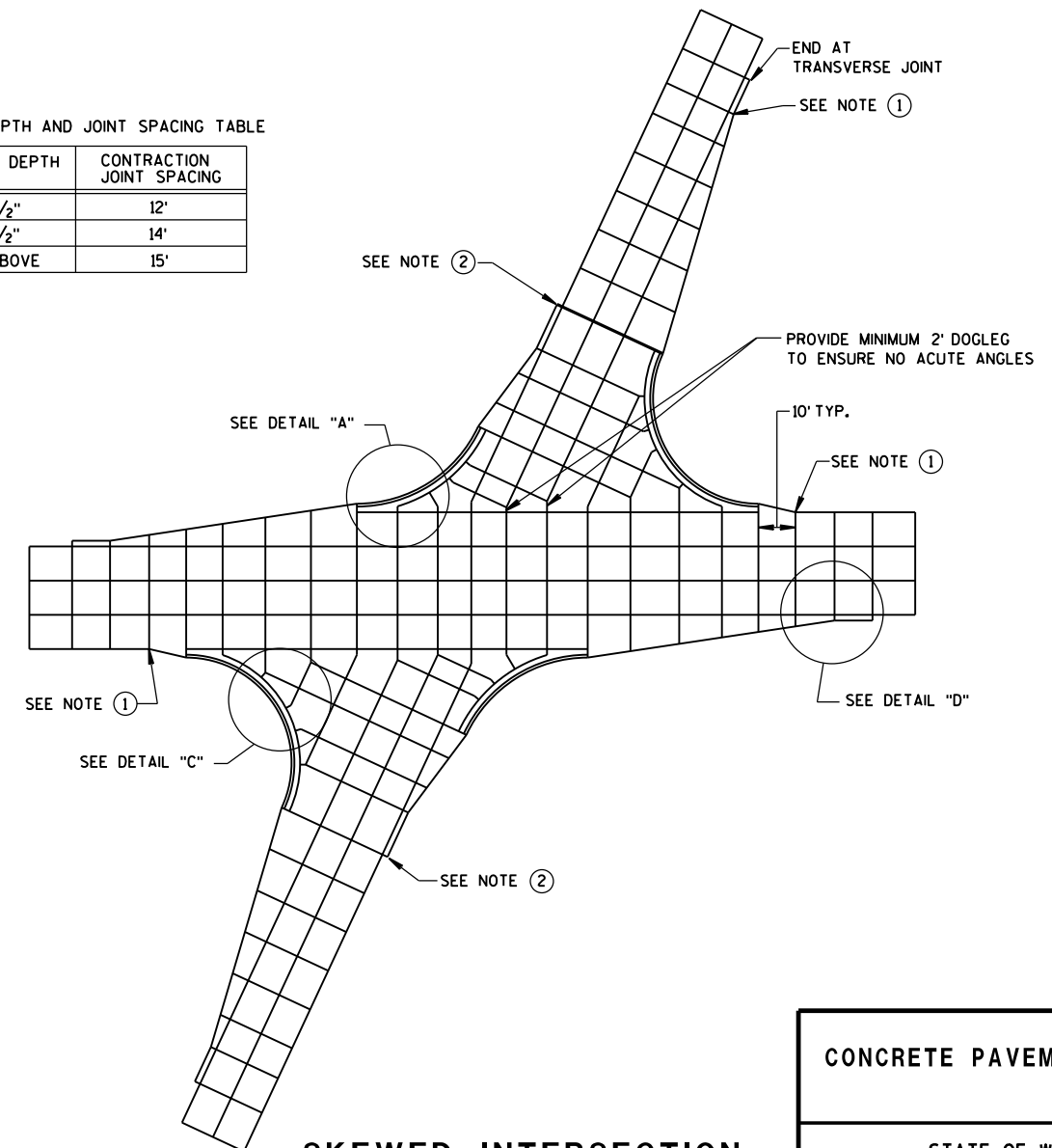
APPROACH TO MEDIAN



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'



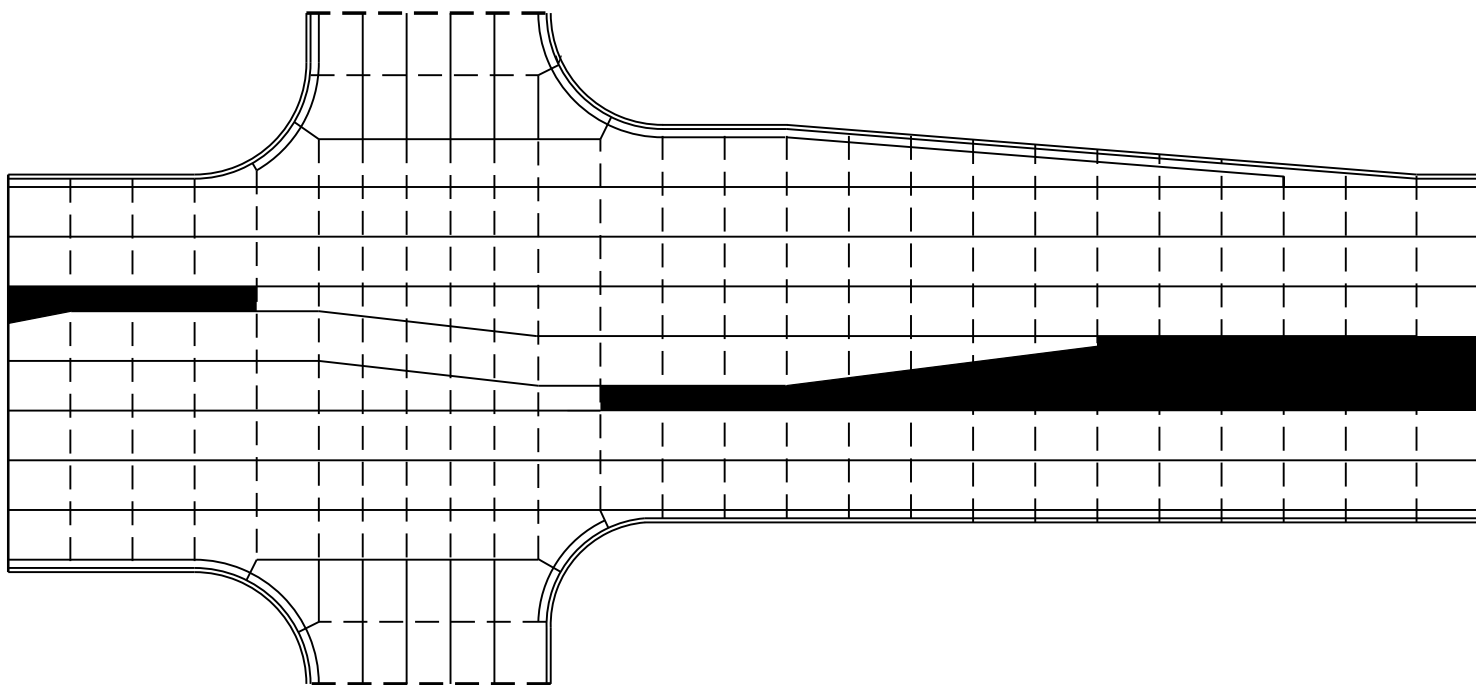
SKewed INTERSECTION

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

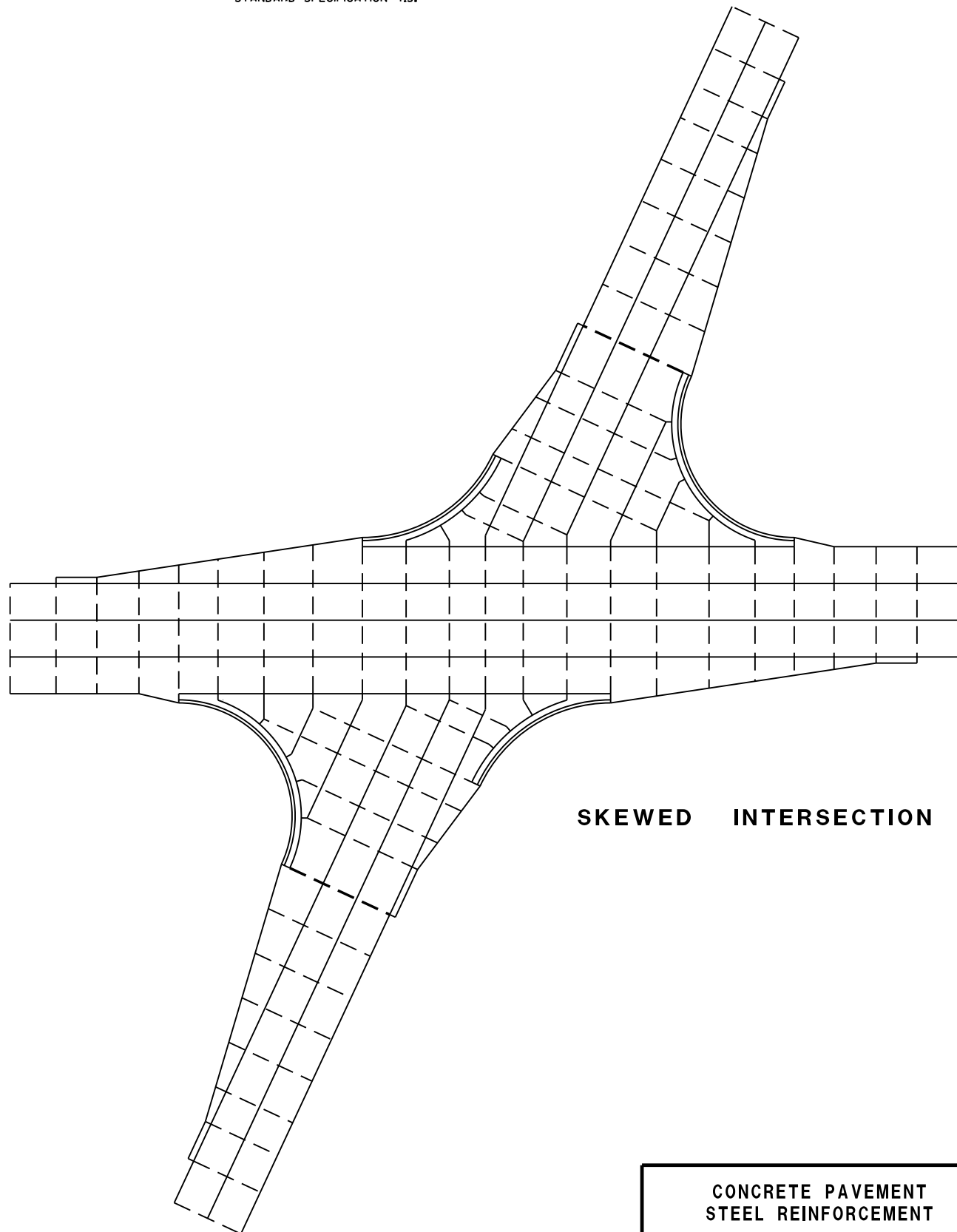
- POTENTIAL DOWELED EXPANSION JOINT
- - - DOWELED JOINT
- TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

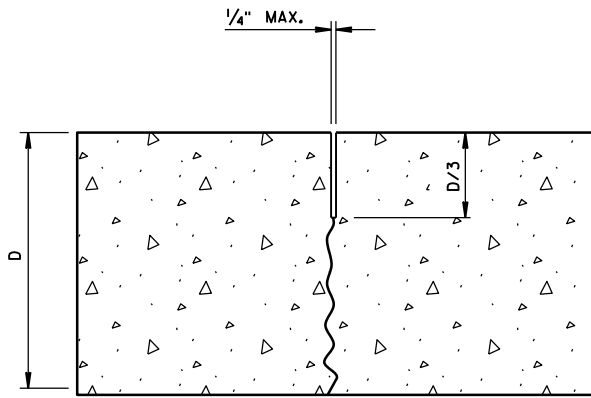
USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



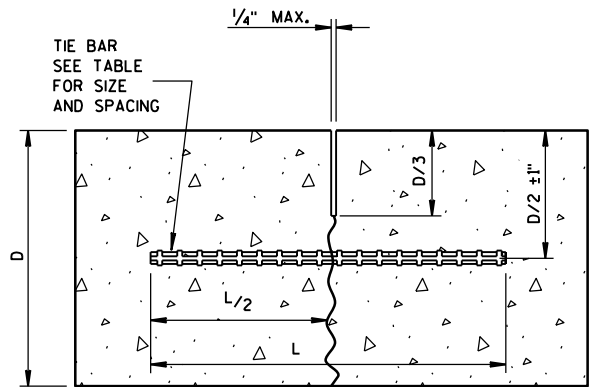
SKewed INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

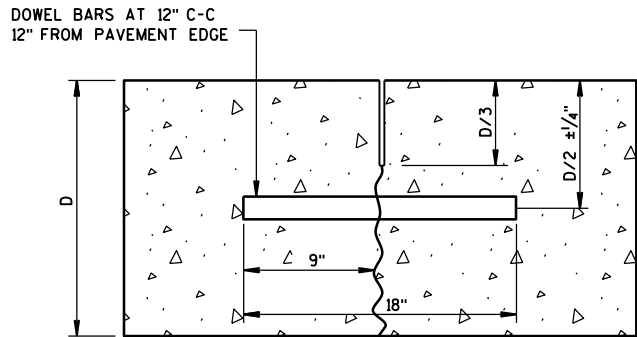
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* 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

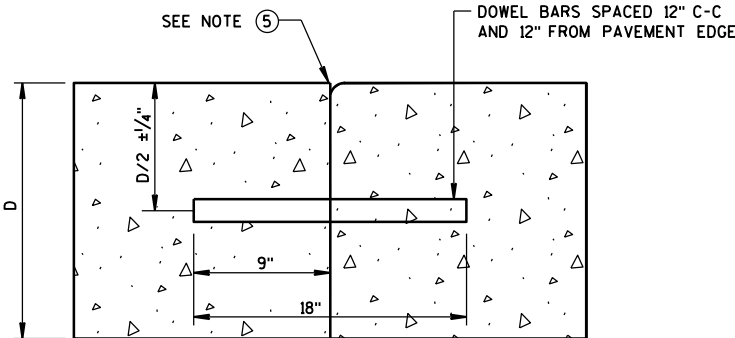
- 1 USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
- 2 SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
- 3 LOCATE CONSTRUCTION JOINTS A MINIMUM 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.



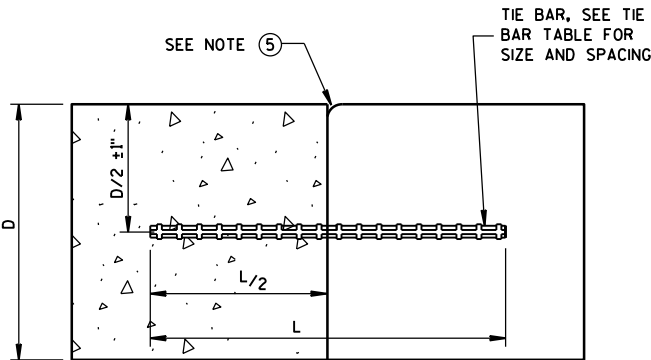
DOWELED-TRANSVERSE

CONTRACTION JOINTS

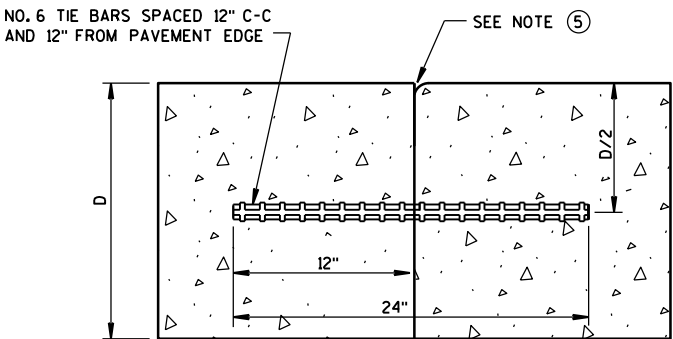
SEE NOTE 2



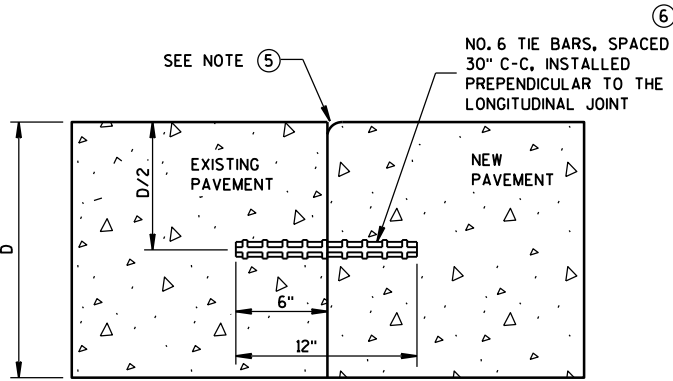
DOWELED TRANSVERSE 3



TIED LONGITUDINAL



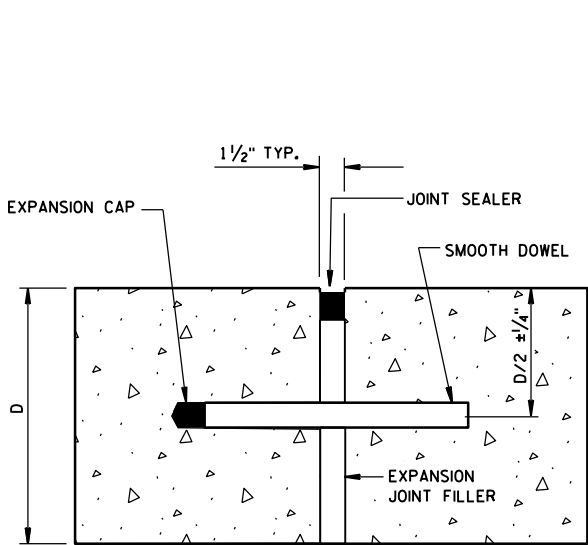
TIED TRANSVERSE 3
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



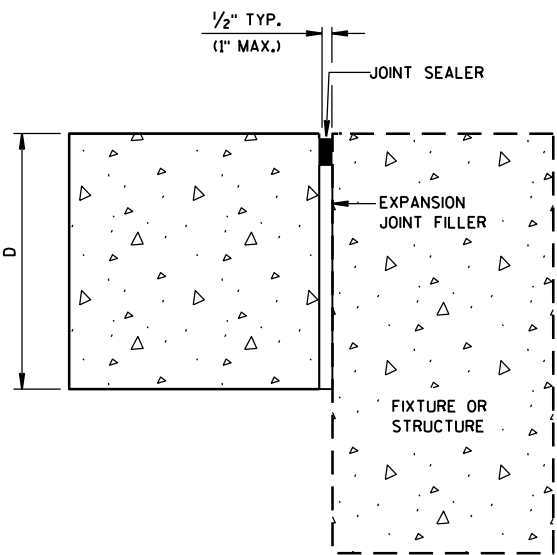
TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS

SEE NOTE 4



DOWELED-TRANSVERSE
SEE NOTE 1

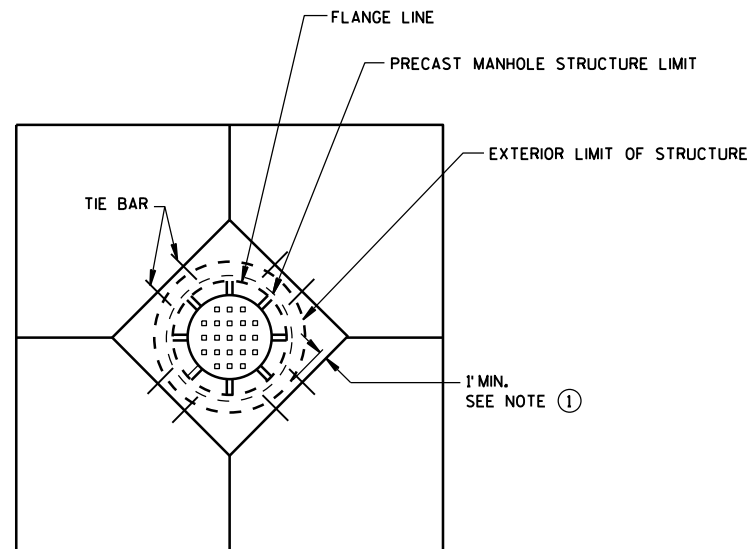


UNTIED-LONGITUDINAL

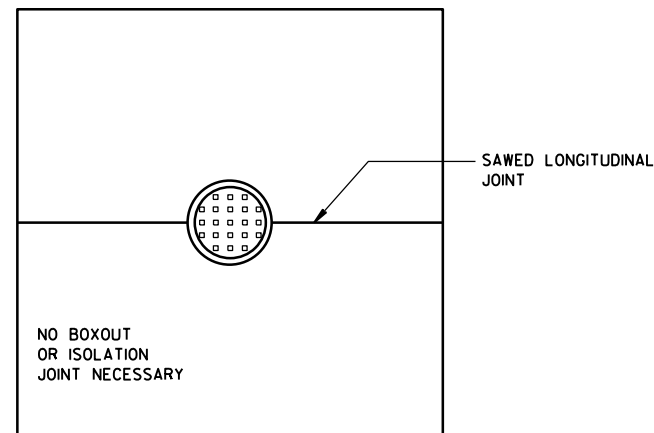
EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

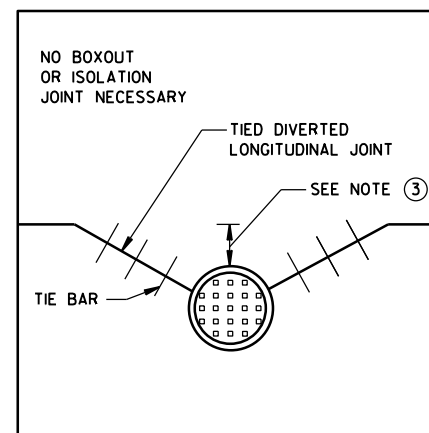
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



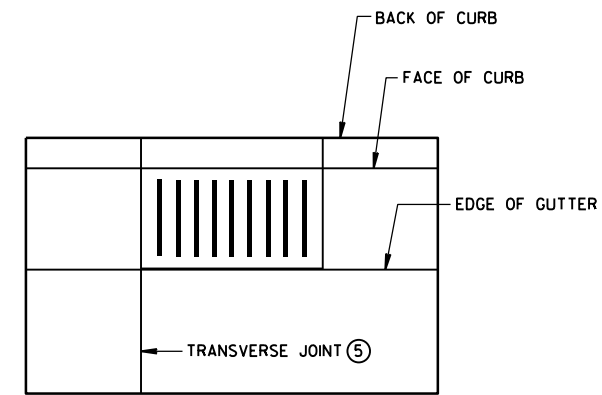
**DIAGONAL MANHOLE BOXOUT
FOR CONSTRUCTION JOINTS**



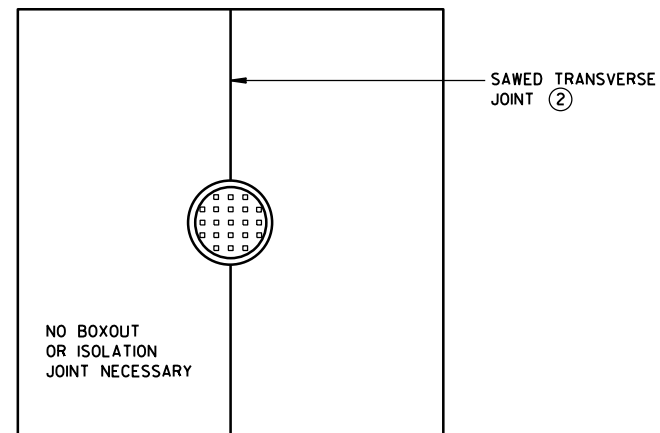
**MANHOLE WITH
LONGITUDINAL JOINT**



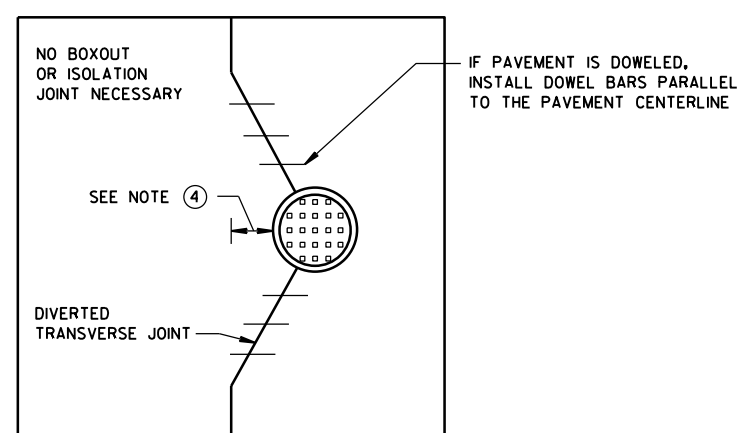
**MANHOLE WITH DIVERTED
LONGITUDINAL CONTRACTION JOINT**



**INLET WITH
TRANSVERSE JOINT**



**MANHOLE WITH
TRANSVERSE JOINT**



**MANHOLE WITH DIVERTED
TRANSVERSE CONTRACTION JOINT**

GENERAL NOTES

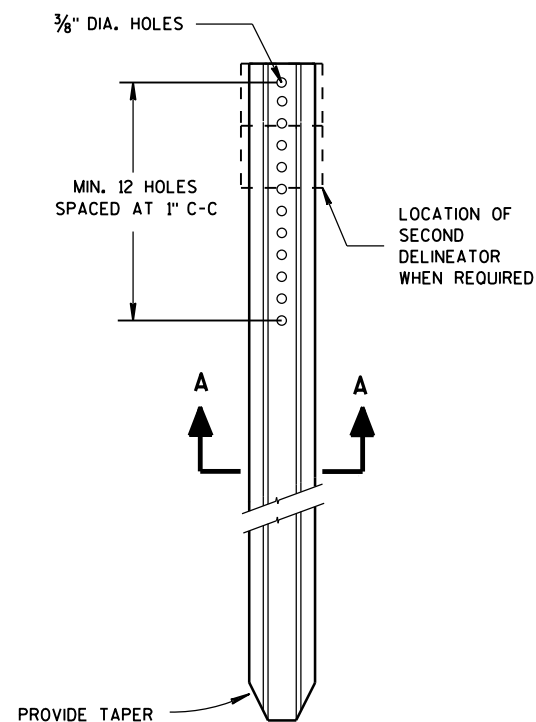
- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE 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**

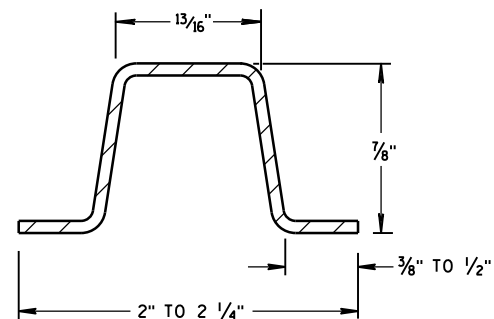
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
FHWA

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

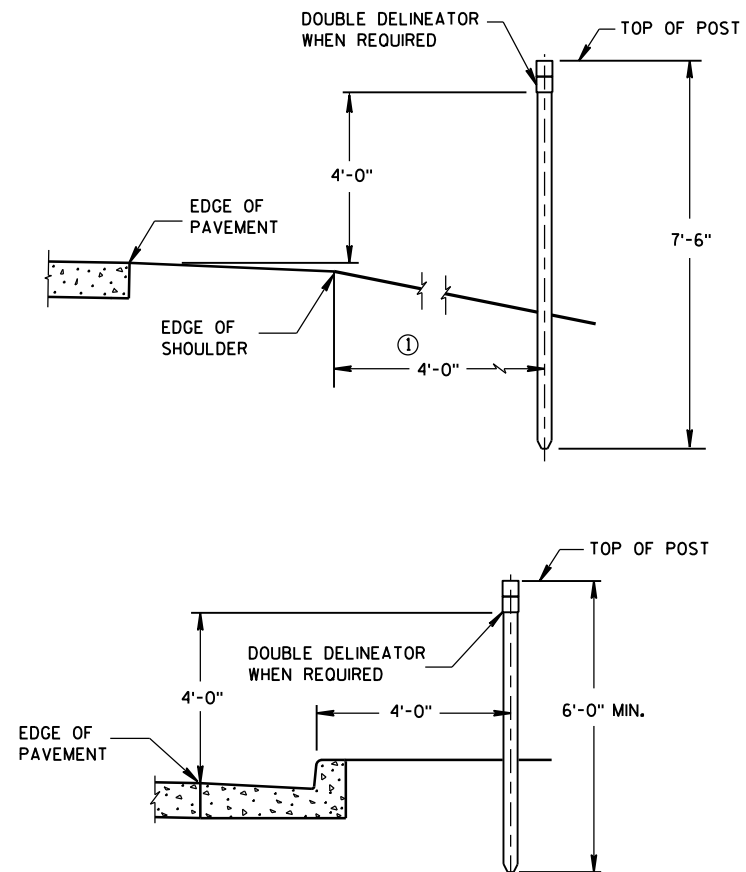


DELINEATOR POST



SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

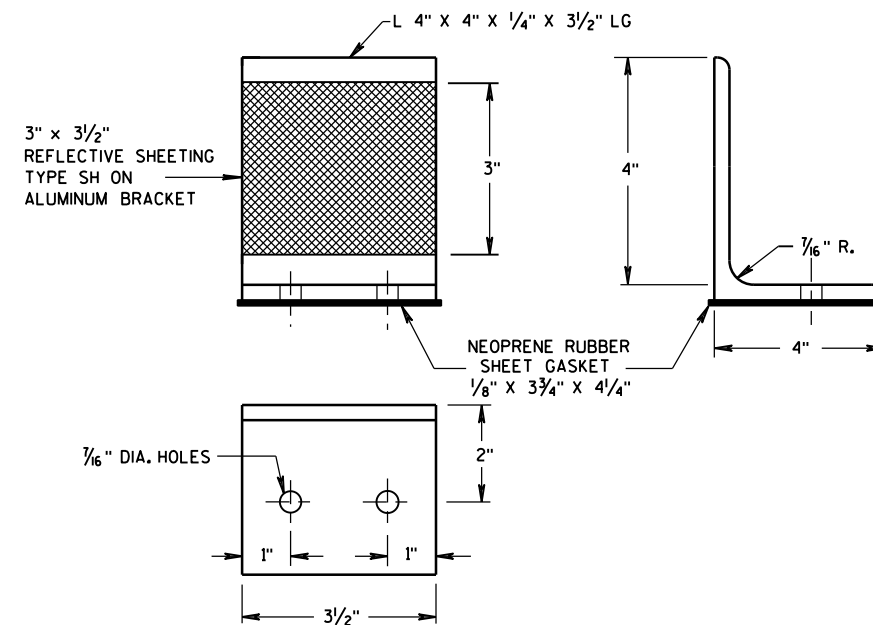


TYPICAL INSTALLATIONS OF DELINEATOR POSTS

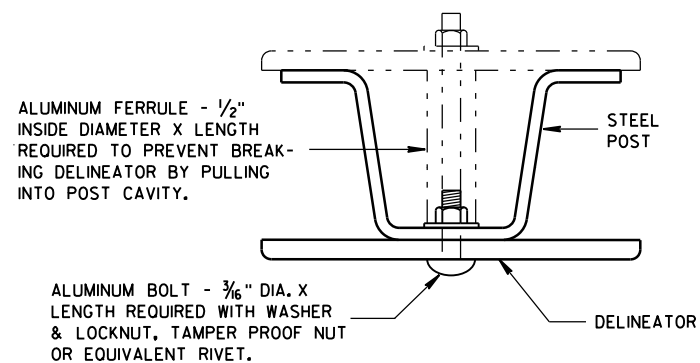
GENERAL NOTES

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

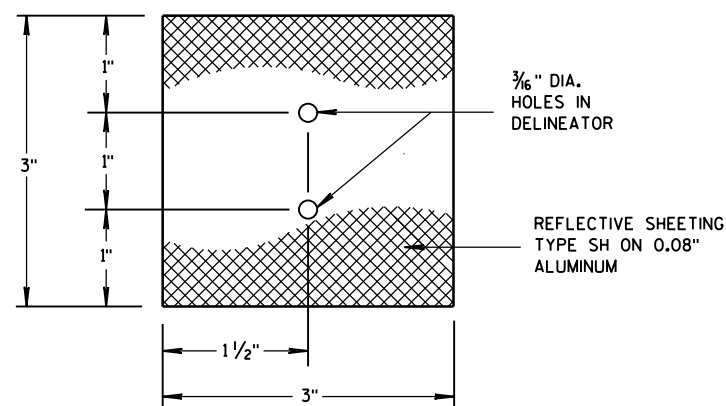
- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



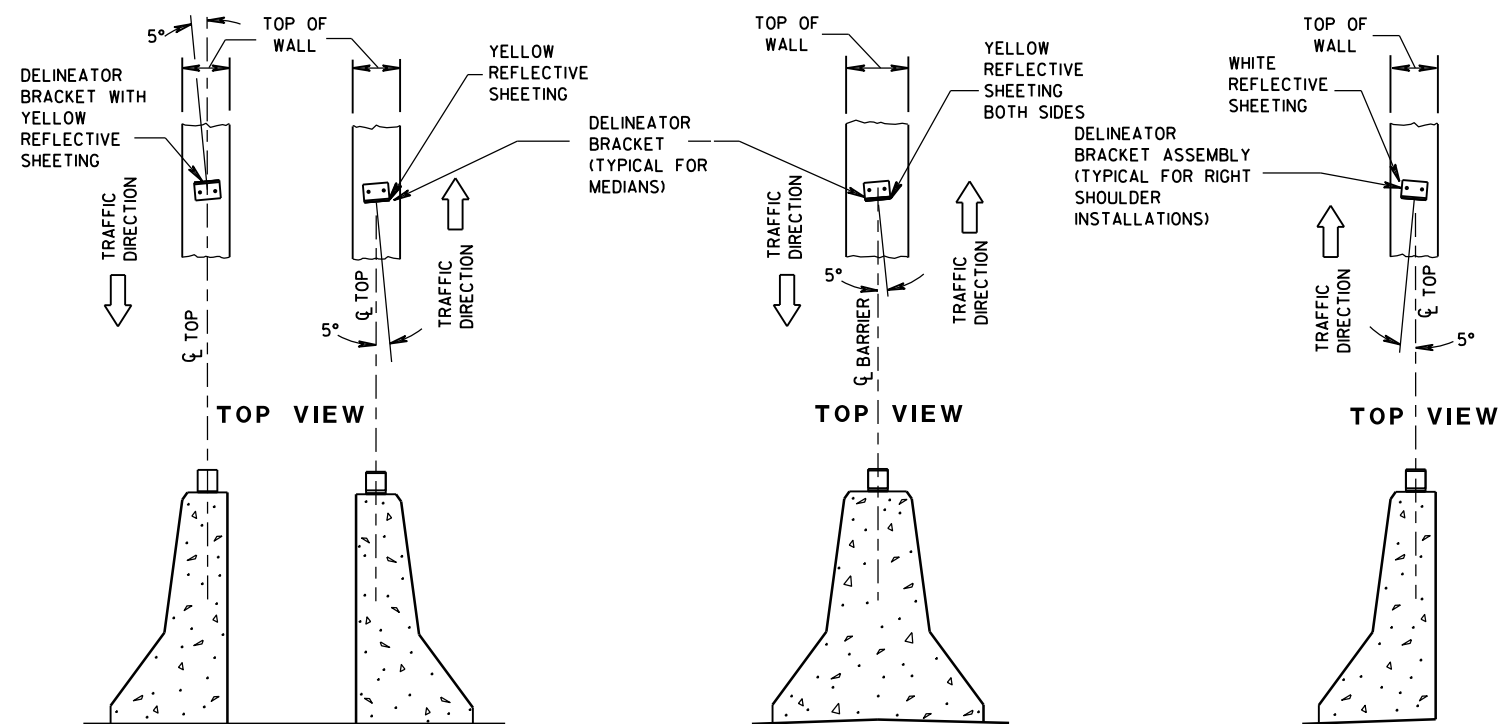
DELINEATOR BRACKET



MOUNTING DETAIL FOR DELINEATOR



3" x 3" DELINEATOR

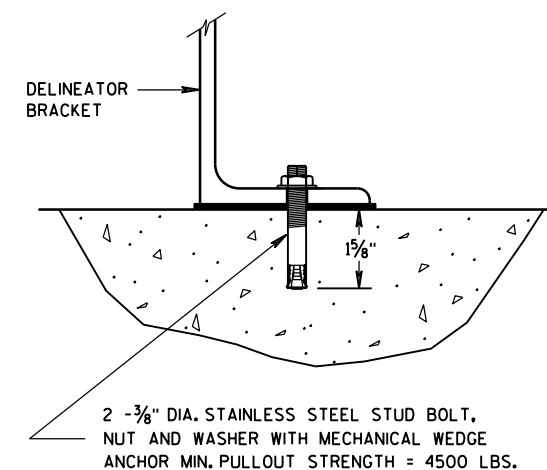


DOUBLE BARRIERS IN MEDIAN

MEDIAN BARRIER

BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

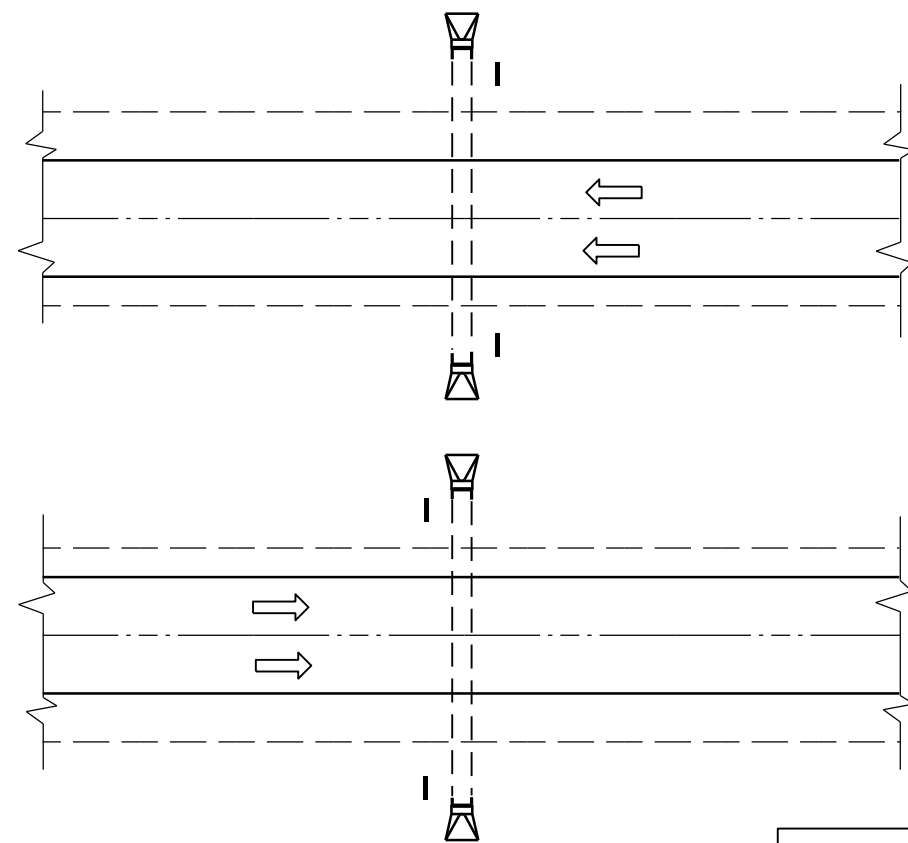
7/2013

DATE

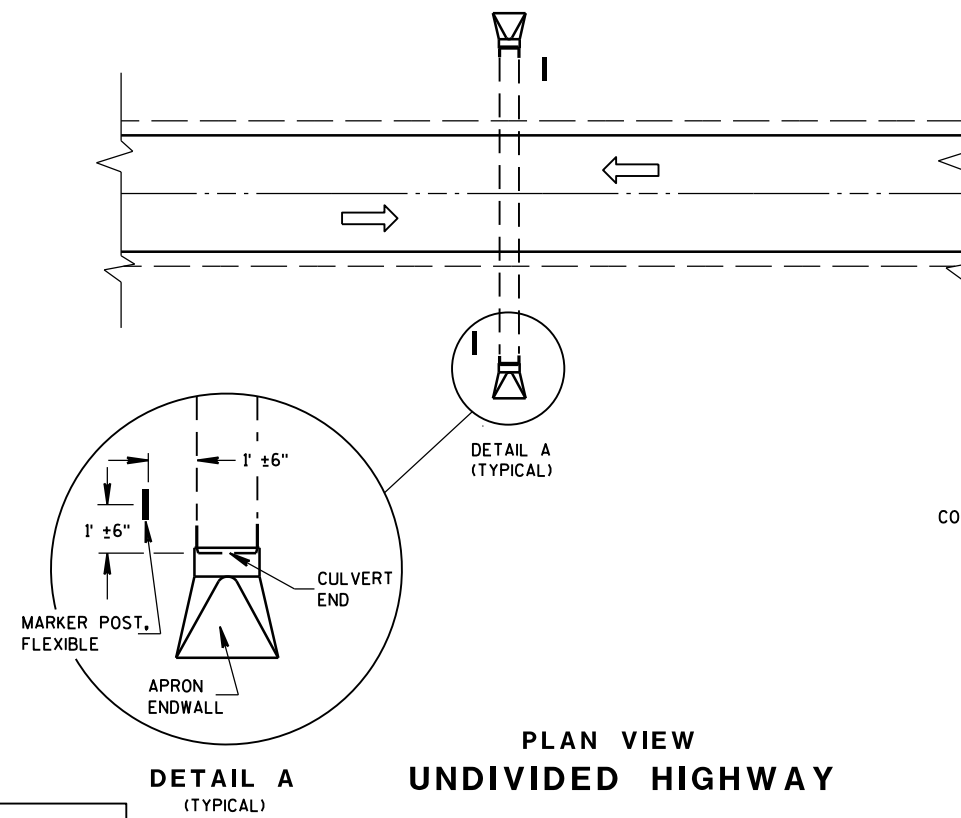
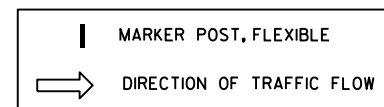
FHWA

/S/ Travis Feltes

STATE TRAFFIC ENGINEER



PLAN VIEW
DIVIDED HIGHWAY



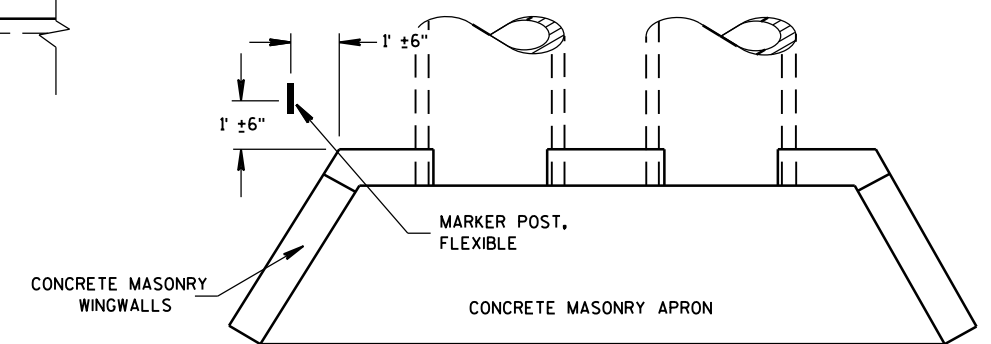
DETAIL A
(TYPICAL)

PLAN VIEW
UNDIVIDED HIGHWAY

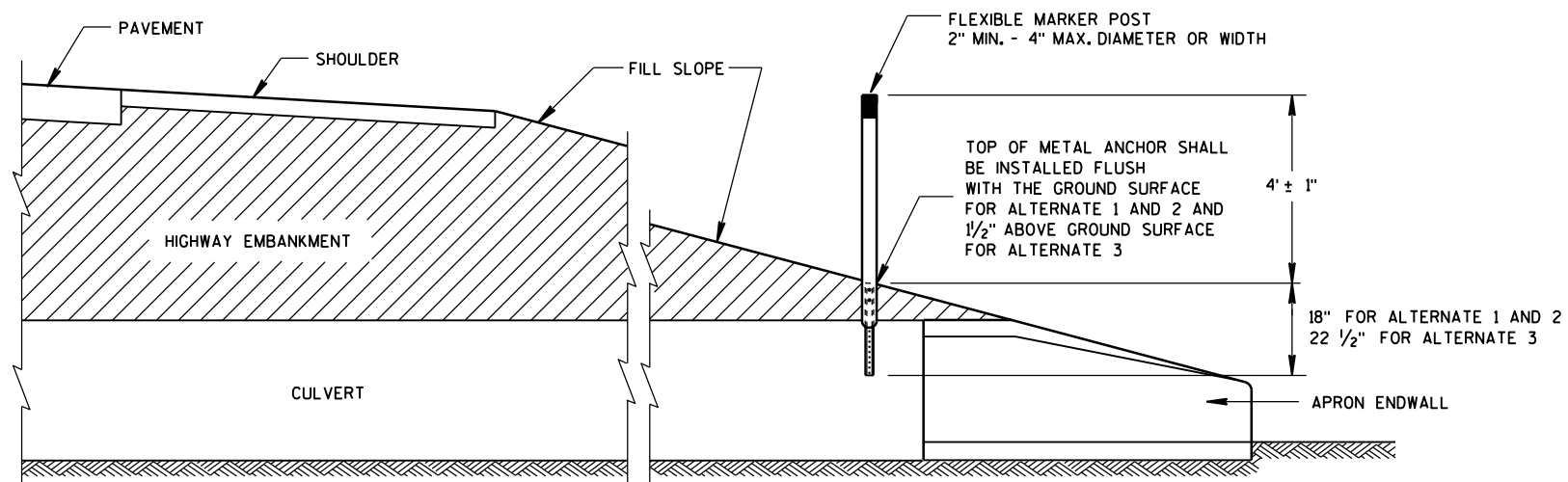
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



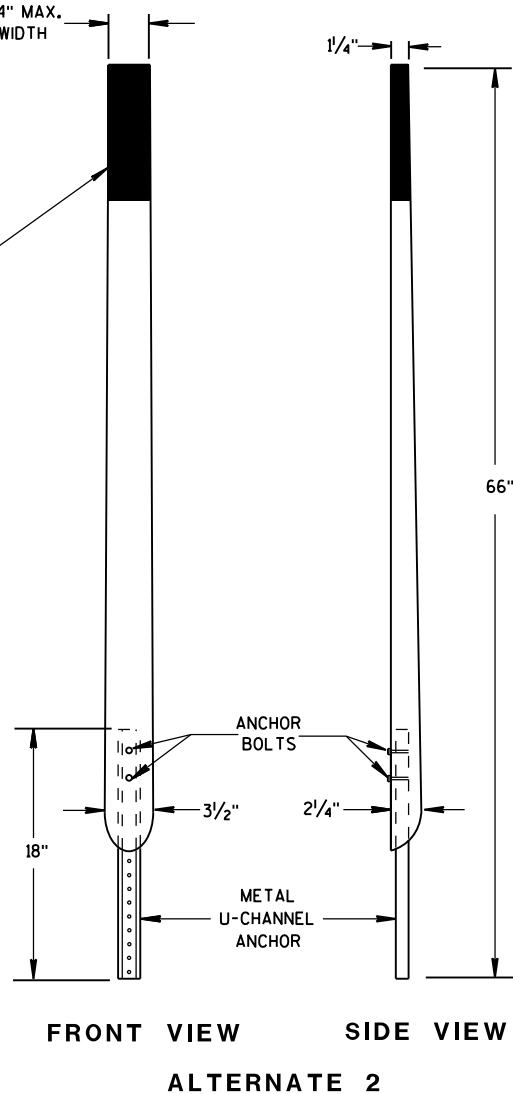
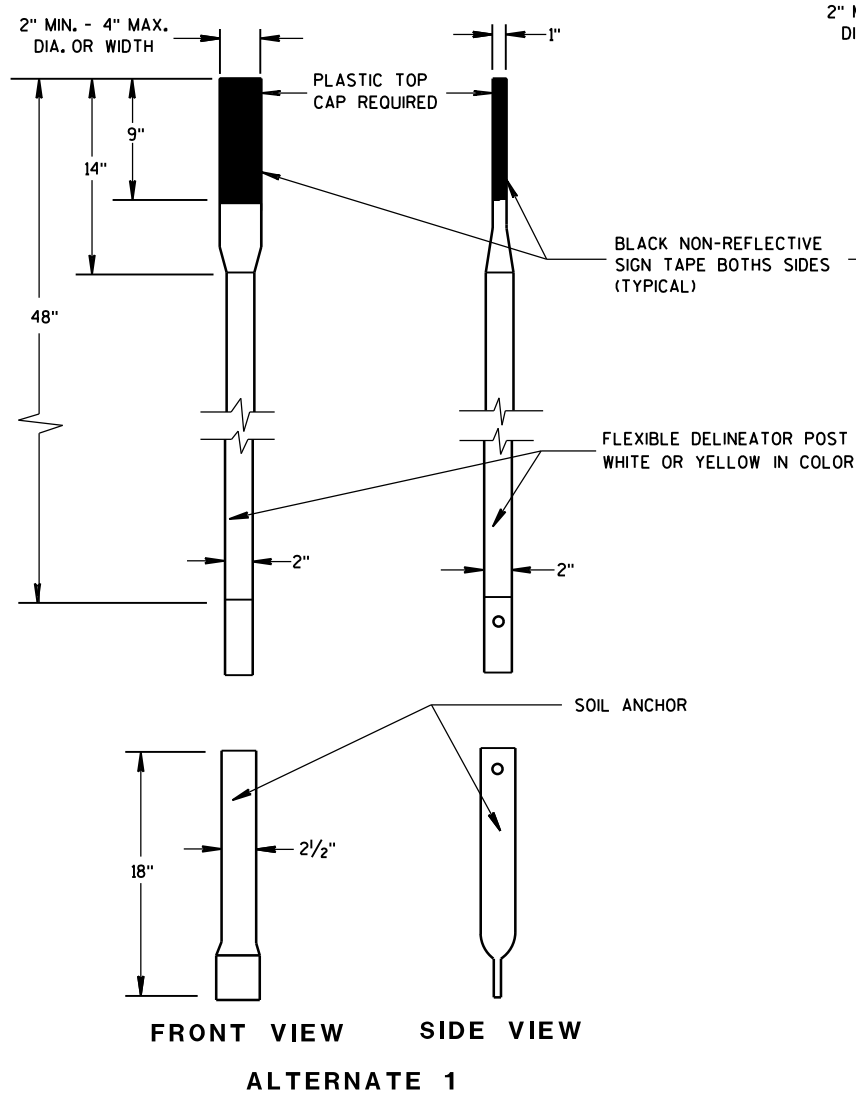
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



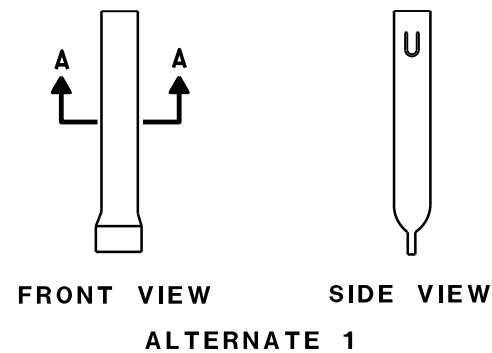
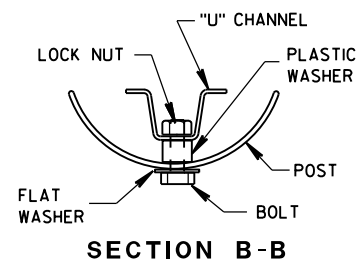
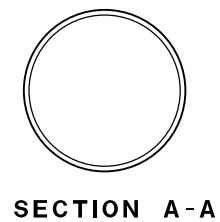
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

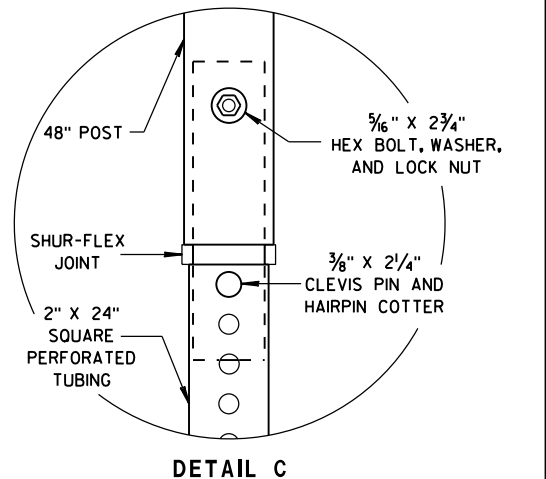
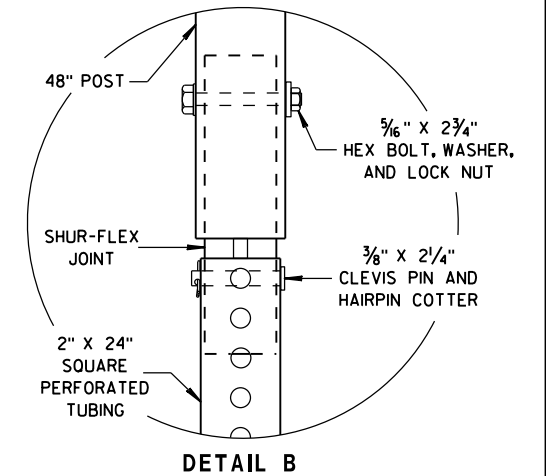
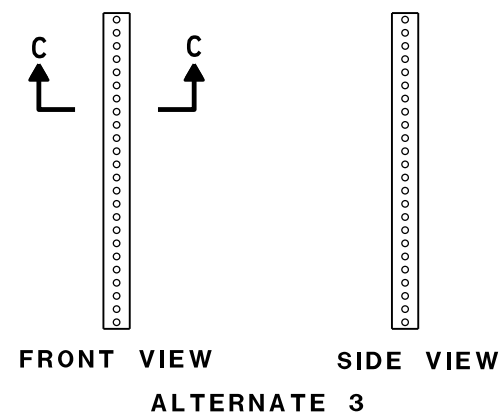
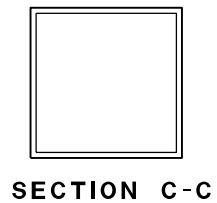
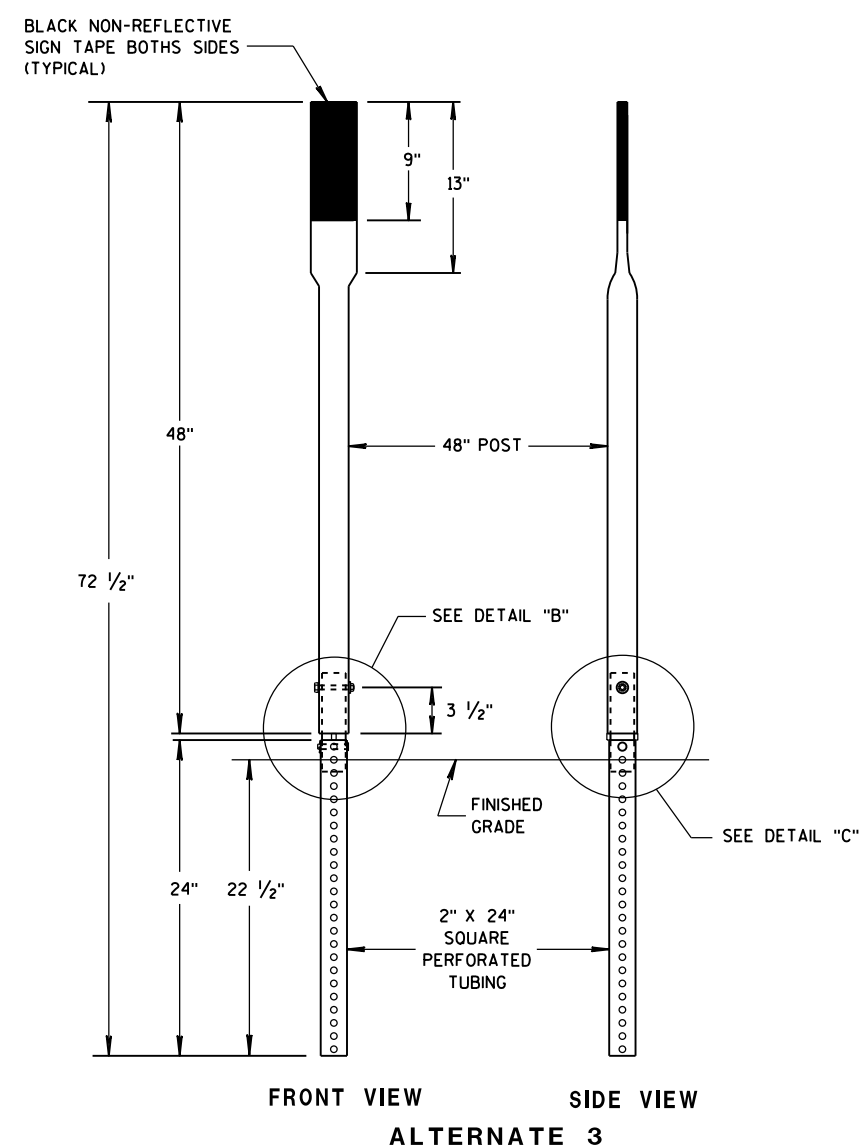
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



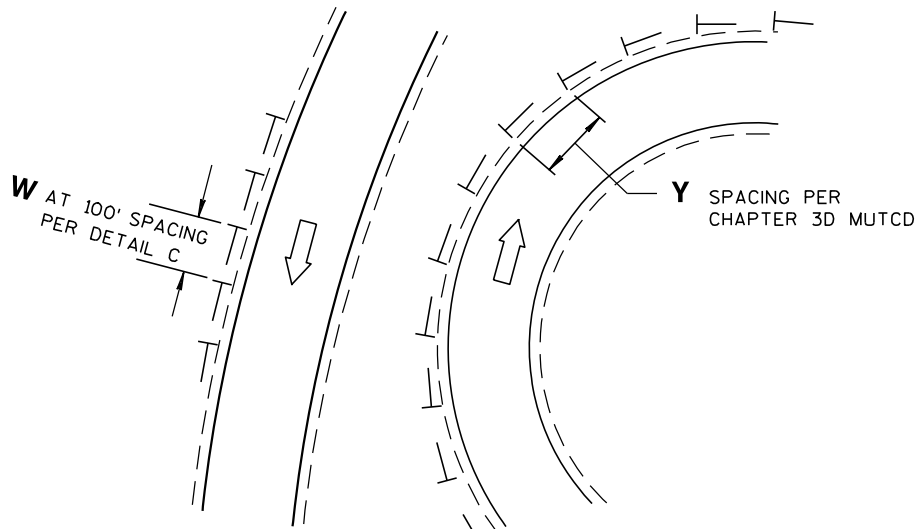
FLEXIBLE MARKER POSTS



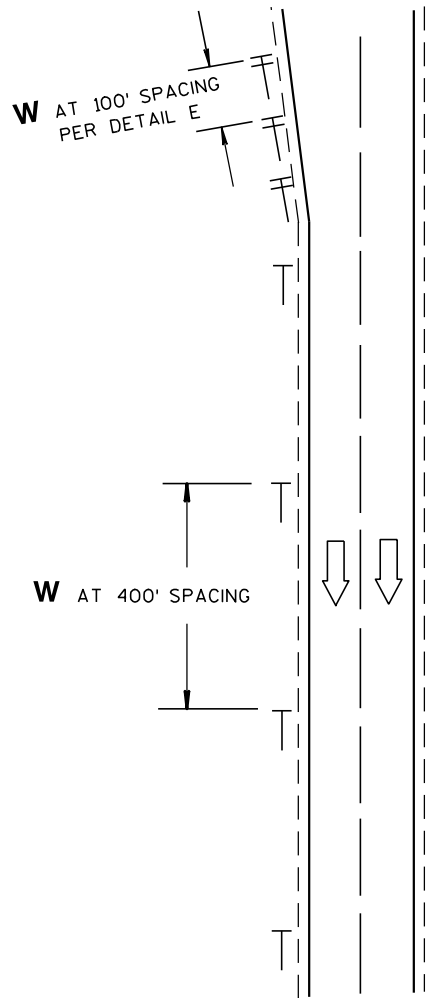
FLEXIBLE MARKER POST ANCHORS



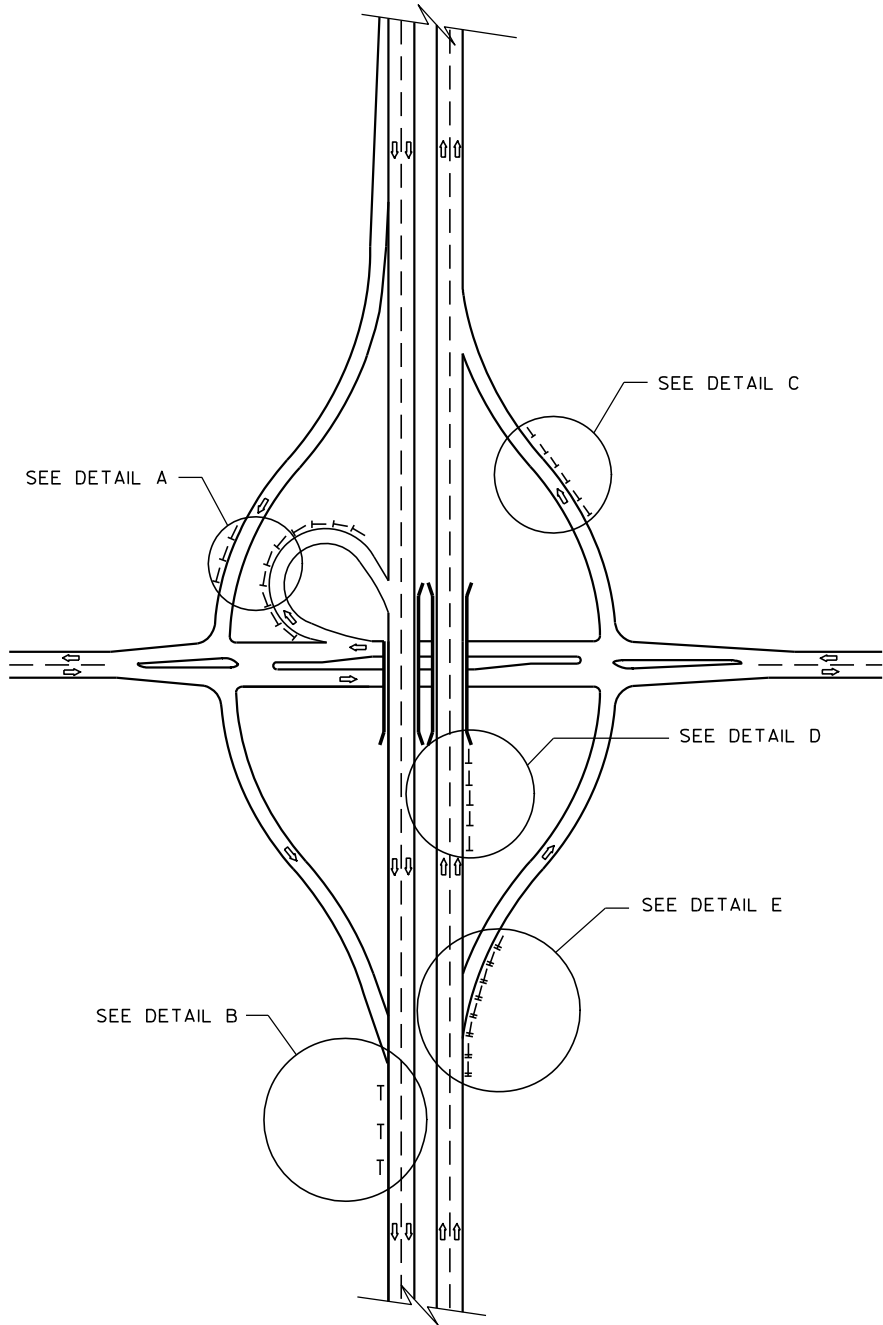
FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



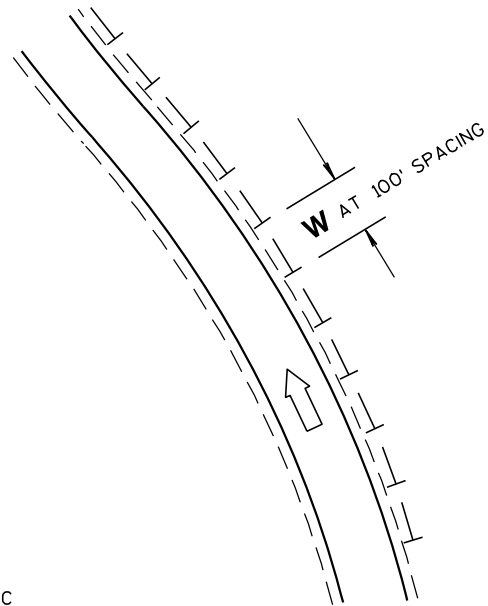
DETAIL A
DELINEATOR LAYOUT AT CURVED RAMP



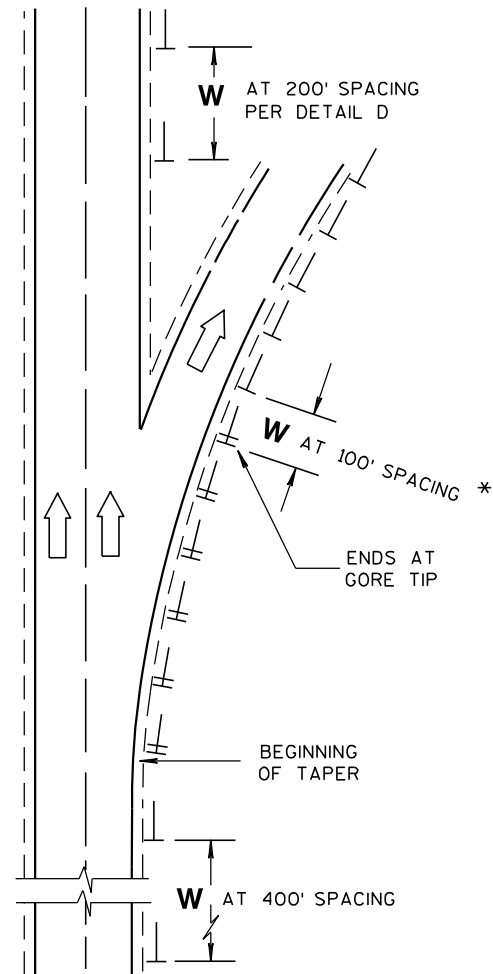
DETAIL B
DELINEATOR LAYOUT
ALONG MAINLINE



DELINEATOR LAYOUT



DETAIL C
DELINEATOR LAYOUT ALONG RAMP



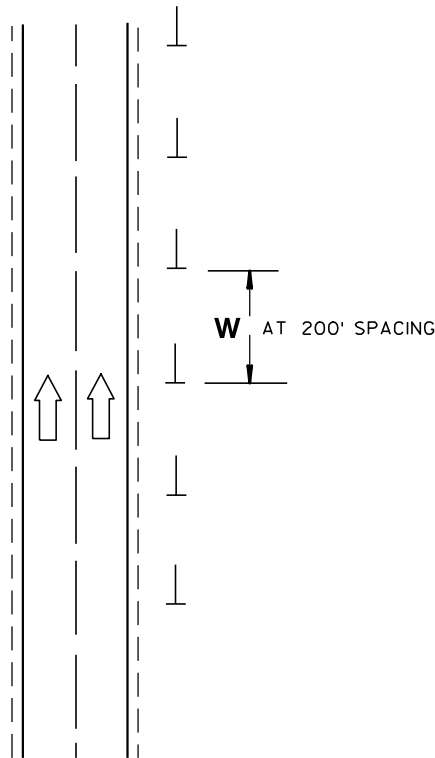
DETAIL E
DELINEATOR LAYOUT FOR ACCELERATION
- DECELERATION LANES AND TAPERS AT RAMPS

GENERAL NOTES

* USE DOUBLE DELINEATOR ALONG ACCELERATION-DECELERATION LANES AND TAPERS.
USE SINGLE DELINEATOR WHEN RAMP PAVEMENT IS FULL WIDTH.

LEGEND

- DIRECTION OF TRAFFIC FLOW
- SINGLE DELINEATOR
- DOUBLE DELINEATOR
- W** WHITE
- Y** YELLOW

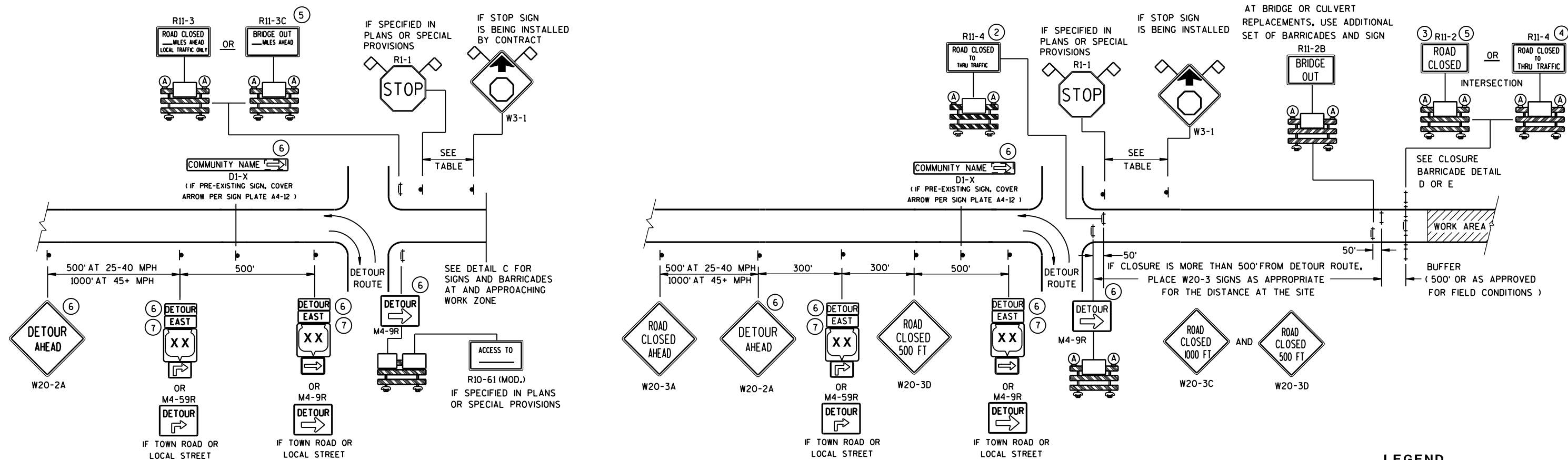


DETAIL D
DELINEATOR LAYOUT
BETWEEN INTERCHANGE RAMPS

DELINEATOR LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

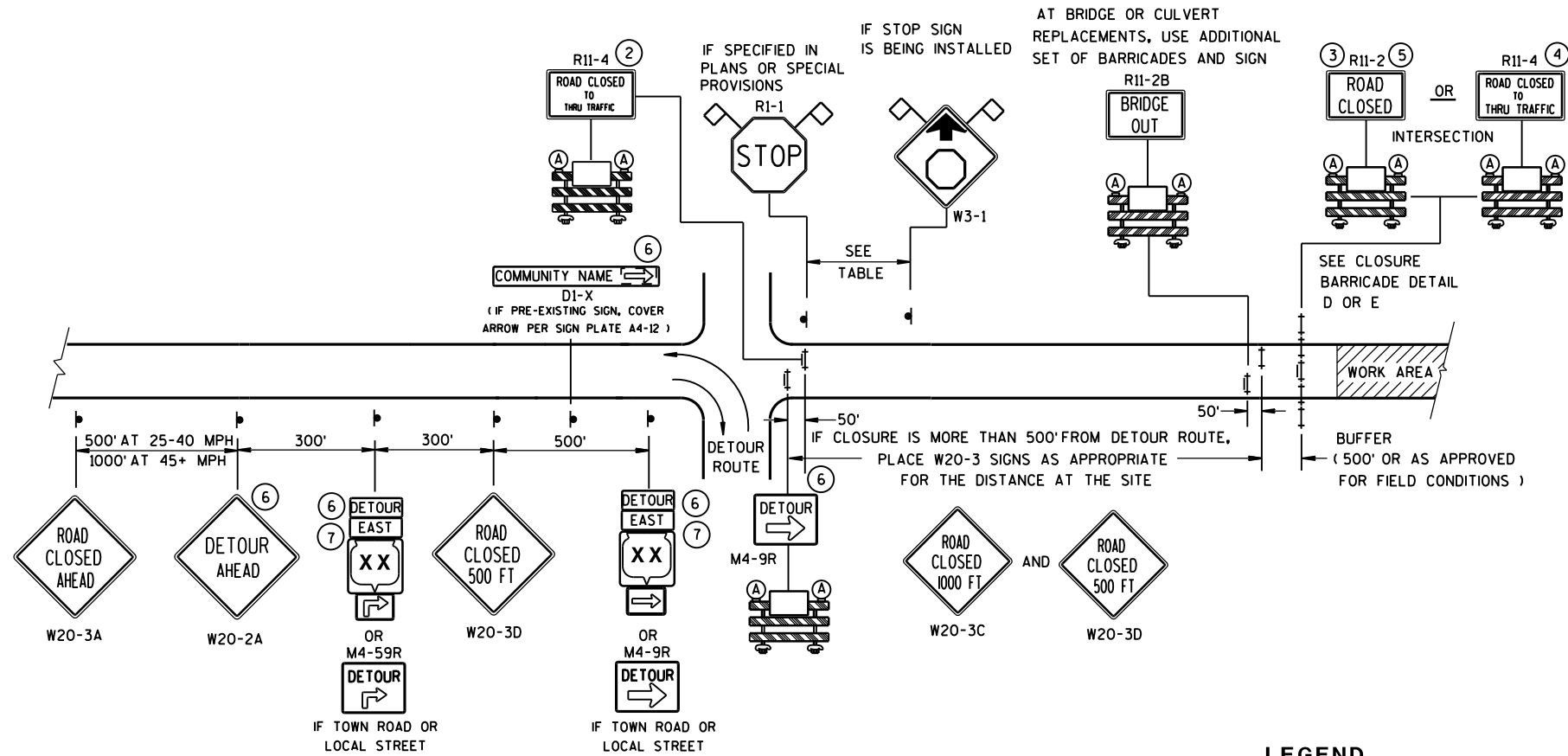
APPROVED
2/5/09 /S/ Thomas N. Notbohm
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

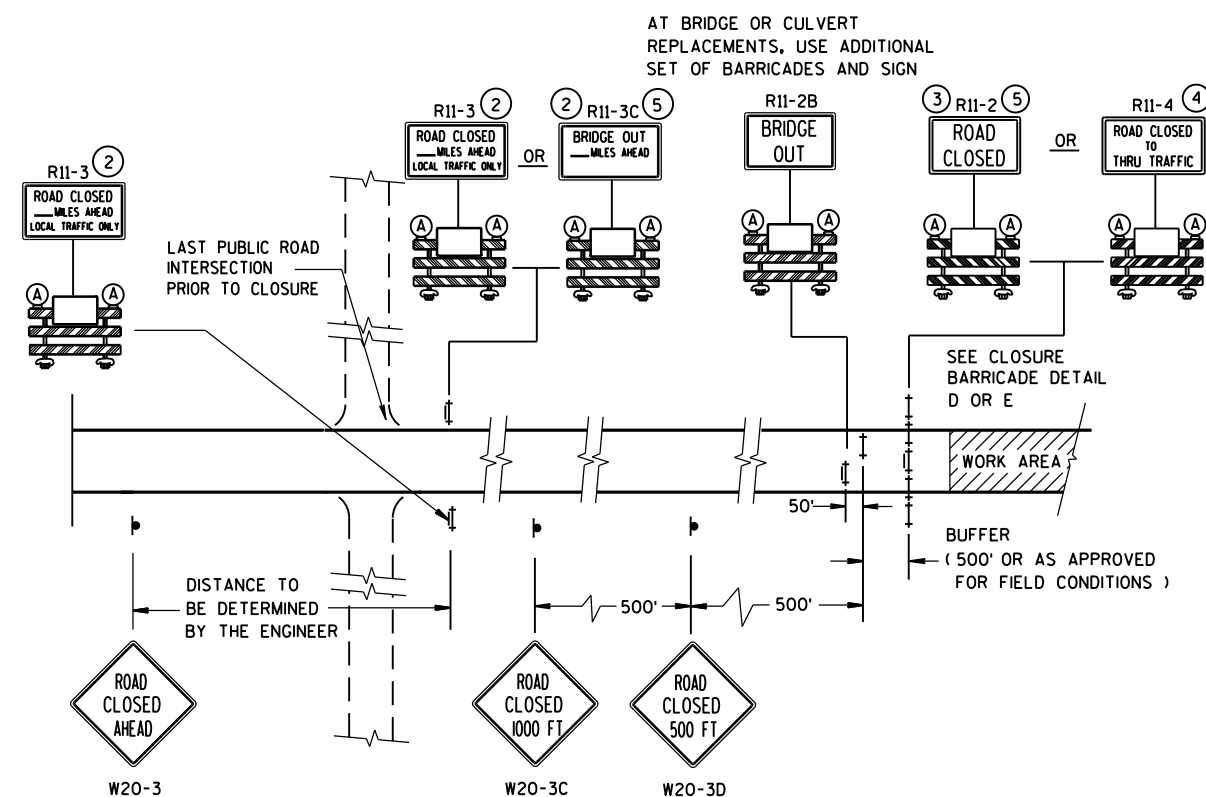
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



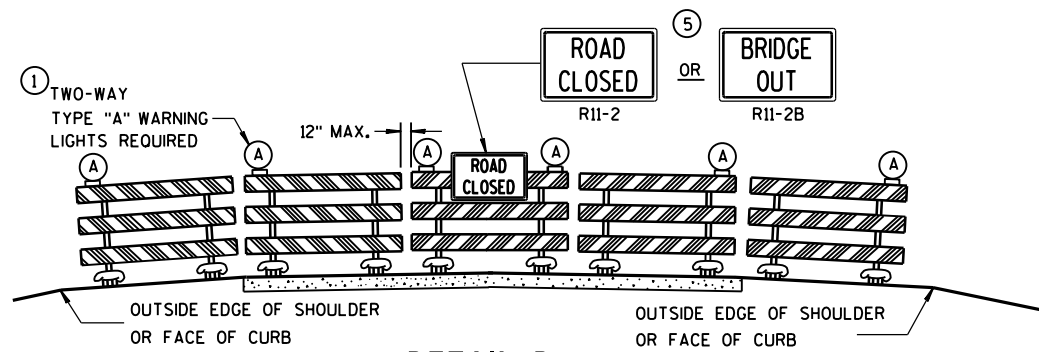
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

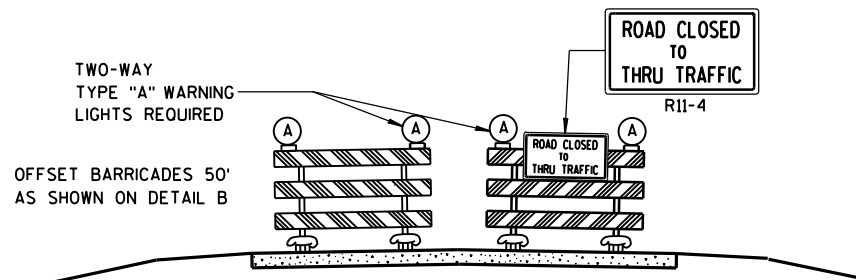
- ## LEGEND
-  SIGN ON PERMANENT SUPPORT
-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  WORK AREA
-  M4-8
M3-X
-  M1-4
-  COUNTY
M1-5A
-  M1-6
-  M05-1
-  M06-1
-  FLAGS, 16" X 16" MIN., (ORANGE)

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	
<u>Sept. 2015</u> <u>DATE</u>	<u>/S/ Peter Amakobe Atepe</u> STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



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:

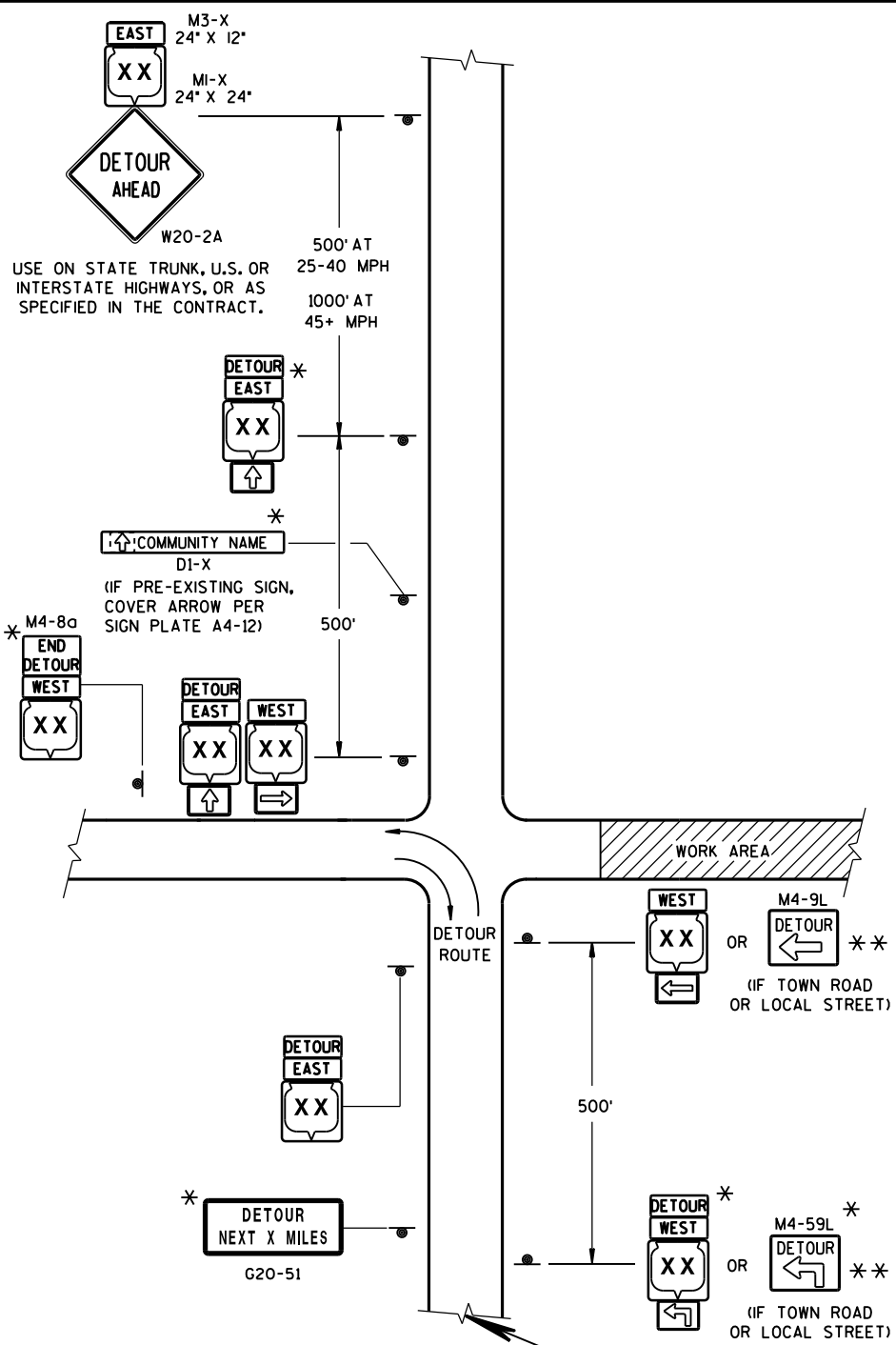
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" 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 STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



LEGEND

● SIGN ON PERMANENT SUPPORT

▨ WORK AREA

DETOUR EAST M4-8 M3-X

MI-4 OR COUNTY MI-5A OR MI-6

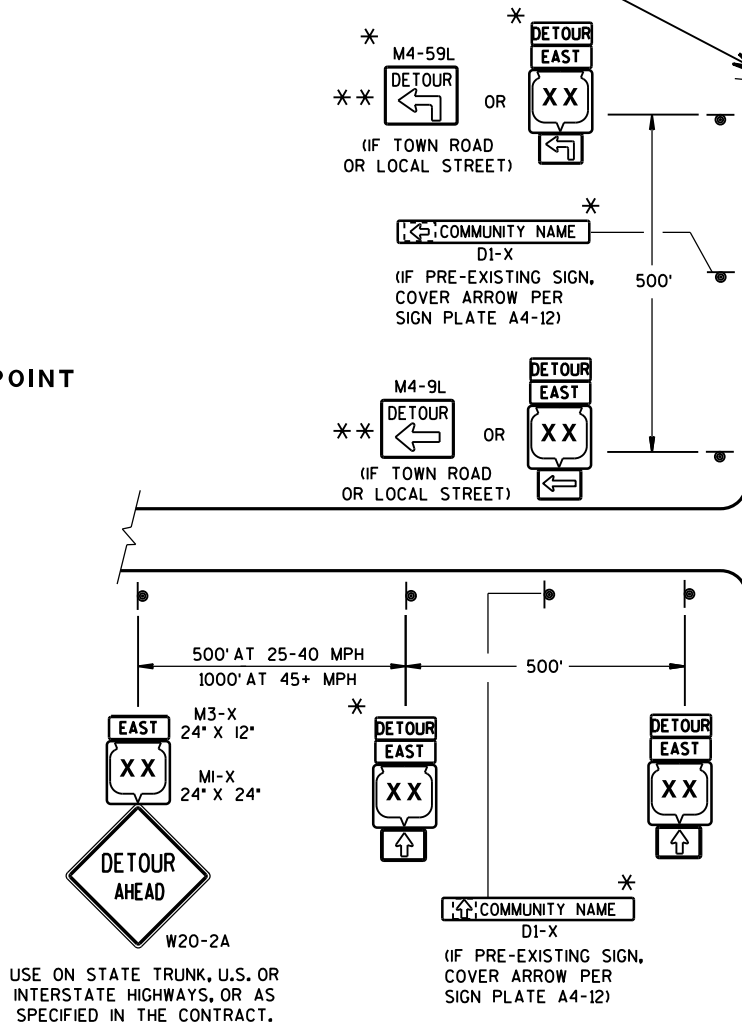
M05-1 OR M06-1 OR M06-1

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.

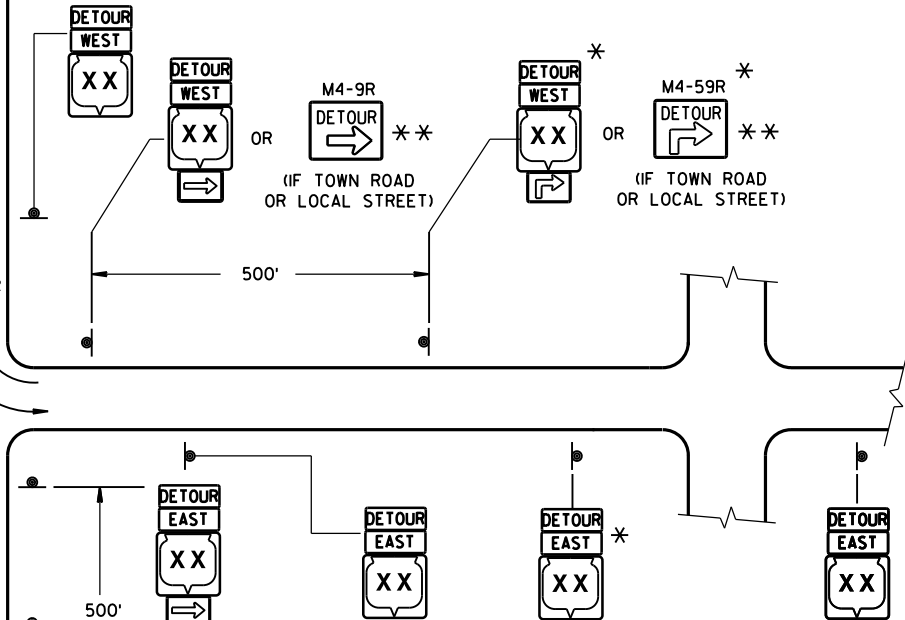
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.)
- MI-4, MI-5A, AND MI-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.



PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA.)

DETOUR SIGNING FOR MAINLINE CLOSURES

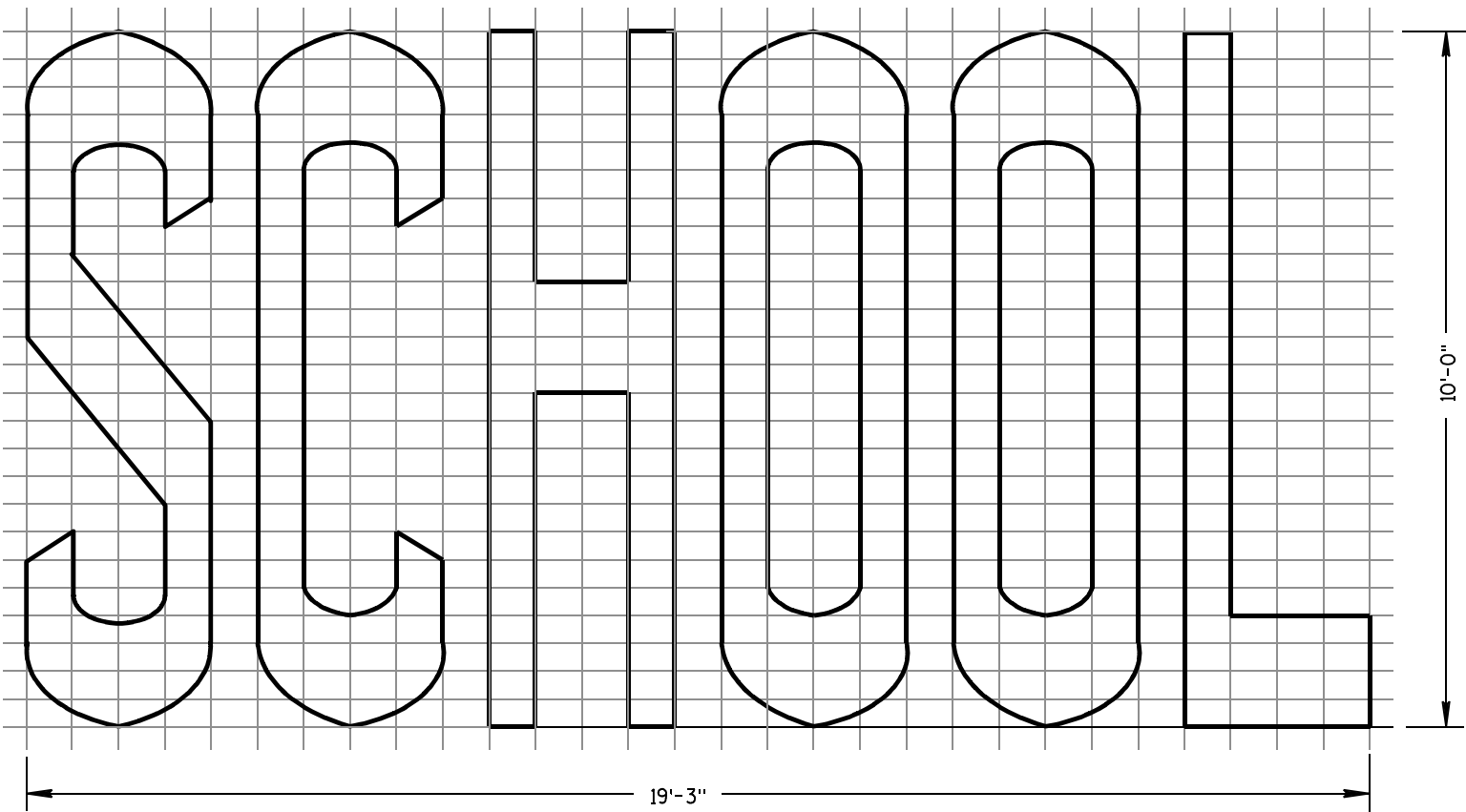
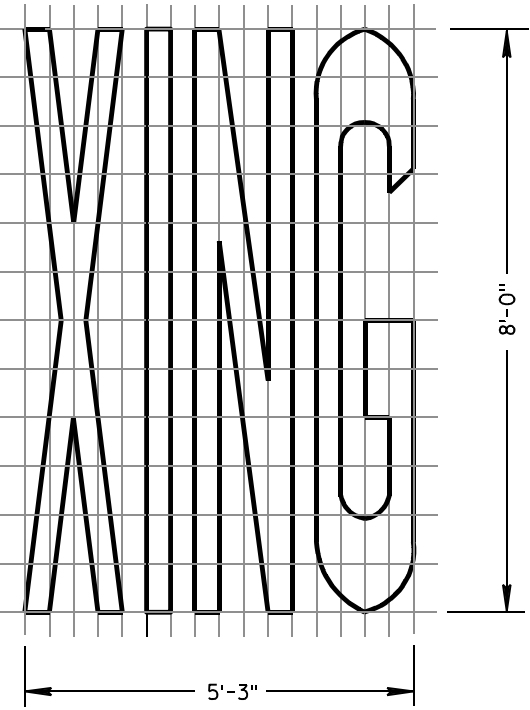
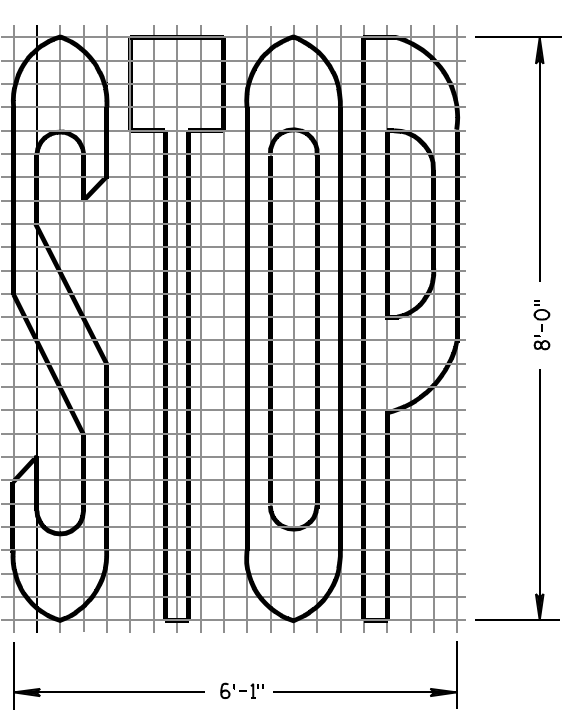
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

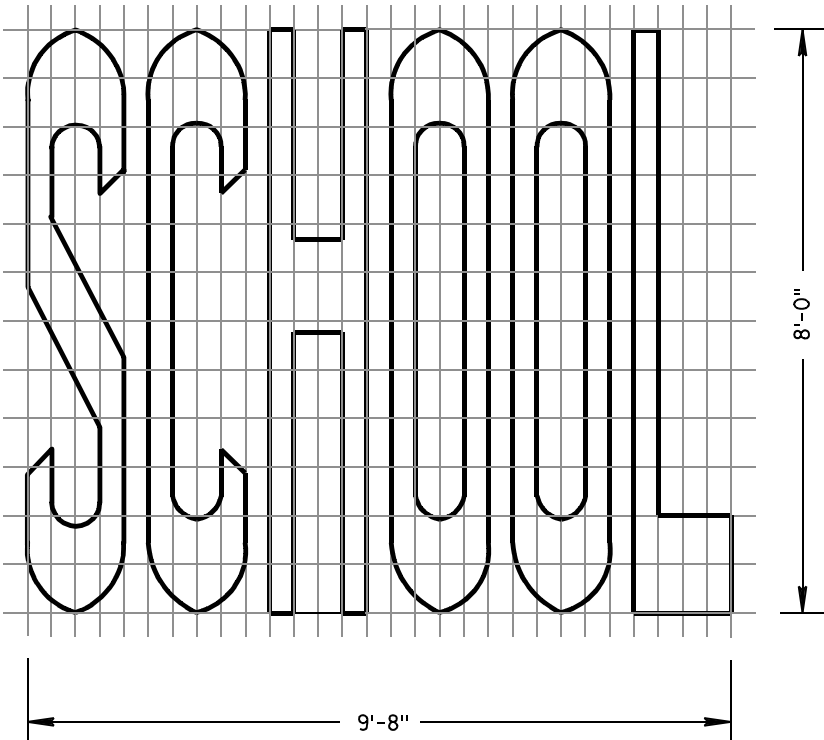
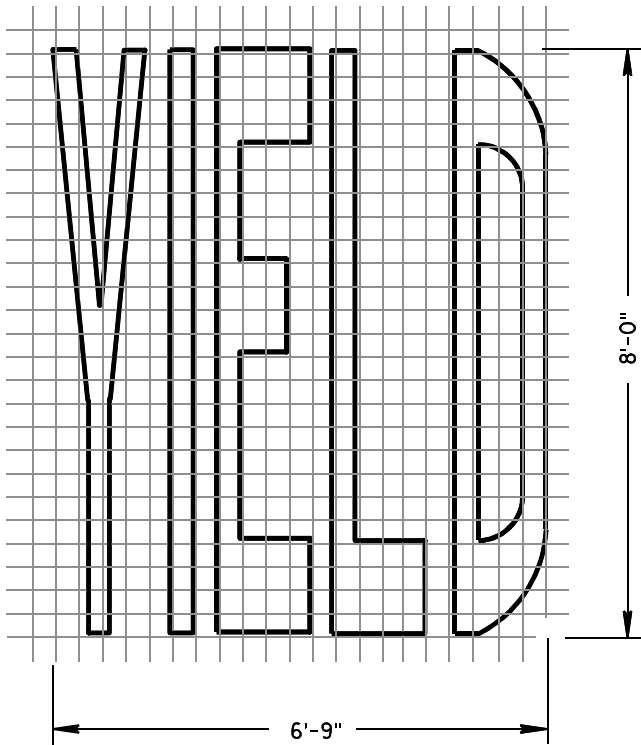
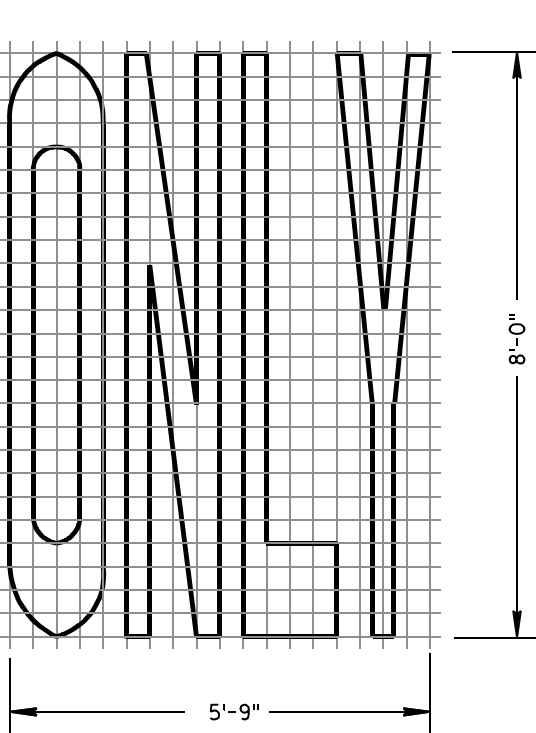
GENERAL NOTES

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

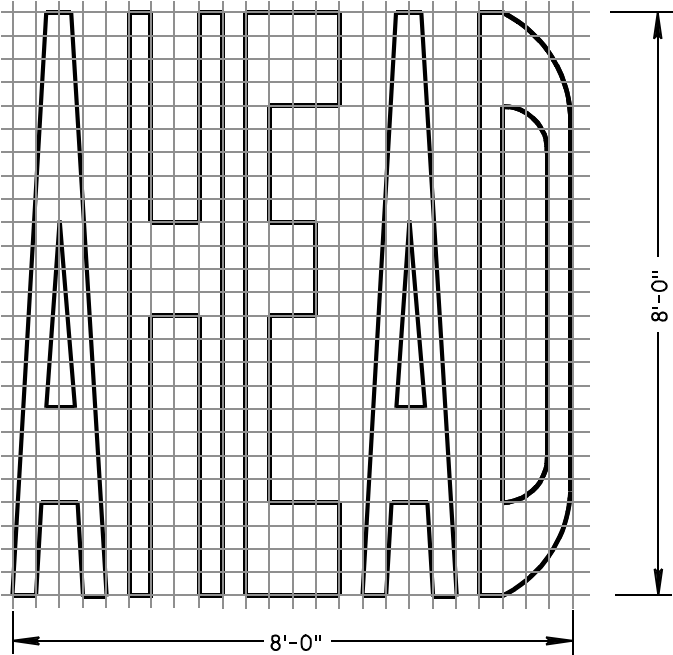
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES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



TWO-LANE



SINGLE-LANE



PAVEMENT MARKING WORDS

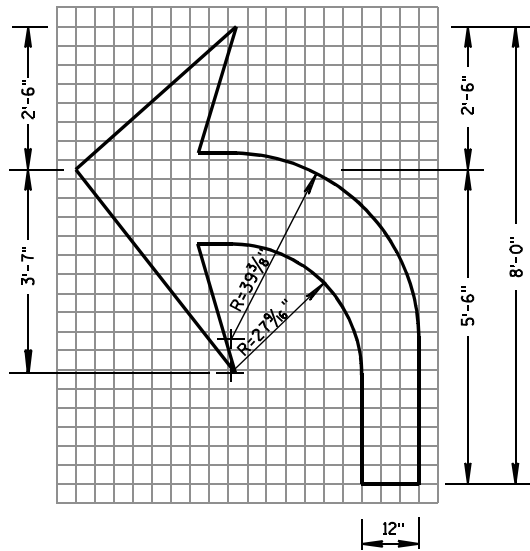
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

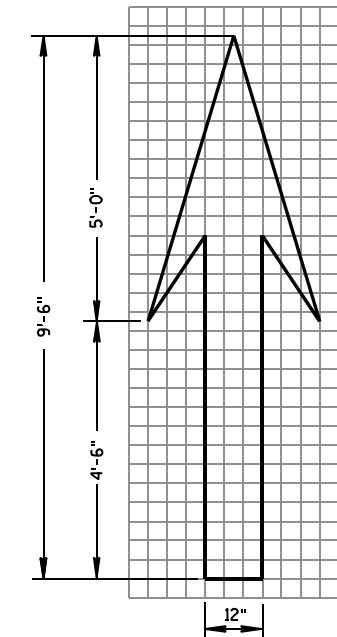
7-1-11
DATE

/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

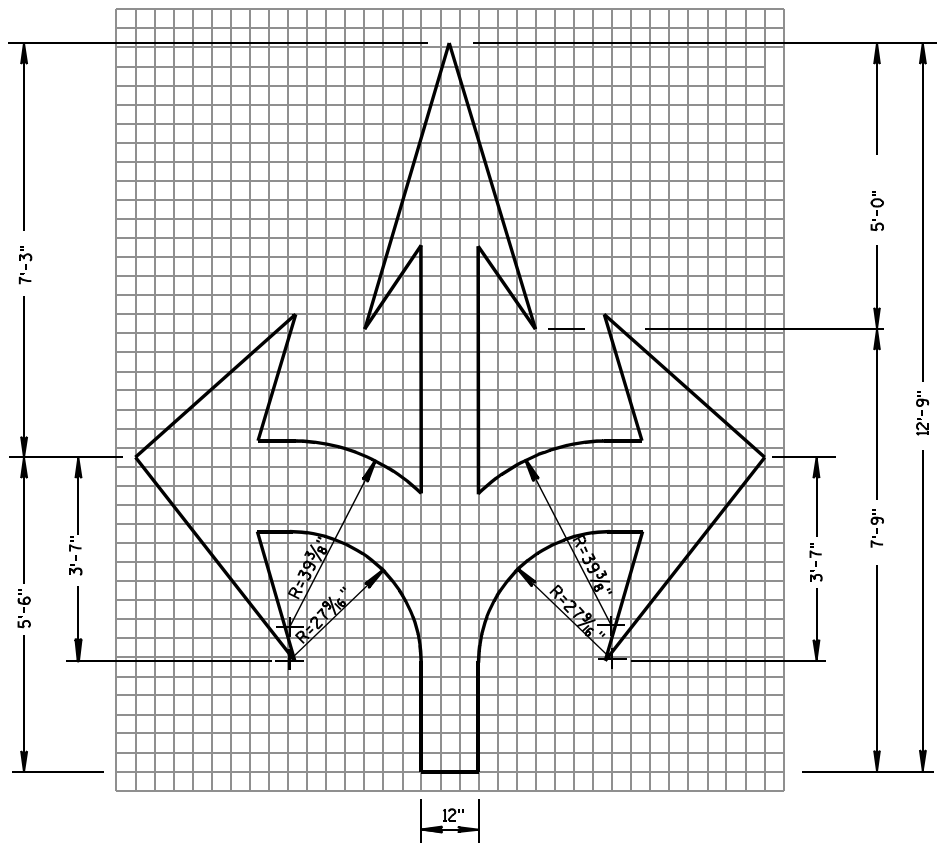
FHWA



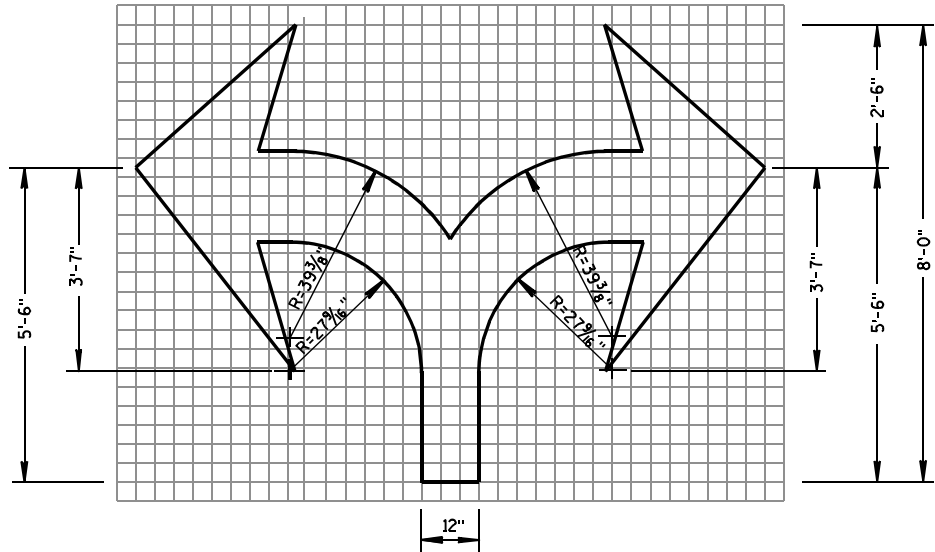
TYPE 2



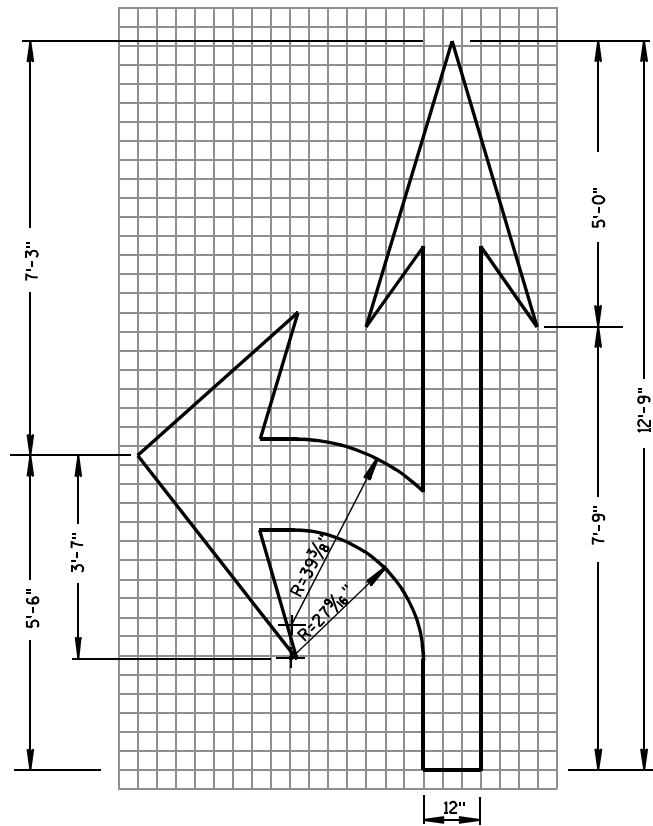
TYPE 1



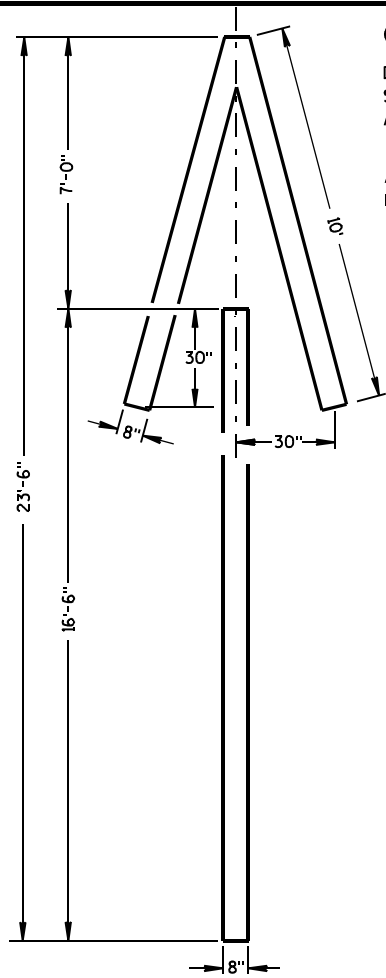
TYPE 6



TYPE 7



TYPE 3

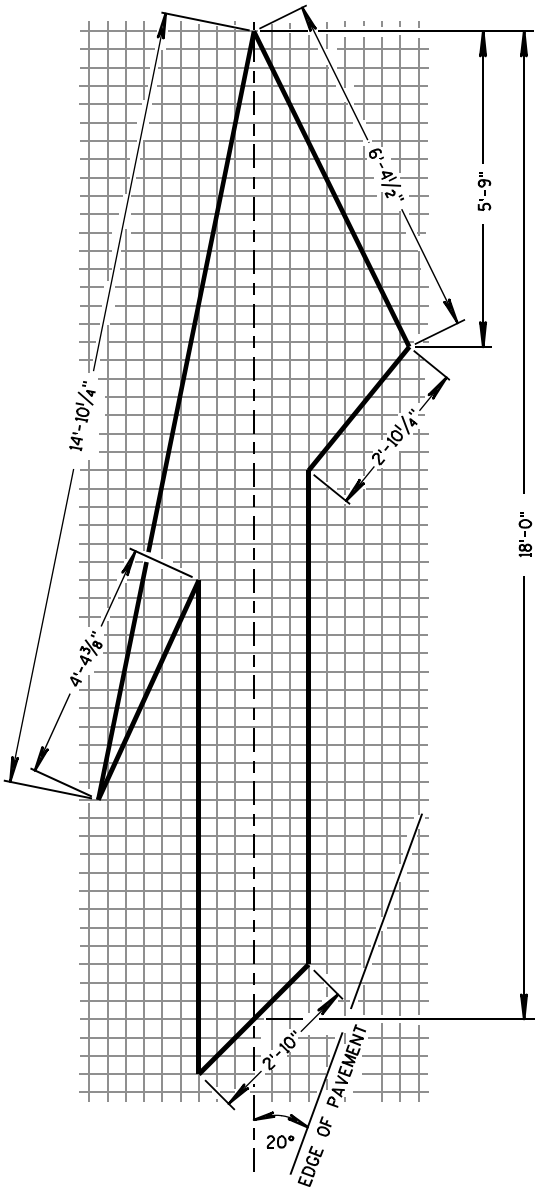


TYPE 4

GENERAL NOTES

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

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



TYPE 5 LANE DROP ARROW

PAVEMENT MARKING ARROWS

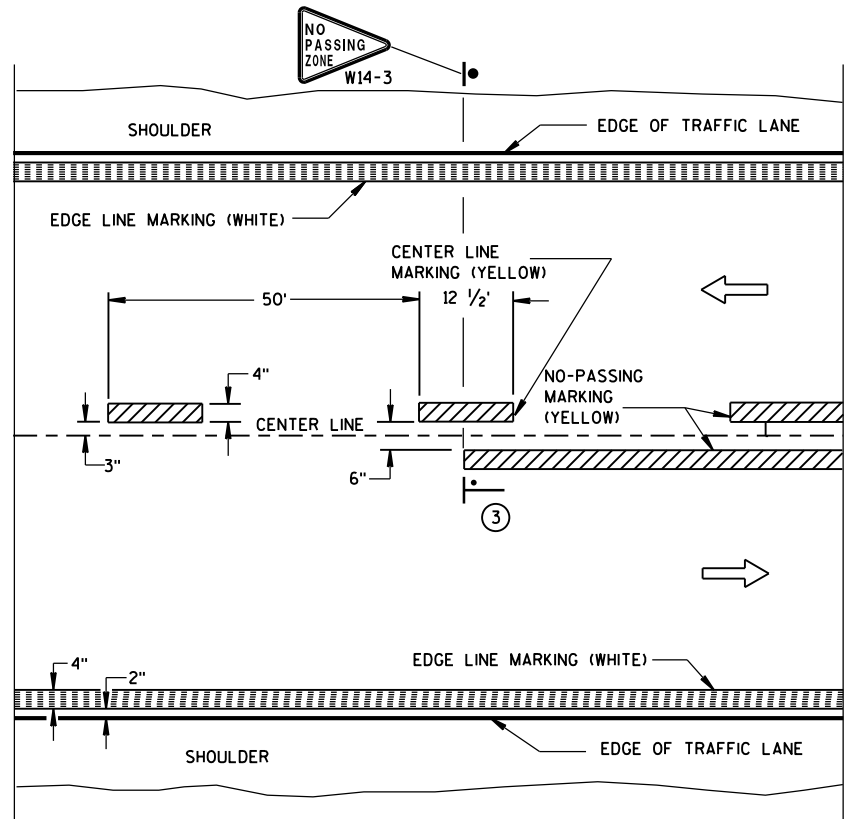
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

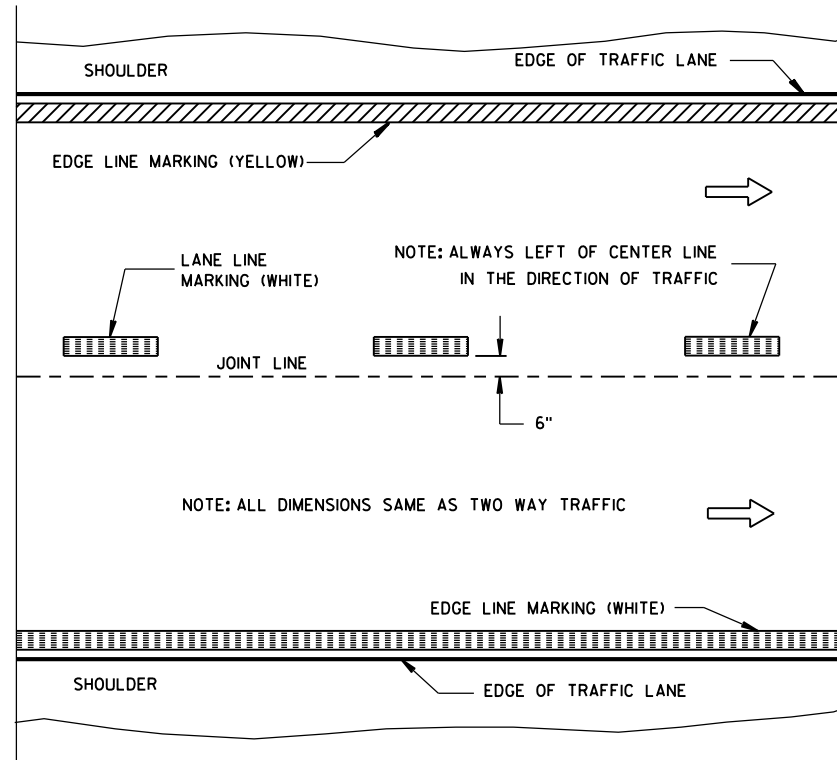
7/1/11
DATE

/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

FHWA

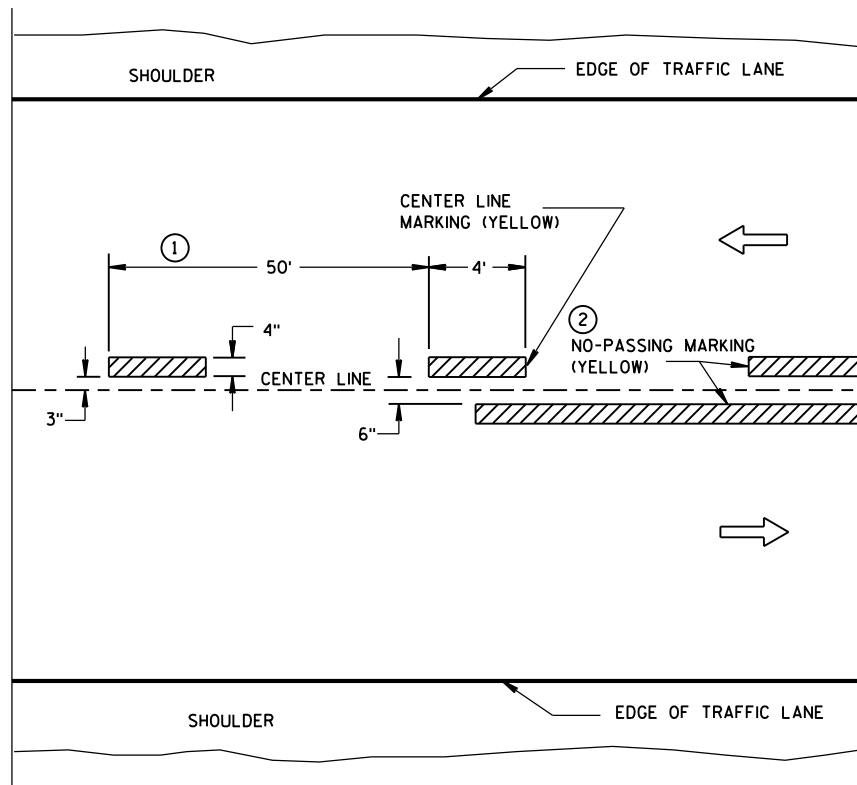


TWO WAY TRAFFIC

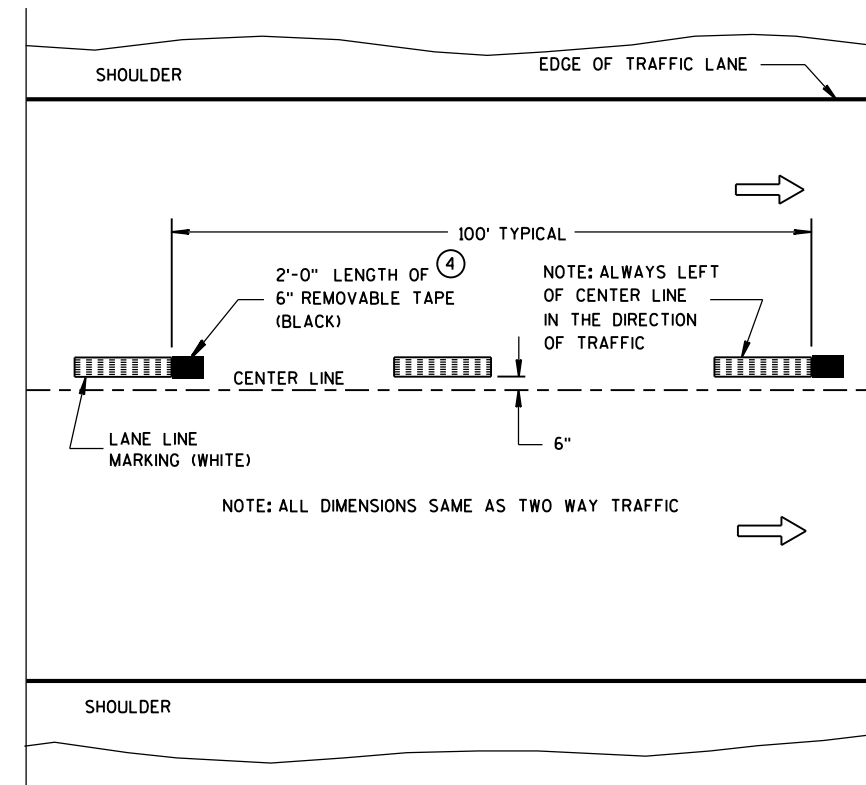


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

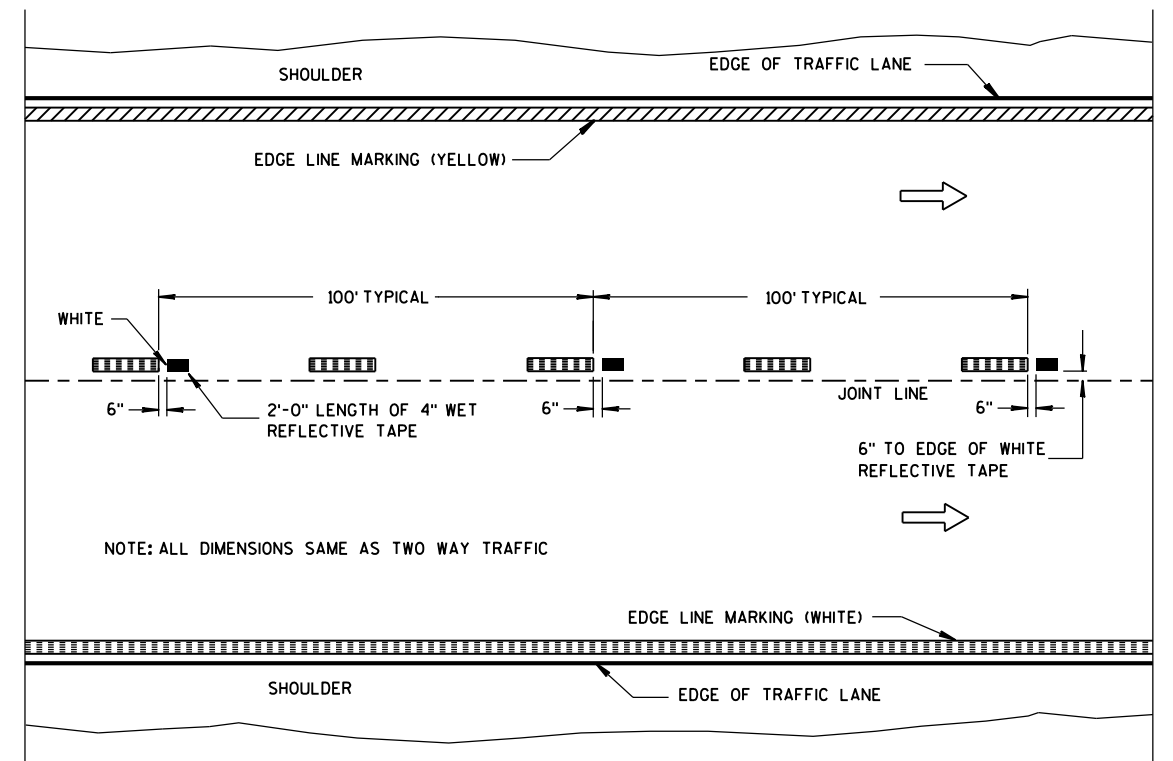
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

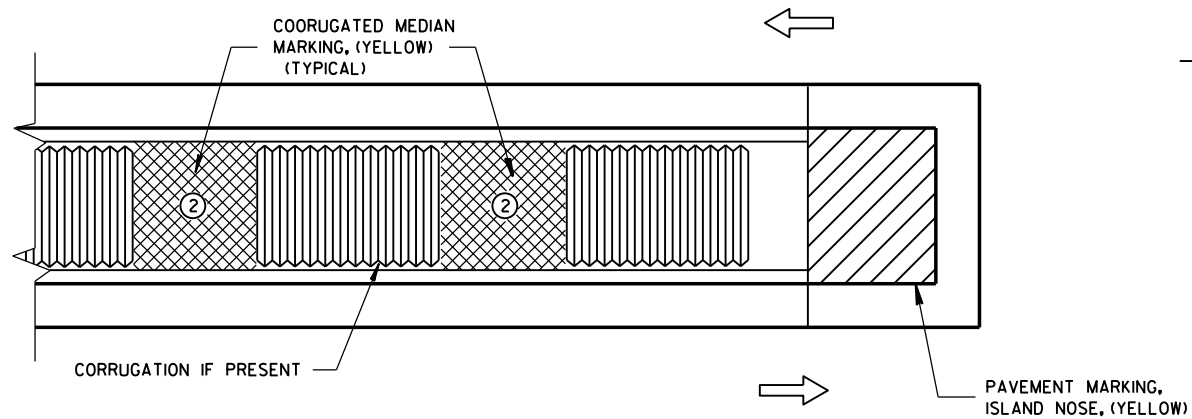
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

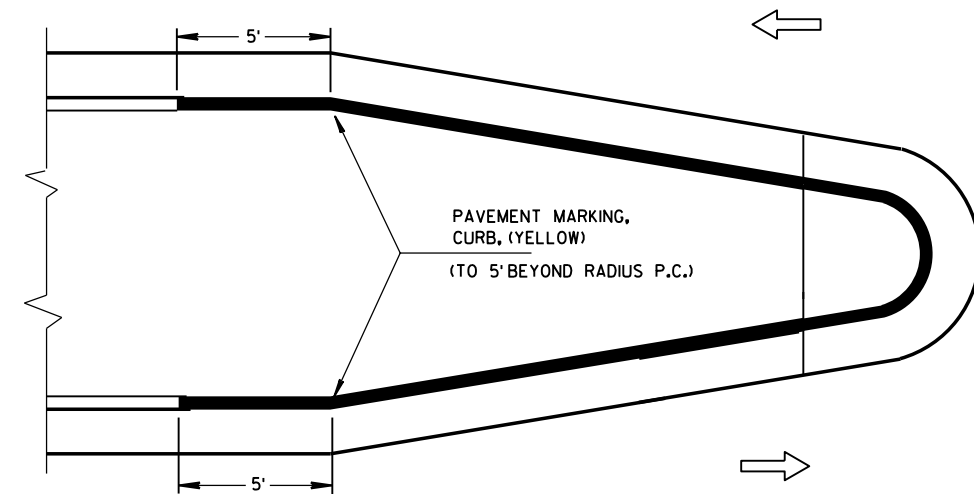
PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

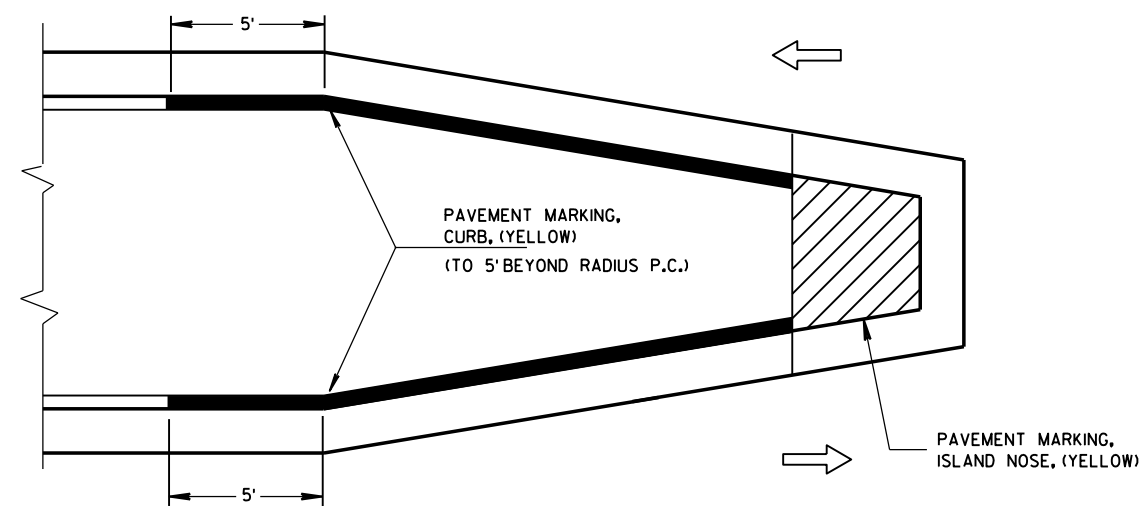
APPROVED
5-13-2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER
FHWA



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

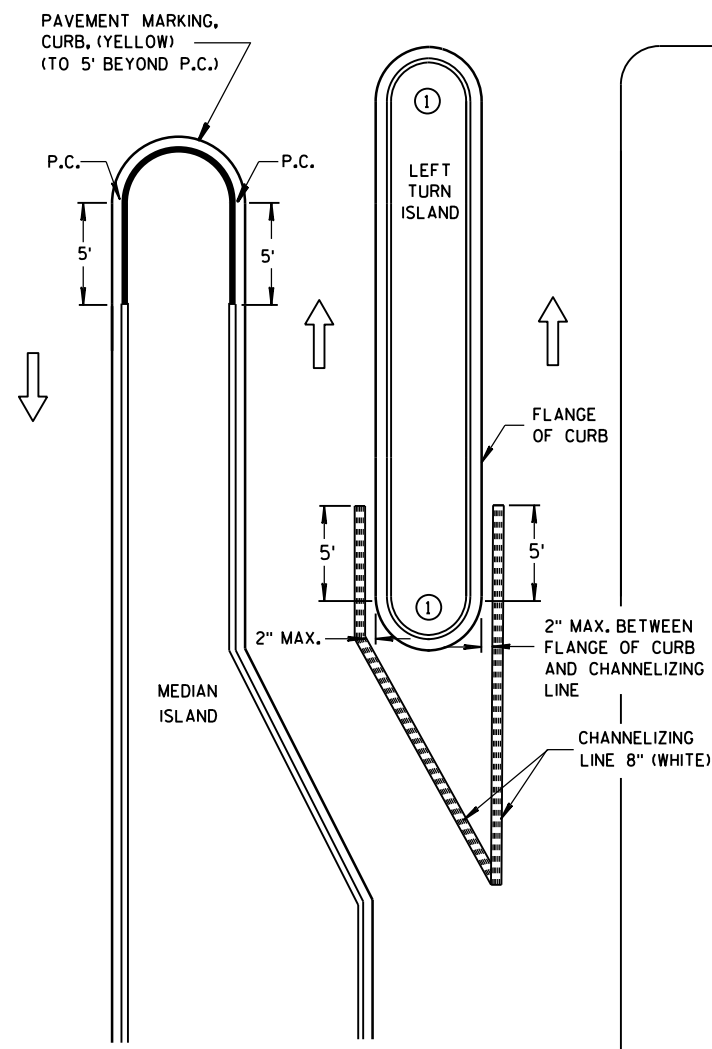


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

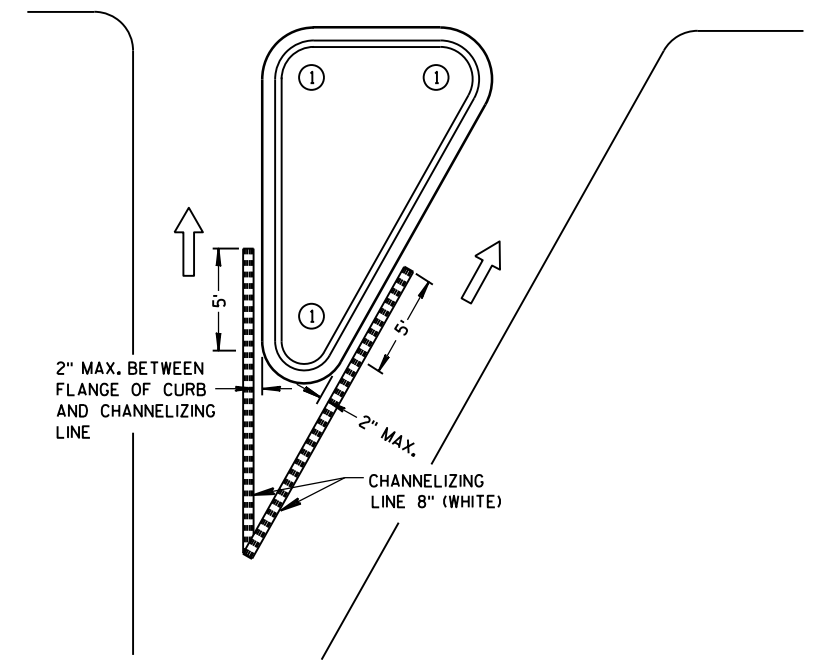
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS



LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

- 1 DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.
- 2 WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



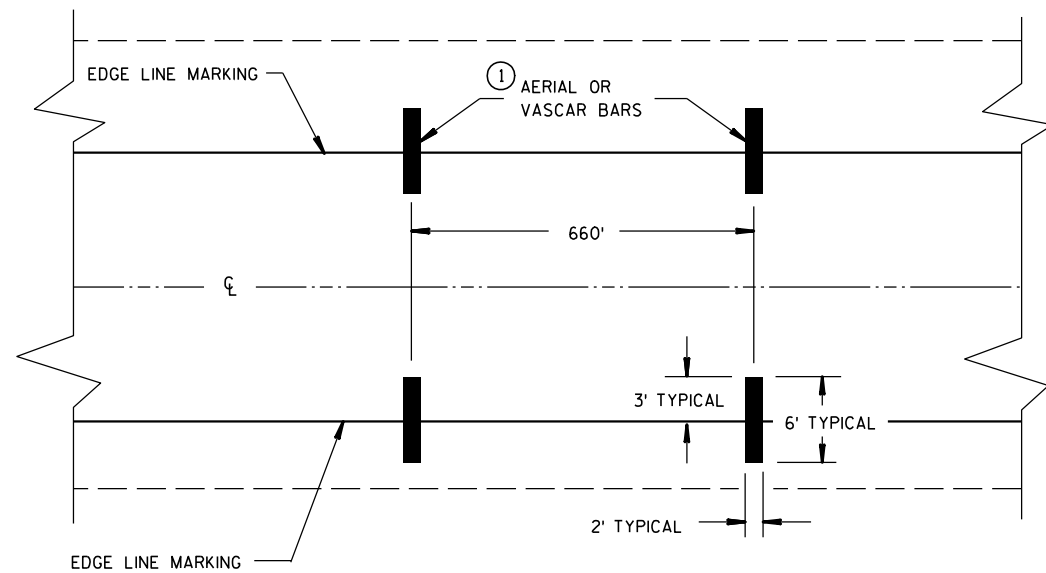
RIGHT TURN ISLAND

LEGEND

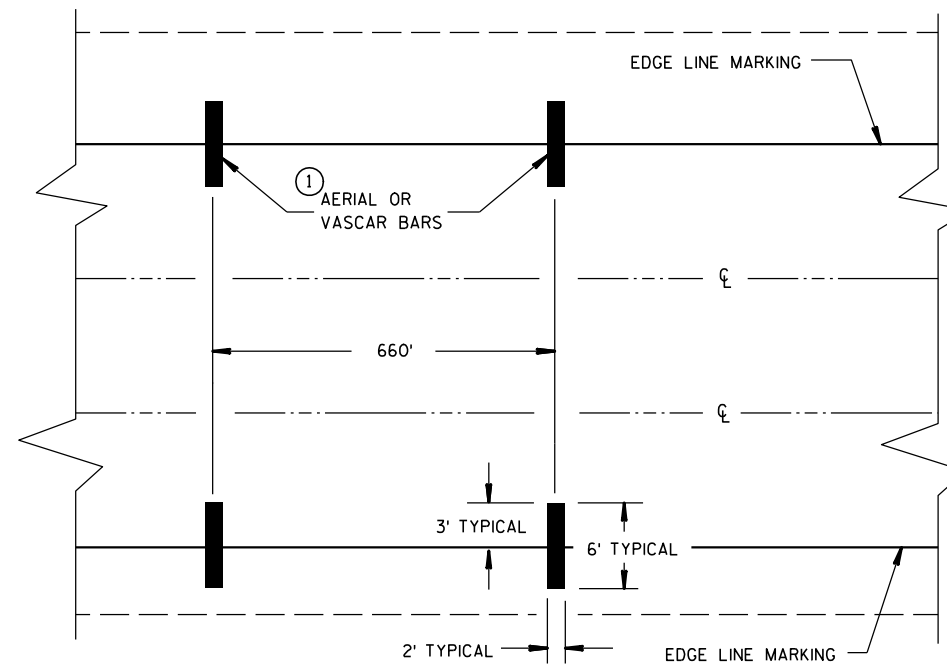
- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING (ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TYPICAL FOR TWO WAY OR ONE WAY TRAFFIC



TYPICAL FOR MULTILANE TRAFFIC

SPEED ENFORCEMENT ZONE WITH AERIAL OR VASCAR BARS

GENERAL NOTES

- ① NUMBER OF VASCAR OR AERIAL BARS SHALL BE A MINIMUM OF 2 OR A MAXIMUM OF 5 AT 660' SPACING.

A CAR CAN BE PROVIDED BY THE WISCONSIN STATE PATROL FOR TRAFFIC CONTROL.

AERIAL ENFORCEMENT BARS
PAVEMENT MARKING DETAILS

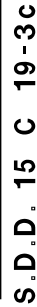
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

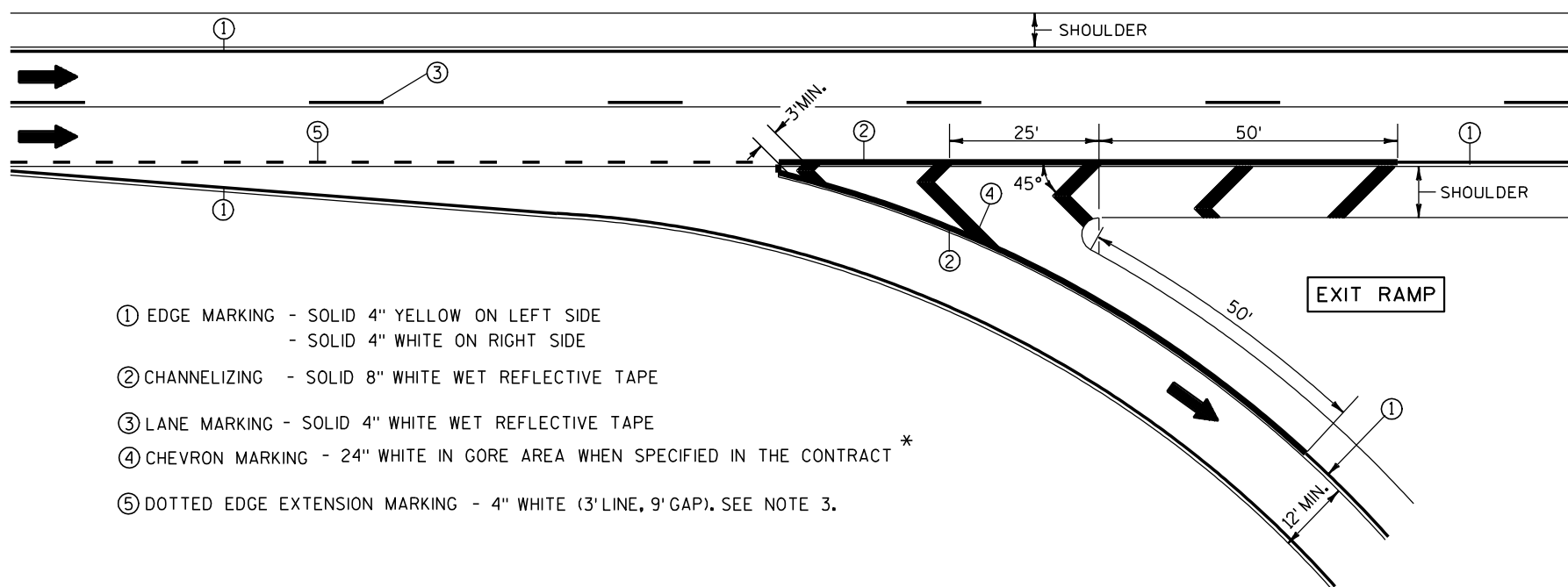
4/23/01
DATE

/S/ Chester J. Spang
CHIEF SIGNS AND MARKING ENGINEER

FHWA



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

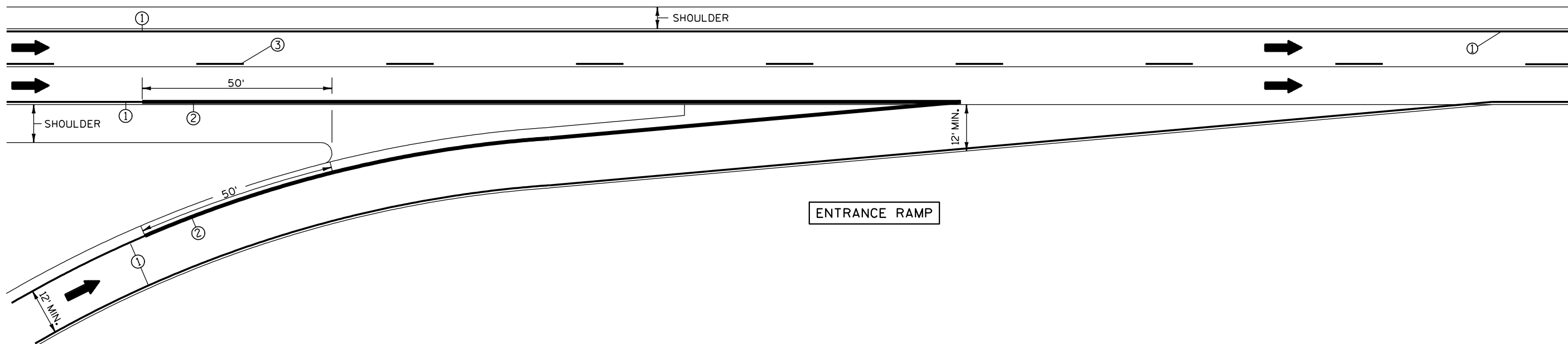


- ① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE
- ② CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE
- ③ LANE MARKING - SOLID 4" WHITE WET REFLECTIVE TAPE
- ④ CHEVRON MARKING - 24" WHITE IN GORE AREA WHEN SPECIFIED IN THE CONTRACT *
- ⑤ DOTTED EDGE EXTENSION MARKING - 4" WHITE (3' LINE, 9' GAP). SEE NOTE 3.

NOTES:

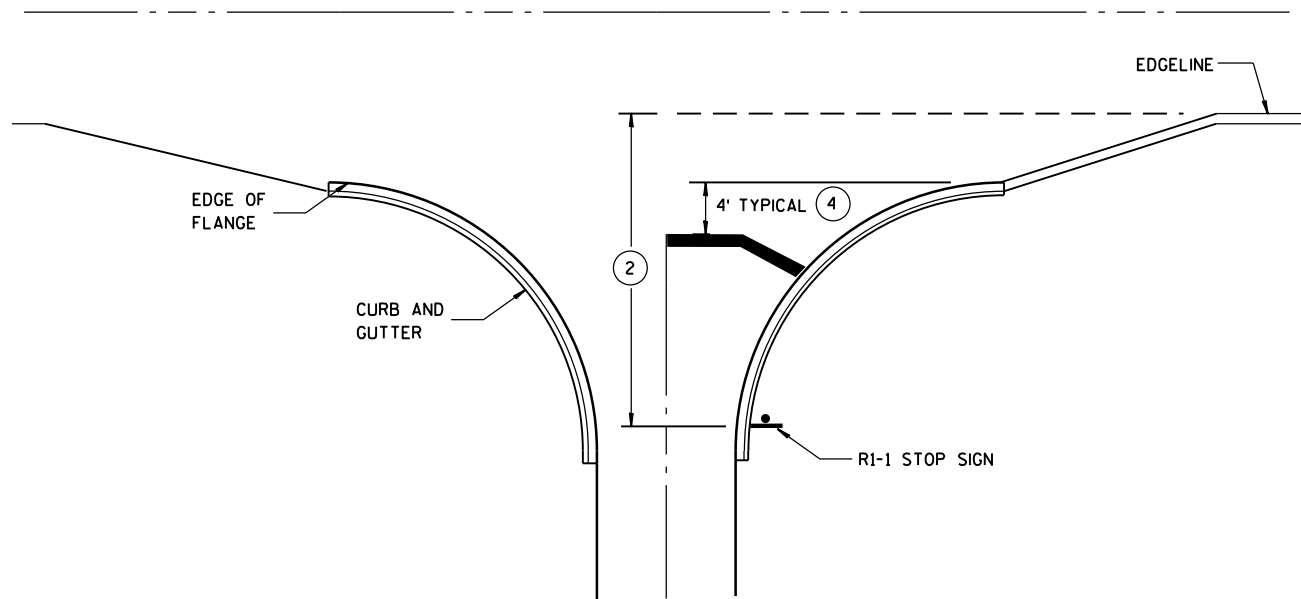
- 1. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.
- 2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.
- 3. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- 4. RETRACE EXISTING DIAGONAL MARKINGS.

* REFER TO DESIGN NOTES.

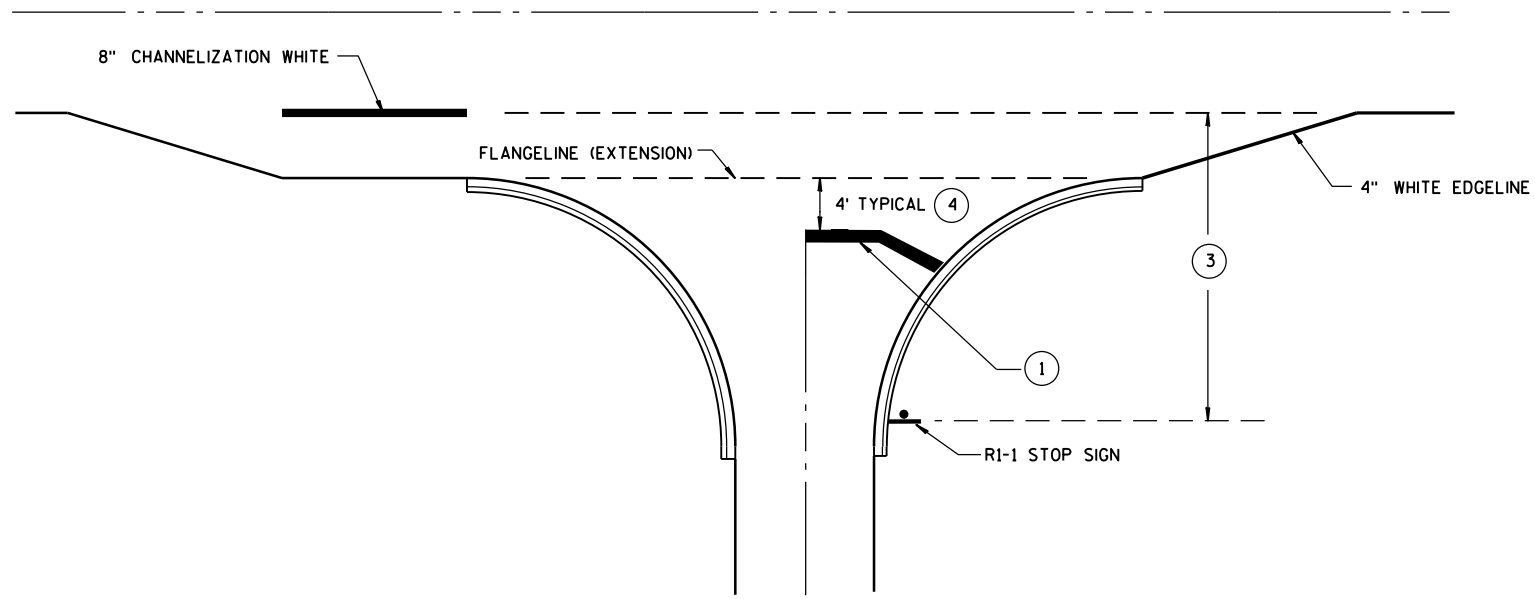


PAVEMENT MARKING
(RAMPS AND GORES)

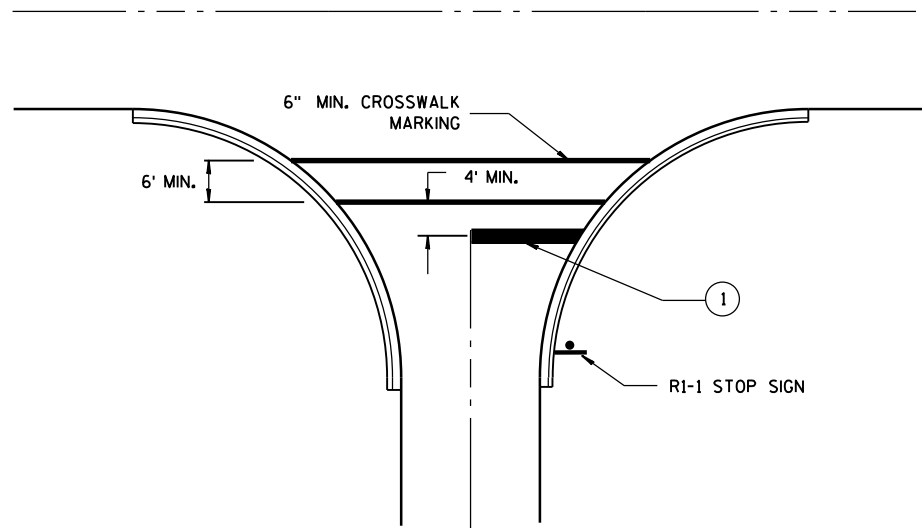
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



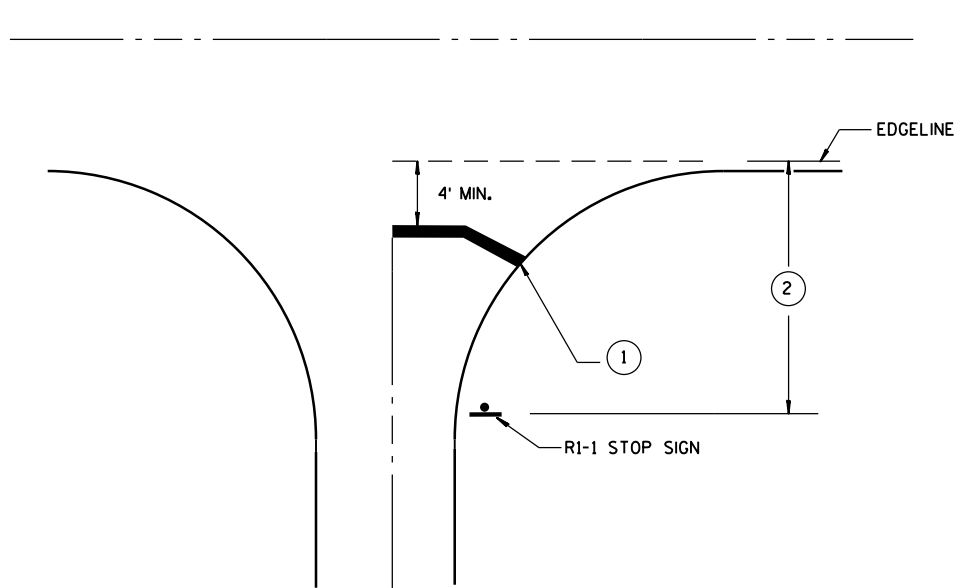
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

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

STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/30/2013 DATE /S/ Travis Feltz
STATE TRAFFIC ENGINEER
FHWA

LEGEND

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

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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

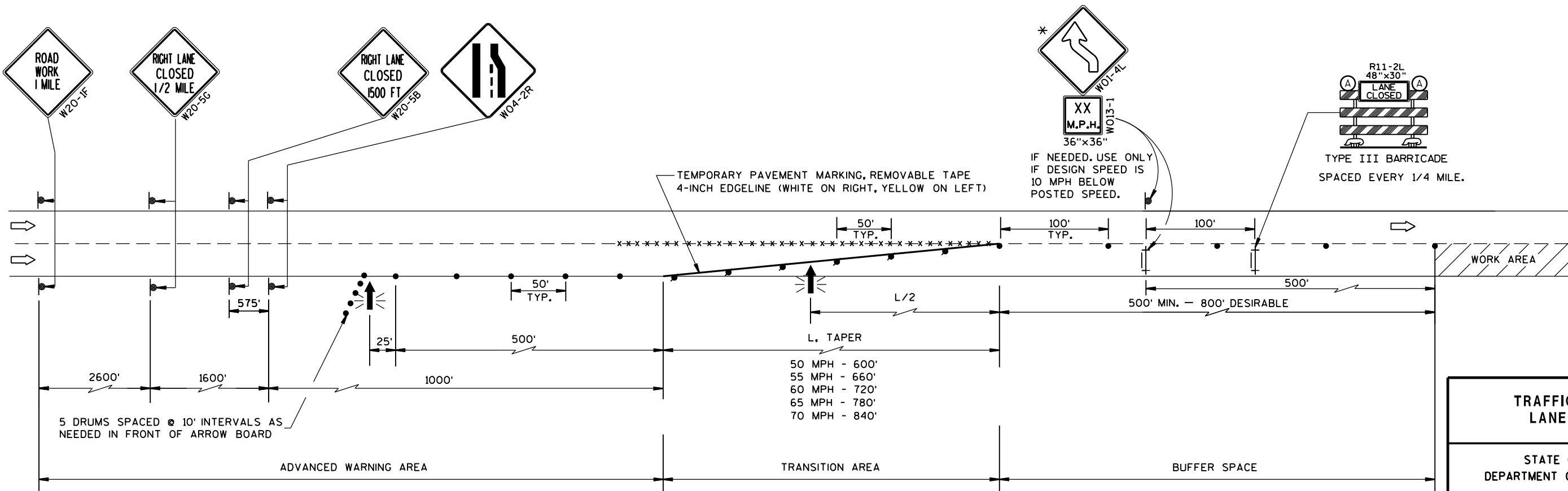
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

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

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

* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

LEGEND

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

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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

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

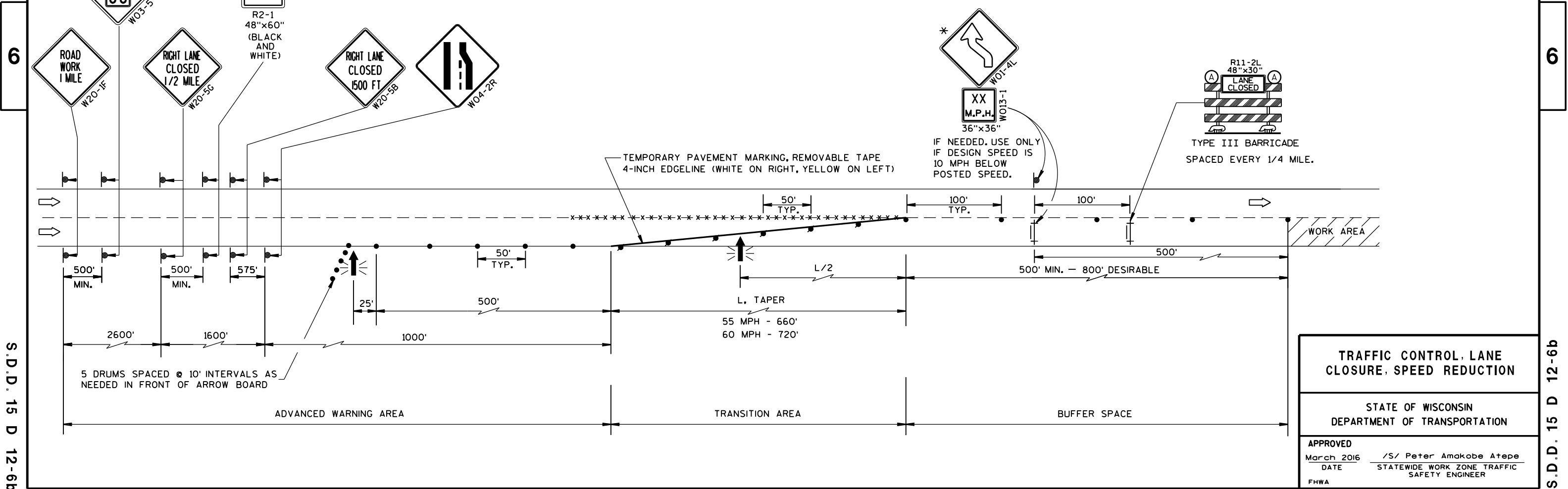
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

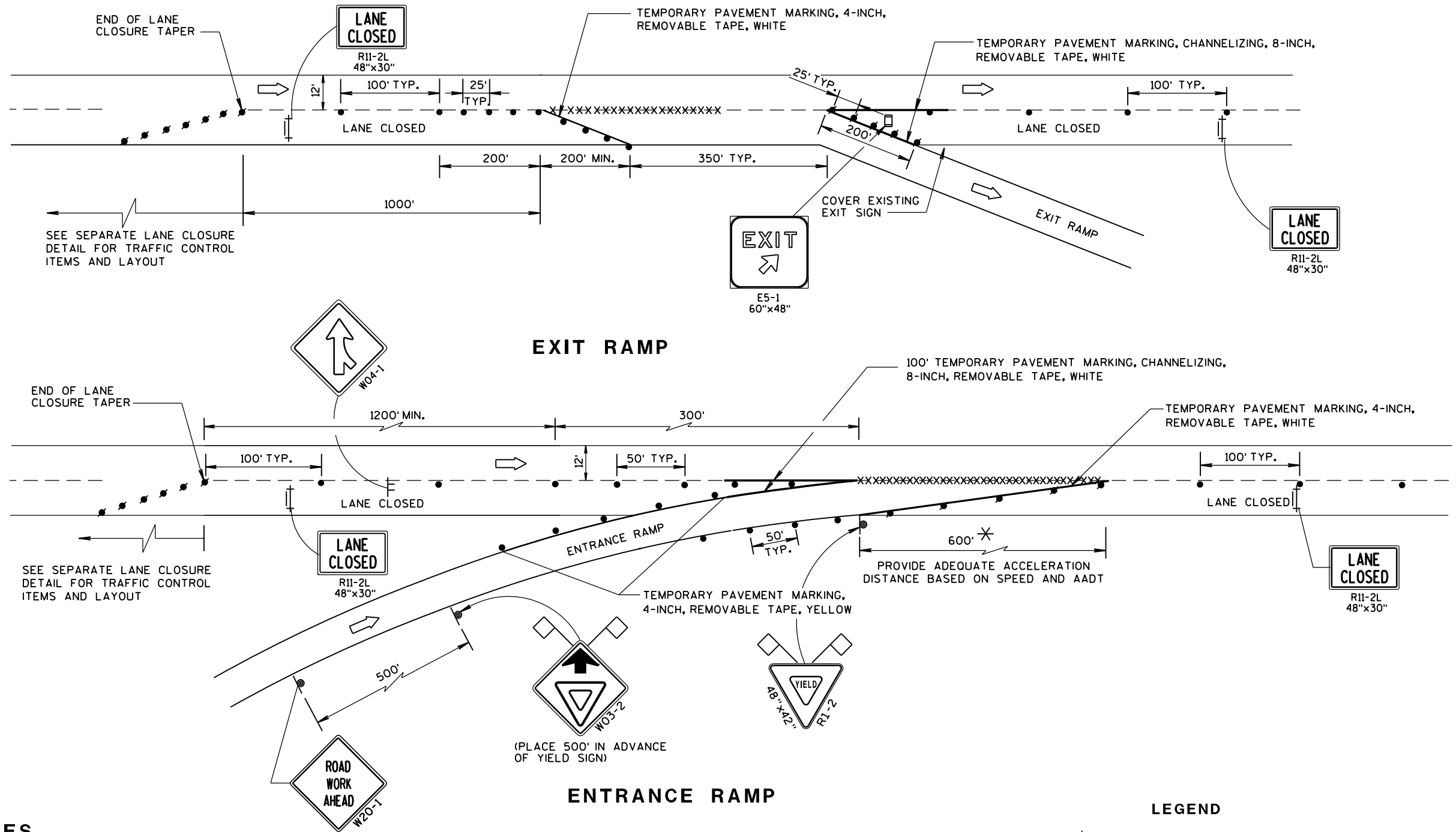
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN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

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

** A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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

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

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

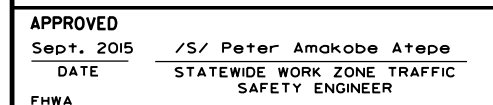
* LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

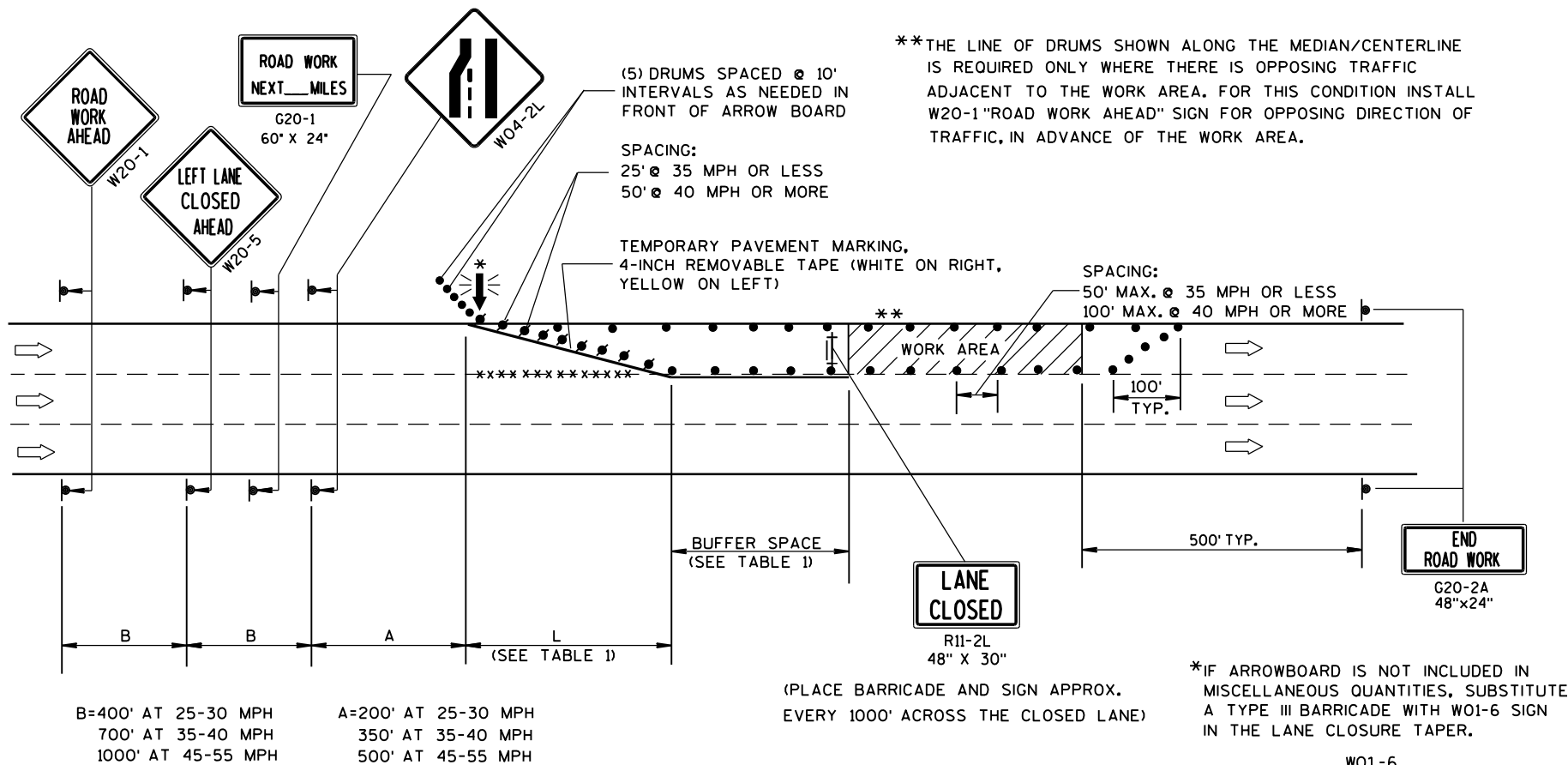
LEGEND

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

TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2015 DATE	/S/ Peter Amokobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

** PLACE "RAMP WILL BE CLOSED" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.





GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

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

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

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

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

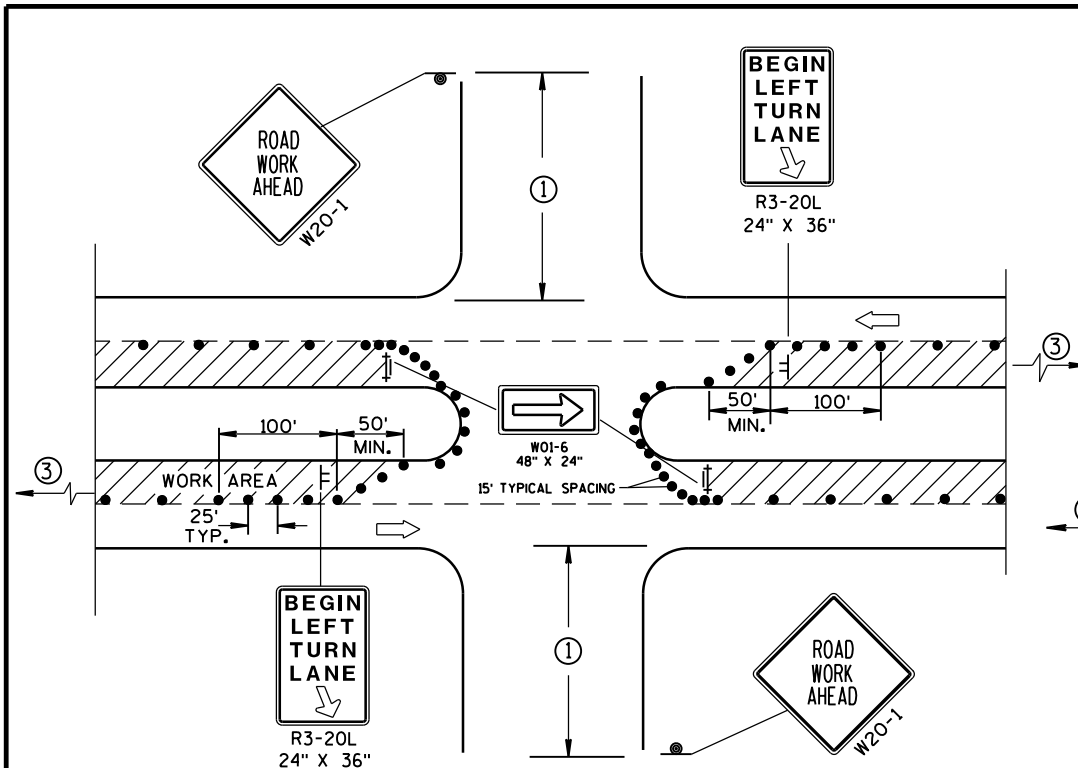
LEGEND

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

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

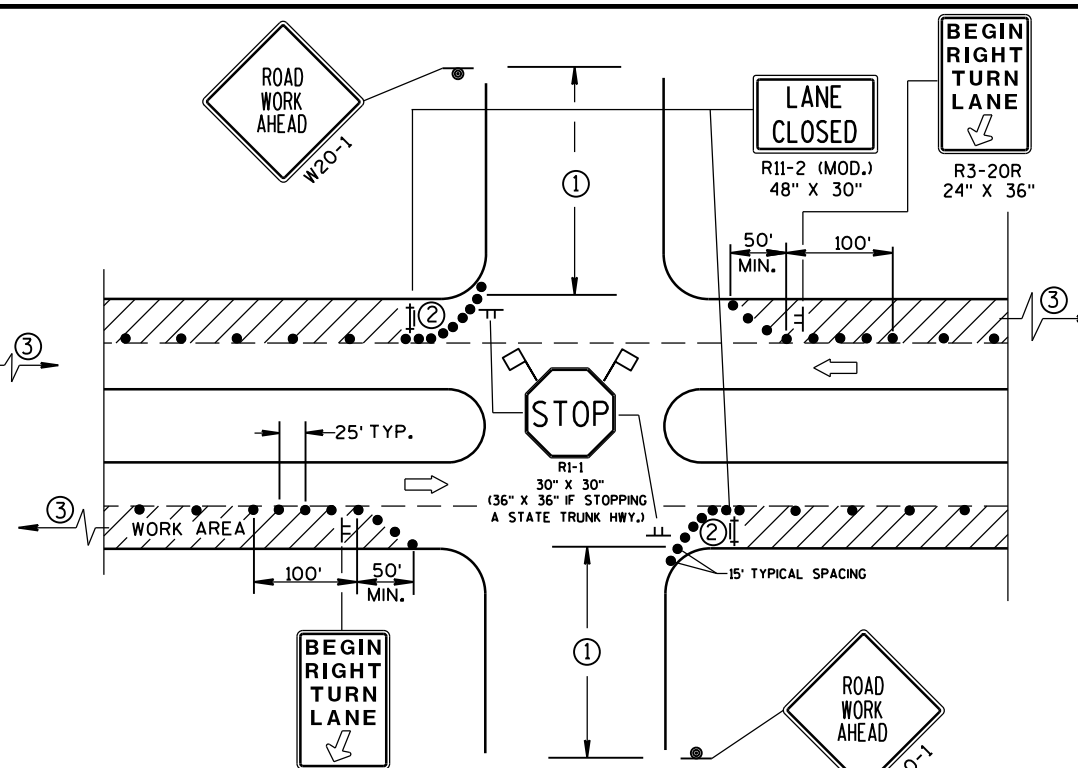
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Feb. 2015 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



DETAIL A
FOR LEFT LANE CLOSURE AT
INTERSECTION OR MEDIAN OPENING

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



DETAIL B
FOR RIGHT LANE CLOSURE
AT INTERSECTION

GENERAL NOTES

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

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

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

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

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

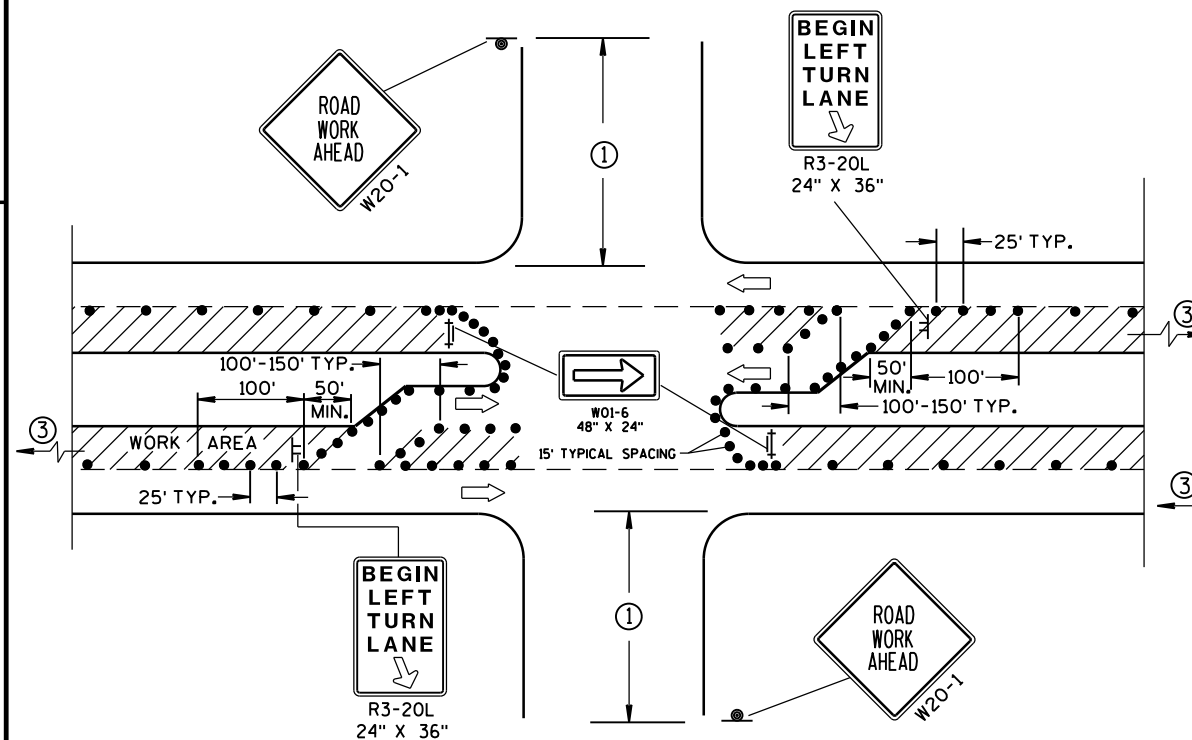
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

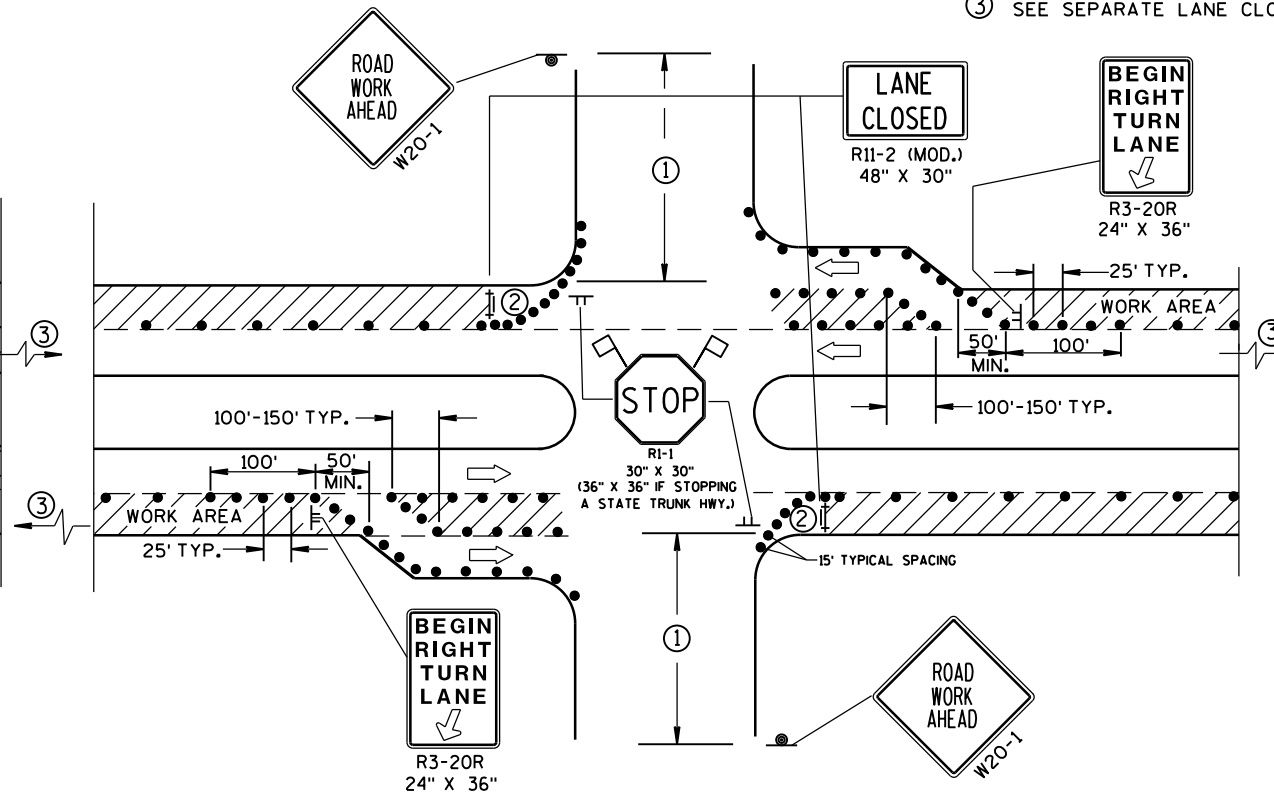
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.
- ② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



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



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

LEGEND

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

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Nov. 2014 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡➡ FLASHING ARROW BOARD
- ▨ WORK AREA

GENERAL NOTES

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

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

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

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

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

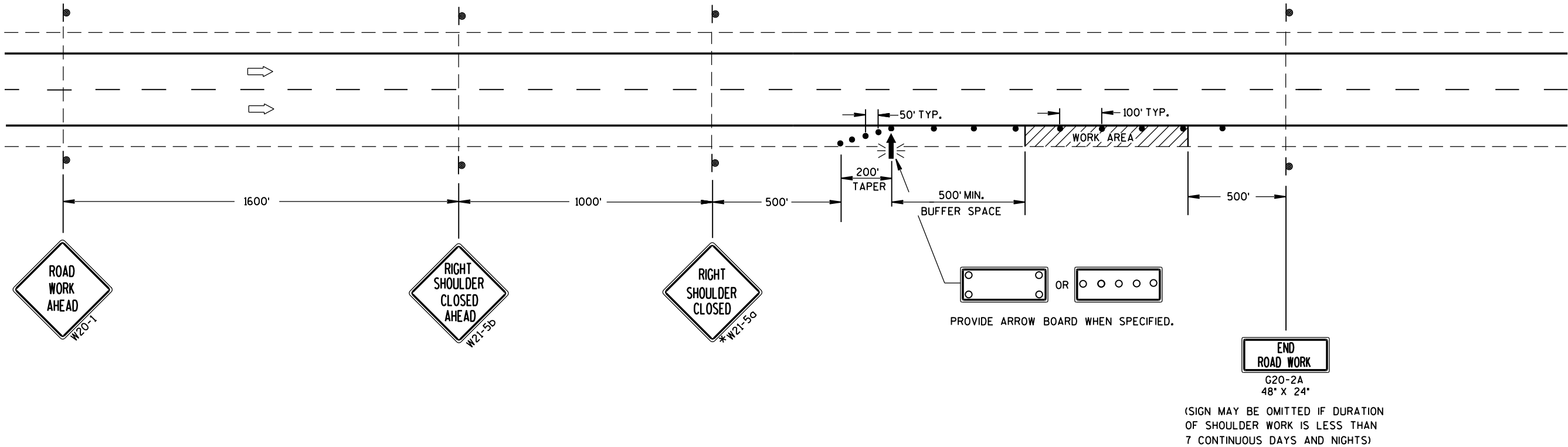
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

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



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltz
DATE STATE TRAFFIC ENGINEER OF DESIGN
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

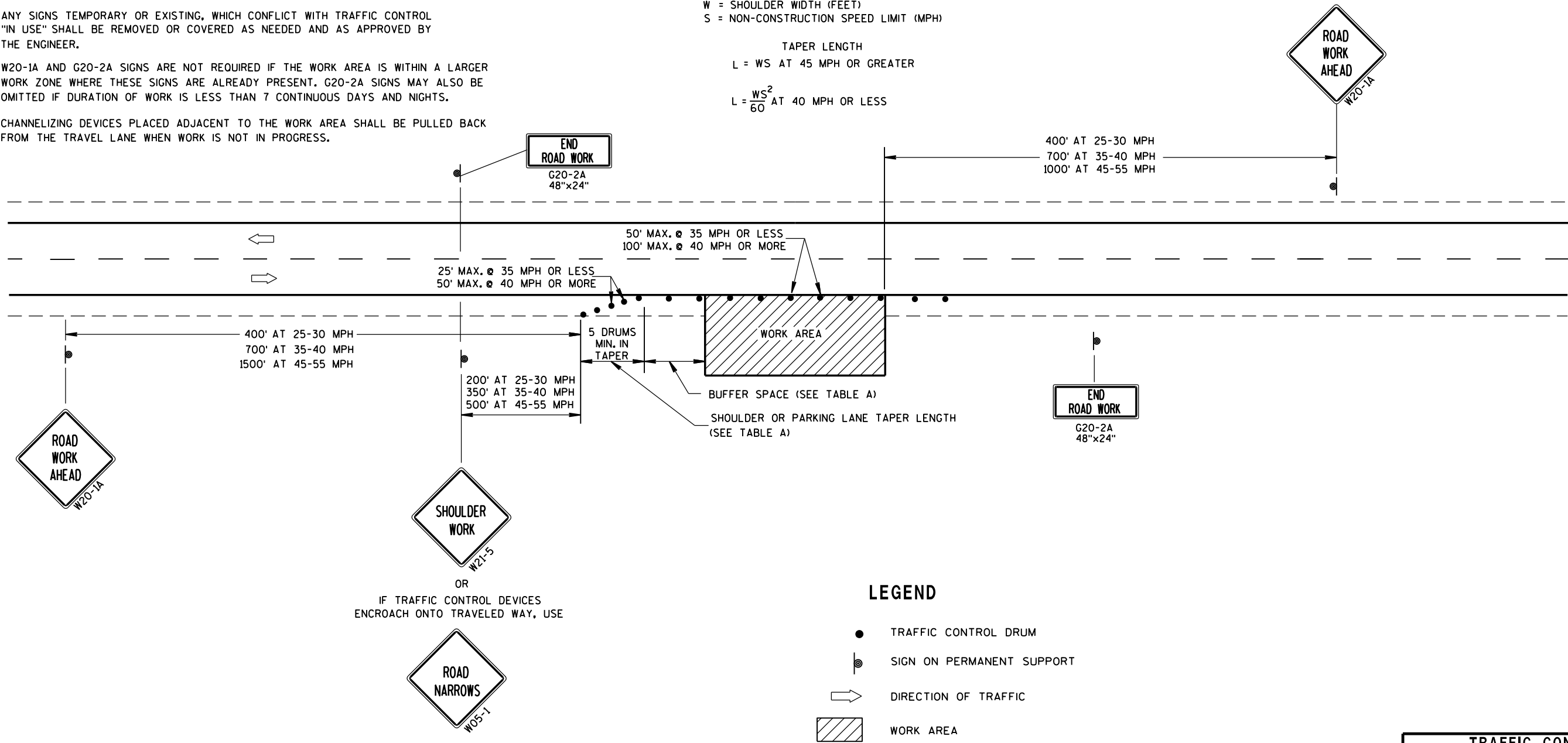
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

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

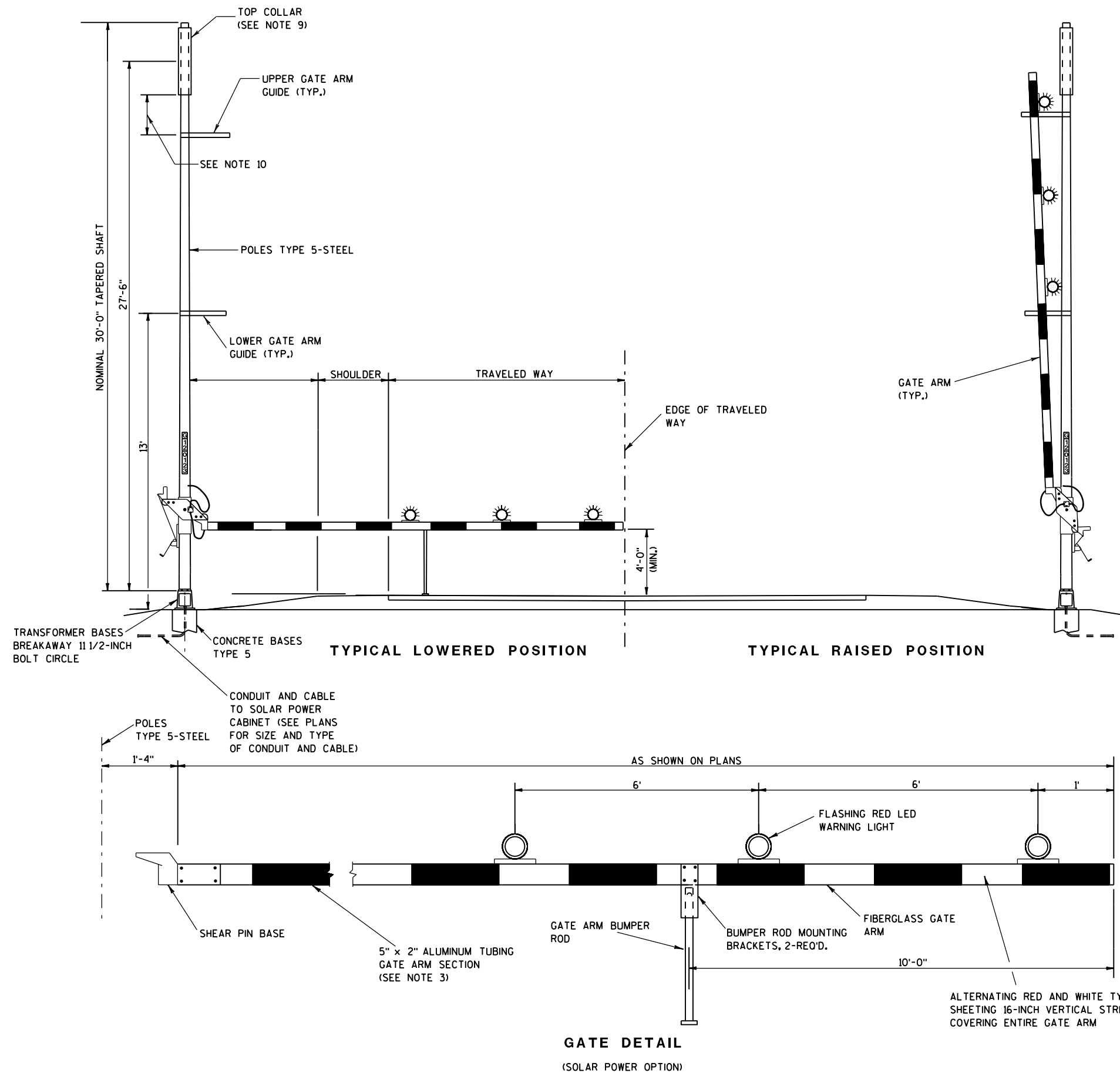
SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

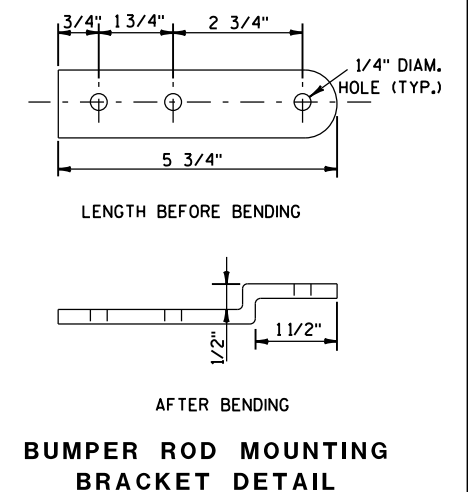
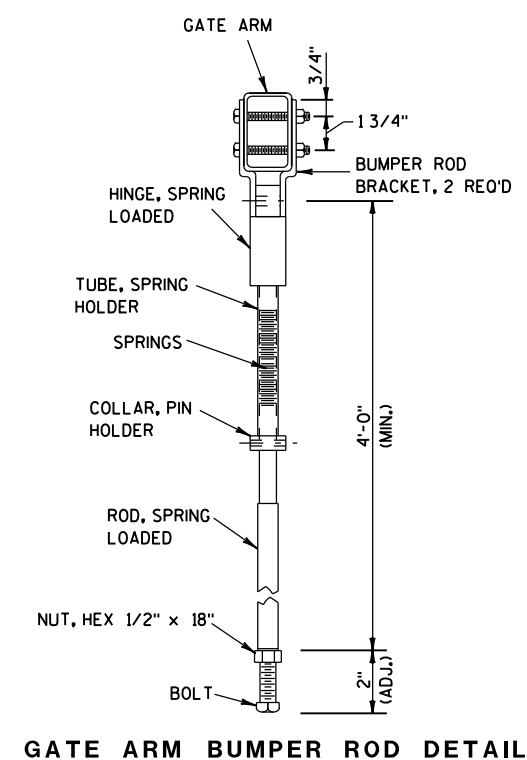
- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

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 TRAFFIC SAFETY ENGINEER
FHWA	



GENERAL NOTES

1. THE LOCATION OF RAMP CLOSURE GATES AND MOUNTING HEIGHT OF GATE ARM PIVOT SHALL BE VERIFIED BY THE ENGINEER.
2. HEIGHT OF GATE ARM GUIDES MAY BE VARIED AS REQUIRED FOR WARNING LIGHT CLEARANCE.
3. FIBERGLASS/ALUMINUM GATE ARM AND SHEAR PIN BASE SHALL BE SUPPLIED BY THE SAME VENDOR.
4. GATE ARM TO BE MOUNTED ON PROPOSED POLE AS INDICATED ON THE PLANS. PROPOSED POLE SHALL BE TYPE 5 POLE.
5. LOCATION OF THE CONCRETE BASE AND LENGTH OF THE GATE ARM WILL BE VERIFIED BY THE ENGINEER TO ENSURE ADEQUATE COVERAGE OF THE TRAVELED LANE.
6. GATE PIVOTS, SUPPORTS AND GUIDES, AND ALL ASSOCIATED HARDWARE SHALL BE GALVANIZED. ALL ROUGH EDGES AND BURRS SHALL BE GROUND SMOOTH PRIOR TO GALVANIZING.
7. ALL EXPOSED BOLT THREADS SHALL BE PAINTED WITH TWO COATS OF ZINC RICH PAINT CONFORMING WITH THE REQUIREMENTS OF ASTM A 780.
8. ANY FIELD DAMAGE TO THE GALVANIZING SHALL BE REPAIRED WITH TWO COATS OF ZINC RICH PAINT CONFORMING WITH THE REQUIREMENTS OF ASTM A 780.
9. A STANDARD LIGHTING LUMINAIRE ARM MAY BE MOUNTED TO THE TYPE 5 POLE IN LIEU OF THE TOP COLLAR.
10. UPPER GATE ARM GUIDE IS TO BE INSTALLED 6 TO 12-INCHES BELOW THE BOTTOM OF THE TOP COLLAR.

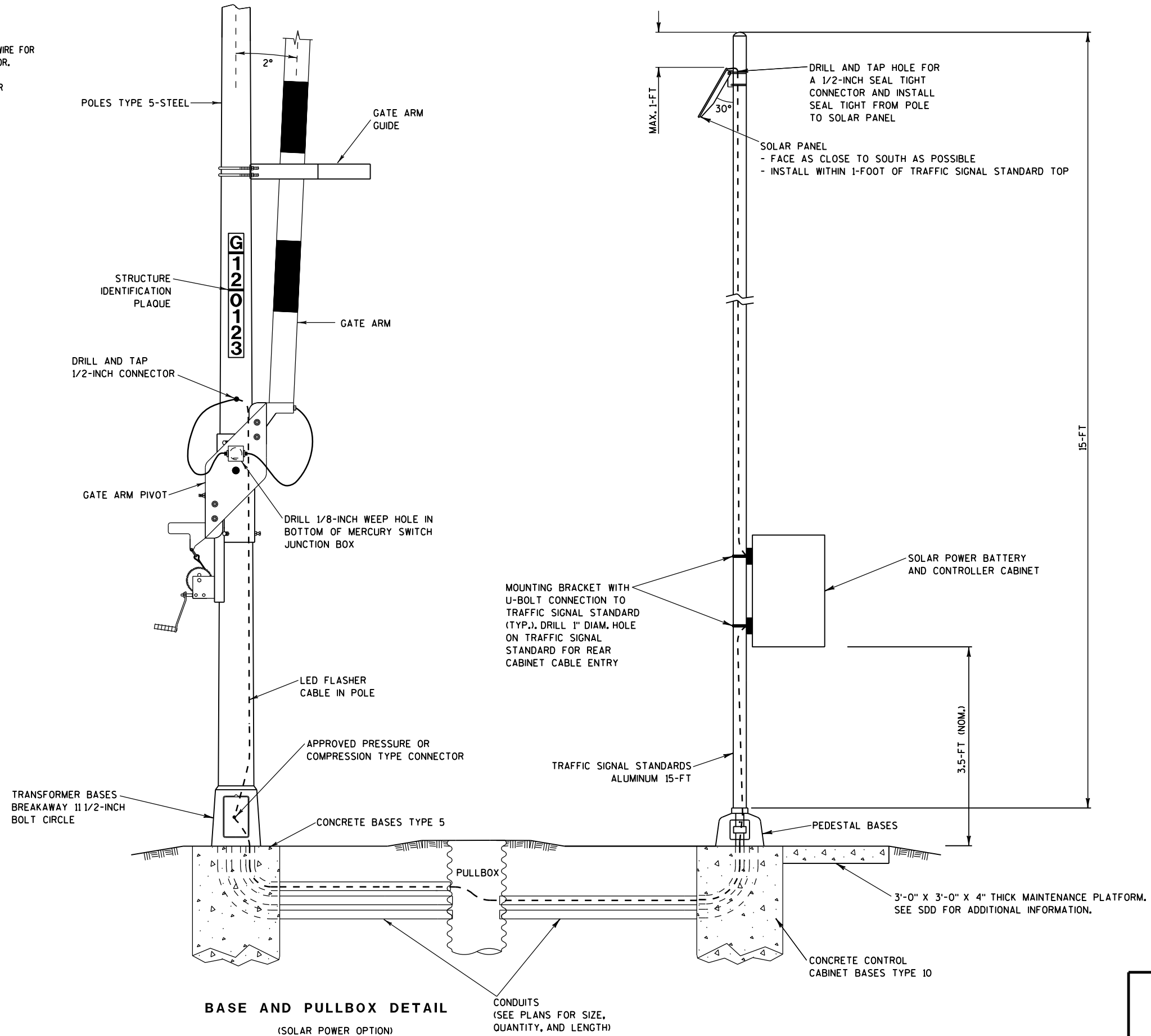


**RAMP GATE
SOLAR POWER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

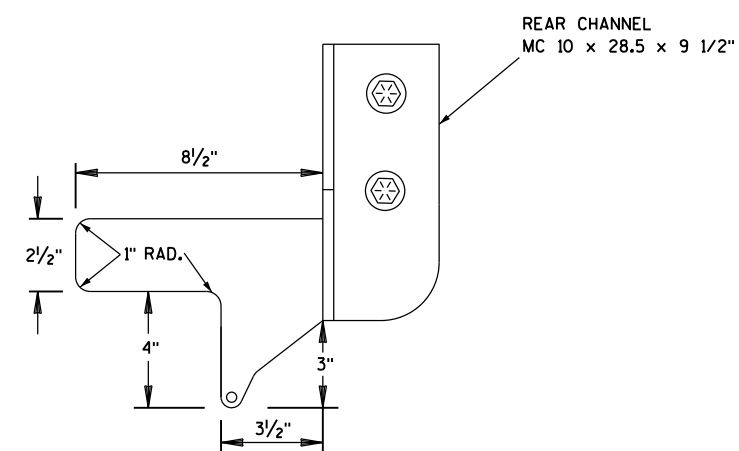
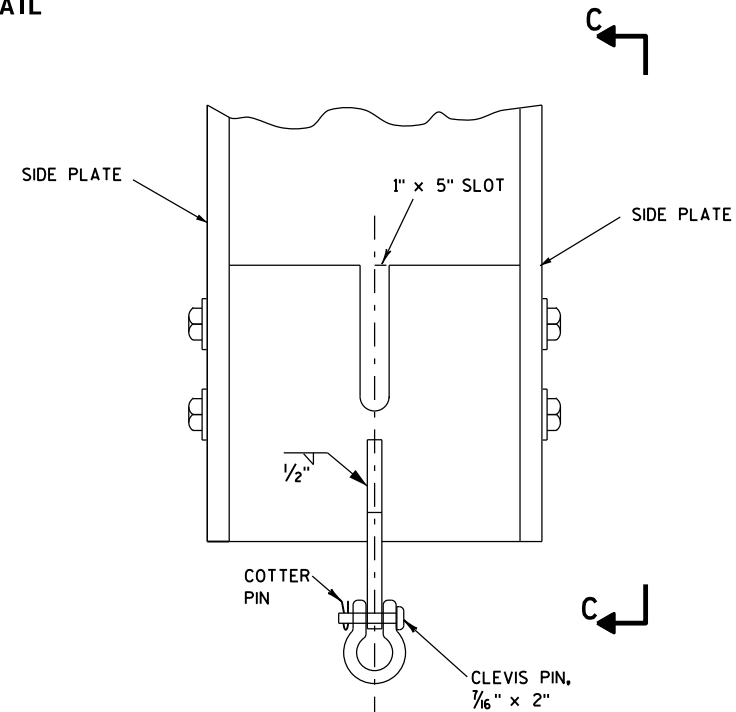
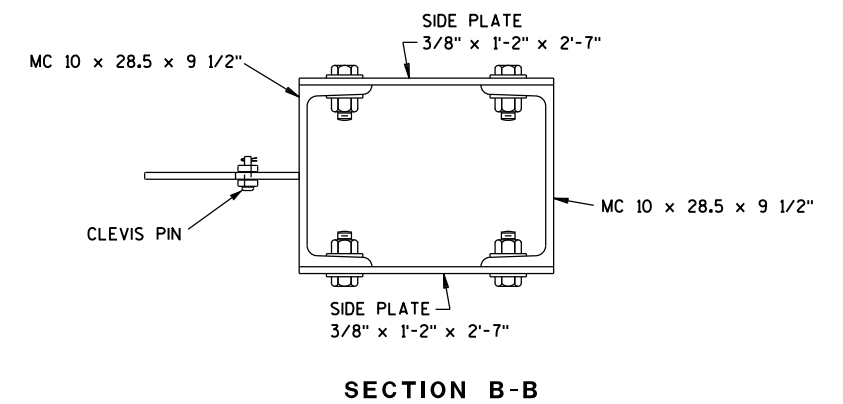
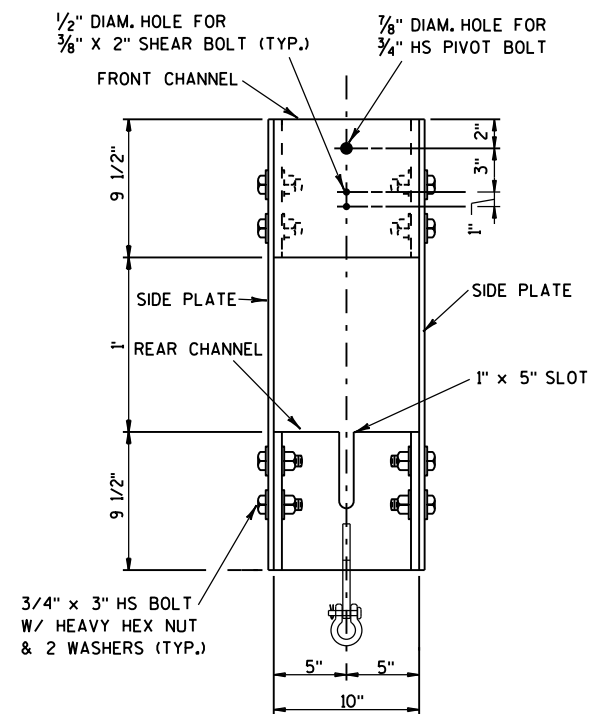
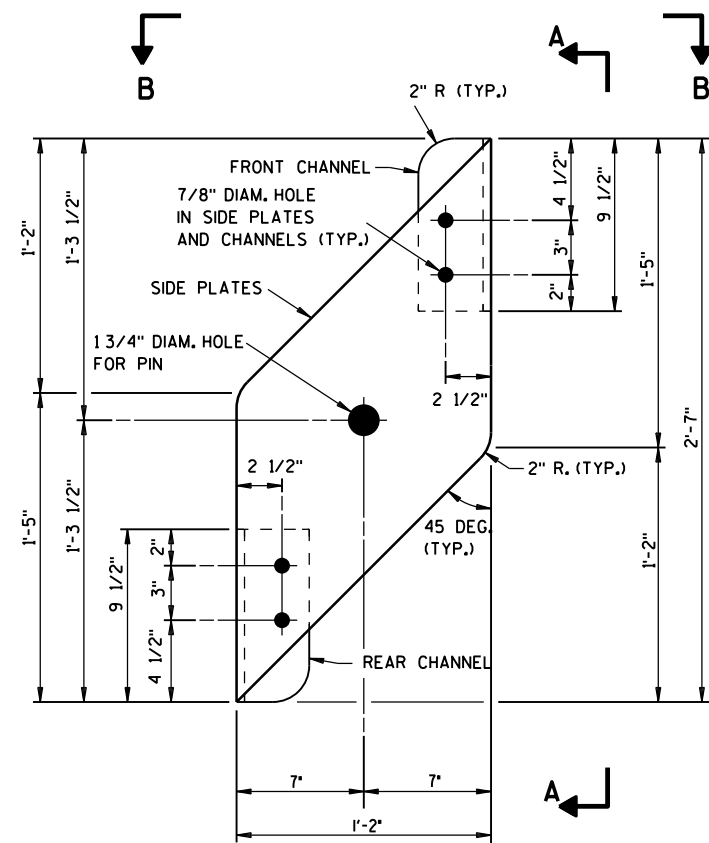
WIRING NOTES

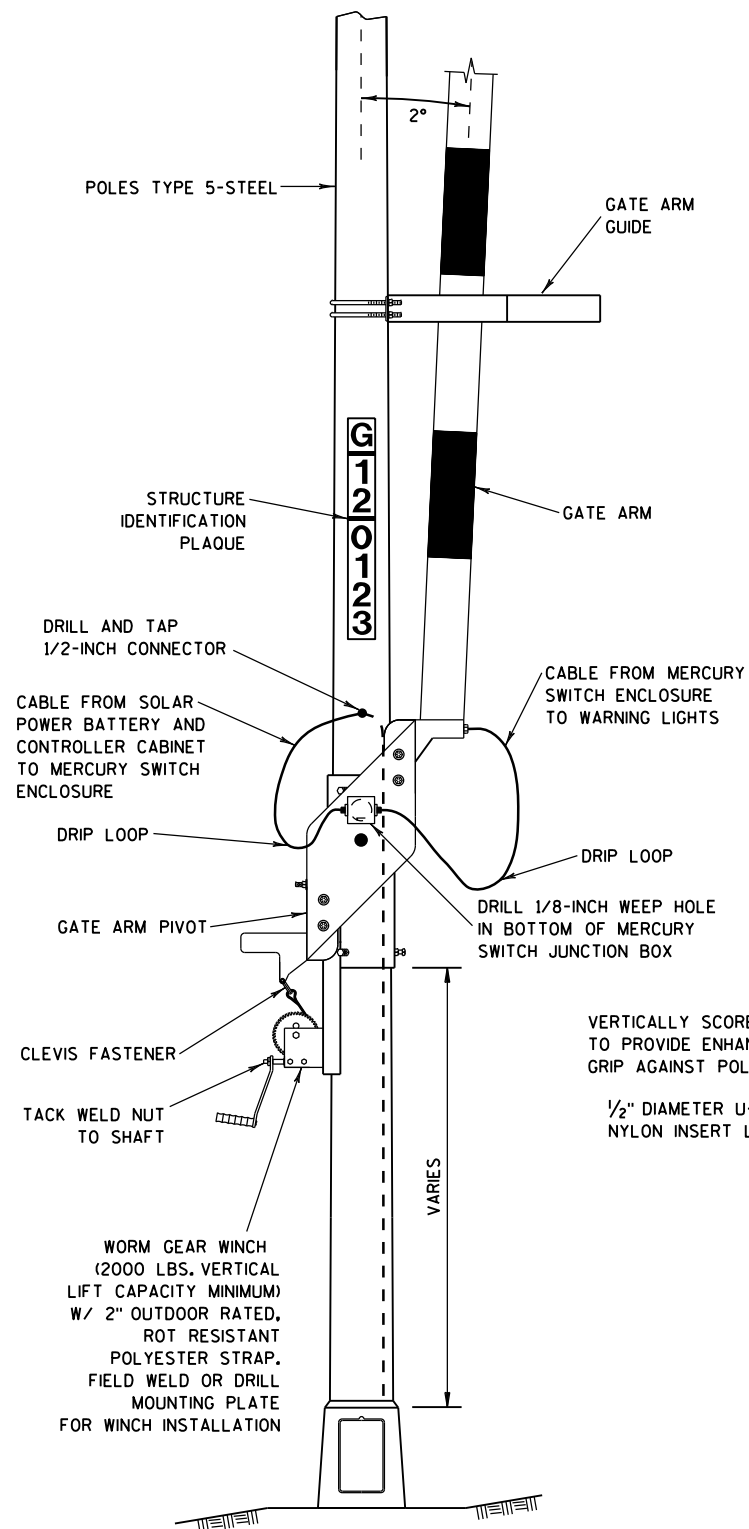
1. WIRING FROM SOLAR PANEL TO CABINET SHALL BE BLUE #10 XLP WIRE FOR POSITIVE CONDUCTOR AND WHITE #10 XLP FOR NEGATIVE CONDUCTOR.
2. WIRING FROM CABINET TO GATE ARM SHALL BE WHITE #10 XLP FOR COMMON, RED #10 XLP FOR FLASHER CIRCUIT 1, AND BLUE #10 XLP FOR FLASHER CIRCUIT 2.



RAMP GATE
SOLAR POWER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

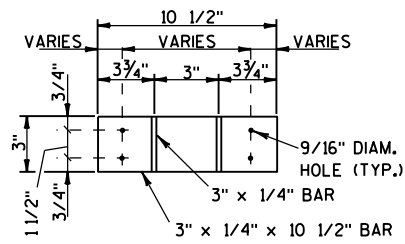
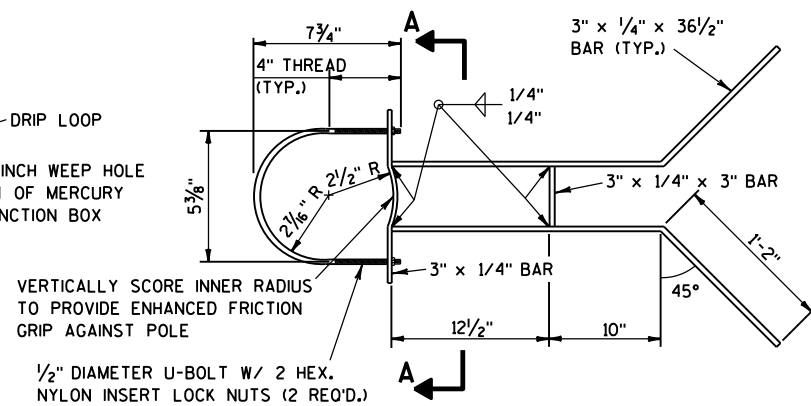




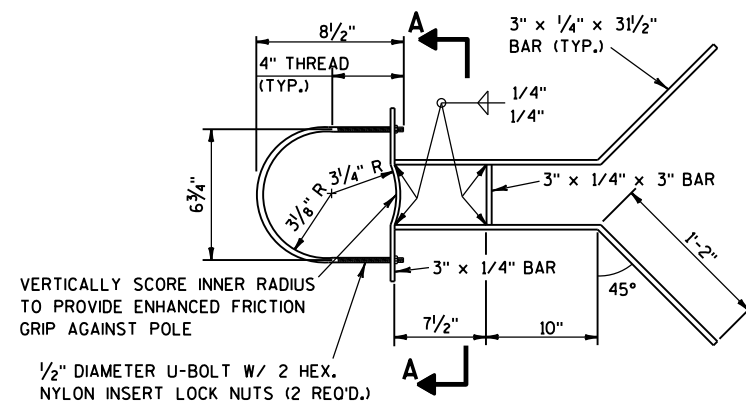
GATE PIVOT ASSEMBLY

GENERAL NOTES

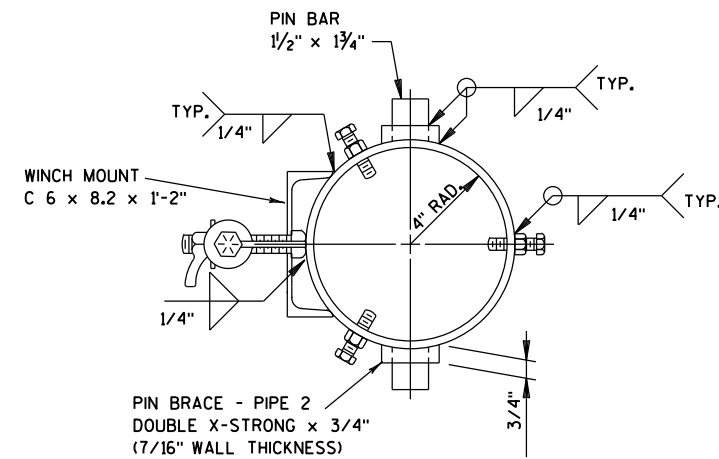
1. WHEN THE GATE IS FULLY RAISED, THE NUT AND WASHER SHALL BE PLACED SNUGLY AGAINST THE OUTSIDE OF THE REAR CHANNEL.
2. WHEN THE GATE IS FULLY LOWERED, THE NUT AND WASHER SHALL BE PLACED SNUGLY AGAINST THE INSIDE OF THE REAR CHANNEL.
3. ANTI-SEIZE LUBRICATING MATERIAL SHALL BE USED ON ALL BOLT THREADS BEFORE INSTALLATION.
4. ALL BOLTS SHALL BE GALVANIZED AND CONFORM TO ASTM A307, GRADE A, UNLESS DESIGNATED AS HS (HIGH STRENGTH), WHICH SHALL CONFORM TO ASTM A325. BOLTS OF 1/2" NOMINAL DIAMETER OR LESS MAY BE STAINLESS STEEL.

SECTION A-A
U-BOLTS NOT SHOWN

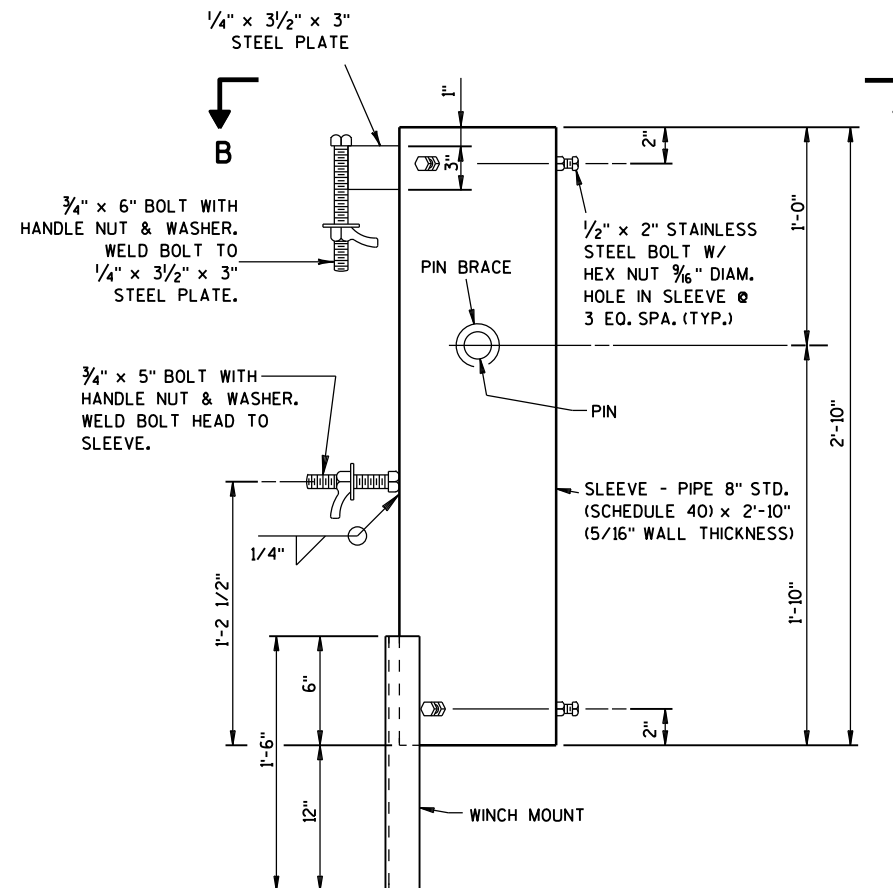
UPPER GATE ARM GUIDE DETAIL



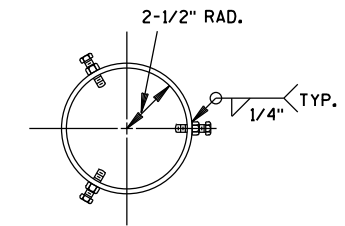
LOWER GATE ARM GUIDE DETAIL



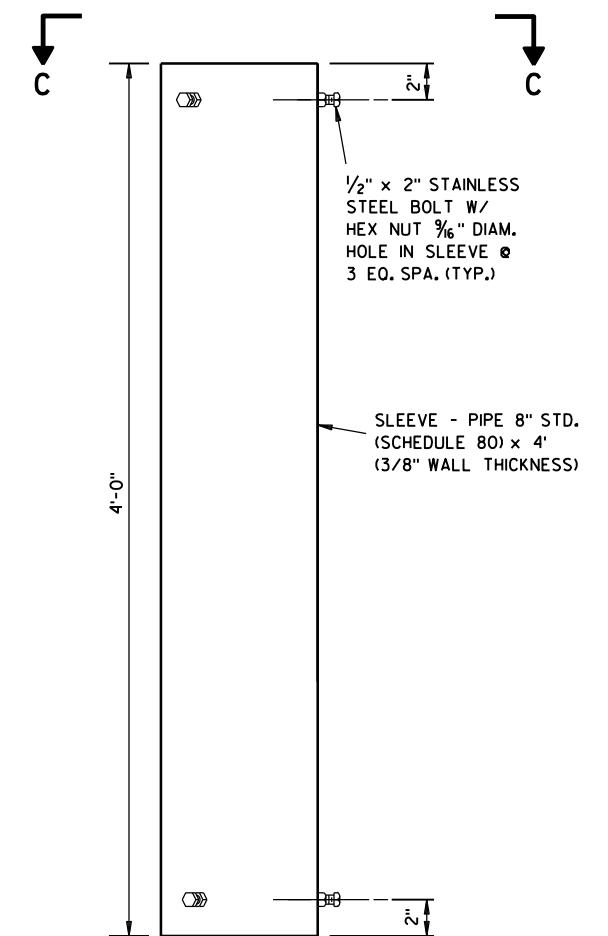
SECTION B-B



PIVOT SLEEVE DETAIL



SECTION C-C



TOP COLLAR

RAMP GATE
SOLAR POWERSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/20/15

DATE

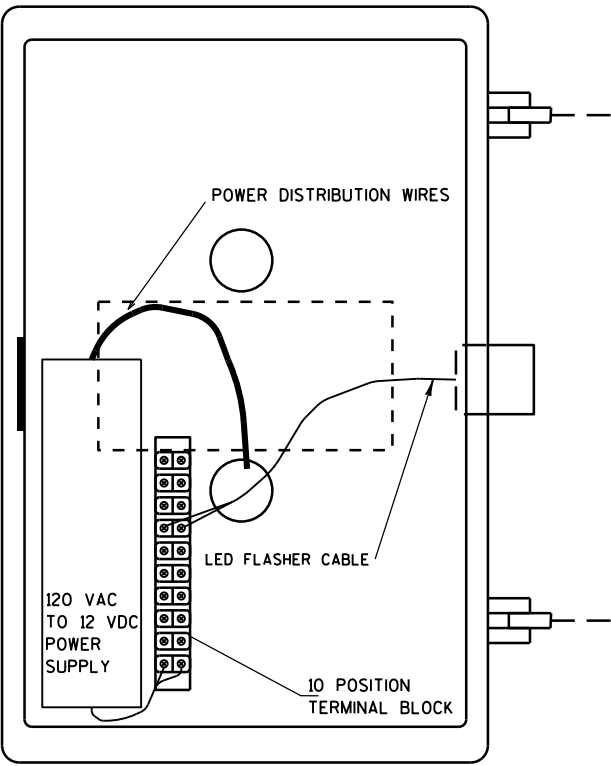
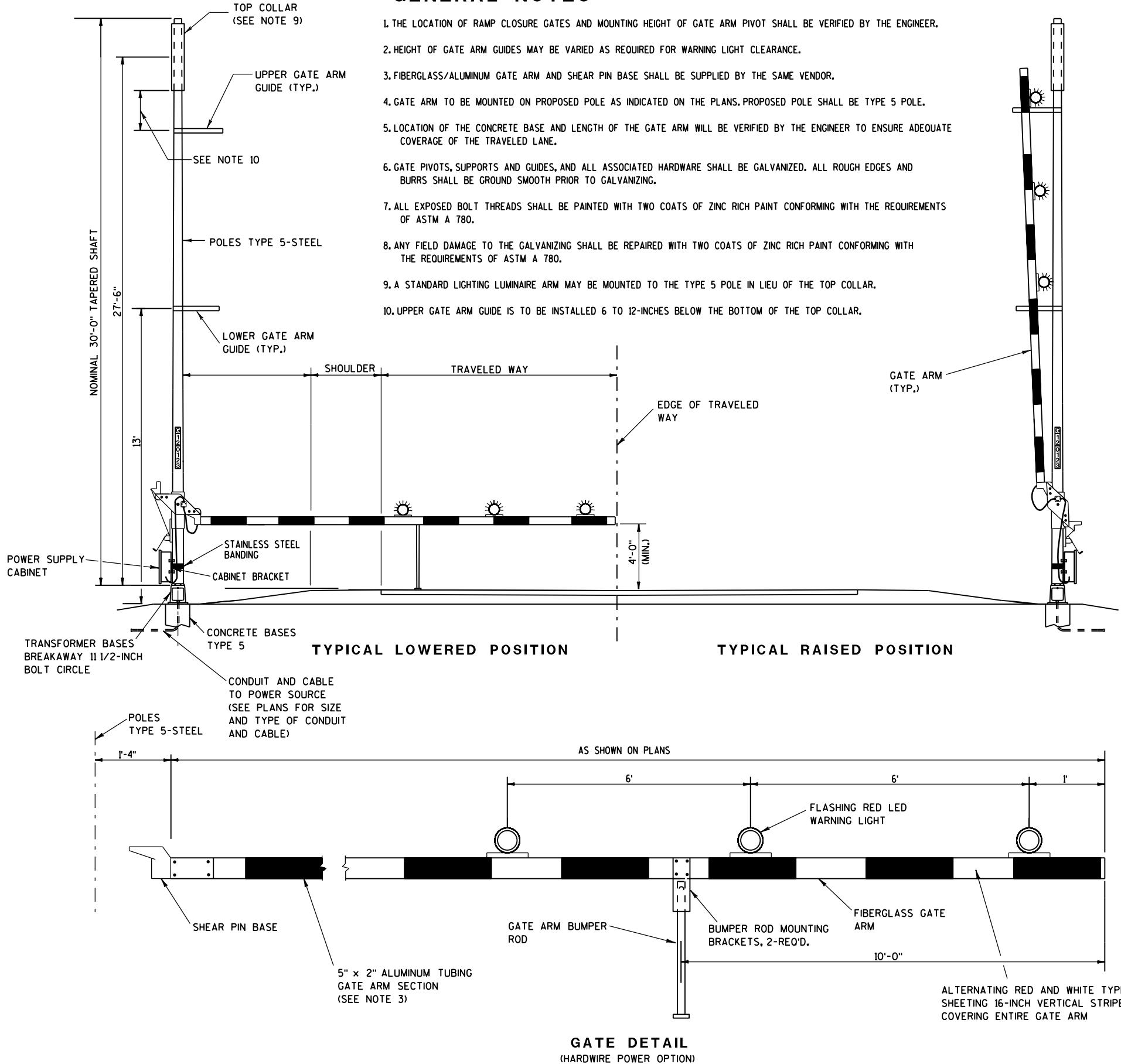
FHWA

/S/ Ahmet Demirelek

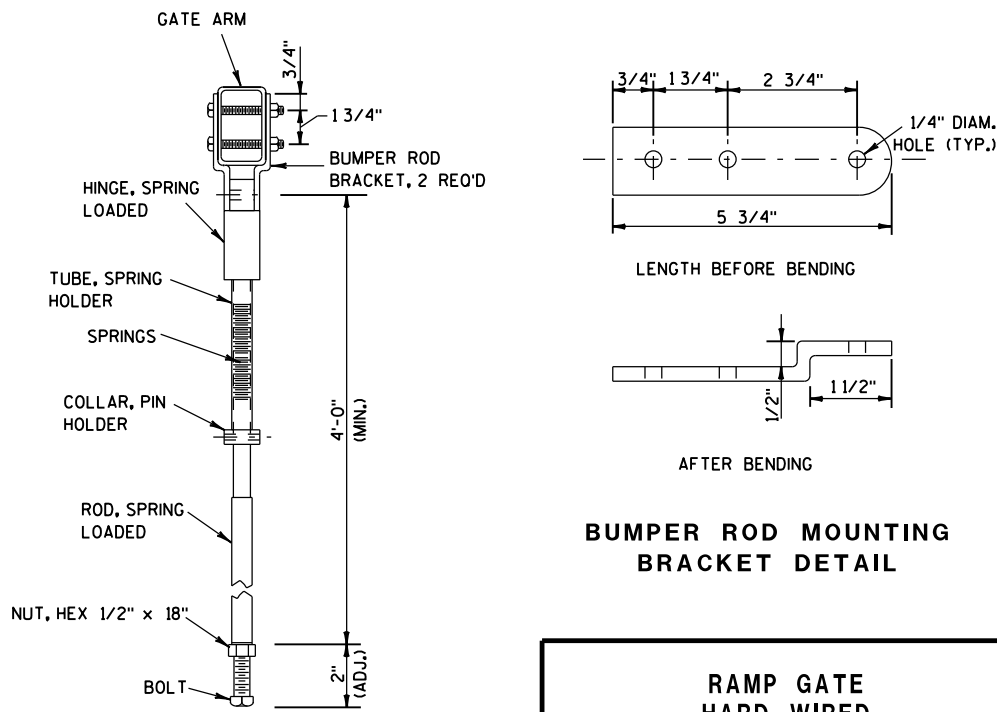
STATE ELECTRICAL ENGINEER

GENERAL NOTES

- 1. THE LOCATION OF RAMP CLOSURE GATES AND MOUNTING HEIGHT OF GATE ARM PIVOT SHALL BE VERIFIED BY THE ENGINEER.
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- 4. GATE ARM TO BE MOUNTED ON PROPOSED POLE AS INDICATED ON THE PLANS. PROPOSED POLE SHALL BE TYPE 5 POLE.
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- 8. ANY FIELD DAMAGE TO THE GALVANIZING SHALL BE REPAIRED WITH TWO COATS OF ZINC RICH PAINT CONFORMING WITH THE REQUIREMENTS OF ASTM A 780.
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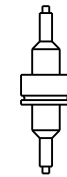
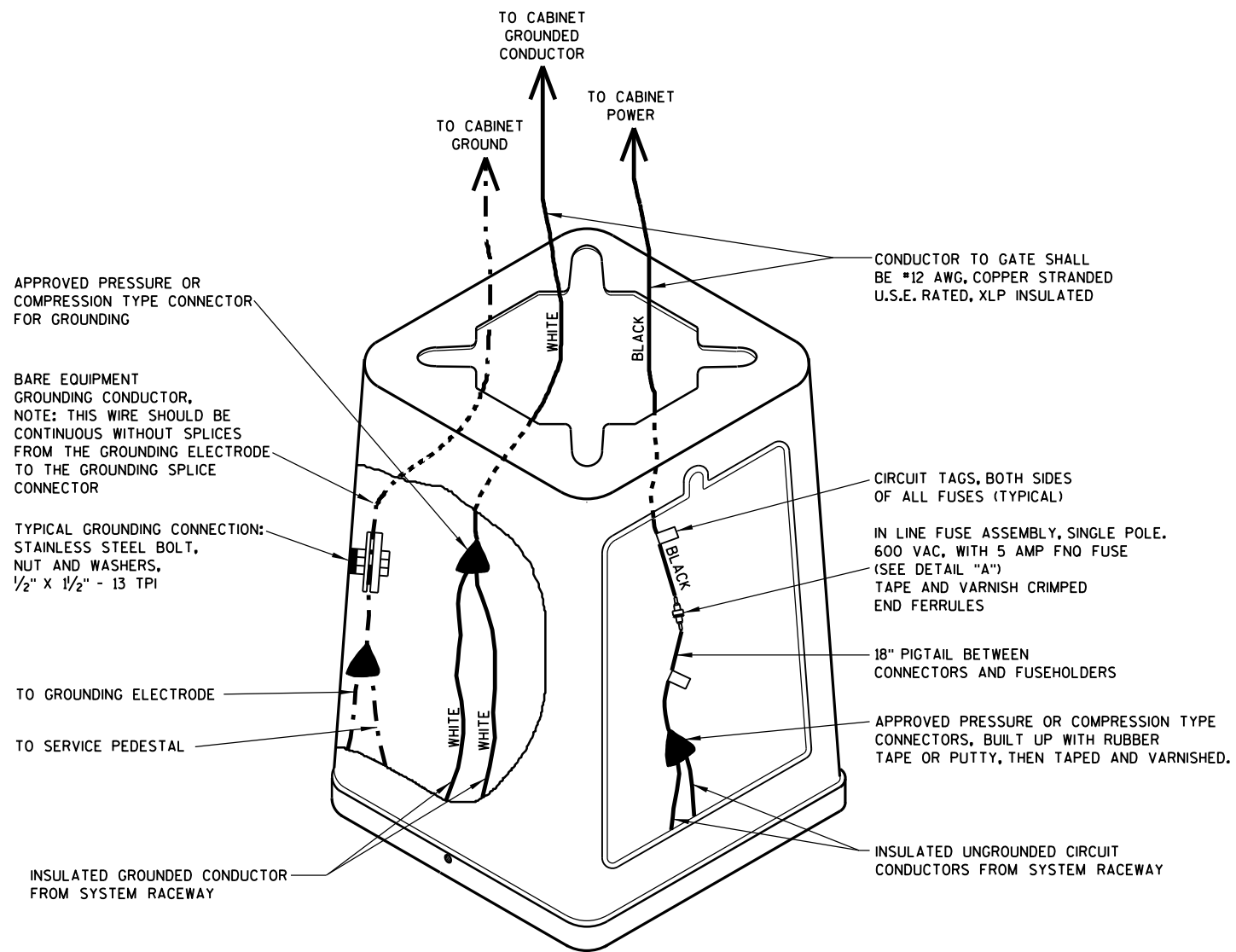
POWER SUPPLY CABINET



BUMPER ROD MOUNTING BRACKET DETAIL

RAMP GATE HARD WIRED

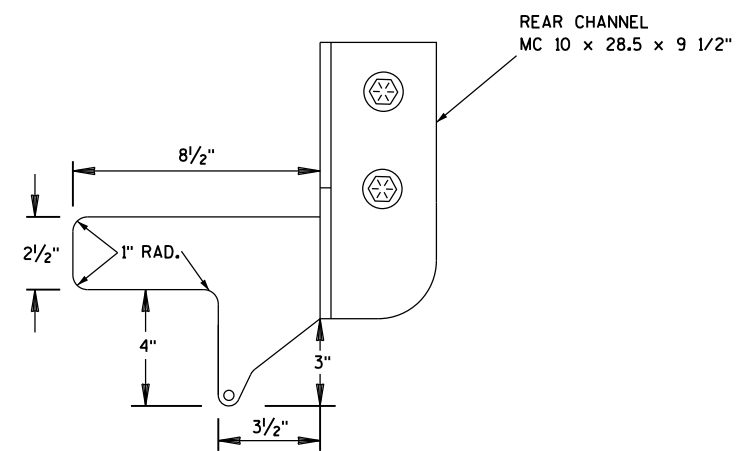
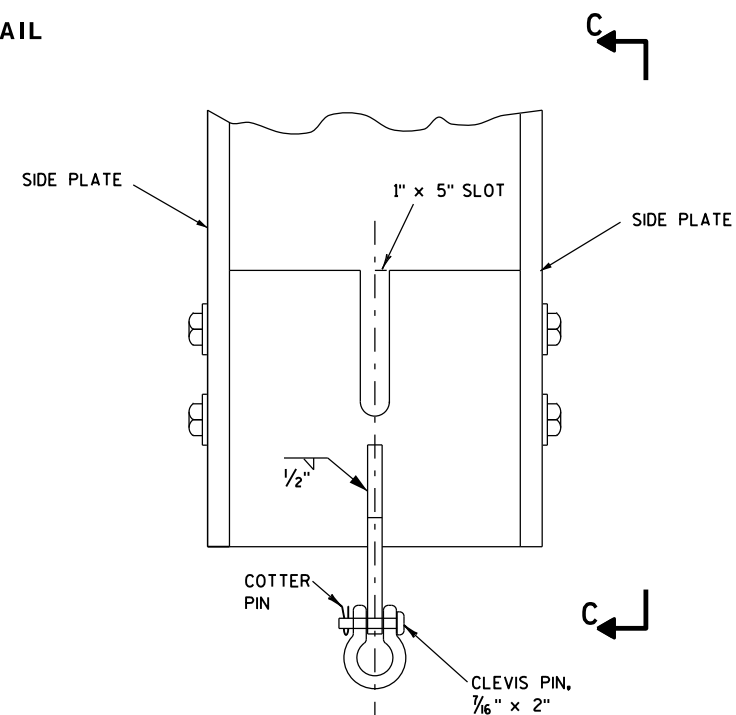
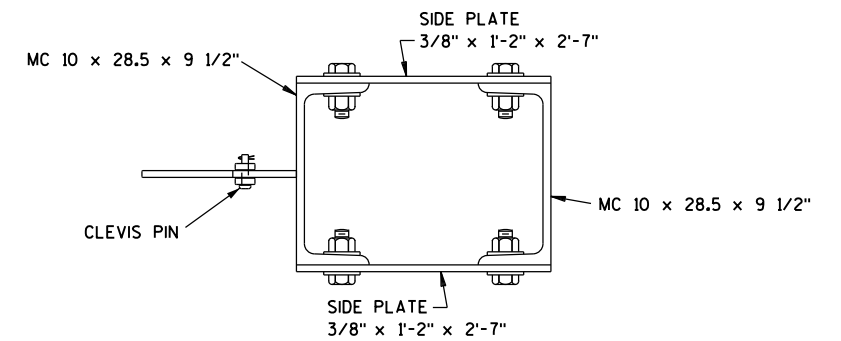
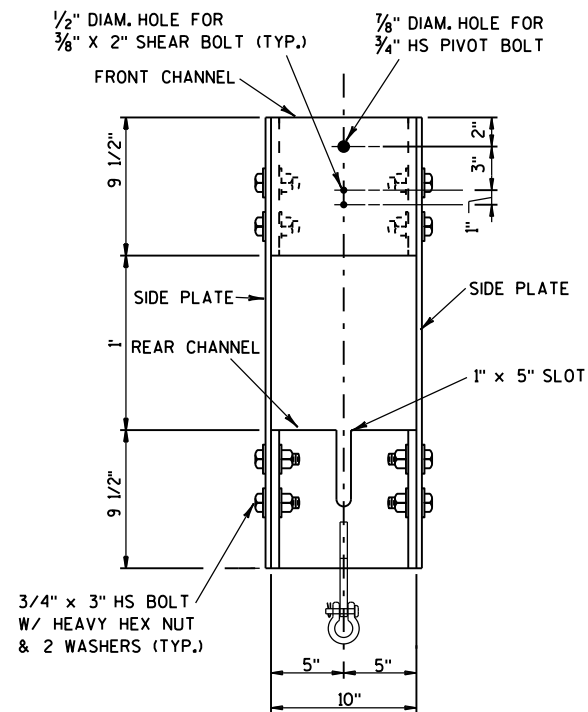
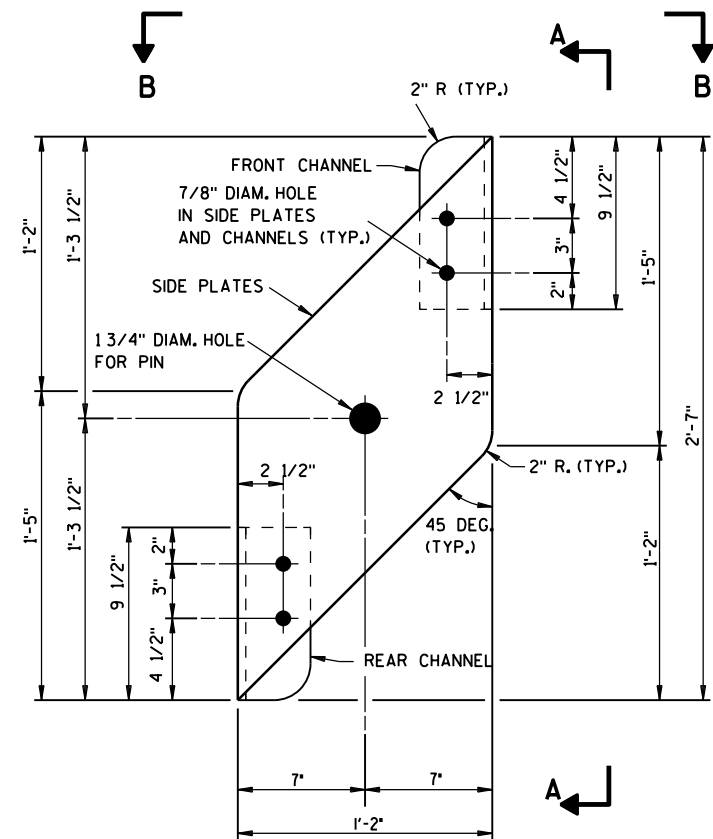
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

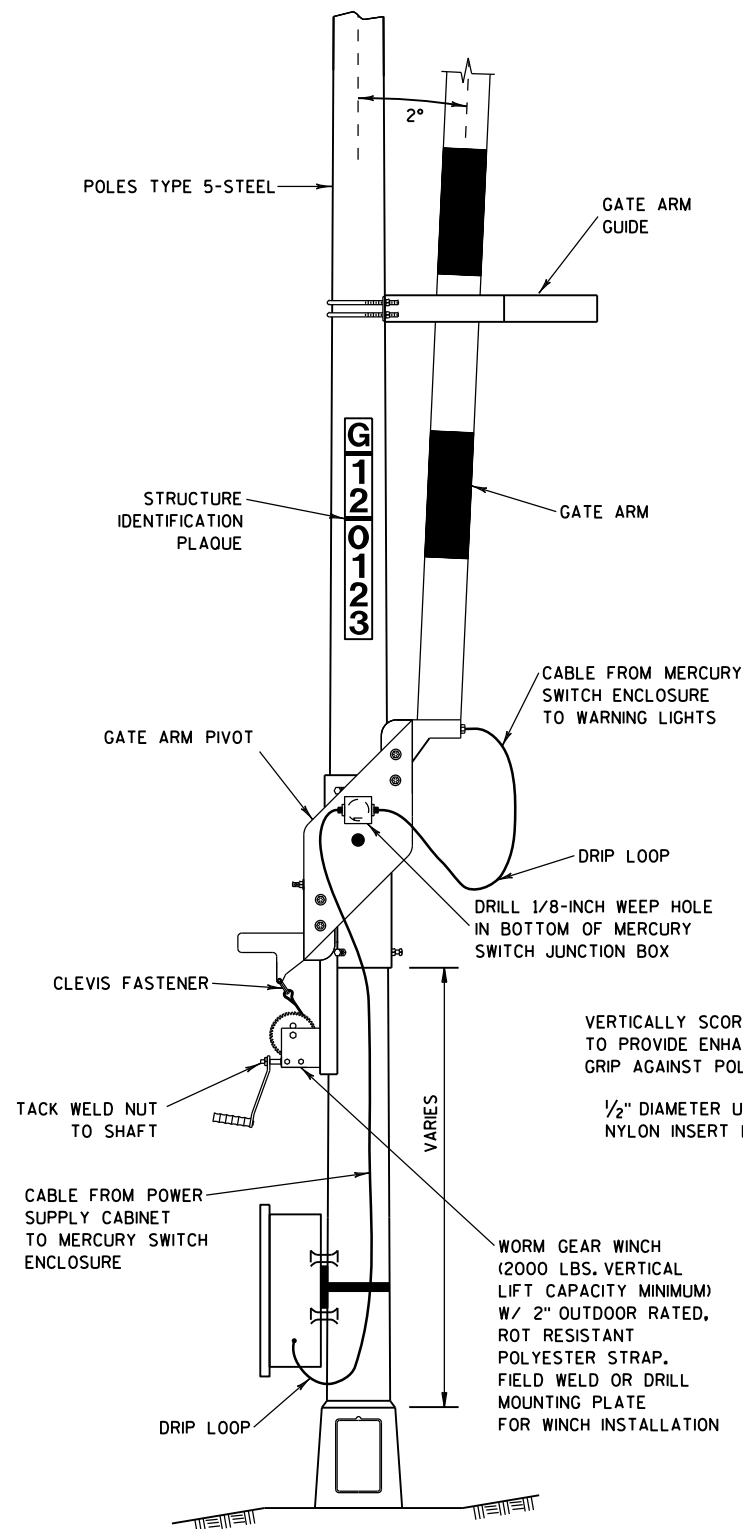


DETAIL "A"
SINGLE POLE

**RAMP GATE
HARD WIRED**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

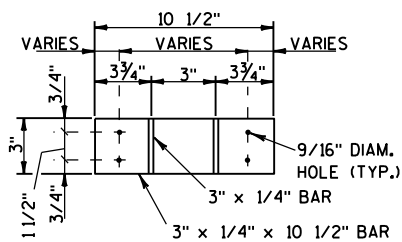
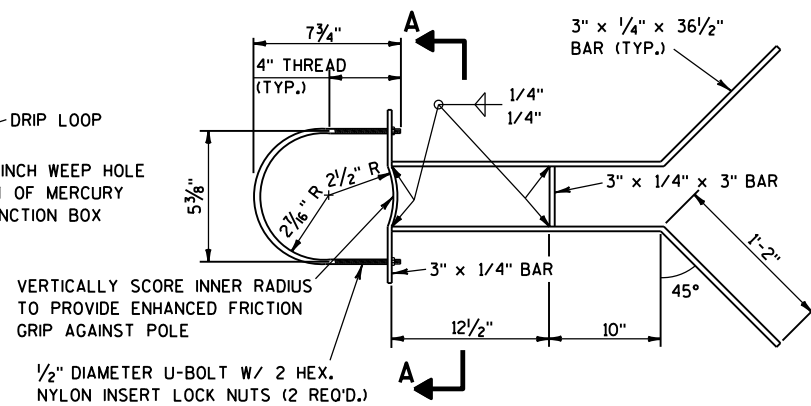




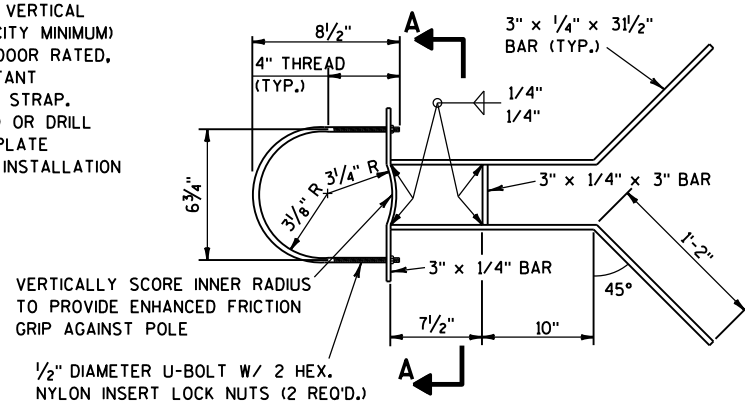
GATE PIVOT ASSEMBLY

GENERAL NOTES

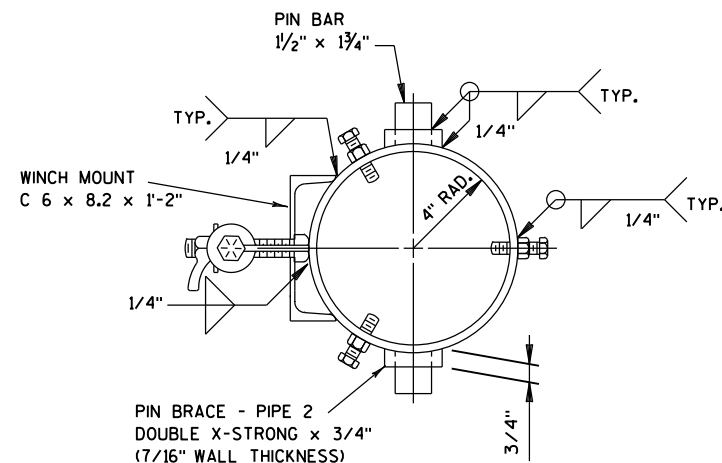
1. WHEN THE GATE IS FULLY RAISED, THE NUT AND WASHER SHALL BE PLACED SNUGLY AGAINST THE OUTSIDE OF THE REAR CHANNEL.
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SECTION A-A
U-BOLTS NOT SHOWN

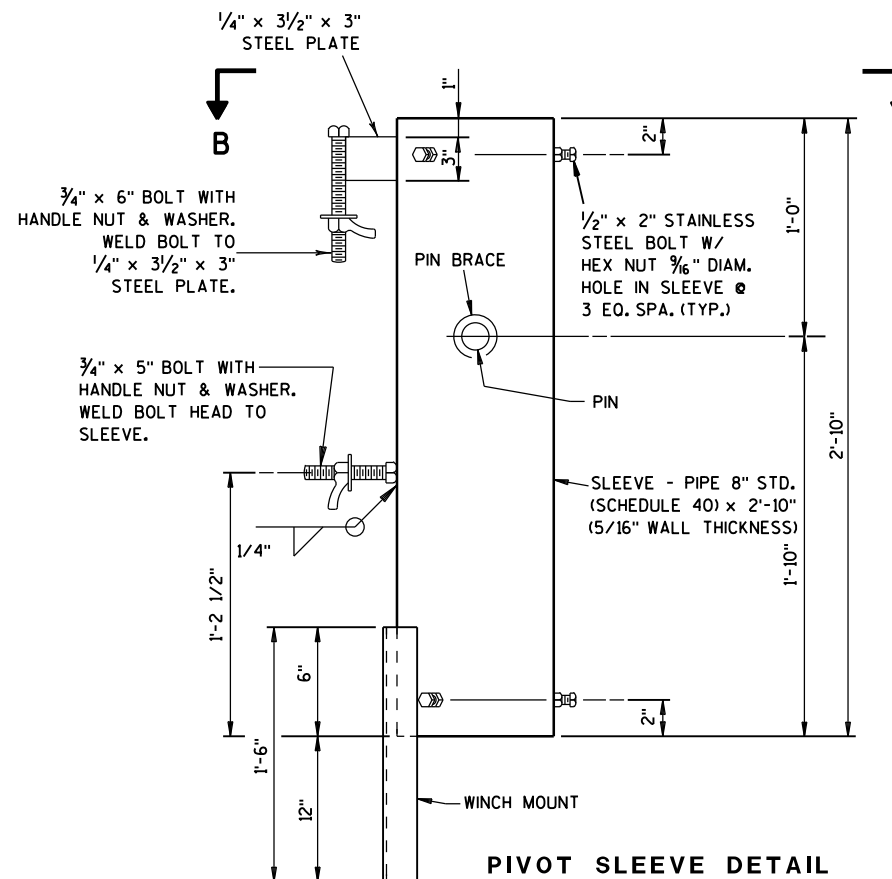
UPPER GATE ARM GUIDE DETAIL



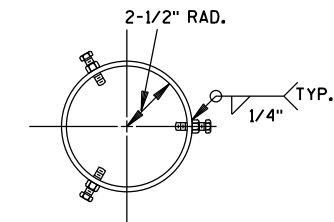
LOWER GATE ARM GUIDE DETAIL



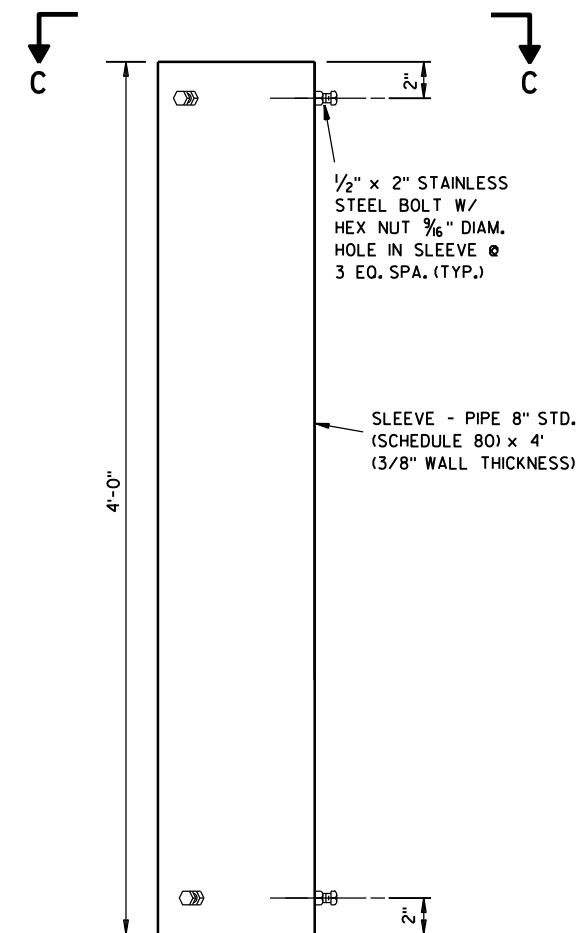
SECTION B-B



PIVOT SLEEVE DETAIL



SECTION C-C



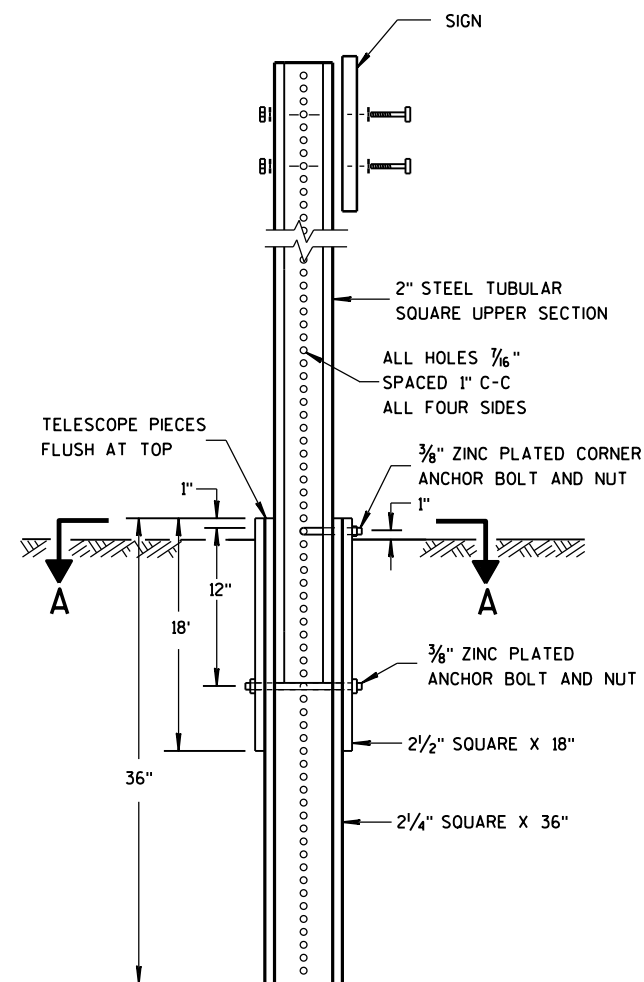
TOP COLLAR

RAMP GATE
HARD WIREDSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/2015
DATE/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER

FHWA

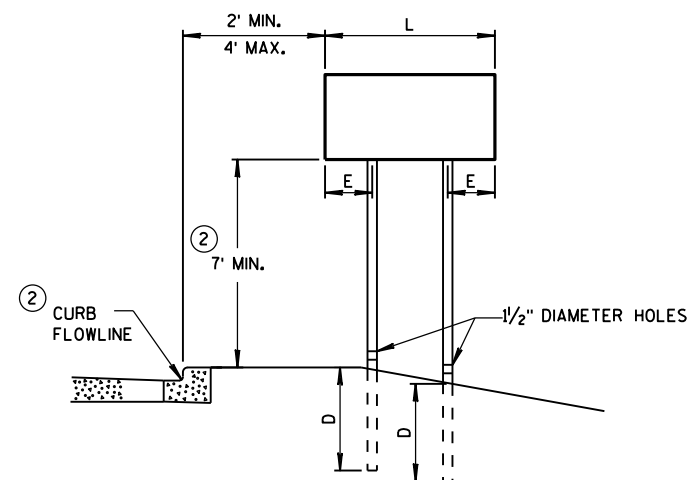
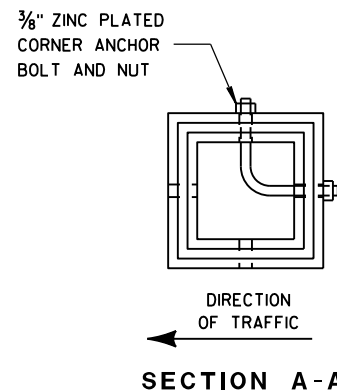


DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

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

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

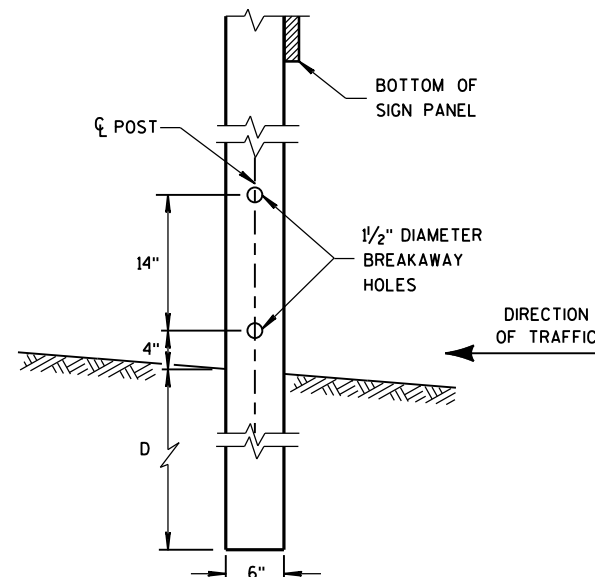


URBAN AREA

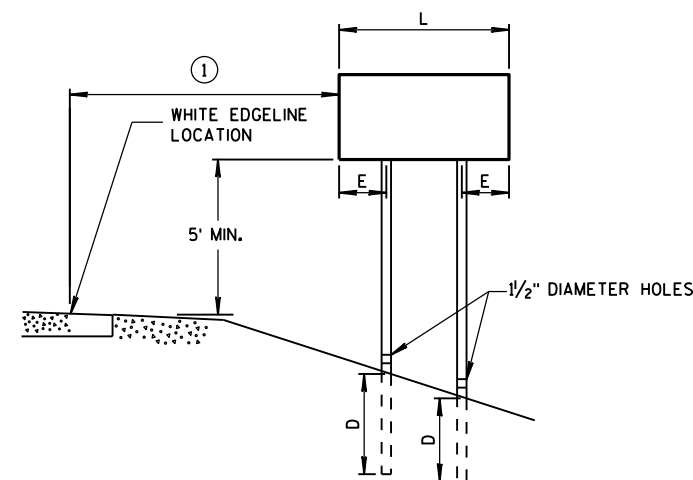
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

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

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

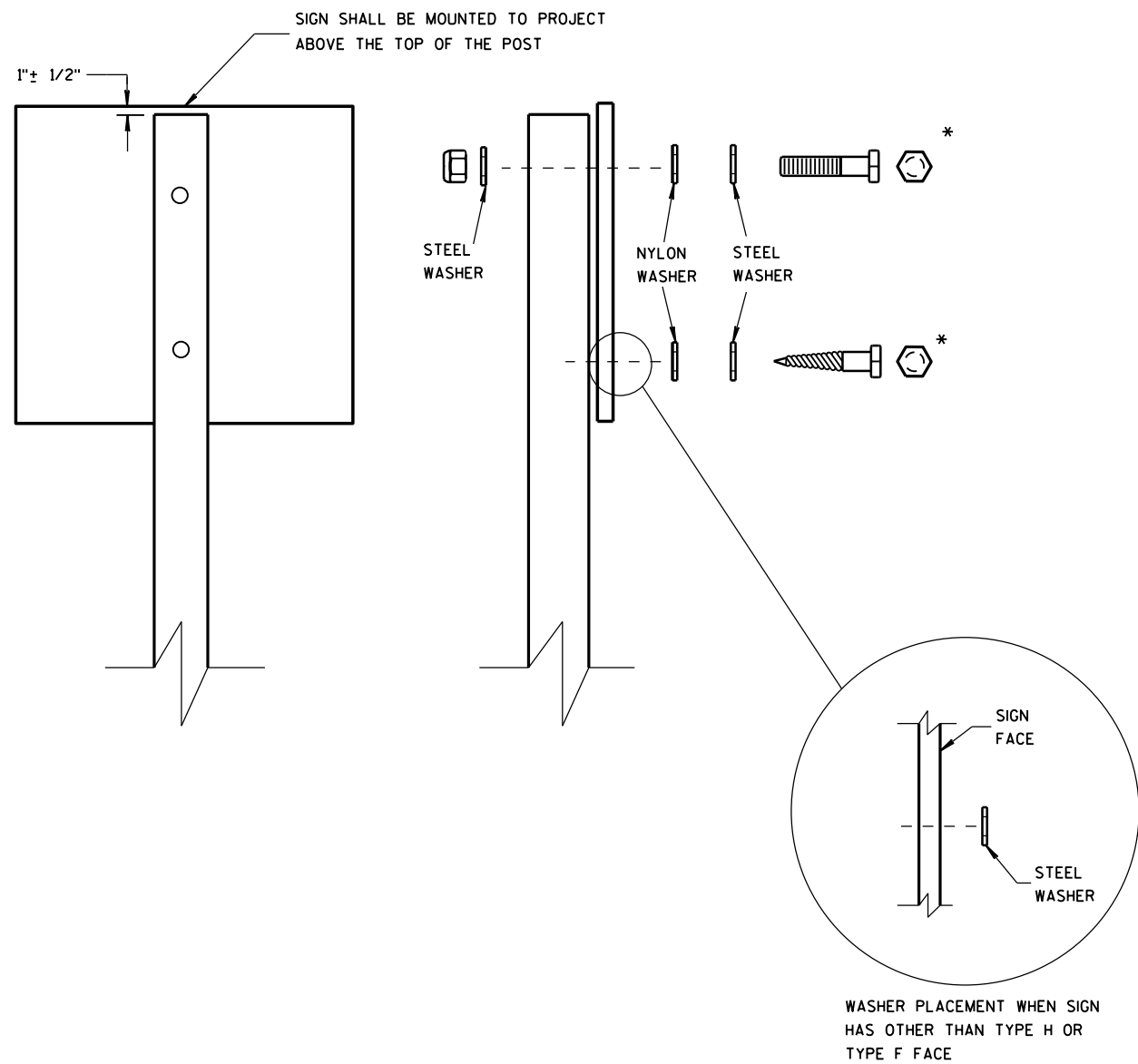
SEE NOTE ③

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.

TEMPORARY TRAFFIC CONTROL
FIXED MESSAGE SIGNS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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.

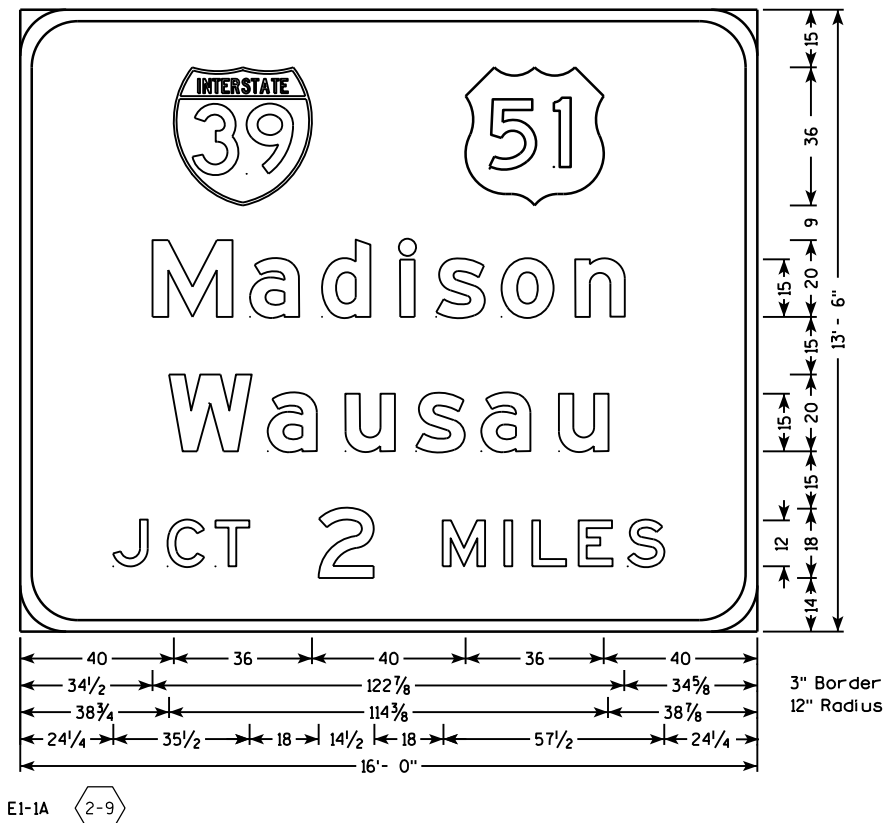
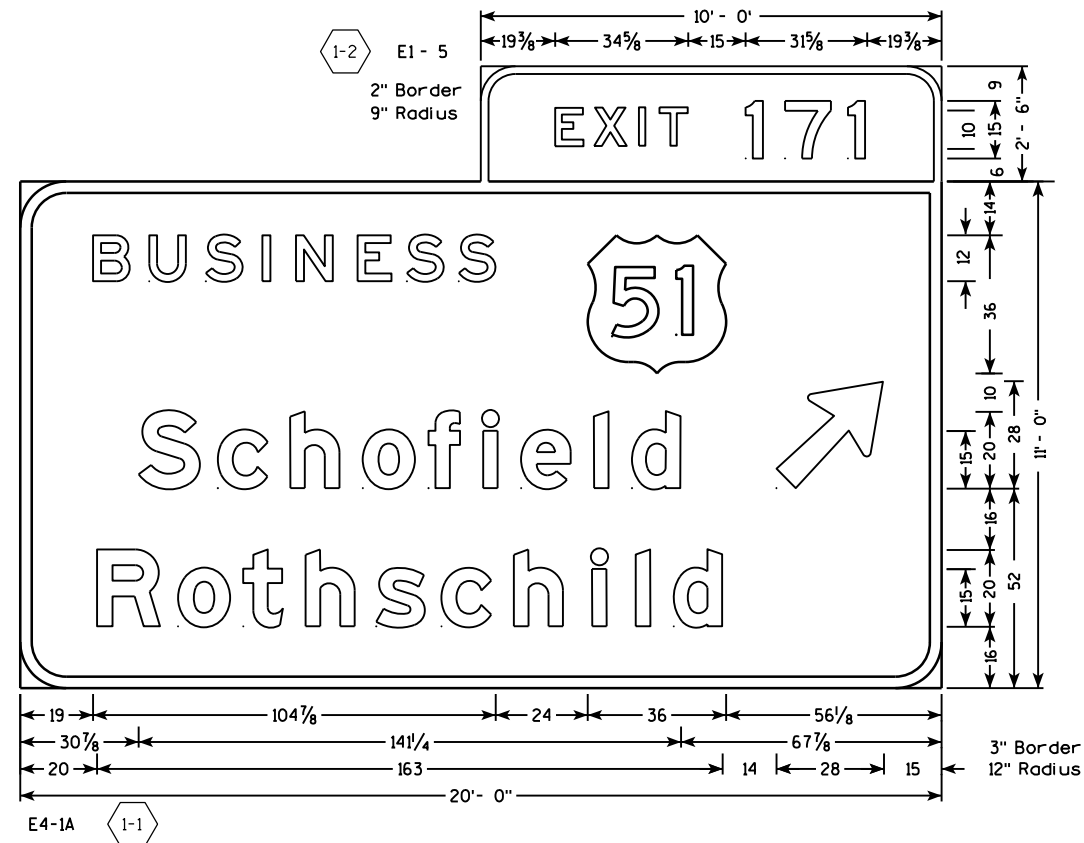
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3"
 - MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

- 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

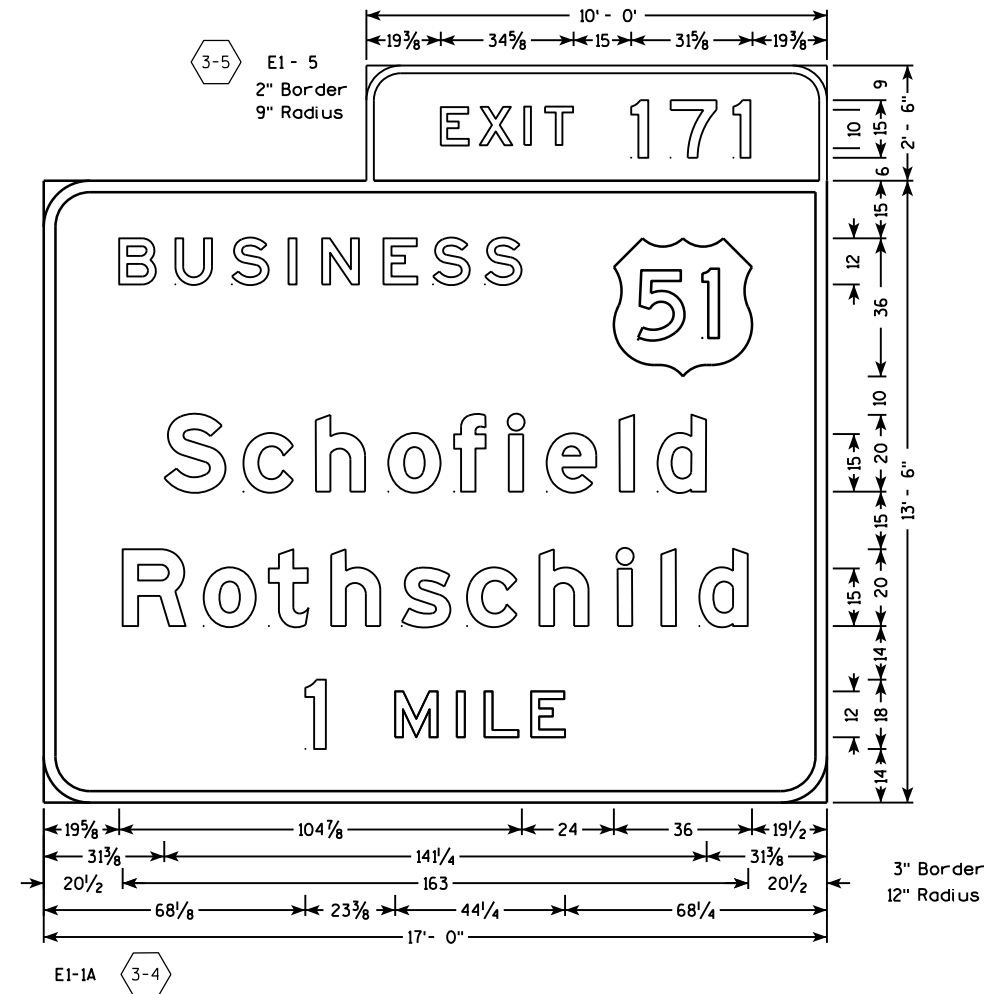
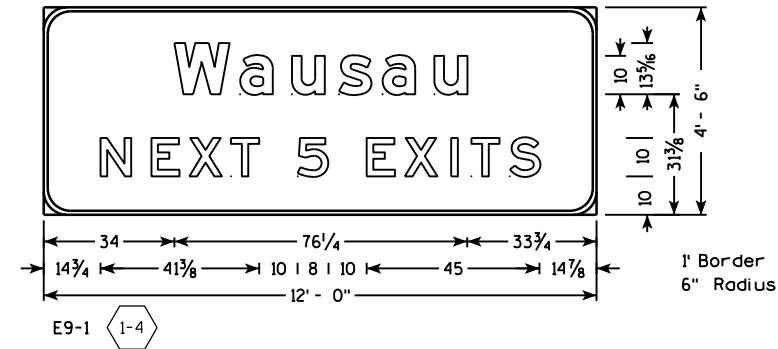
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

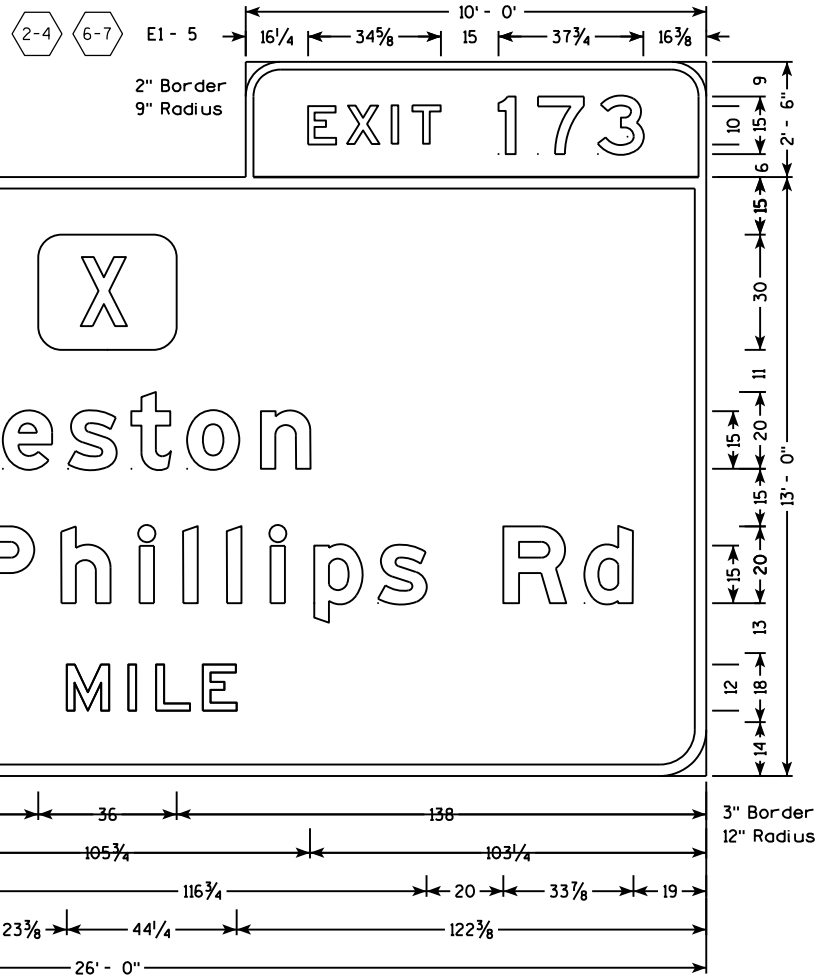
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED Feb. 2015	/S/ Travis Feltes	
DATE	STATE TRAFFIC ENGINEER OF DESIGN	
FHWA		

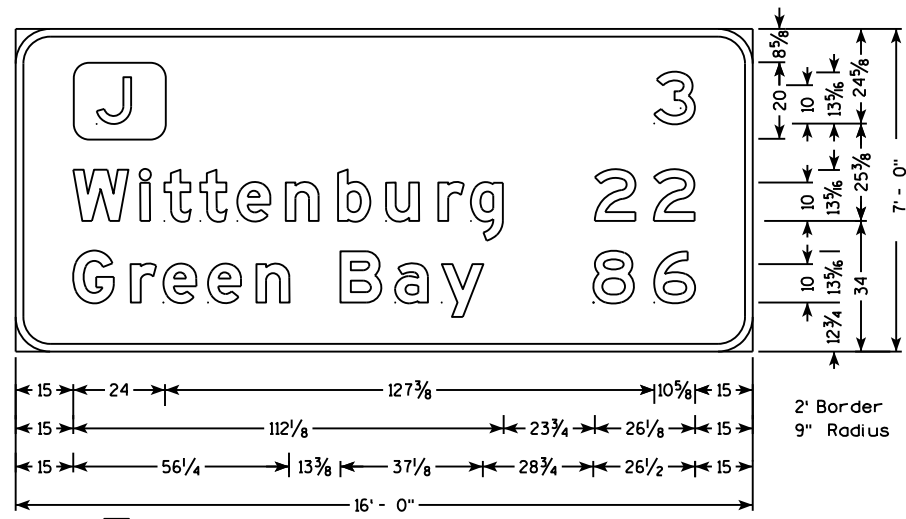


- NOTES**
1. All Signs are Type I - Type SH Reflective
 2. Color:
Background - Green
Message - White
 3. Message Series - E Modified except all cap Words are Series E



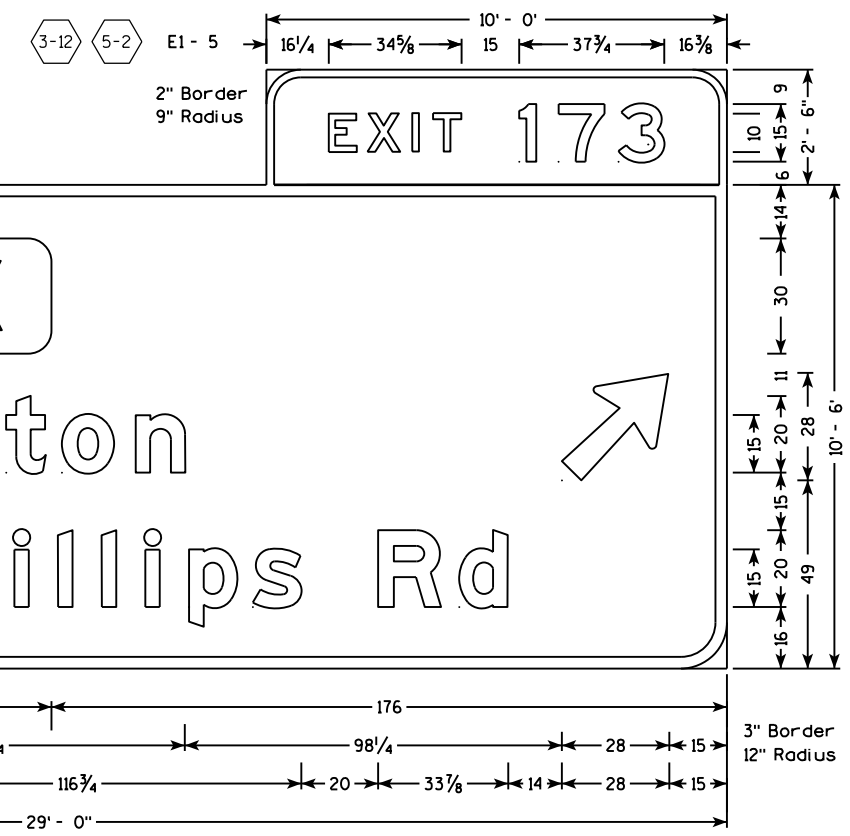
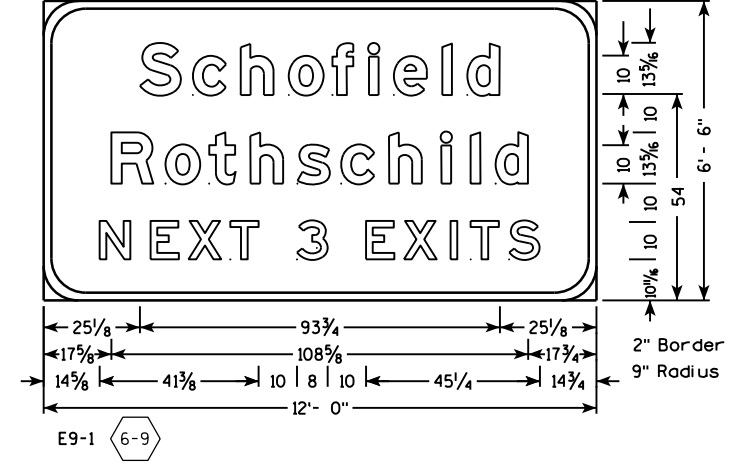


E1-1A 2-3 6-6



D2-3 5-9

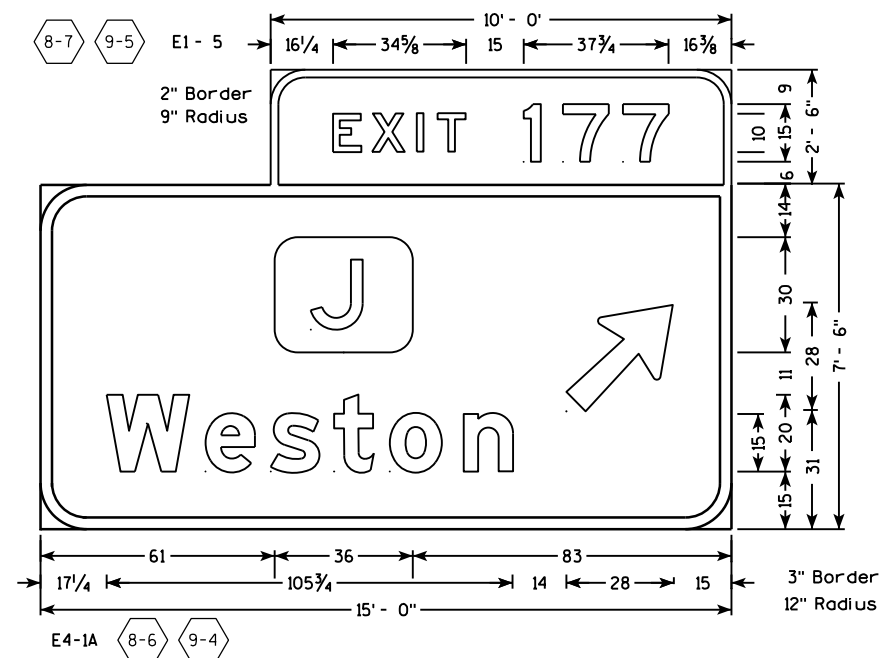
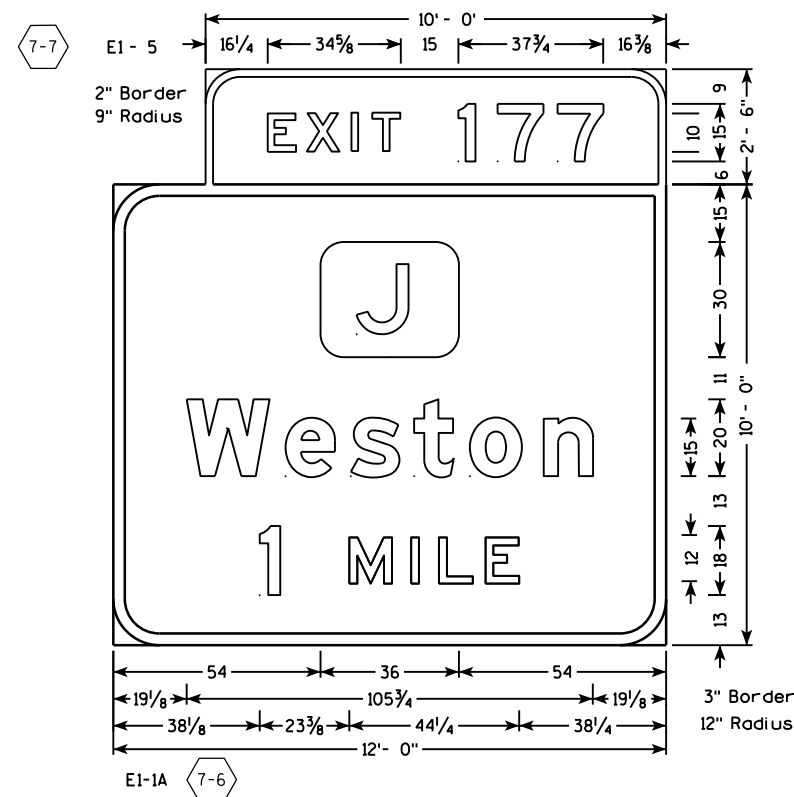
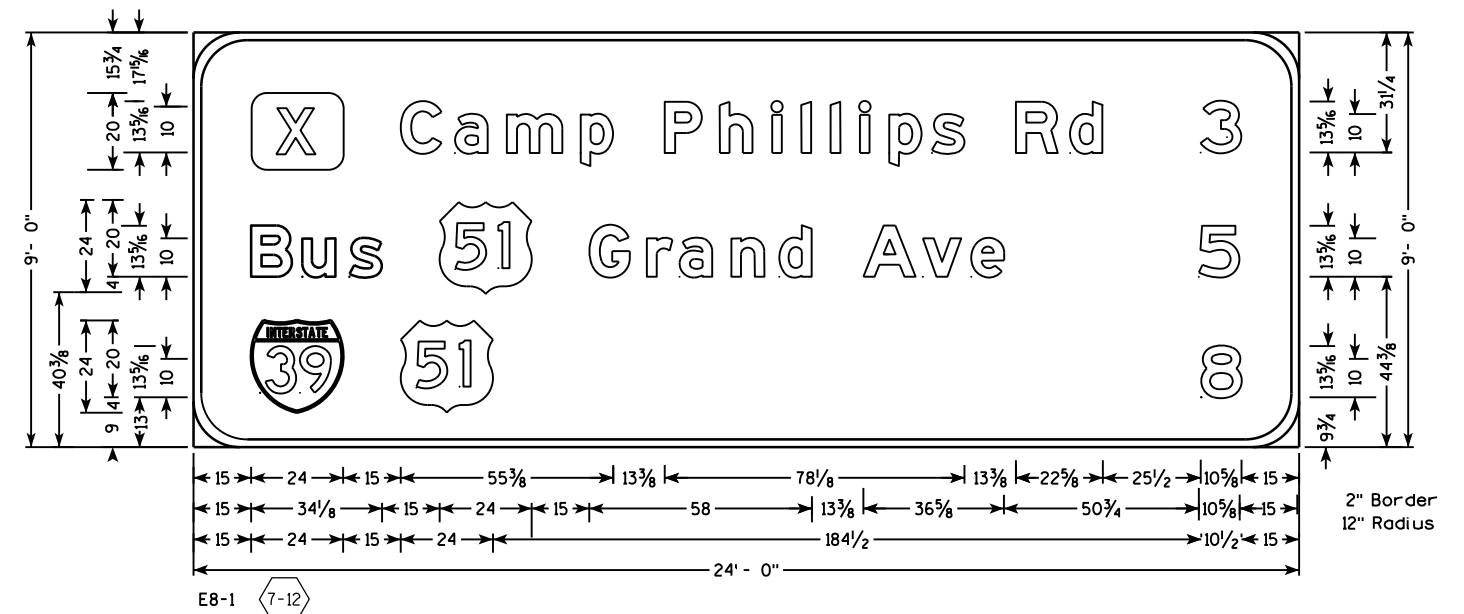
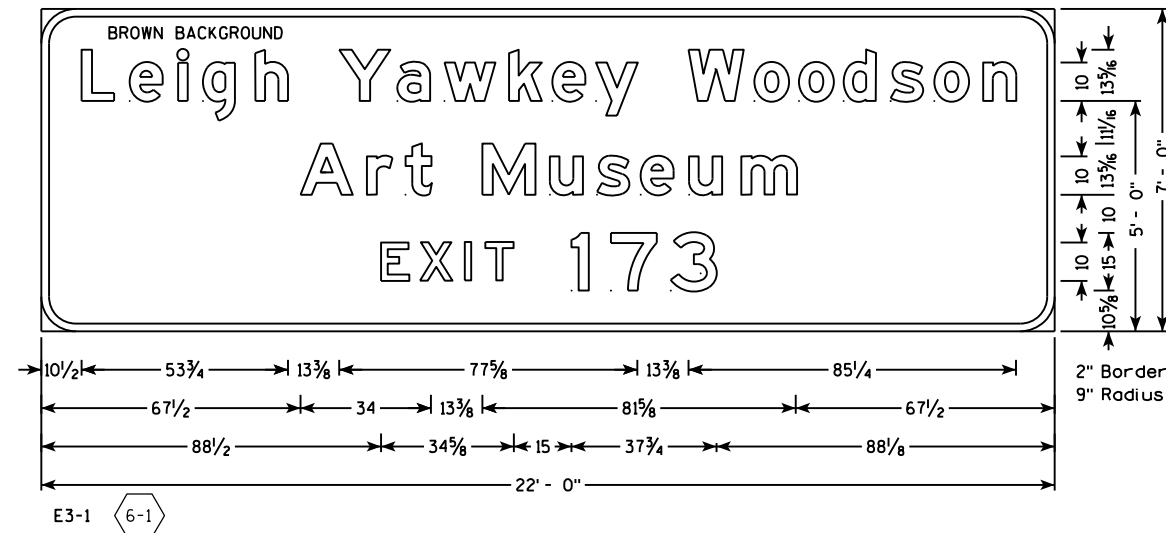
- NOTES**
1. All Signs are Type I - Type SH Reflective
 2. Color:
Background - Green
Message - White
 3. Message Series - E Modified except all cap Words are Series E



E4-1A 3-11 5-1

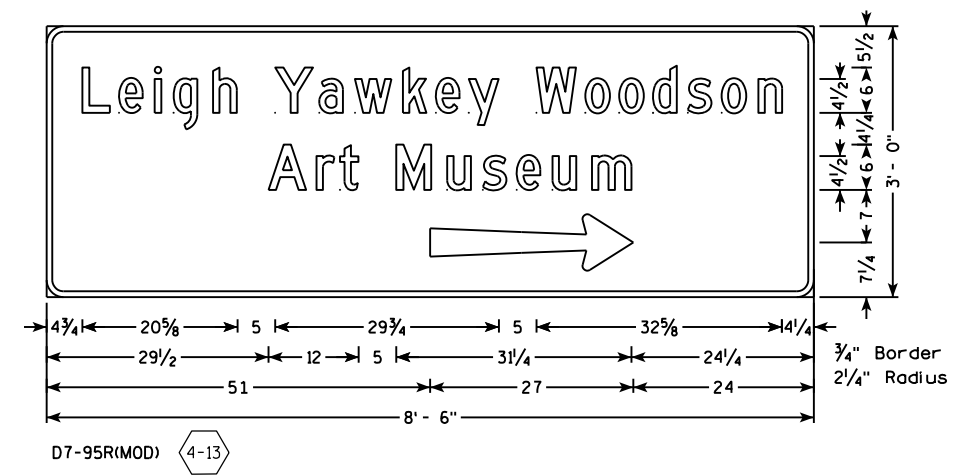
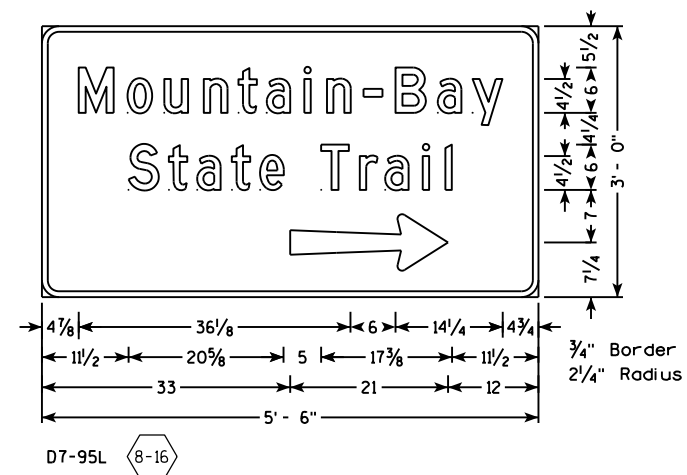
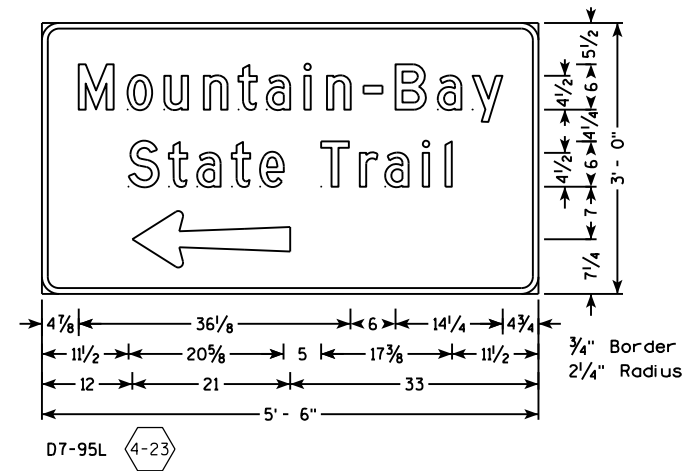
NOTES

1. All Signs are Type I - Type SH Reflective
2. Color:
Background - Green except as shown
Message - White
3. Message Series - E Modified except all cap Words are Series E



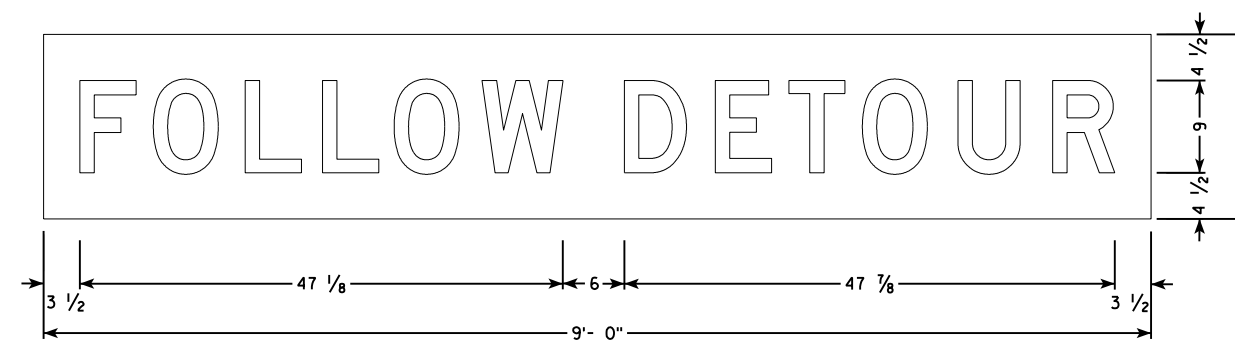
NOTES

1. All Signs are Type II - Type H Reflective
2. Color:
Background - Brown
Message - White
3. Message Series - D



NOTES

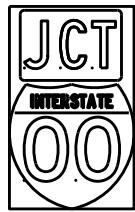
1. All Signs Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Sign made of .040" aluminum backing



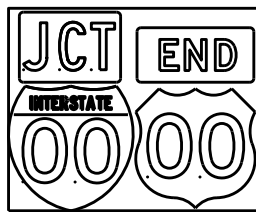
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7

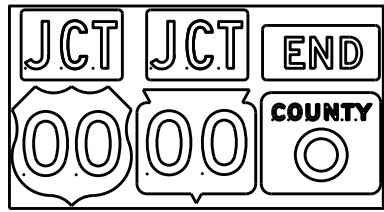
TYPICAL ASSEMBLIES



J1-1



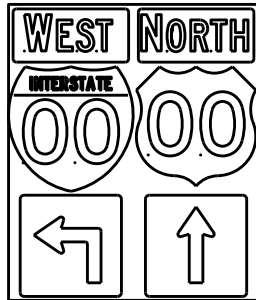
J1-2



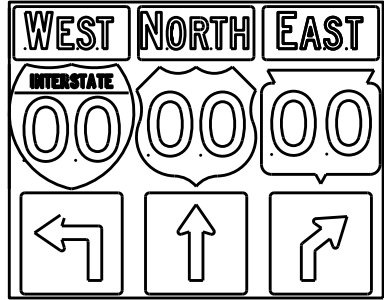
J1-3



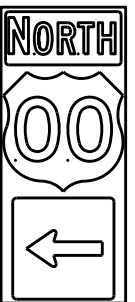
J2-1



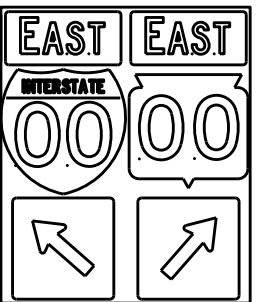
J2-2



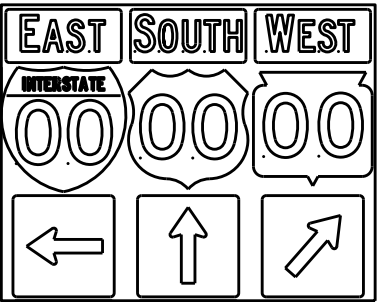
J2-3



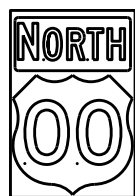
J3-1



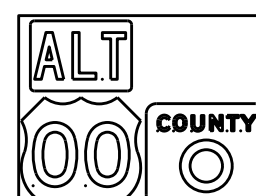
J3-2



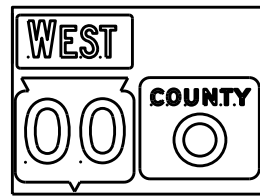
J3-3



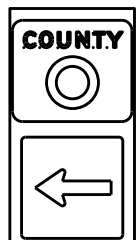
J4-1



J4-2



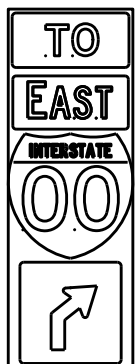
J4-2



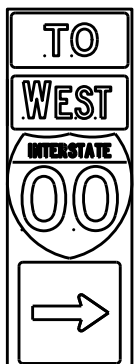
J13-1



J12-1



J32-1



J33-1



J23-1

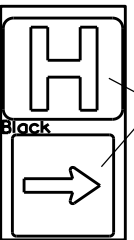


J22-1



JV

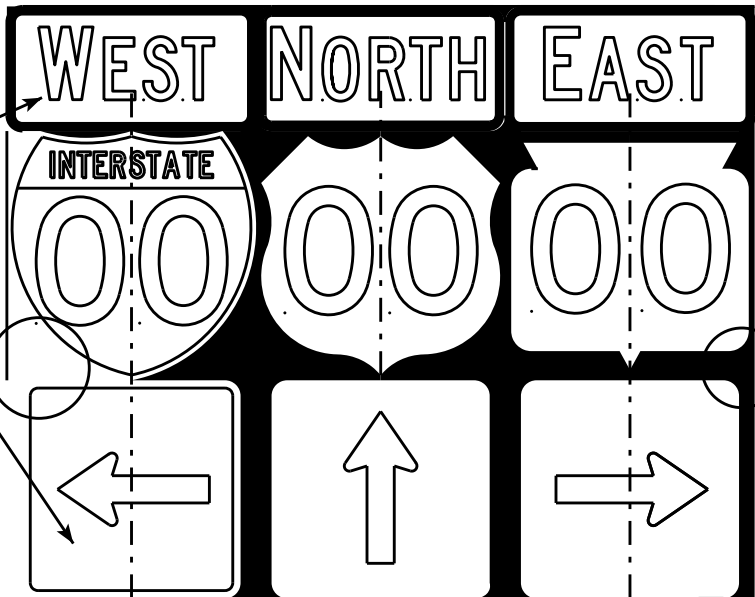
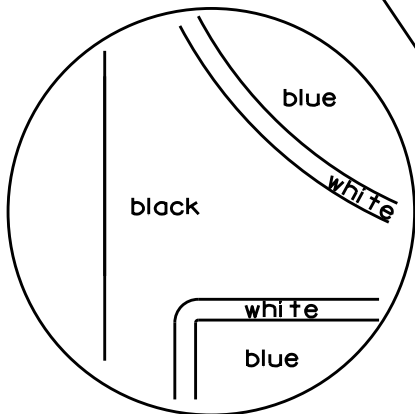
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

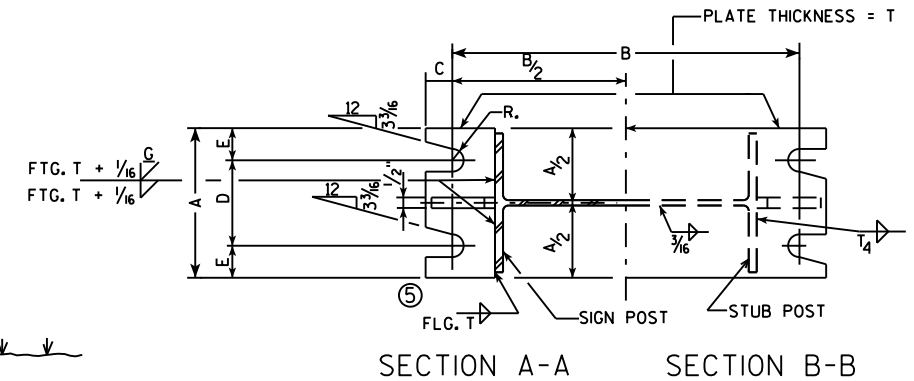
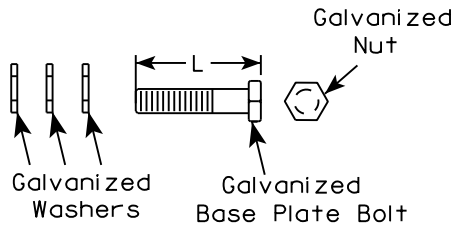
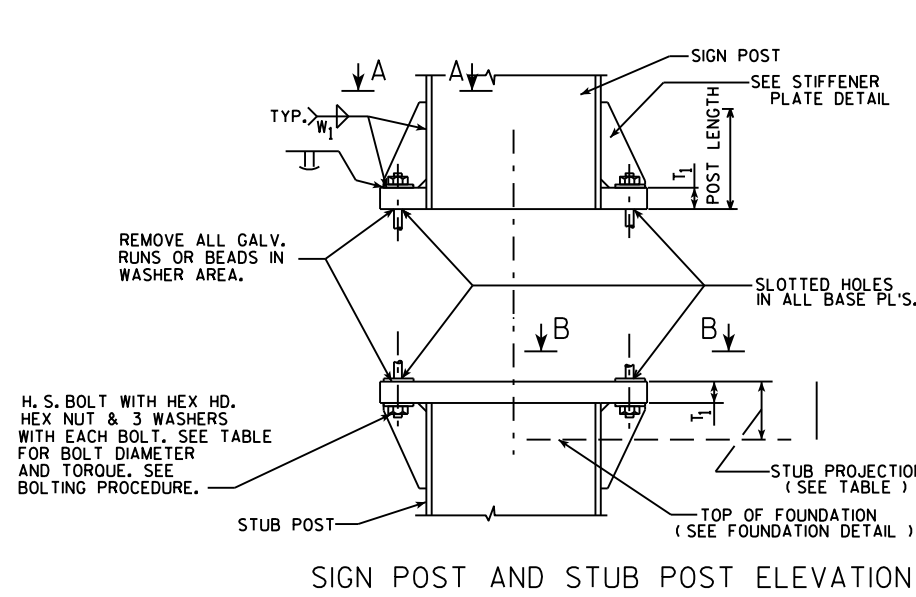
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/06/14 PLATE NO. A2-1S.8

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.



DESIGN DATA

WIND PRESSURE = 75 M.P.H.
WIND COMPONENTS - NORMAL = 1.0 TRANSVERSE = 0.0
ICE LOAD = 3 P.S.F.

GROUP LOADS

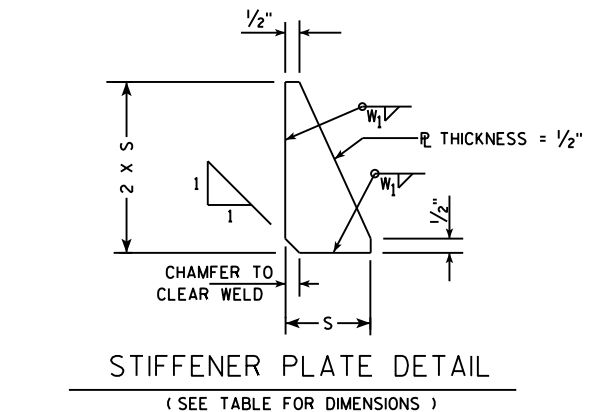
GROUP LOADS	PERCENT OF ALLOWABLE STRESS
1. DEAD	100
2. DEAD & WIND	140
3. DEAD, ICE & 1/2 WIND ^Δ	140

^Δ25 P.S.F. MIN.

ALLOWABLE SOIL PRESSURE = 1/2 T / SQ. FT.
WIND LOAD WAS APPLIED TO THE AREA OF THE SIGN AND TO THE SUPPORTING MEMBERS.
ICE LOAD WAS APPLIED TO ONE FACE OF THE SIGN AND AROUND THE SURFACE OF THE SUPPORTING MEMBERS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DESIGN CONFORMS WITH A.A.S.H.T.O. SPECIFICATIONS 1985.
ALL POSTS, POST STUBS & ATTACHMENTS SHALL BE A.S.T.M. A709 GRADE 50, GALVANIZED IN ACCORDANCE WITH ASTM A123.
THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER FABRICATION.
FURNISH STEEL BOLTS, NUTS, AND WASHERS IN ACCORDANCE WITH SECTION 635 OF THE STANDARD SPECIFICATIONS.



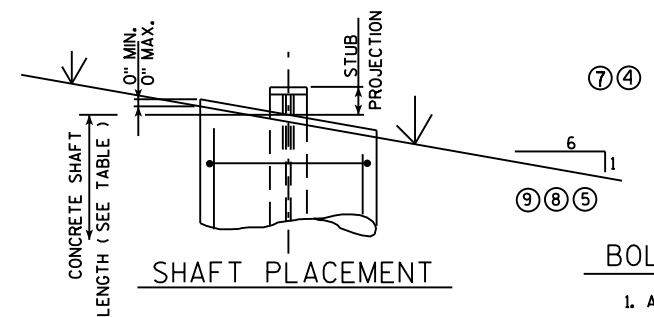
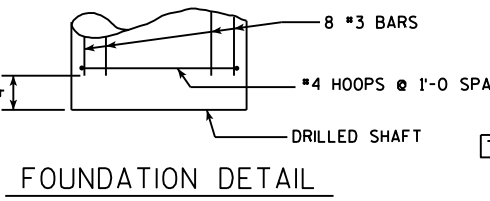
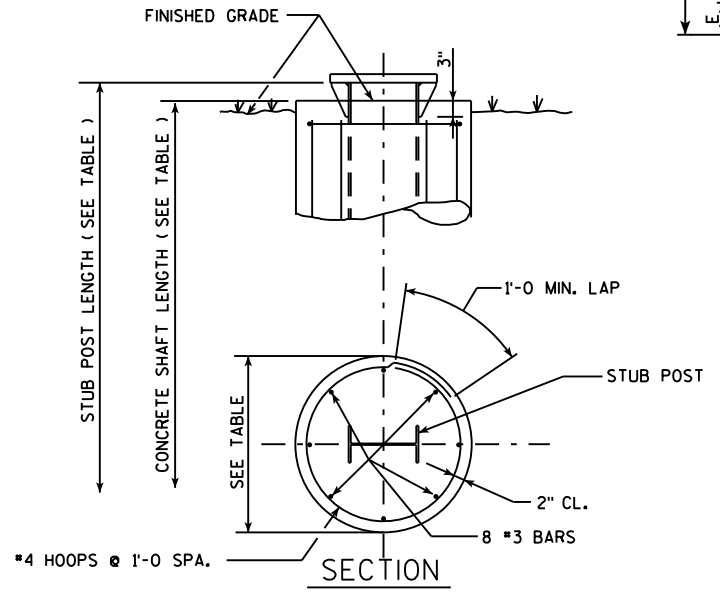
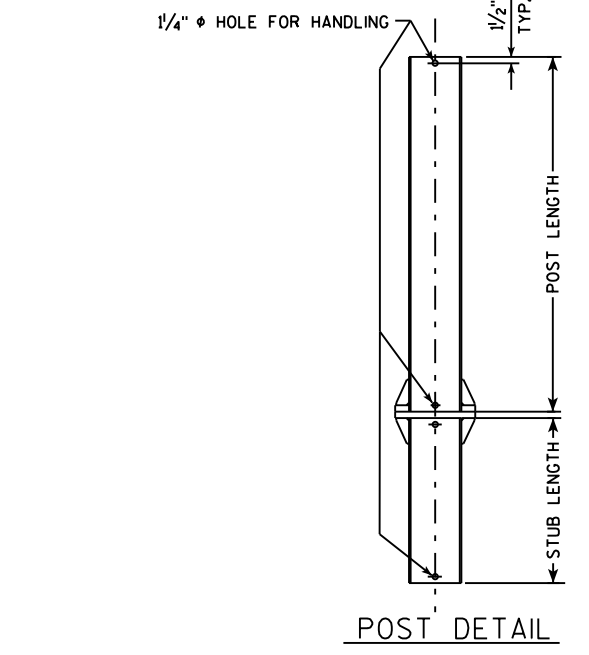
FURNISH 2 @ .012" ± THICK AND 2 @ .032" ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M. - B36.

SHIM DETAIL

QUANTITIES FOR 1 FOOTING		
	CONC. MASONRY C.Y.	REINF. STEEL LBS.
A	0.6	34
B	0.8	49
C	0.9	50
D	0.9	56
E	1.0	62

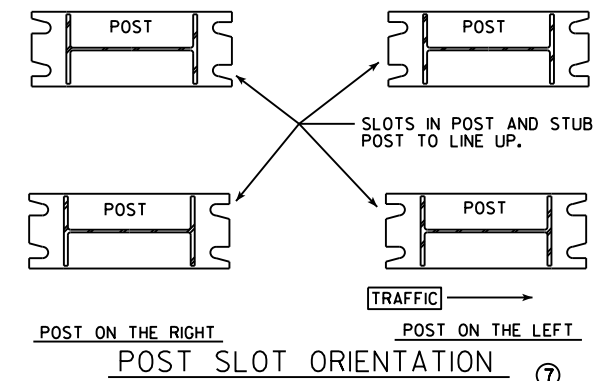
⑦

REINF.	TYPE	#3		#4	
		8 @ 4'-5"	5 @ 6'-3"	7 @ 6'-3"	7 @ 6'-3"
⑦	A	8 @ 4'-5"	5 @ 6'-3"	7 @ 6'-3"	7 @ 6'-3"
	B	8 @ 6'-5"	7 @ 6'-3"	7 @ 6'-3"	7 @ 6'-3"
	C	8 @ 6'-11"	7 @ 6'-3"	7 @ 6'-3"	7 @ 6'-3"
	D	8 @ 7'-5"	8 @ 6'-3"	8 @ 6'-3"	8 @ 6'-3"
	E	8 @ 7'-11"	9 @ 6'-3"	9 @ 6'-3"	9 @ 6'-3"



BOLTING PROCEDURE - BASE CONNECTION

- ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND ONE OF THE FLAT WASHERS ON EACH BOLT BETW. PLATES.
 - SHIM AS REQ'D. TO PLUMB POST.
 - PRIOR TO BOLT TIGHTENING LUBRICATE BASE CONNECTION BOLTS WITH BEESWAX OR OTHER HIGH-WAX LUBRICANT.
 - TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)
 - BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.
- NOTE:
TIGHTEN THE HIGH STRENGTH BOLTS TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.



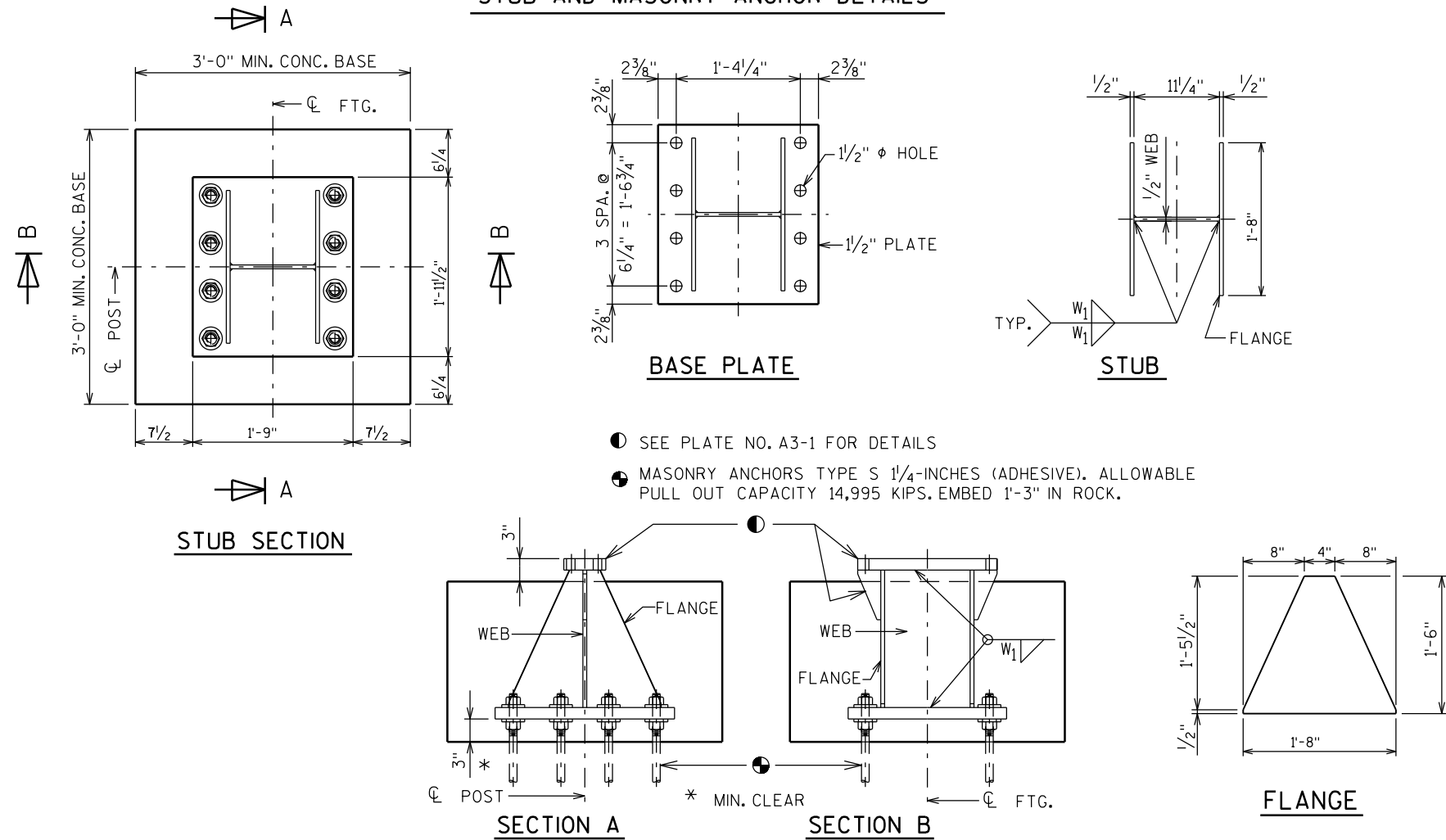
BASE CONNECTION DATA TABLE															FOUNDATION DATA				K
L	X	TYPE	DIMENSION POST SIZE	BOLT SIZE & TORQUE	A	B	C	D	E	T ₁	T ₄	W ₁	R	S	STUB LENGTH	STUB PROJECTION	SHAFT DIAMETER	SHAFT LENGTH	
3 3/4	④	A	W10"x12.0 #/FT.	3/4" φ @ 75*-FT.	5/4"	1'-0 3/8"	7/8"	3 1/2"	7/8"	1"	3/16"	5/16"	1 1/2"	2 1/8"	3'-6"	3"	2'-0 φ	5'-0"	76.0*
4 3/4	④	B	W12"x16.0 #/FT.	7/8" φ @ 85*-FT.	5/2"	1'-4 1/4"	1"	3 1/2"	1"	1 1/4"	1/4"	5/16"	1 1/2"	3"	5'-6"	3"	2'-0 φ	7'-0"	146.5*
5		C	W12"x19.0 #/FT.	7/8" φ @ 85*-FT.	5/2"	1'-4 1/4"	1"	3 1/2"	1"	1 1/2"	3/8"	5/16"	1 1/2"	3"	6'-0"	3"	2'-0 φ	7'-6"	182.1*
5		D	W12"x22.0 #/FT.	7/8" φ @ 85*-FT.	5/2"	1'-4 1/4"	1"	3 1/2"	1"	1 1/2"	3/8"	5/16"	1 1/2"	3"	6'-6"	3"	2'-0 φ	8'-0"	210.5*
5	③	E	W12"x26.0 #/FT.	1" φ @ 90*-FT.	7"	1'-4 1/4"	1 1/4"	4"	1 1/2"	1 1/2"	3/8"	5/16"	1 1/2"	3"	7'-0"	3"	2'-0 φ	8'-6"	293.0*

① ⑥ ①

STRUCTURAL CARBON STEEL PAY WTS. (1POST) = K + (POST LENGTH X POST WT.)
"K" INCLUDES STUB, BASE PLATES, STIFFS., BOLTS, AND WASHERS.

WISCONSIN DEPT OF TRANSPORTATION			
APPROVED		Matthew R. Rauch for State Traffic Engineer	
DATE 11/12/15		PLATE NO. A3-1.16	
⑩	1-21-14	LUBRICATION OF BASE BOLTS	
⑨	4-26-11	REMOVE NON-GALVANIZED	
⑧	10-30-96	NOT GALVANIZED/GALVANIZED	
⑦	10-30-92	QUANT., A588 EXCEPT., ADD SLOT VIEW	
⑥	8-24-87	BASE CONN. WELD	
⑤	10-13-81	BASE CONN. WELD & FUSE PLATE WASHERS	
④	10-19-79	POST A & B, A572 GR. 50, & K	
②	11-28-78	"K" ③ 4-23-79 TYPE "E"	
①	5-4-78	T ₁ • T ₂ & W ₁	
NO.	DATE	REVISION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
TYPE A, B, C, D, & E			
CONST. SPEC.	2011	DRAWN BY JPH	PLANS CK'D.
FTG. & SIGN SUPPORT DETAILS GROUND MOUNT BREAK-AWAY SIGNS			SHEET

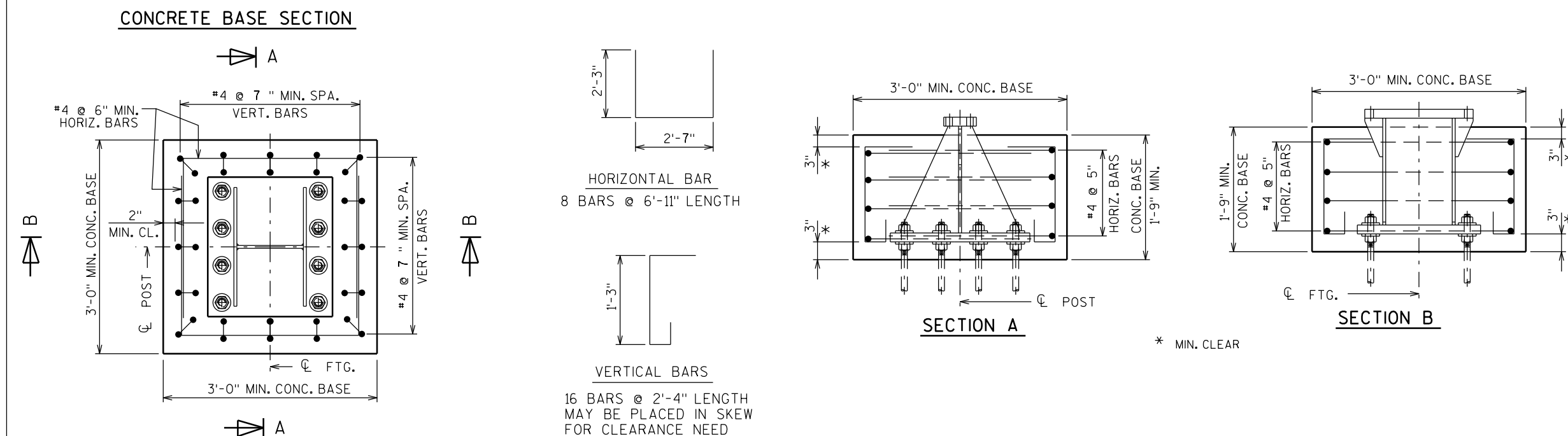
STUB AND MASONRY ANCHOR DETAILS



GENERAL NOTES

- Quantities per Base:
 - REINFORCING BAR STEEL = 62 LBS
 - CONCRETE = 0.6 C.Y.
 - STEEL WEIGHT = 335 LBS
- All materials, except anchor rod, nuts and washers, are to be A.S.T.M. A709 grade 50. All materials to be galvanized after fabrication.
- If the contractor encounters rock before reaching the footing depth, per the A3-1 Sign Detail, determine the pull-out capacity of a test adhesive anchor installed in the rock. If the test result equals or exceeds the pull-out capacity of 14,995 KIPS, the contractor may install the breakaway stub for rock, according to this detail.

CONCRETE BASE AND REINFORCING STEEL DETAILS



ALTERNATE BREAK-AWAY
BASE ON ROCK
A3-1M

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/06/2014 PLATE NO. A3-1M.1

7

VERITCAL DIMENSION ⇄

HORIZONTAL DIMENSION ⇄

	2.5 ft.	3 ft.	3.5 ft.	4 ft.	4.5 ft.	5 ft.	5.5 ft.	6 ft.	6.5 ft.	7 ft.	7.5 ft.	8 ft.	8.5 ft.	9 ft.	9.5 ft.	10 ft.	10.5 ft.	11 ft.	11.5 ft.	12 ft.	12.5 ft.	13 ft.	13.5 ft.	14 ft.	14.5 ft.	15 ft.	15.5 ft.	16 ft.		
10 ft.	25 Sq. Ft	30 Sq. Ft	35 Sq. Ft	40 Sq. Ft	45 Sq. Ft	50 Sq. Ft	55 Sq. Ft	60 Sq. Ft	65 Sq. Ft	70 Sq. Ft	75 Sq. Ft	80 Sq. Ft	85 Sq. Ft	90 Sq. Ft	95 Sq. Ft	100 Sq. Ft	105 Sq. Ft	110 Sq. Ft	115 Sq. Ft	120 Sq. Ft	125 Sq. Ft	130 Sq. Ft	135 Sq. Ft	140 Sq. Ft	145 Sq. Ft	150 Sq. Ft	155 Sq. Ft	160 Sq. Ft		
11 ft.	27.5 Sq. Ft	33 Sq. Ft	38.5 Sq. Ft	44 Sq. Ft	49.5 Sq. Ft	55 Sq. Ft	60.5 Sq. Ft	66 Sq. Ft	71.5 Sq. Ft	77 Sq. Ft	82.5 Sq. Ft	88 Sq. Ft	93.5 Sq. Ft	99 Sq. Ft	104.5 Sq. Ft	110 Sq. Ft	115.5 Sq. Ft	121 Sq. Ft	126.5 Sq. Ft	132 Sq. Ft	137.5 Sq. Ft	143 Sq. Ft	148.5 Sq. Ft	154 Sq. Ft	159.5 Sq. Ft	165 Sq. Ft	170.5 Sq. Ft	176 Sq. Ft		
12 ft.	30 Sq. Ft	36 Sq. Ft	42 Sq. Ft	48 Sq. Ft	54 Sq. Ft	60 Sq. Ft	66 Sq. Ft	72 Sq. Ft	78 Sq. Ft	84 Sq. Ft	90 Sq. Ft	96 Sq. Ft	102 Sq. Ft	108 Sq. Ft	114 Sq. Ft	120 Sq. Ft	126 Sq. Ft	132 Sq. Ft	138 Sq. Ft	144 Sq. Ft	150 Sq. Ft	156 Sq. Ft	162 Sq. Ft	168 Sq. Ft	174 Sq. Ft	180 Sq. Ft	186 Sq. Ft	192 Sq. Ft		
13 ft.	32.5 Sq. Ft	39 Sq. Ft	45.5 Sq. Ft	52 Sq. Ft	58.5 Sq. Ft	65 Sq. Ft	71.5 Sq. Ft	78 Sq. Ft	84.5 Sq. Ft	91 Sq. Ft	97.5 Sq. Ft	104 Sq. Ft	110.5 Sq. Ft	117 Sq. Ft	123.5 Sq. Ft	130 Sq. Ft	136.5 Sq. Ft	143 Sq. Ft	149.5 Sq. Ft	156 Sq. Ft	162.5 Sq. Ft	169 Sq. Ft	175.5 Sq. Ft	182 Sq. Ft	188.5 Sq. Ft	195 Sq. Ft	201.5 Sq. Ft	208 Sq. Ft		
14 ft.	35 Sq. Ft	42 Sq. Ft	49 Sq. Ft	56 Sq. Ft	63 Sq. Ft	70 Sq. Ft	77 Sq. Ft	84 Sq. Ft	91 Sq. Ft	98 Sq. Ft	105 Sq. Ft	112 Sq. Ft	119 Sq. Ft	126 Sq. Ft	133 Sq. Ft	140 Sq. Ft	147 Sq. Ft	154 Sq. Ft	161 Sq. Ft	168 Sq. Ft	175 Sq. Ft	182 Sq. Ft	189 Sq. Ft	196 Sq. Ft	203 Sq. Ft	210 Sq. Ft	217 Sq. Ft	224 Sq. Ft		
15 ft.	37.5 Sq. Ft	45 Sq. Ft	52.5 Sq. Ft	60 Sq. Ft	67.5 Sq. Ft	75 Sq. Ft	82.5 Sq. Ft	90 Sq. Ft	97.5 Sq. Ft	105 Sq. Ft	112.5 Sq. Ft	120 Sq. Ft	127.5 Sq. Ft	135 Sq. Ft	142.5 Sq. Ft	150 Sq. Ft	157.5 Sq. Ft	165 Sq. Ft	172.5 Sq. Ft	180 Sq. Ft	187.5 Sq. Ft	195 Sq. Ft	202.5 Sq. Ft	210 Sq. Ft	217.5 Sq. Ft	225 Sq. Ft	232.5 Sq. Ft	240 Sq. Ft		
16 ft.	40 Sq. Ft	48 Sq. Ft	56 Sq. Ft	64 Sq. Ft	72 Sq. Ft	80 Sq. Ft	88 Sq. Ft	96 Sq. Ft	104 Sq. Ft	112 Sq. Ft	120 Sq. Ft	128 Sq. Ft	136 Sq. Ft	144 Sq. Ft	152 Sq. Ft	160 Sq. Ft	168 Sq. Ft	176 Sq. Ft	184 Sq. Ft	192 Sq. Ft	200 Sq. Ft	208 Sq. Ft	216 Sq. Ft	224 Sq. Ft	232 Sq. Ft	240 Sq. Ft	248 Sq. Ft	256 Sq. Ft		
17 ft.	42.5 Sq. Ft	51 Sq. Ft	59.5 Sq. Ft	68 Sq. Ft	76.5 Sq. Ft	85 Sq. Ft	93.5 Sq. Ft	102 Sq. Ft	110.5 Sq. Ft	119 Sq. Ft	127.5 Sq. Ft	136 Sq. Ft	144.5 Sq. Ft	153 Sq. Ft	161.5 Sq. Ft	170 Sq. Ft	178.5 Sq. Ft	187 Sq. Ft	195.5 Sq. Ft	204 Sq. Ft	212.5 Sq. Ft	221 Sq. Ft	229.5 Sq. Ft	238 Sq. Ft	246.5 Sq. Ft	255 Sq. Ft	263.5 Sq. Ft	272 Sq. Ft		
18 ft.	45 Sq. Ft	54 Sq. Ft	63 Sq. Ft	72 Sq. Ft	81 Sq. Ft	90 Sq. Ft	99 Sq. Ft	108 Sq. Ft	117 Sq. Ft	126 Sq. Ft	135 Sq. Ft	144 Sq. Ft	153 Sq. Ft	162 Sq. Ft	171 Sq. Ft	180 Sq. Ft	189 Sq. Ft	198 Sq. Ft	207 Sq. Ft	216 Sq. Ft	225 Sq. Ft	234 Sq. Ft	243 Sq. Ft	252 Sq. Ft	261 Sq. Ft	270 Sq. Ft	279 Sq. Ft	288 Sq. Ft		
19 ft.	47.5 Sq. Ft	57 Sq. Ft	66.5 Sq. Ft	76 Sq. Ft	85.5 Sq. Ft	95 Sq. Ft	104.5 Sq. Ft	114 Sq. Ft	123.5 Sq. Ft	133 Sq. Ft	142.5 Sq. Ft	152 Sq. Ft	161.5 Sq. Ft	171 Sq. Ft	180.5 Sq. Ft	190 Sq. Ft	199.5 Sq. Ft	209 Sq. Ft	218.5 Sq. Ft	228 Sq. Ft	237.5 Sq. Ft	247 Sq. Ft	256.5 Sq. Ft	266 Sq. Ft	275.5 Sq. Ft	285 Sq. Ft	294.5 Sq. Ft	304 Sq. Ft		
20 ft.	50 Sq. Ft	60 Sq. Ft	70 Sq. Ft	80 Sq. Ft	90 Sq. Ft	100 Sq. Ft	110 Sq. Ft	120 Sq. Ft	130 Sq. Ft	140 Sq. Ft	150 Sq. Ft	160 Sq. Ft	170 Sq. Ft	180 Sq. Ft	190 Sq. Ft	200 Sq. Ft	210 Sq. Ft	220 Sq. Ft	230 Sq. Ft	240 Sq. Ft	250 Sq. Ft	260 Sq. Ft	270 Sq. Ft	280 Sq. Ft	290 Sq. Ft	300 Sq. Ft	310 Sq. Ft	320 Sq. Ft		
21 ft.	52.5 Sq. Ft	63 Sq. Ft	73.5 Sq. Ft	84 Sq. Ft	94.5 Sq. Ft	105 Sq. Ft	115.5 Sq. Ft	126 Sq. Ft	136.5 Sq. Ft	147 Sq. Ft	157.5 Sq. Ft	168 Sq. Ft	178.5 Sq. Ft	189 Sq. Ft	199.5 Sq. Ft	210 Sq. Ft	220.5 Sq. Ft	231 Sq. Ft	241.5 Sq. Ft	252 Sq. Ft	262.5 Sq. Ft	273 Sq. Ft	283.5 Sq. Ft	294 Sq. Ft	304.5 Sq. Ft	315 Sq. Ft	325.5 Sq. Ft	336 Sq. Ft		
Type "A" (2 Posts) 1.2 CY Conc. 68 LBs Bar Steel					Type "B" (2 Posts) 1.6 CY Conc. 98 LBs Bar Steel										Type "C" (2 Posts) 1.8 CY Conc. 100 LBs Bar Steel					Type "D" (2 Posts) 1.8 CY Conc. 112 LBs Bar Steel					Type "C" (3 Posts) 2.7 CY Conc. 150 LBs Bar Steel					
STEEL POST SIZE "A" - W10" x 12" "B" - W12" x 16" "C" - W12" x 19" "D" - W12 x 22"																														

7

DETERMINATION OF HIGH STRENGTH
STRUCTURAL STEEL SIGN SUPPORT TYPE

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
for State Traffic Engineer

DATE 3/03/10 PLATE NO. A3-2.2

PROJECT NO:

SHEET NO:

E

FILE NAME : C:\Users\PROJECTS\tr_std\plate\A32.DGN

PLOT DATE : 05-MAR-2010 10:10

PLOT BY : di+jph

WISDOT/CADDs SHEET 42

VERTICAL DIMENSION ⇄

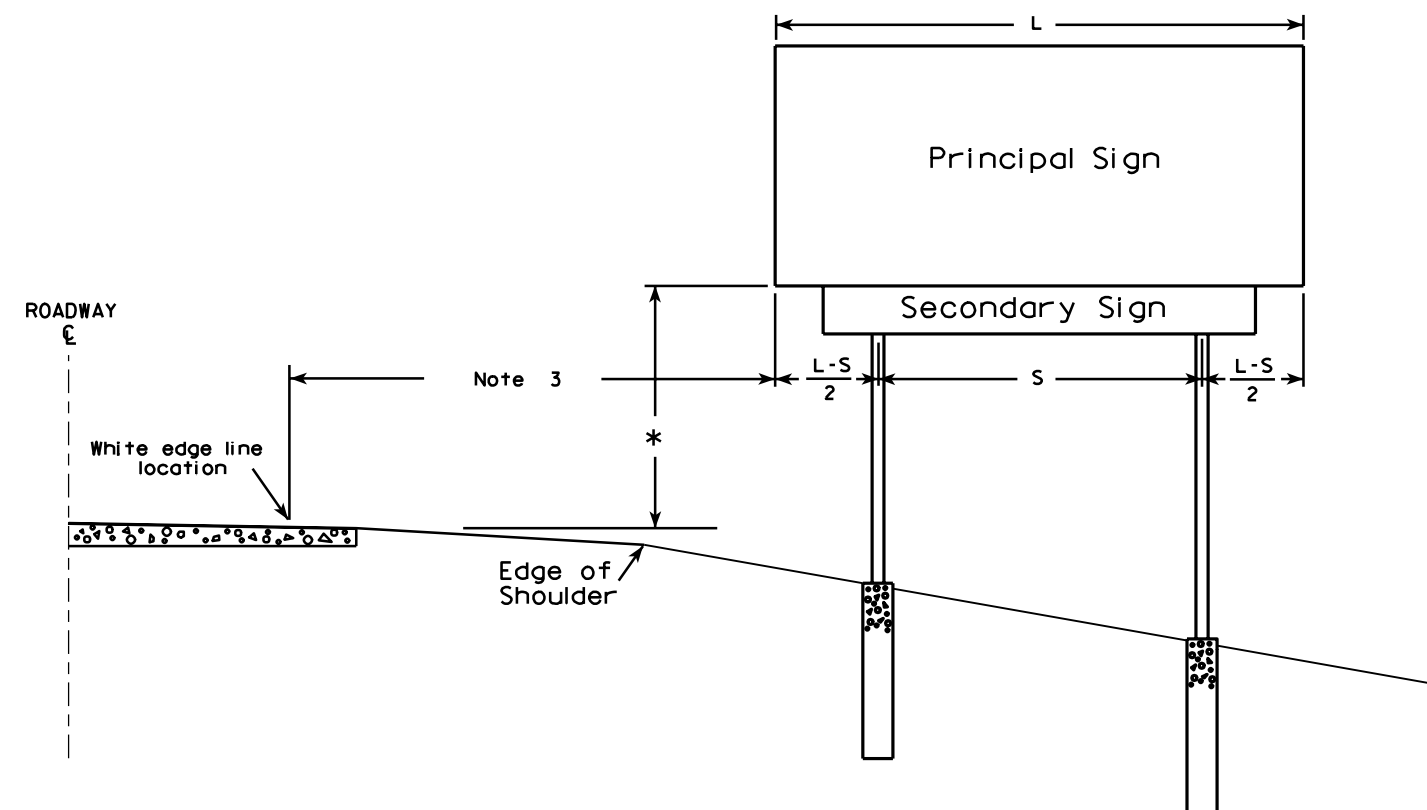
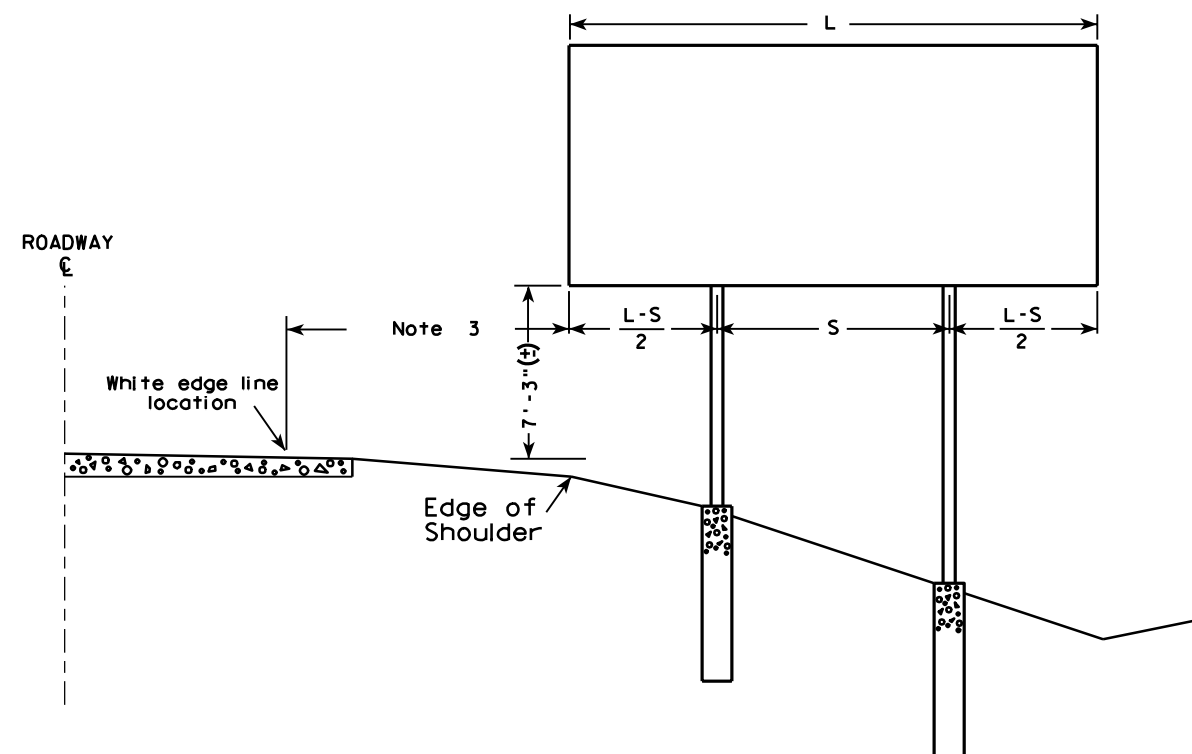
HORIZONTAL DIMENSION ⇄	Type "A" (2 Posts)																												
		2.5 ft.	3 ft.	3.5 ft.	4 ft.	4.5 ft.	5 ft.	5.5 ft.	6 ft.	6.5 ft.	7 ft.	7.5 ft.	8 ft.	8.5 ft.	9 ft.	9.5 ft.	10 ft.	10.5 ft.	11 ft.	11.5 ft.	12 ft.	12.5 ft.	13 ft.	13.5 ft.	14 ft.	14.5 ft.	15 ft.	15.5 ft.	16 ft.
	22 ft.	55 Sq. Ft	66 Sq. Ft	77 Sq. Ft	88 Sq. Ft	99 Sq. Ft	110 Sq. Ft	121 Sq. Ft	132 Sq. Ft	143 Sq. Ft	154 Sq. Ft	165 Sq. Ft	176 Sq. Ft	187 Sq. Ft	198 Sq. Ft	209 Sq. Ft	220 Sq. Ft	231 Sq. Ft	242 Sq. Ft	253 Sq. Ft	264 Sq. Ft	275 Sq. Ft	286 Sq. Ft	297 Sq. Ft	308 Sq. Ft	319 Sq. Ft	330 Sq. Ft	341 Sq. Ft	352 Sq. Ft
	23 ft.	57.5 Sq. Ft	69 Sq. Ft	80.5 Sq. Ft	92 Sq. Ft	103.5 Sq. Ft	115 Sq. Ft	126.5 Sq. Ft	138 Sq. Ft	149.5 Sq. Ft	161 Sq. Ft	172.5 Sq. Ft	184 Sq. Ft	195.5 Sq. Ft	207 Sq. Ft	218.5 Sq. Ft	230 Sq. Ft	241.5 Sq. Ft	253 Sq. Ft	264.5 Sq. Ft	276 Sq. Ft	287.5 Sq. Ft	299 Sq. Ft	310.5 Sq. Ft	322 Sq. Ft	333.5 Sq. Ft	345 Sq. Ft	356.5 Sq. Ft	368 Sq. Ft
	24 ft.	60 Sq. Ft	72 Sq. Ft	84 Sq. Ft	96 Sq. Ft	108 Sq. Ft	120 Sq. Ft	132 Sq. Ft	144 Sq. Ft	156 Sq. Ft	168 Sq. Ft	180 Sq. Ft	192 Sq. Ft	204 Sq. Ft	216 Sq. Ft	228 Sq. Ft	240 Sq. Ft	252 Sq. Ft	264 Sq. Ft	276 Sq. Ft	288 Sq. Ft	300 Sq. Ft	312 Sq. Ft	324 Sq. Ft	336 Sq. Ft	348 Sq. Ft	360 Sq. Ft	372 Sq. Ft	384 Sq. Ft
	25 ft.	62.5 Sq. Ft	75 Sq. Ft	87.5 Sq. Ft	100 Sq. Ft	112.5 Sq. Ft	125 Sq. Ft	137.5 Sq. Ft	150 Sq. Ft	162.5 Sq. Ft	175 Sq. Ft	187.5 Sq. Ft	200 Sq. Ft	212.5 Sq. Ft	225 Sq. Ft	237.5 Sq. Ft	250 Sq. Ft	262.5 Sq. Ft	275 Sq. Ft	287.5 Sq. Ft	300 Sq. Ft	312.5 Sq. Ft	325 Sq. Ft	337.5 Sq. Ft	350 Sq. Ft	362.5 Sq. Ft	375 Sq. Ft	387.5 Sq. Ft	400 Sq. Ft
	26 ft.	65 Sq. Ft	78 Sq. Ft	91 Sq. Ft	104 Sq. Ft	117 Sq. Ft	130 Sq. Ft	143 Sq. Ft	156 Sq. Ft	169 Sq. Ft	182 Sq. Ft	195 Sq. Ft	208 Sq. Ft	221 Sq. Ft	234 Sq. Ft	247 Sq. Ft	260 Sq. Ft	273 Sq. Ft	286 Sq. Ft	299 Sq. Ft	312 Sq. Ft	325 Sq. Ft	338 Sq. Ft	351 Sq. Ft	364 Sq. Ft	377 Sq. Ft	390 Sq. Ft	403 Sq. Ft	416 Sq. Ft
	27 ft.	67.5 Sq. Ft	81 Sq. Ft	94.5 Sq. Ft	108 Sq. Ft	121.5 Sq. Ft	135 Sq. Ft	148.5 Sq. Ft	162 Sq. Ft	175.5 Sq. Ft	189 Sq. Ft	202.5 Sq. Ft	216 Sq. Ft	229.5 Sq. Ft	243 Sq. Ft	256.5 Sq. Ft	270 Sq. Ft	283.5 Sq. Ft	297 Sq. Ft	310.5 Sq. Ft	324 Sq. Ft	337.5 Sq. Ft	351 Sq. Ft	364.5 Sq. Ft	378 Sq. Ft	391.5 Sq. Ft	405 Sq. Ft	418.5 Sq. Ft	432 Sq. Ft
	28 ft.	70 Sq. Ft	84 Sq. Ft	98 Sq. Ft	112 Sq. Ft	126 Sq. Ft	140 Sq. Ft	154 Sq. Ft	168 Sq. Ft	182 Sq. Ft	196 Sq. Ft	210 Sq. Ft	224 Sq. Ft	238 Sq. Ft	252 Sq. Ft	266 Sq. Ft	280 Sq. Ft	294 Sq. Ft	308 Sq. Ft	322 Sq. Ft	336 Sq. Ft	350 Sq. Ft	364 Sq. Ft	378 Sq. Ft	392 Sq. Ft	406 Sq. Ft	420 Sq. Ft	434 Sq. Ft	448 Sq. Ft
	29 ft.	72.5 Sq. Ft	87 Sq. Ft	101.5 Sq. Ft	116 Sq. Ft	130.5 Sq. Ft	145 Sq. Ft	159.5 Sq. Ft	174 Sq. Ft	188.5 Sq. Ft	203 Sq. Ft	217.5 Sq. Ft	232 Sq. Ft	246.5 Sq. Ft	261 Sq. Ft	275.5 Sq. Ft	290 Sq. Ft	304.5 Sq. Ft	319 Sq. Ft	333.5 Sq. Ft	348 Sq. Ft	362.5 Sq. Ft	377 Sq. Ft	391.5 Sq. Ft	406 Sq. Ft	420.5 Sq. Ft	435 Sq. Ft	449.5 Sq. Ft	464 Sq. Ft
	30 ft.	75 Sq. Ft	90 Sq. Ft	105 Sq. Ft	120 Sq. Ft	135 Sq. Ft	150 Sq. Ft	165 Sq. Ft	180 Sq. Ft	195 Sq. Ft	210 Sq. Ft	225 Sq. Ft	240 Sq. Ft	255 Sq. Ft	270 Sq. Ft	285 Sq. Ft	300 Sq. Ft	315 Sq. Ft	330 Sq. Ft	345 Sq. Ft	360 Sq. Ft	375 Sq. Ft	390 Sq. Ft	405 Sq. Ft	420 Sq. Ft	435 Sq. Ft	450 Sq. Ft	465 Sq. Ft	480 Sq. Ft
Type "A" (2 Posts) 1.2 CY Conc. 68 Lbs Bar Steel	31 ft.	77.5 Sq. Ft	93 Sq. Ft	108.5 Sq. Ft	124 Sq. Ft	139.5 Sq. Ft	155 Sq. Ft	170.5 Sq. Ft	186 Sq. Ft	201.5 Sq. Ft	217 Sq. Ft	232.5 Sq. Ft	248 Sq. Ft	263.5 Sq. Ft	279 Sq. Ft	294.5 Sq. Ft	310 Sq. Ft	325.5 Sq. Ft	341 Sq. Ft	356.5 Sq. Ft	372 Sq. Ft	387.5 Sq. Ft	403 Sq. Ft	418.5 Sq. Ft	434 Sq. Ft	449.5 Sq. Ft	465 Sq. Ft	480.5 Sq. Ft	496 Sq. Ft
	32 ft.	80 Sq. Ft	96 Sq. Ft	112 Sq. Ft	128 Sq. Ft	144 Sq. Ft	160 Sq. Ft	176 Sq. Ft	192 Sq. Ft	208 Sq. Ft	224 Sq. Ft	240 Sq. Ft	256 Sq. Ft	272 Sq. Ft	288 Sq. Ft	304 Sq. Ft	320 Sq. Ft	336 Sq. Ft	352 Sq. Ft	368 Sq. Ft	384 Sq. Ft	400 Sq. Ft	416 Sq. Ft	432 Sq. Ft	448 Sq. Ft	464 Sq. Ft	480 Sq. Ft	496 Sq. Ft	512 Sq. Ft
	33 ft.	82.5 Sq. Ft	99 Sq. Ft	115.5 Sq. Ft	132 Sq. Ft	148.5 Sq. Ft	165 Sq. Ft	181.5 Sq. Ft	198 Sq. Ft	214.5 Sq. Ft	231 Sq. Ft	247.5 Sq. Ft	264 Sq. Ft	280.5 Sq. Ft	297 Sq. Ft	313.5 Sq. Ft	330 Sq. Ft	346.5 Sq. Ft	363 Sq. Ft	379.5 Sq. Ft	396 Sq. Ft	412.5 Sq. Ft	429 Sq. Ft	445.5 Sq. Ft	462 Sq. Ft	478.5 Sq. Ft	495 Sq. Ft	511.5 Sq. Ft	528 Sq. Ft
	34 ft.	85 Sq. Ft	102 Sq. Ft	119 Sq. Ft	136 Sq. Ft	153 Sq. Ft	170 Sq. Ft	187 Sq. Ft	204 Sq. Ft	221 Sq. Ft	238 Sq. Ft	255 Sq. Ft	272 Sq. Ft	289 Sq. Ft	306 Sq. Ft	323 Sq. Ft	340 Sq. Ft	357 Sq. Ft	374 Sq. Ft	391 Sq. Ft	408 Sq. Ft	425 Sq. Ft	442 Sq. Ft	459 Sq. Ft	476 Sq. Ft	493 Sq. Ft	510 Sq. Ft	527 Sq. Ft	544 Sq. Ft
	35 ft.	87.5 Sq. Ft	105 Sq. Ft	122.5 Sq. Ft	140 Sq. Ft	157.5 Sq. Ft	175 Sq. Ft	192.5 Sq. Ft	210 Sq. Ft	227.5 Sq. Ft	245 Sq. Ft	262.5 Sq. Ft	280 Sq. Ft	297.5 Sq. Ft	315 Sq. Ft	332.5 Sq. Ft	350 Sq. Ft	367.5 Sq. Ft	385 Sq. Ft	402.5 Sq. Ft	420 Sq. Ft	437.5 Sq. Ft	455 Sq. Ft	472.5 Sq. Ft	490 Sq. Ft	507.5 Sq. Ft	525 Sq. Ft	542.5 Sq. Ft	560 Sq. Ft
	36 ft.	90 Sq. Ft	108 Sq. Ft	126 Sq. Ft	144 Sq. Ft	162 Sq. Ft	180 Sq. Ft	198 Sq. Ft	216 Sq. Ft	234 Sq. Ft	252 Sq. Ft	270 Sq. Ft	288 Sq. Ft	306 Sq. Ft	324 Sq. Ft	342 Sq. Ft	360 Sq. Ft	378 Sq. Ft	396 Sq. Ft	414 Sq. Ft	432 Sq. Ft	450 Sq. Ft	468 Sq. Ft	486 Sq. Ft	504 Sq. Ft	522 Sq. Ft	540 Sq. Ft	558 Sq. Ft	576 Sq. Ft
Type "B" (2 Posts) 1.6 CY Conc. 98 Lbs Bar Steel												Type "C" (2 Posts) 1.8 CY Conc. 100 Lbs Bar Steel				Type "D" (2 Posts) 1.8 CY Conc. 112 Lbs Bar Steel			Type "C" (3 Posts) 2.7 CY Conc. 150 Lbs Bar Steel			Type "D" (3 Posts) 2.7 CY Conc. 168 Lbs Bar Steel							
STEEL POST SIZE "A" - W10" x 12" "B" - W12" x 16" "C" - W12" x 19" "D" - W12 x 22"																													

DETERMINATION OF HIGH STRENGTH
STRUCTURAL STEEL SIGN SUPPORT TYPE

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/5/10 PLATE NO. A3-3.2



GENERAL NOTES

1. For a 2 post installation, S equals $3L/5$, but shall not be less than 9 ft.
2. For a 3 post installation, S equals $5L/7$, but shall not be less than 18 ft., and the space between any two posts shall not be less than 9 ft.
3. Unless noted in the plan, the sign offset distance shall be a minimum of 17'-6", desirable 30'-0".
4. The (±) tolerance shown on this sheet is 3 in.
5. The vertical sign height clearance detailed is measured from the bottom of the sign to the near edge of pavement.
6. Post lengths shown in the miscellaneous quantities are estimated lengths. The contractor shall verify post lengths at the time of final grading.
7. Refer to the Traffic Guidelines Manual for further guidance on minimum vertical clearance requirements.

* Clearance is 8'-3" (±) when the secondary sign is 3 ft. or less in height. For secondary signs larger than 3 ft., the clearance to the bottom of the secondary sign shall be 5'-3" (±).

TYPICAL INSTALLATION OF TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

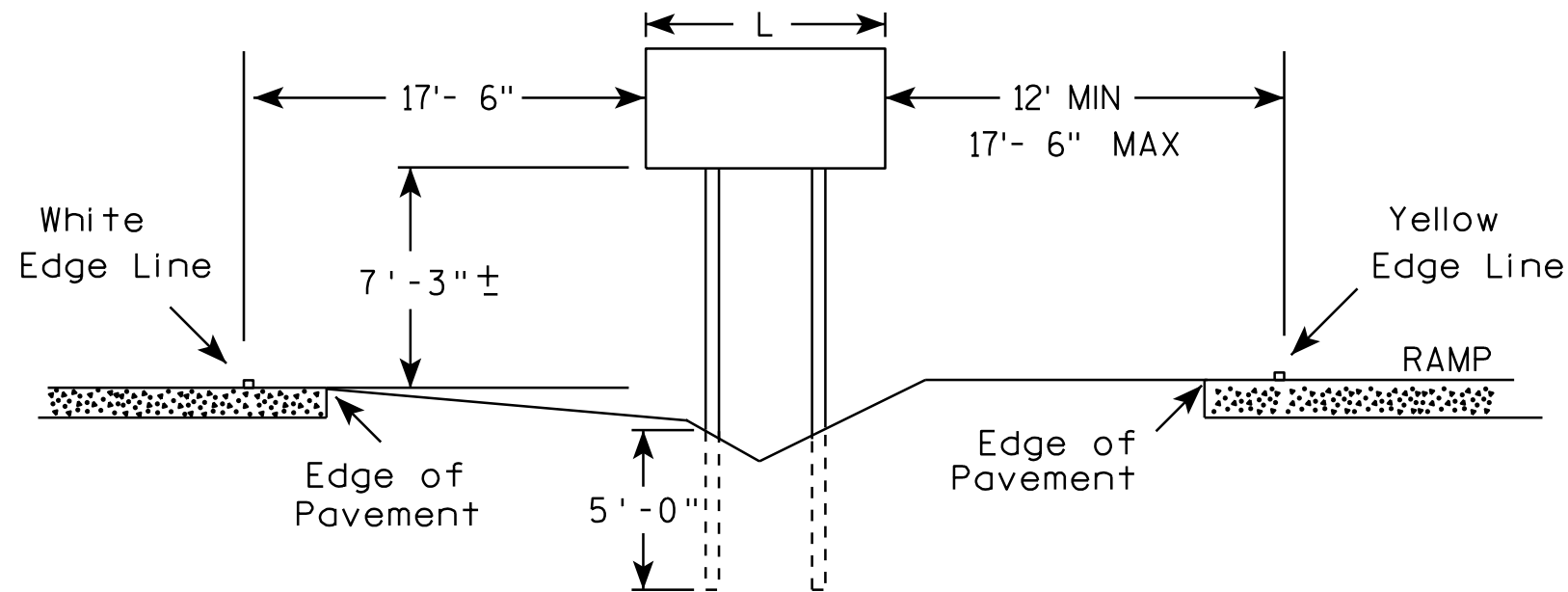
DATE 4/02/08

PLATE NO. A4-1.9

PROJECT NO:

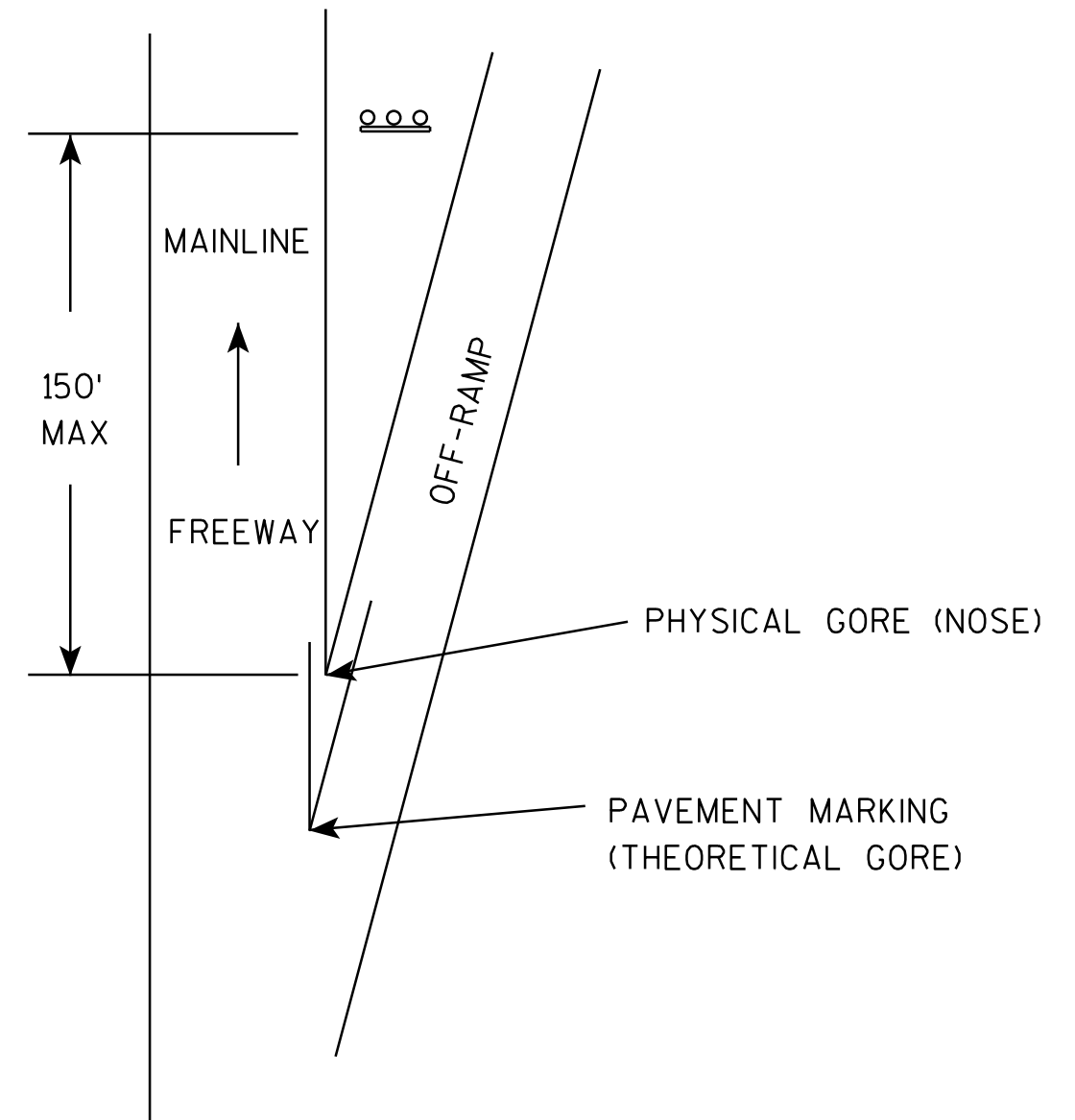
SHEET NO:

E



GENERAL NOTES

1. The 150 foot distance from the physical gore (where pavement ends) will normally provide the offsets as shown.
2. If roadway geometrics permit, the sign may be closer than the 150 foot distance as long as the offsets are maintained.
3. At no time shall the location be greater than 150 feet. If the normal offsets cannot be maintained, they can be reduced to 6 feet from the edge of the paved shoulder (both freeway and ramp).
4. The offset from edge of sign to the yellow edge line on the ramp is shown as a minimum of 12 feet and a maximum of 17 feet, 6 inches. Preference is adhering to the maximum rather than the minimum dimension.
5. When L is equal to or exceeds 10 feet, use 3 posts as per A4-4.
6. The ($\pm$) tolerance for the mounting height is 3 inches.



TYPICAL INSTALLATION
OF TYPE II SIGNS ON
WOOD POSTS IN GORE

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

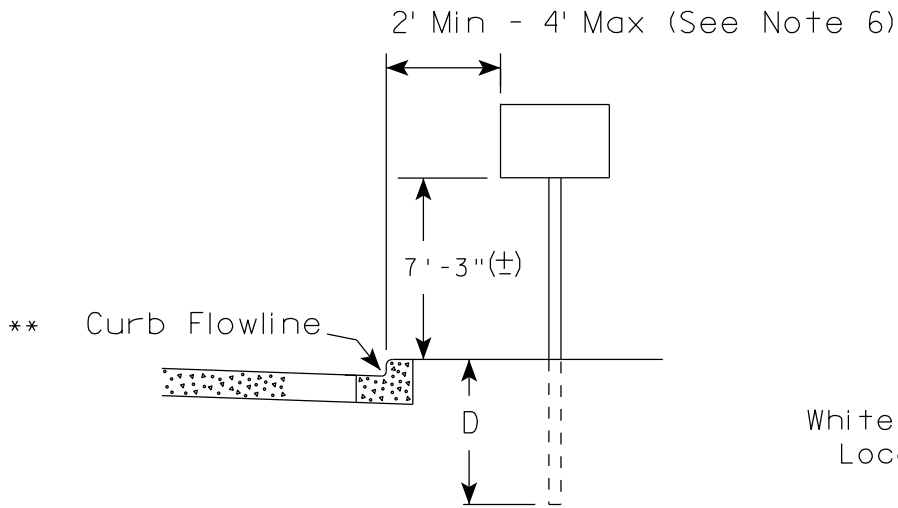
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PROJECT NO:

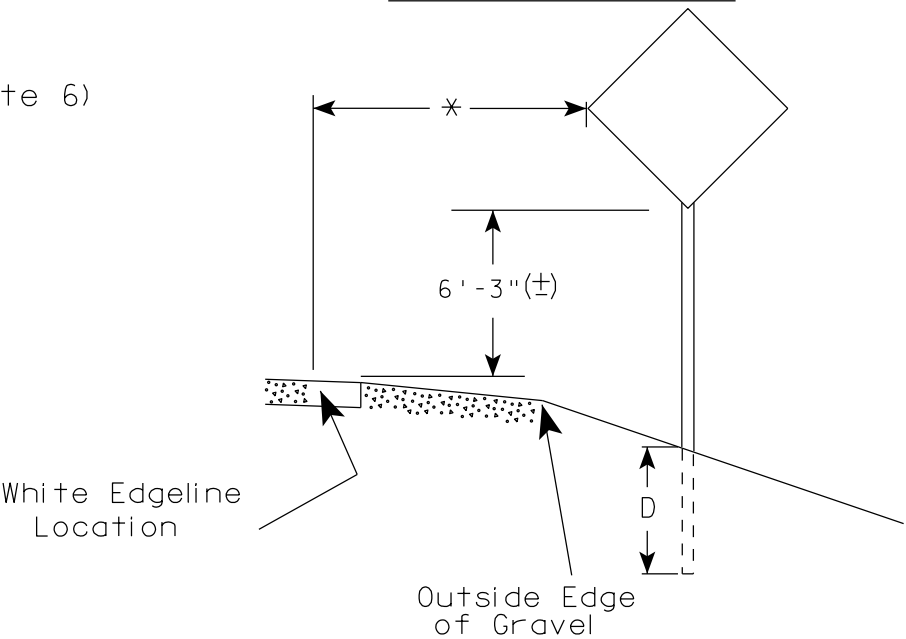
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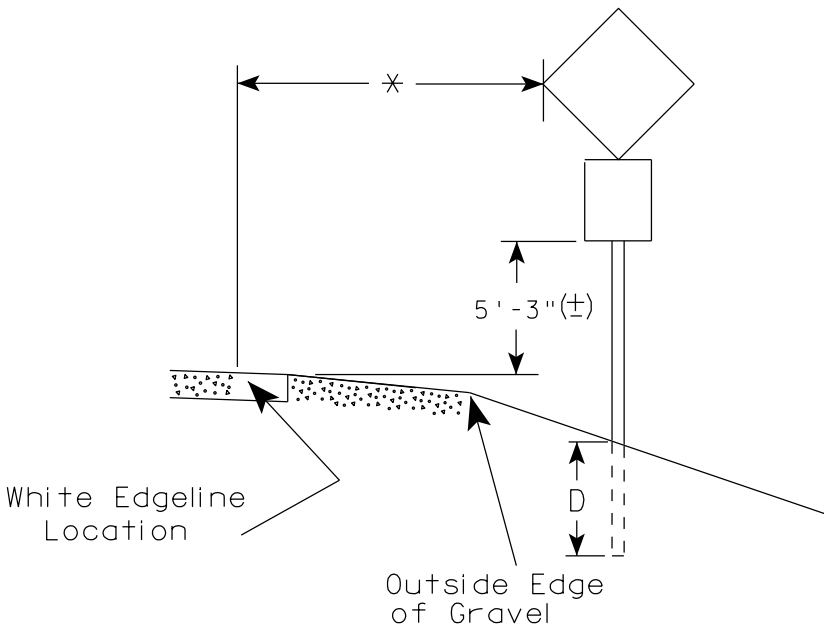
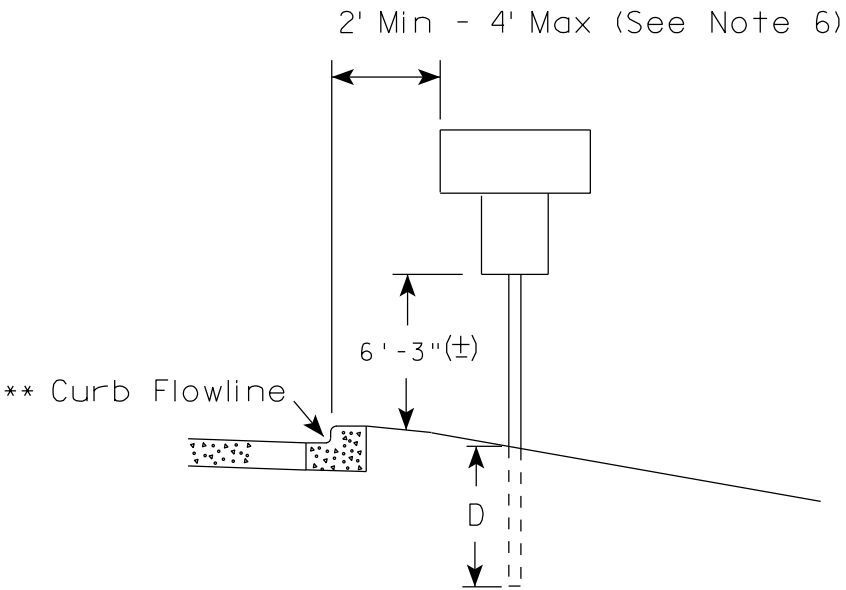
URBAN AREA



RURAL AREA (See Note 2)



- GENERAL NOTES
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
 2. If signs are mounted on barrier wall, see A4-10 sign plate.
 3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
 4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. The (±) tolerance for mounting height is 3 inches.
 8. Folding 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" (±).



POST EMBEDMENT DEPTH

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

* * 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.

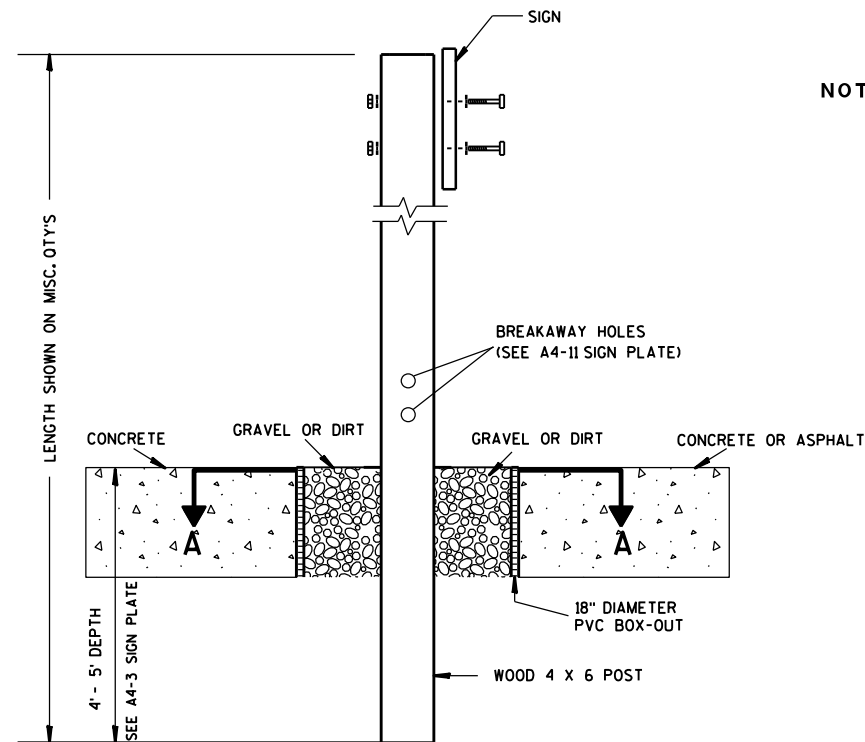
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

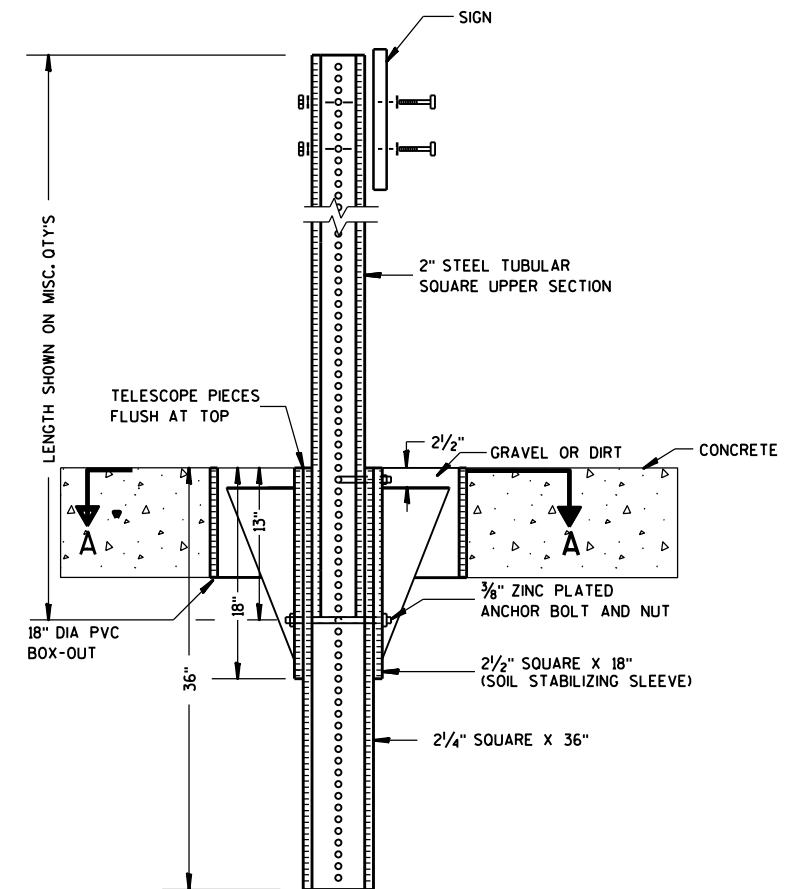
DATE 7/23/15 PLATE NO. A4-3.20



ELEVATION VIEW

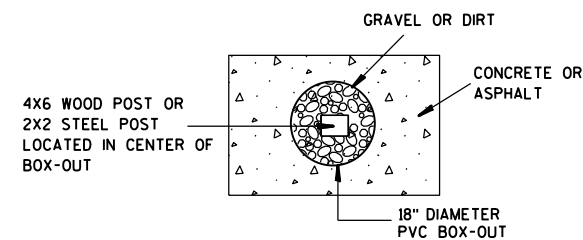
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

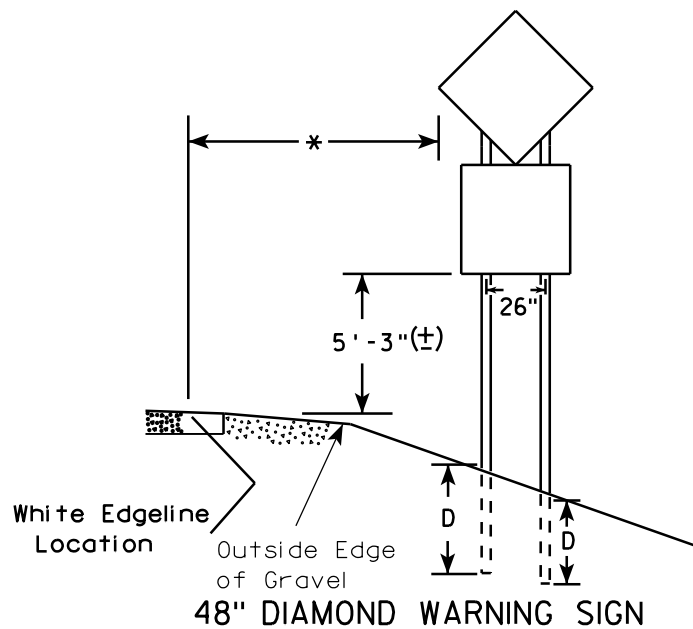
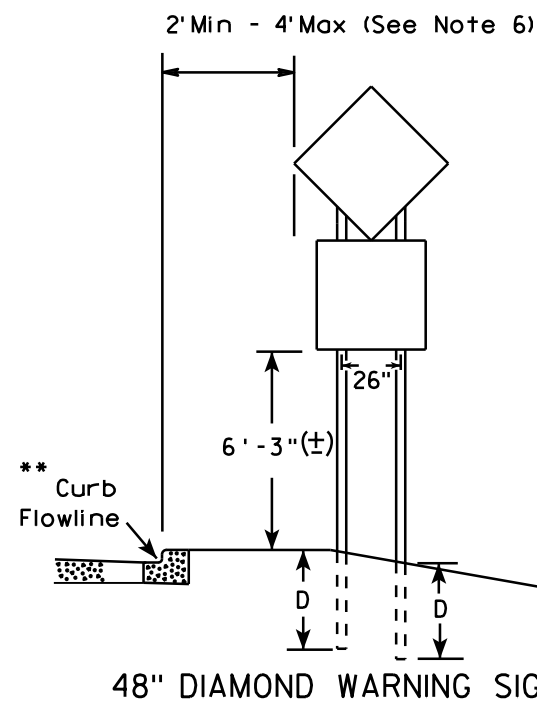
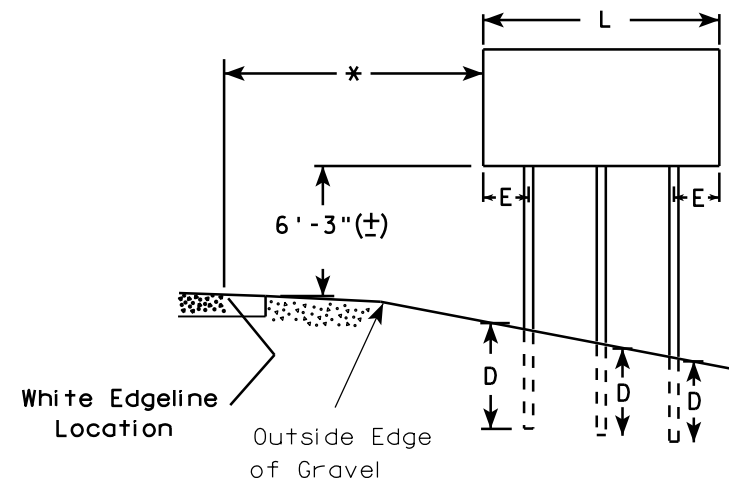
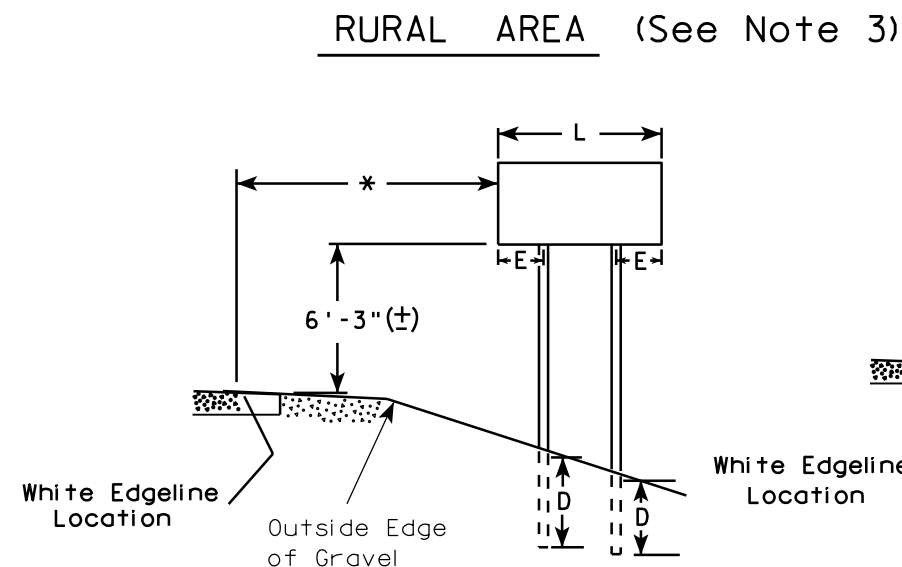
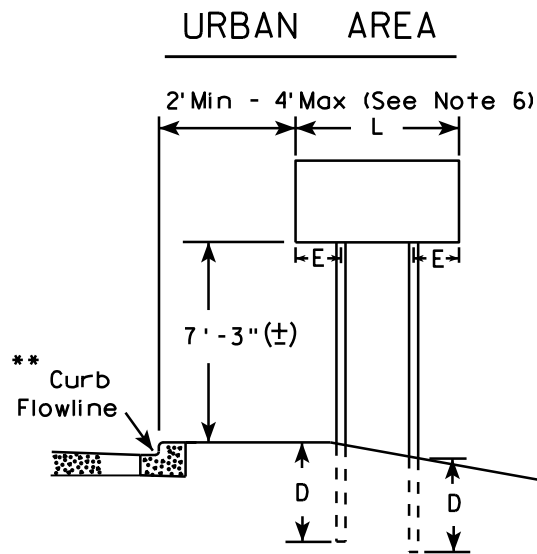
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



- GENERAL NOTES**
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding 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.

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

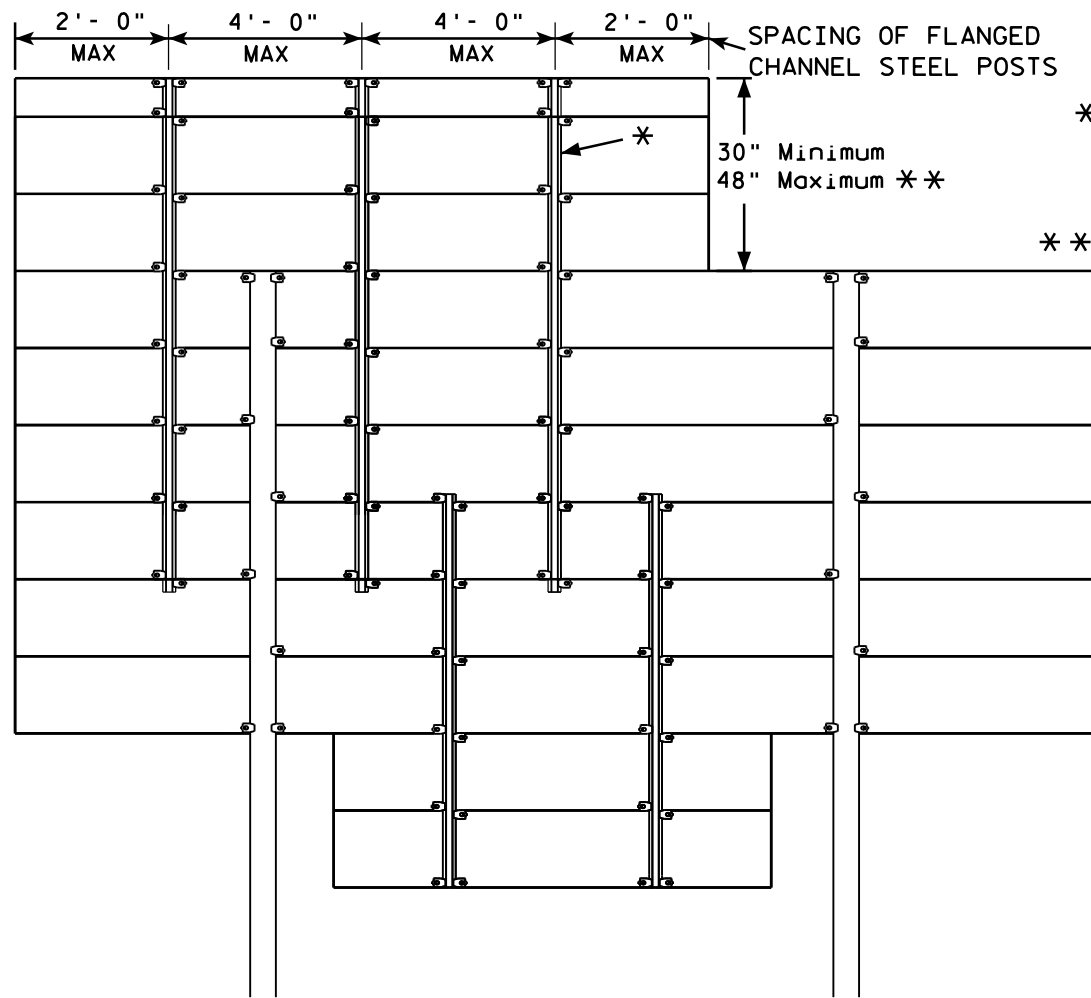
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

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

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 7/23/15	PLATE NO. A4-4.14

GROUND MOUNTED SIGN

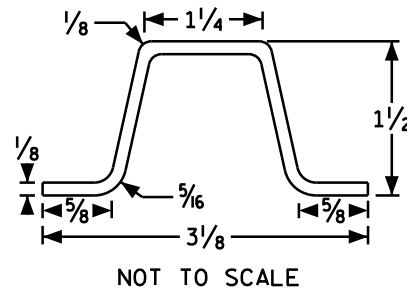


* = 2.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

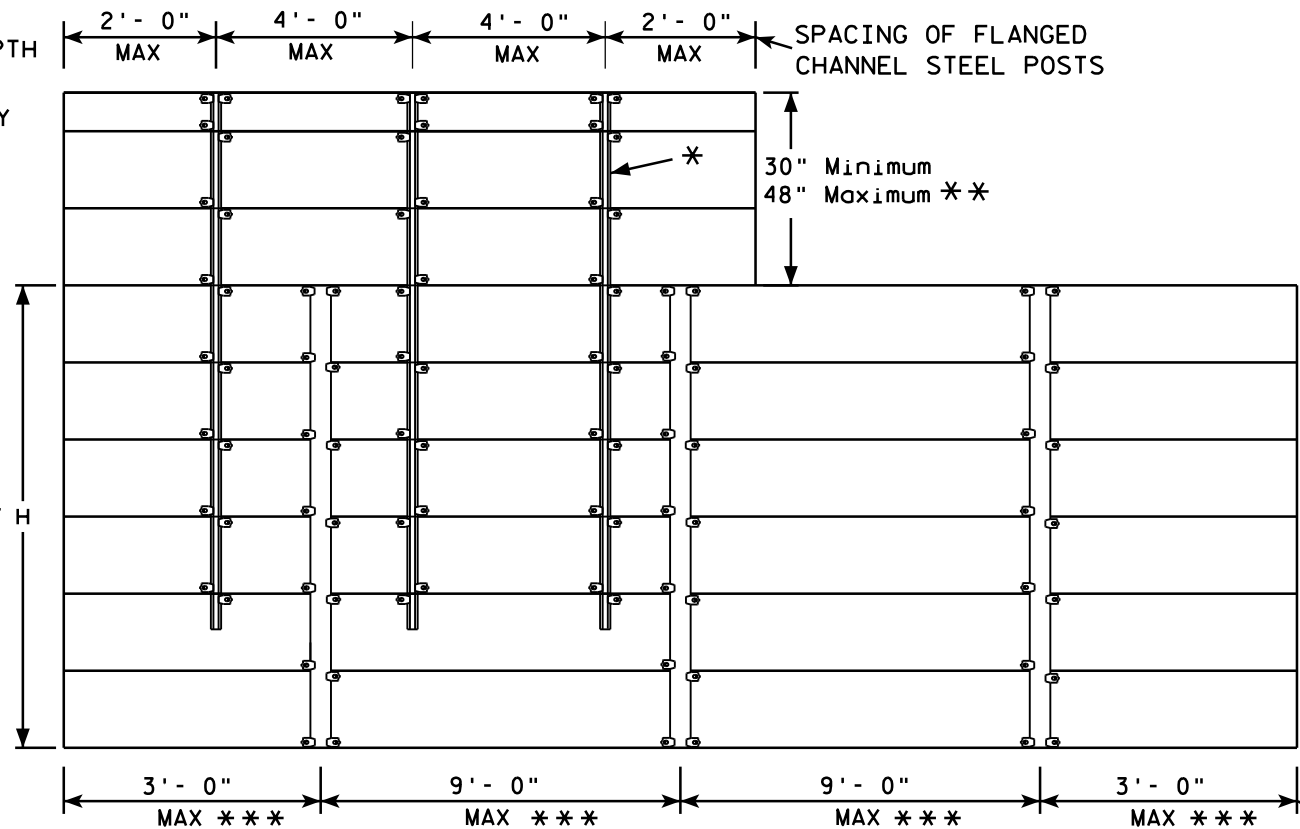
** = FOR 48" HEIGHT PANELS ON OVERHEAD STRUCTURES, ENTIRE SIGN SHALL BE CENTERED VERTICALLY ABOUT THE DEPTH OF THE TRUSS.

*** THESE SPACING DISTANCES SHALL ONLY BE USED WHEN THE MAIN SIGN HAS A MAXIMUM HEIGHT (DIMENSION H) OF 16 FT OR LESS. FOR SIGNS WITH A HEIGHT OF GREATER THAN 16 FT, STRUCTURAL CALCULATIONS SHALL BE PERFORMED.

FLANGE CHANNEL DETAIL



SIGN BRIDGE MOUNTED SIGN



SPACING OF ALUMINUM SIGN SUPPORTS 5" X 3.5" X 3.7 LBS./ft.

GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:
PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
PANEL LENGTH 9'-0" - 12'-0" = 3 CHANNELS
PANEL LENGTH 13'-0" OR MORE = 4 CHANNELS
If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.

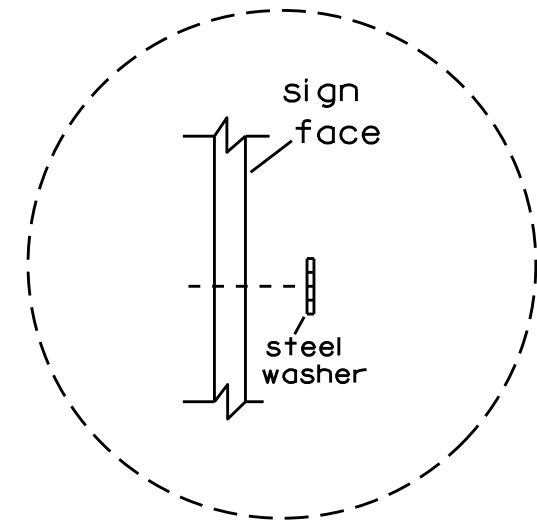
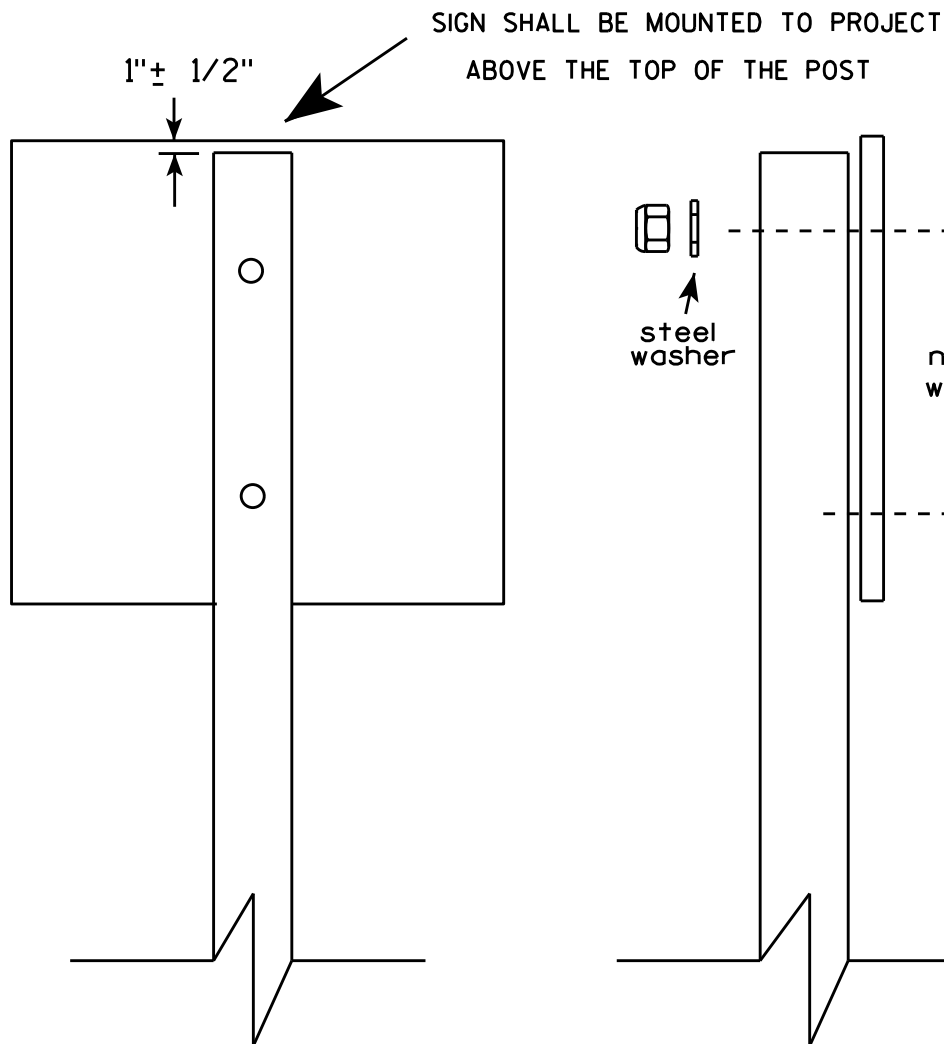
3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)
6. Structural steel sign supports shall extend to the top of the main signs, as shown on the above details.

ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/05/13 PLATE NO. A4-6.12



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

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

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

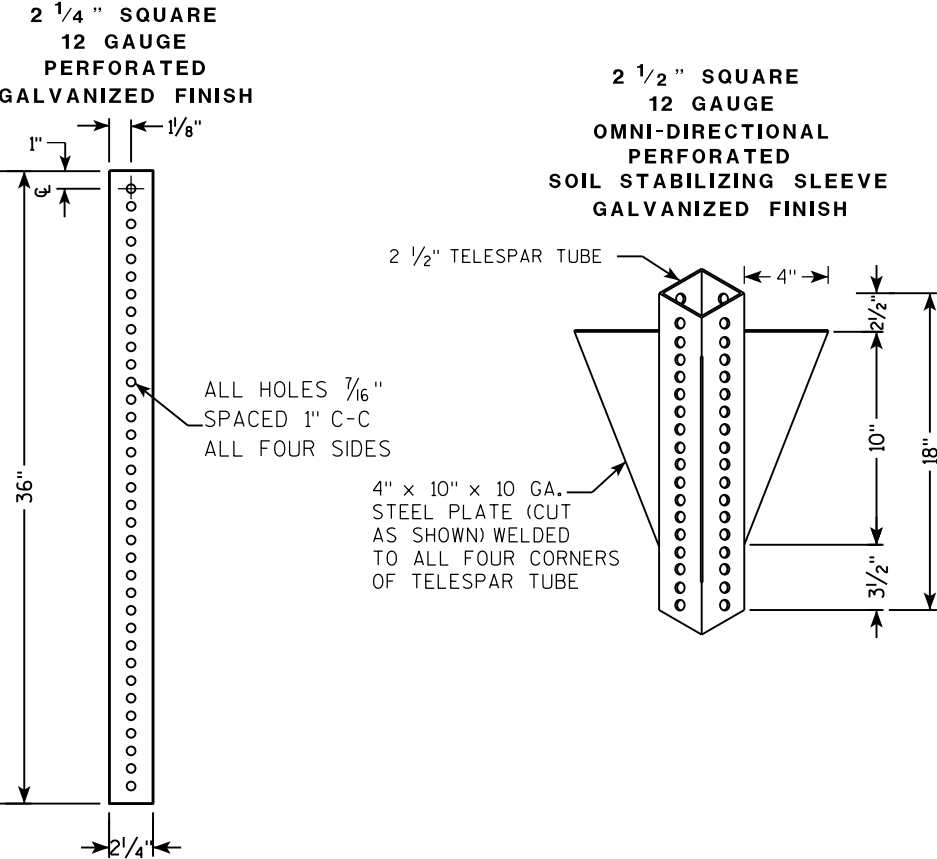
- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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.

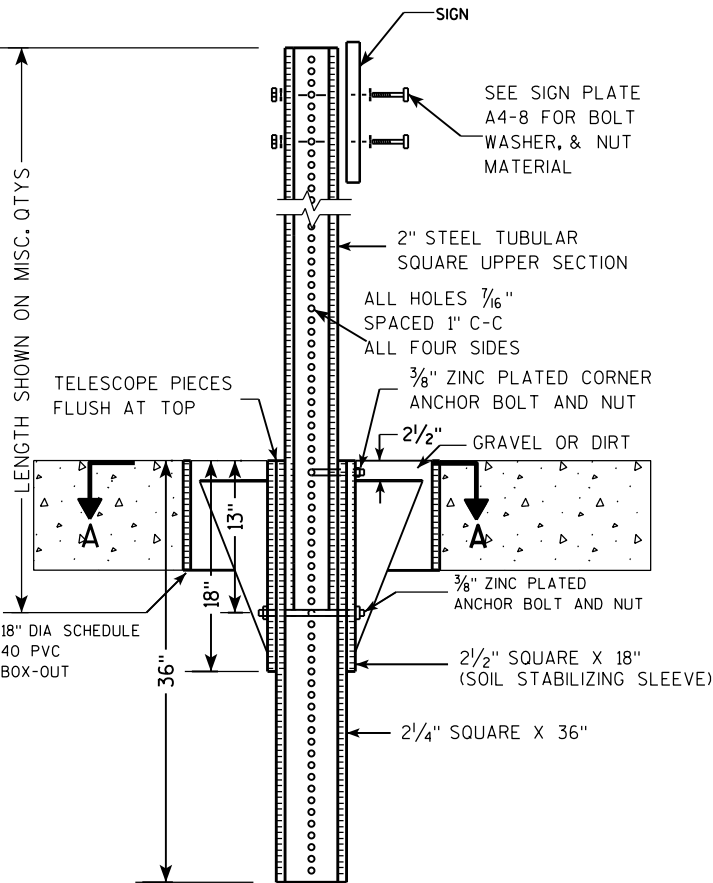
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{8}$ " X 1-3/4" Length w/ nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (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 $\frac{3}{8}$ " 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.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/5/16	PLATE NO. A4-8.8

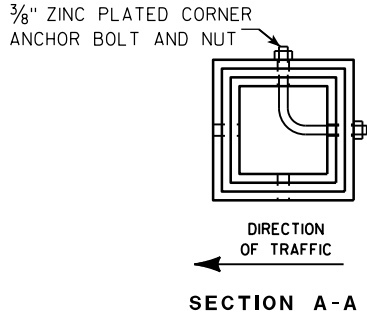
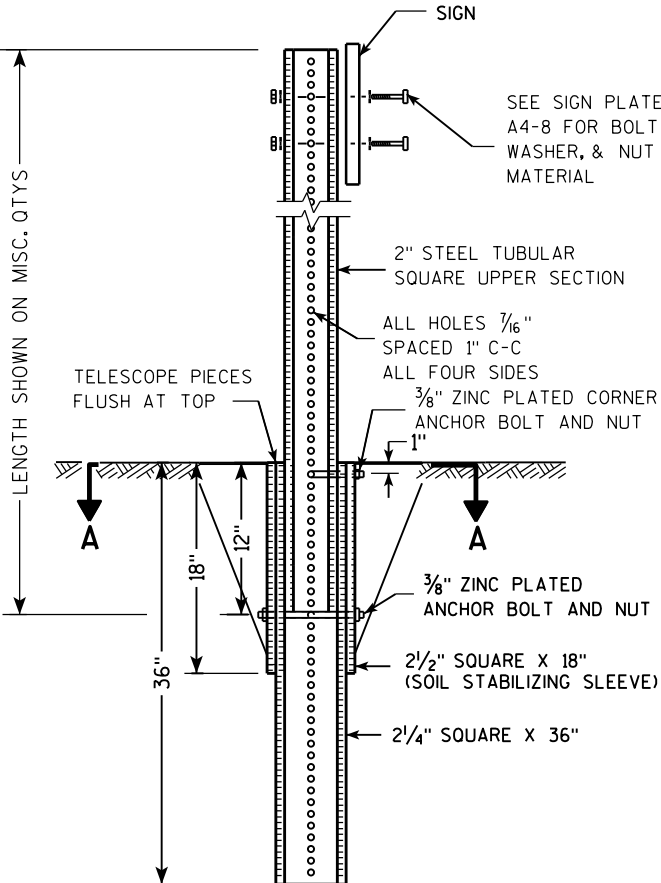
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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).

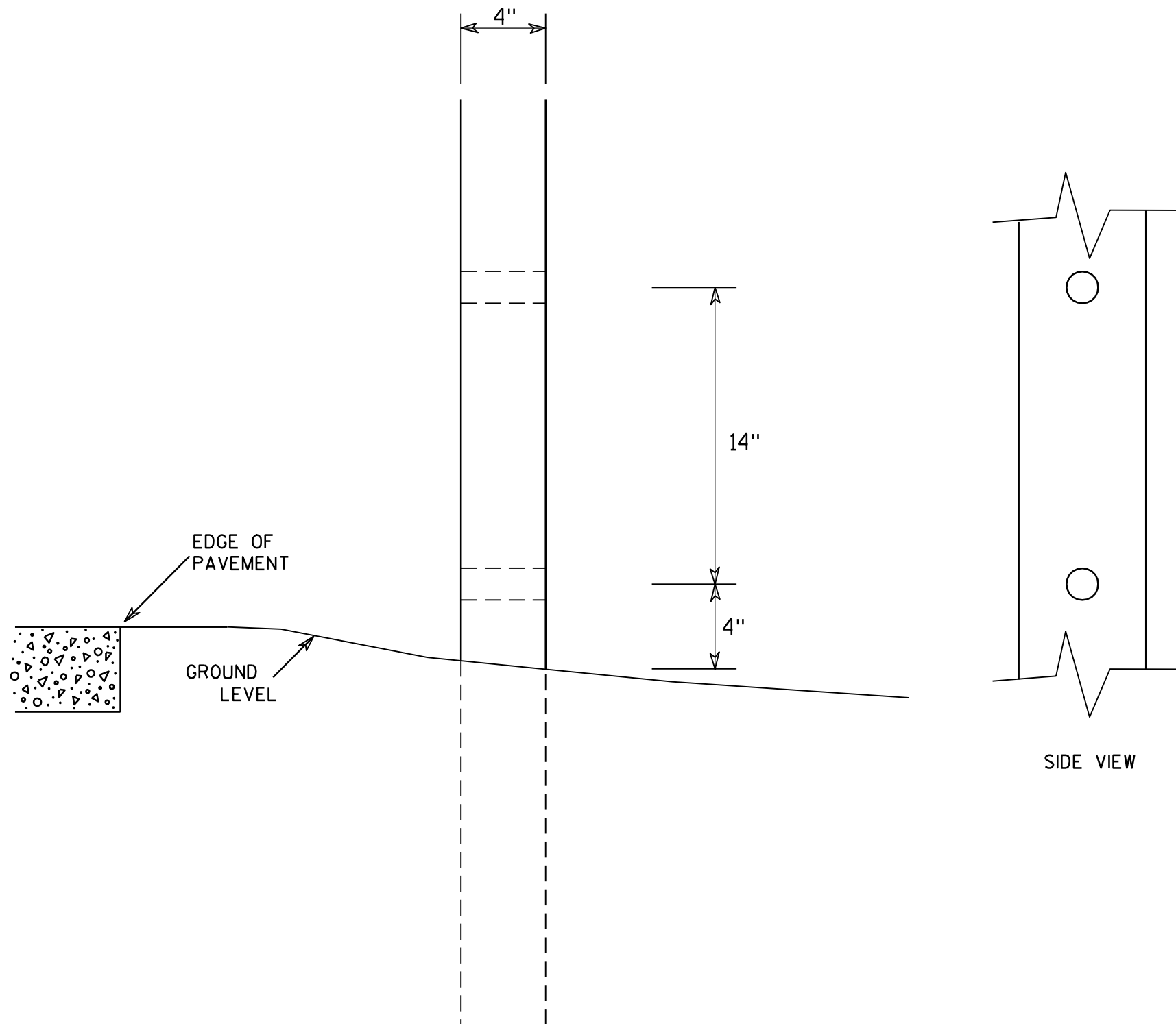
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

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:

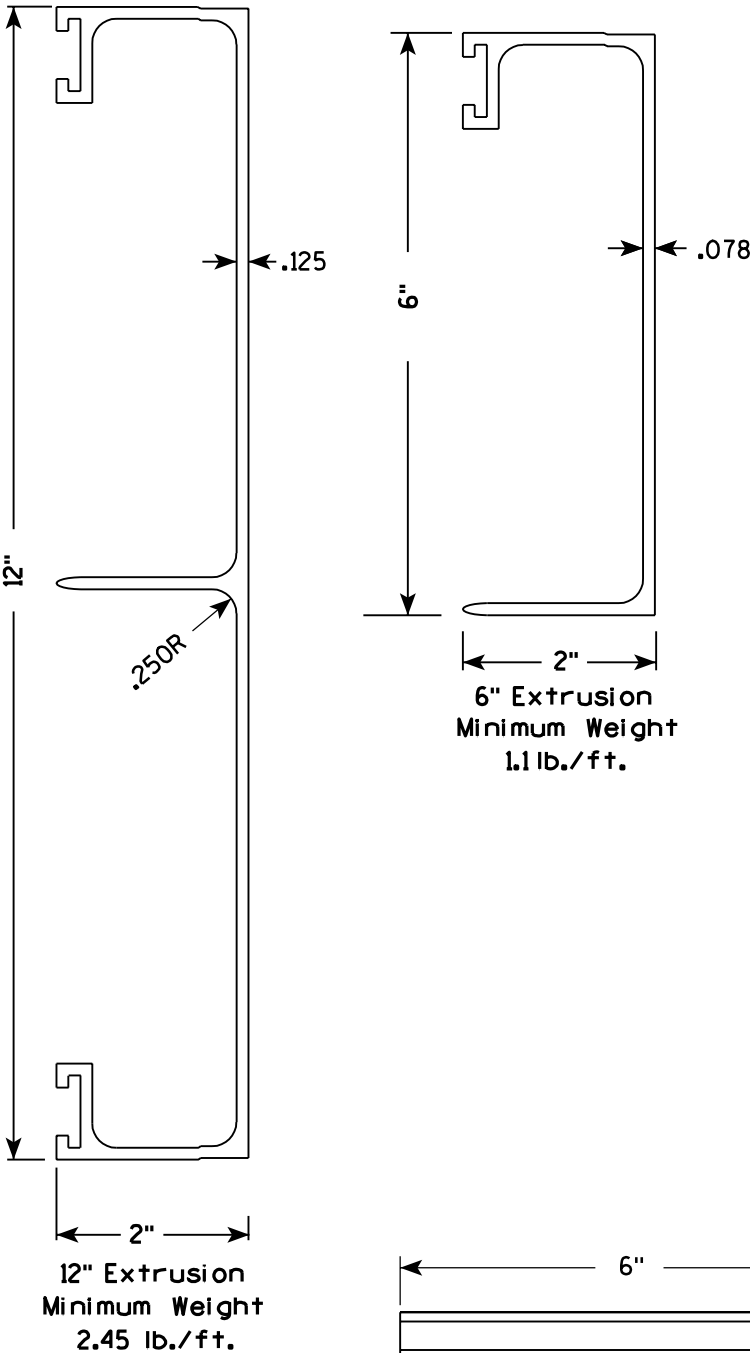
COUNTY:

SHEET NO:

E

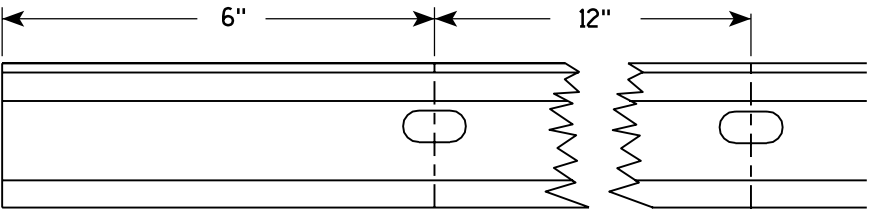
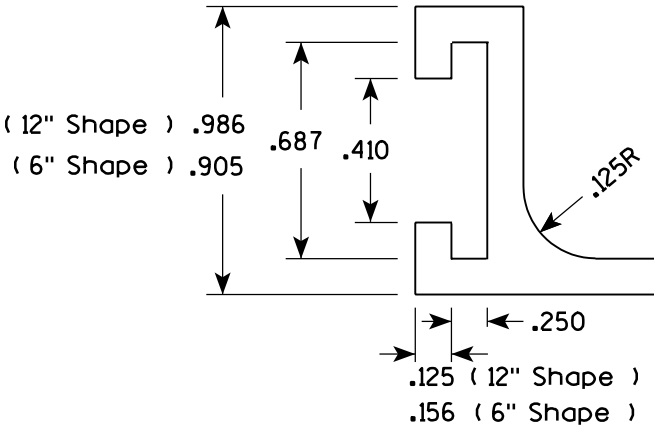
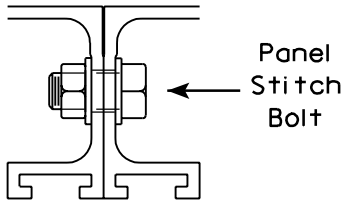
Extruded Shape

Hardware

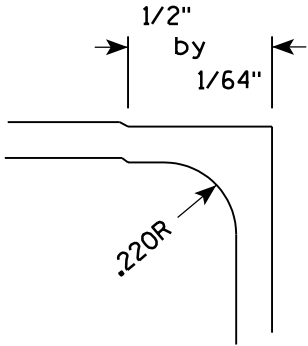


STITCH BOLT, WASHER & NUT

The hardware includes:
3/8 " - 16 X 3/4 " Economy Bolt 2024-T4 alloy
3/8 " - Stainless steel stop nut
3/8" X .064 Flat Washers, Alclad 2024-T4 alloy

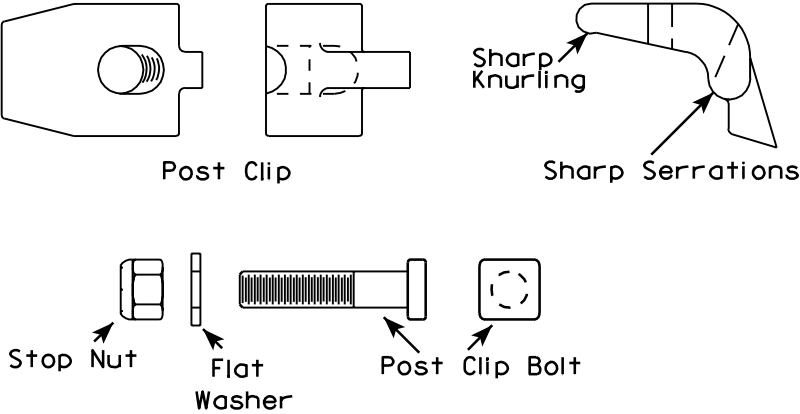


Punch 7/16" x 7/8" oval holes beginning 6" in from end of extrusion 12" CC on both edges of 6" and 12" panels.



POST CLIP, POST CLIP BOLT, WASHER & NUT

Post Clip shall be Alum. Alloy 356-T6
Post Clip Bolt shall be Stainless Steel.
Flat washer shall be 3/8" X .091, Stainless Steel.
Stop nut shall be stainless steel.



NOTES

1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.

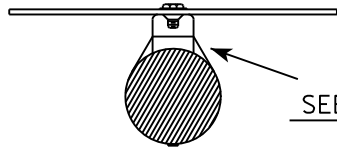
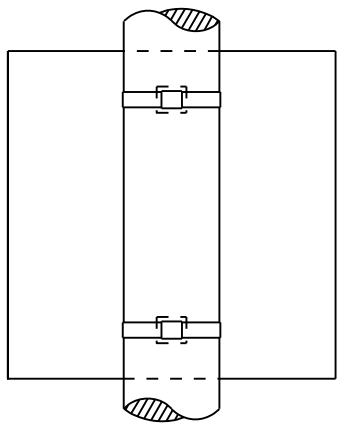
ALUMINUM EXTRUSIONS FOR
TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Chester J. Spang*
for State Traffic Engineer
DATE 11/18/99 PLATE NO. A5-2.9

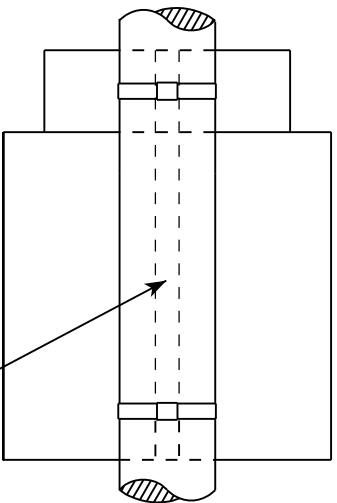
BANDING

SINGLE SIGN

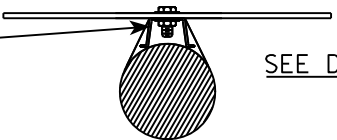


SEE DETAIL A

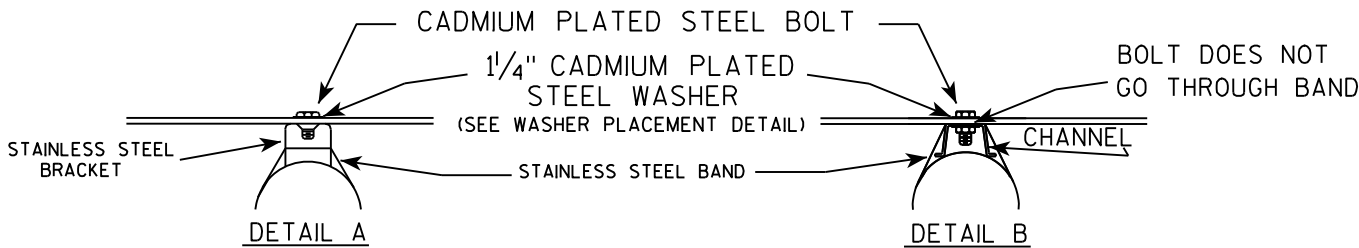
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



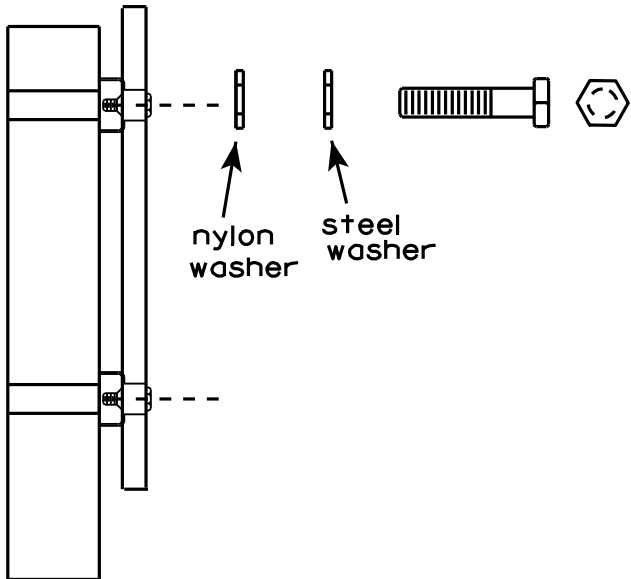
SEE DETAIL B



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

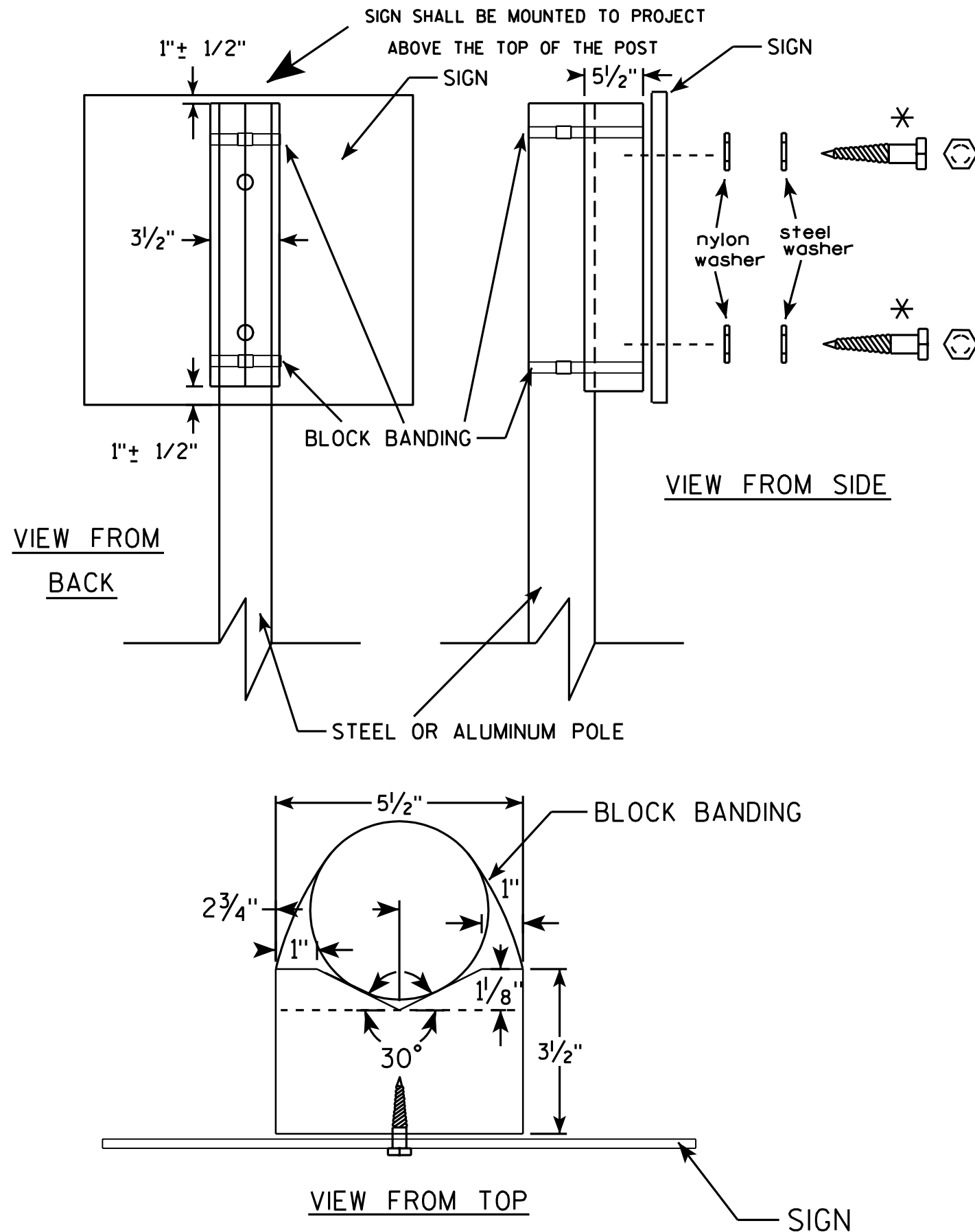
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 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 1 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

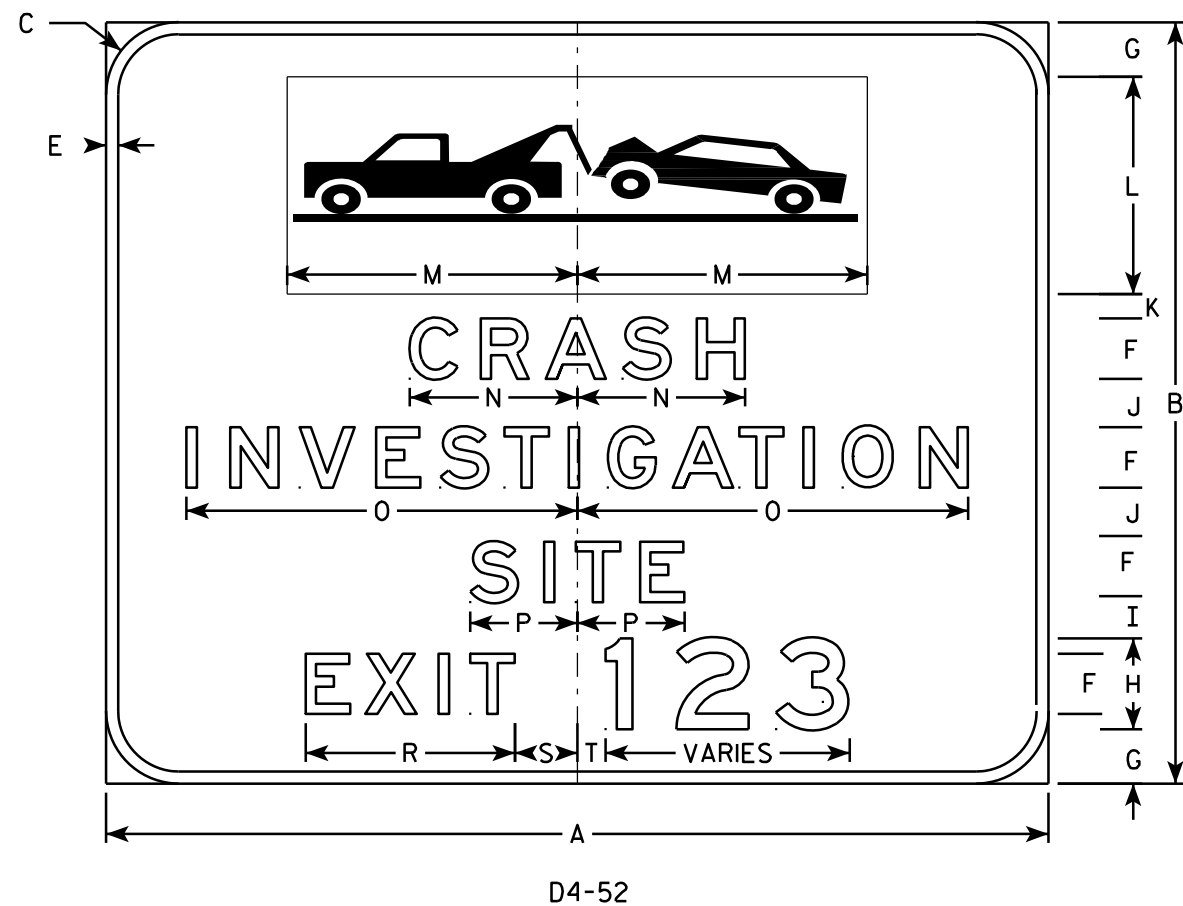
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

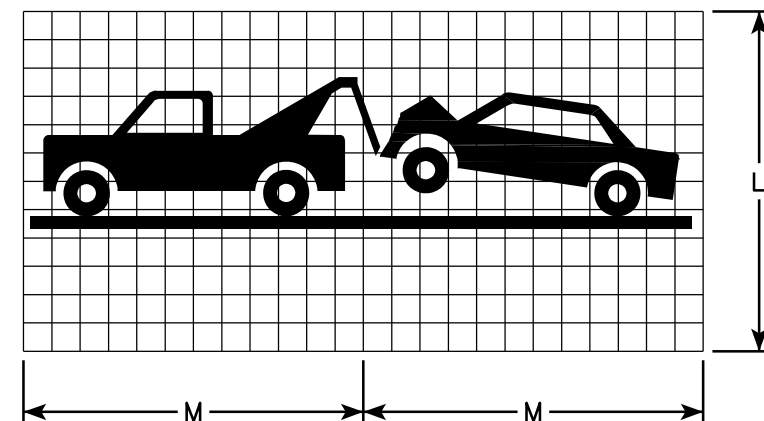
SHEET NO:

E



NOTES

1. Sign is Type I - Type SH Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - BLUE
Message - WHITE
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Logo shall be white in color mounted on 96 x 36 .040 aluminum with Blue SH Reflective Background sheeting.



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	156	126	12		2	10	9	15	7	8	4	36	48	27 ¾	64 ¾	17 ¾		34 ⅝	10 ⅜	4 ⅝							136.5
3																											
4																											
5																											

STANDARD SIGN
D4-52

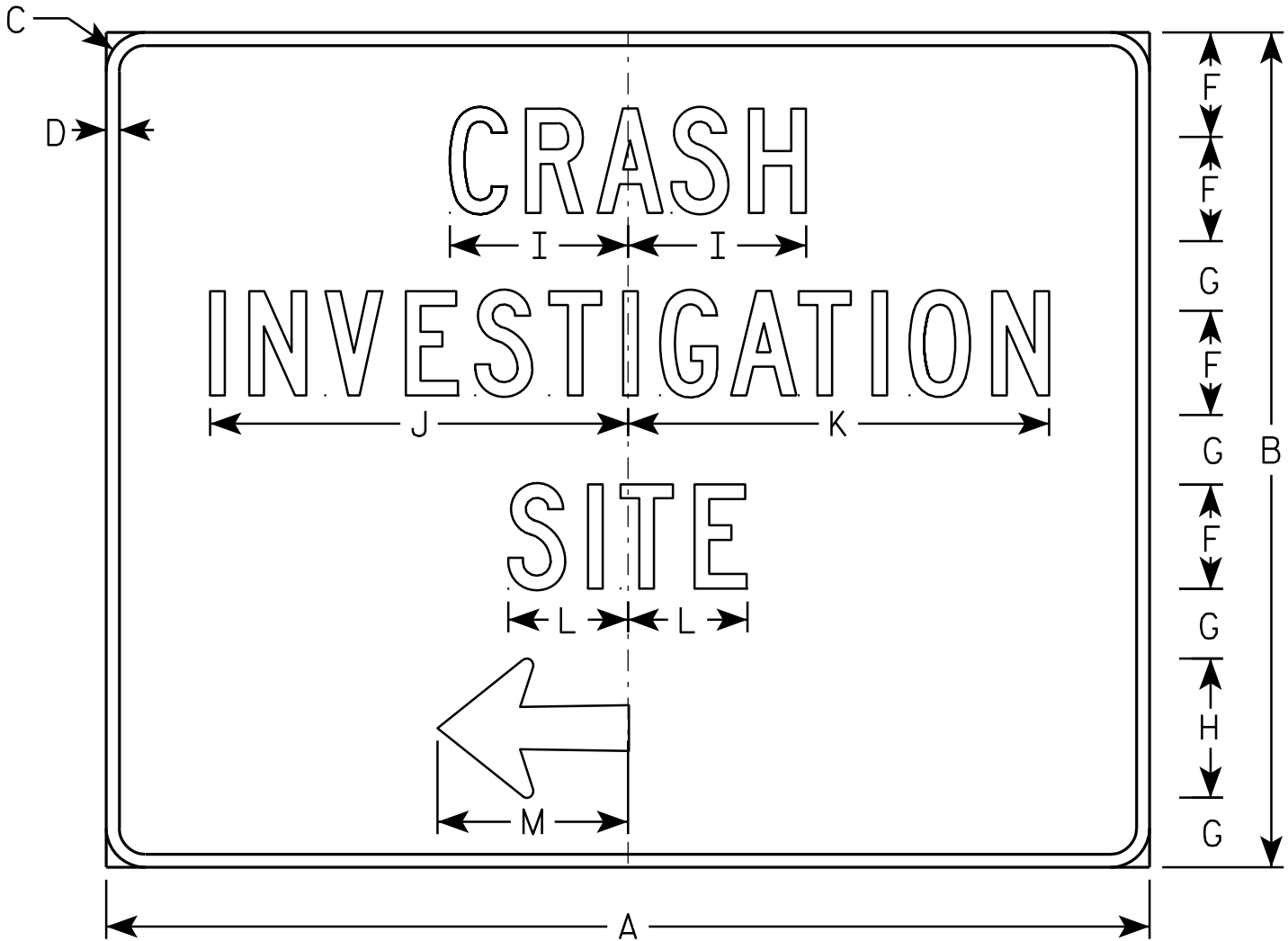
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 4/14/2011 PLATE NO. D4-52.1

NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
 - Background - BLUE
 - Message - WHITE
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. D4-54R is same as D4-54L except arrow is reversed.
- 6. Arrow is from A1-2 Lower Case 4 1/2 Series D & E



D4-54L

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	60	48	2 1/4	3/4		6	4	8	10 1/4	24	24 1/4	6 7/8	11														20.0
3																											
4																											
5																											

STANDARD SIGN

D4-54 L & R

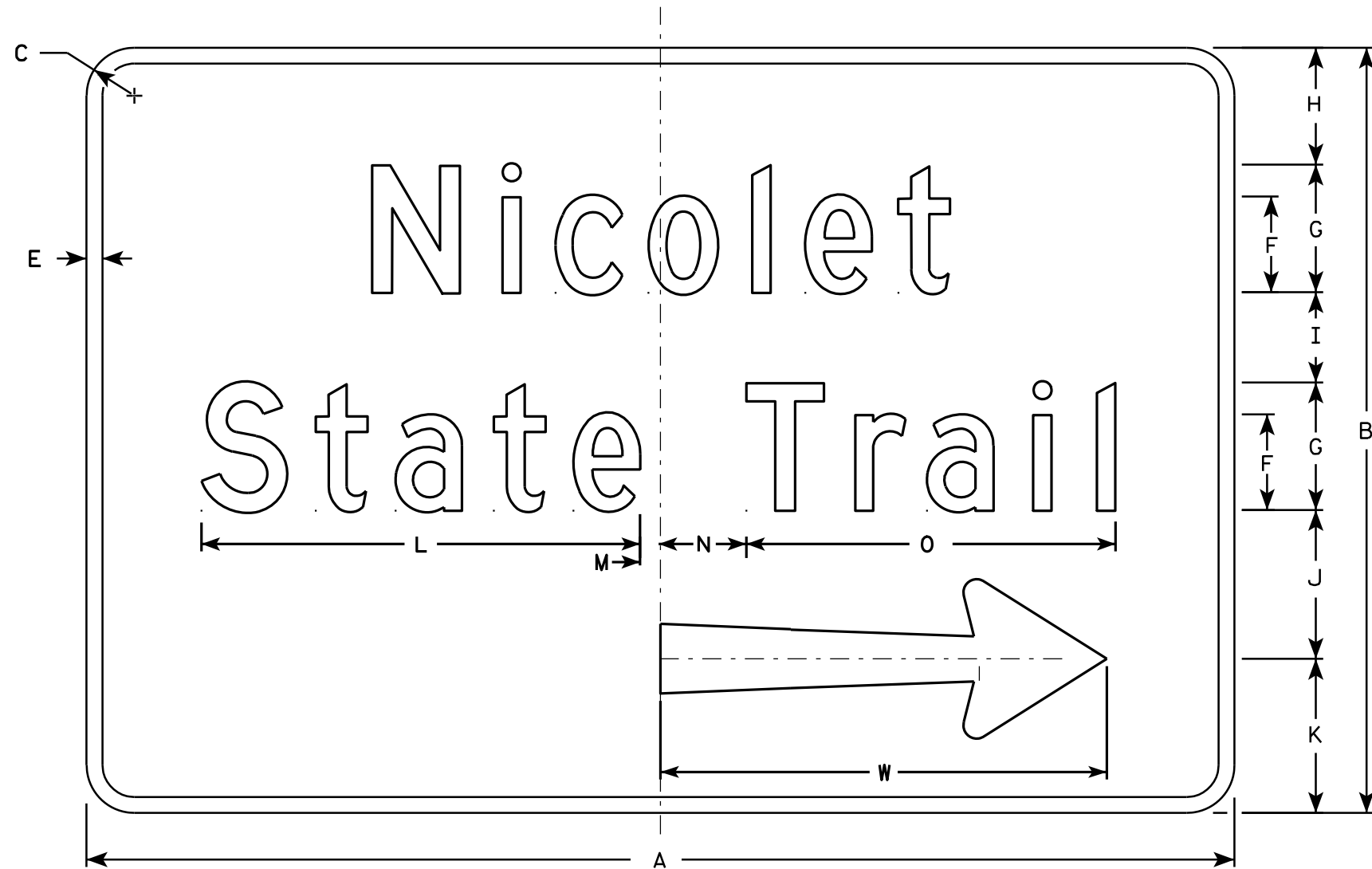
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*

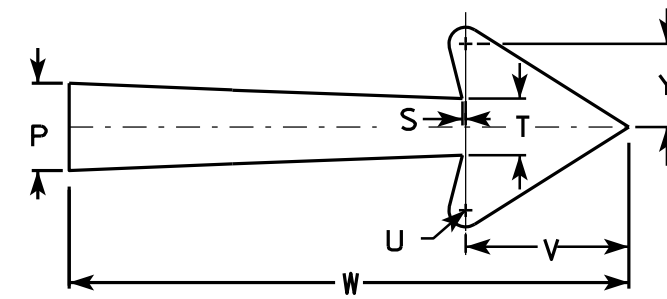
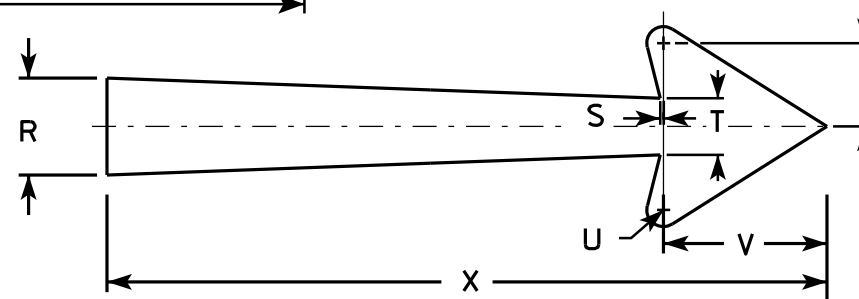
For State Traffic Engineer

DATE 1/24/2011 PLATE NO. D4-54.1

7



D7-95R



Arrow Details

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Brown
Message - White
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate name and optically adjust spacing to achieve proper balance. When necessary to accommodate name, lengthen board by 6" increments. Minimum sign width is 54".
6. Use 21" arrow (dimension W) for lengths of 54" to 72". Use 27" arrow (dimension X) for 78" and longer.
7. D7-95L is the same as D7-95R except the arrow is reversed.

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
1																										
2	varies	36	2 1/4		3/4	4 1/2	6	5 1/2	4 1/4	7	7 1/4	20 5/8	7/8	4 1/8	17 3/8	3 1/4		3 5/8	1/8	2 1/8	5/8	6 1/8	21	27	3 1/8	
3																										
4																										
5																										

STANDARD SIGN
D7-95

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/23/11 PLATE NO. D7-95.1

7

Metric equivalent
for this sign is:

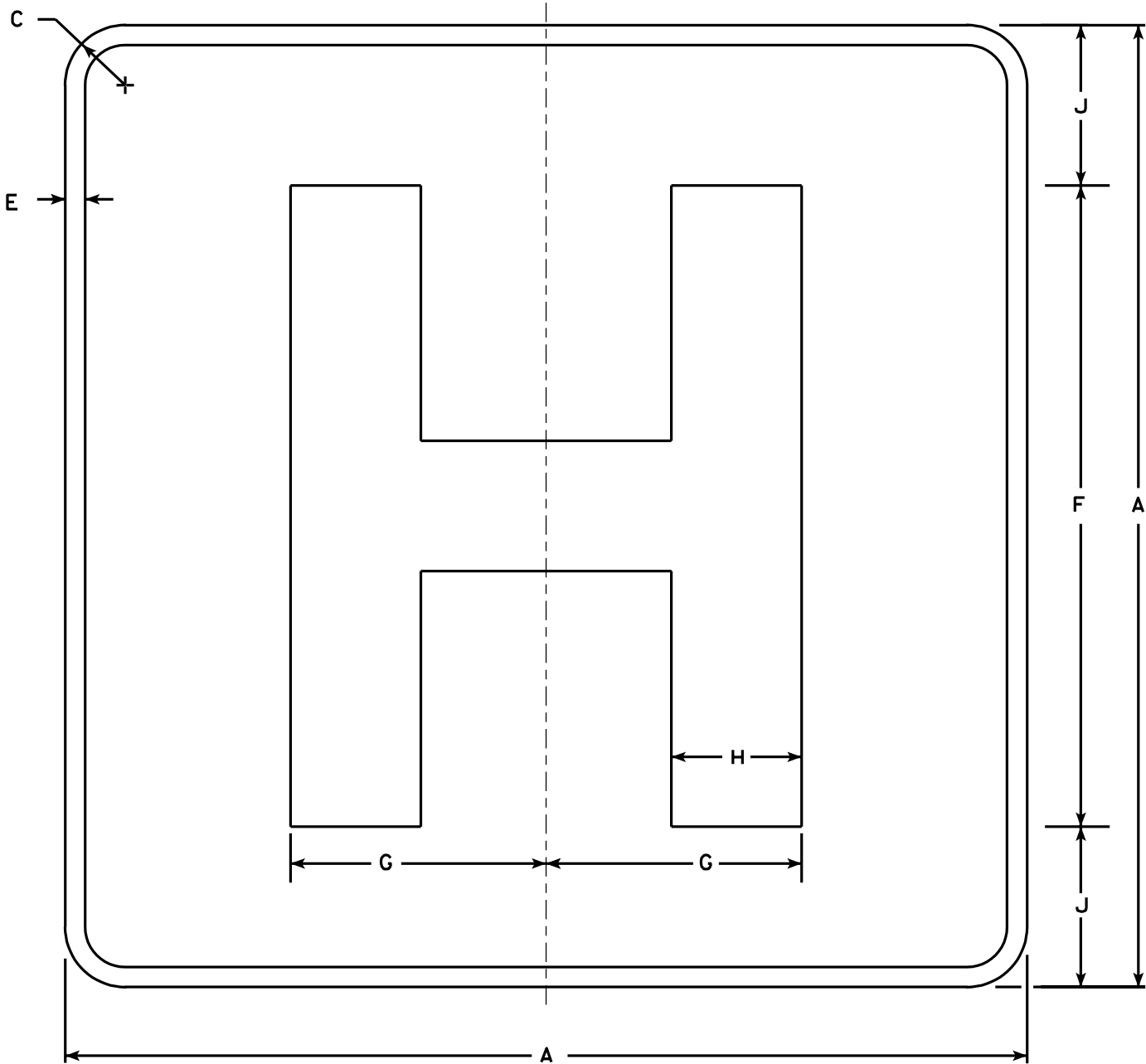
SIZE	
1	450 mmX 450 mm
2	600 mmX 600 mm
3	900 mmX 900 mm
4	X
5	X

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

PROJECT NO:

SHEET NO:

E



D9-2

NOTES

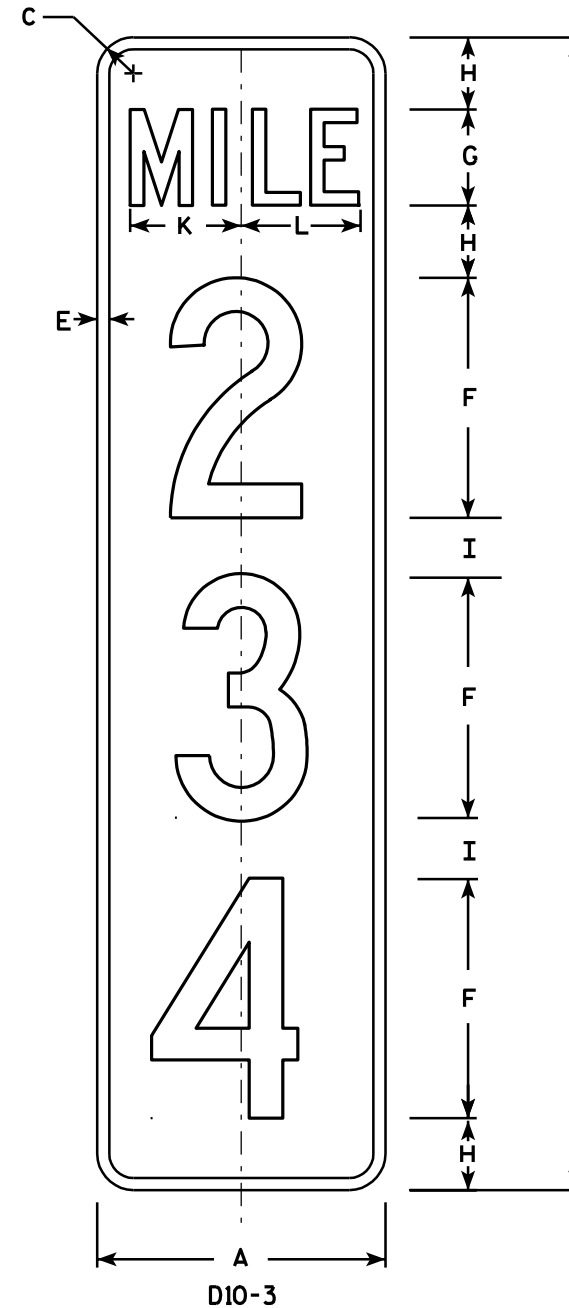
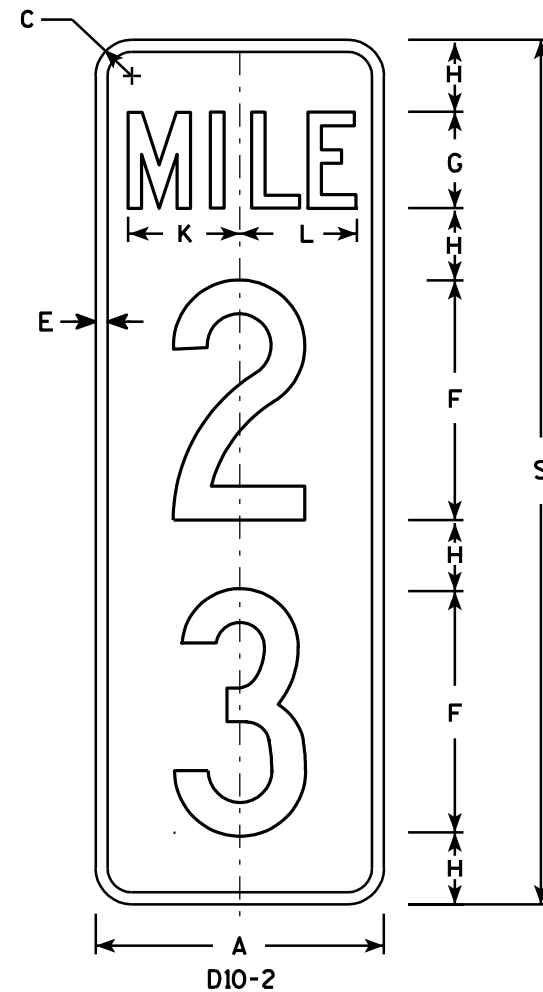
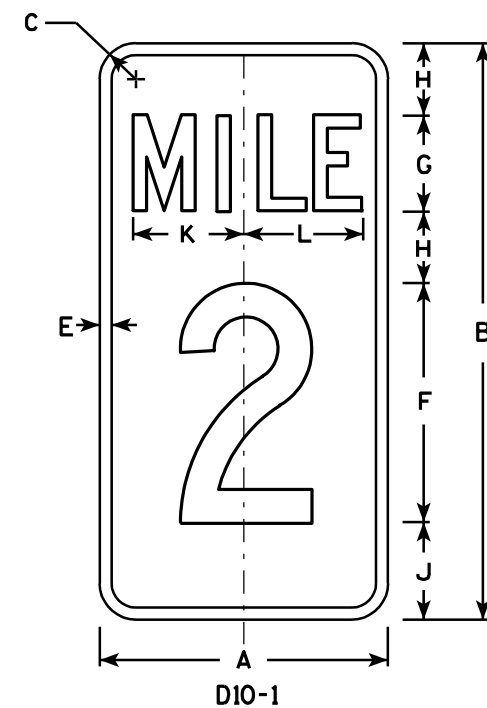
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Blue
Message - White - Type H Reflective
3. Message Series - E Modified
4. Corners may be square or rounded when base material is plywood but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

STANDARD SIGN
D9-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Chester J. Spang
for State Traffic Engineer

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



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
 - Background - Green
 - Message - White - Type H Reflective
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. Optically adjust numerals about the centerline of the sign to achieve proper balance.

7

Metric equivalent
for this sign is:

PHY. SIZE	
12 X 24	300 mm X 600 mm
12 X 36	300 mm X 900 mm
12 X 48	300 mm X 1200 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3																										
4	12	24	1 1/2		1/2	10	4	3	2 1/2	4	4 5/8	4 7/8							36	48						
5	12	24	1 1/2		1/2	10	4	3	2 1/2	4	4 5/8	4 7/8							36	48						

D10-1	D10-2	D10-3
Area sq. ft.	Area sq. ft.	Area sq. ft.
2.0	3.0	4.0
Area m ²	Area m ²	Area m ²
.19	.28	.38

STANDARD SIGN
D10-1 , D10-2 & D10-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Charles J. Spang*
for Director, Office of Traffic

DATE 1/16/02 PLATE NO. D10-3.2

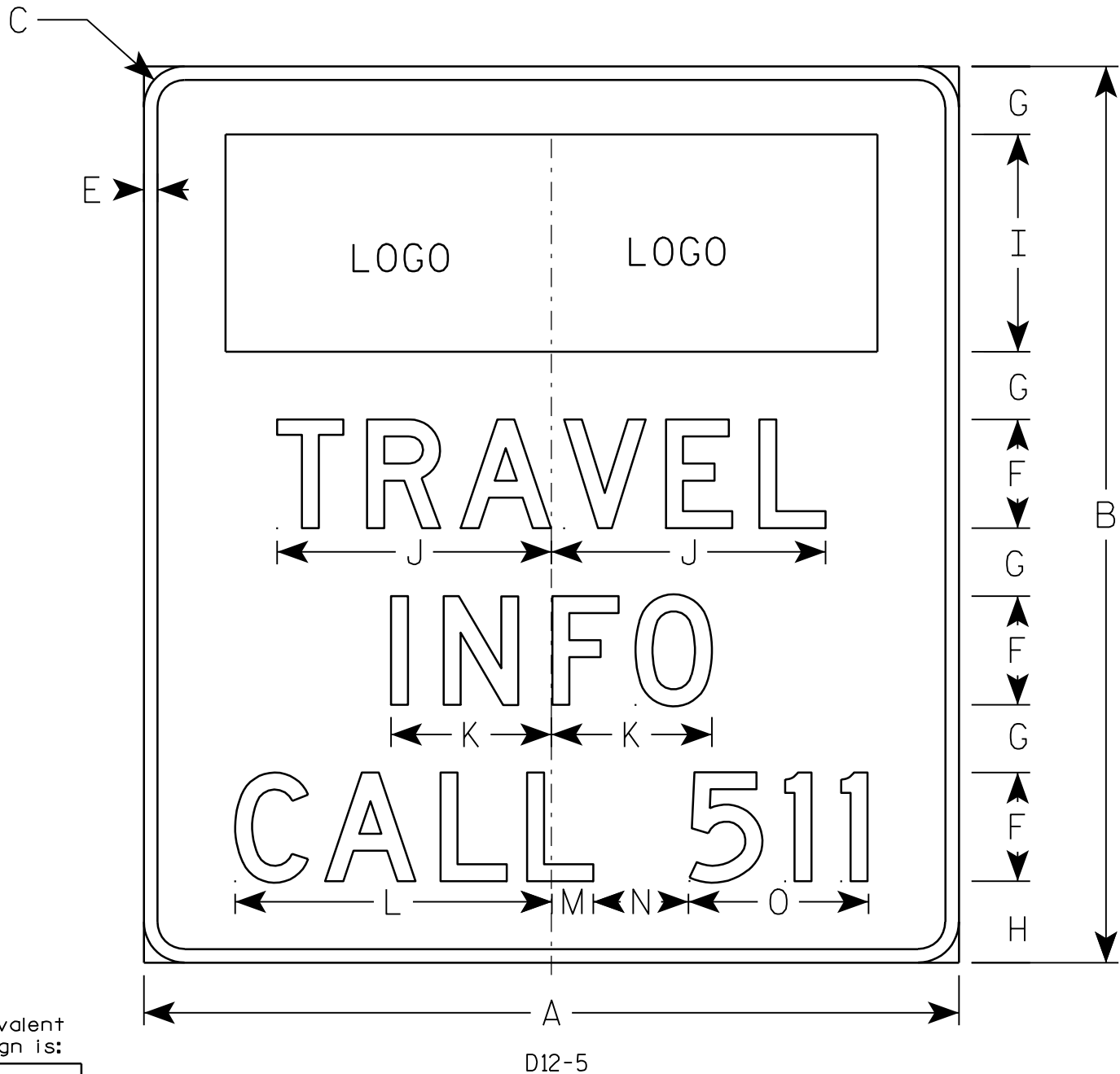
PROJECT NO:

SHEET NO:

E

NOTES

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



Metric equivalent
for this sign is:

SIZE	
1	
2	1500 mm X 1650 mm
3	
4	
5	

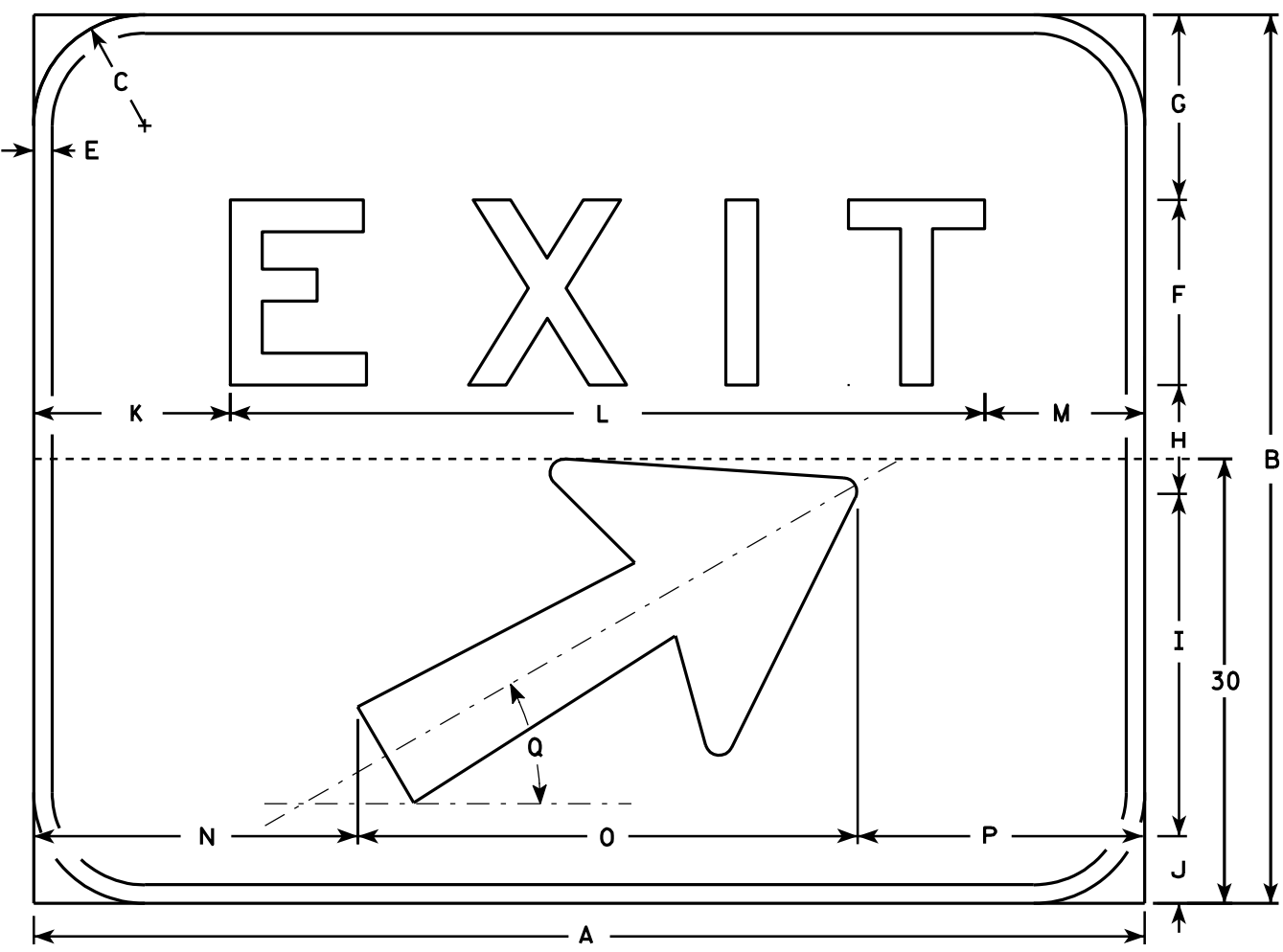
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	60	66	2 1/4		1	8	5	6	16	20 1/4	11 7/8	23 3/8	3 1/8	7	13 1/4												27.5	2.48
3																												
4																												
5																												

STANDARD SIGN
D12-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/5/08 PLATE NO. D12-5.2



E5-1

NOTES

- 1. Sign is Type II - Type H reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Green
Message - White (Type H reflective)
- 3. Message Series - E
- 4. Corners may be square or rounded but borders shall be rounded as shown.
- 5. Base material for this sign shall be plywood and shall be split into two seperate pieces for the 72 x 60 size as shown on the detail by the dashed line (-----).
- 6. Arrow is Type "A" from sign plate A1-1.
- 7. As per the Standard Spec's, this sign shall not have a vertical joint.

Metric equivalent for this sign is:

SIZE	
1	
2	
3	
4	1500 mm X 1200 mm
5	1800 mm X 1500 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2																												
3																												
4	60	48	6		1	10	10	5 7/8	18 1/2	3 5/8	10 5/8	40 3/4	8 5/8	17 1/2	27	15 1/2	30°										20.0	1.80
5	72	60	6		1	12	12	10	18 1/2	7 1/2	13 1/4	48 1/2	10 1/4	23 1/2	27	21 1/2	30°										30.0	2.70

STANDARD SIGN
E5 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Christa J. Spang
for State Traffic Engineer

DATE 6/22/00 PLATE NO. E5-1.8

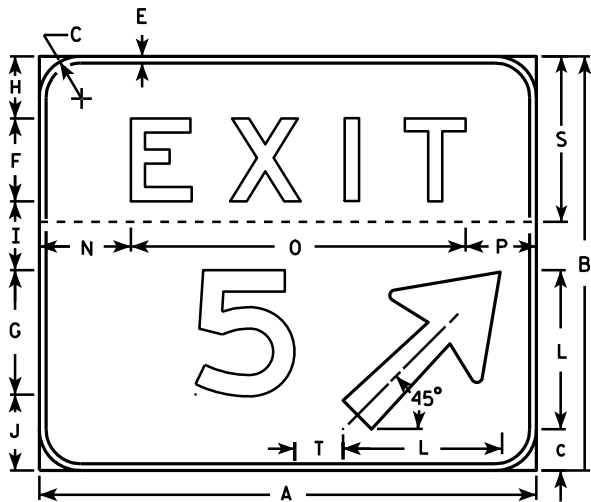
PROJECT NO:

HWY:

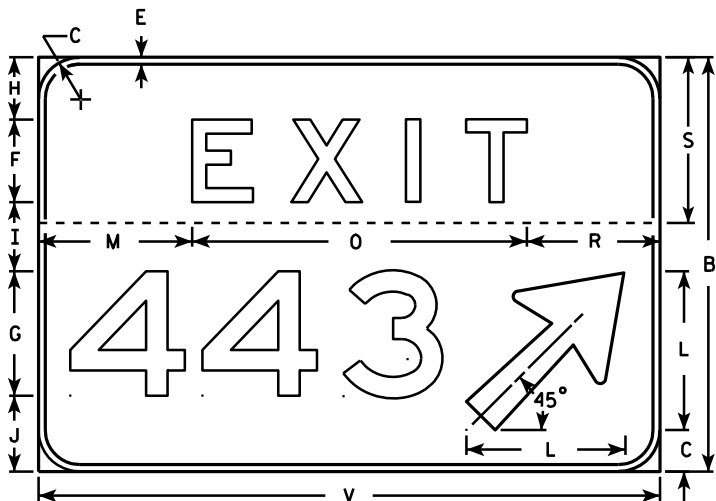
COUNTY:

SHEET NO:

E



NOTE: T dimension shall be measured from the back of the number to the front of the arrow



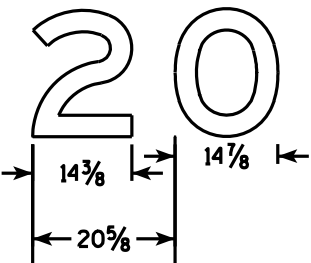
NOTES

1. Sign is Type II - Type H reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Green
Message - White (Type H reflective)
3. Message Series - E
4. Corners may be square or rounded but the border shall be rounded as shown.
5. Base material for this sign shall be plywood and shall be split into two separate pieces as shown on each detail by the dashed line (-----).
6. Arrow is Type "A" from sign plate A1-1.
7. Substitute appropriate message, space per the table and adjust placement on sign to achieve proper balance.
8. As per the Standard Spec's, these signs shall not have a vertical joint.

SPACING CHART FOR 18" NUMERALS

NUMBERS	WIDTH	0	1	2	3	4	5	6	7	8	9	A	B	C
0	14 7/8	21 5/8	21 5/8	21 1/4	20 3/8	21 1/4	21 1/4	21 5/8	19 7/8	22 1/8	21 5/8			
1	5 7/8	14	14	14	13 1/8	12 1/8	14	14	12 1/4	14	14			
2	14 3/8	20 5/8	21 1/8	20 5/8	19 3/4	20 1/4	20 5/8	20 5/8	18 7/8	21 1/8	20 5/8			
3	14 3/8	20 3/4	21 1/8	20 3/4	20 1/4	19 3/4	20 3/4	20 3/4	19 3/8	21 1/8	20 3/4			
4	16 5/8	22 7/8	22	22 1/2	21 5/8	21 5/8	22 7/8	22 7/8	20 5/8	23 3/8	22 7/8			
5	14 1/4	20 5/8	20 5/8	20 1/8	18 3/4	18 3/4	20 5/8	20 5/8	18 3/8	20 5/8	20 5/8			
6	14 1/2	21 1/4	20 3/4	20 3/4	19 7/8	19 1/2	20 3/8	20 3/4	19	20 3/4	20 3/8			
7	14 3/8	19 3/4	19 3/4	20 1/4	19 3/4	17	19 3/4	20 5/8	18 7/8	20 5/8	19 3/4			
8	14 1/4	21 1/2	21 1/2	20 5/8	19 1/4	19 3/4	20 5/8	21 1/2	19 5/8	21 1/2	20 5/8			
9	14 1/2	21 1/4	21 1/4	20 7/8	20	20 7/8	20 7/8	21 1/4	19 1/2	21 3/4	21 1/4			
A	18	19 3/4	19 3/4	20 1/4	19 3/4	17	19 3/4	20 5/8	18 7/8	20 5/8	19 3/4	21 5/8	23 7/8	23
B	14 1/4	21 1/2	21 1/2	20 5/8	19 1/4	19 3/4	20 5/8	21 1/2	19 5/8	21 1/2	20 5/8	19 1/2	22 3/8	21 1/2
C	14 1/4	21 1/4	21 1/4	20 7/8	20	20 7/8	20 7/8	21 1/4	19 1/2	21 3/4	21 1/4	18 3/8	21	19 3/4

EXAMPLE FOR USING SPACING CHART



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
2																										
3																										
4																										
5	72	60	6		1	12	18	9	10	11	8 ⁷ / ₈	23	22 ¹ / ₄	13 ¹ / ₄	48 ¹ / ₂	10 ¹ / ₄		19 ¹ / ₄	24	7		90		96	7 ¹ / ₂	

1-2 Digit Bid Area	3 Digit Bid Area
Sq. Ft.	
30	37.5

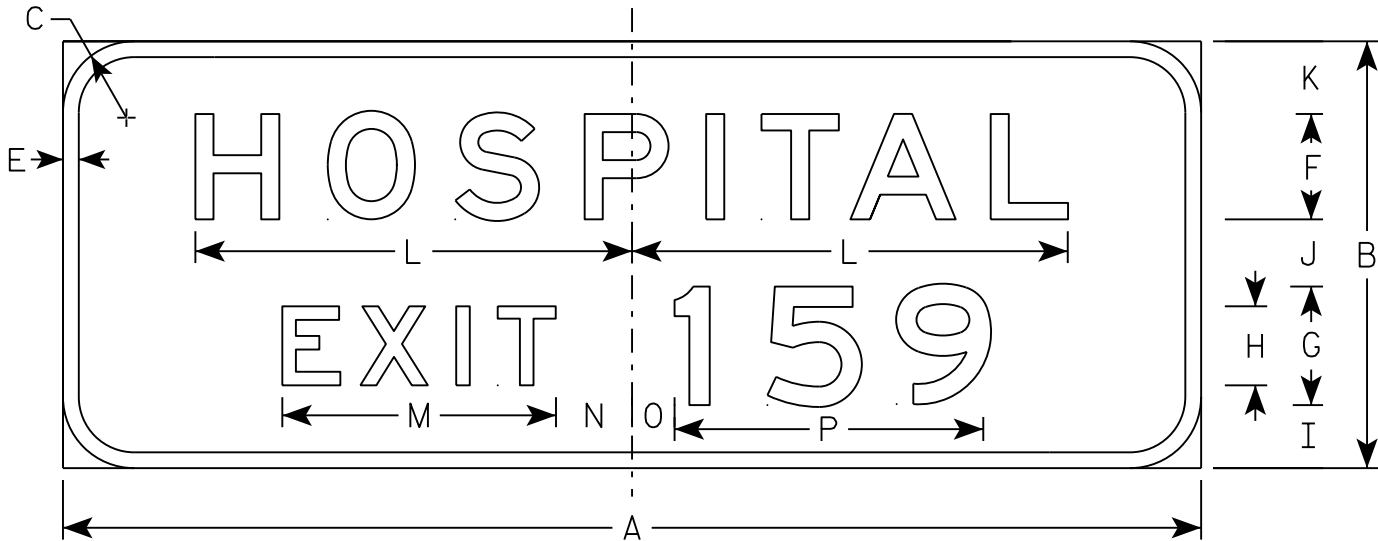
STANDARD SIGN
E5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 5/11/10 PLATE NO. E5-1A.12

NOTES

- 1. Sign is Type I - Type SH Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Blue
Message - White
- 3. Message Series - E
- 4. Apply proper Exit Numbers and letters, optically adjust spacing to achieve proper balance.



E10-61

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																											
3																											
4	144	54	9		2	13 ³ / ₈	15	10	8	8 ¹ / ₂	9 ¹ / ₄	55 ¹ / ₄	34 ⁵ / ₈	9 ⁵ / ₈	5 ³ / ₈	39											54
5	144	54	9		2	13 ³ / ₈	15	10	8	8 ¹ / ₂	9 ¹ / ₄	55 ¹ / ₄	34 ⁵ / ₈	9 ⁵ / ₈	5 ³ / ₈	39											54

TYPICAL SIGNS

E10-61

WISCONSIN DEPT OF TRANSPORTATION

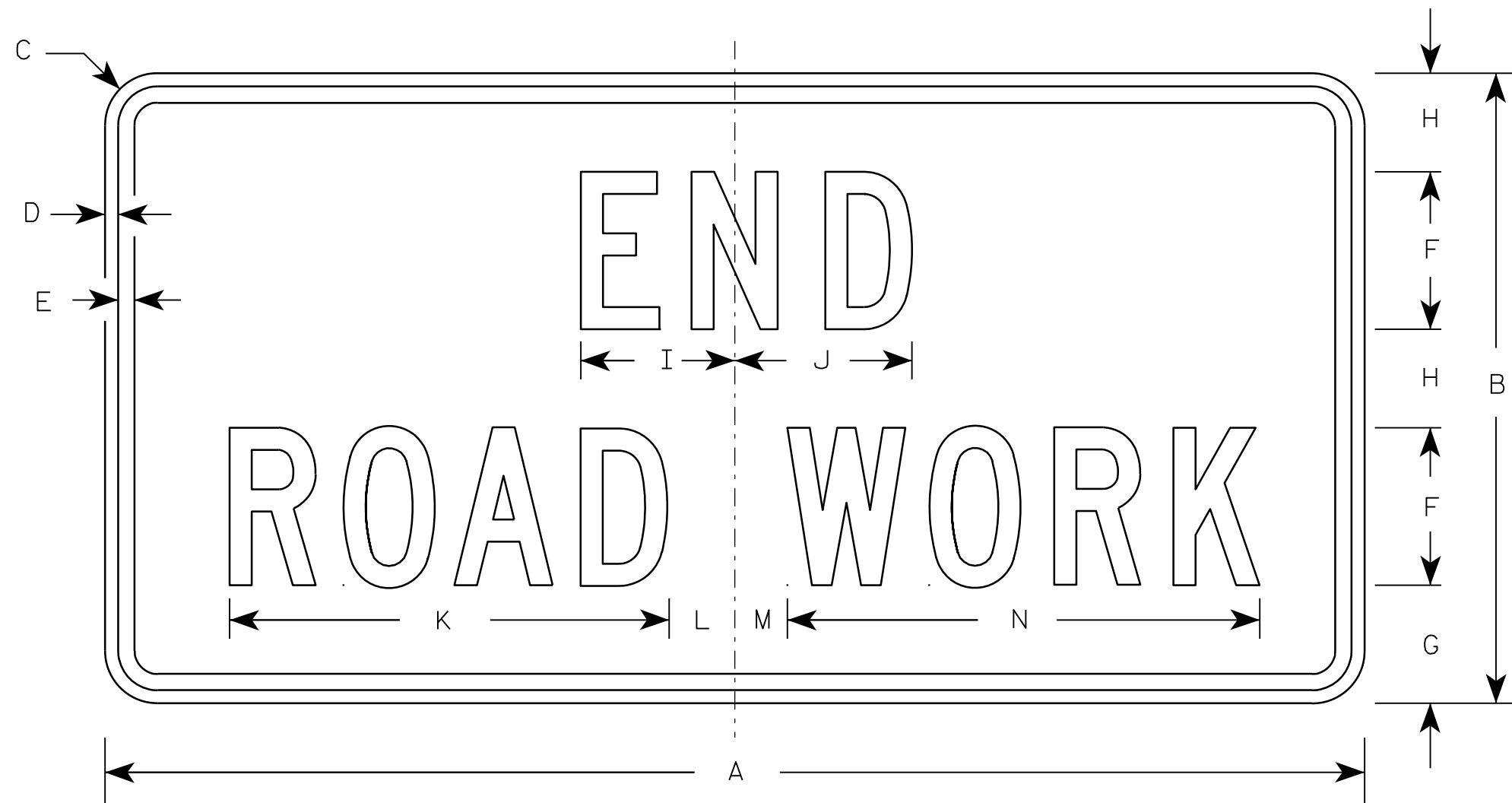
APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 9/24/15

PLATE NO. E10-61.3

7



G20-2A

Metric equivalent
for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq. m.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

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 - C
- 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

PROJECT NO:

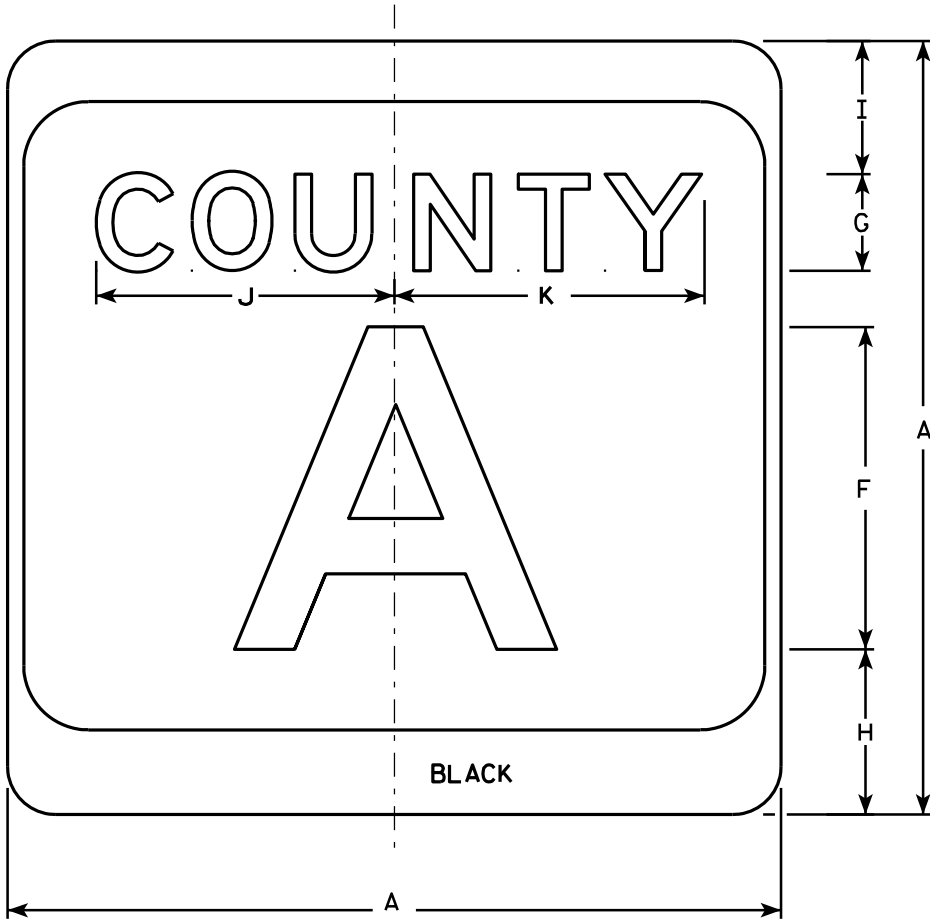
HWY:

COUNTY:

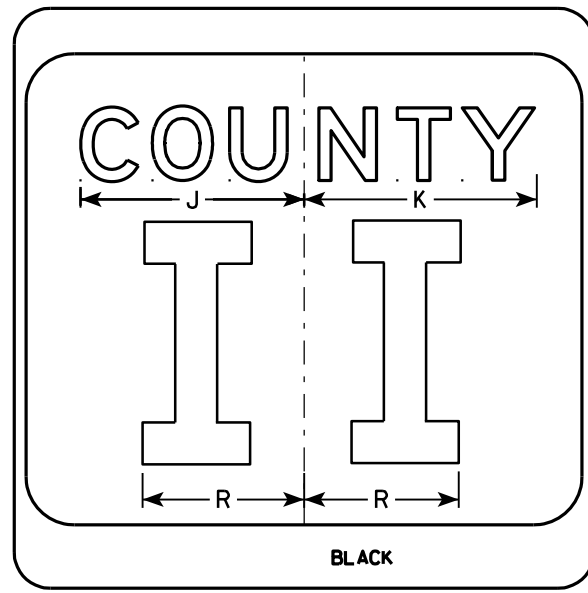
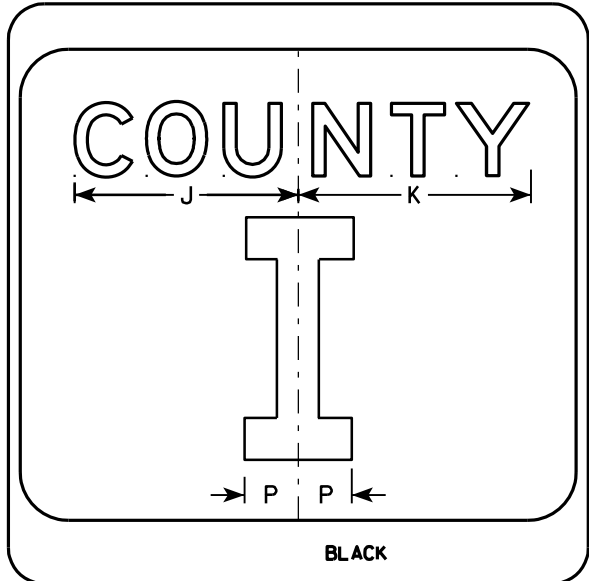
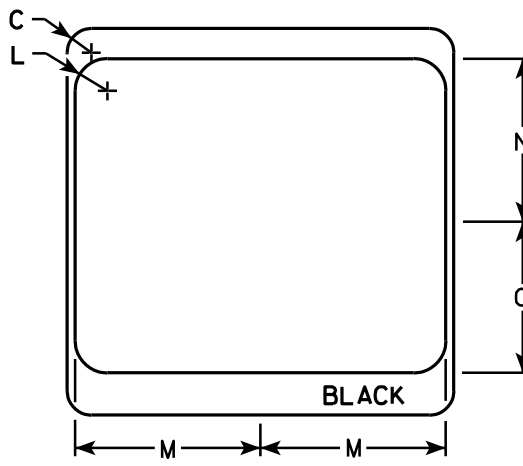
SHEET NO:

E

7



M1-5A



NOTES

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

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

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---

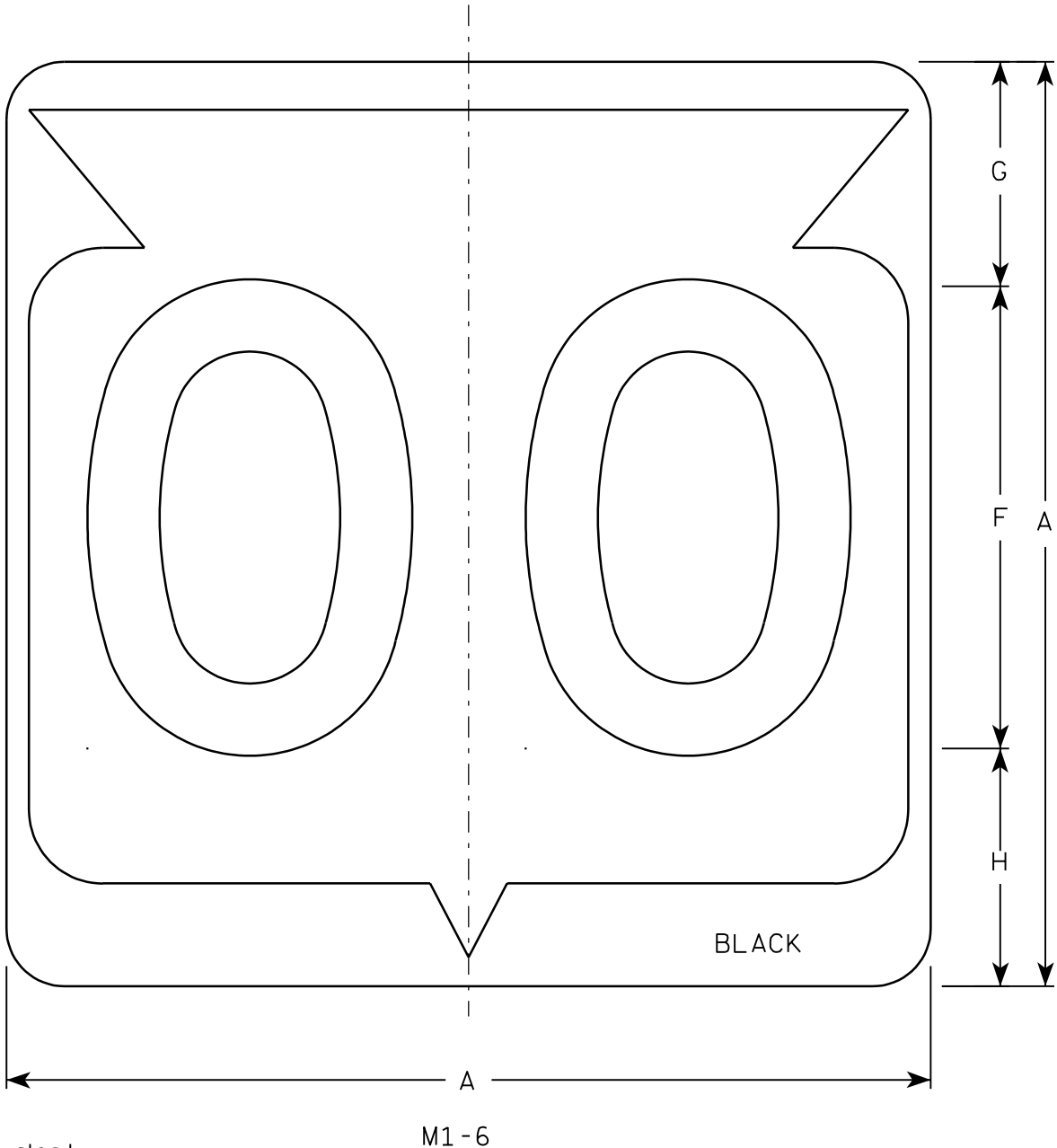
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

7



Metric equivalent
for this sign is:

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

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

PROJECT NO:

HWY:

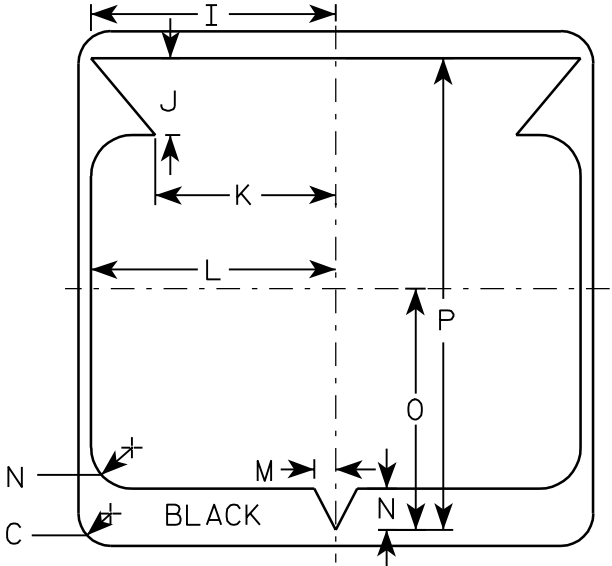
COUNTY:

SHEET NO:

E

NOTES

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



STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

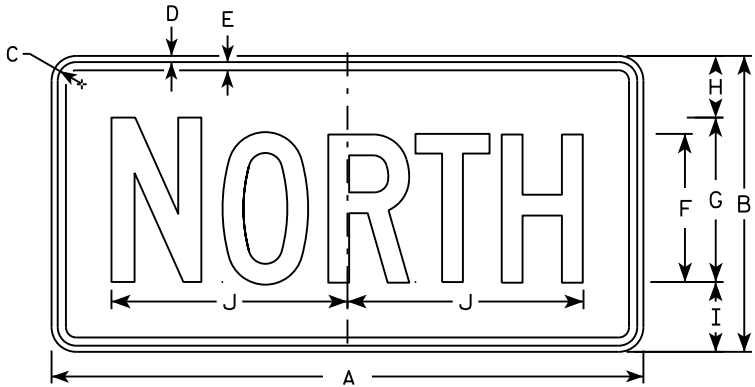
WISCONSIN DEPT OF TRANSPORTATION

APPROVED


for State Traffic Engineer

DATE 3/20/02

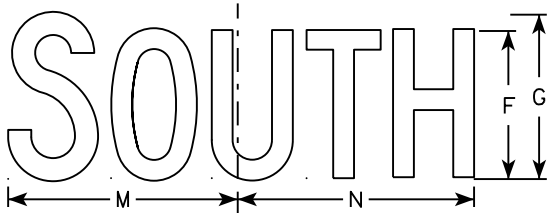
PLATE NO. M1-6.9



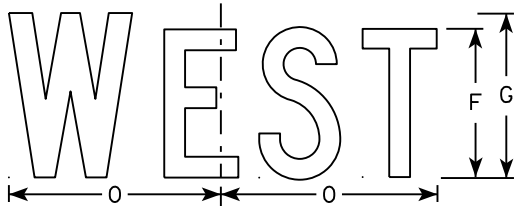
M3-1
MM3-1
MP3-1



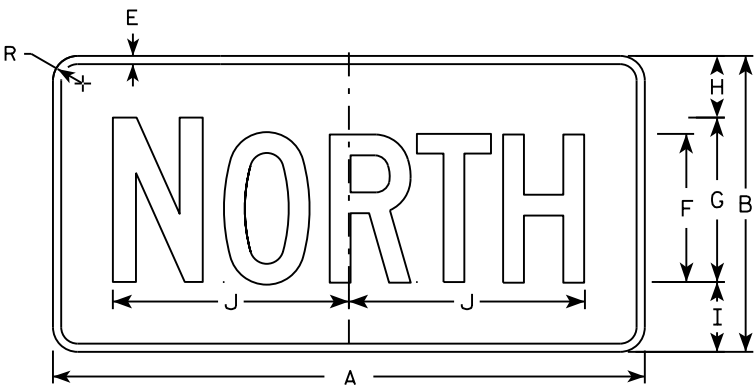
M3-2
MM3-2
MP3-2



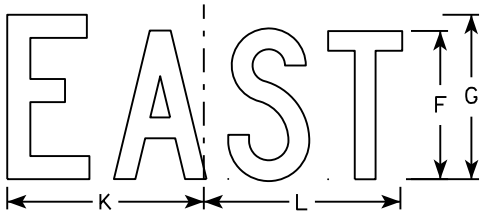
M3-3
MM3-3
MP3-3



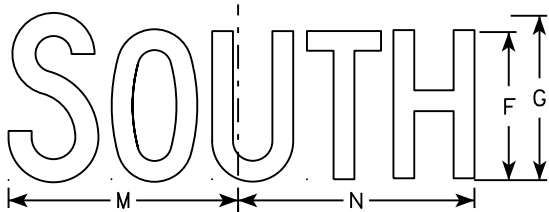
M3-4
MM3-4
MP3-4



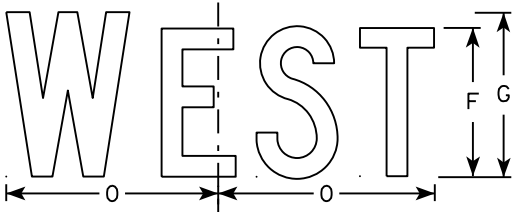
MB3-1
MK3-1
MN3-1



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

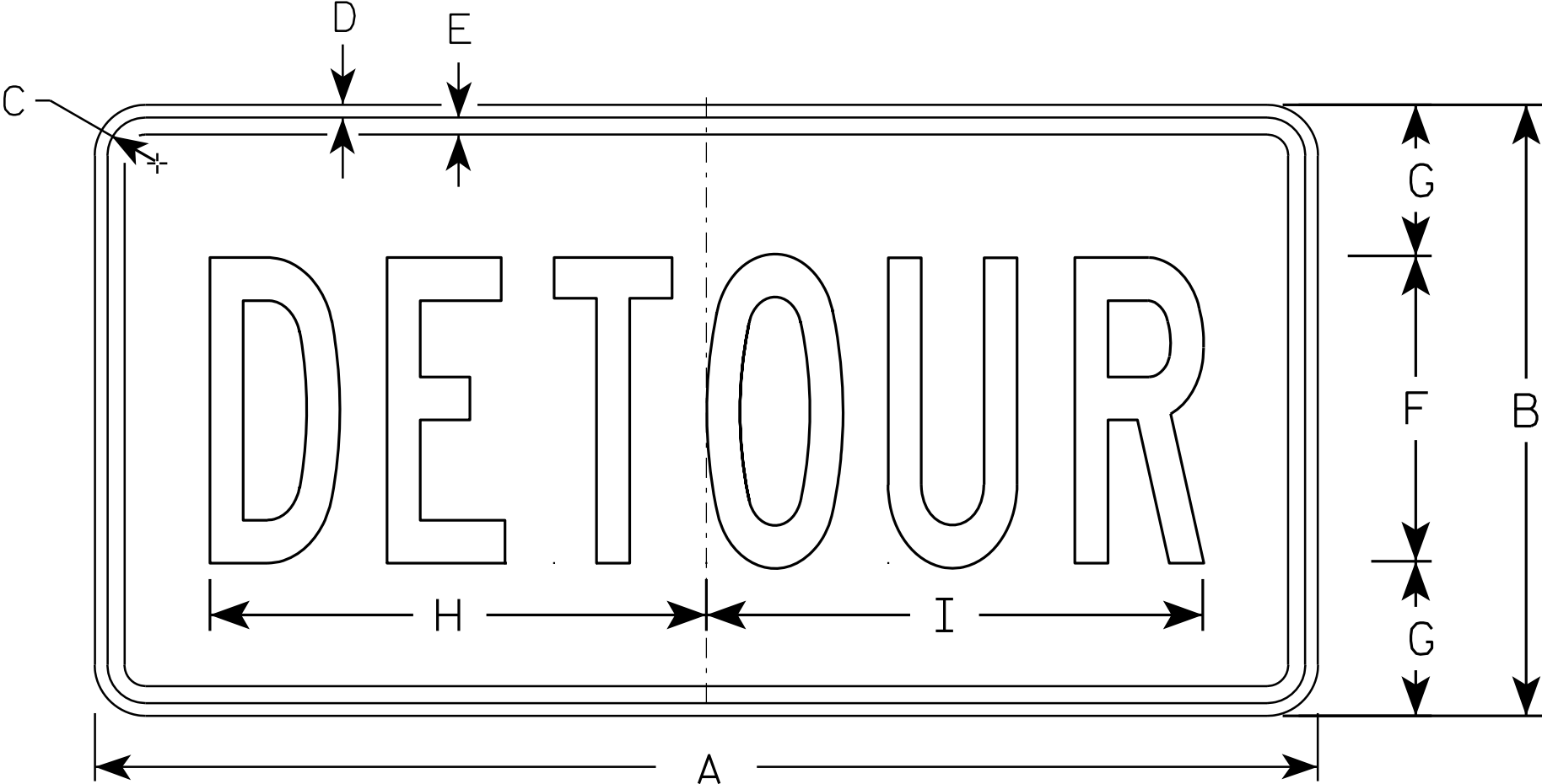
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 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

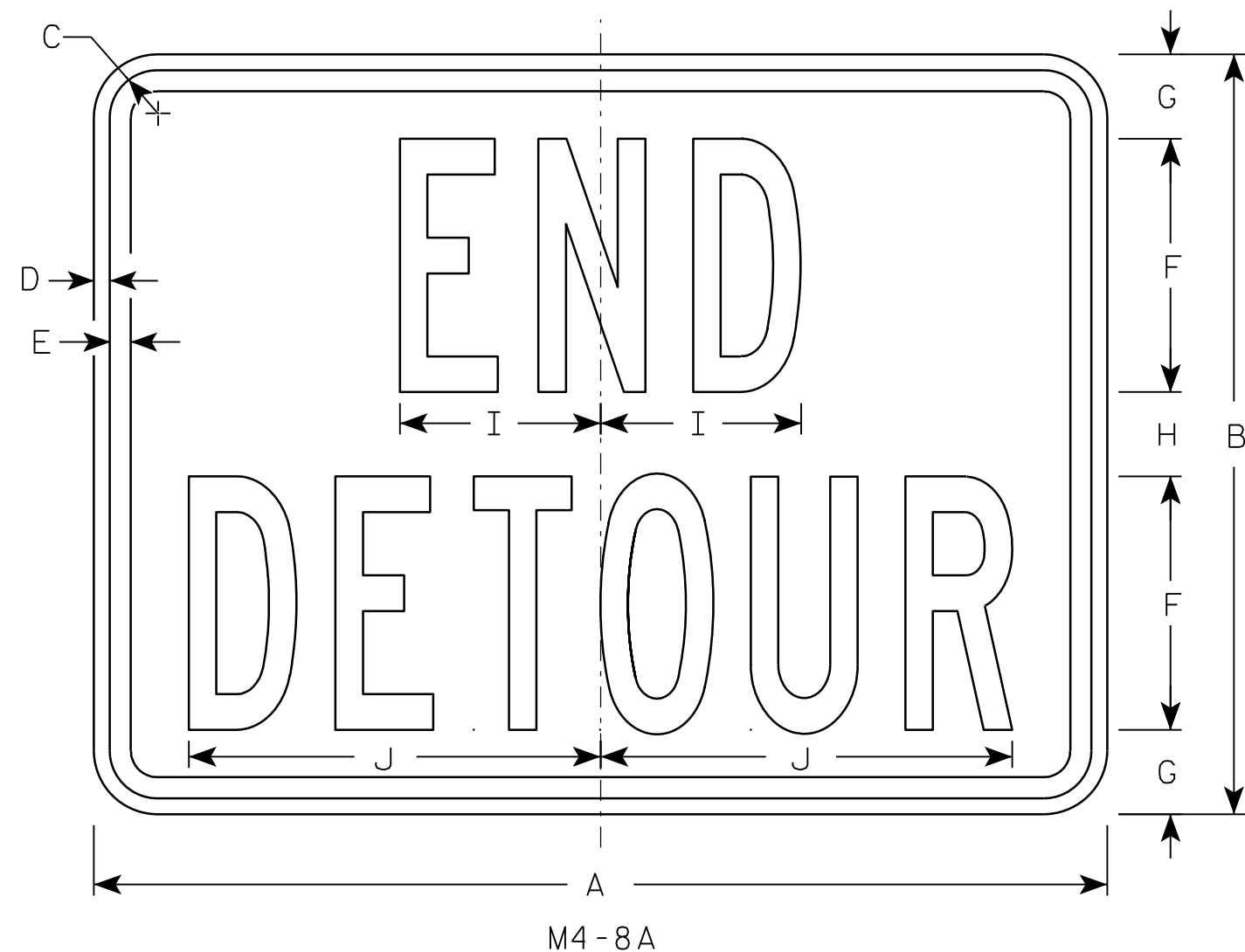
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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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																											

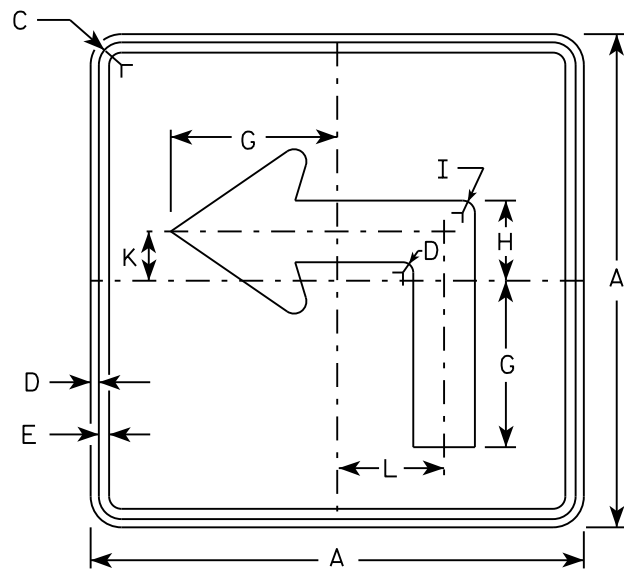
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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STANDARD SIGN
M4-8A

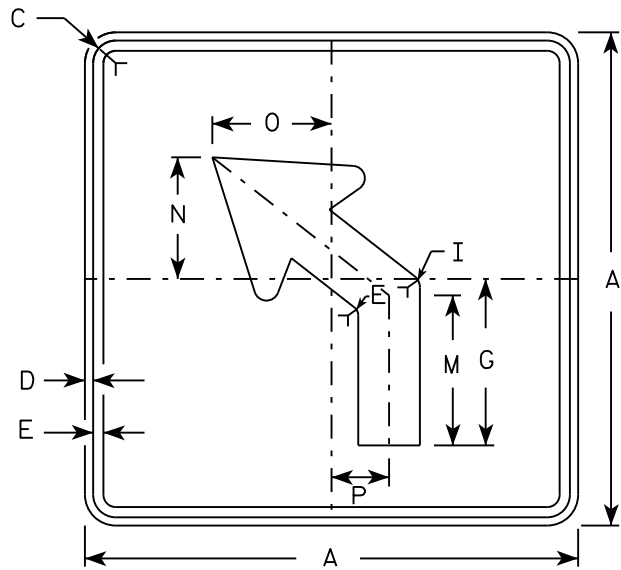
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

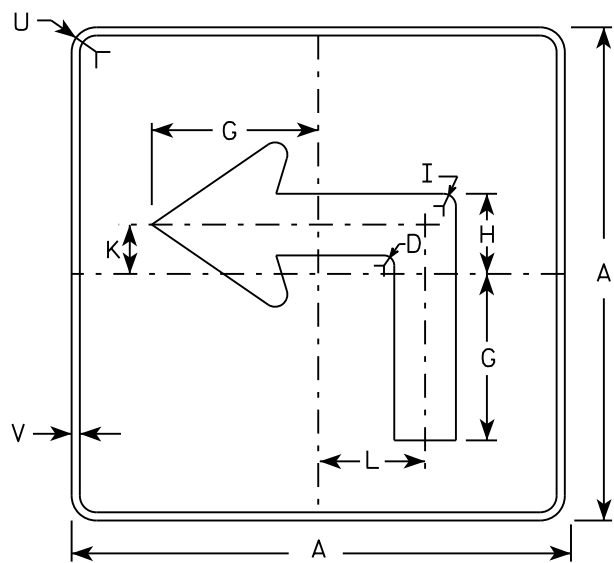
DATE 3/9/11 PLATE NO. M4-8A.2



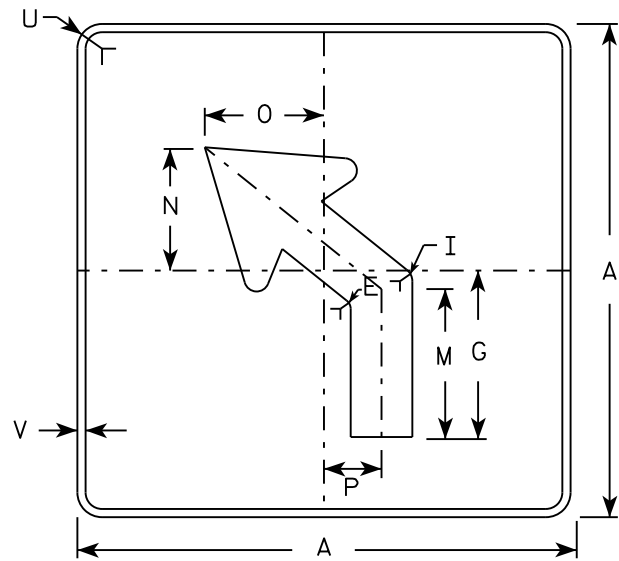
M5-1L
MM5-1L
M05-1L
MP5-1L



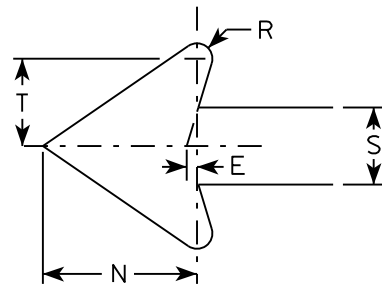
M5-2L
MM5-2L
M05-2L
MP5-2L



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

STANDARD SIGN

M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

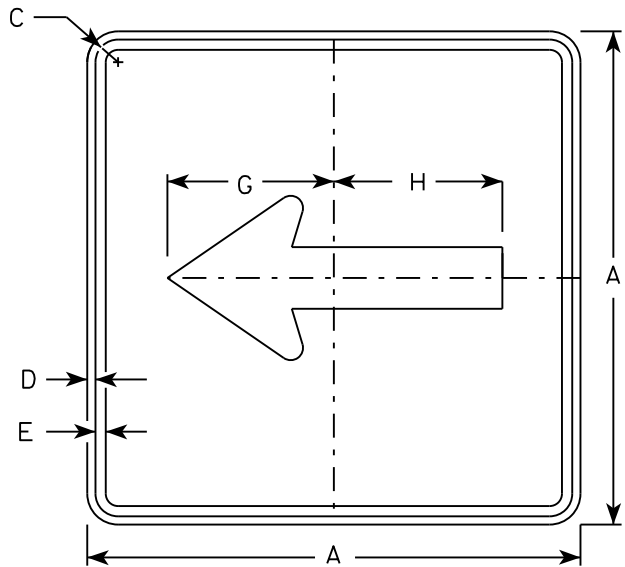
APPROVED

Matthew R. Rauch

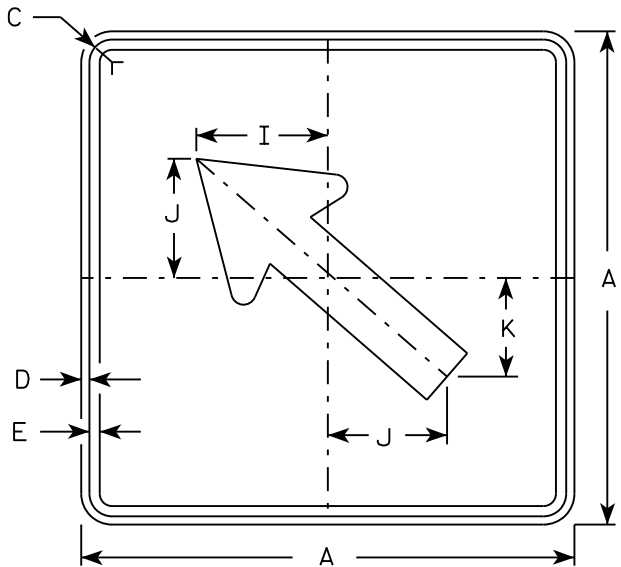
for State Traffic Engineer

DATE 10/15/15

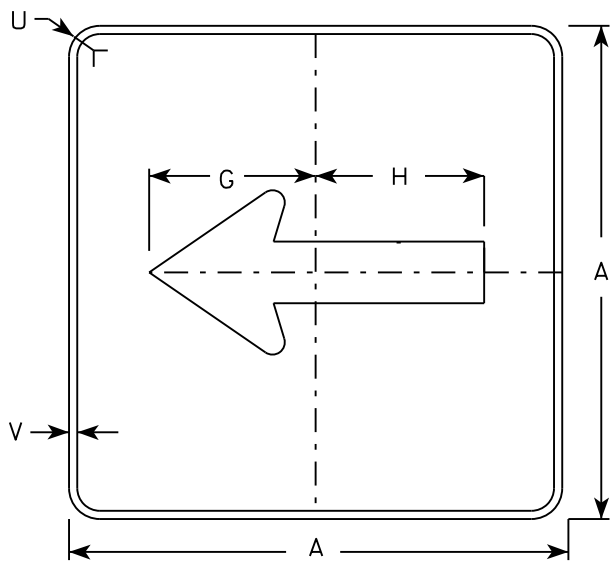
PLATE NO. M5-1.13



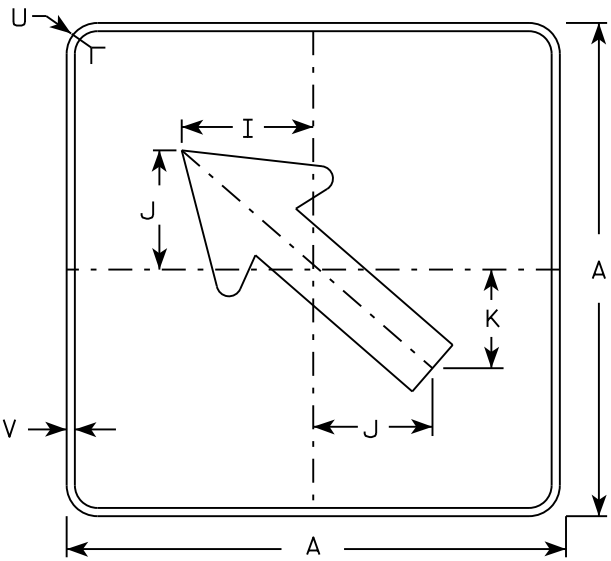
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



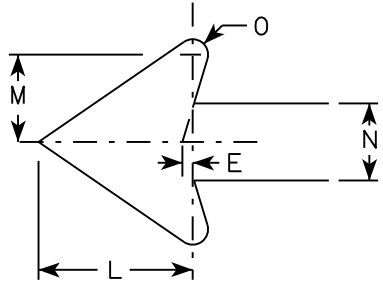
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



MB6 - 1
MK6 - 1
MN6 - 1
MR6 - 1



MB6 - 2
MK6 - 2
MN6 - 2
MR6 - 2



NOTES

- Signs are Type II - Type H 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.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 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		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

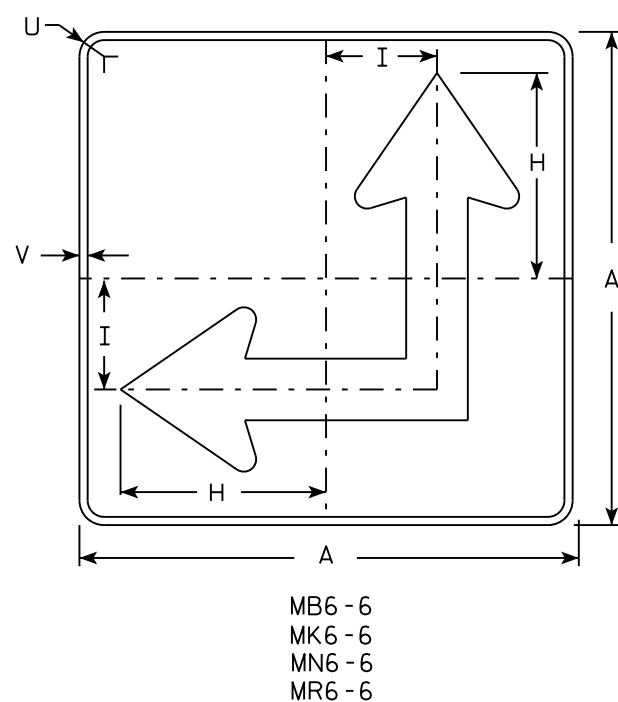
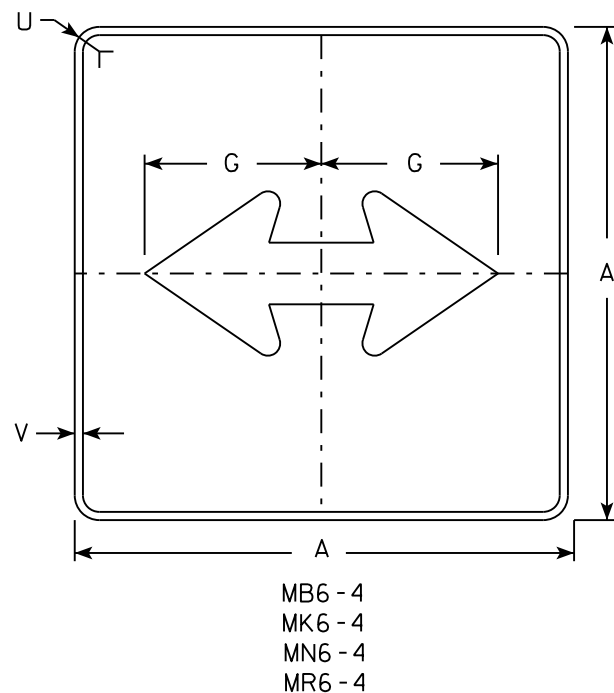
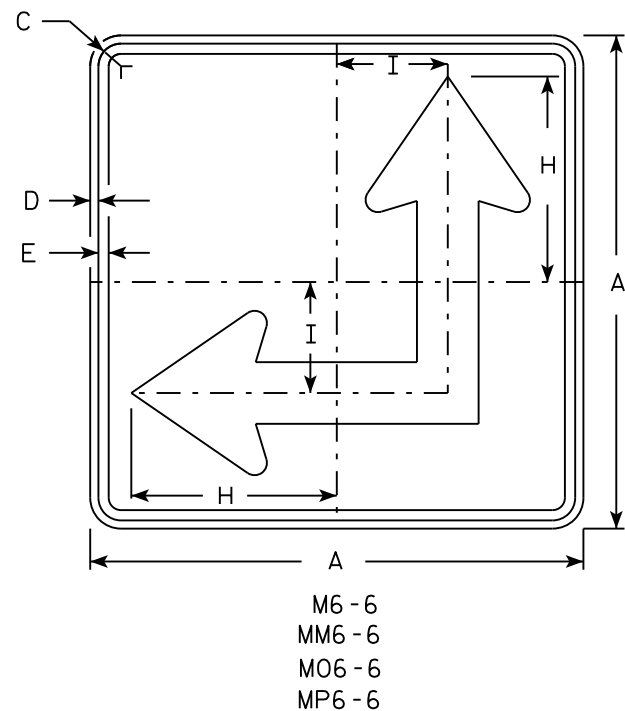
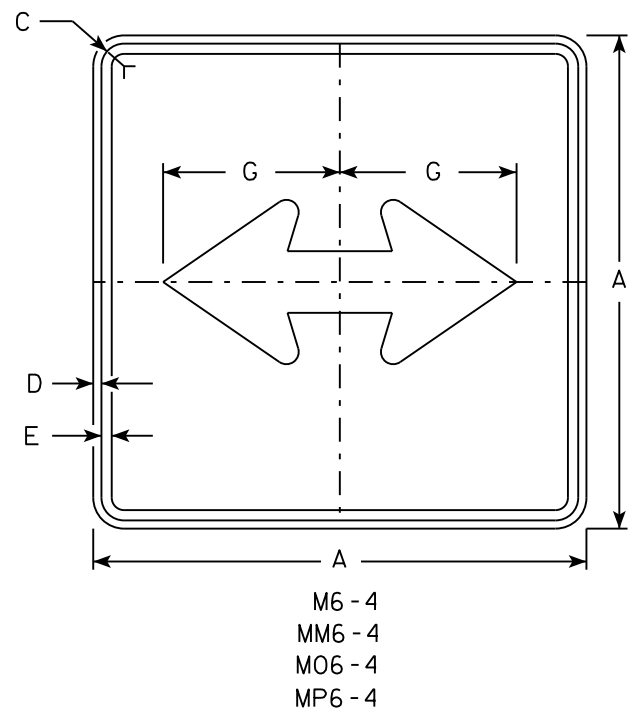
E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

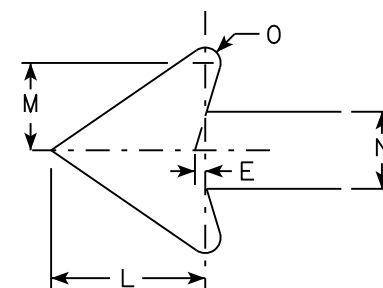
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-1.15



NOTES

- Signs are Type II - Type H 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.
- M6-4 and M6-6 Background - White
Message - Black
MB6-4 and MB6-6 Background - Blue
Message - White
MK6-4 and MK6-6 Background - Green
Message - White
MM6-4 and MM6-6 Background - White
Message - Green
MN6-4 and MN6-6 Background - Brown
Message - White
M06-4 and M06-6 Background - Orange - Type F Reflective
Message - Black
MP6-4 and MP6-6 Background - White
Message - Blue
MR6-4 and MR6-6 Background - Brown
Message - Yellow
- M6-6R same as M6-6L except arrow points ahead and 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 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

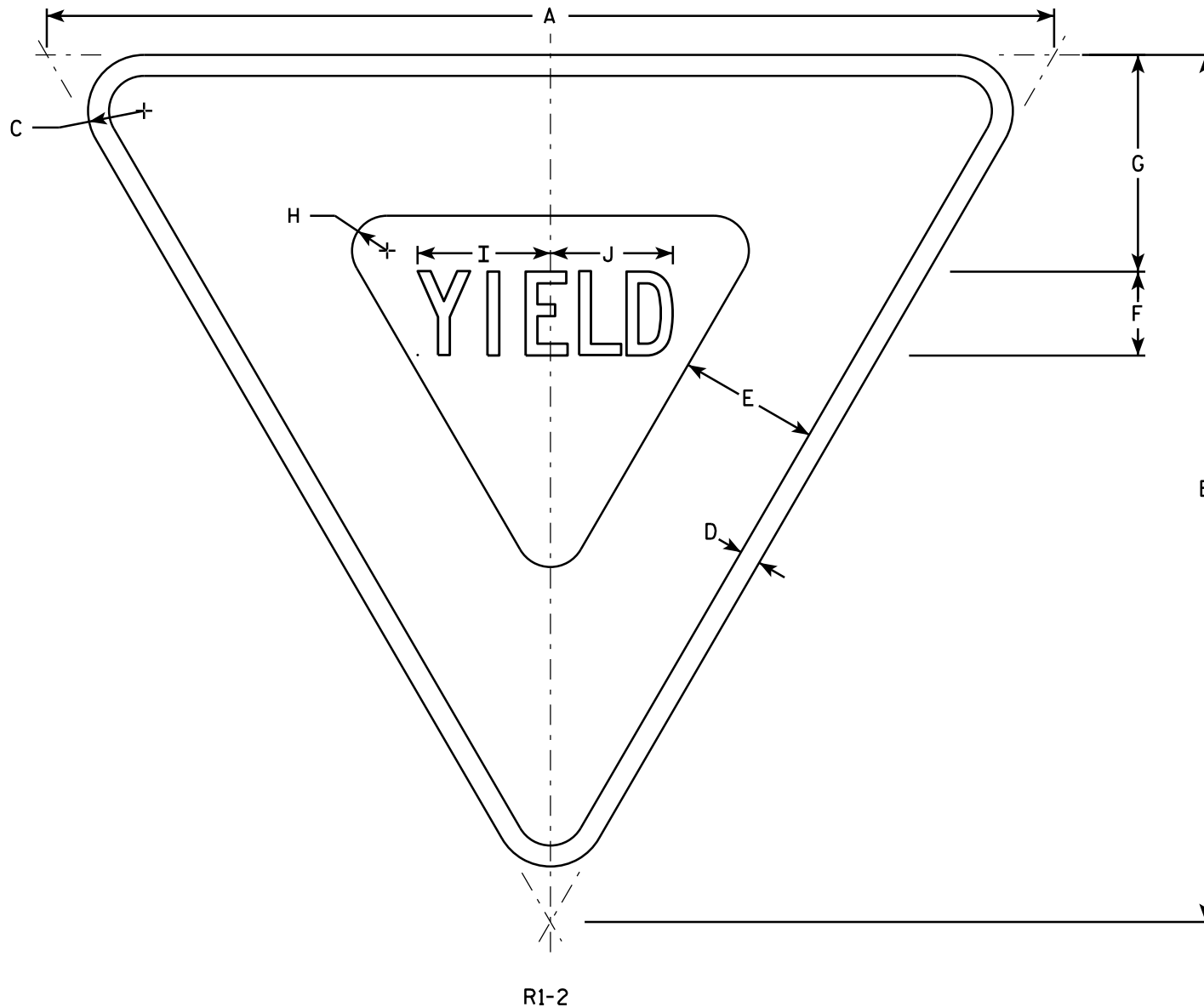
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M6 - 4 & M6 - 6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-4.10



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 - 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. The border strip and word message are reflectorized red.

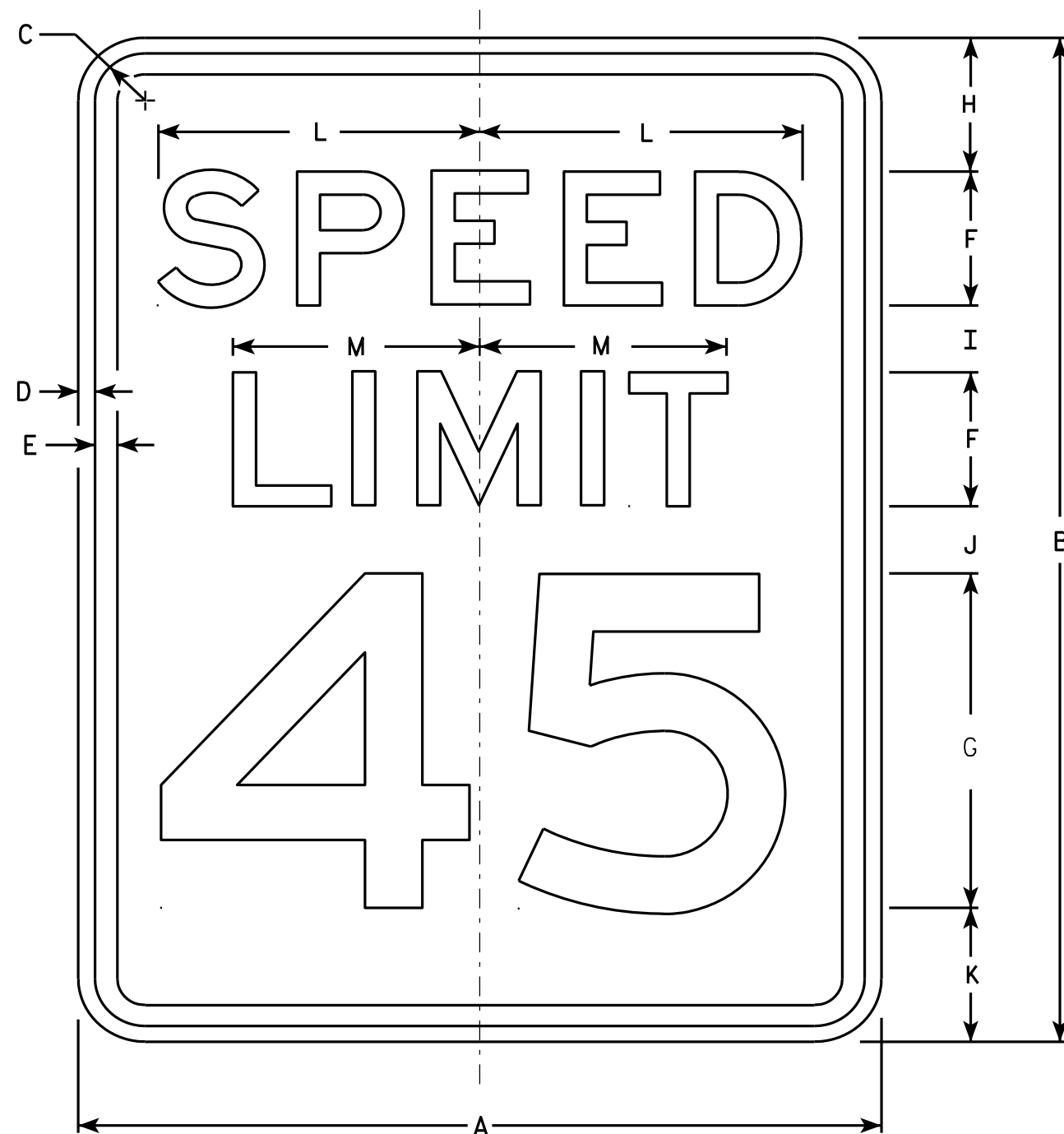
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

STANDARD SIGN
R1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/13/14 PLATE NO. R1-2.12



NOTES

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

R2-1

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

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

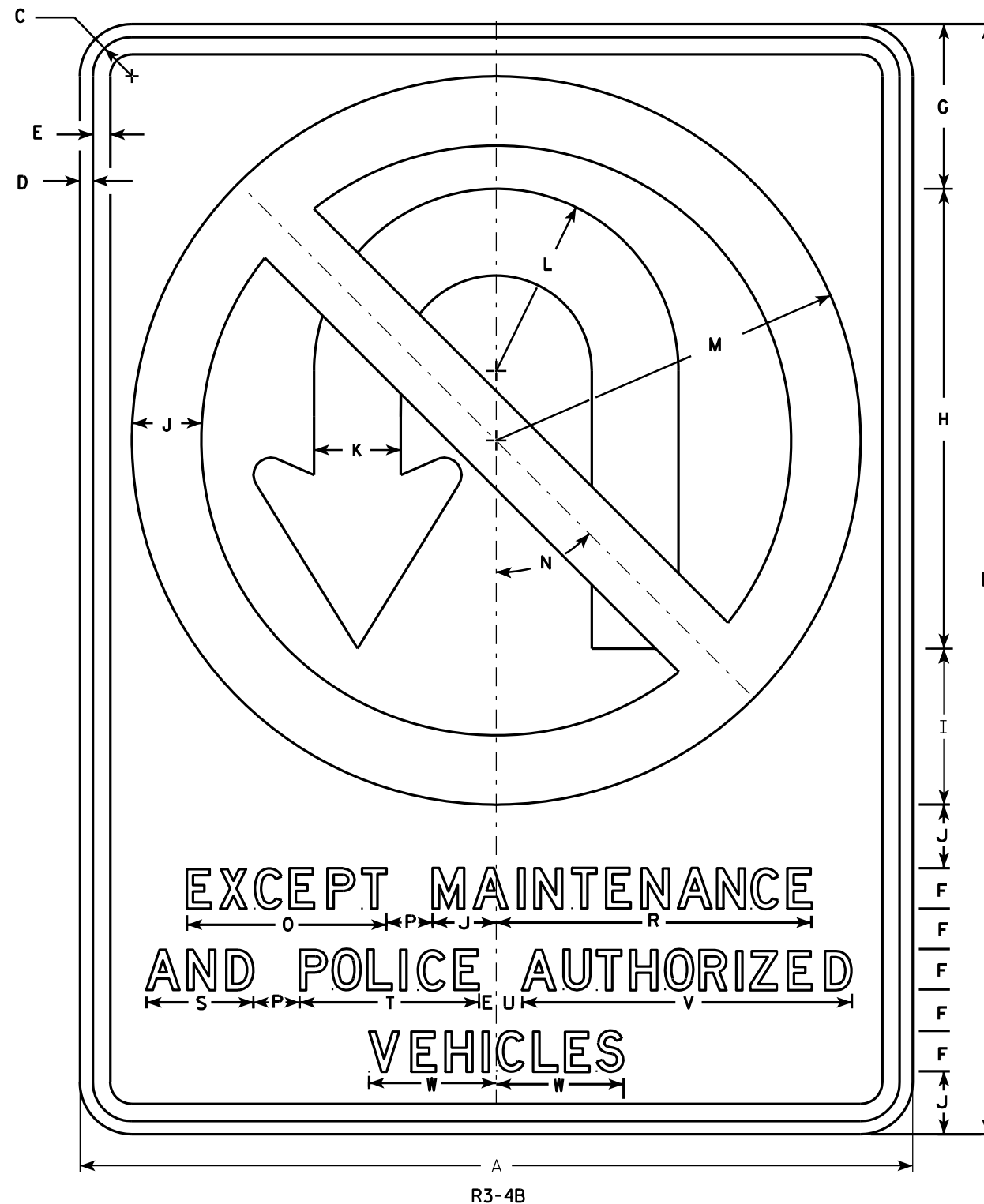
PROJECT NO:

HWY:

COUNTY:

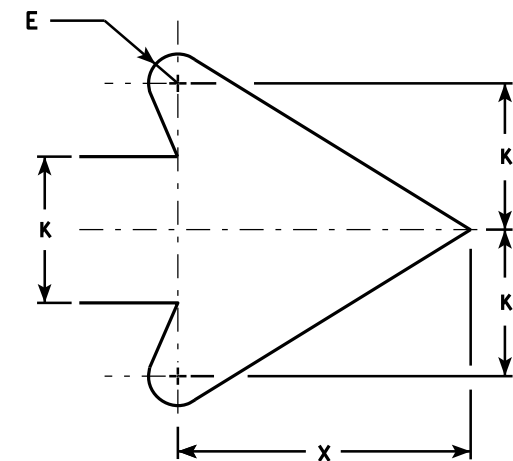
SHEET NO:

E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



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																											
2M																											
3																											
4	36	48	1 5⁄8	5⁄8	3⁄4	1 3⁄4	7 1⁄8	19 7⁄8	6 3⁄4	2 3⁄4	3 3⁄4	7 7⁄8	15 3⁄4	45°	8 5⁄8	2		13 5⁄8	4 5⁄8	7 3⁄4	1 1⁄8	14 1⁄4	5 1⁄2	7 5⁄8			12.0
5	36	48	1 5⁄8	5⁄8	3⁄4	1 3⁄4	7 1⁄8	19 7⁄8	6 3⁄4	2 3⁄4	3 3⁄4	7 7⁄8	15 3⁄4	45°	8 5⁄8	2		13 5⁄8	4 5⁄8	7 3⁄4	1 1⁄8	14 1⁄4	5 1⁄2	7 5⁄8			12.0

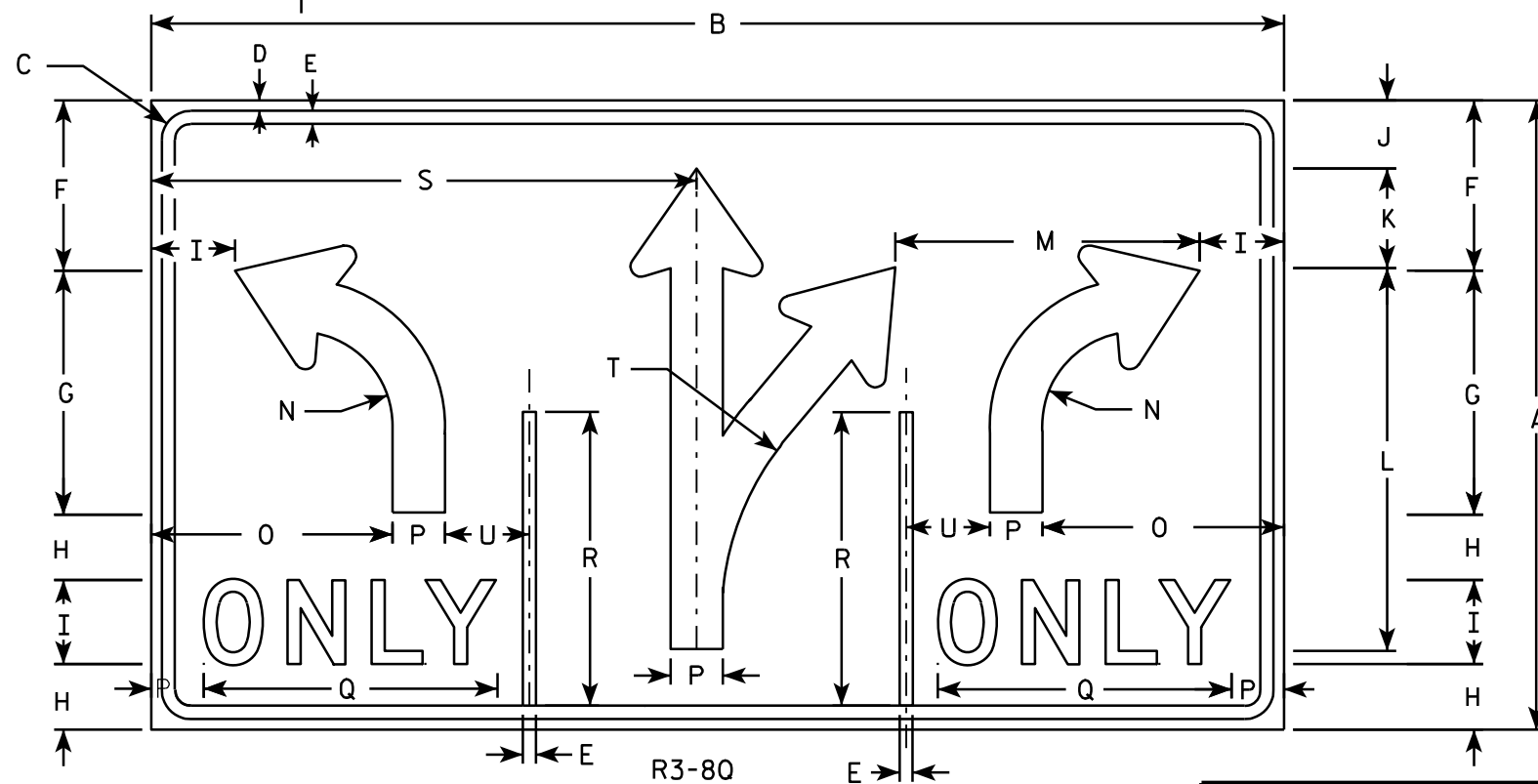
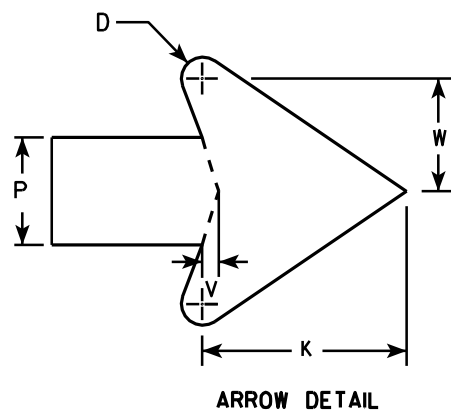
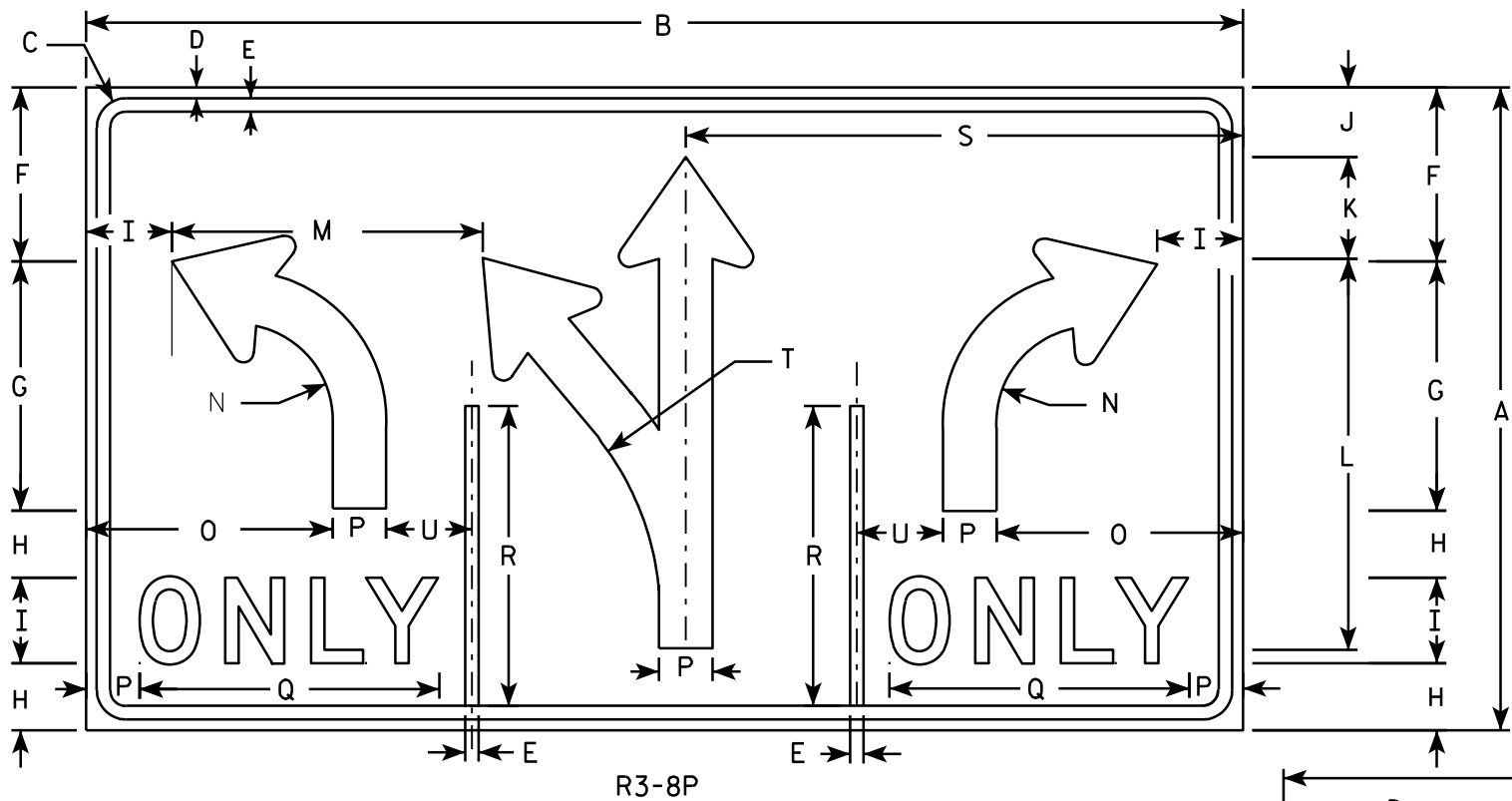
STANDARD SIGN R3-4B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/17/2011 PLATE NO. R3-4B.2

PROJECT NO: HWY: COUNTY: SHEET NO: E



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	54	1 3⁄8	1⁄2	5⁄8	8 1⁄8	11 5⁄8	3 1⁄8	4	3 1⁄4	4 3⁄4	18 1⁄4	14 1⁄2	4 1⁄2	11 1⁄2	2 1⁄2	14	14	26	13 1⁄4	4	3⁄8	2 5⁄8				11.25
2M	30	54	1 3⁄8	1⁄2	5⁄8	8 1⁄8	11 5⁄8	3 1⁄8	4	3 1⁄4	4 3⁄4	18 1⁄4	14 1⁄2	4 1⁄2	11 1⁄2	2 1⁄2	14	14	26	13 1⁄4	4	3⁄8	2 5⁄8				11.25
3																											
4	48	84	2 1⁄4	3⁄4	1	13 1⁄4	18 1⁄2	5 1⁄8	6	5 1⁄4	7 1⁄8	29 1⁄8	22 5⁄8	7 1⁄4	17 1⁄4	3 3⁄4	20 5⁄8	22 3⁄8	40 3⁄4	21 7⁄8	7	5⁄8	4				28.0
5	48	84	2 1⁄4	3⁄4	1	13 1⁄4	18 1⁄2	5 1⁄8	6	5 1⁄4	7 1⁄8	29 1⁄8	22 5⁄8	7 1⁄4	17 1⁄4	3 3⁄4	20 5⁄8	22 3⁄8	40 3⁄4	21 7⁄8	7	5⁄8	4				28.0

STANDARD SIGN R3-8P & R3-80

WISCONSIN DEPT OF TRANSPORTATION

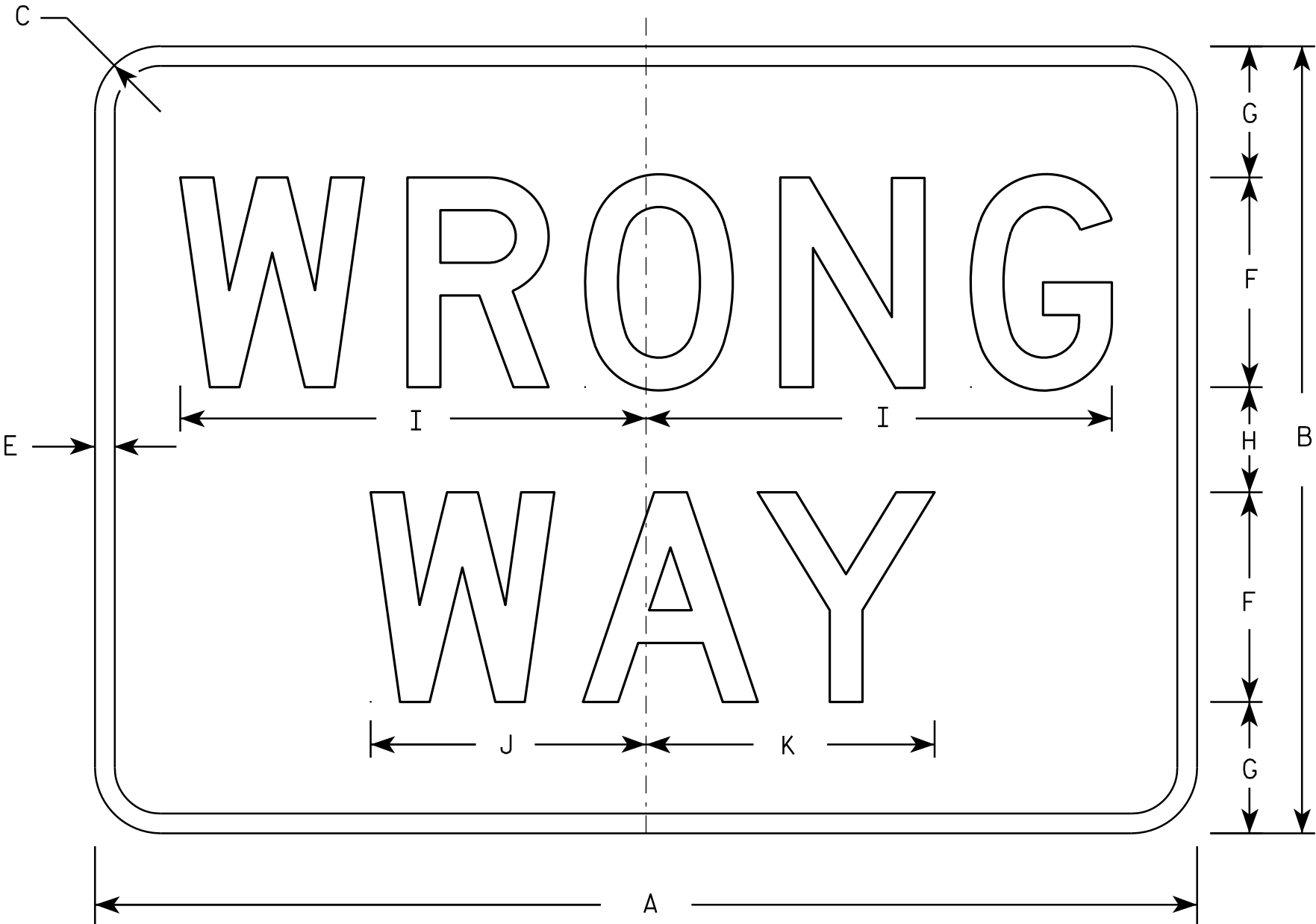
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-8P.2

PROJECT NO:

SHEET NO:

E



R5-1A

NOTES

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

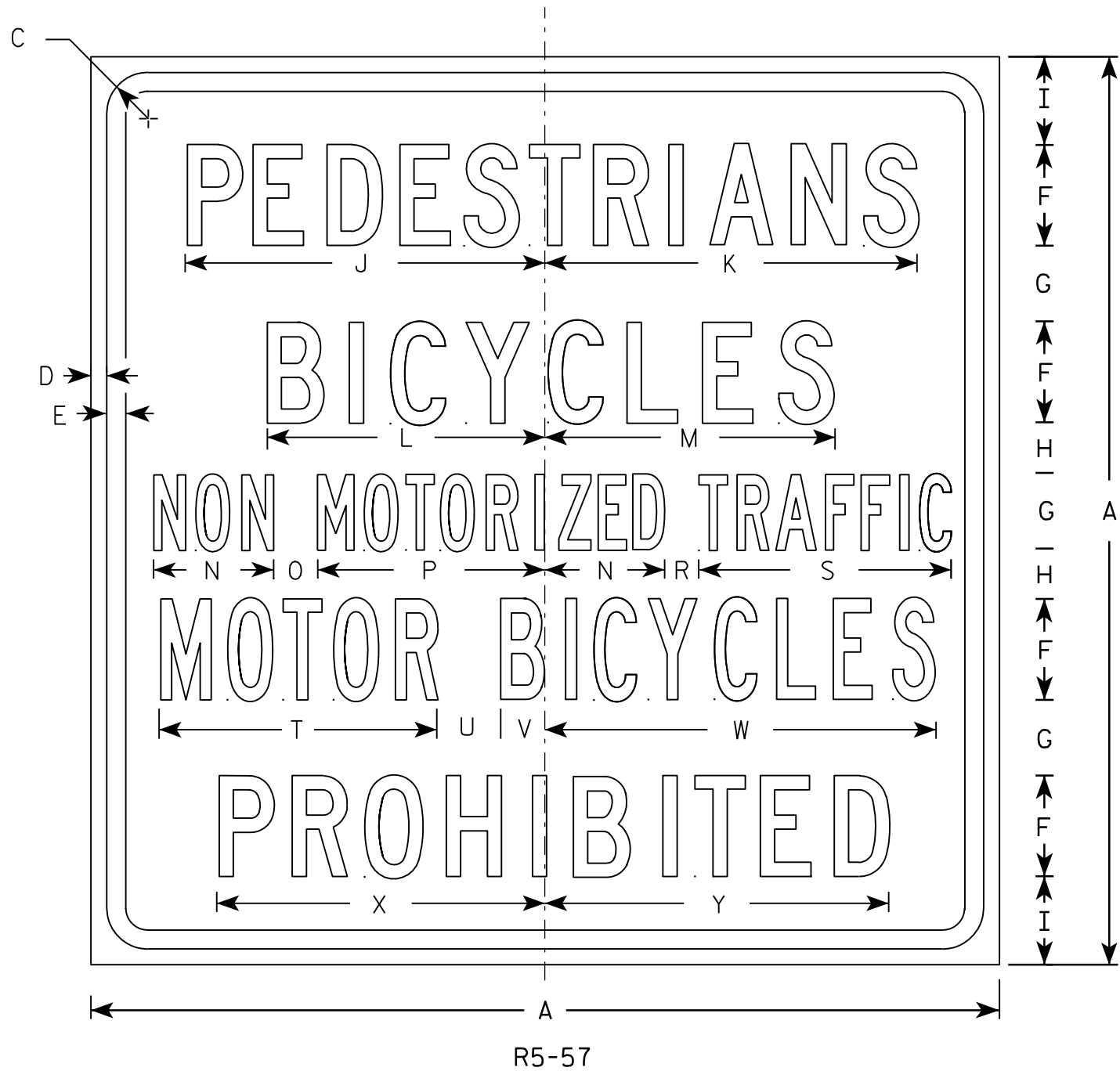
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75

STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1A.2



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - Lines 1, 2, and 5 are Series C.
Lines 3 and 4 are 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

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																											
2S																											
2M																											
3																											
4	36		1 5⁄8	5⁄8	3⁄4	4	3	2	3 1⁄2	14 1⁄4	14 7⁄8	11	11 1⁄2	4 3⁄4	1 3⁄4	9		1 3⁄8	10	11	2 1⁄2	1 3⁄4	15 1⁄2	13	13 5⁄8		9.0
5	36		1 5⁄8	5⁄8	3⁄4	4	3	2	3 1⁄2	14 1⁄4	14 7⁄8	11	11 1⁄2	4 3⁄4	1 3⁄4	9		1 3⁄8	10	11	2 1⁄2	1 3⁄4	15 1⁄2	13	13 5⁄8		9.0

STANDARD SIGN
R5-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-57.10

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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R8-55

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - WHITE
Message - BLACK
3. Message Series - 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	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	42	36	1 3⁄8	1⁄2	5⁄8	4	5 3⁄8	3	5	13 1⁄4	16 1⁄4	14	10 1⁄2														10.5
2M	42	36	1 3⁄8	1⁄2	5⁄8	4	5 3⁄8	3	5	13 1⁄4	16 1⁄4	14	10 1⁄2														10.5
3																											
4																											
5																											

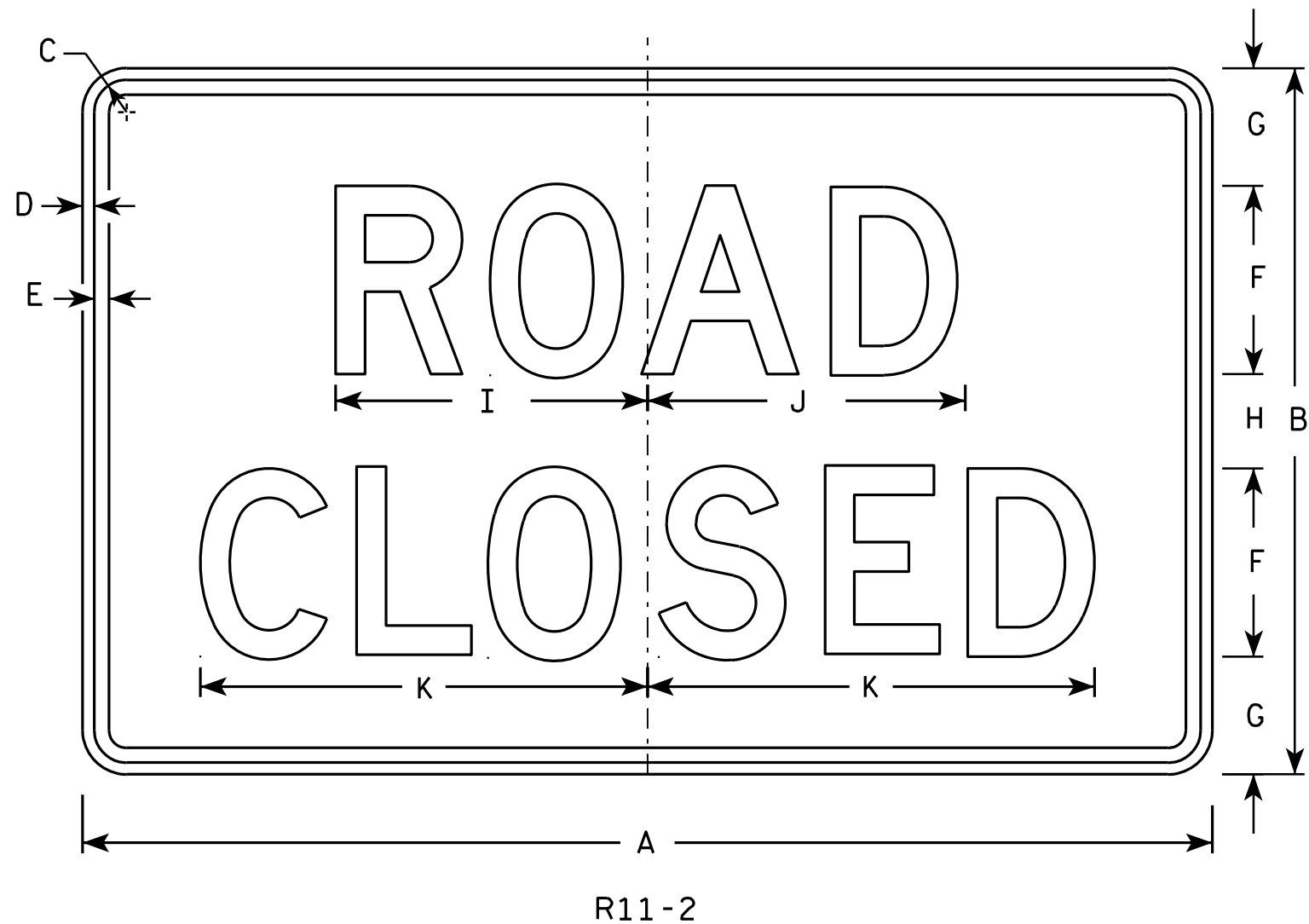
STANDARD SIGN
R8-55

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

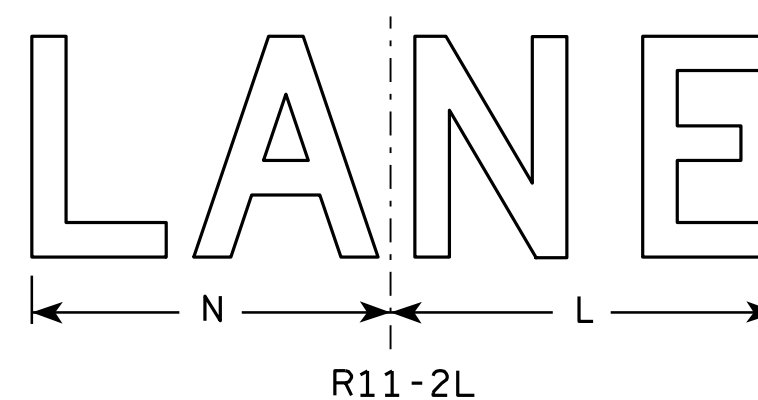
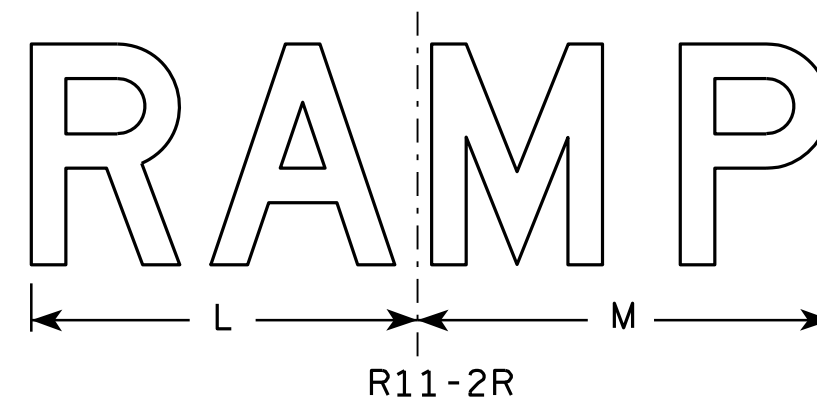
DATE 2/18/2011 PLATE NO. R8-55.1

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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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.
- Modify the message as required.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
2M	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
3	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
4	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
5	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0

STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

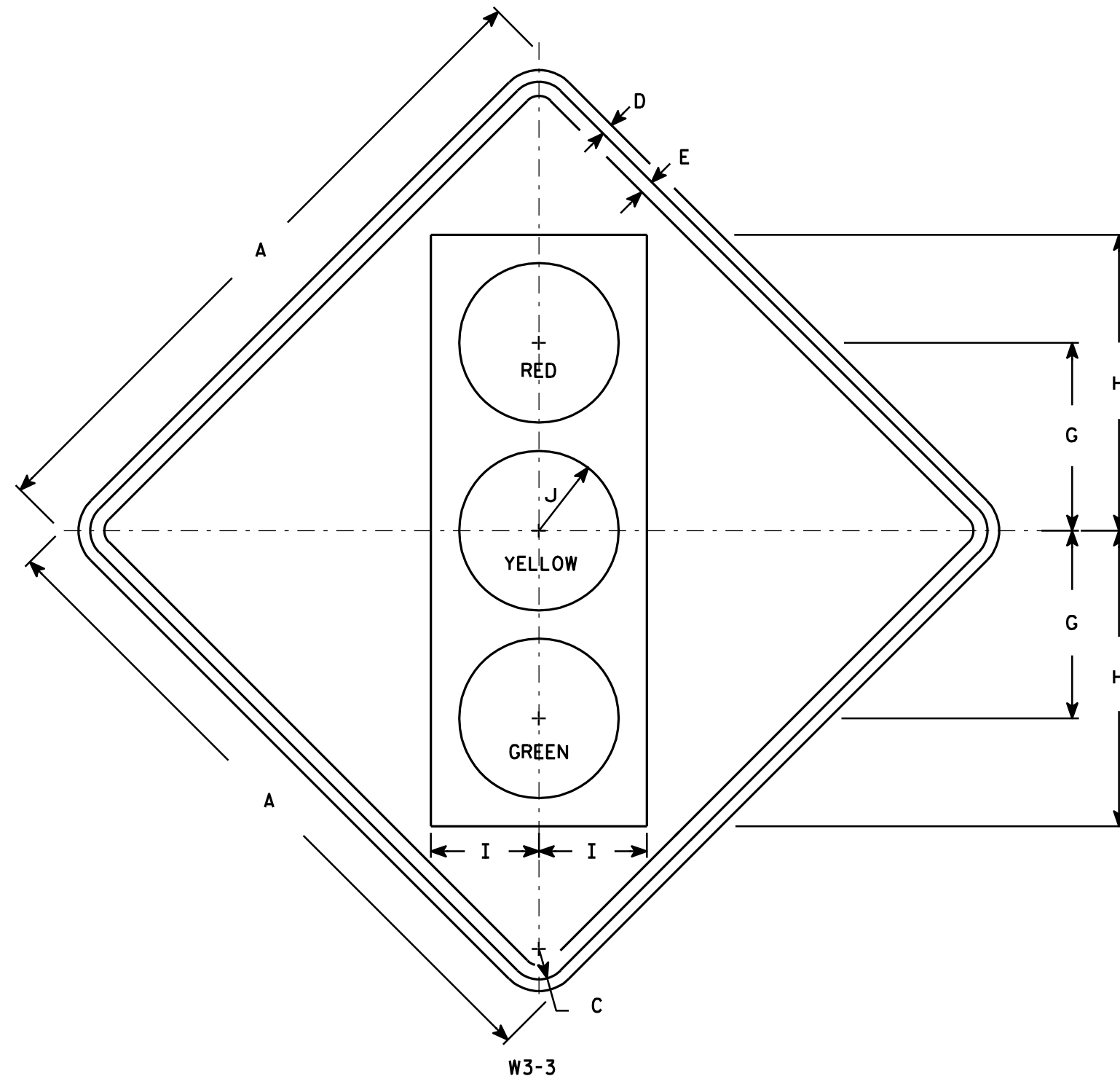
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Yellow
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.
- Symbol and border are non-reflective black.
Top circle - Type H Reflectorized Red
Center circle - Same as background
Bottom circle - Type H Reflectorized Green

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8		8 3/4	13 3/4	5	3 3/4																	6.25
2S	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2M	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
3	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
4	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0

STANDARD SIGN W3-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 6/7/10

PLATE NO. W3-3.11

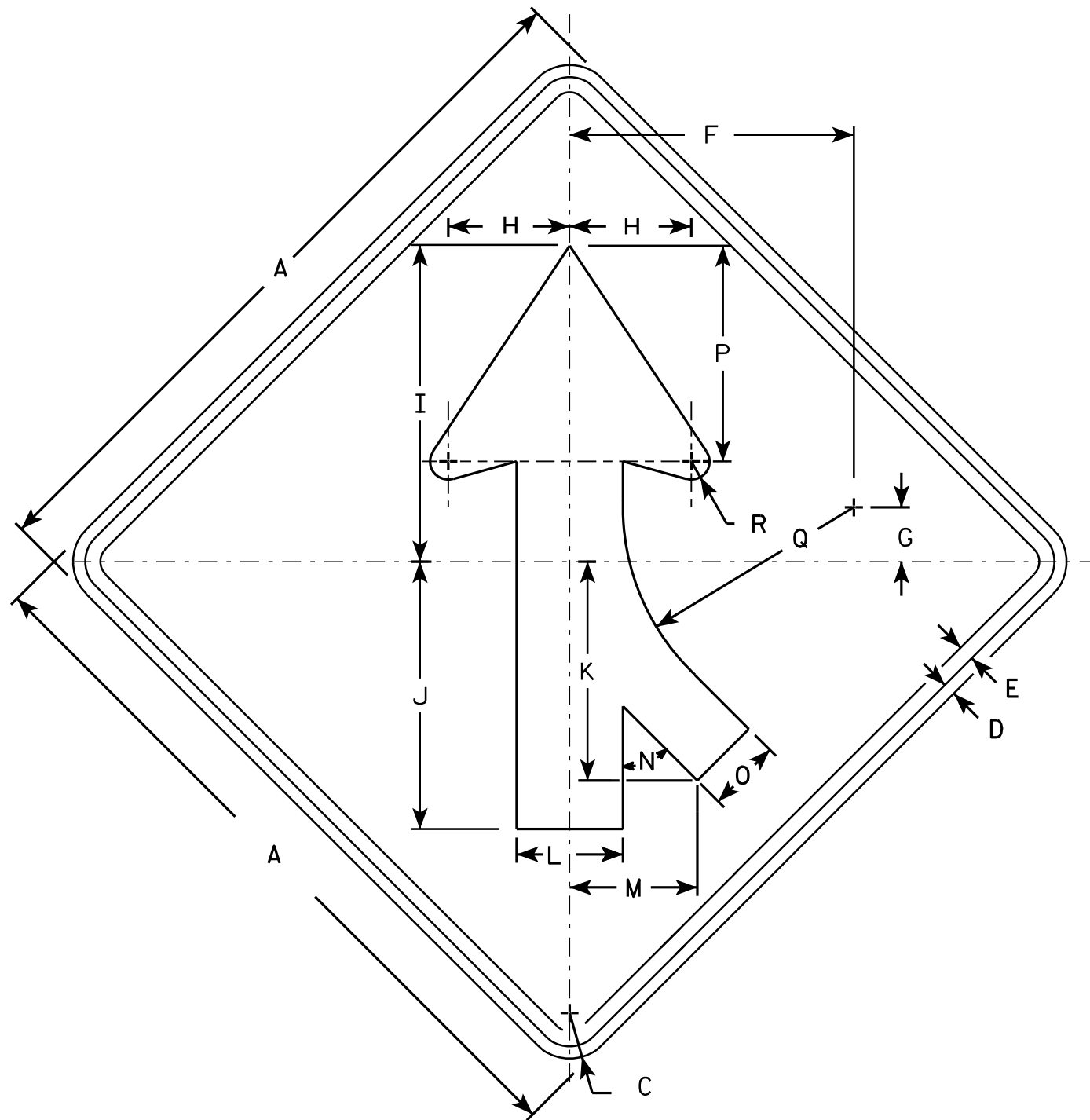
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



W4-1 R

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. W4-1L is the same as W4-1R 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	30		1 3/8	1/2	5/8	11 5/8	2 1/2	5	13	11	9	4 3/8	5 1/4	45°	3	8 7/8	9 1/2	3/4									6.25
2S	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
2M	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
3	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
4	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
5	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0

STANDARD SIGN

W4-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W4-1.14

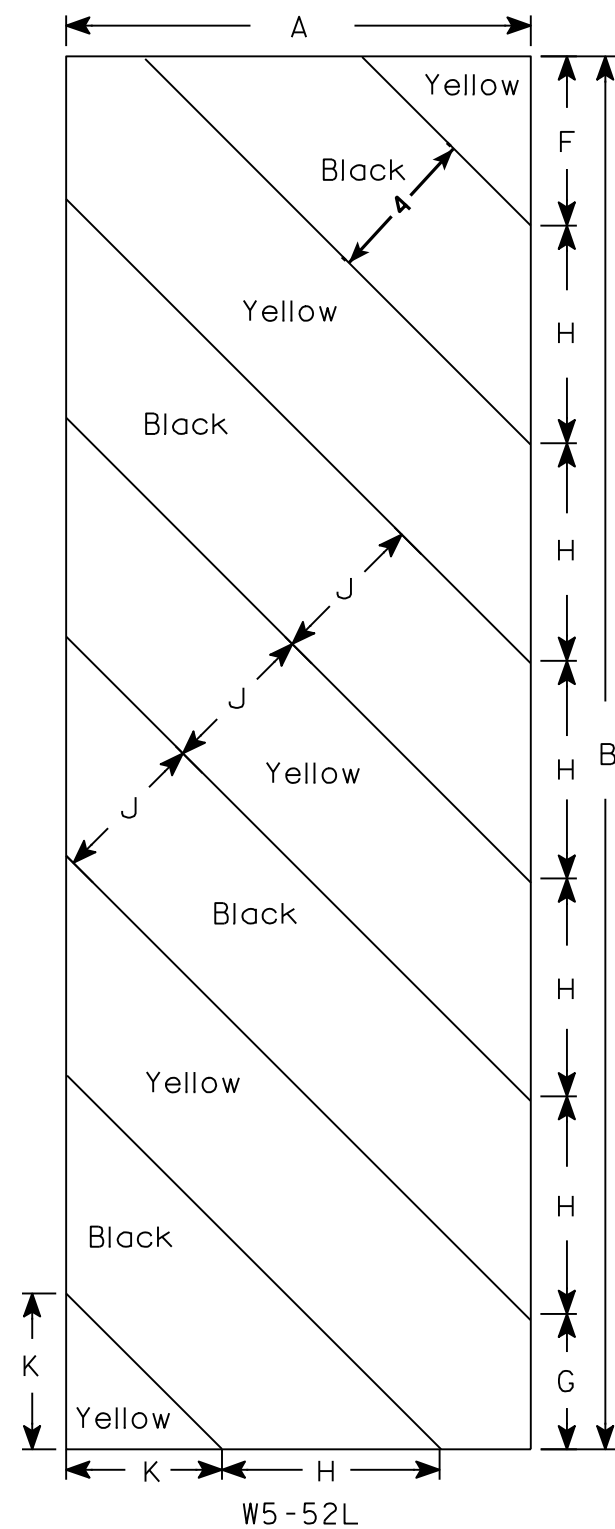
PROJECT NO:

HWY:

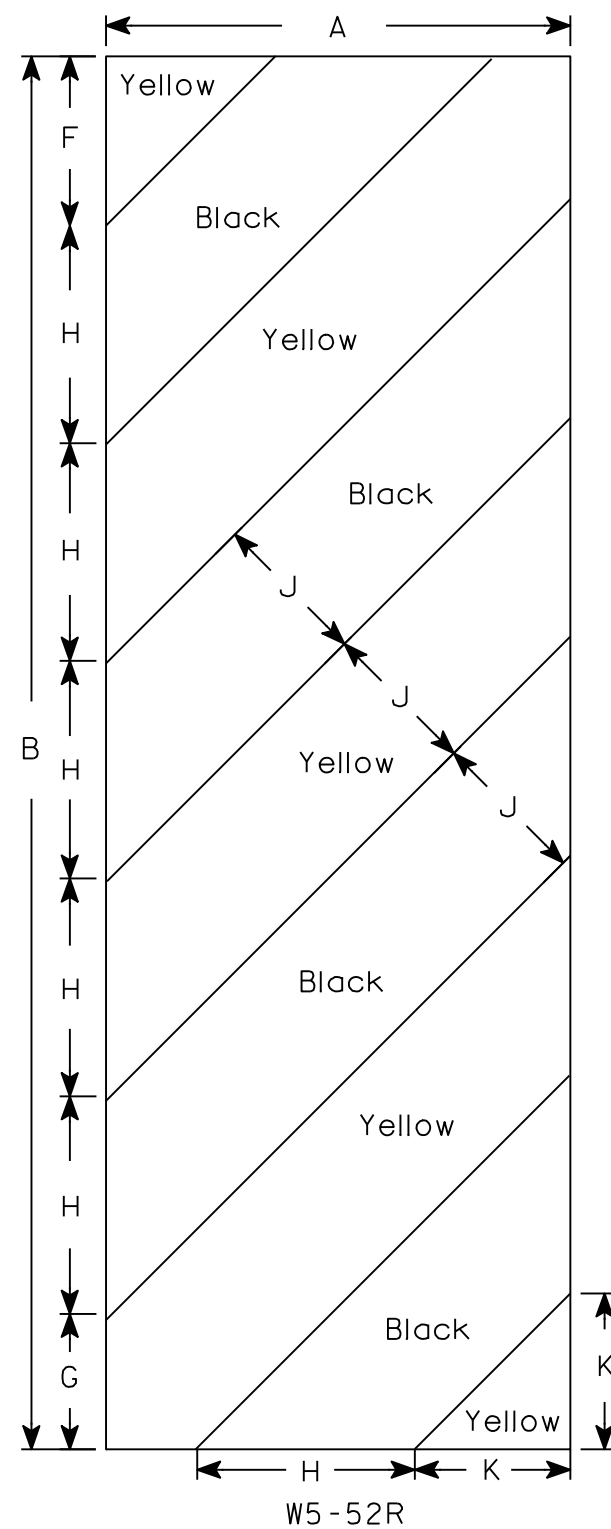
COUNTY:

SHEET NO:

E



W5-52L



W5-52R

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.

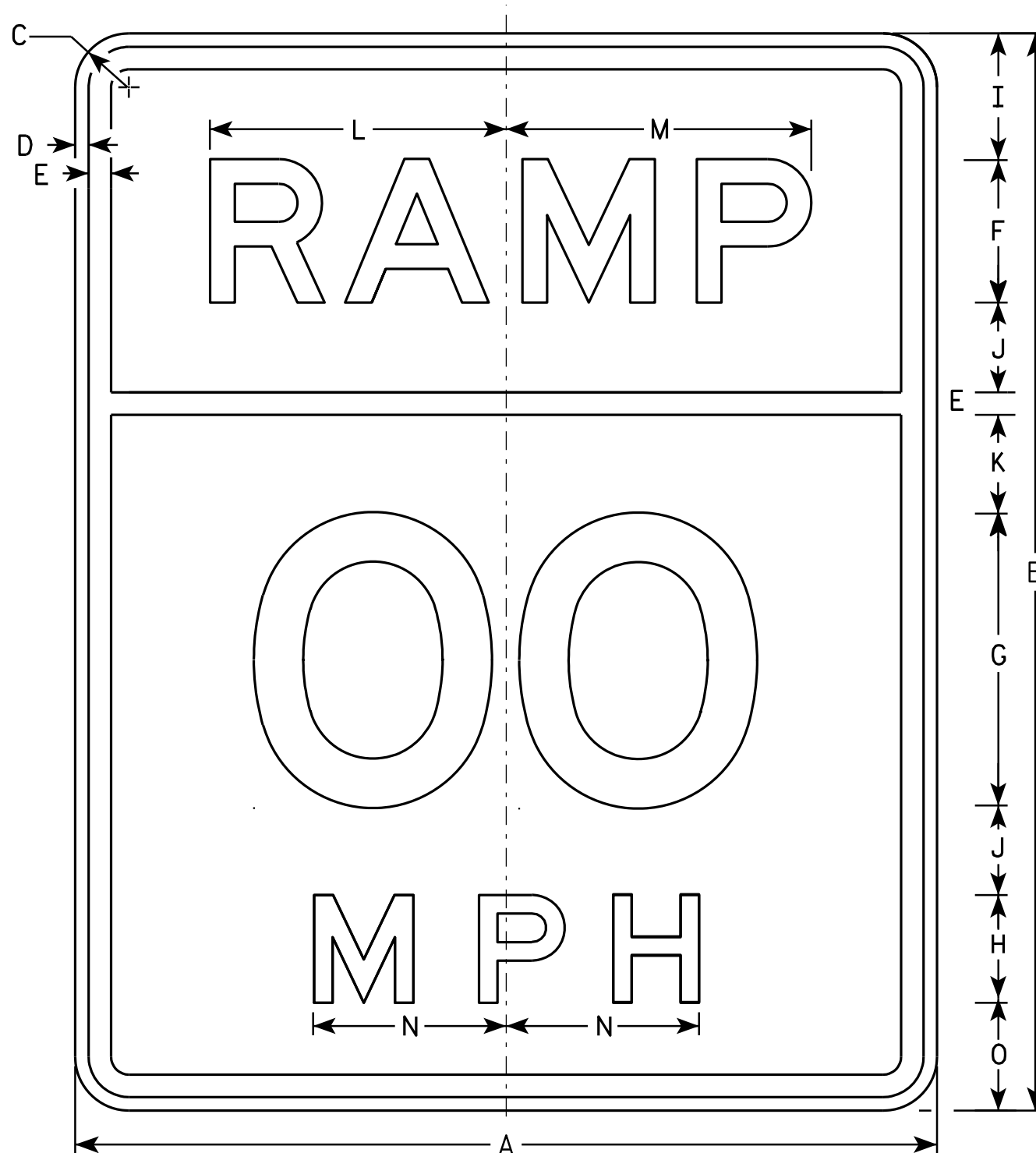
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
2M	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
3	18	54				6	5 1⁄2	8 1⁄2	45°	6	6 5⁄6																6.75
4																											
5																											

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



W13-3

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
- 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.

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	30	1 1/8	3/8	5/8	4	8	3	3 1/2	2 1/2	2 7/8	8 1/4	8 1/2	5 3/8	3												5.0
2S	24	30	1 1/8	3/8	5/8	4	8	3	3 1/2	2 1/2	2 7/8	8 1/4	8 1/2	5 3/8	3												5.0
2M	24	30	1 1/8	3/8	5/8	4	8	3	3 1/2	2 1/2	2 7/8	8 1/4	8 1/2	5 3/8	3												5.0
3																											
4	36	48	1 5/8	5/8	7/8	6	12	4	6	4 1/8	5 1/8	13 1/2	13 5/8	7 1/8	6												12.0
5	48	60	2 1/4	3/4	1 1/4	8	16	6	7	5	5 3/4	16 1/2	17	10 5/8	6												20.0

STANDARD SIGN
W13-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/13/13 PLATE NO. W13-3.9

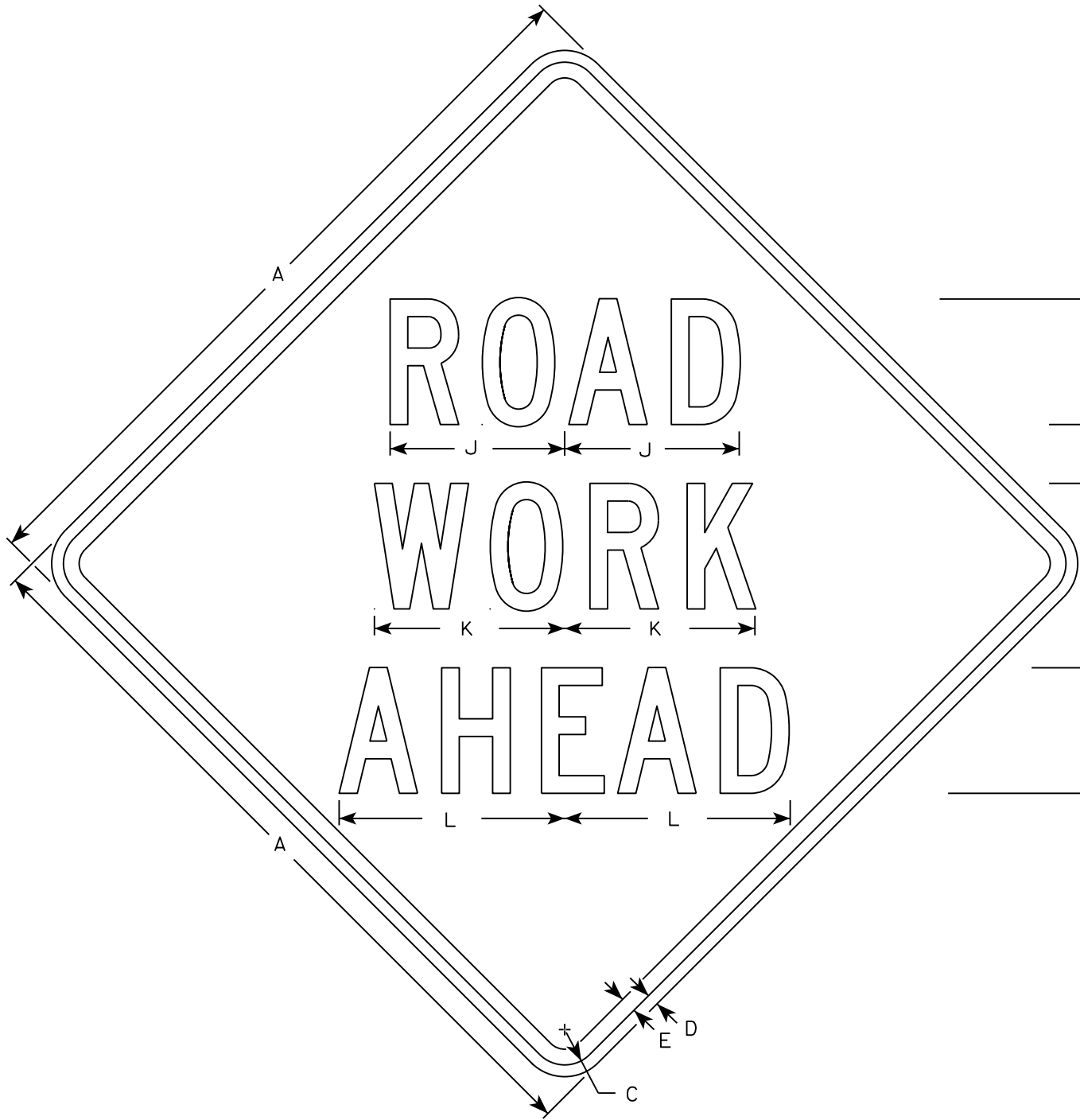
PROJECT NO:

HWY:

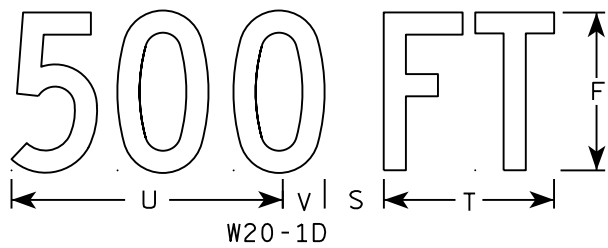
COUNTY:

SHEET NO:

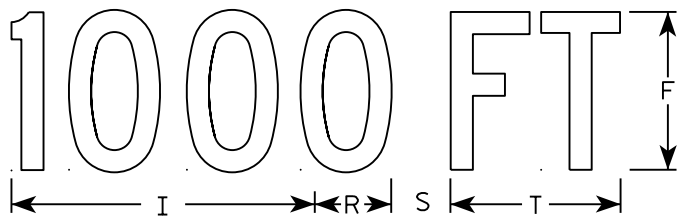
E



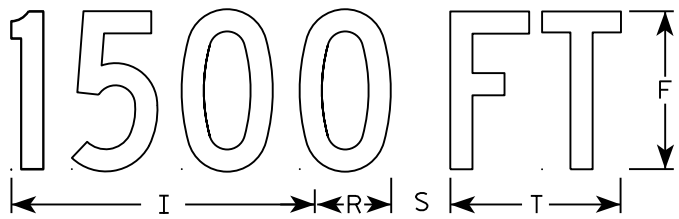
W20-1A



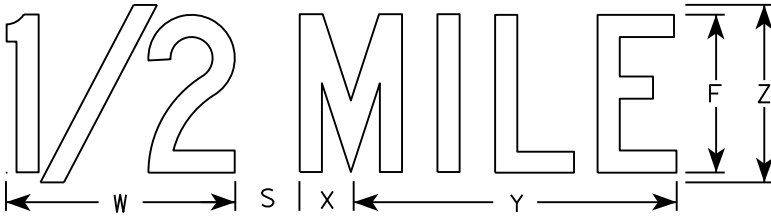
W20-1D



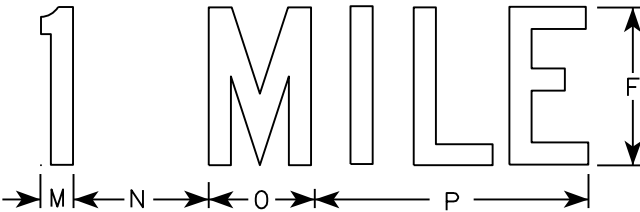
W20-1C



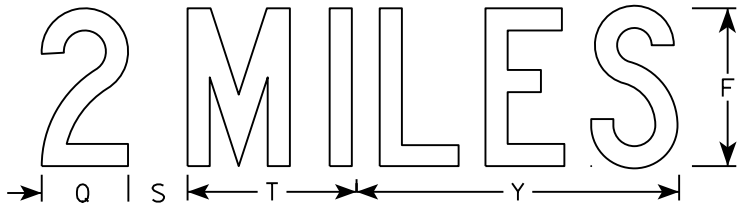
W20-1B



W20-1G



W20-1F



W20-1E

NOTES

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

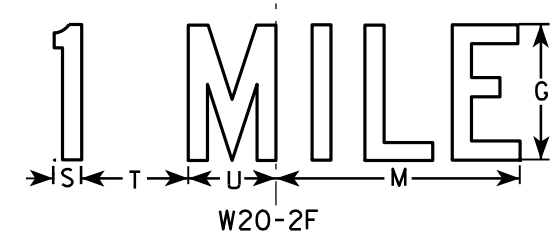
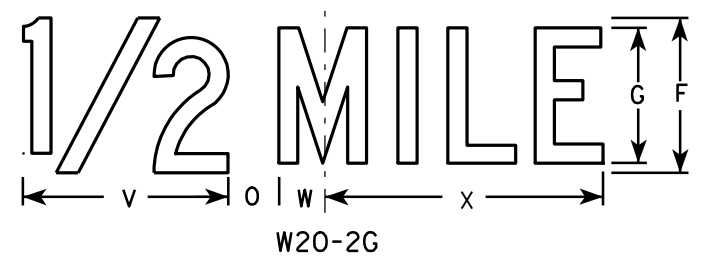
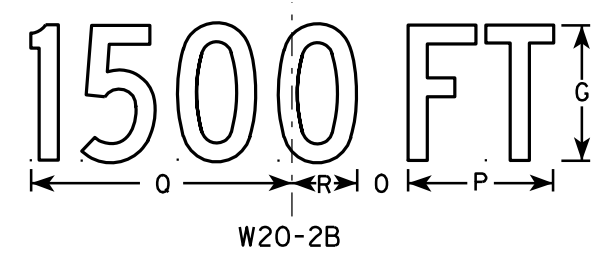
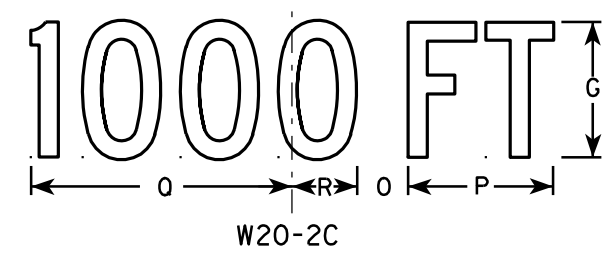
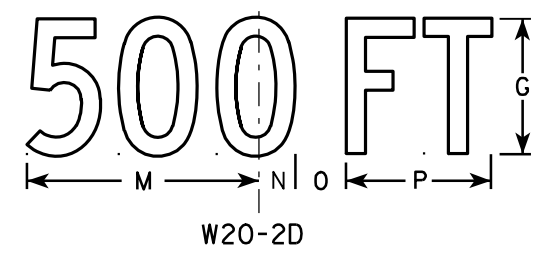
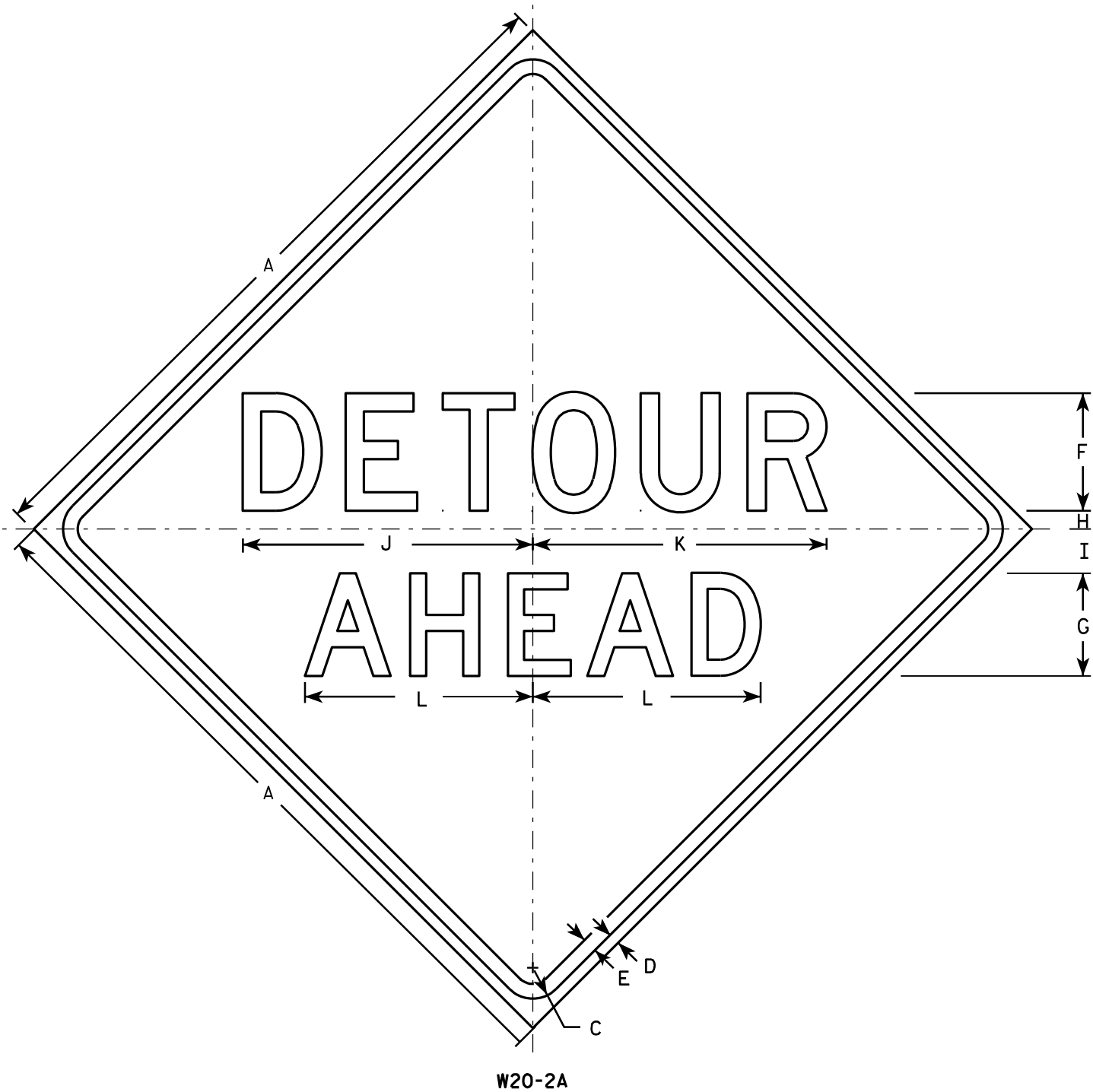
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10



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.

7

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	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

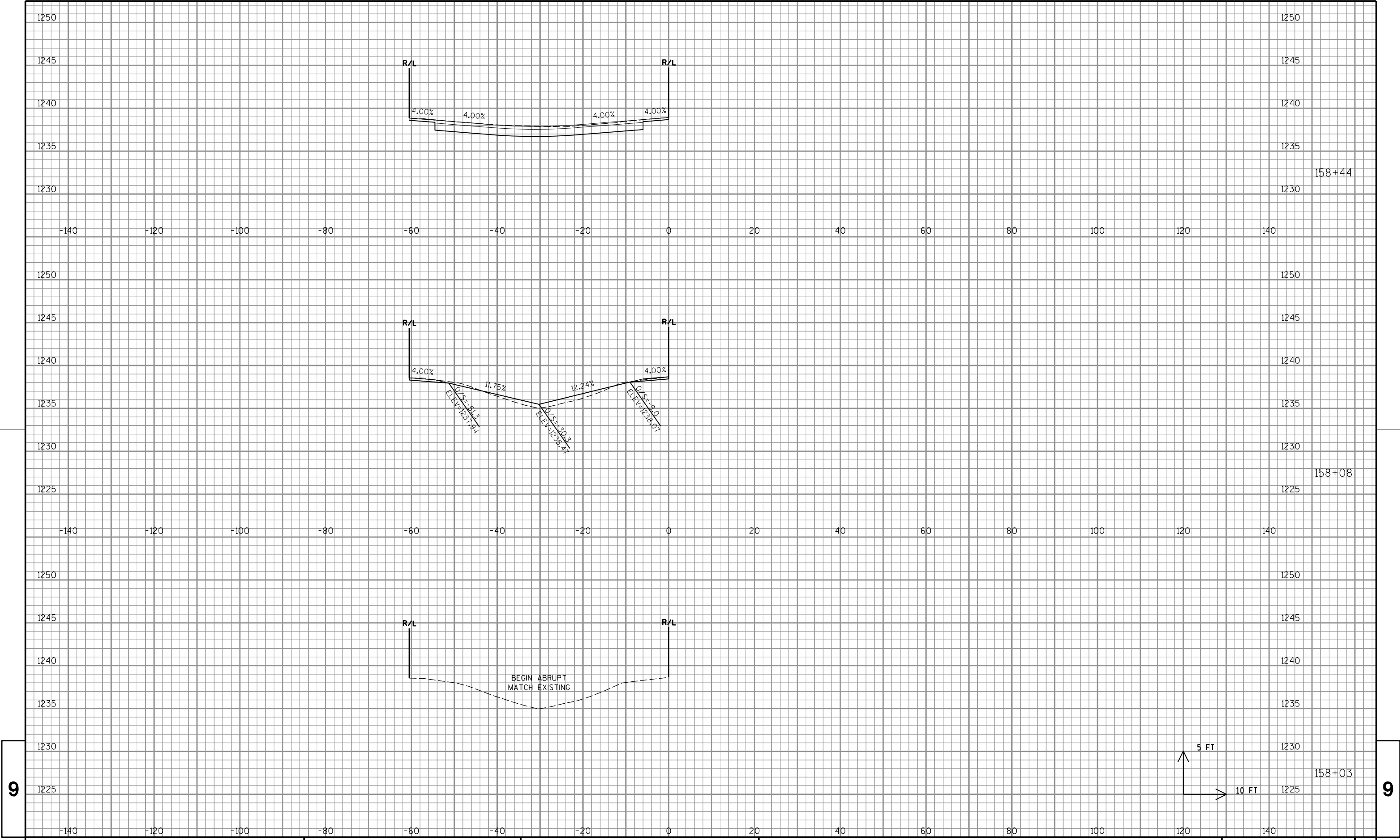
PROJECT NO:

HWY:

COUNTY:

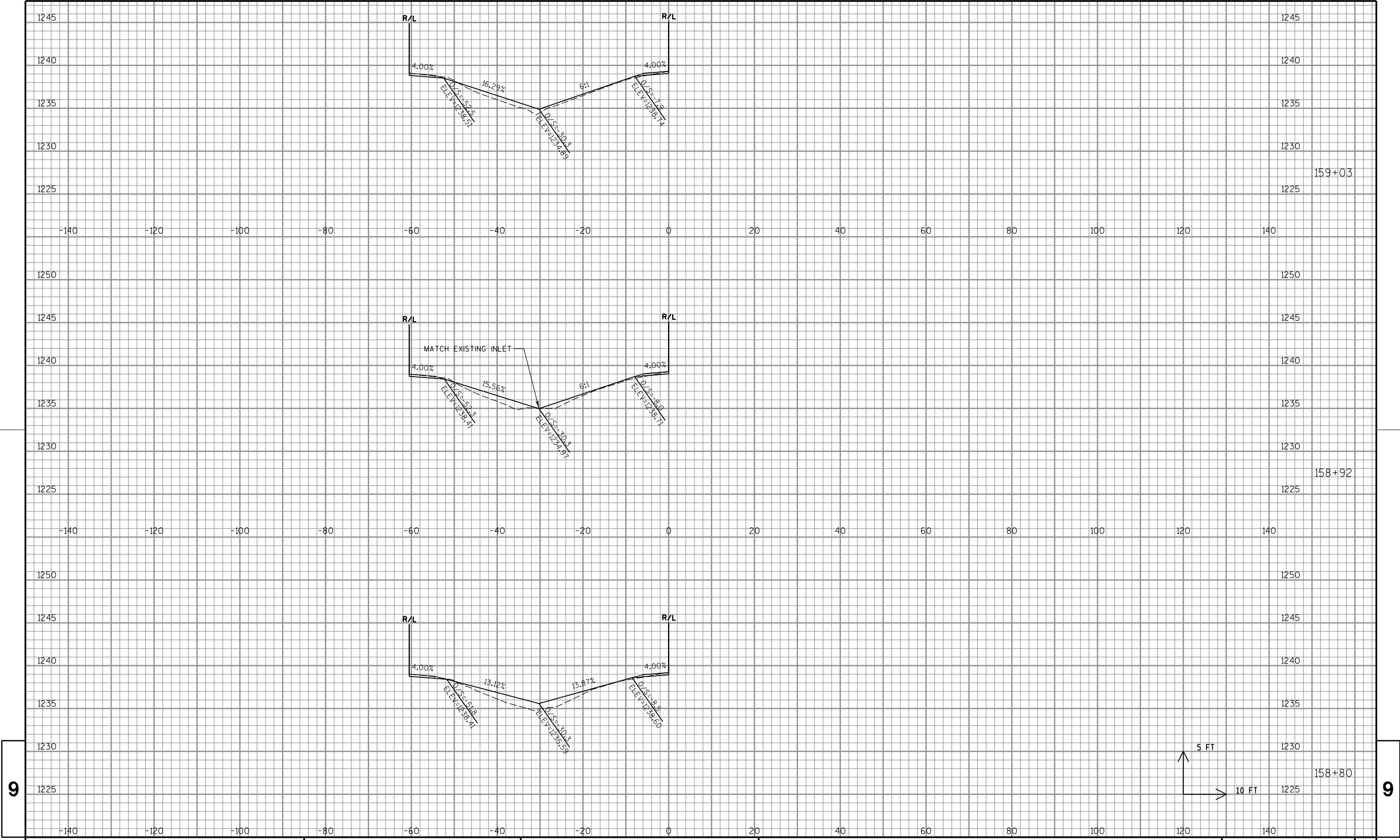
SHEET NO:

E

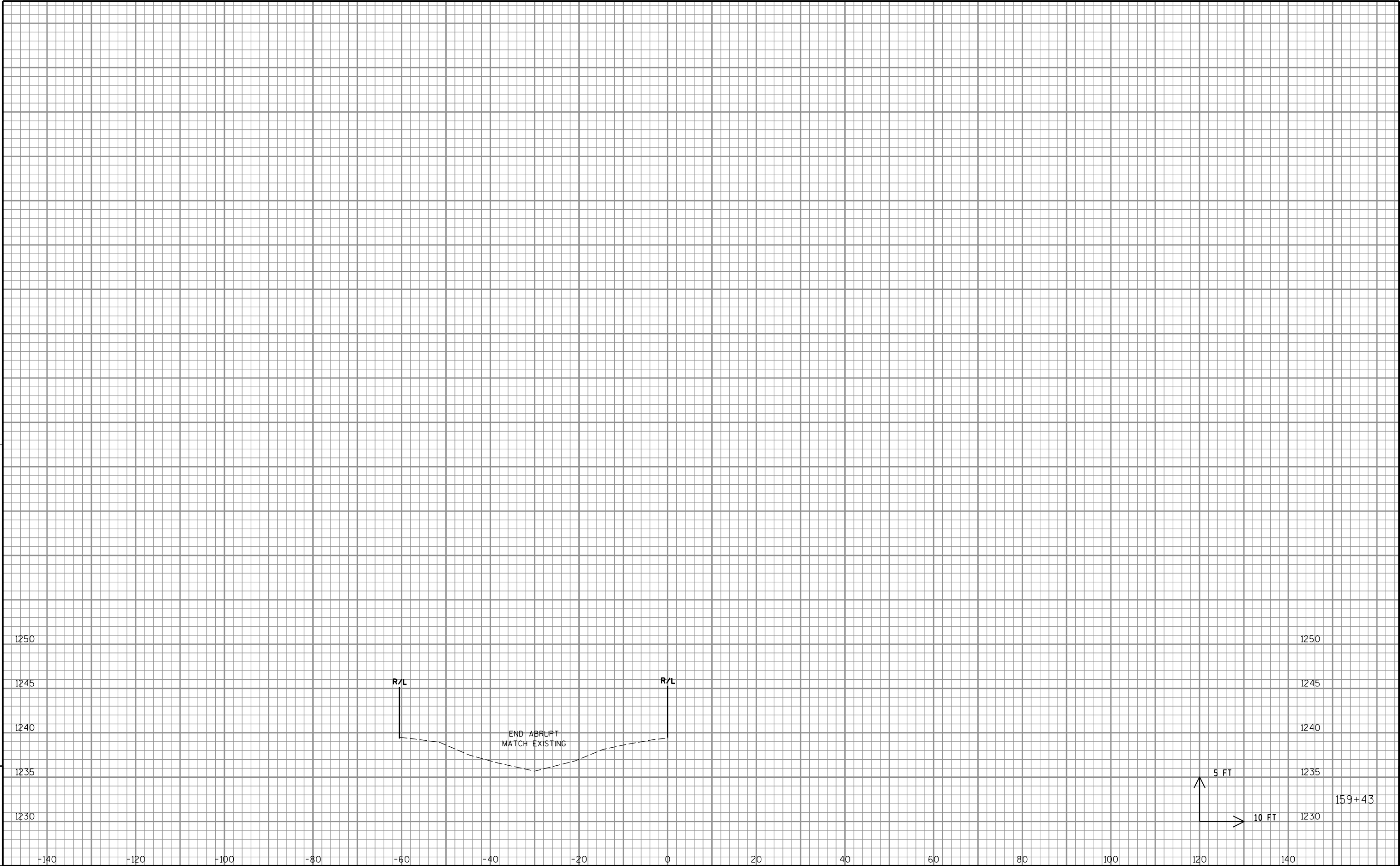


9

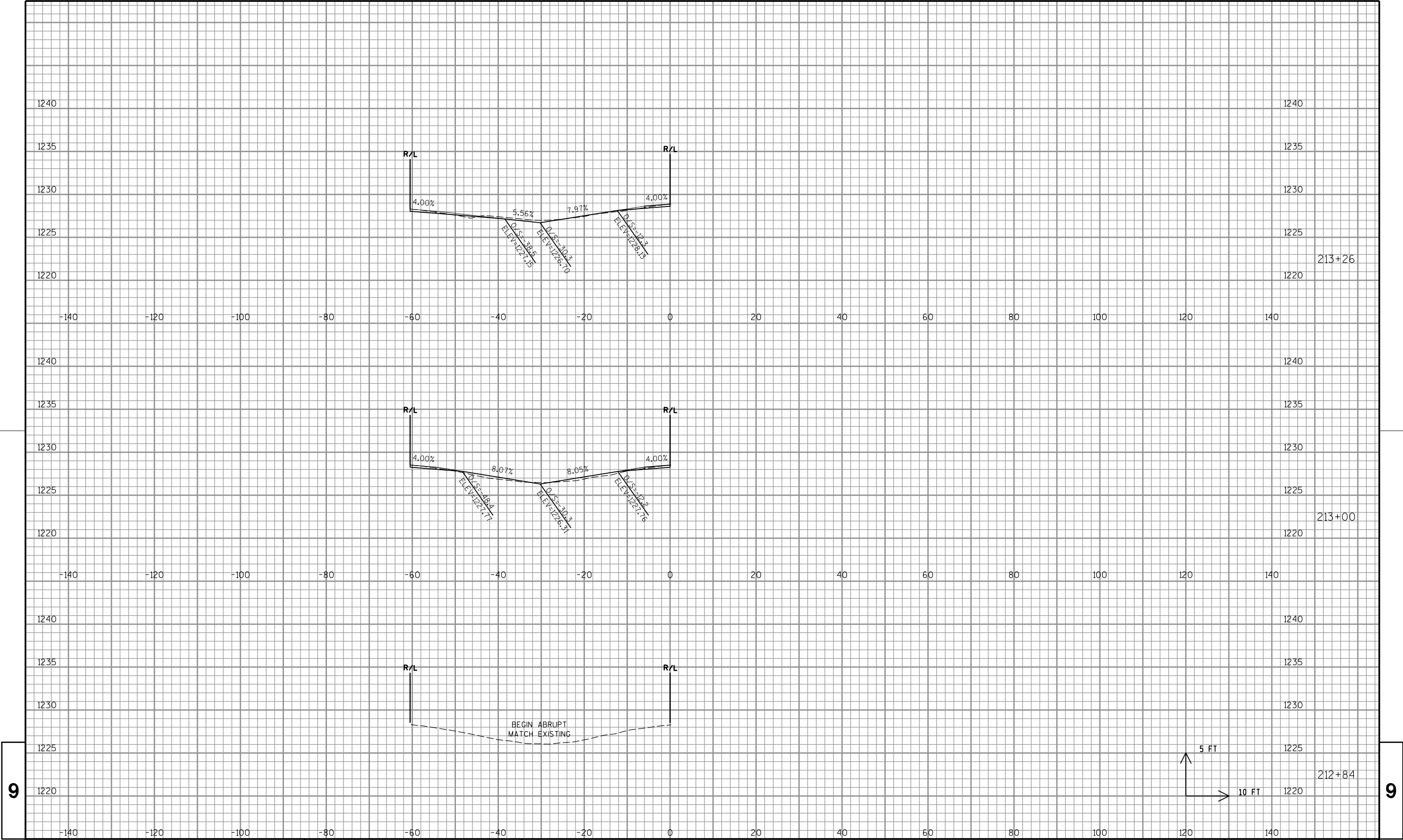
9



9



9



9

9

PROJECT NO:1053-02-65

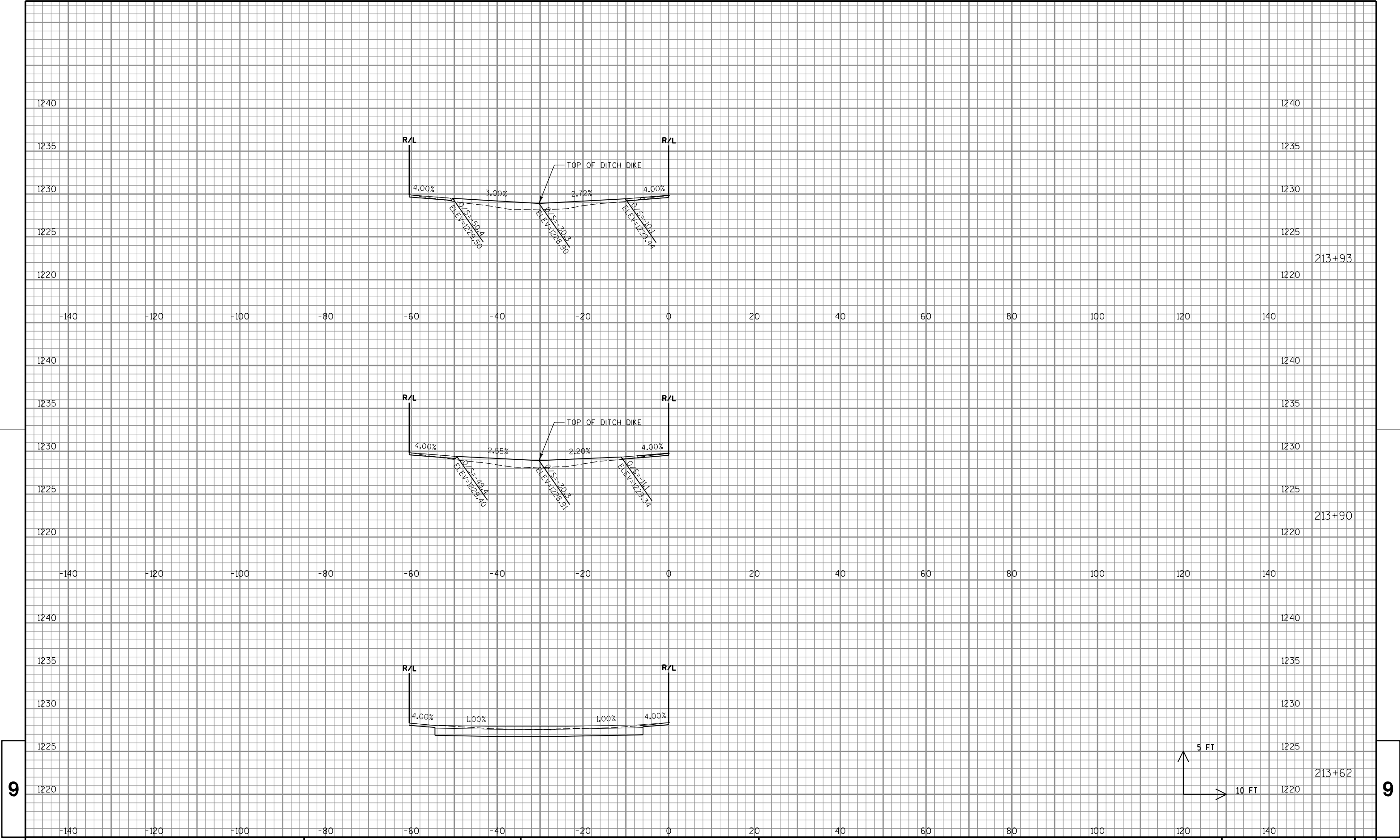
HWY:STH 29

COUNTY:MARATHON

CROSS SECTIONS: CROSSOVER GRADING

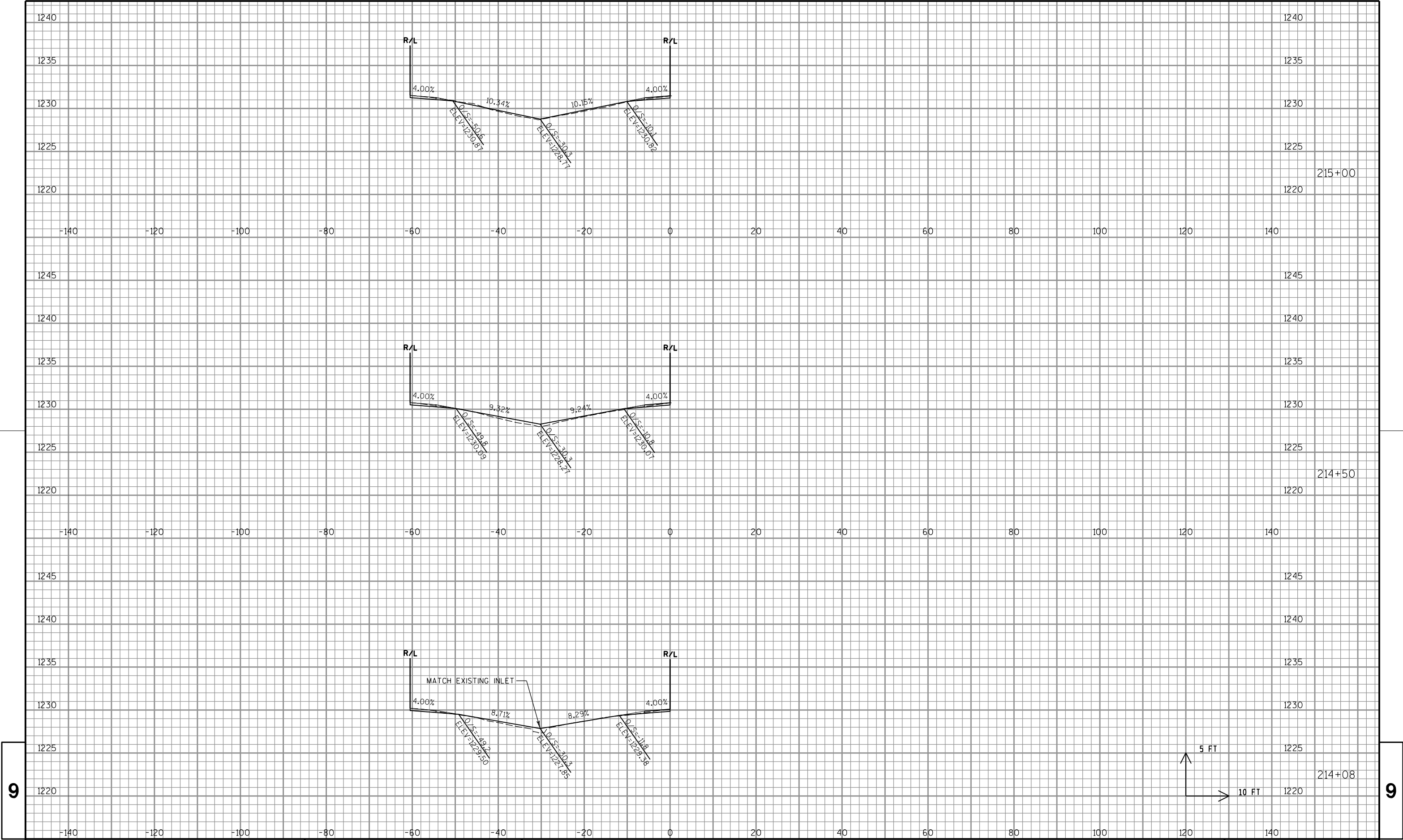
SHEET

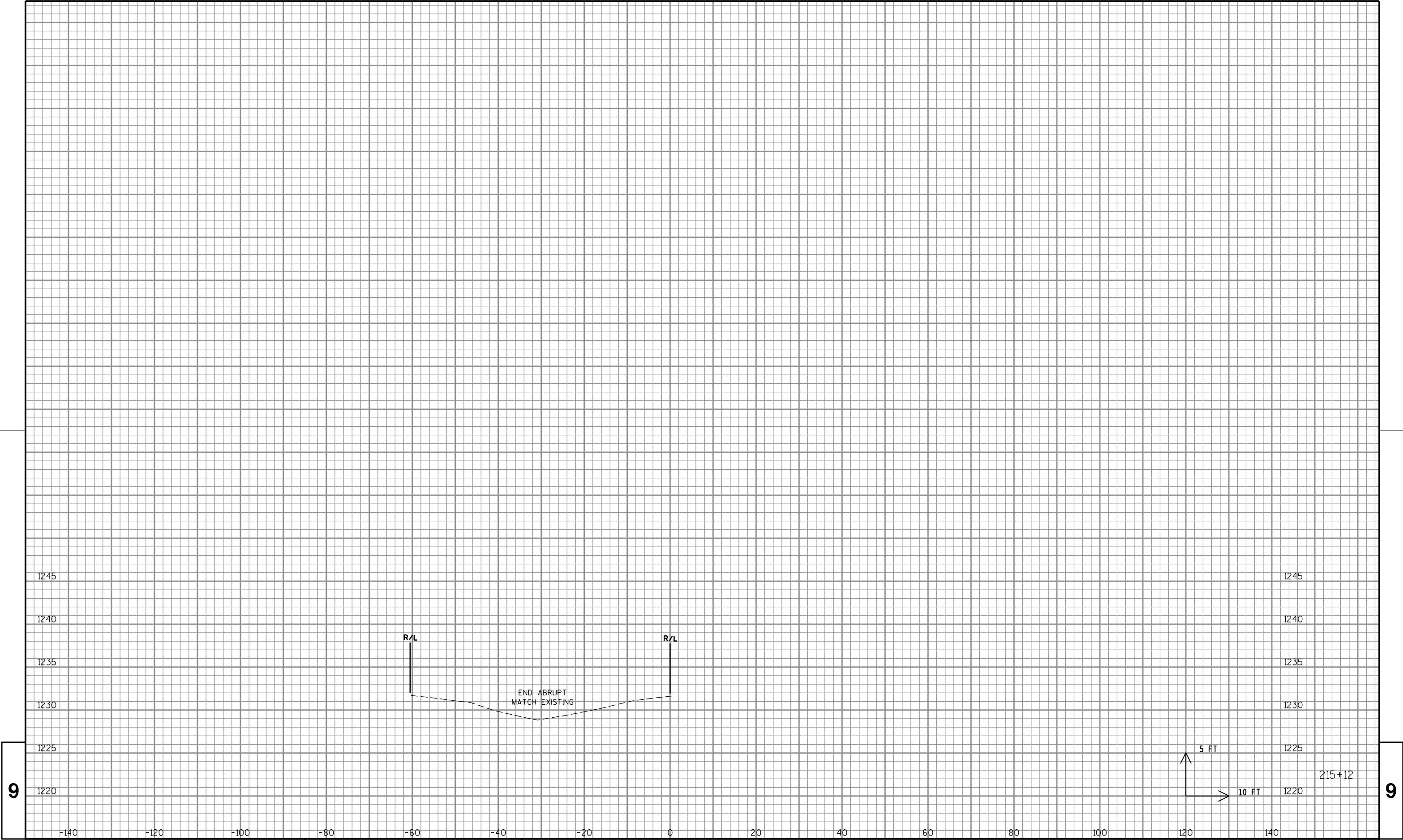
E



9

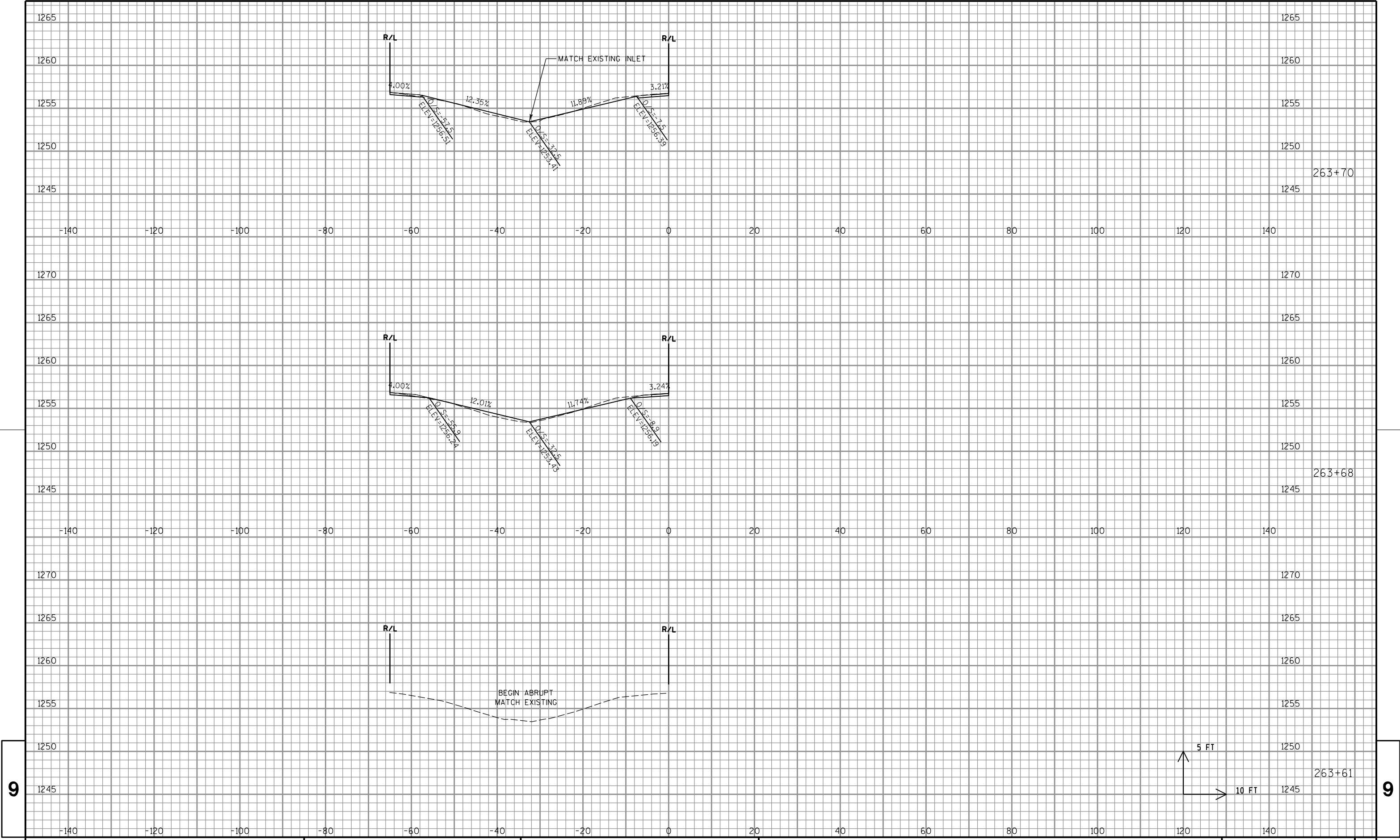
9





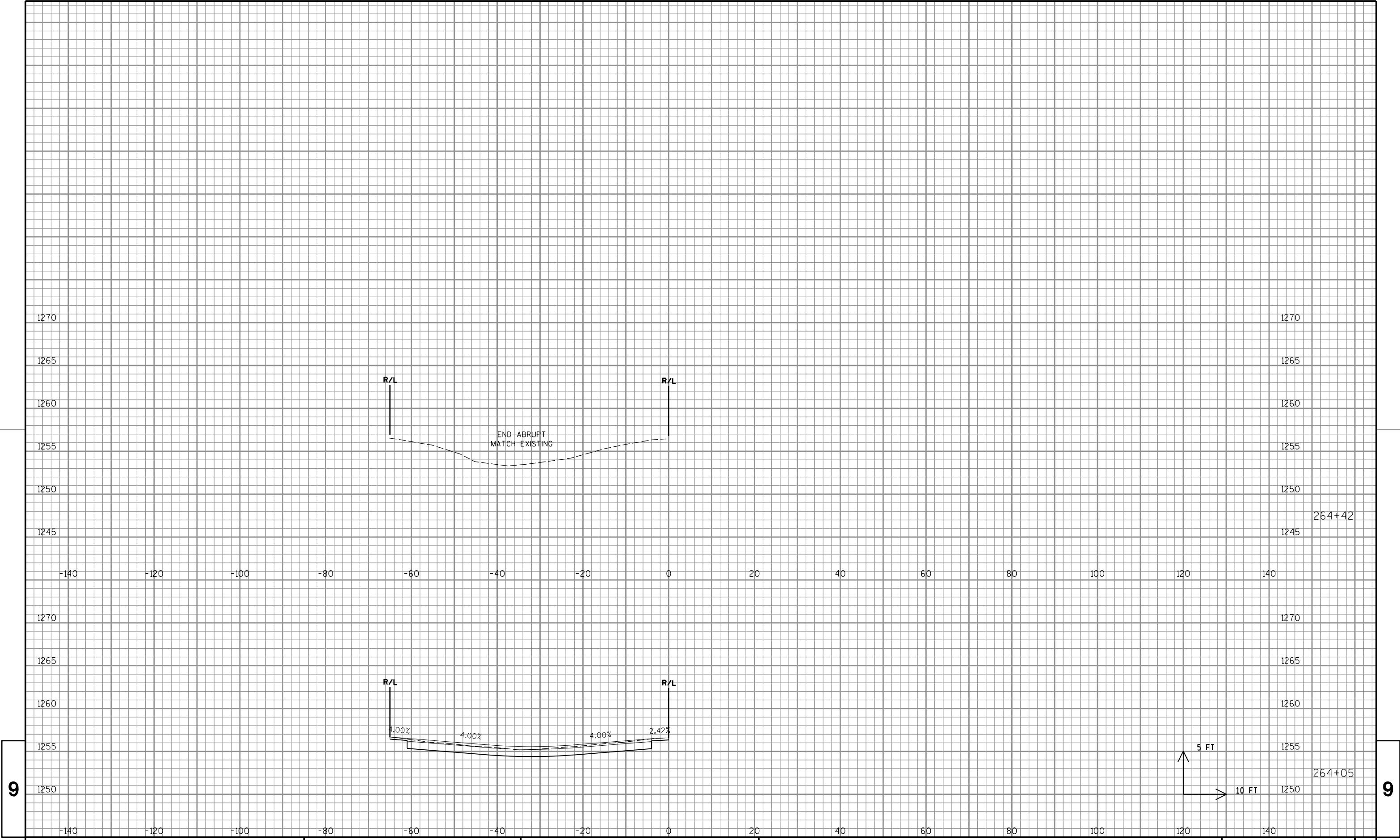
9

9



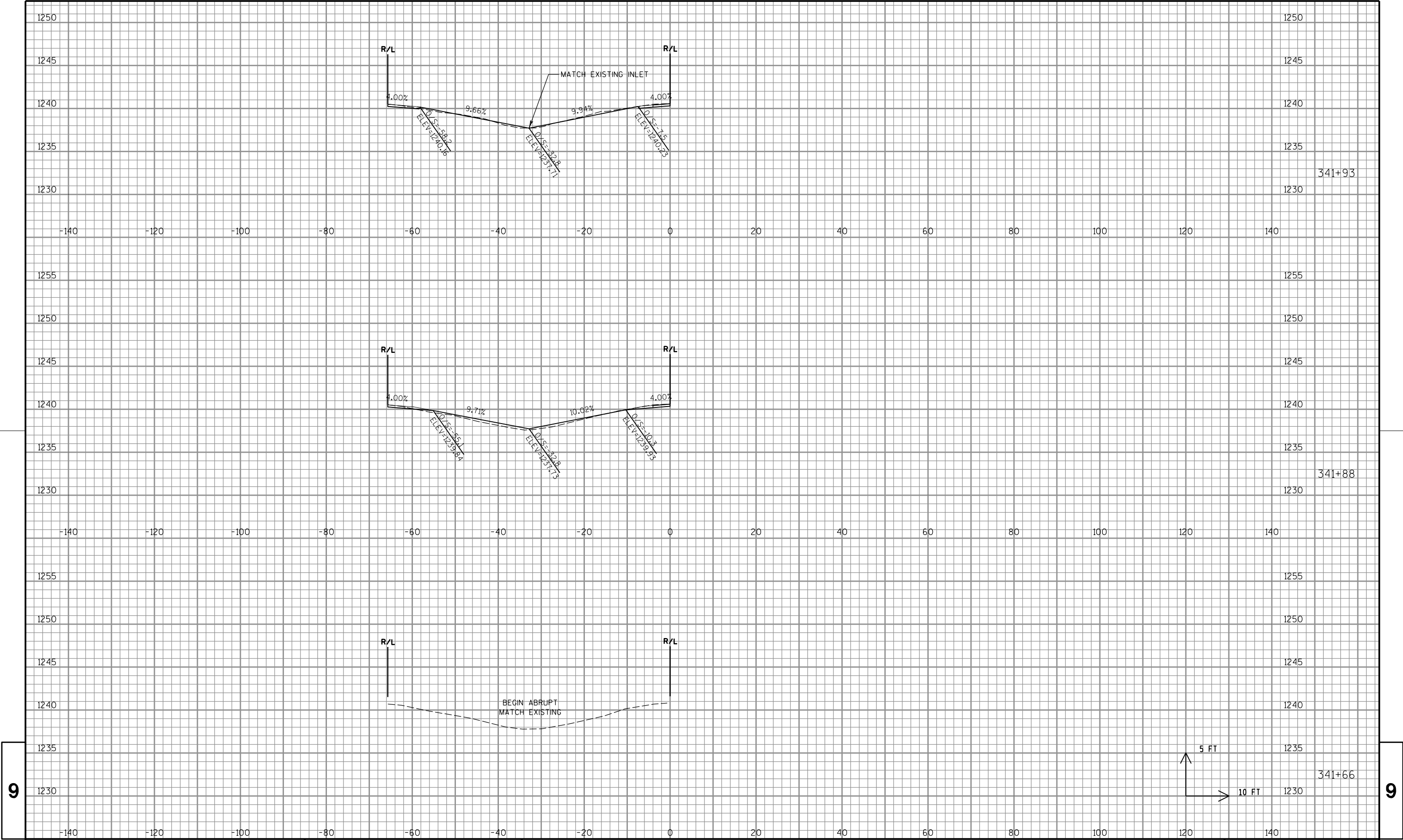
9

9



9

9



9

9

PROJECT NO: 1053-02-65

HWY: STH 29

COUNTY: MARATHON

CROSS SECTIONS: CROSSOVER GRADING

SHEET

E

FILE NAME : P:\47xx\4792_DP.13.STH29.MAR\CADDSPlan\1053-02-65 (West Project)\090201_xs.dgn

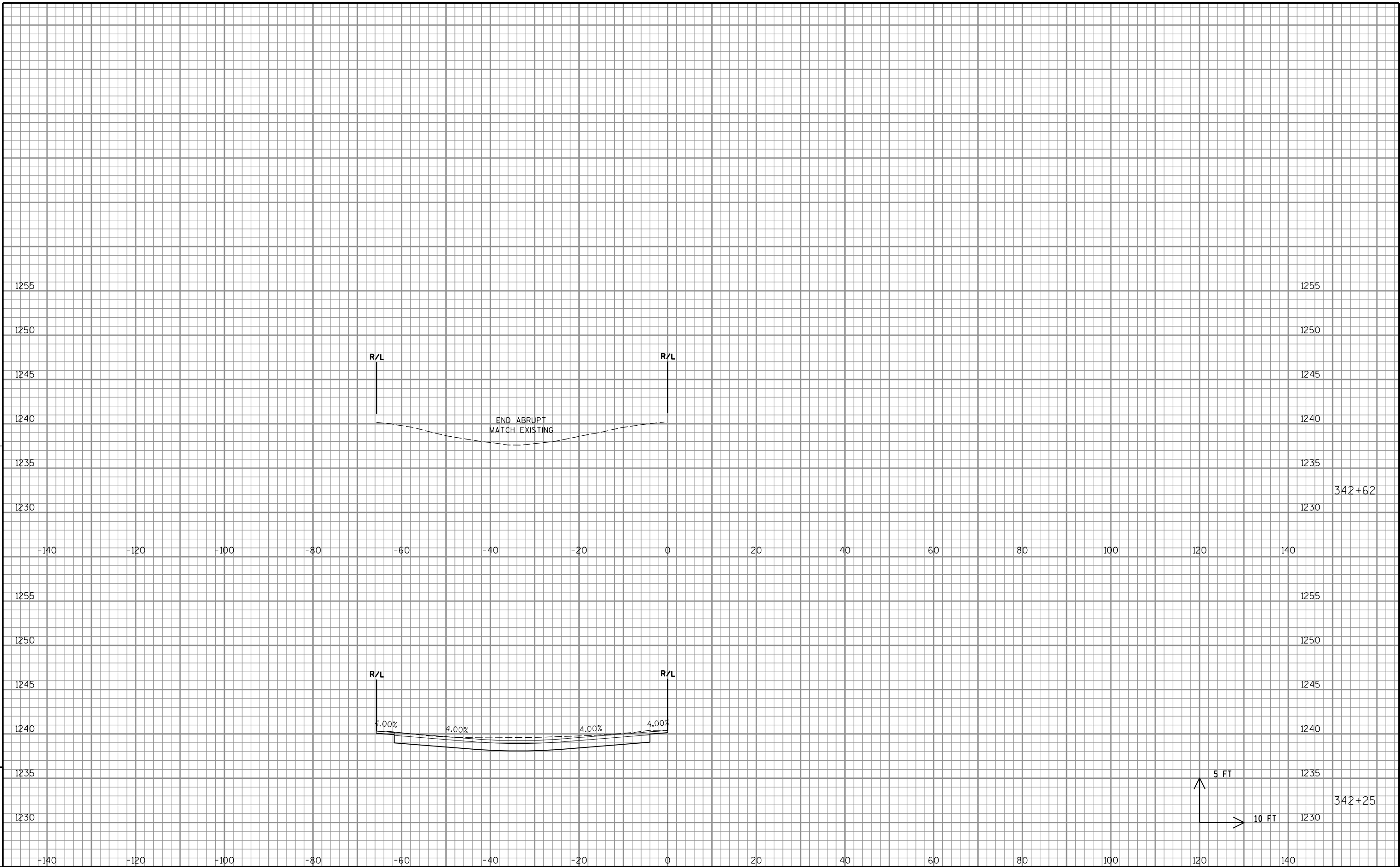
PLOT DATE : 4/12/2016

PLOT BY : sgc

PLOT NAME :

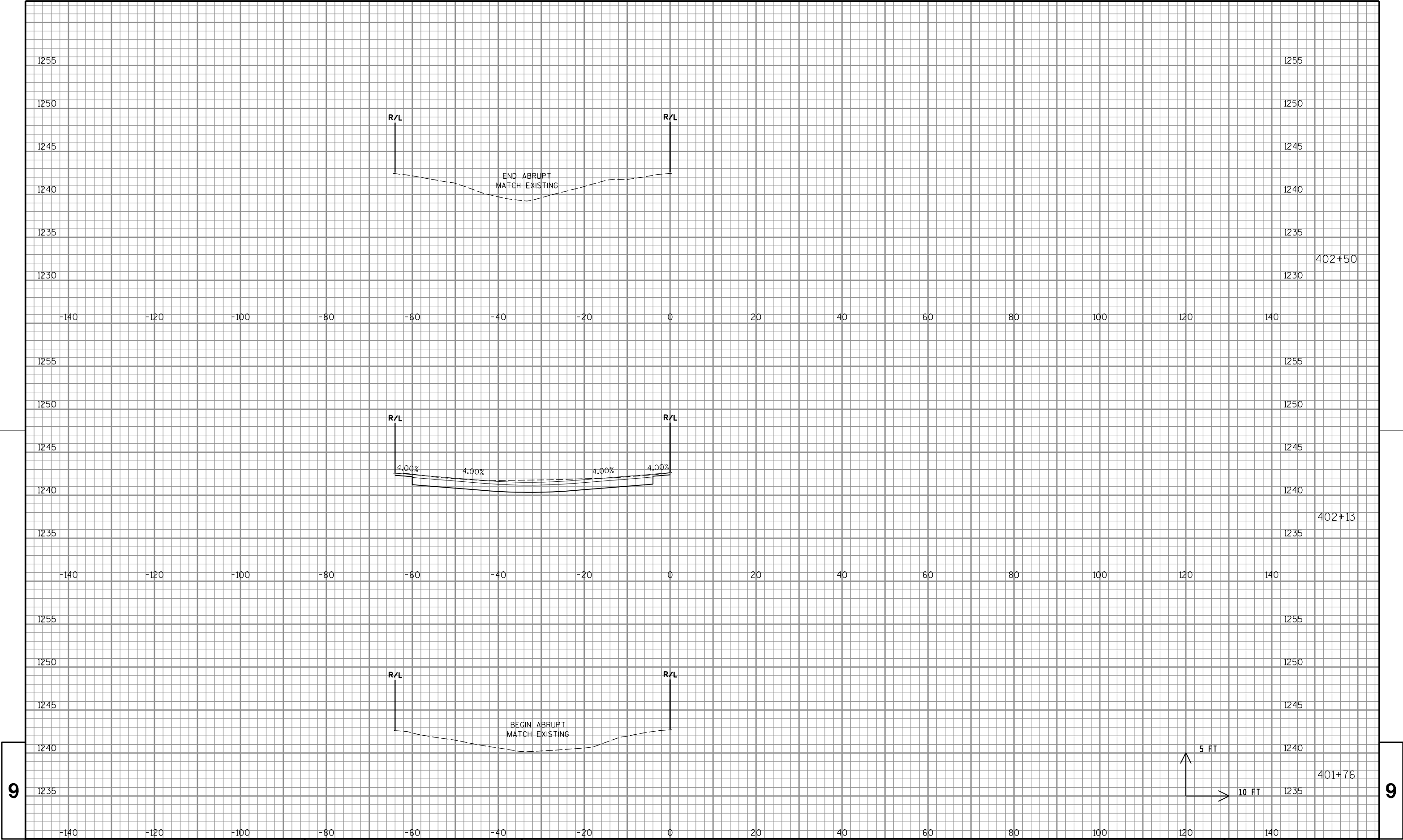
PLOT SCALE : 1:20

WISDOT/CADDs SHEET 21



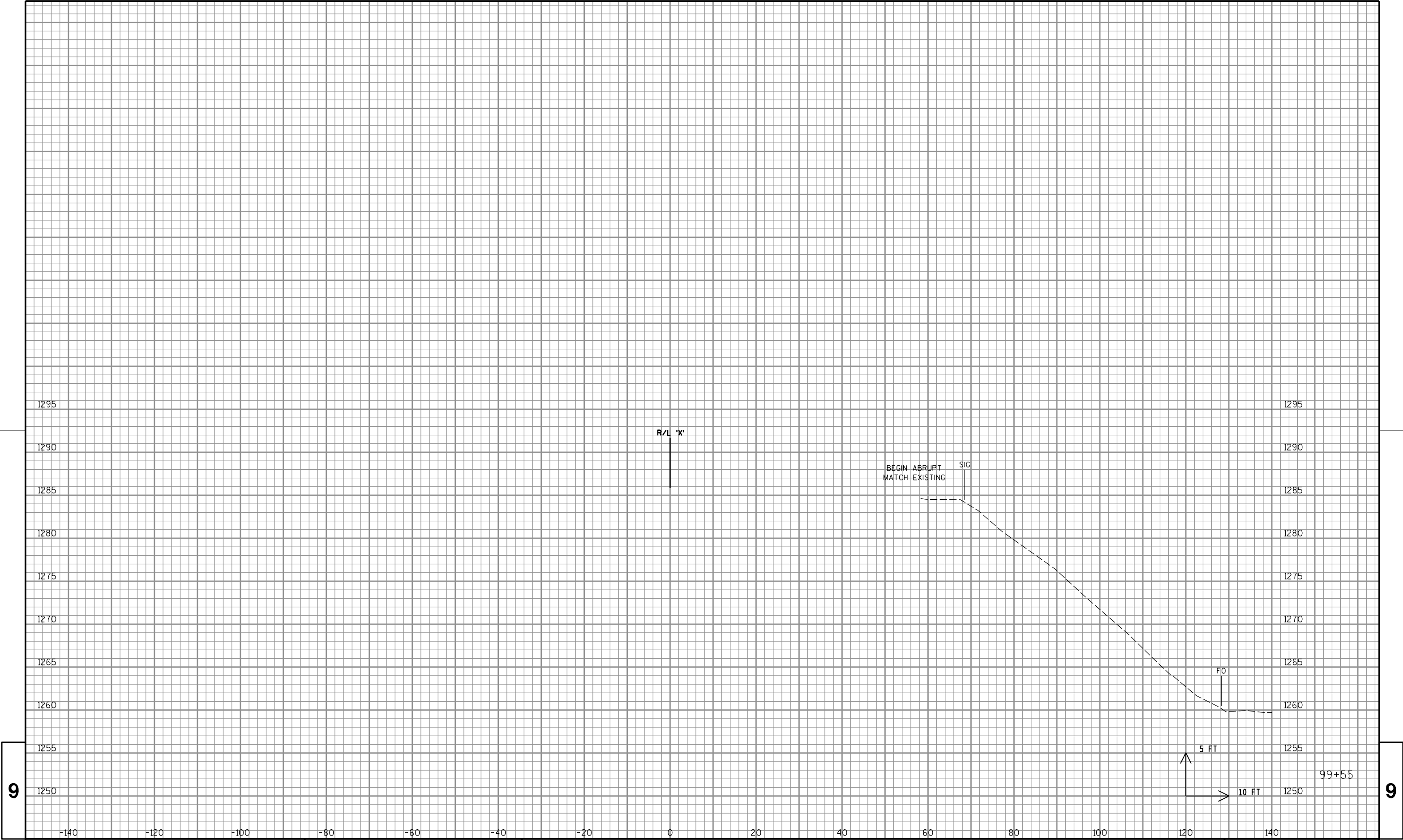
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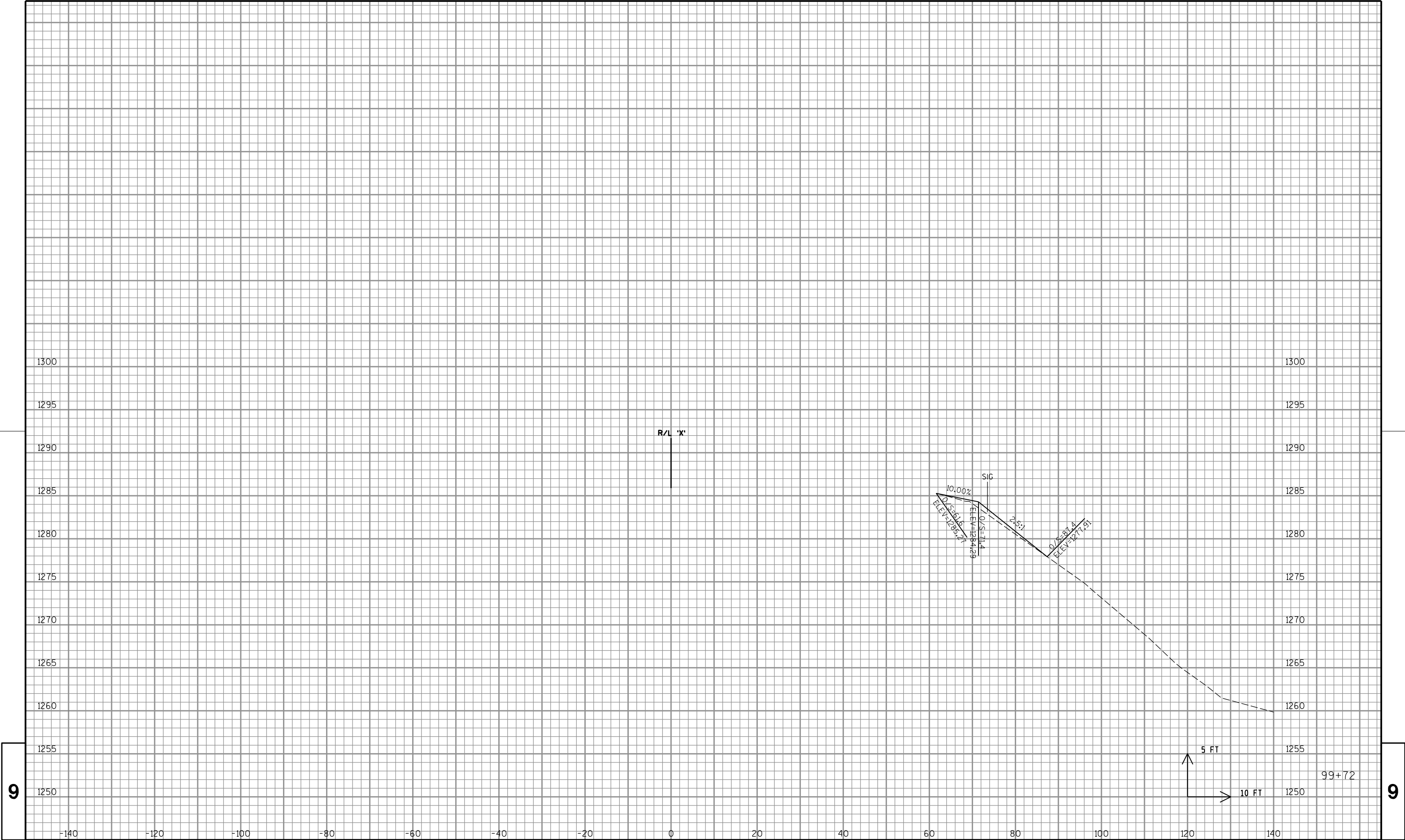
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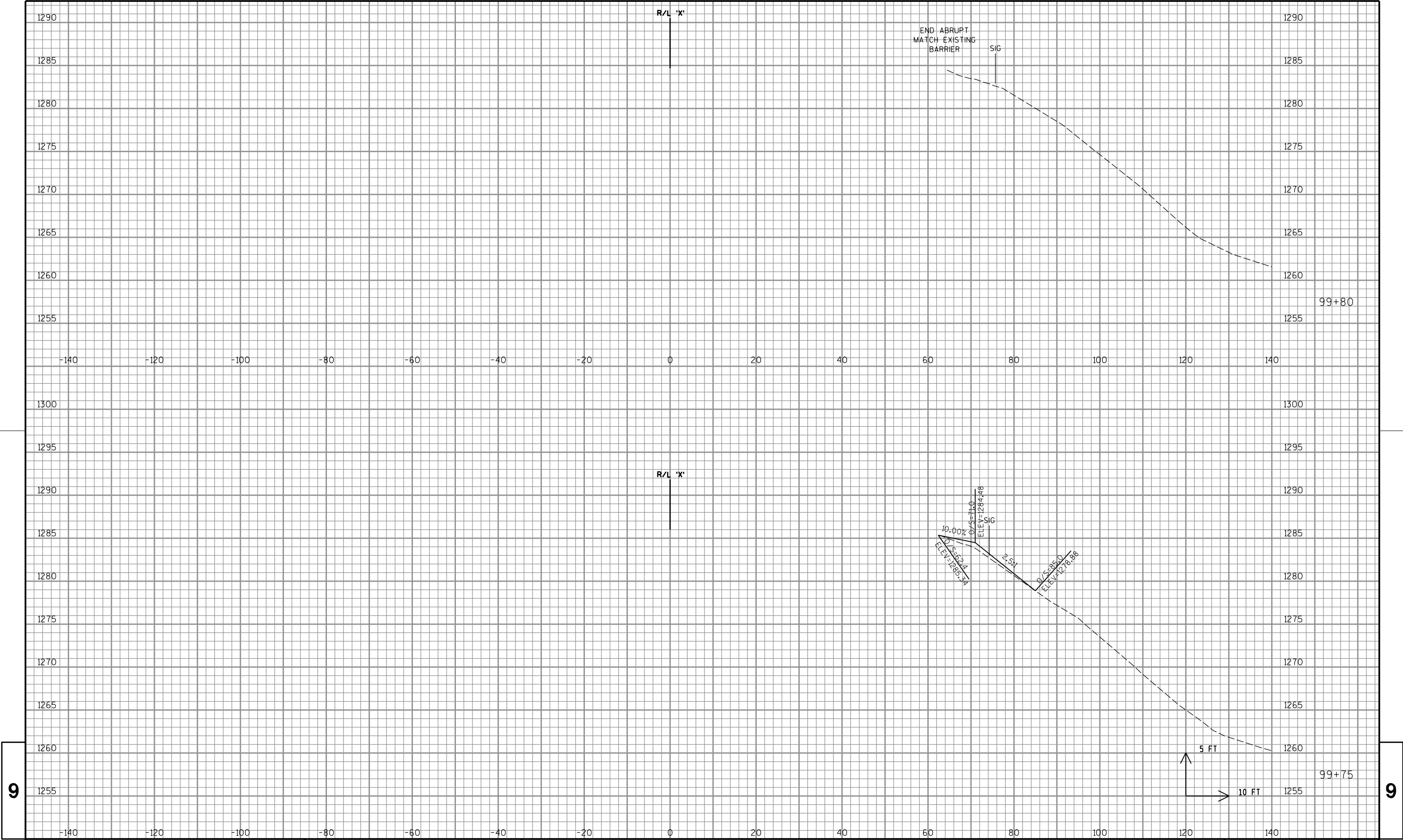
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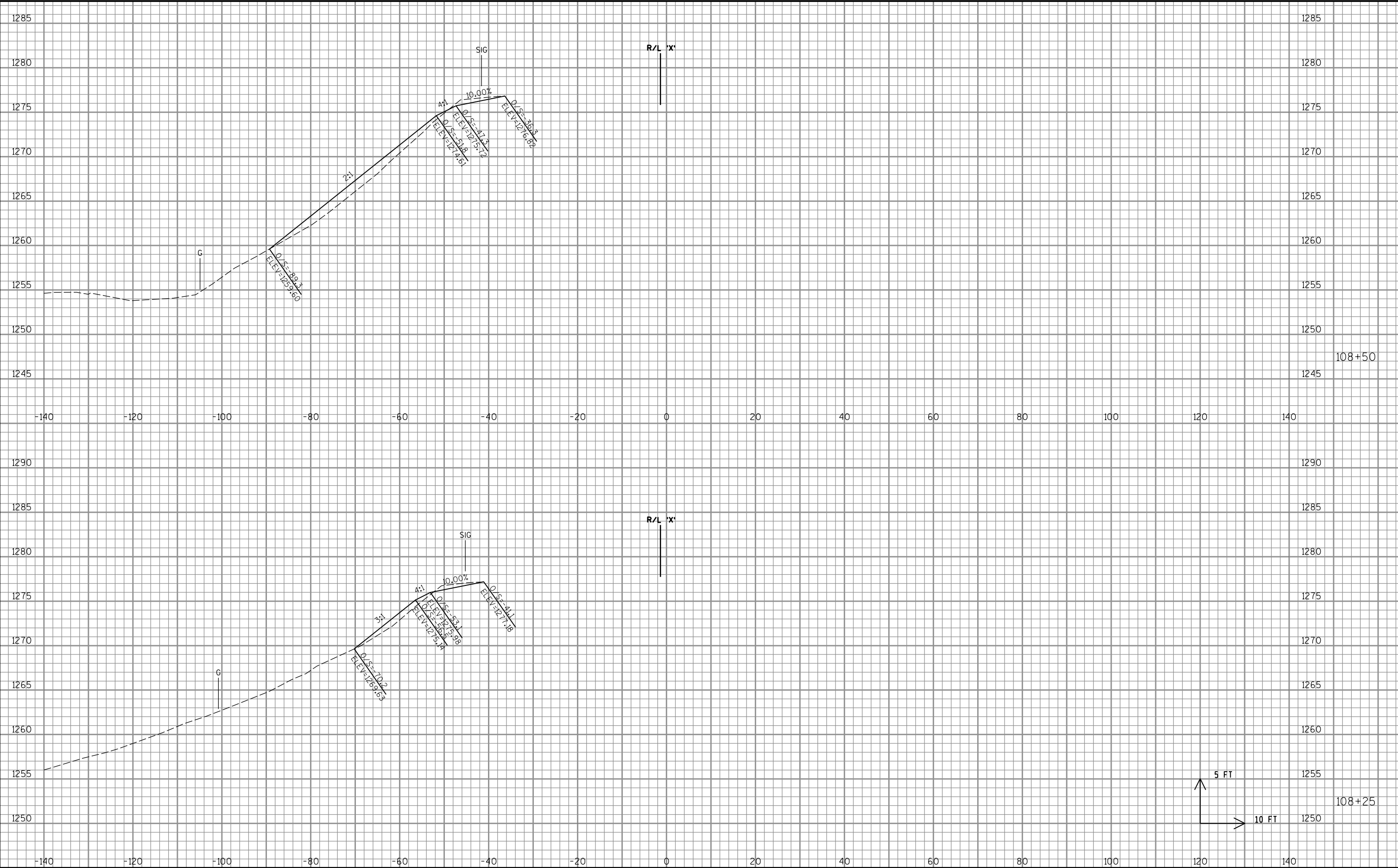


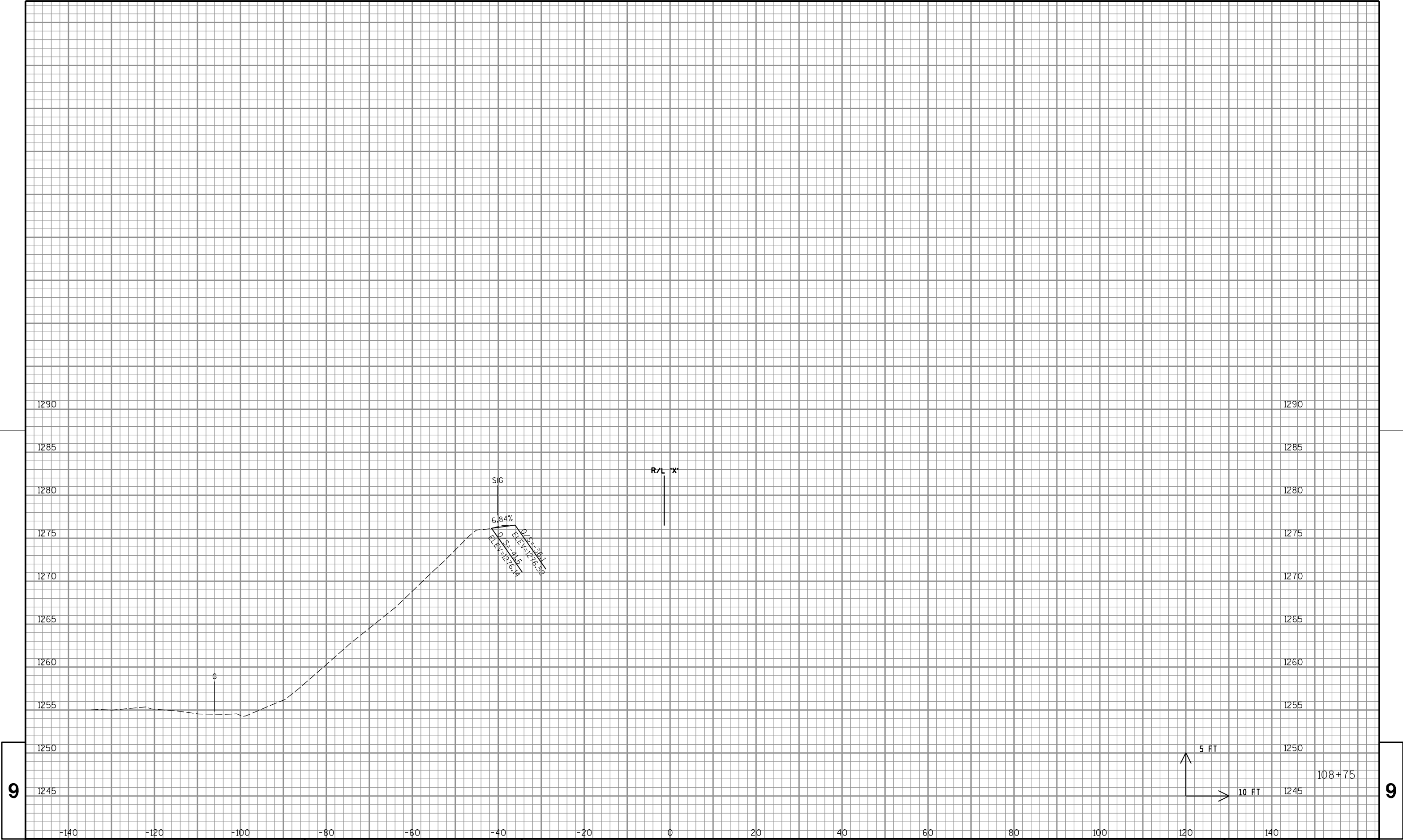
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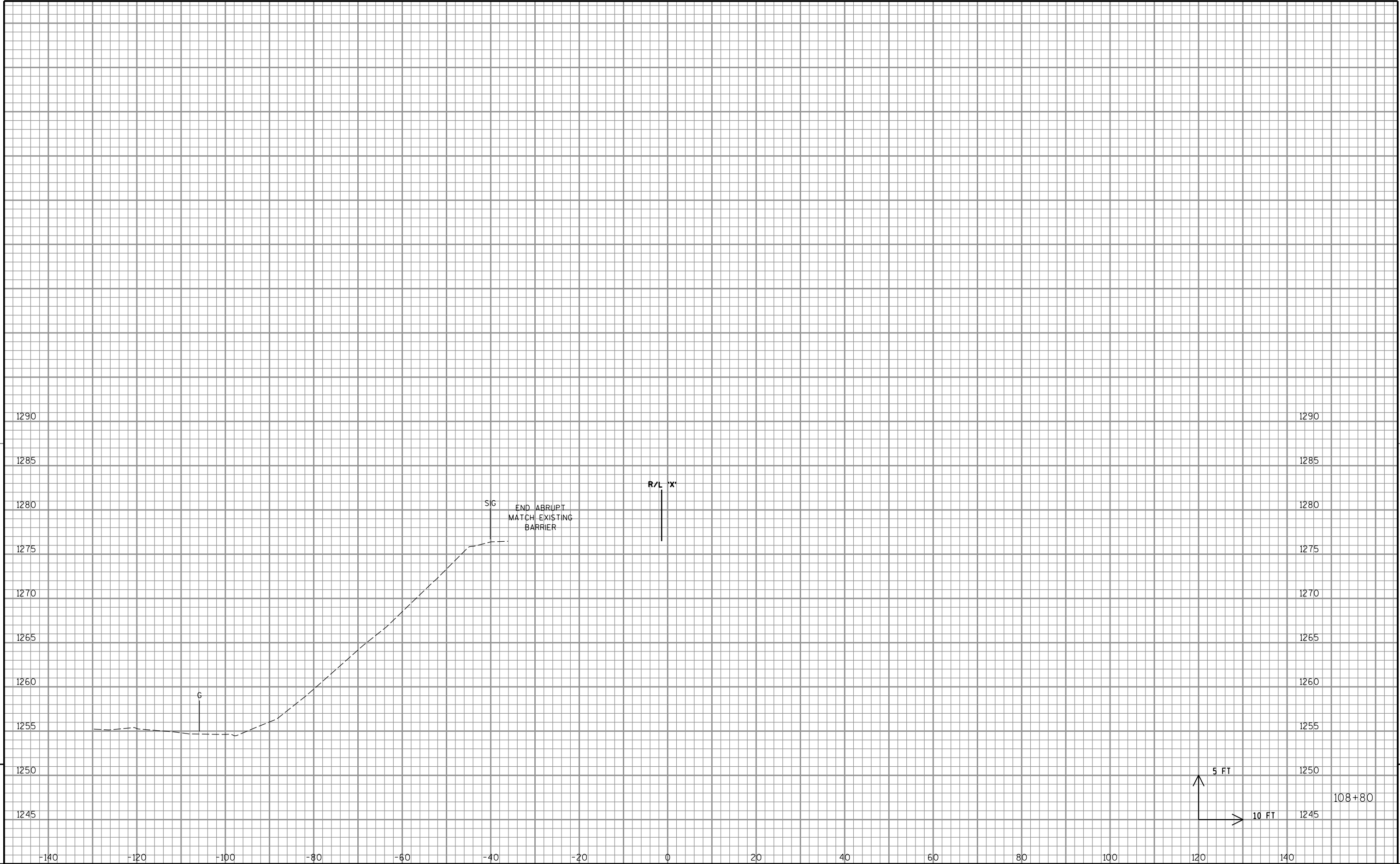






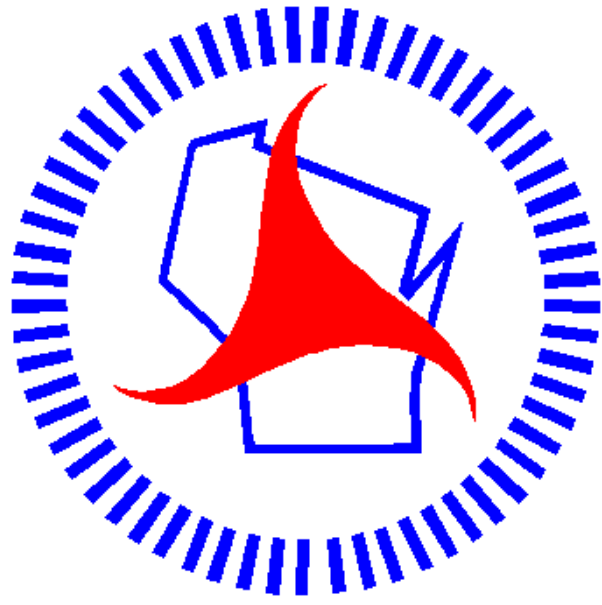


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PROJECT NO:1053-02-65	HWY:STH 29	COUNTY:MARATHON	CROSS SECTIONS: RAMP GATE - CTH X (LT)	SHEET	E
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