

SUP MAY 2017

PROJECT ID:

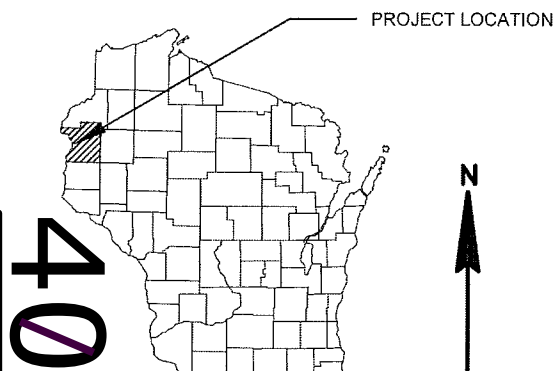
1570-00-72/1570-00-73

COUNTY: POLK

ORDER OF SHEETS

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

TOTAL SHEETS = 150



DESIGN DESIGNATION

A.A.D.T. (2016)	=	16420
A.A.D.T. (2036)	=	21220
D.H.V.	=	1640
D.D.	=	60/40
T.	=	1630
DESIGN SPEED	=	50 MPH
ESALS	=	N/A

CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	////
PROPERTY LINE	----
LOT LINE	----
LIMITED HIGHWAY EASEMENT	----
EXISTING RIGHT OF WAY	----
PROPOSED OR NEW R/W LINE	----
SLOPE INTERCEPT	----
REFERENCE LINE	----
EXISTING CULVERT	----
PROPOSED CULVERT (Box or Pipe)	----
COMBUSTIBLE FLUIDS	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	95.36
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

ST CROIX FALLS -
TURTLE LAKE

ST CROIX RIVER TO GLACIER DRIVE

USH 8
POLK COUNTY

STATE PROJECT NUMBER
1570-00-72

ST CROIX FALLS -
TURTLE LAKE

B-48-0004, B-48-0038, B-48-0039

USH 8
POLK COUNTY

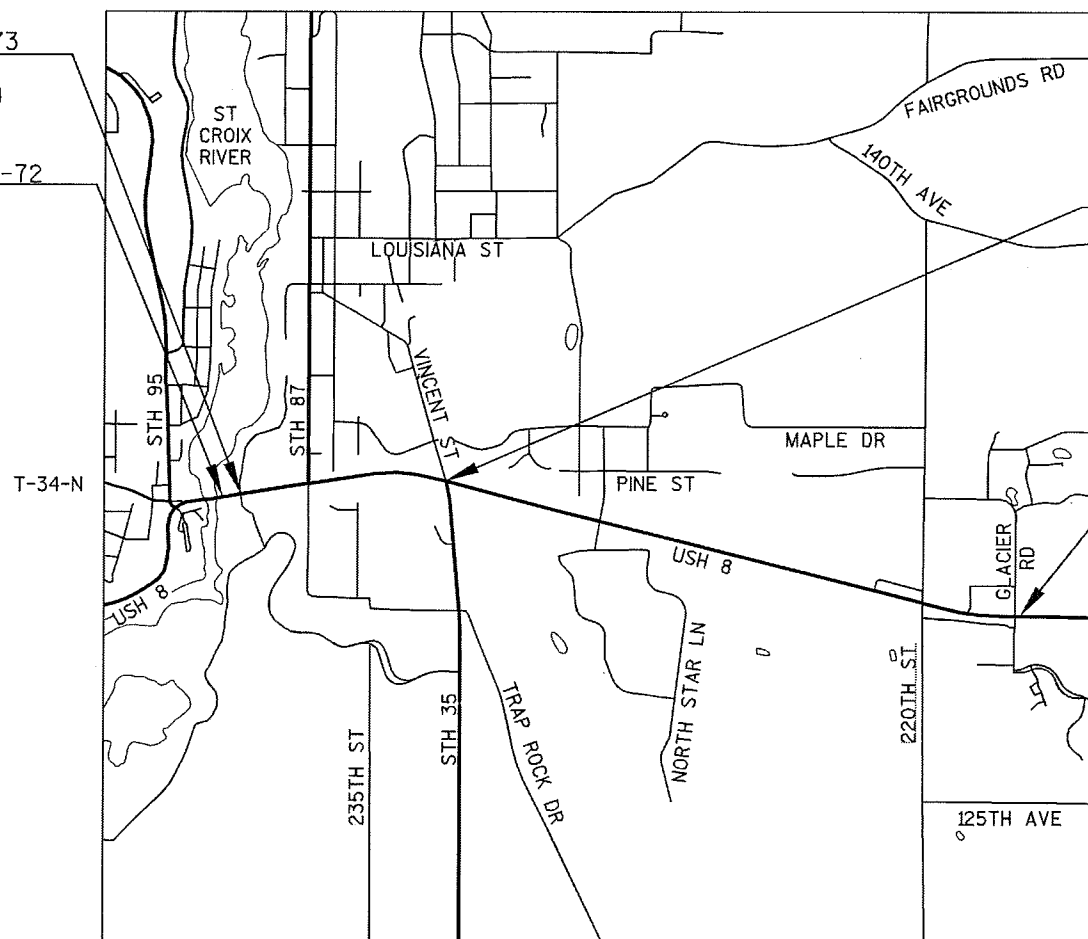
STATE PROJECT NUMBER
1570-00-73

PROJECT 1570-00-73
B-48-04
STA. 8+73 - STA. 9+64

BEGIN PROJECT 1570-00-72
STA. 6+62
Y = 270,144.05
X = 460,816.87

PROJECT 1570-00-73
B-48-38 (WB)
STA. 37W+65 - STA. 39W+60
B-48-39 (EB)
STA. 37E+74 - STA. 39E+72

END PROJECT 1570-00-72
STA. 122E+50
Y = 268,445.92
X = 472,139.90



LAYOUT
SCALE 0 0.5MI.

TOTAL NET LENGTH OF CENTERLINE (1570-00-72) = 2.17 MILES

STATE PROJECT

1570-00-72

1570-00-73

FEDERAL PROJECT

PROJECT

WISC 2017293

CONTRACT

1

ORIGINAL PLANS PREPARED BY

MSA

TRANSPORTATION • MUNICIPAL
DEVELOPMENT • ENVIRONMENTAL
1835 N. Stevens St., Rhinelander, WI 54501
715-362-3244 1-800-844-7854 Fax: 715-362-4119
Web Address: www.msa-ps.com
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1/6/17

(Date)

(Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	MSA PROFESSIONAL SERVICES, INC.
Designer	MSA PROFESSIONAL SERVICES, INC.
Project Manager	BETH CUNNINGHAM, PE
Regional Examiner	TOU YANG, PE
Regional Supervisor	ANDREW STENSLAND, PE

APPROVED FOR THE DEPARTMENT

DATE: 1/6/17 *Cindy Stensland*
(Signature)

E

GENERAL NOTES

NO SHRUBS OR TREES SHALL BE REMOVED WITHOUT THE 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.

THE 2.75" HMA PAVEMENT OVERLAY AREAS TO BE PLACED IN A 1.25" LEVELING LAYER AND A 1.5" UPPER LIFT.
THE 2" HMA PAVEMENT OVERLAY AREAS TO BE PLACED IN ONE LIFT.
THE 1.5" HMA PAVEMENT OVERLAY AREAS TO BE PLACED IN ONE LIFT.
THE 4" HMA PAVEMENT SHOULDER WIDENING AREAS TO BE PLACED IN A 2.25" LOWER LAYER AND A 1.75" UPPER LIFT.
THE No. 5 (9.5 mm) GRADATION SHALL BE USED FOR LIFTS.

ELEVATIONS ON THIS PLAN ARE REFERENCED TO A HEIGHT MODERNIZATION SURVEY STATION "ANITA" (PID DP2717), ELEV.769.40, NAVD 88 DATUM.

WHEN THE QUANTITY OF THE ITEM OF BASE LAYER IS MEASURED BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

ALL CONCRETE PAVEMENT REPAIR, REPLACEMENT, HES REPLACEMENT, AND CONCRETE JOINT AND CRACK WORK WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
WORK SHALL CONFORM TO THE APPLICABLE STANDARD DETAIL DRAWINGS, AS DIRECTED BY THE ENGINEER.

ALL WASTE MATERIAL RESULTING FROM VARIOUS CONSTRUCTION OPERATIONS SHALL BE ENTIRELY REMOVED AND PROPERLY DISPOSED. NO WASTE MATERIAL SHALL INTERFERE WITH TRAFFIC IN THE ADJACENT LIVE LANE(S).

LOCATIONS NOTED IN PLANS ARE ALONG THE EASTBOUND USH 8 ALIGNMENT (E), UNLESS NOTED OTHERWISE.

DO NOT STORE OR STAGE MATERIALS OR EQUIPMENT IN INTERSTATE STATE PARK.

ORDER OF SECTION 2 SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PERMANENT SIGNING
- PAVEMENT MARKING
- TRAFFIC CONTROL
- PROJECT TIES

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES
AMY CRONK
810 WEST MAPLE STREET
SPOONER, WI 54801
PHONE: 715-635-4229
EMAIL: AMY.CRONK@WISCONSIN.GOV

UTILITIES

COMMUNICATIONS:
CENTURYLINK
MICHAEL VANDENBOS
2426 75TH AVENUE
OSCEOLA, WI 54020
PHONE: 715-294-2463
EMAIL: MIKE.VANDENBOS@CENTURYLINK.COM

COMMUNICATIONS:
CHARTER COMMUNICATIONS
THOMAS HAASE
2301 S MAIN STREET
RICE LAKE, WI 54868
PHONE: 715-719-0564
EMAIL: TOM.HAASE@CHARTER.COM

ELECTRIC:
POLK-BURNETT ELECTRIC COOPERATIVE
ERICK VITALIS
1001 STATE ROAD 35
CENTURIA, WI 54824
PHONE: 715-646-2191
EMAIL: EVITALIS@POLKBURNETT.COM

WATER:
ST CROIX FALLS MUNICIPAL WATER UTILITY
SCOTT BRUST
710 S HWY 35
ST CROIX FALLS, WI 54024-9240
PHONE: 715-483-3929

GAS/PETROLEUM:
WE ENERGIES
LEWIS KNAPP
104 W SOUTH STREET
RICE LAKE, WI 54868
PHONE: 715-234-9605
EMAIL: LEWIS.KNAPP@WE-ENERGIES.COM

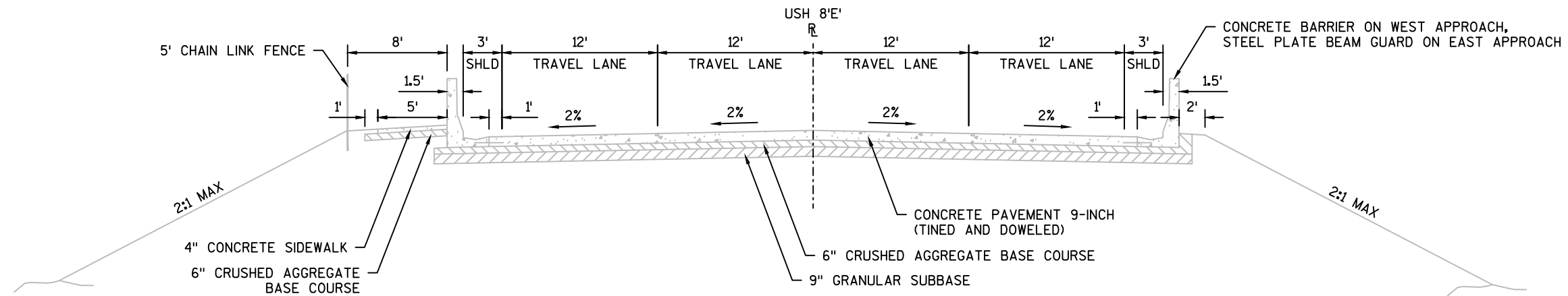
ELECTRIC:
XCEL ENERGY
TYLER PERRENOUD
1201 LIVINGSTONE ROAD
HUDSON, WI 54016
PHONE: 715-386-4811
EMAIL: TYLER.L.PERRENOUD@XCELENERGY.COM

DIGGERSHOTLINE

Dial 811 or (800)242-8511

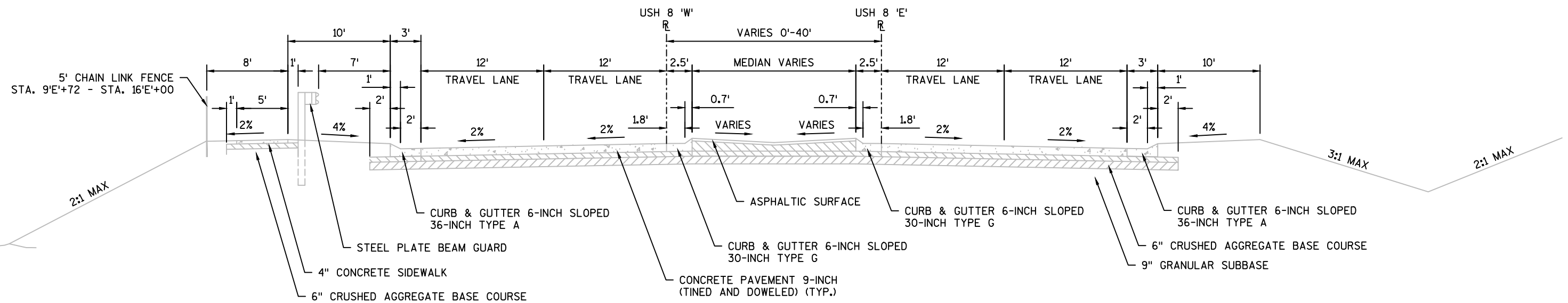
www.DiggersHotline.com





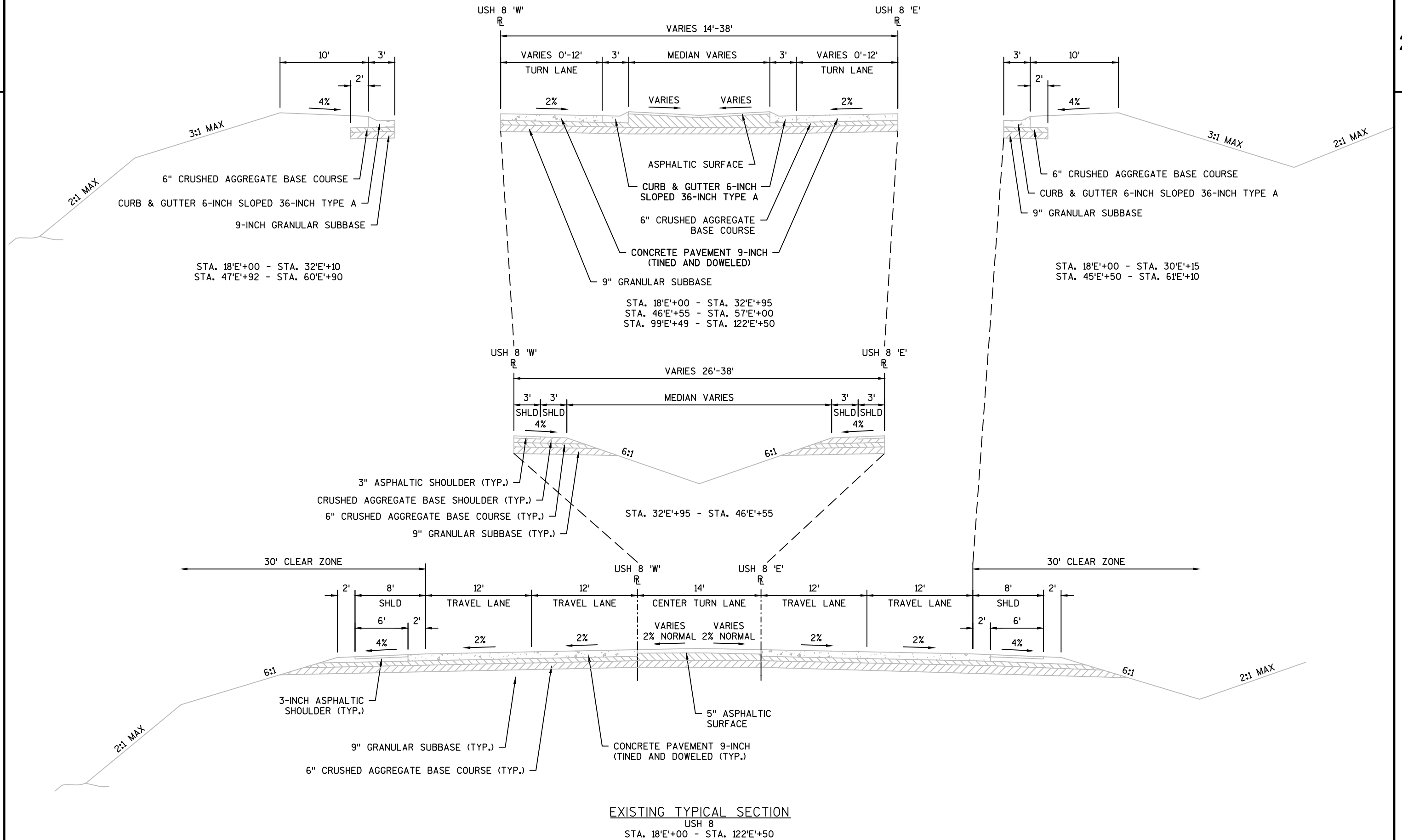
EXISTING TYPICAL SECTION

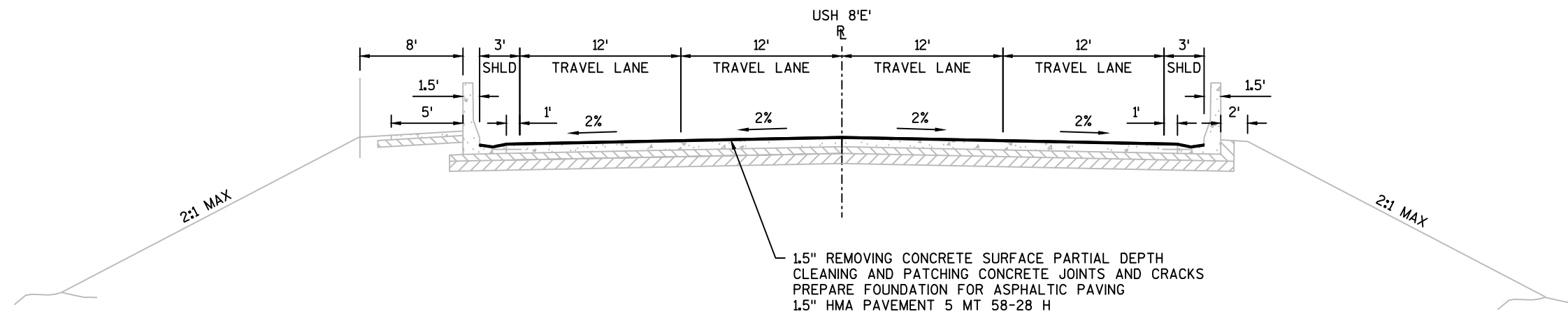
USH 8
STA. 6'E+62 - STA. 8'E+73



EXISTING TYPICAL SECTION

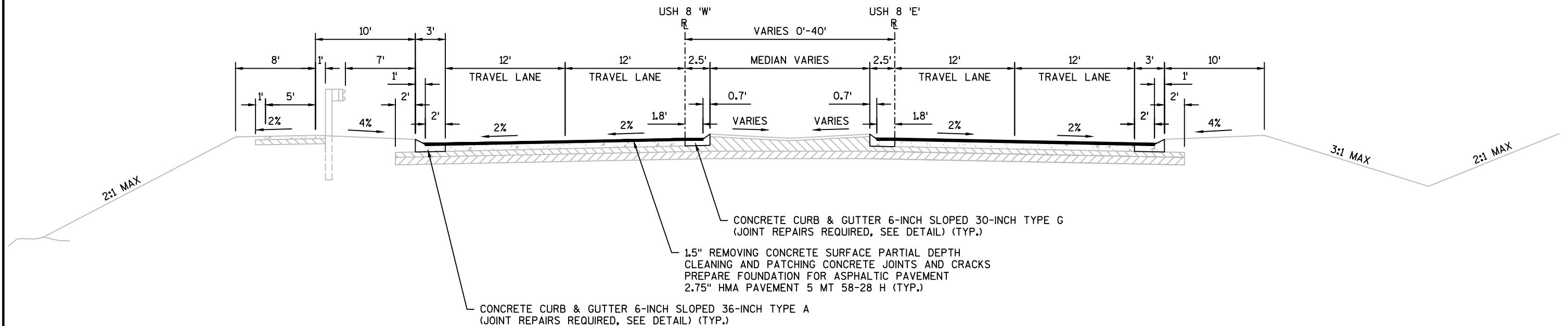
USH 8
STA. 9'E+64 - STA. 18'E+00





FINISHED TYPICAL SECTION

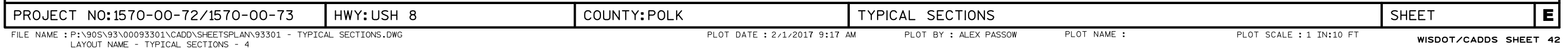
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STA. 6'E'+62 - STA. 8'E'+73

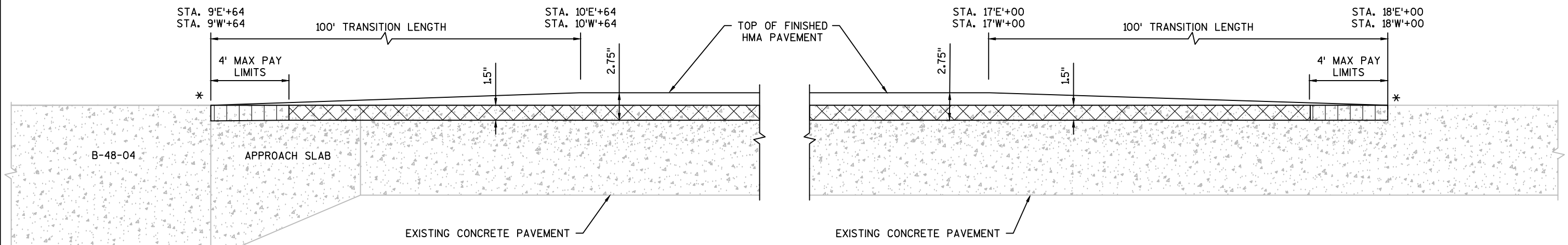
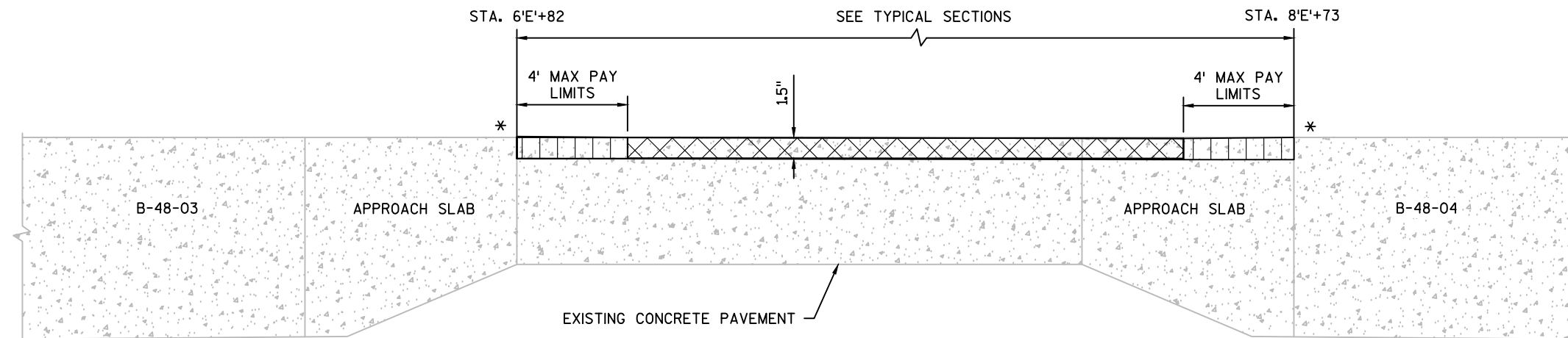


FINISHED TYPICAL SECTION

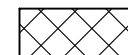
USH 8
STA. 9'E'+64 - STA. 18'E'+00

2



**LEGEND**

REMOVING PAVEMENT BUTT JOINTS



REMOVING CONCRETE SURFACE PARTIAL DEPTH (SEE TYPICAL SECTIONS)

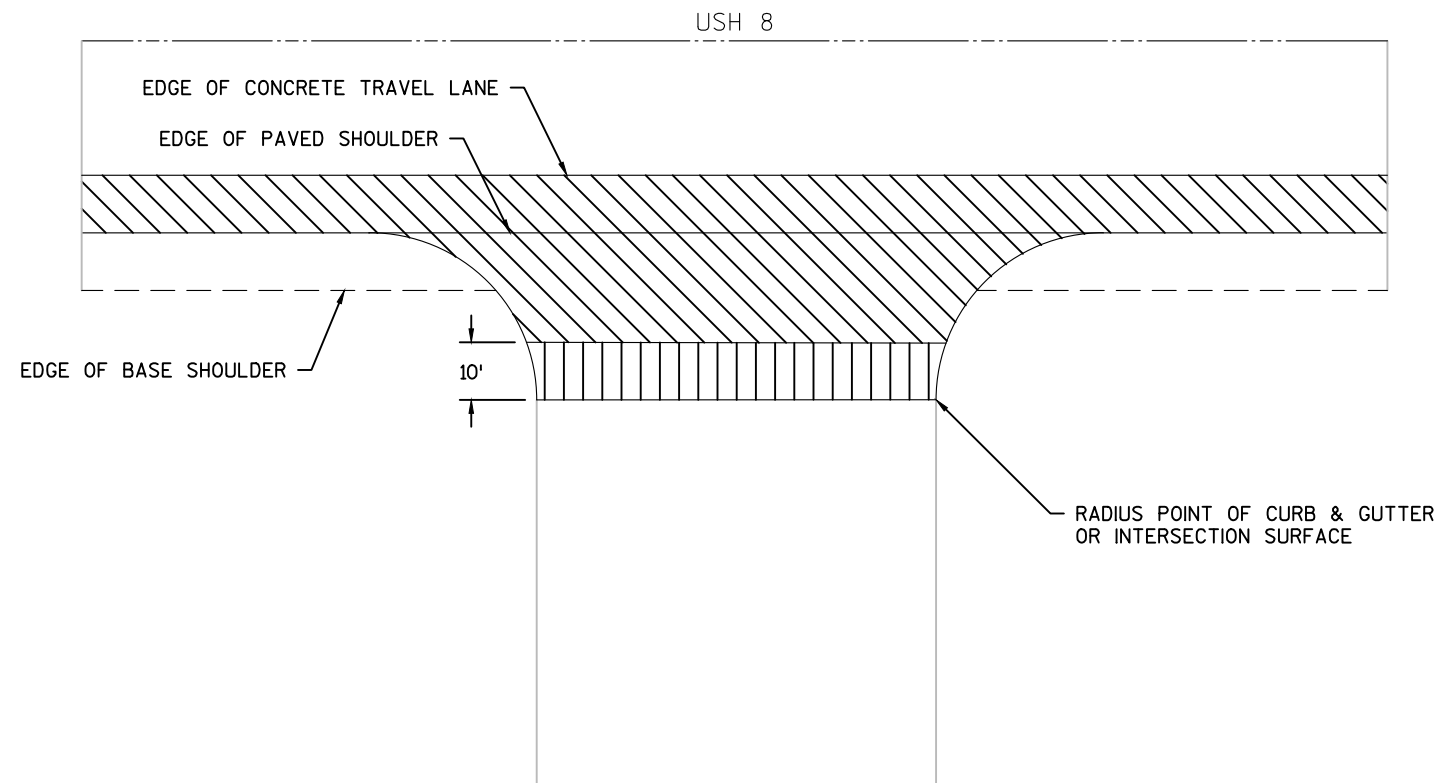
NOTES:

MAINLINE AND GUTTER TO BE INCLUDED IN THE CONCRETE SURFACE PARTIAL DEPTH REMOVAL.

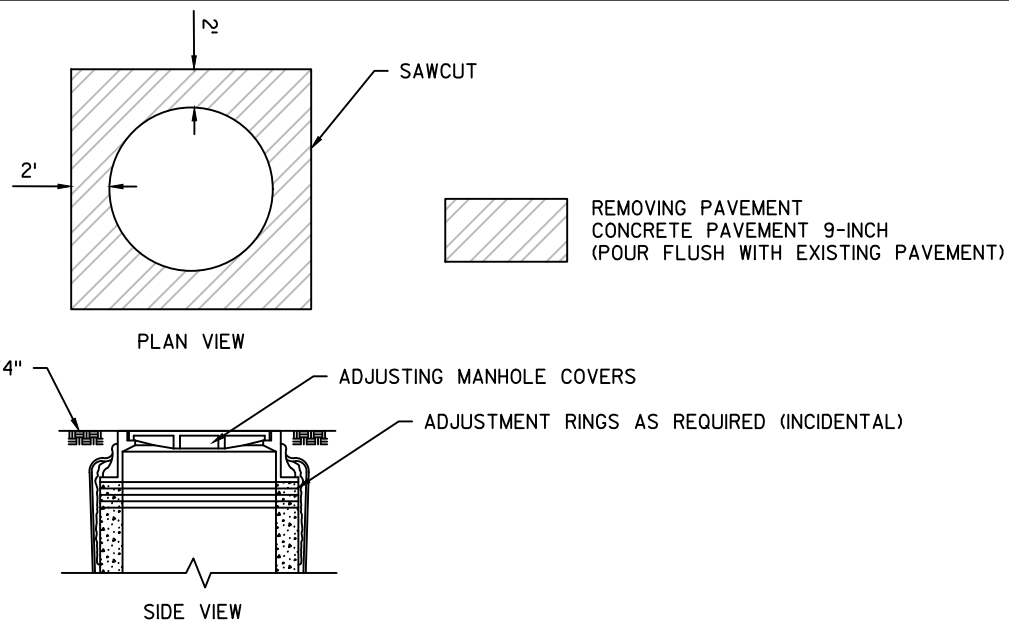
* SAWING CONCRETE (INCIDENTAL TO REMOVING PAVEMENT BUTT JOINTS)

DETAIL OF PAVEMENT TRANSITIONS

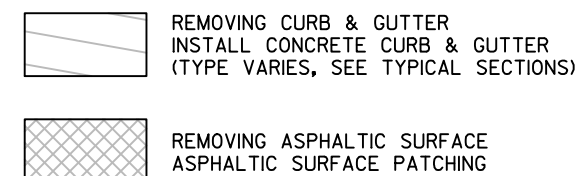
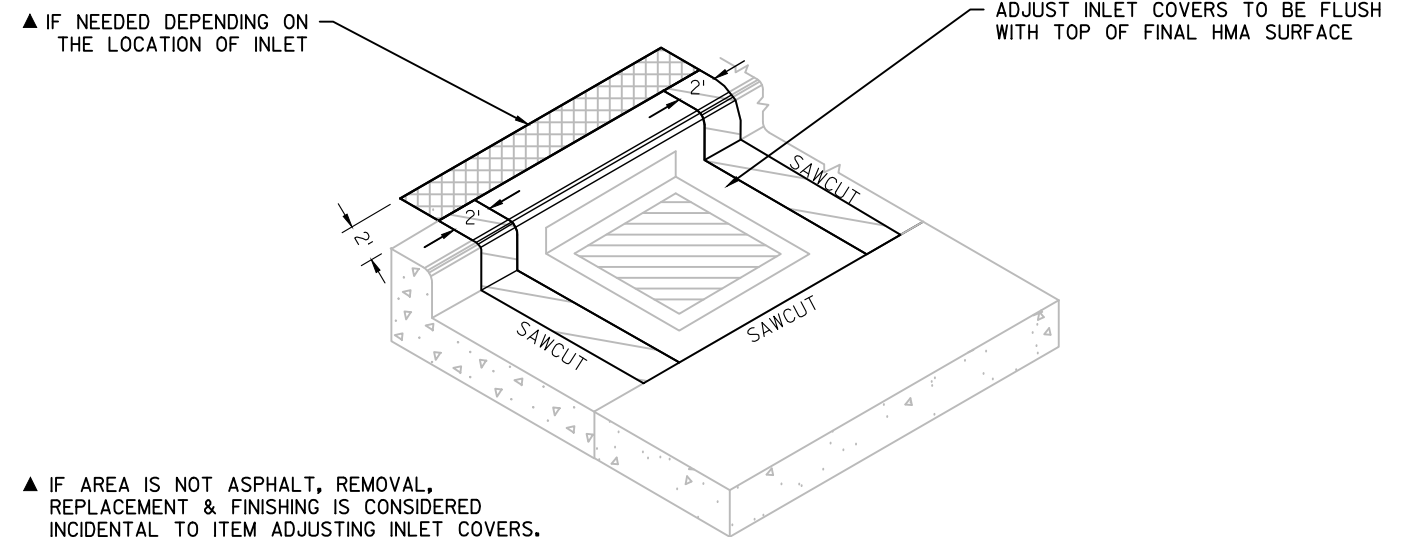
STA. 6'E'+82 - STA. 8'E'+73
STA. 9'E'+64 - STA. 10'E'+64
STA. 17'E'+00 - STA. 18'E'+00



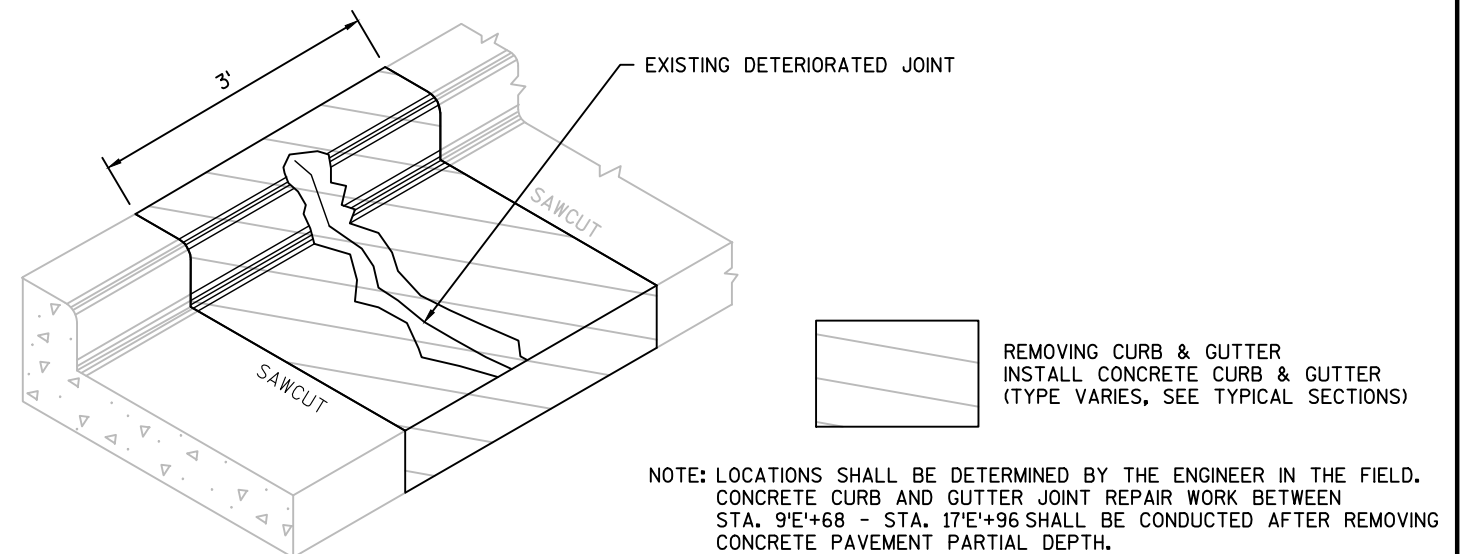
SIDE ROAD AND ASPHALTIC PAVEMENT ENTRANCE DETAIL
SEE PLAN SHEETS FOR LOCATIONS



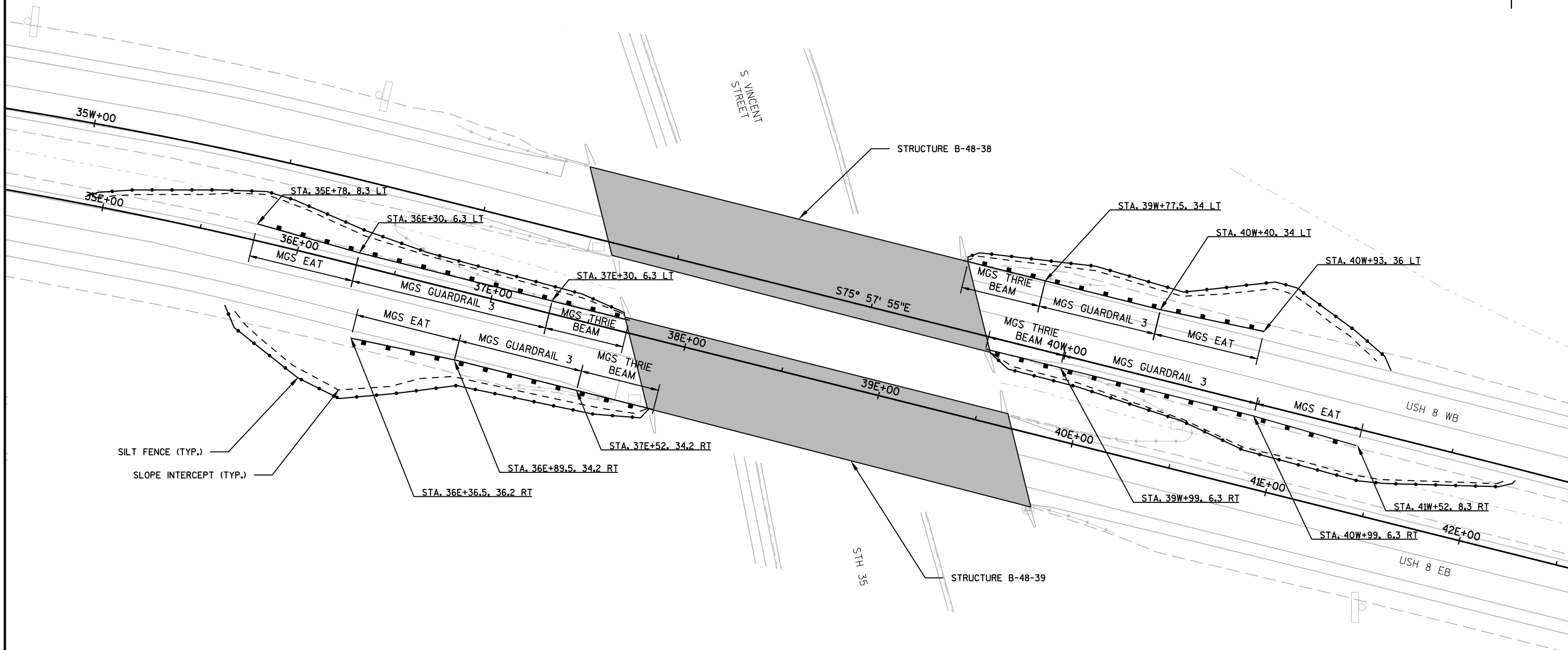
MANHOLE ADJUSTMENT DETAIL
SEE PLAN SHEETS FOR LOCATIONS



INLET ADJUSTMENT DETAIL
SEE PLAN SHEETS FOR LOCATIONS



CONCRETE CURB & GUTTER JOINT REPAIR DETAIL



GUARDRAIL LAYOUT DETAIL AND EROSION CONTROL DETAIL

SIZE DIMENSION	66 X 60	96 X 84	132 X 108	168 X 132
RADIUS	6	9	12	12
MARGIN				
BORDER	1.25	1.5	2	2
a	15.5	20.7	27.6	34.5
b	16.1	21.6	28.8	35.9
c	6.8	9	12	15
d	54	78	108	144
e	20.6	27.5	36.6	45.8
f	22.2	29.5	39.4	49.2
g	14.6	19.4	25.9	32.4
h	3.25	4.5	5.5	8.5
i	12	18	24	24
j	3.25	5.5	7	8
k	3	4	5	5
l	2	4	5	6
m	1.25	1.5	2	2
n	3.5	4.5	5.7	7.1
o	3.5	4.5	5.6	7.1
p	2	4	4.5	6
q	3.25	5.5	6.5	8
r				
s				
t				
u				
v				
w				
x				
y	4.5D	6D	8D	10D
z	6-4.5D	8-6D	10.67-8D	13.33-10D

- NOTES: 1. All dimensions are in inches.
2. Color - Black legend and border on orange reflectorized background. Route markers shall be the colors stated in the Standard Signs Manual.
3. More than one route marker may be used on top, and route markers may be used in the center portion.
4. Horizontal spacing between words should be equal to letter height.
5. Legend lines shall be centered horizontally on the panel.
6. "BEGINS..." shall be covered after work starts with ending date or blank orange panel.



WORK ZONE LOCATION ADVANCE NOTICE			
APPROVED	DATE OF REV.	SIGN NUMBER	
9/1/90	1/1/11	G20-X2	

TRAFFIC CONTROL SIGNS FIXED MESSAGE MnDOT DETAIL

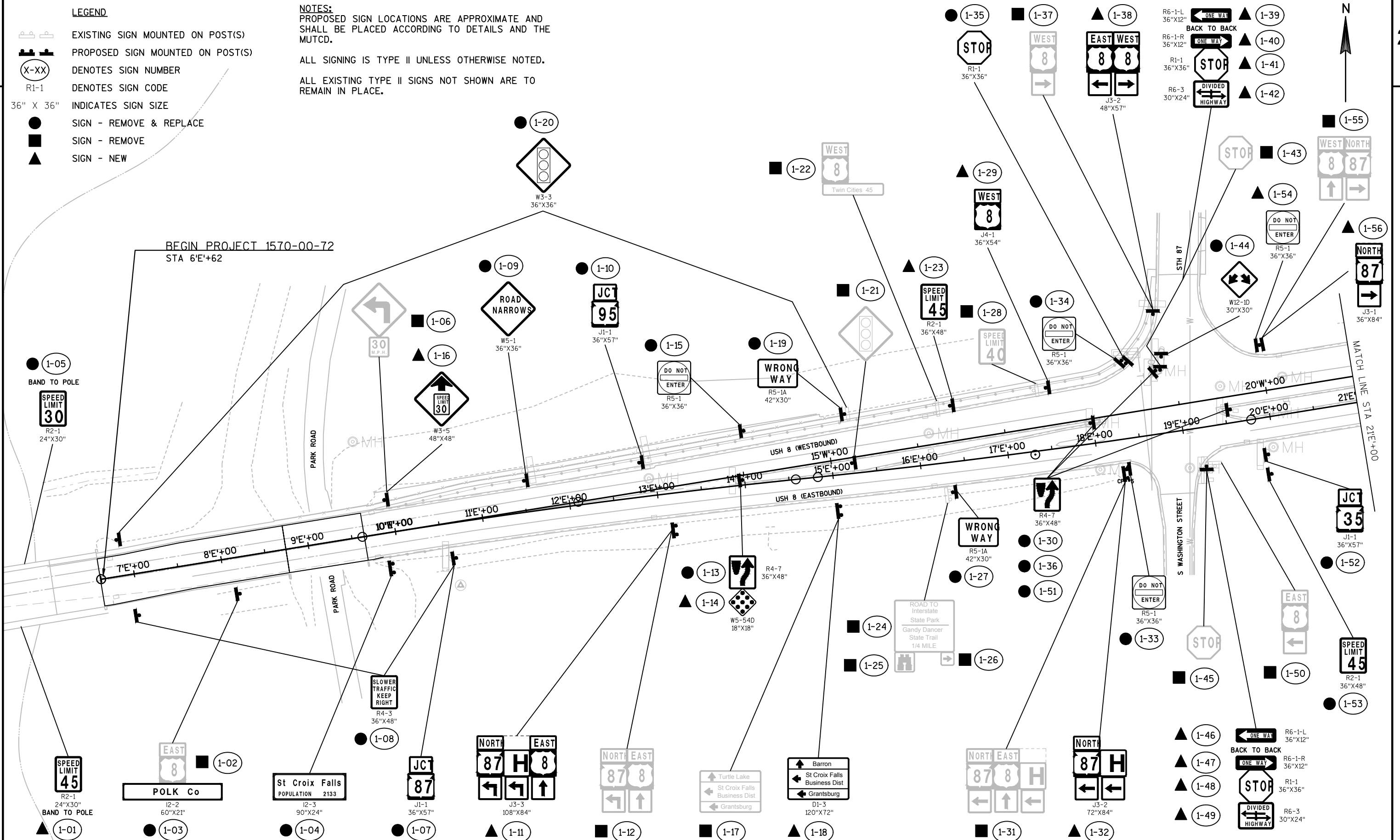
LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
PROPOSED SIGN MOUNTED ON POST(S)
X-XX DENOTES SIGN NUMBER
R1-1 DENOTES SIGN CODE
36" X 36" INDICATES SIGN SIZE
SIGN - REMOVE & REPLACE
SIGN - REMOVE
SIGN - NEW

NOTES:
PROPOSED SIGN LOCATIONS ARE APPROXIMATE AND SHALL BE PLACED ACCORDING TO DETAILS AND THE MUTCD.

ALL SIGNING IS TYPE II UNLESS OTHERWISE NOTED.

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



PROJECT NO:1570-00-72

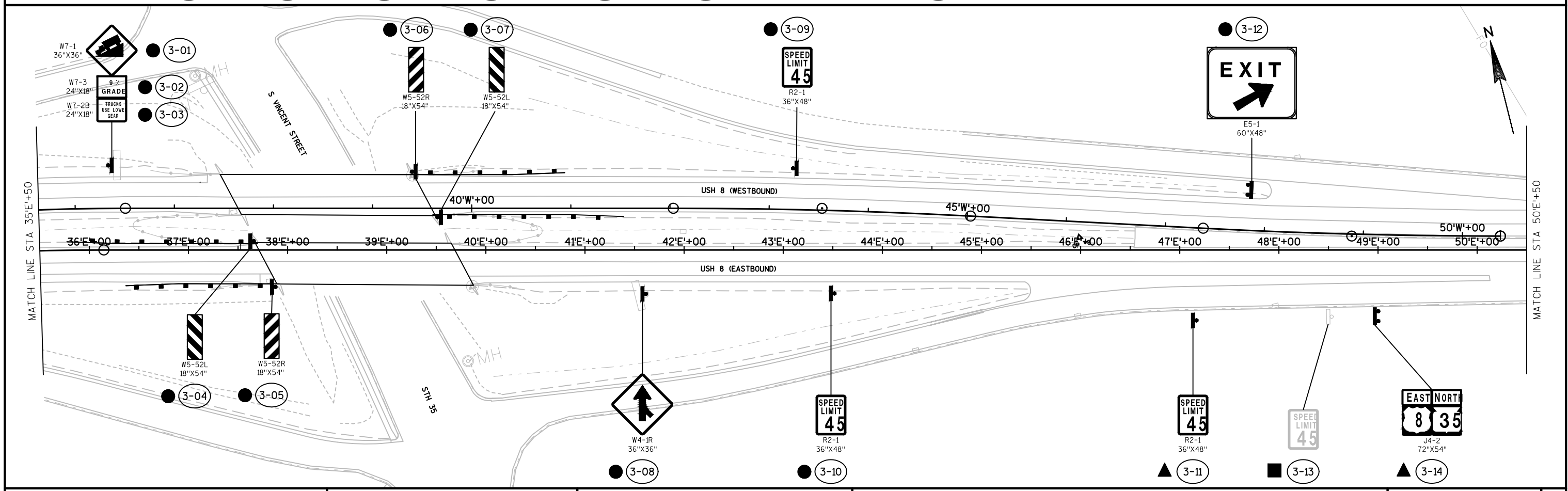
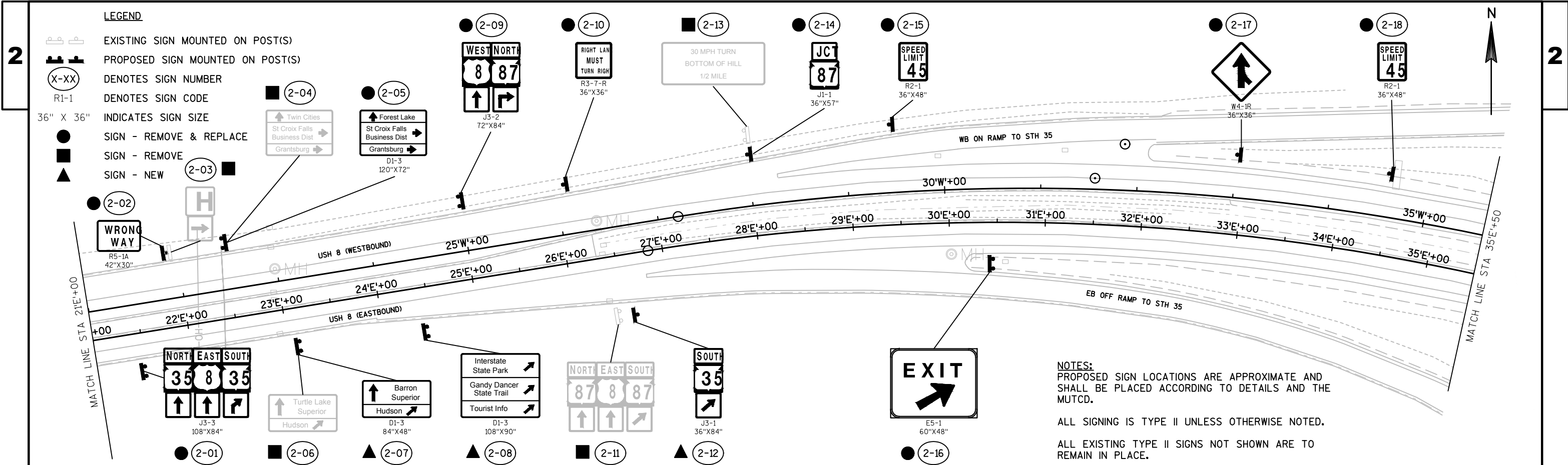
HWY:USH 8

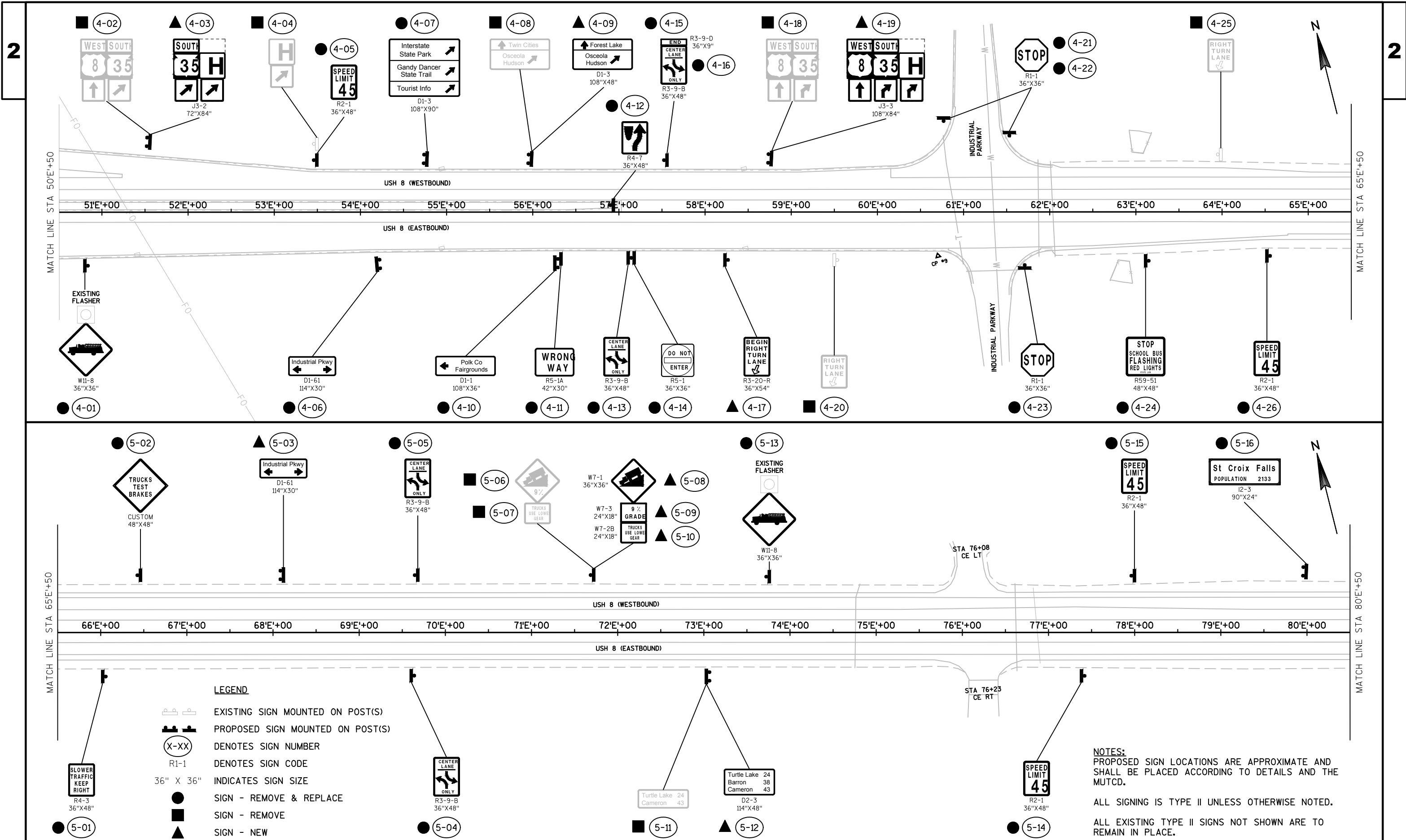
COUNTY:POLK

PERMANENT SIGNING

SHEET

E





LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
PROPOSED SIGN MOUNTED ON POST(S)
DENOTES SIGN NUMBER
R1-1 DENOTES SIGN CODE
36" X 36" INDICATES SIGN SIZE
SIGN - REMOVE & REPLACE
SIGN - REMOVE
SIGN - NEW

MATCH LINE STA 80'E+50

STA 81+92
PE LT6-01
CENTER LANE ONLY
R3-9-B
36"X48"R4-3
36"X48"
SLOWER TRAFFIC
KEEP RIGHT

6-02

155-56
30"X36"
ADOTT A HIGHWAY
SPONSOR
WIS BEAR
HUNTERS
ASSOCIATION

6-03

R2-1
36"X48"
SPEED LIMIT
45

6-04

NOTES:
PROPOSED SIGN LOCATIONS ARE APPROXIMATE AND
SHALL BE PLACED ACCORDING TO DETAILS AND THE
MUTCD.

ALL SIGNING IS TYPE II UNLESS OTHERWISE NOTED.

ALL EXISTING TYPE II SIGNS NOT SHOWN ARE TO
REMAIN IN PLACE.6-07
CENTER LANE ONLY
R3-9-B
36"X48"R3-9-B
36"X48"
END CENTER LANE ONLY

6-06

R3-9-D
36"X9"

MATCH LINE STA 95'E+50

96'E'+00 97'E'+00 98'E'+00 99'E'+00 100'E'+00 101'E'+00 102'E'+00 103'E'+00 104'E'+00 105'E'+00 106'E'+00 107'E'+00 108'E'+00 109'E'+00 110'E'+00

USH 8 (WESTBOUND)

USH 8 (EASTBOUND)

7-04

7-05

W7-1
36"X36"W7-3
24"X18"W7-2B
24"X18"9%
GRADE
TRUCKS
USE LOWER
GEAR

7-06

7-07

7-08

7-11

R1-1
36"X36"
STOPSTA 101+36
CE LT

7-12

ONE WAY

R6-2-R
30"X36"

7-13

DO NOT ENTER

R5-1
36"X36"

7-17

WRONG WAY

R5-1A
42"X30"

7-18

ROAD TO Interstate
State Park
Gandy Dancer
State Trail
1/4 MILE

7-22

STOP

R6-1-L
36"X12"

BACK TO BACK

R6-1-R
36"X12"

ONE WAY

STOP

ONE WAY

DIVIDED HIGHWAY

R1-1
36"X36"R6-3
30"X24"

7-23

7-24

7-25

7-26

7-21

7-32

7-33

R4-7
36"X48"

DO NOT ENTER

R5-1
36"X36"

7-01

7-02

R2-1
36"X48"
SPEED LIMIT
45R4-7
36"X48"
LEFT TURN LANER3-20-L
24"X36"
BEGIN LEFT TURN LANED1-3
126"X36"
220th St
Golf Course Rd

7-10

7-14

LEFT TURN LANE

7-15

RIGHT TURN LANE

7-16

WRONG WAY

R5-1A
42"X30"

7-20

DO NOT ENTER

R5-1
36"X36"

7-27

STOP

7-28

7-29

7-30

7-31

R6-1-L
36"X12"

BACK TO BACK

R6-1-R
36"X12"

ONE WAY

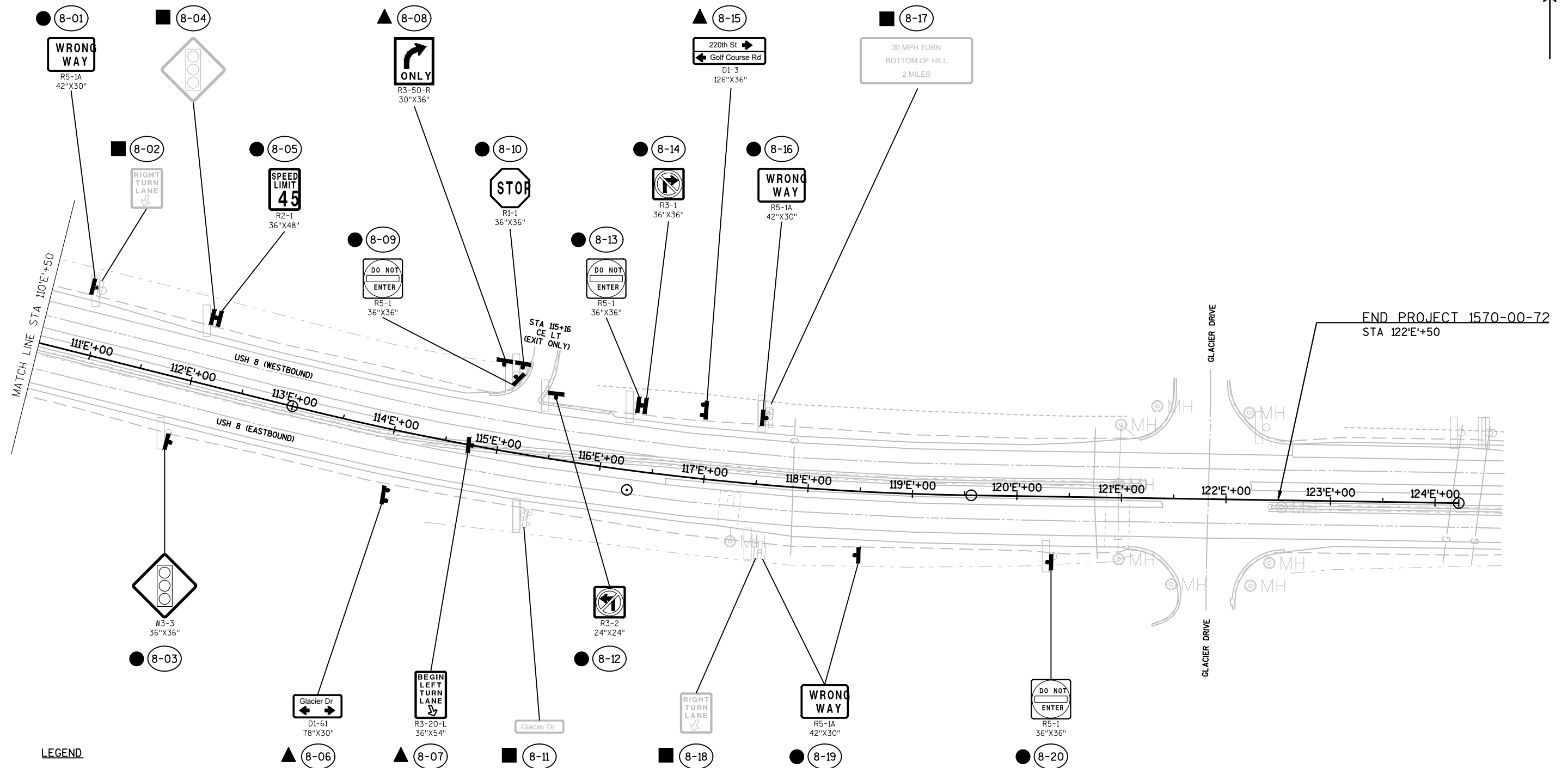
STOP

R1-1
36"X36"R6-3
30"X24"

DIVIDED HIGHWAY

7-34

R2-1
36"X48"
SPEED LIMIT
45



LEGEND

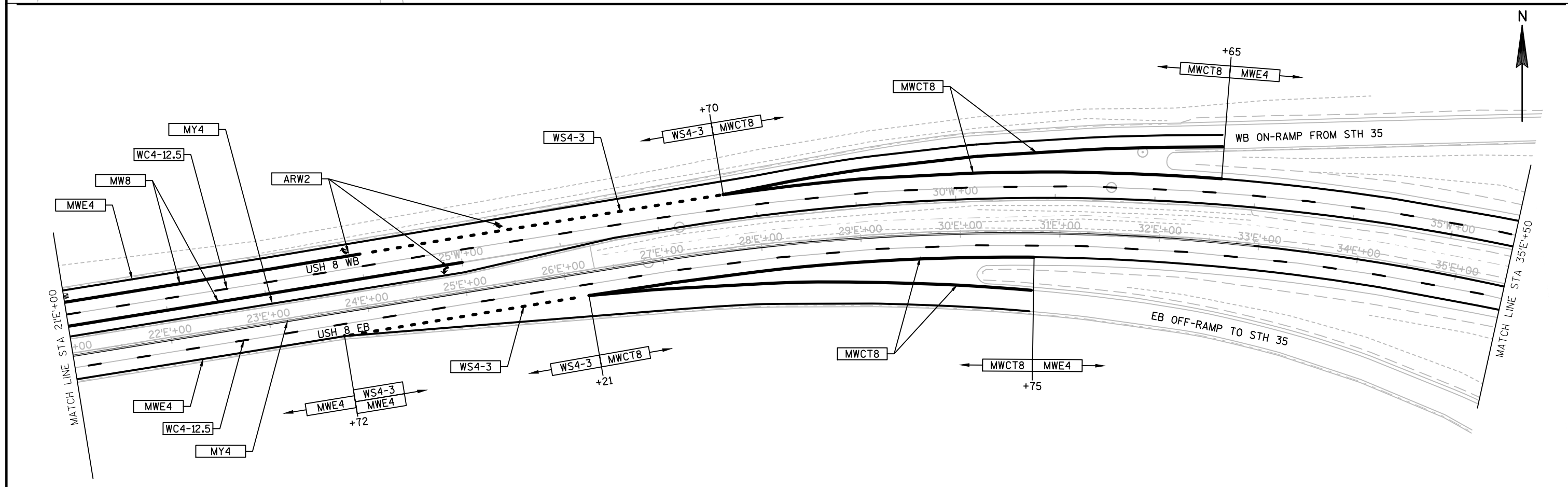
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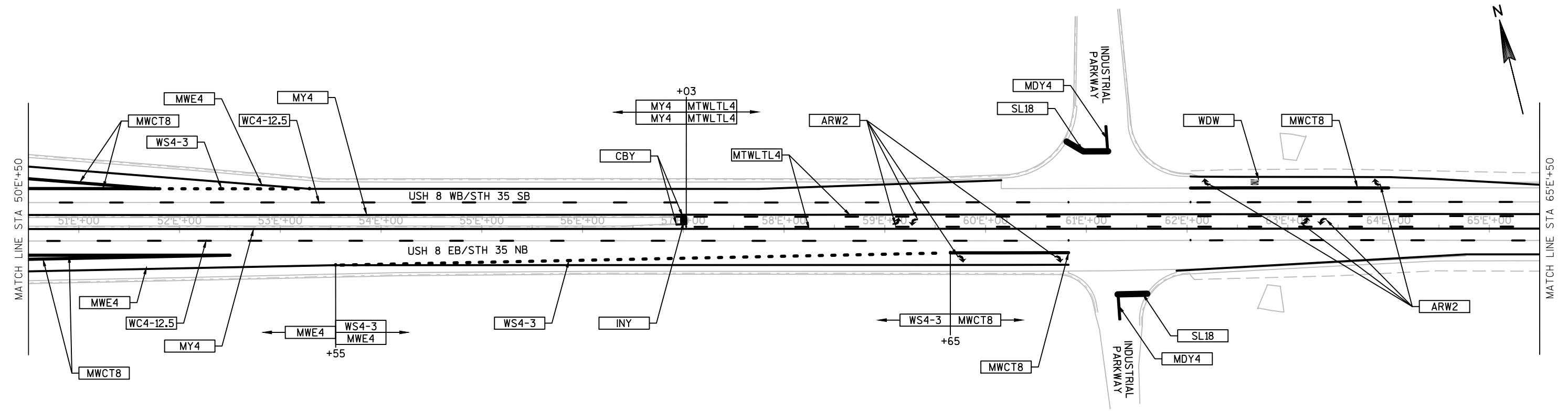
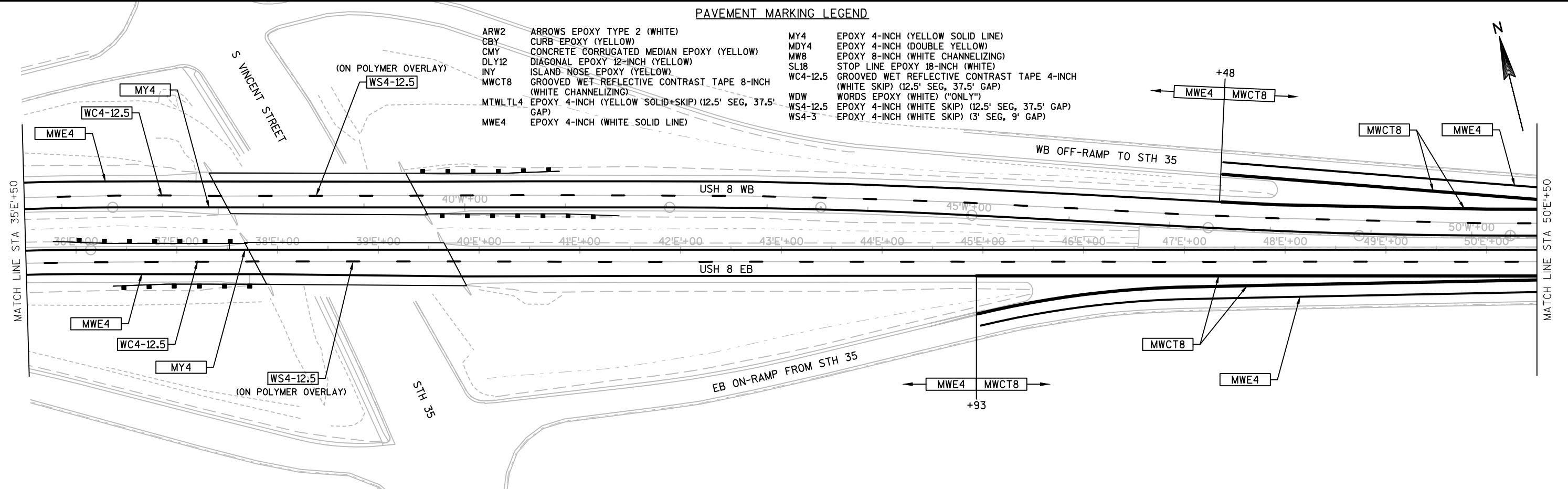
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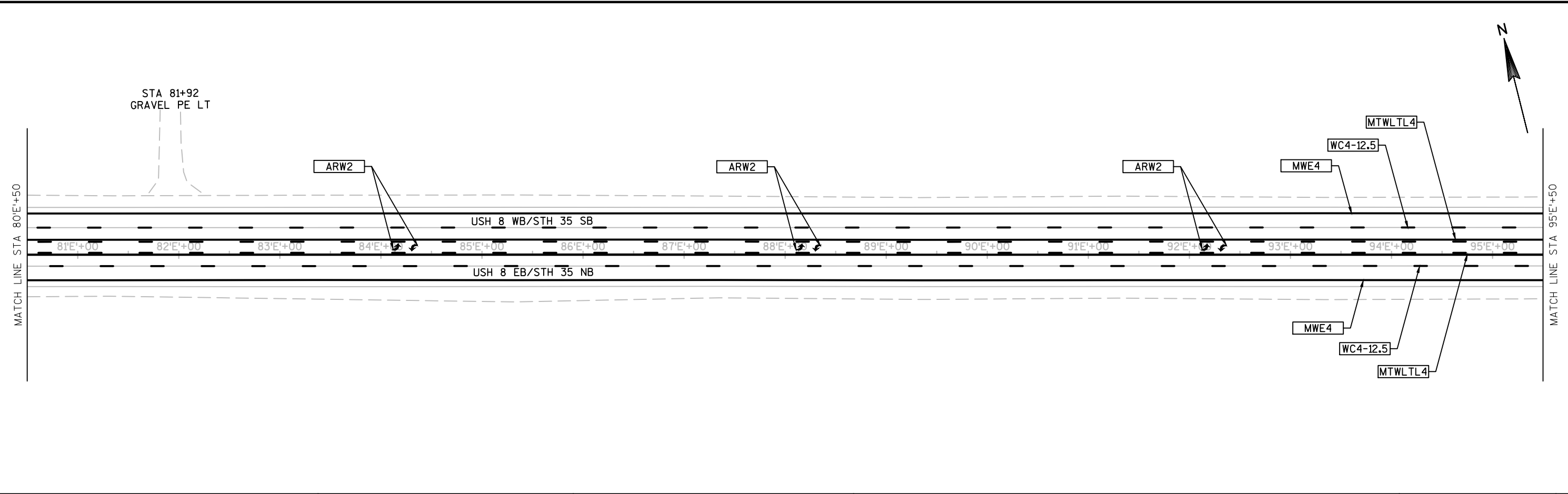
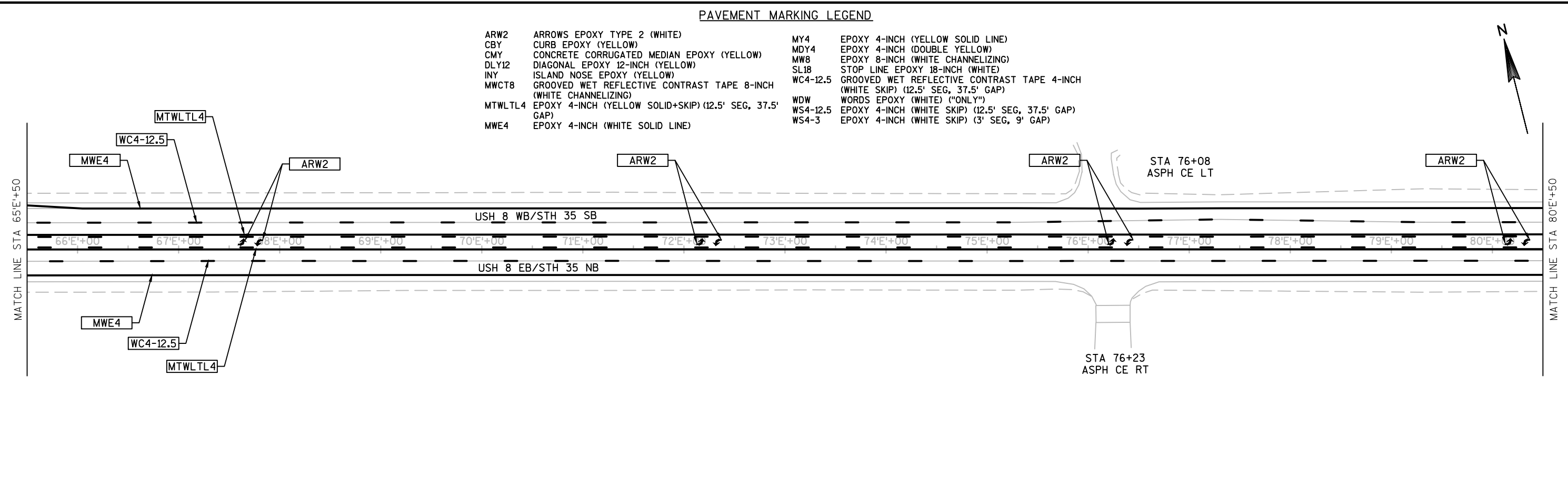
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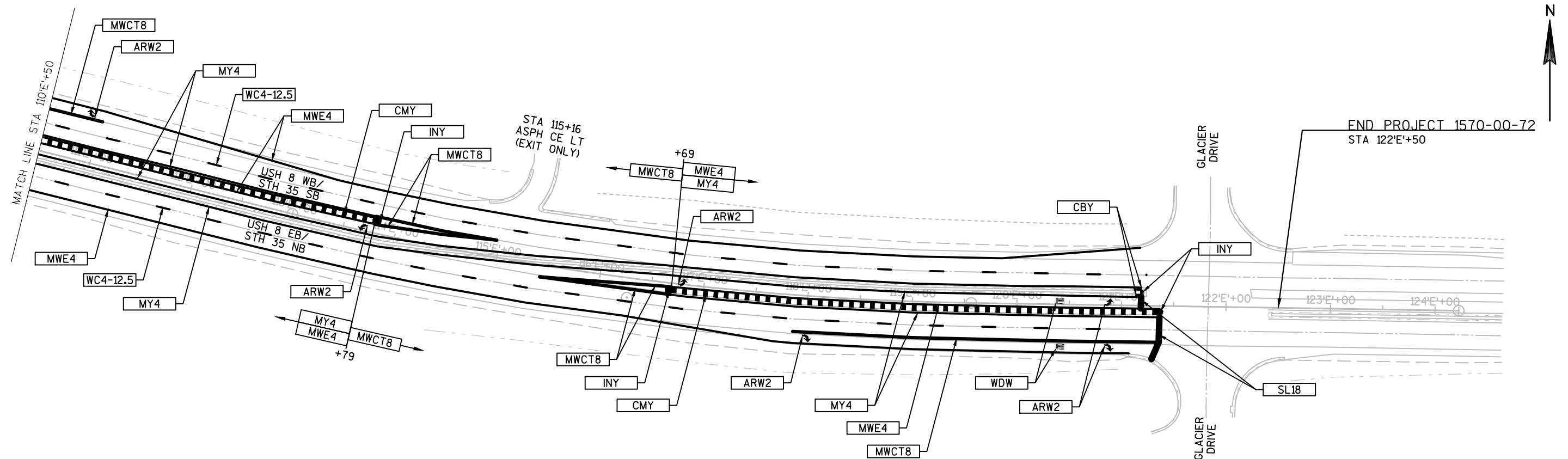
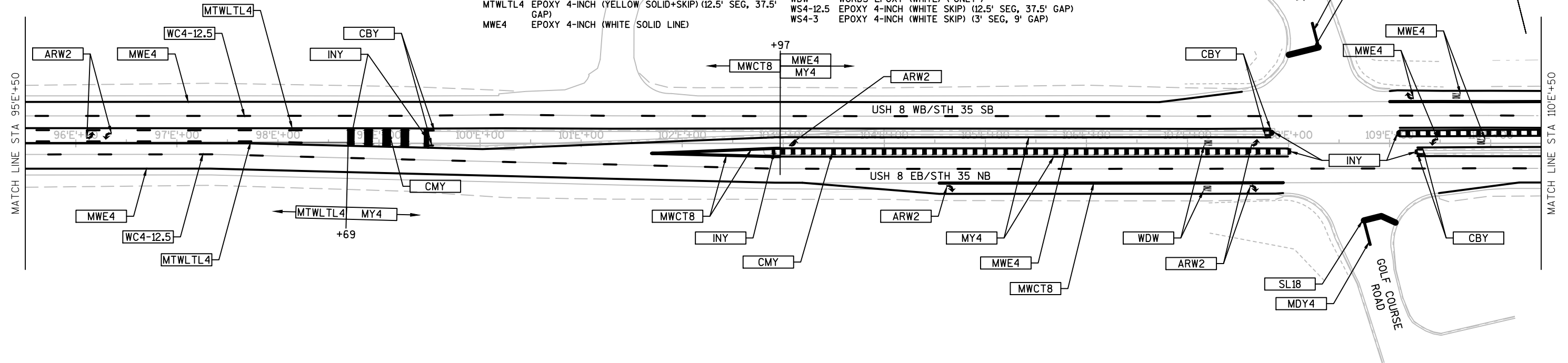


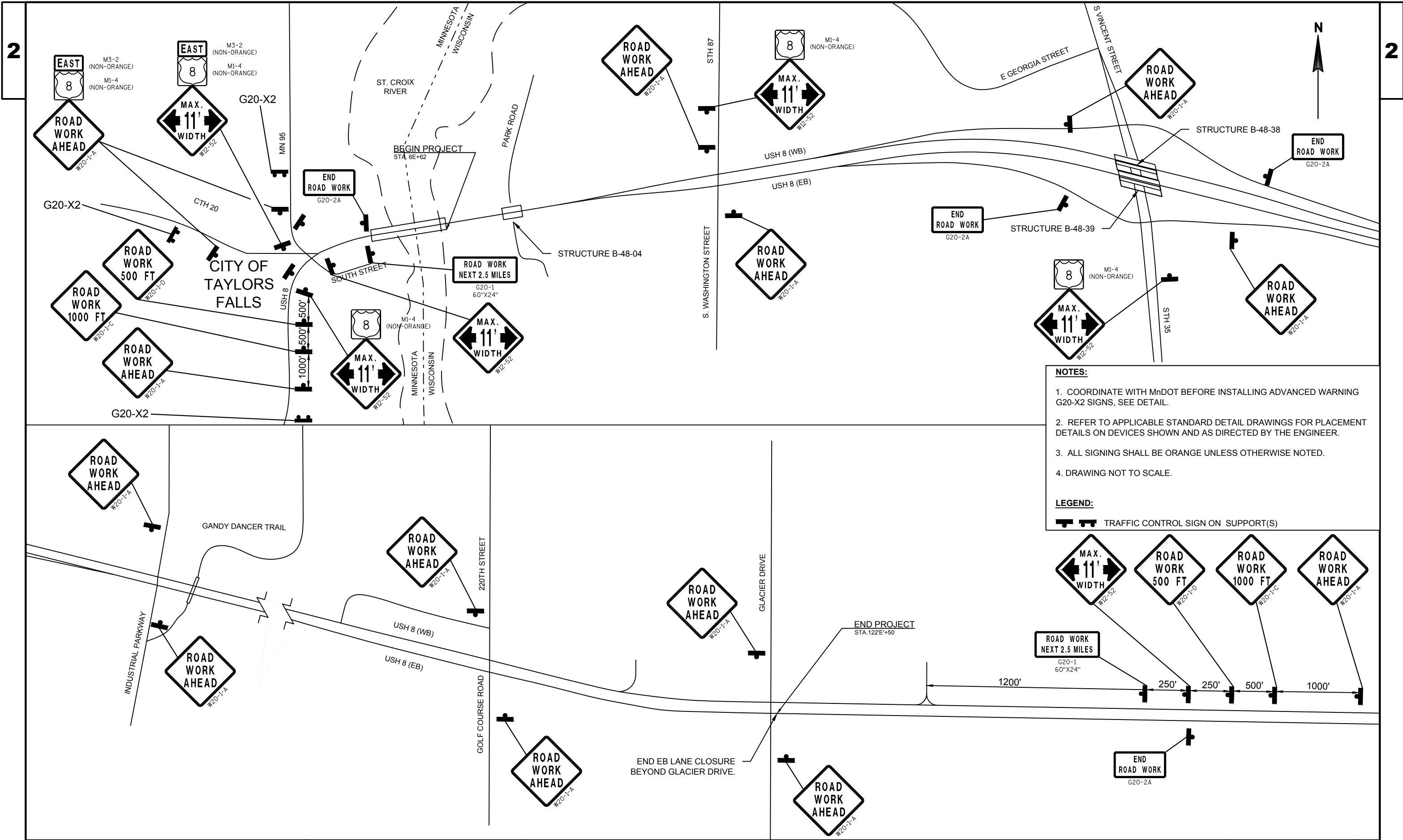




PAVEMENT MARKING LEGEND

ARW2	ARROWS EPOXY TYPE 2 (WHITE)	MY4	EPOXY 4-INCH (YELLOW SOLID LINE)
CBY	CURB EPOXY (YELLOW)	MDY4	EPOXY 4-INCH (DOUBLE YELLOW)
CMY	CONCRETE CORRUGATED MEDIAN EPOXY (YELLOW)	MW8	EPOXY 8-INCH (WHITE CHANNELIZING)
DLY12	DIAGONAL EPOXY 12-INCH (YELLOW)	SL18	STOP LINE EPOXY 18-INCH (WHITE)
INY	ISLAND NOSE EPOXY (YELLOW)	WC4-12.5	GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE SKIP) (12.5' SEG, 37.5' GAP)
MWCT8	GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE CHANNELIZING)	WDW	WORDS EPOXY (WHITE) ("ONLY")
MTWLT4	EPOXY 4-INCH (YELLOW SOLID+SKIP) (12.5' SEG, 37.5' GAP)	WS4-12.5	EPOXY 4-INCH (WHITE SKIP) (12.5' SEG, 37.5' GAP)
MWE4	EPOXY 4-INCH (WHITE SOLID LINE)	WS4-3	EPOXY 4-INCH (WHITE SKIP) (3' SEG, 9' GAP)





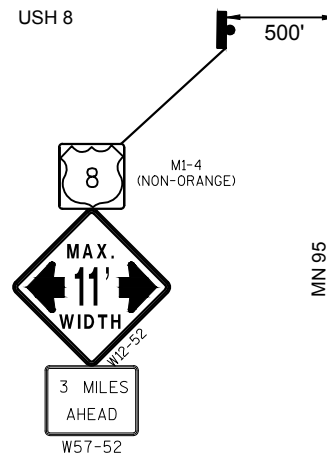
NOTES:

1. COORDINATE WITH MnDOT BEFORE INSTALLING ADVANCED WARNING G20-X2 SIGNS, SEE DETAIL.
2. REFER TO APPLICABLE STANDARD DETAIL DRAWINGS FOR PLACEMENT DETAILS ON DEVICES SHOWN AND AS DIRECTED BY THE ENGINEER.
3. ALL SIGNING SHALL BE ORANGE UNLESS OTHERWISE NOTED.
4. DRAWING NOT TO SCALE.

LEGEND:

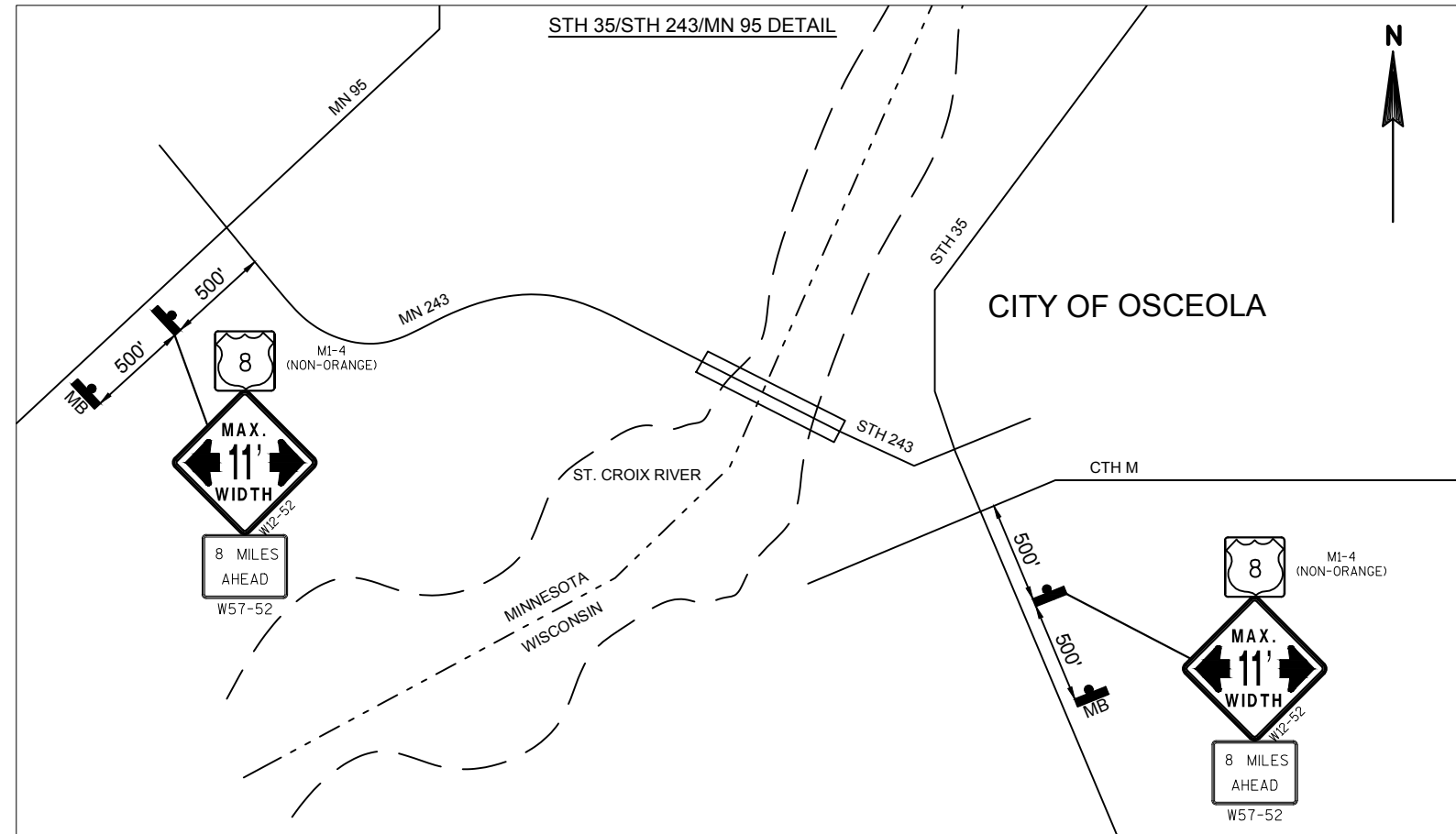
TRAFFIC CONTROL SIGN ON SUPPORT(S)

USH 8/MN 95 DETAIL

USH 8/
MN 95

MN 95

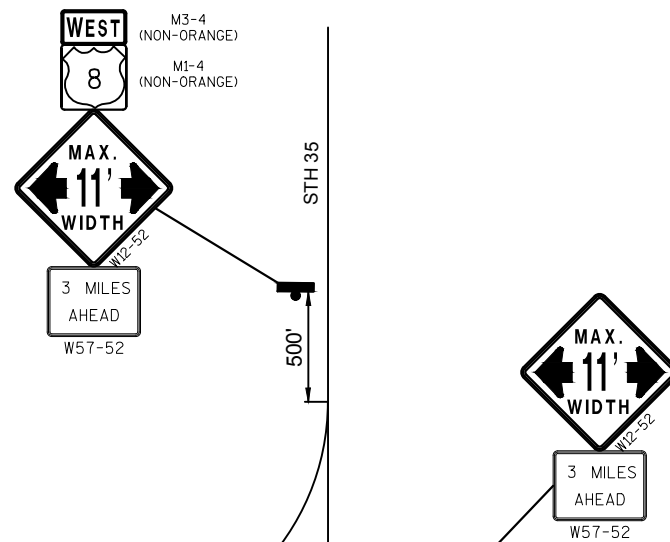
STH 35/STH 243/MN 95 DETAIL



CITY OF OSCEOLA

CTH M

USH 8/STH 35 DETAIL

USH 8/
STH 35

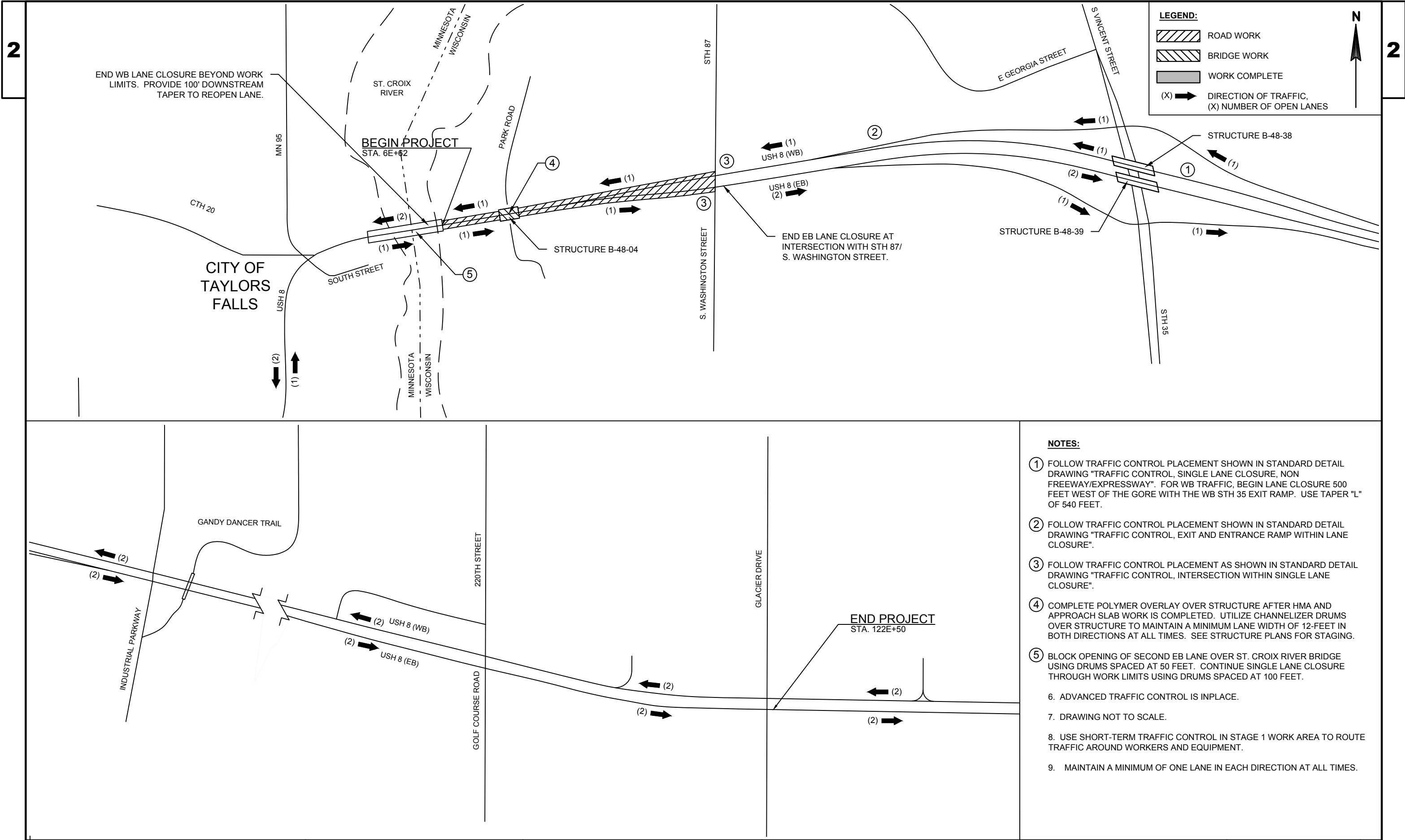
USH 8

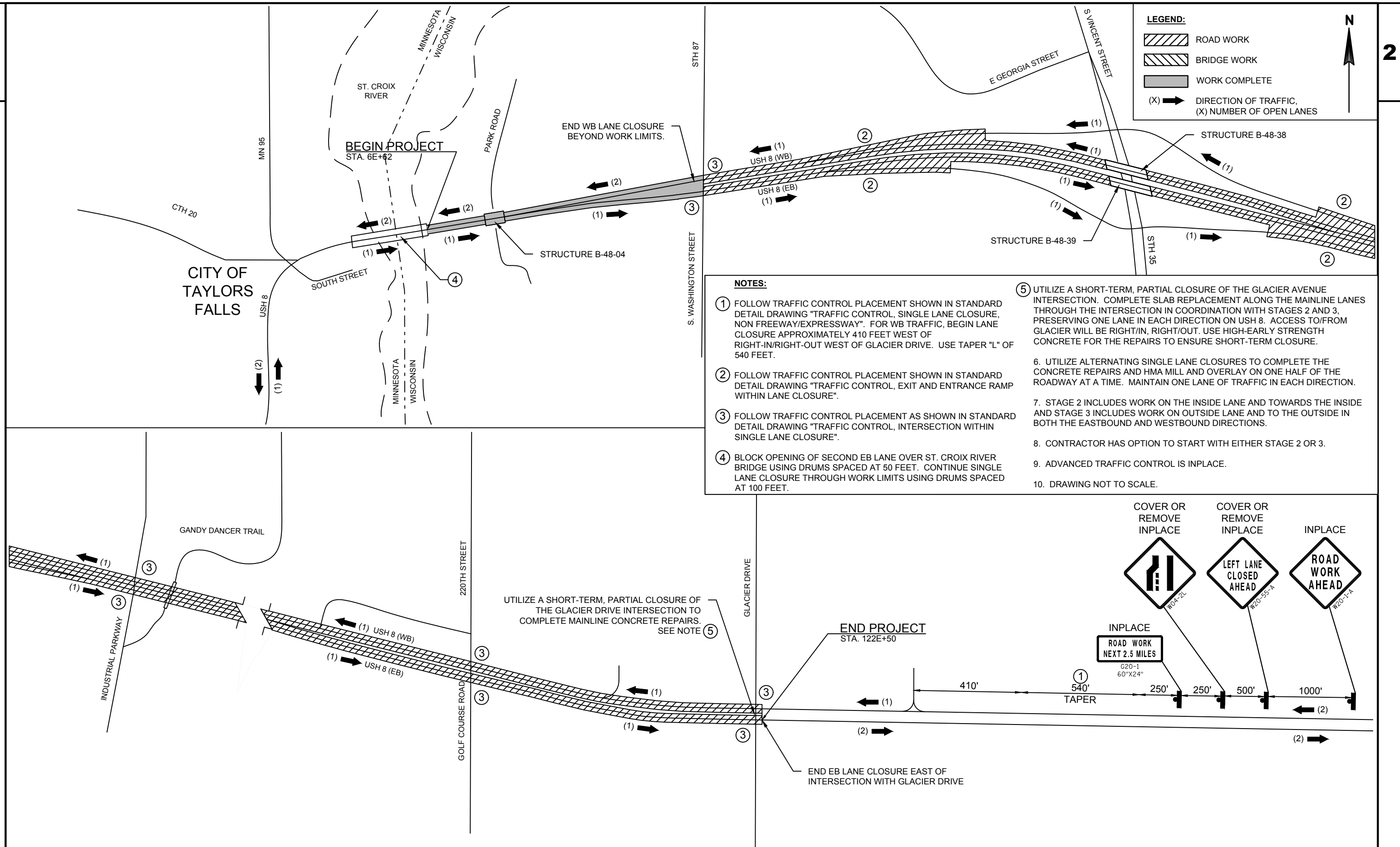
NOTES:

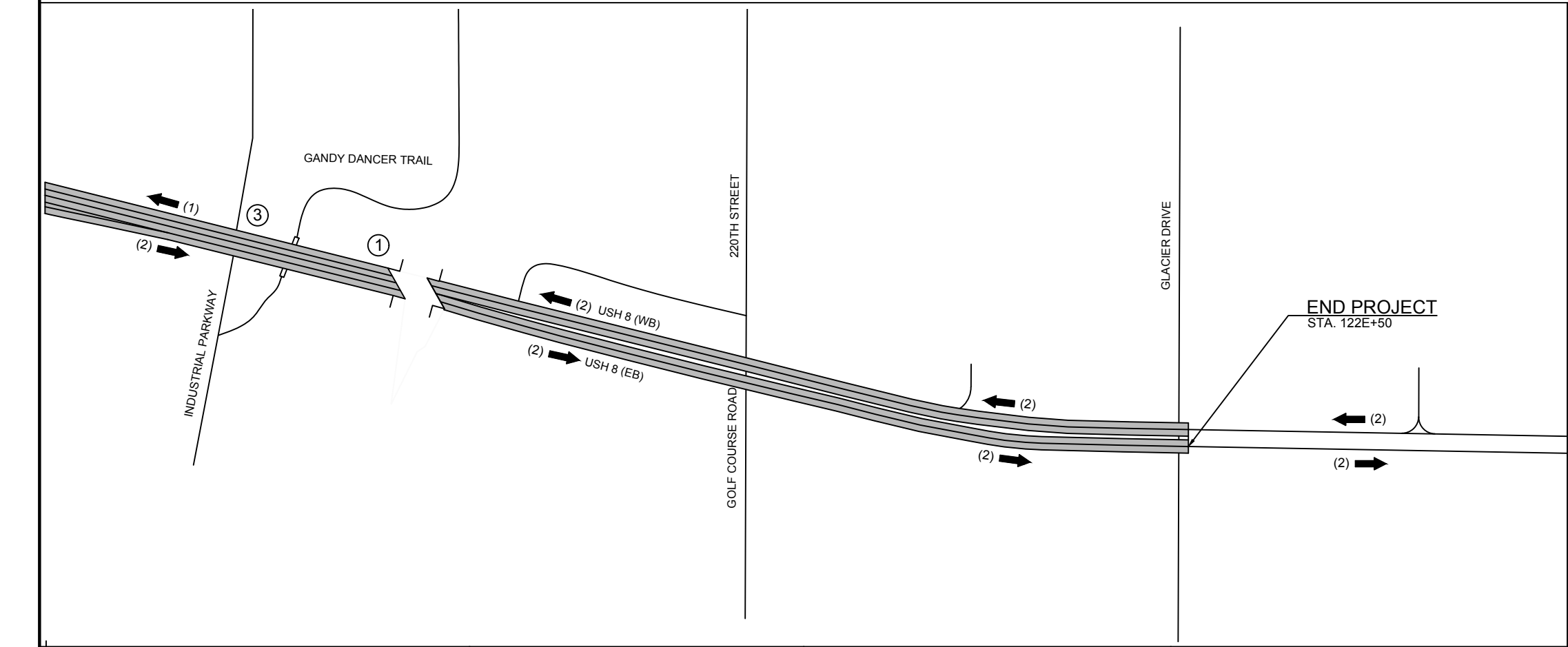
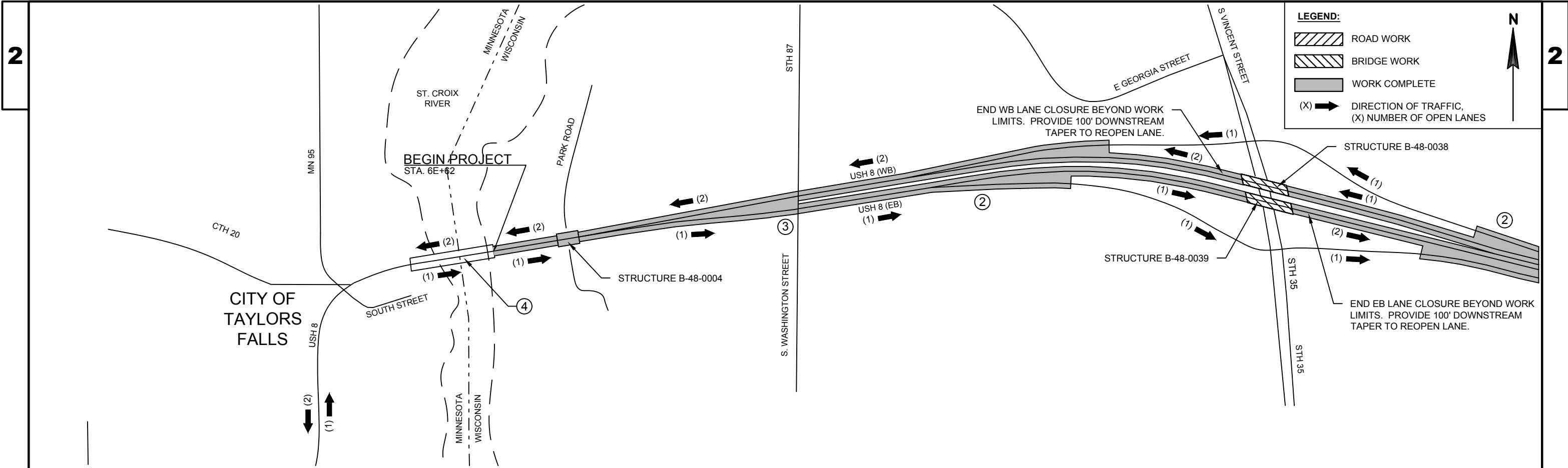
1. SIGNING TO BE PLACED AS DIRECTED BY THE ENGINEER.
2. ALL SIGNING SHALL BE ORANGE UNLESS OTHERWISE NOTED.
3. DRAWING NOT TO SCALE.

LEGEND:

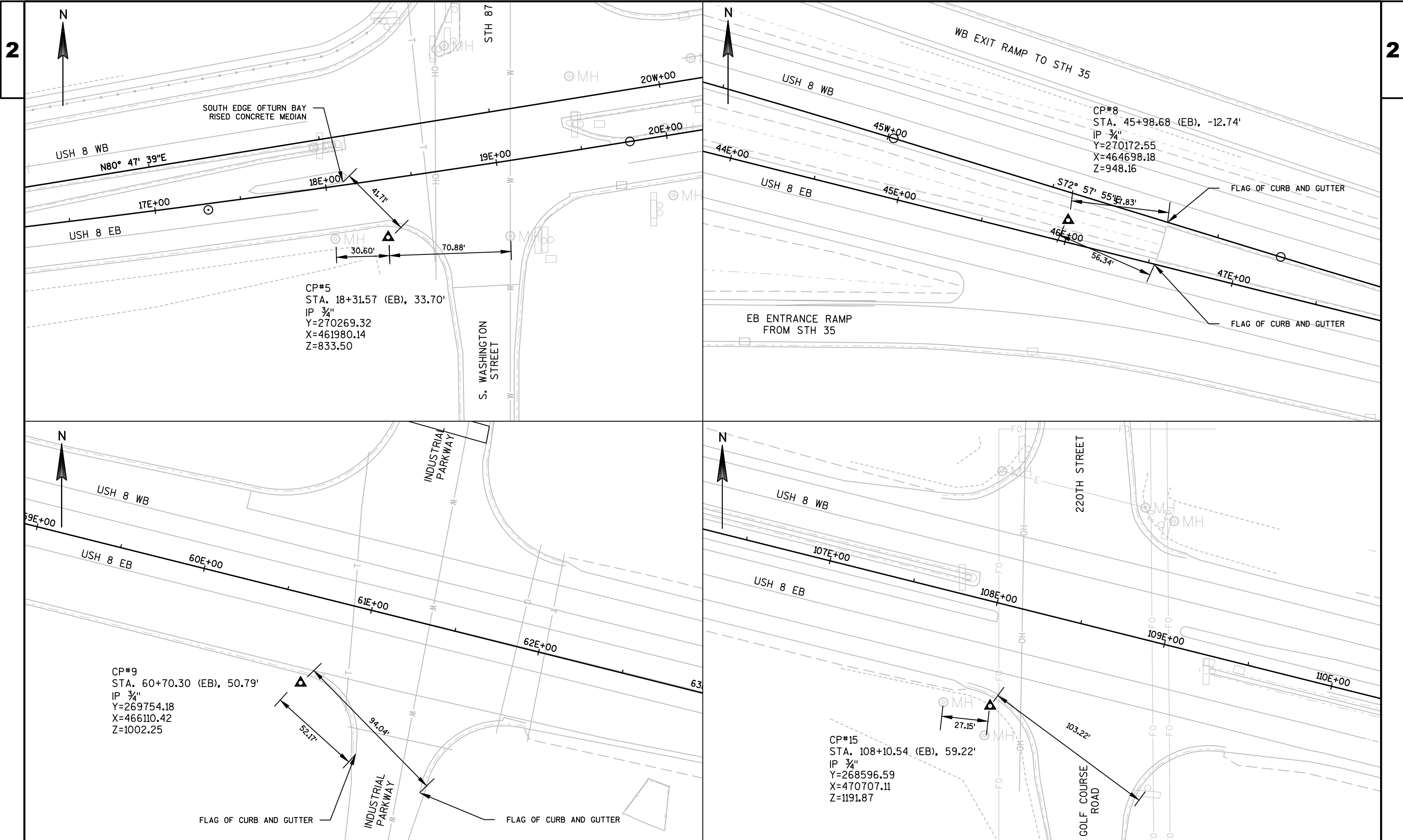
-  TRAFFIC CONTROL SIGN ON SINGLE SUPPORT
-  PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)







- NOTES:**
- 1 FOLLOW TRAFFIC CONTROL PLACEMENT SHOWN IN SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY". FOR WB TRAFFIC, BEGIN LANE CLOSURE APPROXIMATELY 1500 FEET EAST OF INDUSTRIAL PARKWAY. USE TAPER "L" OF 540 FEET.
 - 2 FOLLOW TRAFFIC CONTROL PLACEMENT SHOWN IN SDD "TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE".
 - 3 FOLLOW TRAFFIC CONTROL PLACEMENT AS SHOWN IN SDD "TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE".
 - 4 BLOCK OPENING OF SECOND EB LANE OVER ST. CROIX RIVER BRIDGE USING DRUMS SPACED AT 50 FEET. CONTINUE SINGLE LANE CLOSURE THROUGH WORK LIMITS USING DRUMS SPACED AT 100 FEET.
5. COMPLETE POLYMER OVERLAY AFTER COMPLETION OF ADJACENT APPROACH SLAB AND HMA WORK. UTILIZE ALTERNATING SINGLE LANE CLOSURES TO COMPLETE THE POLYMER OVERLAY ON ONE HALF OF THE DECK AT A TIME. MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION. SEE BRIDGE PLANS FOR STAGING APPROACH.
6. ADVANCED TRAFFIC CONTROL IS INPLACE.
7. DRAWING NOT TO SCALE.



PROJECT NO:1570-00-72

HWY:USH 8

COUNTY:POLK

PROJECT TIES

SHEET

E

Estimate Of Quantities

		1570-00-72	1570-00-73			
Line	Item	Item Description	Unit	Total	Qty	Qty
0010	204.0100	Removing Pavement	SY	406.000	20.000	386.000
0020	204.0105	Removing Pavement Butt Joints	SY	108.000	108.000	
0030	204.0109.S	Removing Concrete Surface Partial Depth	SF	64,400.000	64,400.000	
0040	204.0110	Removing Asphaltic Surface	SY	20.000	20.000	
0050	204.0115	Removing Asphaltic Surface Butt Joints	SY	331.000	331.000	
0060	204.0120	Removing Asphaltic Surface Milling	SY	22,335.000	22,335.000	
0070	204.0150	Removing Curb & Gutter	LF	510.000	510.000	
0080	204.0165	Removing Guardrail	LF	807.000		807.000
0090	205.0100	Excavation Common	CY	344.000		344.000
0100	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 1572-00-72	LS	1.000	1.000	
0110	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	8.000		8.000
0120	213.0100	Finishing Roadway (project) 01. 1570-00-72	EACH	1.000	1.000	
0130	305.0110	Base Aggregate Dense 3/4-Inch	TON	205.000		205.000
0140	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	900.000		900.000
0150	415.0090	Concrete Pavement 9-Inch	SY	125.000	20.000	105.000
0160	415.0410	Concrete Pavement Approach Slab	SY	346.000		346.000
0170	416.0610	Drilled Tie Bars	EACH	1,161.000	1,161.000	
0180	416.0620	Drilled Dowel Bars	EACH	10,666.000	10,666.000	
0190	416.1010	Concrete Surface Drains	CY	12.000		12.000
0200	455.0605	Tack Coat	GAL	2,667.000	2,592.000	75.000
0210	460.2000	Incentive Density HMA Pavement	DOL	2,080.000	2,080.000	
0220	460.6425	HMA Pavement 5 MT 58-28 H	TON	3,420.000	3,240.000	180.000
0230	465.0110	Asphaltic Surface Patching	TON	50.000	50.000	
0240	509.0301	Preparation Decks Type 1	SY	13.000		13.000
0250	509.0302	Preparation Decks Type 2	SY	5.000		5.000
0260	509.2000	Full-Depth Deck Repair	SY	1.000		1.000
0270	509.5100.S	Polymer Overlay	SY	2,298.000		2,298.000
0280	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	50.000	50.000	
0290	601.0413	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type G	LF	70.000	70.000	
0300	601.0555	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type A	LF	390.000	390.000	
0310	611.0430	Reconstructing Inlets	EACH	8.000	5.000	3.000
0320	611.0627	Inlet Covers Type HM	EACH	5.000	5.000	
0330	611.8110	Adjusting Manhole Covers	EACH	2.000	2.000	
0340	611.8115	Adjusting Inlet Covers	EACH	2.000	2.000	
0350	611.8120.S	Cover Plates Temporary	EACH	3.000		3.000
0360	614.0010	Barrier System Grading Shaping Finishing	EACH	8.000		8.000
0370	614.2300	MGS Guardrail 3	LF	325.000		325.000
0380	614.2500	MGS Thrie Beam Transition	LF	157.600		157.600
0390	614.2610	MGS Guardrail Terminal EAT	EACH	4.000		4.000

Estimate Of Quantities

		1570-00-72		1570-00-73		
Line	Item	Item Description	Unit	Total	Qty	Qty
0400	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1570-00-72	EACH	1.000	1.000	
0410	619.1000	Mobilization	EACH	1.000	0.900	0.100
0420	628.1504	Silt Fence	LF	1,120.000		1,120.000
0430	628.1520	Silt Fence Maintenance	LF	1,120.000		1,120.000
0440	628.1905	Mobilizations Erosion Control	EACH	2.000		2.000
0450	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000		2.000
0460	628.7005	Inlet Protection Type A	EACH	10.000	10.000	
0470	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	110.000	106.000	4.000
0480	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	26.000	26.000	
0490	634.0620	Posts Wood 4x6-Inch X 20-FT	EACH	5.000	5.000	
0500	637.2210	Signs Type II Reflective H	SF	1,895.020	1,895.020	
0510	637.2230	Signs Type II Reflective F	SF	163.500	136.500	27.000
0520	638.2602	Removing Signs Type II	EACH	61.000	57.000	4.000
0530	638.3000	Removing Small Sign Supports	EACH	51.000	47.000	4.000
0540	642.5001	Field Office Type B	EACH	1.000	1.000	
0550	643.0200.S	Traffic Control Surveillance and Maintenance (project) 01. 1570-00-72	DAY	84.000	84.000	
0560	643.0300	Traffic Control Drums	DAY	64,040.000	64,040.000	
0570	643.0420	Traffic Control Barricades Type III	DAY	2,400.000	2,400.000	
0580	643.0705	Traffic Control Warning Lights Type A	DAY	4,800.000	4,800.000	
0590	643.0715	Traffic Control Warning Lights Type C	DAY	2,700.000	2,700.000	
0600	643.0800	Traffic Control Arrow Boards	DAY	400.000	400.000	
0610	643.0900	Traffic Control Signs	DAY	5,980.000	5,980.000	
0620	646.0106	Pavement Marking Epoxy 4-Inch	LF	51,815.000	50,525.000	1,290.000
0630	646.0126	Pavement Marking Epoxy 8-Inch	LF	55.000	55.000	
0640	646.0406	Pavement Marking Same Day Epoxy 4-Inch	LF	2,000.000	2,000.000	
0650	646.0600	Removing Pavement Markings	LF	1,000.000	1,000.000	
0660	646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF	5,600.000	5,600.000	
0670	646.0843.S	Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch	LF	7,460.000	7,460.000	
0680	647.0166	Pavement Marking Arrows Epoxy Type 2	EACH	43.000	43.000	
0690	647.0356	Pavement Marking Words Epoxy	EACH	10.000	10.000	
0700	647.0456	Pavement Marking Curb Epoxy	LF	115.000	115.000	
0710	647.0566	Pavement Marking Stop Line Epoxy 18-Inch	LF	252.000	252.000	
0720	647.0606	Pavement Marking Island Nose Epoxy	EACH	17.000	17.000	
0730	647.0726	Pavement Marking Diagonal Epoxy 12-Inch	LF	70.000	70.000	
0740	647.0856	Pavement Marking Concrete Corrugated Median Epoxy	SF	4,325.000	4,325.000	
0750	647.0955	Removing Pavement Markings Arrows	EACH	11.000	11.000	
0760	647.0965	Removing Pavement Markings Words	EACH	11.000	11.000	

Estimate Of Quantities

1570-00-72						1570-00-73	
Line	Item	Item Description	Unit	Total	Qty	Qty	
0770	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	2,500.000	2,500.000		
0780	649.0506	Temporary Pavement Marking Removable Mask-Out Tape 6-Inch	LF	2,500.000	2,500.000		
0790	649.0801	Temporary Pavement Marking Removable Tape 8-Inch	LF	1,000.000	1,000.000		
0800	650.4500	Construction Staking Subgrade	LF	585.000		585.000	
0810	650.5000	Construction Staking Base	LF	585.000		585.000	
0820	650.8000	Construction Staking Resurfacing Reference	LF	15,662.000	15,662.000		
0830	650.9910	Construction Staking Supplemental Control (project) 01. 1570-00-72	LS	1.000	1.000		
0840	650.9910	Construction Staking Supplemental Control (project) 02.1570-00-73	LS	1.000		1.000	
0850	650.9920	Construction Staking Slope Stakes	LF	585.000		585.000	
0860	690.0150	Sawing Asphalt	LF	4,855.000	4,855.000		
0870	690.0250	Sawing Concrete	LF	28,102.000	28,102.000		
0880	715.0415	Incentive Strength Concrete Pavement	DOL	4,150.000	4,150.000		
0890	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000		
0900	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	630.000	630.000		
0910	SPV.0035	Special 01. Concrete Masonry Deck Patching Rapid Set	CY	1.600		1.600	
0920	SPV.0060	Special 01. Remove, Salvage, & Reinstall Flashing Red Beacon Assembly	EACH	2.000	2.000		
0930	SPV.0060	Special 02. Traffic Control Signs Fixed Message MnDOT	EACH	3.000	3.000		
0940	SPV.0090	Special 01. Sawing Pavement Deck Preparation Areas	LF	130.000		130.000	
0950	SPV.0090	Special 02. Cleaning and Patching Concrete Joints and Cracks	LF	6,794.000	6,794.000		
0960	SPV.0180	Special 01. Concrete Pavement Repair Doweled Special	SY	4,890.000	4,890.000		
0970	SPV.0180	Special 02. Concrete Pavement Replacement Doweled Special	SY	5,544.000	5,544.000		
0980	SPV.0180	Special 03. Concrete Pavement Replacement HES Doweled Special	SY	4,180.000	4,180.000		

REMOVING PAVEMENT ITEMS					
			204.0100	204.0105	
			REMOVING	REMOVING	
			PAVEMENT	PAVEMENT	
			SY	BUTT JOINTS	
STATION	-	STATION	LOCATION	SY	SY
6E+82	-	6E+86	USH 8 EB & WB	--	24
8E+69	-	8E+73	USH 8 EB & WB	--	24
9E+64	-	9E+68	USH 8 EB & WB	--	24
17E+96	-	18E+00	USH 8 EB & WB	--	36
UNDISTRIBUTED		MANHOLE ADJUSTMENTS	20	--	
TOTALS:			20	108	

REMOVING CURB & GUTTER	
LOCATION	204.0150
INLETS (1)	LF
UNDISTRIBUTED (2)	60
	450
TOTAL:	510

(1) - UTILIZE AS NEEDED FOR INLETS
(2) - UTILIZE AS NEEDED FOR CURB AND GUTTER LOCATIONS WITH DETERIORATED JOINTS

REMOVING CONCRETE SURFACE PARTIAL DEPTH			
			204.0109.S
			SF
STATION	-	STATION	LOCATION
6E+86	-	8E+69	USH 8 EB & WB
9E+68	-	17E+96	USH 8 EB & WB
TOTAL:			64400

PREPARE FOUNDATION FOR ASPHALTIC PAVING (1572-00-72)	
PROJECT	211.0100
1570-00-72	LS
	1
TOTAL:	1

REMOVING ASPHALTIC ITEMS						
				204.0110	204.0115	204.0120
				REMOVING	REMOVING	REMOVING
				ASPHALTIC	ASPHALTIC SURFACE	ASPHALTIC SURFACE
				SURFACE	BUTT JOINTS	MILLING
STATION	-	STATION	LOCATION	SY	SY	SY
26E+79	-	35E+76	USH 8 EB SHOULDERS RT	--	--	1100
32E+94	-	37E+52	USH 8 EB SHOULDERS LT	--	--	70
40E+11	-	46E+54	USH 8 EB SHOULDERS LT	--	--	230
40E+11	-	50E+12	USH 8 EB SHOULDERS RT	--	--	950
57E+03	-	99E+49	USH 8 MIDDLE TURN LANE	--	--	6615
60E+82	-	61E+89	INTERSECTION RT	--	46	315
62E+03	-	104E+00	INTERSECTION AND USH 8 EB SHOULDERS RT	--	42	2970
104E+00	-	110E+07	INTERSECTION AND TURN LANE RT	--	44	1180
110E+07	-	116E+64	USH 8 EB SHOULDERS RT	--	--	430
116E+64	-	121E+07	USH 8 EB SHOULDERS RT	--	--	470
28W+27	-	37W+33	USH 8 WB SHOULDERS LT	--	--	1050
32W+98	-	37W+55	USH 8 WB SHOULDERS RT	--	--	185
42W+28	-	46W+70	USH 8 WB SHOULDERS RT	--	--	170
41W+53	-	51W+24	USH 8 WB SHOULDERS LT	--	--	1050
60E+16	-	65E+94	INTERSECTION LT AND TURN LANE LT	--	56	1165
65E+94	-	106E+71	USH 8 WB SHOULDERS LT	--	77	2980
106E+71	-	113E+26	INTERSECTION AND TURN LANE LT	--	66	920
113E+26	-	114E+61	USH 8 WB SHOULDERS LT	--	--	90
116E+08	-	120E+33	USH 8 WB SHOULDERS LT	--	--	295
120E+33	-	121E+17	USH 8 WB SHOULDERS LT	--	--	100
9E+64	-	18E+00	INLETS	20	--	--
TOTALS:				20	331	22335

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CAEGORY 0010 UNLESS OTHERWISE NOTED

CONCRETE PAVEMENT 9-INCH			
STATION	-	STATION	415.0090
UNDISTRIBUTED		LOCATION	SY
		MANHOLE ADJUSTMENTS	20
TOTAL:			20

CONCRETE CURB AND GUTTER ITEMS						
			601.0555		601.0413	
			6-INCH SLOPED		6-INCH SLOPED	
			36-INCH TYPE A		30-INCH TYPE G	
STATION	-	STATION	LOCATION	LF	LF	LF
12E+94	-	18E+00	USH 8 EB INLETS	20	--	10
12W+93	-	18W+00	USH 8 WB INLETS	20	--	10
UNDISTRIBUTED		CURB AND GUTTER JOINT REPAIRS		350	50	50
TOTALS:				390	50	70

ASPHALTIC ITEMS					
			455.0605	460.6425	465.0110
			TACK	HMA	ASPHALTIC
			COAT	PAVEMENT	SURFACE
			GAL	5 MT 58-28 H	PATCHING
STATION	-	STATION	LOCATION	TON	TON
6E+82	-	8E+74	USH 8 EB	45	--
6E+82	-	8E+74	USH 8 WB	45	--
9E+64	-	18E+00	USH 8 EB	450	--
9W+64	-	18W+00	USH 8 WB	425	--
26E+79	-	35E+76	USH 8 EB SHOULDERS RT	75	--
32E+94	-	34E+95	USH 8 EB SHOULDERS LT	5	--
40E+11	-	46E+54	USH 8 EB SHOULDERS LT	15	--
40E+11	-	50E+12	USH 8 EB SHOULDERS RT	65	--
57E+03	-	99E+49	USH 8 MIDDLE TURN LANE	465	--
60E+82	-	61E+89	INTERSECTION RT	25	--
62E+03	-	104E+00	INTERSECTION AND USH 8 EB SHOULDERS RT	215	--
104E+00	-	110E+07	INTERSECTION AND TURN LANE RT	90	--
110E+07	-	116E+64	USH 8 EB SHOULDERS RT	30	--
116E+64	-	121E+07	USH 8 EB SHOULDERS RT	35	--
28W+27	-	37W+33	USH 8 WB SHOULDERS LT	75	--
32W+98	-	37W+55	USH 8 WB SHOULDERS RT	15	--
42W+28	-	46W+70	USH 8 WB SHOULDERS RT	12	--
41W+53	-	51W+24	USH 8 WB SHOULDERS LT	75	--
60E+16	-	65E+94	INTERSECTION LT AND TURN LANE LT	85	--
65E+94	-	106E+71	USH 8 WB SHOULDERS LT	215	--
106E+71	-	113E+26	INTERSECTION AND TURN LANE LT	70	--
113E+26	-	114E+61	USH 8 WB SHOULDERS LT	6	--
116E+08	-	120E+33	USH 8 WB SHOULDERS LT	22	--
120E+33	-	121E+17	USH 8 WB SHOULDERS LT	7	--
UNDISTRIBUTED			25	50	50
TOTALS:			2592	3240	50

MANHOLES AND INLETS					
		611.0430	611.0627	611.8110	611.8115
		RECONSTRUCTING	INLET	ADJUSTING	ADJUSTING
		INLETS	COVERS	MANHOLE	INLET
		EACH	TYPE HM	COVERS	COVERS
STATION	LOCATION		EACH	EACH	EACH
12E+93	USH 8 EB, RT	1	1	--	--
12W+93	USH 8 WB, LT	1	1	--	--
12W+93	USH 8 WB, LT	--	--	1	--
16E+14	USH 8 EB, RT	1	1	--	--
16E+14	USH 8 EB, LT	1	1	--	--
16W+14	USH 8 WB, LT	1	1	--	--
16W+14	USH 8 WB, LT	--	--	1	--
UNDISTRIBUTED	USH 8	--	--	--	2
TOTALS:		5	5	2	2

ALL ITEMS AND QUANTITIES ON
THIS SHEET ARE CAEGORY 0010
UNLESS OTHERWISE NOTED

TYPE II SIGNS AND SUPPORTS												
PLAN SIGN NUMBER	SIGN CODE	WIDTH IN	X	HEIGHT IN	637.2210	637.2230	634.0616	634.0618	634.0620	638.2602	638.3000	COMMENTS
					SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	POSTS WOOD 4x6-INCH x 16-FT EACH	POSTS WOOD 4x6-INCH x 18-FT EACH	POSTS WOOD 4x6-INCH x 20-FT EACH	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
1-01	R2-1	24	X	30	5.00	--	--	--	--	--	--	BAND TO LIGHT POLE
1-02	--	--	X	--	--	--	--	--	--	1	1	REMOVE EAST USH 8 SIGN
1-03	I2-2	60	X	21	8.75	--	1	--	--	--	--	
1-04	I2-3	90	X	24	15.00	--	2	--	--	1	1	
1-05	R2-1	24	X	24	--	4.00	--	--	--	1	--	BAND TO LIGHT POLE
1-06	--	--	X	--	--	--	--	--	--	1	--	
1-07	J1-1	36	X	57	14.25	--	1	--	--	1	1	
1-08	R4-3	36	X	48	12.00	--	1	--	--	1	1	REMOVE EXISTING SIGN AND INSTALL NEW SIGN AT ~7'E'+00 RT
1-09	W5-1	36	X	36	--	9.00	1	--	--	1	1	
1-10	J1-1	36	X	75	18.75	--	1	--	--	1	1	
1-11	J3-3	108	X	84	63.00	--	2	--	--	--	--	
1-12	--	--	X	--	--	--	--	--	--	1	1	
1-13	R4-7	36	X	48	12.00	--	--	1	--	1	1	
1-14	W5-54D	18	X	18	--	2.25	--	--	--	--	--	MOUNT TO SAME POST AS 1-13
1-15	R5-1	36	X	36	9.00	--	1	--	--	1	1	
1-16	W3-5	48	X	48	--	16.00	1	--	--	--	--	MOUNT TO SAME POST AS 1-15
1-17	--	--	X	--	--	--	--	--	--	1	1	
1-18	D1-3	120	X	72	60.00	--	--	2	--	--	--	
1-19	R5-1A	42	X	30	8.75	--	1	--	--	1	1	
1-20	W3-3	36	X	36	--	9.00	1	--	--	--	--	REMOVE EXISTING SIGN AND INSTALL NEW SIGN AT ~6'E'+90 LT
1-21	--	--	X	--	--	--	--	--	--	1	1	
1-22	--	--	X	--	--	--	--	--	--	1	2	
1-23	R2-1	36	X	48	12.00	--	1	--	--	--	--	
1-24	--	--	X	--	--	--	--	--	--	1	2	
1-25	--	--	X	--	--	--	--	--	--	--	--	
1-26	--	--	X	--	--	--	--	--	--	--	--	
1-27	R5-1A	42	X	30	8.75	--	1	--	--	--	--	
1-28	--	--	X	--	--	--	--	--	--	1	1	
1-29	J4-1	36	X	54	13.50	--	1	--	--	--	--	
1-30	R4-7	36	X	48	12.00	--	1	--	--	1	1	
1-31	--	--	X	--	--	--	--	--	--	2	3	
1-32	J3-2	72	X	84	42.00	--	--	2	--	--	--	
1-33	R5-1	36	X	36	9.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 1-32
1-34	R5-1	36	X	36	9.00	--	1	--	--	1	1	
1-35	R1-1	36	X	36	7.46	--	--	--	--	1	--	MOUNT TO SAME POST AS 1-34
1-36	R4-7	36	X	48	12.00	--	1	--	--	1	1	
1-37	--	--	X	--	--	--	--	--	--	1	1	
1-38	J3-2	48	X	57	19.00	--	1	--	--	--	--	
1-39	R6-1L	36	X	12	3.00	--	--	1	--	--	--	
1-40	R6-1R	36	X	12	3.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 1-39
1-41	R1-1	36	X	36	7.46	--	--	--	--	--	--	MOUNT TO SAME POST AS 1-39
1-42	R6-3	30	X	24	5.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 1-39
1-43	--	--	X	--	--	--	--	--	--	1	1	
1-44	W12-1D	30	X	30	--	6.25	1	--	--	1	1	
1-45	--	--	X	--	--	--	--	--	--	1	1	
1-46	R6-1L	36	X	12	3.00	--	--	1	--	--	--	
1-47	R6-1R	36	X	12	3.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 1-46
1-48	R1-1	36	X	36	7.46	--	--	--	--	--	--	MOUNT TO SAME POST AS 1-46
1-49	R6-3	30	X	24	5.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 1-46
1-50	--	--	X	--	--	--	--	--	--	1	1	
1-51	R4-7	36	X	48	12.00	--	1	--	--	1	1	
1-52	J1-1	36	X	57	14.25	--	1	--	--	1	1	
1-53	R2-1	36	X	48	12.00	--	1	--	--	1	1	
1-54	R5-1	36	X	36	9.00	--	--	1	--	--	--	
1-55	--	--	X	--	--	--	--	--	--	1	2	
1-56	J3-1	36	X	84	21.00	--	--	--	--	-	-	MOUNT TO SAME POST AS 1-54
SUBTOTALS:					476.38	46.5	24	8	0	18	14	(CONTINUED ON NEXT SHEET)

ALL ITEMS AND QUANTITIES ON
THIS SHEET ARE CAEGORY 0010
UNLESS OTHERWISE NOTED

TYPE II SIGNS AND SUPPORTS (CONTINUED FROM PREVIOUS SHEET)												COMMENTS
PLAN SIGN NUMBER	SIGN CODE	WIDTH IN	X	HEIGHT IN	637.2210 SIGNS TYPE II REFLECTIVE H SF	637.2230 SIGNS TYPE II REFLECTIVE F SF	634.0616 POSTS WOOD 4x6-INCH x 16-FT EACH	634.0618 POSTS WOOD 4x6-INCH x 18-FT EACH	634.0620 POSTS WOOD 4x6-INCH x 20-FT EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	
2-01	J3-3	108	X	84	63.00	--	--	2	--	1	2	
2-02	R5-1A	42	X	30	8.75	--	1	--	--	1	1	
2-03	--	--	X	--	--	--	--	--	--	--	--	
2-04	--	--	X	--	--	--	--	--	--	1	2	
2-05	D1-3	120	X	72	60.00	--	--	2	--	--	--	
2-06	--	--	X	--	--	--	--	--	--	1	2	
2-07	D1-3	84	X	48	28.00	--	2	--	--	--	--	
2-08	D1-3	108	X	90	67.50	--	--	2	--	--	--	
2-09	J3-2	72	X	84	42.00	--	1	--	--	1	1	
2-10	R3-7R	36	X	36	9.00	--	1	--	--	1	1	
2-11	--	--	X	--	--	--	--	--	--	1	2	
2-12	J3-1	36	X	84	21.00	--	1	--	--	--	--	
2-13	--	--	X	--	--	--	--	--	--	1	2	
2-14	J1-1	36	X	57	14.25	--	1	--	--	1	1	
2-15	R2-1	36	X	48	12.00	--	1	--	--	1	1	
2-16	E5-1	60	X	48	20.00	--	2	--	--	1	2	
2-17	W4-1R	36	X	36	--	9.00	1	--	--	1	1	
2-18	R2-1	36	X	48	12.00	--	1	--	--	1	1	
3-01	W7-1	36	X	36	--	9.00	--	1	--	1	1	
3-02	W7-3	24	X	18	--	3.00	--	--	--	--	--	MOUNT TO SAME POST AS 3-01
3-03	W7-2B	24	X	18	--	3.00	--	--	--	--	--	MOUNT TO SAME POST AS 3-01
3-04	--	--	X	--	--	--	--	--	--	--	--	SEE MISCELLANEOUS QUANTITIES FOR 1570-00-73
3-05	--	--	X	--	--	--	--	--	--	--	--	SEE MISCELLANEOUS QUANTITIES FOR 1570-00-73
3-06	--	--	X	--	--	--	--	--	--	--	--	SEE MISCELLANEOUS QUANTITIES FOR 1570-00-73
3-07	--	--	X	--	--	--	--	--	--	--	--	SEE MISCELLANEOUS QUANTITIES FOR 1570-00-73
3-08	W4-1R	36	X	36	--	9.00	1	--	--	1	1	
3-09	R2-1	36	X	48	12.00	--	1	--	--	1	1	
3-10	R2-1	36	X	48	12.00	--	1	--	--	1	1	
3-11	R2-1	36	X	48	12.00	--	1	--	--	--	--	
3-12	E5-1	60	X	48	20.00	--	2	--	--	1	2	
3-13	--	--	X	--	--	--	--	--	--	1	1	
3-14	J4-2	72	X	54	27.00	--	--	--	2	--	--	
4-01	W11-8	36	X	36	--	9.00	1	--	--	1	1	SALVAGE EXISTING FLASHING BEACON
4-02	--	--	X	--	--	--	--	--	--	1	2	
4-03	J3-2	72	X	84	42.00	--	2	--	--	--	--	
4-04	--	--	X	--	--	--	--	--	--	1	1	
4-05	R2-1	36	X	48	12.00	--	1	--	--	1	1	
4-06	D1-61	114	X	30	23.75	--	2	--	--	--	--	
4-07	D1-3	108	X	90	67.50	--	2	--	--	1	2	
4-08	--	--	X	--	--	--	--	--	--	1	2	
4-09	D1-3	108	X	48	36.00	--	2	--	--	--	--	
4-10	D1-1	108	X	36	27.00	--	2	--	--	1	2	
4-11	R5-1A	42	X	30	8.75	--	--	--	--	--	--	MOUNT TO SAME POST AS 4-10
4-12	R4-7	36	X	48	12.00	--	1	--	--	1	1	
4-13	R3-9B	36	X	48	12.00	--	--	1	--	1	1	
4-14	R5-1	36	X	36	9.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 4-13
4-15	R3-9D	36	X	9	2.25	--	--	1	--	1	1	
4-16	R3-9B	36	X	48	12.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 4-15
4-17	R3-20R	36	X	54	13.50	--	--	1	--	--	--	
4-18	--	--	X	--	--	--	--	--	--	1	2	
4-19	J3-3	108	X	84	63.00	--	--	2	--	--	--	
4-20	--	--	X	--	--	--	--	--	--	1	1	
4-21	R1-1	36	X	36	7.46	--	1	--	--	1	1	
4-22	R1-1	36	X	36	7.46	--	1	--	--	1	1	
4-23	R1-1	36	X	36	7.46	--	1	--	--	1	1	
4-24	R59-51	48	X	48	16.00	--	1	--	--	1	1	
4-25	--	--	X	--	--	--	--	--	--	1	1	
4-26	R2-1	36	X	48	12.00	--	1	--	--	1	1	
SUBTOTALS:					831.63	42.00	36	12	2	14	11	(CONTINUED ON NEXT SHEET)

ALL ITEMS AND QUANTITIES ON
THIS SHEET ARE CAEGORY 0010
UNLESS OTHERWISE NOTED

TYPE II SIGNS AND SUPPORTS (CONTINUED FROM PREVIOUS SHEET)												
					637.2210 SIGNS TYPE II REFLECTIVE H	637.2230 SIGNS TYPE II REFLECTIVE F	634.0616 POSTS WOOD 4x6-INCH x 16-FT EACH	634.0618 POSTS WOOD 4x6-INCH x 18-FT EACH	634.0620 POSTS WOOD 4x6-INCH x 20-FT EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	
PLAN SIGN NUMBER	SIGN CODE	WIDTH IN	X	HEIGHT IN								COMMENTS
5-01	R4-3	36	X	48	12.00	--	1	--	--	1	1	
5-02	CUSTOM	48	X	48	16.00	--	1	--	--	1	1	
5-03	D1-61	114	X	30	23.75	--	2	--	--	--	--	
5-04	R3-9B	36	X	48	12.00	--	1	--	--	1	1	
5-05	R3-9B	36	X	48	12.00	--	1	--	--	1	1	
5-06	--	--	X	--	--	--	--	--	--	1	1	
5-07	--	--	X	--	--	--	--	--	--	--	--	
5-08	W7-1	36	X	36	--	9.00	--	--	1	--	--	
5-09	W7-3	24	X	18	--	3.00	--	--	--	--	--	MOUNT TO SAME POST AS 5-08
5-10	W7-2B	24	X	18	--	3.00	--	--	--	--	--	MOUNT TO SAME POST AS 5-08
5-11	--	--	X	--	--	--	--	--	--	1	2	
5-12	D2-3	114	X	48	38.00	--	1	1	--	--	--	
5-13	W11-8	36	X	36	--	9.00	--	1	--	1	1	SALVAGE EXISTING FLASHING BEACON
5-14	R2-1	36	X	48	12.00	--	1	--	--	1	1	
5-15	R2-1	36	X	48	12.00	--	1	--	--	1	1	
5-16	I2-3	90	X	48	15.00	--	2	--	--	1	2	
6-01	R3-9B	36	X	48	12.00	--	1	--	--	1	1	
6-02	R4-3	36	X	48	12.00	--	1	--	--	1	1	
6-03	I55-56	30	X	36	7.50	--	1	--	--	1	1	
6-04	R2-1	36	X	48	12.00	--	1	--	--	1	1	
6-05	R3-9D	36	X	9	2.25	--	1	--	--	1	1	
6-06	R3-9B	36	X	48	12.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 6-05
6-07	R3-9B	36	X	48	12.00	--	1	--	--	1	1	
7-01	R2-1	36	X	48	12.00	--	1	--	--	1	1	
7-02	R2-1	36	X	48	12.00	--	1	--	--	1	1	
7-03	R4-7	36	X	48	12.00	--	1	--	--	1	1	
7-04	--	--	X	--	--	--	--	--	--	1	1	
7-05	--	--	X	--	--	--	--	--	--	--	--	
7-06	W7-1	36	X	36	--	9.00	--	1	--	--	--	
7-07	W7-3	24	X	18	--	3.00	--	--	--	--	--	MOUNT TO SAME POST AS 7-06
7-08	W7-2B	24	X	18	--	3.00	--	--	--	--	--	MOUNT TO SAME POST AS 7-06
7-09	R3-20L	24	X	36	6.00	--	1	--	--	--	--	
7-10	D1-3	126	X	36	31.50	--	2	--	--	--	--	
7-11	R1-1	36	X	36	7.46	--	1	--	--	1	1	
7-12	R6-2R	30	X	36	7.50	--	1	--	--	1	1	
7-13	R5-1	36	X	36	9.00	--	1	--	--	1	1	
7-14	--	--	X	--	--	--	--	--	--	1	1	
7-15	--	--	X	--	--	--	--	--	--	1	1	
7-16	R5-1A	42	X	30	8.75	--	1	--	--	--	--	
7-17	R5-1A	42	X	30	8.75	--	1	--	--	--	--	
7-18	--	--	X	--	--	--	--	--	--	1	2	
7-19	--	--	X	--	--	--	--	--	--	--	--	
7-20	R5-1	36	X	36	9.00	--	1	--	--	1	1	
7-21	R4-7	36	X	48	12.00	--	1	--	--	1	1	
7-22	--	--	X	--	--	--	--	--	--	1	1	
7-23	R6-1L	36	X	12	3.00	--	--	--	1	--	--	
7-24	R6-1R	36	X	12	3.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 7-23
7-25	R1-1	36	X	36	7.46	--	--	--	--	--	--	MOUNT TO SAME POST AS 7-23
7-26	R6-3	30	X	24	5.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 7-23
7-27	--	--	X	--	--	--	--	--	--	1	1	
7-28	R6-1L	36	X	12	3.00	--	--	--	1	--	--	
7-29	R6-1R	36	X	12	3.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 7-28
7-30	R1-1	36	X	36	7.46	--	--	--	--	--	--	MOUNT TO SAME POST AS 7-28
7-31	R6-3	30	X	24	5.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 7-28
7-32	R4-7	36	X	48	12.00	--	1	--	--	1	1	
7-33	R5-1	36	X	36	9.00	--	1	--	--	1	1	
7-34	R2-1	36	X	48	12.00	--	1	--	--	1	1	
SUBTOTALS:					428.38	39.00	33	3	3	18	17	(CONTINUED ON NEXT SHEET)

ALL ITEMS AND QUANTITIES ON
THIS SHEET ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

TYPE II SIGNS AND SUPPORTS (CONTINUED FROM PREVIOUS SHEET)												
PLAN SIGN NUMBER SIGN CODE		WIDTH IN	X	HEIGHT IN	637.2210	637.2230	634.0616	634.0618	634.0620	638.2602	638.3000	COMMENTS
					SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	POSTS WOOD 4x6-INCH x 16-FT EACH	POSTS WOOD 4x6-INCH x 18-FT EACH	POSTS WOOD 4x6-INCH x 20-FT EACH	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
8-01	R5-1A	42	X	30	8.75	--	1	--	--	1	1	
8-02	--	--	X	--	--	--	--	--	--	--	--	
8-03	W3-3	36	X	36	--	9.00	1	--	--	1	1	
8-04	--	--	X	--	--	--	--	--	--	1	--	
8-05	R2-1	36	X	48	12.00	--	1	--	--	1	1	
8-06	D1-61	78	X	30	16.25	--	2	--	--	--	--	
8-07	R3-20L	36	X	54	13.50	--	1	--	--	--	--	
8-08	R3-50R	30	X	56	11.67	--	1	--	--	--	--	
8-09	R5-1	36	X	36	9.00	--	1	--	--	1	1	
8-10	R1-1	36	X	36	7.46	--	1	--	--	1	1	
8-11	--	--	X	--	--	--	--	--	--	1	2	
8-12	R3-2	24	X	24	4.00	--	1	--	--	1	1	
8-13	R5-1	36	X	36	9.00	--	1	--	--	1	1	
8-14	R3-1	36	X	36	9.00	--	--	--	--	--	--	MOUNT TO SAME POST AS 8-13
8-15	D1-3	126	X	36	31.50	--	--	2	--	--	--	
8-16	R5-1A	42	X	30	8.75	--	--	1	--	--	--	
8-17	--	--	X	--	--	--	--	--	--	1	2	
8-18	--	--	X	--	--	--	--	--	--	1	1	
8-19	R5-1A	42	X	30	8.75	--	1	--	--	--	--	
8-20	R5-1	36	X	36	9.00	--	1	--	--	1	1	
SUBTOTALS:					158.63	9.00	13	3	0	7	5	
TOTALS:					1895.02	136.50	106	26	5	57	47	

INLET PROTECTION TYPE A	
LOCATION	628.7005 EA
UNDISTRIBUTED	10
TOTAL:	10

TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (1572-00-72)	
PROJECT	643.0200.S DAY
1570-00-72	84
TOTAL:	84

TRAFFIC CONTROL ITEMS													
STAGE	DURATION DAYS	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	
		NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS
ADVANCED WARNING	89	--	--	--	--	--	--	--	--	--	--	20	1760
STAGE 1	20	810	2440	26	520	52	1040	11	220	4	80	42	840
STAGE 2	30	860	25800	26	780	52	1560	31	930	4	120	42	1260
STAGE 3	30	860	25800	26	780	52	1560	31	930	4	120	42	1260
STAGE 4	20	500	10000	16	320	32	640	31	620	4	80	42	840
TOTALS:		64040		2400		4800		2700		400		5980	

ALL ITEMS AND QUANTITIES ON
THIS SHEET ARE CAEGORY 0010
UNLESS OTHERWISE NOTED

PAVEMENT MARKING ITEMS															
STATION - STATION			646.0106		646.0126	646.0841.S	646.0843.S	647.0166	647.0356	647.0456	647.0566	647.0606	647.0726	647.0856	646.0406
			EPOXY 4-INCH		EPOXY 8-INCH	GROOVED WET REFLECTIVE CONTRAST TAPE	GROOVED WET REFLECTIVE CONTRAST TAPE	ARROW	WORDS EPOXY	CURB EPOXY	STOP LINE	ISLAND NOSE	DIAGONAL	CONCRETE	SAME DAY
			(WHITE)	(YELLOW)	(WHITE)	4-INCH	8-INCH	EPOXY TYPE 2	(ONLY)	(YELLOW)	EPOXY 18-INCH	EPOXY	EPOXY 12-INCH	MEDIAN EPOXY	MEDIAN EPOXY
LOCATION			LF	LF	LF	LF	LF	EACH	EACH	LF	LF	EACH	LF	SF	LF
6E+62 - 19E+00 USH 8 MAINLINE, LT/RT			2350	2950	--	550	200	2	1	20	--	5	70	250	2000
19E+00 - 61E+25 USH 8 MAINLINE, LT/RT			8100	8560	--	2075	5400	9	2	55	--	2	--	--	--
61E+25 - 108E+50 USH 8 MAINLINE, LT/RT			9675	11700	--	2350	810	24	3	20	--	4	--	1775	--
108E+50 - 122E+50 USH 8 MAINLINE, LT/RT			3325	3350	--	625	1050	8	4	20	60	6	--	2300	--
19E+00, LT STH 87			--	215	55	--	--	--	--	--	35	--	--	--	--
19E+00, RT S WASHINGTON ST			--	60	--	--	--	--	--	--	20	--	--	--	--
61E+25, LT INDUSTRIAL PKWY			--	60	--	--	--	--	--	--	45	--	--	--	--
61E+25, RT INDUSTRIAL PKWY			--	60	--	--	--	--	--	--	30	--	--	--	--
108E+50, LT 220TH ST			--	60	--	--	--	--	--	--	30	--	--	--	--
108E+50, RT GOLF COURSE RD			--	60	--	--	--	--	--	--	32	--	--	--	--
			23450	27075											
TOTALS:			50525		55	5600	7460	43	10	115	252	17	70	4325	2000

REMOVING PAVEMENT MARKINGS ITEMS					
STATION - STATION		646.0600		647.0955	647.0965
		REMOVING PAVEMENT MARKINGS	REMOVING PAVEMENT ARROWS	REMOVING PAVEMENT MARKINGS	REMOVING PAVEMENT WORDS
		LF	EACH	EACH	COMMENTS
UNDISTRIBUTED		1000	11	11	USE FOR RESIDUAL EXISTING PAVEMENT MARKINGS
TOTALS:		1000	11	11	

TEMPORARY PAVEMENT MARKING REMOVABLE TAPE					
STAGE		649.0400		649.0801	
		4-INCH	8-INCH	8-INCH	
		(WHITE)	(YELLOW)	(WHITE)	
		LF	LF	LF	
STAGE 2	USH 8 EB LT LANE CLOSURE	--	550	--	
STAGE 2	USH 8 WB LT LANE CLOSURE	--	550	--	
STAGE 3	USH 8 EB RT LANE CLOSURE	550	--	--	
STAGE 3	USH 8 WB RT LANE CLOSURE	550	--	--	
STAGE 3	USH 8 EB GORE MARKINGS	--	--	500	
STAGE 3	USH 8 WB GORE MARKINGS	--	--	500	
UNDISTRIBUTED		150	150	--	
		1250	1250		
TOTALS:		2500		1000	

TEMPORARY PAVEMENT MARKING REMOVABLE MASK-OUT TAPE 6-INCH		
LOCATION		649.0506
		LF
UNDISTRIBUTED		2500
TOTAL:		2500

ALL ITEMS AND QUANTITIES ON
THIS SHEET ARE CAEGORY 0010
UNLESS OTHERWISE NOTED

CONCRETE PAVEMENT REPAIR ITEMS										
		SPV.0090.02 CLEANING AND PATCHING CONCRETE JOINTS AND CRACKS	SPV.0180.01 CONCRETE PAVEMENT REPAIR DOWELED SPECIAL	SPV.0180.02 CONCRETE PAVEMENT REPLACEMENT DOWELED SPECIAL	SPV.0180.03 CONCRETE PAVEMENT REPLACEMENT HES DOWELED SPECIAL	416.0610 DRILLED TIE BARS	416.0620 DRILLED DOWEL BARS	690.0150 SAWING ASPHALT	690.0250 SAWING CONCRETE	
STATION	- STATION	LF (1)	SY	SY (2)	SY	EACH	EACH	LF (3)	LF (3)	
18E+00	- 37E+52	1650	330	360	--	90	712	153	1958	
40E+11	- 61E+25	880	160	960	--	240	816	700	2248	
61E+25	- 108E+50	550	300	1920	--	480	1600	1581	4238	
108E+50	- 122E+50	480	235	100	1800	25	412	165	958	
UNDISTRIBUTED		356	103	334	180	84	354	260	940	
TOTALS EASTBOUND:		3916	1128	3674	1980	919	3894	2859	10342	
18W+00	- 37W+26	1465	1620	340	--	50	2636	446	6460	
39W+81	- 61E+25	976	690	660	--	100	1436	548	3656	
61E+25	- 108E+50	175	790	280	--	70	1352	802	2844	
108E+50	- 122E+50	0	320	420	2000	0	732	0	2208	
UNDISTRIBUTED		262	342	170	200	22	616	180	1517	
TOTALS WESTBOUND:		2878	3762	1870	2200	242	6772	1976	16685	
TOTALS:		6794	4890	5544	4180	1161	10666	4835	27027	

- (1) - THIS ITEM TO BE USED FOR LONGITUDINAL JOINTS ONLY AND INCLUDES ASPHALTIC SURFACE.
(2) - UTILIZE FOR ADDITIONAL LARGER NEEDED REPAIRS OF USH 8 NOT COVERED BY OTHER ITEMS.
(3) - ADDITIONAL QUANTITIES LISTED ELSEWHERE.

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL	
	650.9910
PROJECT	LS
1570-00-72	1
TOTAL:	
	1

CONSTRUCTION STAKING RESURFACING REFERENCE			
		650.8000	
STATION	- STATION	LF	
6E+62	- 122E+50	11588	
9W+64	- 50W+38	4074	
TOTAL:		15662	

SAWING ITEMS		
	690.0150 ASPHALT LF (1)	690.0250 CONCRETE LF (1)
CURB AND GUTTER JOINT REPAIRS	-	900
MANHOLE ADJUSTMENTS	-	65
INLET ADJUSTMENTS AND RECONSTRUCTS	-	45
UNDISTRIBUTED	20	65
TOTALS:		20 1075

- (1) - ADDITIONAL QUANTITIES LISTED ELSEWHERE

REMOVE, SALVAGE, AND REINSTALL FLASHING RED BEACON ASSEMBLY	
	SPV.0060.01
LOCATION	EA
50E+80, RT	1
73E+80, LT	1
TOTAL:	
	2

TRAFFIC CONTROL SIGNS FIXED MESSAGE MnDOT		
	SPV.0060.02	
LOCATION	EA	COMMENTS
MIN 95, SOUTHBOUND IN TAYLORS FALLS	1	SEE TRAFFIC CONTROL - ADVANCED WARNING SHEET
CTH 20, EASTBOUND IN TAYLORS FALLS	1	SEE TRAFFIC CONTROL - ADVANCED WARNING SHEET
USH 8, EASTBOUND IN TAYLORS FALLS	1	SEE TRAFFIC CONTROL - ADVANCED WARNING SHEET
TOTAL:		3

ALL ITEMS AND QUANTITIES ON
THIS SHEET ARE CAEGORY 0010
UNLESS OTHERWISE NOTED

REMOVING PAVMENT		
STATION	LOCATION	204.0100 SY
37E+80 RT	B-48-39 SURFACE DRAIN	16
37E+65 & 39E+95	B-48-39 APPROACH SLABS	174
37W+40 LT & 37W+60 RT	B-48-38 SURFACE DRAINS	24
37W+40 & 39W+65	B-48-38 APPROACH SLABS	172
TOTAL:		386

REMOVING GUARDRAIL				
STATION	-	STATION	LOCATION	204.0165 LF
36E+44	-	37E+67	B-48-38/39 MEDIAN	340
37E+20	-	37E+88	B-48-39	68
39E+51	-	40E+57	B-48-38/39 MEDIAN	210
39E+87	-	40E+32	B-48-39	45
36W+76	-	37W+47	B-48-38	72
39W+42	-	40W+11	B-48-38	72
TOTAL:				807

EXCAVATION COMMON				
STATION	-	STATION	LOCATION	205.0100 CY
34E+95	-	37E+71	SHOULDER WIDENING/B-48-39 GUARDRAIL, LT	78
35E+76	-	37E+89	SHOULDER WIDENING/B-48-39 GUARDRAIL, RT	58
39W+42	-	41W+53	SHOULDER WIDENING/B-48-38 GUARDRAIL, LT	105
39W+81	-	42W+28	SHOULDER WIDENING/B-48-38 GUARDRAIL, RT	103
TOTAL:				344

BASE AGGREGATE DENSE ITEMS					
STATION	-	STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON
34E+95	-	37E+52	SHOULDER WIDENING/B-48-39 GUARDRAIL, LT	35	175
35E+76	-	37E+89	SHOULDER WIDENING/B-48-39 GUARDRAIL, RT	30	190
37E+52	-	37E+84	B-48-39 APPROACH SLAB BASE/CONCRETE SHOULDER/SURFACE DRAIN	--	35
39E+69	-	40E+11	B-48-39 APPROACH SLAB BASE/CONCRETE SHOULDERS	--	50
37W+26	-	37W+65	B-48-38 APPROACH SLAB BASE/CONCRETE SURFACE DRAINS	--	40
39W+42	-	39W+81	B-48-38 APPROACH SLAB BASE/CONCRETE SHOULDERS	--	50
39W+42	-	41W+53	SHOULDER WIDENING/B-48-38 GUARDRAIL, LT	30	170
39W+81	-	42W+28	SHOULDER WIDENING/B-48-38 GUARDRAIL, RT	35	190
UNDISTRIBUTED				75	--
TOTALS:				205	900

ALL ITEMS AND QUANTITIES ON
THIS SHEET ARE CAEGORY 0010
UNLESS OTHERWISE NOTED

CONCRETE PAVEMENT ITEMS						
STATION	-	STATION	LOCATION	415.0090 CONCRETE PAVEMENT 9-INCH SY (1)	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	416.1010 CONCRETE SURFACE DRAINS CY
37E+52	-	37E+89	B-48-39 WEST APPROACH	12	68	5
39E+66	-	40E+11	B-48-39 EAST APPROACH	45	106	--
37W+26	-	37W+67	B-48-38 WEST APPROACH	--	92	7
39W+42	-	39W+81	B-48-38 EAST APPROACH	48	80	--
TOTALS:				105	346	12

(1) - UTILIZE FOR SHOULDER REPLACEMENT ADJACENT TO APPROACH SLABS,
WHERE SURFACE DRAINS ARE NOT PRESENT. SEE STANDARD DETAIL DRAWING.

RECONSTRUCTING INLETS	
LOCATION	611.0430 EACH
B-48-38 SURFACE DRAINS	2
B-48-39 SURFACE DRAIN	1
TOTAL:	3

GUARDRAIL ITEMS						
STATION	-	STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
39W+41	-	40W+94	B-48-38, LT	62.5	39.4	1
39W+62	-	41W+53	B-48-38, RT	100	39.4	1
35E+77	-	37E+67	B-48-39, LT	100	39.4	1
36E+36	-	37E+89	B-48-39, RT	62.5	39.4	1
TOTALS:				325	157.6	4

ASPHALTIC ITEMS						
				211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	455.0605 TACK COAT	460.6425 HMA PAVEMENT 5 MT 58-28 H
STATION	-	STATION	LOCATION	STA	GAL	TON
35E+76	-	37E+72	USH 8 EB SHOULDERS RT	--	15	55
34E+95	-	37E+52	USH 8 EB SHOULDERS LT	--	10	45
39W+81	-	42W+53	USH 8 WB SHOULDERS LT	--	25	40
39W+81	-	42W+28	USH 8 WB SHOULDERS RT	--	25	40
B-48-38 SHOULDER WIDENING			USH 8 WB SHOULDERS	4	--	--
B-48-39 SHOULDER WIDENING			USH 8 EB SHOULDERS	4	--	--
TOTALS:				8	75	180

				EMAT CLASS I FERTILIZER						
STATION	-	STATION	LOCATION	614.0010 EACH	BORROW CY (1)	TOPSOIL SY (1)	TYPE B SY (1)	TYPE B CWT (1)	SEEDING #20 LB (1)	COMMENTS
34E+90	-	37E+67	B-48-39, LT	1	26	285	285	0.2	10	
35E+70	-	37E+89	B-48-39, RT	1	37	375	375	0.3	12	
39E+66	-	40E+60	B-48-39, LT	1	0	70	70	0.1	2	RESTORE AREA WHERE EXISTING GUARDRAIL IS REMOVED
39E+87	-	40E+32	B-48-39, RT	1	0	20	20	0.1	1	RESTORE AREA WHERE EXISTING GUARDRAIL IS REMOVED
36W+55	-	37W+68	B-48-38, RT	1	0	45	45	0.1	2	RESTORE AREA WHERE EXISTING GUARDRAIL IS REMOVED
36W+74	-	37W+46	B-48-38, LT	1	0	35	35	0.1	2	RESTORE AREA WHERE EXISTING GUARDRAIL IS REMOVED
39W+41	-	40W+94	B-48-38, LT	1	5	300	300	0.2	10	
39W+62	-	41W+53	B-48-38, RT	1	20	375	375	0.3	12	
TOTAL:				8	88	1505	1505	1.4	51	

(1) - APPROXIMATE QUANTITY SHOWN IS INCIDENTAL TO ITEM 614.0010.

				628.1504	628.1520
				SILT	SILT FENCE
STATION	-	STATION	LOCATION	FENCE	MAINTENANCE
				LF	LF
35E+77	-	37E+67	B-48-39 GUARDRAIL, LT	300	300
36E+36	-	37E+89	B-48-39 GUARDRAIL, RT	260	260
39W+41	-	40W+94	B-48-38 GUARDRAIL, LT	300	300
39W+62	-	41W+53	B-48-38 GUARDRAIL, RT	260	260
TOTALS:				1120	1120

LOCATION	628.1905 EACH	628.1910 EMERGENCY EACH
1570-00-73	2	2
TOTALS:	2	2

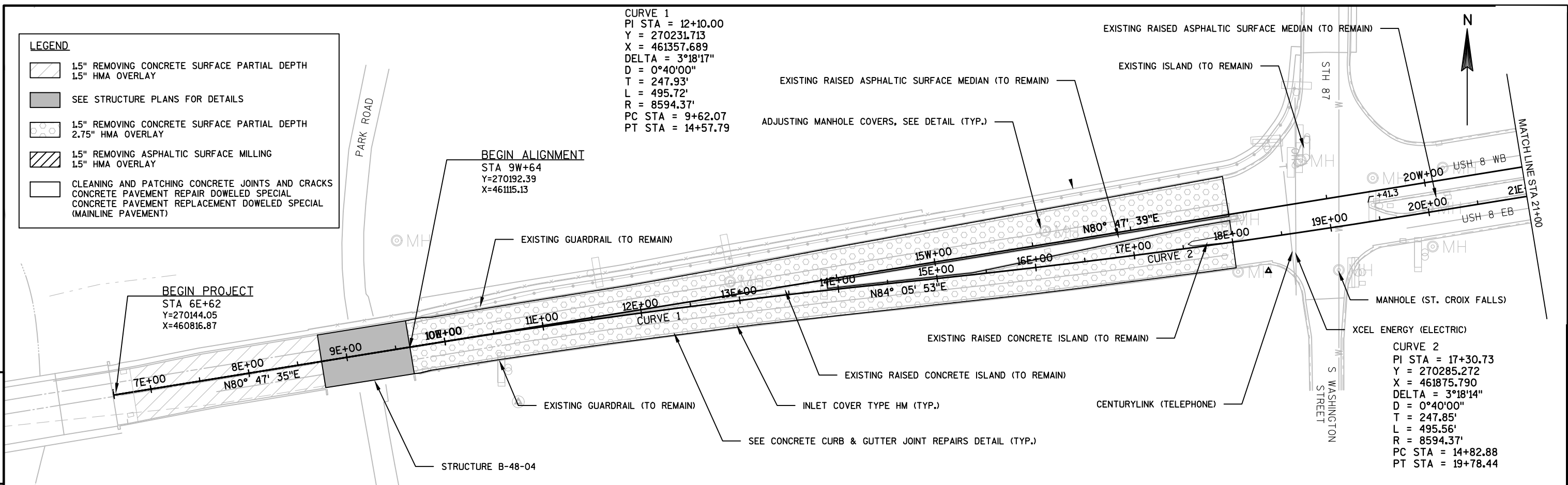
	646.0106	
	(WHITE)	(YELLOW)
LOCATION	LF	LF
B-48-04	230	180
B-48-38	245	195
B-48-39	245	195
	720	570
TOTAL:	1290	

PLAN SIGN		WIDTH	X	HEIGHT	637.2230 SIGNS TYPE II REFLECTIVE	634.0616 POSTS WOOD 4x6-INCH x 16-FT EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
NUMBER	SIGN CODE	IN		IN	F SF			
3-04	W5-52L	18	X	54	6.75	1	1	1
3-05	W5-52R	18	X	54	6.75	1	1	1
3-06	W5-52R	18	X	54	6.75	1	1	1
3-07	W5-52L	18	X	54	6.75	1	1	1
TOTALS:					27.00	4	4	4

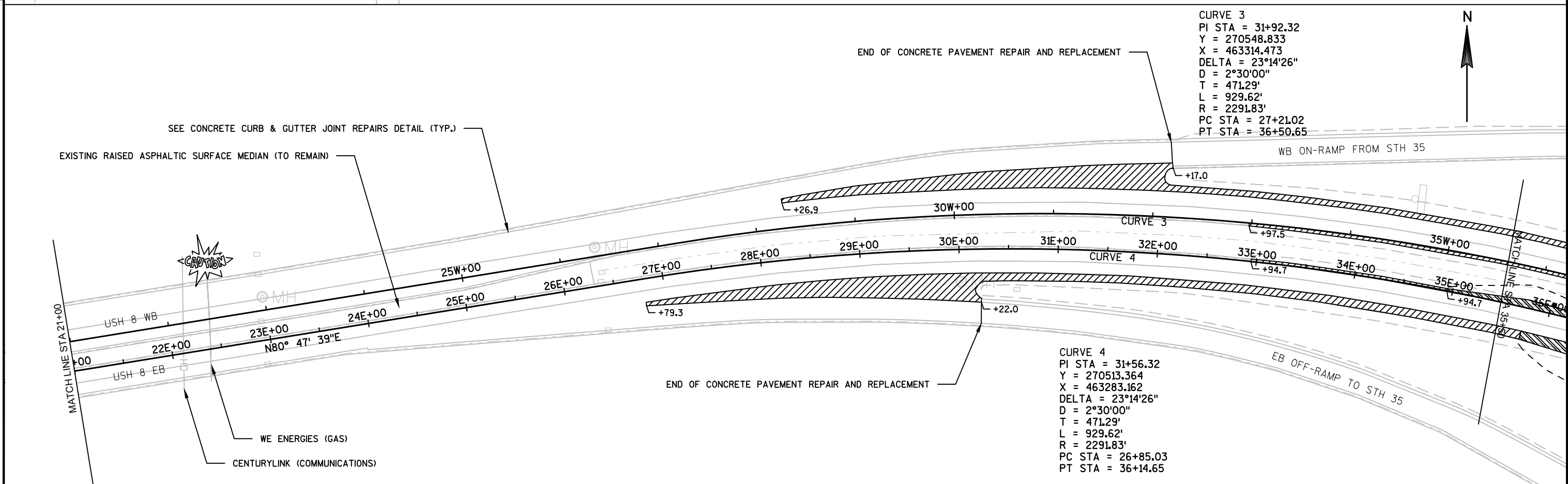
STATION		650.4500 CONSTRUCTION STAKING SUBGRADE	650.5000 CONSTRUCTION STAKING BASE	650.9920 CONSTRUCTION STAKING SLOPE STAKES
34E+95	-	37E+90	295	295
39W+40	-	42W+30	290	290
TOTALS:		585	585	585

ALL ITEMS AND QUANTITIES ON
THIS SHEET ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

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PROJECT NO:1570-00-72/1570-00-73

HWY: USH 8

COUNTY: POLK

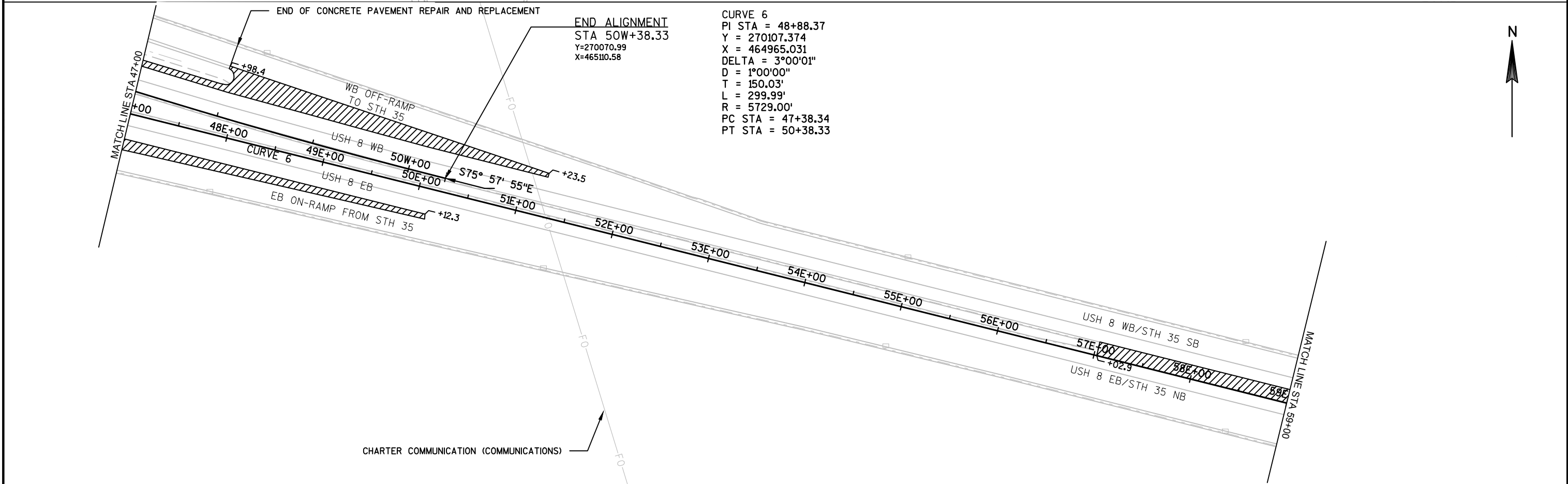
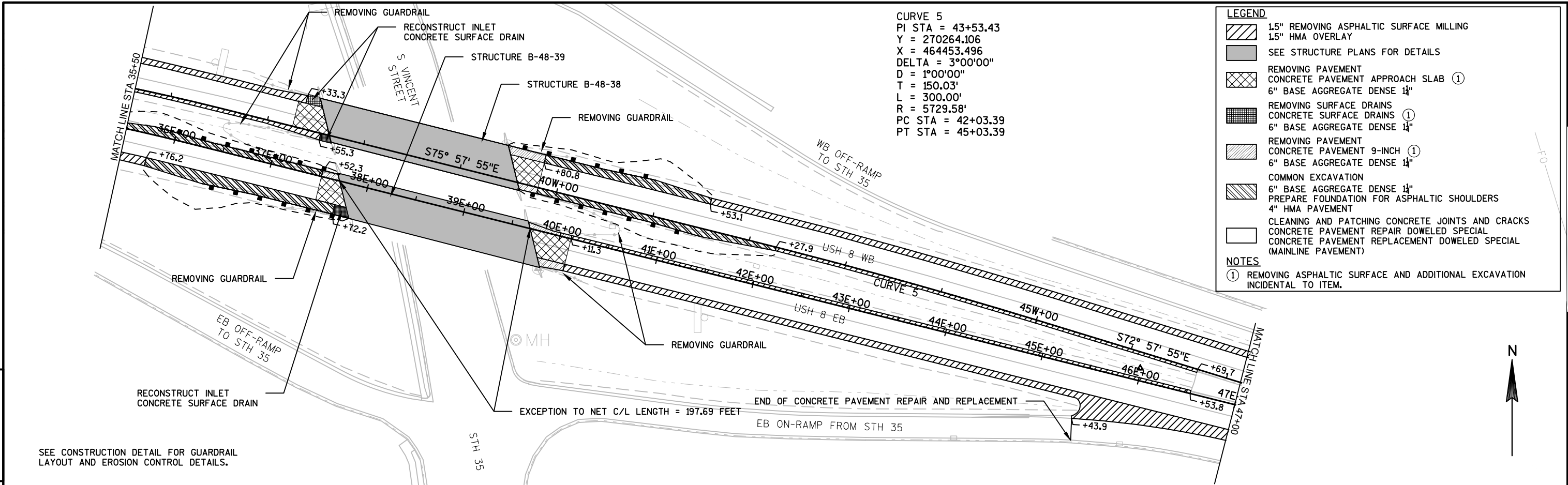
PLAN DETAILS

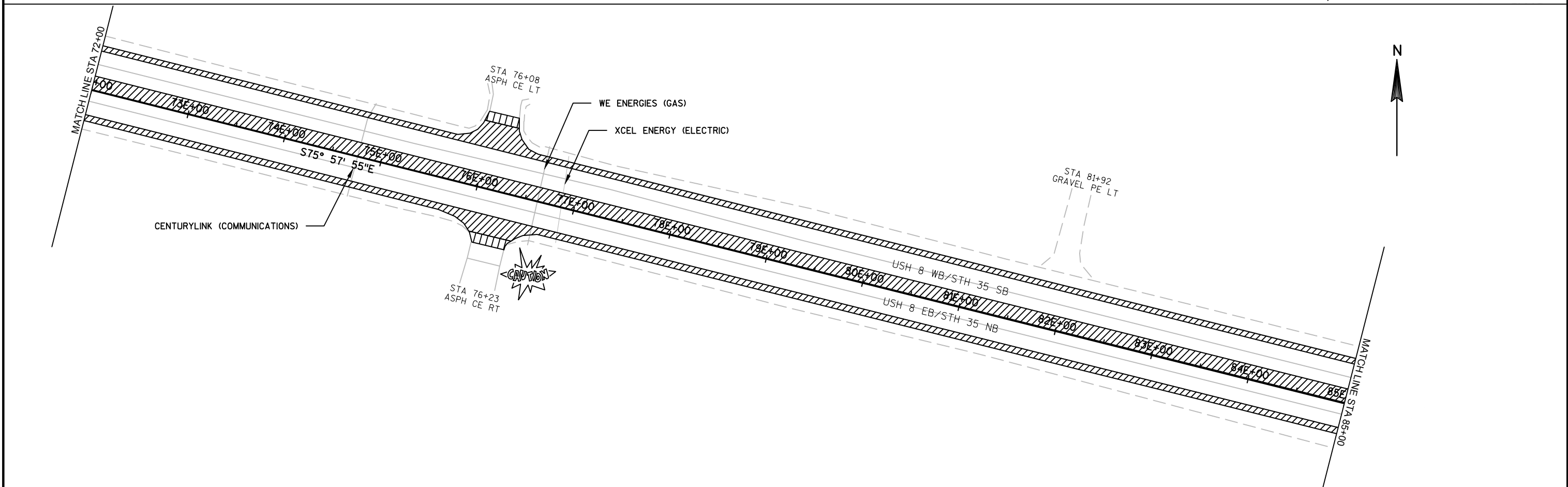
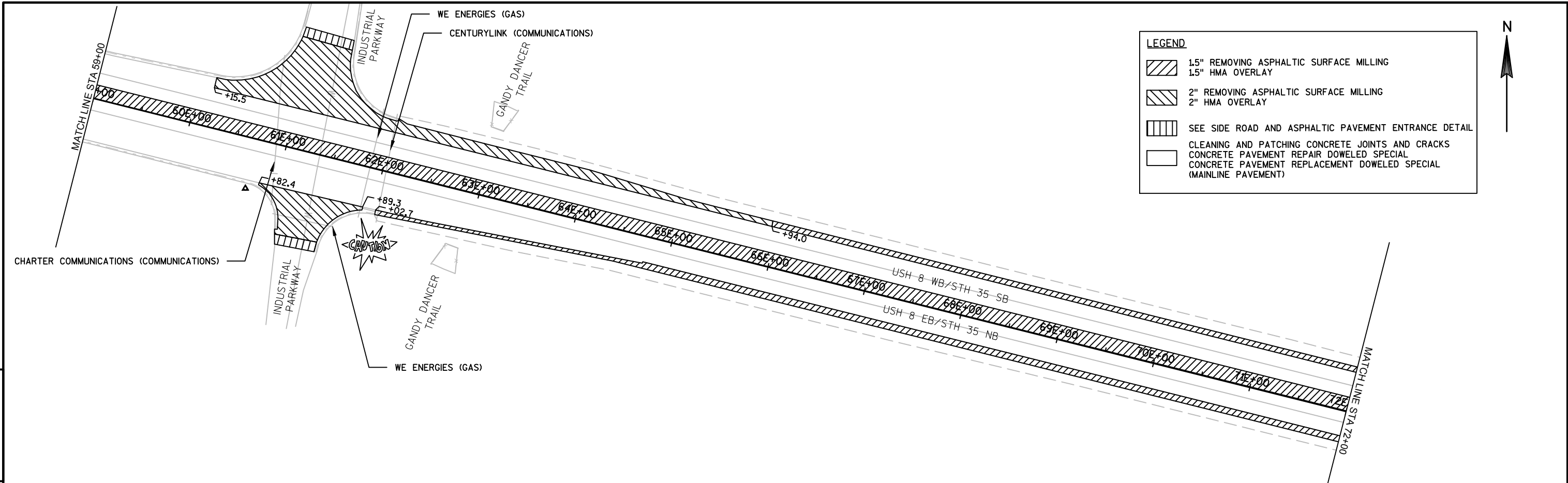
SHEET

E

5

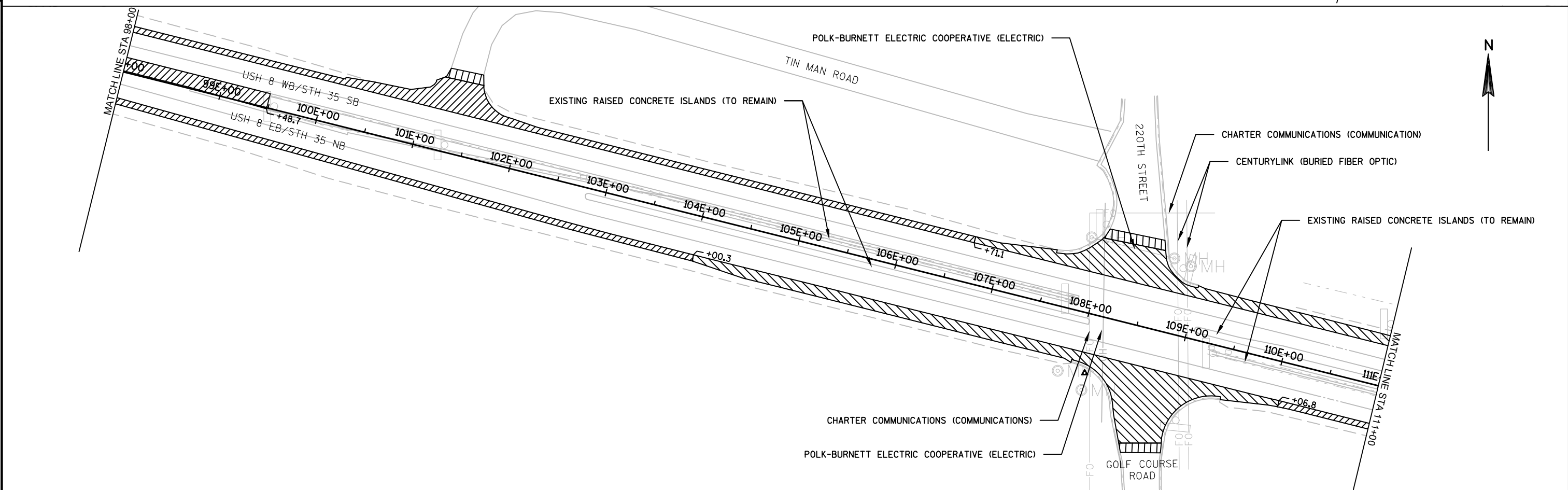
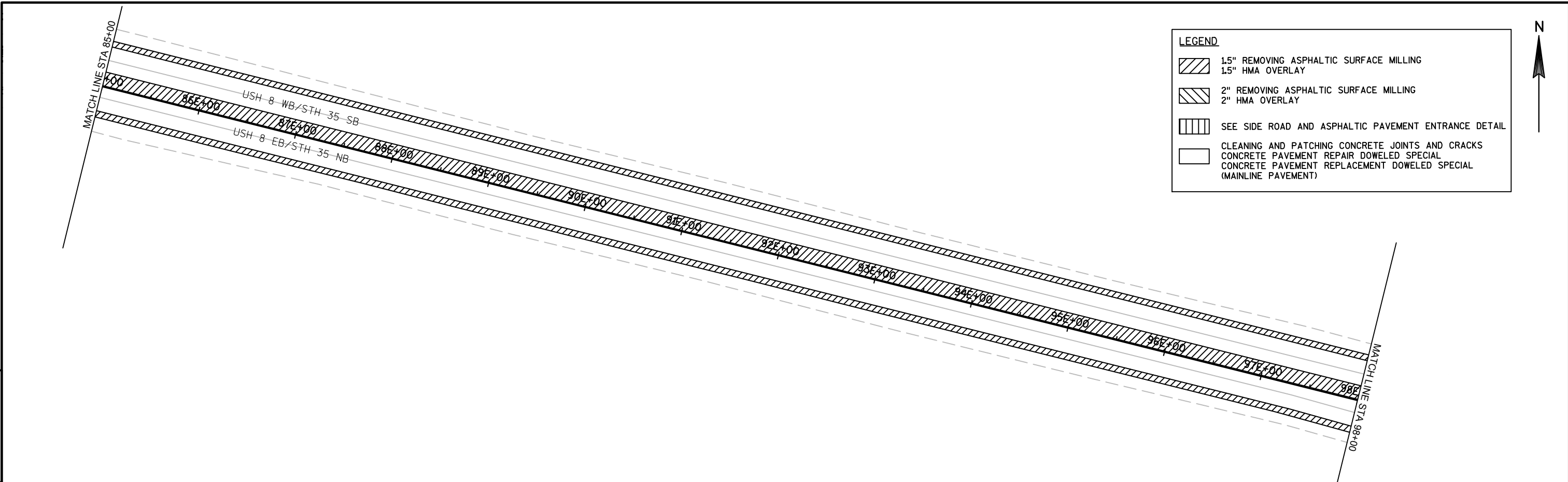
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PROJECT NO:1570-00-72	HWY:USH 8	COUNTY:POLK	PLAN DETAILS	SHEET	E
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5

LEGEND

1.5" REMOVING ASPHALTIC SURFACE MILLING
1.5" HMA OVERLAY

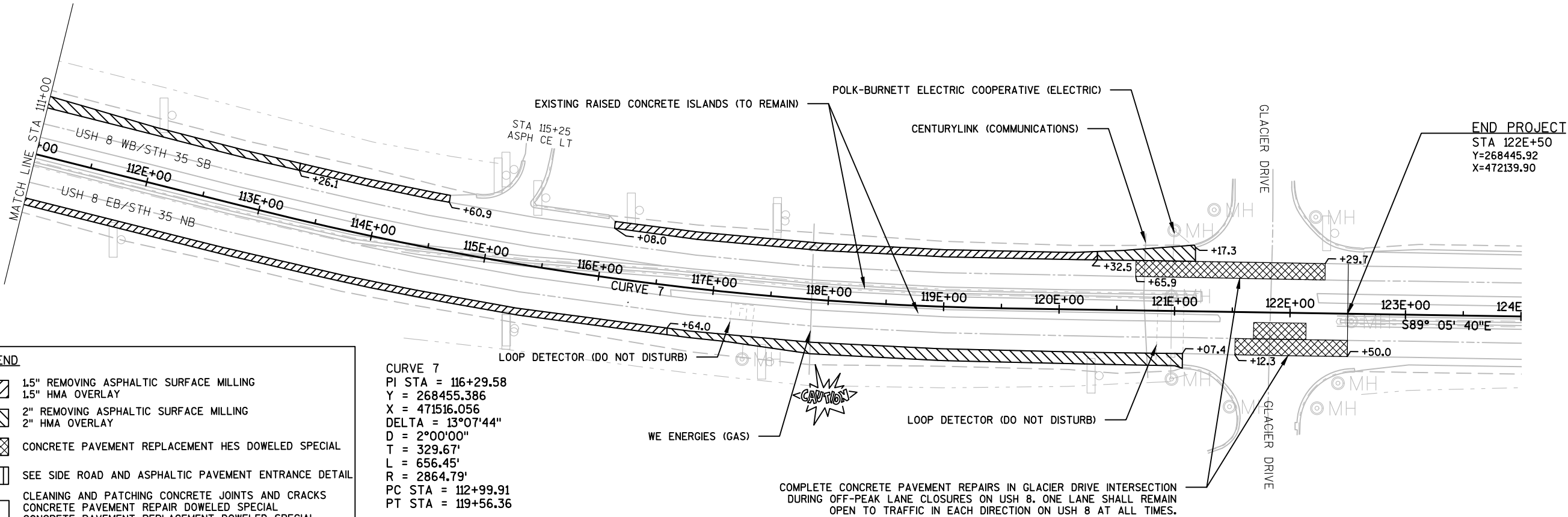
2" REMOVING ASPHALTIC SURFACE MILLING
2" HMA OVERLAY

CONCRETE PAVEMENT REPLACEMENT HES DOWELED SPECIAL

SEE SIDE ROAD AND ASPHALTIC PAVEMENT ENTRANCE DETAIL

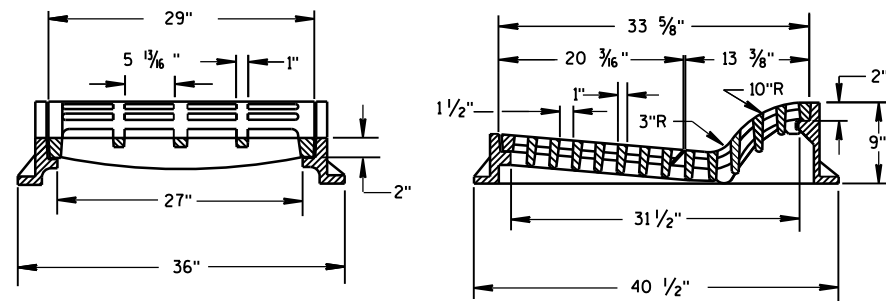
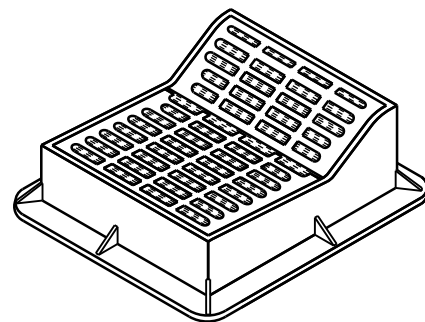
CLEANING AND PATCHING CONCRETE JOINTS AND CRACKS
CONCRETE PAVEMENT REPAIR DOWELED SPECIAL
CONCRETE PAVEMENT REPLACEMENT DOWELED SPECIAL
(MAINLINE PAVEMENT)

CURVE 7
PI STA = 116+29.58
Y = 268455.386
X = 471516.056
DELTA = 13°07'44"
D = 2°00'00"
T = 329.67'
L = 656.45'
R = 2864.79'
PC STA = 112+99.91
PT STA = 119+56.36



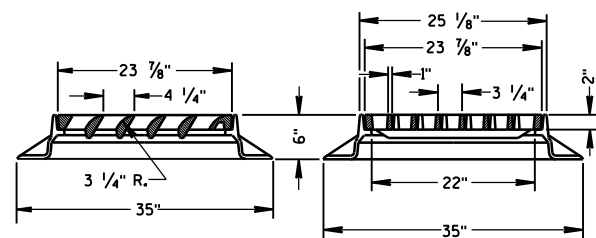
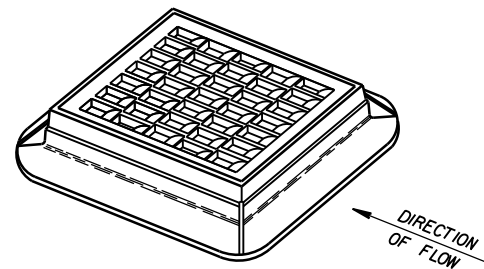
Standard Detail Drawing List

08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08D01-19	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D03-06	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13B02-08B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
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
14B42-04A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C03-03	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-13B	PAVEMENT MARKING WORDS
15C07-13C	PAVEMENT MARKING ARROWS
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C08-17B	PAVEMENT MARKING (TURN LANES)
15C08-17C	PAVEMENT MARKING (ISLANDS)
15C18-03	MEDIAN ISLAND MARKING
15C19-04B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C19-04C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C31-02A	PAVEMENT MARKING (RAMPS AND GORES)
15C31-02C	PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP
15C33-02	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D15-02	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-04	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

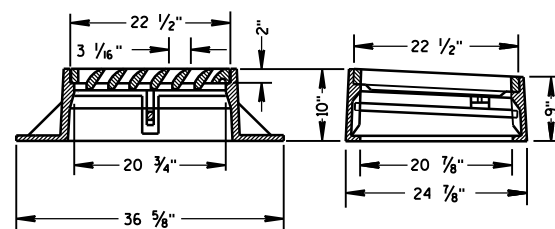
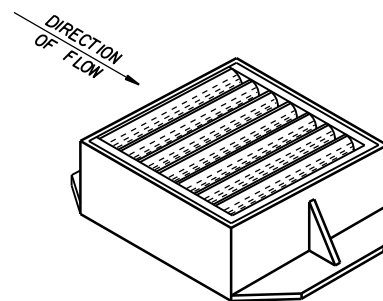


TYPE "F"

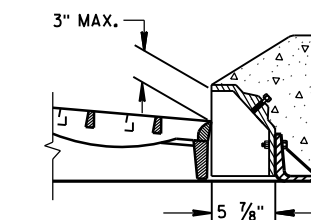
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



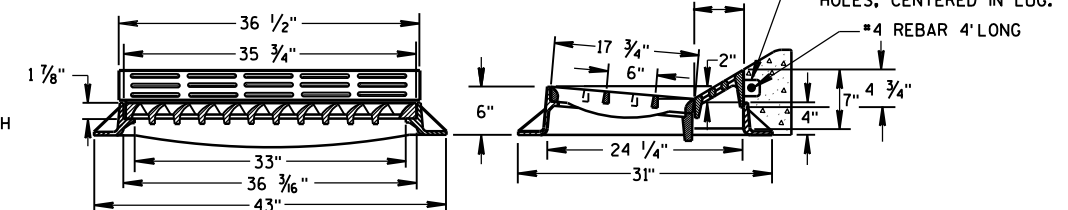
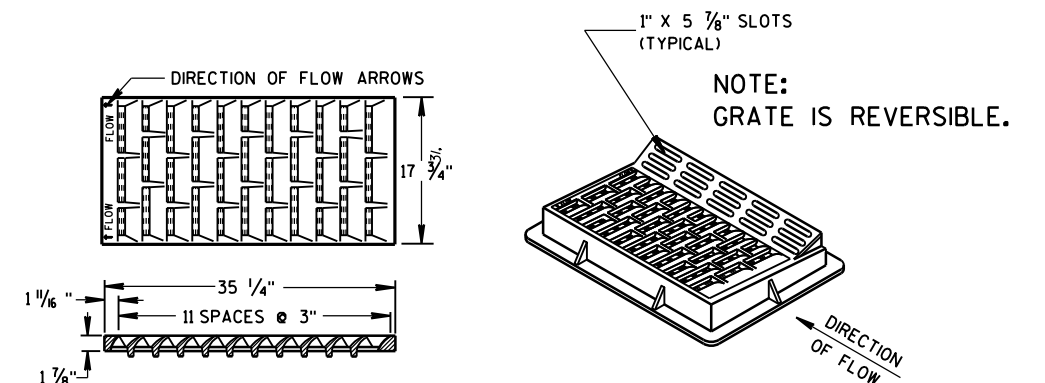
TYPE "S"



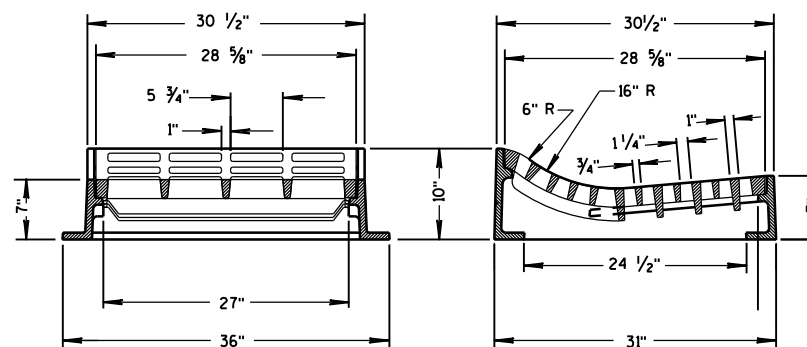
TYPE "V"

ALTERNATIVE CURB BOX
FOR TYPE "HM" COVERUSE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLENOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

GENERAL NOTES

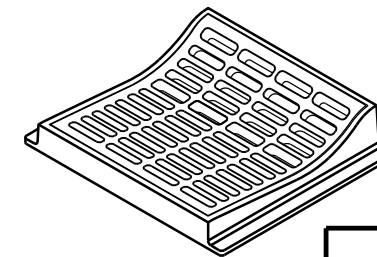
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING
SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND
THE APPLICABLE SPECIAL PROVISIONS.DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED
TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION
FOR EQUIVALENT CAPACITY AND STRENGTH.

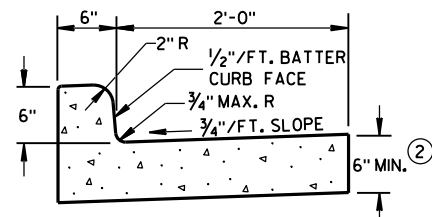
TYPE "HM"

USE WITH TYPES A & D CONCRETE
CURB & GUTTER, 36 INCH.NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE

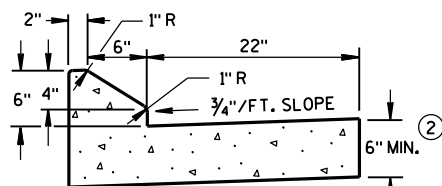
TYPE "T"

USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.

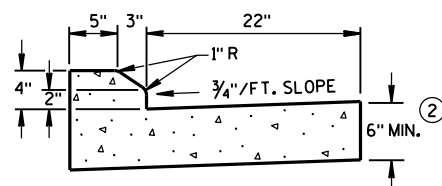
INLET COVERS
TYPE F, HM, HM-S, S, T, V,
HM-GJ, & HM-GJ-SSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATIONAPPROVED
11/27/2013
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



TYPES A & D ①

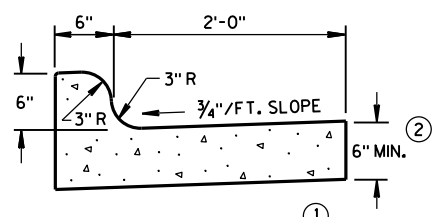


6" SLOPED CURB TYPES G & J ①



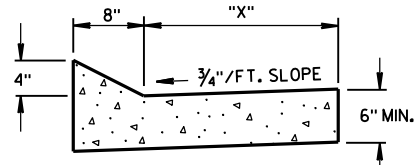
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"



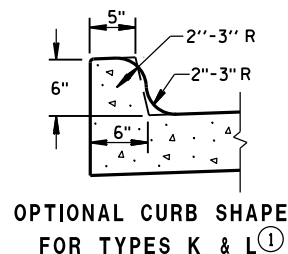
TYPES K & L ①

CONCRETE CURB & GUTTER 30"

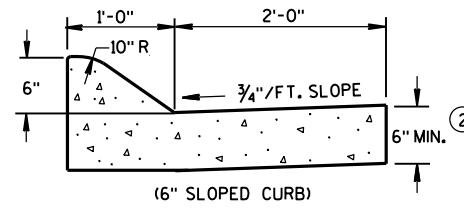


TYPES TBT & TBT ①
CONCRETE CURB & GUTTER

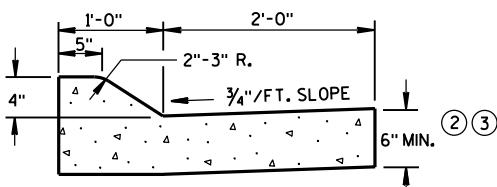
TBT & TBT	"X"
30"	22"
36"	28"



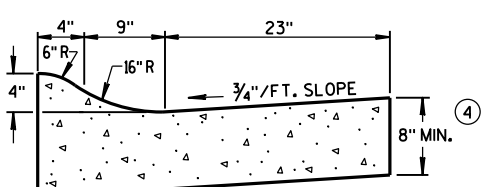
OPTIONAL CURB SHAPE
FOR TYPES K & L ①



(6" SLOPED CURB)



(4" SLOPED CURB)
TYPES A & D ①



4" SLOPED CURB TYPES R & T ① ⑤
CONCRETE CURB & GUTTER 36"

GENERAL NOTES

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

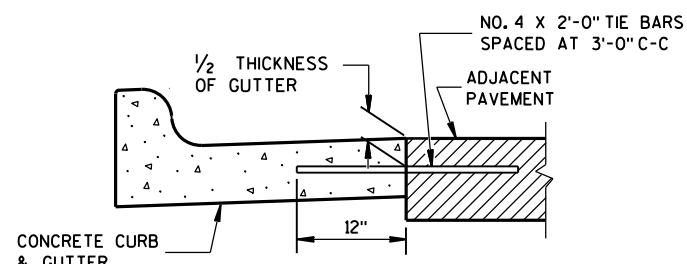
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

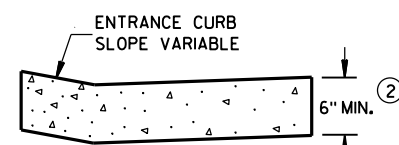
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

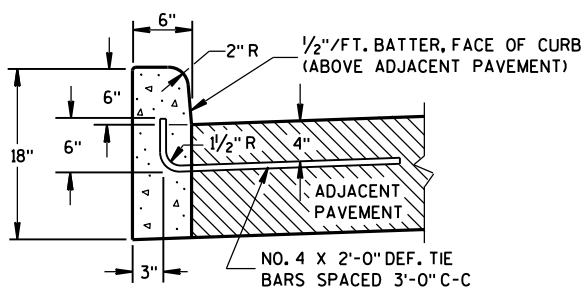
- TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBT.
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



TYPICAL TIE BAR LOCATION ①

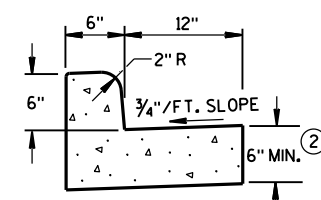


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

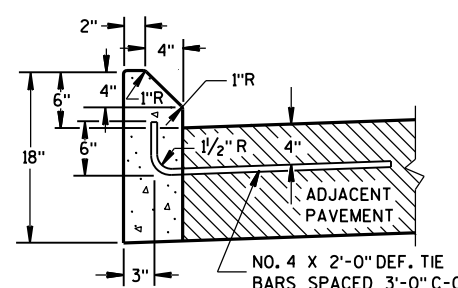


TYPES A & D ①

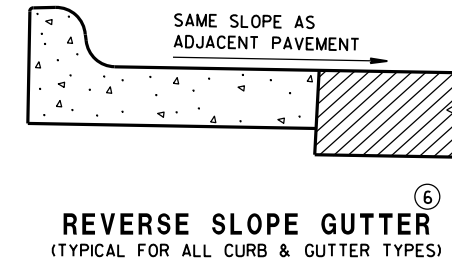
CONCRETE CURB



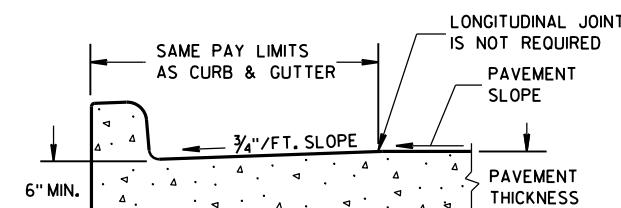
TYPES A & D
CONCRETE CURB & GUTTER 18"



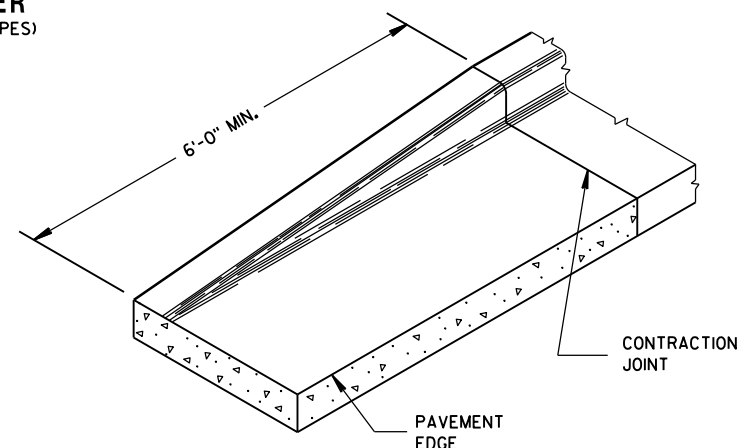
TYPES G & J ①



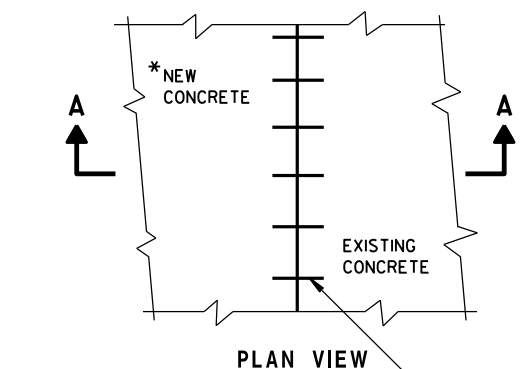
REVERSE SLOPE GUTTER
(TYPICAL FOR ALL CURB & GUTTER TYPES)



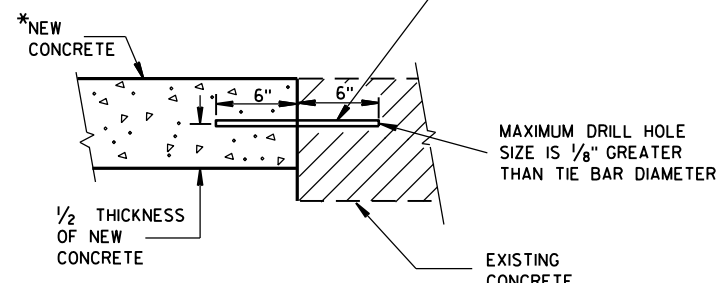
PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER



PLAN VIEW



TIE BARS DRILLED
INTO EXISTING PAVEMENT

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

NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.

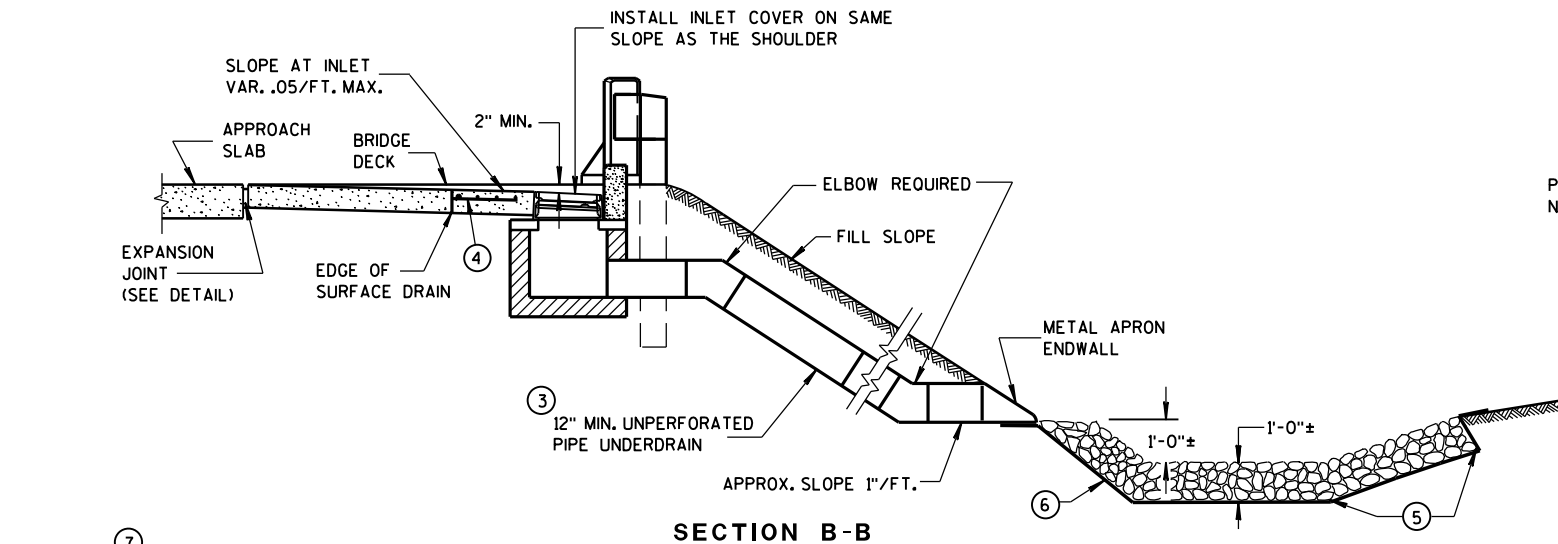
MAXIMUM DRILL HOLE
SIZE IS 1/8" GREATER
THAN TIE BAR DIAMETER

EXISTING CONCRETE

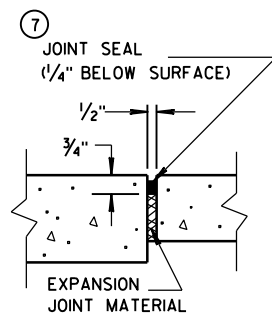
CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

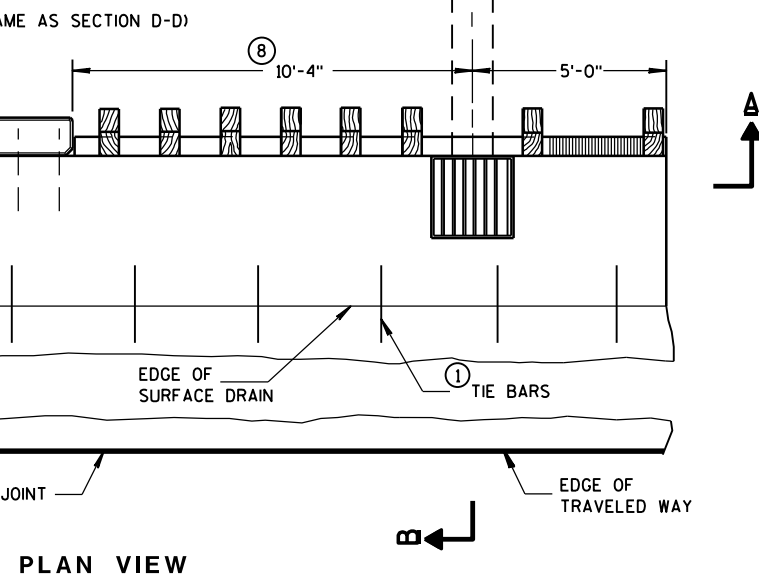
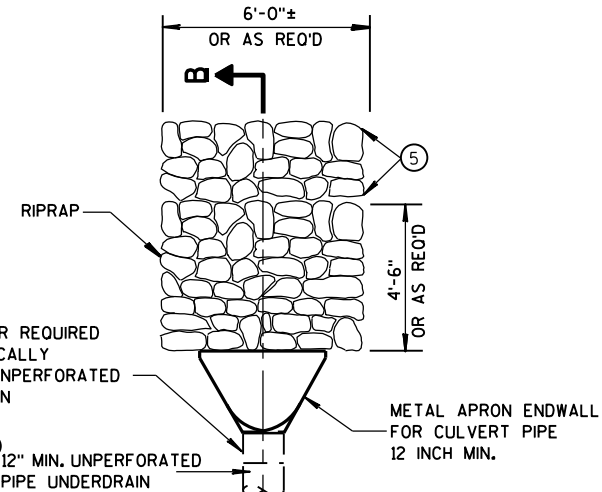
APPROVED
June, 2016 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



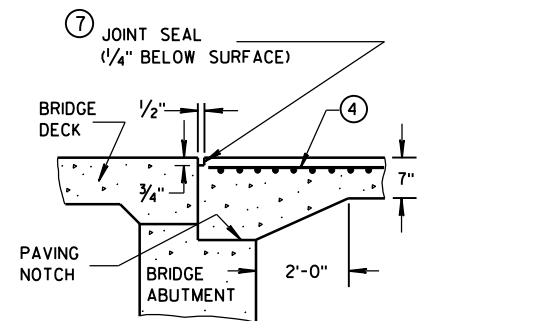
SECTION B-B



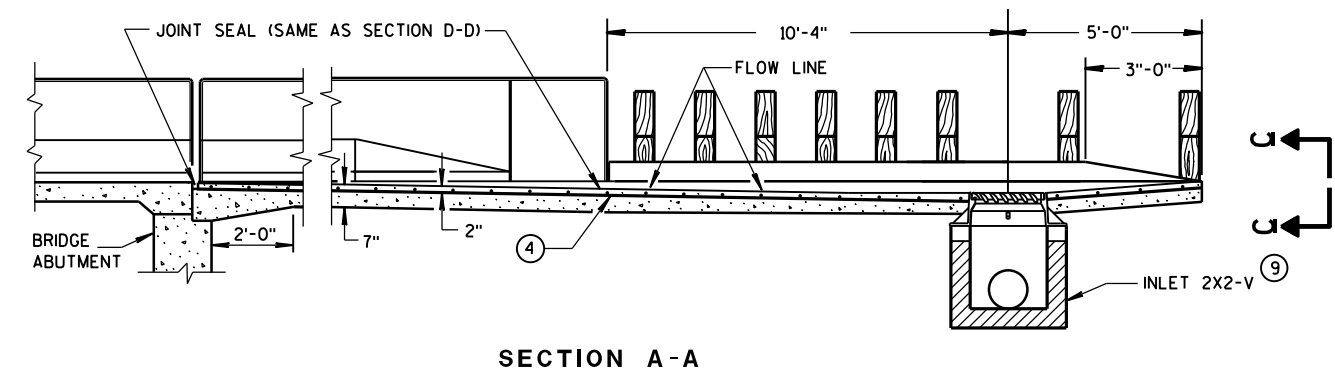
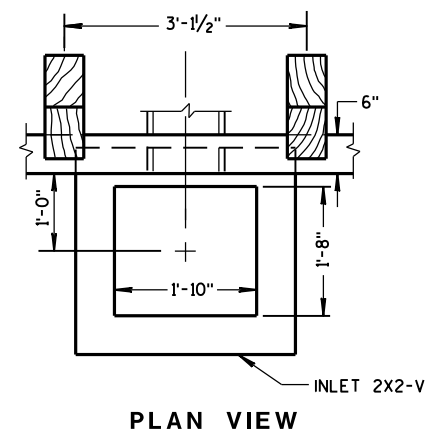
EXPANSION JOINT DETAIL



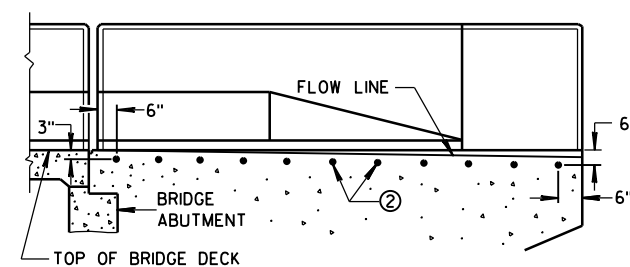
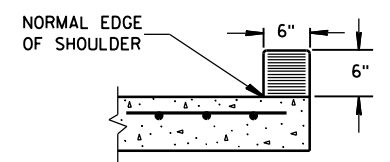
PLAN VIEW



SECTION D-D



SECTION A-A

LOCATION OF
TIE BARS IN WINGWALL

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.

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

- ① NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
- ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE STANDARD SPECIFICATIONS SECTION 612.2 EXCEPT DRAIN TILE.
- ④ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑤ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑥ GEOTEXTILE FABRIC, TYPE 'R'
- ⑦ HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
- ⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1/2".
- ⑨ SEE CURRENT STANDARD DETAIL DRAWINGS 8A5 AND 8C7 FOR DETAILS.

CONCRETE SURFACE DRAINS
DROP INLET TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

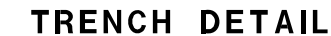
APPROVED
9/4/08
DATE

FHWA

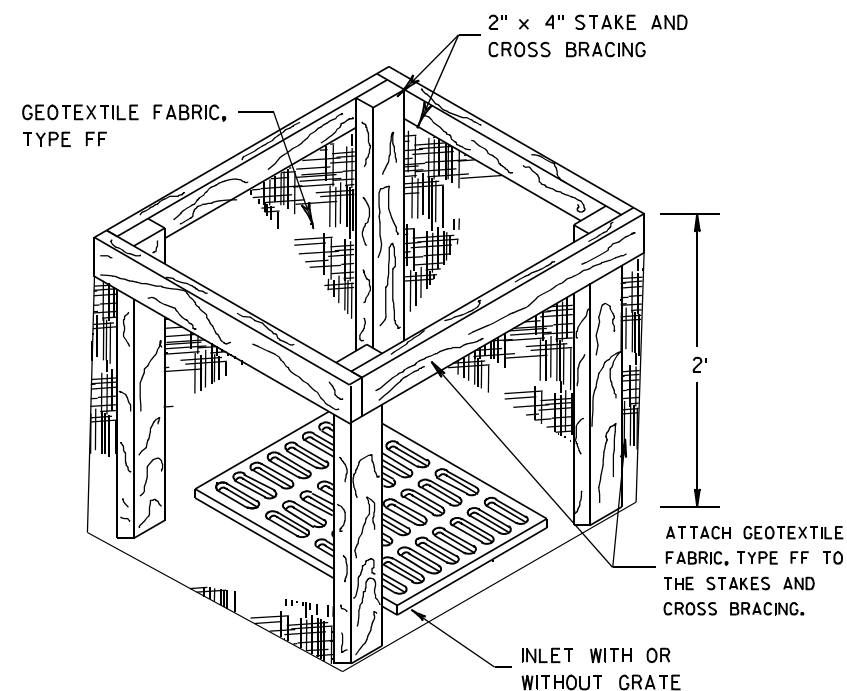
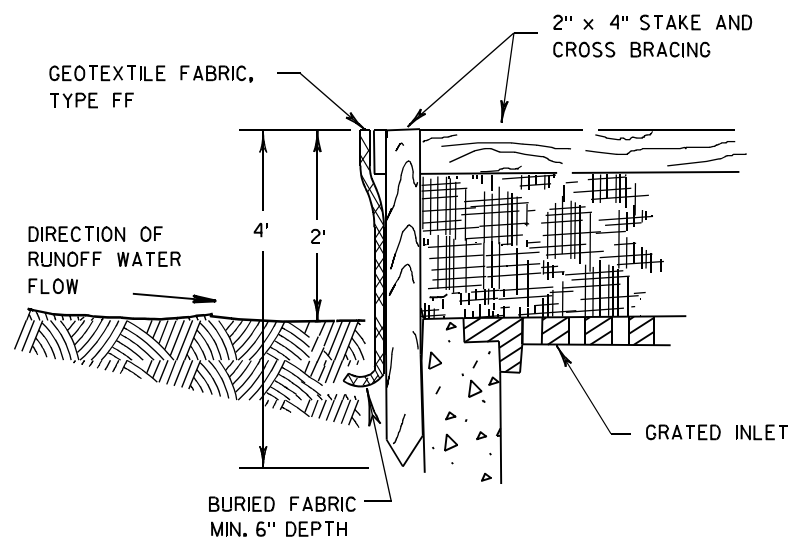
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



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



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



INLET PROTECTION, TYPE A

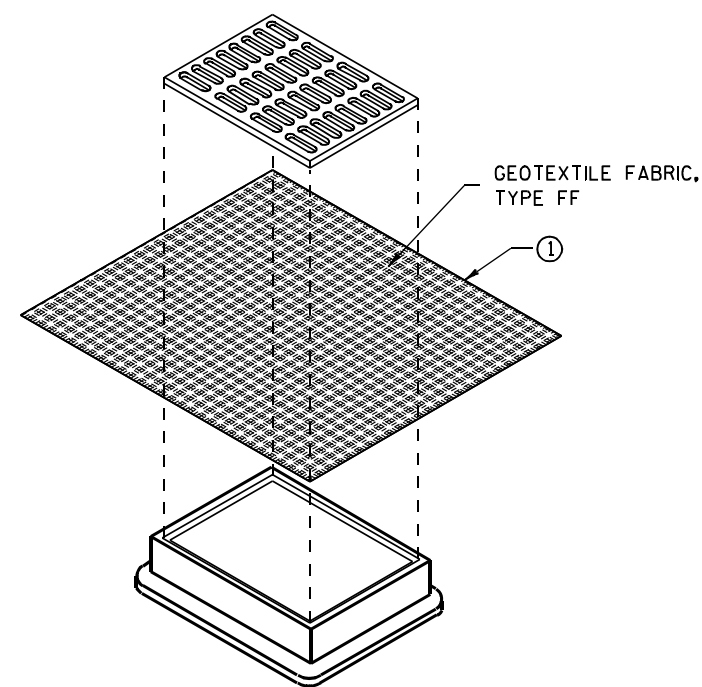
GENERAL NOTES

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.

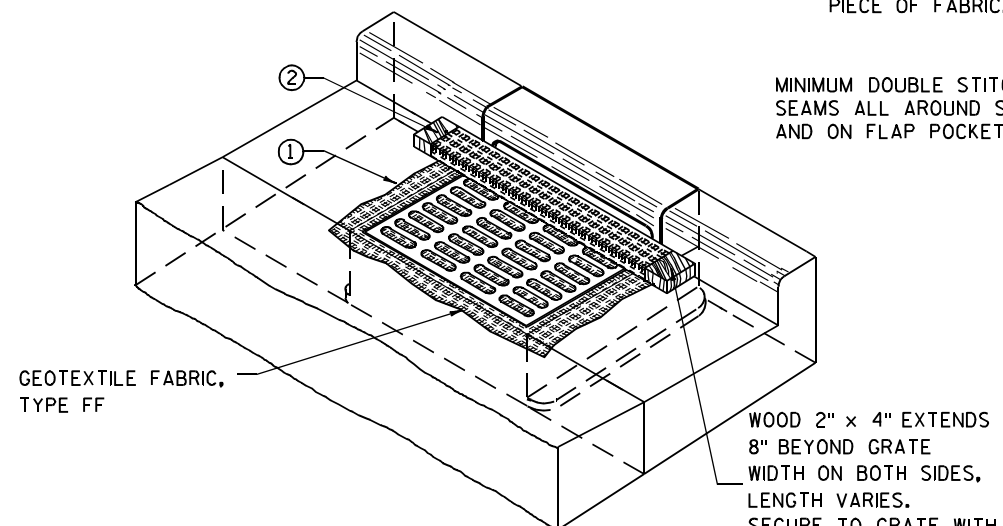
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

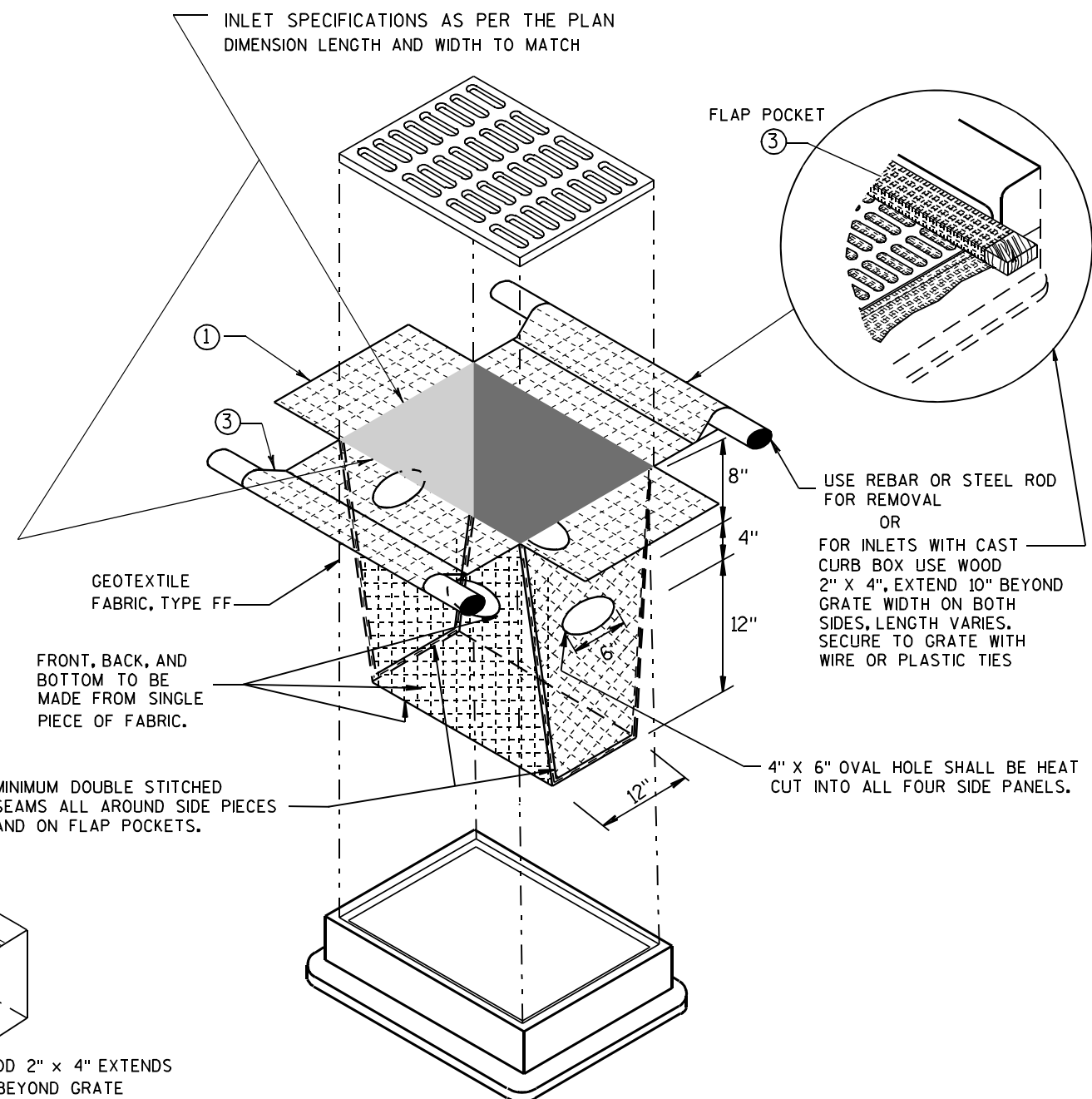
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.



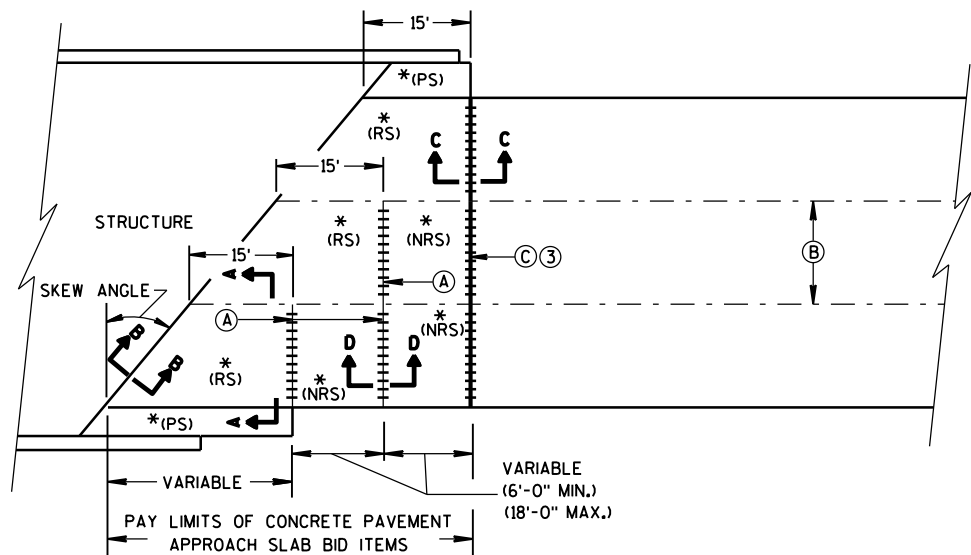
INLET PROTECTION, TYPE D

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

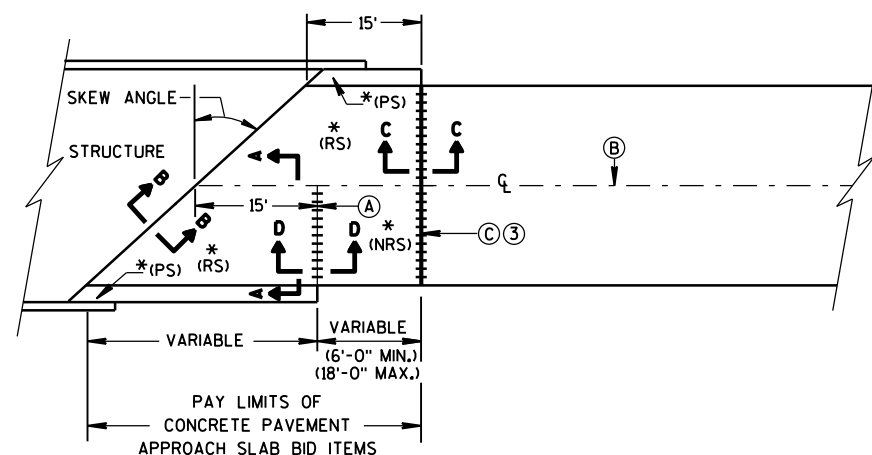
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

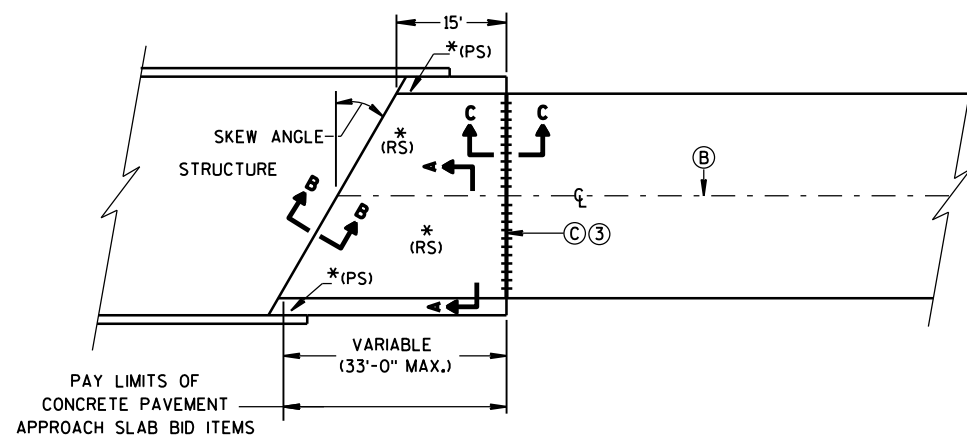
APPROVED
10/16/02 /S/ Beth Cannestra
DATE
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



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



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

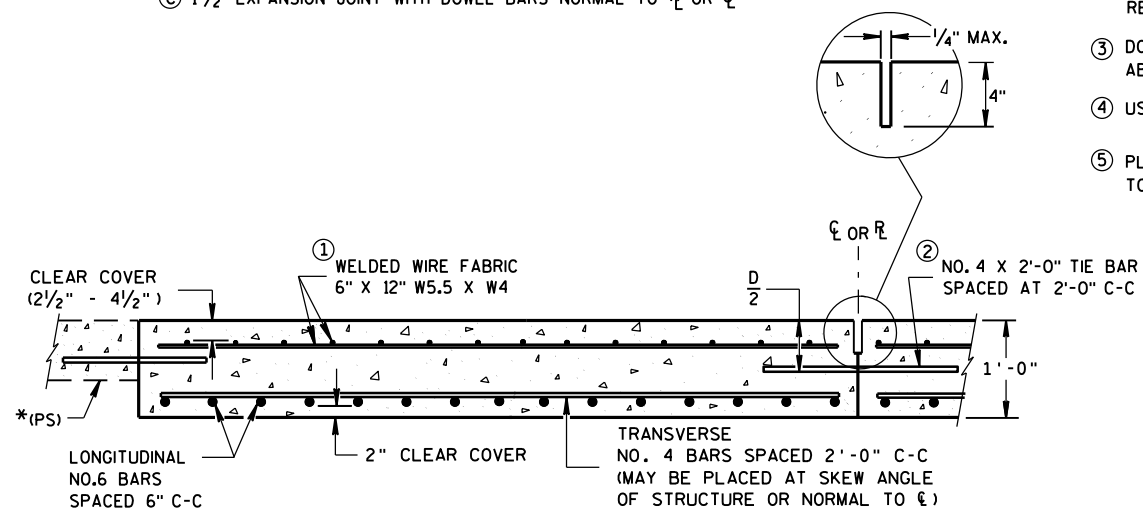


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

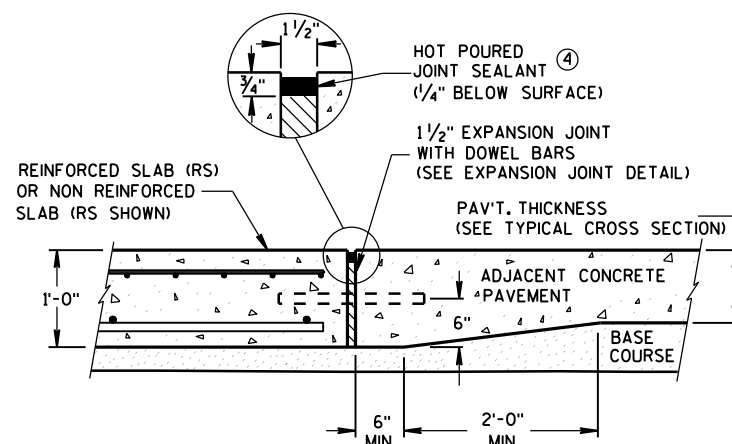
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

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

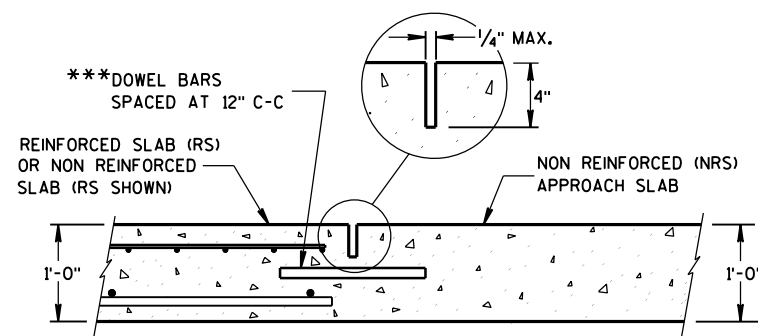
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



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



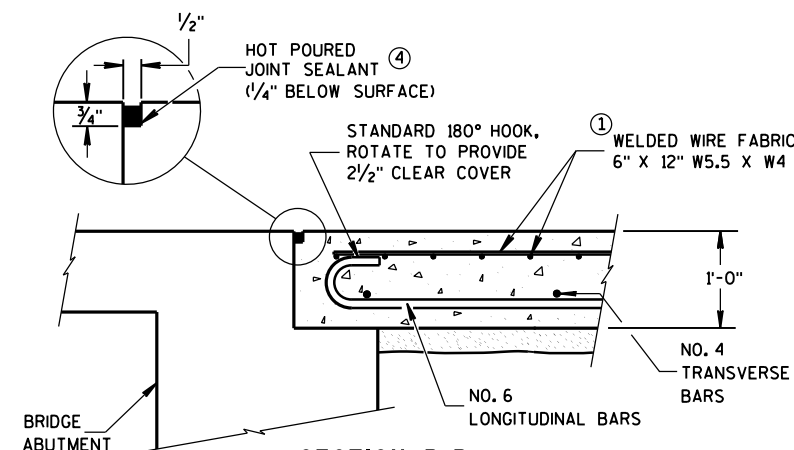
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

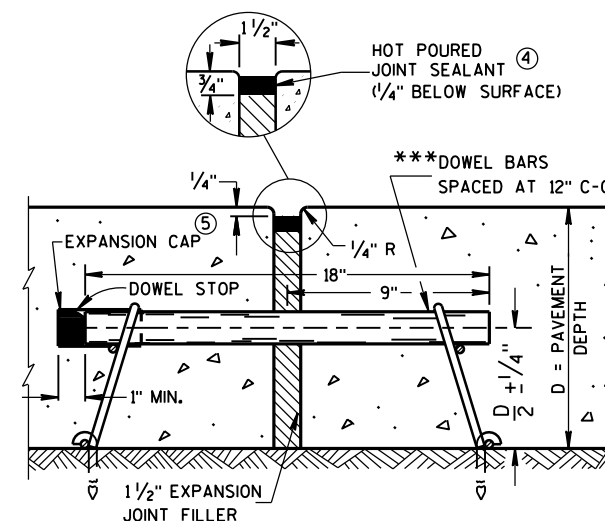
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



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

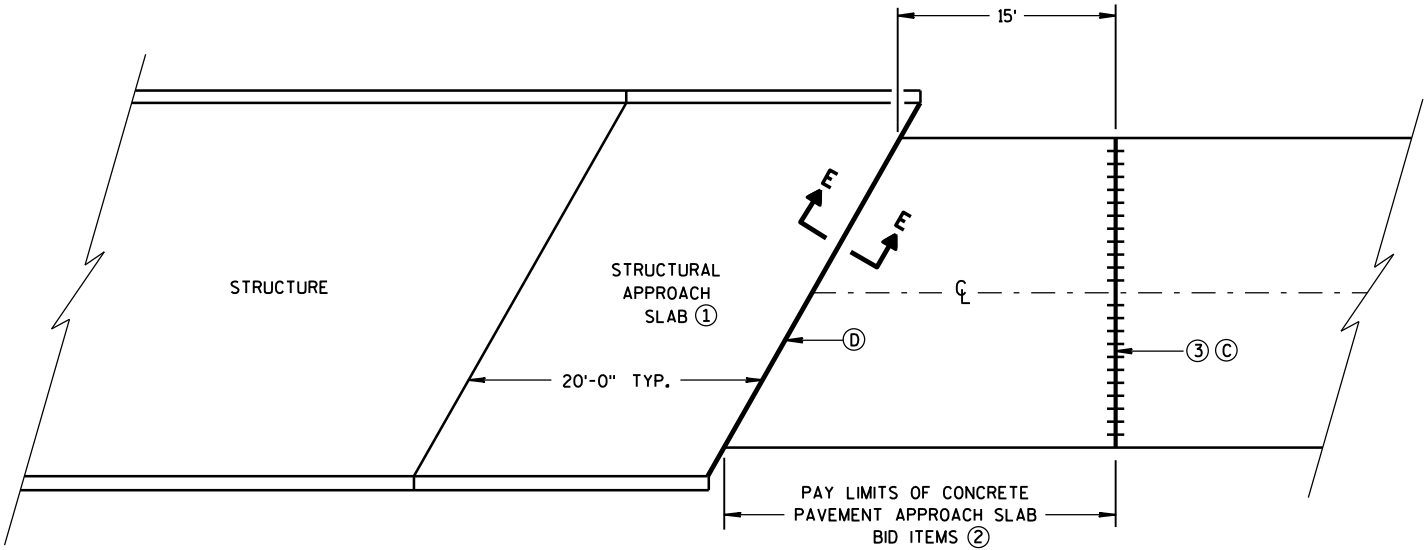


EXPANSION JOINT DETAIL

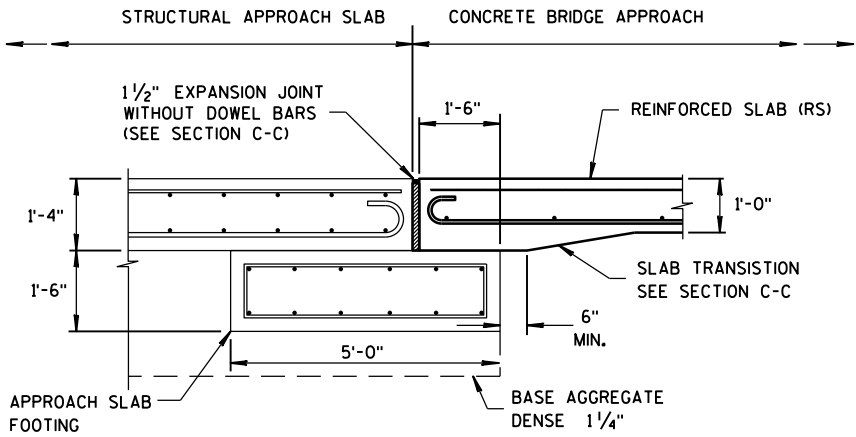
CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



BRIDGE APPROACHES



SECTION E-E
FOOTING DETAIL
STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

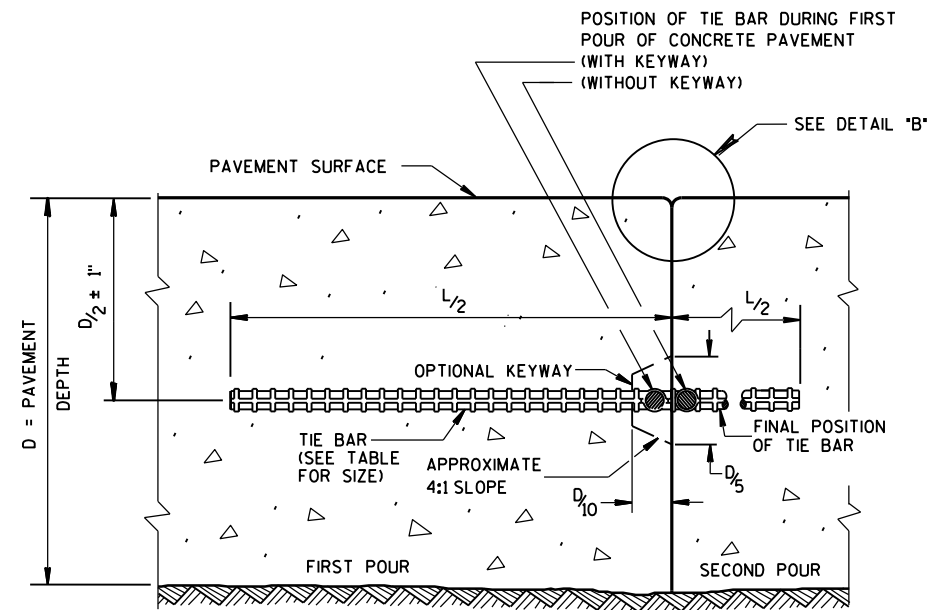
GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE PAVEMENT APPROACH SLAB.

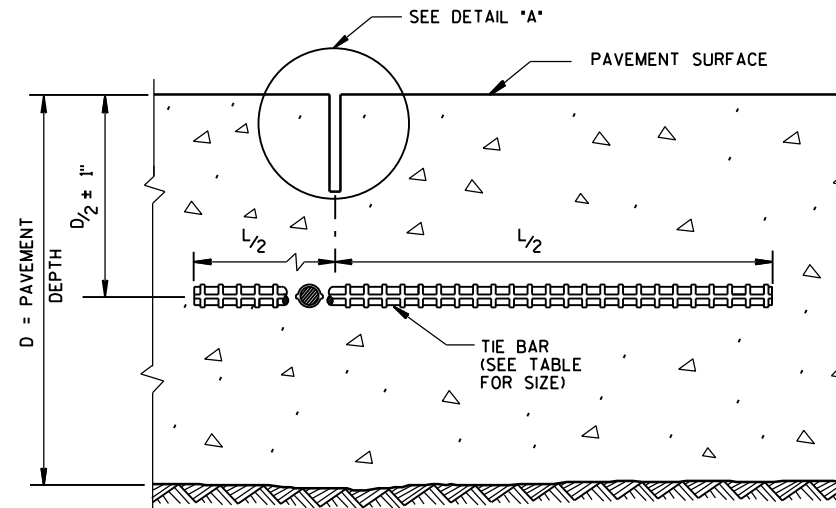
- ① SEE BRIDGE PLAN.
- ② CONFORM TO SHEET 13 B 2(A) FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

- ③ C 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO R_L OR C_L
- ③ D 1 1/2" EXPANSION JOINT (NO DOWELS)

STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2015 DATE	/S/ Peter Kemp, P.E. PAVEMENT SUPERVISOR
FHWA	



CONSTRUCTION JOINT



SAWED JOINT

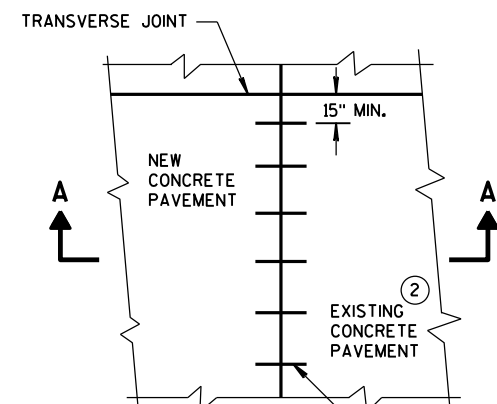
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

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

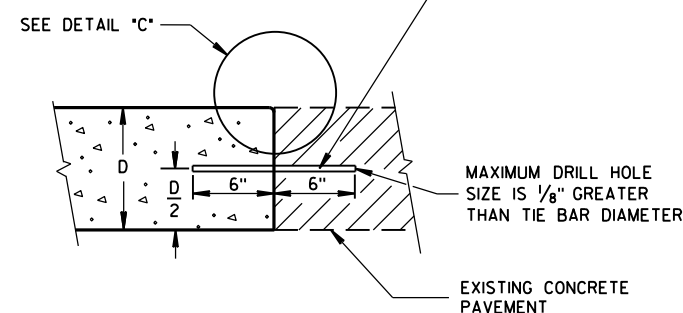
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

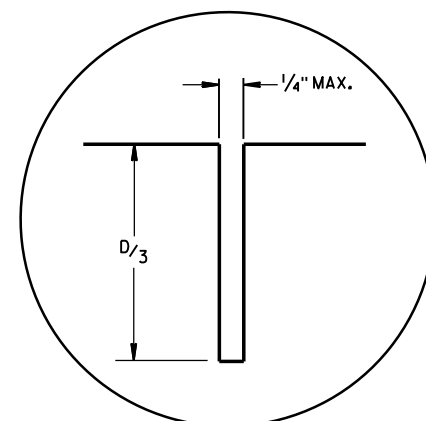


PLAN VIEW

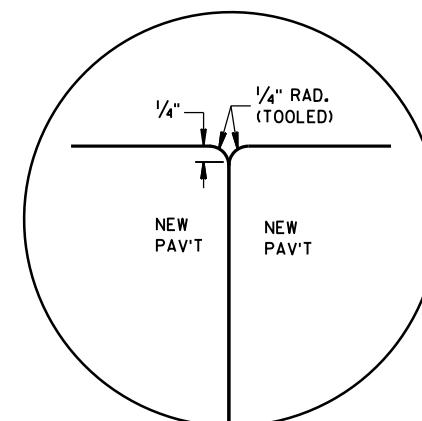
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



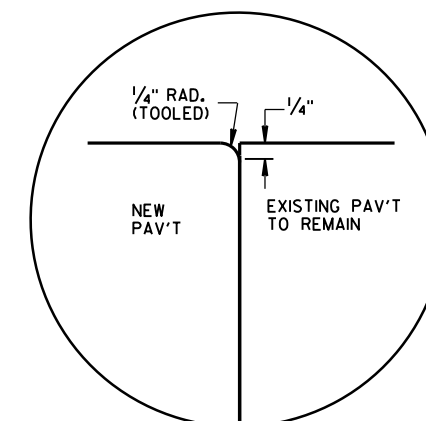
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



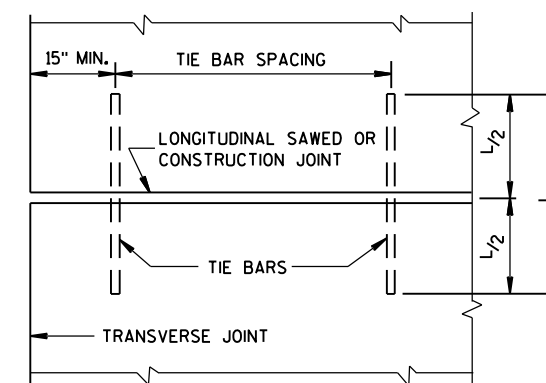
DETAIL "C"

TIE BAR TABLE

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

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

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



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

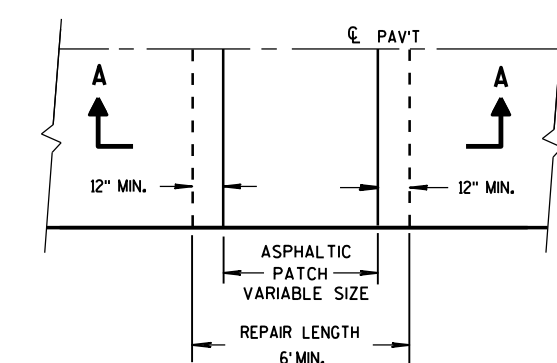
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

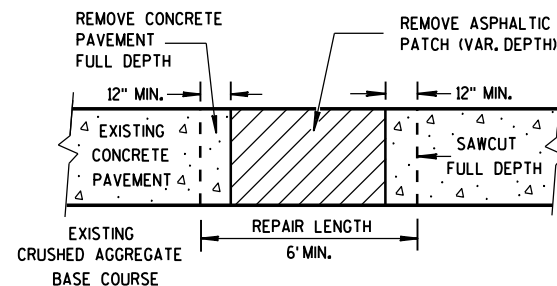
June, 2015
DATE

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

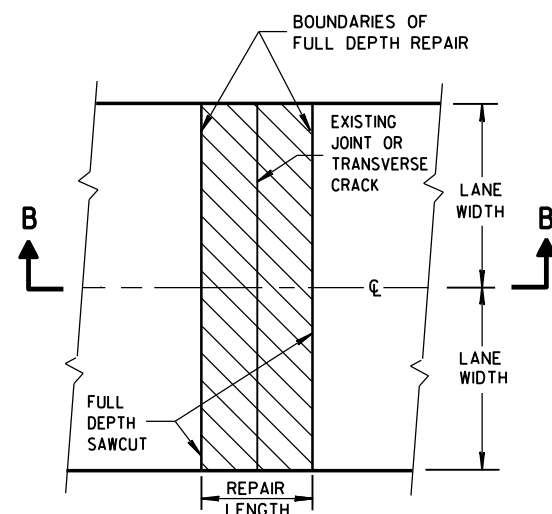
FHWA



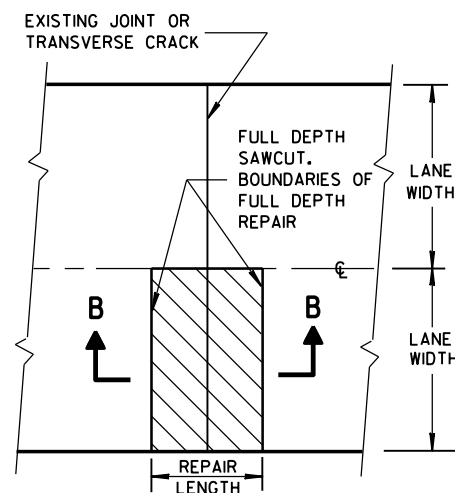
PLAN VIEW



SECTION A-A
HMA PATCH REMOVAL



PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

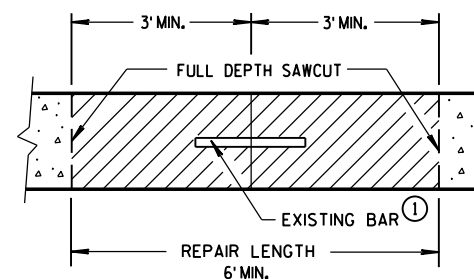
GENERAL NOTES

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.

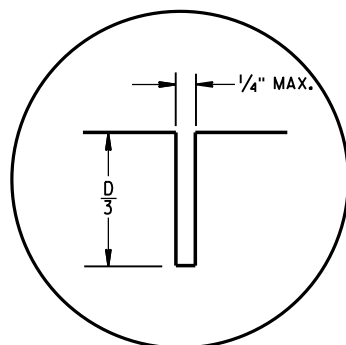
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

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.

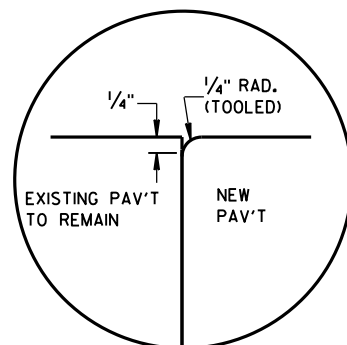
① DOWEL BARS MIGHT NOT EXIST.



SECTION B-B
CONCRETE REMOVAL

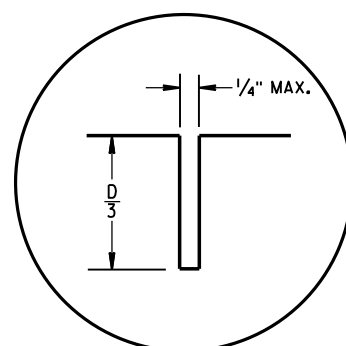


C1

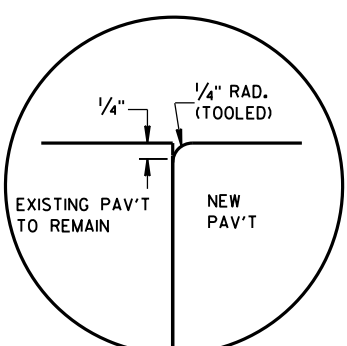


C2

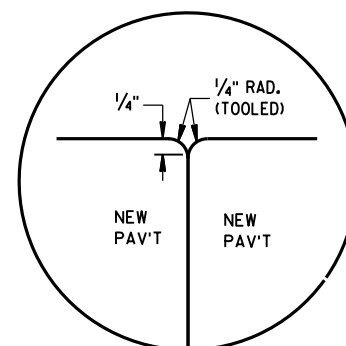
TRANSVERSE JOINTS



L1



L2



L3

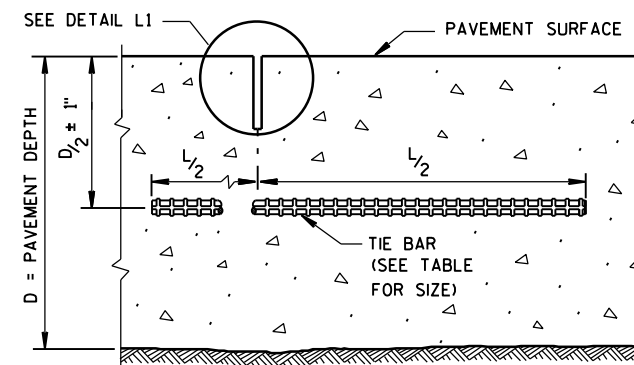
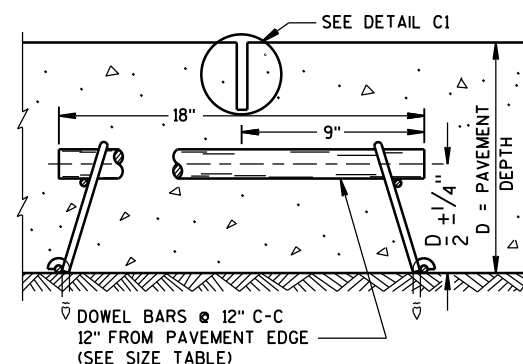
LONGITUDINAL JOINTS

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.

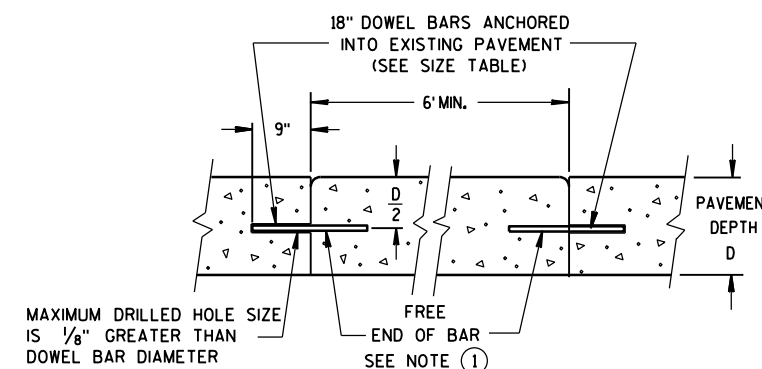
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

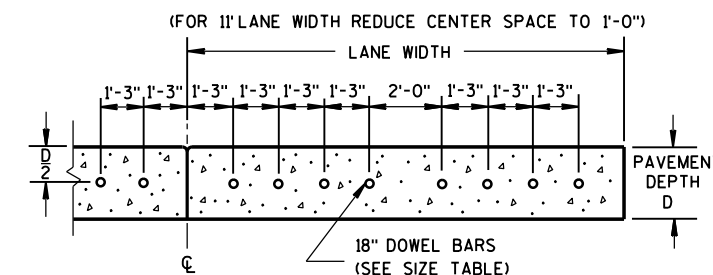
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

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.



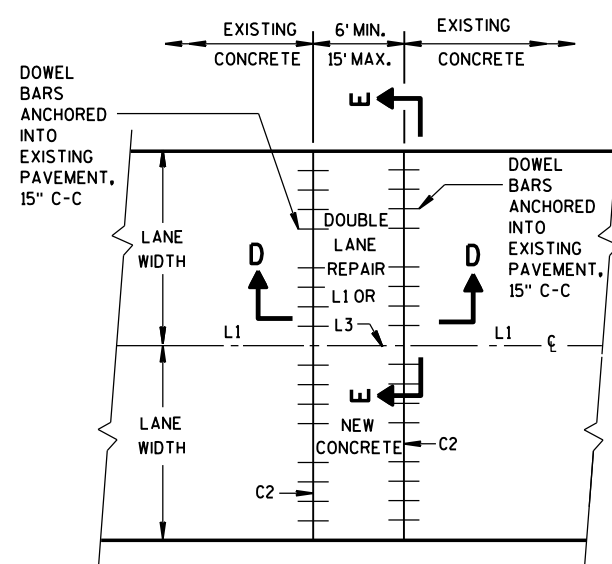
SECTION D-D

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'

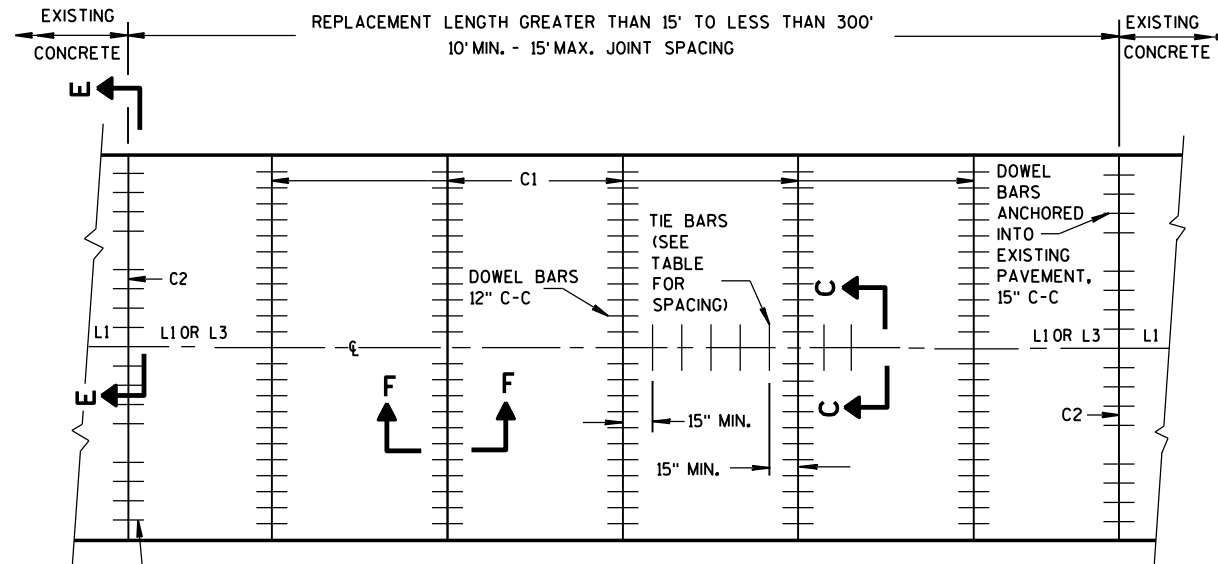
CONCRETE PAVEMENT
REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



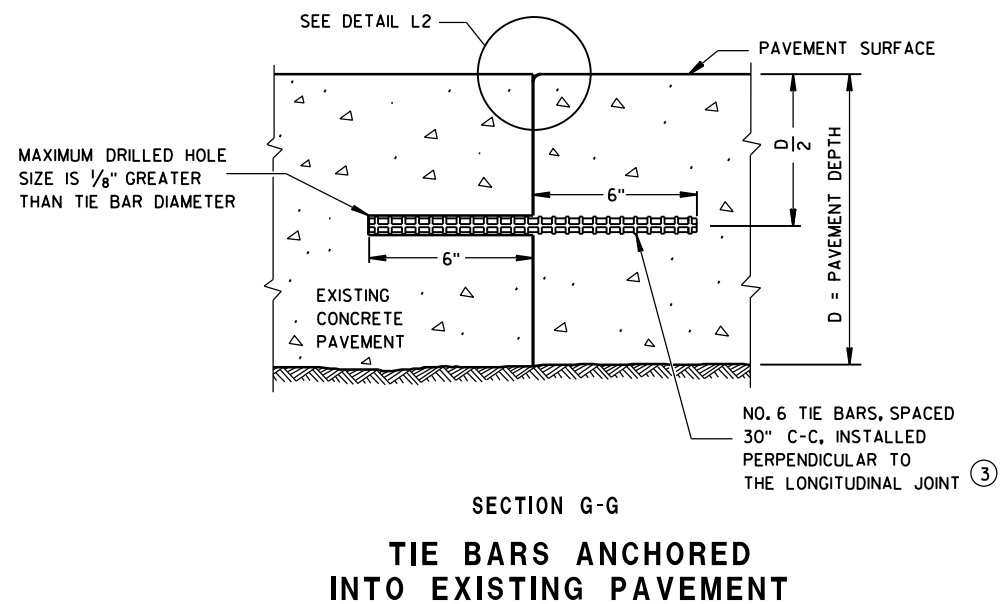
PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



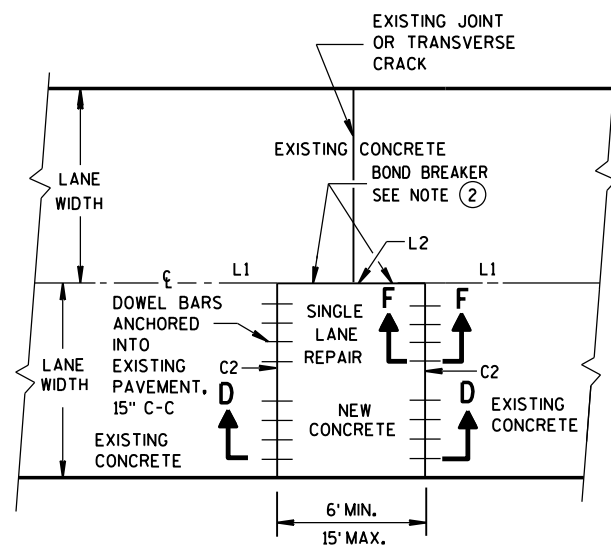
PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

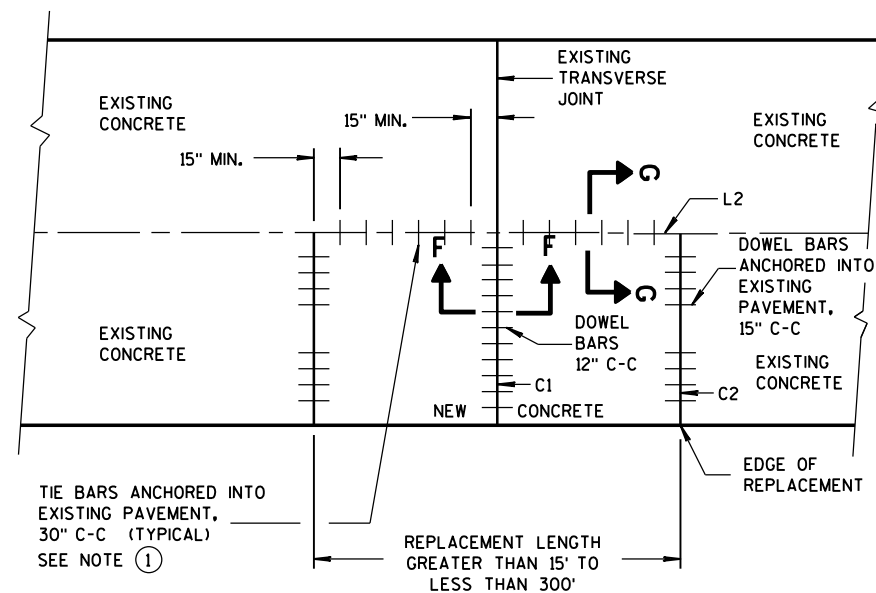


GENERAL NOTES

- 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.



PLAN VIEW
**SINGLE LANE
CONCRETE PAVEMENT REPAIR**



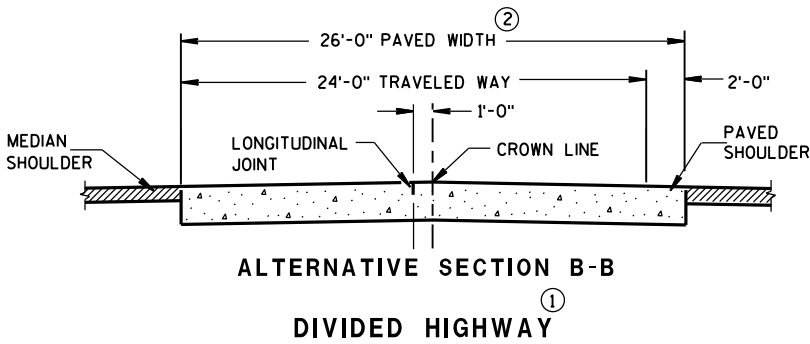
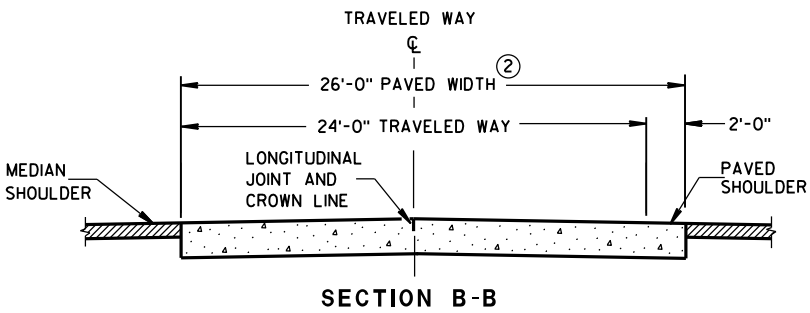
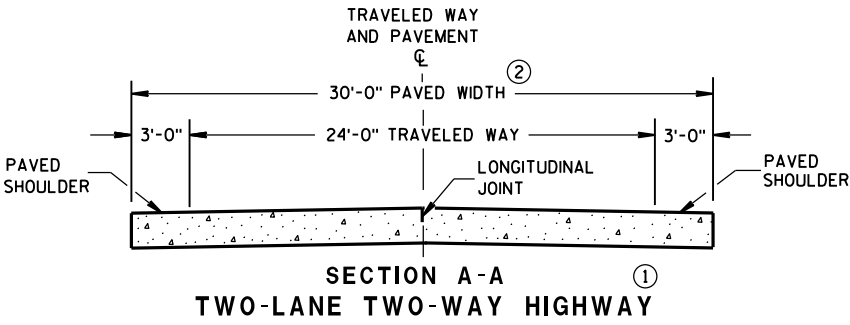
PLAN VIEW
**SINGLE LANE
CONCRETE PAVEMENT REPLACEMENT**

**CONCRETE PAVEMENT
REPAIR AND REPLACEMENT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
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.

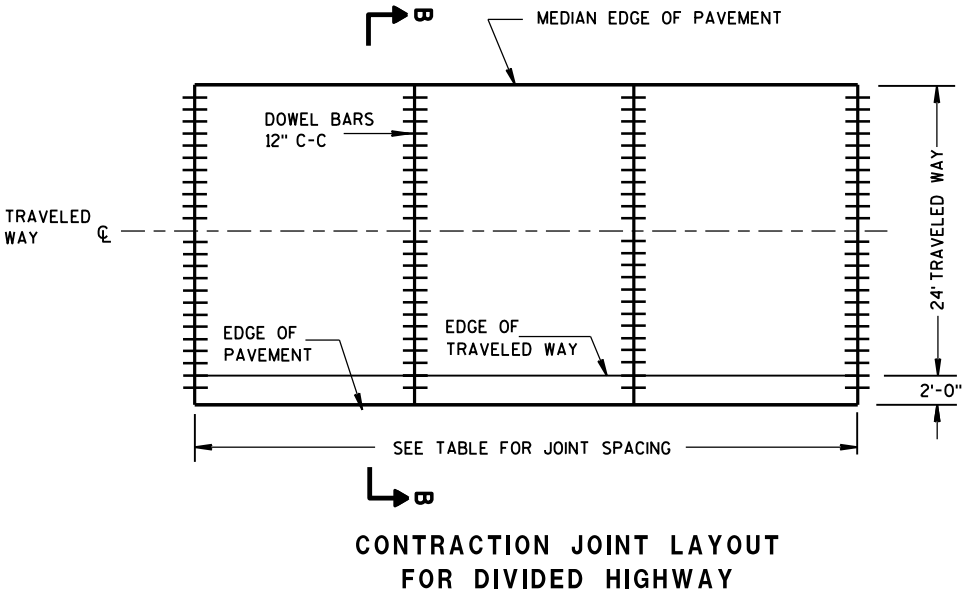
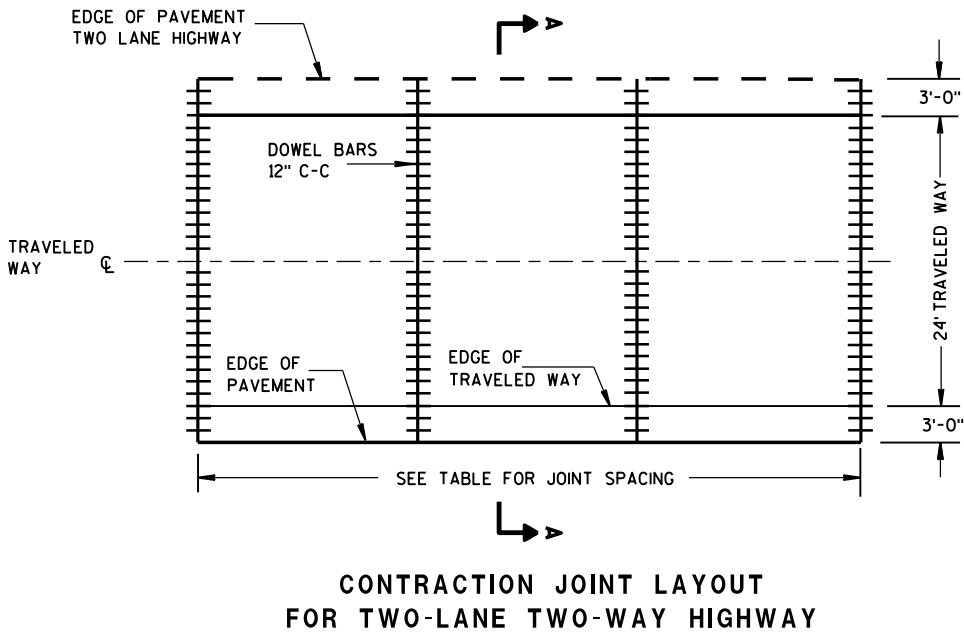
CONSTRUCTION JOINTS

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.

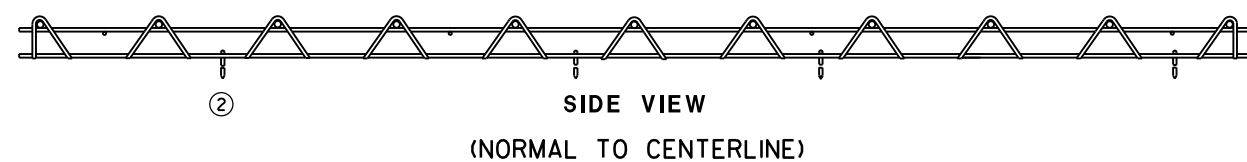
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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'

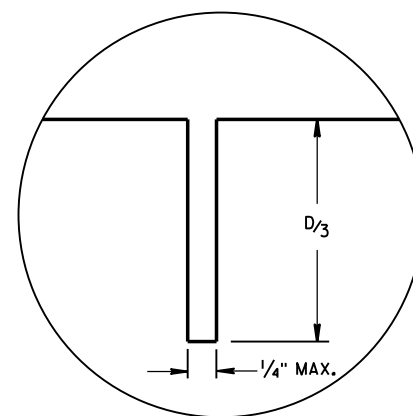


RURAL DOWELED
CONCRETE PAVEMENT

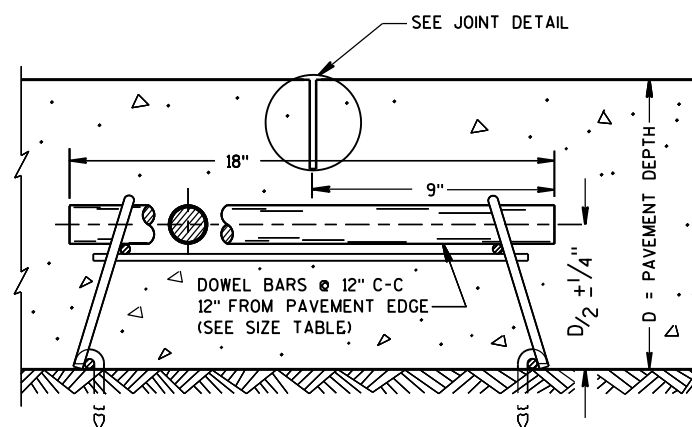
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DEPARTMENT OF TRANSPORTATION



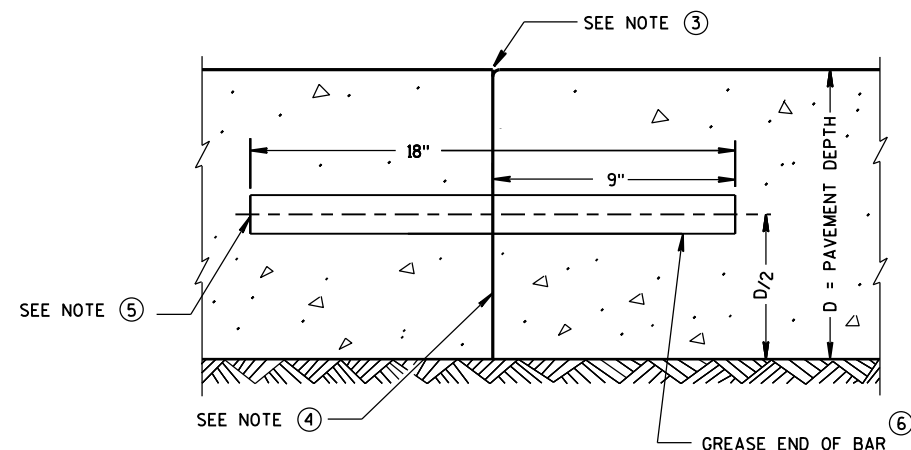
CONTRACTION JOINT DOWEL ASSEMBLY ^①



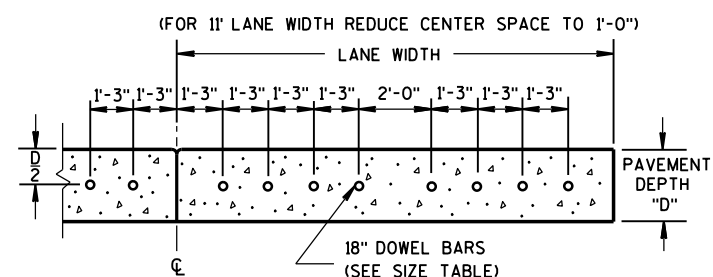
JOINT DETAIL



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT

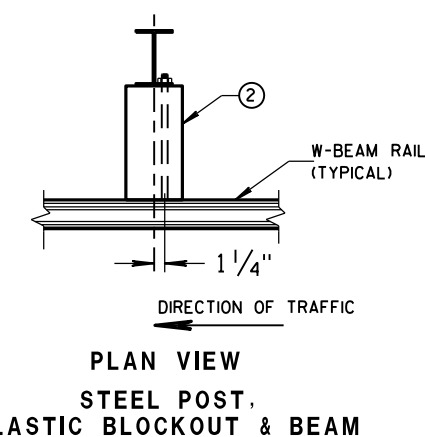
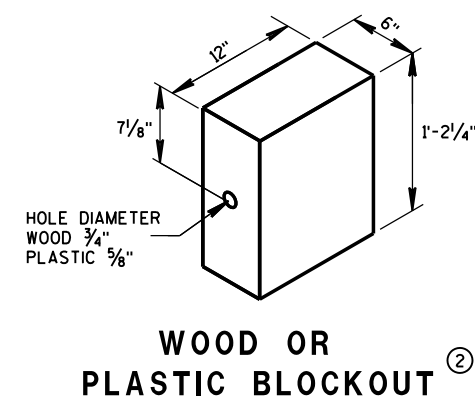
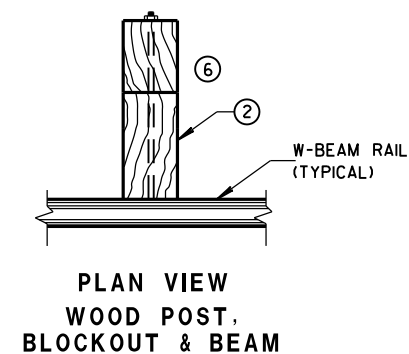
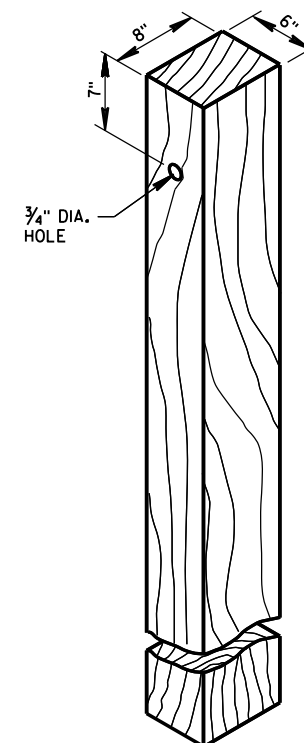
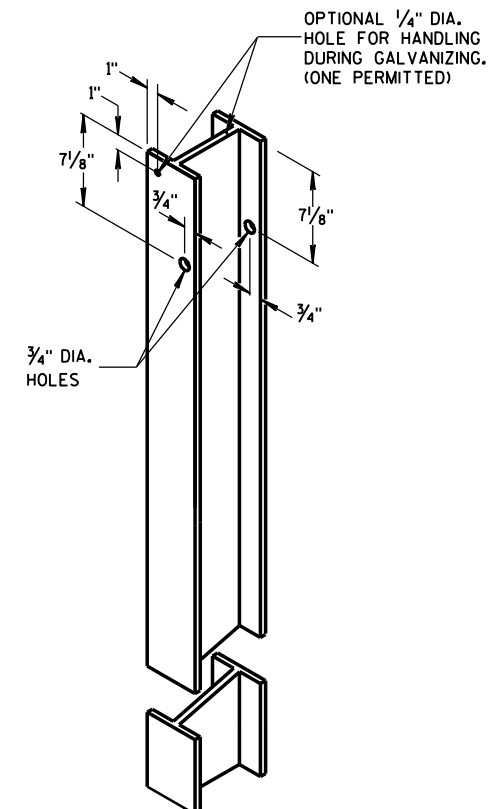
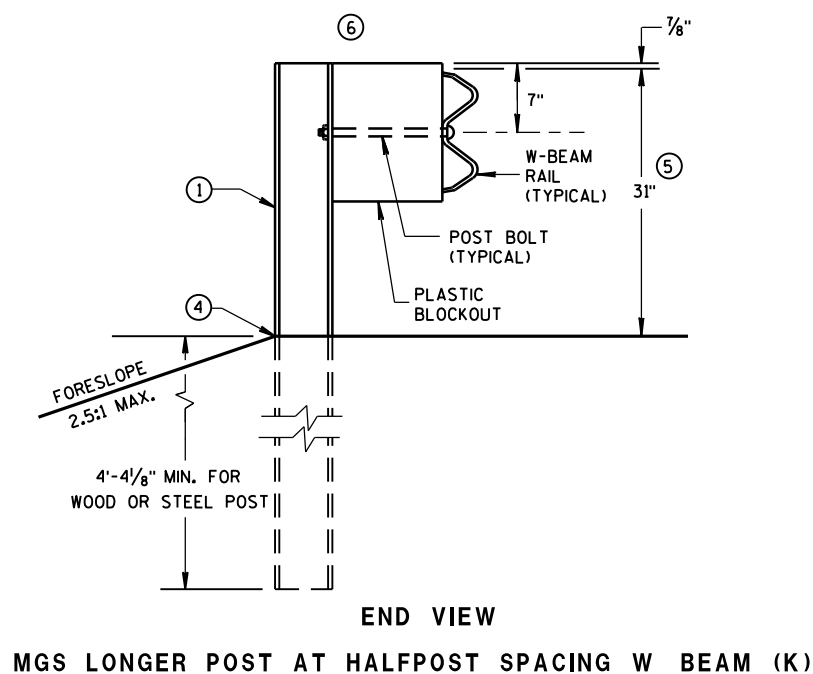
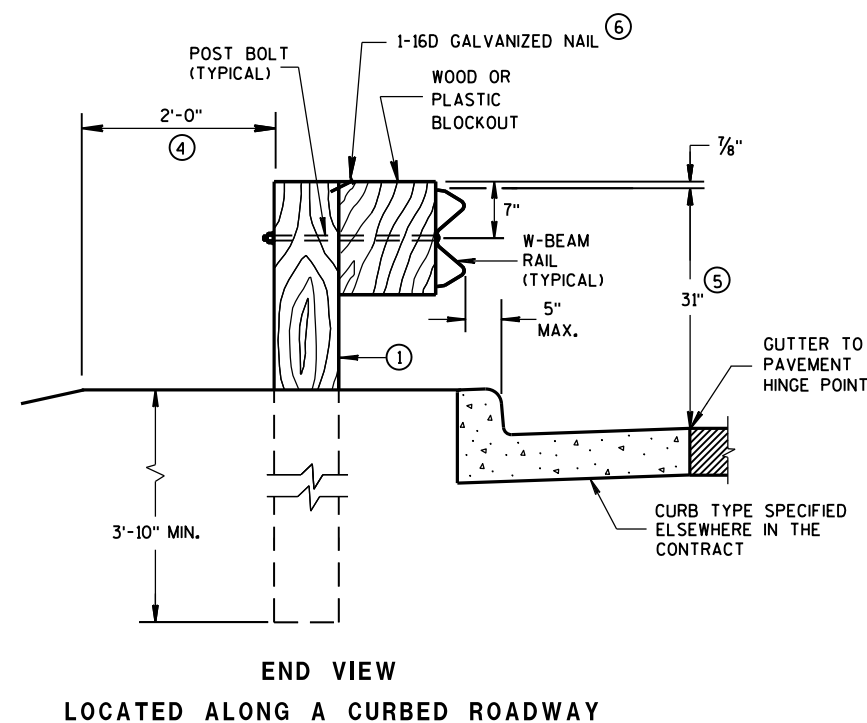
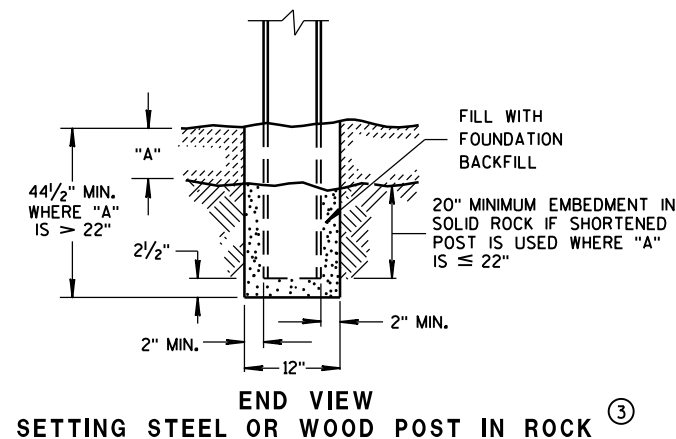


DRILLED DOWEL BAR CONSTRUCTION JOINT ⁽⁷⁾

GENERAL NOTES

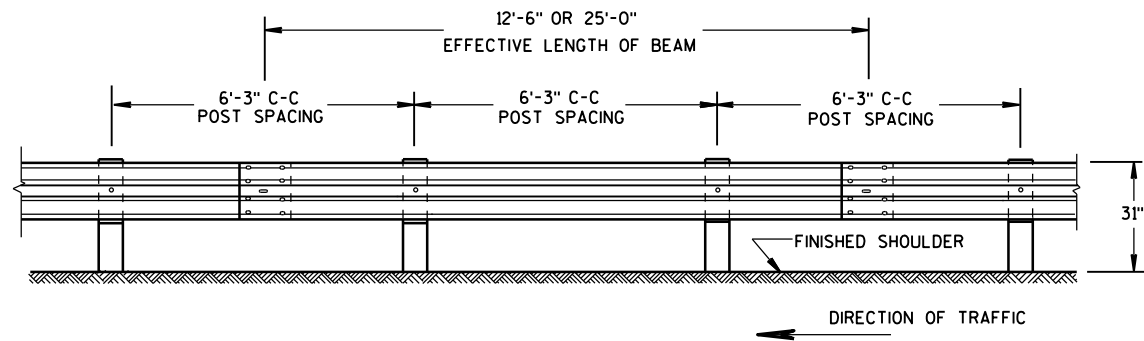
- ① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.
- ② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND 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.

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2 INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



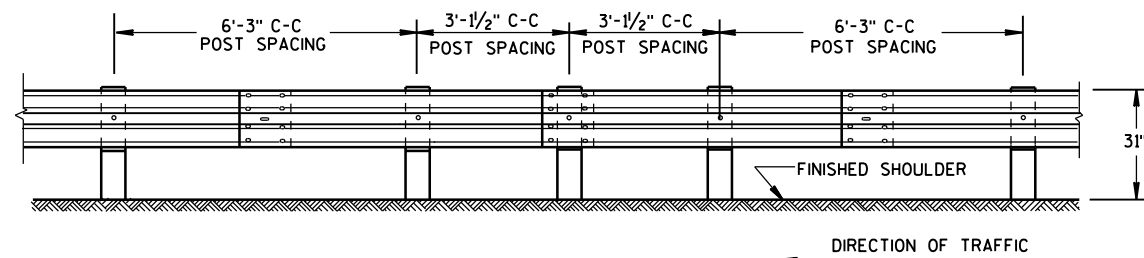
MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
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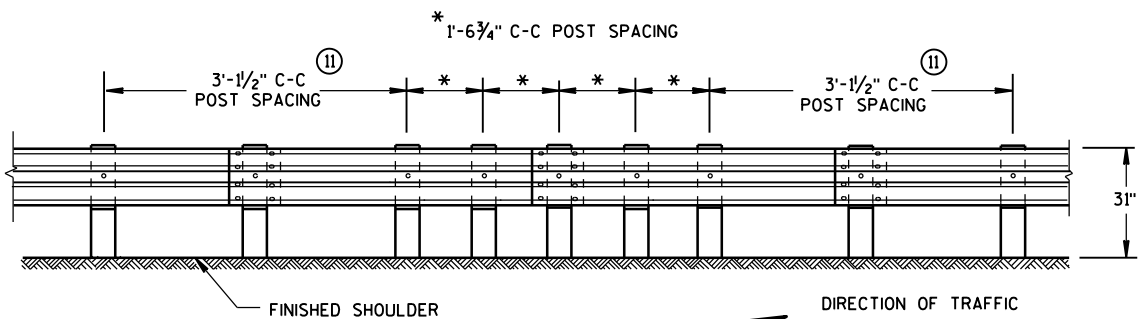
FRONT VIEW

POST SPACING STANDARD INSTALLATION



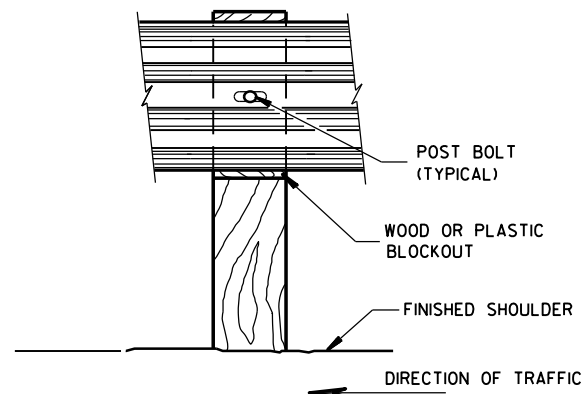
FRONT VIEW

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

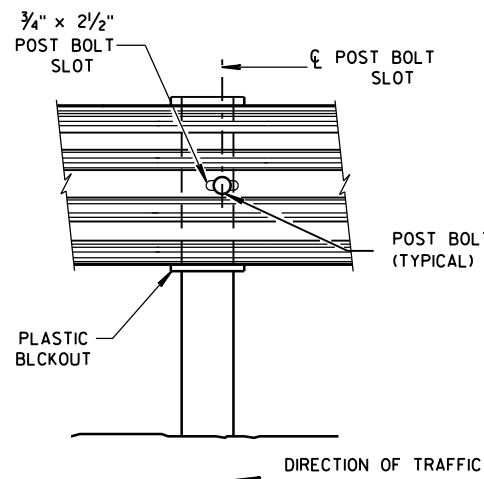


FRONT VIEW

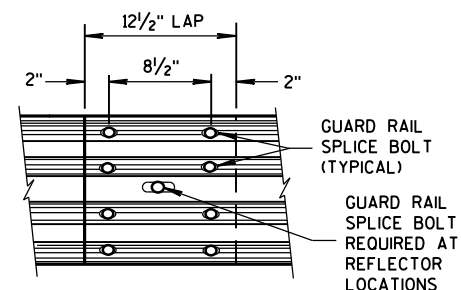
QUARTER POST SPACING (QS)



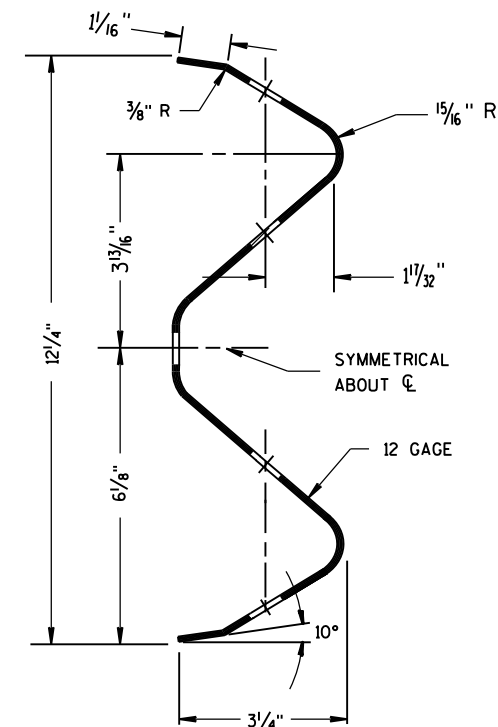
FRONT VIEW AT WOOD POST



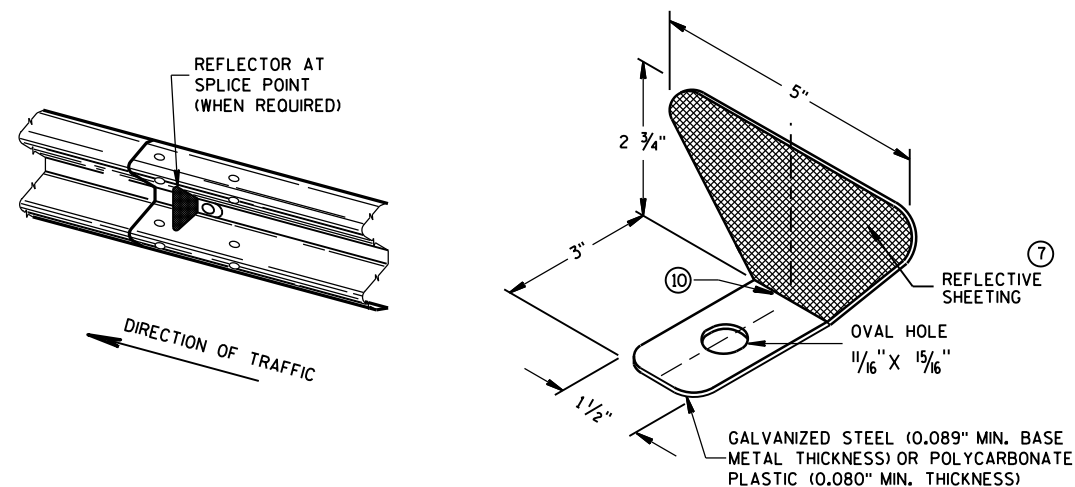
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

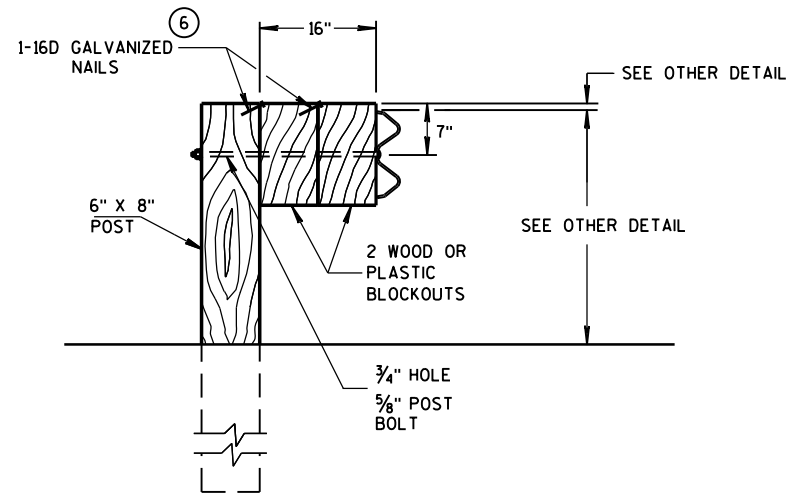
- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
 - ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
 - ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑩	3
	> 200'	100' C-C	2	

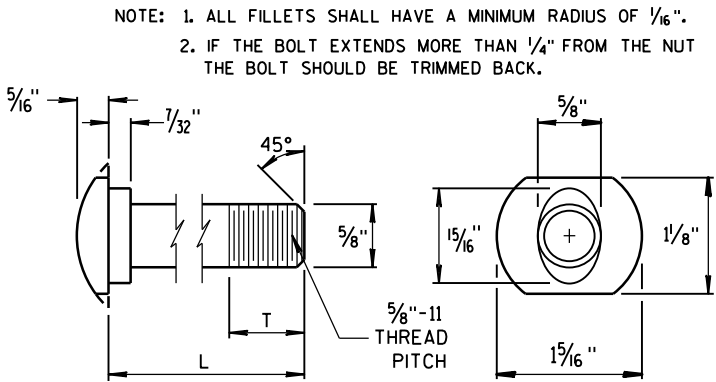
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

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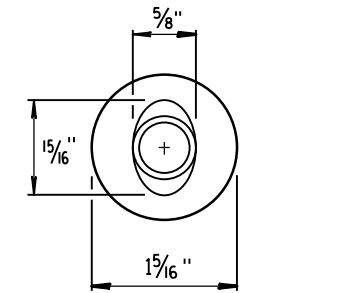


DETAIL FOR 16" BLOCKOUT DEPTH

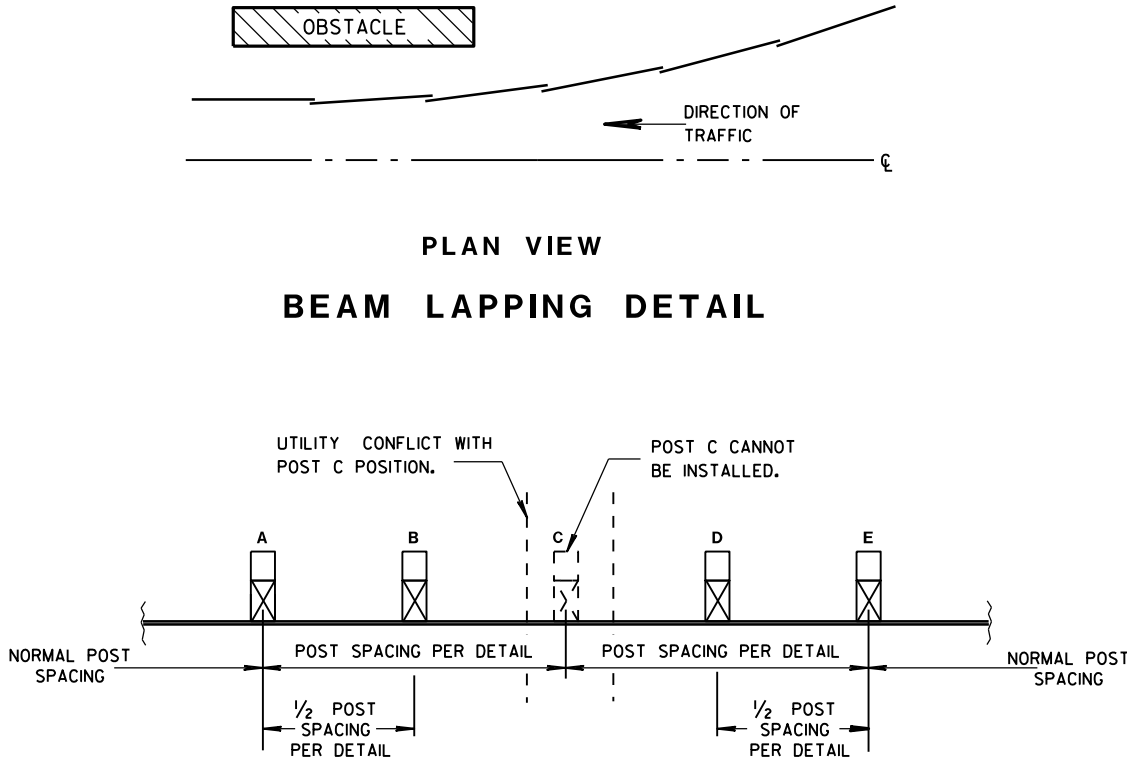
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



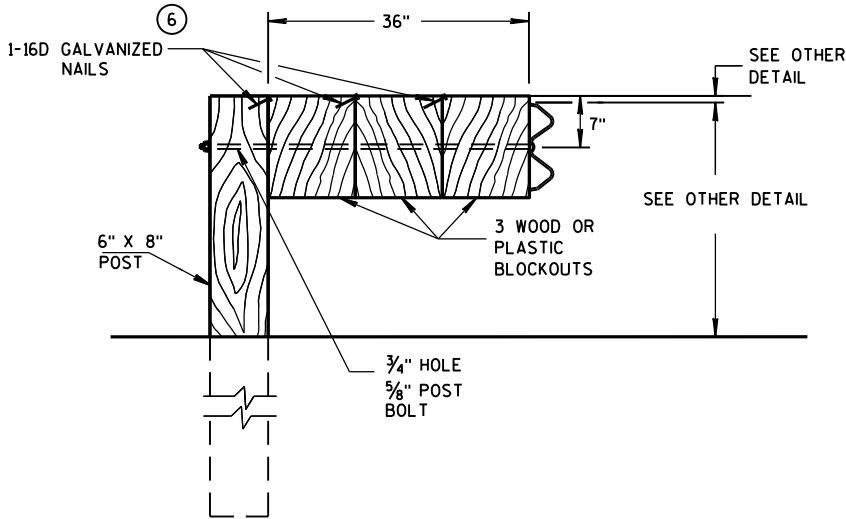
POST BOLT TABLE



ALTERNATE BOLT HEAD



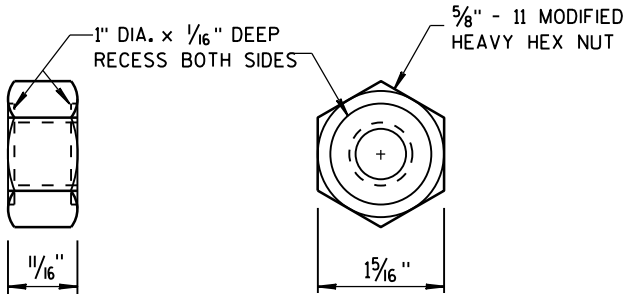
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



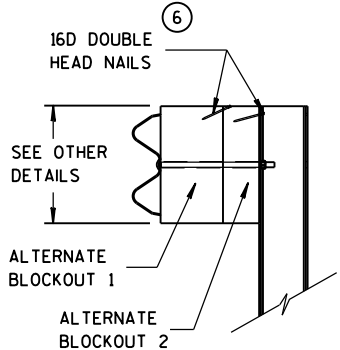
DETAIL FOR 36" BLOCKOUT DEPTH

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

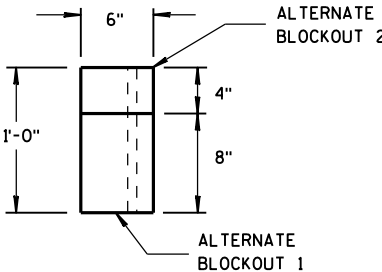
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

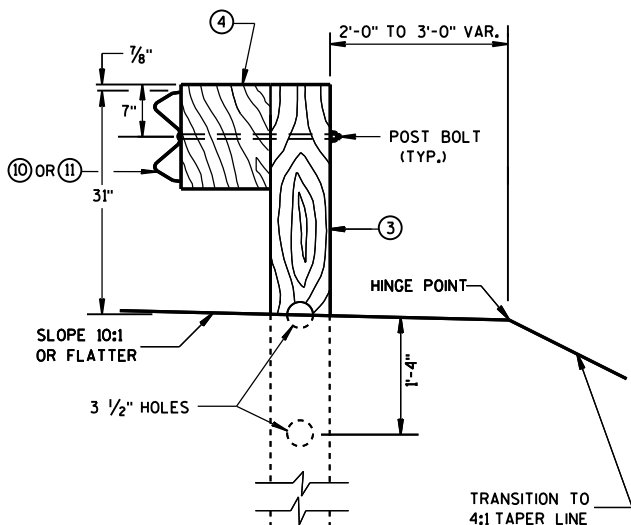
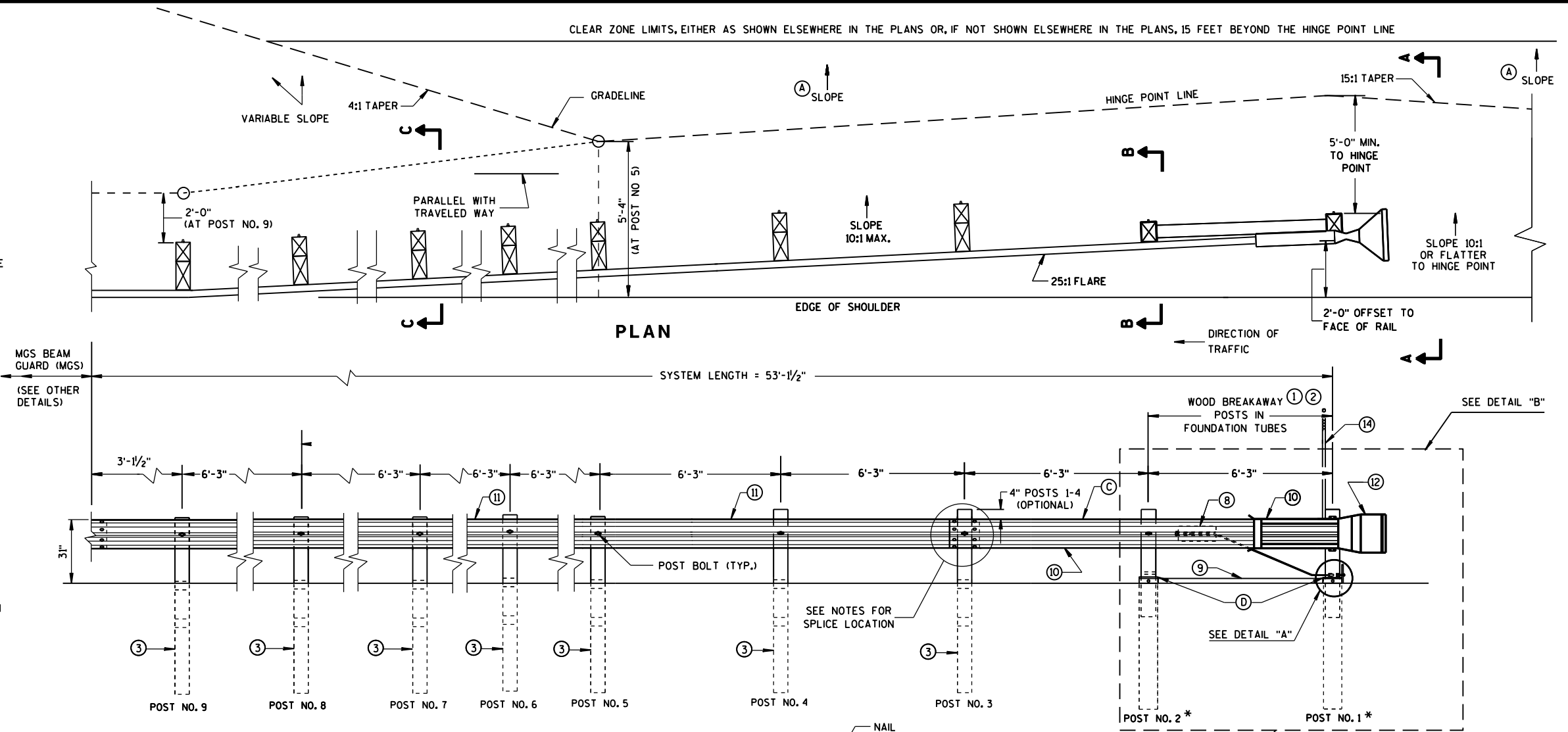
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

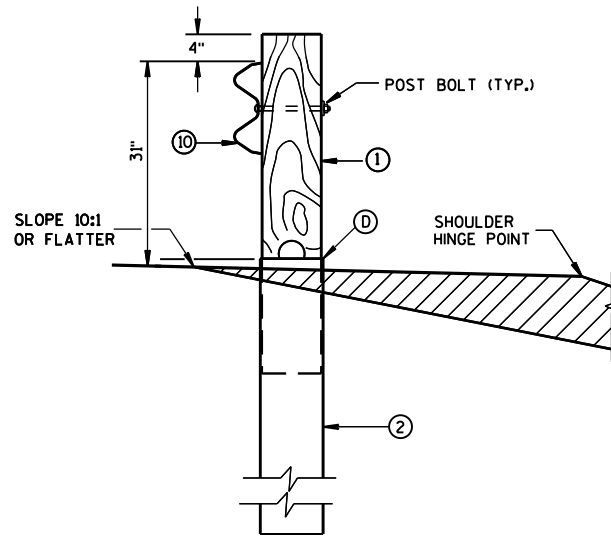
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

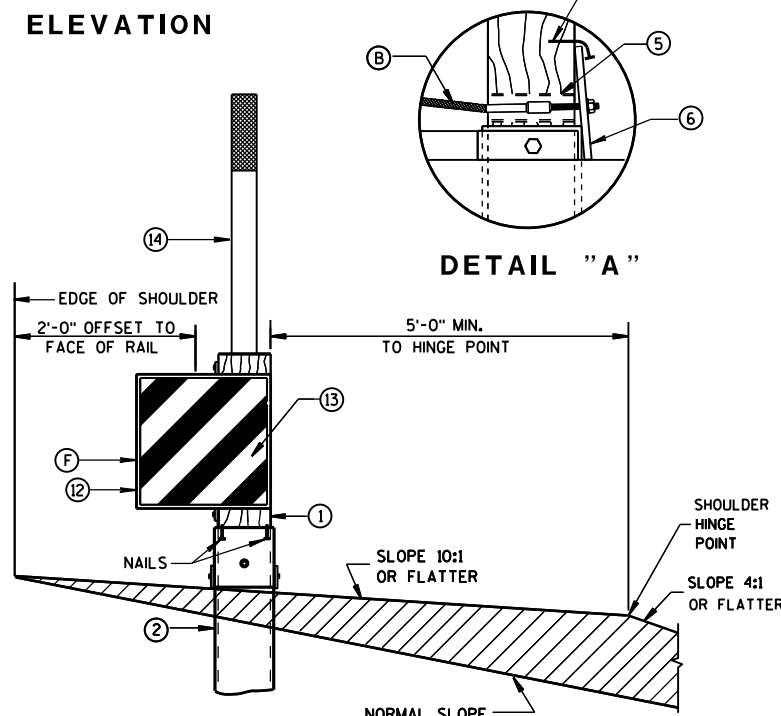
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



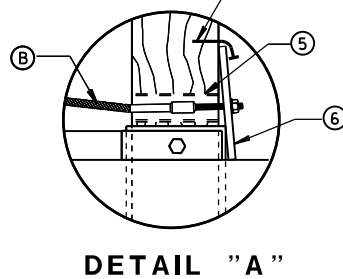
SECTION C-C
TYPICAL AT POST NOS. 3-9



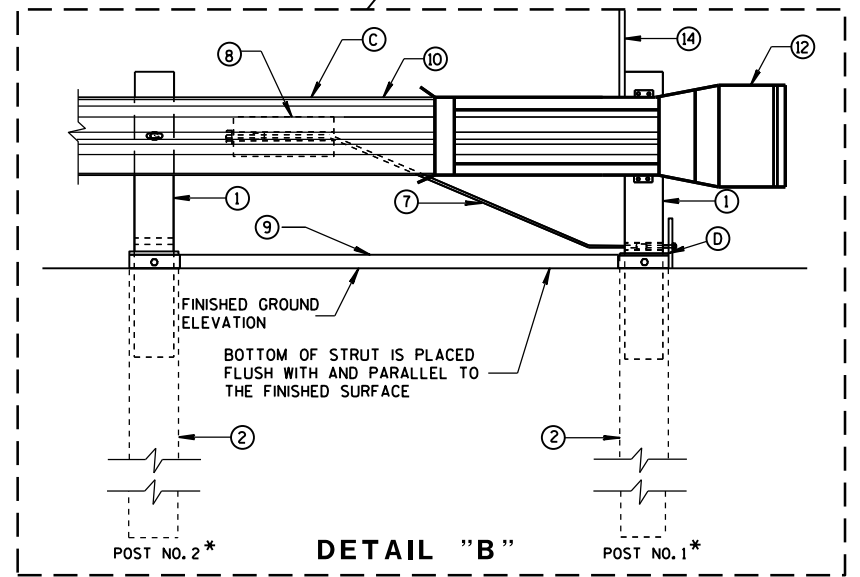
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



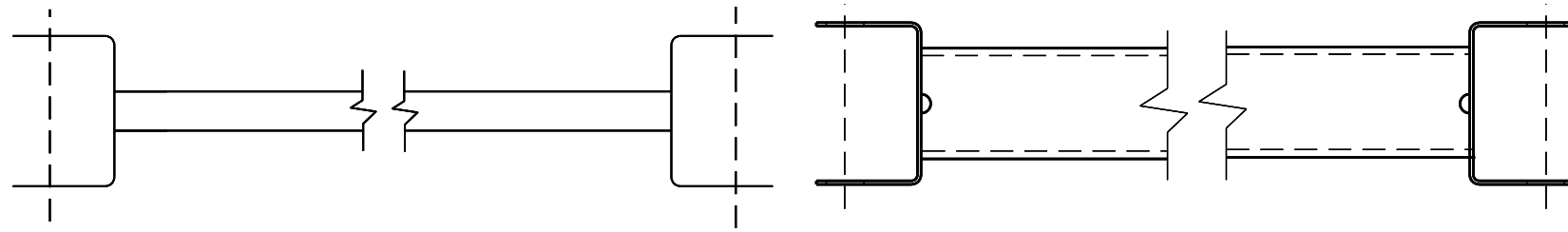
DETAIL "A"



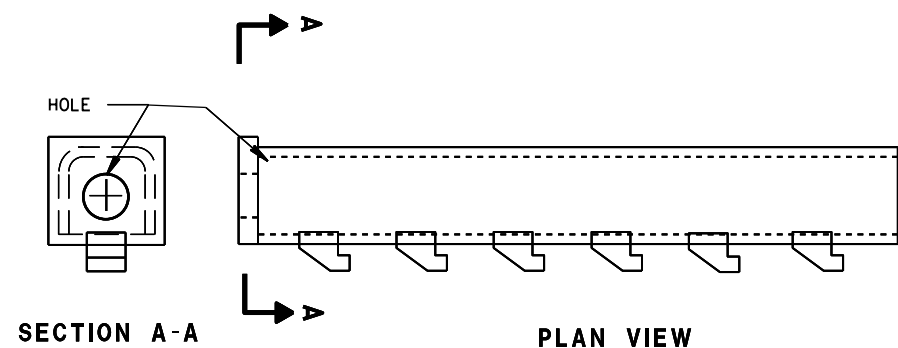
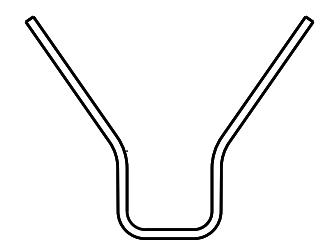
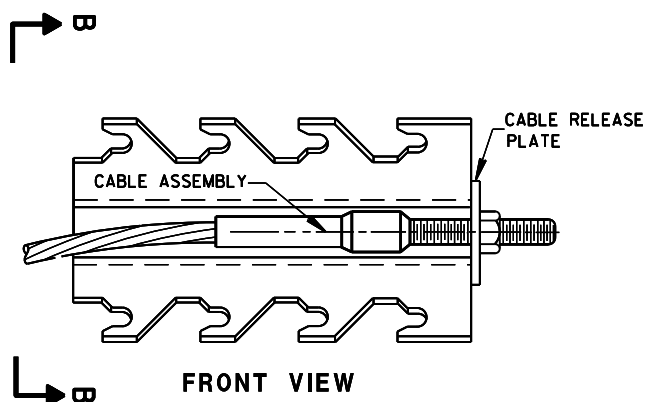
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



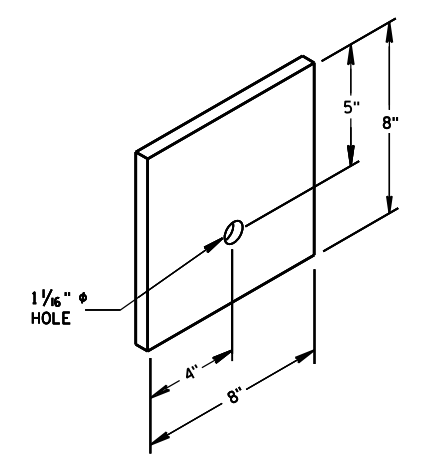
9 H
GENERIC GROUND STRUT



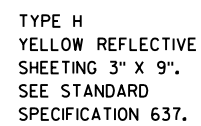
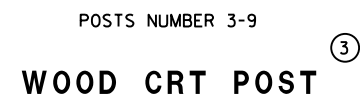
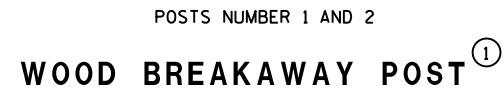
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

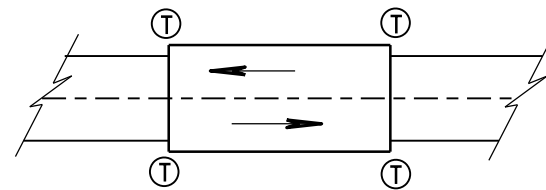
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



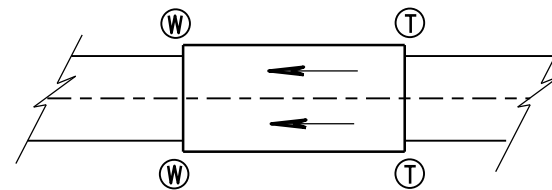
6
BEARING PLATE



MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014	/s/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

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

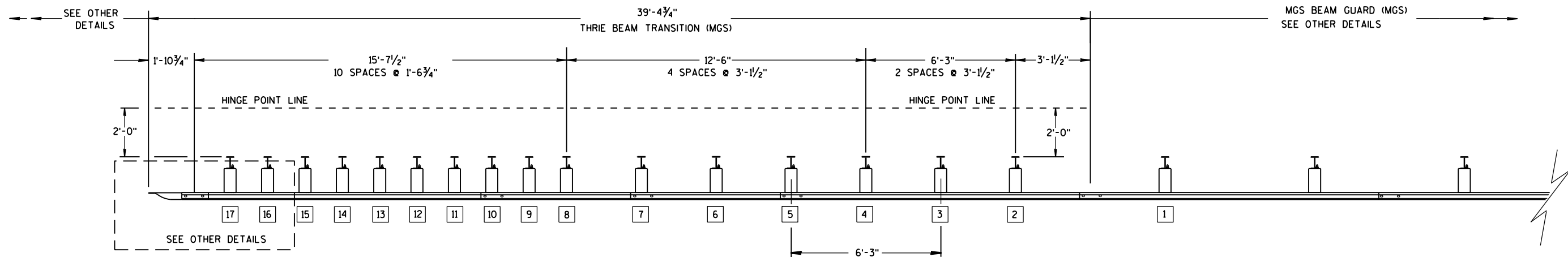
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

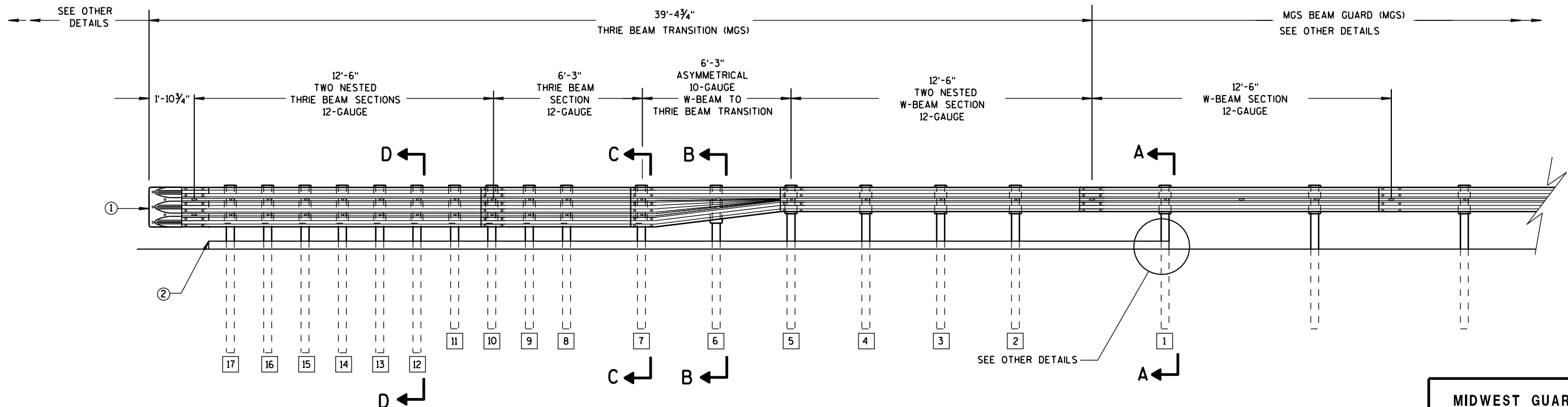
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

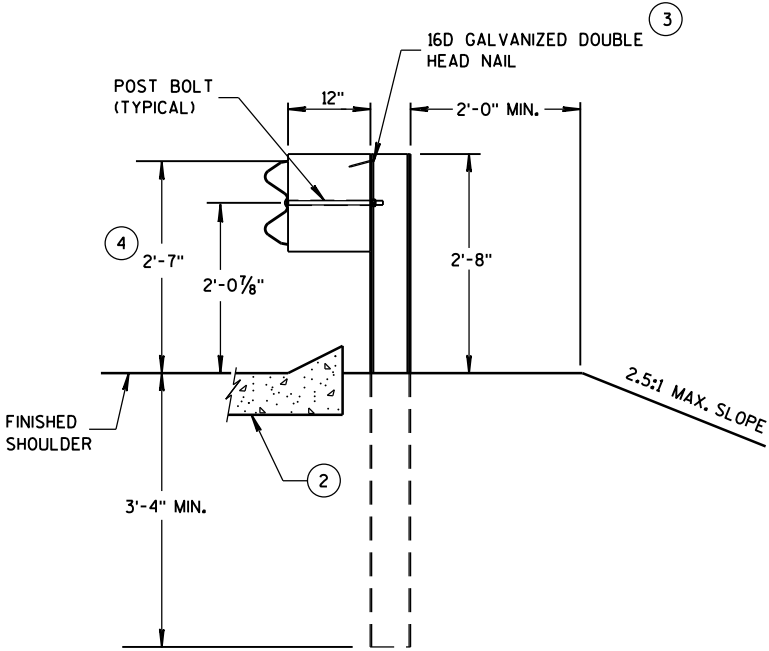
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

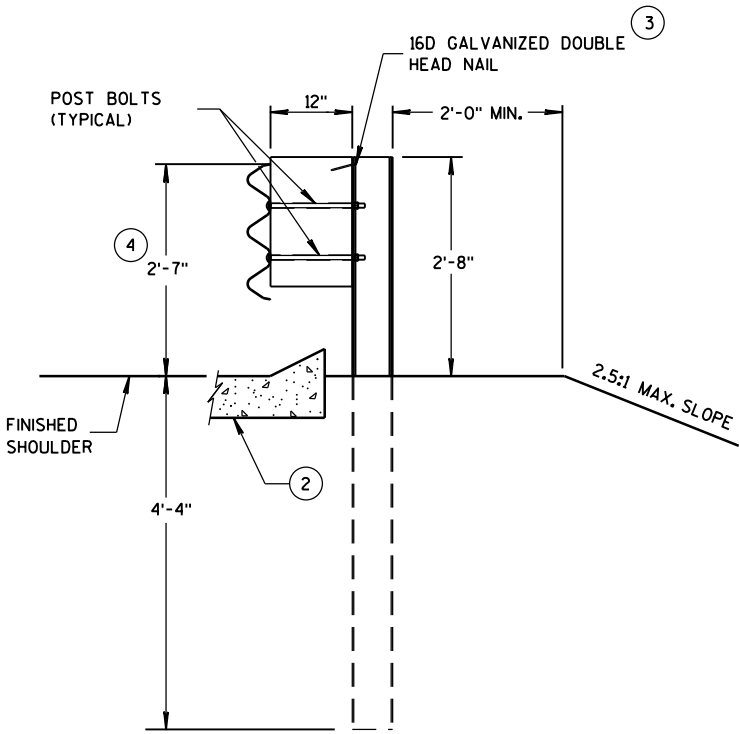
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

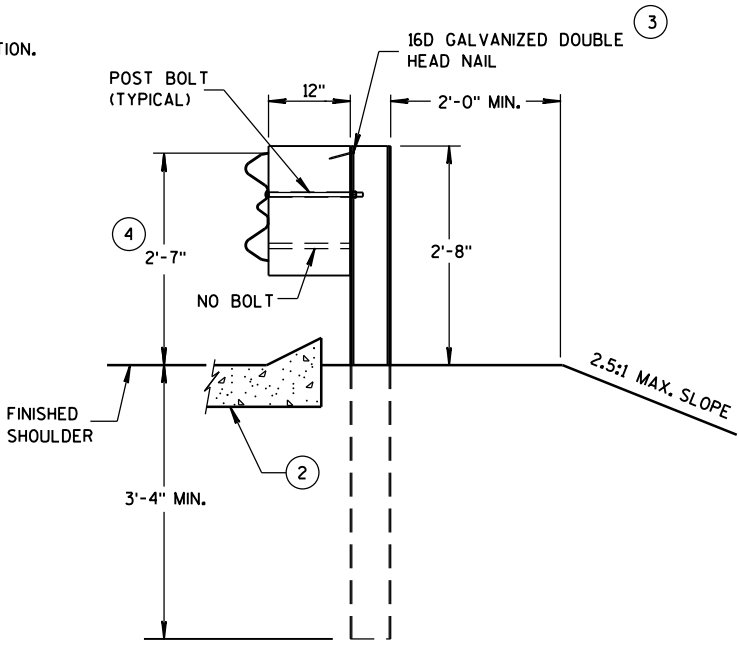
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



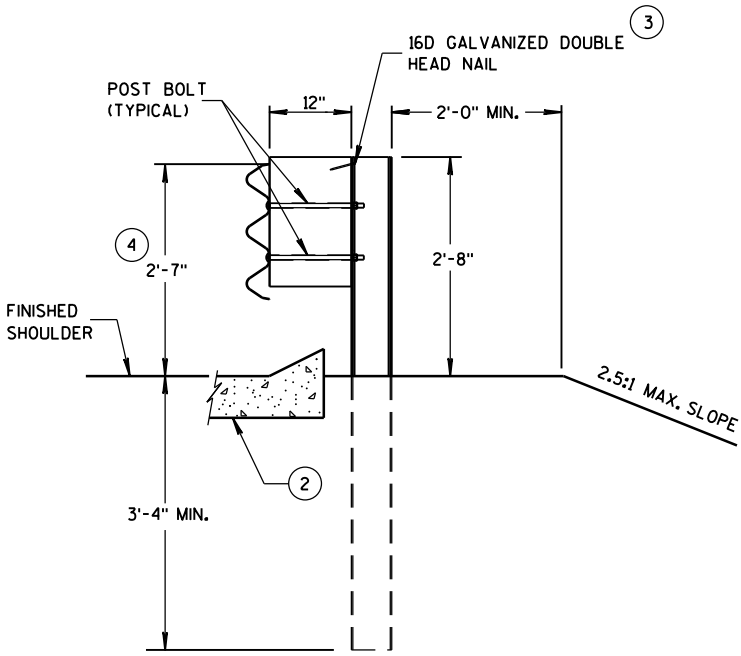
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

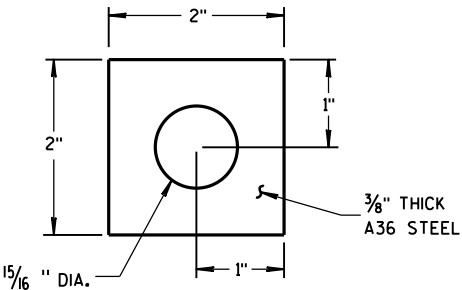
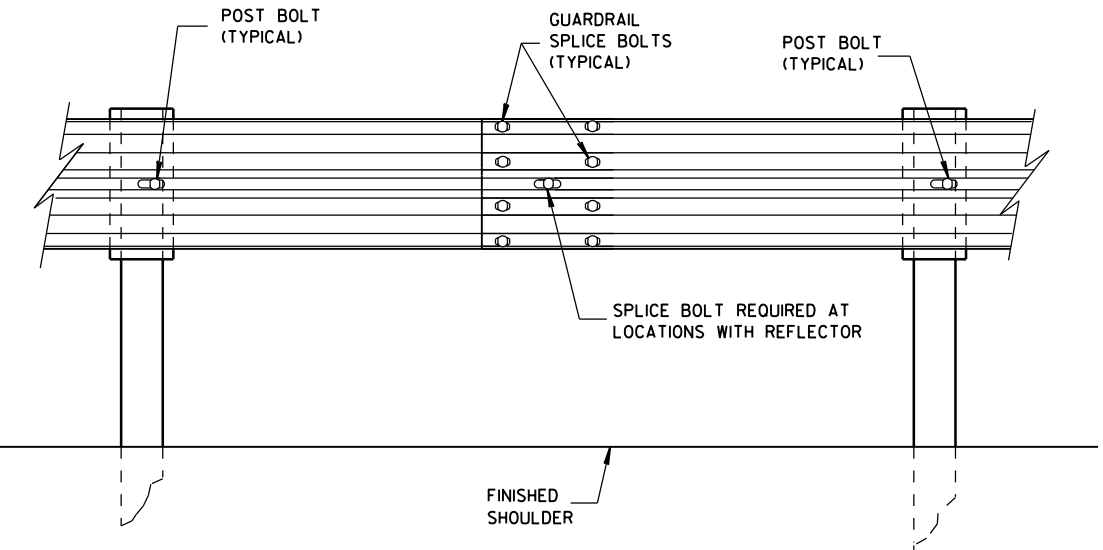
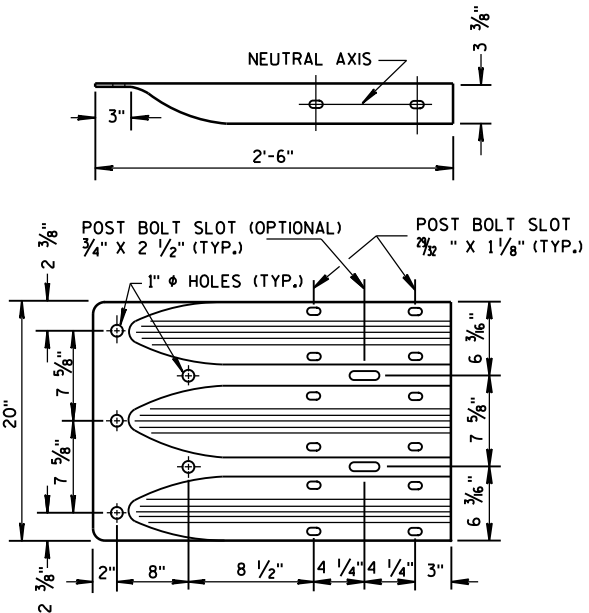


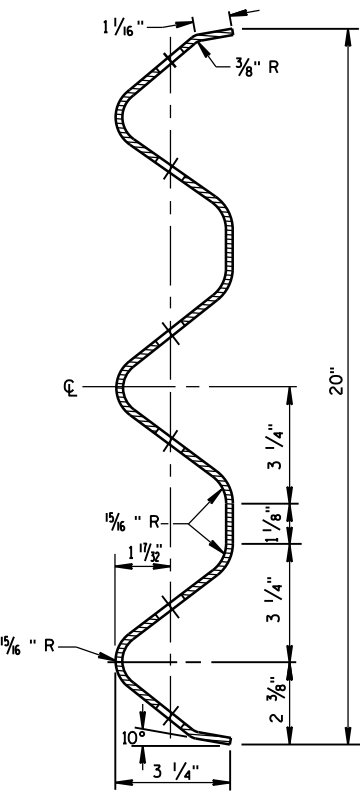
PLATE WASHER DETAIL



SPlice DETAIL



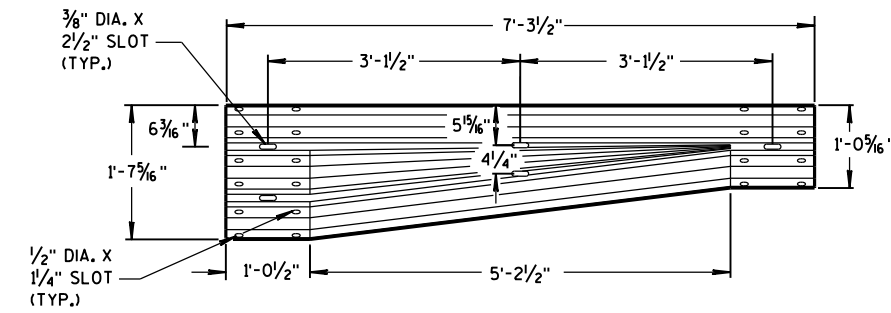
THRIE BEAM
TERMINAL CONNECTOR



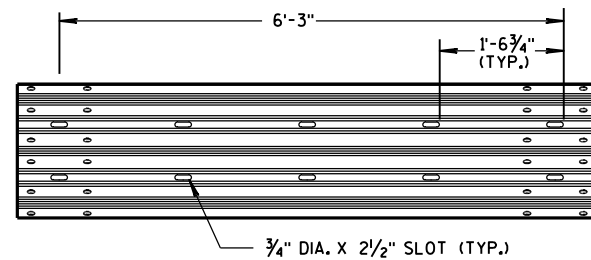
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

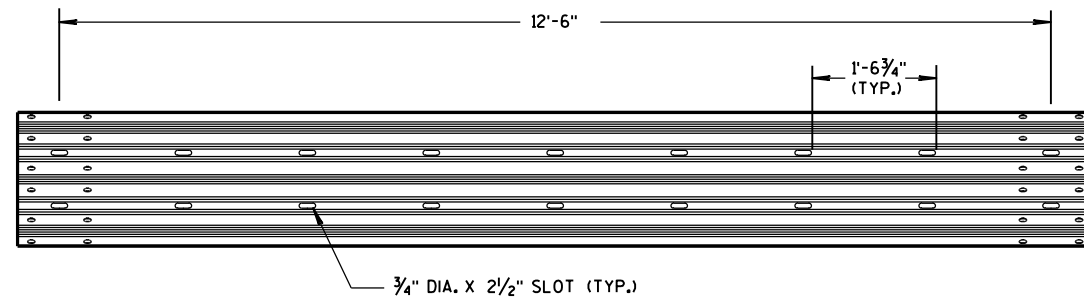
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



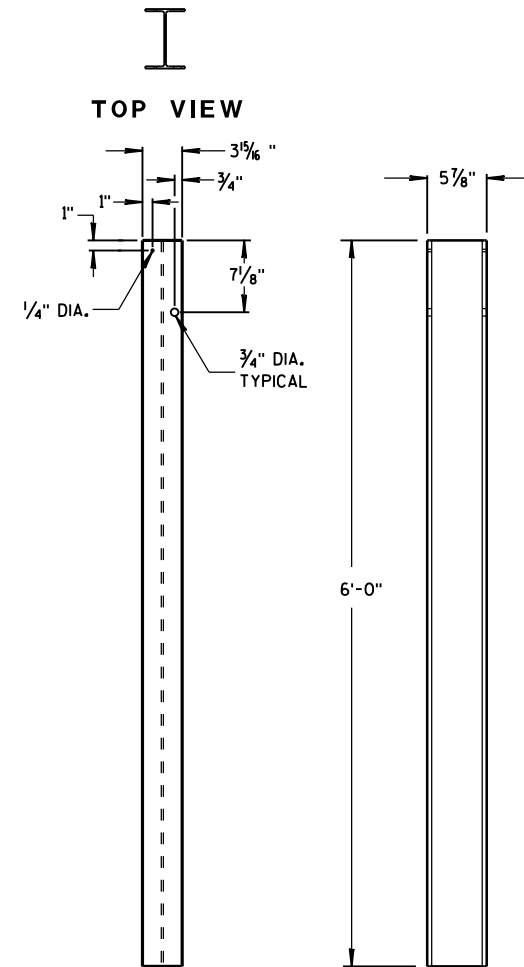
W-BEAM TO THRIE BEAM TRANSITION SECTION



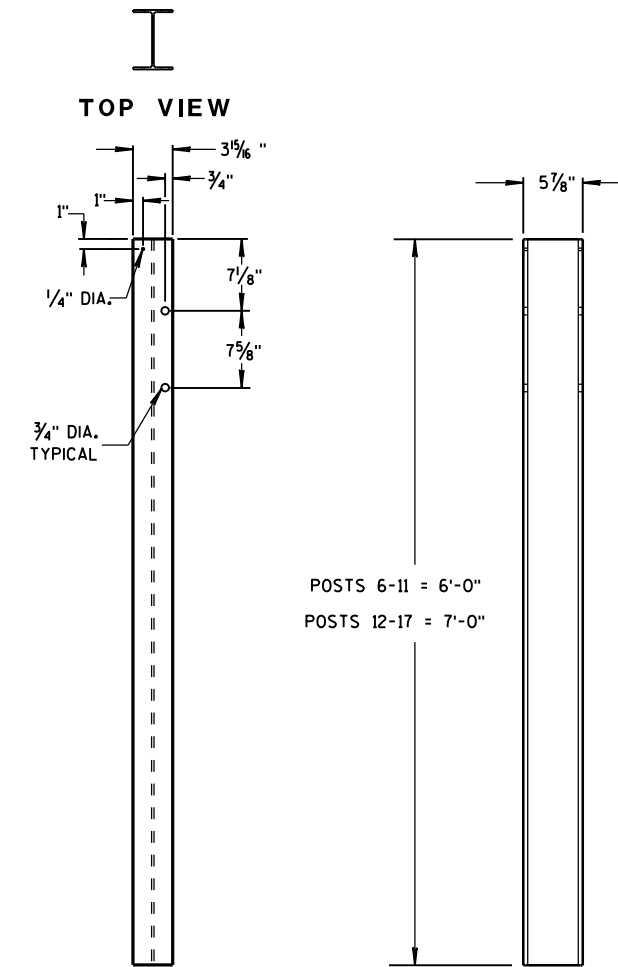
6'-3" THRIE BEAM SECTION



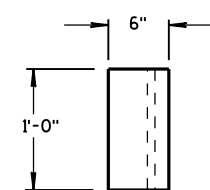
12'-6" THRIE BEAM SECTION



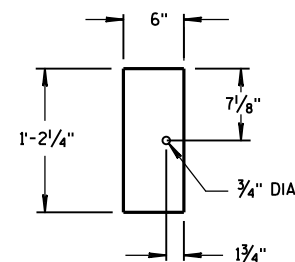
FRONT VIEW SIDE VIEW
STEEL POSTS 1-5



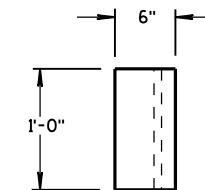
FRONT VIEW SIDE VIEW
STEEL POSTS 6-17



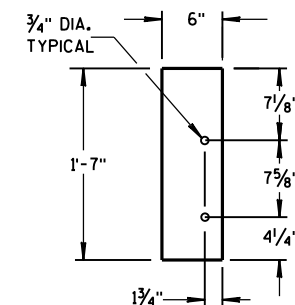
TOP VIEW



FRONT VIEW
BLOCKOUT
POSTS 1-5



TOP VIEW



FRONT VIEW
BLOCKOUT
POSTS 6-17

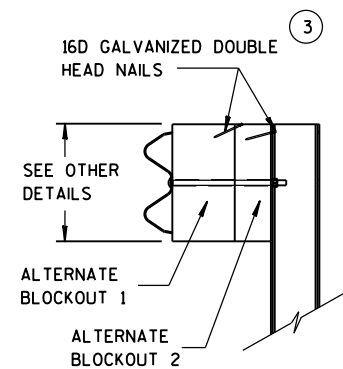
GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

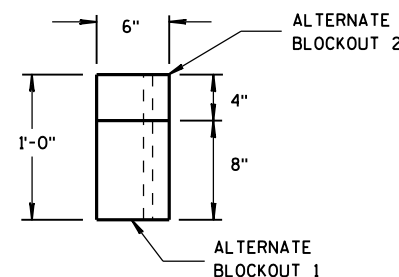
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

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

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



SIDE VIEW

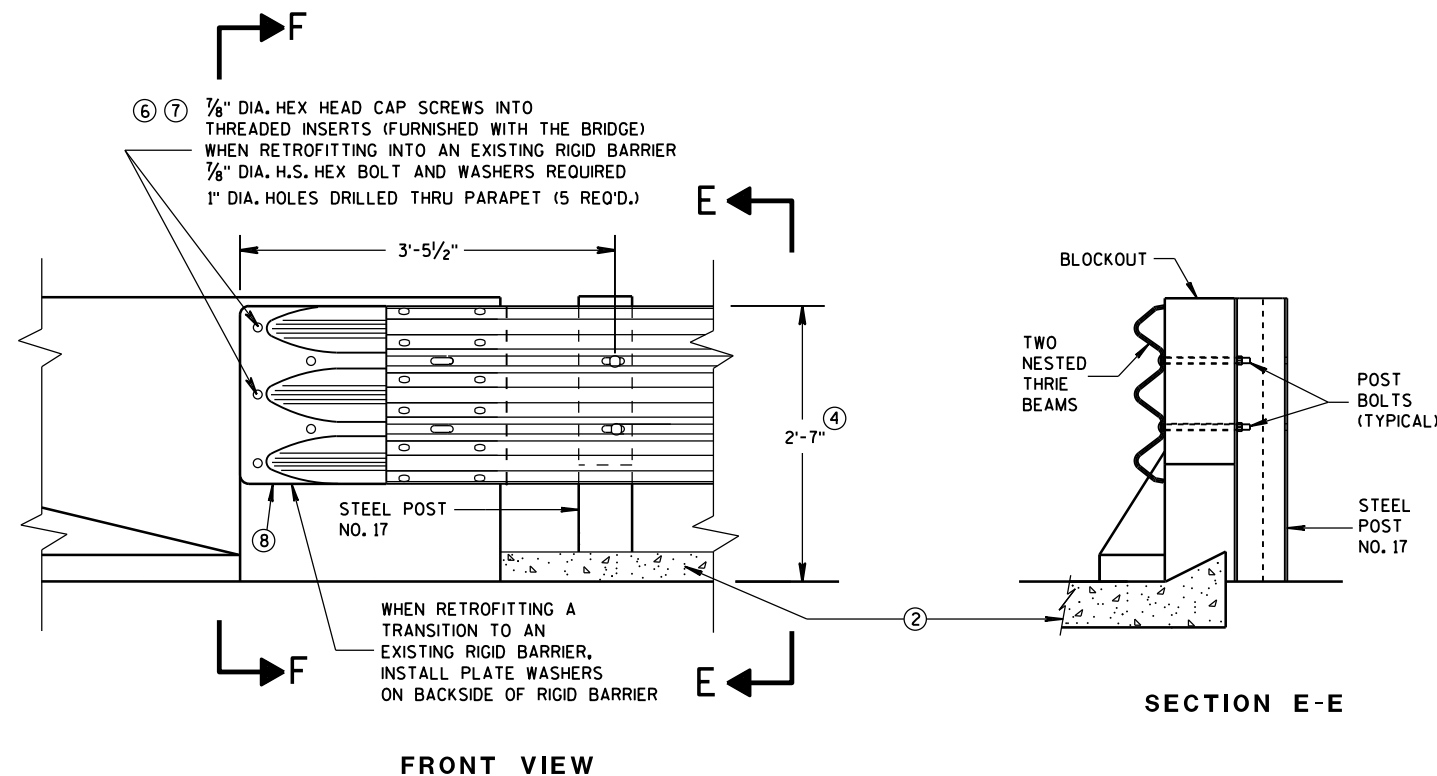


TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

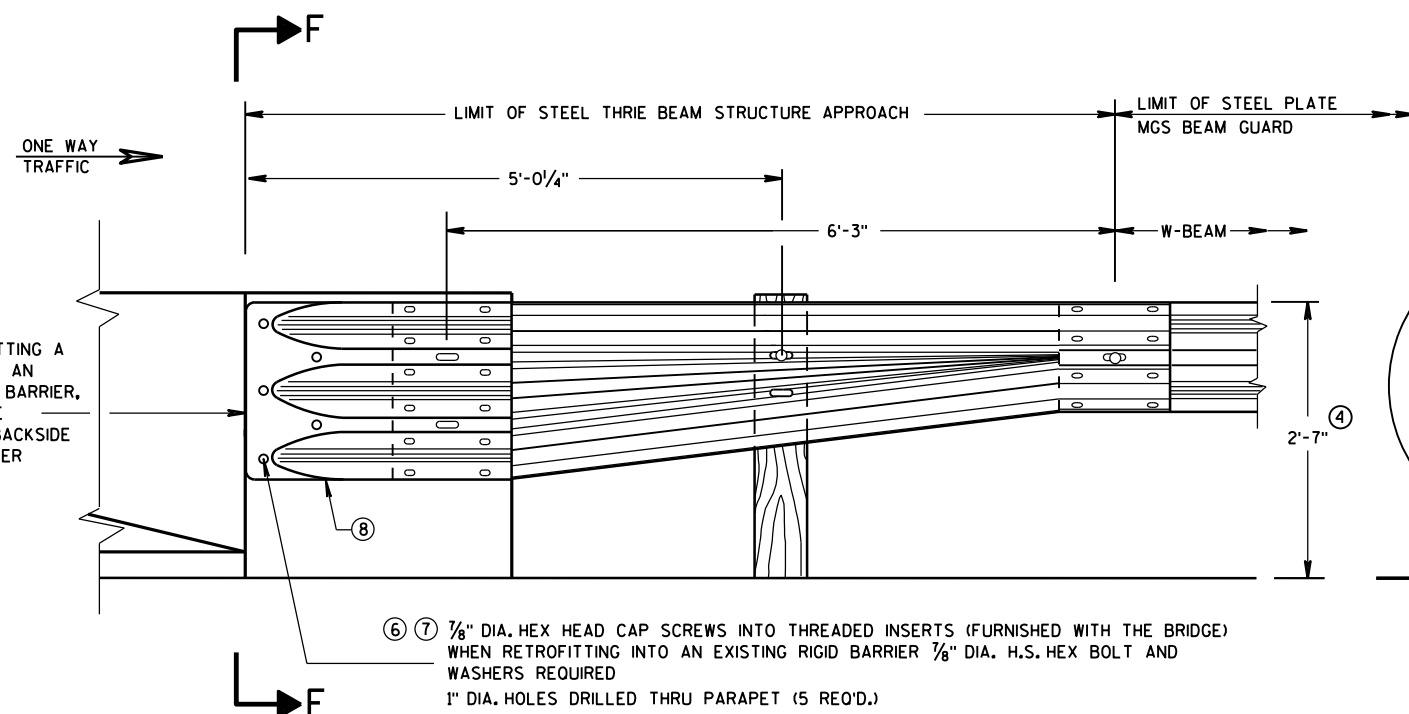
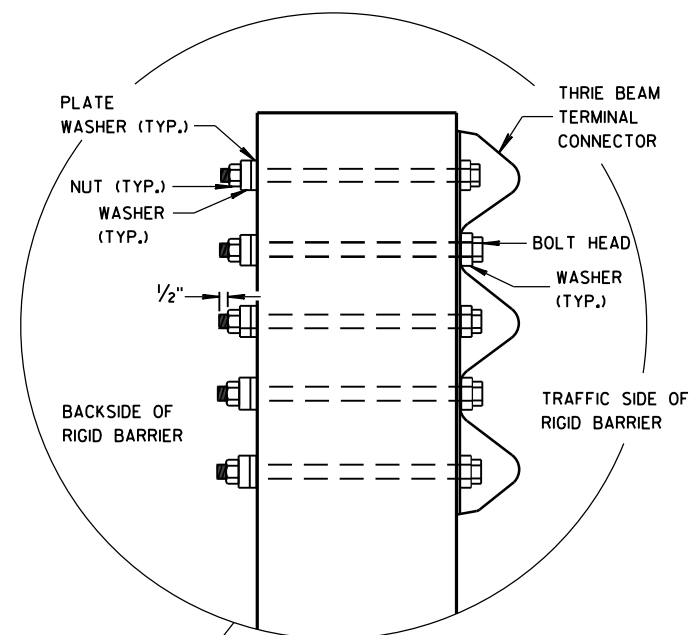
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



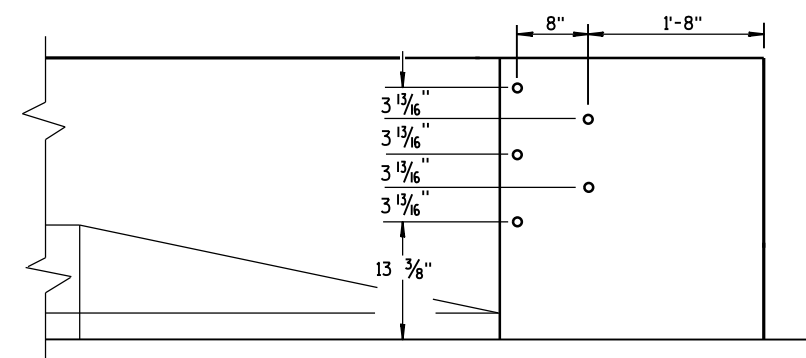
GENERAL NOTES

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

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



SECTION F-F



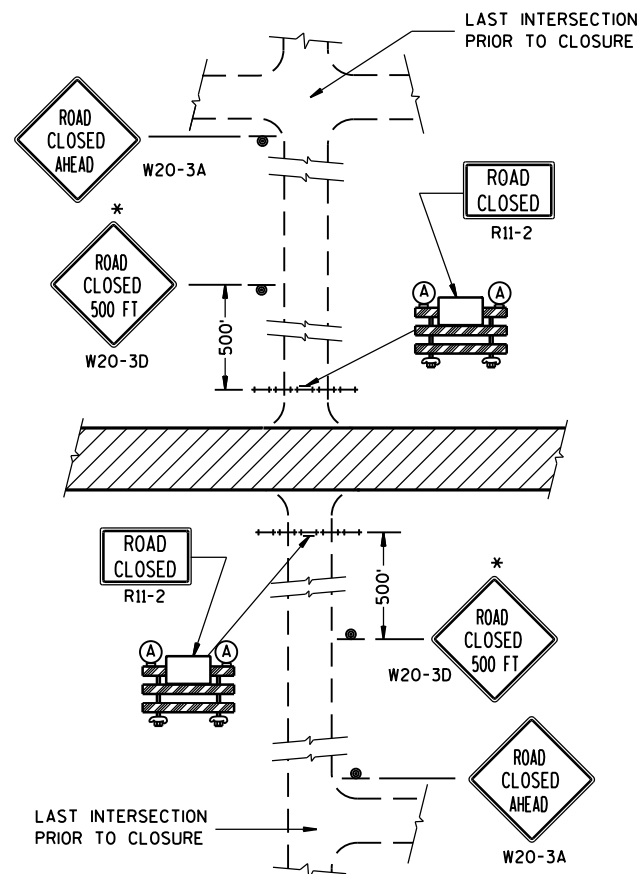
DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

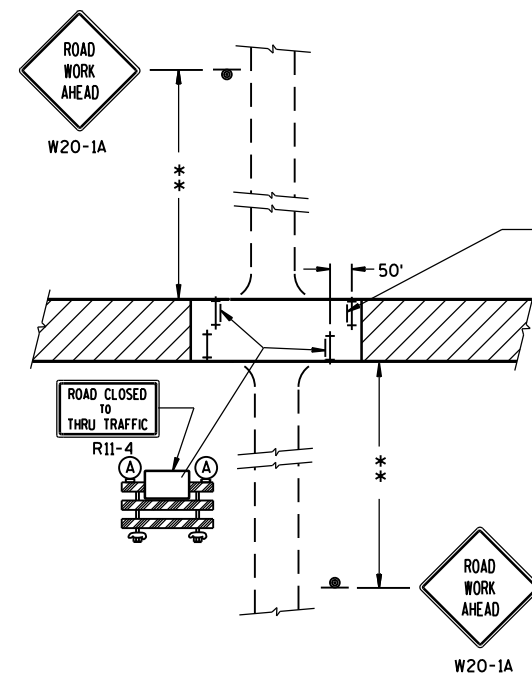
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
FHWA

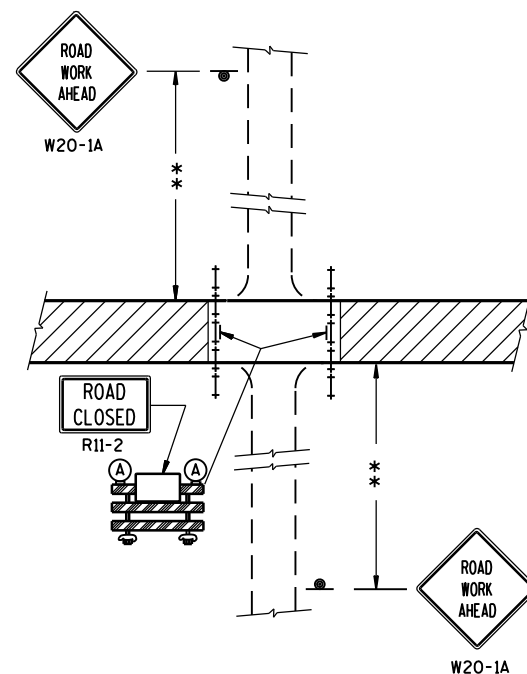
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



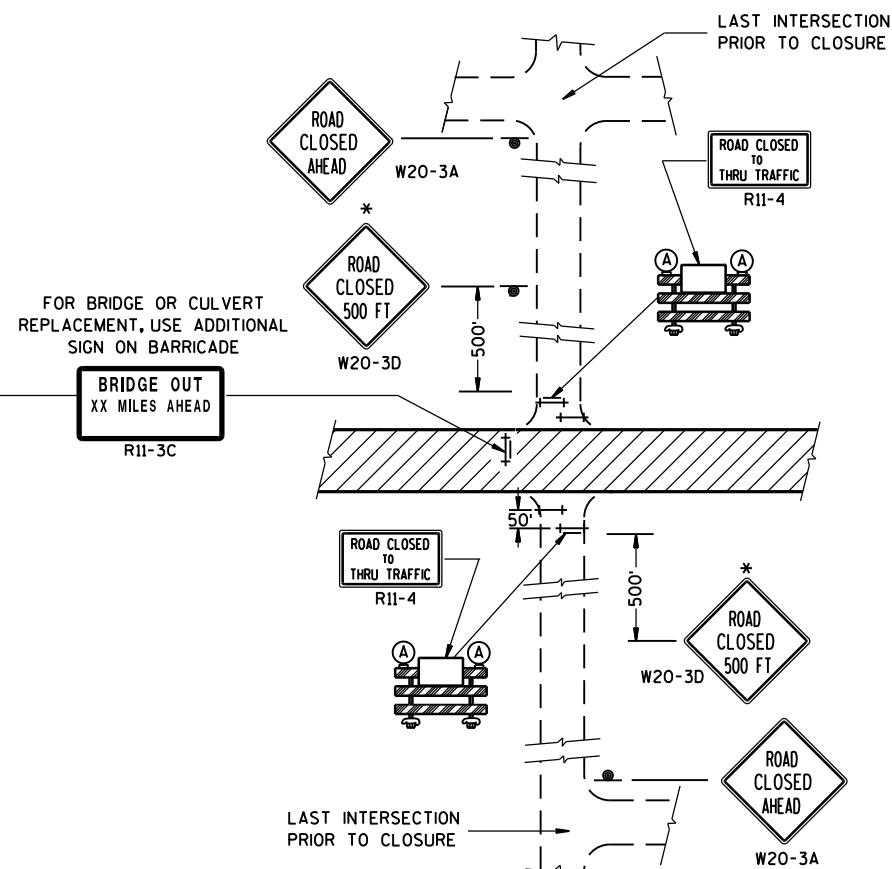
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

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.

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

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 AND R11-4 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.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ⊢ TYPE III BARRICADE
- ⊢ TYPE III BARRICADE WITH ATTACHED SIGN
- Ⓐ TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

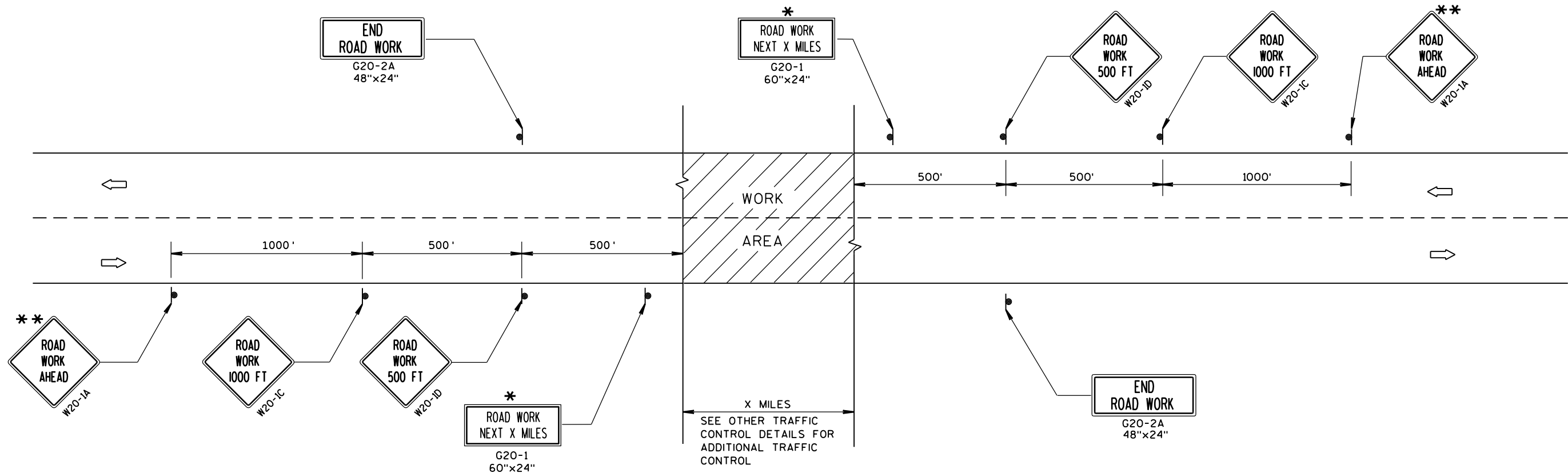
APPROVED

Sept. 2015

DATE

FHWA

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

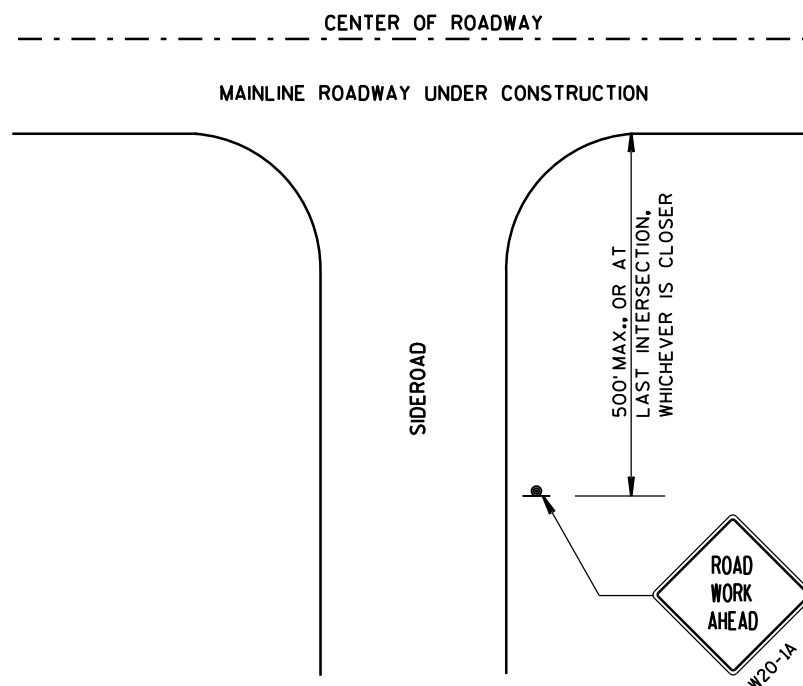
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

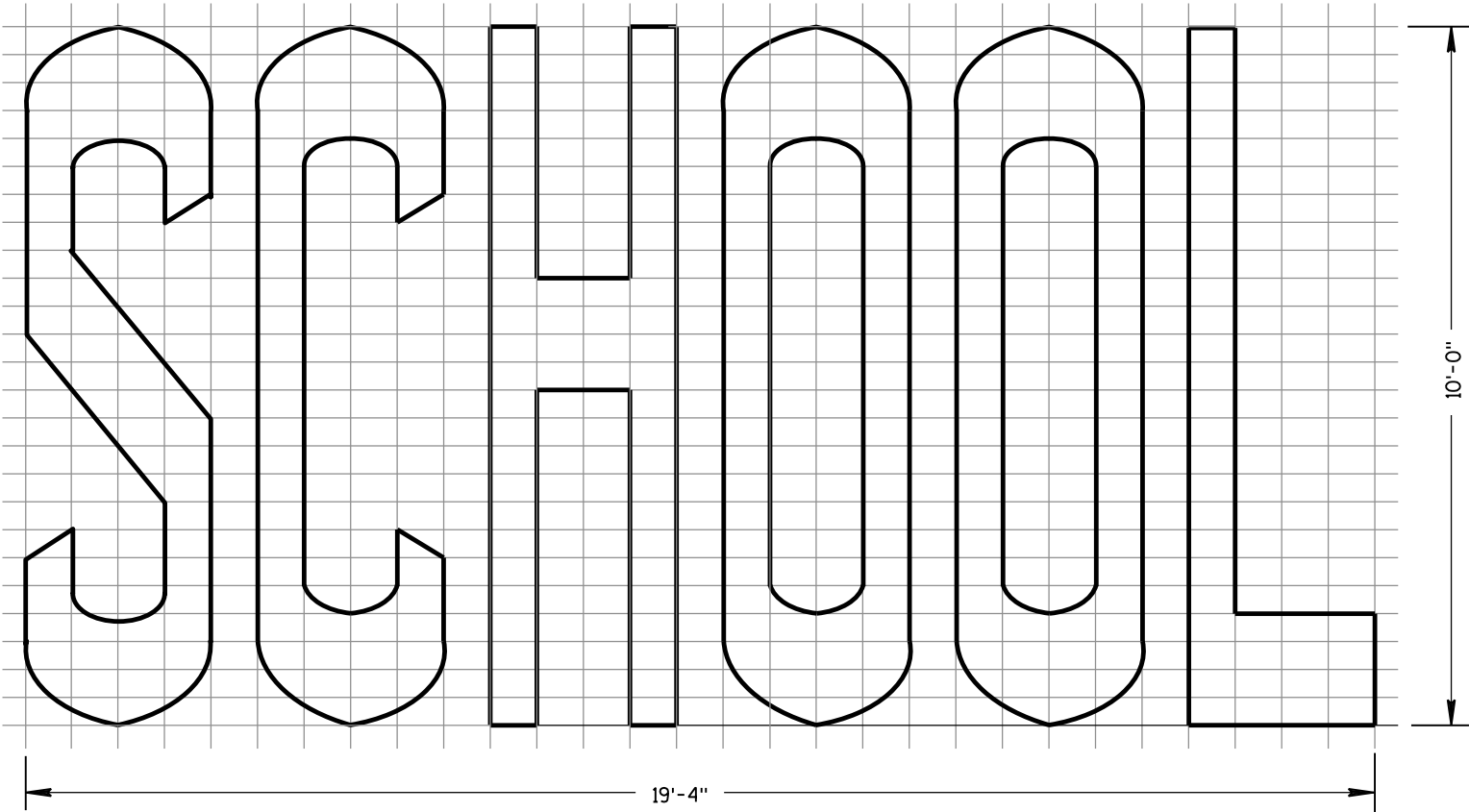
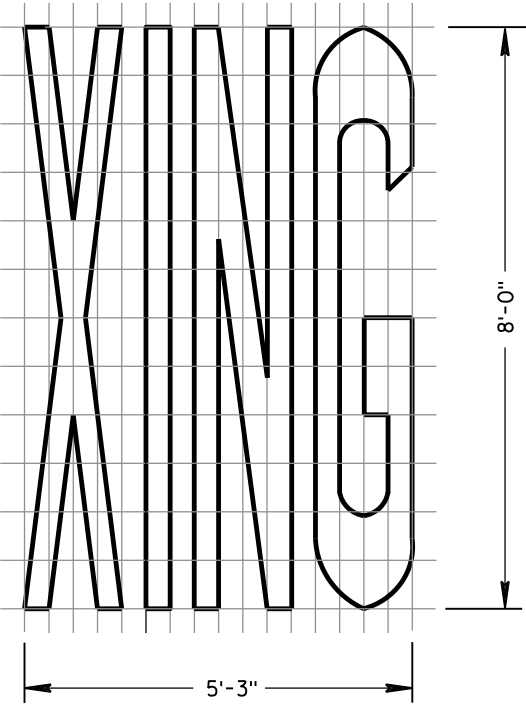
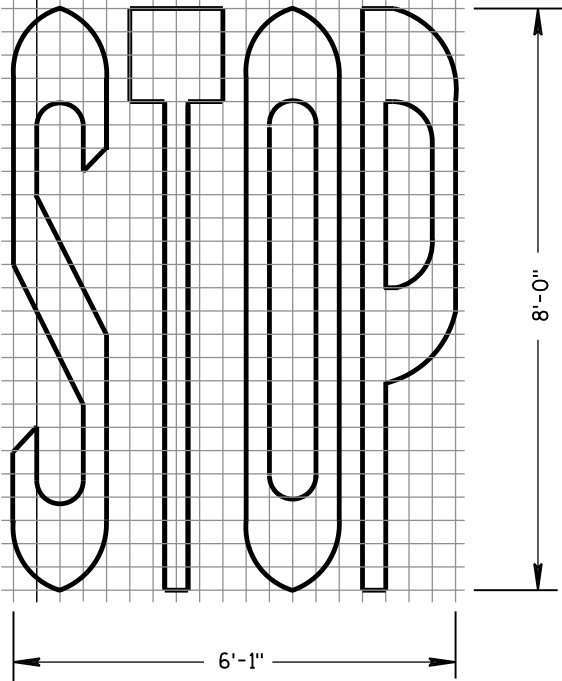
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

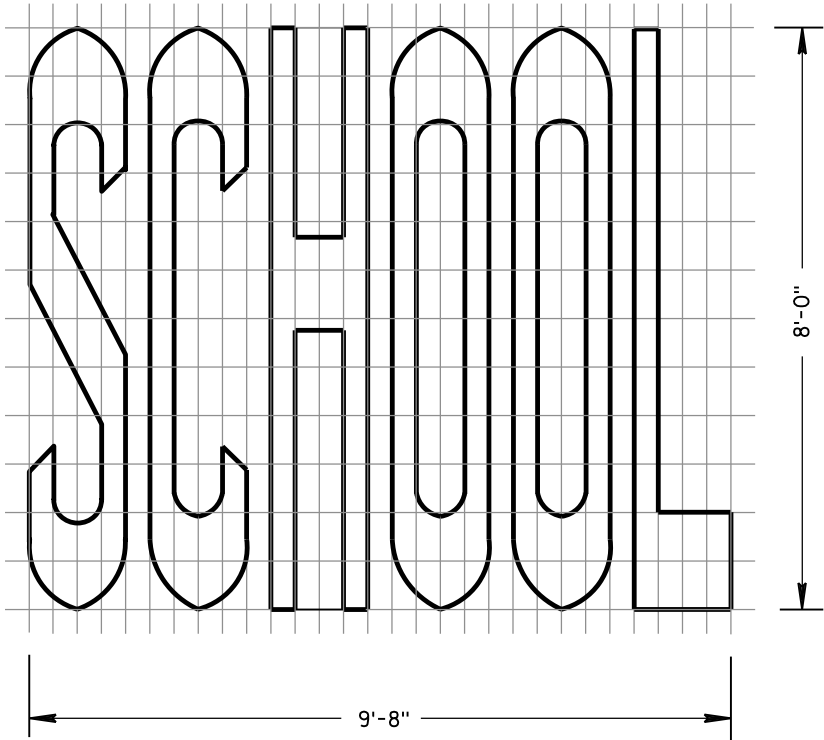
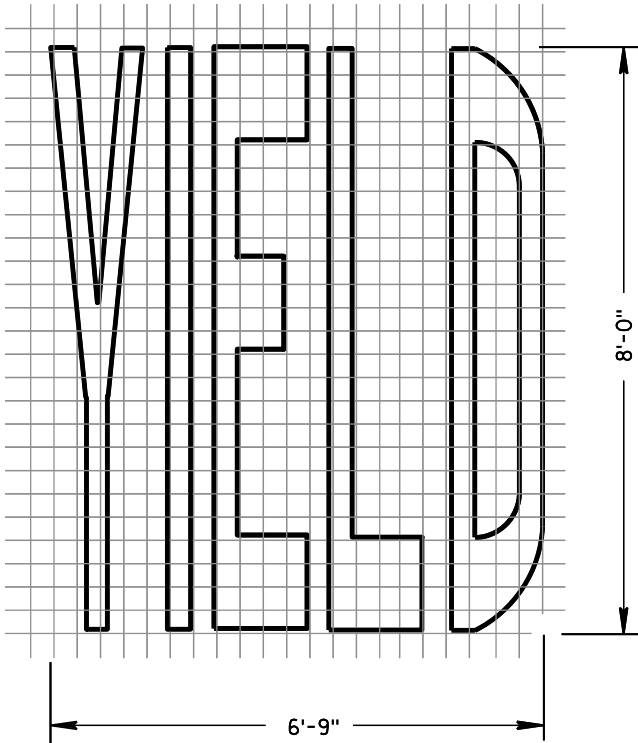
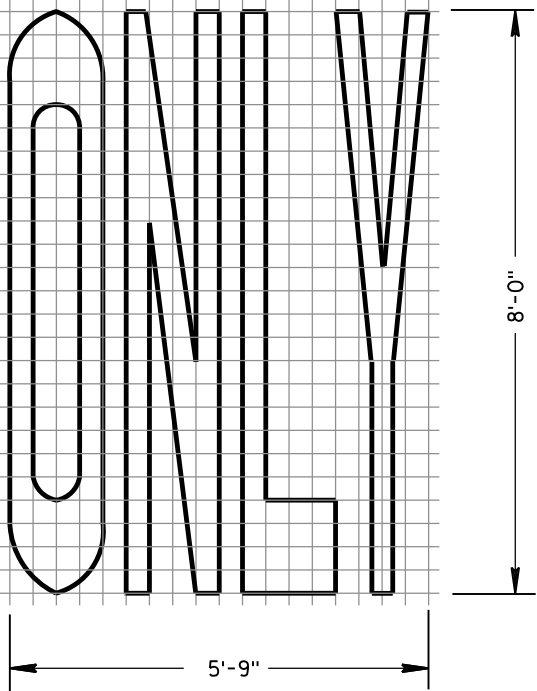
APPROVED
Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER

GENERAL NOTES

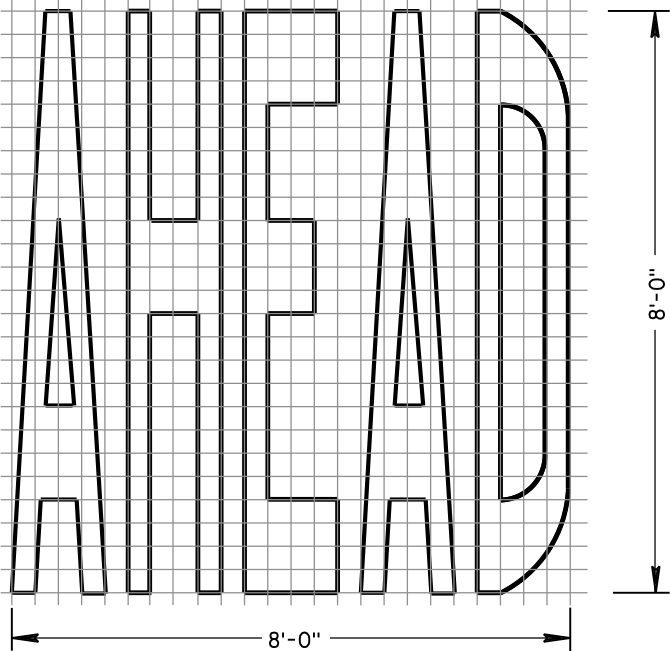
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



TWO-LANE



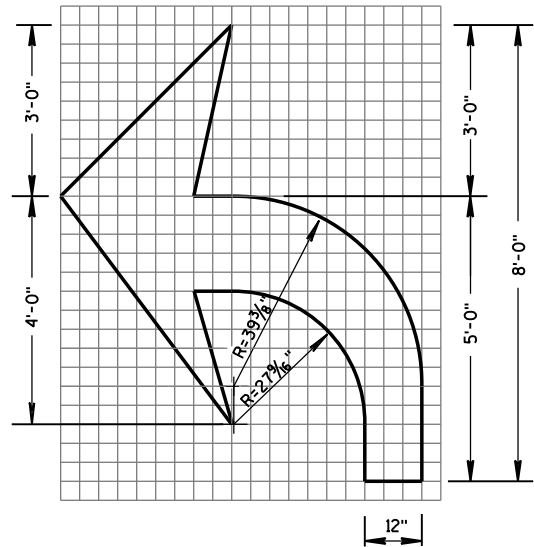
SINGLE-LANE



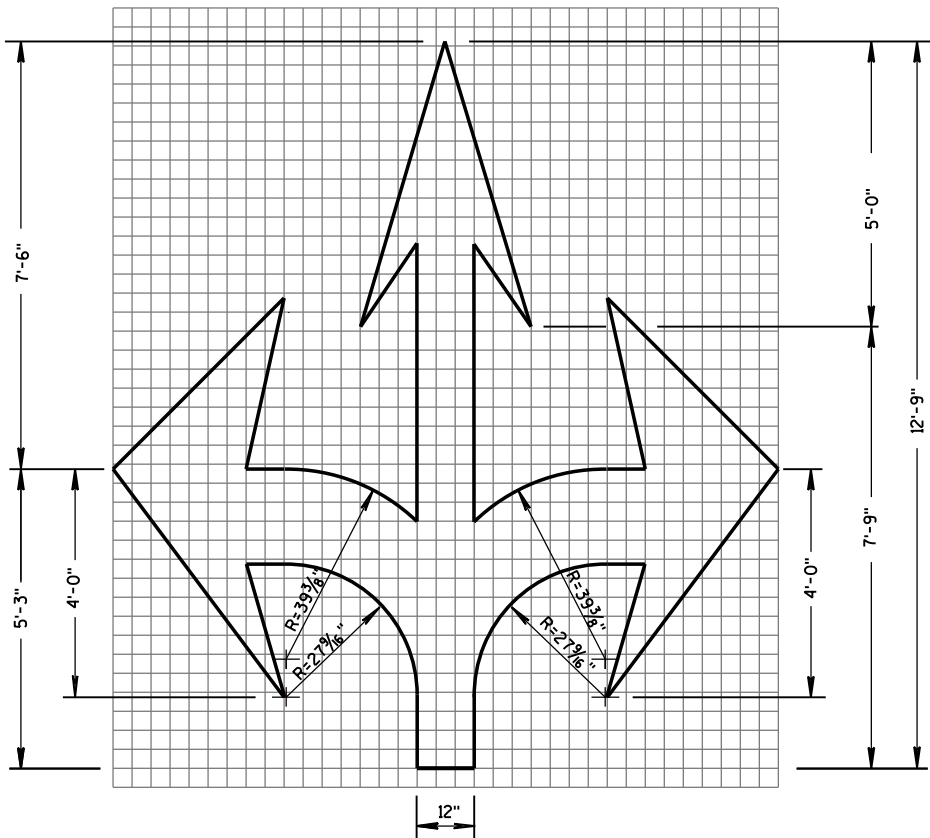
PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

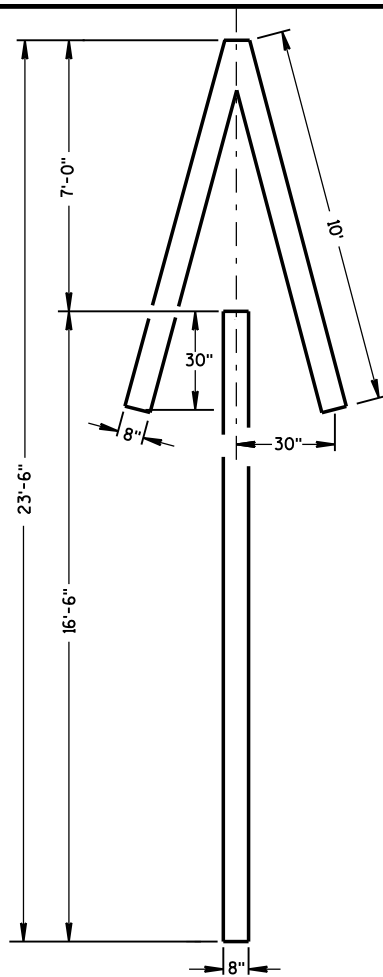
APPROVED
4-18-16 DATE /S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER
FHWA



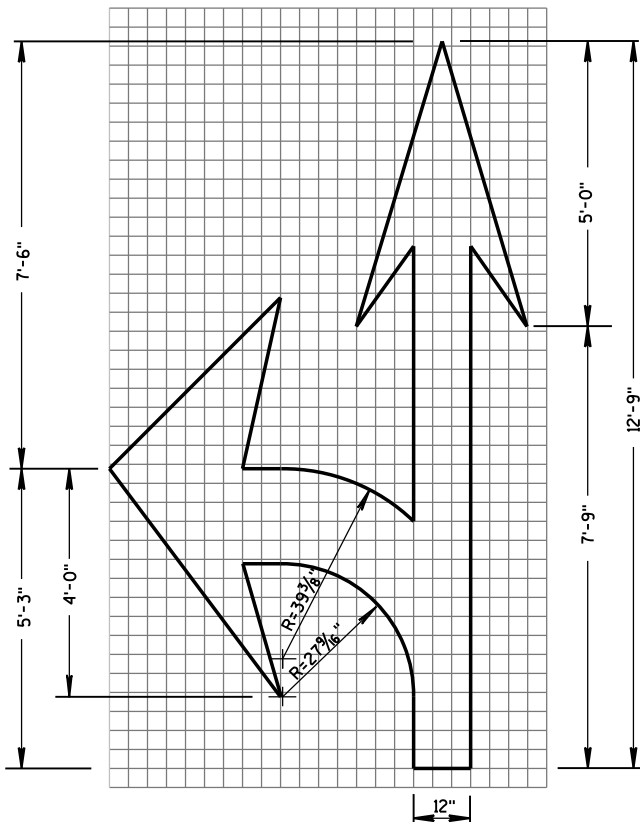
TYPE 2



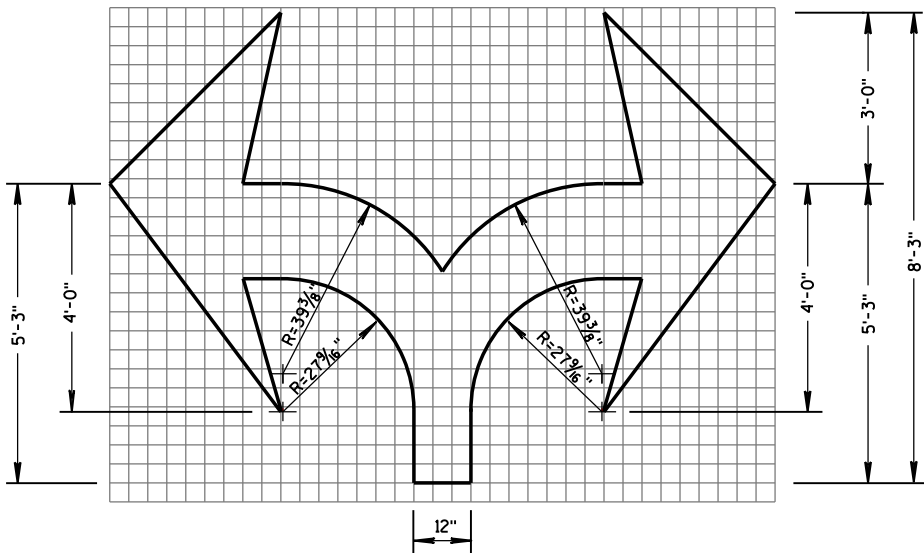
TYPE 6



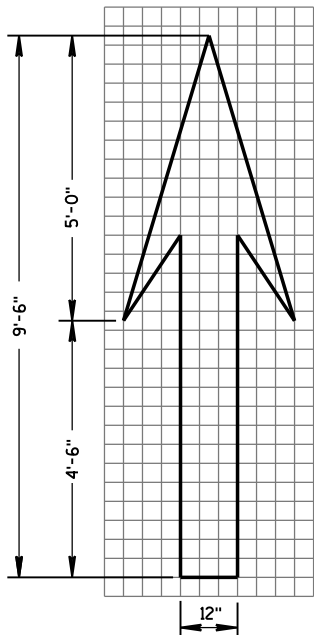
TYPE 4



TYPE 3



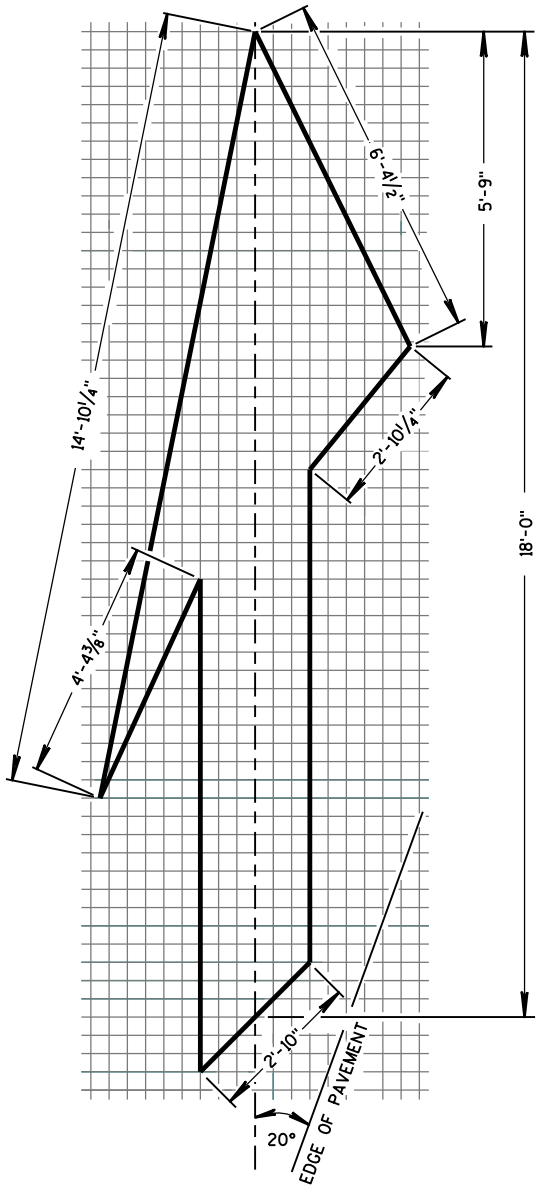
TYPE 7



TYPE 1

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.

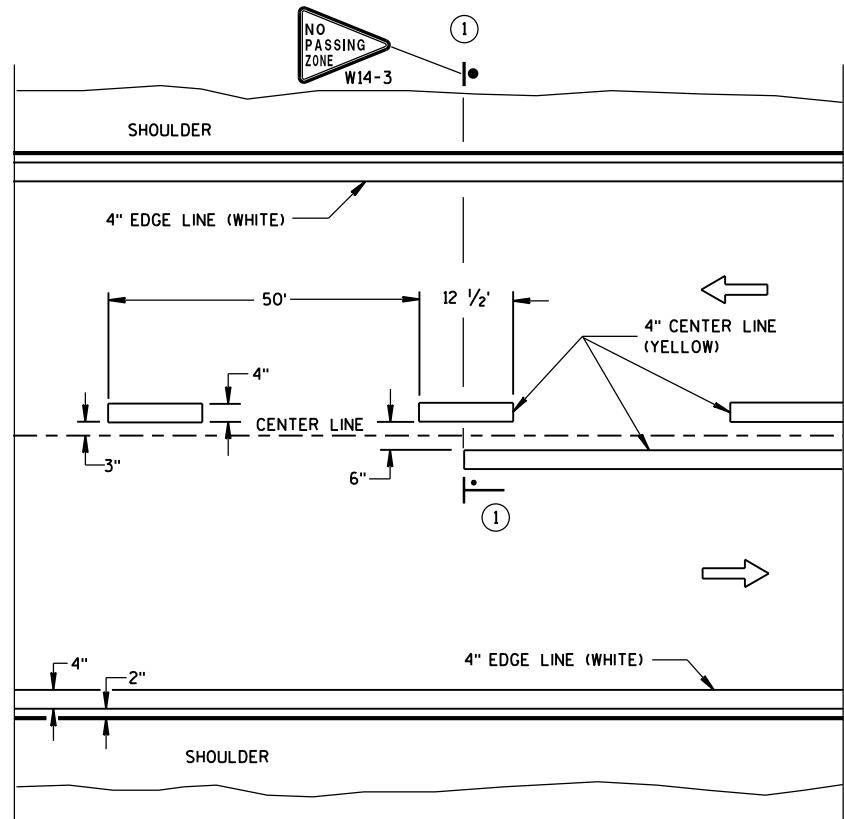


TYPE 5 LANE DROP ARROW

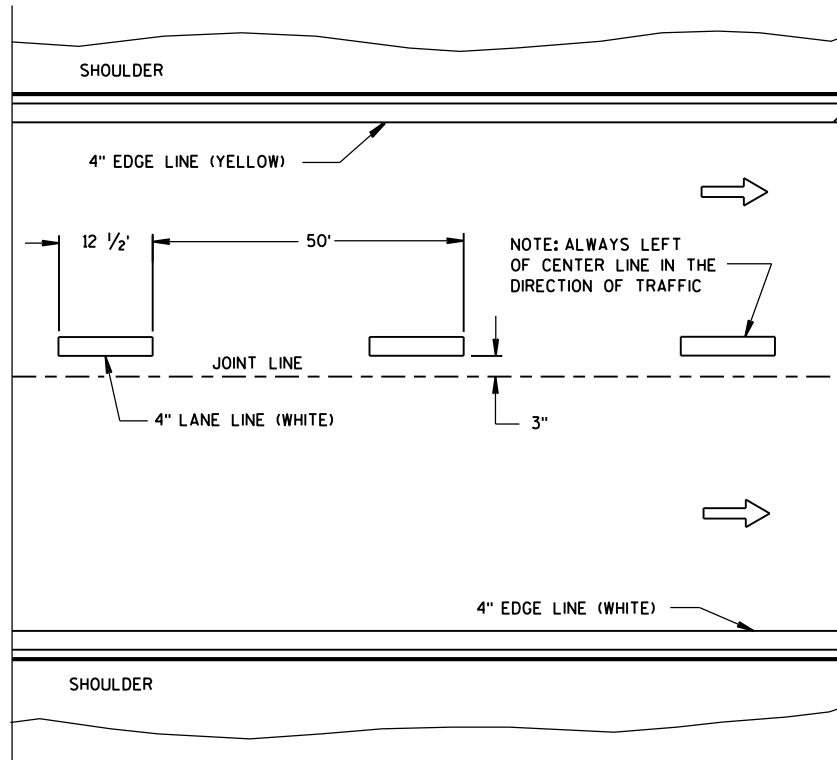
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-16 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

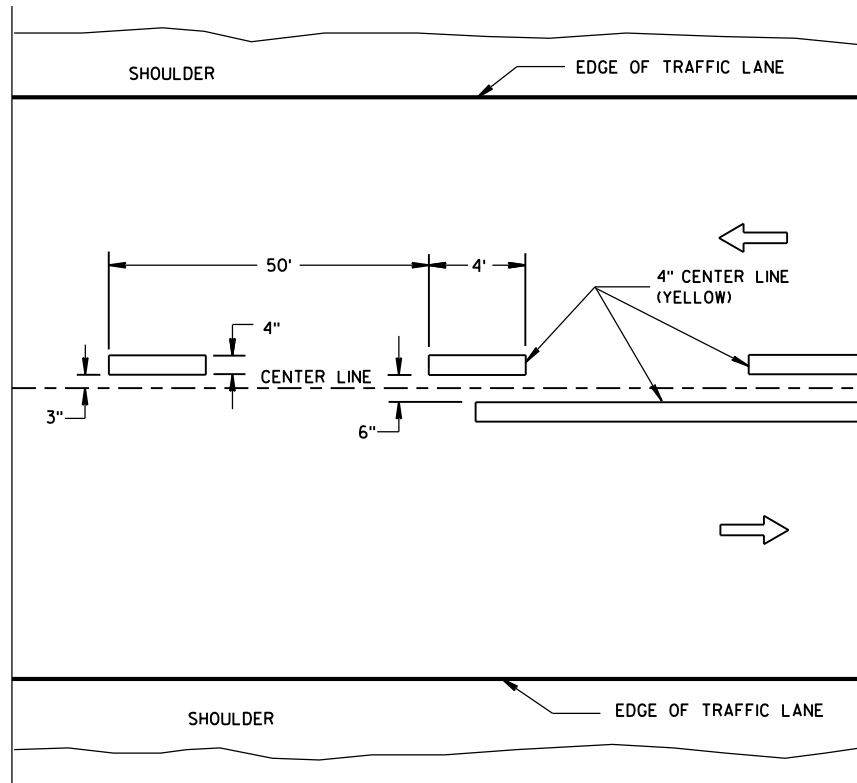


TWO WAY TRAFFIC

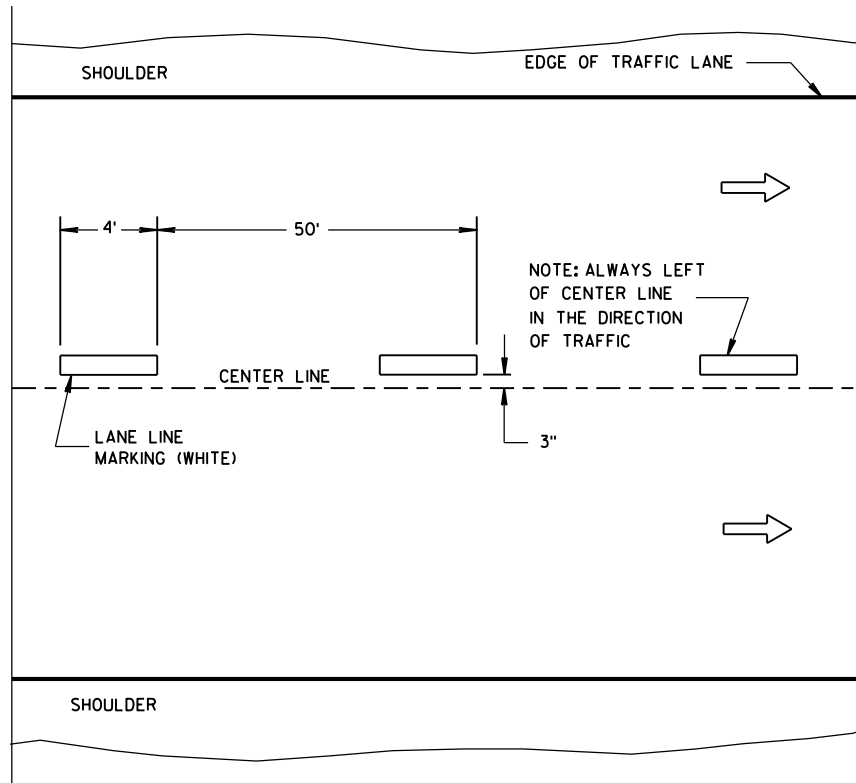


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

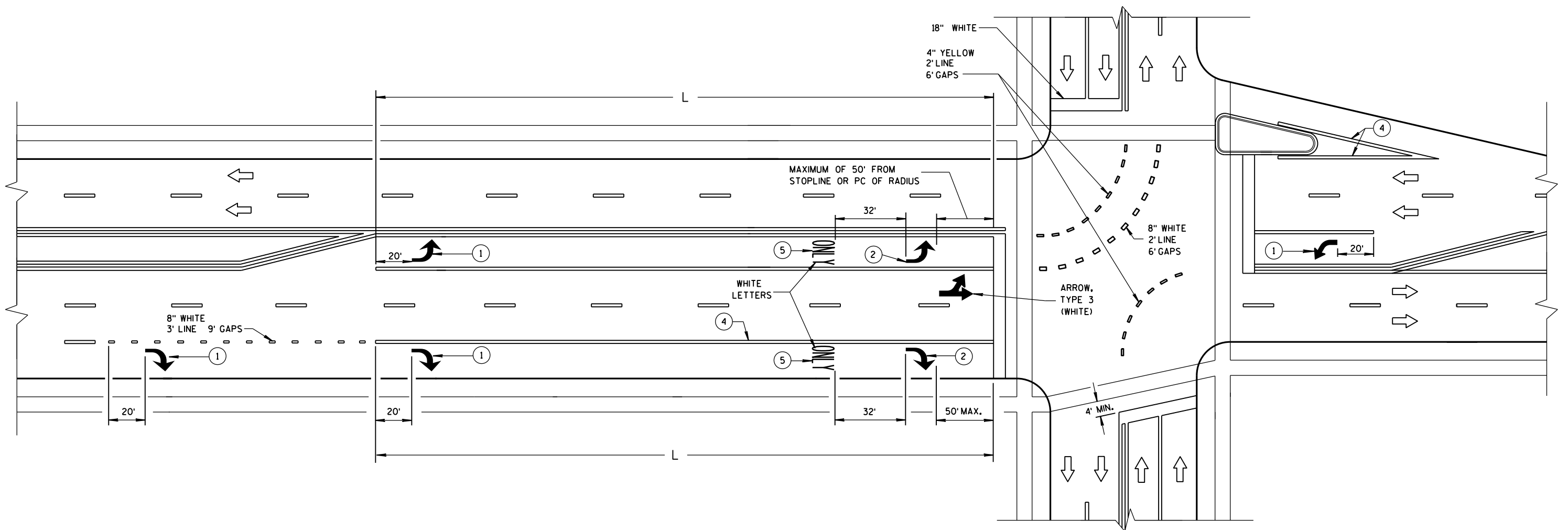
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



GENERAL NOTES

- ① REQUIRED ARROW, TYPE 2 (WHITE).
- ② REQUIRED ARROW, TYPE 2 (WHITE) WHEN L IS GREATER THAN 78 FEET AND LESS THAN OR EQUAL TO 166 FEET.
- ③ A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ④ 8" WHITE
- ⑤ REQUIRED WORD ONLY WHEN L IS GREATER THAN 166 FEET.

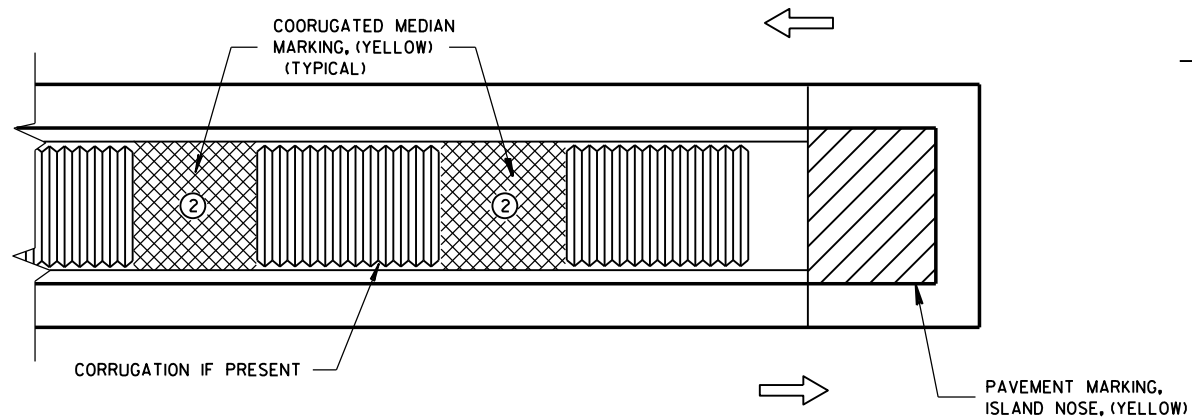
TWO WAY LEFT TURN LANE

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL

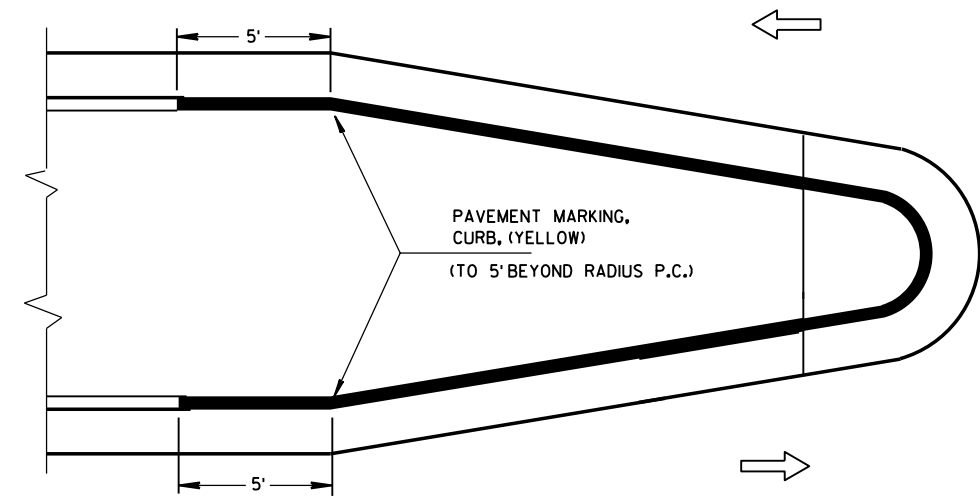
L = LENGTH OF TURN BAY

PAVEMENT MARKING
(TURN LANES)

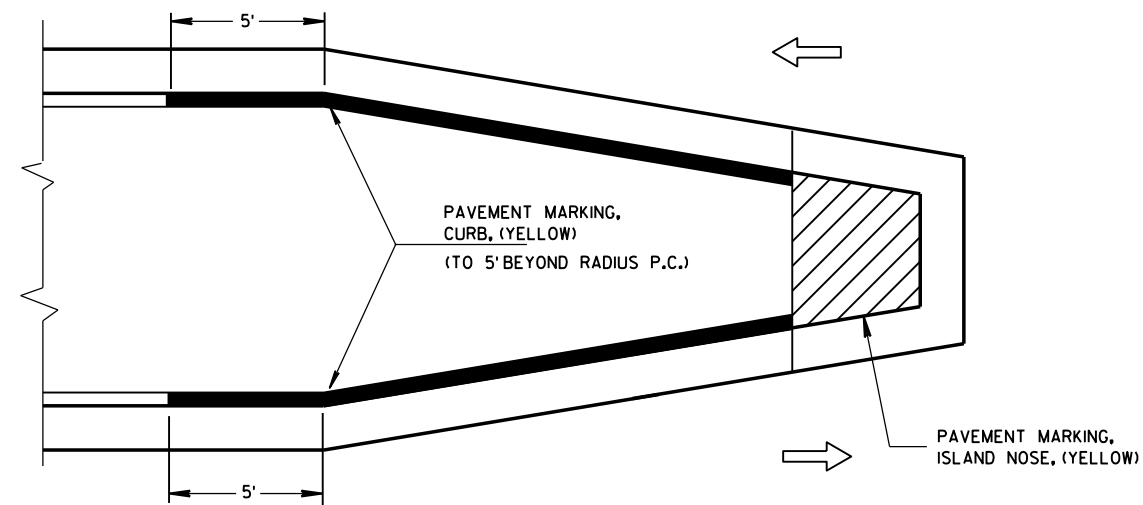
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

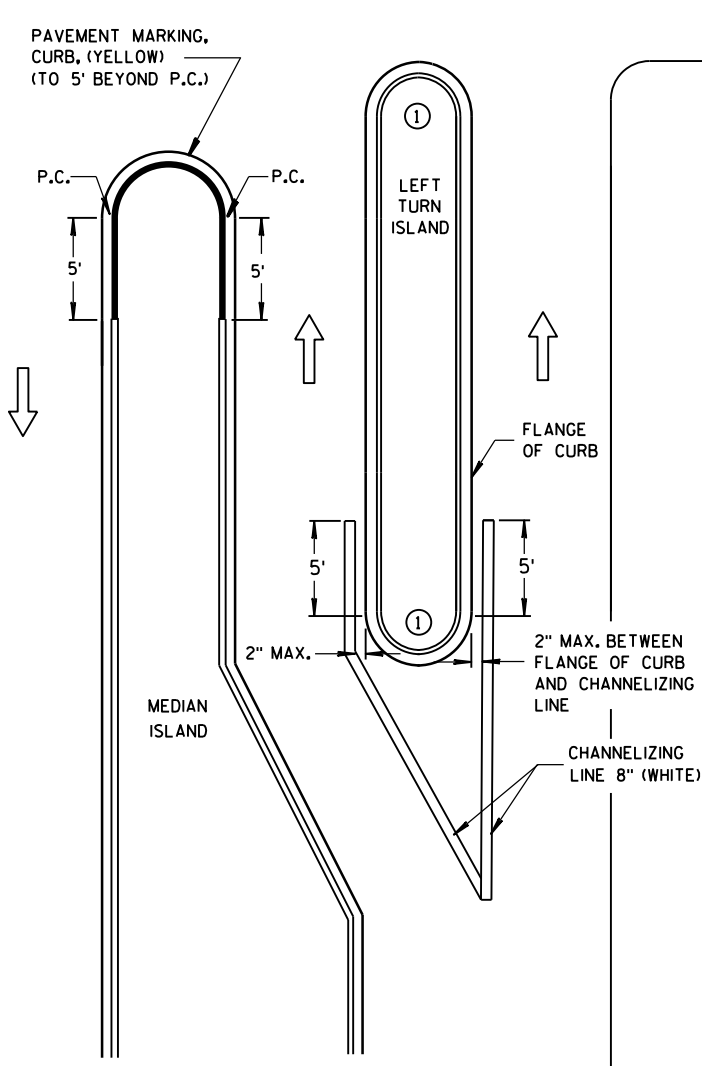


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

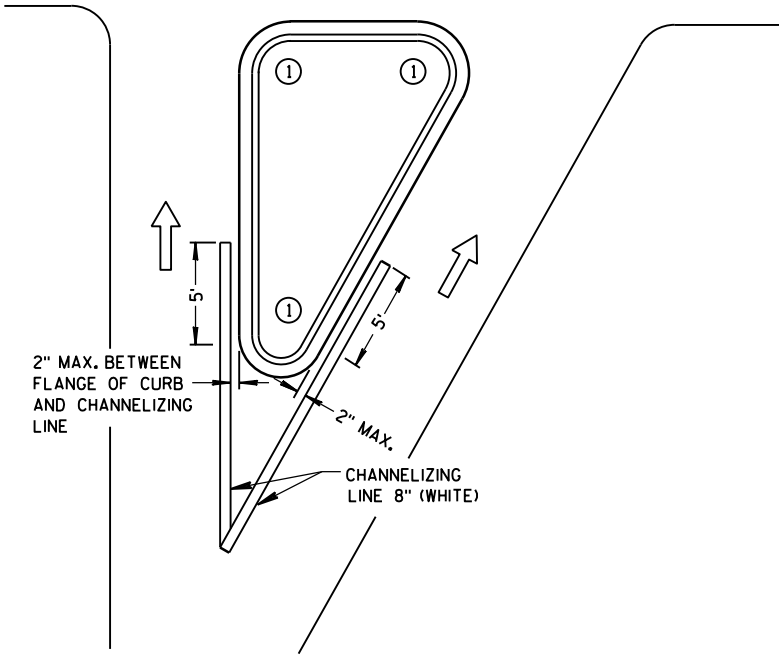
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS



LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

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



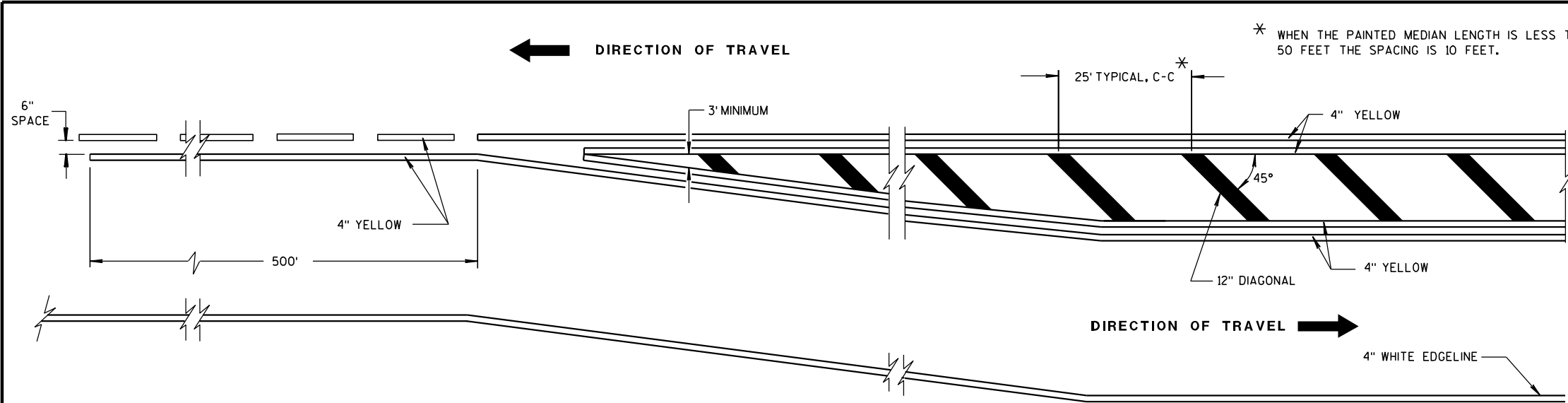
RIGHT TURN ISLAND

LEGEND

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

PAVEMENT MARKING (ISLANDS)

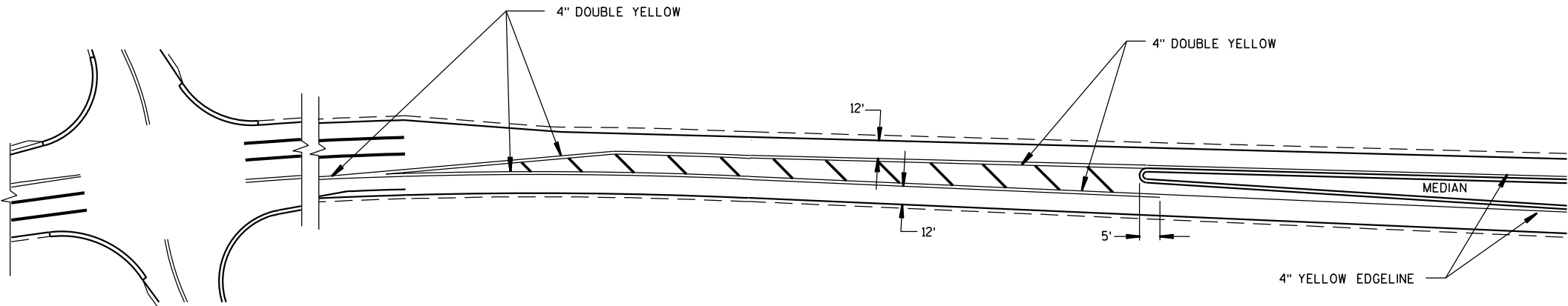
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



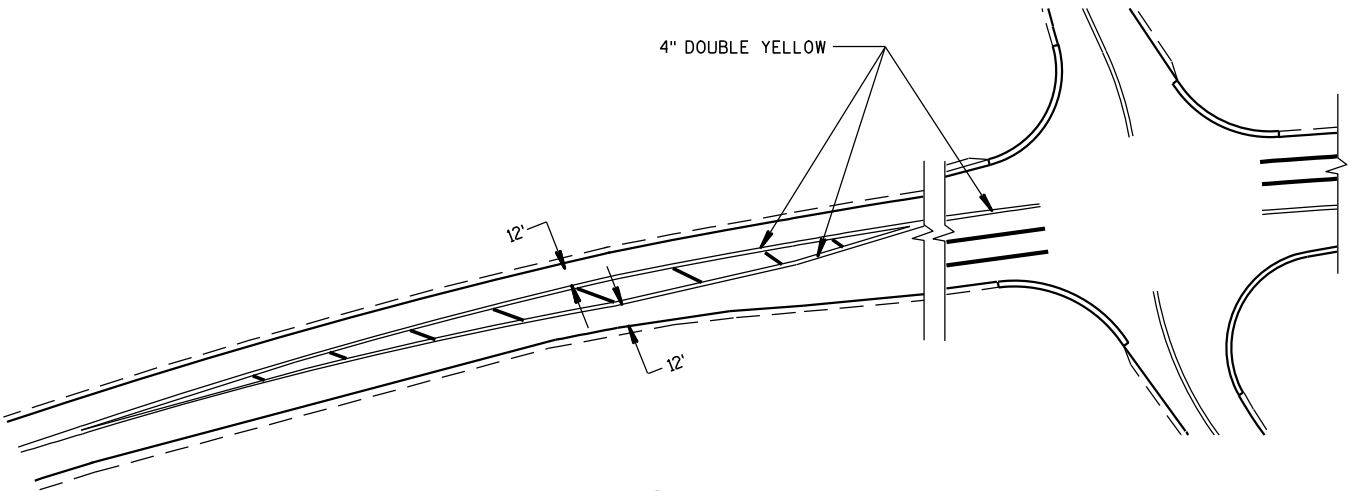
MEDIAN ISLAND DETAIL

GENERAL NOTE

DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.

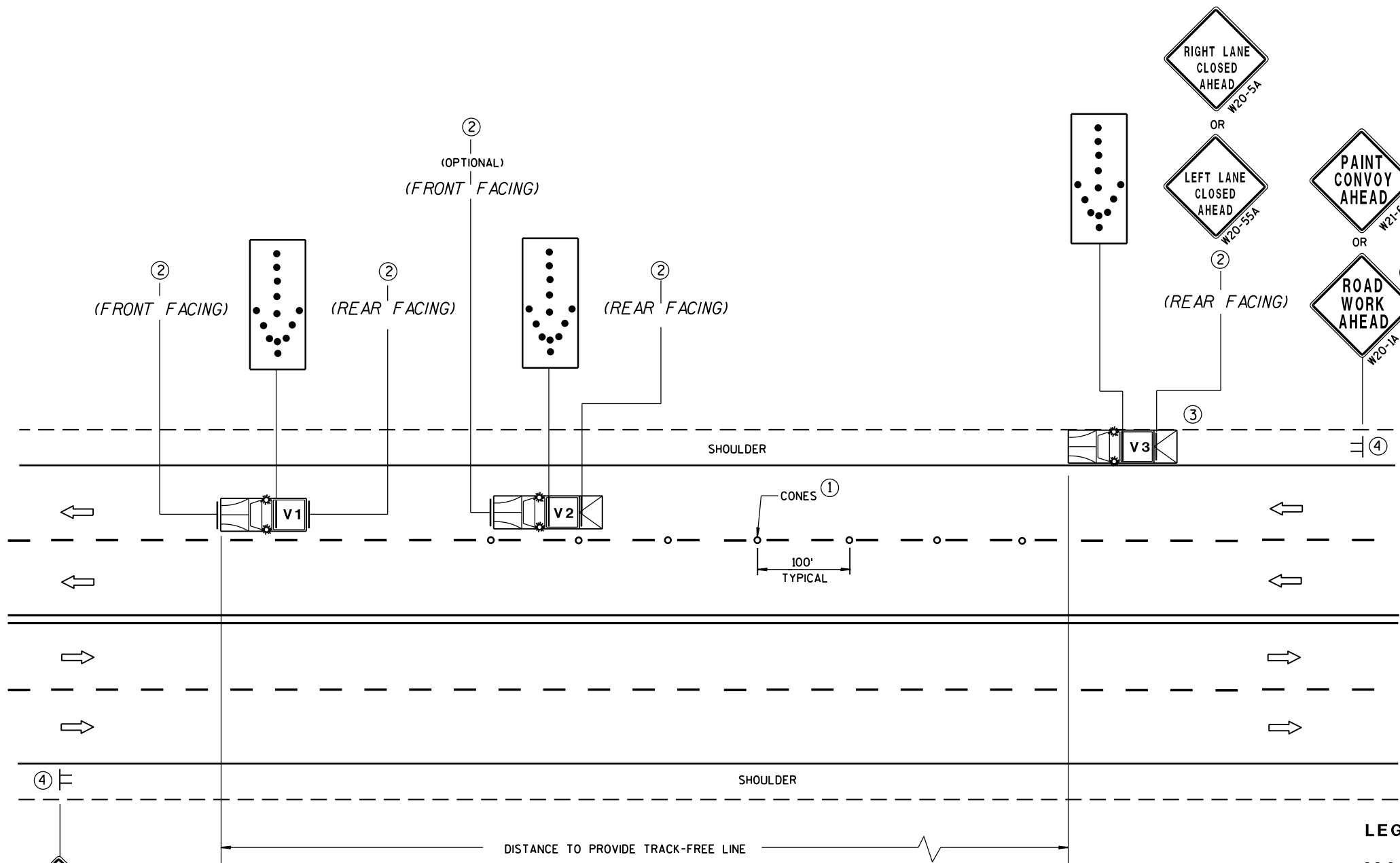


APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON APPROACH MARKINGS

MEDIAN ISLAND MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 2-5-09 DATE	/S/ Thomas N. Notbohm STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

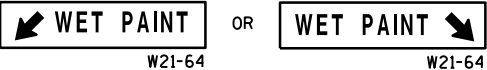


MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE UNDIVIDED ROADWAY

GENERAL NOTES

- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.
- IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.
- ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.
- DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.
- WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.
- USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.
- FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH.
- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.
- THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE OR LANELINE MARKING FOR MULTILANE UNDIVIDED ROADWAYS.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.



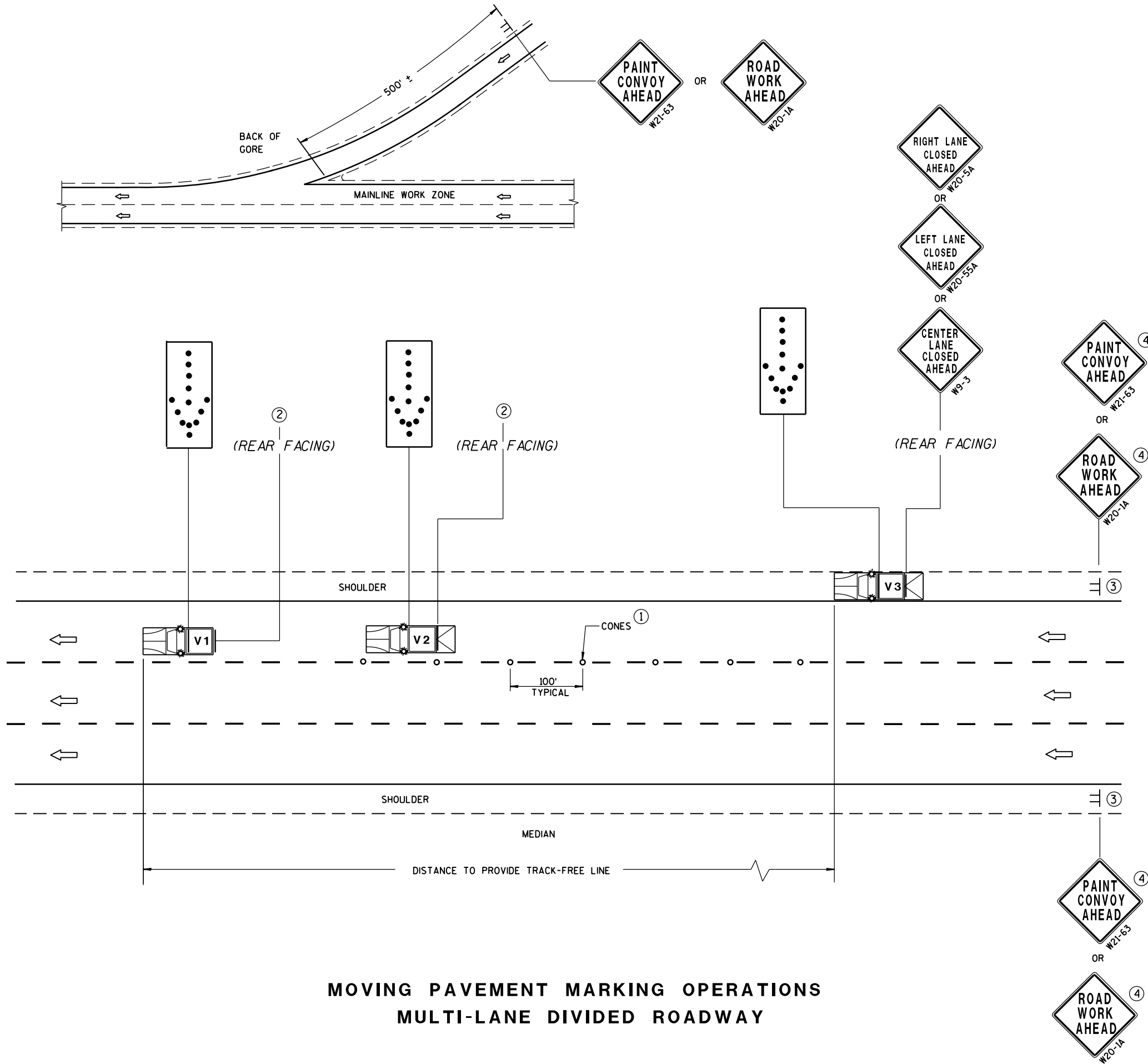
LEGEND

- V1 LEAD VEHICLE
- V2 SHADOW VEHICLE
- V3 TRAIL VEHICLE WITH TMA
- TMA TRUCK-MOUNTED ATTENUATOR
- Sign on temporary support
- Direction of traffic
- Cones
- Flashing arrow panel (merge)

MOVING PAVEMENT MARKING
OPERATION
MULTI-LANE UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

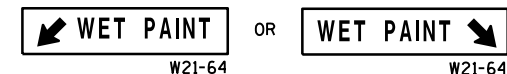
FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH. USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

THIS DRAWING SHALL BE USED FOR EDGELINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.

① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.



③ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.

④ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

V1 LEAD VEHICLE

V2 SHADOW VEHICLE

V3 TRAIL VEHICLE WITH TMA

 **TMA** TRUCK-MOUNTED ATTENUATOR

 SIGN ON TEMPORARY SUPPORT

 DIRECTION OF TRAFFIC

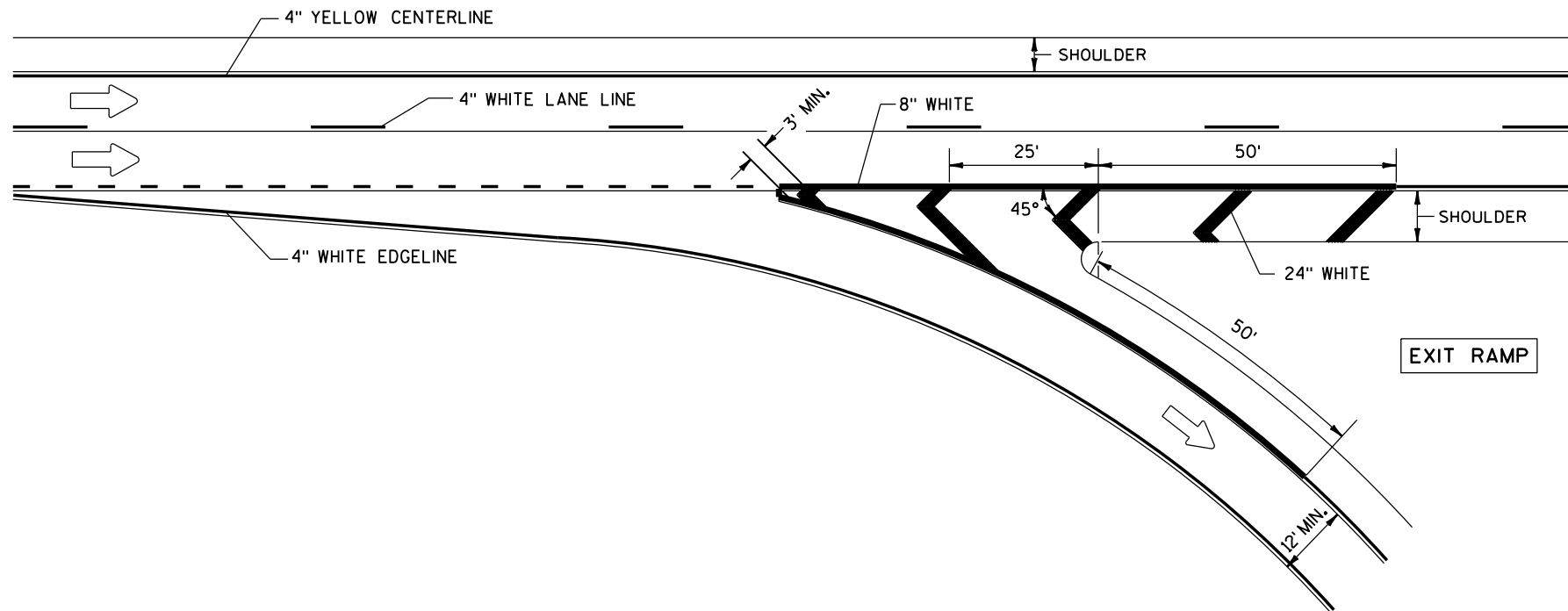
 CONES

 FLASHING ARROW PANEL (MERGE)

**MOVING PAVEMENT MARKING
OPERATION
MULTI-LANE DIVIDED ROADWAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



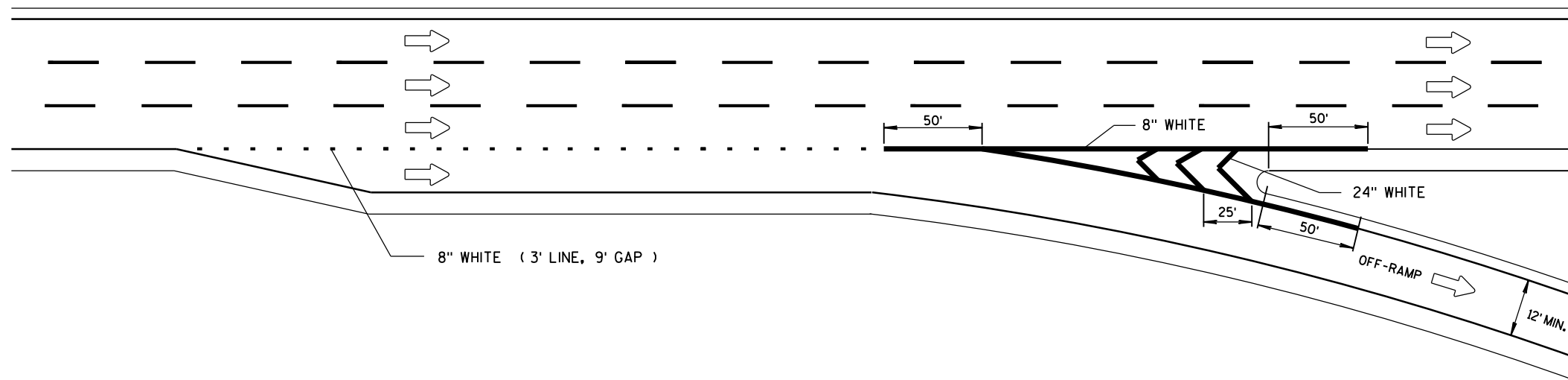
GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

LEGEND

→ DIRECTION OF TRAVEL

PAVEMENT MARKING FOR EXIT RAMP



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT-RAMP

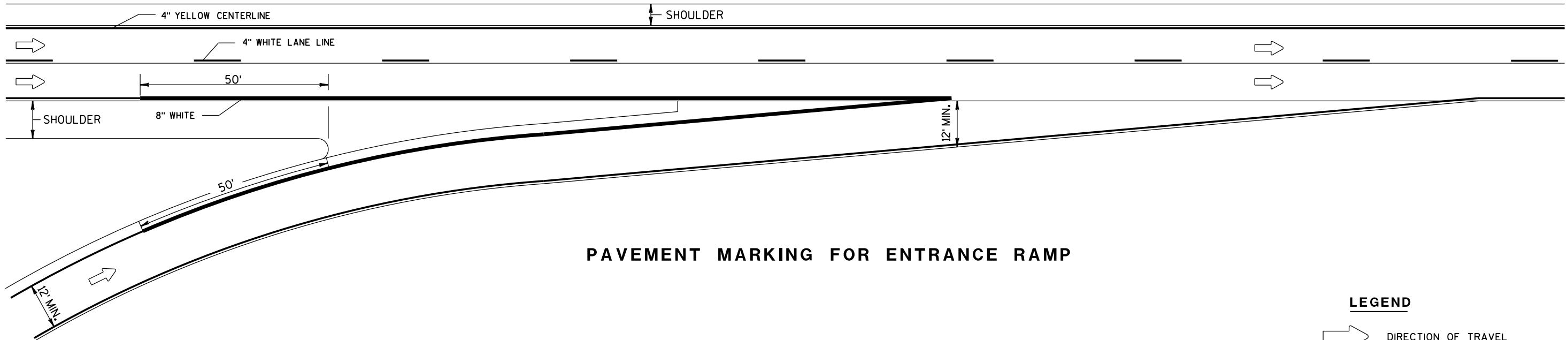
PAVEMENT MARKING
(RAMPS AND GOES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

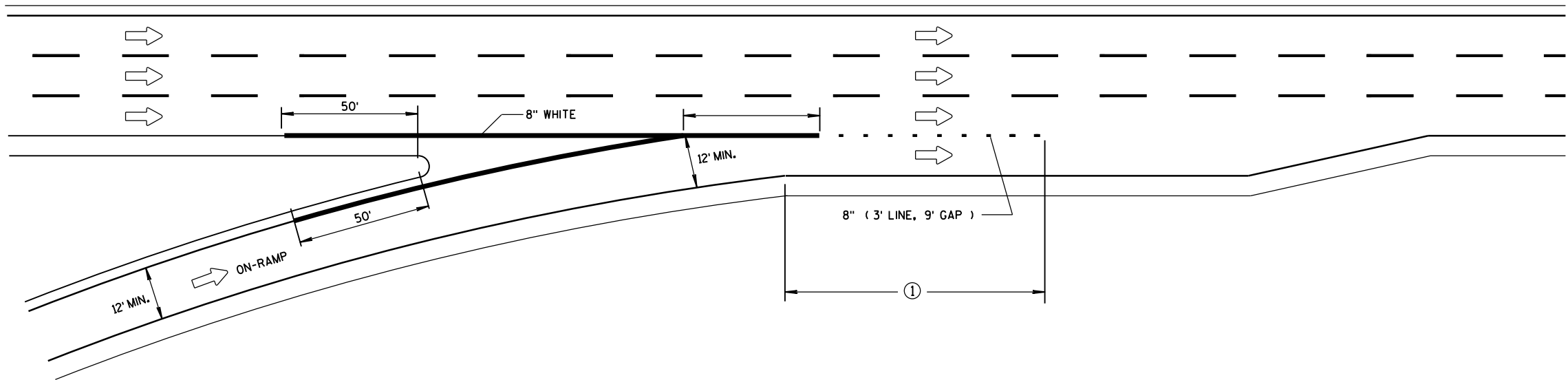
PLACE GROOVE 3 INCHES LEFT OF JOINT.

① 1/2 LENGTH OF FULL WIDTH ACCELERATION LANE.



LEGEND

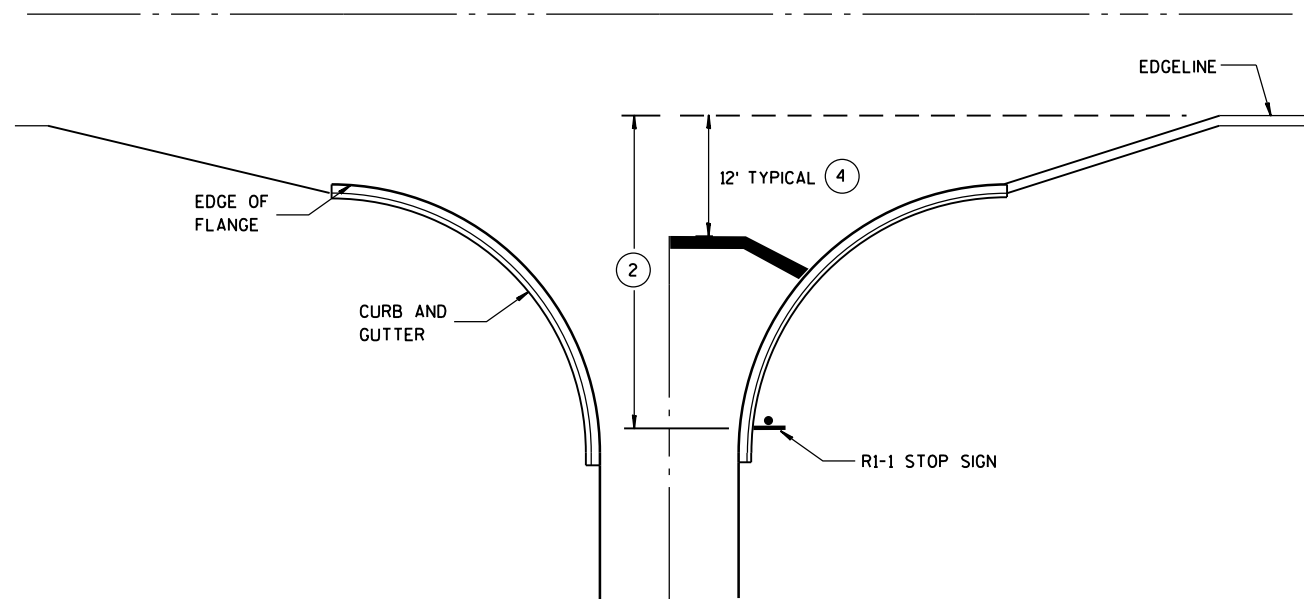
➡ DIRECTION OF TRAVEL



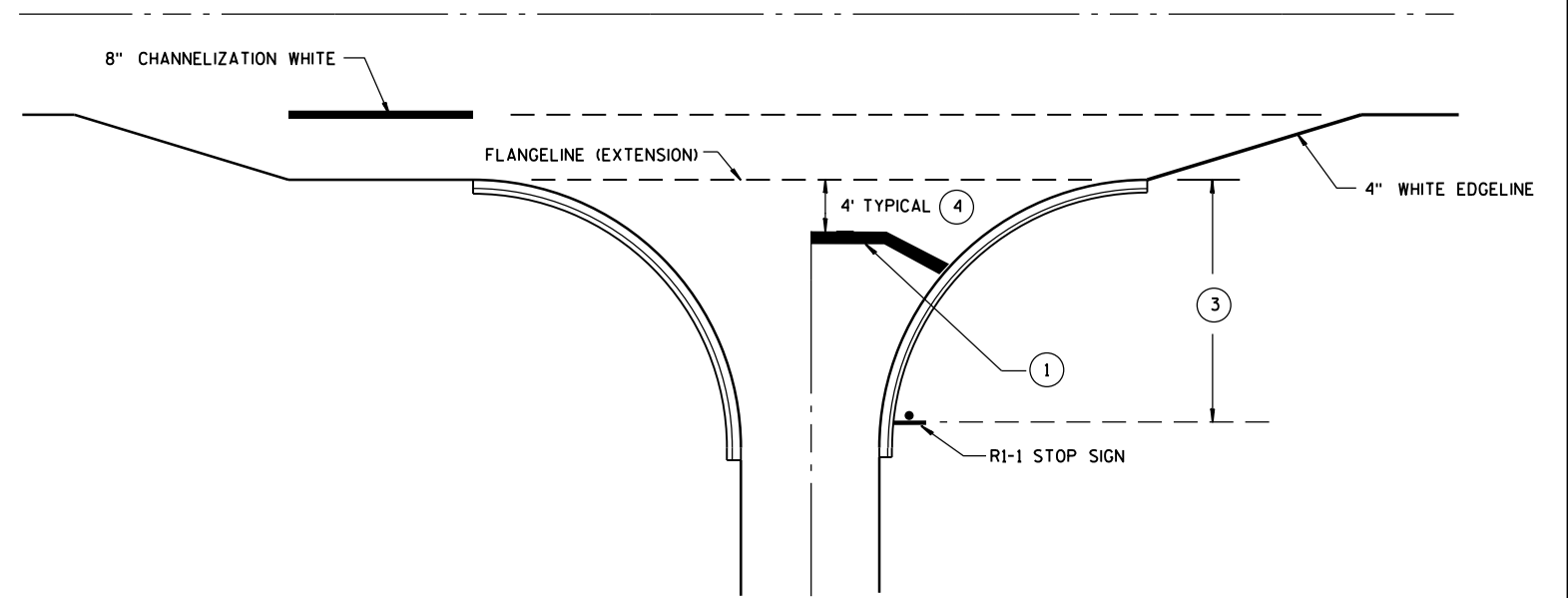
PAVEMENT MARKING FOR
PARALLEL ON-RAMP AND
PARALLEL OFF-RAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

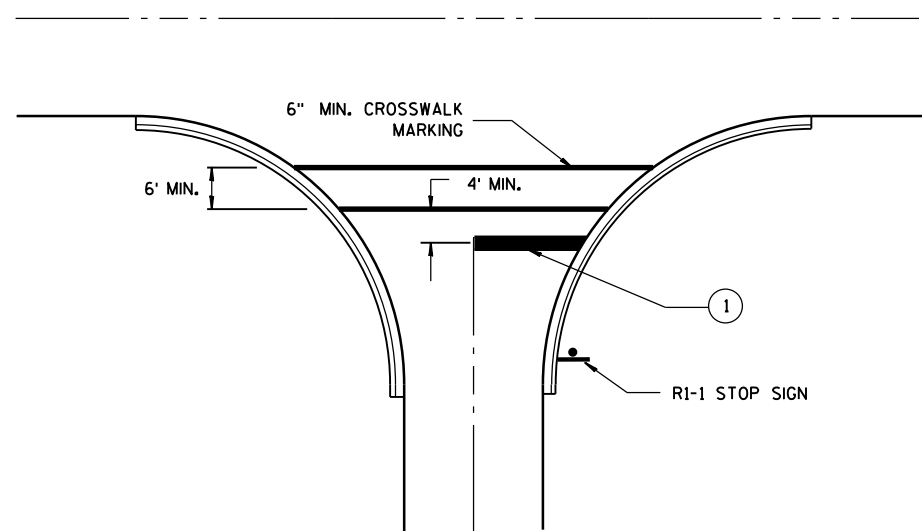
APPROVED
Sept., 2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



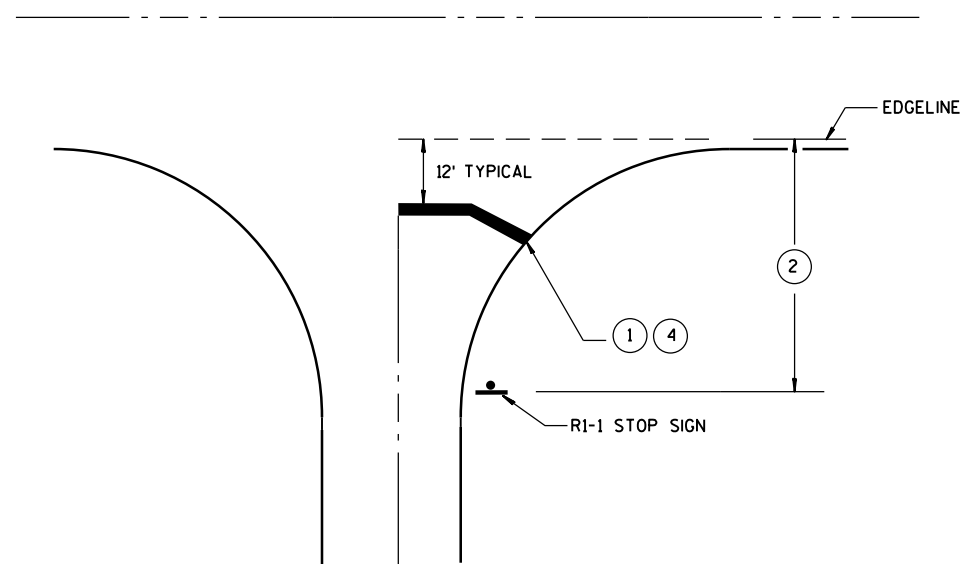
**TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER**



**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. (NO CLOSER THAN 4 FEET).

STOP LINE AND CROSSWALK PAVEMENT MARKING

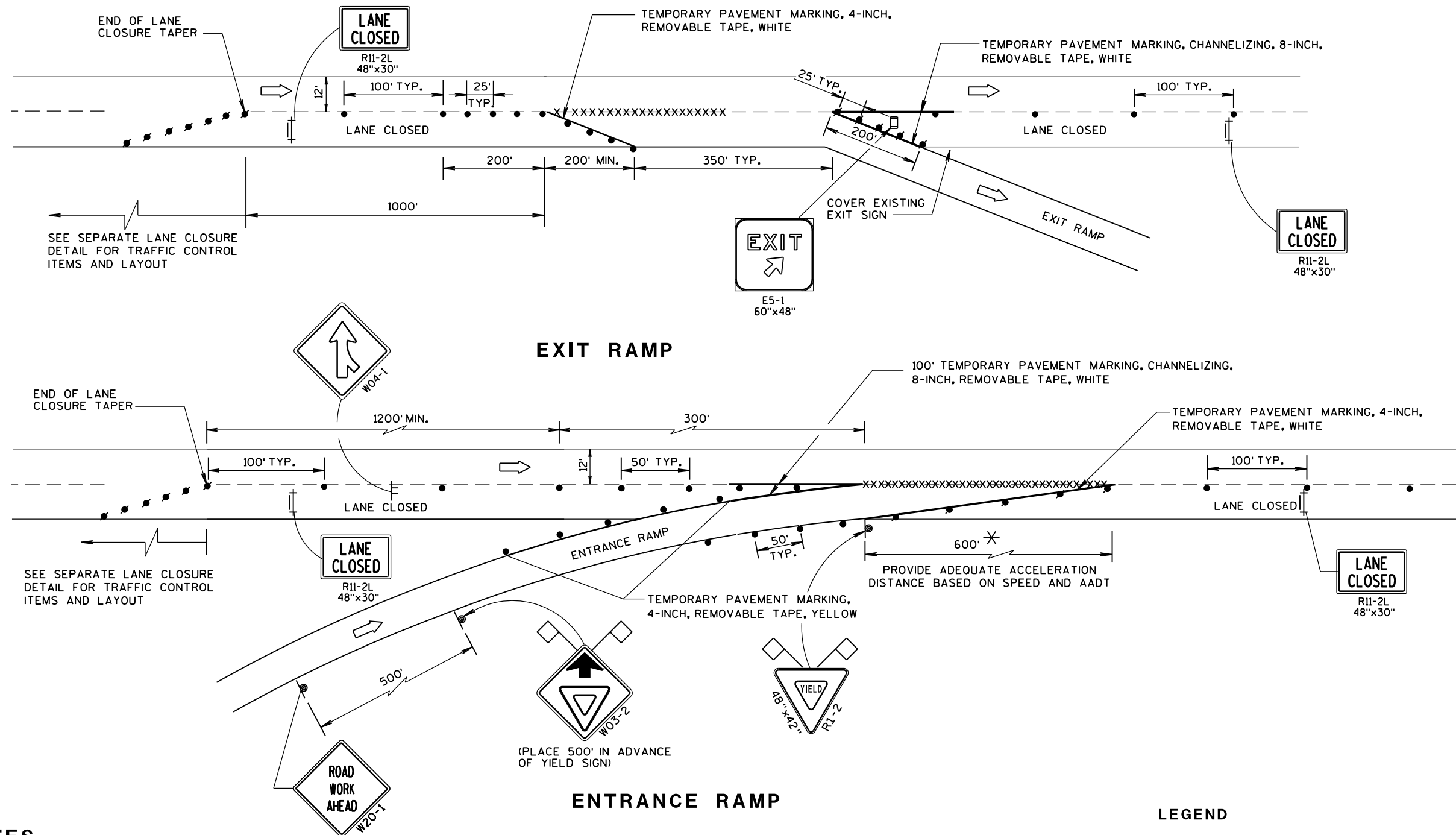
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-18-2016
DATE

FHWA

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



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.

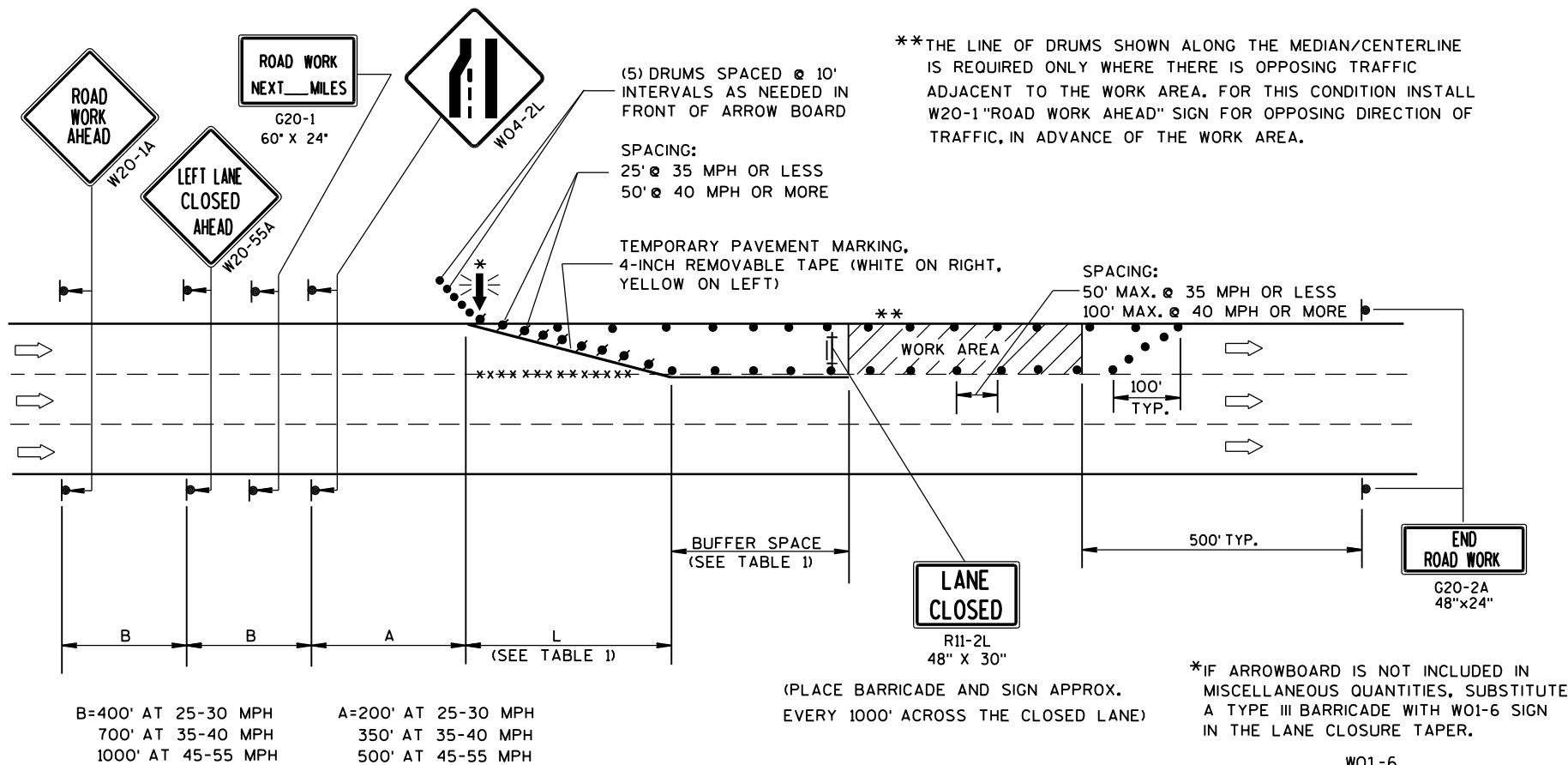
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.



GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

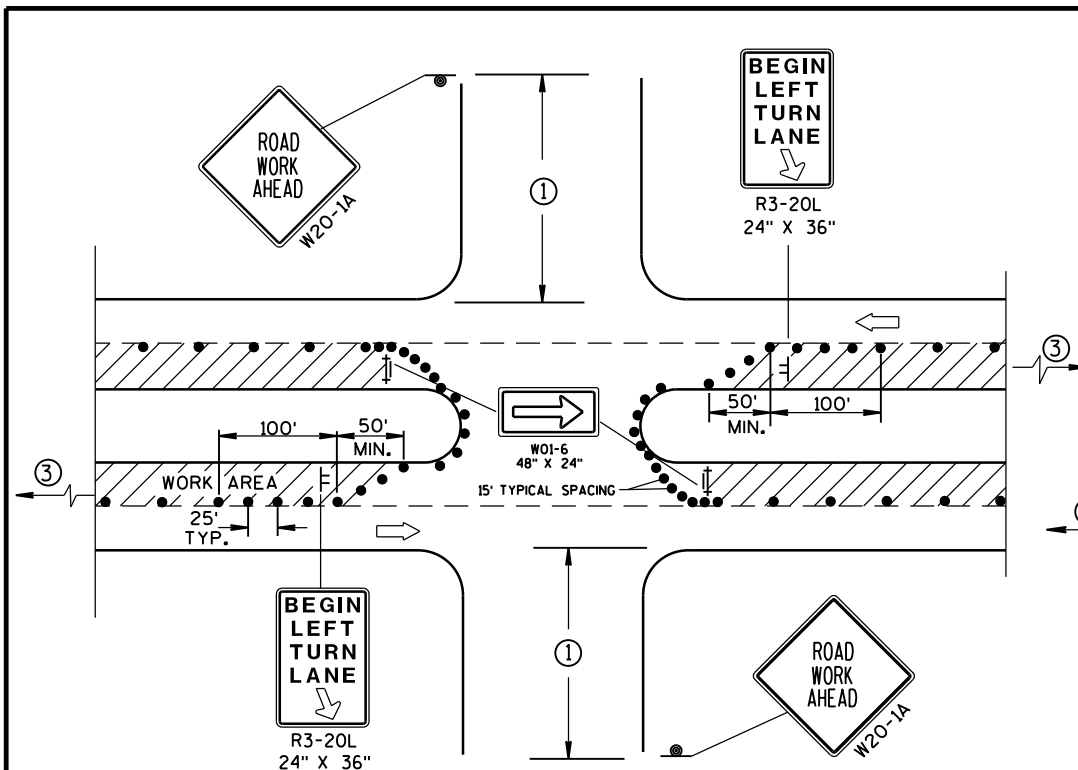
LEGEND

- 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

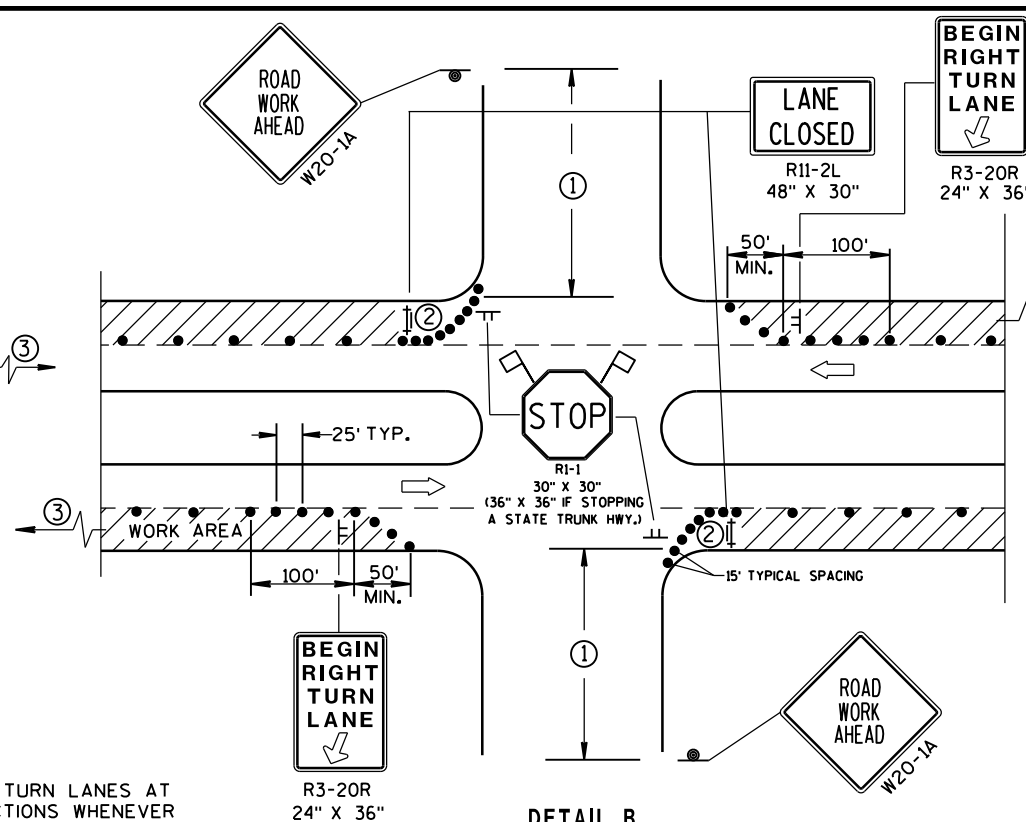
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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.

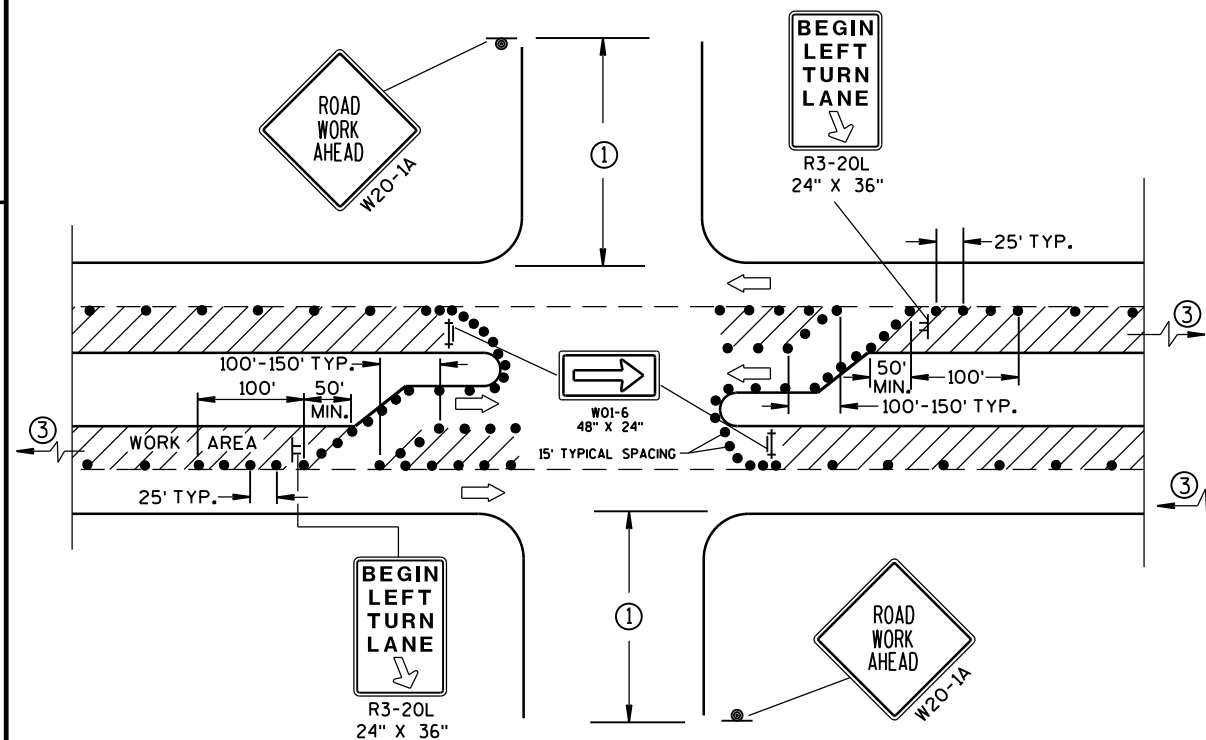
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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.

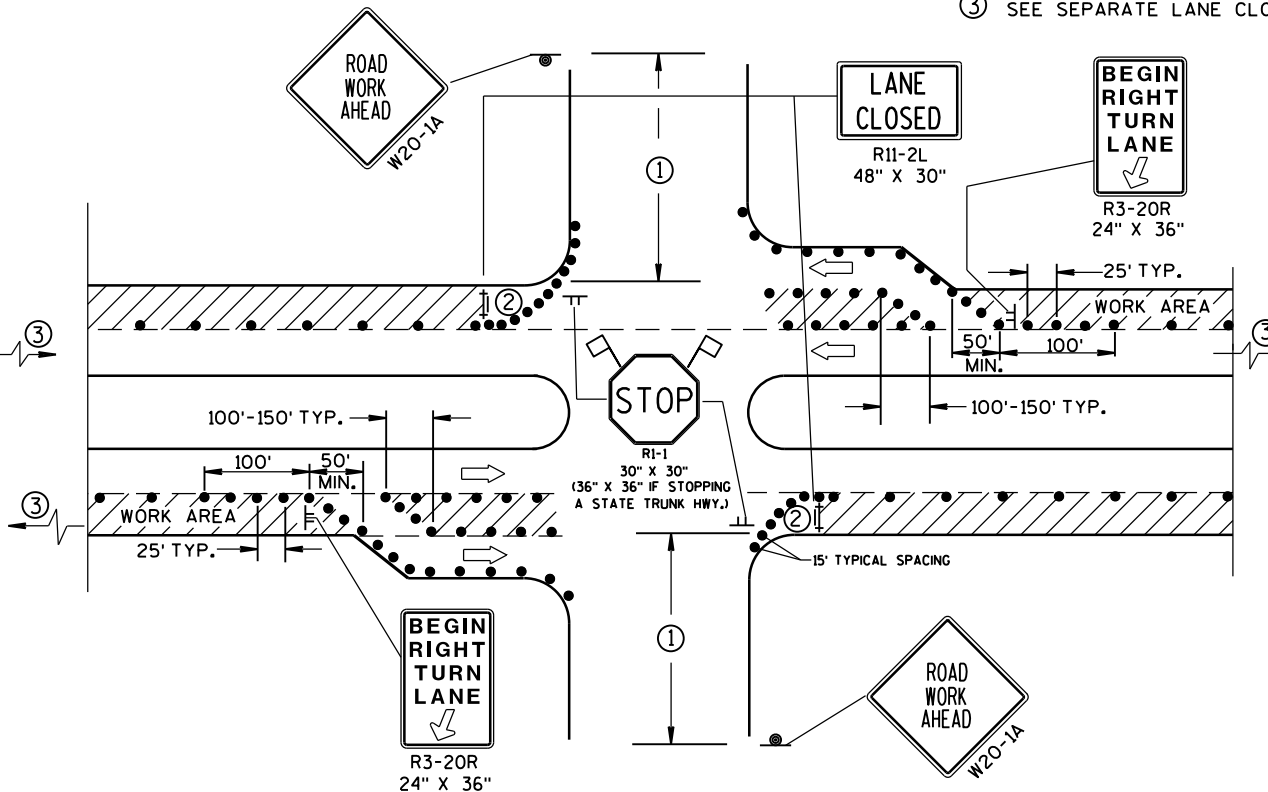
- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.
- ② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

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



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)

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Anakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER

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.

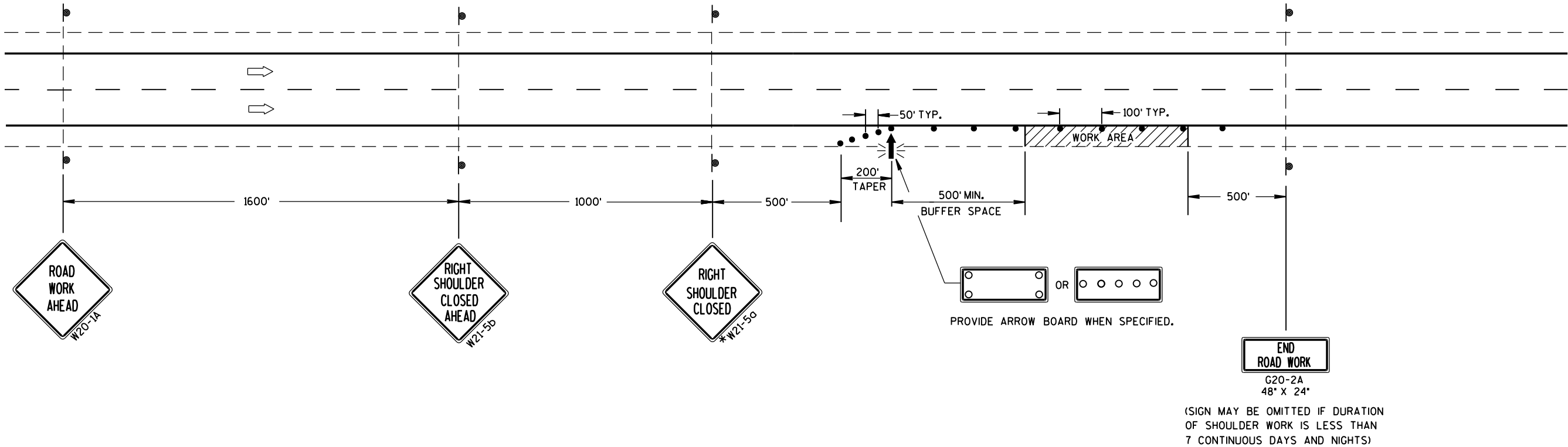
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

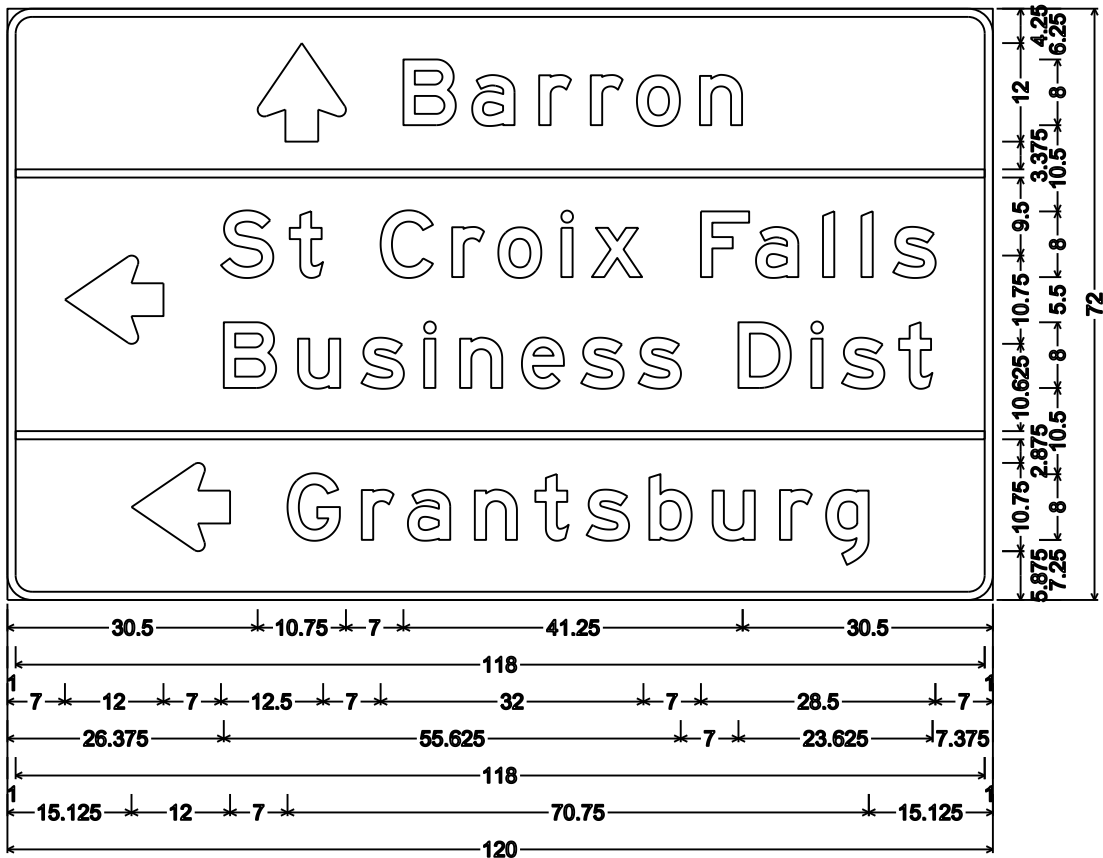
*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



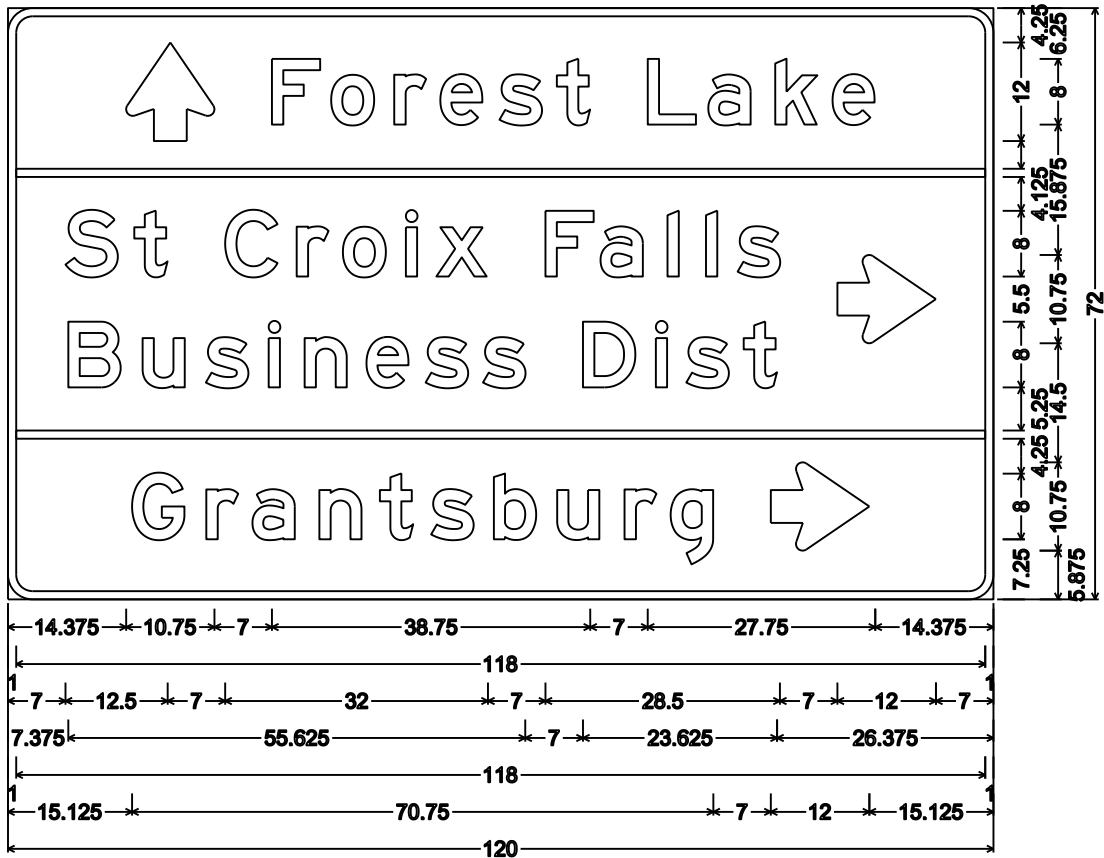
TRAFFIC CONTROL
SHOULDER CLOSURE ON DIVIDED
ROADWAY, SPEEDS GREATER
THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

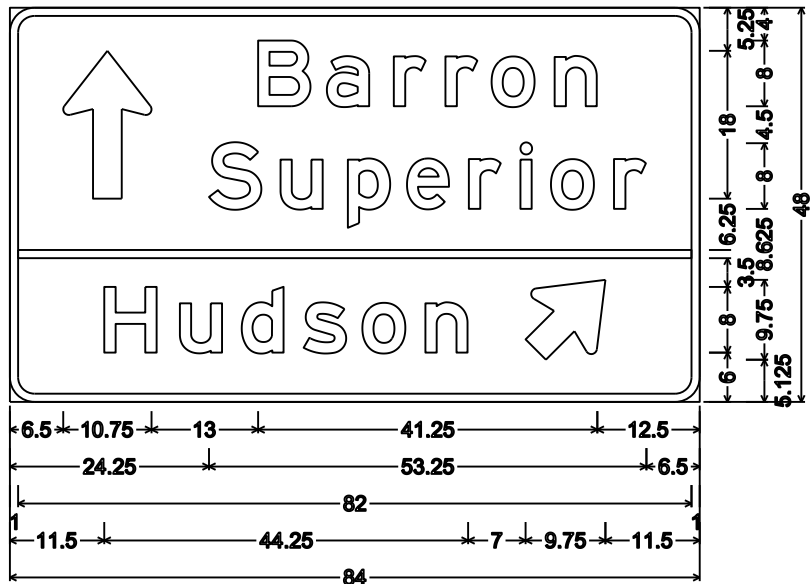
APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



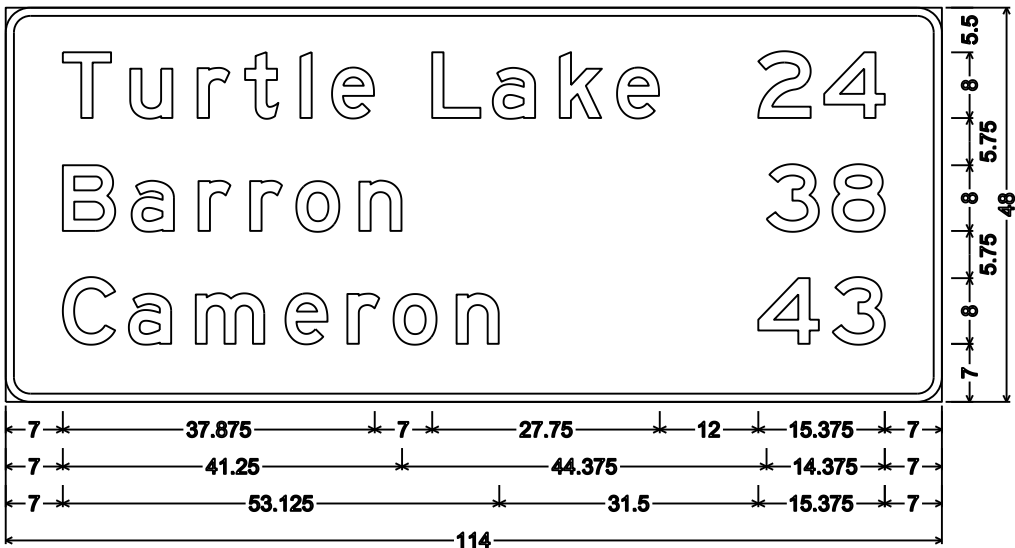
D1-4; 3.000" Radius, 1.000" Border



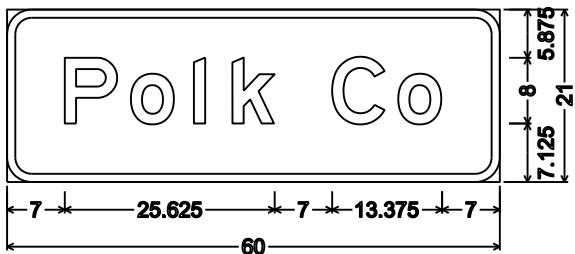
D1-4; 3.000" Radius, 1.000" Border



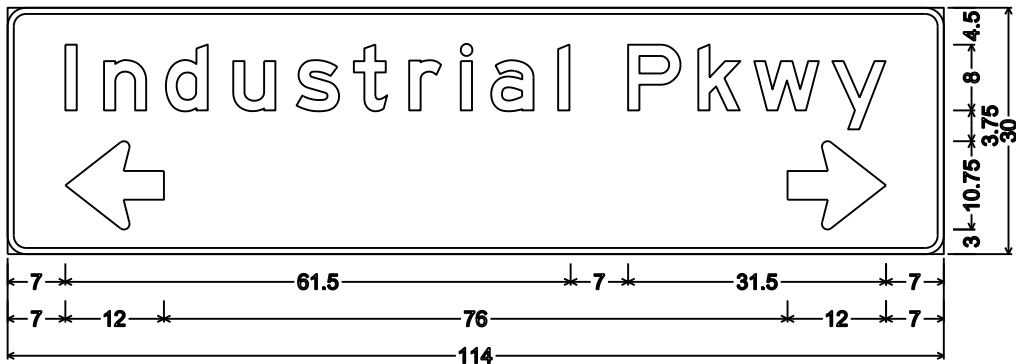
D1-3; 3.000" Radius, 1.000" Border



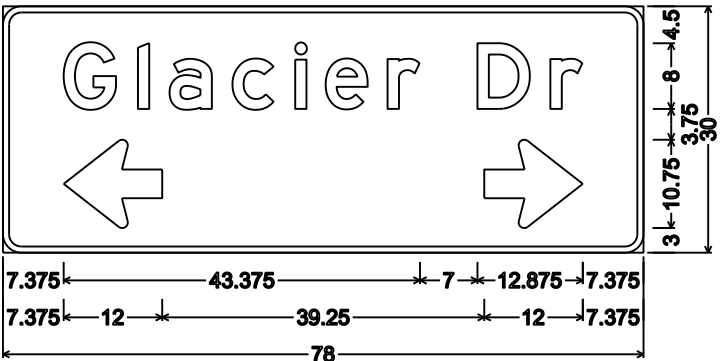
D2-3; 3.000" Radius, 1.000" Border



I2-2;
3.000" Radius, 1.000" Border

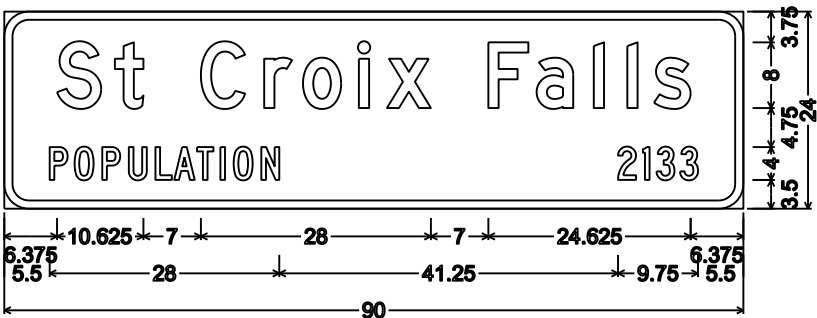


D1-61; 2.250" Radius, 0.750" Border

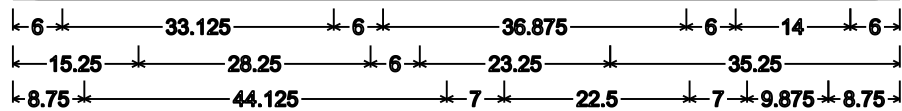
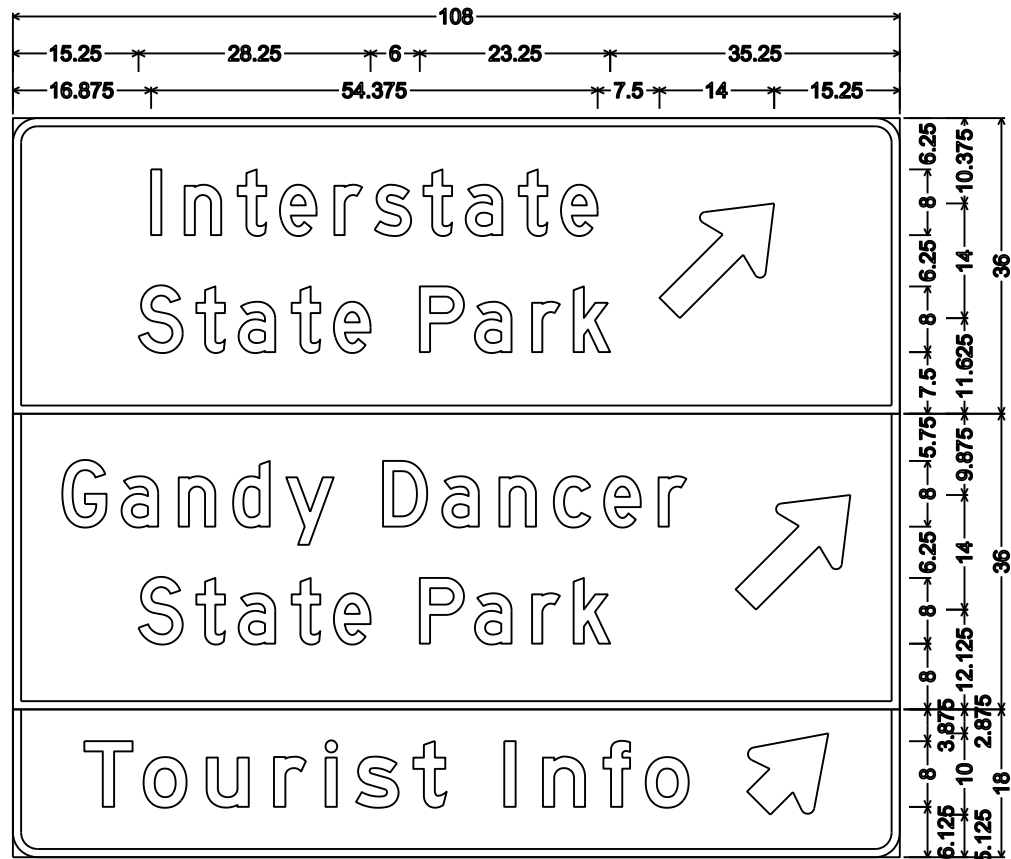


D1-61; 2.250" Radius, 0.750" Border

- NOTES
1. All Signs Type II - Type H Reflective
 2. Color:
Background - GREEN
Message - WHITE
 3. Message Series - E



I2-3; 3.000" Radius, 1.000" Border,
"St" D; "Croix" D; "Falls" D; "POPULATION" C; "2133" C



D1-5; 3.000" Radius, 1.000" Border, White on Brown;

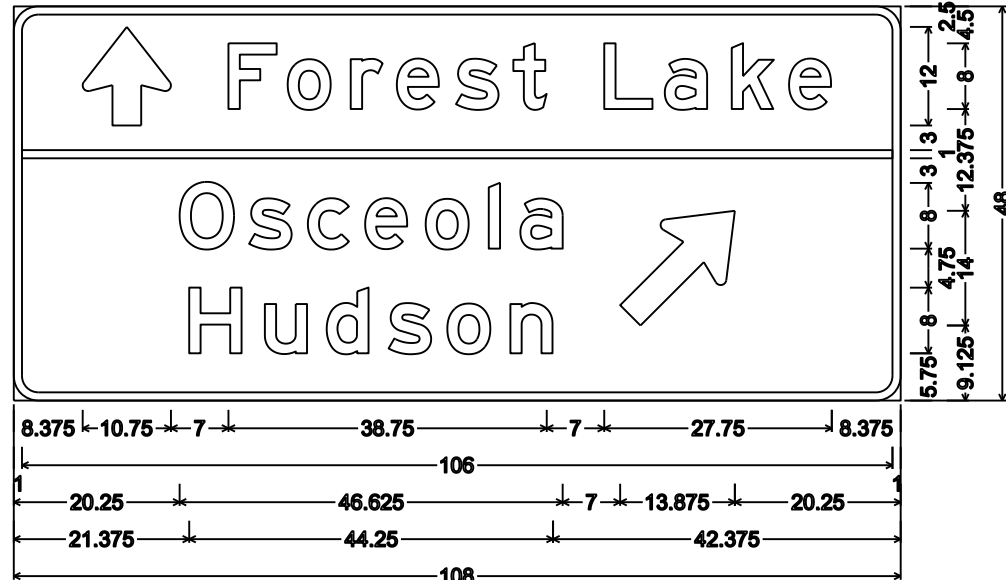
"Interstate" D; "State" D; "Park" D;

3.000" Radius, 1.000" Border, White on Brown;

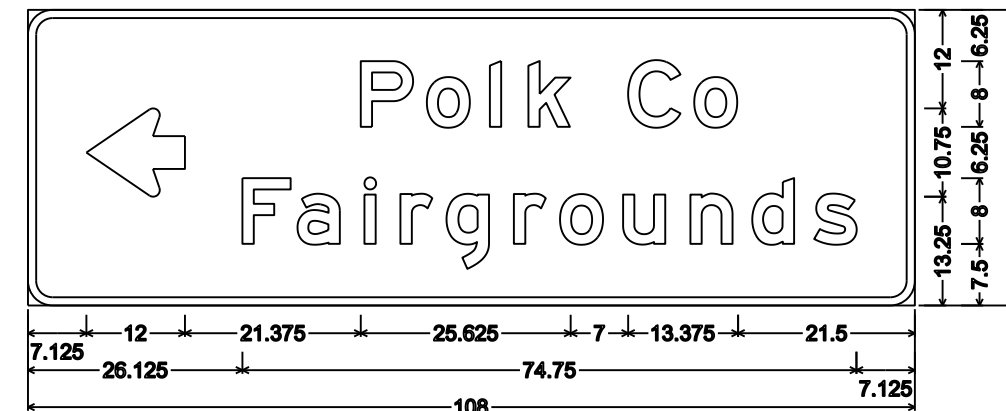
"Gandy" D; "Dancer" D; "State" D; "Park" D;

3.000" Radius, 1.000" Border, White on Blue;

"Tourist" E; "Info" E



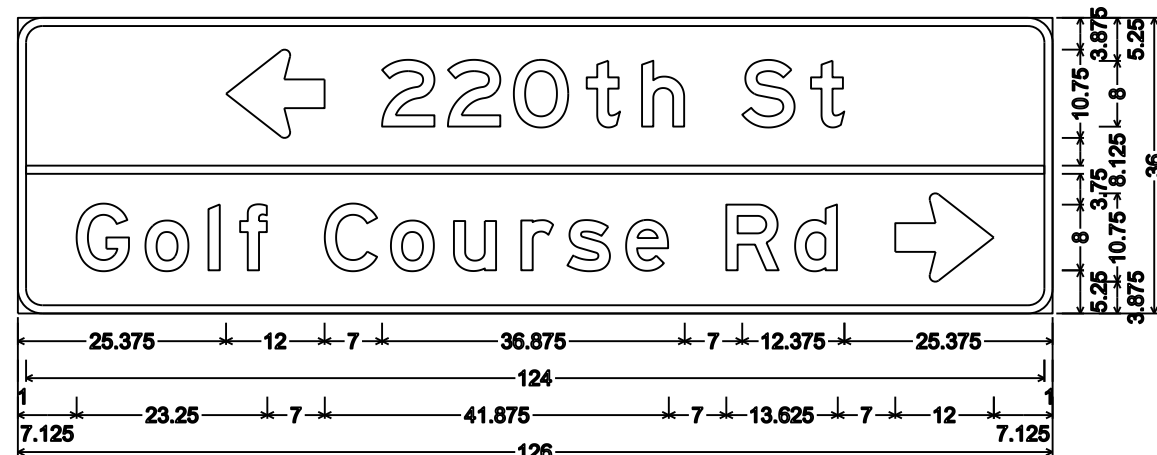
D1-3; 3.000" Radius, 1.000" Border



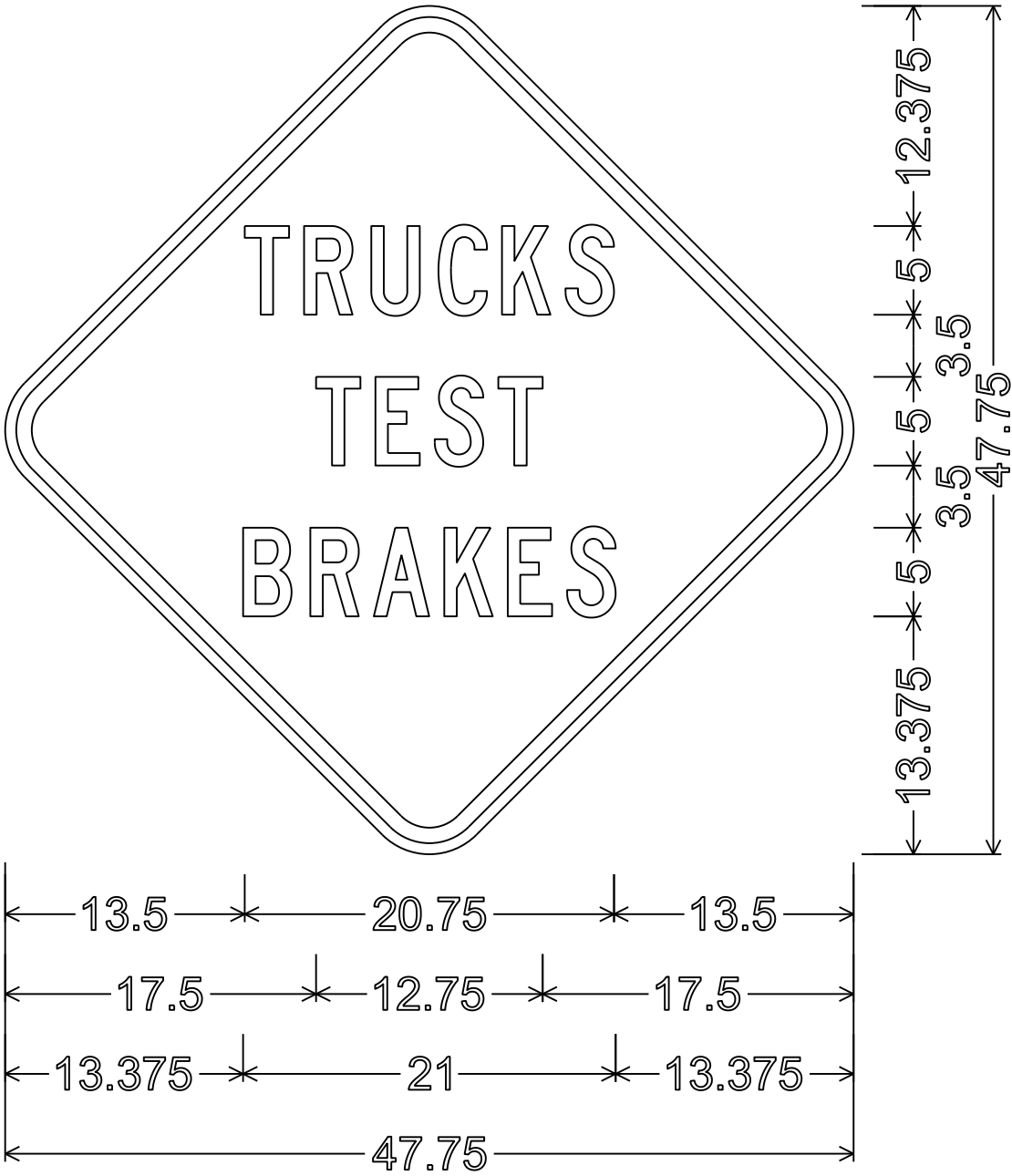
D1-2; 3.000" Radius, 1.000" Border

NOTES

1. All Signs Type II - Type H Reflective
2. Color:
Background - GREEN except as noted
Message - WHITE
3. Message Series - E except as noted



D1-2; 3.000" Radius, 1.000" Border

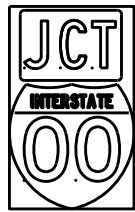


36.000" across sides 3.750" Radius, 0.875" Border, 0.625" Indent,

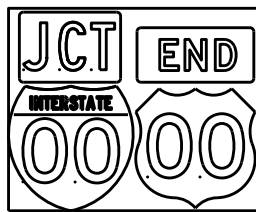
NOTES

- 1. All Signs Type II - Type F Reflective
- 2. Color:
 - Background - Yellow
 - Message - Black
- 3. Message Series - C

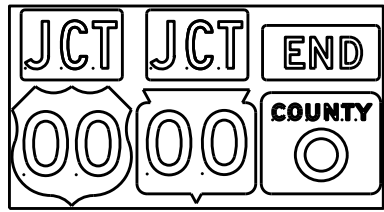
TYPICAL ASSEMBLIES



J1-1



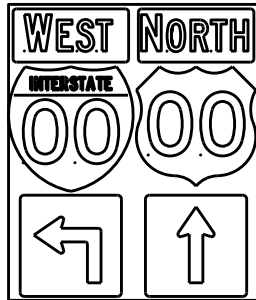
J1-2



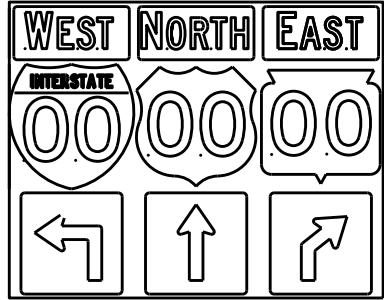
J1-3



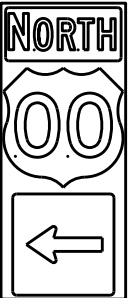
J2-1



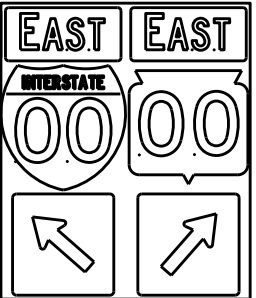
J2-2



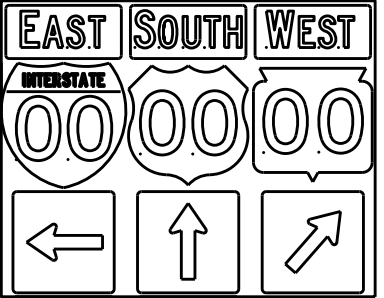
J2-3



J3-1



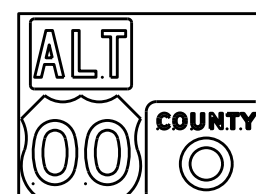
J3-2



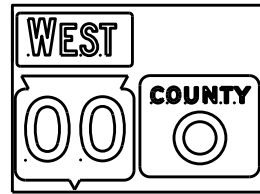
J3-3



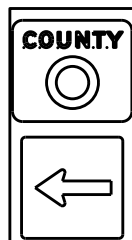
J4-1



J4-2



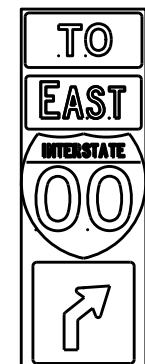
J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

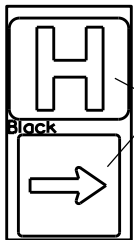


J22-1



JV

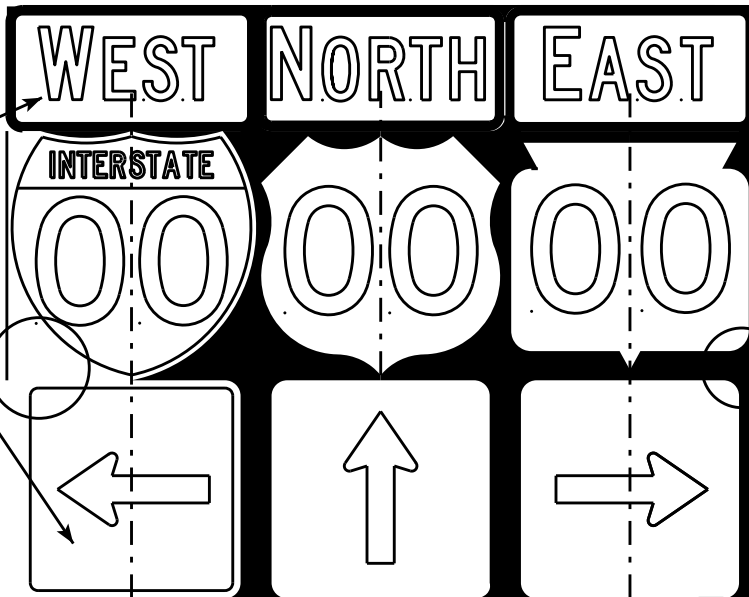
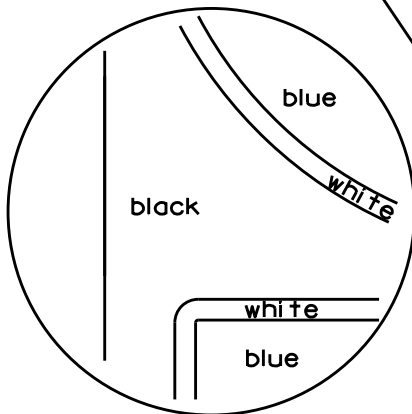
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

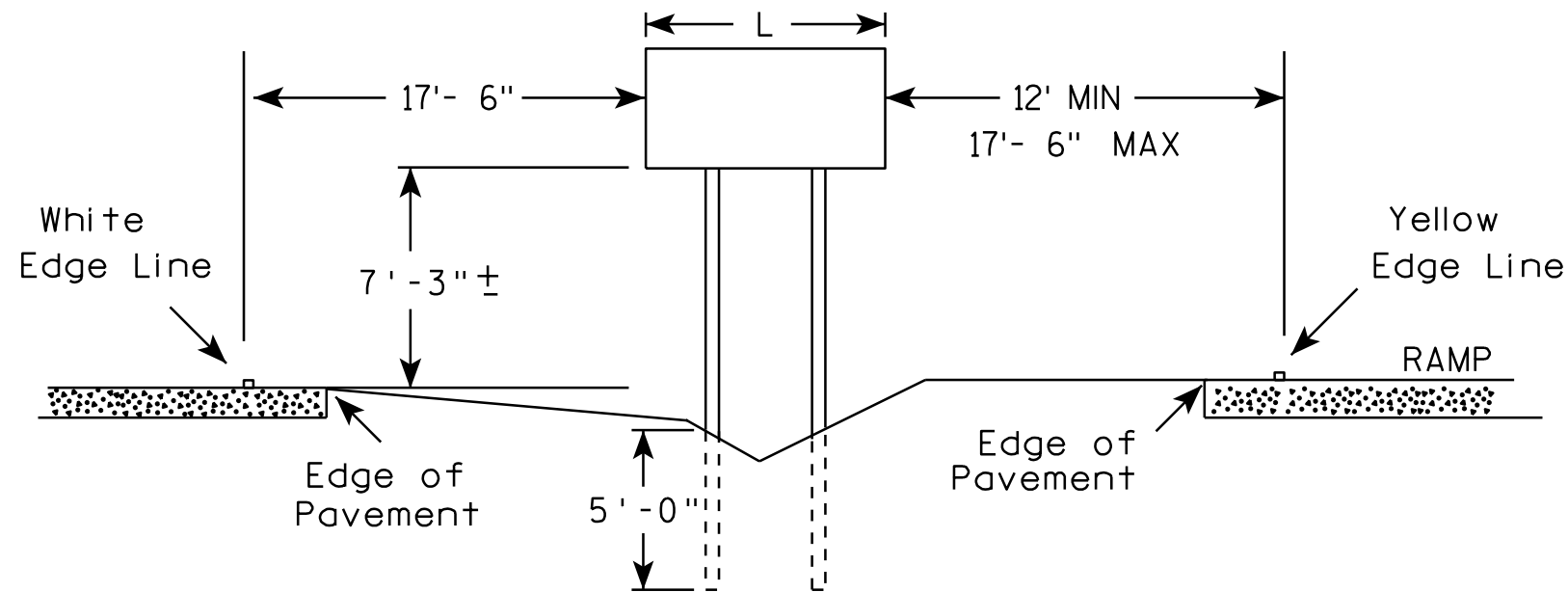
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

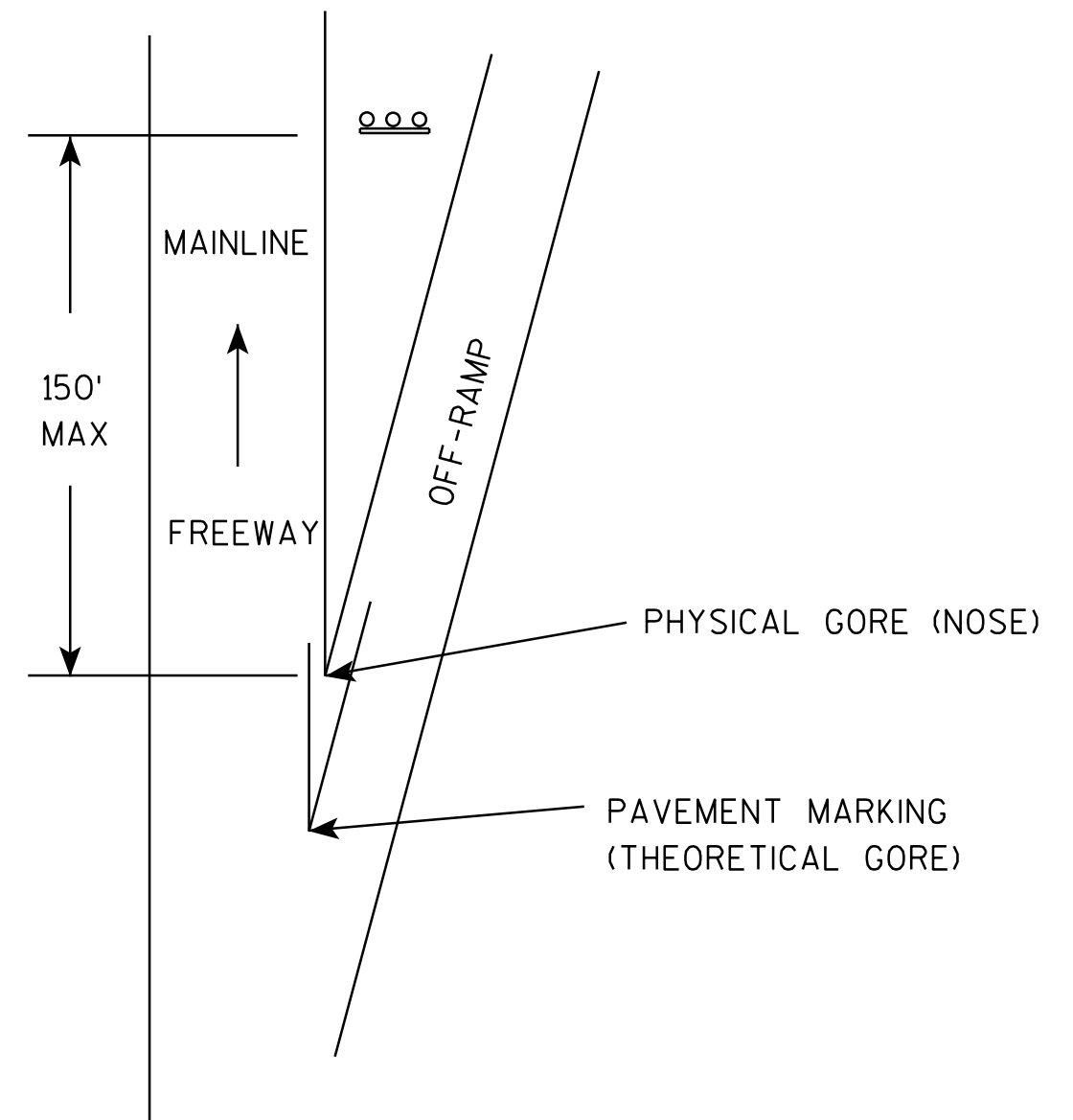
NOTES

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.



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

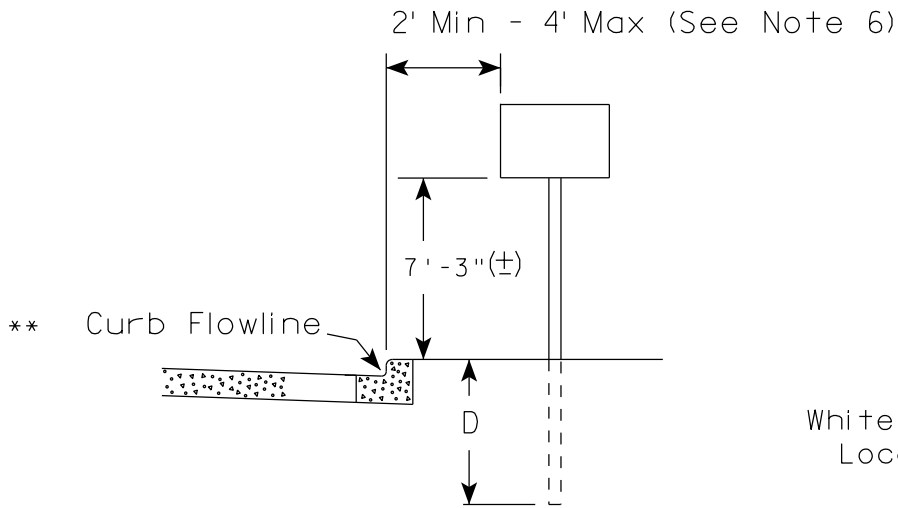
DATE 2/06/14 PLATE NO. A4-2.3

PROJECT NO:

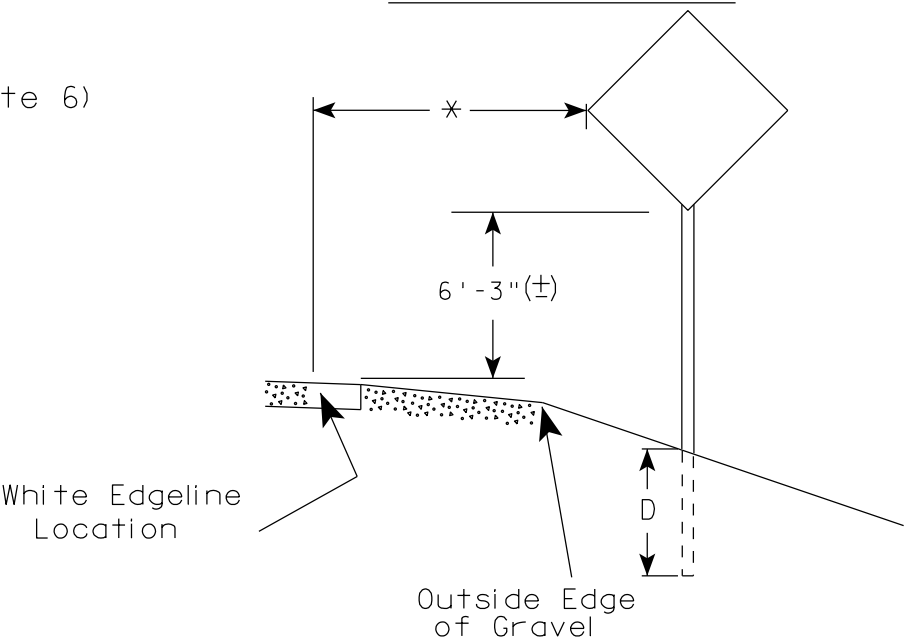
SHEET NO:

E

URBAN AREA

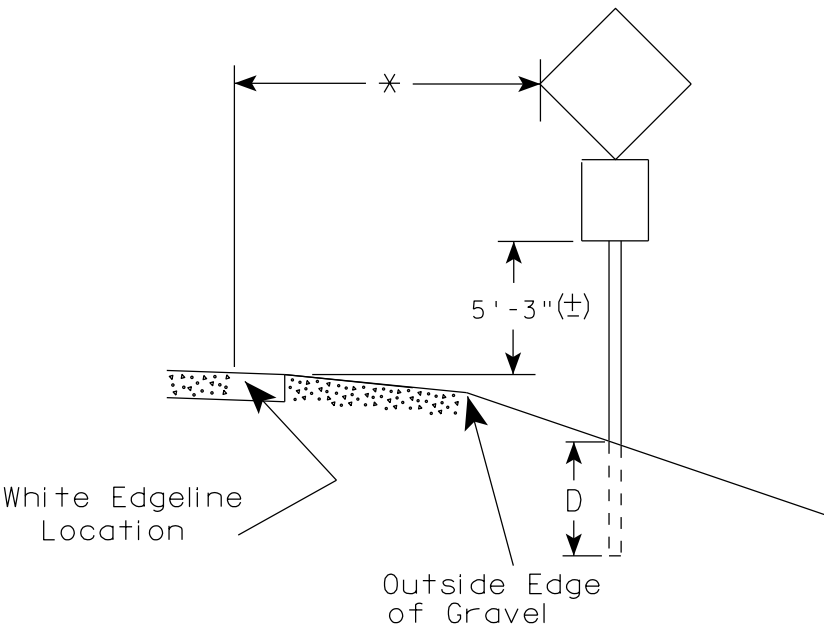
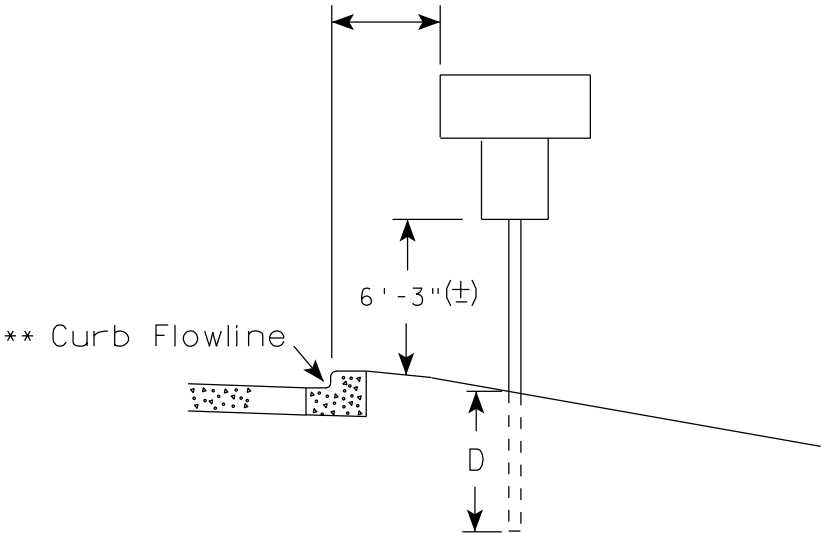


RURAL AREA (See Note 2)



- 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" (±).

2' Min - 4' Max (See Note 6)



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.

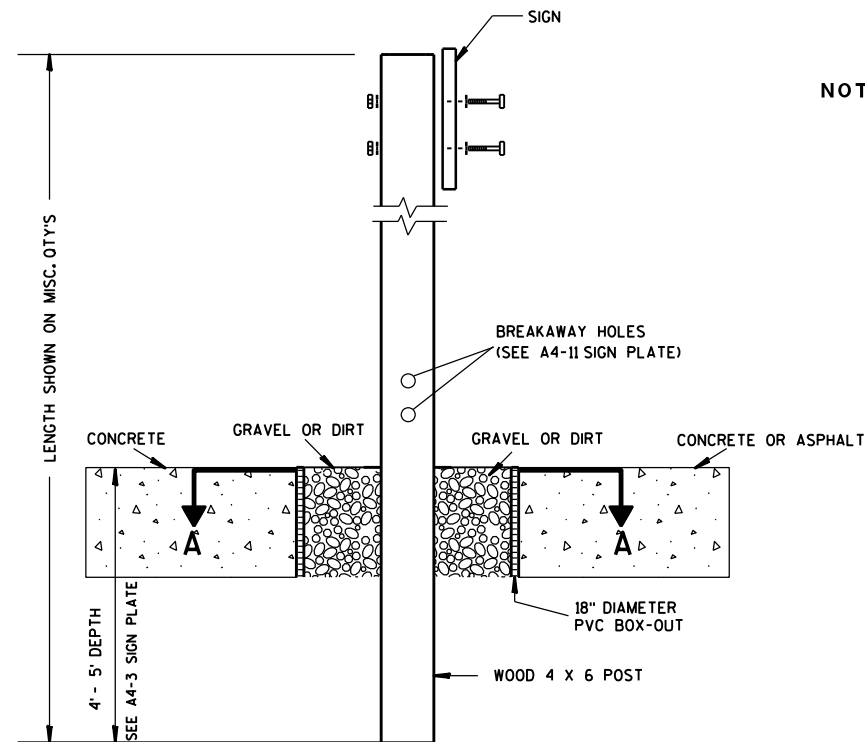
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

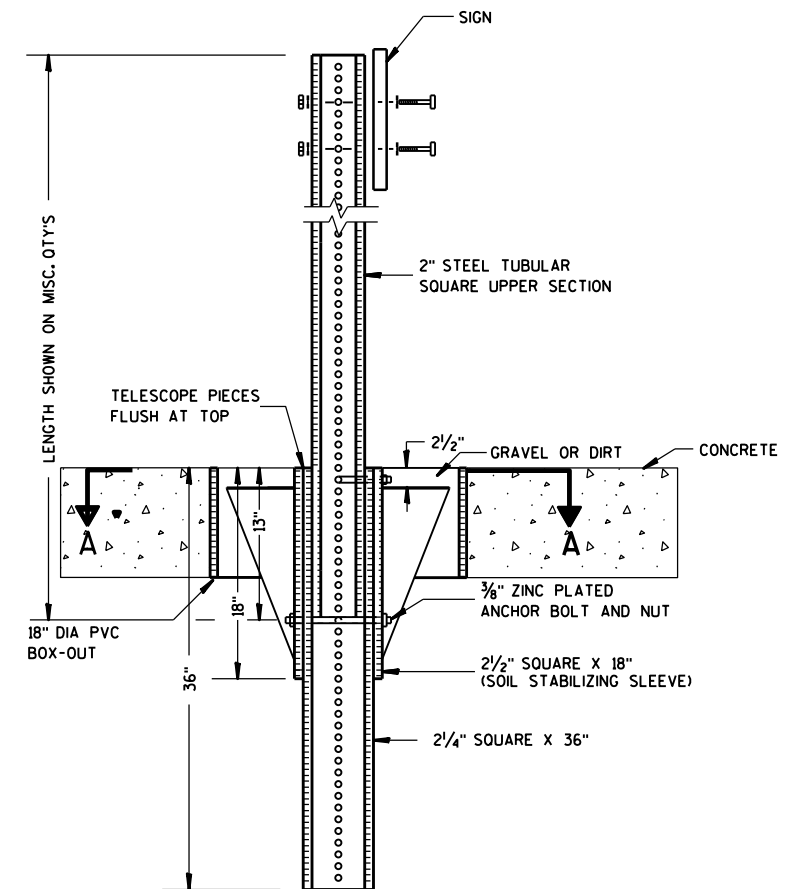
DATE 7/23/15 PLATE NO. A4-3.20



ELEVATION VIEW

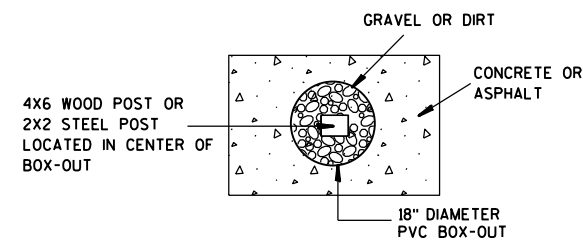
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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

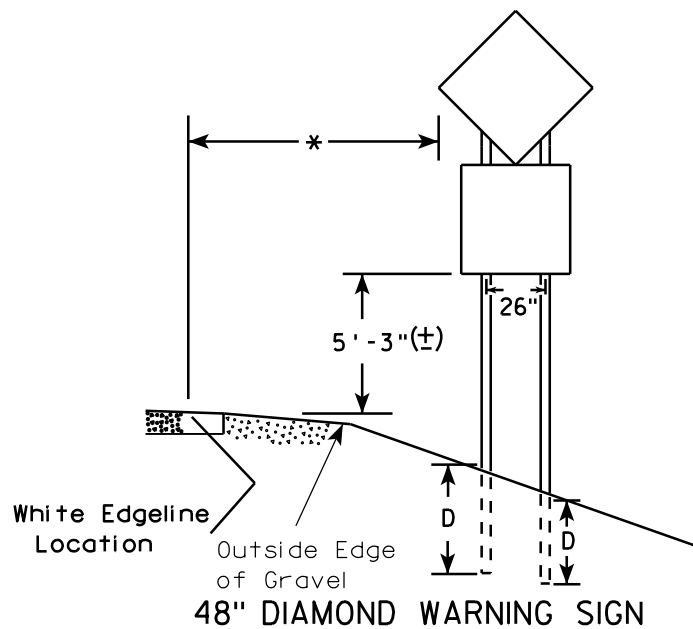
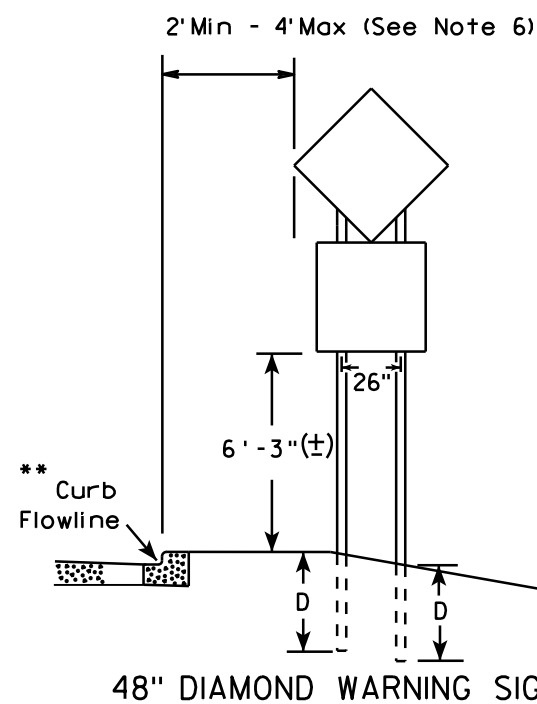
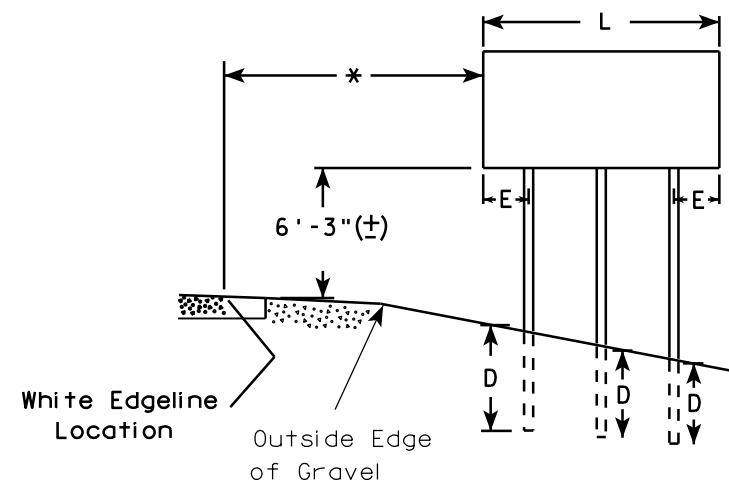
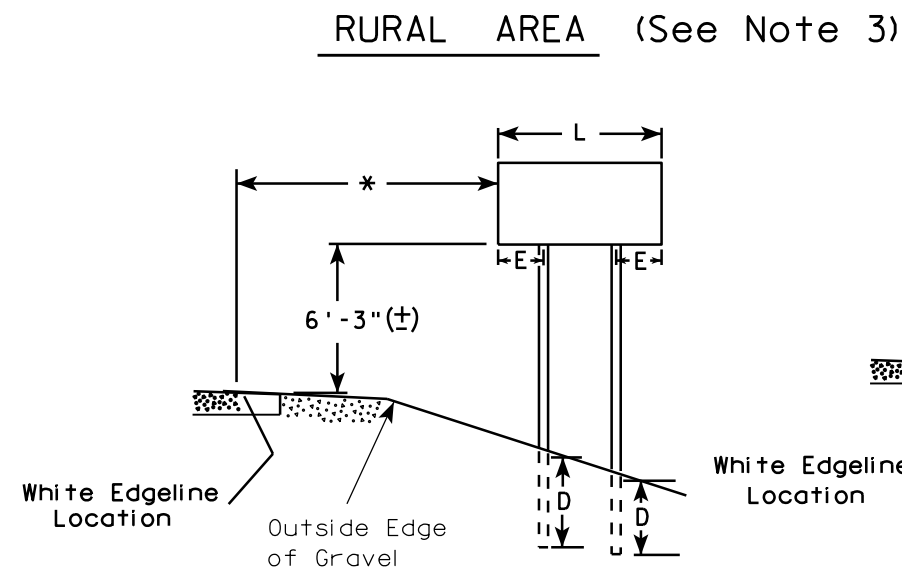
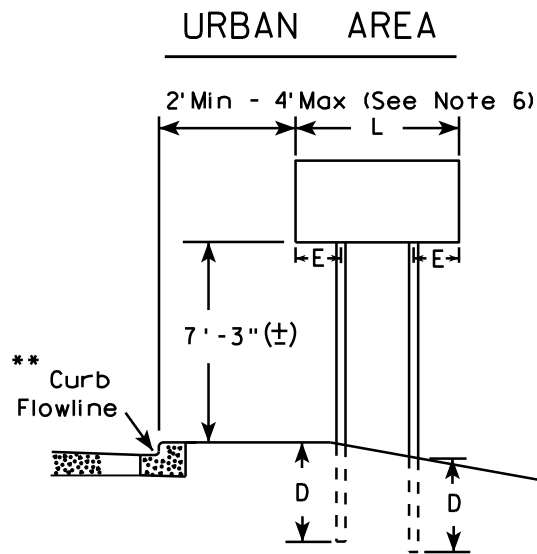
PROJECT NO:

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

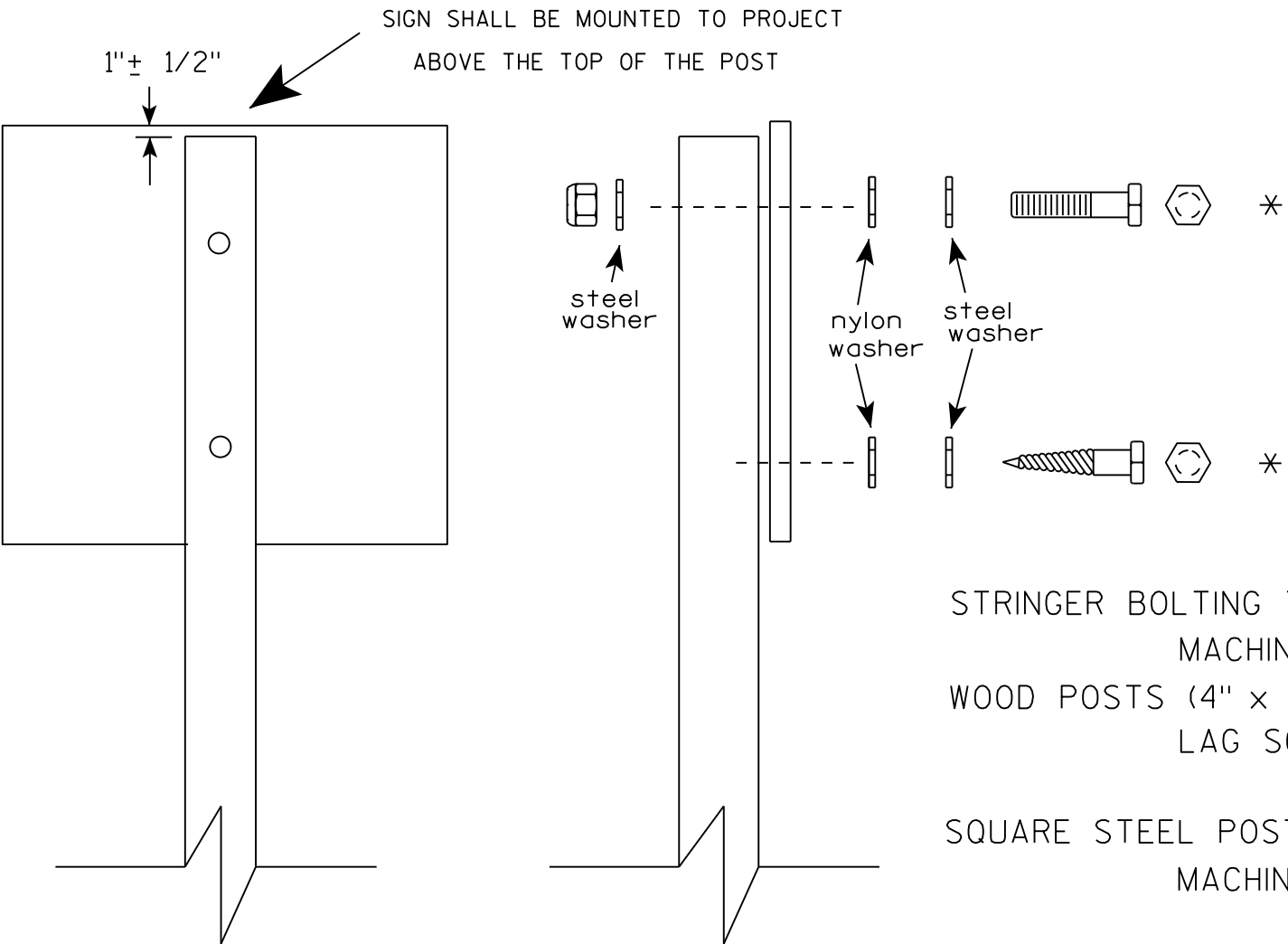
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4.14



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

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

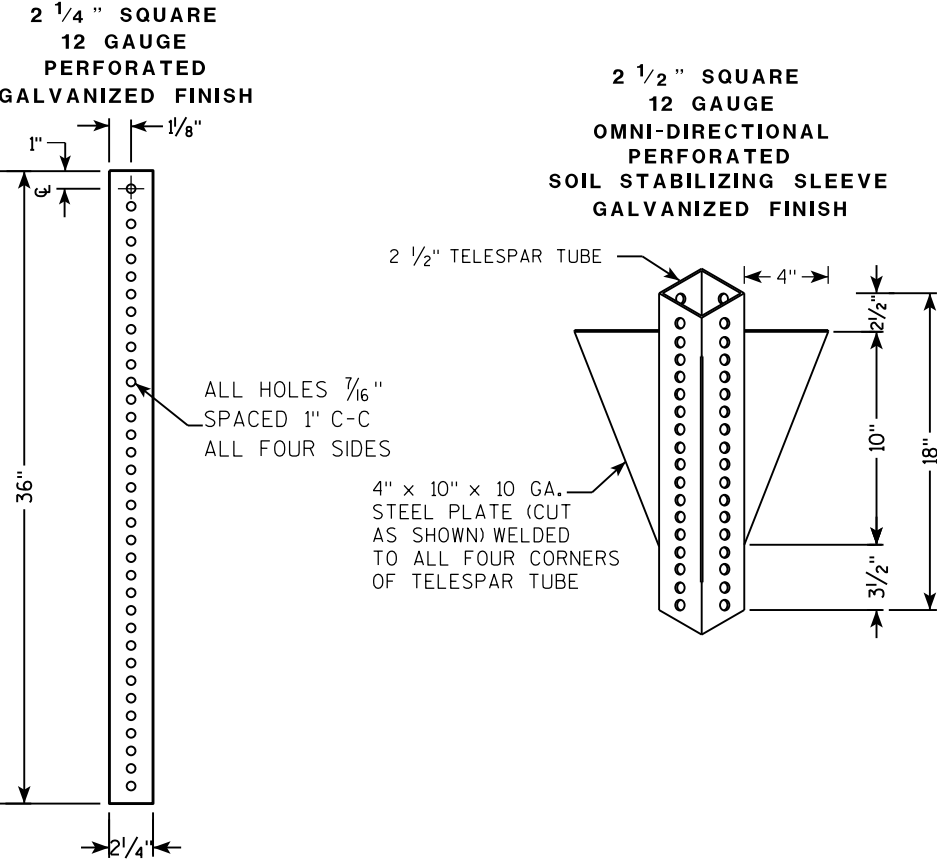
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

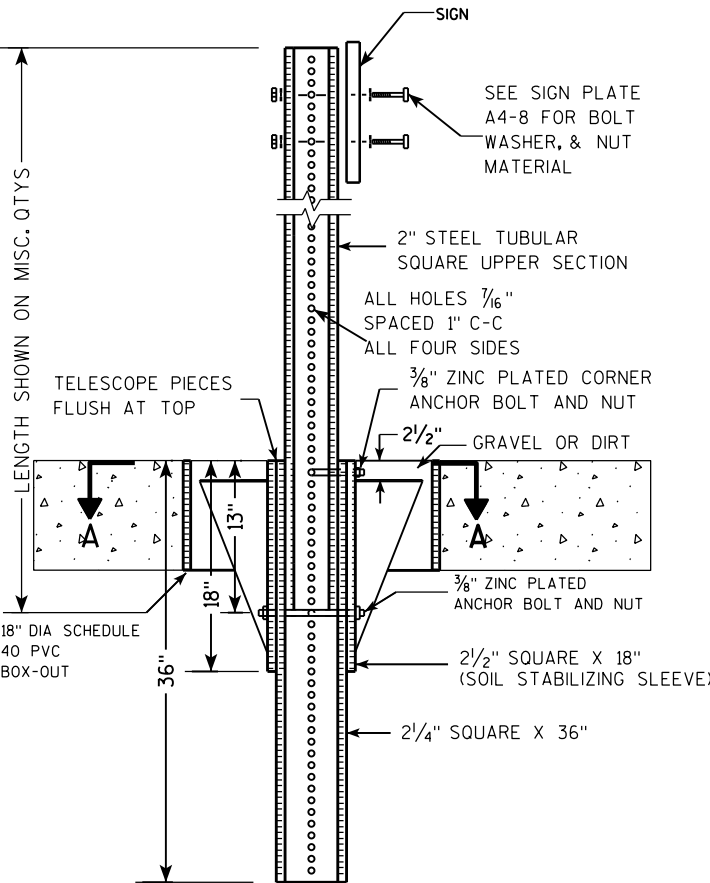
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

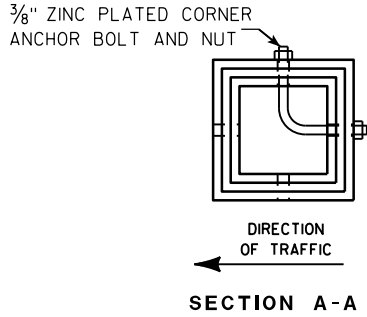
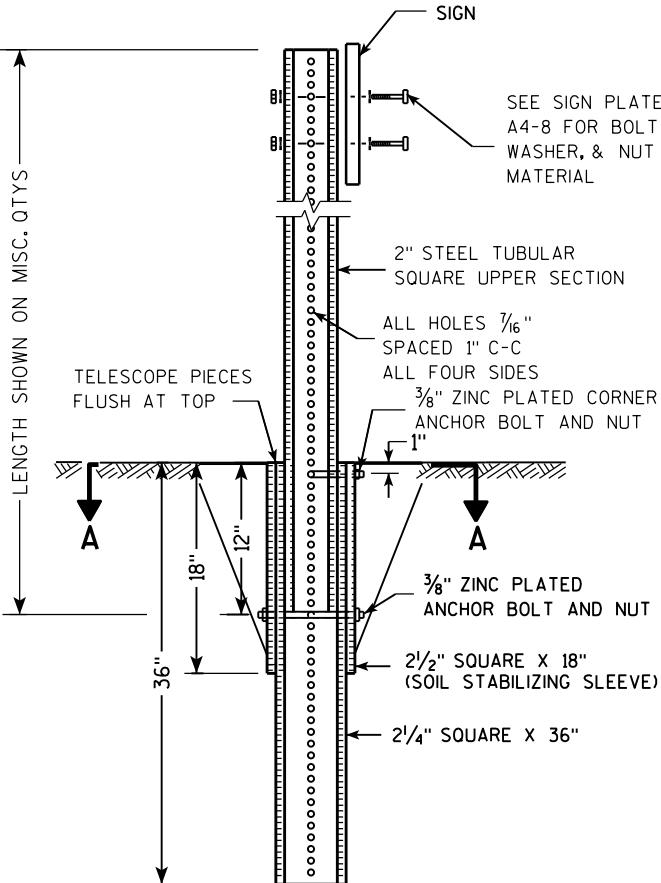
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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).

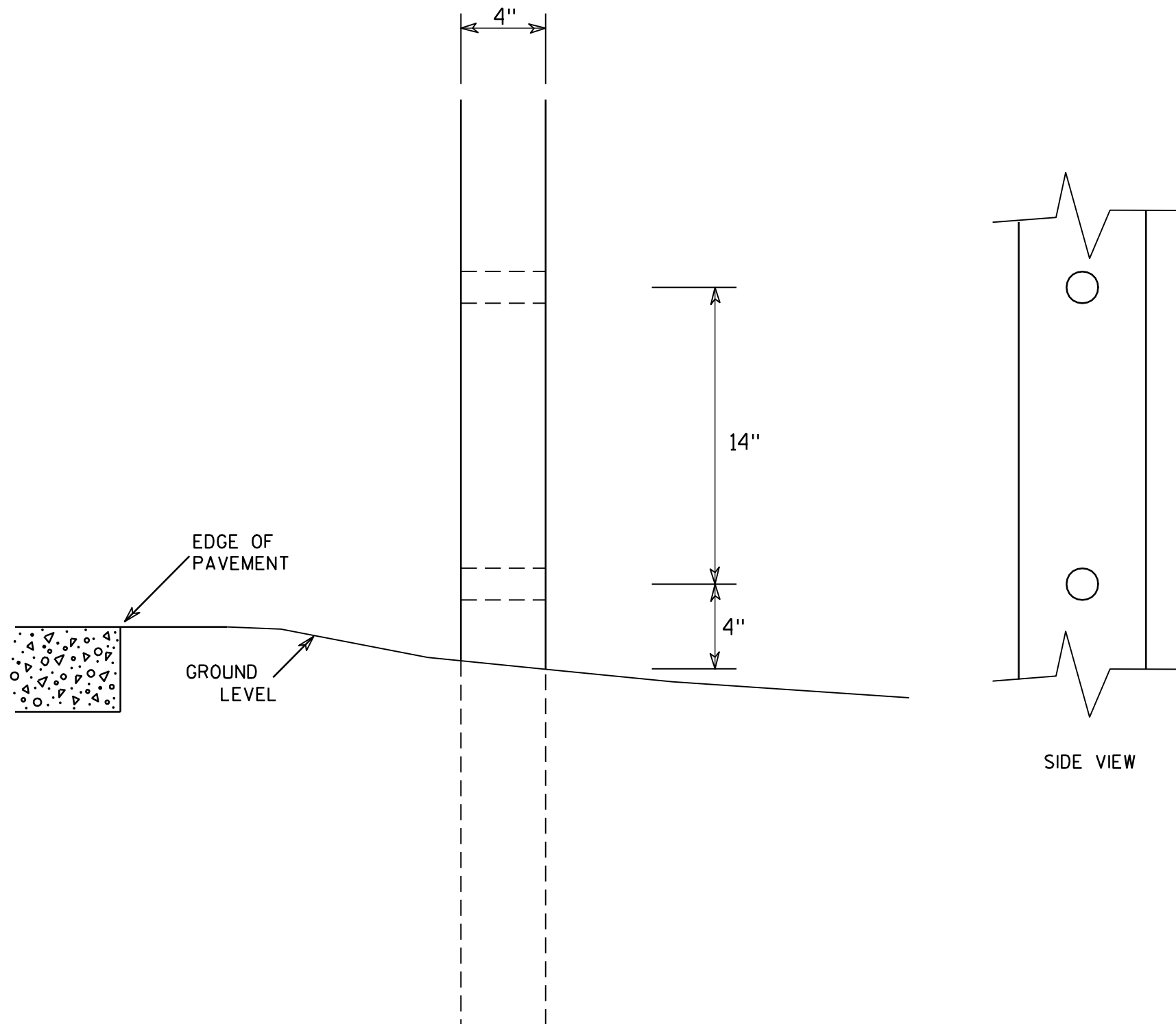
TUBULAR STEEL
SIGN POST
A4-9

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:

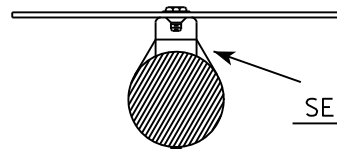
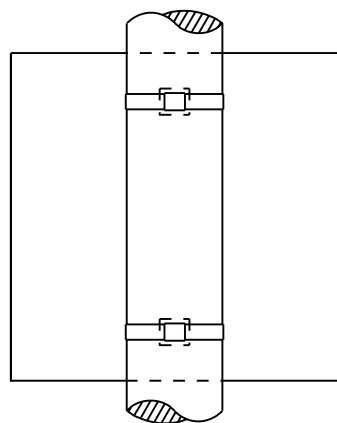
COUNTY:

SHEET NO:

E

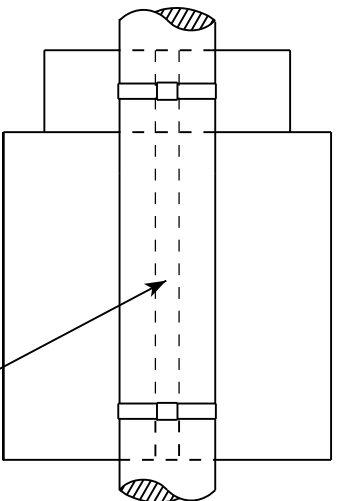
BANDING

SINGLE SIGN

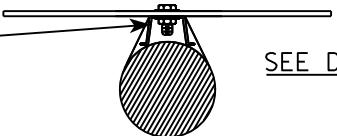


SEE DETAIL A

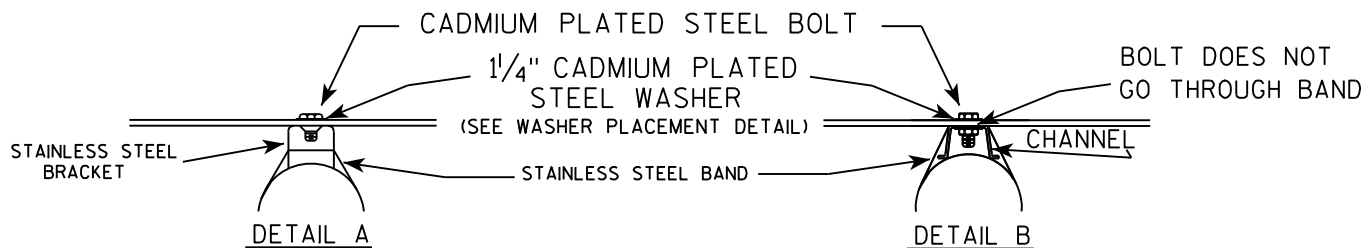
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



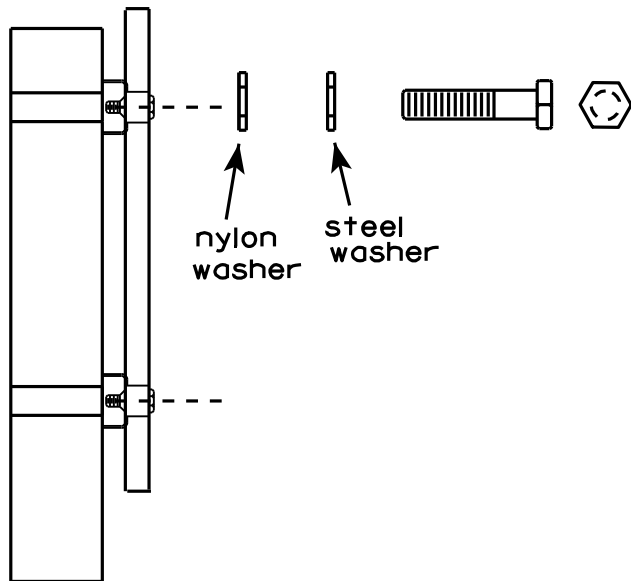
SEE DETAIL B



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



nylon washer

steel washer

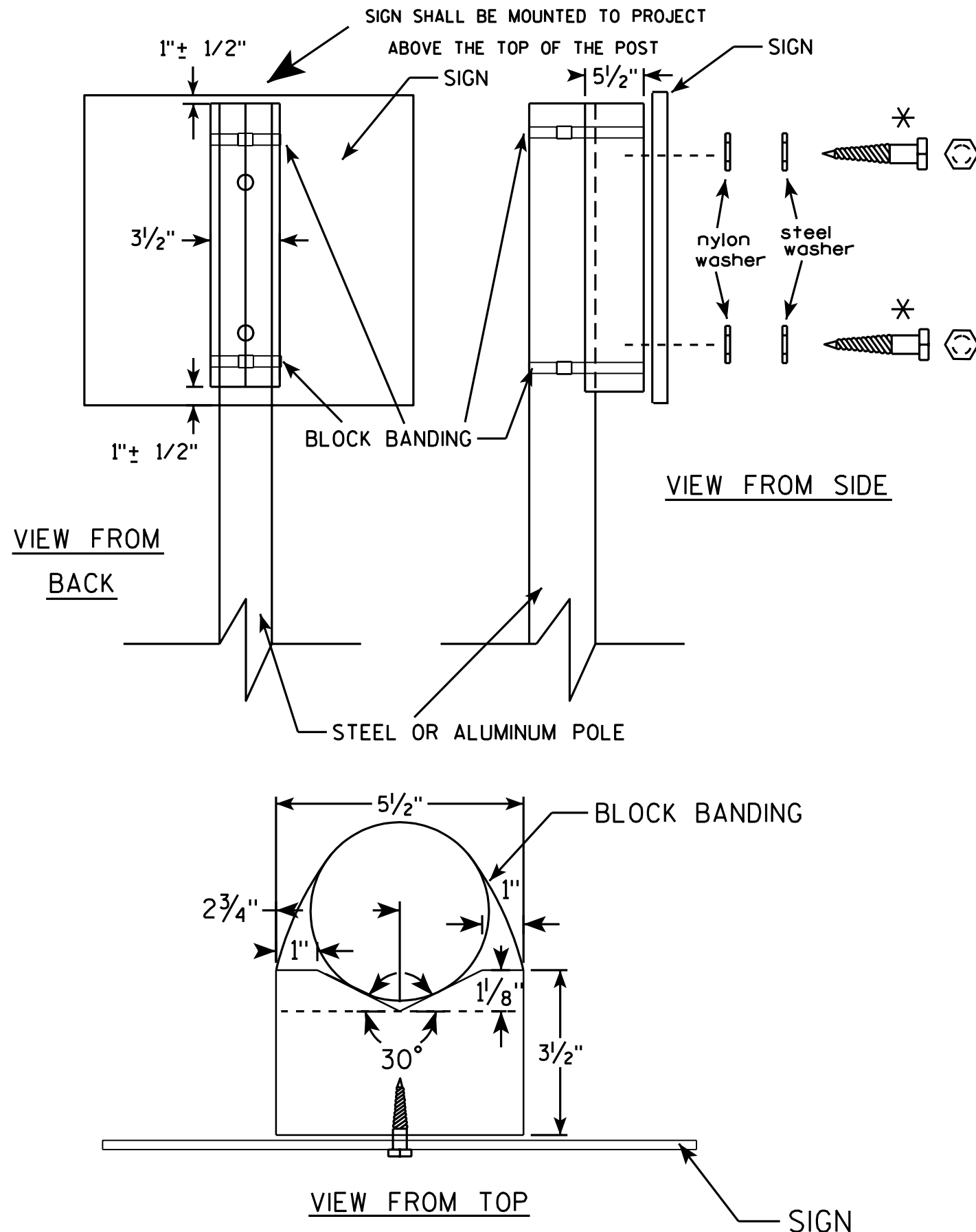
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



GENERAL NOTES

1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 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

✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

SHEET NO:

E

7

Metric equivalent
for this sign is:

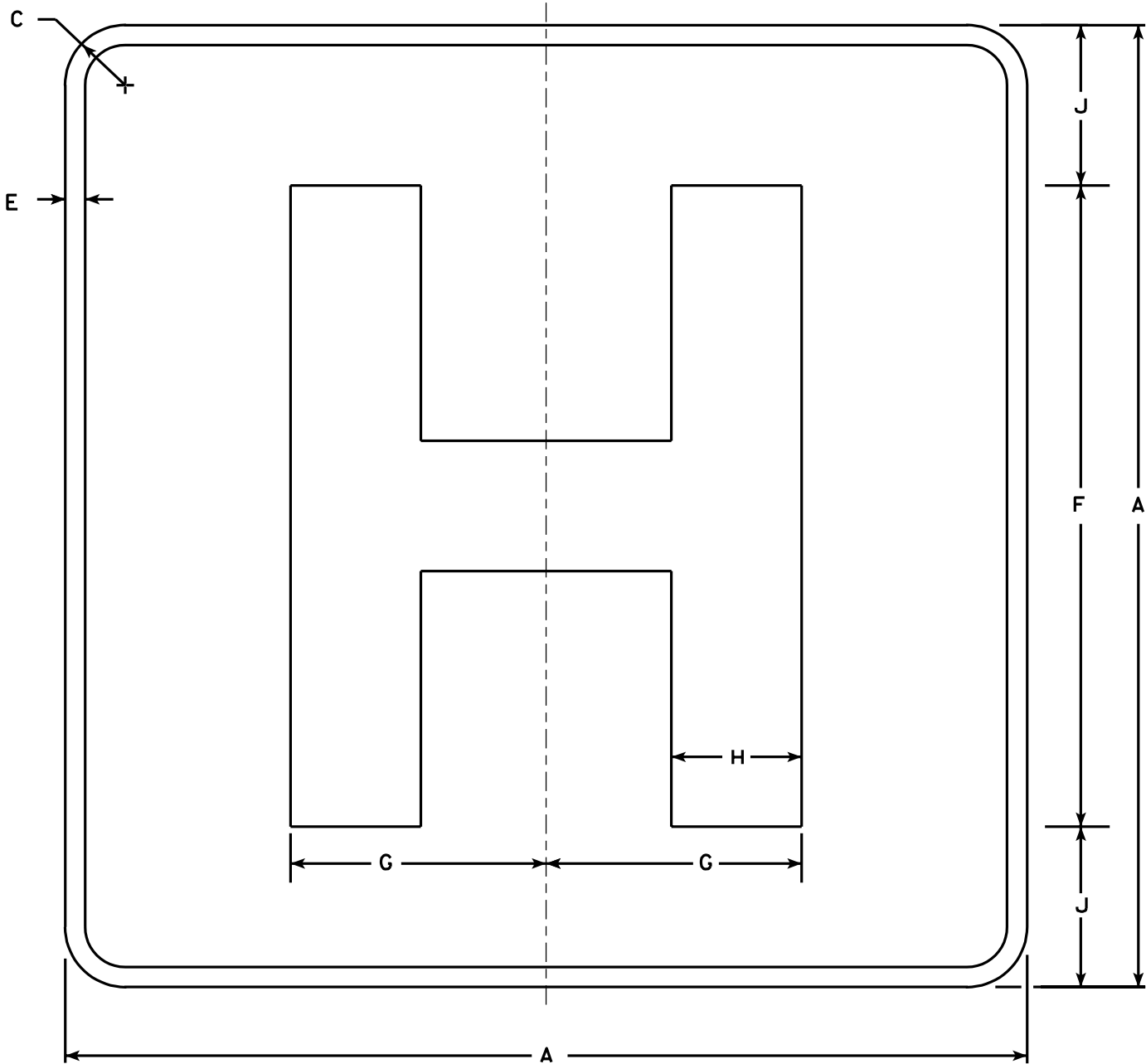
SIZE	
1	450 mmX 450 mm
2	600 mmX 600 mm
3	900 mmX 900 mm
4	X
5	X

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

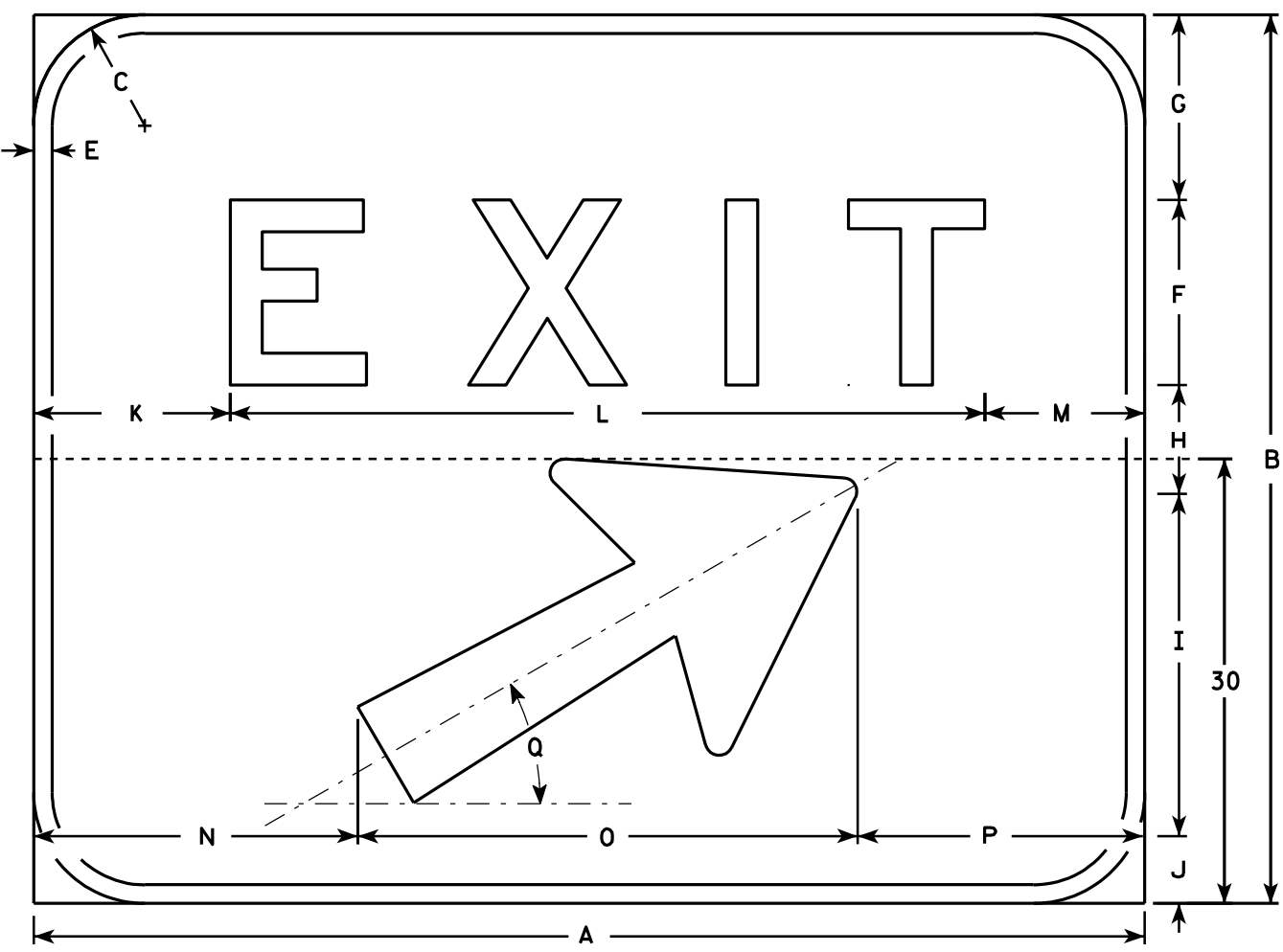
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Blue
Message - White - Type H Reflective
3. Message Series - E Modified
4. Corners may be square or rounded when base material is plywood but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



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

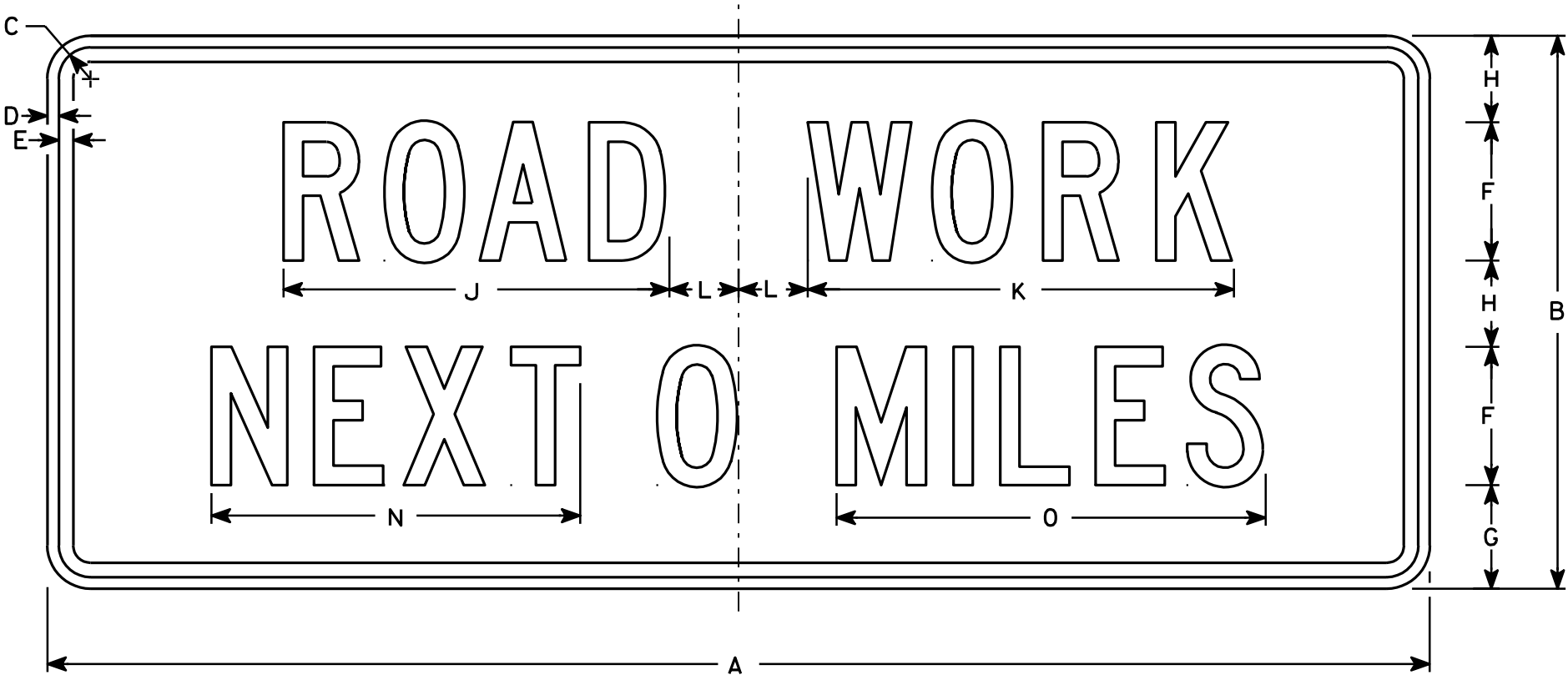
APPROVED
Christa J. Spang
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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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 - 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. Substitute appropriate numerals and optically adjust spacing to achieve proper balance



G20-1

Metric equivalent
for this sign is:

SIZE	
1	
2	1500 mm X 600 mm
3	
4	1500 mm X 600 mm
5	

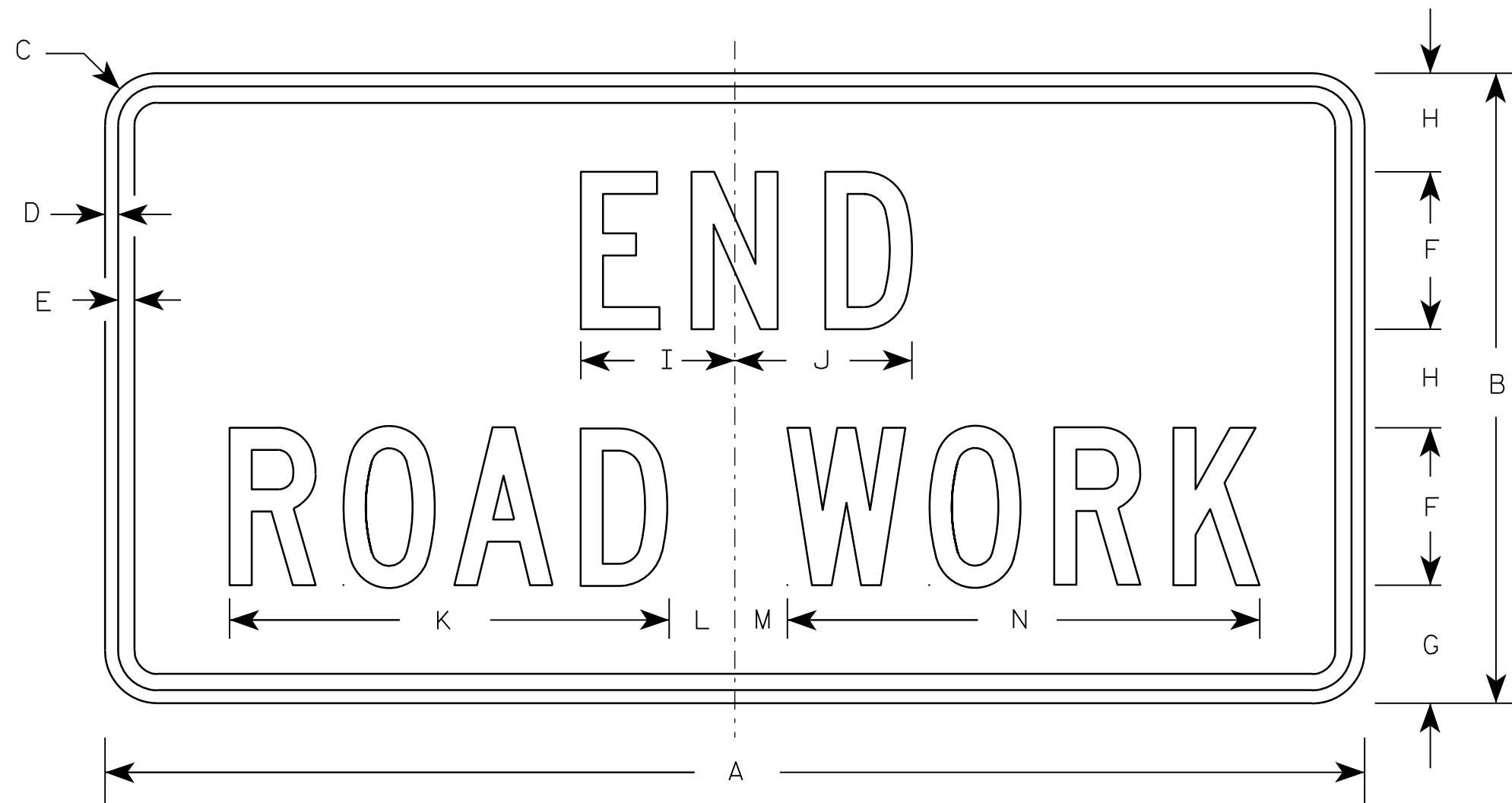
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	60	24	1 3⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4		16 3⁄4	18 1⁄2	3		16	18 5⁄8												10	.90
3																												
4	60	24	1 3⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4		16 3⁄4	18 1⁄2	3		16	18 5⁄8												10	.90
5																												

STANDARD SIGN
G20-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Chris J. Spay
State Traffic Engineer
DATE 4/8/97 PLATE NO. G20-1.7

7



G20-2A

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 - 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.

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 m ²
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

STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

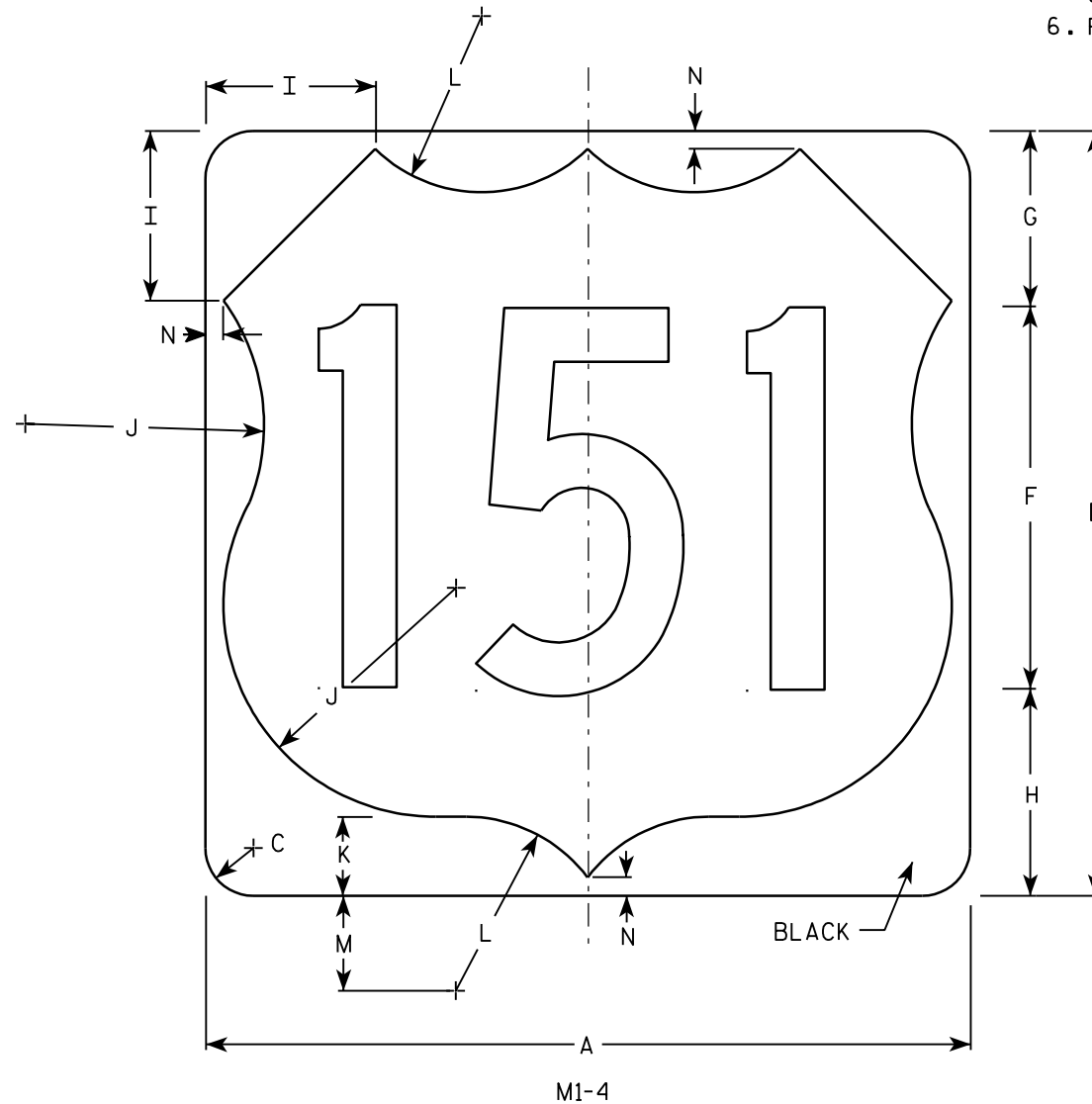
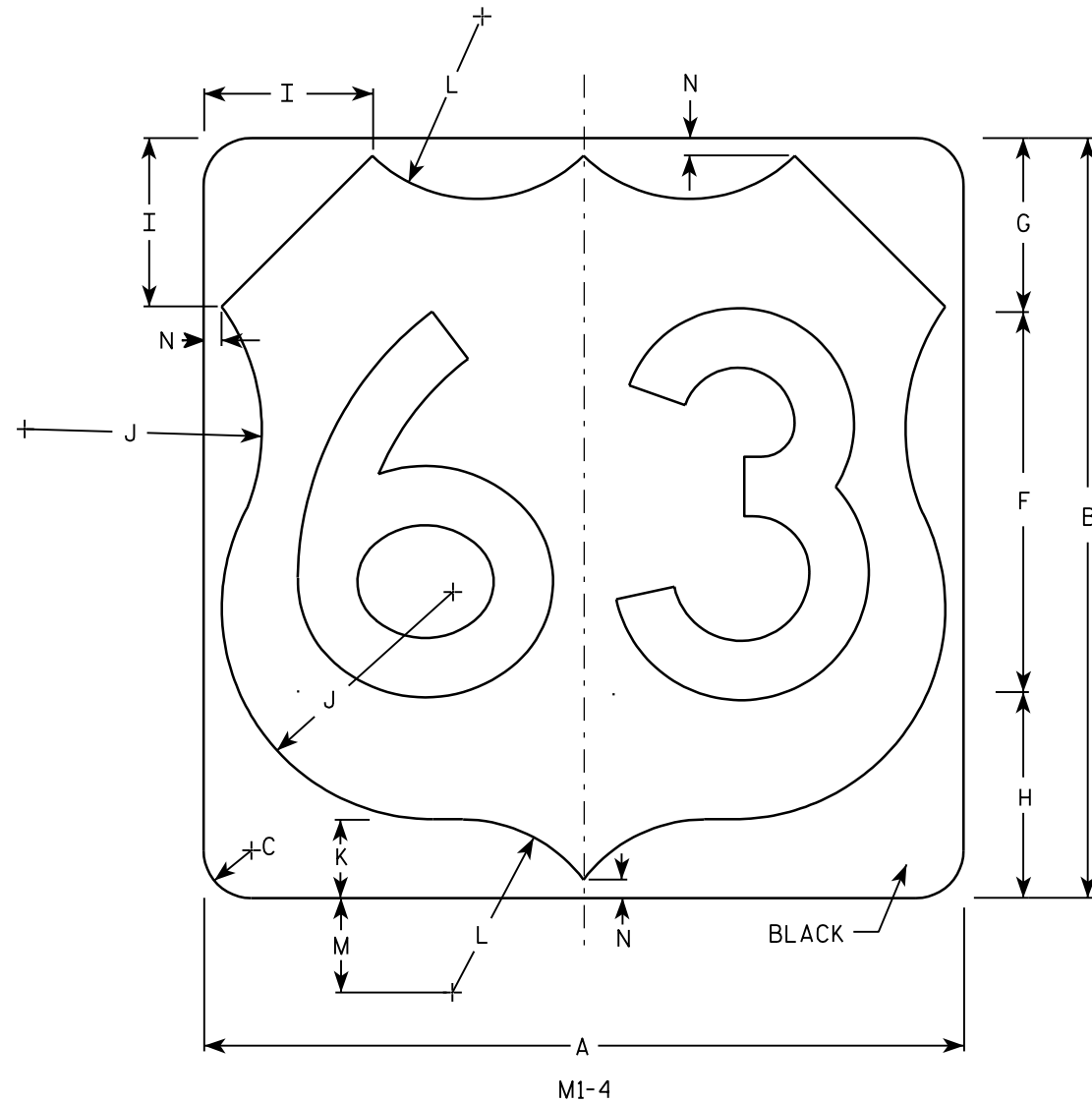
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

7

NOTES

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



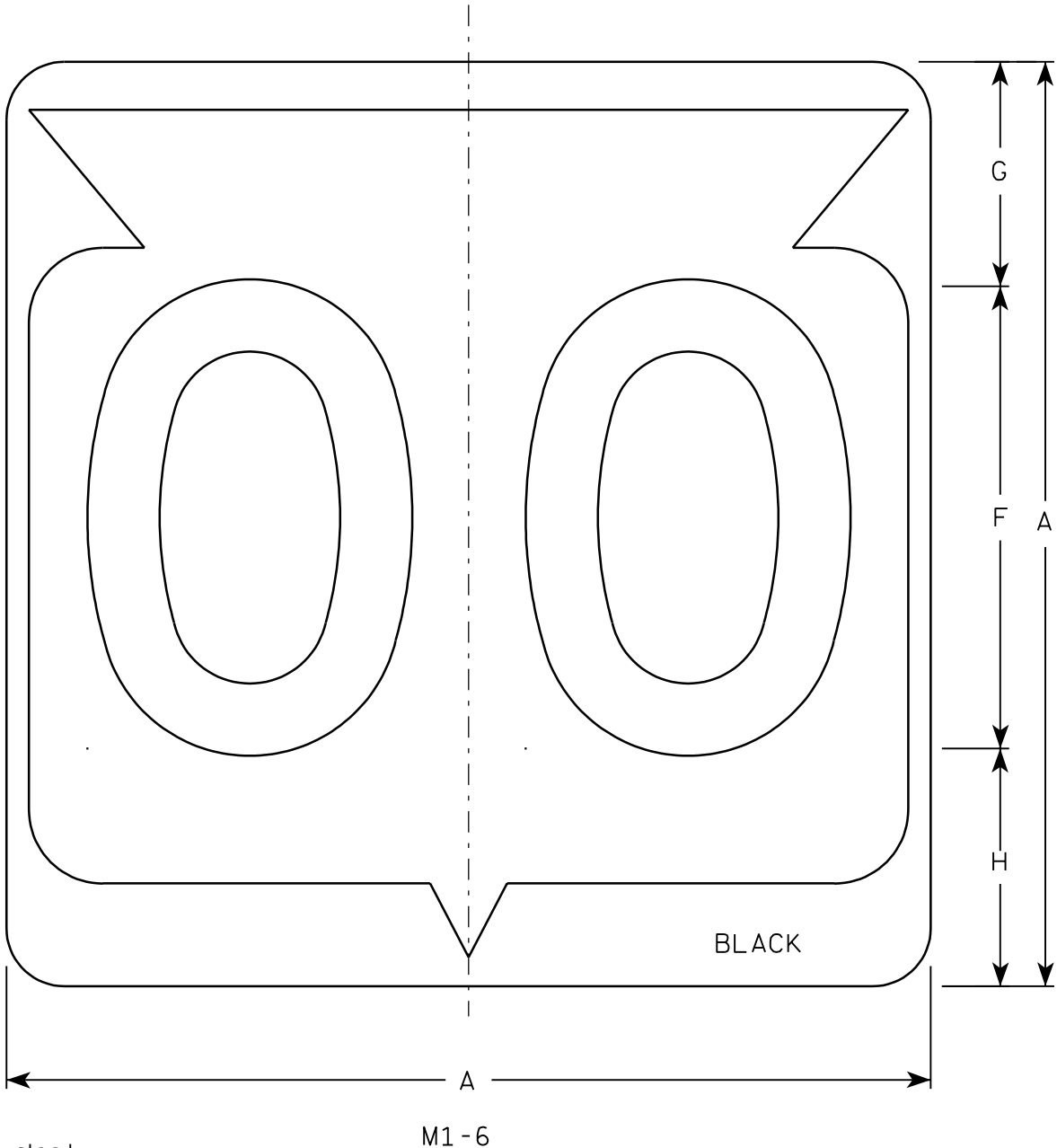
Metric equivalent
for this sign is:

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

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

PROJECT NO: HWY: COUNTY: SHEET NO: E

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:

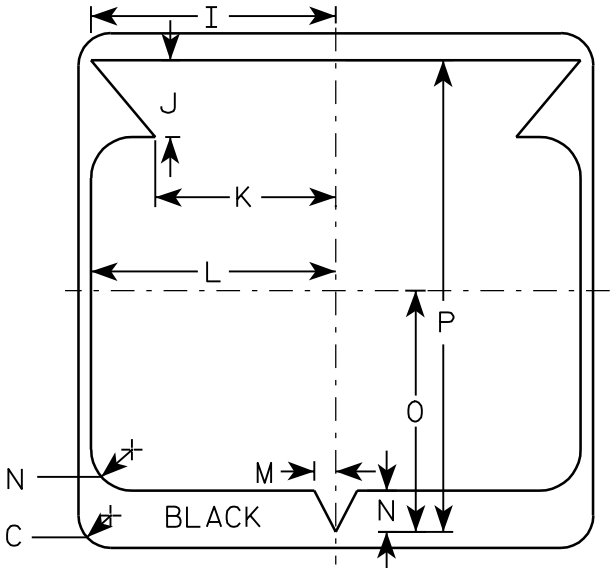
COUNTY:

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

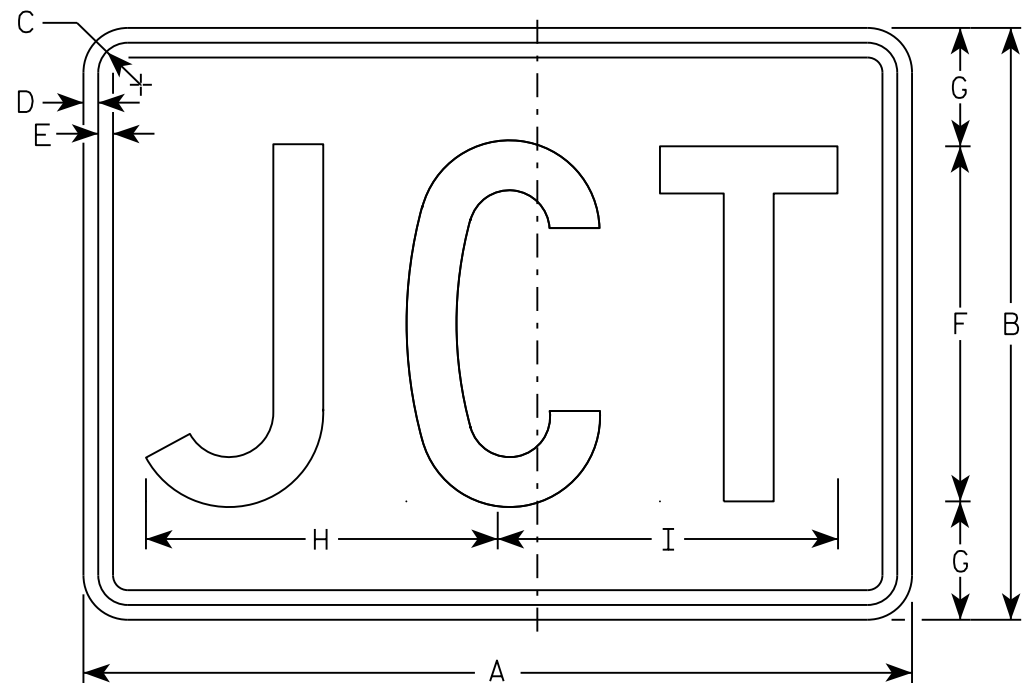
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

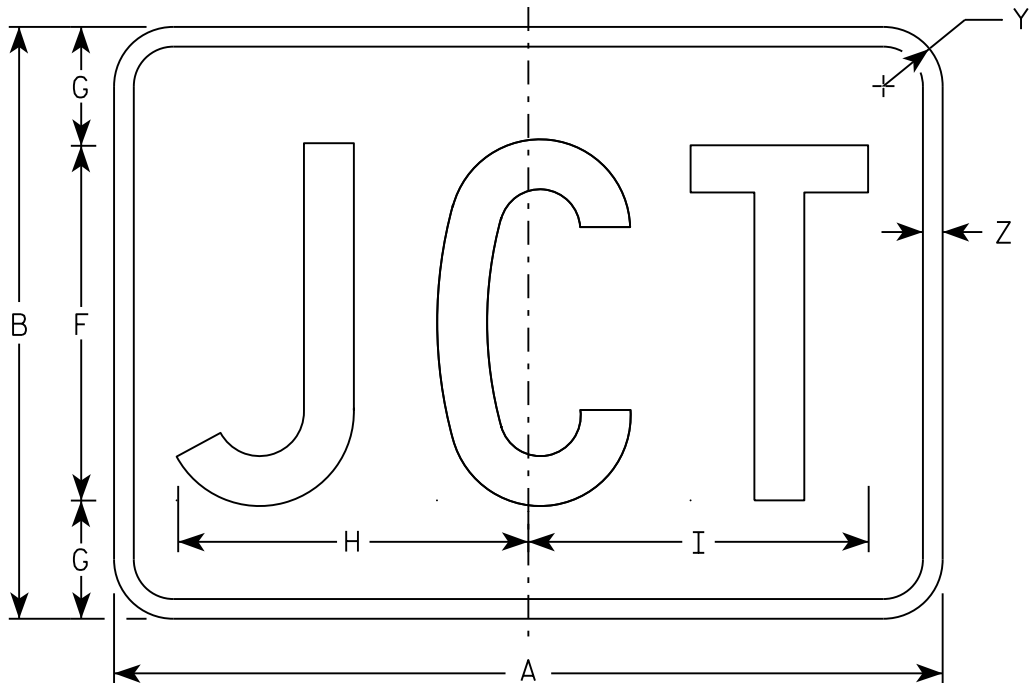
Chester J. Spang
for State Traffic Engineer

DATE 3/20/02

PLATE NO. M1-6.9



M2-1
MM2-1
MP2-1



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

NOTES

- 1. Sign is Type II - Type H
- 2. Color:
 - Background - See note 5
 - Message - See note 5
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. M2-1 Background - White
 Message - Black
 MB2-1 Background - Blue
 Message - White
 MK2-1 Background - Green
 Message - White
 MM2-1 Background - White
 Message - Green
 MN2-1 Background - Brown
 Message - White
 MP2-1 Background - White
 Message - Blue
 MR2-1 Background - Brown
 Message - Yellow

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

STANDARD SIGN

M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

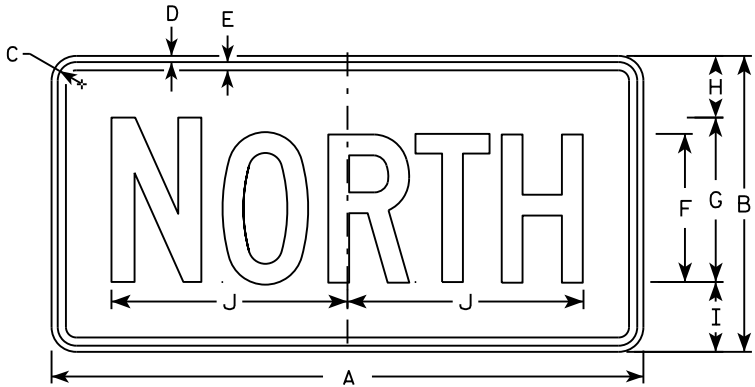
APPROVED

Matthew R. Rauch

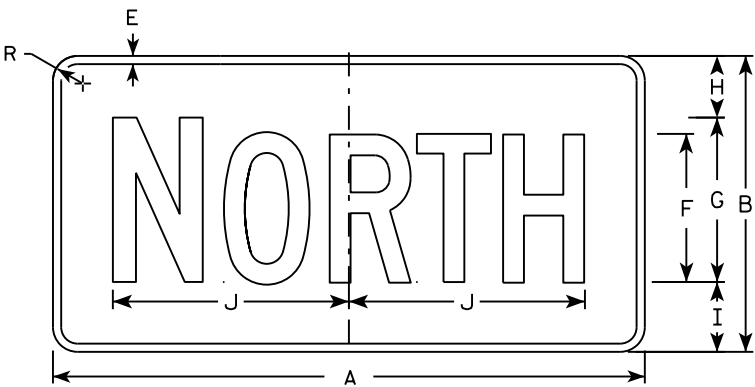
For State Traffic Engineer

DATE 10/15/15

PLATE NO. M2-1.12



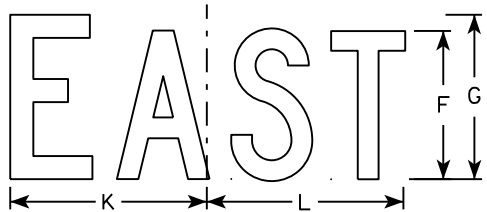
M3-1
MM3-1
MP3-1



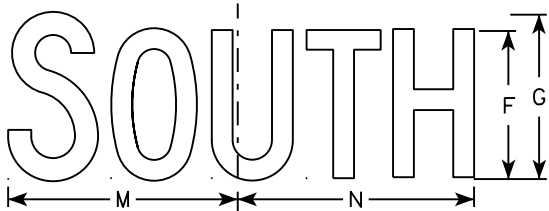
MB3-1
MK3-1
MN3-1



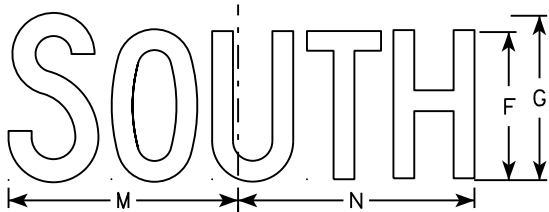
M3-2
MM3-2
MP3-2



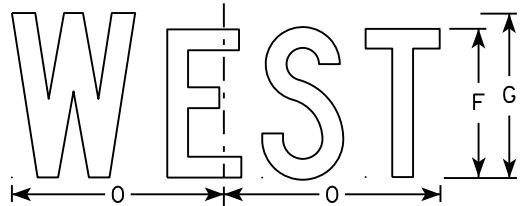
MB3-2
MK3-2
MN3-2



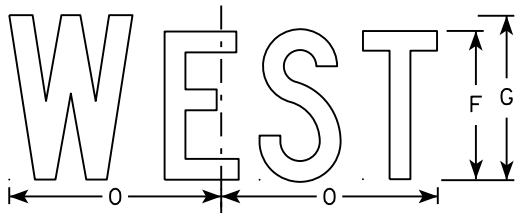
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



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.

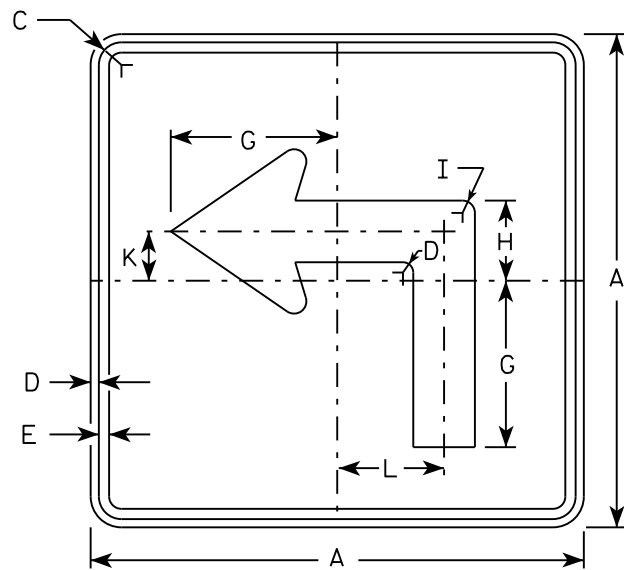
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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

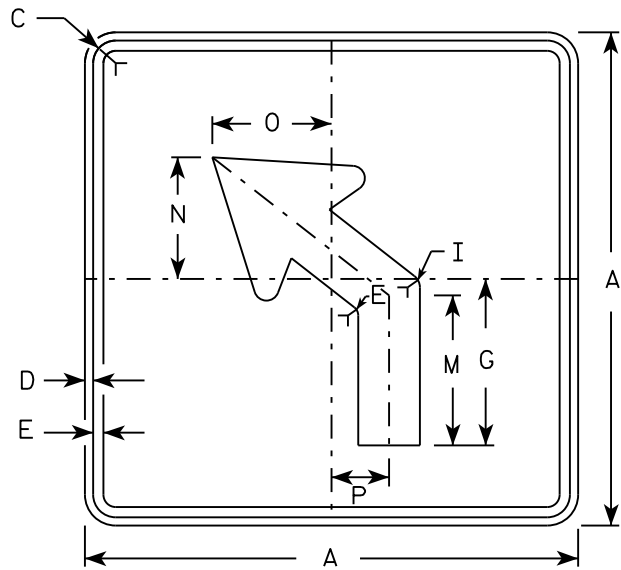
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

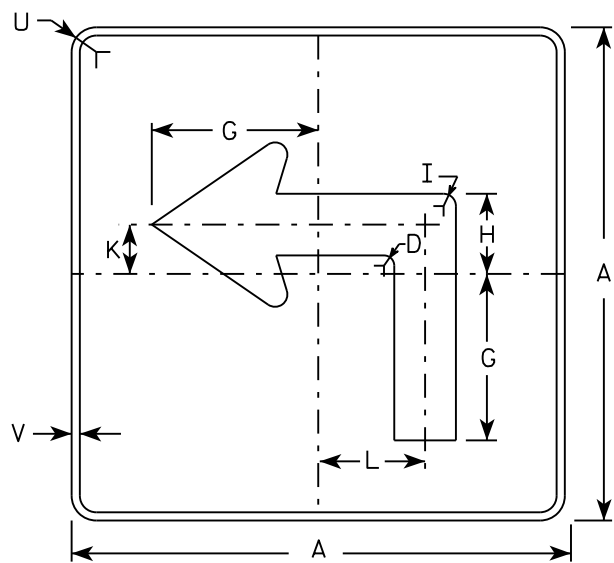
DATE 10/15/15 PLATE NO. M3-1.14



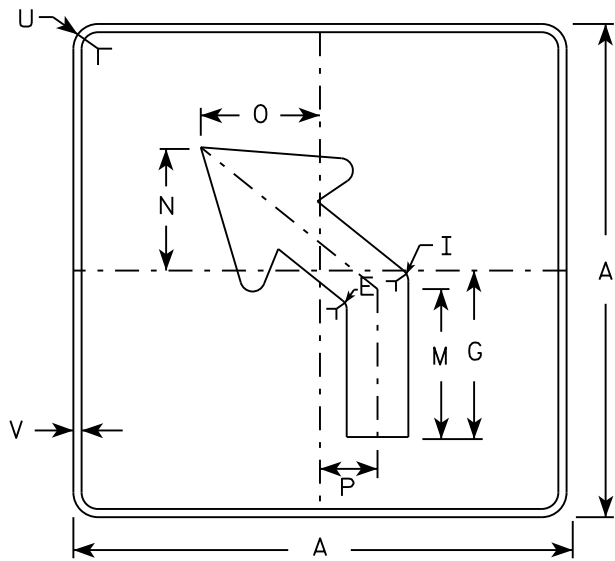
M5-1L
MM5-1L
M05-1L
MP5-1L



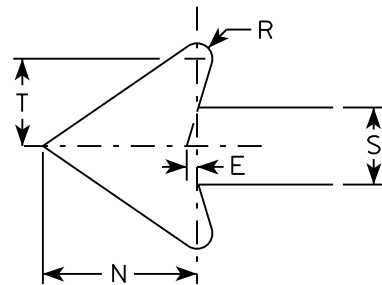
M5-2L
MM5-2L
M05-2L
MP5-2L



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.

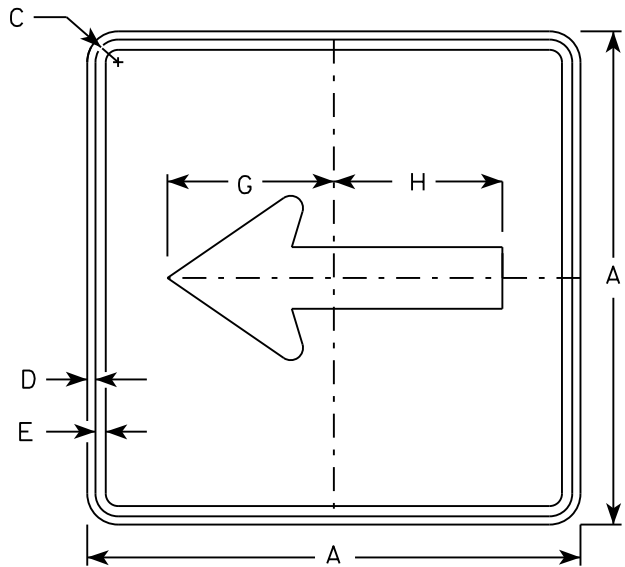
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
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

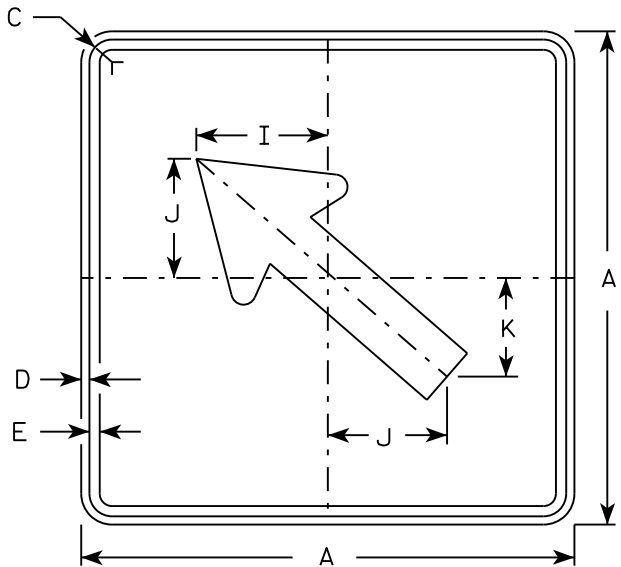
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

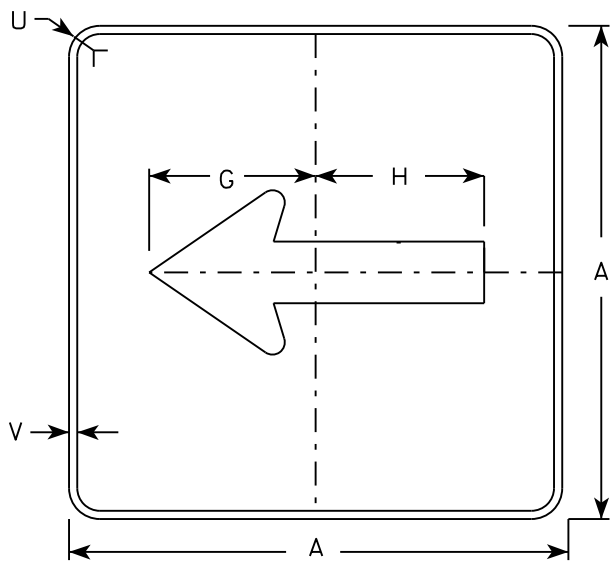
DATE 10/15/15 PLATE NO. M5-1.13



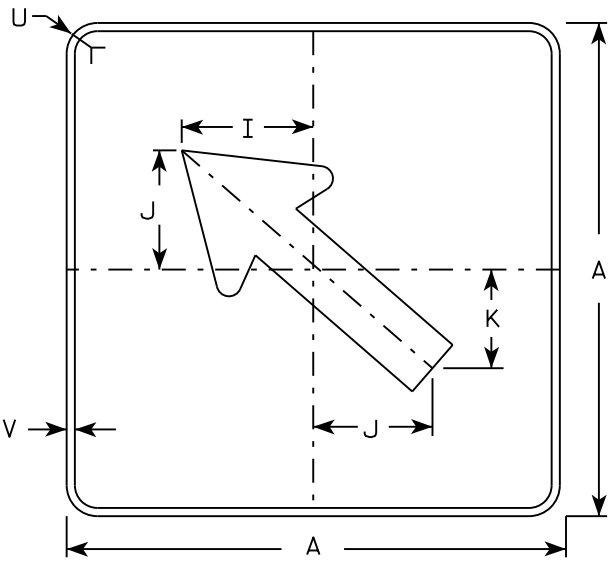
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



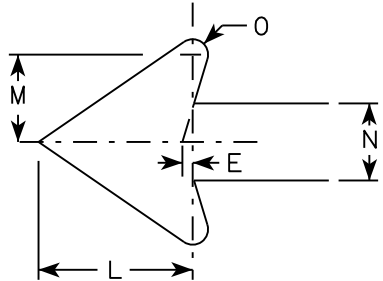
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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:

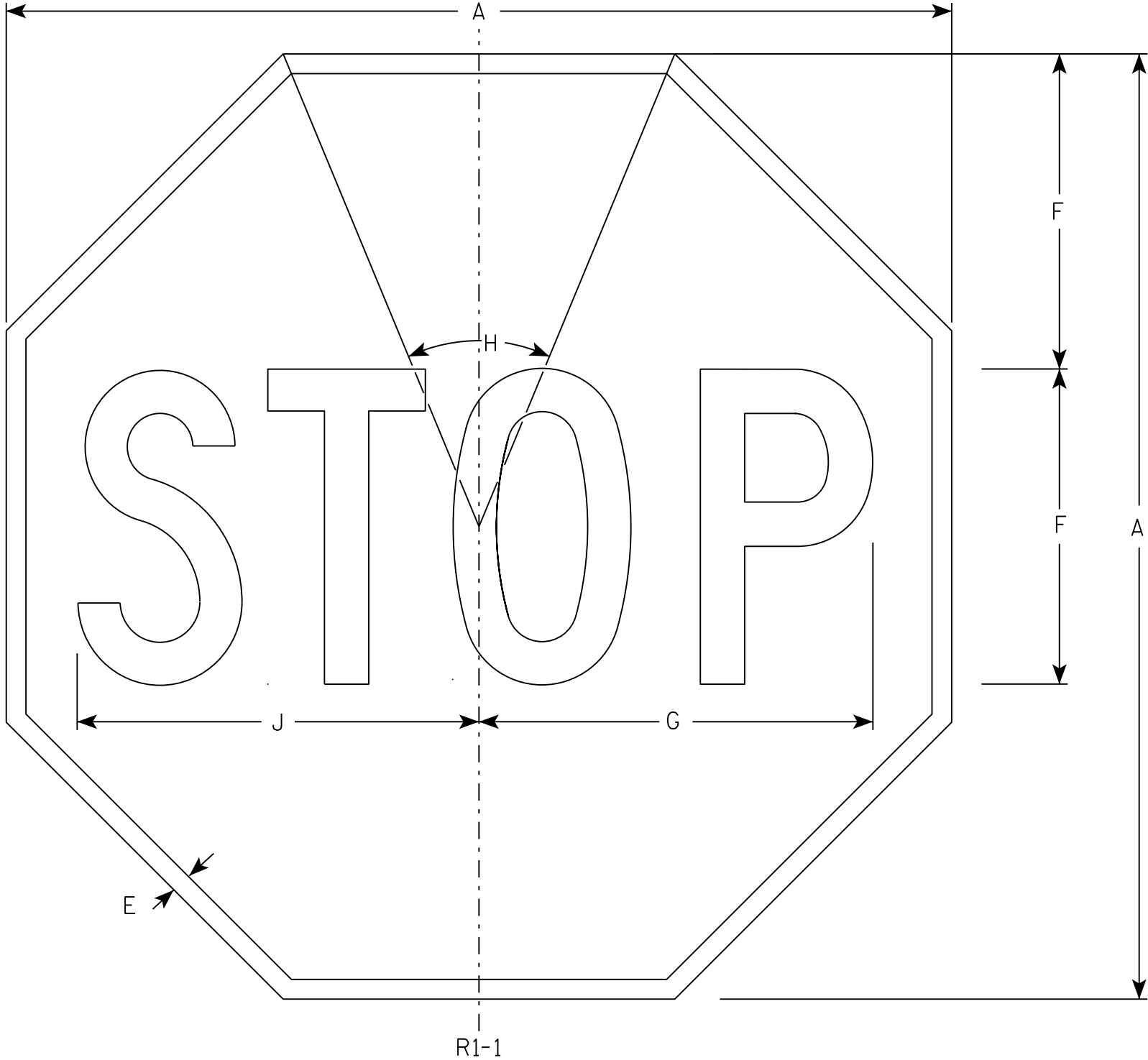
E

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

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

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

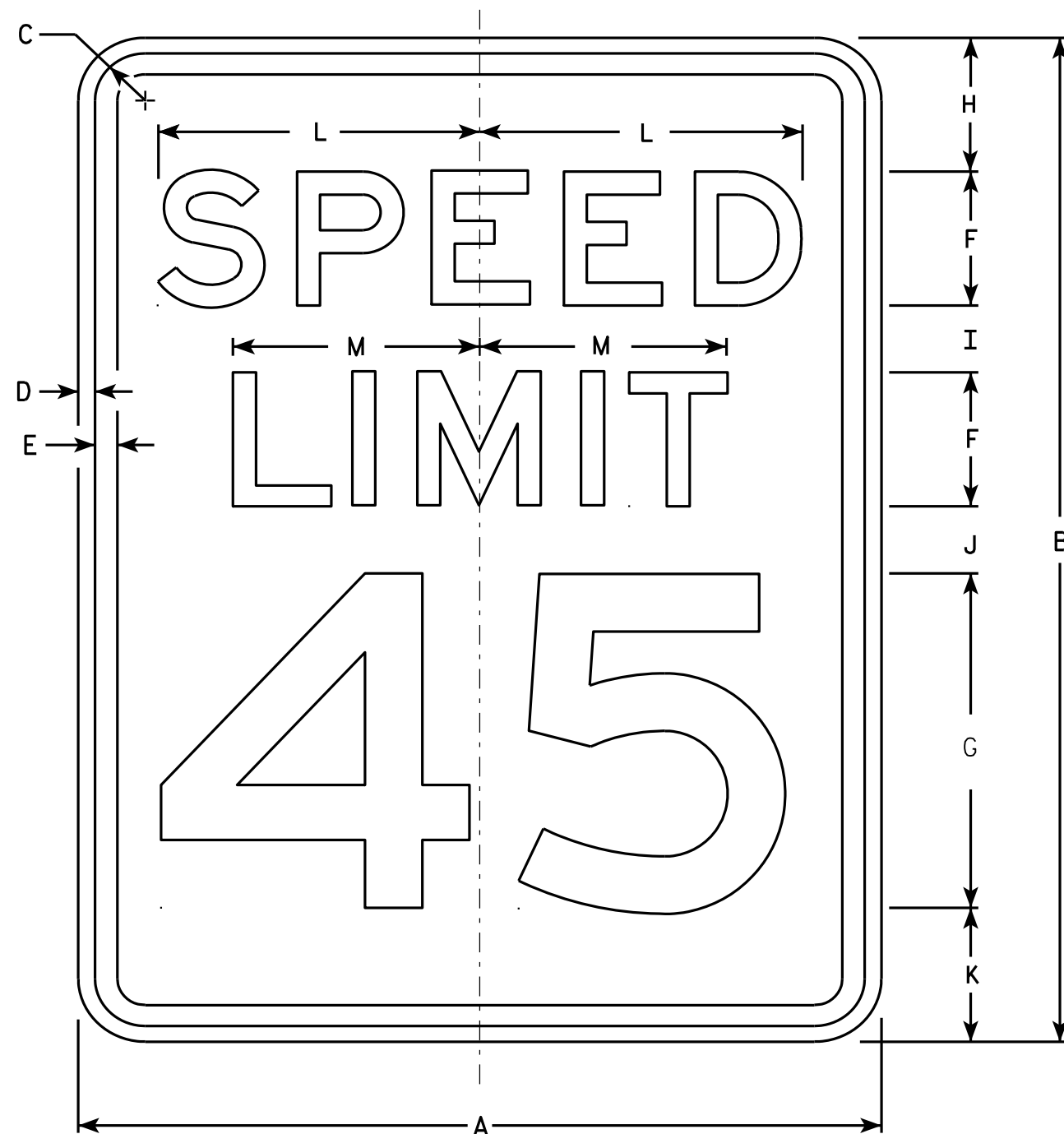
STANDARD SIGN

R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13



R2-1

NOTES

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

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

STANDARD SIGN R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

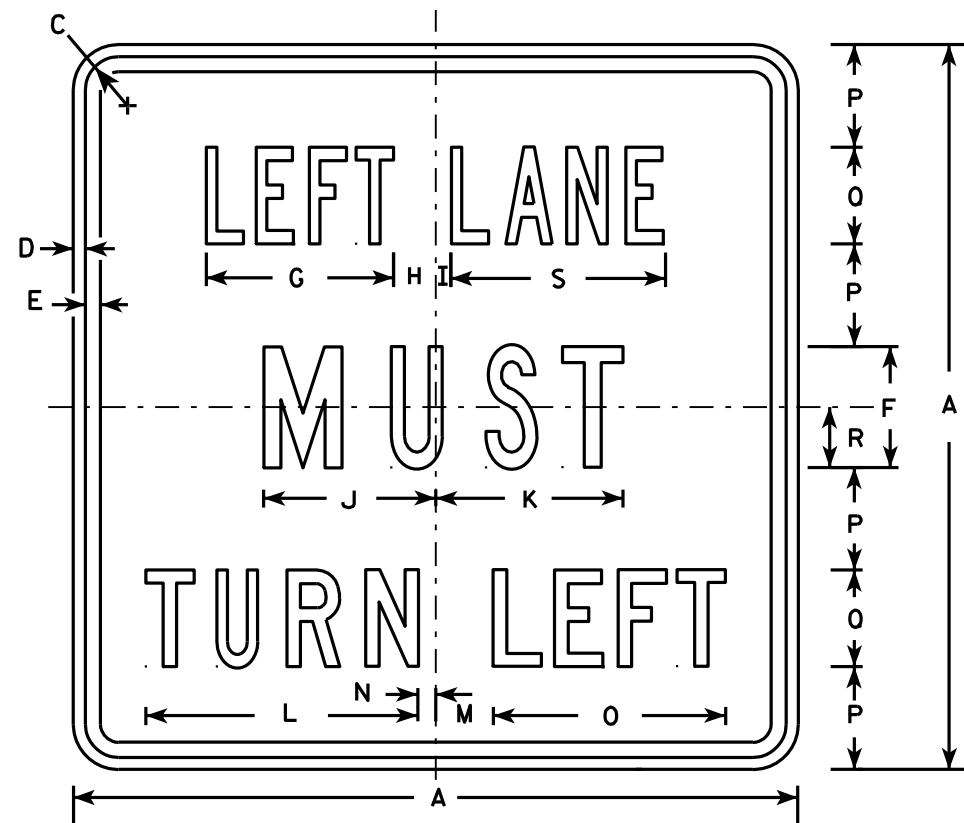
PROJECT NO:

HWY:

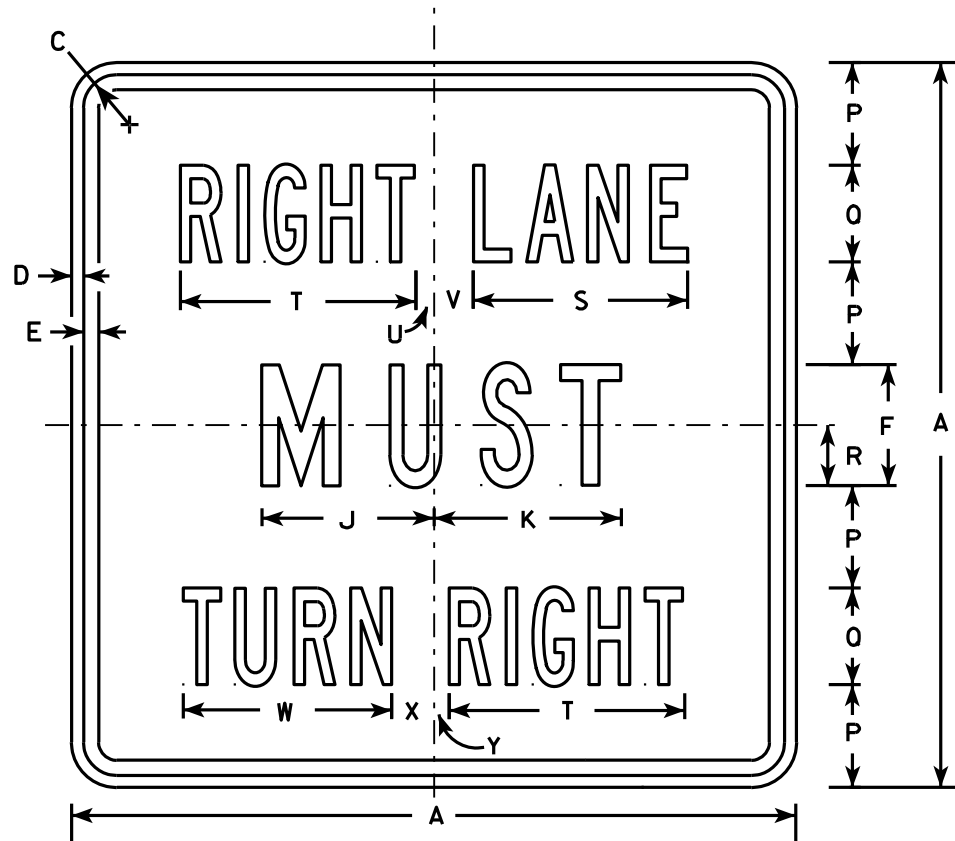
COUNTY:

SHEET NO:

E



R3-7L



R3-7R

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 - Line 1 is Series B.
Line 2 is Series C.
Line 3 on plate R3-7R is Series B and Series C on plate R3-7L.
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	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2S	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2M	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
3	36		1 5/8	5/8	3/4	6	9 5/8	2	1 1/8	8 3/4	9	13 1/2	3 7/8	1 1/2	12 1/2	5	5	3	10 5/8	12	7/8	2 1/4	10 5/8	2 1/8	1		9.00
4	48		2 1/4	3/4	1	8	13 1/2	2 3/8	1 1/2	11 1/2	11 7/8	17 3/4	3 5/8	2 1/2	16 3/8	6 1/2	7	4	14 3/8	16 7/8	5/8	3 1/4	15 1/8	2 3/4	1 1/8		16.00
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

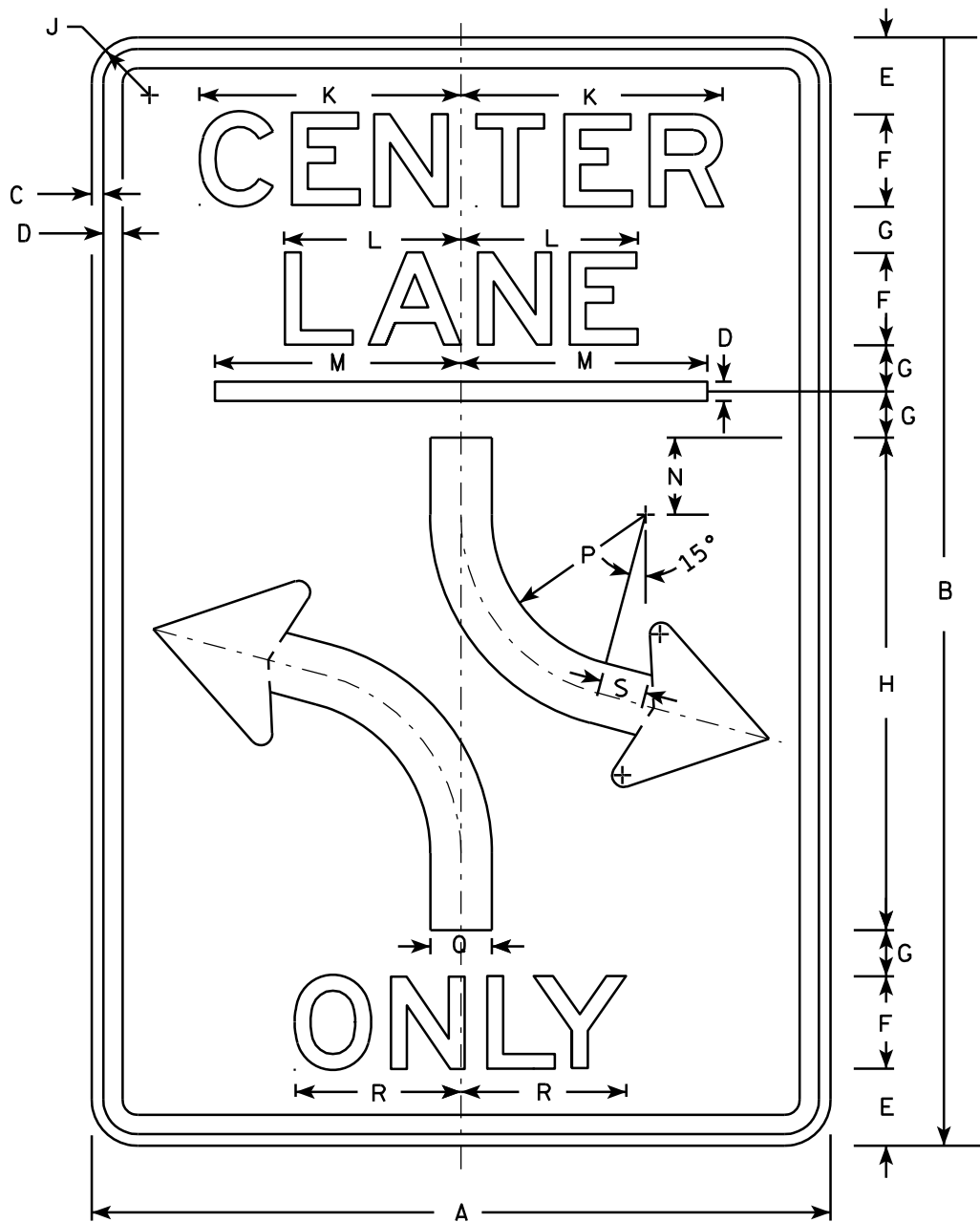
E

STANDARD SIGN
R3-7L & R3-7R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

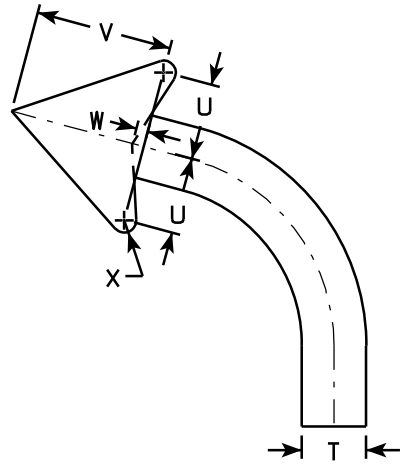
DATE 3/18/2011 PLATE NO. R3-7.3



R3-9B

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.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	$\frac{3}{8}$	$\frac{1}{2}$	2 $\frac{1}{2}$	3	1 $\frac{1}{2}$	16		1 $\frac{1}{2}$	8 $\frac{1}{2}$	5 $\frac{3}{4}$	8	2 $\frac{1}{2}$		6	2	5 $\frac{1}{8}$	1 $\frac{1}{2}$		2 $\frac{3}{8}$	4 $\frac{3}{8}$	$\frac{3}{8}$				6.0
2M	24	36	$\frac{3}{8}$	$\frac{1}{2}$	2 $\frac{1}{2}$	3	1 $\frac{1}{2}$	16		1 $\frac{1}{2}$	8 $\frac{1}{2}$	5 $\frac{3}{4}$	8	2 $\frac{1}{2}$		6	2	5 $\frac{1}{8}$	1 $\frac{1}{2}$		2 $\frac{3}{8}$	4 $\frac{3}{8}$	$\frac{3}{8}$				6.0
3	36	48	$\frac{5}{8}$	$\frac{7}{8}$	3 $\frac{1}{2}$	5	1 $\frac{1}{2}$	20		2 $\frac{1}{4}$	14 $\frac{1}{8}$	9 $\frac{1}{2}$	12	3		4	3	9 $\frac{7}{8}$	2		3 $\frac{1}{2}$	6 $\frac{1}{8}$	$\frac{1}{2}$				12.0
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

STANDARD SIGN
R3-9B

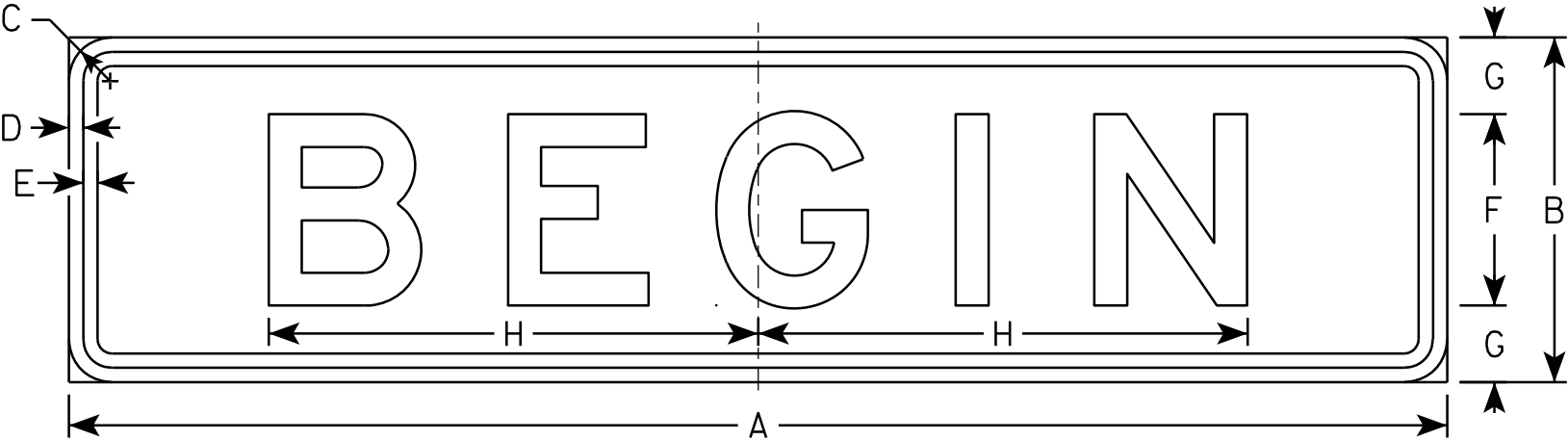
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

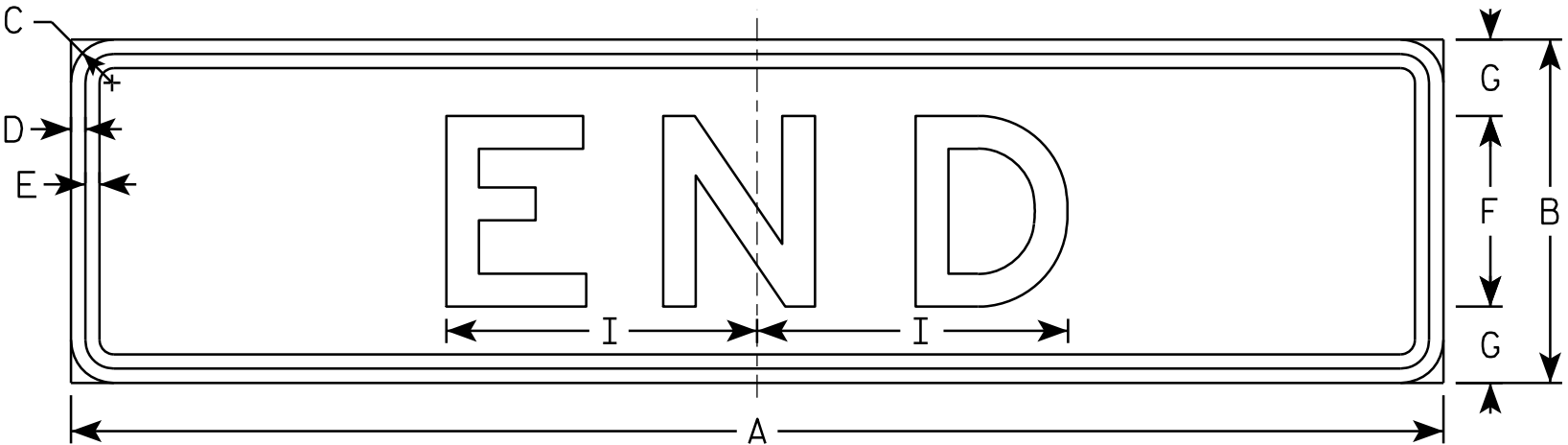
DATE 3/24/2011 PLATE NO. R3-9B.5

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.



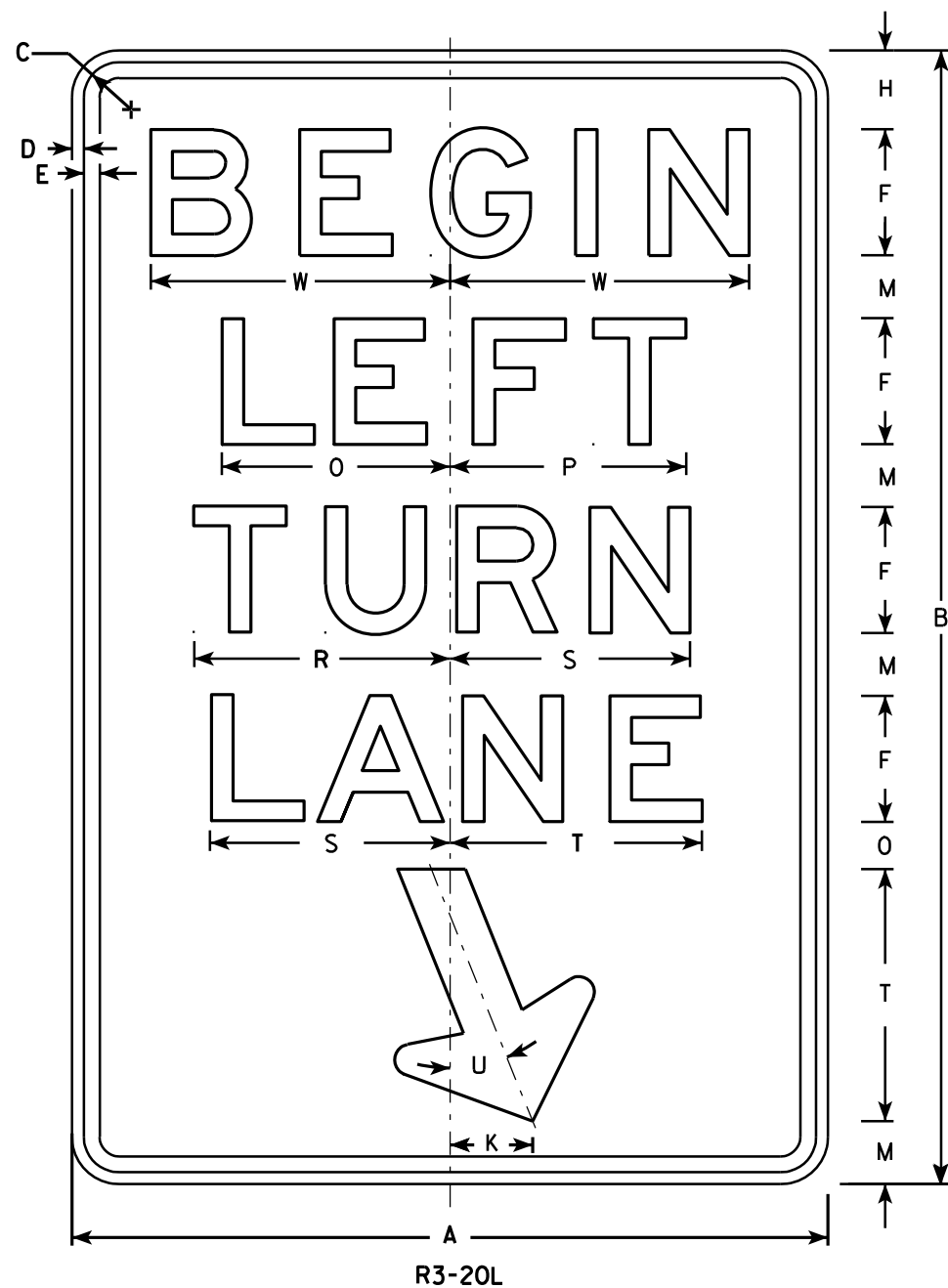
R3-9C



R3-9D

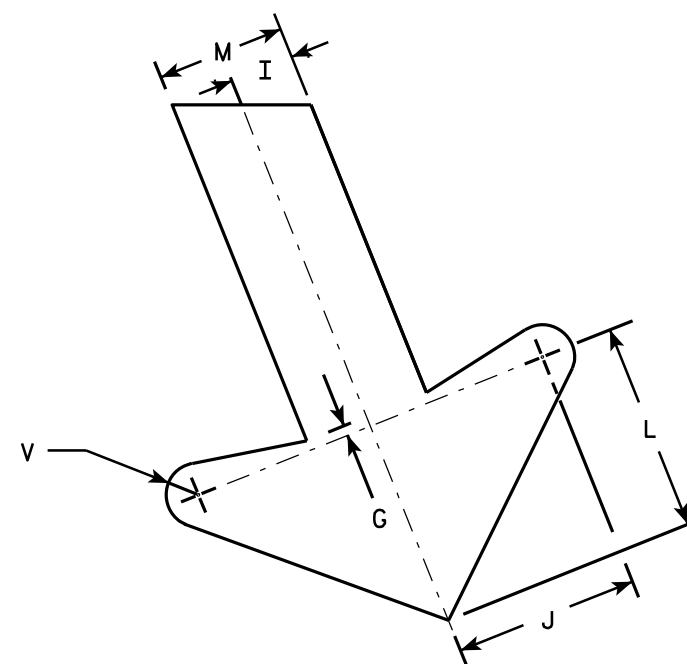
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	6	1 1/8	3/8	3/8	3	1 1/2	7 3/4	4 7/8																		1.0
2M	24	6	1 1/8	3/8	3/8	3	1 1/2	7 3/4	4 7/8																		1.0
3	36	9	1 1/8	3/8	3/8	5	2	12 3/4	8 1/8																		1.86
4																											
5																											

STANDARD SIGN R3-9C & R3-9D	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/24/2011	PLATE NO. R3-9C.2



NOTES

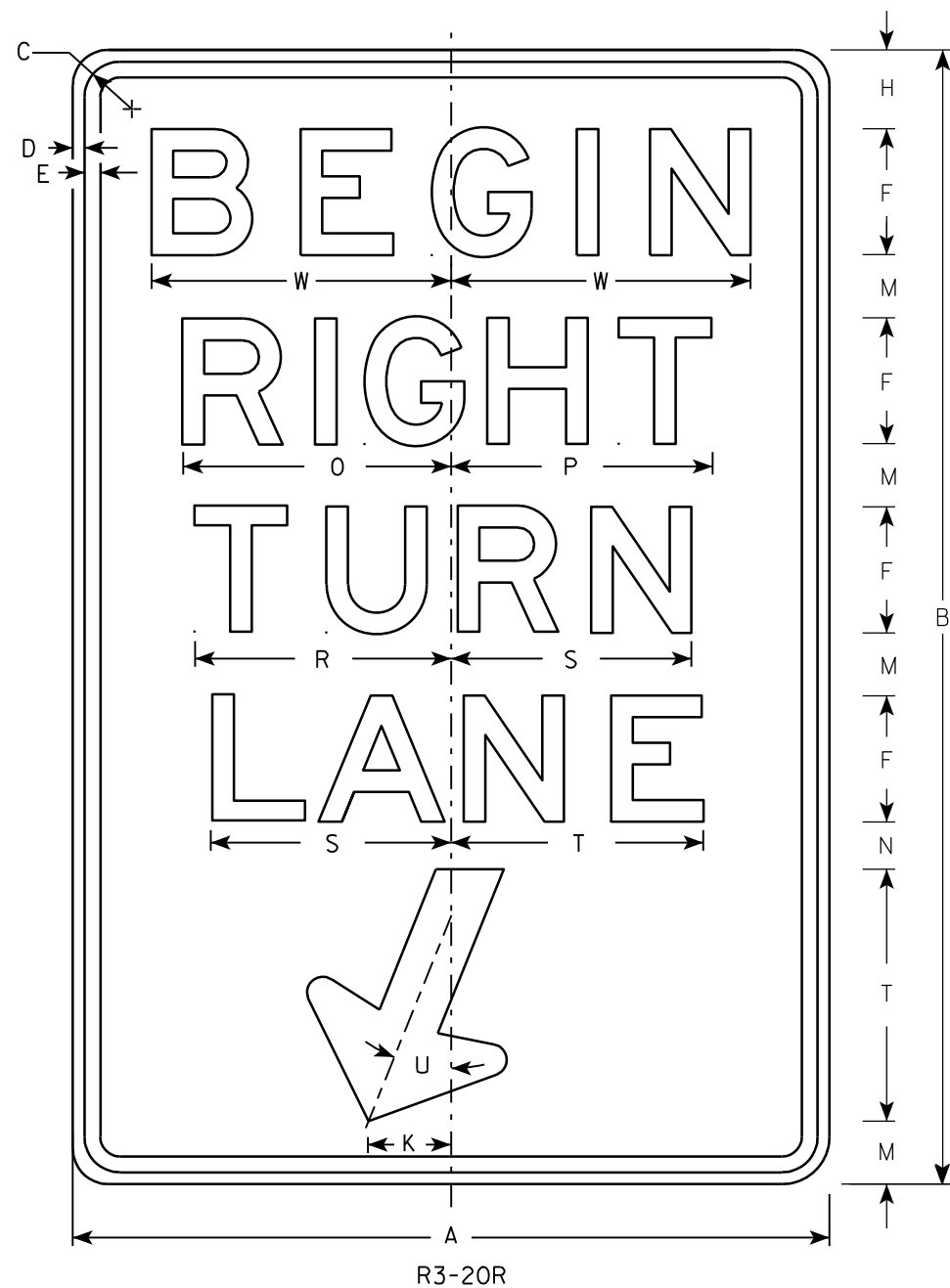
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as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



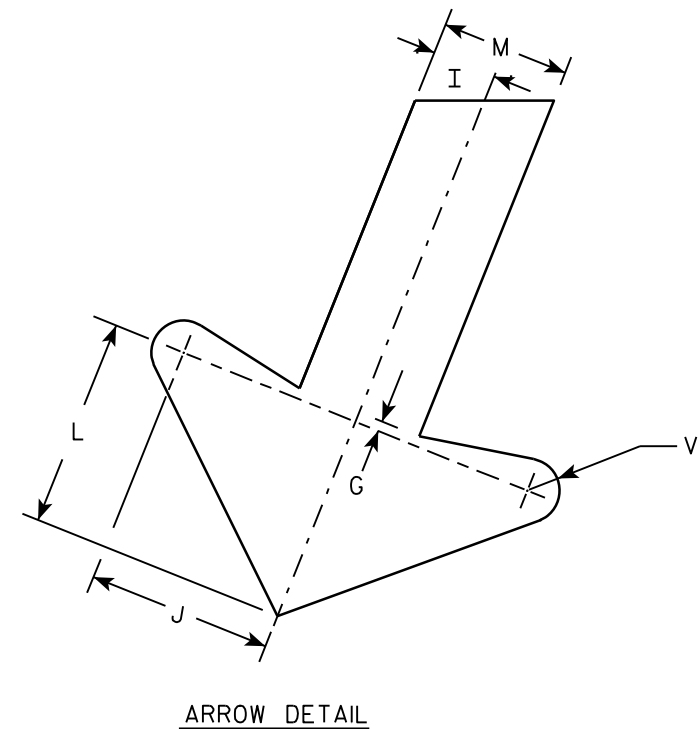
ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

STANDARD SIGN R3-20L	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 10/18/10	PLATE NO. R3-20L.7



- 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.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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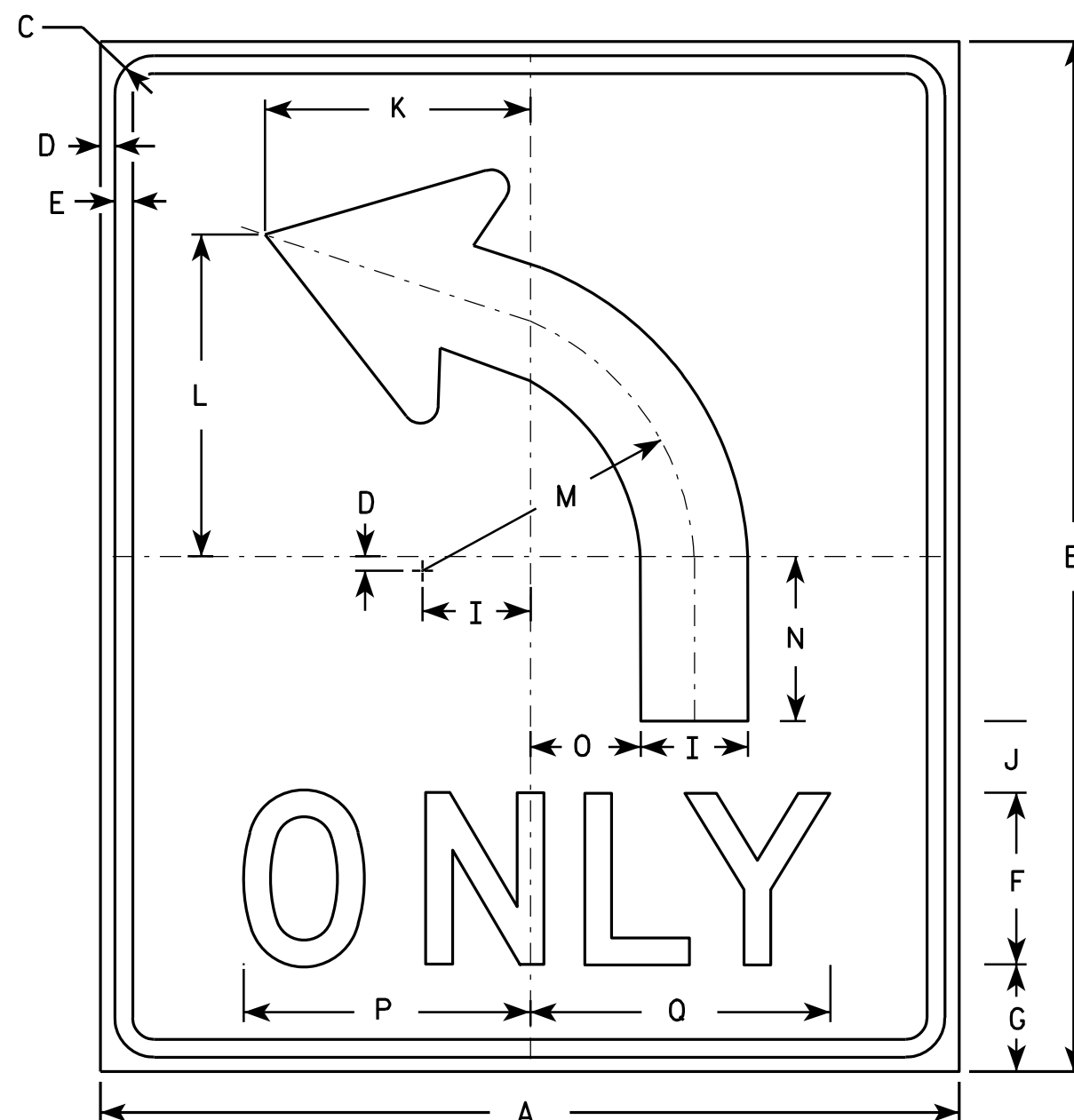
STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

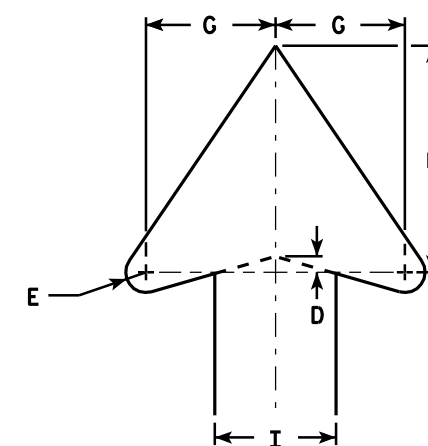
7



R3-50L

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.
5. R3-50R is the same as R3-50L except curved portion of arrow points right.



ARROW DETAIL

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	30	36	1 3⁄8	1⁄2	5⁄8	6	4	7	3 3⁄4	2 1⁄2	9 1⁄4	11 1⁄4	9 1⁄2	5 3⁄4	3 7⁄8	10	10 1⁄2										7.5
2M	30	36	1 3⁄8	1⁄2	5⁄8	6	4	7	3 3⁄4	2 1⁄2	9 1⁄4	11 1⁄4	9 1⁄2	5 3⁄4	3 7⁄8	10	10 1⁄2										7.5
3																											
4																											
5																											

STANDARD SIGN
R3-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-50.2

PROJECT NO: HWY: COUNTY: SHEET NO: E



R4-3

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	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 3/4	10	6 1/4	6 3/4	7 1/8	7 5/8													5.0
2M	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 3/4	10	6 1/4	6 3/4	7 1/8	7 5/8													5.0
3	36	48	1 5/8	5/8	3/4	6	6	4	14 5/8	15	9 3/8	10	10 3/4	11 3/8													12.0
4	36	48	1 5/8	5/8	3/4	6	6	4	14 5/8	15	9 3/8	10	10 3/4	11 3/8													12.0
5	48	60	2 1/4	3/4	1	8	7 1/4	4 1/2	19 1/2	20	12 1/2	13 1/2	14 1/4	15 1/4													20.0

STANDARD SIGN R4-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

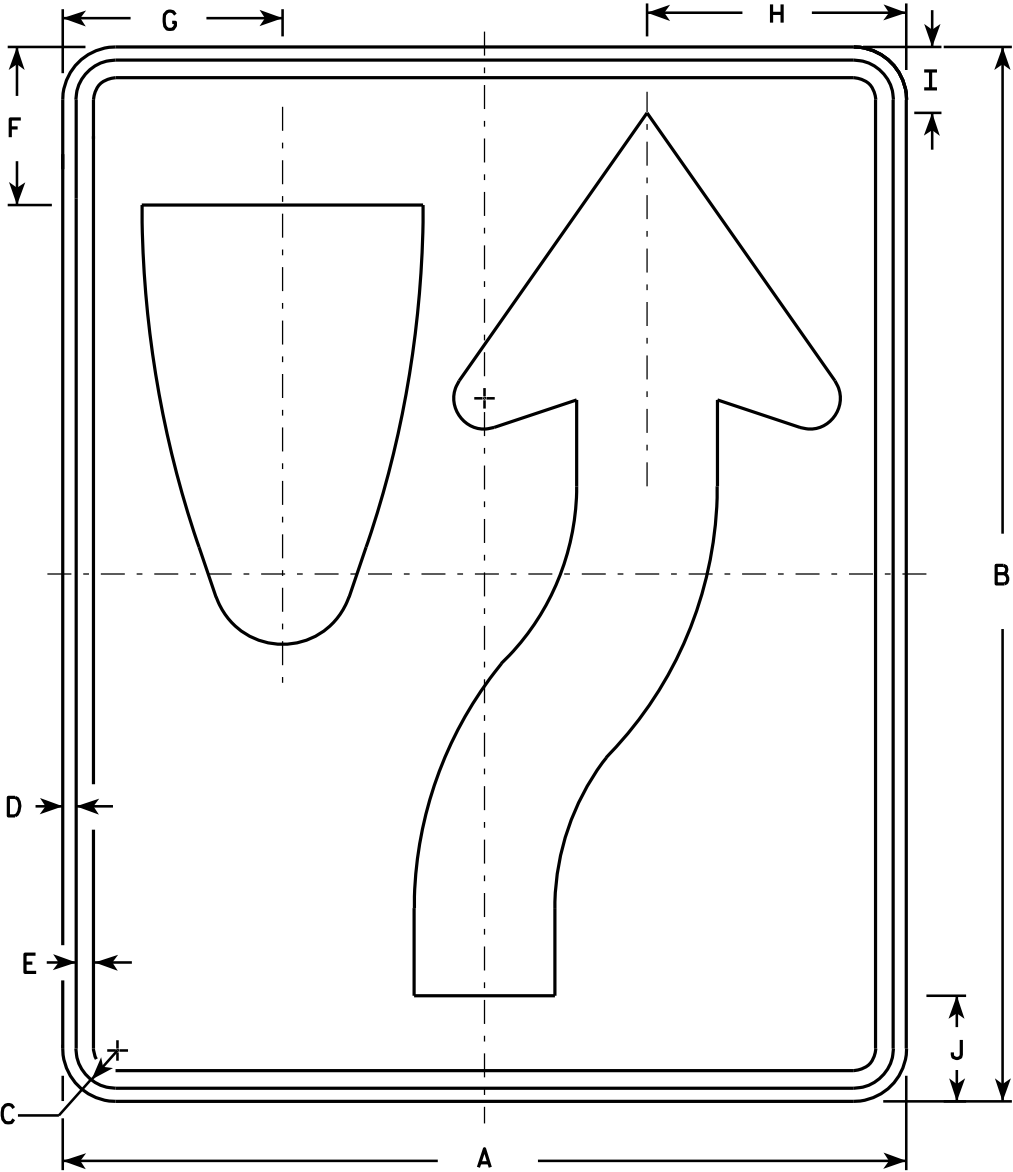
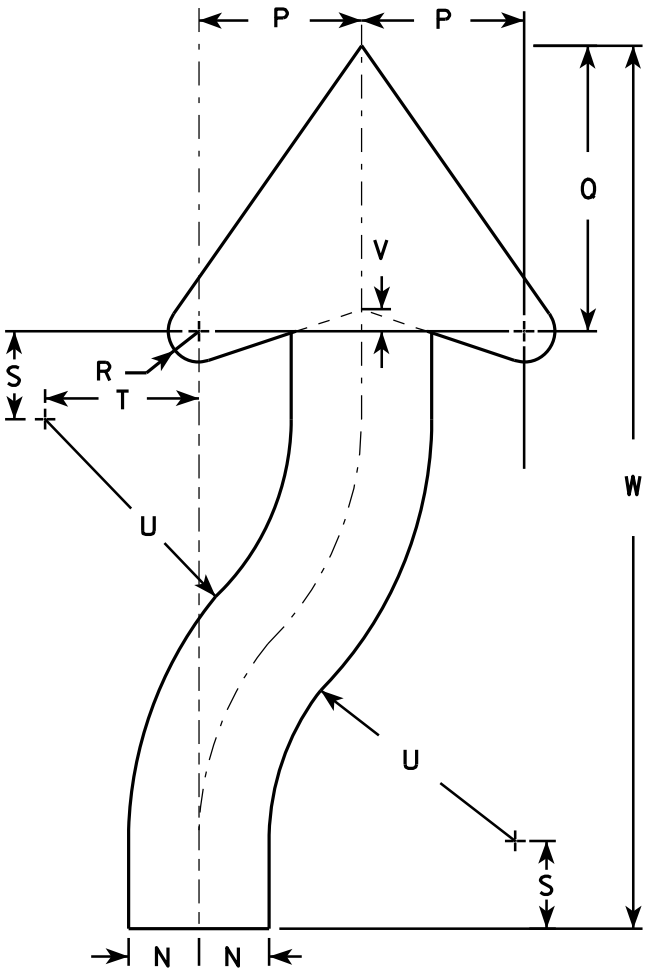
PROJECT NO:

SHEET NO:

E

NOTES

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



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

STANDARD SIGN
R4-7 & R4-8

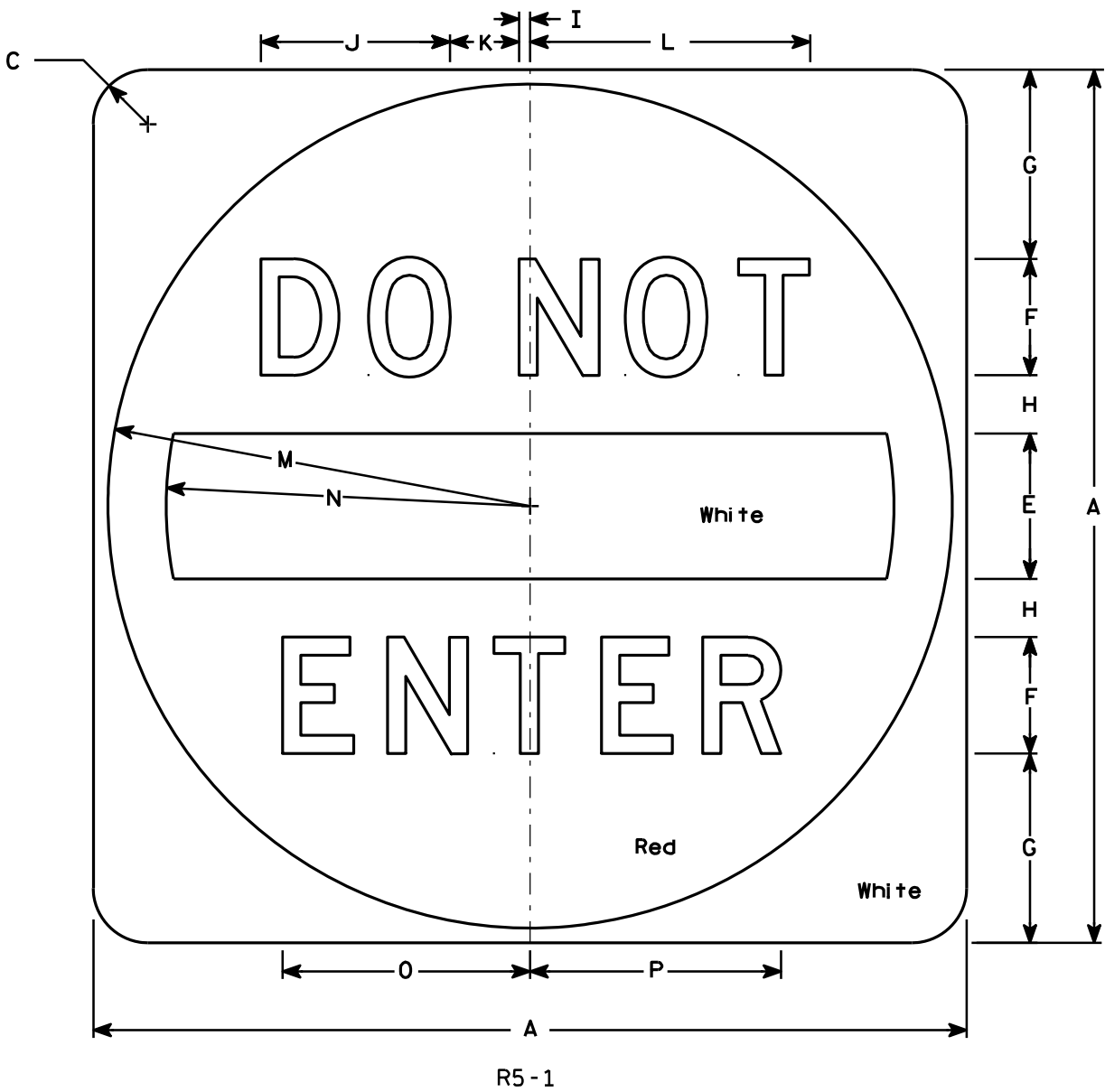
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

NOTES

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



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

STANDARD SIGN

R5 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

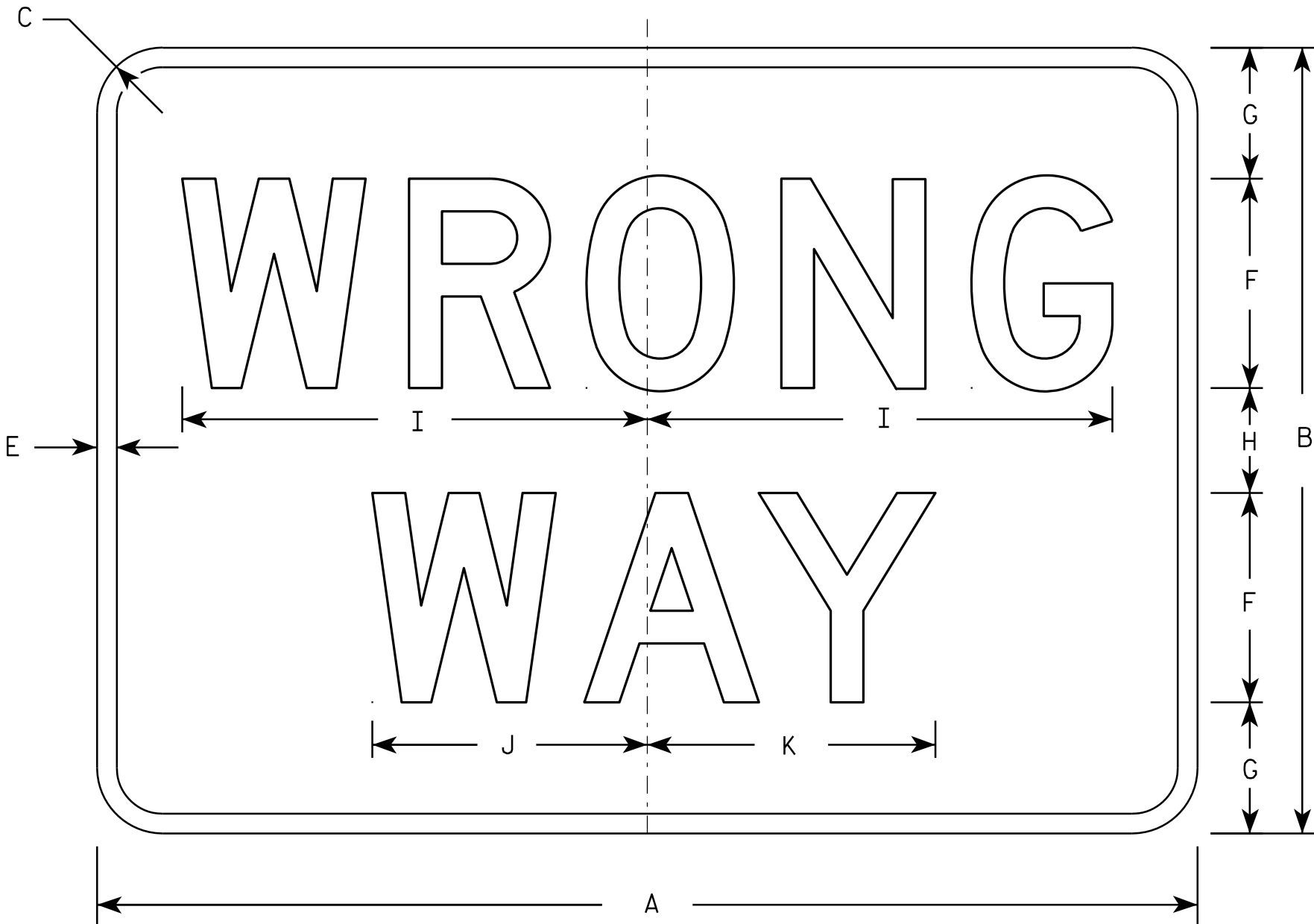
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

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.

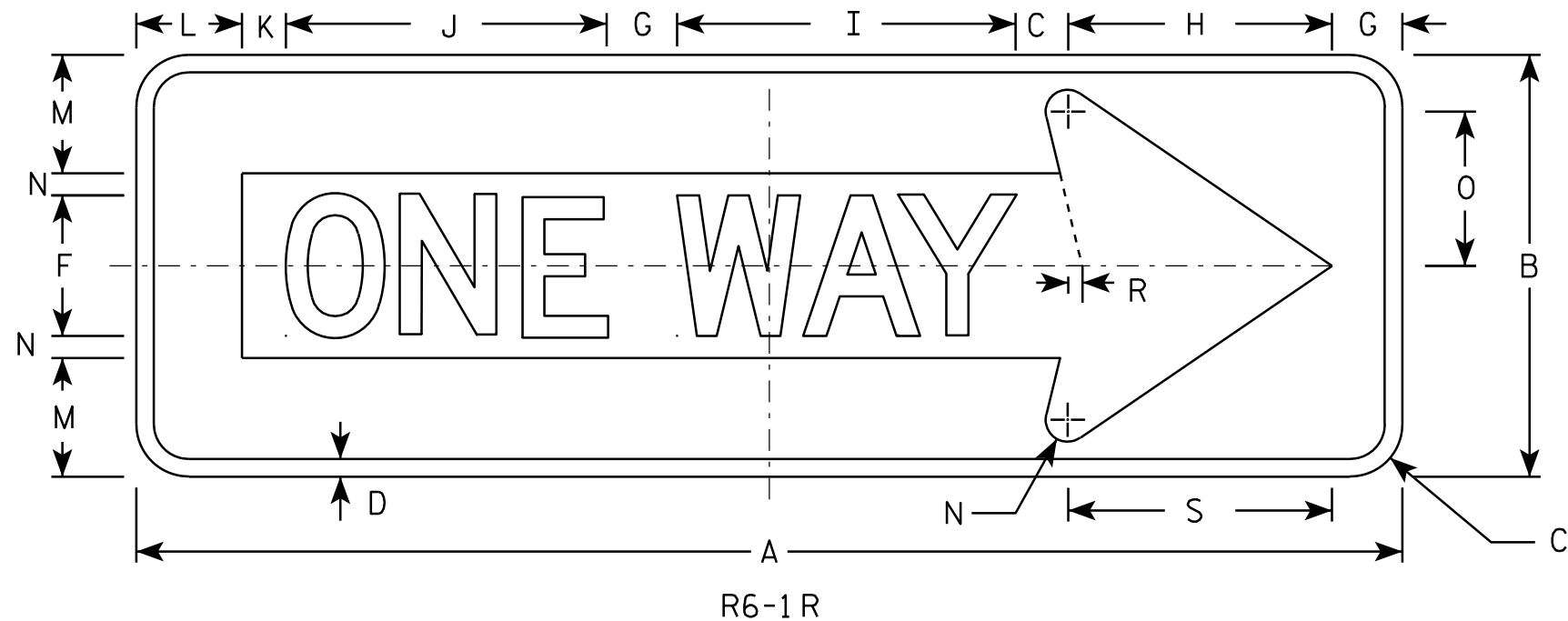
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11	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

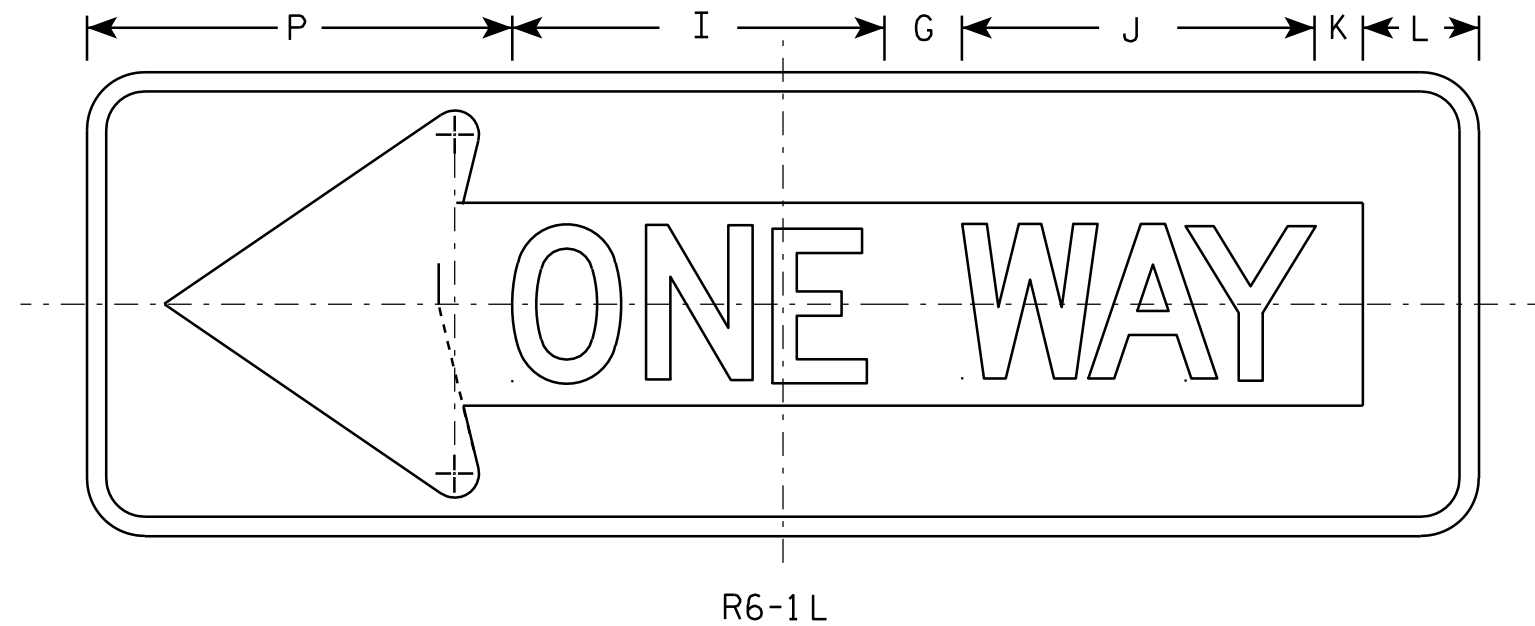
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



NOTES

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



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36	12	1 1/2	1/2		4	2	7 1/2	9 5/8	9 1/8	1 1/4	3	3 3/8	5/8	4 3/8	11		3/8	7 1/2								3.0
2M	54	18	2 1/4	3/4		6	3	11 1/4	14 1/2	13 5/8	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4								6.75
3	54	18	2 1/4	3/4		6	3	11 1/4	14 1/2	13 5/8	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4								6.75
4	54	18	2 1/4	3/4		6	3	11 1/4	14 1/2	13 5/8	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4								6.75
5																											

STANDARD SIGN R6-1 L & R

WISCONSIN DEPT OF TRANSPORTATION

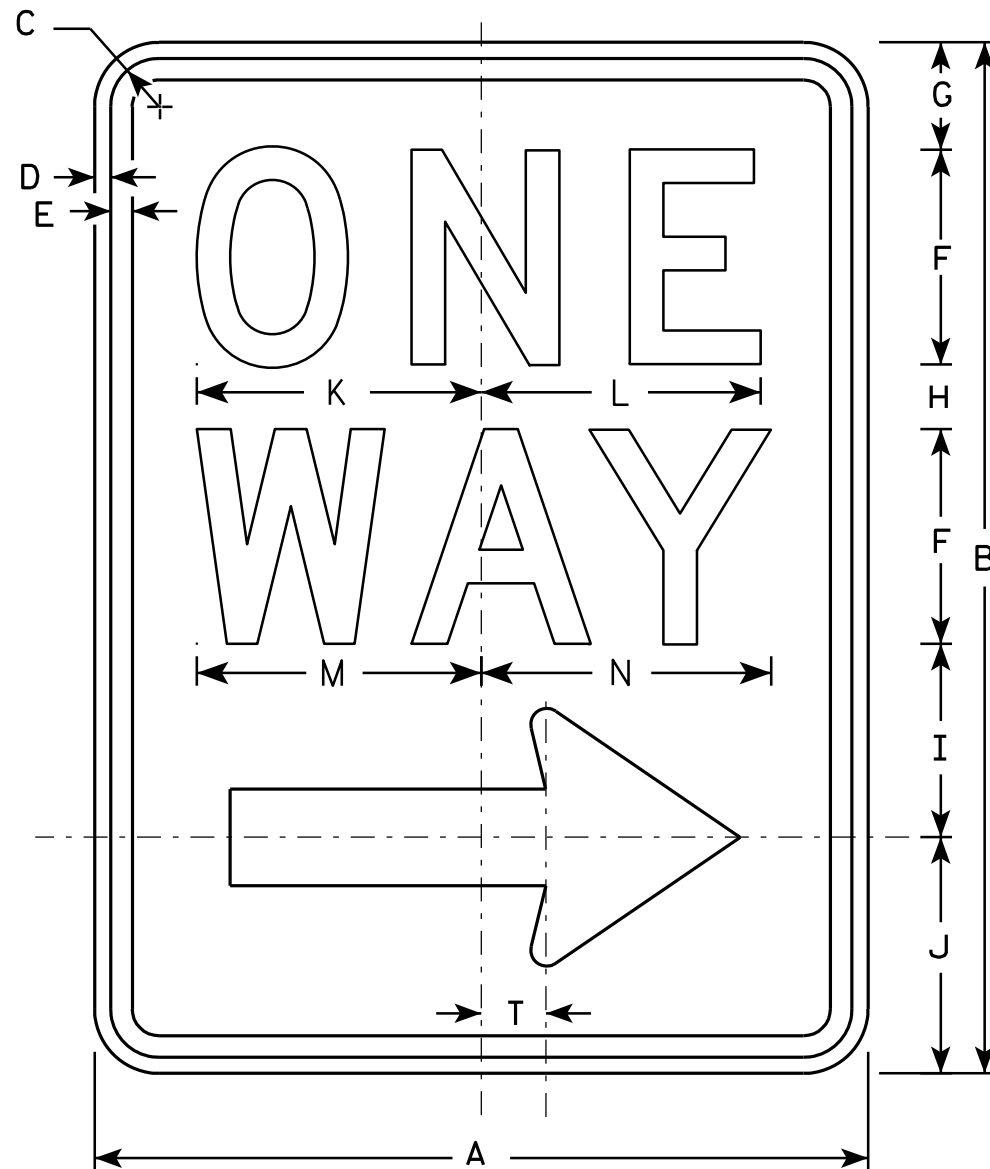
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 12/17/10 PLATE NO. R6-1.2

PROJECT NO:

SHEET NO:

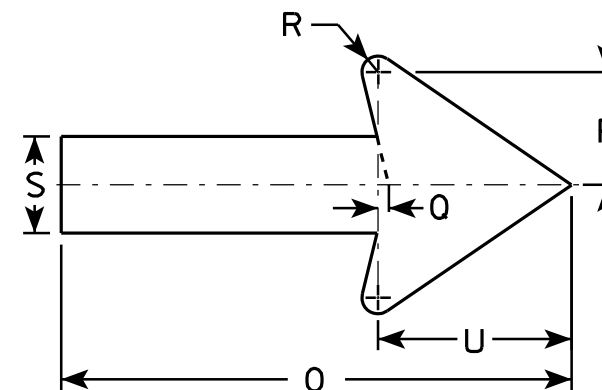
E



R6-2R

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.
5. R6-2L same as R6-2R except arrow points to the left.



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
1	18	24	1 1/8	3/8	1/2	5	2 1/2	1 1/2	4 1/2	5 1/2	6 5/8	6 1/2	6 5/8	6 3/4	11 7/8	2 5/8	1/4	3/8	2 1/4	1 1/2	4 1/2					
2S	24	30	1 1/8	3/8	1/2	6	3	2 1/2	5 1/2	7	8 1/8	8 1/8	8 1/2	8 5/8	16	3 1/2	3/8	1/2	3	2	6					
2M	30	36	1 3/8	1/2	5/8	8	2 1/2	2 5/8	6 7/8	8	10 1/2	10 1/2	11 1/4	11 1/4	20	4 3/8	1/2	5/8	3 3/4	2 1/2	7 1/2					
3	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
4	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
5																										

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN

R6-2 R&L

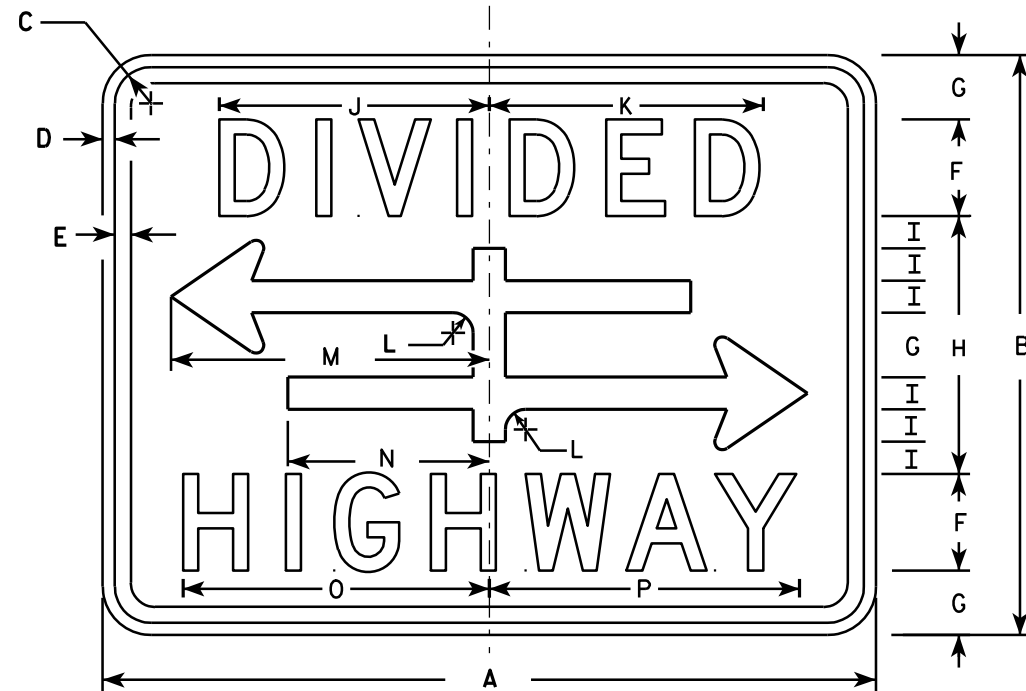
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

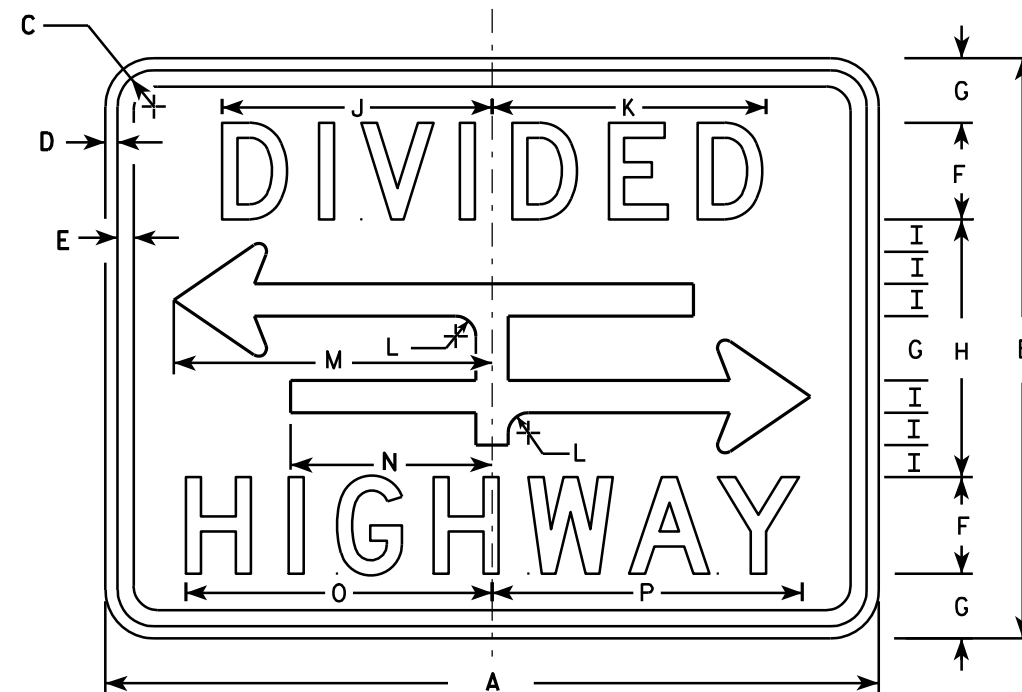
DATE 11/2/10 PLATE NO. R6-2.8

NOTES

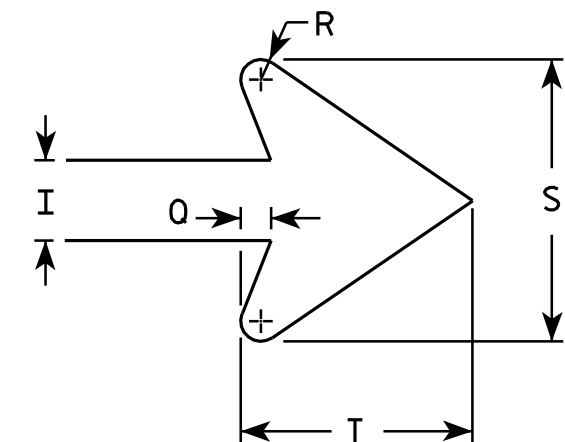
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as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



R6-3



R6-3A



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	24	18	1 1/8	3/8	3/8	3	2	8	1	8 3/8	8 1/2	5/8	9 7/8	6 1/4	9 1/2	9 5/8	3/8	1/4	3 1/2	2 3/4							3.0
2S	30	24	1 1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
2M	30	24	1 1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
3																											
4																											
5																											

STANDARD SIGN R6-3 & R6-3A

WISCONSIN DEPT OF TRANSPORTATION

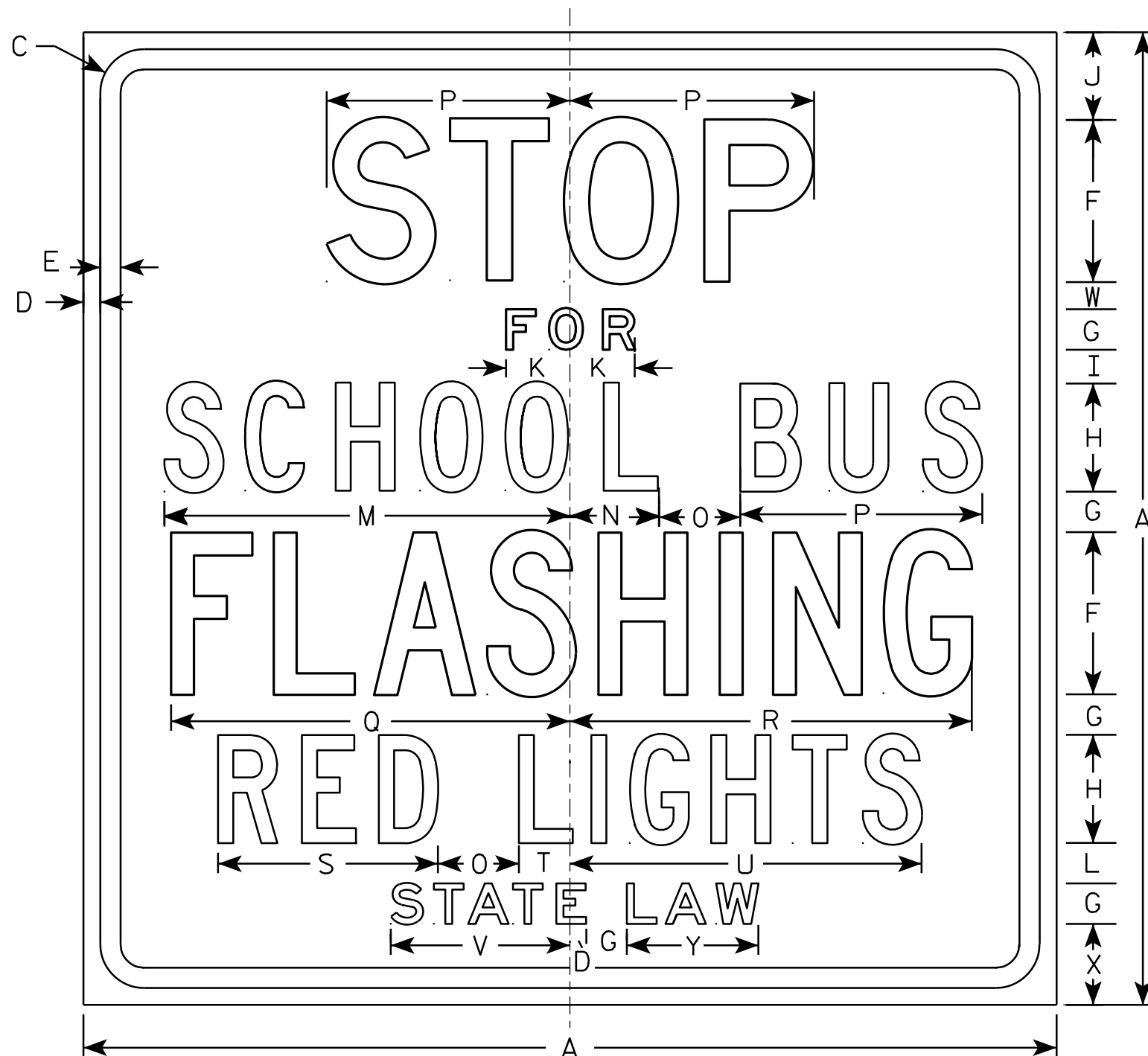
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R6-3.5

PROJECT NO:

SHEET NO:

E



R59-51

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 - 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
Lines 2 & 6 are Series E
Line 3, 4 & 5 are Series C

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

STANDARD SIGN R59-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
For State Traffic Engineer

DATE 3/30/11

PLATE NO. R59-51.10

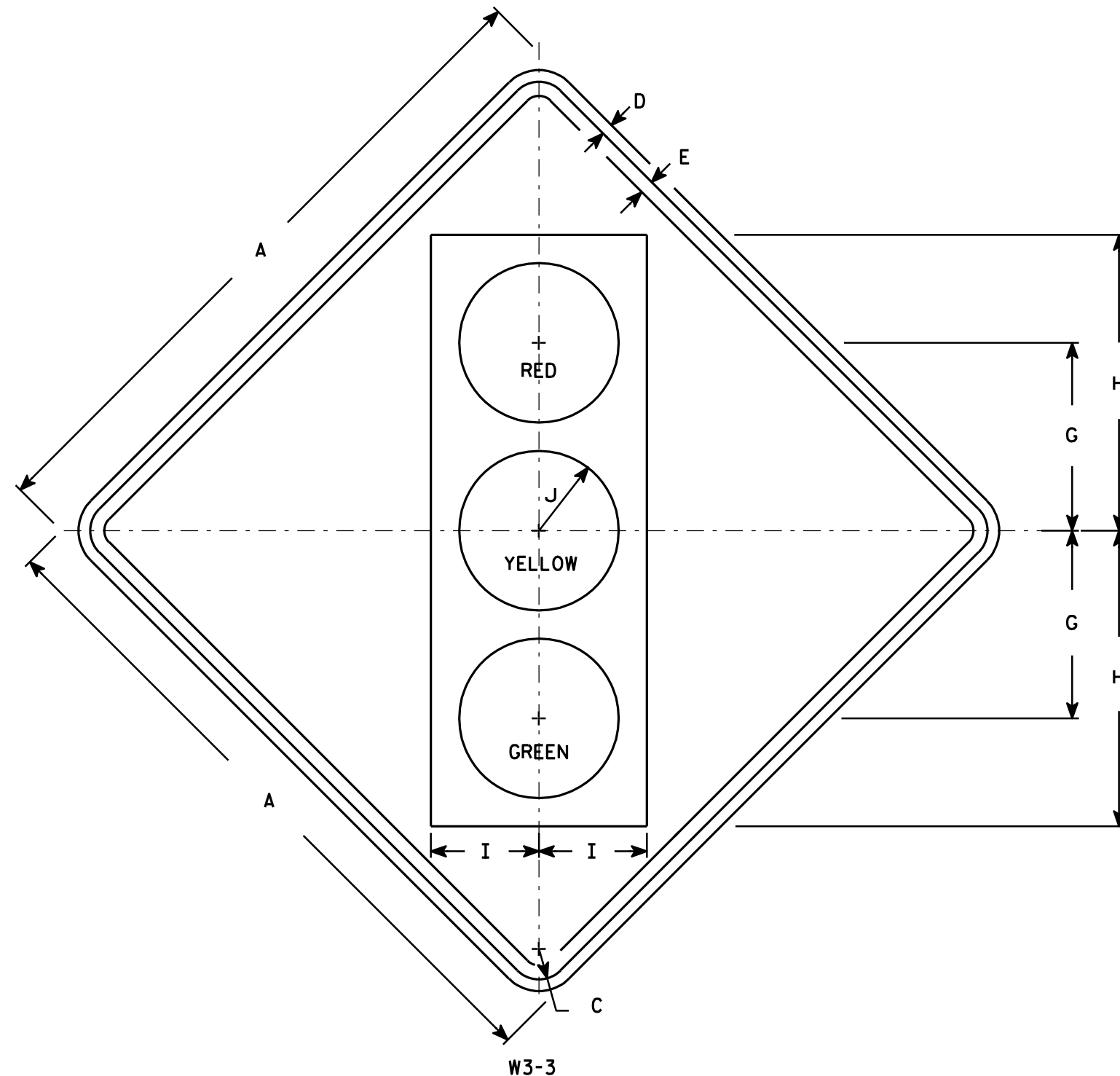
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



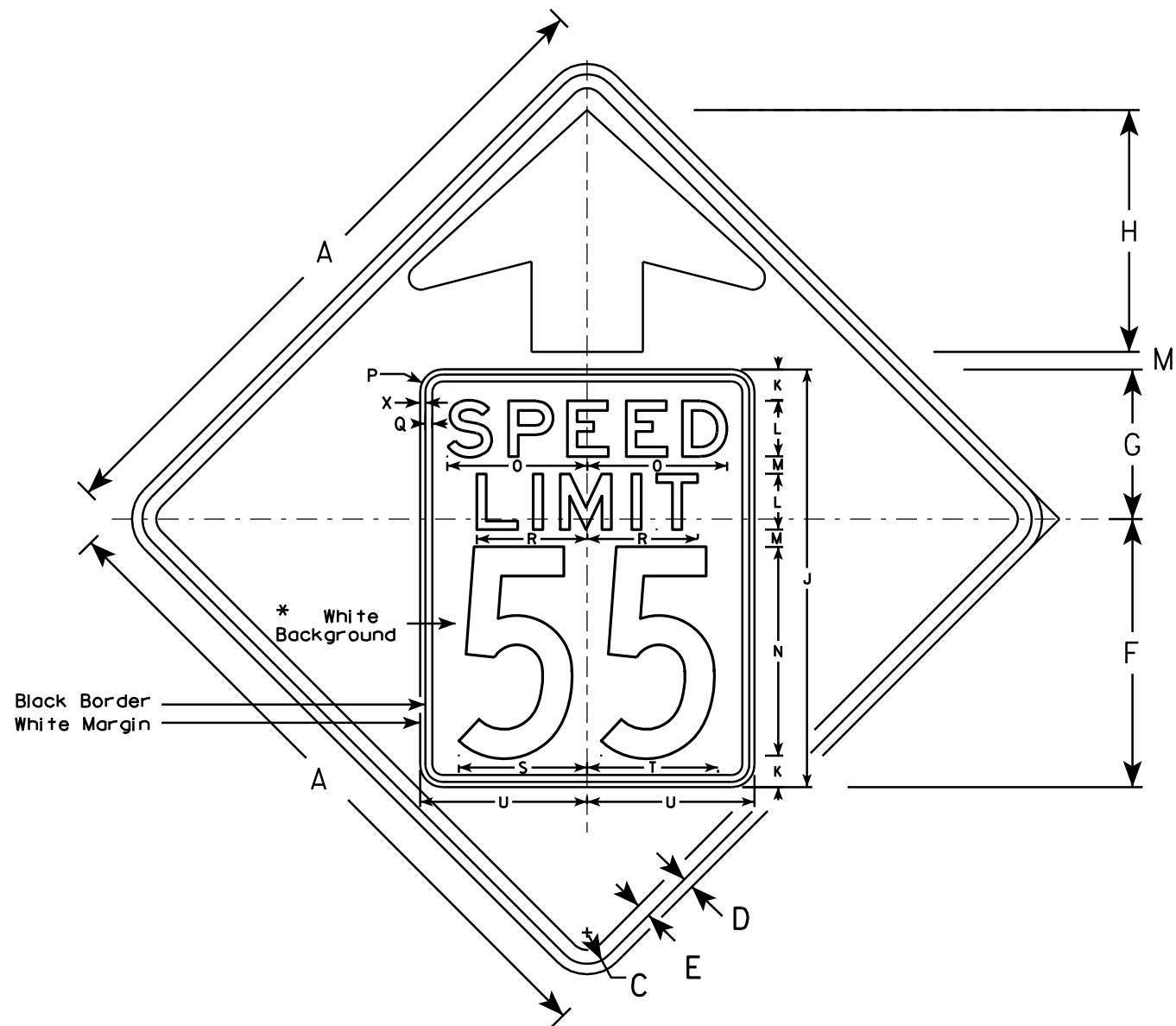
NOTES

- 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

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN W3-3	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 6/7/10	PLATE NO. W3-3.11

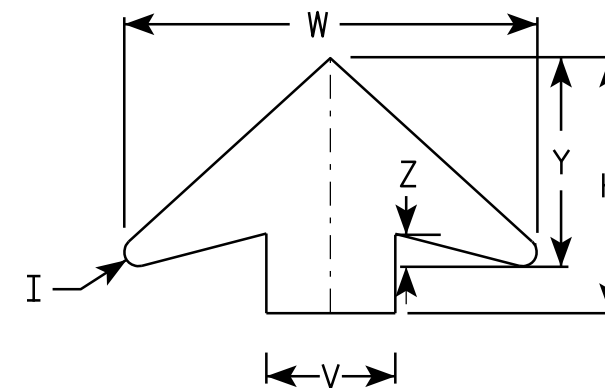


W3-5

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color: *
Background - YELLOW*
Message - BLACK
3. Message Series - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
2M	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
3	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
4	48		2 1⁄4	3⁄4	1	19 1⁄4	10 3⁄4	17 3⁄8	7⁄8	30	2 1⁄4	4	1 1⁄4	15	10	1 5⁄8	1⁄2	8	9 1⁄4	9 3⁄8	12	8	25 5⁄8	3⁄8	13	2	16.0
5	48		2 1⁄4	3⁄4	1	19 1⁄4	10 3⁄4	17 3⁄8	7⁄8	30	2 1⁄4	4	1 1⁄4	15	10	1 5⁄8	1⁄2	8	9 1⁄4	9 3⁄8	12	8	25 5⁄8	3⁄8	13	2	16.0

STANDARD SIGN

W3-5

WISCONSIN DEPT OF TRANSPORTATION

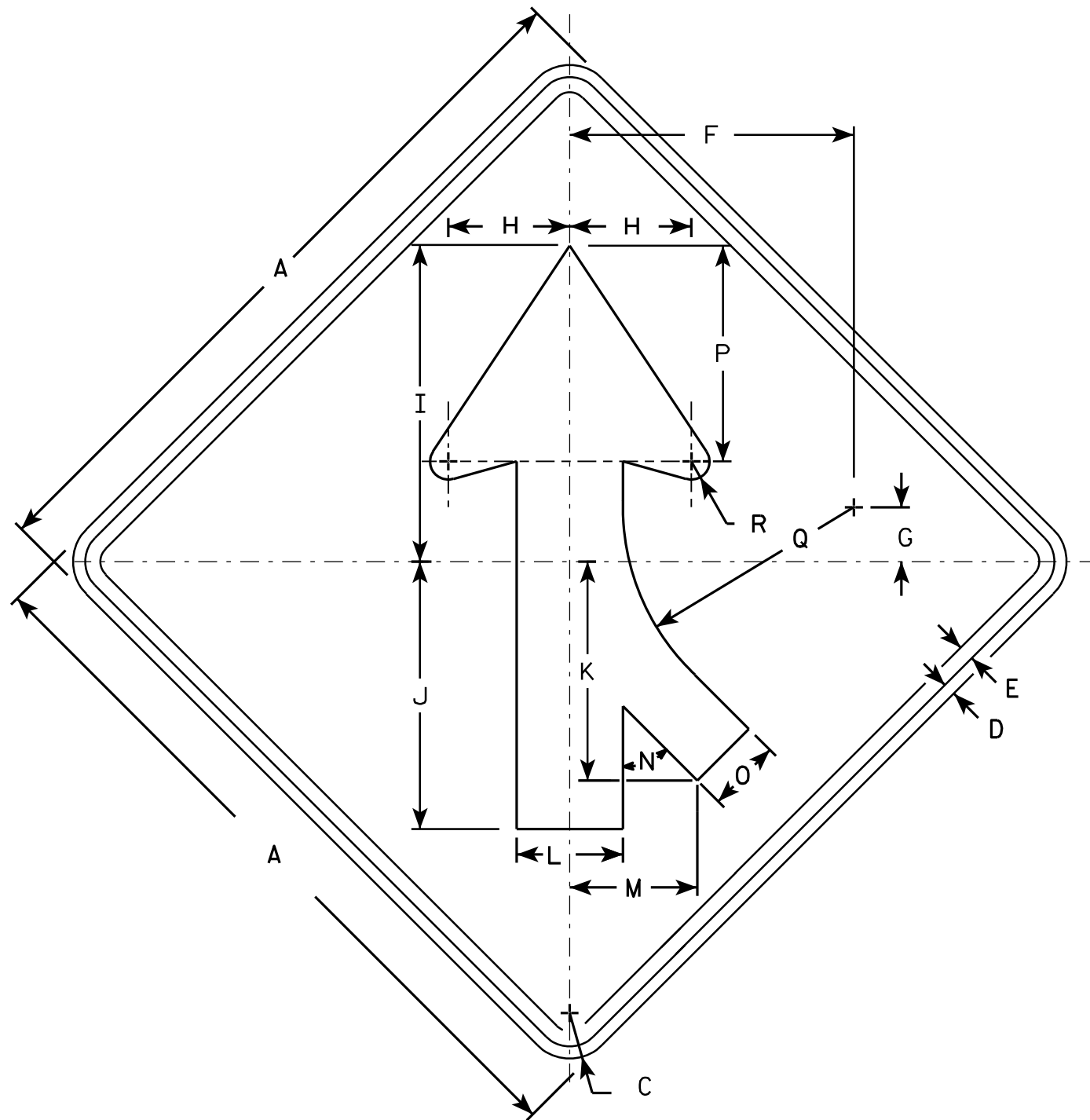
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

SHEET NO:

E



W4-1 R

NOTES

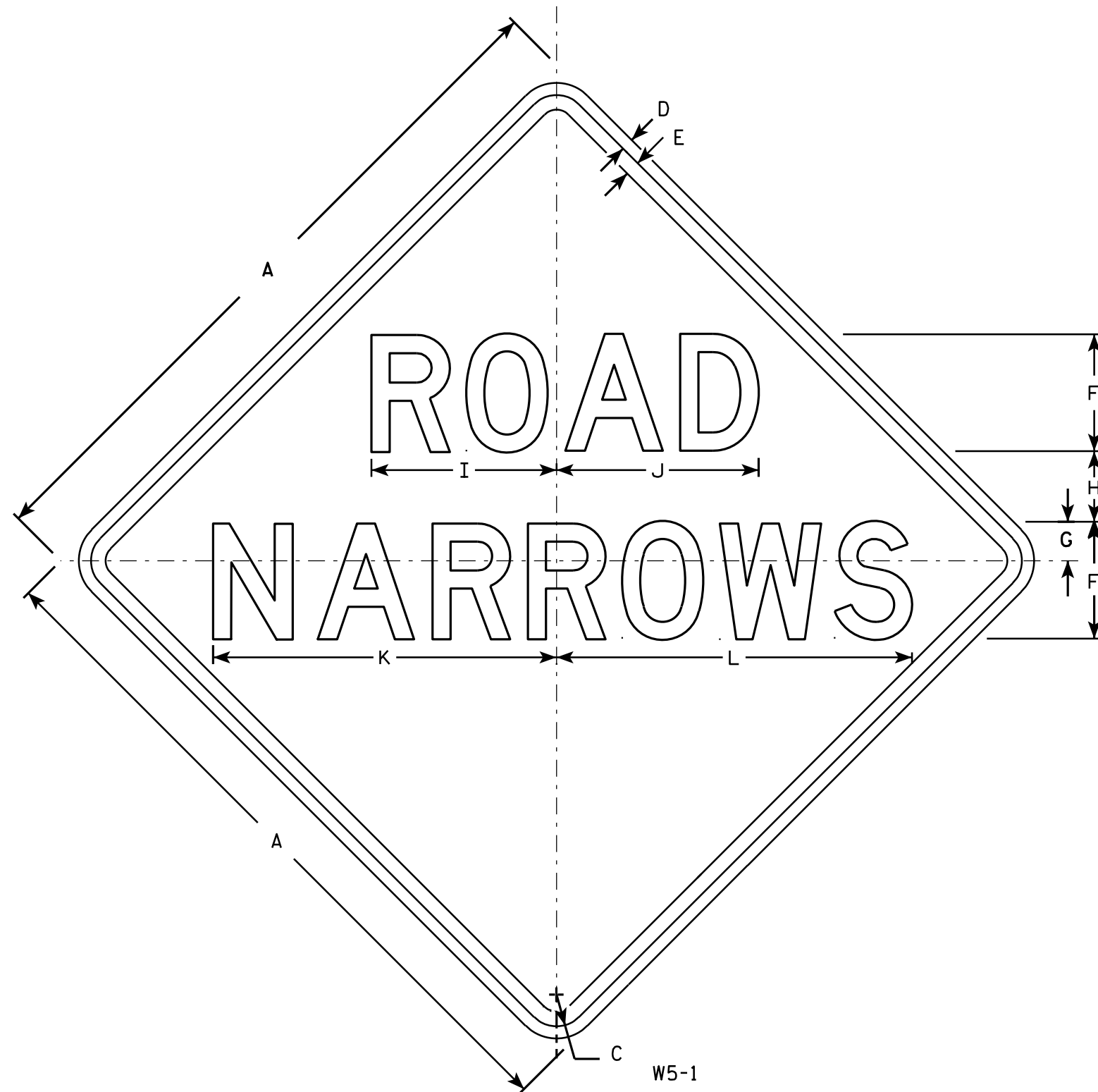
1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material 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	O	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
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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 - 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		1 3⁄8	1⁄2	5⁄8	5	1 3⁄4	3	7 7⁄8	8 5⁄8	14 3⁄4	15 1⁄8															6.25
2S	36		1 5⁄8	5⁄8	3⁄4	6	2	3 1⁄2	9 1⁄2	10 3⁄8	17 5⁄8	18 1⁄4															9.0
2M	36		1 5⁄8	5⁄8	3⁄4	6	2	3 1⁄2	9 1⁄2	10 3⁄8	17 5⁄8	18 1⁄4															9.0
3																											
4	48		2 1⁄4	3⁄4	1	8	3	4	12 3⁄4	13 3⁄4	23 1⁄2	24 3⁄8															16.0
5																											

STANDARD SIGN

W5 - 1

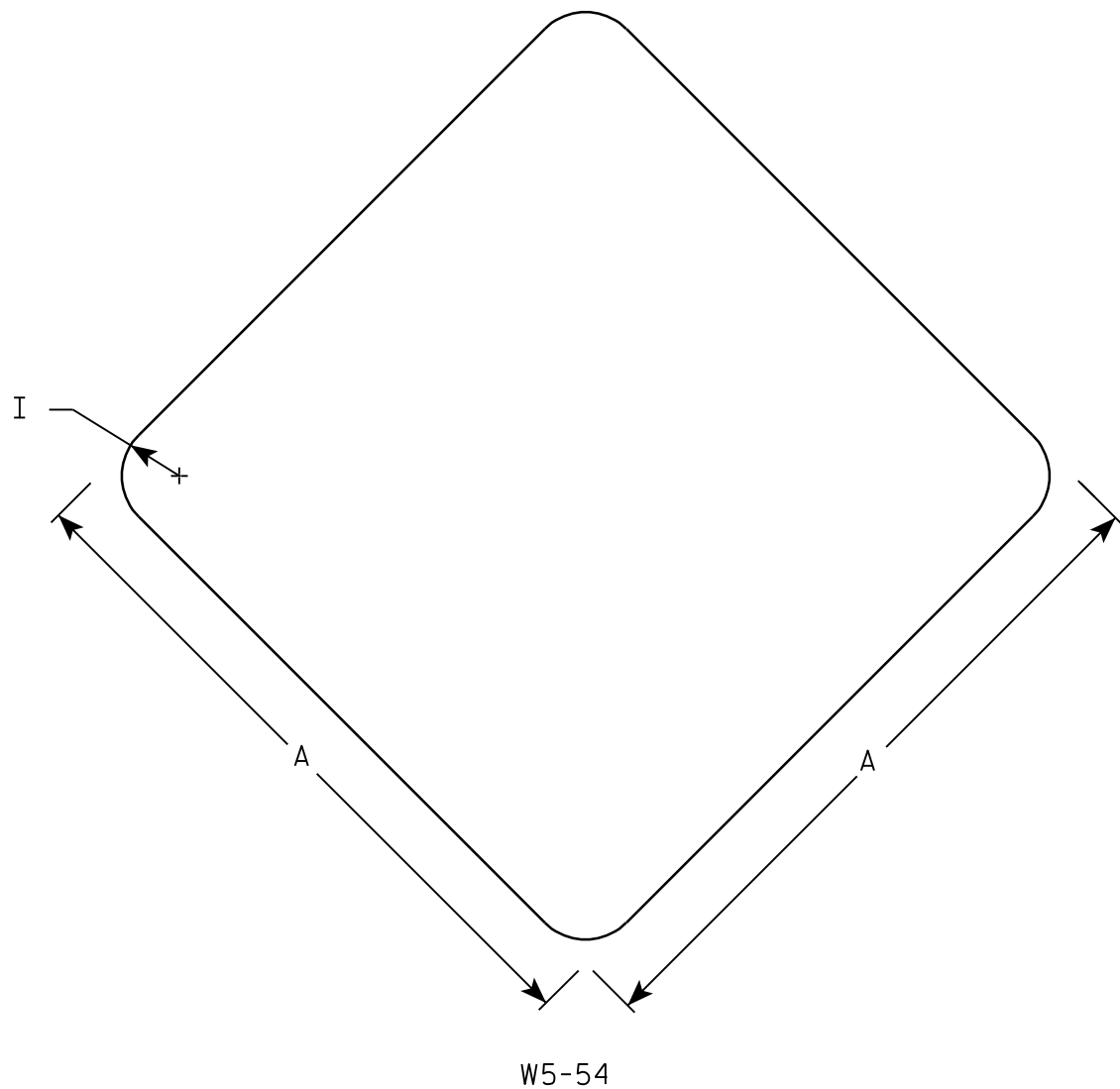
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W5-1.8

PROJECT NO: HWY: COUNTY: SHEET NO: E

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 - Yellow
- 3. Corners may be square or rounded when base material is plywood. When base material is metal the corners 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	12								1																		1.0
2S	18								1 1/2																		2.25
2M	18								1 1/2																		2.25
3																											
4																											
5																											

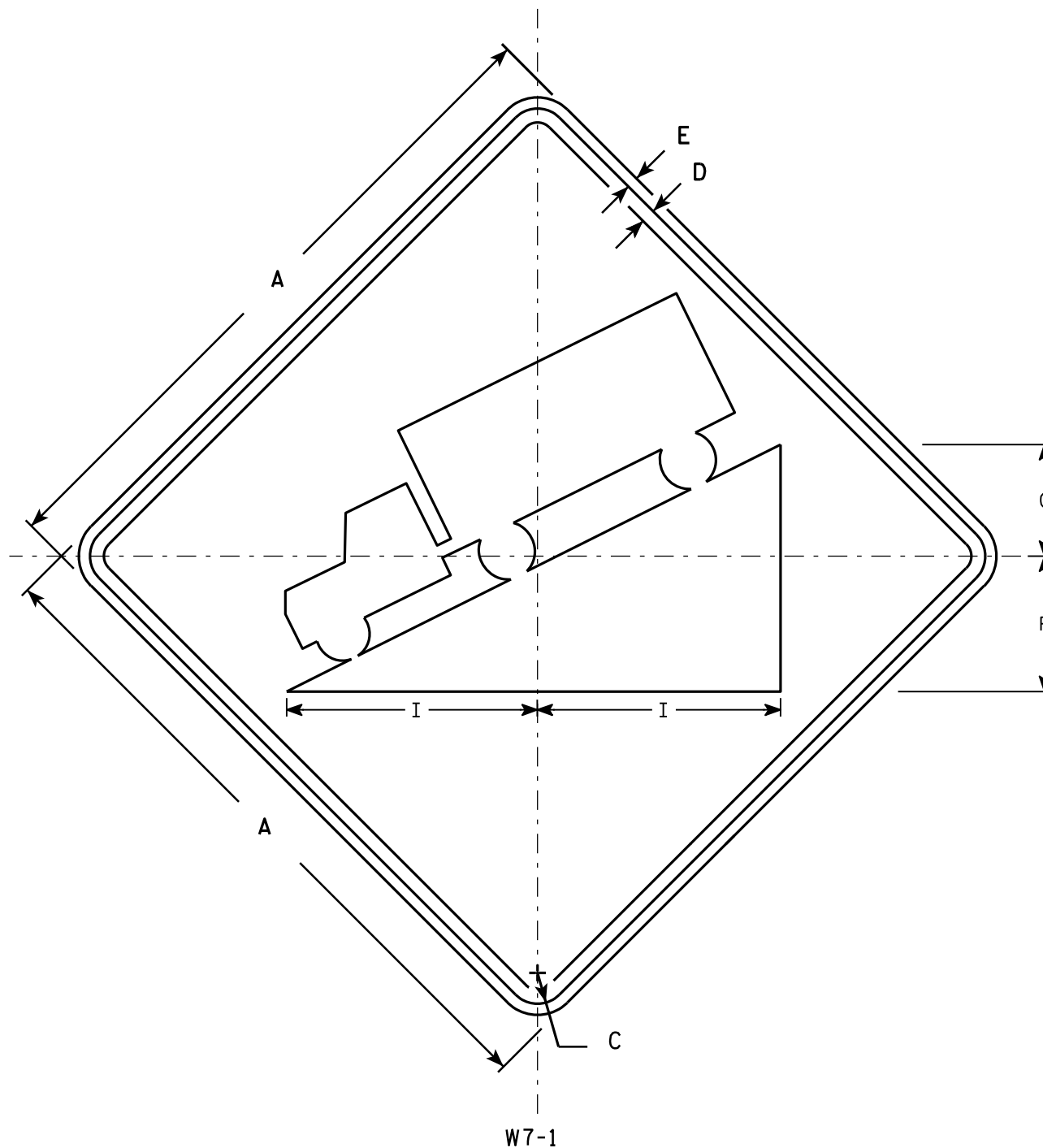
STANDARD SIGN

W5-54

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/3/10 PLATE NO. W5-54.8



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 - 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.

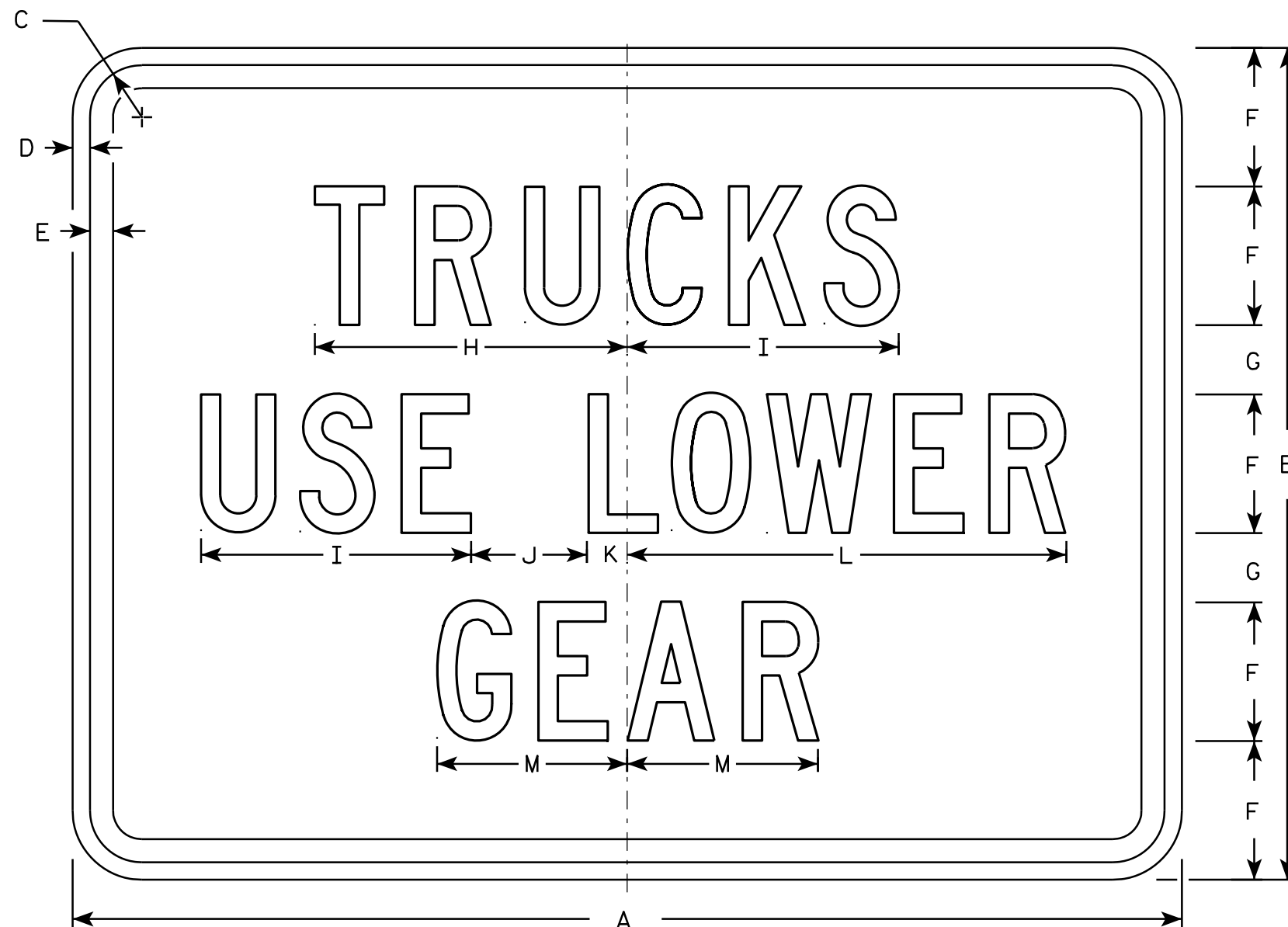
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	3/8	5	4		8 3/4																		4.0
2S	30		1 3/8	1/2	5/8	6	5		11																		6.25
2M	36		1 5/8	5/8	3/4	7 1/4	6		13 1/4																		9.0
3	36		1 5/8	5/8	3/4	7 1/4	6		13 1/4																		9.0
4	36		1 5/8	5/8	3/4	7 1/4	6		13 1/4																		9.0
5	48		2 1/4	3/4	1	9 3/4	8		17 1/2																		16.0

STANDARD SIGN W7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 03/12/13 PLATE NO. W7-1.13

PROJECT NO: HWY: COUNTY: SHEET NO: E



W7-2B

NOTES

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

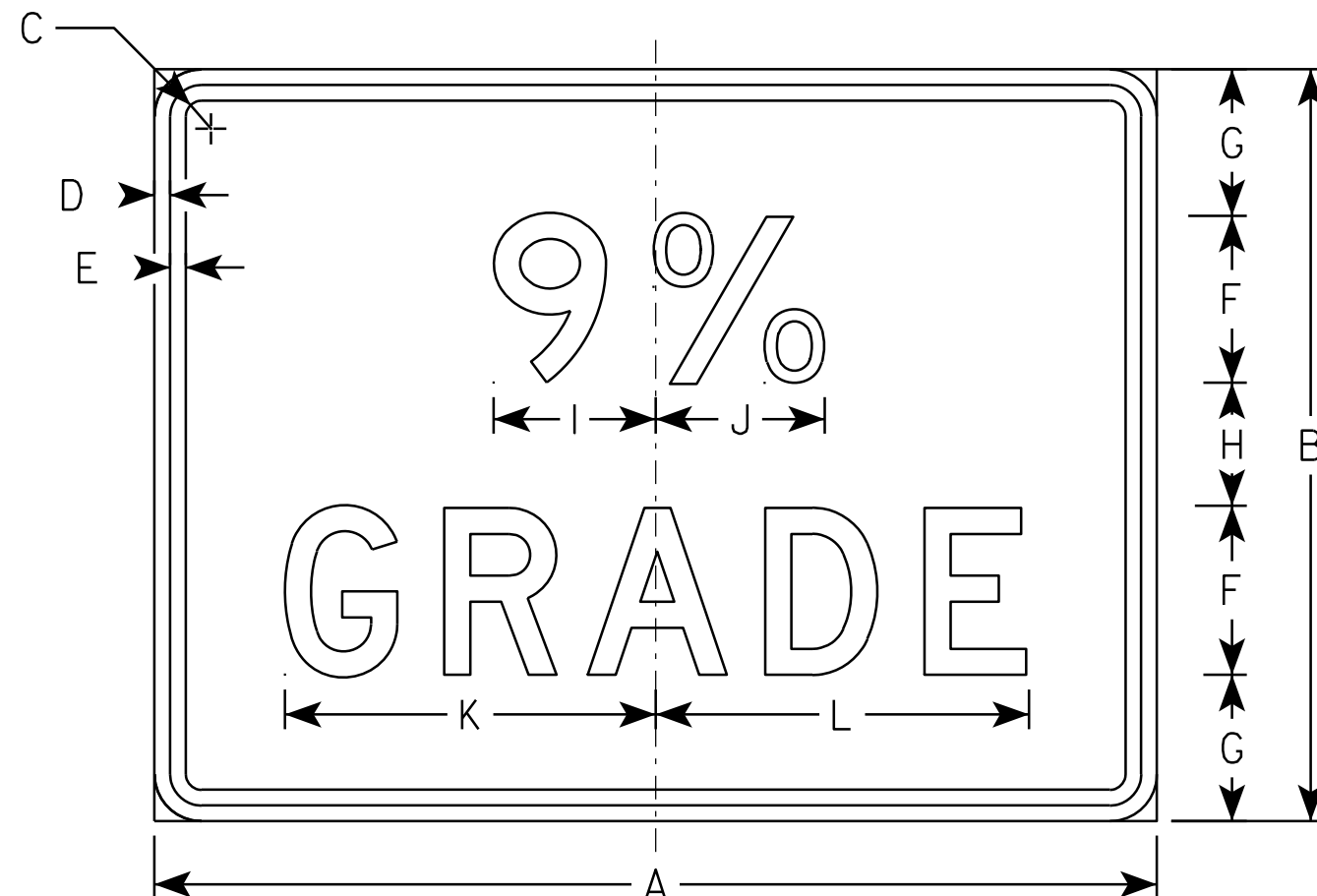
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	18	1 1/8	3/8	1/2	3	1 1/2	6 3/4	5 7/8	2 1/2	7/8	9 1/2	4 1/8														3.0
2M	24	18	1 1/8	3/8	1/2	3	1 1/2	6 3/4	5 7/8	2 1/2	7/8	9 1/2	4 1/8														3.0
3																											
4	30	24	1 3/8	1/2	5/8	4	2	8 3/4	7 3/4	3 3/8	1 1/4	2 3/4	5 1/2														5.0
5	48	36	2 1/4	3/4	1	6	3	13 1/2	11 3/4	5	1 3/4	19	8 1/4														12.0

STANDARD SIGN
W7-2B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W7-2B.9



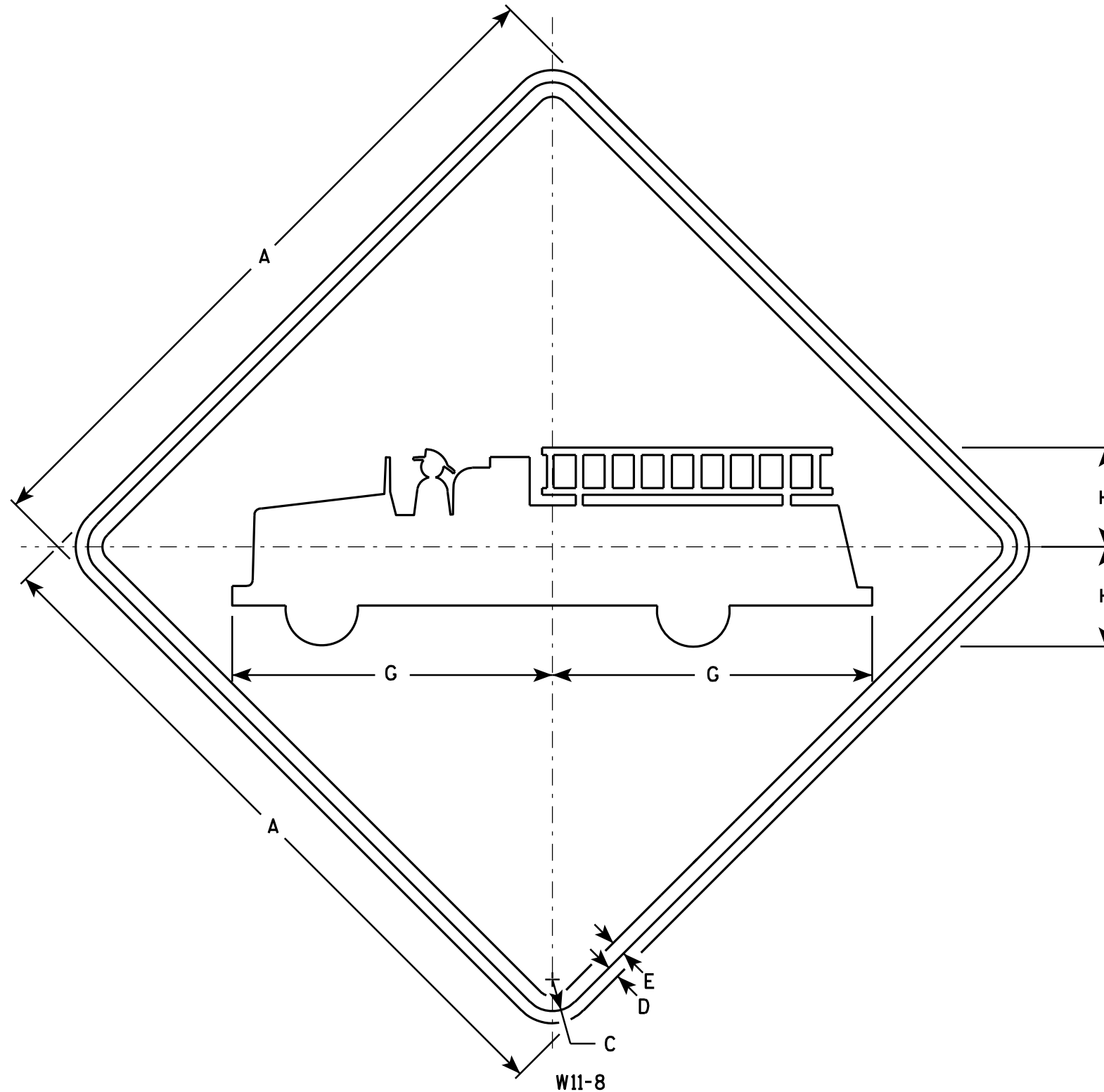
W7-3

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. 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. Substitute appropriate numeral and optically adjust spacing to achieve proper balance.

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

STANDARD SIGN	
W7-3	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 03/12/13	PLATE NO. W7-3.4



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.

W11-8

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	24		1 1/8	3/8	1/2		11	3 3/8																			4.0
2S	30		1 3/8	1/2	5/8		13 3/4	4 3/8																			6.25
2M	30		1 3/8	1/2	5/8		13 3/4	4 3/8																			6.25
3	36		1 5/8	5/8	3/4		16 1/2	5 1/4																			9.0
4	48		2 1/4	3/4	1		22	7																			16.0
5																											

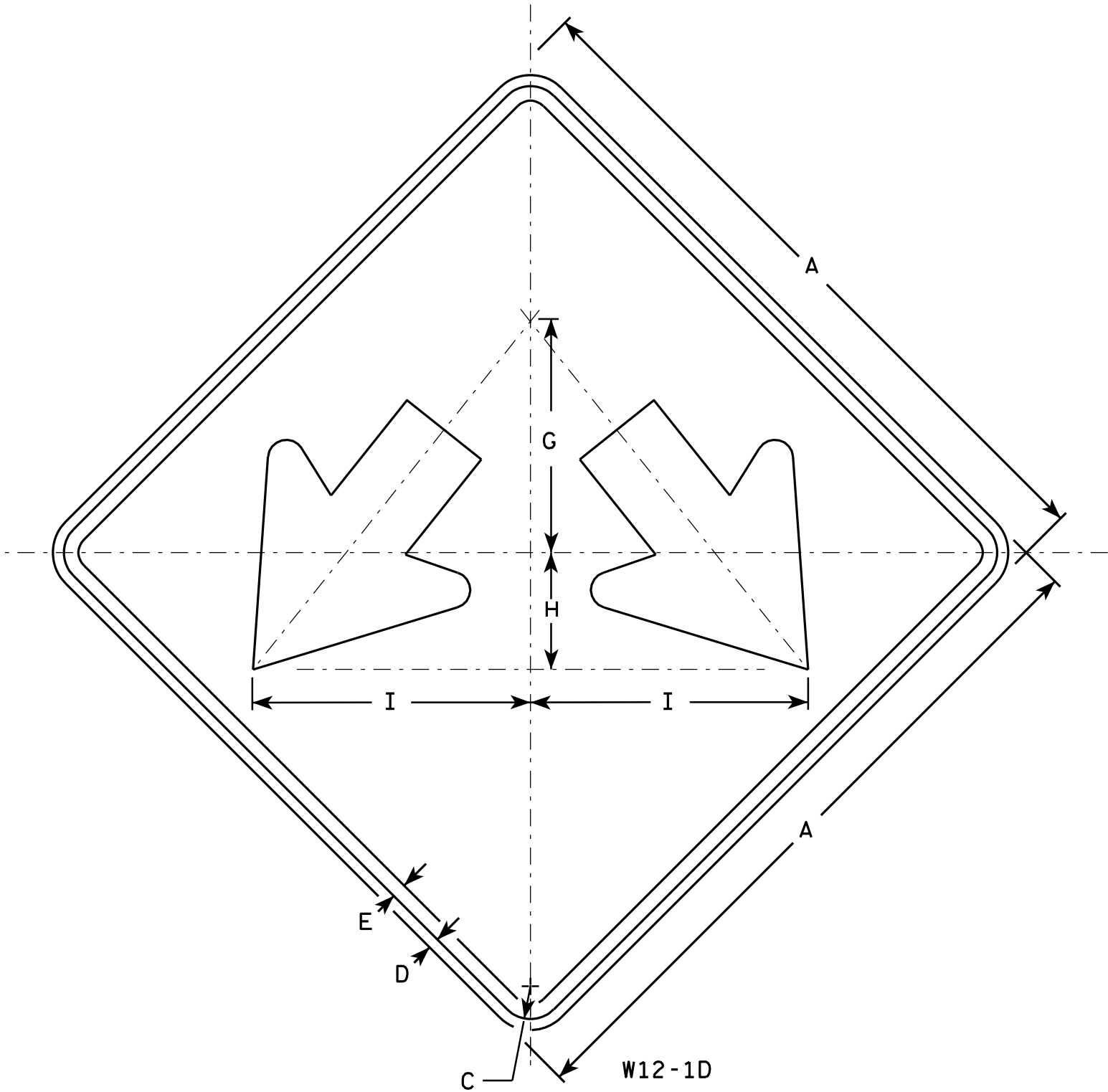
STANDARD SIGN W11-8

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/13/13 PLATE NO. W11-8.7

PROJECT NO:

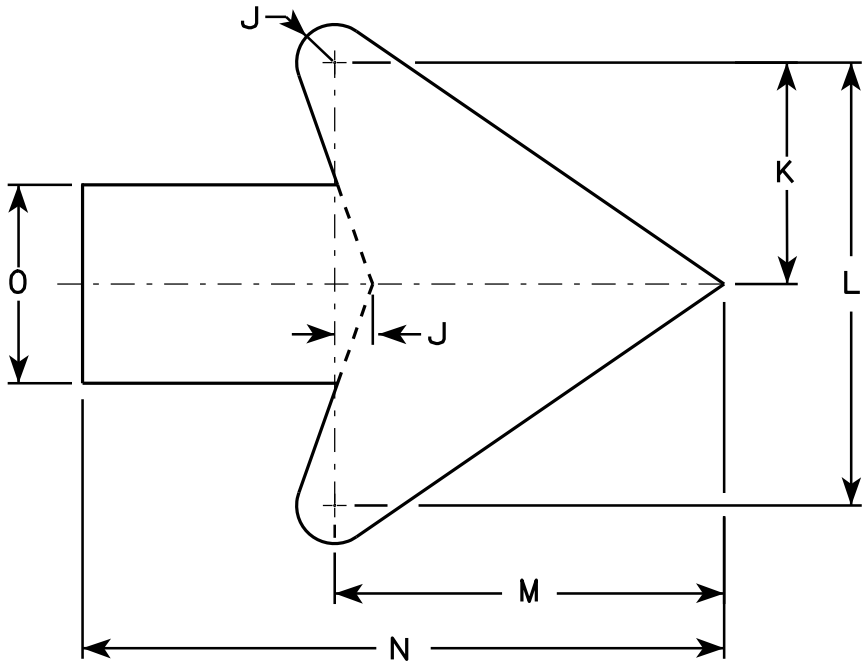
SHEET NO:

E



NOTES

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



Arrow Detail

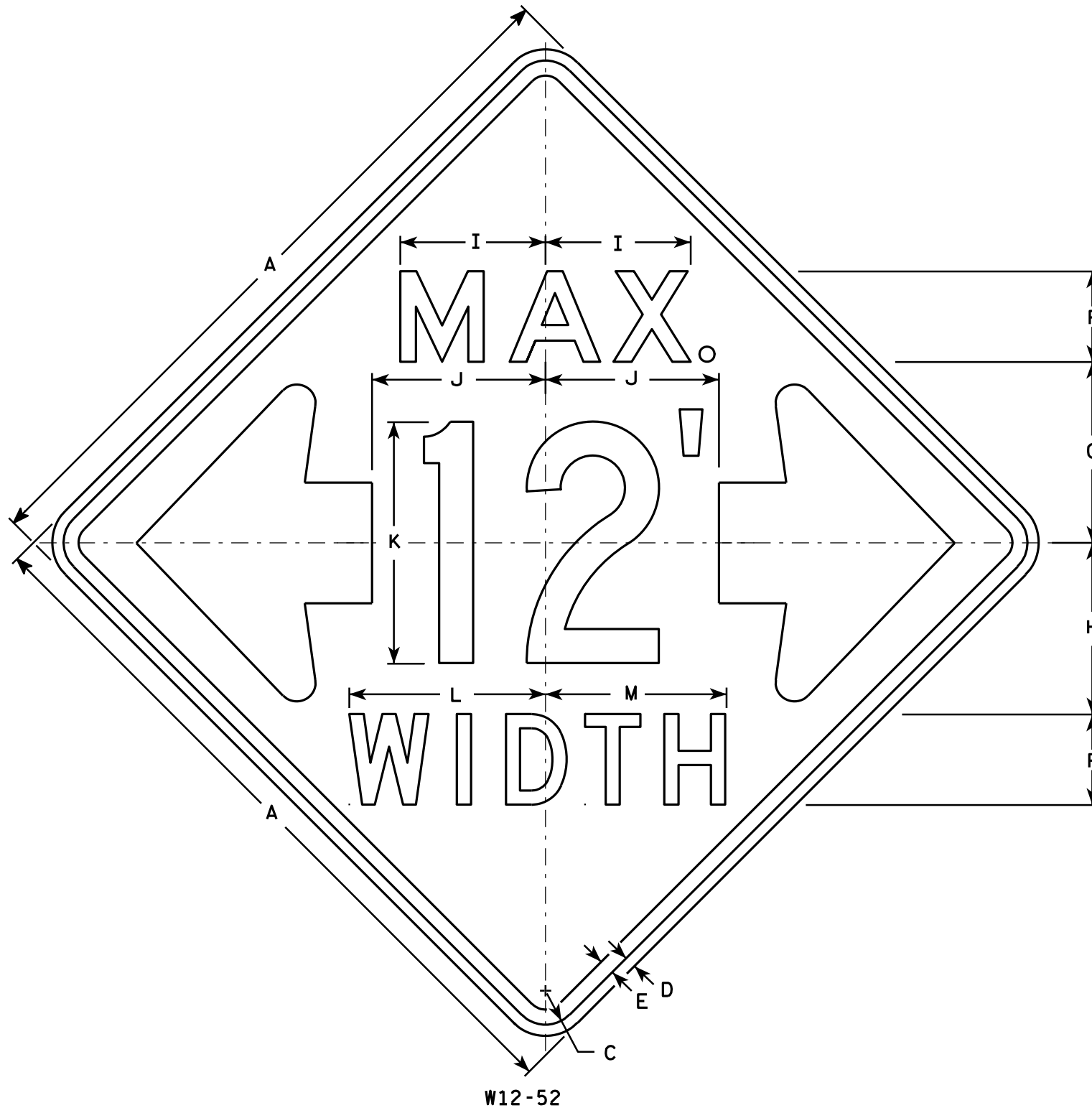
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
2M	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
3	30		1 3/8	1/2	5/8		10	5	11 7/8	3/4	4 1/2	9	7 7/8	13	4												6.25
4	36		1 3/8	1/2	5/8		12	6	14 1/4	1	5 1/2	10 7/8	9 5/8	15 3/4	4 3/4												9.0
5	48		2 1/4	3/4	1		16	8	19	1 1/4	7 1/4	14 1/2	12 3/4	21	6 1/4												16.0

STANDARD SIGN
W12-1D

WISCONSIN DEPT OF TRANSPORTATION

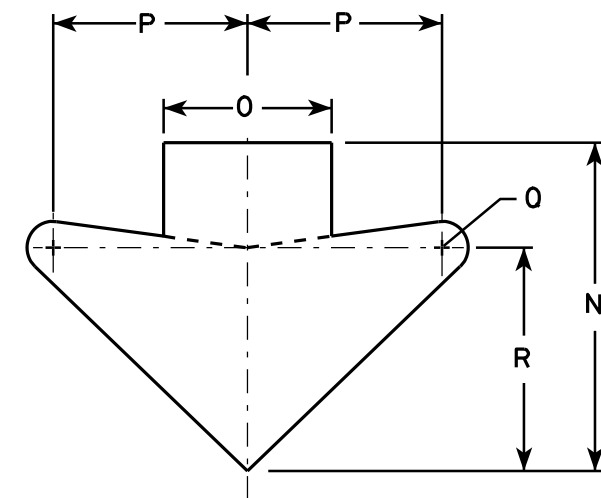
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W12-1D.15



NOTES

- Sign Is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Orange
Message - Black
- Message Series - See note 5
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- The top line is series E, the numerals are series C, and the bottom line is series D.
- Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

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

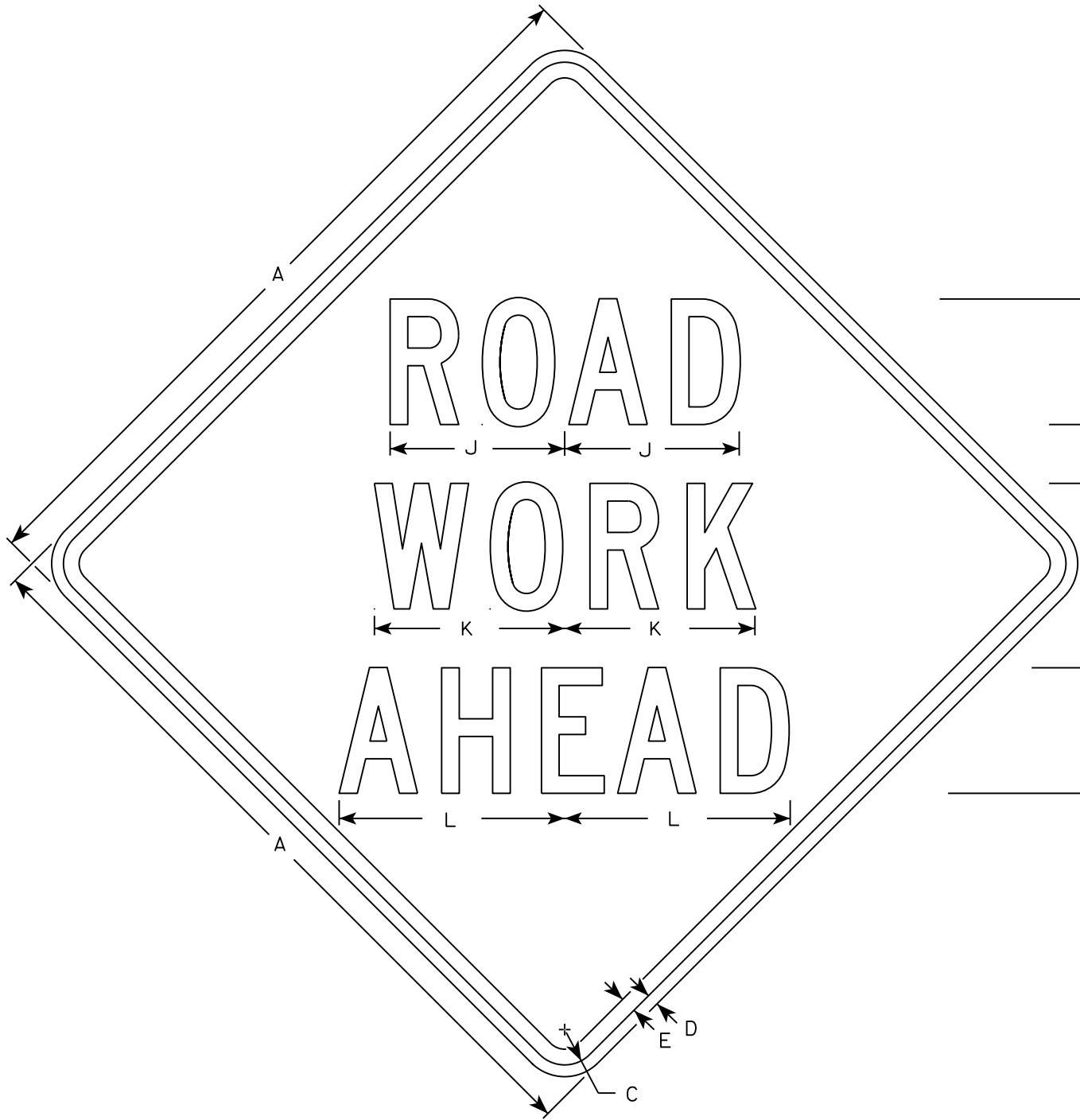
STANDARD SIGN W12-52

WISCONSIN DEPT OF TRANSPORTATION

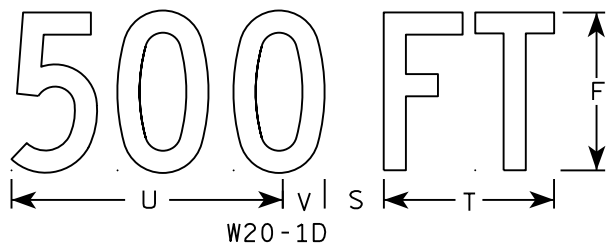
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

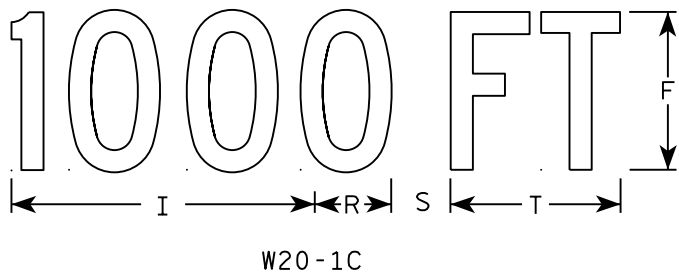
PROJECT NO: HWY: COUNTY: SHEET NO: E



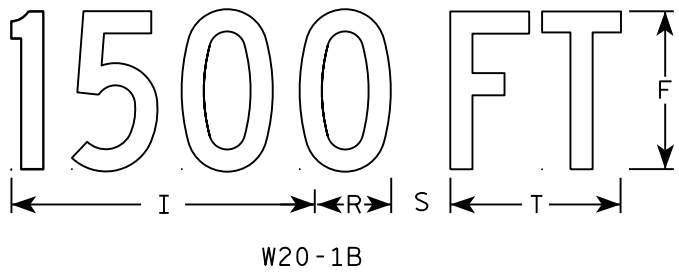
W20-1A



W20-1D



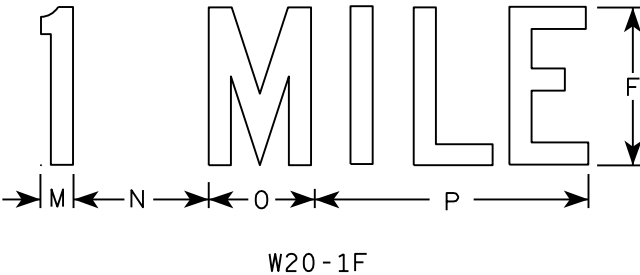
W20-1C



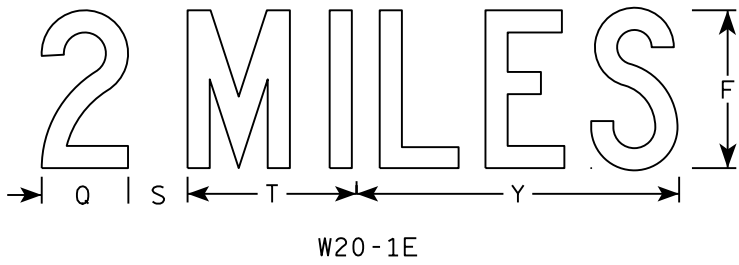
W20-1B



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

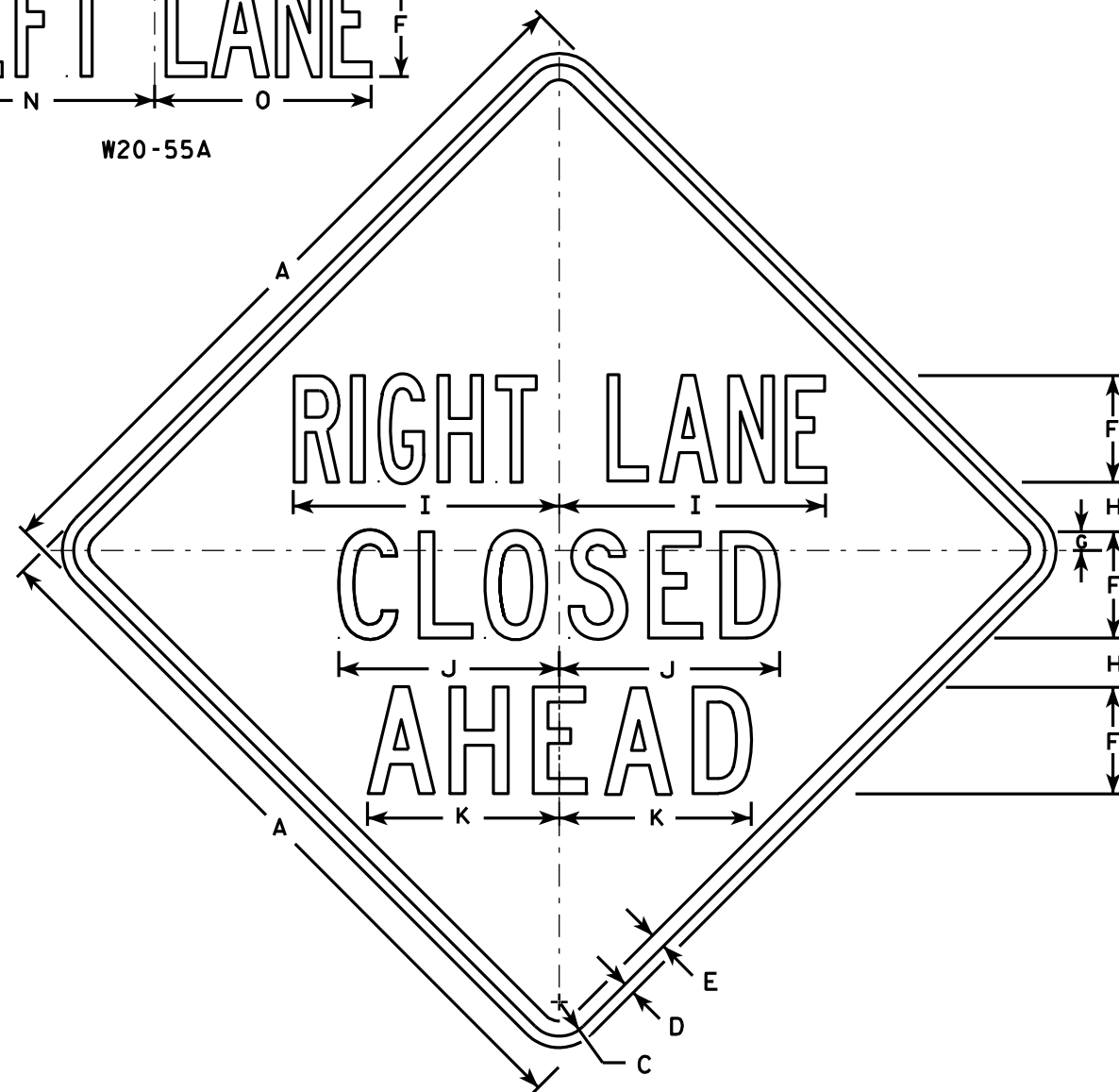
DATE 5/07/15 PLATE NO. W20-1.10

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

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. "----- LANE" is Series B.
All other copy is Series C.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	1 5/8	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

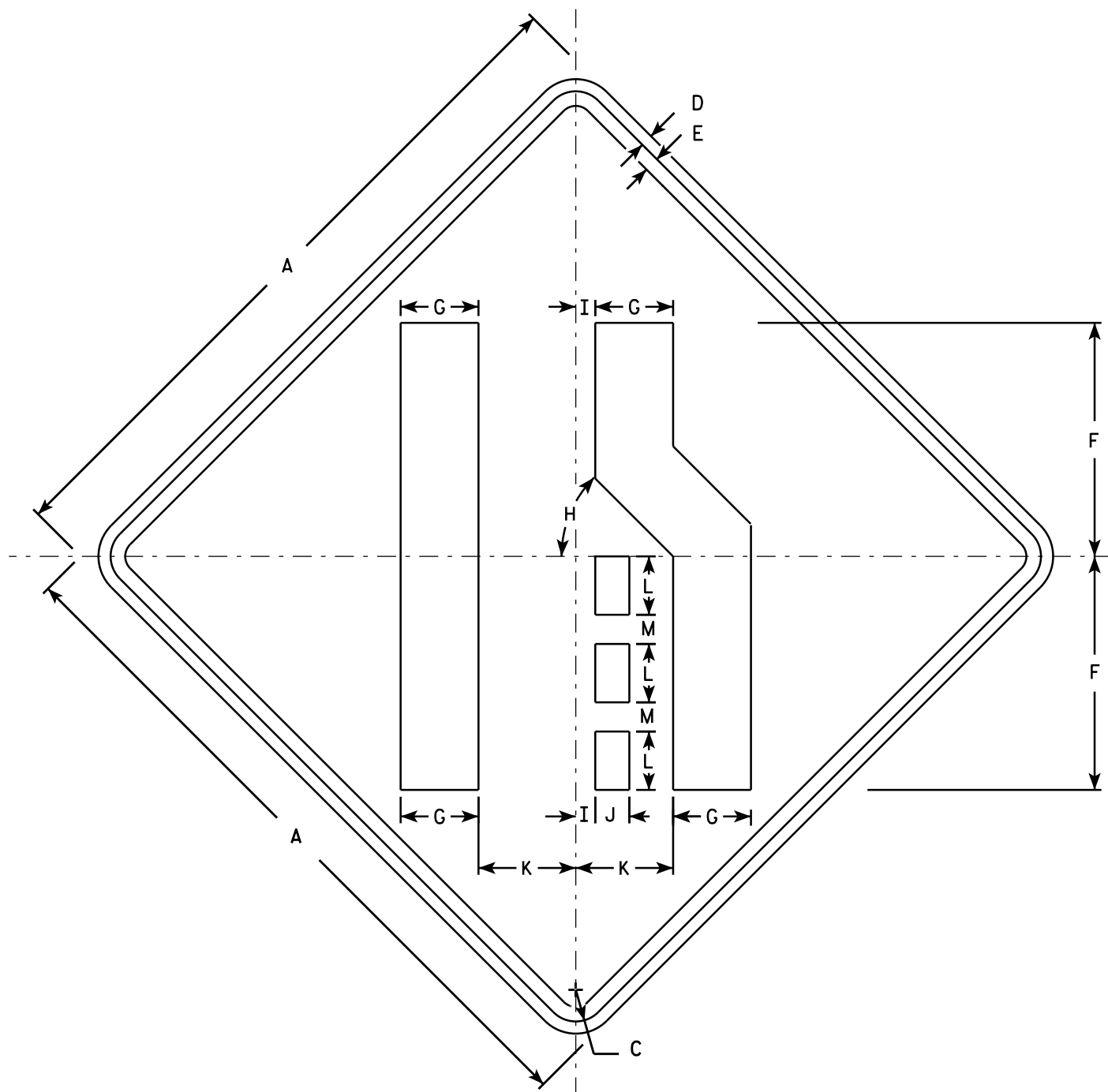
E

STANDARD SIGN
W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11



W04-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-2L is the same as W04-2R except the symbol is reversed along the vertical centerline.

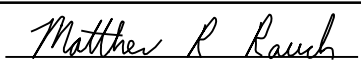
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN

W04-2

WISCONSIN DEPT OF TRANSPORTATION

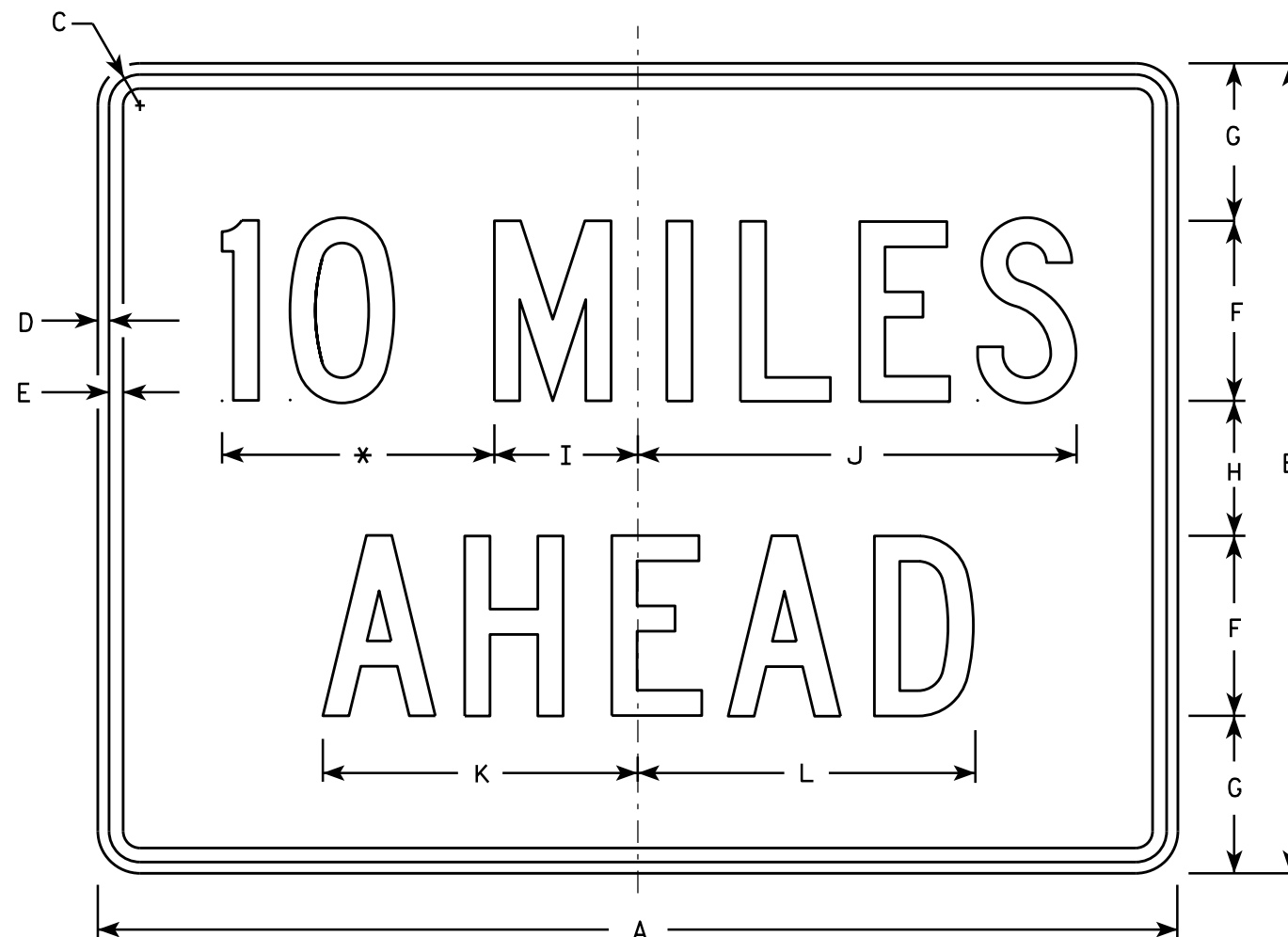
APPROVED



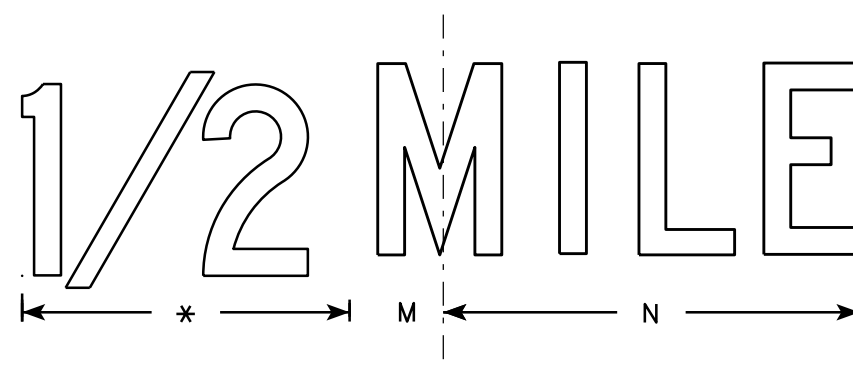
Matthew R. Rauch
 For State Traffic Engineer

DATE 11/20/13

PLATE NO. W04-2.1



W057-52



* See note 5

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - 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.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	13													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0

STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 11/20/13

PLATE NO. W057-52.1

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



FILE= 93311-B-48-4-01.DGN
DATE= 10/3/2016

DESIGN DATA

LIVE LOAD:

DESIGN LOADING : HS-20
INVENTORY RATING : HS-23
OPERATIONAL RATING : HS-37
MAXIMUM STANDARD PERMIT
VEHICLE LOAD : 220 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY DECK PATCHING
RAPID SET -- f'c = 4,000 P.S.I.

TRAFFIC DATA:

A.A.D.T. (2016) = 16,420
A.A.D.T. (2036) = 21,220
DESIGN SPEED = 50 MPH

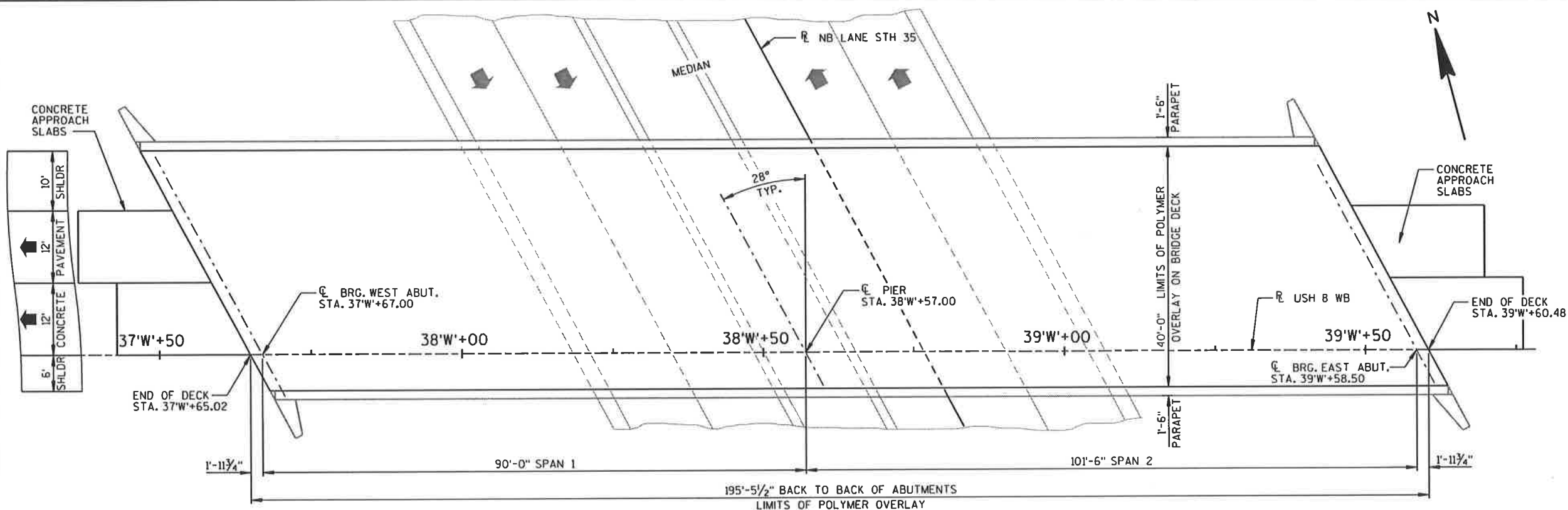
LIST OF DRAWINGS

1. POLYMER OVERLAY



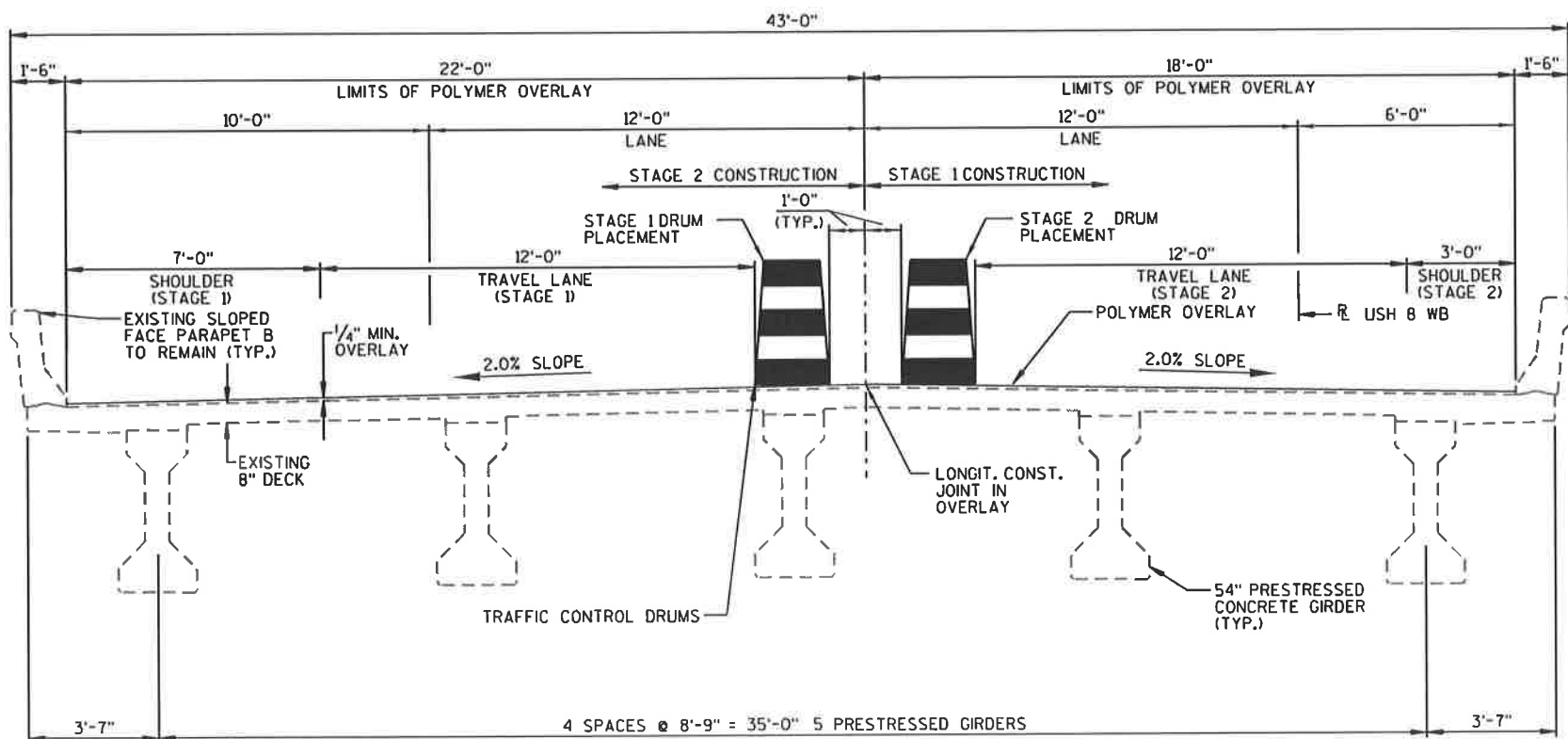
DESIGN CONTACT:
DANIEL WAGNER
(608) 355-8952

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



PLAN

(REHAB - POLYMER OVERLAY ON EXISTING TWO SPAN 54" PRESTRESSED CONCRETE GIRDER)



CROSS SECTION THRU ROADWAY

(LOOKING EAST)

NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL 1995 STRUCTURE PLANS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

THIS PROJECT WILL REHABILITATE THE EXISTING STRUCTURE, B-48-38, A TWO SPAN, 195.46' PRESTRESSED CONCRETE GIRDER BRIDGE SET ON CONCRETE SILL ABUTMENTS AND A MULTI-COLUMN PIER. APPLY POLYMER OVERLAY TO DECK SURFACE TO THE LIMITS SHOWN. COMPLETE PREPARATION DECKS TYPE 1 AND TYPE 2 AS DIRECTED BY THE ENGINEER. PREVENT DAMAGE TO EXISTING BAR STEEL REINFORCEMENT.

SEE THE ROAD PLANS FOR TRAFFIC CONTROL DETAILS, AND FOR APPROXIMATE LOCATIONS OF EXISTING UTILITY INSTALLATIONS. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

PREPARATION DECKS TYPE 1 AND PREPARATION DECKS TYPE 2 ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER AND SHALL BE DEFINED BY A 1/2" DEEP SAW CUT. THE SAW CUT IS INCLUDED IN "SAWING PAVEMENT DECK PREPARATION AREAS".

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

REMOVE THE EXISTING EPOXY OVERLAY FROM THE BRIDGE DECK SHOULDERS BY SHOT BLASTING AS PART OF THE SURFACE PREPARATION FOR "POLYMER OVERLAY". ESTIMATED THICKNESS IS 1/4" INCH. ESTIMATED WIDTH IS 3 FEET AT EACH SHOULDER FLOW LINE.

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1/4" PLACED ABOVE THE DECK SURFACE AFTER THE EXISTING DECK SURFACE HAS BEEN PREPARED. THE PLAN QUANTITY FOR THE BID ITEM "POLYMER OVERLAY" IS BASED ON THE CLEAR WIDTH BETWEEN PARAPETS AND THE DECK LENGTH.

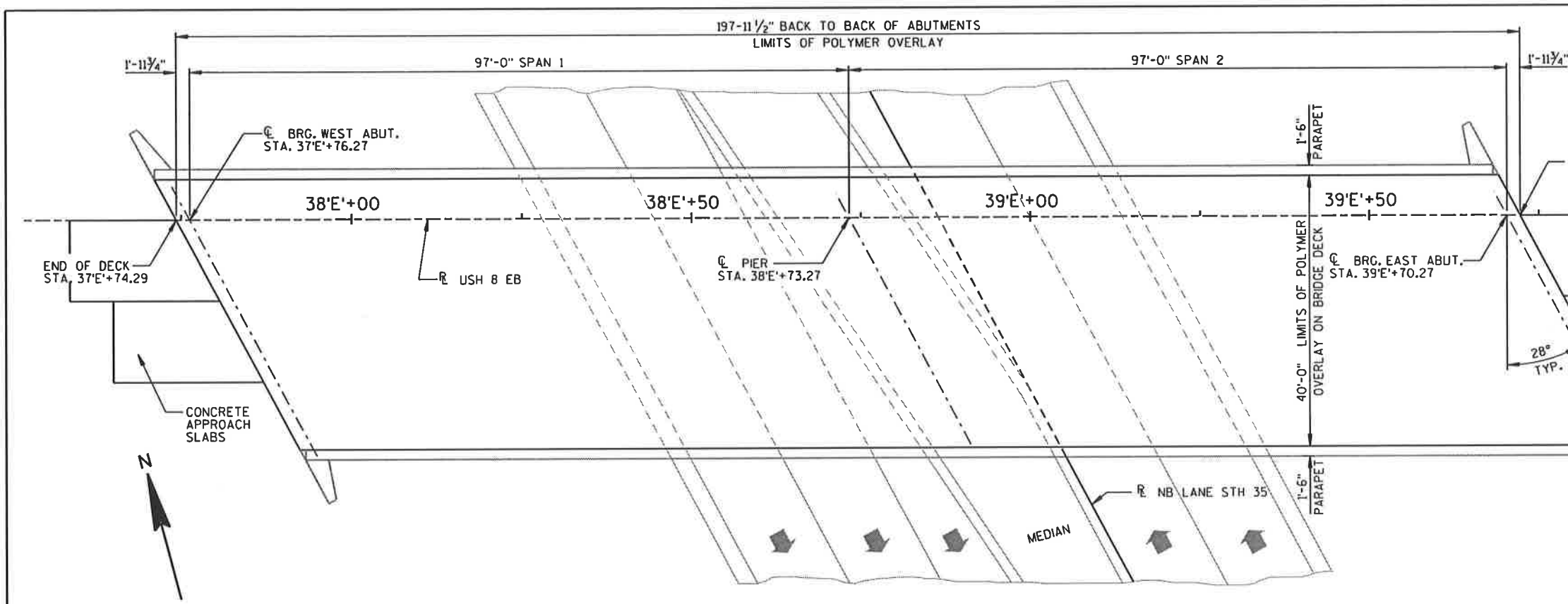
STATIONING BASED ON PREVIOUS AS-BUILTS AND IS FOR STRUCTURE DIMENSIONING & REFERENCE ONLY.

ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	TOTAL
509.0301	PREPARATION DECKS TYPE 1	SY	2
509.0302	PREPARATION DECKS TYPE 2	SY	1
509.5100.5	POLYMER OVERLAY	SY	869
*SPV.0035.01	CONCRETE MASONRY DECK PATCHING RAPID SET	CY	0.2
SPV.0090.01	SAWING PAVEMENT DECK PREPARATION AREAS	LF	20

* BID ITEM INCLUDES CONCRETE FOR PREPARATION DECKS TYPE 1 AND 2.

NO.	DATE	REVISION	BY
MSA TRANSPORTATION • MUNICIPAL DEVELOPMENT • ENVIRONMENTAL 1230 South Boulevard Baraboo, WI 53913 608-356-2771 L-800-362-4503 Fax: 608-356-2770			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Decker</i> 02/20/17 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-48-38 USH 8 WB OVER STH 35 (VINCENT ST.)			
COUNTY	POLK	TOWN/CITY/VILLAGE	ST. CROIX FALLS
DESIGN SPEC. REHABILITATION - N/A			
DESIGNED BY	DHW	DESIGN CK'D.	JAS
DRAWN BY	RLR	PLANS CK'D.	DHW
POLYMER OVERLAY			SHEET 1 OF 1



PLAN
(REHAB - POLYMER OVERLAY ON EXISTING TWO SPAN 54" PRESTRESSED CONCRETE GIRDER)

STATE PROJECT NUMBER

1570-00-73

DESIGN DATA

LIVE LOAD:
DESIGN LOADING : HS-20
INVENTORY RATING : HS-23
OPERATIONAL RATING : HS-41
MAXIMUM STANDARD PERMIT
VEHICLE LOAD : 240 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY DECK PATCHING
RAPID SET -- f'c = 4,000 P.S.I.

TRAFFIC DATA:
A.A.D.T. (2016) = 16,420
A.A.D.T. (2036) = 21,220
DESIGN SPEED = 50 MPH

LIST OF DRAWINGS

1. POLYMER OVERLAY



DESIGN CONTACT: DANIEL WAGNER (608) 355-8952
BRIDGE OFFICE CONTACT: WILLIAM DREHER (608) 266-8489

NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL 1995 STRUCTURE PLANS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

THIS PROJECT WILL REHABILITATE THE EXISTING STRUCTURE, B-48-39, A TWO SPAN, 197.96' PRESTRESSED CONCRETE GIRDER BRIDGE SET ON CONCRETE SILL ABUTMENTS AND A MULTI-COLUMN PIER. APPLY POLYMER OVERLAY TO DECK SURFACE TO THE LIMITS SHOWN. COMPLETE PREPARATION DECKS TYPE 1 AND TYPE 2 AS DIRECTED BY THE ENGINEER. PREVENT DAMAGE TO EXISTING BAR STEEL REINFORCEMENT.

SEE THE ROAD PLANS FOR TRAFFIC CONTROL DETAILS, AND FOR APPROXIMATE LOCATIONS OF EXISTING UTILITY INSTALLATIONS. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

PREPARATION DECKS TYPE 1 AND PREPARATION DECKS TYPE 2 ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER AND SHALL BE DEFINED BY A 1/2" DEEP SAW CUT. THE SAW CUT IS INCLUDED IN "SAWING PAVEMENT DECK PREPARATION AREAS".

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

REMOVE THE EXISTING EPOXY OVERLAY FROM THE BRIDGE DECK SHOULDERS BY SHOT BLASTING AS PART OF THE SURFACE PREPARATION FOR "POLYMER OVERLAY". ESTIMATED THICKNESS IS 1/4" INCH. ESTIMATED WIDTH IS 3 FEET AT EACH SHOULDER FLOW LINE.

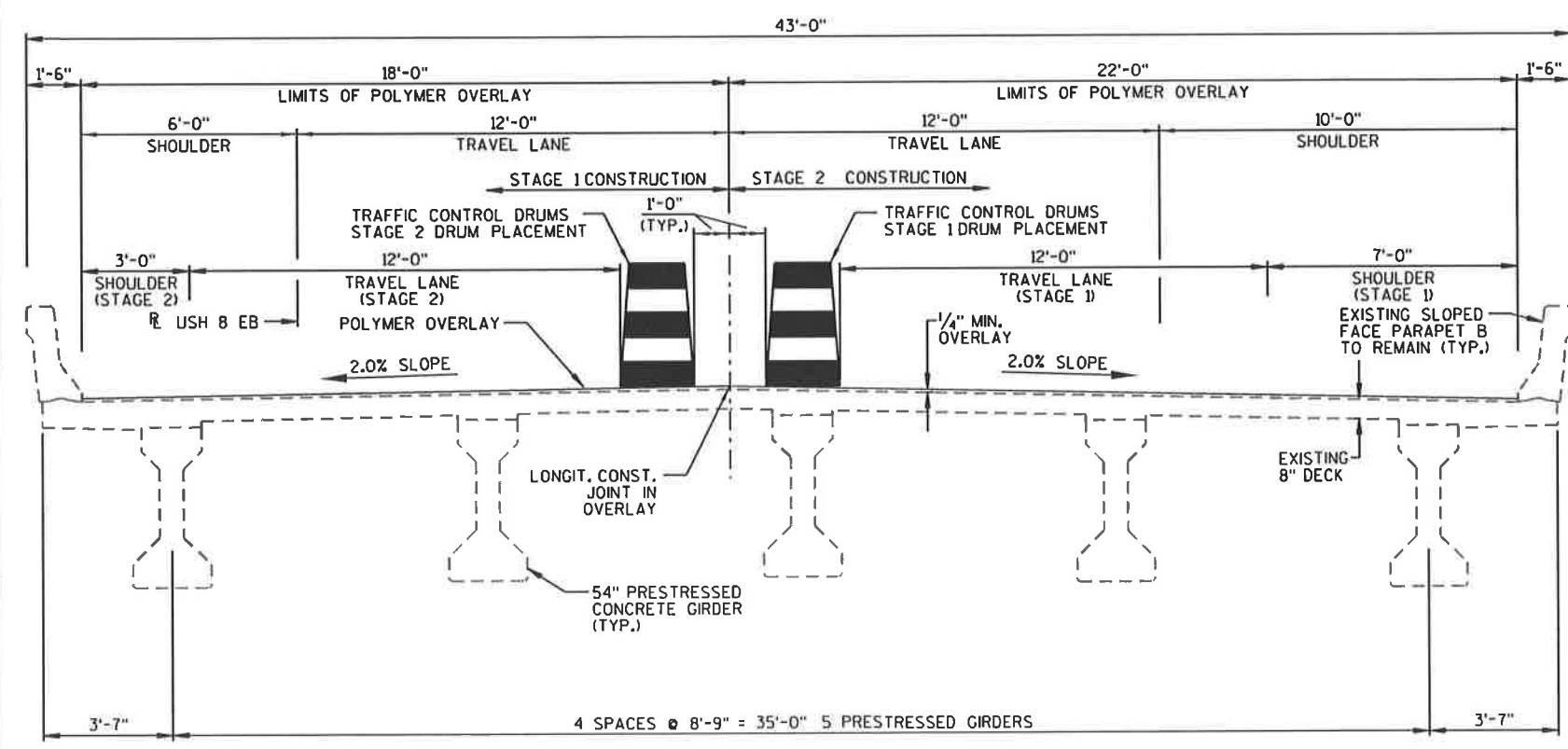
PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1/4" PLACED ABOVE THE DECK SURFACE AFTER THE EXISTING DECK SURFACE HAS BEEN PREPARED. THE PLAN QUANTITY FOR THE BID ITEM "POLYMER OVERLAY" IS BASED ON THE CLEAR WIDTH BETWEEN PARAPETS AND THE DECK LENGTH.

STATIONING BASED ON PREVIOUS AS-BUILTS AND IS FOR STRUCTURE DIMENSIONING & REFERENCE ONLY.

ESTIMATED QUANTITIES

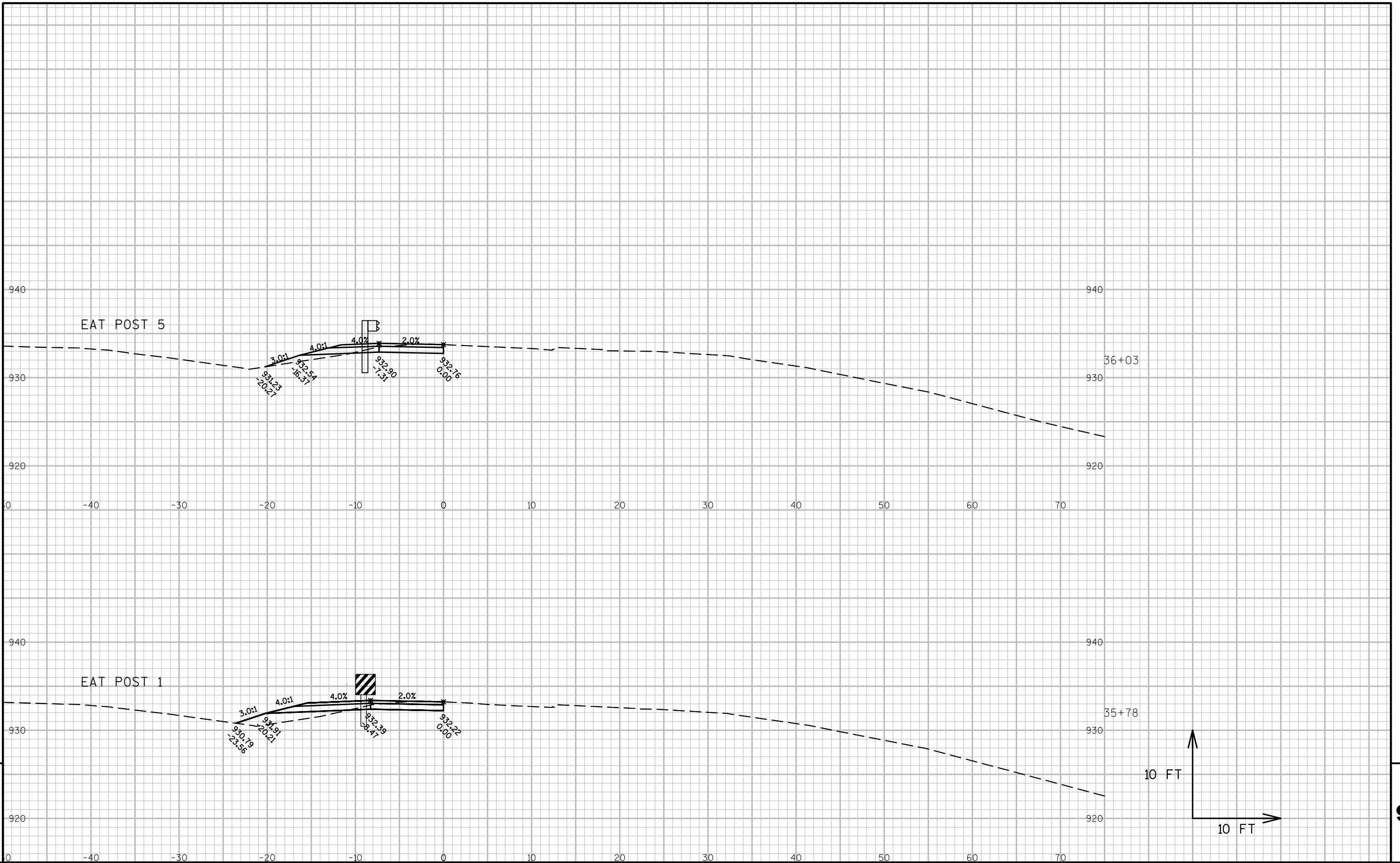
ITEM NUMBER	BID ITEM	UNIT	TOTAL
509.0301	PREPARATION DECKS TYPE 1	SY	1
509.0302	PREPARATION DECKS TYPE 2	SY	1
509.5100.S	POLYMER OVERLAY	SY	880
*SPV.0035.01	CONCRETE MASONRY DECK PATCHING RAPID SET	CY	0.2
SPV.0090.01	SAWING PAVEMENT DECK PREPARATION AREAS	LF	10

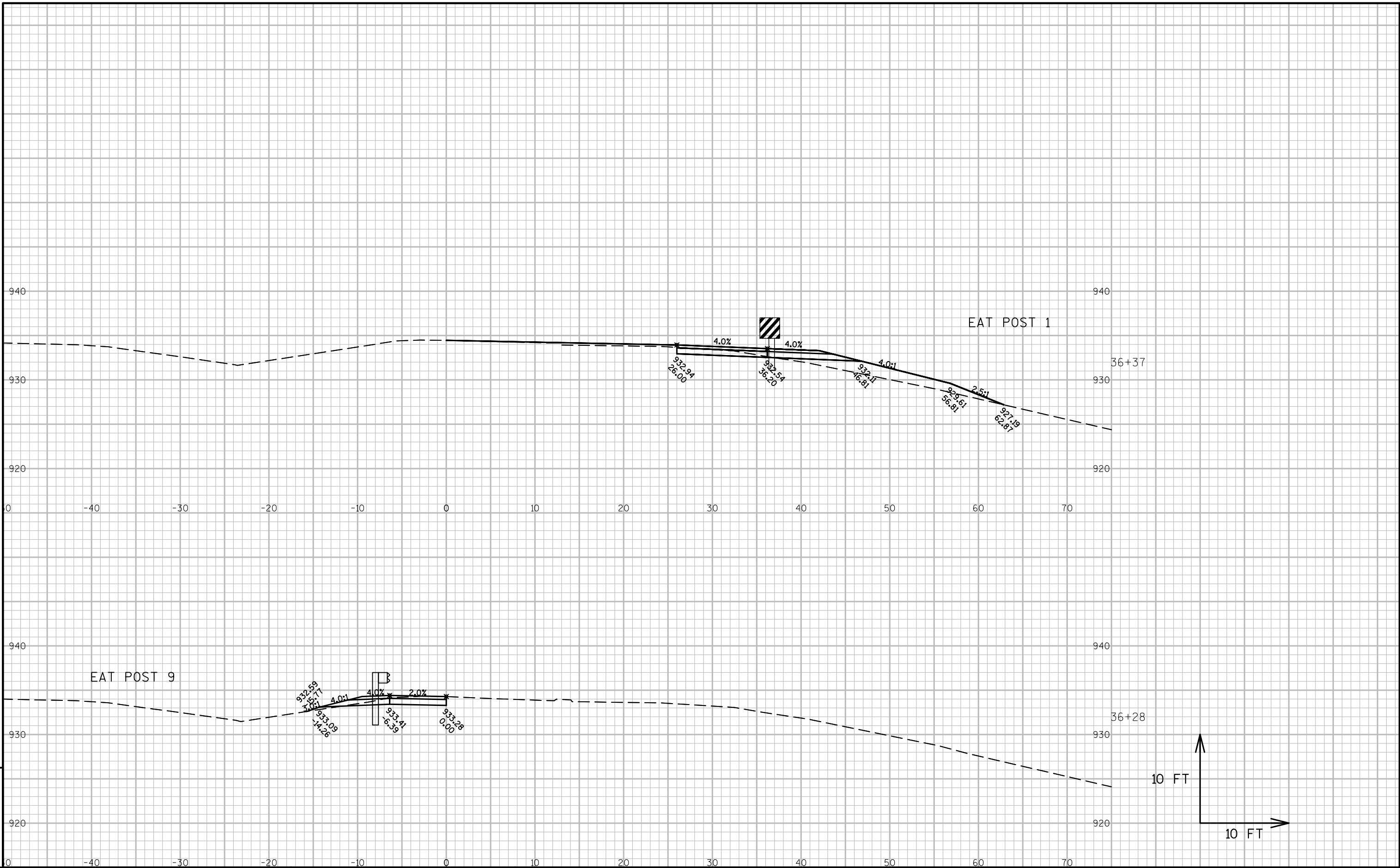
* BID ITEM INCLUDES CONCRETE FOR PREPARATION DECKS TYPE 1 AND 2.



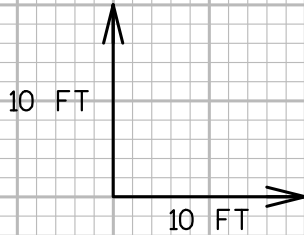
CROSS SECTION THRU ROADWAY
(LOOKING EAST)

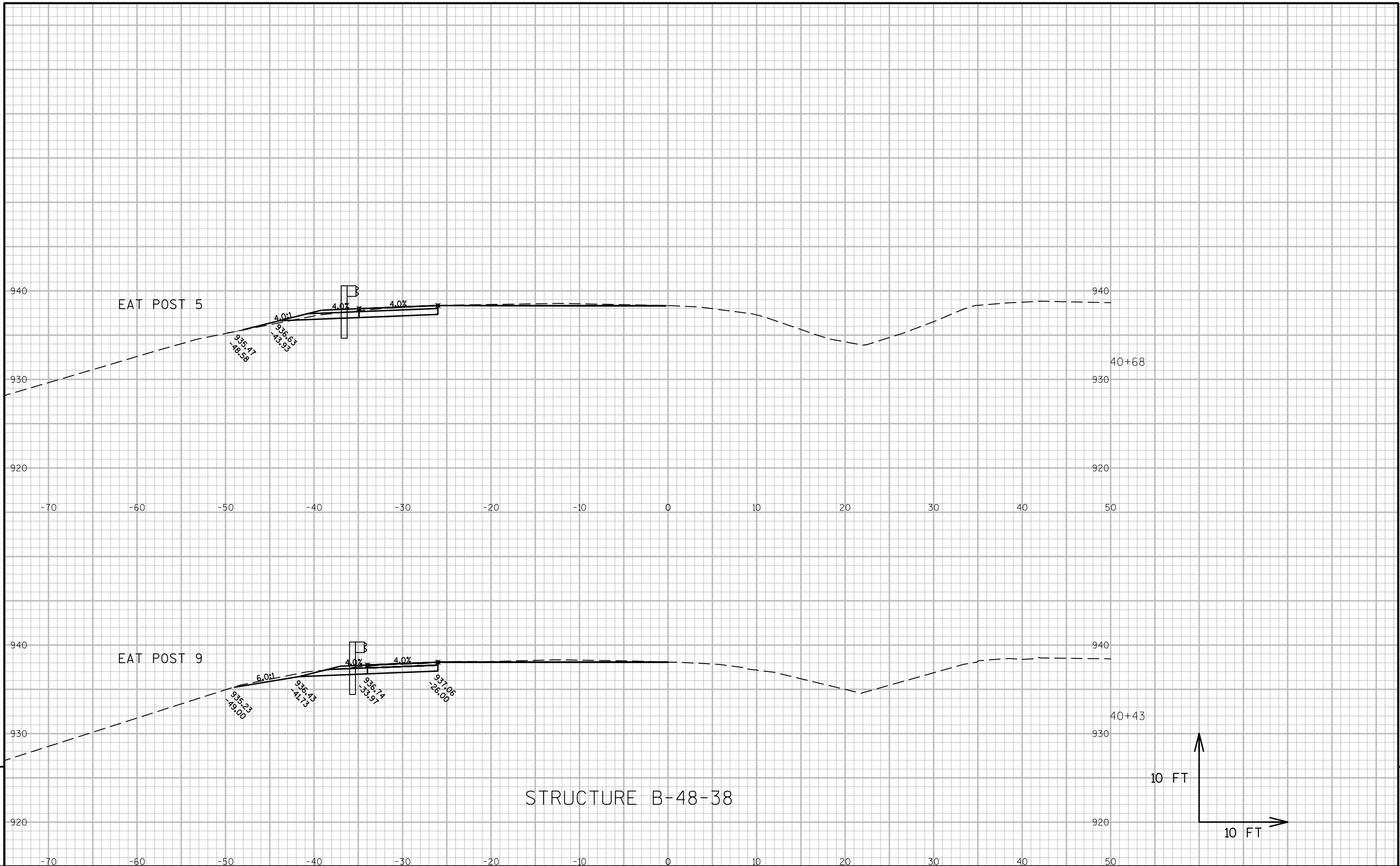
NO.	DATE	REVISION	BY
MSA TRANSPORTATION • MUNICIPAL DEVELOPMENT • ENVIRONMENTAL 1230 South Boulevard Baraboo, WI 53913 608-355-3771 1-800-362-4903 Fax: 608-355-3770			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Dreher</i> SR 02/20/17 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-48-39			
USH 8 EB OVER STH 35 (VINCENT ST.)			
COUNTY	POLK	TOWN/CITY/VILLAGE	ST. CROIX FALLS
DESIGN SPEC. REHABILITATION - N/A			
DESIGNED BY	DHW	DESIGN CK'D.	JAS
DRAWN BY	RLR	PLANS CK'D.	DHW
POLYMER OVERLAY			SHEET 1 OF 1

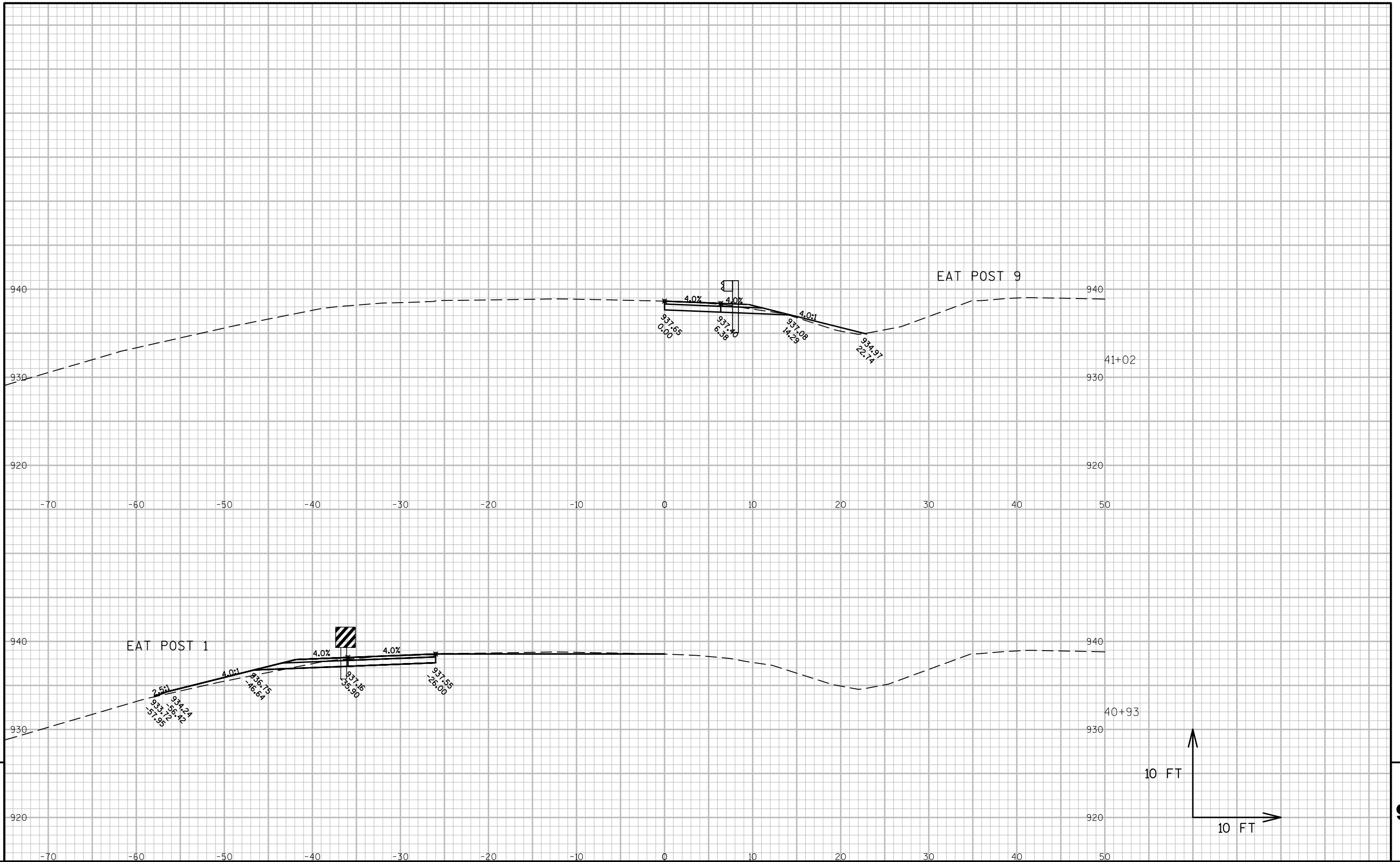


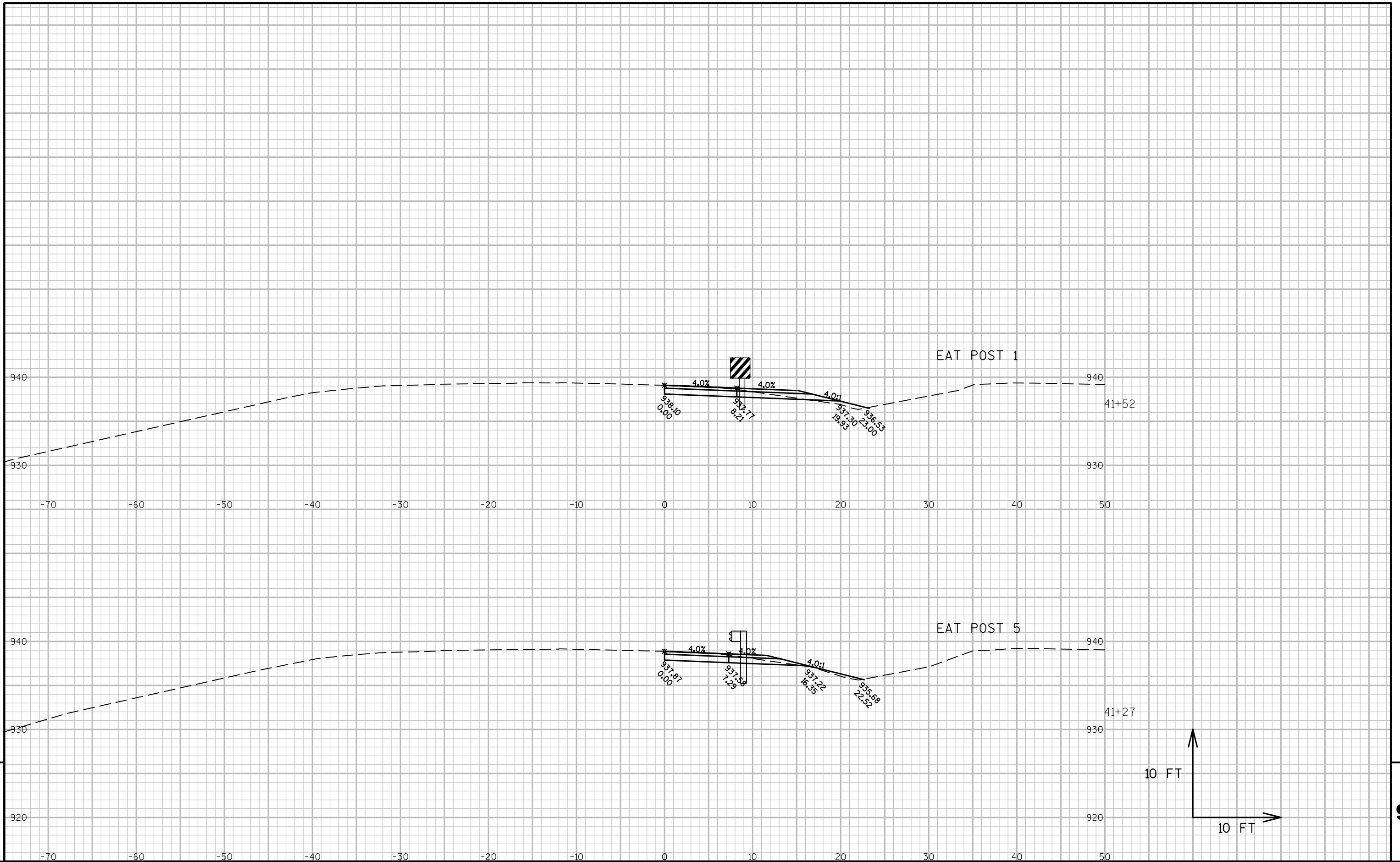


STRUCTURE B-48-39

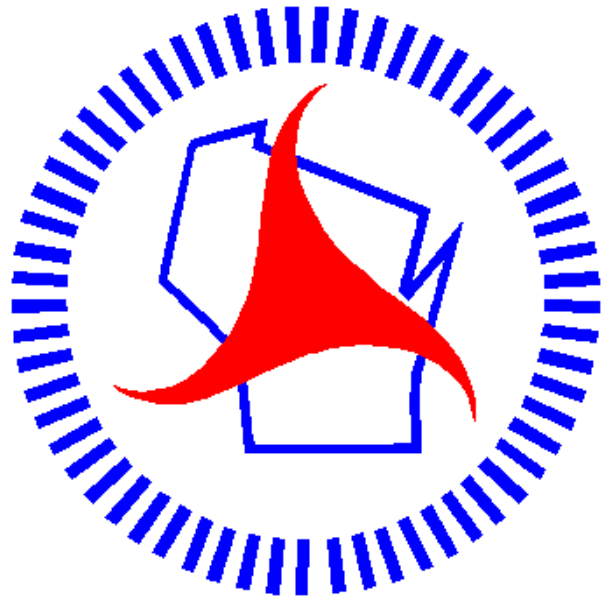








Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>