

SEL
PROJECT ID: 2070-08-70
WITH: N/A
COUNTY: MILWAUKEE

DEC 2015

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 = 94



DESIGN DESIGNATION

A.A.D.T.	2012	=	30,200-17,100
A.A.D.T.	2036	=	40,500-22,200
D.H.V.		=	N/A
D.D.		=	N/A
T.		=	3.1%
DESIGN SPEED		=	35 MPH
ESALS		=	N/A

CONVENTIONAL SYMBOLS

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

PROFILE

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

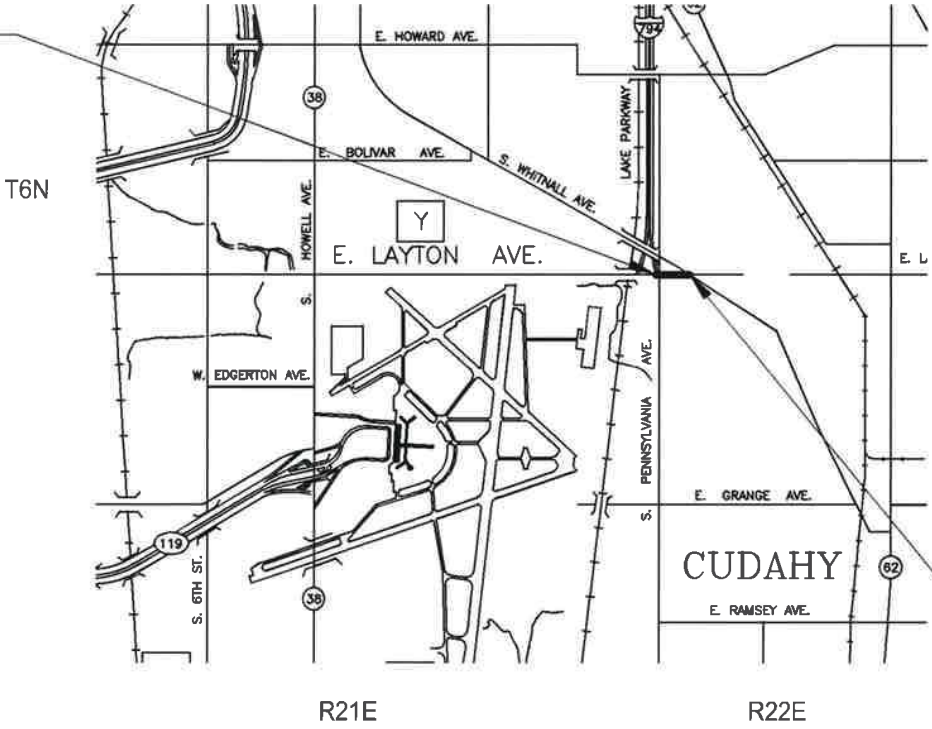
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH Y
PENNSYLVANIA / WHITNALL AVE INTERSECTION
CTH Y
MILWAUKEE COUNTY

STATE PROJECT NUMBER
2070-08-70

BEGIN PROJECT
STA. 11+00
X = 2567365.5436
Y = 356769.6702



END PROJECT
STA. 26+00

LAYOUT
SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.28 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, MILWAUKEE COUNTY, NAD83 (1997), 88 IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2070-08-70	WISC 2015641	1

ORIGINAL PLANS PREPARED BY:

MILWAUKEE COUNTY
DEPARTMENT OF TRANSPORTATION

WISCONSIN
DANIEL M. MURPHY
E-42735
MILWAUKEE, WIS.
PROFESSIONAL ENGINEER

PROJECT DESIGNER:
DATE: 9/22/15 *Daniel Murphy*

RECOMMENDED FOR APPROVAL:
DATE: 9/22/15 *David J. ...*
Transportation Engineering Manager

APPROVED:
DATE: 9/23/15 *...*
Director of Milwaukee County Department of Transportation

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	MILWAUKEE COUNTY
Designer	MILWAUKEE COUNTY
Management Consultant	DAAR ENGINEERING, INC.
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 9/28/15 *...*
Management Consultant Signature

E

STANDARD ABBRIVATIONS

AEW	APRON ENDWALL	PE	PRIVATE ENTRANCE
AGG	AGGREGATE	PI	POINT OF INTERSECTION
BAD	BASE AGGREGATE DENSE	PLE	PERMANENT LIMITED EASEMENT
BM	BENCHMARK	PT	POINT OF TANGENT
C&G	CURB AND GUTTER	R	RADIUS OF CURVE
CL OR		R/L	REFERENCE LINE
$\frac{C}{L}$	CENTER OR CONSTRUCTION LINE	R/W	RIGHT OF WAY
CMCP	CULVERT PIPE CORRUGATED METAL	RC	REVERSE CROWN
CONC	CONCRETE	RCAEW	APRON END WALL FOR CULVERT PIPE REINFORCED
CP	CULVERT PIPE		CONCRETE
CPRC	CULVERT PIPE REINFORCED CONCRETE	REQD	REQUIRED
CSD	CONCRETE SURFACE DRAIN	RHF	RIGHT HAND FORWARD
CY	CUBIC YARD	RO	RUN OFF LENGTH
DD	DEGREE OF CURVE DEGREE OF CURVE	RRSP	RAILROAD SPIKE RAILROAD SPIKE
Δ	DELTA	RT	RIGHT
DISCH	DISCHARGE	SLV	SALVAGED
FE	FIELD ENTRANCE	SAPBC	SALVAGED ASPHALTIC PAVEMENT BASE COURSE
HMA	HOT MIX ASPHALT	SB	SOUTHBOUND
INV	INVERT	SDD	STANDARD DETAIL DRAWING
L	LENGTH OF CURVE	SE	SUPER ELEVATION
LHF	LEFT HAND FORWARD	SF	SQUARE FOOT
LT	LEFT	STA	STATION
M/L	MAINLINE	SY	SQUARE YARD
NB	NORTHBOUND	T	TANGENT LENGTH
NC	NORMAL CROWN	TLE	TEMPORARY LIMITED EASEMENT
PAVT	PAVEMENT	VCL	VERTICAL CURVE LENGTH
PC	POINT OF CURVE	VPC	POINT VERTICAL CURVE
PCC	POINT OF COMPOUND CURVE	VPI	POINT OF VERTICAL INTERSECTION

GENERAL NOTES

DO NOT REMOVE TREES OR SHRUBS WITHOUT THE CONSENT OF THE ENGINEER.

FILL ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES WITH GRANULAR BACKFILL, UNLESS REGULATIONS REQUIRE DIFFERENTLY. GRANULAR MATERIAL IS INCIDENTAL TO REMOVAL ITEM.

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

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF EXCAVATION AND TO NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE AND MUST BE CONTACTED SEPARATELY.

TOPSOIL, SEED AND WATER DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS AS DIRECTED BY THE ENGINEER.

ADJUST TRAFFIC CONTROL DEVICES TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

UTILITIES

AT&T
2005 Pewaukee Road
Waukesha, WI 53188
ATTN: Mr. Mark Eder
Phone: (262) 896-7434

Time Warner Cable Communications
1320 N. Martin Luther King Dr.
Milwaukee, WI 53212
ATTN: Mr. Steve Storm
Phone: (414) 908-4785

WE ENERGIES
333 W. Everett St. – A299
Milwaukee, WI 53203
ATTN: Mr. LaTroy Brumfield
Phone: (414) 221-5617

Milwaukee Metropolitan Sewage District
260 W Seeboth St.
Milwaukee, WI 53204-1446
ATTN: Ms. Debra Jensen
Phone: (414) 225-2205

AGENCIES

City of Cudahy
Engineering Department
5050 S. Lake Drive
Cudahy, WI 53110
ATTN: Ms. Mary Jo Lange
Phone: (414) 769-2213

City of Saint Francis
4235 South Nicholson Ave
St. Francis, Wisconsin 53235
ATTN: Ms. Melinda Dejewski
Phone: (414) 481-2300 Ext. 128

City of Milwaukee
Jeff Polenske
Water Works
841 N Broadway
Milwaukee, WI 53202
ATTN: Dave Goldapp
Phone: (414) 286-6301

STATE AGENCIES

State of Wisconsin
Department of Natural Resources
2300 N. Martin Luther King Jr. Dr.
Milwaukee, WI 53212
ATTN: Ms. Kristina Betzold
(414) 263-8517

MILWAUKEE COUNTY

Milwaukee County Transit System
1942 N. 17th St.
Milwaukee, WI 53205
ATTN: Ms. Melanie MacArthur
Phone: (414) 343-1764

Milwaukee County DOT
Highway Maintenance Division
10190 W. Watertown Plank Rd.
Wauwatosa, WI 53226
ATTN: Mr. Greg Heisel
Phone: (414) 257-6566

Milwaukee County DOT
Electrical Maintenance Division
10190 W. Watertown Plank Rd.
Wauwatosa, WI 53226
ATTN: Mr. Stanley Jackson
Phone: (414) 257-6593

Milwaukee County DOT
Transportation Services Division
10437 W. Innovation Dr., 5th Floor
Wauwatosa, WI 53226
ATTN: Ms. Andrea Weddle-Henning
Phone: (414) 257-5934

Milwaukee County DOT
Traffic Engineering
10437 W. Innovation Dr., 5th Floor
Wauwatosa, WI 53226
ATTN: Mr. Daniel Murphy
Phone: (414) 257-5942

SHEET INDEX

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
EASEMENT DETAIL
EROSION CONTROL
TRAFFIC SIGNAL REMOVAL PLAN
TRAFFIC SIGNAL PLAN
TEMPORARY TRAFFIC SIGNAL PLAN
SIGNING & PAVEMENT MARKING

DIGGERS



HOTLINE

Dial



or (800) 242-8511

www.DiggersHotline.com



BEGIN PROJECT
2070-08-70
STA 11+00.00
X=2567365.5436
Y=356769.6702

BP: 8+00.00

PI: 12+68.18

S. PENNSYLVANIA AVE

S. WHITNALL AVE

E. LAYTON AVE. (CTH Y)

END PROJECT
2070-08-70
STA 26+00.00

CITY OF ST. FRANCIS

CITY OF CUDAHY

EP: 39+00.22

PROJECT NO:2070-08-70

HWY: E. LAYTON AVE. (CTY Y)

COUNTY:MILWAUKEE

PROJECT OVERVIEW

SHEET

E

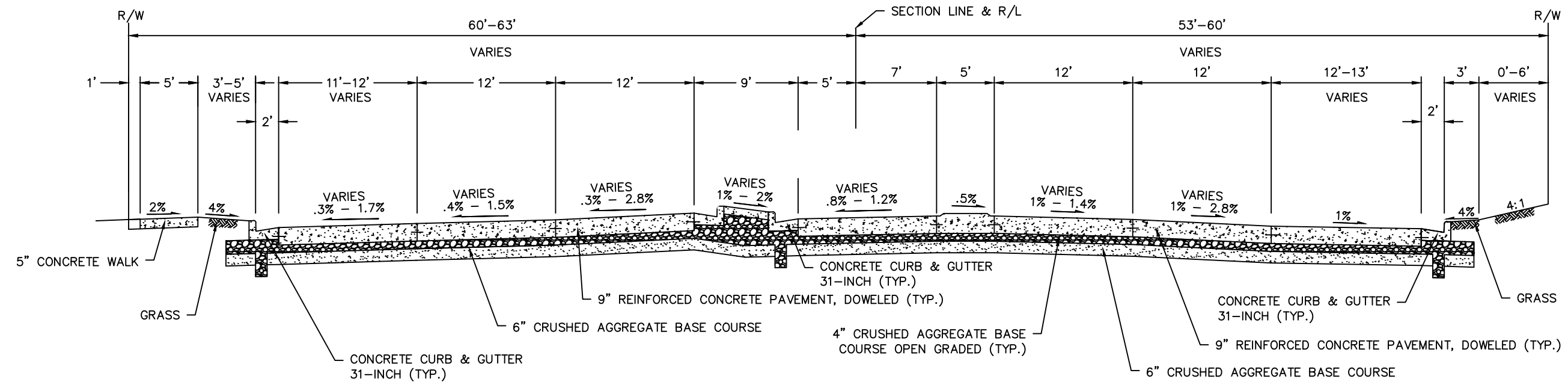
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PLOT BY : JENKINS, KENYA

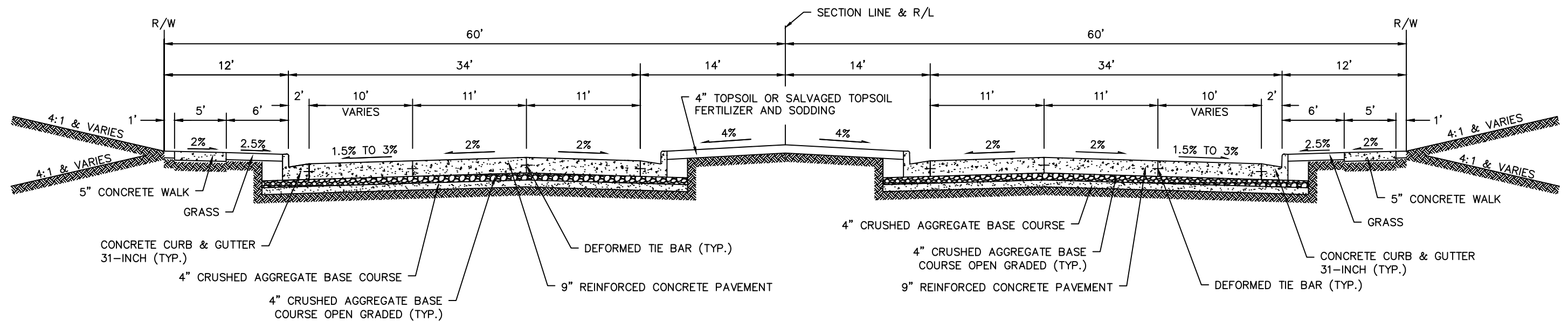
PLOT NAME :

PLOT SCALE : 1" = 200'_XREF

WISDOT/CADDs SHEET 42



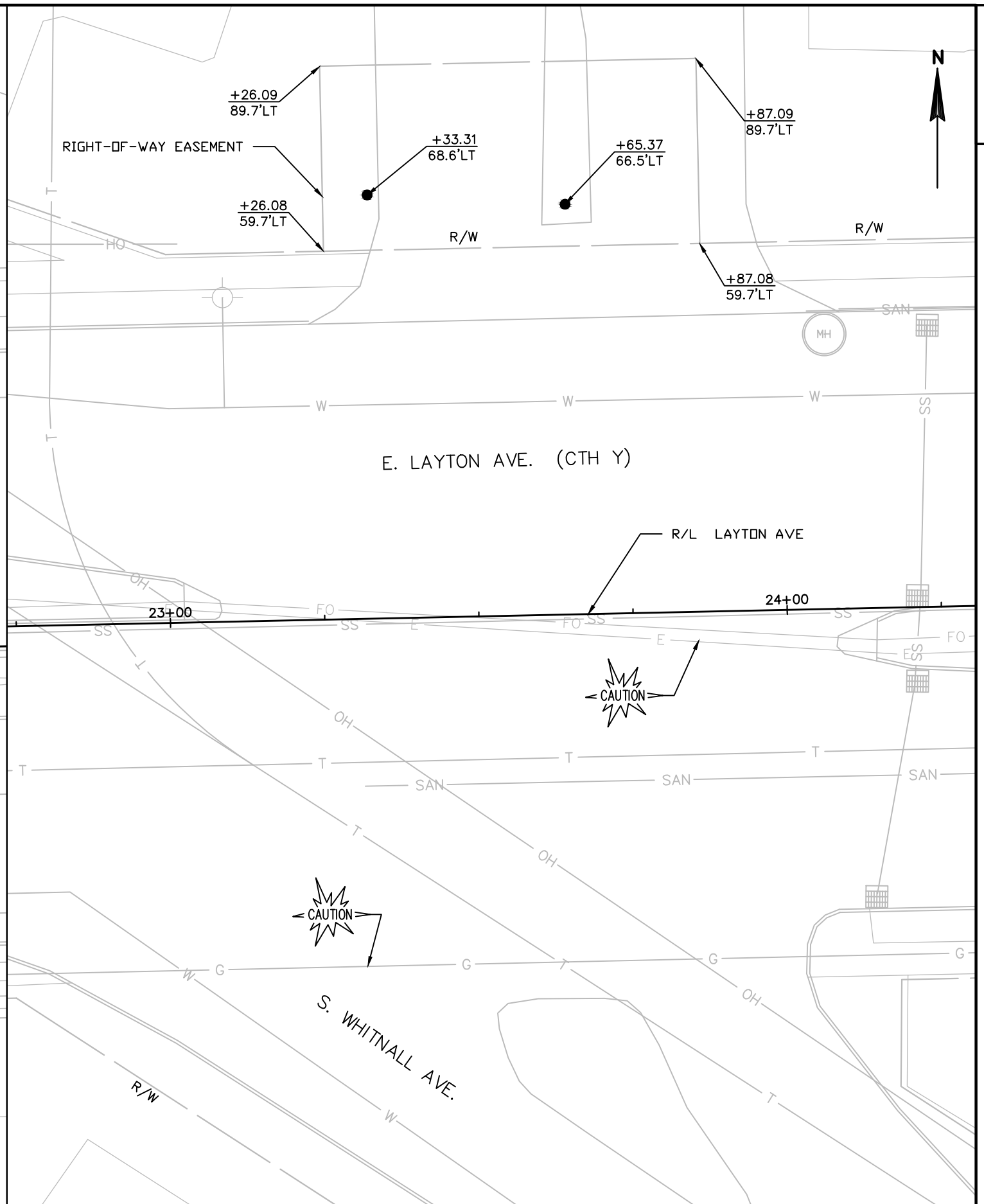
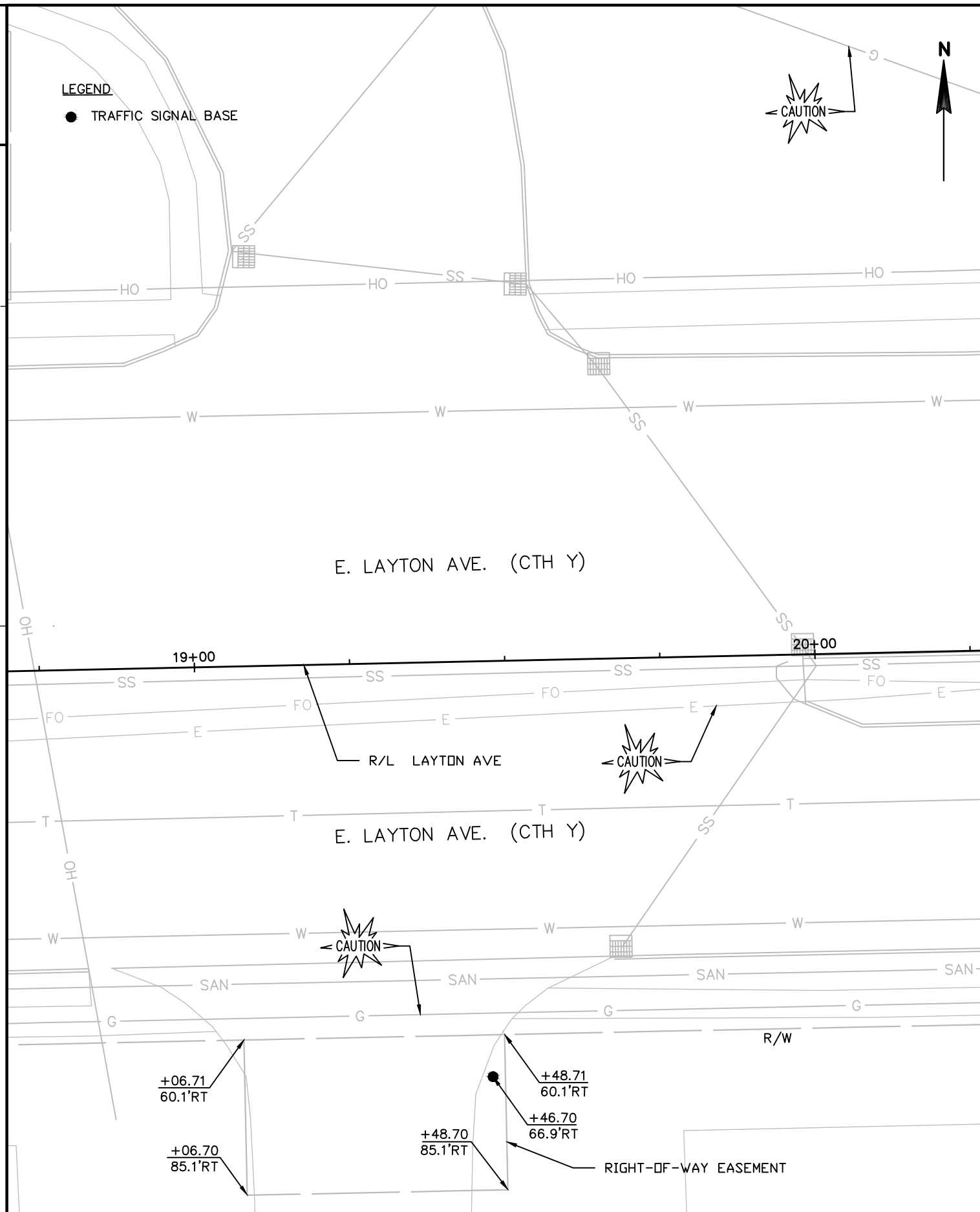
TYPICAL EXISTING SECTION
STA. 11+00 TO STA. 18+50



TYPICAL EXISTING SECTION
STA. 18+50 TO STA. 26+00

LEGEND

● TRAFFIC SIGNAL BASE



PROJECT NO:2070-08-70

HWY: E. LAYTON AVE (CTH Y)

COUNTY:MILWAUKEE

EASEMENT DETAIL

SHEET

E

FILE NAME : O:\HIGHWAY OPERATIONS CONTROL FILE\CENTRAL FILES\2010-2014\CTH Y - E. LAYTON AVE\INT WITH PENN & WHIT - HSIP\PLANS\FINAL\21_ROW PLAT\Y_WHIT_EASEMENT.DWG

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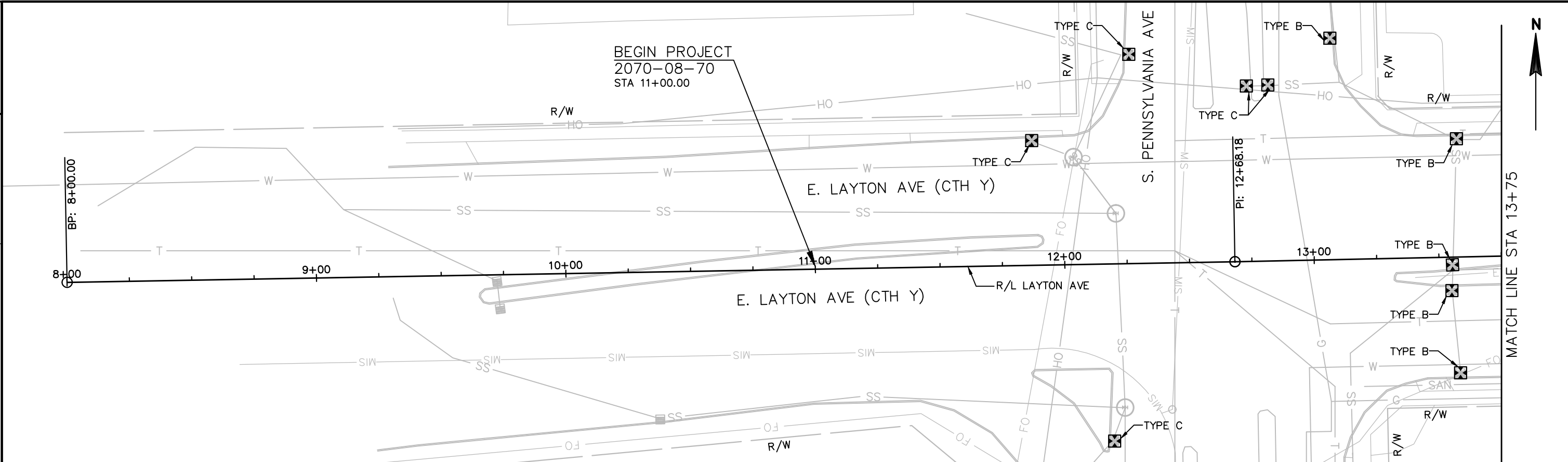
PLOT BY : JENKINS, KENYA

PLOT NAME :

PLOT SCALE : #####

WISDOT/CADDS SHEET 42

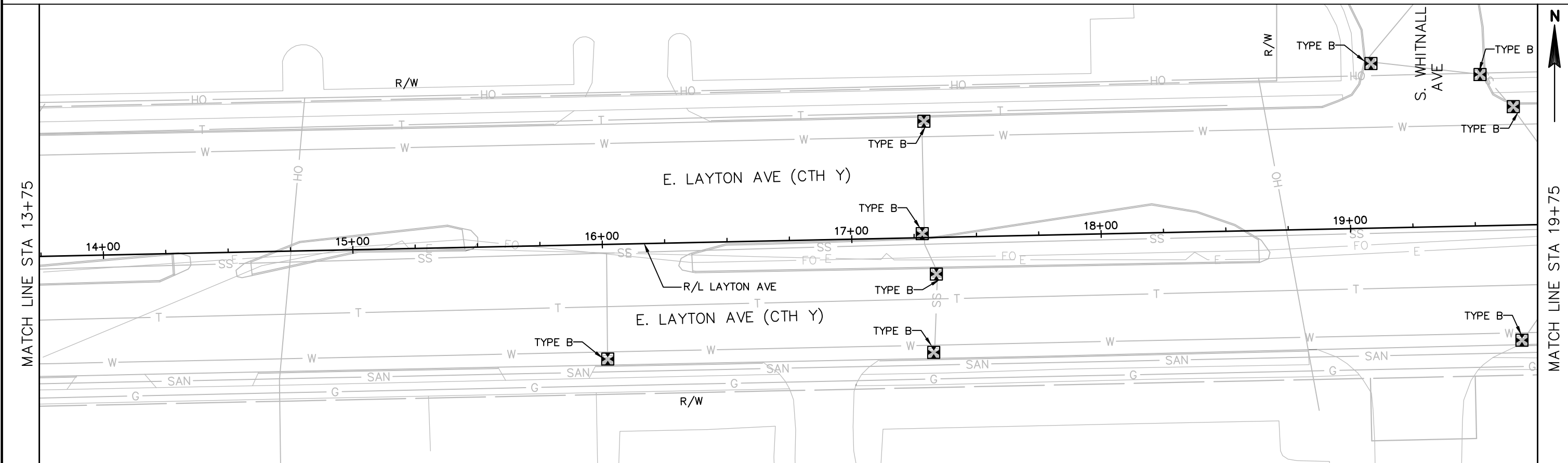
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LEGEND



INLET PROTECTION
(TYPE SPECIFIED ON PLAN)



PROJECT NO:2070-08-70

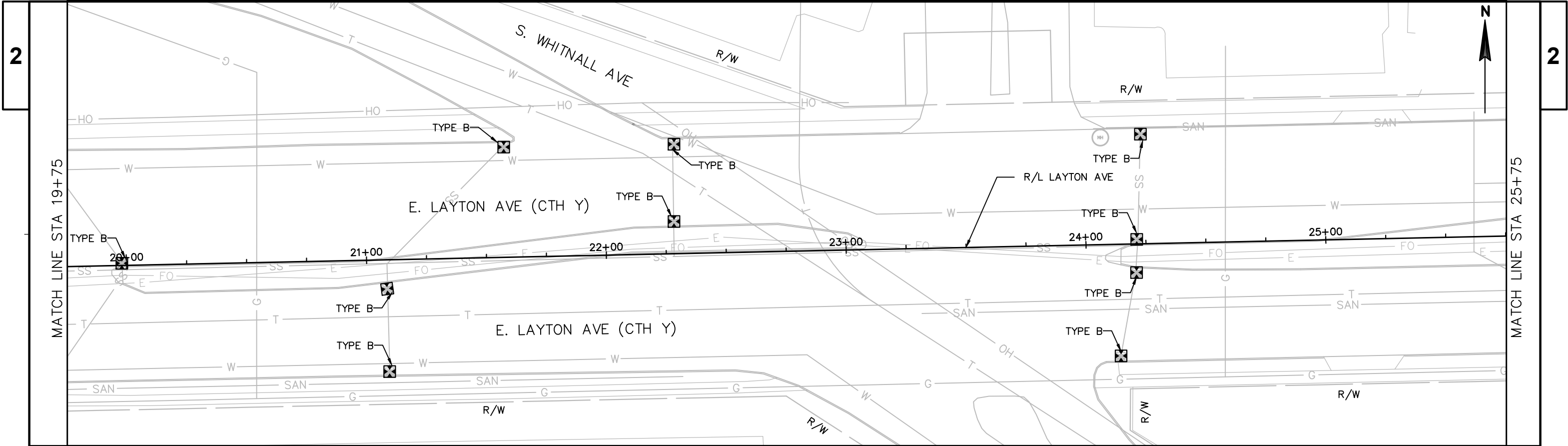
HWY:E. LAYTON AVE (CTH Y)

COUNTY:MILWAUKEE

EROSION CONTROL

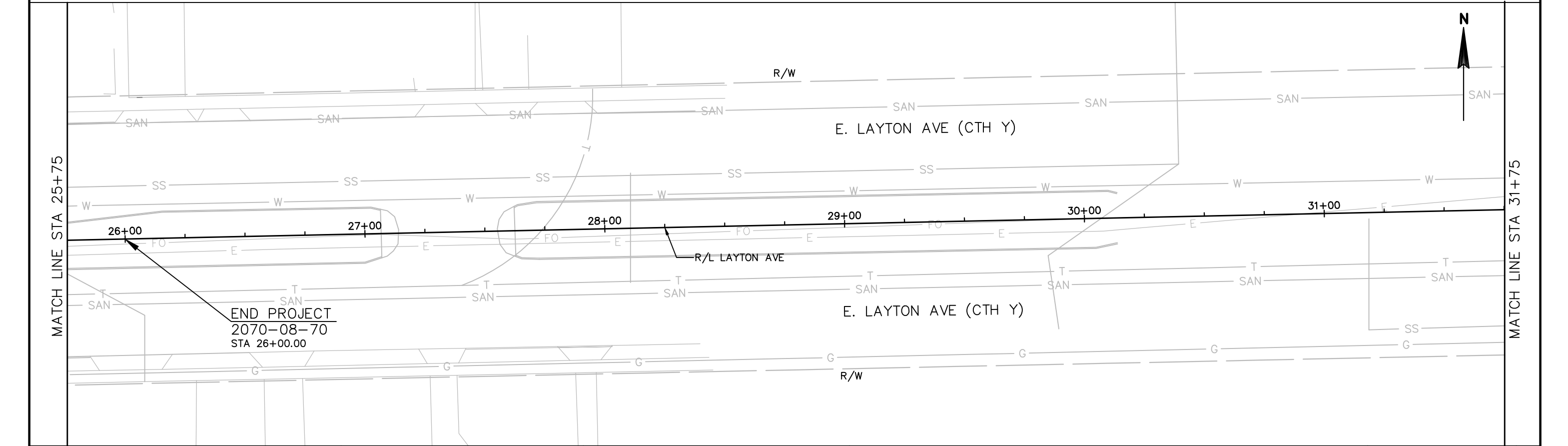
SHEET

11



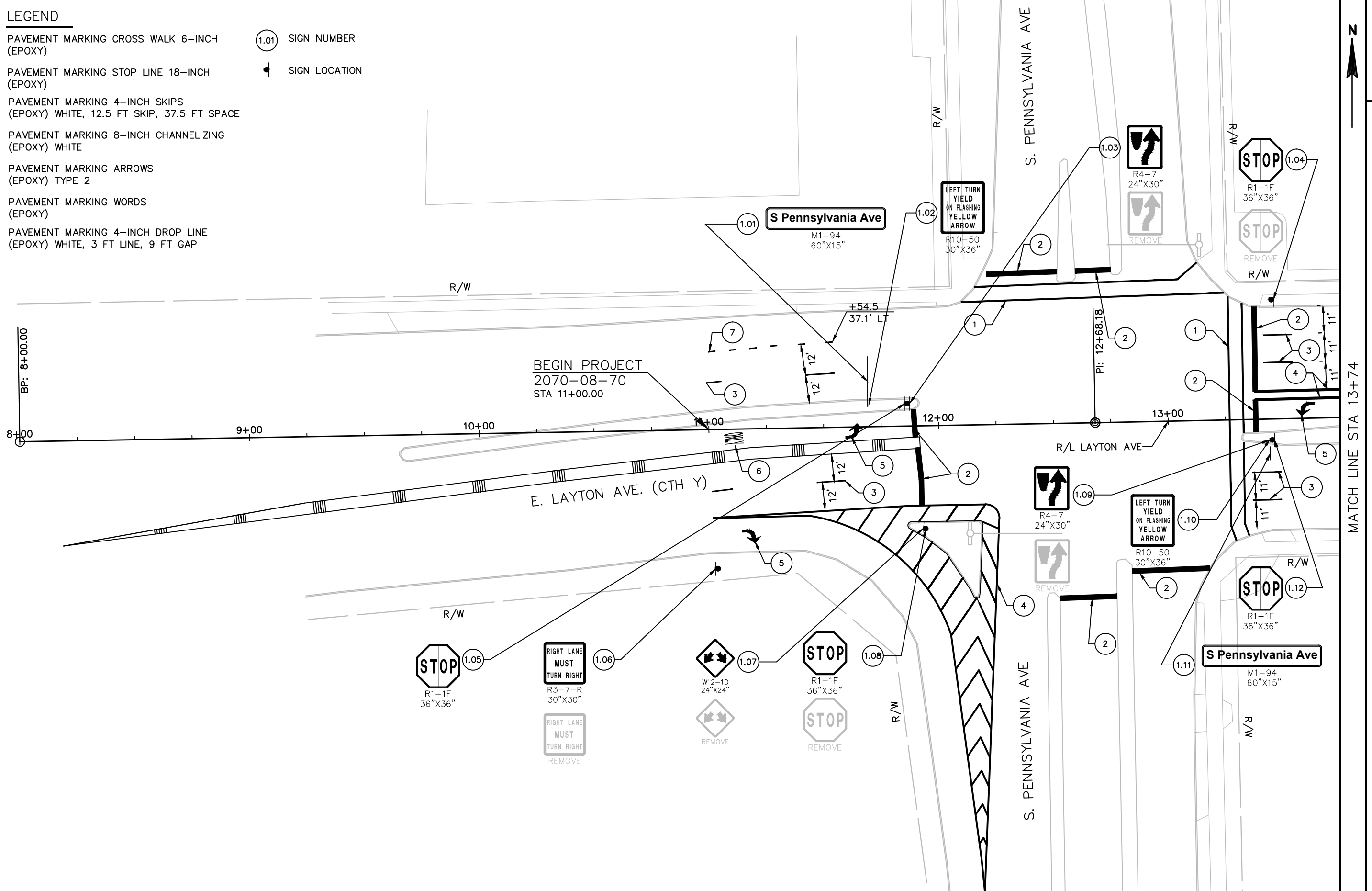
LEGEND

 INLET PROTECTION
(TYPE SPECIFIED ON PLAN)



LEGEND

- | | | | |
|---|--|--------|---------------|
| 1 | PAVEMENT MARKING CROSS WALK 6-INCH (EPOXY) | (1.01) | SIGN NUMBER |
| 2 | PAVEMENT MARKING STOP LINE 18-INCH (EPOXY) | + | SIGN LOCATION |
| 3 | PAVEMENT MARKING 4-INCH SKIPS (EPOXY) WHITE, 12.5 FT SKIP, 37.5 FT SPACE | | |
| 4 | PAVEMENT MARKING 8-INCH CHANNELIZING (EPOXY) WHITE | | |
| 5 | PAVEMENT MARKING ARROWS (EPOXY) TYPE 2 | | |
| 6 | PAVEMENT MARKING WORDS (EPOXY) | | |
| 7 | PAVEMENT MARKING 4-INCH DROP LINE (EPOXY) WHITE, 3 FT LINE, 9 FT GAP | | |

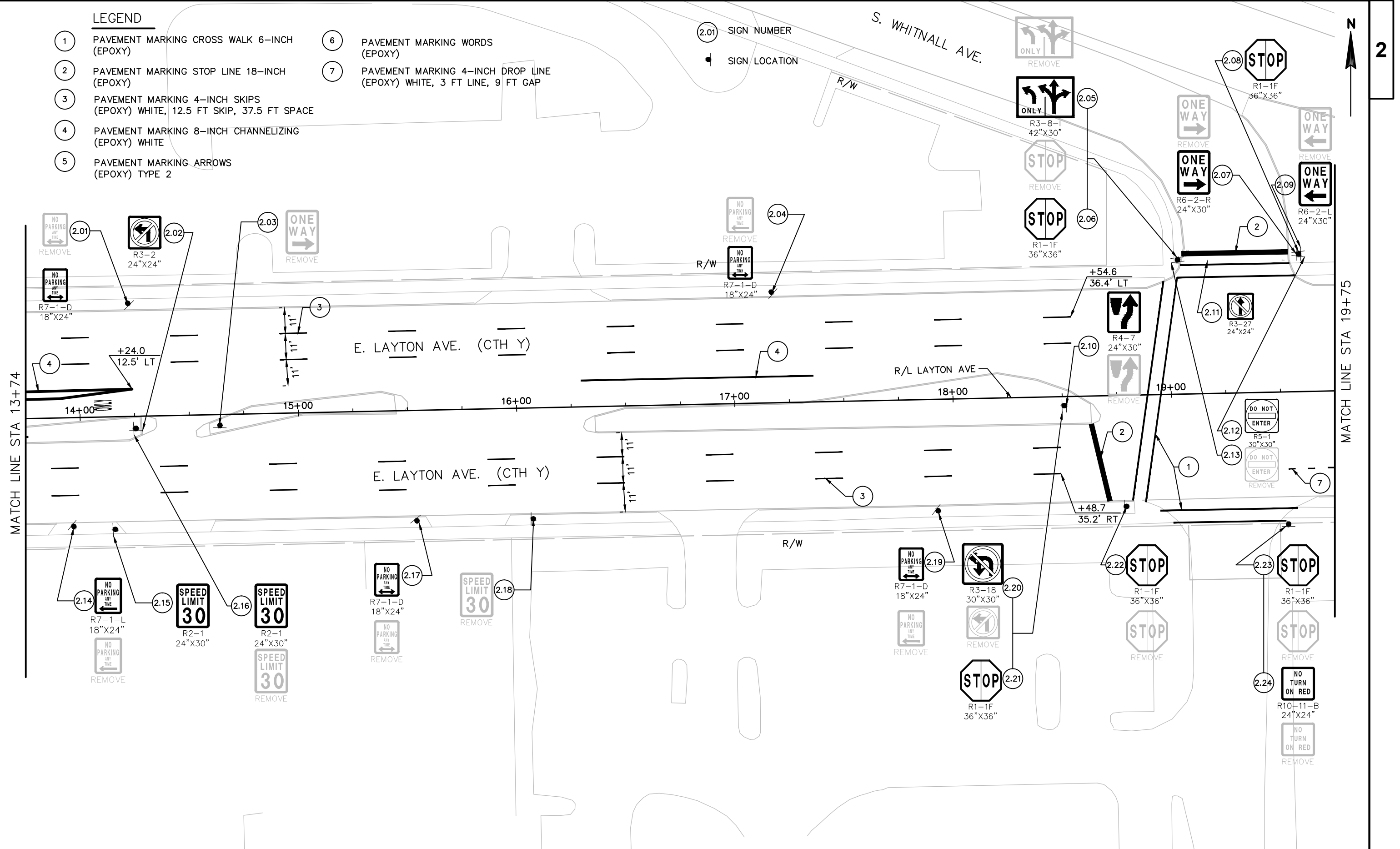


LEGEND

- | | | | |
|---|--|---|--|
| 1 | PAVEMENT MARKING CROSS WALK 6-INCH (EPOXY) | 6 | PAVEMENT MARKING WORDS (EPOXY) |
| 2 | PAVEMENT MARKING STOP LINE 18-INCH (EPOXY) | 7 | PAVEMENT MARKING 4-INCH DROP LINE (EPOXY) WHITE, 3 FT LINE, 9 FT GAP |
| 3 | PAVEMENT MARKING 4-INCH SKIPS (EPOXY) WHITE, 12.5 FT SKIP, 37.5 FT SPACE | | |
| 4 | PAVEMENT MARKING 8-INCH CHANNELIZING (EPOXY) WHITE | | |
| 5 | PAVEMENT MARKING ARROWS (EPOXY) TYPE 2 | | |

MATCH LINE STA 13+74

MATCH LINE STA 19+75



PROJECT NO: 2070-08-70

HWY: CTH Y

COUNTY: MILWAUKEE

SIGNING & PAVEMENT MARKING

SHEET

E

FILE NAME : O:\HIGHWAY OPERATIONS CONTROL FILE\CENTRAL FILES\2010-2014\CTH Y - E. LAYTON AVE\INT WITH PENN & WHIT - HSIP\PLANS\FINAL\2014\2070-08-70-PS06.PLOT.DWG: JENKINS, KENYA

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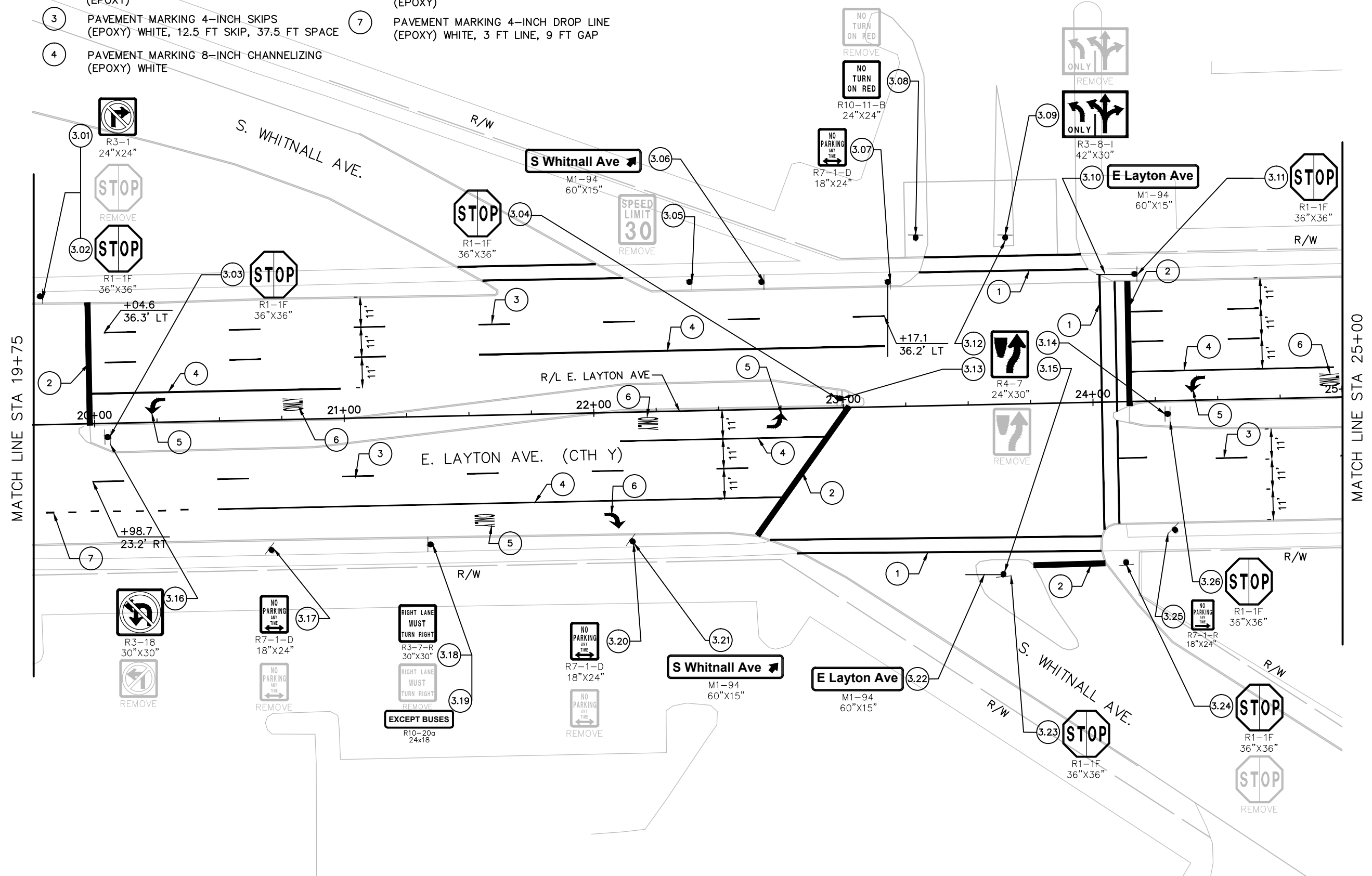
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WISDOT/CADDs SHEET 42

LEGEND

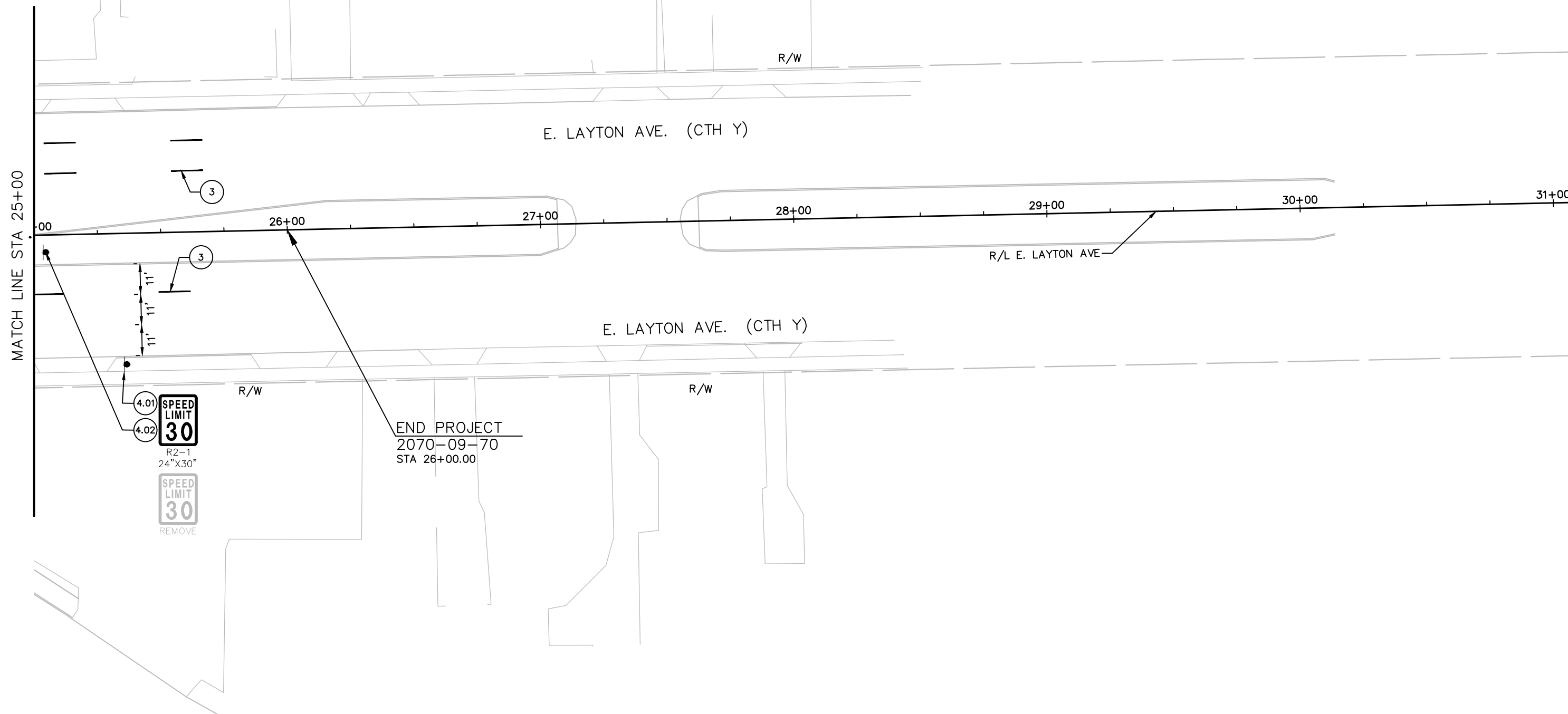
- | | | | |
|---|--|---|--|
| 1 | PAVEMENT MARKING CROSS WALK 6-INCH (EPOXY) | 5 | PAVEMENT MARKING ARROWS (EPOXY) TYPE 2 |
| 2 | PAVEMENT MARKING STOP LINE 18-INCH (EPOXY) | 6 | PAVEMENT MARKING WORDS (EPOXY) |
| 3 | PAVEMENT MARKING 4-INCH SKIPS (EPOXY) WHITE, 12.5 FT SKIP, 37.5 FT SPACE | 7 | PAVEMENT MARKING 4-INCH DROP LINE (EPOXY) WHITE, 3 FT LINE, 9 FT GAP |
| 4 | PAVEMENT MARKING 8-INCH CHANNELIZING (EPOXY) WHITE | | |

- 3.01 SIGN NUMBER
SIGN LOCATION



LEGEND

- | | | | |
|---|--|--------|---------------|
| 1 | PAVEMENT MARKING CROSS WALK 6-INCH (EPOXY) | (4.01) | SIGN NUMBER |
| 2 | PAVEMENT MARKING STOP LINE 18-INCH (EPOXY) | ● | SIGN LOCATION |
| 3 | PAVEMENT MARKING 4-INCH SKIPS (EPOXY) WHITE, 12.5 FT SKIP, 37.5 FT SPACE | | |
| 4 | PAVEMENT MARKING 8-INCH CHANNELIZING (EPOXY) WHITE | | |
| 5 | PAVEMENT MARKING ARROWS (EPOXY) TYPE 2 | | |
| 6 | PAVEMENT MARKING WORDS (EPOXY) | | |



PROJECT NO:2070-08-70

HWY: CTH Y

COUNTY:MILWAUKEE

SIGNING & PAVEMENT MARKING

SHEET

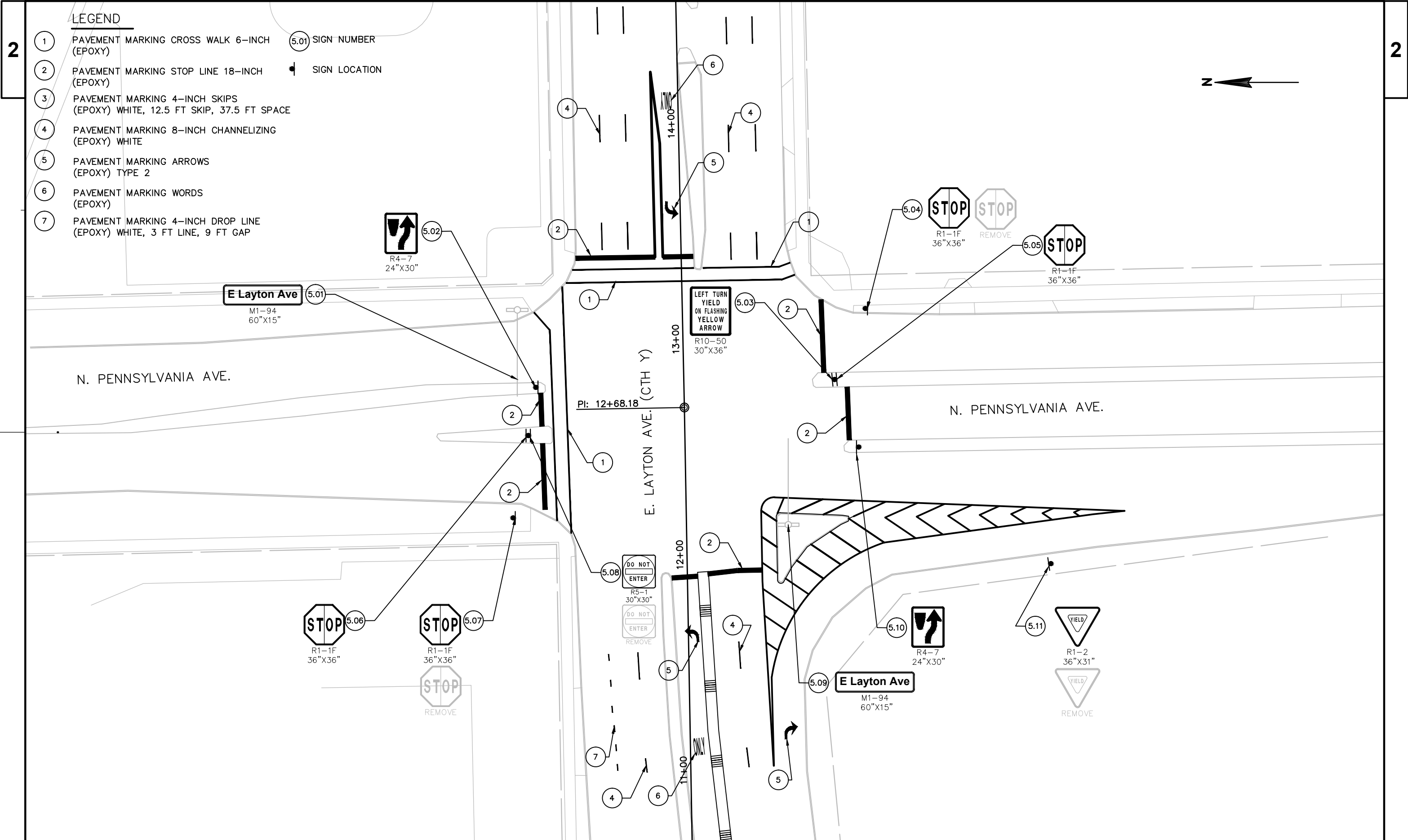
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PLOT NAME :

PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDs SHEET 42



LEGEND

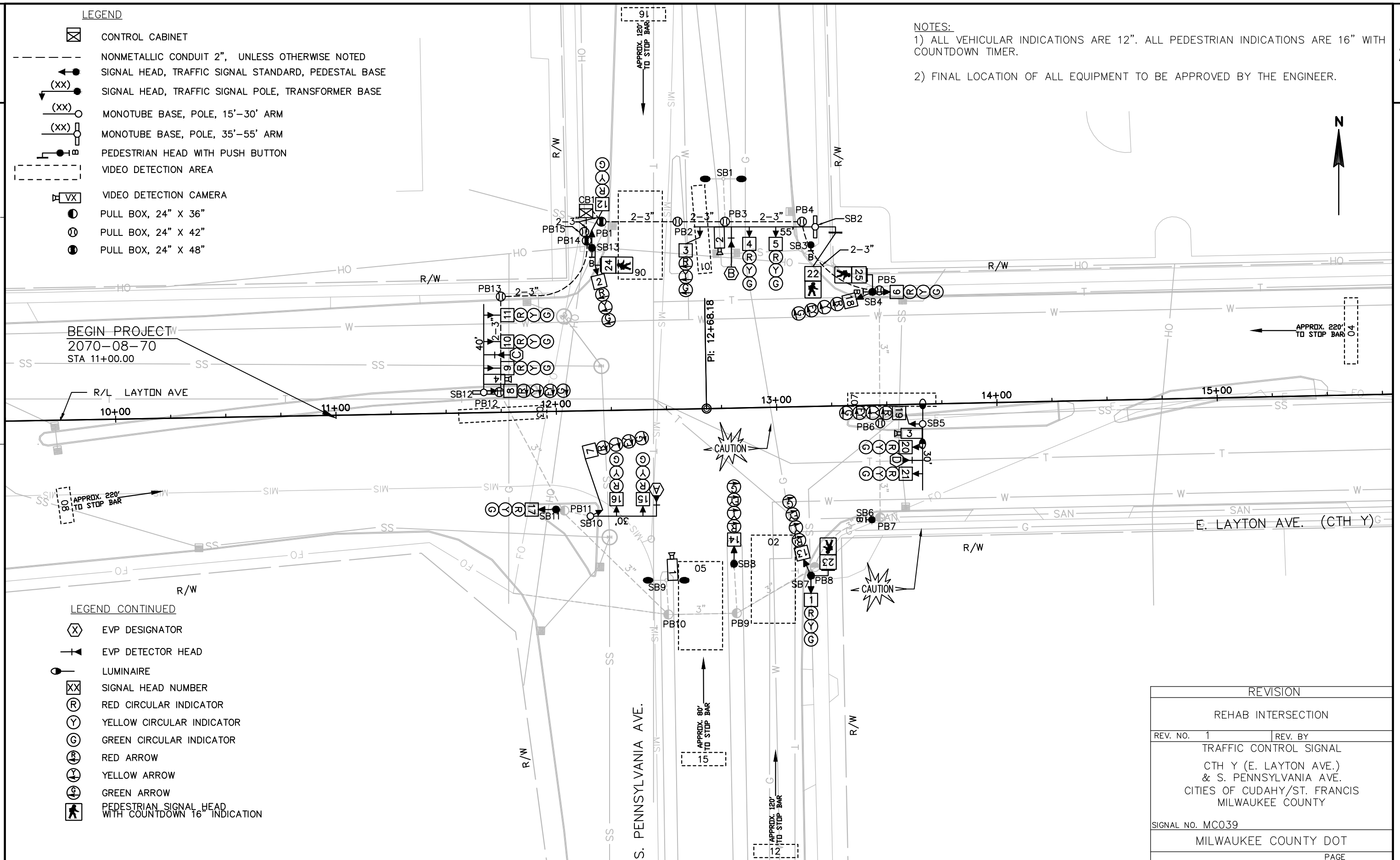
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 - 2 PAVEMENT MARKING STOP LINE 18-INCH (EPOXY)
 - 3 PAVEMENT MARKING 4-INCH SKIPS (EPOXY) WHITE, 12.5 FT SKIP, 37.5 FT SPACE
 - 4 PAVEMENT MARKING 8-INCH CHANNELIZING (EPOXY) WHITE
 - 5 PAVEMENT MARKING ARROWS (EPOXY) TYPE 2
 - 6 PAVEMENT MARKING WORDS (EPOXY)
 - 7 PAVEMENT MARKING 4-INCH DROP LINE (EPOXY) WHITE, 3 FT LINE, 9 FT GAP
- (5.01) SIGN NUMBER
- SIGN LOCATION

LEGEND

- ☒ CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) ● SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- (XX) ○ MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) □ MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- VIDEO DETECTION AREA
- ☒ VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- PULL BOX, 24" X 48"

NOTES:

- 1) ALL VEHICULAR INDICATIONS ARE 12". ALL PEDESTRIAN INDICATIONS ARE 16" WITH COUNTDOWN TIMER.
- 2) FINAL LOCATION OF ALL EQUIPMENT TO BE APPROVED BY THE ENGINEER.



LEGEND CONTINUED

- ⊗ EVP DESIGNATOR
- ⊢ EVP DETECTOR HEAD
- LUMINAIRE
- ⊗ 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
- ⊗ PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN 16" INDICATION

PROJECT NO: 2070-08-70

HWY: E. LAYTON AVE (CTH Y)

COUNTY: MILWAUKEE

TRAFFIC SIGNAL PLAN

SHEET

E

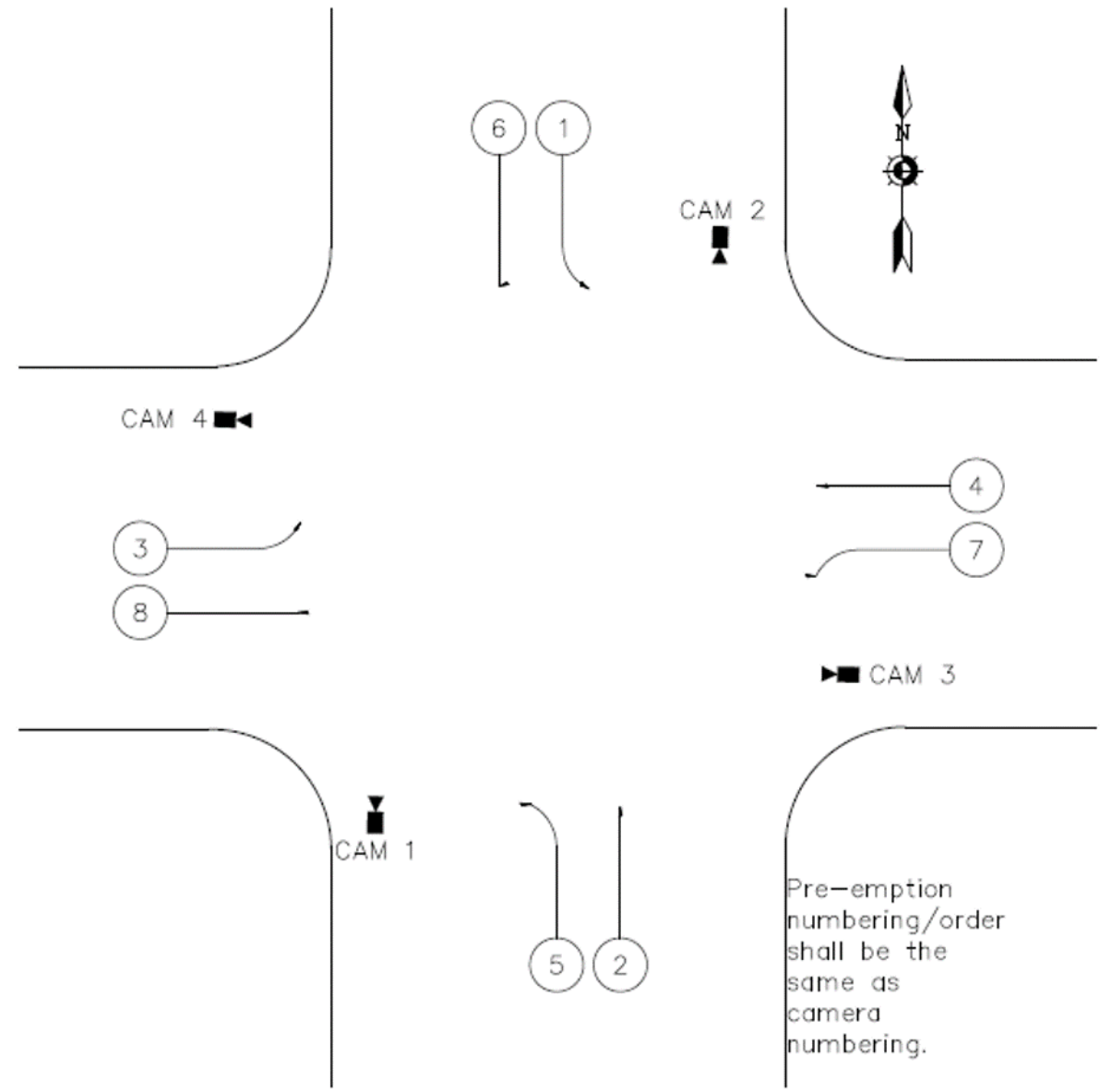
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PLOT BY : MURPHY, DANIEL

PLOT NAME :

PLOT SCALE : 1" = 40' XREF

WISDOT/CADDs SHEET 42



PHASES			
PHASE	VEHICLE	LEFT TURN TYPE	PED
1	X	FYA	
2	X		X
3	X	FYA	
4	X		X
5	X	PROT	
6	X		
7	X	FYA	
8	X		

OVERLAPS	
OVLP	USED
A	
B	
C	
D	
E	
F	
G	
H	

Pre-emption numbering/order shall be the same as camera numbering.

INTERCONNECT	
ETHERNET SWITCH	X
SM FIBER	
MM FIBER	X
5.8 GHZ RADIO	
900 MHZ ETHERNET RADIO	X
900 MHZ SERIAL RADIO	
TWISTED PAIR	
ETHERNET OVER COPPER	

PRE-EMPT	
EMERGENCY VEHICLE	X
W/ BEACONS	X
RAILROAD	

	YES	NO
LIGHTING FROM CABINET	X	
BATTERY BACKUP		X
PTZ CAMERA		X
AUDIBLE PEDESTRIAN HEADS		X
AUDIBLE PEDESTRIAN BUTTONS	X	

CTH Y (E. LAYTON AVE.) &
S. PENNSYLVANIA AVE.
MC039
OPERATIONS AND AUX. EQUIPMENT

INSTALLED:
REVISED:PAGE 2 OF 2

PROJECT ID:	2070-08-70
INTERSECTION:	CTH Y & S PENNSYLVANIA AVE

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

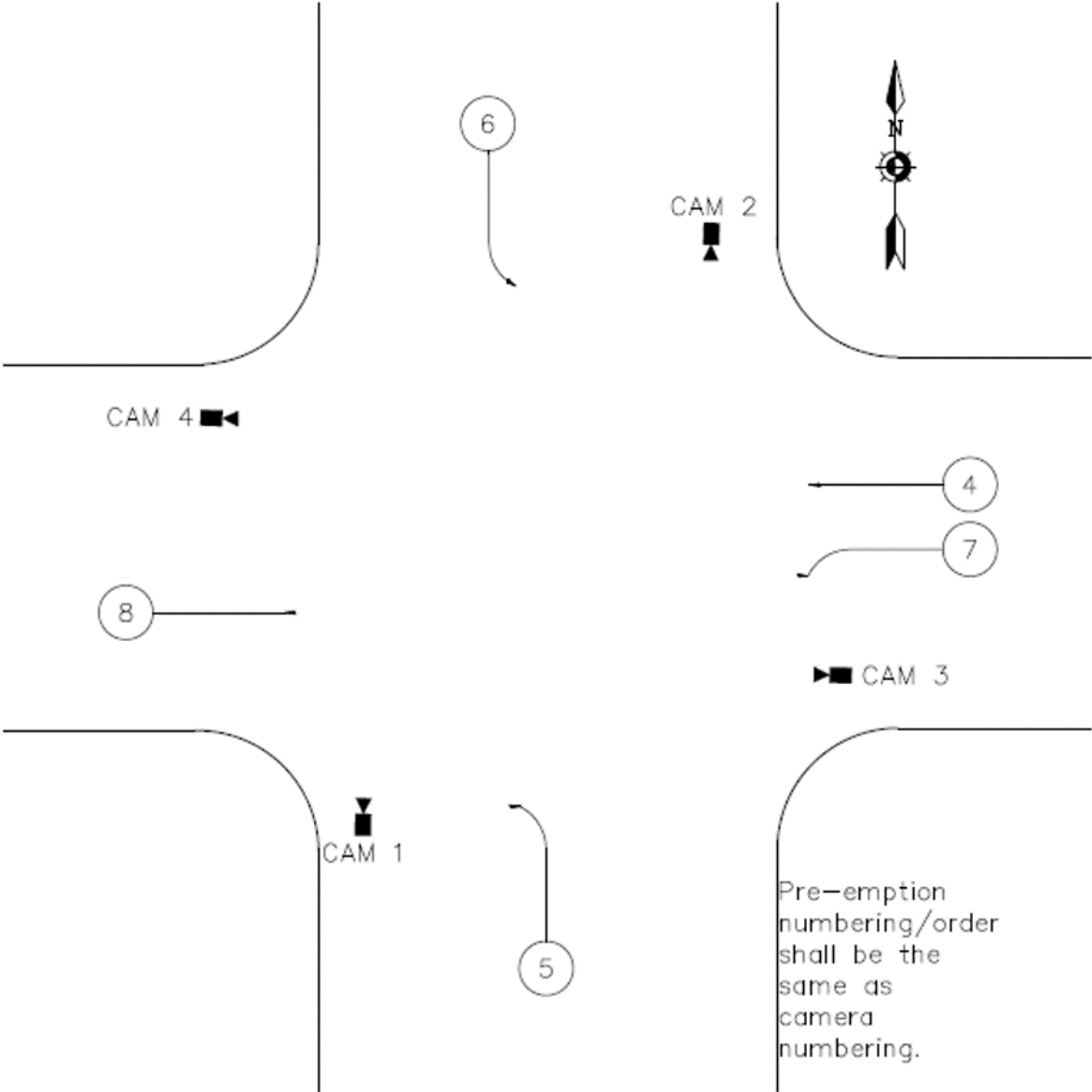
CB1 TO	# OF COND.	HEAD NO.	PHASE	SIGNAL INDICATION WIRE COLOR									PED BUTTON
				RED	YELLOW	GREEN	<RED>	<YELLOW>	<FL YLW>	<GREEN>	D/WALK	WALK	
SB2		4	2	RED	ORG	GRN							
		5	2	RED	ORG	GRN							
		3	5				RED/BLK	ORG/BLK		GRN/BLK			
		22	6								BLU	BLK	
SB3		B	4										RED
SB4		6	4	RED	ORG	GRN							
		18	3				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		25	4								BLU	BLK	
		B	2										WHT/BLK
SB5		20	8	RED	ORG	GRN							
		21	8	RED	ORG	GRN							
		19	3				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
SB6		B	2										RED
SB7		1	2	RED	ORG	GRN							
		13	1				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		23	2								BLU	BLK	
SB8		14	1				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
SB10		15	6	RED	ORG	GRN							
		16	6	RED	ORG	GRN							
		7	7				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
SB11		17	8	RED	ORG	GRN							
SB12		9	4										
		10	4	RED	ORG	GRN							
		11	4	RED	ORG	GRN							
		8	7				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
SB13		12	6	RED	ORG	GRN							
		2	5				RED/BLK	ORG/BLK		GRN/BLK			
		24	4								BLU	BLK	
		B	4										WHT/BLK

NOTES:

1. DO NOT USE THE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR SIGNAL INDICATIONS.

2. ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.

3. AT THE SIGNAL BASES, CONNECT ONE TERMINAL OF THE PEDESTRIAN BUTTON TO THE COLOR INDICATED IN THE CHART, CONNECT THE OTHER TERMINAL TO THE WHITE CONDUCTOR IN THE SIGNAL CABLE



PHASES			
PHASE	VEHICLE	LEFT TURN TYPE	PED
1			
2			
3			
4	X		X
5	X		
6	X		X
7	X	FYA	
8	X		X

OVERLAPS	
OVLP	USED
A	
B	
C	
D	
E	
F	
G	
H	

INTERCONNECT	
ETHERNET SWITCH	X
SM FIBER	
MM FIBER	X
5.8 GHZ RADIO	
900 MHZ ETHERNET RADIO	X
900 MHZ SERIAL RADIO	
TWISTED PAIR	
ETHERNET OVER COPPER	

PRE-EMPT	
EMERGENCY VEHICLE	X
W/ BEACONS	X
RAILROAD	

	YES	NO
LIGHTING FROM CABINET	X	
BATTERY BACKUP		X
PTZ CAMERA		X
AUDIBLE PEDESTRIAN HEADS		X
AUDIBLE PEDESTRIAN BUTTONS	X	

CTH Y (E. LAYTON AVE.) &
S. WHITNALL AVE. (WEST)
MC046
OPERATIONS AND AUX. EQUIPMENT

INSTALLED:
REVISED:PAGE 2 OF 2

PROJECT ID:	2070-08-70
INTERSECTION:	CTH Y & S WHITNALL AVE (WEST)

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

CB1 TO	# OF COND.	HEAD NO.	PHASE	SIGNAL INDICATION WIRE COLOR									PED BUTTON
				RED	YELLOW	GREEN	<RED>	<YELLOW>	<FL YLW>	<GREEN>	D/WALK	WALK	
SB1		2	5	RED	ORG	GRN							
		20	6								BLU	BLK	
		B	5										WHT/BLK
SB2		10	6	RED	ORG	GRN							
		3	5	RED/BLK	ORG/BLK					GRN/BLK			
		B	4										WHT/BLK
SB3		4	4	RED	ORG	GRN							
		18	4								BLU	BLK	
SB4		14	8	RED	ORG	GRN							
		15	8	RED	ORG	GRN							
		16	8	RED	ORG	GRN							
SB5		11	6	RED	ORG	GRN							
		21	8								BLU	BLK	
		B	8										WHT/BLK
SB6		1	5	RED	ORG	GRN							
SB7		12	6	RED	ORG	GRN				GRN			
		13	8	RED/WHT	BLU/WHT	GRN/WHT							
		5	7				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		19	6								BLU	BLK	
		22	8								BLU/RED	BLK/RED	
		B	6										WHT/BLK
		B	8										WHT/RED
SB8		7	4	RED	ORG	GRN							
		8	4	RED	ORG	GRN							
		9	4	RED	ORG	GRN							
		6	7				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		17	4								BLU	BLK	
		B	6										WHT/BLK

NOTES:
1. DO NOT USE THE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR SIGNAL INDICATIONS.
2. ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
3. AT THE SIGNAL BASES, CONNECT ONE TERMINAL OF THE PEDESTRIAN BUTTON TO THE COLOR INDICATED IN THE CHART, CONNECT THE OTHER TERMINAL TO THE WHITE CONDUCTOR IN THE SIGNAL CABLE

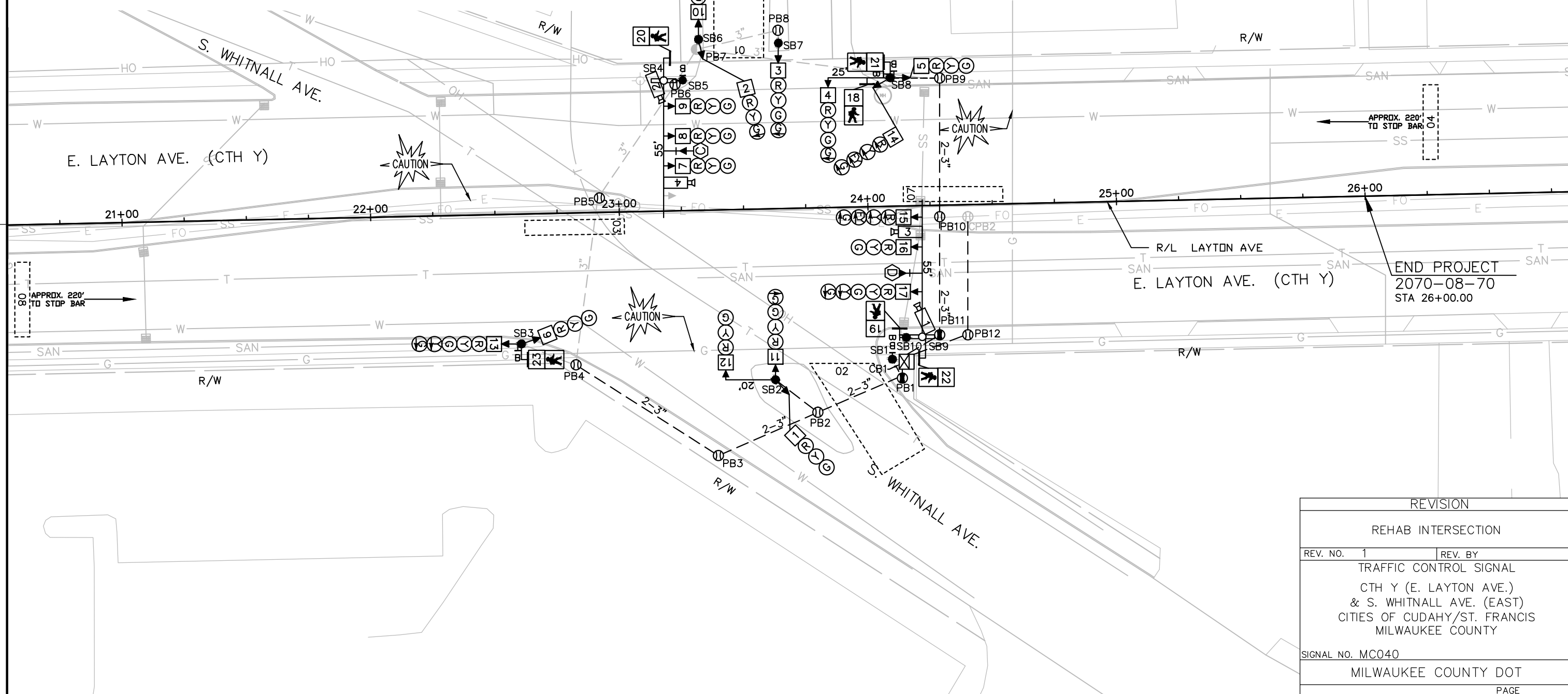
LEGEND

- ☒ CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- ◀ (XX) SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- ◀ (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- ◀ PEDESTRIAN HEAD WITH PUSH BUTTON
- VIDEO DETECTION AREA
- ☒ VX VIDEO DETECTION CAMERA

- PULL BOX, 24" X 36"
- ⊖ PULL BOX, 24" X 42"
- ⊖ PULL BOX, 24" X 48"
- ⊗ EVP DESIGNATOR
- ⊕ EVP DETECTOR HEAD
- ⊗ 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
- ⊖ PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN 16" INDICATION

NOTES:

- 1) ALL VEHICULAR INDICATIONS ARE 12". ALL PEDESTRIAN INDICATIONS ARE 16" WITH COUNTDOWN TIMER.
- 2) FINAL LOCATION OF ALL EQUIPMENT TO BE APPROVED BY THE ENGINEER.



PROJECT NO: 2070-08-70

HWY: E. LAYTON AVE (CTH Y)

COUNTY: MILWAUKEE

TRAFFIC SIGNAL PLAN

SHEET

E

FILE NAME : O:\HIGHWAY OPERATIONS CONTROL FILE\CENTRAL FILES\2010-2014\CTH Y - E. LAYTON AVE\INT WITH PENN & WHIT - HSP\PLANS\FINAL\13_TRAF SIG\Y_WHITEAST_SIG.DWG

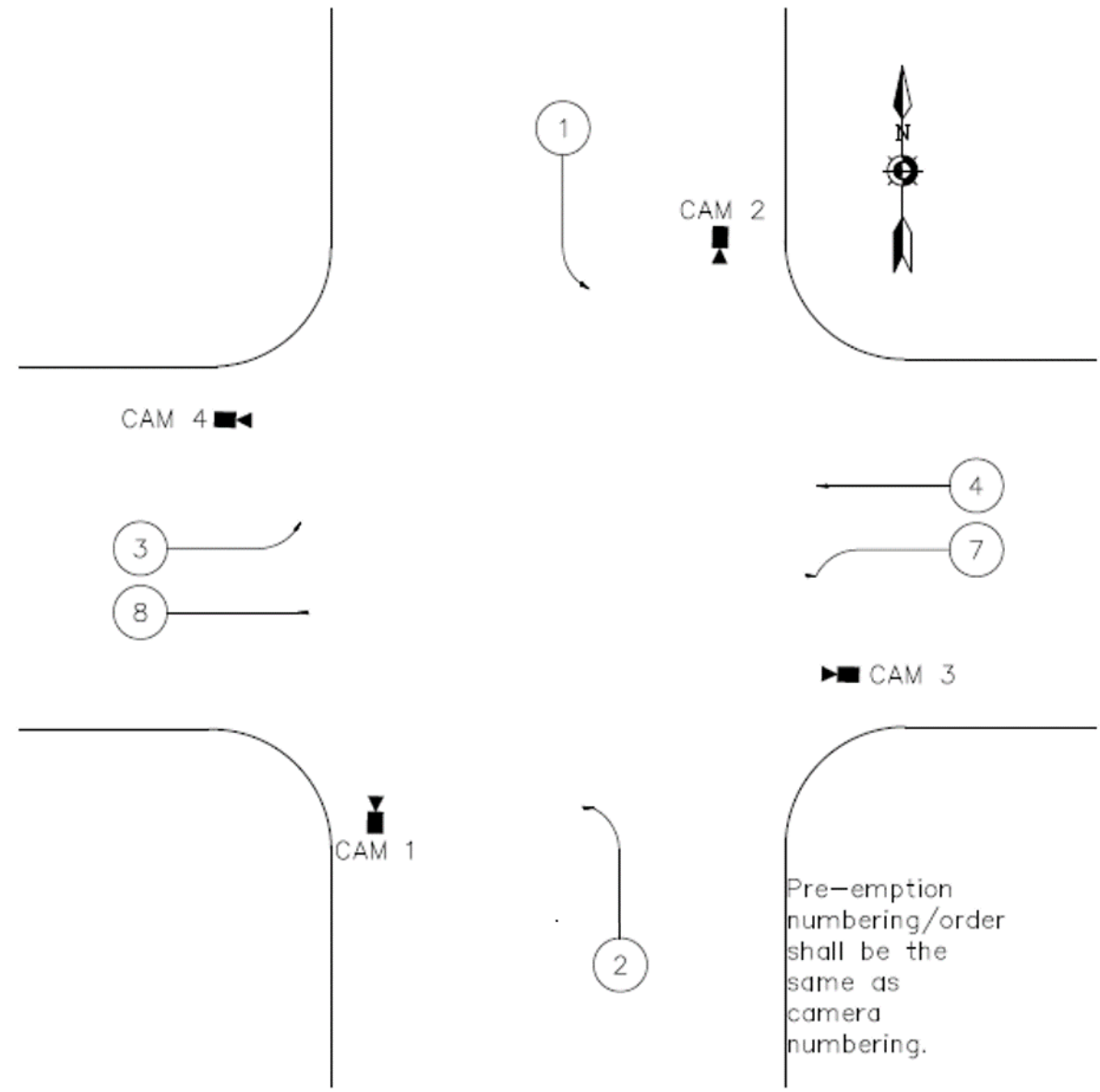
PLOT DATE : 7/29/2015 3:57 PM

PLOT BY : MURPHY, DANIEL

PLOT NAME :

PLOT SCALE : #####

WISDOT/CADDs SHEET 42



PHASES			
PHASE	VEHICLE	LEFT TURN TYPE	PED
1	X		
2	X		X
3	X	FYA	
4	X		X
5			
6			
7		FYA	
8	X		X

OVERLAPS	
OVLP	USED
A	X
B	
C	
D	
E	
F	
G	
H	

INTERCONNECT	
ETHERNET SWITCH	X
SM FIBER	
MM FIBER	X
5.8 GHZ RADIO	
900 MHZ ETHERNET RADIO	X
900 MHZ SERIAL RADIO	
TWISTED PAIR	
ETHERNET OVER COPPER	

PRE-EMPT	
EMERGENCY VEHICLE	X
W/ BEACONS	X
RAILROAD	

	YES	NO
LIGHTING FROM CABINET		X
BATTERY BACKUP		X
PTZ CAMERA		X
AUDIBLE PEDESTRIAN HEADS		X
AUDIBLE PEDESTRIAN BUTTONS	X	

CTH Y (E. LAYTON AVE.) &
S. PENNSYLVANIA AVE.
MC039
OPERATIONS AND AUX. EQUIPMENT

INSTALLED:
REVISED: PAGE 2 OF 2

PROJECT ID:	2070-08-70
INTERSECTION:	CTH Y & S WHITNALL AVE (EAST)

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

CB1 TO	# OF COND.	HEAD NO.	PHASE	SIGNAL INDICATION WIRE COLOR									PED BUTTON
				RED	YELLOW	GREEN	<RED>	<YELLOW>	<FL YLW>	<GREEN>	D/WALK	WALK	
SB1		B	8										RED
SB2		1	2	RED	ORG	GRN							
		11	1	RED/BLK	ORG/BLK	GRN/BLK							
		12	1	RED/BLK	ORG/BLK	GRN/BLK				GRN/BLK			
SB3		6	4	RED	ORG	GRN							
		13	8	RED/BLK	ORG/BLK	GRN/BLK			BLU/BLK	GRN/WHT			
		23	8								BLU	BLK	
		B	8										WHT/BLK
SB4		7	4	RED	ORG	GRN							
		8	4	RED	ORG	GRN							
		9	4	RED	ORG	GRN							
		20	4								BLU	BLK	
SB5		B	4										RED
SB6		2	2	RED	ORG	GRN							
		10	1	RED/BLK	ORG/BLK					GRN/BLK			
SB7		3	2	RED/BLK	ORG/BLK	GRN/BLK				GRN/BLK			
SB8		4	2	RED	ORG	GRN				GRN			
		5	4	RED/WHT	BLU/WHT	GRN/WHT							
		14	3				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		18	2								BLU	BLK	
		21	4								BLU/RED	BLK/RED	
		B	2										WHT/BLK
		B	4										WHT/RED
SB9		16	8	RED	ORG	GRN							
		17	8	RED	ORG	GRN			BLU/WHT	GRN/WHT			
		15	3				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		19	2								BLU	BLK	
		22	8								BLU/RED	BLK/RED	
SB10		B	2										RED

NOTES:
1. DO NOT USE THE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR SIGNAL INDICATIONS.
2. ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
3. AT THE SIGNAL BASES, CONNECT ONE TERMINAL OF THE PEDESTRIAN BUTTON TO THE COLOR INDICATED IN THE CHART, CONNECT THE OTHER TERMINAL TO THE WHITE CONDUCTOR IN THE SIGNAL CABLE

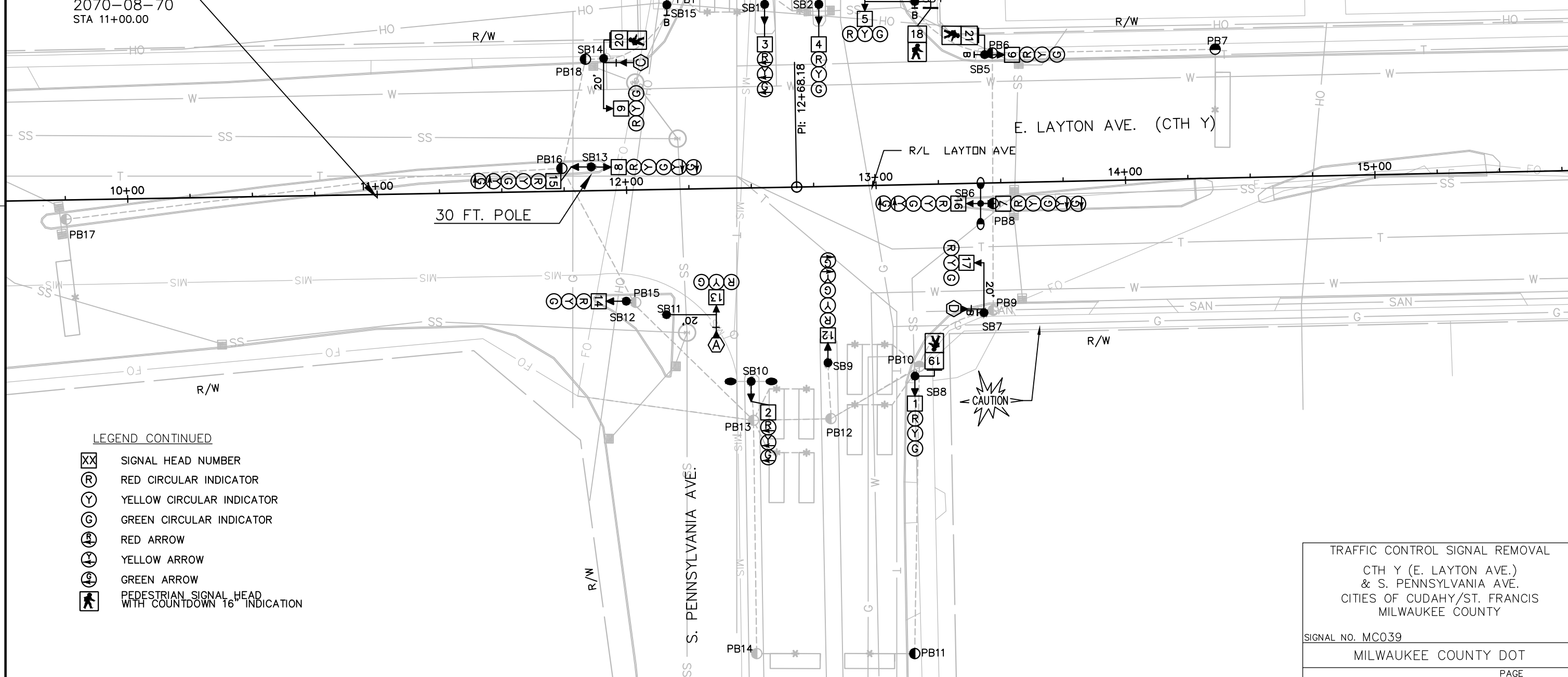
LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- EVP DESIGNATOR
- EVP DETECTOR HEAD

BEGIN PROJECT
2070-08-70
STA 11+00.00

NOTES:

- 1) ITEMS IN BOLD TO BE REMOVED.
- 2) STREET NAME SIGNS ARE THE PROPERTY OF THE MUNICIPALITIES AND SHALL BE GIVEN TO THE ENGINEER TO RETURN TO THE MUNICIPALITIES.



LEGEND CONTINUED

- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN 16" INDICATION

TRAFFIC CONTROL SIGNAL REMOVAL
CTH Y (E. LAYTON AVE.)
& S. PENNSYLVANIA AVE.
CITIES OF CUDAHY/ST. FRANCIS
MILWAUKEE COUNTY

SIGNAL NO. MC039

MILWAUKEE COUNTY DOT

PAGE

PROJECT NO: 2070-08-70

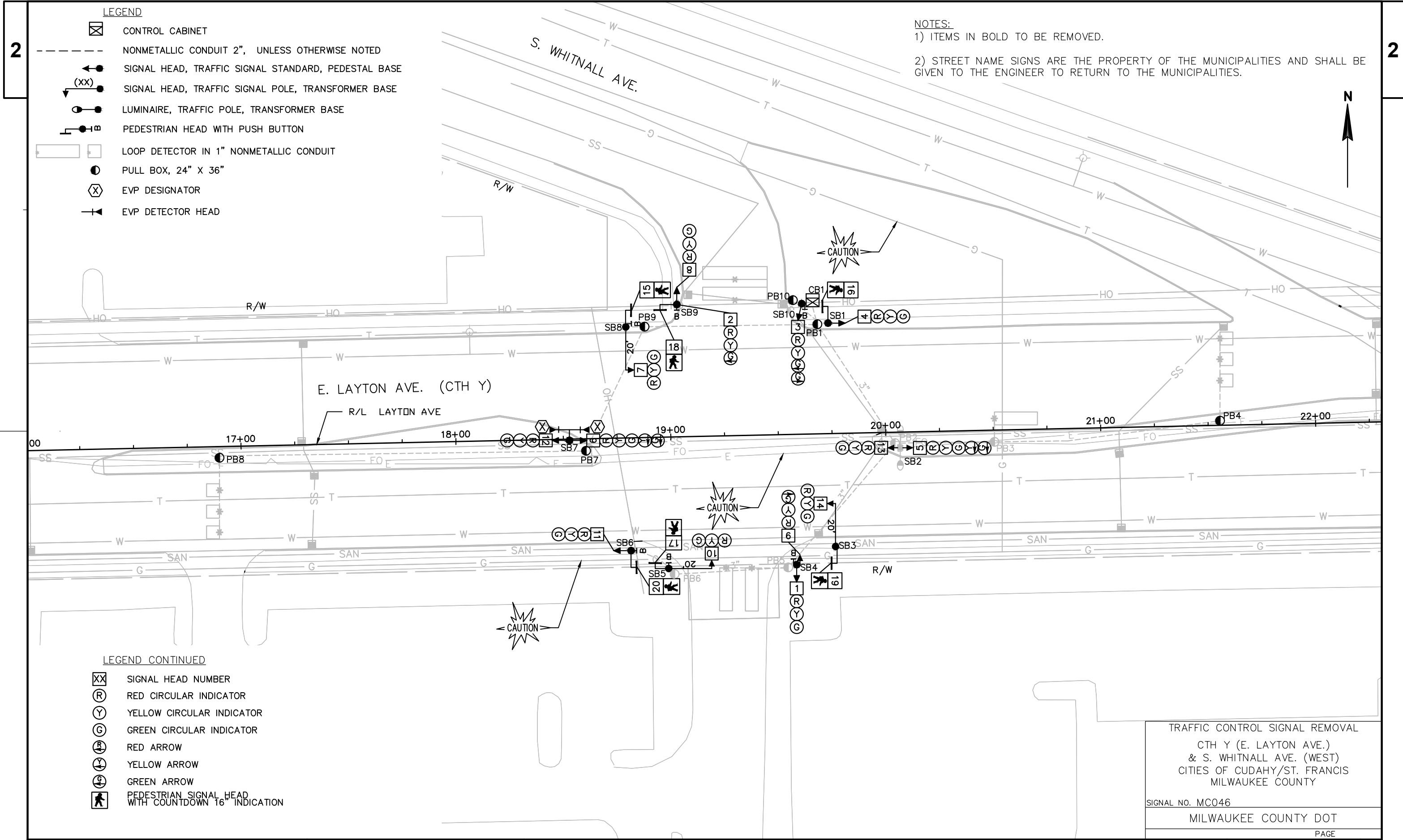
HWY: E. LAYTON AVE (CTH Y)

COUNTY: MILWAUKEE

TRAFFIC SIGNAL REMOVAL PLAN

SHEET

E



TRAFFIC CONTROL SIGNAL REMOVAL

CTH Y (E. LAYTON AVE.)
& S. WHITNALL AVE. (WEST)

CITIES OF CUDAHY/ST. FRANCIS
MILWAUKEE COUNTY

SIGNAL NO. MC046

MILWAUKEE COUNTY DOT

PAGE

LEGEND

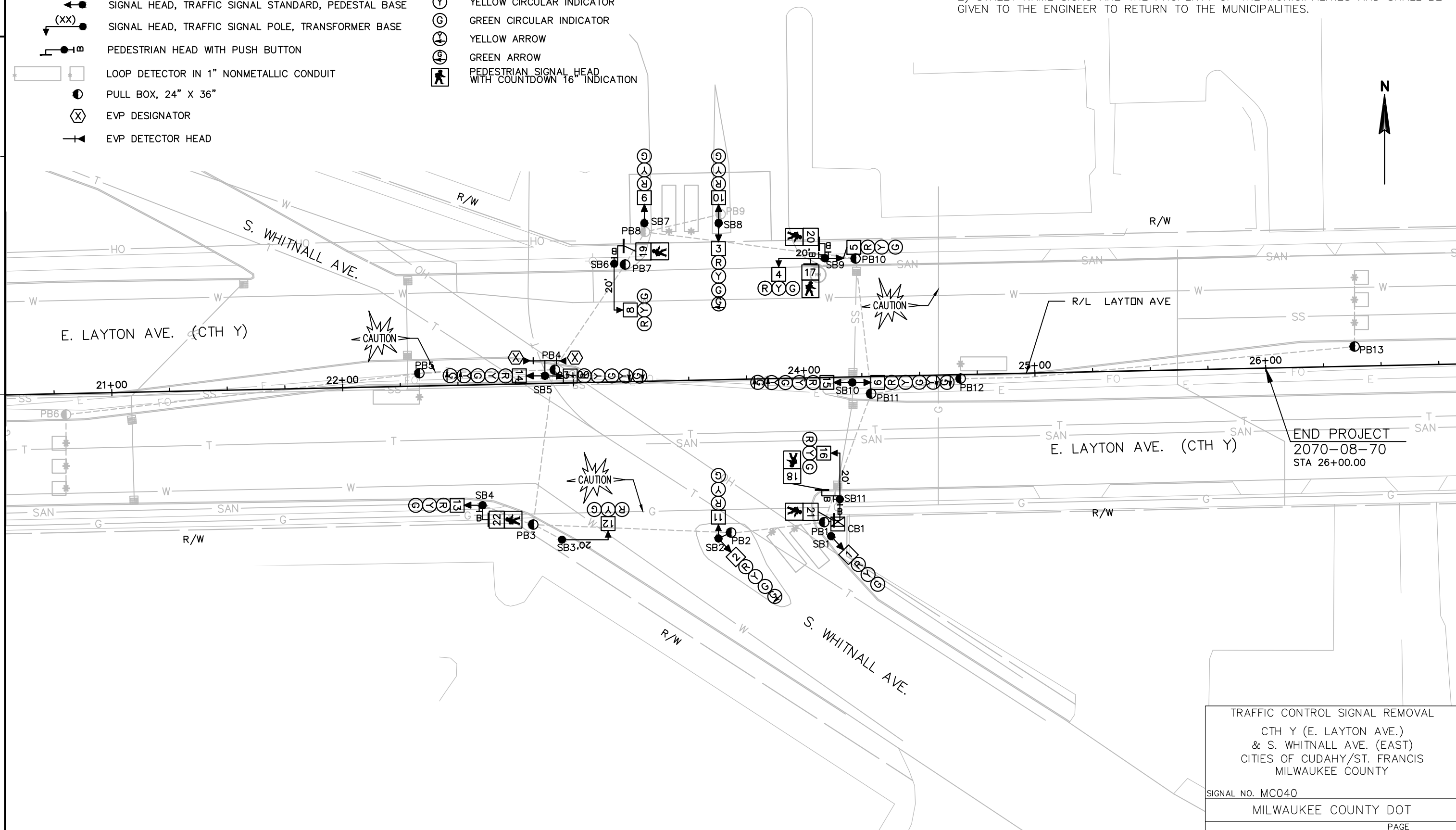
- ☒ CONTROL CABINET
--- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
◀ SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
(XX) ◀ SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
◀ PEDESTRIAN HEAD WITH PUSH BUTTON
□ LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
● PULL BOX, 24" X 36"
⊗ EVP DESIGNATOR
◀ EVP DETECTOR HEAD

- ⊗ SIGNAL HEAD NUMBER
Ⓡ RED CIRCULAR INDICATOR
Ⓢ YELLOW CIRCULAR INDICATOR
Ⓢ GREEN CIRCULAR INDICATOR
Ⓢ YELLOW ARROW
Ⓢ GREEN ARROW
Ⓢ PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN 16" INDICATION

NOTES:

1) ITEMS IN BOLD TO BE REMOVED.

2) STREET NAME SIGNS ARE THE PROPERTY OF THE MUNICIPALITIES AND SHALL BE GIVEN TO THE ENGINEER TO RETURN TO THE MUNICIPALITIES.

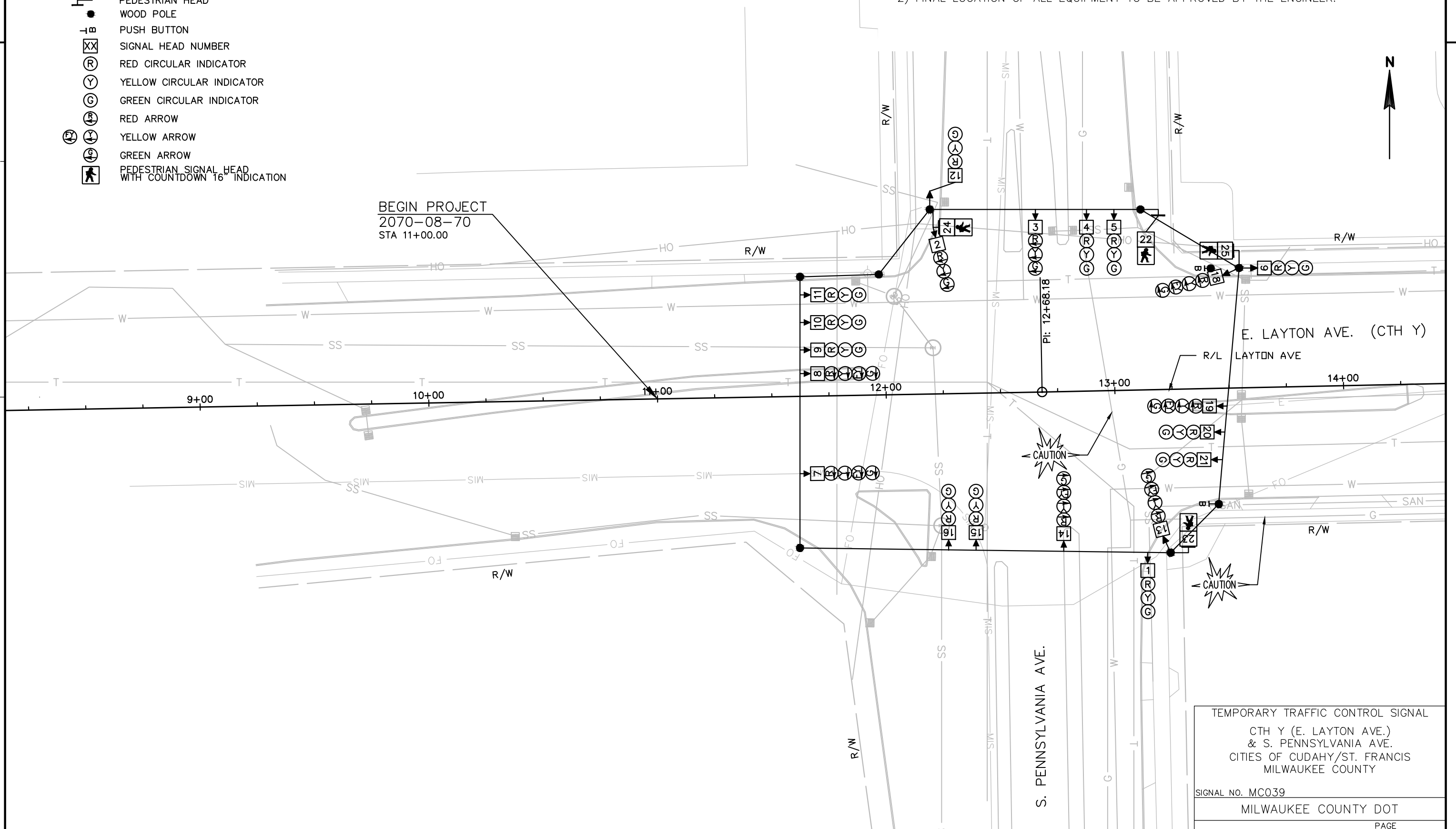


LEGEND

- OVERHEAD CABLE & WIRING
- SIGNAL HEAD
- PEDESTRIAN HEAD
- WOOD POLE
- PUSH BUTTON
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN 16" INDICATION

NOTES:

- 1) ALL VEHICULAR INDICATIONS ARE 12". PEDESTRIAN INDICATIONS ARE 12" MINIMUM, ALL PEDESTRIAN INDICATIONS SHALL BE THE SAME SIZE.
- 2) FINAL LOCATION OF ALL EQUIPMENT TO BE APPROVED BY THE ENGINEER.

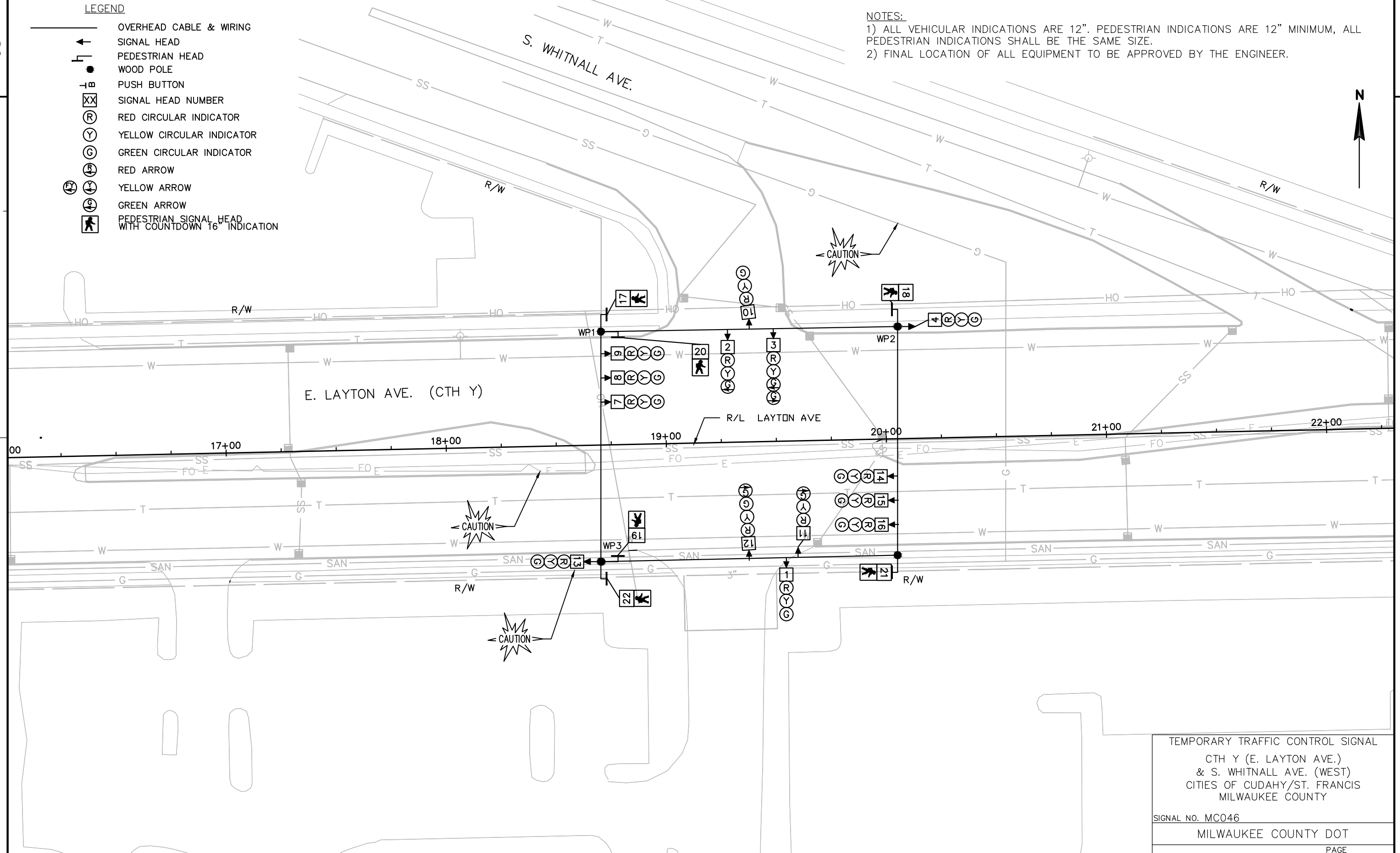


LEGEND

—	OVERHEAD CABLE & WIRING
↑	SIGNAL HEAD
↑ B	PEDESTRIAN HEAD
●	WOOD POLE
⊥ B	PUSH BUTTON
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
↑ B	PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN 16" INDICATION

NOTES:

- 1) ALL VEHICULAR INDICATIONS ARE 12". PEDESTRIAN INDICATIONS ARE 12" MINIMUM, ALL PEDESTRIAN INDICATIONS SHALL BE THE SAME SIZE.
- 2) FINAL LOCATION OF ALL EQUIPMENT TO BE APPROVED BY THE ENGINEER.



PROJECT NO:2070-08-70

HWY: E. LAYTON AVE (CTH Y)

COUNTY:MILWAUKEE

TEMPORARY TRAFFIC SIGNAL PLAN

SHEET

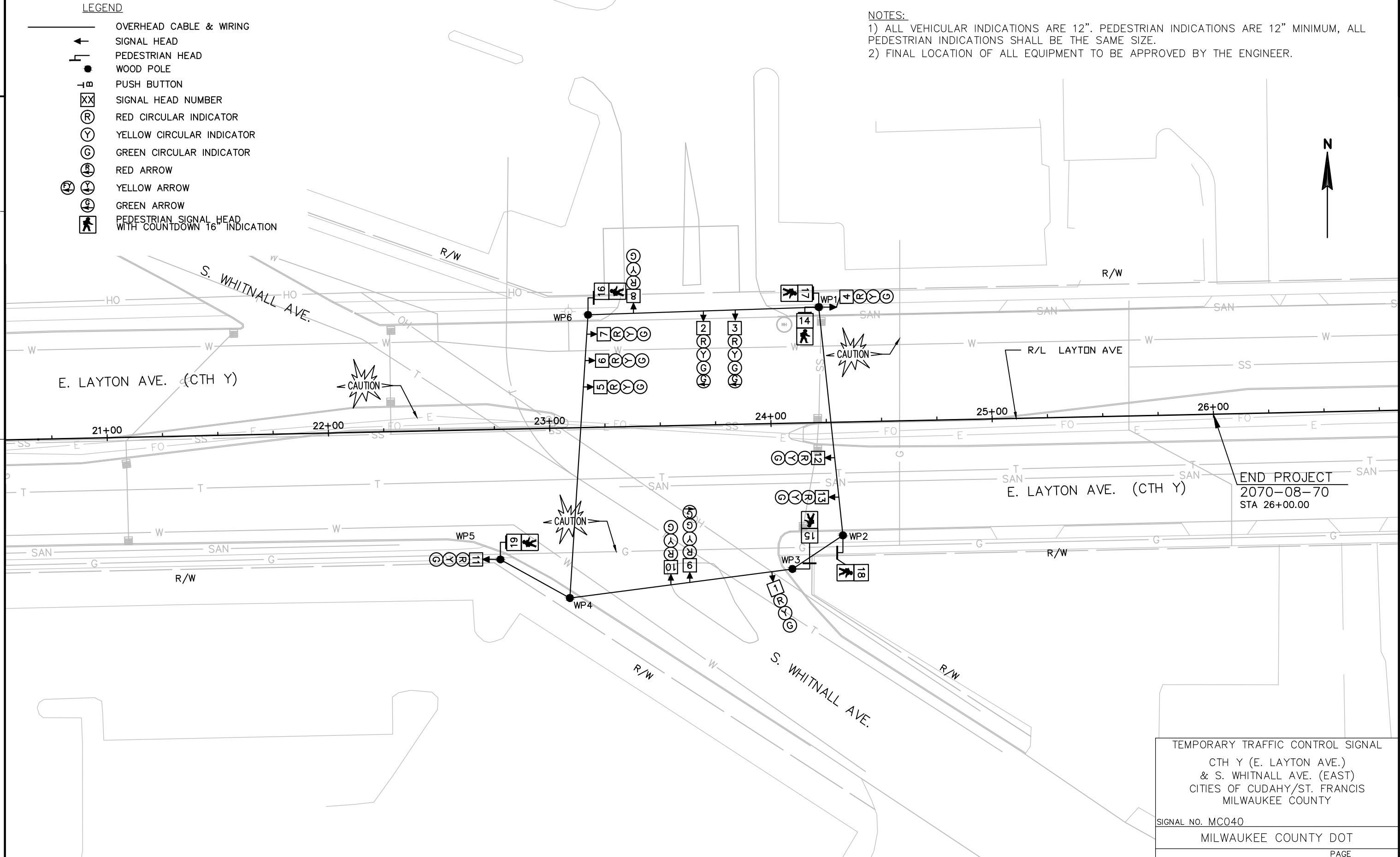
E

LEGEND

- OVERHEAD CABLE & WIRING
- SIGNAL HEAD
- PEDESTRIAN HEAD
- WOOD POLE
- PUSH BUTTON
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN 16" INDICATION

NOTES:

- 1) ALL VEHICULAR INDICATIONS ARE 12". PEDESTRIAN INDICATIONS ARE 12" MINIMUM, ALL PEDESTRIAN INDICATIONS SHALL BE THE SAME SIZE.
- 2) FINAL LOCATION OF ALL EQUIPMENT TO BE APPROVED BY THE ENGINEER.



TEMPORARY TRAFFIC CONTROL SIGNAL
CTH Y (E. LAYTON AVE.)
& S. WHITNALL AVE. (EAST)
CITIES OF CUDAHY/ST. FRANCIS
MILWAUKEE COUNTY

SIGNAL NO. MC040

MILWAUKEE COUNTY DOT

PAGE

PROJECT NO: 2070-08-70

HWY: E. LAYTON AVE (CTH Y)

COUNTY: MILWAUKEE

TEMPORARY TRAFFIC SIGNAL PLAN

SHEET

E

DATE 08OCT15		E S T I M A T E O F Q U A N T I T I E S			
LINE					2070-08-70
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	204.0195	Removing Concrete Bases	EACH	33.000	33.000
0020	205.0501.S	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	TON	7.000	7.000
0030	213.0100	Finishing Roadway (project) 01. 2070-08-70	EACH	1.000	1.000
0040	602.0410	Concrete Sidewalk 5-Inch	SF	250.000	250.000
0050	619.1000	Mobilization	EACH	1.000	1.000
0060	624.0100	Water	MGAL	0.400	0.400
0070	625.0100	Topsoil	SY	400.000	400.000
0080	627.0200	Mulching	SY	200.000	200.000
0090	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0100	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0110	628.2008	Erosion Mat Urban Class I Type B	SY	200.000	200.000
0120	628.7010	Inlet Protection Type B	EACH	26.000	26.000
0130	628.7015	Inlet Protection Type C	EACH	8.000	8.000
0140	630.0110	Seeding Mixture No. 10	LB	5.000	5.000
0150	634.0810	Posts Tubular Steel 2x2-Inch X 10-FT	EACH	28.000	28.000
0160	637.2210	Signs Type II Reflective H	SF	278.000	278.000
0170	637.2215	Signs Type II Reflective H Folding	SF	149.000	149.000
0180	637.2230	Signs Type II Reflective F	SF	4.000	4.000
0190	638.2602	Removing Signs Type II	EACH	56.000	56.000
0200	638.3000	Removing Small Sign Supports	EACH	22.000	22.000
0210	642.5001	Field Office Type B	EACH	1.000	1.000
0220	643.0100	Traffic Control (project) 01. 2070-08-70	EACH	1.000	1.000
0230	646.0106	Pavement Marking Epoxy 4-Inch	LF	390.000	390.000
0240	646.0126	Pavement Marking Epoxy 8-Inch	LF	200.000	200.000
0250	647.0166	Pavement Marking Arrows Epoxy Type 2	EACH	3.000	3.000
0260	647.0356	Pavement Marking Words Epoxy	EACH	3.000	3.000
0270	647.0566	Pavement Marking Stop Line Epoxy 18-Inch	LF	600.000	600.000
0280	647.0766	Pavement Marking Crosswalk Epoxy 6-Inch	LF	1,200.000	1,200.000
0290	650.8500	Construction Staking Electrical Installations (project) 01. 2070-08-70	LS	1.000	1.000
0300	650.9910	Construction Staking Supplemental Control (project) 01. 2070-08-70	LS	1.000	1.000
0310	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	260.000	260.000
0320	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	190.000	190.000
0330	652.0605	Conduit Special 2-Inch	LF	200.000	200.000
0340	652.0615	Conduit Special 3-Inch	LF	1,280.000	1,280.000
0350	653.0140	Pull Boxes Steel 24x42-Inch	EACH	22.000	22.000
0360	653.0145	Pull Boxes Steel 24x48-Inch	EACH	6.000	6.000
0370	653.0905	Removing Pull Boxes	EACH	28.000	28.000
0380	654.0101	Concrete Bases Type 1	EACH	16.000	16.000
0390	654.0102	Concrete Bases Type 2	EACH	4.000	4.000
0400	654.0110	Concrete Bases Type 10	EACH	3.000	3.000
0410	654.0113	Concrete Bases Type 13	EACH	5.000	5.000
0420	654.0217	Concrete Control Cabinet Bases Type 9 Special	EACH	3.000	3.000
0430	655.0230	Cable Traffic Signal 5-14 AWG	LF	2,250.000	2,250.000
0440	655.0240	Cable Traffic Signal 7-14 AWG	LF	1,610.000	1,610.000
0450	655.0270	Cable Traffic Signal 15-14 AWG	LF	3,810.000	3,810.000
0460	655.0280	Cable Traffic Signal 19-14 AWG	LF	570.000	570.000
0470	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	9,050.000	9,050.000
0480	655.0900	Traffic Signal EVP Detector Cable	LF	2,350.000	2,350.000

DATE 08OCT15		E S T I M A T E O F Q U A N T I T I E S			
LINE				2070-08-70	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0490	656.0200	Electrical Service Meter Breaker Pedestal (location) 01. PENNSYLVANIA AVE	LS	1.000	1.000
0500	656.0200	Electrical Service Meter Breaker Pedestal (location) 02. WHITNALL AVE (WEST)	LS	1.000	1.000
0510	656.0200	Electrical Service Meter Breaker Pedestal (location) 03. WHITNALL AVE (EAST)	LS	1.000	1.000
0520	657.0100	Pedestal Bases	EACH	17.000	17.000
0530	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	4.000	4.000
0540	657.0305	Poles Type 2	EACH	4.000	4.000
0550	657.0405	Traffic Signal Standards Aluminum 3.5-FT	EACH	5.000	5.000
0560	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	14.000	14.000
0570	657.0430	Traffic Signal Standards Aluminum 10-FT	EACH	1.000	1.000
0580	657.0590	Trombone Arms 20-FT	EACH	1.000	1.000
0590	657.0595	Trombone Arms 25-FT	EACH	3.000	3.000
0600	658.0110	Traffic Signal Face 3-12 Inch Vertical	EACH	37.000	37.000
0610	658.0115	Traffic Signal Face 4-12 Inch Vertical	EACH	15.000	15.000
0620	658.0120	Traffic Signal Face 5-12 Inch Vertical	EACH	2.000	2.000
0630	658.0215	Backplates Signal Face 3 Section 12-Inch	EACH	37.000	37.000
0640	658.0220	Backplates Signal Face 4 Section 12-Inch	EACH	15.000	15.000
0650	658.0225	Backplates Signal Face 5 Section 12-Inch	EACH	2.000	2.000
0660	658.0416	Pedestrian Signal Face 16-Inch	EACH	16.000	16.000
0670	658.0600	Led Modules 12-Inch Red Ball	EACH	42.000	42.000
0680	658.0605	Led Modules 12-Inch Yellow Ball	EACH	42.000	42.000
0690	658.0610	Led Modules 12-Inch Green Ball	EACH	39.000	39.000
0700	658.0615	Led Modules 12-Inch Red Arrow	EACH	12.000	12.000
0710	658.0620	Led Modules 12-Inch Yellow Arrow	EACH	24.000	24.000
0720	658.0625	Led Modules 12-Inch Green Arrow	EACH	23.000	23.000
0730	658.0635	Led Modules Pedestrian Countdown Timer 16-Inch	EACH	16.000	16.000
0740	658.5069	Signal Mounting Hardware (location) 01. PENNSYLVANIA AVE	LS	1.000	1.000
0750	658.5069	Signal Mounting Hardware (location) 02. WHITNALL AVE (WEST)	LS	1.000	1.000
0760	658.5069	Signal Mounting Hardware (location) 03. WHITNALL AVE (EAST)	LS	1.000	1.000
0770	659.1115	Luminaires Utility LED A .	EACH	6.000	6.000
0780	661.0200	Temporary Traffic Signals for Intersections (location) 01. PENNSYLVANIA AVE	LS	1.000	1.000
0790	661.0200	Temporary Traffic Signals for Intersections (location) 02. WHITNALL AVE (WEST)	LS	1.000	1.000
0800	661.0200	Temporary Traffic Signals for Intersections (location) 03. WHITNALL AVE (EAST)	LS	1.000	1.000
0810	678.0400	Fiber Optic Termination	EACH	12.000	12.000
0820	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR .	HRS	300.000	300.000
0830	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR .	HRS	300.000	300.000
0840	SPV.0060	Special 01. POLES TYPE 10	EACH	3.000	3.000
0850	SPV.0060	Special 02. POLES TYPE 12	EACH	5.000	5.000
0860	SPV.0060	Special 03. MONOTUBE MAST ARMS 30-FT	EACH	3.000	3.000

DATE 08OCT15			E S T I M A T E O F Q U A N T I T I E S		
LINE			2070-08-70		
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0870	SPV.0060	Special 04. MONOTUBE MAST ARMS 40-FT	EACH	1.000	1.000
0880	SPV.0060	Special 05. MONOTUBE MAST ARMS 55-FT	EACH	4.000	4.000
0890	SPV.0060	Special 06. UTILITY LINE OPENING	EACH	8.000	8.000
0900	SPV.0060	Special 07. LUMINAIRE ARMS STEEL 10 FT	EACH	2.000	2.000
0910	SPV.0105	Special 01. TRAFFIC SIGNAL CABINET	LS	1.000	1.000
0920	SPV.0105	Special 02. TRAFFIC SIGNAL CABINET	LS	1.000	1.000
0930	SPV.0105	Special 03. TRAFFIC SIGNAL CABINET	LS	1.000	1.000
0940	SPV.0105	Special 04. EMERGENCY VEHICLE	LS	1.000	1.000
0950	SPV.0105	PREEMPTION SYSTEM WHITNALL AVE (EAST)	LS	1.000	1.000
0960	SPV.0105	Special 06. VEHICULAR VIDEO DETECTION	LS	1.000	1.000
0970	SPV.0105	SYSTEM WHITNALL AVE (WEST) (4 CAMERAS)	LS	1.000	1.000
0980	SPV.0105	Special 07. VEHICULAR VIDEO DETECTION	LS	1.000	1.000
0980	SPV.0105	SYSTEM WHITNALL AVE (EAST) (4 CAMERAS)	LS	1.000	1.000
0980	SPV.0105	Special 08. FIBER OPTIC INTEGRATION,	LS	1.000	1.000
0990	SPV.0105	DOCUMENTATION AND TESTING	LS	1.000	1.000
0990	SPV.0105	Special 09. REMOVE TRAFFIC SIGNAL	LS	1.000	1.000
1000	SPV.0105	EQUIPMENT PENNSYLVANIA AVE	LS	1.000	1.000
1000	SPV.0105	Special 10. REMOVE TRAFFIC SIGNAL	LS	1.000	1.000
1010	SPV.0105	EQUIPMENT WHITNALL AVE (WEST)	LS	1.000	1.000
1020	SPV.0105	Special 11. REMOVE TRAFFIC SIGNAL	LS	1.000	1.000
1020	SPV.0105	EQUIPMENT WHITNALL AVE (EAST)	LS	1.000	1.000
1030	SPV.0105	Special 12. ACCESSIBLE PEDESTRIAN PUSH	LS	1.000	1.000
1030	SPV.0105	BUTTON SYSTEM PENNSYLVANIA AVE (4	LS	1.000	1.000
1030	SPV.0105	BUTTONS)	LS	1.000	1.000
1040	SPV.0105	Special 13. ACCESSIBLE PEDESTRIAN	LS	1.000	1.000
1040	SPV.0105	PUSHBUTTON SYSTEM WHITNALL AVE(WEST) (6	LS	1.000	1.000
1040	SPV.0105	BUTTONS)	LS	1.000	1.000
1040	SPV.0105	Special 14. ACCESSIBLE PEDESTRIAN	LS	1.000	1.000
1040	SPV.0105	PUSHBUTTON SYSTEM WHITNALL AVE (EAST)	LS	1.000	1.000
1040	SPV.0105	(6 BUTTONS)	LS	1.000	1.000

REMOVING CONCRETE BASES		
204.0195		
REMOVING		
CONCRETE		
BASES		
BASE NO.	EACH	REMARKS
<u>S. PENNSYLVANIA AVE</u>		
SB1	1	NORTH MEDIAN
SB2	1	NORTH MEDIAN
SB3	--	TO REMAIN
SB4	1	NE CORNER
SB5	1	NE CORNER
SB6	1	EAST MEDIAN
SB7	1	SE CORNER
SB8	--	TO REMAIN
SB9	--	TO REMAIN
SB10	--	TO REMAIN
SB11	1	SW CORNER
SB12	--	TO REMAIN
SB13	1	WEST MEDIAN
SB14	1	NW CORNER
SB15	1	NW CORNER
CB1	1	SW CORNER
TOTAL	11	
 <u>S. WHITNALL AVE (WEST)</u>		
SB1	1	NW CORNER
SB2	1	EAST MEDIAN
SB3	1	SE CORNER
SB4	1	SE CORNER
SB5	1	SW CORNER
SB6	1	SW CORNER
SB7	1	WEST MEDIAN
SB8	1	NW CORNER
SB9	1	NW CORNER
SB10	1	NE CORNER
CB1	1	NE CORNER
TOTAL	11	
 <u>S. WHITNALL AVE (EAST)</u>		
SB1	1	SW CORNER
SB2	1	SOUTH MEDIAN
SB3	1	SW CORNER
SB4	1	NW CORNER
SB5	1	WEST MEDIAN
SB6	1	NW CORNER
SB7	1	NW CORNER
SB8	--	TO REMAIN
SB9	1	NE CORNER
SB10	1	EAST MEDIAN
SB11	1	SE CORNER
CB1	1	SE CORNER
TOTAL	11	
PROJECT TOTAL:	33	

REMOVING PULL BOXES		
653.0905		
REMOVING		
PULL		
BOXES		
PULL BOX NO.	EACH	REMARKS
<u>S. PENNSYLVANIA AVE</u>		
PB1	1	
PB2	1	
PB3	1	
PB4	1	
PB5	1	
PB6	1	
PB7	1	
PB8	1	
PB11	1	
PB12	1	
PB16	1	
PB17	1	
PB18	1	
TOTAL:	13	
 <u>S. WHITNALL AVE (WEST)</u>		
PB1	1	
PB4	1	
PB7	1	
PB8	1	
PB9	1	
PB10	1	
TOTAL:	6	
 <u>S. WHITNALL AVE (EAST)</u>		
PB1	1	
PB2	1	
PB3	1	
PB4	1	
PB5	1	
PB7	1	
PB10	1	
PB11	1	
PB12	1	
TOTAL	9	
PROJECT TOTAL:	28	

CATEGORY 0010		
REMOVE TRAFFIC SIGNAL EQUIPMENT		
LOCATION	BID ITEM	LS
PENNSYLVANIA AVE.	SPV.0105.09	1
WHITNALL AVE. (WEST)	SPV.0105.10	1
WHITNALL AVE. (EAST)	SPV.0105.11	1

EXCAVATION, HAULING AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL			
 205.0501.S			
EXCAVATION, HAULING AND DISPOSAL			
OF PETROLEUM CONTAMINATED SOIL			
LOCATION	STATION - STATION		TONS
SW CORNER	23+00	- 24+00	2
SW CORNER	24+00	- 25+50	5
TOTAL			7

3

3

SIGN SUMMARY													
							638.2602	638.3000	637.2210	637.2215	637.2230	634.0810	
							REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS	SIGNS TYPE II REFLECTIVE H	SIGNS TYPE II REFLECTIVE H FOLDING	SIGNS TYPE II REFLECTIVE F	POSTS TUBULAR STEEL 2x2-INCH x 10-FT	
SIGN NO.		SIGN CODE	DESCRIPTION	SIZE			EACH	EACH	SF	SF	SF	EACH	NOTES
				INCHES	X	INCHES							
01	01	M1-94	S PENNSYLVANIA AVE	86	X	15	--	--	8.96	--	--	1	ON SIGNAL POLE
01	02	R10-50	LEFT TURN YIELD ON FLASSHING YELLOW ARROW	30	X	36	--	--	6.25	--	--	--	
01	03	R4-7	KEEP RIGHT	24	X	30	1	--	5.00	--	--	1	
01	04	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	--	ON SIGNAL POLE
01	05	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	--	ON SAME POST AS 01.03
01	06	R3-7-R	RIGHT LANE MUST TURN RIGHT	30	X	30	1	1	6.25	--	--	--	
01	07	W12-1-D	DOUBLE ARROWS	24	X	24	1	1	--	--	4.00	--	ON SIGNAL POLE
01	08	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	--	ON SIGNAL POLE
01	09	R4-7	KEEP RIGHT	24	X	30	1	--	5.00	--	--	--	ON SIGNAL POLE
01	10	R10-50	LEFT TURN YIELD ON FLASSHING YELLOW ARROW	30	X	36	--	--	6.25	--	--	--	ON SIGNAL POLE
01	11	M1-94	S PENNSYLVANIA AVE	86	X	15	--	--	8.96	--	--	1	ON SIGNAL POLE
01	12	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	--	ON SIGNAL POLE
02	01	R7-1-D	NO PARKING ANY TIME	18	X	24	1	1	3.00	--	--	1	
02	02	R3-2	NO LEFT TURN	24	X	24	--	--	4.00	--	--	1	ON SAME POST AS 2.16
02	03	R6-2R	ONE WAY (RIGHT ARROW)	18	X	24	1	1	--	--	--	--	
02	04	R7-1-D	NO PARKING ANY TIME	18	X	24	1	1	3.00	--	--	1	
02	05	R3-8	MULTI DIRECTIONAL ARROWS (MODIFIED)	36	X	36	1	--	9.00	--	--	--	ON SIGNAL POLE
02	06	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	--	ON SIGNAL POLE
02	07	R6-2L	ONE WAY (LEFT ARROW)	18	X	24	1	1	3.00	--	--	--	ON SIGNAL POLE
02	08	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	--	ON SIGNAL POLE
02	09	R6-2R	ONE WAY (RIGHT ARROW)	18	X	24	1	1	3.00	--	--	--	ON SIGNAL POLE
02	10	R4-7	KEEP RIGHT	24	X	30	1	--	5.00	--	--	--	
02	11	R3-27	NO THROUGH	36	X	36	1	--	9.00	--	--	--	ON SIGNAL POLE
02	12	R5-1	DO NOT ENTER	30	X	30	1	--	6.25	--	--	--	ON SIGNAL POLE
02	13	R5-1	DO NOT ENTER	30	X	30	1	--	6.25	--	--	--	ON SIGNAL POLE
02	14	R7-1-D	NO PARKING ANY TIME	18	X	24	1	1	3.00	--	--	1	
02	15	R2-1	SPEED LIMIT 30	24	X	30	--	--	5.00	--	--	1	
02	16	R2-1	SPEED LIMIT 30	24	X	30	1	1	5.00	--	--	1	ON SAME POST AS 2.03
02	17	R7-1-D	NO PARKING ANY TIME	18	X	24	1	1	3.00	--	--	1	
02	18	R2-1	SPEED LIMIT 30	24	X	30	1	1	--	--	--	--	
02	19	R7-1-D	NO PARKING ANY TIME	18	X	24	1	1	3.00	--	--	1	
02	20	R3-18	NO LEFT/NO U TURN	30	X	30	1	1	6.25	--	--	1	ON SAME POST AS 2.21
02	21	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	--	
02	22	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	--	ON SIGNAL POLE
02	23	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	--	ON SIGNAL POLE
02	24	R10-11a	NO TURN ON RED	24	X	24	1	--	4.00	--	--	--	ON SIGNAL POLE
				SHEET 1 TOTAL:			30	13	127.00	67.00	4.00	12	

3

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SIGN SUMMARY (CONTINUED)												
SIGN NO.	SIGN CODE	DESCRIPTION	SIZE			638.2602	638.3000	637.2210	637.2215	637.2230	634.0810	NOTES
			INCHES	X	INCHES	REMOVING	REMOVING	SIGNS TYPE II	SIGNS TYPE II	SIGNS TYPE II	POSTS TUBULAR	
						SIGNS TYPE II	SMALL SIGN	REFLECTIVE H	REFLECTIVE H	REFLECTIVE F	STEEL 2x2-INCH x	
						EACH	SUPPORTS	SF	FOLDING	SF	10-FT	
							EACH				EACH	
03	. 01	R3-1	NO RIGHT TURN	24	X	24	--	--	4.00	--	--	ON SIGNAL POLE
03	. 02	R1-1F	STOP (Folding)	36	X	36	1	--	7.46	--	--	ON SIGNAL POLE
03	. 03	R1-1F	STOP (Folding)	36	X	36	--	--	7.46	--	1	ON SAME POST AS 3.16
03	. 04	R1-1F	STOP (Folding)	36	X	36	--	--	7.46	--	1	ON SAME POST AS 3.13
03	. 05	R2-1	SPEED LIMIT 30				1	1	--	--	--	
03	. 06	M1-94	S WHITNALL AVE	72	X	15	1	--	7.50	--	2	
03	. 07	R7-1-D	NO PARKING ANY TIME	18	X	24	1	1	3.00	--	1	
03	. 08	R10-11a	NO TURN ON RED	24	X	24	1	--	4.00	--	--	ON SIGNAL POLE
03	. 09	R3-8	MULTI DIRECTIONAL ARROWS (MODIFIED)	42	X	30	1	--	8.75	--	--	ON SIGNAL POLE
03	. 10	M1-94	E LAYTON AVE	60	X	15	--	--	6.25	--	--	ON SIGNAL POLE
03	. 11	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	ON SIGNAL POLE
03	. 12	R4-7	KEEP RIGHT	24	X	30	1	--	5.00	--	--	ON SIGNAL POLE
03	. 13	R4-7	KEEP RIGHT	24	X	30	1	--	5.00	--	--	ON SAME POST AS 3.04
03	. 14	R4-7	KEEP RIGHT	24	X	30	1	--	5.00	--	1	ON SAME POST AS 3.26
03	. 15	R4-7	KEEP RIGHT	24	X	30	1	--	5.00	--	--	ON SIGNAL POLE
03	. 16	R3-18	NO LEFT/NO U TURN	30	X	30	1	1	6.25	--	1	ON SAME POST AS 3.03
03	. 17	R7-1-D	NO PARKING ANY TIME	18	X	24	1	1	3.00	--	1	
03	. 18	R3-7-R	RIGHT LANE MUST TURN RIGHT	30	X	30	1	--	6.25	--	1	ON SAME POST AS 3.19
03	. 19	R10-20a	EXCEPT BUSES	24	X	18	1	--	3.00	--	--	
03	. 20	R7-1-D	NO PARKING ANY TIME	18	X	24	1	1	5.00	--	1	
03	. 21	M1-94	S WHITNALL AVE	72	X	15	--	--	7.50	--	2	
03	. 22	M1-94	E LAYTON AVE	60	X	15	--	--	6.25	--	--	ON SIGNAL POLE
03	. 23	R1-1F	STOP (Folding)	36	X	36	--	--	--	7.46	--	ON SIGNAL POLE
03	. 24	R1-1F	STOP (Folding)	36	X	36	1	--	5.00	7.46	--	ON SIGNAL POLE
03	. 25	R7-1-D	NO PARKING ANY TIME	18	X	24	1	1	--	--	--	ON SIGNAL POLE
03	. 26	R1-1F	STOP (Folding)	36	X	36	--	--	5.00	7.46	1	
04	. 01	R2-1	SPEED LIMIT 30	24	X	30	1	1	5.00	--	1	
04	. 02	R2-1	SPEED LIMIT 30	24	X	30	1	1	5.00	--	1	
05	. 01	M1-94	E LAYTON AVE	60	X	15		--	6.25	--	--	ON SIGNAL POLE
05	. 02	R4-7	KEEP RIGHT	24	X	30	1	--	5.00	--	--	ON SIGNAL POLE
05	. 03	R10-50	LEFT TURN YIELD ON FLASHING YELLOW ARROW	30	X	36		--	7.50	--	--	ON SIGNAL POLE
05	. 04	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	ON SIGNAL POLE
05	. 05	R1-1F	STOP (Folding)	36	X	36	--	--	--	7.46	--	ON SIGNAL POLE
05	. 06	R1-1F	STOP (Folding)	36	X	36	1	--	--	7.46	--	ON SIGNAL POLE
05	. 07	R1-1F	STOP (Folding)	36	X	36	--	--	--	7.46	--	ON SIGNAL POLE
05	. 08	R5-1	DO NOT ENTER	30	X	30	1	--	6.25	--	--	ON SIGNAL POLE
05	. 09	M1-94	E LAYTON AVE	60	X	15		--	6.25	--	--	ON SIGNAL POLE
05	. 10	R4-7	KEEP RIGHT	24	X	30	1	--	5.00	--	--	ON SIGNAL POLE
05	. 11	R1-2	YIELD	36	X	31	1	1	3.88	--	1	
				SHEET 2 TOTAL:			26	9	151.00	82.00	0.00	16
				ITEM TOTAL:			56	22	278.00	149.00	4.00	28

CONCRETE SIDEWALK

602.0410

CONCRETE SIDEWALK
5-INCH

LOCATION	SF
UNDISTRUBTED	250
TOTAL	250

PAVEMENT MARKING

	646.0106 PAVEMENT MARKING EPOXY 4-INCH	646.0126 PAVEMENT MARKING EPOXY 8-INCH	647.0166 PAVEMENT MARKING ARROWS EPOXY TYPE 2	647.0356 PAVEMENT MARKING WORDS EPOXY	647.0566 PAVEMENT MARKING STOP LINE 18-INCH EPOXY	647.0766 PAVEMENT MARKING CROSS WALK 6-INCH EPOXY
LOCATION	WHITE LF	WHITE LF	EACH	EACH	LF	LF
LAYTON	370	162	3	3	594	1,188
UNDISTRIBUTED	20	38			6	12
GRAND TOTAL	390	200	3	3	600	1,200

CONCRETE CONTROL CABINET BASE TYPE 9 SPECIAL		
654.0217		
CONCRETE CONTROL		
CABINET BASE		
TYPE 9 SPECIAL		
LOCATION	EACH	REMARKS
PENNSYLVANIA AVE.	1	
WHITNALL AVE. (WEST)	1	
WHITNALL AVE. (EAST)	1	
	3	

ELECTRICAL SERVICE METER BREAKER PEDESTAL			
LOCATION	BID ITEM	EACH	REMARKS
PENNSYLVANIA AVE.	656.0200.01	1	
WHITNALL AVE. (WEST)	656.0200.02	1	
WHITNALL AVE. (EAST)	656.0200.03	1	
	ITEM TOTAL:	3	

SIGNAL MOUNTING HARDWARE			
LOCATION	BID ITEM	LS	REMARKS
PENNSYLVANIA AVE.	658.5069.01	1	
WHITNALL AVE. (WEST)	658.5069.02	1	
WHITNALL AVE. (EAST)	658.5069.03	1	

TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS			
LOCATION	BID ITEM	LS	REMARKS
PENNSYLVANIA AVE.	661.0200.01	1	
WHITNALL AVE. (WEST)	661.0200.02	1	
WHITNALL AVE. (EAST)	661.0200.03	1	

FIELD OFFICE	
642.5001	
FIELD OFFICE	
TYPE B	
PROJECT I.D.	EACH
2070-08-70	1
TOTAL	1

TRAFFIC CONTROL (PROJECT 2070-08-70)		
BID ITEM	EACH	REMARKS
643.0100	1	

UTILITY LINE OPENING		
UNDISTRIBUTED	SPV.0060.06	8
	ITEM TOTAL:	8

TRAFFIC SIGNAL CABINET 16-PHASE			
LOCATION	BID ITEM	LS	REMARKS
PENNSYLVANIA AVE.	SPV.0105.01	1	
WHITNALL AVE. (WEST)	SPV.0105.02	1	
WHITNALL AVE. (EAST)	SPV.0105.03	1	

EMERGENCY VEHICLE PREEMPTION SYSTEM			
LOCATION	BID ITEM	LS	REMARKS
PENNSYLVANIA AVE.;			
& WHITNALL AVE. (WEST);			
& WHITNALL AVE. (EAST)	SPV.0105.04	1	

VEHICULAR VIDEO DETECTION SYSTEM			
LOCATION	BID ITEM	LS	REMARKS
PENNSYLVANIA AVE.	SPV.0105.05	1	4-CAMERA
WHITNALL AVE. (WEST)	SPV.0105.06	1	4-CAMERA
WHITNALL AVE. (EAST)	SPV.0105.07	1	4-CAMERA

ACCESSIBLE PEDESTRIAN PUSH BUTTON SYSTEM			
LOCATION	BID ITEM	LS	REMARKS
PENNSYLVANIA AVE.	SPV.0105.12	1	4-BUTTONS
WHITNALL AVE. (WEST)	SPV.0105.13	1	6-BUTTONS
WHITNALL AVE. (EAST)	SPV.0105.14	1	6-BUTTONS

CONDIT RIGID NONMETALLIC LAYTON AVE & PENNSYLVANIA AVE					
FROM	TO	652.0225 SCHEDULE 40 2-INCH*	652.0235 SCHEDULE 40 3-INCH	652.0615 SPECIAL 3-INCH	REMARKS
CB1	PB1	--	20	--	2 RUNS
PB1	PB2	--	--	60	2 RUNS
PB2	PB3	--	--	40	2 RUNS
PB3	PB4	--	--	60	2 RUNS
PB4	SB2	5	--	--	
PB4	SB3	10	--	--	
PB4	PB5	--	--	100	2 RUNS
PB5	SB4	5	--	--	
PB5	PB6	--	--	--	EXISTING
PB6	SB5	20	--	--	
PB6	PB7	--	--	--	EXISTING
PB7	SB6	5	--	--	
PB7	PB8	--	--	--	EXISTING
PB8	SB7	--	--	--	EXISTING
PB8	PB9	--	--	--	EXISTING
PB9	SB8	--	--	--	EXISTING
PB9	PB10	--	--	--	EXISTING
PB10	SB9	--	--	--	EXISTING
PB11	SB10	5	--	--	CONNECT TO EXISTING 2 INCH CONDUIT
PB11	SB11	--	--	--	EXISTING
PB11	PB12	--	--	--	EXISTING
PB12	SB12	5	--	--	
PB12	PB13	--	--	80	2 RUNS
PB13	PB14	--	--	130	
PB14	SB13	5	--	--	
PB14	CB1	--	10	--	
INTERSECTION TOTAL:		60	30	470	
*ADDITIONAL QUANTIES SHOWN ELSEWHERE					

CONDIT RIGID NONMETALLIC (CONT') LAYTON AVE & WHITNALL AVE WEST					
FROM	TO	652.0225 SCHEDULE 40 2-INCH*	652.0235 SCHEDULE 40 3-INCH	652.0615 SPECIAL 3-INCH	REMARKS
CB1	PB1	--	20	20	2 RUNS
PB1	SB1	10	--	110	2 RUNS
PB1	PB2	--	--	--	
PB2	SB2	10	--	--	
PB2	PB3	--	--	40	2 RUNS
PB3	SB3	5	--	--	
PB3	PB4	--	--	--	EXISTING
PB4	SB4	10	--	--	
PB4	PB5	--	--	--	EXISTING
PB5	SB5	5	--	--	
PB5	PB6	--	--	--	EXISTING
PB6	SB6	5	--	--	
PB6	PB7	--	--	--	EXISTING
PB7	SB7	10	--	--	
PB7	PB8	--	--	90	2 RUNS
PB8	PB9	--	--	110	2 RUNS
PB9	SB8	20	--	--	
PB9	SB9	25	--	--	
PB9	CB1	--	--	40	
INTERSECTION TOTAL:		100	20	410	
*ADDITIONAL QUANTIES SHOWN ELSEWHERE					

CONDIT RIGID NONMETALLIC (CONT')					
LAYTON AVE & WHITNALL (EAST)					
		652.0225 SCHEDULE 40 2-INCH*	652.0235 SCHEDULE 40 3-INCH*	652.0615 SPECIAL 3-INCH*	
FROM	TO	LF	LF	LF	REMARKS
CB1	PB1	--	10	--	2 RUNS
PB1	SB1	10			
PB1	PB2		--	70	2 RUNS
PB2	SB2	20	--		
PB2	PB3	--	--	80	2 RUNS
PB3	PB4	--	130	--	2 RUNS
PB4	EXT1	--	--	--	EXISTING
EXT1	SB3	5	--		
PB4	PB5		--	--	EXISTING
PB5	PB6	--	--		EXISTING
PB6	SB4	15	--	--	
PB6	SB5	5		--	
PB6	PB7		--	--	EXISTING
PB7	SB6	--	--		EXISTING
PB7	PB8	--	--	--	EXISTING
PB8	SB7	--	--		EXISTING
PB7	EXT2	--	--	--	EXISTING
EXT2	PB9	--		20	2 RUNS
PB9	SB8	10	--	--	
PB9	PB10	--	--	110	2 RUNS
PB10	PB11	--	--	90	2 RUNS
PB11	SB9	10	--	--	
PB11	SB10	15	--	--	
PB11	CB1	--	--	30	2 RUNS
INTERSECTION TOTAL:		90	140	400	
TOTAL:		250	190	1280	
*ADDITIONAL QUANTITIES SHOWN ELSEWHERE					

FIBER OPTIC INTERCONNECT					
		652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH*	652.0605 CONDUIT SPECIAL 2-INCH		
FROM	TO	LF	LF	REMARKS	
PB15	CB1(PENNSYLVANIA)	10	--		
CPB1	PB9	--	60		
PB9	CB1(WHITNALL WEST)	--	40		
CPB2	PB12	--	60		
PB12	CB1(WHITNALL EAST)	--	40		
TOTAL:		10	200		
*ADDITIONAL QUANTITIES SHOWN ELSEWHERE					

PULL BOXES			653.0140 STEEL 24X42 - INCH	653.0145 STEEL 24X48 - INCH
NO.	STA.	OFFSET	EACH*	EACH*
PENNSYLVANIA AVE				
PB1	12+21	85'LT	--	1
PB2	12+56	85'LT	1	--
PB3	12+78	84'LT	1	--
PB4	13+13	83'LT	1	--
PB5	13+47	51'LT	1	--
PB6	13+46	8'RT	1	--
PB7	13+42	51'RT	--	--
PB8	13+13	76'RT	--	--
PB9	12+79	93'RT	--	--
PB10	12+49	93'RT	--	--
PB11	12+02	45'RT	--	--
PB12	11+74	9'LT	1	--
PB13	11+75	52'LT	1	--
PB14	12+15	77'LT	--	1
PB15	12+14	80'LT	1	--
TOTAL:			8	2
WHITNALL AVE (WEST)				
PB1	19+04	74'LT	--	1
PB2	19+62	73'LT	1	--
PB3	19+69	50'LT	1	--
PB4	--	--	--	--
PB5	19+71	50'RT	1	--
PB6	18+60	52'RT	1	--
PB7	18+60	5'RT	1	--
PB8	18+61	51'LT	--	1
PB9	18+44	52'LT	1	--
TOTAL:			6	2
WHITNALL AVE (EAST)				
PB1	24+12	69'RT	--	1
PB2	23+78	82'RT	1	--
PB3	23+37	98'RT	1	--
PB4	22+81	61RT	1	--
PB5	22+92	5'LT	1	--
PB6	23+24	50'LT	1	--
PB7	--	--	--	--
PB8	--	--	--	--
PB9	24+29	51'LT	1	--
PB10	24+28	4'RT	1	--
PB11	24+27	52'RT	--	1
PB12	24+39	52'RT	1	
TOTAL:			8	2
PROJECT TOTAL			22	6
* FINAL LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD				

			TRAFFIC SIGNAL BASES				
			LAYTON & PENNSYLVANIA				
NO.	LOCATION*		654.0101	654.0102	654.0110	654.0113	PEDESTRIAN PUSH BUTTON LOCATION**
			CONCRETE	CONCRETE	CONCRETE	CONCRETE	
			BASES TYPE 1	BASES TYPE 2	BASES TYPE 10	BASES TYPE 13	
	STA	OFFSET	EACH*	EACH*	EACH*	EACH*	
SB1	12+78	104'LT	--	--	--	--	--
SB2	13+19	81'LT	--	--	--	1	--
SB3	13+17	73'LT	1	--	--	--	1
SB4	13+44	51'LT	1	--	--	--	1
SB5	13+66	8'RT	--	--	1	--	--
SB6	13+42	51'RT	1	--	--	--	1
SB7	13+13	76'RT	1	--	--	--	--
SB8	12+79	70'RT	--	--	--	--	--
SB9	12+48	77'RT	--	--	--	--	--
SB10	12+14	47'RT	--	--	1	--	--
SB11	11+99	44'RT	1	--	--	--	--
SB12	11+67	9'LT	--	--	--	1	--
SB13	12+17	73'LT	1	--	--	--	1

* FINAL LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD, BASES WITH PUSH BUTTONS MAY NOT BE GREATER THAN 10" FROM POLE TO SIDEWALK
** FOR INFORMATION ONLY

		TRAFFIC SIGNAL BASES (CONT')					
		LAYTON & WHITNALL WEST					
NO.	LOCATION*		654.0101	654.0102	654.0110	654.0113	PEDESTRIAN PUSH BUTTON LOCATION**
			CONCRETE	CONCRETE	CONCRETE	CONCRETE	
			BASES	BASES	BASES	BASES	
		TYPE 1	TYPE 2	TYPE 10	TYPE 13		
	STA	OFFSET	EACH*	EACH*	EACH*	EACH*	
SB1	19+04	61'LT	--	1	--	--	1
SB2	19+62	60'LT	1	--	--	--	1
SB3	19+74	51'LT	1	--	--	--	--
SB4	20+16	9'RT	--	--	1	--	--
SB5	19+71	50'RT	1	--	--	--	1
SB6	19+47	67'RT	1	--	--	--	--
SB7	18+80	52'RT	--	1	--	--	2
SB8	18+83	52'LT	--	--	--	1	--
SB9	18+95	52'LT	1	--	--	--	1
INTERSECTION TOTAL:			5	2	1	1	

* FINAL LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD, BASES WITH PUSH BUTTONS MAY NOT BE GREATER THAN 10" FROM POLE TO SIDEWALK
** FOR INFORMATION ONLY

TRAFFIC SIGNAL BASES (CONT')							
LAYTON & WHITNALL EAST							
NO.	LOCATION*		654.0101	654.0102	654.0110	654.0113	PEDESTRIAN PUSH BUTTON LOCATION**
			CONCRETE	CONCRETE	CONCRETE	CONCRETE	
			BASES	BASES	BASES	BASES	
			TYPE 1	TYPE 2	TYPE 10	TYPE 13	
	STA	OFFSET	EACH*	EACH*	EACH*	EACH*	
SB1	24+08	62'RT	1	--	--	--	1
SB2	23+61	68'RT	--	1	--	--	--
SB3	22+59	52'RT	1	--	--	--	1
SB4	23+11	52'LT	--	--	--	1	--
SB5	23+26	52'LT	1	--	--	--	1
SB6	23+33	68'LT	--	--	--	--	--
SB7	23+65	66'LT	--	--	--	--	--
SB8	24+10	51'LT	--	1	--	--	2
SB9	24+20	52'RT	1	--	--	1	--
SB10	24+14	52'RT	1	--	--	--	1
INTERSECTION TOTAL:			5	2	0	2	
PROJECT TOTAL:			16	4	3	5	

* FINAL LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD, BASES WITH PUSH BUTTONS MAY NOT BE GREATER THAN 10" FROM POLE TO SIDEWALK
** FOR INFORMATION ONLY

CATEGORY 0010

TRAFFIC STANDARDS, POLES, MAST ARMS														
LAYTON & PENNSYLVANIA														
NO.	657.0100 PEDESTAL BASES	657.0255 TRANSFORMER BASES 11 1/2-INCH BOLT CIRCLE	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT	657.0305 POLES TYPE 2	657.0590 TROMBONE ARMS 20-FT	657.0595 TROMBONE ARMS 25-FT	SPV.0060.01 POLES TYPE 10	SPV.0060.02 POLES TYPE 12	SPV.0060.03 MONOTUBE ARMS 30-FT	SPV.0060.04 MONOTUBE ARMS 40-FT	SPV.0060.05 MONOTUBE ARMS 55-FT	SPV.0060.07 LUMINARE ARMS STEEL 10-FT
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
SB1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB2	--	--	--	--	--	--	--	--	--	1	--	--	1	--
SB3	1	--	1	--	--	--	--	--	--	--	--	--	--	--
SB4	1	--	--	1	--	--	--	--	--	--	--	--	--	--
SB5	--	--	--	--	--	--	--	--	1	--	1	--	--	2
SB6	1	--	1	--	--	--	--	--	--	--	--	--	--	--
SB7	1	--	--	1	--	--	--	--	--	--	--	--	--	--
SB8	1	--	--	1	--	--	--	--	--	--	--	--	--	--
SB9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB10	--	--	--	1	--	--	--	--	1	--	1	--	--	--
SB11	1	--	--	1	--	--	--	--	--	--	--	--	--	--
SB12	--	--	--	1	--	--	--	--	--	1	--	1	--	--
SB13	1	--	--	1	--	--	--	--	--	--	--	--	--	--
INTERSECTION TOTAL:	7	0	2	7	0	0	0	0	2	2	2	1	1	2

TRAFFIC STANDARDS, POLES, MAST ARMS (CONT')														
LAYTON & WHITNALL WEST														
NO.	657.0100 PEDESTAL BASES	657.0255 TRANSFORMER BASES 11 1/2-INCH BOLT CIRCLE	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT	657.0305 POLES TYPE 2	657.0590 TROMBONE ARMS 20-FT	657.0595 TROMBONE ARMS 25-FT	SPV.0060.01 POLES TYPE 10	SPV.0060.02 POLES TYPE 12	SPV.0060.03 MONOTUBE ARMS 30-FT	SPV.0060.04 MONOTUBE ARMS 40-FT	SPV.0060.05 MONOTUBE ARMS 55-FT	SPV.0060.07 LUMINARE ARMS STEEL 10-FT
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
SB1	--	1	--	--	--	1	--	1	--	--	--	--	--	--
SB2	1	--	--	1	--	--	--	--	--	--	--	--	--	--
SB3	1	--	--	1	--	--	--	--	--	--	--	--	--	--
SB4	--	--	--	--	--	--	--	--	1	--	1	--	--	--
SB5	1	--	--	1	--	--	--	--	--	--	--	--	--	--
SB6	1	--	--	1	--	--	--	--	--	--	--	--	--	--
SB7	--	1	--	--	--	1	--	1	--	--	--	--	--	--
SB8	--	--	--	--	--	--	--	--	--	1	--	--	1	--
SB9	1	--	1	--	--	--	--	--	--	--	--	--	--	--
INTERSECTION TOTAL:	5	2	1	4	0	2	0	2	1	1	1	0	1	0

TRAFFIC STANDARDS, POLES, MAST ARMS (CONT')														
LAYTON & WHITNALL EAST														
NO.	657.0100 PEDESTAL BASES	657.0255 TRANSFORMER BASES 11 1/2-INCH BOLT CIRCLE	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT	657.0305 POLES TYPE 2	657.0590 TROMBONE ARMS 20-FT	657.0595 TROMBONE ARMS 25-FT	SPV.0060.01 POLES TYPE 10	SPV.0060.02 POLES TYPE 12	SPV.0060.03 MONOTUBE ARMS 30-FT	SPV.0060.04 MONOTUBE ARMS 40-FT	SPV.0060.05 MONOTUBE ARMS 55-FT	SPV.0060.07 LUMINARE ARMS STEEL 10-FT
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
SB1	1	--	1	--	--	--	--	--	--	--	--	--	--	--
SB2	--	1	--	--	--	1	1	--	--	--	--	--	--	--
SB3	1	--	--	1	--	--	--	--	--	--	--	--	--	--
SB4	--	--	--	--	--	--	--	--	--	1	--	--	1	--
SB5	1	--	1	--	--	--	--	--	--	--	--	--	--	--
SB6	--	--	--	1	--	--	--	--	--	--	--	--	--	--
SB7	--	--	--	1	--	--	--	--	--	--	--	--	--	--
SB8	--	1	--	--	--	1	--	1	--	--	--	--	--	--
SB9	1	--	--	--	--	--	--	--	--	1	--	--	1	--
SB10	1	--	--	--	1	--	--	--	--	--	--	--	--	--
INTERSECTION TOTAL:	5	2	2	3	1	2	1	1	0	2	0	0	2	0
PROJECT TOTAL:	17	4	5	14	1	4	1	3	3	5	3	1	4	2

TRAFFIC SIGNAL FACES AND EQUIPMENT															
LAYTON & PENNSYLVANIA															
NO.	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL EACH	658.0120 TRAFFIC SIGNAL FACE 5-12 INCH VERTICAL EACH	658.0215 BACKPLATES SIGNAL FACE 3-12 EACH	658.0220 BACKPLATES SIGNAL FACE 4-12 EACH	658.0225 BACKPLATES SIGNAL FACE 5-12 EACH	658.0416 PEDESTRIAN SIGNAL FACE COUNTDOWN 16-INCH EACH	658.0600 LED MODULES RED BALL 12-INCH EACH	658.0605 LED MODULES YELLOW BALL 12-INCH EACH	658.0610 LED MODULES GREEN BALL 12-INCH EACH	658.0615 LED MODULES RED ARROW 12-INCH EACH	658.0620 LED MODULES YELLOW ARROW 12-INCH EACH	658.0625 LED MODULES GREEN ARROW 12-INCH EACH	658.0635 LED MODULE PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH	659.1115 LUMINAIRES UTILITY LED A EACH
SB1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2
SB2	3	--	--	3	--	--	1	2	2	2	1	1	1	1	--
SB3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB4	1	1	--	1	1	--	1	1	1	1	1	2	1	1	--
SB5	2	1	--	2	1	--	--	2	2	2	1	2	1	--	2
SB6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB7	1	1	--	1	1	--	1	1	1	1	1	2	1	1	--
SB8	--	1	--	--	1	--	--	--	--	--	1	2	1	--	--
SB9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2
SB10	2	1	--	2	1	--	--	2	2	2	1	2	1	--	--
SB11	1	--	--	1	--	--	--	1	1	1	--	--	--	--	--
SB12	3	1	--	3	1	--	--	3	3	3	1	2	1	--	--
SB13	2	--	--	2	--	--	1	1	1	1	1	1	1	1	--
INTERSECTION TOTAL:	15	6		15	6		4	13	13	13	8	14	8	4	6

TRAFFIC SIGNAL FACES AND EQUIPMENT (CONT')															
LAYTON & WHITNALL WEST															
NO.	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL EACH	658.0120 TRAFFIC SIGNAL FACE 5-12 INCH VERTICAL EACH	658.0215 BACKPLATES SIGNAL FACE 3-12 EACH	658.0220 BACKPLATES SIGNAL FACE 4-12 EACH	658.0225 BACKPLATES SIGNAL FACE 5-12 EACH	658.0416 PEDESTRIAN SIGNAL FACE COUNTDOWN 16-INCH EACH	658.0600 LED MODULES RED BALL 12-INCH EACH	658.0605 LED MODULES YELLOW BALL 12-INCH EACH	658.0610 LED MODULES GREEN BALL 12-INCH EACH	658.0615 LED MODULES RED ARROW 12-INCH EACH	658.0620 LED MODULES YELLOW ARROW 12-INCH EACH	658.0625 LED MODULES GREEN ARROW 12-INCH EACH	658.0635 LED MODULE PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH	659.1115 LUMINAIRES UTILITY LED A EACH
SB1	1	--	--	1	--	--	1	1	1	--	--	--	1	1	--
SB2	1	1	--	1	1	--	--	2	2	1	--	--	2	--	--
SB3	1	--	--	1	--	--	1	1	1	1	--	--	--	1	--
SB4	3	--	--	3	--	--	--	3	3	3	--	--	--	--	--
SB5	1	--	--	1	--	--	1	1	1	1	--	--	1	1	--
SB6	1	--	--	1	--	--	--	1	1	1	--	--	--	--	--
SB7	1	2	--	1	2	--	2	2	2	2	1	2	2	2	--
SB8	3	1	--	3	1	--	1	3	3	3	1	2	1	1	--
SB9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
INTERSECTION TOTAL:	12	4	0	12	4	0	6	14	14	12	2	4	7	6	0

TRAFFIC SIGNAL FACES AND EQUIPMENT (CONT')															
LAYTON & WHITNALL EAST															
NO.	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL EACH	658.0120 TRAFFIC SIGNAL FACE 5-12 INCH VERTICAL EACH	658.0215 BACKPLATES SIGNAL FACE 3-12 EACH	658.0220 BACKPLATES SIGNAL FACE 4-12 EACH	658.0225 BACKPLATES SIGNAL FACE 5-12 EACH	658.0416 PEDESTRIAN SIGNAL FACE COUNTDOWN 16-INCH EACH	658.0600 LED MODULES RED BALL 12-INCH EACH	658.0605 LED MODULES YELLOW BALL 12-INCH EACH	658.0610 LED MODULES GREEN BALL 12-INCH EACH	658.0615 LED MODULES RED ARROW 12-INCH EACH	658.0620 LED MODULES YELLOW ARROW 12-INCH EACH	658.0625 LED MODULES GREEN ARROW 12-INCH EACH	658.0635 LED MODULE PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH	659.1115 LUMINAIRES UTILITY LED A EACH
SB1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB2	2	1	--	2	1	--	--	3	3	3	--	--	1	--	--
SB3	1	--	1	1	--	1	1	2	2	2	--	1	1	1	--
SB4	3	--	--	3	--	--	1	3	3	3	--	--	--	1	--
SB5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB6	2	--	--	2	--	--	--	2	2	1	--	--	1	--	--
SB7	--	1	--	--	1	--	--	1	1	1	--	--	1	--	--
SB8	1	2	--	1	2	--	2	2	2	2	1	2	2	2	--
SB9	1	1	1	1	1	1	1	2	2	2	1	3	2	1	--
SB10	--	--	--	--	--	--	1	--	--	--	--	--	--	1	--
INTERSECTION TOTAL:	10	5	2	10	5	2	6	15	15	14	2	6	8	6	0
PROJECT TOTAL:	37	15	2	37	15	2	16	42	42	39	12	24	23	16	6

FIBER OPTIC TERMINATION 678.0400 FIBER OPTIC TERMINATION <table><tr><th>LOCATION</th><th>EACH</th></tr><tr><td>E. LAYTON AVE. (CTH Y) & S. PENNSYLVANIA AVE. CB1</td><td>4</td></tr><tr><td>E. LAYTON AVE. (CTH Y) & S. WHITNALL AVE. (WEST) CB1</td><td>4</td></tr><tr><td>E. LAYTON AVE. (CTH Y) & S. WHITNALL AVE. (EAST) CB1</td><td>4</td></tr><tr><td>ITEM TOTAL:</td><td>12</td></tr></table>										LOCATION	EACH	E. LAYTON AVE. (CTH Y) & S. PENNSYLVANIA AVE. CB1	4	E. LAYTON AVE. (CTH Y) & S. WHITNALL AVE. (WEST) CB1	4	E. LAYTON AVE. (CTH Y) & S. WHITNALL AVE. (EAST) CB1	4	ITEM TOTAL:	12	FIBER OPTIC COMMUNICATION SYSTEM INTEGRATION, DOCUMENTATION AND TESTING <table><tr><th>BID ITEM</th><th>LS</th></tr><tr><td>SPV.0105.08</td><td>1</td></tr><tr><td>ITEM TOTAL:</td><td>1</td></tr></table>										BID ITEM	LS	SPV.0105.08	1	ITEM TOTAL:	1	CATEGORY 0010 CONSTRUCTION STAKING 650.8500650.9910 CONSTRUCTION STAKING SUPPLEMENTAL ELECTRICAL INSTALLATIONS CONTROL <table><tr><th>LS</th><th>LS</th></tr><tr><td>TOTAL</td><td>11</td></tr></table>										LS	LS	TOTAL	11																																								
LOCATION	EACH																																																																																								
E. LAYTON AVE. (CTH Y) & S. PENNSYLVANIA AVE. CB1	4																																																																																								
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BID ITEM	LS																																																																																								
SPV.0105.08	1																																																																																								
ITEM TOTAL:	1																																																																																								
LS	LS																																																																																								
TOTAL	11																																																																																								
INLET PROTECTION <table><tr><th colspan="3">LOCATION</th><th>628.7010 INLET PROTECTION TYPE B</th><th>628.7015 INLET PROTECTION TYPE C</th></tr><tr><th>STATION</th><th>TO</th><th>STATION</th><th>EACH</th><th>EACH</th></tr><tr><td colspan="5">E. LAYTON AVE</td></tr><tr><td>11+00</td><td>-</td><td>13+74</td><td>5</td><td>6</td></tr><tr><td>13+74</td><td>-</td><td>19+75</td><td>9</td><td>-</td></tr><tr><td>19+75</td><td>-</td><td>25+75</td><td>9</td><td>-</td></tr><tr><td>25+75</td><td>-</td><td>31+75</td><td>1</td><td>-</td></tr><tr><td colspan="3">UNDISTRIBUTED</td><td>2</td><td>2</td></tr><tr><td colspan="3">TOTAL</td><td>26</td><td>8</td></tr></table>																				LOCATION			628.7010 INLET PROTECTION TYPE B	628.7015 INLET PROTECTION TYPE C	STATION	TO	STATION	EACH	EACH	E. LAYTON AVE					11+00	-	13+74	5	6	13+74	-	19+75	9	-	19+75	-	25+75	9	-	25+75	-	31+75	1	-	UNDISTRIBUTED			2	2	TOTAL			26	8	MOBILIZATION 619.1000 <table><tr><th>PROJECT I.D.</th><th>MOBILIZATION EACH</th></tr><tr><td>2070-08-70</td><td>1</td></tr><tr><td>TOTAL</td><td>1</td></tr></table>										PROJECT I.D.	MOBILIZATION EACH	2070-08-70	1	TOTAL	1									
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TRAFFIC SIGNAL CABLE AND ELECTRICAL WIRING- S. PENNSYLVANIA AVE

CATEGORY 0010

		655.0230	655.0240	655.0270	655.0280	655.0305	655.0515	655.0515	655.0900
		CABLE	CABLE	CABLE	CABLE	CABLE	ELECTRICAL WIRE	ELECTRICAL WIRE	TRAFFIC
		TRAFFIC	TRAFFIC	TRAFFIC	TRAFFIC	TYPE UF	TRAFFIC SIGNALS	TRAFFIC SIGNALS	SIGNAL
		SIGNAL	SIGNAL	SIGNAL	SIGNAL	2-12 AWG	(NEUTRAL)	(EQUIPMENT	EVP
		5-14 AWG	7-14 AWG	15-14 AWG	19-14 AWG	GROUND	10 AWG	GROUNDING)	DETECTOR
							WHITE	GREEN	CABLE
FROM	TO	LF	LF	LF	LF	LF	LF	LF	LF
CB1	SB1	--	--	--	--	80	--	--	--
CB1	SB2	--	--	120	--	--	--	--	180
CB1	SB3	120	--	--	--	--	--	--	--
CB1	SB4	--	--	--	180	--	--	--	--
CB1	SB5	--	--	260	--	260	--	--	370
CB1	SB6	300	--	--	--	--	--	--	--
CB1	SB7	--	--	350	--	--	--	--	--
CB1	SB8	--	320	--	--	--	--	--	--
CB1	SB9	--	--	290	--	290	--	--	--
CB1	SB10	--	--	210	--	--	--	--	300
CB1	SB11	--	--	200	--	--	--	--	--
CB1	SB12	--	--	140	--	--	--	--	220
CB1	SB13	--	--	--	30	--	--	--	--
CB1	SB1	--	--	--	--	--	80	80	--
SB1	SB2	--	--	--	--	--	120	120	--
SB2	SB3	--	--	--	--	--	120	120	--
SB3	SB4	--	--	--	--	--	190	190	--
SB4	SB5	--	--	--	--	--	260	260	--
SB5	SB6	--	--	--	--	--	300	300	--
SB6	SB7	--	--	--	--	--	350	350	--
SB7	SB8	--	--	--	--	--	320	320	--
SB8	SB9	--	--	--	--	--	290	290	--
SB9	SB10	--	--	--	--	--	210	210	--
SB10	SB11	--	--	--	--	--	200	200	--
SB11	SB12	--	--	--	--	--	70	70	--
SB12	SB13	--	--	--	--	--	110	110	--
SB13	CB1	--	--	--	--	--	30	30	--
PB3	SB1	--	--	--	--	--	--	10	--
PB4	SB2	--	--	--	--	--	--	10	--
PB4	SB3	--	--	--	--	--	--	20	--
PB5	SB4	--	--	--	--	--	--	20	--
PB6	SB5	--	--	--	--	--	--	10	--
PB7	SB6	--	--	--	--	--	--	10	--
PB8	SB7	--	--	--	--	--	--	10	--
PB9	SB8	--	--	--	--	--	--	20	--
PB10	SB9	--	--	--	--	--	--	20	--
PB11	SB10	--	--	--	--	--	--	20	--
PB11	SB11	--	--	--	--	--	--	10	--
PB12	SB12	--	--	--	--	--	--	10	--
PB14	SB13	--	--	--	--	--	--	10	--
BASE TO SIGNAL HEAD CABLING		520	260	--	--	--	--	--	--
SUBTOTAL:		940	580	1570	210	630	2650	2830	1070
INTERSECTION TOTAL:		940	580	1570	210	630	5480		1070
		LF	LF	LF	LF	LF	LF		LF

3

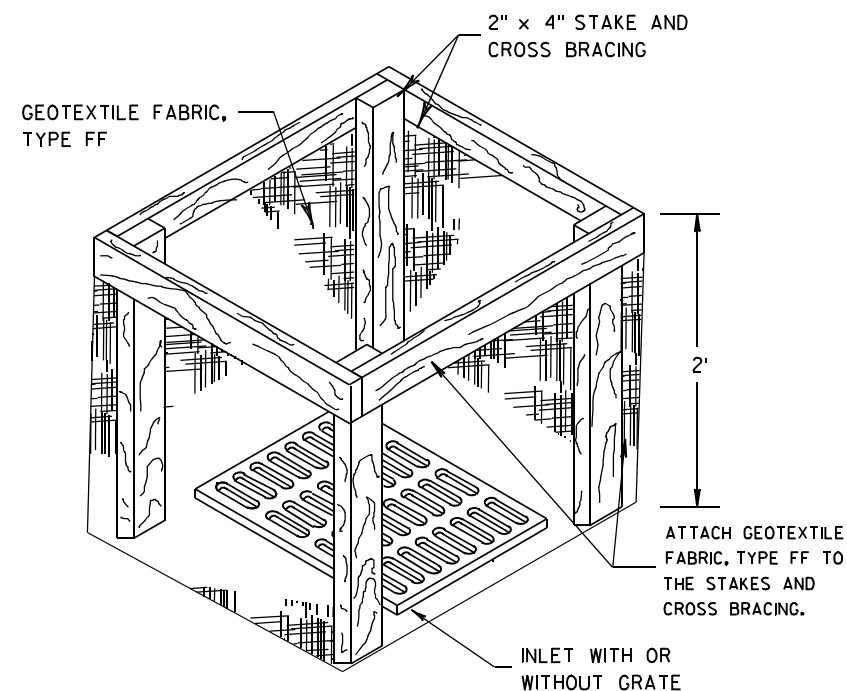
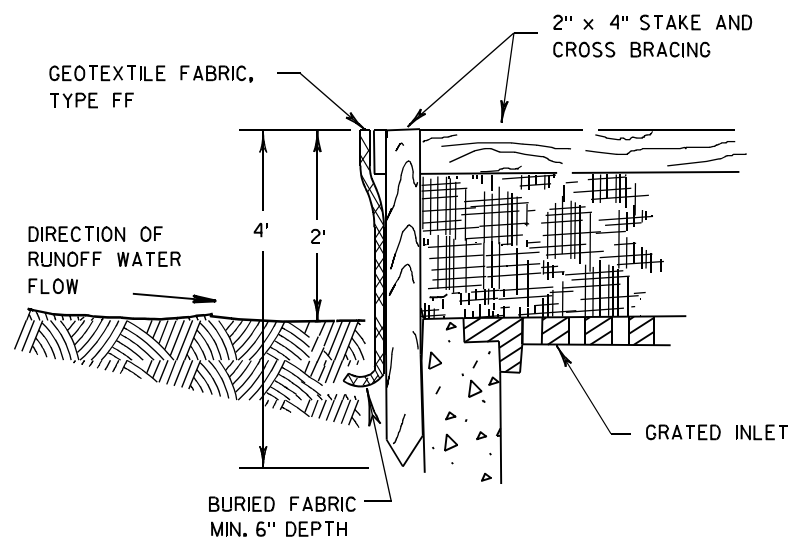
3

TRAFFIC SIGNAL CABLE AND ELECTRICAL WIRING- W. WHITNALL AVE (WEST)								
		655.0230	655.0240	655.0270	655.0280	655.0515	655.0515	655.0900
		CABLE	CABLE	CABLE	CABLE	ELECTRICAL WIRE	ELECTRICAL WIRE	TRAFFIC
		TRAFFIC	TRAFFIC	TRAFFIC	TRAFFIC	TRAFFIC SIGNALS	TRAFFIC SIGNALS	SIGNAL
		SIGNAL	SIGNAL	SIGNAL	SIGNAL	(NEUTRAL)	(EQUIPMENT	EVP
		5-14 AWG	7-14 AWG	15-14 AWG	19-14 AWG	10 AWG	GROUNDING)	DETECTOR
						WHITE	GREEN	CABLE
FROM	TO	LF	LF	LF	LF	LF	LF	LF
CB1	SB1	--	--	50	--	--	--	--
CB1	SB2	--	--	100	--	--	--	--
CB1	SB3	--	--	130	--	--	--	--
CB1	SB4	--	--	190	--	--	--	280
CB1	SB5	--	--	270	--	--	--	--
CB1	SB6	--	--	200	--	--	--	--
CB1	SB7	--	--	--	150	--	--	--
CB1	SB8	--	--	60	--	--	--	80
CB1	SB9	70	--	--		--	--	--
CB1	SB1	--	--	--	--	80	80	--
SB1	SB2	--	--	--	--	80	80	--
SB2	SB3	--	--	--	--	40	40	--
SB3	SB4	--	--	--	--	80	80	--
SB4	SB5	--	--	--	--	90	90	--
SB5	SB6	--	--	--	--	80	80	--
SB6	SB7	--	--	--	--	70	70	--
SB7	SB8	--	--	--	--	90	90	--
SB8	SB9	--	--	--	--	90	90	--
SB9	CB1	--	--	--	--	30	30	--
PB2	SB1	--	--	--	--	--	10	--
PB4	SB2	--	--	--	--	--	10	--
PB4	SB3	--	--	--	--	--	20	--
PB5	SB4	--	--	--	--	--	20	--
PB6	SB5	--	--	--	--	--	10	--
PB7	SB6	--	--	--	--	--	10	--
PB8	SB7	--	--	--	--	--	20	--
PB9	SB8	--	--	--	--	--	20	--
PB13	SB9	--	--	--	--	--	10	--
BASE TO SIGNAL HEAD CABLING		490	190	--	--	--	--	--
SUBTOTAL:		560	190	1000	150	730	860	360
INTERSECTION TOTAL:		560	190	1000	150	1590		360
		LF	LF	LF	LF	LF		LF

TRAFFIC SIGNAL CABLE AND ELECTRICAL WIRING- W. WHITNALL AVE (EAST)								
		655.0230	655.0240	655.0270	655.0280	655.0515	655.0515	655.0900
		CABLE	CABLE	CABLE	CABLE	ELECTRICAL WIRE	ELECTRICAL WIRE	TRAFFIC
		TRAFFIC	TRAFFIC	TRAFFIC	TRAFFIC	TRAFFIC SIGNALS	TRAFFIC SIGNALS	SIGNAL
		SIGNAL	SIGNAL	SIGNAL	SIGNAL	(NEUTRAL)	(EQUIPMENT	EVP
		5-14 AWG	7-14 AWG	15-14 AWG	19-14 AWG	10 AWG	GROUNDING)	DETECTOR
						WHITE	GREEN	CABLE
FROM	TO	LF	LF	LF	LF	LF	LF	LF
CB1	SB1	--	--	80	--	--	--	--
CB1	SB2	--	--	--	210	--	--	280
CB1	SB3	220	--	--	--	--	--	--
CB1	SB4	--	--	280	--	--	--	--
CB1	SB5	--		340	--	--	--	370
CB1	SB6	--	390	--	--	--	--	--
CB1	SB7	--	--	300	--	--	--	--
CB1	SB8	--	--	240	--	--	--	270
CB1	SB9	--	190	--	--	--	--	--
CB1	SB10	--	--	--	--	--	--	--
CB1	SB1	--	--	--	--	80	80	--
SB1	SB2	--	--	--	--	150	150	--
SB2	SB3	--	--	--	--	40	40	--
SB3	SB4	--	--	--	--	80	80	--
SB4	SB5	--	--	--	--	130	130	--
SB5	SB6	--	--	--	--	80	80	--
SB6	SB7	--	--	--	--	110	110	--
SB7	SB8	--	--	--	--	90	90	--
SB8	SB9	--	--	--	--	90	90	--
SB9	SB10	--	--	--	--	30	30	--
SB10	CB1	--	--	--	--	30	30	--
PB2	SB1	--	--	--	--	--	10	--
PB4	SB2	--	--	--	--	--	10	--
PB4	SB3	--	--	--	--	--	20	--
PB5	SB4	--	--	--	--	--	20	--
PB6	SB5	--	--	--	--	--	10	--
PB7	SB6	--	--	--	--	--	10	--
PB8	SB7	--	--	--	--	--	20	--
PB9	SB8	--	--	--	--	--	20	--
PB10	SB9	--	--	--	--	--	20	--
PB11	SB10	--	--	--	--	--	10	--
PB11	SB11	--	--	--	--	--	10	--
BASE TO SIGNAL HEAD CABLING		530	260	--	--	--	--	--
SUBTOTAL:		750	840	1240	210	910	1070	920
INTERSECTION TOTAL:		750	840	1240	210	1980		920
		LF	LF	LF	LF	LF		LF
PROJECT TOTAL:		2250	1610	3810	570	9050		2350

Standard Detail Drawing List

08E10-02	INLET PROTECTION TYPE A, B, C AND D
09B02-09	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
09C11-06	CONCRETE BASE TYPE 10
09C11-07	CONCRETE BASE TYPE 10
09C12-06A	CONCRETE BASE TYPE 13
09C12-06B	CONCRETE BASE TYPE 13
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09E01-14A	POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2
09E01-14G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E08-07B	TYPE 10 POLE 15'-30' MONOTUBE ARM
09E08-07C	TYPE 12 POLE 35'-55' MONOTUBE ARM
09E08-07E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D20-03	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY



INLET PROTECTION, TYPE A

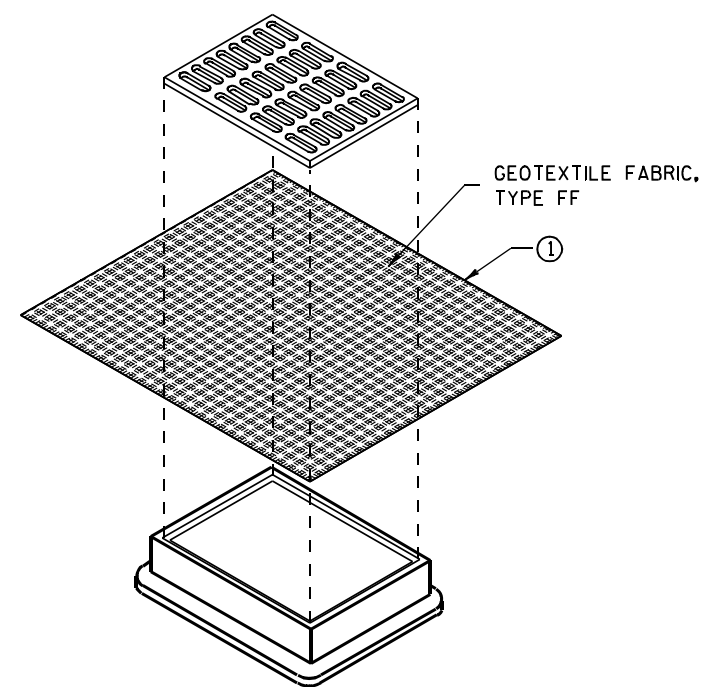
GENERAL NOTES

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

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

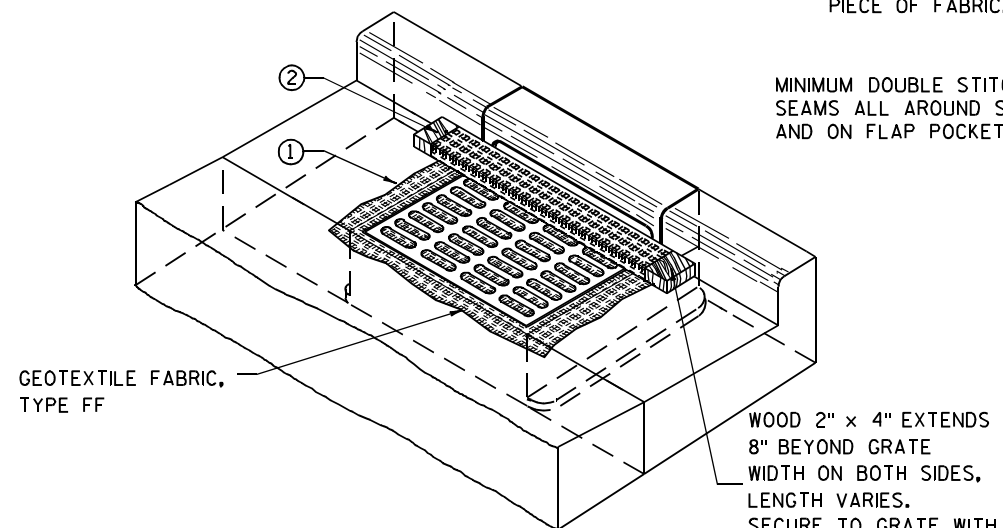
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

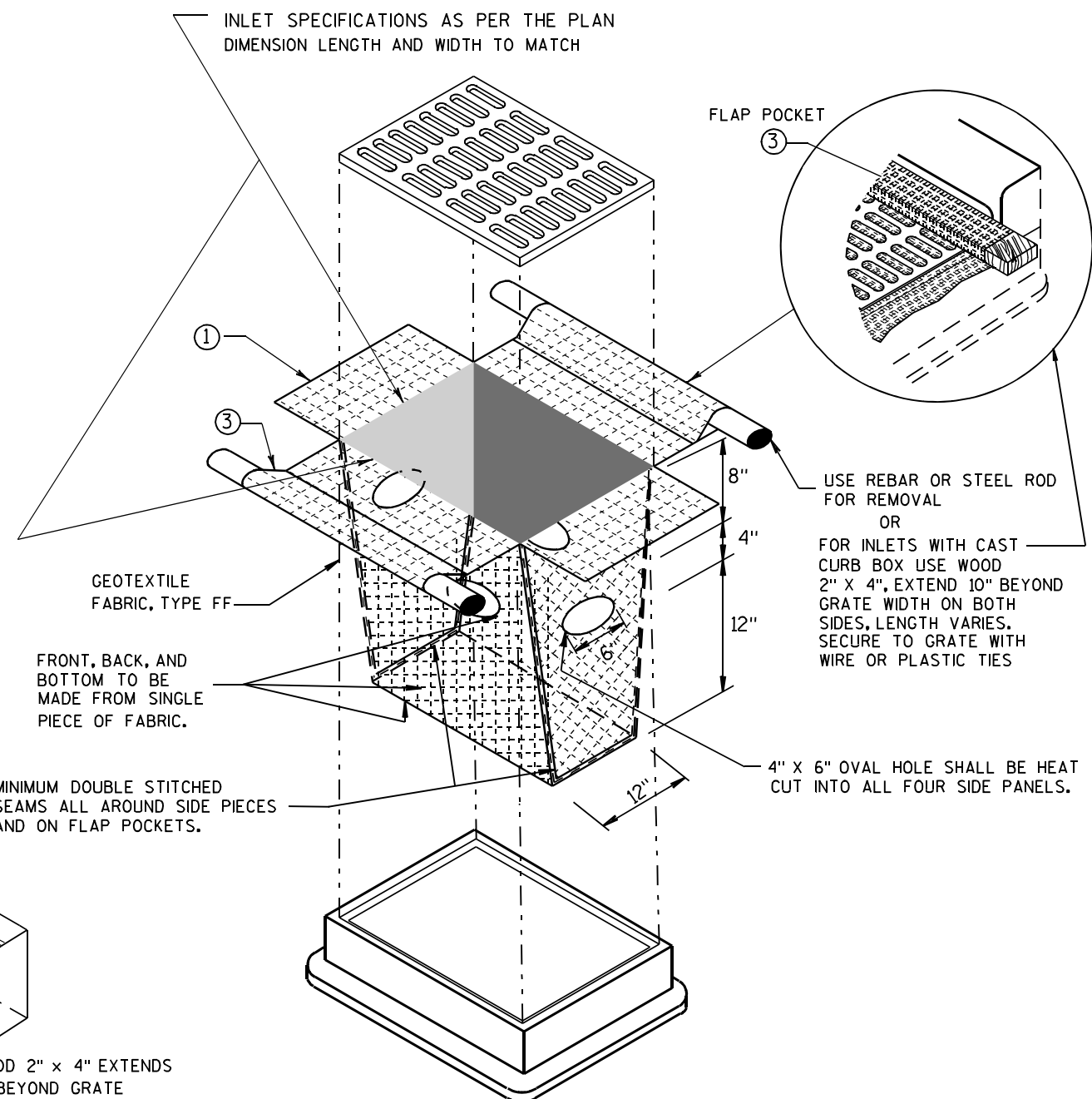
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



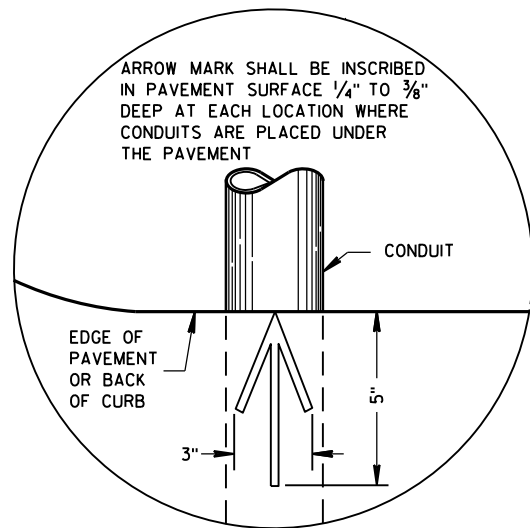
INLET PROTECTION, TYPE D

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

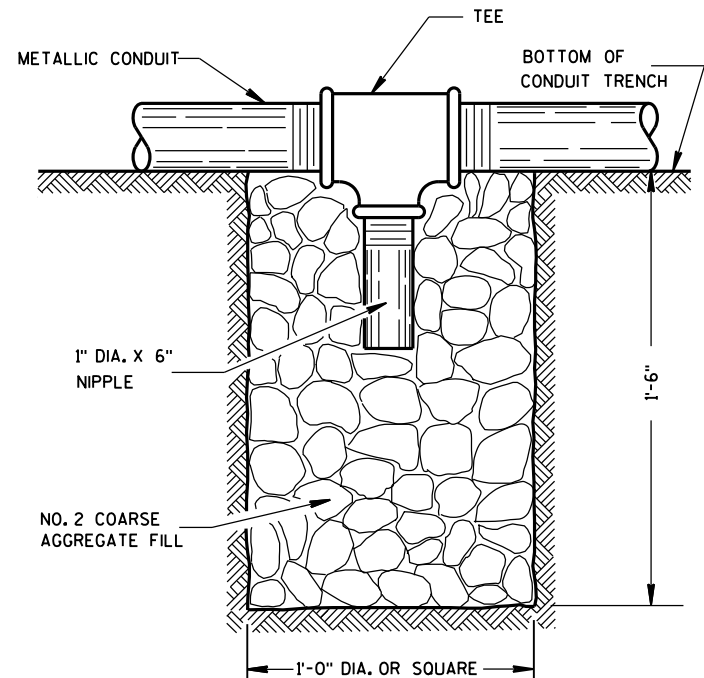
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

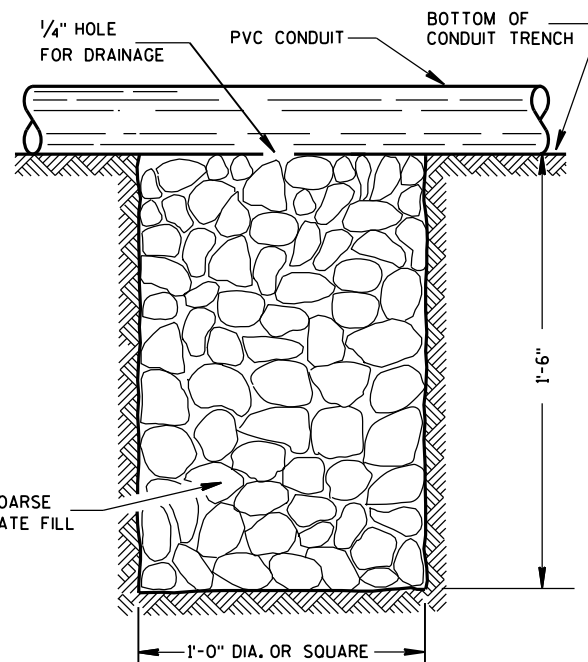


PLAN VIEW
ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

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.

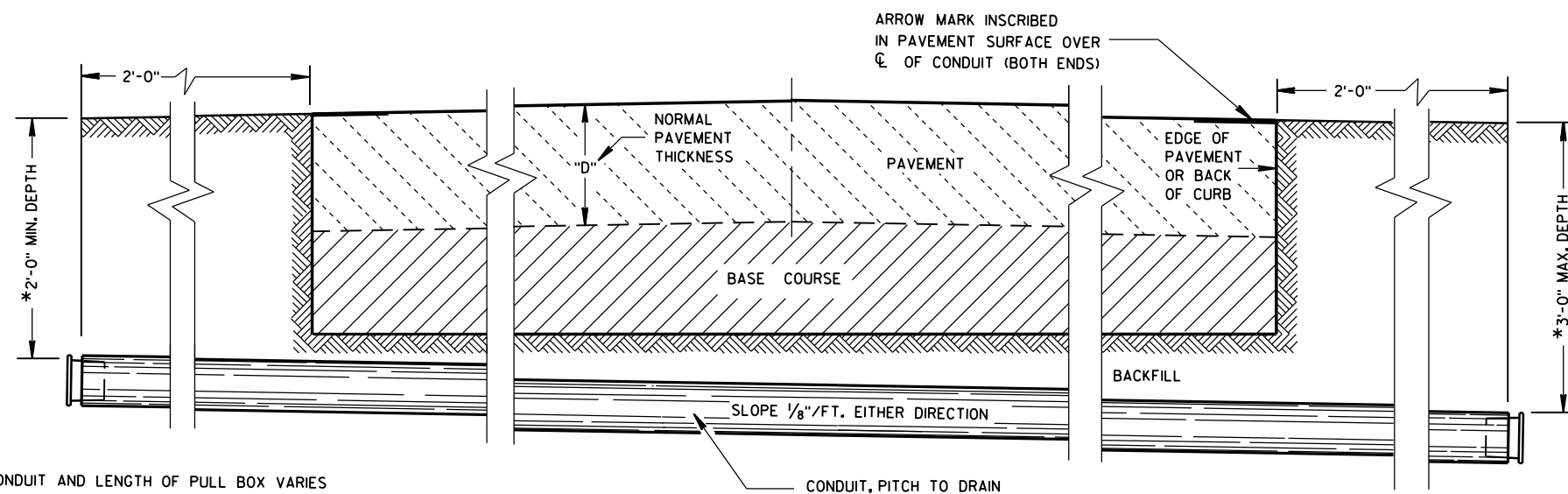
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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.



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

SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

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

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

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

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

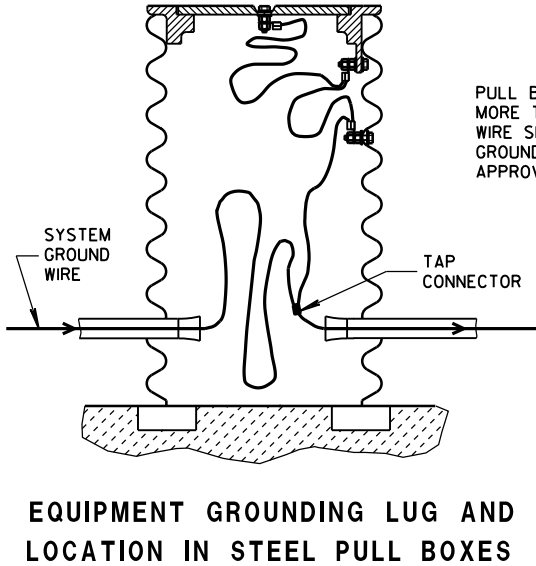
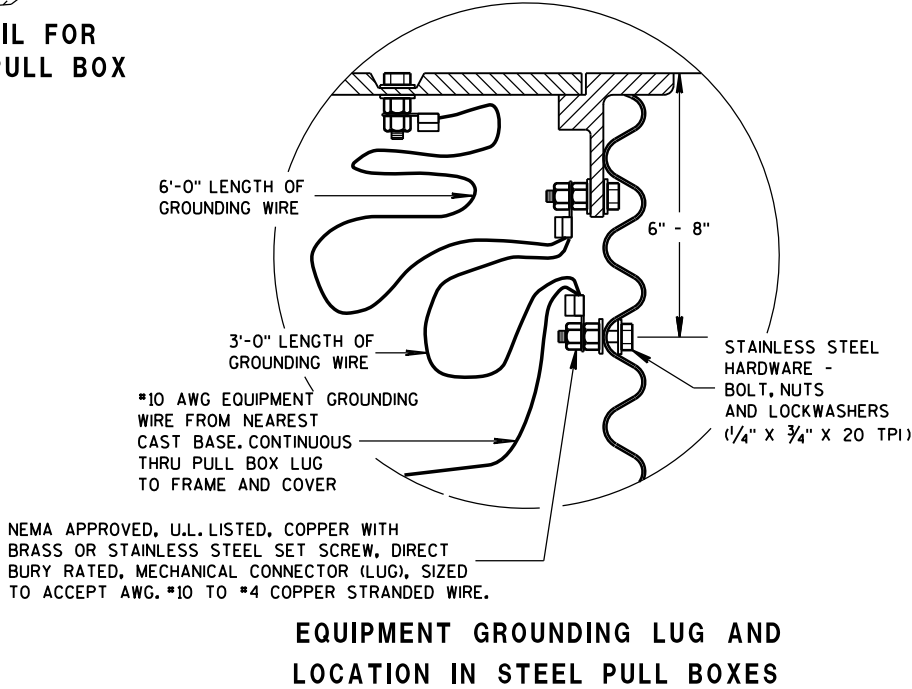
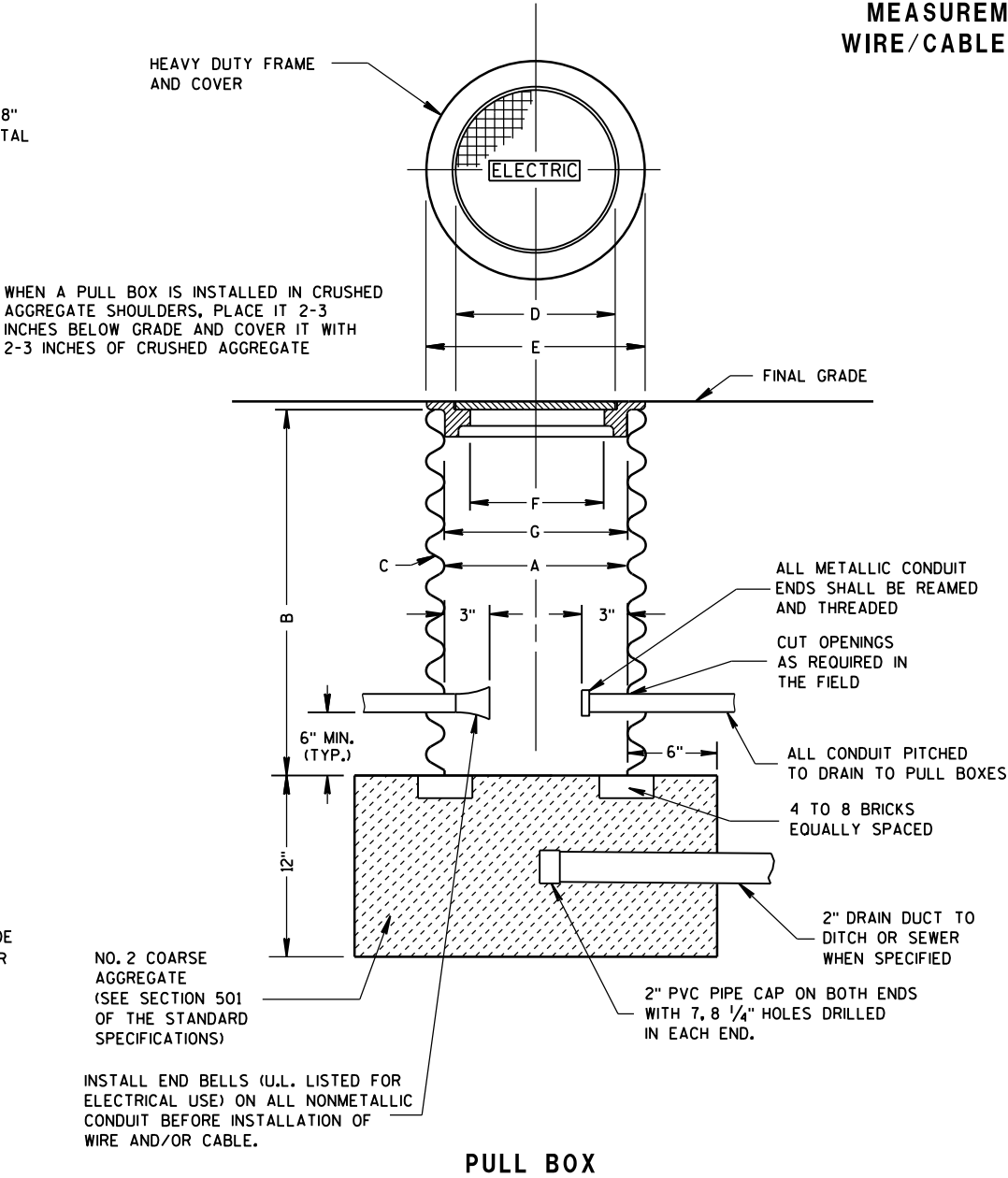
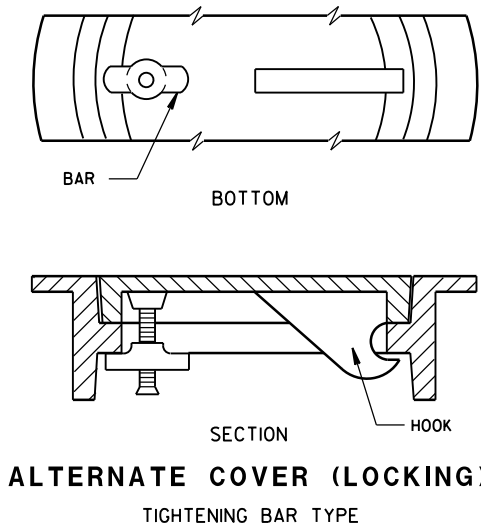
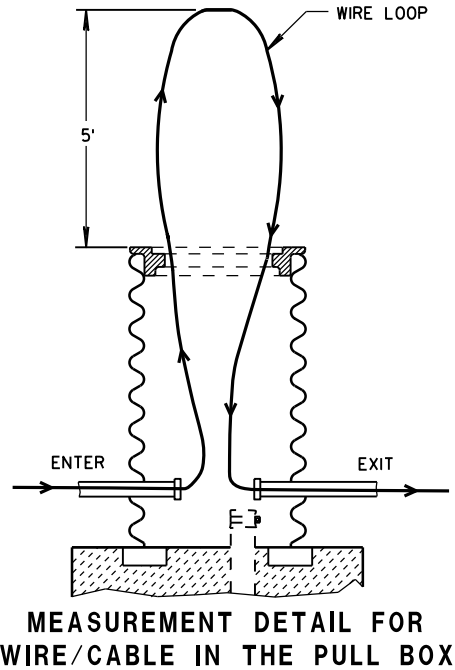
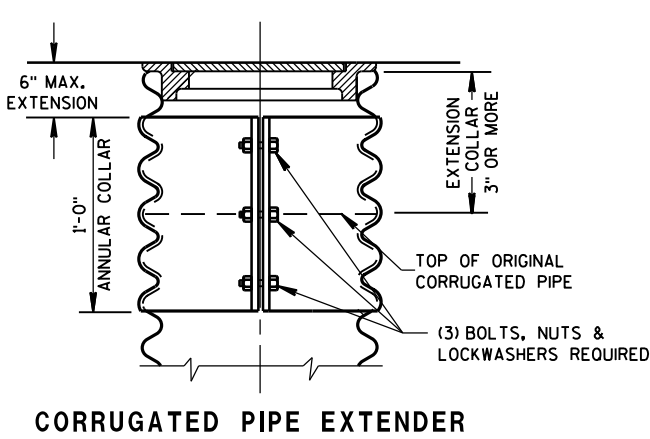
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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

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

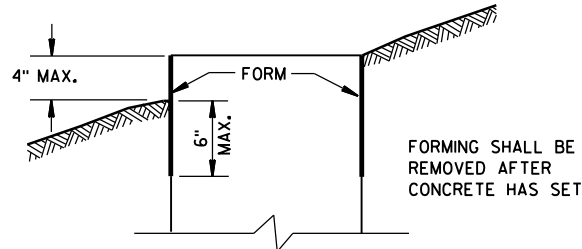
ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

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



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

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



FORMING DETAIL

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

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

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

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

GENERAL NOTES (CONTINUED)

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

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

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

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

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

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

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

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

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

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

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

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

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

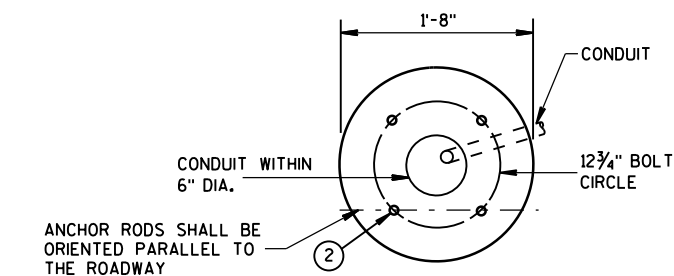
4 (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

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

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

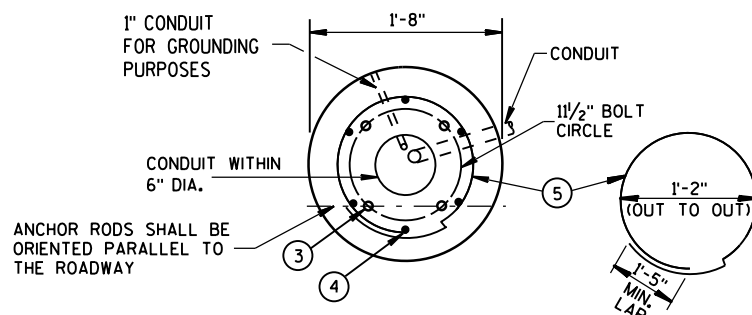
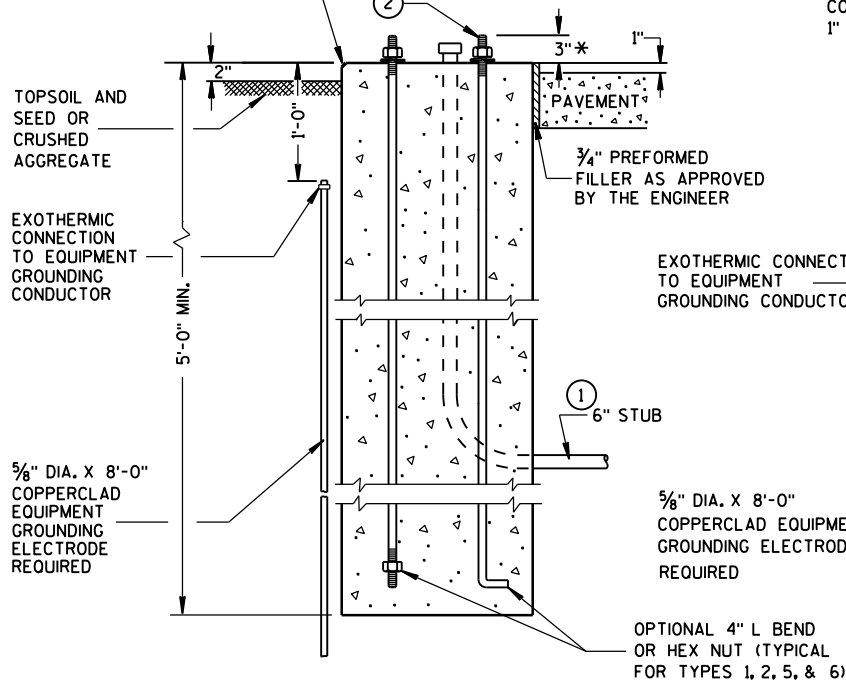
7 (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT.

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

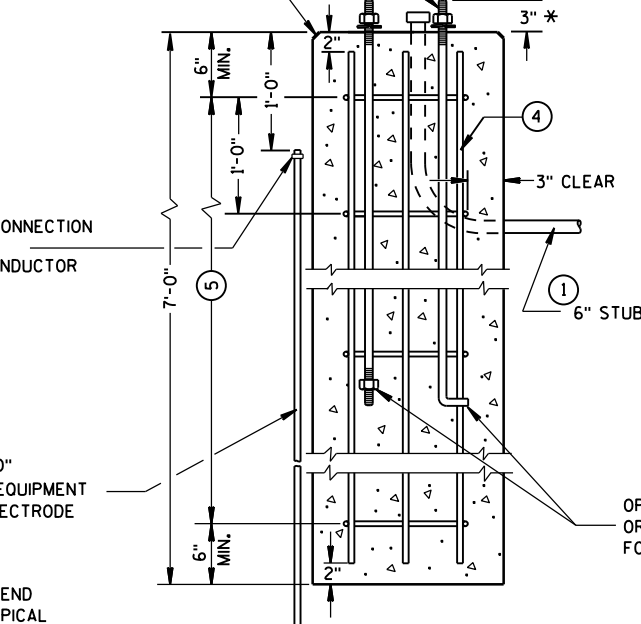


FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

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

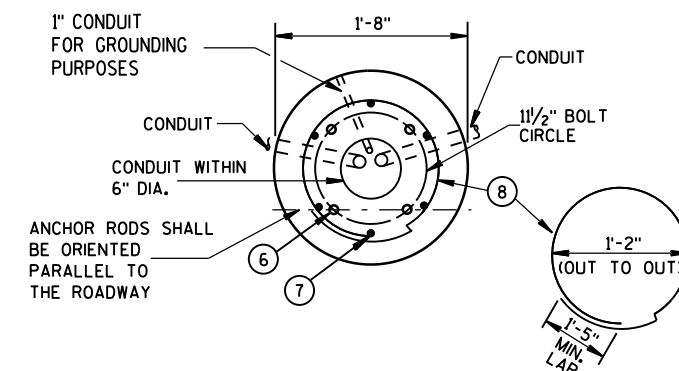


FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

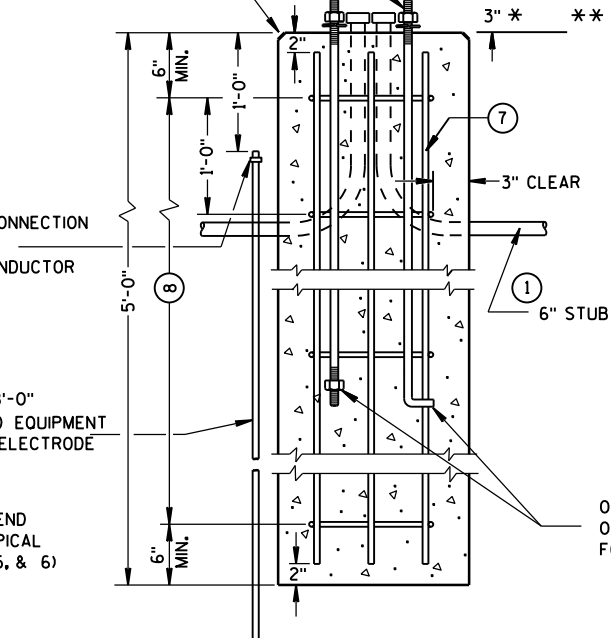


TYPE 2

CONCRETE BASES



FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



TYPE 5 & 6

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014

DATE

/S/ Ahmet Demirbilek

STATE ELECTRICAL ENGINEER

FHWA

GENERAL NOTES

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

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

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

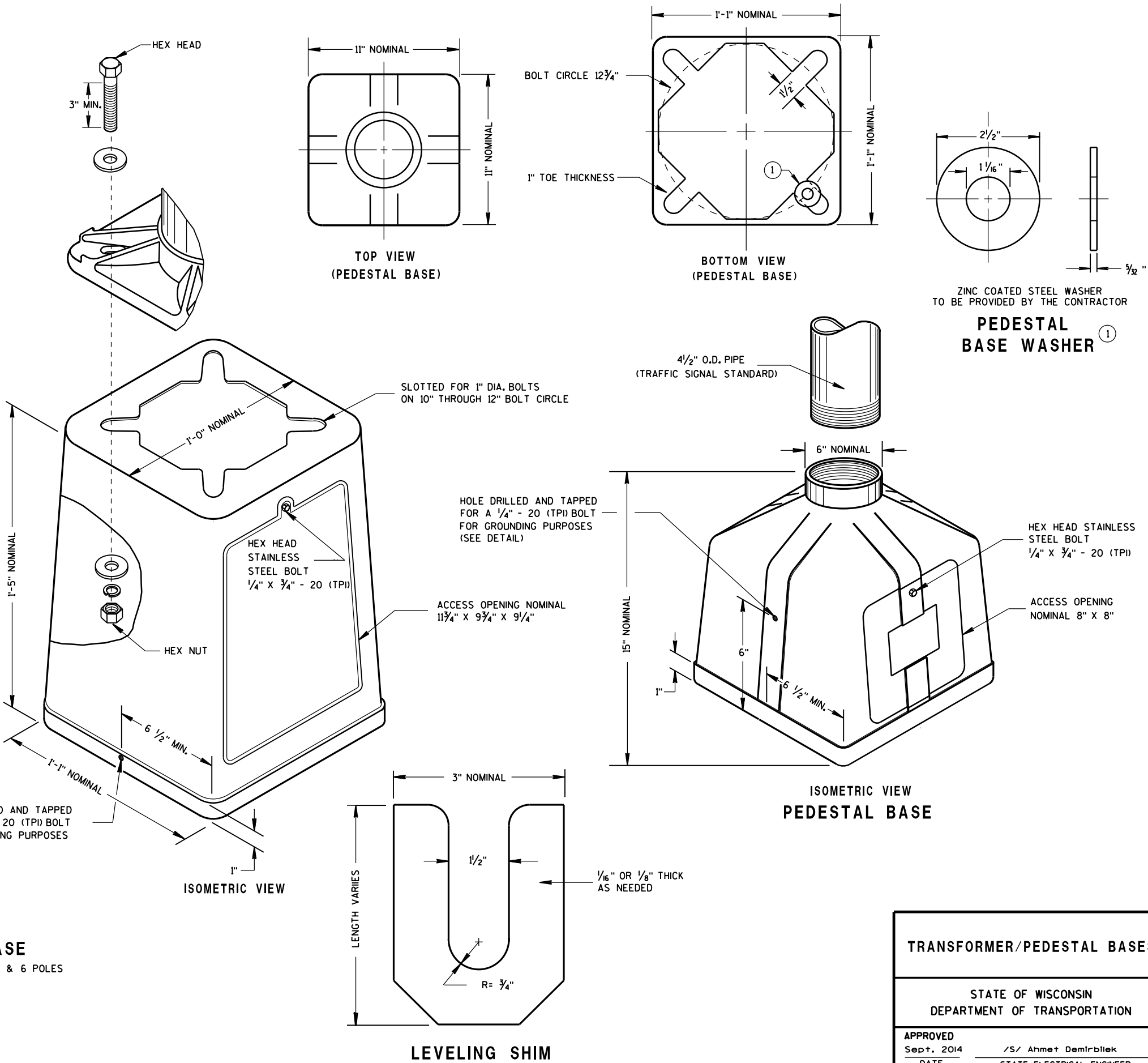
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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

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

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

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



TYPICAL MECHANICAL
CONNECTOR LUG
TO BE FURNISHED WITH EACH BASE

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

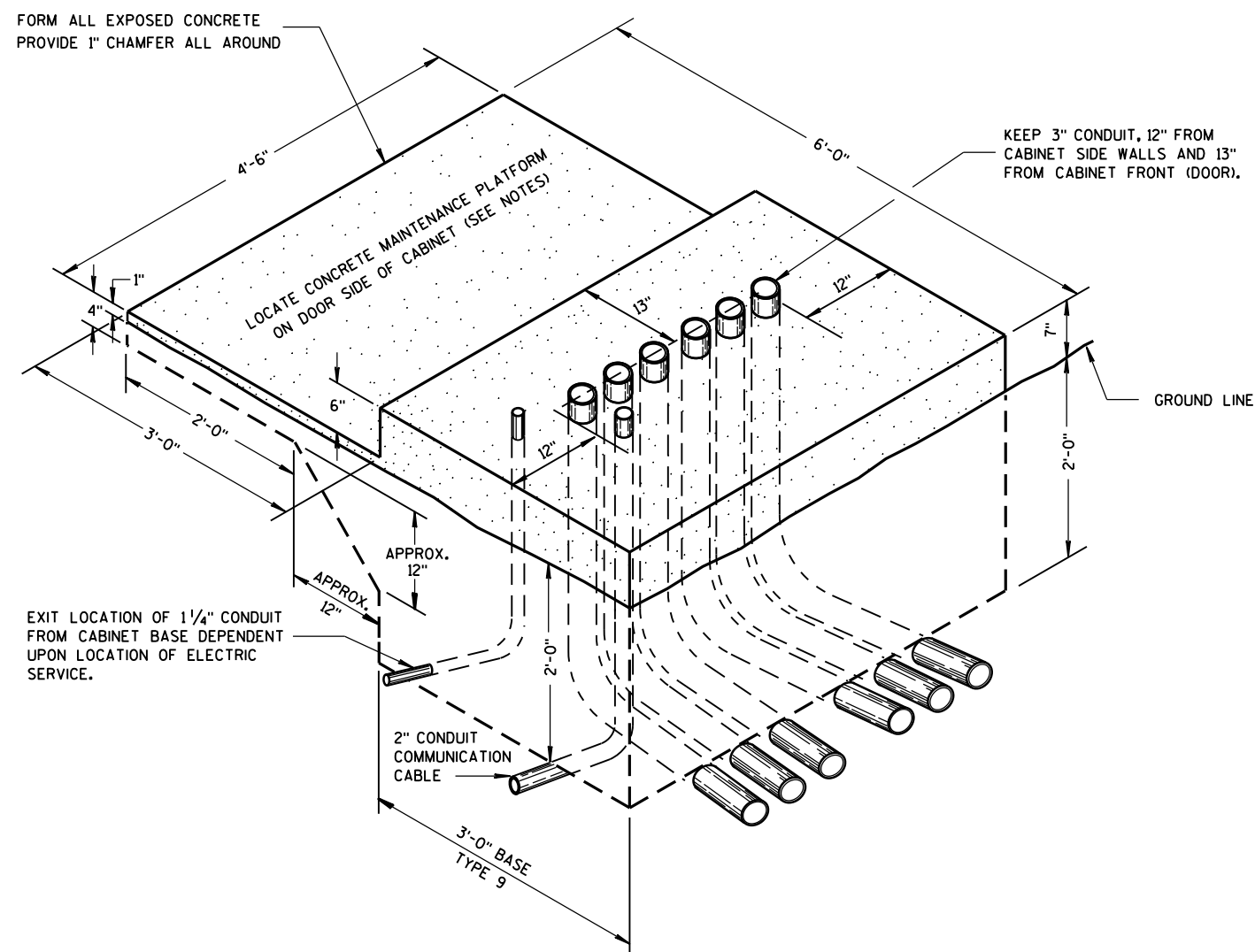
ISOMETRIC VIEW
PEDESTAL BASE

LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

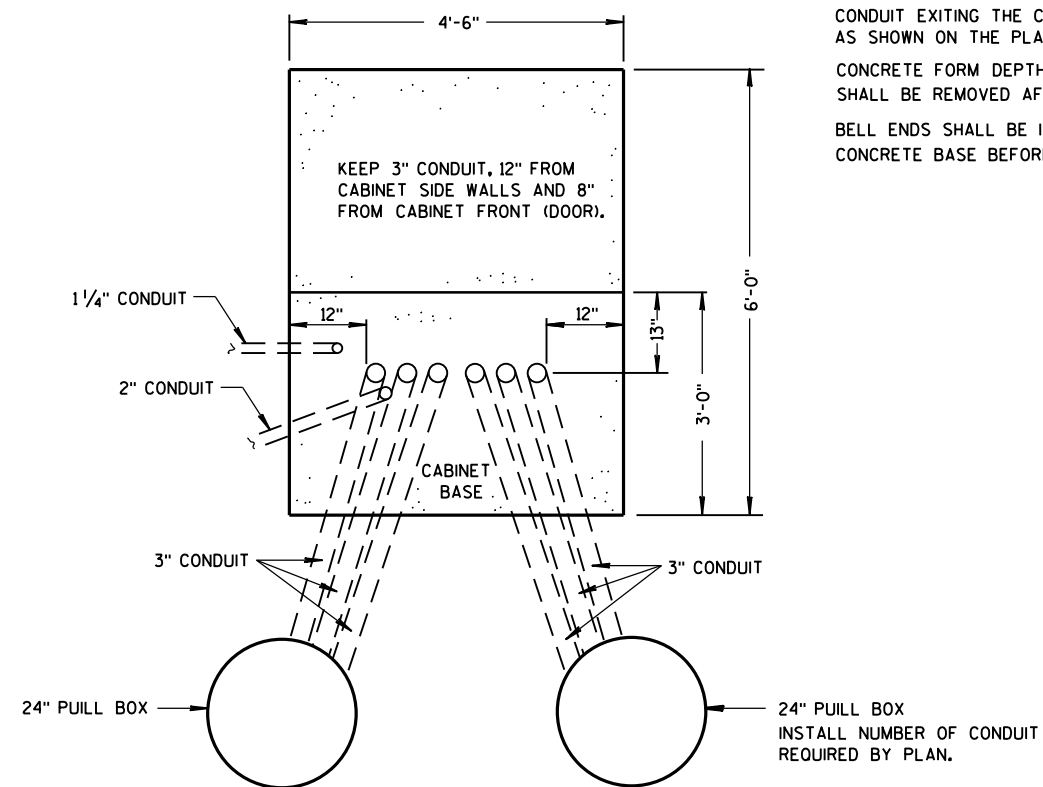
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER

FHWA

6

S.D.D. 9 C 11-6

S.D.D. 9 C 11-6

S.D.D. 9 C 11-6

S.D.D. 9 C 11-6

S.D.D. 9 C 11-6

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S.D.D. 9 C 11-6



S.D.D. 9 C 11-6



S.D.D. 9 C 11-6

S.D.D. 9 C 11-6

S.D.D. 9 C 11-6

S.D.D. 9 C 11-6

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).

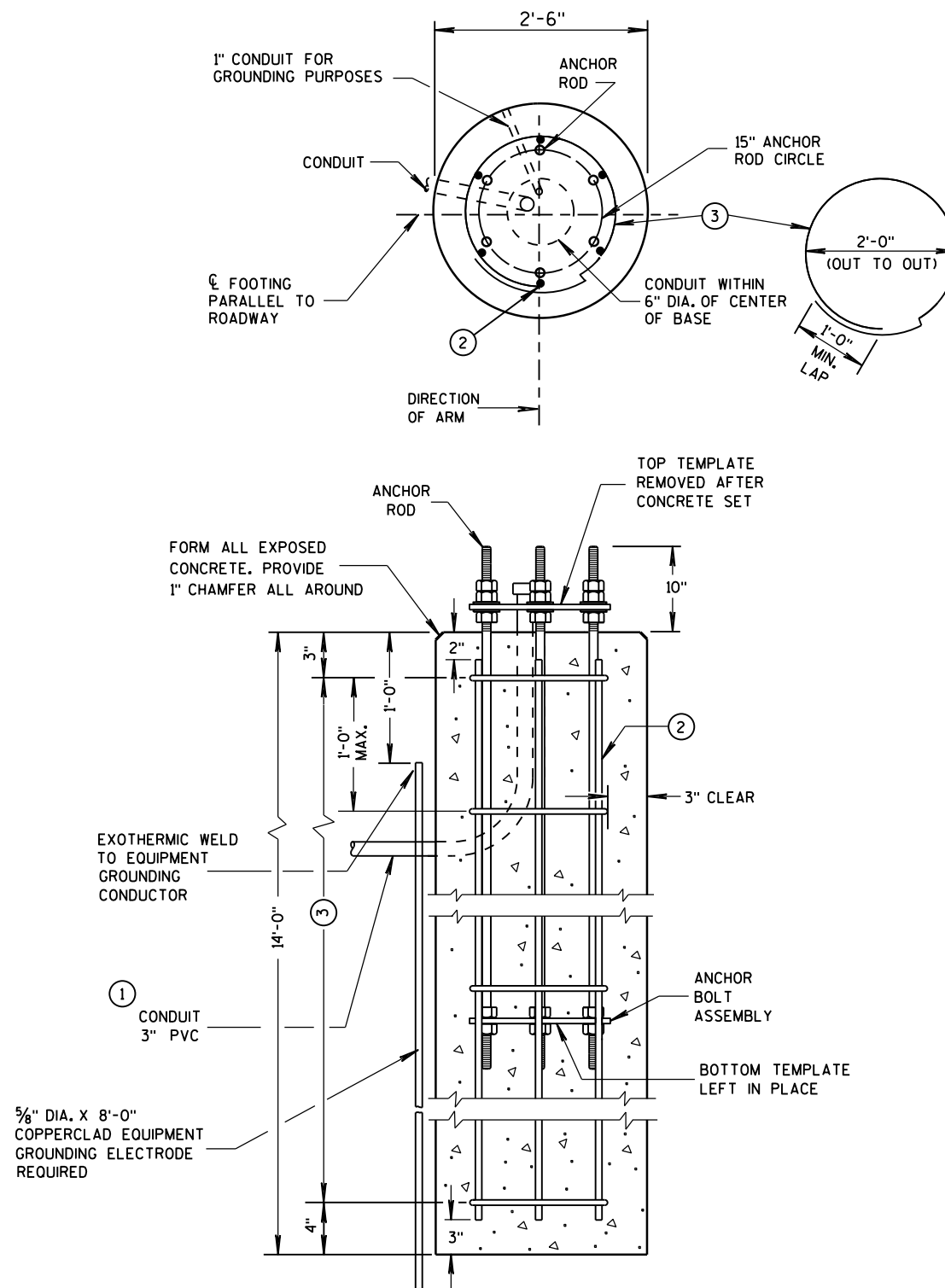
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

- 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.

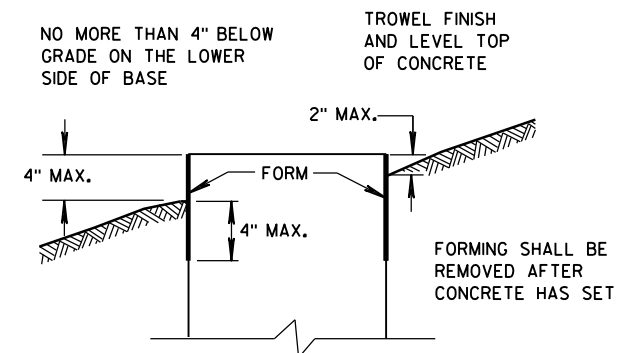
- ③ (15) NO. 4 X 7'-4" BAR STEEL REINFORCEMENT @ 1'-0" MAX. C-C.

CONCRETE MASONRY	-----	$f_c=3,500$ p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	-----	$f_y=60,000$ p.s.i.
ANCHOR RODS, AASHTO M314 GRADE 55	-----	$f_y=55,000$ p.s.i.
TEMPLATES, ASTM, A709 GRADE 36	-----	$f_y=36,000$ p.s.i.

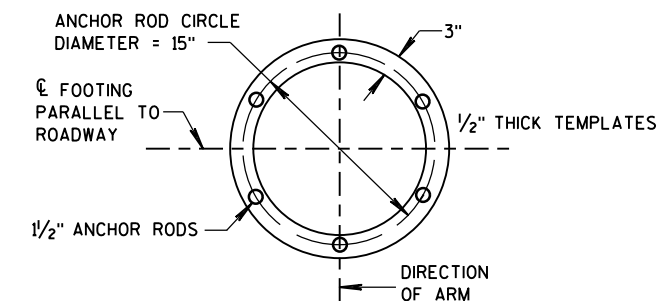


CONCRETE BASE TYPE 10 (FOR TYPE 9 & 10 POLES)

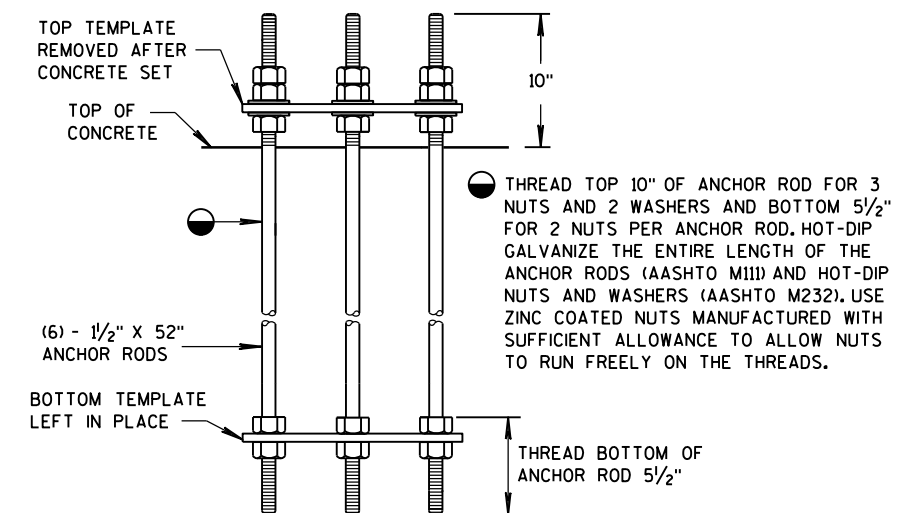
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

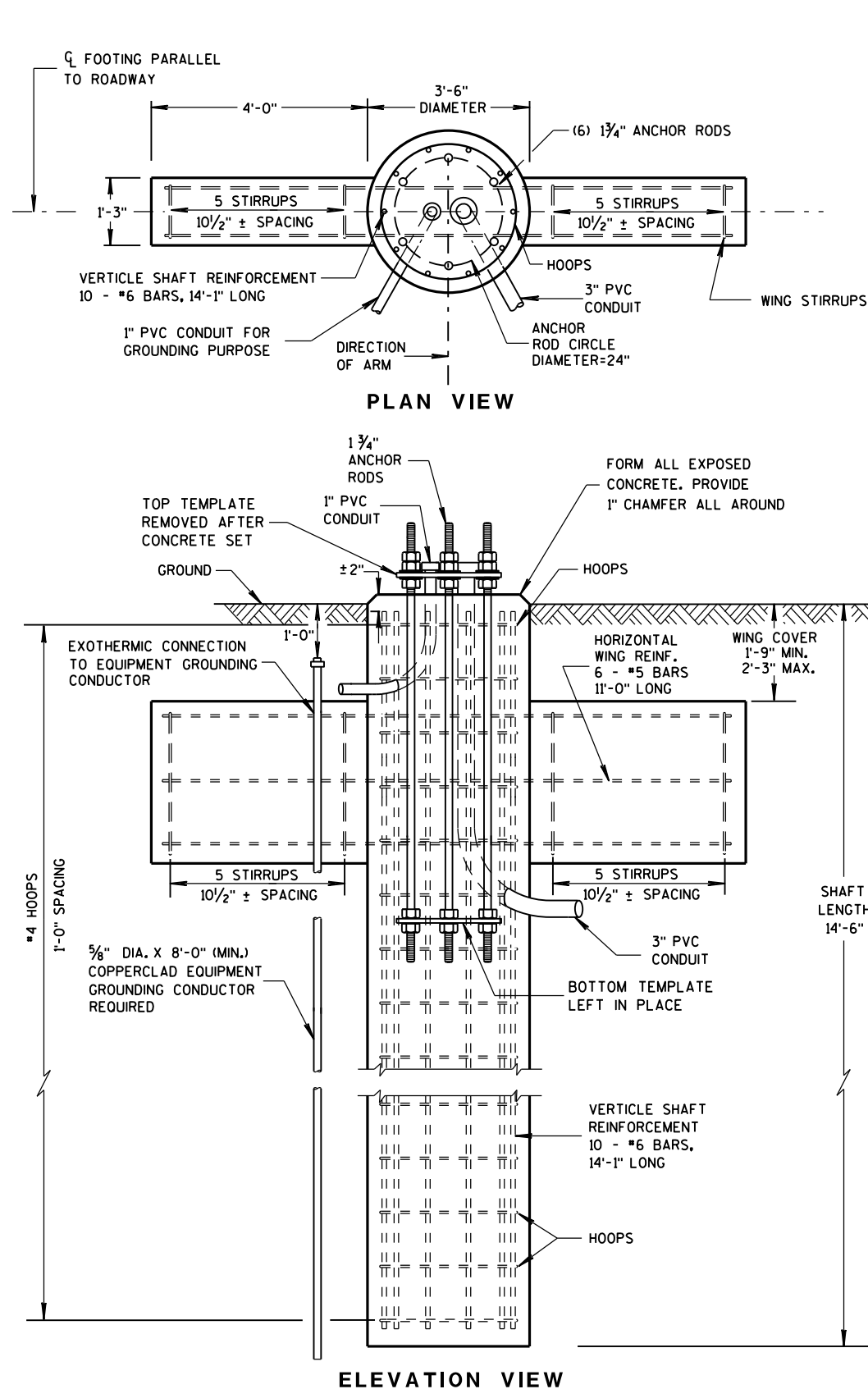
CONCRETE BASE TYPE 10 ANCHOR ASSEMBLY

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	69
LBS. OF VERTICAL BAR STEEL	122

CONCRETE BASE TYPE 10

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

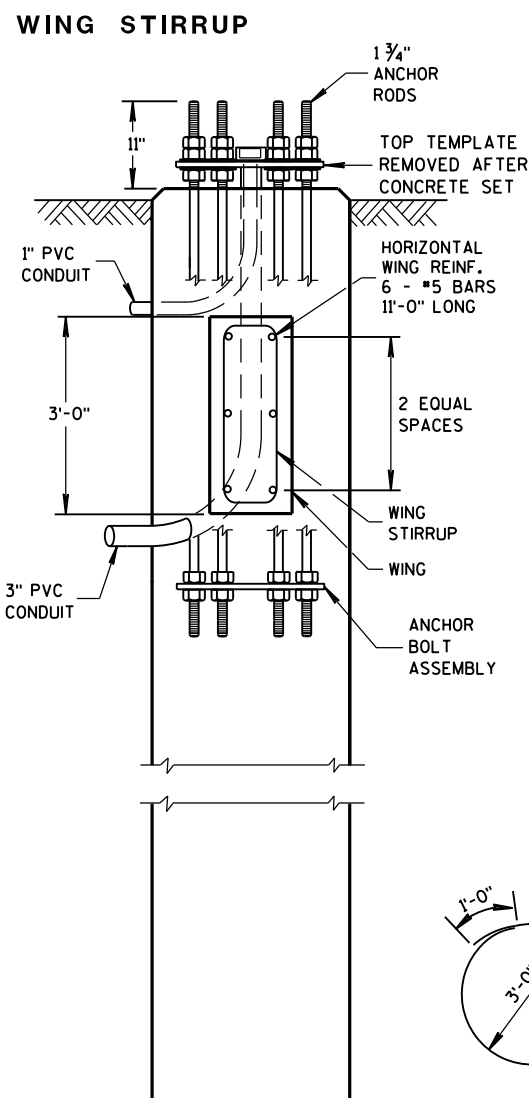
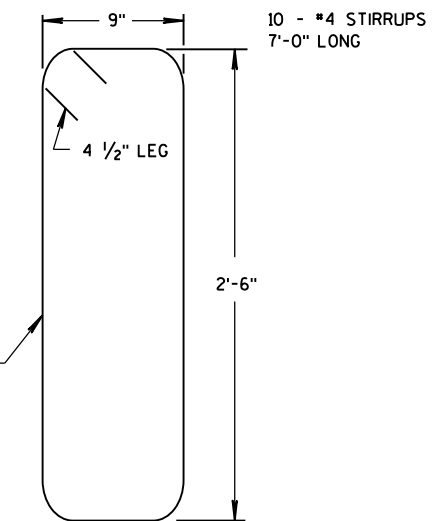
APPROVED
June, 2015 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA



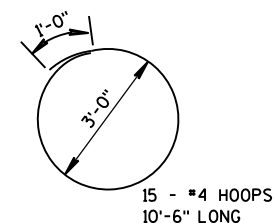
(FOR TYPE 12 & 13 POLES)

CONCRETE = 6.3 C.Y.
H.S. REINFORCEMENT = 433 LBS.

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.



DOES NOT SHOW HOOPS OR
VERTICAL SHAFT REINFORCEMENT

**GENERAL NOTES**

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

ORIENT ANCHOR RODS IN FOOTING AND PROVIDE ANCHOR ROD PROJECTION ABOVE TOP OF CONCRETE FOOTING BASE PER THIS SHEET.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF THE UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

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

BASES (SHAFT), BELOW THE WING, SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, 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.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

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

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

CONDUIT HEIGHT ABOVE CONCRETE BASE SHALL BE 4 1/2" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

ALL CONDUIT ENDS AT THE TOP OF THE 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.

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

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTOR FITTINGS, UL LISTED FOR ELECTRICAL USE, SHALL BE USED.

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 BE FURNISHED AND INSTALLED TO 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.

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

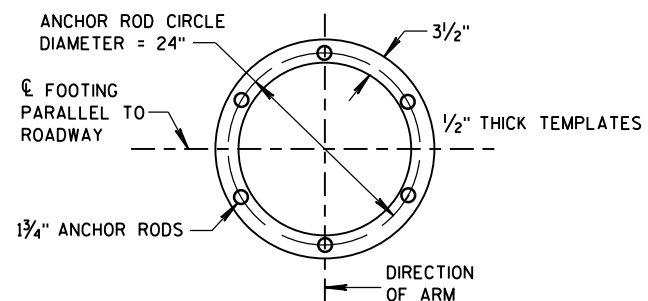
THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVEL WAY SHALL BE 24-INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18-INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36-INCHES, (GREATER THAN 36-INCHES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

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

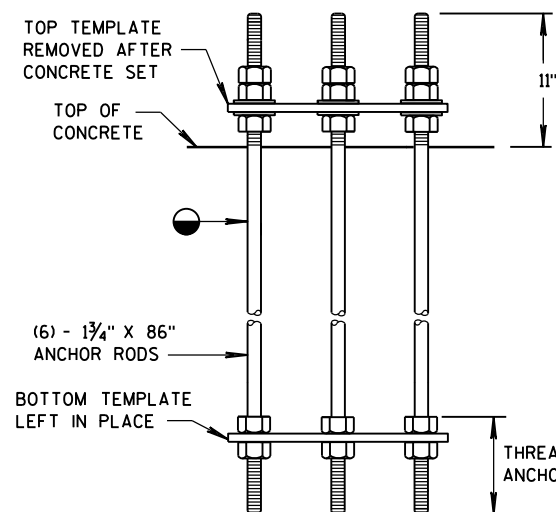
CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, AASHTO M314 GRADE 55	fy=55,000 p.s.i.
TEMPLATES, ASTM A709 GRADE 36	fy=36,000 p.s.i.

CONCRETE BASE TYPE 13

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TOP AND BOTTOM TEMPLATES

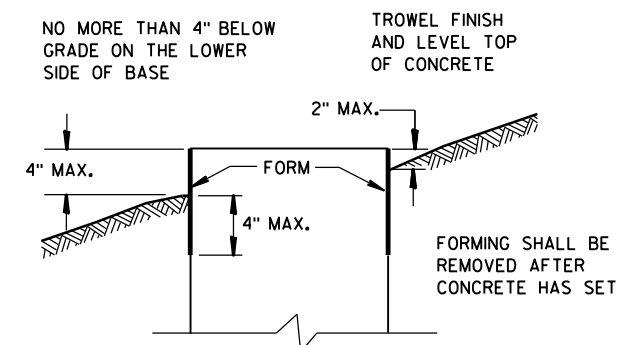


ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 13 ANCHOR ASSEMBLY

● THREAD TOP 11" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 1/2" FOR 2 NUTS PER ANCHOR ROD. HOT-DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR RODS (AASHTO M111) AND HOT-DIP NUTS AND WASHERS (AASHTO M232). USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

THREAD BOTTOM OF ANCHOR ROD 5 1/2"



FORMING DETAIL

CONCRETE BASE TYPE 13

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

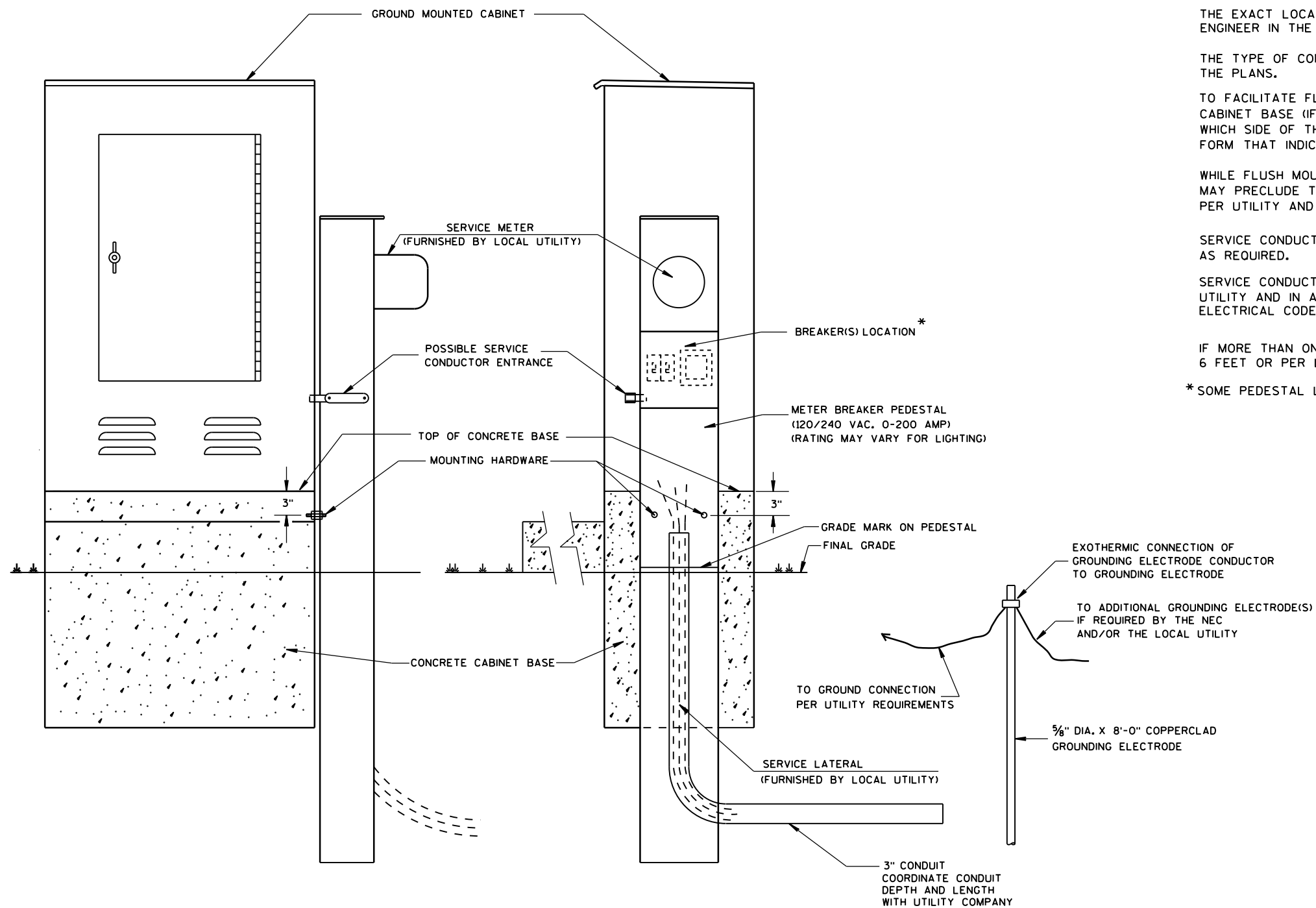
APPROVED

Feb. 2015

DATE

FHWA

/S/ Ahmet Demirelek
STATE ELECTRICAL ENGINEER



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.

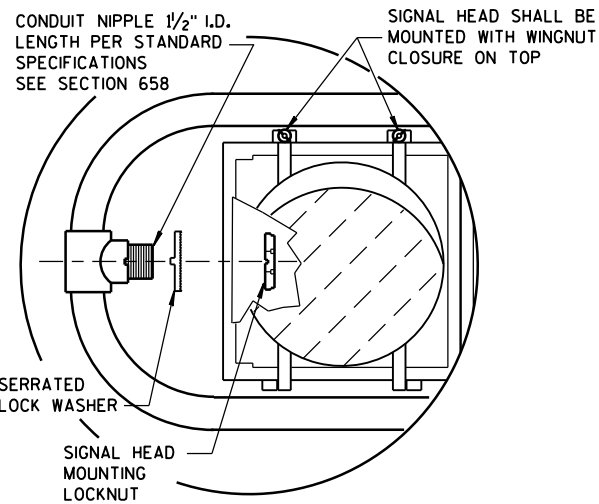
CABINET SERVICE INSTALLATION
(METER BREAKER PEDESTAL)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014
DATE

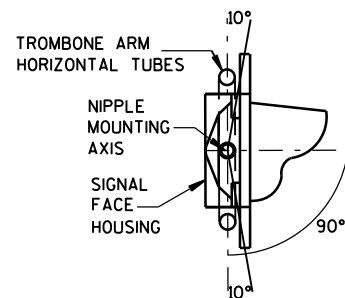
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER

FHWA



HORIZONTAL SIGNAL HEAD MOUNTING DETAIL *

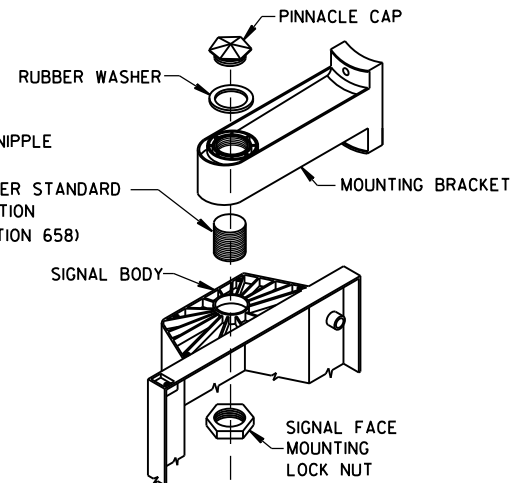
* SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR



SECTION A-A

(10 DEGREES TILT REQUIREMENT OF FACE(S) IN THE TROMBONE MOUNTING)

CONDUIT NIPPLE
1/2" I.D.
LENGTH PER STANDARD
SPECIFICATION
(SEE SECTION 658)



SIGNAL FACE MOUNTING DETAIL (BANDED)

GENERAL NOTES

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

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

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

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652 SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

TYPE 2 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

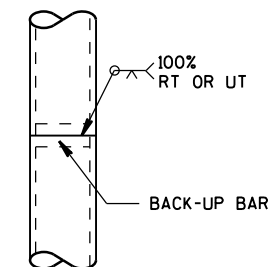
WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

- ① 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" X 3/4" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
- ② SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)
- ③ GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ④ SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- ⑤ POLE MOUNTED SIGNAL FACES SHALL REQUIRE 10R MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACES.
- ⑥ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ⑦ MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1/2 INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658).
- ⑧ VERTICAL STRUT (ADJUSTABLE), ONE (1) SET SCREW (1/4" X 3/4" LONG-20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.
- ⑨ 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.
- ⑩ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.
- ⑪ USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

*MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.

FOR MANUFACTURERS USE ONLY

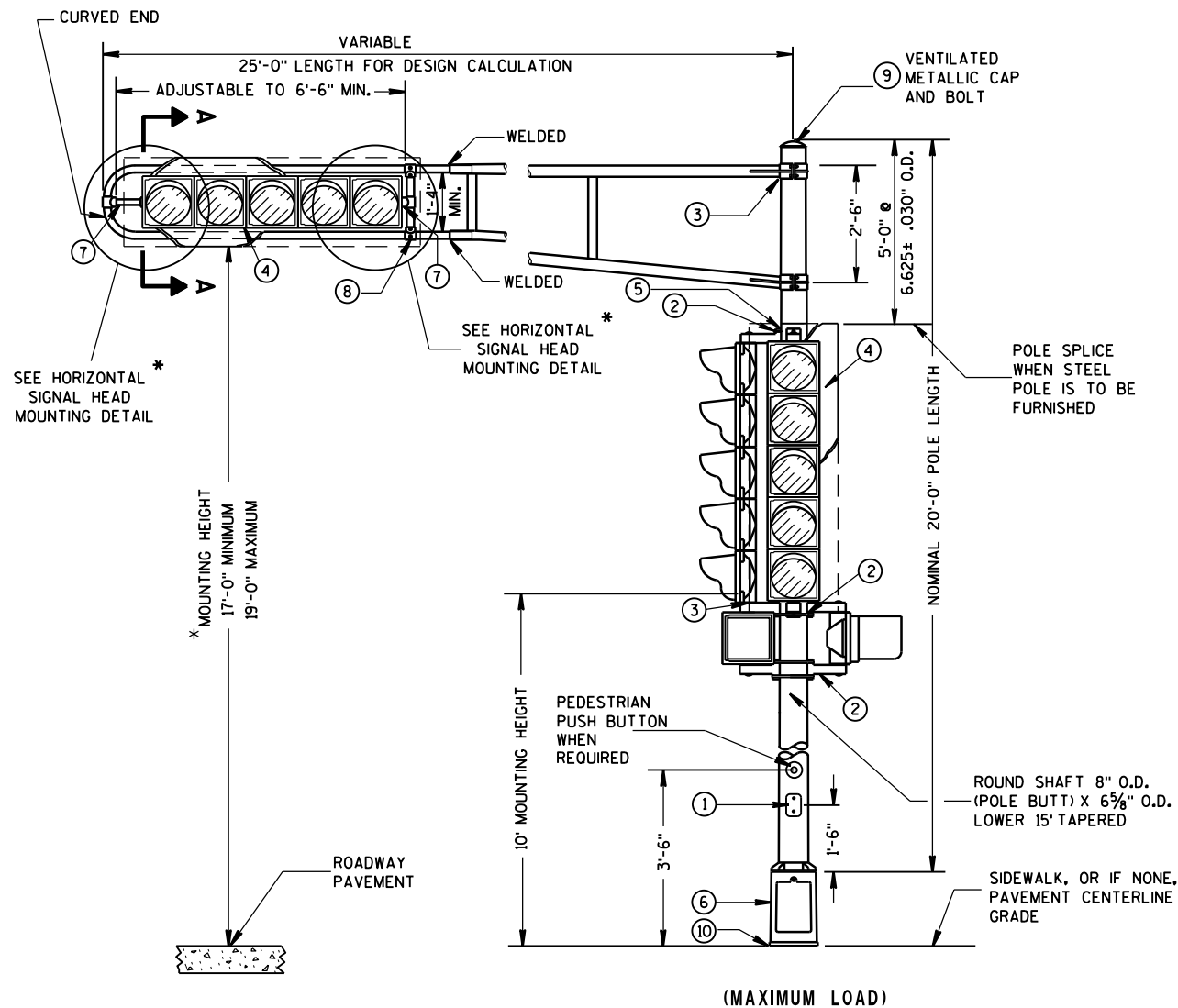
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.



POLE SPLICE DETAIL

POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2

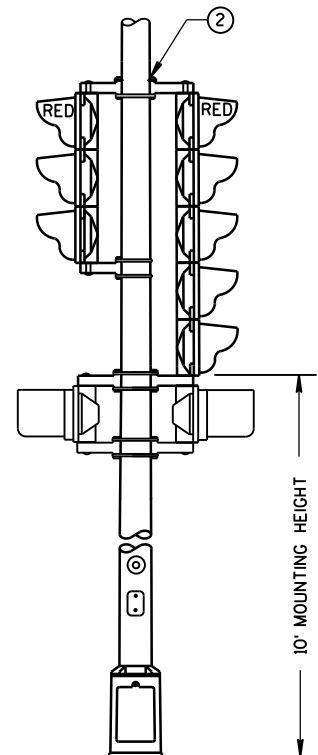
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



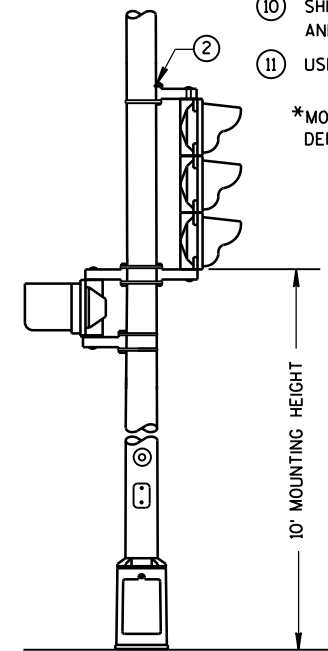
(MAXIMUM LOAD)

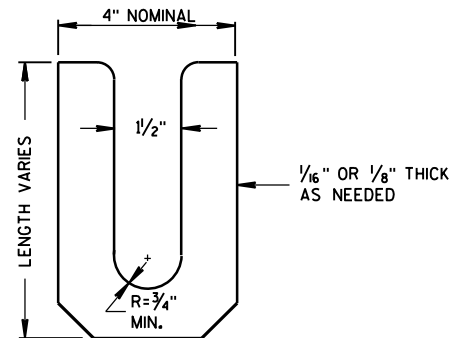
TYPICAL MOUNTING OF BACK TO BACK
3 AND 5 SECTION SIGNAL FACES

TYPE 2 POLE MOUNTING CONFIGURATION

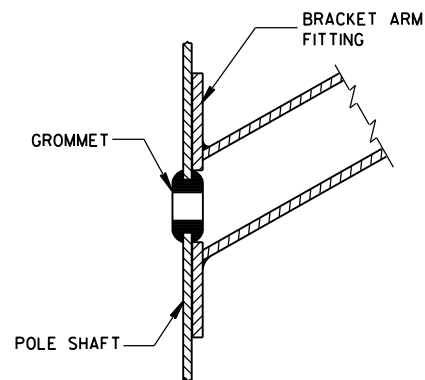


TYPICAL MOUNTING OF 3 SECTION
SIGNAL FACE

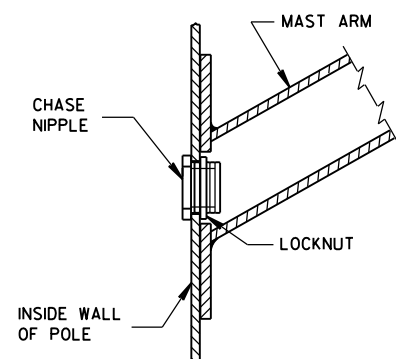




LEVELING SHIM
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



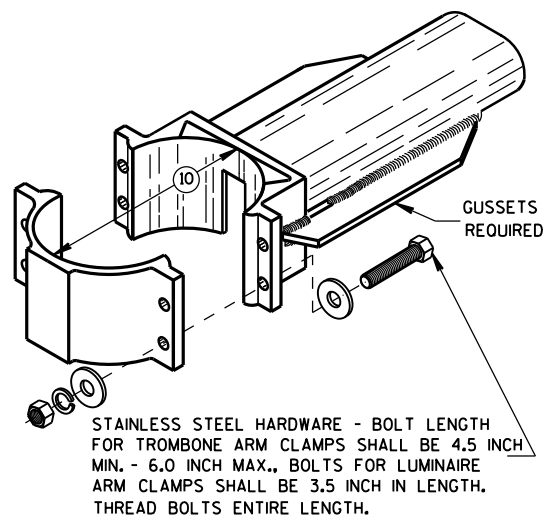
TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

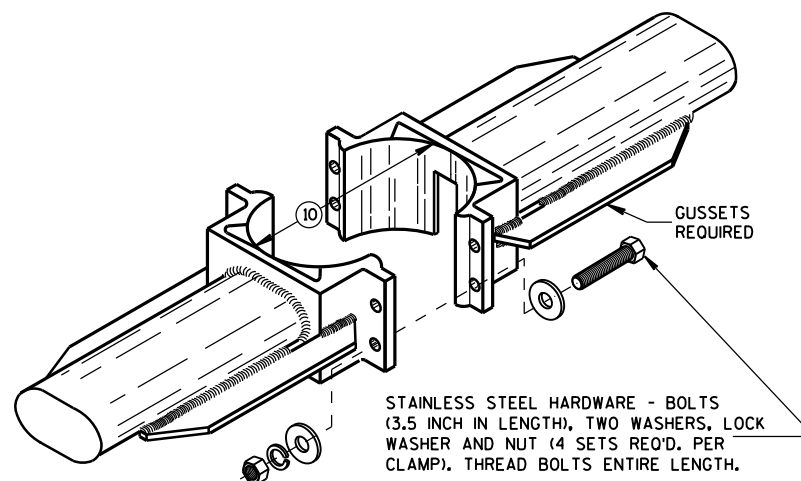
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- 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.

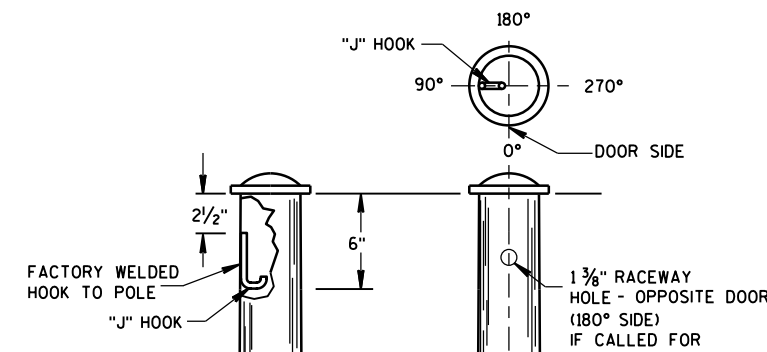
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE
AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



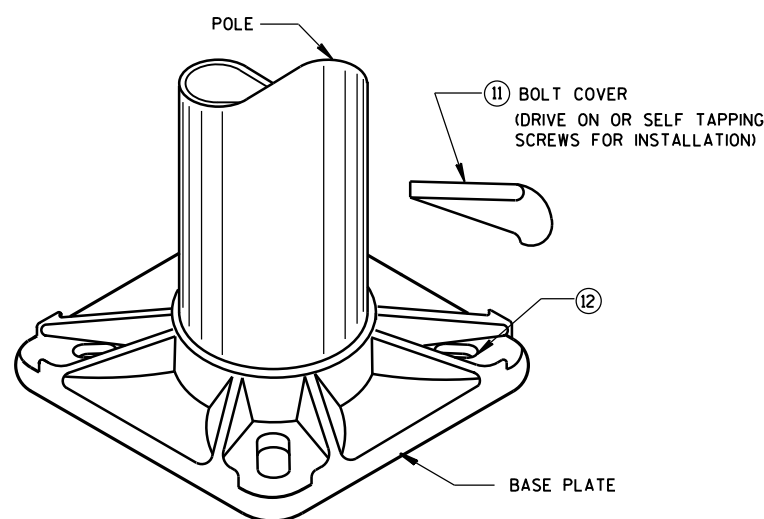
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



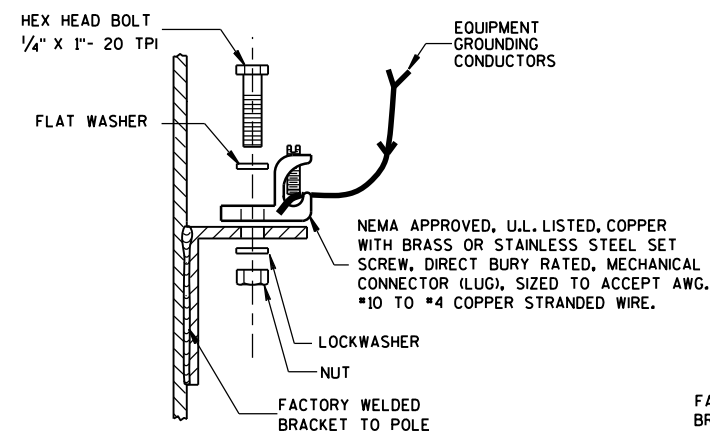
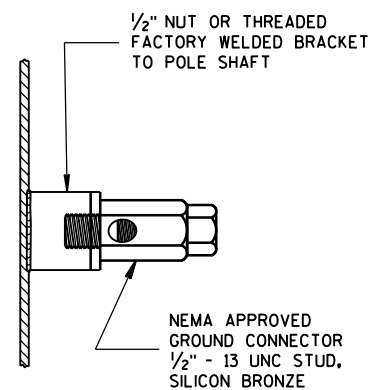
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



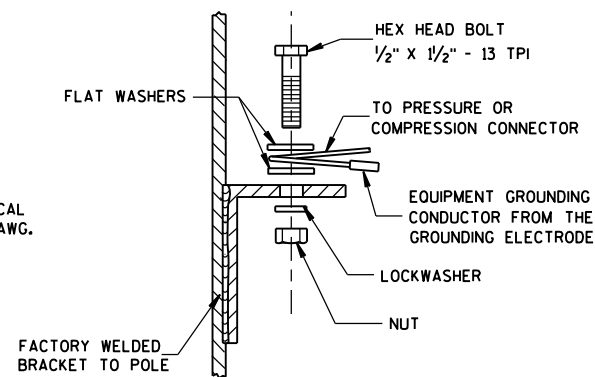
TYPICAL "J" HOOK LOCATION



BASE PLATE



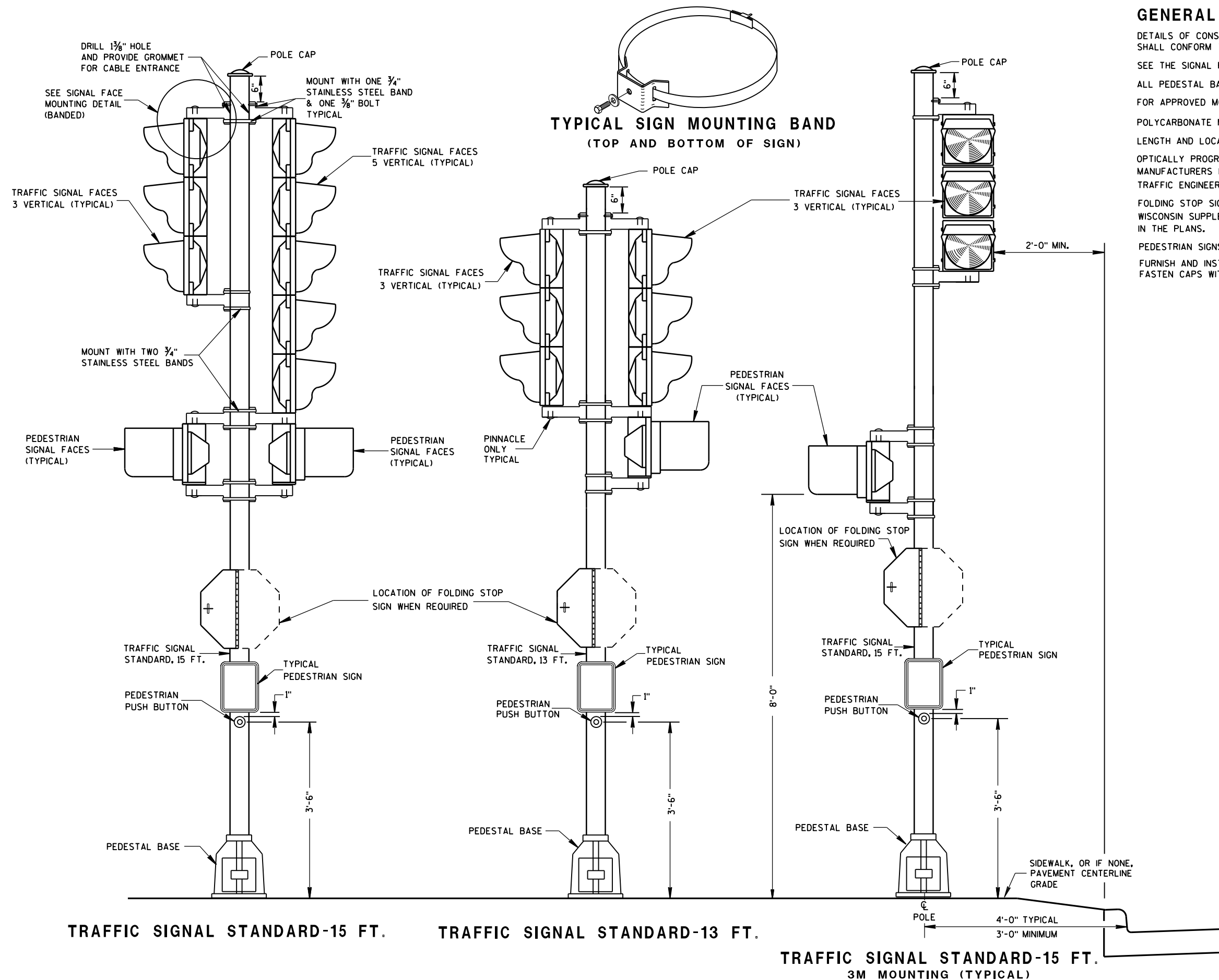
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL
BE STAINLESS STEEL



HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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.

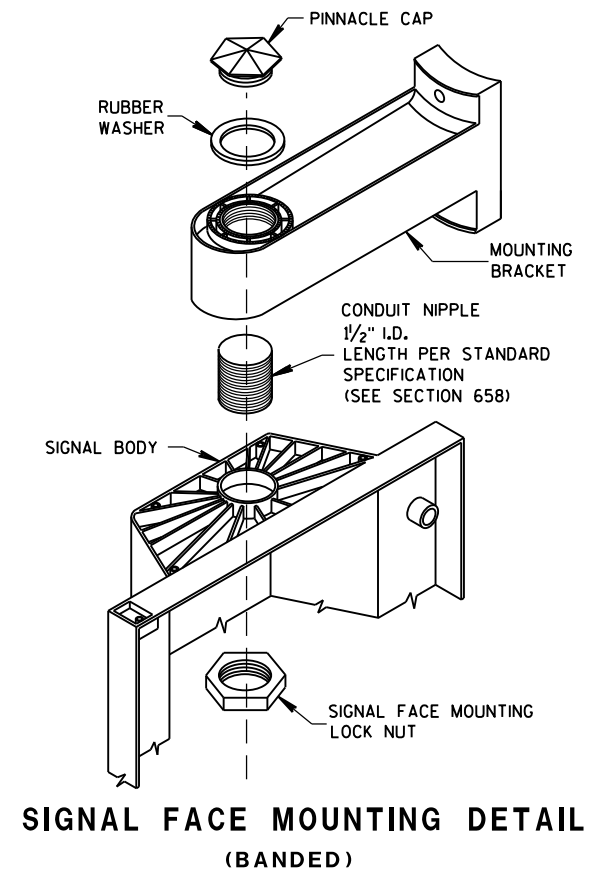
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

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.



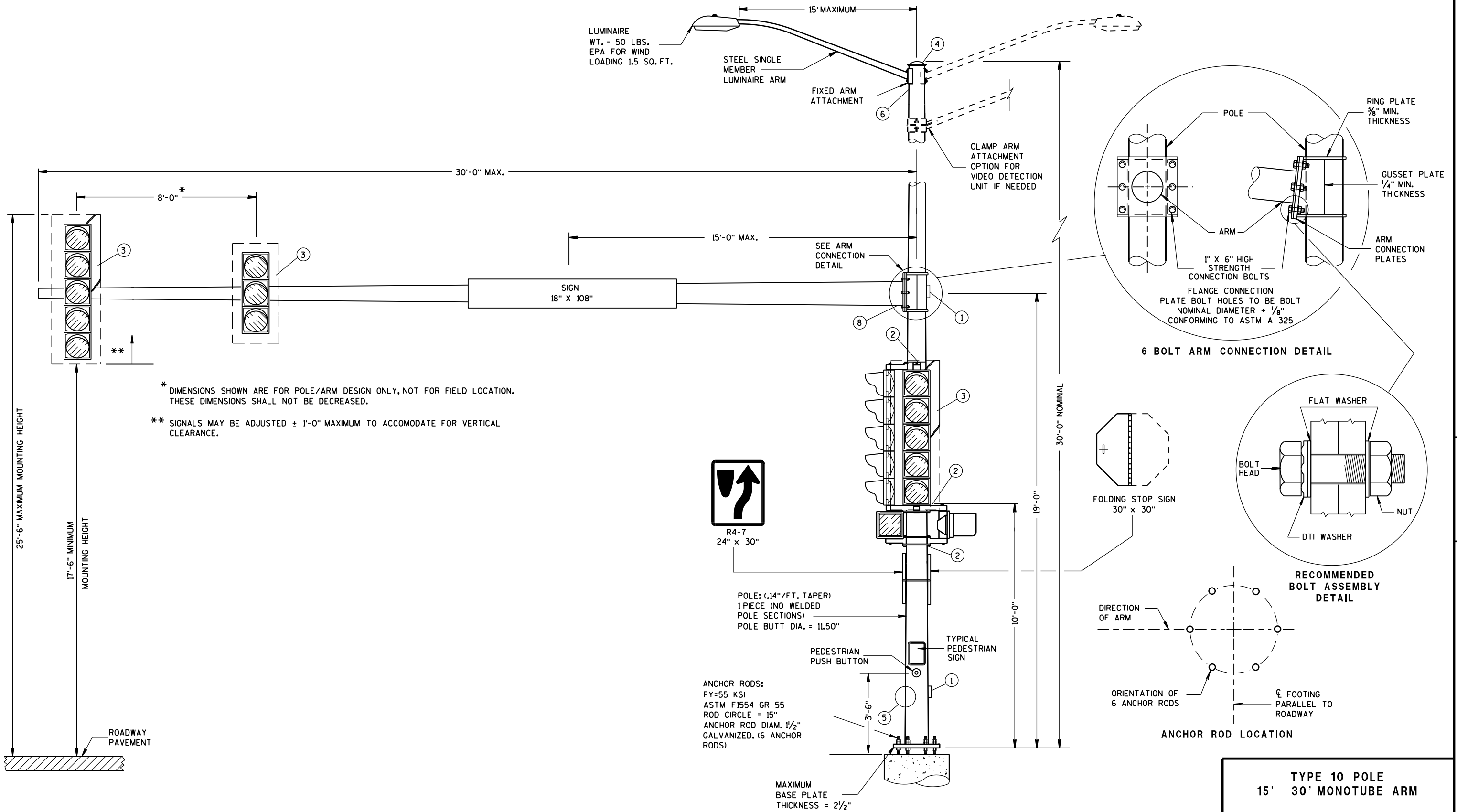
**TRAFFIC SIGNAL STANDARD
POLY BRACKET MOUNTINGS
(TYPICAL) 13 FT. OR 15 FT.**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/28/2013
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER

FHWA



(MAXIMUM LOAD)

TYPE 10 POLE
15' - 30' MONOTUBE ARM

TYPE 10 POLE
15' - 30' MONOTUBE ARM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
FHWA

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER



TYPE 12 POLE	
35' - 55' MONOTUBE ARM	
STATE OF WISCONSIN	
DEPARTMENT OF TRANSPORTATION	
APPROVED	
<u>June, 2015</u>	<u>/S/ Ahmet Demirbilek</u>
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.

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 ½ ± 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:

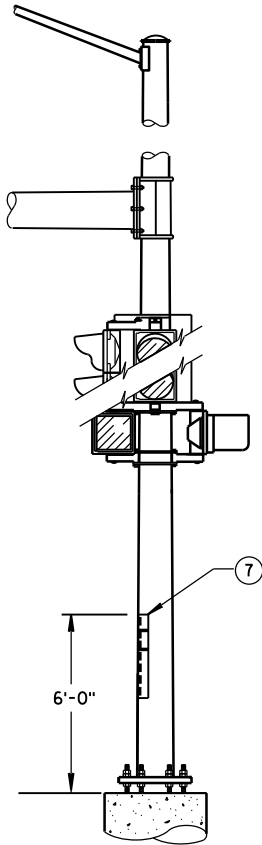
- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
- CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 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.

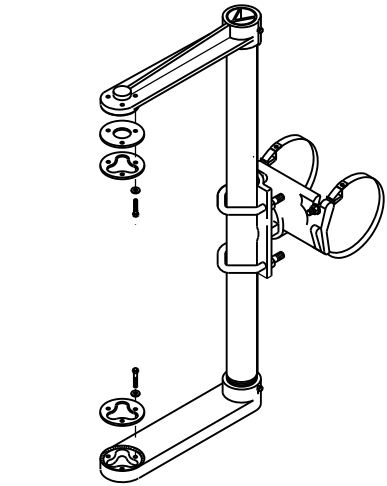
INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

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.

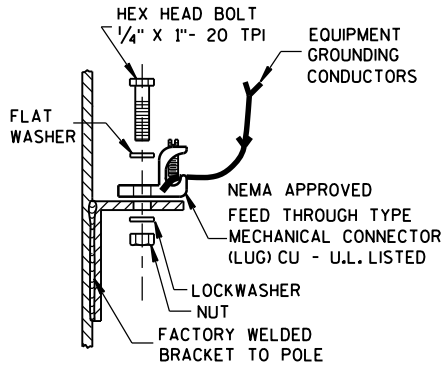


STRUCTURAL IDENTIFICATION
PLAQUE PLACEMENT



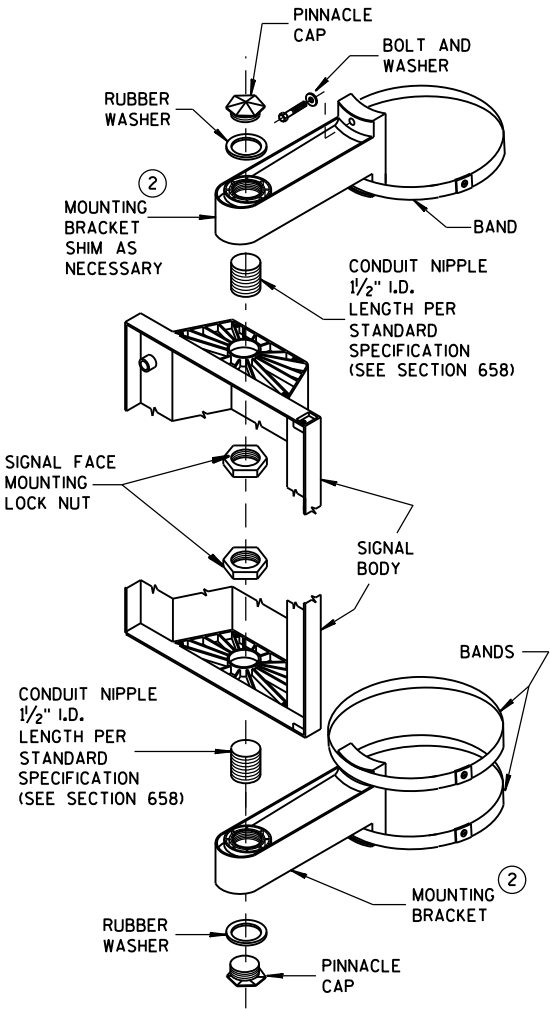
SIGNAL FACE MOUNTING BRACKET
DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

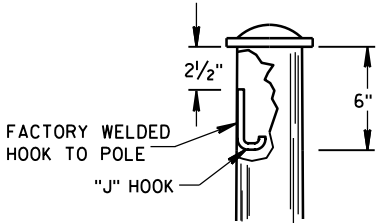


TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL
BE STAINLESS STEEL



SIGNAL FACE
VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT

- ① DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO ¼" x ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.
- ② SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).
- ③ SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.
- ④ 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.
- ⑤ 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.
- ⑥ FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.
- ⑦ 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.

- ⑧ 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

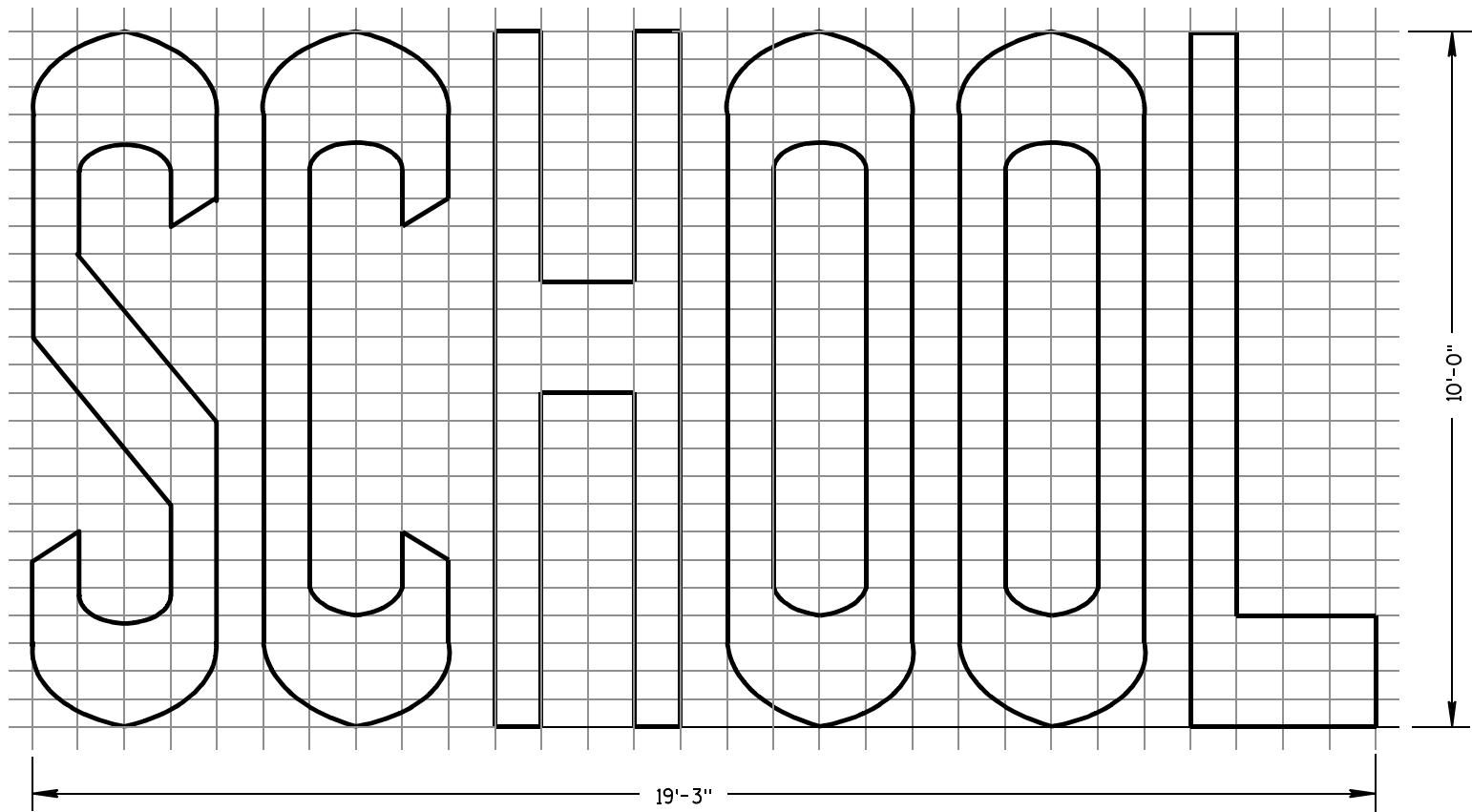
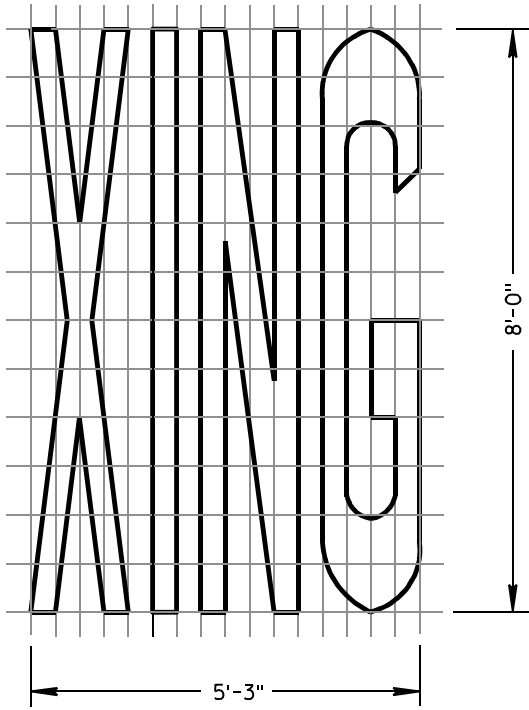
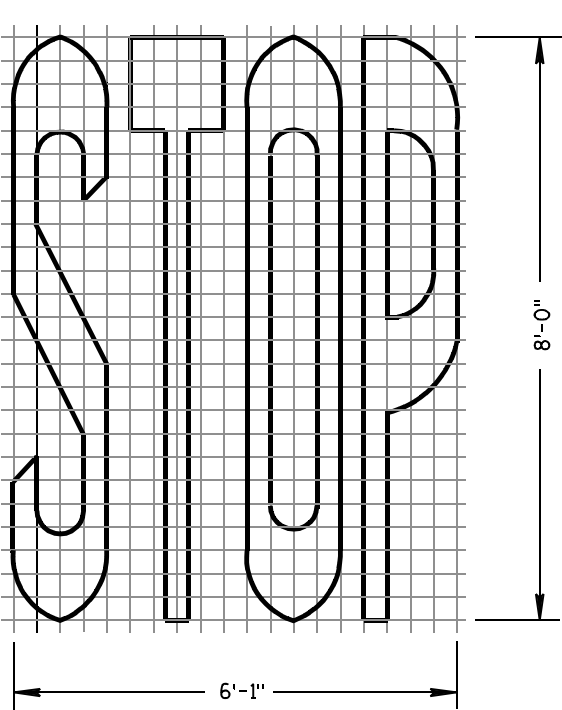
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA

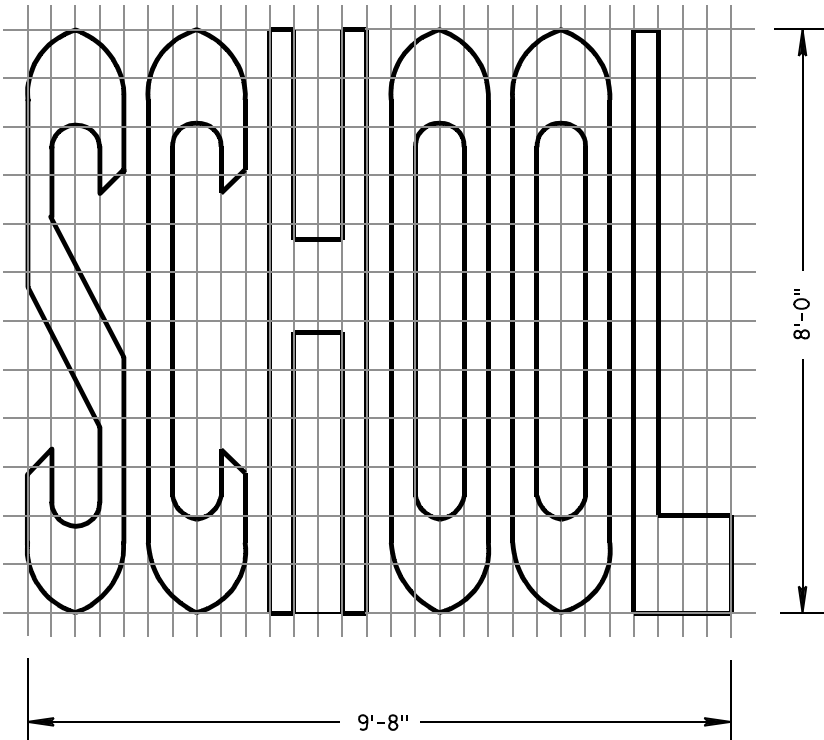
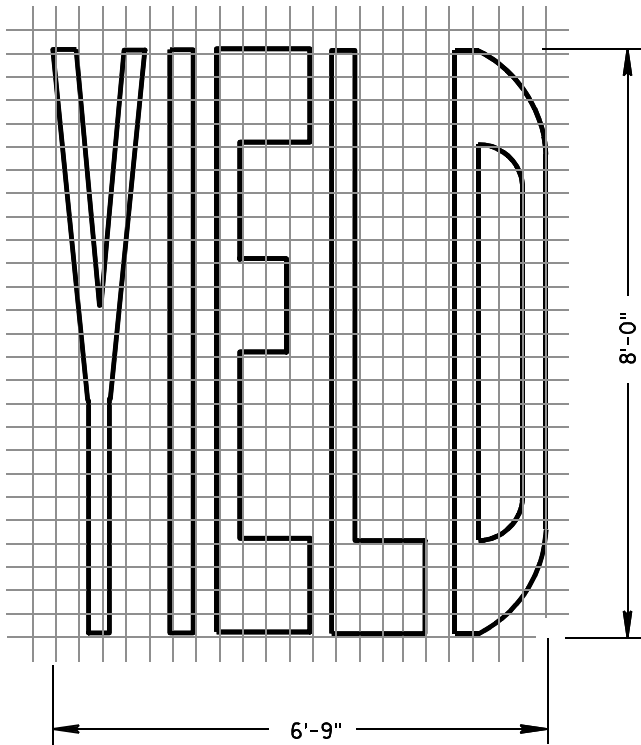
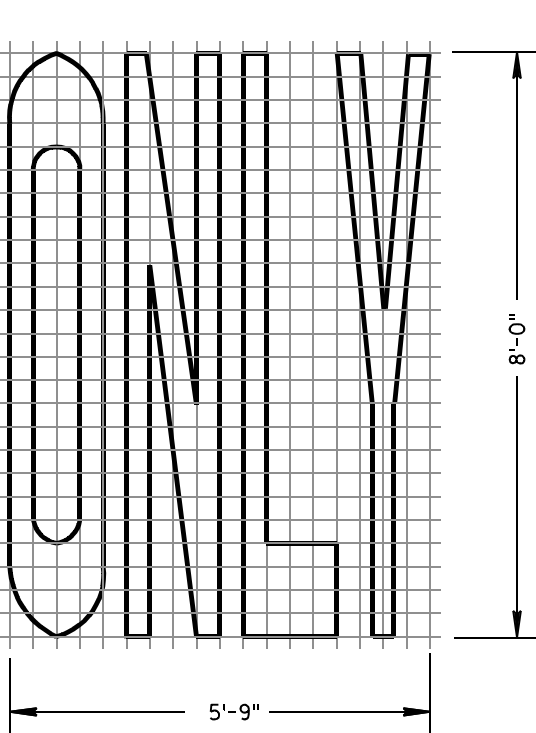
GENERAL NOTES

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

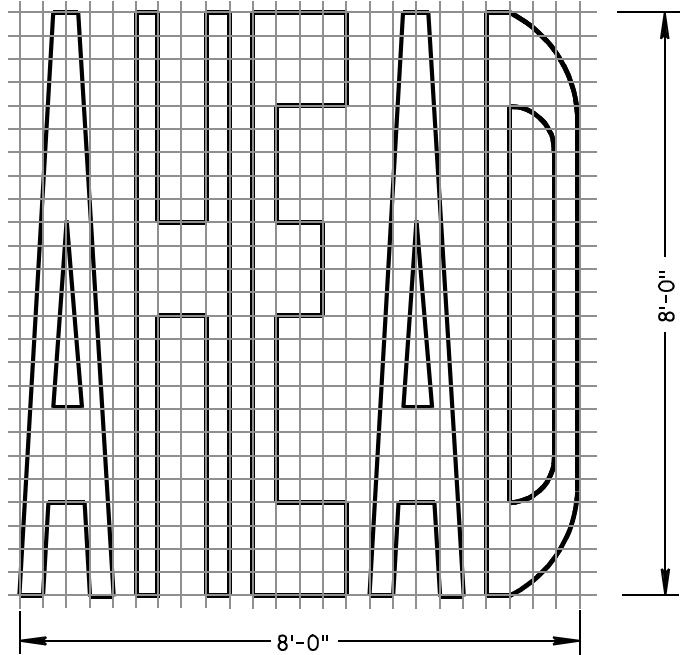
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES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



TWO-LANE



SINGLE-LANE



PAVEMENT MARKING WORDS

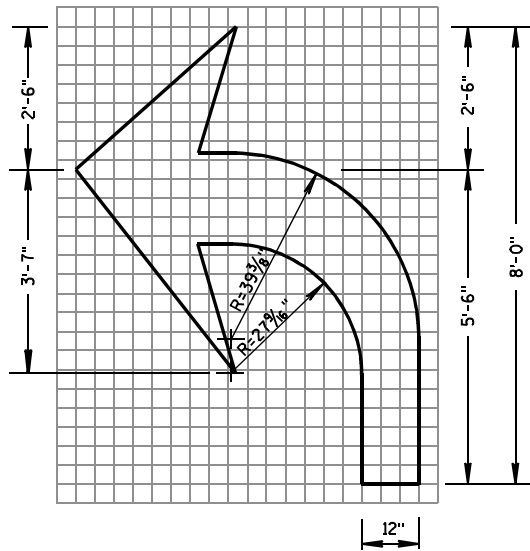
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

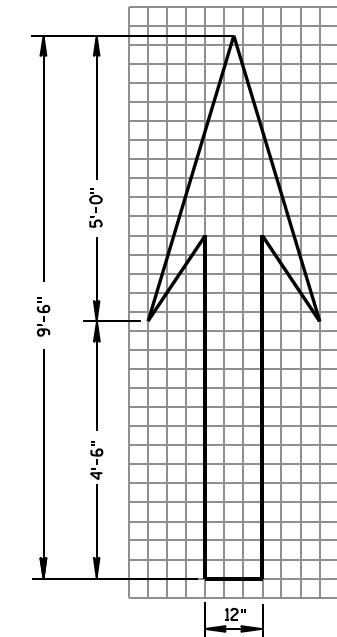
7-1-11
DATE

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

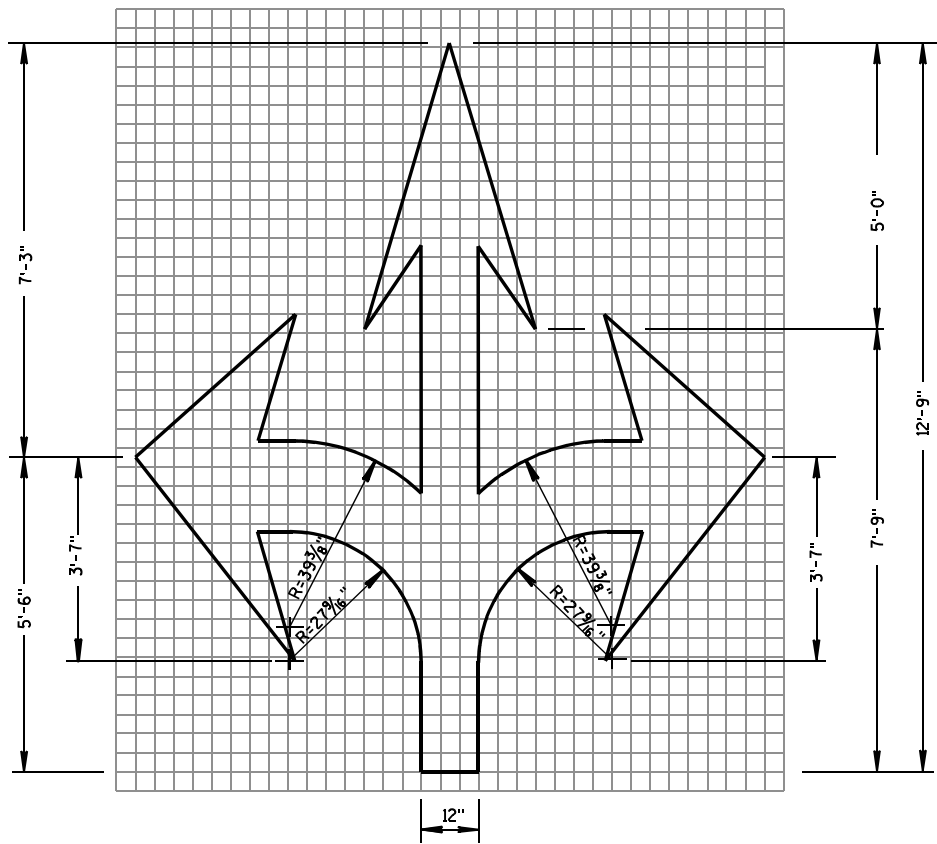
FHWA



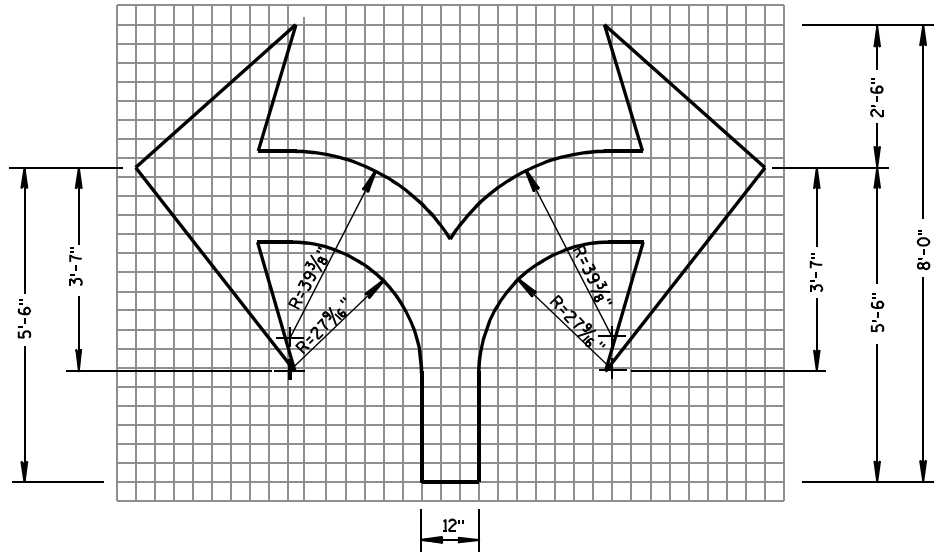
TYPE 2



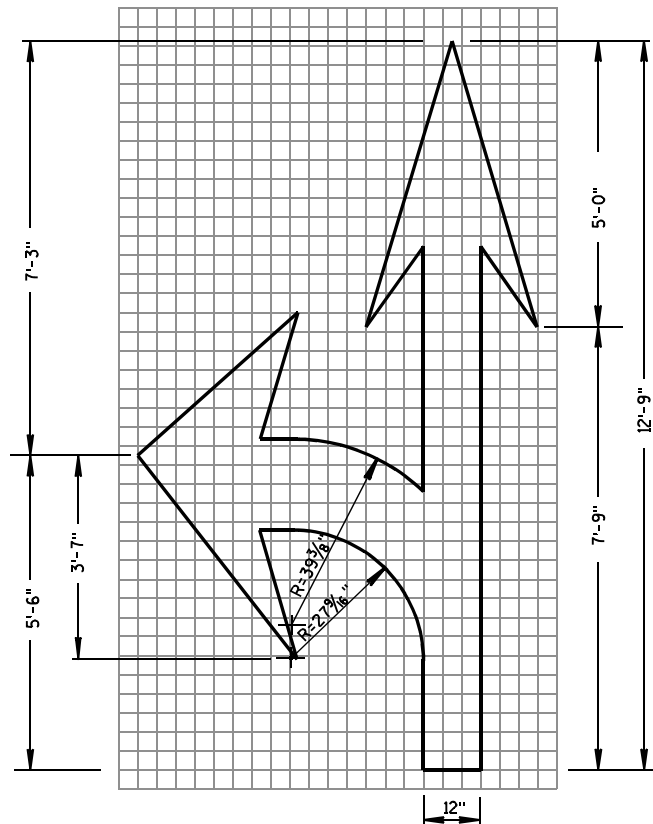
TYPE 1



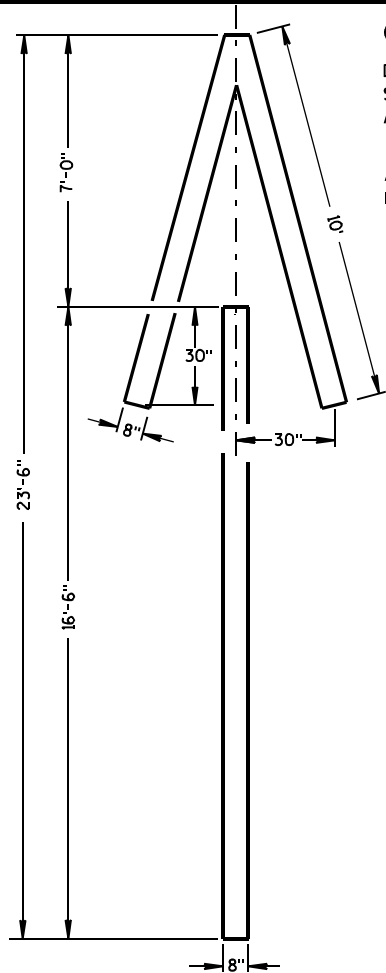
TYPE 6



TYPE 7



TYPE 3

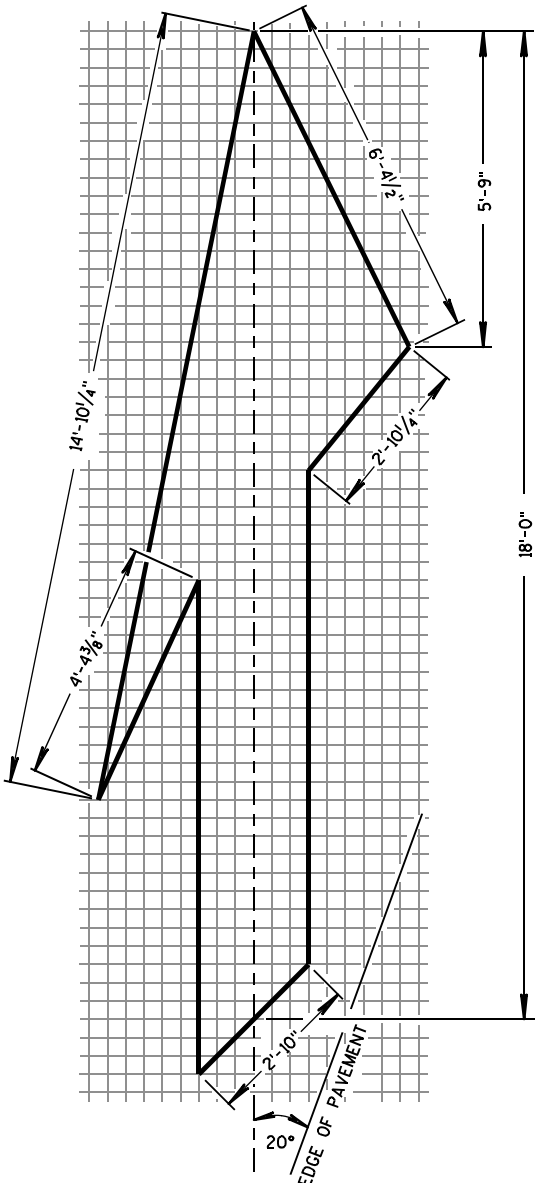


TYPE 4

GENERAL NOTES

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

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



TYPE 5 LANE DROP ARROW

PAVEMENT MARKING ARROWS

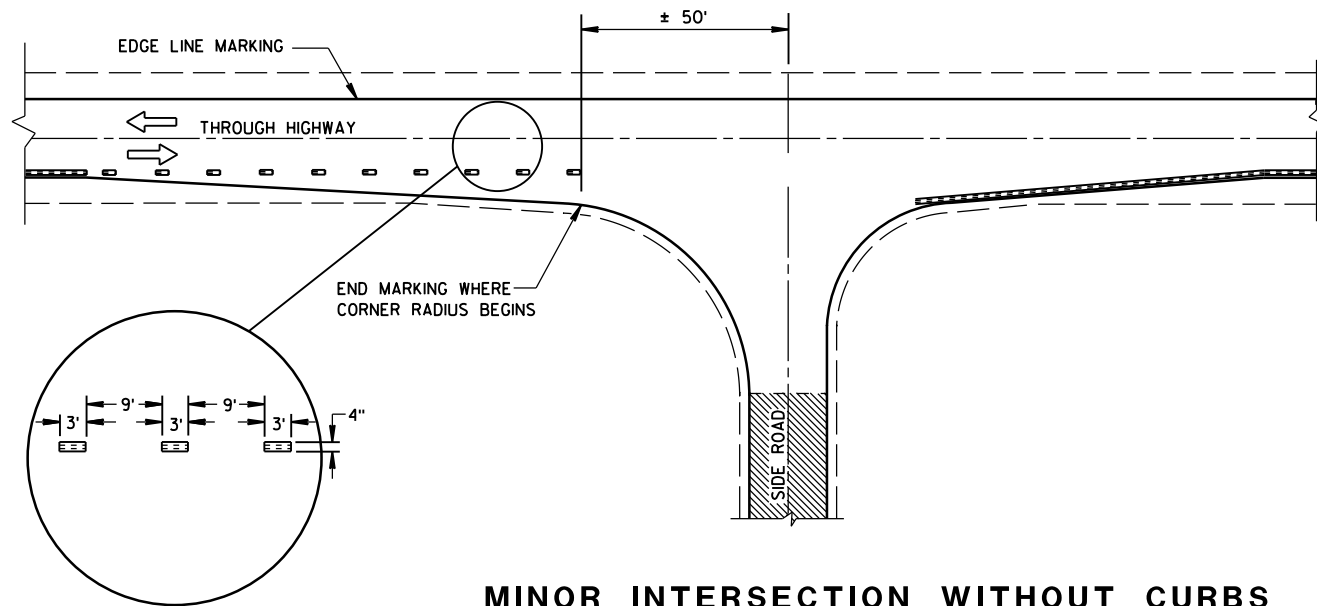
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/1/11
DATE

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

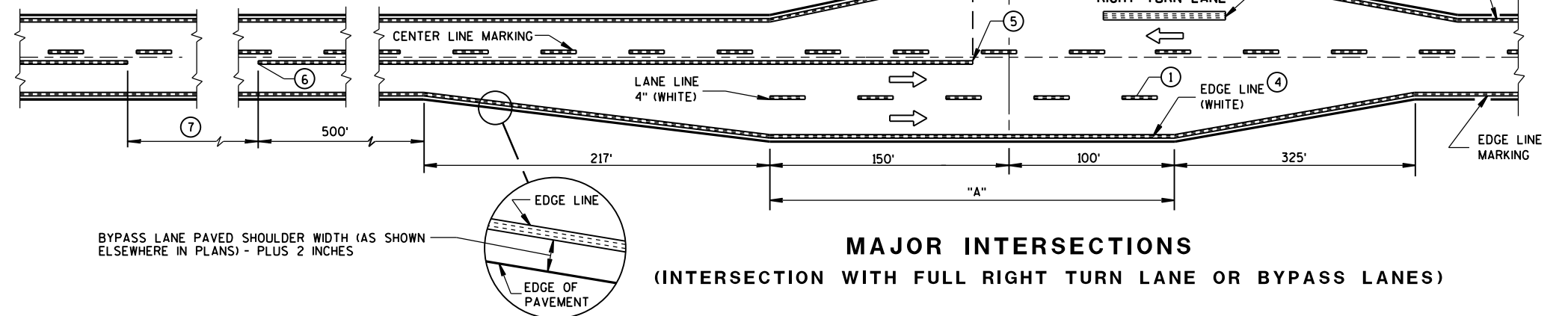
FHWA



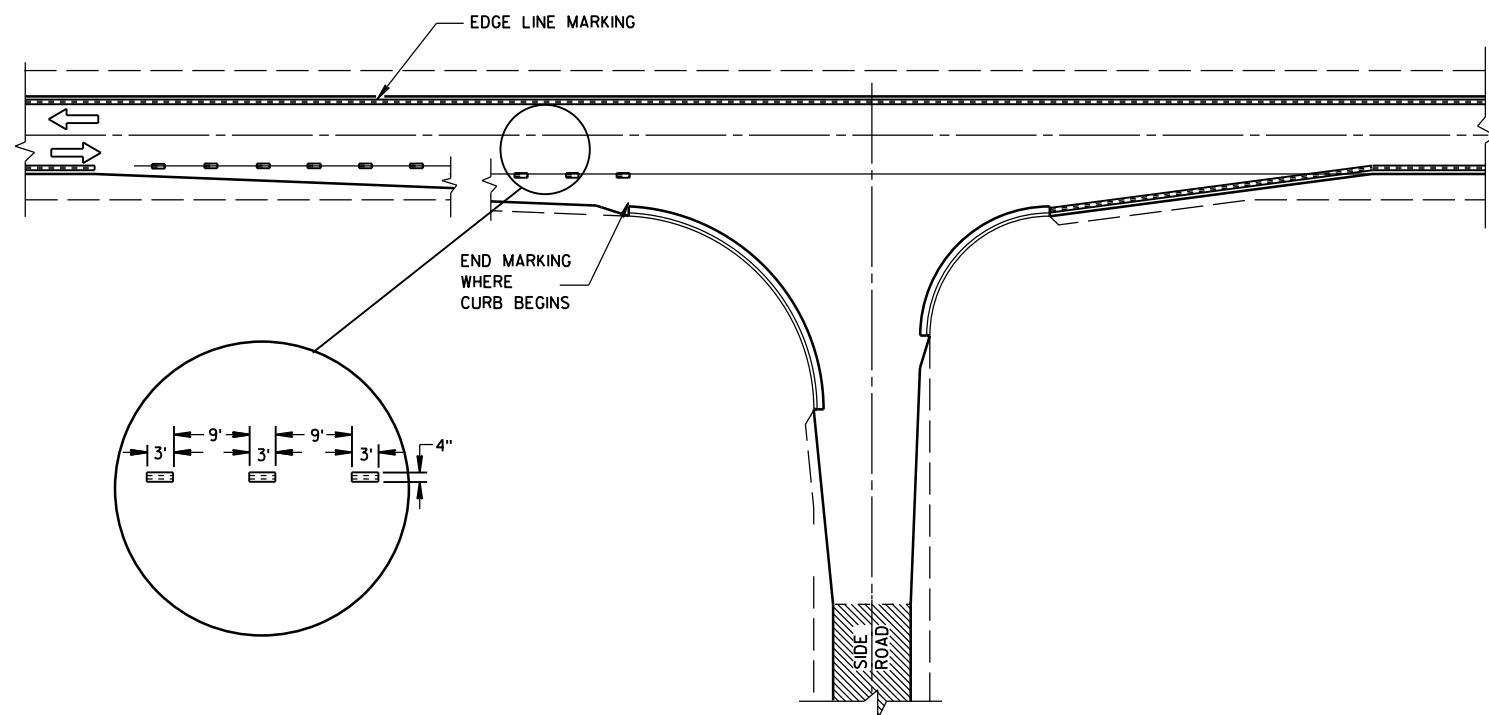
MINOR INTERSECTION WITHOUT CURBS

⑦

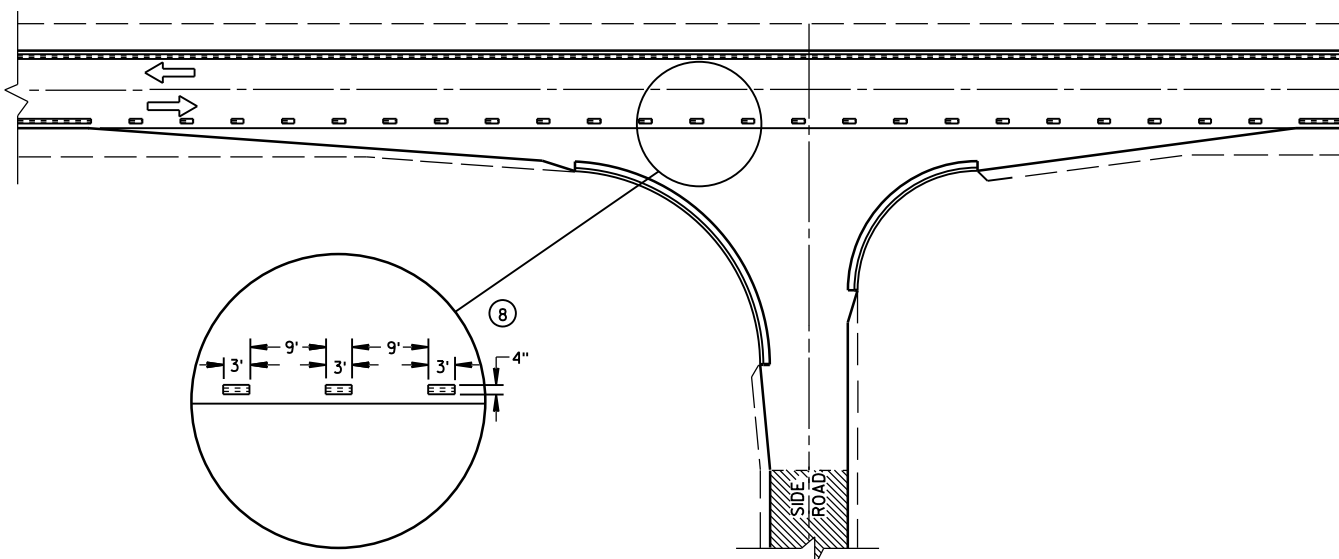
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



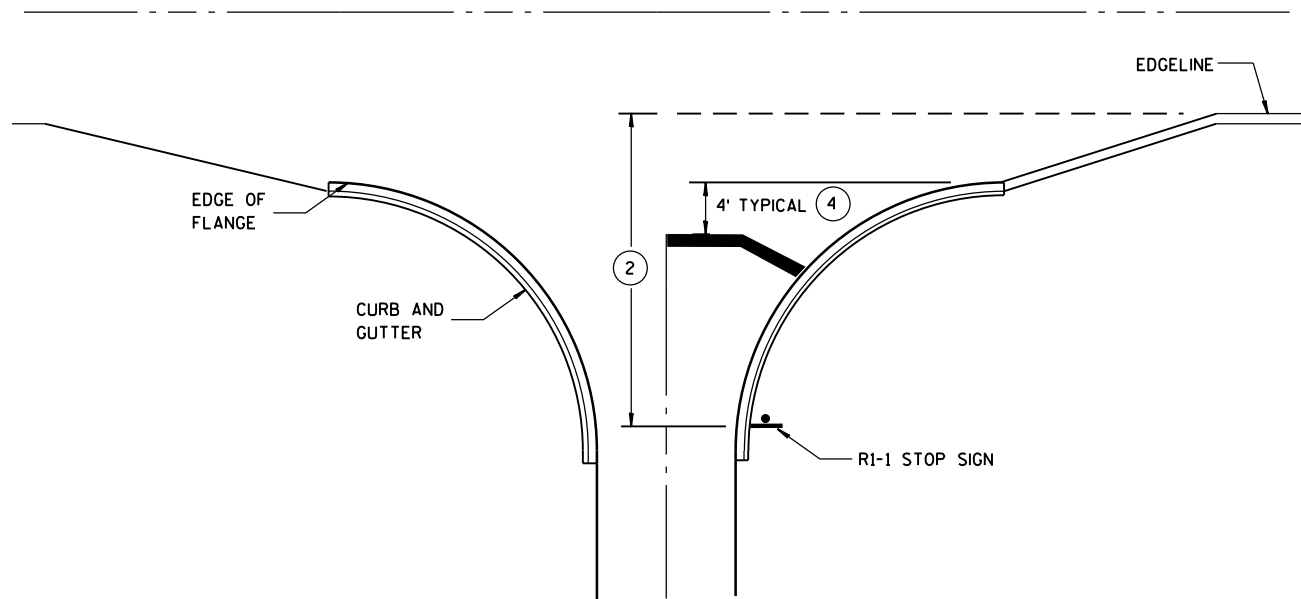
MINOR INTERSECTION WITH CURBS
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

GENERAL NOTES

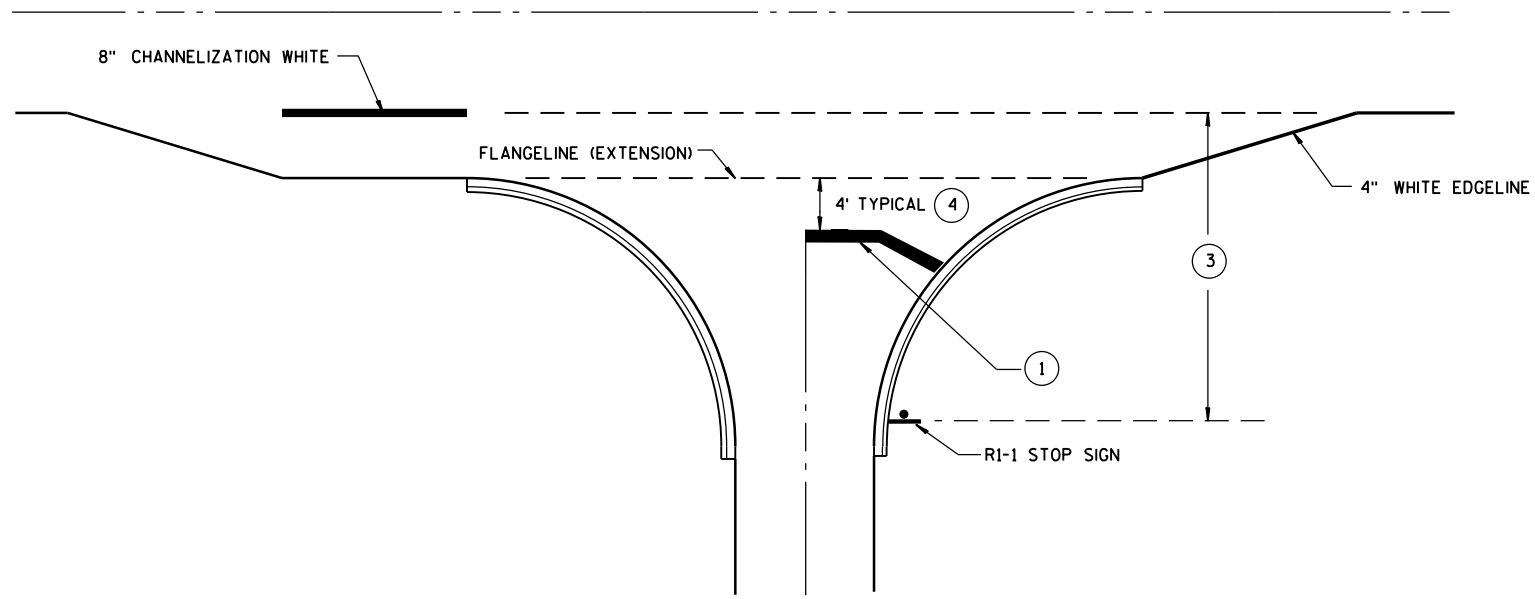
- EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
 - ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
 - ③ ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
 - ④ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
 - ⑤ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
 - ⑥ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
 - ⑦ IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
 - ⑧ 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

PAVEMENT MARKING
(INTERSECTIONS)

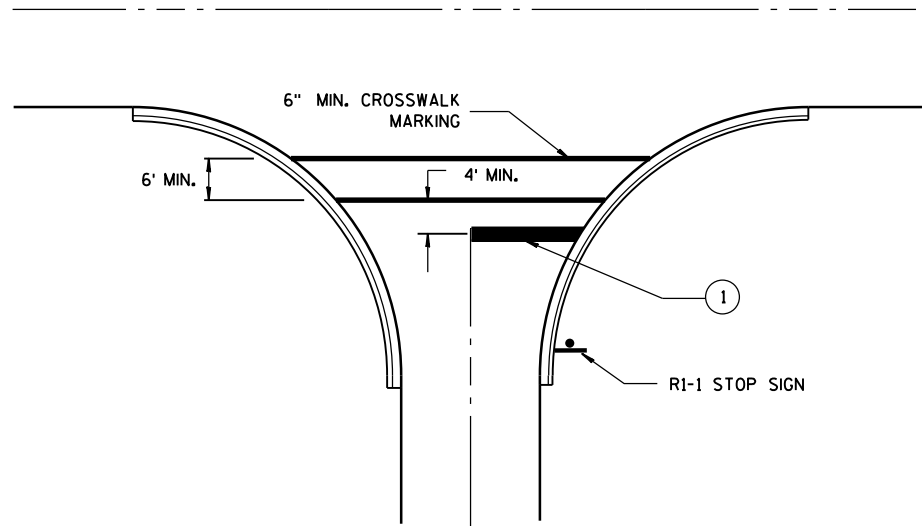
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



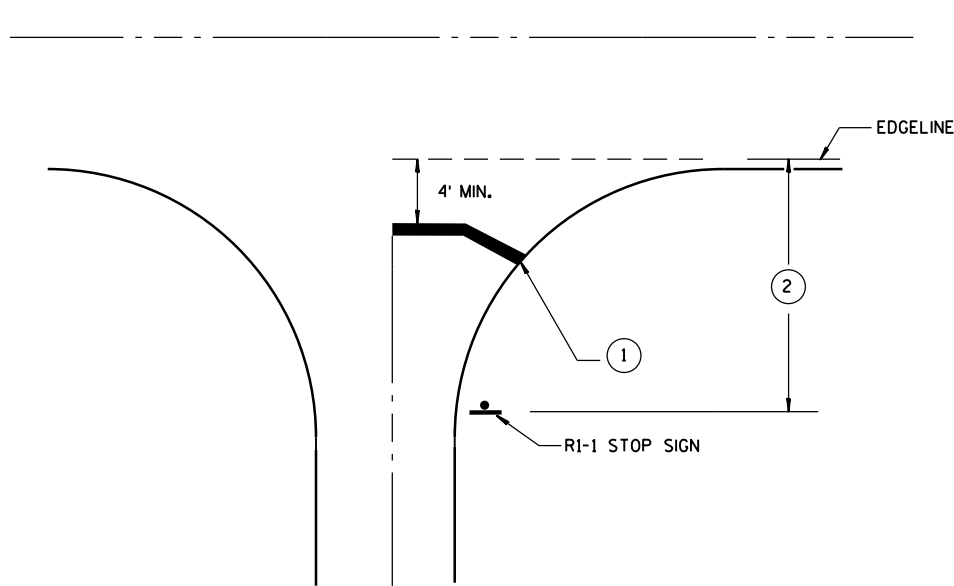
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

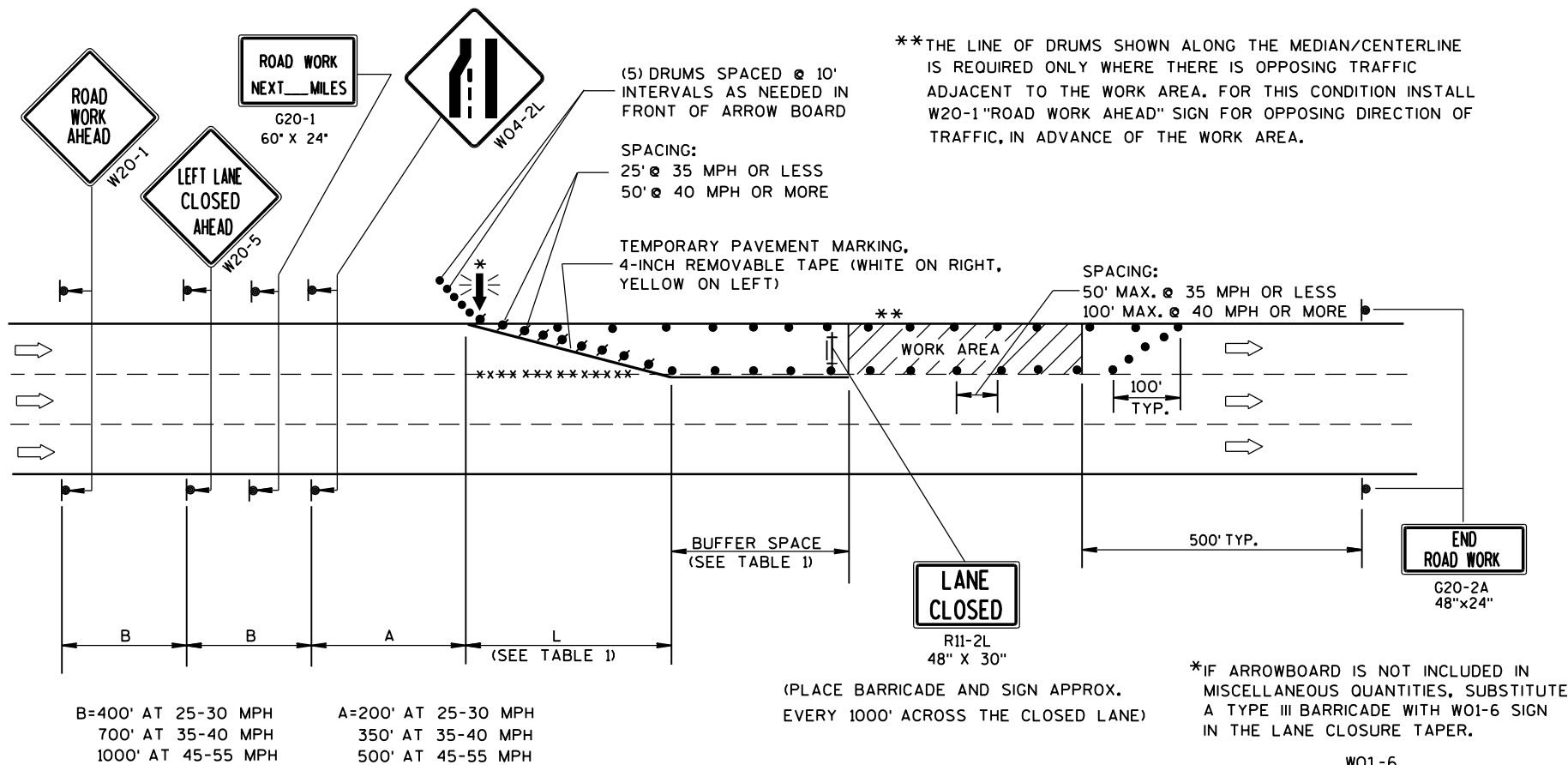
GENERAL NOTES

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

STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

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

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

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

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

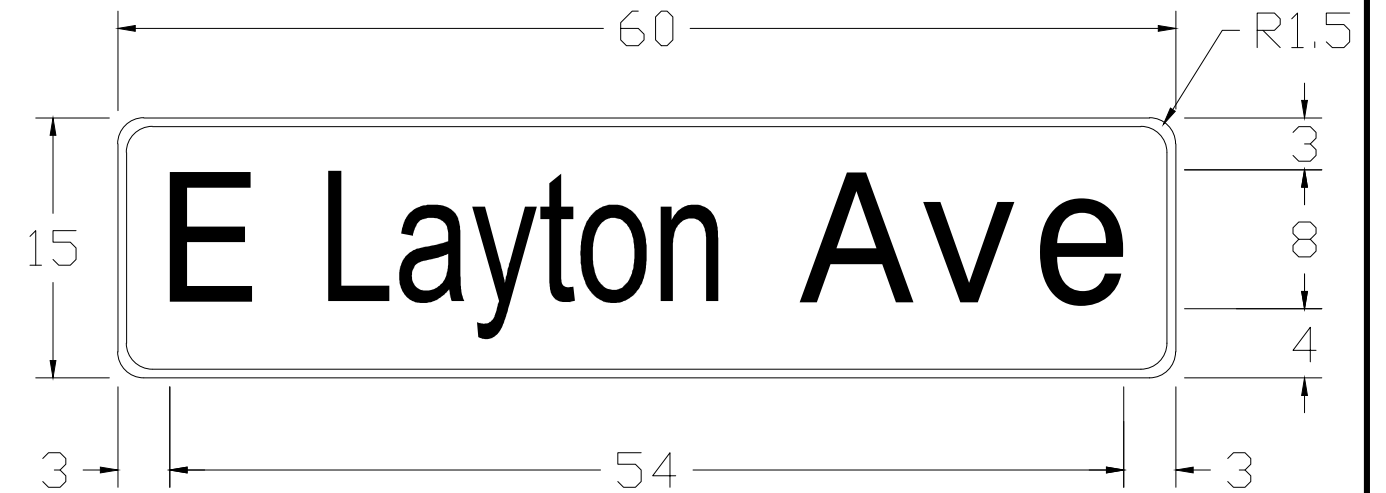
- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

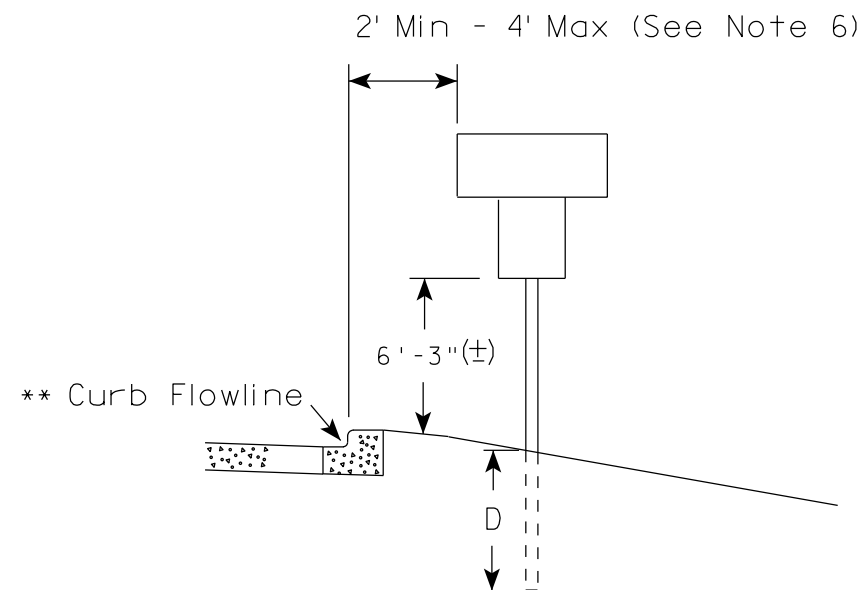
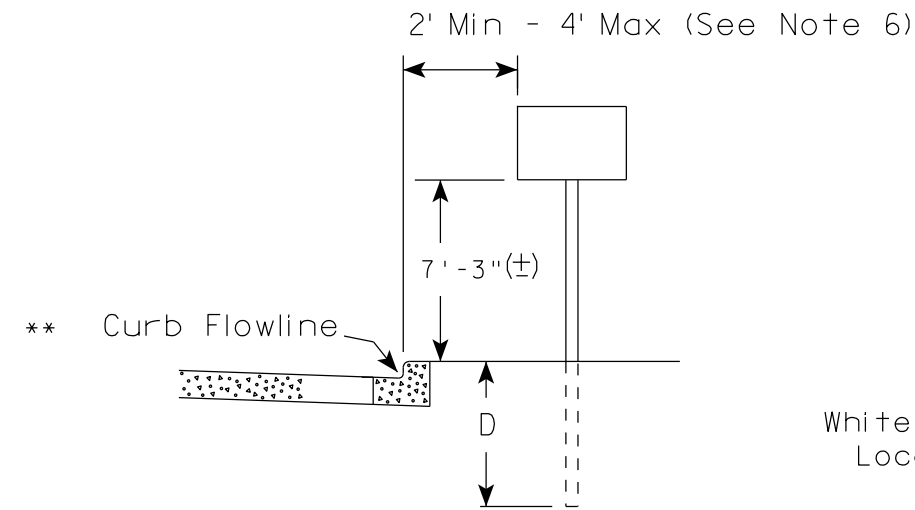
STREET NAME SIGN DETAILS
MAST ARM MOUNTED



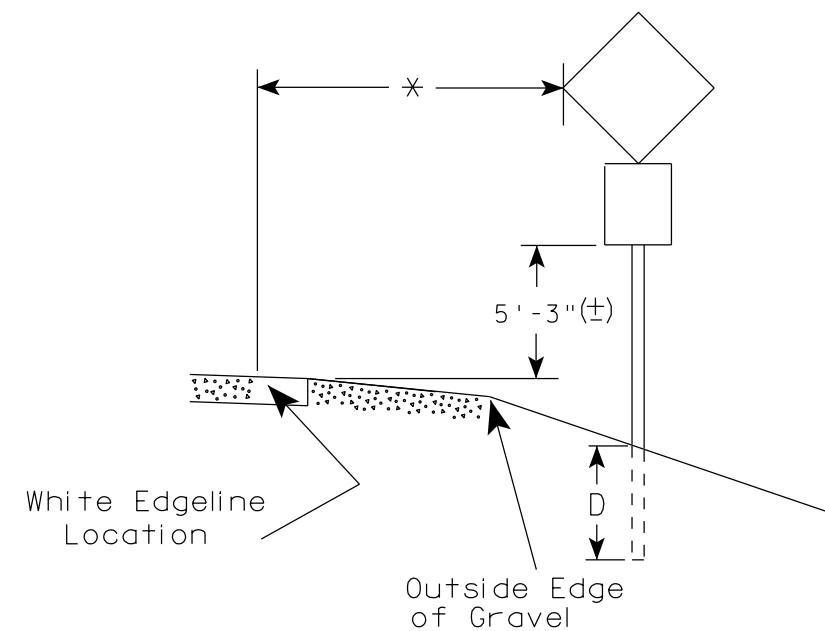
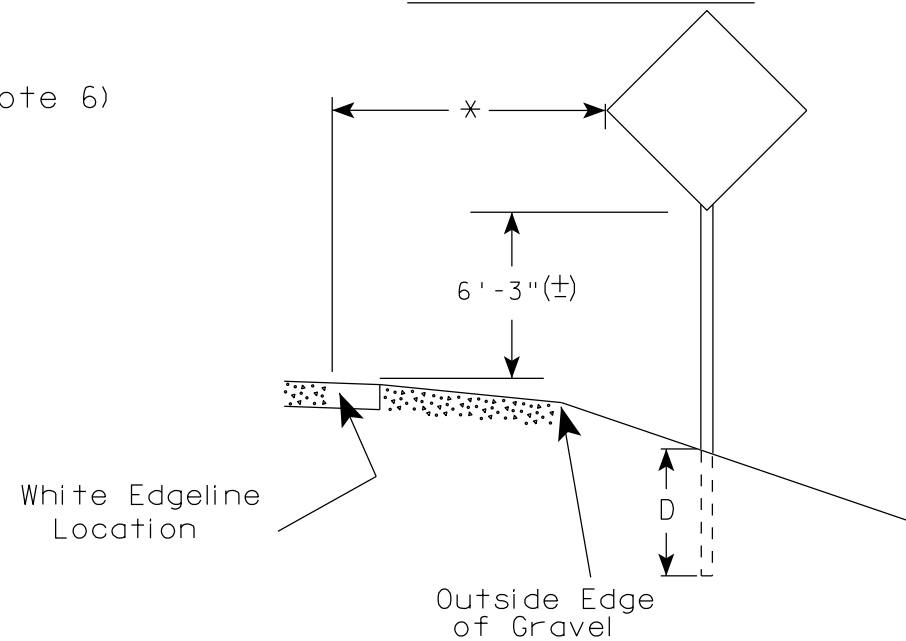
CONSTRUCTION NOTES:

1. All Signs are Type II - Type H Sheeting - reference WisDOT Standard Specifications for Highway and Structure Construction, latest edition.
2. Color: Background - Green; Message and Border - White
3. Letters are Series C (spaced to fit); 8" Upper Case; 6" Lower Case
4. Signs shall be sheet aluminum. The corners and borders shall be rounded.
5. Sign message texts shown are typical. See Sign Quantities for message and quantity of each sign type.
6. All dimensions are in inches.

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'-3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

×× The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

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

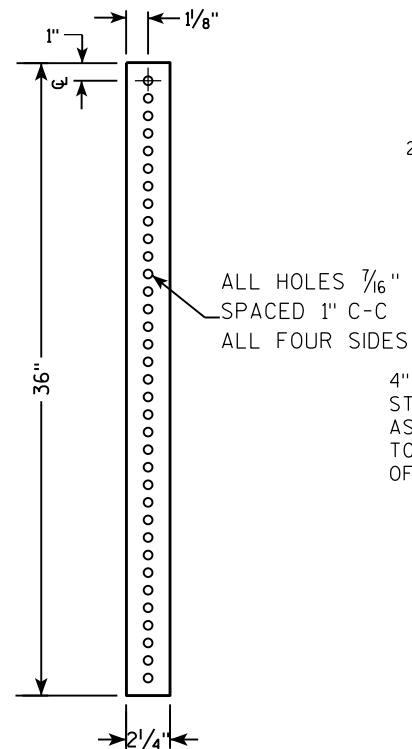
TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

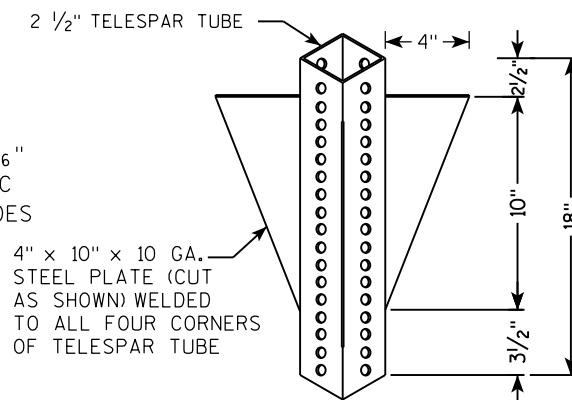
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-3.19

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



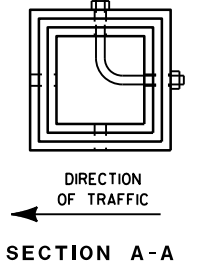
**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



LENGTH SHOWN ON MISC. Q'TYS
 18" DIA SCHEDULE 40 PVC BOX-OUT
 TELESCOPE PIECES FLUSH AT TOP
 36"
 18"
 13"
 2 1/2"
 2 1/4" SQUARE X 36"
 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 3/8" ZINC PLATED ANCHOR BOLT AND NUT
 2 1/2" GRAVEL OR DIRT
 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT
 ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES
 2" STEEL TUBULAR SQUARE UPPER SECTION
 SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 SIGN

[illegible]

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



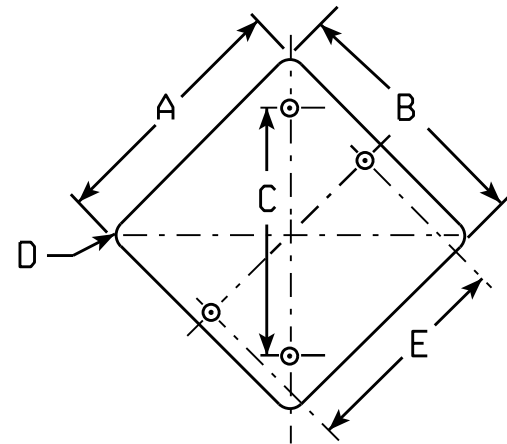
Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

TUBULAR STEEL
SIGN POST
A4-9

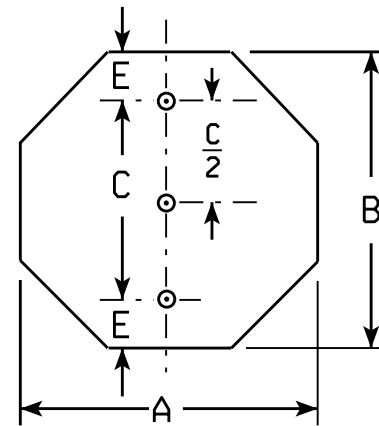
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

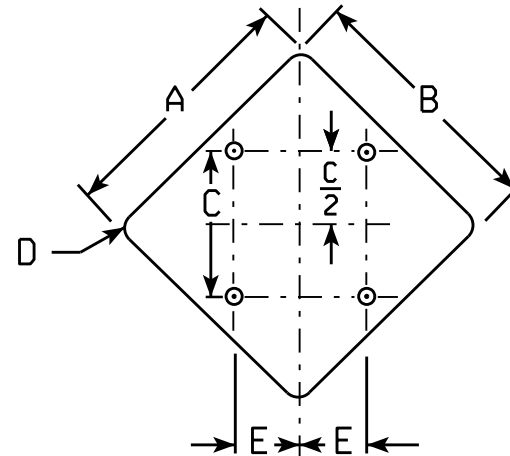
DATE 2/05/15 PLATE NO. A4-9.9



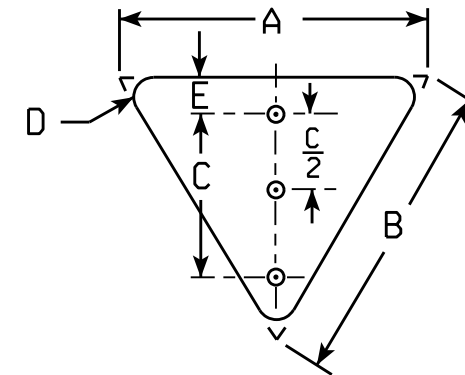
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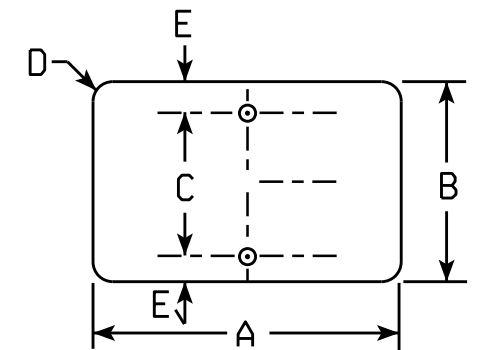
2



3



4



5

TYPE 1								
A	B	C	D	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
18	18	18	1½	14	2.25	.080	2	
24	24	24	1½	20	4.0	.080	2	
30	30	30	1⅞	22	6.25	.080	2	
36	36	36	2¼	26	9.0	.100	2	

TYPE 2							
A	B	C	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
24	24	20	2	3.31	.080	2	
30	30	24	3	5.18	.100	2	
36	36	28	4	7.46	.125	2	
48	48	36	6	13.25	.125	3	

TYPE 3								
A	B	C	D	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
48	48	26	3	13	16.0	.125	4	

TYPE 4								
A	B	C	D	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
18	18	14	1	2	1.95	.080	2	
36	36	24	2	2	3.9	.100	2	
48	48	32	3	3	7.0	.125	2	

TYPE 5								
A	B	C	D	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
8	8	6	1½	1	0.44	.080	2	
12	12	9	1½	1½	1.00	.080	2	
18	18	14	1½	2	2.25	.080	2	
21	15	11	1½	2	2.19	.080	2	
21	21	17	1½	2	3.06	.080	2	
24	12	8	1½	2	2.0	.080	2	
24	18	14	1½	2	3.0	.080	2	
24	24	20	1½	2	4.0	.080	2	
30	12	8	1½	2	2.5	.080	2	
30	15	11	1½	2	3.13	.080	2	
30	18	14	1½	2	3.75	.080	2	
30	21	17	1½	2	4.37	.080	2	
30	24	20	1½	2	5.0	.080	2	

TYPE 5 CONT'D.								
A	B	C	D	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
30	30	22	1⅞	4	6.25	.080	2	
36	12	8	1½	2	3.0	.100	2	
36	18	14	1½	2	4.5	.100	2	
36	24	20	1½	2	6.0	.100	2	
36	36	26	2¼	5	9.0	.100	2	
40	18	14	1½	2	5.00	.100	2	
42	21	17	1⅞	2	6.125	.125	2	
42	30	22	1⅞	4	8.75	.125	2	
48	48	32	3	8	16.0	.125	4	

NOTES

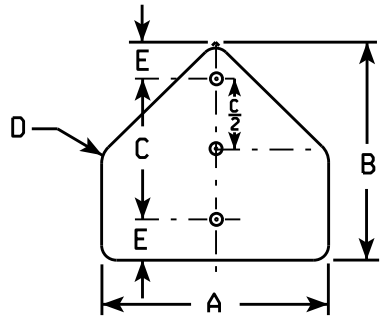
1. All sign blanks shall have ⅞" Diameter mounting hole.

STANDARD LAYOUT OF ALUMINUM SIGN BLANKS SHEET 1 OF 3

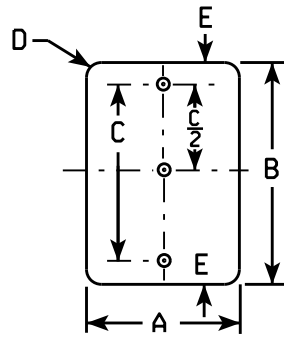
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

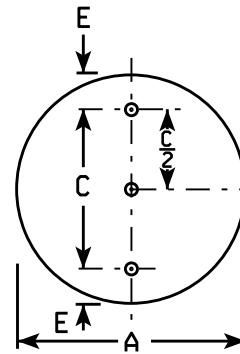
DATE 10/13/14 PLATE NO. A5-3.22



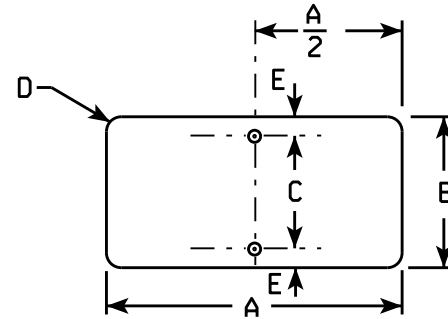
6



7



8



9

TYPE 6								
A	B	C	D	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
30	30	24	1 ³ / ₈	3	4.68	.080	2	
36	36	26	1 ⁵ / ₈	5	6.75	.100	2	
48	48	32	1 ⁷ / ₈	8	12.0	.125	3	

TYPE 7								
A	B	C	D	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
12	18	15	1 ¹ / ₂	1 ¹ / ₂	1.5	.080	2	
12	24	20	1 ¹ / ₂	2	2.0	.080	2	
12	36	24	1 ¹ / ₂	6	3.0	.100	2	
12	48	32	1 ¹ / ₂	8	4.0	.125	3	
15	21	18	1 ¹ / ₂	1 ¹ / ₂	2.19	.080	2	
18	24	20	1 ¹ / ₂	2	3.0	.080	2	
18	36	24	1 ¹ / ₂	6	4.5	.100	2	
18	54	36	2 ¹ / ₂	9	6.75	.080	3	
21	60	40	1 ¹ / ₂	10	8.75	.080	3	
21	72	52	1 ¹ / ₂	10	10.5	.080	3	
24	30	22	1 ¹ / ₂	4	5.0	.080	2	
24	36	24	1 ¹ / ₂	6	6.0	.100	2	
24	39	27	1 ¹ / ₂	6	6.5	.080	3	
24	45	32	1 ⁷ / ₈	6	7.5	.080	3	
24	48	32	1 ⁷ / ₈	8	8.0	.125	3	
24	57	37	1 ⁷ / ₈	10	9.5	.080	3	
36	48	32	1 ⁷ / ₈	8	12.0	.125	3	
30	36	24	1 ⁷ / ₈	6	7.5	.100	2	
36	54	36	2 ¹ / ₄	9	12.75	.100	3	
36	57	37	1 ⁷ / ₈	10	14.25	.100	3	
48	39	27	1 ⁷ / ₈	10	13.0	.125	3	
48	45	32	1 ⁷ / ₈	10	14.0	.125	3	
48	57	37	3	6	19.0	.125	3	

TYPE 8							
A	B	C	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
30	—	24	3	4.91	.080	2	
36	—	26	5	7.07	.100	2	
48	—	32	8	12.5	.125	3	

TYPE 9							
A	B	C	D	E	Area Sq. Ft.	THICK NESS	Mounting Holes
48	24	20	1 ⁷ / ₈	2	8.0	.125	2

NOTES

1. All sign blanks shall have 7/16" Diameter mounting holes.

STANDARD LAYOUT OF ALUMINUM SIGN BLANKS SHEET 2 OF 3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 10/13/14

PLATE NO. A5-3.22

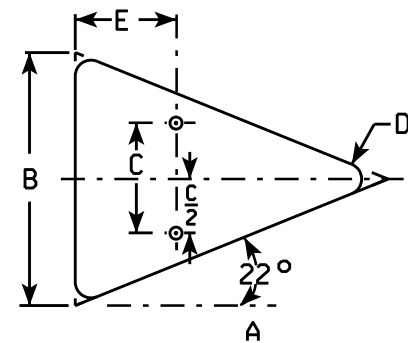
PROJECT NO:

HWY:

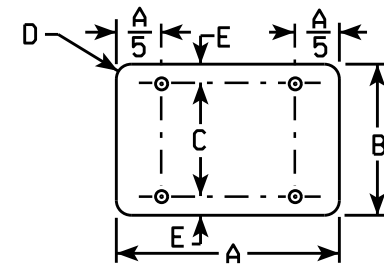
COUNTY:

SHEET NO:

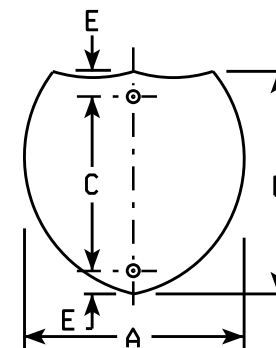
E



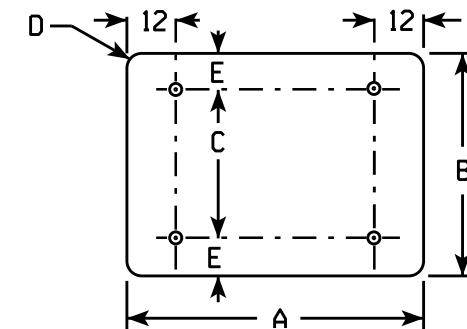
10



11



12



13

TYPE 10 (NOTE 1)								
A	B	C	D	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
48	36	14	2 1/4	16	6.0	.125	2	

TYPE 11								
A	B	C	D	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
48	48	32	3	8	16.0	.125	4	

TYPE 12 (NOTE 2)							
A	B	C	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
24	24	18	3	3.13	.080	2	
30	24	18	3	3.91	.080	2	
36	36	28	4	7.03	.100	2	
45	36	28	4	8.79	.125	2	

TYPE 13								
A	B	C	D	E	Area Sq. Ft.	THICK NESS	Mounting Holes	
48	60	40	3	10	20.0	.125	4	
48	24	20	1 7/8	2	8.0	.125	4	
48	30	22	1 7/8	4	10.0	.125	4	
54	18	14	1 1/2	2	6.75	.125	4	
60	12	8	1 1/2	2	5.0	.125	4	
60	24	20	1 7/8	2	10.0	.125	4	
60	30	22	1 7/8	4	12.5	.125	4	

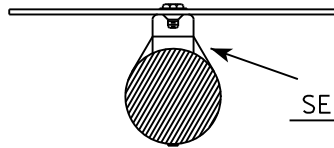
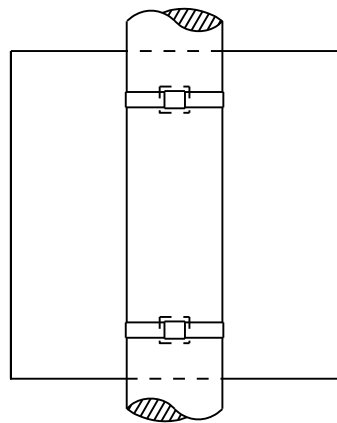
NOTES

1. Dimension A on type *10 is measured to the theoretical intersections of the edges.
2. Shape of type *12 shall conform to FHWA standard for Interstate route markers.

STANDARD LAYOUT OF ALUMINUM SIGN BLANKS SHEET 3 OF 3	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 9/24/14	PLATE NO. A5.3.22

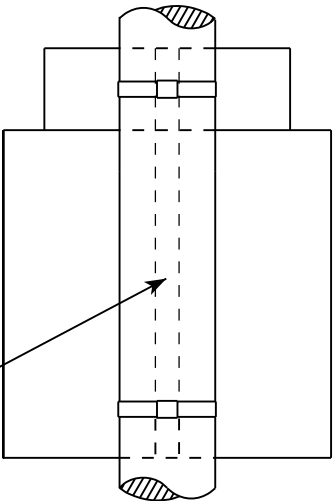
BANDING

SINGLE SIGN



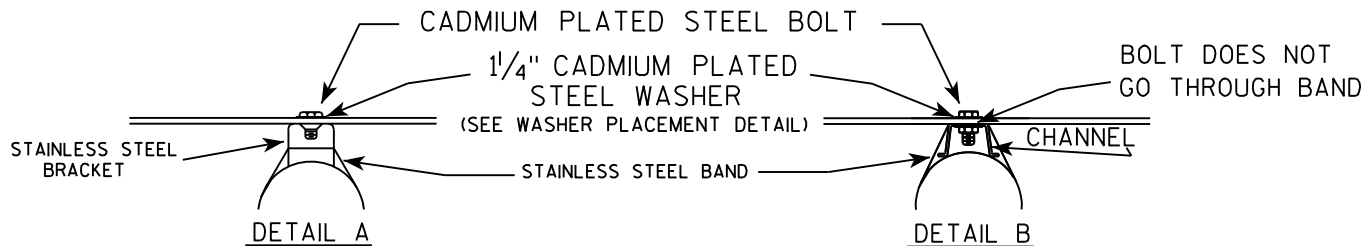
SEE DETAIL A

"J" ASSEMBLY



SEE DETAIL B

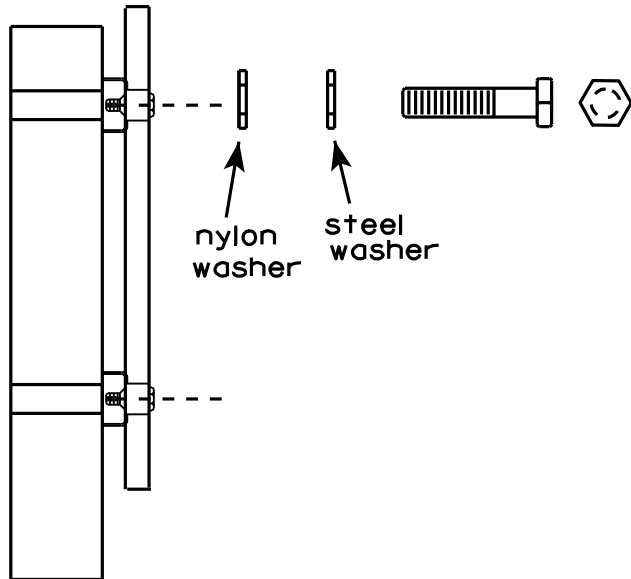
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



GENERAL NOTES

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

WASHER PLACEMENT



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

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 8/16/13

PLATE NO. A5-9.3

PROJECT NO:

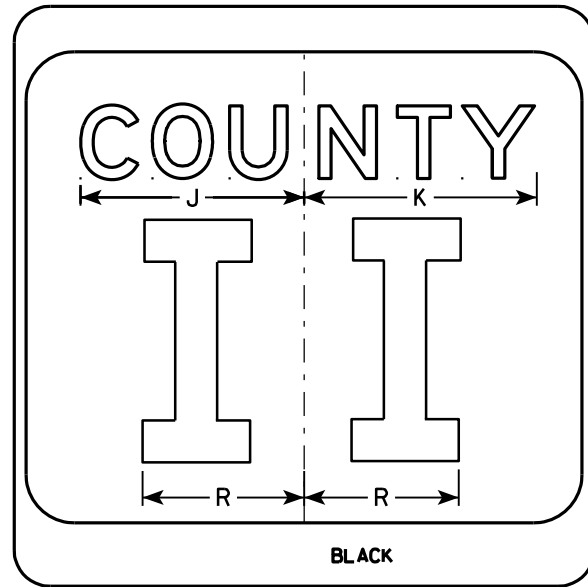
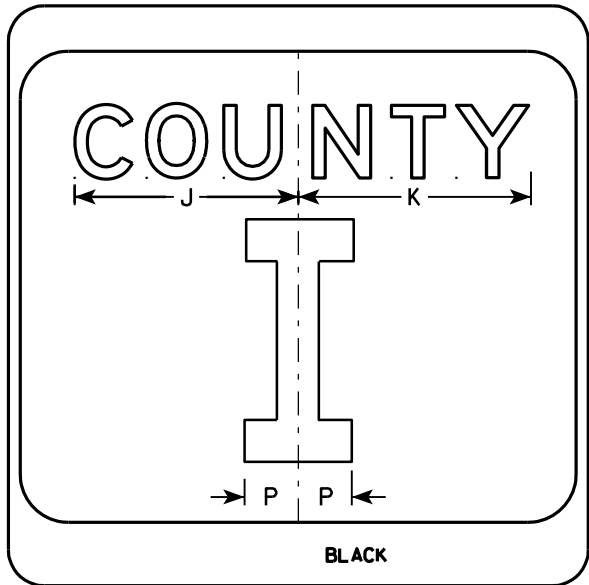
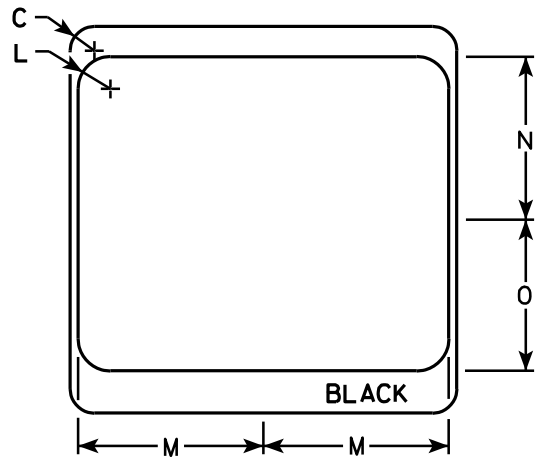
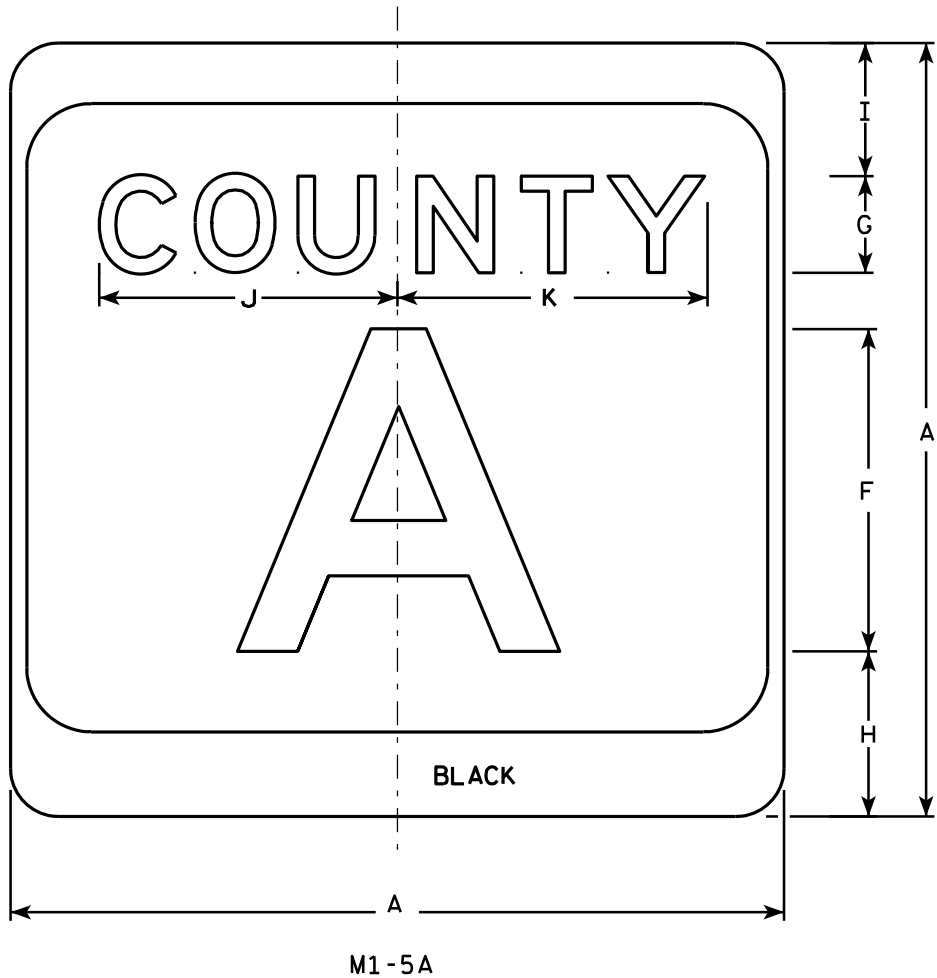
HWY:

COUNTY:

SHEET NO:

E

7



NOTES

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

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

NOTES

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



M1-94

* Minimum dimension is normally height of upper case letter.

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	Varies	15	2 1/4		3/4	4 1/2	6	5	4 1/8	8 5/8	5 1/4	14 5/8	7 3/4	6	8 1/2			30									Varies
3																											
4	Varies	21	3		1	6	8	7 1/8	4 3/4	9 1/2	5 3/4	17 1/2	9 1/4	7	12			36									Varies
5	Varies	21	3		1	6	8	7 1/8	4 3/4	9 1/2	5 3/4	17 1/2	9 1/4	7	12			36									Varies

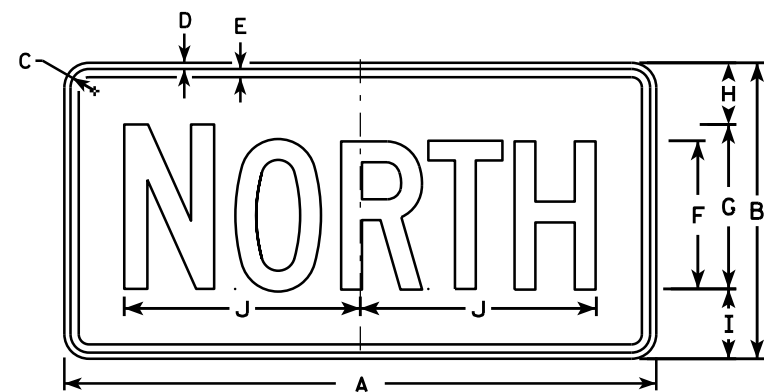
PROJECT NO:			HWY:			COUNTY:													SHEET NO:		E
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STANDARD SIGN
M1-94

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

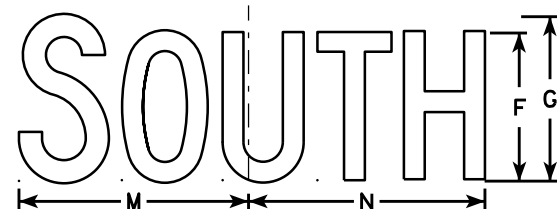
DATE 12/16/10 PLATE NO. M1-94.6



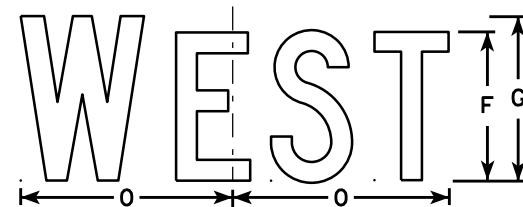
M3-1
MK3-1
MM3-1
MN3-1



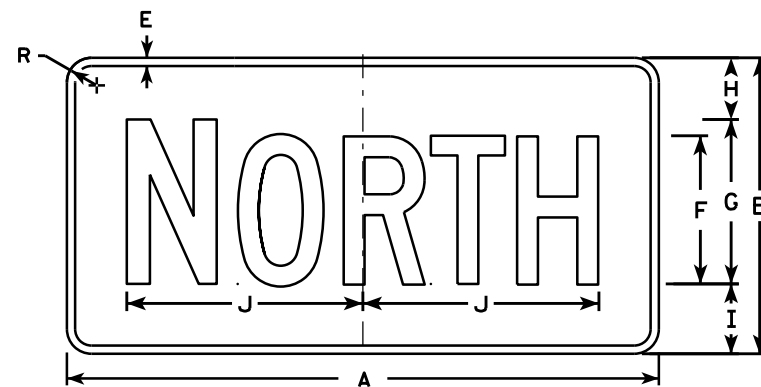
M3-2
MK3-2
MM3-2
MN3-2



M3-3
MK3-3
MM3-3
MN3-3



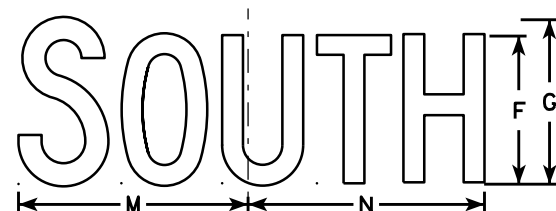
M3-4
MK3-4
MM3-4
MN3-4



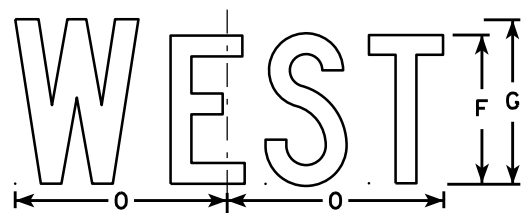
MB3-1



MB3-2



MB3-3



MB3-4

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
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 6/30/14 PLATE NO. M3-1.13

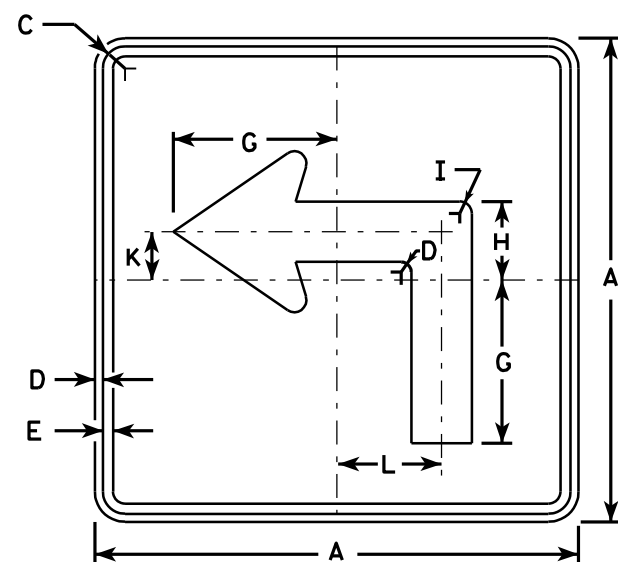
PROJECT NO:

HWY:

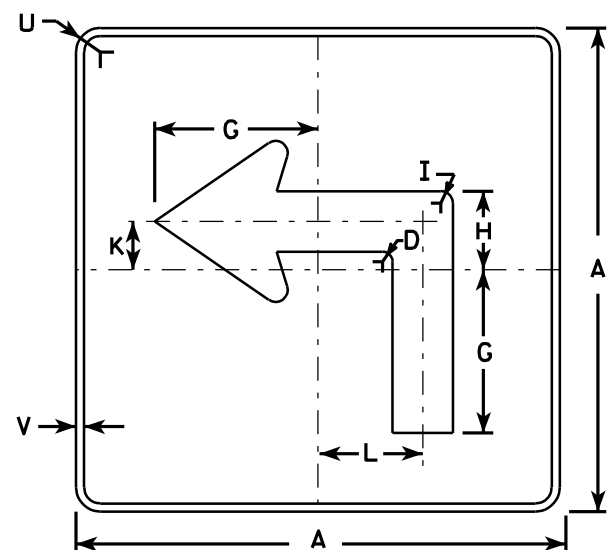
COUNTY:

SHEET NO:

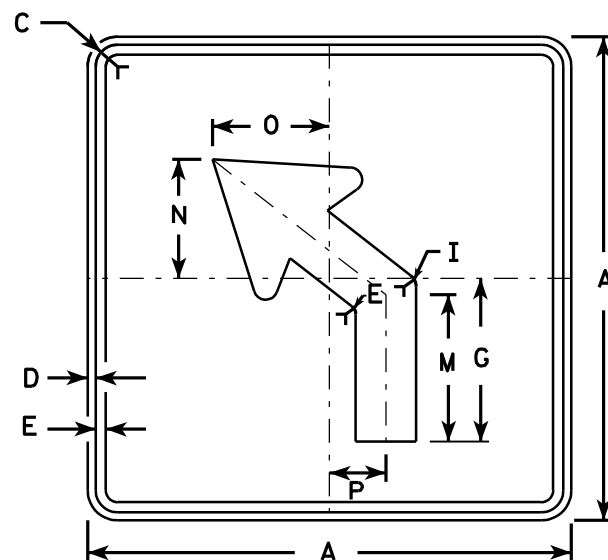
E



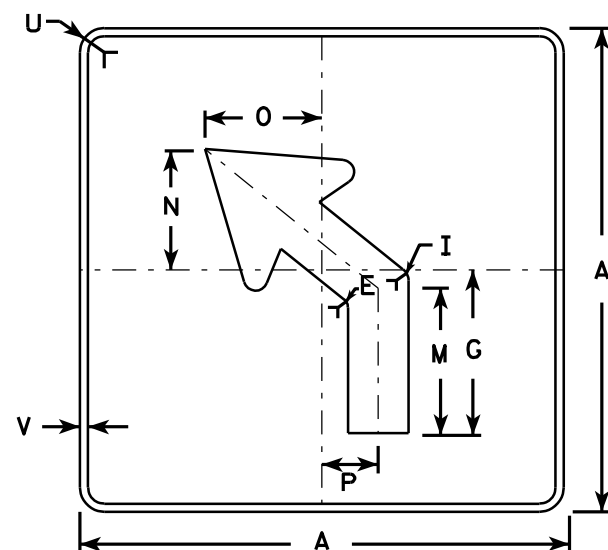
M5-1L
MK5-1L
MM5-1L
M05-1L
MP5-1L
MR5-1L



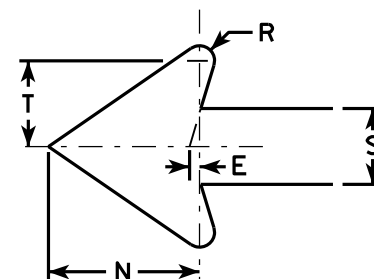
MB5-1L
MG5-1L
MN5-1L



M5-2L
MK5-2L
MM5-2L
M05-2L
MP5-2L
MR5-2L



MB5-2L
MG5-2L
MN5-2L

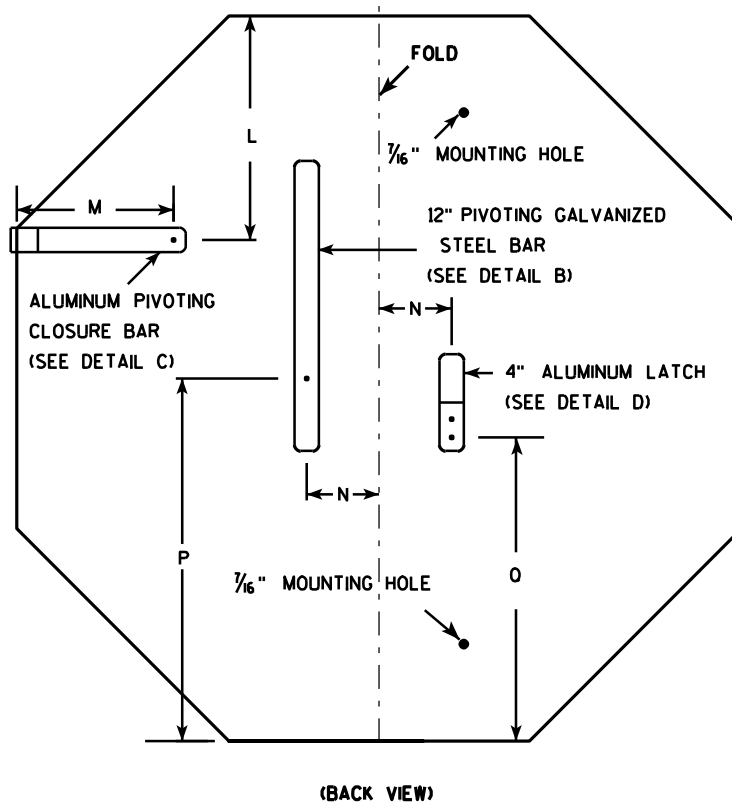
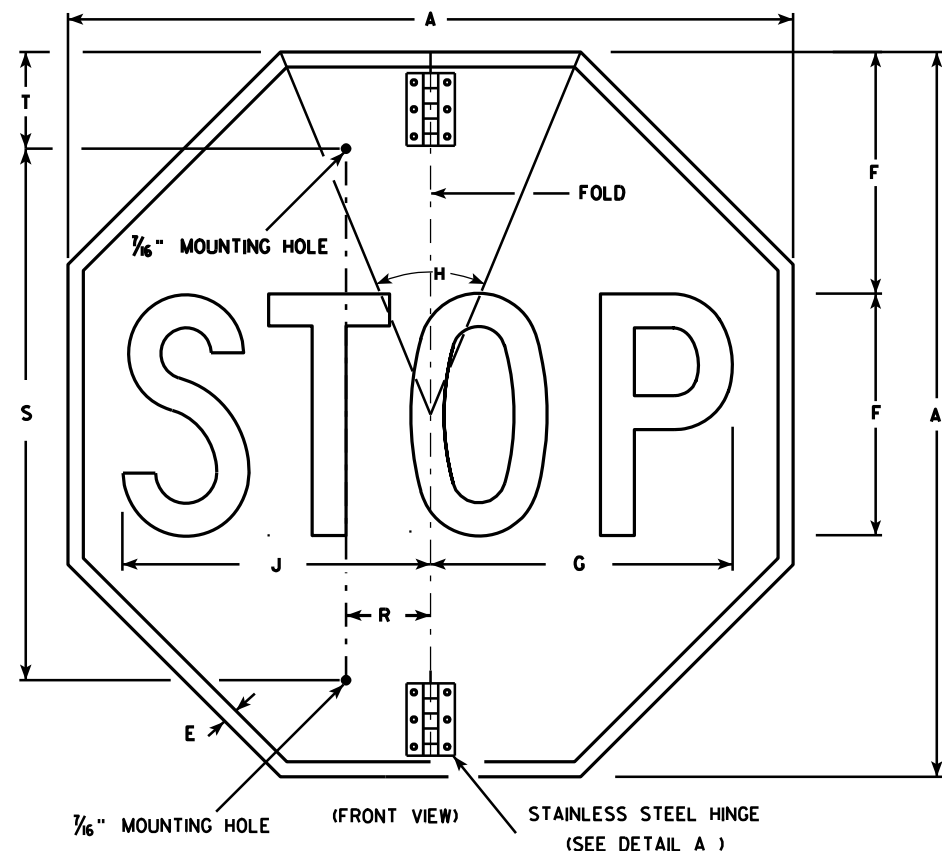


NOTES

- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 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 - Type H Reflective
Message - Black
MB5-1 and MB5-2 Background - Blue
Message - White - Type H Reflective
MG5-1 and MG5-2 Background - Green
Message - White - Type H Reflective
MK5-1 and MK5-2 Background - Green
Message - White Type H Reflective
MM5-1 and MM5-2 Background - White - Type H Reflective
Message - Green
MN5-1 and MN5-2 Background - Brown
Message - White - Type H Reflective
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 - Type H Reflective
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

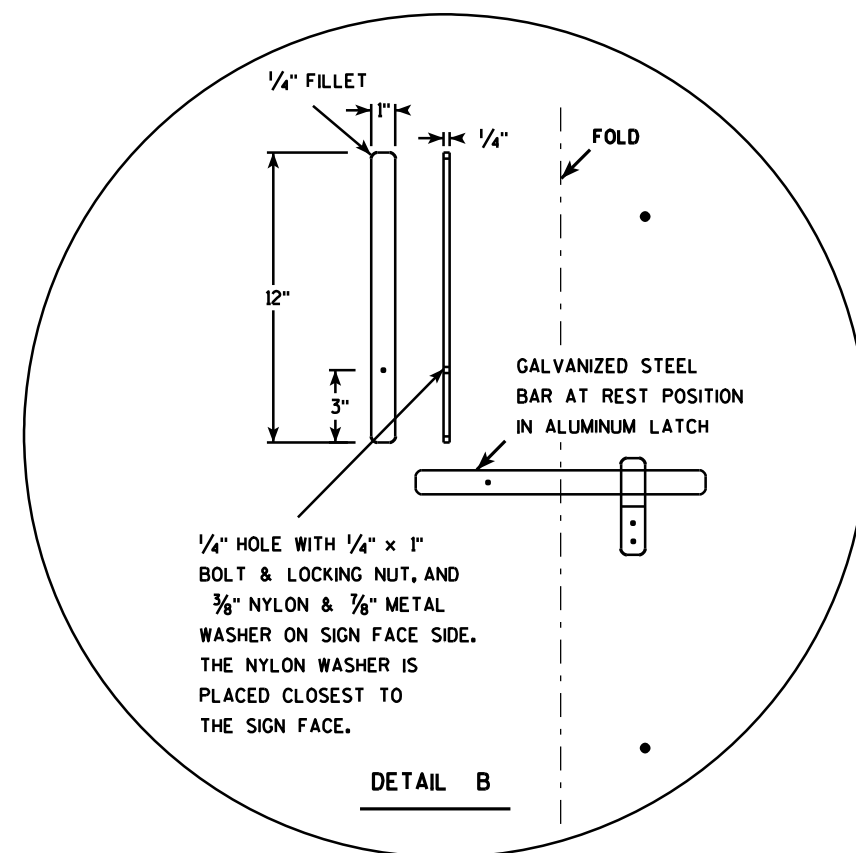
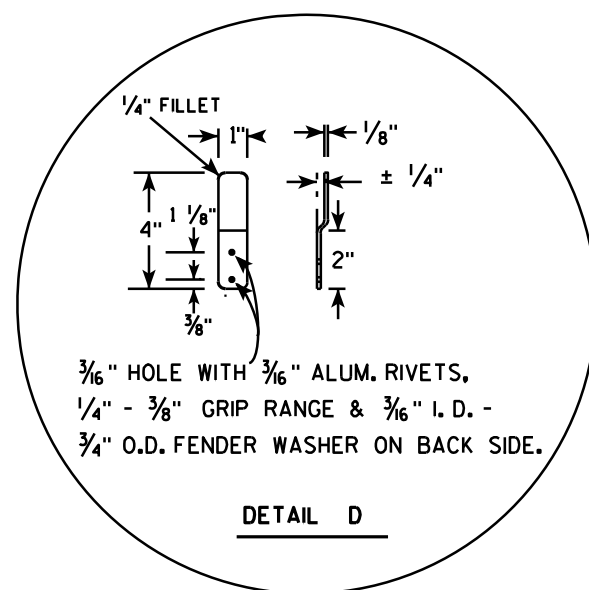
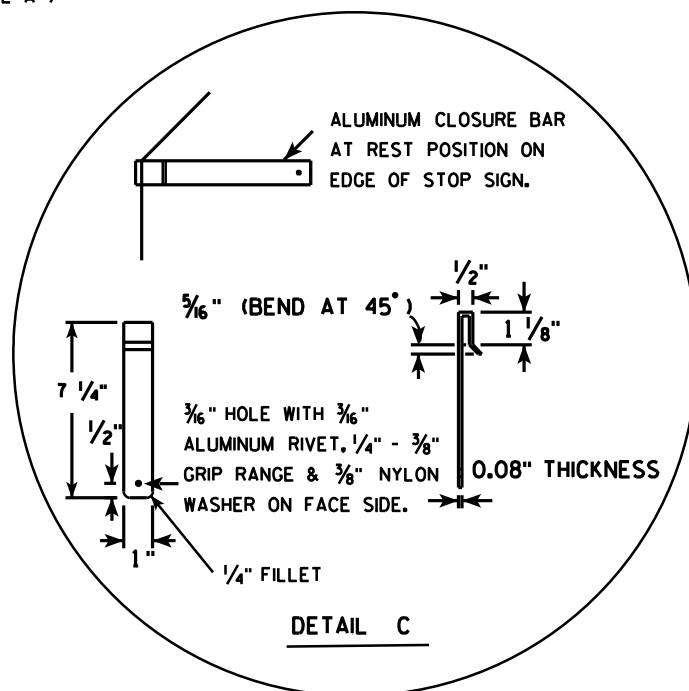
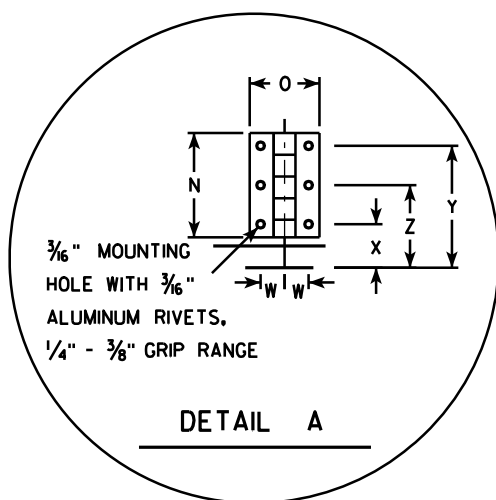
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25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

STANDARD SIGN	
M5-1 & M5-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 7/29/13	PLATE NO. M5-1.12



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			11/16	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			11/16	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			11/16	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

STANDARD SIGN
R1-1F

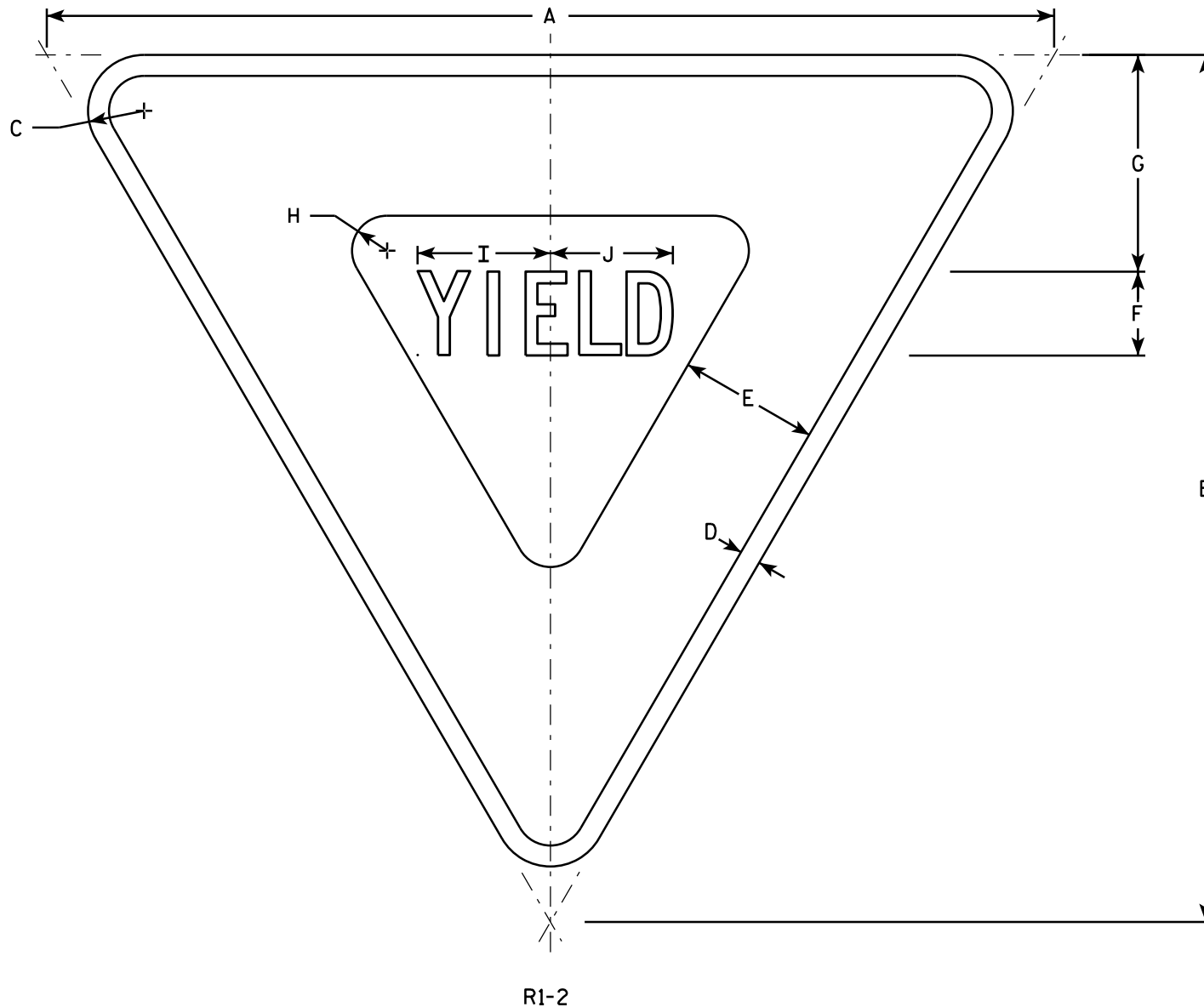
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3

SHEET NO:

E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The border strip and word message are reflectorized red.

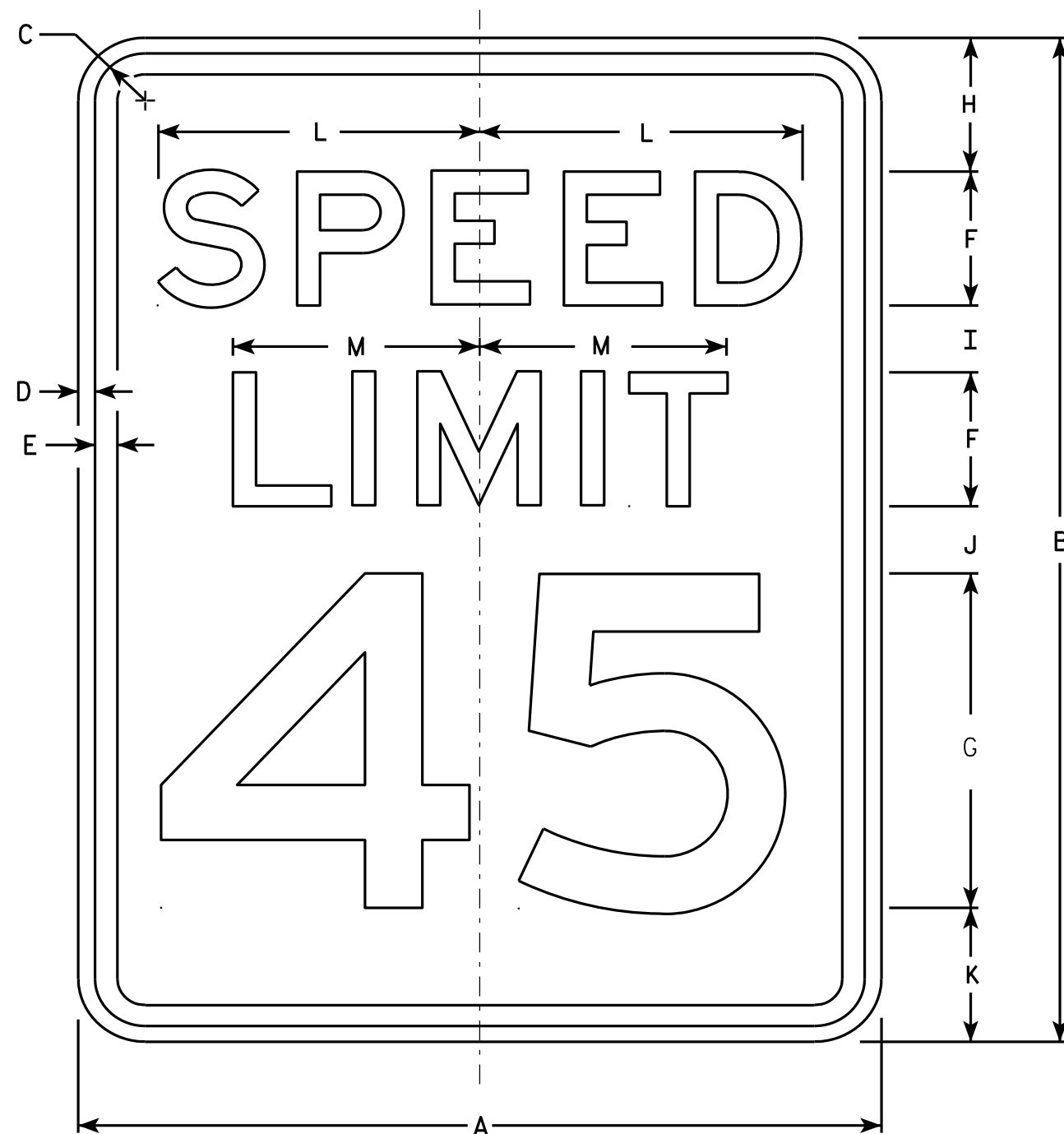
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8								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

STANDARD SIGN
R1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



R2-1

NOTES

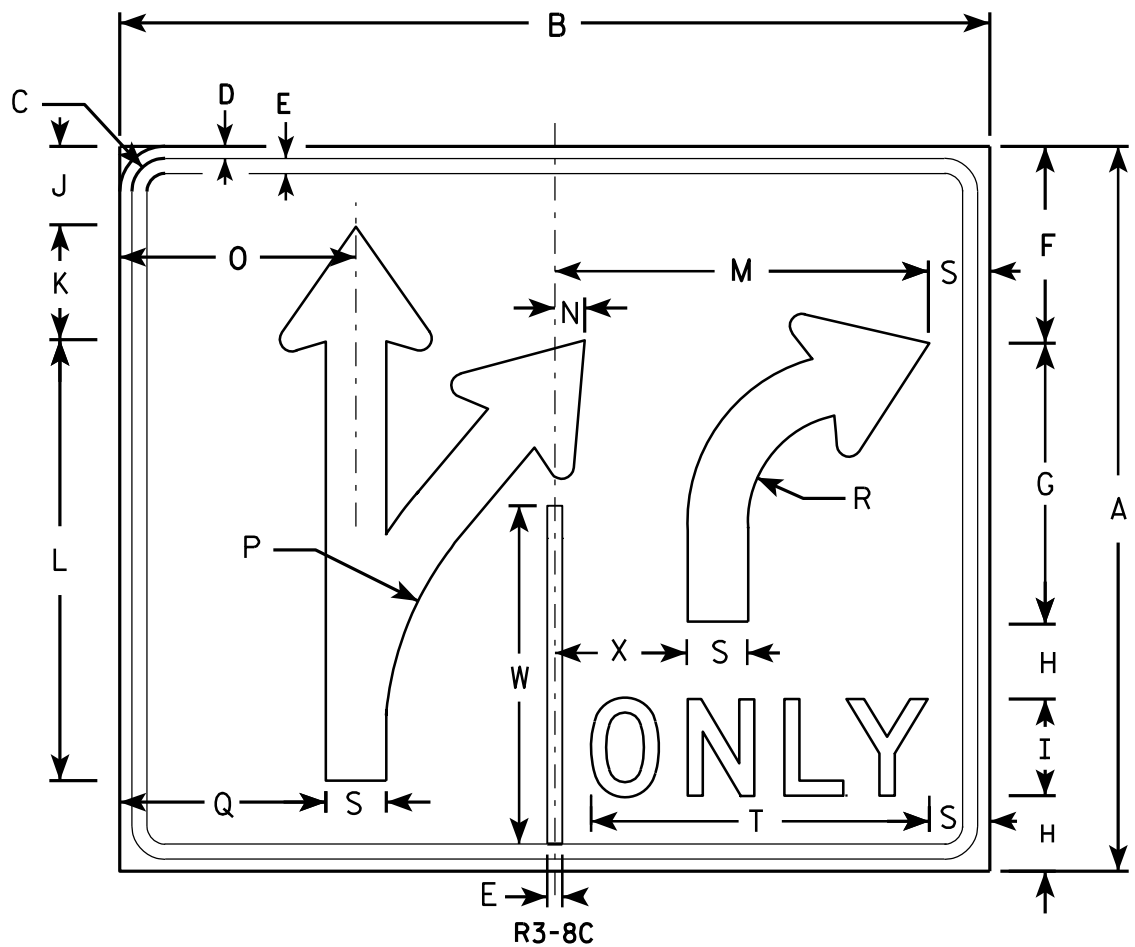
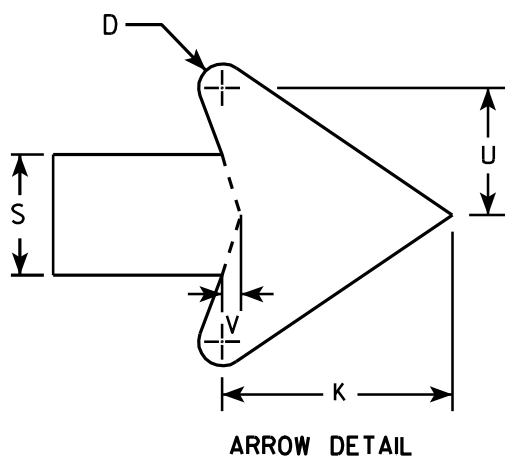
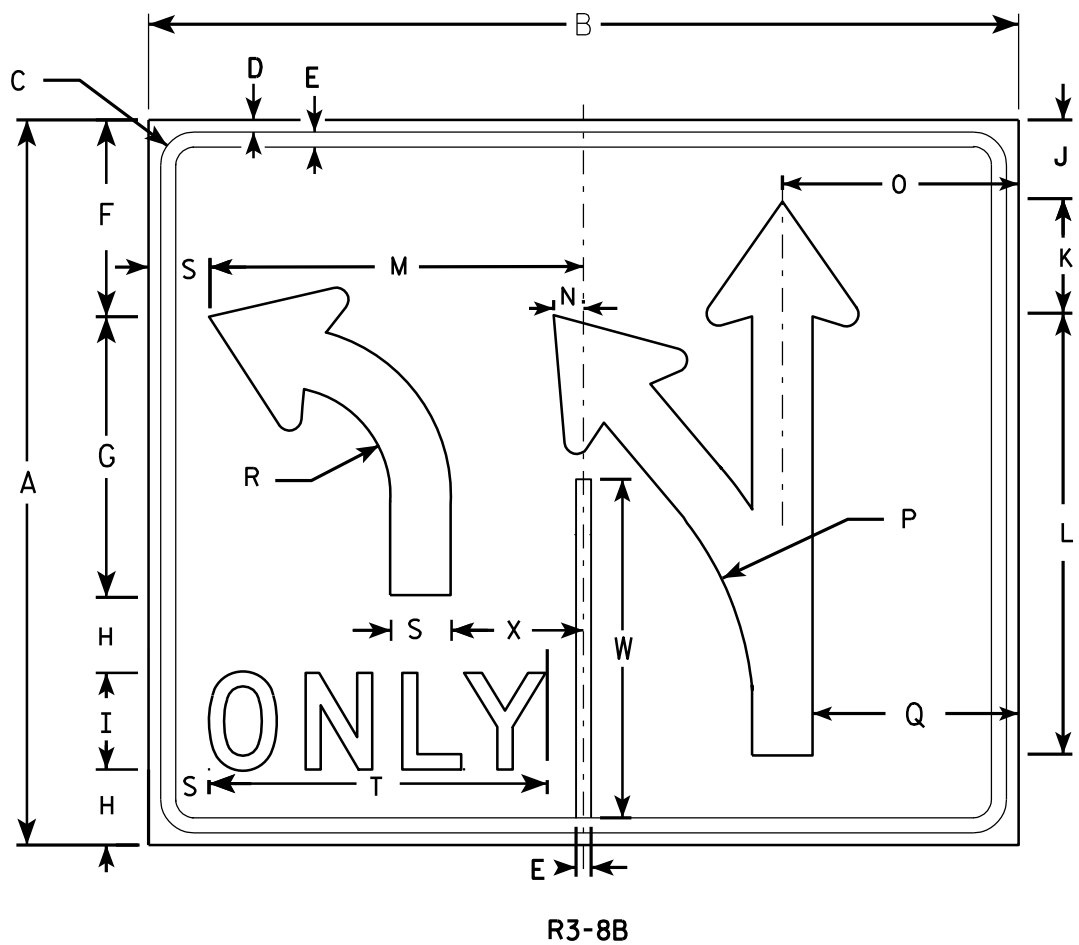
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as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

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

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: HWY: COUNTY: SHEET NO: E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - WHITE
Message - BLACK
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R3-8B & R3-8C is the same but 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																											
2S	30	36	1 3⁄8	1⁄2	5⁄8	8 1⁄8	11 5⁄8	3 1⁄8	4	3 1⁄4	4 3⁄4	18 1⁄4	15 1⁄2	1 1⁄4	9 3⁄4	13 1⁄4	8 1⁄2	4 1⁄2	2 1⁄2	14	2 5⁄8	3⁄8	14	5 1⁄4			7.5
2M	30	36	1 3⁄8	1⁄2	5⁄8	8 1⁄8	11 5⁄8	3 1⁄8	4	3 1⁄4	4 3⁄4	18 1⁄4	15 1⁄2	1 1⁄4	9 3⁄4	13 1⁄4	8 1⁄2	4 1⁄2	2 1⁄2	14	2 5⁄8	3⁄8	14	5 1⁄4			7.5
3																											
4	48	54	2 1⁄4	3⁄4	1	13 1⁄4	18 1⁄2	5 1⁄8	6	5 1⁄4	7 1⁄8	29 5⁄8	23 1⁄8	1 7⁄8	14 5⁄8	21 7⁄8	12 3⁄4	7 1⁄4	3 3⁄4	20 5⁄8	4	5⁄8	22 3⁄8	8 1⁄8			18.0
5	48	54	2 1⁄4	3⁄4	1	13 1⁄4	18 1⁄2	5 1⁄8	6	5 1⁄4	7 1⁄8	29 5⁄8	23 1⁄8	1 7⁄8	14 5⁄8	21 7⁄8	12 3⁄4	7 1⁄4	3 3⁄4	20 5⁄8	4	5⁄8	22 3⁄8	8 1⁄8			18.0

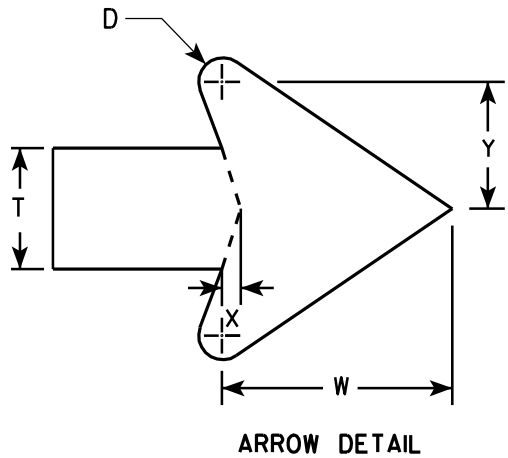
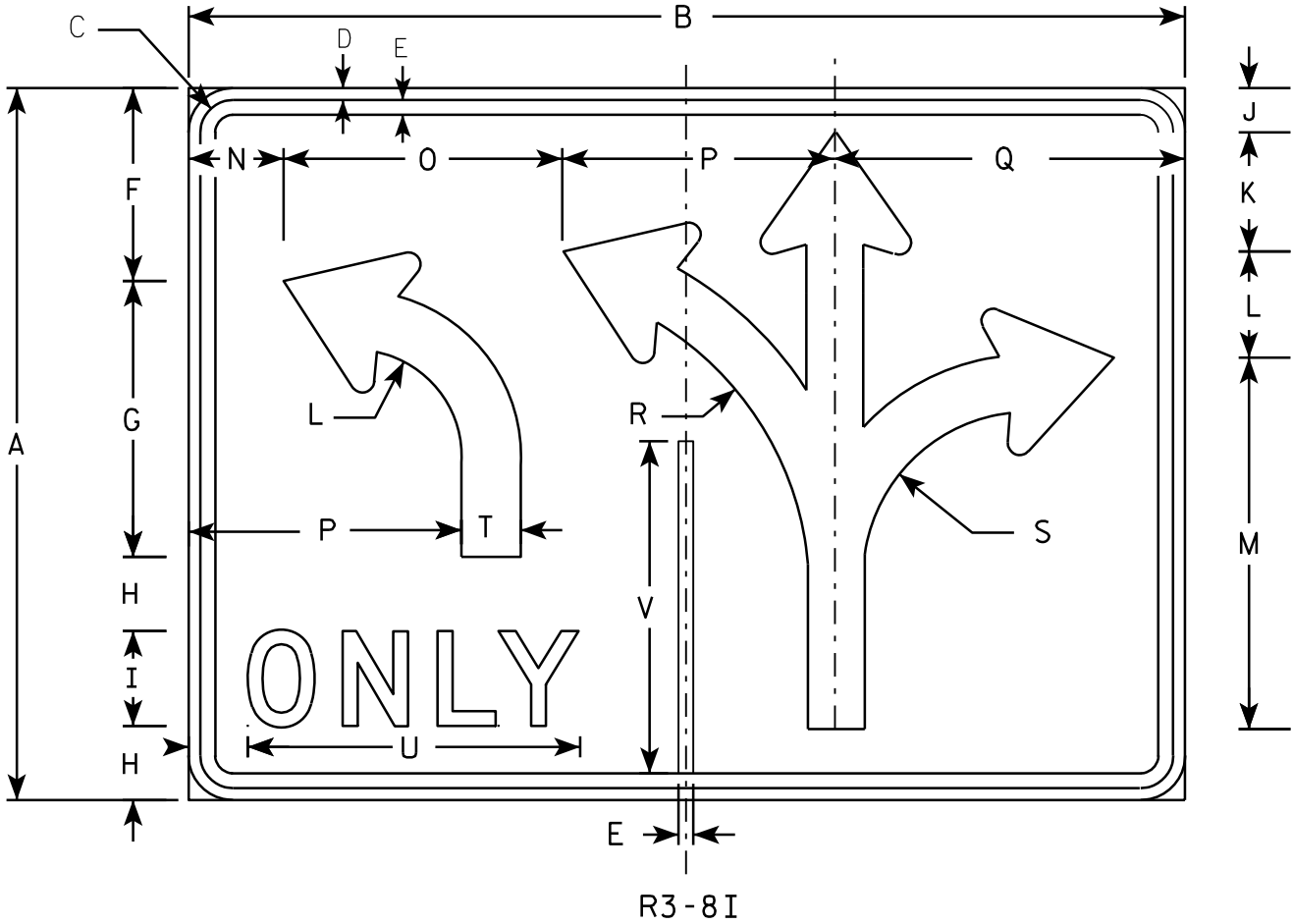
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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STANDARD SIGN
R3-8B & R3-8C

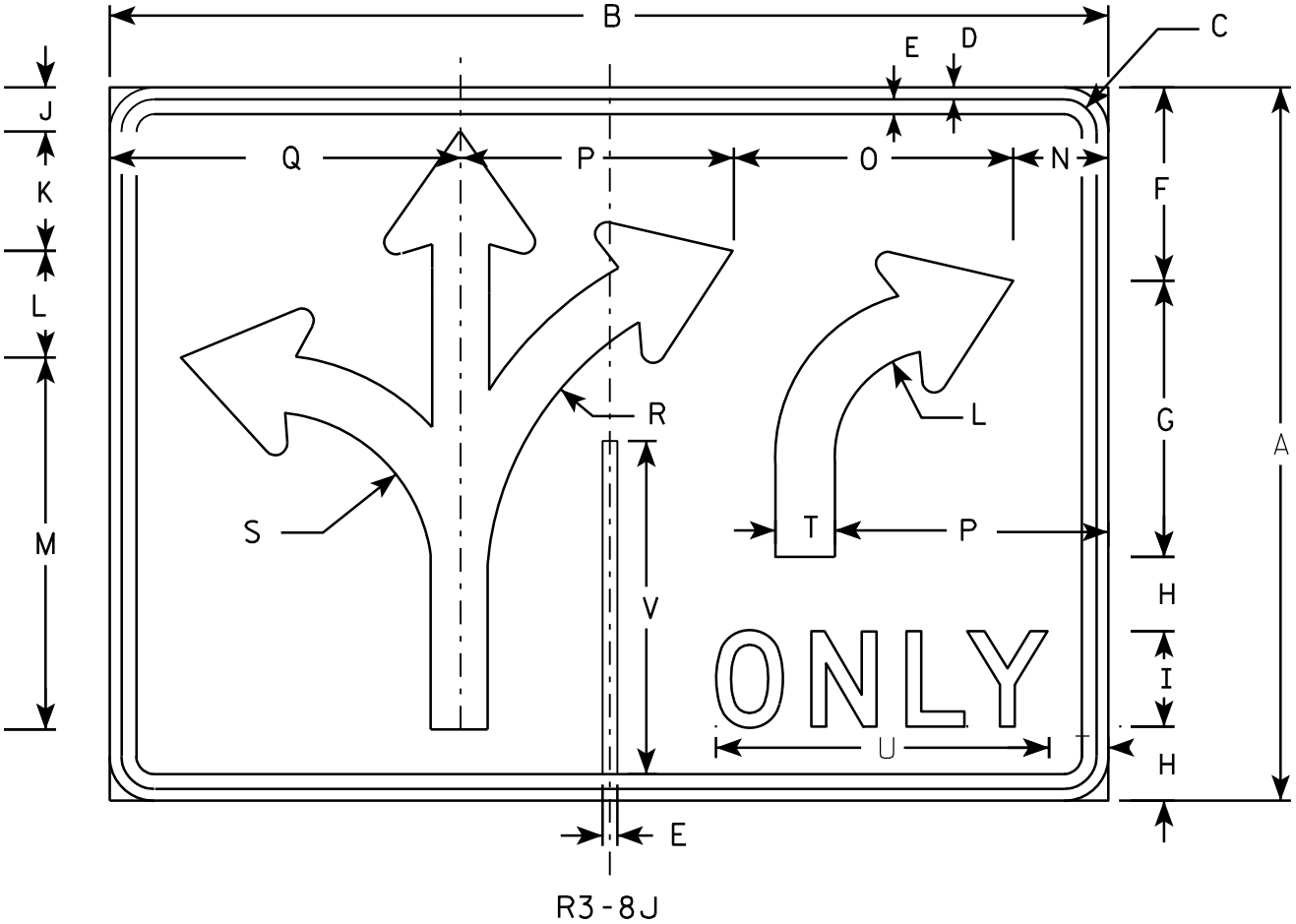
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-8B.2



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



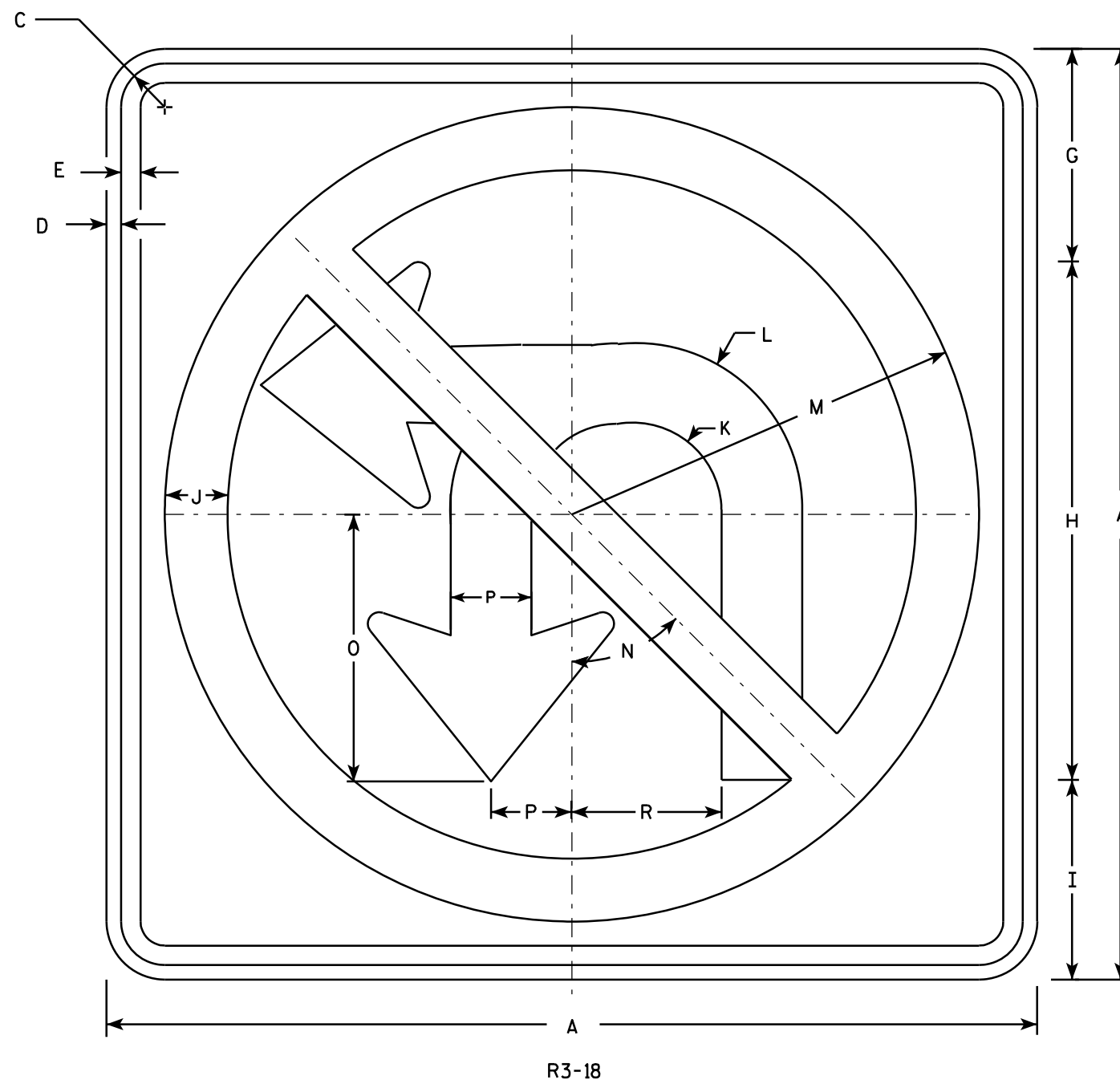
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	42	1 3⁄8	1⁄2	5⁄8	8 1⁄8	11 5⁄8	3 1⁄8	4	1 7⁄8	5	4 1⁄2	15 5⁄8	4	11 3⁄4	11 1⁄2	14 3⁄4	13 1⁄4	7	2 1⁄2	14	14	4 3⁄4	3⁄8	2 5⁄8		8.75
2M	30	42	1 3⁄8	1⁄2	5⁄8	8 1⁄8	11 5⁄8	3 1⁄8	4	1 7⁄8	5	4 1⁄2	15 5⁄8	4	11 3⁄4	11 1⁄2	14 3⁄4	13 1⁄4	7	2 1⁄2	14	14	4 3⁄4	3⁄8	2 5⁄8		8.75
3																											
4	48	66	2 1⁄4	3⁄4	1	13 1⁄4	18 1⁄2	5 1⁄8	6	3 1⁄8	7 7⁄8	7 1⁄4	24 7⁄8	6 1⁄4	18 1⁄2	18	23 1⁄8	21 1⁄4	11 1⁄8	3 3⁄4	20 5⁄8	22 3⁄8	7 1⁄8	5⁄8	4		22.0
5	48	66	2 1⁄4	3⁄4	1	13 1⁄4	18 1⁄2	5 1⁄8	6	3 1⁄8	7 7⁄8	7 1⁄4	24 7⁄8	6 1⁄4	18 1⁄2	18	23 1⁄8	21 1⁄4	11 1⁄8	3 3⁄4	20 5⁄8	22 3⁄8	7 1⁄8	5⁄8	4		22.0

STANDARD SIGN
R3-8I & R3-8J

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/2011> PLATE NO. R3-8I.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.

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		5 1/2	13 3/8	5 1/8	1 5/8	2 1/4	4 1/4	10 1/2	45°	6 7/8	2 1/8		3 7/8									4.0
2M	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45°	10 3/8	3 1/8		5 3/4									9.0
3	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45	10 3/8	3 1/8		5 3/4									9.0
4	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45	10 3/8	3 1/8		5 3/4									9.0
5	48		2 1/4	3/4	1		11	26 3/4	10 1/4	3 1/4	4 5/8	8 5/8	21	45°	13 3/4	4 1/8		7 3/4									16.0

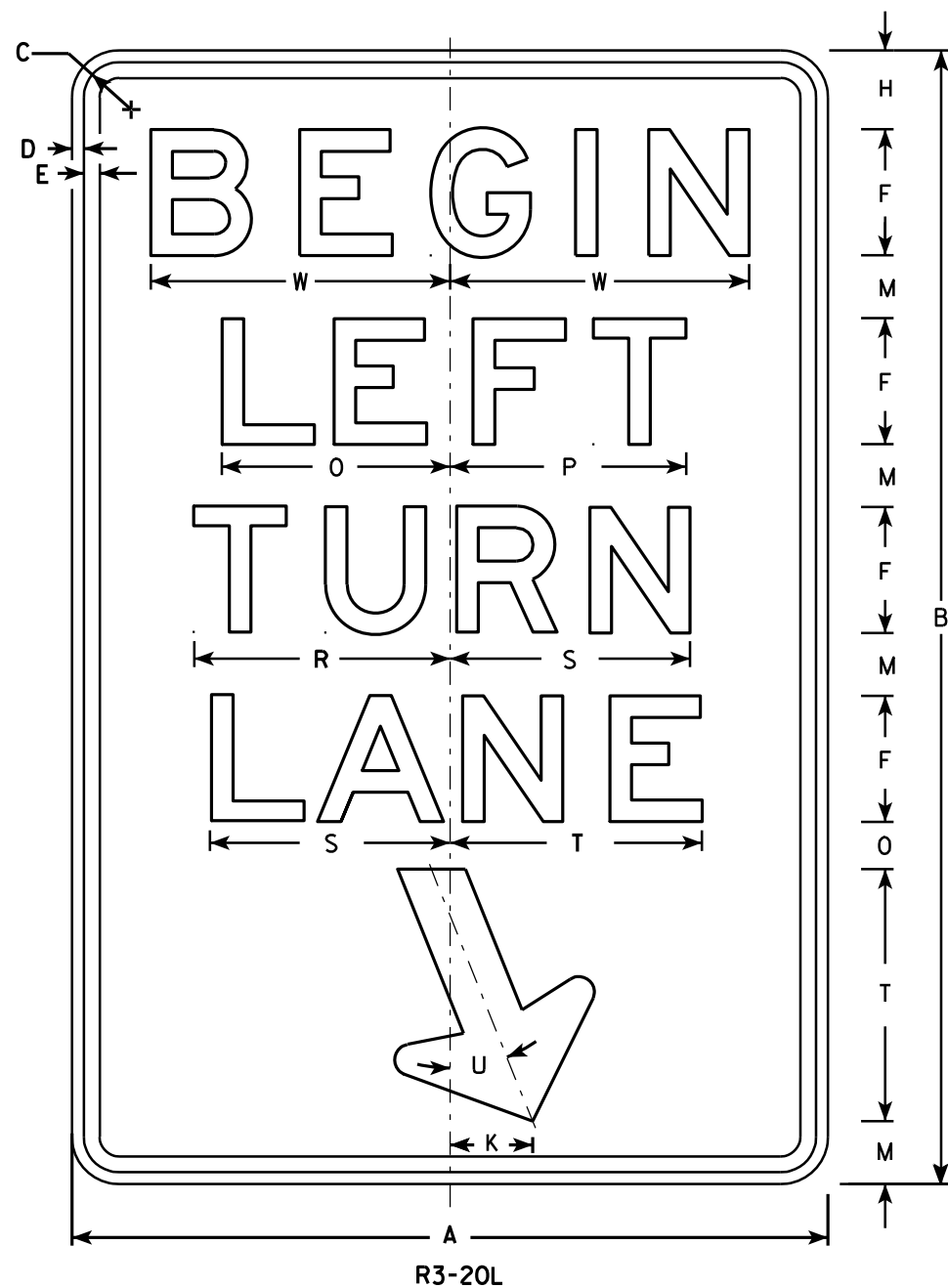
STANDARD SIGN R3-18

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

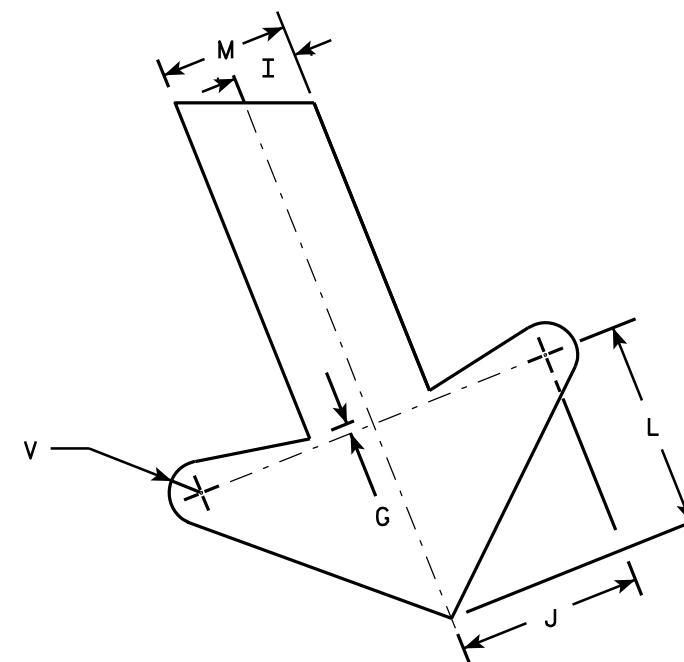
DATE 11/21/10 PLATE NO. R3-18.2

PROJECT NO: HWY: COUNTY: SHEET NO: E



NOTES

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



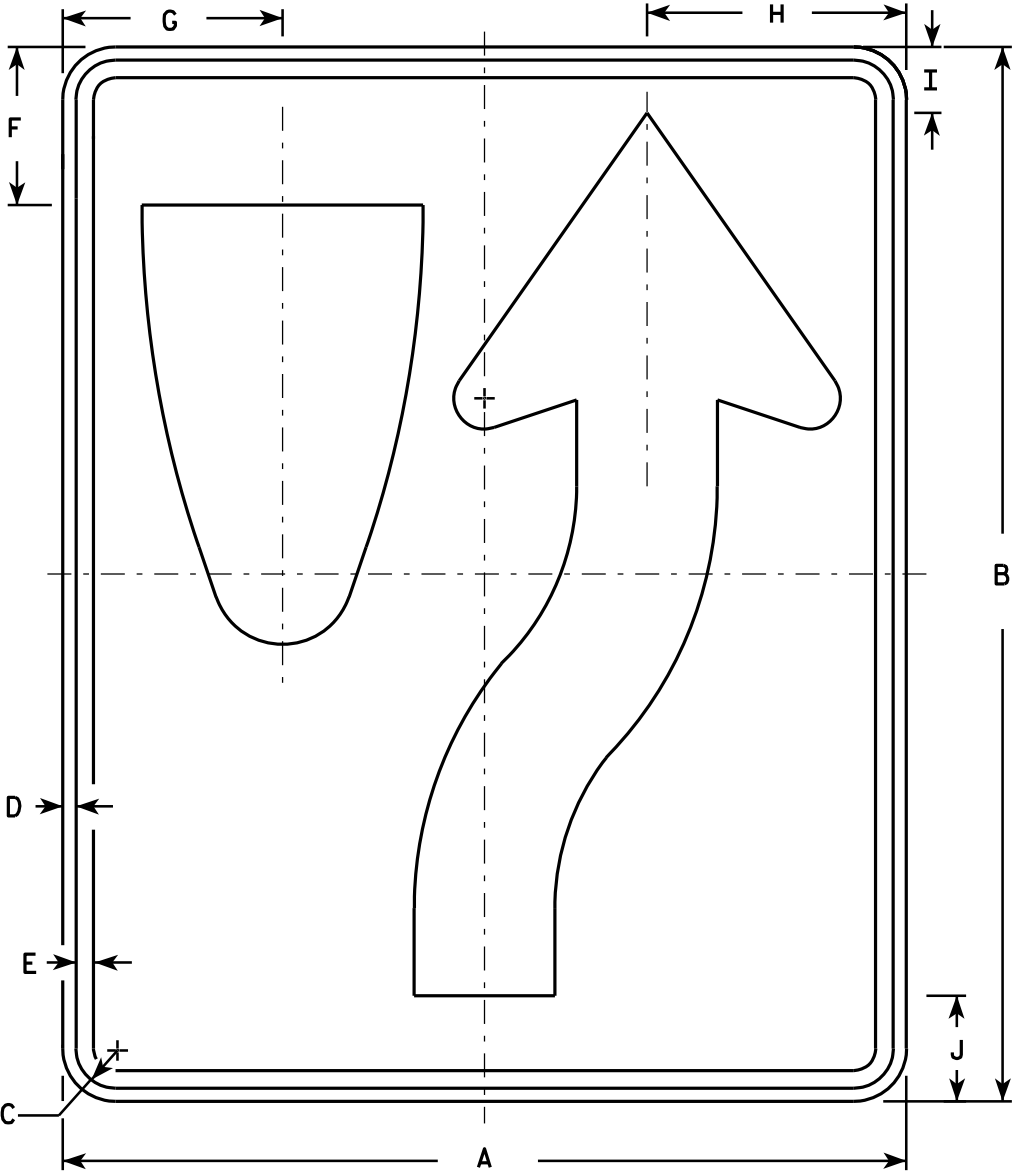
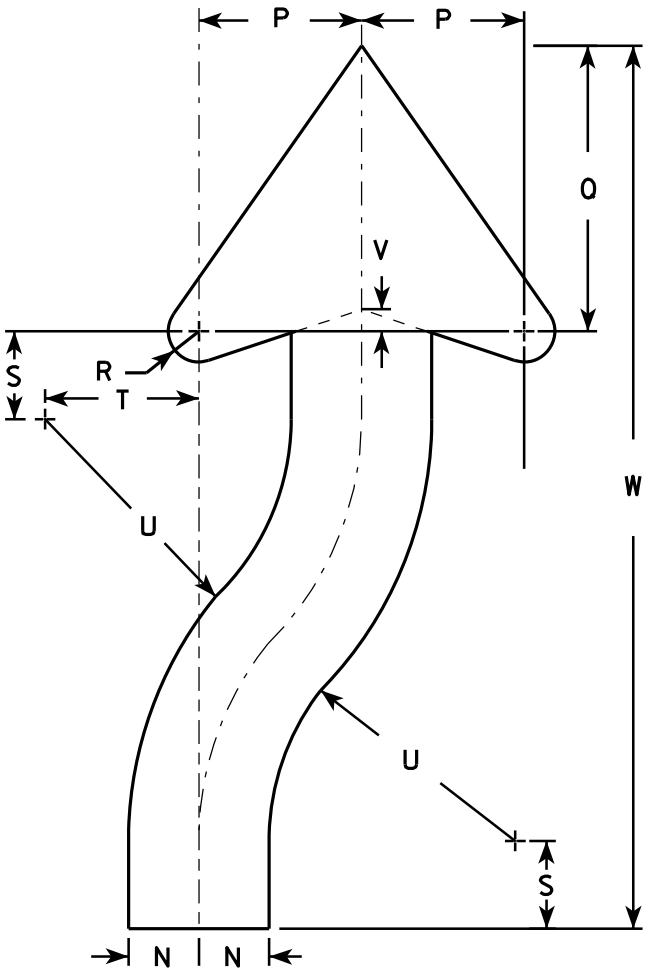
ARROW DETAIL

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:

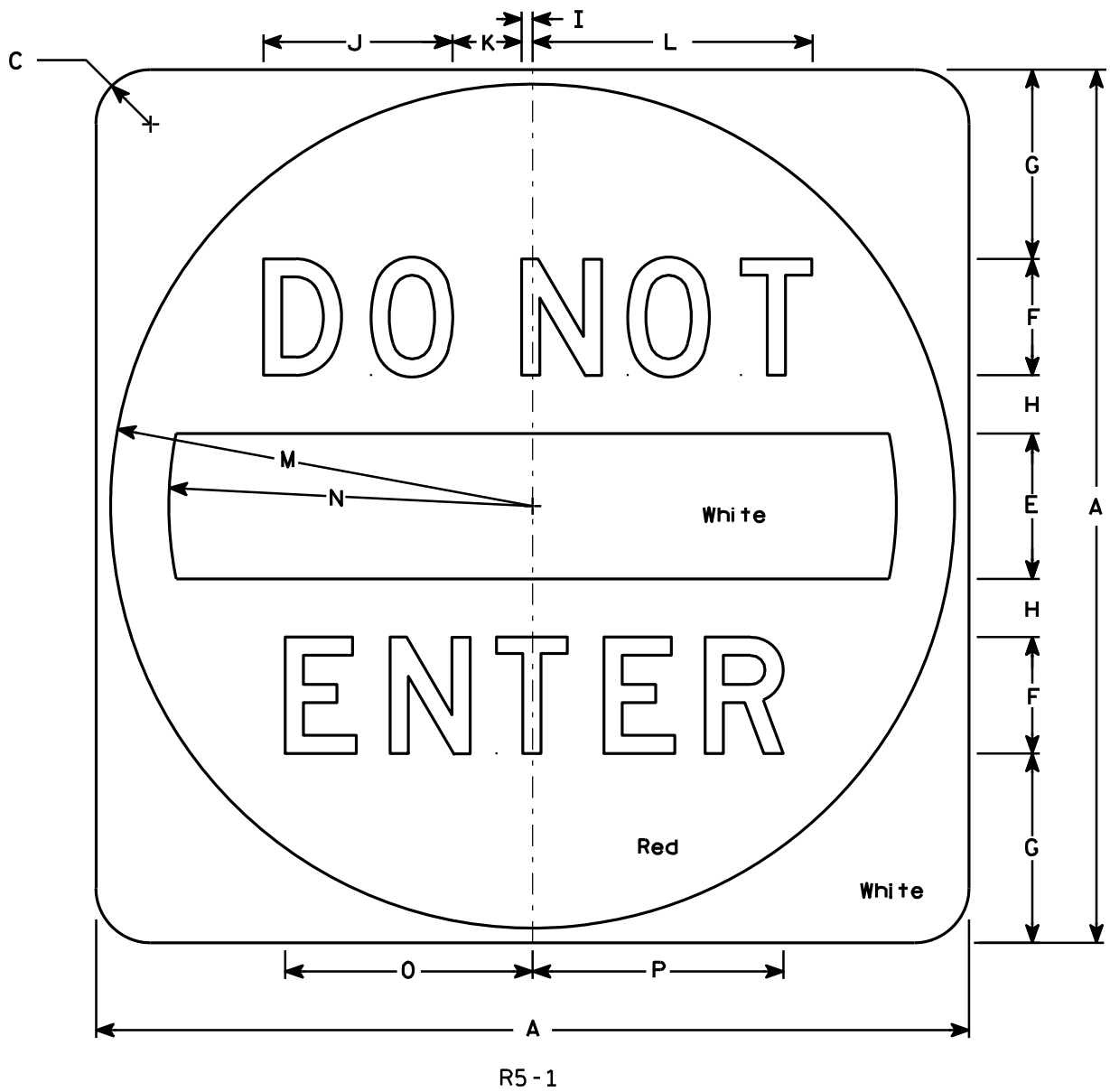
COUNTY:

SHEET NO:

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 - 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

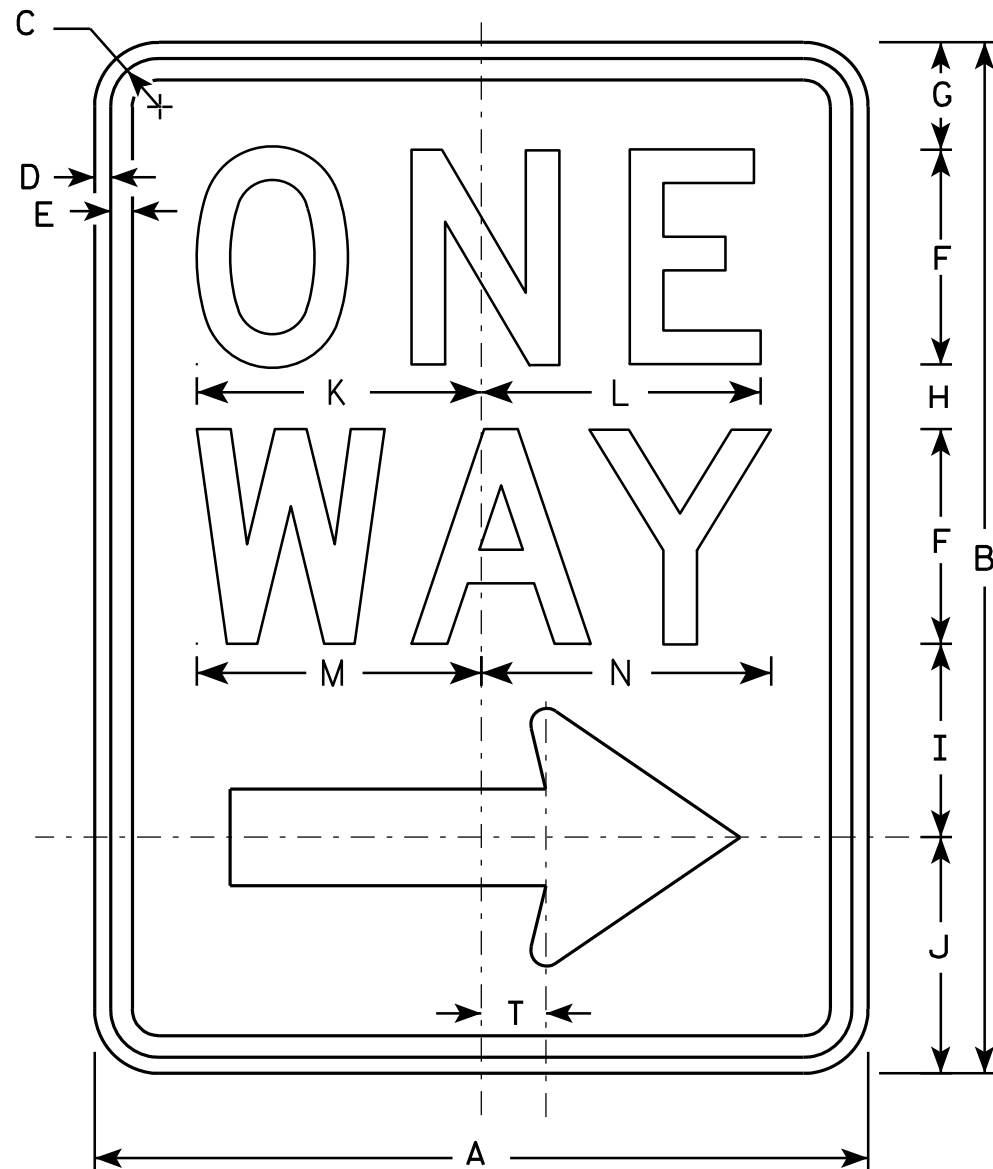
STANDARD SIGN

R5 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

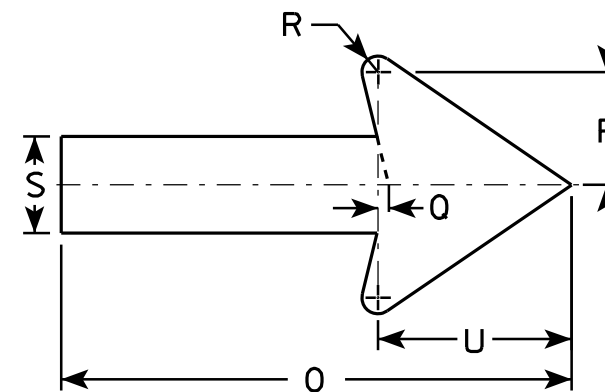
DATE 12/17/10 PLATE NO. R5-1.15



R6-2R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R6-2L same as R6-2R except arrow points to the left.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z
1	18	24	1 1/8	3/8	1/2	5	2 1/2	1 1/2	4 1/2	5 1/2	6 5/8	6 1/2	6 5/8	6 3/4	11 7/8	2 5/8	1/4	3/8	2 1/4	1 1/2	4 1/2					
2S	24	30	1 1/8	3/8	1/2	6	3	2 1/2	5 1/2	7	8 1/8	8 1/8	8 1/2	8 5/8	16	3 1/2	3/8	1/2	3	2	6					
2M	30	36	1 3/8	1/2	5/8	8	2 1/2	2 5/8	6 7/8	8	10 1/2	10 1/2	11 1/4	11 1/4	20	4 3/8	1/2	5/8	3 3/4	2 1/2	7 1/2					
3	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
4	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
5																										

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

R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

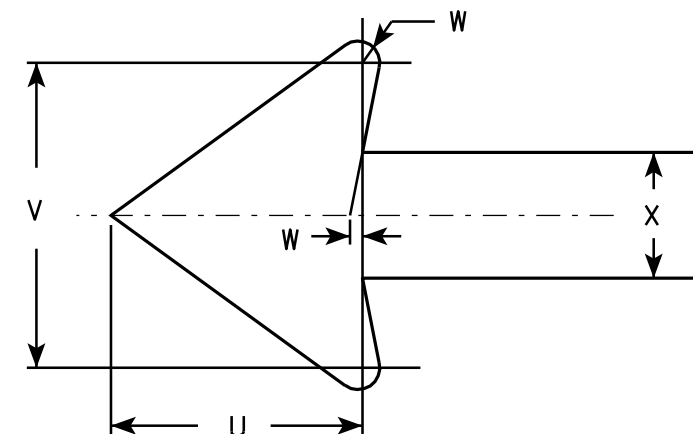
DATE 11/2/10 PLATE NO. R6-2.8



R7-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Red
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

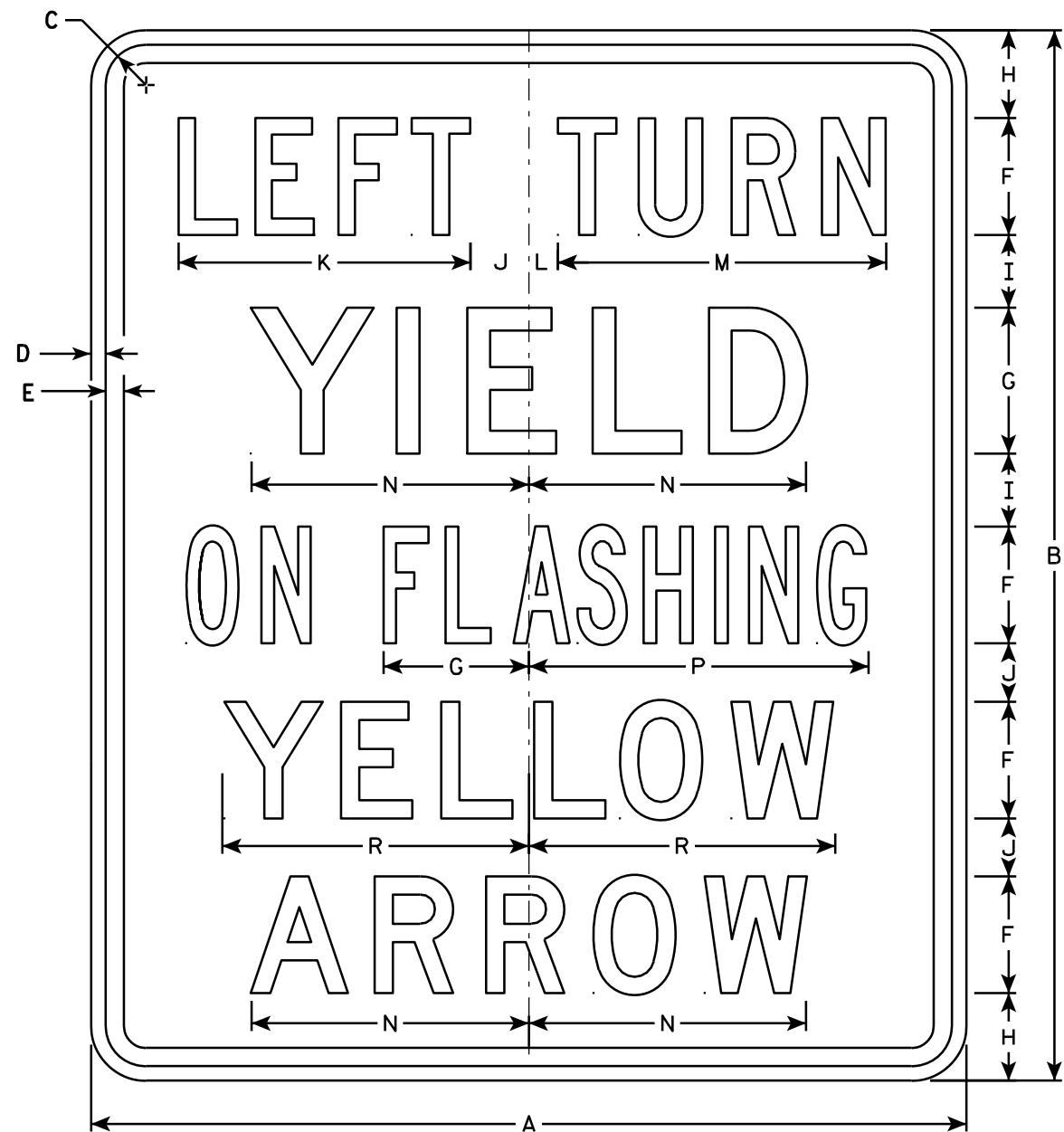
STANDARD SIGN R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

PROJECT NO: HWY: COUNTY: SHEET NO: E

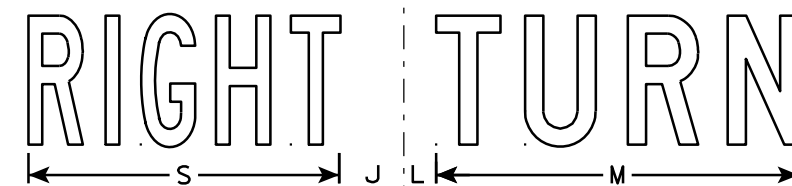


R10-50L

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

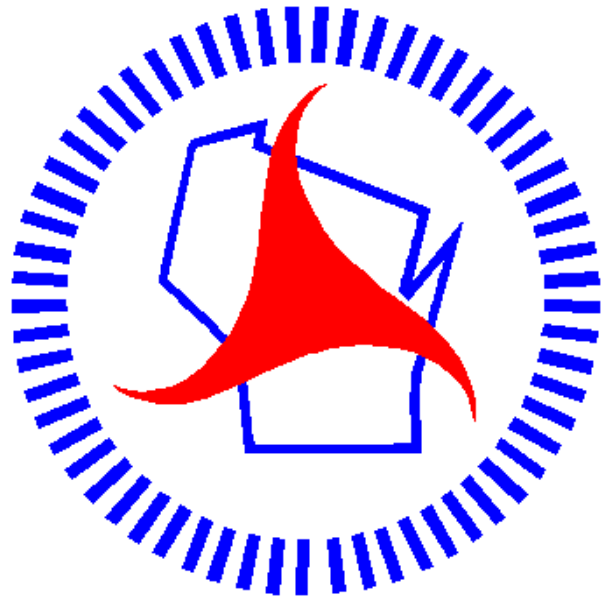
WISCONSIN DEPT OF TRANSPORTATION

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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