BID  #####

**Project Name**

Project Location

RRBF Crosswalk System

This page has been left blank intentionally.

Contents

*To update the TOC to reflect any changes in the body of the document, press CTRL+A, then press F9. In the update window, select ‘Update entire table’, then click OK. Delete this blue text when you’re ready to send this document.*

[Introduction iv](#_Toc46144189)

[1 Scope 1](#_Toc46144190)

[2 Purpose 1](#_Toc46144191)

[3 Terms and definitions 1](#_Toc46144192)

[4 Project Location 2](#_Toc46144193)

[5 Installer Responsibilities 2](#_Toc46144194)

[6 Warranty 2](#_Toc46144195)

[7 Technical Specifications 2](#_Toc46144196)

[7.1 RRFB Light Bar 3](#_Toc46144197)

[7.2 RRFB Controller 3](#_Toc46144198)

[7.3 Communication 3](#_Toc46144199)

[7.4 Push-to-Walk Assemblies (optional) 4](#_Toc46144200)

[7.4.1 Polara Bulldog Pedestrian Pushbutton 4](#_Toc46144201)

[7.4.2 Polara Model X Annunciating Pushbutton 4](#_Toc46144202)

[7.4.3 Polara INX Annunciating Pushbutton 4](#_Toc46144203)

[7.5 No Touch Activation Assemblies (optional) 4](#_Toc46144204)

[7.5.1 Touchless Pole Mounted Sentinel Sensor 4](#_Toc46144205)

[7.5.2 Photo Bollard Assembly 5](#_Toc46144206)

[7.5.3 Sentinel Bollard Assembly 5](#_Toc46144207)

[7.5.4 FLIR TrafiOne Sensor 5](#_Toc46144208)

[7.6 In-Road Wiring System (wired systems only) 6](#_Toc46144209)

[7.7 Power Supply 6](#_Toc46144210)

[7.7.1 Solar Powered System 6](#_Toc46144211)

[7.7.2 AC (Grid) Powered System 7](#_Toc46144212)

[7.8 Cabinet 7](#_Toc46144213)

[7.8.1 Side of Pole Cabinet 7](#_Toc46144214)

[7.8.2 Top of Pole Cabinet 7](#_Toc46144215)

[7.9 Signs 7](#_Toc46144216)

Introduction

Type text.

RRFB Crosswalk System Specification

# Scope

Refer to attached plan drawings for layout details of the/each system.

Select the option that applies, then delete the rest of the paragraphs.

The system shall consist of two, back-to-back facing RRFB units, each situated at the entrance of each side of the pedestrian crossing, each equipped with a pedestrian activation device,

The system shall consist of two single direction facing RRFB units, each situated at the entrance of each side of the pedestrian crossing, each equipped with a pedestrian activation device, and one back to back facing RRFB units without a pedestrian activation device, situated in the median.

The system shall consist of two single direction facing RRFB units, each situated at the entrance of each side of the pedestrian crossing, each equipped with a pedestrian activation device, and two single direction facing RRFB units without pedestrian activation devices, situated in the median.

# Purpose

Type your text here.

# Terms and definitions

Select the option that applies, then delete the rest of the paragraphs.

For the purposes of this document, the following terms and definitions apply.

|  |  |
| --- | --- |
| **Term** | **Definition** |
|  |  |
|  |  |
|  |  |

For the purposes of this document, the terms and definitions given in FHWA MUTCD section 4L apply.

For the purposes of this document, the terms and definitions given in CALTRANS MUTCD section 4L apply.

For the purposes of this document, the terms and definitions given in CALTRANS MUTCD section 4L apply.

For the purposes of this document, the terms and definitions given in TXDOT MUTCD section 4L apply.

The RRFB system shall conform to the current edition of the MUTCD or bear interim approval.

No terms and definitions are listed in this document.

# Project Location

The system consists of the materials for the installation of a LaneLight RRFB Pedestrian Crossing System to be used for the pedestrian crossing in [Location], at [Site] to alert motorists that they are approaching an active pedestrian crossing occupied or about to be occupied by one or more pedestrians.

The installer’s responsibilities would consist of installing RRFB system and auxiliary components such as poles, signs, pushbuttons, automatic detection, and the construction of facilities to support the system, as outlined in these specifications and in strict adherence to the manufacturer’s installation requirements as outlined in, but not limited to, the manufacturer’s installation instructions.

# Installer Responsibilities

Several utilities may exist in the area; any and all utilities’ locations shown in any plans should be considered approximate. The installer shall be responsible for calling the appropriate authority and all affected utility companies prior to any drilling or excavation on this project.

The installer shall stake all proposed accessible push button station locations, ground box locations, conduit, and pole locations after utility locations are finalized. The engineer having authority must approve these locations prior to any drilling or excavation on the project.

# Warranty

System components shall have a non-pro-rated warranty period of five (5) years against manufacture defects and failure under normal use.

# Technical Specifications

**IMPORTANT**: If the installer wishes to submit an alternate system for an approved equal (“equal” is defined herein as meeting or exceeding all the specifications shown in this document), specifications of the proposed alternate that fully conform to the following specifications shall be submitted to the Engineer having jurisdiction at least twenty (60) working days prior to the bid opening date as determined in the bid solicitation notice. No proposed “equal” product proposed after the 60 day advance will be accepted, and it is therefore assumed the successful bidder on this project will install the specified product if no approval has been issued by the Engineer Having Jurisdiction.

## RRFB Light Bar

1. Each RRFB shall consist of two rapidly and alternately flashing rectangular yellow indications having LED array based pulsing light sources; each rectangular indication being of US manufacture and of a design suitable for all-condition emergency vehicle use.
2. Each RRFB LED beacon shall be a minimum size of 7 in. wide x 3 in. high.
3. The light intensity of the RRFB’s indications shall be Society of Automotive Engineers (SAE) standard J595 certified.
4. The light bar housing shall be finished entirely in [black] [yellow] [RAL color #], powder coated finish.
5. Each light bar shall display four LED indicators on [one end] [both ends] of the light bar housing which flash in unison with the LED beacons facing traffic.

## RRFB Controller

*Verify details of this section depending on which controller is specified.*

Process Control Unit (PCU)

1. Type:
2. Supply Voltage 12 VDC (typically 12V DC Photo Voltaic) OR 110 to 240 volts AC line voltage with factory supplied power converter
3. Output 12 VDC
4. Transient/Inrush current limiting – internal on all outputs
5. Overload –internal, auto-reset circuit breakers on outputs, 10A threshold on two output channels
6. Power Factor Correction – provided, Power Output limiting – 120%
7. Short Circuit – Continuous protection, intermittent cycle permitted
8. Day/ night mode control – automatic PV Panel or photocell sensed
9. Night Brightness automatic, minimum level adjustable
10. Activation time selector: 1 – 120 seconds
11. Pattern Mode Selector: RRFB pattern - per RRFB/FHWA specified pulse/alternating flash

## Communication

Select which options apply and delete the rest.

This section is to describe communication between units and/or from system to cloud, etc.

1. Stand-alone, hard-wired to flasher devices
2. Unit to unit wireless communication: Frequency: ISM-B and 2.4GHz (standard) or 900MHz (optional)/Range: Up to 1 km (3200 ft) with line of sight
3. Number of comm IDs/channels: 24
4. GPS receiver for time and location
5. Cellular network connectivity for LaneLightConnect service

## Push-to-Walk Assemblies (optional)

Select the option that applies, then delete the rest of the sections. Update the TOC when you’re finished customizing the body of the document.

### Polara Bulldog Pedestrian Pushbutton

1. Model: BDLM3 2 in. ADA equipped with Frame and 9x12 R10-(type) or R62-E or LED embedded Sig
2. Quantity: xx
3. Casing color: Yellow (standard), Green, Black
4. ??

### Polara Model X Annunciating Pushbutton

1. Model: XAVCU2-DC controlled
2. Quantity: xx
3. Casing color:
4. Dynamic volume level control
5. ?

### Polara INX Annunciating Pushbutton

1. Model:
2. Quantity: xx
3. Casing color:
4. ??

## No Touch Activation Assemblies (optional)

Select the option that applies, then delete the rest of the sections. Update the TOC when you’re finished customizing the body of the document.

### Touchless Pole Mounted Sentinel Sensor

1. Accuracy: Reaction to passing pedestrians: >99.9%
2. Dimensions: 4.8 in. x 4.8 in. x3 in. (122 x 122 x 76 mm)
3. Case construction: Aluminium
4. Finish: Powder Coated
5. Color: (Black)
6. Ingress protection: IP67
7. Sign/Frame: [No sign/frame] [Instruction sign/frame] [Other?]
8. Sensors: LED single beam, with data acquisition of up to eight segments simultaneously, data refresh rate 10-100 Hz
9. No Internal heating required
10. Power consumption <2W at 12 VDC
11. Logic: Entry detection, system activated. Exit detection, no activation
12. Wiring: ITEM 18/4 auxiliary cable, color coded; direct burial rated
13. Range: Up to 606 ft. [185m] depending on optics

### Photo Bollard Assembly

1. Accuracy: Reaction to passing pedestrians: >99.9%
2. Dimensions: (8 in. x 8 in. square x 42 in.)
3. Construction: Square 0.125 in. aluminium
4. Finish: Powder Coated
5. Color: (White) (Black) (Forest Green) (Bronze) (Gray) or (Custom per client provided RAL #)
6. Sensors: Infrared, through-beam, high gain, wide angle, cross talk prevention design, easy set up
7. No Internal heating required
8. Power consumption (per bollard) non illuminated 0.5w at 12 VDC; illuminated 1.5w at 12 VDC
9. Logic: Entry detection, system activated. Exit detection, no activation
10. Wiring: ITEM 18/4 auxiliary cable, color coded; direct burial rated
11. Range 70 feet
12. Optional 8 in. round configuration

### Sentinel Bollard Assembly

1. Accuracy: Reaction to passing pedestrians: >99.9%
2. Dimensions: 8 in. x 8 in. x 42 in. (203 x 203 x 1073 mm)
3. Construction: Aluminium
4. Finish: Powder Coated
5. Color: (White) (Black) (Forest Green) (Bronze) (Gray) or (Custom per client provided RAL #)
6. Sensors: LED single beam, with data acquisition of up to eight segments simultaneously, data refresh rate 10-100 Hz
7. No Internal heating required
8. Power consumption (per bollard) non illuminated <2W at 12 VDC; illumination module 0.6W – 3W (field adjustable) at 12 VDC
9. Logic: Entry detection, system activated. Exit detection, no activation
10. Wiring: ITEM 18/4 auxiliary cable, color coded; direct burial rated
11. Range: Up to 606 ft. [185m] depending on optics

### FLIR TrafiOne Sensor

1. Model:
2. Quantity: xx
3. ??

## In-Road Wiring System (wired systems only)

Delete this section if it’s not required.

1. LaneLight Crosswalk control cable –18/3, 0.25 in. o.d. (nominal), with dry water block system and tinned conductors, outer jacket labeled “LANELIGHT XW”.
2. LaneLight Activation–18/4, 0.26 in. o.d. (nominal), with dry water block system and tinned conductors, outer jacket labeled “LANELIGHT ACT”
3. Control and activation cable must be UL and direct-bury rated, for direct burial installation method, WITHOUT EXCEPTION.
4. Control cable may be contained in ½ in. (trade size) manufacturer provided flexible non-metallic conduit, if used instead of direct bury method. Conduit shall be mechanically fitted to the LED module housings. Both conduit and LED module fittings shall be factory supplied. Duct seal shall be used to seal the junction box conduit entrances, to prevent encapsulant gel from escaping the junction box during final encapsulation process.
5. Conductors for Pedestrian Activation Devices, Beacons, and LED signs, if installed using conduit, shall be run in a conduit separate from that of the LED modules, that conduit provided by the contractor.
6. Sub-Base Encapsulation – 3M Scotchcast 8882, or manufacturer approved equal.
7. Waterproof connectors: Silicon filled w/cap; 3M 314.

## Power Supply

Select the sections that apply, then delete the rest of the sections. Update the TOC when you’re finished customizing the body of the document.

### Solar Powered System

A solar power system shall be designed to suit the application’s electrical and geographical requirements, as determined by the manufacturer. and shall consist of a single solar panel and pole mount, solar charge regulator, circuit breakers for panels, batteries, and load, terminal strip for all connections pertaining to the solar power equipment, battery capable of providing an application-suitable period of autonomy.

#### Solar Panel

1. Solar panel size:
2. Solar panel mount:

#### Charge Regulator

1. Type:
2. Other specification???

#### Circuit Breakers/Terminal Strips

1. Specification ??
2. Specification ??

#### Batteries

1. Type and size: [20w/20ah LiFePO4] [50w/20ah LiFePO4] [50w/40ah LiFePO4]
2. Quantity: ??

### AC (Grid) Powered System

System powered by 120 volts line voltage; converted to DC by manufacturer designed and supplied device.

## Cabinet

Select the option that applies, then delete the rest of the sections. Update the TOC when you’re finished customizing the body of the document.

### Side of Pole Cabinet

1. NEMA 3R cabinet with Corbin #2 lock, with controller and any auxiliary activation controllers or equipment interfaces capable of being mounted within.
2. Cabinet shall be supplied with mounting hardware for a variety of poles, or as specified by the client.
3. Fully equipped weight shall not exceed ??

### Top of Pole Cabinet

1. Type shall be LaneLight Top of Pole RRFB solar engine
2. Fully equipped weight shall not exceed [xx lb (xx kg)]
3. Battery: Qty [X] of type [20w/20ah LiFePO4] [50w/20ah LiFePO4] [50w/40ah LiFePO4]

## Signs

1. Signs shall be size [30 in.] [36 in.]
2. Signs shall be W11-2 type with FYG reflective sheeting.
3. Signs shall be S1-1 type with FYG reflective sheeting.
4. Signs shall be equipped with mount brackets.