

NW AUGUST 2013

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	General Notes
Section No. 2	Details
Section No. 3	Miscellaneous Quantities
Section No. 5	Flasher System Plans
Section No. 5	Enlarged Intersection Layouts
Section No. 7	Standard Detail Plates

TOTAL SHEETS = 34

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

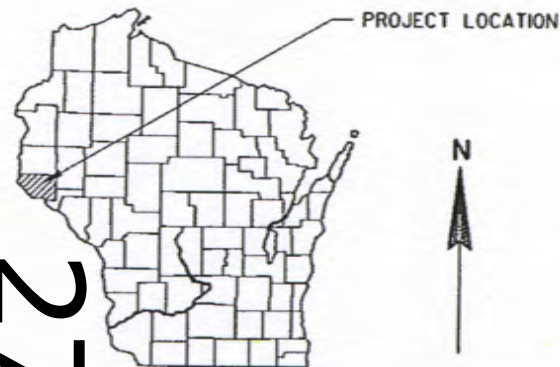
C RIVER FALLS, CASCADE AVENUE

SPRUCE STREET TO SIXTH STREET

LOCAL STREET

PIERCE COUNTY

STATE PROJECT NUMBER
7640-00-71



DESIGN DESIGNATION

A.A.D.T. 2012	=	N/A
A.A.D.T. 2032	=	N/A
D.H.V.	=	N/A
D.D.	=	N/A
T.	=	N/A
DESIGN SPEED	=	N/A
ESALS	=	N/A

CONVENTIONAL SYMBOLS

COUNTY LINE		COMBUSTIBLE FLUIDS	
CORPORATE LIMITS		UNDERGROUND UTILITIES	
PROPERTY LINE		GAS	
LOT LINE		ELECTRIC	
LIMITED EASEMENT		TELEPHONE OR TELEGRAPH	
EARTHWORK BALANCE POINT		TV/CABLE	
EXISTING RIGHT OF WAY		SERVICE PEDESTAL	
PROPOSED OR NEW R/W LINE		POWER POLE	
SURVEY LINE		TELEPHONE POLE	
SLOPE INTERCEPT		RAILROAD	
ORIGINAL GROUND		SANITARY SEWER	
MARSH OR ROCK PROFILE (To be noted as such)		STORM SEWER	
MARSH AREA		WATER	
WOODED OR SHRUB AREA		EXISTING CULVERT	
		PROPOSED CULVERT (Box or Pipe)	
		CULVERT (Profile View)	



BEGIN PROJECT
STA 10+00.00

Y = 383174.800
X = 1287467.011

END PROJECT
STA 29+00.00

LAYOUT
SCALE 0 500'

TOTAL NET LENGTH OF CENTERLINE = 0.360 MI

Coordinates on this plan are referenced to the Wisconsin County Coordinate System (WCCS), Pierce County.

STATE PROJECT

7640-00-71

FEDERAL PROJECT

PROJECT

WISC 2013288

CONTRACT

1

ACCEPTED FOR

CITY of RIVER FALLS

6-3-13
DATE:

ORIGINAL PLANS PREPARED BY:



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	SEH
Designer	SEH
Management Consultant	KNIGHT E/A INC
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 6/3/2013 *Ryan B. McKane* PE
(Management Consultant Signature)

E

PROJECT ID: 7640-00-71

COUNTY: PIERCE

27

STANDARD ABBREVIATIONS

ABUT	ABUTMENT	HYD	HYDRANT
AC	ACRE	ID	INSIDE DIAMETER
AGG	AGGREGATE	INV	INVERT
AECPRC	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE	IP	IRON PIPE ON PIN
		LHF	LEFT-HAND FORWARD
ASPH	ASPHALTIC	L	LENGTH OF CURVE
AVG	AVERAGE	LF	LINEAR FOOT
ADT	AVERAGE DAILY TRAFFIC	LC	LONG CHORD OF CURVE
BF	BACK FACE	LS	LUMP SUM
BM	BENCH MARK	MH	MANHOLE
BR	BRIDGE	MOR	MID POINT OF RADIUS
CE	COMMERCIAL ENTRANCE	NC	NORMAL CROWN
CL OR C/L OR CL	CENTER LINE	NO	NUMBER
Δ	CENTRAL ANGLE OR DELTA	OBLIT	OBLITERATE
CONC	CONCRETE	PAVT	PAVEMENT
CPRC	CULVERT PIPE REINFORCED CONCRETE	PE	PRIVATE ENTRANCE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL	PVRC	POINT OF VERTICAL REVERSE CURVE
		QOR	QUARTER POINT OF RADIUS
CR	CREEK	R	RADIUS
CY	CUBIC YARD	REQ'D	REQUIRED
C & G	CURB AND GUTTER	RES	RESIDENCE OR RESIDENTIAL
D	DEGREE OF CURVE	RHF	RIGHT-HAND FORWARD
DHV	DESIGN HOUR VOLUME	R/W	RIGHT-OF-WAY
DISCH	DISCHARGE	R	RIVER
DG	DITCH GRADE	RDWY	ROADWAY
DWY	DRIVEWAY	R/L OR RL	REFERENCE LINE
X	EAST GRID COORDINATE	SALV	SALVAGED
EAT	STEEL PLATE BEAM GUARD	SAN	SANITARY SEWER
	ENERGY ABSORBING TERMINAL	SF	SQUARE FEET
		SY	SQUARE YARD
EOR	END POINT OF RADIUS	SDD	STANDARD DETAIL DRAWINGS
EL	ELEVATION	STA	STATION
ENT	ENTRANCE	SS	STORM SEWER
ESALS	EQUIVALENT SINGLE AXLE LOADS	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
EXC	EXCAVATION	SE	SUPERELEVATION RATE
EBS	EXCAVATION BELOW SUBGRADE	TC	TOP OF CURB
EXIST	EXISTING	T OR TN	TOWN
FC	FACE OF CURB	T	TRUCKS (PERCENT OF)
FF	FACE TO FACE	TYP	TYPICAL
FERT	FERTILIZE	VAR	VARIABLE
FE	FIELD ENTRANCE	VC	VERTICAL CURVE
FL	FLOW LINE	Y	NORTH GRID COORDINATE
FO	FIBER OPTIC	YD	YARD
CWT	HUNDREDWEIGHT		

GENERAL NOTES

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

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE RESTORED WITH 4 INCHES OF TOPSOIL, SEED, FERTILIZER AND MULCH. RESTORATION MATERIALS AND LABOR SHALL BE CONSIDERED AS INCIDENTAL WORK TO THE ENTIRE PROJECT. NO DIRECT COMPENSATION WILL BE MADE FOR RESTORATION.

HORIZONTAL ALIGNMENT SHOWN IS FOR QUANTITATIVE PURPOSES ONLY.

DESIGN CONTACT

SEH INC.
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110-5196
TELEPHONE: 651.490.2000
ATTENTION: JOHN GRAY, PE
EMAIL: JGRAY@SEHINC.COM

WIS DNR CONTACT

DEPT OF NATURAL RESOURCES
WEST CENTRAL REGION HEADQUARTERS
1300 WEST CLAIREMONT AVE
EAU CLAIRE, WI 54701
TELEPHONE: 715.839.3700
ATTENTION: NICK SCHAFF

UTILITY CONTACTS

CITY OF RIVER FALLS (STORM SEWER)
222 LEWIS STREET
RIVER FALLS, WI 54022
TELEPHONE: 715.426.3409
ATTN: REID WRONSKI, CITY ENGINEER

RIVER FALLS SCHOOL DISTRICT
852 EAST DIVISION STREET
RIVER FALLS, WI 54022
TELEPHONE: 715.425.1800
ATTENTION: BRIAN DADO

RIVER FALLS MUNICIPAL UTILITIES
222 LEWIS STREET
RIVER FALLS, WI 54022
TELEPHONE: 715.425.0906
ATTENTION: TAMARRA JAWORSKI
(WATER, SEWER, AND ELECTRIC)

AT&T
304 S. DEWEY STREET
EAU CLAIRE, WI 54701
TELEPHONE: 715.839.5565
ATTENTION: RICK PODOLAK

ST. CROIX VALLEY NATURAL GAS
PO BOX 6
RIVER FALLS, WI 54022
TELEPHONE: 715.425.6177
ATTENTION: GREG LEE

COMCAST
2611 FAIRVIEW AVENUE N
ROSEVILLE, MN 55113
TELEPHONE: 651.493.5127
ATTENTION: SCOTT RUPPERT

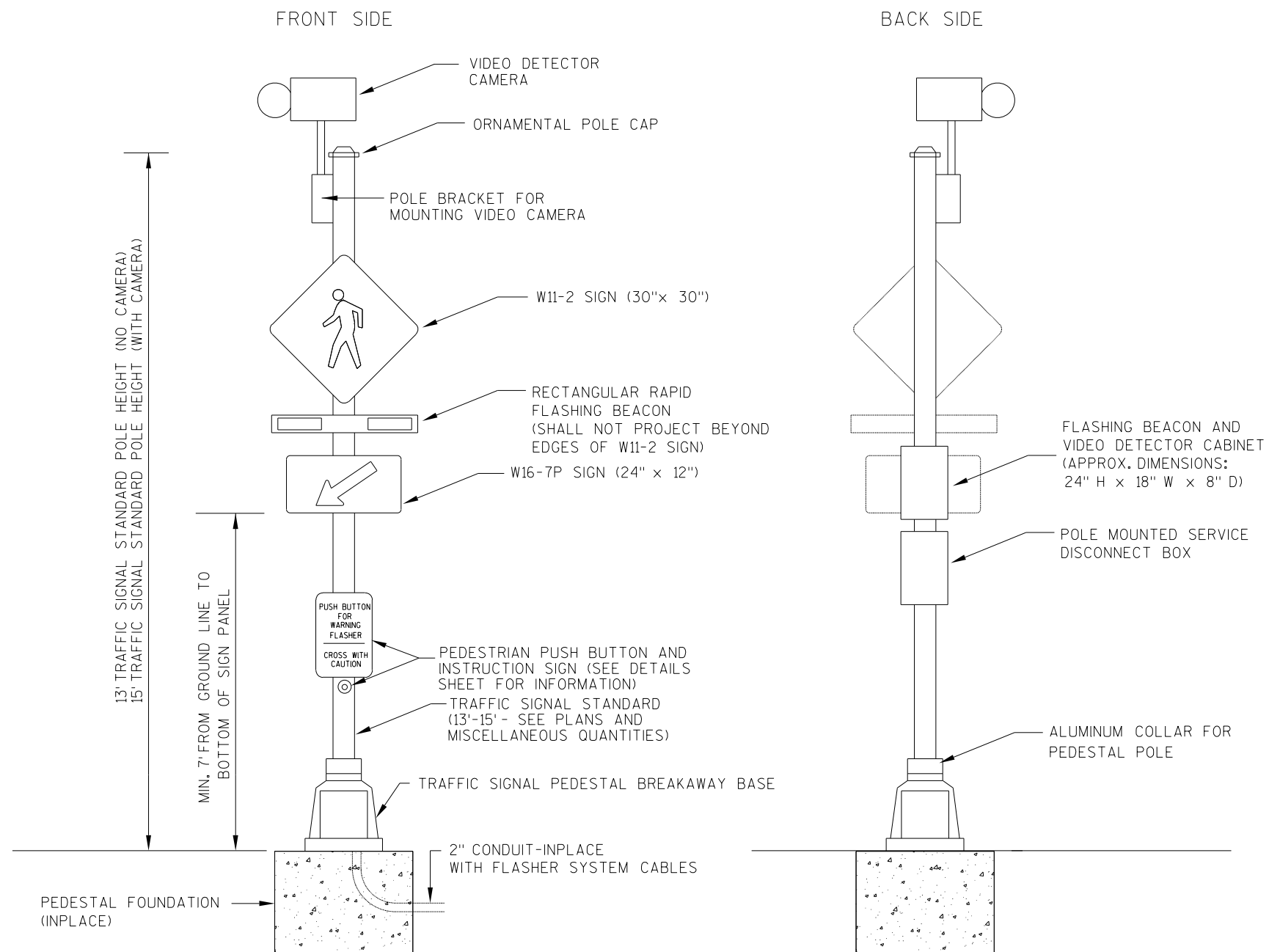
C & L COMMUNICATIONS FOR
RIVER FALLS SCHOOL DISTRICT
(FIBER OPTIC)
C & L: PO BOX 362
OWATONNA, MN 55060
TELEPHONE: 507.451.3326
ATTENTION: BRUCE LOUCKS



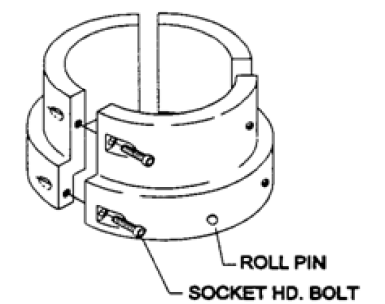
CALL 811 OR (800)242.8511
(877)500.9592 (EMERGENCY ONLY)
www.DiggersHotline.com

NOTE:
THE EXACT LOCATION OF UNDERGROUND UTILITIES SUCH AS GAS, TELEPHONE, FIBER OPTIC, ELECTRIC, CABLE TV AND PIPE LINES ARE UNKNOWN. THE CONTRACTOR SHALL CONTACT DIGGERS HOTLINE AND ALL OTHER UTILITY OWNERS WHICH ARE WITHIN PROJECT LIMITS, BEFORE COMMENCING EXCAVATION.

FLASHER POLE DETAIL



ALUMINUM COLLAR FOR
PEDESTAL POLE



FLASHER SYSTEM PEDESTAL MOUNTED SIGNING (TYPE II SIGNS)

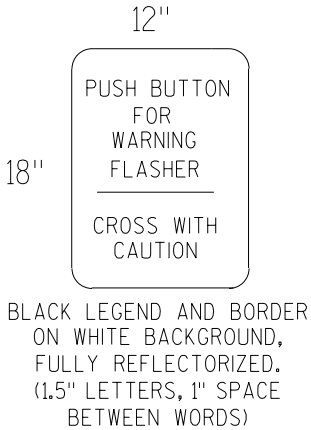
CASCADE AVENUE FLASHERS						
SIGNS, TYPE IIREFLECTIVE (REGULATORY SIGNS) - F & I						
MUTCD CODE	PANEL LEGEND	NO. REQ.	SIZE (IN)	AREA PER SIGN (SF)	TOTAL AREA (SF)	POLE NO.
W11-2	PEDESTRIAN XING	6	30×30	6.25	37.50	SB-2,2,5,6,21,22
W16-7PR	DOWN ARROW (RIGHT)	6	24×18	3.00	18.00	SB-2,2,5,6,21,22
-	PUSH BUTTON SIGN	22	12×18	1.50	33.00	SB-1,3,4-23
TOTAL QUANTITIES		34			88.50	

CASCADE AVENUE FLASHERS					
REMOVING SIGNS TYPE II					
PLAN CODE	MUTCD CODE	PANEL LEGEND	NO. REQ.	SIZE (IN)	SIGN MOUNTING
C-1	R4-7	KEEP RIGHT	1	24×30	1-POST
C-2	W11-2	PEDESTRIAN XING	12	30×30	1-POST
	W16-7PL	DOWN ARROW (LEFT)	12	24×18	
C-3	W11-2	PEDESTRIAN XING	6	30×30	1-POST
	W16-7PR	DOWN ARROW (RIGHT)	6	24×18	
TOTAL QUANTITIES			37		

CASCADE AVENUE FLASHERS				
MOVING SIGNS TYPE II				
MUTCD CODE	PANEL LEGEND	NO. REQ.	SIZE (IN)	POLE NO.
W11-2	PEDESTRIAN XING	12	30×30	SB-1,3,4,7,8,11,12,15,16,19,20,23
W16-7PL	DOWN ARROW (LEFT)	12	24×18	SB-1,3,4,7,8,11,12,15,16,19,20,23
W11-2	PEDESTRIAN XING	6	30×30	SB-9,10,13,14,17,18
W16-7PR	DOWN ARROW (RIGHT)	6	24×18	SB-9,10,13,14,17,18
TOTAL QUANTITIES		36		

NOTES:

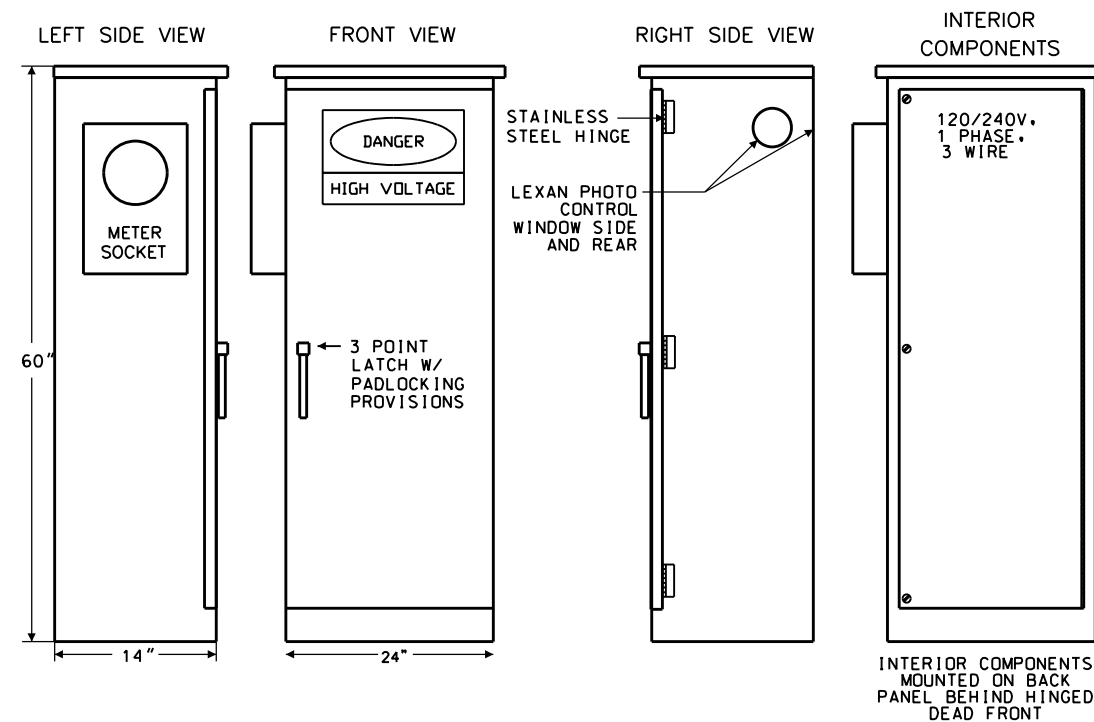
- 1) CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- 2) ALL NEW SIGNS SHALL BE FABRICATED USING TYPE SH SHEETING.
- 3) FURNISHING AND INSTALLING NEW SIGN MOUNTING HARDWARE SHALL BE CONSIDERED INCIDENTAL TO SIGNING BID ITEMS.
- 4) SIGN POSTS AND SIGN POST MOUNTING HARDWARE SHALL BE REMOVED AND SALVAGED TO THE CITY OF RIVER FALLS BY THE CONTRACTOR (INCIDENTAL TO SIGNING BID ITEMS).



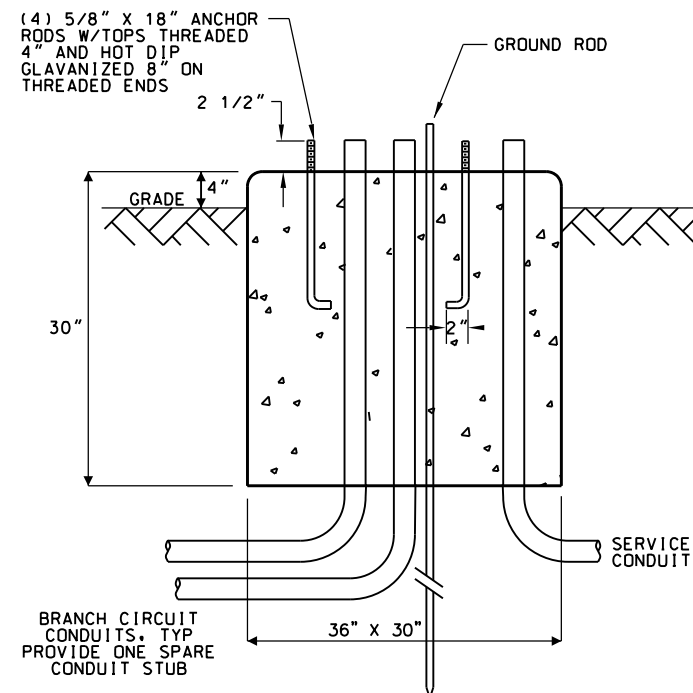
CABLE ROUTING DETAILS

TYPICAL CABLE AND WIRING			
FROM	TO	CABLE SIZE	COLOR CODE
CABINET (CB)	FLASHING BEACON (R)	4/C*14	BLK, W, R, G
CABINET (CB)	VIDEO DETECTOR (V)	CAT 5e (VIDEO)	BR/W, BL, BL/W, BR, O/W, O, G/W, G
CABINET (CB)	VIDEO DETECTOR (V)	3/C*14 (POWER)	BLK, W, R
CABINET (CB)	DISCONNECT (SP)	3-1/C*10	BLK, W, G (GRD)
CABINET (CB)	PUSH BUTTON	3/C*14	BLK, W, R
DISCONNECT (SP)	SERVICE CABINET	3-1/C*6	BLK, W, G (GRD)
CABINET (CB)	LUMINAIRE	1-1/c*12	BLK
LUMINAIRE (BACK TO)	CABINET (CB)	1-1/c*12	WH

ELECTRICAL WIRE 10 AWG, XLP (WHITE)		ELECTRICAL WIRE 10 AWG, XLP (GREEN)		BONDING JUMPERS	
FROM	TO	FROM	TO	FROM	TO
CB-1A	SB-1	CB-1A	SB-1	SB-1	PB-1
CB-1A	SB-2	SB-1	SB-2	SB-2	PB-2
CB-2A	SB-2	SB-2	SB-3	SB-3	PB-3
CB-2A	SB-3	SB-3	CB-2A	SB-4	PB-7
CB-1B	SB-4	CB-1B	SB-4	SB-5	PB-8
CB-1B	SB-5	SB-4	SB-5	SB-6	PB-8
CB-2B	SB-6	SB-6	SB-7	SB-7	PB-9
CB-2B	SB-7	SB-7	CB-2B	SB-8	PB-11
CB-1C	SB-8	CB-1C	SB-8	SB-9	PB-12
CB-1C	SB-9	SB-8	SB-9	SB-10	PB-12
CB-2C	SB-10	SB-10	SB-11	SB-11	PB-13
CB-2C	SB-11	SB-11	CB-2C	SB-12	PB-15
CB-1D	SB-12	CB-1D	SB-12	SB-13	PB-16
CB-1D	SB-13	SB-12	SB-13	SB-14	PB-16
CB-2D	SB-14	SB-14	SB-15	SB-15	PB-17
CB-2D	SB-15	SB-15	CB-2D	SB-16	PB-18
CB-1E	SB-16	CB-1E	SB-16	SB-17	PB-19
CB-1E	SB-17	SB-16	SB-17	SB-18	PB-19
CB-2E	SB-18	SB-18	SB-19	SB-19	PB-20
CB-2E	SB-19	SB-19	CB-2E	SB-20	PB-24
CB-1F	SB-20	CB-1F	SB-20	SB-21	PB-23
CB-1F	SB-21	SB-20	SB-21	SB-22	PB-23
CB-2F	SB-22	SB-22	SB-23	SB-23	PB-22
CB-2F	SB-23	SB-23	CB-2F		



SERVICE CABINET DETAIL (TYPE 1)

EQUIPMENT PAD DETAIL
SERVICE CABINET FOUNDATION**SERVICE CABINET NOTES:**

PROVIDE METER SOCKET PER UTILITY COMPANY REQUIREMENTS.

CIRCUIT BREAKERS SHALL BE 120 VOLT AC, 60HZ AND SHALL BE CLEARLY MARKED WITH THE "ON" AND "OFF" POSITIONS AND IDENTIFIED WITH THE LOAD TO WHICH IT IS CONNECTED.

SHORT CIRCUIT RATING - 14,000 AIC SYMMETRICAL.

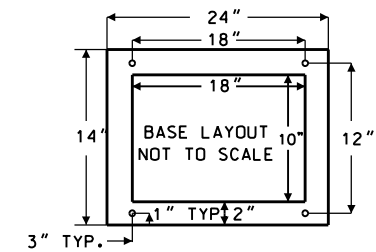
SELECTOR SWITCH ALLEN BRADLEY #800TJ2A.

CIRCUIT CONTACTORS SHALL HAVE A 240 VOLT RATING, WITH 120 VOLT COIL.

PROVIDE PANEL WITH DIMENSIONS AS REQUIRED TO FIT EQUIPMENT PROPOSED.

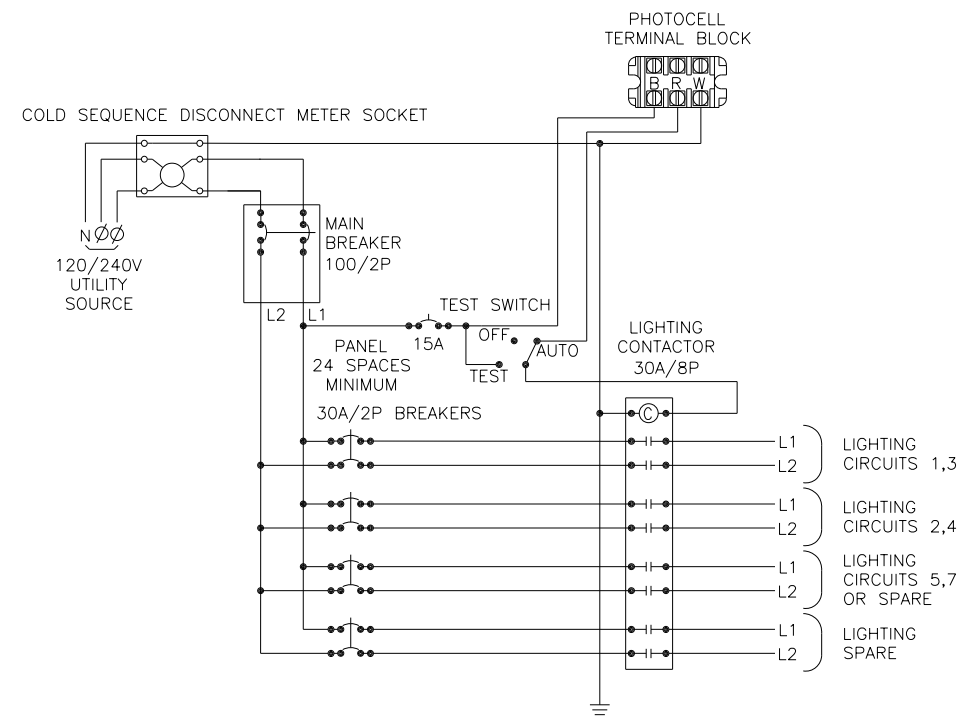
BOTH PHOTOELECTRIC CONTROL AND SOCKET SHALL BE 3 TERMINAL, POLARIZED, TWIST-LOCK TYPE. IT SHALL BE EQUIPPED WITH A MOVRO TYPE LIGHTING ARRESTER.

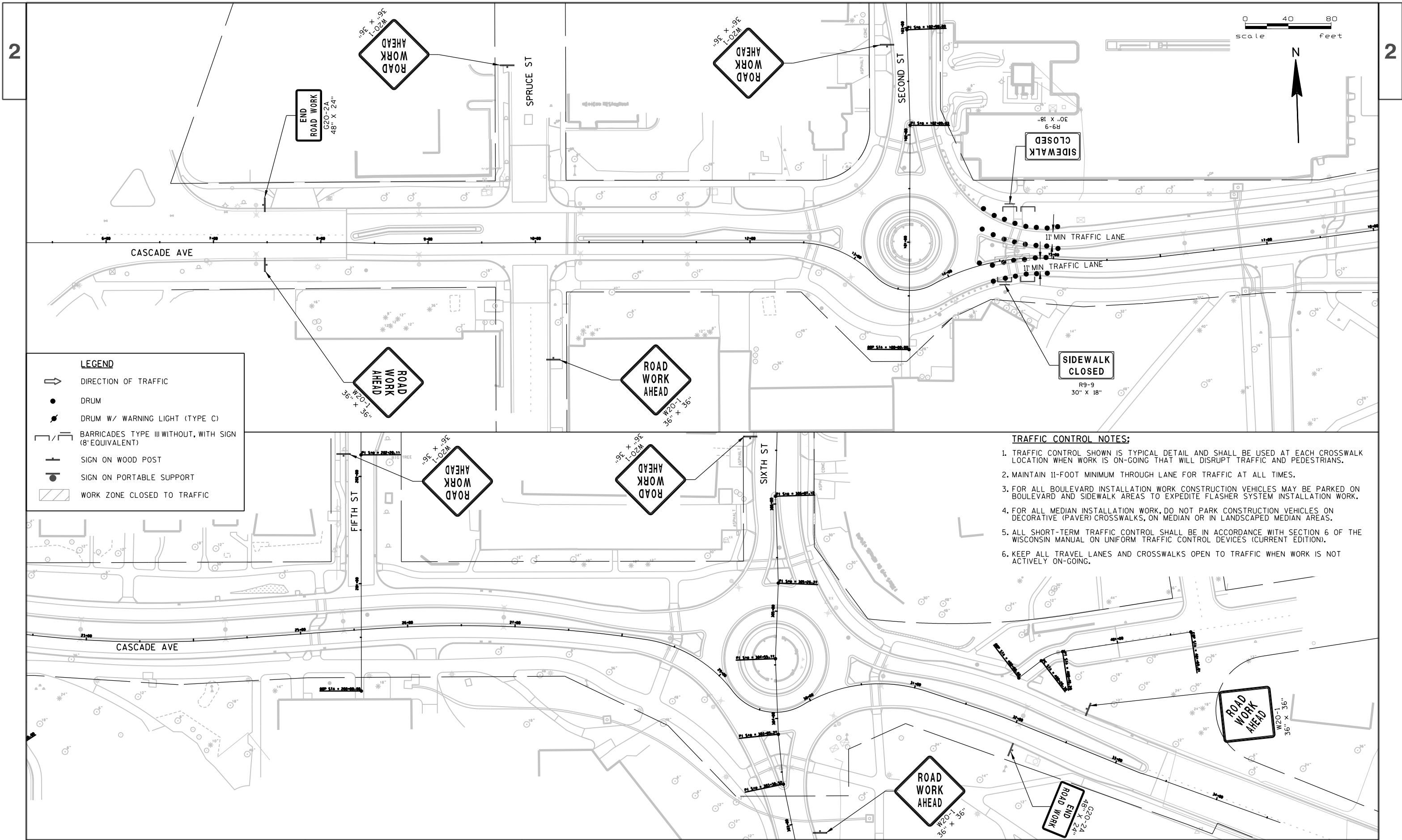
COORDINATE CONNECTION TO EXISTING TRANSFORMERS WITH CHUCK BERANEK, RIVER FALLS MUNICIPAL UTILITIES 715.222.2356

**CABINET CONSTRUCTION**

- NEMA 3R
- INTERIOR COMPONENTS MOUNTED ON BACK PANEL BEHIND DEAD FRONT
- 1/8" ANODIZED ALUMINUM (DURANODIC BLACK)
- NEOPRENE GASKETED DOORS
- STAINLESS STEEL HARDWARE
- ETL LISTED IN ACCORDANCE WITH UL508A

SERVICE CABINET A & B SCHEMATIC (UNMETERED (TYPE 1))





- TRAFFIC CONTROL NOTES:**
1. TRAFFIC CONTROL SHOWN IS TYPICAL DETAIL AND SHALL BE USED AT EACH CROSSWALK LOCATION WHEN WORK IS ON-GOING THAT WILL DISRUPT TRAFFIC AND PEDESTRIANS.
 2. MAINTAIN 11-FOOT MINIMUM THROUGH LANE FOR TRAFFIC AT ALL TIMES.
 3. FOR ALL BOULEVARD INSTALLATION WORK CONSTRUCTION VEHICLES MAY BE PARKED ON BOULEVARD AND SIDEWALK AREAS TO EXPEDITE FLASHER SYSTEM INSTALLATION WORK.
 4. FOR ALL MEDIAN INSTALLATION WORK, DO NOT PARK CONSTRUCTION VEHICLES ON DECORATIVE (PAVER) CROSSWALKS, ON MEDIAN OR IN LANDSCAPED MEDIAN AREAS.
 5. ALL SHORT-TERM TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH SECTION 6 OF THE WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CURRENT EDITION).
 6. KEEP ALL TRAVEL LANES AND CROSSWALKS OPEN TO TRAFFIC WHEN WORK IS NOT ACTIVELY ON-GOING.

DATE 11JUN13		E S T I M A T E O F Q U A N T I T I E S			
LINE				7640-00-71	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	213.0100	FINISHING ROADWAY (PROJECT) 01. 7640-00-71	EACH	1.000	1.000
0020	619.1000	MOBILIZATION	EACH	1.000	1.000
0030	637.0202	SIGNS REFLECTIVE TYPE II	SF	88.500	88.500
0040	638.2102	MOVING SIGNS TYPE II	EACH	36.000	36.000
0050	638.2602	REMOVING SIGNS TYPE II	EACH	37.000	37.000
0060	643.0100	TRAFFIC CONTROL (PROJECT) 01. 7640-00-71	EACH	1.000	1.000
0070	655.0210	CABLE TRAFFIC SIGNAL 3-14 AWG	LF	1,085.000	1,085.000
0080	655.0220	CABLE TRAFFIC SIGNAL 4-14 AWG	LF	1,110.000	1,110.000
0090	655.0515	ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	LF	5,045.000	5,045.000
0100	655.0525	ELECTRICAL WIRE TRAFFIC SIGNALS 6 AWG	LF	7,635.000	7,635.000
0110	655.0610	ELECTRICAL WIRE LIGHTING 12 AWG	LF	1,785.000	1,785.000
0120	656.0300	ELECTRICAL SERVICE UNMETERED (LOCATION) 01. CASCADE AVENUE & SECOND STREET INTERSECTION	LS	1.000	1.000
0130	656.0300	ELECTRICAL SERVICE UNMETERED (LOCATION) 02. CASCADE AVENUE & SIXTH STREET INTERSECTION	LS	1.000	1.000
0140	656.0500	ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 01. CASCADE/SPRUCE	LS	1.000	1.000
0150	656.0500	ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 02. CASCADE/SECOND	LS	1.000	1.000
0160	656.0500	ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 03. CASCADE/THIRD	LS	1.000	1.000
0170	656.0500	ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 04. CASCADE/ FOURTH	LS	1.000	1.000
0180	656.0500	ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 05. CASCADE/FIFTH	LS	1.000	1.000
0190	656.0500	ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 06. CASCADE/SIXTH	LS	1.000	1.000
0200	657.0100	PEDESTAL BASES	EACH	23.000	23.000
0210	657.0420	TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT	EACH	11.000	11.000
0220	657.0425	TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	EACH	12.000	12.000
0230	658.0500	PEDESTRIAN PUSH BUTTONS	EACH	22.000	22.000
0240	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 01. CASCADE AVENUE & SPRUCE STREET INTERSECTION	LS	1.000	1.000
0250	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 02. CASCADE AVENUE & SECOND STREET INTERSECTION	LS	1.000	1.000
0260	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 03. CASCADE AVENUE & THIRD STREET INTERSECTION	LS	1.000	1.000
0270	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 04. CASCADE AVENUE & FOURTH STREET INTERSECTION	LS	1.000	1.000
0280	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 05. CASCADE AVENUE & FIFTH STREET INTERSECTION	LS	1.000	1.000
0290	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 06. CASCADE AVENUE & SIXTH STREET INTERSECTION	LS	1.000	1.000
0300	ASP.1TOA	ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR	HRS	1,200.000	1,200.000
0310	ASP.1TOG	ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR	HRS	300.000	300.000
0320	SPV.0060	SPECIAL 01. VIDEO DETECTOR, SPECIAL	EACH	12.000	12.000
0330	SPV.0090	SPECIAL 01. VIDEO DETECTOR CABLE, CAT 5E SPECIAL	LF	180.000	180.000

DATE 11JUN13		E S T I M A T E O F Q U A N T I T I E S				
LINE						7640-00-71
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	
0340	SPV. 0105	SPECIAL 01. RRFB SYSTEM (CASCADE/SPRUCE NORTH CROSSWALK)	LS	1.000	1.000	
0350	SPV. 0105	SPECIAL 02. RRFB SYSTEMS (CASCADE/SPRUCE SOUTH CROSSWALK)	LS	1.000	1.000	
0360	SPV. 0105	SPECIAL 03. RRFB SYSTEM (CASCADE/SECOND NORTH CROSSWALK)	LS	1.000	1.000	
0370	SPV. 0105	SPECIAL 04. RRFB SYSTEM (CASCADE/SECOND SOUTH CROSSWALK)	LS	1.000	1.000	
0380	SPV. 0105	SPECIAL 05. RRFB SYSTEM (CASCADE/THIRD NORTH CROSSWALK)	LS	1.000	1.000	
0390	SPV. 0105	SPECIAL 06. RRFB SYSTEM (CASCADE/THIRD SOUTH CROSSWALK)	LS	1.000	1.000	
0400	SPV. 0105	SPECIAL 07. RRFB SYSTEM (CASCADE/FOURTH NORTH CROSSWALK)	LS	1.000	1.000	
0410	SPV. 0105	SPECIAL 08. RRFB SYSTEM (CASCADE/FOURTH SOUTH CROSSWALK)	LS	1.000	1.000	
0420	SPV. 0105	SPECIAL 09. RRFB SYSTEM (CASCADE/FIFTH NORTH CROSSWALK)	LS	1.000	1.000	
0430	SPV. 0105	SPECIAL 10. RRFB SYSTEM (CASCADE/FIFTH SOUTH CROSSWALK)	LS	1.000	1.000	
0440	SPV. 0105	SPECIAL 11. RRFB SYSTEM (CASCADE/SIXTH NORTH CROSSWALK)	LS	1.000	1.000	
0450	SPV. 0105	SPECIAL 12. RRFB SYSTEM (CASCADE/SIXTH SOUTH CROSSWALK)	LS	1.000	1.000	

3

CABLE AND WIRING		655.0210 TRAFFIC SIGNAL CABLE 3 CONDUCTOR NO. 14 FT	655.0220 TRAFFIC SIGNAL CABLE 4 CONDUCTOR NO. 14 FT	655.0525 ELECTRICAL WIRE, TRAFFIC SIGNALS NO.6 FT	655.0515 * ELECTRICAL WIRE, TRAFFIC SIGNALS NO.10 FT	655.0610 ELECTRICAL WIRE, LIGHTING NO. 12 FT	SPV.0090.01 VIDEO DETECTOR CABLE CAT 5e (SPECIAL) FT
SPRUCE STREET SYSTEMS	FROM	TO					
	CB-1A	R1		10			
	CB-1A	V1	15				15
	CB-1A	BUTTON	10				
	CB-1A	SP-A			15		
	CB-1A	PB-1				50	
	PB-1	LUM (NORTH)				30	
	CB-1A	R2		80			
	SP-A	PB-1			75 1,800		
	PB-1	SERVICE "A"					
	SP-A	CB-2A			375		
	CB-2A	R3		75			
	PB-3	LUM (SOUTH)				20	
	PB-3	CB-2A				50	
SECOND STREET SYSTEMS	CB-2A	R4		10			
	CB-2A	V2	15				15
	CB-2A	BUTTON	10				
	CB-1B	R5		10			
	CB-1B	V3	15				15
	CB-1B	BUTTON	10				
	CB-1B	SP-B			15		
	CB-1B	PB-7				35	
	PB-7	LPB-3				110	
	LPB-3	LUM (MEDIAN)				100	
	CB-1B	R6		65			
	CB-1B	BUTTON (SB-5)	60				
	SP-B	PB-7			75 375		
	PB-7	SERVICE "A"					
THIRD STREET SYSTEMS	SP-B	CB-2B			360		
	CB-2B	R7		90			
	CB-2B	BUTTON (SB-6)	85				
	CB-2B	PB-9				60	
	PB-9	PB-7				130	
	CB-2B	R8		10			
	CB-2B	V4	15				15
	CB-2B	BUTTON	10				
	CB-1C	R9		10			
	CB-1C	V5	15				15
	CB-1C	BUTTON	10				
	CB-1C	SP-C			15		
	CB-1C	PB-11				50	
	PB-11	PB-12				60	
FOURTH STREET SYSTEMS	PB-12	LUM (MEDIAN)				40	
	CB-1C	R10		80			
	CB-1C	BUTTON (SB-9)	75				
	SP-C	PB-11			75 675		
	PB-11	SERVICE "A"					
	SP-C	CB-2C			390		
	CB-2C	R11		90			
	CB-2C	BUTTON (SB-10)	85				
	CB-2C	PB-13				50	
	PB-13	PB-12				70	
	CB-2C	R12		10			
	CB-2C	V6	15				15
	CB-2C	BUTTON	10				
	CB-1D	R13		10			
	CB-1D	V7	15				15
	CB-1D	BUTTON	10				
	CB-1D	SP-D			15		
	CB-1D	PB-15				50	
	PB-15	PB-16				70	
	PB-16	LUM (MEDIAN)				40	
	CB-1D	R14		95			
	CB-1D	BUTTON (SB-13)	90				
	SP-D	PB-15			75 1,950		
	PB-15	SERVICE "A"					
	SP-D	CB-2D			345		
	CB-2D	R15		80			
	CB-2D	BUTTON (SB-14)	75				
	CB-2D	PB-17				40	
	PB-17	PB-16				70	
	CB-2D	R16		10			
	CB-2D	V8	15				15
	CB-2D	BUTTON	10				
	SUBTOTALS:		670'	735'	5100'	1530'	120'

3

CABLE AND WIRING		655.0210 TRAFFIC SIGNAL CABLE 3 CONDUCTOR NO. 14 FT	655.0220 TRAFFIC SIGNAL CABLE 4 CONDUCTOR NO. 14 FT	655.0525 ELECTRICAL WIRE, TRAFFIC SIGNALS NO.6 FT	655.0515 * ELECTRICAL WIRE, TRAFFIC SIGNALS NO.10 FT	655.0610 ELECTRICAL WIRE, LIGHTING NO. 12 FT	SPV.0090.01 VIDEO DETECTOR CABLE CAT 5e (SPECIAL) FT
FIFTH STREET SYSTEMS	FROM	TO					
	CB-1E	R17		10			
	CB-1E	V9	15				15
	CB-1E	BUTTON	10				
	CB-1E	SP-E			345		
	CB-1E	PB-18				50	
	PB-18	PB-19				70	
	PB-19	LUM (MEDIAN)				40	
	CB-1E	R18		95			
	CB-1E	BUTTON (SB-17)	90				
	SP-E	PB-20			60 1,710		
	PB-20	SERVICE "B"					
	SP-E	CB-2E			15		
	CB-2E	R19		75			
SIXTH STREET SYSTEMS	CB-2E	BUTTON (SB-18)	70				
	CB-2E	PB-20				40	
	PB-20	PB-19				60	
	CB-2E	R20		10			
	CB-2E	V10	15				15
	CB-2E	BUTTON	10				
	CB-1F	R21		10			
	CB-1F	V11	15				15
	CB-1F	BUTTON	10				
	CB-1F	SP-F			360		
	CB-1F	PB-24				60	
	PB-24	LUM (MEDIAN)				180	
	CB-1F	R22		100			
	CB-1F	BUTTON (SB-21)	95				
	SP-F	PB-22			45 720		
	PB-22	SERVICE "B"					
	SP-F	CB-2F			15		
	CB-2F	R23		65			
	CB-2F	BUTTON (SB-22)	60				
	CB-2F	PB-22				30	
	PB-22	PB-23				60	
	PB-23	PB-24				70	
	CB-2F	R24		10			
	CB-2F	V12	15				15
	CB-2F	BUTTON	10				
	SUBTOTALS:		415'	375'	2535'	735'	60'
	TOTALS:		1085'	1110'	7635'	2265'	1785'

		655.0515 * ELECTRICAL WIRE, TRAFFIC SIGNALS NO.10 FT	655.0515 * ELECTRICAL WIRE, TRAFFIC SIGNALS NO.10 FT	655.0515 * ELECTRICAL WIRE, TRAFFIC SIGNALS NO.10 FT
NEUTRAL (WHITE)				
CB-1A	SB-1	10		
CB-1A	SB-2	75		
CB-2A	SB-2	70		
CB-2A	SB-3	10		
CB-1B	SB-4	10		
CB-1B	SB-5	70		
CB-2B	SB-6	95		
CB-2B	SB-7	10		
CB-1C	SB-8	10		
CB-1C	SB-9	85		
CB-2C	SB-10	105		
CB-2C	SB-11	10		
CB-1D	SB-12	10		
CB-1D	SB-13	100		
CB-2D	SB-14	85		
CB-2D	SB-15	10		
CB-1E	SB-16	10		
CB-1E	SB-17	90		
CB-2E	SB-18	75		
CB-2E	SB-19	10		
CB-1F	SB-20	10		
CB-1F	SB-21	100		
CB-2F	SB-22	75		
CB-2F	SB-23	10		
TOTALS:		1145'	1085'	550'
NEUTRAL (GREEN)				
CB-1A	SB-1	10		
SB-1	SB-2	70		
SB-2	SB-3	65		
SB-3	CB-2A	10		
CB-1B	SB-4	10		
SB-4	SB-5	65		
SB-6	SB-7	90		
SB-7	CB-2B	10		
CB-1C	SB-8	10		
SB-8	SB-9	80		
SB-10	SB-11	100		
SB-11	CB-2C	10		
CB-1D	SB-12	10		
SB-12	SB-13	95		
SB-14	SB-15	80		
SB-15	CB-2D	10		
CB-1E	SB-16	10		
SB-16	SB-17	85		
SB-18	SB-19	70		
SB-19	CB-2E	10		
CB-1F	SB-20	10		
SB-20	SB-21	95		
SB-22	SB-23	70		
SB-23	CB-2F	10		
TOTALS:		1145'	1085'	550'
BONDING JUMPERS				
SB-1	PB-1	25		
SB-2	PB-2	15		
SB-3	PB-3	25		
SB-4	PB-7	20		
SB-5	PB-8	15		
SB-6	PB-8	30		
SB-7	PB-9	30		
SB-8	PB-11	25		
SB-9	PB-12	25		
SB-10	PB-12	35		
SB-11	PB-13	25		
SB-12	PB-15	25		
SB-13	PB-16	35		
SB-14	PB-16	20		
SB-15	PB-17	20		
SB-16	PB-18	25		
SB-17	PB-19	25		
SB-18	PB-19	15		
SB-19	PB-20	20		
SB-20	PB-24	30		
SB-21	PB-23	25		
SB-22	PB-23	20		
SB-23	PB-22	20		

*ITEM SHOWN ELSEWHERE IN PLAN

PROJECT NO: 7640-00-71

HWY: CASCADE AVENUE

COUNTY: PIERCE

MISCELLANEOUS QUANTITIES

SHEET

E

ELECTRICAL SERVICE UNMETERED

LOCATION	SERVICE UNMETERED L.S.	
CASCADE AVENUE & SECOND STREET INTERSECTION	1	(656.0300.01)
CASCADE AVENUE & SIXTH STREET INTERSECTION	1	(656.0300.02)

TOTALS:	2
ELECTRICAL SERVICE EQUIPMENT SHALL BE SET UP AND PROVIDED TO ACCEPT AVAILABLE 120/240 SINGLE PHASE SERVICE FROM THE CITY OF RIVER FALLS (RFMU).	

PEDESTAL BASES (657.0100)
TRAFFIC SIGNAL STANDARDS, ALUMINUM, 13-FOOT (657.0420), 15-FOOT (657.0425)
PEDESTRIAN PUSH BUTTON (658.0500)
VIDEO DETECTOR, SPECIAL (SPV.0060.01)
ELECTRICAL SERVICE BREAKER DISCONNECT BOX (656.0500.01, 656.0500.02, 656.0500.03, 656.0500.04, 656.0500.05, 656.0500.06)

FLASHER BASE NO.	PED. BASE EACH	13-FOOT STAND. EACH	15-FOOT STAND. EACH	PUSH BUTTON EACH	VIDEO DETECTOR SPECIAL EACH	SERVICE BREAKER DISCONNECT BOX L.S.
SB-1	1		1	1	1	1
SB-2	1	1				
SB-3	1		1	1	1	
SB-4	1		1	1	1	1
SB-5	1	1		1		
SB-6	1	1		1		
SB-7	1		1	1	1	
SB-8	1		1	1	1	1
SB-9	1	1		1		
SB-10	1	1		1		
SB-11	1		1	1	1	
SB-12	1		1	1	1	1
SB-13	1	1		1		
SB-14	1	1		1		
SB-15	1		1	1	1	
SB-16	1		1	1	1	
SB-17	1	1		1		
SB-18	1	1		1		
SB-19	1		1	1	1	1
SB-20	1		1	1	1	1
SB-21	1	1		1		
SB-22	1	1		1		
SB-23	1		1	1	1	1
TOTALS:	23	11	12	22	12	6

(658.5069.01, 658.5069.02, 658.5069.03, 658.5069.04, 658.5069.05, 658.5069.06)

SIGNAL MOUNTING HARDWARE	
LOCATION	L.S.
CASCADE AVENUE & SPRUCE STREET INTERSECTION	1
CASCADE AVENUE & SECOND STREET INTERSECTION	1
CASCADE AVENUE & THIRD STREET INTERSECTION	1
CASCADE AVENUE & FOURTH STREET INTERSECTION	1
CASCADE AVENUE & FIFTH STREET INTERSECTION	1
CASCADE AVENUE & SIXTH STREET INTERSECTION	1
ITEM TOTAL	6

RECTANGULAR RAPID FLASHING BEACON (RRFB) SYSTEMS		
LOCATION	L.S.	ITEM #
CASCADE/SPRUCE NORTH CROSSWALK	1	SPV.0105.01
CASCADE/SPRUCE SOUTH CROSSWALK	1	SPV.0105.02
CASCADE/SECOND NORTH CROSSWALK	1	SPV.0105.03
CASCADE/SECOND SOUTH CROSSWALK	1	SPV.0105.04
CASCADE/THIRD NORTH CROSSWALK	1	SPV.0105.05
CASCADE/THIRD SOUTH CROSSWALK	1	SPV.0105.06
CASCADE/FOURTH NORTH CROSSWALK	1	SPV.0105.07
CASCADE/FOURTH SOUTH CROSSWALK	1	SPV.0105.08
CASCADE/FIFTH NORTH CROSSWALK	1	SPV.0105.09
CASCADE/FIFTH SOUTH CROSSWALK	1	SPV.0105.10
CASCADE/SIXTH NORTH CROSSWALK	1	SPV.0105.11
CASCADE/SIXTH SOUTH CROSSWALK	1	SPV.0105.12
ITEM TOTAL	12	

NOTE: SEE COMPONENTS OF RRFB FOR ADDITIONAL ITEM INFORMATION

COMPONENTS OF RECTANGULAR RAPID FLASHING BEACON (RRFB) SYSTEMS

RECTANGULAR RAPID FLASHING BEACON UNITS CONTROLLER CABINET-PEDESTAL MOUNTED			
FLASHER BASE NO.	RRFB SYSTEM	FLASHING BEACON (RRFB) EACH	CONTROLLER CABINET EACH
SB-1	CASCADE/SPRUCE NORTH CROSSWALK (SPV.0105.01)	1	1
SB-2		1	
SB-2	CASCADE/SPRUCE SOUTH CROSSWALK (SPV.0105.02)	1	
SB-3		1	1
SB-4	CASCADE/SECOND NORTH CROSSWALK (SPV.0105.03)	1	1
SB-5		1	
SB-6	CASCADE/SECOND SOUTH CROSSWALK (SPV.0105.04)	1	
SB-7		1	1
SB-8	CASCADE/THIRD NORTH CROSSWALK (SPV.0105.05)	1	1
SB-9		1	
SB-10	CASCADE/THIRD SOUTH CROSSWALK (SPV.0105.06)	1	
SB-11		1	1
SB-12	CASCADE/FOURTH NORTH CROSSWALK (SPV.0105.07)	1	1
SB-13		1	
SB-14	CASCADE/FOURTH SOUTH CROSSWALK (SPV.0105.08)	1	
SB-15		1	1
SB-16	CASCADE/FIFTH NORTH CROSSWALK (SPV.0105.09)	1	1
SB-17		1	
SB-18	CASCADE/FIFTH SOUTH CROSSWALK (SPV.0105.10)	1	
SB-19		1	1
SB-20	CASCADE/SIXTH NORTH CROSSWALK (SPV.0105.11)	1	1
SB-21		1	
SB-22	CASCADE/SIXTH SOUTH CROSSWALK (SPV.0105.12)	1	
SB-23		1	1
TOTALS:		24	12

NOTE: COMPONENTS LISTED ABOVE ARE INCLUDED AS PART OF THE PAY ITEM FOR EACH INDIVIDUAL RECTANGULAR RAPID FLASHING BEACON (RRFB) SYSTEM AND WILL NOT BE MEASURED AND PAID FOR SEPARATELY.

MISCELLANEOUS ITEMS				
DESCRIPTION	UNIT	QUANTITY		REMARKS
FINISHING ROADWAY (PROJECT)	EACH	1	(213.0100)	
MOBILIZATION	EACH	1	(619.1000)	
TRAFFIC CONTROL (PROJECT)	EACH	1	(643.0100)	

(CASCADE AVENUE FLASHER SYSTEMS)			
SIGNING QUANTITIES			
DESCRIPTION	UNIT	QUANTITY	
SIGNS REFLECTIVE TYPE II	S.F.	88.5	(637.0202)
MOVING SIGNS TYPE II	EACH	36	(638.2102)
REMOVING SIGNS TYPE II	EACH	37	(638.2602)

NOTE: SEE DETAILS SHEET FOR ADDITIONAL ITEM INFORMATION

SIGNING NOTES:

- ① SALVAGE INPLACE SIGN PANEL AND REINSTALL ON ADJACENT FLASHER PEDESTAL POLE (REMOVE INPLACE SIGN POST AND MOUNTING HARDWARE).
- ② SALVAGE INPLACE SIGN PANEL, POST AND MOUNTING HARDWARE TO CITY OF RIVER FALLS.

C-1 SEE DETAILS SHEET UNDER "REMOVING SIGNS TYPE II" TABLE
C-2 REGARDING INPLACE SIGNS LOCATED AT SPECIFIC LOCATIONS.
C-3

NOTES:

- 1) ALL FLASHER POLE FOUNDATIONS, PULL BOXES, GROUND MOUNTED SERVICE CABINETS, CONDUIT, AND LUMINAIRES ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE.
- 2) ONE-2" PVC CONDUIT IS INPLACE FROM EACH FLASHER POLE PEDESTAL BASE TO THE ADJACENT PULL BOX.
- 3) ARROWS SHOWN ARE FOR LANE DESIGNATION AND ARE FOR INFORMATIONAL PURPOSES ONLY.
- 4) CONTRACTOR SHALL TAKE CARE TO NOT DISTURB DECORATIVE SIDEWALK AND LANDSCAPED AREAS DURING ALL FLASHER SYSTEM WORK, AND SHALL RESTORE ALL DISTURBED ITEMS TO THE SATISFACTION OF THE ENGINEER, ALL AT NO EXPENSE TO THE OWNER.
- 5) CONTRACTOR SHALL SALVAGE AND INSTALL INPLACE SIGNS, REMOVE AND SALVAGE CORRESPONDING SIGN POSTS AND MOUNTING HARDWARE, AND SHALL FURNISH AND INSTALL NEW PEDESTAL POLE MOUNTED SIGNS AS SHOWN ELSEWHERE IN THESE PLANS.
- 6) CONTRACTOR SHALL COORDINATE DIRECTLY WITH SUPPLIER OF VIDEO DETECTOR UNITS AND RRFB SYSTEMS IN ORDER TO PROGRAM, AIM, AND MAKE EACH VIDEO DETECTOR AND RRFB SYSTEM OPERATIONAL TO THE SATISFACTION OF THE ENGINEER.
- 7) SEE DETAILS FOR FURTHER INFORMATION REGARDING POLE MOUNTED FLASHER SYSTEM COMPONENTS TO BE FURNISHED, INSTALLED, AND MADE OPERATIONAL BY THE CONTRACTOR.
- 8) THE MAIN SERVICE CABINET FOR THE SOURCE OF POWER CONNECTION, FOR THE SPRUCE STREET FLASHER SYSTEMS, IS LOCATED ON THE NORTHEAST QUADRANT OF CASCADE AVENUE/SECOND STREET ROUNDABOUT INTERSECTION (INPLACE 120/240 VOLT UNMETERED CABINET). POWER FROM A NEARBY INPLACE GROUND MOUNTED TRANSFORMER TO THE MAIN SERVICE CABINET IS INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, LABELING, AND MAKING OPERATIONAL A SEPARATE 30A/2P CIRCUIT BREAKER FOR THE COMPLETE INTERSECTION FLASHER SYSTEM INSTALLATION. POWER CABLES FROM THE MAIN SERVICE CABINET TO THE SPRUCE STREET POLE MOUNTED DISCONNECT SHALL BE FURNISHED, INSTALLED AND MADE OPERATIONAL BY THE CONTRACTOR.
- 9) CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, AND MAKING OPERATIONAL CABLES AND FLASHER CABINET RELAYS/EQUIPMENT NEEDED TO ALLOW FOR THE INTENSITY OF THE LUMINAIRE AT EACH CROSSWALK TO BE INCREASED WITH EACH VIDEO DETECTOR OR PUSH BUTTON ACTIVATION OF THE FLASHER SYSTEM. SEE MISCELLANEOUS QUANTITIES AND SPECIAL PROVISIONS FOR FURTHER INFORMATION.

LEGEND OF SYMBOLS

=====	EXISTING NON-METALLIC ELECTRICAL CONDUIT (2" UNLESS OTHERWISE NOTED)
	RECTANGULAR RAPID FLASHING BEACON (RRFB)-POLE MOUNT (ON INPLACE TYPE 1 CONCRETE BASE)
	VIDEO SENSOR-POLE MOUNT (MOUNTED NEAR TOP OF POLE-FACING ADJACENT CROSSWALK)
PB-1	EXISTING FLASHER SYSTEM PULL BOX STEEL 24" X 36"
LPB-1	EXISTING STREET LIGHTING PULL BOX STEEL 24" X 36"
CB1-A	CAMERA/FLASHING BEACON CABINET-POLE MOUNT ("A" DENOTES FLASHER SYSTEM NUMBER)
	PEDESTRIAN PUSH BUTTON AND SIGN (SEE DETAIL)
SP-A	SERVICE DISCONNECT-POLE MOUNT ("A" DENOTES FLASHER SYSTEM NUMBER)
V1	VIDEO SENSOR NUMBER
R1	RECTANGULAR RAPID FLASHING BEACON (RRFB) NUMBER
	EXISTING SERVICE CABINET A OR B (120/240 VOLT UNMETERED)-ON EXISTING SERVICE CABINET CONCRETE FOUNDATION (SEE DETAIL)
	INPLACE GROUND MOUNTED TRANSFORMER (FOR SERVICE)
	EXISTING SIGN PANEL AND POST
	EXISTING LUMINAIRE AND POLE

SEE ENLARGED INTERSECTION LAYOUT OF SPRUCE STREET FLASHER SYSTEMS

0 20 40
scale feet



PROJECT NO: 7640-00-71

HWY: CASCADE AVENUE

COUNTY: PIERCE

FLASHER SYSTEM PLAN-CASCADE AVE AT SPRUCE ST

SHEET

E

LEGEND OF SYMBOLS

- ===== EXISTING NON-METALLIC ELECTRICAL CONDUIT (2" UNLESS OTHERWISE NOTED)
- RECTANGULAR RAPID FLASHING BEACON (RRFB)-POLE MOUNT (ON INPLACE TYPE 1 CONCRETE BASE)
- VIDEO SENSOR-POLE MOUNT (MOUNTED NEAR TOP OF POLE-FACING ADJACENT CROSSWALK)
- PB-1 ● EXISTING FLASHER SYSTEM PULL BOX STEEL 24" X 36"
- LPB-1 ● EXISTING STREET LIGHTING PULL BOX STEEL 24" X 36"
- CB1-A CAMERA/FLASHING BEACON CABINET-POLE MOUNT ("A" DENOTES FLASHER SYSTEM NUMBER)
- PEDESTRIAN PUSH BUTTON AND SIGN (SEE DETAIL)
- SP-A SERVICE DISCONNECT-POLE MOUNT ("A" DENOTES FLASHER SYSTEM NUMBER)
- V1 VIDEO SENSOR NUMBER
- R1 RECTANGULAR RAPID FLASHING BEACON (RRFB) NUMBER
- ⊗ EXISTING SERVICE CABINET A OR B (120/240 VOLT UNMETERED)-ON EXISTING SERVICE CABINET CONCRETE FOUNDATION (SEE DETAIL)
- Ⓢ INPLACE GROUND MOUNTED TRANSFORMER (FOR SERVICE)
- Ⓟ EXISTING SIGN PANEL AND POST
- ☀ EXISTING LUMINAIRE AND POLE

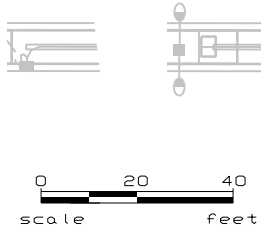
SIGNING NOTES:

- ① SALVAGE INPLACE SIGN PANEL AND REINSTALL ON ADJACENT FLASHER PEDESTAL POLE (REMOVE INPLACE SIGN POST AND MOUNTING HARDWARE).
- ② SALVAGE INPLACE SIGN PANEL, POST AND MOUNTING HARDWARE TO CITY OF RIVER FALLS.
- C-1 SEE DETAILS SHEET UNDER "REMOVING SIGNS TYPE II" TABLE
- C-2 REGARDING INPLACE SIGNS LOCATED AT SPECIFIC LOCATIONS.
- C-3

NOTES:

- 1) ALL FLASHER POLE FOUNDATIONS, PULL BOXES, GROUND MOUNTED SERVICE CABINETS, CONDUIT, AND LUMINAIRES ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE.
- 2) ONE-2" PVC CONDUIT IS INPLACE FROM EACH FLASHER POLE PEDESTAL BASE TO THE ADJACENT PULL BOX.
- 3) ARROWS SHOWN ARE FOR LANE DESIGNATION AND ARE FOR INFORMATIONAL PURPOSES ONLY.
- 4) CONTRACTOR SHALL TAKE CARE TO NOT DISTURB DECORATIVE SIDEWALK AND LANDSCAPED AREAS DURING ALL FLASHER SYSTEM WORK, AND SHALL RESTORE ALL DISTURBED ITEMS TO THE SATISFACTION OF THE ENGINEER, ALL AT NO EXPENSE TO THE OWNER.
- 5) CONTRACTOR SHALL SALVAGE AND INSTALL INPLACE SIGNS, REMOVE AND SALVAGE CORRESPONDING SIGN POSTS AND MOUNTING HARDWARE, AND SHALL FURNISH AND INSTALL NEW PEDESTAL POLE MOUNTED SIGNS AS SHOWN ELSEWHERE IN THESE PLANS.
- 6) CONTRACTOR SHALL COORDINATE DIRECTLY WITH SUPPLIER OF VIDEO DETECTOR UNITS AND RRFB SYSTEMS IN ORDER TO PROGRAM, AIM, AND MAKE EACH VIDEO DETECTOR AND RRFB SYSTEM OPERATIONAL TO THE SATISFACTION OF THE ENGINEER.
- 7) SEE DETAILS FOR FURTHER INFORMATION REGARDING POLE MOUNTED FLASHER SYSTEM COMPONENTS TO BE FURNISHED, INSTALLED, AND MADE OPERATIONAL BY THE CONTRACTOR.
- 8) THE MAIN SERVICE CABINET FOR THE SOURCE OF POWER CONNECTION, FOR THE SECOND STREET FLASHER SYSTEMS, IS LOCATED ON THE NORTHEAST QUADRANT OF CASCADE AVENUE/SECOND STREET ROUNDABOUT INTERSECTION (INPLACE 120/240 VOLT UNMETERED CABINET). POWER FROM A NEARBY INPLACE GROUND MOUNTED TRANSFORMER TO THE MAIN SERVICE CABINET IS INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, LABELING, AND MAKING OPERATIONAL A SEPARATE 30A/2P CIRCUIT BREAKER FOR THE COMPLETE INTERSECTION FLASHER SYSTEM INSTALLATION. POWER CABLES FROM THE MAIN SERVICE CABINET TO THE SECOND STREET POLE MOUNTED DISCONNECT SHALL BE FURNISHED, INSTALLED AND MADE OPERATIONAL BY THE CONTRACTOR.

- 9) CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, AND MAKING OPERATIONAL CABLES AND FLASHER CABINET RELAYS/EQUIPMENT NEEDED TO ALLOW FOR THE INTENSITY OF THE LUMINAIRE AT EACH CROSSWALK TO BE INCREASED WITH EACH VIDEO DETECTOR OR PUSH BUTTON ACTIVATION OF THE FLASHER SYSTEM. SEE MISCELLANEOUS QUANTITIES AND SPECIAL PROVISIONS FOR FURTHER INFORMATION.



MATCHLINE STATION 11+00

MATCHLINE STATION 16+00

CASCADE AVE
(25 MPH)

SECOND ST
(25 MPH)

SEE ENLARGED INTERSECTION
LAYOUT OF SECOND
STREET FLASHER SYSTEMS

LEGEND OF SYMBOLS

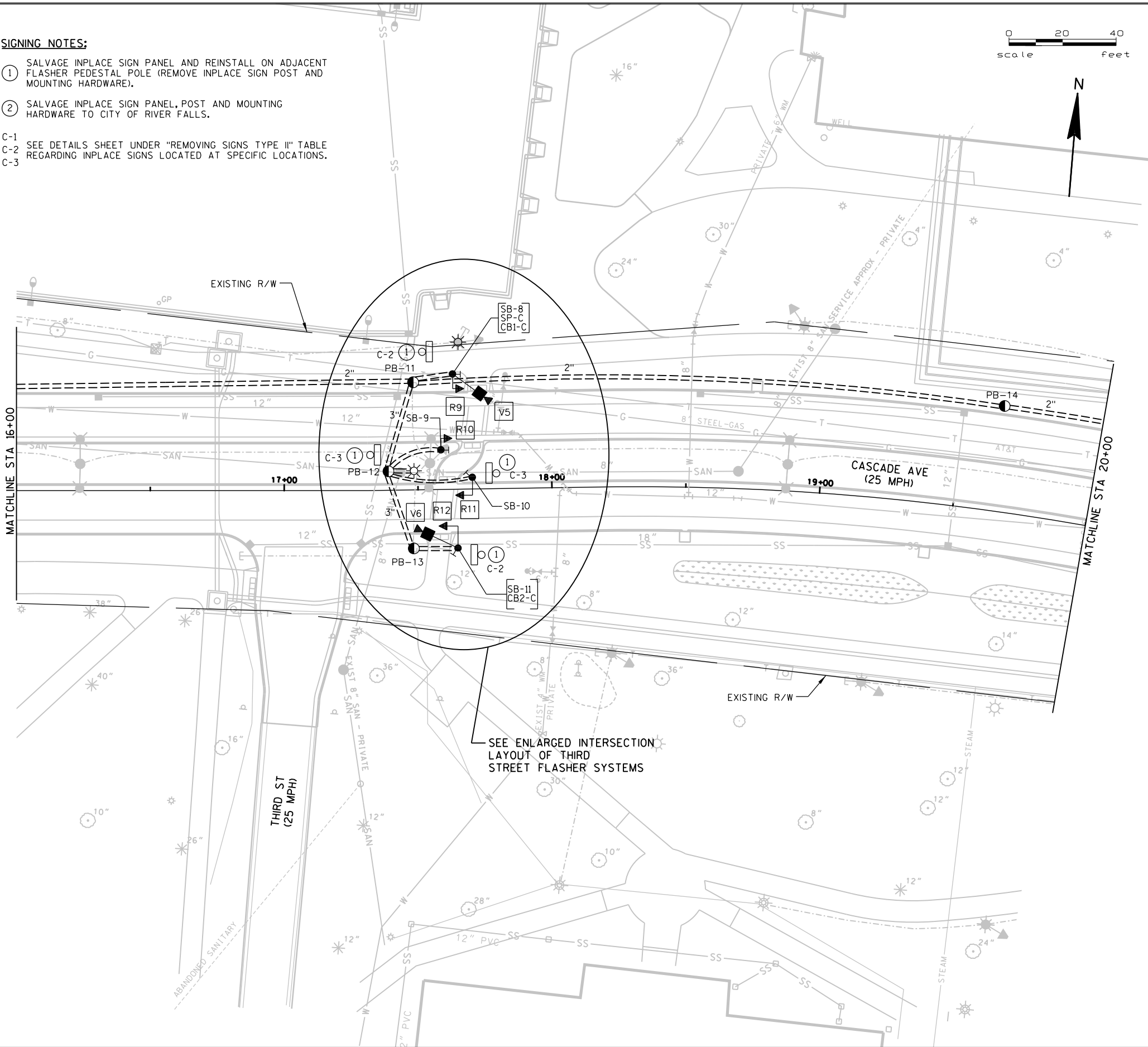
- ===== EXISTING NON-METALLIC ELECTRICAL CONDUIT (2" UNLESS OTHERWISE NOTED)
- RECTANGULAR RAPID FLASHING BEACON (RRFB)-POLE MOUNT (ON INPLACE TYPE 1 CONCRETE BASE)
- VIDEO SENSOR-POLE MOUNT (MOUNTED NEAR TOP OF POLE-FACING ADJACENT CROSSWALK)
- PB-1 ● EXISTING FLASHER SYSTEM PULL BOX STEEL 24" X 36"
- LPB-1 ● EXISTING STREET LIGHTING PULL BOX STEEL 24" X 36"
- CB1-A CAMERA/FLASHING BEACON CABINET-POLE MOUNT ("A" DENOTES FLASHER SYSTEM NUMBER)
- I PEDESTRIAN PUSH BUTTON AND SIGN (SEE DETAIL)
- SP-A SERVICE DISCONNECT-POLE MOUNT ("A" DENOTES FLASHER SYSTEM NUMBER)
- V1 VIDEO SENSOR NUMBER
- R1 RECTANGULAR RAPID FLASHING BEACON (RRFB) NUMBER
- ⊗ EXISTING SERVICE CABINET A OR B (120/240 VOLT UNMETERED)-ON EXISTING SERVICE CABINET CONCRETE FOUNDATION (SEE DETAIL)
- ⊞ INPLACE GROUND MOUNTED TRANSFORMER (FOR SERVICE)
- ⊞ EXISTING SIGN PANEL AND POST
- ☀ EXISTING LUMINAIRE AND POLE

NOTES:

- 1) ALL FLASHER POLE FOUNDATIONS, PULL BOXES, GROUND MOUNTED SERVICE CABINETS, CONDUIT, AND LUMINAIRES ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE.
- 2) ONE-2" PVC CONDUIT IS INPLACE FROM EACH FLASHER POLE PEDESTAL BASE TO THE ADJACENT PULL BOX.
- 3) ARROWS SHOWN ARE FOR LANE DESIGNATION AND ARE FOR INFORMATIONAL PURPOSES ONLY.
- 4) CONTRACTOR SHALL TAKE CARE TO NOT DISTURB DECORATIVE SIDEWALK AND LANDSCAPED AREAS DURING ALL FLASHER SYSTEM WORK, AND SHALL RESTORE ALL DISTURBED ITEMS TO THE SATISFACTION OF THE ENGINEER, ALL AT NO EXPENSE TO THE OWNER.
- 5) CONTRACTOR SHALL SALVAGE AND INSTALL INPLACE SIGNS, REMOVE AND SALVAGE CORRESPONDING SIGN POSTS AND MOUNTING HARDWARE, AND SHALL FURNISH AND INSTALL NEW PEDESTAL POLE MOUNTED SIGNS AS SHOWN ELSEWHERE IN THESE PLANS.
- 6) CONTRACTOR SHALL COORDINATE DIRECTLY WITH SUPPLIER OF VIDEO DETECTOR UNITS AND RRFB SYSTEMS IN ORDER TO PROGRAM, AIM, AND MAKE EACH VIDEO DETECTOR AND RRFB SYSTEM OPERATIONAL TO THE SATISFACTION OF THE ENGINEER.
- 7) SEE DETAILS FOR FURTHER INFORMATION REGARDING POLE MOUNTED FLASHER SYSTEM COMPONENTS TO BE FURNISHED, INSTALLED, AND MADE OPERATIONAL BY THE CONTRACTOR.
- 8) THE MAIN SERVICE CABINET FOR THE SOURCE OF POWER CONNECTION, FOR THE THIRD STREET FLASHER SYSTEMS, IS LOCATED ON THE NORTHEAST QUADRANT OF CASCADE AVENUE/SECOND STREET ROUNDABOUT INTERSECTION (INPLACE 120/240 VOLT UNMETERED CABINET). POWER FROM A NEARBY INPLACE GROUND MOUNTED TRANSFORMER TO THE MAIN SERVICE CABINET IS INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, LABELING, AND MAKING OPERATIONAL A SEPARATE 30A/2P CIRCUIT BREAKER FOR THE COMPLETE INTERSECTION FLASHER SYSTEM INSTALLATION. POWER CABLES FROM THE MAIN SERVICE CABINET TO THE THIRD STREET POLE MOUNTED DISCONNECT SHALL BE FURNISHED, INSTALLED AND MADE OPERATIONAL BY THE CONTRACTOR.
- 9) CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, AND MAKING OPERATIONAL CABLES AND FLASHER CABINET RELAYS/EQUIPMENT NEEDED TO ALLOW FOR THE INTENSITY OF THE LUMINAIRE AT EACH CROSSWALK TO BE INCREASED WITH EACH VIDEO DETECTOR OR PUSH BUTTON ACTIVATION OF THE FLASHER SYSTEM. SEE MISCELLANEOUS QUANTITIES AND SPECIAL PROVISIONS FOR FURTHER INFORMATION.

SIGNING NOTES:

- 1) SALVAGE INPLACE SIGN PANEL AND REINSTALL ON ADJACENT FLASHER PEDESTAL POLE (REMOVE INPLACE SIGN POST AND MOUNTING HARDWARE).
 - 2) SALVAGE INPLACE SIGN PANEL, POST AND MOUNTING HARDWARE TO CITY OF RIVER FALLS.
- C-1 SEE DETAILS SHEET UNDER "REMOVING SIGNS TYPE II" TABLE
- C-2 REGARDING INPLACE SIGNS LOCATED AT SPECIFIC LOCATIONS.
- C-3

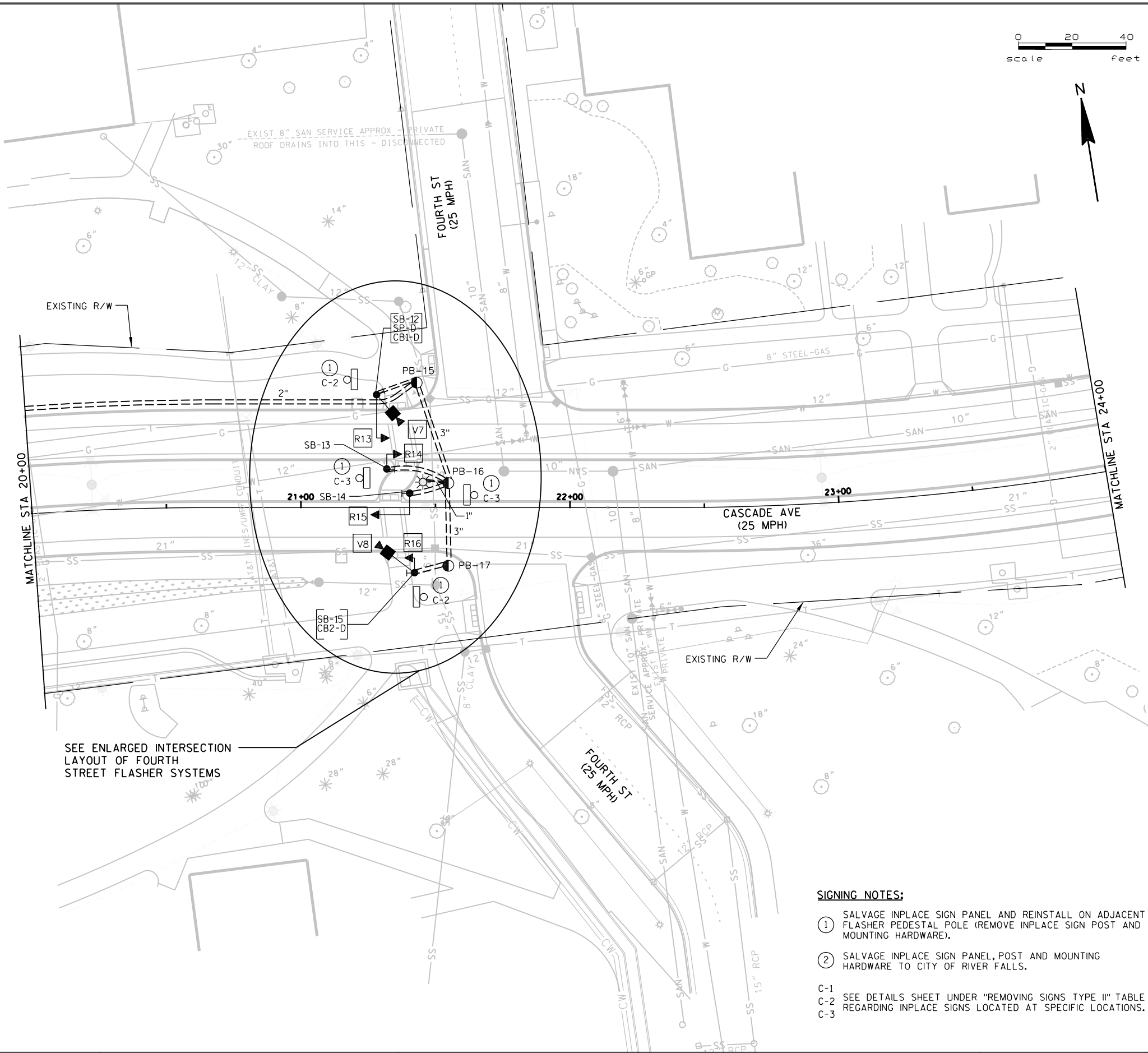


LEGEND OF SYMBOLS

- ===== EXISTING NON-METALLIC ELECTRICAL CONDUIT (2" UNLESS OTHERWISE NOTED)
- RECTANGULAR RAPID FLASHING BEACON (RRFB)-POLE MOUNT (ON INPLACE TYPE 1 CONCRETE BASE)
- VIDEO SENSOR-POLE MOUNT (MOUNTED NEAR TOP OF POLE-FACING ADJACENT CROSSWALK)
- PB-1 ● EXISTING FLASHER SYSTEM PULL BOX STEEL 24" X 36"
- LPB-1 ● EXISTING STREET LIGHTING PULL BOX STEEL 24" X 36"
- CB1-A CAMERA/FLASHING BEACON CABINET-POLE MOUNT ("A" DENOTES FLASHER SYSTEM NUMBER)
- I PEDESTRIAN PUSH BUTTON AND SIGN (SEE DETAIL)
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- ⊞ INPLACE GROUND MOUNTED TRANSFORMER (FOR SERVICE)
- ⊞ EXISTING SIGN PANEL AND POST
- ☀ EXISTING LUMINAIRE AND POLE

NOTES:

- 1) ALL FLASHER POLE FOUNDATIONS, PULL BOXES, GROUND MOUNTED SERVICE CABINETS, CONDUIT, AND LUMINAIRES ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE.
- 2) ONE-2" PVC CONDUIT IS INPLACE FROM EACH FLASHER POLE PEDESTAL BASE TO THE ADJACENT PULL BOX.
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LEGEND OF SYMBOLS

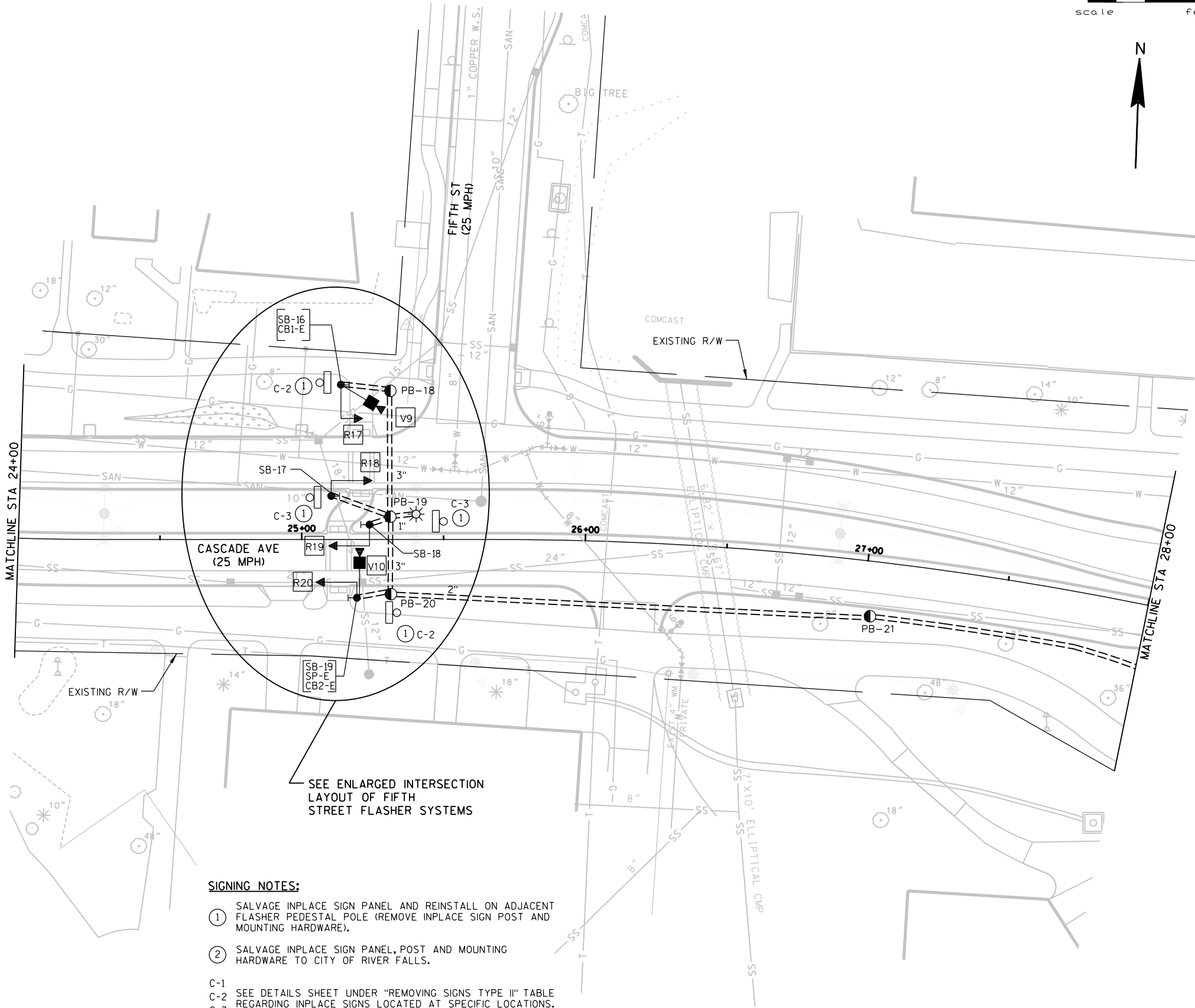
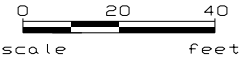
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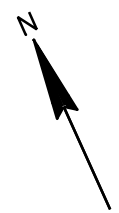
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5

0 20 40
scale feet



SIGNING NOTES:

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C-1 SEE DETAILS SHEET UNDER "REMOVING SIGNS TYPE II" TABLE
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C-3

SEE ENLARGED INTERSECTION
LAYOUT OF SIXTH
STREET FLASHER SYSTEMS

END PROJECT
STA 29+00.00

NOTES:

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- 8) THE MAIN SERVICE CABINET FOR THE SOURCE OF POWER CONNECTION, FOR THE SIXTH STREET FLASHER SYSTEMS, IS LOCATED ON THE NORTHEAST QUADRANT OF CASCADE AVENUE/SIXTH STREET ROUNDABOUT INTERSECTION (INPLACE 120/240 VOLT UNMETERED CABINET). POWER FROM A NEARBY INPLACE GROUND MOUNTED TRANSFORMER TO THE MAIN SERVICE CABINET IS INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, LABELING, AND MAKING OPERATIONAL A SEPARATE 30A/2P CIRCUIT BREAKER FOR THE COMPLETE INTERSECTION FLASHER SYSTEM INSTALLATION. POWER CABLES FROM THE MAIN SERVICE CABINET TO THE SIXTH STREET POLE MOUNTED DISCONNECT SHALL BE FURNISHED, INSTALLED AND MADE OPERATIONAL BY THE CONTRACTOR.
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PROJECT NO: 7640-00-71

HWY: CASCADE AVE

COUNTY: PIERCE

FLASHER SYSTEM PLAN-CASCADE AVE AT SIXTH ST

SHEET

E

FILE NAME : N:\PT\R\River\119076\5-final-dsgn\51-drawings\10-Civil\10-DGN\050206 PN.dgn

PLOT TIME : 3:43:23 PM

PLOT DATE : 6/3/2013

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

WISDOT/CADDs SHEET 44

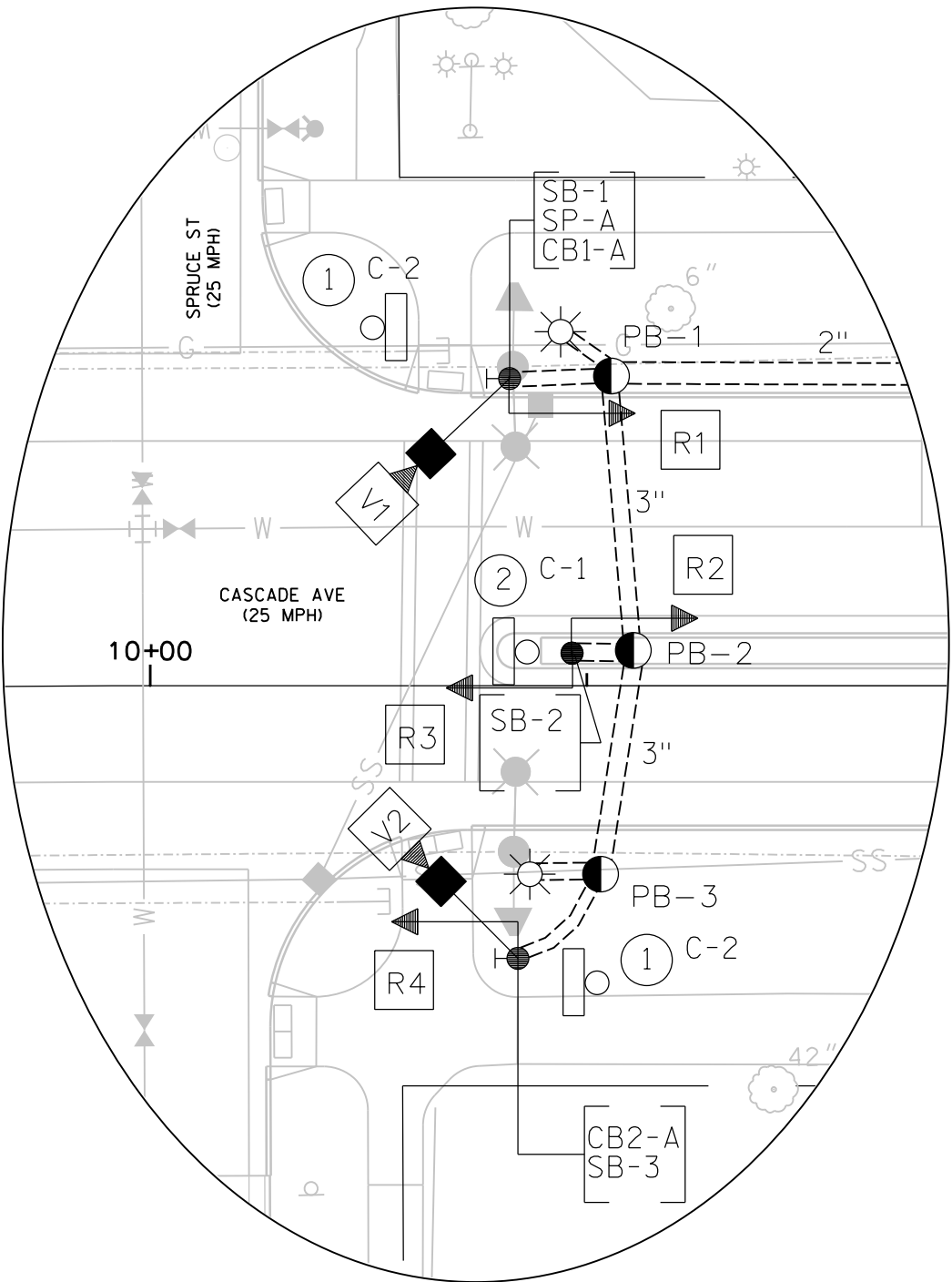
EXISTING UTILITY LEGEND

- ELECTRICAL- RIVER FALLS MUNICIPAL UTILITIES
- SS- STORM SEWER- CITY OF RIVER FALLS
- W- WATERMAIN- RIVER FALLS MUNICIPAL UTILITIES
- SAN- SANITARY SEWER- RIVER FALLS MUNICIPAL UTILITIES
- G- GAS MAIN- ST.CROIX GAS
- T- COMMUNICATIONS- AT&T

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scale feet

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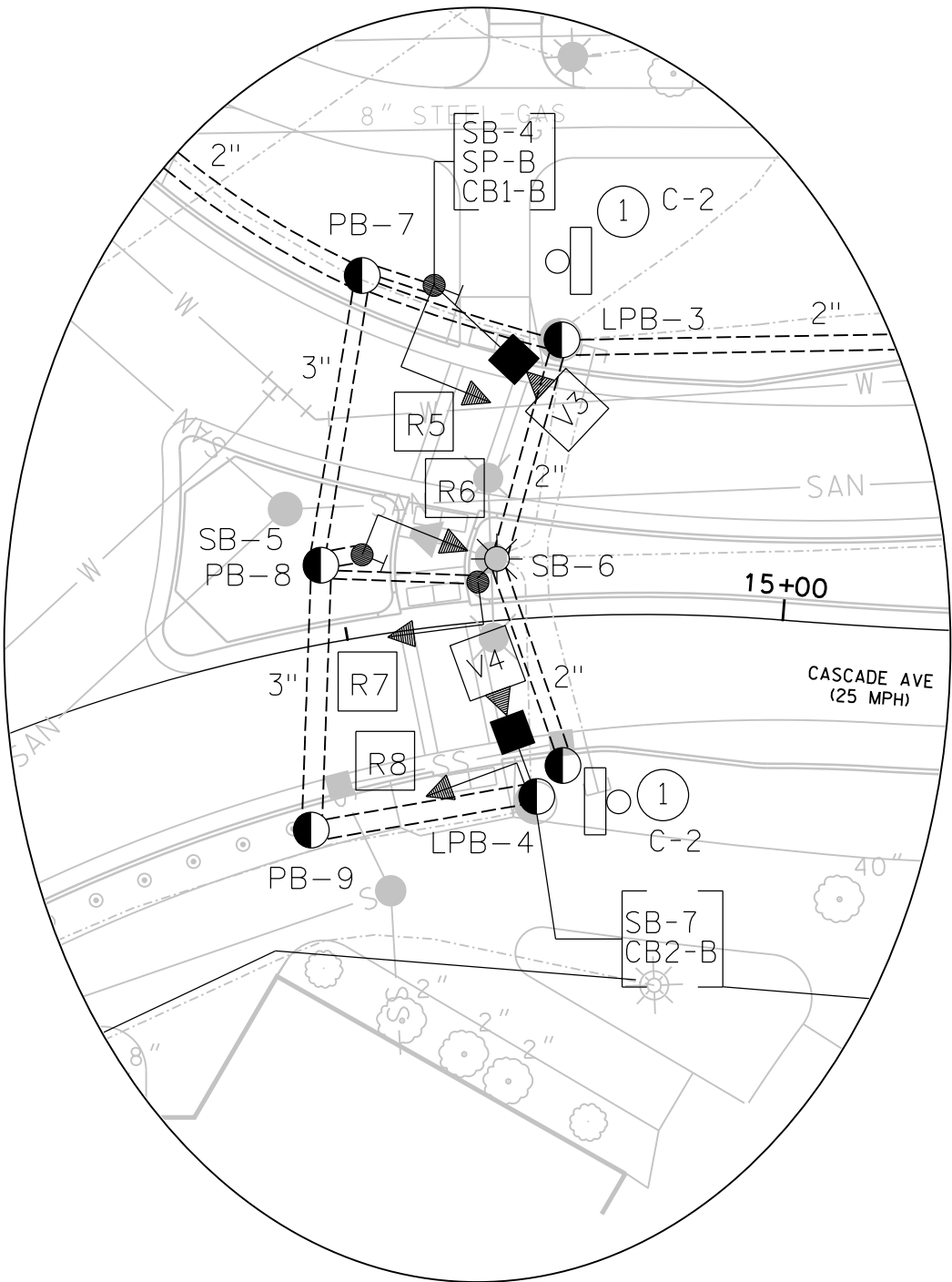
SPRUCE STREET
FLASHER SYSTEMS



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scale feet

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SECOND STREET
FLASHER SYSTEMS



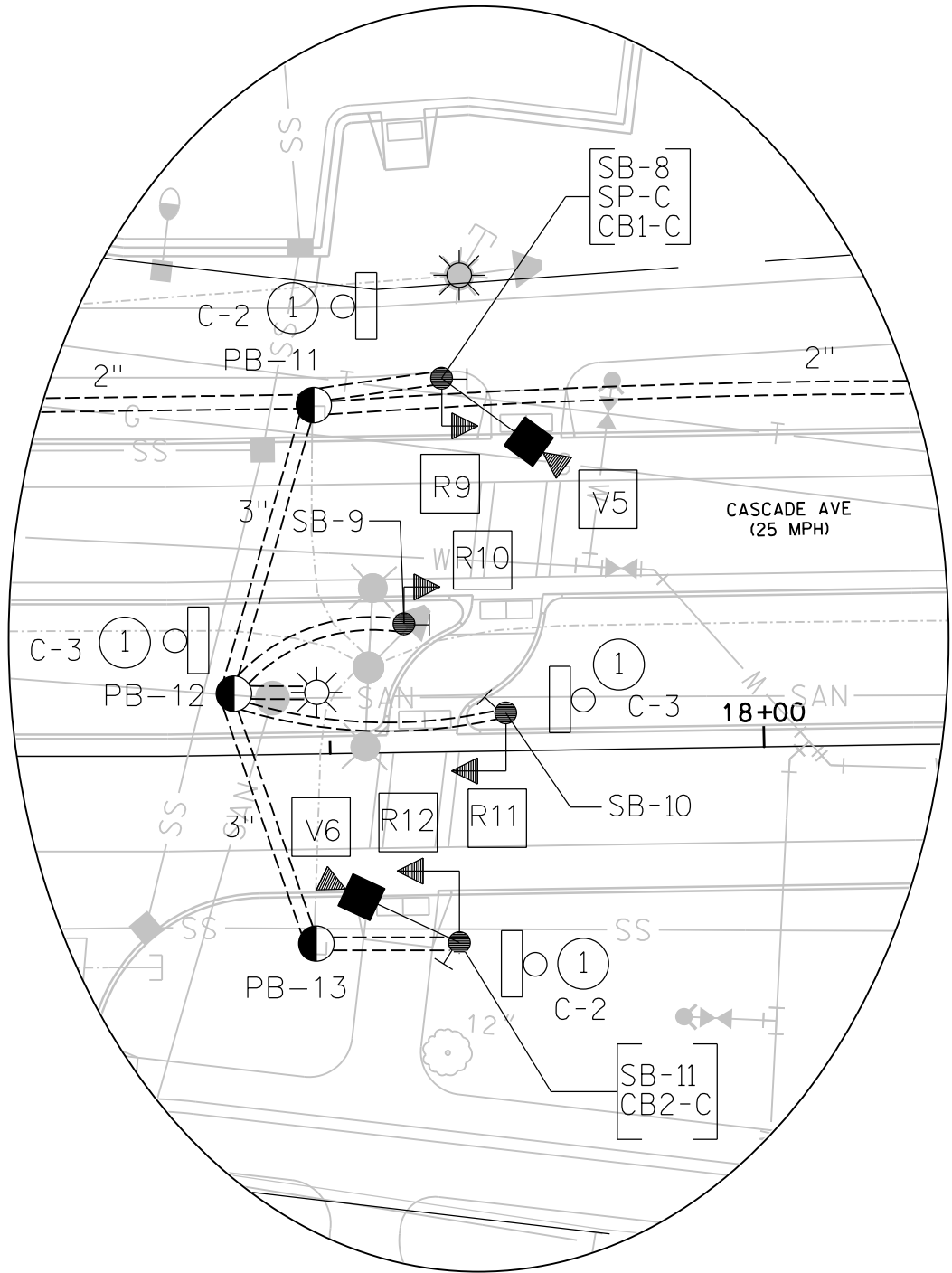
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- G- GAS MAIN- ST. CROIX GAS
- T- COMMUNICATIONS- AT&T

0 20 40
scale feet

N

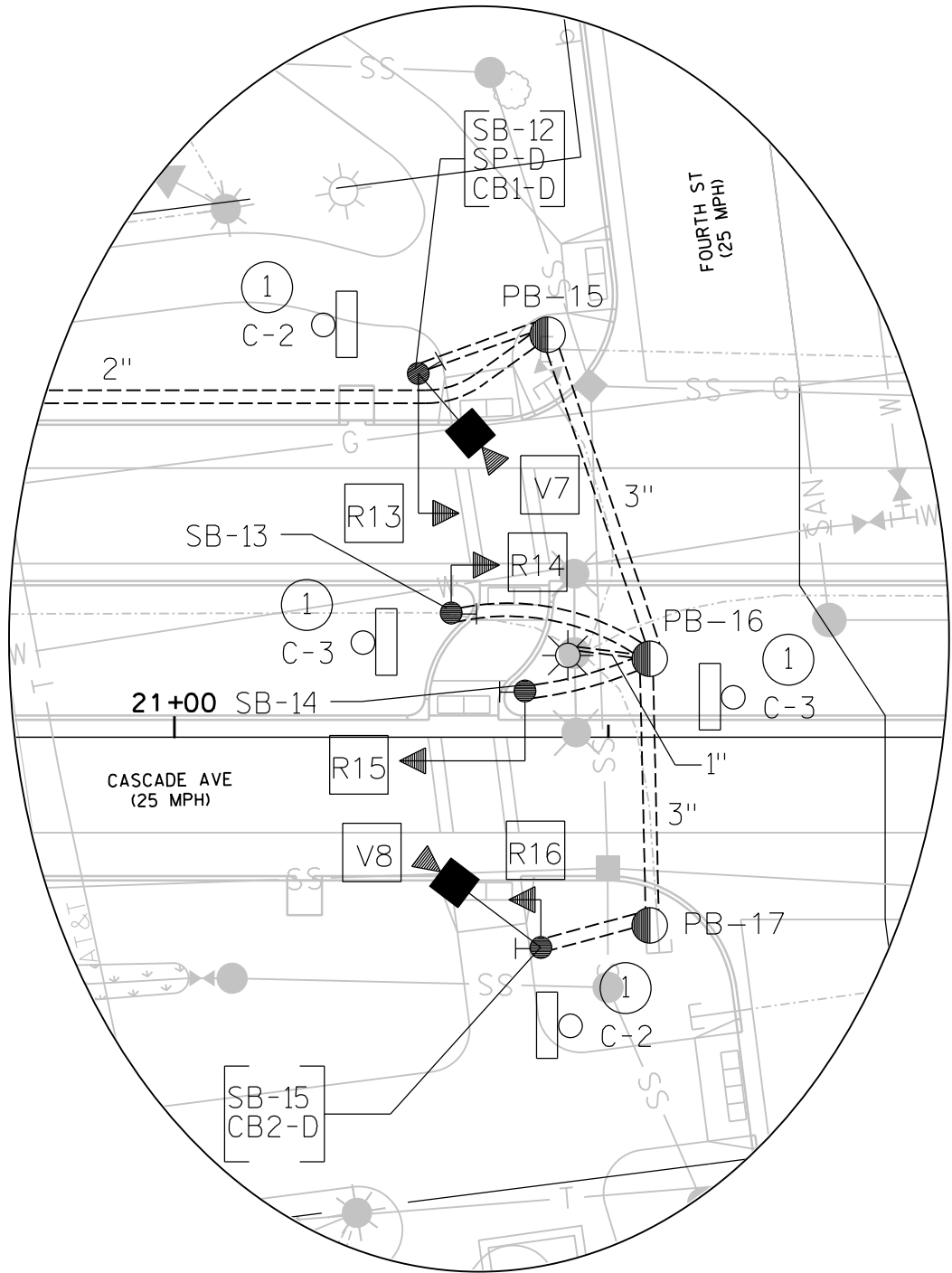
THIRD STREET
FLASHER SYSTEMS



0 20 40
scale feet

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FOURTH STREET
FLASHER SYSTEMS



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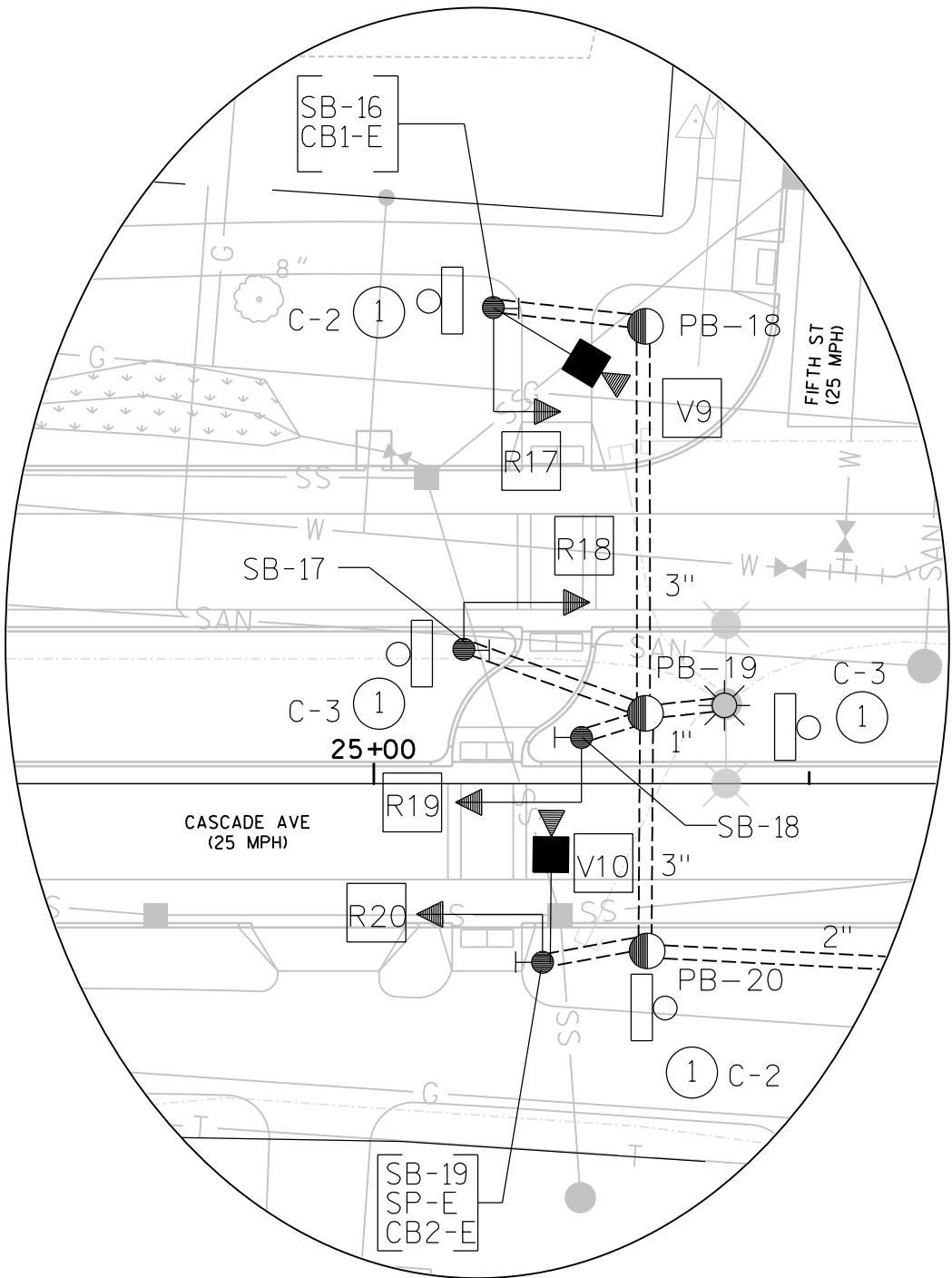
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0 10 20
scale feet

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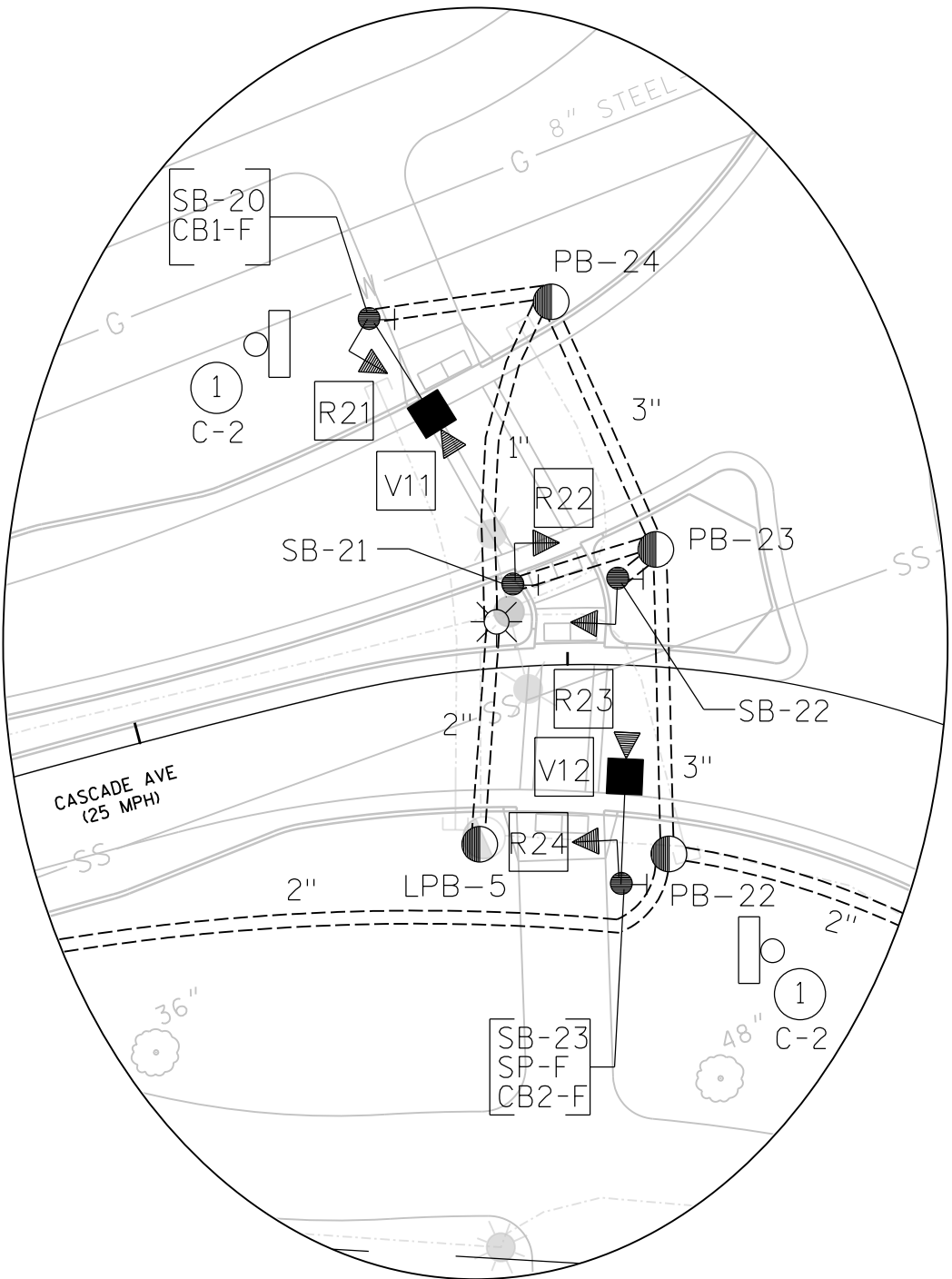
FIFTH STREET
FLASHER SYSTEMS



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scale feet

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SIXTH STREET
FLASHER SYSTEMS

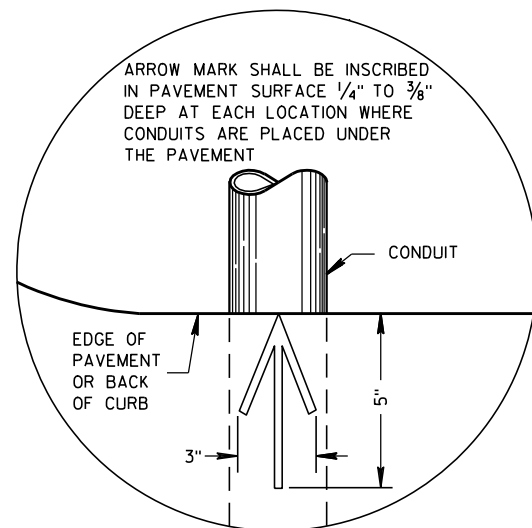


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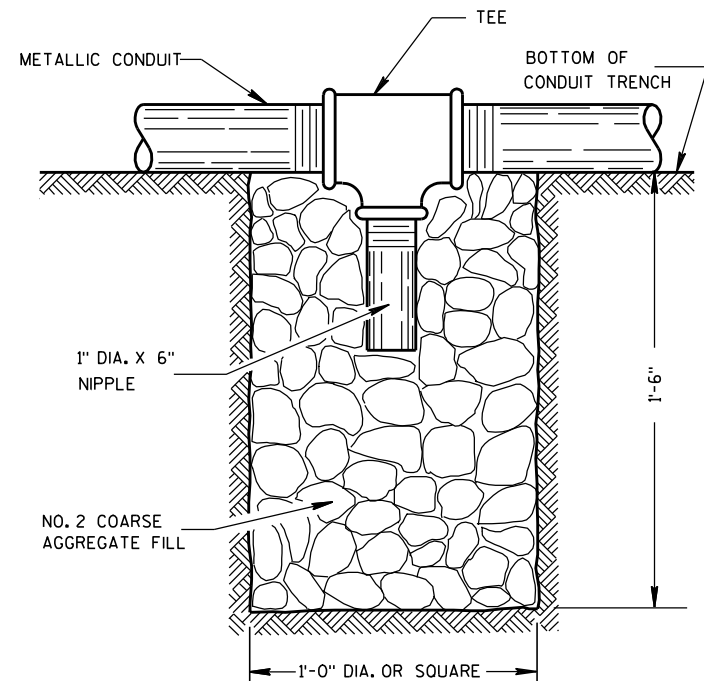
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Standard Detail Drawing List

09B02-07	CONDUIT
09B04-10	PULL BOX
09C02-06	CONCRETE BASES, TYPES 1, 2 & 5
09C03-03	TRANSFORMER/PEDESTAL BASES
09D02-02	SIGNAL OR LIGHTING CONTROL CABINET
09D03-02	POST MOUNTED CONTROLLER SERVICE INSTALLATION
09E01-12G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E05-05	TRAFFIC SIGNAL STANDARD ORNAMENTAL BRACKET MOUNTINGS TYPICAL FOR 13 FT. OR 15 FT.
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS

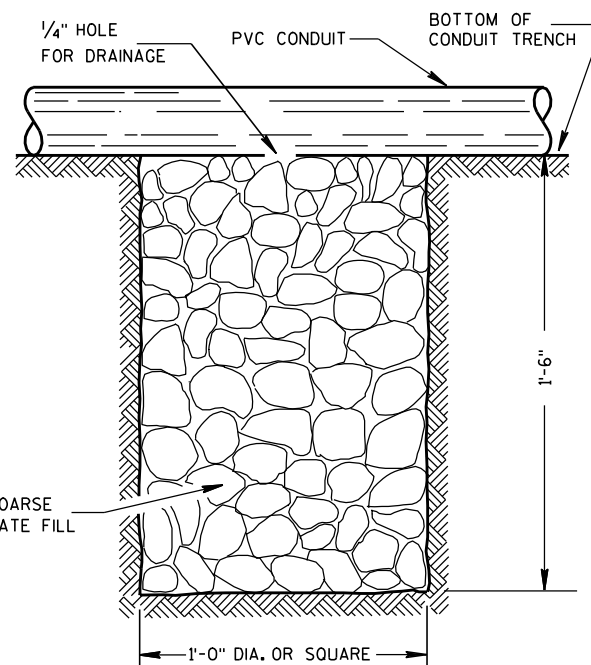


PLAN VIEW
ARROW MARK



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.

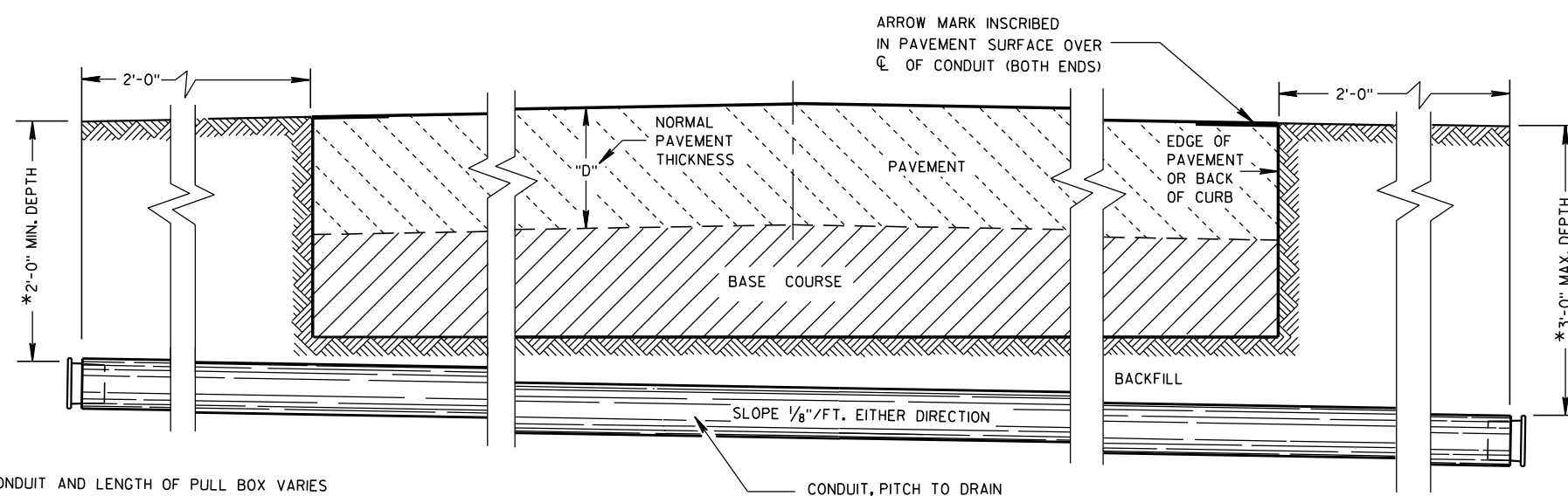
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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.).

POLY ROPE OR A PULL 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.



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/23/03
DATE

FHWA

/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGINEER FOR HWYS

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.

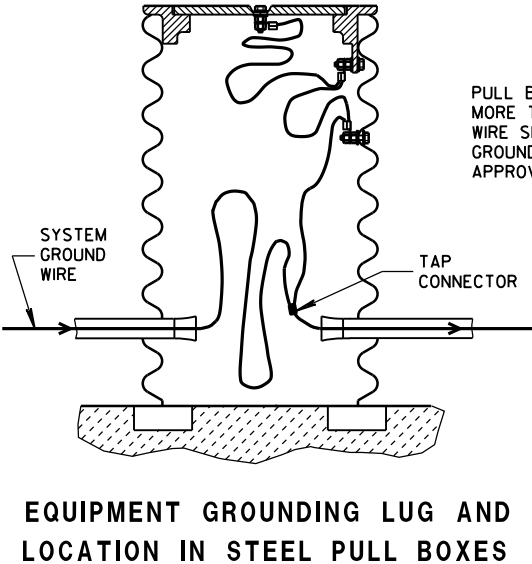
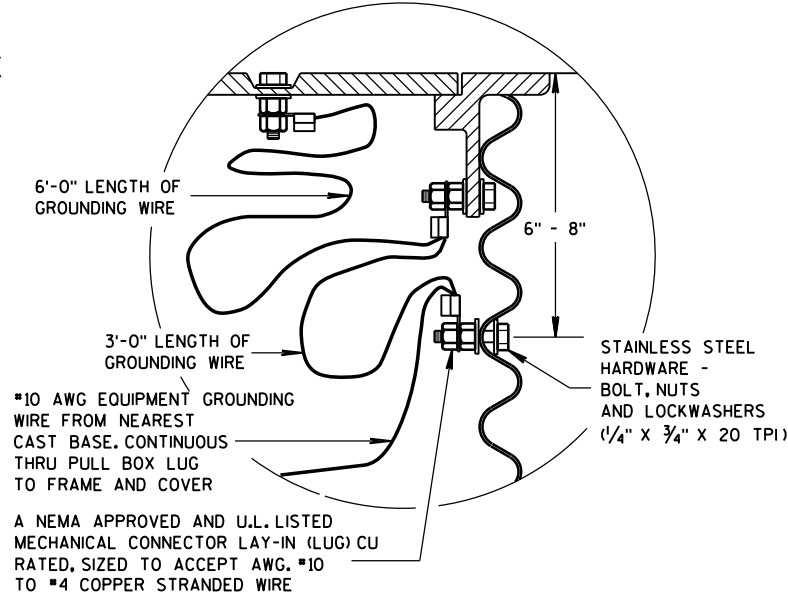
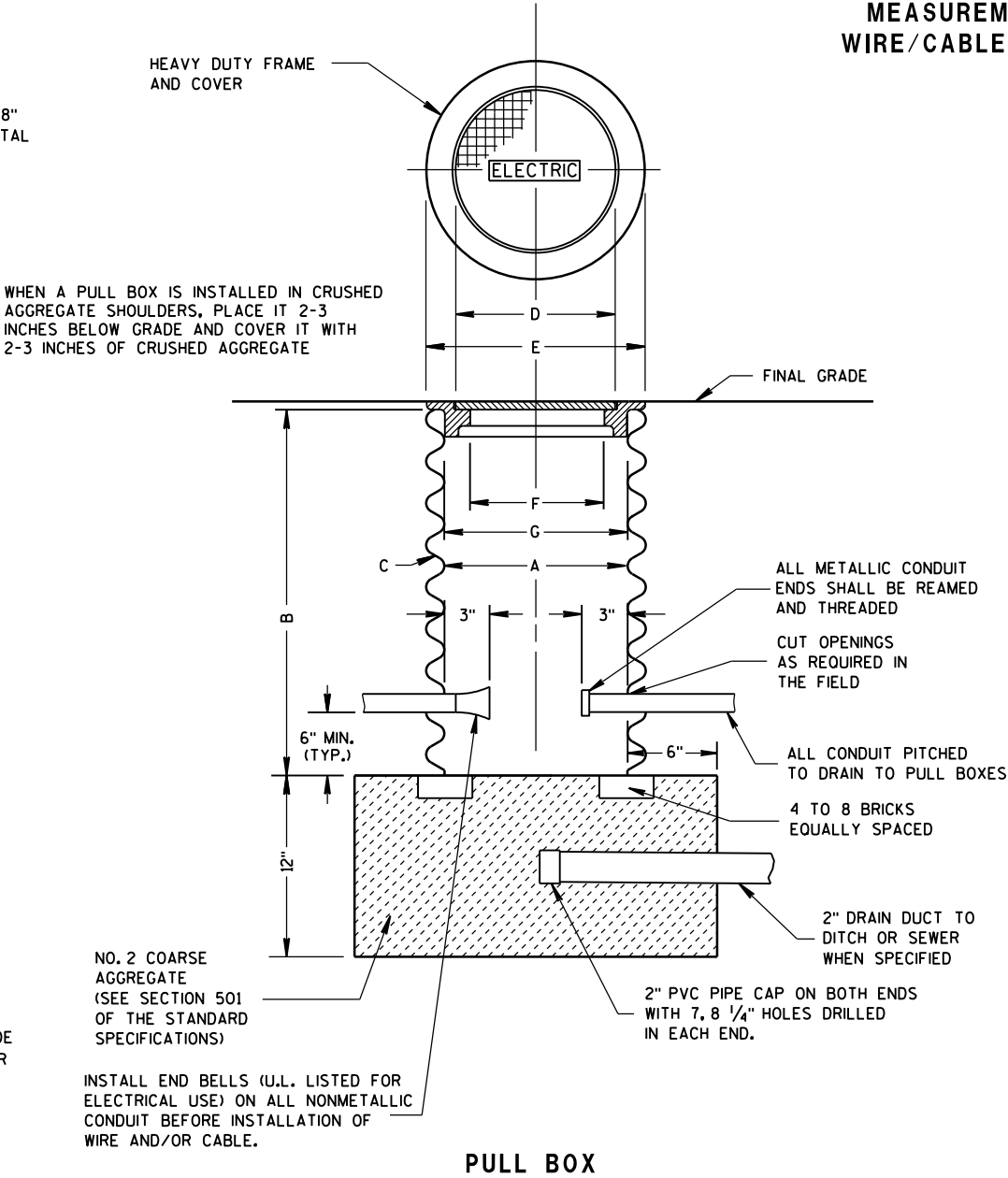
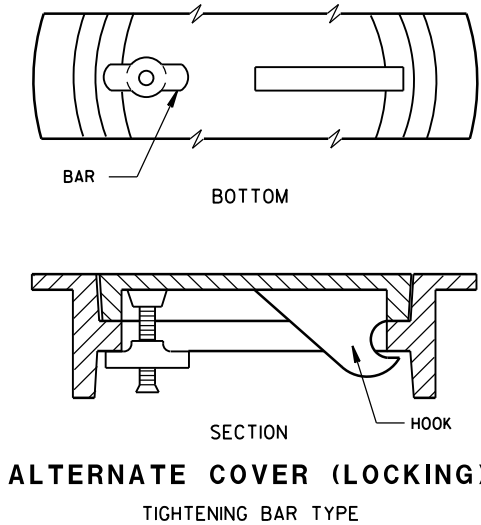
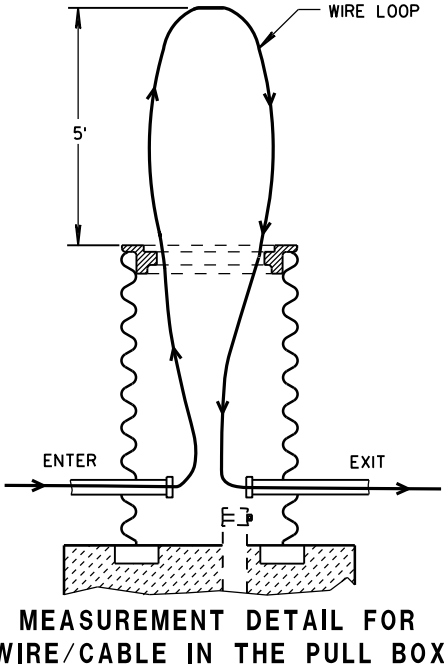
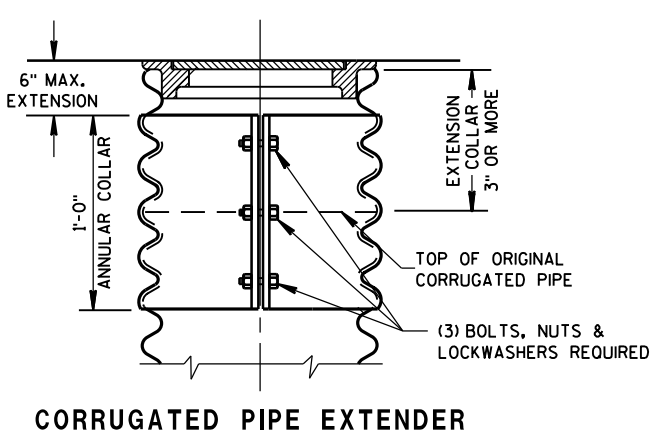
GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

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

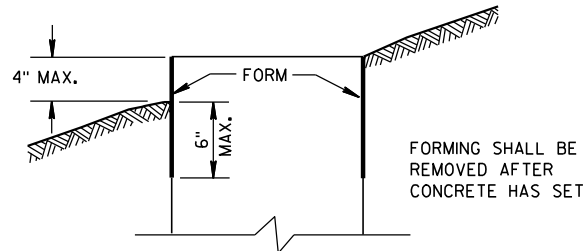
S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

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 2-7-2013 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

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



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5
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 2 AND TYPE 5 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 AND 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-449, OR ASTM A-687 (GRADE 105).

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.

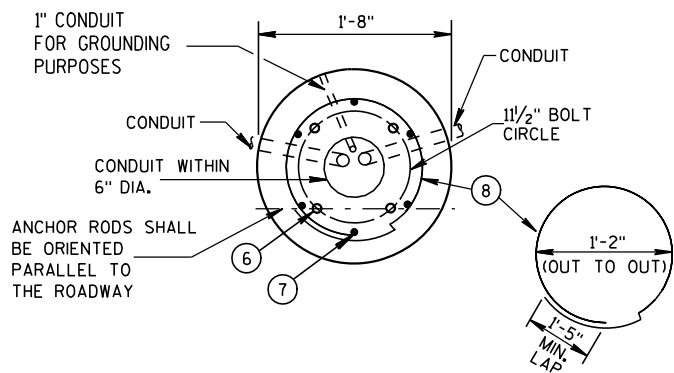
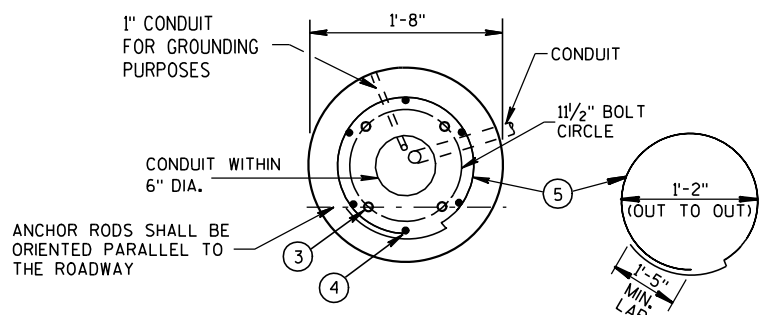
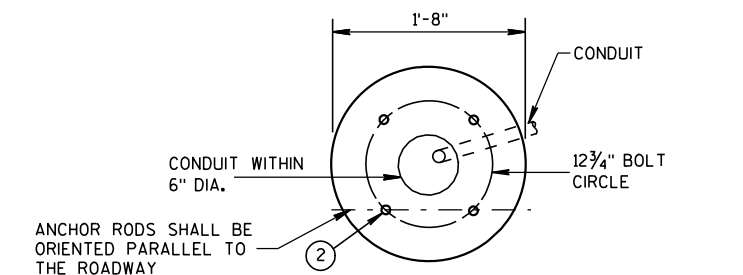
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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.

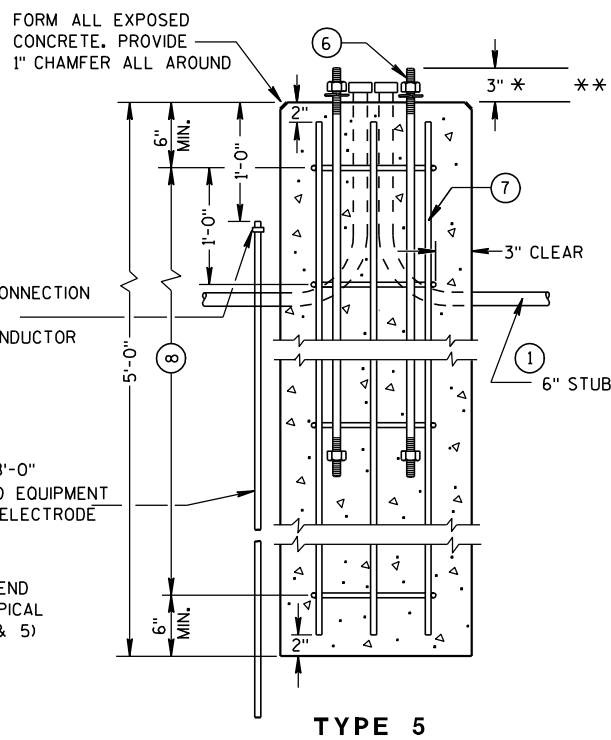
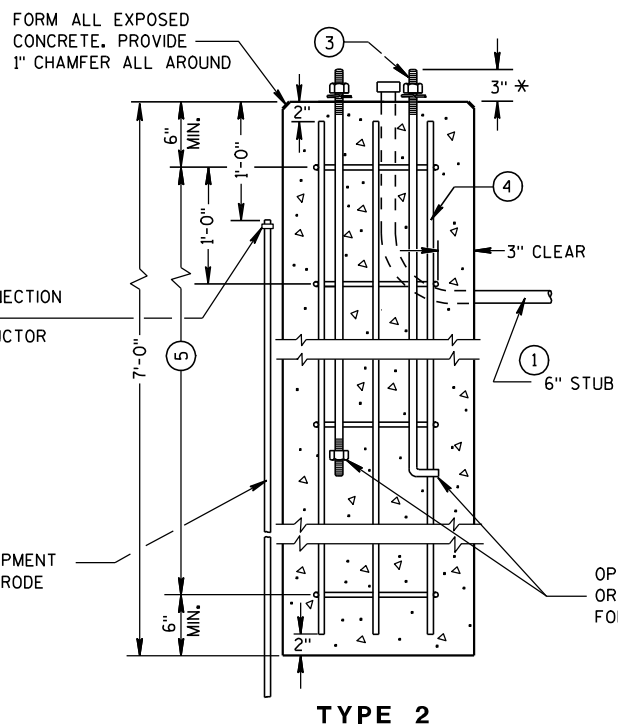
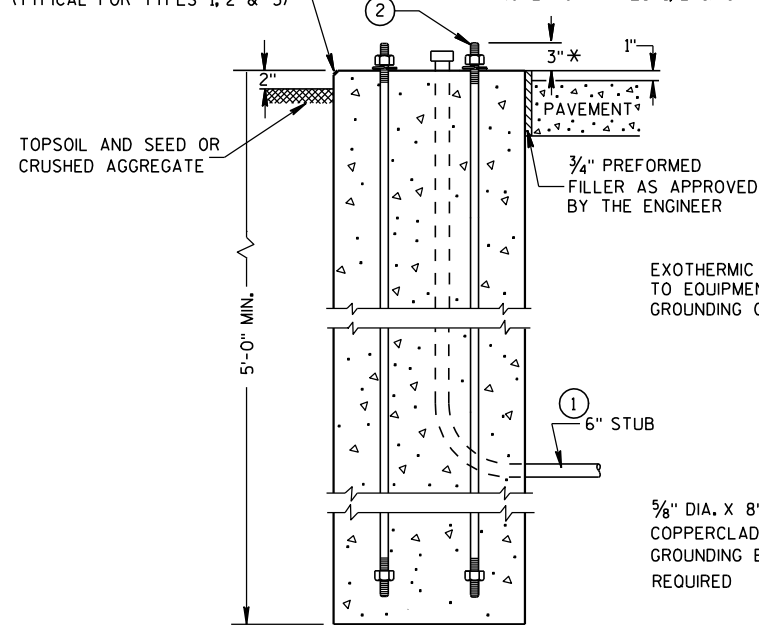
- ② (4) 1" DIA. X 3'-6" ANCHOR RODS.
③ (4) 1" DIA. X 5'-0" ANCHOR RODS.
④ (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.
⑤ (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.
⑥ (4) 1" DIA. X 3'-6" ANCHOR RODS.
⑦ (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT.
⑧ (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0"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



FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

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

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



CONCRETE BASES

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

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

CONCRETE BASES,
TYPES 1, 2 & 5

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/3/10

DATE

FHWA

/S/ Joanna L. Bush

STATE ELECTRICAL ENGINEER FOR HWYS

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, ASTM A-325, (92,000 YIELD) HEAVY HEX NUT AND BE GALVANIZED IN ACCORDANCE WITH ASTM A-153, CLASS C.

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 AND U.L. LISTED MECHANICAL CONNECTOR (LUG) AL/CU RATED AND SIZED TO ACCEPT #10 AWG STRANDED WIRE, SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

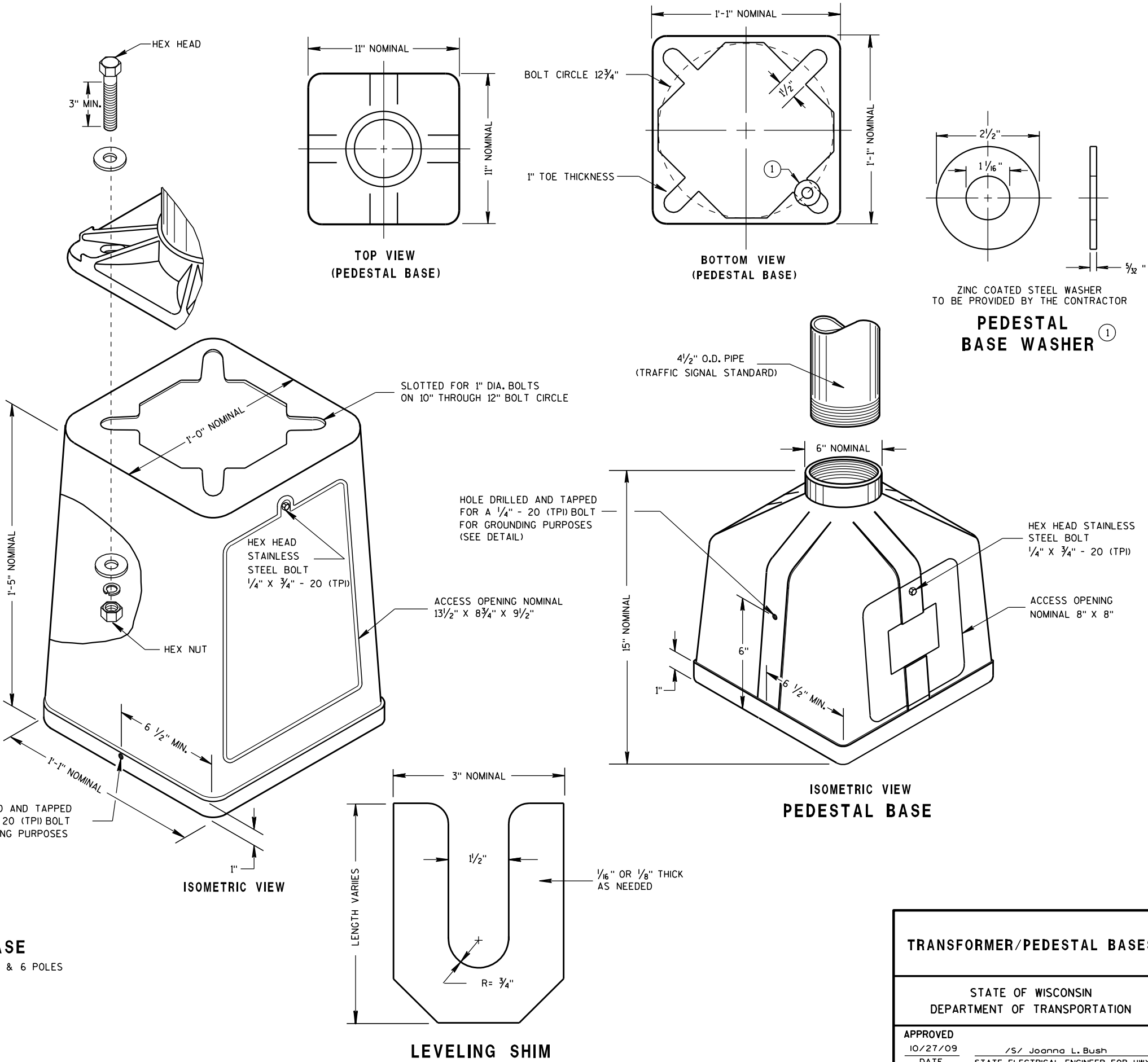
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

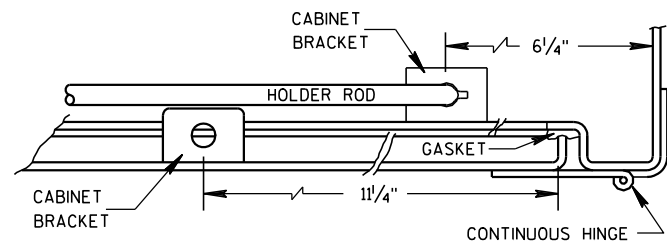
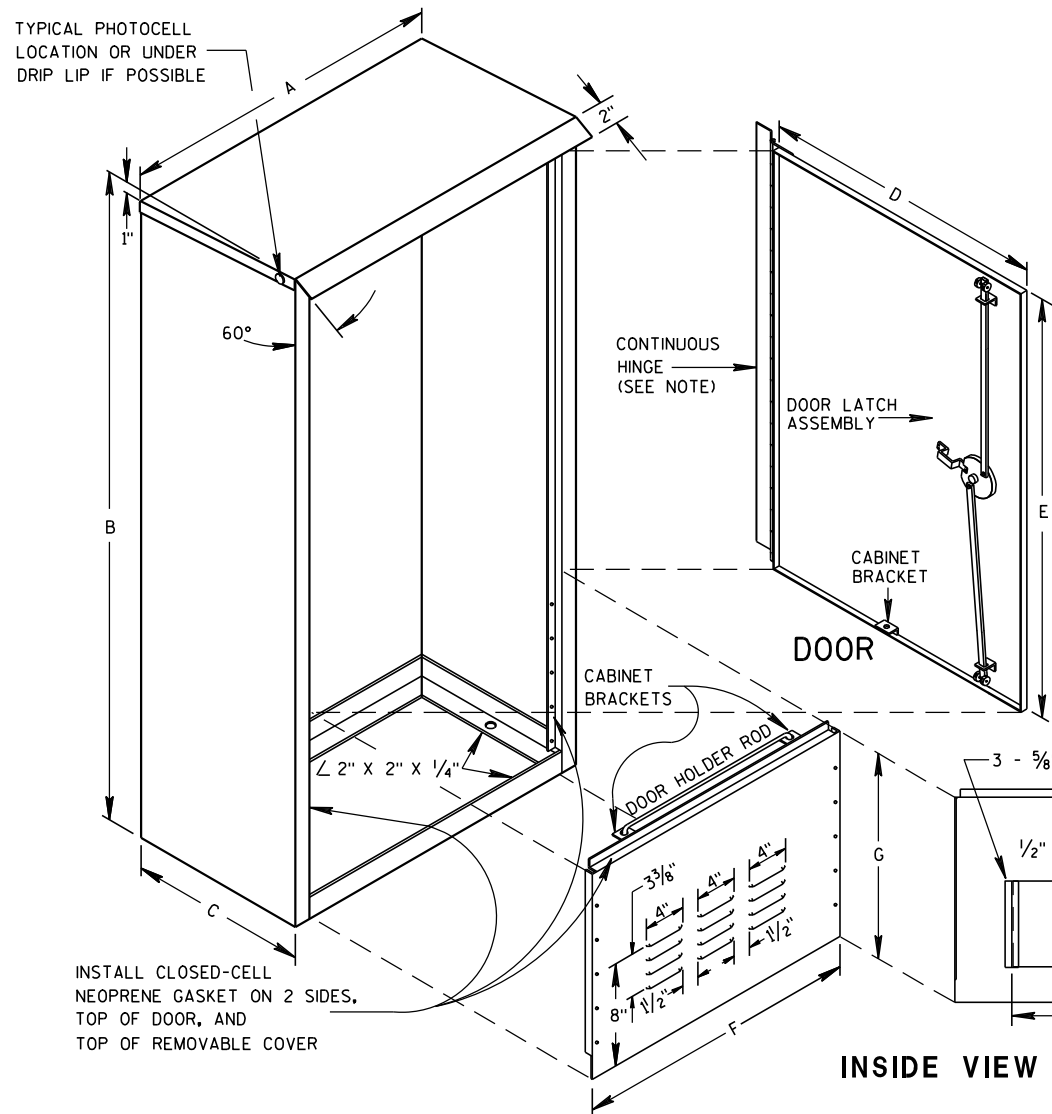
THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.



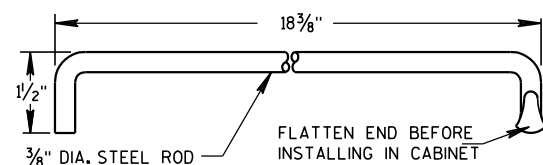
TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

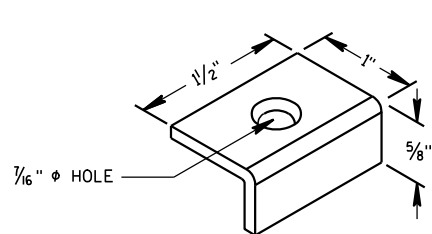
APPROVED
10/27/09
DATE /S/ Joanna L. Bush
STATE ELECTRICAL ENGINEER FOR HWYS
FHWA



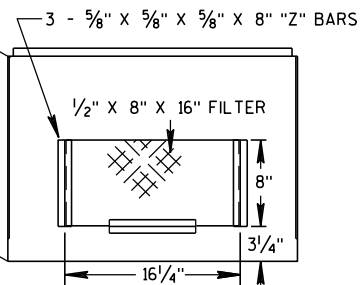
HINGE & DOOR HOLDER



HOLDER ROD

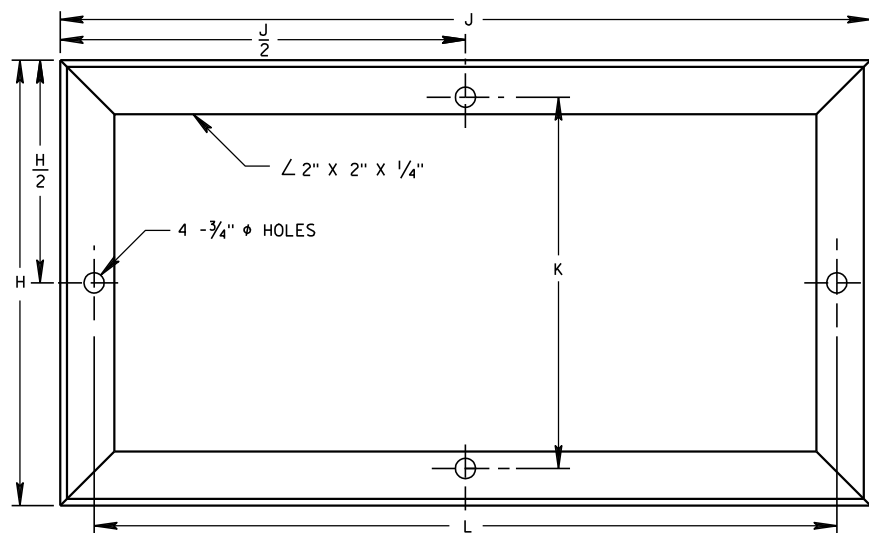


CABINET BRACKET



INSIDE VIEW SHOWING FILTER

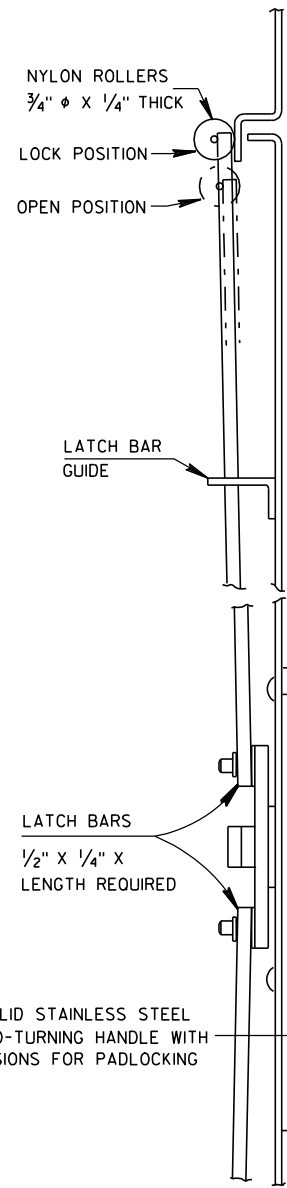
REMOVABLE COVER



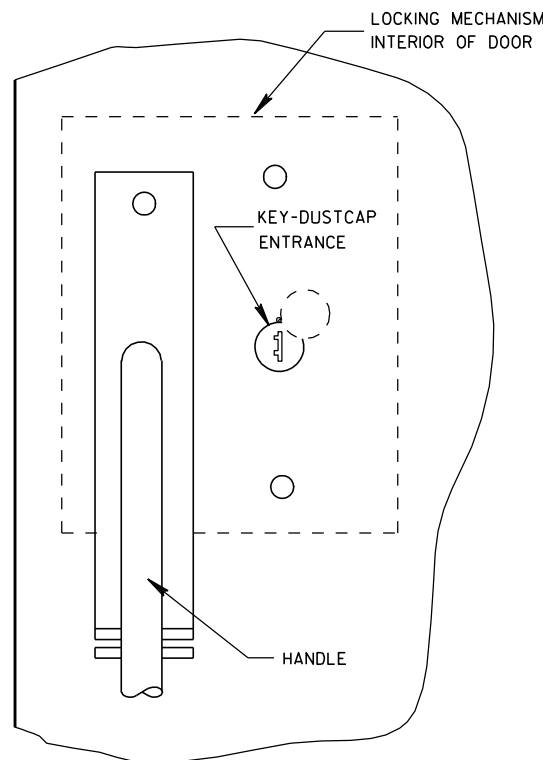
MOUNTING BASE

TABLE OF DIMENSIONS (INCHES)

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

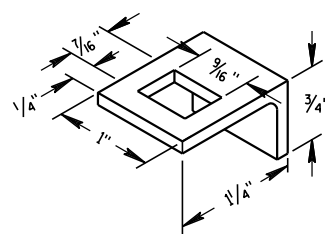


SIDE VIEW



FRONT VIEW

LATCH ASSEMBLY



LATCH BAR GUIDE

GENERAL NOTES

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

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

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

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

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

ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

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

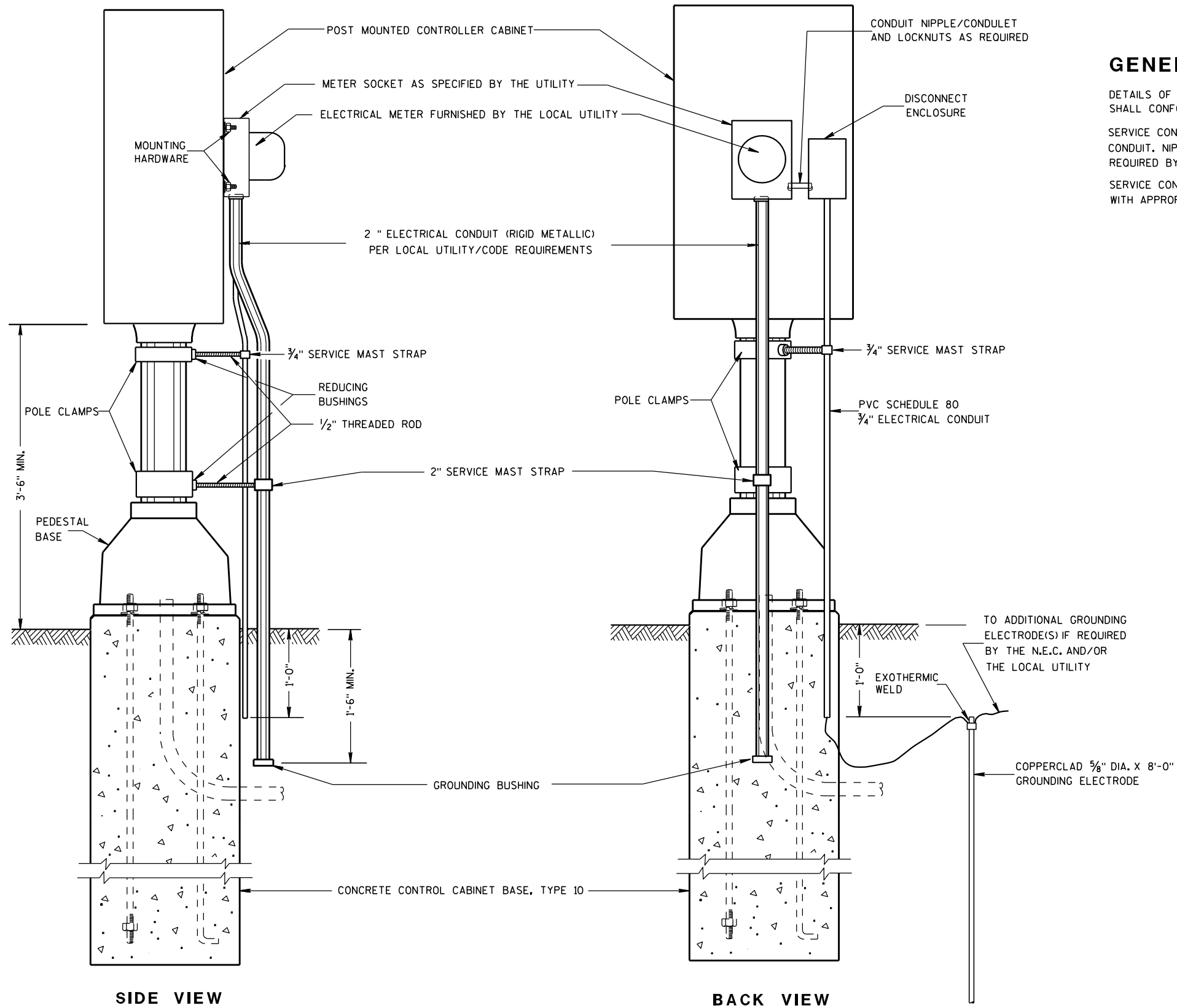
A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH-NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE AN APPROVED TYPE.

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

SIGNAL OR LIGHTING
CONTROL CABINET

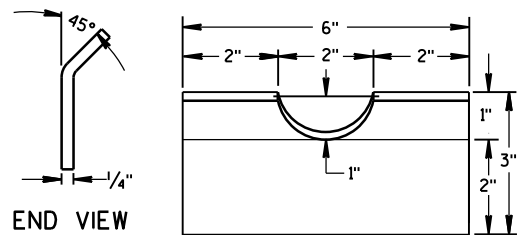
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/21/96
DATE
/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGINEER FOR HWYS
FHWA

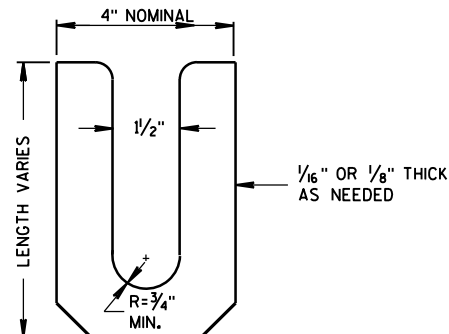


POST MOUNTED CONTROLLER SERVICE INSTALLATION

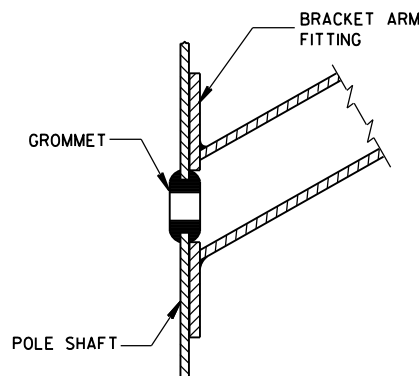
POST MOUNTED CONTROLLER SERVICE INSTALLATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/24/2003 DATE	/S/ Balu Ananthanarayanan STATE ELECTRICAL ENGINEER FOR HWYS
FHWA	



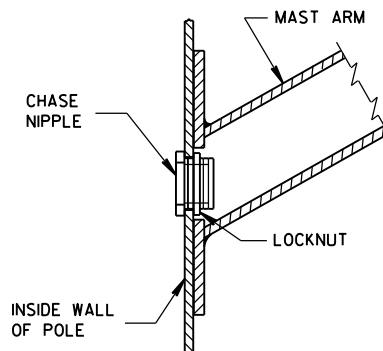
FRONT VIEW
RECTANGULAR CLAMP SHIM
(4 TO A SET)



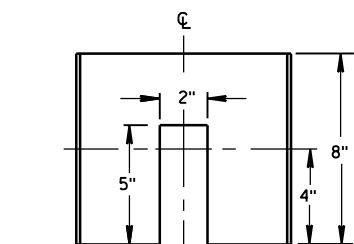
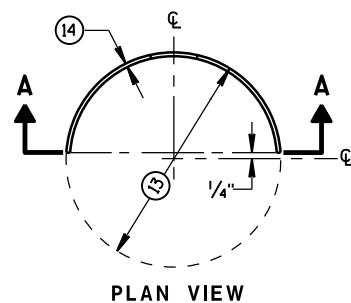
LEVELING SHIM
SHALL BE ALUMINUM



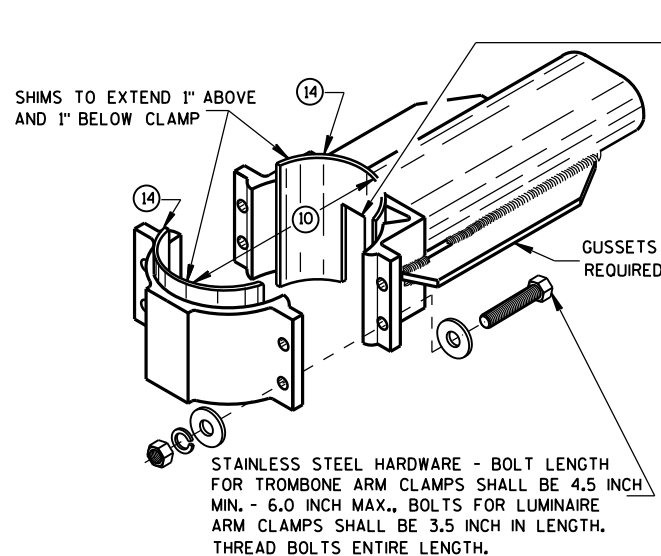
TYPICAL APPLICATION OF
GROMMET IN POLE SHAFT



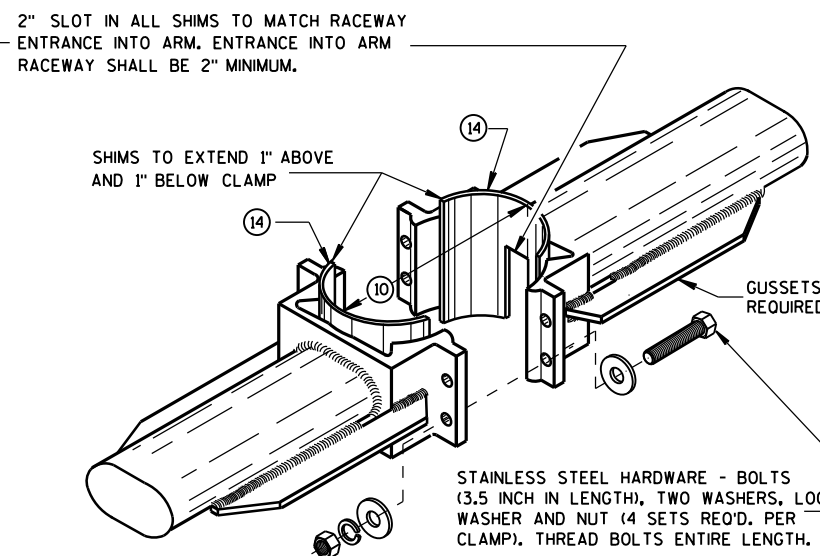
TYPICAL APPLICATION OF
CHASE NIPPLE IN POLE SHAFT



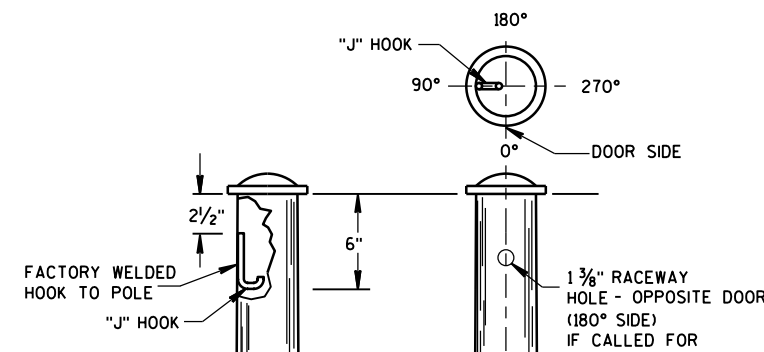
SECTION A-A
CIRCULAR CLAMP SHIM
(2 TO A SET)



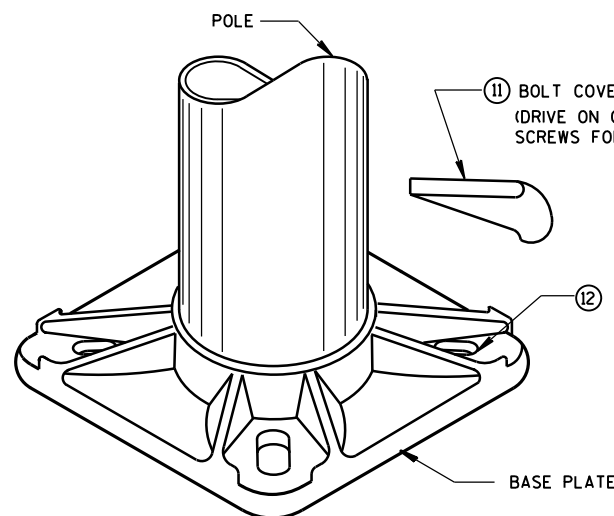
TYPICAL TROMBONE MAST ARM AND SINGLE
LUMINAIRE MAST ARM MOUNTING CLAMP



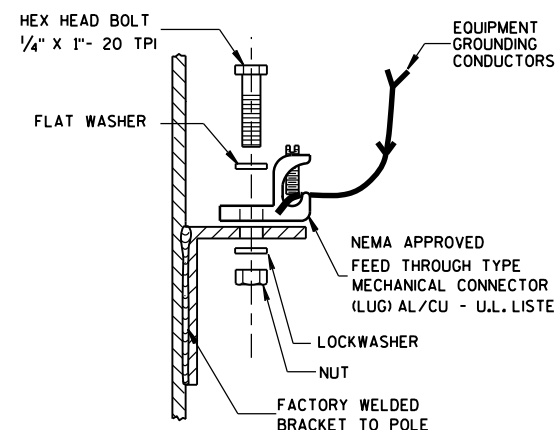
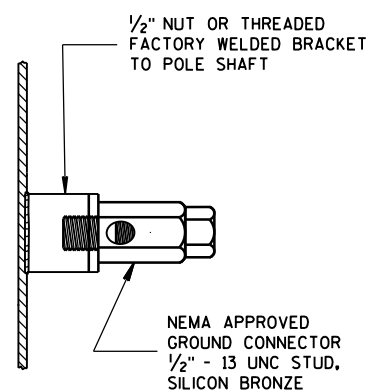
TYPICAL LUMINAIRE MAST ARM
(DOUBLE) MOUNTING BRACKETS



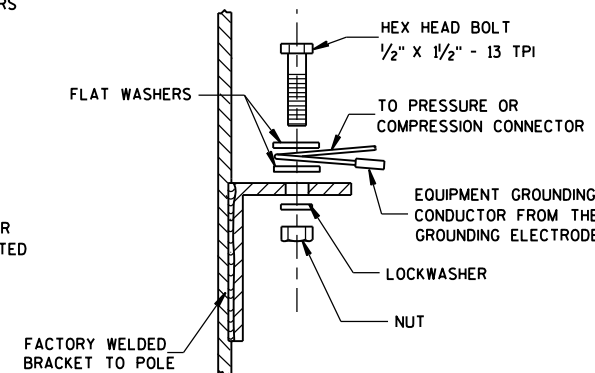
TYPICAL "J" HOOK LOCATION



BASE PLATE



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



GENERAL NOTES

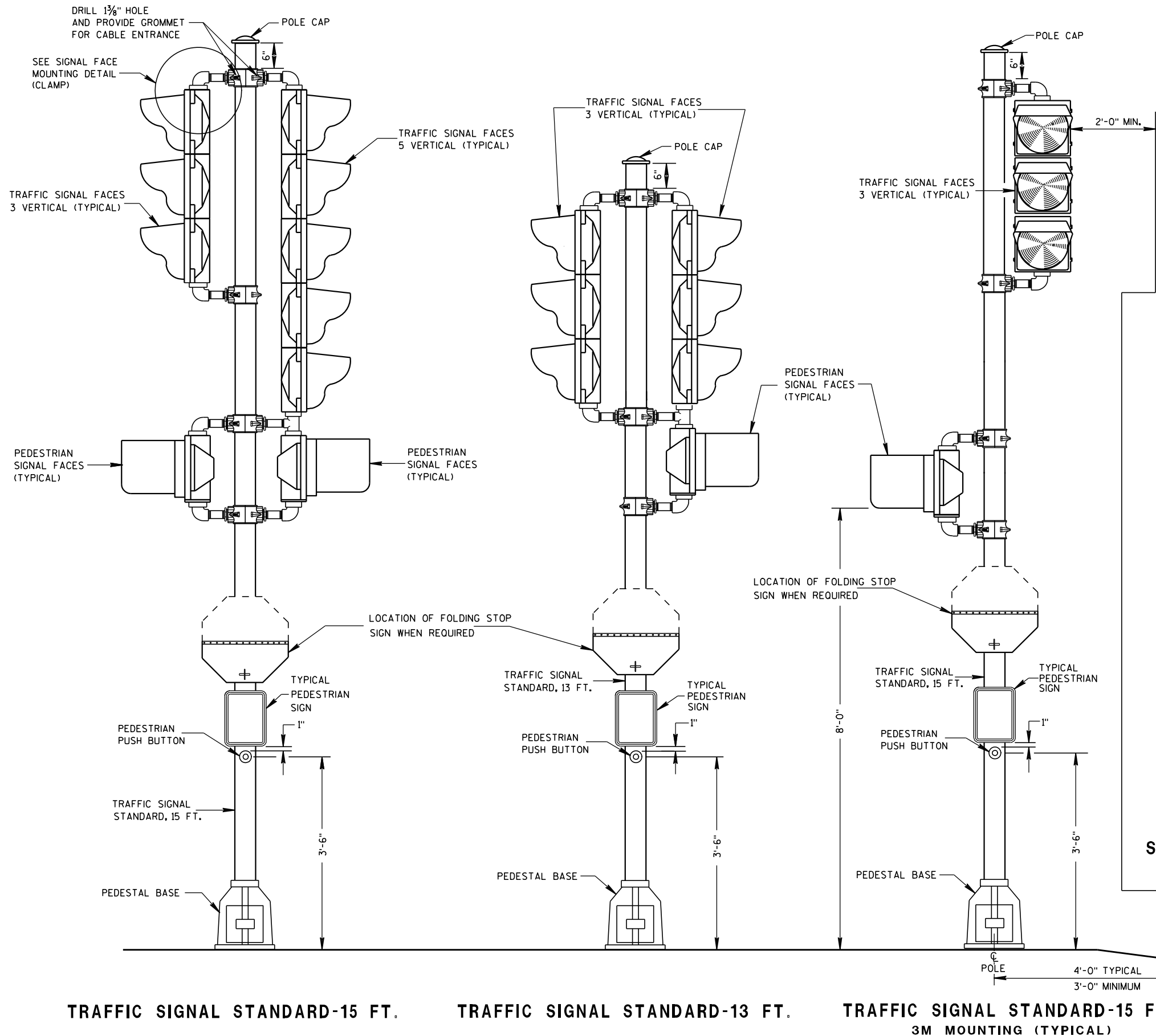
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- 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 OUTSIDE SHIM DIAMETER - (4.5" O.D. FOR LUMINAIRE MAST ARM)
(6.625" O.D. FOR TROMBONE MAST ARM)
- 14 VARIABLE SHIM THICKNESS - (0.10", 0.25", 0.35", 0.53" OR 0.70")
SHIM THICKNESS FOR TROMBONE MAST ARMS MAY BE TYPICALLY 0.25", 0.35",
0.53" OR 0.70".
SHIM THICKNESS FOR LUMINAIRE MAST ARMS MAY BE TYPICALLY 0.10",
0.25" OR 0.35".
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.
SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS
SHALL BE 1/4" HIGH AND LEGIBLE.
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS
TO THE ENGINEER FOR APPROVAL.
- 15 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.

HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/7/2013
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.

POLE CLAMP (AS SHOWN) MOUNTING BRACKETS SHALL BE USED.

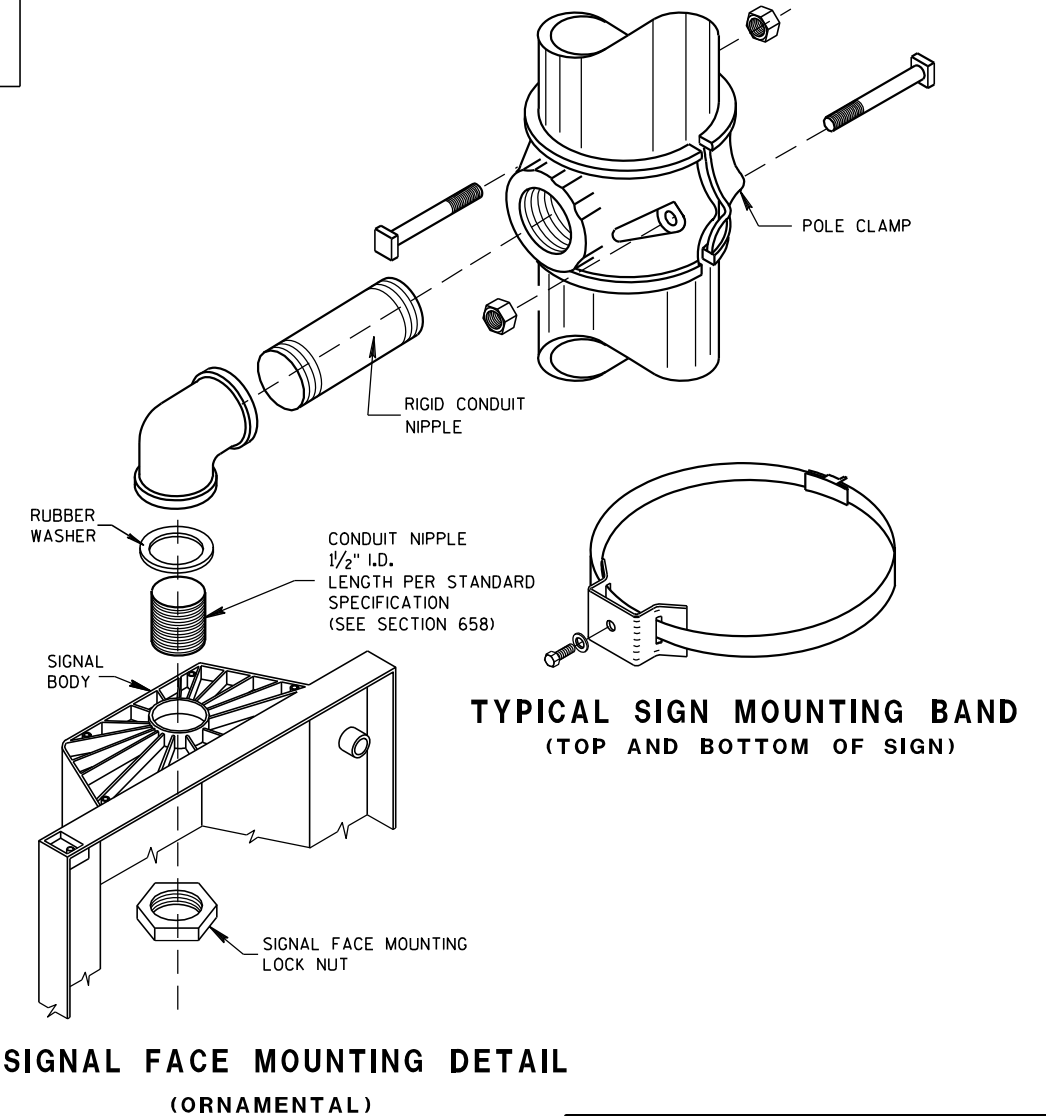
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

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

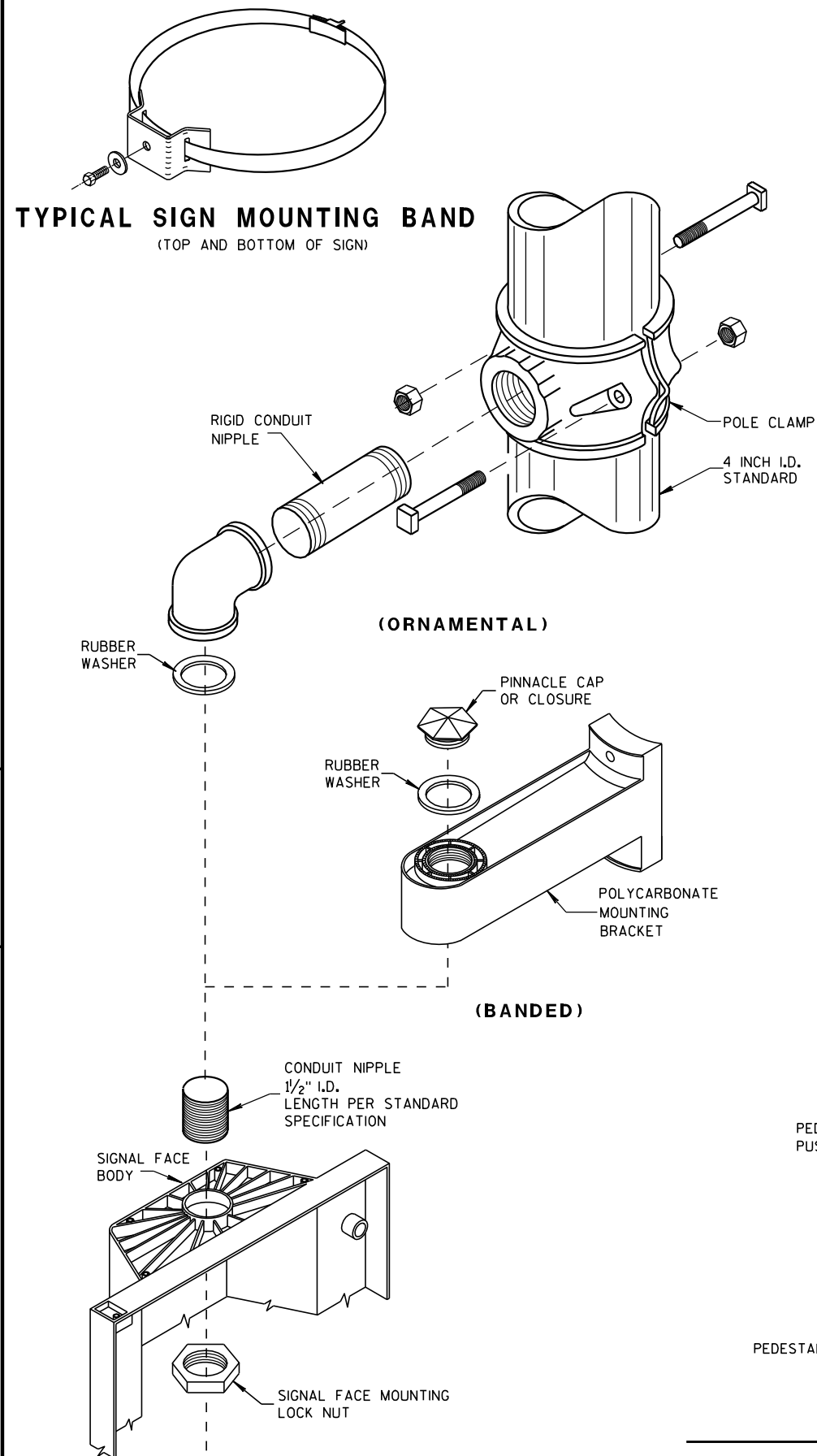
FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) $\frac{1}{4}$ " X $\frac{3}{4}$ " - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



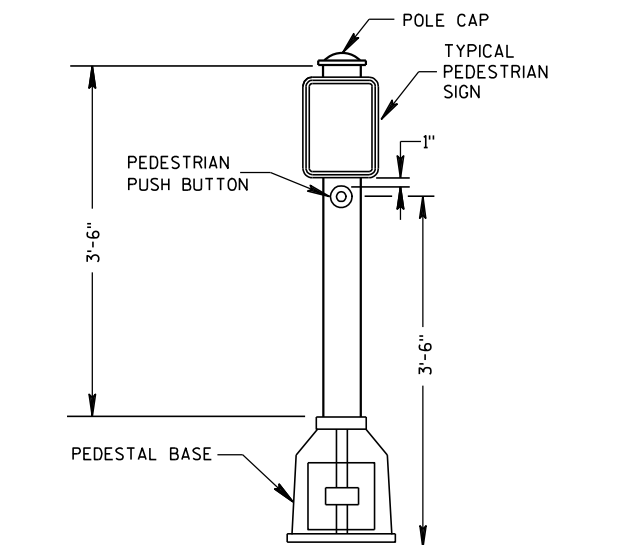
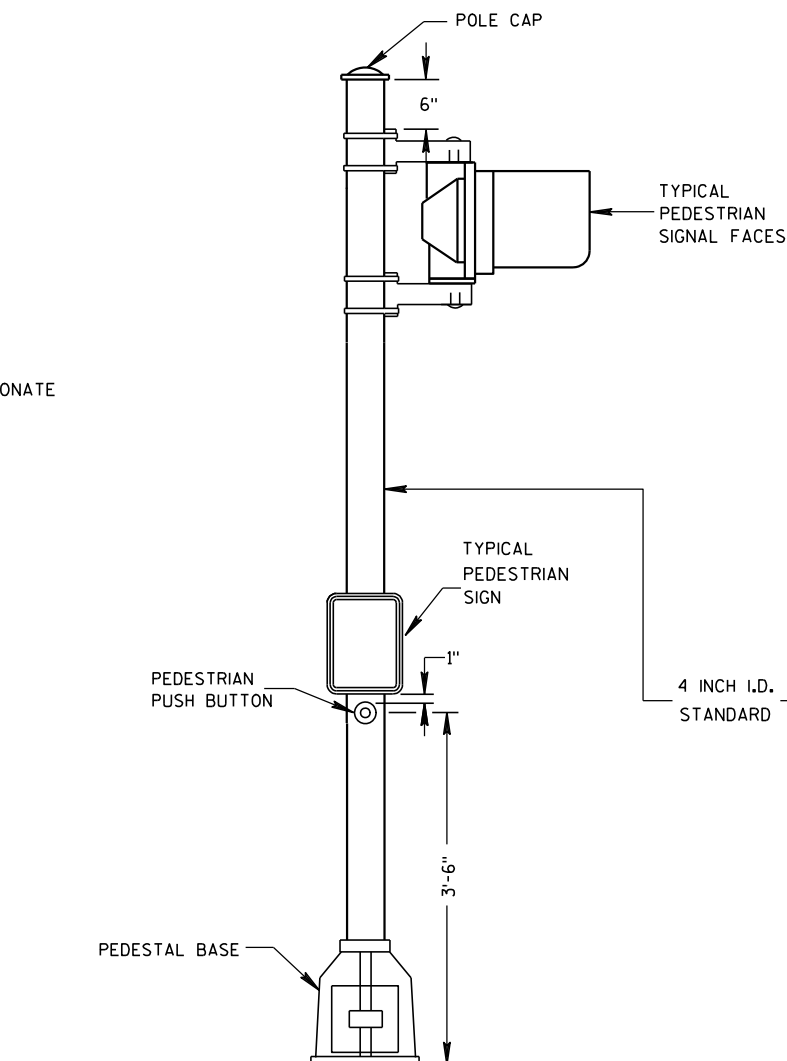
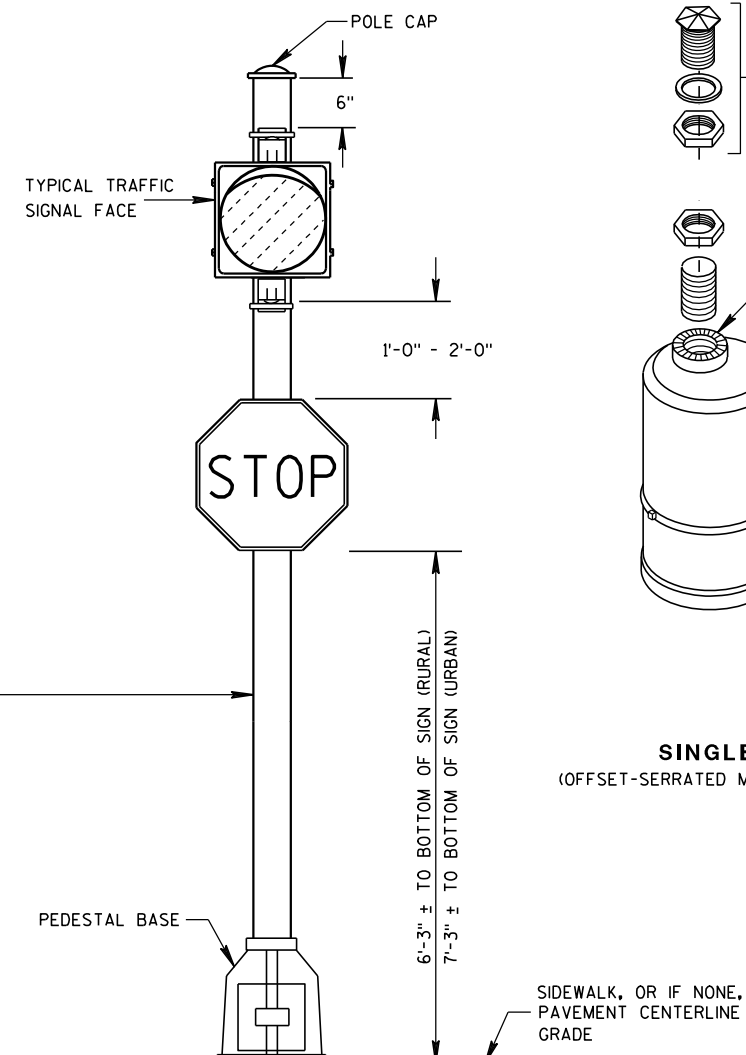
TRAFFIC SIGNAL STANDARD ORNAMENTAL BRACKET MOUNTINGS TYPICAL FOR 13 FT. OR 15 FT.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/11/10 DATE /S/ John Corbin
STATE ELECTRICAL ENGINEER FOR HWYS
FHWA



SIGNAL FACE MOUNTING DETAILS

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

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

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

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

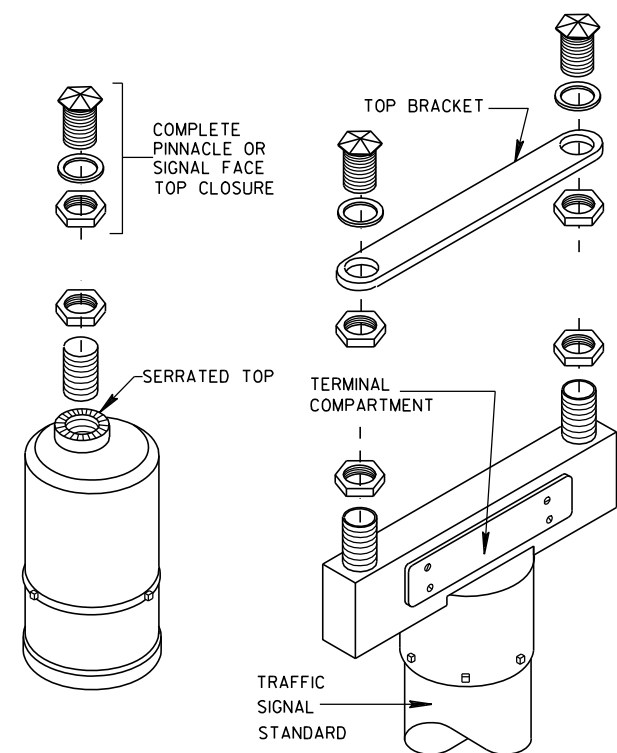
POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

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

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

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

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

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

SLIPFITTERS

TRAFFIC SIGNAL STANDARD
PEDESTRIAN AND FLASHER
TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

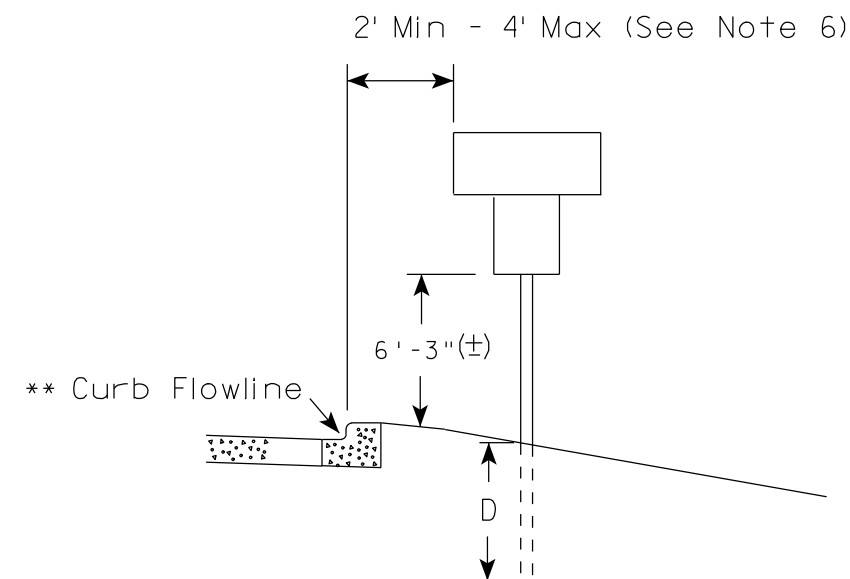
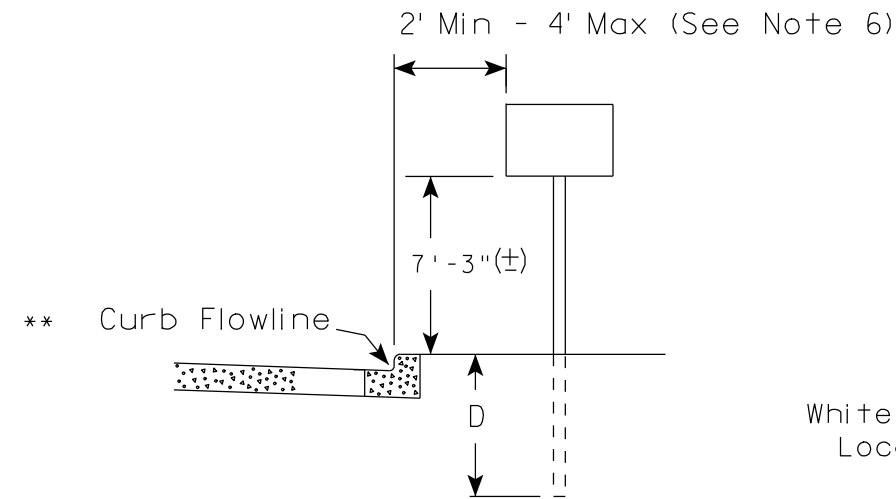
5/11/10

DATE

FHWA

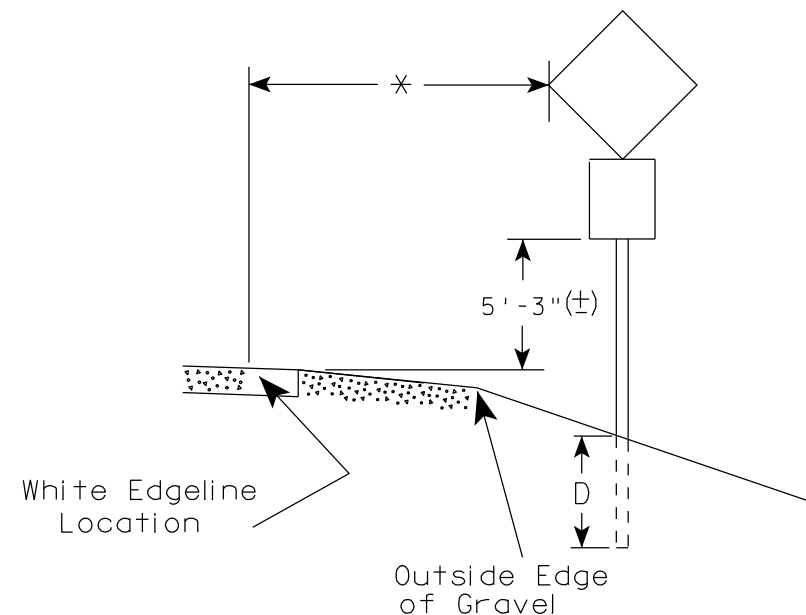
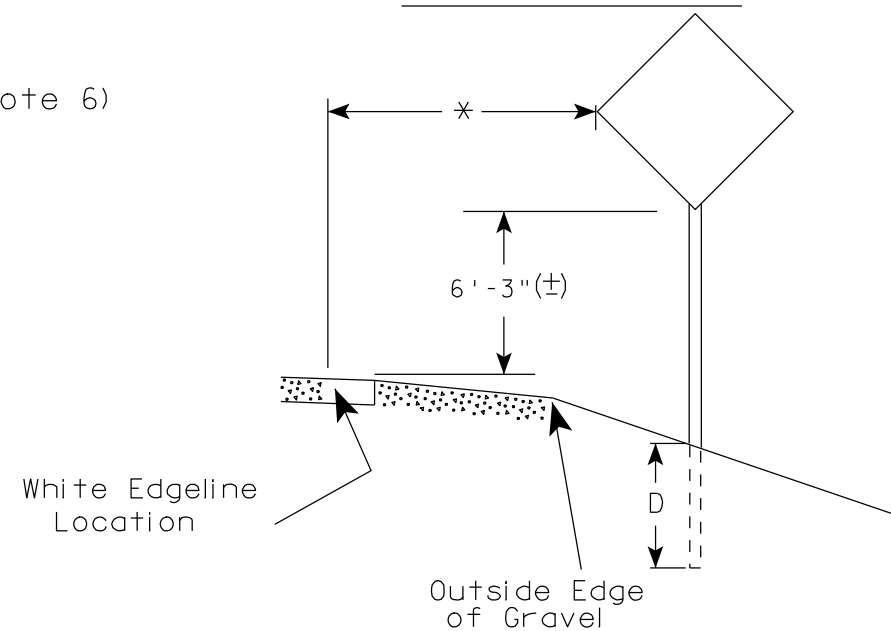
/S/ John Corbin
STATE ELECTRICAL ENGINEER FOR HWYS

URBAN AREA



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

RURAL AREA (See Note 2)



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

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. 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 (A4-5) 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 stop signs (R1-1F) 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) & End of Road Markers (W5-56 & W5-56A) 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'

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/24/2013 PLATE NO. A4-3.17

PROJECT NO:

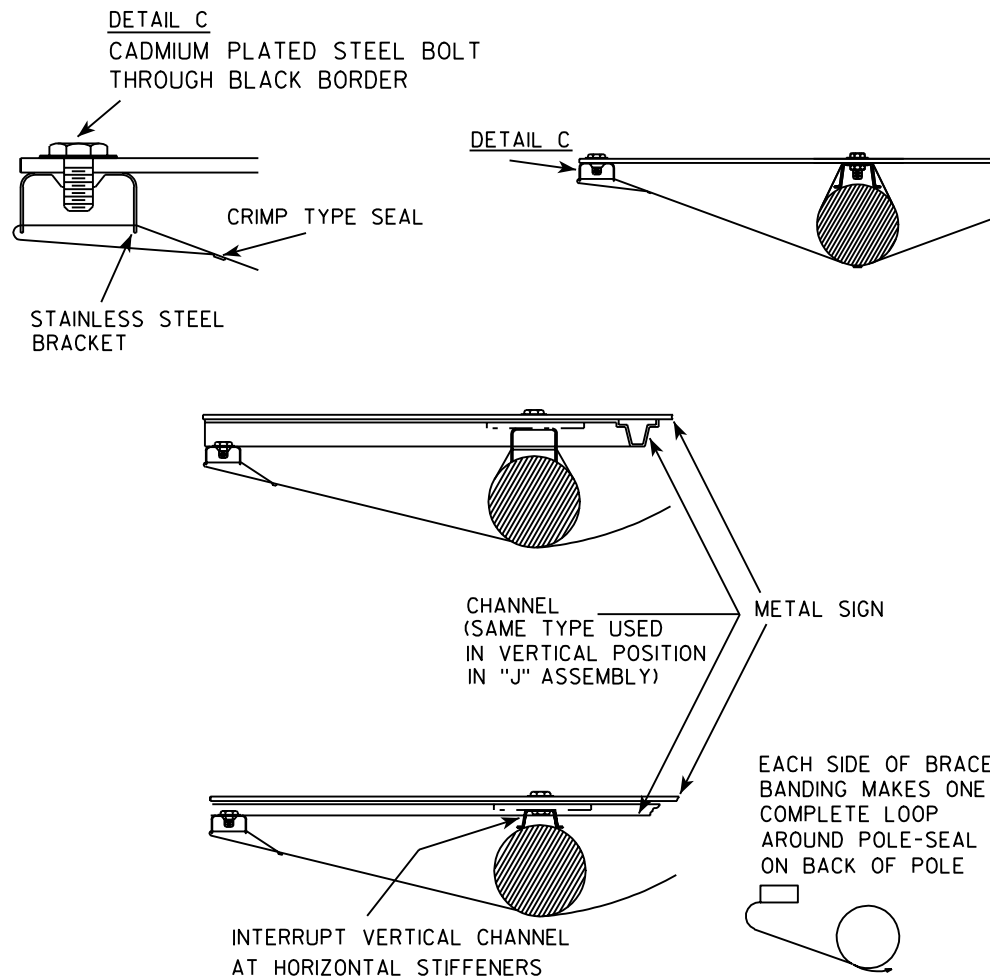
HWY:

COUNTY:

SHEET NO:

E

BRACE BANDING

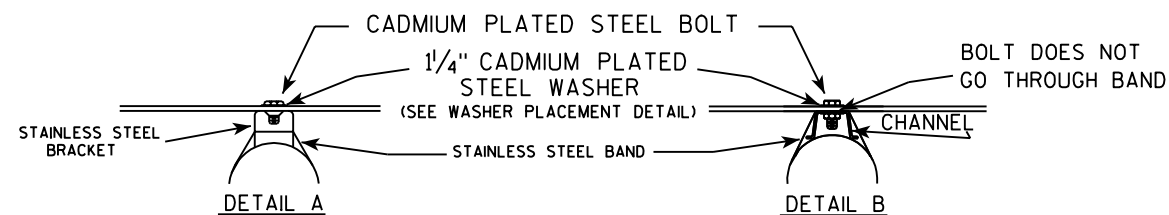
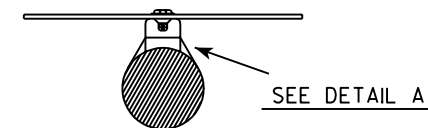
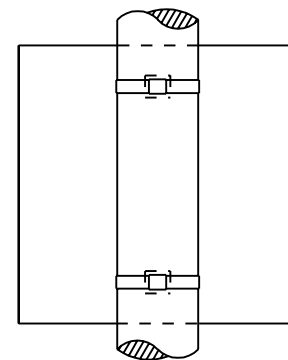


BRACE BANDING

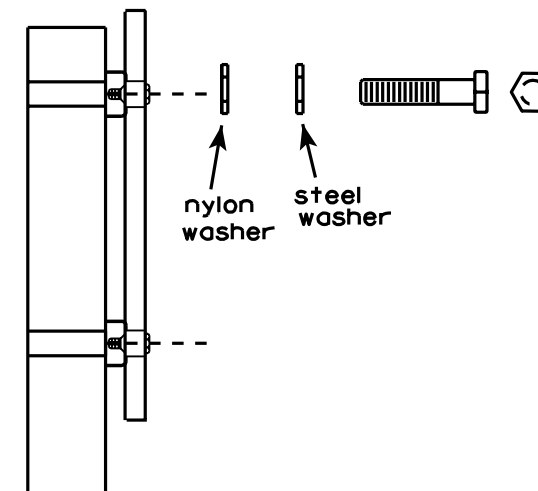
BRACE BANDING SHALL BE TIGHTENED FIRMLY
BUT NOT SO TIGHT AS TO APPRECIABLY
CURVE FACE OF SIGN.

BRACKET BANDING

SINGLE SIGN



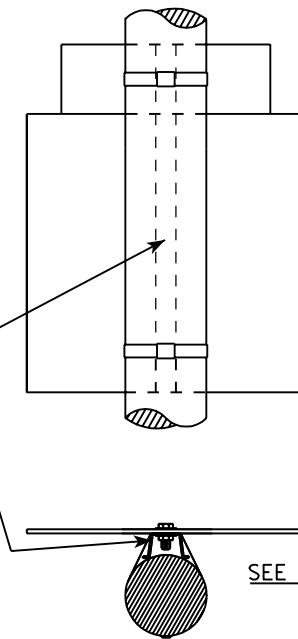
WASHER PLACEMENT



WASHERS (ALL POSTS) -

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

"J" ASSEMBLY



SEE DETAIL B

GENERAL NOTES

1. Signs 4' or greater in width shall have one brace band installed at the center of the sign.
2. Signs 3' or greater in height shall have three bracket bands installed. Signs less than 3' in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

STANDARD SIGN SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/08/05 PLATE NO. A5-9.2

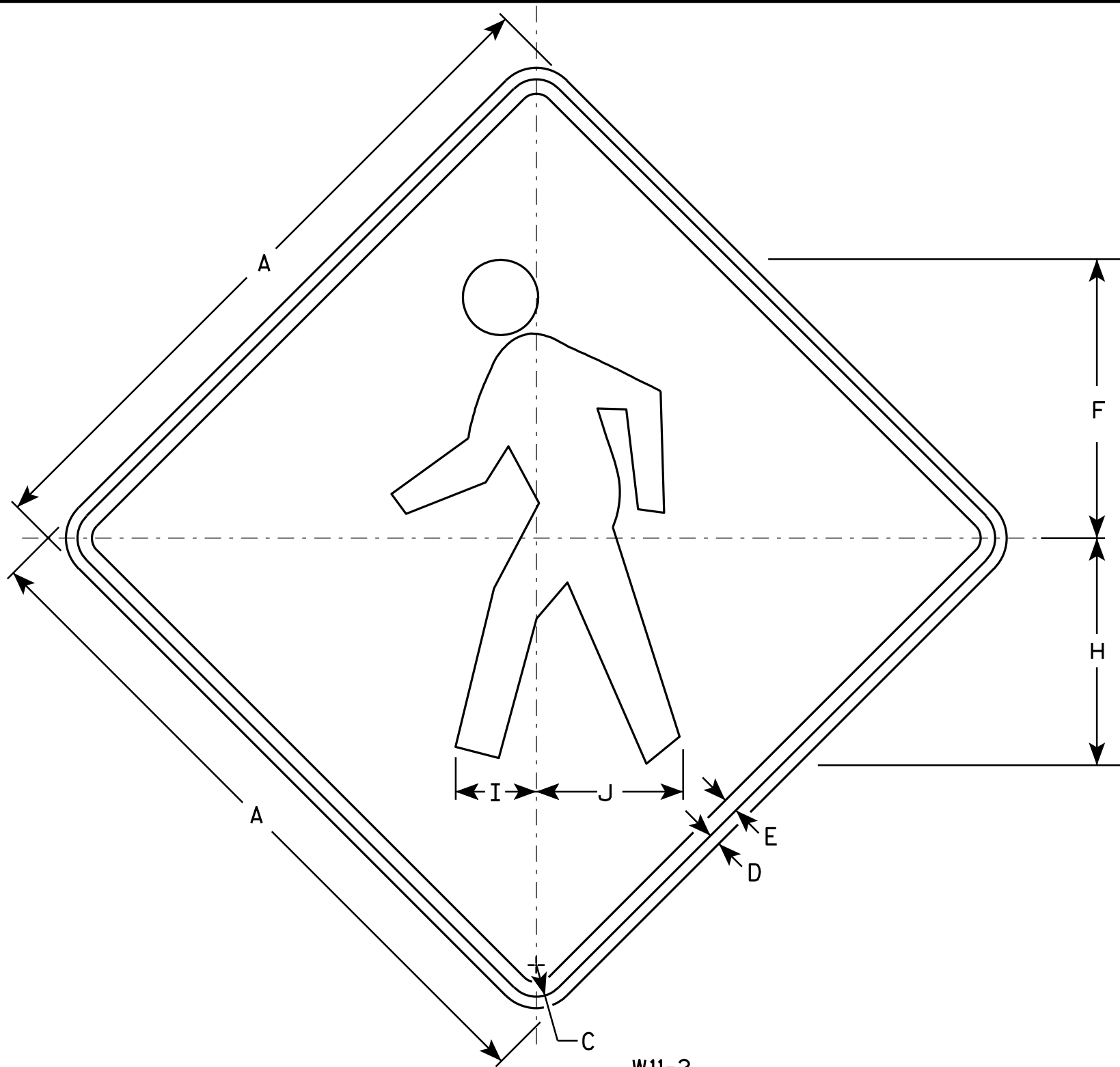
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



W11-2

NOTES

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

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

STANDARD SIGN
W11-2

WISCONSIN DEPT OF TRANSPORTATION

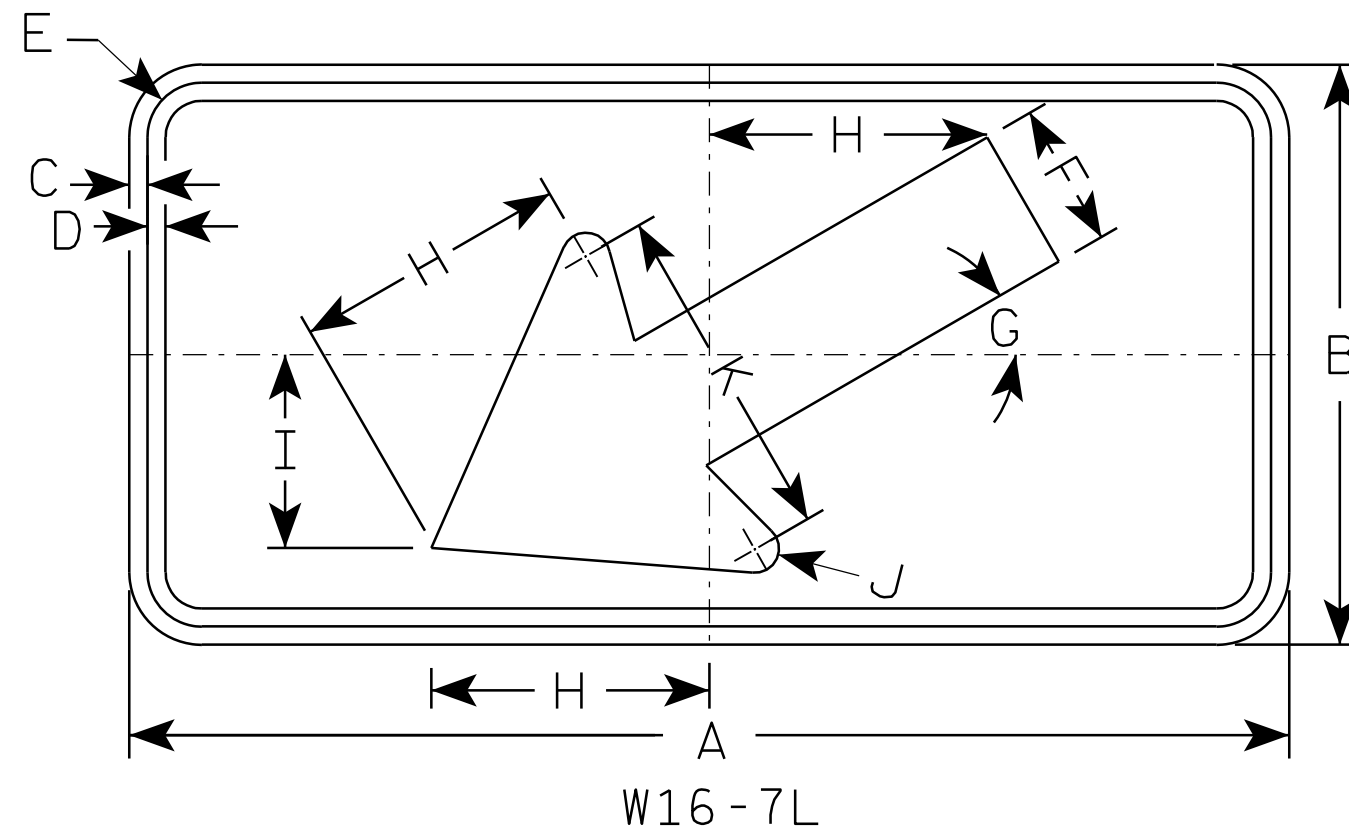
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W11-2.7

PROJECT NO: HWY: COUNTY: SHEET NO: E

NOTES

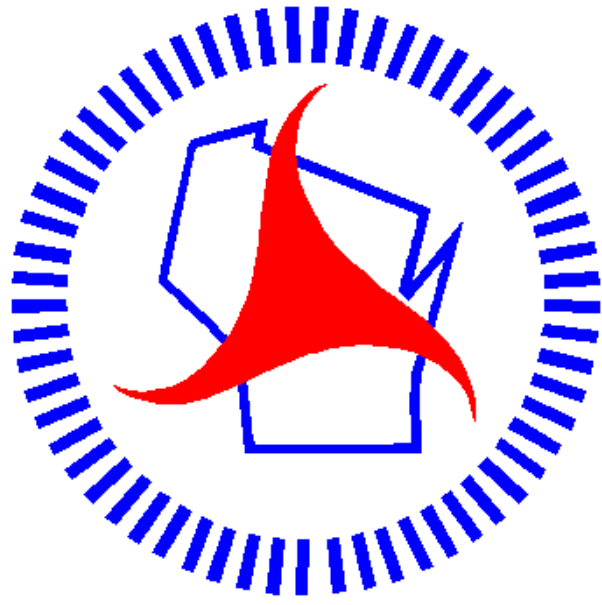
1. Sign is Type II - Type F Reflective -
reference WIS DOT Standard Specification for
HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base
material is plywood but borders shall be rounded
as shown. When base material is metal, the
corners and borders shall be rounded.
4. W16-7R is the same as W16-L
except the arrow is reversed along
the vertical centerline.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	3/8	3/8	1 1/8	3	30°	5 3/4	4	1/2	7																2.0
2M	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
3	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
4																											8
5																											8

STANDARD SIGN	
W16-7	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 11/02/10	PLATE NO. W16-7.5

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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Wisconsin Department of Transportation

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