

APPENDIX F. Traffic Signal Plans Submittal Checklist

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CITY OF AUBURN TRAFFIC SIGNAL PLANS SUBMITTAL CHECKLIST

This checklist must be submitted with every set of plans for traffic signals improvements. All items on the checklist shall be addressed. If the item is not applicable to this project check the box next to the item labeled "N/A", and provide comment. Items preceded by an asterisk (*) are required for the submittal to be considered complete. If one of these items is missing from the submittal without a valid explanation, the entire submittal will be rejected. Note that this checklist is not intended to be all-inclusive, and fulfillment of this checklist does not alleviate the obligation of the designer to meet all City of Auburn code, regulations, ordinances, and specifications. The purpose of this checklist is to facilitate a more efficient plan review process for the designer and the review team.

	Description	Check	N/A	Comments
Required Plan Sheets				
	These are the basic sheets we expect to see in a set of plans. Some sheets may be combined on certain projects, or have different names (for example, storm water profiles shown on the street plan & profile sheets).			
*	Traffic Signal Notes Sheet			
*	Signal Plan Sheets			
*	Installation Notes			
*	Standard Details and Drawings Sheets			
*	Coordination Plan Sheets			
Signal Support				
Signal Support - Signal Support	Galvanized Steel Poles			
	Powder Coat Gloss Black finish			
	Smooth Pole (not fluted)			
	Smooth, Arched Mast Arm			
	Gloss Black Decorative Top included			
	Gloss Black Decorative Base included			
	Black Ball on Decorative top			
Cabinet				
Cabinet	Auburn Spec Cabinet (not ALDOT)			
	Painted Black			
	UPS included			
	8-Phase NEMA Compatible Controller included			
	Ground Mounted Cabinet			
	Interconnect Components specified			
	Preemption Requirements specified			
Power Supply				
Power supply - P	Underground Service designed			
	Future Service Corner/Disconnect Location shown			
	Verified with ALPCo			
	Show existing topography with clearly labeled contours lines			
Signal Heads				
Signal H	Yellow, Aluminum, 12inch signal heads			
	Gelcore ELD specified			
Pedestrian Signals				
Pedestrian Signal	Black, Aluminum heads			
	LED			
	Countdown style			
	Audible pedestrian buttons			
Signage				
Signage	Overhead Blue Street Name Signs specified			
	Overhead Turn Signs specified			
	Overhead Lane Control Signs required			
	Signal Ahead Signs required			
Luminaries				
Luminaries	Black, 250 W HPS over each stop bar			
	Cut-off style Cobra Head Fixture			
	12' Luminaire Arm			
Plans				
Plans-Plans	Traffic Signal Notes Sheet			
	Signal Plan Sheets			
	intersection geometry shown			
	utilities shown			
	pavement markings shown			
	right of way shown			
	Installation Notes Specified for the following:			
controller/cabinet specs				

APPENDIX G. Traffic Signal Notes

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APPENDIX G. Traffic Signal Notes

Pavement markings shown are for illustrative purposes unless otherwise noted.

Controller shall be capable of running pedestrian phases.

Mast arm pole shall be galvanized steel, smooth, round poles (not fluted) with an arched mast arm and a powder coated gloss black (P33) finish.

The contractor shall not order the traffic signal material until the shop drawings and design calculations have been reviewed by the City of Auburn and written approval granted.

Poles shall include ornamental pole base and top as per City of Auburn standard.

Ball at top of crown shall be black.

The traffic signal pole assembly includes the pole structure, mast arm, decorative pole base, decorative pole top, luminaire arm and assembly, and miscellaneous hardware incidentals for a complete mast arm pole installation.

Cost of mast arm installation shall include all miscellaneous items, such as washers, bolts and all incidental items to have a complete installation.

Signal heads shall have a minimum clearance of 17' from the bottom of the signal head to the roadway.

Signal heads shall be yellow.

Signal heads shall be 12" LED's.

Luminaire assembly shall be gloss black Phillips Roadstar 130W98LED4K or approved equal.

Pedestrian signal housing shall be gloss black.

Pedestrian signals shall be led countdown signal heads (Lumination PS7-CFF1-01A-18).

Pedestrian pole shall be Holophane Wadsworth Aluminum Sitelink pole (or approved equal) with a powder coated gloss black finish.

Pedestrian signal head clamshell bracket shall be bolted to the pole, not banded.

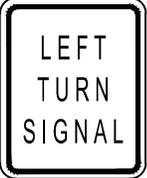
Uninterruptable power systems (battery back-up systems Clary SP 1000SN+) using the OP72C battery are required for all intersections. The entire ups system and batteries shall be housed in the standard City of Auburn traffic signal controller cabinet unless otherwise approved.

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APPENDIX H. Traffic Signal Details and Specifications

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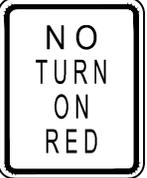
DETAIL OF TYPICAL TRAFFIC SIGNAL SIGNS



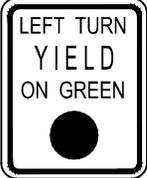
R10-10(L)
24" x 30"



R10-10(R)
24" x 30"



R10-11a
24" x 30"



R10-12
24" x 30"



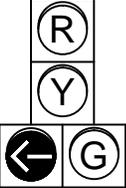
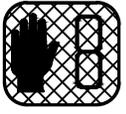
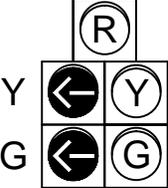
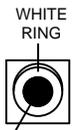
R10-3i **
9" x 15"



R10-3e **
9" x 15"

Street name shall be included in braille on the face of the sign. **

DETAIL OF TYPICAL TRAFFIC SIGNAL HEADS

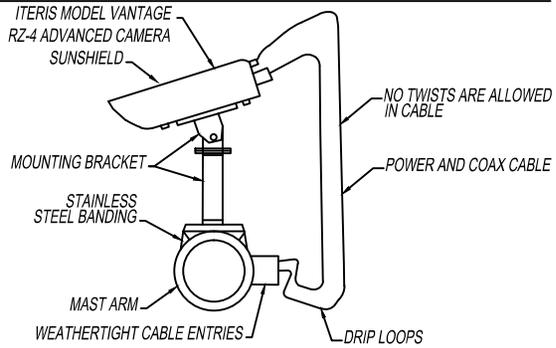
TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6	TYPE 7	TYPE 8
							
					COUNTDOWN TYPE LED		WHITE RING RED CENTER SUPPLEMENTAL RED INDICATION

STANDARD DETAILS: SIGNALS

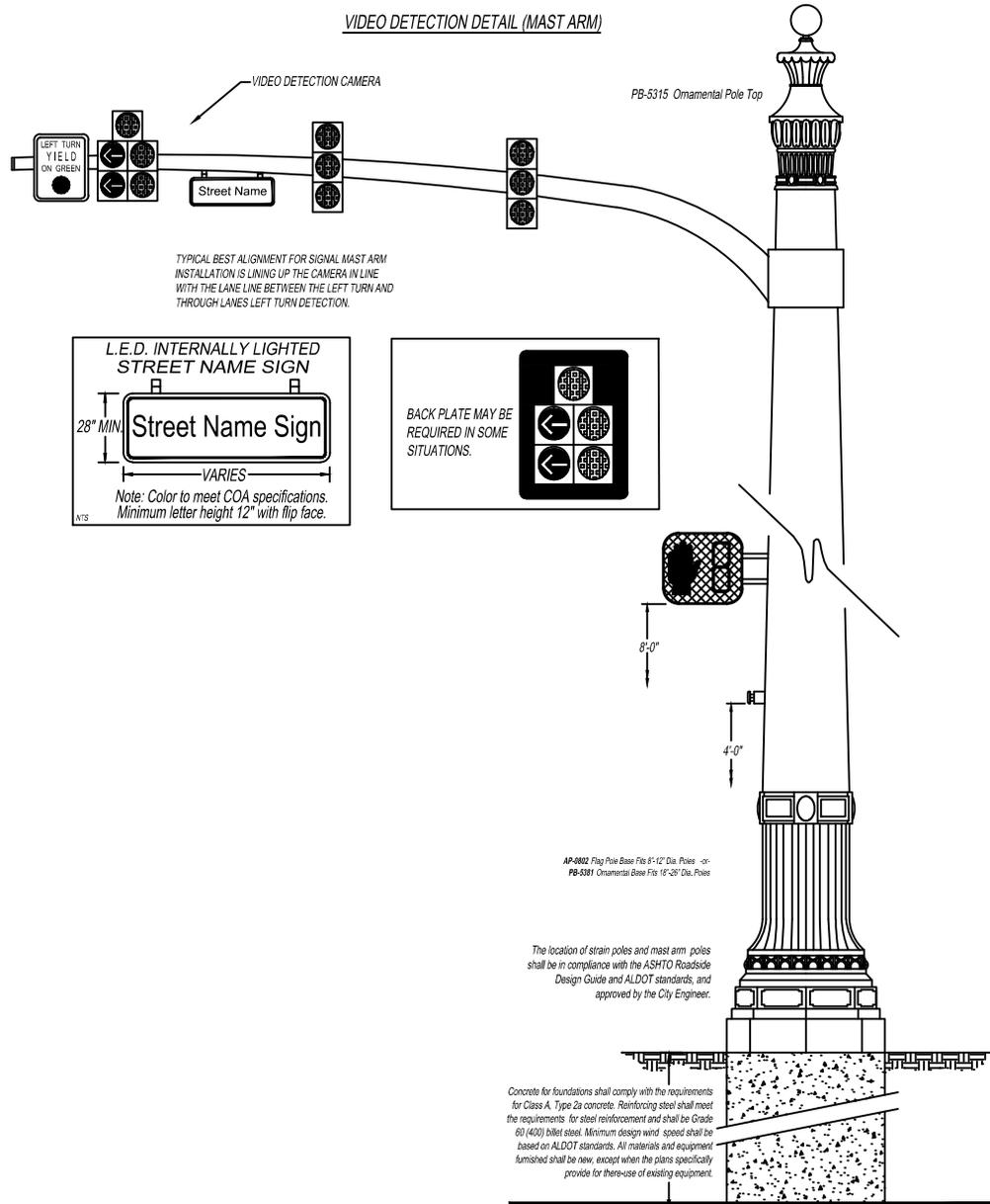
PROJECT TITLE:	DEPARTMENT: ENGINEERING	REVISIONS:	GM: 07-28-2011
	SCALE: N.T.S.		GM: 02-13-2014
	DRAWN BY: M.BERGIN / MCCRICKARD		GM: 12-15-15
	CITY ENGINEER: JEFF RAMSEY		
	APPRVD. BY:		
	IMPLEMENTED:		

SHEET 1 OF 6

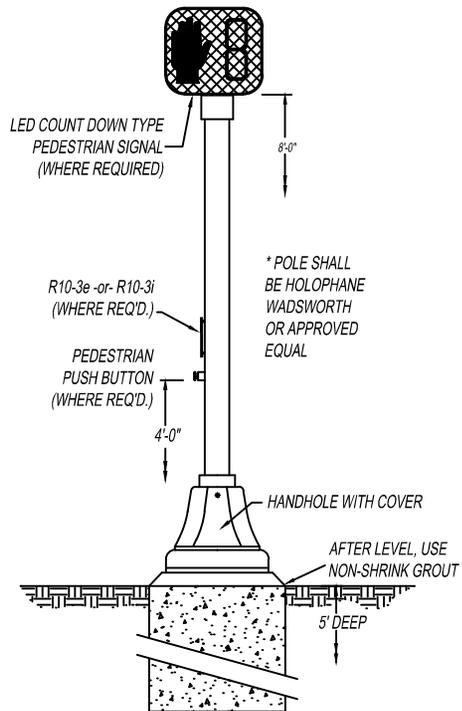
VIDEO DETECTION CAMERA MOUNTING DETAIL



VIDEO DETECTION DETAIL (MAST ARM)

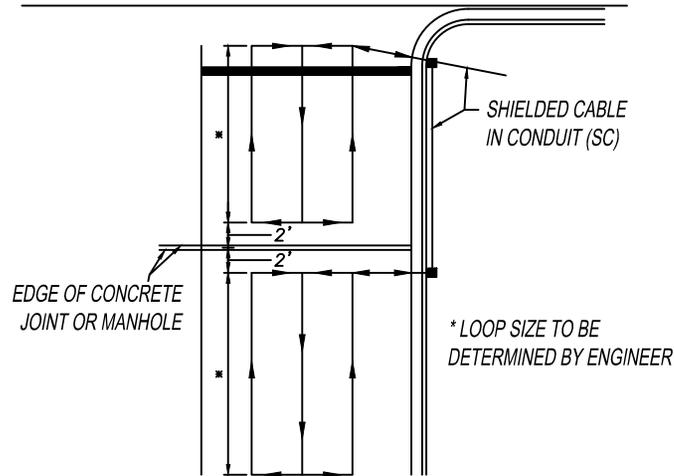


PEDESTRIAN POLE INSTALLATION DETAIL



STANDARD DETAILS: SIGNALS			
PROJECT TITLE:	DEPARTMENT:	ENGINEERING	REVISIONS:
 City of Auburn	SCALE:	N. T. S.	GM: 07-28-2011
	DRAWN BY:	McCRICKARD	GM: 11-26-2012
	CITY ENGINEER:	JEFF RAMSEY	GM: 02-13-2014
	APPVD. BY:		GM: 12-15-15
	IMPLEMENTED:		
			SHEET 2 OF 6

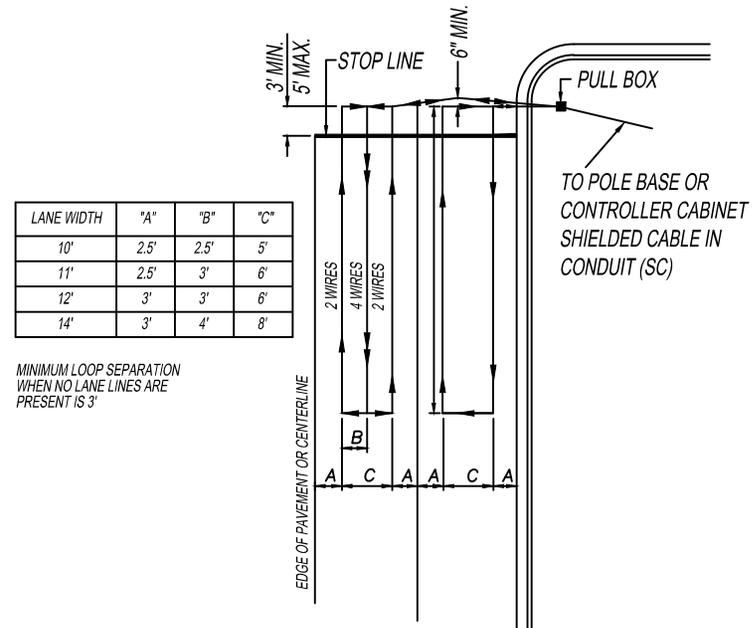
TYPICAL DETAIL OF LOOP DETECTOR WHERE TRANSVERSE CONCRETE JOINTS, MANHOLES ETC. ARE ENCOUNTERED



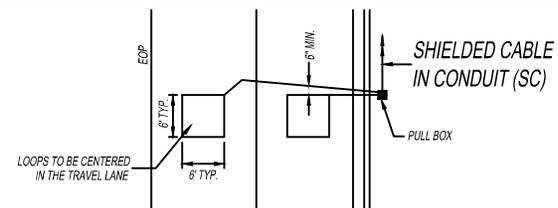
NOTE

NO LOOPS ARE TO BE INSTALLED THROUGH, OVER, OR UNDER TRANSVERSE CONCRETE JOINTS IN CONCRETE PAVEMENT, AND NO MANHOLES, INLETS, ETC. MAY BE LOCATED WITHIN A LOOP. IF ANY OF THE ABOVE ARE ENCOUNTERED THE LOCATION OF THE LOOP MAY BE VARIED SLIGHTLY AS DIRECTED BY THE ENGINEER. IF THE ABOVE ITEMS ARE UNAVOIDABLE, SMALLER LOOPS AS SHOWN TO THE RIGHT MAY BE USED. SMALLER LOOPS USED TO REPLACE ONE LARGE LOOP MAY BE CONNECTED TO ONE CHANNEL.

LARGE LOOP DETECTOR INSTALLATION DETAIL



SMALL LOOP DETECTOR INSTALLATION DETAIL

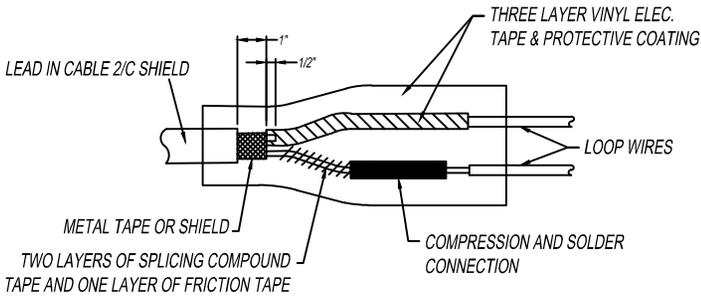


STANDARD DETAILS: SIGNALS

PROJECT TITLE:	DEPARTMENT: ENGINEERING	REVISIONS:	GM: 07-28-2011
	SCALE: N.T.S.		GM: 02-13-2014
	DRAWN BY: M.BERGIN / MCCRICKARD		GM: 12-15-15
	CITY ENGINEER: JEFF RAMSEY		
	APPVD. BY:		
	IMPLEMENTED:		

SHEET 3 OF 6

LOOP SPLICING DETAIL

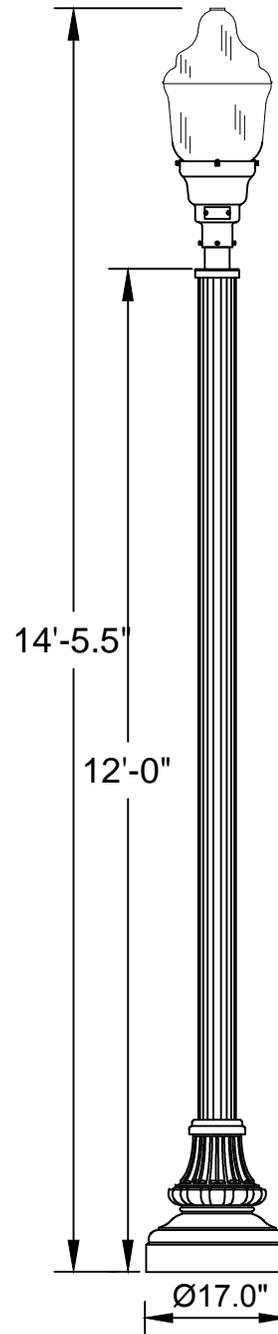


STANDARD DETAILS: SIGNALS			
<small>PROJECT TITLE:</small>			
 City of Auburn	<small>DEPARTMENT:</small>	ENGINEERING	<small>REVISIONS:</small>
	<small>SCALE:</small>	N.T.S.	GM: 07-28-2011
	<small>DRAWN BY:</small>	McCRICKARD	GM: 11-26-2012
	<small>CITY ENGINEER:</small>	JEFF RAMSEY	GM: 02-13-2014
	<small>APPRVD. BY:</small>		GM: 12-15-15
<small>IMPLEMENTED:</small>			SHEET 4 OF 6

DECORATIVE PEDESTRIAN LIGHT

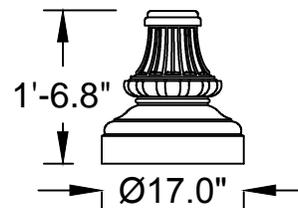
Pole - Wadsworth Aluminum Pole
 [WDA 12 L4E 17 P07 ABG BK]
 Prefix: Wadsworth Aluminum Pole
 Height: 12 Feet (Actual Height: 12'-0")
 Shaft Style: SiteLink 4.5 inch Fluted,
 .156 wall
 Base: 17 inch Round Base
 Tenon: 3 X 3 Tenon
 Pole Mounting: Anchor bolts,
 galvanized steel
 Finish: Powder Coat Black Paint Finish,
 unless otherwise noted during DRT
 Breakaway Kit: None
 Breakaway Kit Finish: None
 Base EPA: 1.62
 Base Weight: 41
 Anchor Bolt: AB-31-4

Fixture - Granville II LED (GVD)
 [GVD 80 4K AS S B 3 N N U]
 Prefix: Granville II LED (GVD)
 Source & Wattage: 80W 400mA Driver
 Color Temperature: 4000 Series CCT
 Voltage: Auto-Sensing Voltage (120-277)
 Housing: Simple
 Finish: Black
 Optics: Asymmetric Type III
 Trim: No Trim
 Finial: No Finial
 Trim and/or Finial Finish:
 No Trim and Clear or No Finial
 Dimming Drive: None
 Covers: None
 Finish for Cover: None
 NEMA Label: None
 Photocontrol Receptacle: None
 Dimming: None
 Photocontrol: None
 Dimming: None
 Photocontrol: None
 ROAM Dimming Contro: None
 Prewired Leads: None
 Photocontrol Kits: None
 Photocontrol Kit Finish: None
 Decorative Band: None
 House Side Shields: None
 Post Capital: None
 Luminaire EPA: 1.88
 Luminaire Weight: 59



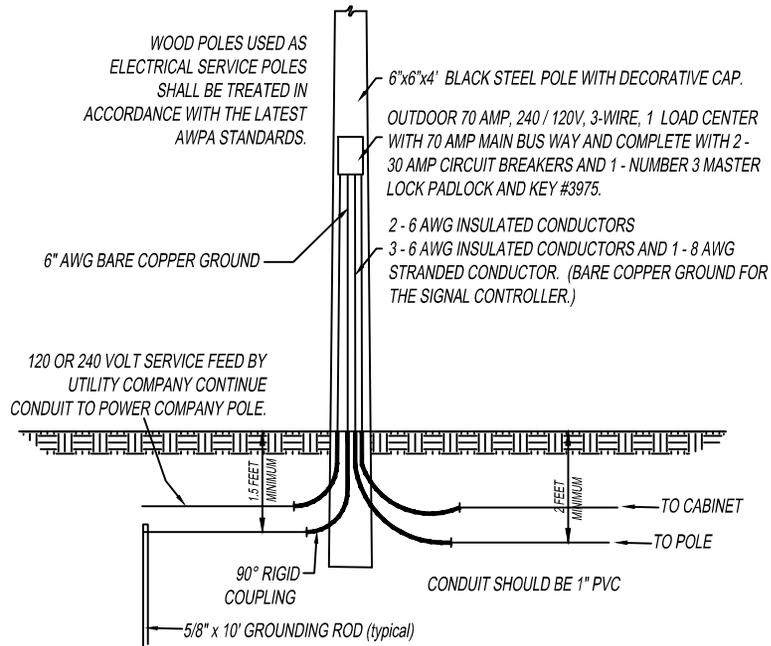
NOTES:

1. The lighting post shall be all aluminum, one-piece construction, with a classic tapered and fluted base design.
2. The base and fluted tapered cast shaft shall be heavy wall, cast aluminum produced from certified ASTM 356.1 Ingot per ASTM B-179-95a or ASTM B26-95.
3. The straight shafts shall be extruded from aluminum, ASTM 6061 ally.
4. The tapered shaft shall be extruded from aluminum, ASTM 6063 alloy, spun to a tapered shape.
5. Material heat treated to a T6 temper.

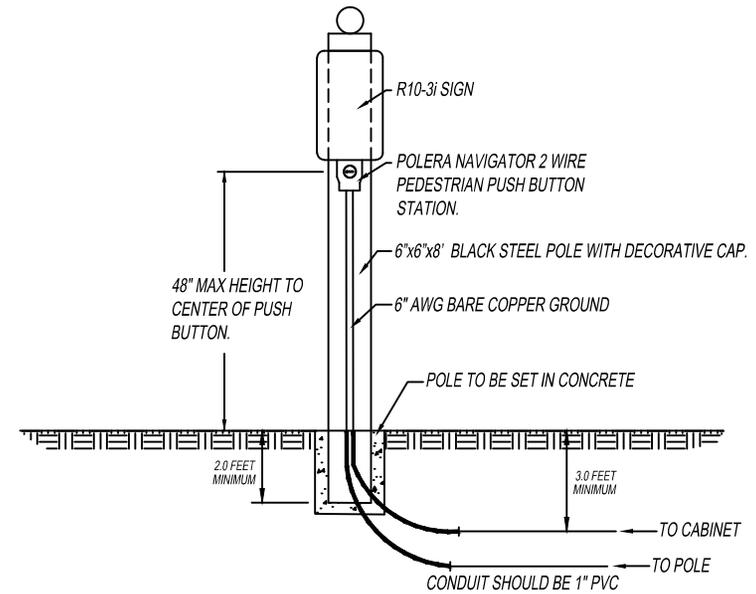


STANDARD DETAILS: SIGNALS		
<small>PROJECT TITLE:</small>	<small>DEPARTMENT:</small> ENGINEERING	<small>REVISIONS:</small>
	<small>SCALE:</small> N.T.S.	
	<small>DRAWN BY:</small> MCCORMACK	
	<small>CITY ENGINEER:</small> JEFF RAMSEY	
	<small>APPR'D. BY:</small>	
<small>City of Auburn</small>	<small>IMPLEMENTED:</small> 1-1-2016	SHEET 5 OF 6

UNDERGROUND POWER SOURCE FOR COMBINATION TRAFFIC SIGNAL AND STREET LIGHTING POLES



PEDESTRIAN PUSH BUTTON DETAIL



STANDARD DETAILS: SIGNALS			
PROJECT TITLE:	DEPARTMENT: ENGINEERING	REVISIONS:	GM: 07-28-2011
 City of Auburn	SCALE: N.T.S.		GM: 11-26-2012
	DRAWN BY: MCCRICKARD		GM: 02-13-2014
	CITY ENGINEER: JEFF RAMSEY		GM: 12-15-15
	APPRD. BY:		
	IMPLEMENTED:		

SP Series Specifications

ELECTRICAL

Input

Voltage 120 VAC +12%, -29%
(without battery discharge)

Frequency 48 to 62 Hz

Output

Voltage 120 VAC +3%

Frequency 50 or 60 Hz

Rating: SP 1000 SR/SN 1,250 VA/875 Watts
SP 1250 SR/SN PLUS 1,250 VA/875 Watts¹
SP 2000SR/SN/U 2,000 VA/1400 Watts

Crest Factor Ratio @50% Load Up to 4.8:1
(Non-linear Load and @75% Load Up to 3.2:1
< 5% THD) Typical @100% Load Up to 2.4:1

Total Harmonic Distortion (THD) 4.0% Max.

Dynamic Response ±4% for 100% Step Load Change
0.5 ms Recovery Time

Overload 110% for 10 sec;
200% for .05 sec

UPS Protection Input and Output Short Circuit;
Input and Output Overload;
Excessive Battery Discharge

ENVIRONMENTAL

Operating Temp. -40°C to +74°C (-40F to +165°F)

Humidity 0% to 95% Non-condensing

Altitude Sea Level to 10,000 ft (some
derating of temp. w/altitude > 6,000 ft)

MECHANICAL

Input Hardwired to PIM

Outputs Hardwired to PIM, w/single 15 Amp
Receptacle on back of UPS

Cabinet NEMA, 332 or CBO-123 Cabinet
Style Configurations Available;
NEMA 3R Type II and Type III
Optional

CUSTOM Options

Consult Factory for other Custom options

DESIGN

Standard Features Power Factor Corrected Input;
Fully Regenerative;
True On-Line Continuous Power;
Low Distortion Sinewave Output;
Designed for Non-linear Loads;
Extended Brownout Protection;
EIA/RS232 Data Interface

Specifications Meets FCC Class A, IEEE
587/ANSI C62.41, IEC 555 @
120 VAC and NEMA Stds

MTBF Inverter: > 100,000 hrs
System w/Bypass: 150,000 hrs
Calculated from Component Spec

Typical Recharge 48-72 hrs (more time required
Time to 85% with extended battery option)
Capacity @ Less than 20 hrs with optional
100% Load Fast Battery Charger

CONTROLS AND INDICATORS

Ramping LEDs Battery Level; Load Level
Single LEDs AC In; Inverter On; Low Battery
and Summary Alarm; Alarm Silence

Control Panel Power On; Cold Start; Test; Alarm
Silence; Event Counter (w/Reset);
Hour Meter; Battery Disconnect

Audible Alarms Utility Interrupt; Inverter Failure;
Overload; Low Battery; Self Test

Serial Interface for Full Interactive Remote Computer
EIA 232. Optional Monitoring and Control of Most
NTCIP and TCP/IP Features Including Load Control
via Standard RJ45 (requires optional monitoring
Connector software); NTCIP and TCP/IP
Ready

Contact Closures Open Collector for Remote
("D" connector) Annunciation of Power Up,
Power Down, On Battery, Low
Battery and Alarms

Specifications subject to change without prior notice.



Uninterruptible Power for Traffic Signal Applications - 1000, 1250 and 2000VA

Model	VA	Watts	Input Current (A)	Output Current (A)	Backup Time 100% / 50% Load	Unit Weight (lbs)	Rackmount H x W x D (in)
SP1000SN/SR ²	1,250	875	8.8	10.4	1.5 hrs. / 3.25 hrs.	20	3.50 x 19.0 x 13.0 (2U)
SP1250SN/SR Plus ^{1,2}	1,250	875	8.8	10.4	1.5 hrs. / 3.25 hrs.	20	3.50 x 19.0 x 13.0 (2U)
SP2000SN/SR ²	2,000	1400	18.0	20.0	15.0 min. / 35.0 min.	30	5.25 x 19.0 x 17.0 (3U)
SP1250U	1,250	875	8.8	10.4	1.5 hrs. / 3.25 hrs.	20	3.50 x 19.0 x 13.0 (2U)
SP2000U	2,000	1400	18.0	20.0	15.0 min / 35.0 min	30	5.25 x 19.0 x 17.0 (3U)

Note 1 Supports 1400 watt peak load for 10 seconds or less, intended for yellow incandescent applications.

Note 2 Requires Clary PIM30C, G, R, or GR for traffic applications.

CLARY
The Continuous Power Company™

Clary Corporation
150 E Huntington Drive Monrovia, Ca 91016
Tel: 800.442.5278 • Fax: 626.305.0254
• www.clary.com

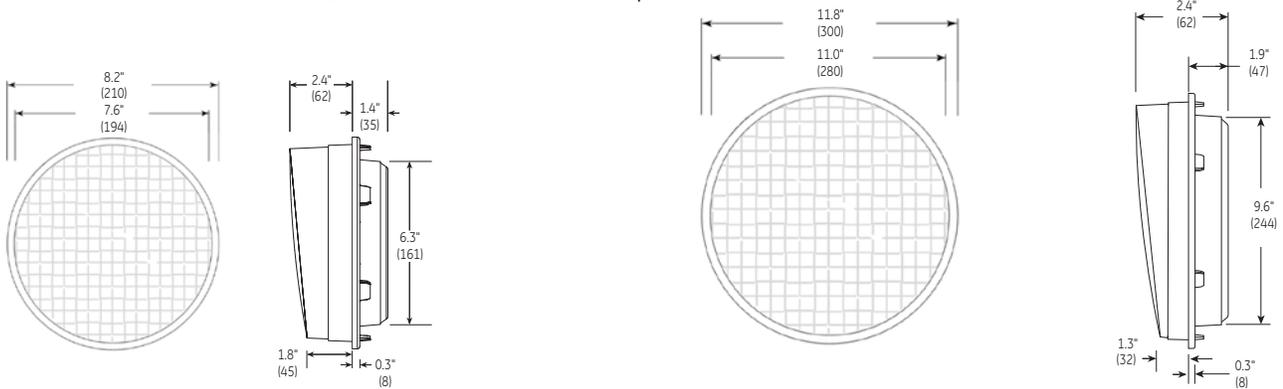
Made in the USA

P/N 520-13481
08/04/06-Ver. 1.4

RX11 LED Signal Modules

- 8 and 12 inch

Mechanical Outline Dimensions in inches. (mm) indicates metric equivalent



Design Compliance

Test Type	Compliance
Luminous Intensity	ITE VTCSH-STD Part 2 - July 1998
Chromaticity	ITE VTCSH-STD Part 2 - July 1998
Moisture Resistance	NEMA STD 250 Type 4 - 1991
Mechanical Vibration	MIL-STD-883 Method 2007
Electronic Noise	FCC Title 47 Sub. B Sec 15 ¹
Transient Voltage Protection	ITE VTCSH-STD Part 2 - July 1998
Controller Compatibility	NEMA TS-2-1992
Wiring	National Electric Code

¹ Class A

Operating Specifications

Parameter	Rating
Operating Temperature Range	-40 to +74°C (-40 to +165°F)
Operating Voltage Range	80 to 135 V (60Hz AC)
Power Factor (PF)	> 90 %
Total Harmonic Distortion (THD)	< 20 %
Voltage Turn-off (VTO)	45 V
Lens & Shell Material	UV Stabilized Polycarbonate
Wiring	16 AWG, Color Coded with Strain Relief

Product Information

Model Number	Size (in)	AC Voltage	Power (W)	Wavelength (nm)	Maintained Intensity (Cd)
		Nominal	Nominal	Dominant	Minimum ²
DR4-RTFB-20A	8	120V - 60 Hz	5	626	133
DR4-YTFB-20A	8	120V - 60 Hz	13	589	267 ³
DR4-GTFB-20A	8	120V - 60 Hz	6	508	267
DR4-GCFB-20A	8	120V - 60 Hz	6	508	267
DR6-RTFB-20A ⁴	12	120V - 60 Hz	10	626	339
DR6-YTFB-20A	12	120V - 60 Hz	22	589	678 ³
DR6-GTFB-20A	12	120V - 60 Hz	12	508	678
DR6-GCFB-20A	12	120V - 60 Hz	12	508	678

Options :

- Q : Quick Connect
- S : Medium Base Socket
- F : In-line Fuse

Standard product equipped with spade connectors.

² Measured at +2.5°H -2.5°W, T₀ = 25°C.

³ Actual intensity less than ITE VTCSH-STD Part 2 - July 1998.

⁴ May exceed maximum intensity of ITE VTCSH-STD Part 2 - July 1998.

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 P: 216.606.6555 • F: 216.606.6599 • www.led.com • signals@led.com

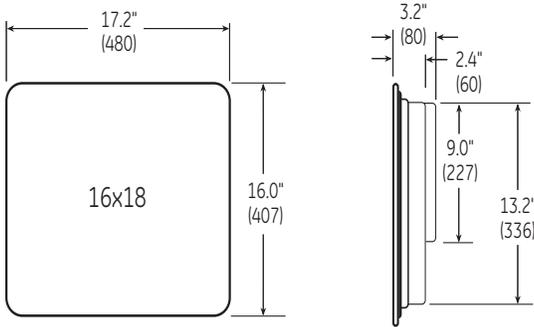
For customer service & technical support, contact:
1-888-MY-GE-LED (1.888.694.3533)

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LED Array Pedestrian Countdown Signals

- 16 X 18 inch module

Mechanical Outline Dimensions in inches. (mm) indicates metric equivalent



Design Compliance

Test type	Compliance
Luminous intensity	ITE Pedestrian Traffic Control Signal Indication - Part 2: Light Emitting Diode (LED) Pedestrian Traffic Signal Modules Section 4.1.1 (applies to: Hand & Person only)
Chromaticity	ITE PTCSI-STD - Part 2
Moisture Resistance	NEMA STD 250 Type 4 - 1991
Mechanical Vibration	MIL-STD-883 Method 2007
Electronic Noise	FCC Title 47 Sec 15 Sub. B ¹
Transient Voltage Protection	ITE PTCSI-STD - Part 2
Controller Compatibility	NEMA TS-2-1992
Wiring	National Electric Code

¹ Class A

Operating Specifications

Parameter	Rating
Operating Temperature Range	-40 to +74°C (-40 to +165°F)
Operating Voltage Range	80 to 135 V (60Hz AC)
Power Factor (PF)	> 90 %
Total Harmonic Distortion (THD)	< 20 %
Voltage Turn-Off (VTO)	45 V
Lens & Shell Material	UV Stabilized Polycarbonate
Wiring	16 AWG, Color Coded with Strain Relief
LED Color	Hand: Portland Orange Person: Lunar White Countdown: Portland Orange

Product Information

Model Number	Operating Cycle	Configuration	Symbol			AC Voltage Nominal	Power (W)			Figure
			Hand	Person	Countdown		Hand	Person	Countdown	
PS7-CFF1-01A-18 ²	Clearance	Overlay/ Countdown	Full	Full	2 Rows/ 9" high	120V - 60Hz	9	8	5	A
PS7-CFL1-01A	Overlay	Overlay	Full	Full	-	120V - 60Hz	9	8	-	B

² Full MUTCD Compliance

Standard product shipped with spade connectors.

Test Conditions: T_a = 25°C

Options: Q - Quick Connect, MB - For GTE Winkomatic (16 7/8" x 16 1/4") Housing,

MC - For Econolite (18" x 15 5/8") Housing.

Figure A



Figure B



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TRAF058-R012808