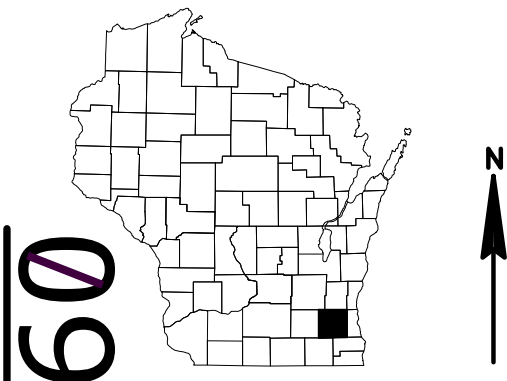


WKE
PROJECT ID: 1060-18-91
COUNTY: WAUKESHA

JULY 2017

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 = 38		



DESIGN DESIGNATION

A.A.D.T.	2017	=	21,200
A.A.D.T.	2037	=	26,800
D.H.V.		=	N/A
D.D.		=	N/A
T.		=	N/A
DESIGN SPEED		=	40 MPH
ESALS		=	N/A

CONVENTIONAL SYMBOLS

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

PROFILE	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
OVERHEAD UTILITY	
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

EAST - WEST FREEWAY

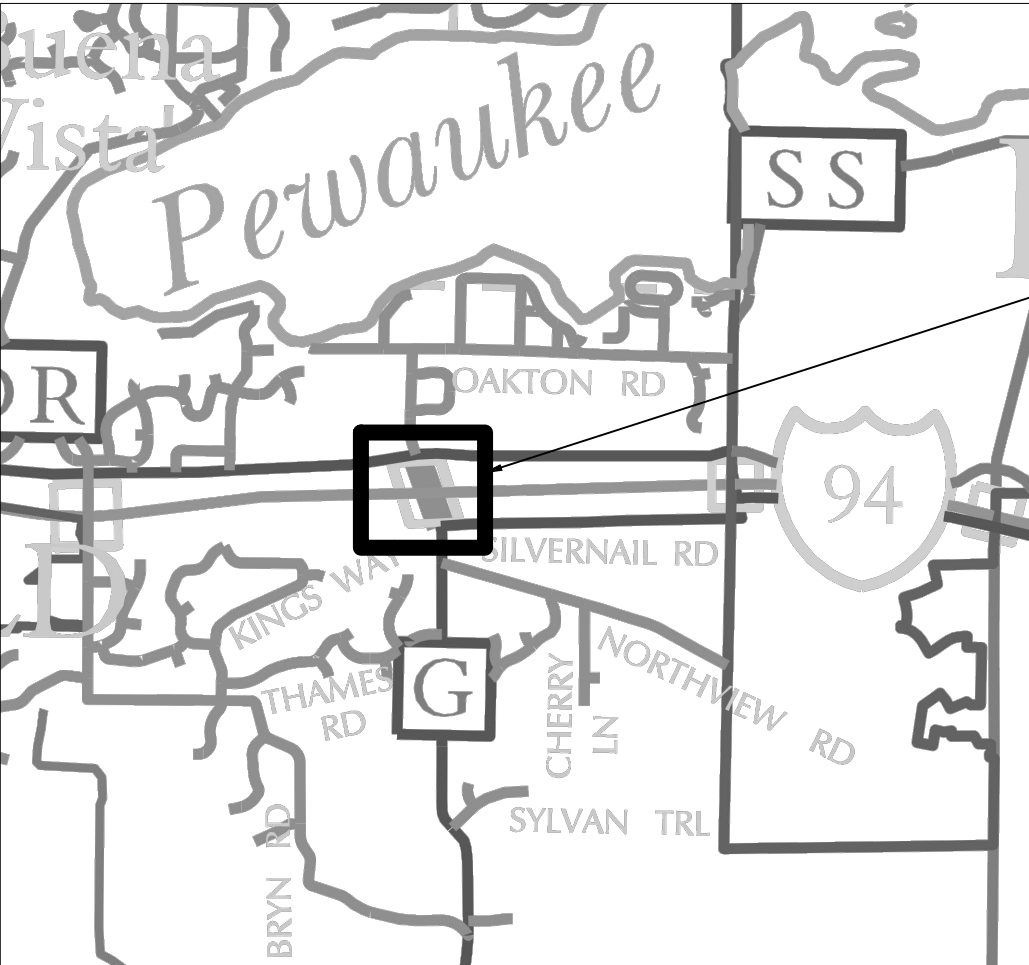
IH-94 AND SILVERNAIL RD INTERSECTION

IH-94

WAUKESHA COUNTY

STATE PROJECT NUMBER
1060-18-91

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1060-18-91		



IH-94 AND SILVERNAIL RD.
INTERSECTION

LAYOUT
SCALE 0 0.1 MILE

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUKESHA COUNTY COORDINATES NAD83 (2011), VERTICAL BASED ON NAVD88 (2012) IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

TOTAL NET LENGTH OF CENTERLINE = N/A

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	WISDOT
Designer	DREW PINTER
Project Manager	DOUG CAIN
Regional Examiner	
Regional Supervisor	BENEDICT ERUCHALU
APPROVED FOR THE DEPARTMENT	
DATE: 02/01/2017	

STANDARD ABBREVIATIONS

AP	ACCESS POINT	NOM	NOMINAL
AC	ACRE	NC	NORMAL CROWN
ADJ	ADJUST	N	NORTH
AECPRC	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE	Y	NORTH GRID COORDINATE
AH	AHEAD	NB	NORTHBOUND
AC	ASPHALT CEMENT	NO	NUMBER
ASPH	ASPHALTIC	OPT	OPTIONAL
ACP	ASPHALTIC CONCRETE PAVEMENT	OD	OUTSIDE DIAMETER
AVG	AVERAGE	PAVT	PAVEMENT
ADT	AVERAGE DAILY TRAFFIC	PLE	PERMANENT LIMITED EASEMENT
BK	BACK	PACS	PIPE ARCH CORRUGATED STEEL
BAD	BASE AGGREGATE DENSE	PT	POINT
BM	BENCHMARK	PC	POINT OF CURVATURE
CB	CATCH BASIN	PI	POINT OF INTERSECTION
C/L	CENTER LINE	PT	POINT OF TANGENCY
C/L CONST	CENTER LINE CONSTRUCTION	PVC	POINT OF VERTICAL CURVE
Δ	CENTRAL ANGLE OR DELTA	PVI	POINT OF VERTICAL INTERSECTION
CL	CLASS	PVT	POINT OF VERTICAL TANGENCY
CONC	CONCRETE	PVC	POLYVINYL CHLORIDE
CONST	CONSTRUCTION	PCC	PORTLAND CEMENT CONCRETE
CMCP	CORRUGATED METAL CULVERT PIPE	LB	POUND
CTH	COUNTY TRUNK HIGHWAY	PSF	POUNDS PER SQUARE FOOT
CABC	CRUSHED AGGREGATE BASE COURSE	PSI	POUNDS PER SQUARE INCH
CFS	CUBIC FEET PER SECOND	PE	PRIVATE ENTRANCE
CY	CUBIC YARD	PGL	PROFILE GRADE LINE
CP	CULVERT PIPE	PL	PROPERTY LINE
CPCS	CULVERT PIPE CORRUGATED STEEL	Q100	100-YEAR FLOW RATE
CPRC	CULVERT PIPE REINFORCED CONCRETE	R	RADIUS
CPRCHE	CULVERT PIPE REINFORCED CONCRETE	RR	RAILROAD
	HORIZONTAL ELLIPTICAL	R	RANGE
C & G	CURB AND GUTTER	R/L	R/L
D	DEGREE OF CURVE	REINF	REINFORCING OR REINFORCEMENT
DHV	DESIGN HOUR VOLUME	REQD	REQUIRED
DIA	DIAMETER	RT	RIGHT
DD	DIRECTIONAL DISTRIBUTION	R/W	RIGHT-OF-WAY
DWY	DRIVEWAY	RD	ROAD
E	EAST	RDWY	ROADWAY
X	EAST GRID COORDINATE	SEC	SECTION
EB	EASTBOUND	SHLDR	SHOULDER
EL	ELEVATION	S	SOUTH
ESALS	EQUIVALENT SINGLE AXLE LOADS	SB	SOUTHBOUND
EXC	EXCAVATION	SQ	SQUARE
EBS	EXCAVATION BELOW SUBGRADE	SF	SQUARE FEET
EXIST	EXISTING	SW	SIDEWALK
FPS	FEET PER SECOND	SY	SQUARE YARD
FERT	FERTILIZE	SDD	STANDARD DETAIL DRAWINGS
FE	FIELD ENTRANCE	STH	STATE TRUNK HIGHWAYS
FL	FLOW LINE	STA	STATION
FT	FOOT	SS	STORM SEWER
GN	GRID NORTH	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
HES	HIGH EARLY STRENGTH	ST	STREET
HP HW	HIGH POINT	STR	STRUCTURE OR STRUCTURAL
HW	HIGH WATER	SEC	SUPERELEVATION
HMA	HOT MIX ASPHALT	T	TANGENT
CWT	HUNDREDWEIGHT	TEMP	TEMPORARY
HWD	HYDRANT	TI	TEMPORARY INTEREST
INL	INLET	TLE	TEMPORARY LIMITED EASEMENT
ID	INSIDE DIAMETER	t	TON
I	INTERSECTION ANGLE	T	TOWN
INV	INVERT	T/L	TRANSIT LINE
IP	IRON PIPE OR PIN	T	TRUCKS (PERCENT OF)
JT	JOINT	TYP	TYPICAL
LT	LEFT	USH	UNITED STATES HIGHWAY
LT	LENGTH OF CURVE	VAR	VARIABLE
LF	LINEAR FOOT	V	VELOCITY OF DESIGN SPEED
LP	LOW POINT	VERT	VERTICAL
LS	LUMP SUM	VC	VERTICAL CURVE
MH	MANHOLE	VOL	VOLUME
MAX	MAXIMUM	WM	WATERMAIN
Mgal	MEGAGALLON	WV	WATER VALVE
MPH	MILES PER HOUR	W	WEST
MIN	MINIMUM	WB	WESTBOUND
MON	MONUMENT	YD	YARD

GENERAL NOTES

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

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT LOCATION THAT ARE NOT SHOWN.

THE CONTRACTOR WILL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A CALL TO THE UTILITIES THAT HAVE INSTALLATIONS WITHIN THE PROJECT AREA.

TRAFFIC CONTROL LOCATIONS AS SHOWN IN THE PLAN ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTURBED LOCATIONS WITHIN THE RIGHT-OF-WAY SHALL BE RESTORED AS DIRECTED BY THE ENGINEER.

ELEVATIONS ARE TO THE FLANGE LINE OF CURB & GUTTER

ALL RADII ARE MEASURED TO THE FLANGE LINE OF CURB AND GUTTER UNLESS OTHERWISE NOTED.

CONSTRUCTION LIMITS ON SIDE ROADS AND PRIVATE ENTRANCES SHALL BE DETERMINED BY THE ENGINEER AND SHALL BE RESTORED IN KIND.

ORDER OF SECTION 2 SHEETS

- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PERMANENT SIGNING
- TRAFFIC SIGNALS
- PAVEMENT MARKING

OTHER CONTACTS

WISDOT REGION CONTACT

DOUGLAS CAIN, P.E.
WISDOT SOUTHEAST REGION
WAUKESHA OFFICE
141 NW BARSTOW ST
WAUKESHA, WI 53187
PHONE: (262) 548-5603

WISDOT SIGNALS

DAVID BRANTNER
141 NW BARSTOW
PO BOX 798
WAUKESHA, WI 53187
PHONE: (262) 548-8736

WISDOT LIGHTING

ERIC PEREA
141 NW BARSTOW
PO BOX 798
WAUKESHA, WI 53187
PHONE: (262) 574-5422

WISDNR CONTACT

CRAIG WEBSTER
DNR LIAISON
141 NW BARSTOW ST
WAUKESHA, WI 53187
PHONE: (262) 574-2141

CITY OF WAUKESHA

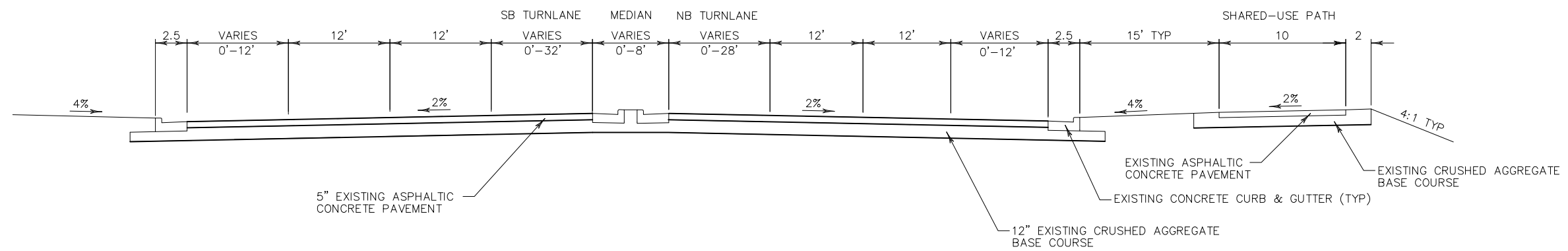
FRED ABADI, P.E.
DIRECTOR OF PUBLIC WORKS
130 DELAFIELD ST.
WAUKESHA, WI 53188
PHONE: (262) 524-3600

CITY OF WAUKESHA

ALEX DAMIEN
CITY ENGINEER
130 DELAFIELD ST
WAUKESHA, WI 53188
PHONE: (262) 524-3907

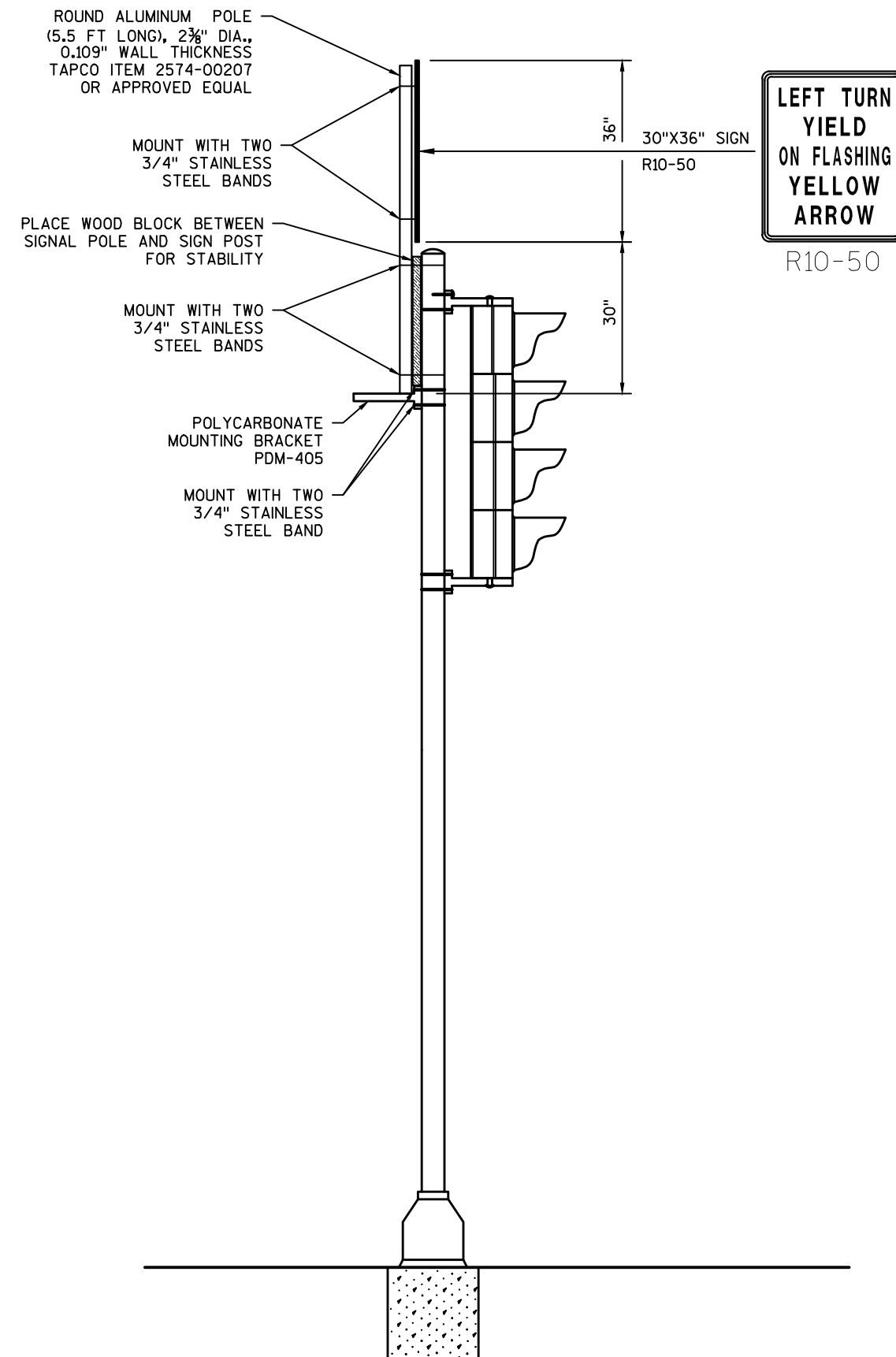


Dial 811 or (800) 242-8511
www.DiggersHotline.com



TYPICAL EXISTING SECTION

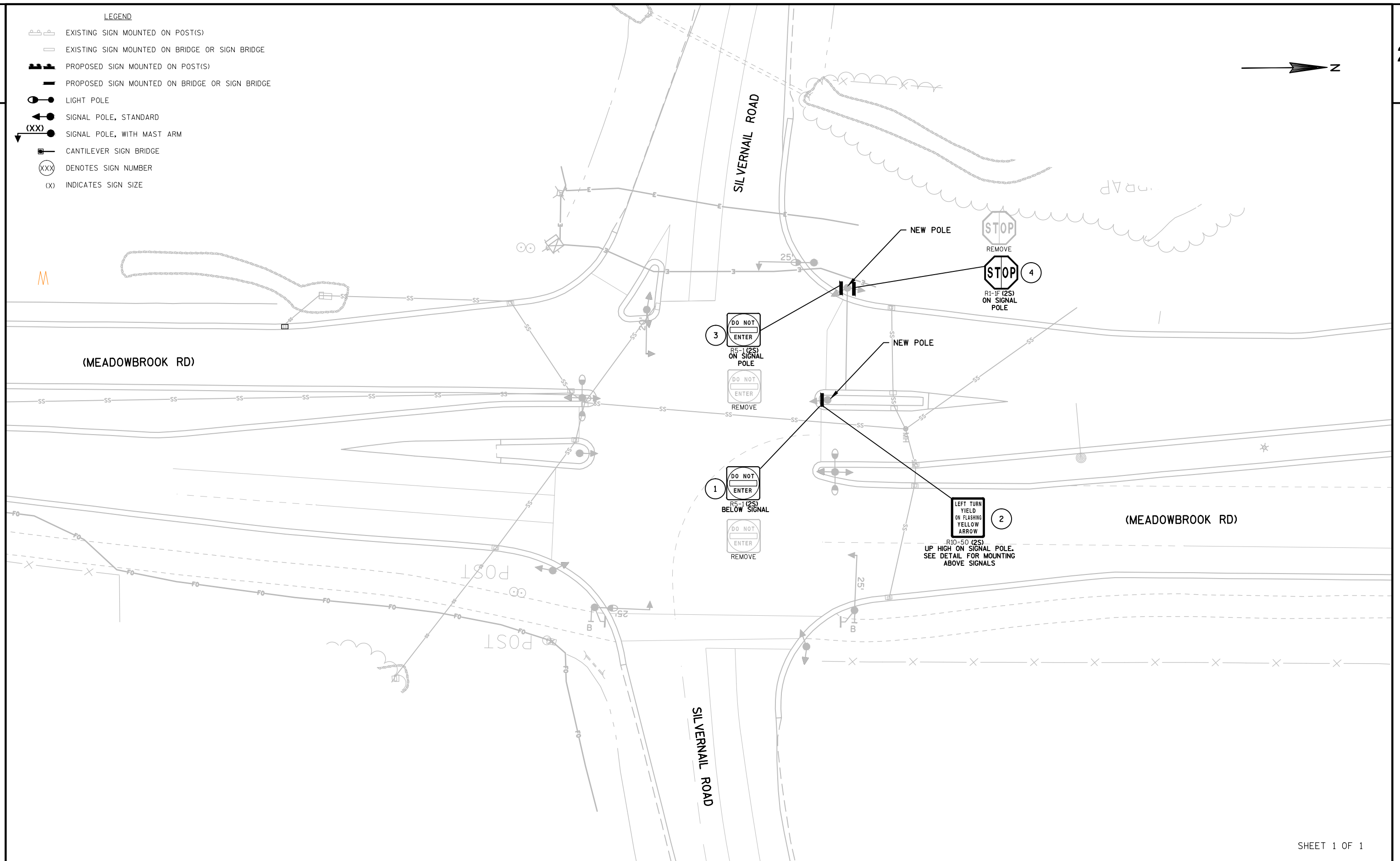
MEADOWBROOK RD



MOUNTING DETAIL FOR R10-50 SIGN ON SIGNAL POLE

LEGEND

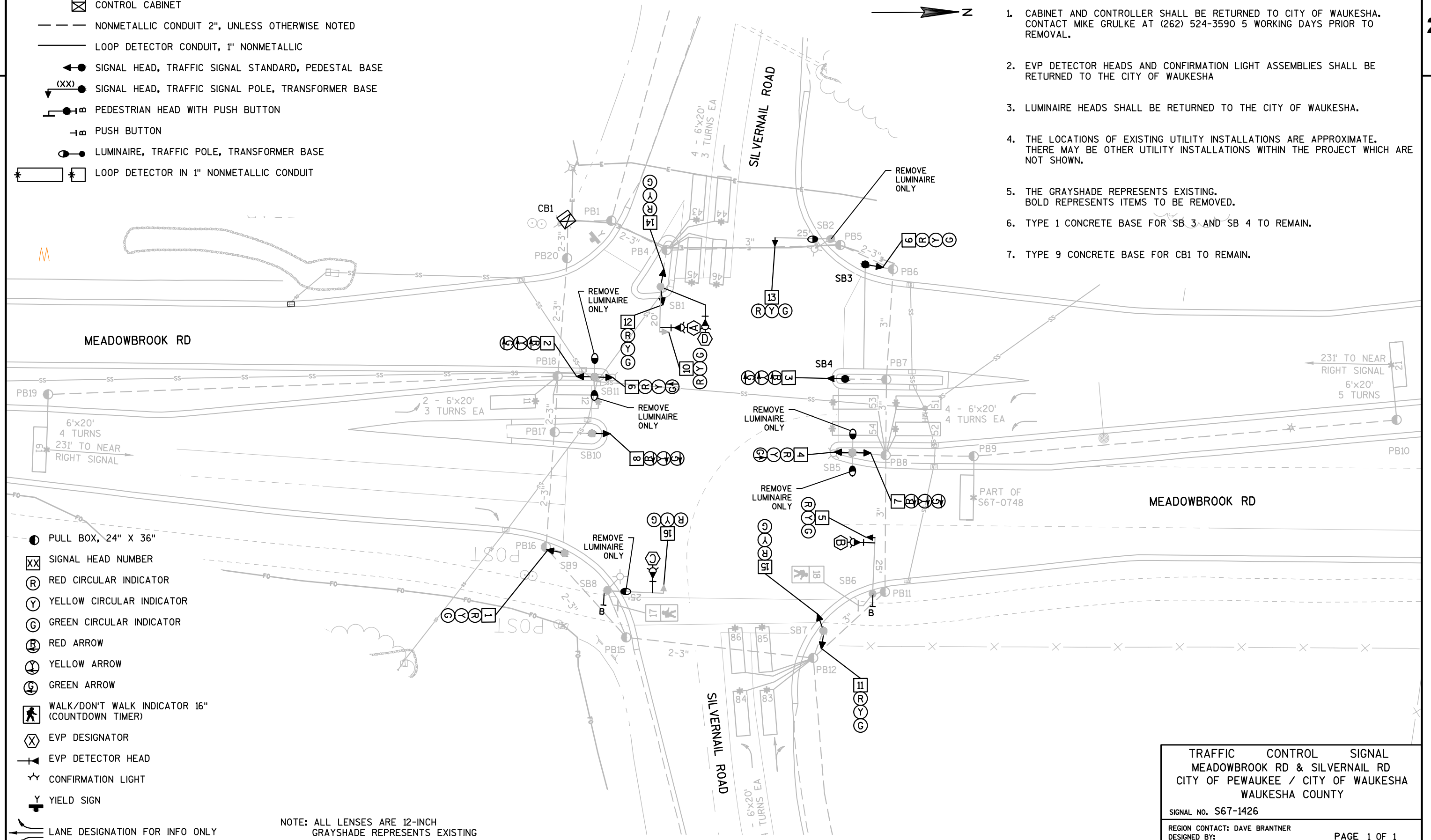
- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- LIGHT POLE
- SIGNAL POLE, STANDARD
- SIGNAL POLE, WITH MAST ARM
- CANTILEVER SIGN BRIDGE
- DENOTES SIGN NUMBER
- INDICATES SIGN SIZE



SHEET 1 OF 1

CONSTRUCTION NOTES:

1. CABINET AND CONTROLLER SHALL BE RETURNED TO CITY OF WAUKESHA. CONTACT MIKE GRULKE AT (262) 524-3590 5 WORKING DAYS PRIOR TO REMOVAL.
2. EVP DETECTOR HEADS AND CONFIRMATION LIGHT ASSEMBLIES SHALL BE RETURNED TO THE CITY OF WAUKESHA
3. LUMINAIRE HEADS SHALL BE RETURNED TO THE CITY OF WAUKESHA.
4. THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
5. THE GRAYSHADE REPRESENTS EXISTING.
BOLD REPRESENTS ITEMS TO BE REMOVED.
6. TYPE 1 CONCRETE BASE FOR SB 3 AND SB 4 TO REMAIN.
7. TYPE 9 CONCRETE BASE FOR CB1 TO REMAIN.



NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

TRAFFIC CONTROL SIGNAL
MEADOWBROOK RD & SILVERNAIL RD
CITY OF PEWAUKEE / CITY OF WAUKESHA
WAUKESHA COUNTY

SIGNAL NO. S67-1426

REGION CONTACT: DAVE BRANTNER

DESIGNED BY:
REVISED BY: BRIAN DODGE

PAGE 1 OF 1

PROJECT NO:1060-18-91

HWY: IH-94

COUNTY: WAUKESHA

TRAFFIC SIGNAL REMOVAL PLAN

SHEET

E

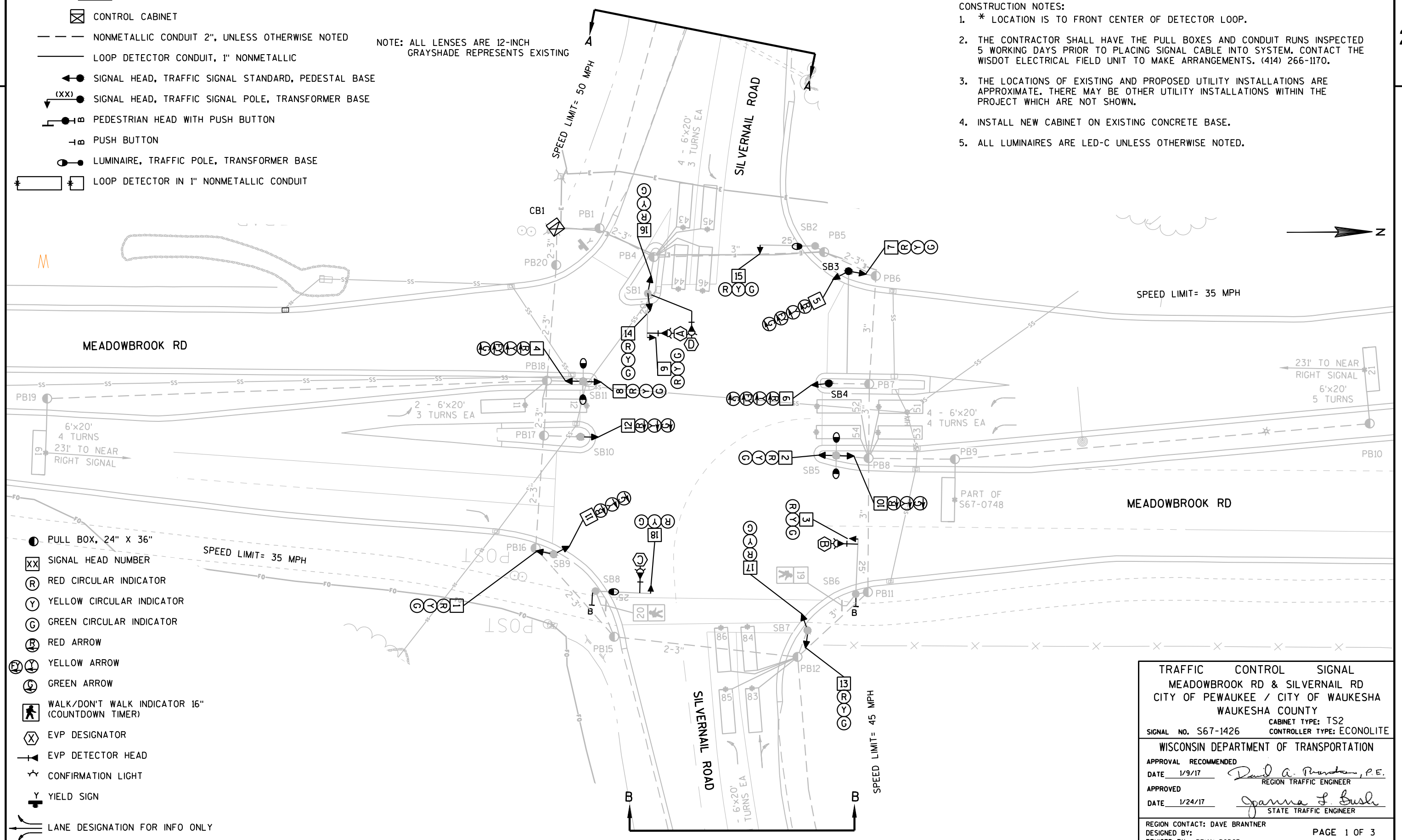
LEGEND

- ☒ 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
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- * □ * LOOP DETECTOR IN 1" NONMETALLIC CONDUIT

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 NEW CABINET ON EXISTING CONCRETE BASE.
- ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.



- PULL BOX, 24" X 36"
- XX SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- (R) RED ARROW
- (Y) YELLOW ARROW
- (G) GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD
- ☆ CONFIRMATION LIGHT
- Y YIELD SIGN
- LANE DESIGNATION FOR INFO ONLY

TRAFFIC CONTROL SIGNAL	
MEADOWBROOK RD & SILVERNAIL RD	
CITY OF PEWAUKEE / CITY OF WAUKESHA	
WAUKESHA COUNTY	
SIGNAL NO. S67-1426	CABINET TYPE: TS2 CONTROLLER TYPE: ECONOLITE
WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVAL RECOMMENDED	DATE 1/9/17 <i>David A. Brantner, P.E.</i> REGION TRAFFIC ENGINEER
APPROVED	DATE 1/24/17 <i>Janina F. Bush</i> STATE TRAFFIC ENGINEER
REGION CONTACT: DAVE BRANTNER	
DESIGNED BY:	REVISOR: BRIAN DODGE

PROJECT NO: 1060-18-91

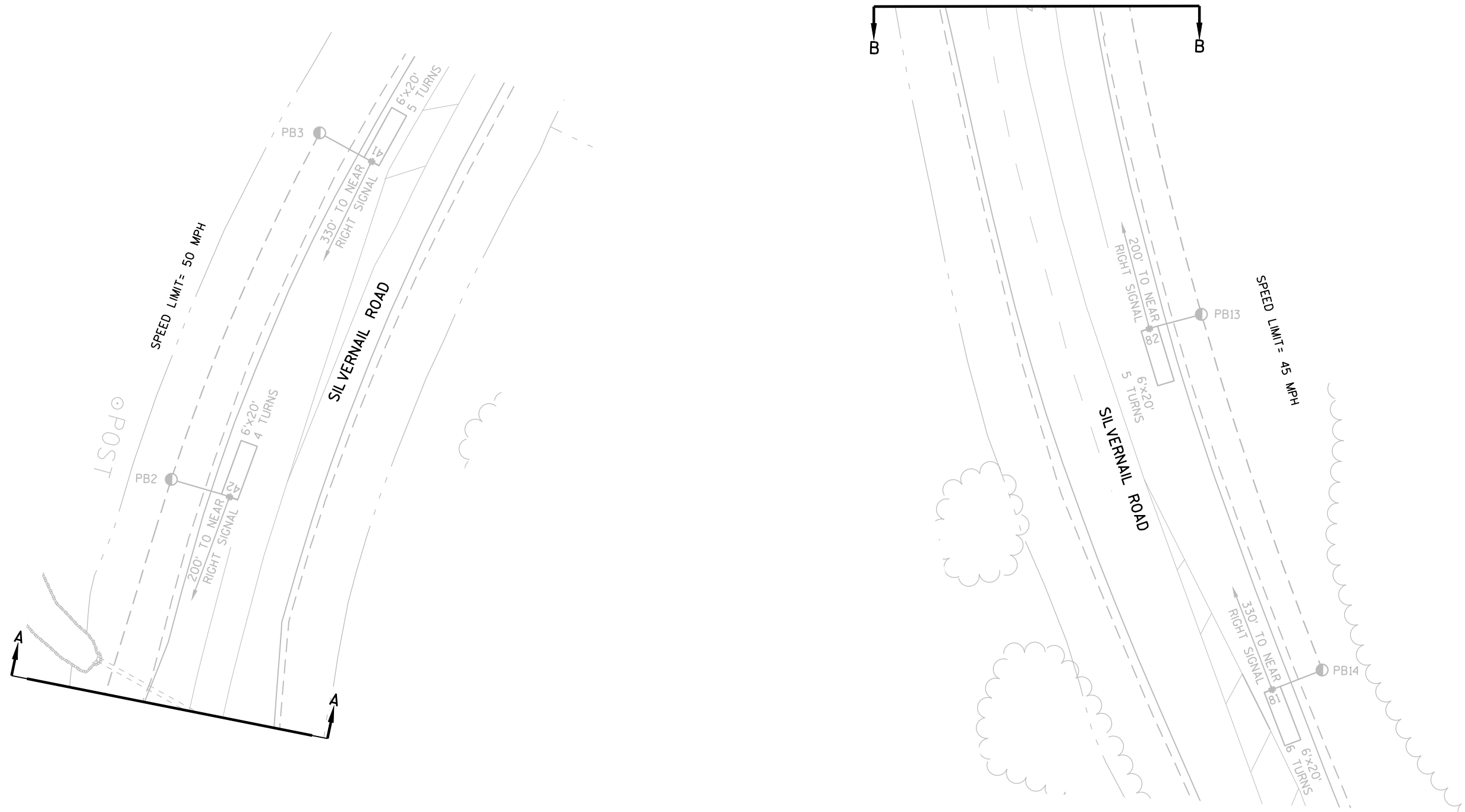
HWY: IH-94

COUNTY: WAUKESHA

TRAFFIC SIGNAL PLAN

SHEET

E



TRAFFIC CONTROL SIGNAL MEADOWBROOK RD & SILVERNAIL RD CITY OF PEWAUKEE / CITY OF WAUKESHA WAUKESHA COUNTY	
SIGNAL NO. S67-1426	
REGION CONTACT: DAVE BRANTNER DESIGNED BY: REVISED BY: BRIAN DODGE	PAGE 2 OF 3

PROJECT NO:1060-18-91

HWY:IH-94

COUNTY:WAUKESHA

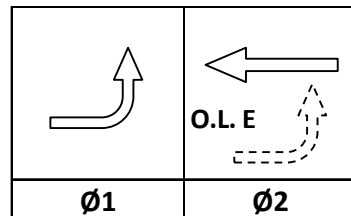
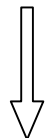
TRAFFIC SIGNAL PLAN

SHEET

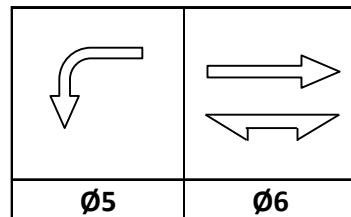
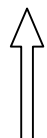
E

	HEAD NUMBERS	FLASH
Ø1	4,5,6	R
Ø2	7,8,9	R
Ø3		
Ø4	16,17,18	R
Ø5	10,11,12	R
Ø6	1,2,3	R
Ø7		
Ø8	13,14,15	R
Ø2P		
Ø4P		
Ø6P	19,20	
Ø8P		
OLE	4,5,6	-
OLF		
OLG		
OLH		

RING 1

NOT
USED

RING 2

NOT
USED

BARRIER

Z

CONTROLLER LOGIC

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

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+8	8+4

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+8 OR 8+4, CONTROLLER SHALL RETURN TO PHASES 4+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	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	21	42	44	46	52	54	81
CALLED PHASE	1	2	4	4	4	5	5	8
CALL OPTION	X	X		X	X	X	X	
DELAY TIME					X			
EXTENTION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME			X					X
USE ADDED INITIAL		X						
CROSS SWITCH PHASE	2							

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	12	41	43	45	51	53	61	82
CALLED PHASE	1	4	4	4	5	5	6	8
CALL OPTION	X		X	X	X	X	X	
DELAY TIME								
EXTENTION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME		X						X
USE ADDED INITIAL							X	
CROSS SWITCH PHASE	2							

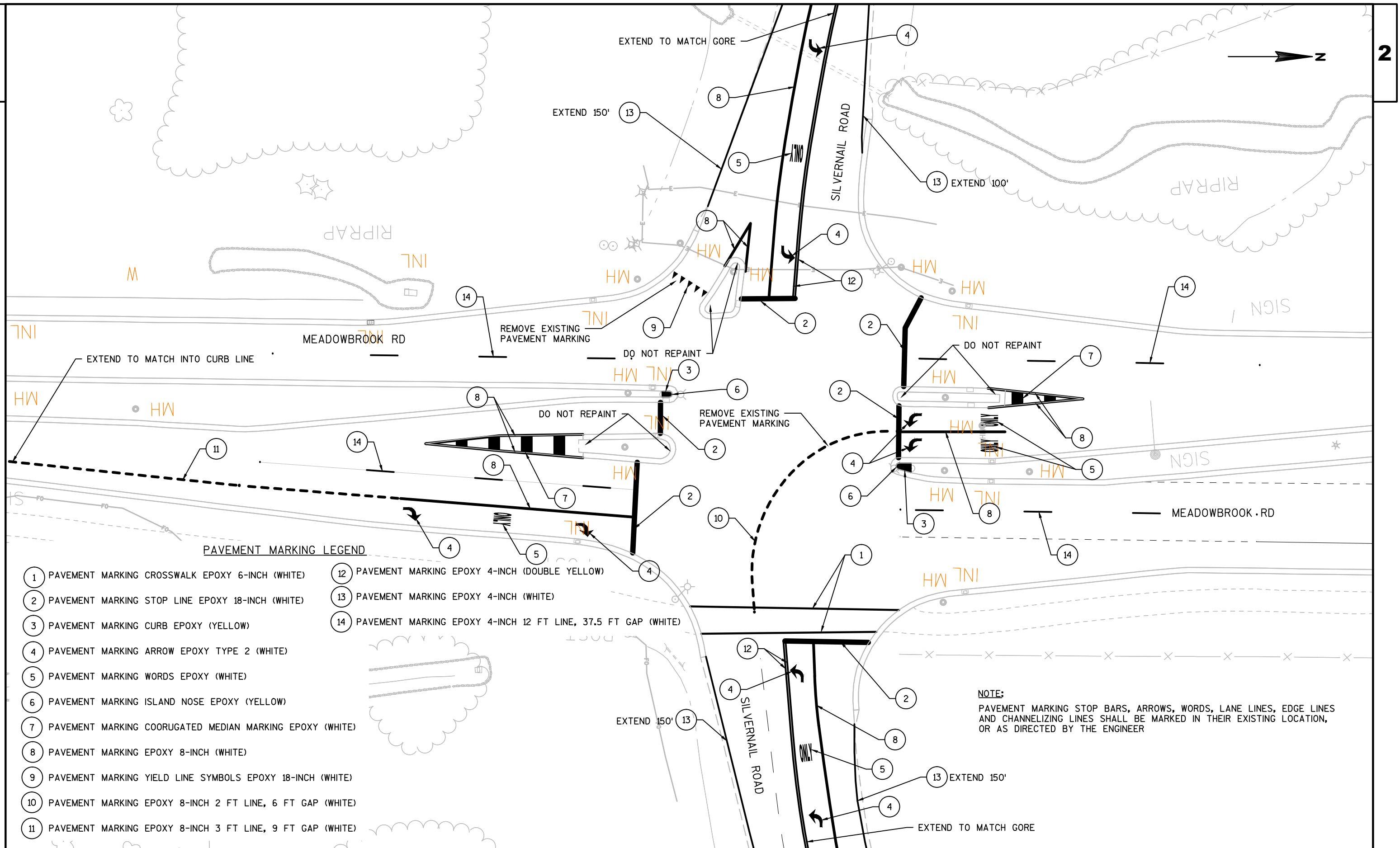
19	17	23	21	27	25	31	29
83	85						
8	8						
X	X						
X	X						

20	18	24	22	28	26	32	30
84	86						
8	8						
X	X						
X	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	

MEADOWBROOK RD & SILVERNAIL RD	
CITY OF PEWAUKEE/CITY OF WAUKESHA	
WAUKESHA COUNTY	
SIGNAL NO: S67-1426	CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE	
DATE: 1/17	PAGE NO. 3 OF 3



Estimate Of Quantities

1060-18-91

Line	Item	Item Description	Unit	Total	Qty
0010	204.9060.S	Removing (item description) 01. Luminaires	EACH	6.000	6.000
0020	213.0100	Finishing Roadway (project) 01. 1060-18-91	EACH	1.000	1.000
0030	619.1000	Mobilization	EACH	1.000	1.000
0040	637.2210	Signs Type II Reflective H	SF	20.000	20.000
0050	637.2215	Signs Type II Reflective H Folding	SF	5.180	5.180
0060	638.2602	Removing Signs Type II	EACH	2.000	2.000
0070	643.0100	Traffic Control (project) 01. 1060-18-91	EACH	1.000	1.000
0080	643.0300	Traffic Control Drums	DAY	1,120.000	1,120.000
0090	643.0420	Traffic Control Barricades Type III	DAY	48.000	48.000
0100	643.0705	Traffic Control Warning Lights Type A	DAY	32.000	32.000
0110	643.0715	Traffic Control Warning Lights Type C	DAY	144.000	144.000
0120	643.0800	Traffic Control Arrow Boards	DAY	16.000	16.000
0130	643.0900	Traffic Control Signs	DAY	272.000	272.000
0140	646.0106	Pavement Marking Epoxy 4-Inch	LF	1,235.000	1,235.000
0150	646.0126	Pavement Marking Epoxy 8-Inch	LF	890.000	890.000
0160	646.0600	Removing Pavement Markings	LF	137.000	137.000
0170	647.0166	Pavement Marking Arrows Epoxy Type 2	EACH	8.000	8.000
0180	647.0356	Pavement Marking Words Epoxy	EACH	5.000	5.000
0190	647.0456	Pavement Marking Curb Epoxy	LF	68.000	68.000
0200	647.0566	Pavement Marking Stop Line Epoxy 18-Inch	LF	191.000	191.000
0210	647.0606	Pavement Marking Island Nose Epoxy	EACH	2.000	2.000
0220	647.0766	Pavement Marking Crosswalk Epoxy 6-Inch	LF	174.000	174.000
0230	647.0856	Pavement Marking Concrete Corrugated Median Epoxy	SF	160.000	160.000
0240	655.0230	Cable Traffic Signal 5-14 AWG	LF	19.000	19.000
0250	655.0240	Cable Traffic Signal 7-14 AWG	LF	22.000	22.000
0260	655.0900	Traffic Signal EVP Detector Cable	LF	1,138.000	1,138.000
0270	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	2.000	2.000
0280	658.0110	Traffic Signal Face 3-12 Inch Vertical	EACH	11.000	11.000
0290	658.0115	Traffic Signal Face 4-12 Inch Vertical	EACH	3.000	3.000
0300	658.0155	Traffic Signal Face 3-12 Inch Horizontal	EACH	4.000	4.000
0310	658.0215	Backplates Signal Face 3 Section 12-Inch	EACH	15.000	15.000
0320	658.0220	Backplates Signal Face 4 Section 12-Inch	EACH	3.000	3.000
0330	658.0500	Pedestrian Push Buttons	EACH	2.000	2.000
0340	658.0600	Led Modules 12-Inch Red Ball	EACH	12.000	12.000
0350	658.0605	Led Modules 12-Inch Yellow Ball	EACH	12.000	12.000
0360	658.0610	Led Modules 12-Inch Green Ball	EACH	12.000	12.000
0370	658.0615	Led Modules 12-Inch Red Arrow	EACH	6.000	6.000
0380	658.0620	Led Modules 12-Inch Yellow Arrow	EACH	9.000	9.000
0390	658.0625	Led Modules 12-Inch Green Arrow	EACH	6.000	6.000
0400	658.5069	Signal Mounting Hardware (location) 01. Meadowbrook	LS	1.000	1.000

Estimate Of Quantities

1060-18-91

Line	Item	Item Description	Unit	Total	Qty
		Rd. & Silvernail Rd			
0410	659.1125	Luminaires Utility LED C	EACH	6.000	6.000
0420	SPV.0060	Special 02. Lamp Disposal High Density Discharge	EACH	6.000	6.000
0430	SPV.0060	Special 03. Sign Support Special Mounting	EACH	1.000	1.000
0440	SPV.0105	Special 01. Transport and Install State Furnished Traffic Signal Cabinet Meadowbrook Rd & Silvernail Rd	LS	1.000	1.000
0450	SPV.0105	Special 02. Remove Traffic Signals Meadowbrook Rd & Silvernail Rd	LS	1.000	1.000
0460	SPV.0105	Special 03. Transport and Install State Furnished EVP Detector Heads Meadowbrook Rd & Silvernail Rd	LS	1.000	1.000

MEADOWBROOK RD & SILVERNAIL RD
WAUKESHA COUNTY
CATEGORY 0010
S67-1426

STATE FURNISHED MATERIALS SUMMARY		
EACH	DESCRIPTION	
1	TRAFFIC SIGNAL CONTROLLER, FULLY ACTUATED, 8 PHASE	
1	TRAFFIC SIGNAL CABINET	
4	EVP DETECTOR HEADS	
4	EVP CONFIRMATION LIGHTS	

STATE FURNISHED FOR INFORMATION ONLY		
SIGNAL	EVP DETECTOR	EVP
	HEADS	CONFIRMATION
	TYPE I	LIGHT ASSEMBLY TYPE I
BASE NO.	EACH	EACH
SB1	2	2
SB6	1	1
SB8	1	1
TOTAL		4

TRAFFIC SIGNAL CABLE AND WIRE			
		655.0230	655.0240
		CABLE	CABLE
		TRAFFIC SIGNAL	TRAFFIC SIGNAL
		5-14 AWG	7-14 AWG
FROM	TO	L.F.	L.F.
SB3	HEAD 5		22
SB9	HEAD 11	19	
TOTAL		19	22

TRAFFIC SIGNAL EVP DETECTOR CABLE		
		655.0900
		TRAFFIC SIGNAL
		EVP DETECTOR
		CABLE
FROM	TO	L.F.
CB1	SB1 (HEAD A)	157
CB1	SB6 (HEAD B)	477
CB1	SB8 (HEAD C)	367
CB1	SB1 (HEAD D)	137
TOTAL		1138

SIGNAL MOUNTING HARDWARE	
	658.5069.01
	SIGNAL
	MOUNTING
	HARDWARE
LOCATION	L.S.
MEADOWBROOK RD & SILVERNAIL RD	1
TOTAL	1

POLES			
	657.0425	658.0500	659.1125
	TRAFFIC SIGNAL		
	STANDARDS	PEDESTRIAN	LUMINAIRES
	ALUMINUM	PUSH	UTILITY
SIGNAL	15-FT	BUTTONS	LED C
BASE NO.	EACH	EACH	EACH
SB2			1
SB3	1		
SB4	1		
SB5			2
SB6		1	
SB8		1	1
SB11			2
TOTAL	2	2	6

		FACES										
		658.0110	658.0115	658.0155	658.0215	658.0220	658.0600	658.0605	658.0610	658.0615	658.0620	658.0625
		TRAFFIC	TRAFFIC	TRAFFIC	BACKPLATES	BACKPLATES						
		SIGNAL FACE	SIGNAL FACE	SIGNAL FACE	SIGNAL FACE	SIGNAL FACE	LED MODULES	LED MODULES	LED MODULES	LED MODULES	LED MODULES	LED MODULES
		3-12 INCH	4-12 INCH	3-12 INCH	3 SECTION	4 SECTION	12-INCH	12-INCH	12-INCH	12-INCH	12-INCH	12-INCH
SIGNAL HEAD NO.	SIGNAL BASE NO.	VERTICAL	VERTICAL	HORIZONTAL	12-INCH	12-INCH	RED BALL	YELLOW BALL	GREEN BALL	RED ARROW	YELLOW ARROW	GREEN ARROW
		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1	SB9	1			1		1	1	1			
2	SB5	1			1		1	1	1			
3	SB6			1	1		1	1	1			
4	SB11		1			1				1	2	1
5	SB3		1			1				1	2	1
6	SB4		1			1				1	2	1
7	SB3	1			1		1	1	1			
8	SB11	1			1		1	1	1			
9	SB1			1	1		1	1	1			
10	SB5	1			1					1	1	1
11	SB9	1			1					1	1	1
12	SB10	1			1					1	1	1
13	SB7	1			1		1	1	1			
14	SB1	1			1		1	1	1			
15	SB2			1	1		1	1	1			
16	SB1	1			1		1	1	1			
17	SB7	1			1		1	1	1			
18	SB8			1	1		1	1	1			
TOTAL		11	3	4	15	3	12	12	12	6	9	6

REMOVING LUMINAIRES			
	204.9060.S.01	SPV.0060.02	
		LAMP DISPOSAL	
	REMOVING	HIGH INTENSITY	
	LUMINAIRES	DISCHARGE	
SIGNAL		EACH	EACH
BASE NO.			
SB2	REMOVE LUMIN. ONLY	1	1
SB5	REMOVE LUMIN. ONLY	2	2
SB8	REMOVE LUMIN. ONLY	1	1
SB11	REMOVE LUMIN. ONLY	2	2
TOTAL		6	6

INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET	
	SPV.0105.01
	TRANSPORT AND
	INSTALL STATE
	FURNISHED TRAFFIC
	SIGNAL CABINET
LOCATION	L.S.
MEADOWBROOK RD & SILVERNAIL RD	1
TOTAL	1

REMOVE TRAFFIC SIGNALS	
	SPV.0105.02
	REMOVE
	TRAFFIC SIGNALS
LOCATION	L.S.
MEADOWBROOK RD & SILVERNAIL RD	1
TOTAL	1

EVP DETECTOR HEAD INSTALLATION	
	SPV.0105.03
	TRANSPORT AND INSTALL
	STATE FURNISHED
	EVP DETECTOR HEADS
LOCATION	L.S.
MEADOWBROOK RD & SILVERNAIL RD	1

TYPE II PERMANENT SIGNING

CATEGORY 0010

1060-18-91 IH 94 AT SILVERNAIL RD

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE			637.2210	637.2215	638.2602	SPV.0060.03	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 H FOLDING [SF]	REMOVING SIGNS TYPE II [EA]	SIGN SUPPORT SPECIAL MOUNTING [EA]		
1	R5-1(2S)	--	30	x	30	6.250	--	1	--	--	MOUNT ON SIGNAL POLE BELOW SIGNAL
2	R10-50(2S)	--	30	x	36	7.500	--	--	1	--	MOUNT ABOVE SIGNAL HEAD
3	R5-1(2S)	--	30	x	30	6.250	--	1	--	--	MOUNT ON SIGNAL POLE
4	R1-1F(2S)	--	30	x	30	--	5.180	--	--	--	MOUNT ON SIGNAL POLE
--	--	--	--	x	--	--	--	--	--	--	--
TOTALS						20.000	5.180	2	1		

TRAFFIC CONTROL ITEMS

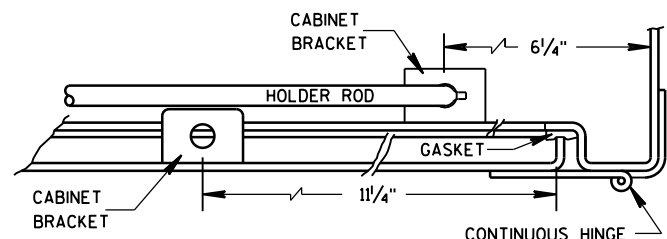
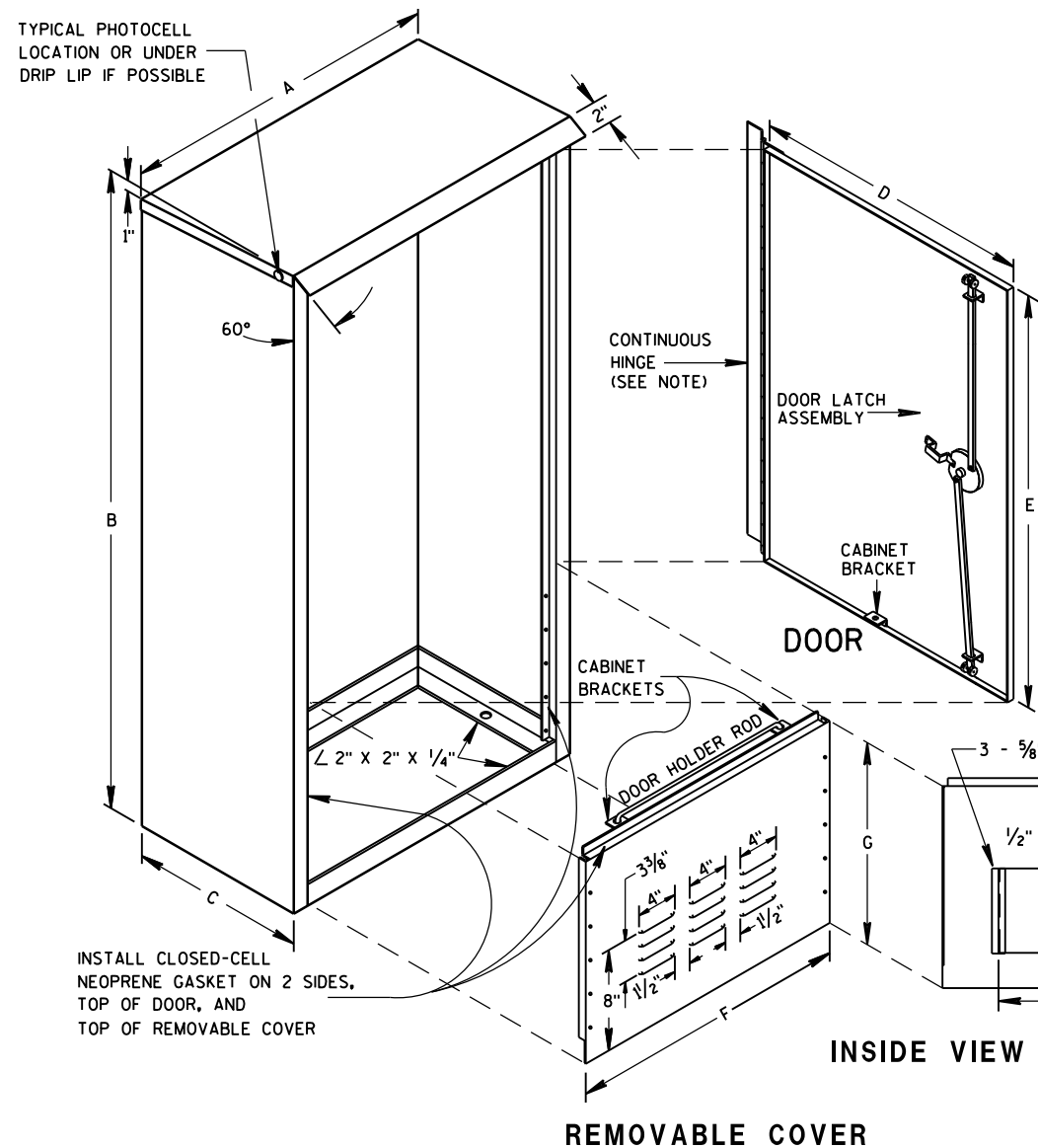
			643.0100	643.0300	643.0420	643.0705	643.0715	643.0800	643.0900
				DRUMS	BARRICADES	WARNING LIGHTS		ARROW	
		PROJECT	DAYS	TYPE III	TYPE A	TYPE C	BOARDS	SIGNS	
LOCATION	# OF DAYS	EACH	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS
MEADOWBROOK RD AND SILVERNAIL RD INTERSECTION EAST LEG	3	--	200	9	6	27	3	51	
MEADOWBROOK RD AND SILVERNAIL RD INTERSECTION NORTH LEG	3	--	200	9	6	27	3	51	
MEADOWBROOK RD AND SILVERNAIL RD INTERSECTION NORTH LEG MEDIAN	2	--	160	6	4	18	2	34	
MEADOWBROOK RD AND SILVERNAIL RD INTERSECTION WEST LEG	3	--	200	9	6	27	3	51	
MEADOWBROOK RD AND SILVERNAIL RD INTERSECTION SOUTH LEG	3	--	200	9	6	27	3	51	
MEADOWBROOK RD AND SILVERNAIL RD INTERSECTION SOUTH LEG MEDIAN	2	--	160	6	4	18	2	34	
PROJECT 1060-18-91	--	1	--	--	--	--	--	--	--
	TOTAL	1	1120	48	32	144	16	272	

PAVEMENT MARKING

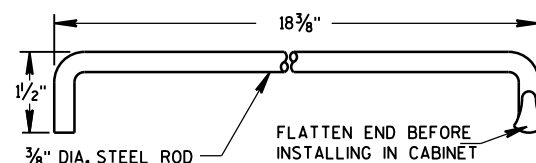
				646.0106 EPOXY 4-INCH			646.0126 EPOXY 8-INCH CHANNELIZING			646.0600	647.0166	647.0356	647.0456	647.0566	647.0606	647.0766	647.0856
				LINE	LINE	SKIP	LINE	SKIP	SKIP	REMOVING PAVEMENT	ARROWS EPOXY	WORDS EPOXY	CURB EPOXY	STOP LINE EPOXY	ISLAND NOSE EPOXY	CROSSWALK EPOXY	CONCRETE CORRUGATED
				(WHITE)	(DOUBLE YELLOW)	(12.5' LINE, 37.5' GAP) (WHITE)	(WHITE)	(2' LINE, 6' GAP) (WHITE)	(3' LINE, 9' GAP) (WHITE)	MARKINGS	TYPE 2 (WHITE)	(WHITE)	(YELLOW)	(WHITE)	(YELLOW)	(WHITE)	(WHITE)
STATION	TO	STATION	LOCATION	LF	LF	LF	LF	LF	LF	LF	EACH	EACH	LF	LF	EACH	LF	SF
INTERSECTION OF MEADOWBROOK RD AND SILVERNAIL RD				--	--	--	--	30	--	117	--	--	--	--	--	--	--
			NORTH LEG	--	--	75	142	--	--	--	2	2	56	70	1	--	26
			EAST LEG	350	260	--	178	--	--	--	2	1	--	38	--	174	--
			SOUTH LEG	--	--	75	262	--	44	--	2	1	12	59	1	--	134
			WEST LEG	250	225	--	234	--	--	20	2	1	--	24	--	--	--
SUBTOTAL				600	485	150	816	30	44	137	8	5	68	191	2	174	160
TOTAL				1235			890			137	8	5	68	191	2	174	160

Standard Detail Drawing List

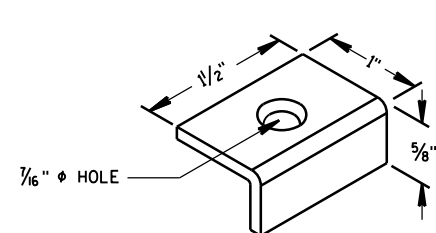
09D02-03	SIGNAL CONTROL CABINET
09E01-14G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
15C07-13B	PAVEMENT MARKING WORDS
15C07-13C	PAVEMENT MARKING ARROWS
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C08-17B	PAVEMENT MARKING (TURN LANES)
15C08-17C	PAVEMENT MARKING (ISLANDS)
15C18-03	MEDIAN ISLAND MARKING
15C20-02	YIELD MARKING
15C33-02	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D21-04	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE



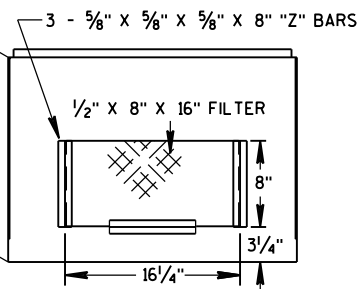
HINGE & DOOR HOLDER



HOLDER ROD



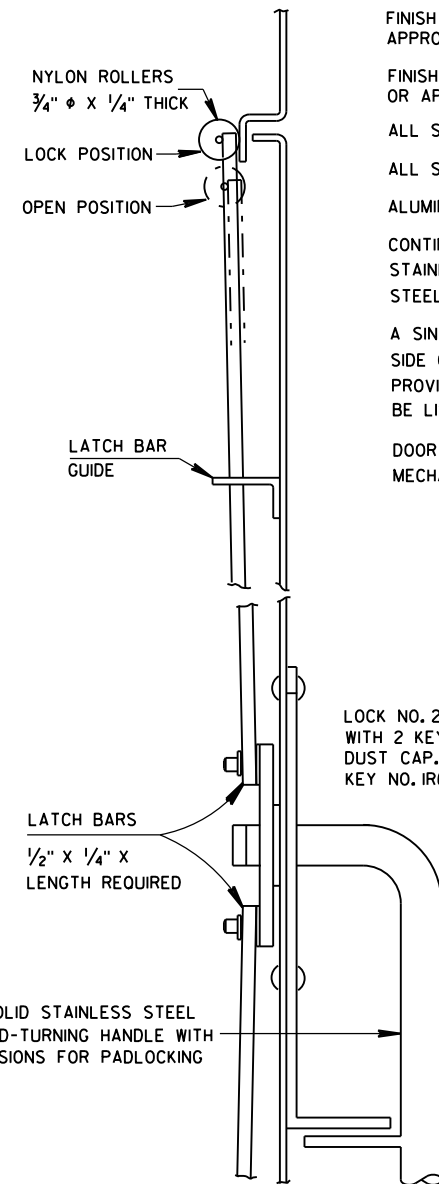
CABINET BRACKET



INSIDE VIEW SHOWING FILTER

TABLE OF DIMENSIONS (INCHES)

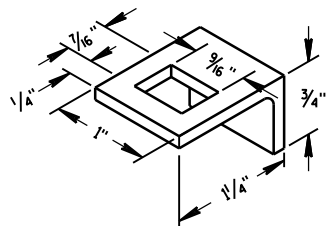
MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16 1/2	16 1/2	24
D	26 1/2	34 3/4	33 3/4
E	38 3/4	38 3/4	38 3/4
F	26 1/2	34 3/4	33 3/4
G	19	19	25
H	16 1/2	16 1/2	24
H/2	8 1/4	8 1/4	12
J	30	38	38
J/2	15	19	19
K	13 3/4	13 3/4	21 1/4
L	27 1/2	35 1/2	35 1/2



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.

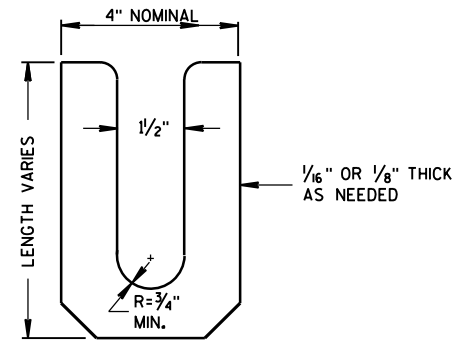
ALUMINUM SHALL BE TYPE 5052-H32.

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.

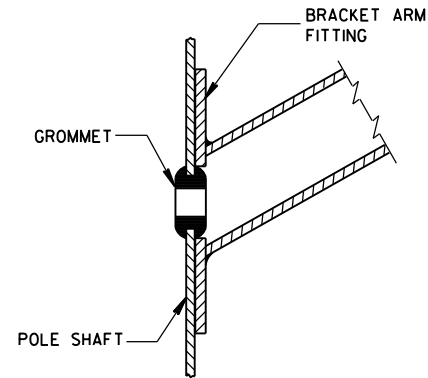
A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH-NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST.

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

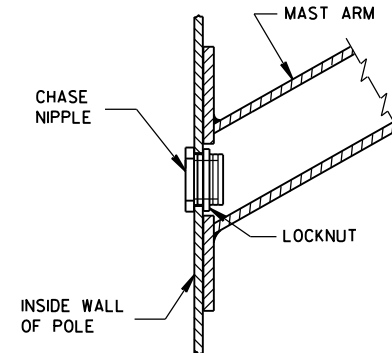
SIGNAL CONTROL CABINET	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	



LEVELING SHIM
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



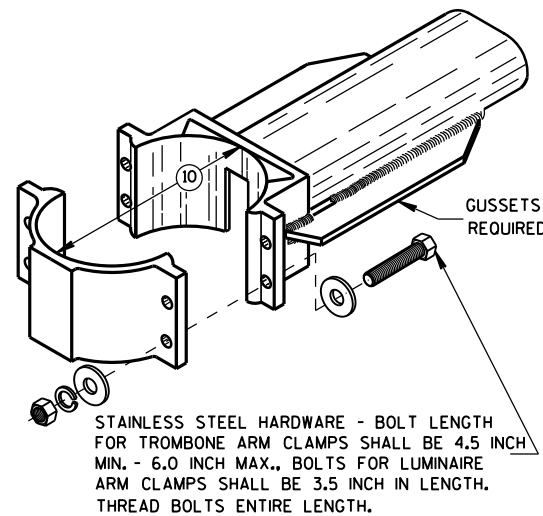
TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

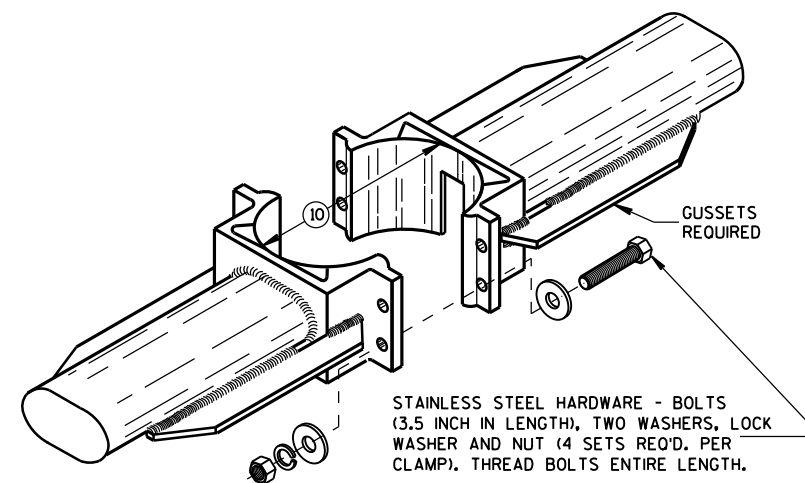
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- ⑩ 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- ⑪ INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
- ⑫ BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT
CIRCLE USING 1" DIAMETER ANCHOR RODS.
- ⑬ LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING
POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT
ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE
CONCRETE BASE AND A METALLIC BASE PLATE.

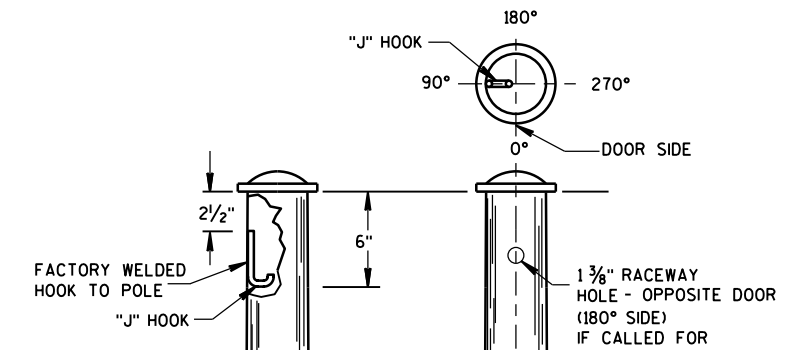
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE
AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



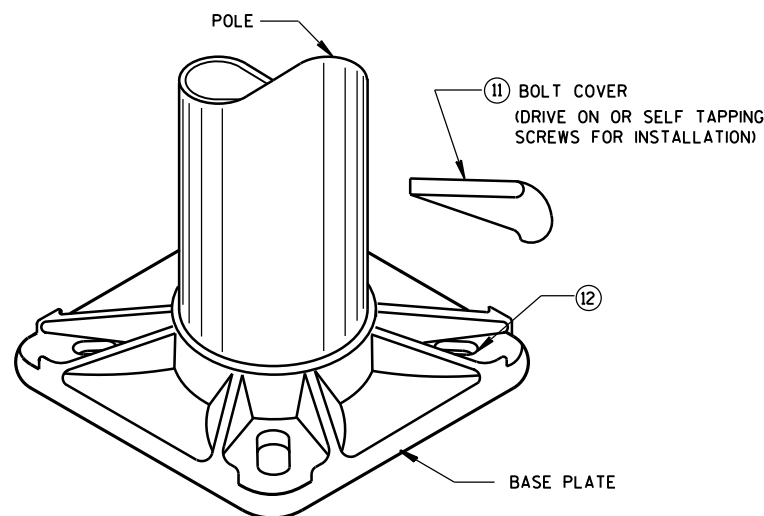
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



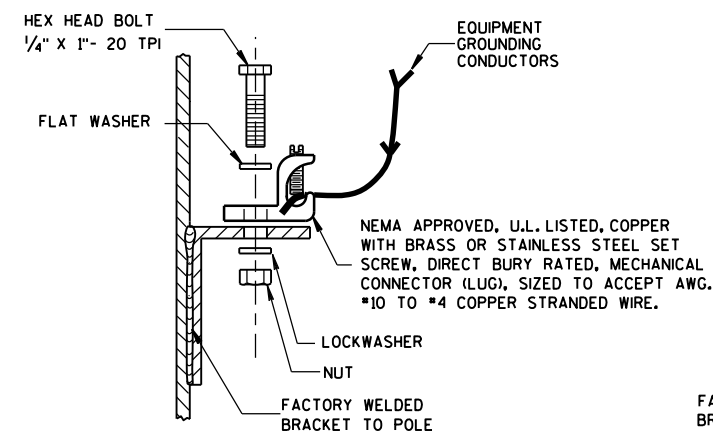
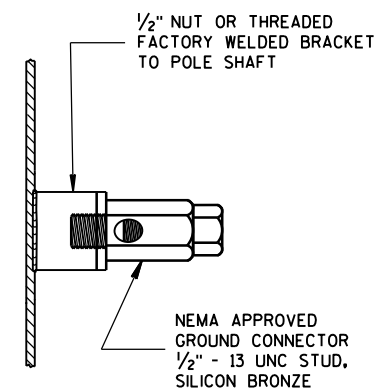
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



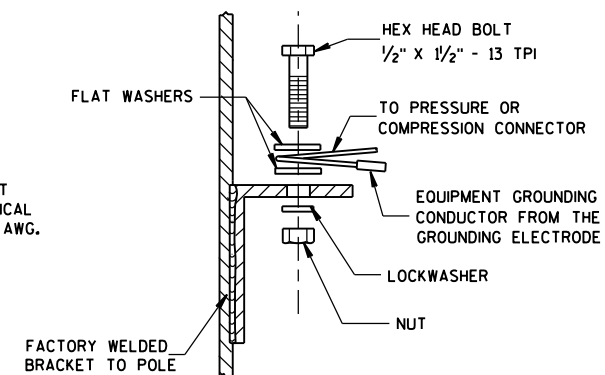
TYPICAL "J" HOOK LOCATION



BASE PLATE



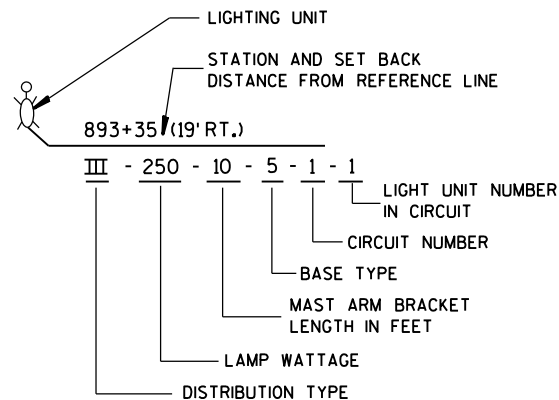
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



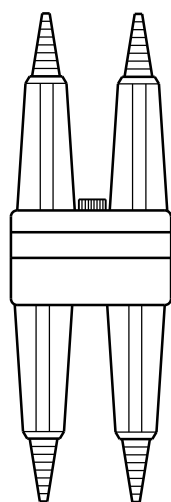
HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

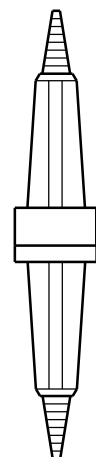
APPROVED
Feb. 2015
DATE /S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER
FHWA



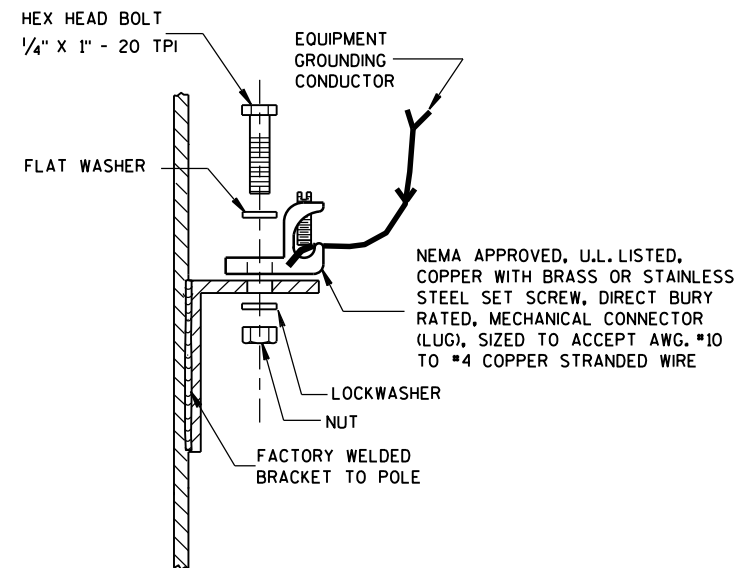
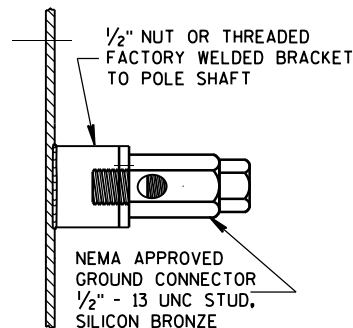
**LIGHTING UNIT CODE
(TYPICAL)**



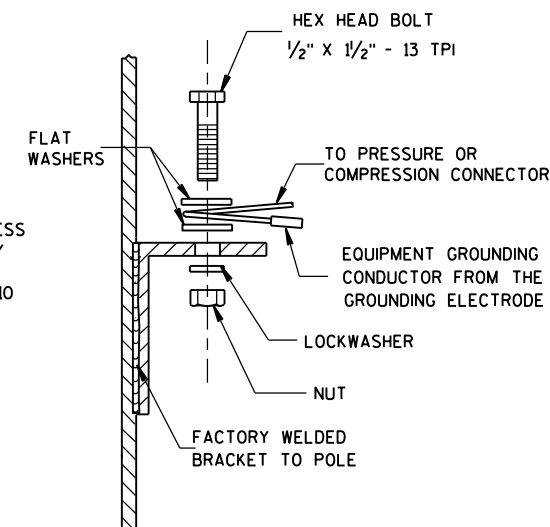
**DETAIL "A"
BREAKAWY
DOUBLE POLE WITH
WATERPROOF
INSULATING BOOT**



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



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

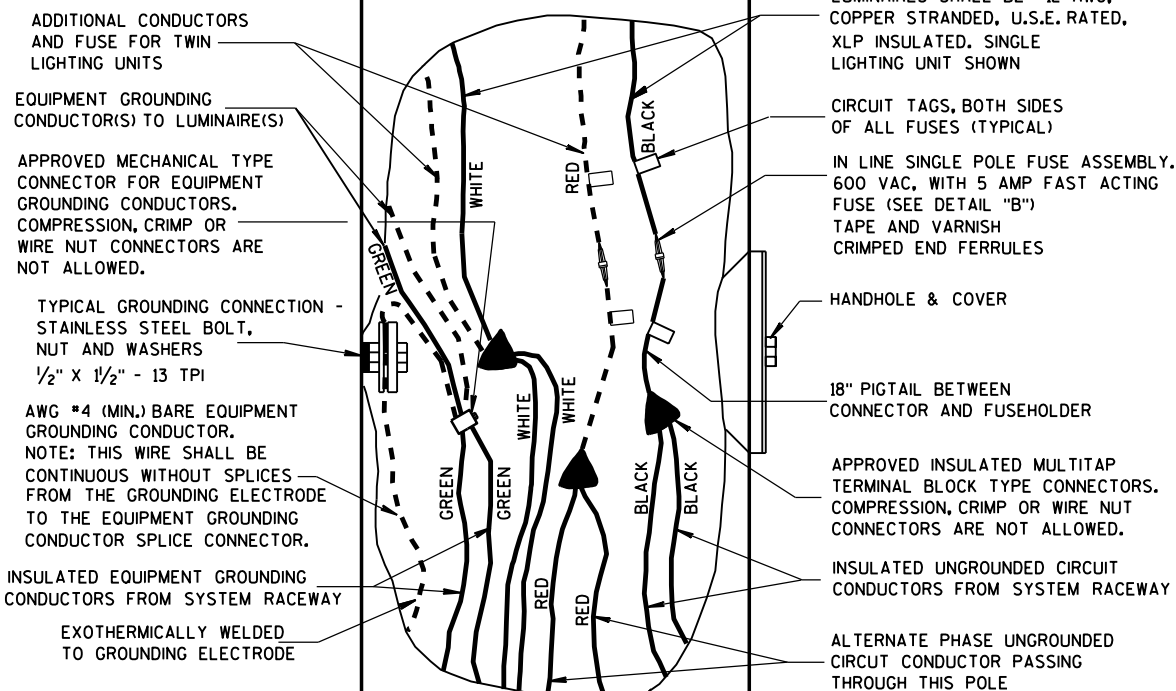


GENERAL NOTES

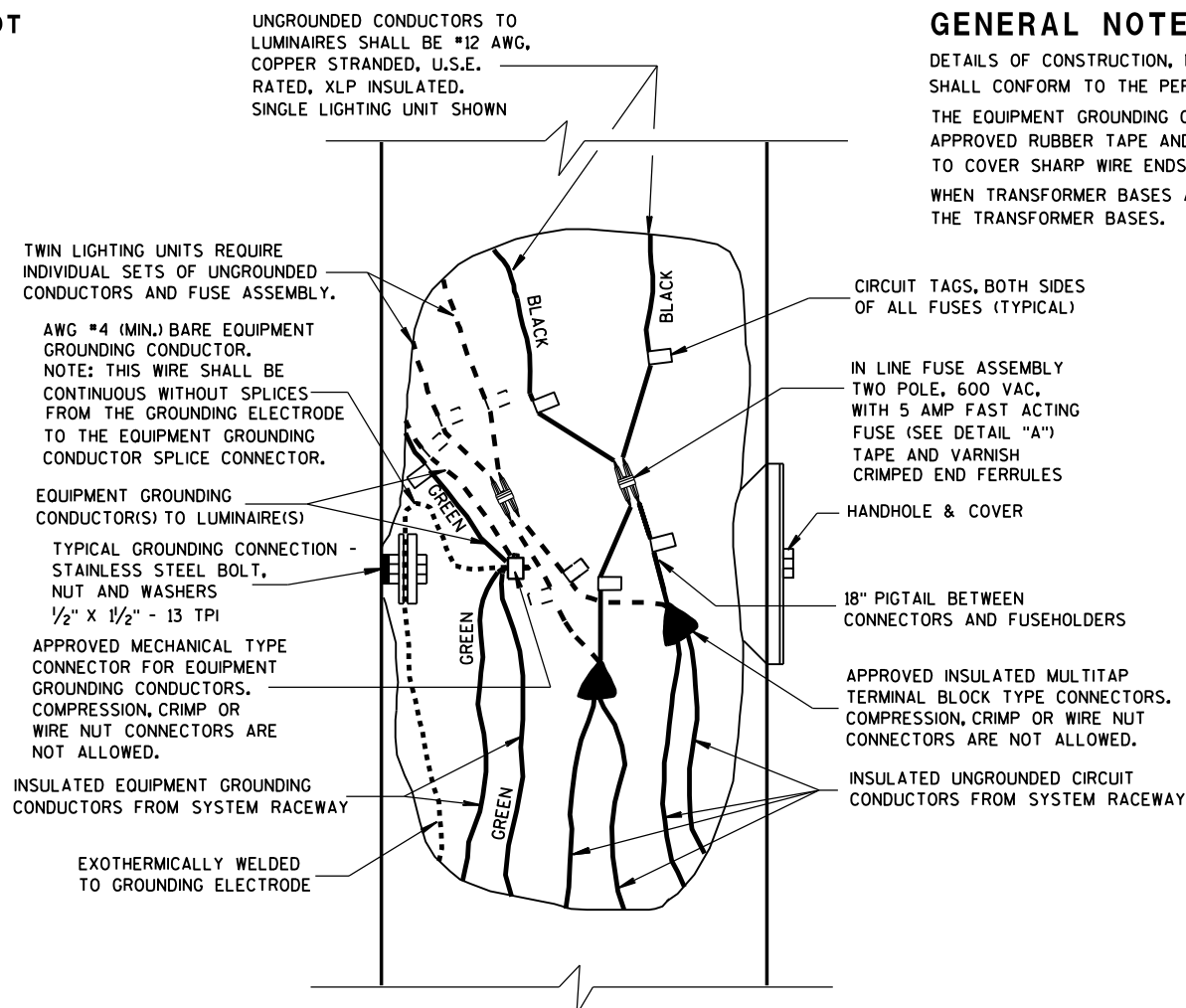
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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 (UNGROUNDING CONDUCTOR)
WITH GROUNDED CONDUCTOR AND
WITH EQUIPMENT GROUNDING CONDUCTOR**

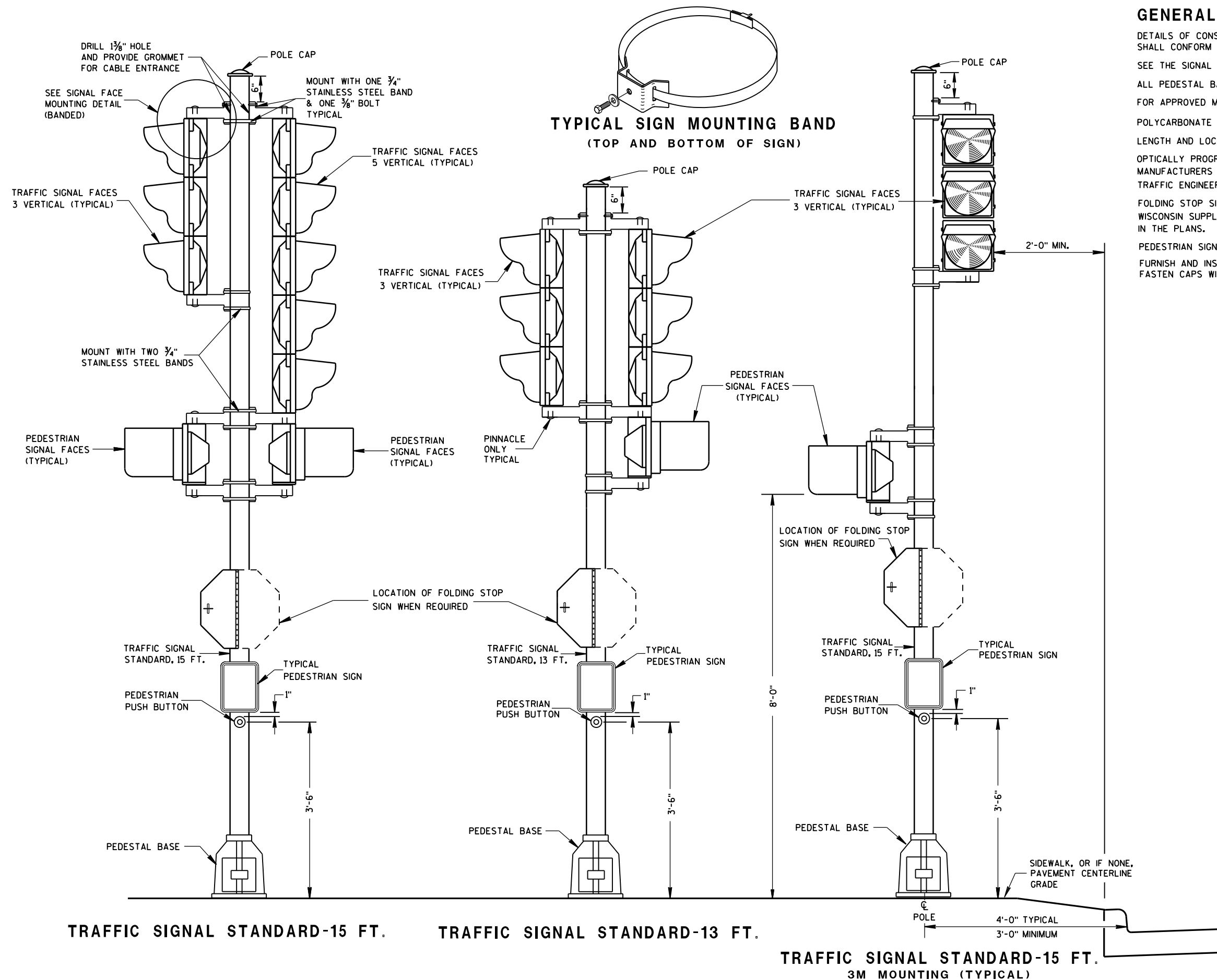


**2 WIRE - 240 OR 480 VAC (UNGROUNDING CONDUCTORS)
WITH EQUIPMENT GROUNDING CONDUCTOR**

**NON-FREEWAY LIGHTING UNIT
POLE WIRING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



GENERAL NOTES

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

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.

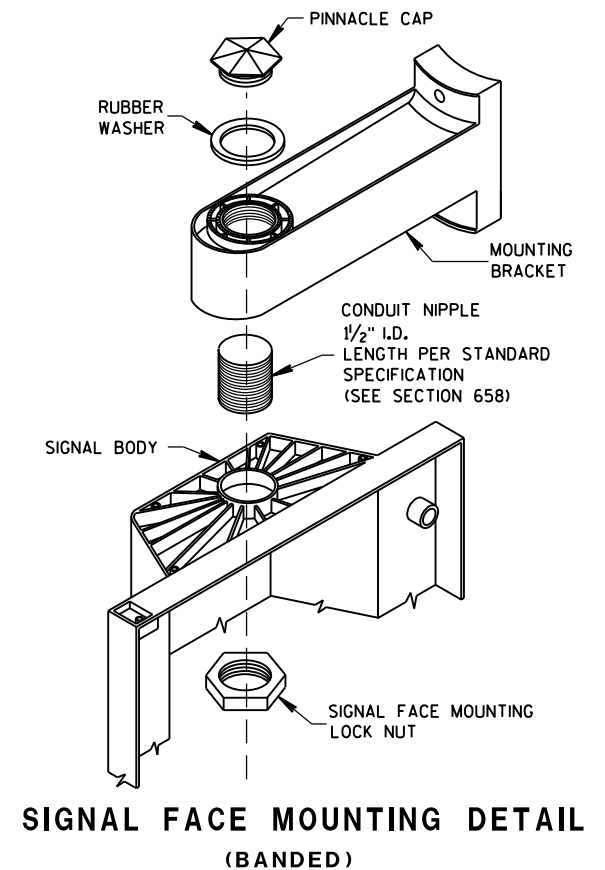
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

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.



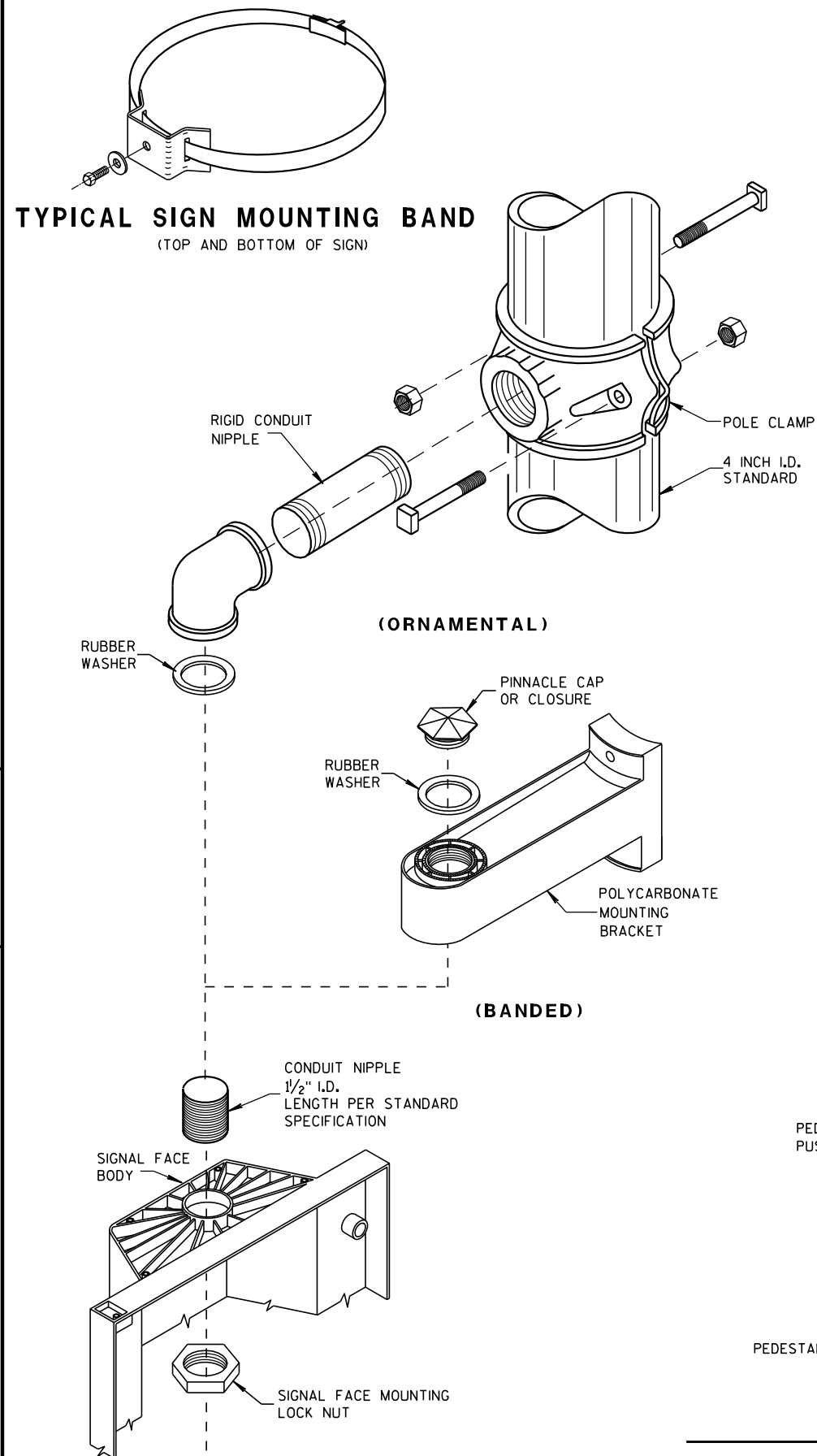
TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

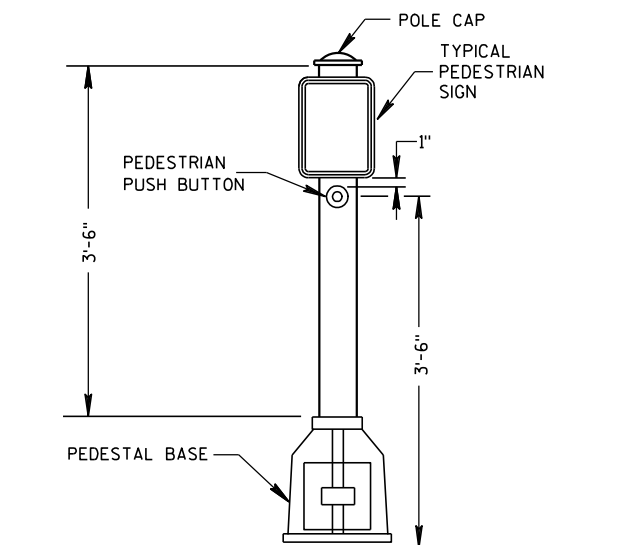
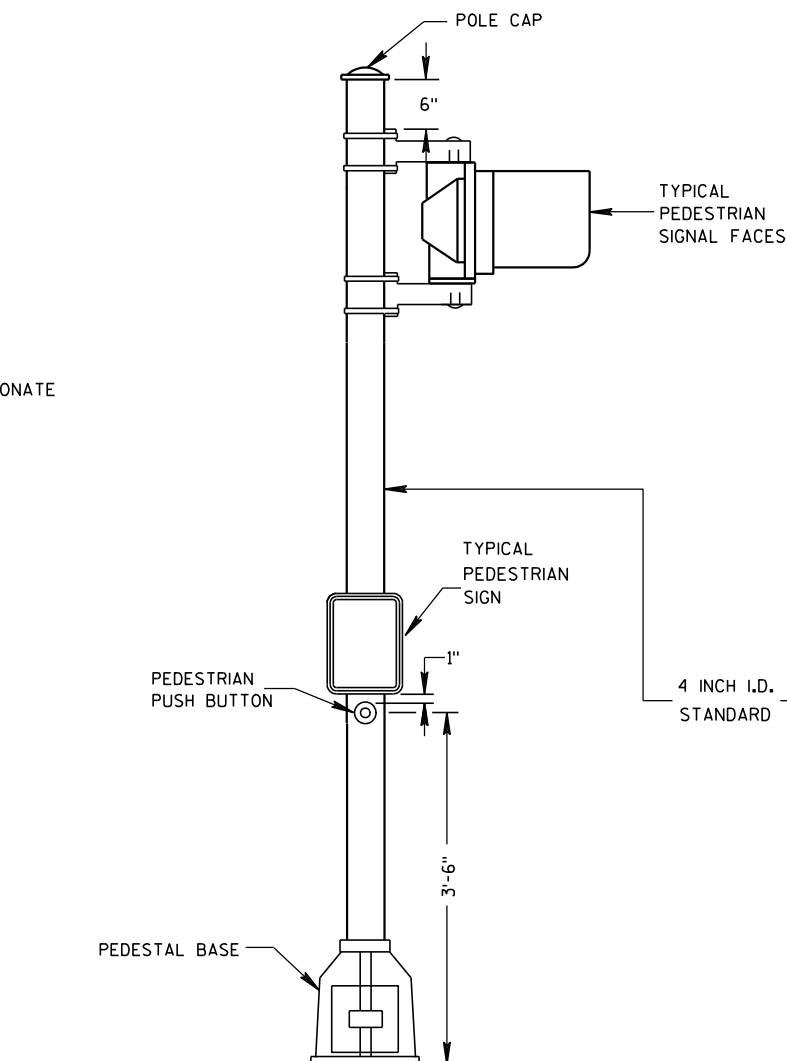
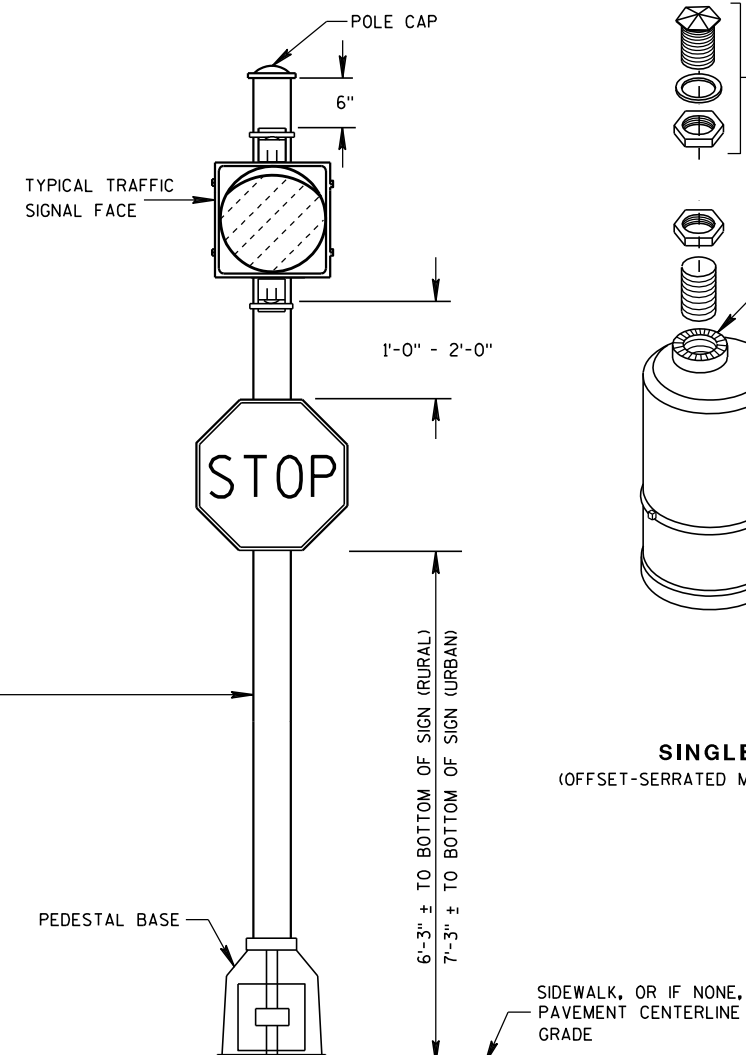
**APPROVED
2/28/2013
DATE**

**/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER**

FHWA



SIGNAL FACE MOUNTING DETAILS

PEDESTRIAN PUSH BUTTON
TYPICAL MOUNTINGPEDESTRIAN FACE STANDARD-10 FT.
(WALK-DON'T WALK)STANDARD FLASHER.
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED

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.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

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

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

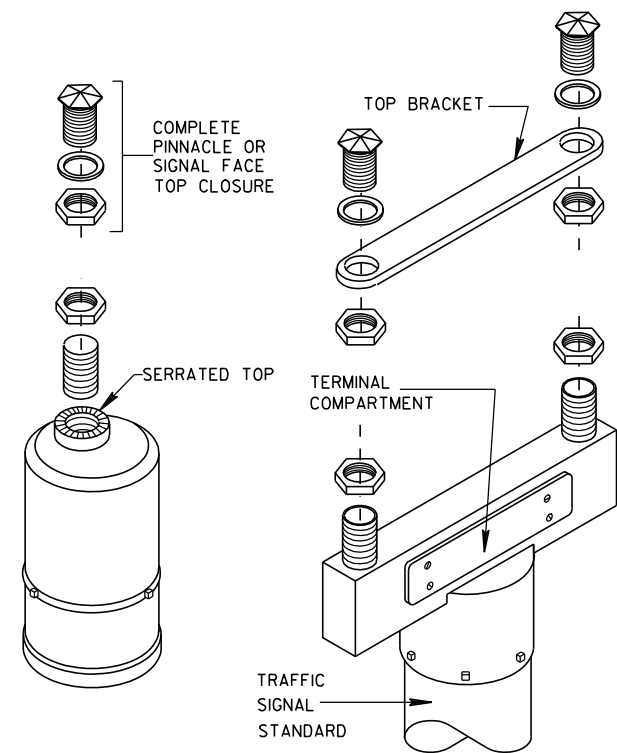
POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

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

MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE DISTRICT TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

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

SINGLE
(OFFSET-SERRATED MOUNTING)DOUBLE
(SERRATED MOUNTING)

SLIPFITTERS

TRAFFIC SIGNAL STANDARD
PEDESTRIAN AND FLASHER
TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

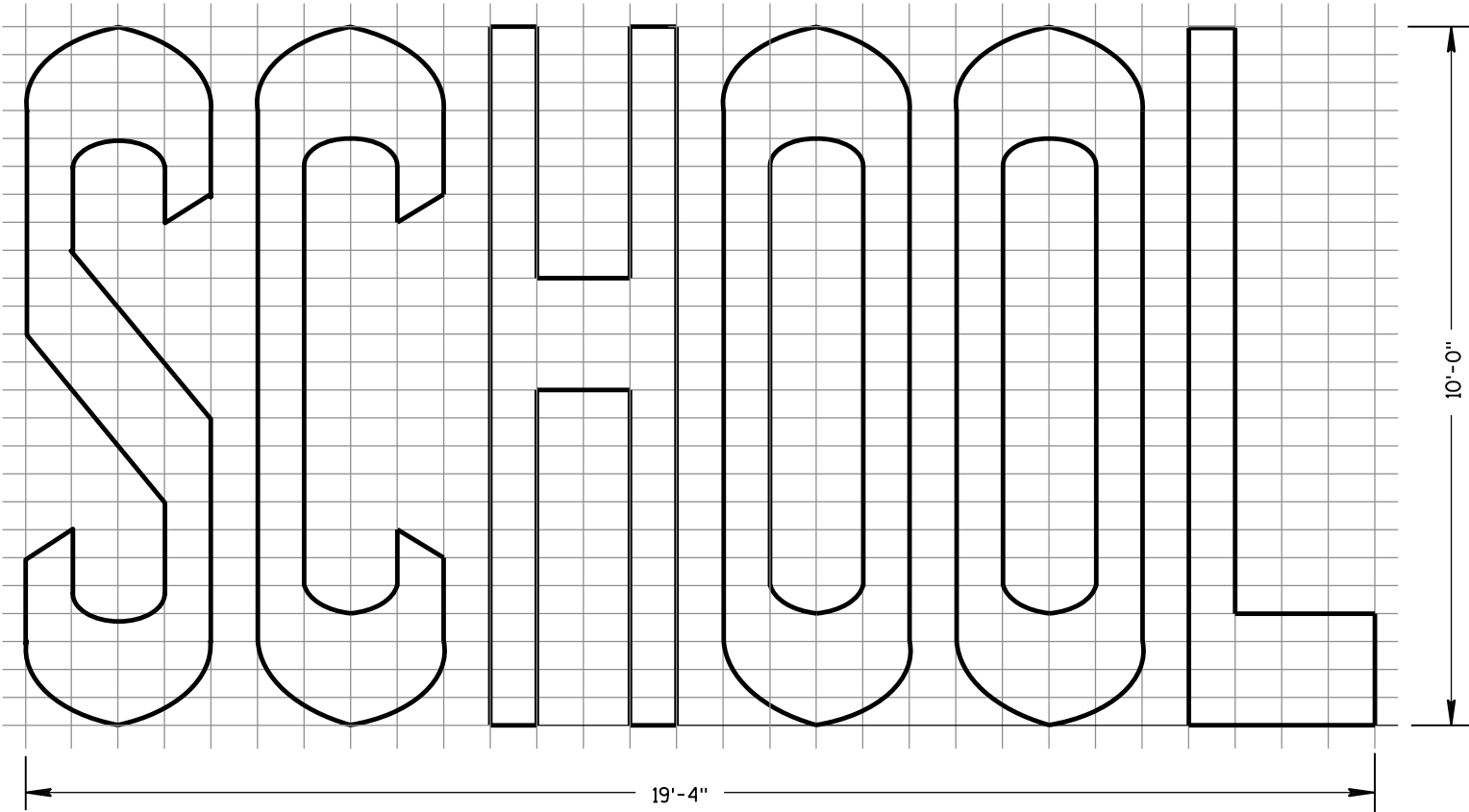
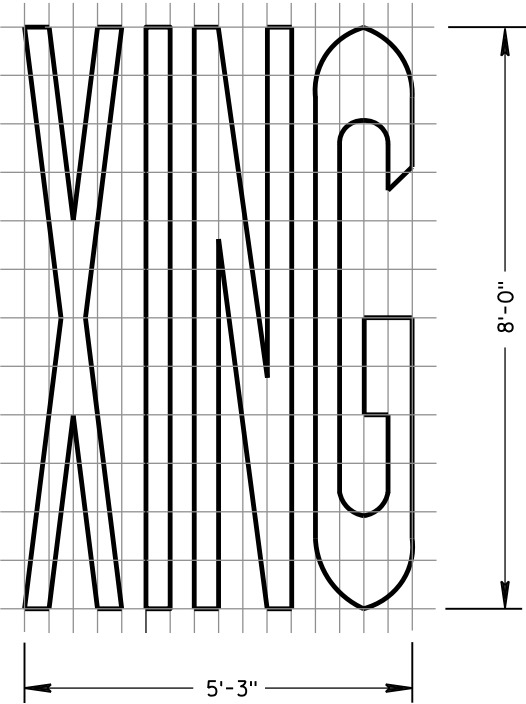
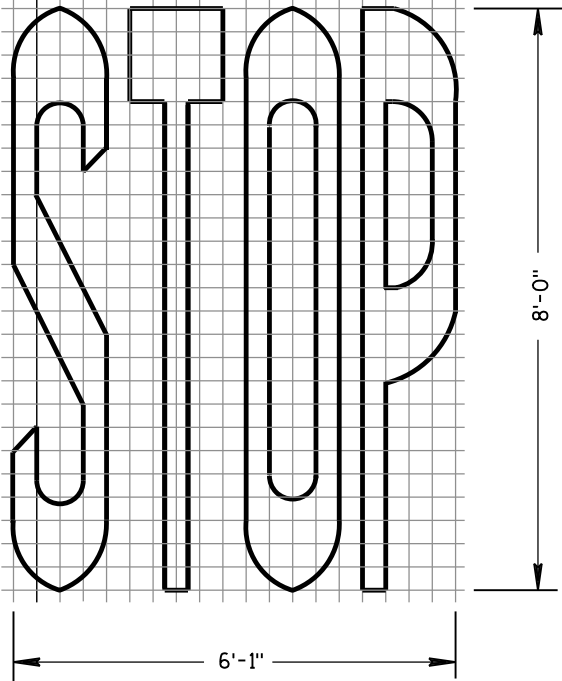
5/11/10
DATE

FHWA

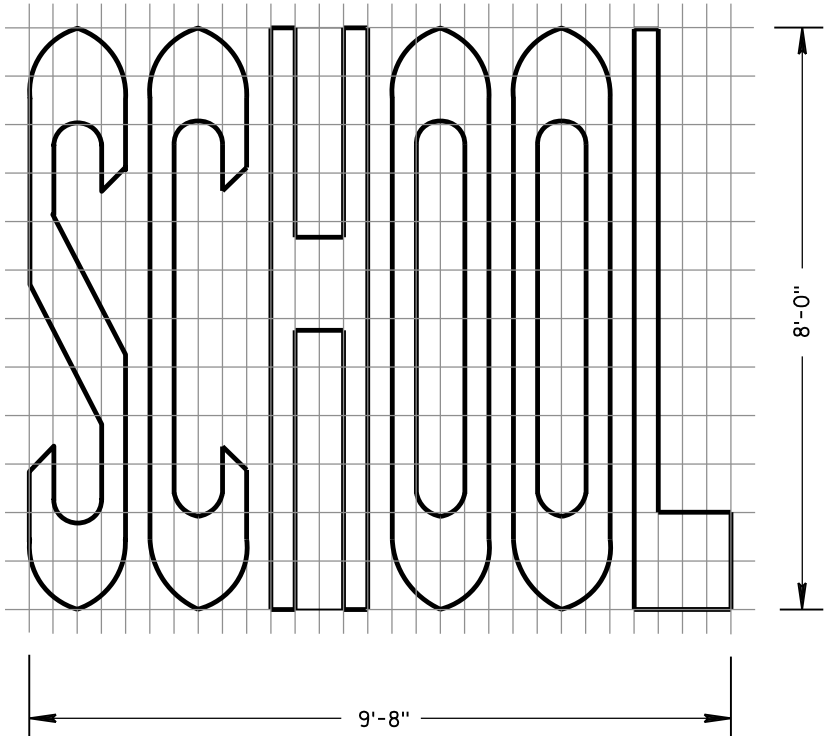
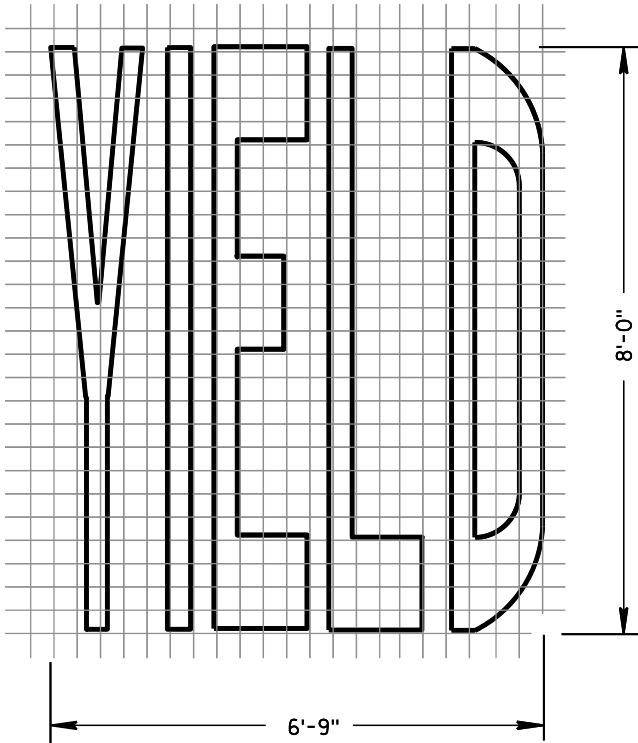
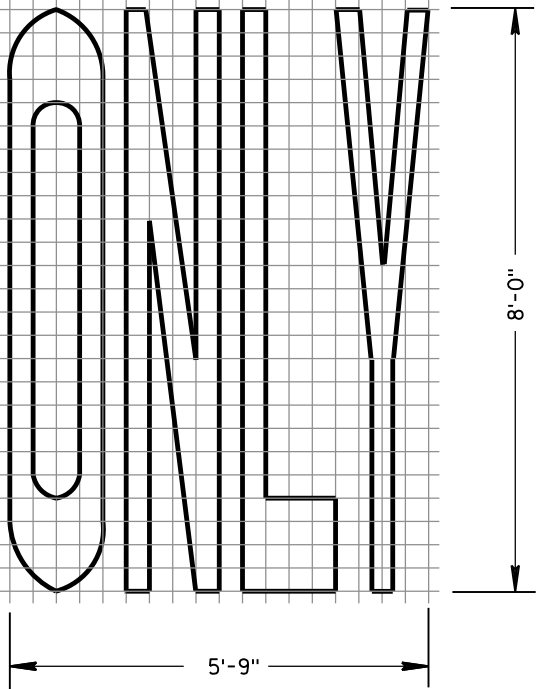
/S/ John Corbin
STATE ELECTRICAL ENGINEER FOR HWYS

GENERAL NOTES

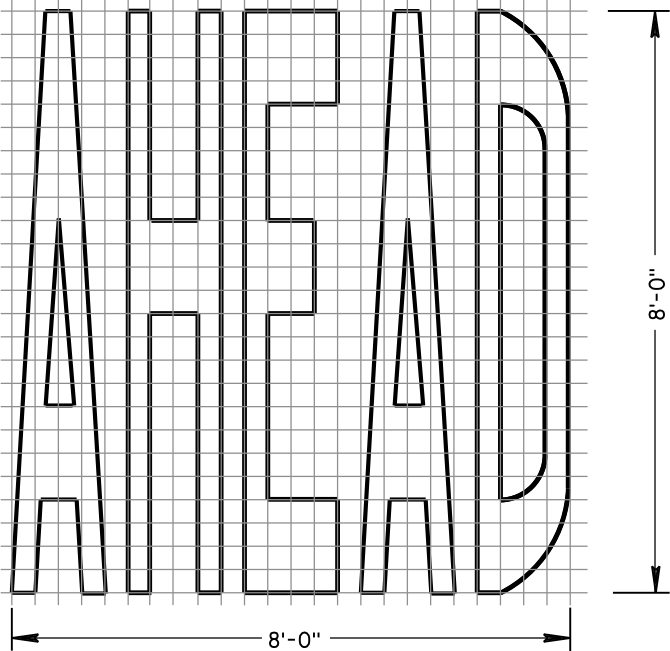
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



TWO-LANE



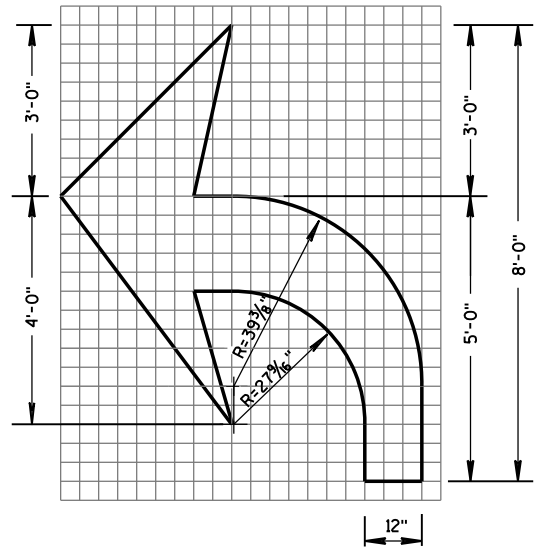
SINGLE-LANE



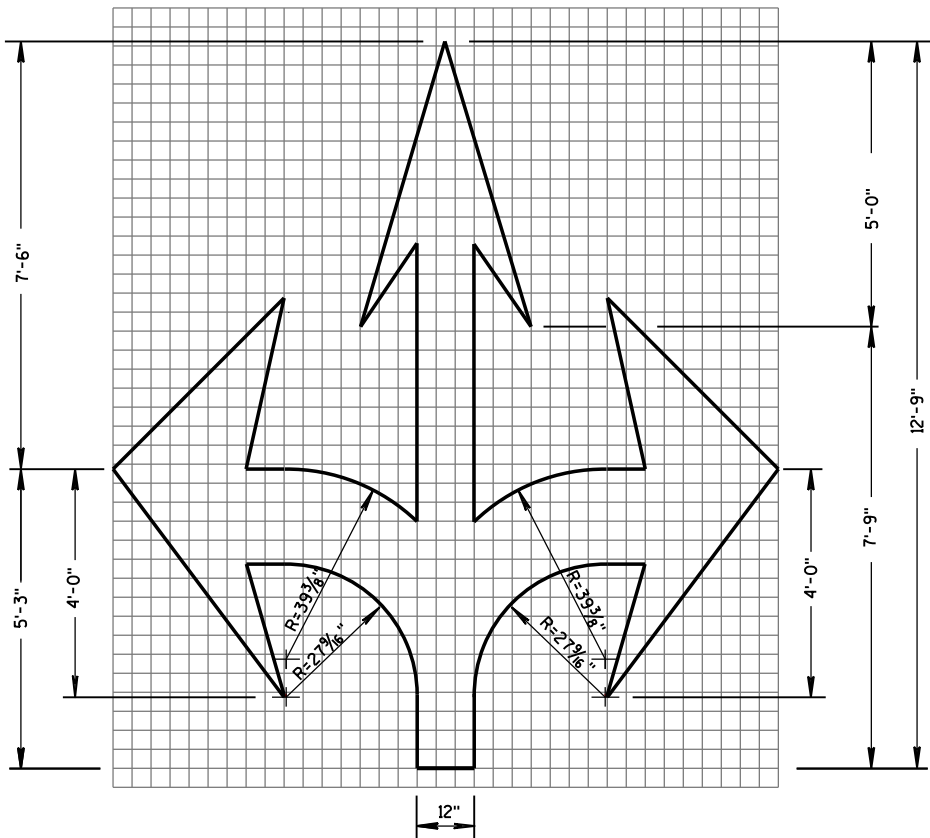
PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

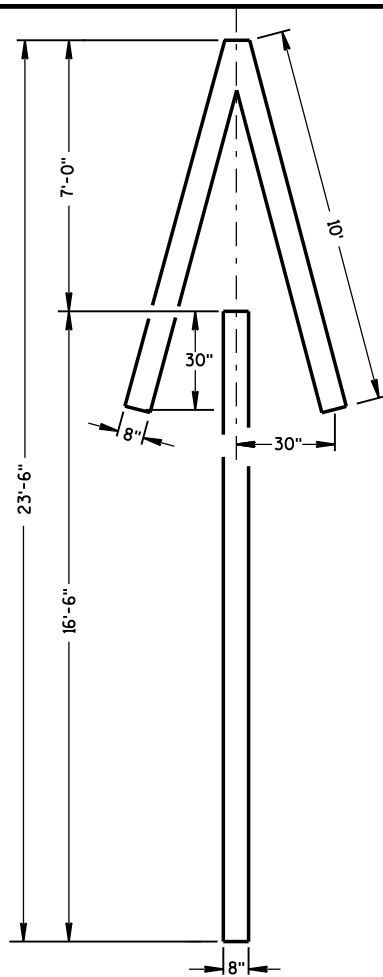
APPROVED
4-18-16 DATE /S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER
FHWA



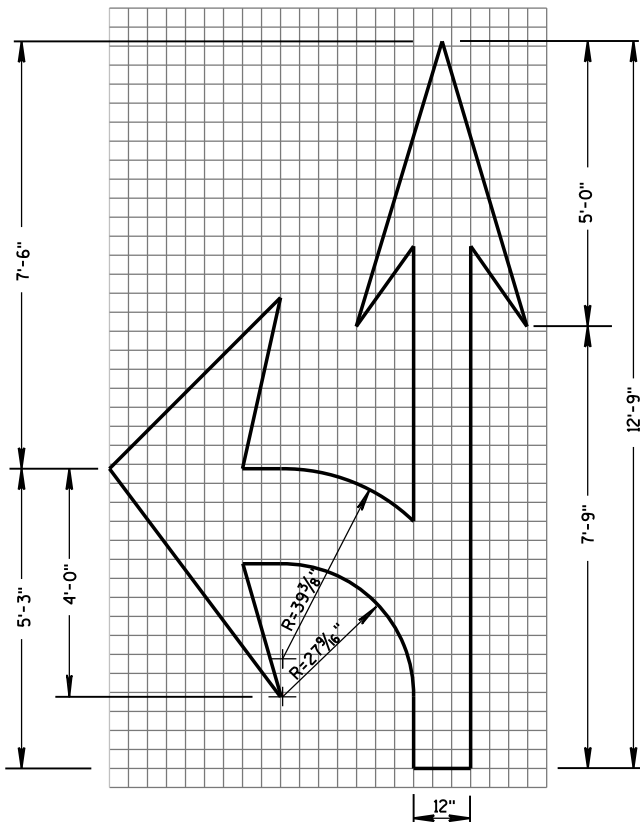
TYPE 2



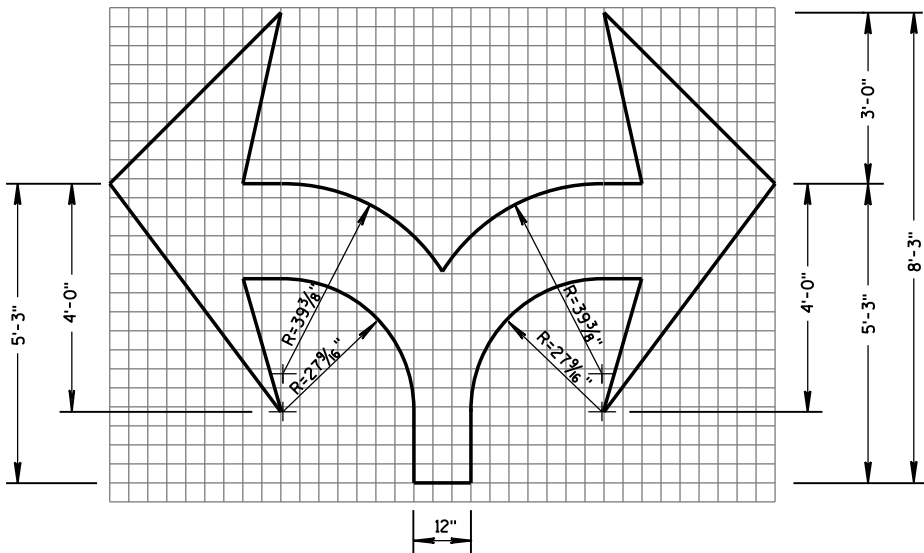
TYPE 6



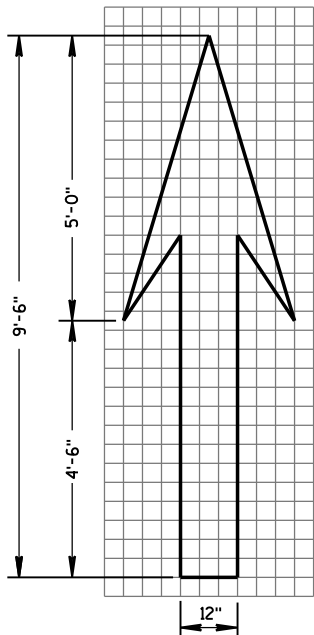
TYPE 4



TYPE 3



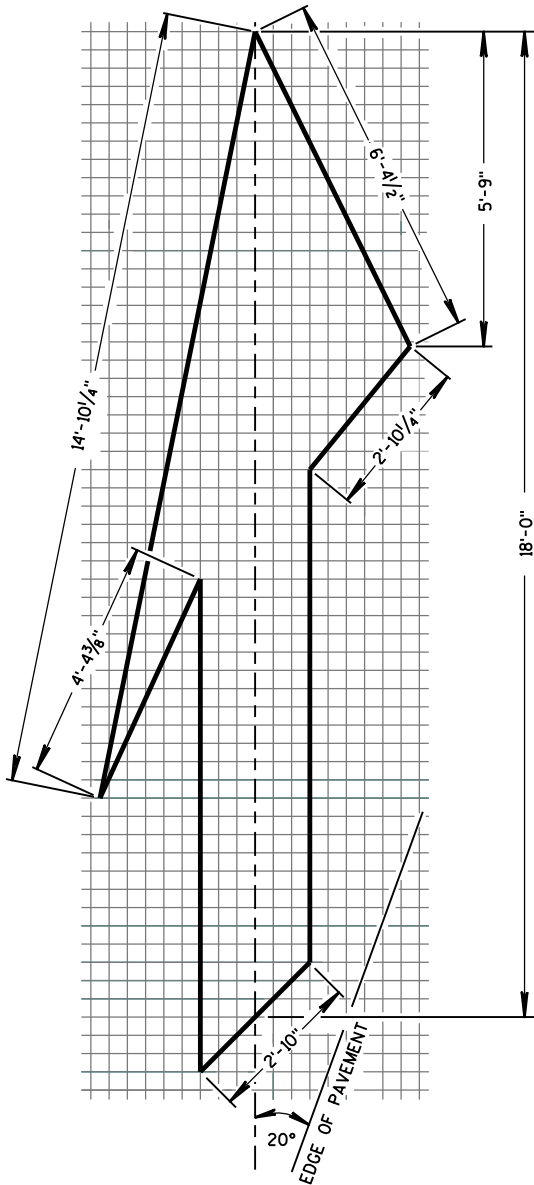
TYPE 7



TYPE 1

GENERAL NOTES

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

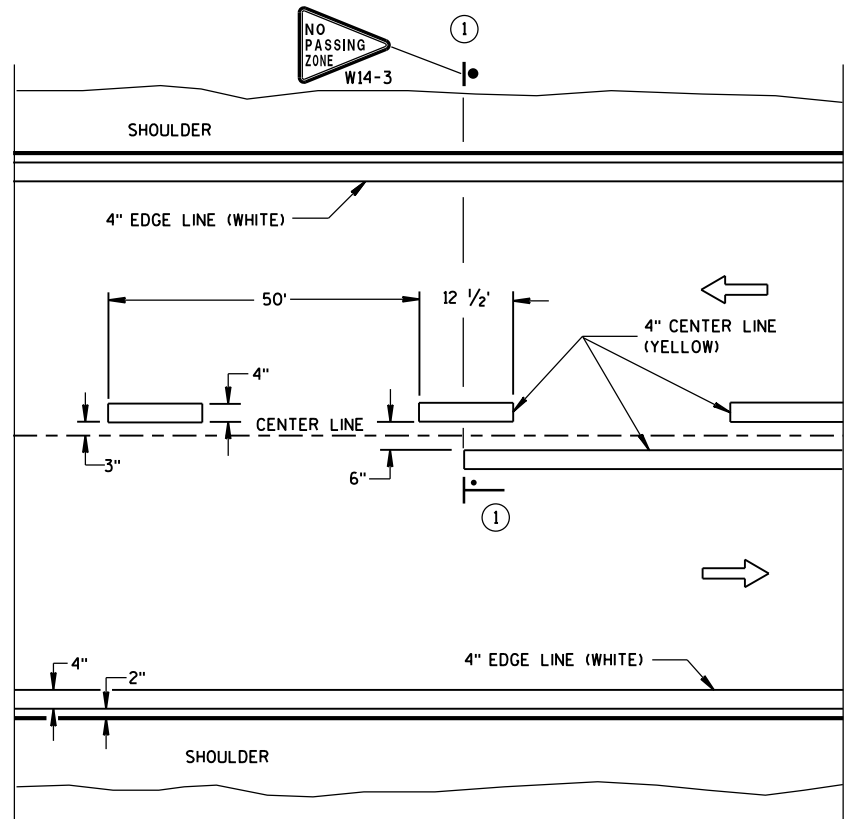


TYPE 5 LANE DROP ARROW

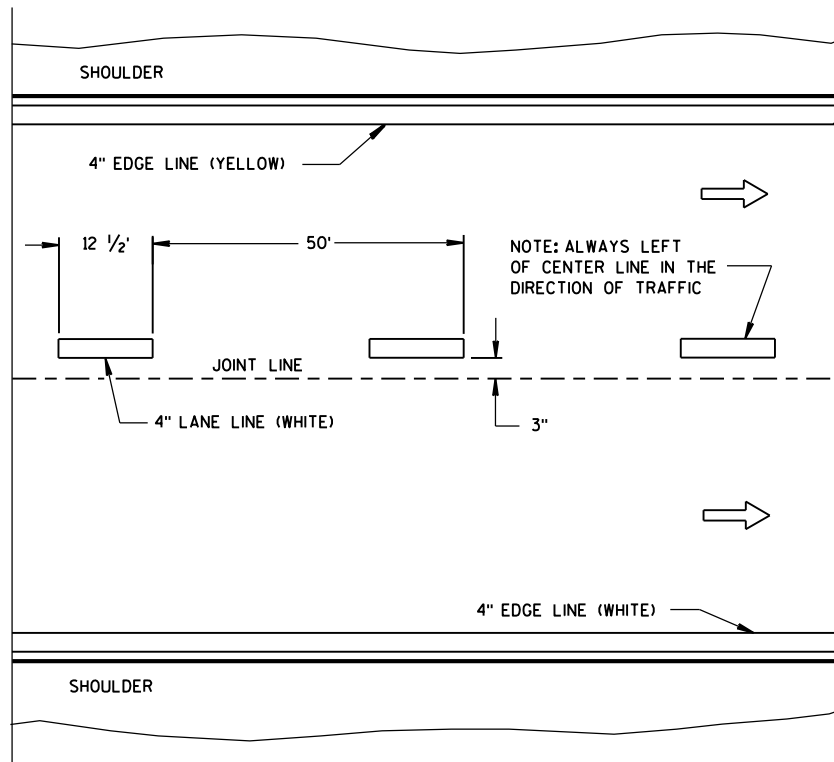
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

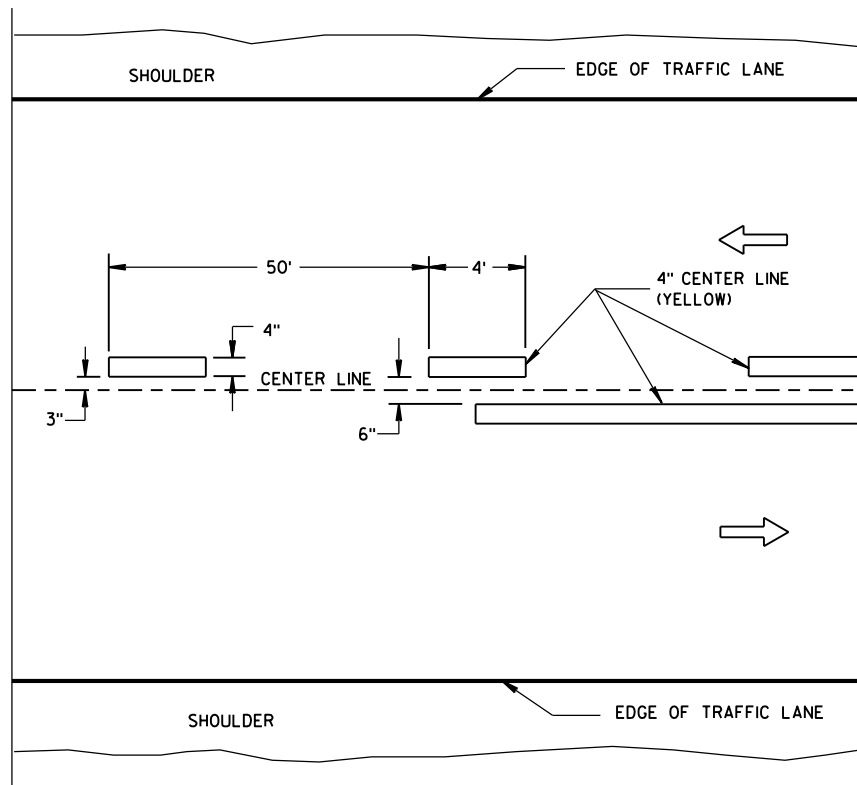


TWO WAY TRAFFIC

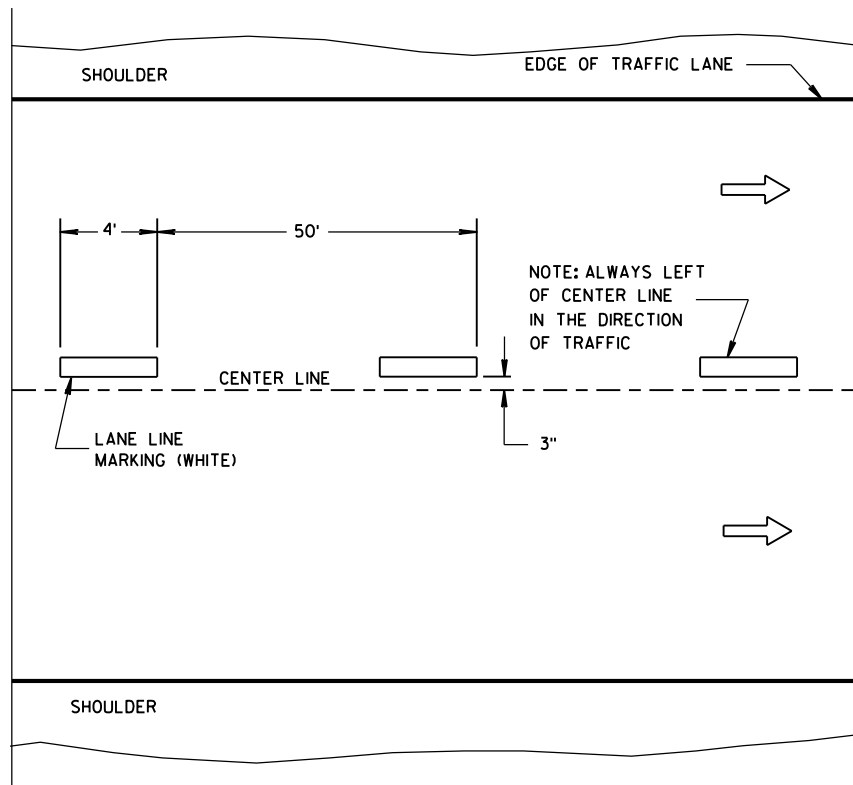


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

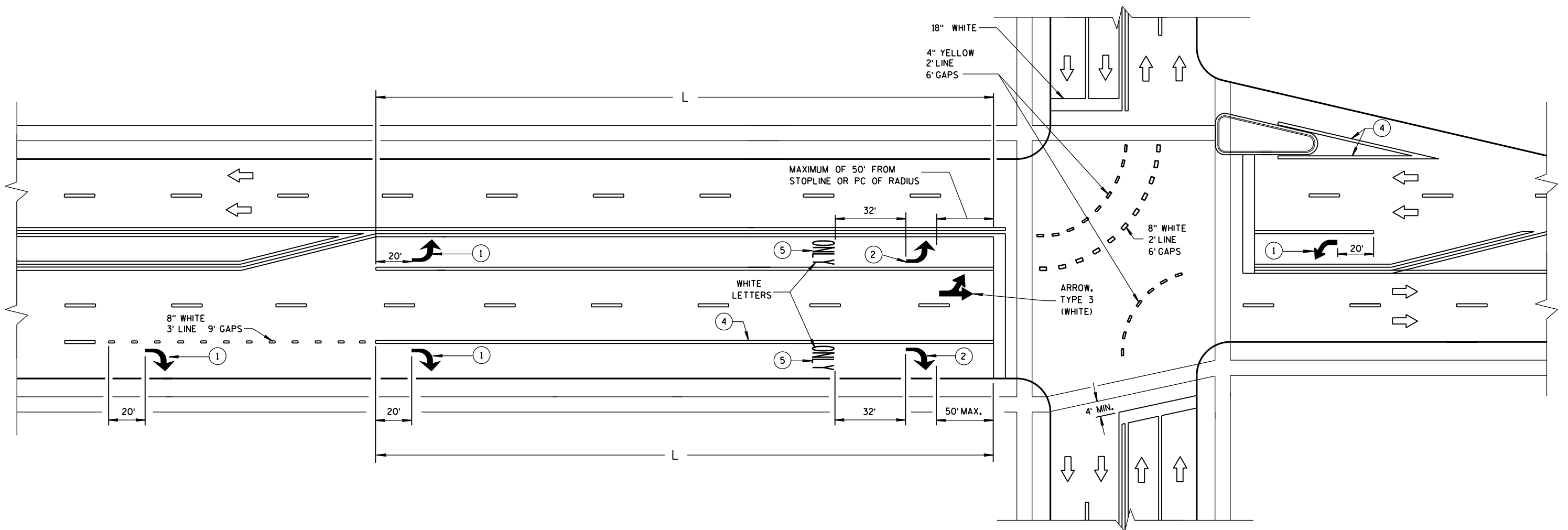
—●— "T" MARKING

● POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



GENERAL NOTES

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

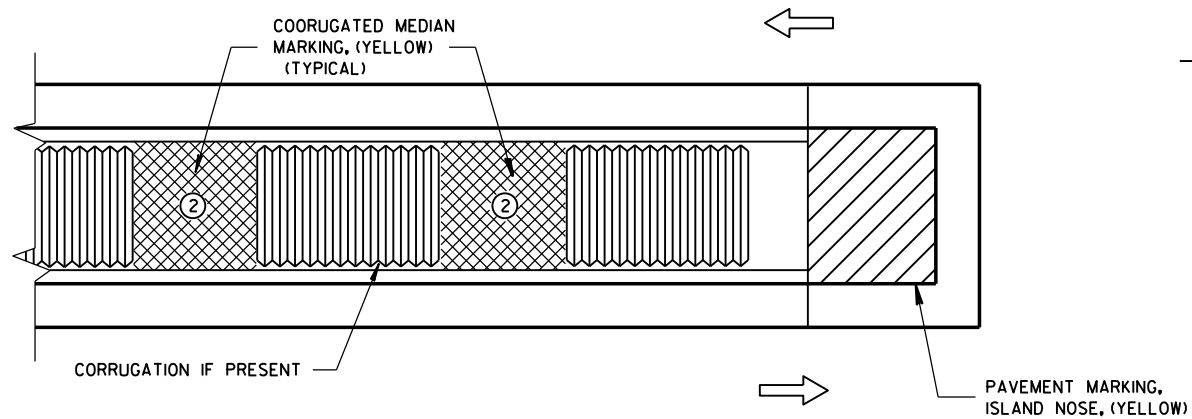
TWO WAY LEFT TURN LANE

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL

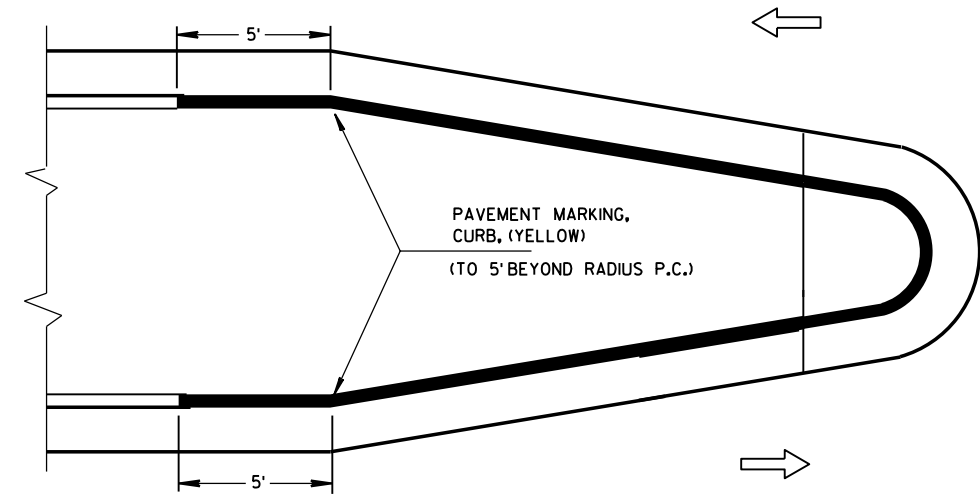
L = LENGTH OF TURN BAY

PAVEMENT MARKING
(TURN LANES)

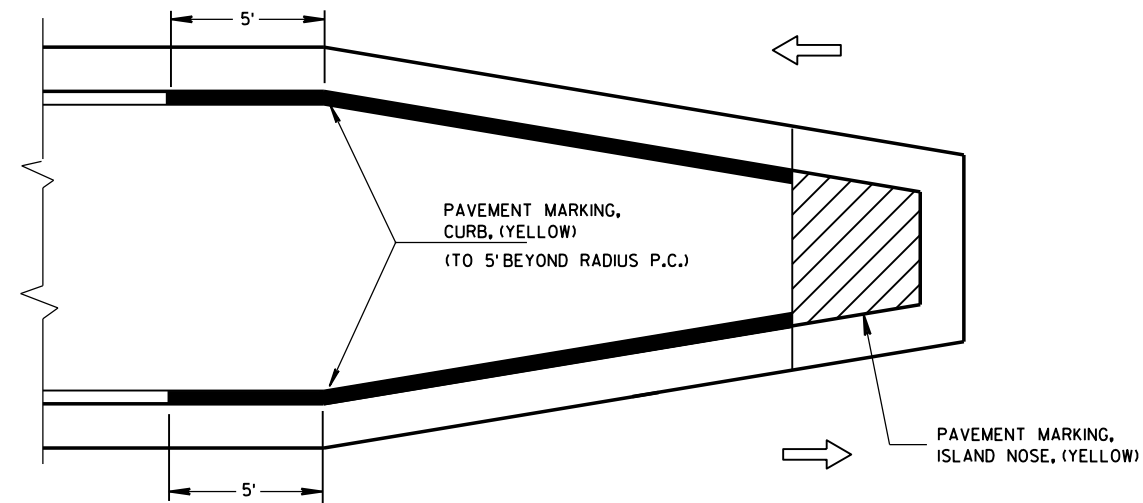
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

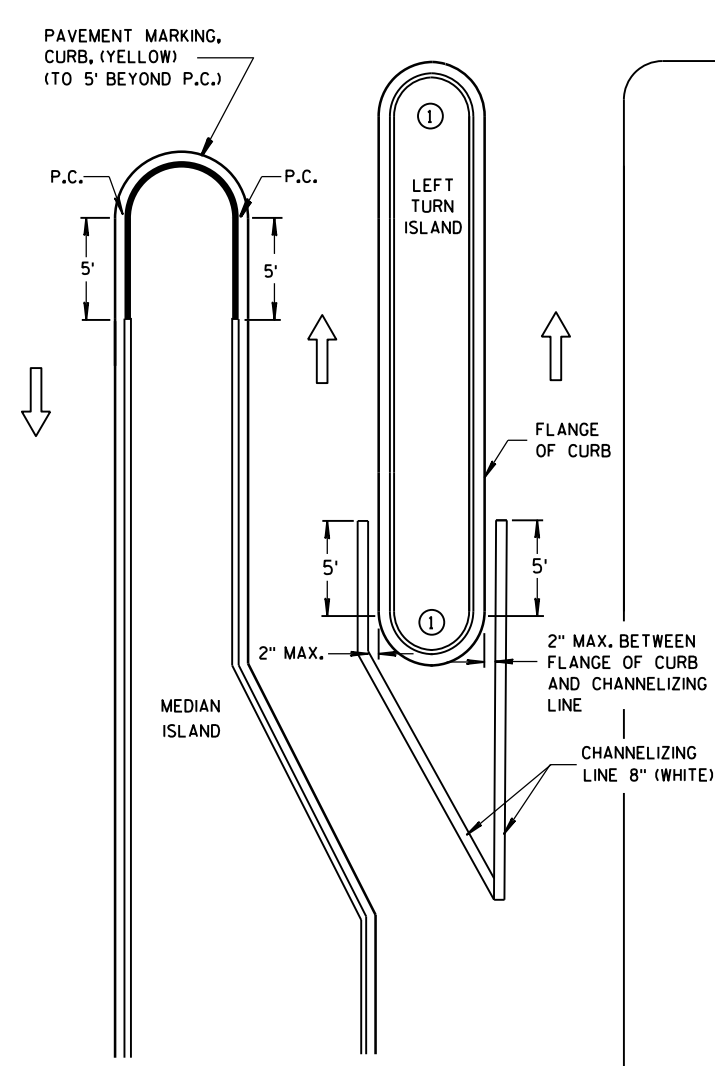


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

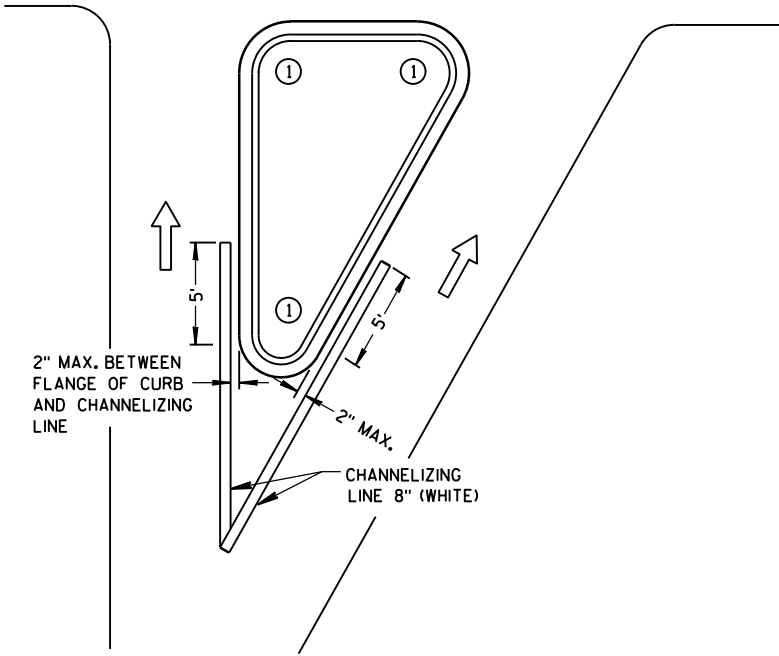
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS



LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

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

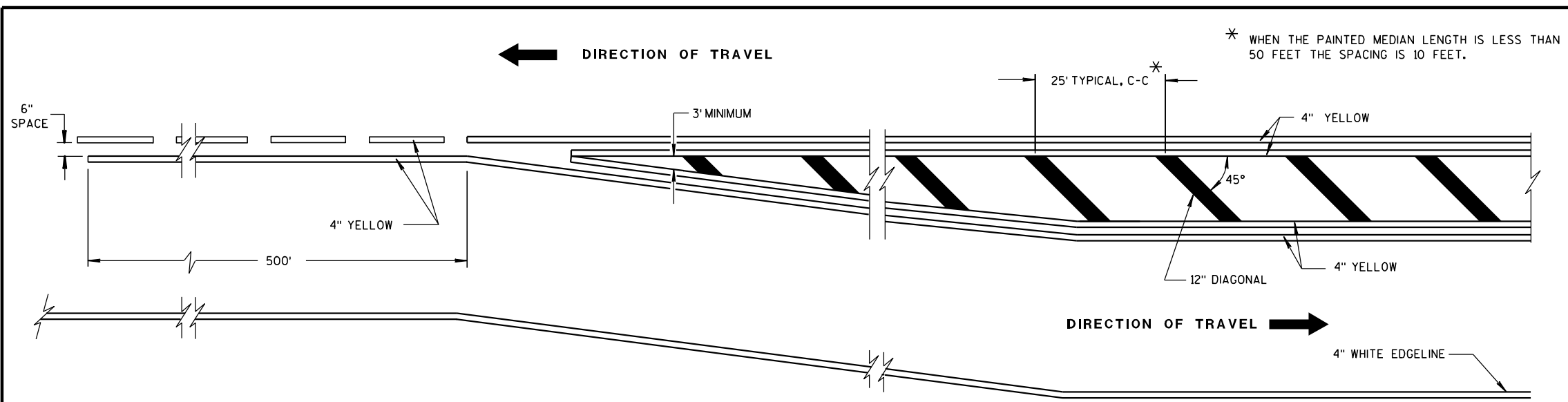


RIGHT TURN ISLAND

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

PAVEMENT MARKING (ISLANDS)

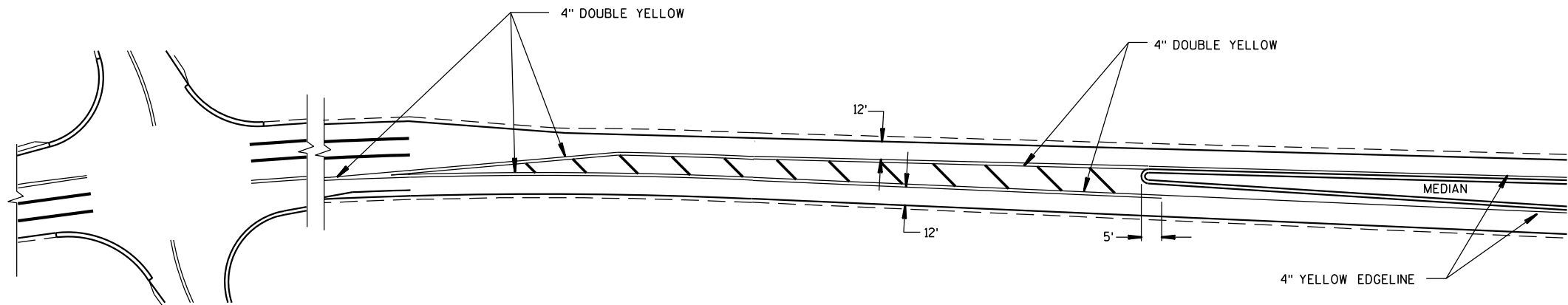
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



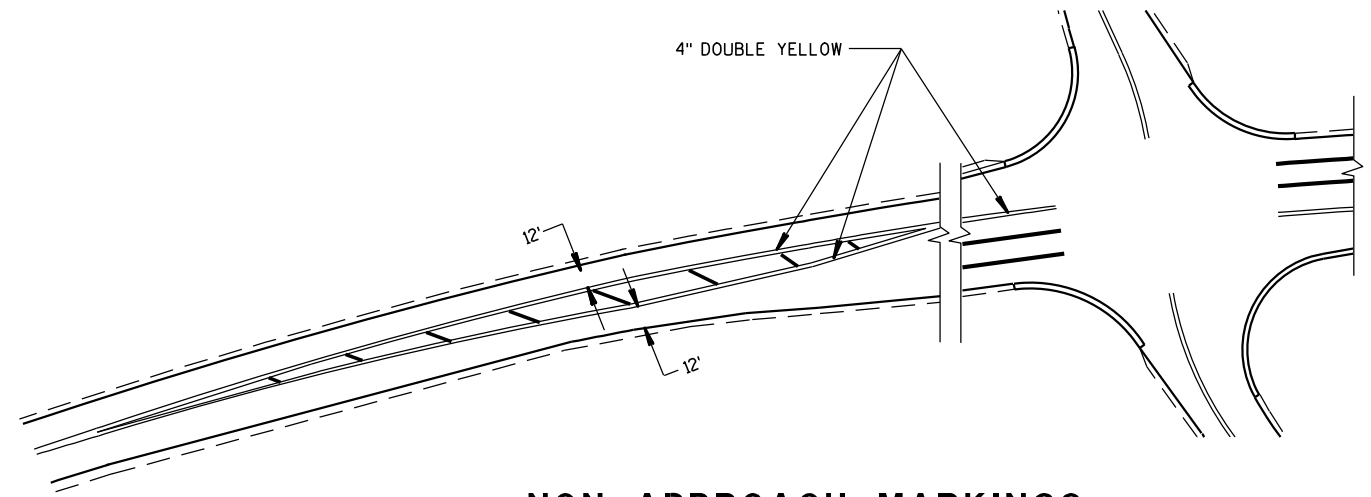
MEDIAN ISLAND DETAIL

GENERAL NOTE

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

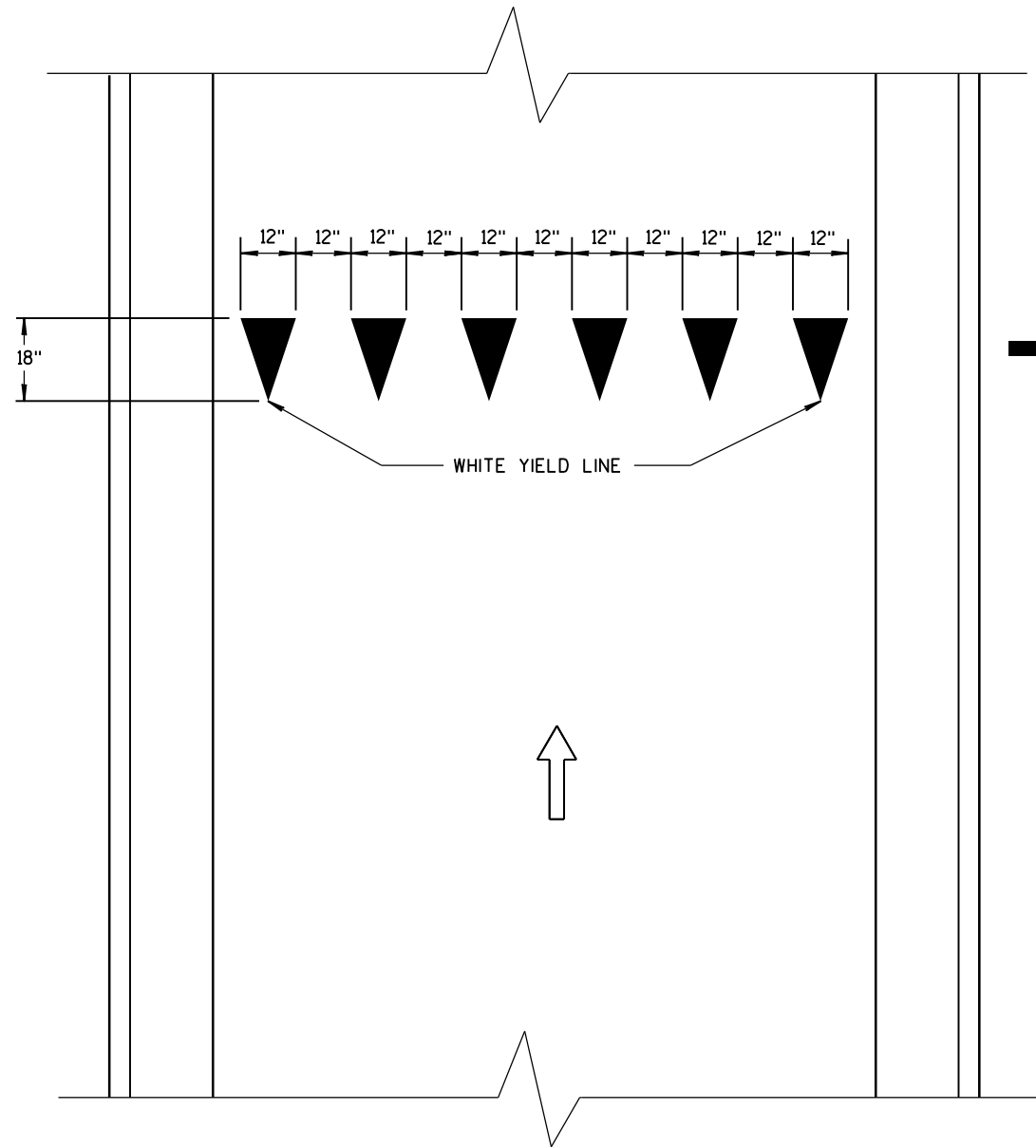


APPROACH MARKINGS FOR OTHER MEDIAN TYPES

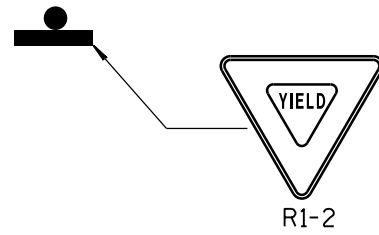


NON APPROACH MARKINGS

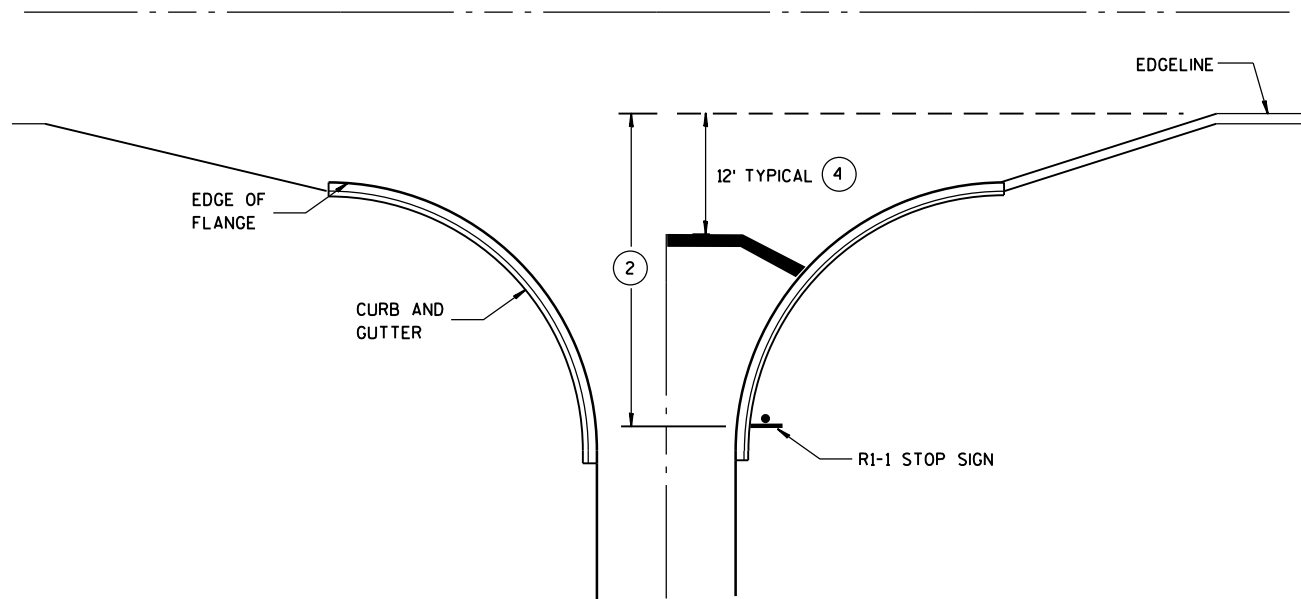
MEDIAN ISLAND MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 2-5-09 DATE	/S/ Thomas N. Notbohm STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



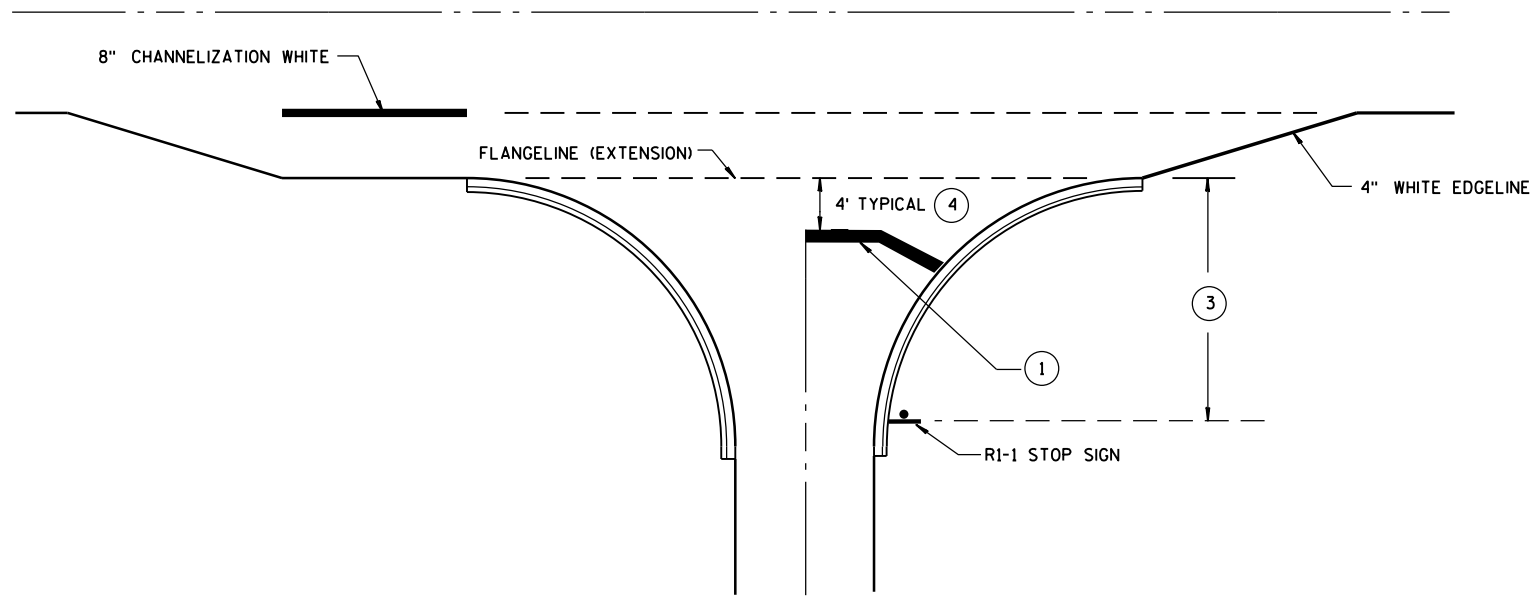
→ DIRECTION OF TRAVEL



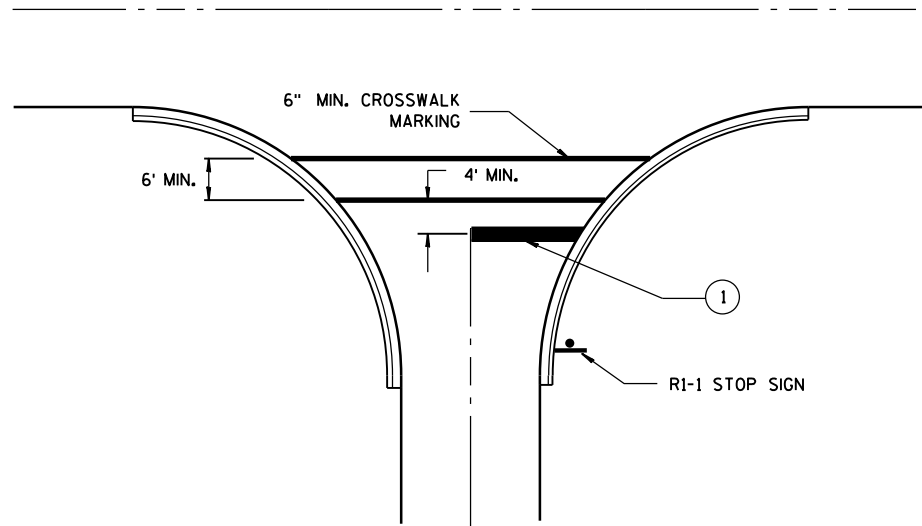
YIELD MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-18-2016 DATE	/S/ Matthew R. Rauch STATE SIGNING AND MARKING ENGINEER FHWA



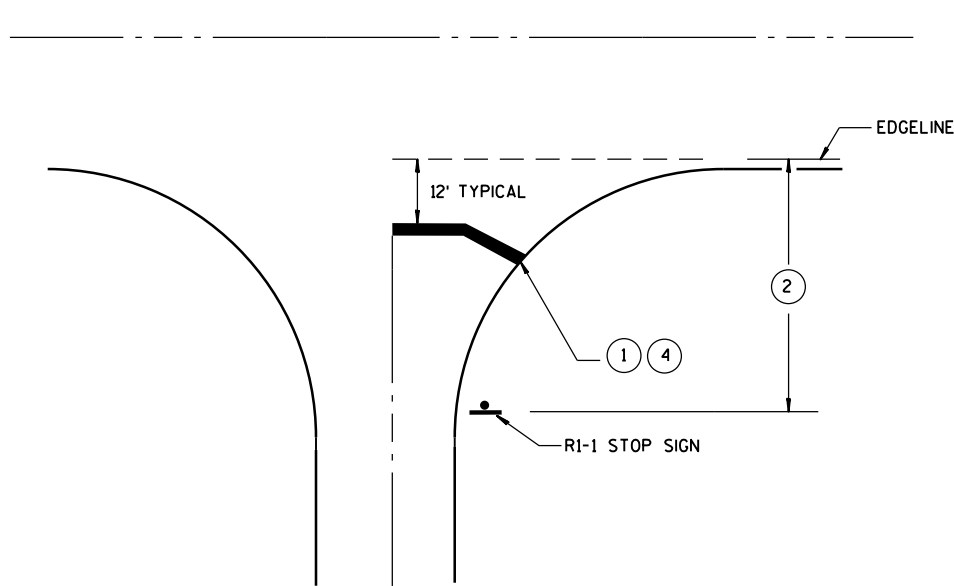
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

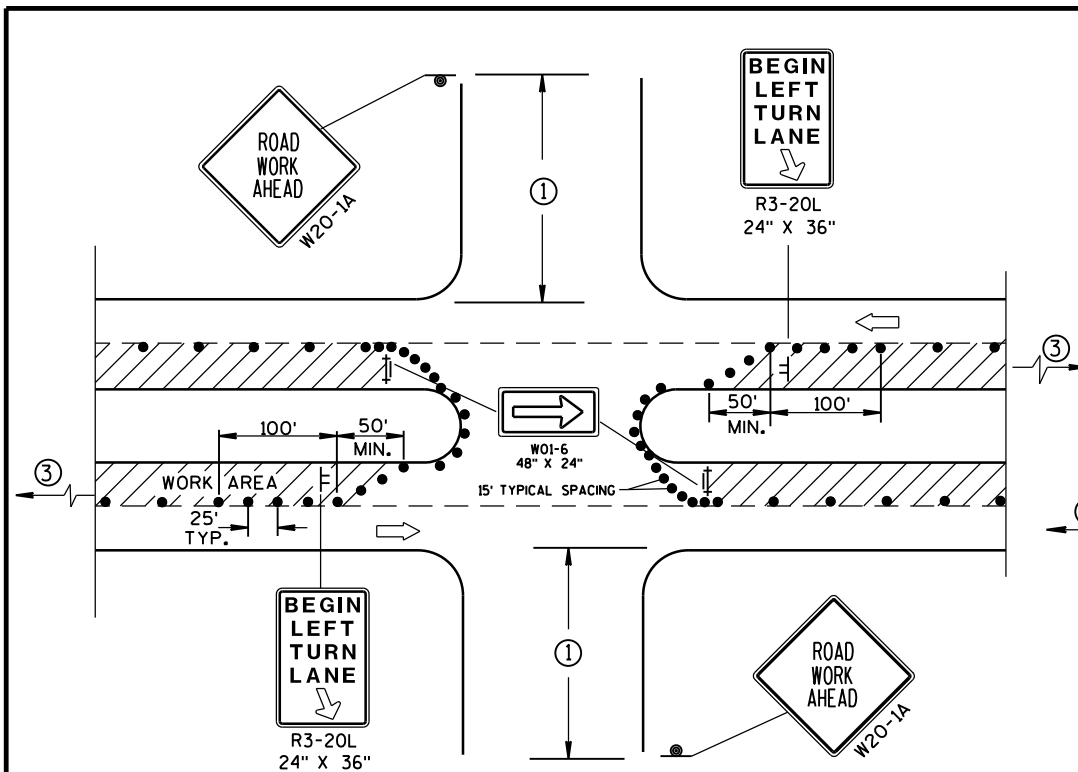
GENERAL NOTES

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

STOP LINE AND CROSSWALK
PAVEMENT MARKING

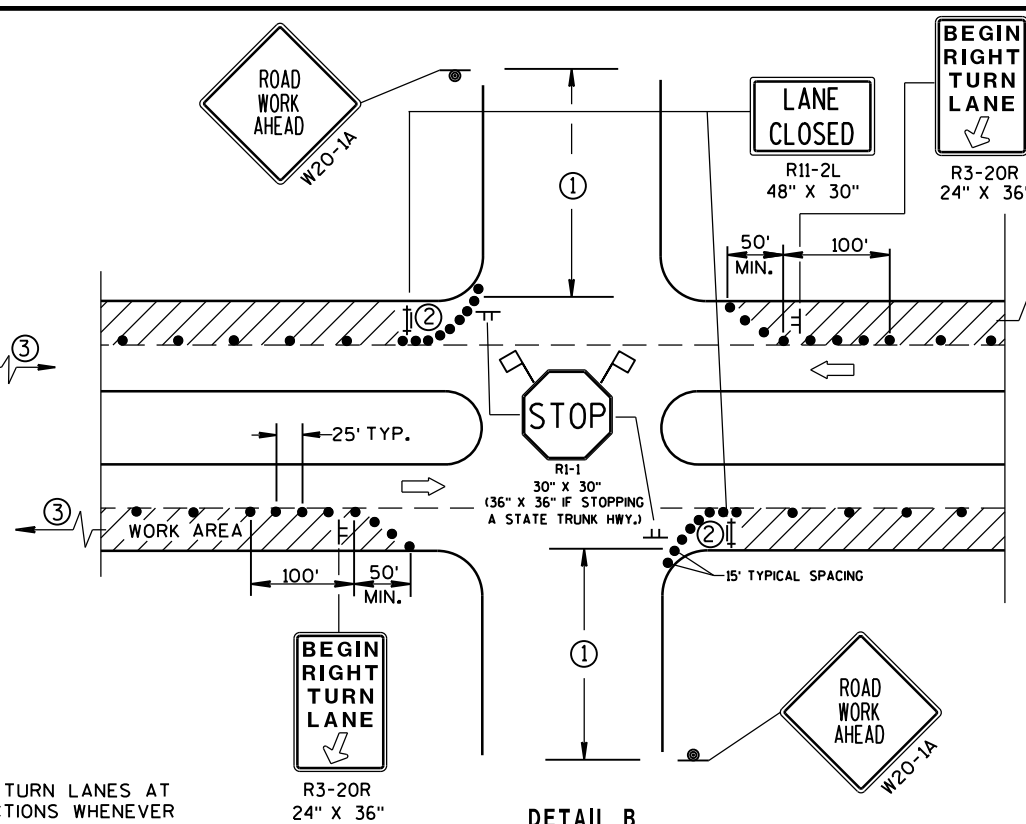
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
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.

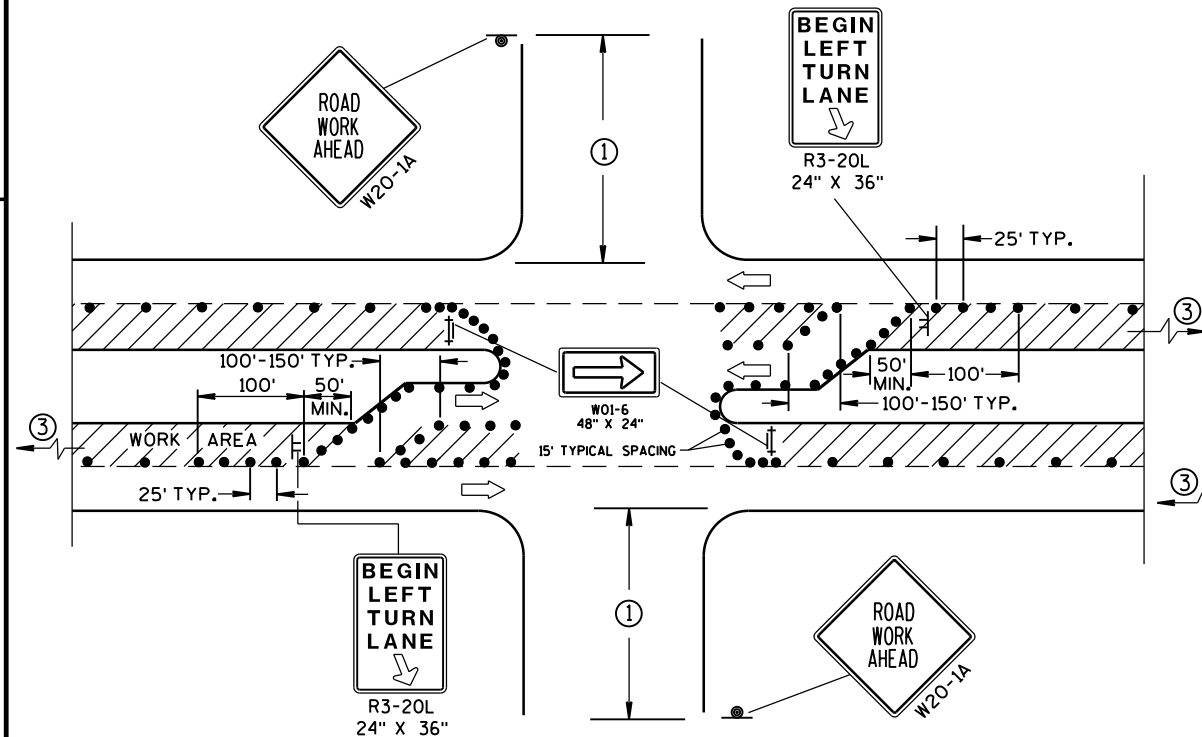
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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.

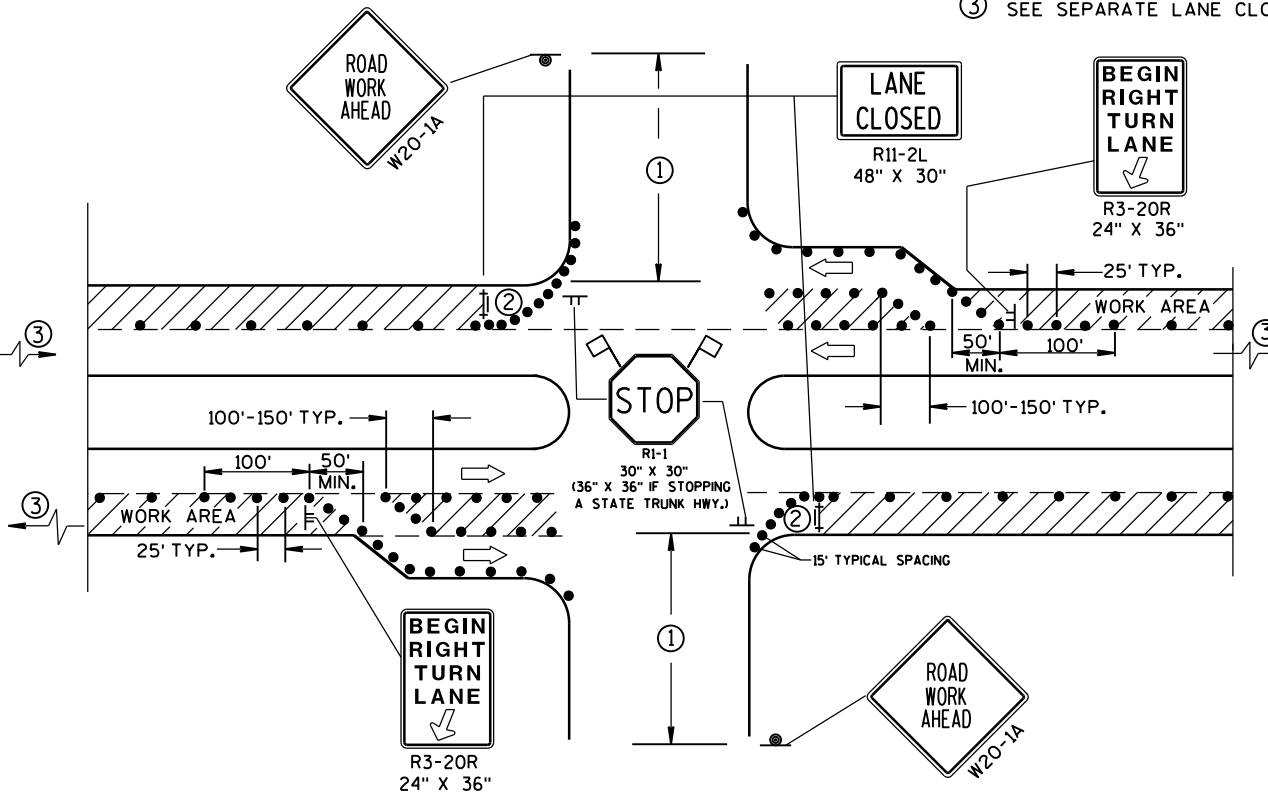
- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.
- ② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

LEGEND

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



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

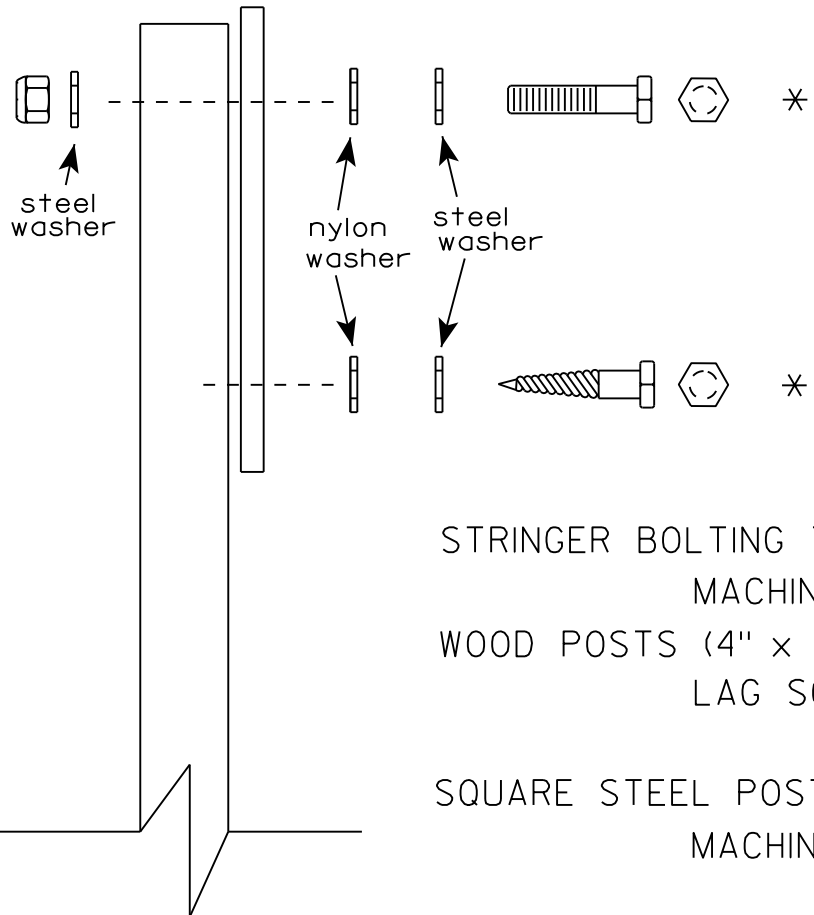
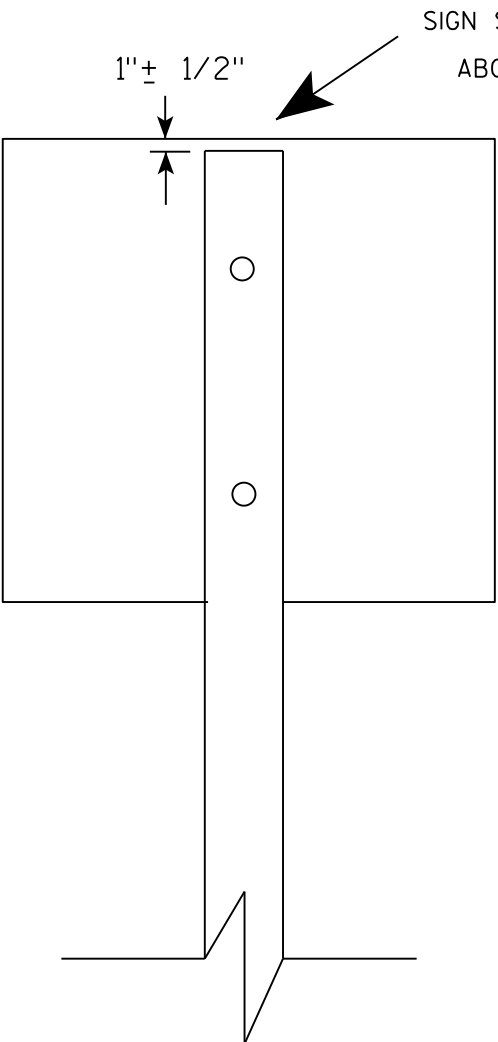


DETAIL D
FOR RIGHT LANE CLOSURE AT INTERSECTION
(WITH RIGHT TURN BAY OPEN)

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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

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

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

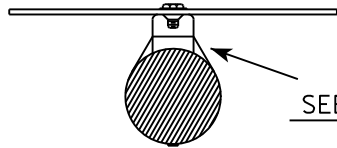
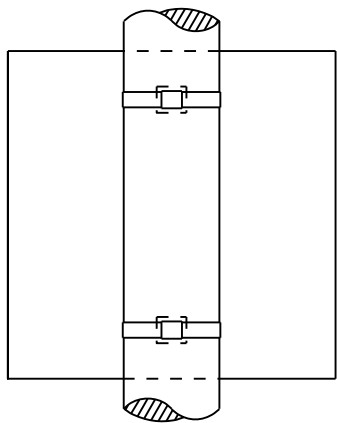
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2"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

* 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.

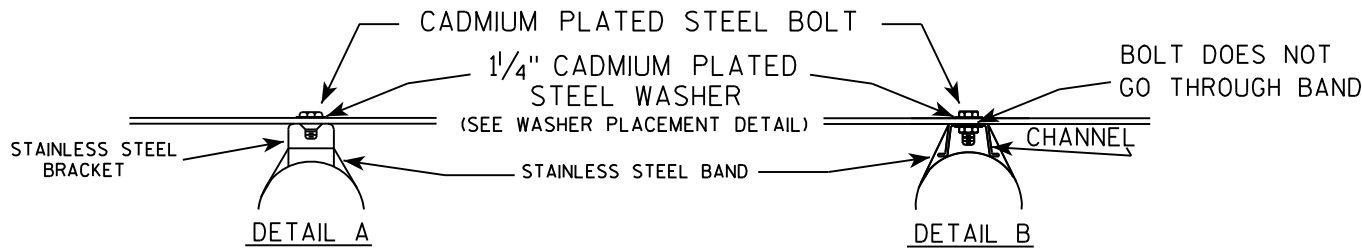
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8

BANDING

SINGLE SIGN



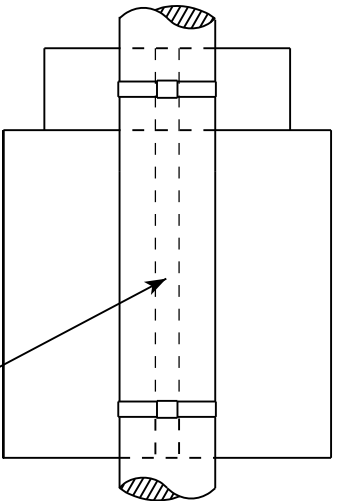
SEE DETAIL A



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

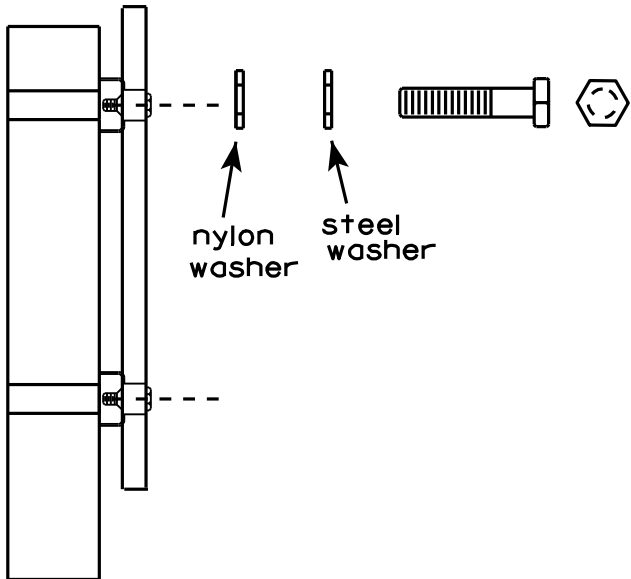
"J" ASSEMBLY



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



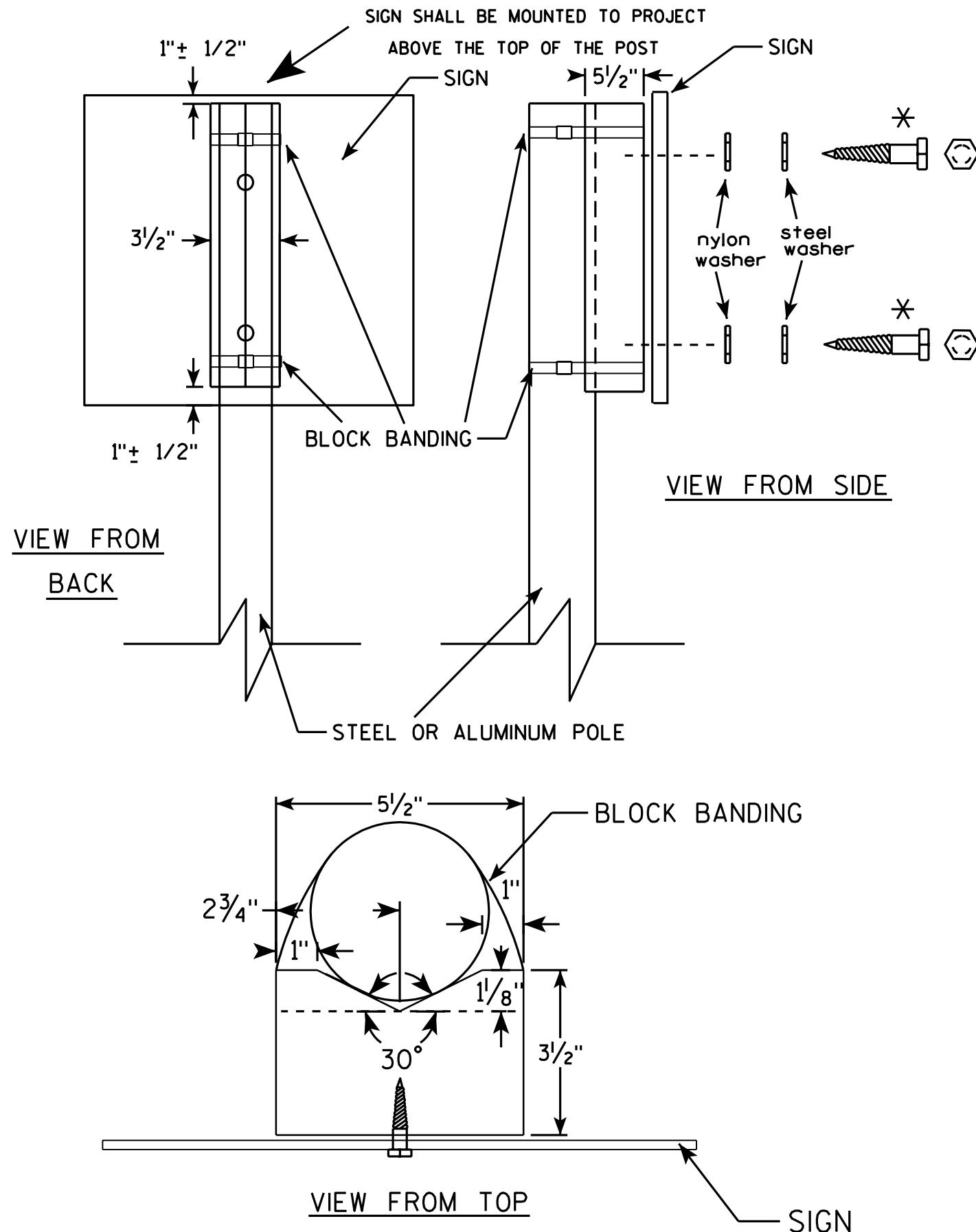
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

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

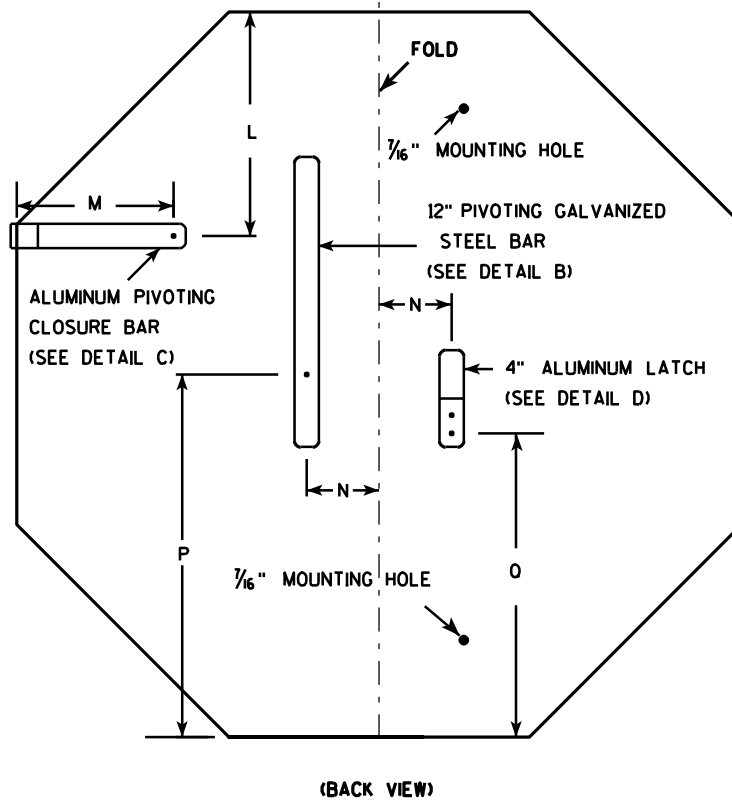
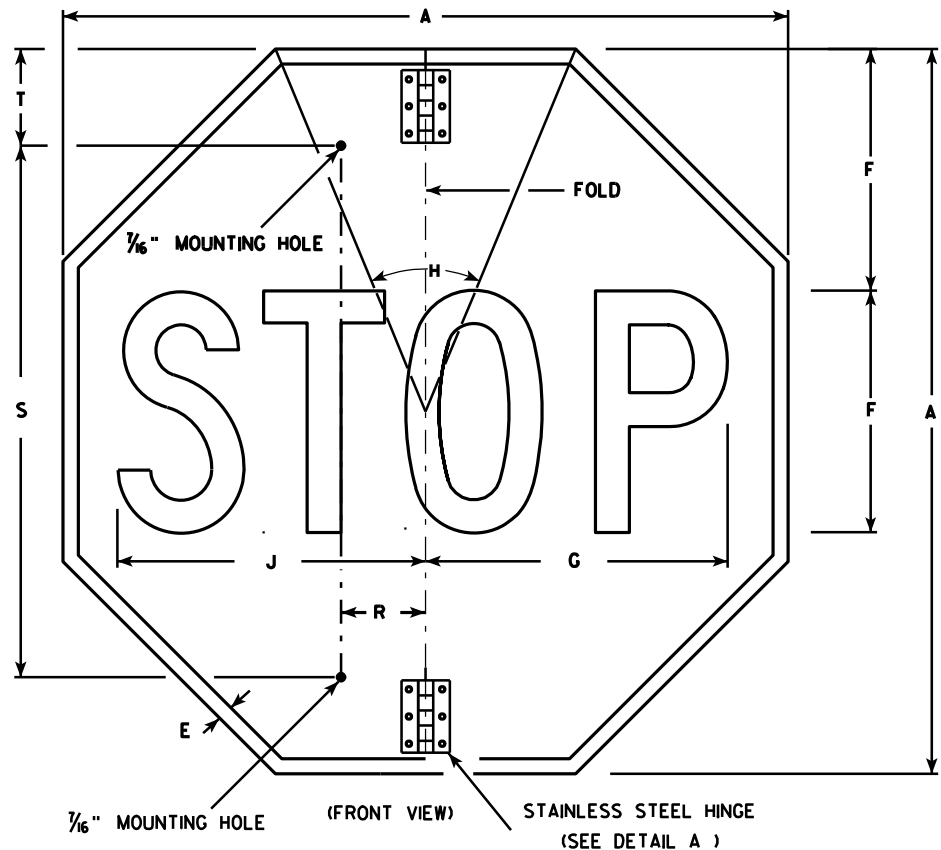
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

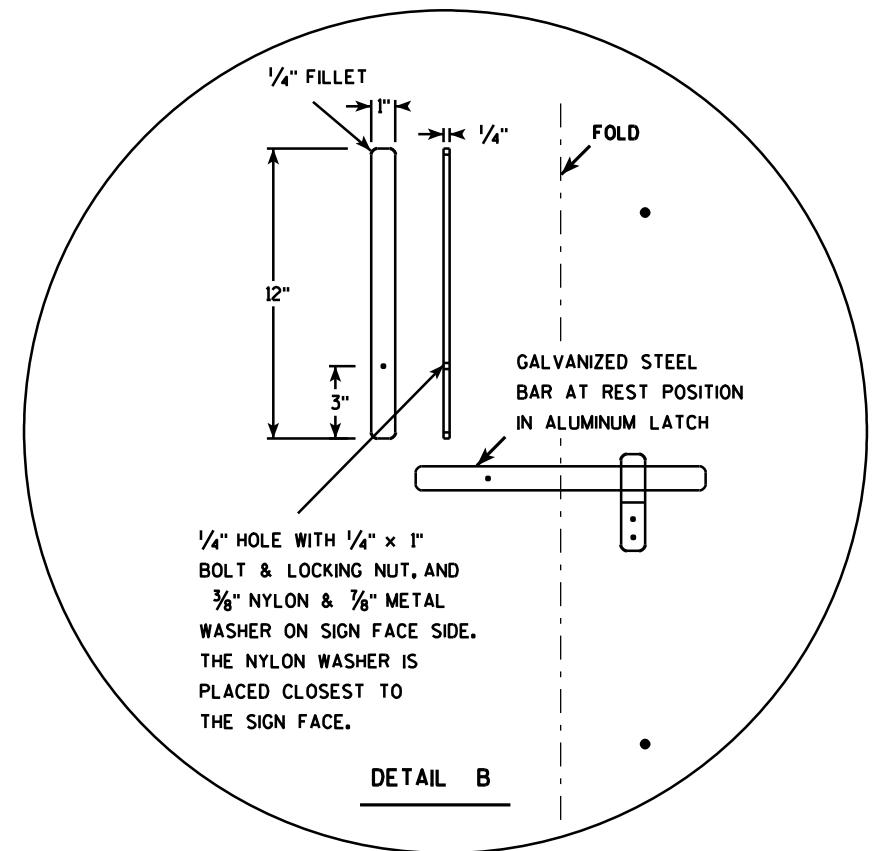
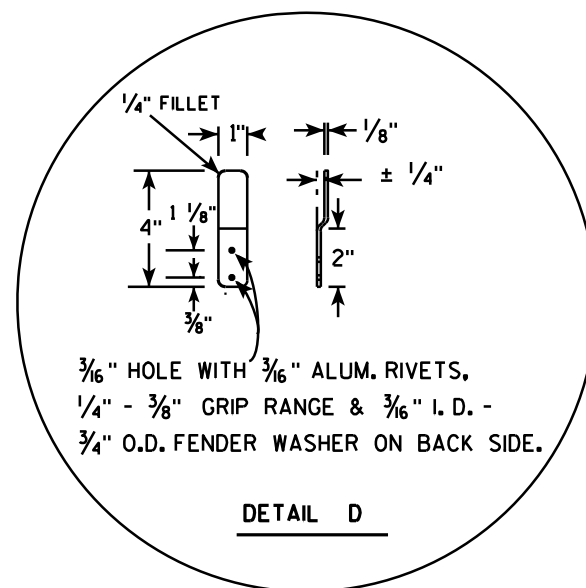
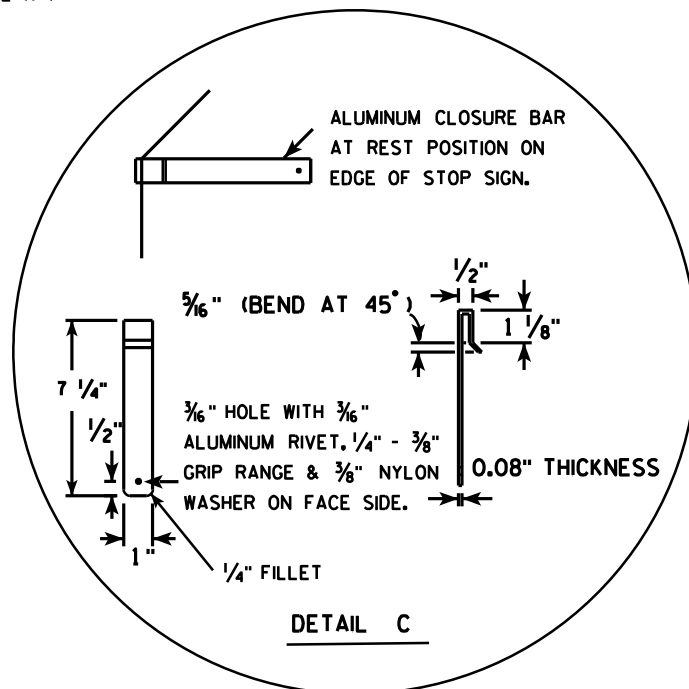
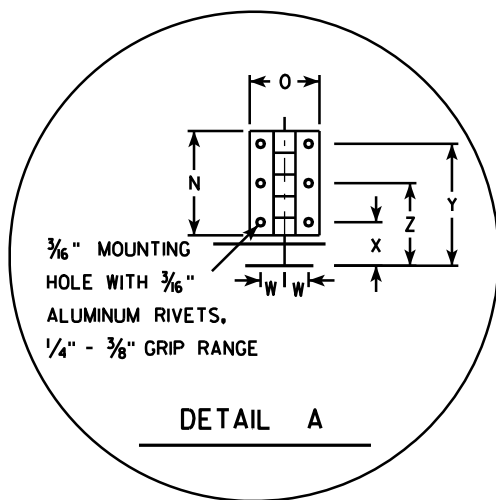
SHEET NO:

E



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				$\frac{5}{8}$	10	12 $\frac{1}{2}$	45		12 $\frac{3}{4}$		9 $\frac{1}{4}$	6 $\frac{1}{2}$	3	2	15	12 $\frac{3}{8}$	2 $\frac{1}{2}$	22	5			$\frac{1}{16}$	1 $\frac{1}{4}$	3 $\frac{1}{2}$	2 $\frac{3}{8}$	5.18
2M	36				$\frac{3}{4}$	12	15	45		15 $\frac{3}{8}$		11	6 $\frac{1}{2}$	3	2	18	15 $\frac{3}{8}$	2 $\frac{1}{2}$	26	5			$\frac{1}{16}$	1 $\frac{1}{4}$	3 $\frac{1}{2}$	2 $\frac{3}{8}$	7.46
3	36				$\frac{3}{4}$	12	15	45		15 $\frac{3}{8}$		11	6 $\frac{1}{2}$	3	2	18	15 $\frac{3}{8}$	2 $\frac{1}{2}$	26	5			$\frac{1}{16}$	1 $\frac{1}{4}$	3 $\frac{1}{2}$	2 $\frac{3}{8}$	7.46
4																											
5																											

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN R1-1F

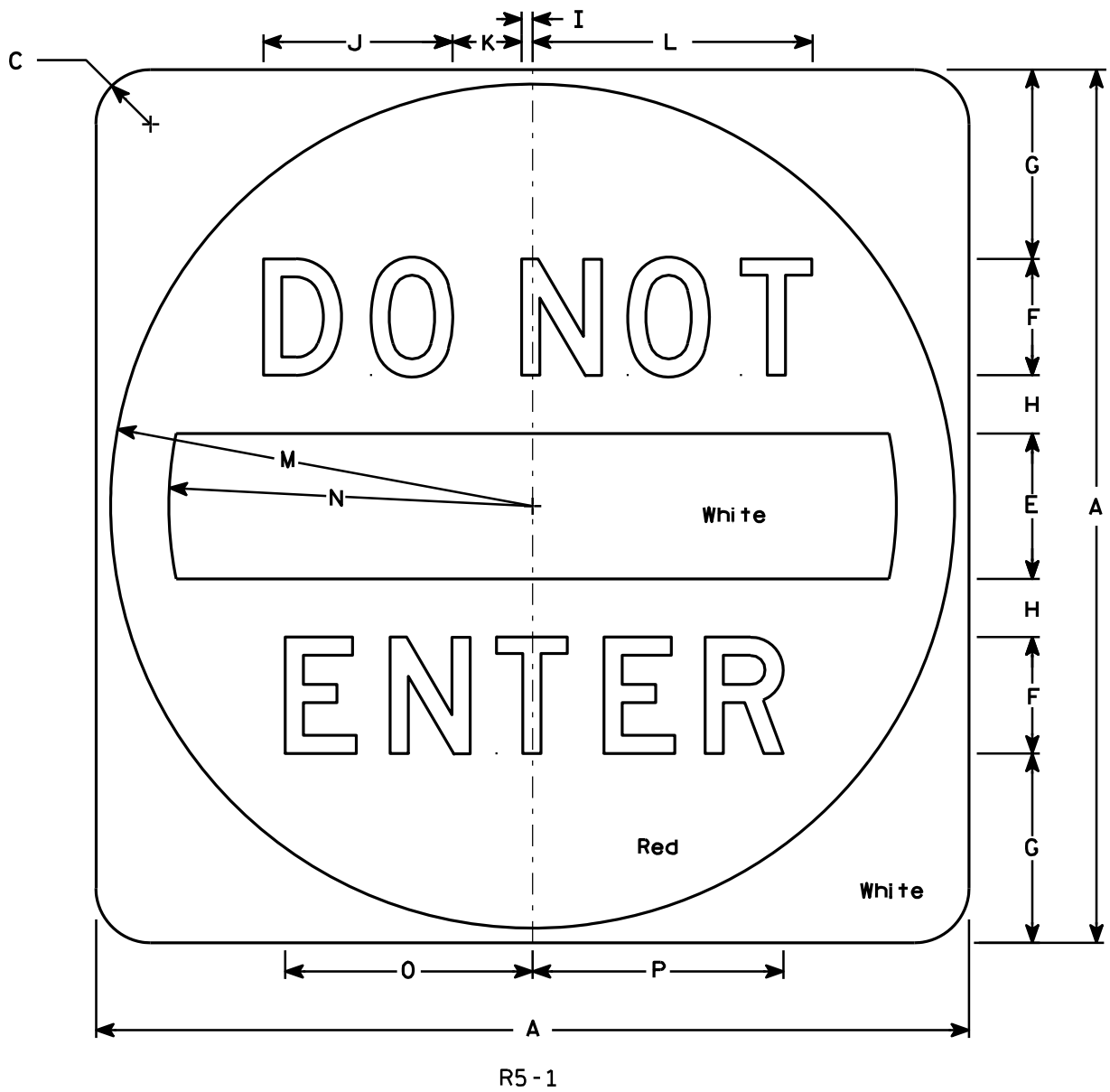
WISCONSIN DEPT OF TRANSPORTATION

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 - See detail
 - Message - White - Type H Reflective
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but when base material is metal, the corners shall be rounded.



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

STANDARD SIGN

R5 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

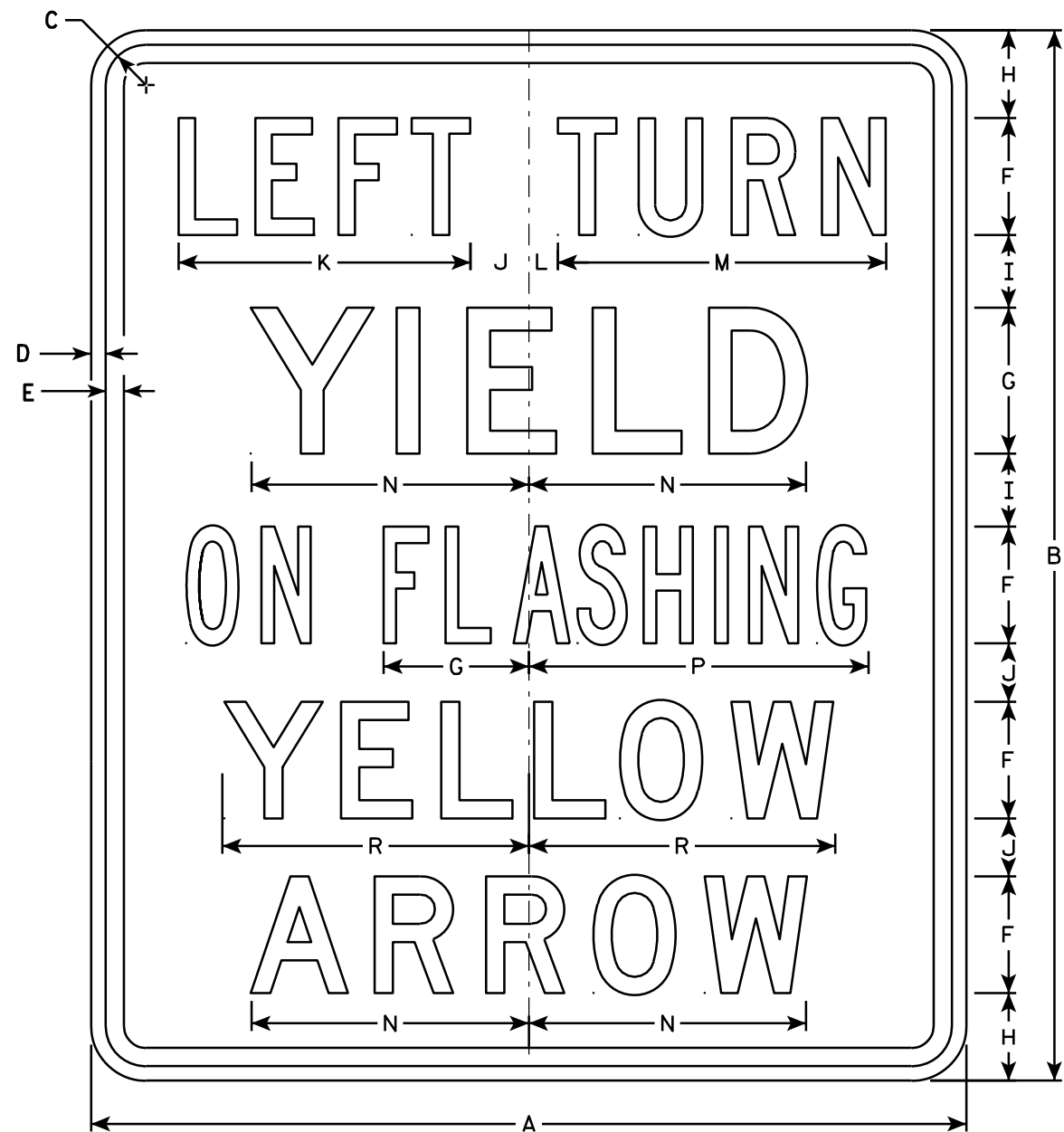
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

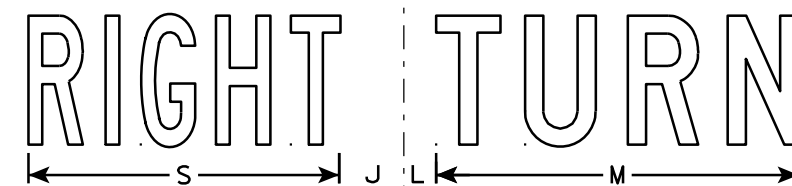


R10-50L

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

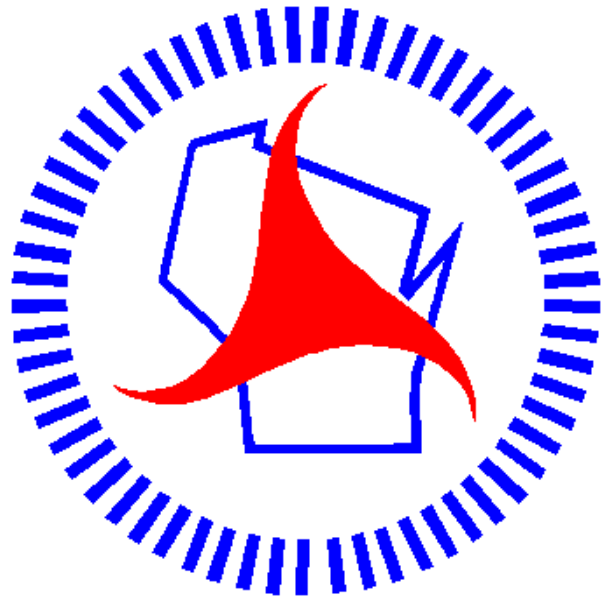
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/11/13 PLATE NO. R10-50.2

PROJECT NO: HWY: COUNTY: SHEET NO: E

Notes



Wisconsin Department of Transportation

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