

WKE

WITH:

PROJECT ID:

1100-35-70

COUNTY:

MILWAUKEE

APRIL 2019

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 = 220



DESIGN	DESIGNATION	IH 894/IH 41	BELOIT RD
A.A.D.T.	2019	= 123,700	20,000
A.A.D.T.	2039	= 136,500	22,700
D.H.V.		= 9.6	7.5
D.D.		= 55/45	59/41
T.		= 11.7%	8.7%
DESIGN SPEED		= 60MPH	40MPH
ESALS		= -	-

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

ZOO FREEWAY

BELOIT ROAD BRIDGE

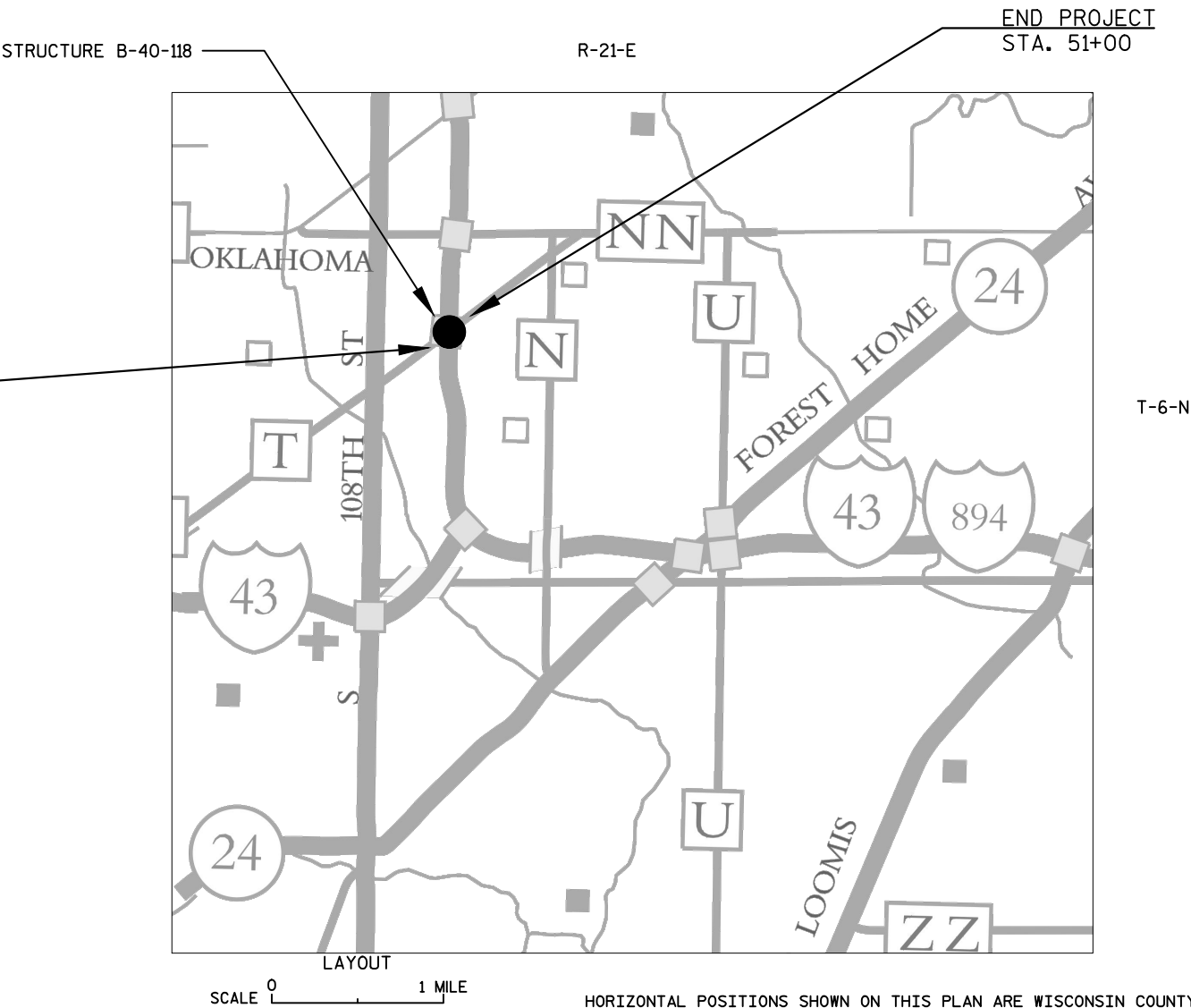
IH 894

MILWAUKEE COUNTY

STATE PROJECT NUMBER
1100-35-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1100-35-70	WISC 2019221	1

BEGIN PROJECT
STA. 40+00
Y= 277965.397
X= 570916.506



TOTAL NET LENGTH OF CENTERLINE = 0.000

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, MILWAUKEE COUNTY, NAD83 (2007), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD88 (2007).

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	WISDOT
Designer	WISDOT
Project Manager	JOSHUA LEVEQUE, P.E.
Regional Examiner	
Regional Supervisor	WILLIAM S. MOHR, P.E.
APPROVED FOR THE DEPARTMENT	
DATE: 12/01/2018	
	(Signature)

E

UTILITY CONTACTS

WE ENERGIES – ELECTRIC / GAS

MS. NICOLE SMULLEN
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AT&T WISCONSIN

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WISCONSIN DEPARTMENT OF TRANSPORTATION - STREET LIGHTING

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Eric.Perea@dot.wi.gov

AT&T CORP.

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PLANO, IL 60545
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CHARTER COMMUNICATIONS

CHARTER COMMUNICATIONS
1320 N DR. MARTIN LUTHER KING DR.
MILWAUKEE, WI 53212
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CITY OF WEST ALLIS – COMMUNICATION LINE / SEWER

PETER DANIELS
7525 W GREENFIELD AVE
WEST ALLIS, WI 53214
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pdaniels@westalliswi.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION - WISCONSIN SIGNAL

DERRIN WOLFORD
141 NW BARSTOW STREET
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(262) 521-4409
derrin.wolford@dot.wi.gov

OTHER CONTACTS

WISDOT REGION CONTACT

JOSHUA LEVEQUE, PROJECT MANAGER
141 NW BARSTOW ST.
WAUKESHA, WI 53187
PHONE: (414) 750-1468
joshua.leveque@dot.wi.gov

CITY OF MILWAUKEE

JEFFERY POLENSKE
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MILWAUKEE, WI 53202
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MILWAUKEE COUNTY

ANDREA J. WEDDLE-HENNING
MILWAUKEE COUNTY DEPT OF TRANSPORTATION
10320 W. WATERTOWN PLANK RD., 2ND FLOOR
WAUWATOSA, WI 53226
PHONE: (414) 257-5934
andrea.weddle-henning@milwaukeecountywi.gov

CITY OF GREENFIELD

CRAIG SKALA
7325 W FOREST HOME AVE
GREENFIELD, WI 53220
PHONE: (414) 329-5315
Craig.skala@greenfieldwi.us

WISDNR CONTACT

KRISTINA BETZOLD
2300 N DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212
PHONE: (414) 263-8517
kristina.betzold@wisconsin.gov



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

STANDARD ABBREVIATIONS

ASPH	ASPHALTIC
AVE	AVENUE
BAD	BASE AGGREGATE DENSE
BP	BEGIN POINT
C/L	CENTER OR CONSTRUCTION LINE
CONC	CONCRETE
CTH	COUNTY TRUNK HIGHWAY
D	DEGREE OF CURVE
DHV	DESIGN HOURLY VOLUME
DIM	DIMENSION
EB	EASTBOUND
EP	END POINT
IH	INTERSTATE HIGHWAY
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
NB	NORTHBOUND
NORM	NORMAL
PAVT	PAVEMENT
PC	POINT OF CURVE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RT	RIGHT
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
SI	SLOPE INTERCEPT
STA	STATION
STH	STATE TRUCK HIGHWAY
SY	SQUARE YARD
T	TANGENT LENGTH
TYP	TYPICAL
USH	US HIGHWAY
WB	WESTBOUND

ORDER OF SECTION 2 SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- CONSTRUCTION DETAILS
- PLAN DETAILS/EROSION CONTROL
- PERMANENT SIGNING
- TRAFFIC SIGNALS
- PAVEMENT MARKING
- TRAFFIC CONTROL
- DETOUR PLAN
- ALIGNMENT AND CONTROL POINT PLANS

GENERAL NOTES

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

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

REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.

RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL.

STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION.

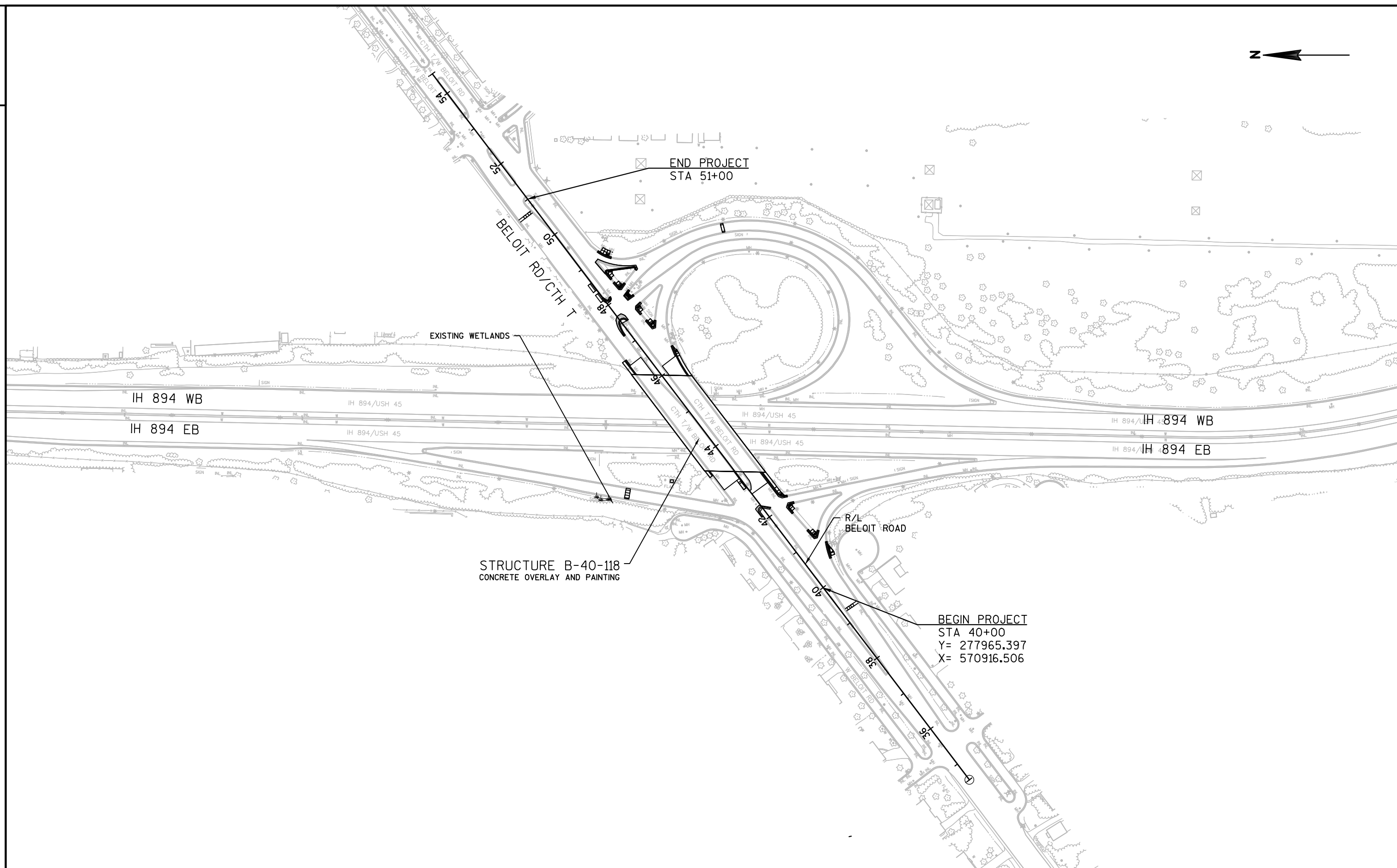
EROSION CONTROL BMPS ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S ECIP AND BY THE ENGINEER. EROSION CONTROL BMPS SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.

EXISTING WETLANDS NOT DESIGNATED FOR IMPACTS SHALL BE PROTECTED USING SILT FENCE. SILT FENCE TO BE INSTALLED PRIOR TO START OPERATION OF HEAVY EQUIPMENT IN THE VICINITY OF THE WETLANDS. LOCATION OF SILT FENCE TO BE STAKED AND APPROVED BY ENGINEER BEFORE INSTALLATION.

HMOD NOTES
CONTRACTOR TO PROTECT GREENFIELD W GPS AND KEEP CONSTRUCTION EQUIPMENT AT LEAST 10 FEET AWAY FROM GREENFIELD W GPS.

ENSURE THAT GREENFIELD W GPS IS/ARE NOT DISTURBED, BUMPED OR MOVED DURING THE DURATION OF THE PROJECT. NOTIFY JACOB ROCKWEILER IMMEDIATELY IF GREENFIELD W GPS IS/ARE DISTURBED, BUMPED OR MOVED DURING CONSTRUCTION OPERATIONS.

JACOB ROCKWEILER, P.E., WISCONSIN HEIGHT MODERNIZATION PROGRAM MANAGER WITH THE WISCONSIN DEPARTMENT OF TRANSPORTATION WHOSE PHONE NUMBER IS (608) 516-6362 AND EMAIL IS Jacob.rockweiler@dot.wi.gov



2

2

MATCH ADJACENT PAVEMENT SLOPE

RESTORE WITH,
FERTILIZER, SOD LAWN

ASPHALTIC SURFACE 2-INCH

BASE PATCHING CONCRETE 9-INCH

TIE BAR (TYP)

CONCRETE CURB & GUTTER 31-INCH

6" BASE AGGREGATE DENSE 1 1/4-INCH

SECTION A-A (TYP)

BELOIT RD WB

R/L BELOIT RD

41+00

N = 278103.21
E = 571090.44

42+00

ASPHALTIC SURFACE 2-INCH

42+09.86, -14.30' LT

R8.1'

CONCRETE MEDIAN SLOPED NOSE TYPE 1

42+83.71, -8.71' LT

43+10.00, -1.87' LT

BELOIT RD EB

CONCRETE CURB & GUTTER 31-INCH

42+15.36, 15.80' RT

N = 277983.38
E = 571033.24

N = 278038.05
E = 571099.65

N = 278055.92
E = 571135.77

IH 894 EB ON RAMP

PROJECT NO: 1100-35-70

HWY: USH 45/IH 894

COUNTY: MILWAUKEE

CONSTRUCTION DETAILS

SHEET

5

E

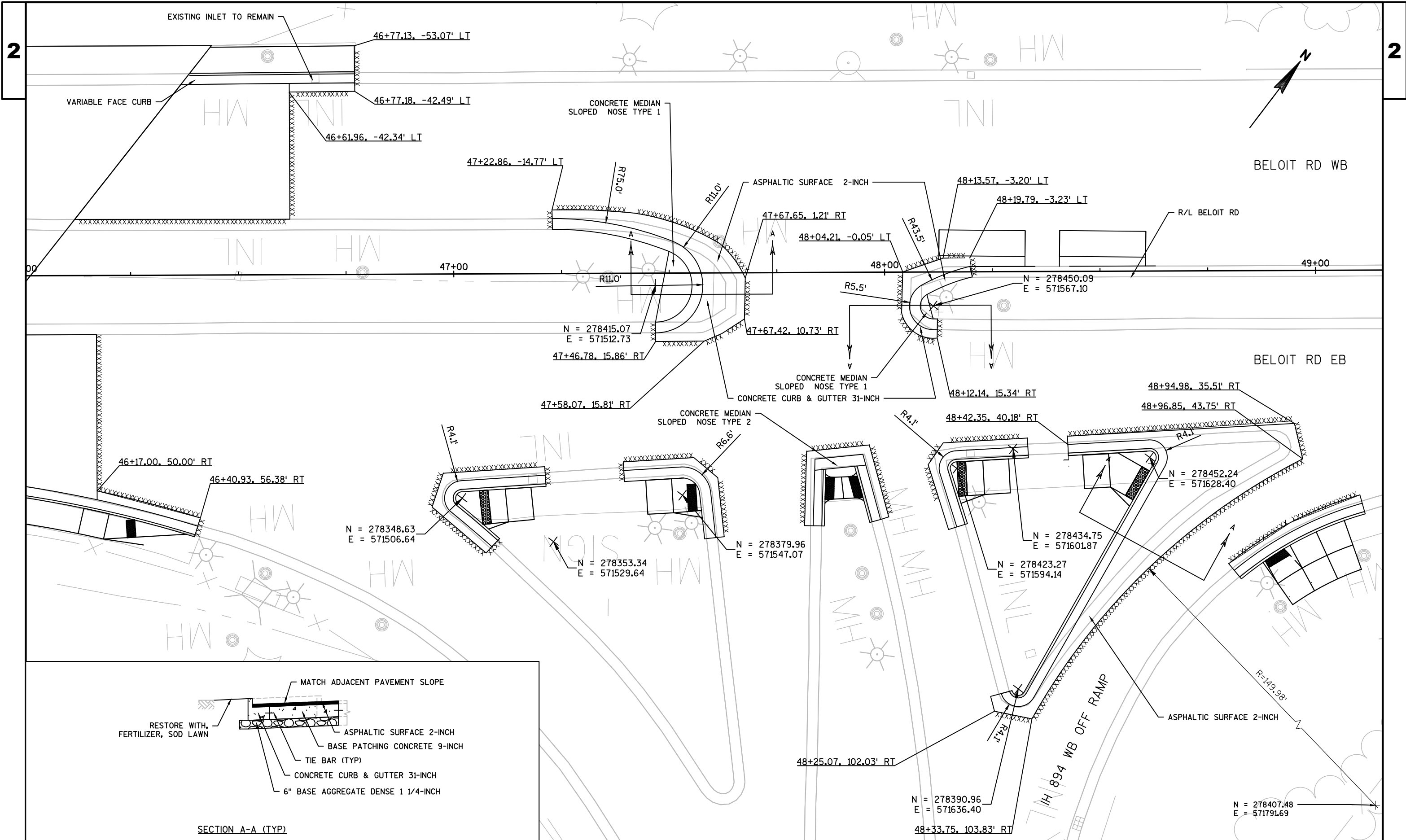
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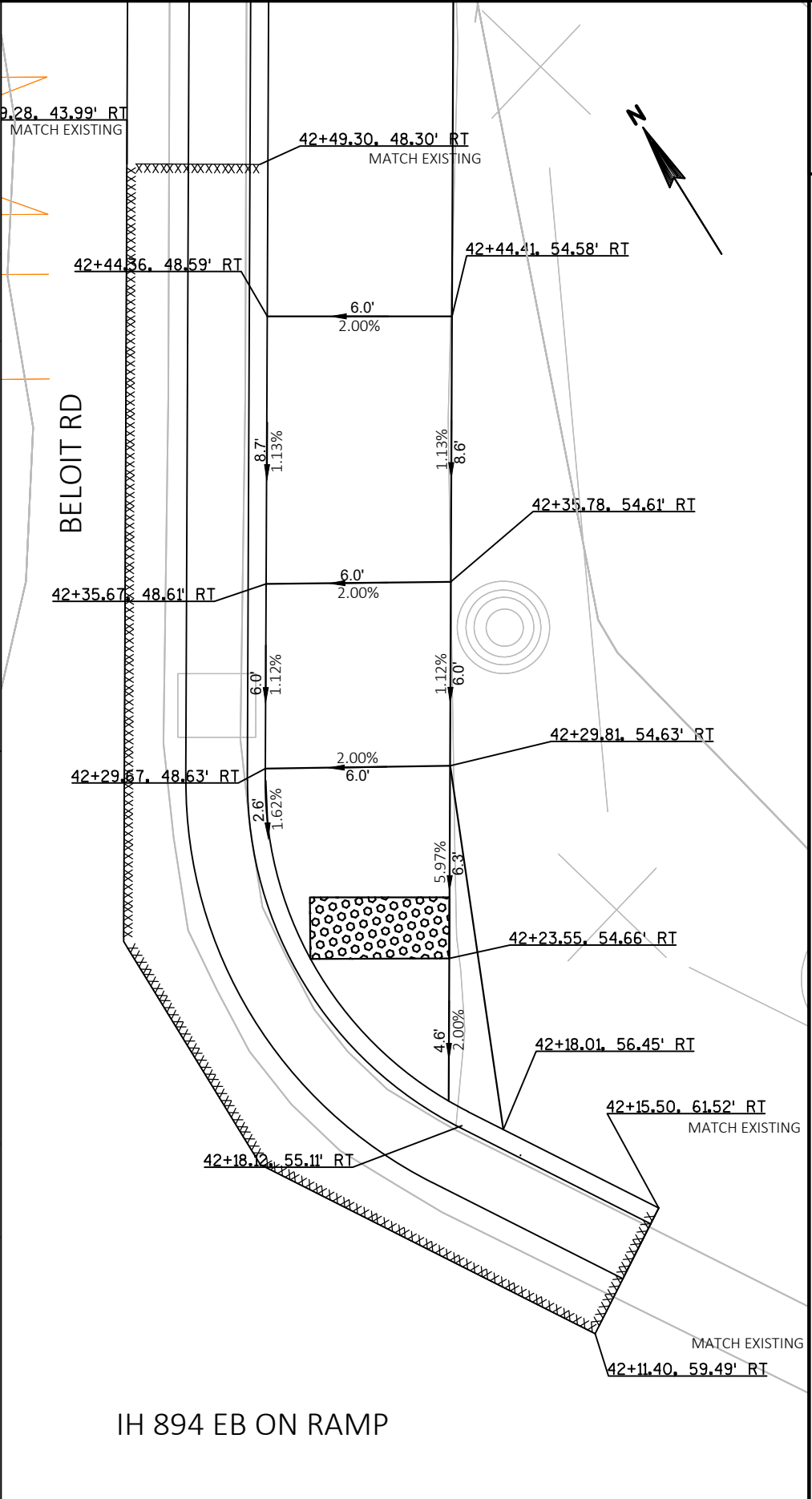
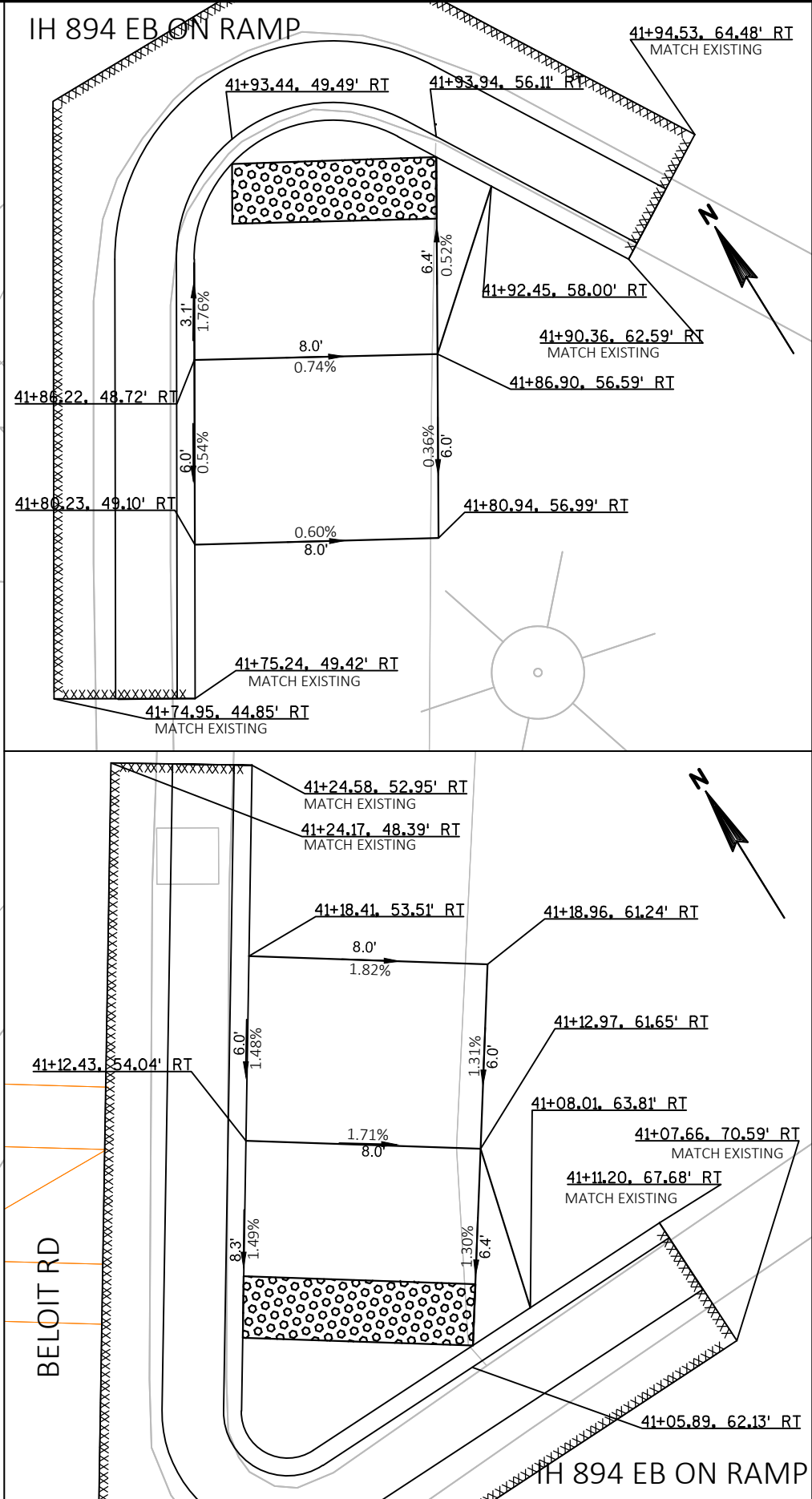
PLOT DATE : 1/31/2019 3:17 PM

PLOT BY : GARCIA CHOQUE, JOSE PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDs SHEET 42



[illegible]

2

[illegible]

46+40.93, 56.38' RT
MATCH EXISTING

46+19.77, 55.32' RT /

~~6+15.49. 54.36' RT~~
~~MATCH EXISTING~~

6+16.95, 49.09' RT
MATCH EXISTING

~~46+13.91 54.03' RT~~

46+39.55. 60.75' RT
MATCH EXISTING

46+27.71, 62.59' RT

46+18.43, 61.18' RT

46+12.58. 59.84' RT

[illegible]

47+50.35, 47.75' RT

47+44.36, 48.08' RT

47+39.1	43.81	RT
MATCH	EXISTING	/

47+39.41, 48.36' RT
MATCH EXISTING

47+57.77. 55.09' RT

47+57.41. 56.75' RT

47+50.79. 55.65' RT

47+44.80, 55.96' RT

92.44.80' RT/
MATCH EXISTING

47+21.20, 49.38' RT
MATCH EXISTING

47+17.70. 49.59' RT

47+18.42, 57.06' RT

47+1.72. 49.96' RT

47+12.45. 57.61' RT

47+07.85, 59.24' R

47+10.38. 61.48' RT

47+00.49 50.61' RT

47+05.85, 58.23' RT

MATCH EXISTING
47+07.23, 64.80

[illegible]

BELOIT RD

47+95.36, 52.26' RT

47+94.04, 47.35' RT

47+91.47, 47.44' RT

47+89.78, 47.51' RT

47+88.10, 47.57' RT

47+85.36, 47.67' RT

47+85.30, 52.74' RT

47+87.98, 52.62' RT

47+90.30, 52.51' RT

47+92.78, 52.39' RT

47+96.40, 58.06' RT

48+00.74, 56.90' RT

47+85.68, 58.86' RT

47+81.18, 58.75' RT

47+62.52, 61.24' RT

0.65%

3.8'

5.0'

2.00%

1.28%

16.9'

4.5'

1.64%

4.4'

2.11%

MATCH EXISTING

MATCH EXISTING

MATCH EXISTING

MATCH EXISTING

N

47+95.36, 52.26' RT

47+94.04, 47.35' RT

47+91.47, 47.44' RT

47+89.78, 47.51' RT

47+38.10. 47.57' RT

47+92.78, 52.39' RT

47+90.30, 52.51' RT

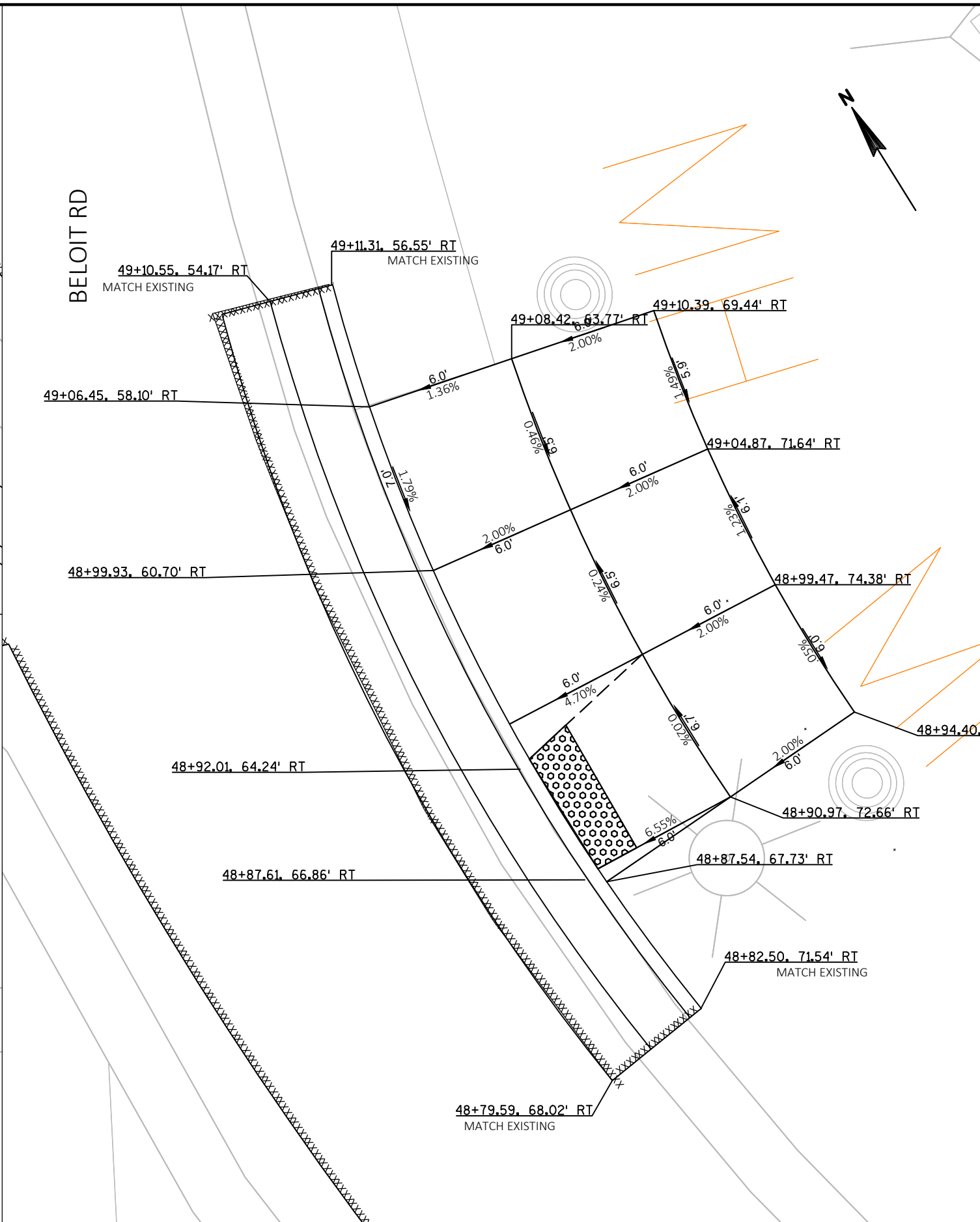
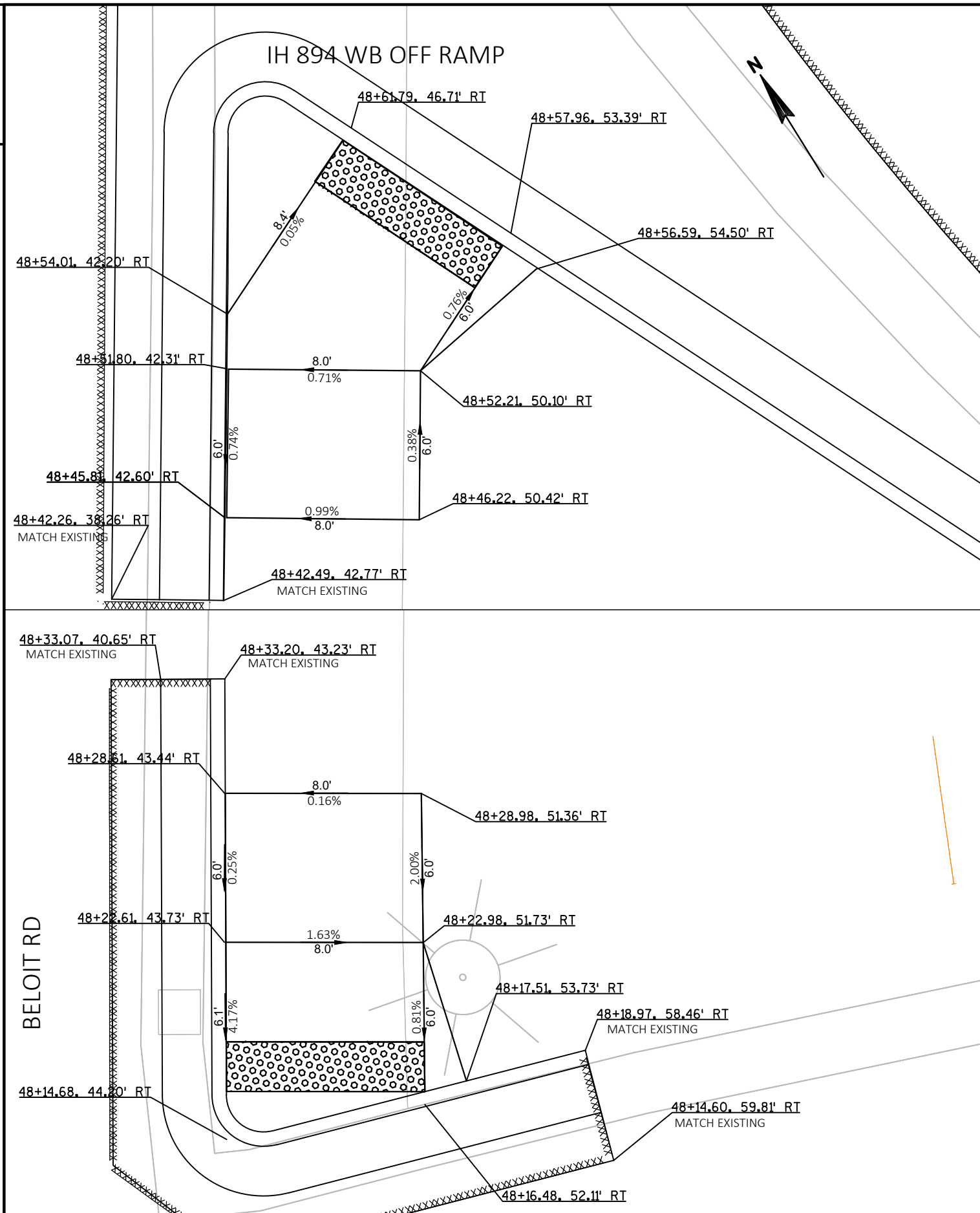
47+87.98, 52.62' RT

47+85.68. 58.86' RT

47+85.30, 52.74' RT/

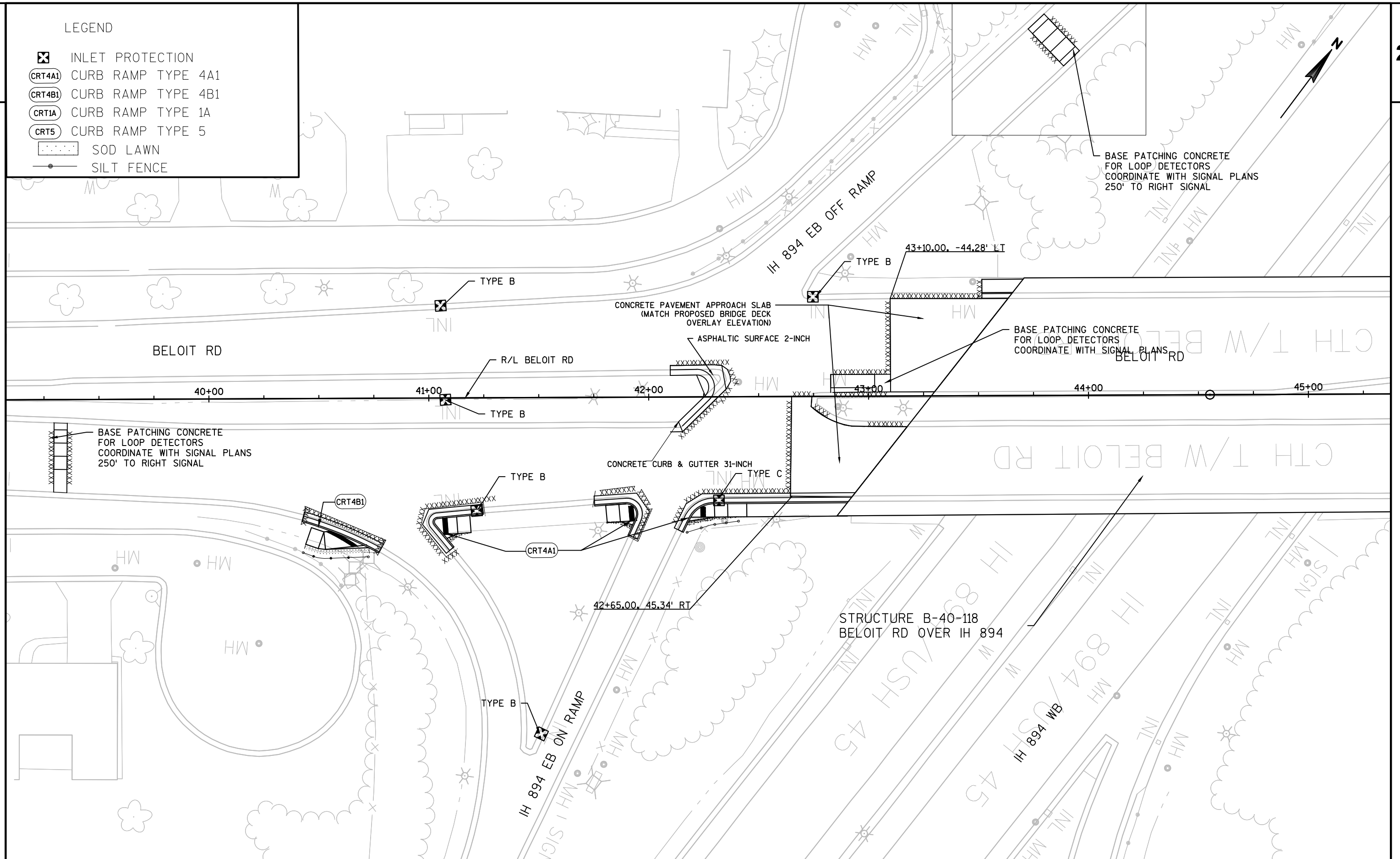
47+81.18. 58.75' RT

47+62.52, 61.24' RT

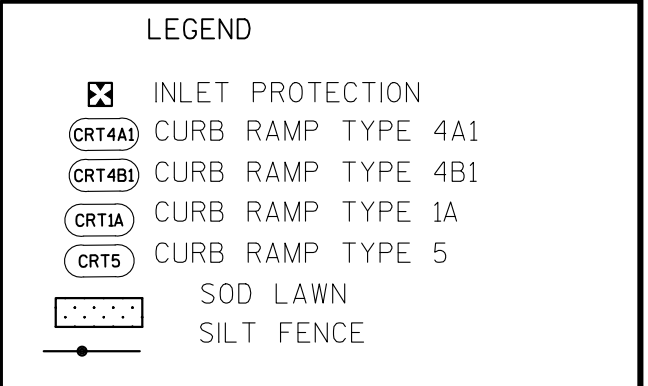


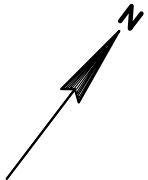
LEGEND

-  INLET PROTECTION
-  CURB RAMP TYPE 4A1
-  CURB RAMP TYPE 4B1
-  CURB RAMP TYPE 1A
-  CURB RAMP TYPE 5
-  SOD LAWN
-  SILT FENCE



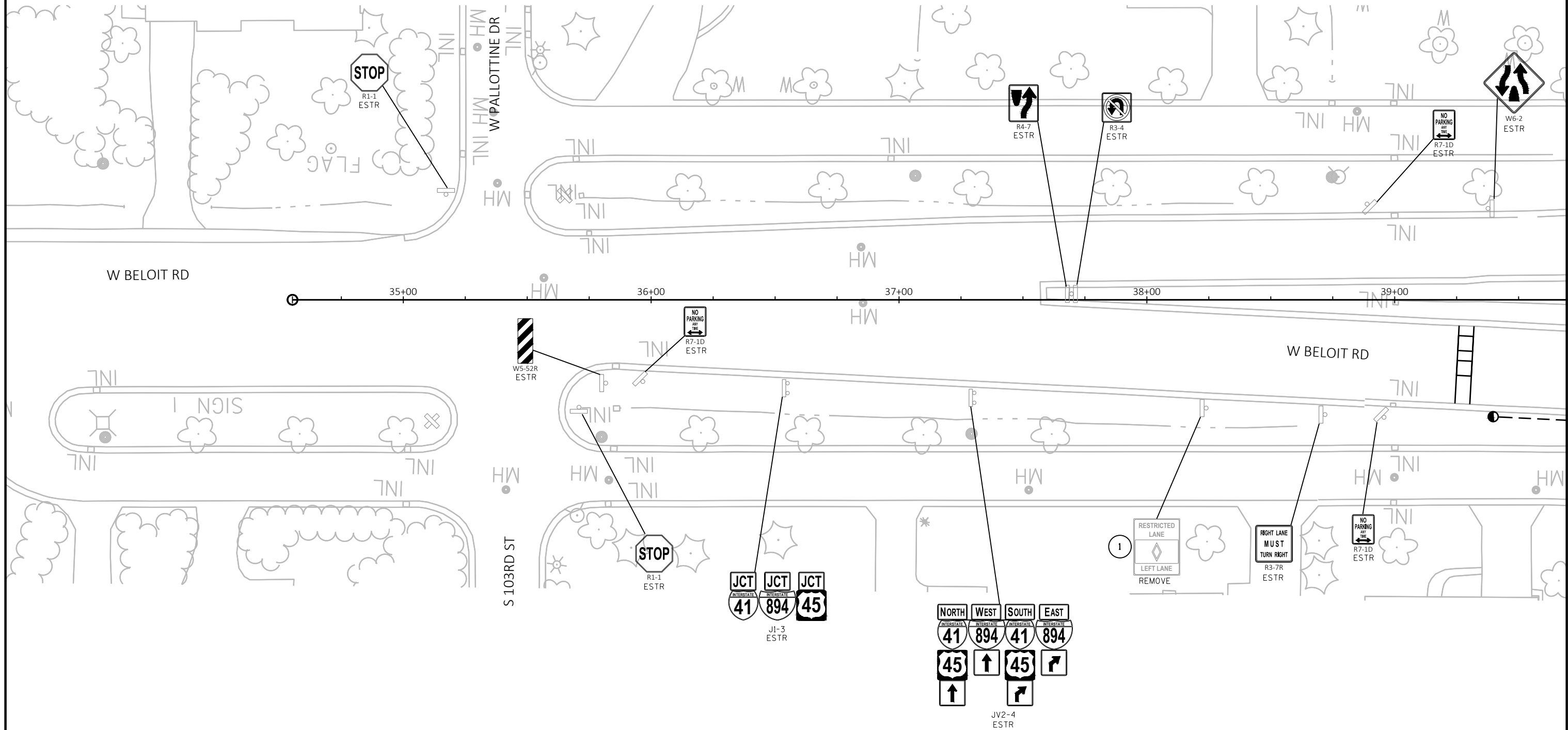
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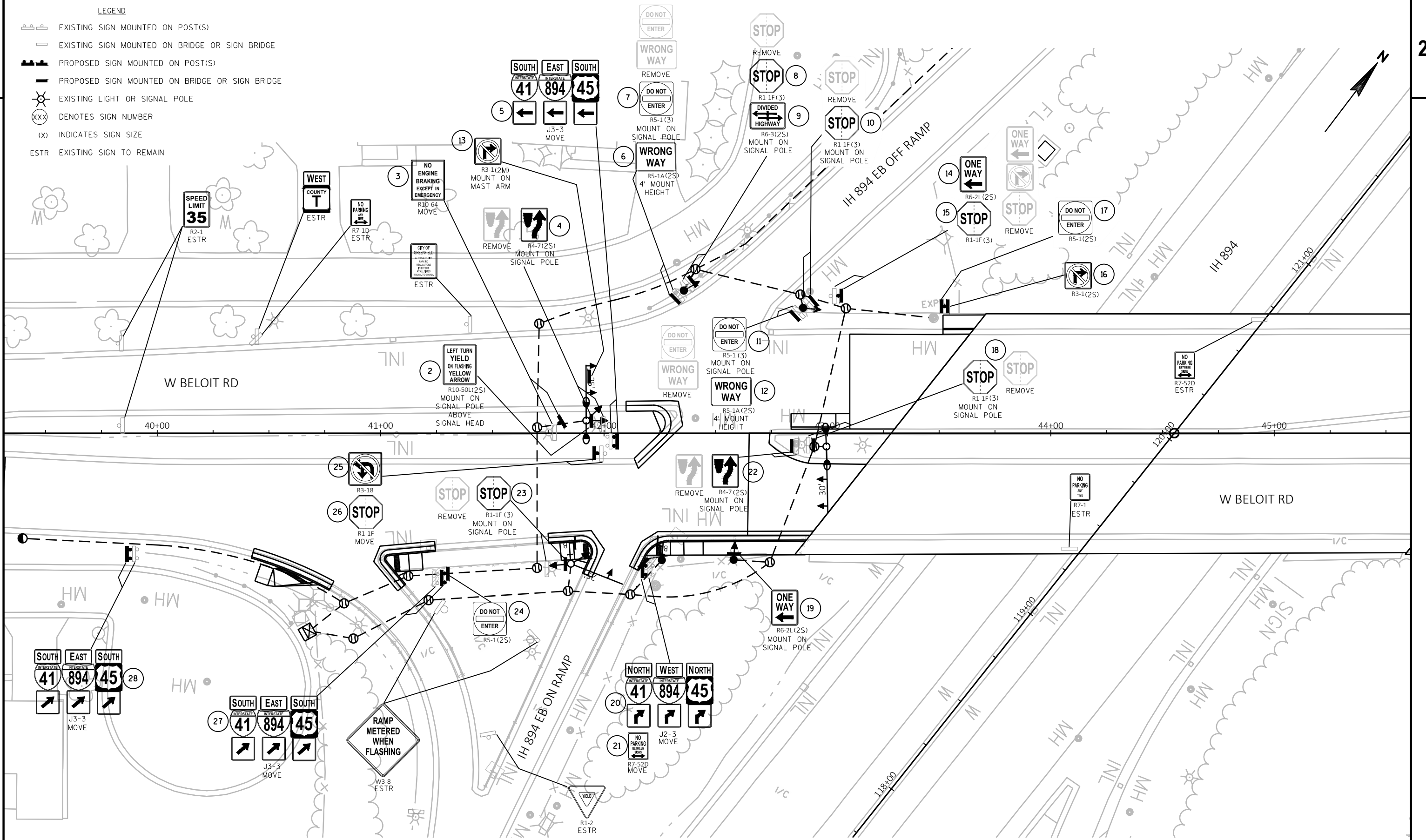
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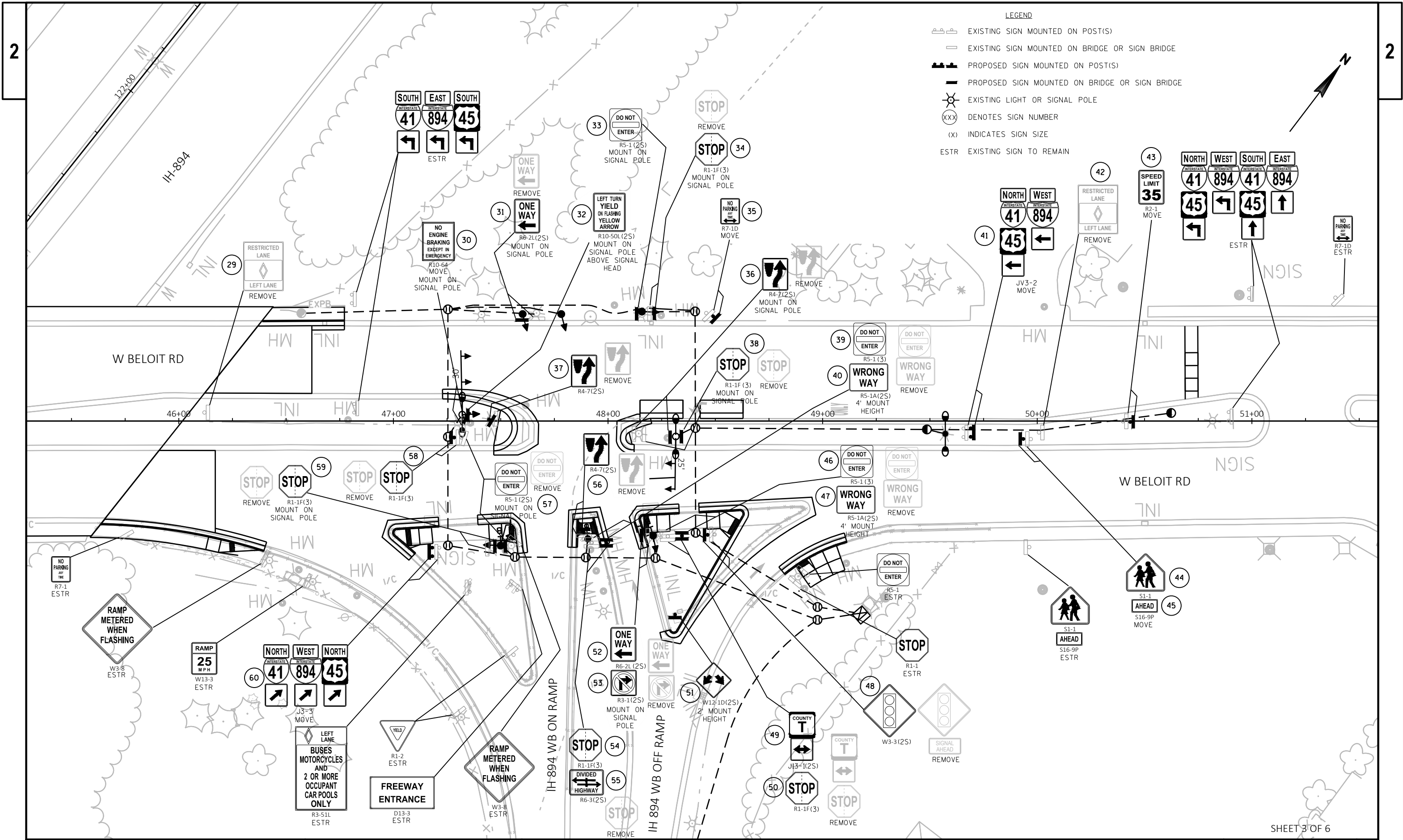
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- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- DENOTES SIGN NUMBER
- INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN



LEGEND

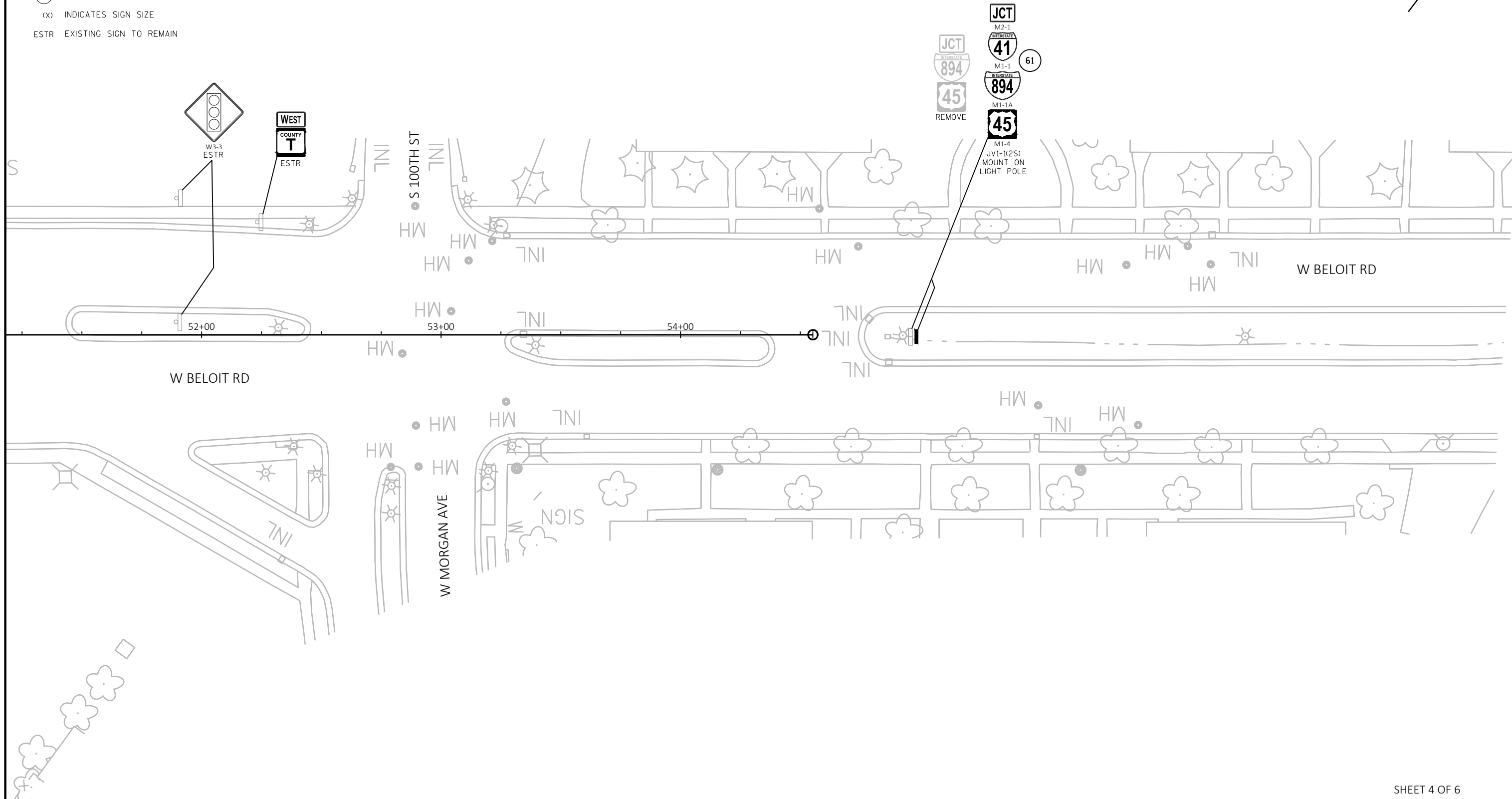
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- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- XXX DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN





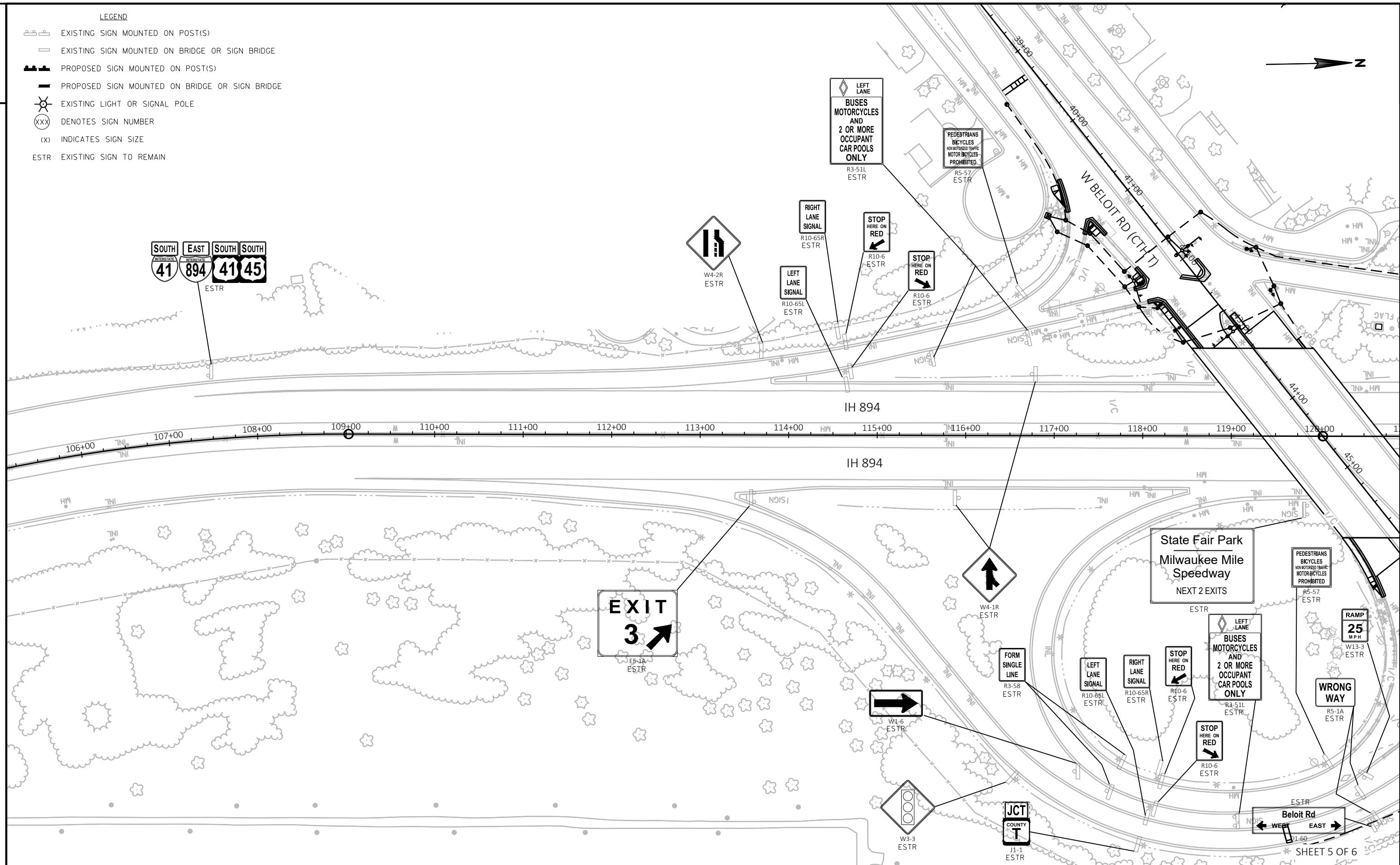
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- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- DENOTES SIGN NUMBER
- (x) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN



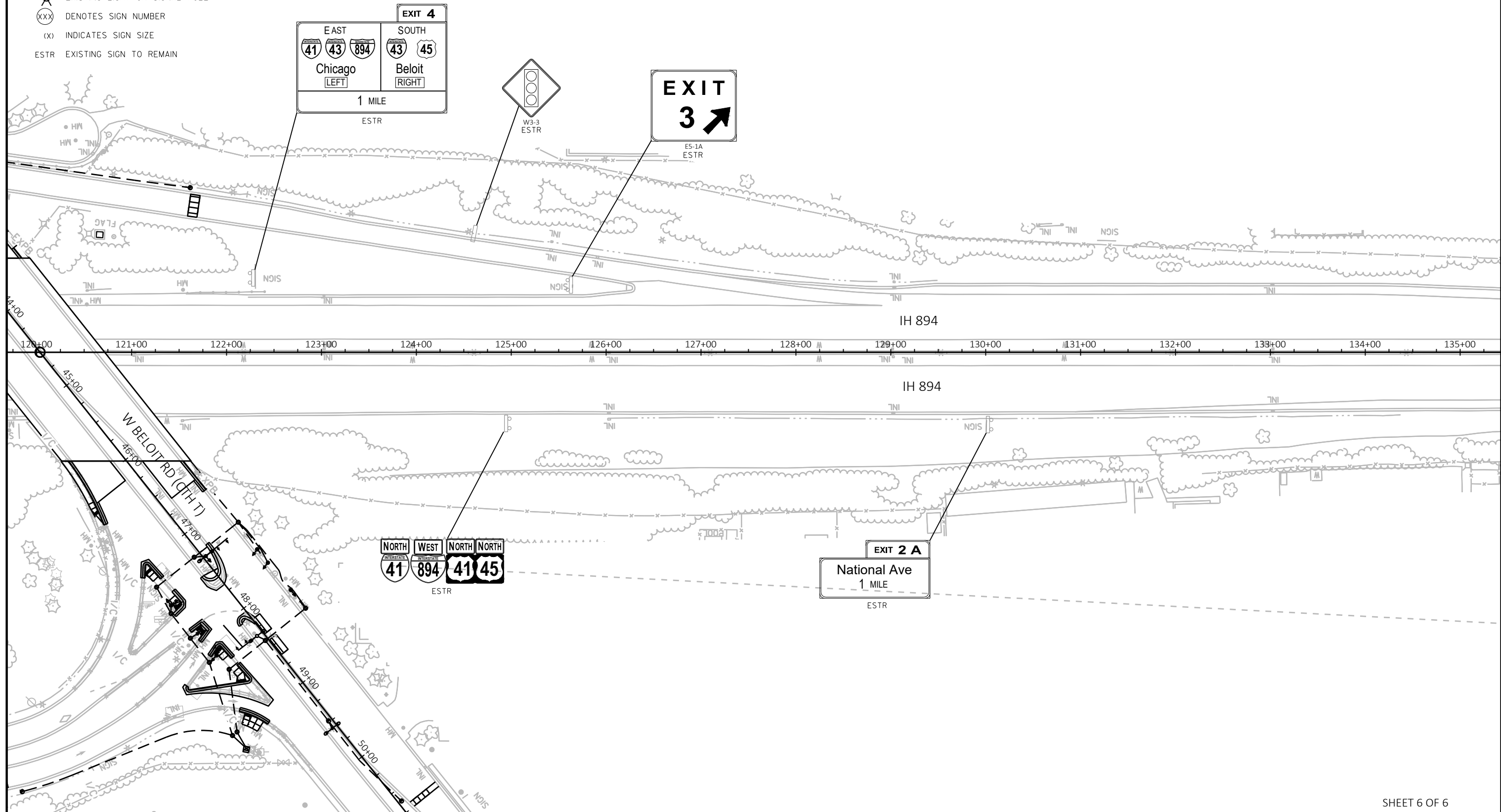
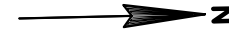
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- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- DENOTES SIGN NUMBER
- INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN



LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- DENOTES SIGN NUMBER
- INDICATES SIGN SIZE
- EXISTING SIGN TO REMAIN



SHEET 6 OF 6



LEGEND



WISDOT OWNED TRAFFIC SIGNAL

SXX-XXXX



INSTALL TEMPORARY TRAFFIC SIGNAL



REMOVE TEMPORARY TRAFFIC SIGNAL UPON PROJECT COMPLETION

PROJECT NO: 1100-35-70

HWY: USH 45/IH 894

COUNTY: MILWAUKEE

TEMPORARY TRAFFIC SIGNAL PROJECT OVERVIEW

SHEET

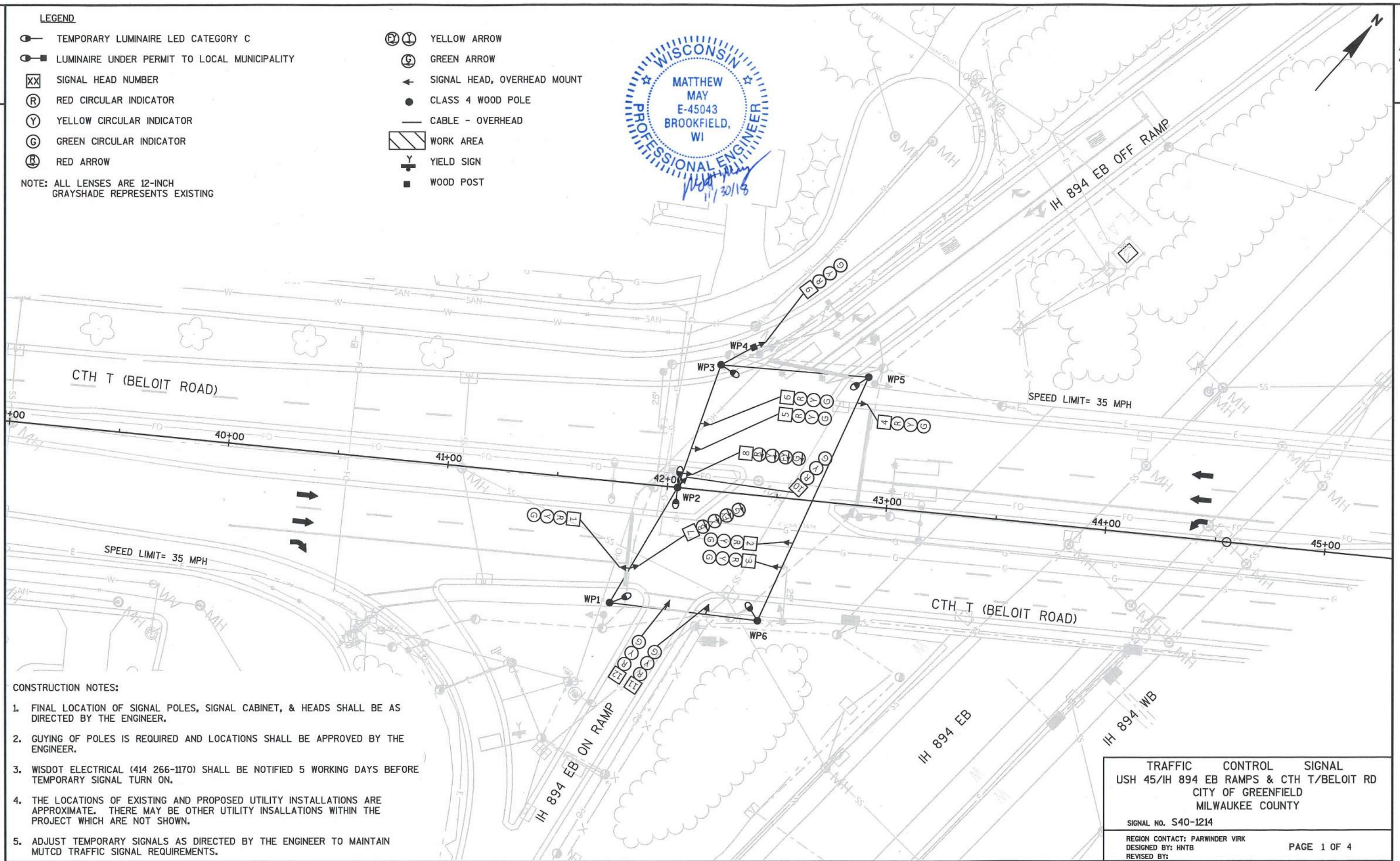
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LEGEND

- TEMPORARY LUMINAIRE LED CATEGORY C
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- XX SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- (R) RED ARROW

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

- (Y) YELLOW ARROW
- (G) GREEN ARROW
- SIGNAL HEAD, OVERHEAD MOUNT
- CLASS 4 WOOD POLE
- CABLE - OVERHEAD
- WORK AREA
- Y YIELD SIGN
- WOOD POST



CONSTRUCTION NOTES:

1. FINAL LOCATION OF SIGNAL POLES, SIGNAL CABINET, & HEADS SHALL BE AS DIRECTED BY THE ENGINEER.
2. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
3. WISDOT ELECTRICAL (414 266-1170) SHALL BE NOTIFIED 5 WORKING DAYS BEFORE TEMPORARY SIGNAL TURN ON.
4. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
5. ADJUST TEMPORARY SIGNALS AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD TRAFFIC SIGNAL REQUIREMENTS.

TRAFFIC CONTROL SIGNAL
USH 45/IH 894 EB RAMP & CTH T/BELOIT RD
CITY OF GREENFIELD
MILWAUKEE COUNTY

SIGNAL NO. S40-1214

REGION CONTACT: PARWINDER VIRK
DESIGNED BY: HNTB
REVISED BY:

PAGE 1 OF 4

PROJECT NO: 1100-35-70

HWY: USH 45 / IH 894

COUNTY: MILWAUKEE

TEMPORARY TRAFFIC SIGNAL PLAN - PRE-STAGE

SHEET

19

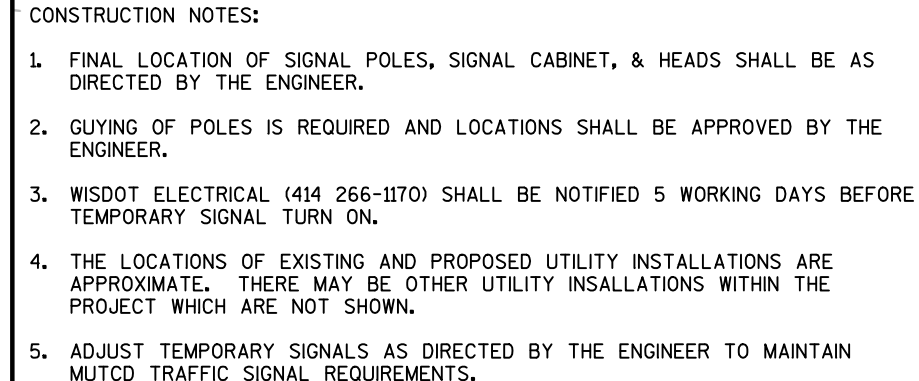
E

2

2

- TEMPORARY LUMINAIRE LED CATEGORY C
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW

 YELLOW ARROW
 GREEN ARROW
 SIGNAL HEAD, OVERHEAD MOUNT
 CLASS 4 WOOD POLE
 CABLE - OVERHEAD
 WORK AREA
 YIELD SIGN
 WOOD POST



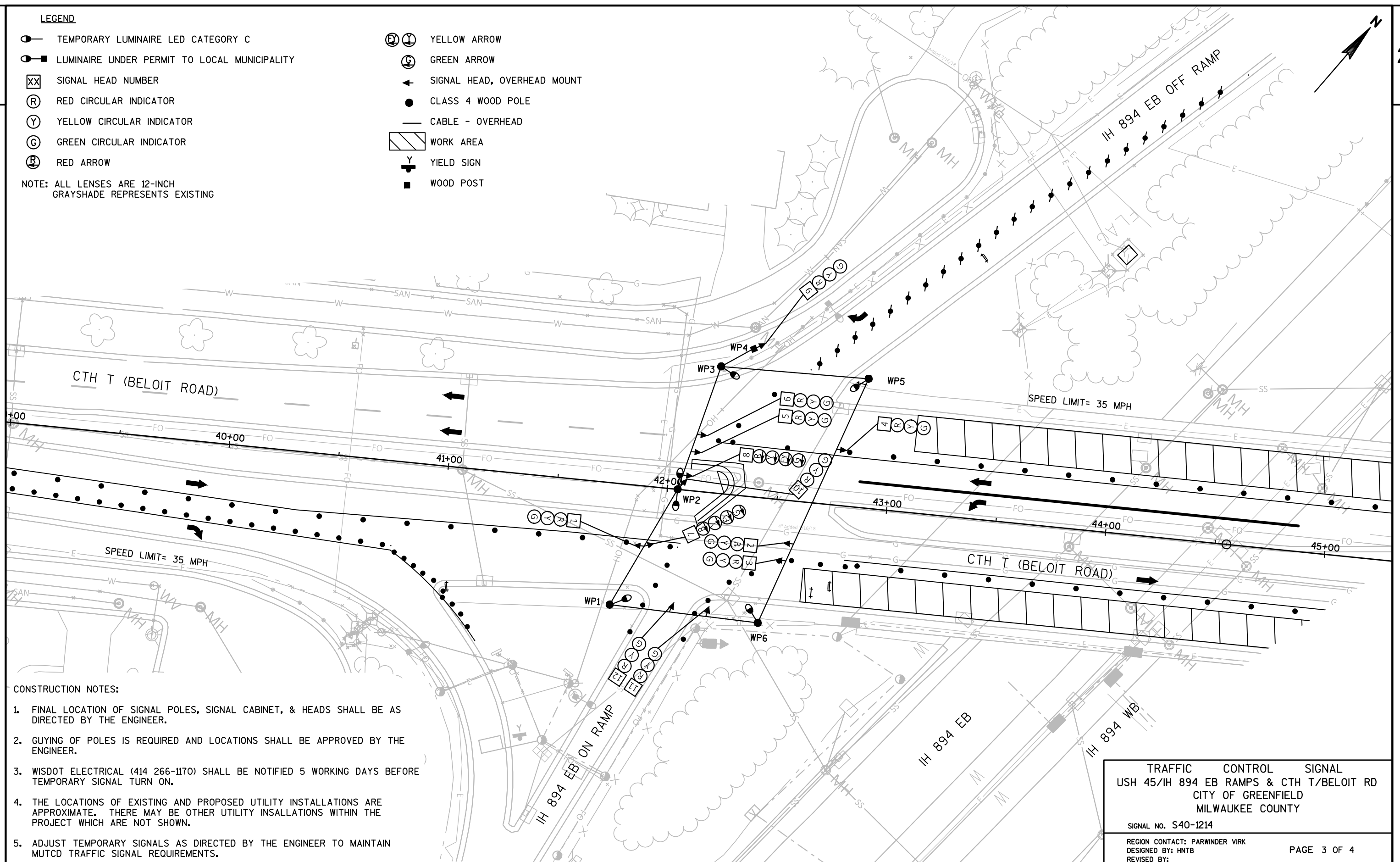
PROJECT NO:1100-35-70	HWY:USH 45 / IH 894	COUNTY:MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 1	SHEET 20	E
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LEGEND

- TEMPORARY LUMINAIRE LED CATEGORY C
—■— LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
XX SIGNAL HEAD NUMBER
Ⓡ RED CIRCULAR INDICATOR
Ⓢ YELLOW CIRCULAR INDICATOR
Ⓣ GREEN CIRCULAR INDICATOR
Ⓤ RED ARROW

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

- Ⓥ YELLOW ARROW
Ⓦ GREEN ARROW
← SIGNAL HEAD, OVERHEAD MOUNT
● CLASS 4 WOOD POLE
— CABLE - OVERHEAD
▨ WORK AREA
Y YIELD SIGN
■ WOOD POST



PROJECT NO:1100-35-70

HWY:USH 45 / IH 894

COUNTY:MILWAUKEE

TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 2

SHEET

21

E

FILE NAME : N:\PDS\C3D\CAD\11003500\SIG\TEMPS\STAGE2_TEMPS.DWG
LAYOUT NAME - S40-1214_TEMP-S2

PLOT DATE : 11/30/2018 8:46 AM

PLOT BY : MATSON, JASON R

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	F L A S H
Ø1		
Ø2	4,5,6	R
Ø3		
Ø4	9,10,11,12	R
Ø5	7,8	-
Ø6	1,2,3	R
Ø7		
Ø8		
Ø2P		
Ø4P		
Ø6P		
Ø8P		
OLA		
OLB		
OLC	7,8	R
OLD		

RING 1

NOT USED	←
Ø1	Ø2

NOT USED	↓
Ø3	Ø4

N

RING 2

↙	↘ O.L. C →
Ø5	Ø6

NOT USED	NOT USED
Ø7	Ø8

BARRIER

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MAX	X
3				
4	X		MAX	X
5	X	2	MAX	X
6	X	2	MAX	X
7				
8				

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	X
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER	
CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS-

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

GENERAL NOTES:

1. PHASE 5 SHALL BE OMITTED DURING STAGE 1.

USH 45/IH 894 EB RAMPS & CTH T/BELOIT RD	
CITY OF GREENFIELD	
MILWAUKEE COUNTY	
SIGNAL NO: S40-1214	CABINET TYPE: TEMP
CONTROLLER TYPE: TEMP	
DATE: 11/2018	PAGE NUMBER: 4 OF 4



LEGEND

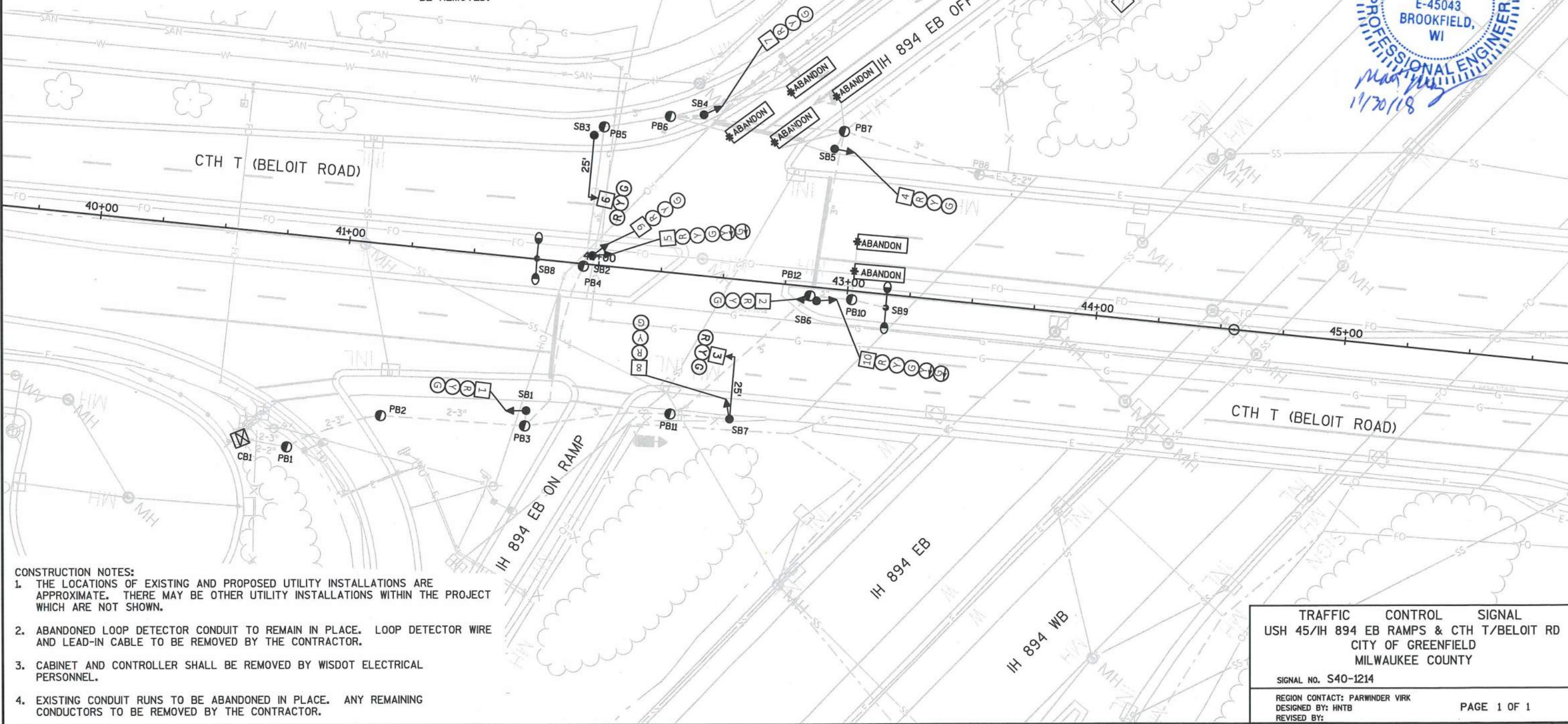
-  WISDOT OWNED TRAFFIC SIGNAL
SXX-XXXX
-  REMOVE EXISTING TRAFFIC SIGNAL
-  INSTALL PERMANENT TRAFFIC SIGNAL

LEGEND

- CONTROL CABINET
 NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
 LOOP DETECTOR CONDUIT, 1" NONMETALLIC
 SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
 SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
 LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
 LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
 LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
 PULL BOX, 24" X 36"
- RED CIRCULAR INDICATOR
 YELLOW CIRCULAR INDICATOR
 GREEN CIRCULAR INDICATOR
 YELLOW ARROW
 GREEN ARROW
 YIELD SIGN
 SIGNAL HEAD NUMBER

NOTE:
ALL LENSES ARE 12-INCH.
GRAYSHADE REPRESENTS EXISTING TO REMAIN. BOLD REPRESENTS EXISTING TO BE REMOVED.

WISCONSIN
 MATTHEW MAY
 E-45043
 BROOKFIELD, WI
 PROFESSIONAL ENGINEER
 11/30/18



CONSTRUCTION NOTES:

- THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
- ABANDONED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRE AND LEAD-IN CABLE TO BE REMOVED BY THE CONTRACTOR.
- CABINET AND CONTROLLER SHALL BE REMOVED BY WISDOT ELECTRICAL PERSONNEL.
- EXISTING CONDUIT RUNS TO BE ABANDONED IN PLACE. ANY REMAINING CONDUCTORS TO BE REMOVED BY THE CONTRACTOR.

TRAFFIC CONTROL SIGNAL
 USH 45/IH 894 EB RAMP & CTH T/BELOIT RD
 CITY OF GREENFIELD
 MILWAUKEE COUNTY

SIGNAL NO. S40-1214

REGION CONTACT: PARWINDER VIRK
 DESIGNED BY: HNTB
 REVISED BY:

PAGE 1 OF 1

PROJECT NO:1100-35-70

HWY:USH 45 / IH 894

COUNTY:MILWAUKEE

TRAFFIC SIGNAL REMOVAL PLAN

SHEET

24

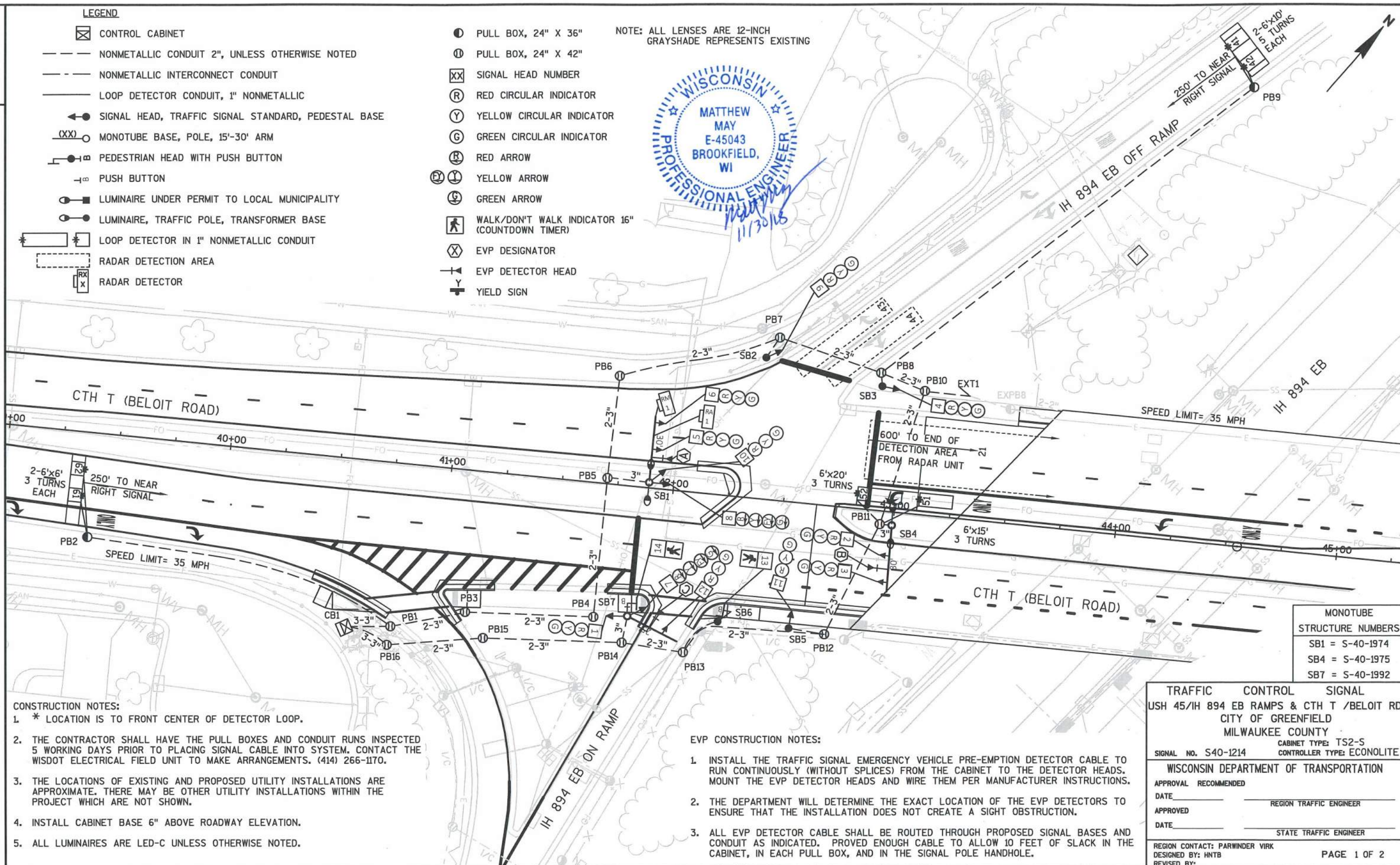
E

LEGEND

- CONTROL CABINET
 NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
 NONMETALLIC INTERCONNECT CONDUIT
 LOOP DETECTOR CONDUIT, 1" NONMETALLIC
 SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
 (XX) MONOTUBE BASE, POLE, 15'-30' ARM
 PEDESTRIAN HEAD WITH PUSH BUTTON
 PUSH BUTTON
 LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
 LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
 LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
 RADAR DETECTION AREA
 RADAR DETECTOR

- PULL BOX, 24" X 36"
 PULL BOX, 24" X 42"
 SIGNAL HEAD NUMBER
 RED CIRCULAR INDICATOR
 YELLOW CIRCULAR INDICATOR
 GREEN CIRCULAR INDICATOR
 RED ARROW
 YELLOW ARROW
 GREEN ARROW
 WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
 EVP DESIGNATOR
 EVP DETECTOR HEAD
 YIELD SIGN

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING



CONSTRUCTION NOTES:

- * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
- THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
- THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
- INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
- ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.

EVP CONSTRUCTION NOTES:

- INSTALL THE TRAFFIC SIGNAL EMERGENCY VEHICLE PRE-EMPTION DETECTOR CABLE TO RUN CONTINUOUSLY (WITHOUT SPLICES) FROM THE CABINET TO THE DETECTOR HEADS. MOUNT THE EVP DETECTOR HEADS AND WIRE THEM PER MANUFACTURER INSTRUCTIONS.
- THE DEPARTMENT WILL DETERMINE THE EXACT LOCATION OF THE EVP DETECTORS TO ENSURE THAT THE INSTALLATION DOES NOT CREATE A SIGHT OBSTRUCTION.
- ALL EVP DETECTOR CABLE SHALL BE ROUTED THROUGH PROPOSED SIGNAL BASES AND CONDUIT AS INDICATED. PROVIDE ENOUGH CABLE TO ALLOW 10 FEET OF SLACK IN THE CABINET, IN EACH PULL BOX, AND IN THE SIGNAL POLE HANDHOLE.

MONOTUBE
STRUCTURE NUMBERS

SB1 = S-40-1974
 SB4 = S-40-1975
 SB7 = S-40-1992

TRAFFIC CONTROL SIGNAL
 USH 45/IH 894 EB RAMP & CTH T /BELOIT RD
 CITY OF GREENFIELD
 MILWAUKEE COUNTY
 SIGNAL NO. S40-1214
 CABINET TYPE: TS2-S
 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED

DATE _____ REGION TRAFFIC ENGINEER _____

APPROVED _____

DATE _____ STATE TRAFFIC ENGINEER _____

REGION CONTACT: PARVINDER VIRK
 DESIGNED BY: HNTB
 REVISED BY:

PAGE 1 OF 2

PROJECT NO: 1100-35-70

HWY: USH 45 / IH 894

COUNTY: MILWAUKEE

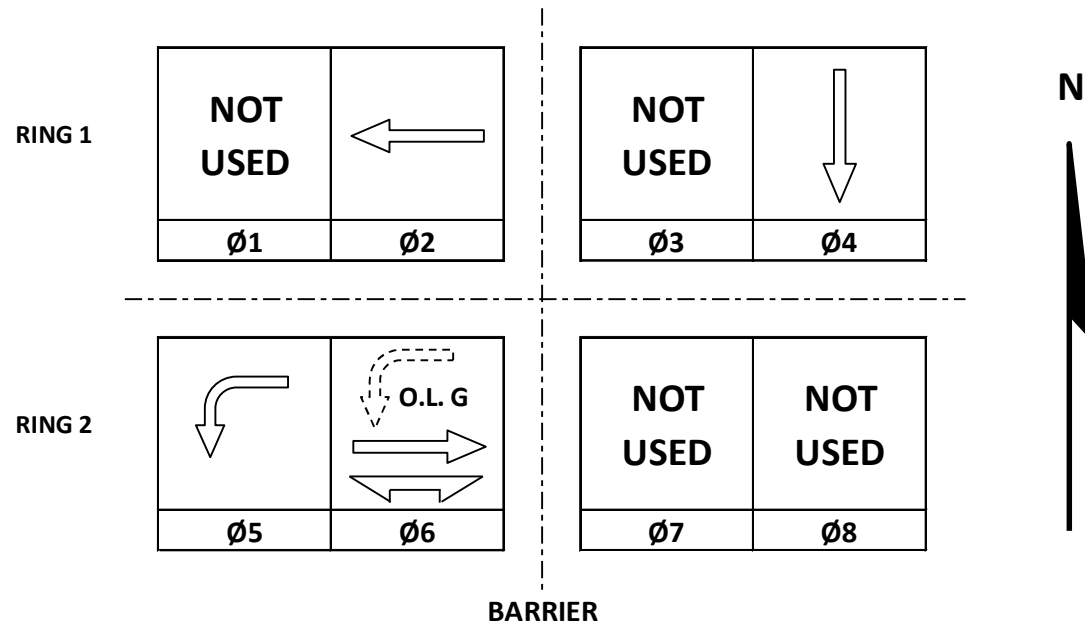
TRAFFIC SIGNAL PLAN

SHEET

25

E

	HEAD NUMBERS	FLASH
Ø1		
Ø2	4,5,6	R
Ø3		
Ø4	9,10,11,12	R
Ø5	7,8	R
Ø6	1,2,3	R
Ø7		
Ø8		
Ø2P		
Ø4P		
Ø6P	13,14	
Ø8P		
OLE		
OLF		
OLG	7,8	-
OLH		



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MIN	X
3				
4				X
5		2		X
6	X	2	MIN	X
7				
8				

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+2	4	

AFTER PREEMPTION SEQUENCE 2+5 OR 6+2, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4, CONTROLLER SHALL RETURN TO PHASE 4.

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	X
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 40-0064

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	
TOMAR	X
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	41	51	61					
CALLED PHASE	4	5	6					
CALL OPTION		X	X					
DELAY TIME								
EXTENTION OPTION	X	X	X					
EXTEND TIME	X							
USE ADDED INITIAL			X					
CROSS SWITCH PHASE		6						

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	42	52	62					
CALLED PHASE	4	5	6					
CALL OPTION		X	X					
DELAY TIME								
EXTENTION OPTION	X	X	X					
EXTEND TIME	X							
USE ADDED INITIAL			X					
CROSS SWITCH PHASE		6						

19	17	23	21	27	25	31	29
21	44						
2	4						
X	X						
X	X						

20	18	24	22	28	26	32	30
43							
4							
X							
X							
X							

DETECTOR INPUT	
PLAN LOOP DETECTOR*(S)	
CALLED PHASE	
CALL OPTION	
DELAY TIME	
EXTENTION OPTION	
EXTEND TIME	
USE ADDED INITIAL	
CROSS SWITCH PHASE	

DETECTOR INPUT	
PLAN LOOP DETECTOR*(S)	
CALLED PHASE	
CALL OPTION	
DELAY TIME	
EXTENTION OPTION	
EXTEND TIME	
USE ADDED INITIAL	
CROSS SWITCH PHASE	

USH 45/IH 894 EB RAMPS & CTH T/BELOIT RD	
CITY OF GREENFIELD	
MILWAUKEE COUNTY	
SIGNAL NO: S40-1214	CABINET TYPE: TS2-S
CONTROLLER TYPE: ECONOLITE	
DATE: 11/2018	PAGE NUMBER: 2 OF 2

PROJECT ID:	1100-35-70					SIGNAL WIRE COLOR CODING		BLK-BLACK	RED-RED	GRN-GREEN
INTERSECTION:	USH 45/IH 894 EB RAMPS & CTH T							WHT-WHITE	BLU-BLUE	ORG-ORANGE

CB1 TO	NO. OF CONDUCTORS	HEAD NO.	RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	FLASHING <YELLOW>	D/WALK	WALK	PED BUTTON	OTHER
SB1	15	5	RED/BLK	ORG/BLK	GRN/BLK								
		6	RED/BLK	ORG/BLK	GRN/BLK								
		8				RED/WHT	ORG/WHT	GRN/WHT	BLK/WHT				
		10	RED	ORG	GRN								
SB2	7	9	RED	ORG	GRN								
SB3	7	4	RED	ORG	GRN								
SB4	7	2	RED	ORG	GRN								
		3	RED	ORG	GRN								
SB5	7	11	RED	ORG	GRN								
SB6	7	13								BLK	BLU		
		B										WHT/BLK	
SB7	15	1	RED/BLK	ORG/BLK	GRN/BLK								
		7				RED/WHT	ORG/WHT	GRN/WHT	BLK/WHT				
		12	RED	ORG	GRN								
		14								BLK	BLU		
		B										WHT/BLK	

NOTES: USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
AT THE SIGNAL BASES, CONNECT ONE TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.



(CONTINUED ON NEXT SHEET)

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	CB1

LIGHTING UF 10 AWG W/ GROUND	
FROM	TO
CB1	SB1
CB1	SB4

PULL BOX BONDING JUMPER 10 AWG GRN XLP	
FROM	TO
PB1	CB1
PB3	CB1
PB4	CB1
PB5	SB1
PB6	SB2
PB7	SB2
PB8	SB3
PB10	SB3
PB11	SB4
PB12	SB5
PB13	SB6
PB14	SB7
PB15	CB1
PB16	CB1

RADAR DETECTION CABLE	
FROM	TO
CB1	SB1 (RA1)
CB1	SB1 (RM1)

EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	SB1 (HEAD A)
CB1	SB4 (HEAD B)
CB1	SB7 (HEAD C)

LEGEND

-  CONTROL CABINET
 NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
 LOOP DETECTOR CONDUIT, 1" NONMETALLIC
 SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
 (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
 LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
 LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
 LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
 PULL BOX, 24" X 36"
 (R) RED CIRCULAR INDICATOR
 (Y) YELLOW CIRCULAR INDICATOR
 (G) GREEN CIRCULAR INDICATOR
 (Y) YELLOW ARROW
 (G) GREEN ARROW
 Y YIELD SIGN
 S STOP SIGN
 XX SIGNAL HEAD NUMBER

NOTE:
ALL LENSES ARE 12-INCH.
GRAYSHADE REPRESENTS EXISTING TO
REMAIN. BOLD REPRESENTS EXISTING TO
BE REMOVED.



CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. ABANDONED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRE AND LEAD-IN CABLE TO BE REMOVED BY THE CONTRACTOR.
3. CABINET AND CONTROLLER SHALL BE REMOVED BY WISDOT ELECTRICAL PERSONNEL.
4. EXISTING CONDUIT RUNS TO BE ABANDONED IN PLACE. ANY REMAINING CONDUCTORS TO BE REMOVED BY THE CONTRACTOR.

PROJECT NO: 1100-35-70

HWY: USH 45 / IH 894

COUNTY: MILWAUKEE

TRAFFIC SIGNAL REMOVAL PLAN

SHEET

29

E

FILE NAME : N:\PDS\C3D\CAD\11003500\SIG\S40-1215\S40-1215_REMOVAL.DWG
LAYOUT NAME - S40-1215_REMOVAL

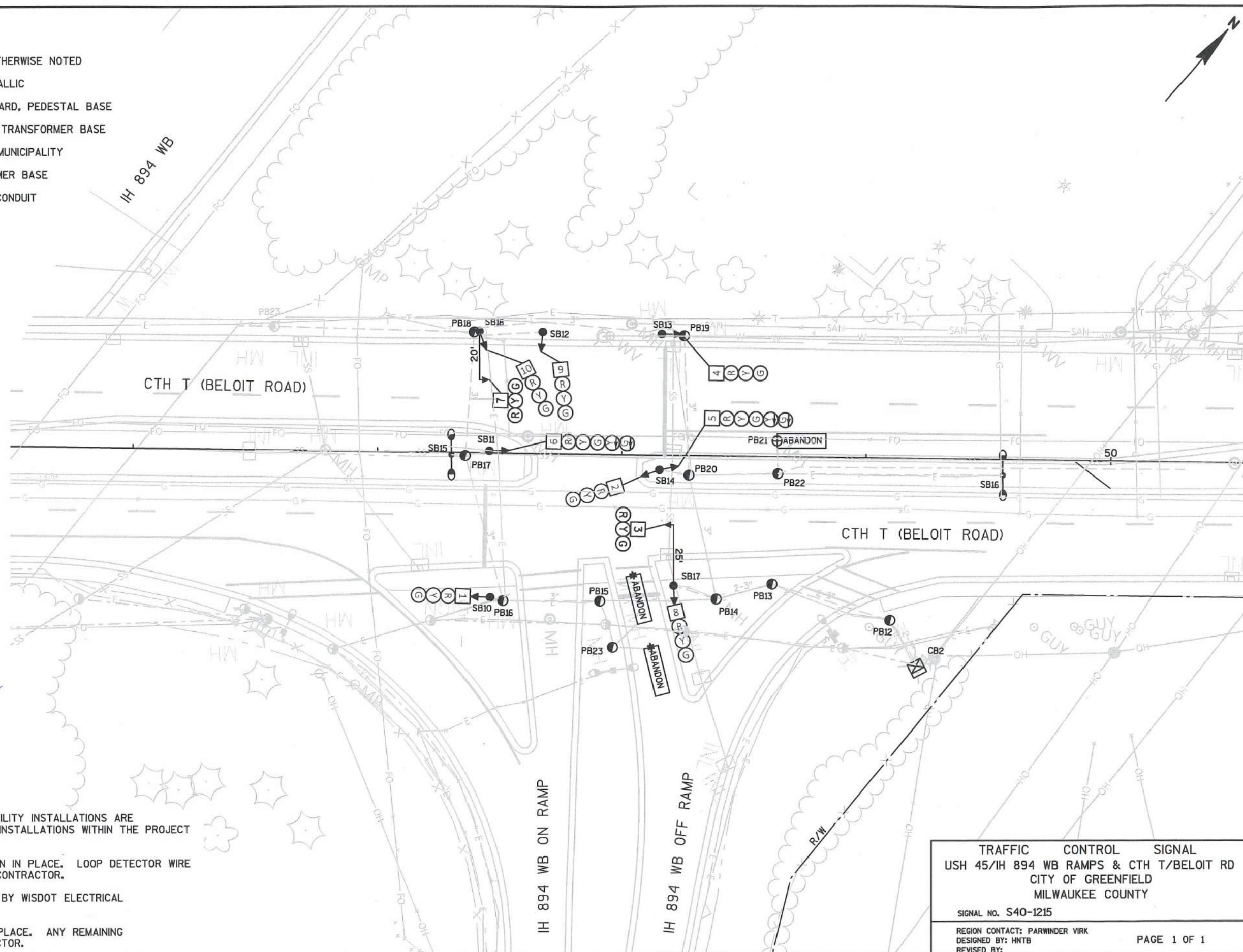
PLOT DATE : 11/30/2018 8:23 AM

PLOT BY : MATSON, JASON R

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDs SHEET 42

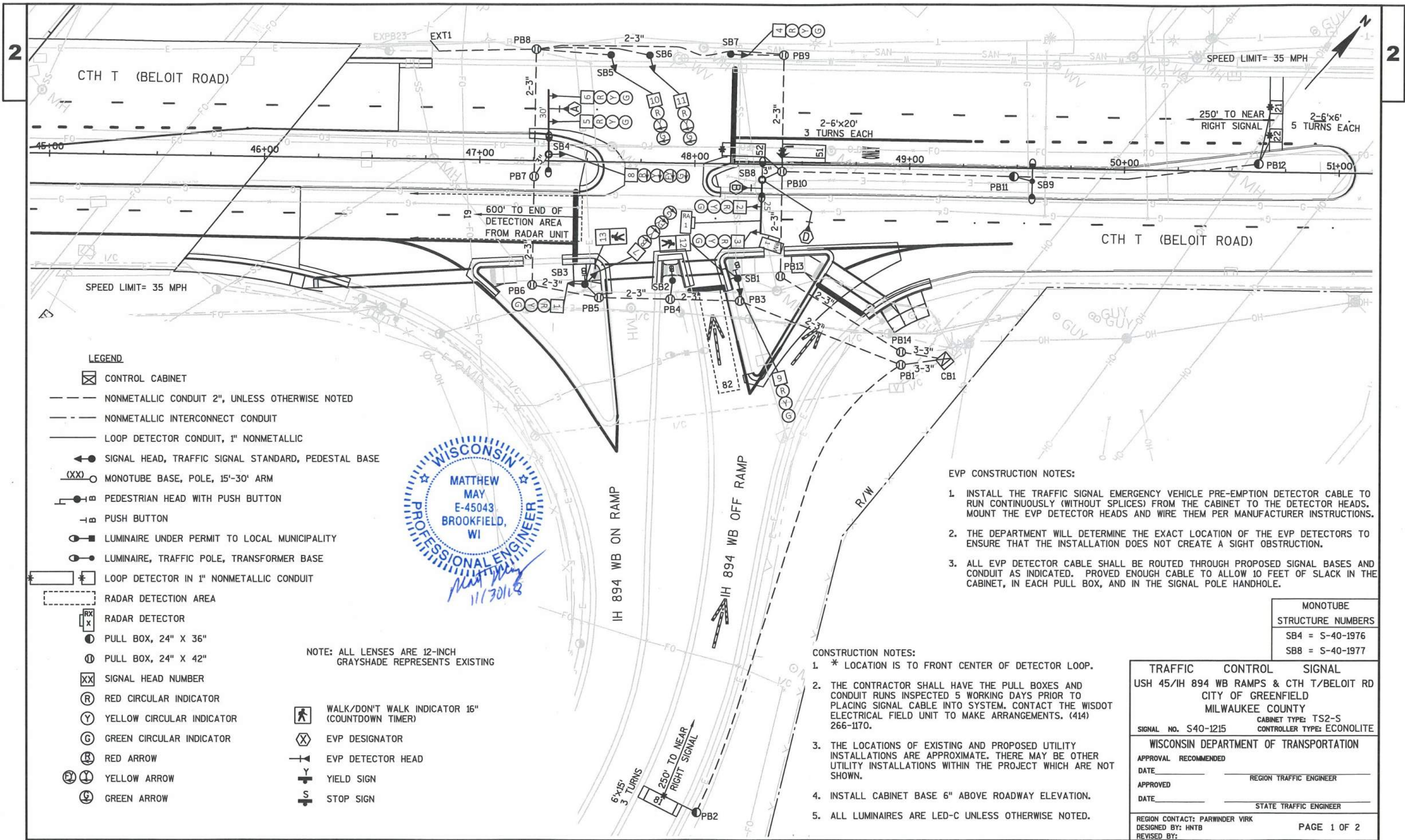


TRAFFIC CONTROL SIGNAL
USH 45/IH 894 WB RAMPs & CTH T/BELOIT RD
CITY OF GREENFIELD
MILWAUKEE COUNTY

SIGNAL NO. S40-1215

REGION CONTACT: PARWINDER VIRK
DESIGNED BY: HNTB
REVISED BY:

PAGE 1 OF 1



PROJECT NO:1100-35-70

HWY:USH 45 / IH 894

COUNTY:MILWAUKEE

TRAFFIC SIGNAL PLAN

SHEET 30 E

FILE NAME : N:\PDS\C3D\CAD\11003500\SIG\S40-1215\S40-1215.DWG
LAYOUT NAME - S40-1215

PLOT DATE : 11/30/2018 8:24 AM

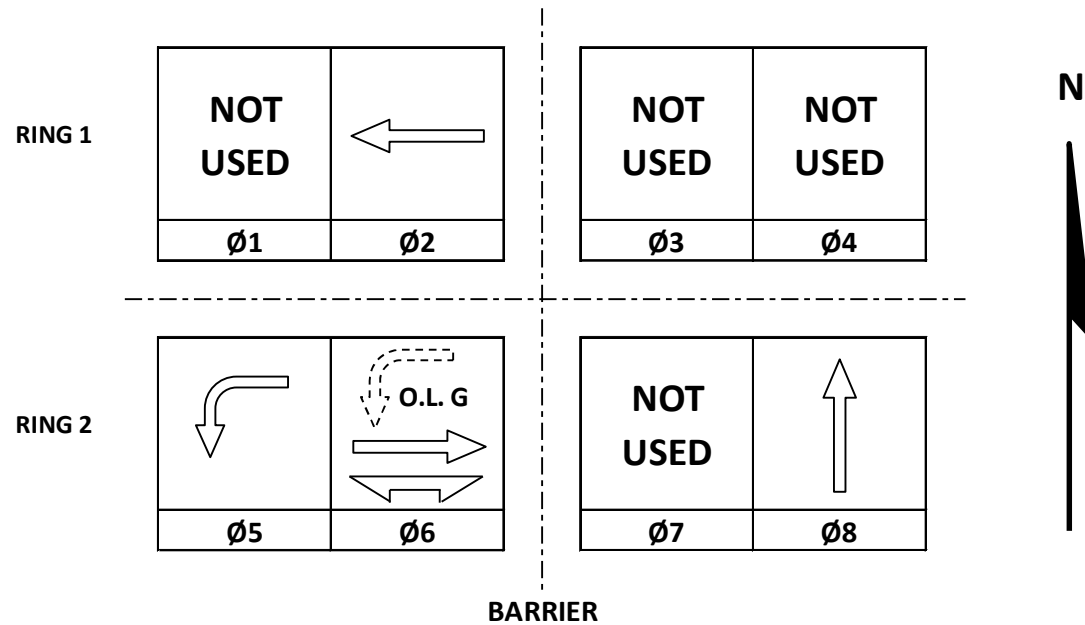
PLOT BY : MATSON, JASON R

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDs SHEET 42

	HEAD NUMBERS	FLASH
Ø1		
Ø2	4,5,6	R
Ø3		
Ø4		
Ø5	7,8	R
Ø6	1,2,3	R
Ø7		
Ø8	9,10,11	R
Ø2P		
Ø4P		
Ø6P	12,13	
Ø8P		
OLE		
OLF		
OLG	7,8	-
OLH		

**CONTROLLER LOGIC**

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MIN	X
3				
4				
5		2		X
6	X	2	MIN	X
7				
8				X

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT	←	↔		↑
PHASE	2+5	6+2		8

AFTER PREEMPTION SEQUENCE 2+5 OR 6+2, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 8, CONTROLLER SHALL RETURN TO PHASE 8.

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	X
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 40-0064

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	
TOMAR	X
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	21	51	81					
CALLED PHASE	2	5	8					
CALL OPTION	X	X						
DELAY TIME								
EXTENTION OPTION	X	X	X					
EXTEND TIME			X					
USE ADDED INITIAL	X							
CROSS SWITCH PHASE		6						

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	22	52						
CALLED PHASE	2	5						
CALL OPTION	X	X						
DELAY TIME								
EXTENTION OPTION	X	X						
EXTEND TIME								
USE ADDED INITIAL	X							
CROSS SWITCH PHASE		6						

19	17	23	21	27	25	31	29
61							
6							
X							
X							

20	18	24	22	28	26	32	30
82							
8							
X							
X							

DETECTOR INPUT	
PLAN LOOP DETECTOR*(S)	
CALLED PHASE	
CALL OPTION	
DELAY TIME	
EXTENTION OPTION	
EXTEND TIME	
USE ADDED INITIAL	
CROSS SWITCH PHASE	

DETECTOR INPUT	
PLAN LOOP DETECTOR*(S)	
CALLED PHASE	
CALL OPTION	
DELAY TIME	
EXTENTION OPTION	
EXTEND TIME	
USE ADDED INITIAL	
CROSS SWITCH PHASE	

USH 45/IH 894 WB RAMPS & CTH T/BELOIT RD	
CITY OF GREENFIELD	
MILWAUKEE COUNTY	
SIGNAL NO: S40-1215	CABINET TYPE: TS2-S
CONTROLLER TYPE: ECONOLITE	
DATE: 11/2018	PAGE NUMBER: 2 OF 2

PROJECT ID:	1100-35-70
INTERSECTION:	USH 45/IH 894 WB RAMPS & CTH T

SIGNAL WIRE COLOR CODING	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

CB1 TO	NO. OF CONDUCTORS	HEAD NO.	RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	FLASHING <YELLOW>	D/WALK	WALK	PED BUTTON	OTHER
SB1	12	9	RED	ORG	GRN								
		12								BLK	BLU		
		B										WHT/BLK	
SB2	7	B										WHT/BLK	
SB3	12	1	RED	ORG	GRN								
		7				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
		13								BLK	BLU		
		B										WHT/BLK	
SB4	12	5	RED	ORG	GRN								
		6	RED	ORG	GRN								
		8				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
SB5	7	10	RED				ORG	GRN					
SB6	7	11	RED				ORG	GRN					
SB7	7	4	RED	ORG	GRN								
SB8	7	2	RED	ORG	GRN								
		3	RED	ORG	GRN								

NOTES: USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
AT THE SIGNAL BASES, CONNECT ONE TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE
OTHER TERMINAL TO THE GROUNDED CONDUCTOR.



(CONTINUED ON NEXT SHEET)

(CONTINUED)

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	CB1

LIGHTING UF 10 AWG W/ GROUND	
FROM	TO
CB1	SB4
CB1	SB8
SB8	SB9

PULL BOX BONDING JUMPER 10 AWG GRN XLP	
FROM	TO
PB1	CB1
PB3	SB1
PB4	SB2
PB5	SB3
PB6	SB3
PB7	SB4
PB8	SB5
PB9	SB7
PB10	SB8
PB11	SB9
PB13	SB8
PB14	CB1

RADAR DETECTION CABLE	
FROM	TO
CB1	SB8 (RA1)
CB1	SB8 (RM1)

EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	SB4 (HEAD A)
CB1	SB8 (HEAD B)
CB1	SB8 (HEAD D)



LEGEND



WISDOT OWNED TRAFFIC SIGNAL

SXX-XXXX

①

INSTALL ETHERNET SWITCH IN TRAFFIC SIGNAL CABINET

②

INSTALL PRE-TERMINATED PATCH PANEL IN TRAFFIC SIGNAL CABINET AND 8-CT SINGLE MODE FIBER OPTIC PIGTAIL IN CONDUIT

③

INSTALL 6-CT SINGLE MODE FIBER OPTIC CABLE IN CONDUIT

④

INSTALL 12-CT SINGLE MODE FIBER OPTIC CABLE IN CONDUIT

⑤

INSTALL CONDUIT FOR FUTURE CONNECTION

PROJECT NO: 1100-35-70

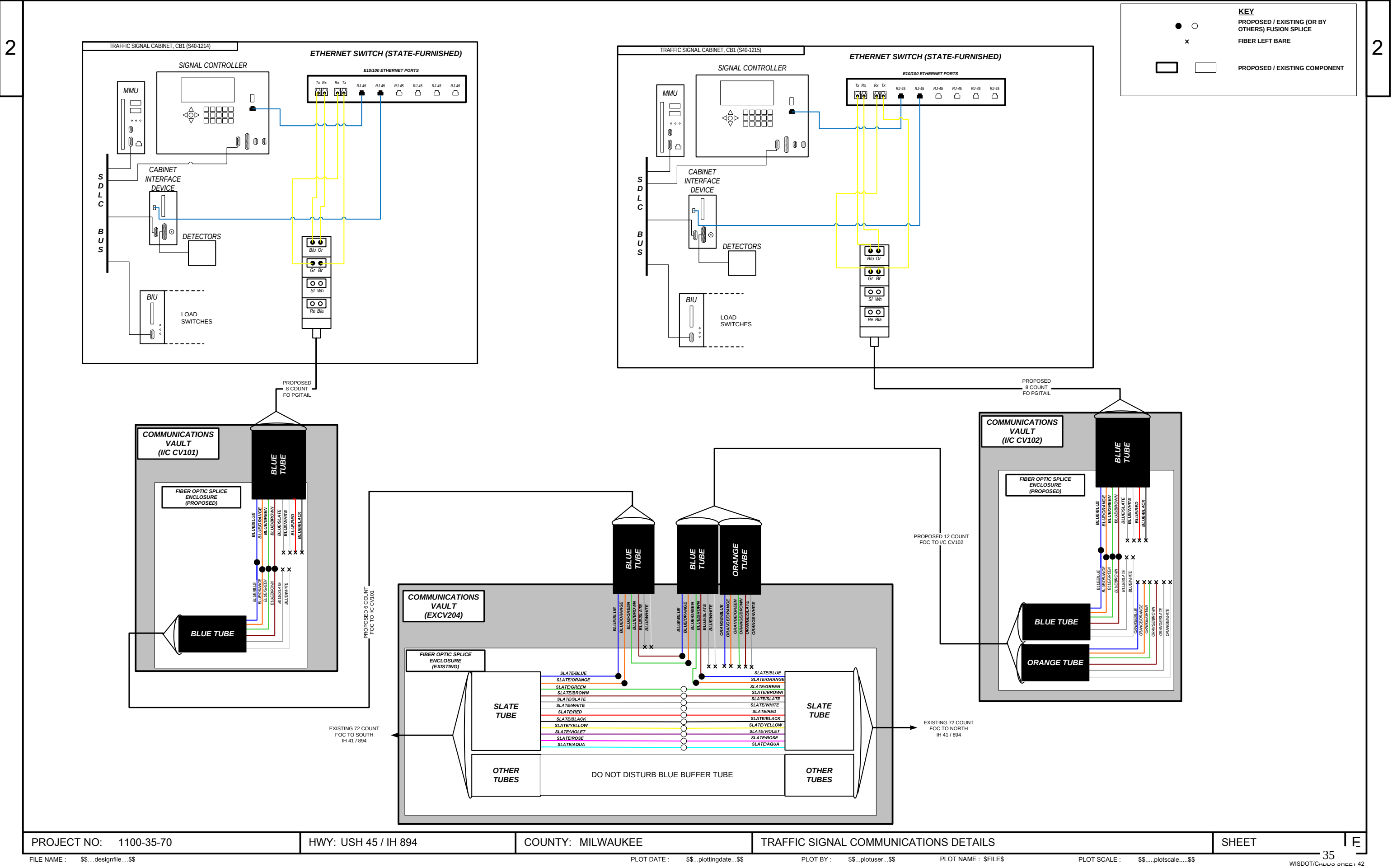
HWY: USH 45/IH 894

COUNTY: MILWAUKEE

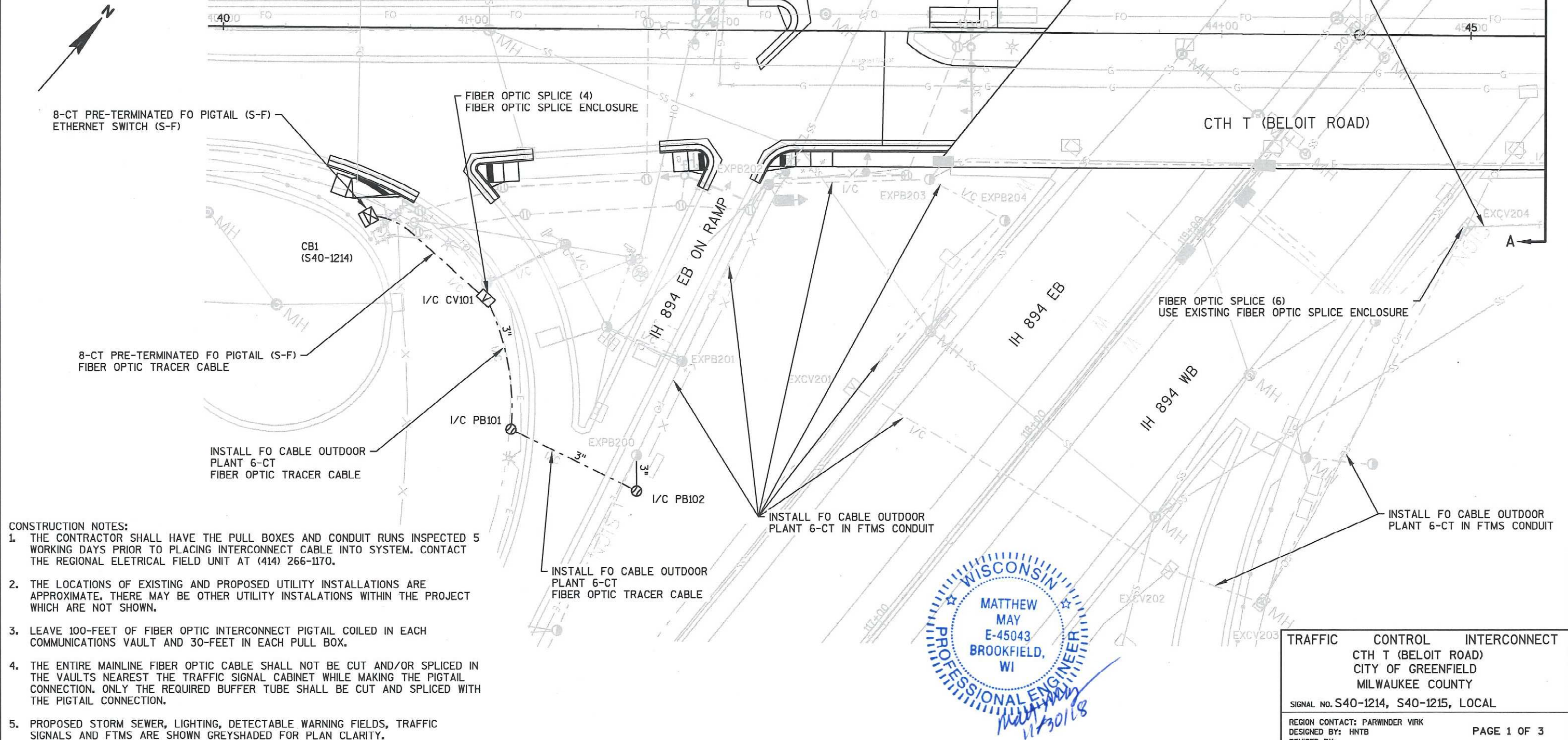
COMMUNICATION PROJECT OVERVIEW

SHEET

E



V COMMUNICATIONS VAULT



CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING INTERCONNECT CABLE INTO SYSTEM. CONTACT THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. LEAVE 100-FEET OF FIBER OPTIC INTERCONNECT PIGTAIL COILED IN EACH COMMUNICATIONS VAULT AND 30-FEET IN EACH PULL BOX.
4. THE ENTIRE MAINLINE FIBER OPTIC CABLE SHALL NOT BE CUT AND/OR SPLICED IN THE VAULTS NEAREST THE TRAFFIC SIGNAL CABINET WHILE MAKING THE PIGTAIL CONNECTION. ONLY THE REQUIRED BUFFER TUBE SHALL BE CUT AND SPLICED WITH THE PIGTAIL CONNECTION.
5. PROPOSED STORM SEWER, LIGHTING, DETECTABLE WARNING FIELDS, TRAFFIC SIGNALS AND FTMS ARE SHOWN GREYSHADED FOR PLAN CLARITY.

TRAFFIC CONTROL INTERCONNECT CTH T (BELOIT ROAD) CITY OF GREENFIELD MILWAUKEE COUNTY SIGNAL NO. S40-1214, S40-1215, LOCAL	REGION CONTACT: PARWINDER VIRK DESIGNED BY: HNTB REVISED BY:
PAGE 1 OF 3	

LEGEND

 CONTROL CABINET

--- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED

--- NONMETALLIC INTERCONNECT CONDUIT

 PULL BOX, 24" X 36" PULL BOX, 24" X 42" COMMUNICATIONS VAULT

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING INTERCONNECT CABLE INTO SYSTEM. CONTACT THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. LEAVE 100-FEET OF FIBER OPTIC INTERCONNECT PIGTAIL COILED IN EACH COMMUNICATIONS VAULT AND 30-FEET IN EACH PULL BOX.
4. THE ENTIRE MAINLINE FIBER OPTIC CABLE SHALL NOT BE CUT AND/OR SPLICED IN THE VAULTS NEAREST THE TRAFFIC SIGNAL CABINET WHILE MAKING THE PIGTAIL CONNECTION. ONLY THE REQUIRED BUFFER TUBE SHALL BE CUT AND SPLICED WITH THE PIGTAIL CONNECTION.
5. PROPOSED STORM SEWER, LIGHTING, DETECTABLE WARNING FIELDS, TRAFFIC SIGNALS AND FTMS ARE SHOWN GREYSHADED FOR PLAN CLARITY.

INSTALL FO CABLE OUTDOOR
PLANT 12-CT
FIBER OPTIC TRACER CABLEINSTALL FO CABLE OUTDOOR
PLANT 12-CT IN FTMS CONDUIT

PROJECT NO: 1100-35-70

HWY: USH 45/IH 894

COUNTY: MILWAUKEE

TRAFFIC SIGNAL INTERCONNECT PLAN

SHEET

37

E

FILE NAME : N:\PDS\C3D\CAD\11003500\IC\1100-35-70 IC.DWG
LAYOUT NAME - IC PAGE 2

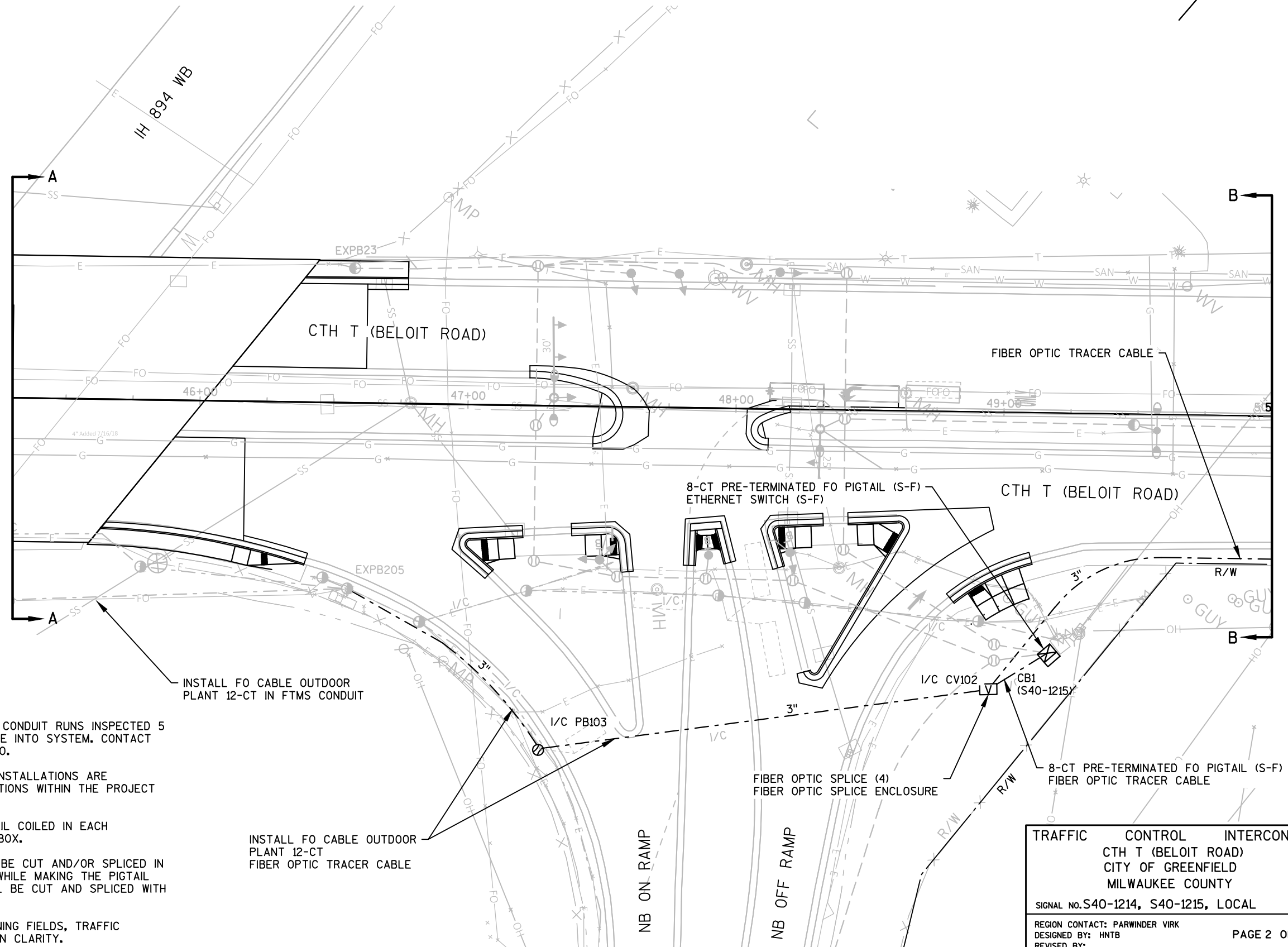
PLOT DATE : 11/30/2018 9:15 AM

PLOT BY : MATSON, JASON R

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADS SHEET 42



LEGEND

☒ CONTROL CABINET

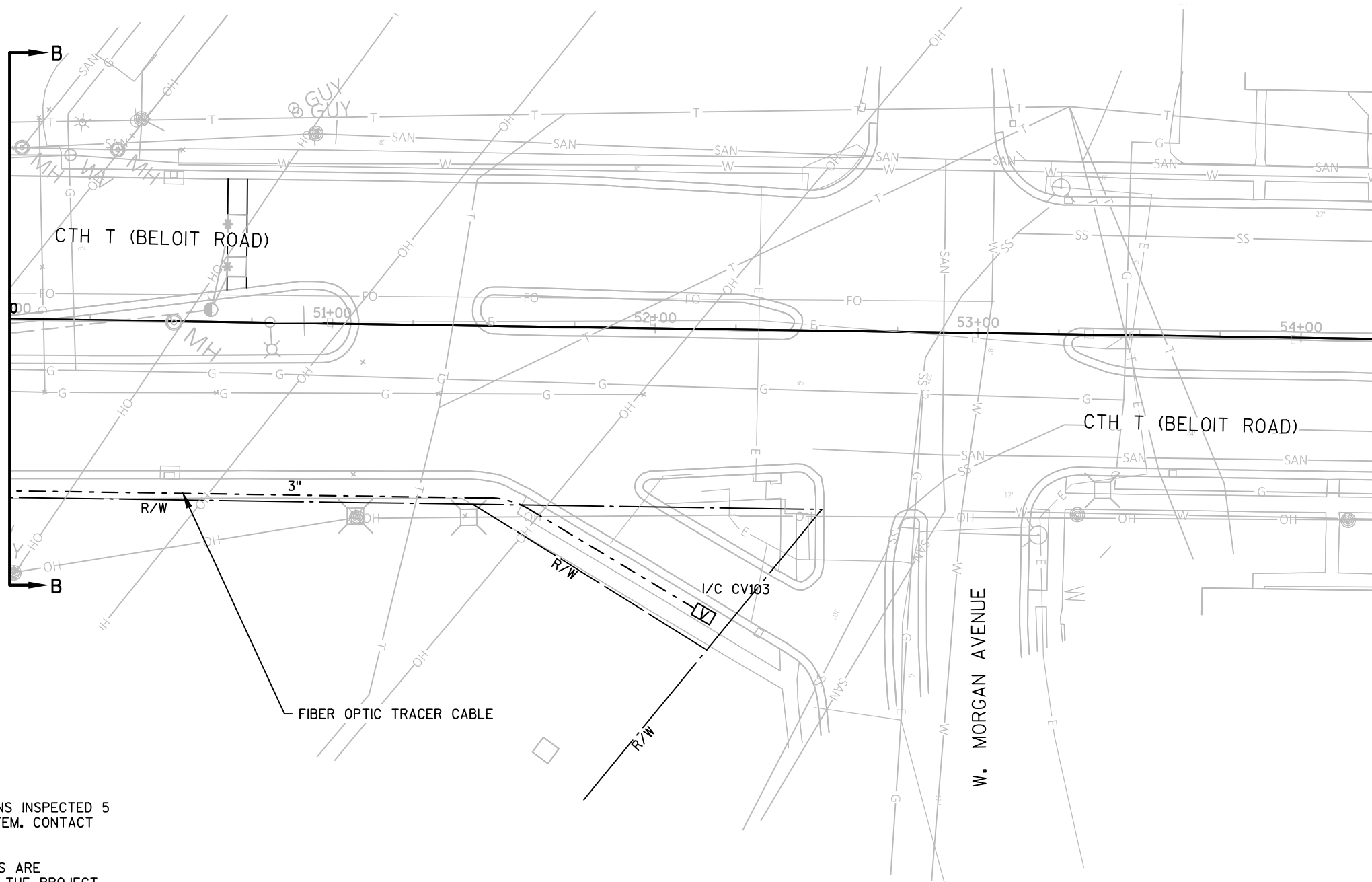
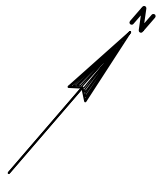
— — — NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED

— — — NONMETALLIC INTERCONNECT CONDUIT

● PULL BOX, 24" X 36"

⓪ PULL BOX, 24" X 42"

☑ COMMUNICATIONS VAULT



CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING INTERCONNECT CABLE INTO SYSTEM. CONTACT THE REGIONAL ELETRICAL FIELD UNIT AT (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. LEAVE 100-FEET OF FIBER OPTIC INTERCONNECT PIGTAIL COILED IN EACH COMMUNICATIONS VAULT AND 30-FEET IN EACH PULL BOX.
4. THE ENTIRE MAINLINE FIBER OPTIC CABLE SHALL NOT BE CUT AND/OR SPLICED IN THE VAULTS NEAREST THE TRAFFIC SIGNAL CABINET WHILE MAKING THE PIGTAIL CONNECTION. ONLY THE REQUIRED BUFFER TUBE SHALL BE CUT AND SPLICED WITH THE PIGTAIL CONNECTION.
5. PROPOSED STORM SEWER, LIGHTING, DETECTABLE WARNING FIELDS, TRAFFIC SIGNALS AND FTMS ARE SHOWN GREYSHADED FOR PLAN CLARITY.

TRAFFIC	CONTROL	INTERCONNECT
CTH T (BELOIT ROAD)		
CITY OF GREENFIELD		
MILWAUKEE COUNTY		
SIGNAL NO.S40-1214, S40-1215, LOCAL		
REGION CONTACT: PARWINDER VIRK		PAGE 3 OF 3
DESIGNED BY: HNTB		
REVISED BY:		

PROJECT NO:1100-35-70

HWY:USH 45/IH 894

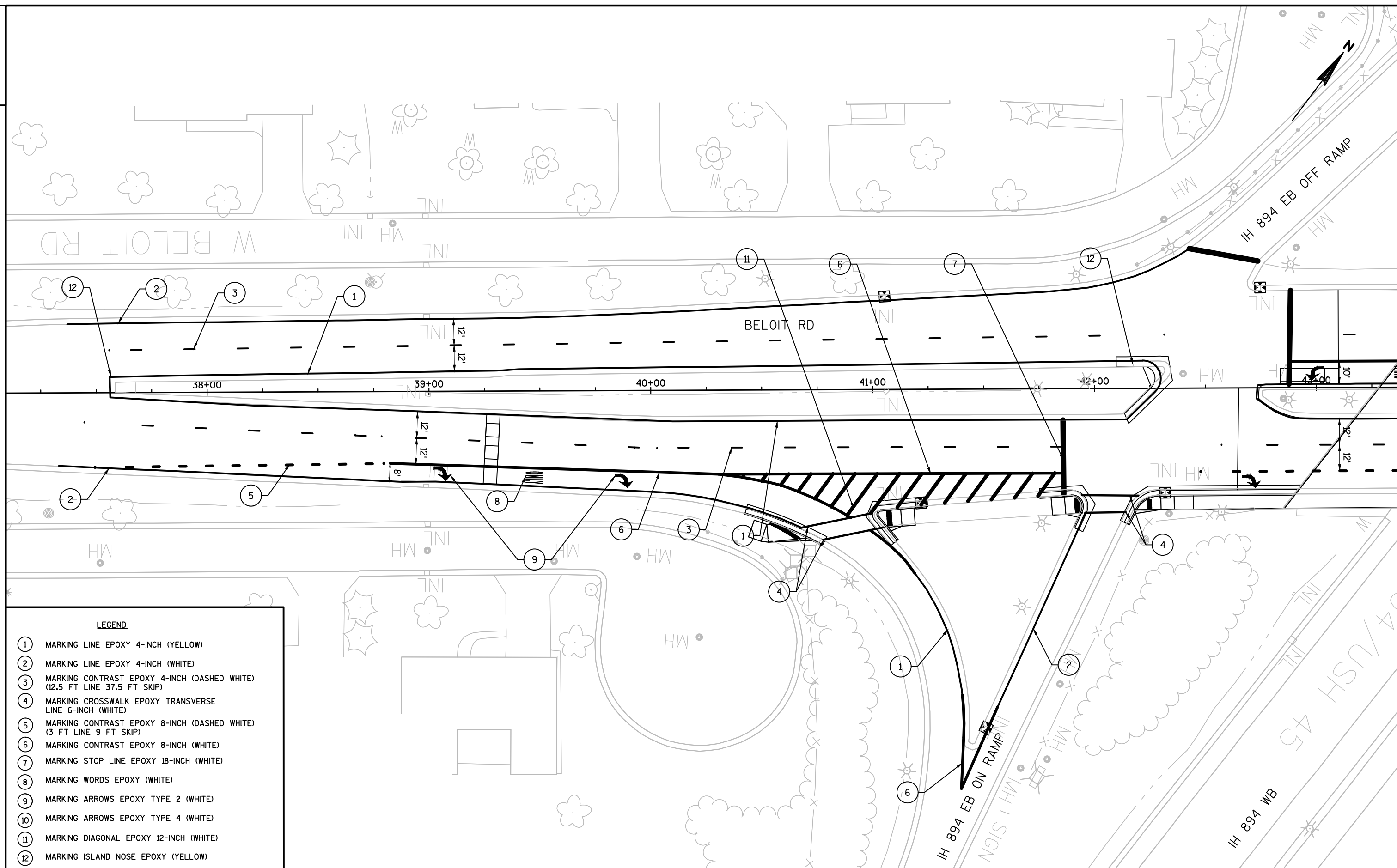
COUNTY:MILWAUKEE

TRAFFIC SIGNAL INTERCONNECT PLAN

SHEET

38

E



LEGEND

- ① MARKING LINE EPOXY 4-INCH (YELLOW)
- ② MARKING LINE EPOXY 4-INCH (WHITE)
- ③ MARKING CONTRAST EPOXY 4-INCH (DASHED WHITE)
(12.5 FT LINE 37.5 FT SKIP)
- ④ MARKING CROSSWALK EPOXY TRANSVERSE
LINE 6-INCH (WHITE)
- ⑤ MARKING CONTRAST EPOXY 8-INCH (DASHED WHITE)
(3 FT LINE 9 FT SKIP)
- ⑥ MARKING CONTRAST EPOXY 8-INCH (WHITE)
- ⑦ MARKING STOP LINE EPOXY 18-INCH (WHITE)
- ⑧ MARKING WORDS EPOXY (WHITE)
- ⑨ MARKING ARROWS EPOXY TYPE 2 (WHITE)
- ⑩ MARKING ARROWS EPOXY TYPE 4 (WHITE)
- ⑪ MARKING DIAGONAL EPOXY 12-INCH (WHITE)
- ⑫ MARKING ISLAND NOSE EPOXY (YELLOW)

PROJECT NO: 1100-35-70

HWY: IH 894

COUNTY: MILWAUKEE

PAVEMENT MARKING

SHEET

39

E

FILE NAME : N:\PDS\C3D\11003500\SHEETSPLAN\024501_PM_BELOIT RD.DWG
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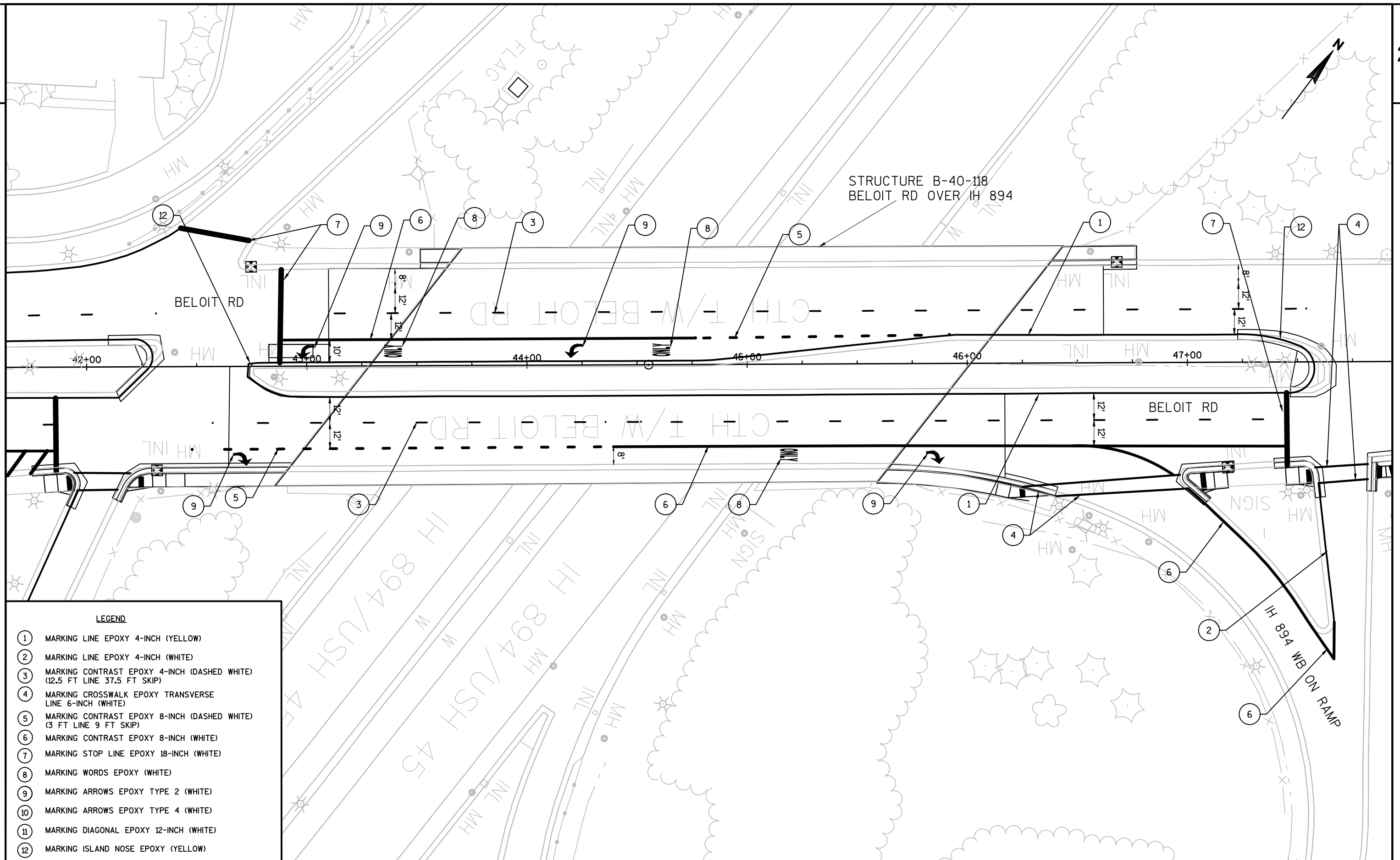
PLOT DATE : 11/8/2018 2:23 PM

PLOT BY : MANYEN, WAYNE

PLOT NAME :

PLOT SCALE : 1 IN=40 FT

WISDOT/CADDs SHEET 42



PROJECT NO:1100-35-70

HWY:IH 894

COUNTY:MILWAUKEE

PAVEMENT MARKING

SHEET

40

E

FILE NAME : N:\PDS\C3D\11003500\SHEETPLAN\024501_PM_BELOIT RD.DWG
LAYOUT NAME - 024501_PM_BELOIT RD - 024501_PM (2)

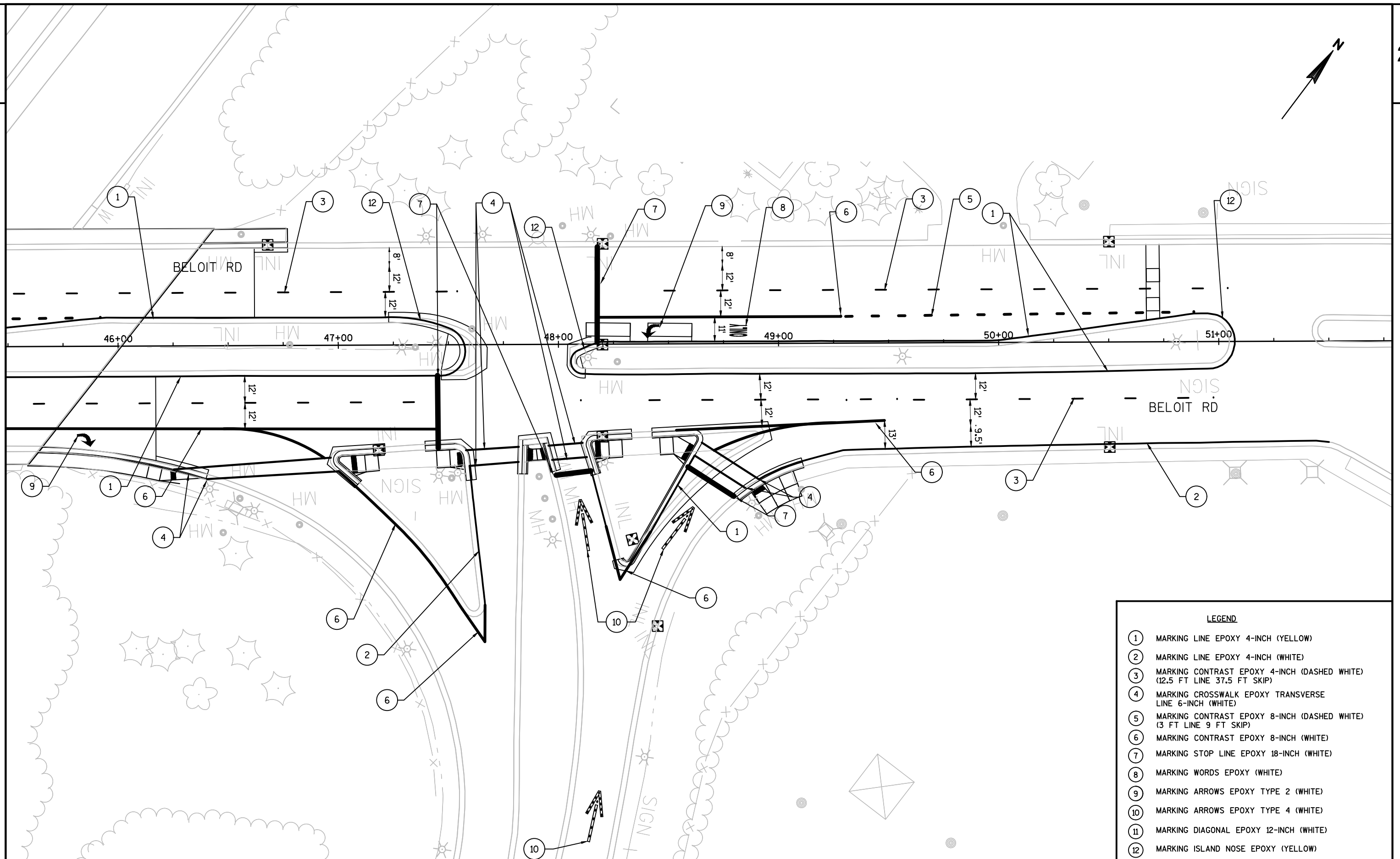
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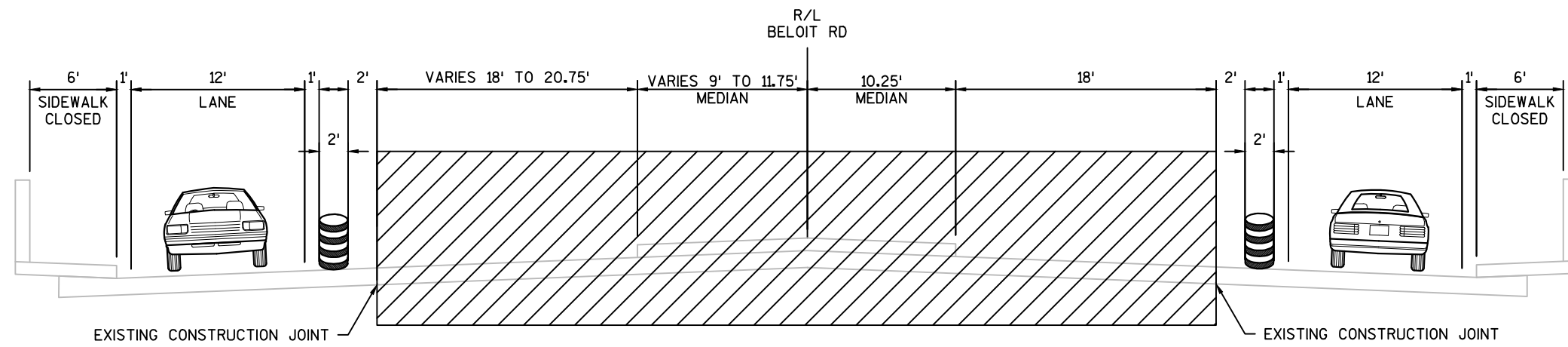
PLOT BY : MANYEN, WAYNE

PLOT NAME :

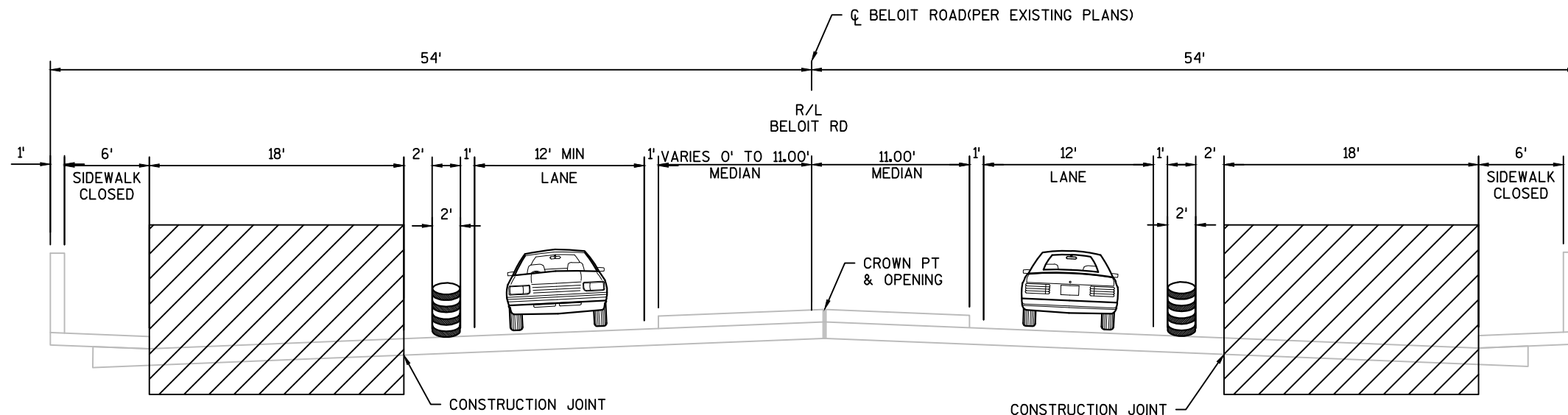
PLOT SCALE : 1 IN:40 FT

WISDOT/CADDs SHEET 42





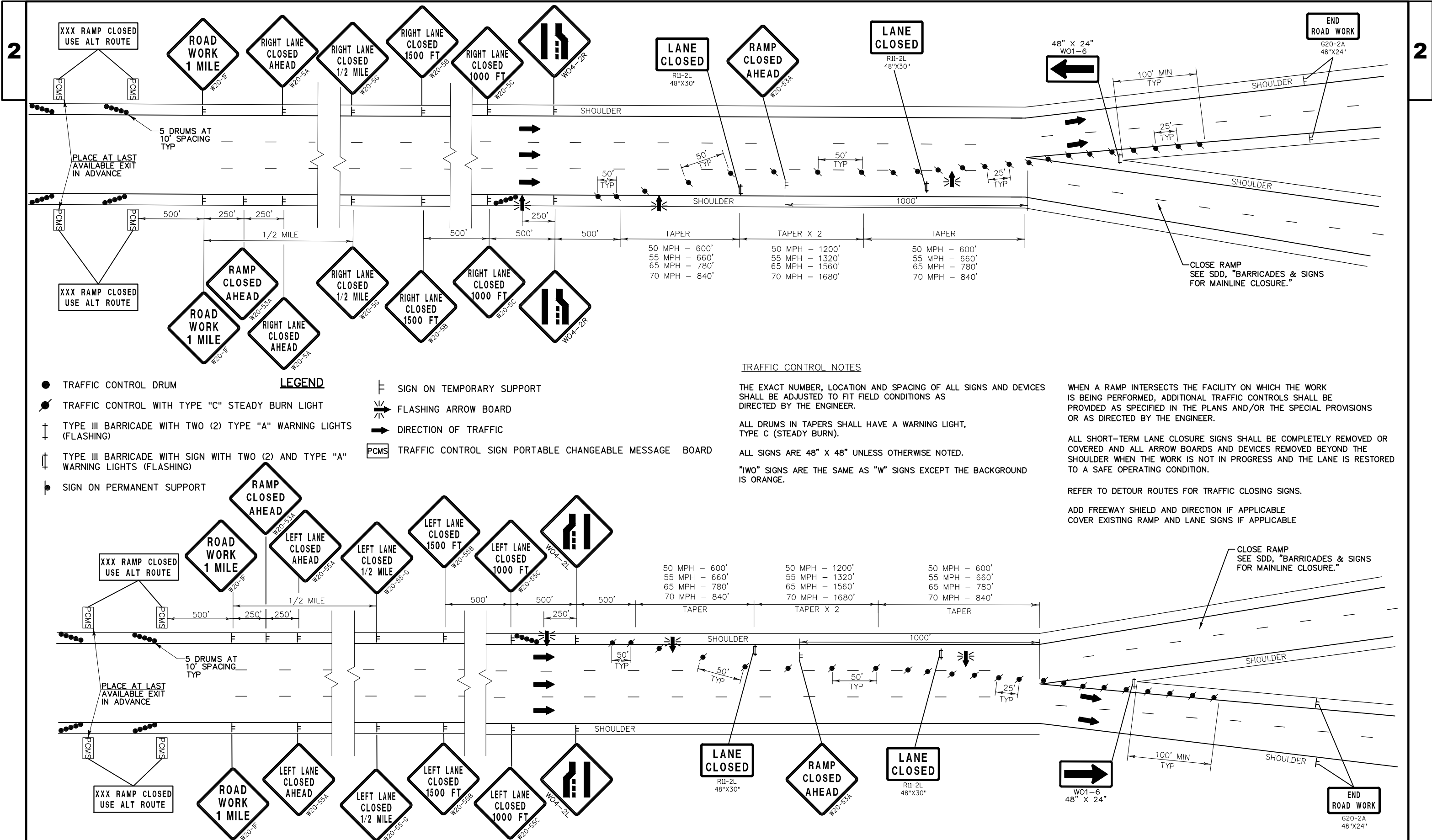
TYPICAL SECTION - STAGE 1



TYPICAL SECTION - STAGE 2

2





- LEGEND**
- TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL WITH TYPE "C" STEADY BURN LIGHT
 - † TYPE III BARRICADE WITH TWO (2) TYPE "A" WARNING LIGHTS (FLASHING)
 - †† TYPE III BARRICADE WITH SIGN WITH TWO (2) AND TYPE "A" WARNING LIGHTS (FLASHING)
 - SIGN ON PERMANENT SUPPORT
 - ⊥ SIGN ON TEMPORARY SUPPORT
 - ⚡ FLASHING ARROW BOARD
 - ➡ DIRECTION OF TRAFFIC
 - PCMS TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE BOARD

TRAFFIC CONTROL NOTES

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

ALL DRUMS IN TAPERS SHALL HAVE A WARNING LIGHT, TYPE C (STEADY BURN).

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

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

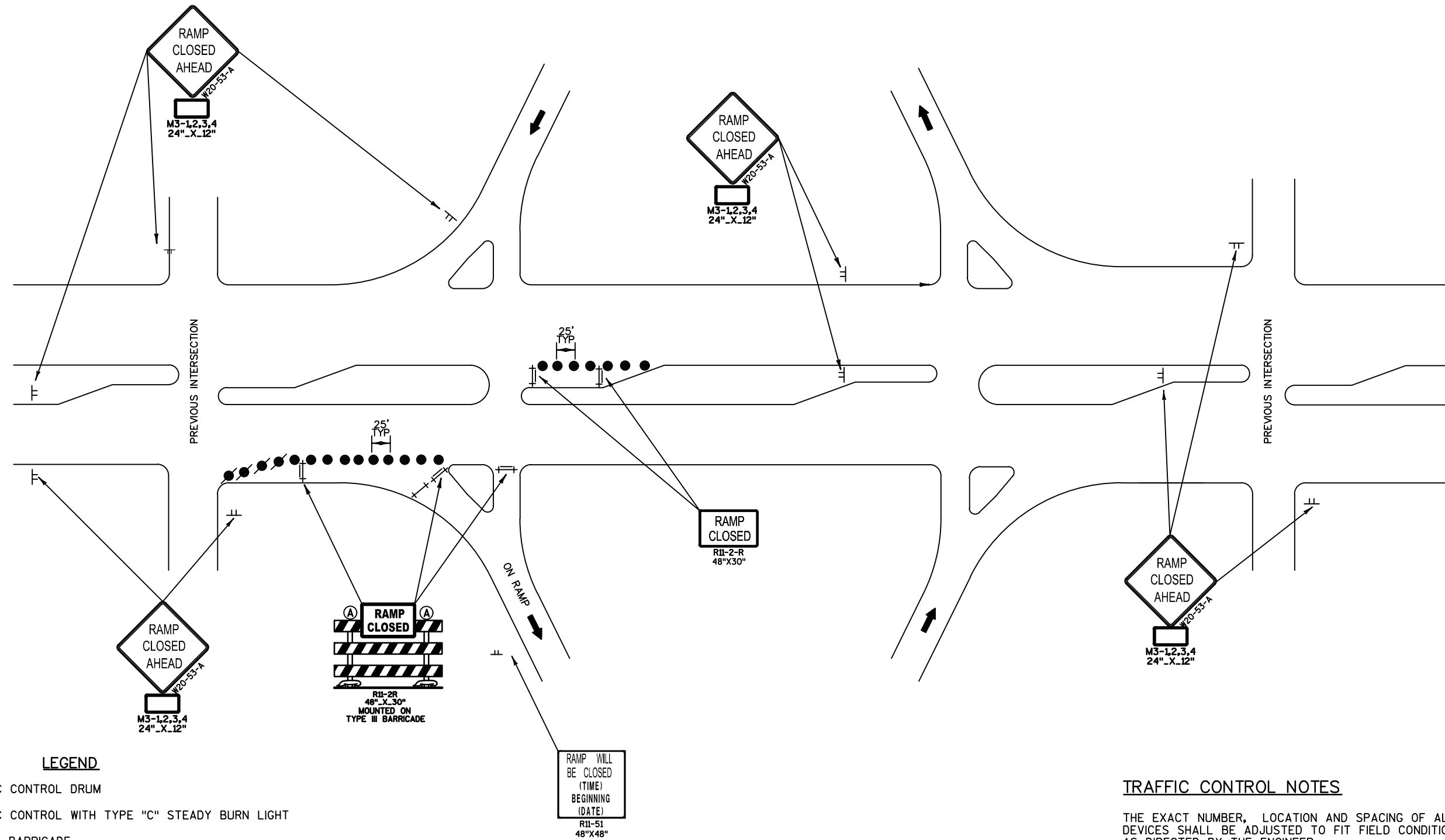
WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS DIRECTED BY THE ENGINEER.

ALL SHORT-TERM LANE CLOSURE SIGNS SHALL BE COMPLETELY REMOVED OR COVERED AND ALL ARROW BOARDS AND DEVICES REMOVED BEYOND THE SHOULDER WHEN THE WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.

REFER TO DETOUR ROUTES FOR TRAFFIC CLOSING SIGNS.

ADD FREEWAY SHIELD AND DIRECTION IF APPLICABLE
COVER EXISTING RAMP AND LANE SIGNS IF APPLICABLE

TYPICAL SYSTEM RAMP CLOSURE

**LEGEND**

- TRAFFIC CONTROL DRUM
- / TRAFFIC CONTROL WITH TYPE "C" STEADY BURN LIGHT
- † TYPE III BARRICADE
- †† TYPE III BARRICADE WITH 2 TYPE "A" WARNING LIGHT (FLASHING)
- SIGN ON PERMANENT SUPPORT
- † SIGN ON TEMPORARY SUPPORT
- ➔ DIRECTION OF TRAFFIC

**TRAFFIC CONTROL FOR ENTRANCE RAMP CLOSURE
SHORT TERM ONLY****TRAFFIC CONTROL NOTES**

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

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

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

SHORT TERM DEFINED AS 7 DAYS/NIGHTS OR LESS. FOR NIGHT TIME OPERATIONS ALL DRUMS IN TAPERS SHALL HAVE WARNING LIGHT, TYPE C (STEADY BURN). MAY BE APPLIED TO ARTERIALS OR LOCAL ROADS.

NORTH
M3-1
24" X 12"

EAST
M3-2
24" X 12"

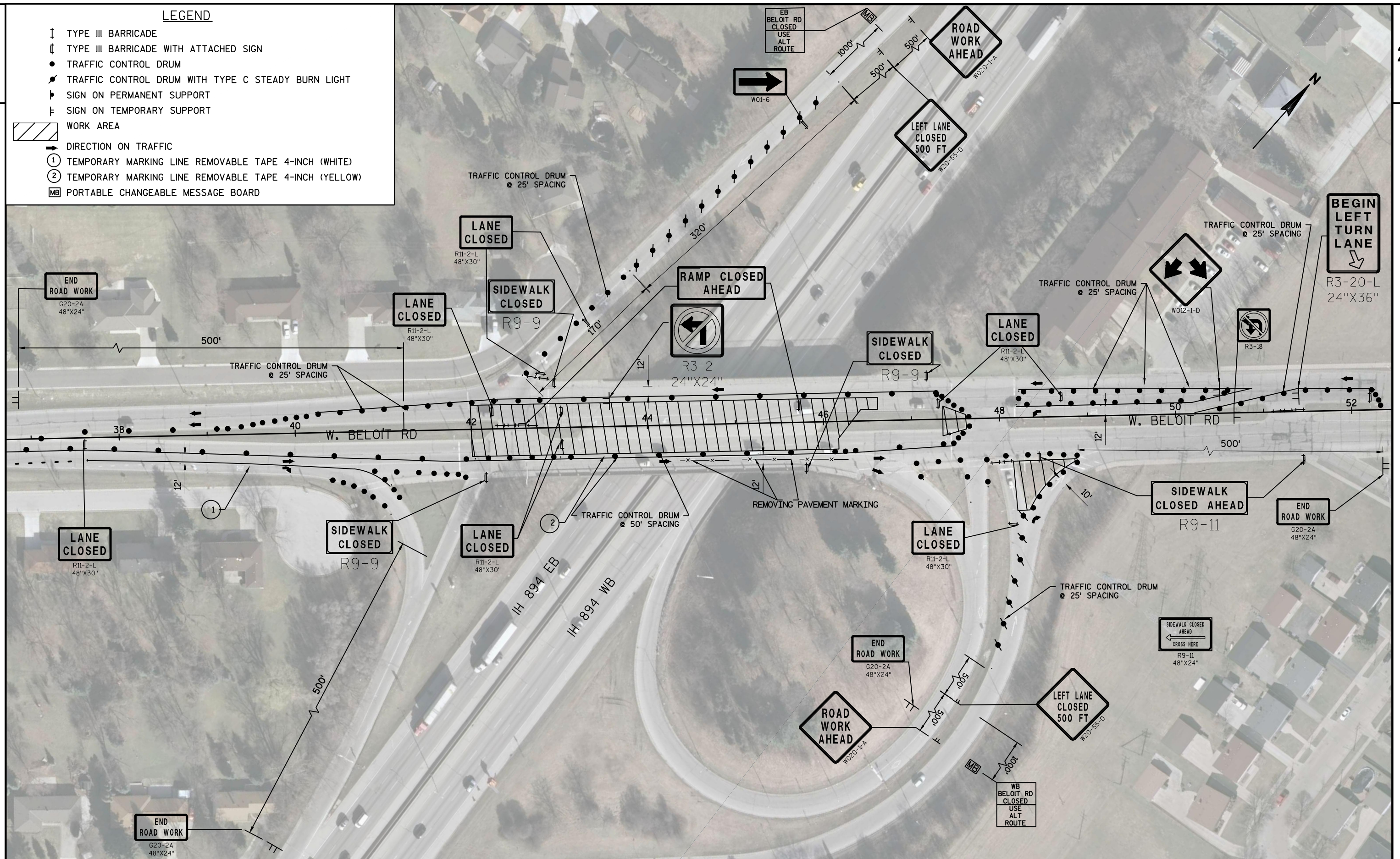
SOUTH
M3-3
24" X 12"

WEST
M3-4
24" X 12"



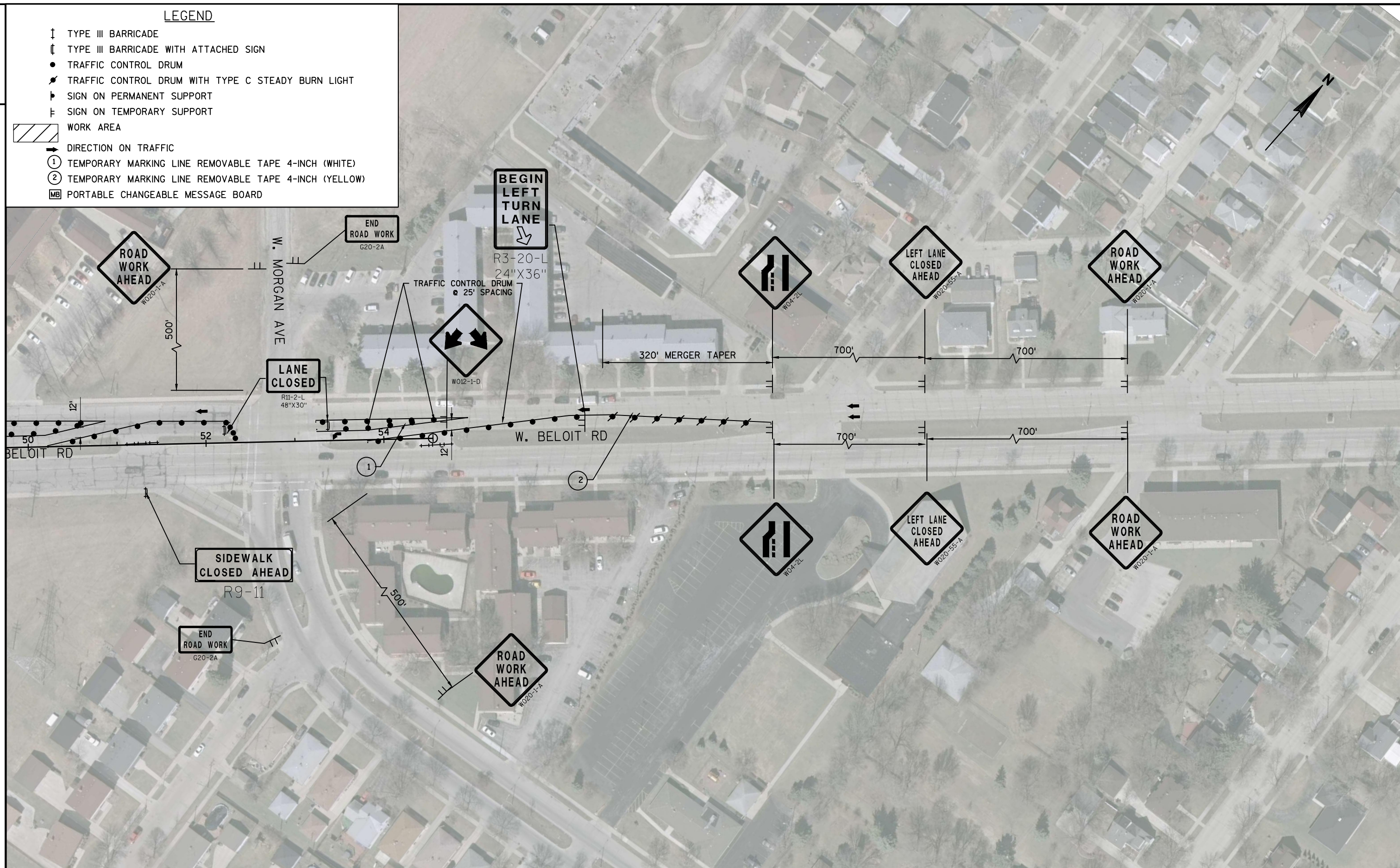
LEGEND

- ↑ TYPE III BARRICADE
- ↑ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ✂ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ↑ SIGN ON PERMANENT SUPPORT
- ↑ SIGN ON TEMPORARY SUPPORT
- ▨ WORK AREA
- DIRECTION ON TRAFFIC
- ① TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
- ② TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW)
- MB PORTABLE CHANGEABLE MESSAGE BOARD



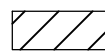
LEGEND

- ↑ TYPE III BARRICADE
- ↑ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ✂ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ▮ SIGN ON PERMANENT SUPPORT
- ▮ SIGN ON TEMPORARY SUPPORT
- ▨ WORK AREA
- DIRECTION ON TRAFFIC
- ① TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
- ② TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW)
- MB PORTABLE CHANGEABLE MESSAGE BOARD



LEGEND

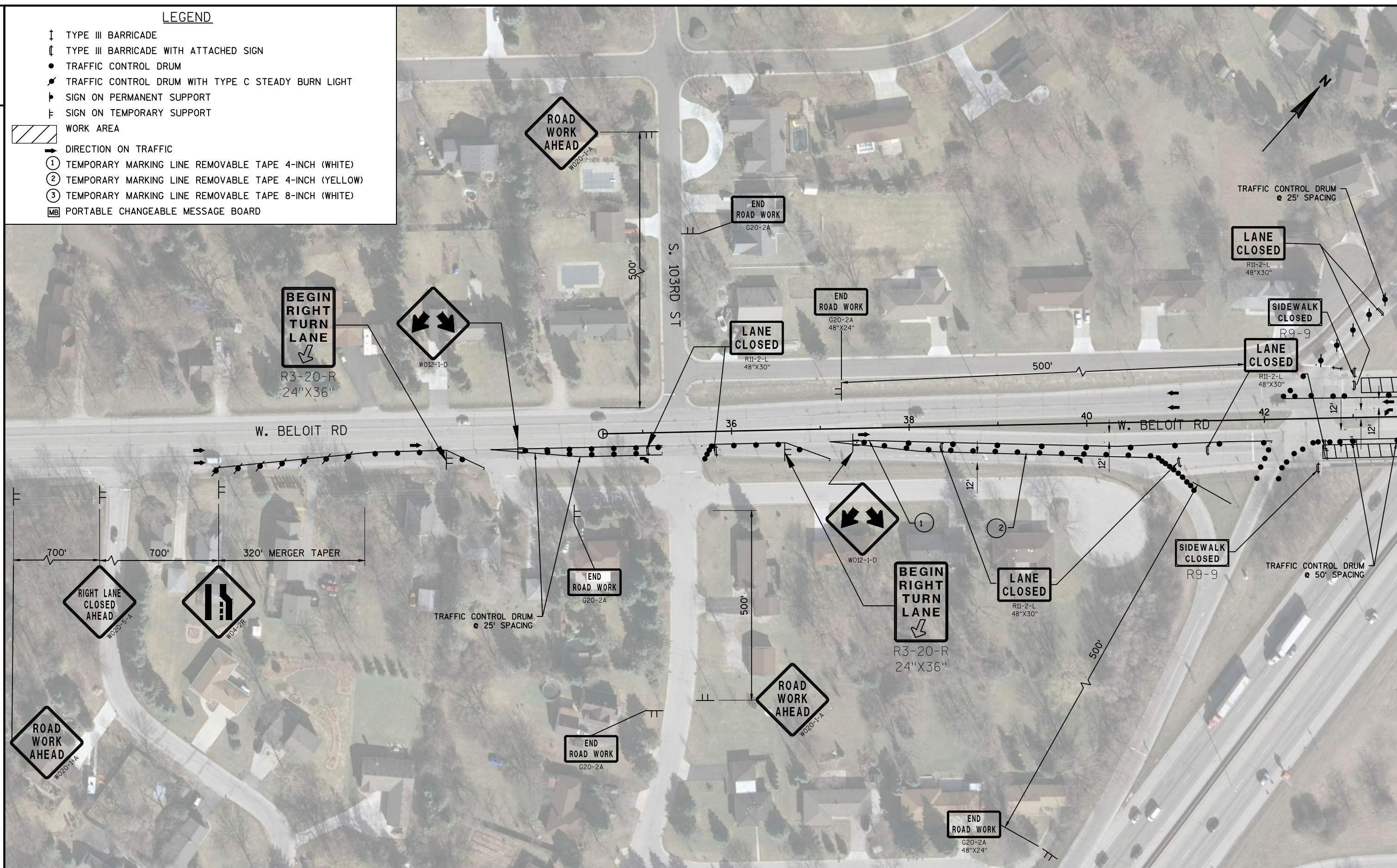
- ↑ TYPE III BARRICADE
- ↑ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ✂ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ↑ SIGN ON PERMANENT SUPPORT
- ↑ SIGN ON TEMPORARY SUPPORT



WORK AREA

→ DIRECTION ON TRAFFIC

- ① TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
- ② TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW)
- ③ TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH (WHITE)
- [MB] PORTABLE CHANGEABLE MESSAGE BOARD



PROJECT NO: 1100-35-70

HWY: USH 45/IH 894

COUNTY: MILWAUKEE

TRAFFIC CONTROL - BELOIT ROAD STAGE 2

SHEET

49

E

FILE NAME : N:\PDS\C3D\11003500\SHEETS\PLAN\026101_S2.DWG
LAYOUT NAME - 026101_S2 - 026101_S2

PLOT DATE : 1/29/2019 3:31 PM

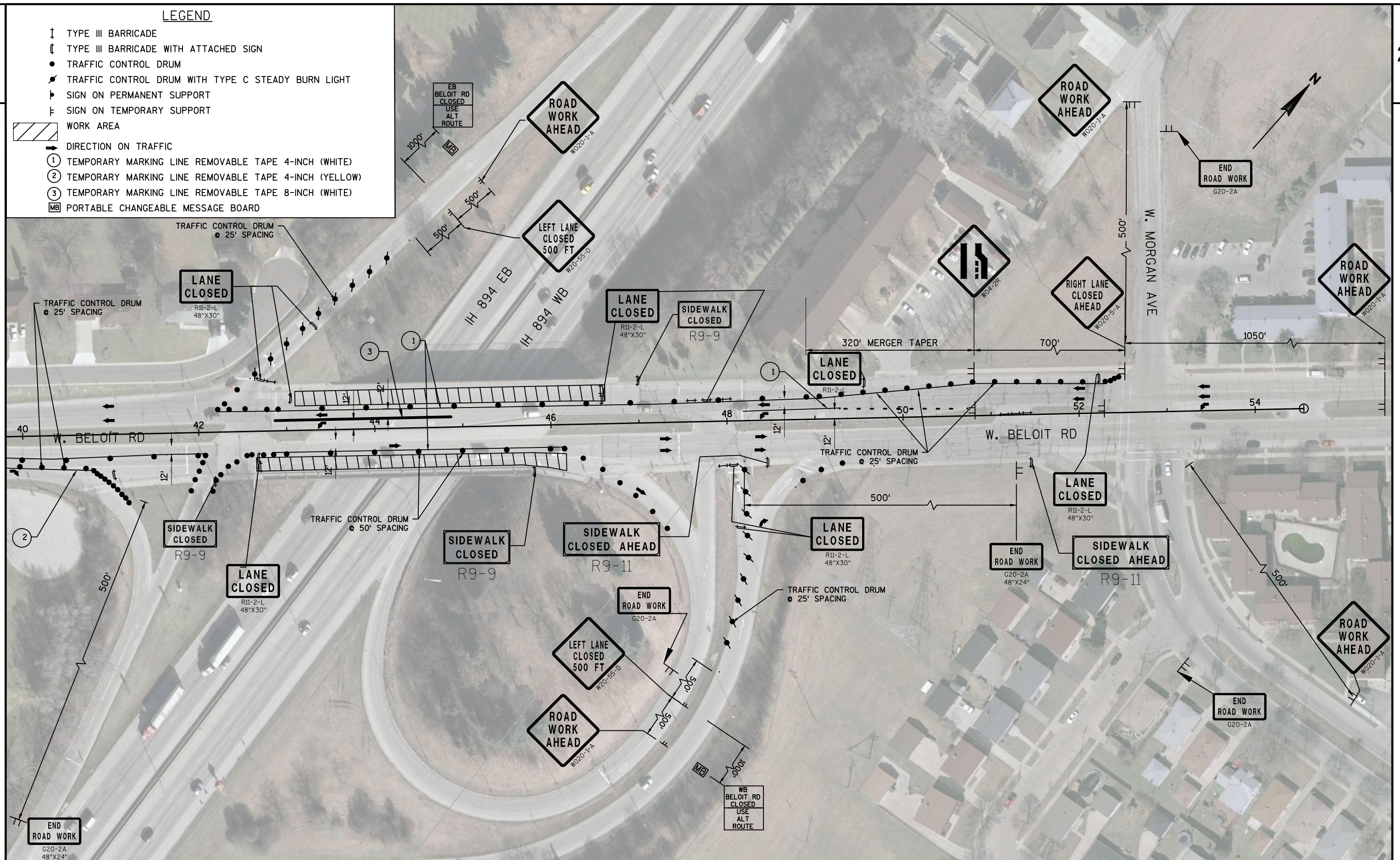
PLOT BY : GARCIA CHOQUE, JOSE PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADS SHEET 42

LEGEND

- ↑ TYPE III BARRICADE
- ↑ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ✂ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ♣ SIGN ON PERMANENT SUPPORT
- ♣ SIGN ON TEMPORARY SUPPORT
- ▨ WORK AREA
- DIRECTION ON TRAFFIC
- ① TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
- ② TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW)
- ③ TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH (WHITE)
- MB PORTABLE CHANGEABLE MESSAGE BOARD



PROJECT NO: 1100-35-70

HWY: USH 45/IH 894

COUNTY: MILWAUKEE

TRAFFIC CONTROL - BELOIT ROAD STAGE 2

SHEET

50

E

FILE NAME : N:\PDS\C3D\11003500\SHEETSP\LAN026101_S2.DWG
LAYOUT NAME - 026101_S2 - 026102_S2

PLOT DATE : 1/29/2019 3:32 PM

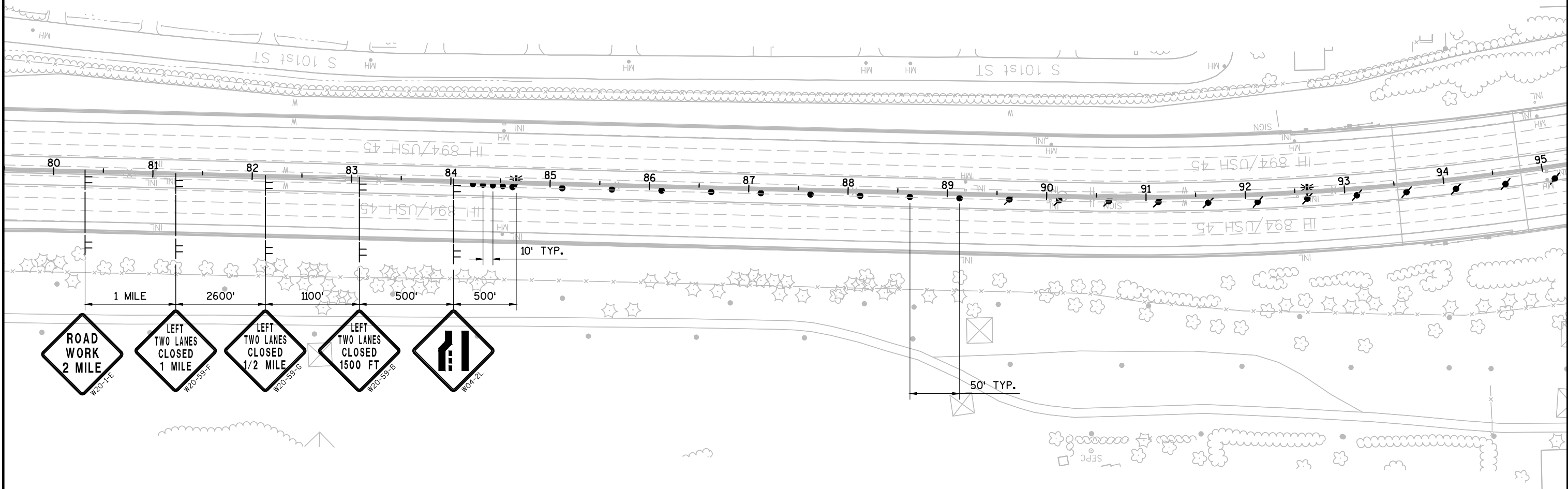
PLOT BY : GARCIA CHOQUE, JOSE PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADS SHEET 42

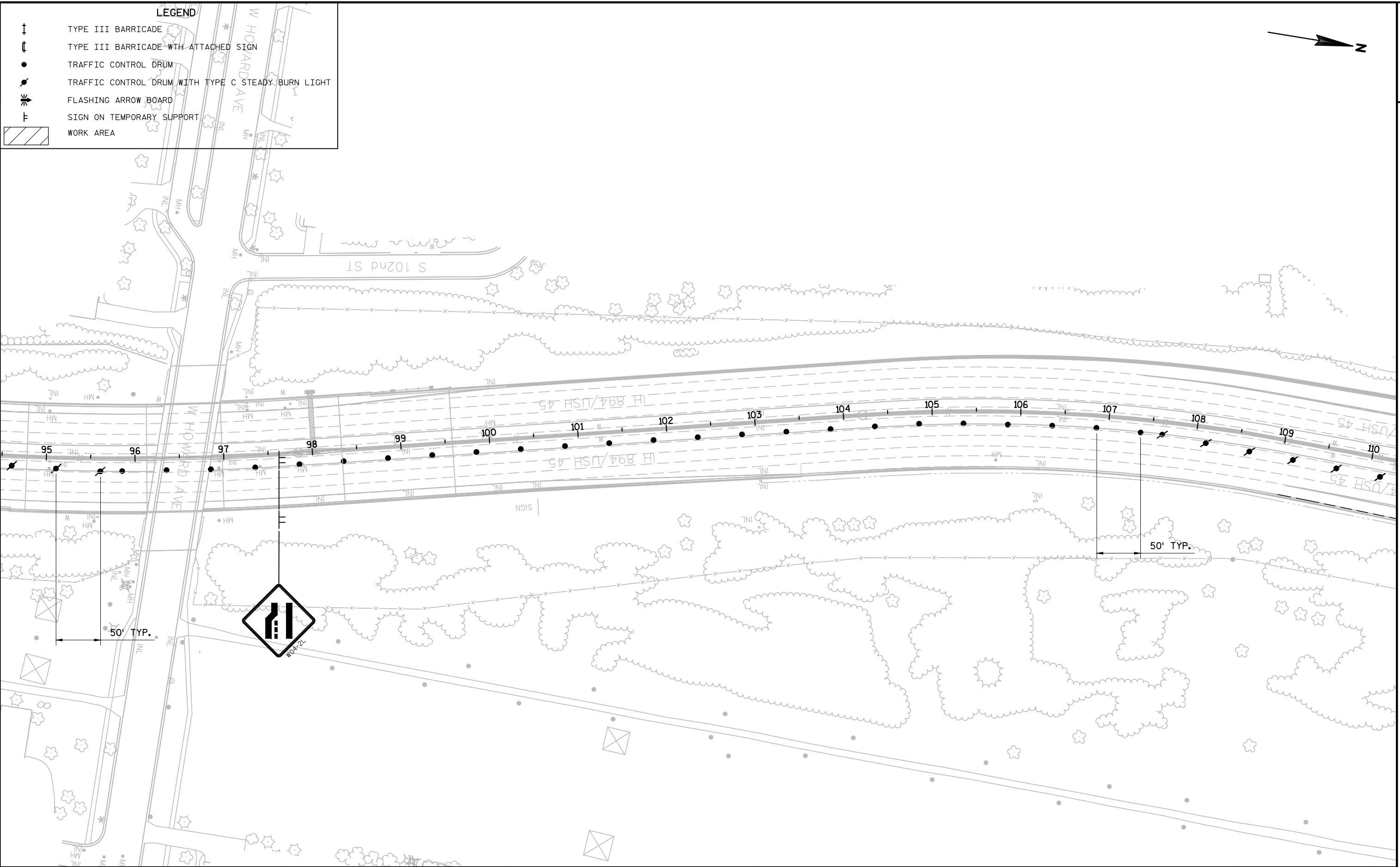
LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- WORK AREA



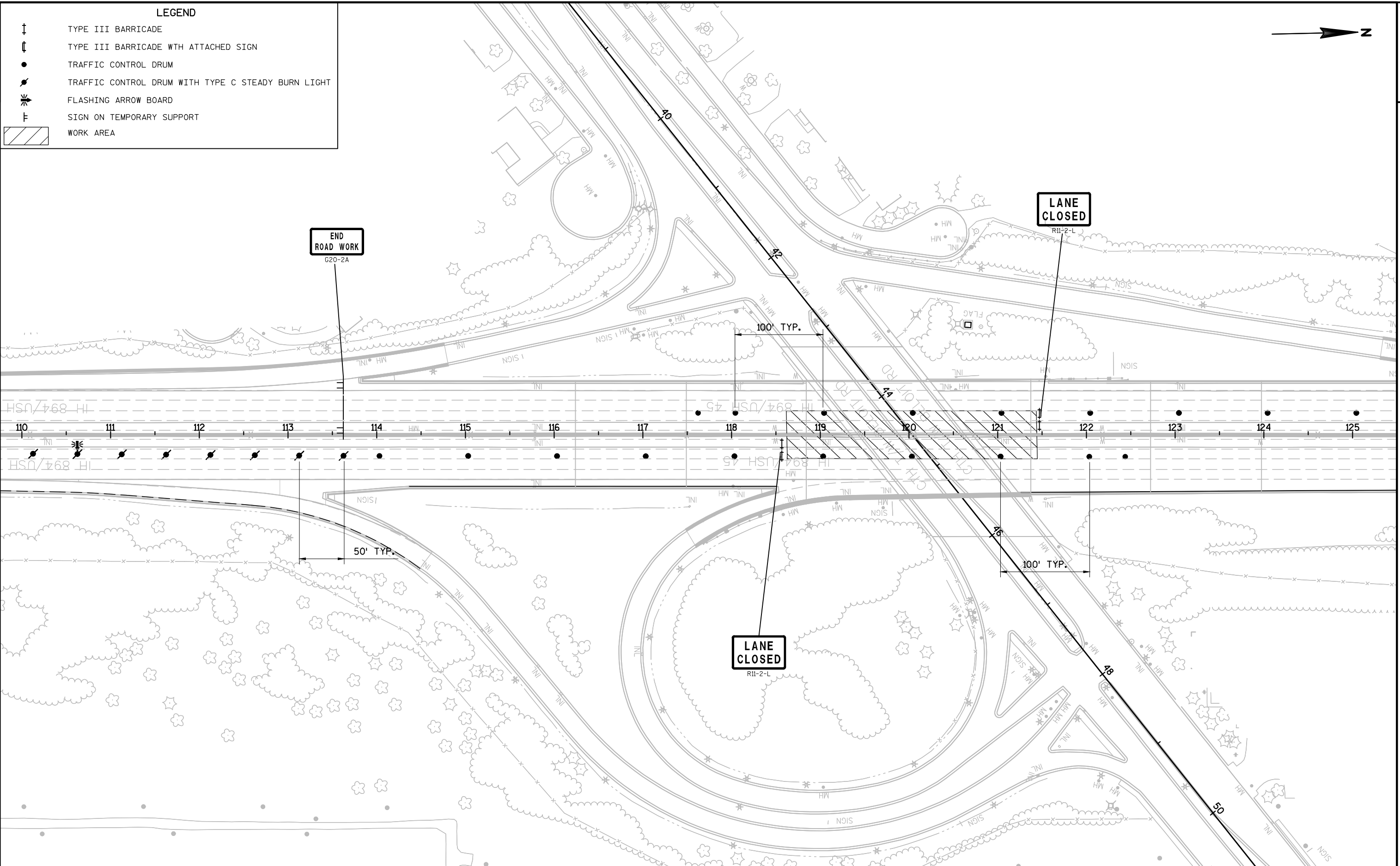
LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- WORK AREA



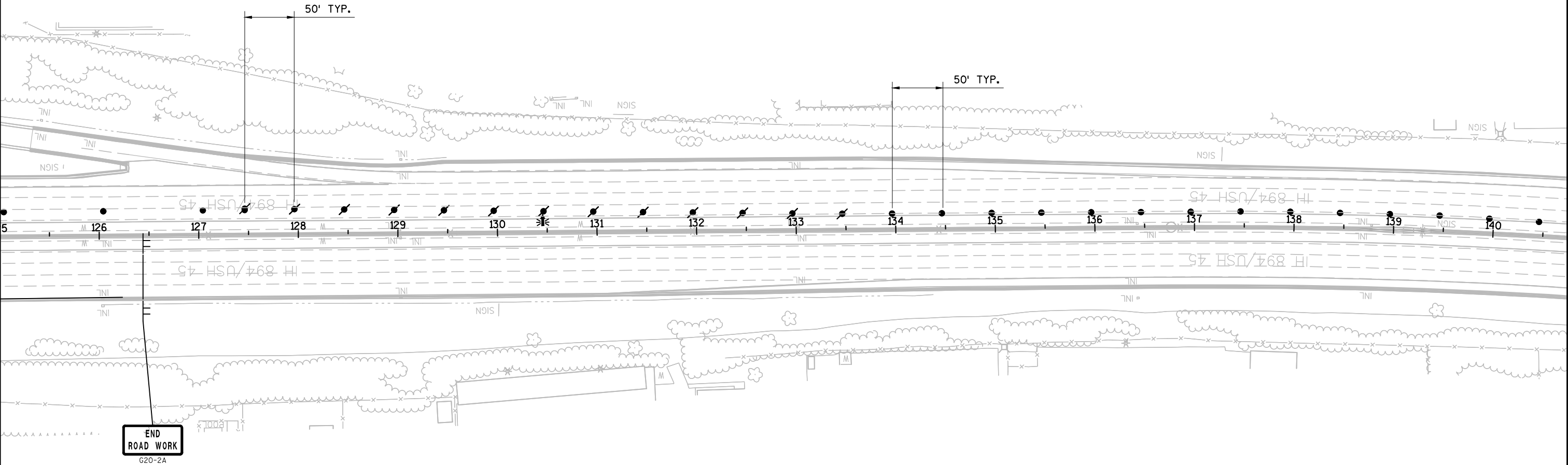
LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- WORK AREA



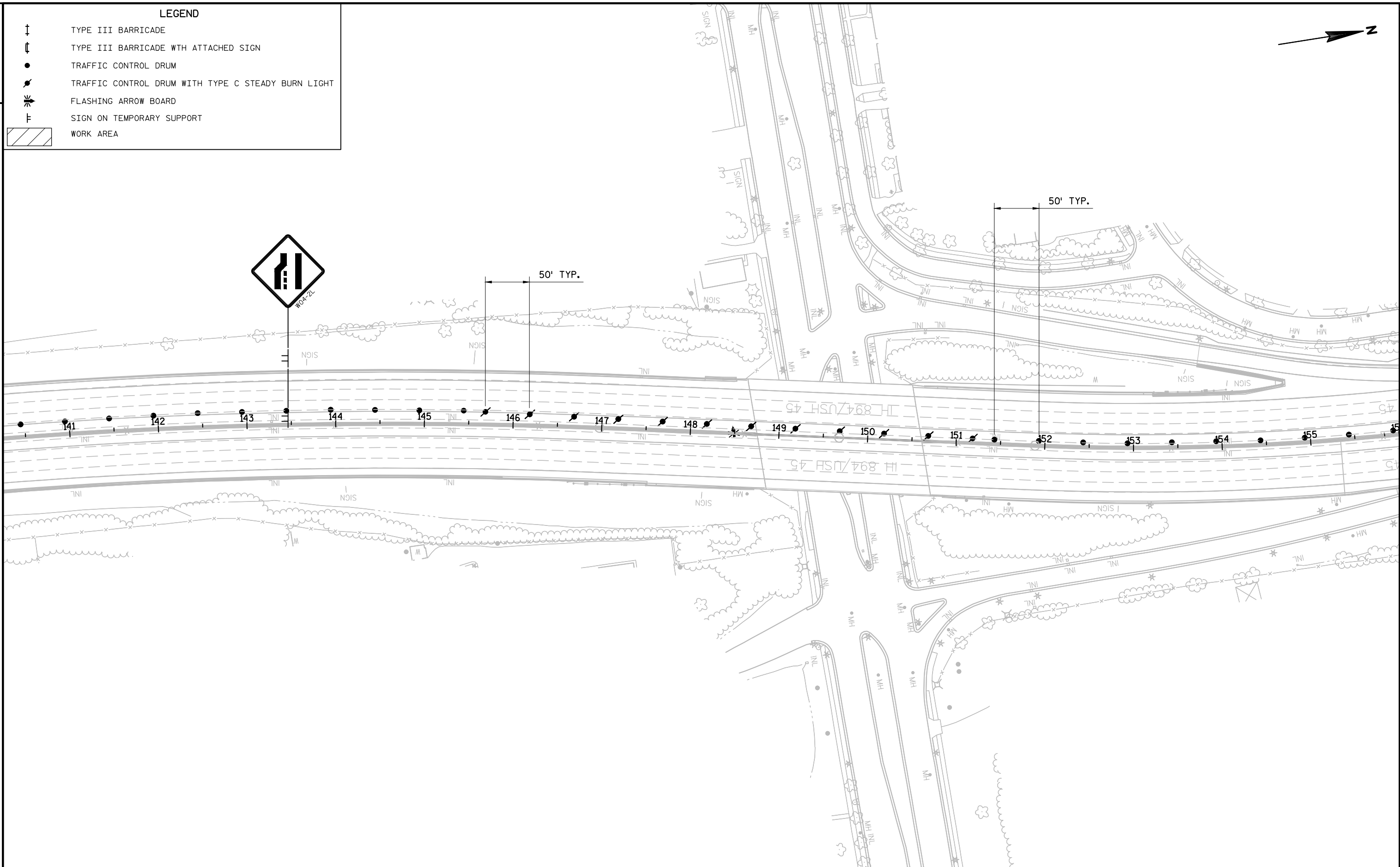
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- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- WORK AREA



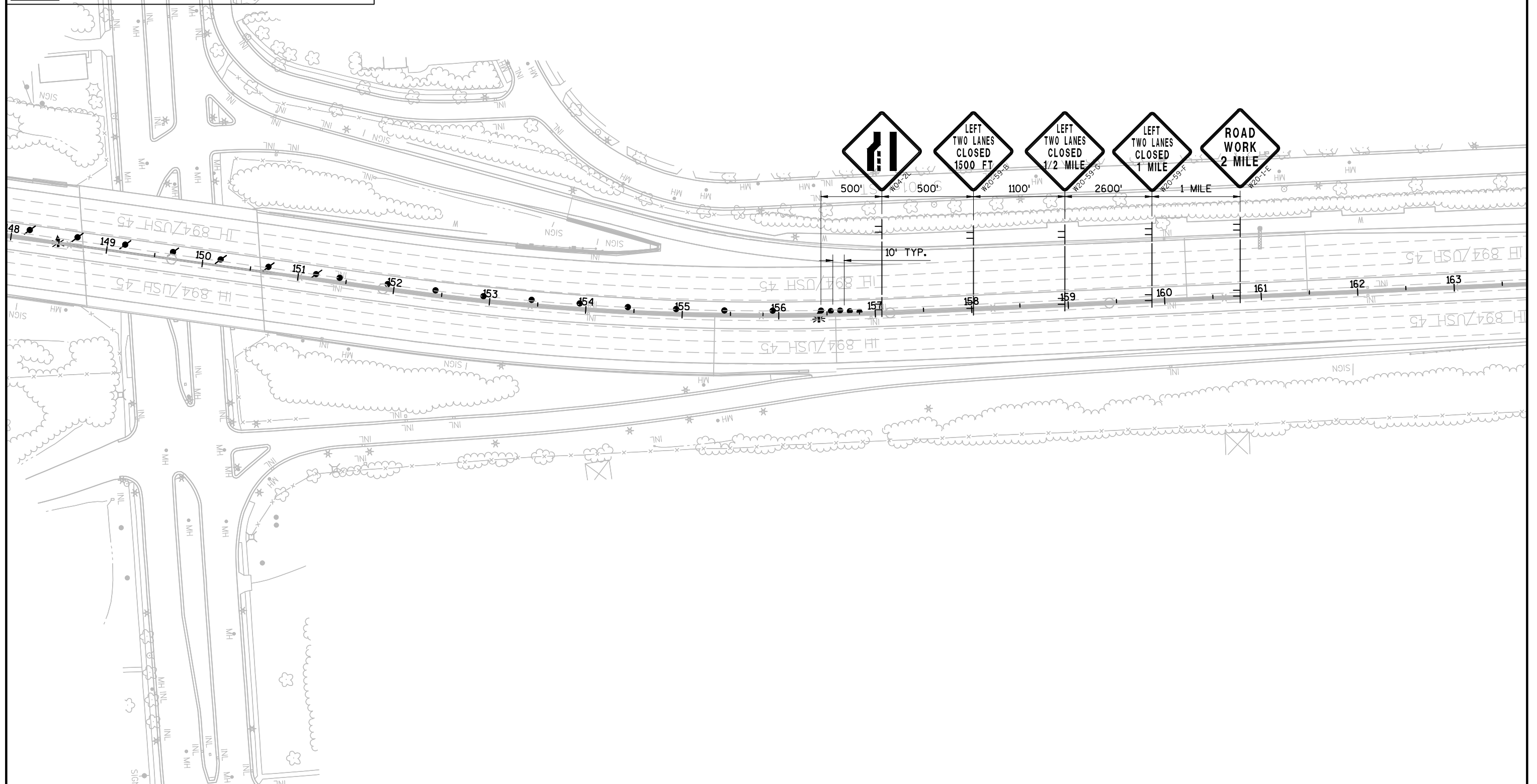
LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- WORK AREA



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- WORK AREA



PROJECT NO:1100-35-70

HWY:USH 45/IH 894

COUNTY:MILWAUKEE

TRAFFIC CONTROL - STAGE A (BELOIT ROAD BRIDGE PAINTING)

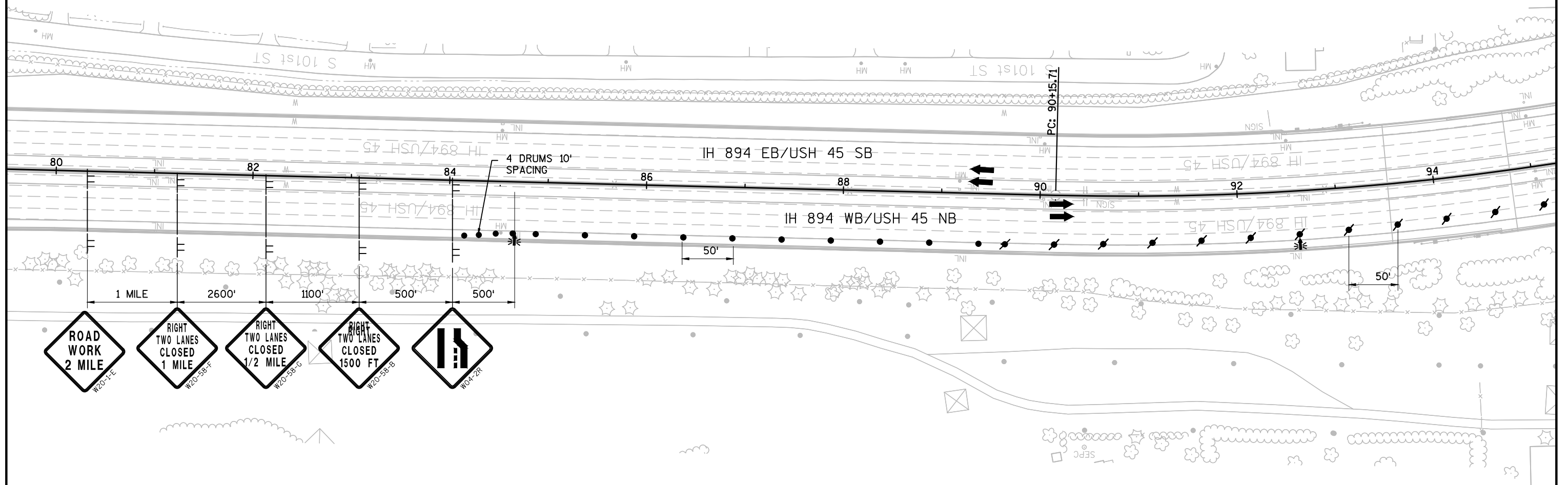
SHEET

56

E

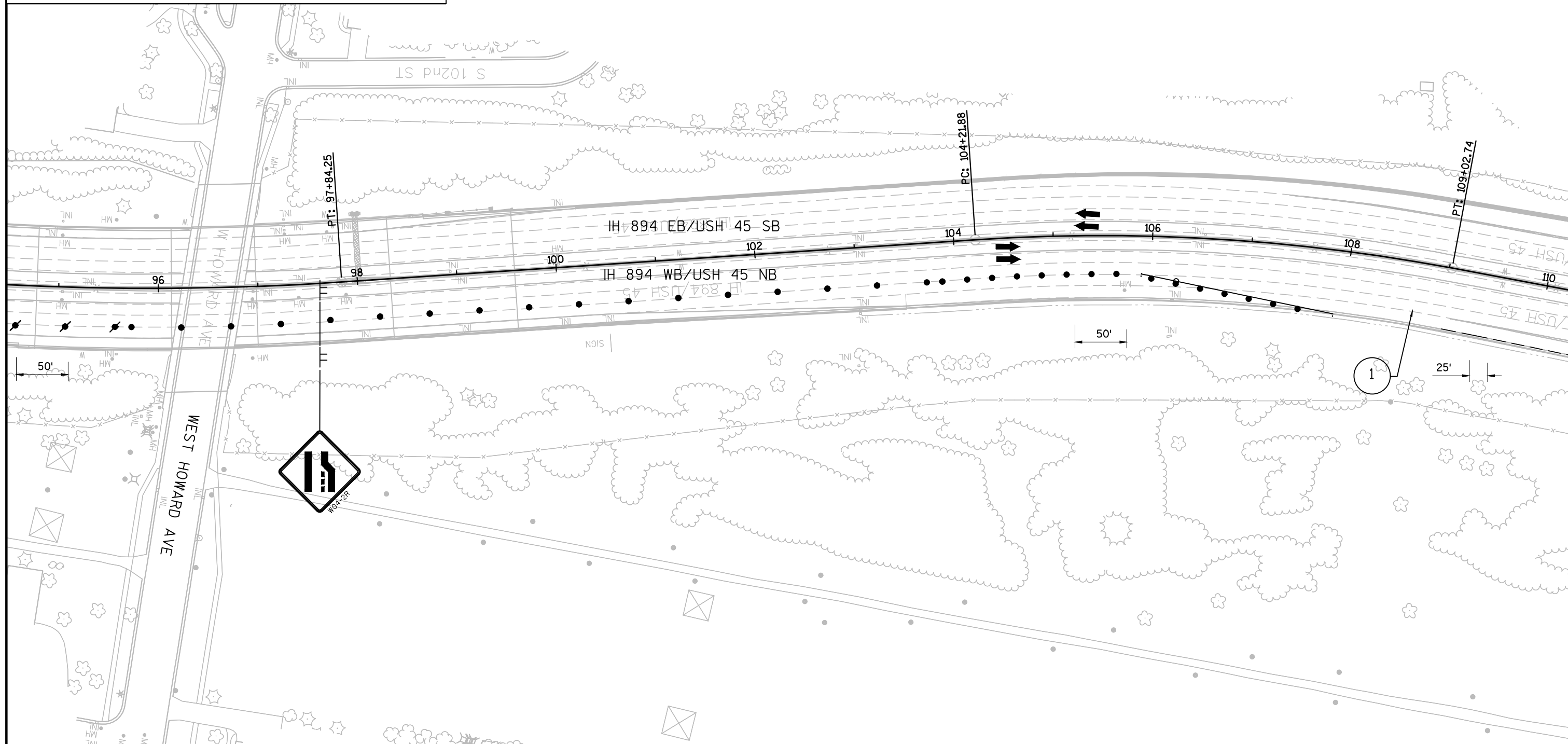
LEGEND

- ↑ TYPE III BARRICADE
- ↑ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ✱ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ▮ SIGN ON PERMANENT SUPPORT
- ▮ SIGN ON TEMPORARY SUPPORT
- ▨ WORK AREA
- ➡ DIRECTION ON TRAFFIC
- ① TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
- ② TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW)
- MB PORTABLE CHANGEABLE MESSAGE BOARD



LEGEND

- † TYPE III BARRICADE
- ‡ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ✱ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ▤ SIGN ON PERMANENT SUPPORT
- ▥ SIGN ON TEMPORARY SUPPORT
- ▨ WORK AREA
- ➔ DIRECTION ON TRAFFIC
- ① TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
- ② TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW)
- MB PORTABLE CHANGEABLE MESSAGE BOARD



PROJECT NO: 1100-35-70

HWY: USH 45/IH 894

COUNTY: MILWAUKEE

TRAFFIC CONTROL - STAGE B (BELOIT ROAD BRIDGE PAINTING)

SHEET

58

E

FILE NAME : N:\PDS\C3D\11003500\SHEETSP\AN\026101_S4.DWG
LAYOUT NAME - 026101_S4 - 026002_TCS4

PLOT DATE : 11/27/2018 2:03 PM

PLOT BY : MANYEN, WAYNE

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 42

LEGEND

- ↑ TYPE III BARRICADE
- ↑ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ▮ SIGN ON PERMANENT SUPPORT
- ▮ SIGN ON TEMPORARY SUPPORT
- ▨ WORK AREA
- ➔ DIRECTION ON TRAFFIC
- ① TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
- ② TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW)
- MB PORTABLE CHANGEABLE MESSAGE BOARD

END
ROAD WORK
G20-2A
48"X24"LANE
CLOSED
R11-2-LRAMP
CLOSED
R11-2-R
48"X30"END
ROAD WORK
G20-2ALANE
CLOSED
R11-2-LRAMP
CLOSED
R11-2-R
48"X30"RAMP CLOSED
SEE ENTRANCE
RAMP CLOSURE
DETAILLANE
CLOSED
R11-2-LLEFT LANE
CLOSED
AHEAD
W020-55-A

PROJECT NO:1100-35-70

HWY:USH 45/IH 894

COUNTY:MILWAUKEE

TRAFFIC CONTROL - STAGE B (BELOIT ROAD BRIDGE PAINTING)

SHEET

59

E

FILE NAME : N:\PDS\C3D\11003500\SHEETSP\PLAN\026101_S4.DWG
LAYOUT NAME - 026101_S4 - 026003_TCS4

PLOT DATE : 11/27/2018 2:03 PM

PLOT BY : MANYEN, WAYNE

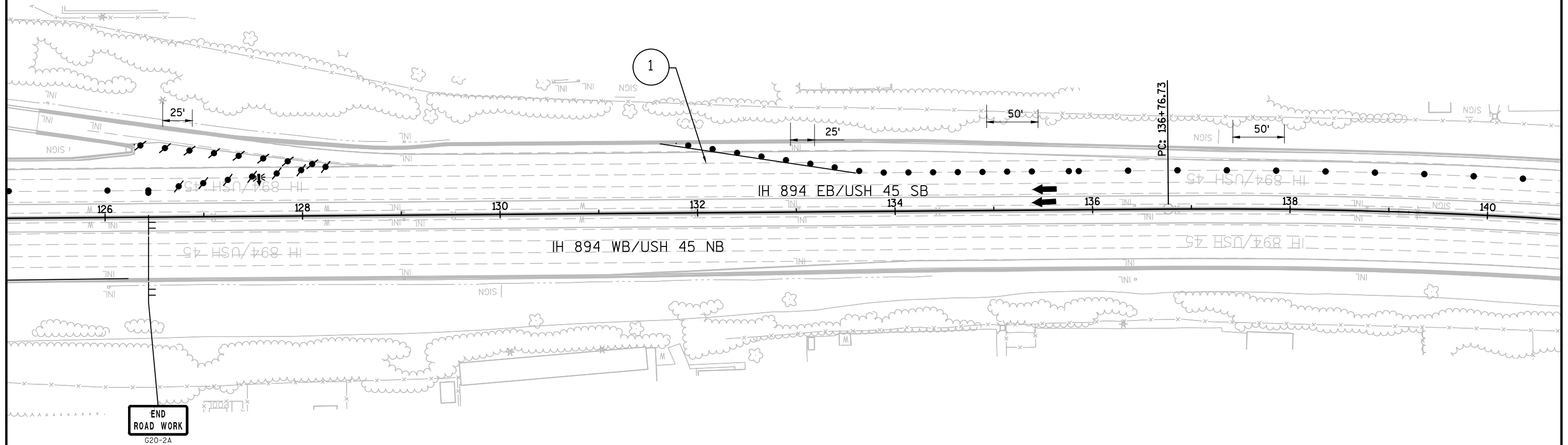
PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADS SHEET 42

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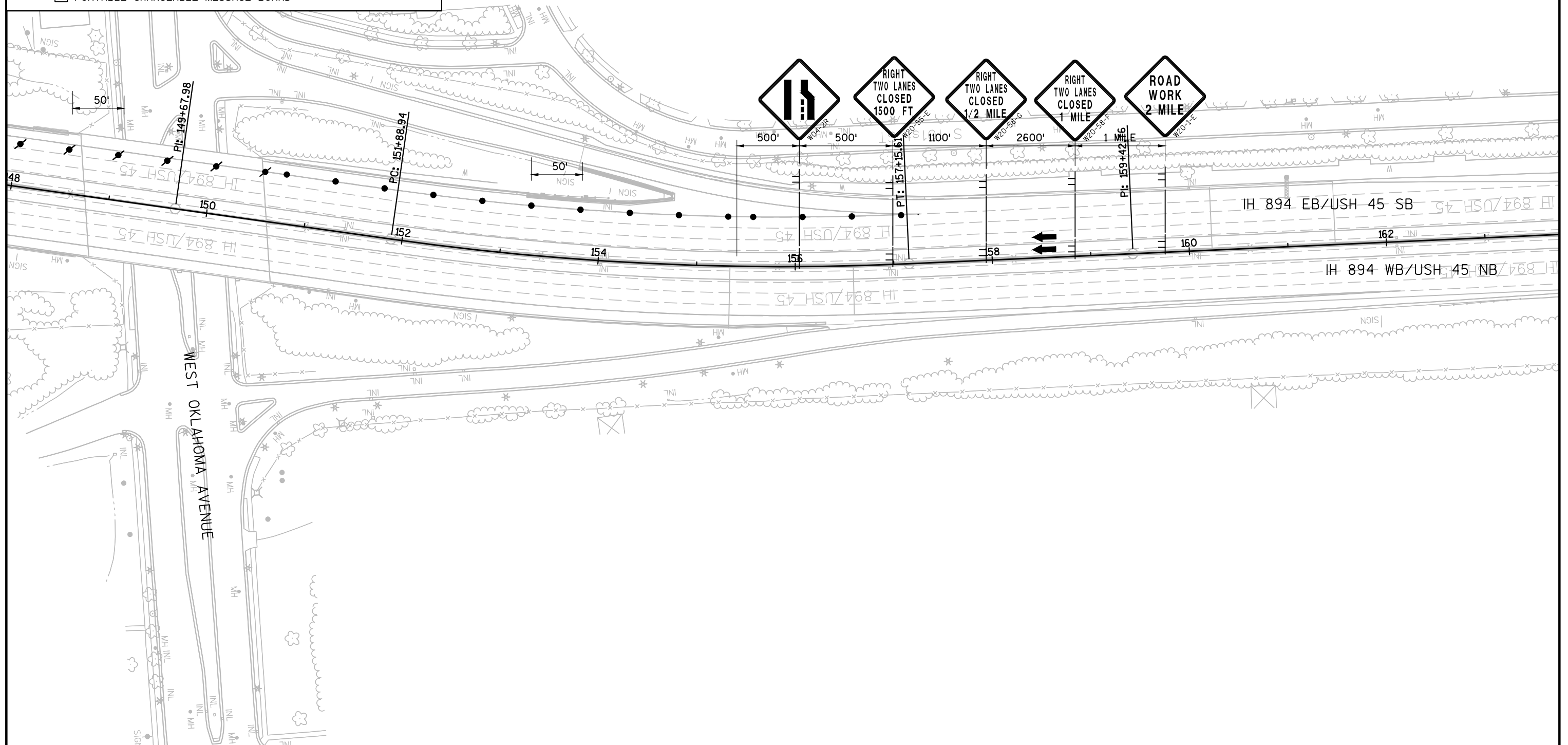
- | | |
|---|---|
|  | TYPE III BARRICADE |
|  | TYPE III BARRICADE WITH ATTACHED SIGN |
|  | TRAFFIC CONTROL DRUM |
|  | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT |
|  | SIGN ON PERMANENT SUPPORT |
|  | SIGN ON TEMPORARY SUPPORT |
|  | WORK AREA |
|  | DIRECTION ON TRAFFIC |
|  | TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE) |
|  | TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW) |
|  | PORTABLE CHANGEABLE MESSAGE BOARD |



WISDOT/CADDS SHEET 42

LEGEND

- † TYPE III BARRICADE
- † TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ✱ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ▮ SIGN ON PERMANENT SUPPORT
- ▮ SIGN ON TEMPORARY SUPPORT
- ▨ WORK AREA
- ➔ DIRECTION ON TRAFFIC
- ① TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
- ② TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW)
- MB PORTABLE CHANGEABLE MESSAGE BOARD



PROJECT NO: 1100-35-70

HWY: USH 45/IH 894

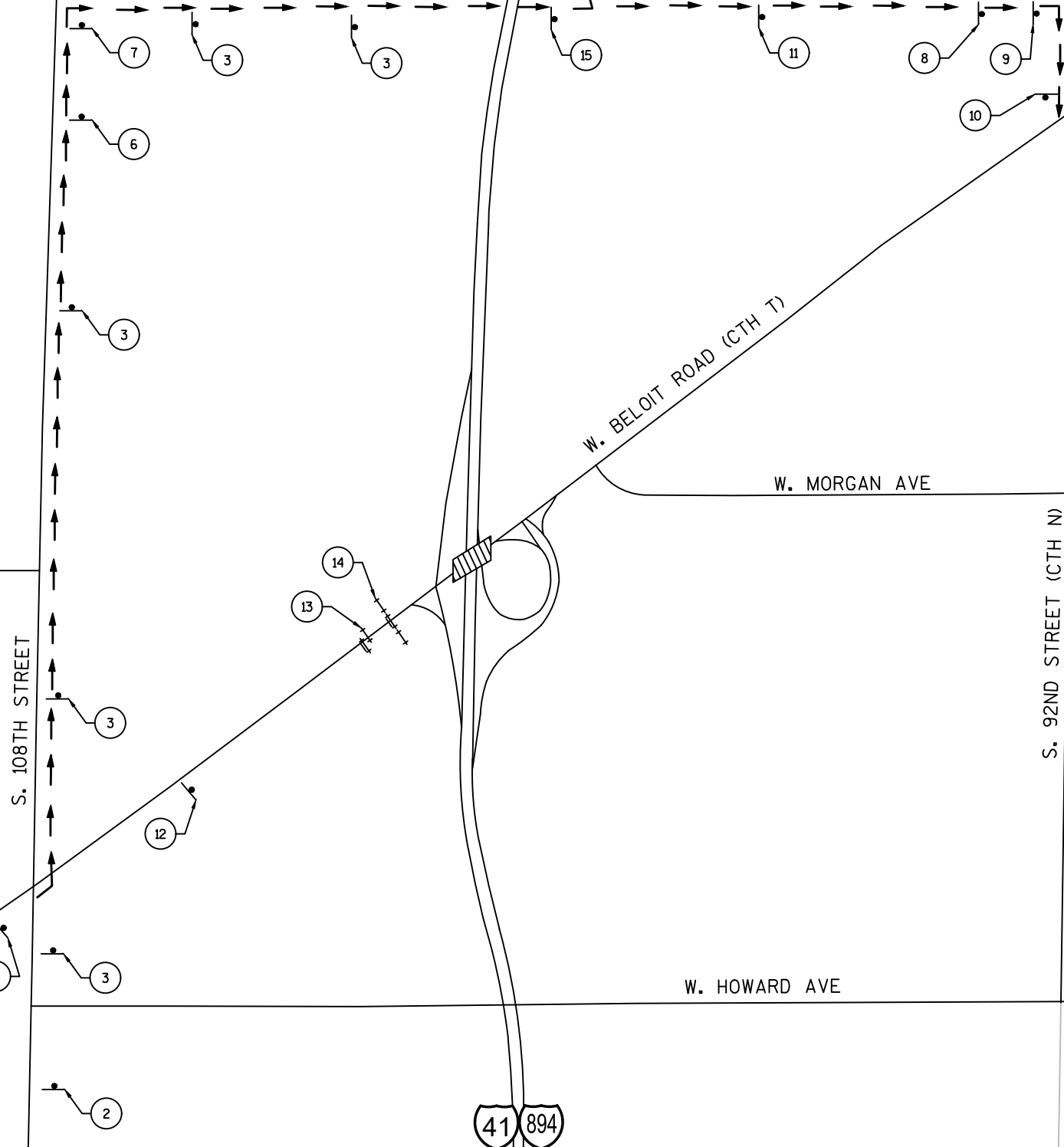
COUNTY: MILWAUKEE

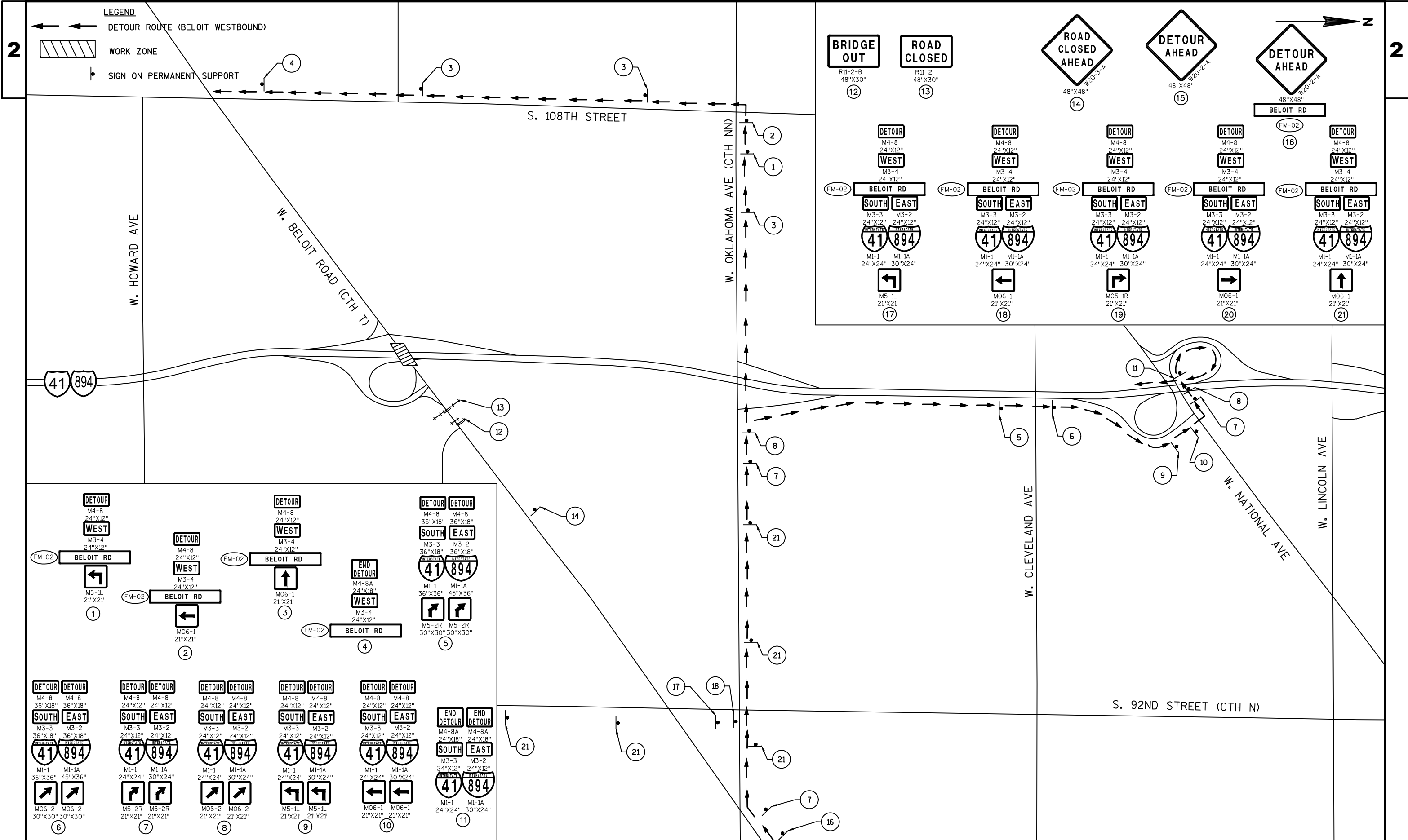
TRAFFIC CONTROL - STAGE B (BELOIT ROAD BRIDGE PAINTING)

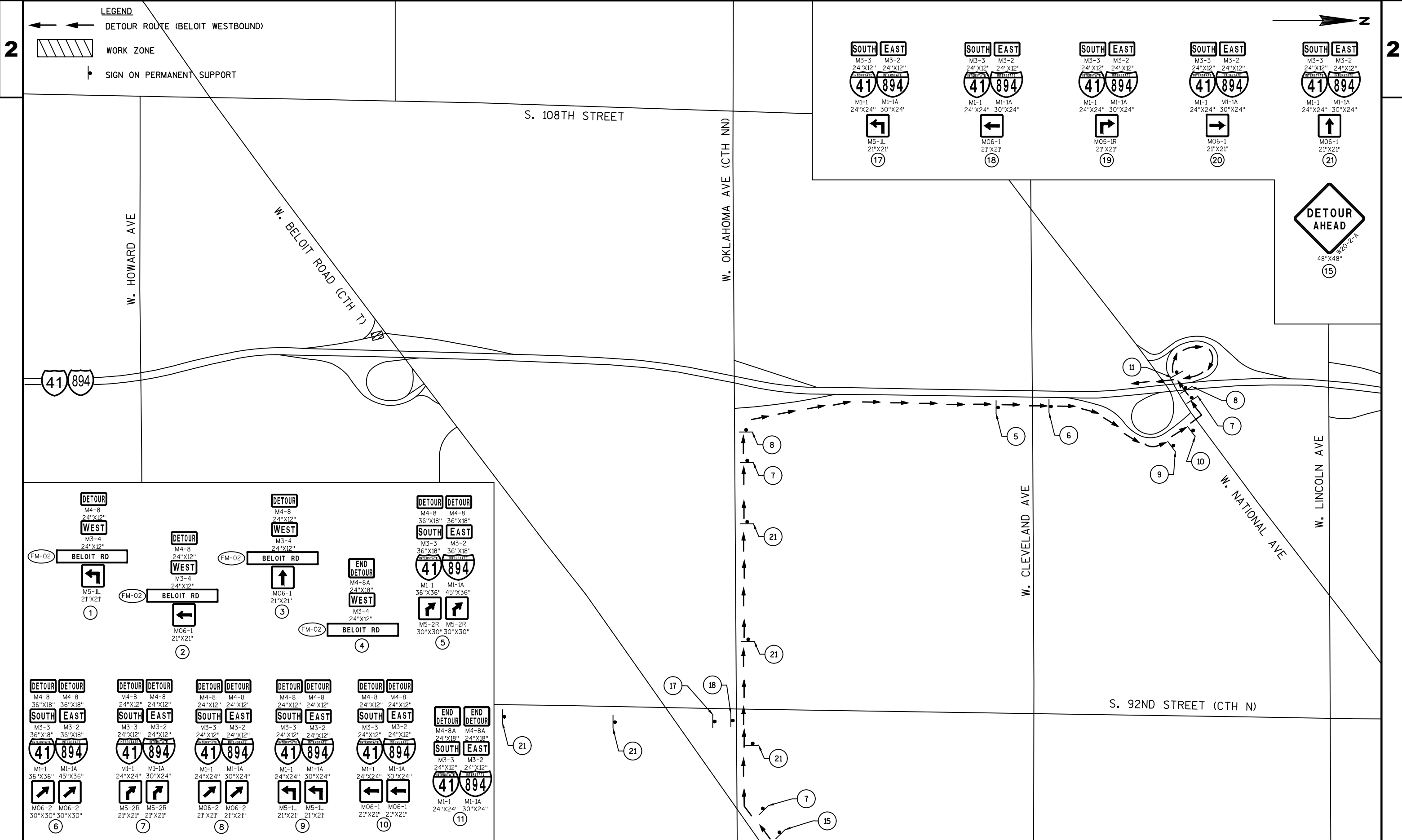
SHEET

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PROJECT NO:1100-35-70

HWY:IH 894/ 41

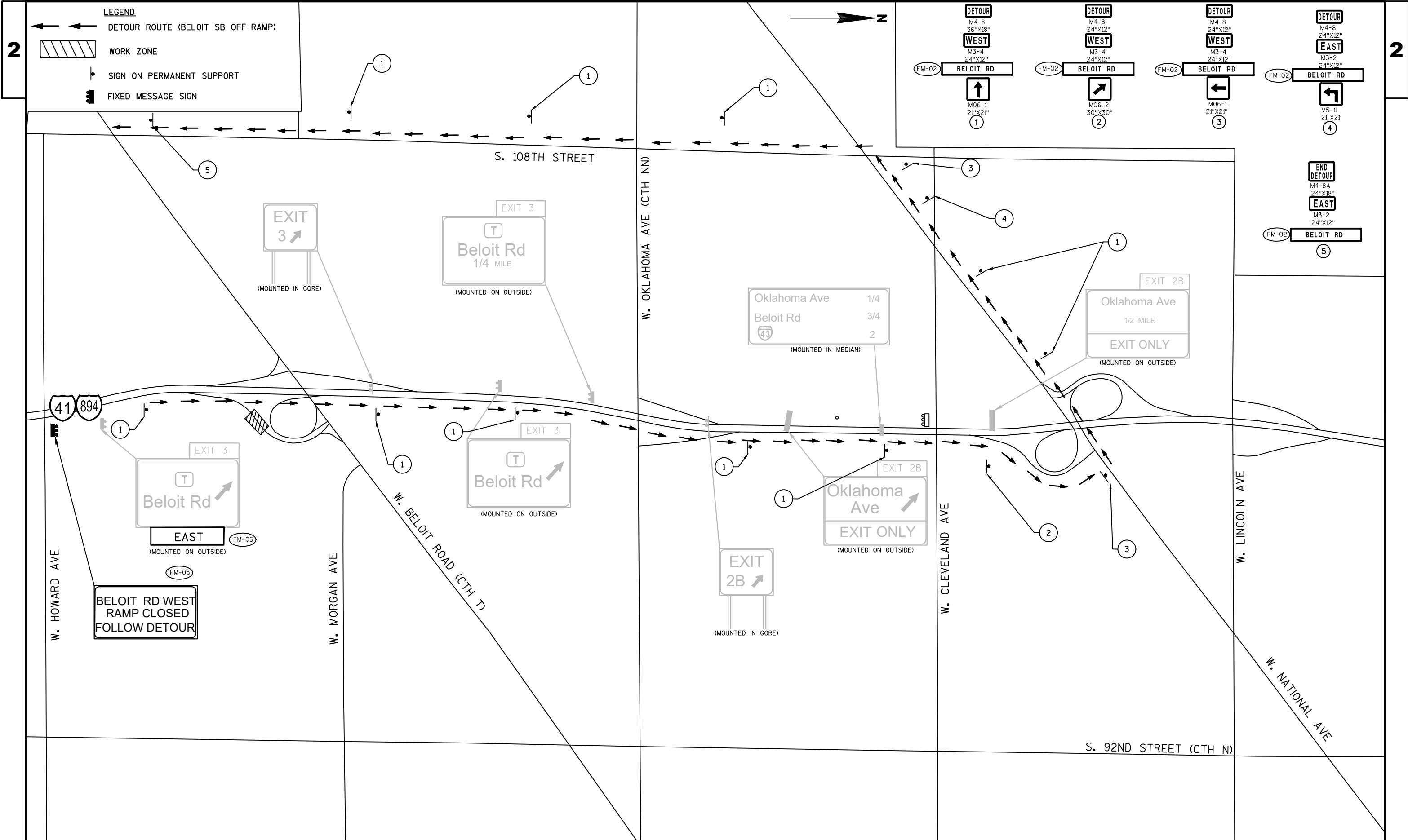
COUNTY:MILWAUKEE

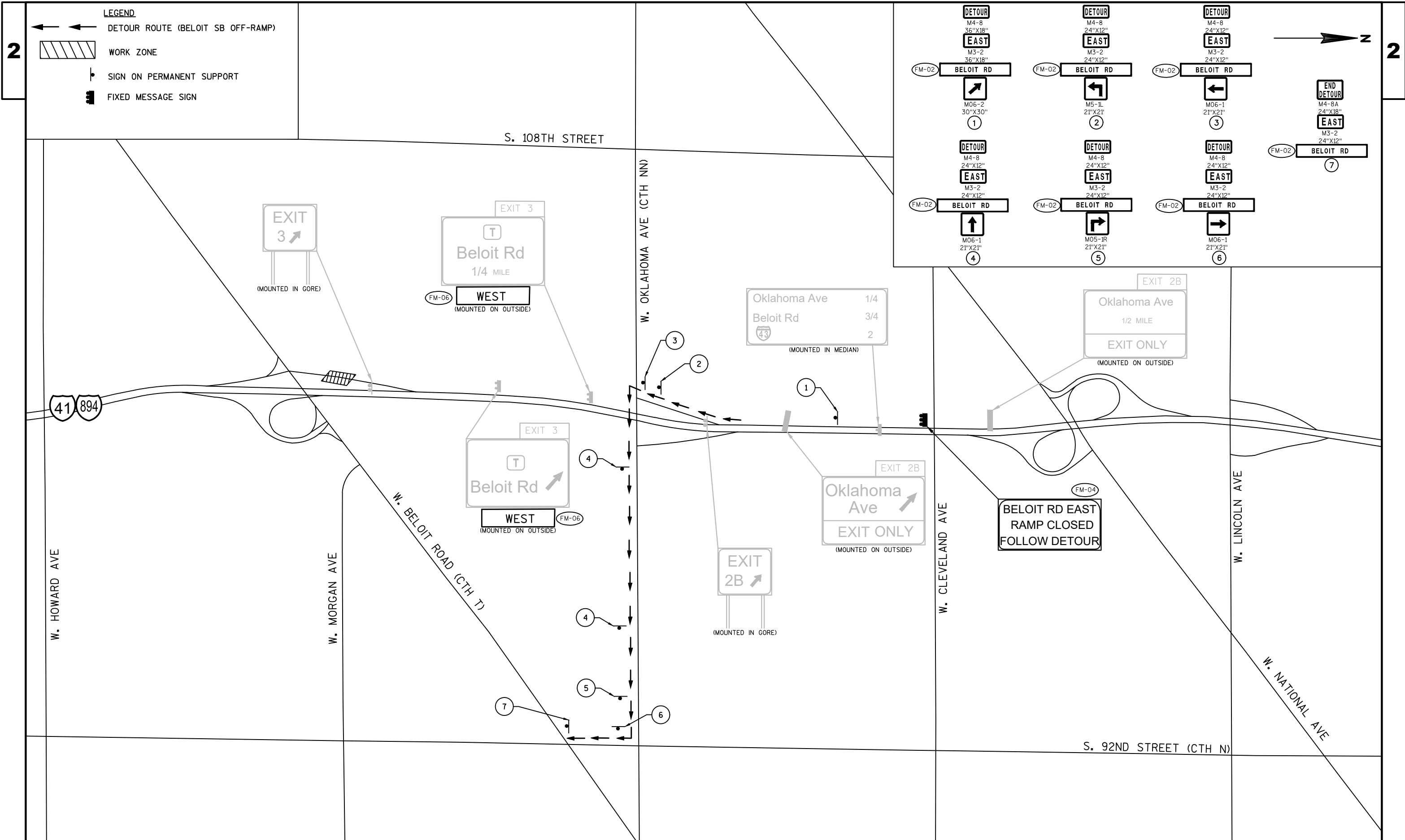
BELOIT SOUTHBOUND ON-RAMP - DETOUR

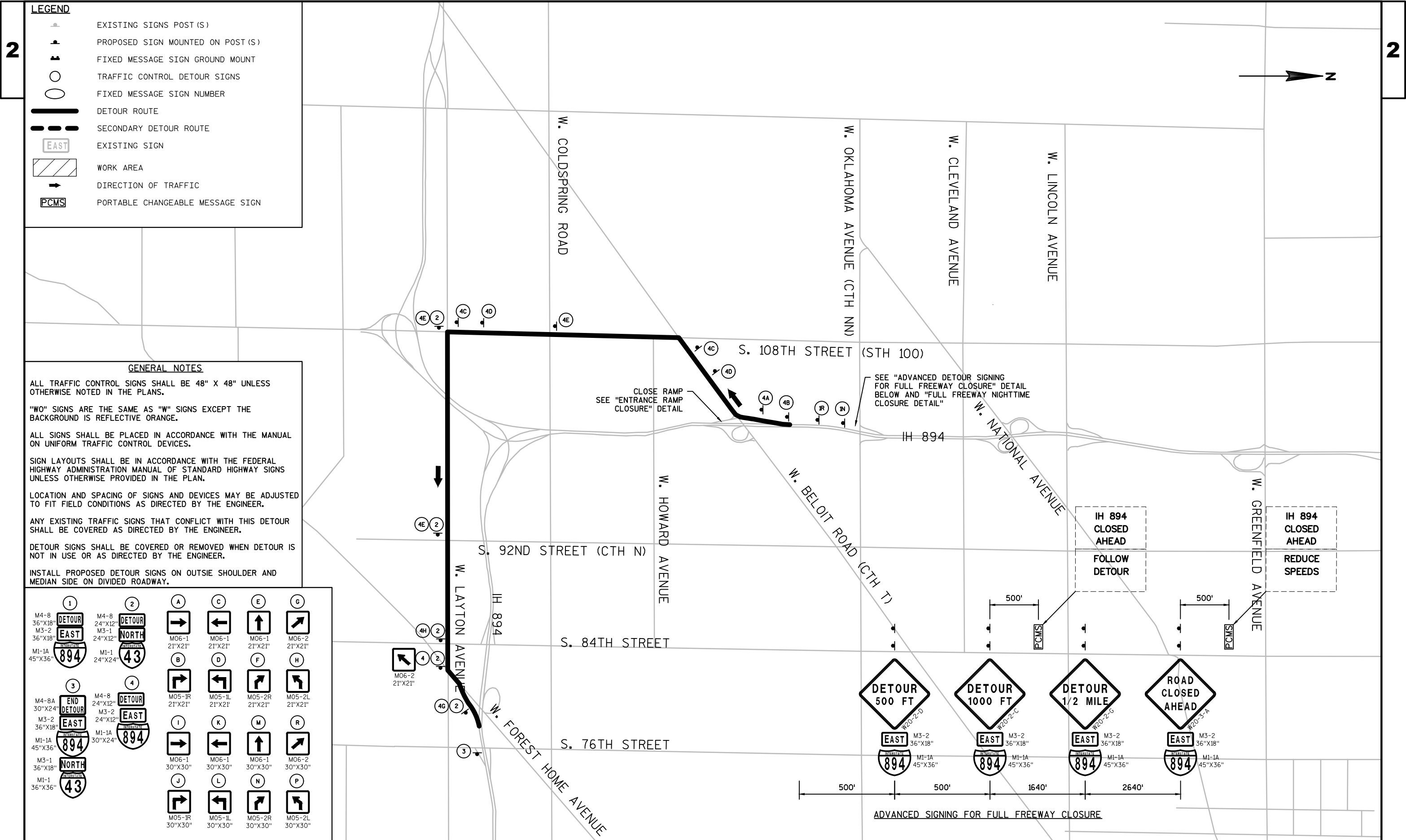
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LEGEND

EXISTING SIGNS POST(S)

PROPOSED SIGN MOUNTED ON POST(S)

FIXED MESSAGE SIGN GROUND MOUNT

TRAFFIC CONTROL DETOUR SIGNS

FIXED MESSAGE SIGN NUMBER

DETOUR ROUTE

SECONDARY DETOUR ROUTE

EXISTING SIGN

WORK AREA

DIRECTION OF TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGN

GENERAL NOTES

ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.

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

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS UNLESS OTHERWISE PROVIDED IN THE PLAN.

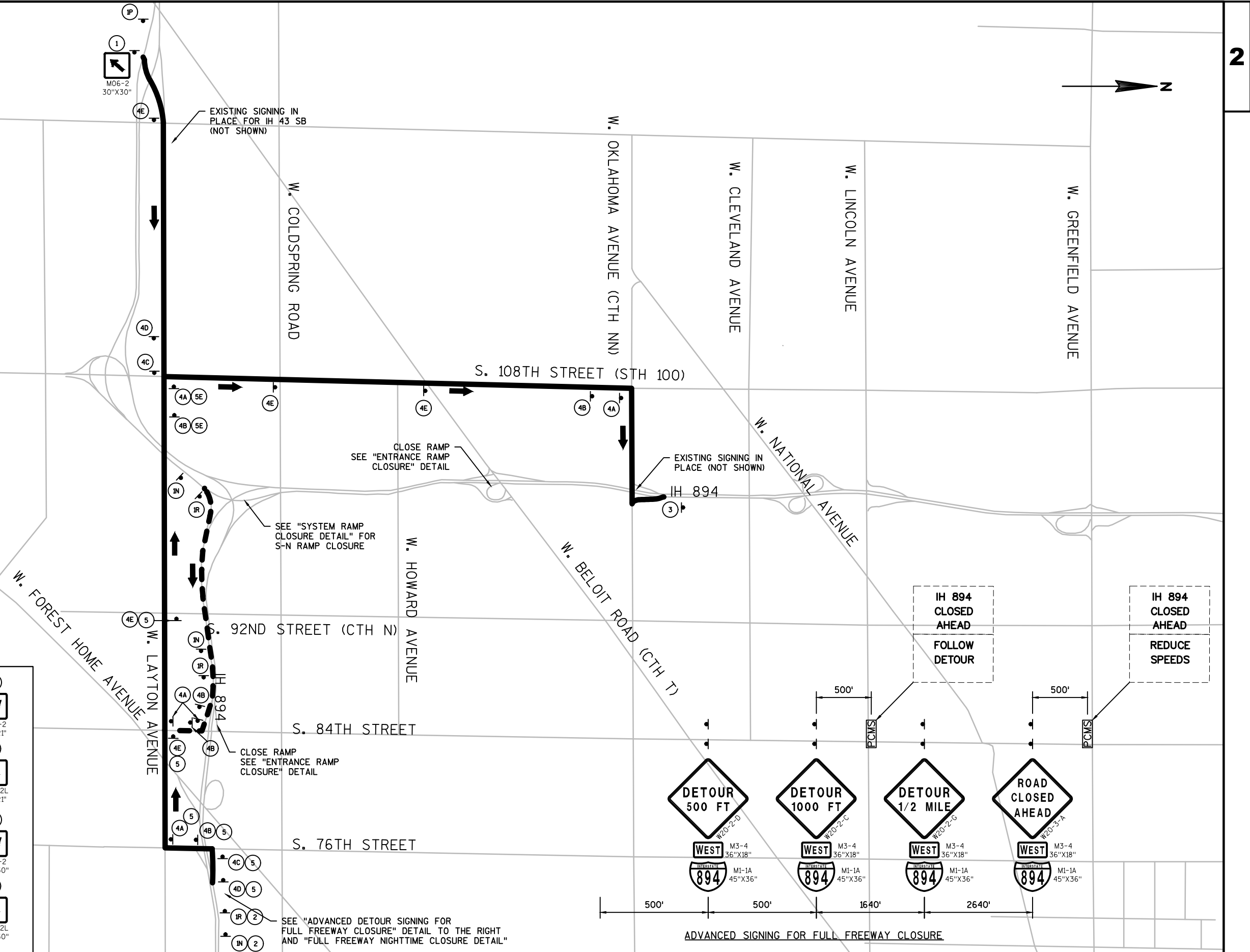
LOCATION AND SPACING OF SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

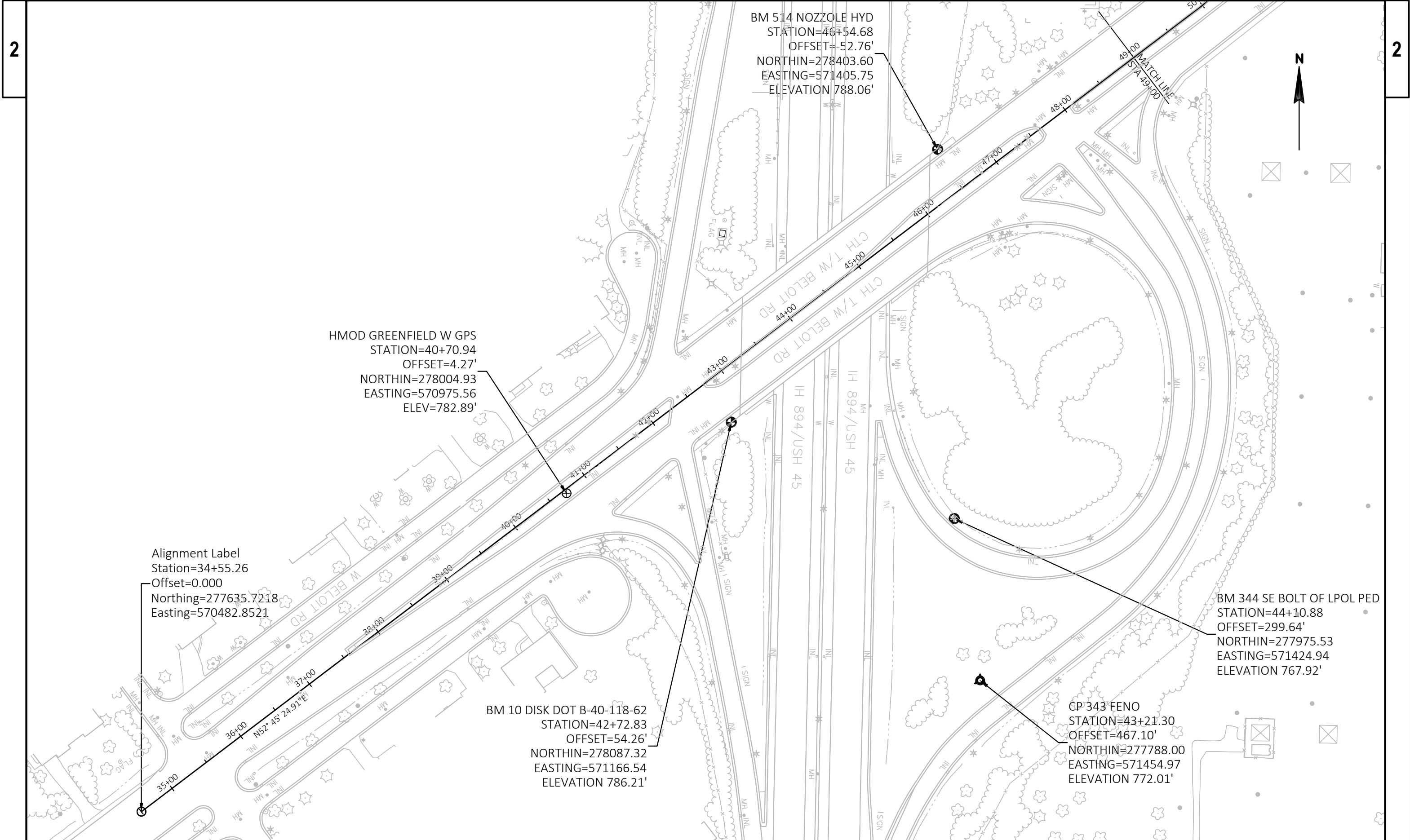
ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS DETOUR SHALL BE COVERED AS DIRECTED BY THE ENGINEER.

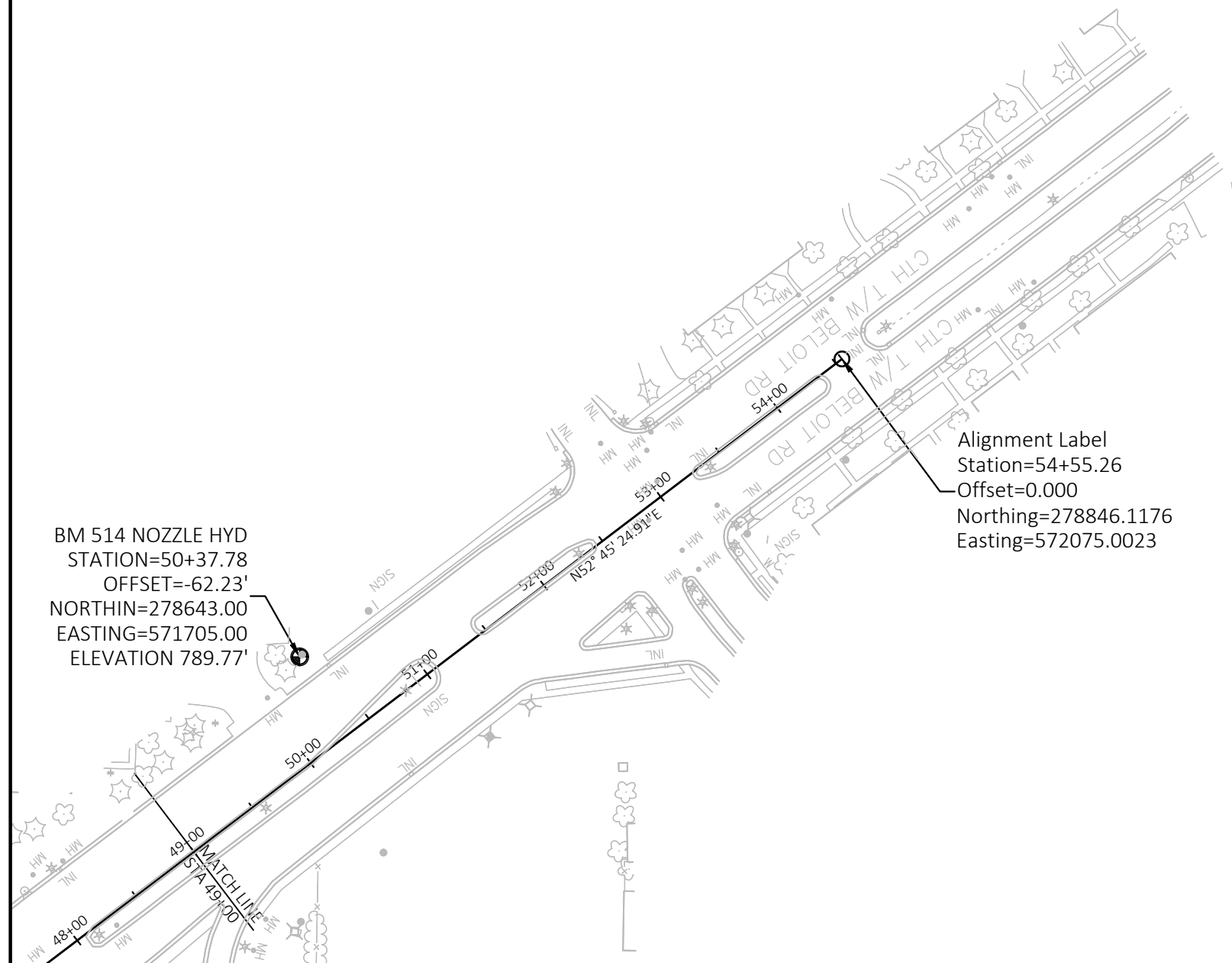
DETOUR SIGNS SHALL BE COVERED OR REMOVED WHEN DETOUR IS NOT IN USE OR AS DIRECTED BY THE ENGINEER.

INSTALL PROPOSED DETOUR SIGNS ON OUTSIDE SHOULDER AND MEDIAN SIDE ON DIVIDED ROADWAY.

1 M4-8 36"x18" M3-4 36"x18" M1-1A 45"x36"	2 M4-8 36"x18" M3-3 36"x18" M1-1 36"x36"	A M06-1 21"x21"	C M06-1 21"x21"	E M06-1 21"x21"	G M06-2 21"x21"
3 M4-8A 30"x24" M3-4 36"x18" M1-1A 45"x36"	4 M4-8 24"x12" M3-4 24"x12" M1-1A 24"x24"	B M05-1R 21"x21"	D M05-1L 21"x21"	F M05-2R 21"x21"	H M05-2L 21"x21"
M3-3 36"x18" M1-1 36"x36"	5 M4-8 24"x12" M3-3 24"x12" M1-1 24"x24"	I M06-1 30"x30"	K M06-1 30"x30"	M M06-1 30"x30"	R M06-2 30"x30"
M3-3 36"x18" M1-1 36"x36"	J M05-1R 30"x30"	L M05-1L 30"x30"	N M05-2R 30"x30"	P M05-2L 30"x30"	







PROJECT NO: 1100-35-70

HWY: IH 894

COUNTY: MILWAUKEE

ALIGNMENT & CONTROL POINT PLAN

SHEET

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Estimate Of Quantities

1100-35-70

Line	Item	Item Description	Unit	Total	Qty
0002	204.0100	Removing Pavement	SY	791.000	791.000
0004	204.0150	Removing Curb & Gutter	LF	785.000	785.000
0006	204.0195	Removing Concrete Bases	EACH	20.000	20.000
0008	204.9105.S	Removing (item description) .31 Traffic Signals (USH 45/IH 894 EB Ramps &CH T	LS	1.000	1.000
0010	204.9105.S	Removing (item description) .32 Traffic Signals (USH 45/IH 894 WB Ramps &CH T	LS	1.000	1.000
0012	204.9105.S	Removing (item description) .33 Loop Detector Wire and Lead-In Cable USH 45/IH 894 EB Ramps &CH T	LS	1.000	1.000
0014	204.9105.S	Removing (item description) .34 Loop Detector Wire and Lead-In Cable USH 45/IH 894 WB Ramps &CH T	LS	1.000	1.000
0016	205.0100	Excavation Common	CY	224.000	224.000
0018	213.0100	Finishing Roadway (project) 01. 1100-35-70	EACH	1.000	1.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	422.000	422.000
0022	320.0155	Concrete Base 9-Inch	SY	169.400	169.400
0024	390.0403	Base Patching Concrete Shes	SY	130.000	130.000
0026	415.0410	Concrete Pavement Approach Slab	SY	622.000	622.000
0028	416.0610	Drilled Tie Bars	EACH	244.000	244.000
0030	416.0620	Drilled Dowel Bars	EACH	389.000	389.000
0032	465.0105	Asphaltic Surface	TON	20.000	20.000
0034	502.2000	Compression Joint Sealer Preformed Elastomeric (width) 01. 3-Inch	LF	545.000	545.000
0036	502.3100	Expansion Device (structure) 01. B-40-118	LS	1.000	1.000
0038	502.3200	Protective Surface Treatment	SY	2,489.000	2,489.000
0040	502.3215.S	Protective Surface Treatment Reseal B-40-118	SY	771.000	771.000
0042	502.4205	Adhesive Anchors No. 5 Bar	EACH	210.000	210.000
0044	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	7,210.000	7,210.000
0046	506.2610	Bearing Pads Elastomeric Laminated B-40-118	EACH	56.000	56.000
0048	506.7050.S	Removing Bearings (structure) 01. B-40-118	EACH	56.000	56.000
0050	506.7070.S	Hinge Replacement	EACH	28.000	28.000
0052	509.0301	Preparation Decks Type 1	SY	100.000	100.000
0054	509.0302	Preparation Decks Type 2	SY	15.000	15.000
0056	509.0500	Cleaning Decks	SY	2,365.000	2,365.000
0058	509.1000	Joint Repair	SY	121.000	121.000
0060	509.1200	Curb Repair	LF	5.000	5.000
0062	509.1500	Concrete Surface Repair	SF	305.000	305.000
0064	509.2000	Full-Depth Deck Repair	SY	1.000	1.000
0066	509.2500	Concrete Masonry Overlay Decks	CY	178.000	178.000
0068	514.0900	Adjusting Floor Drains	EACH	6.000	6.000
0070	517.1800.S	Structure Repainting Recycled Abrasive (structure) 01. B-40-118	LS	1.000	1.000

Estimate Of Quantities

1100-35-70

Line	Item	Item Description	Unit	Total	Qty
0072	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 01. B-40-118	LS	1.000	1.000
0074	517.6001.S	Portable Decontamination Facility B-40-118	EACH	1.000	1.000
0076	601.0331	Concrete Curb & Gutter 31-Inch	LF	745.000	745.000
0078	602.0410	Concrete Sidewalk 5-Inch	SF	2,408.000	2,408.000
0080	602.0515	Curb Ramp Detectable Warning Field Natural Patina	SF	137.000	137.000
0082	602.0615	Curb Ramp Detectable Warning Field Radial Natural Patina	SF	20.000	20.000
0084	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1100-35-70	EACH	1.000	1.000
0086	619.1000	Mobilization	EACH	1.000	1.000
0088	620.0300	Concrete Median Sloped Nose	SF	775.000	775.000
0090	628.1504	Silt Fence	LF	120.000	120.000
0092	628.1520	Silt Fence Maintenance	LF	12.000	12.000
0094	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0096	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0098	628.7010	Inlet Protection Type B	EACH	14.000	14.000
0100	628.7015	Inlet Protection Type C	EACH	2.000	2.000
0102	629.0210	Fertilizer Type B	CWT	0.014	0.014
0104	631.1000	Sod Lawn	SY	23.000	23.000
0106	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	24.000	24.000
0108	634.0814	Posts Tubular Steel 2x2-Inch X 14-FT	EACH	3.000	3.000
0110	637.2210	Signs Type II Reflective H	SF	197.625	197.625
0112	637.2215	Signs Type II Reflective H Folding	SF	82.060	82.060
0114	637.2230	Signs Type II Reflective F	SF	13.000	13.000
0116	638.2102	Moving Signs Type II	EACH	15.000	15.000
0118	638.2602	Removing Signs Type II	EACH	20.000	20.000
0120	638.3000	Removing Small Sign Supports	EACH	24.000	24.000
0122	642.5401	Field Office Type D	EACH	1.000	1.000
0124	643.0300	Traffic Control Drums	DAY	29,379.000	29,379.000
0126	643.0420	Traffic Control Barricades Type III	DAY	2,944.000	2,944.000
0128	643.0705	Traffic Control Warning Lights Type A	DAY	944.000	944.000
0130	643.0715	Traffic Control Warning Lights Type C	DAY	7,254.000	7,254.000
0132	643.0800	Traffic Control Arrow Boards	DAY	225.000	225.000
0134	643.0900	Traffic Control Signs	DAY	19,535.000	19,535.000
0136	643.1000	Traffic Control Signs Fixed Message	SF	364.750	364.750
0138	643.1050	Traffic Control Signs PCMS	DAY	384.000	384.000
0140	643.4100.S	Traffic Control Interim Lane Closure	EACH	80.000	80.000
0142	643.5000	Traffic Control	EACH	1.000	1.000
0144	646.1020	Marking Line Epoxy 4-Inch	LF	4,040.000	4,040.000

Estimate Of Quantities

1100-35-70

Line	Item	Item Description	Unit	Total	Qty
0146	646.5020	Marking Arrow Epoxy	EACH	10.000	10.000
0148	646.5120	Marking Word Epoxy	EACH	5.000	5.000
0150	646.6120	Marking Stop Line Epoxy 18-Inch	LF	227.000	227.000
0152	646.7120	Marking Diagonal Epoxy 12-Inch	LF	226.000	226.000
0154	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	390.000	390.000
0156	646.8220	Marking Island Nose Epoxy	EACH	6.000	6.000
0158	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	7,787.000	7,787.000
0160	649.0250	Temporary Marking Line Removable Tape 8-Inch	LF	188.000	188.000
0162	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	1,168.000	1,168.000
0164	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	1,330.000	1,330.000
0166	652.0615	Conduit Special 3-Inch	LF	2,192.000	2,192.000
0168	652.0800	Conduit Loop Detector	LF	750.000	750.000
0170	653.0135	Pull Boxes Steel 24x36-Inch	EACH	5.000	5.000
0172	653.0140	Pull Boxes Steel 24x42-Inch	EACH	28.000	28.000
0174	653.0905	Removing Pull Boxes	EACH	22.000	22.000
0176	654.0101	Concrete Bases Type 1	EACH	10.000	10.000
0178	654.0105	Concrete Bases Type 5	EACH	1.000	1.000
0180	654.0110	Concrete Bases Type 10	EACH	5.000	5.000
0182	654.0217	Concrete Control Cabinet Bases Type 9 Special	EACH	2.000	2.000
0184	655.0230	Cable Traffic Signal 5-14 AWG	LF	738.000	738.000
0186	655.0240	Cable Traffic Signal 7-14 AWG	LF	3,439.000	3,439.000
0188	655.0260	Cable Traffic Signal 12-14 AWG	LF	773.000	773.000
0190	655.0270	Cable Traffic Signal 15-14 AWG	LF	469.000	469.000
0192	655.0320	Cable Type UF 2-10 AWG Grounded	LF	1,402.000	1,402.000
0194	655.0510	Electrical Wire Traffic Signals 12 AWG	LF	1,011.000	1,011.000
0196	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	4,316.000	4,316.000
0198	655.0610	Electrical Wire Lighting 12 AWG	LF	1,386.000	1,386.000
0200	655.0700	Loop Detector Lead In Cable	LF	3,429.000	3,429.000
0202	655.0800	Loop Detector Wire	LF	2,832.000	2,832.000
0204	655.0900	Traffic Signal EVP Detector Cable	LF	1,470.000	1,470.000
0206	656.0200	Electrical Service Meter Breaker Pedestal (location) .31 USH 45/IH 894 EB Ramps & CTH T	LS	1.000	1.000
0208	656.0200	Electrical Service Meter Breaker Pedestal (location) .32 USH 45/IH 894 WB Ramps & CTH T	LS	1.000	1.000
0210	657.0100	Pedestal Bases	EACH	10.000	10.000
0212	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	1.000	1.000
0214	657.0322	Poles Type 5-Aluminum	EACH	1.000	1.000
0216	657.0405	Traffic Signal Standards Aluminum 3.5-FT	EACH	1.000	1.000
0218	657.0420	Traffic Signal Standards Aluminum 13-FT	EACH	7.000	7.000

Estimate Of Quantities

1100-35-70

Line	Item	Item Description	Unit	Total	Qty
0220	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	1.000	1.000
0222	657.0430	Traffic Signal Standards Aluminum 10-FT	EACH	1.000	1.000
0224	657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	EACH	2.000	2.000
0226	658.0173	Traffic Signal Face 3S 12-Inch	EACH	19.000	19.000
0228	658.0174	Traffic Signal Face 4S 12-Inch	EACH	4.000	4.000
0230	658.0416	Pedestrian Signal Face 16-Inch	EACH	4.000	4.000
0232	658.0500	Pedestrian Push Buttons	EACH	5.000	5.000
0234	658.5069	Signal Mounting Hardware (location) .31 USH 45/IH 894 EB Ramps & CTH T	LS	1.000	1.000
0236	658.5069	Signal Mounting Hardware (location) .32 USH 45/IH 894 WB Ramps & CTH T	LS	1.000	1.000
0238	659.1125	Luminaires Utility LED C	EACH	10.000	10.000
0240	661.0200	Temporary Traffic Signals for Intersections (location) .31 USH 45/IH 894 EB Ramps & CTH T	LS	1.000	1.000
0242	661.0300	Generators	DAY	1.000	1.000
0244	670.0100	Field System Integrator .31 CTH T Traffic Signals	LS	1.000	1.000
0246	670.0200	ITS Documentation .31 CTH T Traffic Signals	LS	1.000	1.000
0248	673.0105	Communication Vault Type 1	EACH	3.000	3.000
0250	678.0006	Install Fiber Optic Cable Outdoor Plant 6-CT	LF	1,500.000	1,500.000
0252	678.0012	Install Fiber Optic Cable Outdoor Plant 12-CT	LF	681.000	681.000
0254	678.0200	Fiber Optic Splice Enclosure	EACH	2.000	2.000
0256	678.0300	Fiber Optic Splice	EACH	14.000	14.000
0258	678.0500	Communication System Testing .31 CTH T Traffic Signals	LS	1.000	1.000
0260	690.0250	Sawing Concrete	LF	905.000	905.000
0262	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0264	715.0502	Incentive Strength Concrete Structures	DOL	1,068.000	1,068.000
0266	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	400.000	400.000
0268	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	700.000	700.000
0270	SPV.0060	Special .01 Traffic Control Full Freeway Closure	EACH	18.000	18.000
0272	SPV.0060	Special .02 Traffic Control Close-Open Freeway Entrance Ramp	EACH	30.000	30.000
0274	SPV.0060	Special .03 Traffic Control Close-Open Freeway to Freeway System Ramp	EACH	18.000	18.000
0276	SPV.0060	Special .32 Install Poles Type 9	EACH	1.000	1.000
0278	SPV.0060	Special .33 Install Poles Type 10	EACH	4.000	4.000
0280	SPV.0060	Special .34 Install Monotube Arms 25-FT	EACH	2.000	2.000
0282	SPV.0060	Special .35 Install Monotube Arms 30-FT	EACH	3.000	3.000
0284	SPV.0060	Special .36 Install Luminaire Arms Steel 15-FT	EACH	8.000	8.000
0286	SPV.0060	Special .40 Junction Box Repair	EACH	3.000	3.000
0288	SPV.0060	Special .41 Embedded Galvanic Anodes	EACH	150.000	150.000

Estimate Of Quantities

1100-35-70					
Line	Item	Item Description	Unit	Total	Qty
0290	SPV.0060	Special .42 Steel Cover Plate Weld Testing Special	EACH	140.000	140.000
0292	SPV.0060	Special .43 Steel Crack Repair Special	EACH	14.000	14.000
0294	SPV.0075	Special .01 Pavement Cleanup Project 1100-35-70	HRS	40.000	40.000
0296	SPV.0090	Special .01 Marking Contrast Epoxy 4-INCH	LF	613.000	613.000
0298	SPV.0090	Special .02 Marking Contrast Epoxy 8-INCH	LF	1,629.000	1,629.000
0300	SPV.0105	Special .01 Survey Project 1100-35-70	LS	1.000	1.000
0302	SPV.0105	Special .31 Transport and Install State Furnished Traffic Signal Cabinet USH 45/IH 894 E	LS	1.000	1.000
0304	SPV.0105	Special .32 Transport and Install State Furnished Traffic Signal Cabinet USH 45/IH 894 W	LS	1.000	1.000
0306	SPV.0105	Special .33 Transport and Install State Furnished Radar Detection Sys. USH 45/IH 894 EB	LS	1.000	1.000
0308	SPV.0105	Special .34 Transport and Install State Furnished Radar Detection Sys. USH 45/IH 894 WB	LS	1.000	1.000
0310	SPV.0105	Special .35 Install Fiber Optic Communications in Cabinet USH 45/IH 894 EB Ramps & CTH T	LS	1.000	1.000
0312	SPV.0105	Special .36 Install Fiber Optic Communications in Cabinet USH 45/IH 894 WB Ramps & CTH T	LS	1.000	1.000
0314	SPV.0105	Special .37 Transport and Install State Furnished EVP USH 45/ IH 894 EB Ramps & CTH T	LS	1.000	1.000
0316	SPV.0105	Special .38 Transport and Install State Furnished EVP USH 45/ IH 894 WB Ramps & CTH T	LS	1.000	1.000
0318	SPV.0105	Special .39 Transport Traffic Sig and Int Ltg Materials USH 45/ IH 894 EB Ramps & CTH T	LS	1.000	1.000
0320	SPV.0105	Special .40 Fence Repair	LS	1.000	1.000
0322	SPV.0105	Special .41 Abutment Backwall Repair	LS	1.000	1.000
0324	SPV.0105	Special .42 Transport Traffic Sig and Int Ltg Materials USH 45/ IH 894 WB Ramps & CTH T	LS	1.000	1.000
0326	SPV.0165	Special .40 Removing Loose Concrete	SF	20.000	20.000

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REMOVING ITEMS					
			204.0100 REMOVING PAVEMENT	204.0150 REMOVING CURB & GUTTER	205.0100 EXCAVATION COMMON
CATEGORY	ROADWAY	STATION	SY	LF	CY
1000	BELOIT RD	37+25 - 48+00	356	265	95
	BELOIT RD	48+00 - 51+75	434	520	129
	TOTAL		791	785	224

SAWCUT			
			690.0250 SAWING CONCRETE
CATEGORY	ROADWAY	STATION	LF
1000	BELOIT RD	37+25 - 48+00	275
	BELOIT RD	48+00 - 51+75	508
	IH 894 SB EXIT RAMP		70
	IH 894 NB EXIT RAMP		52
	TOTAL		

CONCRETE CURB & GUTTER 31-INCH			
			601.0331 CONCRETE CURB & GUTTER 31- INCH
CATEGORY	ROADWAY	STATION	LF
1000	BELOIT RD	37+25 - 48+00	265
	BELOIT RD	48+00 - 51+75	480
	TOTAL		745

ROADWAY			
			SPV.0075.01
			PAVEMENT CLEANUP PROJECT 1100-35-70
CATEGORY	PROJECT	LOCATION	HRS
1000	1100-35-70	BELOIT RD	15
		IH 894	15
		UNDISTRIBUTED	10
	TOTAL		40

PAVEMENT ITEMS													
			305.0120 BASE AGGREGATE DENSE 1 1/4-INCH	320.0155 CONCRETE BASE 9-INCH	390.0403 BASE PATCHING CONCRETE SHES	415.0410 CONCRETE PAVEMENT APPROACH SLAB	416.0610 DRILLED TIE BARS	416.0620 DRILLED DOWEL BARS	465.0105 ASPHALTIC SURFACE 2- INCH	602.0410 CONCRETE SIDEWALK 5- INCH	602.0515 CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA	602.0615 CURB RAMP DETECTABLE WARNING FIELD RADIAL NATURAL PATINA	620.0300 CONCRETE MEDIAN SLOPED NOSE
CATEGORY	ROADWAY	STATION	TON	SY	SY	SY	EACH	EACH	TON	SF	SF	SF	SF
1000	BELOIT RD	37+25 - 48+00	181	17.2	39	339	110	156	2.0	1018	37	20	155
	BELOIT RD	48+00 - 51+75	241	152.2	50	283	120	157	18.0	1390	100	-	620
	IH 894 SB EXIT RAMP				28		8	42					
	IH 894 NB EXIT RAMP				13		6	34					
TOTAL			422	169.4	130	622	244	389	20	2,408	137	20	775

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EROSION CONTROL										
			628.1504	628.1520	628.1905	628.1910	628.7010	628.7015	631.1000	629.0210
			SILT FENCE	SILT FENCE MAINTENANCE	MOBILIZATIONS EROSION CONTROL	MOBILIZATIONS EMERGENCY EROSION CONTROL	INLET PROTECTION TYPE B	INLET PROTECTION TYPE C	SOD LAWN	FERTILIZER, TYPE B
CATEGORY	ROADWAY	STATION	LF	LF	EACH	EACH	EACH	EACH	SY	CWT
1000	BELOIT RD	37+25 - 48+00	65	-	2	1	5	1	11	0.007
	BELOIT RD	48+00 - 51+75	55	-	2	1	9	1	12	0.007
	UNDISTRIBUTED	-	-	12	2	1	-	-	-	-
	TOTAL		120	12	6	3	14	2	23	0.014

3

PAVEMENT MARKING															
			646.1020		646.5020	646.5120	646.6120	646.7120	646.7420	646.8220	649.0150		649.0250	SPV.0090.01	SPV.0090.02
			MARKING LINE EPOXY 4-INCH		MARKING ARROWS EPOXY	MARKING WORDS EPOXY	MARKING STOP LINE EPOXY 18- INCH	MARKING DIAGONAL EPOXY 12-INCH	MARKING CROSSWALK EPOXY TRANVERSE LINE 6-INCH	MARKING ISLAND NOSE EPOXY (YELLOW)	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH	TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH	MARKING CONTRAST EPOXY 4- INCH	MARKING CONTRAST EPOXY 8- INCH	
			WHITE	YELLOW							WHITE	YELLOW	WHITE		
CATEGORY	ROADWAY	STATION	LF	LF	EACH	EACH	LF	LF	LF	EACH	LF	LF	LF	LF	LF
1000	BELOIT RD BELOIT RD	37+25 - 48+00	1051	1930	6	4	137	226	290	4	2957	3270	188	468	1268
		48+00 - 51+00	489	570	4	1	90	-	100	2	890	670	--	145	361
		TOTAL	1540	2500	10	5	227	226	390	6	3847	3940	188	613	1629
			4040								7787				

TRAFFIC CONTROL ITEMS																	
				643.0300		643.0420		643.0705		643.0715		643.0800		643.0900		643.1050	
				TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADE TYPE III		TRAFFIC CONTROL WARNING LIGHT TYPE A		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL ARROW BOARDS		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL SIGNS PCMS	
CATEGORY	ROADWAY	STATION	DURATION*	EACH*	DAY	EACH*	DAY	EACH*	DAY	EACH*	DAY	EACH*	DAY	EACH*	DAY	EACH*	DAY
1000	BELOIT RD STAGE 1	35+00-55+00	60	208	12,480	22	1,320	-	-	41	2460	-	-	55	3300	2	120
	BELOIT RD STAGE 2	35+00-55+00	60	157	9,420	18	1,080	-	-	31	1860	-	-	47	2820	2	120
	OKLAHOMA AVE	-	120	-	-	-	-	-	-	-	-	-	-	12	1440	-	-
	108TH STREET	-	120	-	-	-	-	-	-	-	-	-	-	11	1320	-	-
	92ND STREET	-	120	-	-	-	-	-	-	-	-	-	-	2	240	-	-
	NATIONAL AVE	-	120	-	-	-	-	-	-	-	-	-	-	12	1440	-	-
	USH 41/USH 894	-	120	-	-	-	-	-	-	-	-	-	-	34	4080	-	-
	BELOIT RD EASTBOUND (FULL CLOSURE)	-	2	-	-	5	10	10	20	-	-	-	-	123	246	-	-
	BELOIT RD WESTBOUND (FULL CLOSURE)	-	2	-	-	6	12	12	24	-	-	-	-	151	302	-	-
	IH 894 EASTBOUND, STAGE A		9	72	648	2	18	4	36	24	216	3	27	15	135	-	-
	IH 894 WESTBOUND, STAGE A		9	74	666	2	18	4	36	24	216	3	27	15	135	-	-
	IH 894 EASTBOUND, STAGE B		9	98	882	11	99	5	45	38	342	3	27	21	189	-	-
	IH 894 WESTBOUND, STAGE B		9	106	954	2	18	5	45	49	441	3	27	18	162	-	-
	IH 894 EASTBOUND, FULL CLOSURE		9	182	1638	16	144	32	288	58	522	5	45	152	1368	6	54
	IH 894 WESTBOUND, FULL COSURE		9	299	2691	25	225	50	450	133	1197	8	72	262	2358	10	90
	UNDISTRIBUTED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL				29,379		2,944		944		7254		225		19,535		384	

*=FOR INFORMATION ONLY

TRAFFIC CONTROL SIGNS FIXED MESSAGES				
				643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGES
CATEGORY	ROADWAY	LOCATION	SIGN # & SIZE	SF
1000	BELOIT RD	VARIOUS	FM-02	250.00
		IH 894	FM-03	49.50
		IH 894	FM-04	49.50
		IH 894	FM-05	5.25
		IH 894	FM-06	10.5
	TOTAL			364.75

TRAFFIC CONTROL CLOSURES					
		643.4100.S	SPV.0060.01	SPV.0060.02	SPV.0060.03
		TRAFFIC CONTROL INTERIM LANE CLOSURE	TRAFFIC CONTROL FULL FREEWAY CLOSURE	TRAFFIC CONTROL CLOSE-OPEN FREEWAY ENTRANCE RAMP	TRAFFIC CONTROL CLOSE OPEN FREEWAY TO FREEWAY SYSTEM RAMP
CATEGORY	ROADWAY	EACH	EACH	EACH	EACH
1000	IH 894 EB	40	9	9	-
	IH 894 WB	40	9	21	18
	TOTAL	80	18	30	18

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TYPE II PERMANENT SIGNING -															1100-35-70 IH 894
SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE			637.2210	637.2230	637.2215	638.2602	638.3000	634.0618	634.0814	638.2102	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
			W [IN.]	x	H [IN.]	SIGNS TYPE II REFLC H [SF]	SIGNS TYPE II REFLC F [SF]	SIGNS TYPE II REFLC H FOLDING [SF]	REMOVING SIGNS TYPE II [EA]	REMOVING SMALL SIGN SUPPORTS [EA]	WOOD POSTS 4"X 6"X18' [EA]	TUBULAR STEEL POSTS 2"X2"X14' [EA]	MOVE SIGNS TYPE II [EA]		
1	--	RESTRICTED LANE - LEFT LANE	--	x	--	--	--	--	1	1	--	--	--	--	REMOVE SIGN
2	R10-50L(2S)		--	30	x	36	7.500	--	--	--	--	--	--	--	MOUNT ON SIGNAL POLE
3	R10-64		--	--	x	--	--	--	--	--	1	--	1	--	--
4	R4-7(2S)		--	24	x	30	5.000	--	--	1	--	--	--	--	MOUNT ON SIGNAL POLE
5	J3-3		--	--	x	--	--	--	--	--	2	--	1	--	MOVE SIGN
6	R5-1A(2S)	--	36	x	24	6.000	--	--	1	--	--	--	--	--	4 FT MOUNT HEIGHT ON SIGNAL POLE
7	R5-1(3)	--	36	x	36	9.000	--	--	--	--	--	--	--	--	MOUNT ON SIGNAL POLE
8	R1-1F(3)	--	36	x	36	--	--	7.460	--	--	--	--	--	--	MOUNT ON SIGNAL POLE
9	R6-3(2S)	--	30	x	24	5.000	--	--	--	--	--	--	--	--	MOUNT ON SIGNAL POLE
10	R1-1F(3)	--	36	x	36	--	--	7.460	1	--	--	--	--	--	MOUNT ON SIGNAL POLE
11	R5-1(3)	--	36	x	36	9.000	--	--	--	--	--	--	--	--	MOUNT ON SIGNAL POLE
12	R5-1A(2S)	--	36	x	24	6.000	--	--	--	--	--	--	--	--	4 FT MOUNT HEIGHT ON SIGNAL POLE
13	R3-1(2M)	--	36	x	36	9.000	--	--	--	--	--	--	--	--	MOUNT ON MAST ARM
14	R6-2L(2S)	--	24	x	30	5.000	--	--	1	1	1	--	--	--	--
15	R1-1F(3)	--	36	x	36	--	--	7.460	--	--	--	--	--	#14	--
16	R3-1(2S)	--	24	x	24	4.000	--	--	--	--	1	--	--	--	--
17	R5-1(2S)	--	30	x	30	6.250	--	--	--	--	--	--	--	#16	BACK OF SIGN #16
18	R1-1F(3)	--	36	x	36	--	--	7.460	1	--	--	--	--	--	MOUNT ON SIGNAL POLE
19	R6-2L(2S)	--	24	x	30	5.000	--	--	--	--	--	--	--	--	MOUNT ON SIGNAL POLE
20	J2-3	--	--	x	--	--	--	--	--	2	2	--	1	--	MOVE SIGN
21	R7-52D	--	--	x	--	--	--	--	--	--	--	--	1	#20	MOVE SIGN
22	R4-7(2S)	--	24	x	30	5.000	--	--	--	--	--	--	--	--	MOUNT ON SIGNAL POLE
23	R1-1F(3)	--	36	x	36	--	--	7.460	1	--	--	--	--	--	MOUNT ON SIGNAL POLE
24	R5-1(2S)	--	30	x	30	6.250	--	--	--	--	--	--	--	#27	BACK OF SIGN #27
25	R3-18	--	--	x	--	--	--	--	--	1	1	--	1	--	MOVE SIGN
26	R1-1F	--	--	x	--	--	--	--	--	--	--	--	1	#25	MOVE SIGN
27	J3-3	--	--	x	--	--	--	--	--	2	2	--	1	--	MOVE SIGN
28	J3-3	--	--	x	--	--	--	--	--	2	2	--	1	--	MOVE SIGN
29	--	RESTRICTED LANE - LEFT LANE	--	x	--	--	--	--	1	1	--	--	--	--	REMOVE SIGN
30	--	NO ENGINE BRAKING...	--	x	--	--	--	--	--	--	--	--	1	--	MOUNT ON SIGNAL POLE
31	R6-2L(2S)	--	24	x	30	5.000	--	--	1	--	--	--	--	--	MOUNT ON SIGNAL POLE
32	R10-50L(2S)	--	30	x	36	7.500	--	--	--	--	--	--	--	--	MOUNT HIGH ON SIGNAL POLE
33	R5-1(2S)	--	30	x	30	6.250	--	--	--	--	--	--	--	--	MOUNT ON SIGNAL POLE
34	R1-1F(3)	--	36	x	36	--	--	7.460	--	--	--	--	--	--	MOUNT ON SIGNAL POLE
35	R7-1D	--	--	x	--	--	--	--	--	1	1	--	1	--	--

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TYPE II PERMANENT SIGNING -															1100-35-70 IH 894
SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE			637.2210	637.2230	637.2215	638.2602	638.3000	634.0618	634.0814	638.2102	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
			W [IN.]	x x	H [IN.]	SIGNS TYPE II REFLC H [SF]	SIGNS TYPE II REFLC F [SF]	SIGNS TYPE II REFLC H FOLDING [SF]	REMOVING SIGNS TYPE II [EA]	REMOVING SMALL SIGN SUPPORTS [EA]	WOOD POSTS 4"X 6"X18' [EA]	TUBULAR STEEL POSTS 2"X2"X14' [EA]	MOVE SIGNS TYPE II [EA]		
36	R4-7(2S)	--	24	x	30	5.000	--	--	1	--	--	--	--	--	MOUNT ON SIGNAL POLE
37	R4-7(2S)	--	24	x	30	5.000	--	--	1	--	1	--	--	--	--
38	R1-1F(3)	--	36	x	36	--	--	7.460	--	--	--	--	--	--	MOUNT ON SIGNAL POLE
39	R5-1(3)	--	36	x	36	9.000	--	--	1	1	1	--	--	--	--
40	R5-1A(2S)	--	36	x	24	6.000	--	--	--	--	--	--	--	#39	4 FT MOUNT HEIGHT
41	JV3-2	--	--	x	--	--	--	--	--	2	2	--	1	--	MOVE SIGN
42	--	RESTRICTED LANE - LEFT LANE	--	x	--	--	--	--	1	1	--	--	--	--	REMOVE SIGN
43	R2-1	--	--	x	--	--	--	--	--	1	--	1	1	--	MOVE SIGN
44	S1-1	--	--	x	--	--	--	--	--	1	--	1	1	--	MOVE SIGN
45	S16-9P	--	--	x	--	--	--	--	--	--	--	--	1	#44	MOVE SIGN
46	R5-1(3)	--	36	x	36	9.000	--	--	1	1	1	--	--	--	--
47	R5-1A(2S)	--	36	x	24	6.000	--	--	--	--	--	--	--	#46	4 FT MOUNT HEIGHT
48	W3-3(2S)	--	36	x	36	--	9.000	--	1	--	--	1	--	--	--
49	J13-1(2S)	--	24	x	45	7.500	--	--	1	1	1	--	--	--	--
	M1-5A	CTH T	24	x	24										
	M6-4	--	21	x	21										
50	R1-1F(3)	--	36	x	36	--	--	7.460	--	--	--	--	--	#49	--
51	W12-1D(2S)	--	24	x	24	--	4.000	--	--	--	1	--	--	--	2 FT MOUNT HEIGHT
52	R6-2L(2S)	--	24	x	30	5.000	--	--	1	--	--	--	--	--	MOUNT ON SIGNAL POLE
53	R3-1(2S)	--	24	x	24	4.000	--	--	--	--	--	--	--	#52	MOUNT ON SIGNAL POLE
54	R1-1F(3)	--	36	x	36	--	--	7.460	--	--	--	--	--	#39	BACK OF SIGN #39
55	R6-3(2S)	--	30	x	24	5.000	--	--	--	--	--	--	--	#54	--
56	R4-7(2S)	--	24	x	30	5.000	--	--	1	1	1	--	--	--	--
57	R5-1(2S)	--	30	x	30	6.250	--	--	1	--	--	--	--	--	MOUNT ON SIGNAL POLE
58	R1-1F(3)	--	36	x	36	--	--	7.460	--	--	1	--	--	--	--
59	R1-1F(3)	--	36	x	36	--	--	7.460	--	--	--	--	--	--	MOUNT ON SIGNAL POLE
60	J3-3	--	--	x	--	--	--	--	--	2	2	--	1	--	MOVE SIGN
61	JV1-1(2S)	--	30	x	87	18.125	--	--	1	--	--	--	--	--	MOUNT ON LIGHT POLE
	M2-1	JCT	21	x	15										
	M1-1	IH 41	24	x	24										
	M1-1A	IH 894	30	x	24										
	M1-4	US 45	24	x	24										
--	--	--	--	x	--	--	--	--	--	--	--	--	--	--	--
TOTALS						197.625	13.000	82.060	20	24	24	3	15		

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SUMMARY OF STATE FURNISHED MATERIALS - FOR INFORMATION ONLY

QUANTITY	UNIT	DESCRIPTION
1	EACH	TRAFFIC SIGNAL CONTROLLER AND CABINET
1	EACH	RADAR DETECTOR UNIT - ADVANCE (RA1)
1	EACH	RADAR DETECTOR UNIT - MATRIX (RM1)
163	LF	PRE-TERMINATED FIBER OPTIC PIGTAIL 8-CT
1500	LF	SINGLE MODE FIBER OPTIC CABLE 6-CT
1	EACH	ETHERNET SWITCH
3	EACH	EVP DETECTOR HEADS (HEADS A,B,C)
1	EACH	POLE TYPE 9
2	EACH	POLES TYPE 10
1	EACH	MONOTUBE ARM 25 FT
2	EACH	MONOTUBE ARMS 30 FT
4	EACH	LUMINAIRE ARMS STEEL 15 FT

REMOVING PULL BOXES AND CONCRETE BASES

BASE NO.	204.0195* REMOVING CONCRETE BASES EACH	PULL BOX NO.	653.0905* REMOVING PULL BOXES EACH
CB1	1	PB1	1
SB1	1	PB2	1
SB2	1	PB3	1
SB3	1	PB4	1
SB4	1	PB5	1
SB5	1	PB6	1
SB6	1	PB7	1
SB7	1	PB9	1
SB8	1	PB10	1
SB9	1	PB11	1
		PB12	1
TOTAL	10	TOTAL	11

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 45/IH 894 EB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

TRAFFIC SIGNAL REMOVALS
USH 45/IH 894 EB RAMPS & CTH T

LOCATION	204.9105.S.31 REMOVING TRAFFIC SIGNALS LS	204.9105.S.33 REMOVING LOOP DETECTOR WIRE AND LEAD-IN CABLE LS
USH 45/IH 894 EB RAMPS & CTH T	1	1
TOTAL	1	1



CONDUIT

		652.0225* CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235* CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615* CONDUIT SPECIAL 3-INCH LF
FROM	TO			
CB1	PB1	--	60	--
PB1	PB2	145	--	--
PB1	PB3	--	--	70
PB3	PB4	--	116	--
PB4	PB5	--	--	126
PB5	PB6	--	--	92
PB6	PB7	--	148	--
PB7	PB8	--	--	96
PB8	PB9	212	--	--
PB8	PB10	--	42	--
PB10	EXT1	21	--	--
PB10	PB11	--	--	126
PB11	PB12	--	--	112
PB12	PB13	--	138	--
PB13	PB14	--	--	56
PB14	PB15	--	126	--
PB15	PB16	--	--	88
PB16	CB1	--	63	--
SUBTOTALS		378	693	766

		652.0225* CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235* CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615* CONDUIT SPECIAL 3-INCH LF
FROM	TO			
PB5	SB1	--	19	--
PB7	SB2	11	--	--
PB8	SB3	6	--	--
PB11	SB4	--	5	--
PB12	SB5	16	--	--
PB13	SB6	22	--	--
PB14	SB7	--	12	--
SUBTOTALS		55	36	0
TOTALS		433	729	766

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 45/IH 894 EB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

LOOP DETECTOR SCHEDULE

LOOP NUMBER	HOMERUN PB	STATION	LOCATION	SIZE (FT)X(FT)	NO. OF TURNS	PAVEMENT TYPE	SDD INSTALLATION REFERENCE	652.0800* CONDUIT LOOP DETECTOR LF	655.0700* LOOP DETECTOR LEAD IN CABLE LF	655.0800* LOOP DETECTOR WIRE LF
41	PB9	44+28.2	224.0' LT	6'X10'	5	HMA	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	70	573	360
42	PB9	44+36.2	215.6' LT	6'X10'	5	HMA	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 1)	48	573	250
51	PB11	43+10.7	6.9' LT	6'X15'	3	HMA	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 1)	80	298	250
52	PB11	42+82.8	6.9' LT	6'X20'	3	HMA	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 1)	82	298	256
61	PB2	39+35.4	28.8' RT	6'X6'	3	HMA	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	56	182	178
62	PB2	39+35.5	16.8' RT	6'X6'	3	HMA	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	80	182	250
TOTALS								416	2106	1544

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE
** LOCATION IS TO FRONT CENTER OF DETECTOR LOOP
*** FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

PULL BOXES STEEL

PULL BOX NO.	STATION	LOCATION	653.0135* PULL BOXES STEEL 24X36-INCH EACH	653.0140* PULL BOXES STEEL 24X42-INCH EACH
PB1	40+79.6	73.6' RT	--	1
PB2	39+39.7	47.1' RT	1	--
PB3	41+12.4	63.9' RT	--	1
PB4	41+70.0	60.3' RT	--	1
PB5	41+70.0	2.6' LT	--	1
PB6	41+71.0	49.0' LT	--	1
PB7	42+40.9	73.4' LT	--	1
PB8	42+87.9	62.1' LT	--	1
PB9	44+41.8	206.9' LT	1	--
PB10	43+08.2	55.8' LT	--	1
PB11	42+94.1	6.0' RT	--	1
PB12	42+74.2	57.8' RT	--	1
PB13	42+11.7	72.2' RT	--	1
PB14	41+83.9	70.6' RT	--	1
PB15	41+21.4	74.8' RT	--	1
PB16	40+78.7	82.1' RT	--	1
TOTALS			2	14

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE
*** FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

USH 45/IH 894 EB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

CONCRETE BASES

BASE NO.	STATION	LOCATION	654.0101* CONCRETE BASES TYPE 1 EACH	654.0110* CONCRETE BASES TYPE 10 EACH	654.0217* CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
CB1	40+59.7	75.7' RT	--	--	1
SB1	41+89.0	2.5' LT	--	1	--
SB2	42+35.7	63.8' LT	1	--	--
SB3	42+89.1	56.1' LT	1	--	--
SB4	42+99.5	6.0' RT	--	1	--
SB5	42+58.0	56.7' RT	1	--	--
SB6	42+25.9	56.8' RT	1	--	--
SB7	41+85.1	58.5' RT	--	1	--
TOTALS			4	3	1

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE
*** FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

3

UNDERGROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0240*	655.0270
		CABLE TRAFFIC SIGNAL 7-14 AWG LF	CABLE TRAFFIC SIGNAL 15-14 AWG LF
CB1	SB1	--	270
CB1	SB2	414	--
CB1	SB3	473	--
CB1	SB4	393	--
CB1	SB5	332	--
CB1	SB6	253	--
CB1	SB7	--	199
TOTALS		1865	469

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ABOVE GROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0230*
		CABLE TRAFFIC SIGNAL 5-14 AWG LF
SB1	HEAD 5	40
	HEAD 6	52
	HEAD 8	22
	HEAD 10	19
SB2	HEAD 9	19
SB3	HEAD 4	19
SB4	HEAD 2	39
	HEAD 3	51
SB5	HEAD 11	19
SB6	HEAD 13	15
SB7	HEAD 1	19
	HEAD 7	22
	HEAD 12	43
	HEAD 14	15
TOTAL		394

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 45/IH 894 EB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

3

LIGHTING WIRE

FROM	TO	655.0320*	655.0610*
		CABLE TYPE UF 2-10 AWG GROUNDED LF	ELECTRICAL WIRE LIGHTING 12 AWG LF
CB1	SB1	270	--
SB1	LUMIN (2)	--	288
CB1	SB 4	393	--
SB4	LUMIN (2)	--	288
TOTALS		663	576

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL WIRE TRAFFIC SIGNALS

655.0515* ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG		
FROM	TO	LF
CB1	SB1	270
SB1	SB2	206
SB2	SB3	105
SB3	SB4	151
SB4	SB5	117
SB5	SB6	147
SB6	SB7	102
SB7	CB1	199
PB1	CB1	43
PB3	CB1	94
PB4	CB1	168
PB5	SB1	39
PB6	SB2	121
PB7	SB2	31
PB8	SB3	26
PB10	SB3	63
PB11	SB4	25
PB12	SB5	36
PB13	SB6	42
PB14	SB7	32
PB15	CB1	104
PB16	CB1	44
TOTAL		2165

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 45/IH 894 EB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

TRAFFIC SIGNAL EVP DETECTOR CABLE

655.0900* TRAFFIC SIGNAL EVP DETECTOR CABLE		
FROM	TO	LF
CB1	SB1 (HEAD A)	330
CB1	SB4 (HEAD B)	453
CB1	SB7 (HEAD C)	254
TOTALS		783

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL SERVICE METER BREAKER PEDESTAL
USH 45/IH 894 EB RAMPS & CTH T

656.0200.31 ELECTRICAL SERVICE METER BREAKER PEDESTAL	
BASE NO.	LS
CB1	1
TOTAL	1

***FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

USH 45/IH 894 EB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

CAST BASES, POLES, STANDARDS, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES

SIGNAL BASE NO.	657.0100* PEDESTAL BASES EACH	657.0420* TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	SPV.0060.32* INSTALL POLES TYPE 9 EACH	SPV.0060.33* INSTALL POLES TYPE 10 EACH	SPV.0060.34* INSTALL MONOTUBE ARMS 25-FT EACH	SPV.0060.35* INSTALL MONOTUBE ARMS 30-FT EACH	SPV.0060.36* INSTALL LUMINAIRE ARMS STEEL 15-FT EACH	658.0500* PEDESTRIAN PUSH BUTTONS EACH	659.1125* LUMINAIRES UTILITY LED C EACH
SB1	--	--	--	--	1	--	1	2	--	2
SB2	1	1	--	--	--	--	--	--	--	--
SB3	1	1	--	--	--	--	--	--	--	--
SB4	--	--	--	--	1	--	1	2	--	2
SB5	1	1	--	--	--	--	--	--	--	--
SB6	1	--	1	--	--	--	--	--	1	--
SB7	--	--	--	1	--	1	--	--	1	--
TOTALS	4	3	1	1	2	1	2	4	2	4

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC SIGNAL AND PEDESTRIAN FACES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0173* TRAFFIC SIGNAL FACE 3S 12-INCH EACH	658.0174* TRAFFIC SIGNAL FACE 4S 12-INCH EACH	658.0416* PEDESTRIAN SIGNAL FACE 16-INCH EACH
1	SB7	1	--	--
2	SB4	1	--	--
3	SB4	1	--	--
4	SB3	1	--	--
5	SB1	1	--	--
6	SB1	1	--	--
7	SB7	--	1	--
8	SB1	--	1	--
9	SB2	1	--	--
10	SB1	1	--	--
11	SB5	1	--	--
12	SB7	1	--	--
13	SB6	--	--	1
14	SB7	--	--	1
TOTALS		10	2	2

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 45/IH 894 EB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

SIGNAL MOUNTING HARDWARE
USH 45/IH 894 EB RAMPS & CTH T

LOCATION	658.5069.31 TRAFFIC SIGNAL MOUNTING HARDWARE LS
USH 45/IH 894 EB RAMPS & CTH T	1
TOTAL	1

TEMPORARY TRAFFIC SIGNALS
USH 45/IH 894 EB RAMPS & CTH T

LOCATION	661.0200.31 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS LS	661.0300* GENERATORS DAY
USH 45/IH 894 EB RAMPS & CTH T	1	1
TOTAL	1	1

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

3

TRANSPORT AND INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET
USH 45/IH 894 EB RAMPS & CTH T

SPV.0105.31 TRANSPORT AND INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET	
LOCATION	LS
CB1	1
TOTAL	1

USH 45/IH 894 EB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

TRANSPORT AND INSTALL STATE FURNISHED RADAR
DETECTION SYSTEM
USH 45/IH 894 EB RAMPS & CTH T

SPV.0105.33 TRANSPORT AND INSTALL STATE FURNISHED RADAR DETECTION SYSTEM	
LOCATION	LS
USH 45/IH 894 EB RAMPS & CTH T	1
TOTAL	1

3

TRANSPORT AND INSTALL STATE FURNISHED EMERGENCY VEHICLE
PREEMPTION (EVP) DETECTOR HEADS
USH 45/IH 894 EB RAMPS & CTH T

SPV.0105.37 TRANSPORT AND INSTALL STATE FURNISHED EMERGENCY VEHICLE PREEMPTION (EVP) DETECTOR HEADS	
LOCATION	LS
USH 45/IH 894 EB RAMPS & CTH T	1
TOTAL	1

TRANSPORT TRAFFIC SIGNAL AND INTERSECTION LIGHTING MATERIALS
USH 45/IH 894 EB RAMPS & CTH T

SPV.0105.39 TRANSPORT TRAFFIC SIGNAL AND INTERSECTION LIGHTING MATERIALS	
LOCATION	LS
USH 45/IH 894 EB RAMPS & CTH T	1
TOTAL	1

3

USH 45/IH 894 WB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

3

SUMMARY OF STATE FURNISHED MATERIALS - FOR INFORMATION ONLY		
QUANTITY	UNIT	DESCRIPTION
1	EACH	TRAFFIC SIGNAL CONTROLLER AND CABINET
1	EACH	RADAR DETECTOR UNIT - ADVANCE (RA1)
1	EACH	RADAR DETECTOR UNIT - MATRIX (RM1)
133	LF	PRE-TERMINATED FIBER OPTIC PIGTAIL 8-CT
681	LF	SINGLE MODE FIBER OPTIC CABLE 12-CT
1	EACH	ETHERNET SWITCH
3	EACH	EVP DETECTOR HEADS (HEADS A,B,D)
2	EACH	POLES TYPE 10
1	EACH	MONOTUBE ARM 25 FT
1	EACH	MONOTUBE ARM 30 FT
4	EACH	LUMINAIRE ARMS STEEL 15 FT

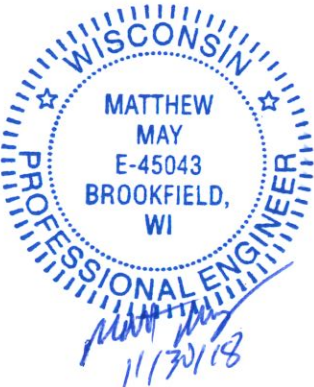
REMOVING PULL BOXES AND CONCRETE BASES

BASE NO.	204.0195* REMOVING CONCRETE BASES EACH	PULL BOX NO.	653.0905* REMOVING PULL BOXES EACH
CB2	1	PB12	1
SB10	1	PB13	1
SB11	1	PB14	1
SB12	1	PB15	1
SB13	1	PB16	1
SB14	1	PB17	1
SB15	1	PB18	1
SB16	1	PB19	1
SB17	1	PB20	1
SB18	1	PB22	1
		PB23	1
TOTAL	10	TOTAL	11

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC SIGNAL REMOVALS
USH 45/IH 894 WB RAMPS & CTH T

LOCATION	204.9105.S.32 REMOVING TRAFFIC SIGNALS LS	204.9105.S.34 REMOVING LOOP DETECTOR WIRE AND LEAD-IN CABLE LS
USH 45/IH 894 WB RAMPS & CTH T	1	1
TOTAL	1	1



CONDUIT

		652.0225* CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235* CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615* CONDUIT SPECIAL 3-INCH LF
FROM	TO			
CB1	PB1	--	60	--
PB1	PB2	234	--	--
PB1	PB3	--	--	162
PB3	PB4	--	--	64
PB4	PB5	--	--	66
PB5	PB6	--	64	--
PB6	PB7	--	--	102
PB7	PB8	--	--	118
PB8	EXT1	46	--	--
PB8	PB9	--	232	--
PB9	PB10	--	--	108
PB10	PB11	108	--	--
PB11	PB12	114	--	--
PB10	PB13	--	--	98
PB13	PB14	--	--	132
PB14	CB1	--	60	--
SUBTOTALS		502	416	850
		652.0225* CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235* CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615* CONDUIT SPECIAL 3-INCH LF
FROM	TO			
PB3	SB1	11	--	--
PB4	SB2	9	--	--
PB5	SB3	9	--	--
PB7	SB4	--	12	--
PB8	SB5	35	--	--
PB8	SB6	53	--	--
PB9	SB7	25	--	--
PB10	SB8	--	10	--
PB11	SB9	9	--	--
SUBTOTALS		151	22	0
TOTALS		653	438	850

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 45/IH 894 WB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

LOOP DETECTOR SCHEDULE

LOOP NUMBER	HOMERUN PB	STATION	LOCATION	SIZE (FT)X(FT)	NO. OF TURNS	PAVEMENT TYPE	SDD INSTALLATION REFERENCE	652.0800* CONDUIT LOOP DETECTOR LF	655.0700* LOOP DETECTOR LEAD IN CABLE LF	655.0800* LOOP DETECTOR WIRE LF
21	PB12	50+67.2	30.3' LT	6'X6'	5	PCC	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	72	374	370
22	PB12	50+67.2	17.2' LT	6'X6'	5	PCC	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	46	374	240
51	PB10	48+40.6	6.5' LT	6'X20'	3	PCC	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	66	152	208
52	PB10	48+12.6	6.8' LT	6'X20'	3	PCC	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	74	152	232
81	PB2	47+90.5	295.4' RT	6'X15'	3	HMA	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	76	271	238
TOTALS								334	1323	1288

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE
** LOCATION IS TO FRONT CENTER OF DETECTOR LOOP
*** FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

USH 45/IH 894 WB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

PULL BOXES STEEL

PULL BOX NO.	STATION	LOCATION	653.0135* PULL BOXES STEEL 24X36-INCH EACH	653.0140* PULL BOXES STEEL 24X42-INCH EACH
PB1	48+97.6	92.6' RT	--	1
PB2	48+05.9	302.9' RT	1	--
PB3	48+22..1	63.9' RT	--	1
PB4	47+89.6	63.6' RT	--	1
PB5	47+56.6	63.4' RT	--	1
PB6	47+25.4	58.0' RT	--	1
PB7	47+25.4	7.4' RT	--	1
PB8	47+25.4	52.0' LT	--	1
PB9	48+40.6	51.1' LT	--	1
PB10	48+40.7	3.3' RT	--	1
PB11	49+48.6	3.9' RT	1	--
PB12	50+62.4	3.7' LT	1	--
PB13	48+40.8	52.1' RT	--	1
PB14	48+97.6	86.7' RT	--	1
TOTALS			3	11

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE
*** FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

CONCRETE BASES

BASE NO.	STATION	LOCATION	654.0101* CONCRETE BASES TYPE 1 EACH	654.0105 CONCRETE BASES TYPE 5 EACH	654.0110* CONCRETE BASES TYPE 10 EACH	654.0217* CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
CB1	49+17.4	89.6' RT	--	--	--	1
SB1	48+21.0	53.4' RT	1	--	--	--
SB2	47+90.6	54.9' RT	1	--	--	--
SB3	47+50.0	57.3' RT	1	--	--	--
SB4	47+32.1	3.0' LT	--	--	1	--
SB5	47+60.2	49.8' LT	1	--	--	--
SB6	47+78.2	49.8' LT	1	--	--	--
SB7	48+15.8	49.9' LT	1	--	--	--
SB8	48+31.6	7.2' RT	--	--	1	--
SB9	49+57.2	5.9' RT	--	1	--	--
TOTALS			6	1	2	1

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE
*** FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

UNDERGROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0240*	655.0260*
		CABLE TRAFFIC SIGNAL 7-14 AWG LF	CABLE TRAFFIC SIGNAL 12-14 AWG LF
CB1	SB1	--	155
CB1	SB2	201	--
CB1	SB3	--	250
CB1	SB4	--	368
CB1	SB5	431	--
CB1	SB6	449	--
CB1	SB7	289	--
CB1	SB8	204	--
TOTALS		1574	773

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ABOVE GROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0230*
		CABLE TRAFFIC SIGNAL 5-14 AWG LF
SB1	HEAD 9	19
	HEAD 12	15
SB3	HEAD 1	19
	HEAD 7	22
	HEAD 13	15
SB4	HEAD 5	38
	HEAD 6	50
	HEAD 8	22
SB5	HEAD 10	19
SB6	HEAD 11	19
SB7	HEAD 4	19
SB8	HEAD 2	38
	HEAD 3	49
TOTAL		344

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 45/IH 894 WB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

LIGHTING WIRE

FROM	TO	655.0320*	655.0610*
		CABLE TYPE UF 2-10 AWG GROUNDED LF	ELECTRICAL WIRE LIGHTING 12 AWG LF
CB1	SB4	368	--
SB4	LUMIN (2)	--	288
CB1	SB8	204	--
SB8	LUMIN (2)	--	288
SB8	SB9	167	--
SB9	LUMIN (2)	--	234
TOTALS		739	810

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL WIRE TRAFFIC SIGNALS

655.0515* ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG		
FROM	TO	LF
CB1	SB1	155
SB1	SB2	92
SB2	SB3	91
SB3	SB4	160
SB4	SB5	146
SB5	SB6	112
SB6	SB7	234
SB7	SB8	129
SB8	SB9	167
SB9	CB1	327
PB1	CB1	43
PB3	SB1	31
PB4	SB2	29
PB5	SB3	29
PB6	SB3	77
PB7	SB4	32
PB8	SB5	55
PB9	SB7	45
PB10	SB8	30
PB11	SB9	29
PB13	SB8	95
PB14	CB1	43
TOTAL		2151

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 45/IH 894 WB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

TRAFFIC SIGNAL EVP DETECTOR CABLE

655.0900* TRAFFIC SIGNAL EVP DETECTOR CABLE LF		
FROM	TO	LF
CB1	SB4 (HEAD A)	428
CB1	SB8 (HEAD B)	259
CB1	SB8 (HEAD D)	259
TOTALS		687

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL SERVICE METER BREAKER PEDESTAL
USH 45/IH 894 WB RAMPS & CTH T

656.0200.32 ELECTRICAL SERVICE METER BREAKER PEDESTAL LS	
BASE NO.	
CB1	1
TOTAL	1

***FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

CAST BASES, POLES, STANDARDS, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES

SIGNAL BASE NO.	657.0100* PEDESTAL BASES EACH	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2 INCH BOLT CIRCLE EACH	657.0322 POLES TYPE 5 ALUMINUM EACH	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT EACH	657.0420* TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT EACH
SB1	1	--	--	--	1	--	--
SB2	1	--	--	1	--	--	--
SB3	1	--	--	--	--	1	--
SB4	--	--	--	--	--	--	--
SB5	1	--	--	--	1	--	--
SB6	1	--	--	--	1	--	--
SB7	1	--	--	--	1	--	--
SB8	--	--	--	--	--	--	--
SB9	--	1	1	--	--	--	2
TOTALS	6	1	1	1	4	1	2

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

CAST BASES, POLES, STANDARDS, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES (CONT.)

SIGNAL BASE NO.	SPV.0060.33* INSTALL POLES TYPE 10 EACH	SPV.0060.34* INSTALL MONOTUBE ARMS 25-FT EACH	SPV.0060.35* INSTALL MONOTUBE ARMS 30-FT EACH	SPV.0060.36* INSTALL LUMINAIRE ARMS STEEL 15-FT EACH	658.0500* PEDESTRIAN PUSH BUTTONS EACH	659.1125* LUMINAIRES UTILITY LED C EACH
SB1	--	--	--	--	1	--
SB2	--	--	--	--	1	--
SB3	--	--	--	--	1	--
SB4	1	--	1	2	--	2
SB5	--	--	--	--	--	--
SB6	--	--	--	--	--	--
SB7	--	--	--	--	--	--
SB8	1	1	--	2	--	2
SB9	--	--	--	--	--	2
TOTALS	2	1	1	4	3	6

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 45/IH 894 WB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

TRAFFIC SIGNAL AND PEDESTRIAN FACES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0173* TRAFFIC SIGNAL FACE 3S 12-INCH EACH	658.0174* TRAFFIC SIGNAL FACE 4S 12-INCH EACH	658.0416* PEDESTRIAN SIGNAL FACE 16-INCH EACH
1	SB3	1	--	--
2	SB8	1	--	--
3	SB8	1	--	--
4	SB7	1	--	--
5	SB4	1	--	--
6	SB4	1	--	--
7	SB3	--	1	--
8	SB4	--	1	--
9	SB1	1	--	--
10	SB5	1	--	--
11	SB6	1	--	--
12	SB1	--	--	1
13	SB3	--	--	1
TOTALS		9	2	2

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

SIGNAL MOUNTING HARDWARE
USH 45/IH 894 WB RAMPS & CTH T

LOCATION	658.5069.32 TRAFFIC SIGNAL MOUNTING HARDWARE LS
USH 45/IH 894 WB RAMPS & CTH T	1
TOTAL	1

TRANSPORT AND INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET
USH 45/IH 894 WB RAMPS & CTH T

SPV.0105.32 TRANSPORT AND INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET	
LOCATION	LS
CB1	1
TOTAL	1

TRANSPORT AND INSTALL STATE FURNISHED RADAR
DETECTION SYSTEM
USH 45/IH 894 WB RAMPS & CTH T

SPV.0105.34 TRANSPORT AND INSTALL STATE FURNISHED RADAR DETECTION SYSTEM	
LOCATION	LS
USH 45/IH 894 WB RAMPS & CTH T	1
TOTAL	1

TRANSPORT AND INSTALL STATE FURNISHED EMERGENCY VEHICLE
PREEMPTION (EVP) DETECTOR HEADS
USH 45/IH 894 WB RAMPS & CTH T

SPV.0105.38 TRANSPORT AND INSTALL STATE FURNISHED EMERGENCY VEHICLE PREMPTION (EVP) DETECTOR HEADS	
LOCATION	LS
USH 45/IH 894 WB RAMPS & CTH T	1
TOTAL	1

TRANSPORT TRAFFIC SIGNAL AND INTERSECTION LIGHTING MATERIALS
USH 45/IH 894 WB RAMPS & CTH T

SPV.0105.42 TRANSPORT TRAFFIC SIGNAL AND INTERSECTION LIGHTING MATERIALS	
LOCATION	LS
USH 45/IH 894 WB RAMPS & CTH T	1
TOTAL	1

USH 45/IH 894 WB RAMPS & CTH T/BELOIT RD
ALL ITEMS ARE CATEGORY 1500 UNLESS
OTHERWISE NOTED

3

CONDUIT

FROM	TO	652.0225*	652.0235*	652.0615*
		CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	CONDUIT SPECIAL 3-INCH LF
CB1 (S40-1214)	I/C CV101	56	--	--
I/C CV101	I/C PB101	--	54	--
I/C PB101	I/C PB102	--	--	56
I/C PB102	EXPB200	--	14	--
EXPB205	I/C PB103	--	95	--
I/C PB103	I/C CV102	--	--	169
I/C CV102	CB1 (S40-1215)	26	--	--
I/C CV102	I/C CV103	--	--	351
TOTALS		82	163	576

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE



COMMUNICATION

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

PULL BOXES AND COMMUNICATION VAULTS

STRUCTURE NO.	STATION	LOCATION	653.0140*	673.0105
			PULL BOXES STEEL 24X42-INCH EACH	COMMUNICATION VAULT TYPE 1 EACH
I/C CV101	41+06.2	108.2' RT	--	1
I/C PB101	41+16.6	160.8' RT	1	--
I/C PB102	41+67.1	185.2' RT	1	--
I/C PB103	47+28.1	128.5' RT	1	--
I/C CV102	48+95.5	103.5' RT	--	1
I/C CV103	52+16.4	88.2' RT	--	1
TOTALS			3	3

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE
*** FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

COMMUNICATION

LOCATION	670.0100.31	670.0200.31	678.0500.31
	FIELD SYSTEM INTEGRATOR LS	ITS DOCUMENTATION LS	COMMUNICATION SYSTEM TESTING LS
CTH T TRAFFIC SIGNALS	1	1	1
TOTALS	1	1	1

3

FIBER OPTIC CABLE AND TRACER CABLE

FROM	TO	655.0510	678.0006	678.0012
		ELECTRICAL WIRE TRAFFIC SIGNALS 12 AWG LF	INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 6-CT LF	INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 12-CT LF
CB1 (S40-1214)	I/C CV101	79	--	--
I/C CV101	EXPB200	188	--	--
I/C CV101	EXCV204	--	1500	--
EXCV204	I/C CV102	--	--	681
EXPB205	I/C CV102	312	--	--
I/C CV102	CB1 (S40-1215)	49	--	--
I/C CV102	I/C CV103	383	--	--
TOTAL		1011	1500	681

COMMUNICATION

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

FIBER OPTIC

LOCATION	678.0200	678.0300
	FIBER OPTIC SPLICE ENCLOSURE EACH	FIBER OPTIC SPLICE EACH
I/C CV101	1	4
EXCV204	--	6
I/C CV102	1	4
TOTAL	2	14

3

INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET USH 45/IH 894 EB RAMPS & CTH T

*** SPV.0105.35	
LOCATION	LS
CB1 (S40-1214)	1
TOTAL	1

*** PAY ITEM INCLUDES INSTALLATION OF BOTH CONTRACTOR FURNISHED AND STATE FURNISHED MATERIALS

SUMMARY OF STATE FURNISHED MATERIALS		
QUANTITY	UNIT	DESCRIPTION
163	LF	PATCH PANEL WITH FIBER OPTIC CABLE PIGTAIL 8-CT
1	EACH	ETHERNET SWITCH
SUMMARY OF CONTRACTOR FURNISHED MATERIALS		
QUANTITY	UNIT	DESCRIPTION
2	EACH	ST-ST SINGLE MODE FIBER OPTIC JUMPER 2-CT
2	EACH	CAT-5E CABLE 1-METER

INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET USH 45/IH 894 WB RAMPS & CTH T

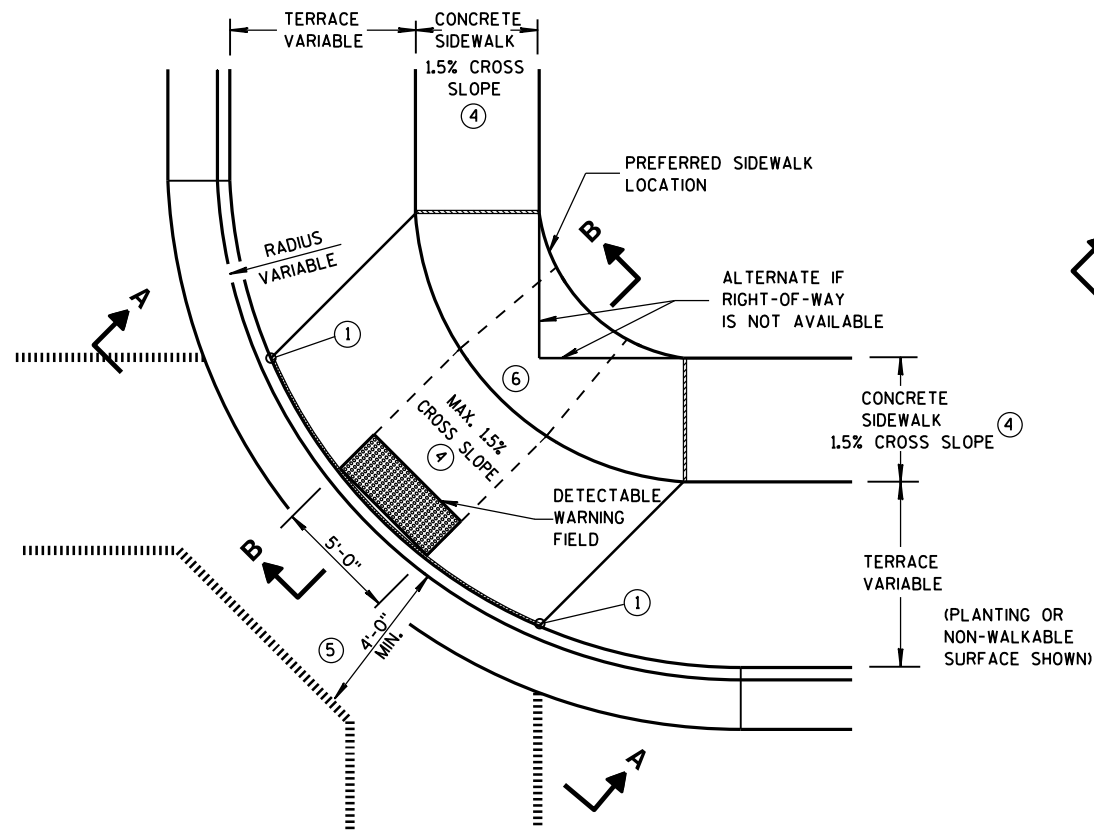
*** SPV.0105.36	
LOCATION	LS
CB1 (S40-1215)	1
TOTAL	1

*** PAY ITEM INCLUDES INSTALLATION OF BOTH CONTRACTOR FURNISHED AND STATE FURNISHED MATERIALS

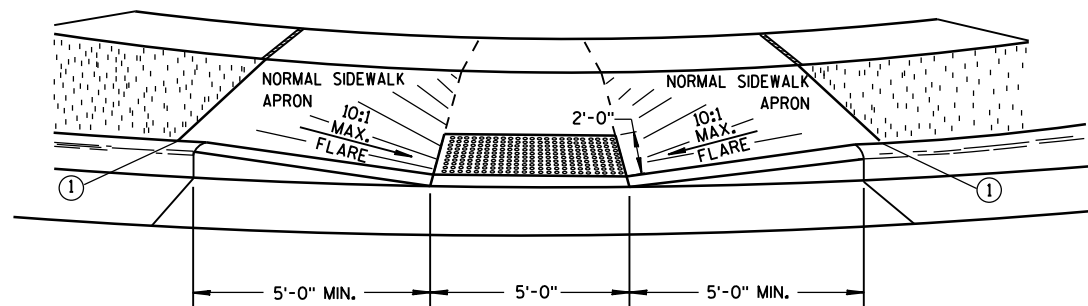
SUMMARY OF STATE FURNISHED MATERIALS		
QUANTITY	UNIT	DESCRIPTION
133	LF	PATCH PANEL WITH FIBER OPTIC CABLE PIGTAIL 8-CT
1	EACH	ETHERNET SWITCH
SUMMARY OF CONTRACTOR FURNISHED MATERIALS		
QUANTITY	UNIT	DESCRIPTION
2	EACH	ST-ST SINGLE MODE FIBER OPTIC JUMPER 2-CT
2	EACH	CAT-5E CABLE 1-METER

Standard Detail Drawing List

08D05-19A	CURB RAMPS TYPES 1 AND 1-A
08D05-19B	CURB RAMPS TYPES 2 AND 3
08D05-19C	CURB RAMPS TYPES 4A AND 4A1
08D05-19D	CURB RAMPS TYPE 4B AND 4B1
08D05-19E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-19F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-19G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09B02-10	CONDUIT
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C06-07	CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL
09C11-10	CONCRETE BASE TYPE 10
09C13-02	CONCRETE BASE TYPE 10 & TYPE 13 EXTENSION
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D02-03	SIGNAL CONTROL CABINET
09E01-14D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
09E08-08B	TYPE 10 POLE 15'-30' MONOTUBE ARM
09E08-08E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
09F15-04A	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)
09F15-04B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)
09G01-04A	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04B	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04C	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04D	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04E	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04F	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04G	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
11B02-02	CONCRETE MEDIAN NOSE
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13C14-07A	BASE PATCHING CONCRETE
13C14-07B	BASE PATCHING CONCRETE
13C14-07C	BASE PATCHING CONCRETE
13C15-06A	CONCRETE BASE
13C15-06B	CONCRETE BASE
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C05-04	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C07-14A	PAVEMENT MARKING SYMBOLS
15C07-14B	PAVEMENT MARKING WORDS
15C07-14C	PAVEMENT MARKING ARROWS
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C08-19B	PAVEMENT MARKING (TURN LANES)
15C08-19C	PAVEMENT MARKING (TURN LANES)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C27-02A	DOUBLE ARROW WARNING SIGN PLACEMENT
15C27-02B	PAVEMENT MARKING (ISLANDS)
15C33-03	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D12-06A	TRAFFIC CONTROL, LANE CLOSURE
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-05	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

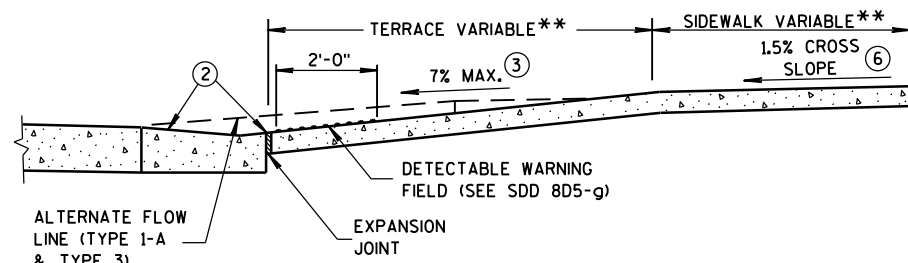


PLAN VIEW
TYPE 1 RAMP
(CENTER OF CORNER RADIUS)

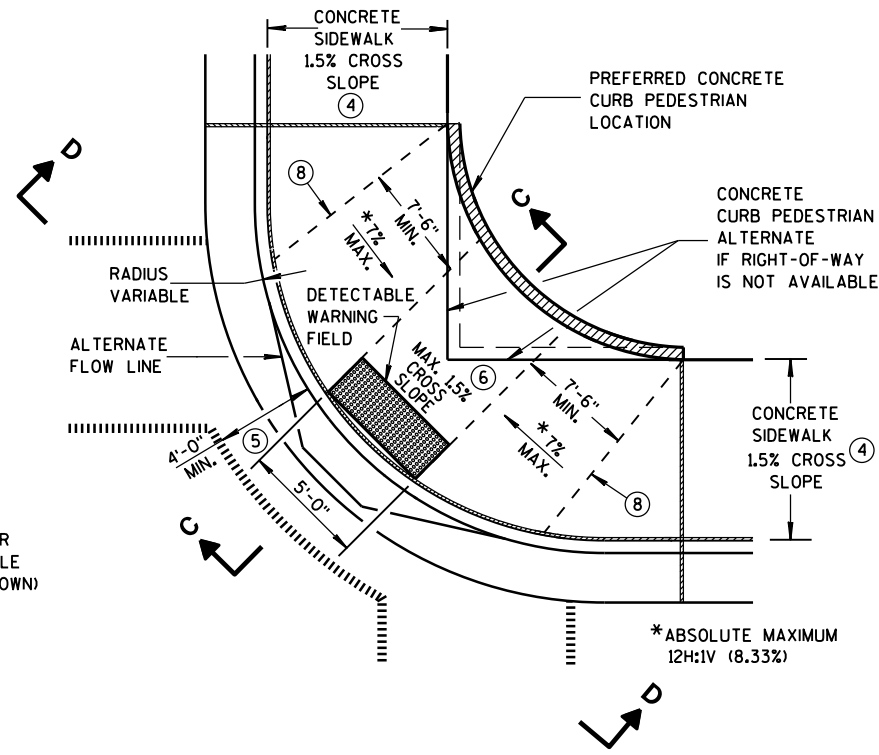


VIEW A-A

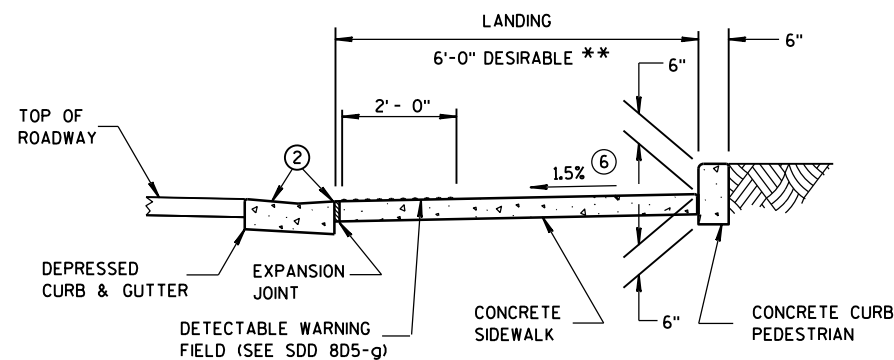
** WIDTH SHOWN ELSEWHERE
IN THE PLANS



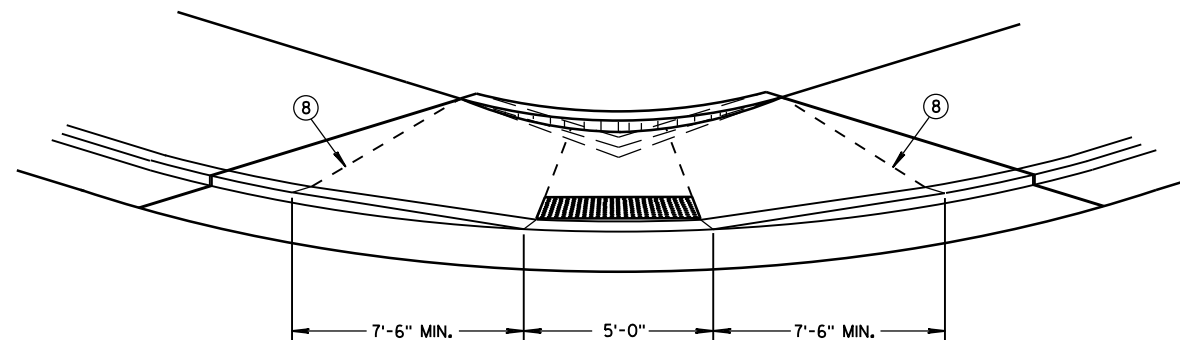
SECTION B-B



PLAN VIEW
TYPE 1-A RAMP
(NO TERRACE)



SECTION C-C



VIEW D-D

GENERAL NOTES

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

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.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

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

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

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

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

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

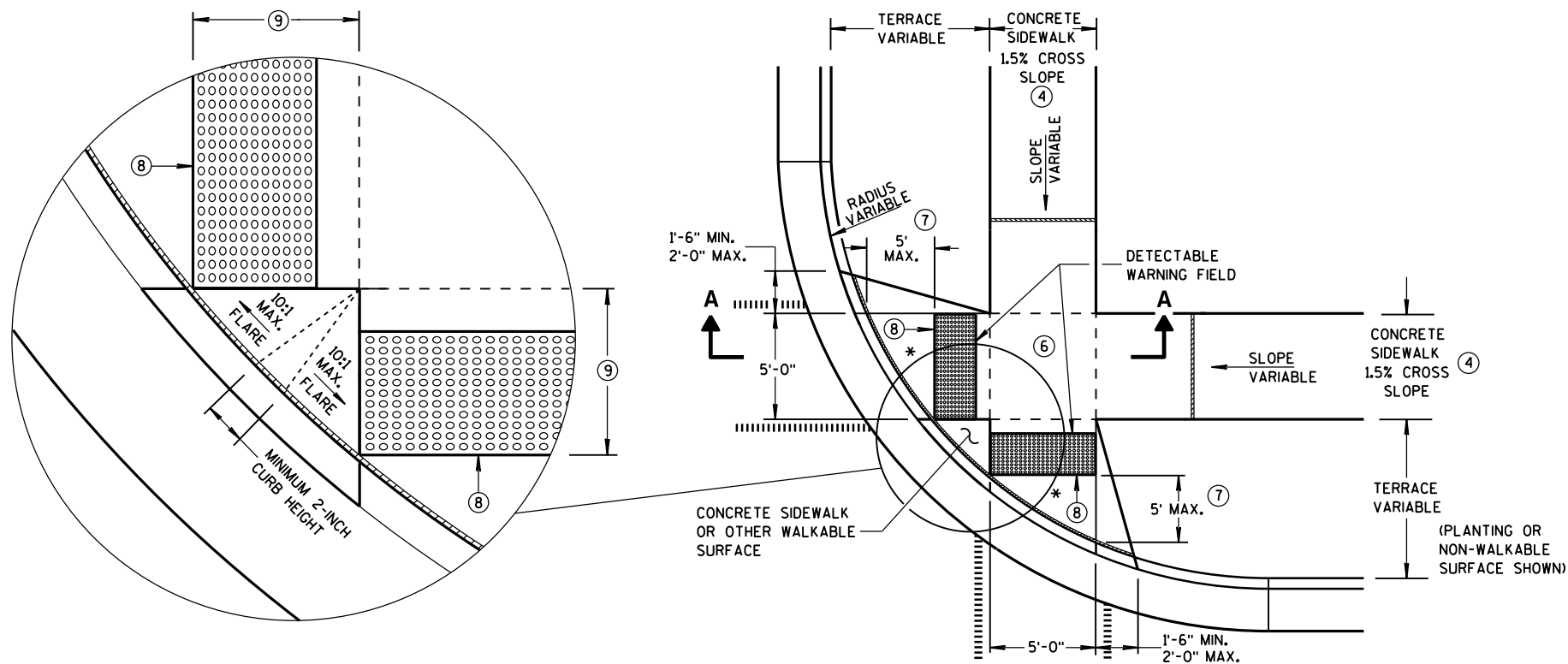
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑤ PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA. (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- - - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

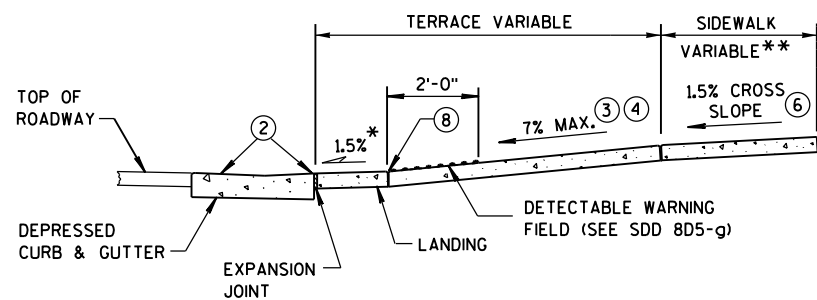
CURB RAMPS
TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 104



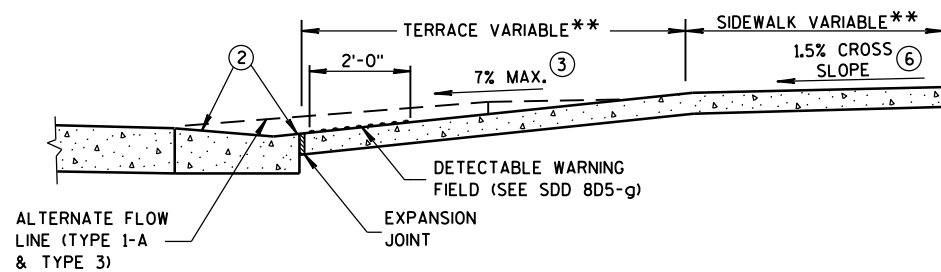
**PLAN VIEW
TYPE 2 RAMP**
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE BREAK



SECTION A-A

** WIDTH SHOWN ELSEWHERE
IN THE PLANS



SECTION B-B

GENERAL NOTES

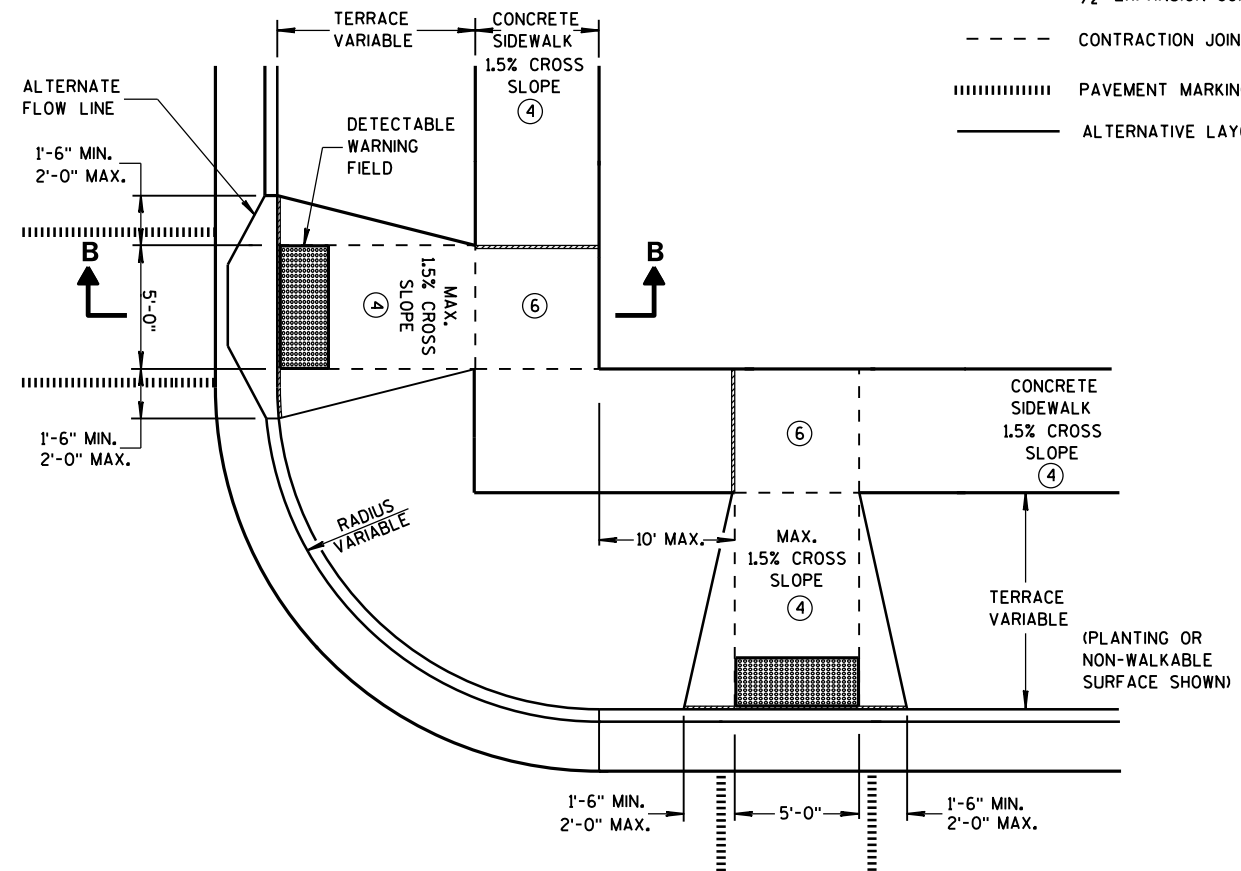
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑨ WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

LEGEND

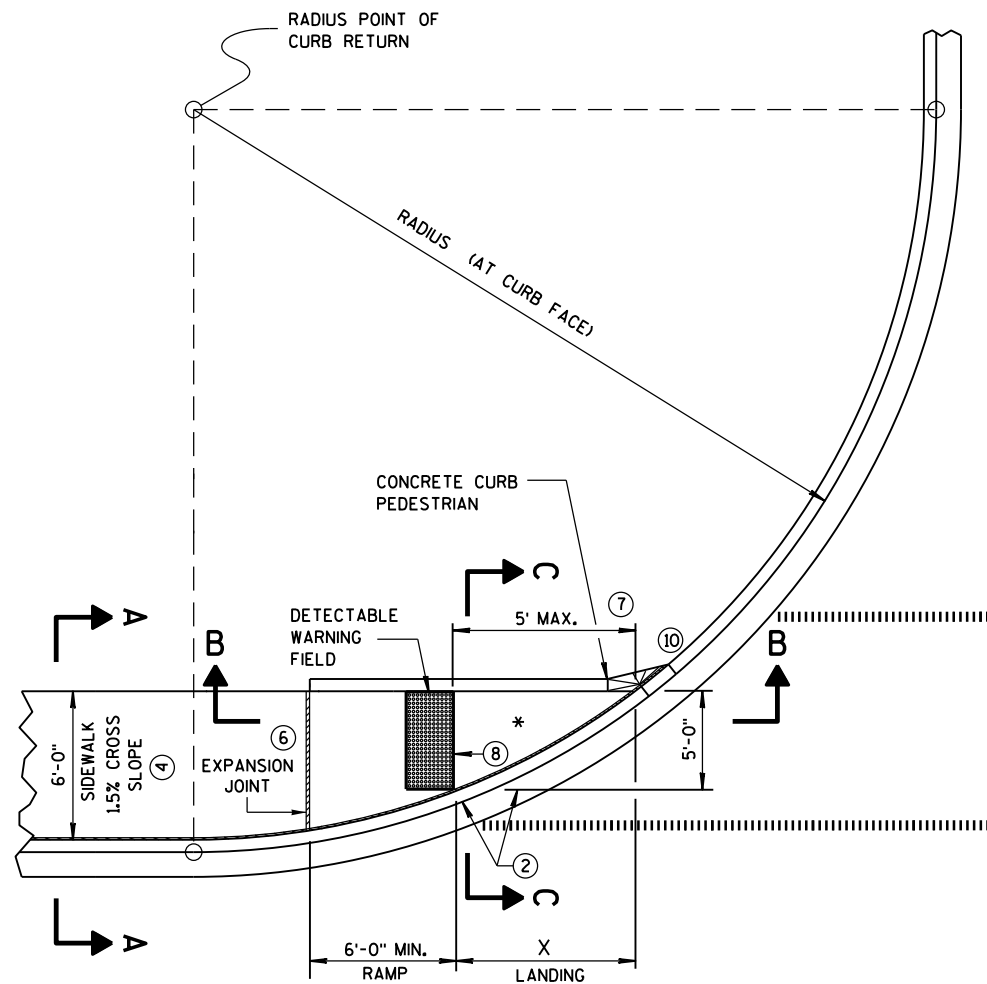
- 1/2" EXPANSION JOINT-SIDEWALK
- - - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



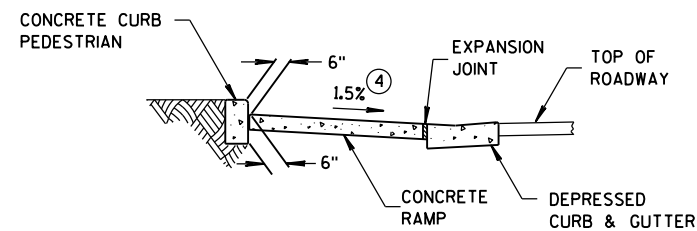
**PLAN VIEW
TYPE 3 RAMP**
(OUTSIDE OF CROSSWALK AREA)

**CURB RAMPS
TYPES 2 AND 3**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 105

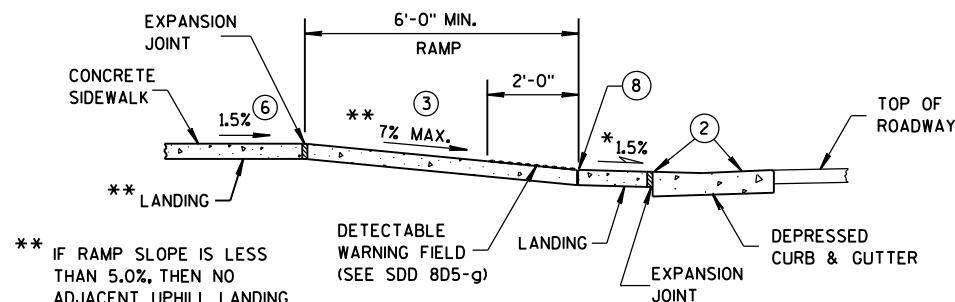


CURB RAMP TYPE 4A
PLAN VIEW



SECTION C-C FOR TYPE 4A

* MAXIMUM 2.0% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE BREAK

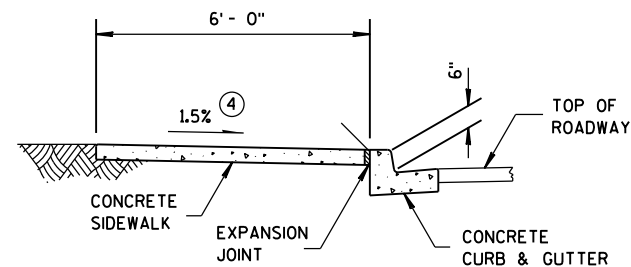


SECTION B-B FOR TYPE 4A

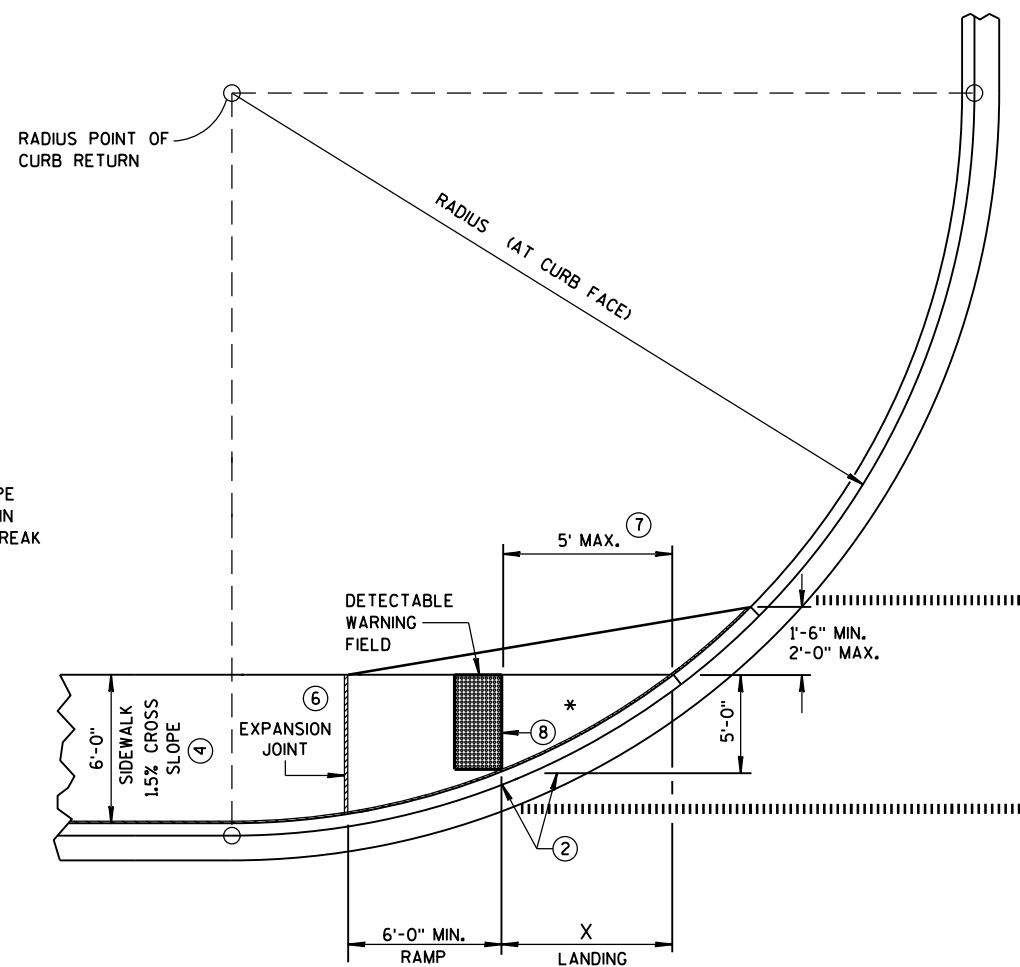
** IF RAMP SLOPE IS LESS
THAN 5.0%, THEN NO
ADJACENT UPHILL LANDING
IS REQUIRED

RADIUS (AT CURB FACE)	X
10 FEET	4'-7"
15 FEET	6'-5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A



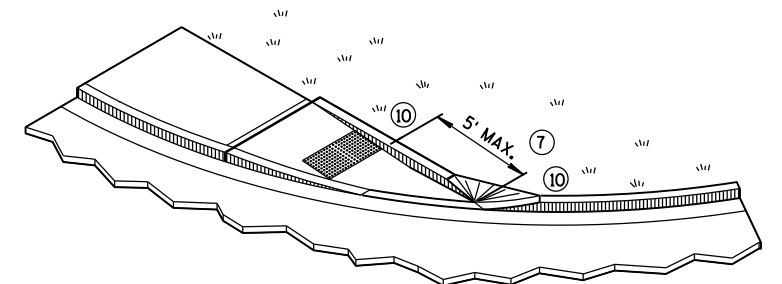
CURB RAMP TYPE 4A1
PLAN VIEW

GENERAL NOTES

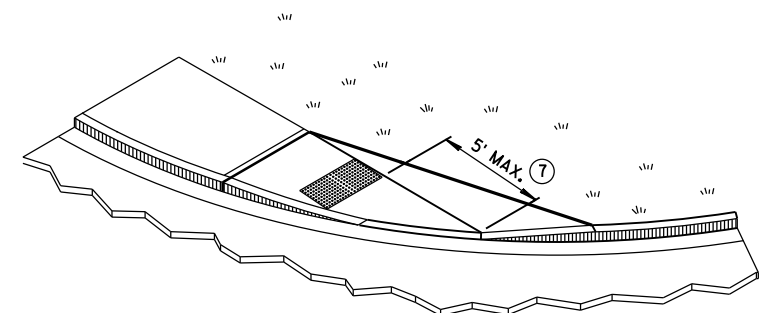
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑩ INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4A



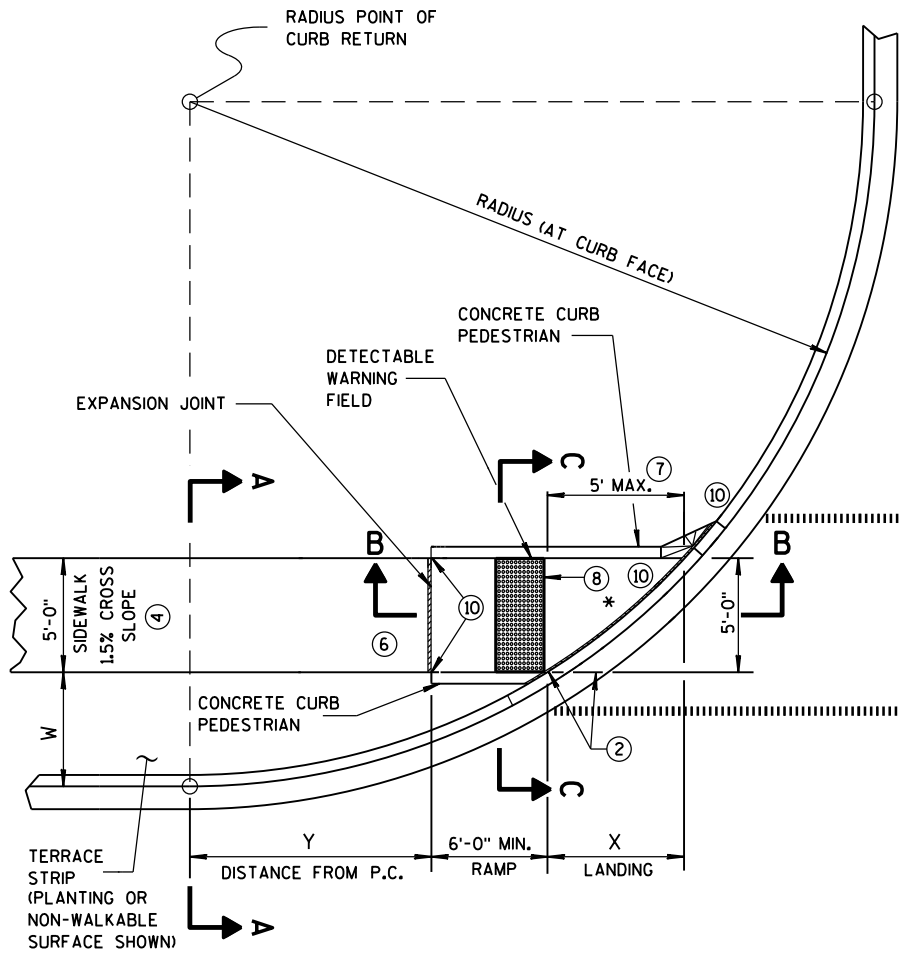
ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

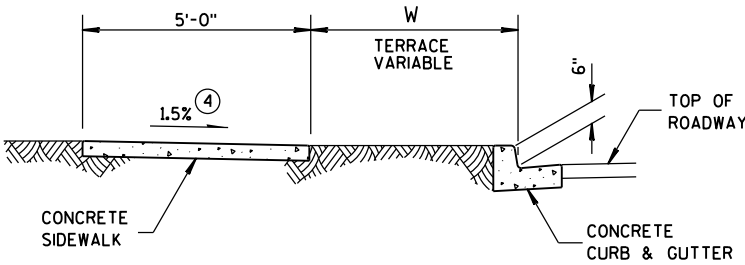
- ½" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

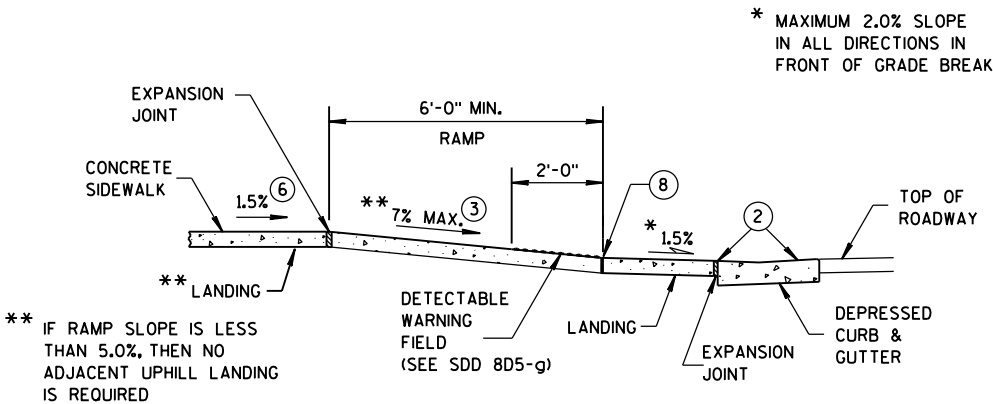
STATE OF WISCONSIN
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**CURB RAMP TYPE 4B
PLAN VIEW**



SECTION A-A FOR TYPE 4B



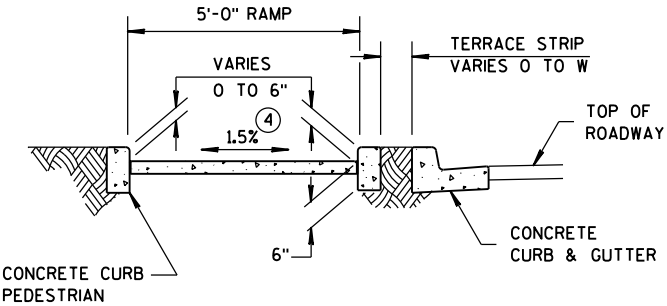
SECTION B-B FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2'-10 1/4"	0'-5"	2'-1"	1'-4 1/2"	1'-5"	2'-1"	0'-10"	2'-7 1/2"	0'-3 1/4"	3'-0 1/4"						
15 FEET	4'-6 3/4"	2'-1 3/4"	3'-9"	3'-5 1/4"	3'-1 1/4"	4'-6"	2'-6 3/4"	5'-4 1/2"	2'-1"	6'-1"	1'-8"	6'-8 1/2"	1'-3 1/4"	7'-2 1/2"	0'-10 3/4"	7'-7 1/4"
20 FEET	5'-9 3/4"	3'-6 1/2"	4'-11 1/2"	5'-1 3/4"	4'-3 1/4"	6'-5 1/2"	3'-8 3/4"	7'-7"	3'-3"	8'-6 1/2"	2'-10"	9'-4 1/2"	2'-5 1/2"	10'-1 1/4"	2'-1 1/4"	10'-9"
30 FEET			6'-9 1/4"	7'-11 1/4"	6'-0 1/4"	9'-8"	5'-5"	11'-1 3/4"	4'-10 3/4"	12'-5 3/4"	4'-5 1/2"	13'-7 3/4"	4'-0 3/4"	14'-8 1/2"	3'-8 1/2"	15'-8 1/4"
40 FEET									6'-1 3/4"	15'-8 1/2"	5'-8"	17'-2"	5'-3"	18'-5 3/4"	4'-10 3/4"	19'-8 1/4"
50 FEET															5'-10 1/4"	23'-2"

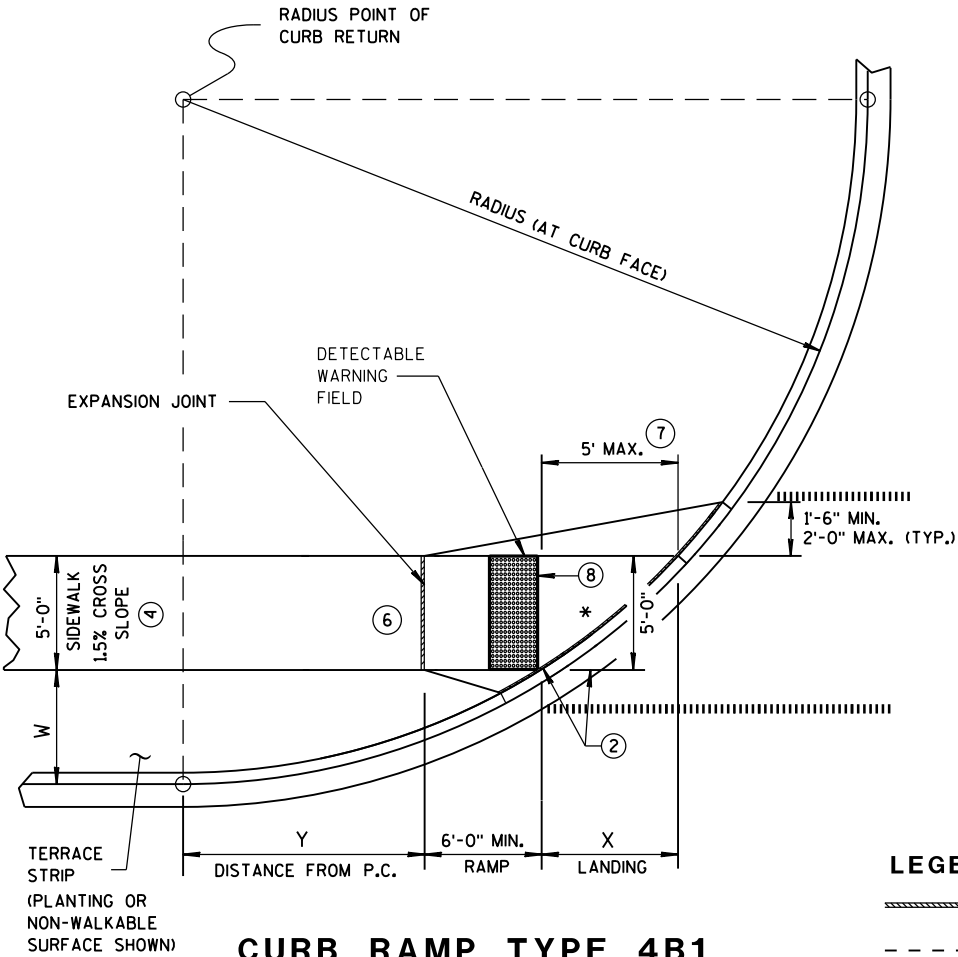
INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

GENERAL NOTES

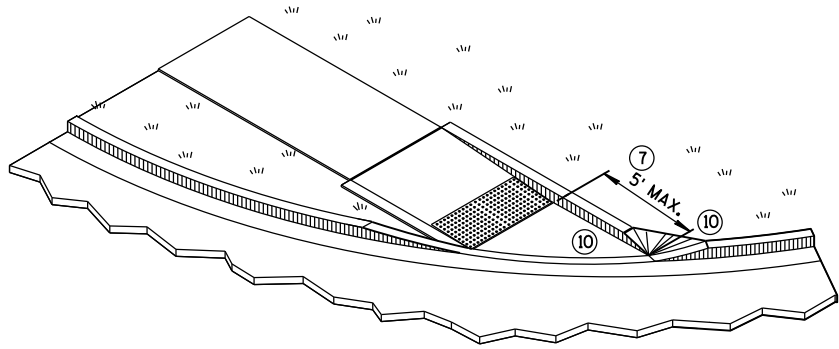
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



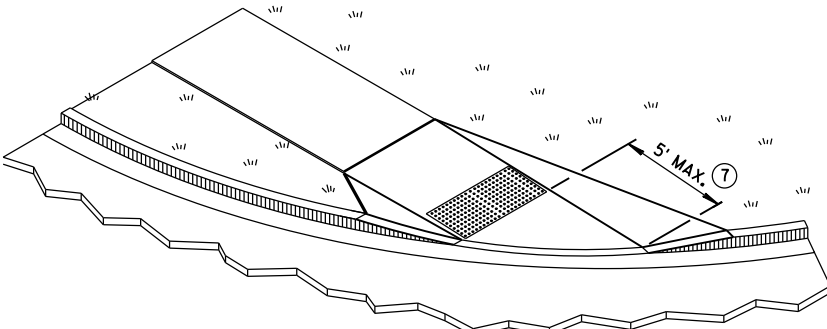
SECTION C-C FOR TYPE 4B



**CURB RAMP TYPE 4B1
PLAN VIEW**



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

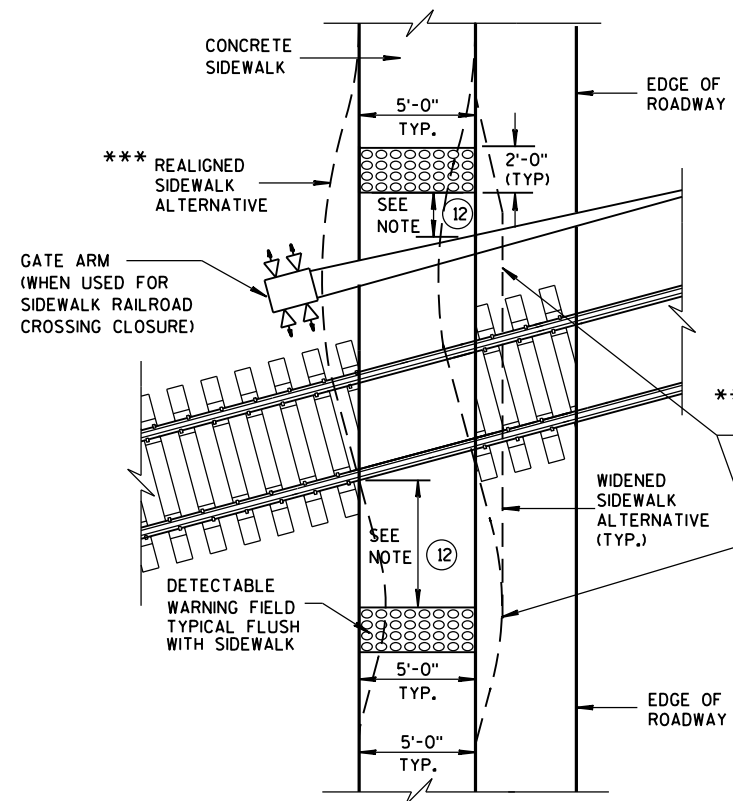
LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

**CURB RAMPS
TYPE 4B AND 4B1**

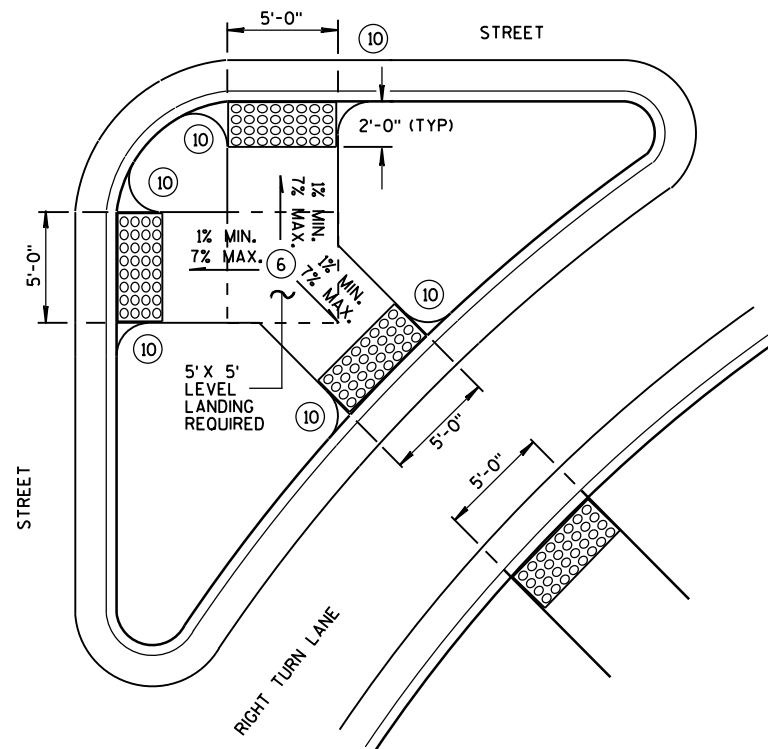
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

107

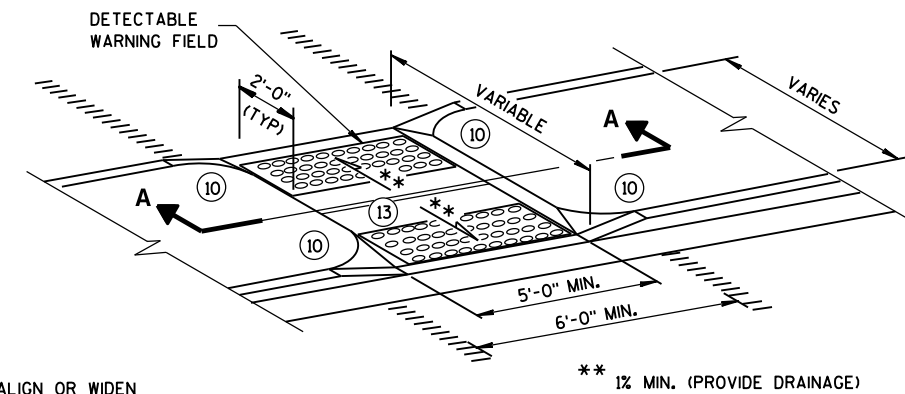


TYPE 8
DETECTABLE WARNINGS
AT RAILROAD CROSSING

REFER TO GENERAL NOTES ② AND ③
FOR ALL ISLAND CURB RAMPS

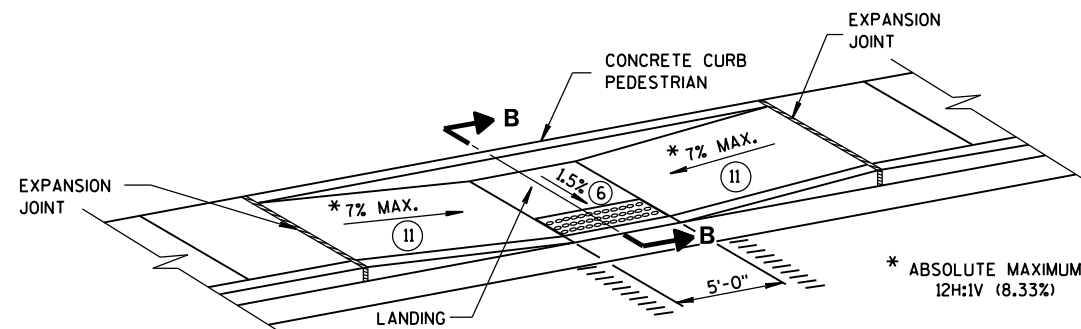


TYPE 6
DETECTABLE WARNING AT ISLANDS

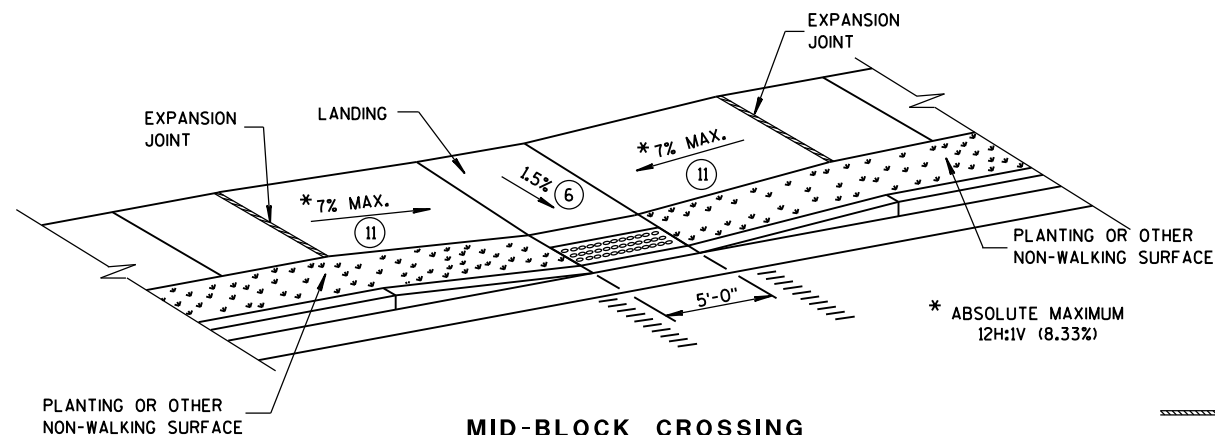


MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING
TYPE 5

*** DETAILS TO BE DETERMINED
BY DESIGNER



MID-BLOCK CROSSING
TYPE 7A



MID-BLOCK CROSSING
TYPE 7B

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

GENERAL NOTES

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

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

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

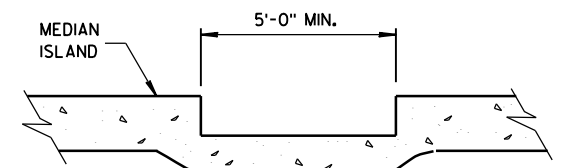
⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

⑩ INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

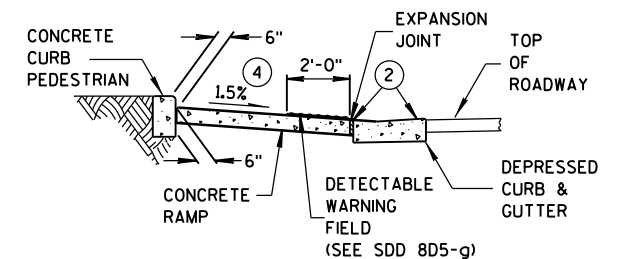
⑪ SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

⑫ THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 15 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

⑬ DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2-FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.



SECTION A-A



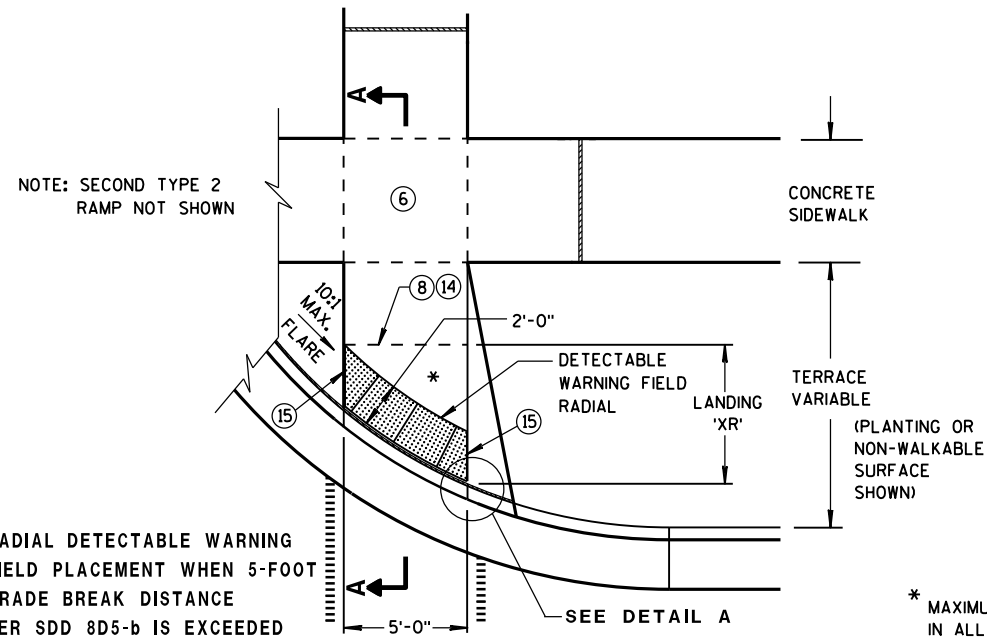
SECTION B-B

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

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

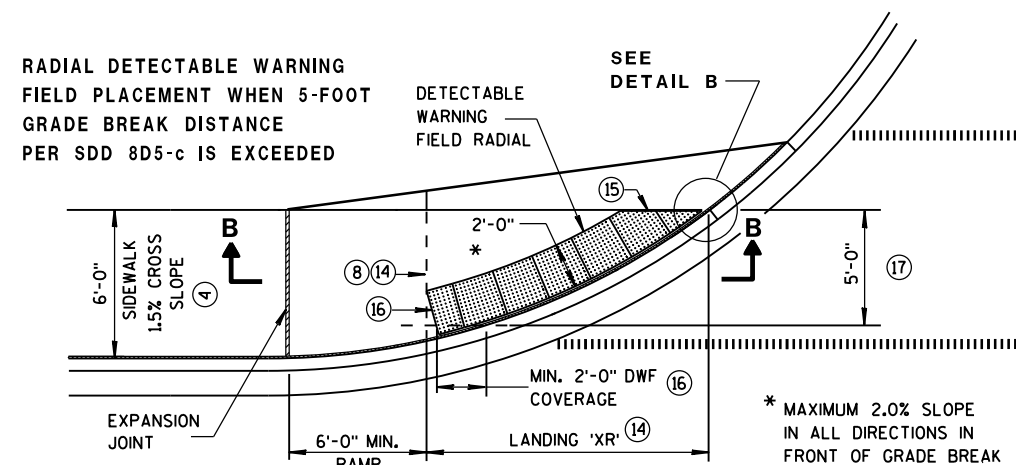
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 108



TYPE 2 RAMP PLAN VIEW

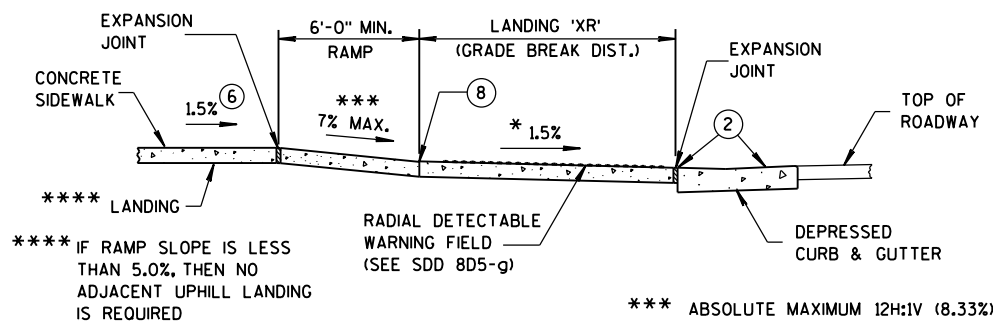
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

(ON LINE WITH SIDEWALK)

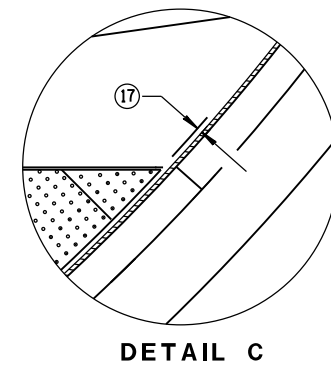
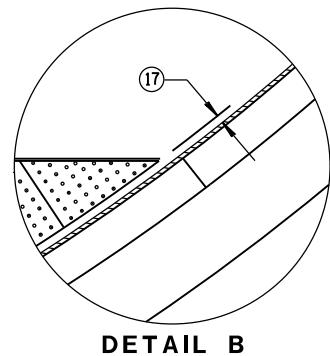
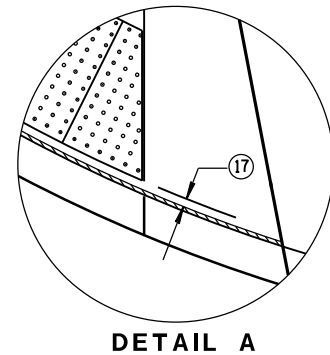
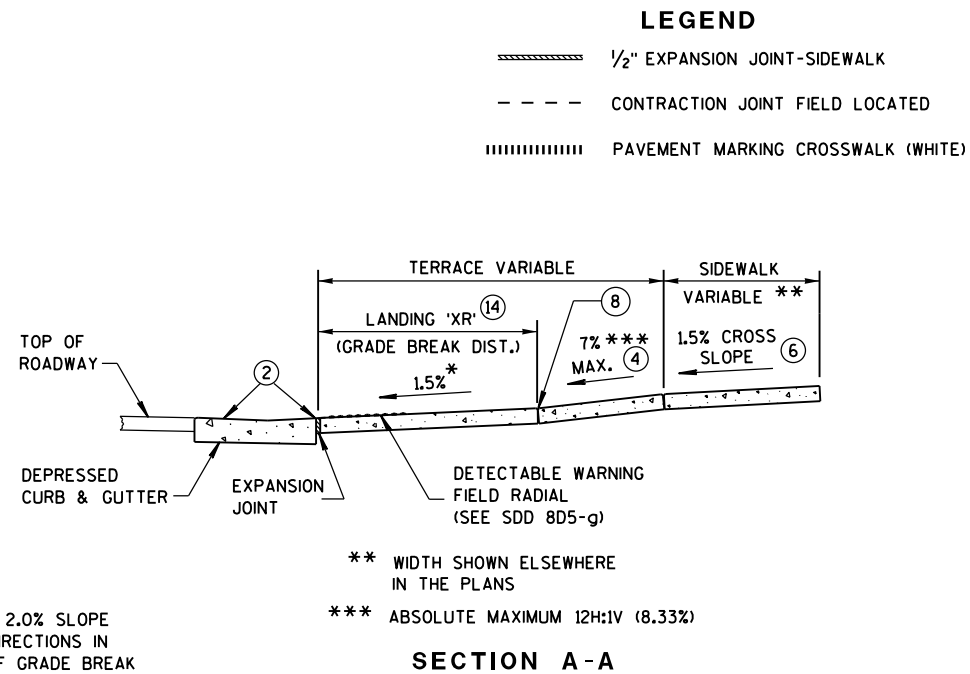


CURB RAMP TYPE 4A1 PLAN VIEW

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



SECTION B-B FOR TYPE 4A1



GENERAL NOTES

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

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

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

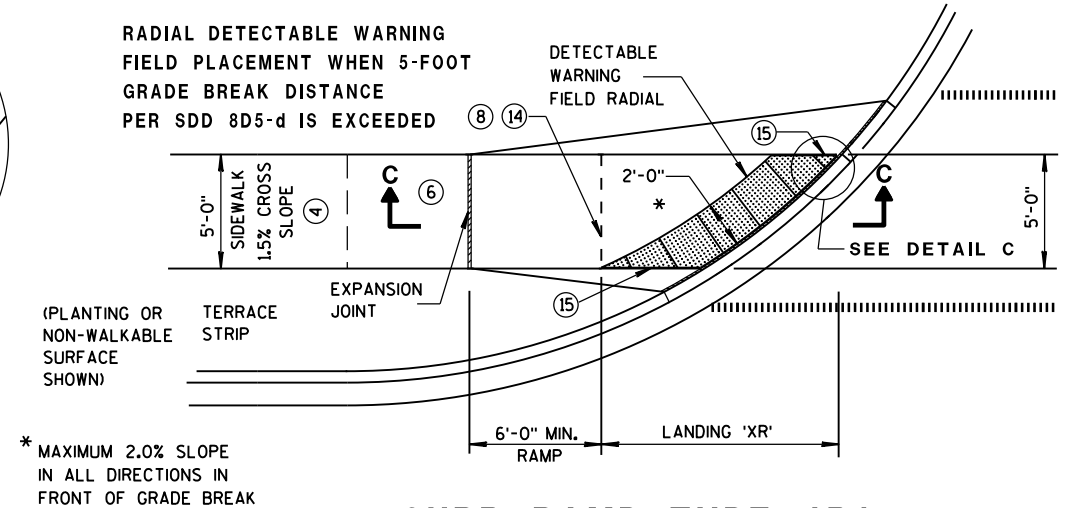
REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

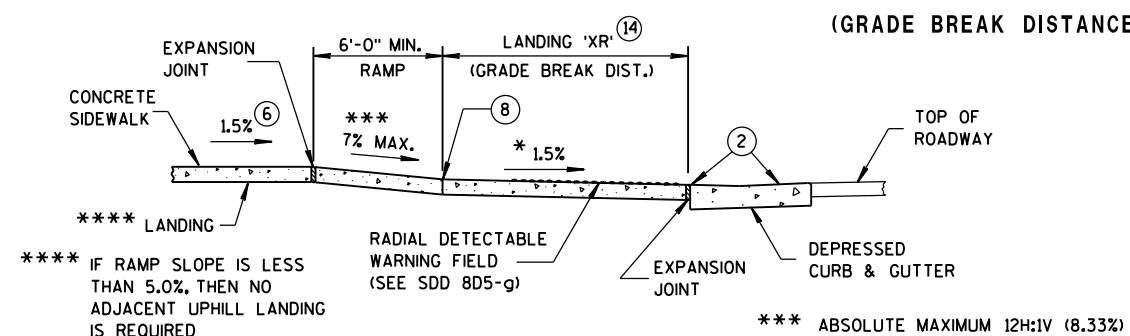
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION 'XR') REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.
- FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.
- USE 1'X 2' RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2'-0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.
- A MAXIMUM 3-INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5-FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



CURB RAMP TYPE 4B1 PLAN VIEW

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



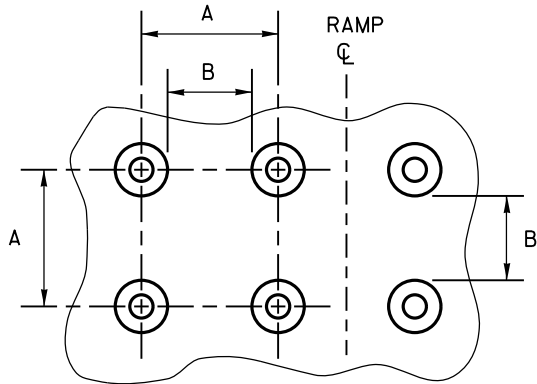
SECTION C-C FOR TYPE 4B1

**CURB RAMPS
RADIAL DETECTABLE WARNING
FIELD APPLICATIONS**

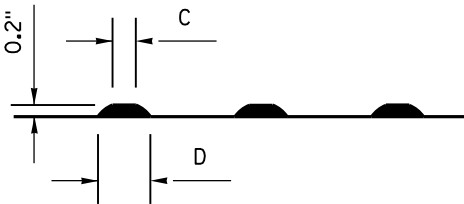
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 109

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

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

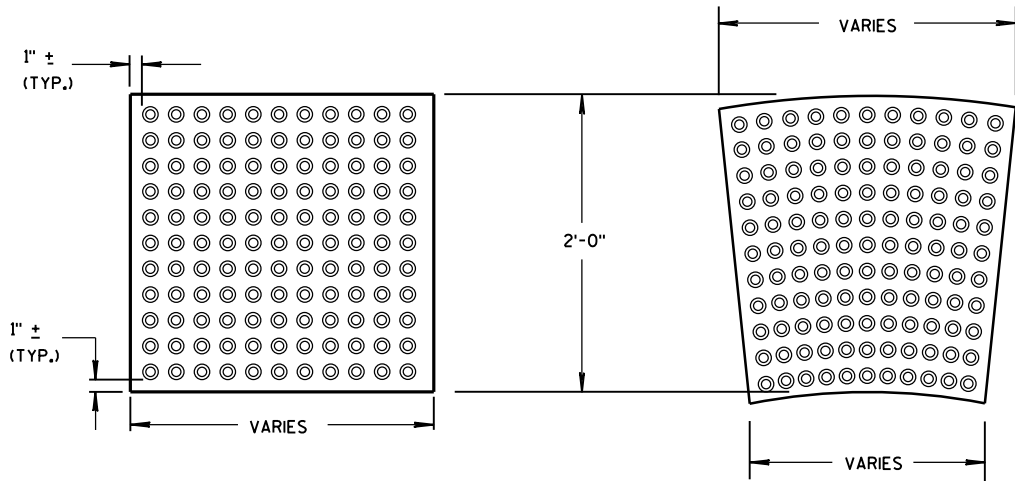


PLAN VIEW



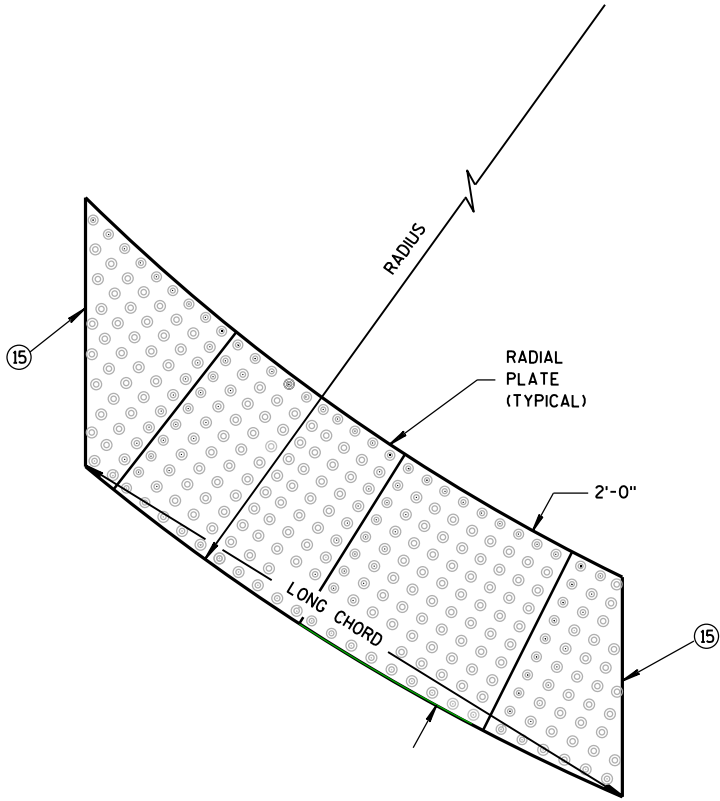
ELEVATION VIEW

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



RECTANGULAR
PLATES
DETECTABLE WARNING FIELDS (TYPICAL)

PLAN VIEW



RADIAL DETECTABLE
WARNING FIELD ATTRIBUTES

GENERAL NOTES

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

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGES IN COMBINATION WITH SQUARE PANELS ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

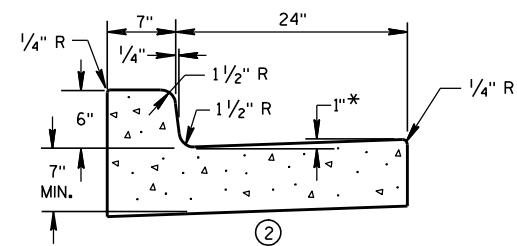
DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

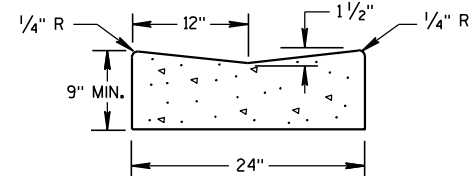
CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

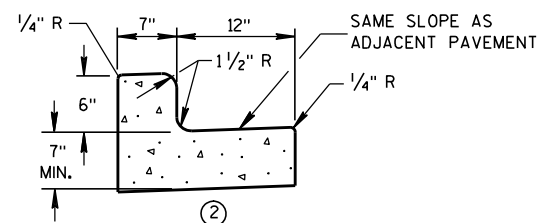
APPROVED
June, 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERV 110 ENT
FHWA



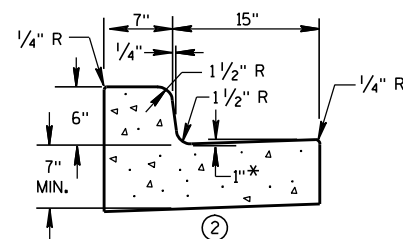
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

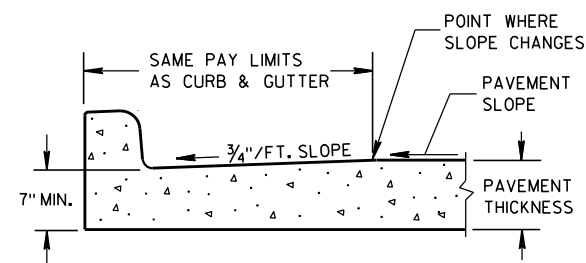


① CONCRETE CURB & GUTTER 19"

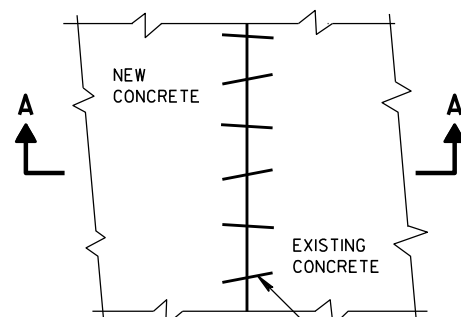


① CONCRETE CURB & GUTTER 22"

* TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



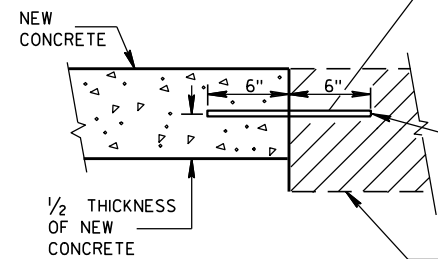
PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



PLAN VIEW

EXISTING AND NEW CONCRETE MAY BE CURB & GUTTER, SURFACE DRAIN, PAVEMENT OR OTHER CONCRETE STRUCTURE.

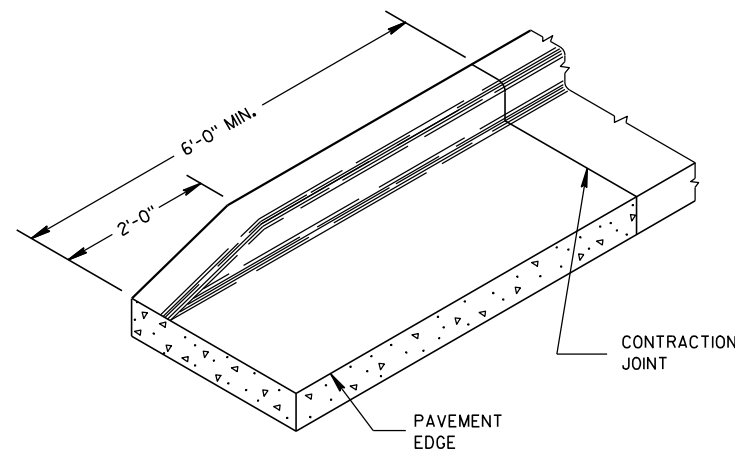
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



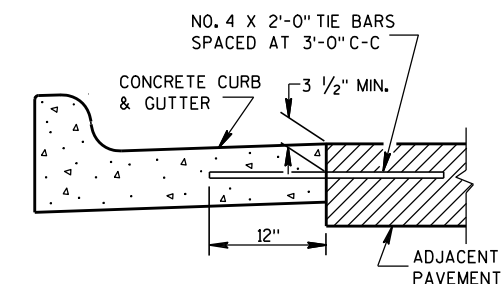
SECTION A-A
PAVEMENT TIES

THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

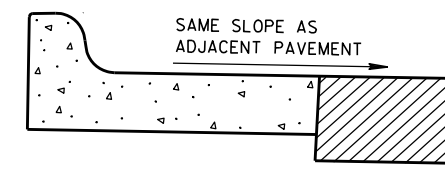
EXISTING CONCRETE



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



③ HIGH SIDE SECTION
(TYPICAL FOR ALL CURB & GUTTER)

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 COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURB.

- ① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.

CONCRETE GUTTER, CURB AND
GUTTER AND PAVEMENT TIES
(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

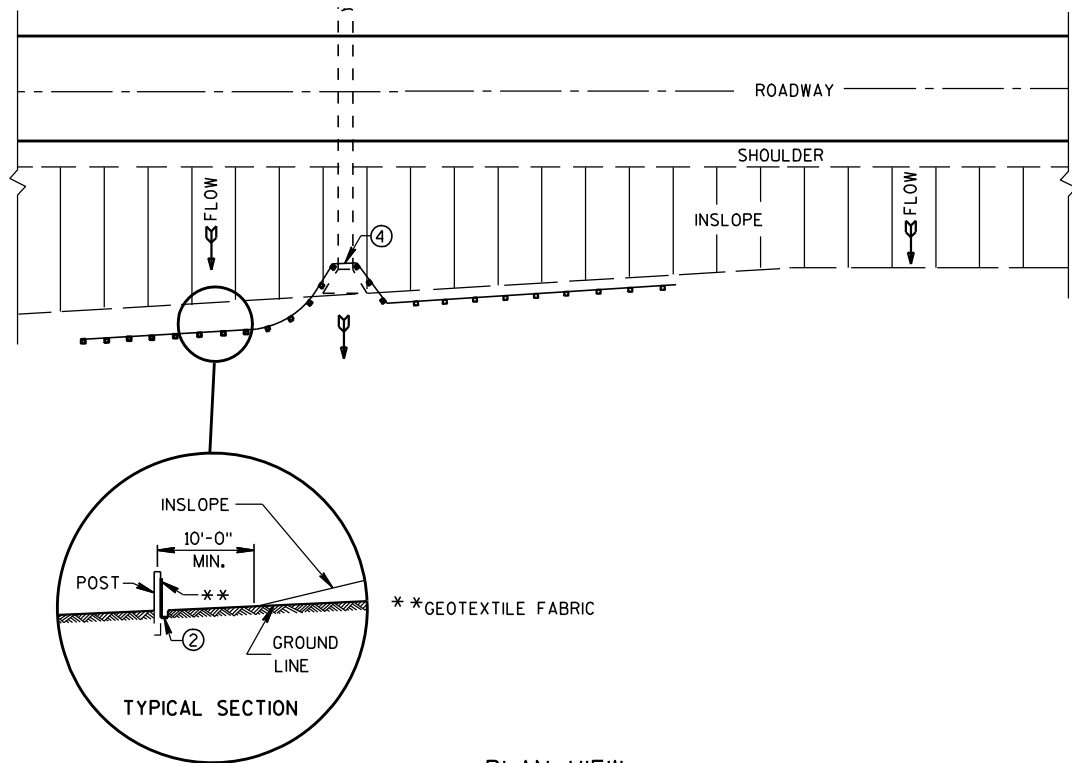
11/2/2010
DATE

FHWA

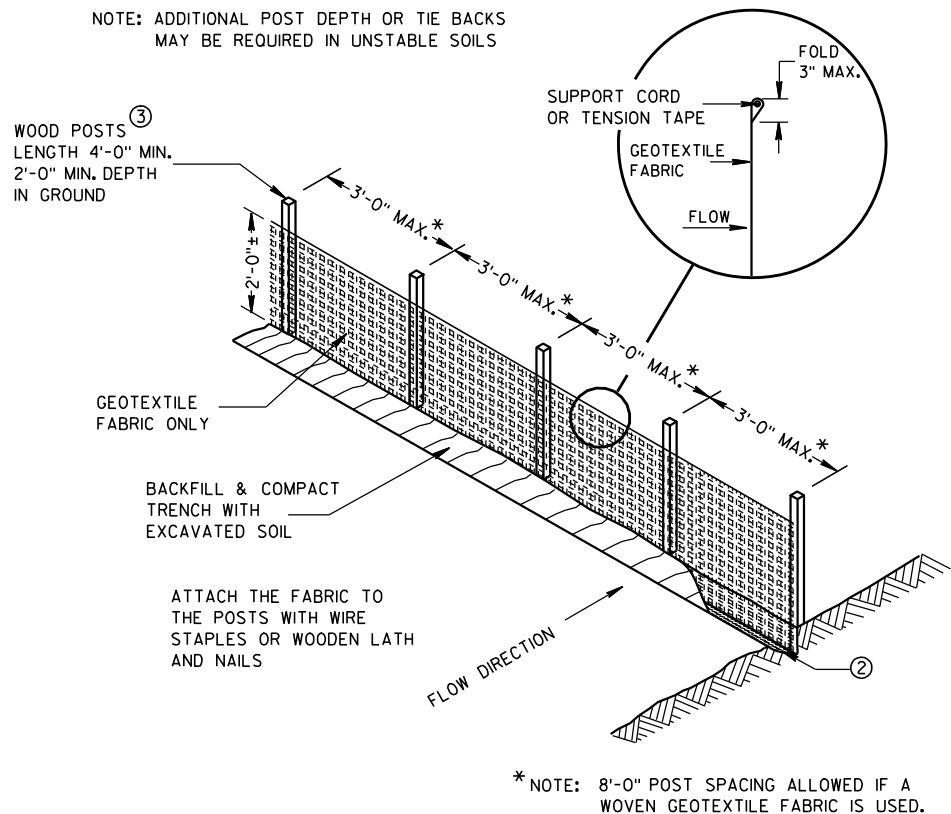
/S/ Jerry Zonn
ROADWAY STANDARDS 111
ENGINEER

S.D.D. 8 D 16-10

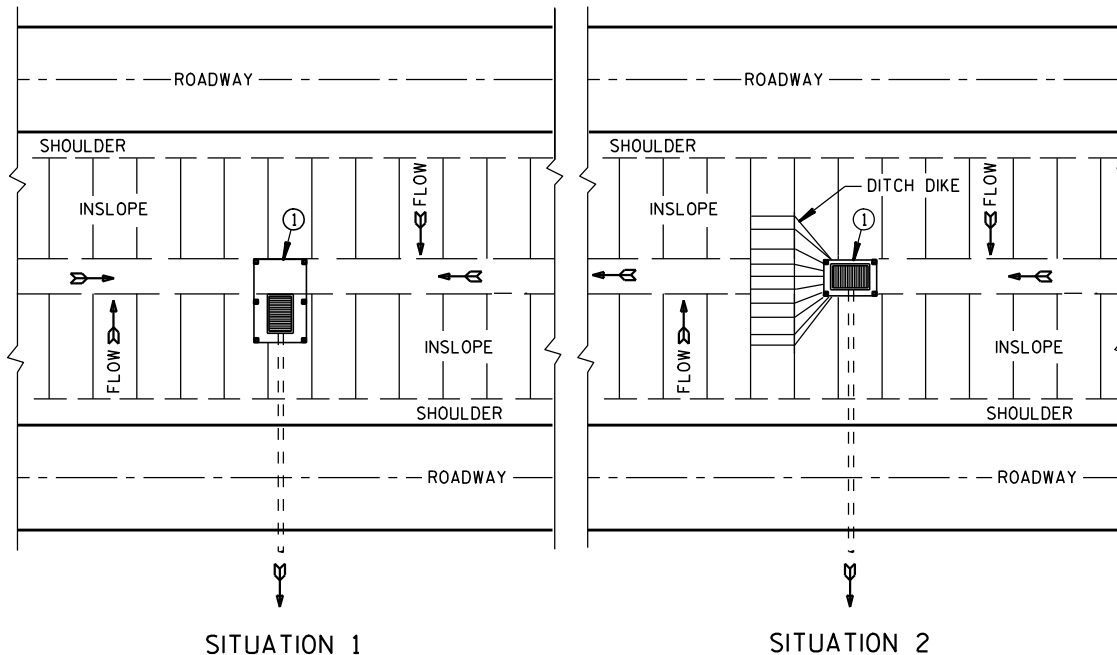
S.D.D. 8 D 16-10



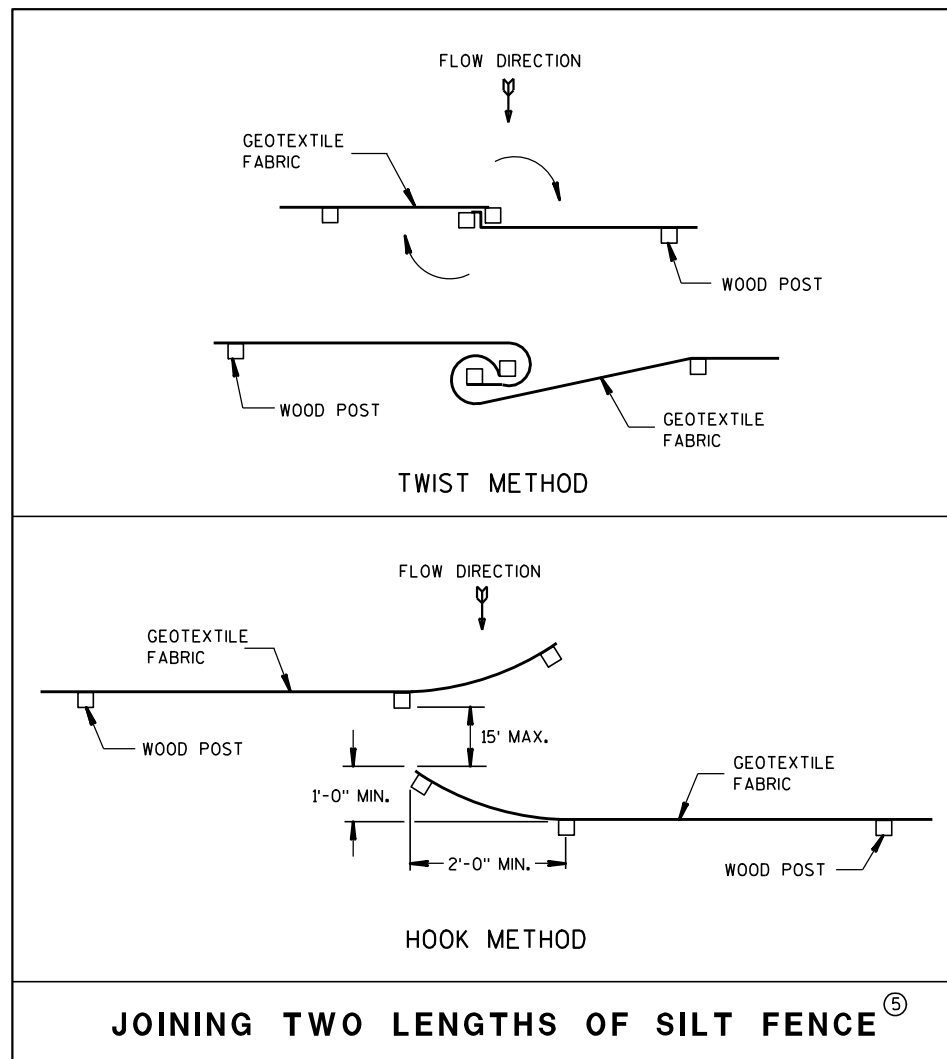
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

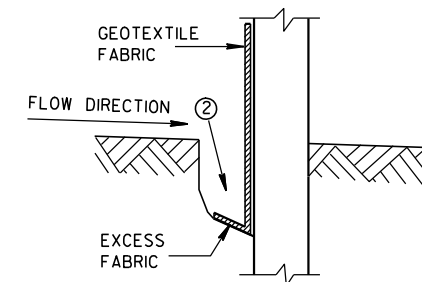


JOINING TWO LENGTHS OF SILT FENCE (5)

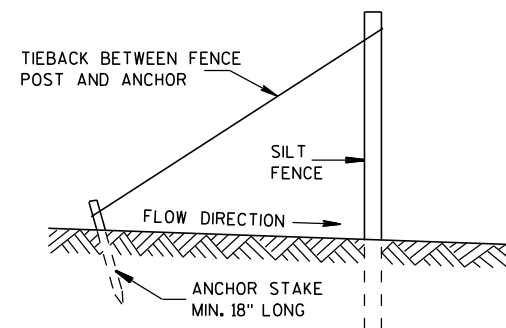
GENERAL NOTES

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

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

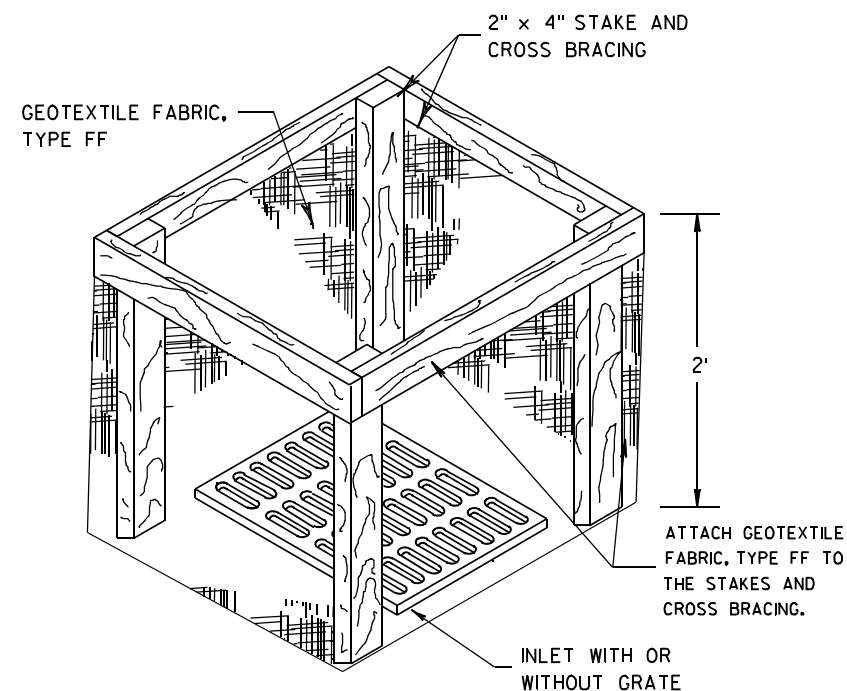
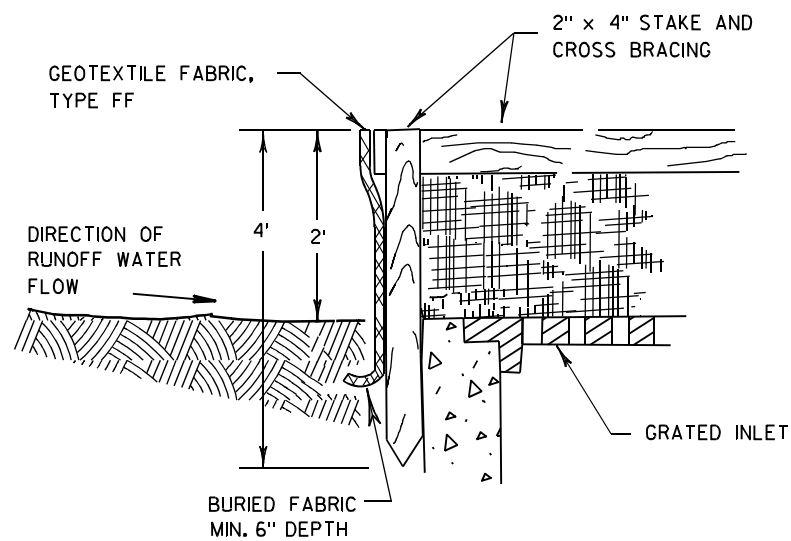


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Conn CHIEF ROADWAY DEVELOPER 112 ENGINEER
FHWA	



INLET PROTECTION, TYPE A

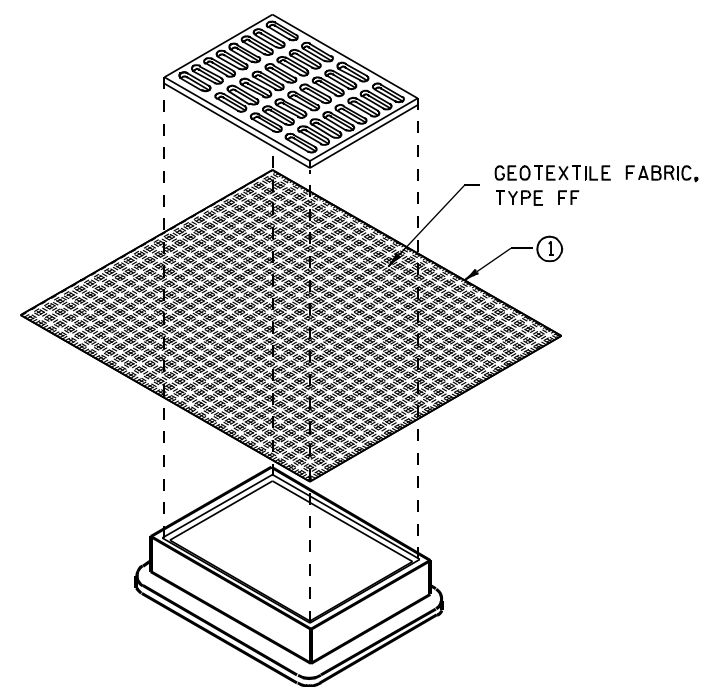
GENERAL NOTES

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

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

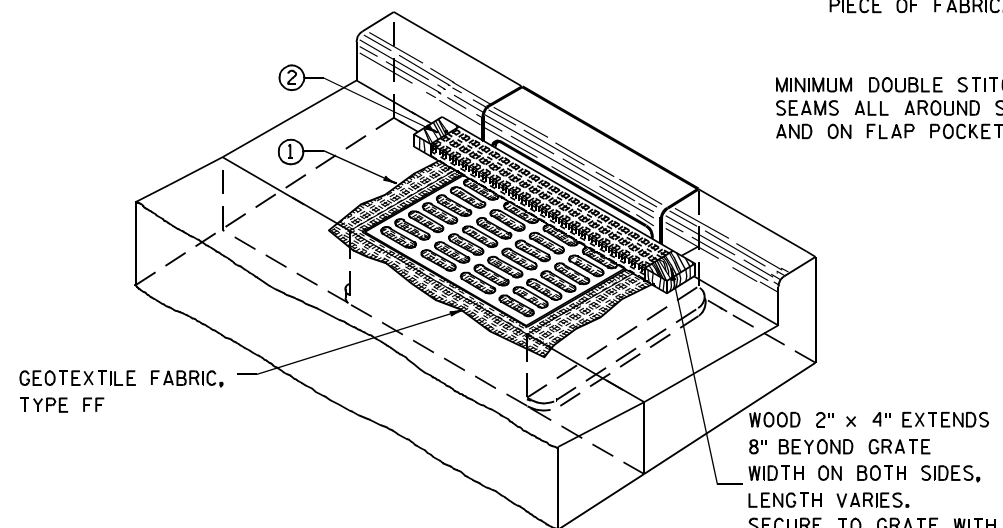
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

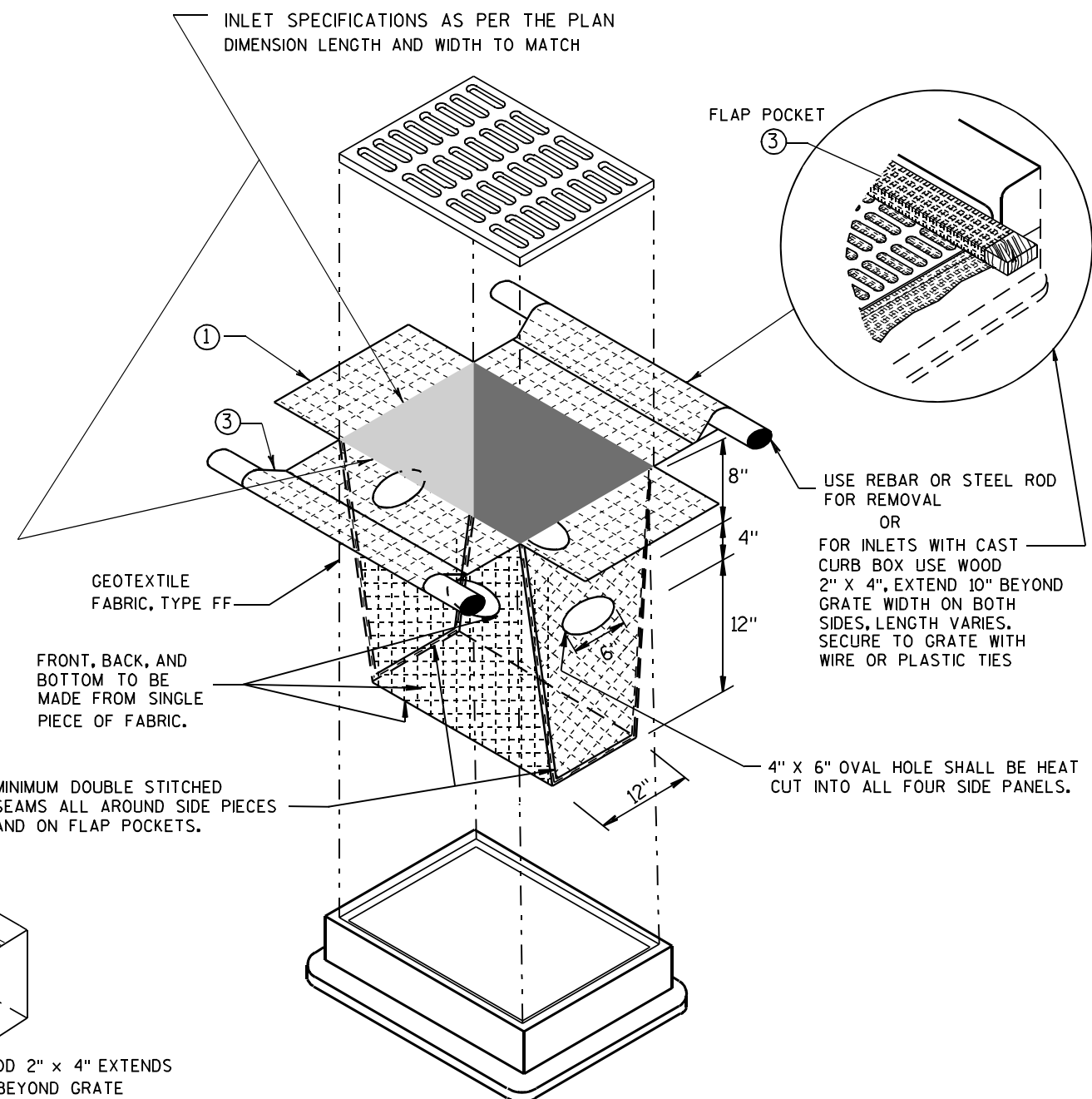
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



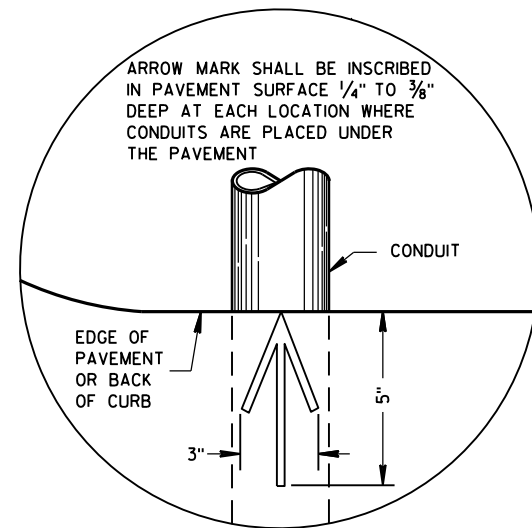
INLET PROTECTION, TYPE D

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

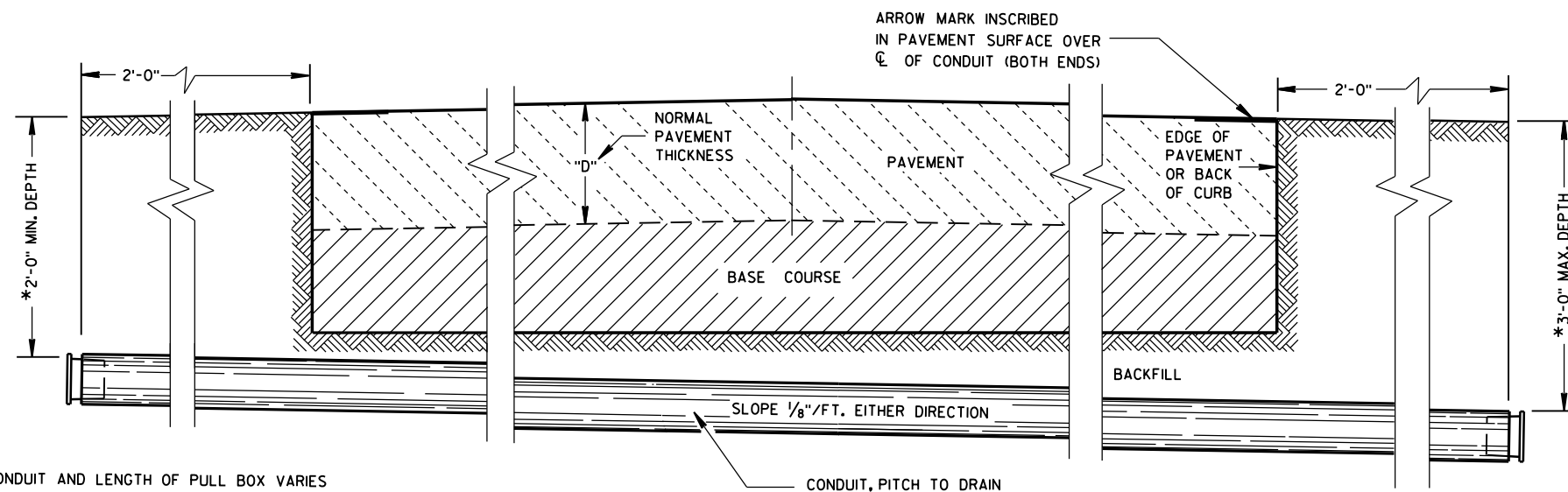
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 113
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



PLAN VIEW
ARROW MARK



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

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

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March, 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 114
FHWA

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

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

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

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

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

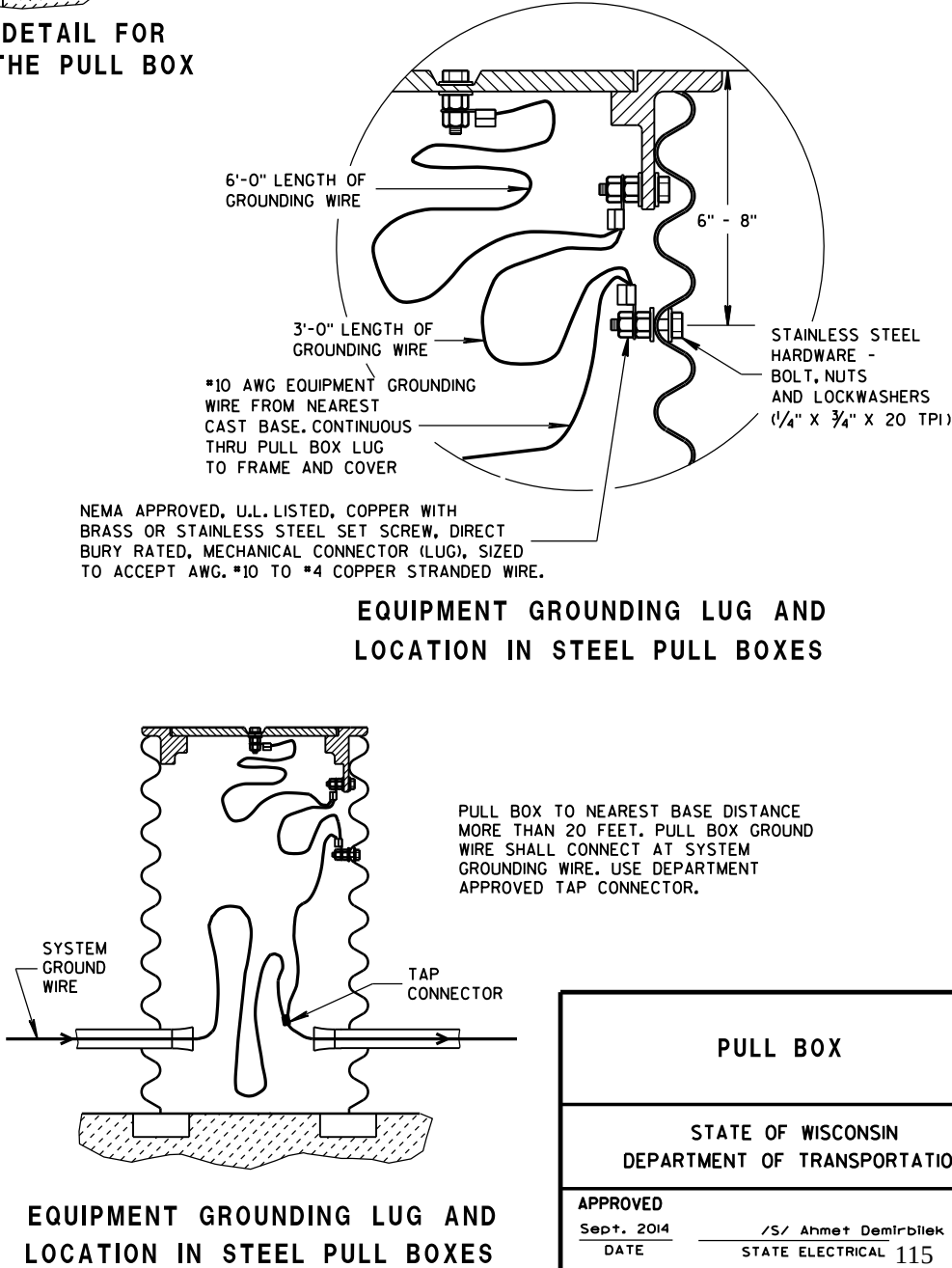
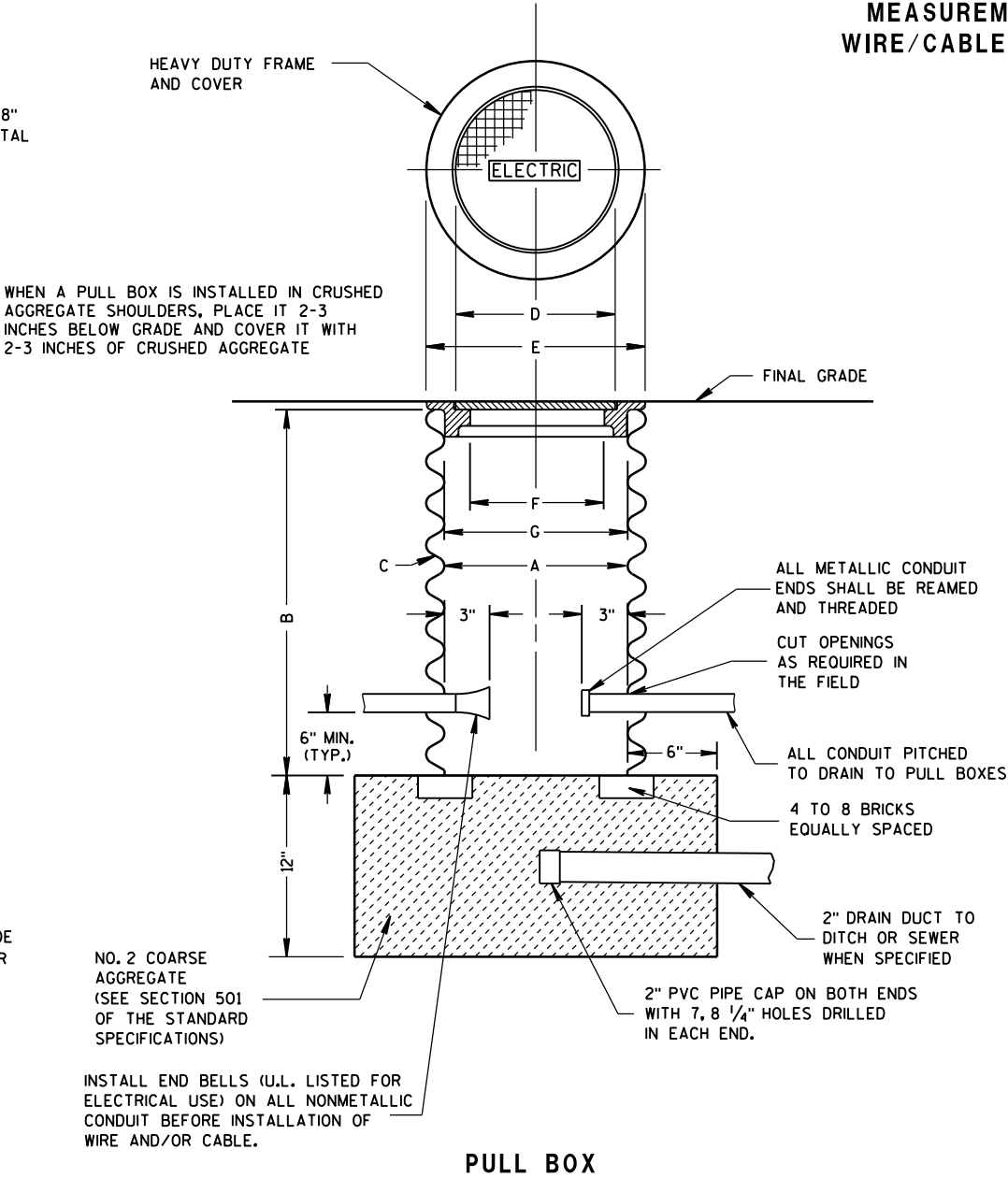
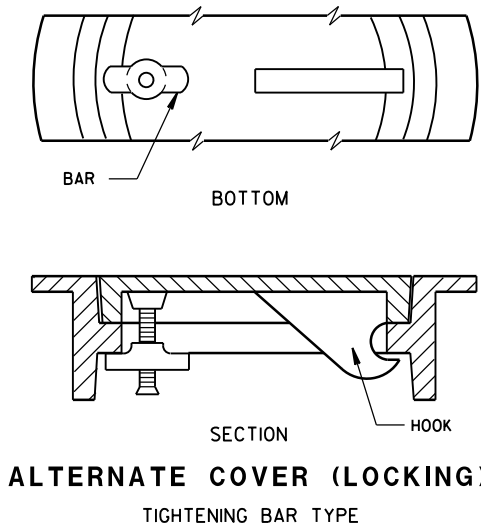
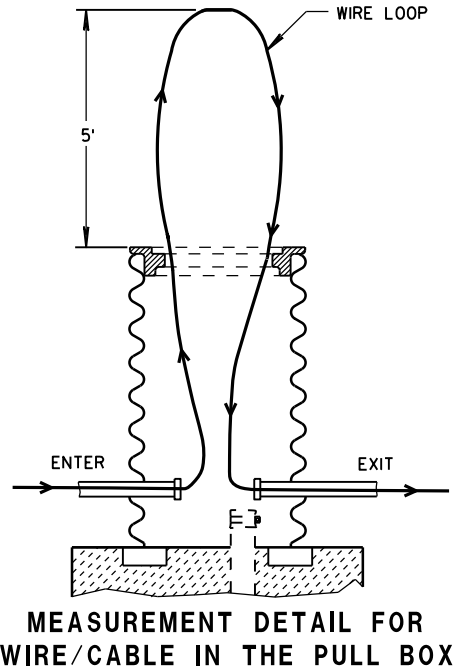
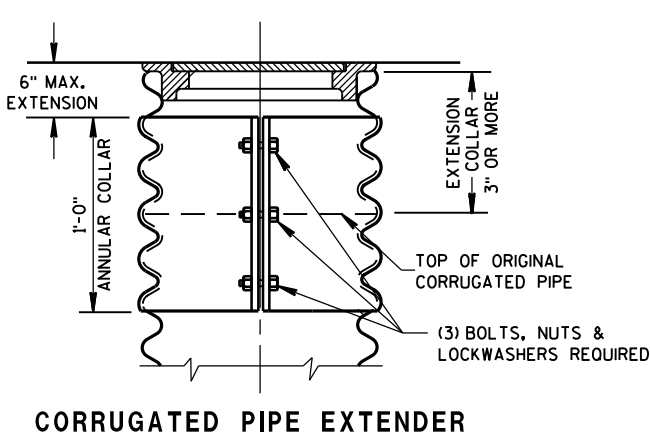
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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

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

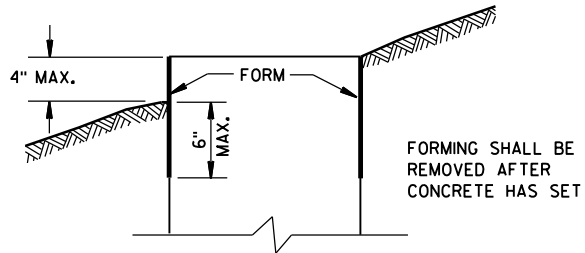
ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

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



PULL BOX	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL 115
FHWA	

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



FORMING DETAIL

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

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

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

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

GENERAL NOTES (CONTINUED)

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

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

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

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

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

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

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

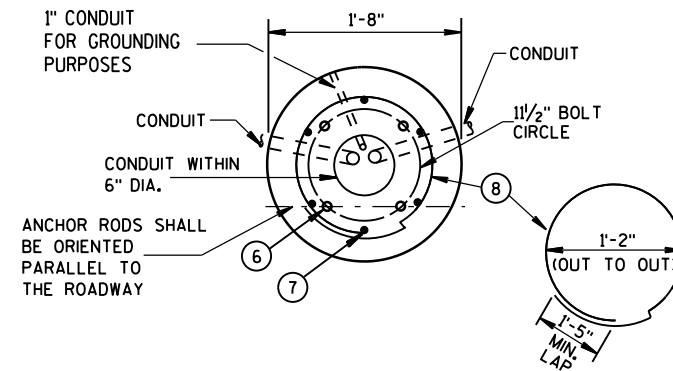
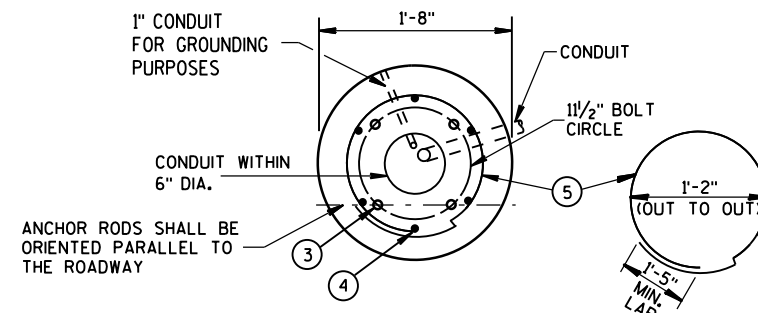
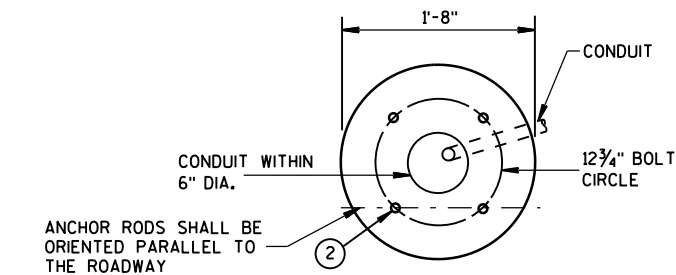
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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

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

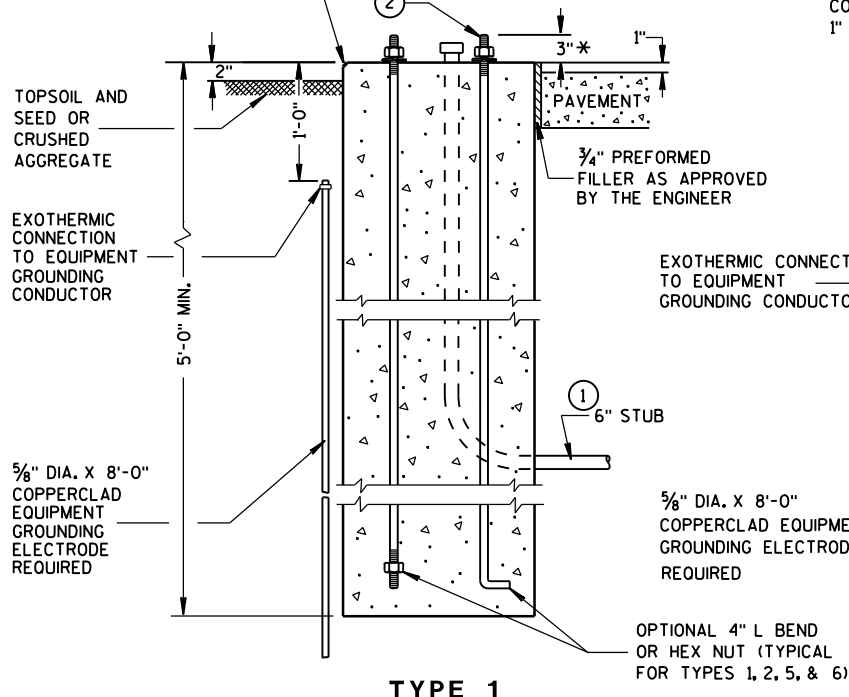
- 1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN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

- 2 (4) 1" DIA. X 3'-6" ANCHOR RODS.
3 (4) 1" DIA. X 5'-0" ANCHOR RODS.
4 (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.
5 (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.
6 (4) 1" DIA. X 3'-6" ANCHOR RODS.
7 (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT.
8 (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



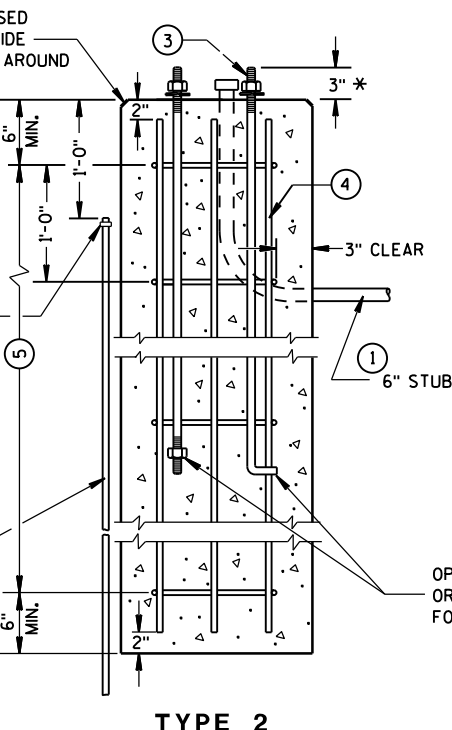
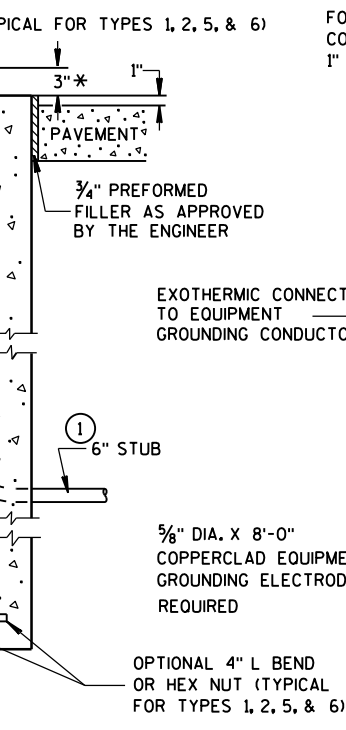
FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

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

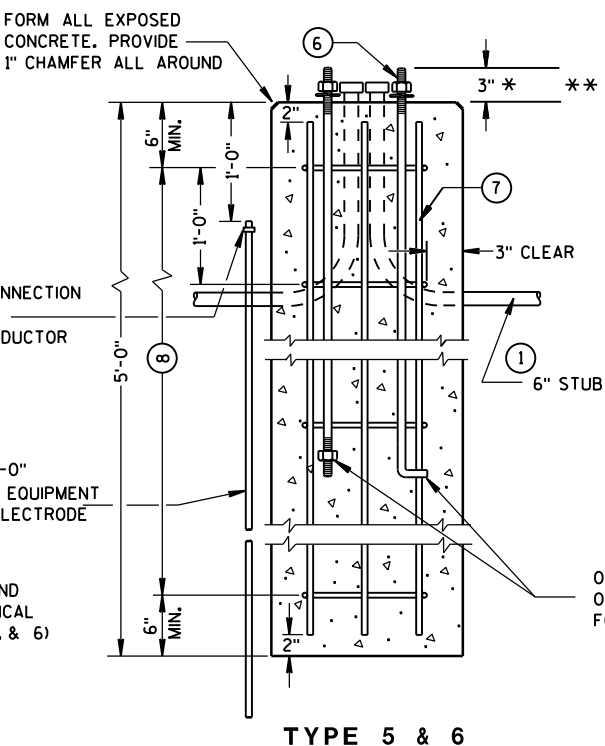


TYPE 1

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



TYPE 2



TYPE 5 & 6

CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014

DATE

/S/ Ahmet Demirel

STATE ELECTRICAL 116

FHWA

GENERAL NOTES

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

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

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

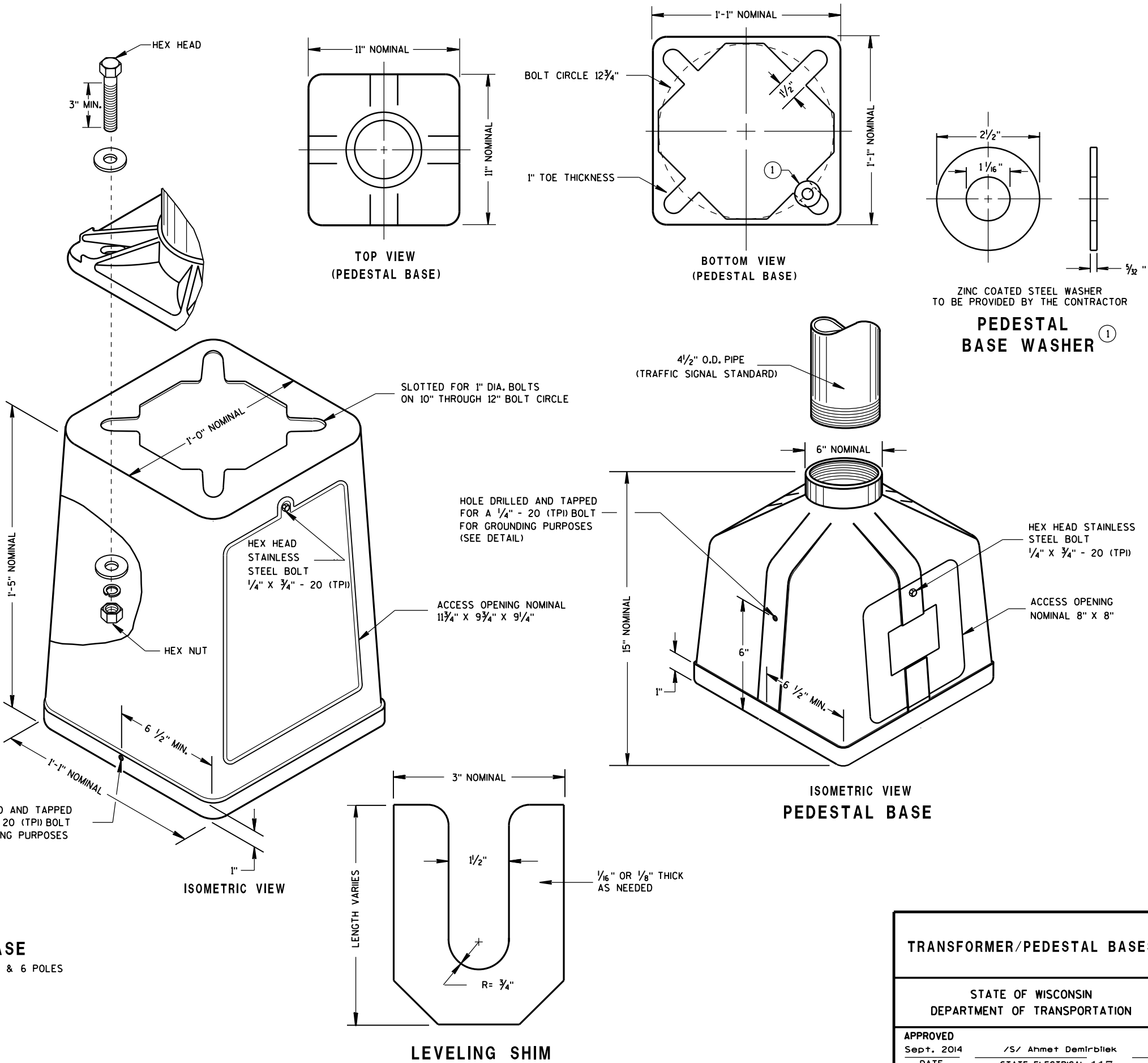
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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

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

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

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



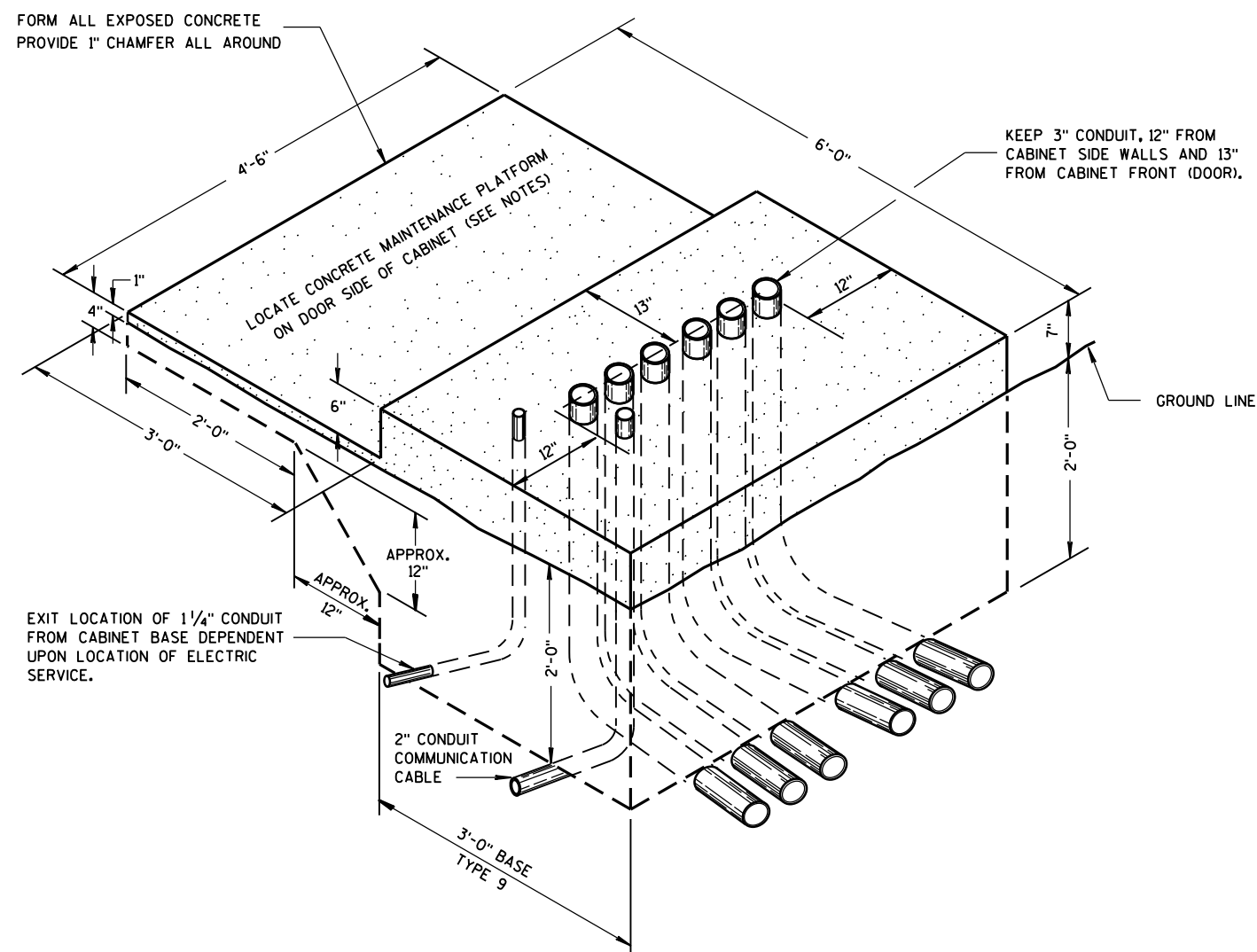
TYPICAL MECHANICAL CONNECTOR LUG TO BE FURNISHED WITH EACH BASE

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

TRANSFORMER/PEDESTAL BASES

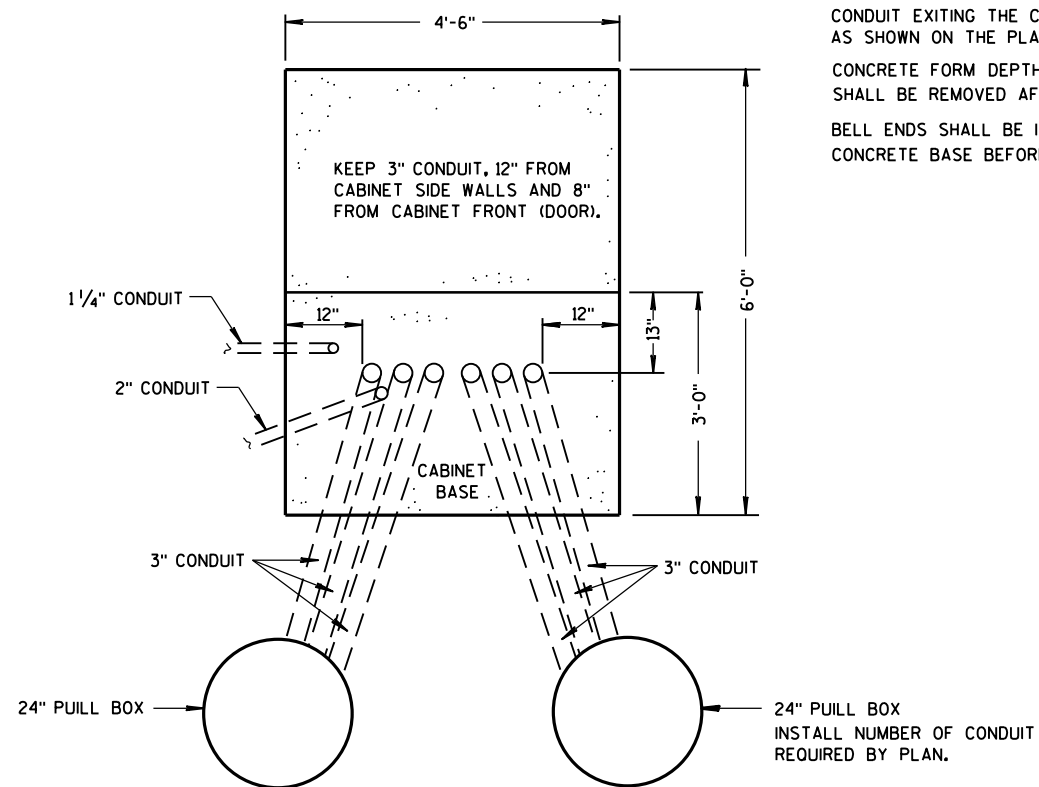
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED Sept. 2014 DATE /S/ Ahmet Demirbilek STATE ELECTRICAL 117 FHWA



**ISOMETRIC VIEW
TYPE 9, SPECIAL**

(C.Y. CONCRETE = APPROX. 1.56)



PLAN VIEW

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

GENERAL NOTES

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

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

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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

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

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

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

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE LEVEL.

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

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

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

CONDUIT EXITING THE CONCRETE BASE (SIX THREE INCH) SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.

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

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

**CONCRETE CONTROL CABINET
BASE, TYPE 9, SPECIAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014

DATE

FHWA

/S/ Ahmet Demirbilek

STATE ELECTRICAL 118

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4 INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL END INSTALLED. ALL CONDUIT SHALL BE SLOPED TO PULL BOX.

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

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

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

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

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

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

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

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

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

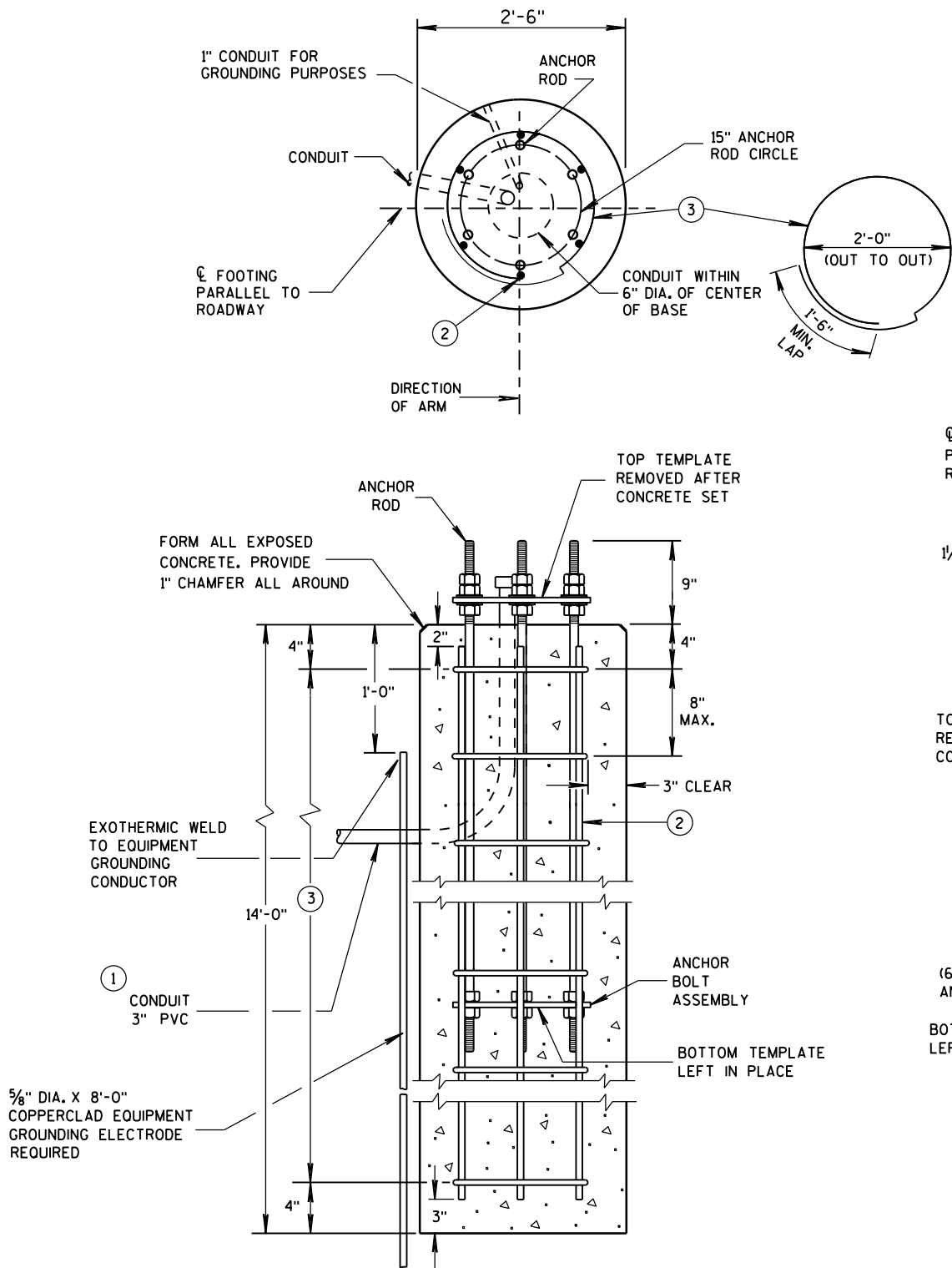
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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

② (6) NO. 6 X 13'-7" BAR STEEL REINFORCEMENT.

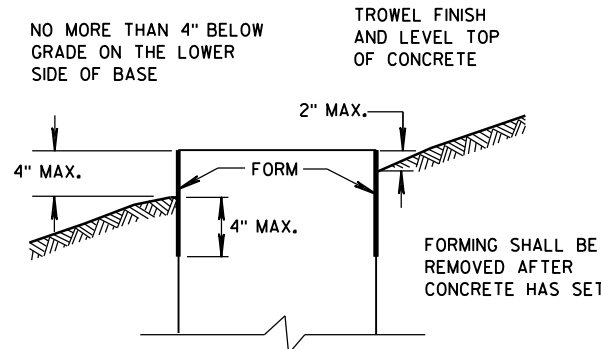
③ (21) NO. 5 X 7'-10" BAR STEEL REINFORCEMENT @ 8" MAX. C-C.

CONCRETE MASONRY	-----	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	-----	fy=60,000 p.s.i.
ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE WITH SECTION 641.2.2.3 OF THE STANDARD SPECIFICATION)	-----	fy=55,000 p.s.i.
TEMPLATES, ASTM, A709 GRADE 36	-----	fy=36,000 p.s.i.

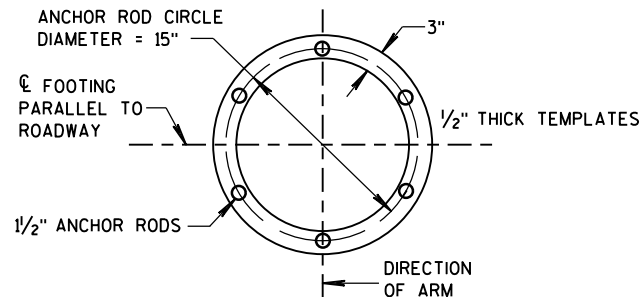


CONCRETE BASE TYPE 10
(FOR TYPE 9 & 10 & OVER HEIGHT (OH) POLES)

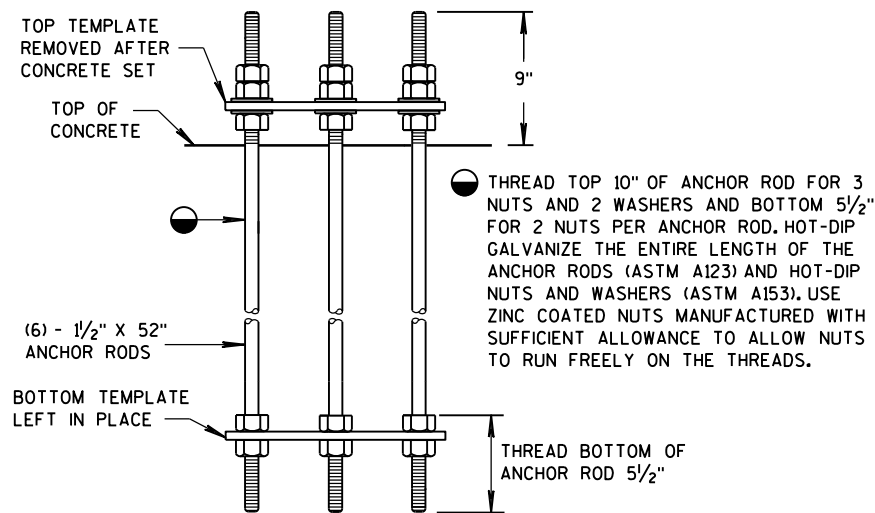
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 10
ANCHOR ASSEMBLY

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	172
LBS. OF VERTICAL BAR STEEL	122

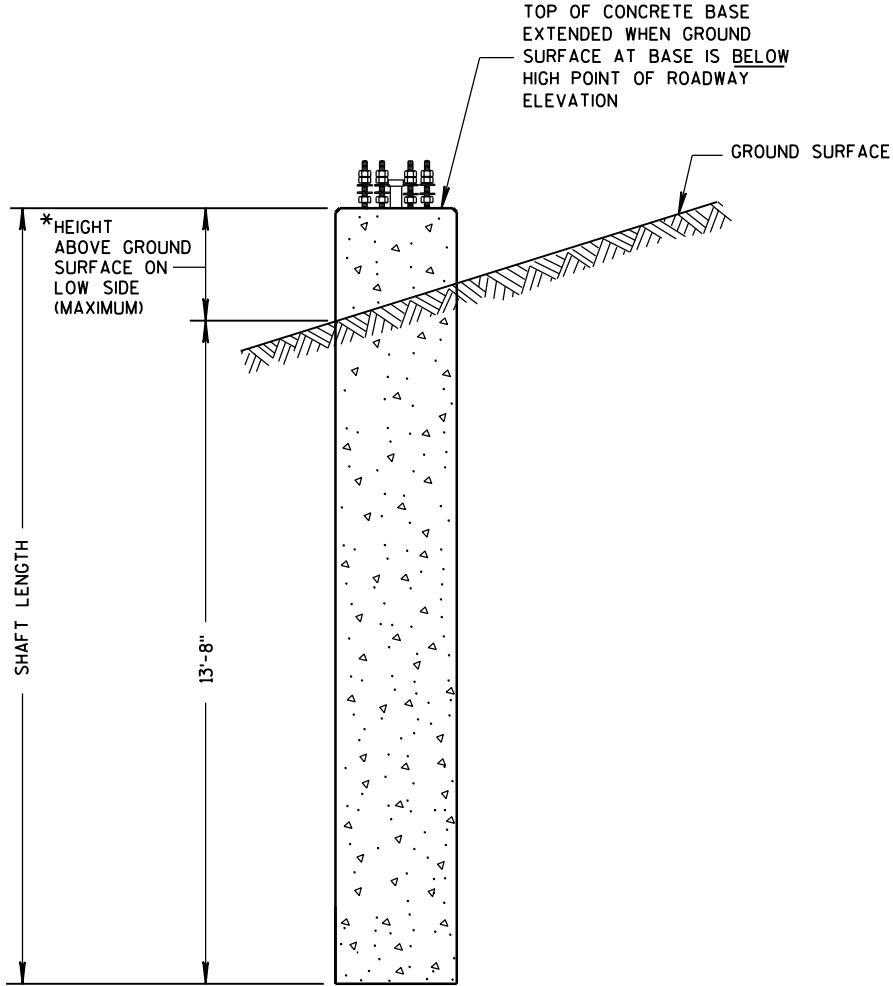
CONCRETE BASE TYPE 10

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 119
FHWA

REINFORCEMENT AND CONCRETE QUANTITIES
ADJUSTED FOR EXTENDED TYPE 10 CONCRETE BASE

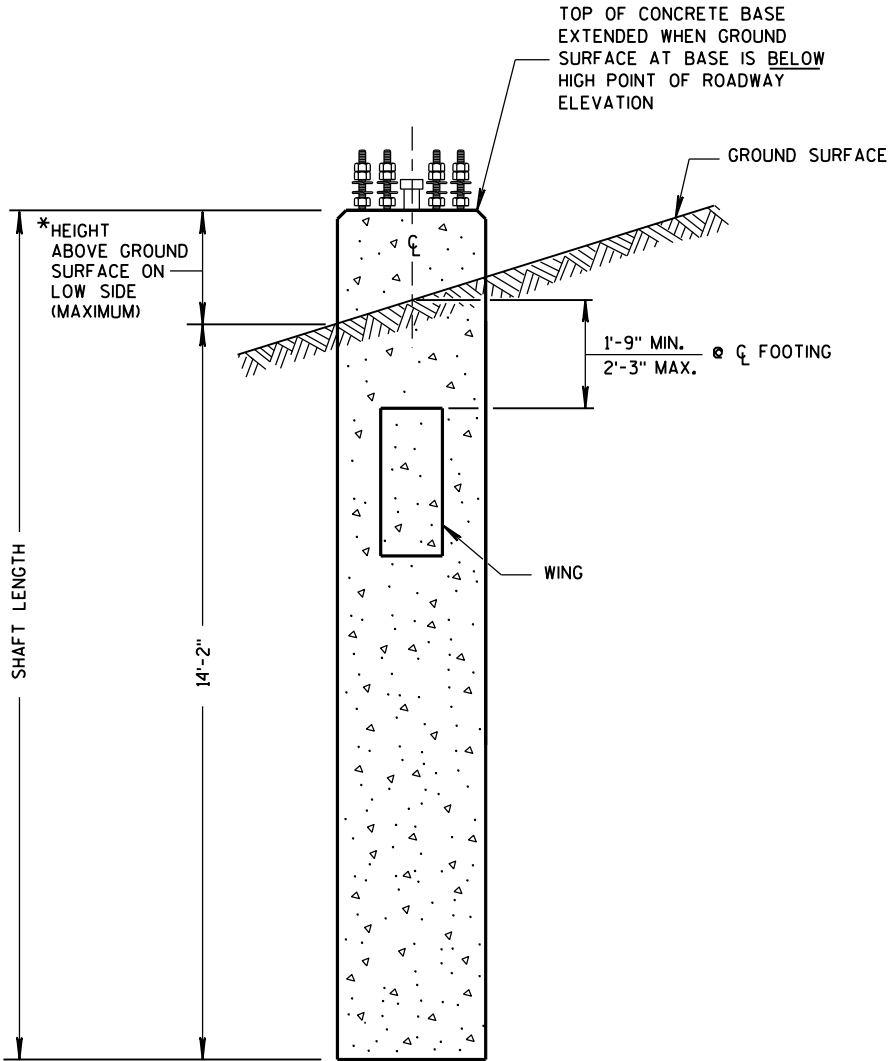
HEIGHT INCREASE REQUIRED	* HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAXIMUM)	SHAFT LENGTH	LENGTH OF #6 VERTICAL REINF.	NO. OF #4 HOOPS	C.Y. OF CONCRETE	LBS. OF HOOP BAR STEEL	LBS. OF VERTICAL BAR STEEL
>0" TO 6"	10"	14'-6"	14'-1"	16	2.6	78	127
>6" TO 1'-0"	1'-4"	15'-0"	14'-7"	16	2.7	78	131
>1'-0" TO 1'-6"	1'-10"	15'-6"	15'-1"	17	2.8	83	136
>1'-6" TO 2'-0"	2'-4"	16'-0"	15'-7"	17	2.9	83	141



CONCRETE BASE TYPE 10 (EXTENDED)

REINFORCEMENT AND CONCRETE QUANTITIES
ADJUSTED FOR EXTENDED TYPE 13 CONCRETE BASE

HEIGHT INCREASE REQUIRED	* HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAXIMUM)	SHAFT LENGTH	LENGTH OF #6 VERTICAL REINF.	NO. OF #4 HOOPS	C.Y. OF CONCRETE	LBS. OF H.S. BAR STEEL
>0" TO 6"	10"	15'-0"	14'-7"	16	6.5	447
>6" TO 1'-0"	1'-4"	15'-6"	15'-1"	16	6.6	454
>1'-0" TO 1'-6"	1'-10"	16'-0"	15'-7"	17	6.8	469
>1'-6" TO 2'-0"	2'-4"	16'-6"	16'-1"	17	7.0	476

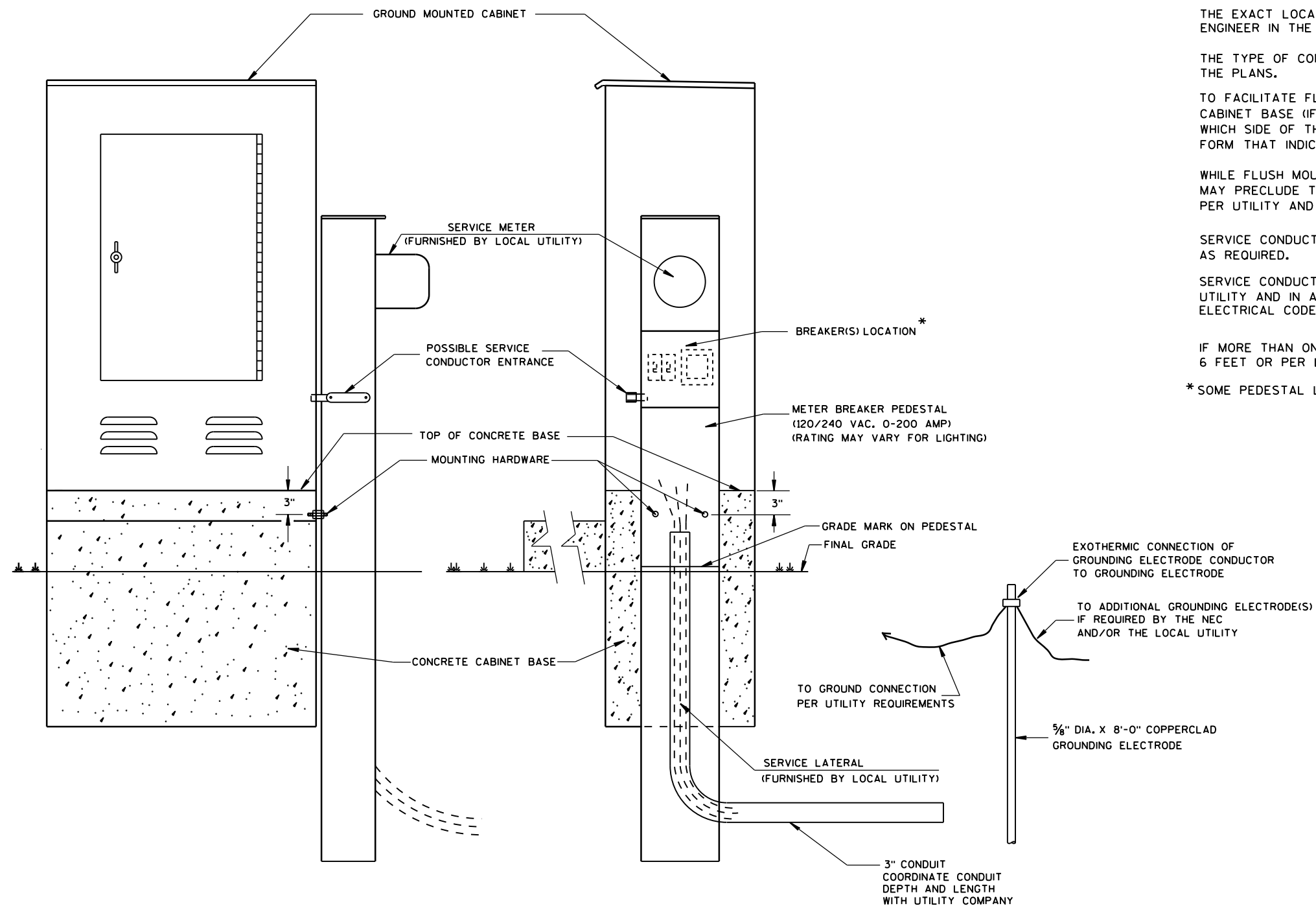


CONCRETE BASE TYPE 13 (EXTENDED)

CONCRETE BASE
TYPE 10 & TYPE 13 EXTENSION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11-26-2013
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL 120
FHWA



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE, CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH, THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION
(METER BREAKER PEDESTAL)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

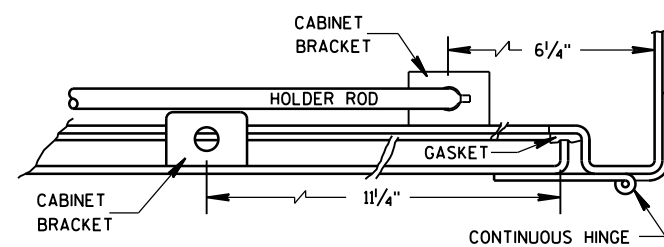
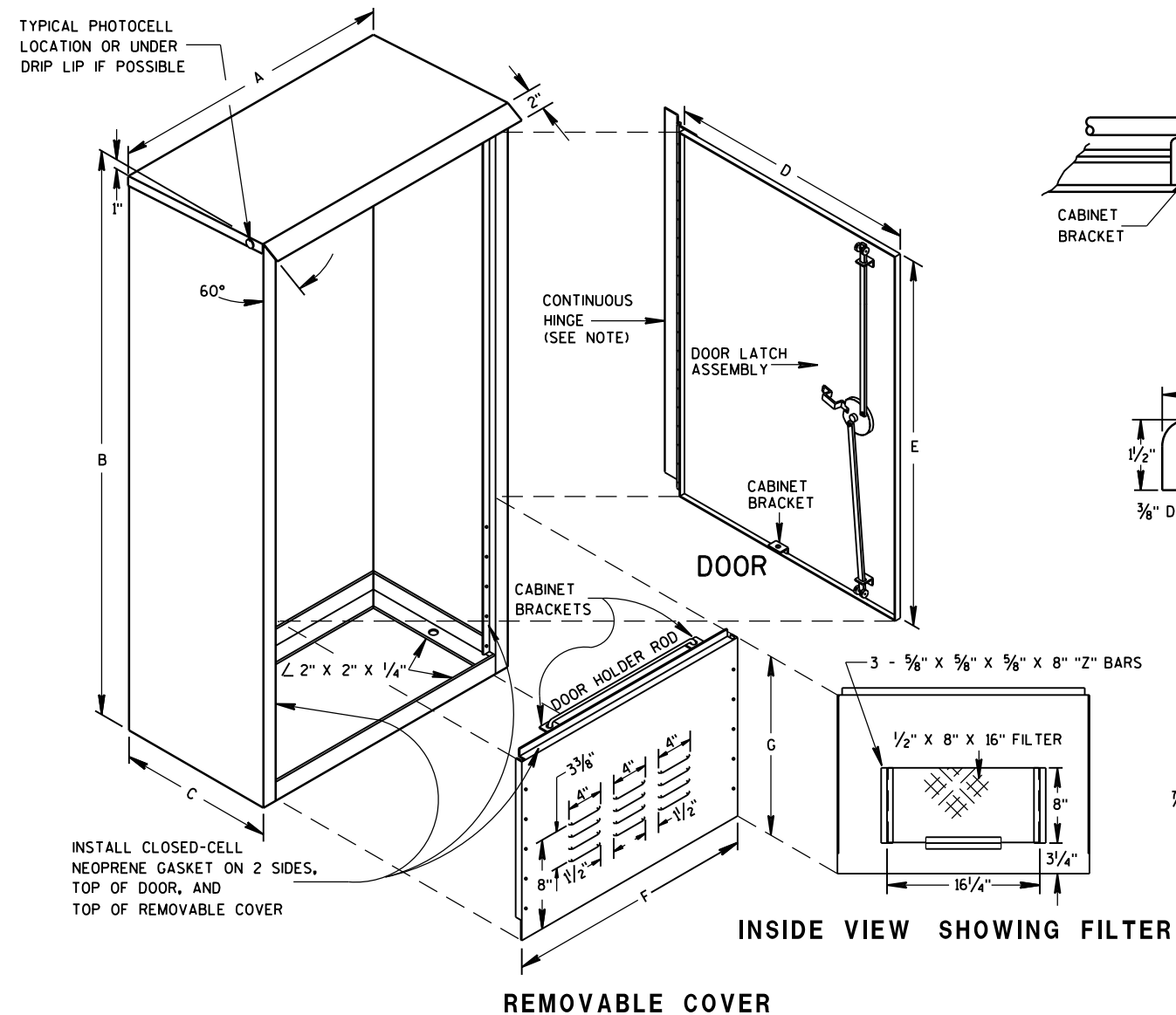
Sept. 2014

DATE

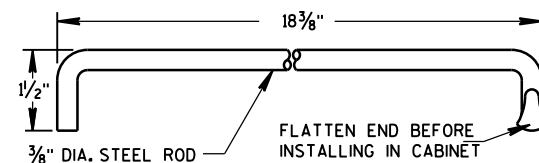
FHWA

/S/ Ahmet Demirbilek

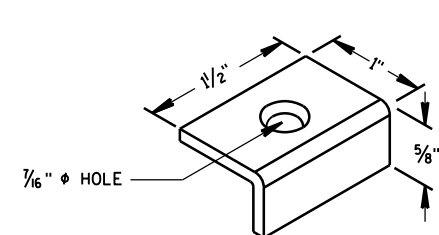
STATE ELECTRICAL 121



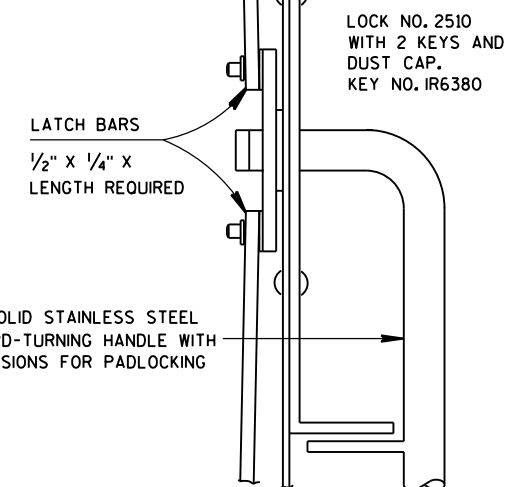
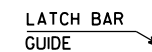
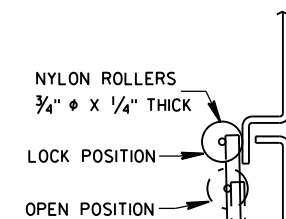
HINGE & DOOR HOLDER



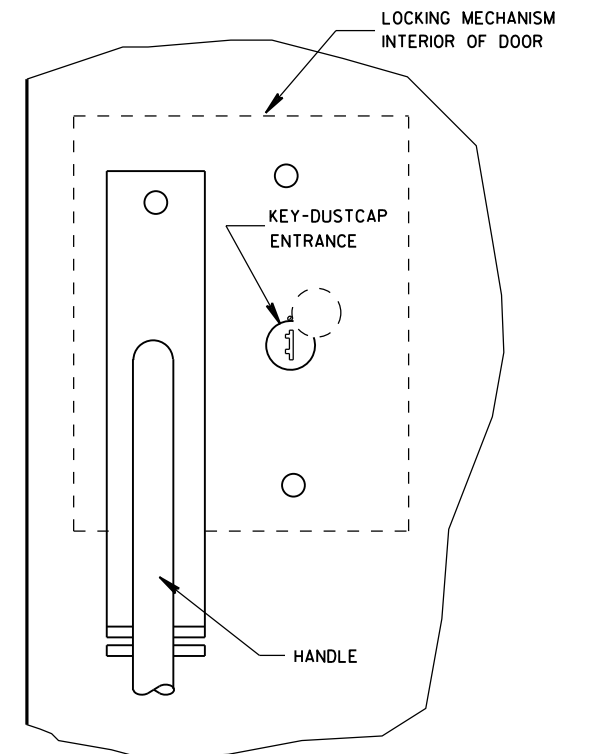
HOLDER ROD



CABINET BRACKET

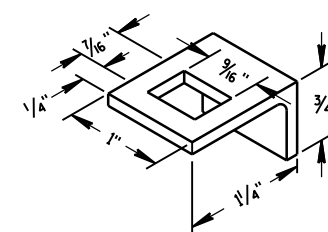


SIDE VIEW



FRONT VIEW

LATCH ASSEMBLY



LATCH BAR GUIDE

GENERAL NOTES

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

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

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

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

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

ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

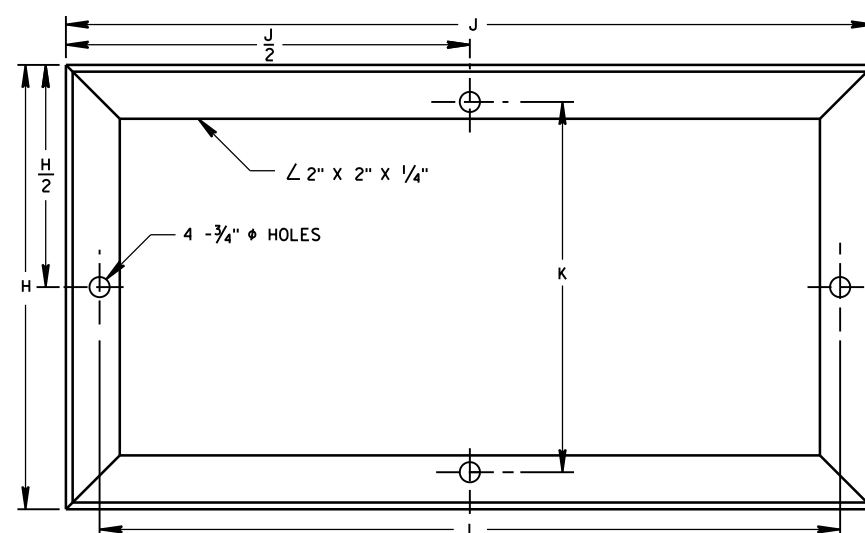
CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH 1/4" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH 1/4" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

A SINGLE PHOTOCCELL SHALL BE LOCATED ON THE NORTH-NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCCELL SHALL BE PLACED AS SHOWN AND SHALL BE LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST.

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

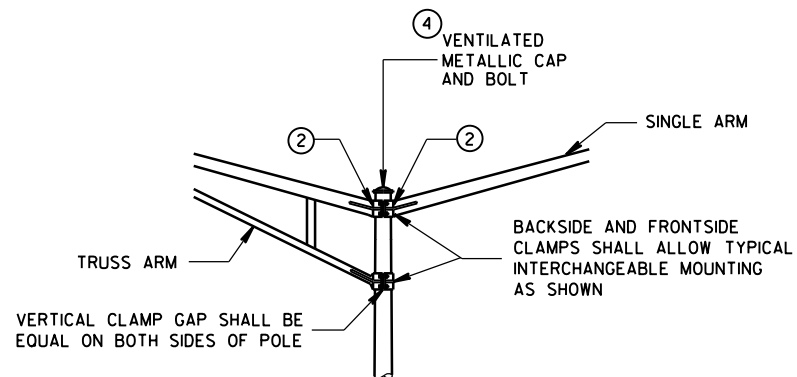
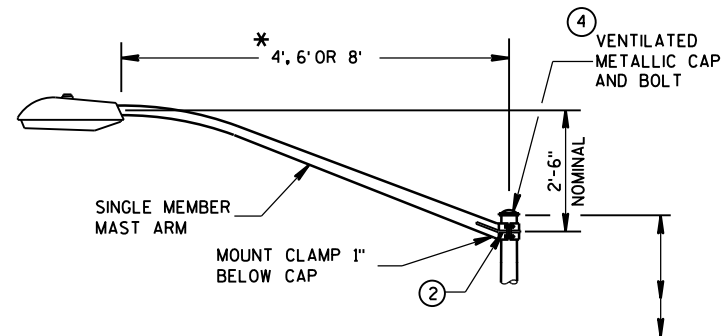
TABLE OF DIMENSIONS (INCHES)

MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16½	16½	24
D	26½	34¾	33¾
E	38¾	38¾	38¾
F	26½	34¾	33¾
G	19	19	25
H	16½	16½	24
H 2	8¼	8¼	12
J	30	38	38
J 2	15	19	19
K	13¾	13¾	21¼
L	27½	35½	35½

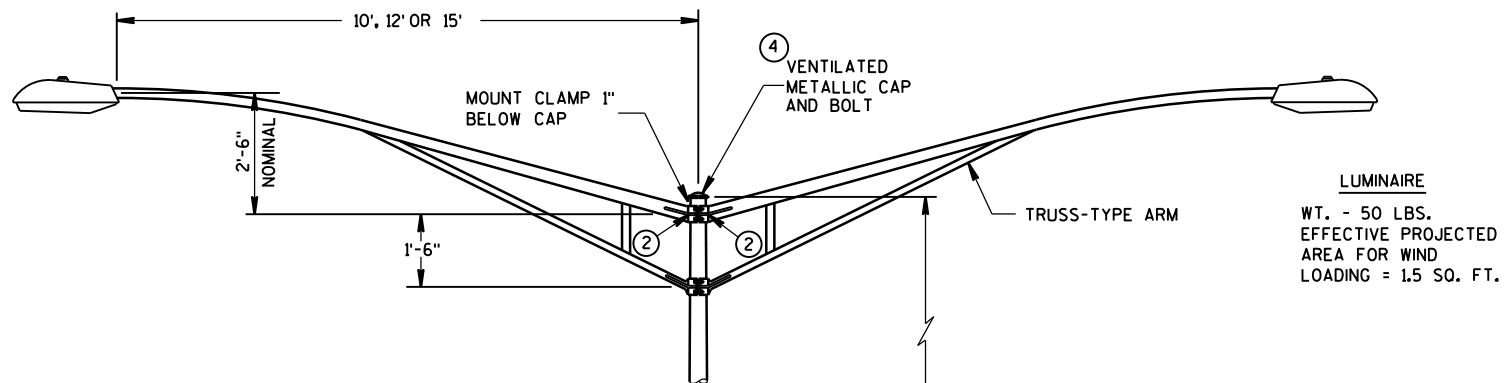


MOUNTING BASE

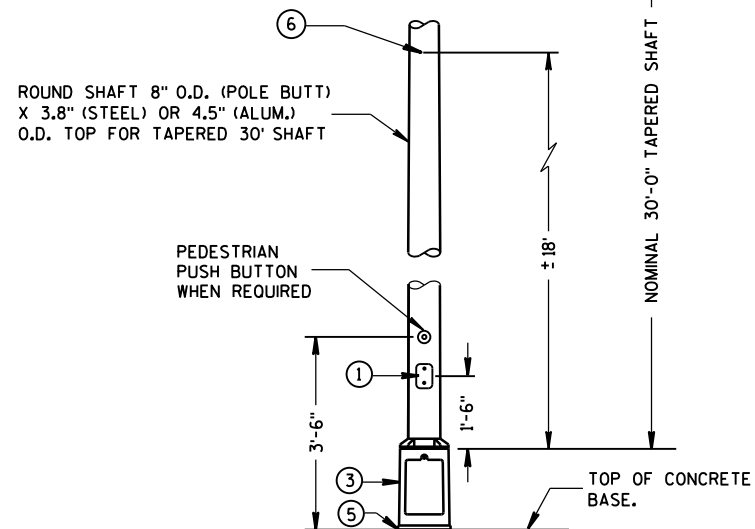
* RISE FOR 4' ARM SHALL BE 2'-0".



INTERCHANGEABLE MOUNTING DETAIL



LUMINAIRE
WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.



TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY

GENERAL NOTES

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

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

THE TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.188".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

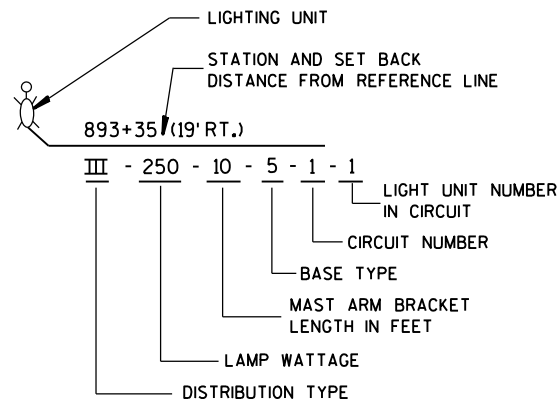
THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL $2\frac{3}{8}$ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

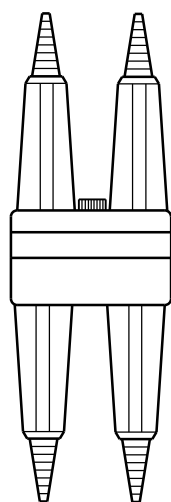
- ① 4" x 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) $\frac{1}{4}$ " x $\frac{3}{4}$ " - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
- ② GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR $1\frac{1}{8}$ " HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ④ FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) $\frac{1}{4}$ " x $\frac{3}{4}$ " - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.
- ⑥ INTERNAL DUMBBELL-TYPE VIBRATION DAMPER.

POLE MONTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)

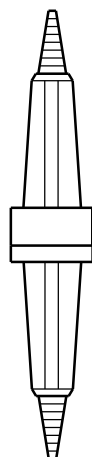
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 123



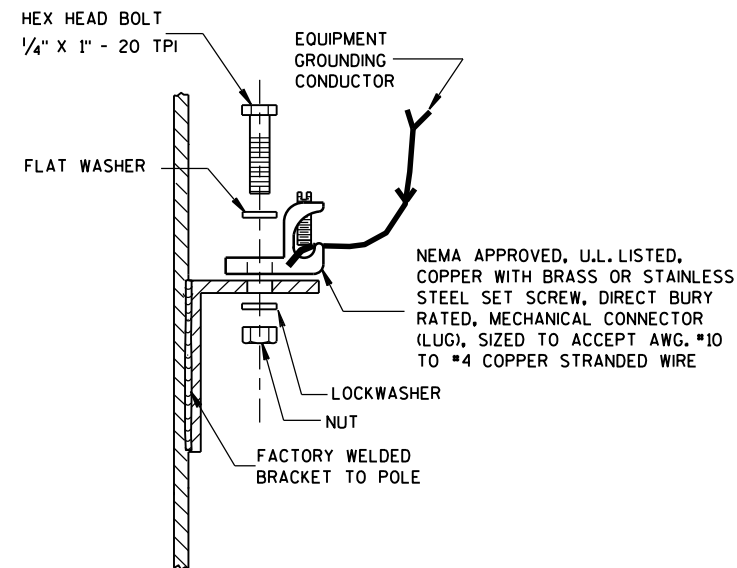
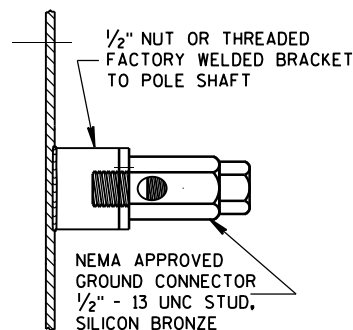
**LIGHTING UNIT CODE
(TYPICAL)**



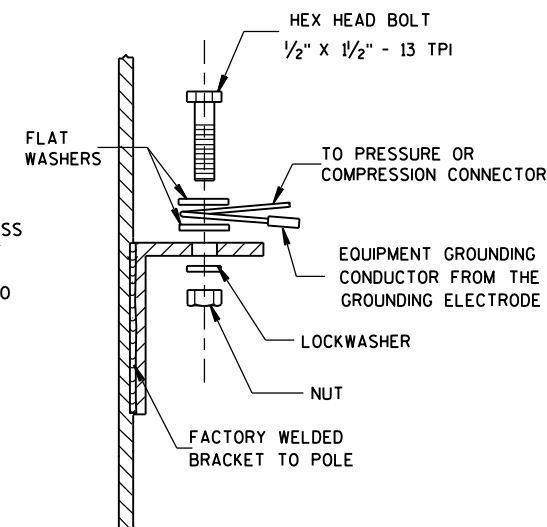
**DETAIL "A"
BREAKAWY
DOUBLE POLE WITH
WATERPROOF
INSULATING BOOT**



**DETAIL "B"
BREAKAWY
SINGLE POLE WITH
WATERPROOF
INSULATING BOOT**

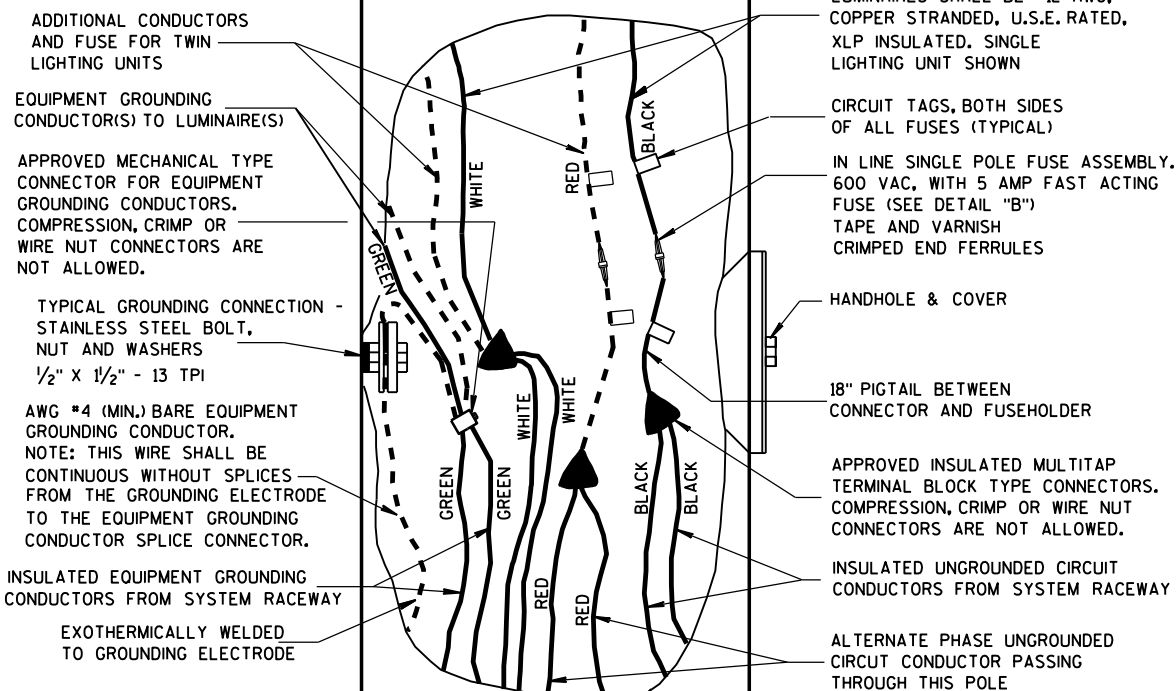


TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL

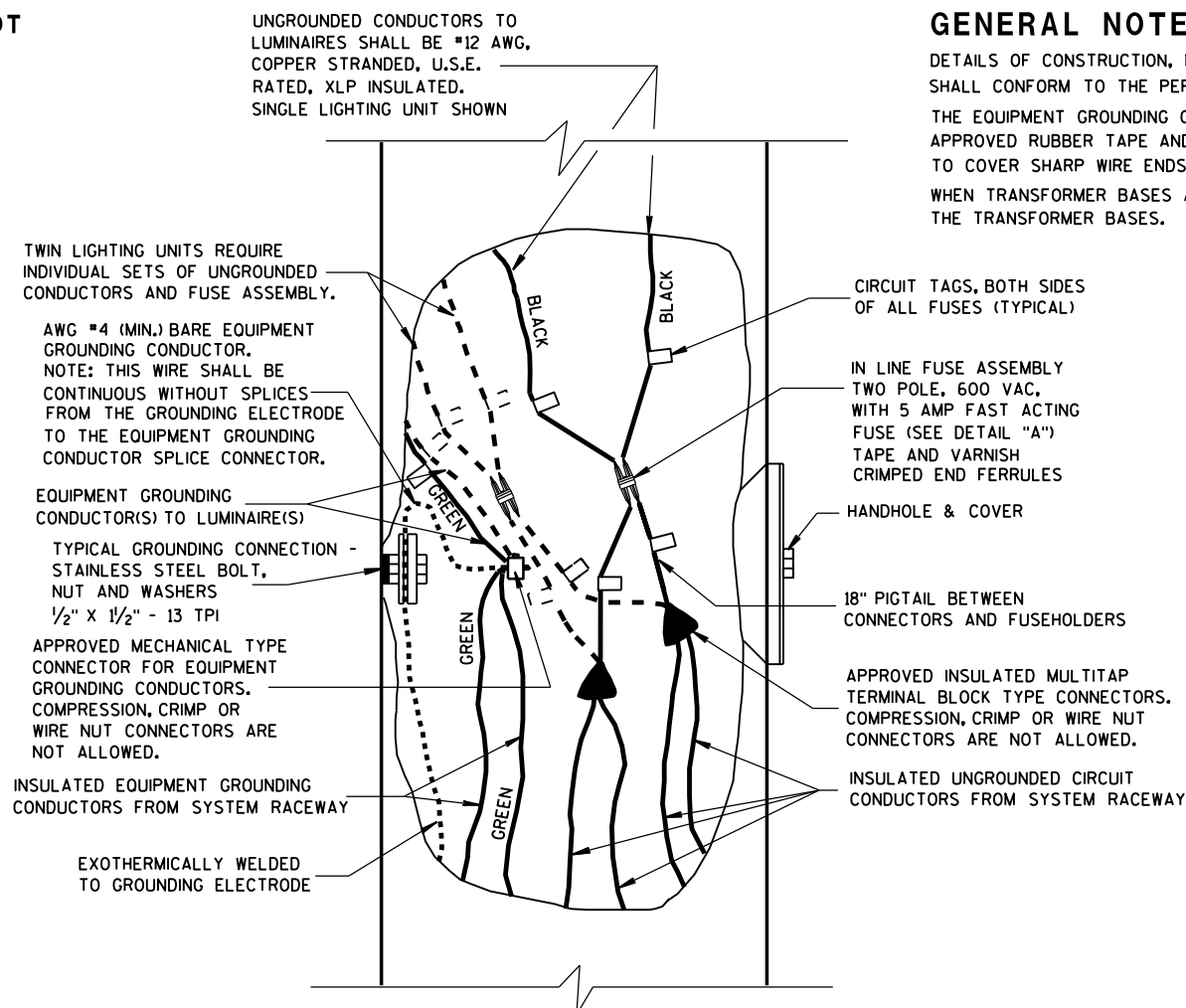


GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.
WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.



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

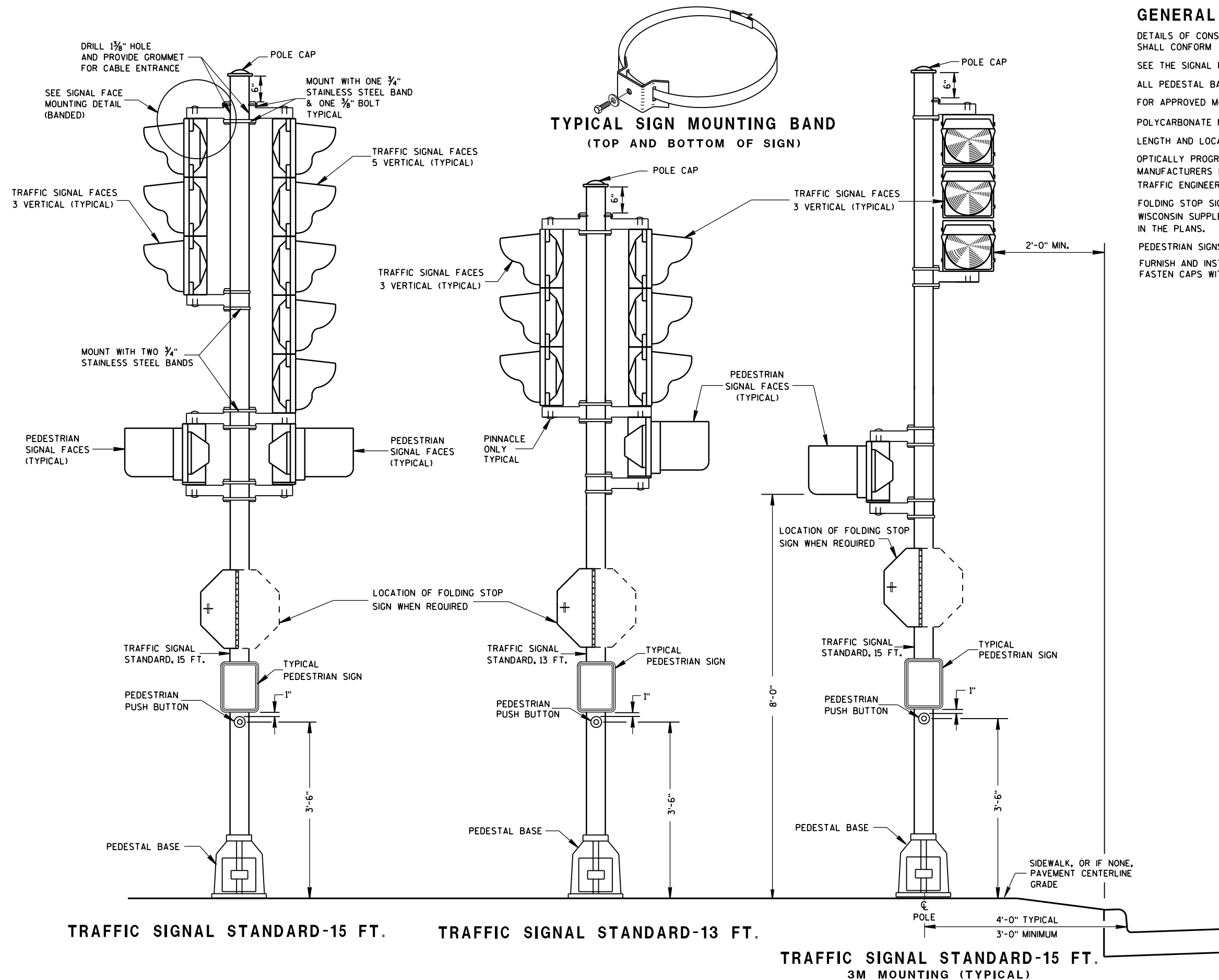


**2 WIRE - 240 OR 480 VAC (UNGROUND CONDUCTORS)
WITH EQUIPMENT GROUNDING CONDUCTOR**

**NON-FREWAY LIGHTING UNIT
POLE WIRING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 124
FHWA



GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

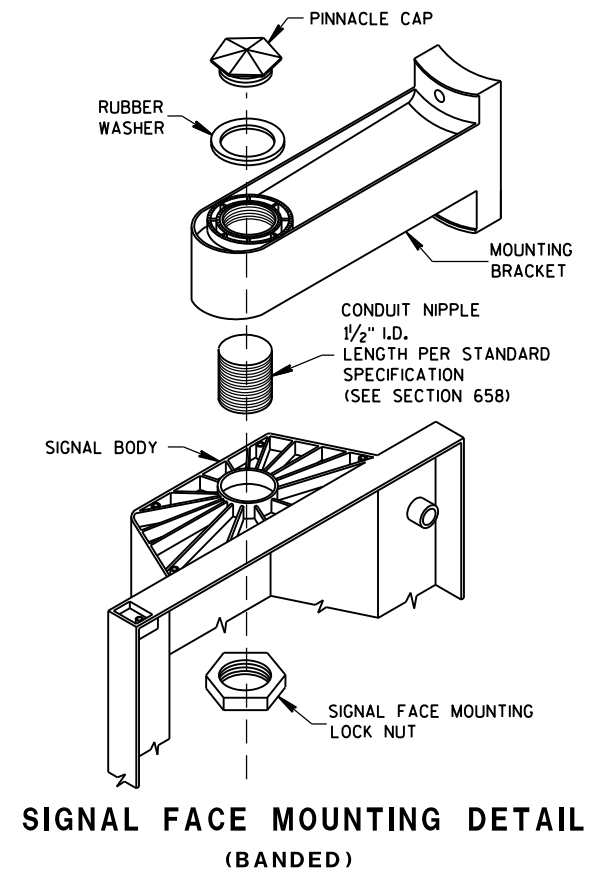
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION TRAFFIC ENGINEER.

FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) $\frac{1}{4}$ " X $\frac{3}{4}$ " - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



**TRAFFIC SIGNAL STANDARD
POLY BRACKET MOUNTINGS
(TYPICAL) 13 FT. OR 15 FT.**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/28/2013
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL 125

FHWA



FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS.
FASTEN CAPS WITH ONE (1) $\frac{1}{4}$ " X $\frac{3}{4}$ " - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

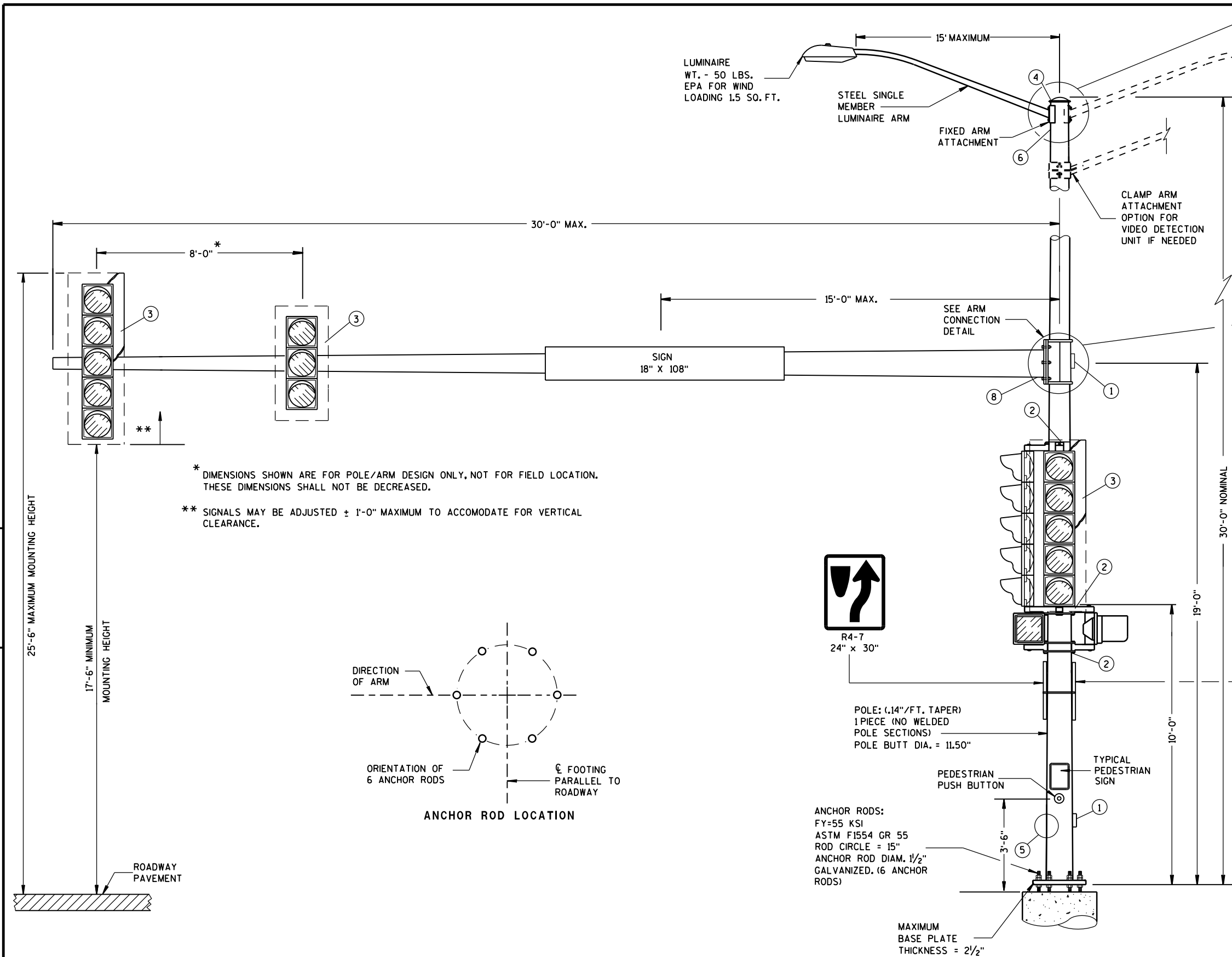
APPROVED

5/11/10
DATE

STATE ELECTRICAL ENGINEER 126

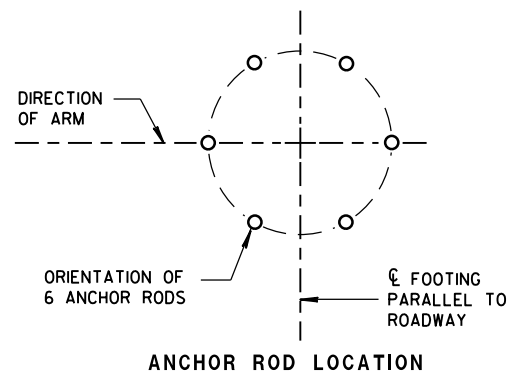
HWYS

FHWA



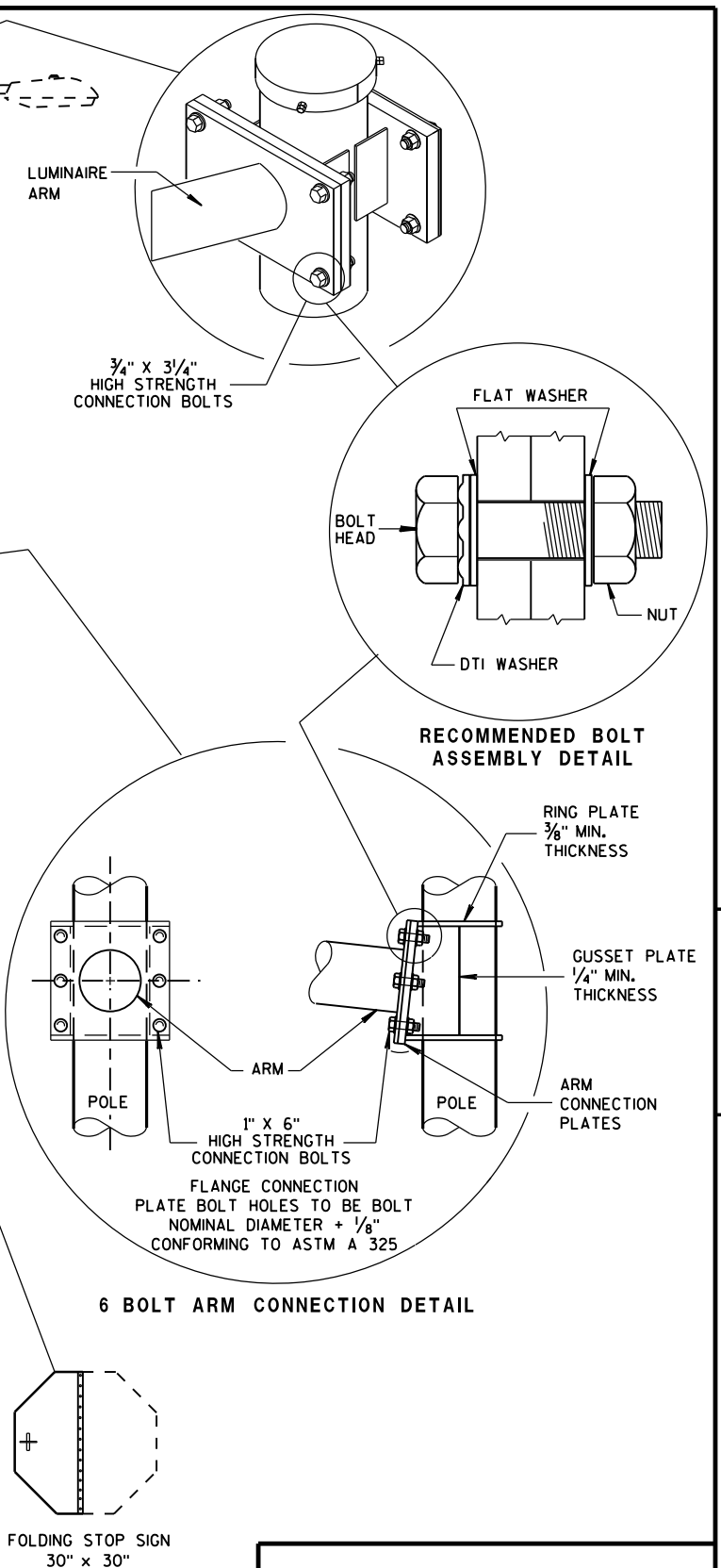
* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

** SIGNALS MAY BE ADJUSTED $\pm 1'-0"$ MAXIMUM TO ACCOMMODATE FOR VERTICAL CLEARANCE.



(MAXIMUM LOAD)

TYPE 10 POLE
15'- 30' MONOTUBE ARM



TYPE 10 POLE 15' - 30' MONOTUBE ARM	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May, 2016 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL 127
FHWA	

GENERAL NOTES

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

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15-FOOT TO 30-FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35-FOOT TO 55-FOOT.

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

RING-STIFFENED BUILT-UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE (1) PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3 ¼ ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO 2013 6TH EDITION AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

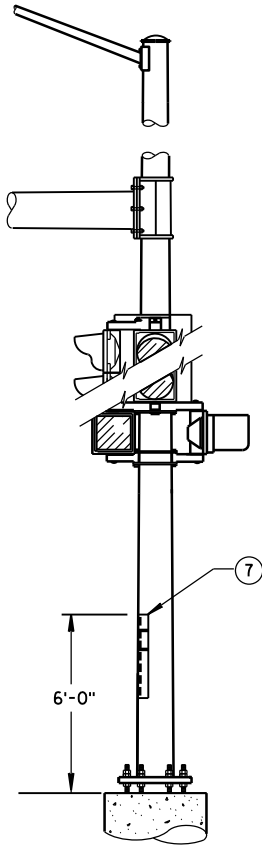
- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
- CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 90 MPH (3-SECOND GUST) WIND SPEED AND A 50 YEAR DESIGN LIFE.

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" S.S. BANDING AROUND THE LEVELING NUTS.

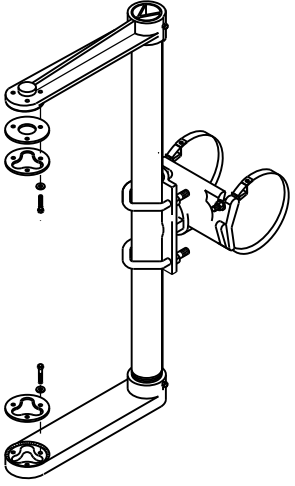
INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR AS DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEADS AT SAME ELEVATION.

SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

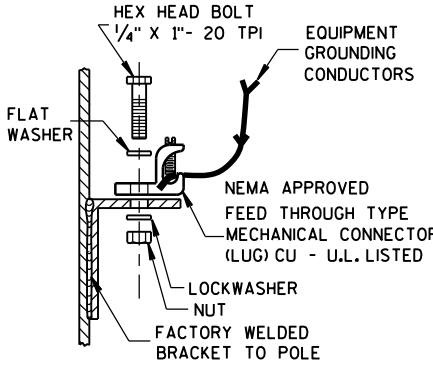


STRUCTURAL IDENTIFICATION
PLAQUE PLACEMENT



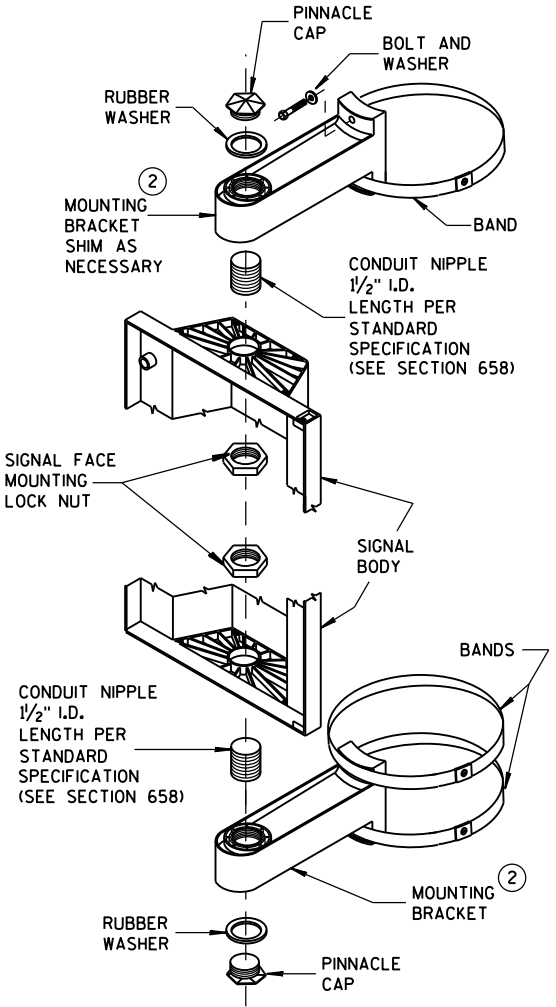
SIGNAL FACE MOUNTING BRACKET
DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

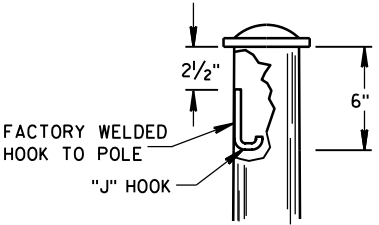


TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL
BE STAINLESS STEEL



SIGNAL FACE
VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT

- DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO ¼" x ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.
- SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).
- SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.
- THE TOP OF THE POLE SHAFT AND THE END OF THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.
- FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" x ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.
- FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.
- INSTALL STRUCTURAL IDENTIFICATION PLAQUES.

STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

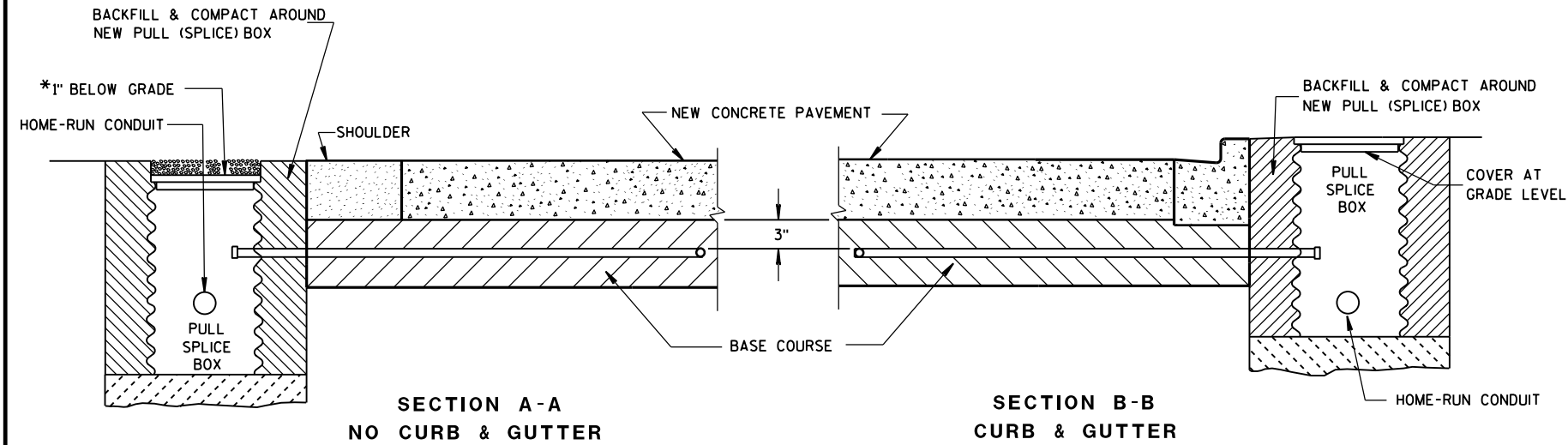
MOUNTING HEIGHT SHALL BE 6'-0" ABOVE THE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

- FACTORY DRILLED ½" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.

GENERAL NOTES AND HARDWARE
DETAILS FOR TYPE 9, 10, 12 & 13
POLES WITH MONOTUBE ARMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2016
DATE
/S/ Ahmet Demirelek
STATE ELECTRICAL 128
FHWA



*RECESS PULL (SPlice) BOX SO THAT THE COVER IS 3\"

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

LOOP SIZE, CONFIGURATION LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPlice) BOX.

SPICES SHALL BE INSTALLED BY USING CAST IN PLACE SPICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

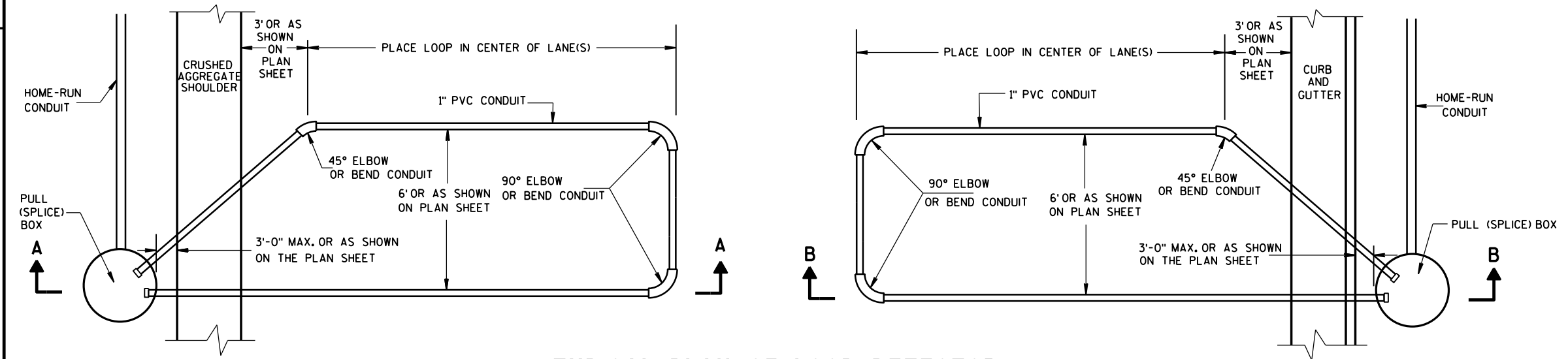
THE #12 AWG. LOOP WIRE IN THE PULL (SPlice) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

SPICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPlice) BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPlice) BOX THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPlice) BOX, AND BE INSTALLED IN ONE, NON-SPICE CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT IN THE BASE COURSE, SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



TYPICAL PLAN OF LOOP DETECTOR WITH 18\"

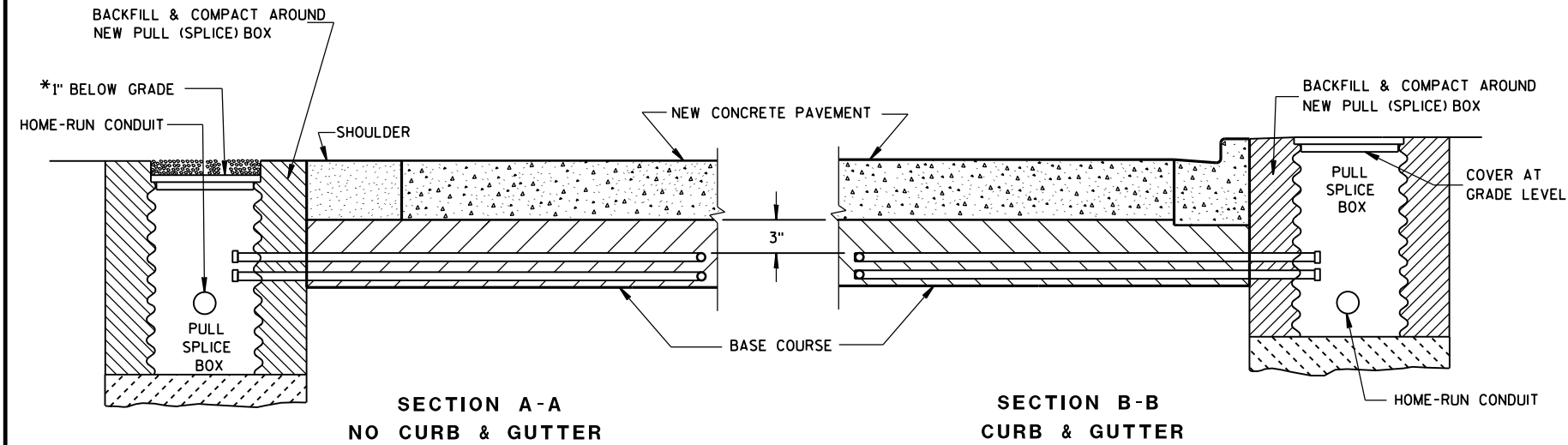
LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 1)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE FHWA	/S/ Ahmet Demirbilek STATE ELECTRICAL 129

6

6

S.D.D. 9 F 15-4a

S.D.D. 9 F 15-4a



*RECESS PULL (SPlice) BOX SO THAT THE COVER IS 3\"

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

LOOP SIZE, CONFIGURATION LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPlice) BOX.

SPlices SHALL BE INSTALLED BY USING CAST IN PLACE SPlice KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPlices TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPlices SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPlice KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPlicing THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

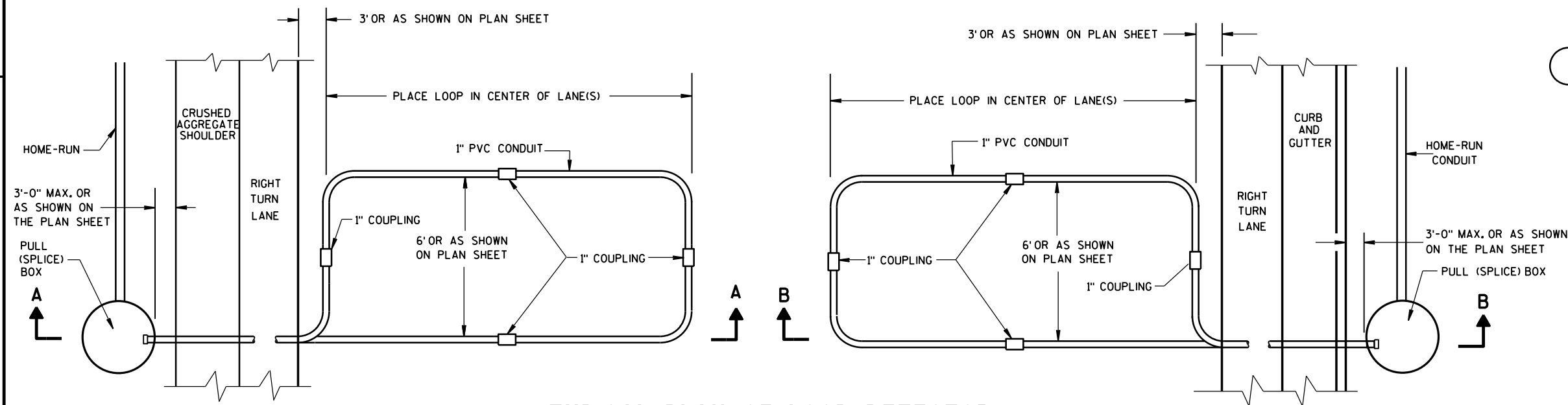
THE #12 AWG. LOOP WIRE IN THE PULL (SPlice) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPliced TO THE LOOP LEAD-IN CABLE.

SPlices OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPlice) BOXES AT THE SIDE OF THE ROAD.

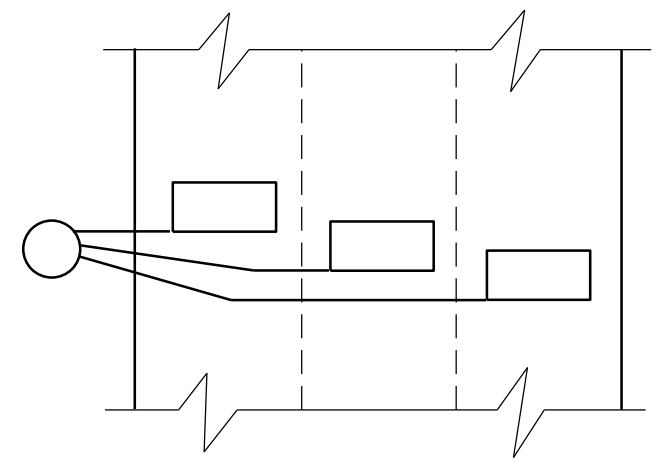
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPlice) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPlice) BOX, AND BE INSTALLED IN ONE, NON-SPliced CONTINUOUS LENGTH.

PROTECTION OF THE CONDUITS IN THE BASE COURSE SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



TYPICAL PLAN OF LOOP DETECTOR WITH 24\"



MULTI-LANE INSTALLATION

LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirelek STATE ELECTRICAL 130
FHWA	

6

S.D.D. 9 F 15-4b

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S.D.D. 9 F 15-4b

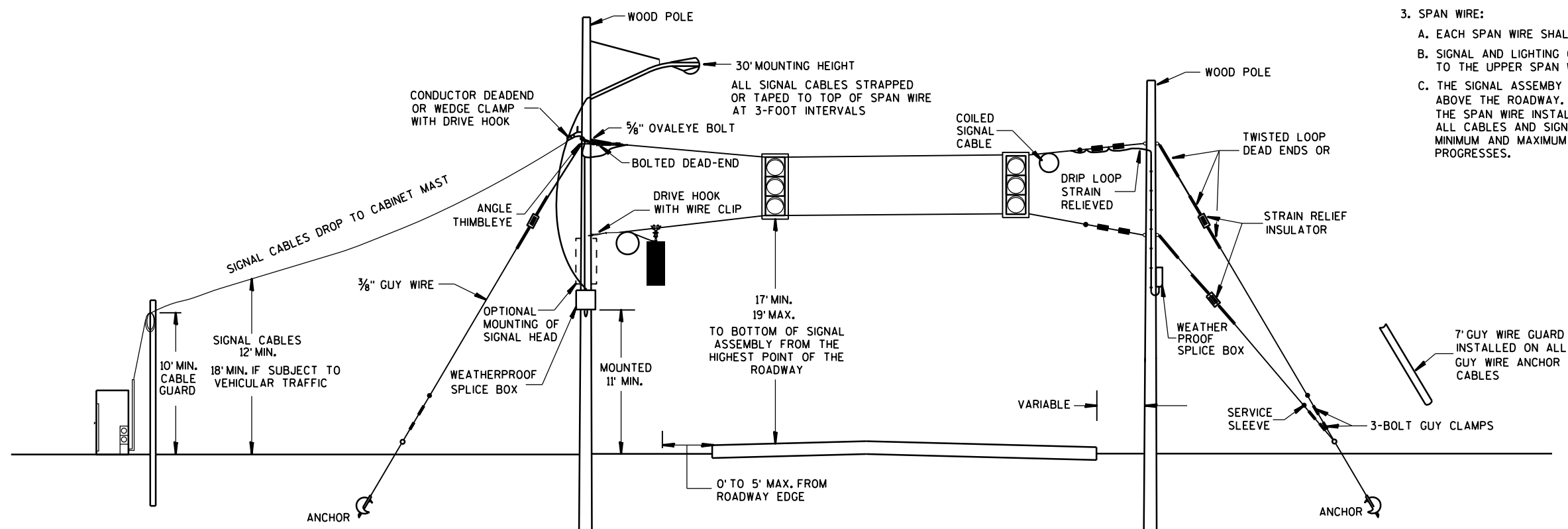
GENERAL NOTES

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

1. WOOD POLES SHALL BE CLASS 4, LENGTH DETERMINED BY SIGNAL PLAN.

2. SIGNAL FACES:
 A. ALL SECTIONS SHALL BE 12" AND POLYCARBONATE.
 B. EACH SHALL CONTAIN A 5" WIDE DULL BLACK POLYCARBONATE BACKPLATE.
 C. EACH SHALL BE WIRED FROM THE TOP SIGNAL MOUNTING BRACKET.
 D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.

3. SPAN WIRE:
 A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED.
 B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.
 C. THE SIGNAL ASSEMBY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE. MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.



SPAN WIRE TEMPORARY SIGNALS

MINIMUM POLE LENGTHS	POLE BURIEL DEPTHS
25'	5'
30'	6'
35'	7'
40'	8'
45'	9'

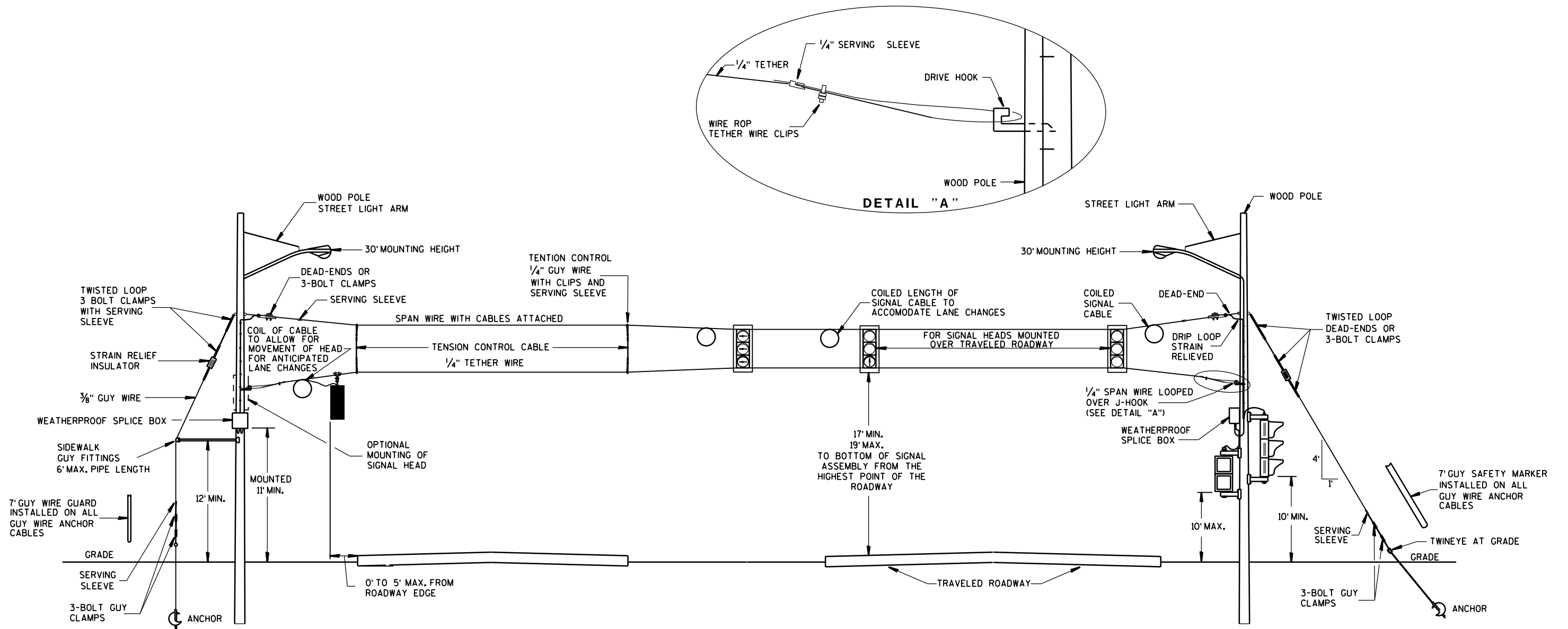
SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 131

FHWA



GENERAL NOTES

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

1. WOOD POLES SHALL BE CLASS 4. LENGTH DETERMINED BY SIGNAL PLAN.

2. SIGNAL FACES:

A. ALL SECTIONS SHALL BE 12" AND POLYCARBONATE.

B. EACH SHALL CONTAIN A 5" WIDE DULL BLACK POLYCARBONATE BACKPLATE.

C. EACH SHALL BE WIRED FROM THE TOP SIGNAL MOUNTING BRACKET.

D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.

E. FAR INDICATION SHALL BE MAINTAINED OVER CENTER OF TRAFFIC LANE.

3. SPAN WIRE:

A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED.

B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.

C. THE SIGNAL ASSEMBLY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE. MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.

SPAN WIRE TEMPORARY SIGNALS 4 LANE ROADWAYS

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

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

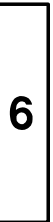
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

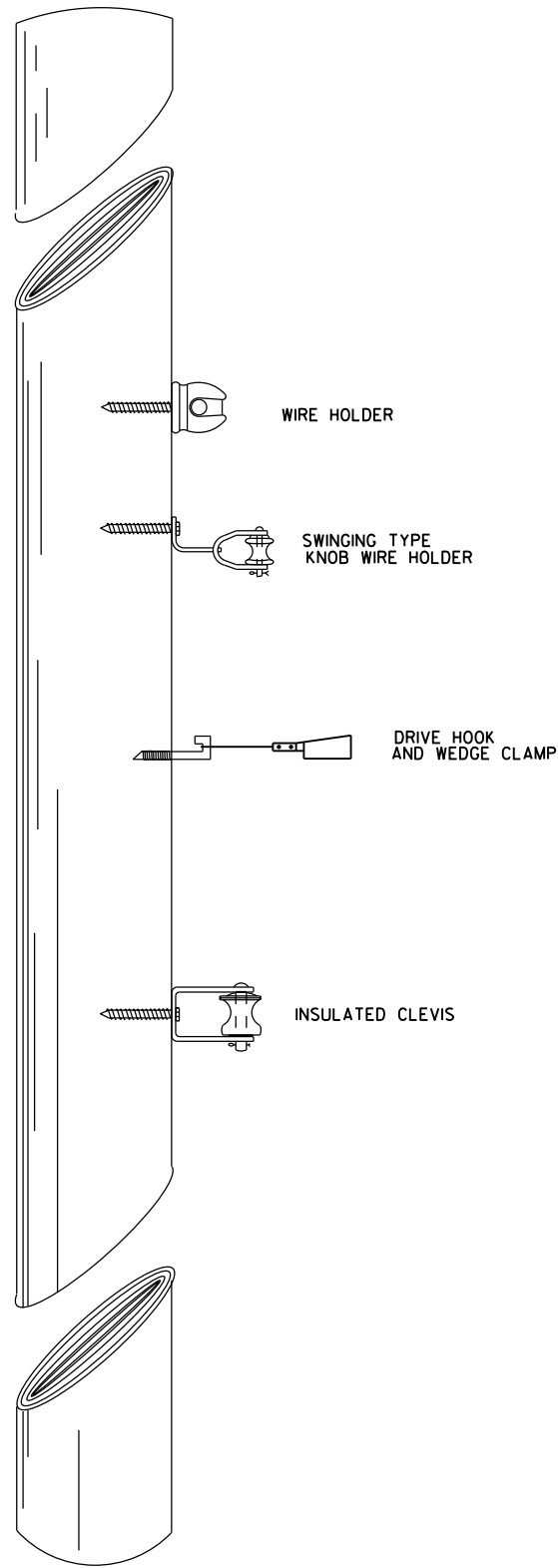
June, 2015
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL 132

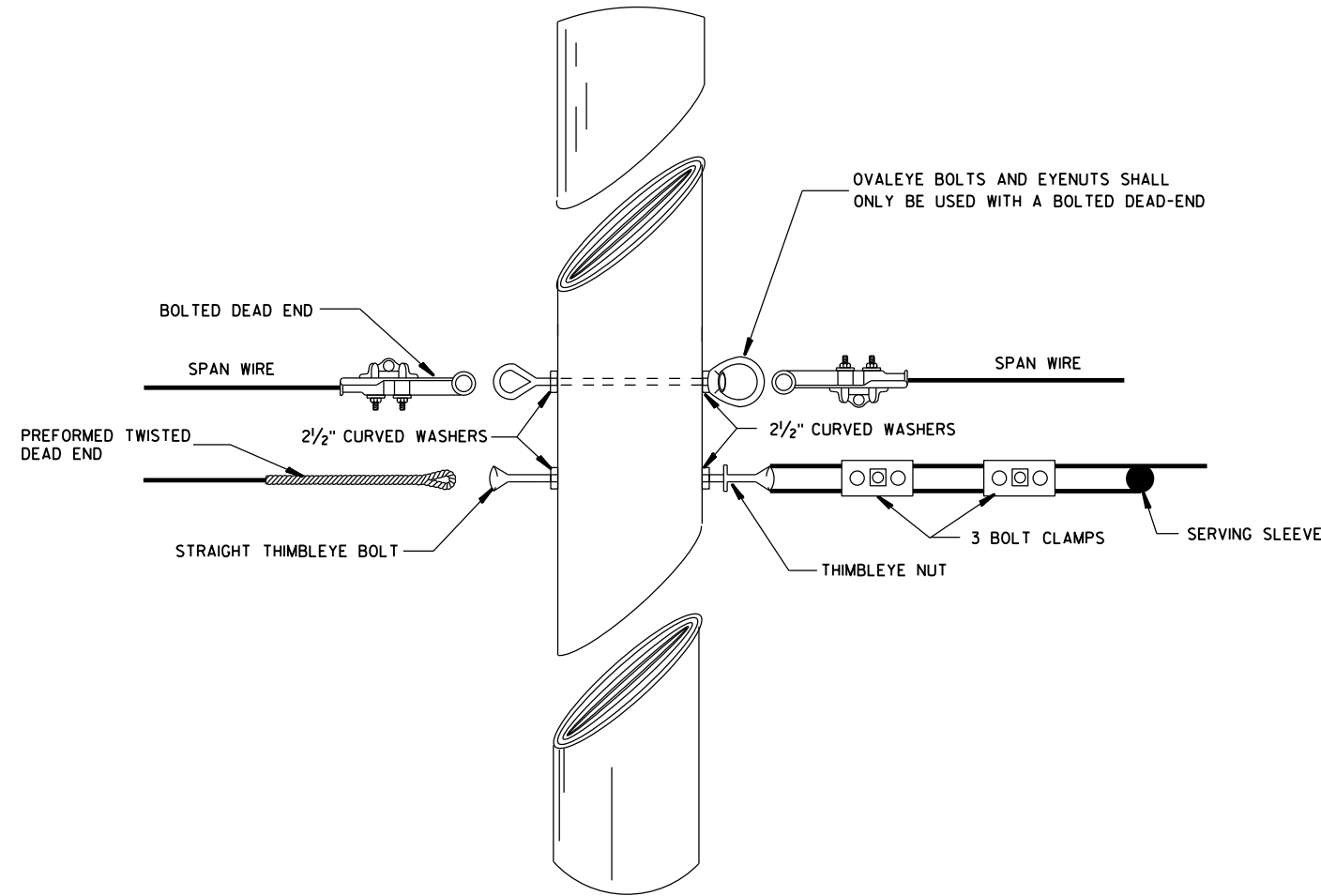
FHWA



S.D.D. 9 G 1-4c

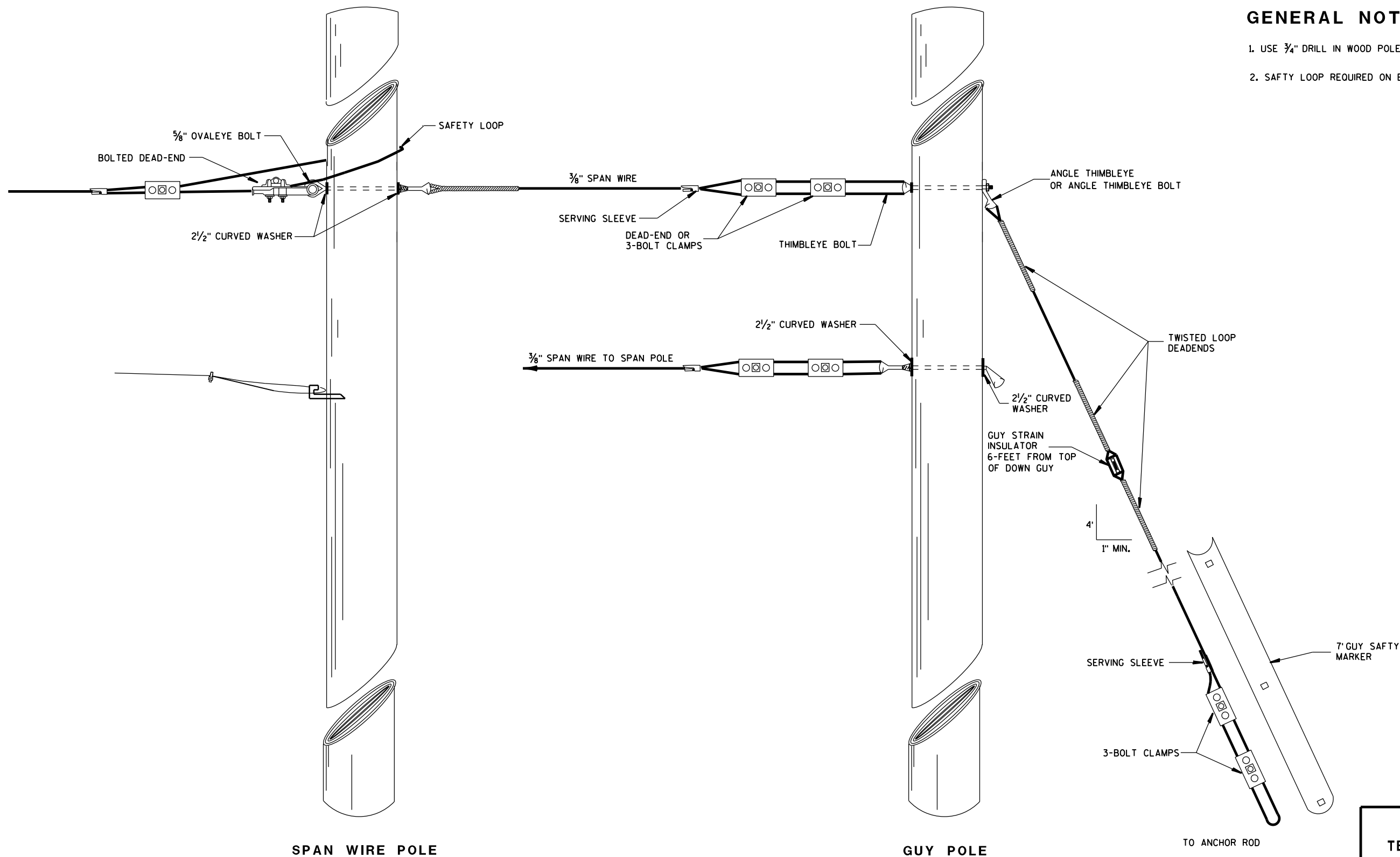


TYPICAL CABLE HANGERS



TYPICAL DEAD-ENDING

SPAN WIRE TEMPORARY TRAFFIC SIGNAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2015 DATE	/S/ Ahmet Demirblek STATE ELECTRICAL 134
FHWA	

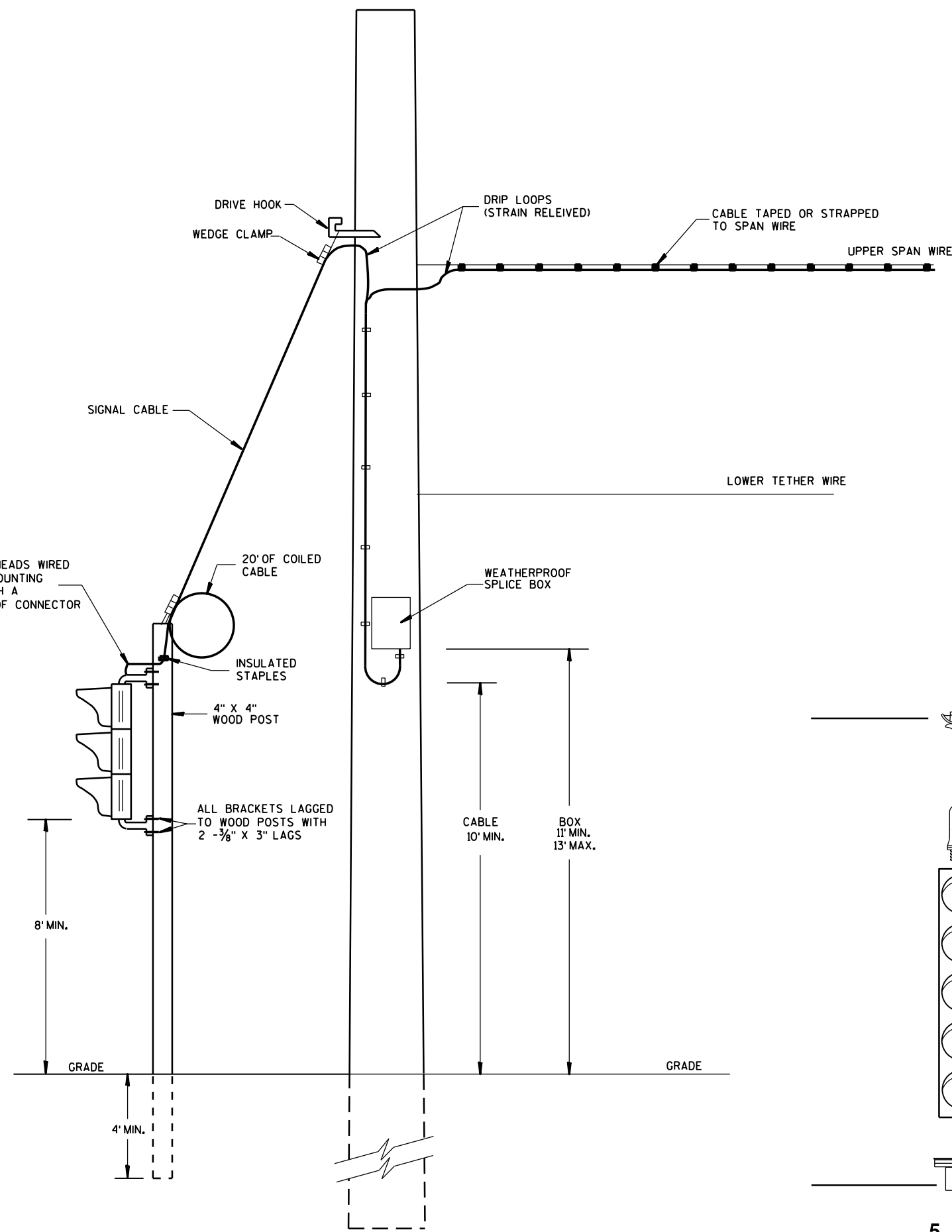


GENERAL NOTES

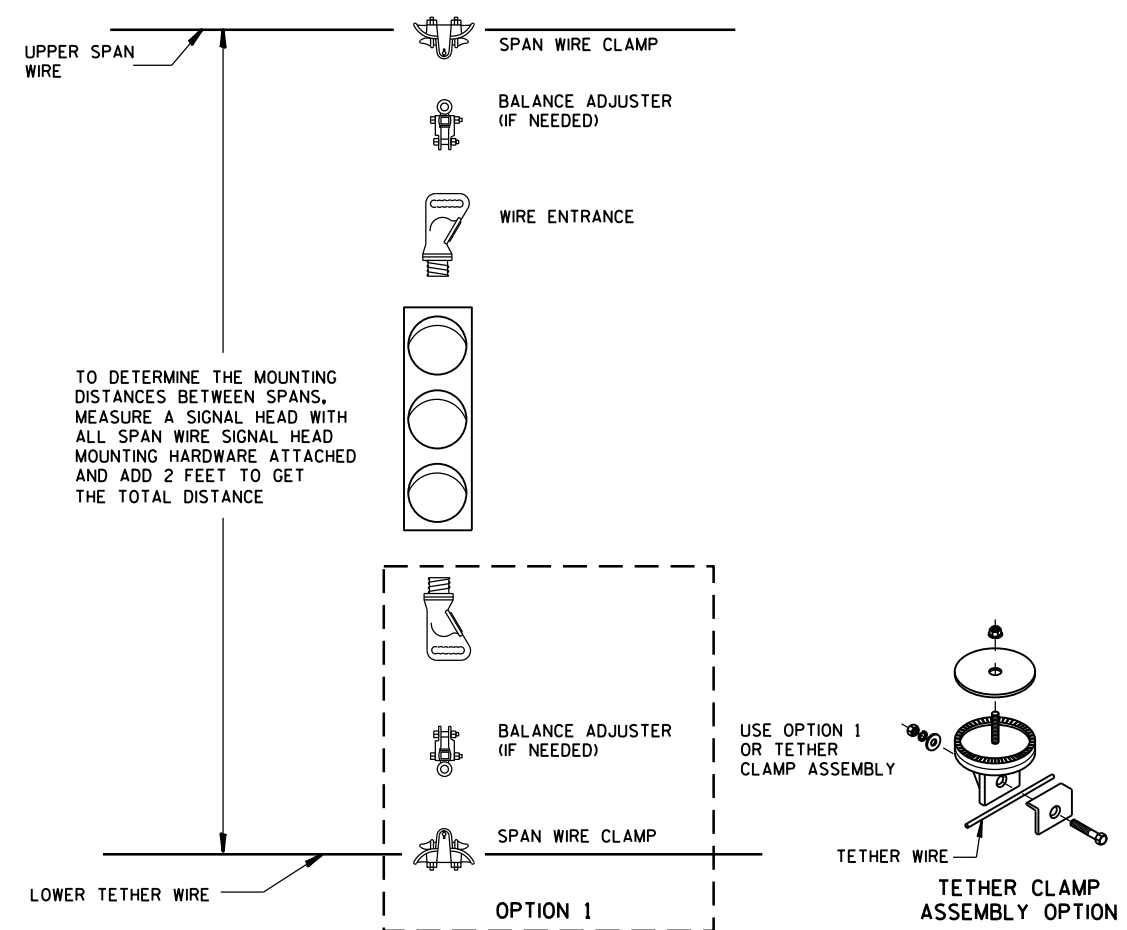
1. USE 3/4" DRILL IN WOOD POLE TO PROVIDE HOLE FOR 5/8" BOLTS.
2. SAFTY LOOP REQUIRED ON EACH END OF ALL SPAN WIRES.

TYPICAL DEAD-ENDINGS OR GUYING

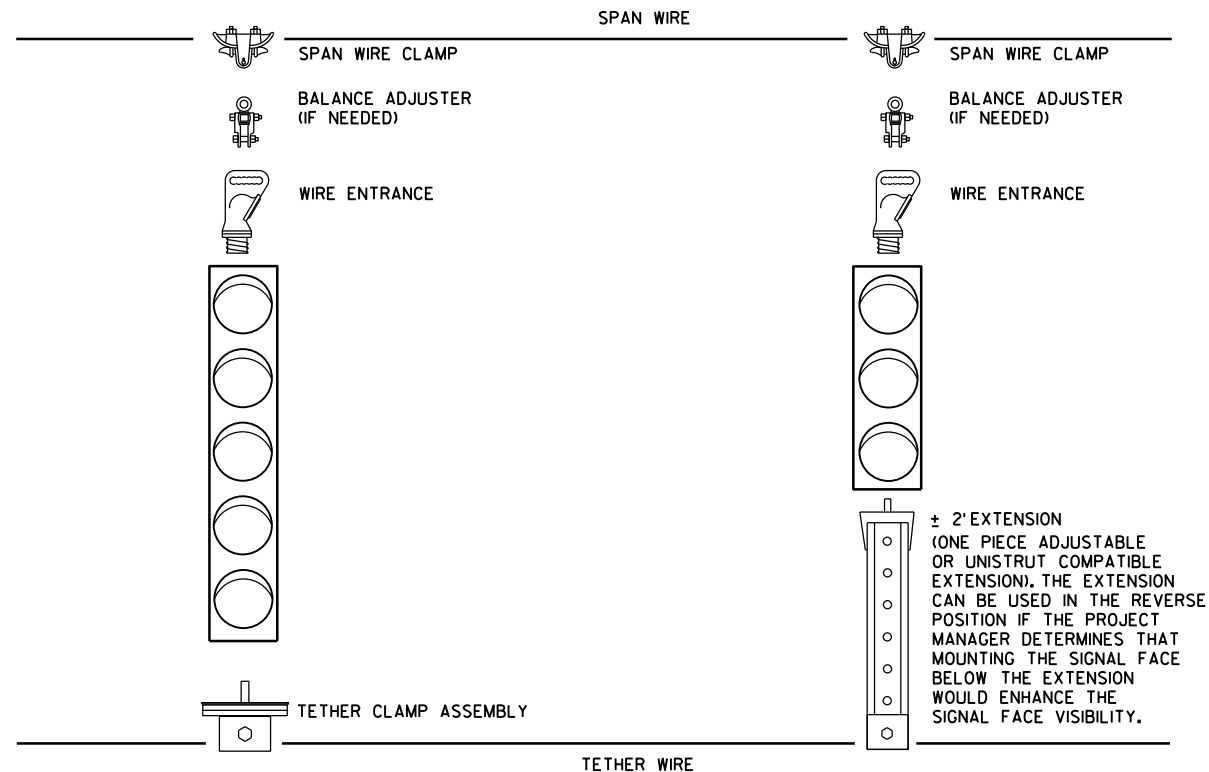
SPAN WIRE TEMPORARY TRAFFIC SIGNAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2015 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL 135
FHWA	



TYPICAL DROP TO TEMPORARY MOVEABLE SIGNAL

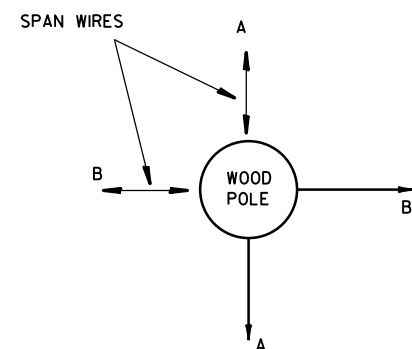
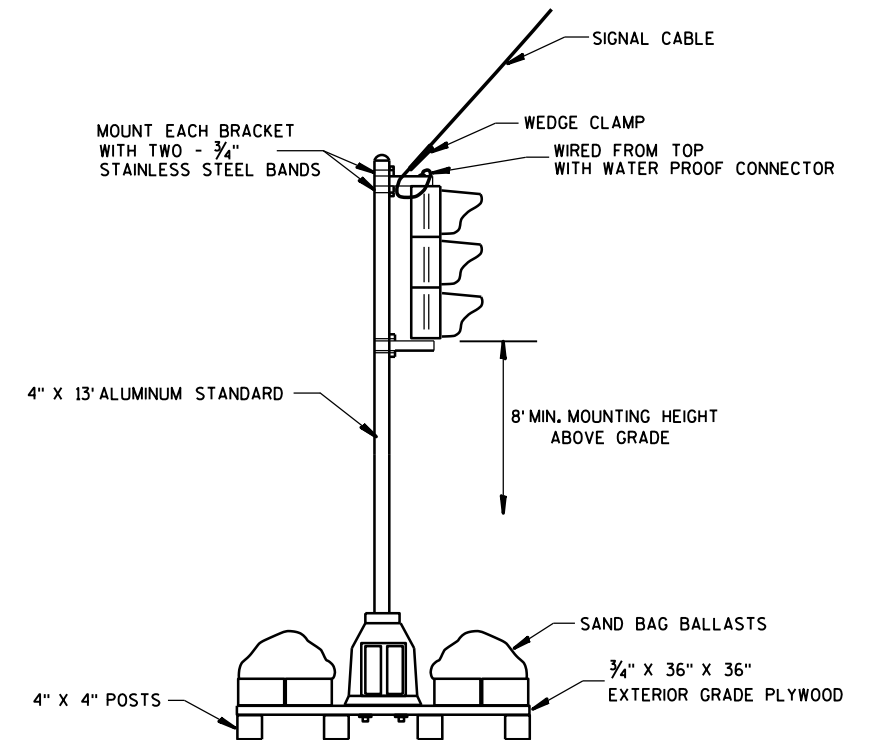
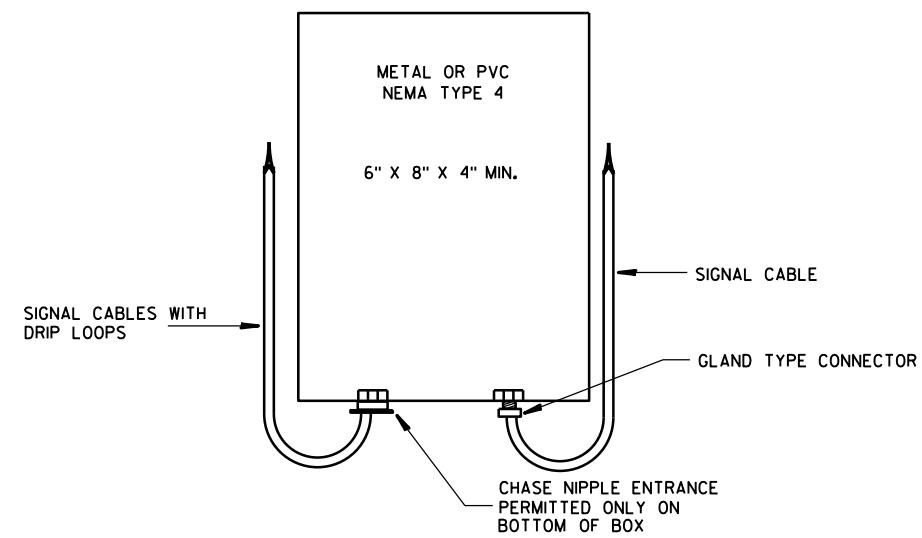
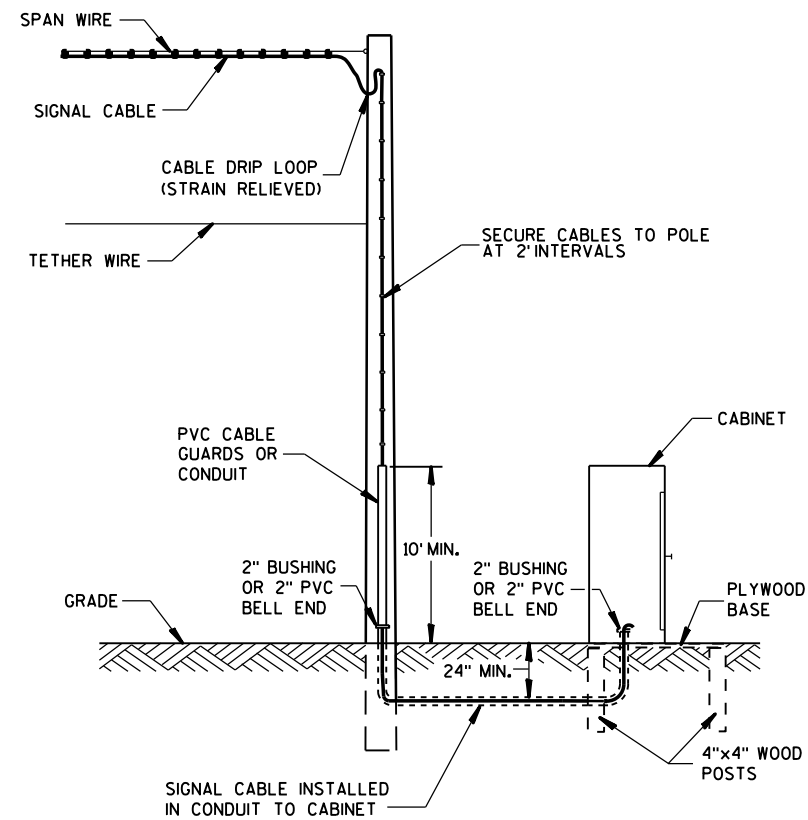


TYPICAL SPAN WIRE MOUNTING HARDWARE



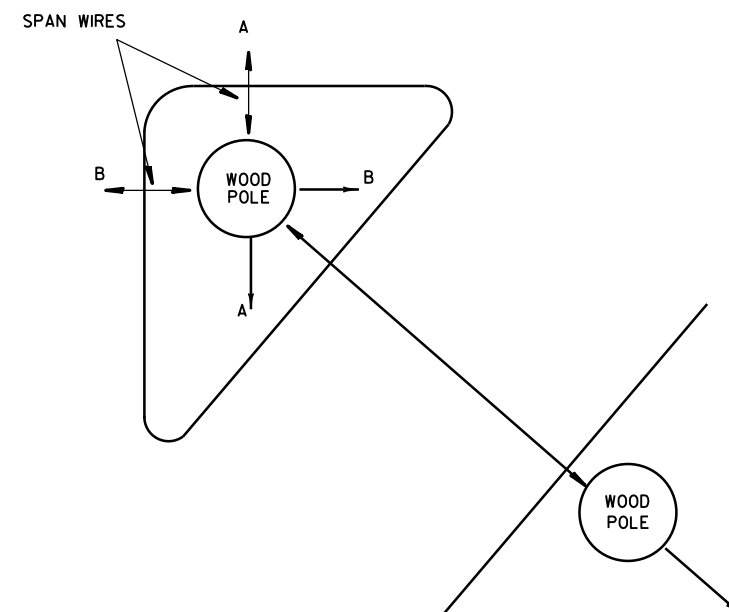
5 SECTION VERTICAL WITH 3 SECTION VERTICAL ON ONE SPAN WIRE

SPAN WIRE TEMPORARY TRAFFIC SIGNAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2015 DATE	/S/ Ahmet Demirelek STATE ELECTRICAL 136
FHWA	

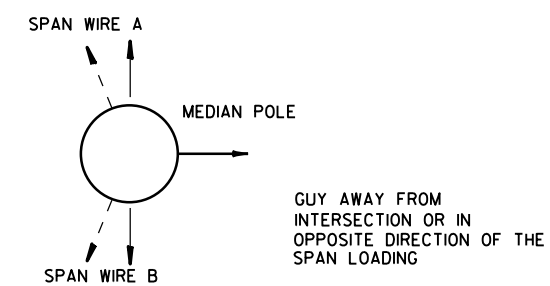


ALL DOWN OR SIDEWALK GUYS
SHALL BE INSTALLED IN THE
OPPOSITE DIRECTION OF THE
STRAIN OF THE SPAN WIRE

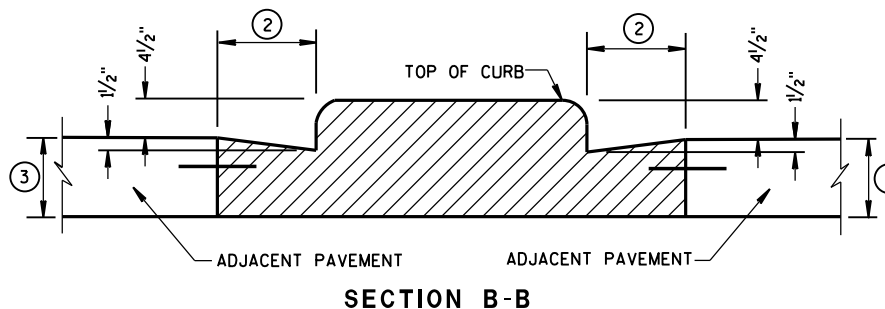
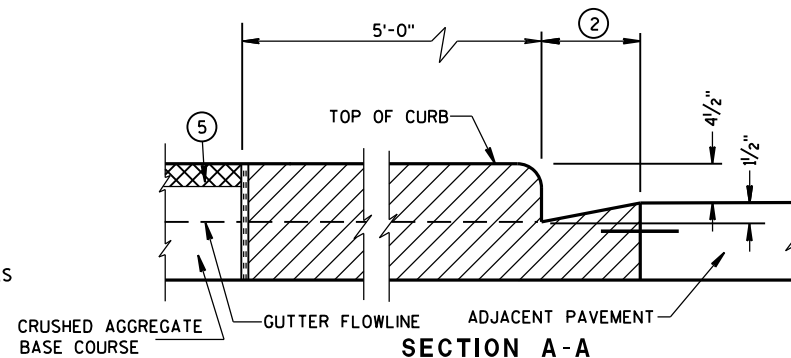
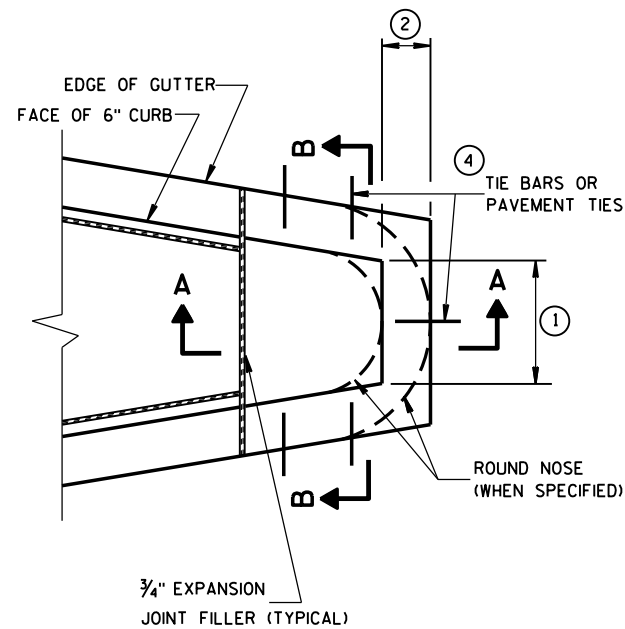
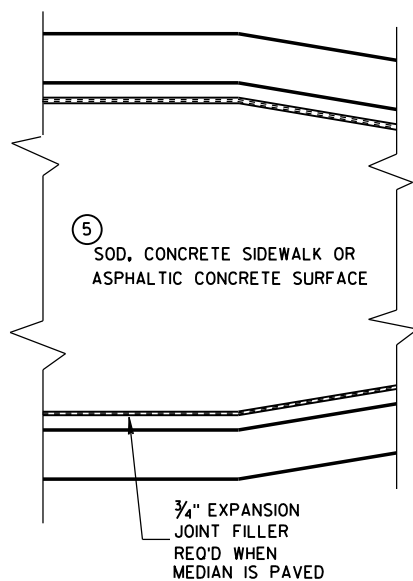
CORNER POLES



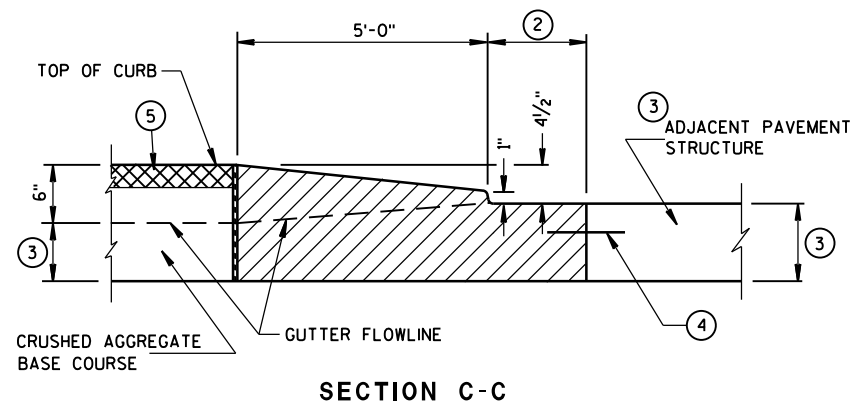
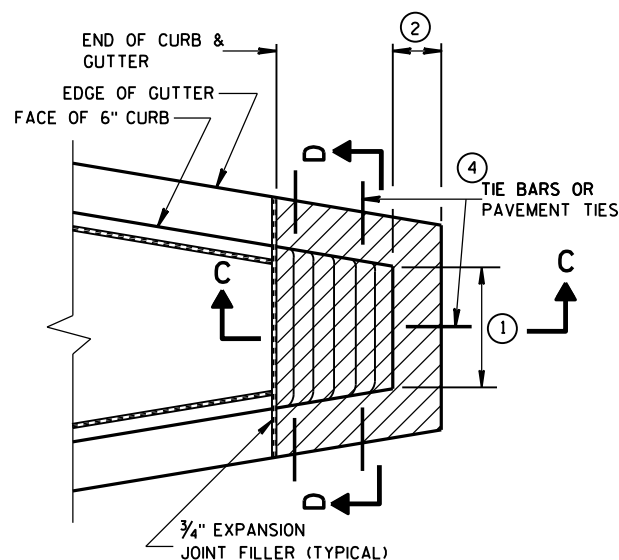
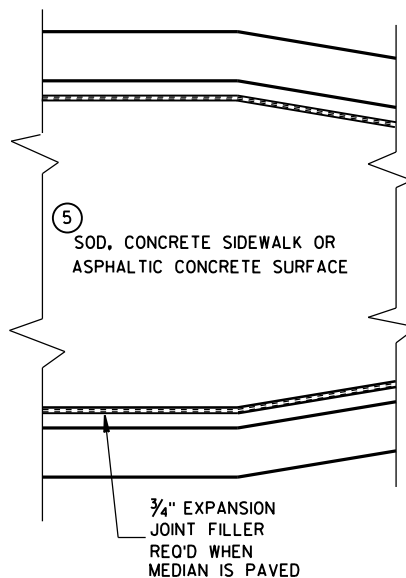
ISLAND POLES



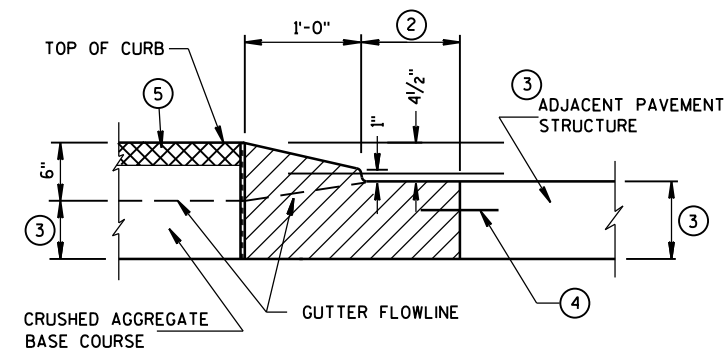
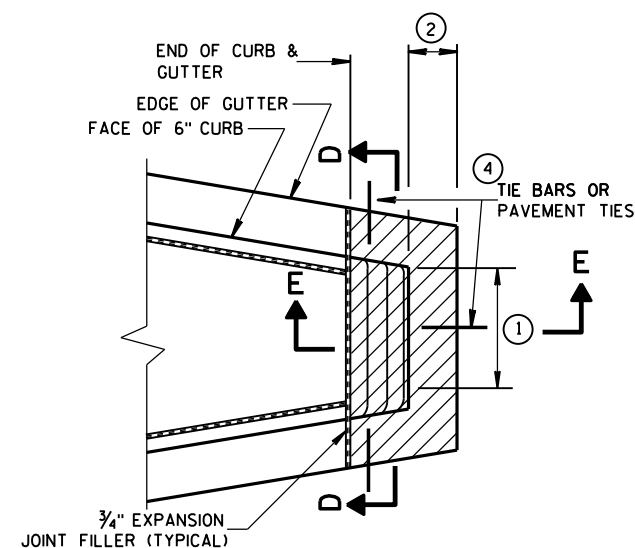
MEDIAN POLES



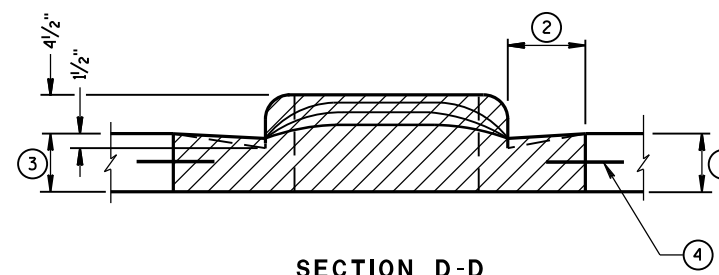
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



GENERAL NOTES

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

- ① SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
- ② WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
- ③ DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
 - (1) NEW OR EXISTING CONCRETE PAVEMENT.
 - (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
 - (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

- ④ TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

- ⑤ SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

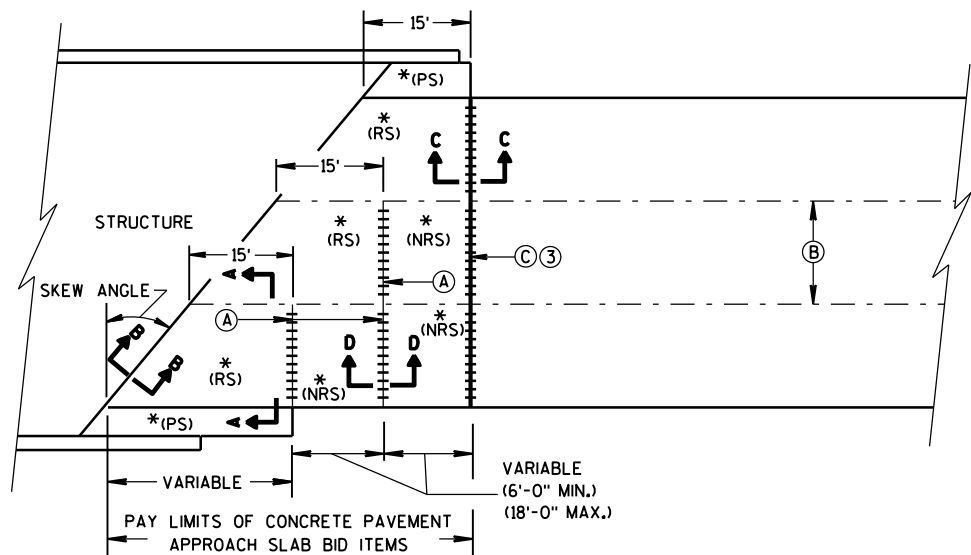
6/8/2006

DATE

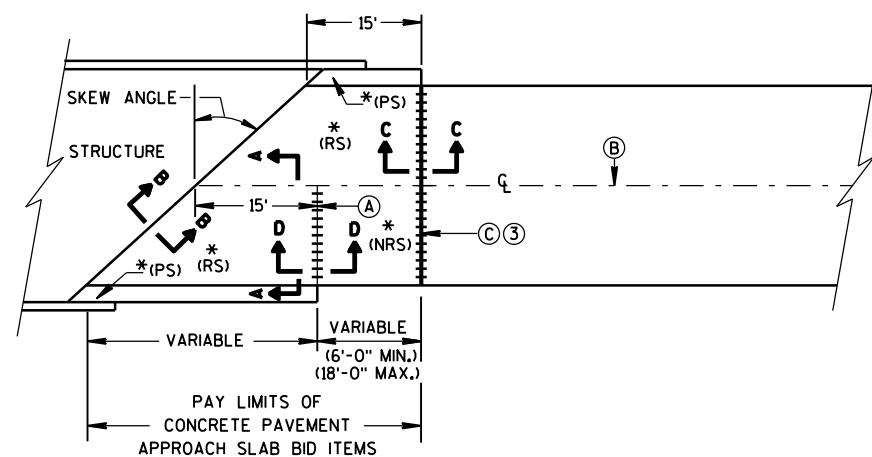
FHWA

/S/ Jerry H. Zoag
ROADWAY STANDARDS & 138
ENGINEER

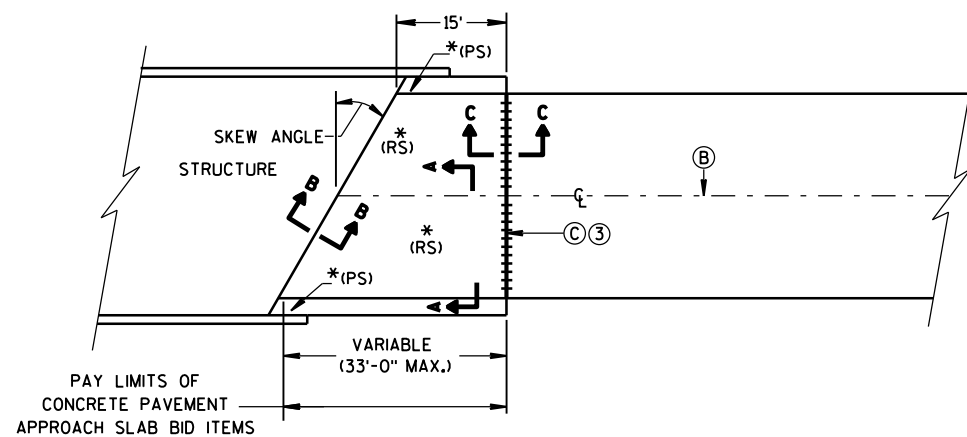
4T



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



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

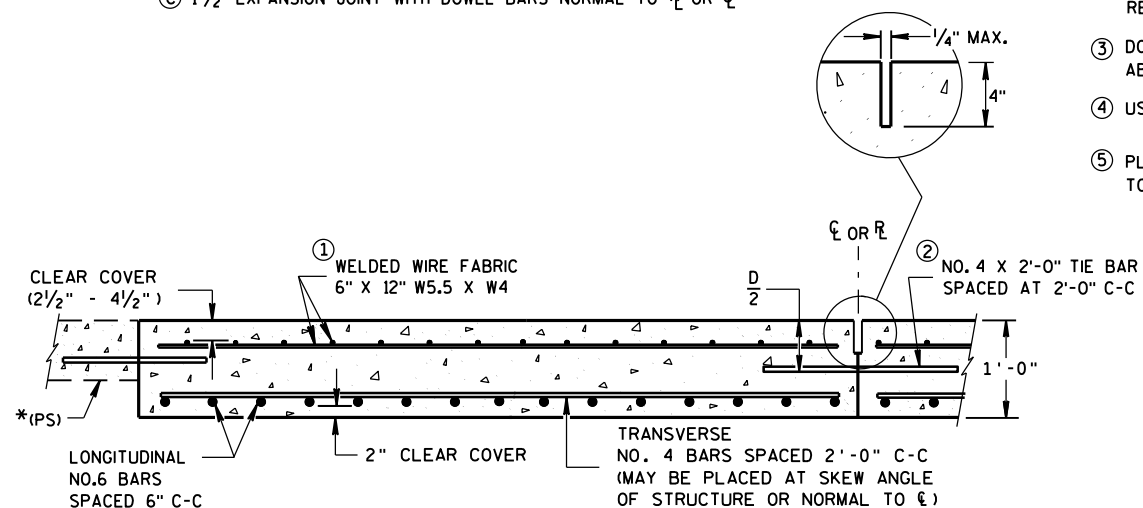


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

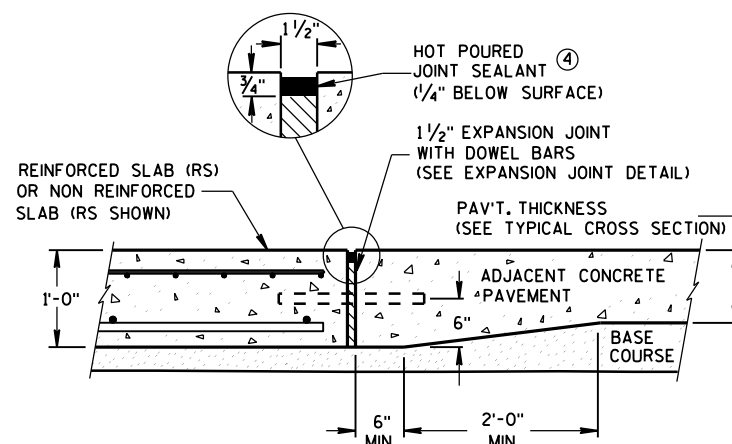
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

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

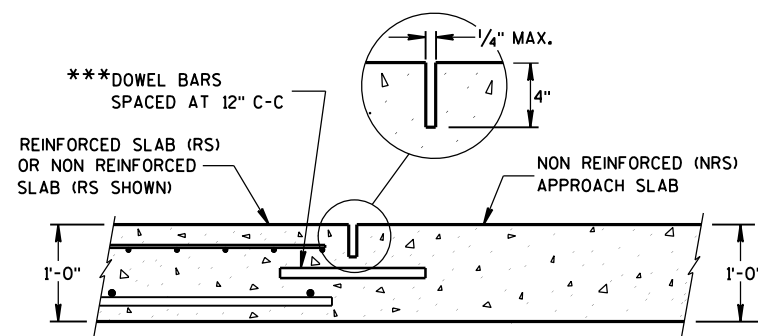
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



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



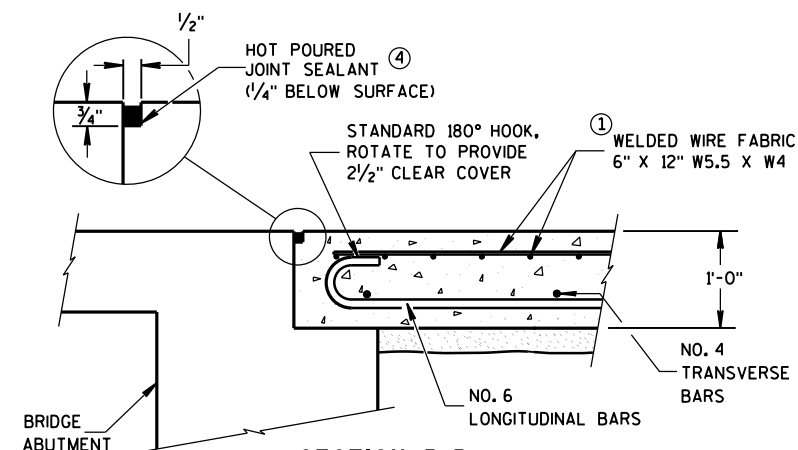
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

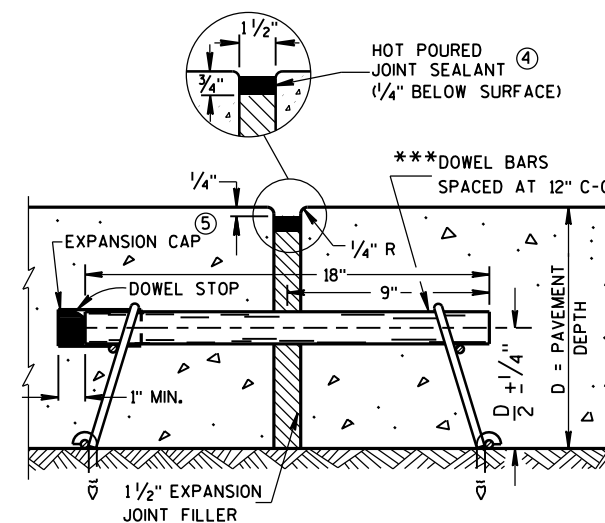
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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



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

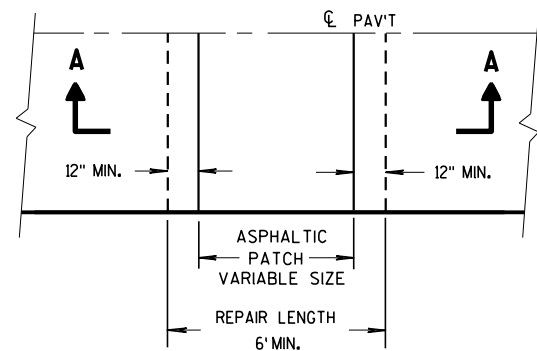


EXPANSION JOINT DETAIL

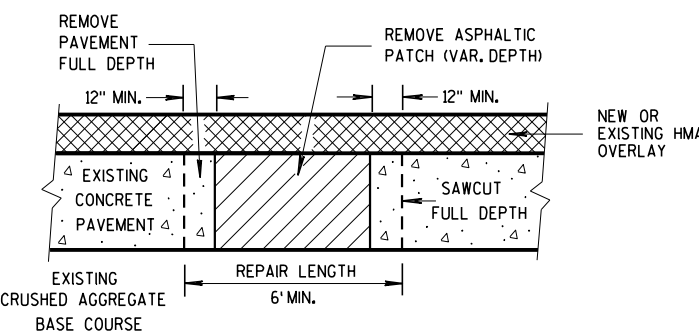
**CONCRETE PAVEMENT
APPROACH SLAB**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE
PAVEMENT SUPER 139
FHWA

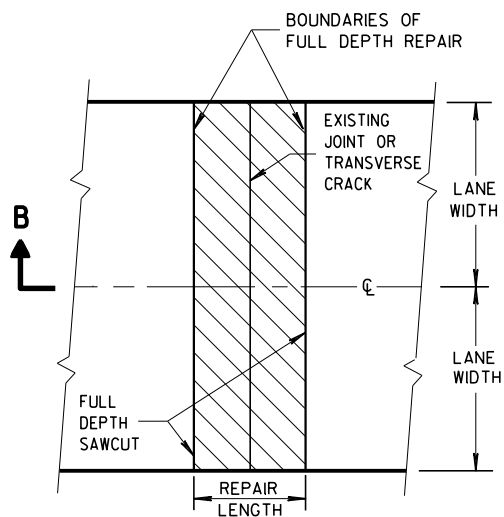


PLAN VIEW

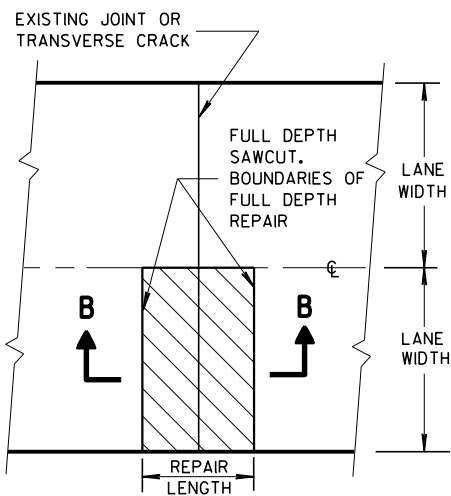


SECTION A-A

HMA PATCH REMOVAL



PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

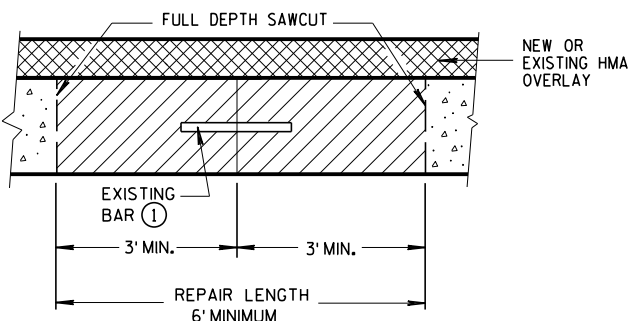
GENERAL NOTES

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 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK.

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.

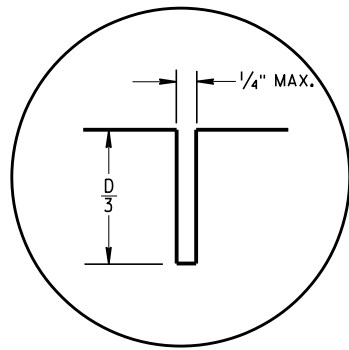
① DOWEL BARS MIGHT NOT EXIST.



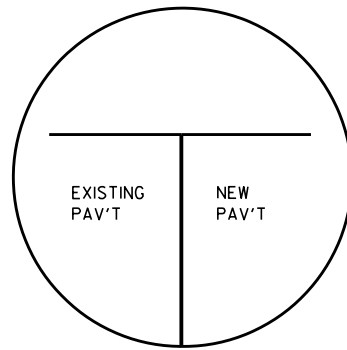
SECTION B-B
CONCRETE REMOVAL

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

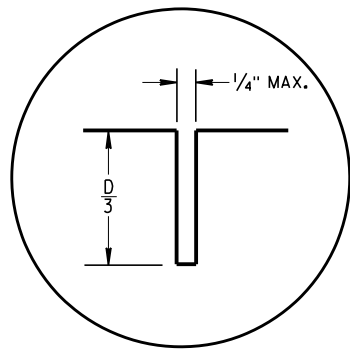


C1

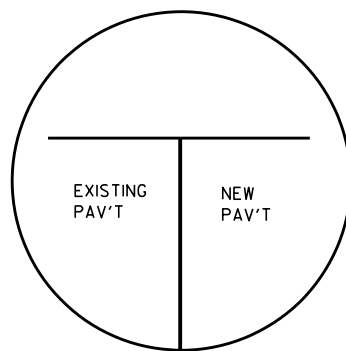


C2

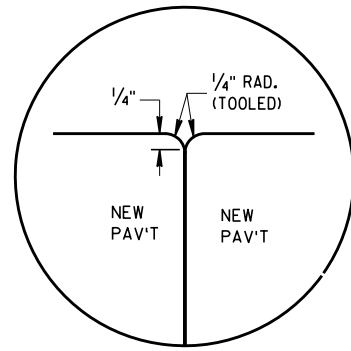
TRANSVERSE JOINTS



L1

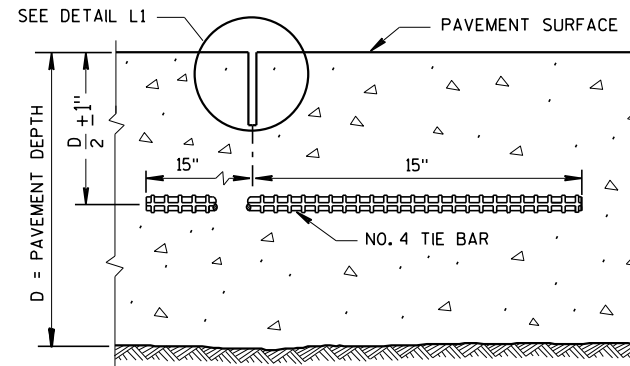


L2

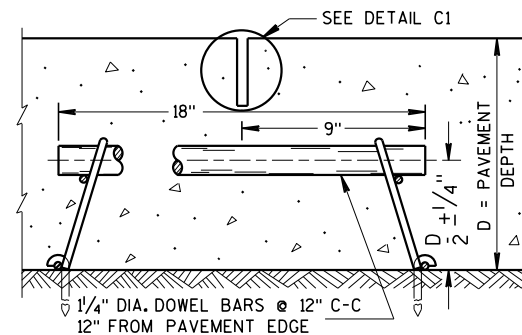


L3

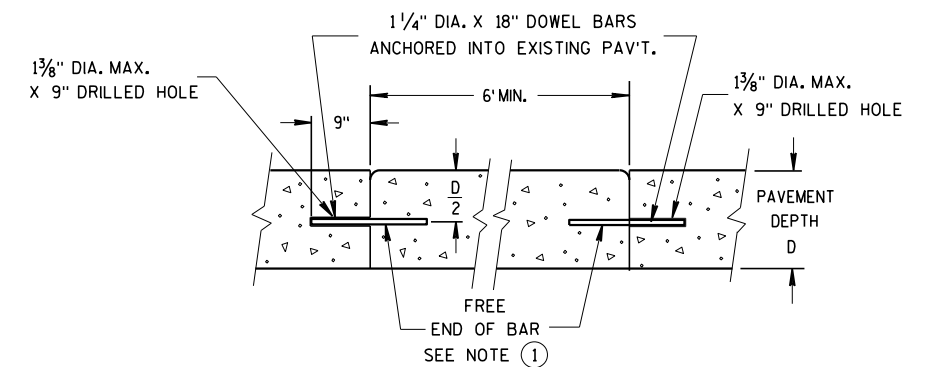
LONGITUDINAL JOINTS



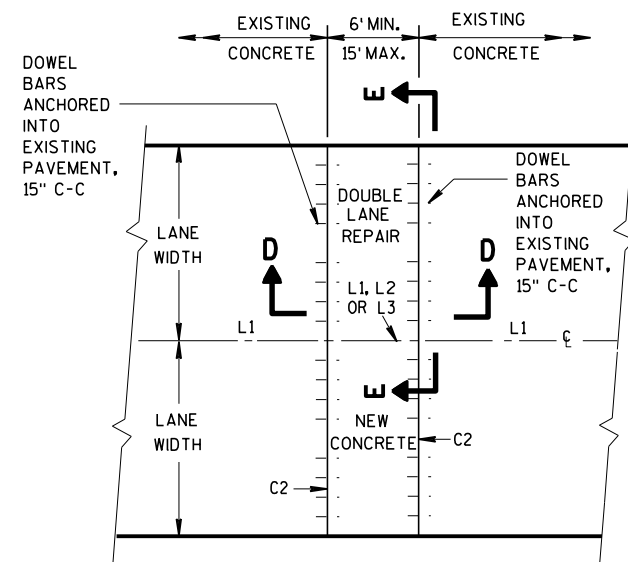
SECTION C-C
SAWED LONGITUDINAL JOINT



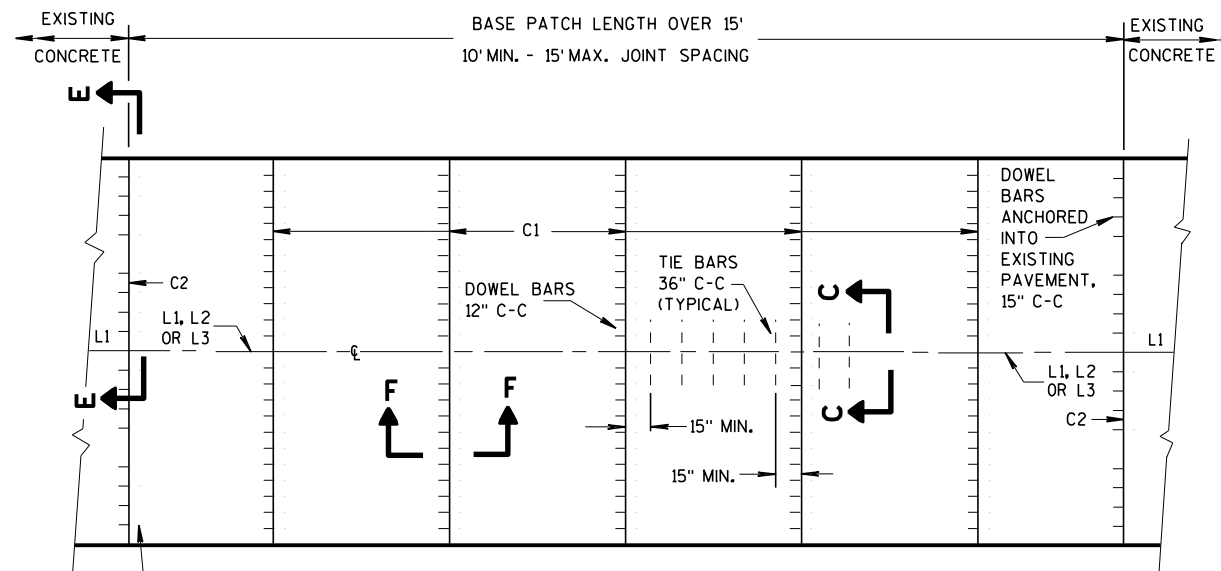
SECTION F-F
CONTRACTION JOINT



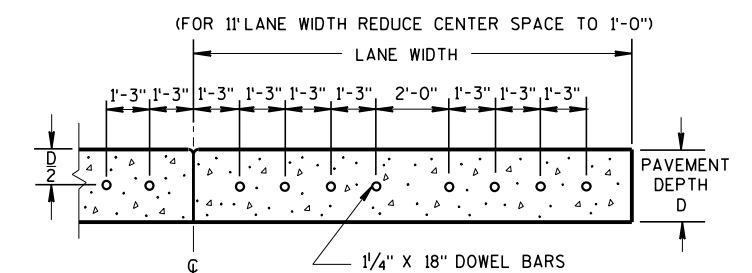
SECTION D-D



PLAN VIEW
MULTI-LANE CONCRETE BASE PATCH
15' MAXIMUM LENGTH



PLAN VIEW
MULTI-LANE CONCRETE BASE PATCH
GREATER THAN 15' IN LENGTH



SECTION E-E
SPACING OF DOWEL BARS
ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

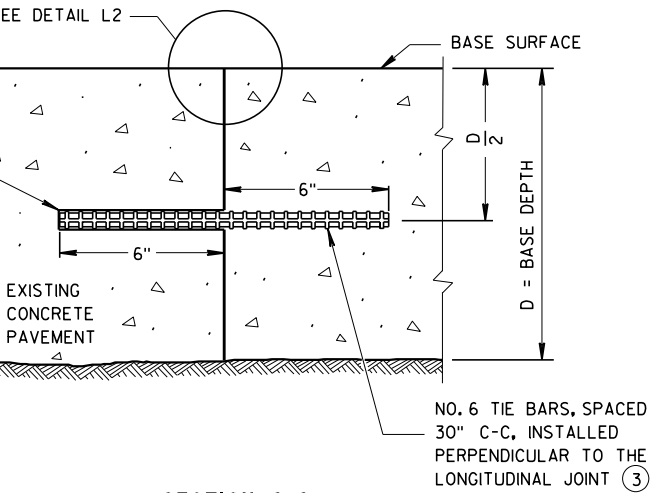
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

CONCRETE BASE PATCHES OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

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

PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

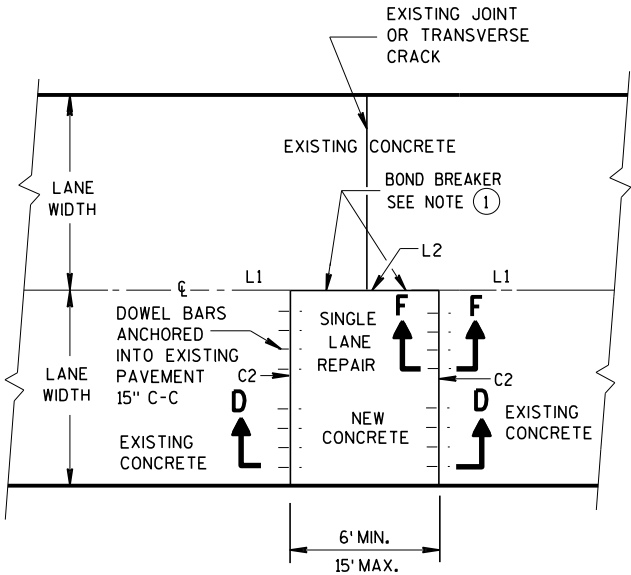
- APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



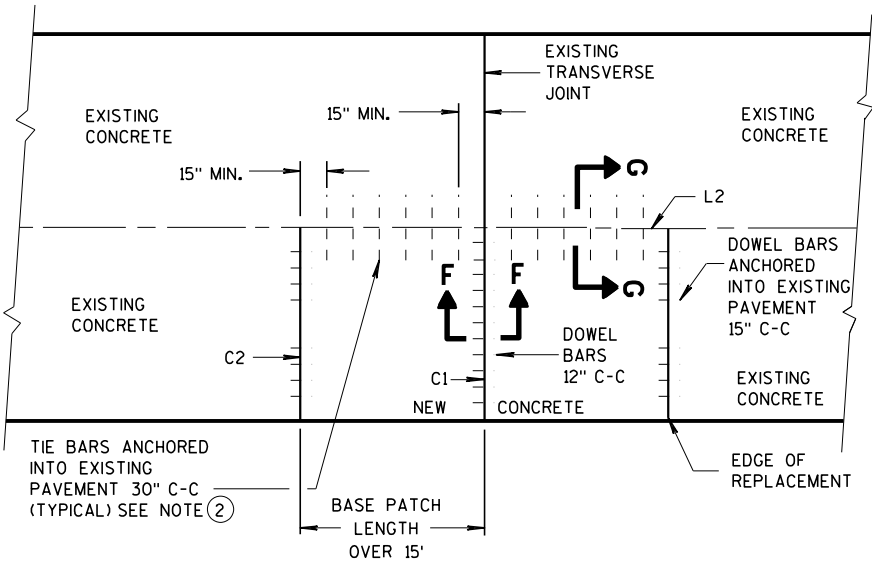
SECTION G-G
TIE BARS ANCHORED
INTO EXISTING PAVEMENT

GENERAL NOTES

- ① USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE BASE PATCHES UP TO 15 FEET IN LENGTH.
- ② WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, DRILLED TIE BARS MAY BE INSTALLED 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.
- ③ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

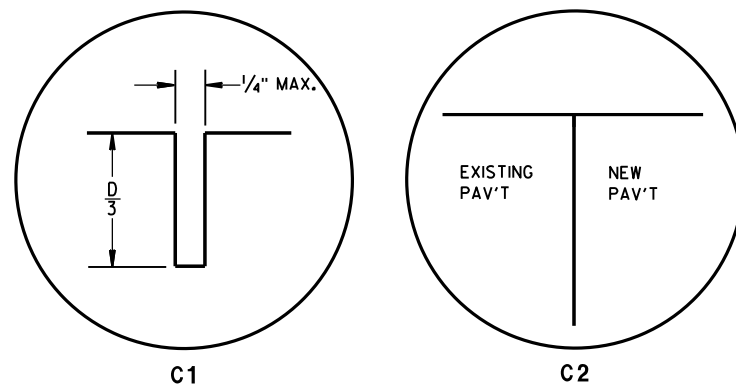


PLAN VIEW
SINGLE LANE CONCRETE BASE PATCH
15' MAXIMUM LENGTH

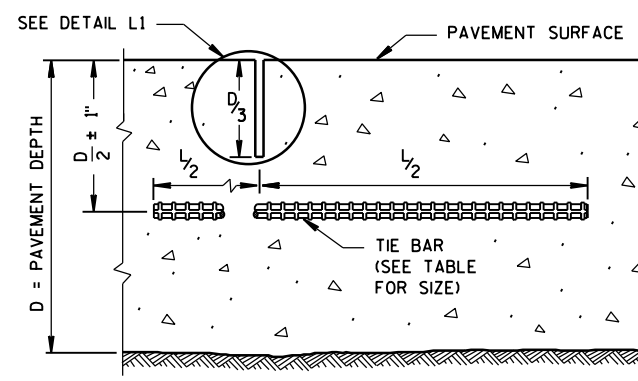


PLAN VIEW
SINGLE LANE CONCRETE BASE PATCH
GREATER THAN 15' IN LENGTH

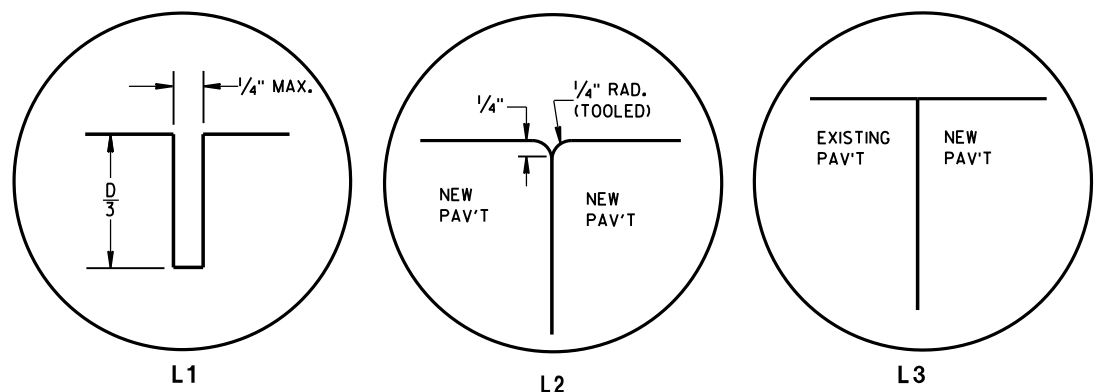
BASE PATCHING CONCRETE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2018 DATE	/S/ Peter Kemp P.E. PAVEMENT SUPER 142
FHWA	



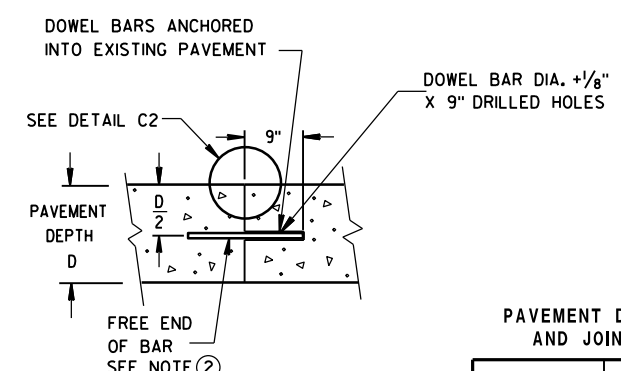
TRANSVERSE JOINTS



SECTION C-C
SAWED JOINT



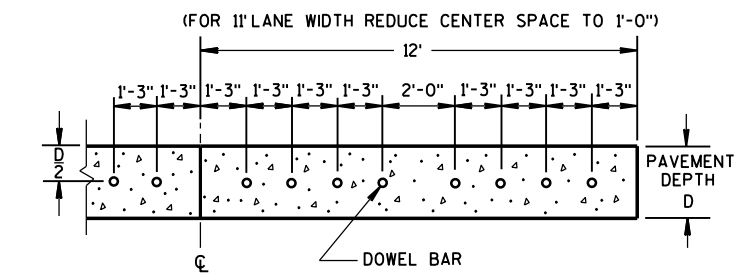
LONGITUDINAL JOINTS



SECTION D-D

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'



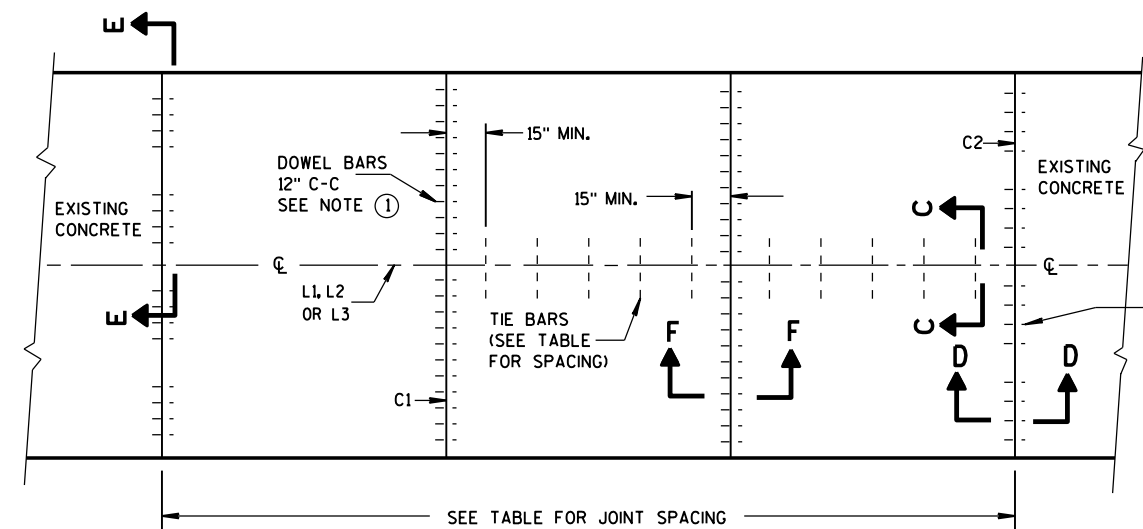
SECTION E-E
SPACING OF DOWEL BARS
ANCHORED INTO EXISTING PAVEMENT

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"***

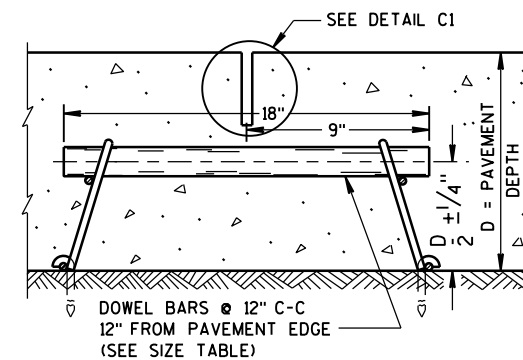
* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

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



PLAN VIEW
CONCRETE BASE
CONTRACTION JOINT LOCATIONS

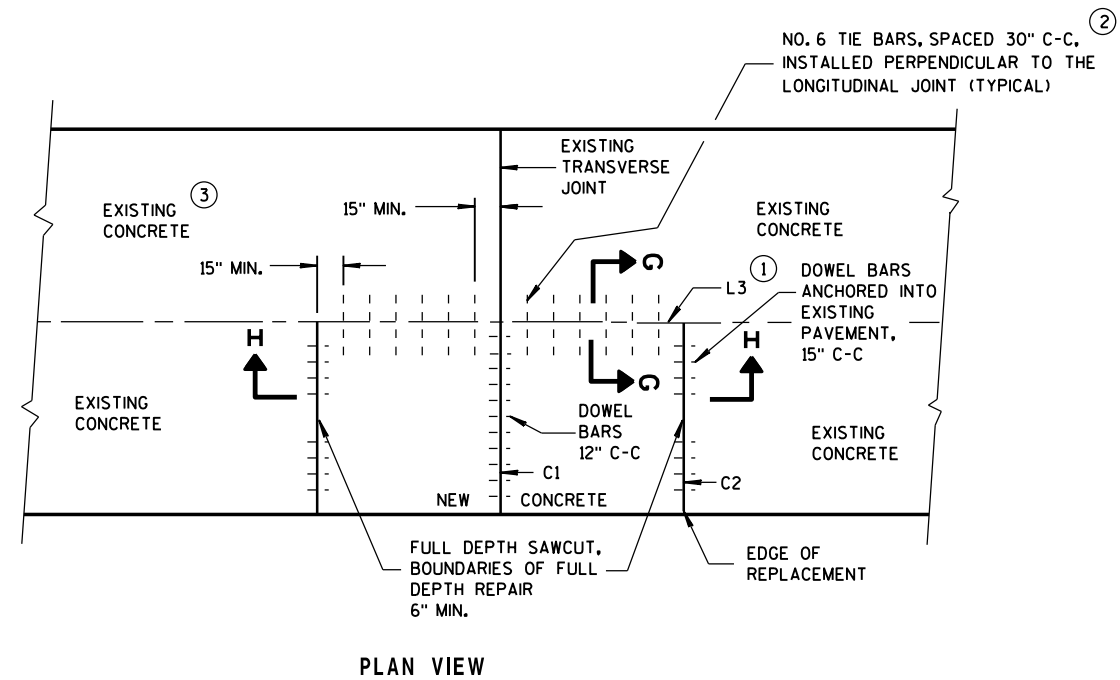
DOWEL BARS ANCHORED INTO EXISTING PAVEMENT, 15" C-C



SECTION F-F
CONTRACTION JOINT

CONCRETE BASE

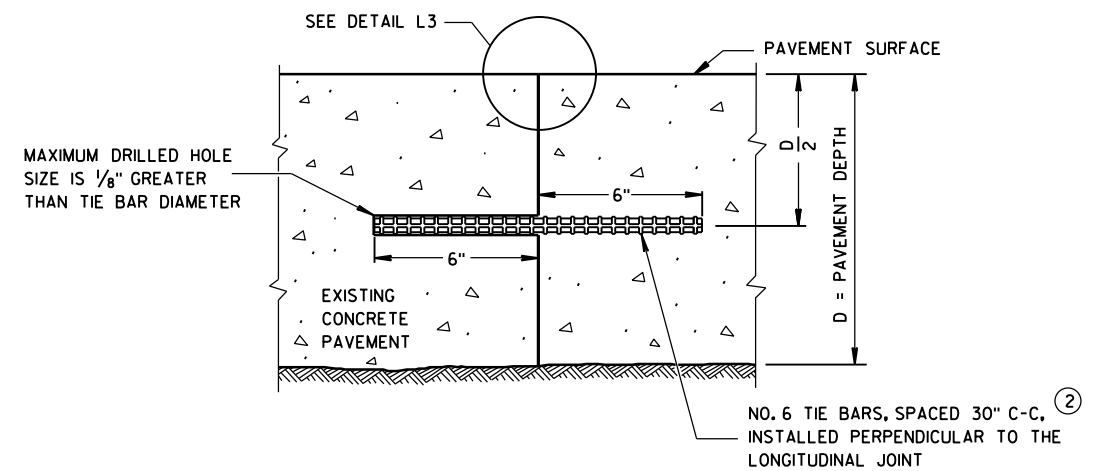
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 143



SINGLE LANE CONCRETE BASE REPAIR

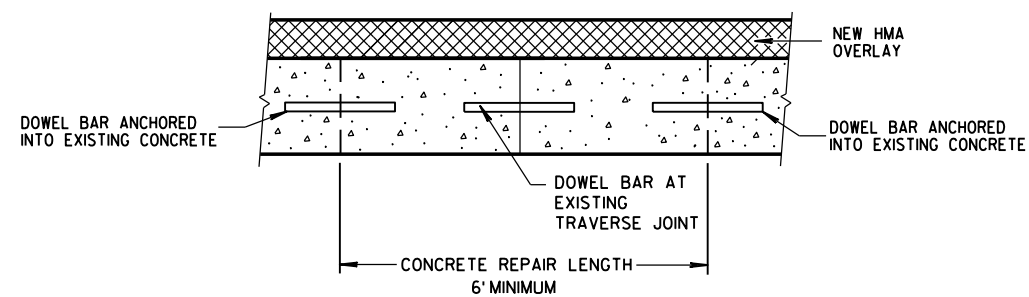
GENERAL NOTES

- ① USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) AT THE LONGITUDINAL JOINT IN LIEU OF TIE BARS FOR SINGLE LANE CONCRETE BASE REPAIRS UP TO 15 FEET IN LENGTH.
- ② ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ③ PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H-H

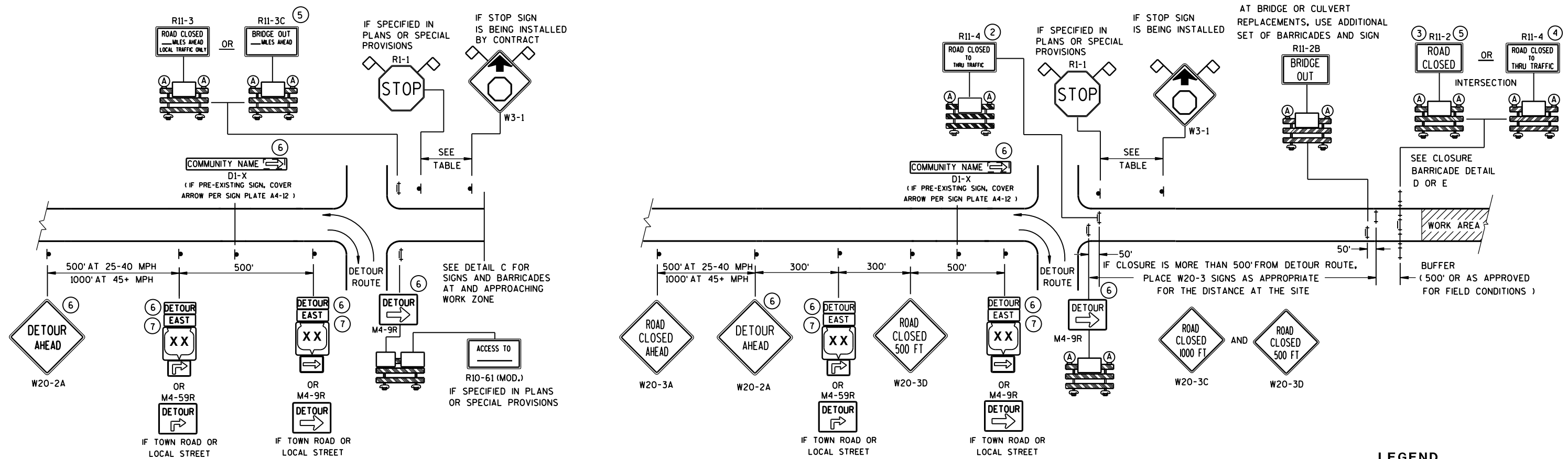
CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

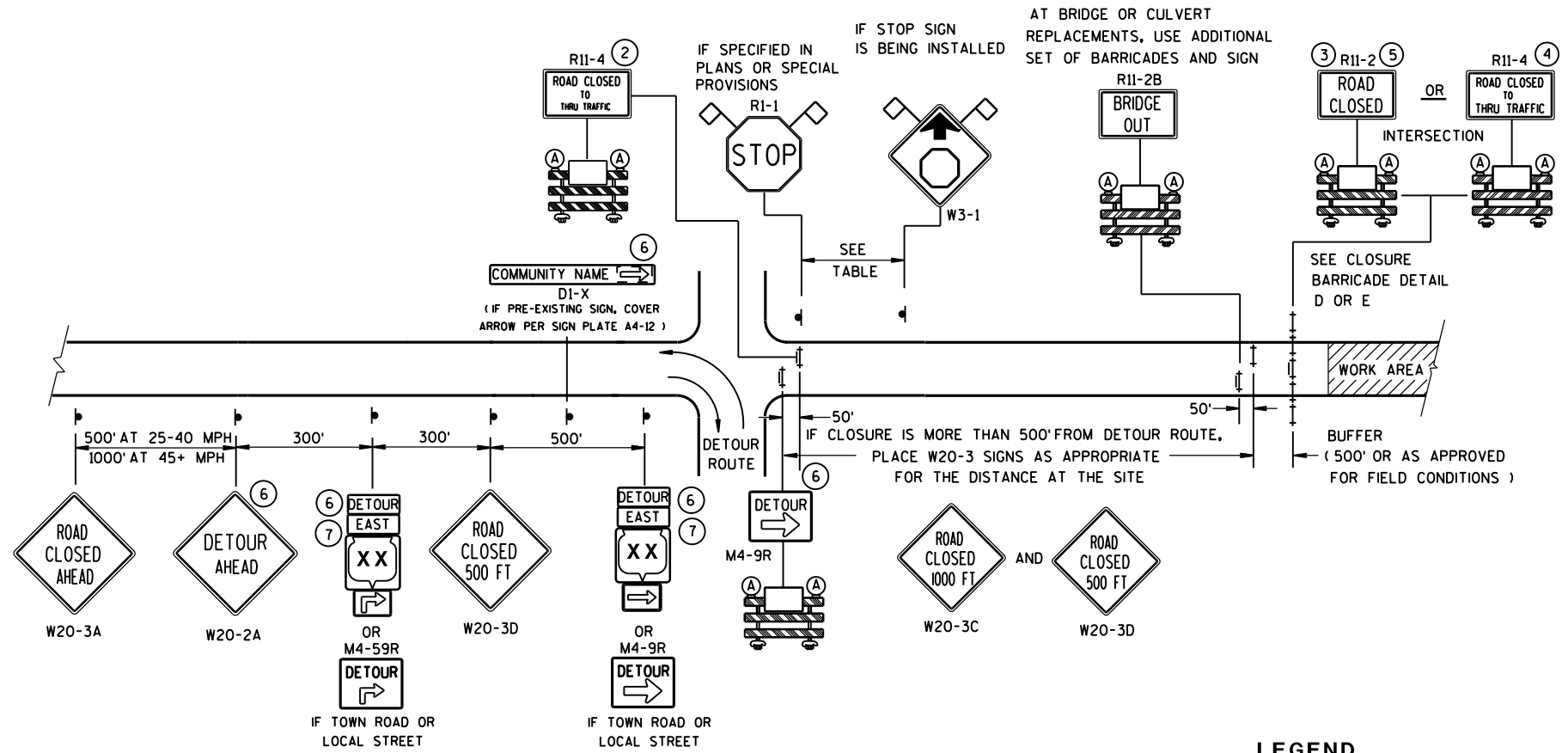
June, 2015
DATE/S/ Peter Kemp, P.E.
PAVEMENT SUPEI 144

FHWA



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

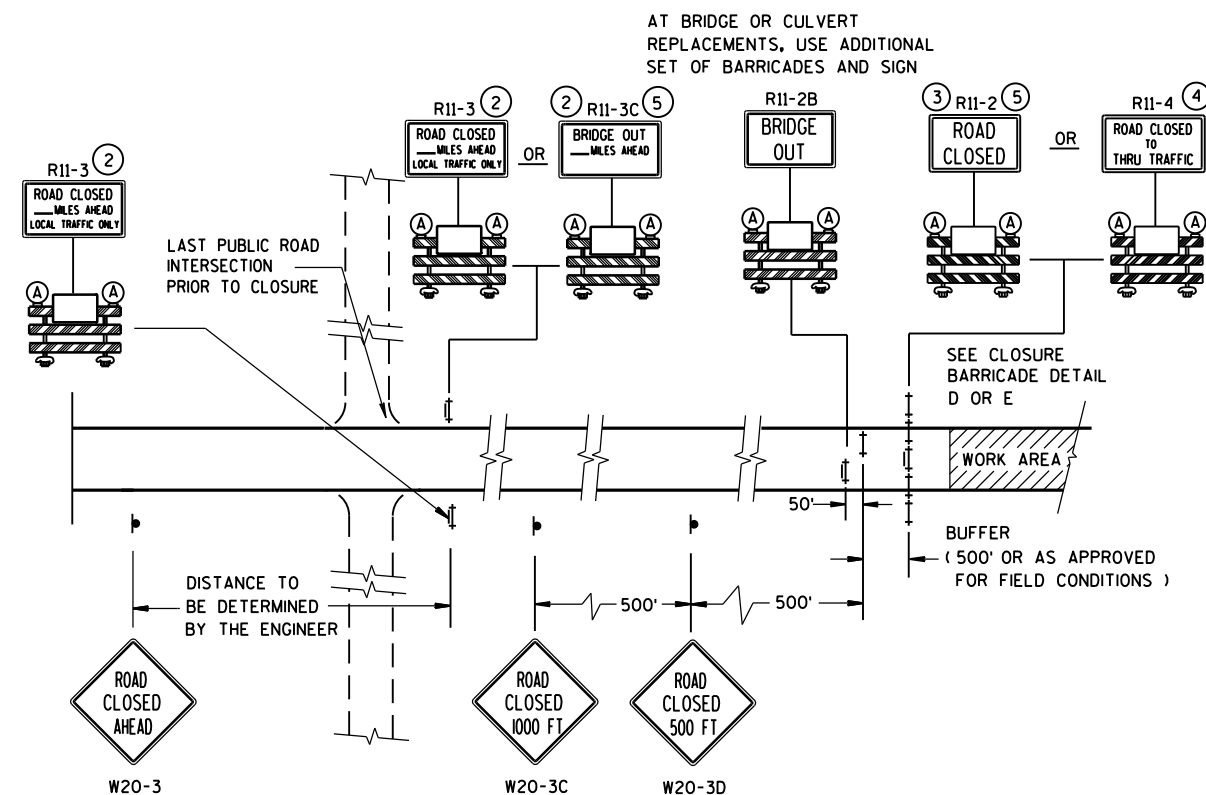
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

LEGEND

- | | |
|---|--|
|  | SIGN ON PERMANENT SUPPORT |
|  | TYPE III BARRICADE |
|  | TYPE III BARRICADE WITH
ATTACHED SIGN |
|  | TYPE "A" WARNING LIGHT (FLASHING) |

 WORK AREA

 M4-8
 M3-X
 M1-4
OR
 M1-5A
OR
 M1-6


 OR
 

M05-1 M06-1

 FLAGS, 16" X 16" MIN., (ORANGE)

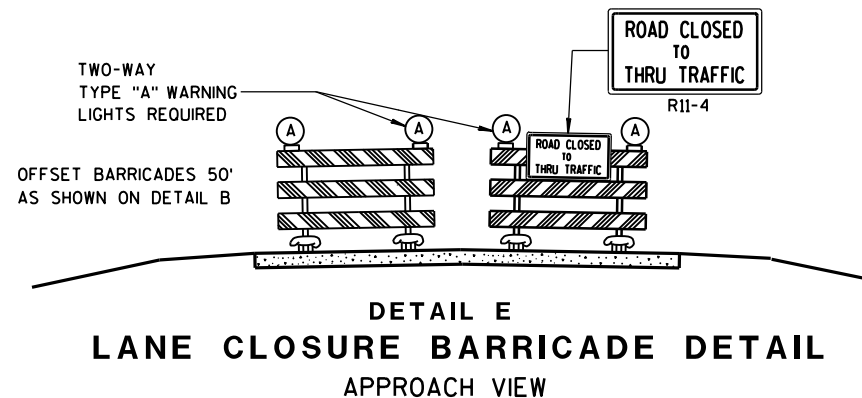
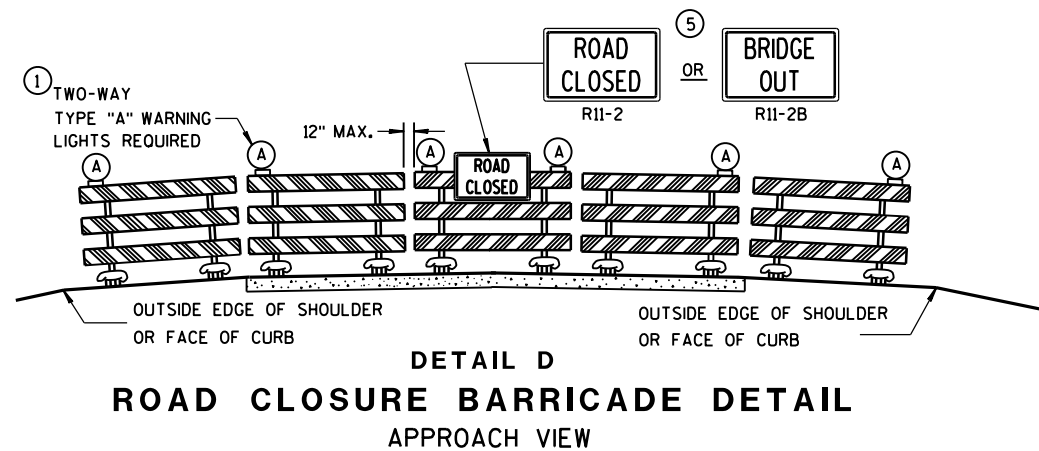
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015	/S/ Peter Amakobe Atepe
DATE	STATEWIDE WORK ZO 145 FIC
FWWA	SAFETY ENGINEER



SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

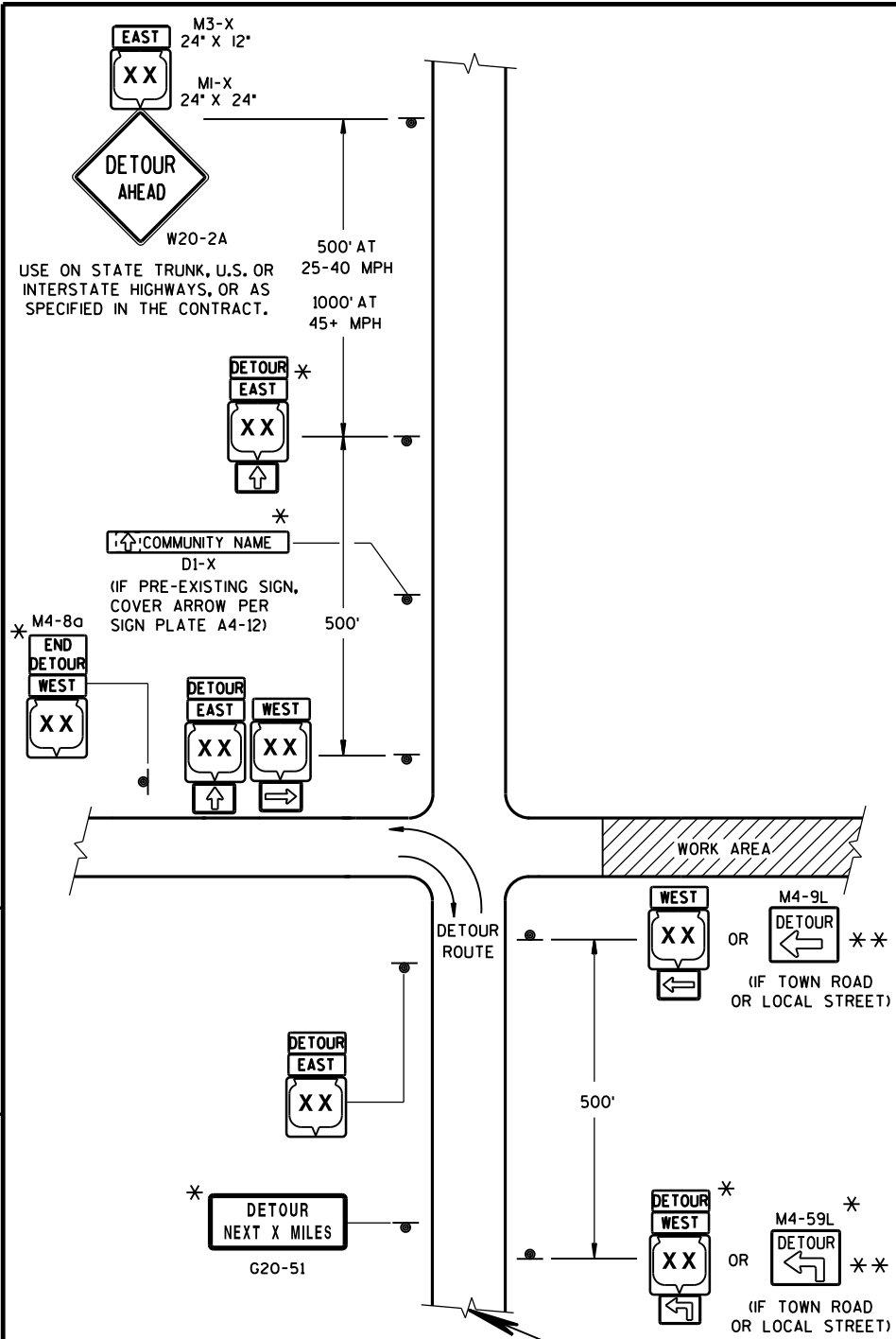
R1-1 SHALL BE 36" X 36".

- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015	/S/ Peter Amokobe Atepe
DATE	STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA	146



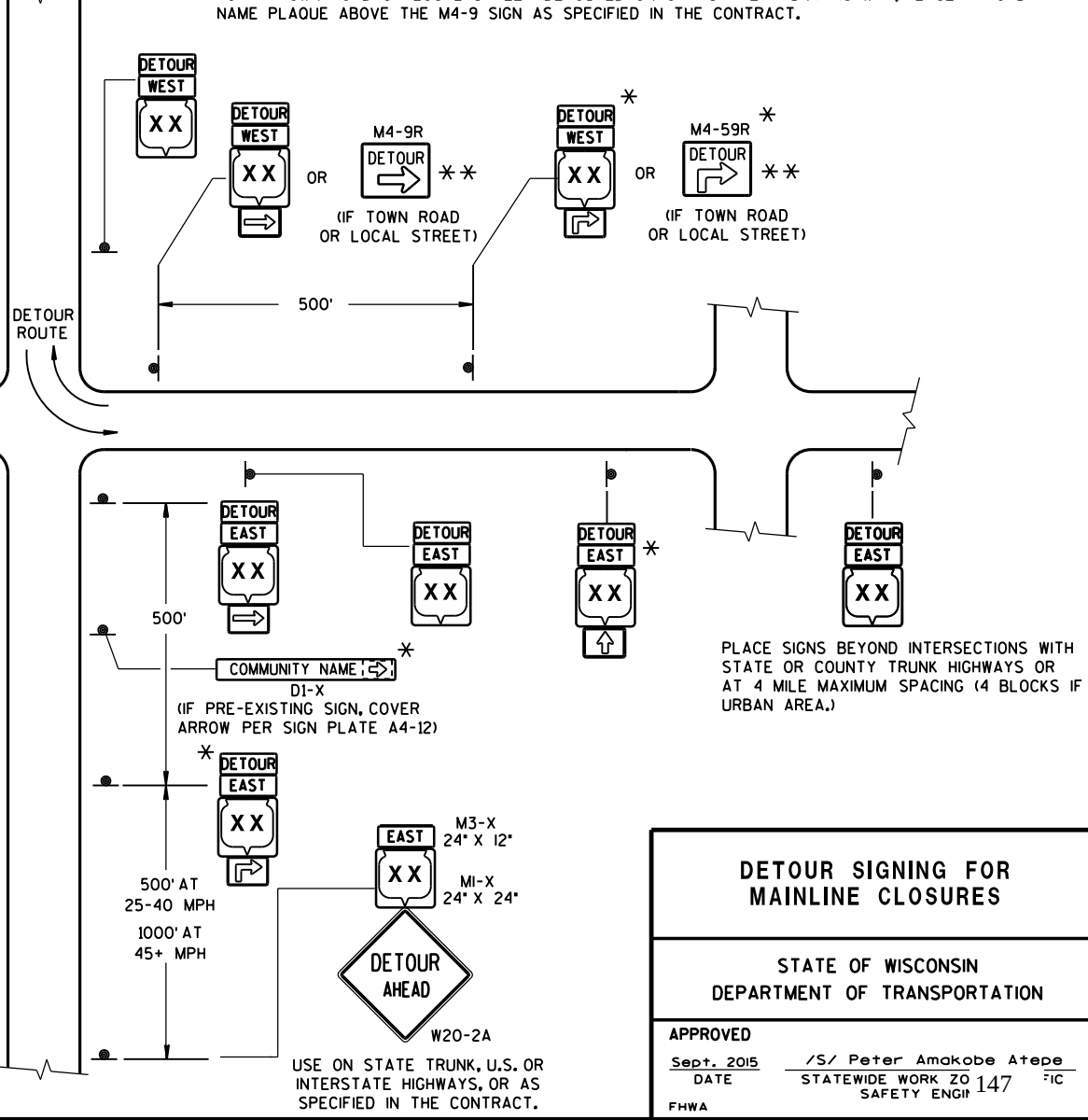
THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT

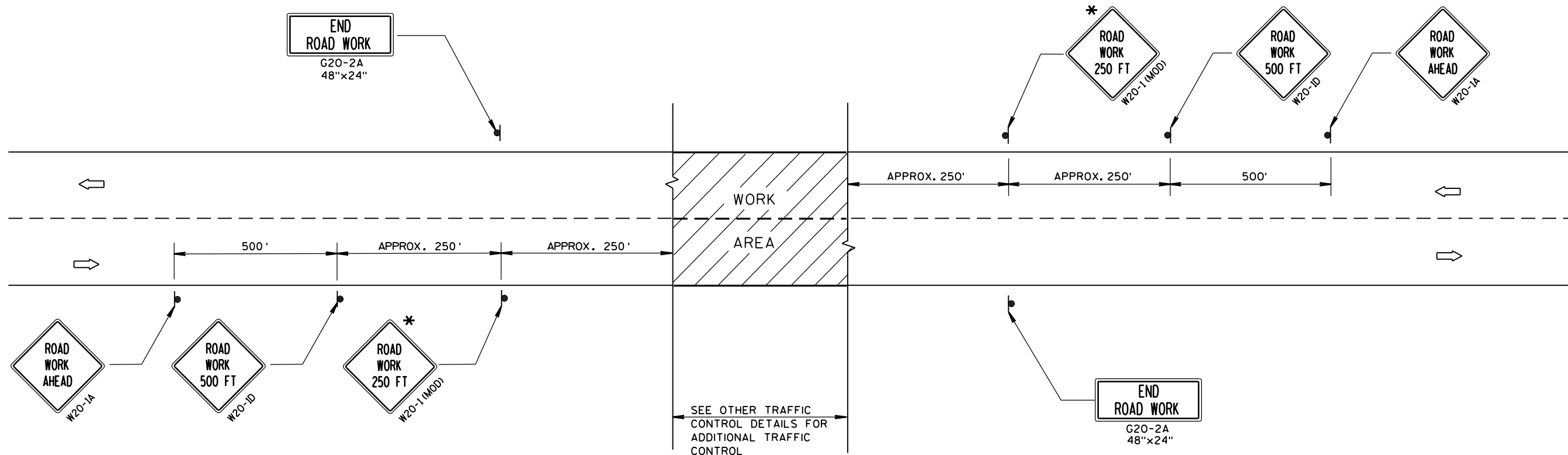
DETAIL F
DETOUR SIGNING

GENERAL NOTES

- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS, MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- "MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- SIGN SIZES SHALL BE AS FOLLOWS:
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M4-9 SHALL BE 30" X 24".
 - M4-8a SHALL BE 24" X 18".
 - G20-51 SHALL BE 60" X 24".
 - W20-2 SHALL BE 48" X 48".
 - D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	/S/ Peter Amakobe Atepe
DATE	STATEWIDE WORK ZONE SAFETY ENGINEER 147
FHWA	



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

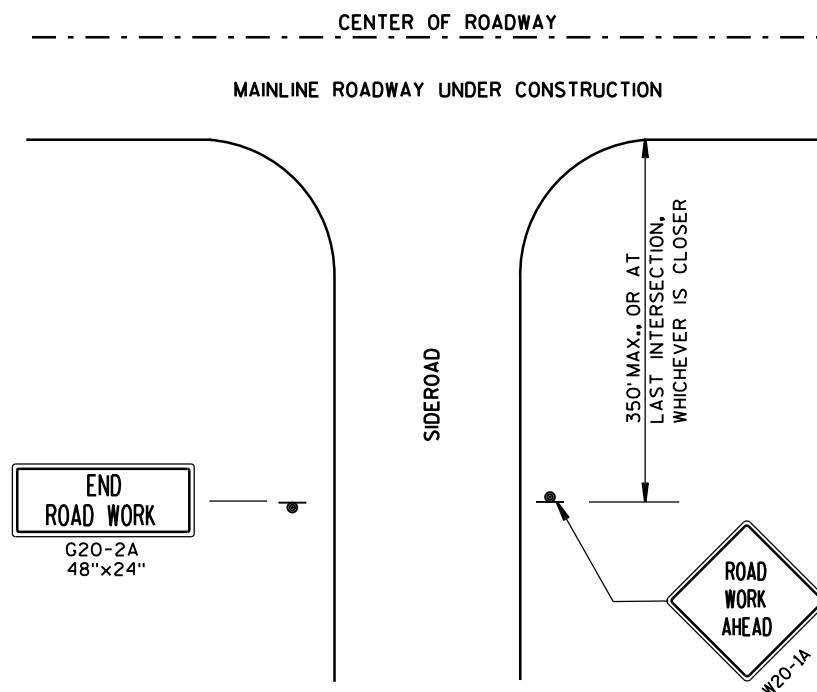
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



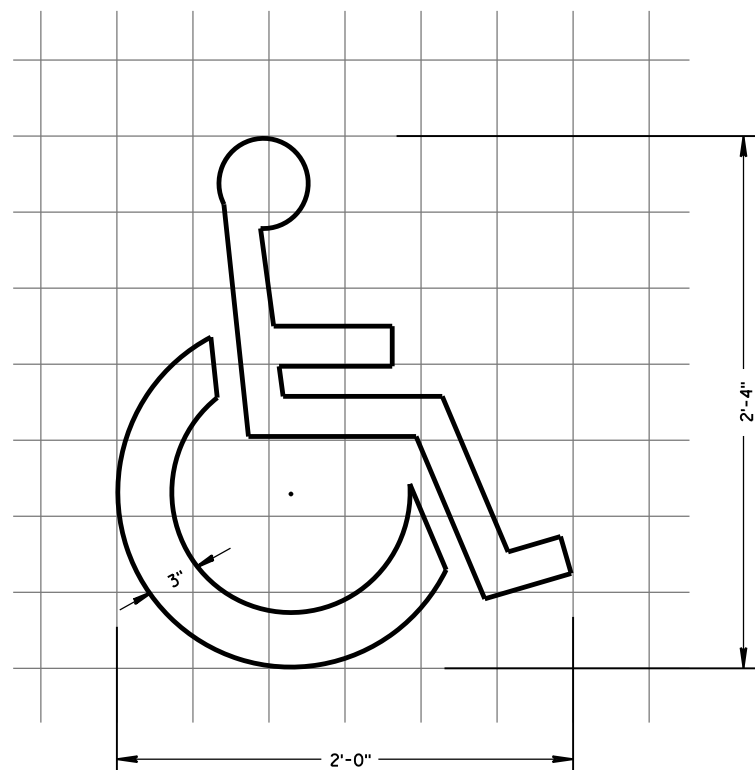
LEGEND

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

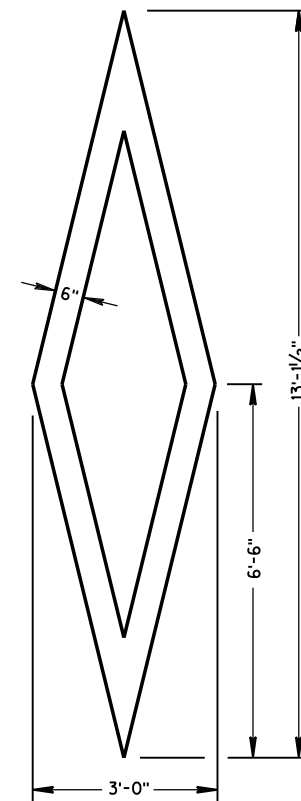
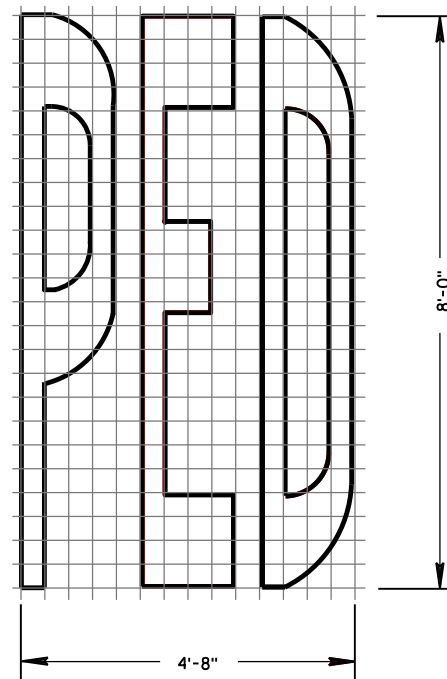
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 40 M.P.H.
OR LESS TWO-WAY UNDIVIDED
ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE: Sept. 2017 /S/ Andrew Heldtke
FWHA WORK ZONE ENG 148



HANDICAP SYMBOL

PREFERENTIAL
LANE SYMBOL**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.

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

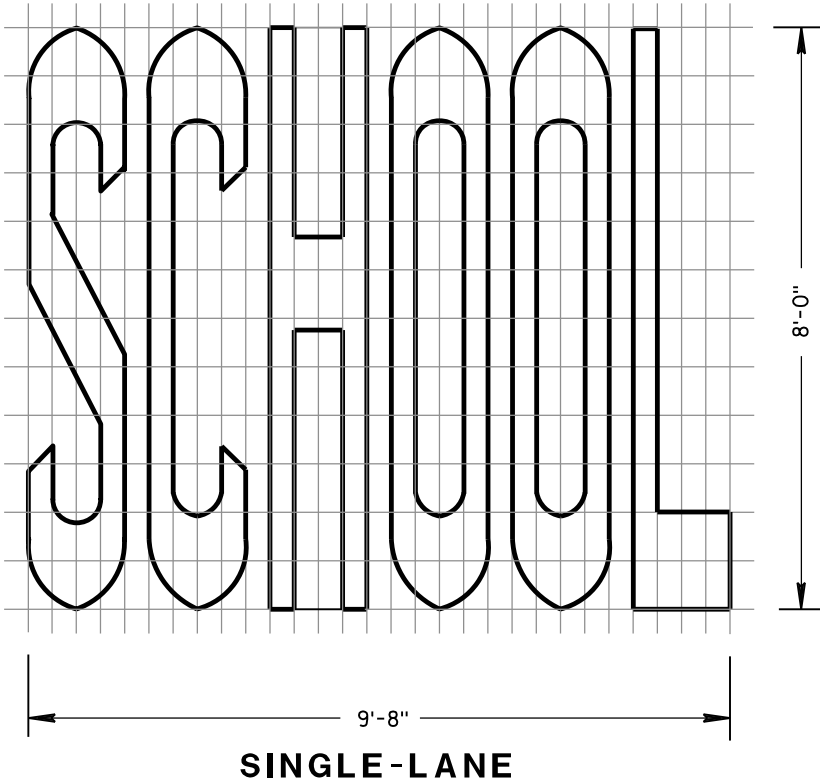
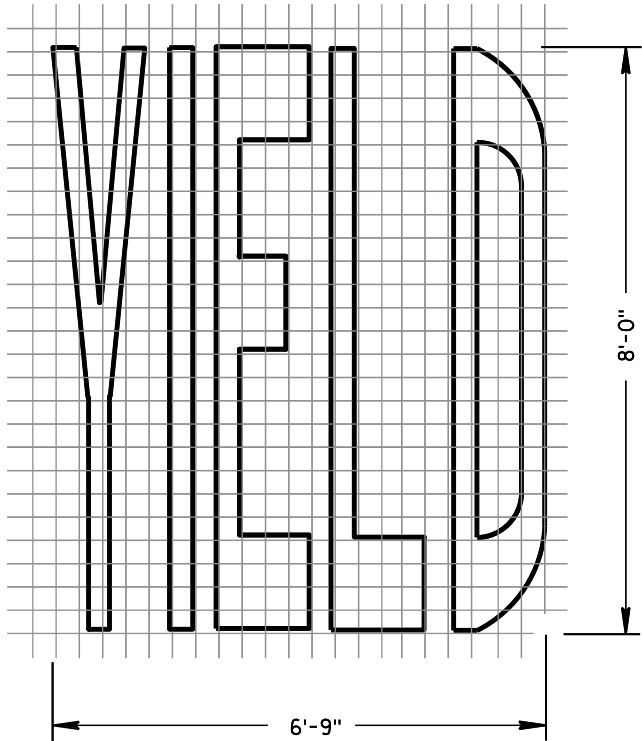
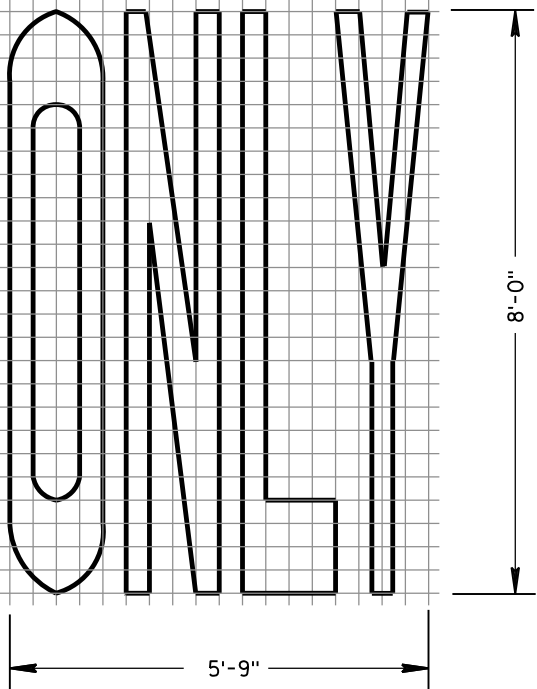
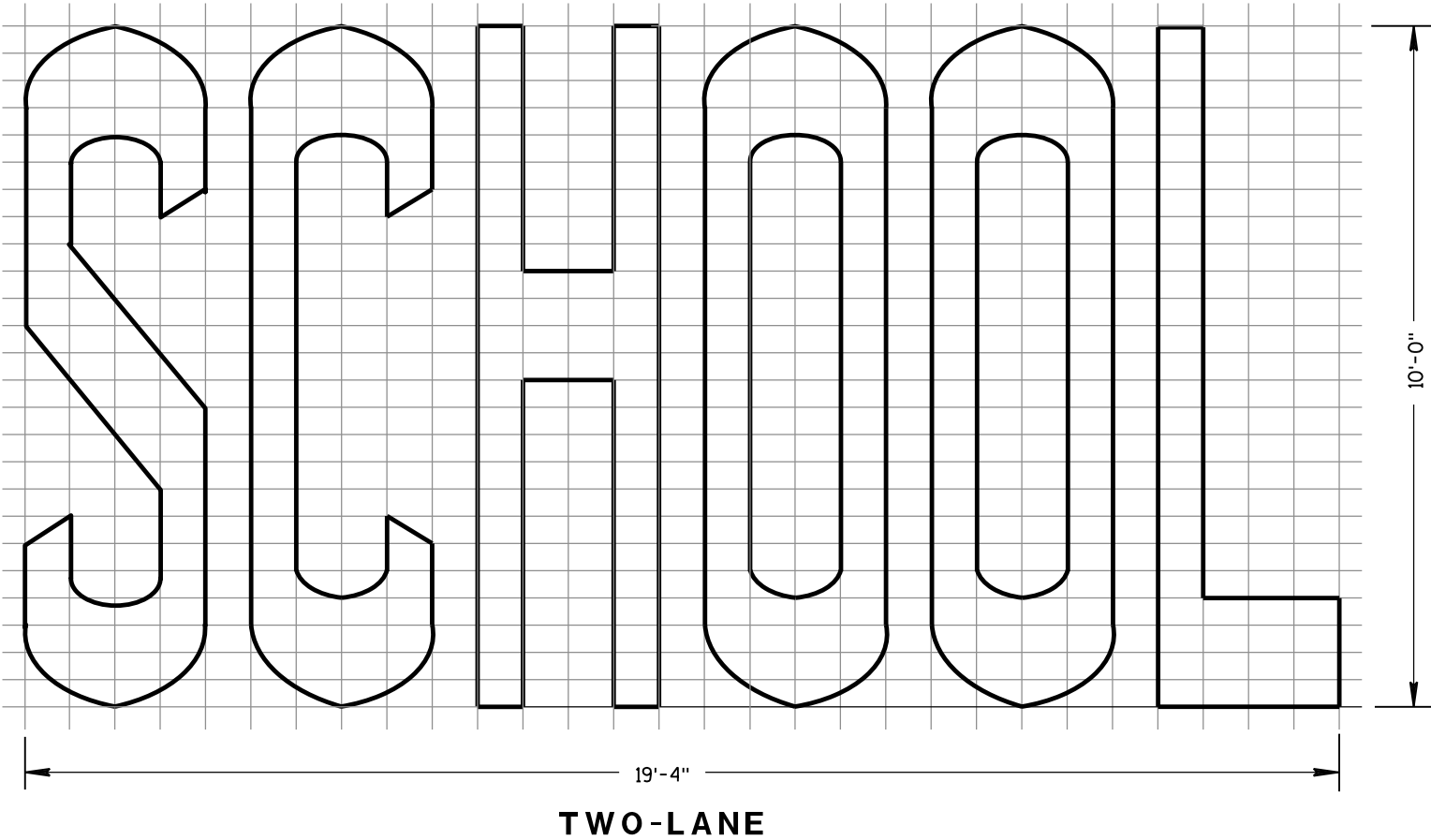
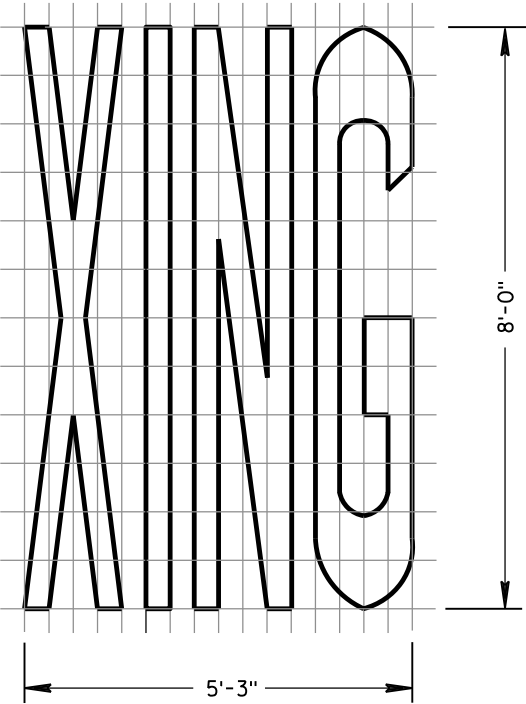
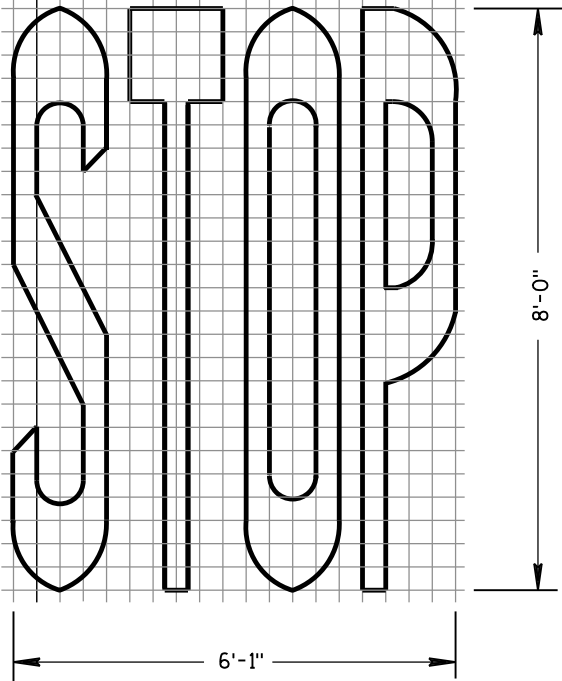
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June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARK 149 EER

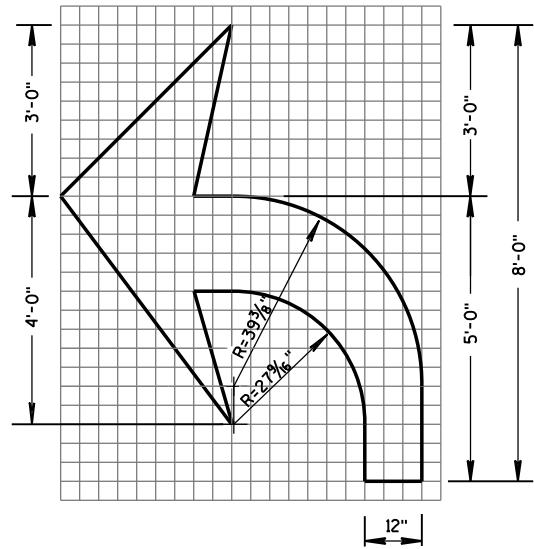
FHWA

GENERAL NOTES

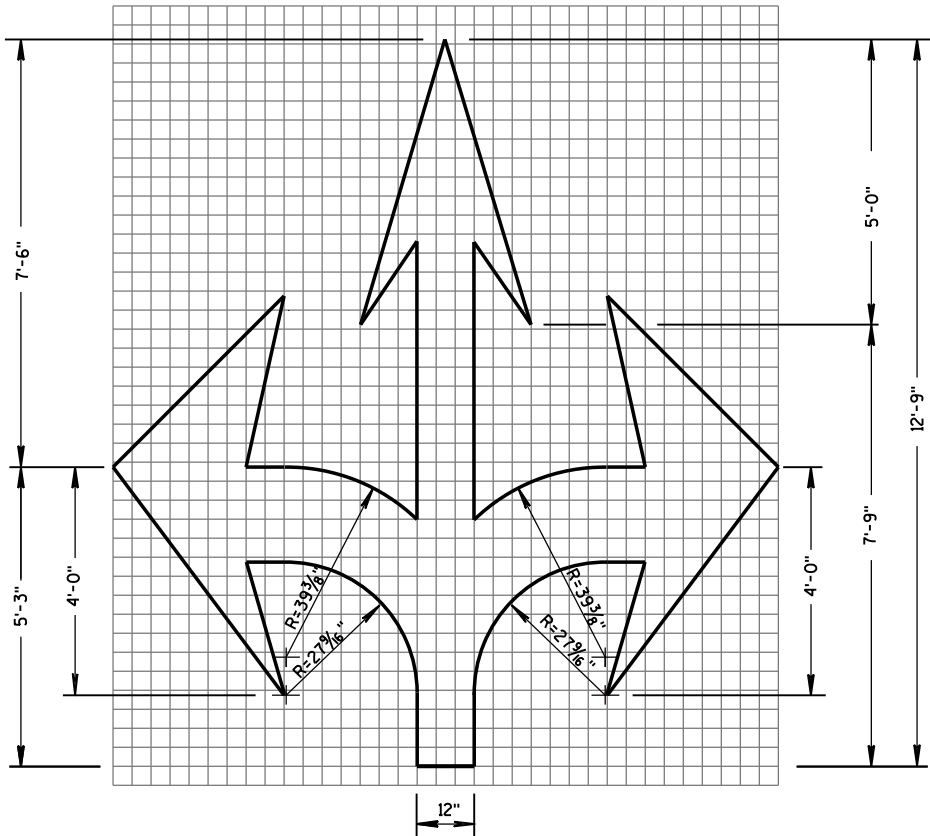
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



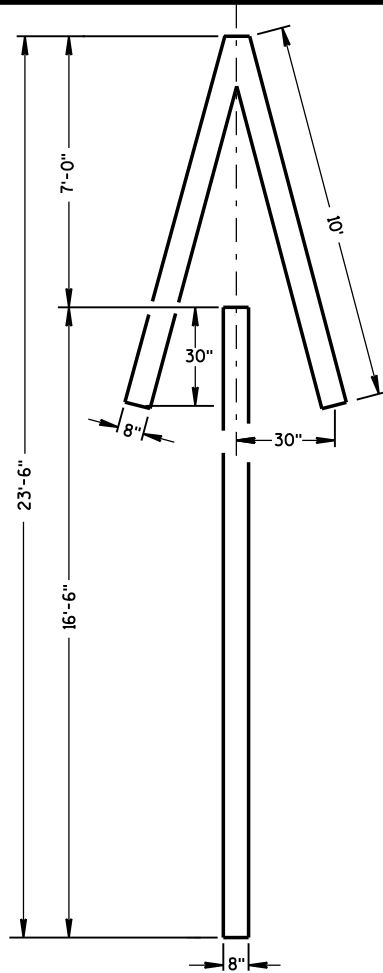
PAVEMENT MARKING WORDS			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
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June 2017	/S/ Matthew R. Rauch		
DATE	STATE SIGNING AND MARK	150	EER
FHWA			



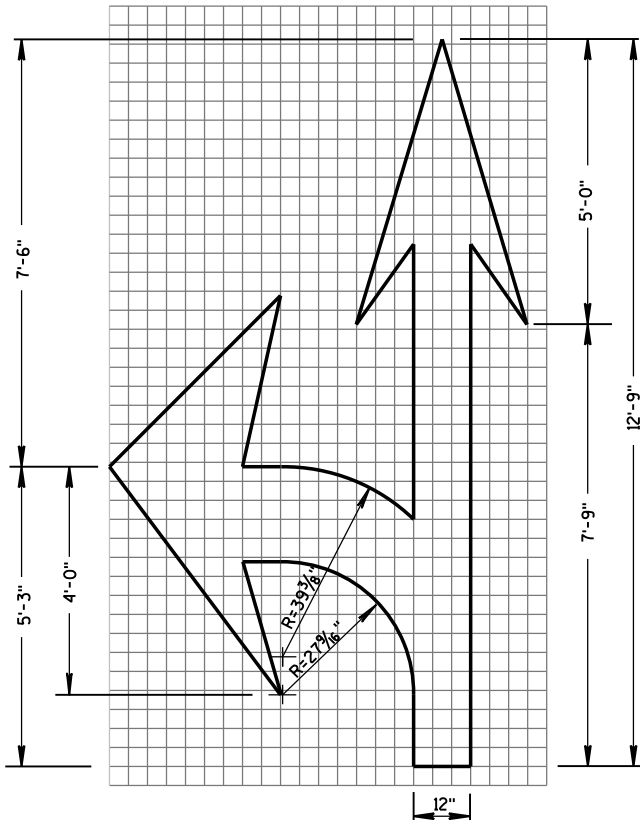
TYPE 2



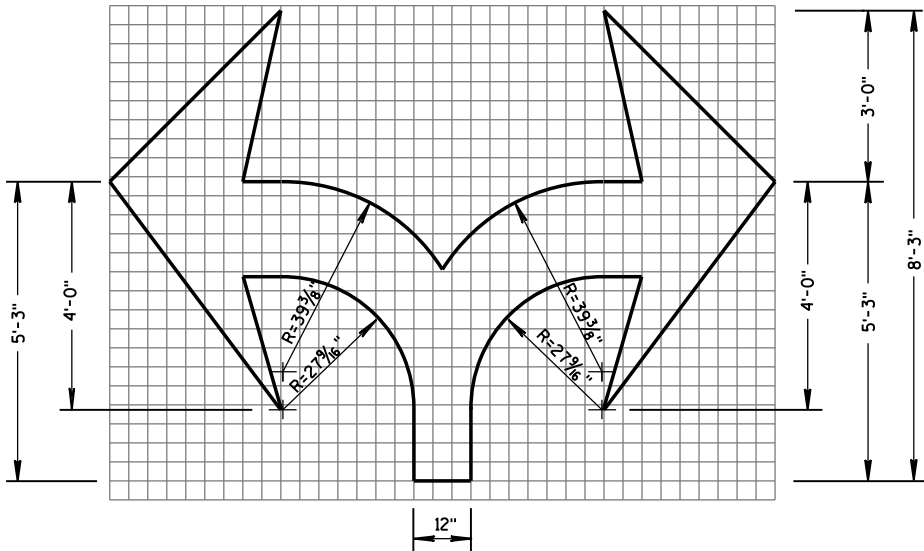
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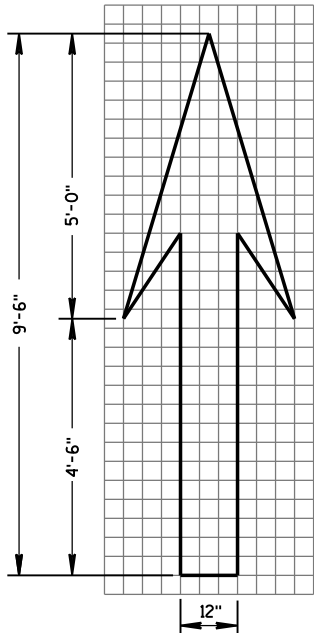
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TYPE 3



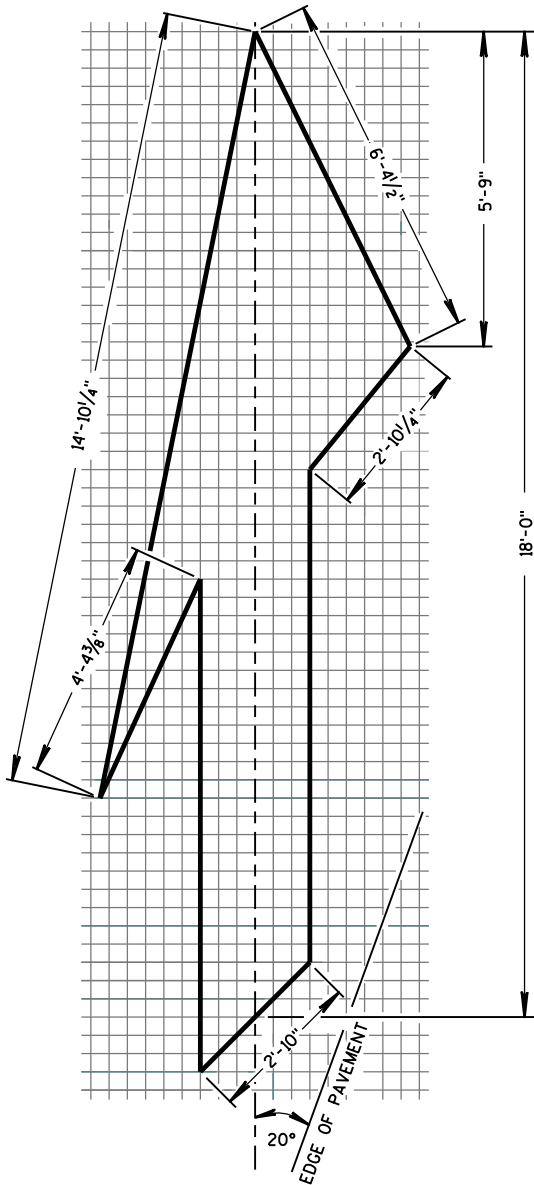
TYPE 7



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.

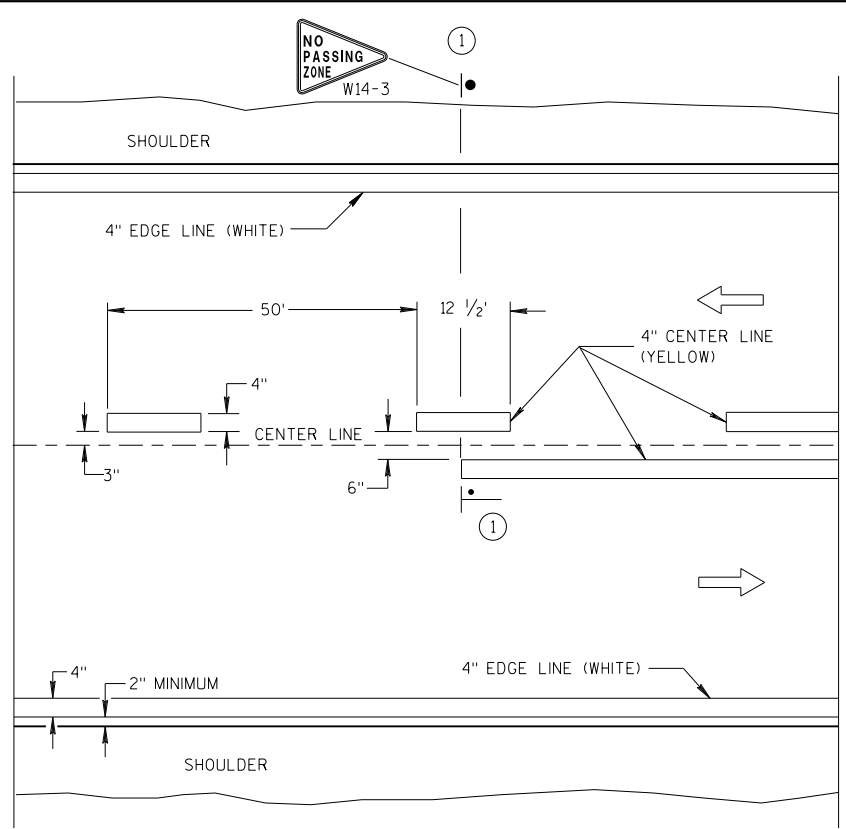


TYPE 5 LANE DROP ARROW

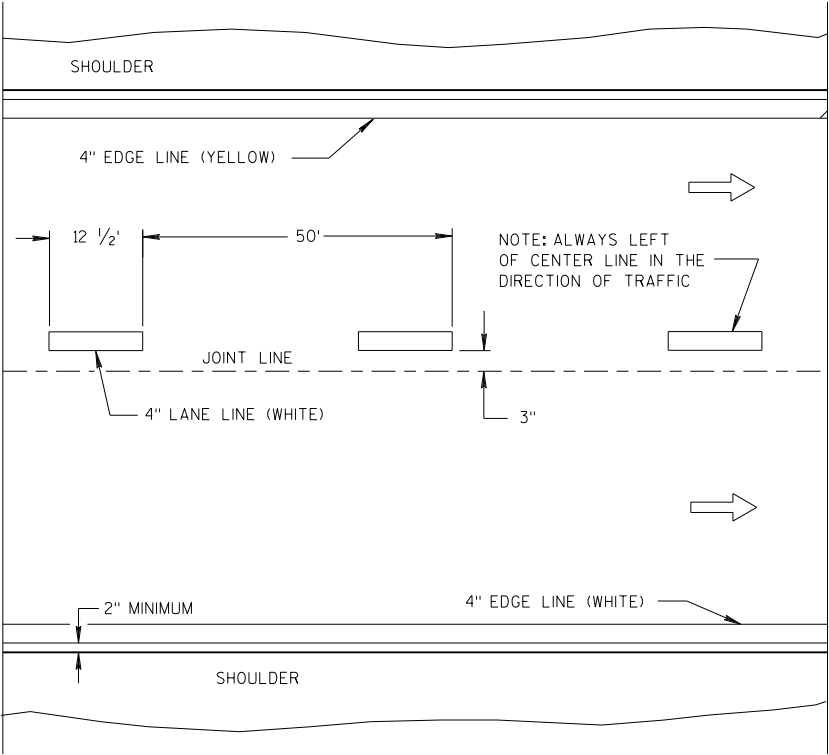
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 151
FHWA

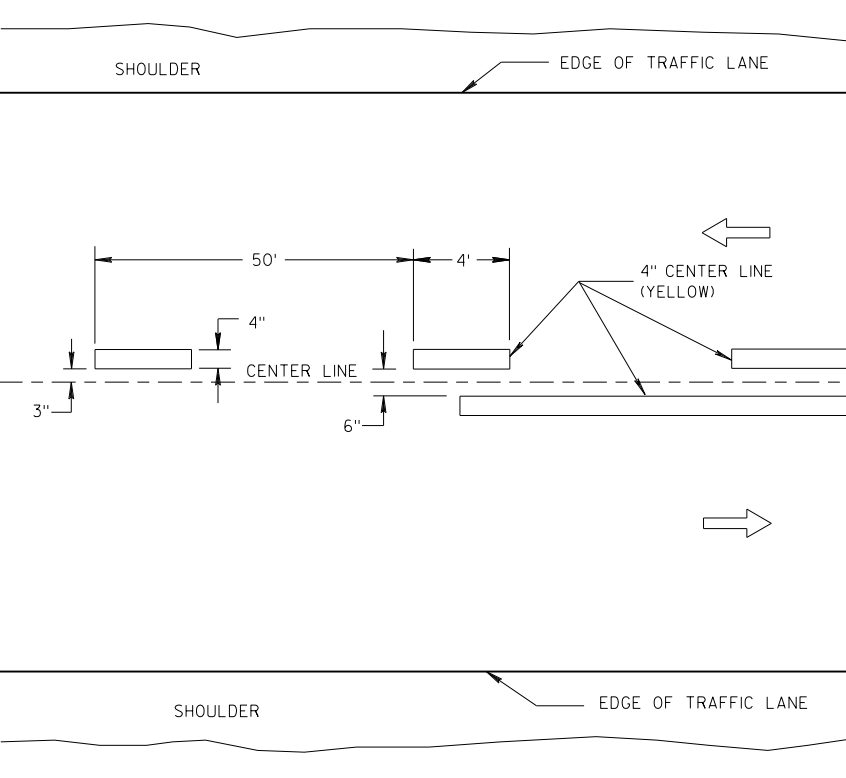


TWO WAY TRAFFIC

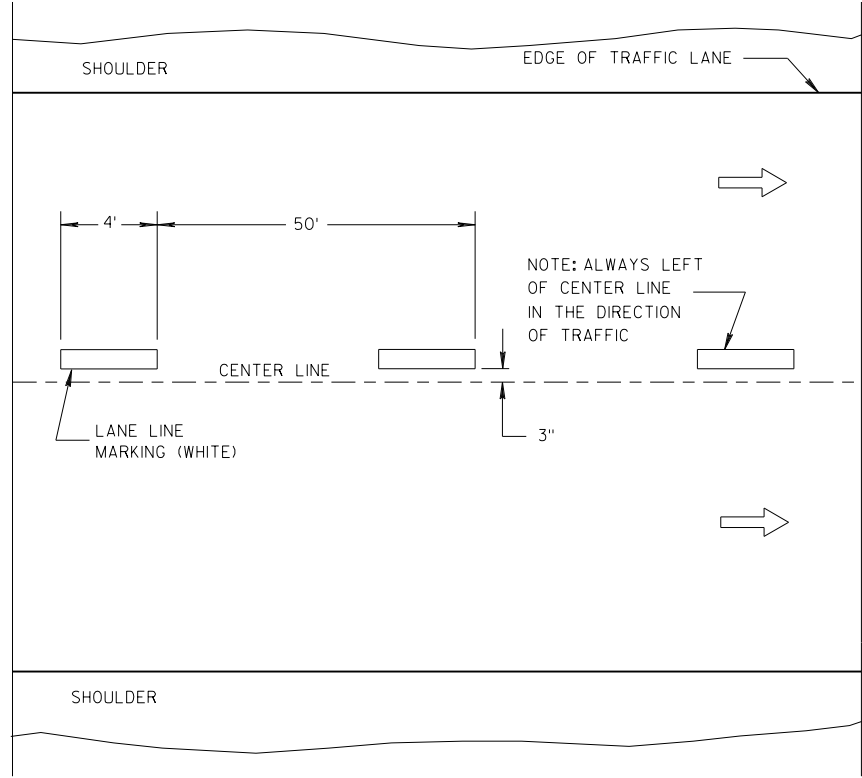


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

LEGEND

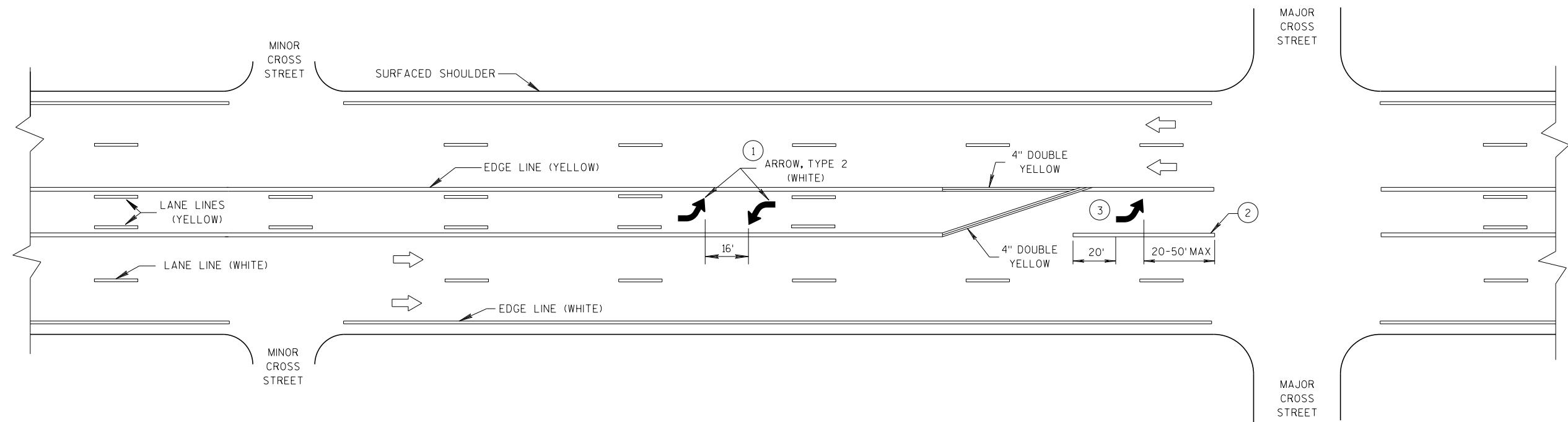
- "T" MARKING
- POST MOUNTED SIGN

LONGITUDINAL MARKING (MAINLINE)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED	7/2018	/S/ Matthew R. Rauch	
DATE	STATE SIGNING AND MAR	152	INEER
FHWA			

GENERAL NOTES

- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 8" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT

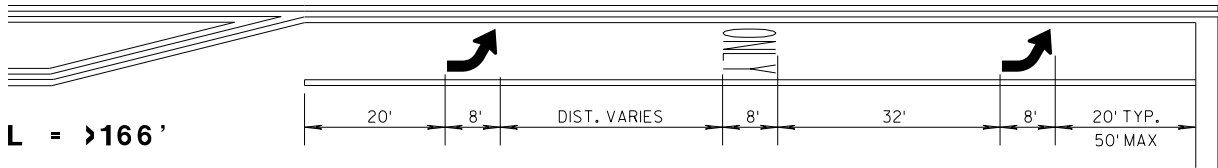
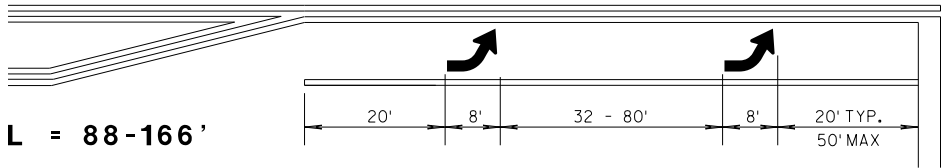
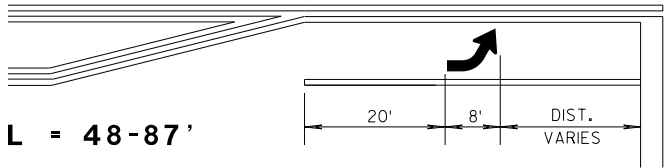
➔ DIRECTION OF TRAFFIC



TWO WAY LEFT TURN LANE

TURN LANE OPTIONS

LENGTH OF TURN BAY (L) OF 0-47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



*(SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

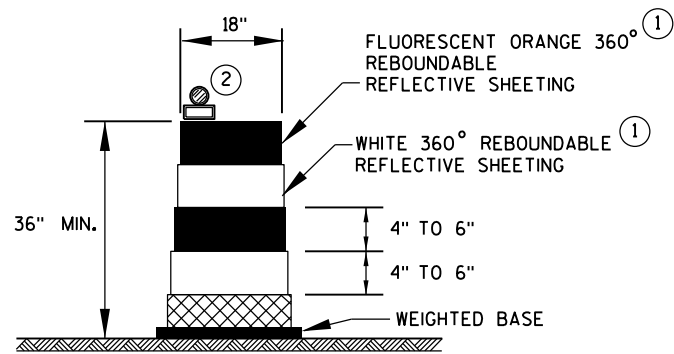
GENERAL NOTES

- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROW ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION, THE ARROWS AND ONLY MARKING ARE ELIMINATED.

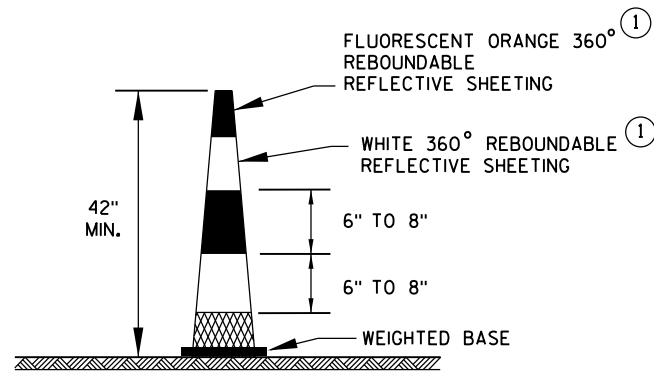
→ DIRECTION OF TRAFFIC
L = LENGTH OF TURN BAY

PAVEMENT MARKING
(TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORT 154



DRUM

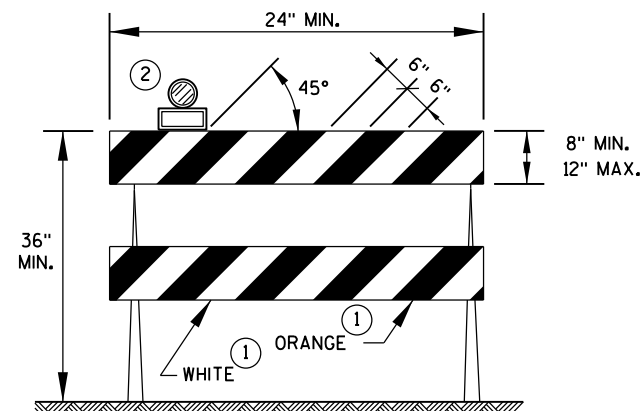


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

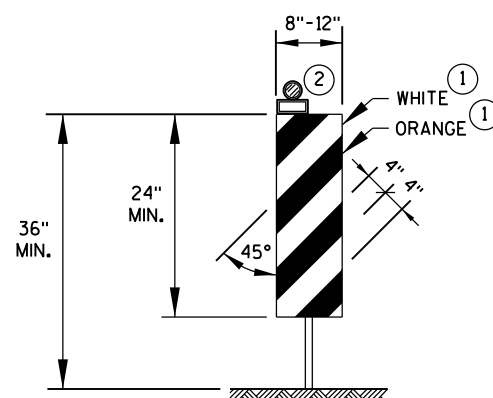
GENERAL NOTES

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



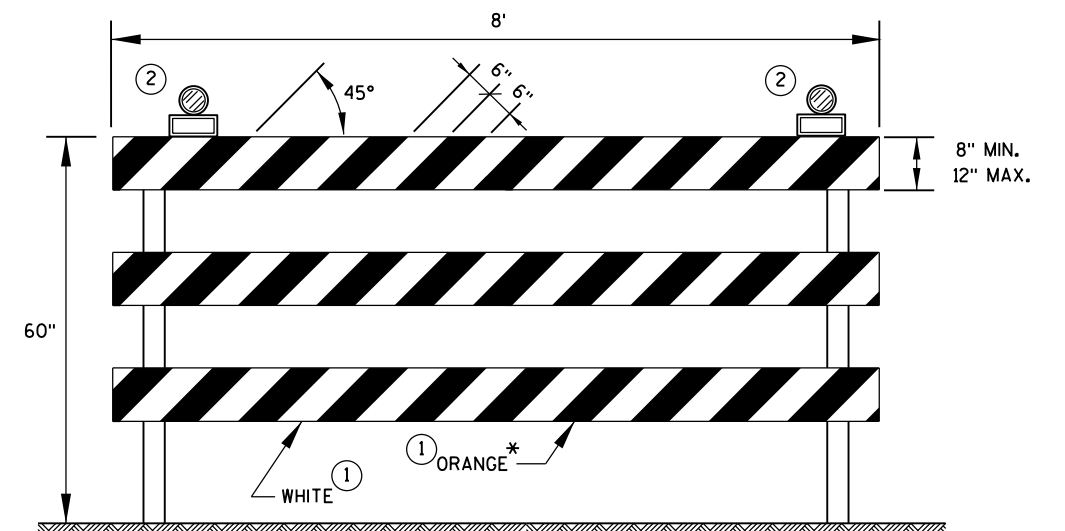
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

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

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

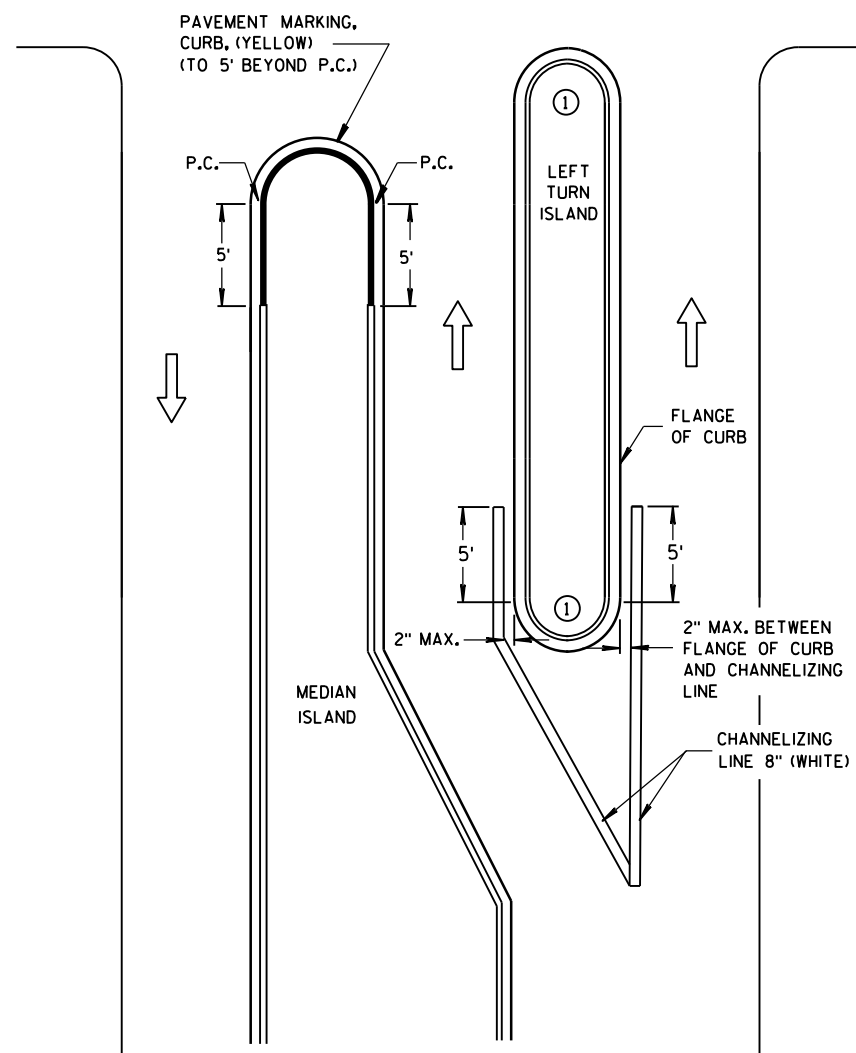
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heidtke
WORK ZONE ENG 155

FHWA

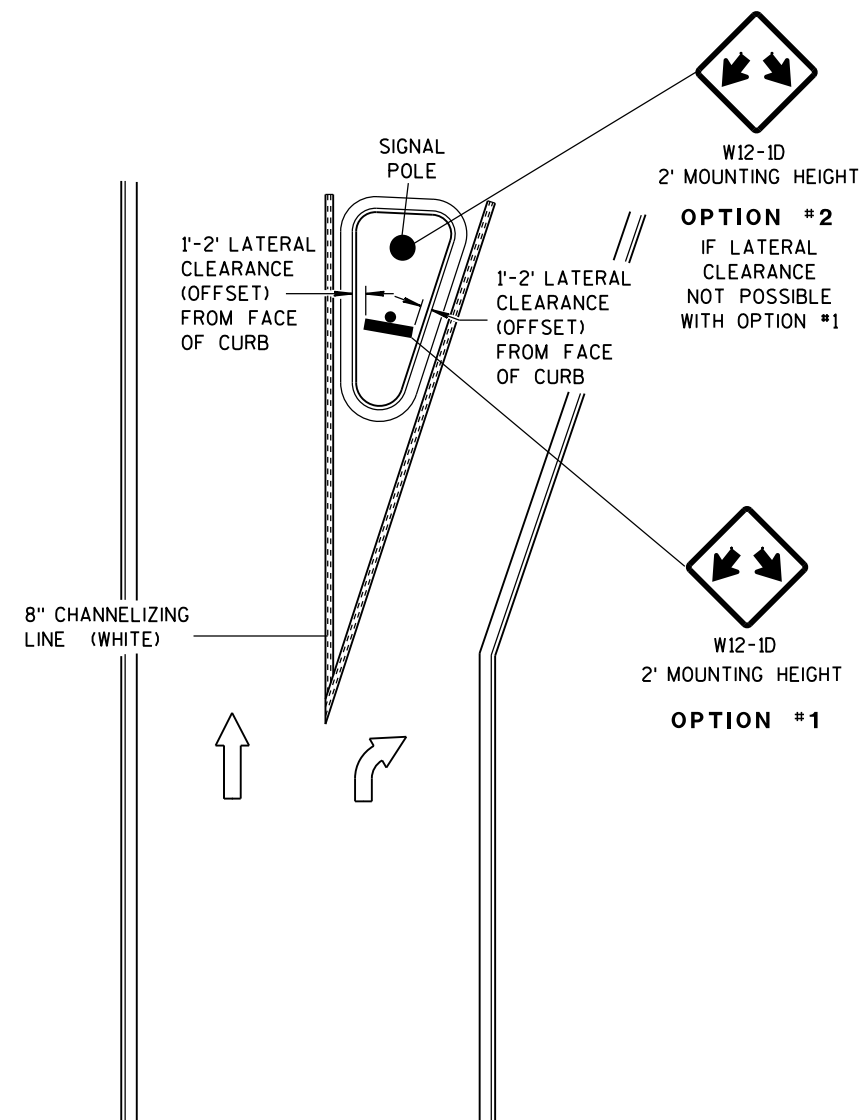


LEFT TURN & MEDIAN ISLAND

GENERAL NOTE

APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.

SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.



RIGHT TURN ISLAND

DOUBLE ARROW
WARNING SIGN PLACEMENTSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017

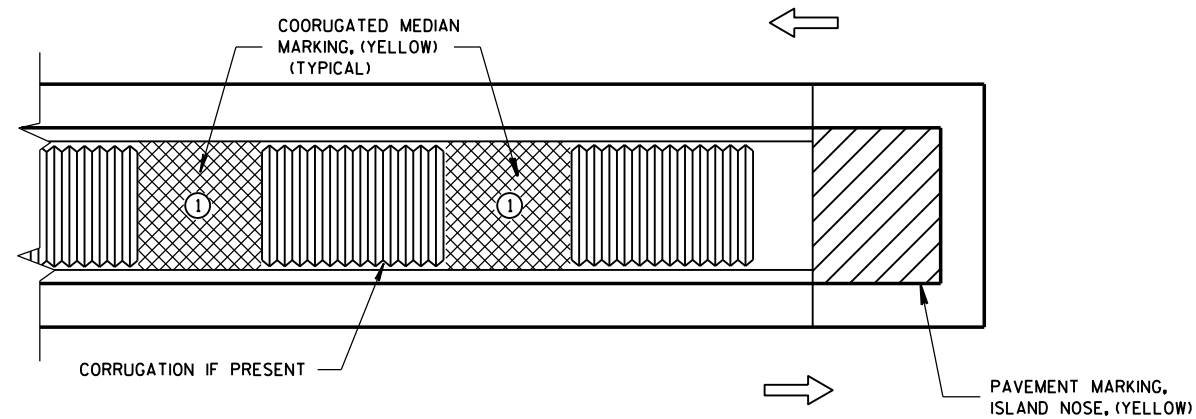
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/S/ Matthew Rauch

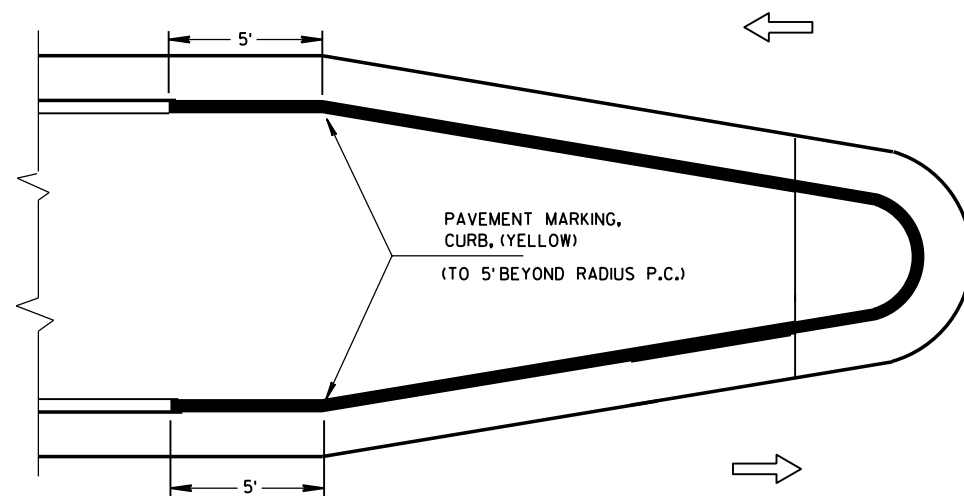
STATE SIGNING AND MARK 156

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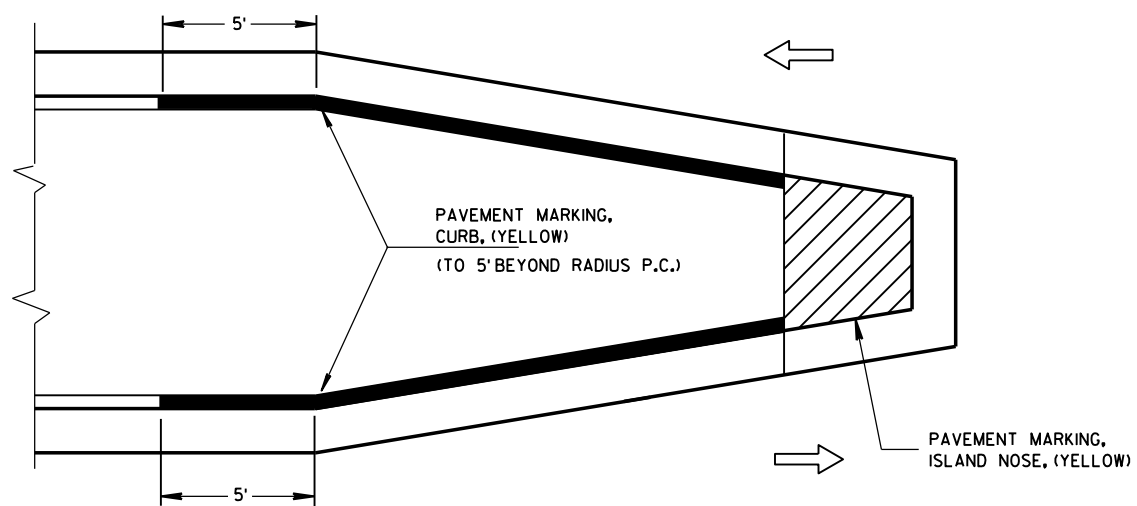
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MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE

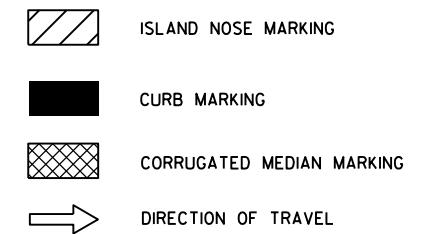


MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

GENERAL NOTES

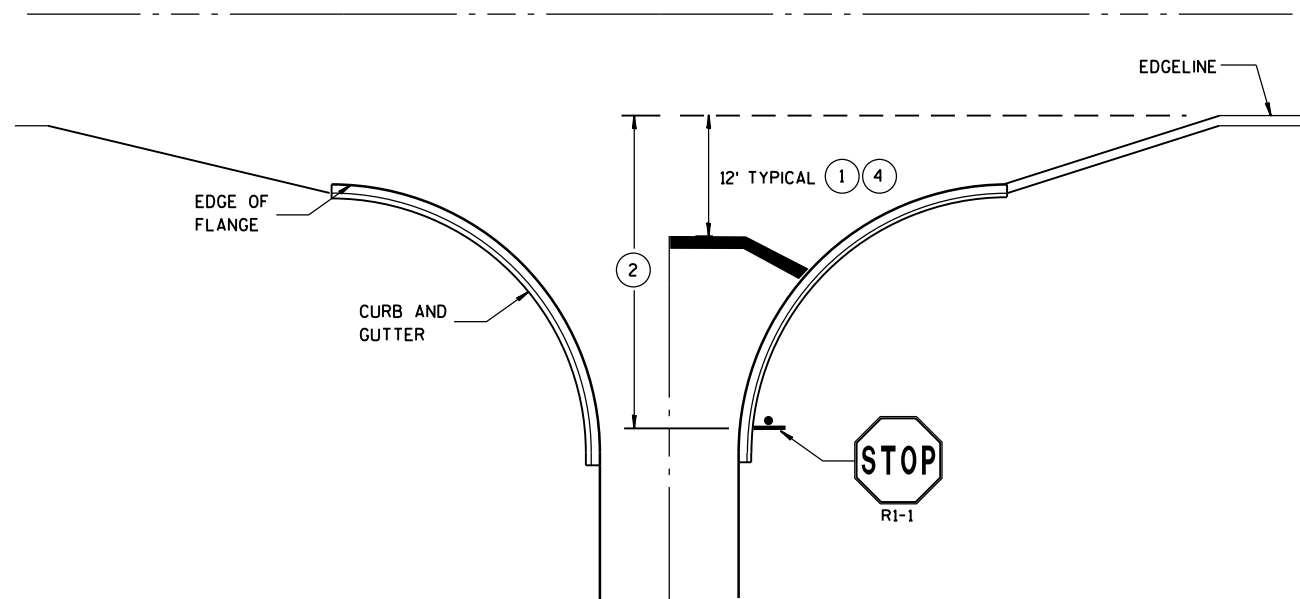
- ① WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



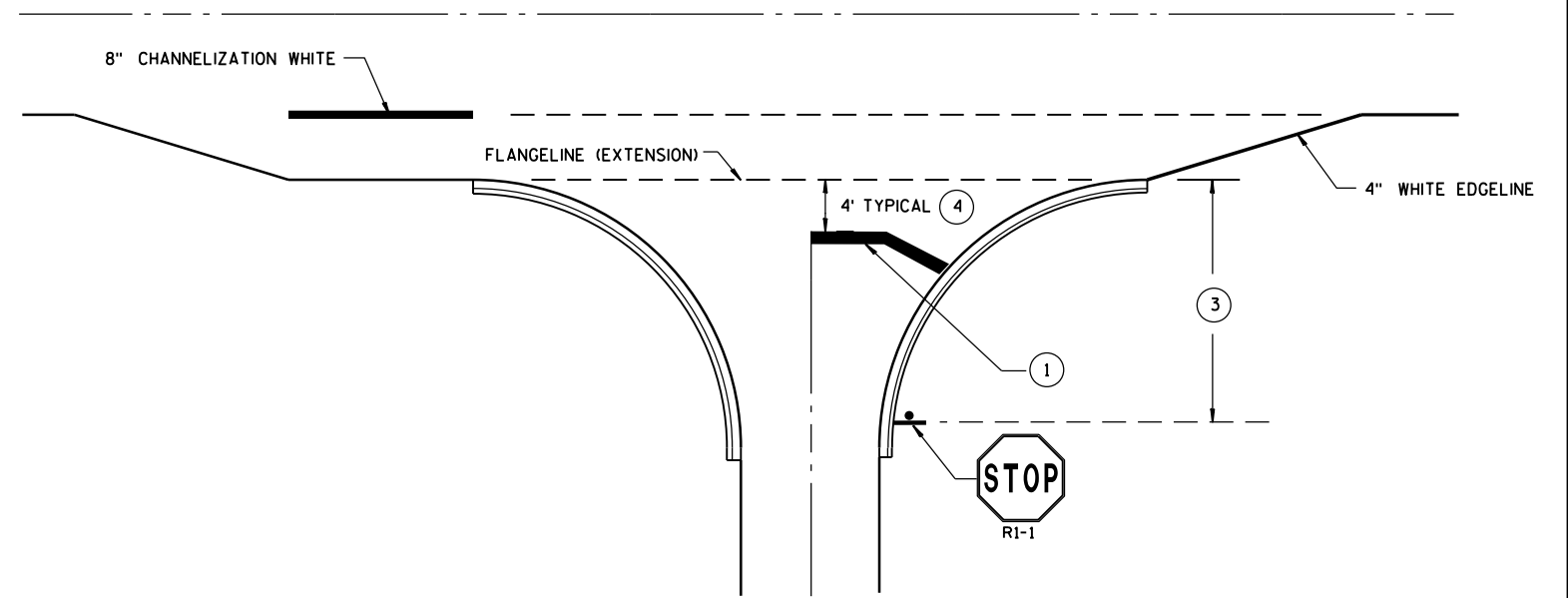
PAVEMENT MARKING (ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

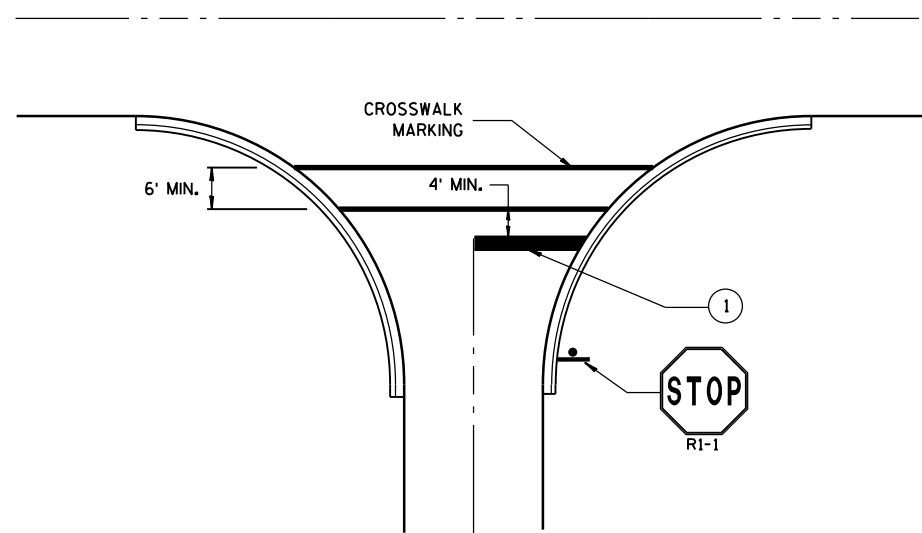
APPROVED
June 2017 /S/ Matthew Rauch
DATE STATE SIGNING AND MARK 157 EER
FHWA



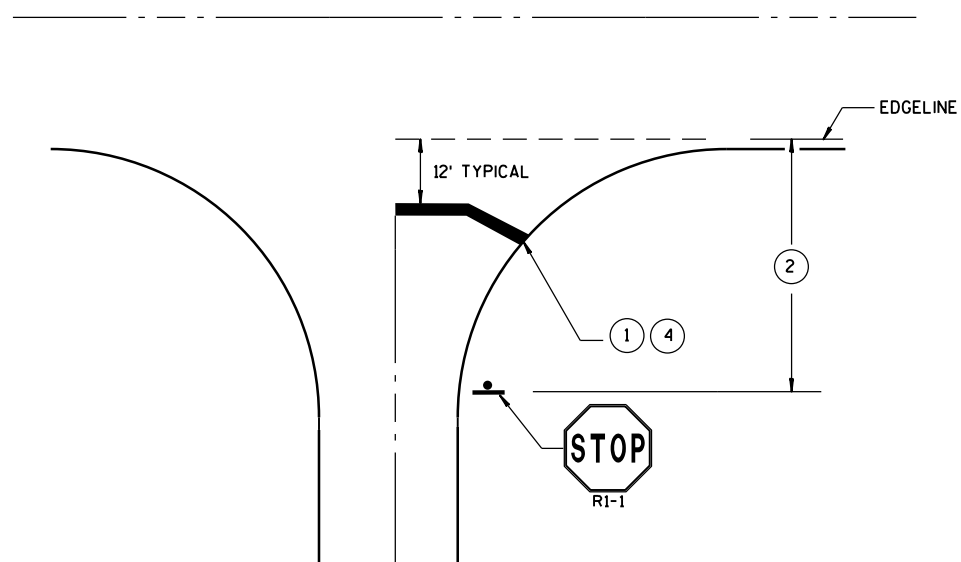
**TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER**



**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

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

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

**STOP LINE AND CROSSWALK
PAVEMENT MARKING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE Sept., 2017 /S/ Matthew R. Rauch
STATE SIGNING AND MAR 158 JER
FHWA

LEGEND

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

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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

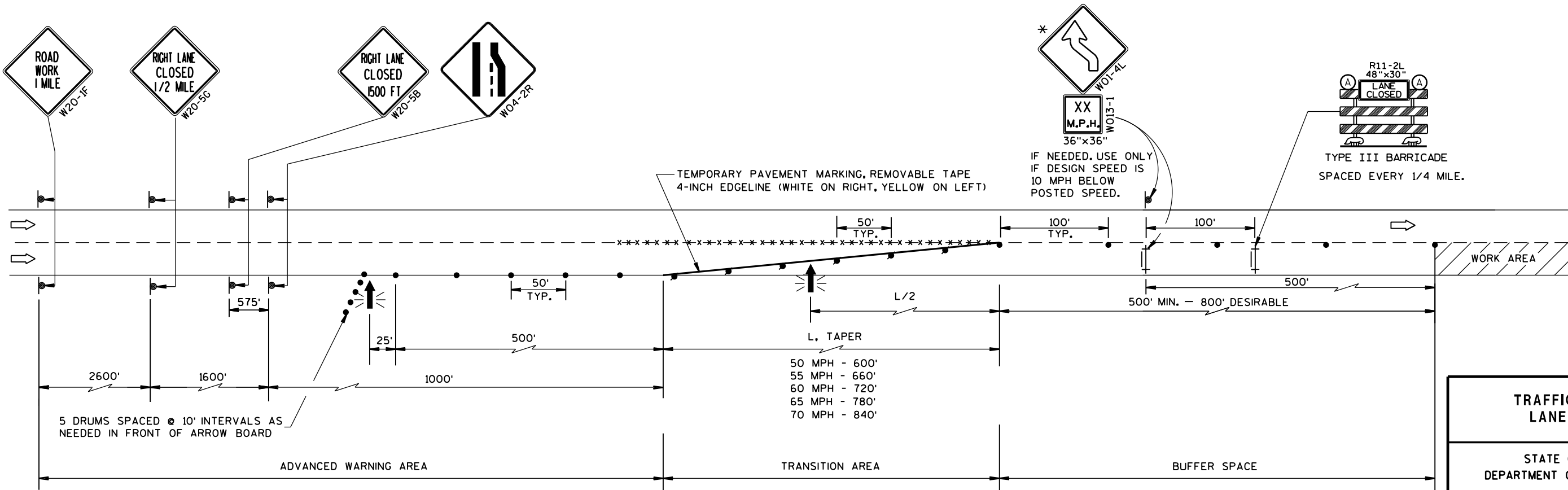
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

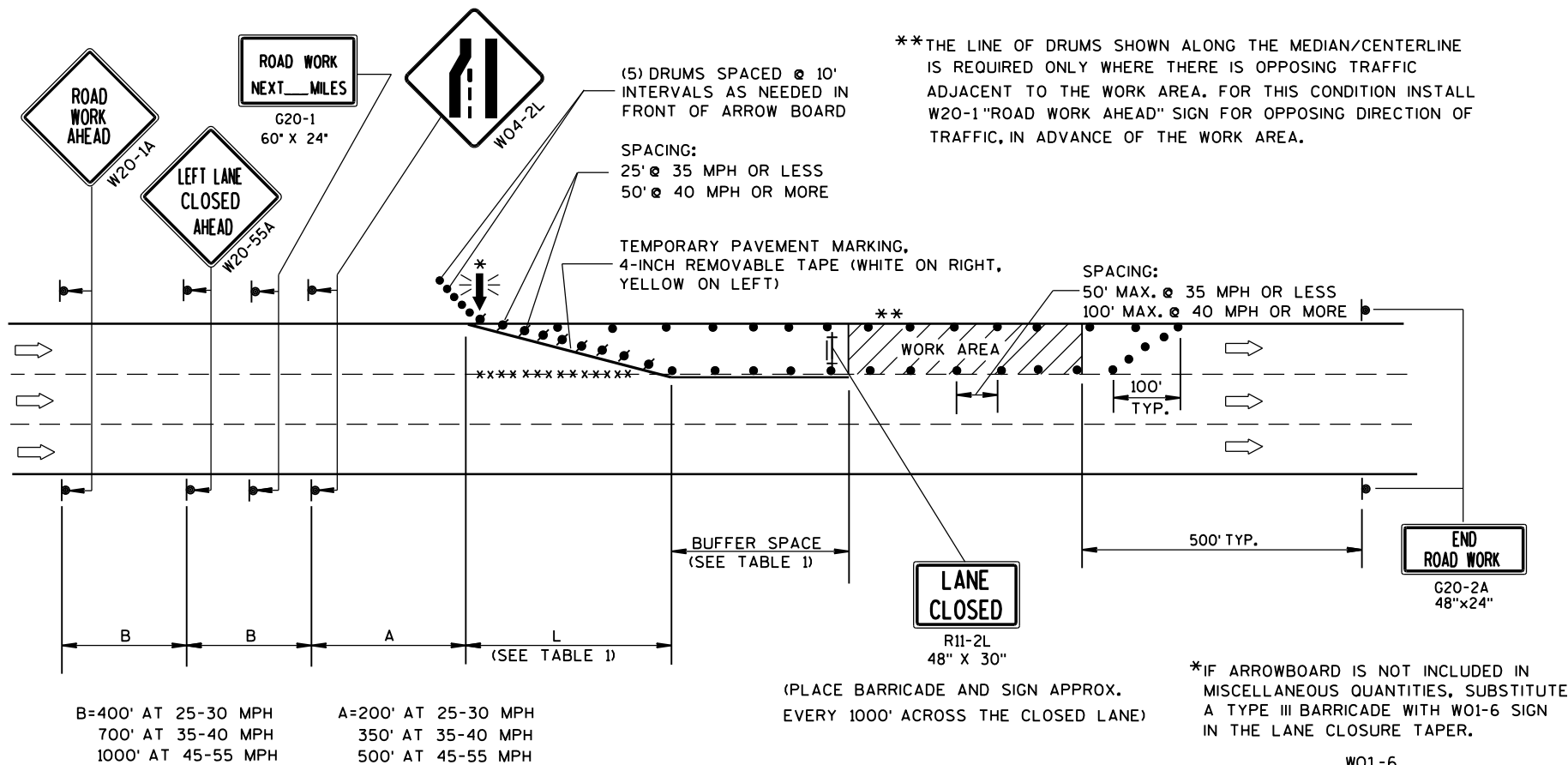
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

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

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



TRAFFIC CONTROL, LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER 159
FHWA	



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

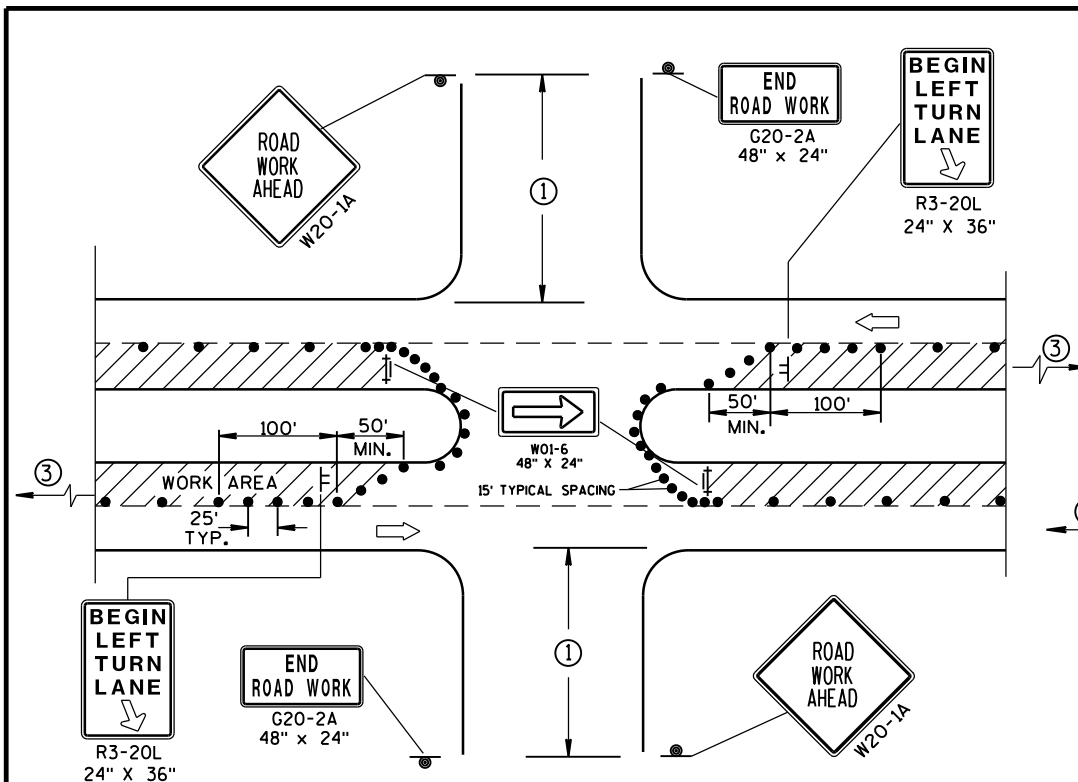
LEGEND

- 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

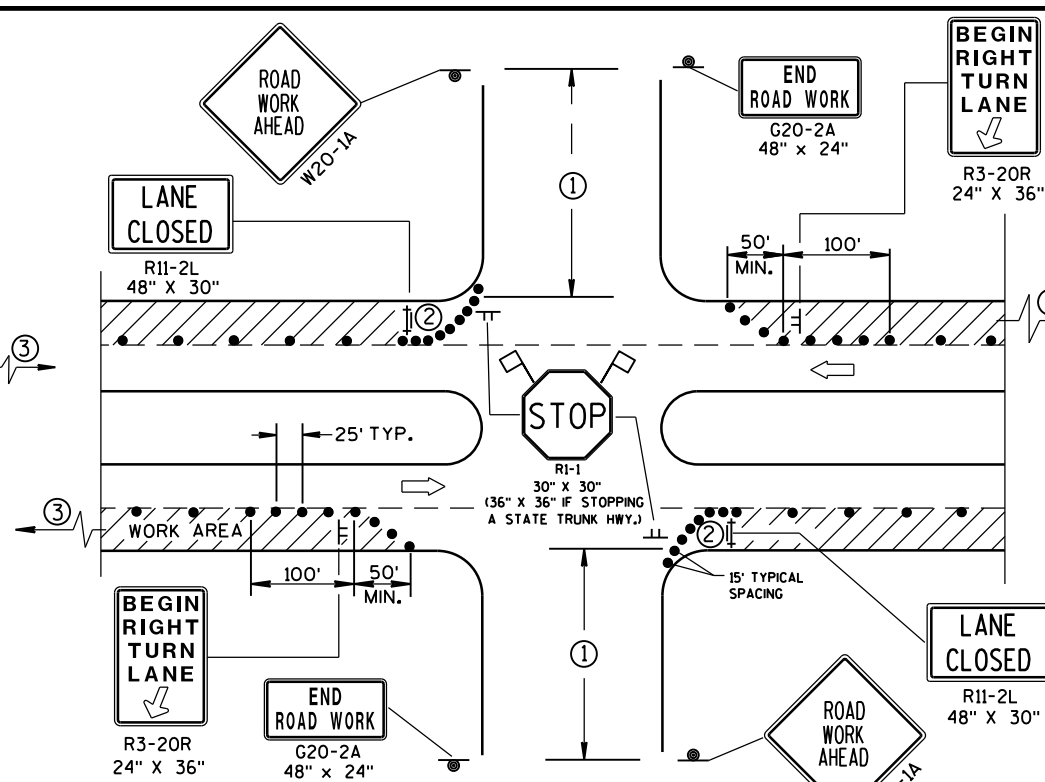
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE SAFETY ENGINEER 160 IC
FHWA



DETAIL A
FOR LEFT LANE CLOSURE AT
INTERSECTION OR MEDIAN OPENING

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



DETAIL B
FOR RIGHT LANE CLOSURE
AT INTERSECTION

GENERAL NOTES

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

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

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

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

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

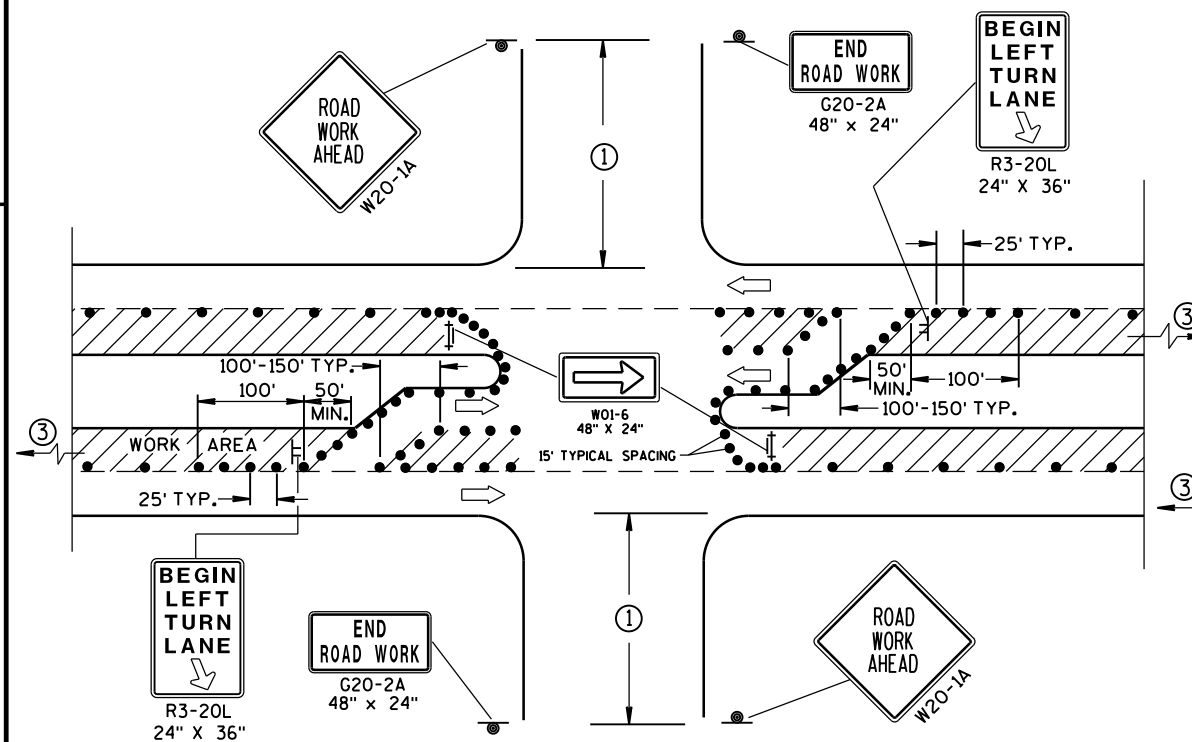
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

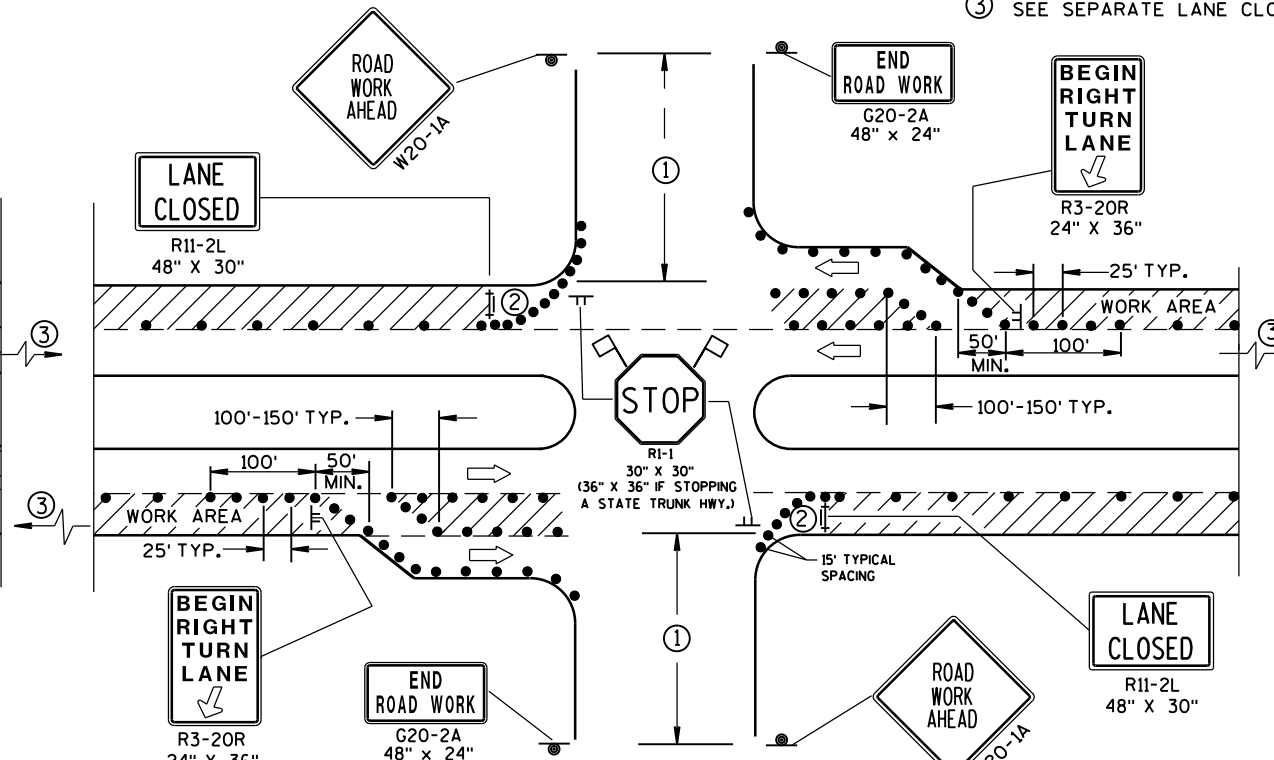
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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



DETAIL C

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



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

LEGEND

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

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017
DATE
FHW

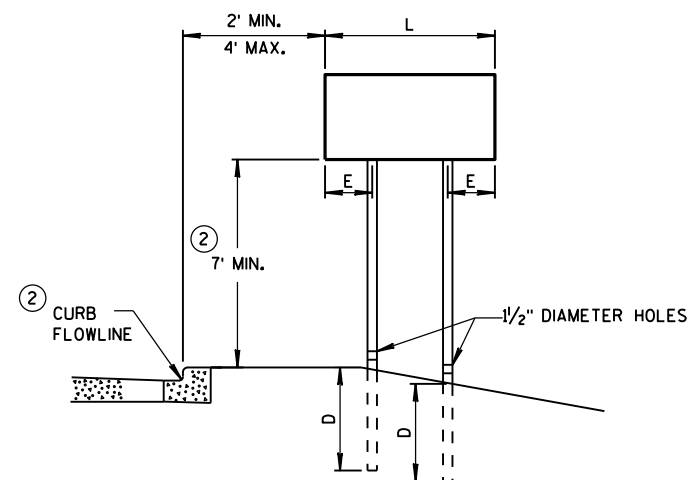
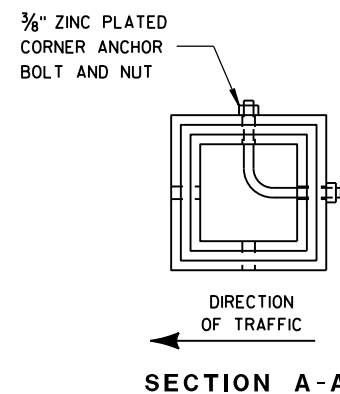
/S/ Andrew Heidtke
WORK ZONE ENC 161



TUBULAR STEEL POSTS

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

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

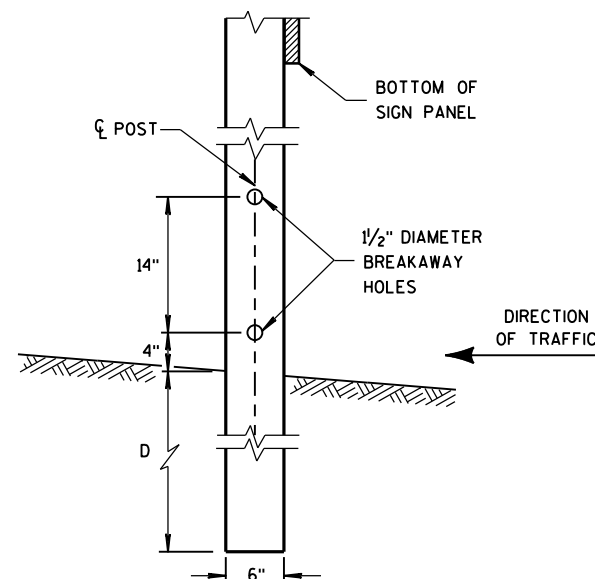


URBAN AREA

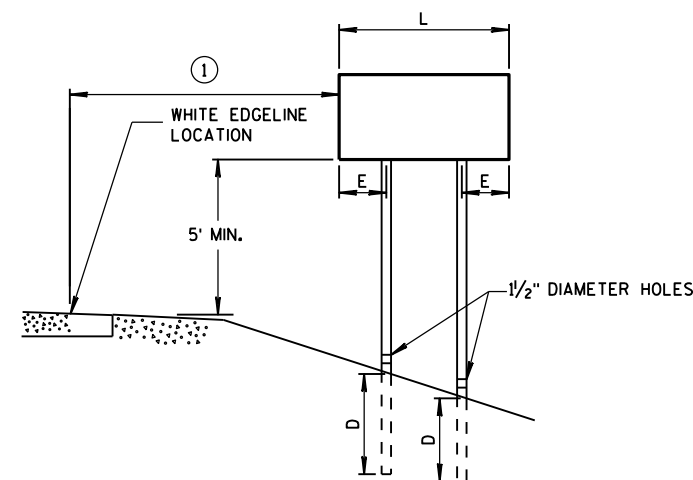
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

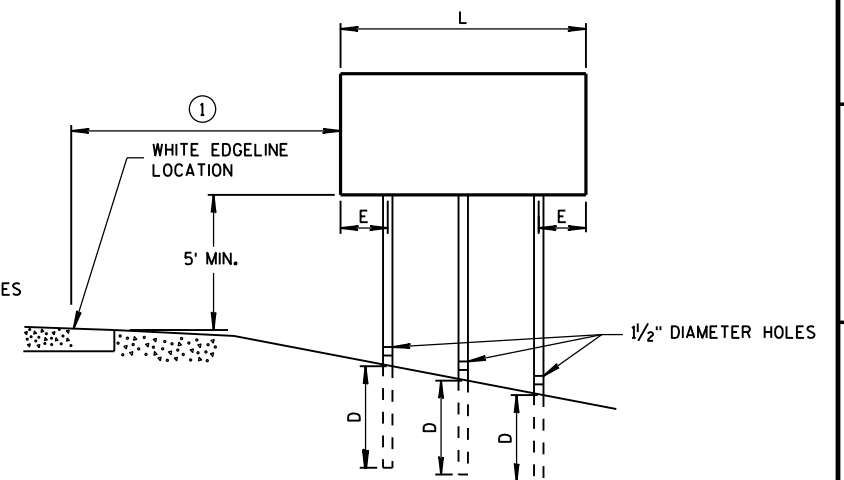
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4"x6" WOOD POST MODIFICATION



RURAL AREA



GENERAL NOTES

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

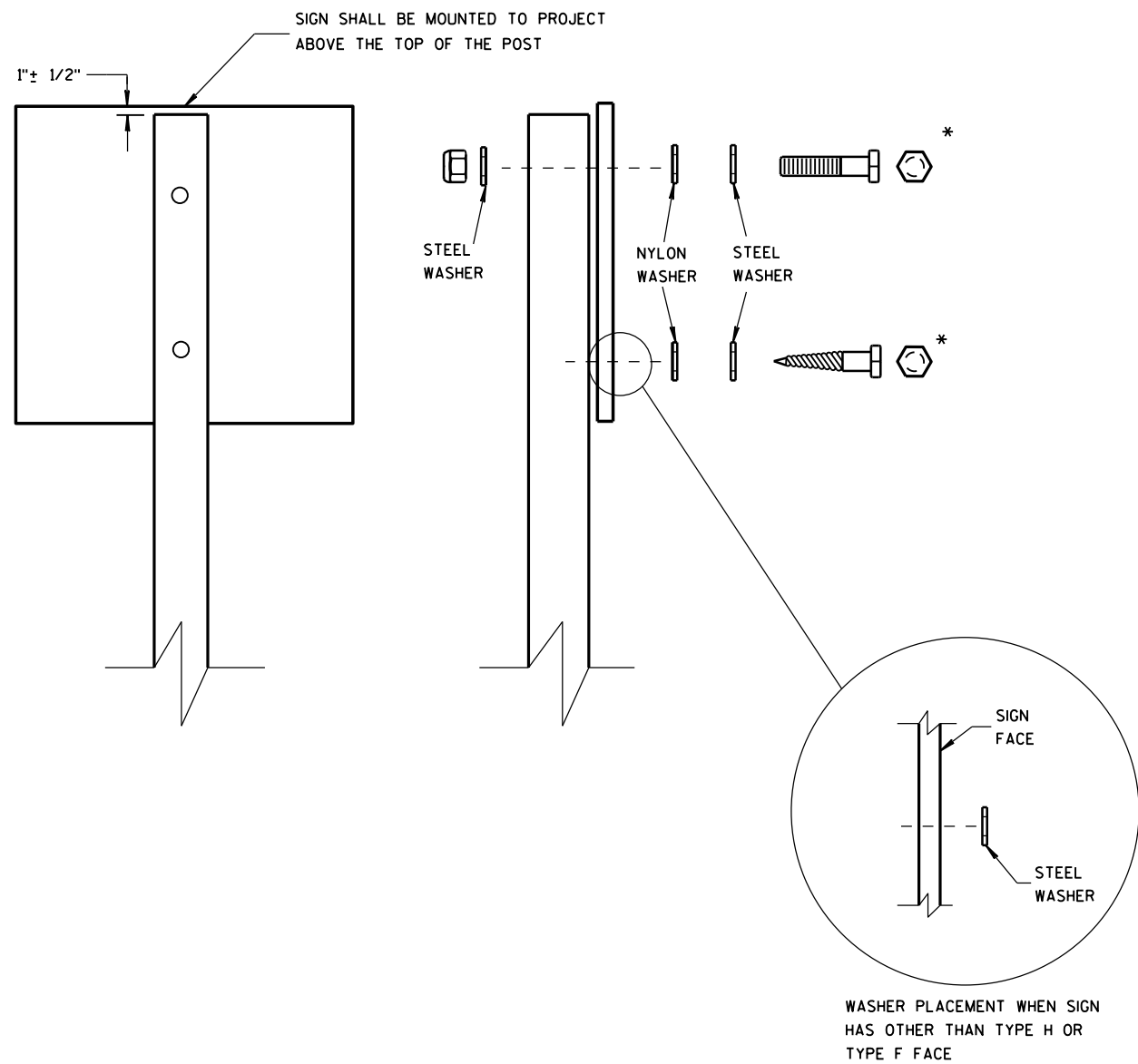
4" X 6" WOOD POST

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

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 162



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

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

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

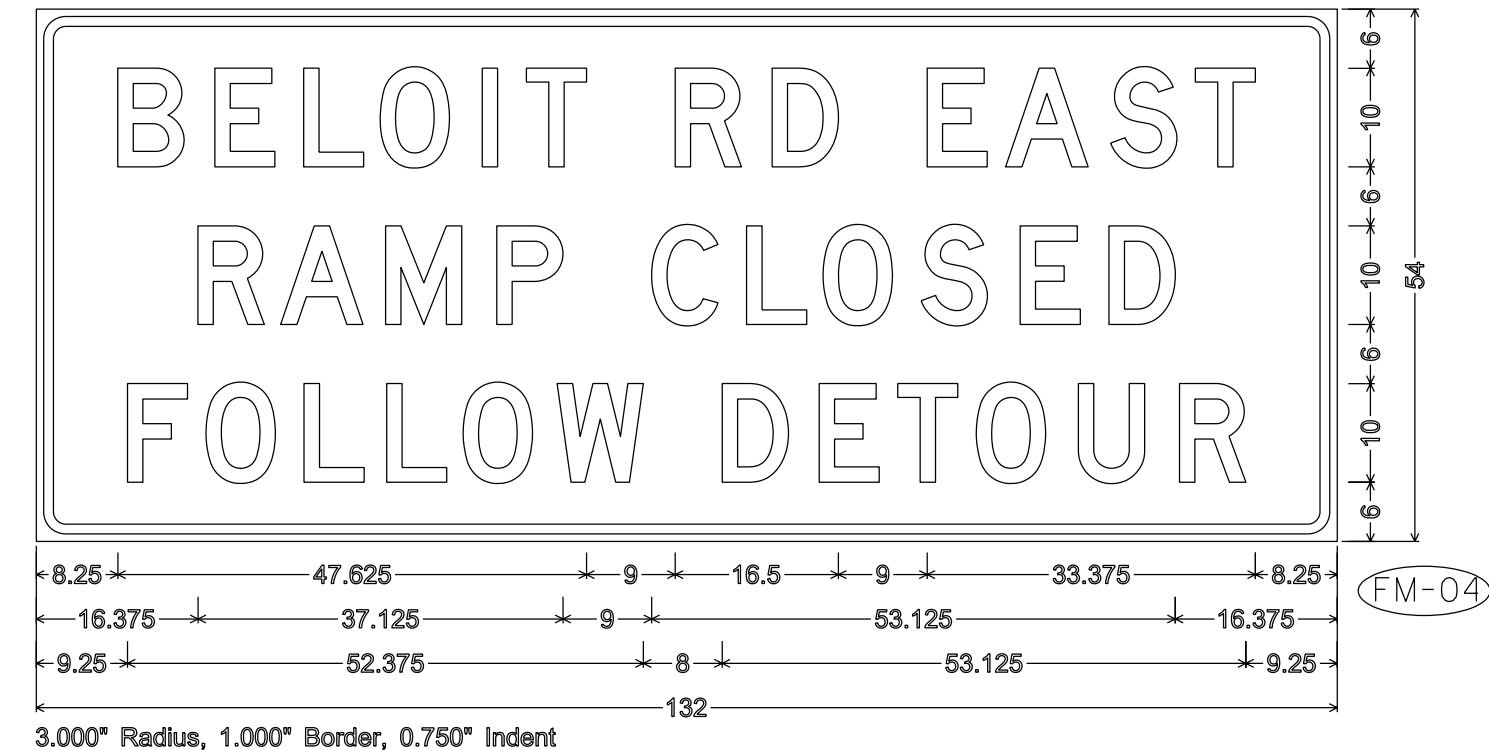
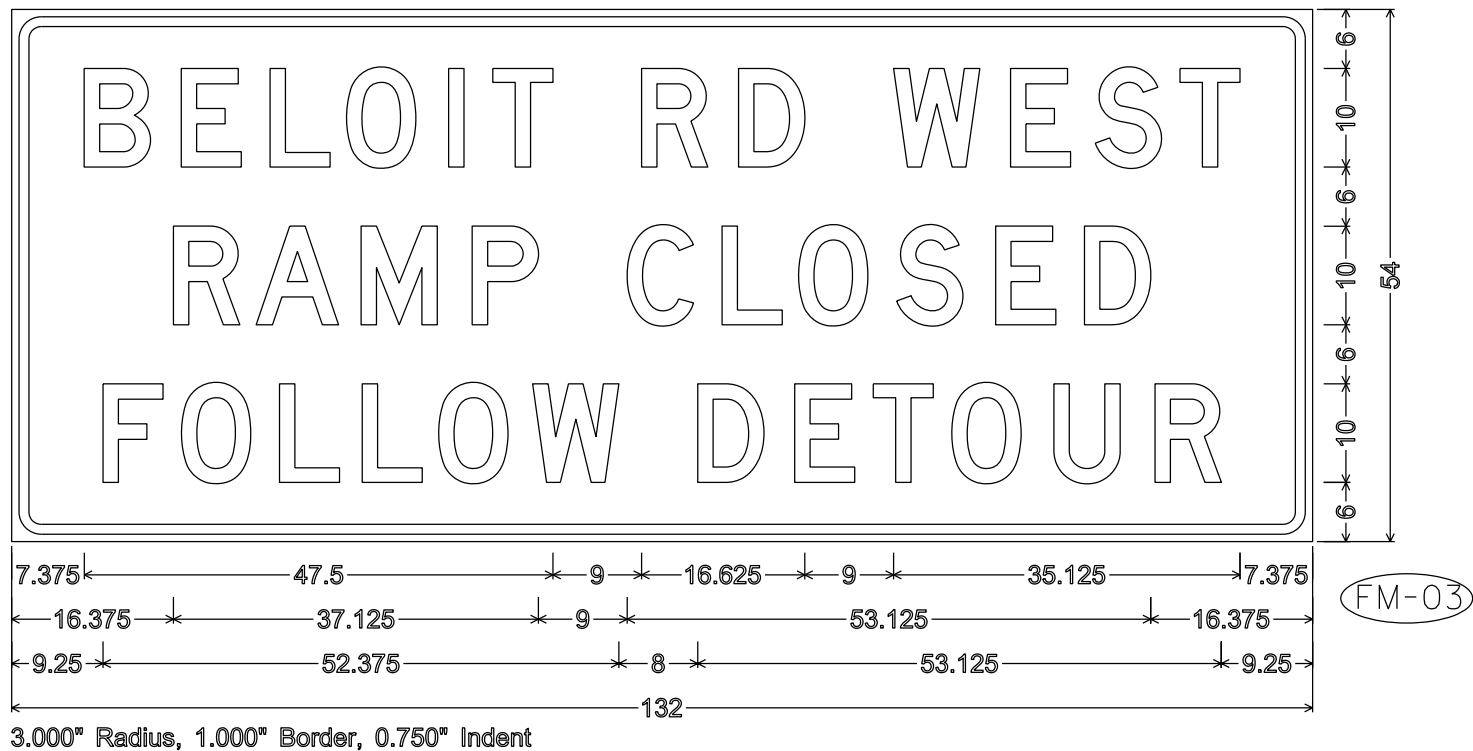
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

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

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

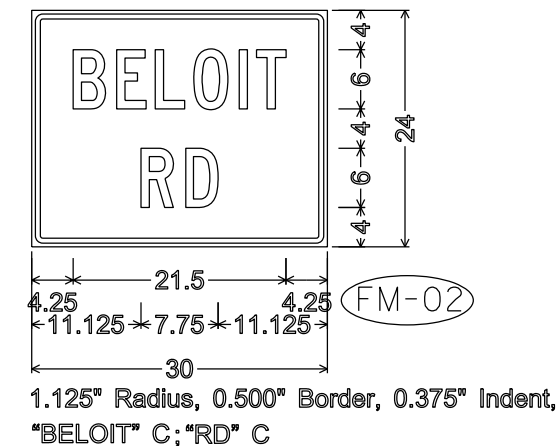
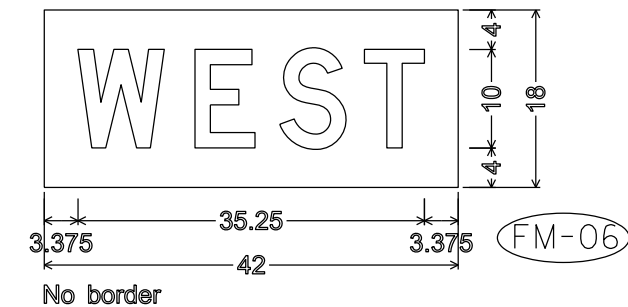
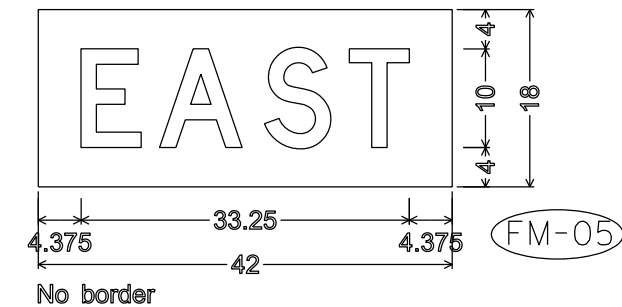
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENC 163
FHWA	

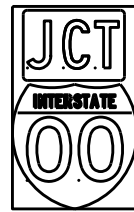


NOTES

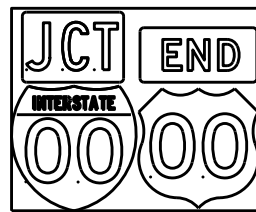
1. All Signs Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D except as noted



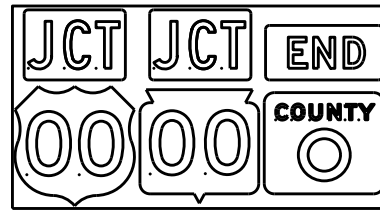
TYPICAL ASSEMBLIES



J1-1



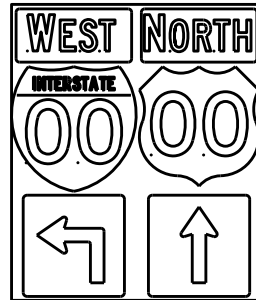
J1-2



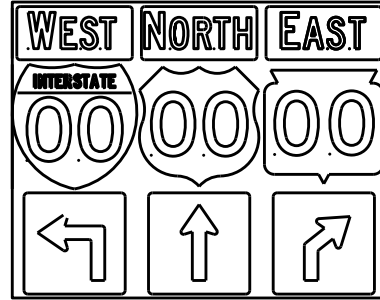
J1-3



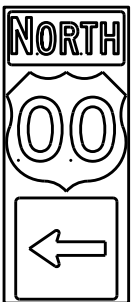
J2-1



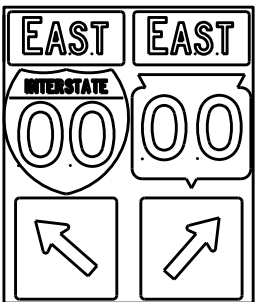
J2-2



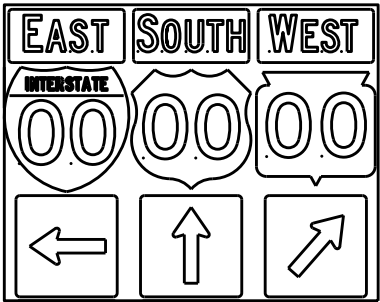
J2-3



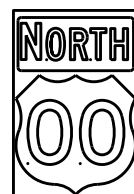
J3-1



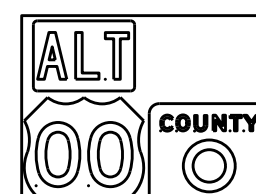
J3-2



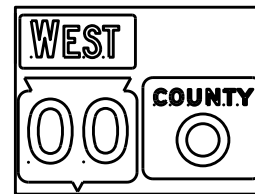
J3-3



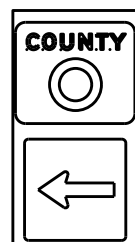
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

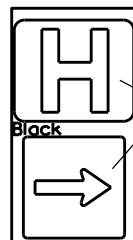


J22-1



JV

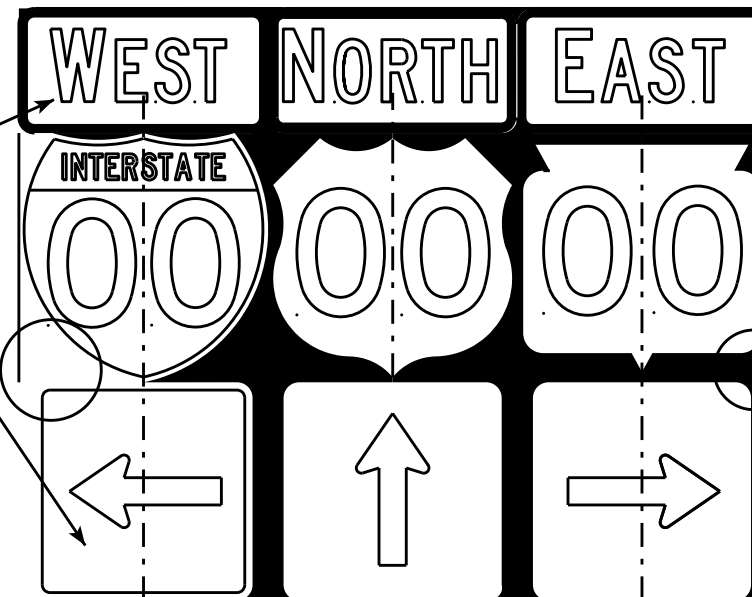
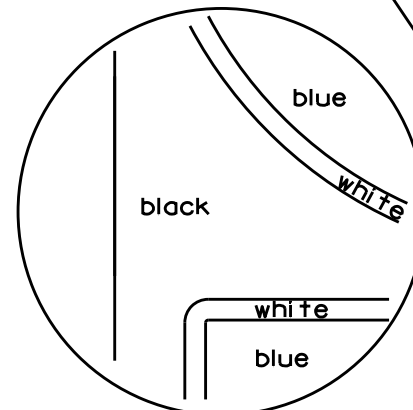
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/06/14 PL 165 A2-1S.8

SHEET NO: E

NOTES

- Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Black Non-reflective
Message - see Note 5
- Message Series - See Note 5
- Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
- The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
- 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.
- 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.
- 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.
- 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.
- All Vertical J Assemblies are given a Sign Code of JV
- For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

PROJECT NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN

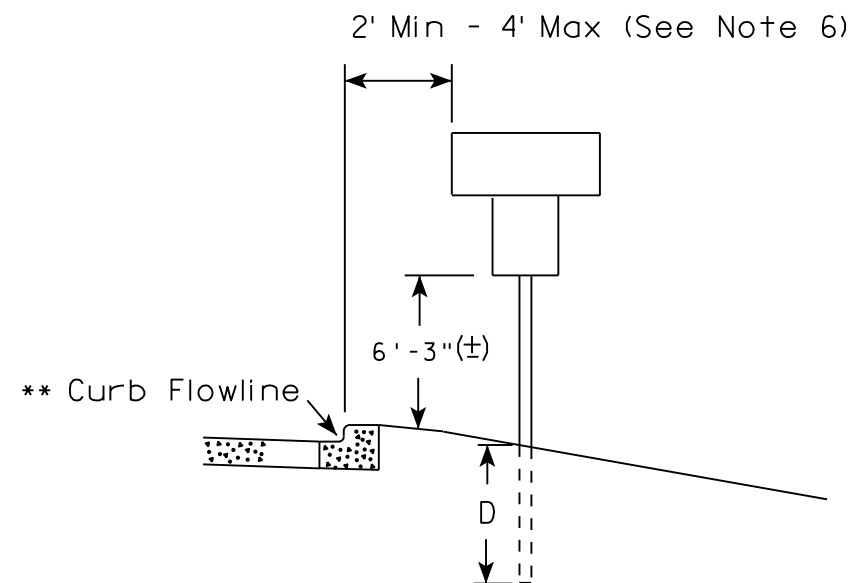
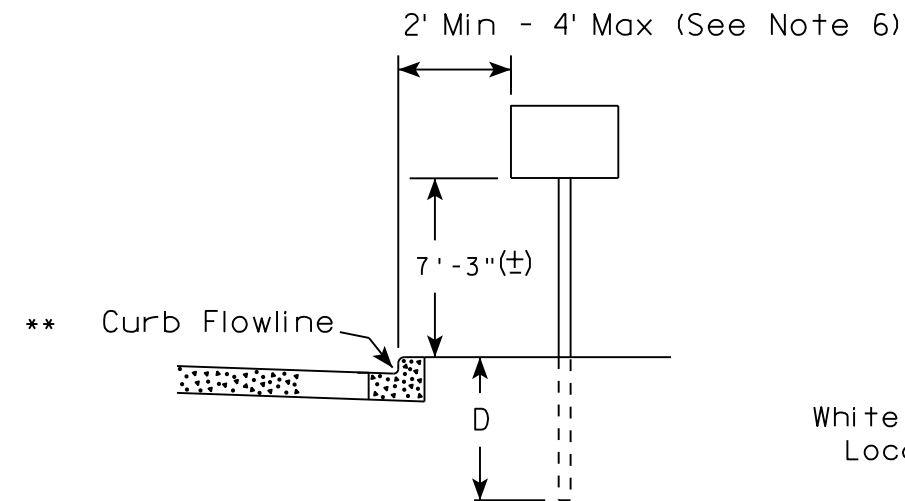
PLOT DATE : 06-FEB-2014 14:10

PLOT BY : mscs.ja

PLOT NAME :

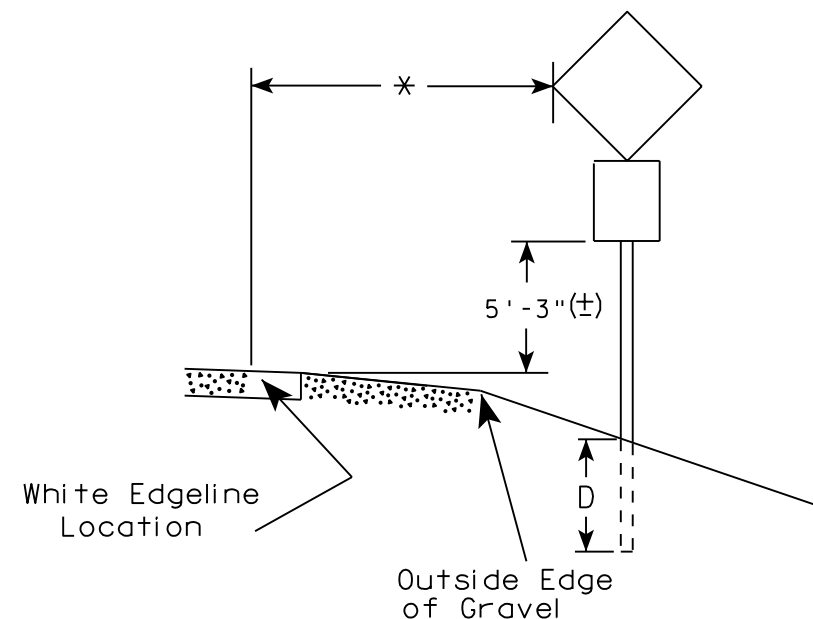
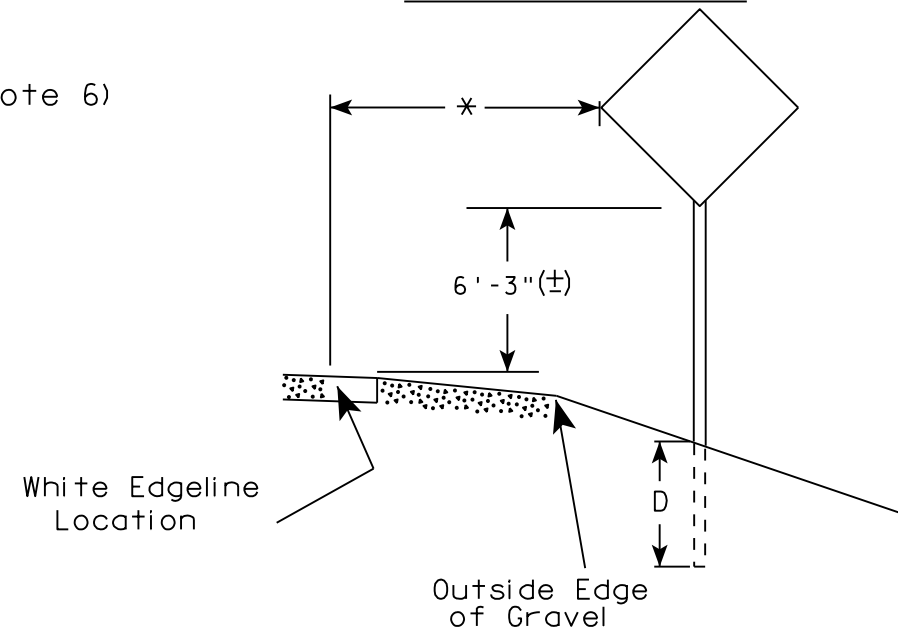
WISDOT/CADDs SHEET 42

URBAN AREA



✱✱ 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.

RURAL AREA (See Note 2)



* 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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

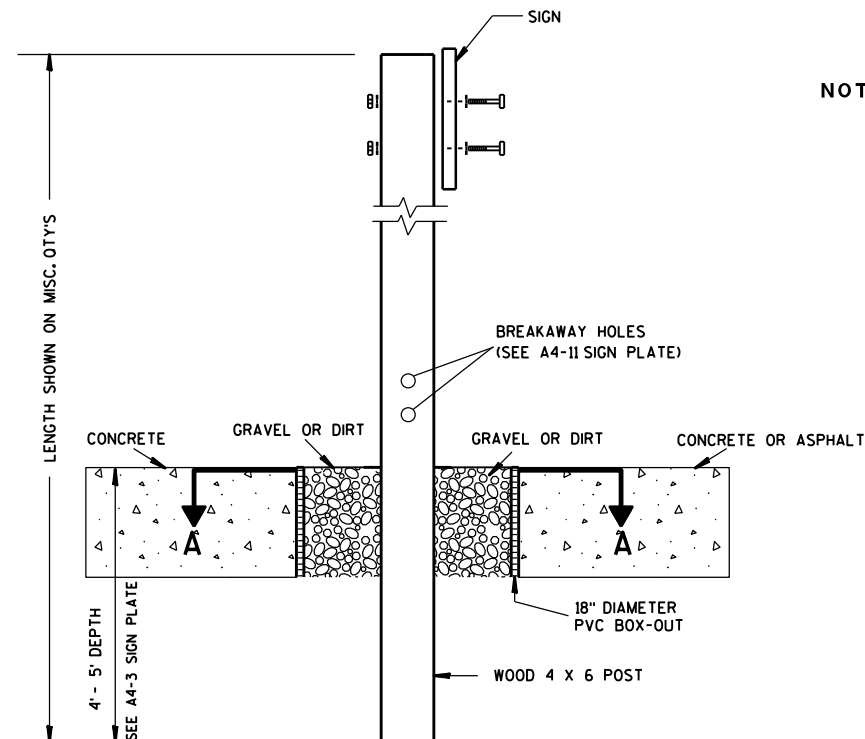
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

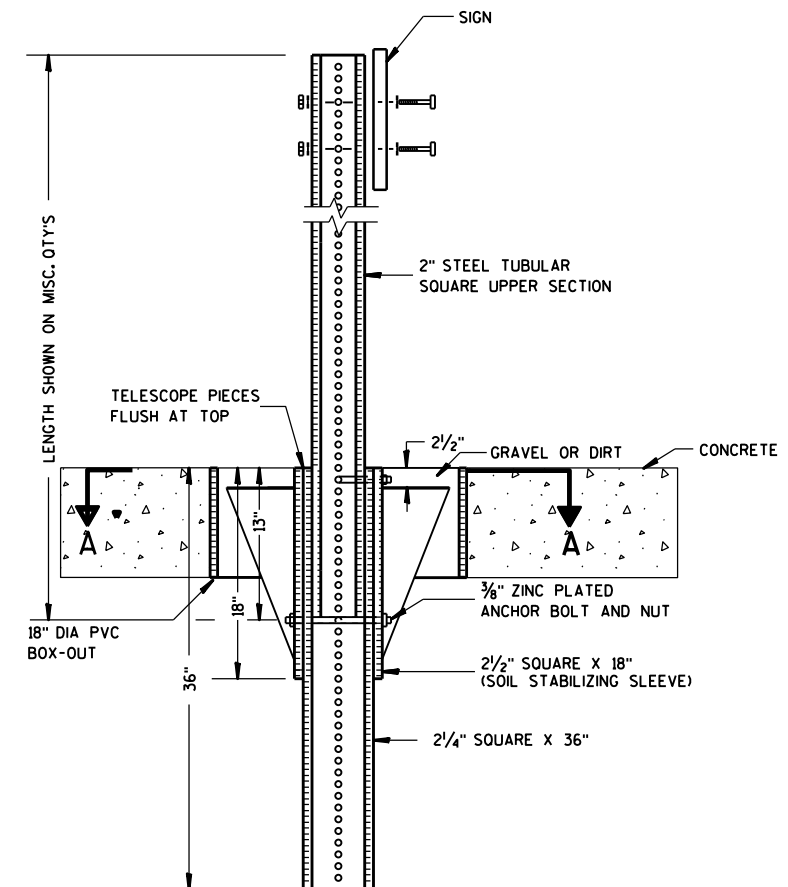
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

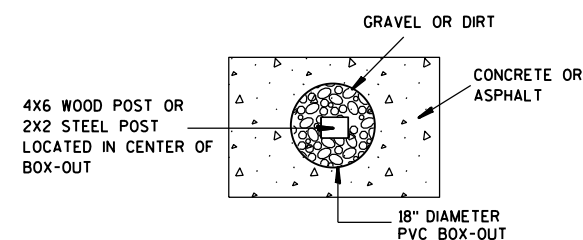
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 167 A4-3B.1

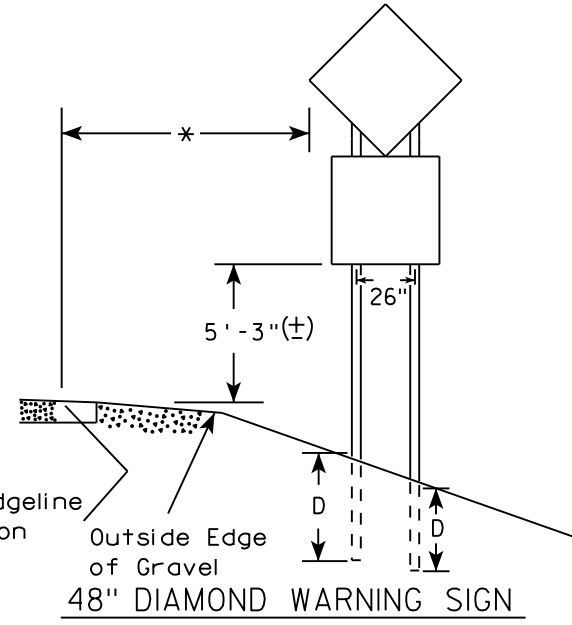
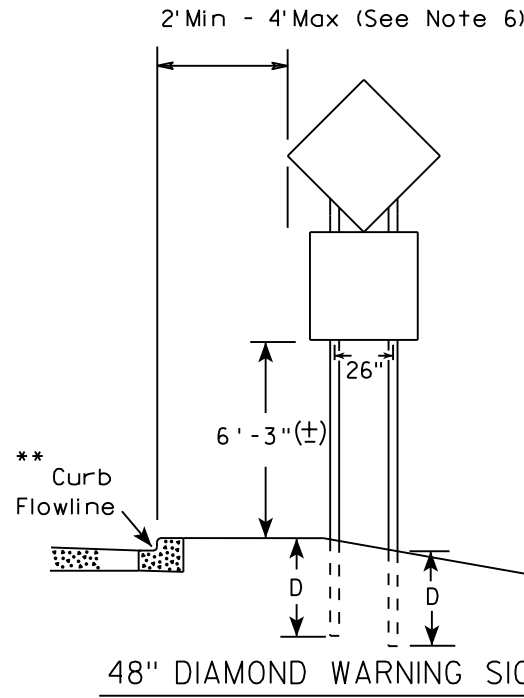
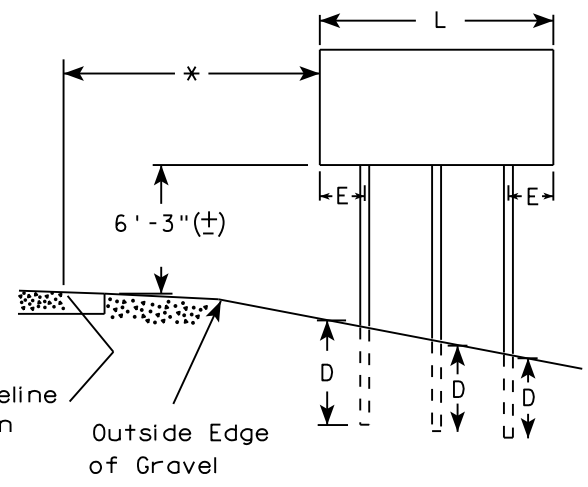
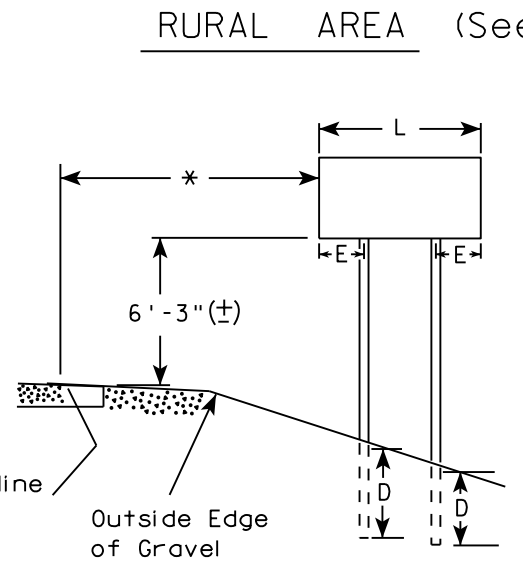
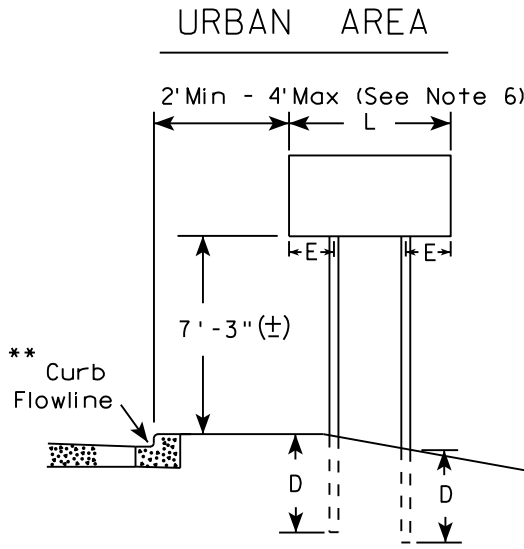
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

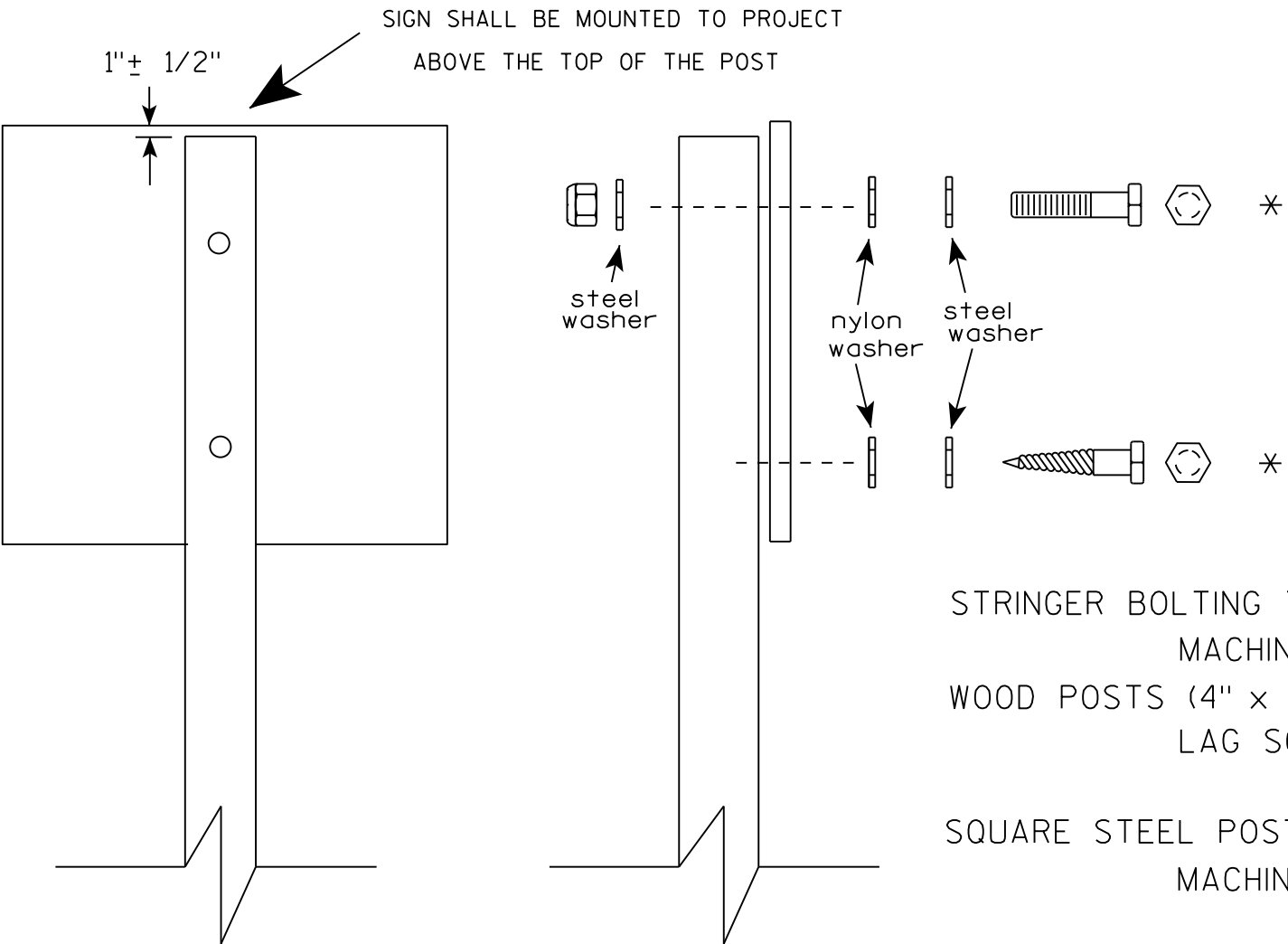
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

- GENERAL NOTES
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. J-Assemblies are considered to be one sign for mounting height.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

- * 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.
- ** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.
- *** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



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

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

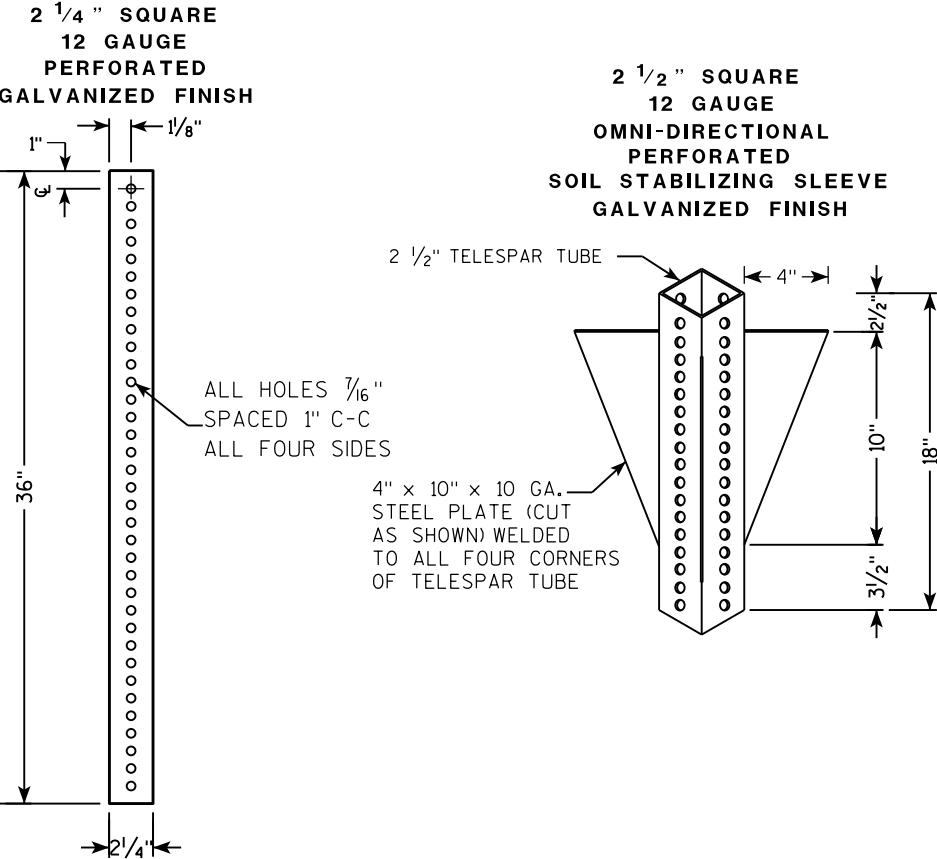
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

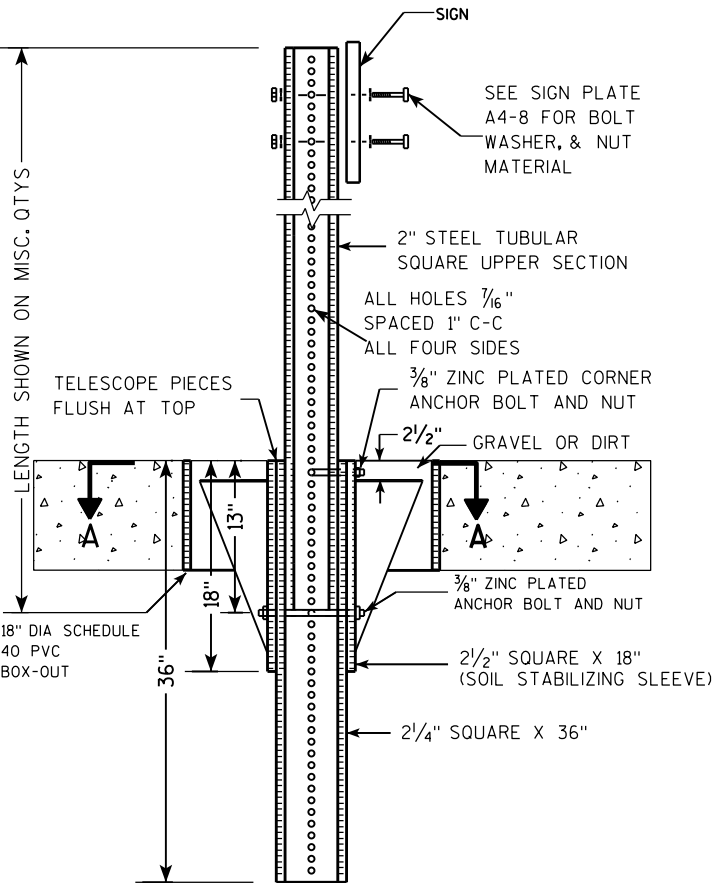
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8 169

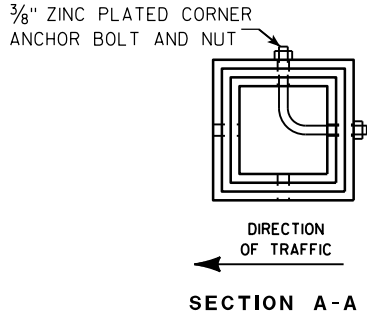
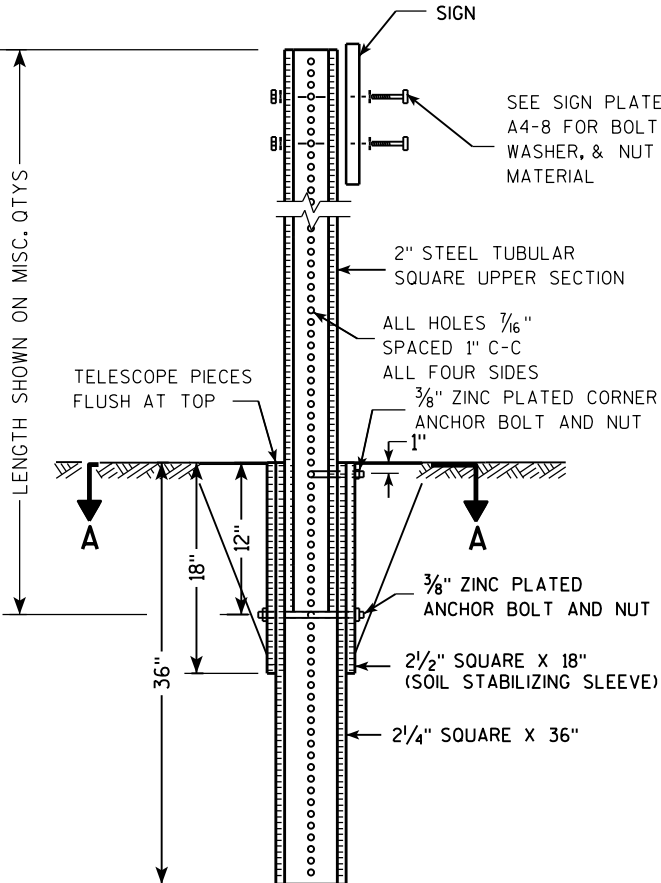
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

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

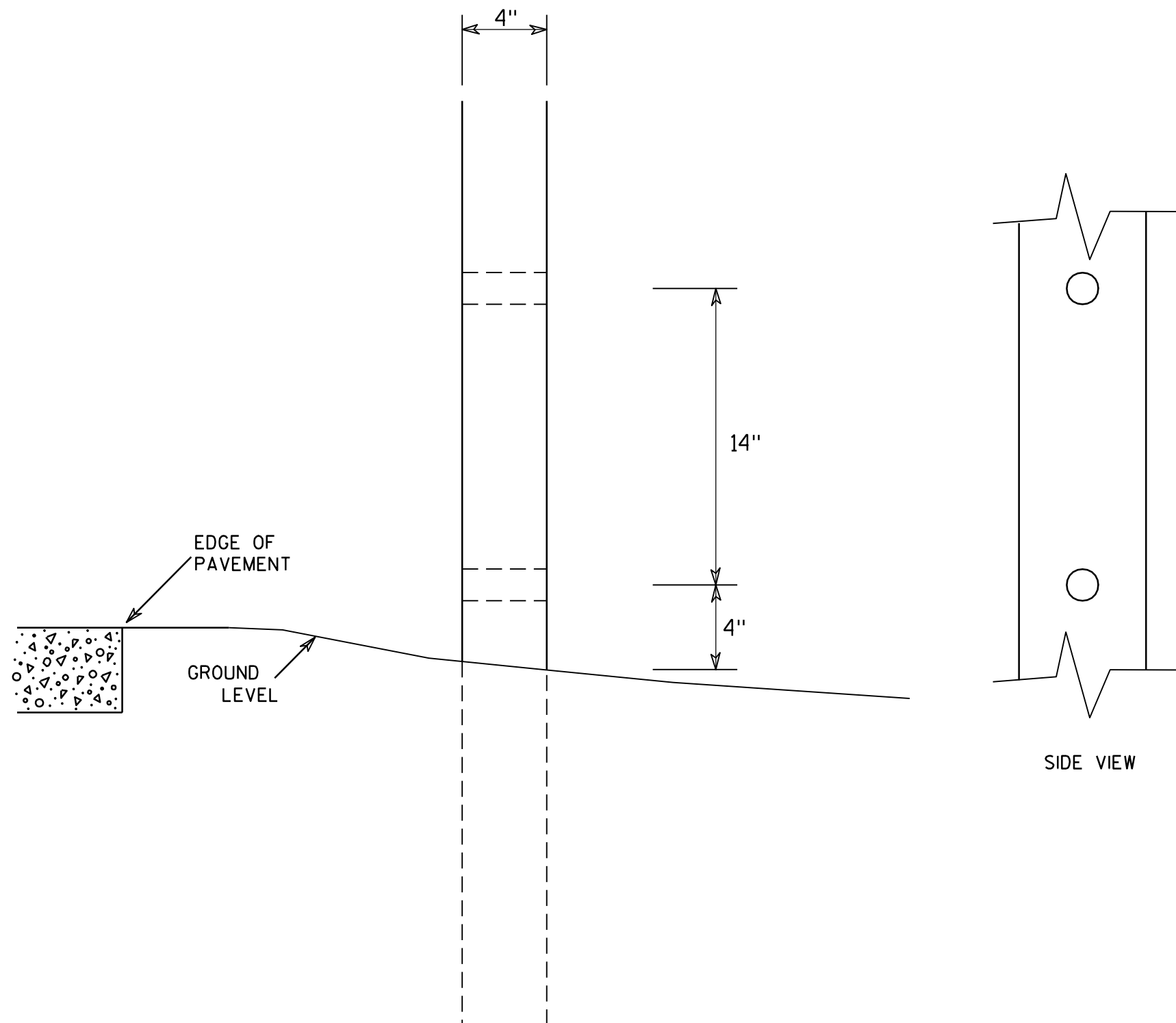
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 170 14-9.9

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

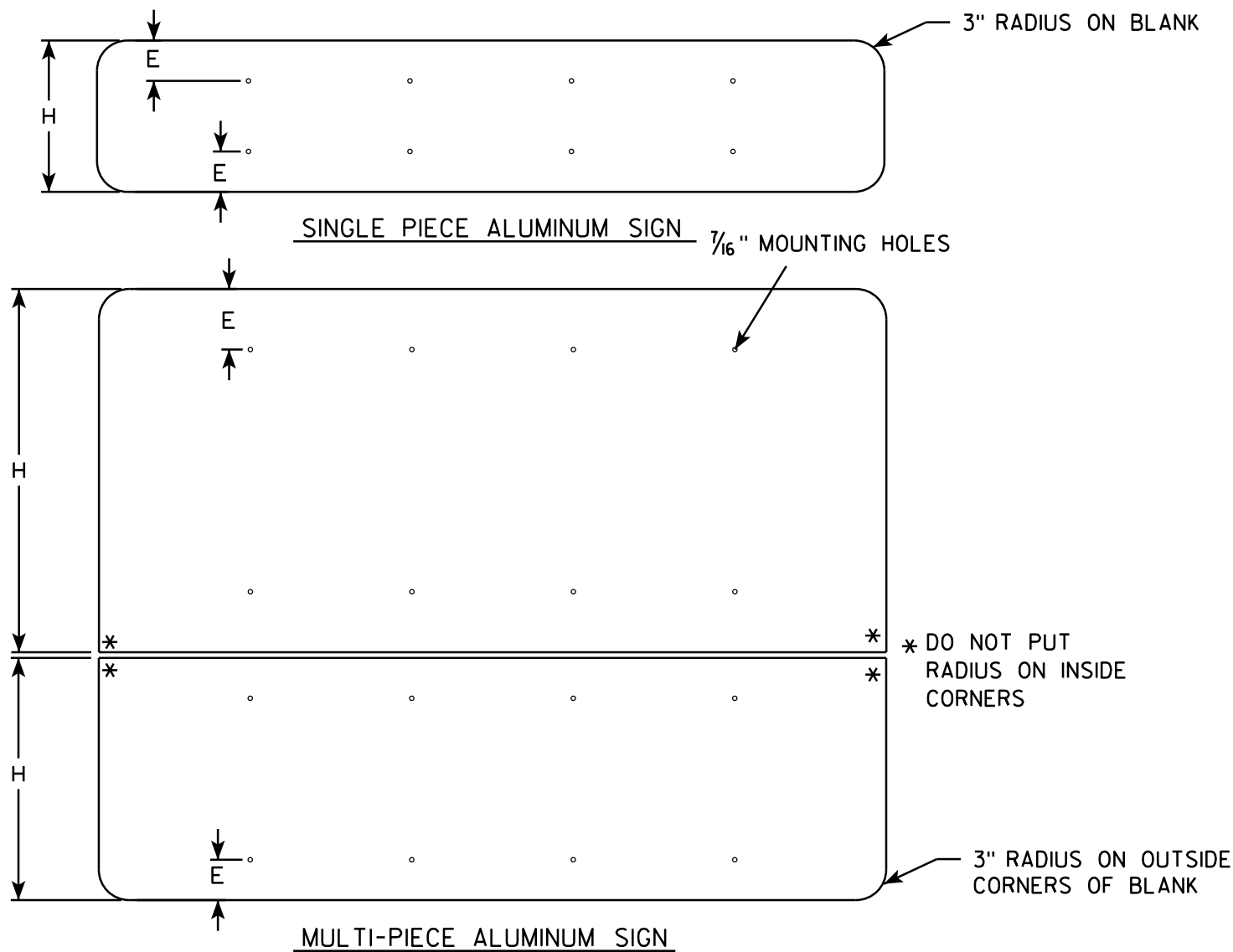
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 171

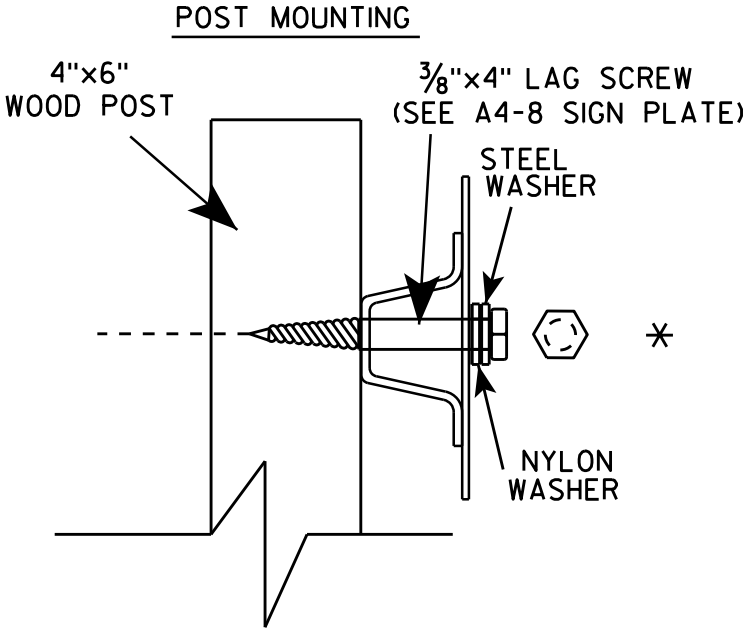
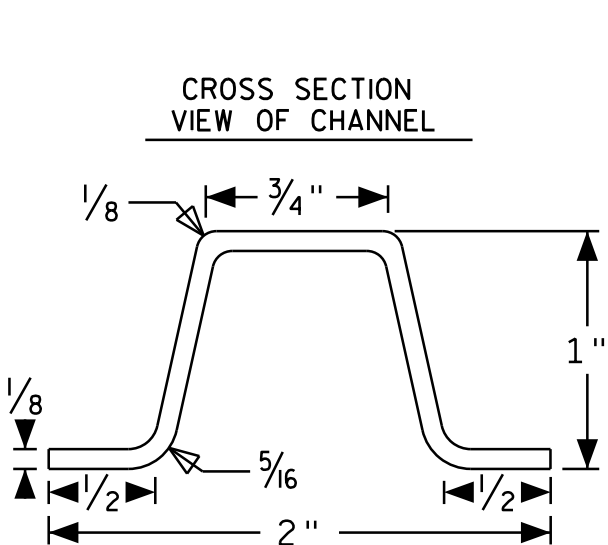
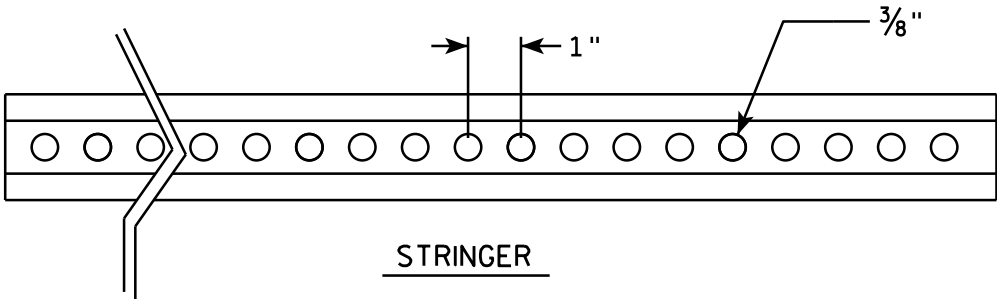
E



GENERAL NOTES

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

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



SIGN STRINGER
MOUNTING REQUIREMENTS

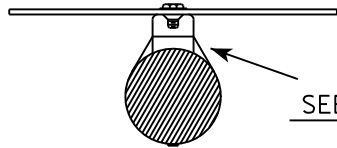
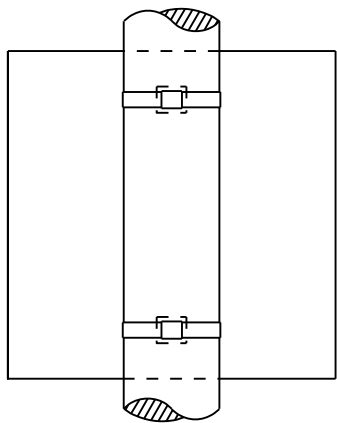
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE No A4-18.1
172

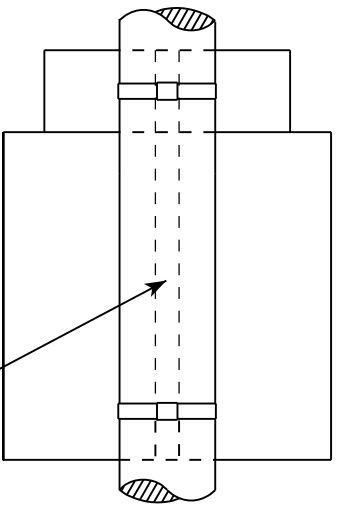
BANDING

SINGLE SIGN

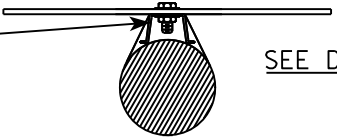


SEE DETAIL A

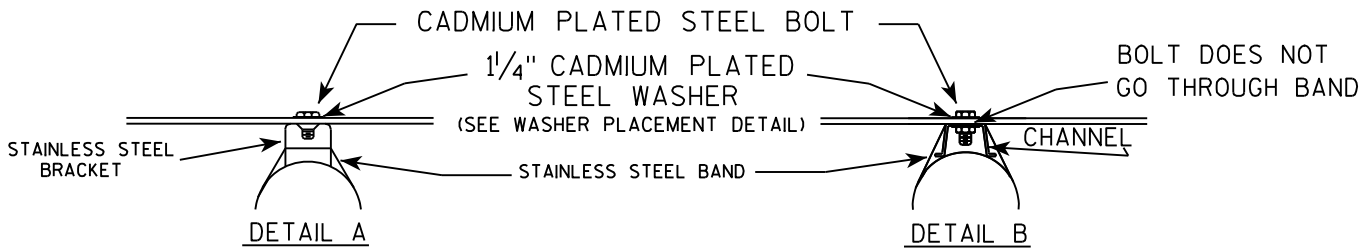
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



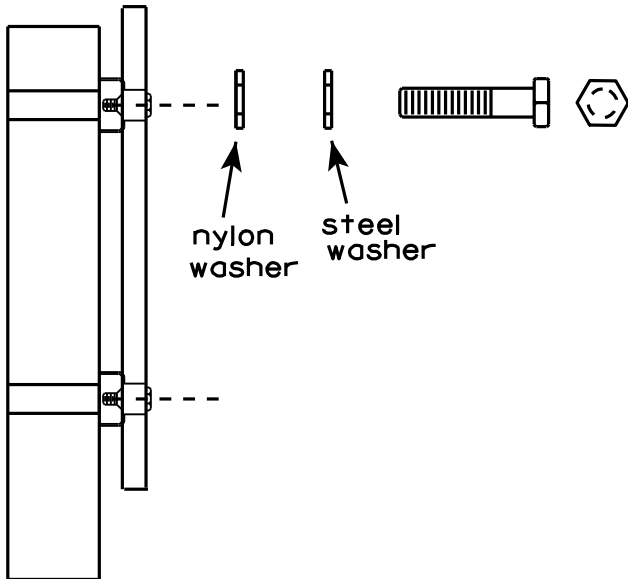
SEE DETAIL B



GENERAL NOTES

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

WASHER PLACEMENT



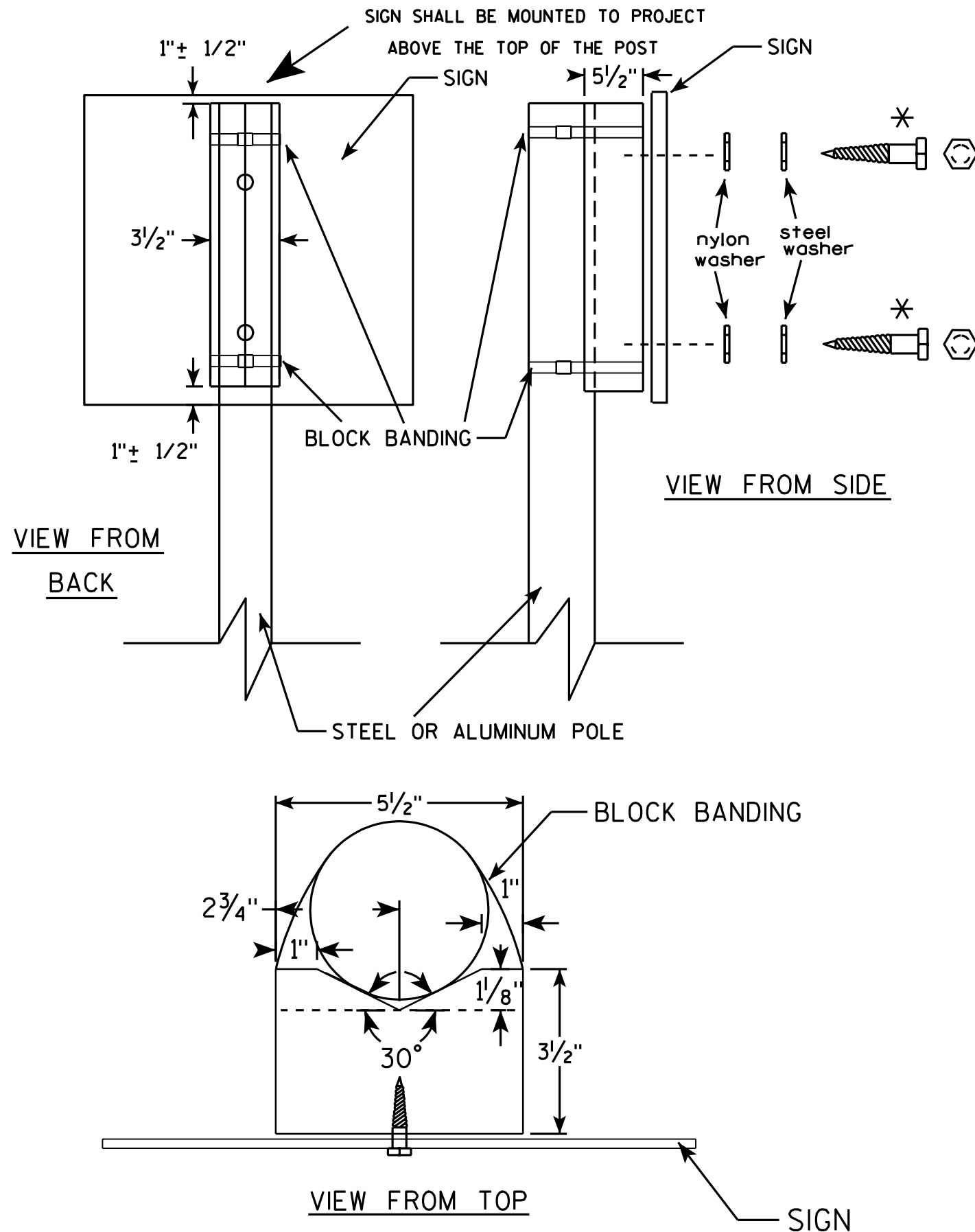
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



GENERAL NOTES

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

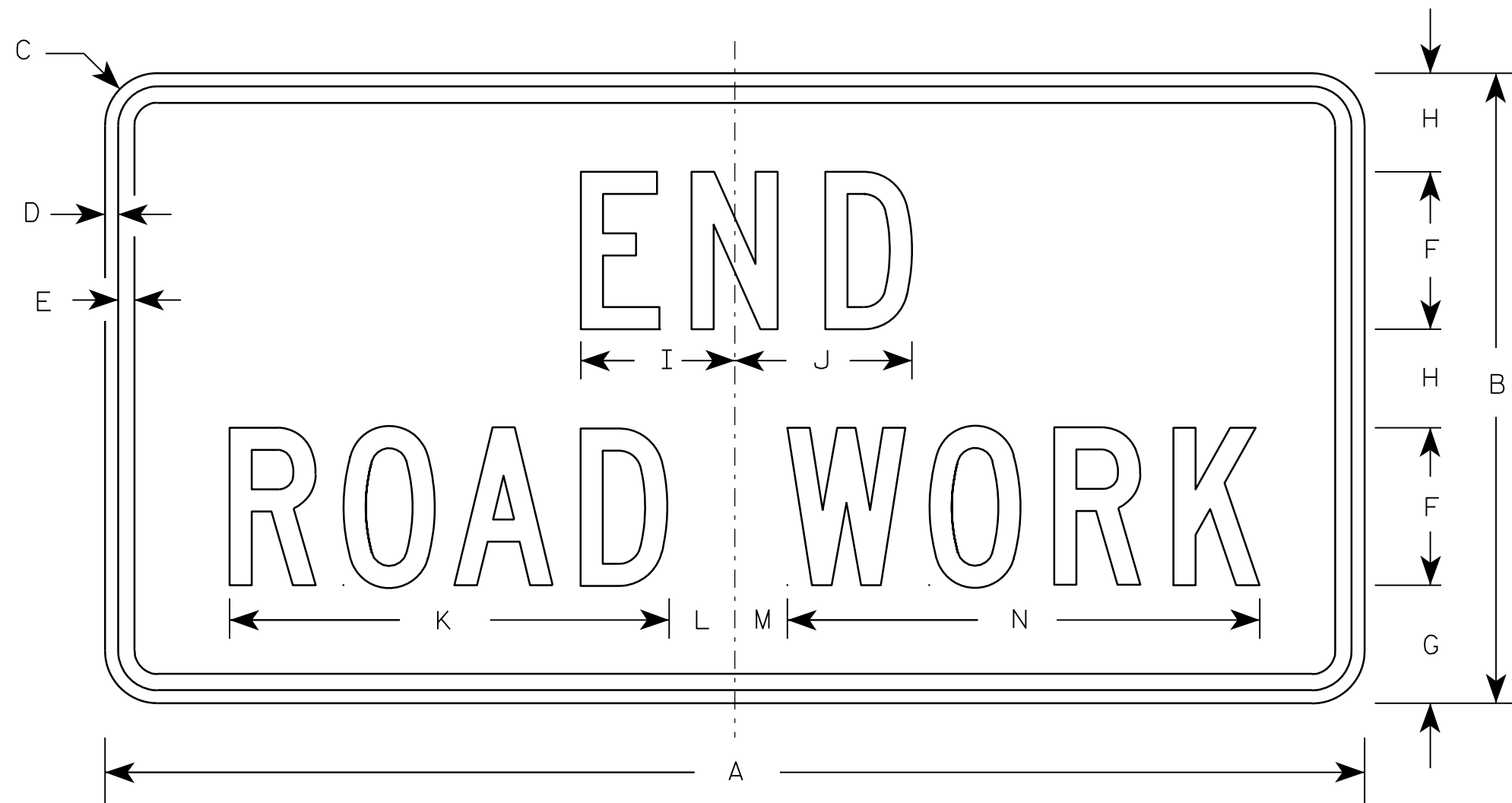
DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO: 174

E

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

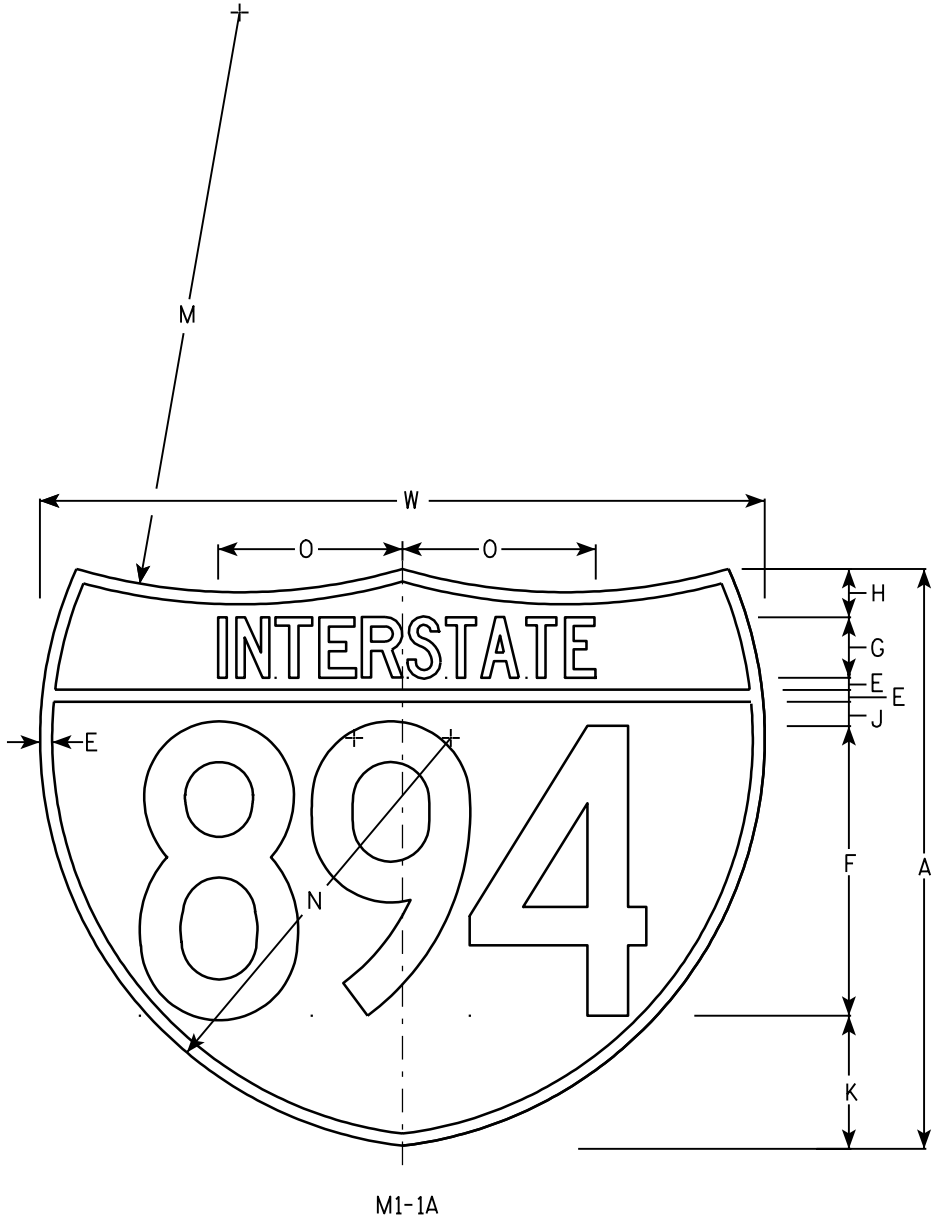
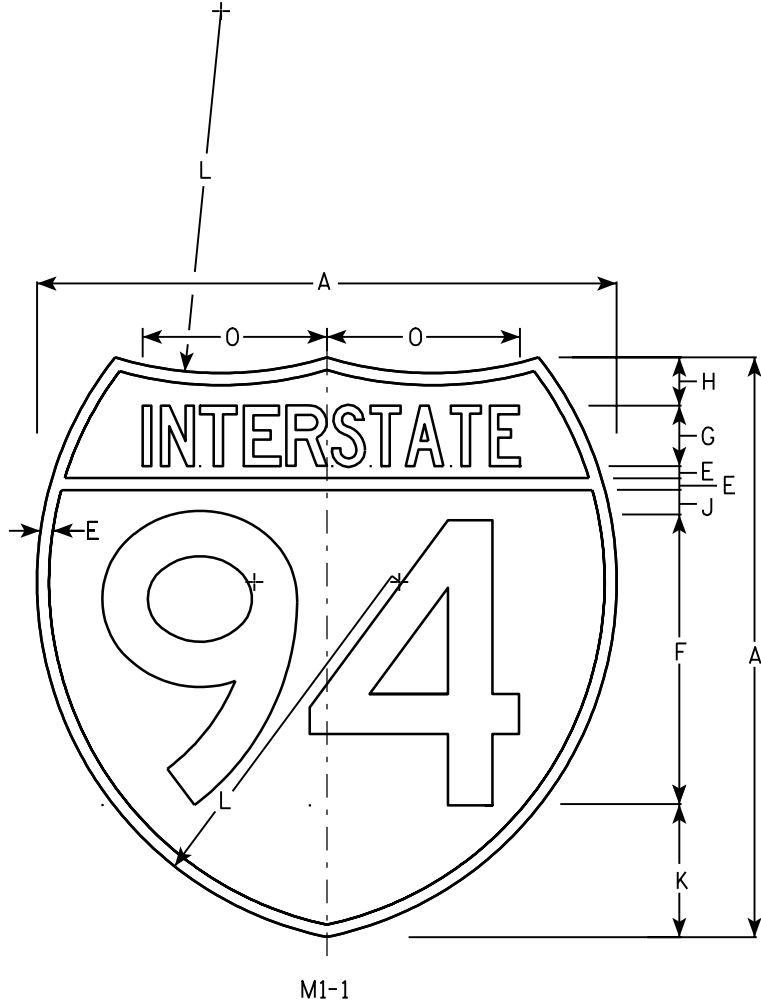
STANDARD SIGN
G20-2A

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 - Top Red - Bottom Blue (See Note 6)
Message - White - See Note 6
- 3. Message Series - See note 5
- 4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
- 5. M1-1 - Numerals - D
Interstate - C
M1-1A - All copy - C
- 6. Permanent Signs
Message - Type H Reflective
Detour or other temporary signs
Background - Reflective
Message - Reflective

Metric equivalent for these signs are:

SIZE	M1 - 1	SIZE	M1 - 1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 mm

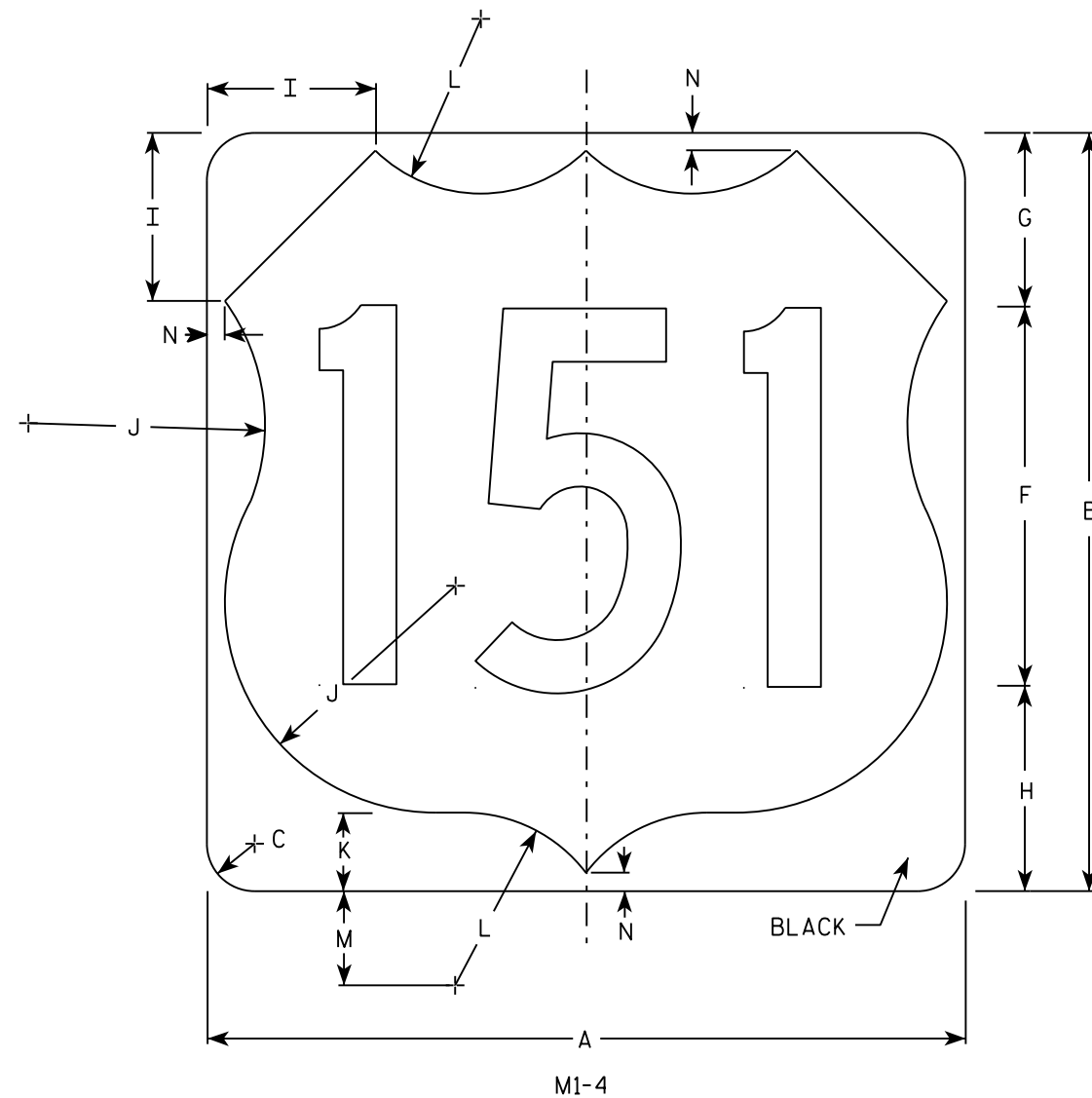
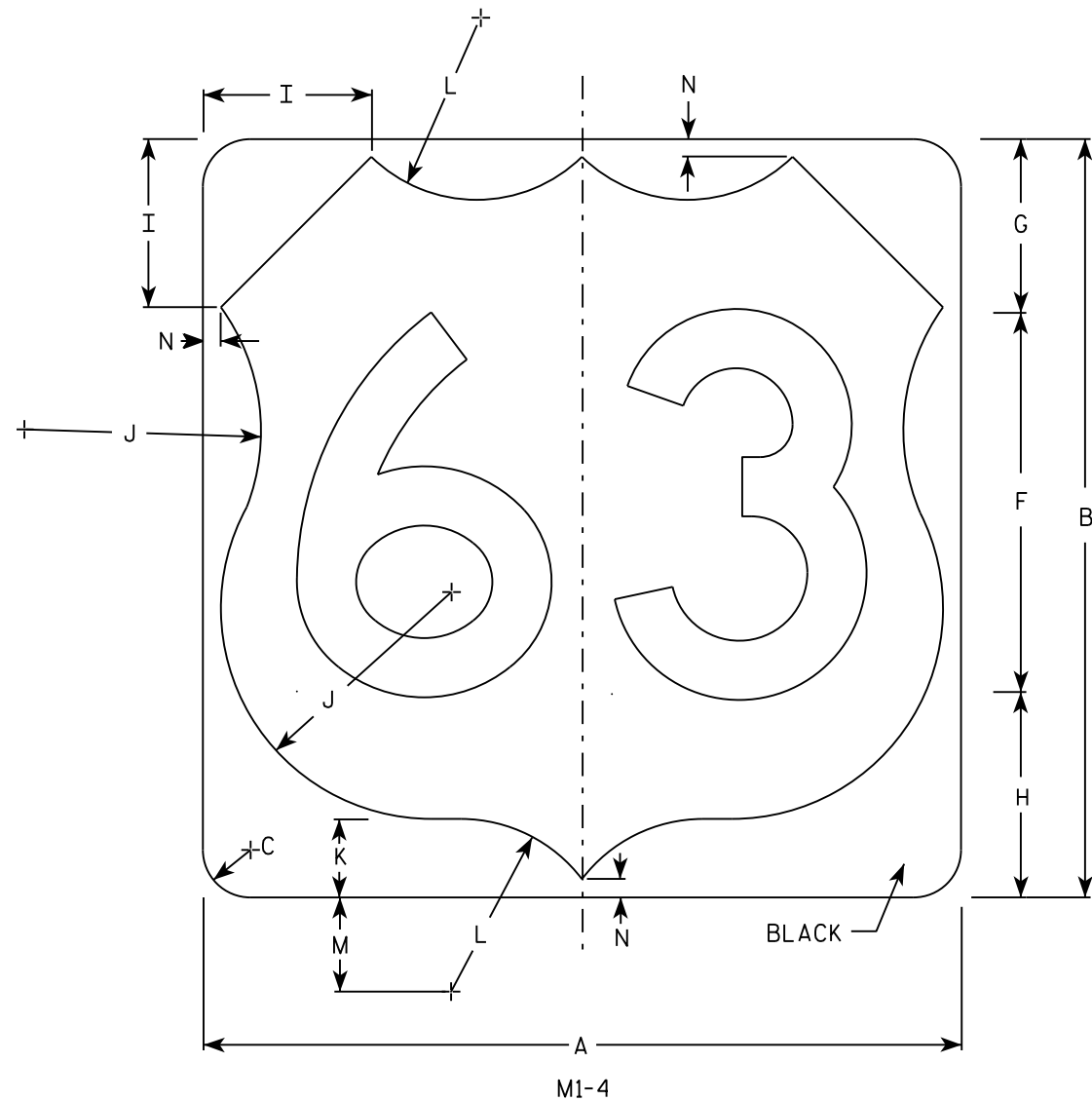
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Area sq. ft.	Area sq. ft.	Area m ²	Area m ²
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05

INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 08/23/05 PLATE NO. M1-1.8

NOTES

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



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

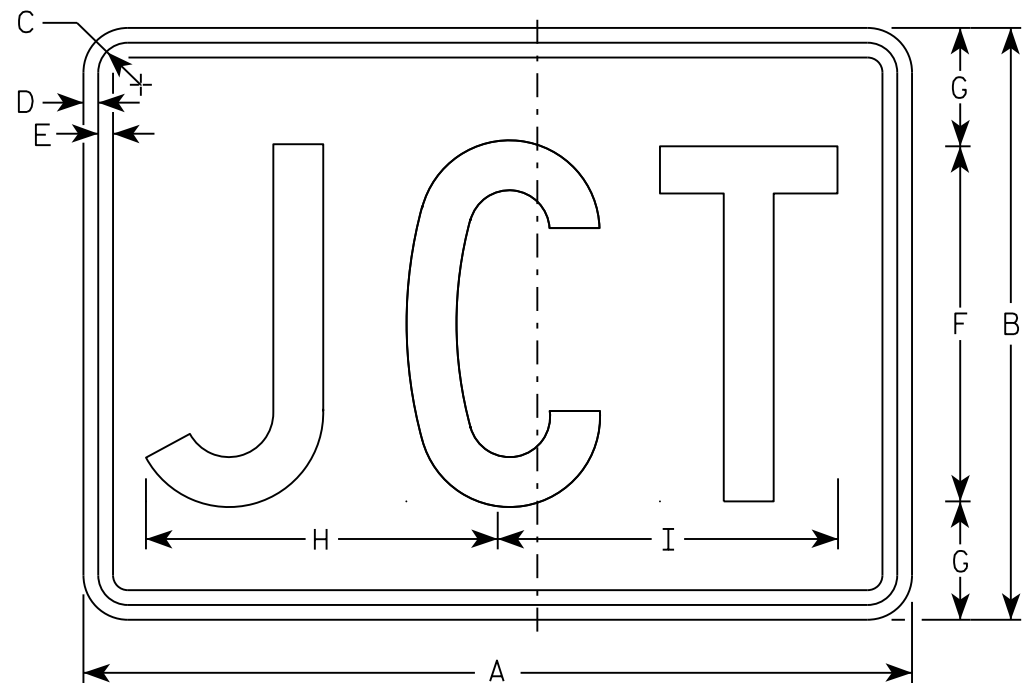
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 177	E
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USH MARKER
M1-4 FOR ASSEMBLIES

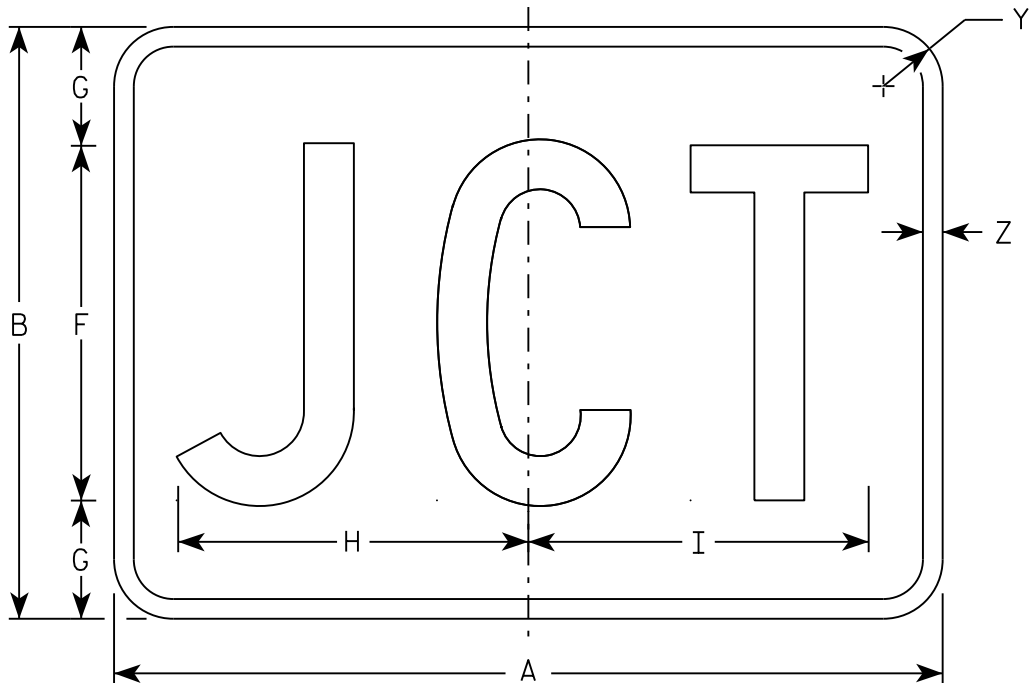
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

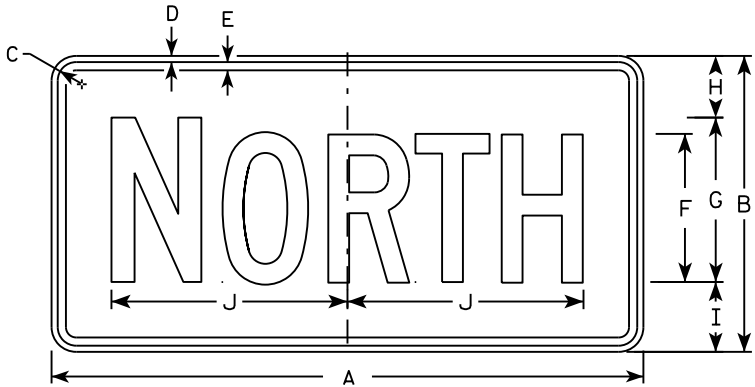
Matthew R. Rauch

For State Traffic Engineer

DATE 10/15/15

PLATE 178

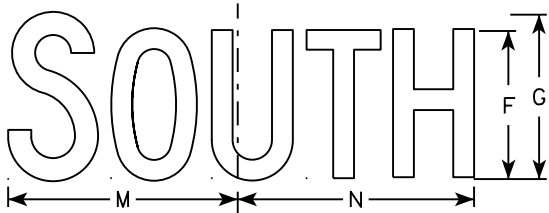
'2-1.12



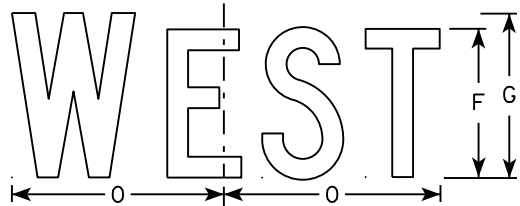
M3-1
MM3-1
MP3-1



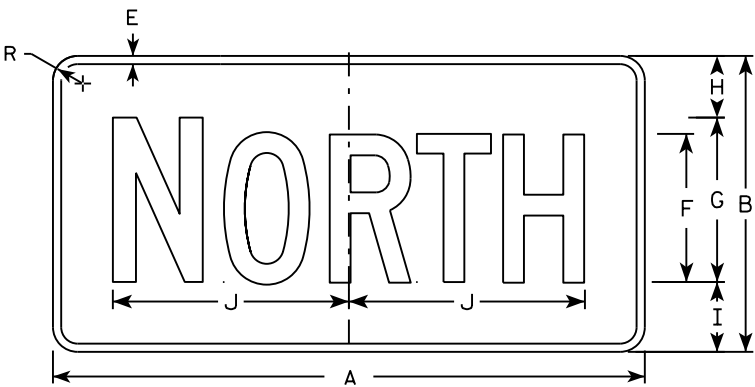
M3-2
MM3-2
MP3-2



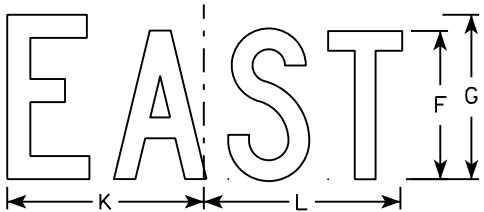
M3-3
MM3-3
MP3-3



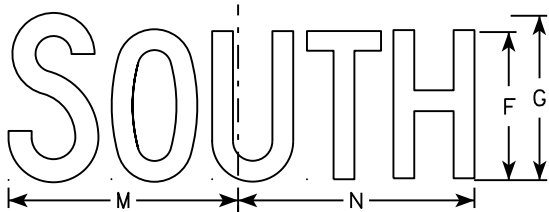
M3-4
MM3-4
MP3-4



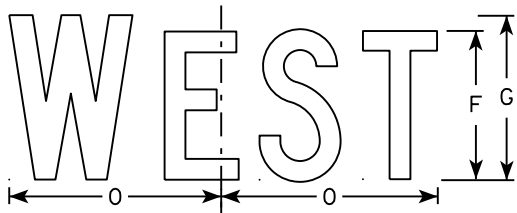
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



MB3-4
MK3-4
MN3-4

NOTES

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

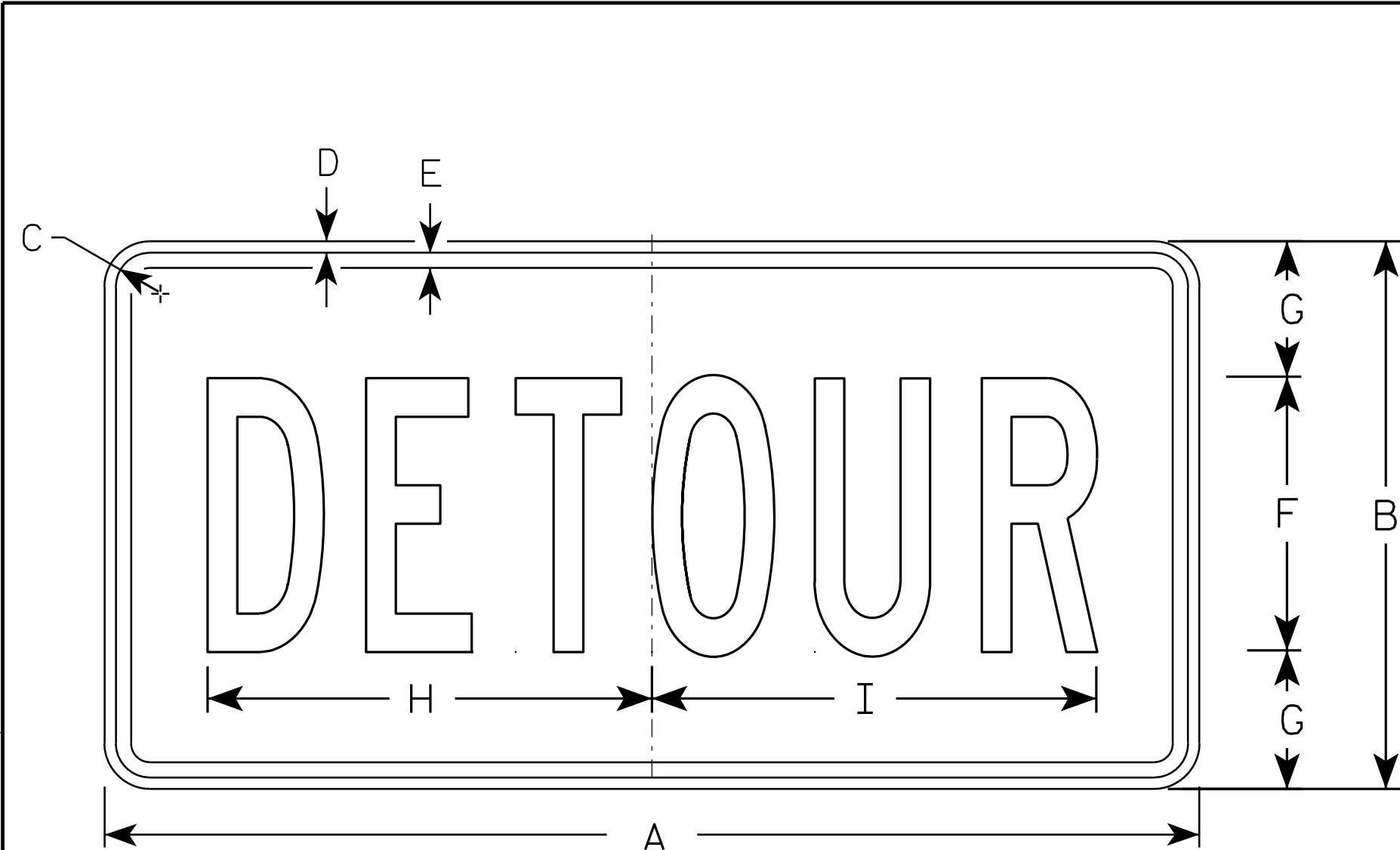
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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

STANDARD SIGNS
M3-1 thru M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 179 M3-1.14



M4 - 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 - Orange
Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

STANDARD SIGN

M4 - 8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

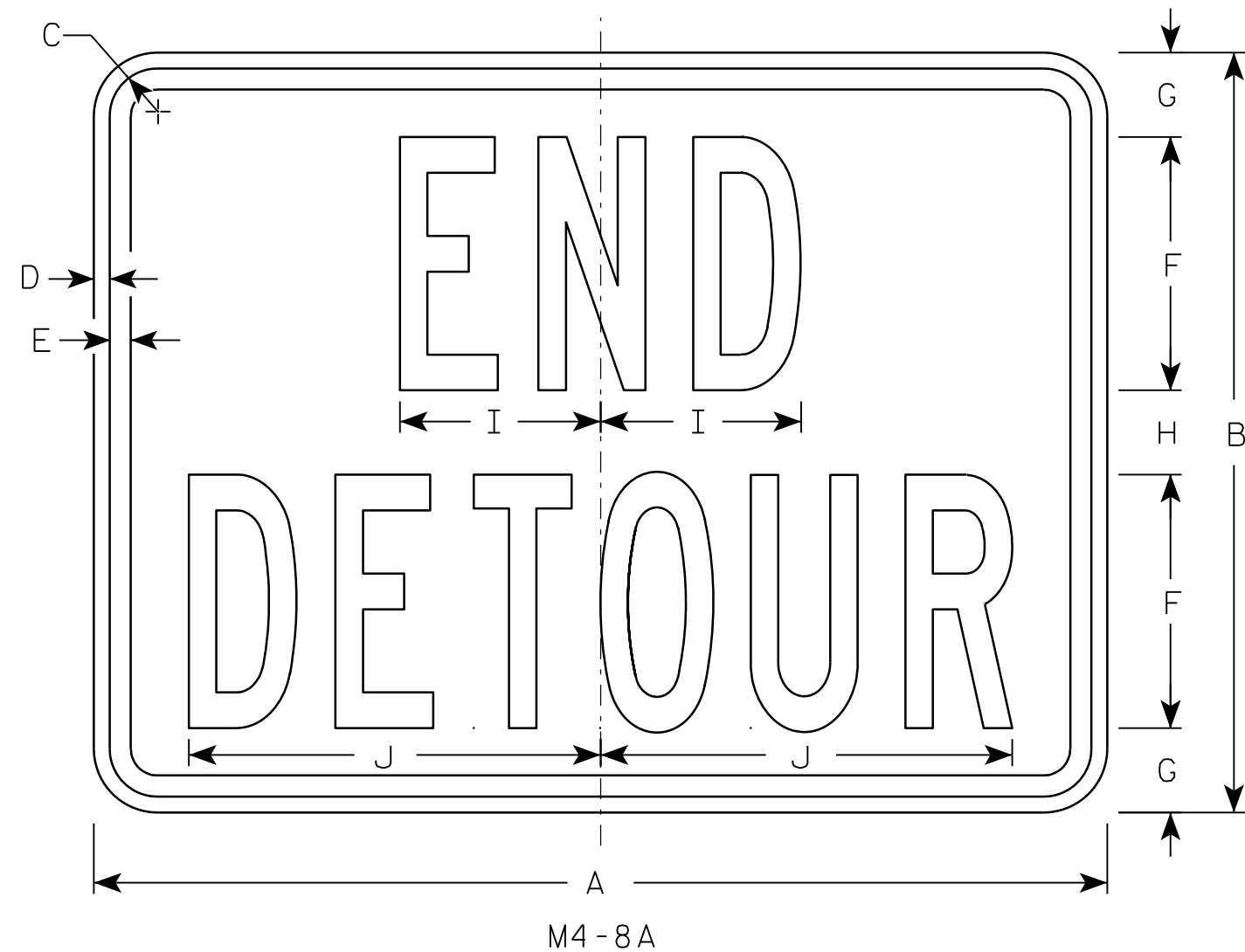
HWY:

COUNTY:

SHEET NO: 180

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 - Orange
Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

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

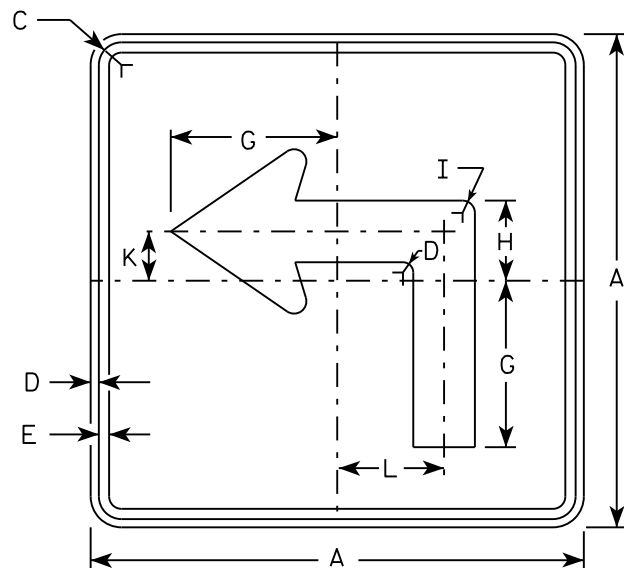
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 181	E
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STANDARD SIGN
M4-8A

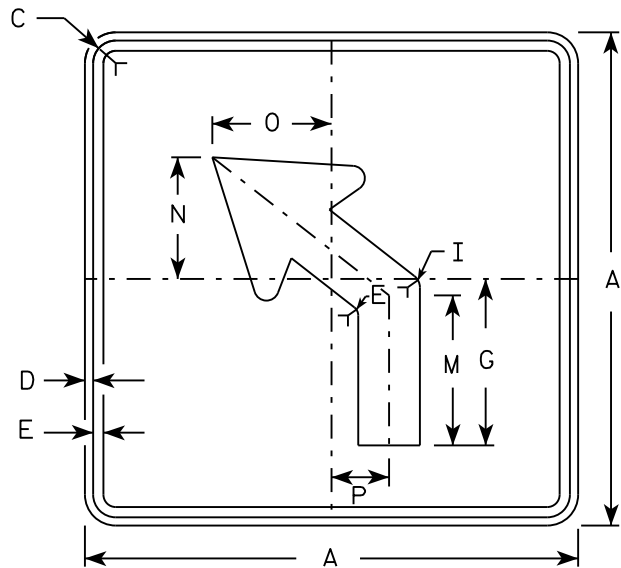
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

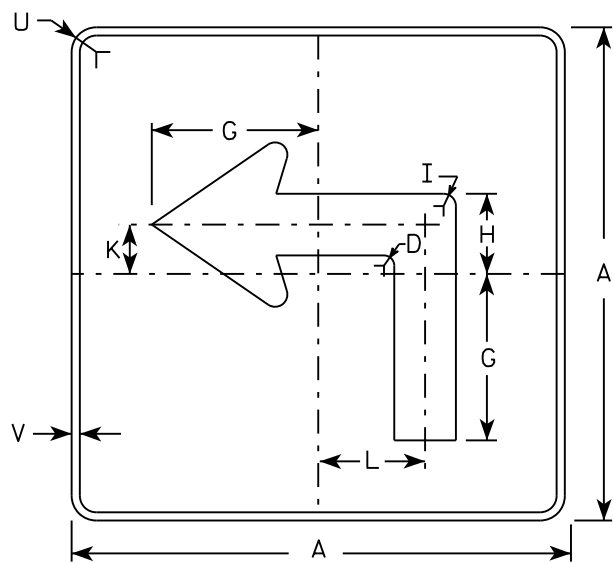
DATE 3/9/11 PLATE NO. M4-8A.2



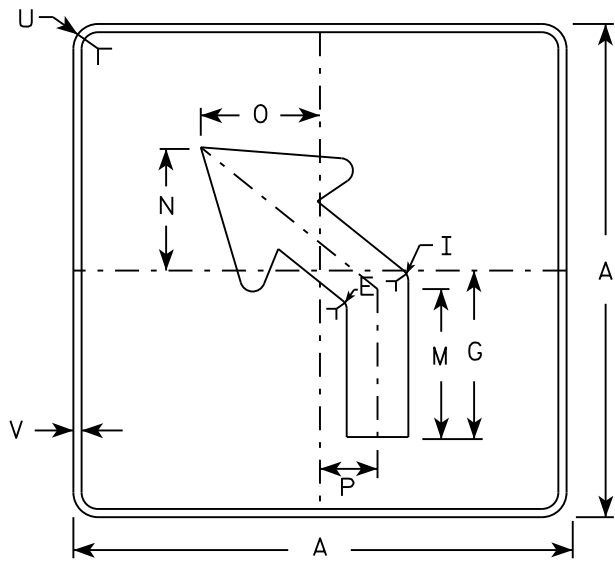
M5-1L
MM5-1L
M05-1L
MP5-1L



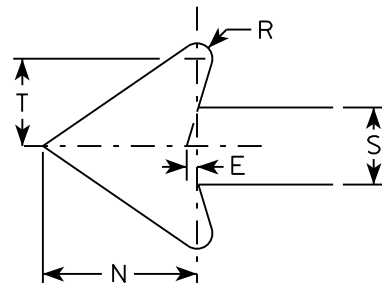
M5-2L
MM5-2L
M05-2L
MP5-2L



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



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



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | |
|-----------------|---|
| M5-1 and M5-2 | Background - White |
| | Message - Black |
| MB5-1 and MB5-2 | Background - Blue |
| | Message - White |
| MK5-1 and MK5-2 | Background - Green |
| | Message - White |
| MM5-1 and MM5-2 | Background - White |
| | Message - Green |
| MN5-1 and MN5-2 | Background - Brown |
| | Message - White |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
| | Message - Black |
| MP5-1 and MP5-2 | Background - White - Type H Reflective |
| | Message - Blue |
| MR5-1 and MR5-2 | Background - Brown |
| | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

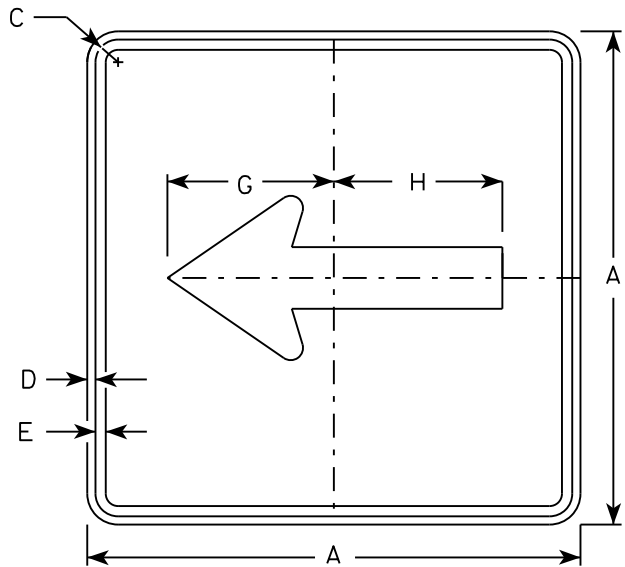
STANDARD SIGN

M5-1 & M5-2

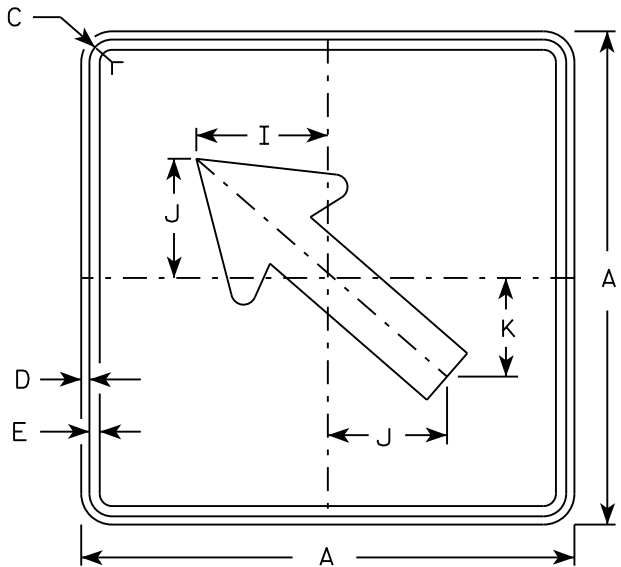
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

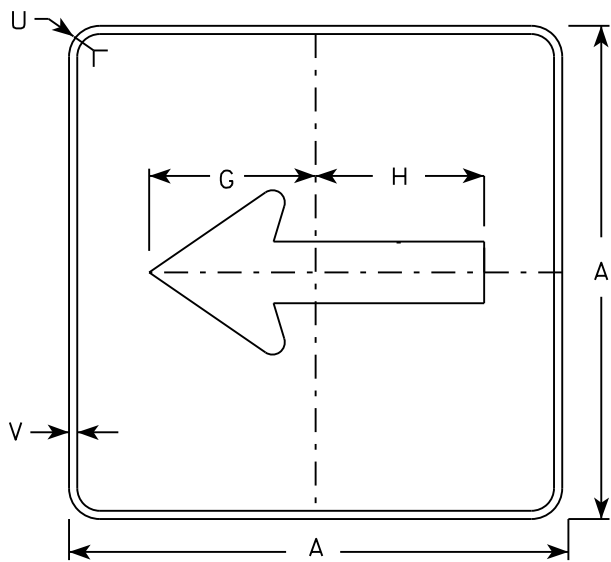
DATE 10/15/15 PLATF 182 M5-1.13



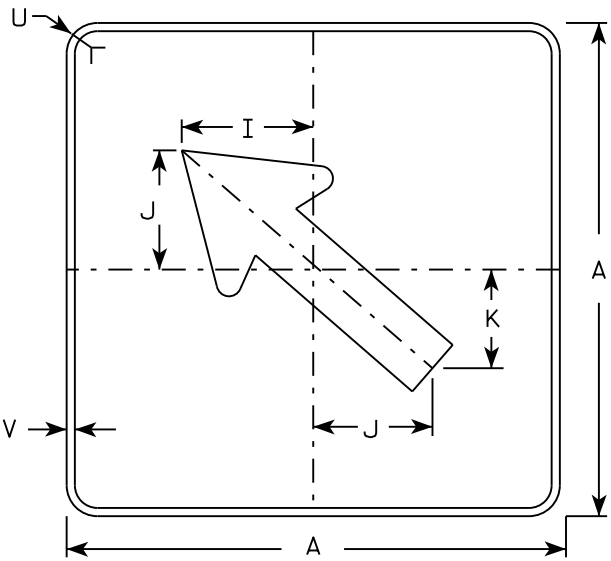
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



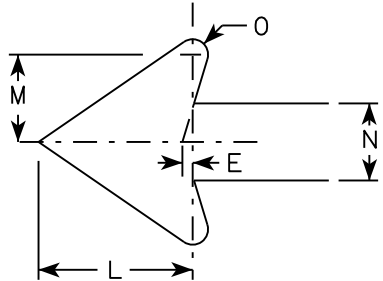
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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



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



NOTES

- 1. Signs are Type II - Type H except as Shown
- 2. Color:
Background - See note 4
Message - See note 4
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 4. M6-1 and M6-2 Background - White
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:

DATE 10/15/15

PLAT 183

SHEET NO:

E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

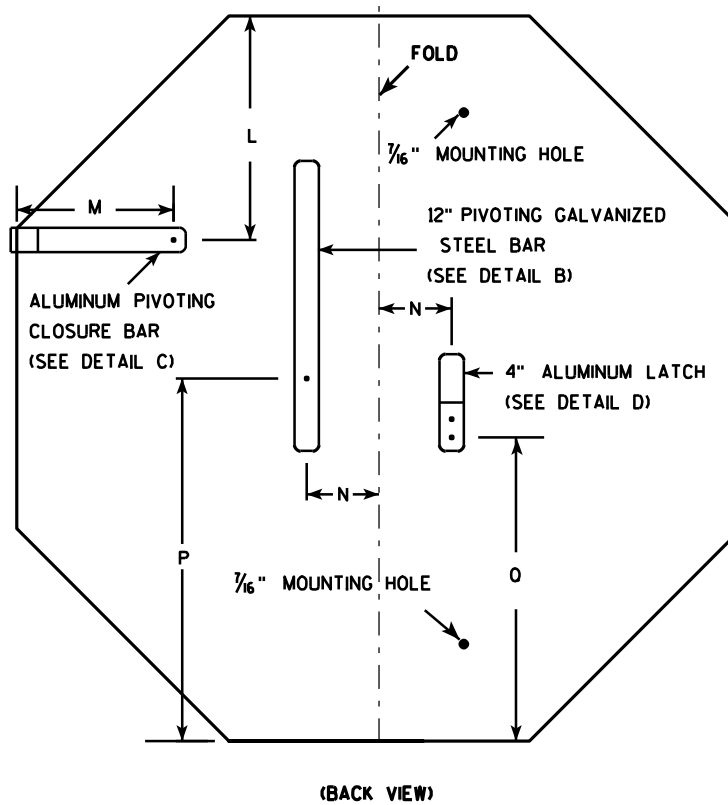
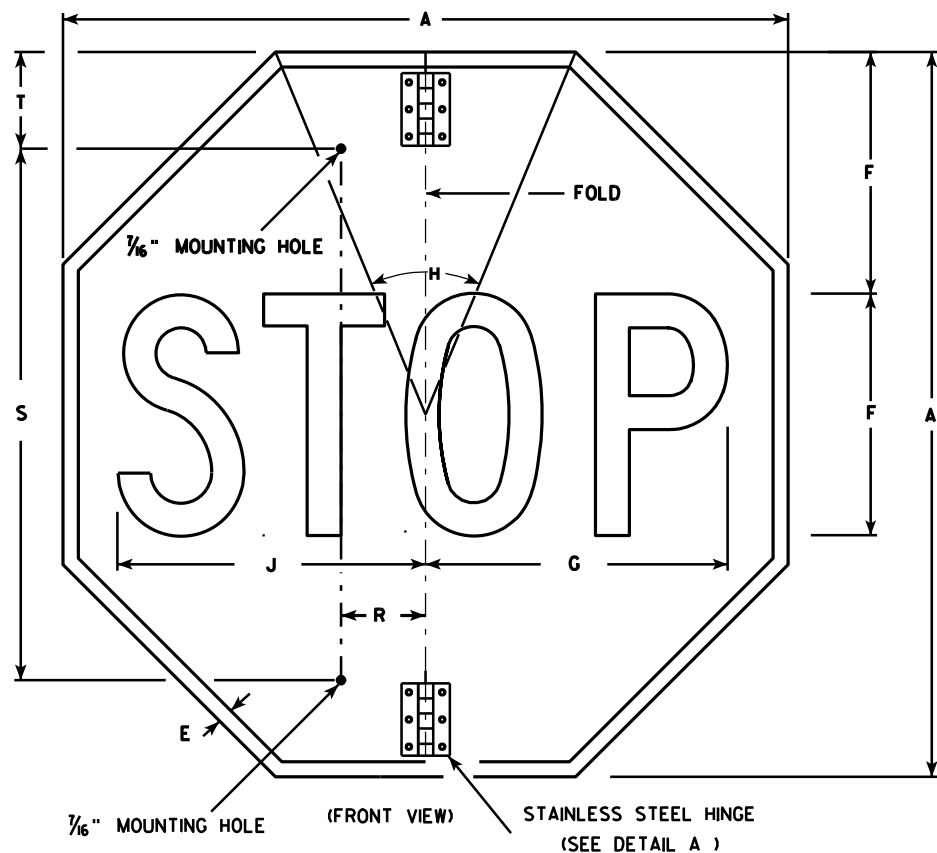
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15

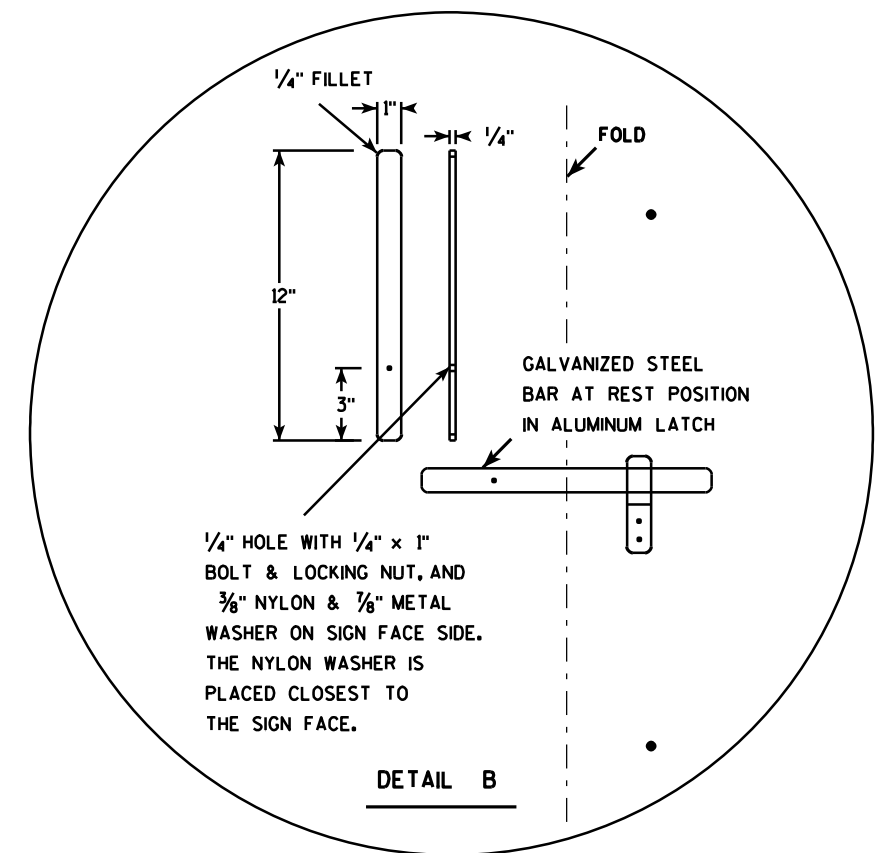
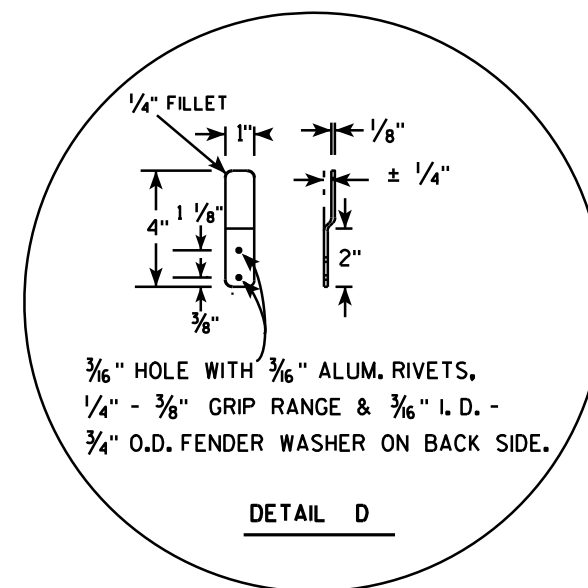
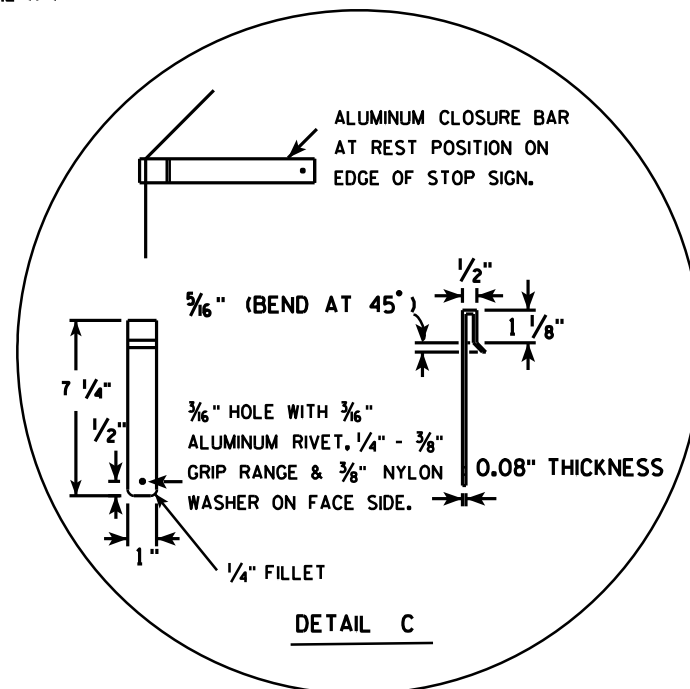
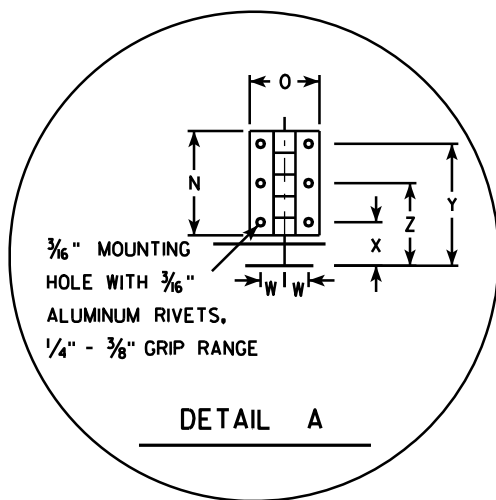
PLAT 183

M6-1.15



NOTES

- Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Red
Message - White
- Message Series - C
- All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



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				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			1/8	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1/8	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1/8	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

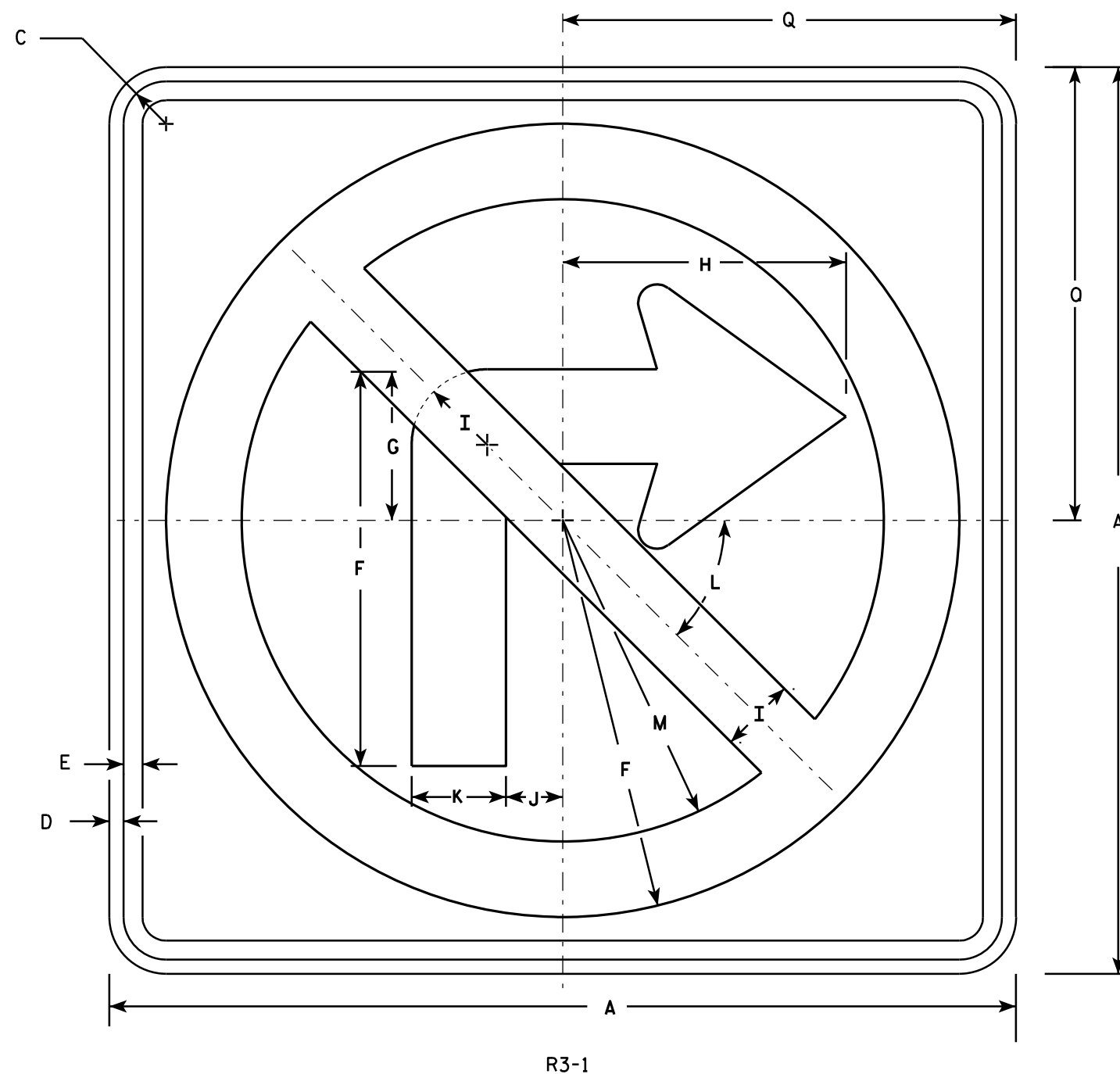
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 184	E
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STANDARD SIGN R1-1F

WISCONSIN DEPT OF TRANSPORTATION

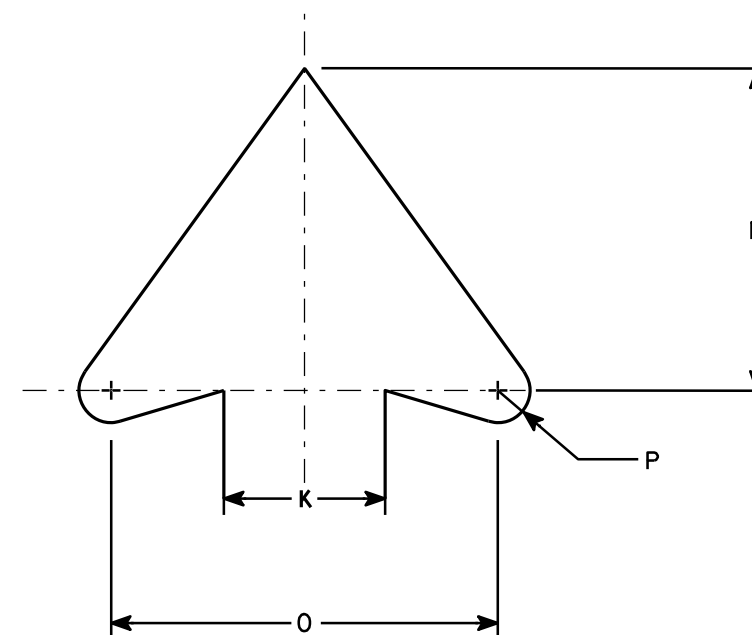
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.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 - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.

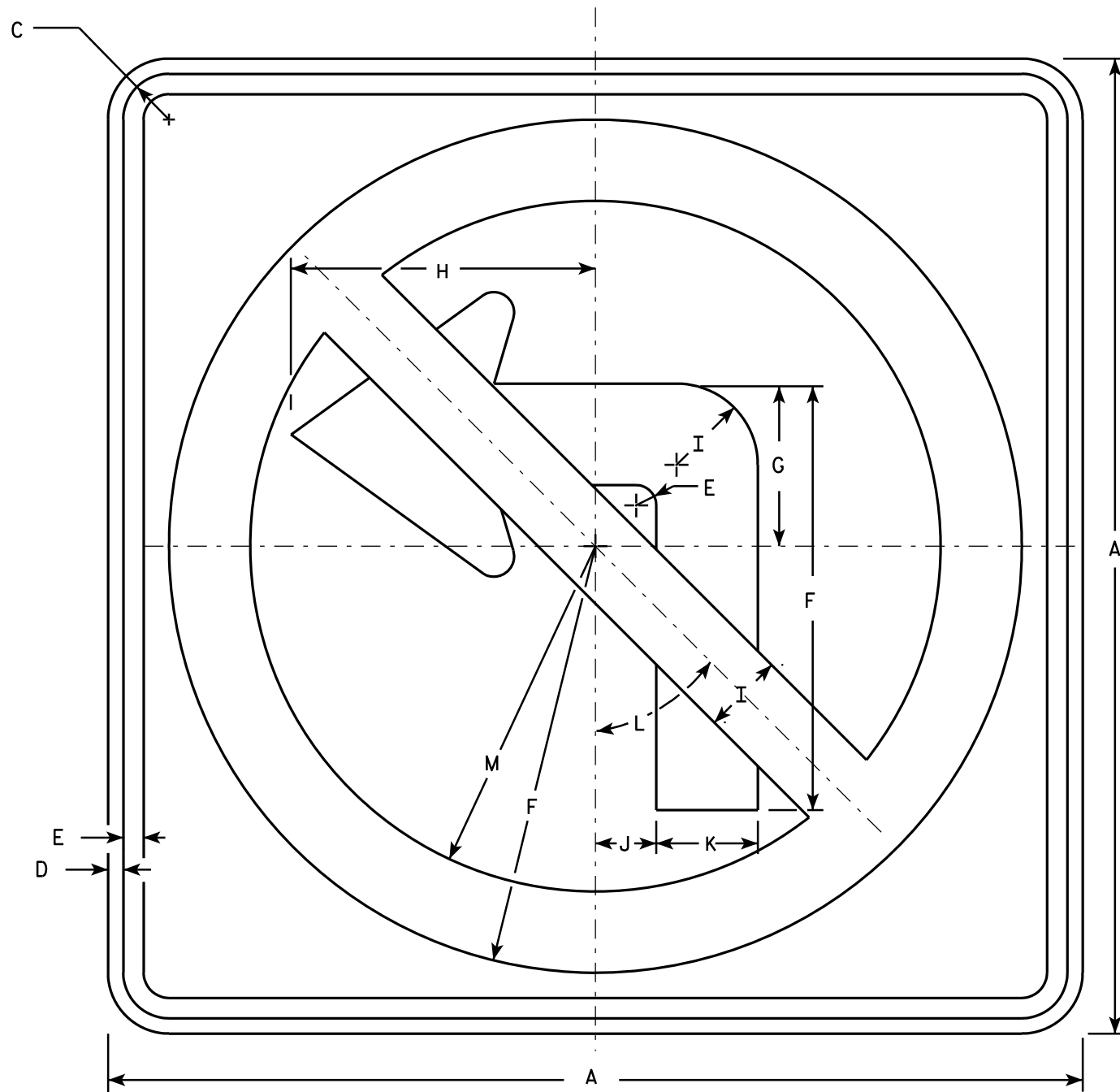


ARROW DETAIL

[illegible]

STANDARD SIGN	
R3-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> for State Traffic Engineer
DATE 12/08/10	PLATE NO. R3-1.5

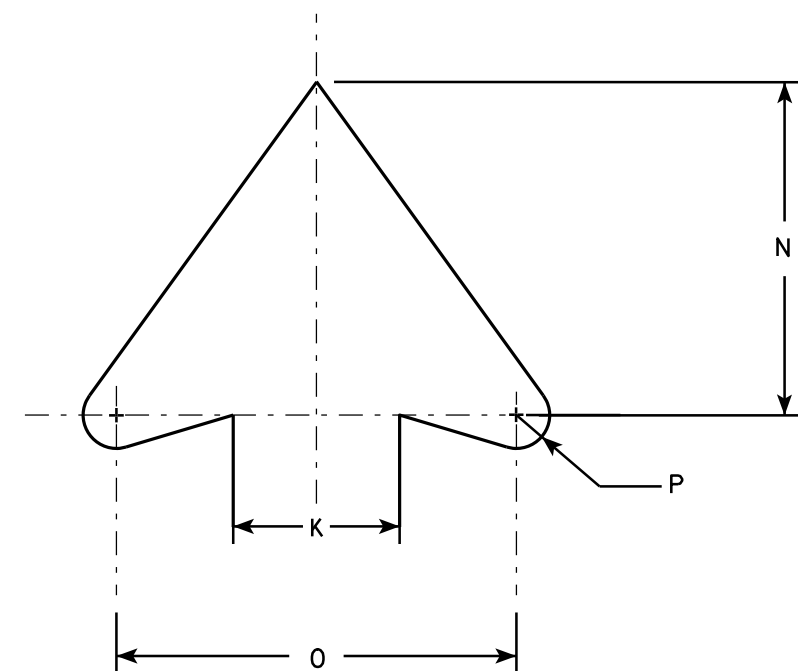
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 185
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R3-2

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 - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

STANDARD SIGN R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

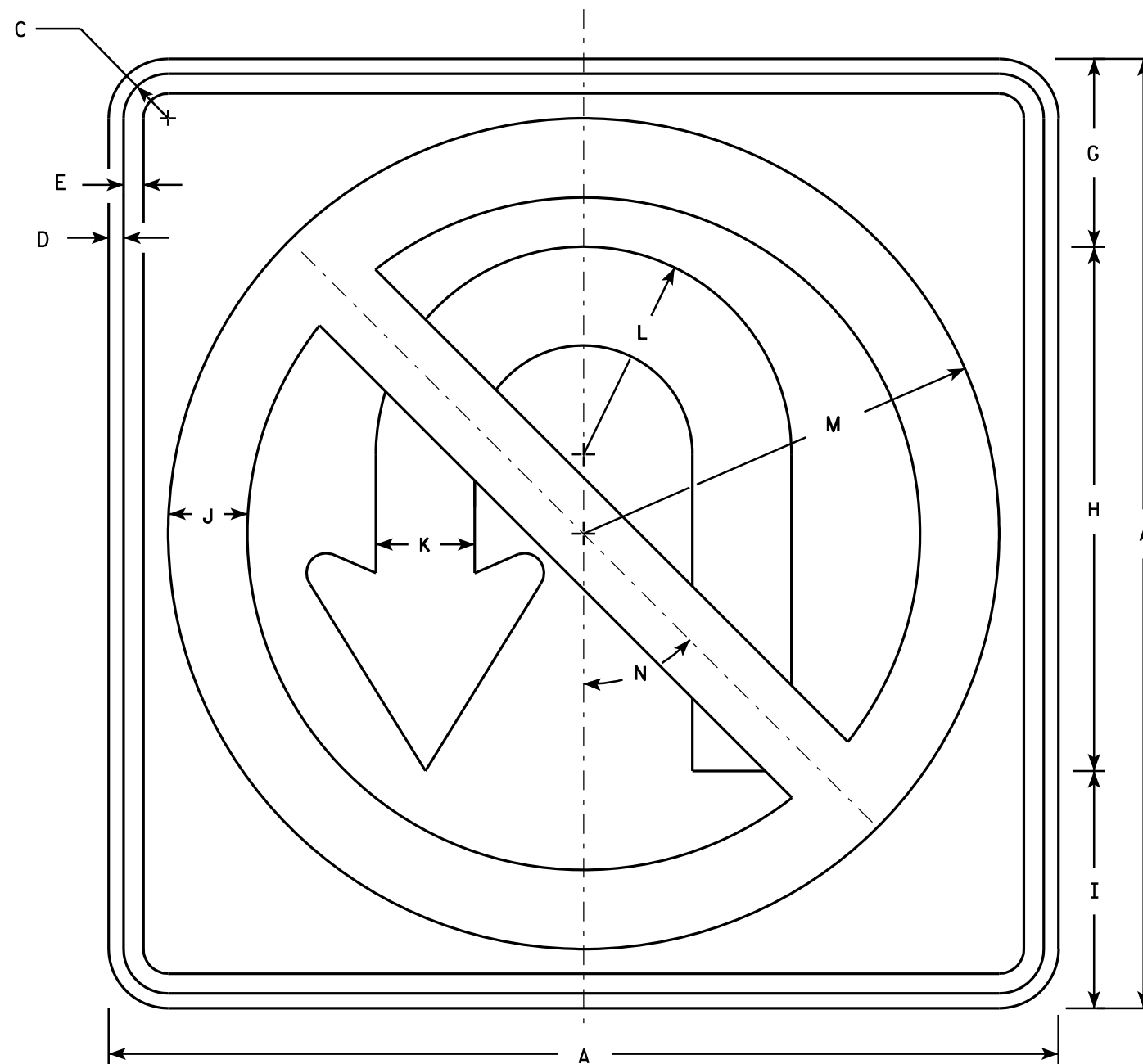
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 186

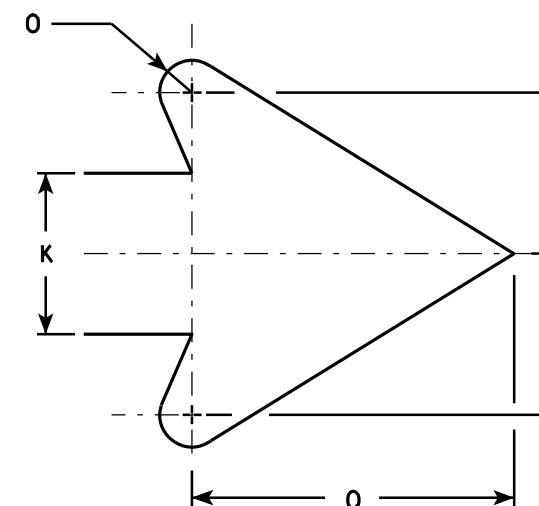
E



R3-4

NOTES

- Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - White
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.
- Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.

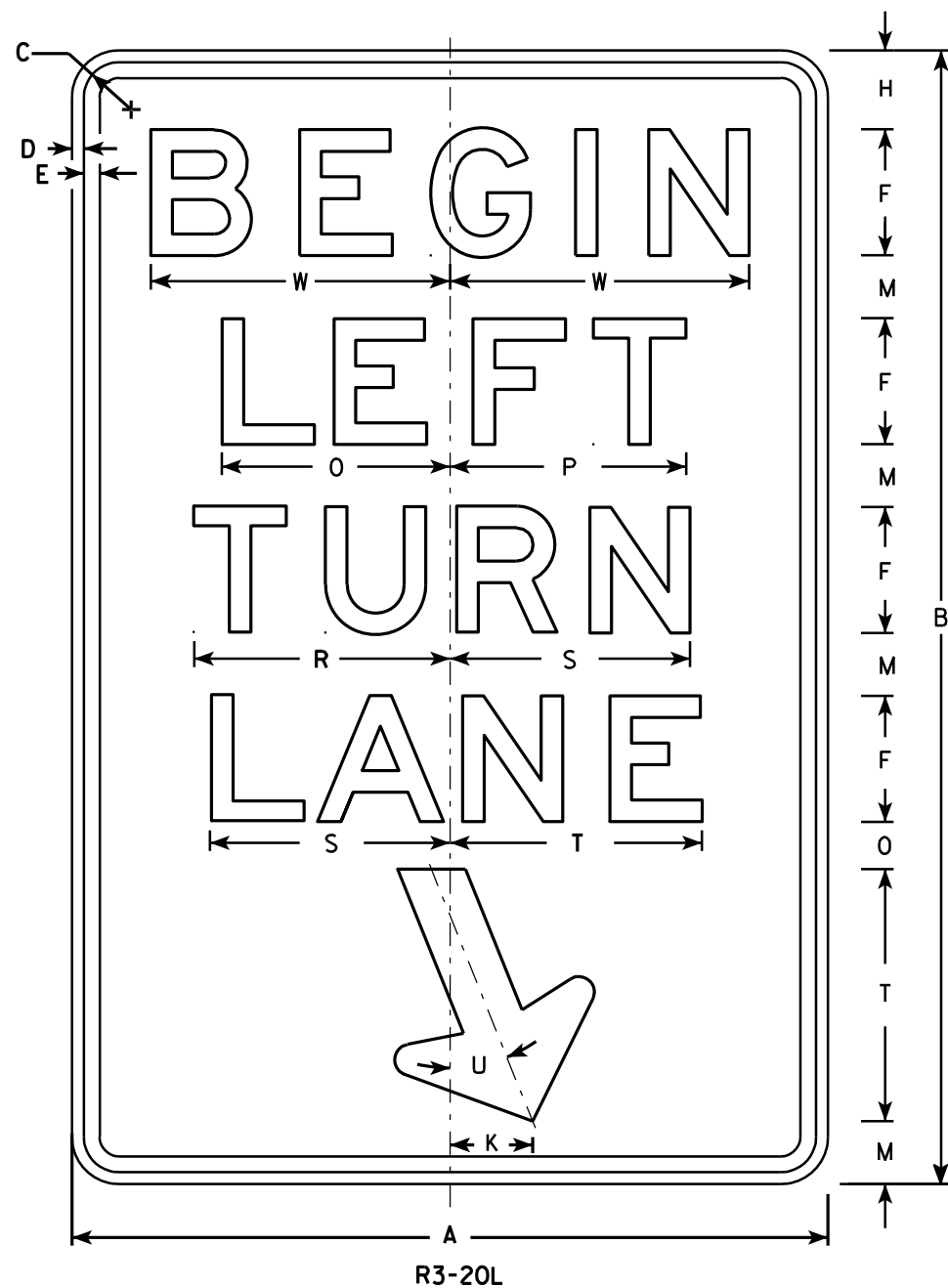


ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	3/8	1/2		4 3/4	13 1/4	6	2	2 1/2	5 1/4	10 1/2	45°	1/2		5										4.0
2M	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
3	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
4	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
5	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0

STANDARD SIGN R3-4	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 12/08/10	PLATE NO. R3-4.11

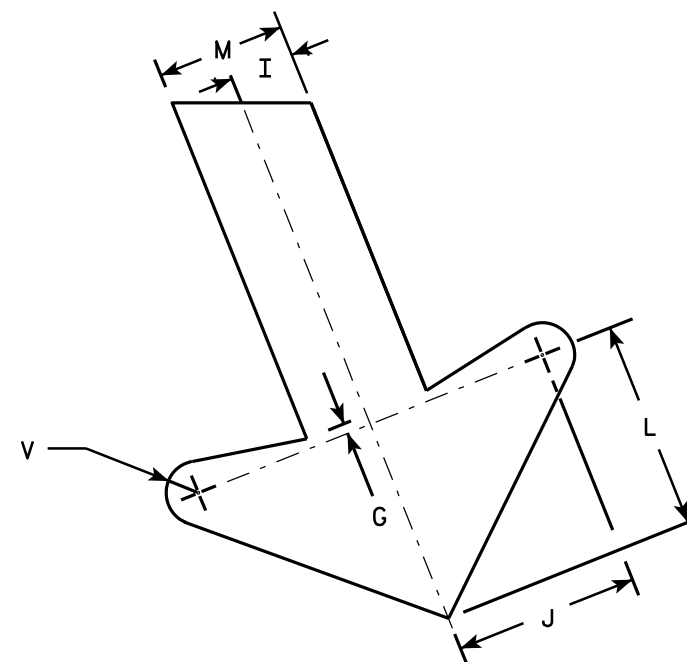
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 187	E
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R3-20L

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.



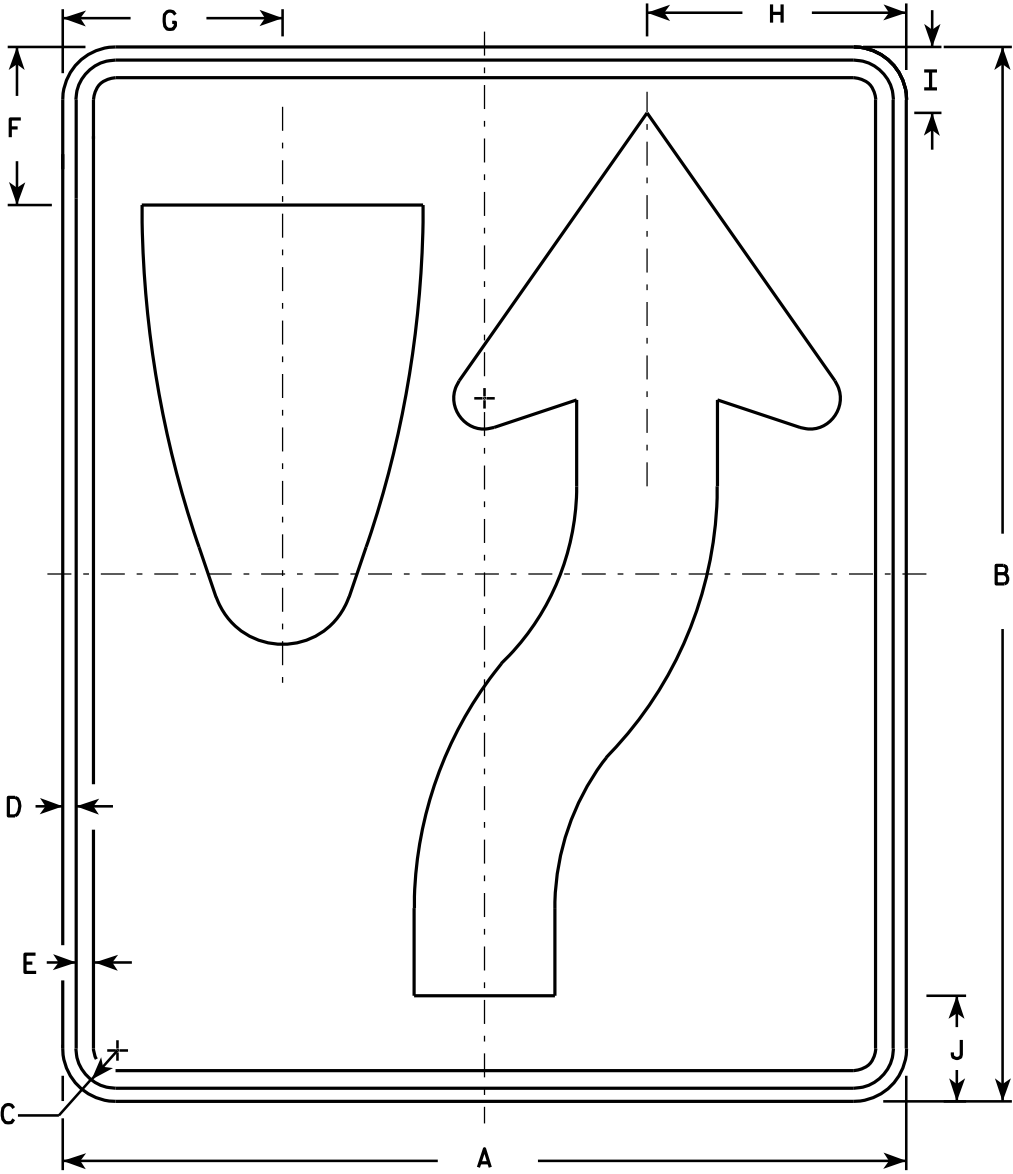
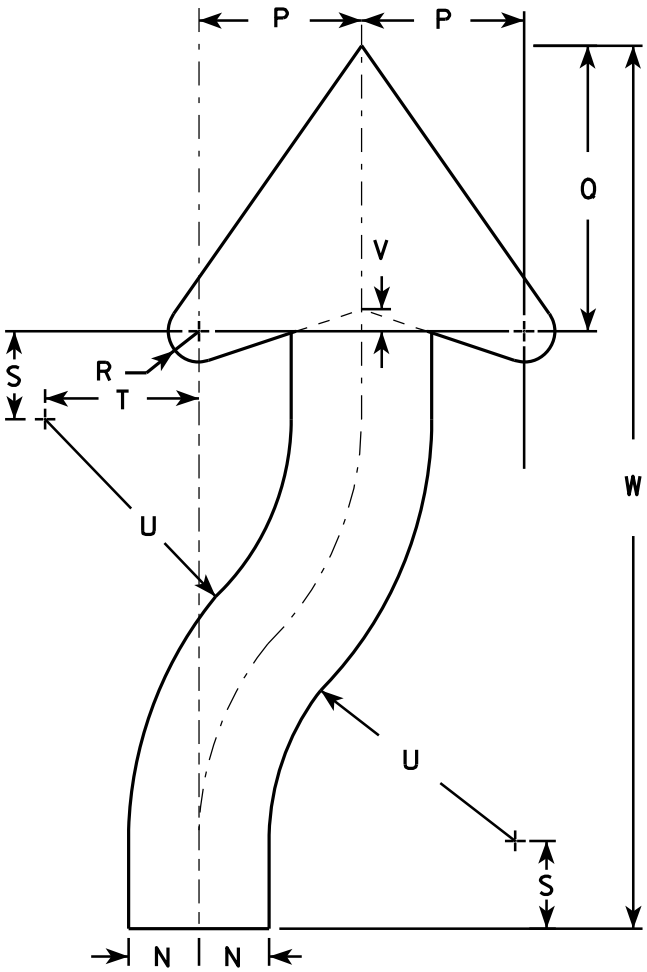
ARROW DETAIL

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. 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

PROJECT NO:

HWY:

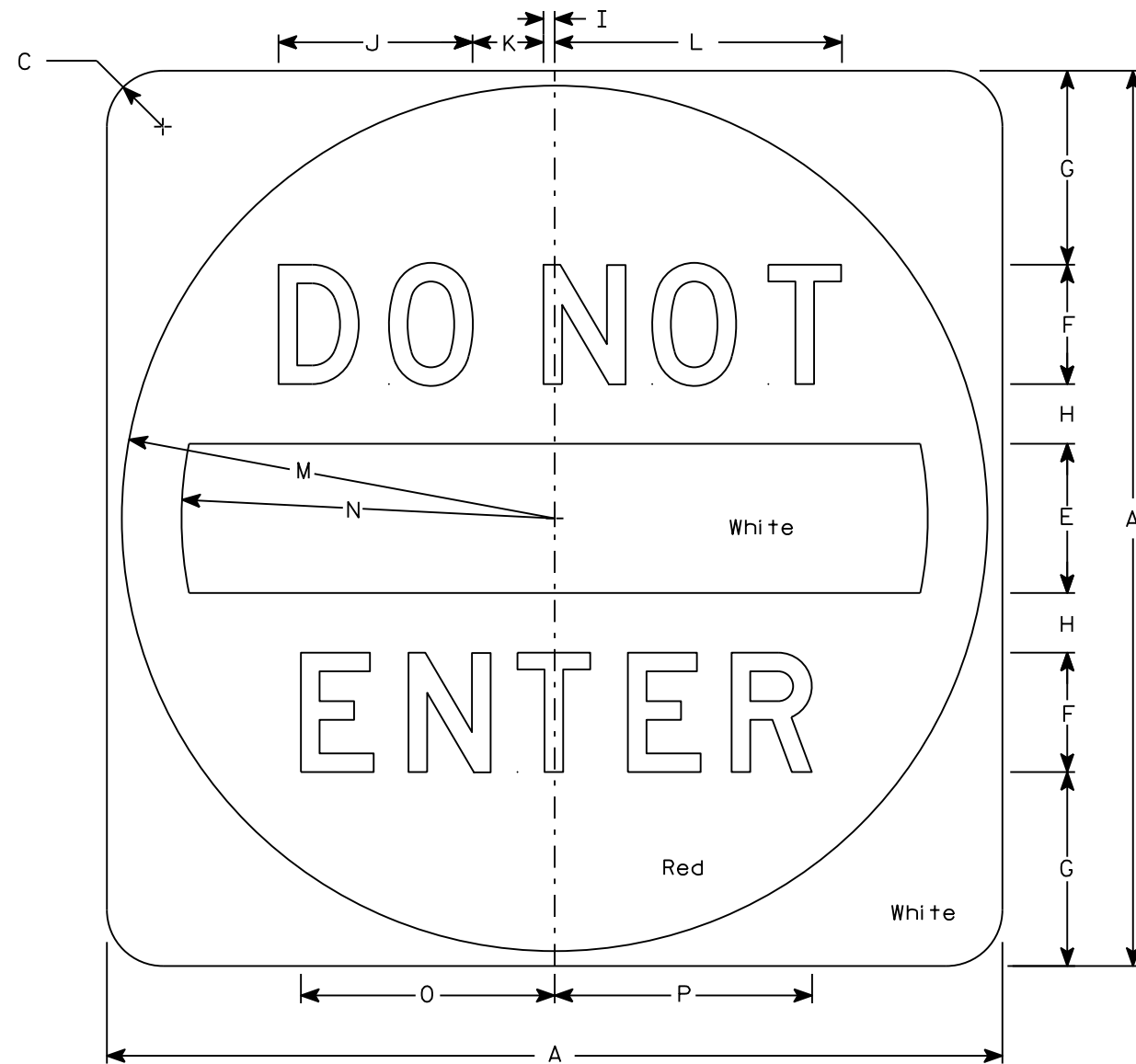
COUNTY:

SHEET NO: 189

E

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
 - Background - See detail
 - Message - White
3. Message Series - D

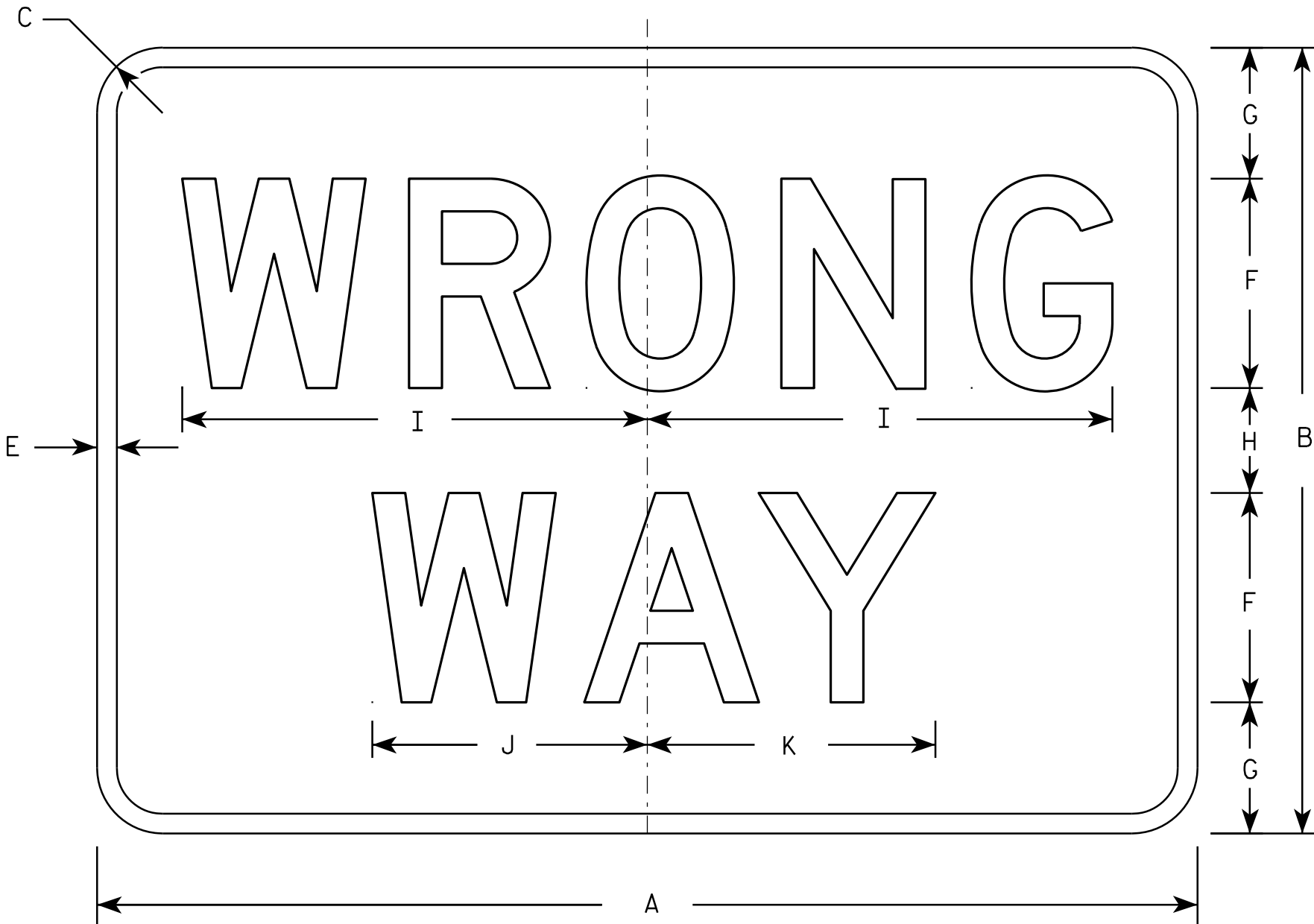


R5 - 1

[illegible]

STANDARD SIGN	
R5 - 1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<u>Matthew R Rauch</u> for State Traffic Engineer
DATE <u>3/15/18</u>	PLATE NO. <u>R5-1.16</u>

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 190	E
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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.

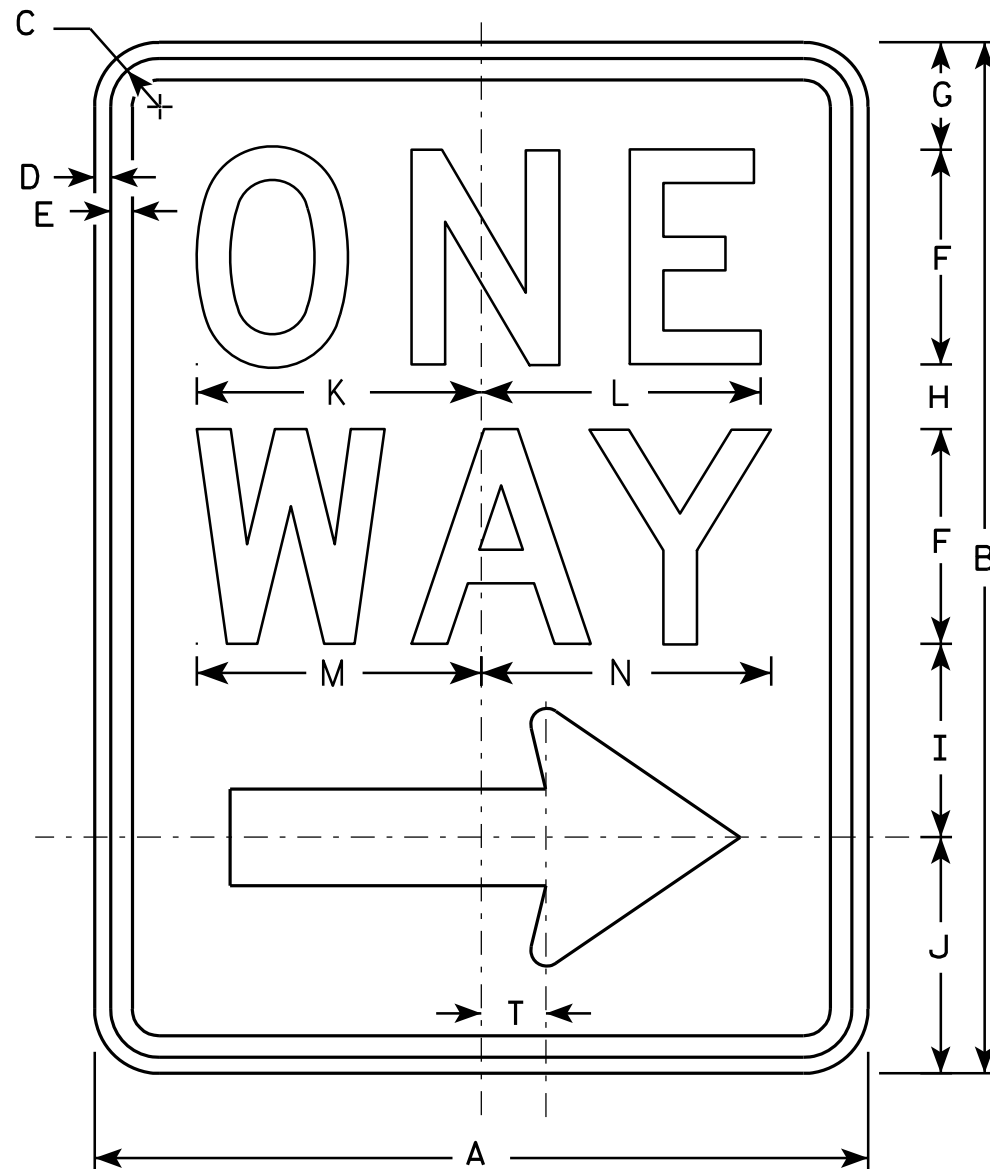
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11	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

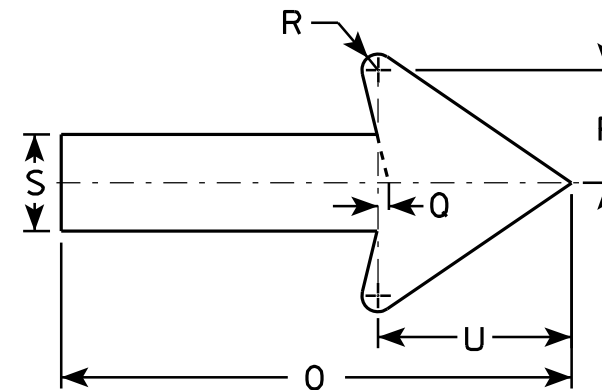
DATE 12/17/10 PLATE NO. R5-1A.2



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																										

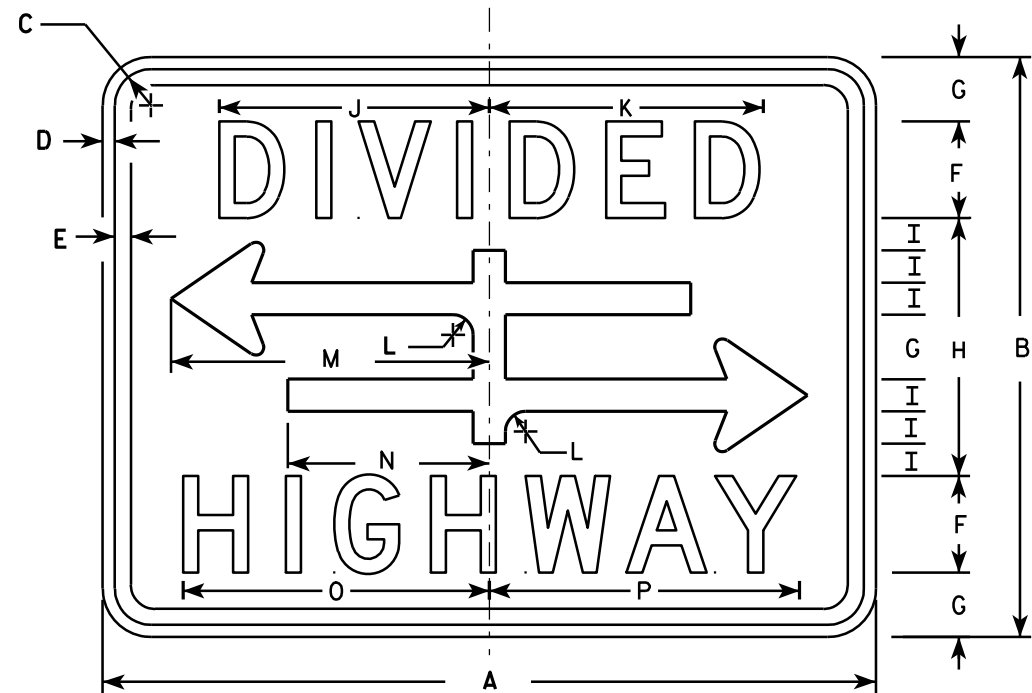
STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

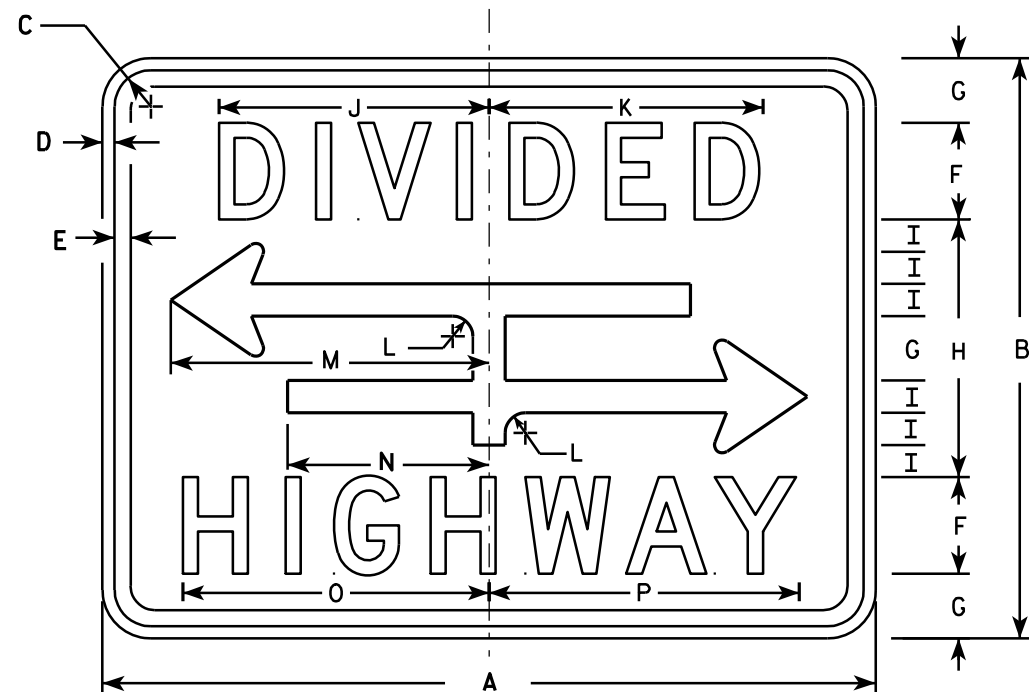
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

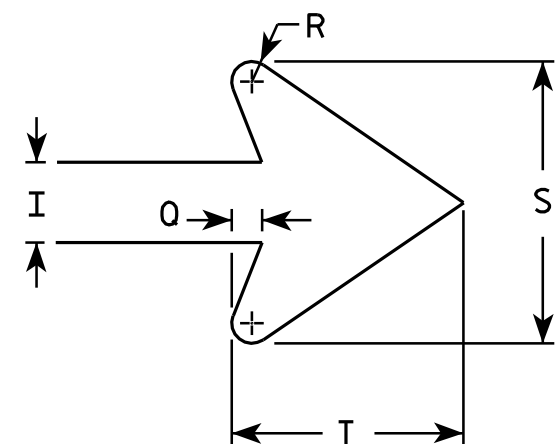
PROJECT NO: HWY: COUNTY: SHEET NO: 192



R6-3



R6-3A



ARROW DETAIL

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	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																											

PROJECT NO:

STANDARD SIGN
R6-3 & R6-3A

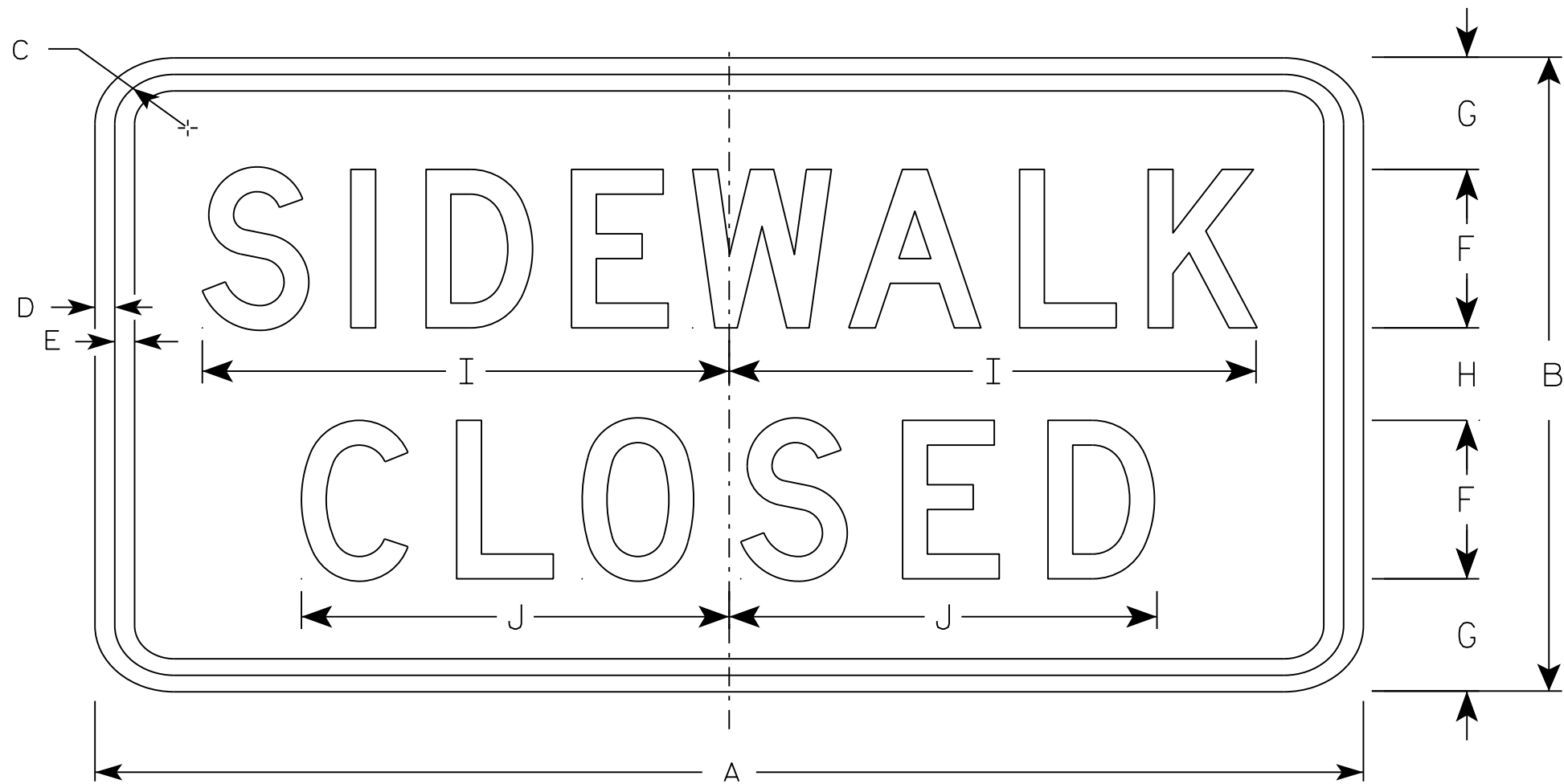
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

SHEET NO: 193

E



R9-9

NOTES

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

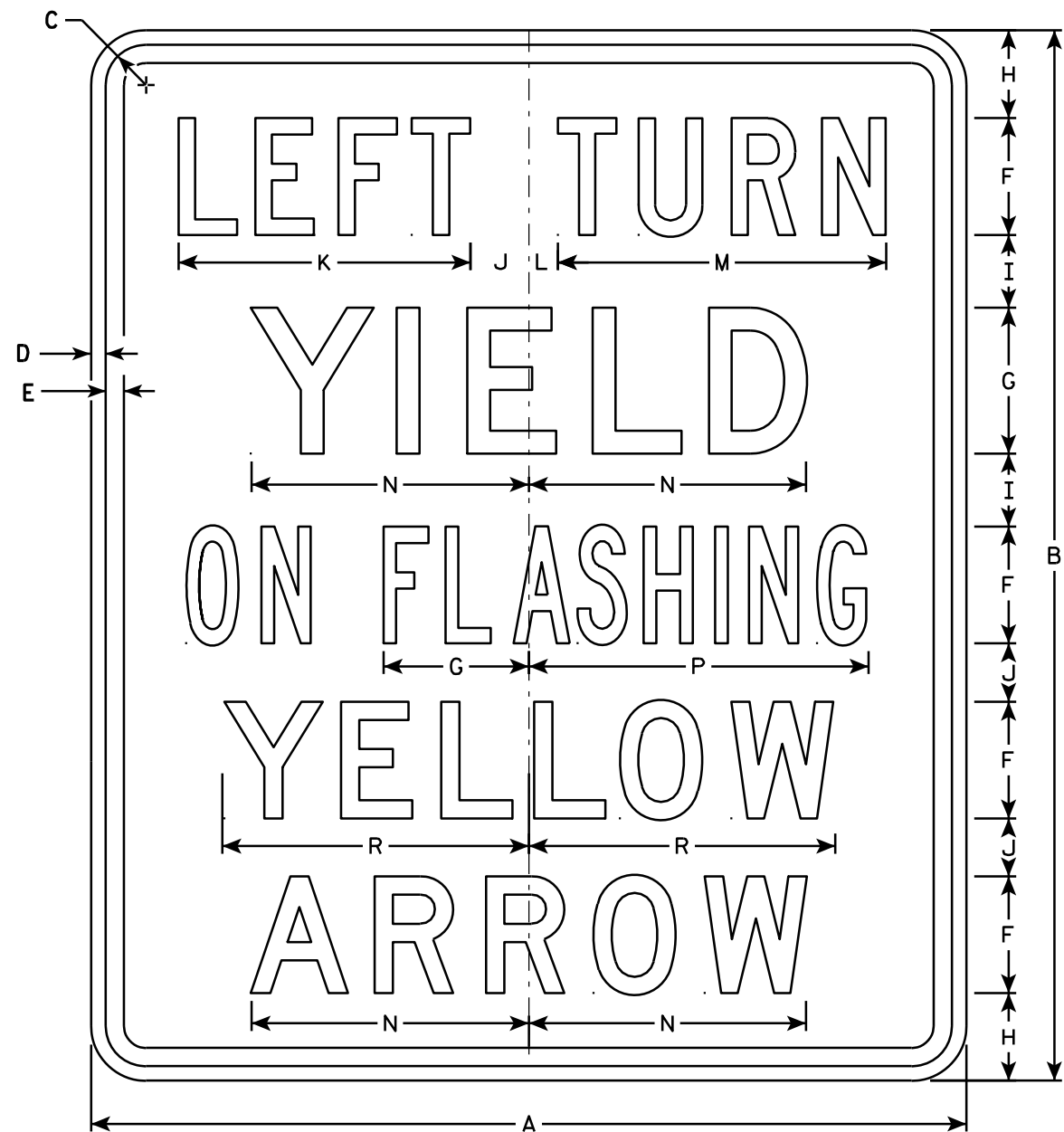
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 ¾	½	½	3	2 ⅛	1 ¾	10	8 ⅛																	2.0
2M	24	12	1 ¾	½	½	3	2 ⅛	1 ¾	10	8 ⅛																	2.0
3	30	18	1 ¾	½	½	4	3 ½	3	12 ½	10 ¼																	3.75
4																											
5																											

STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/11/16 PLATE 194 R9-9.6

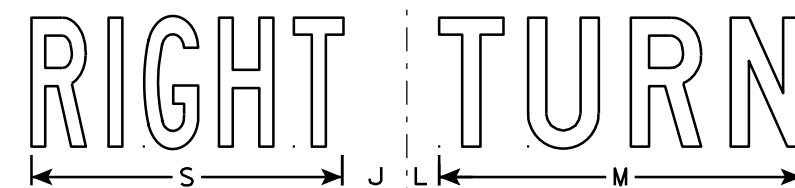


R10-50L

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 - 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 C.
Lines 2, 4 and 5 are Series D.
Line 3 is Series B.

"RIGHT" Is Series B



R10-50R

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

STANDARD SIGN R10-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 4/11/13

PLATE NO. R10-50.2

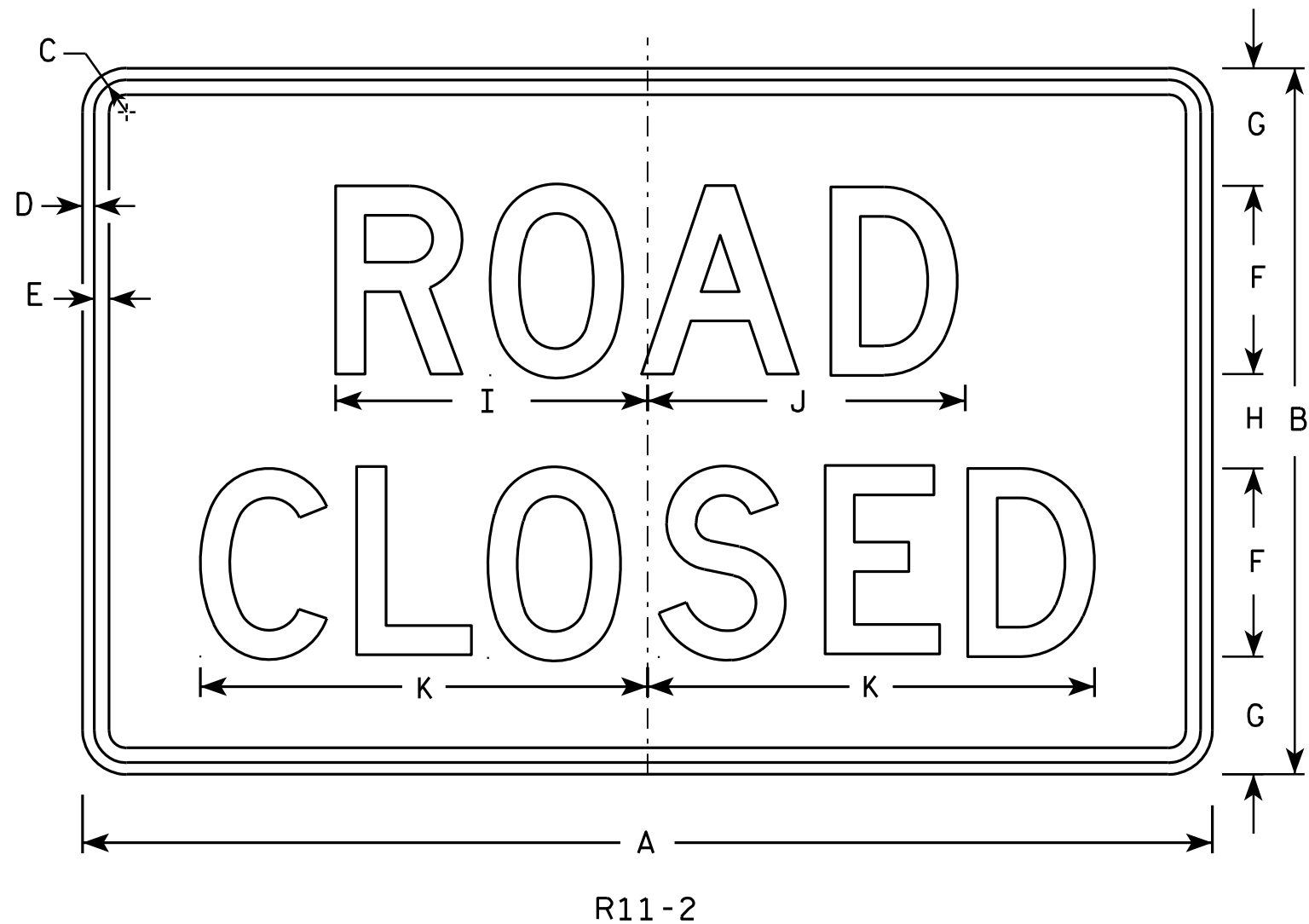
PROJECT NO:

HWY:

COUNTY:

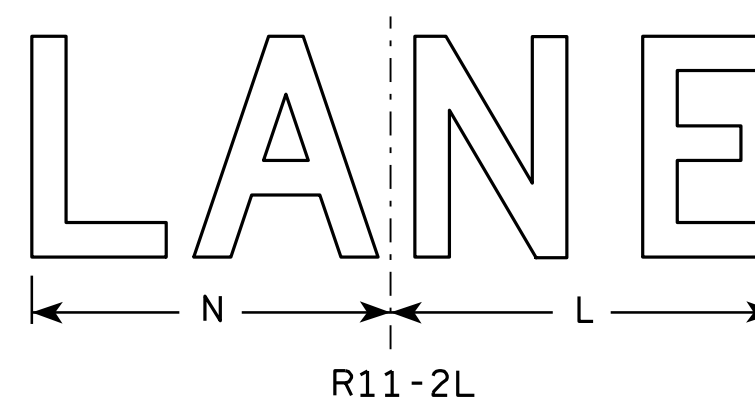
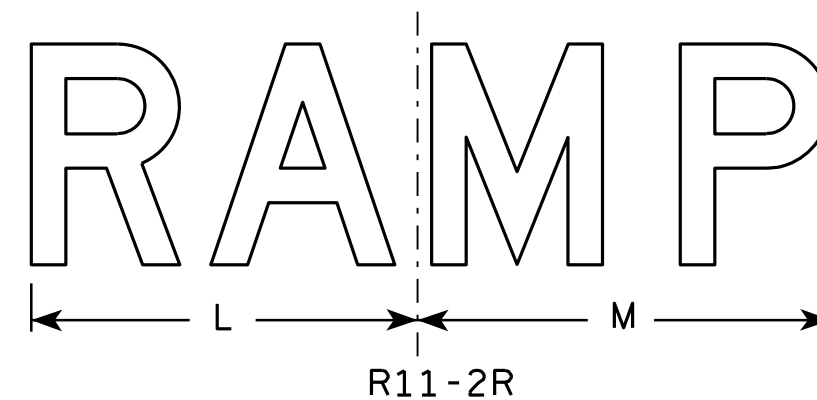
SHEET NO: 195

E



NOTES

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

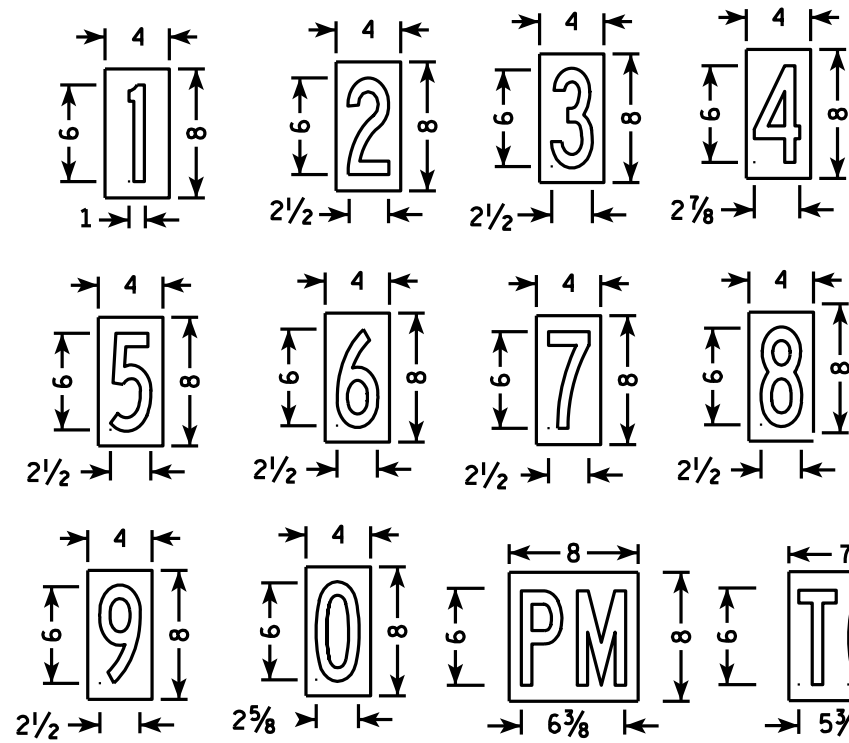
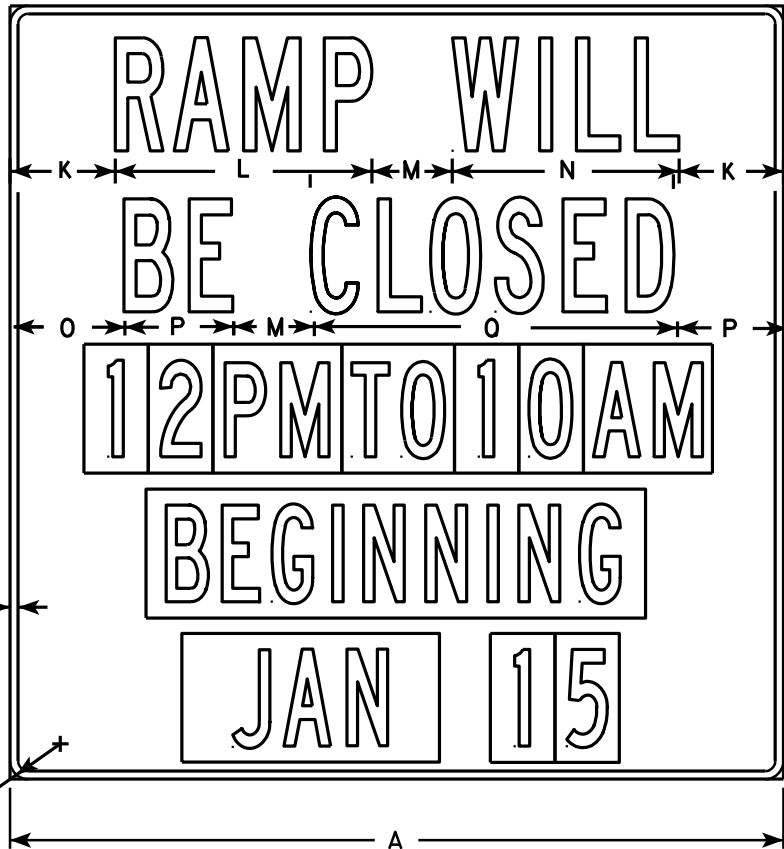


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
2M	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
3	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13				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

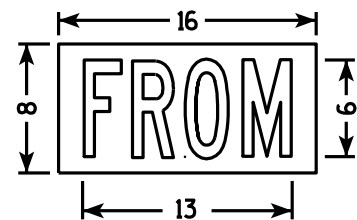
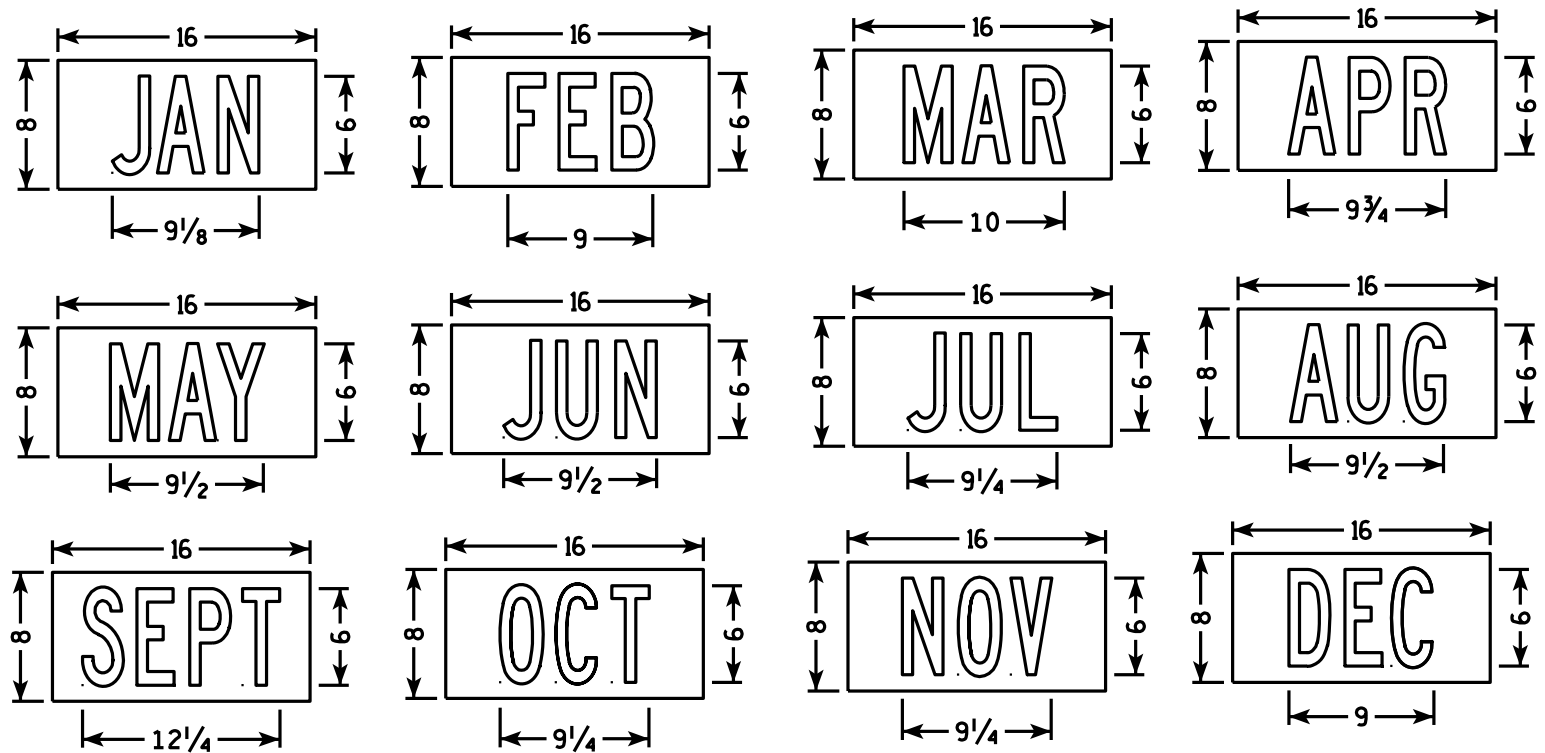
STANDARD SIGN R11-2

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 196 **E**



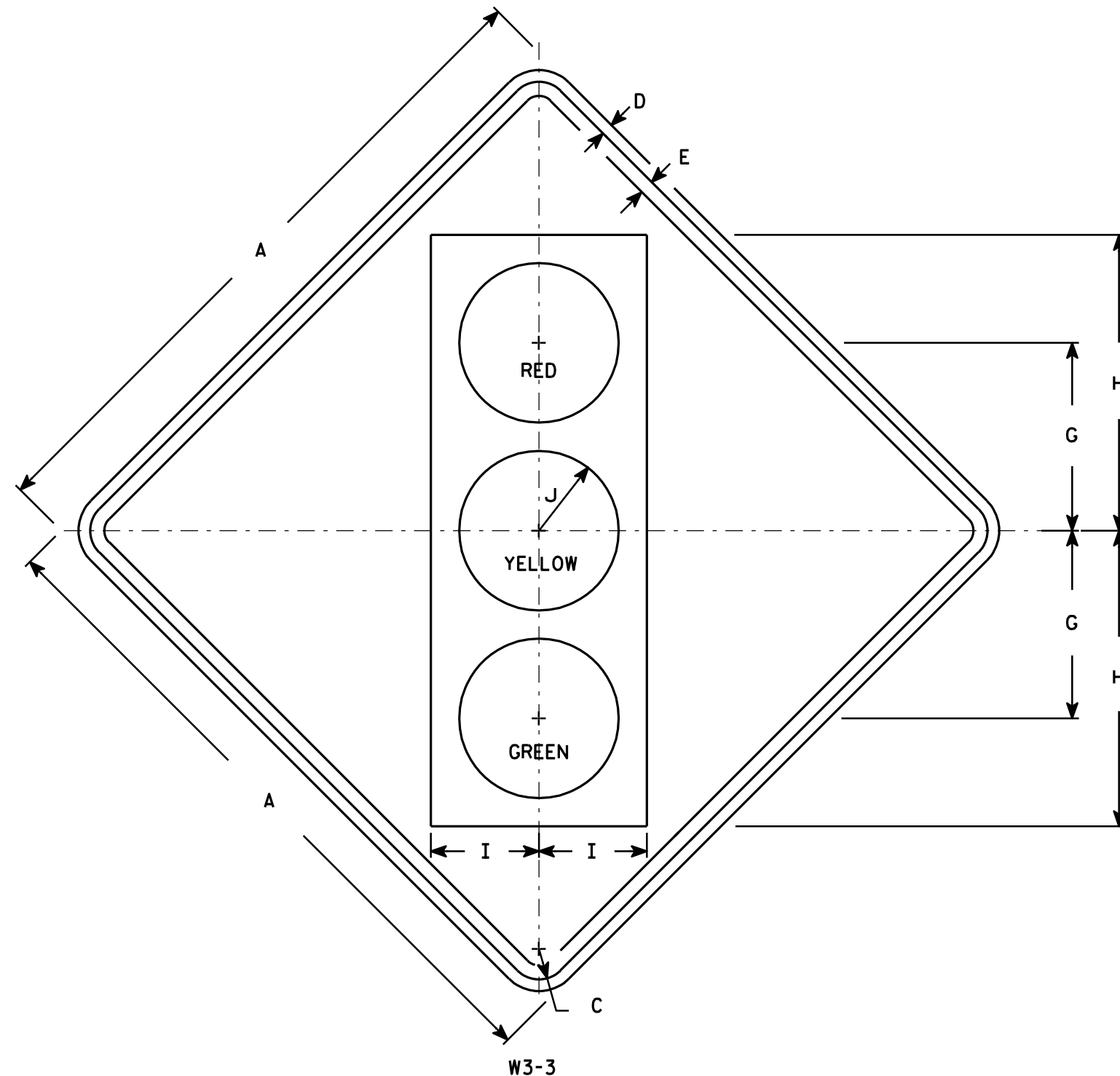
- NOTES**
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
 2. Color:
Background - White
Message - Black
 3. Message Series - B
 4. Message plaques consist of Type H Reflective sheeting with the appropriate non-reflective black message applied to .040 aluminum and screwed to the base sign.



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	1/2		2	6	7	3		6 1/2	15 7/8	5	14 1/8	6 7/8	6 3/4	22 1/2										16.0
2M	48		2 1/4	1/2		2	6	7	3		6 1/2	15 7/8	5	14 1/8	6 7/8	6 3/4	22 1/2										16.0
3																											
4																											
5																											

STANDARD SIGN R11-51	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/1/11	PLATE NO. R11-51.4

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 197	E
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NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Yellow
Message - See Note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- Symbol and border are non-reflective black.
Top circle - Type H Reflectorized Red
Center circle - Same as background
Bottom circle - Type H Reflectorized Green

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

STANDARD SIGN W3-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 6/7/10

PLATE NO. W3-3.11

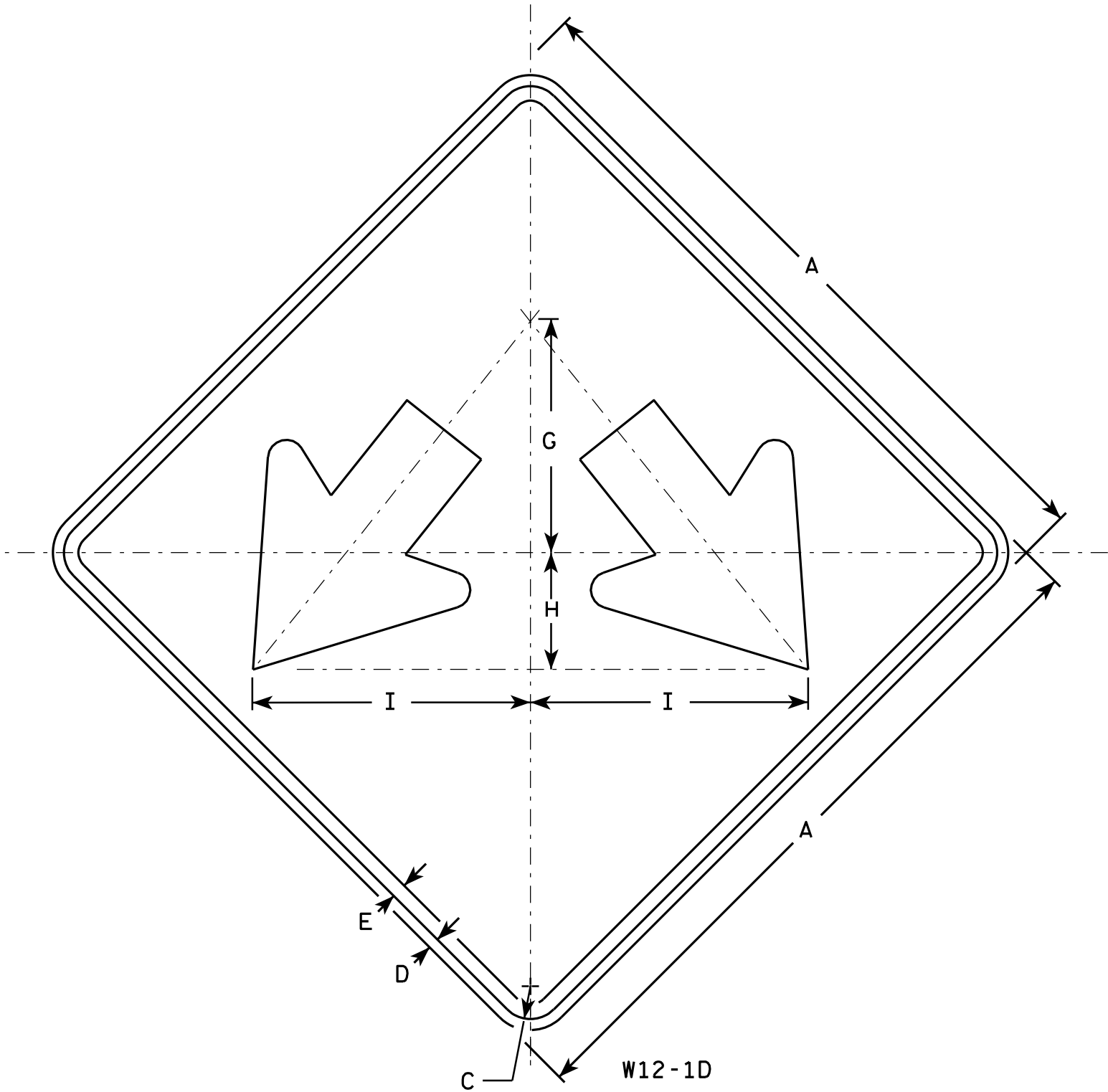
PROJECT NO:

HWY:

COUNTY:

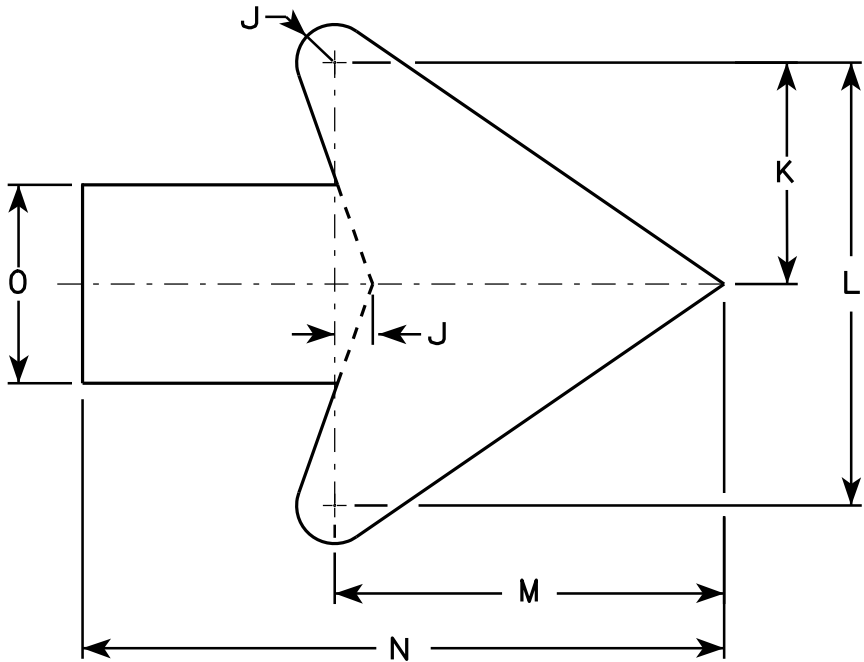
SHEET NO: 198

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

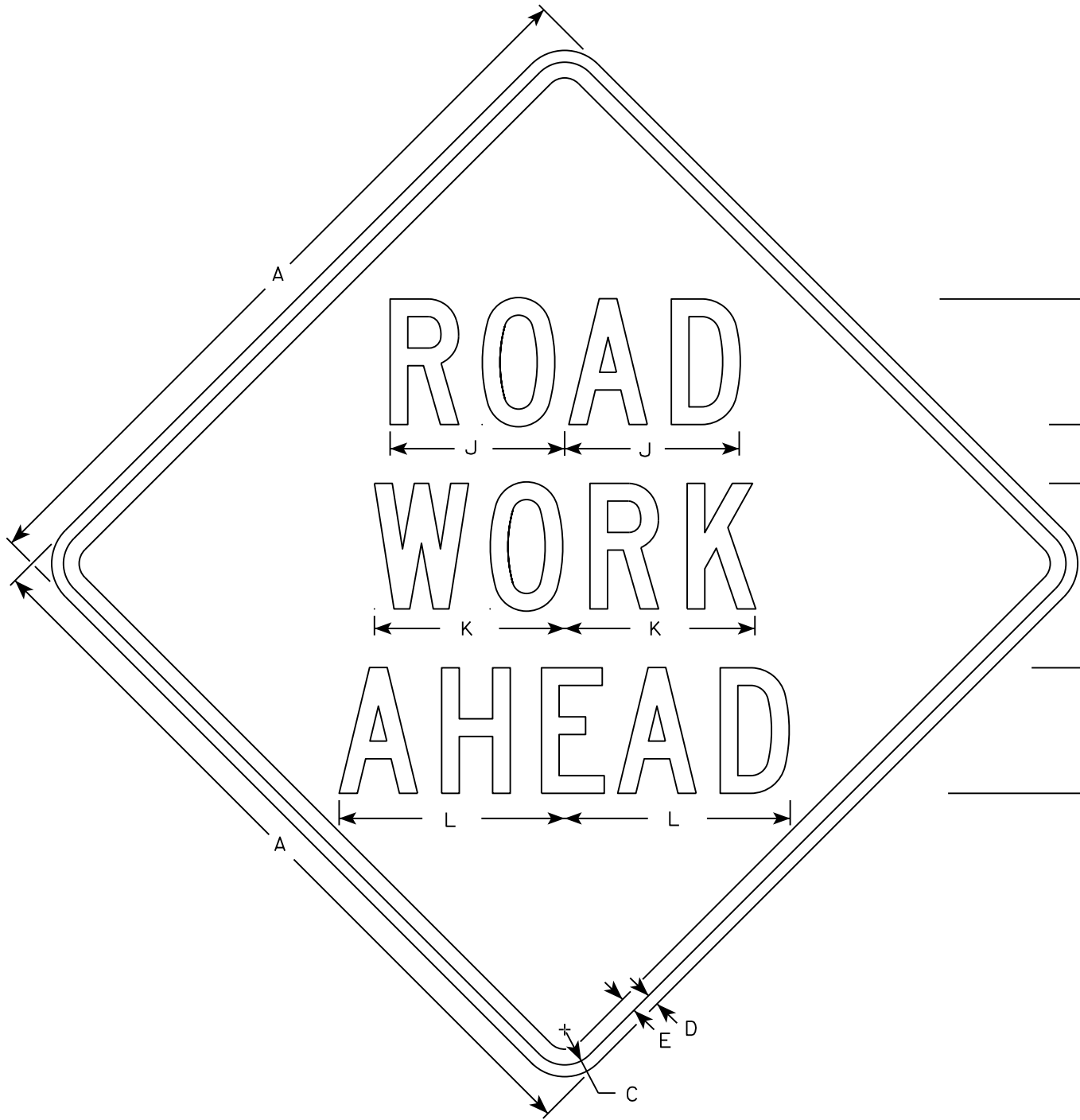
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
2M	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
3	30		1 3/8	1/2	5/8		10	5	11 7/8	3/4	4 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

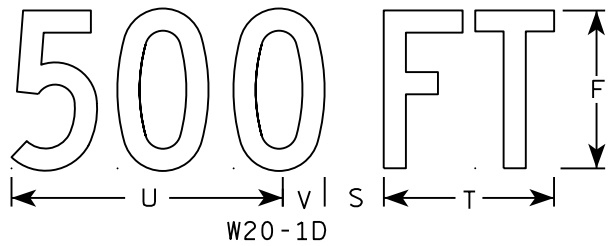
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

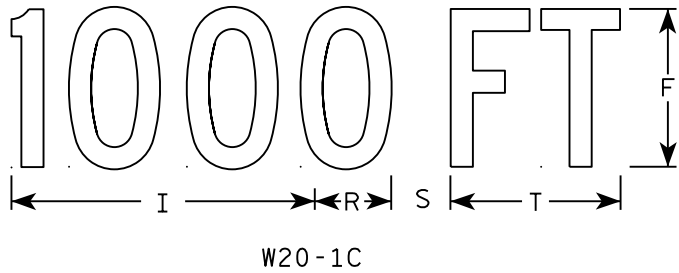
DATE 3/13/13 PLATE NO. W12-1D.15



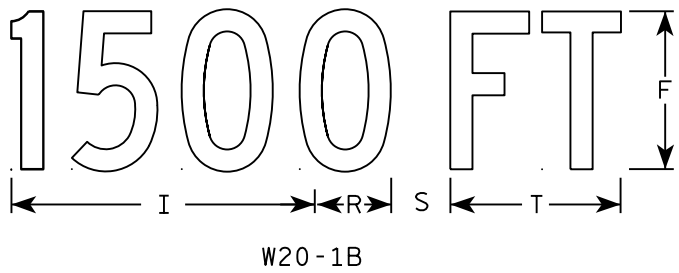
W20-1A



W20-1D



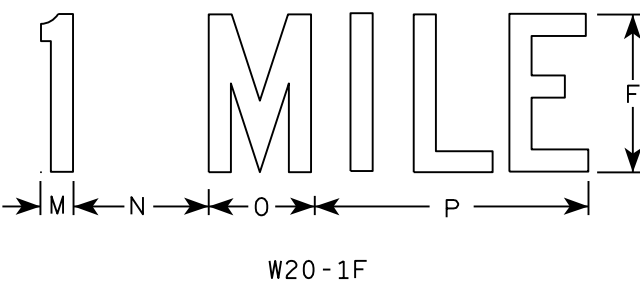
W20-1C



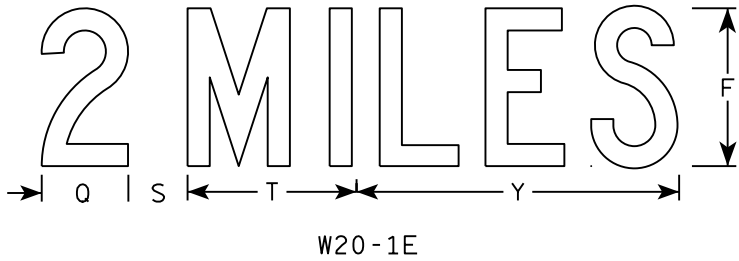
W20-1B



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.

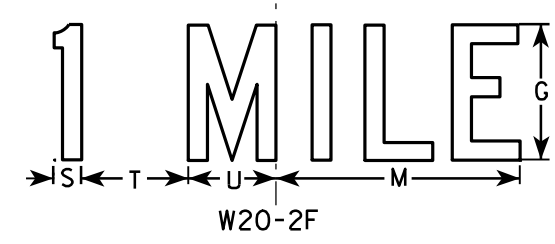
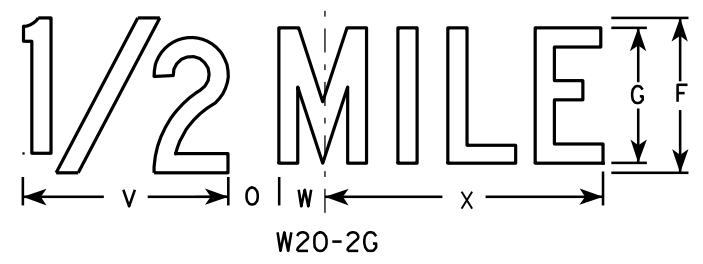
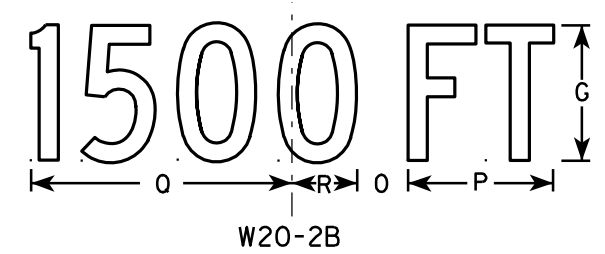
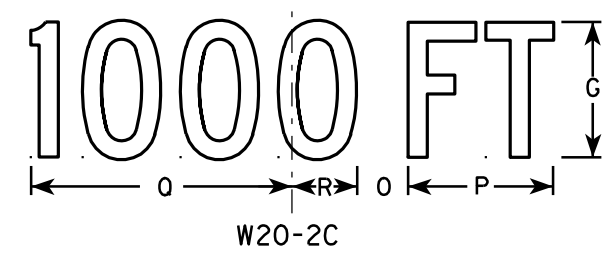
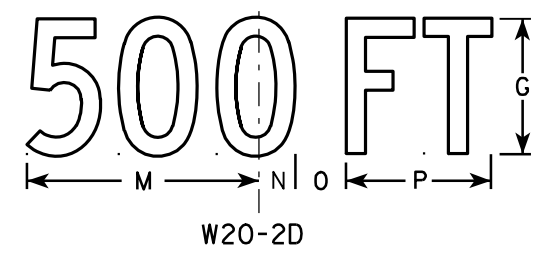
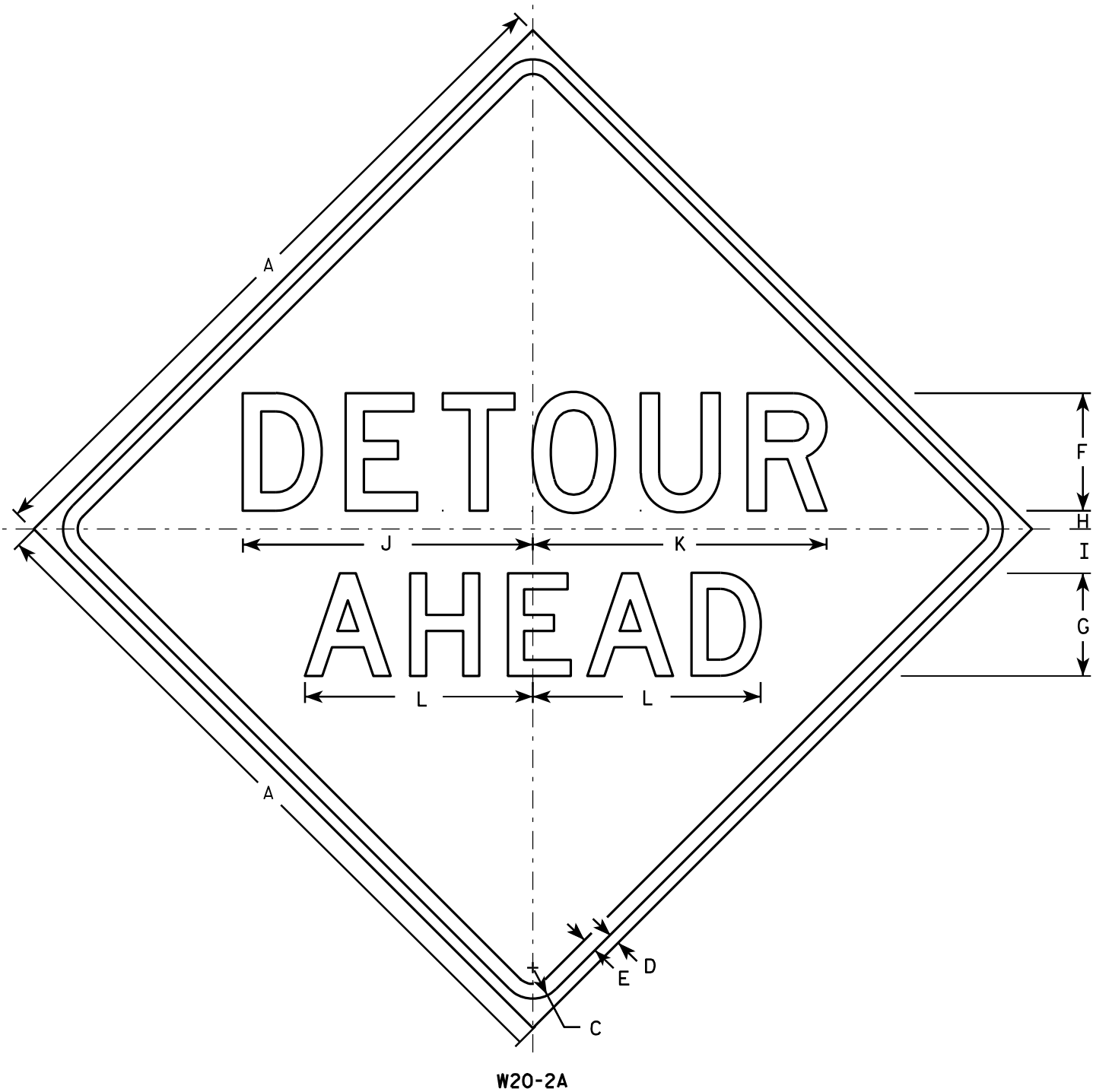
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 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
200



NOTES

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

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

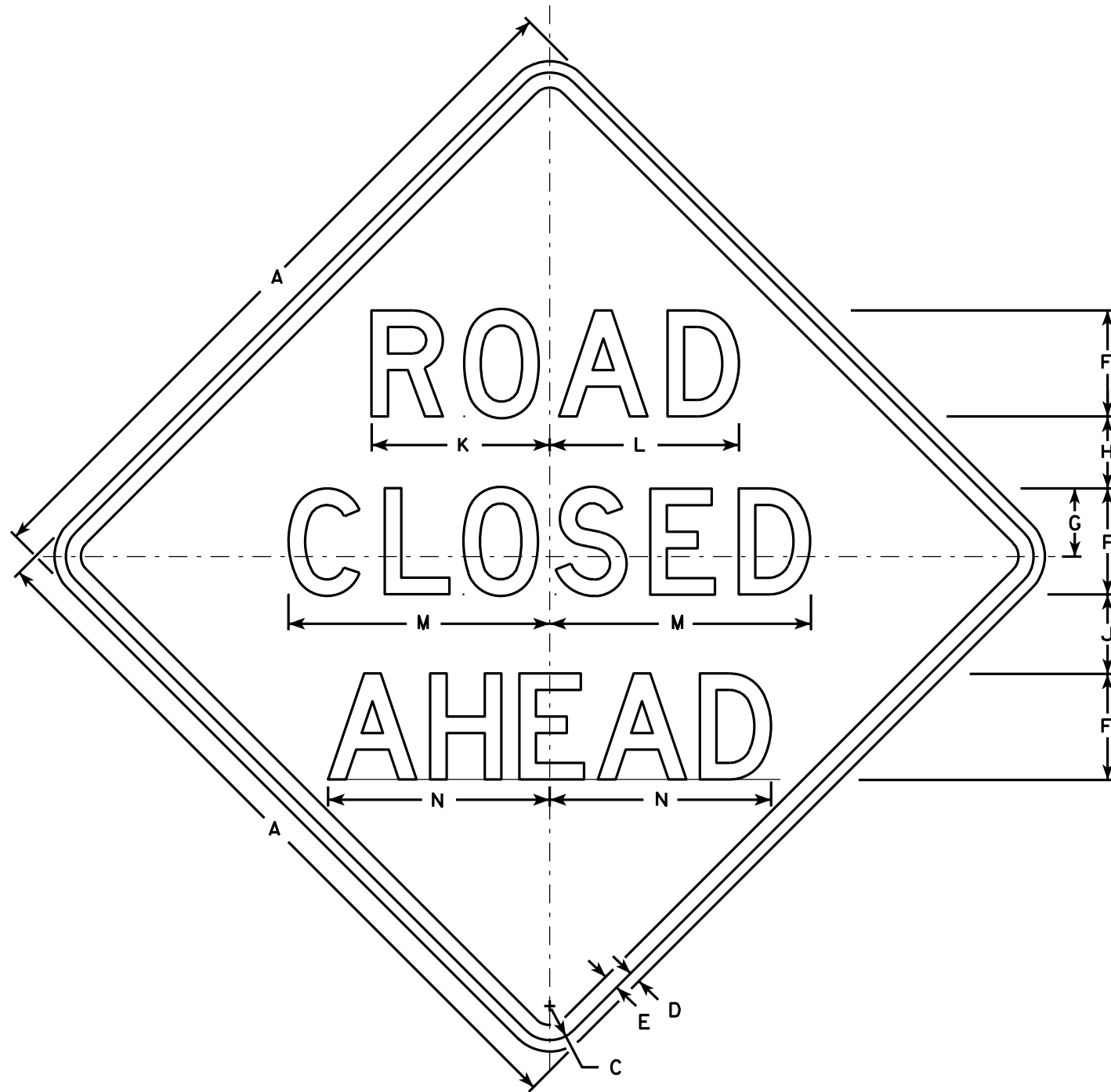
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 201

E



W20-3A

500 FT

W20-3D

1000 FT

W20-3C

1500 FT

W20-3B

1/2 MILE

W20-3G

1 MILE

W20-3F

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. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

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

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 202

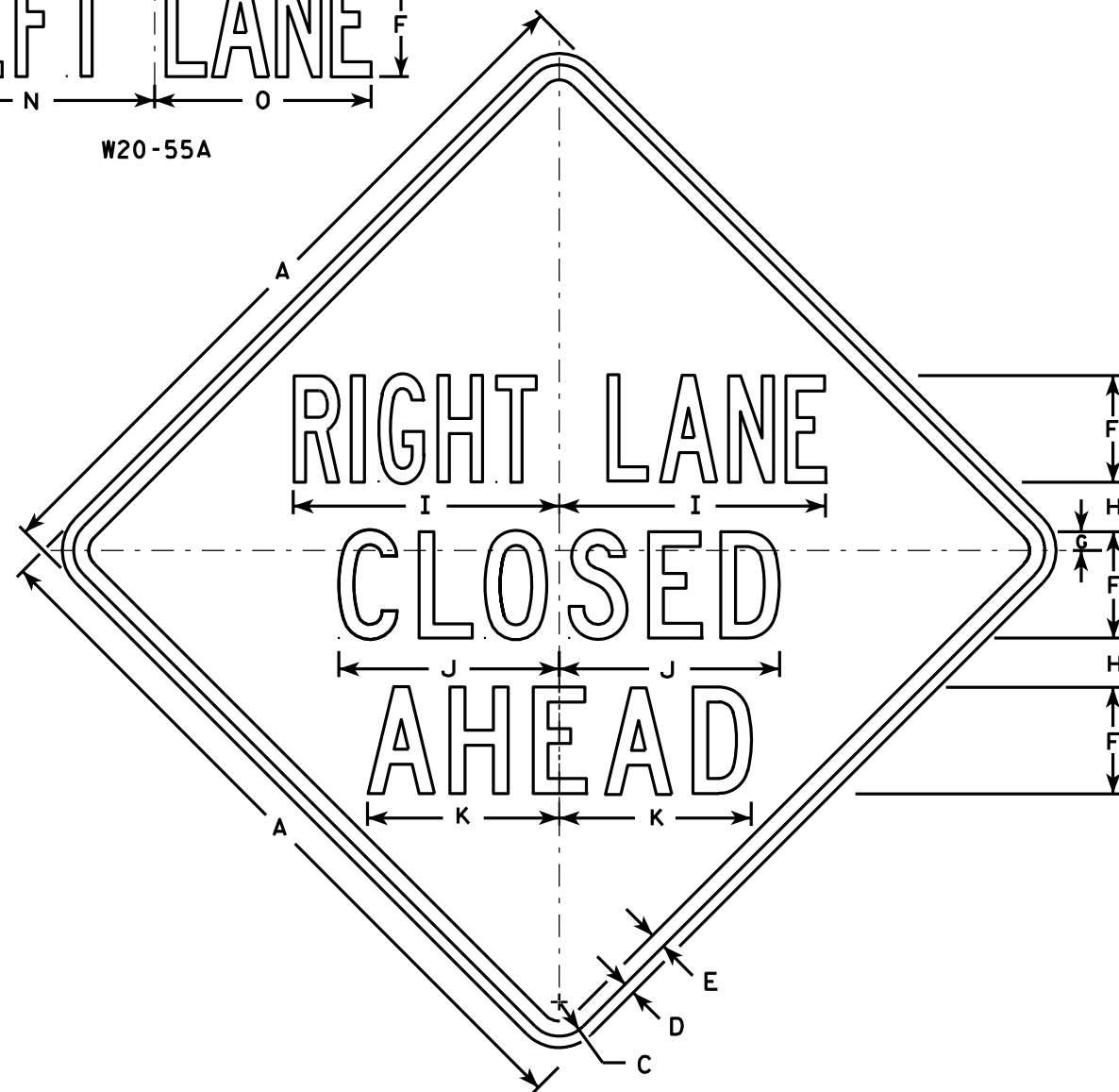
E

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:

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

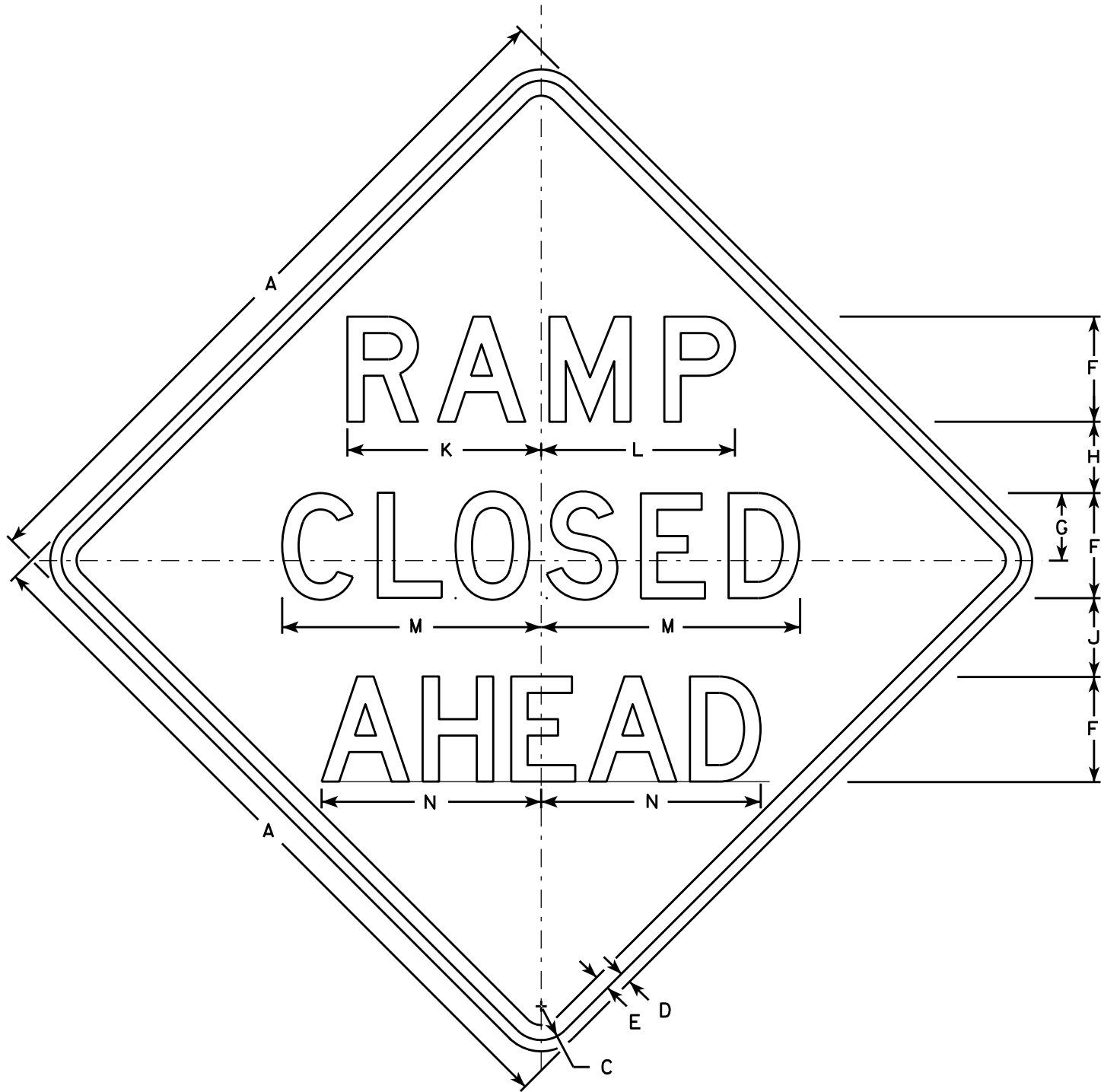
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

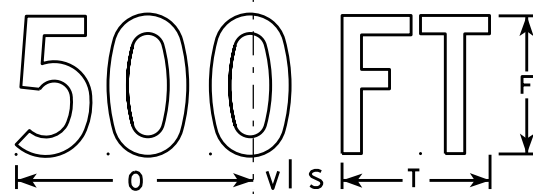
DATE 3/18/11 PLATE NO. W20-5.11

SHEET NO: 203

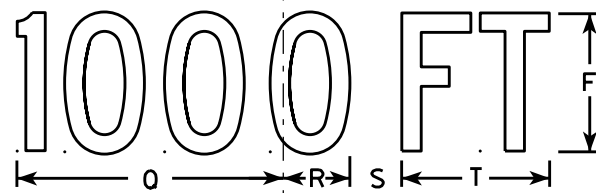
E



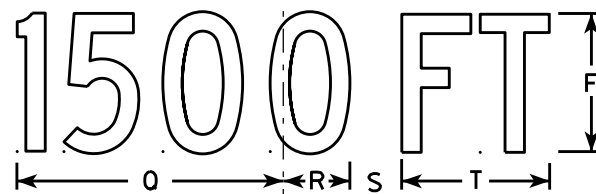
W20-53A



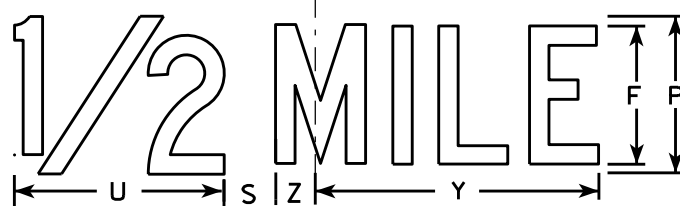
W20-53D



W20-53C



W20-53B



W20-53G



W20-53F

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. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

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

STANDARD SIGN
W20-53A,B,C,D,F,G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/27/15 PLATE NO. W20-53.1

204

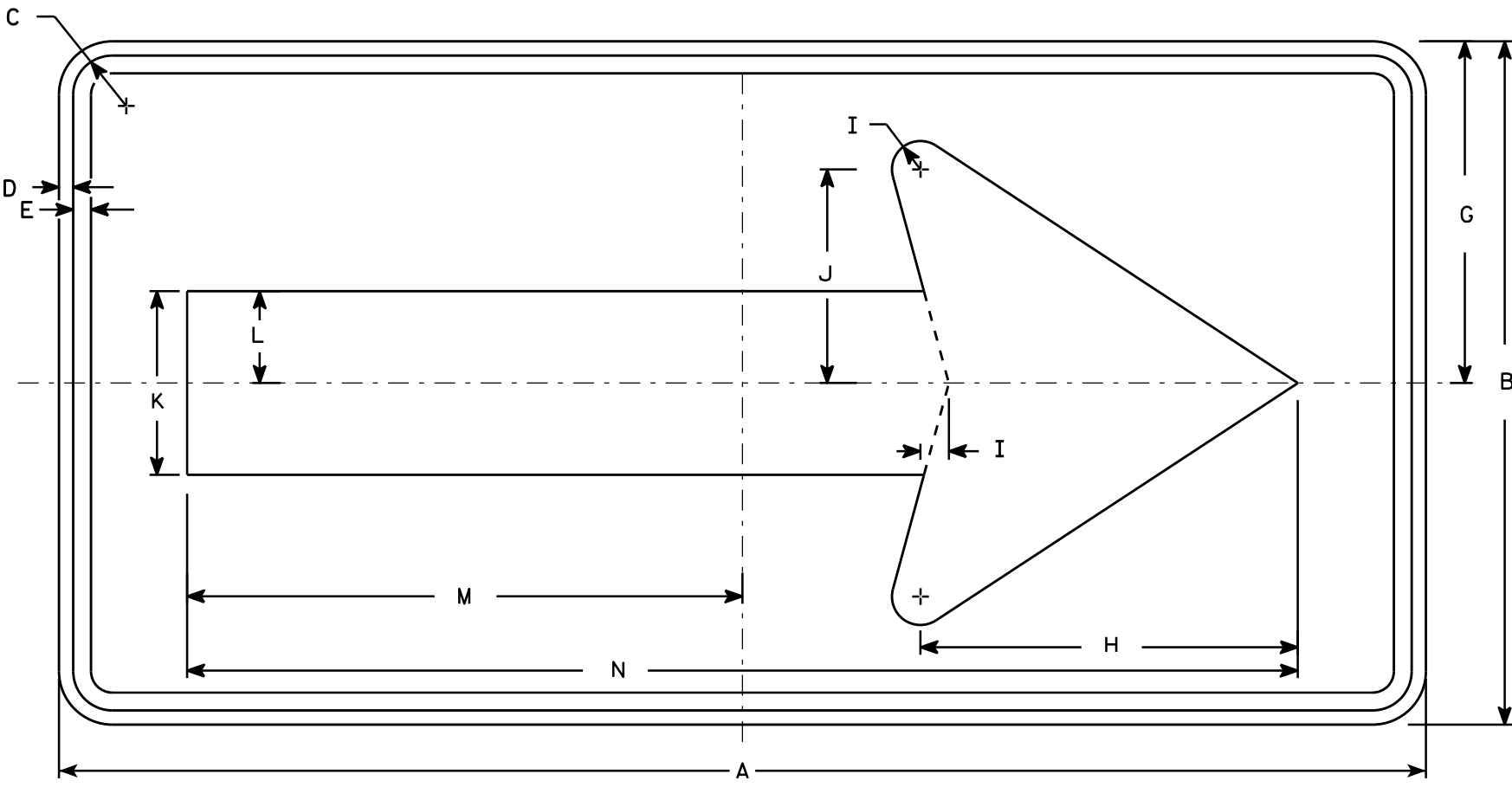
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



W01-6

NOTES

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

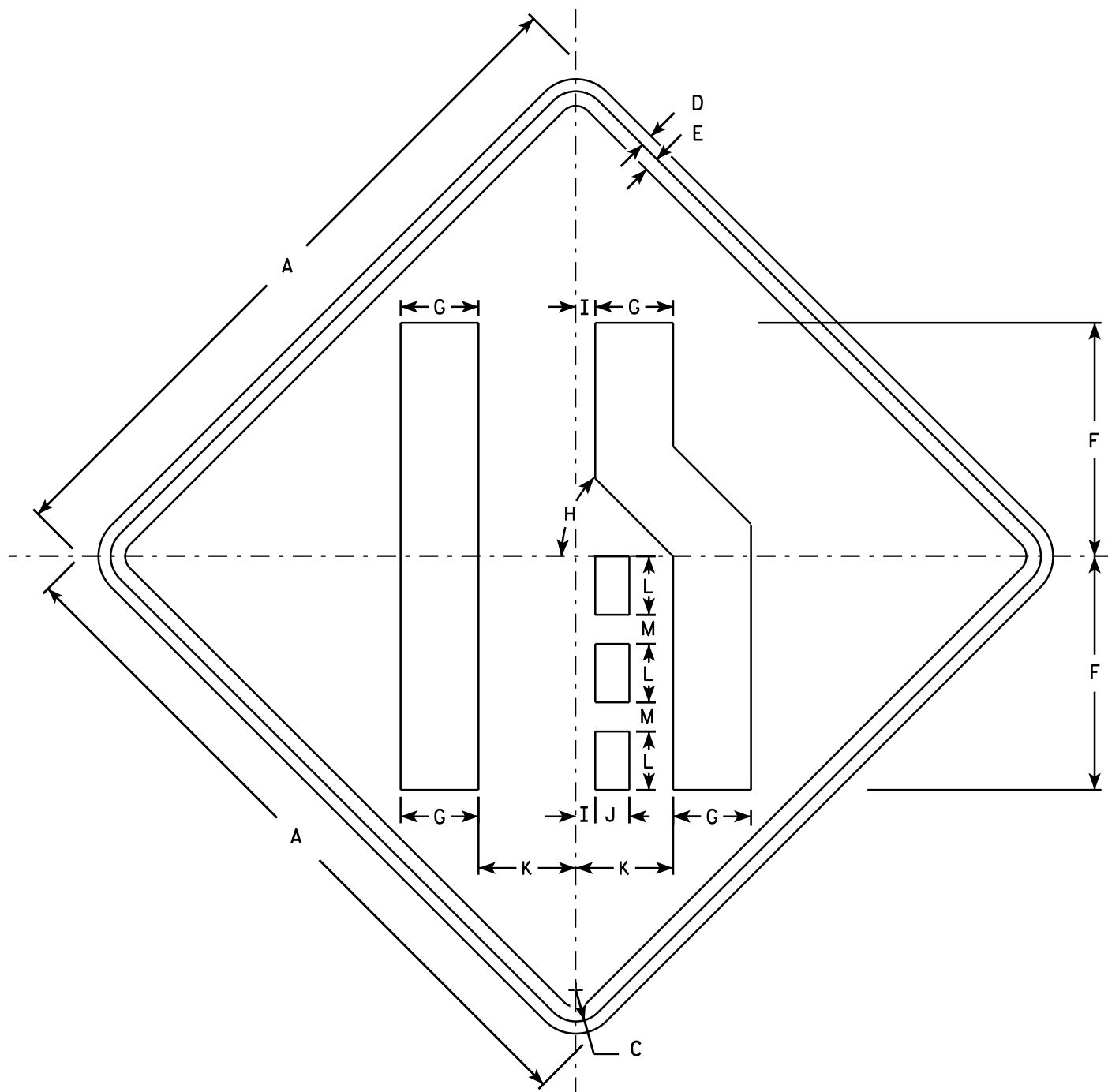
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4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

STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. 205 W01-6.1



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.

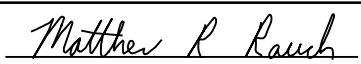
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5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

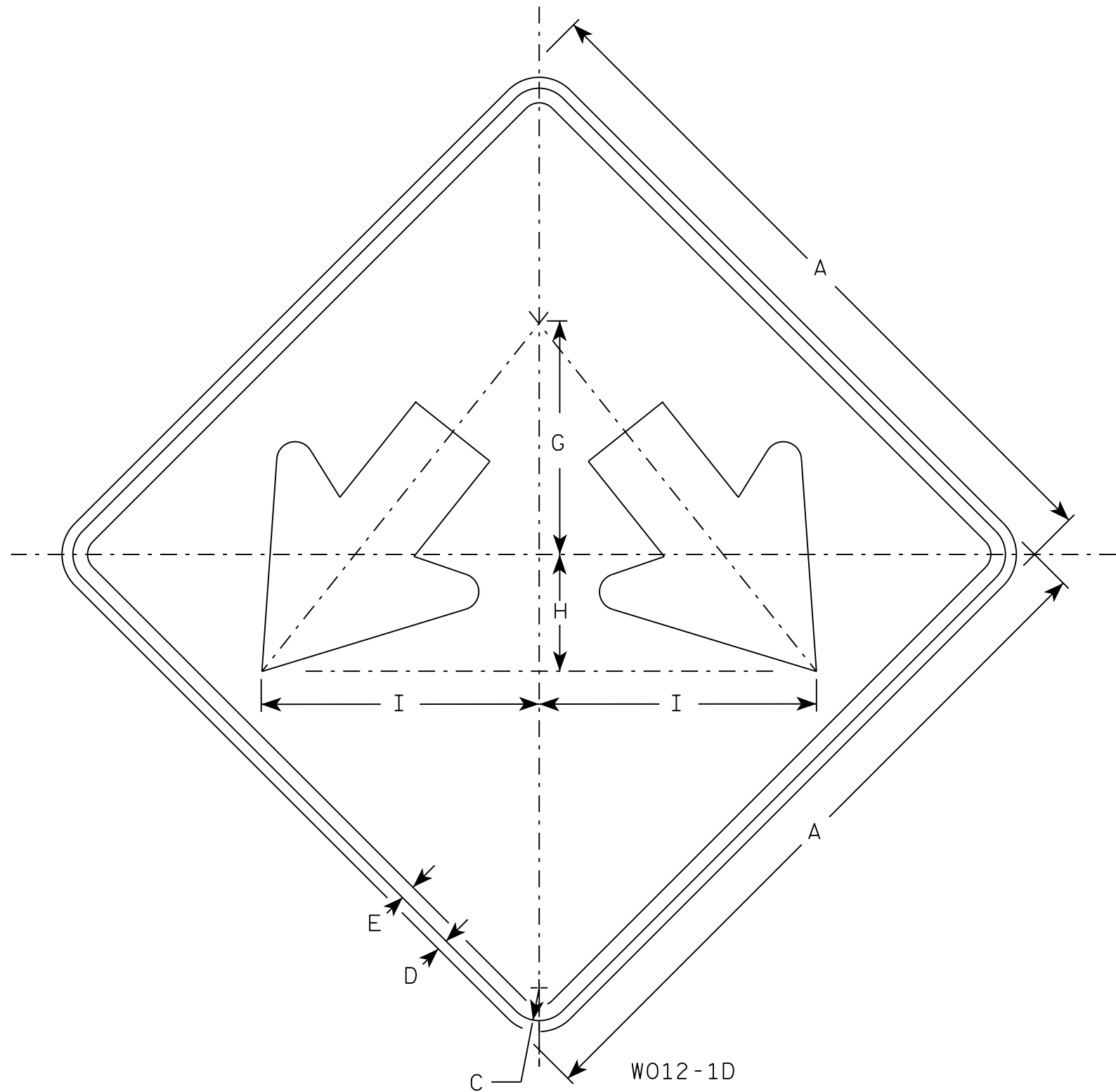


For State Traffic Engineer

DATE 11/20/13

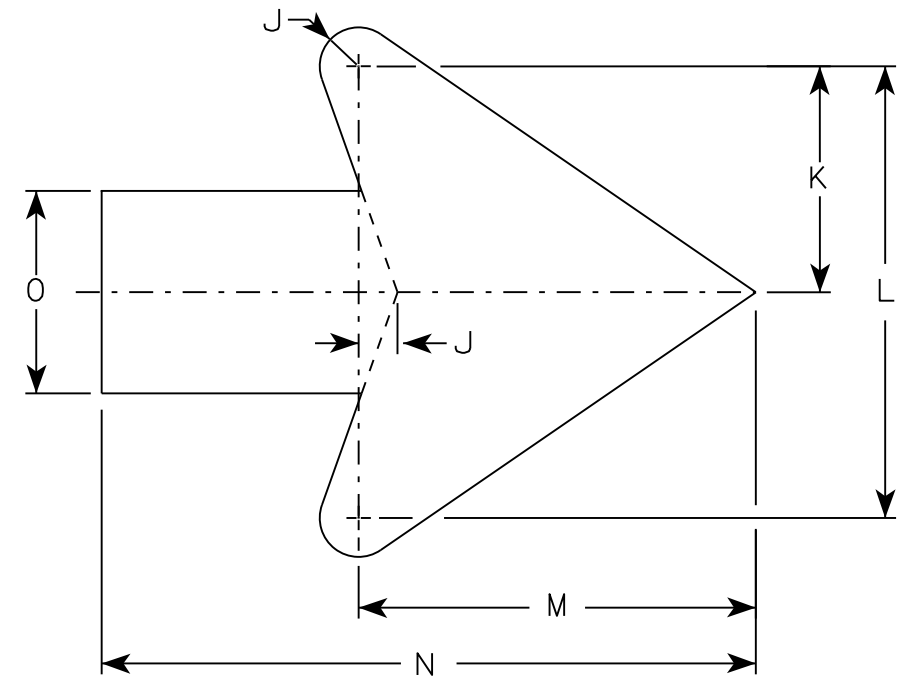
PLATE 206

W04-2.1



NOTES

- 1. Sign is Type II - Type F Reflective
- 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.



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		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
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	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

STANDARD SIGN
W012-1D

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/28/16 PLATE NO. W012-1D.2
207

DESIGN DATA

LIVE LOAD
DESIGN LOADING: HS20
INVENTORY RATING: HS16
OPERATING RATING: HS26
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 210 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY OVERLAY DECKS.....f'c = 4,000 psi
BAR STEEL REINFORCEMENT.....fy = 60,000 psi

TRAFFIC DATA

W. BELOIT ROAD / CTH T

EXISTING A.D.T. = 16,800 (2012)
FUTURE A.D.T. = 19,000 (2031)
R.D.S = 40 MPH

IH 41 / IH 894 / USH 45

EXISTING A.D.T. = 119,900 (2013)
FUTURE A.D.T. = 128,500 (2031)
R.D.S = 60 MPH

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTION, GENERAL NOTES & QUANTITIES
3. CONSTRUCTION STAGING
4. EXPANSION JOINT (1 OF 3)
5. EXPANSION JOINT (2 OF 3)
6. EXPANSION JOINT (3 OF 3)
7. EXPANSION BEARINGS
8. COMPRESSION SEAL JOINT & REPAIR DETAILS
9. GALVANIC ANODES
10. DECK REHABILITATION AREAS (1 OF 2)
11. DECK REHABILITATION AREAS (2 OF 2)
12. HINGED JOINT REHABILITATION

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
RANDY THOMAS (414) 847-0447

LEGEND

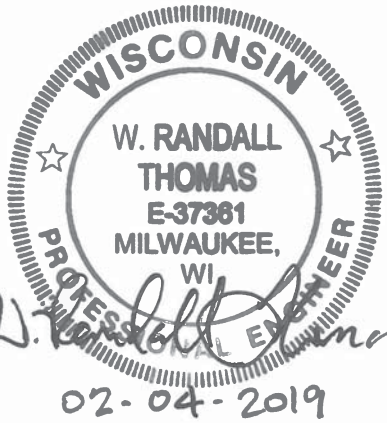
- TRAFFIC DIRECTION
- MIN. CLEARANCE FROM PROJECT 1100-34-70 AS-BUILTS UPDATED: 10/2/2018
- * CURB REPAIR, SEE DETAIL, SHEET 8
- ** CONCRETE SURFACE REPAIR ON PARAPET, SEE DETAIL, SHEET 8
- *** FOR END OF COVER PLATE INSPECTION AND TESTING DETAIL, SEE SHEET 12

PLAN

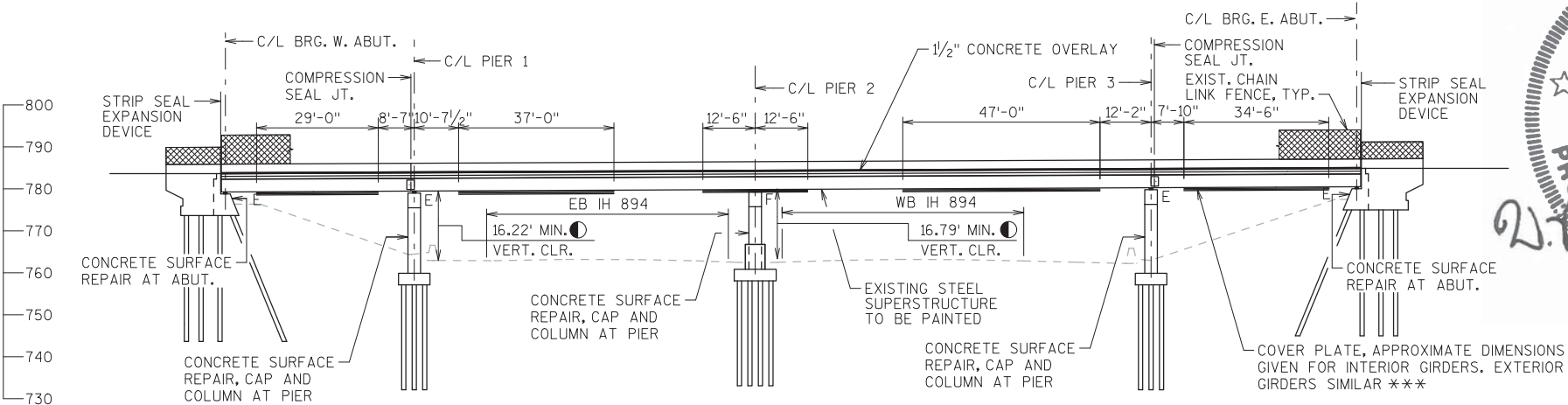
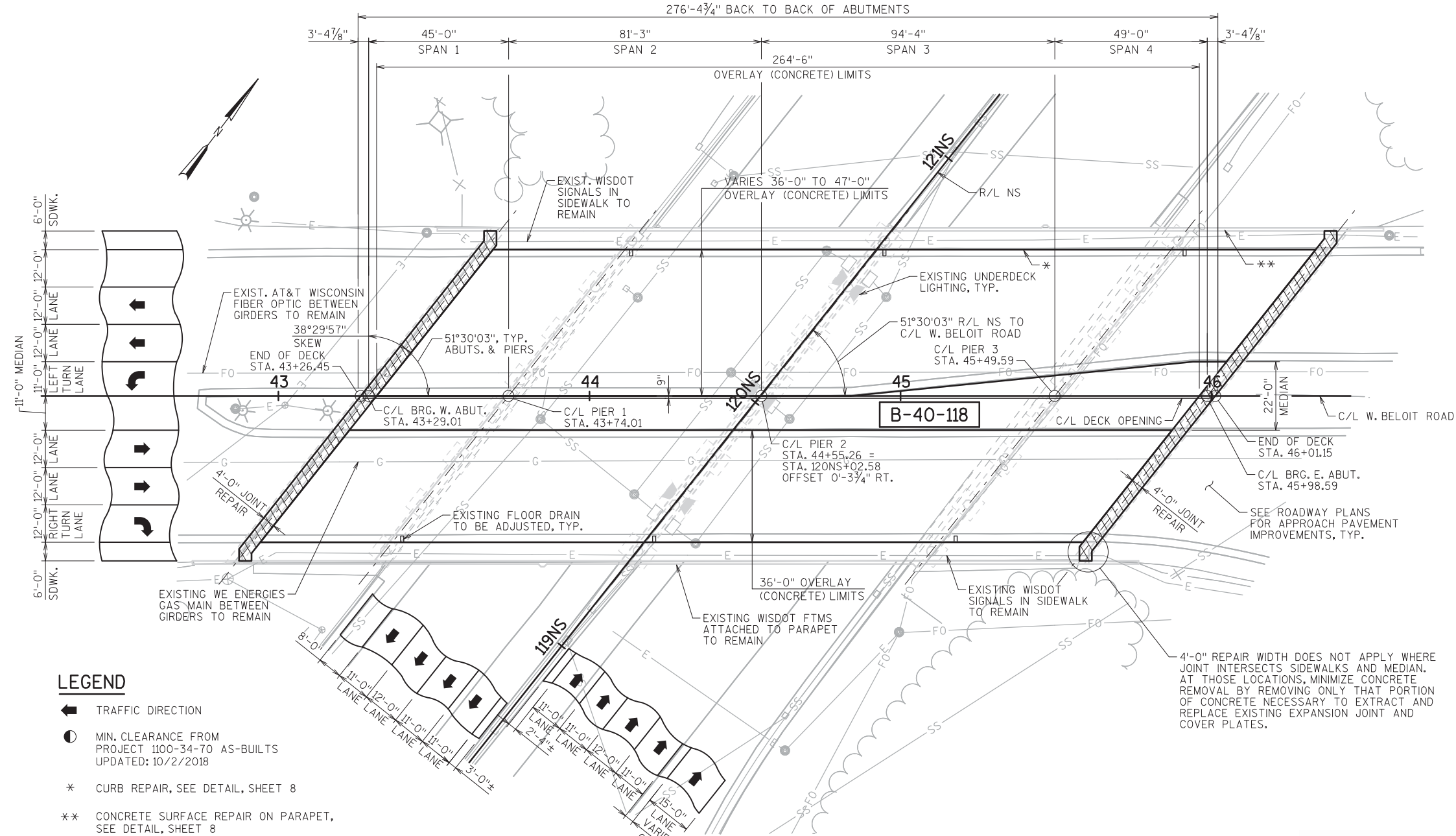
CONCRETE OVERLAY OF 4-SPAN STEEL ROLLED BEAM BRIDGE

ELEVATION

LOOKING NORTH



NO.	DATE	REVISION	BY
FORWARD 45			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <i>William C. Dreher</i> SDR		02/05/19 DATE	
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-40-118			
CTH T/W. BELOIT ROAD OVER IH 894/USH 45			
COUNTY	MILWAUKEE	TOWN/CITY/VILLAGE	GREENFIELD
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	BKS	DESIGN CK'D.	WRT
DRAWN BY	TEK	PLANS CK'D.	BKS
GENERAL PLAN & ELEVATION			SHEET 1 OF 12
			208



GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED. ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

DIMENSIONS SHOWN ARE BASED ON THE EXISTING STRUCTURE PLANS.

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER BID ITEM "CLEANING DECKS".

PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL-DEPTH DECK REPAIR AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY OR JOINT REPAIRS AT THE ABUTMENTS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON THE MINIMUM OVERLAY THICKNESS OF 1 1/2" PLACED ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION. EXPECTED AVERAGE OVERLAY THICKNESS IS 2". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN 1/2", CONTACT THE STRUCTURES DESIGN SECTION.

CLEAN AND PAINT ALL EXPOSED STEEL SUPERSTRUCTURE SURFACES UNDERNEATH THE BRIDGE DECK. THE SURFACES INCLUDE GIRDERS, DIAPHRAGMS, CONNECTIONS, BEARINGS AT PIER 2, AND PIN ASSEMBLIES. CLEAN TOP OF TOP FLANGE AND TOP OF END DIAPHRAGM IN JOINT REPAIR AREAS. ALL CLEANING AND PAINTING TO BE PAID FOR AS "STRUCTURE REPAINTING RECYCLED ABRASIVE B-40-118". PAINT APPLICATIONS ON BEARINGS SHALL BE BRUSHED ON.

EXISTING STEEL SUPERSTRUCTURE SHALL BE PAINTED A COLOR TO MATCH SHERWIN WILLIAMS COLOR "SW6523".

REPAIR A 10'-0" SECTION OF EXISTING TOP RAIL OF CHAIN LINK FENCE LOCATED ON THE SOUTH PARAPET IN SPAN 3. THIS WORK IS PAID FOR UNDER BID ITEM "FENCE REPAIR".

REPAIR EXISTING UTILITY BLOCKOUT LOCATED IN THE EAST ABUTMENT AND WEST ABUTMENT BACKWALL BETWEEN GIRDERS 1 & 2. THIS WORK IS PAID FOR UNDER BID ITEM "ABUTMENT BACKWALL REPAIR".

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

"PROTECTIVE SURFACE TREATMENT" SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY, TOP OF JOINT REPAIR AREAS, TOP OF CURB REPAIR AREAS, PARAPET REPAIR AREAS, AND THE TOP OF CONCRETE SURFACE REPAIR AREAS ON THE SIDEWALK AND MEDIAN.

"PROTECTIVE SURFACE TREATMENT RESEAL" SHALL BE APPLIED TO THE TOP OF EXISTING MEDIAN AND SIDEWALK.

THE LOCATION OF "CONCRETE SURFACE REPAIR" AT W. ABUT., PIER 1, PIER 2, PIER 3, E. ABUT., SIDEWALK, AND MEDIAN SHALL BE DETERMINED BY THE FIELD ENGINEER.

THE LOCATION OF "REMOVING LOOSE CONCRETE" ON THE UNDERSIDE OF THE DECK SHALL BE DETERMINED BY THE FIELD ENGINEER.

AT "CURB REPAIR", EXPOSE EXISTING REINFORCEMENT A MINIMUM OF 1-1/2" CLEAR.

REMOVE AND REPLACE EXISTING LONGITUDINAL COMPRESSION SEAL IN THE MEDIAN WITH "COMPRESSION JOINT SEALER PREFORMED ELASTOMERIC 3-INCH".

REMOVE AND REPLACE EXISTING TRANSVERSE COMPRESSION SEAL AT PIER 1 AND PIER 3 WITH "COMPRESSION JOINT SEALER PREFORMED ELASTOMERIC 3-INCH".

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR UNDER BID ITEM "EXPANSION DEVICE B-40-118".

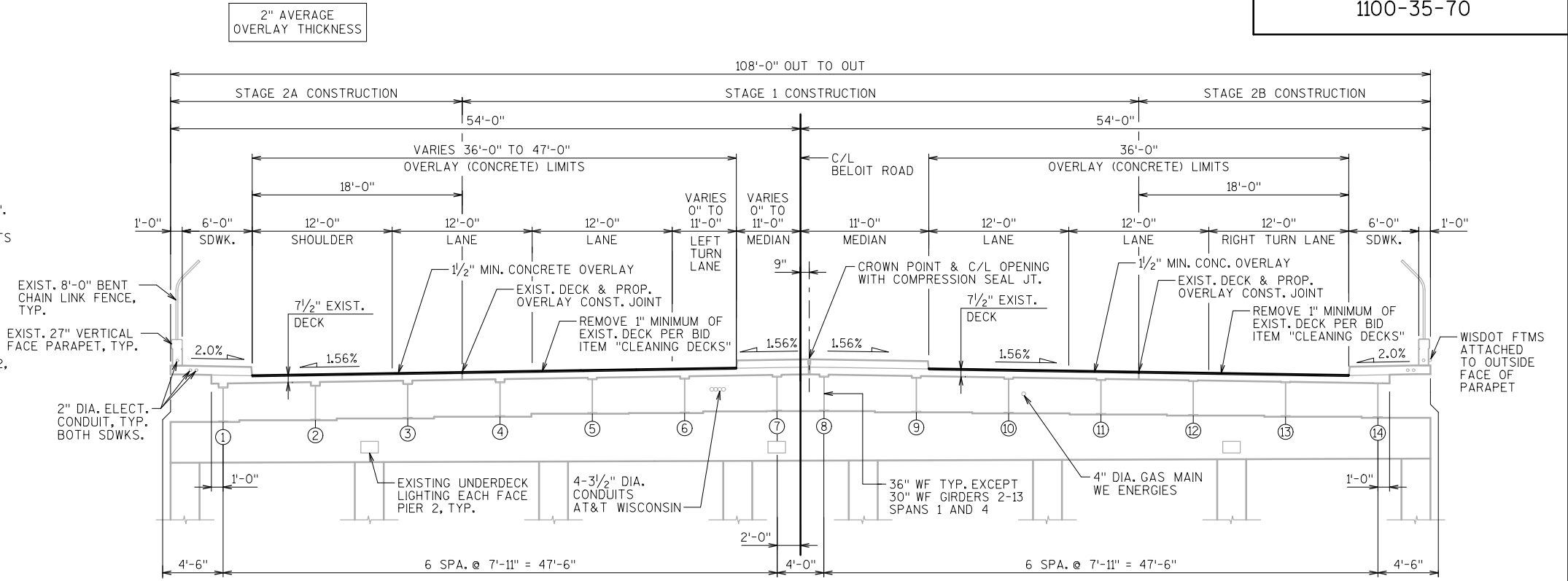
EXISTING FLOOR DRAINS (6 TOTAL) TO BE ADJUSTED. PROVIDE A NEW FLOR DRAIN GRATE FOR THE EXISTING FLOOR DRAIN LOCATED ALONG THE NORTH SIDEWALK NEAR PIER 1. THIS WORK TO BE PAID FOR UNDER "ADJUSTING FLOOR DRAINS".

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF THE UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

CONSTRUCTION STAGING FOR PROPOSED WORK ON THE BRIDGE DECK IS SHOWN ON THE CONSTRUCTION STAGING SHEET. PROPOSED WORK ITEMS UNDER THE BRIDGE DECK AND ON THE SUBSTRUCTURE MUST CONFORM TO TRAFFIC CONTROL RESTRICTIONS NOTED ELSEWHERE IN THE CONTRACT DOCUMENTS.

"STEEL COVER PLATE WELD TESTING SPECIAL" SHALL BE PERFORMED AT THE ENDS OF THE WELDED COVER PLATES ON THE GIRDER BOTTOM FLANGES.

REMOVE AND REPLACE HINGE PINS AND PIN PLATES ON THE STEEL GIRDERS AT PIERS 1 AND 3 WITH "HINGE REPLACEMENT".

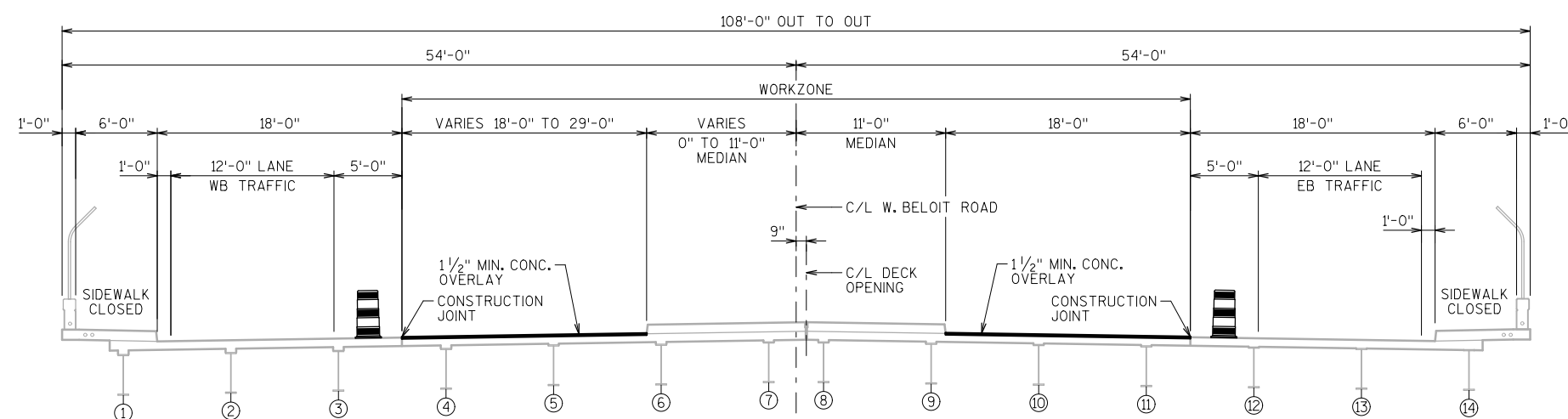


TYPICAL SECTION

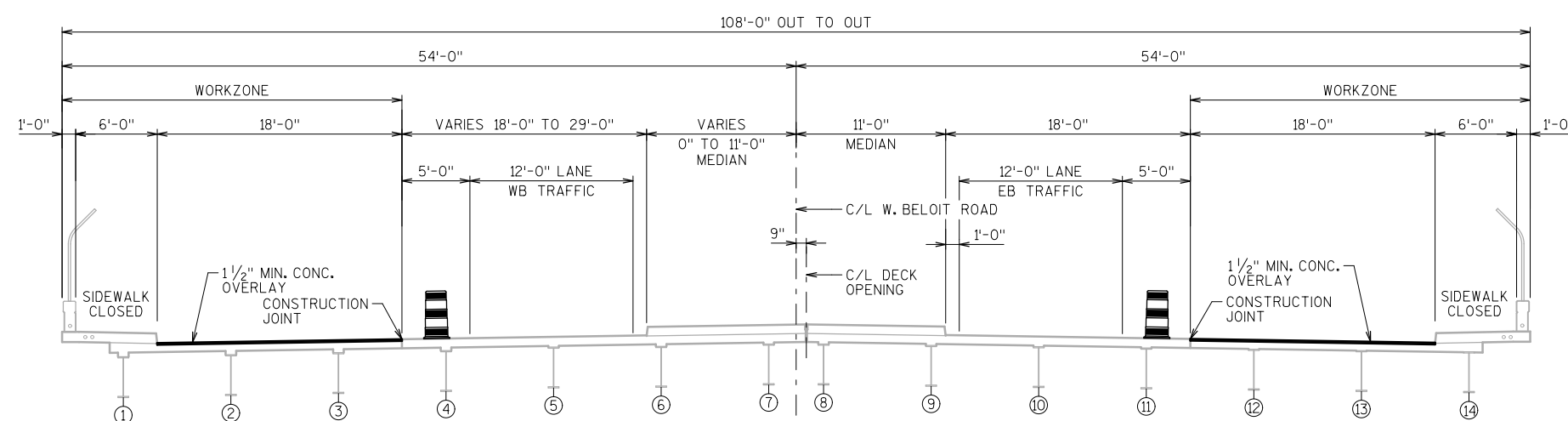
LOOKING EAST

TOTAL ESTIMATED QUANTITIES

[illegible]

**STAGE 1 CONSTRUCTION**

LOOKING EAST

**STAGE 2 CONSTRUCTION**

LOOKING EAST

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-118			
DRAWN BY		TEK	PLANS CK'D. BKS
CONSTRUCTION STAGING		SHEET 3 OF 12	
		210	

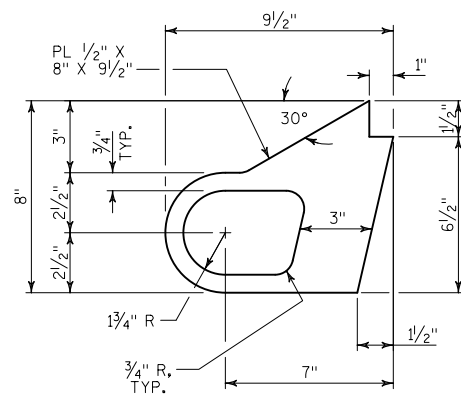
ONE FIELD SPICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPICING PERMITTED IN NEOPRENE STRIP SEAL.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

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

- ① NEOPRENE STRIP SEAL (4 - INCH) & STEEL EXTRUSIONS.
- ② STUDS $\frac{5}{8}$ " DIA $\times$ $6\frac{3}{8}$ " LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.
- ②A $\frac{1}{2}$ " THICK ANCHOR PLATE WITH $\frac{5}{8}$ " DIA ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PL. TO NO. 1 AT 1'-6" CTRS. BETWEEN GIRDERS.
- ③ $\frac{3}{4}$ " DIA THREADED ROD WITH 2 NUTS AND WASHERS. FOR PRESTRESSED GIRDERS FIELD SET ON C/L OF GIRDER. FOR STEEL GIRDERS WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- ④ $\frac{3}{4}$ " DIA THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
- ⑤ FABRICATE SUPPORT FROM 3" $\times$ $\frac{1}{2}$ " BAR AS SHOWN OR EQUIVALENT. ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE $\frac{1}{2}$ " DIA HOLE FOR NO. 3 & 1" DIA HOLE FOR NO. 4.

EXTERIOR GIRDER TO EDGE OF SLAB & AT PARAPETS, MEDIANS & SIDEWALKS



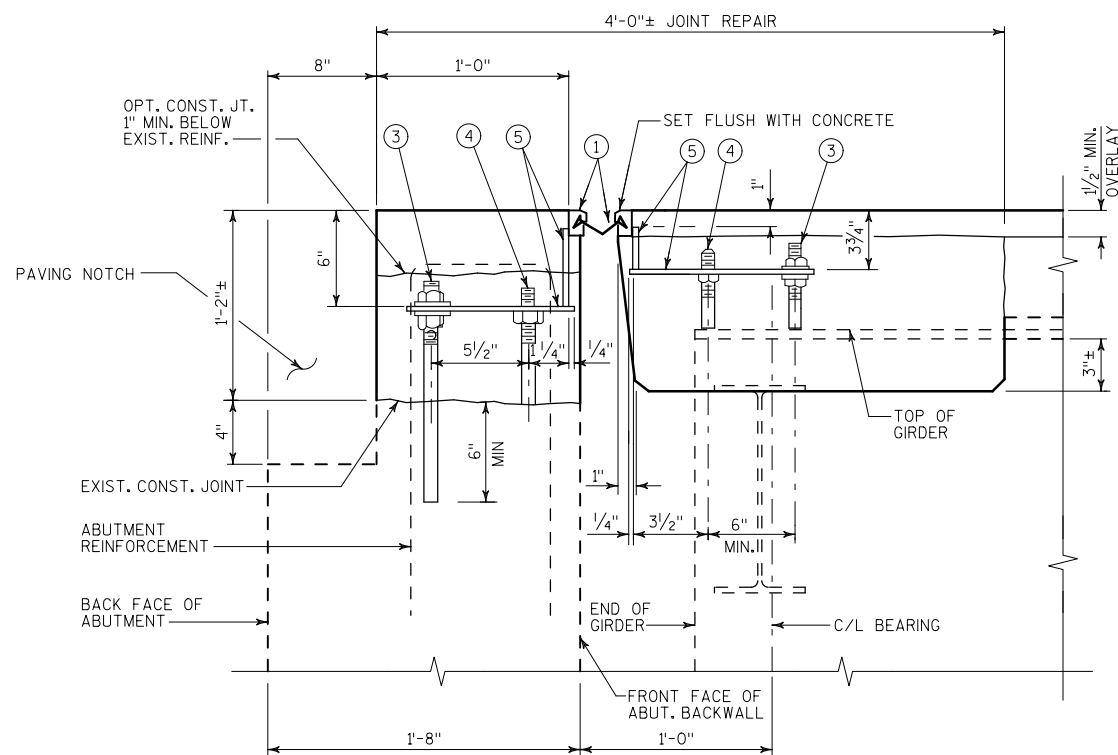
The diagram illustrates the required reinforcement for a manhole opening in a concrete slab or paving block. It consists of two main views: a plan view labeled "AT PAVING BLOCK" and a cross-sectional view labeled "AT SLAB".

- Plan View (AT PAVING BLOCK):** Shows a circular opening with an outer diameter of 9 1/2 inches maximum. Inside this, there is a smaller circle with a diameter of 3 inches. The center of the opening is offset by 1 1/2 inches from the center of the slab. A 5/8 inch diameter rod is shown passing through the opening.
- Cross-Sectional View (AT SLAB):** Shows the vertical profile of the opening. The opening has a depth of 30 degrees. The distance from the face of the concrete opening to the center of the rod is 2 1/2 inches minimum. The total width of the slab is 5 inches. The thickness of the slab is 1/2 inch. The distance from the center of the opening to the edge of the slab is 2 1/2 inches. The distance from the center of the opening to the center of the rod is 1/4 inch typical.

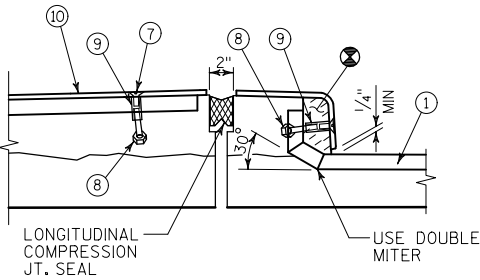
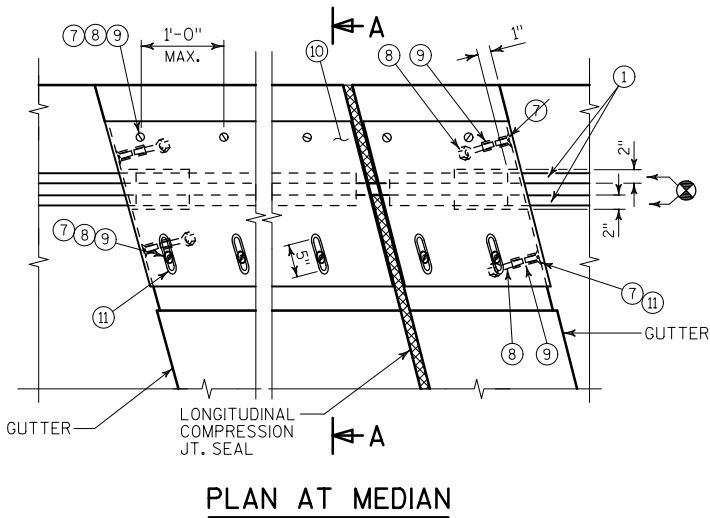
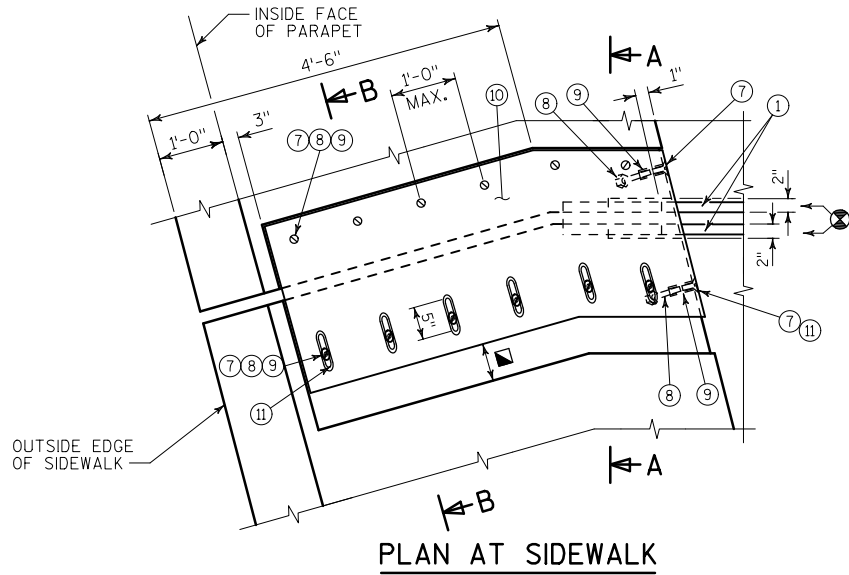
ROADWAY TRAFFIC AREA BETWEEN GIRDERS

NORMAL TO C/L SUBSTRUCTURE

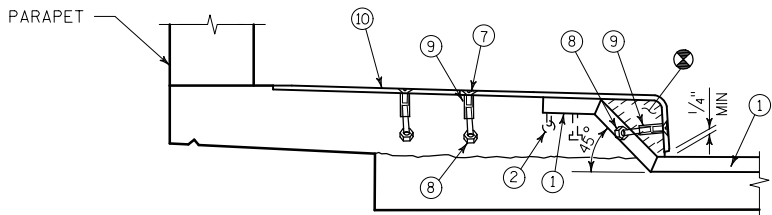
* FOR TRANSVERSE DECK BARS PLACED NORMAL TO GIRDER, SAVE AND INCORPORATE 1'-6" MIN. OF TRANSVERSE REINFORCING BARS.



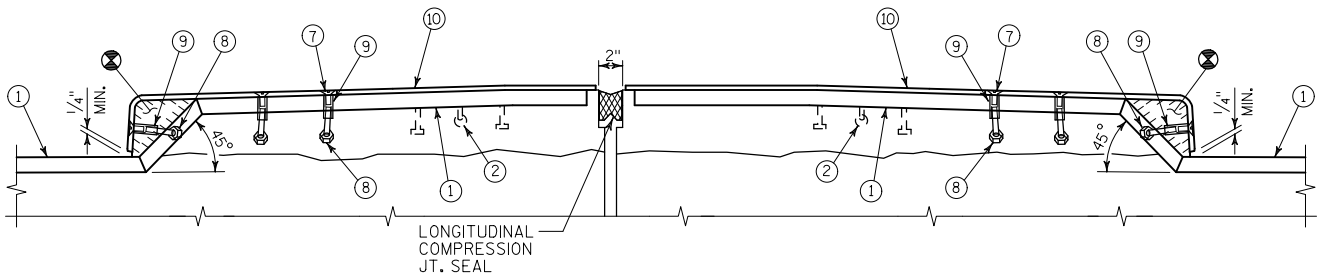
NORMAL TO C/L SUBSTRUCTURE



SECTION AT MEDIAN - WEST ABUTMENT



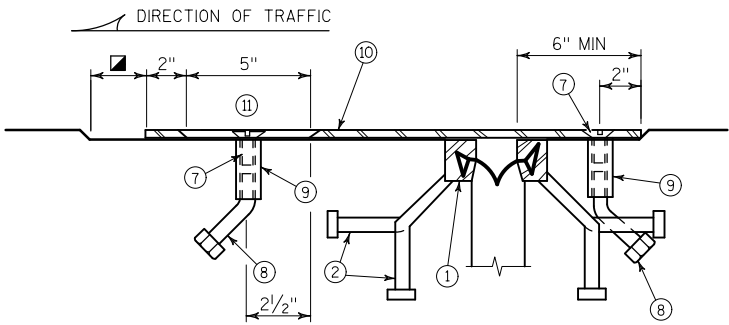
SECTION AT SIDEWALK



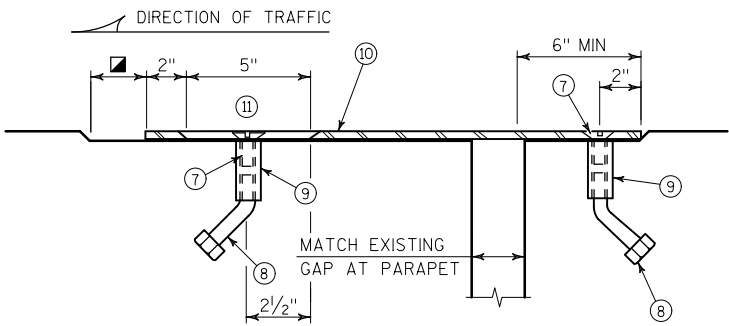
SECTION AT MEDIAN - EAST ABUTMENT

LEGEND

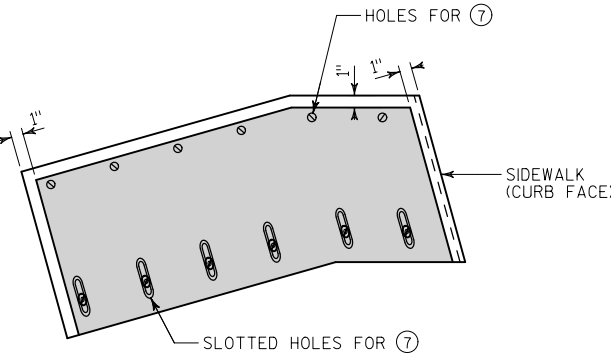
- ① NEOPRENE STRIP SEAL (4 - INCH) & STEEL EXTRUSIONS.
- ② STUDS 5/8" DIA. x 6 3/8" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.
- ⑦ 3/4" DIA. x 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. RECESS 1/16" BELOW PLATE SURFACE.
- ⑧ 3/4" DIA. x 4" GALV. HEX HEAD BOLT. BEND 45°.
- ⑨ 3/4" DIA. x 2 1/4" GALV. THREADED COUPLING.
- ⑩ GALVANIZED SIDEWALK PLATE 3/8" x 2'-0" x LIMITS SHOWN. BEND DOWN FACE OF SIDEWALK WITH HOLES FOR NO. 7.
- ⑪ 1" x 5" SLOTTED CSK. HOLE FOR NO. 7. SLOT PARALLEL TO DIRECTION OF MOVEMENT. SET JOINT OPENING AT 1 3/4".
- ⊗ BLOCK OUT CONCRETE 2" EACH SIDE FOR JOINT OPENING
- ▣ JOINT OPENING DIM. ALONG SKEW PLUS 1/2"



SECTION A-A



SECTION B-B

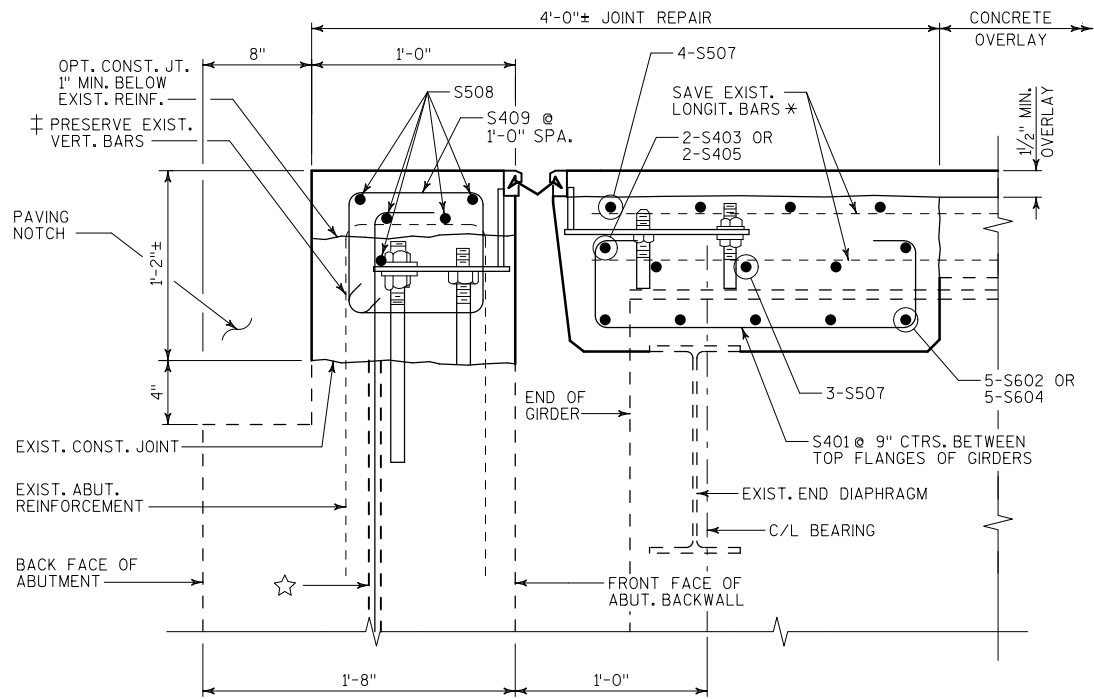


PLAN OF SIDEWALK COVER PLATE WITH SLIP-RESISTANT SURFACE

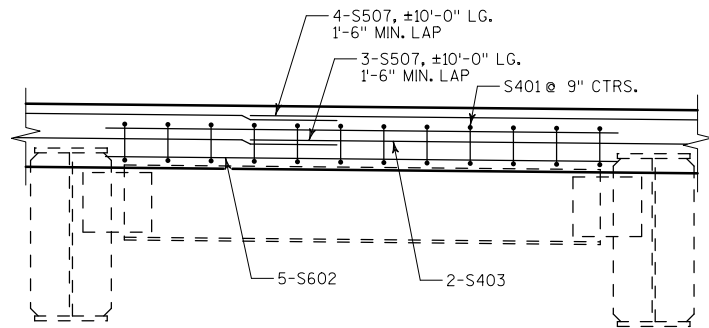
PLACE SLIP-RESISTANT SURFACE ON TOP WALKING SURFACE IN SHADED AREA ONLY (NOT ON CURB FACE)

APPROVED SLIP-RESISTANT APPLIED SURFACES FOR STEEL PLATES		
PRODUCT	MANUFACTURER	CONTACT AT
SLIPNOT GRADE 2, STEEL	W. S. MOLNAR COMPANY	1-800-SLIPNOT
ALGRIP, STEEL	ROSS TECHNOLOGY CORP.	1-800-345-8170

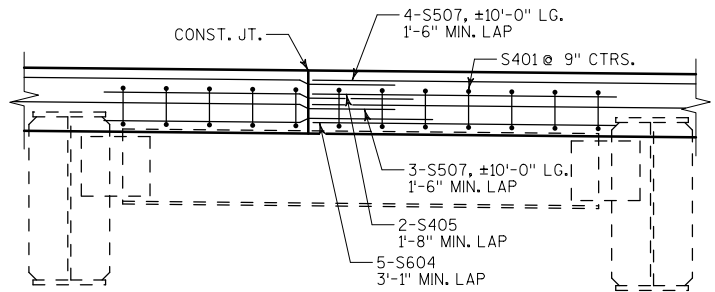
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-118			
DRAWN BY		TEK	PLANS CK'D. BKS
EXPANSION JOINT (2 OF 3)			SHEET 5 OF 12
			212



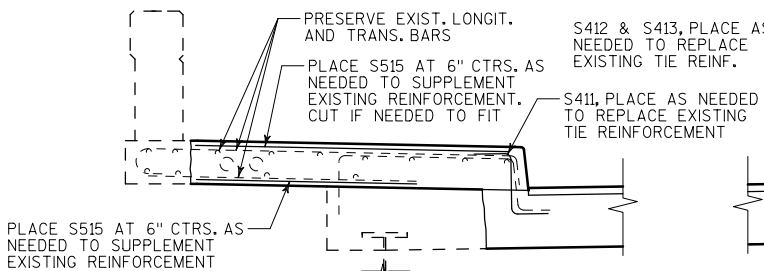
SECTION THRU PROPOSED JOINT AT ABUTMENTS
NORMAL TO C/L SUBSTRUCTURE



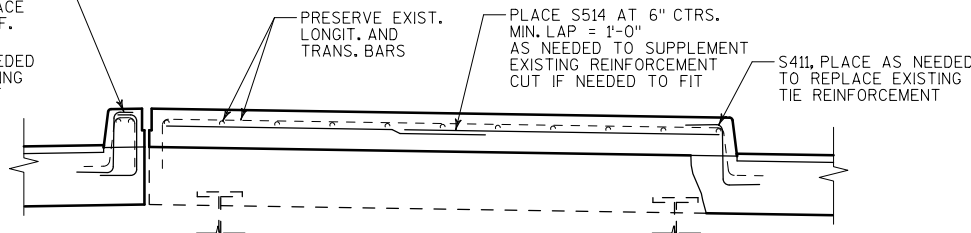
PART TRANSVERSE SECTION AT DIAPHRAGM



PART TRANSVERSE SECTION AT DIAPHRAGM
STAGE CONSTRUCTION JOINT



SECTION THRU SIDEWALK



SECTION THRU MEDIAN AT WEST ABUTMENT

BILL OF BARS

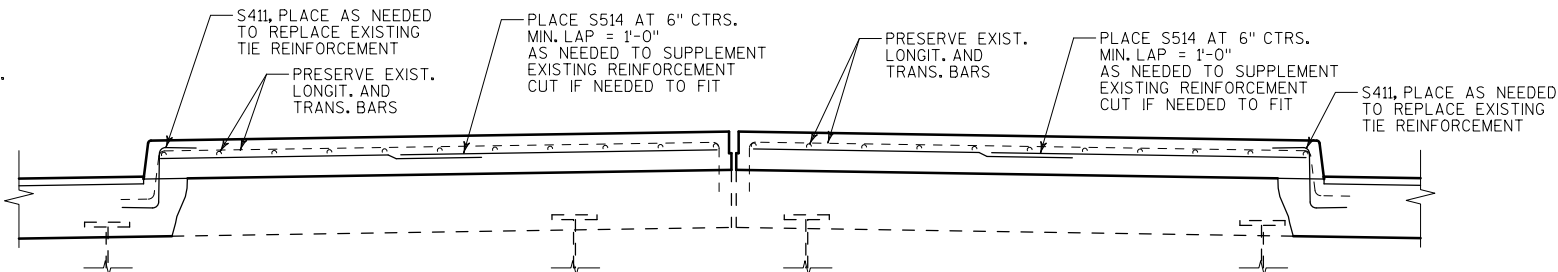
NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	252	3'-10"	X		DIAPHRAGM STIRRUP
S602	X	85	8'-0"			DIAPHRAGM HORIZ.
S403	X	34	8'-0"			DIAPHRAGM HORIZ.
S604	X	40	6'-0"			DIAPHRAGM @ CJ
S405	X	16	6'-0"			DIAPHRAGM @ CJ
S406	X	42	8'-0"			DIAPHRAGM @ STRIP SEAL ANCHOR
S507	X	182	10'-0"			DECK REINF.
S508	X	155	8'-0"			PAVING BLOCK HORIZ.
S409	X	210	3'-0"	X		PAVING BLOCK STIRRUP
S510	X	210	3'-2"	X		PAVING BLOCK ANCHOR
S411	X	24	2'-8"	X		DIAPHRAGM/PAVING BLOCK, MEDIAN/SDWK
S412	X	6	2'-0"	X		DIAPHRAGM/PAVING BLOCK, MEDIAN
S413	X	6	2'-0"	X		DIAPHRAGM/PAVING BLOCK, MEDIAN
S414	X	30	6'-3"			MEDIAN
S515	X	20	7'-6"			SIDEWALK
S416	X	20	5'-0"			SIDEWALK

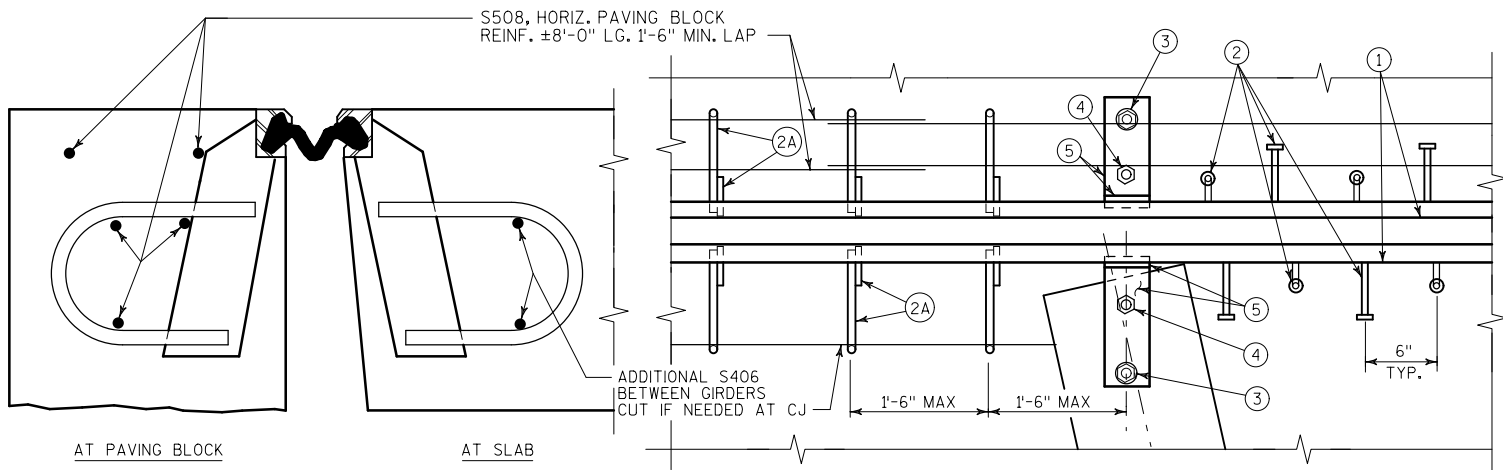
‡ EXISTING BARS ARE LIKELY TO BE CORRODED AND/OR DAMAGED DURING CONCRETE REMOVAL. PRESERVE AND INCORPORATE AS MUCH REBAR AS PRACTICAL. SUPPLEMENT WITH THE BARS INDICATED BY ☆.

☆ S510, ADHESIVE ANCHORS NO. 5 BAR. EMBED 1'-6" IN CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT.

* EXISTING TRANSVERSE DECK BARS ARE PLACED NORMAL TO GIRDER, SAVE AND INCORPORATE 1'-6" MIN. OF EXISTING TRANSVERSE REINFORCING BARS.



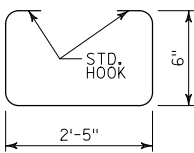
SECTION THRU MEDIAN AT EAST ABUTMENT



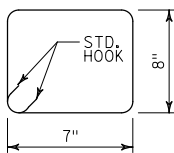
SECTION THRU JOINT
ROADWAY TRAFFIC AREA

PART PLAN

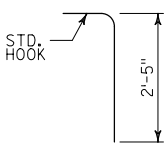
FOR LEGEND, SEE SHEET 4



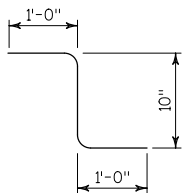
S401



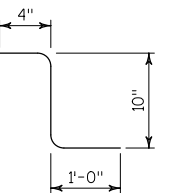
S409



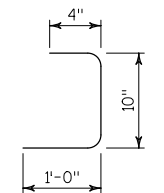
S510



S411



S412

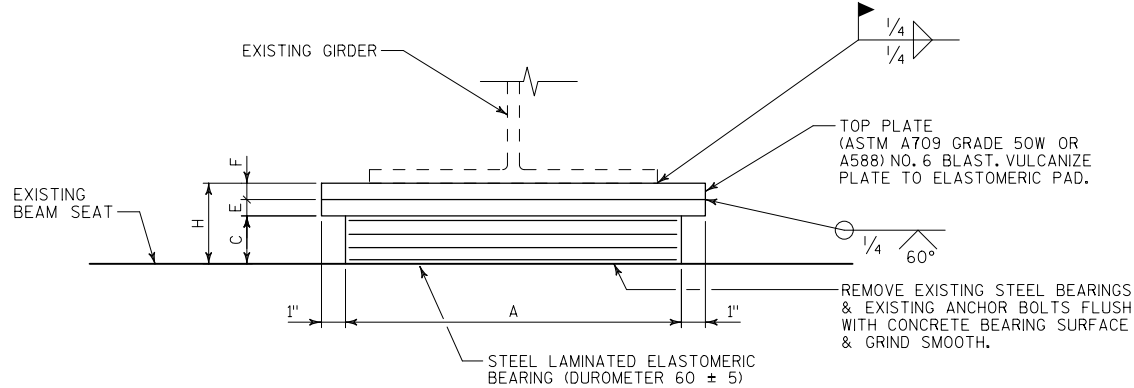


S413

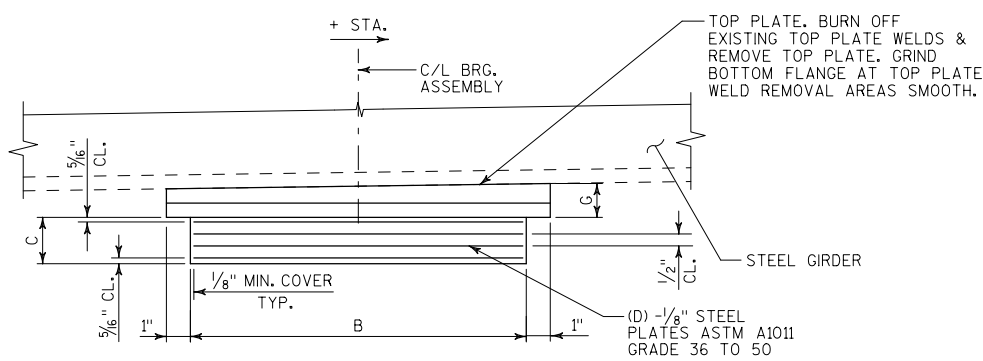
NO.	DATE	REVISION	BY
		STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
		STRUCTURE B-40-118	
		DRAWN BY TEK	PLANS CK'D. BKS
		EXPANSION JOINT (3 OF 3)	SHEET 6 OF 12
			213

NOTES

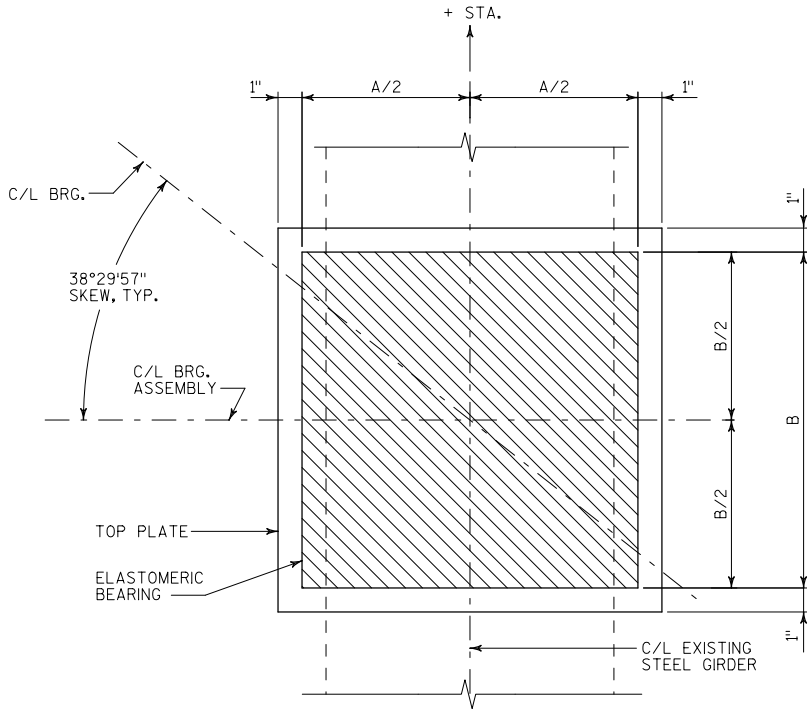
1. ALL STRUCTURAL STEEL PLATES SHALL BE FLAT ROLLED WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.
2. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.
3. ALL MATERIAL USED FOR THE BEARINGS, INCLUDING BEARING PADS, AND STEEL PLATES, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING PADS ELASTOMERIC LAMINATED", EACH.
4. BEARINGS SHALL NOT BE PLACED AT A TEMPERATURE GREATER THAN 85° F.



FRONT ELEVATION



SECTION THRU ELASTOMERIC BEARING



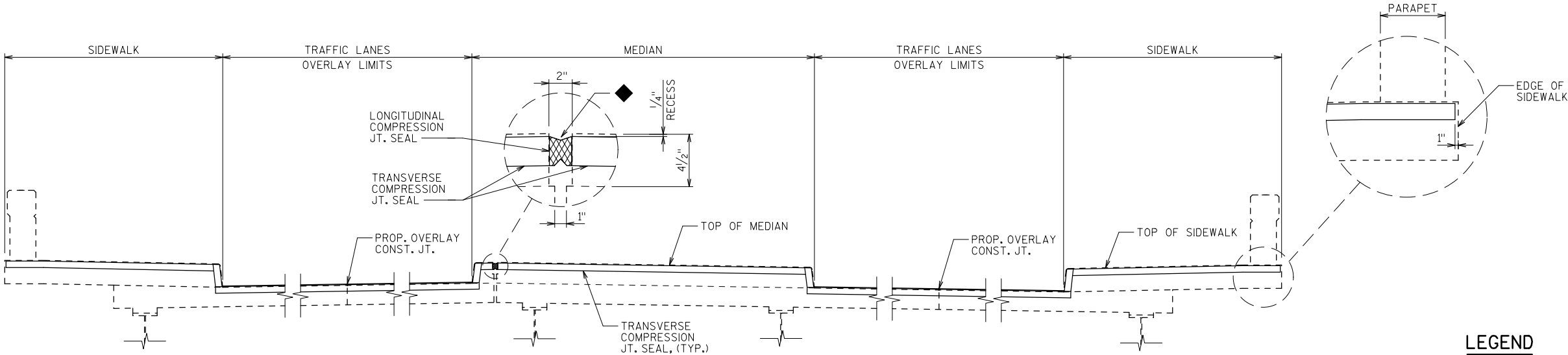
PLAN VIEW

BEARING TABLE

LOCATION		A	B	C	D	E	F	G	H
W. ABUTMENT	GIRDERS 2 THRU 13	1'-0"	10"	2 5/8"	4	1 5/8"	*	1 5/8"	4 1/4"
W. ABUTMENT	GIRDERS 1 & 14	1'-0"	10"	2 5/8"	4	2"	3/4"	2 3/4"	5 3/8"
PIERS 1 & 3	GIRDERS 2 THRU 13	1'-1"	1'-1"	2"	3	2"	1 3/8"	3 3/8"	5 3/8"
PIERS 1 & 3	GIRDERS 1 & 14	1'-4 1/2"	10"	2"	3	2"	1 3/4"	3 3/4"	5 3/4"
E. ABUTMENT	GIRDERS 2 THRU 13	1'-0"	11"	2 5/8"	4	1 5/8"	*	1 5/8"	4 1/4"
E. ABUTMENT	GIRDERS 1 & 14	1'-0"	11"	2 5/8"	4	2"	3/4"	2 3/4"	5 3/8"

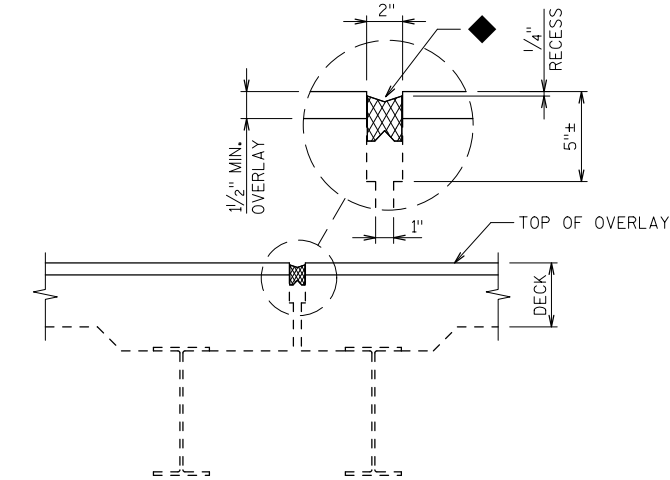
* SECOND PLATE NOT REQUIRED

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-118			
		DRAWN BY	TEK
		PLANS CK'D.	BKS
EXPANSION BEARINGS		SHEET 7 OF 12	
		214	



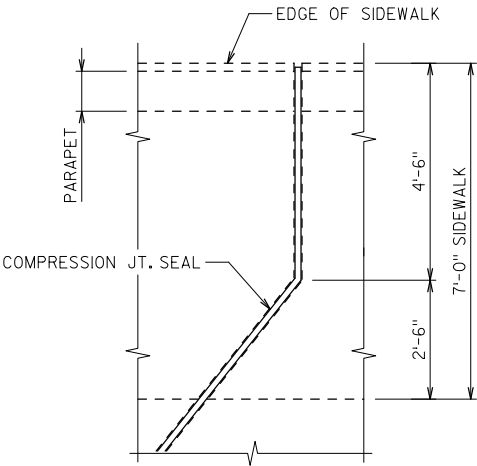
TYPICAL SECTION AT COMPRESSION JT. SEAL

PIER 1 SHOWN, PIER 3 SIMILAR



SECTION THRU TRANSVERSE SEAL

DECK SHOWN, SIDEWALK AND MEDIAN SIMILAR

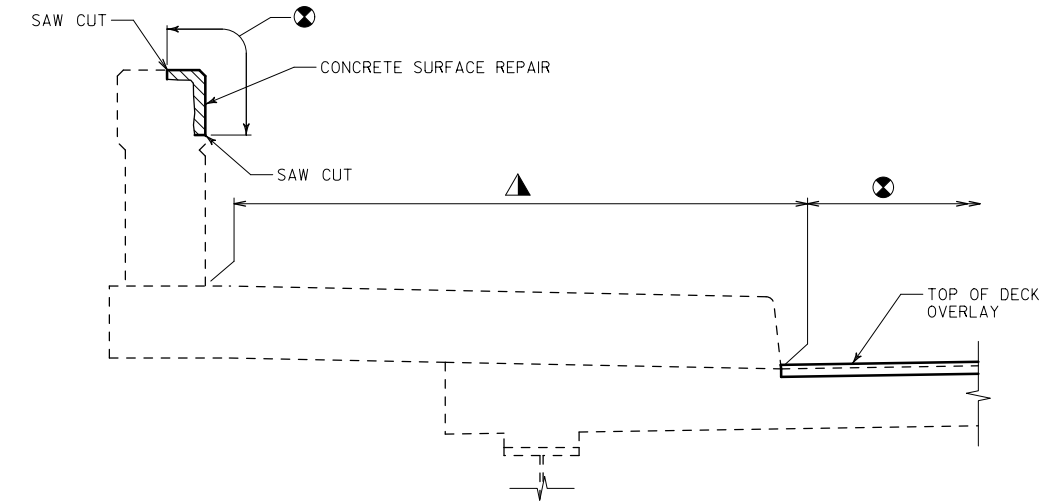


TYPICAL SIDEWALK PLAN

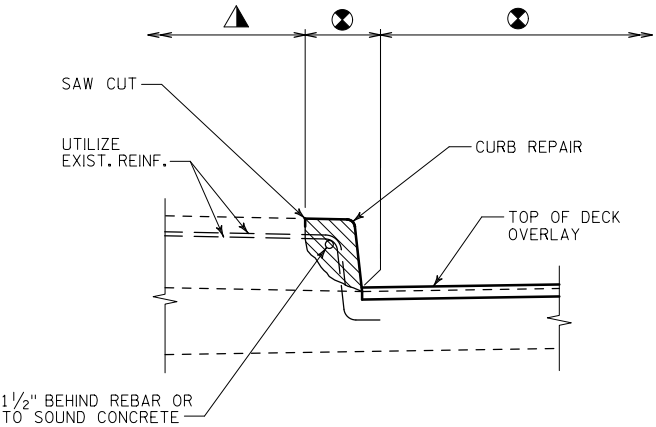
AT COMPRESSION JT. SEAL

LEGEND

- "PROTECTIVE SURFACE TREATMENT" LIMITS
- "PROTECTIVE SURFACE TREATMENT RESEAL" LIMITS
- MANUFACTURER MUST LABEL TOP OF SEAL

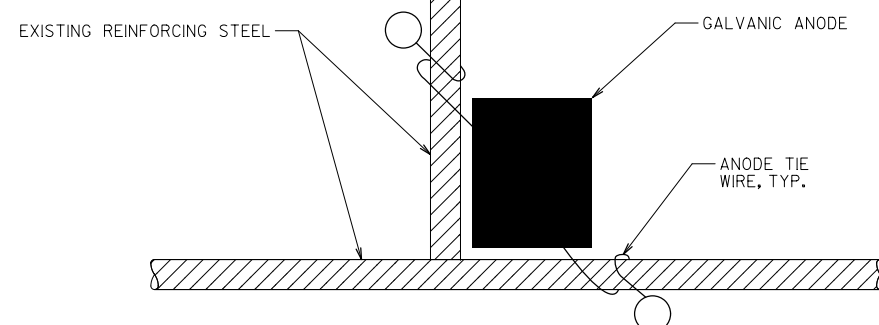


PARAPET REPAIR DETAIL

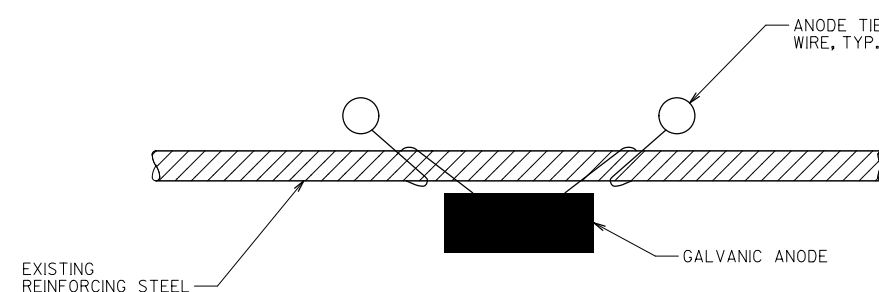


CURB REPAIR DETAIL

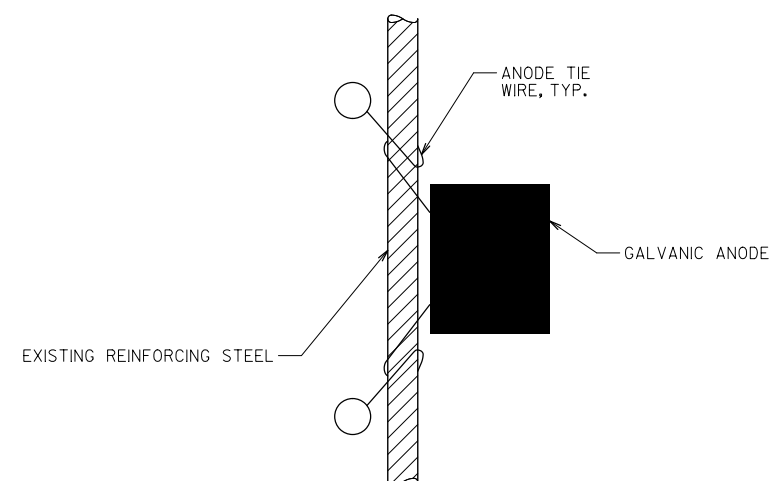
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-118			
DRAWN BY		TEK	PLANS CK'D. BKS
COMPRESSION SEAL JOINT & REPAIR DETAILS			SHEET 8 OF 12
			215



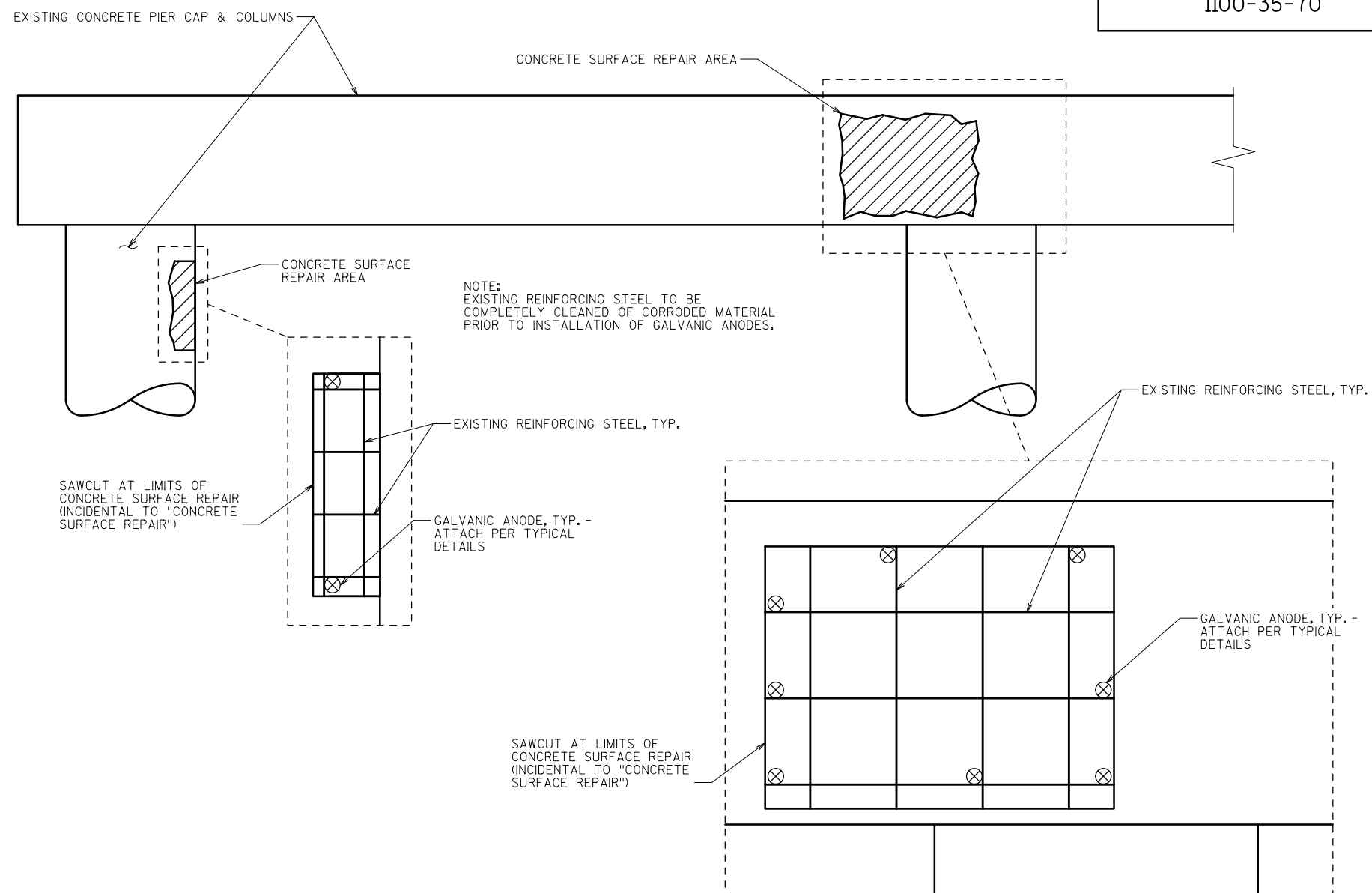
**TYPICAL INSTALLATION AT
BAR STEEL INTERSECTION**



**TYPICAL INSTALLATION
BELOW BAR STEEL
(HORIZONTAL)**



**TYPICAL INSTALLATION
BESIDE BAR STEEL
(VERTICAL)**



TYPICAL SUBSTRUCTURE REPAIR DETAIL

PIER SHOWN, ABUTMENT SIMILAR. SUPERSTRUCTURE OMITTED FOR CLARITY.
VERTICAL SURFACE REPAIR SHOWN, HORIZONTAL SURFACE REPAIR SIMILAR.

NOTES

SEE SPECIAL PROVISION "EMBEDDED GALVANIC ANODES" FOR DESCRIPTION, MATERIALS, CONSTRUCTION, MEASUREMENT AND PAYMENT INFORMATION.

EXISTING REINFORCING STEEL TO BE COMPLETELY CLEANED OF CORRODED MATERIAL PRIOR TO INSTALLATION OF GALVANIC ANODES.

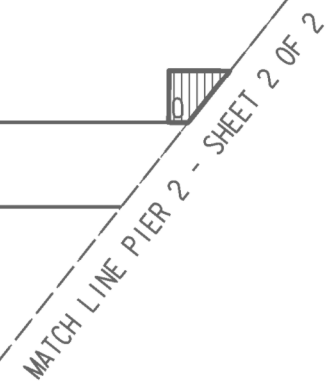
LOCATIONS OF GALVANIC ANODES SHOULD BE WITHIN 6" OF THE EDGE OF THE REPAIR AREA.

AFTER PLACEMENT, GALVANIC ANODES SHOULD MAINTAIN A MINIMUM TOP COVER OF $1\frac{1}{2}$ " AND A MINIMUM BOTTOM COVER OF $\frac{3}{4}$ ".

PROVIDE GALVANIC ANODES IN CONCRETE SURFACE REPAIR AREAS IN SUBSTRUCTURE ONLY.

THE ESTIMATED ANODE QUANTITY ON PLANS IS BASED ON A MAXIMUM SPACING OF 24" AROUND PERIMETER OF THE CONCRETE SURFACE REPAIR AREA. PLACE ADDITIONAL ANODES AT THE INTERIOR OF REPAIRED AREA SO CENTER TO CENTER SPACING OF ANODES IS NOT GREATER THAN 24" IN ANY DIRECTION.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-118			
DRAWN BY		TEK	PLANS CK'D. BKS
GALVANIC ANODES			SHEET 9 OF 12
			216



PROPOSED REHABILITATION AREAS



SURFACE TYPE: CONCRETE - NO OVERLAY
INFRARED INSPECTION DATE: 4/18/17

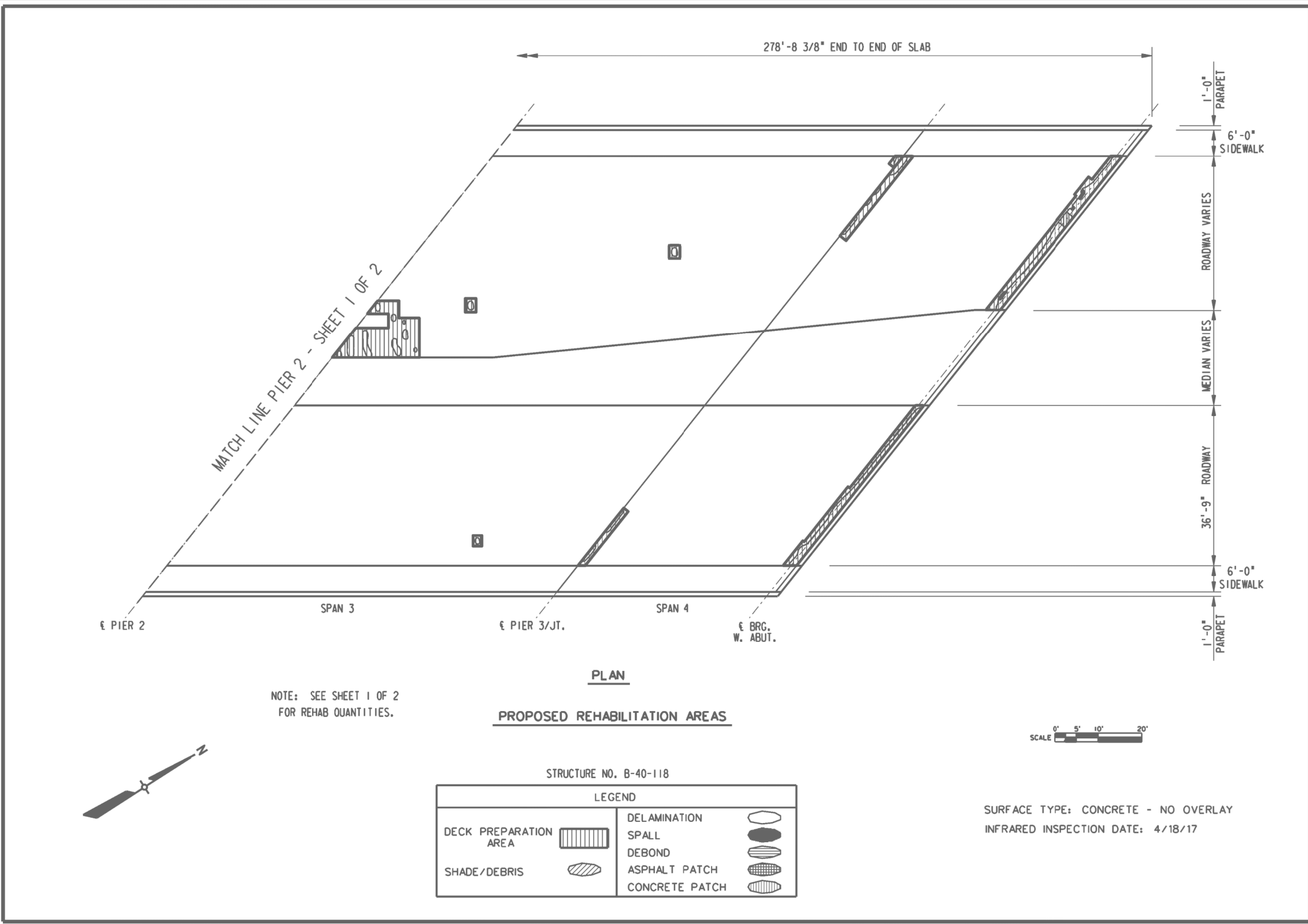
PROPOSED REHABILITATION AREAS FOR CTH T-W BELLOIT AVE OVER I-494-USH 45 STRUCTURE NO. B-40-11B		PREPARED FOR WISCONSIN DEPARTMENT OF TRANSPORTATION	
DATE	4/24/17		
PROJECT NO	6050626		
FILENAME	B-40-11B-REHAB.D		
SHEET NO	1 OF 1		
DRAWING NO			

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-118			
		DRAWN BY	TEK
		PLANS CK'D.	BKS
DECK REHABILITATION AREAS (1 OF 2)		SHEET 10 OF 12	
		217	

STATE PROJECT NUMBER

1100-35-70

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-118			
DRAWN BY TEK		PLANS CK'D. BKS	
DECK REHABILITATION AREAS (2 OF 2)		SHEET 11 OF 12	
		218	



NOTE:

DELAMINATION AREAS SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY. THE FIELD ENGINEER WILL SOUND THE DECK AND MARK AREAS IN THE FIELD. THE ESTIMATED QUANTITIES FOR THE DECK PREPARATION AND DECK REPAIR BID ITEMS ARE ADAPTED FROM THE ABOVE INFRARED THERMOGRAPHY SURVEY RESULTS.

NOTES

DIMENSIONS SHOWN ARE BASED ON EXISTING STRUCTURE PLANS.

INSIDE HOLES OF PIN PLATES SHALL BE COATED WITH "BLOXIDE" OR AN APPROVED EQUAL AFTER FINISHING. THE BUSHINGS SHALL HAVE A PRESS FIT INTO PIN PLATES. THE INSIDE DIAMETER OF BUSHING SHALL PROVIDE A CLEARANCE OF 0.005" MINIMUM AND 0.010" MAXIMUM OVER THEN FINISHED DIAMETER OF THE PIN. NOTE THAT THE HOLE DIAMETER SHALL BE SMALLER THAN THE BUSHING O.D. BY AT LEAST 0.001". FINISH ANS1125.

REMOVE EXISTING PIN PLATES, BOLTS, PINS, AND FILL PLATES AND REPLACE WITH NEW MATERIALS.

STEEL FOR PIN PLATES AND FILL PLATES SHALL CONFORM TO A709 GRADE 50.

BOLTS SHALL BE 3/4-INCH DIAMETER HIGH STRENGTH BOLTS (ASTM A325) WITH WASHERS.

BID ITEM SHALL BE "HINGE REPLACEMENT", EACH. ALL MATERIAL AND WORK INVOLVED SHALL BE PAID FOR UNDER "HINGE REPLACEMENT".

NEW PINS SHALL MATCH THE DIAMETER OF THE EXISTING PINS. CONTRACTOR TO CONTACT ENGINEER IF CORROSION AT EXISTING PIN IS PRESENT.

BLAST CLEAN HANGER PLATES AND GIRDER WEB AT HINGE LOCATION IN ACCORDANCE WITH THE STEEL STRUCTURES PAINTING COUNCIL'S SPECIFICATION SSPC-SP6. PAINT THE AREA WHICH BECOMES INACCESSIBLE AFTER HINGE ASSEMBLY WITH ORGANIC ZINC RICH PAINT SYSTEM.

PIN PLATES AND FILL PLATES SHALL BE SHOP PAINTED.

BUSHINGS SHALL BE THE SAME LENGTH AS THE PIN PLATE THICKNESS.

NON-METALLIC WASHERS SHALL HAVE AN INSIDE DIAMETER OF BETWEEN 0.005" AND 0.010" LARGER THAN THE PIN DIAMETER.

STEEL FOR PINS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 6.4.2 AND ASTM A276. PINS TO BE FINISHED ANS163.

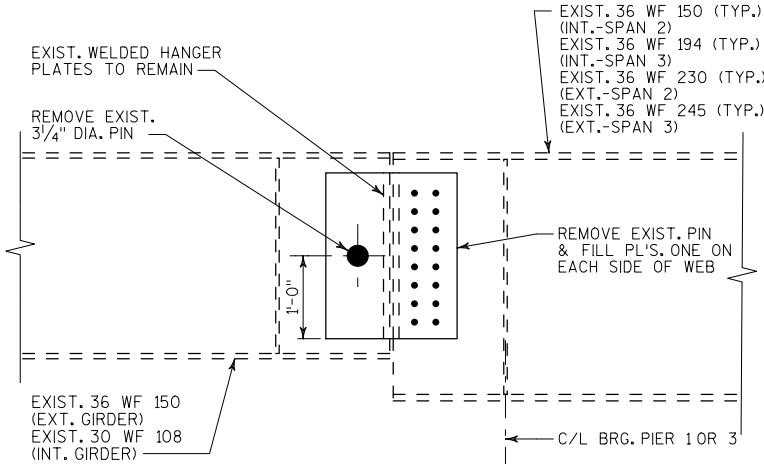
■ BUSHINGS SHALL BE GAR-MAX AS MANUFACTURED BY GARLOCK BEARINGS, INC. OR DURALON JOURNAL BEARINGS AS MANUFACTURED BY REYNOLD BEARING DIVISION, OR APPROVED EQUAL. BUSHINGS SHALL HAVE A NOMINAL WALL THICKNESS OF 1/4".

▲ NON-METALLIC WASHERS REQUIRED FOR USE AS SPACERS BETWEEN THE PIN PLATES AND THE HANGER PLATES AND THE PIN PLATES AND NUTS SHALL BE MADE FROM ONE OF THE FOLLOWING MATERIALS:

1. PHENOLIC, CANVAS REINFORCED, MIL-P-15035
2. POLYETHYLENE, HIGH DENSITY, ASTM D4976, CLASS 3
3. ACETAL, FEDERAL SPECIFICATION L-P-392
4. TEFLON TFE, MIL-P-22241A

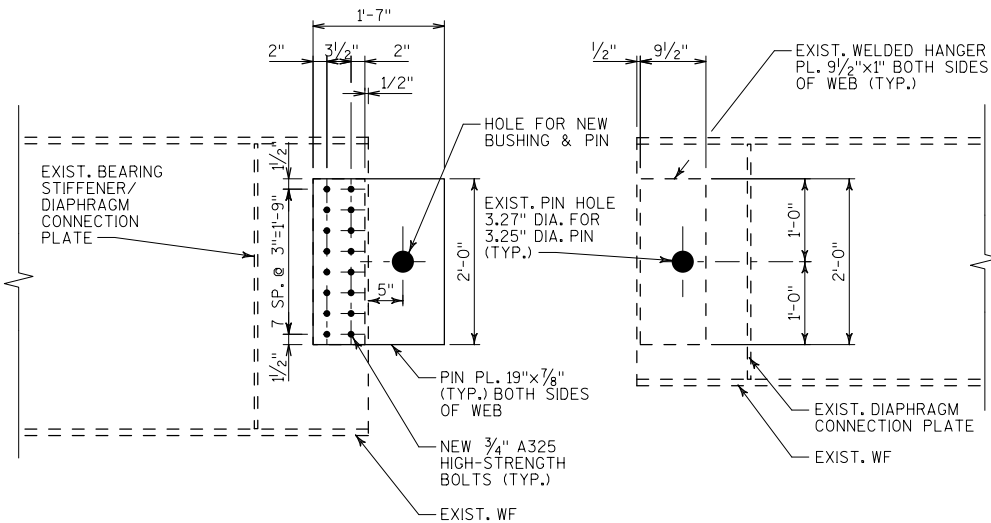
PROVIDE TEMPORARY SUPPORT FOR THE GIRDER AT THE HINGE LOCATION PRIOR TO REMOVING THE HINGE PIN AND BOLTS. THE TEMPORARY SUPPORT SHALL BE DESIGNED TO SUPPORT THE GIRDER DEAD LOAD REACTION AND ANY LIVE LOAD ON THE GIRDER WHILE THE JOINT IS BEING REHABILITATED.

A MAXIMUM OF TWO HINGES CAN BE REHABILITATED SIMULTANEOUSLY AT EACH PIER, BUT THEY CANNOT BE ON ADJACENT GIRDERS.



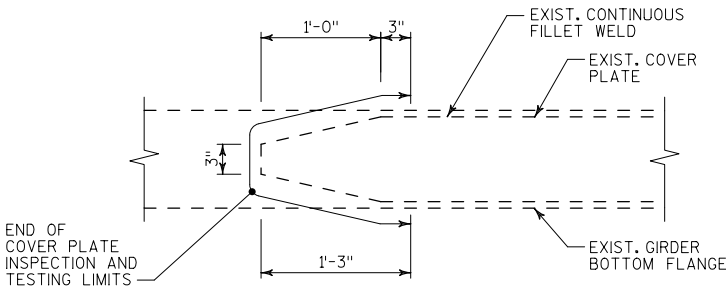
EXISTING AND PROPOSED ELEVATION

(PIER 1 SHOWN)

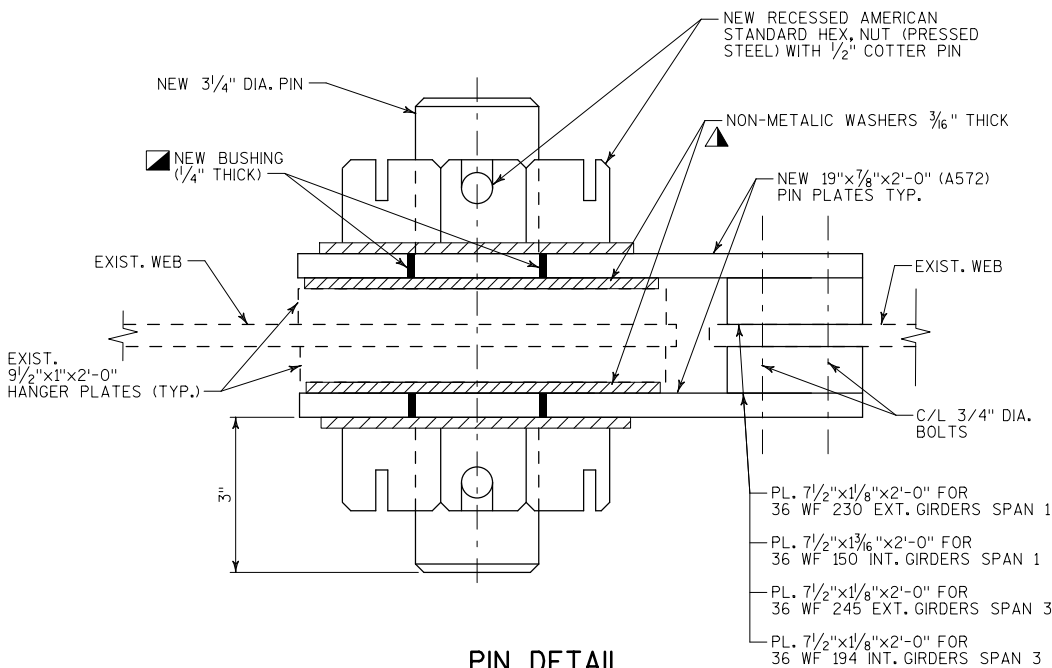


PROPOSED ELEVATION

(PIER 3 SHOWN)



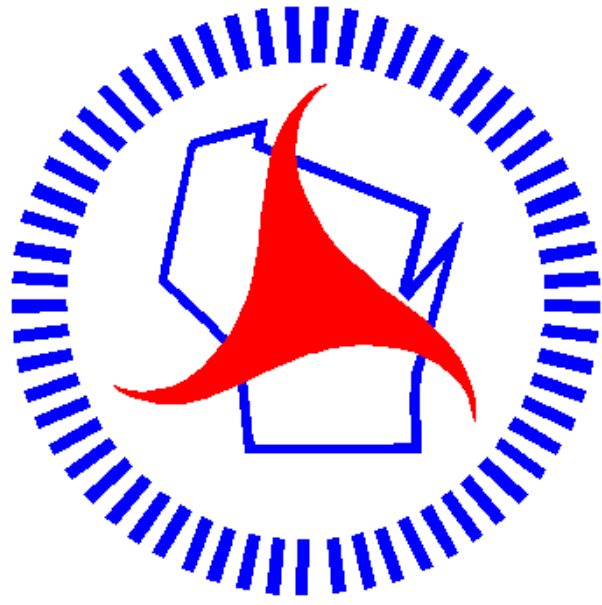
EXISTING COVER PLATE DETAIL



PIN DETAIL

28 LOCATIONS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-118			
DRAWN BY		MAR	PLANS CK'D. SGM
HINGED JOINT REHABILITATION			SHEET 12 OF 12
			219



Wisconsin Department of Transportation

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