# ADDENDUM NUMBER 1

# FOR THE

# CITY OF LEMOORE

## BUSH STREET PEDESTRIAN SAFETY IMPROVEMENTS PROJECT
## HIGHWAY SAFETY IMPROVEMENT PROGRAM
## (HSIP CYCLE 10) HSIP-5115(040)

**January 16, 2024**


**OWNER:**
**City of Lemoore**
**711 W. Cinnamon Drive**
**Lemoore, CA 93245**
**(559) 924-6700**

**PREPARED BY:**
**A&M**
**220 N Locust Street**
**Visalia, CA 93291**
**(559) 429-4747**

**ADDENDUM NUMBER 1**

**The following additions, deletions, or modifications shall become part of the Contract Documents for the City of Lemoore Bust Street Pedestrian Safety Improvement project:**

## REVISIONS TO DRAWINGS:

**REVISION 1:**

- Replace In-Road Light System with RRFB Crosswalk Solar-Powered, Radio, Push Button Activated Warning System w/Crosswalk Illuminator (Or Equal) as shown on the attached documents herein.

## CONTRACTOR QUESTIONS:

**Q1**: Will the intersection require closure?

**A1:** The contractor shall submit to the City a traffic handling plan for approval which will accommodate traffic and the existing bus route in the area.

**NOTE: One copy of this Addendum Number 1 shall be signed by the Contractor and must be submitted with the bid as acknowledgement of receipt and the acceptance of this Addendum Number 1.**

Prepared by: _____ January 16, 2024

Orfil Muniz, P.E. Date

A&M Consulting Engineers

Accepted by: _____ _____

Contractor (signature) Date

TAPCO®

Safe travels.™

# RRFB Crosswalk

# Solar-Powered, Radio, Push Button Activated Warning System w/ Crosswalk Illuminator

## Specification Guide

**Ver 1.0, October 30, 2020**

## Primary Function:

The primary function of the TAPCO RRFB Crosswalk system is to provide a highly visible, enhanced warning for the purpose of alerting road users from both traffic directions of the active pedestrian crossing. The SafeWalk Crosswalk illuminators supplement the crosswalk system by providing additional crosswalk lighting at night when a pedestrian activates the system.

## Description of Components:

The Manufacturer shall provide components for a solar powered Warning RRFB Crosswalk System. Components include:

> RRFB Light Bars, Bulldog Push Buttons, Crosswalk Illuminators, Solar Panels, and Control Cabinets with Flash Controllers, Wireless Transceivers, and Batteries. Mounting Hardware and Optional Static Signage and Pole Packages.

The crosswalk system shall consist of two pole assemblies, or three if there is a median. All pole assemblies shall contain one or more Warning RRFB Light Bars, a Crosswalk Illuminator, a Solar Powered Control Cabinet, and a Bulldog Push Button for system activation. All Control Cabinets in the Crosswalk System shall be synchronized by BlinkerBeam® Wireless Transceivers.

An optional Advance Warning RRFB assembly further increases pedestrian safety when required. Active vehicle warning indications shall be visible in a direct line of sight at distances over 1000 feet during the day, and over 1 mile at night.

## General Requirements:

The RRFB Light Bar Manufacturer shall have a minimum of ten years of relevant intelligent traffic product manufacturing experience, as well as a minimum of three years of RRFB Light Bar manufacturing experience.

The Manufacturer shall provide a system with the option to be upgraded for integration with connected vehicle infrastructure. An upgraded system shall communicate directly with Smart City Road Side Units (RSUs) to relay Intelligent Warning System activation data. Upgraded system shall be compatible with Dedicated Short-Range Communication (DSRC) or Cellular V2X RSUs.

## Specific Functional and Electrical Hardware Requirements:

### System

- Each Pedestrian Crosswalk System shall consist of the following:
    - RRFB Light Bar Warning Assemblies
    - Crosswalk Illuminator
    - Solar Powered Control Cabinets with Flash Controllers and Wireless Transceivers
    - 65W Solar Panels
    - 50Ah Batteries
    - Bulldog Push Buttons
- Upon activation by pedestrian push button, the RRFB controllers shall activate all RRFB Light Bars in the crosswalk system simultaneously. RRFB Light Bars shall flash synchronously and then cease operation after a programmable timeout. Upon nighttime activation by pedestrian, the controllers shall activate all crosswalk illuminators in the crosswalk system simultaneously and then cease operation after a programmable timeout.

### Control Cabinet

- Shall be NEMA 3R Type
- Shall be 15.0” tall x 12.5” wide x 9.9” deep and constructed of minimum 0.080" thick aluminum.
- To promote airflow for internal components, the cabinet shall be vented with screening included on all vents and drains to prevent insects and other foreign matter from entering.
- For security, the cabinet must include at least two tamper-resistant stainless-steel hinges and a replaceable #2 traffic lock with keys.
- To facilitate maintenance or repairs, the cabinet shall include a removable control panel to which all control circuit components either mount or connect.
- For easy installation on a wide range of pole sizes and types, the cabinet shall utilize four 5/16"-18 stainless steel mounting studs that mate to a range of bracket options. To ensure a secure mount to the supporting post, two banding style brackets that fit poles with a 2-3/8” or larger diameter shall be included as standard equipment. Mounting brackets also available for square pole, wooden post, and wall mount applications.
- To prevent corrosion, all materials used in the construction or mounting of the control cabinet shall be either aluminum or stainless steel. Anti-vandal mounting hardware shall be available as an option.
- A UV resistant label shall be applied to the exterior of the cabinet and include system specific information including model number, serial number, date of manufacture, as well as any applicable regulatory compliance information.

### RRFB Controller

The RRFB Programmable Flash Controller is housed within the NEMA 3R type Control Cabinet, and shall:

- Include integrated constant-current LED drivers with a minimum of two-channel output for driving one or two RRFB units.
- Output the following "WW+S" flash pattern during each of its 800 millisecond flash periods:
    - **Left LED illuminates for approximately 50 milliseconds**
    - Both LEDs stay dark for approximately 50 milliseconds
    - **Right LED illuminates for approximately 50 milliseconds**
    - Both LEDs stay dark for approximately 50 milliseconds
    - **Left LED illuminates for approximately 50 milliseconds**
    - Both LEDs stay dark for approximately 50 milliseconds
    - **Right LED illuminates for approximately 50 milliseconds**
    - Both LEDs stay dark for approximately 50 milliseconds
    - **Both LEDs illuminate for approximately 50 milliseconds**
    - Both LEDs stay dark for approximately 50 milliseconds
    - **Both LEDs illuminate for approximately 50 milliseconds**
    - Both LEDs stay dark for approximately 250 milliseconds

- Automatically adjust the LED drive current control to optimize brightness for the ambient lighting conditions determined by the phototransistor input (Optional).
- Have the LED drive outputs reach the full output current as programmed within the duration of the 100ms on-time.
- Include an integrated Real Time Clock (RTC) with on-board battery backup.
- Have the capability of RS232 communication for programming with Windows-based software.
- Include a minimum of two General Purpose Inputs and Outputs (GPIO).
- Be internally housed in its own IP67 type enclosure.
- Be independently replaceable of other control panel components.
- Be able to monitor internal temperature.
- Operate between the temperatures of -40° to +176°F (-40° to +80°C).

**BlinkerBeam® Wireless Transceiver**

- Shall operate wirelessly at 900 MHz, utilizing Frequency Hopping Spread Spectrum (FHSS) technology to minimize the effects of external RF interference.
- Shall seamlessly integrate with the controller to ensure sequential activation of other radio-equipped devices in the system.
- Shall include an integrated LCD and two user-interface buttons for setup and troubleshooting, including readouts of flash duration (timeout), battery conditions, and LED testing functionality.
- Shall include two LED indicators for status and troubleshooting.
- Shall be capable of operating as a Parent (Gateway) or Child (Node or Repeater).
- Shall be capable of providing site-survey data for verification of signal strength between network devices.

- Shall include network-wide modification of sign controller settings and output durations, using programmability from any networked transceiver without the use of additional equipment or software.
- Shall synchronize the system components to activate the indications within 120msec of one other and remain synchronized throughout the duration of the flash (timeout) cycle.
- Shall operate on the license-free ISM band.
- Shall comply with part 15 of FCC rules.
- Shall operate from 3.3VDC to 15VDC.
- Shall be, in the unlikely event of failure, replaceable independently of other components.

**Solar Charge Controller**

- Shall utilize an intelligent 4-stage algorithm and Pulse Width Modulation (PWM) for battery charging.
- Shall automatically provide Low Voltage Disconnect (LVD) to protect batteries when needed.
- Shall automatically provide Load-Reconnection once battery levels have been restored to an acceptable value.
- Shall protect against and automatically recover from: short circuit, overload, reverse polarity, high temperature, lightning and transient surge, as well as voltage spikes.
- Shall be independently replaceable of other control panel components.
- Shall operate from -40° to +140°F (-40° to +60°C).

**Solar Panel, 65 Watt**

- Solar Panel shall be constructed of an anodized aluminum frame, high-transmission 1/8" tempered glass, with silicon cells encapsulated in double-layer EVA, and with a white polymer backing.
- The Solar Panel shall be affixed to a pole top bracket that allows an adjustable angle to provide maximum insolation exposure
- To ensure maximum solar insolation regardless of installation location, the post top mounting system shall provide 360° of rotational direction adjustment and upon installation, must be oriented with the collector facing South.
- The solar panel must be IEC61215, TUV, and UL 1703 certified. The solar panel shall operate at 12VDC nominal with a maximum output rating of 55 watts.
- The solar panel specifications:
    - Overall Size:  25.2" x 25.7"
    - Maximum power voltage:  18.18 VDC
    - Maximum power current: 3.1 A
    - Short circuit current: 3.31 A
    - Open circuit voltage:  22.1 VDC
    - Operate from -40° to +194°F (-40° to +90°C)
- All solar panel connectors shall conform to Ingress Protection, IP-67 rating, dust proof, and protected from temporary immersion in water up to 1 meter deep for 30 minutes. Connectors shall be Deutsch DTM series.
- All solar panel fasteners shall be anti-vandal pin-type set screws.  Wrench shall be provided.

**Battery, 50Ah**

- Shall be housed inside the Control Cabinet.
- Shall have a nominal output voltage of 12 VDC and a capacity of 50Ah.
- Shall be rechargeable type Gelled-Electrolyte.
- Shall be sealed and spill-proof.
- Battery shall be replaceable independently of other components.
- Shall be fused for short circuit protection.

**RRFB-XL2™ Light Bar**

- The RRFB-XL2 Light Bar shall be in conformance with all applicable FHWA MUTCD standards and guidelines, and shall meet or exceed the requirements specified in FHWA Memorandum IA-21, Interim Approval for Optional Use of Pedestrian-Actuated Rectangular Rapid Flashing Beacons at Uncontrolled Marked Crosswalks.
- Shall house two rapidly and alternately flashing rectangular yellow LED array vehicle indications and two field configurable yellow LED array pedestrian indicators. The LED arrays shall be designed, located and operated in accordance with the detailed requirements as specified on the plans.
- When activated, the RRFB-XL2 Light Bar shall have 75 periods of flashing per minute and shall have alternating and simultaneous flash operations following the "WW+S" flash pattern.
- Active vehicle indications shall be visible at distances over 1000 feet during the day and over 1 mile at night.
- The light intensity of the vehicle indications shall meet the minimum specifications of Society of Automotive Engineers (SAE) standard J595 (Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles) dated January 2005. Manufacturer Certification of Compliance shall be provided upon request.
- Have a housing that shall be constructed of durable, corrosion-resistant powder-coated aluminum with stainless steel vandal resistant fasteners.
- Include mounting hardware for either single or back-to-back pole mounting and shall be universal to the pole type.
- Have two vehicle RRFB indications that is approximately 7" wide x 2.8" high, each with 8 yellow LEDs in its array and two field configurable Pedestrian indicators that are approximately 0.5" wide x 1.7" high.
- Have overall dimensions of approximately 22" W x 4"H x 1.5"D

**SafeWalk Crosswalk Illuminator**

- Operate in conjunction with the crosswalk controller and intelligent warning devices.
- Activate when less than 10 lux of ambient light is present (when activated by a pedestrian).
- Provide at least 20 vertical lux at 5 feet for a standard 2 lane crosswalk.
- Activate with a .5 second soft start
- Allow for multiple brightness options for each of illuminator
- Be housed in its own IP66 type enclosure.

- Be made of weather resistant materials (aluminum, stainless steel, plastic).
- Be able to be adjusted and aimed both horizontally and vertically
- Be independently replaceable among other control panel components.
- Operate between the temperatures of -40° to +176°F (-40° to +80°C).

### Bulldog Push Button

- Shall be a Polara Bulldog model.
- Shall operate as a normally open (n/o) circuit.
- Must be ADA Compliant.
- Shall operate from -30° to +165°F (-34° to +74°C)
- Shall be provided with all necessary mounting hardware, wiring and associated ADA signage.

## System Options

### Warning Static Sign

- Each static sign face shall be constructed on a 0.080" thick 5052-H32 aluminum and screened onto 3M Diamond Grade DG$^3$ Reflective sheeting of specified color.
- Shall have MUTCD compliant sign legend, as dictated by the requirements.
- Shall have two holes for mounting to a post or pole.
- Includes pole mounting hardware.

### Pole Package

- Pole shall be a standard specified outer diameter aluminum pedestal pole.
- Pole shall be supplied with one end threaded for easy installation into a pedestal base.
- Pole shall be 13’ - 15’ length Schedule 40 pipe raw aluminum as required
- Pedestal Base shall be TP-358 cast aluminum that mounts on a concrete foundation attached by four internal anchor bolts imbedded in the foundation.
- Pedestal Base shall have a large 8.5" square hand hole cover allowing access to the interior.

# Warranty

The Manufacturer shall offer a three-year warranty on batteries, five-year warranty on the system, and a ten-year warranty on the solar panel.

# MATERIAL LIST

Traffic and Parking Control Co., Inc.
5100 West Brown Deer Rd
Brown Deer, WI 53223
Phone No.:800-236-0112
E-Mail: customerservice@tapconet.com

| Item/Description | U/M | Quantity |
|---|---|---|
| Ped. Xing - Solar, 65w, Radio, DS RRFB, Bulldog PB, SafeWalk, on 4.5" OD Pole | | |
| 500433<br>Controller, 12V, 108045, Hollow, Radio, SW Illum | Each | 2 |
| 142048<br>Universal Cabinet Mounting Bracket, SOP Cabinets 108766, 108045, 120652, Includes U-Bolt Hardware | Each | 2 |
| SLR-55-B<br>65W/12V Solar Panel Package, Top Of Pole Mount 4.5 Dia. | Each | 2 |
| 101494<br>Battery, Universal battery, Solar 12V 50Ah AGM UB12500 - Internal Thread | Each | 2 |
| 138089<br>RRFB, Dimmable, Assembly with Universal Mounting Kit | Each | 4 |
| 101620<br>Push Button Bulldog Add-On Option Kit Yellow, With LED | Kit | 2 |
| 143402<br>SafeWalk Illuminator Assembly with Mounting Kit | Each | 2 |
| Signs, Poles, and Brackets | | |

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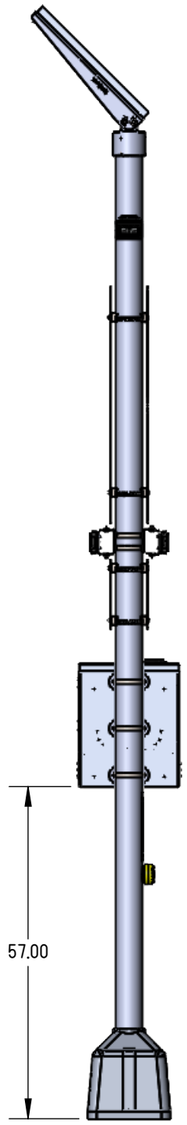
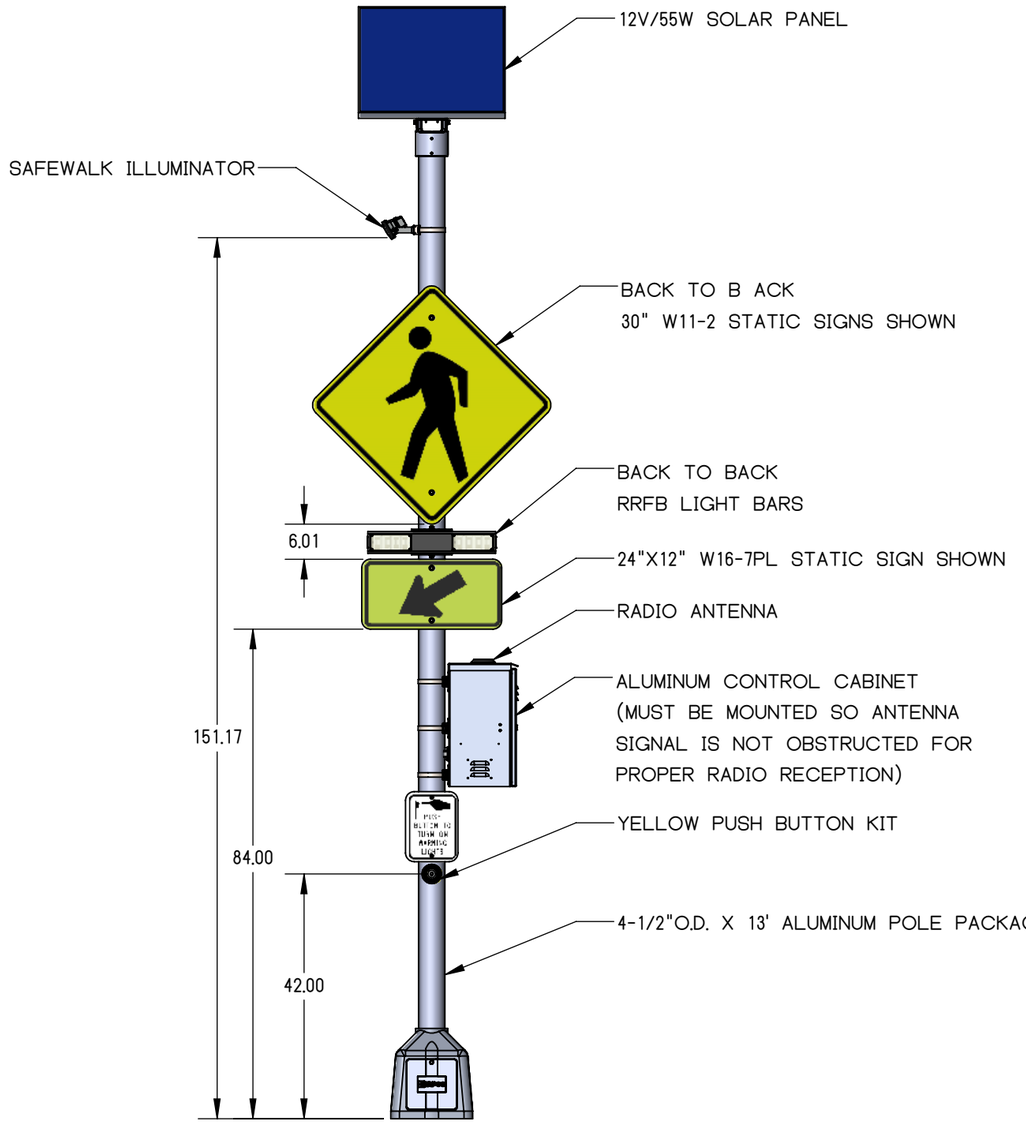
Traffic and Parking Control Co., Inc.
5100 West Brown Deer Rd
Brown Deer, WI 53223
Phone No.:800-236-0112
E-Mail: customerservice@tapconet.com

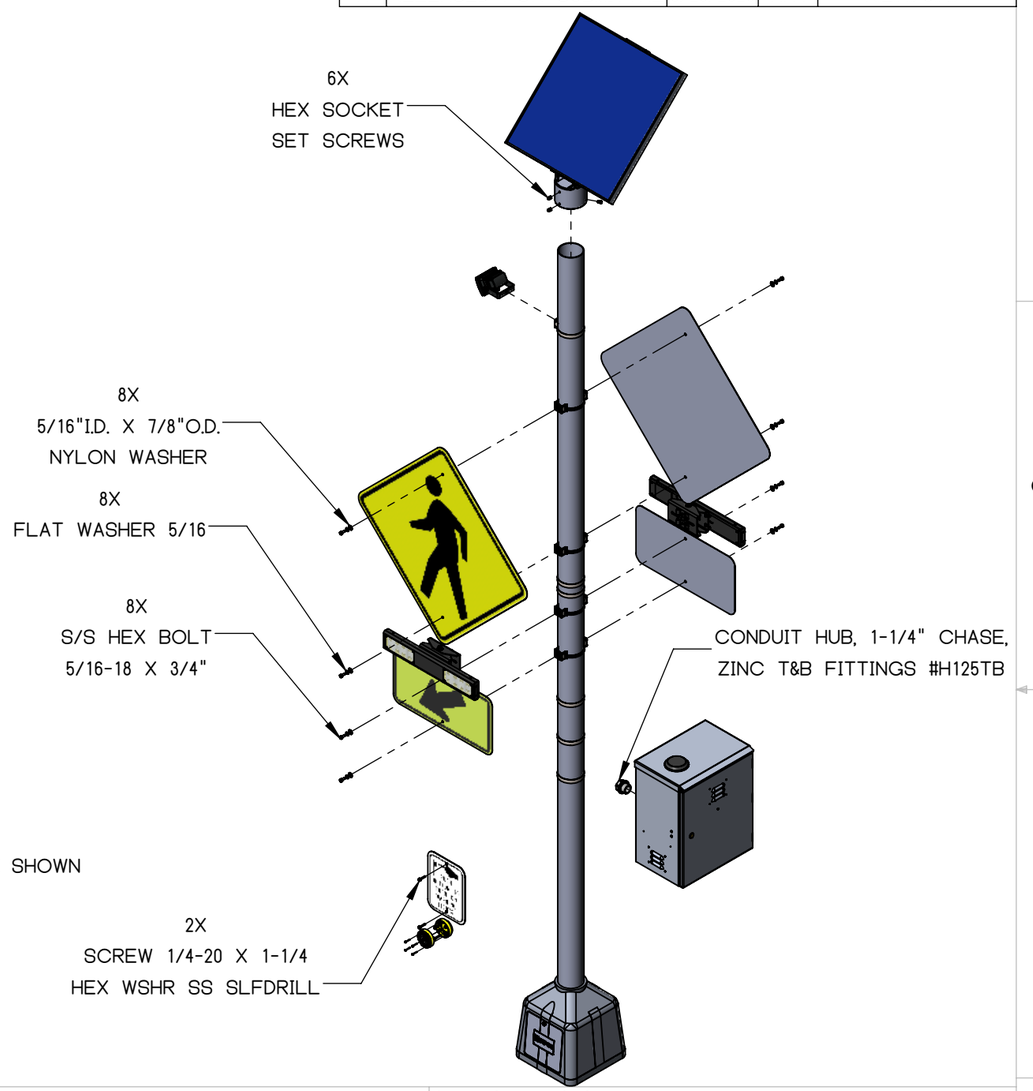
| Item/Description | U/M | Quantity |
|---|---|---|
| 373-05075<br>W11-2,30"x30"x.080 DG3 FYG,Pedestrian Crossing (Symbol) Fed Spec - Fluorescent Yellow-Green Sign | Each | 4 |
| 373-01757<br>W16-7PR,24"x12"x.080 DG3 FYG,Down Diagonal Right Arrow (Fed Spec) Sign | Each | 2 |
| 373-01759<br>W16-7PL,24"x12"x.080 DG3 FYG,Down Diagonal Left Arrow (Fed Spec) Sign | Each | 2 |
| 373-15<br>Pole,Standard Aluminum Pole,15' Schedule 40 6061-T6 4.5" OD T.O.E. | Each | 2 |
| 203-00014<br>Base,Aluminum Square Pedestal, No Paint Door, SP-5444-PNC | Each | 2 |
| 3177-00042<br>J-Bolt,1"x 42"+4" ATSM F1554 GR-105 92k 12" Thread Full Galvanized with Nut & Lock Washer | Each | 8 |
| 030-00006<br>Washer Flat 1-1/16"ID x2.5OD"x.125" Galvanized For 1" A/B, for use w/ J-bolts (not incl) | Each | 8 |
| 107265<br>Sign Mounting Kit, Banded, Flared Leg, Standard For Mounting B2B Static Signs to a Large Pole | Each | 4 |

Furnish only quote. Installation is not included.

| REVISIONS | | | | |
|---|---|---|---|---|
| REV. | DESCRIPTION | DATE | CC # | AUTHOR/APPROVED |
| A | RELEASED FOR SUBMITTAL | 3/25/2020 | N/A | A.E.K./J.R.P. |




NOTES:

1. ORIENT SOLAR PANEL TOWARDS SOUTHERN SKY FOR MAXIMUM SOLAR EXPOSURE
2. CONTROL CABINET HEIGHT MAY VARY.
3. SNAP LOCKS ARE PROVIDED, STANDARD 3/4" S/S BANDING IS RECOMMENDED
4. J-BOLTS NOT SHOWN
5. ALL DIMENSIONS ARE FOR REFERENCE ONLY.
6. STATIC SIGNS AND POLE PACKAGES NOT INCLUDED IN SYSTEM

TAPCO®
TRAFFIC & PARKING CONTROL CO., INC.

S:\ENGINEERING\SPECIFICATIONS\600561

| | | |
|---|---|---|
| MATERIAL | | INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5-2009 |
| FINISH | | REFERENCE: |

TOLERANCE UNLESS OTHERWISE SPECIFIED

| DEC. | INCH |
|---|---|
| HOLE ∅ | ±.003 |
| X | ±0.030 |
| XX | ±0.015 |
| XXX | ±0.005 |
| ANGULAR | ±0.5° |

TITLE:
PEDX, RRFB, SOLAR 55/48, RADIO, SOP, DS AMBER, PB, SW, H POLE X2

| | | | SIZE | DWG. NO. | REV | WEIGHT: |
|---|---|---|---|---|---|---|
| DESIGNED BY: | | | B | 600561 | A | |
| DRAWN BY: | A. KAVANAUGH | 10/28/2019 | | | | SCALE: 1:26 |
| CHECKED BY: | J. PATTERSON | 3/25/2020 | | | | SHEET 1 OF 1 |

TAPCO
Safe travels.

NEW

# SAFEWALK™ CROSSWALK ILLUMINATOR

## FEATURES AND BENEFITS

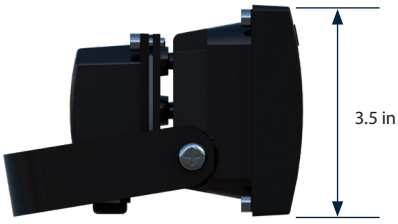
Increase pedestrian visibility at poorly lit, two-lane crossings with the SafeWalk™ Crosswalk Illuminator – a simple safety enhancement to TAPCO Pedestrian Crosswalk Systems.


- Flood light illuminates the approach area of the crosswalk
- Beam light projects outward, illuminating the middle of the crosswalk
- Activates concurrently with LED-enhanced warning alerts
- Adjustable brackets allow for precise light focus at most crossings
- Rugged enclosure to withstand weather and surrounding environment

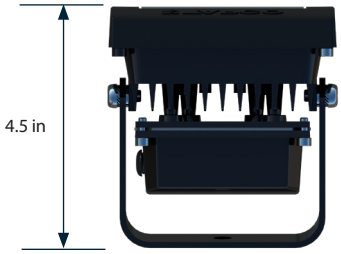
## SPECIFICATIONS

| | |
|---|---|
| **POWER INPUT** | 12VDC |
| **POWER CONSUMPTION** | 700mA to 1.4A |
| **LIGHT DISTANCE** | 6 by 15 feet per illuminator |
| **INSTALLATION HEIGHT** | 12 to 15 feet |
| **HOUSING** | Aluminum and weather resistant polycarbonate |
| **OPERATING TEMPERATURE RANGE** | -40°F to 176°F (-40°C to 80°C) |


Front View




Side View




Bottom View

 5100 West Brown Deer Rd., Brown Deer WI 53223 Phone (800) 236-0112 FAX 800-444-0331 www.TAPCOnet.com

## SYSTEM CAPABILITIES

| | |
|---|---|
| **COMPATIBILITY** | RRFB, Blinkersign® and BinkerBeacon™ Pedestrian Crosswalk Systems |
| **LIGHT VITALITY** | 2 LEDs engineered to light up a crosswalk |
| **LIGHT DURATION** | Varies based on preprogrammed settings - works in conjunction with warning alerts |
| **WIND LOAD RATING** | Up to 120 mph* |

**Dependent upon pole size and system arrangement*

(800) 236-0112 TAPCOnet.com

1037-00003 05/13/19

# CITY OF LEMOORE

## BUSH STREET PEDESTRIAN SAFETY IMPROVEMENTS PROJECT
## HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP CYCLE 10)
## HSIP-5115(040)

## GENERAL CONSTRUCTION NOTES

1. EXISTING UTILITIES AND EXISTING IMPROVEMENTS MAY BE SHOWN AT APPROXIMATED LOCATIONS DUE TO THE AVAILABLE RECORD INFORMATION AT THE TIME OF PLAN PREPARATION. OTHER UTILITY LINES MAY EXIST. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES BY POTHOLING OR LOCATING SERVICES "811" IF FOUND NECESSARY.

2. THE CONTRACTOR SHALL NOTIFY ALL CORRESPONDING UTILITY COMPANIES AND CALL "811" AT LEAST 48 HOURS BEFORE THE COMMENCEMENT OF ANY WORK WHICH MAY REQUIRE UTILITY VERIFICATION. ADDITIONALLY, THE CONTRACTOR WILL SUPPLY SOUTHERN CALIFORNIA GAS COMPANY WITH A CONSTRUCTION SCHEDULE AND NOTIFY OF ANY PRE-CONSTRUCTION MEETINGS.

3. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY OR SUBSTRUCTURE SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. NO CERTIFICATIONS IS MADE AS TO THE ACCURACY OR THOROUGHNESS OF THESE RECORDS. APPROVAL OF THESE PLANS BY THE CITY OF LEMOORE DOES NOT CONSTITUTE A REPRESENTATION OF THE ACCURACY OR COMPLETENESS OF LOCATION OR THE EXISTENCE OR NONEXISTENCE OF ANY UNDERGROUND UTILITY OR SUBSTRUCTURE WITHIN THE LIMITS OF THE PROJECT.

4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE FULL SET OF PLANS FOR ANY DISCREPANCIES AND OMISSIONS PRIOR TO THE COMMENCEMENT OF WORK. IF ANY DISCREPANCIES BETWEEN THESE PLANS AND THE FIELD ARE IDENTIFIED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WORK NOT IN CONFORMANCE WITH THE PLANS OR IN CONFLICT WITH ANY CODE.

5. AN APPROVED SET OF PLANS MUST BE AVAILABLE ON THE JOB SITE AT ALL TIMES.

6. THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

7. ALL WORK SHALL BE PERFORMED IN CONFORMANCE WITH THE PROVISIONS IN THE CALTRANS STANDARD SPECIFICATIONS AND PLANS DATED 2022, ALONG WITH THE CITY OF LEMOORE STANDARD DRAWINGS.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS, FABRICATIONS, EQUIPMENT, APPLIANCES, TRANSPORTATION, SERVICES, AND LABOR NECESSARY FOR THE CONSTRUCTION, ERECTION, AND INSTALLATION OF ALL WORK INDICATED ON THESE DRAWINGS AND/OR OUTLINED IN EACH SECTION OF THE SPECIFICATIONS.

9. FOR THE DURATION OF THE WORK, THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN AS MAY BE REQUIRED, ALL NECESSARY BARRICADES AND RAILINGS, LIGHTS, WARNING SIGNS, AND SIGNALS, AND SHALL TAKE ALL OTHER PRECAUTIONS AS MAY BE REQUIRED TO SAFEGUARD PERSONS, THE JOB SITE AND ADJOINING PROPERTY, AGAINST INJURIES AND DAMAGE OF ANY NATURE.

10. THE CONTRACTOR AND EACH SUBCONTRACTOR SHALL GIVE THEIR PERSONAL ATTENTION TO THE WORK; BE RESPONSIBLE FOR THE LAYOUT AND CORRECTNESS OF THEIR WORK AND COOPERATE WITH EACH OF THE VARIOUS TRADES TO OBTAIN A NEAT FINISHED AND WORKMANLIKE JOB.

11. THE CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

12. TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS OWNER AND ENGINEER, AND THE OFFICERS, DIRECTORS, MEMBERS, PARTNERS, EMPLOYEES, AGENTS, CONSULTANTS AND SUBCONTRACTORS OF EACH AND ANY OF THEM FROM AND AGAINST ALL CLAIMS, COSTS, LOSSES, AND DAMAGES (INCLUDING BUT NOT LIMITED TO ALL FEES AND CHARGES OF ENGINEERS, ARCHITECTS, ATTORNEYS, AND OTHER PROFESSIONALS AND ALL COURT OR ARBITRATION OR OTHER DISPUTE RESOLUTION COSTS) ARISING OUT OF OR RELATING TO THE PERFORMANCE OF THE WORK, PROVIDED THAT ANY SUCH CLAIM, COST, LOSS, OR DAMAGE IS ATTRIBUTABLE TO BODILY INJURY, SICKNESS, DISEASE, OR DEATH, OR TO INJURY TO OR DESTRUCTION OF TANGIBLE PROPERTY (OTHER THAN THE WORK ITSELF), INCLUDING THE LOSS OF USE RESULTING THEREFROM BUT ONLY TO THE EXTENT CAUSED BY ANY NEGLIGENT ACT OR OMISSION OF CONTRACTOR, ANY SUBCONTRACTOR, ANY SUPPLIER, OR ANY INDIVIDUAL OR ENTITY DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM TO PERFORM ANY OF THE WORK OR ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE.

13. SHOULD A CONSTRUCTION SURVEY OR CONSTRUCTION STAKING BE NECESSARY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THIS SERVICE.

14. DO NOT SCALE DRAWINGS. IF UNABLE TO LOCATE DIMENSIONS FOR ANY ITEM OF WORK, CONTACT THE ENGINEER FOR DIRECTION BEFORE PROCEEDING.

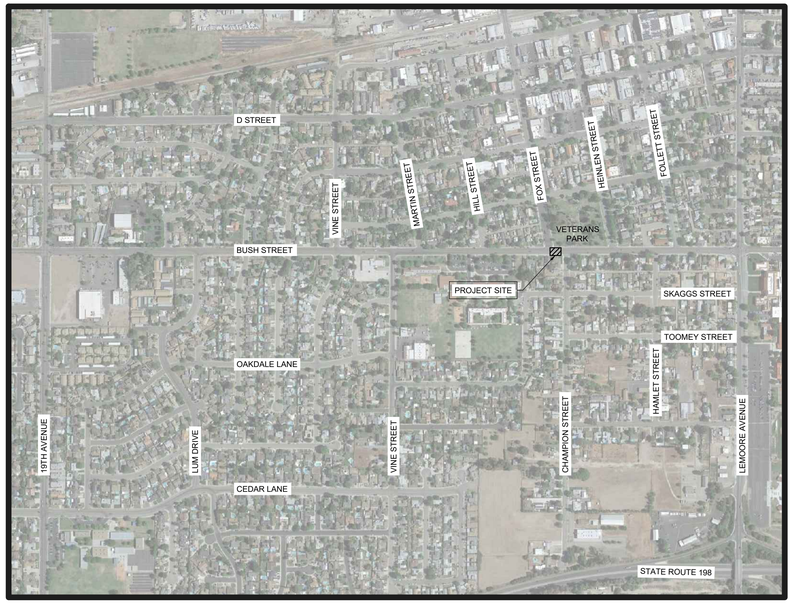
15. ALL DAMAGE TO AREAS AND/OR PROPERTY NOT SPECIFICALLY PART OF THE PROJECT SITE CAUSED DURING CONSTRUCTION ACTIVITIES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RETURN TO PRE-CONSTRUCTION CONDITIONS.

16. CHANGES TO THE APPROVED DRAWINGS SHALL BE MADE BY ADDENDUM OR A CHANGE ORDER SIGNED BY THE ENGINEER AND APPROVED BY THE PUBLIC WORKS/ENGINEERING OFFICIALS.

17. DUST AND DEBRIS CONTROL MEASURES SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT - DISTRICT REGULATION VIII - FUGITIVE DUST RULES.

18. IN ORDER TO REDUCE NOISE IMPACTS FROM THE CONSTRUCTION PROJECT, ALL CONSTRUCTION ACTIVITIES SHALL ONLY OCCUR BETWEEN THE HOURS OF 7:00 AM AND 4:30 PM.

19. THE CONTRACTOR SHALL PREPARE AND SUBMIT A TEMPORARY TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL BY THE CITY AND THE ENGINEER PRIOR TO ANY WORK IN THE STREET RIGHT-OF-WAY. CONSTRUCTION AREA SIGNS FOR TEMPORARY TRAFFIC CONTROL SHALL BE FURNISHED, INSTALLED, MAINTAINED, AND REMOVED WHEN NO LONGER REQUIRED IN CONFORMANCE WITH THE PROVISIONS IN SECTION 12, " TEMPORARY TRAFFIC CONTROL DEVICES," OF THE STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS.




**VICINITY MAP**

CITY OF LEMOORE

N

NTS

## INDEX OF PLANS



## CONTROL POINTS

1. CP1: NAIL AND SHINER IN PAVEMENT
   DESCRIPTION: LOCATED ON THE STREET ON THE NORTH SIDE OF CHAMPION STREET, APPROXIMATELY 71.6 FEET EAST OF THE PROPOSED CROSSWALK.
2. CP2: NAIL AND SHINER IN PAVEMENT
   DESCRIPTION: LOCATED ON THE STREET ON THE SOUTH SIDE OF FOX STREET, APPROXIMATELY 47.6 FEET WEST OF THE PROPOSED CROSSWALK.

## CITY & ENGINEER CONTACTS


PUBLIC WORKS DIRECTOR

FRANK RIVERA
CITY OF LEMOORE
711 W CINNAMON DRIVE
LEMOORE, CA 93245
(559) 924-6744 EXT.731

CIVIL ENGINEER

ORFIL MUNIZ, PE, QSD, QSIP, sUAS
A&M CONSULTING ENGINEERS
220 N LOCUST ST
VISALIA, CA 93291
(559) 429-4747


## PROJECT UTILITY CONTACTS

PG&E
MATT HOUSE, LAND AGENT
705 P STREET
FRESNO, CA 93760
(559)263-5559
MASHP@PGE.COM

SOUTHERN CALIFORNIA GAS CO
MARSHALL CROTTY
404 N TIPTON STREET
VISALIA, CA 93292
(559) 739-2356
MCROTTY@SEMPRAUTILITIES.COM

COMCAST
MARTINA GOMEZ
1031 N PLAZA DRIVE
VISALIA, CA 93291
(925) 424-0278
MARTINA_GOMEZ@CABLE.COMCAST.COM

CITY OF LEMOORE WATER AND WASTEWATER
FRANK RIVERA
711 W CINNAMON DRIVE
LEMOORE, CA 93245
(559) 924-6730

VAST NETWORKS (CVIN LLC)
RYAN STUEHLER
7447 N PALM BLUFFS AVE #105
FRESNO, CA 93711
(559) 554-9114
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AT&T
MIKE WILSON
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VISALIA, CA 93291
(559) 739-6423
MW7046@ATT.COM

811 Know what's below. Call 811 before you dig.



REGISTERED PROFESSIONAL ENGINEER ORFIL M. MUNIZ 88165 CIVIL STATE OF CALIFORNIA

A&M CONSULTING ENGINEERS

ENGINEERING PLANS FOR:
BUSH STREET PEDESTRIAN SAFETY IMPROVEMENTS
SHEET TITLE:
COVER SHEET

REVISIONS
NO.

SCALE: AS SHOWN
JOB NO: 222-021
QA/QC: JA
FILE: 222_021_COVER.DWG
DATE: 6/26/2023

SHEET NO.
1
OF 8

## LEGEND

| | |
|---|---|
| AH | AMPERE HOURS |
| BSW | BACK OF SIDEWALK |
| C | CONCRETE |
| CR | CROWN |
| CITY | CITY OF LEMOORE |
| DIA | DIAMETER |
| EA | EACH |
| EP | EDGE OF PAVEMENT |
| ELEV | ELEVATION |
| EX | EXISTING |
| FL | FLOW LINE |
| FT | FEET |
| GB | GRADE BREAK |
| IN | INCH |
| IRWL | IN-ROADWAY WARNING LIGHT |
| LIP | LIP |
| MIN | MINIMUM |
| OC | ON CENTER |
| OG | ORIGINAL GROUND |
| P | PAVEMENT |
| RC | RELATIVE COMPACTION |
| R/W | RIGHT-OF-WAY |
| SS | SANITARY SEWER |
| TC | TOP OF CURB |
| TYP | TYPICAL |
| (XXX.XX) | EXISTING ELEVATION |
| S=0.XXXX | PROPOSED SLOPE IN DECIMAL |
| S=0.XXXX | EXISTING SLOPE IN DECIMAL |
| ST | STREET |
| STD | STANDARD |
| SPECS | SPECIFICATIONS |
| V | VOLTS |
| W | WATTS |

EXISTING PAVEMENT

DEMOLITION AREA - REMOVE ASPHALT PAVEMENT, CURB, GUTTER, AND SIDEWALK

ASPHALT PAVEMENT GRINDING AREA

SAWCUT LIMITS

PAVEMENT GRINDING LIMITS

(GAS4) EXISTING 4" GAS UTILITY

(COM) EXISTING COMMUNICATION UTILITY

(E) EXISTING ELECTRICITY UTILITY

(W10) EXISTING 10" WATER LINE

(SS8) EXISTING 8" SANITARY SEWER

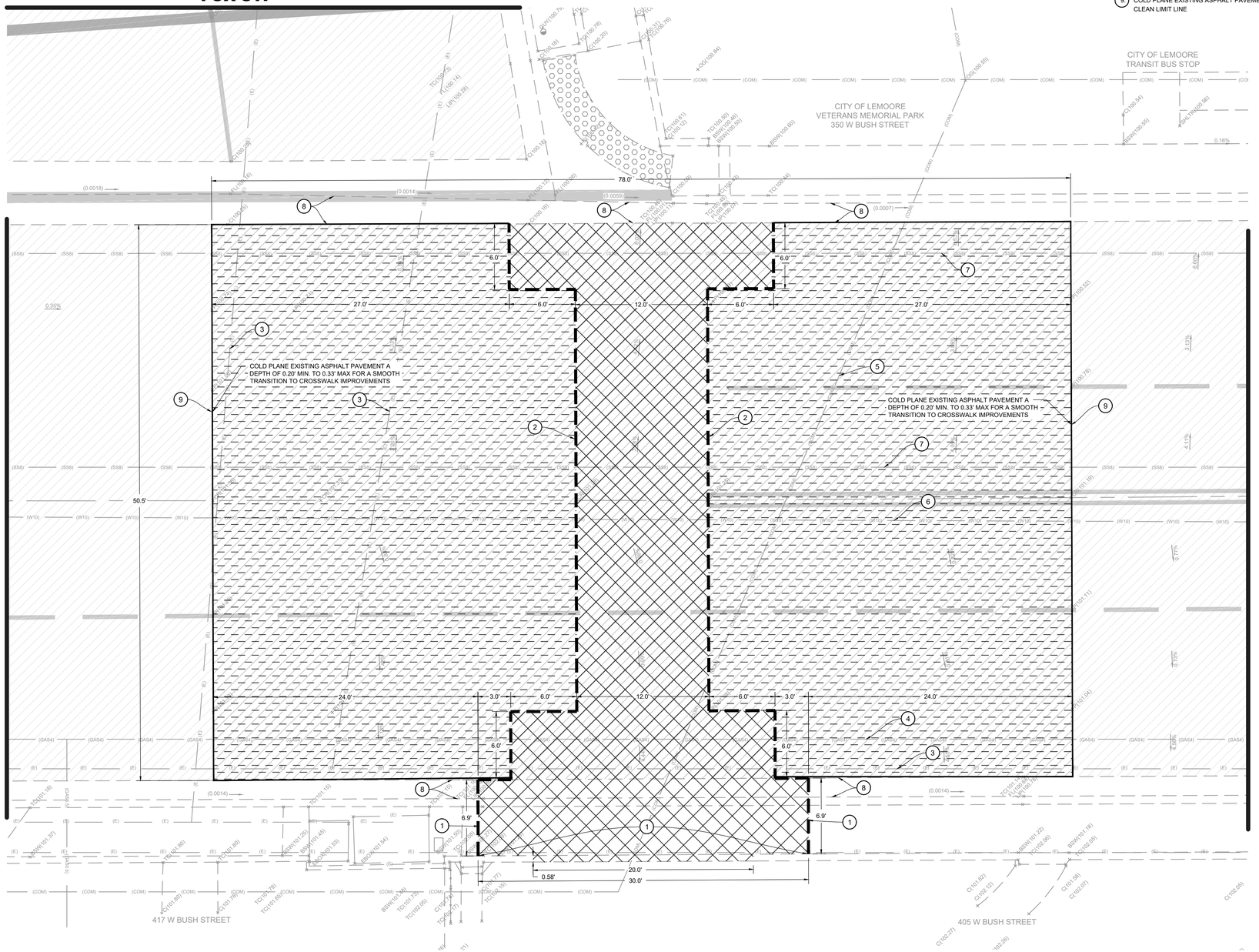
## CONTRACTOR NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PRESERVE ALL SURVEY MONUMENTS. ANY MONUMENT DISTURBED DURING CONSTRUCTION SHALL BE PERPETUATED PER THE PROFESSIONAL LAND SURVEYOR'S ACT, BUSINESS AND PROFESSIONS CODE 8771, AT THE CONTRACTORS EXPENSE.

2. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATED. CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES BEFORE COMMENCEMENT OF WORK.

## DEMOLITION NOTES

1. SAWCUT EXISTING CONCRETE TO A NEAT CLEAN EDGE LINE
2. SAWCUT EXISTING ASPHALT PAVEMENT TO A NEAT CLEAN LIMIT LINE
3. PROTECT IN PLACE EXISTING UNDERGROUND ELECTRIC LINE
4. PROTECT IN PLACE EXISTING GAS LINE
5. PROTECT IN PLACE EXISTING UNDERGROUND COMMUNICATION LINE
6. PROTECT IN PLACE EXISTING WATER LINE
7. PROTECT IN PLACE EXISTING SEWER LINE
8. PROTECT IN PLACE EXISTING CURB & GUTTER
9. COLD PLANE EXISTING ASPHALT PAVEMENT TO A DEPTH OF 0.2' MIN. - 0.33' MAX., LEAVE A NEAT CLEAN LIMIT LINE






0 5 10 Feet

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REGISTERED PROFESSIONAL ENGINEER — CHAD T. MAHAN — 88155 — CIVIL — STATE OF CALIFORNIA

A&M CONSULTING ENGINEERS

ENGINEERING PLANS FOR:

BUSH STREET PEDESTRIAN SAFETY IMPROVEMENTS

SHEET TITLE:

TOPOGRAPHICAL SURVEY & DEMOLITION PLAN

REVISIONS

NO.

SCALE: 1" = 5'
JOB NO.: 222-021
QA/QC: JA
FILE: 222_021_DEMO_CORNER.DWG
DATE: 6/26/2023

SHEET NO.

2

OF 8

## LEGEND

- PROPOSED FULL DEPTH PAVEMENT PATCH, SEE DETAIL 3 ON SHEET 5
- PROPOSED MIN. 0.2' ASPHALT CONCRETE OVERLAY, SEE SECTION A THIS SHEET
- PROPOSED STAMPED CONCRETE, SEE DETAIL 1 ON SHEET 5
- PROPOSED 3.5" THICK CONCRETE SIDEWALK PER CITY STANDARD DETAIL C-5, SEE SHEET 7
- PROPOSED DETECTABLE WARNING SURFACE PER CITY STANDARD DETAIL C-4D, SEE SHEET 7
- PROPOSED 1' WIDE AND 8" THICK CROSSWALK EDGE CURB, SEE DETAIL 1 ON SHEET 5
- EXISTING PAVEMENT

## CONTRACTOR NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PRESERVE ALL SURVEY MONUMENTS. ANY MONUMENT DISTURBED DURING CONSTRUCTION SHALL BE PERPETUATED PER THE PROFESSIONAL LAND SURVEYOR'S ACT, BUSINESS AND PROFESSIONS CODE 8771, AT THE CONTRACTORS EXPENSE.
2. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATED. CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES BEFORE COMMENCEMENT OF WORK.
3. FOR THE BRICK STAMPED CONCRETE CONTRACTOR SHALL SUBMIT PATTERN AND COLOR SAMPLE FOR CITY APPROVAL PRIOR TO ORDERING AND INSTALLING

## SIDEWALK AND RAMP NOTES

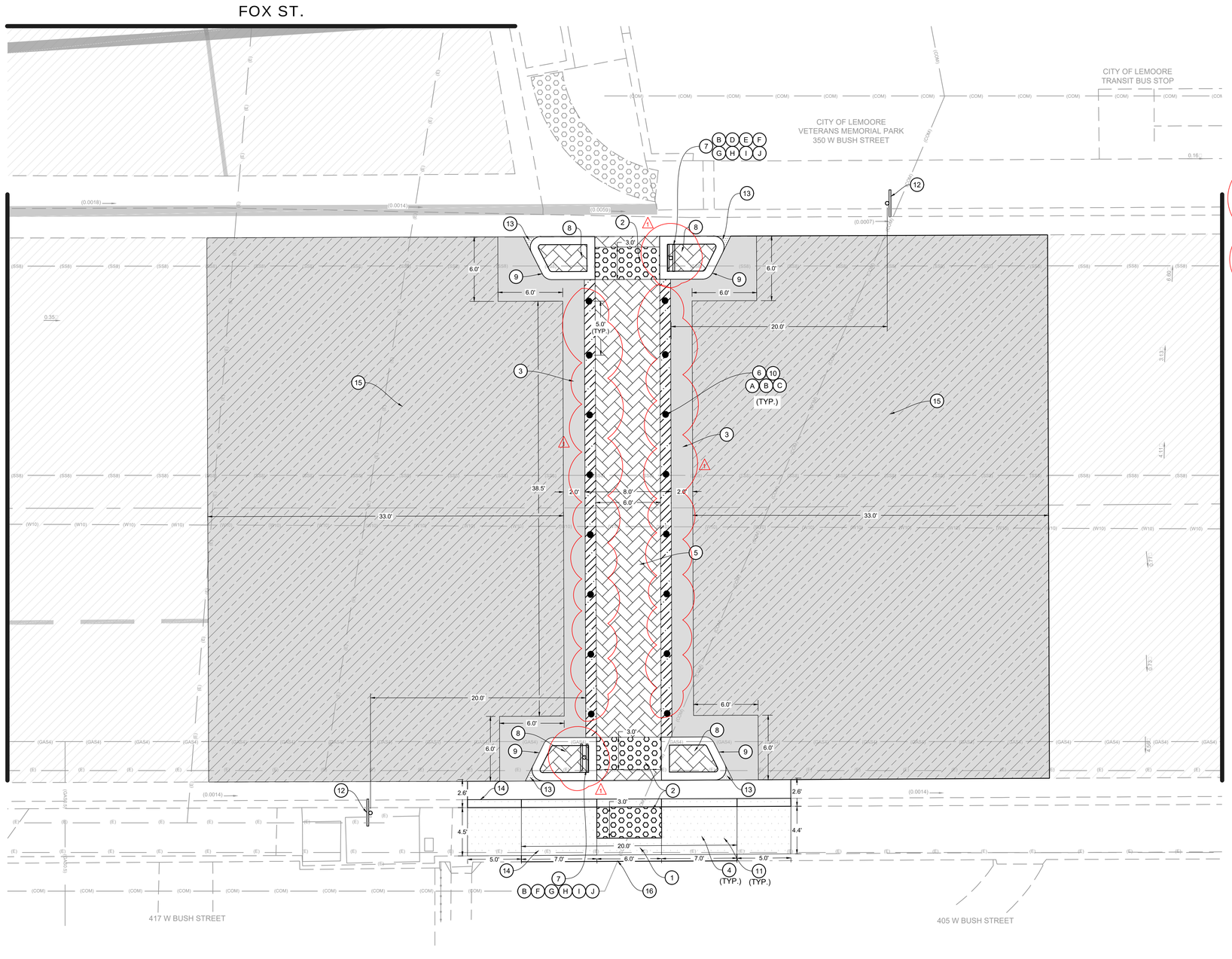
1. MAXIMUM SLOPES OF ADJOINING GUTTERS, THE ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP OR ACCESSIBLE ROUTE SHALL NOT EXCEED 5% WITHIN 4' OF THE BOTTOM OF THE CURB RAMP.
2. CROSS SLOPE IN THE PATH OF TRAVEL SHALL NOT EXCEED 1.5%.
3. SIDEWALKS SHALL BE STEEL TROWELED AND HAVE A LIGHT BROOM FINISH UNLESS OTHERWISE NOTED. RAMPS SHALL HAVE A HEAVY BROOM FINISH PERPENDICULAR TO PATH OF TRAVEL.
4. SIDEWALKS AND RAMPS SHALL HAVE WEAKENED PLANE JOINTS CONSTRUCTED WHERE SHOWN IN THESE IMPROVEMENT PLANS. WEAKENED PLANE JOINTS SHALL BE A MINIMUM OF 1 INCH DEEP AND SHALL BE FINISHED WITH A SCORING TOOL LEAVING THE EDGES ROUNDED.
5. SIDEWALKS AND RAMPS SHALL BE PLACED ON 6 INCH MOIST AND COMPACTED BASE MATERIALS. 95% RELATIVE COMPACTION UNDER SIDEWALKS. 95% RELATIVE COMPACTION UNDER RAMPS AND SIDEWALKS.

## GENERAL CONCRETE NOTES

1. ALL CONCRETE SHALL BE CLASS 3 CONCRETE UNLESS OTHERWISE SPECIFIED.
2. CLASS 3 CONCRETE SHALL CONTAIN NOT LESS THAN 505 POUNDS OF PORTLAND CEMENT PER CUBIC YARD WITH 1 IN AGGREGATE. 5 INCH MAXIMUM SLUMP. 2500 P.S.I. AT 28 DAYS.
3. WHEN MAXIMUM DAYTIME TEMPERATURE EXCEEDS 50° F. ALL NEWLY PLACED CONCRETE SHALL BE SPRAYED UNIFORMLY WITH A WHITE PIGMENTED CURING COMPOUND, CURING COMPOUND SHALL BE APPLIED AT A NOMINAL RATE OF ONE GALLON PER 150 SQUARE FEET, UNLESS OTHERWISE SPECIFIED.
4. ALL WORK CONSTRUCTED BY THESE PLANS SHALL BE IN COMPLIANCE WITH ALL CURRENT ADA REGULATIONS.

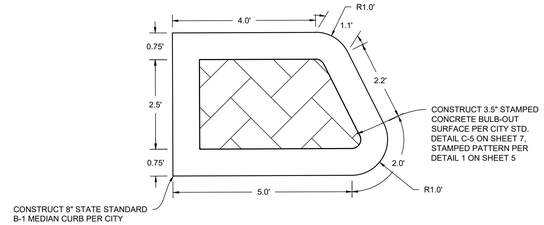
## CONSTRUCTION NOTES

1. CONSTRUCT NEW CASE C CURB RAMP PER ACCESSIBLE CURB RAMP DETAIL ON SHEET 7 AND AS SHOWN ON SHEET 4. RAMP SHALL HAVE DETECTABLE WARNING SURFACE THAT EXTENDS THE FULL WIDTH OF THE RAMP AND MINIMUM 36" OF DEPTH.
2. INSTALL 3' DEEP BY 6' WIDE DETECTABLE WARNING SURFACE PER CITY STANDARD DETAIL C-4D, SEE SHEET 7.
3. CONSTRUCT PAVEMENT PATCH PER DETAIL 3, SEE SHEET 5.
4. HEAVY BROOM FINISH ACROSS SLOPE OF RAMPS.
5. CONSTRUCT CONCRETE DECORATIVE CROSSWALK PER DETAIL 1, SEE SHEET 5. CONCRETE SHALL BE STAMPED WITH QUARRY STONE STAMP AND SHALL HAVE A RED COLOR FINISH. CONTRACTOR TO SUBMIT PATTERN AND COLOR SAMPLE FOR APPROVAL PRIOR TO ORDERING AND INSTALLING. STAMPED CONCRETE SHALL BE BORDERED BY 1' NON-STAMPED CONCRETE STRIP ON BOTH SIDES OF CROSSWALK.
6. INSTALL SOLAR LED IN-ROADWAY WARNING LIGHTS (TYP. OF 16) PER MANUFACTURER'S RECOMMENDATIONS.
7. INSTALL DOUBLE SIDED SOLAR FLASHING SIGN (W11-2 & W16-7P) PER DETAIL 4 ON SHEET 5.
8. INSTALL 3.5" THICK STAMPED CONCRETE SURFACE WITH RED QUARRY STAMP PATTERN. A LIQUID RELEASE AGENT SHALL BE USED. A CURE AND SEAL PRODUCT SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS IMMEDIATELY AFTER COMPLETING THE IMPRINTING PROCESS. GRADE TO ACCOMMODATE DRAINAGE. STAMPED CONCRETE SHALL BE PLACED ON 6" MOIST CLASS II AGGREGATE BASE COMPACTED TO 95% RELATIVE COMPACTION. CONTRACTOR SHALL SUBMIT PATTERN AND COLOR SAMPLE FOR CITY APPROVAL PRIOR TO ORDERING AND INSTALLING.
9. CONSTRUCT BULB-OUT CURB PER DETAIL 1, SEE THIS SHEET.
10. ALIGN IRWL AS SHOWN ON SHEET 8 FOR EACH TRAVEL LANE DIRECTION.
11. INSTALL WEAKENED PLANE JOINT AROUND RAMP PERIMETER, TYPICAL.
12. INSTALL NEW R1-5 (36" X 36") SIGN WITH POST PER CITY STD. DETAIL ST-18A, SEE SHEET 7.
13. INSTALL 3.5" THICK CONCRETE FILL.
14. CONSTRUCT CURB & GUTTER AND SIDEWALK PER CITY STANDARD DETAILS C-3 & C-5, SEE SHEET 7.
15. CONSTRUCT MINIMUM 0.20' ASPHALT PAVEMENT OVERLAY.
16. CONSTRUCT CONCRETE RETAINING CURB PER DETAIL 4 ON SHEET 5.




## LIGHTING ASSEMBLY MATERIAL LIST (FOR REFERENCE ONLY)

| CALLOUT | DESCRIPTION | UNIT | ESTIMATED QUANTITY |
|---|---|---|---|
| A | IN-ROADWAY WARNING LIGHT (IRWL), 16 LIGHTS 5 FT OF SPACING, UNIDIRECTIONAL AMBER, 50 FEET LEAD | EA | 1 |
| B | BLINKER ON SITE | EA | 2 |
| C | EPOXY FOR IN-ROADWAY WARNING LIGHT (IRWL) STUDS | EA | 16 |
| D | CONTROLLER, IRWL, 12V, PROSTAR (OR EQUIVALENT) | EA | 1 |
| E | 120625, RADIO HOLLOW, RELAY-DRIVEN IRWL CONTROLLOER (OR EQUIVALENT) | EA | 1 |
| F | CABINET BRACKET SET, FITS ROUND POLES 2-3/8 & UP, WITH STANDARD HARDWARE & SNAP LOCKS FOR 120625. (OR EQUIVALENT) | EA | 1 |
| G | 85W/12V SOLAR PANEL PACKAGE, TOP OF POLE MOUNT 4" DIAMETER | EA | 2 |
| H | BATTERY 35AH, 12V AGM LEAD ACID. (OR EQUIVALENT) | EA | 3 |
| I | WIRE 2C 18AWG 16TC 2464 (OR EQUIVALENT) | FT | 250 |
| J | 1000 FEET SPOOL 300V CM BRN/BLU | FT | 1000 |




DETAIL 1
BULB-OUT MEASUREMENTS (TYP.)
(N.T.S.)

N

0 5 10 Feet

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REGISTERED PROFESSIONAL ENGINEER — JOHN T. MANN — 88165 — CIVIL — STATE OF CALIFORNIA

A&M CONSULTING ENGINEERS

ENGINEERING PLANS FOR:
BUSH STREET PEDESTRIAN SAFETY IMPROVEMENTS

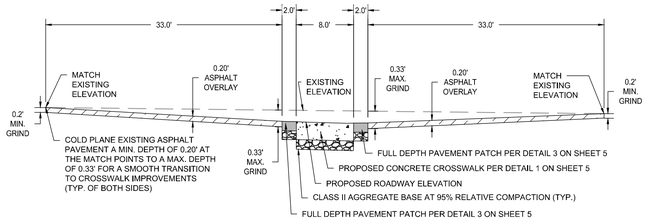
SHEET TITLE:
IMPROVEMENTS AND DIMENSIONS PLAN

REVISIONS

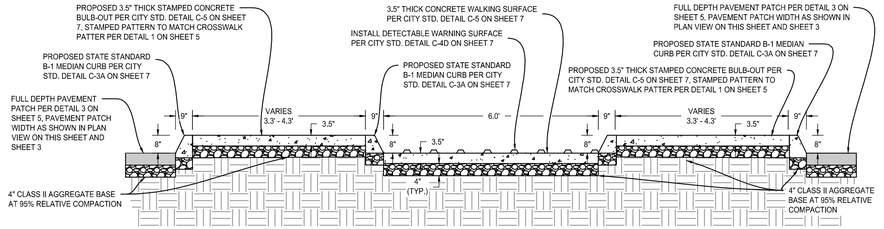
| NO. | |
|---|---|
| 1 | REPLACE IN-ROAD LIGHT SYSTEM WITH RRFB SOLAR POWERED, PUSH BUTTON ACTIVATED WARNING SYSTEM W/ ILLUMINATED CROSSWALK ILLUMINATOR |

SCALE: 1" = 5'
JOB NO: 222-021
QA/QC: JA
FILE: 222_021_IMPR_CORNER.DWG
DATE: 6/26/2023

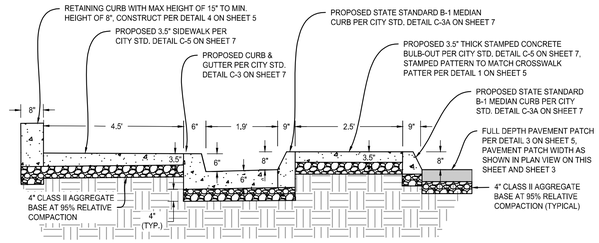
SHEET NO.
3
OF 8



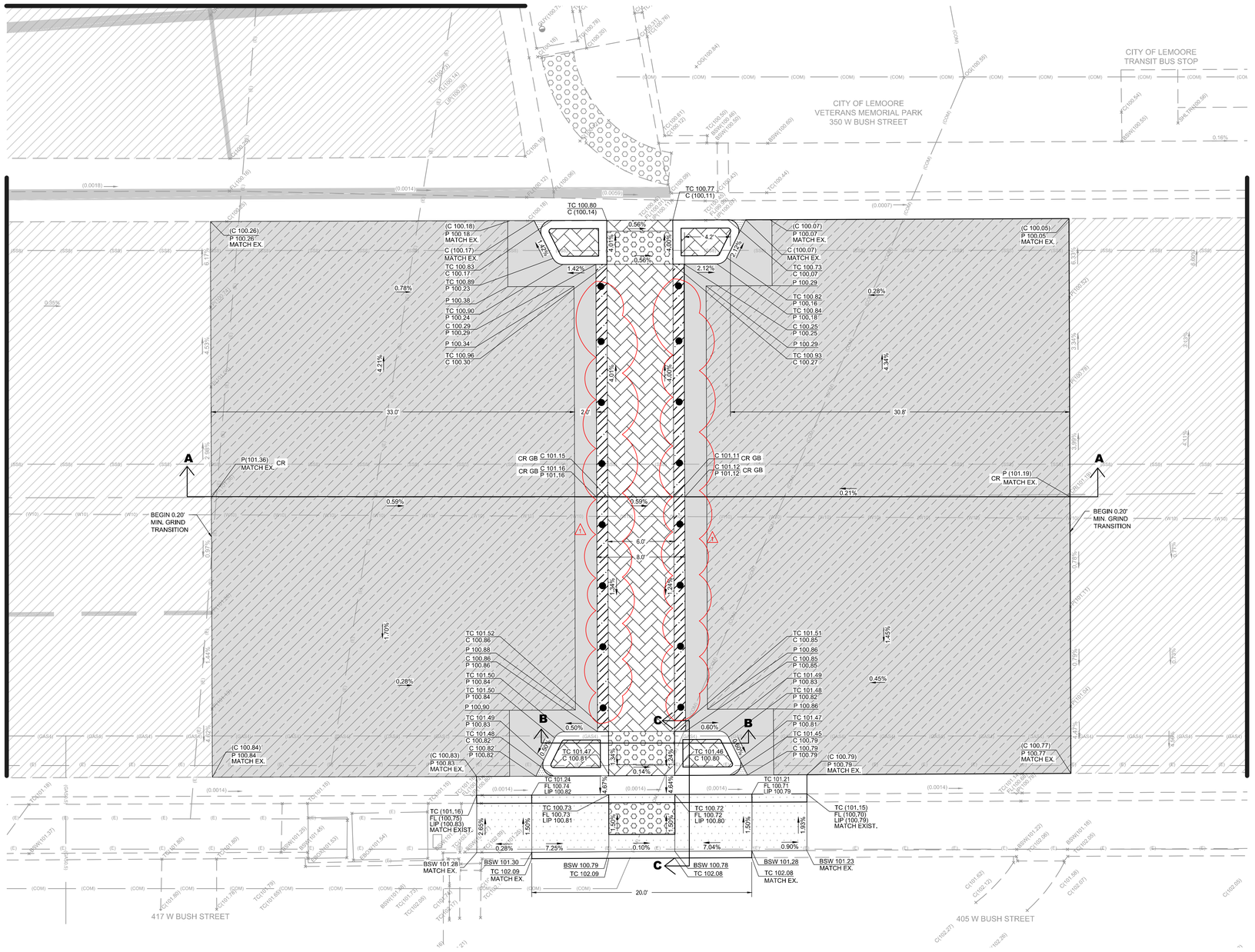

## SECTION A (N.T.S.)




## SECTION B (N.T.S.)




## SECTION C (N.T.S.)




## CONTRACTOR NOTES

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5. NO CROSS SLOPE IN THE PATH OF TRAVEL TO EXCEED 1.5%

## CONTROL POINTS

1. CP1: CHISELED "X"
   DESCRIPTION: LOCATED ON THE STREET ON THE NORTH SIDE OF CHAMPION STREET, APPROXIMATELY 71.6 FEET EAST OF THE PROPOSED CROSSWALK.
2. CP2: CHISELED "X"
   DESCRIPTION: LOCATED ON THE STREET ON THE SOUTH SIDE OF FOX STREET, APPROXIMATELY 47.6 FEET WEST OF THE PROPOSED CROSSWALK.

## LEGEND

- PROPOSED FULL DEPTH PAVEMENT PATCH, SEE DETAIL 3 ON SHEET 5
- PROPOSED MIN. 0.2' ASPHALT CONCRETE OVERLAY, SEE SECTION A THIS SHEET
- PROPOSED STAMPED CONCRETE, SEE DETAIL 1 ON SHEET 5
- PROPOSED 3.5" THICK CONCRETE SIDEWALK PER CITY STANDARD DETAIL C-5, SEE SHEET 7
- PROPOSED DETECTABLE WARNING SURFACE PER CITY STANDARD DETAIL C-4D, SEE SHEET 7
- PROPOSED 1' WIDE AND 8" THICK CROSSWALK EDGE CURB, SEE DETAIL 1 ON SHEET 5
- EXISTING PAVEMENT

N

0 5 10 Feet

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811 Know what's below. Call 811 before you dig.

REGISTERED PROFESSIONAL ENGINEER — MARK T. MUNIZ — 88165 — CIVIL — STATE OF CALIFORNIA

A&M CONSULTING ENGINEERS

ENGINEERING PLANS FOR:

# BUSH STREET PEDESTRIAN SAFETY IMPROVEMENTS

SHEET TITLE:

## GRADING PLAN

REVISIONS

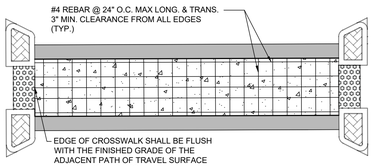
| NO. | |
|---|---|
| 1 | REPLACE IN-ROAD LIGHT SYSTEM WITH RRFB SOLAR POWERED, WARNING SIGN WITH ACTIVATED CROSSWALK ILLUMINATOR |

SCALE: 1" = 5'
JOB NO: 222-021
QA/QC: JA
FILE: 222_021_GRD_CORNER_EDIT.DWG
DATE: 6/26/2023

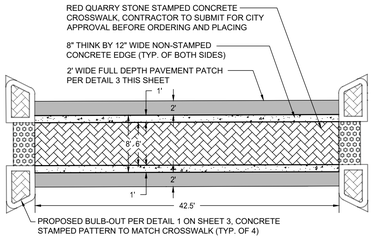
SHEET NO.

4

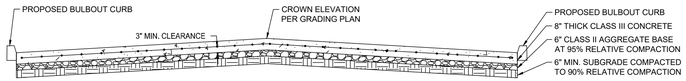
OF 8



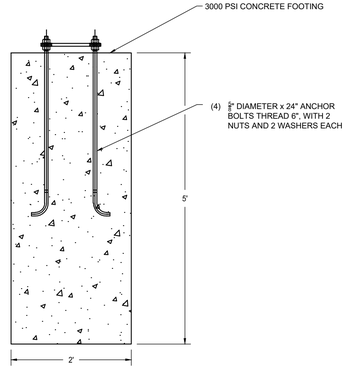

## CONCRETE CROSSWALK PLAN VIEW 1



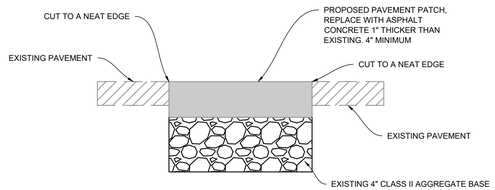

## CONCRETE CROSSWALK PLAN VIEW 2



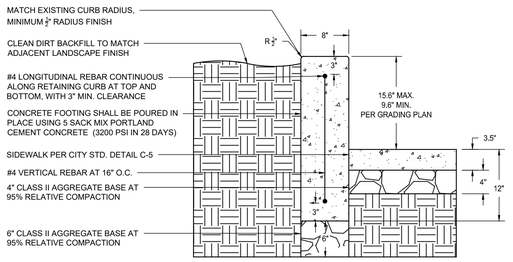

## DETAIL 1
## CONCRETE CROSSWALK
## (N.T.S.)




## DETAIL 2
## ANCHOR BOLT
## (N.T.S.)



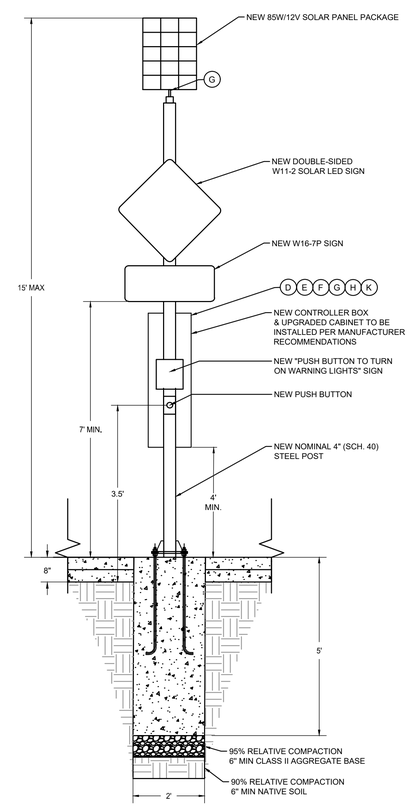

## DETAIL 3
## TYPICAL PAVEMENT PATCH
## (N.T.S.)

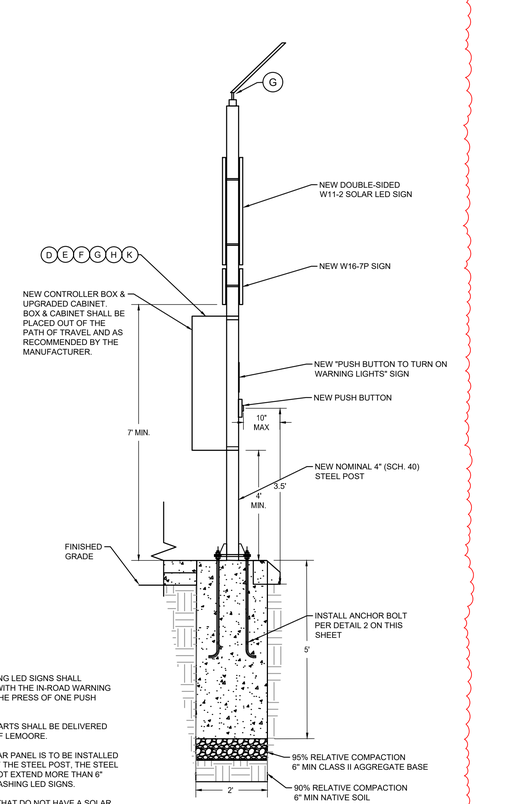



## DETAIL 4
## CONCRETE RETAINING CURB
## (N.T.S.)

### LIGHTING ASSEMBLY MATERIAL LIST
### (FOR REFERENCE ONLY)

| CALLOUT | DESCRIPTION | UNIT | ESTIMATED QUANTITY |
|---|---|---|---|
| D | CONTROLLER, IRWL, 12V, PROSTAR (OR EQUIVALENT) | EA | 1 |
| E | 120625, RADIO HOLLOW, RELAY-DRIVEN IRWL CONTROLLOER (OR EQUIVALENT) | EA | 1 |
| F | CABINET BRACKET SET, FITS ROUND POLES 2-3/8 & UP, WITH STANDARD HARDWARE & SNAP LOCKS FOR 120625. (OR EQUIVALENT) | EA | 1 |
| G | 85W/12V SOLAR PANEL PACKAGE, TOP OF POLE MOUNT 4.5" DIAMETER. | EA | 1 |
| H | BATTERY 35AH, 12V AGM LEAD ACID. (OR EQUIVALENT) | EA | 3 |
| K | BLINKER ON SITE | EA | 1 |



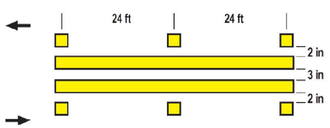




NOTE:

1. SOLAR FLASHING LED SIGNS SHALL COORDINATE WITH THE IN-ROAD WARNING LIGHTS WITH THE PRESS OF ONE PUSH BUTTON.
2. ALL UNUSED PARTS SHALL BE DELIVERED TO THE CITY OF LEMOORE.
3. WHEN NO SOLAR PANEL IS TO BE INSTALLED AT THE TOP OF THE STEEL POST, THE STEEL POST SHALL NOT EXTEND MORE THAN 6" ABOVE THE FLASHING LED SIGNS.
4. STEEL POLES THAT DO NOT HAVE A SOLAR PANEL ASSEMBLY INSTALLED, SHALL BE EQUIPPED WITH A CAP AT THE TOP.

## DETAIL 4
## PROPOSED DOUBLE SIDED SOLAR FLASHING SIGN
## W/ CONTROLLER BOX INSTALLATION LAYOUT (PROFILE VIEW)
## (N.T.S.)

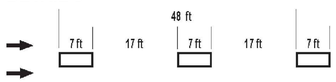
***DETAIL 22***




Two-direction no-passing pattern with pavement markers for use on two-lane streets and highways. See Notes 1 and 2.

**FOR SPEEDS 40 mph OR LESS**

***DETAIL 8***




### POLICY

Lane Line pattern for use on multilane streets and highways (normally used on local streets and highways).

LEGEND

- 4 in Yellow
- Direction of Travel
- Two-Way Yellow Retroreflective Markers
- Non-Retroreflective Yellow Markers
- 4 in White
- Direction of Travel


R1-5
36" X 36"

W11-2*
36" X 36"

W16-7P
24" X 12"



REGISTERED PROFESSIONAL ENGINEER
CRAIG L. MAHAN
88165
CIVIL
STATE OF CALIFORNIA

A&M CONSULTING ENGINEERS

ENGINEERING PLANS FOR:
BUSH STREET PEDESTRIAN
SAFETY IMPROVEMENTS

SHEET TITLE:
DETAILS

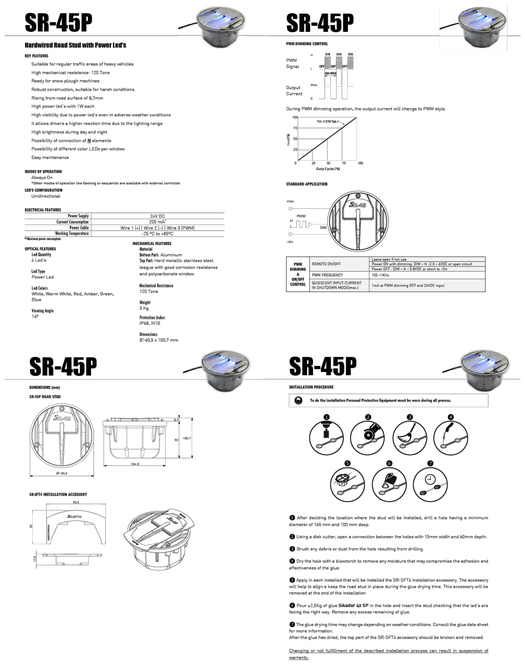
REVISIONS

| NO. | |
|---|---|
| 1 | REPLACE IN-ROAD LIGHT SYSTEM WITH RRFB SOLAR POWERED PUSH BUTTON ACTIVATED WARNING SYSTEM IN CROSSWALK ILLUMINATOR |

SCALE: AS SHOWN
JOB NO.: 222-021
QA/DC: JA
FILE: 222_021_DETAILS.DWG
DATE: 6/26/2023

SHEET NO.
5
OF 8

811 Know what's below. Call 811 before you dig.





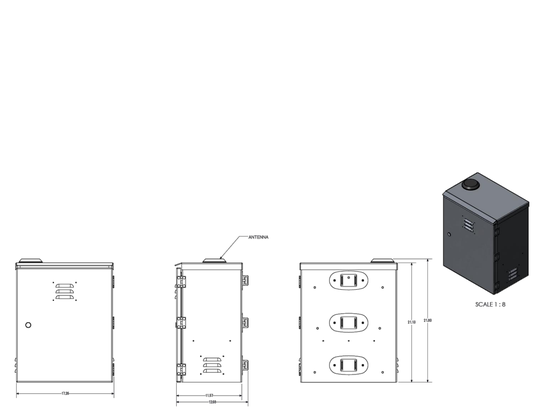




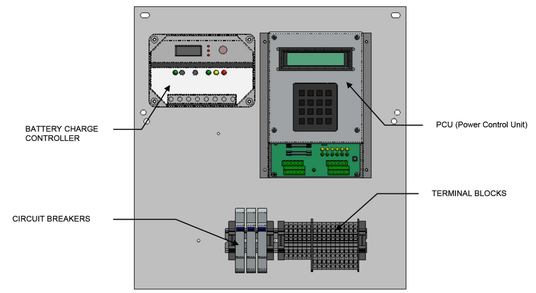




## GENERAL HARDWIRED ROAD STUD WITH POWER LED DETAILS (OR APPROVED EQUAL)
## (N.T.S.)

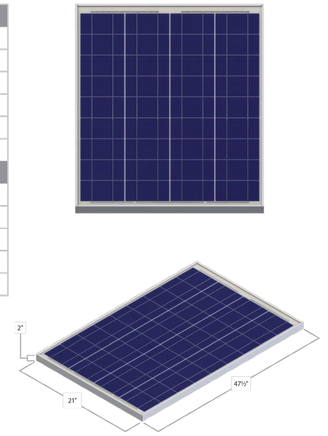



## TYPICAL SOLAR ENCLOSURE
## (OR APPROVED EQUAL)
## (N.T.S.)



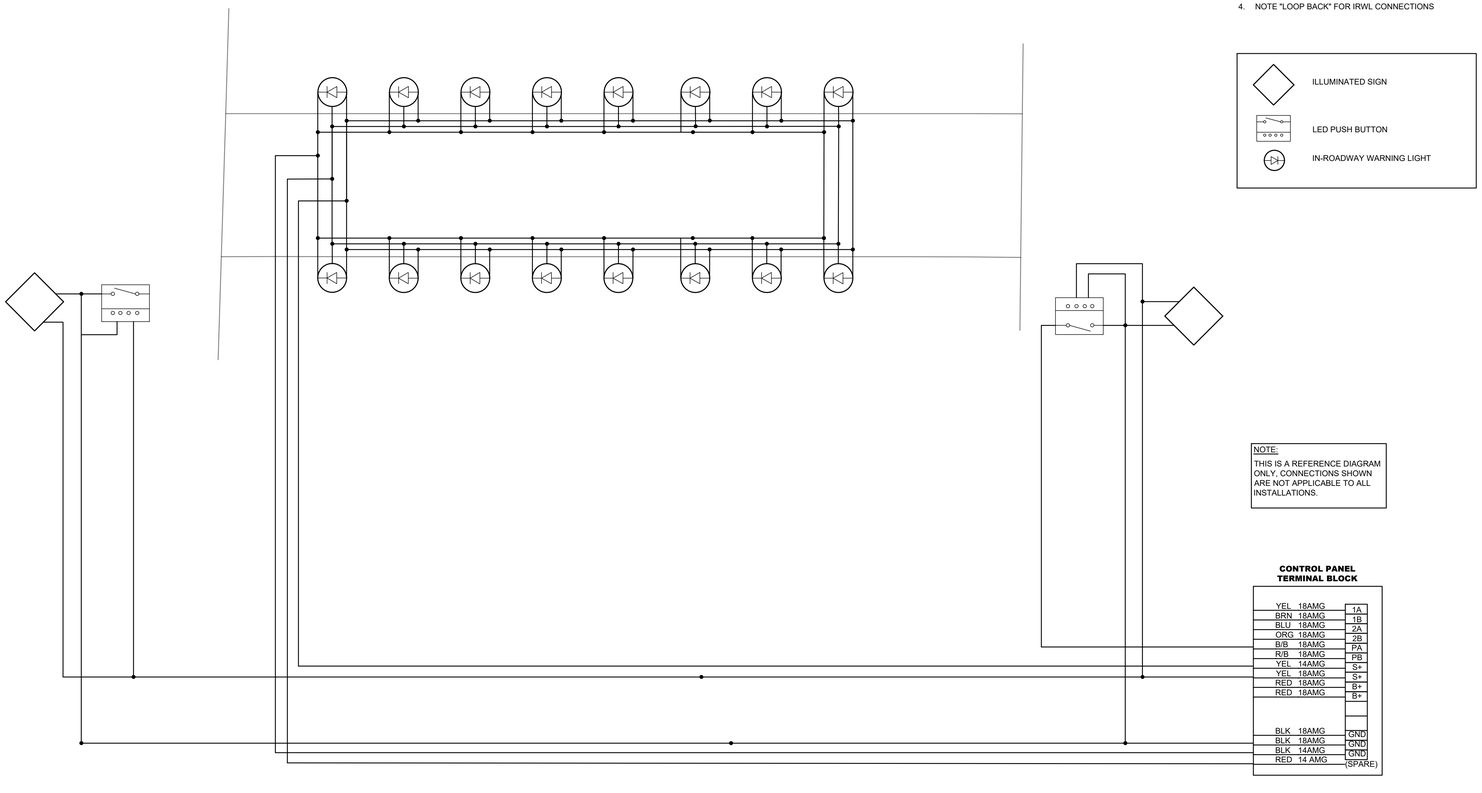

## TYPICAL SOLAR BACK PANEL LAYOUT
## (OR APPROVED EQUAL)
## (N.T.S.)

| Electrical specifications | |
|---|---|
| Max Power | 85W |
| Nominal Voltage | 12V |
| Open Circuit Voltage (Voc) | 22.2V |
| Short Circuit Current (Isc) | 5.35A |
| Maximum Power Voltage (Vpm) | 17.8V |
| Maximum Power Current (Ipm) | 4.78A |
| **Physical dimensions (without brackets)** | |
| Length | 47½" |
| Width | 21" |
| Depth (thickness) | 2" |
| Weight | 20 lbs. |
| Glass | Tempered |

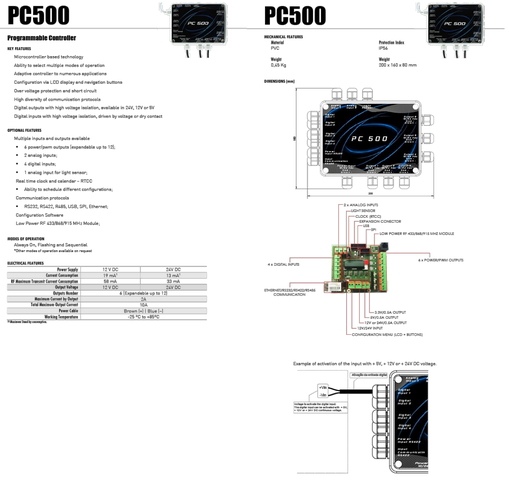



## TYPICAL 85W SOLAR PANEL
## (OR APPROVED EQUAL)
## (N.T.S.)

NOTES:
1. 18 AMG FOR SIGNS & PUSH BUTTONS
2. 14 AMG FOR IN-ROAD WARNING LIGHTS ( IRWL)
3. 8 CONDUCTOR CABLE FOR PUSH BUTTONS
4. NOTE "LOOP BACK" FOR IRWL CONNECTIONS




## TYPICAL IN-ROADWAY WARNING LIGHT WIRING DIAGRAM
## (N.T.S.)







## GENERAL PROGRAMMABLE CONTROLLER DETAILS (OR APPROVED EQUAL)
## (N.T.S.)





REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER T. MANN
88165
CIVIL
STATE OF CALIFORNIA
A&M CONSULTING ENGINEERS

ENGINEERING PLANS FOR:
BUSH STREET PEDESTRIAN SAFETY IMPROVEMENTS

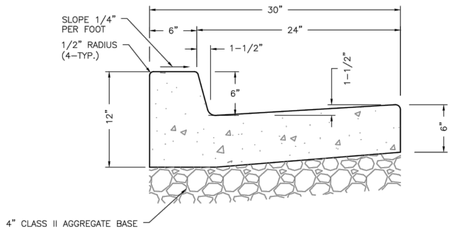
SHEET TITLE:
ELECTRICAL DETAILS

REVISIONS

| NO. | |
|---|---|
| 1 | REPLACE IN-ROAD LIGHT SYSTEM WITH RRFB SOLAR POWERED, PEDESTRIAN ACTIVATED WARNING SYSTEM W/ CROSSWALK ILLUMINATOR |

SCALE: AS SHOWN
JOB NO: 222-021
DA/QC: JA
FILE: 222_021_DETAILS.DWG
DATE: 6/26/2023

SHEET NO.
6
OF 8



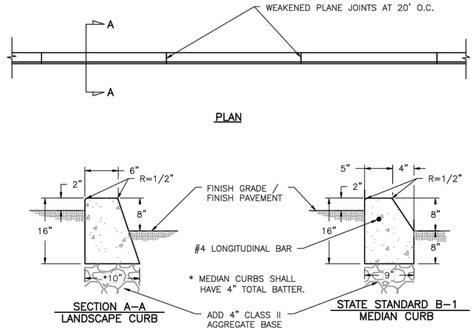

CURB AND GUTTER DETAIL
N.T.S.

NOTES:

1. CONCRETE SHALL BE CLASS 2, 3200 PSI, IN ACCORDANCE WITH SECTION 16 OF THE CITY STANDARD SPECIFICATIONS.
2. CURB AND GUTTER SHALL BE PLACED TO THE GRADES SHOWN ON THE PLANS, AND SHALL NOT VARY MORE THAN THE TOLERANCE STATED IN THE STANDARD SPECIFICATIONS FOR PORTLAND CEMENT CONCRETE IMPROVEMENTS.
3. CURB SHALL BE GIVEN A LIGHT BROOM FINISH. GUTTER PAN SHALL BE GIVEN A ROUGH BROOM FINISH.
4. FINISHED EDGE OF ASPHALT PAVEMENT SHALL BE 1/8 INCH TO 1/4 INCH ABOVE LIP OF GUTTER.
5. COMPACTION UNDER CURB AND GUTTER SHALL BE 95% FOR AGGREGATE BASE AND SUBGRADE.
6. MINIMUM SLOPE SHALL BE 0.0020.

FILE: C-3.DWG

| CURB AND GUTTER | Rev. | Date: 12/17/19 City Engineer | STD. NO. C-3 |
|---|---|---|---|

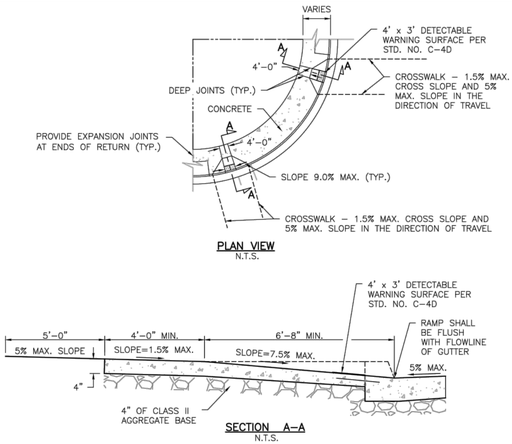



NOTES:

1. ALL CONCRETE WORK SHALL BE OF CLASS 2 CONCRETE (5 SACK MIX.) 3200 P.S.I.
2. ALL CONCRETE SHALL HAVE A LIGHT BROOM FINISH.
3. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT 20 FOOT CENTERS AND SHALL BE A MIN. DEPTH OF 1 INCH AND SHALL BE FINISHED WITH A SCORING TOOL LEAVING THE EDGES ROUNDED. FILL JOINTS AT BACK OF CURBS WITH EPOXY OR AN APPROVED ALTERNATIVE, TO PROHIBIT DRAINAGE TO PAVED AREAS.

FILE: C-3A.DWG

| MEDIAN AND LANDSCAPE CURB | Rev. | Date: 12/17/19 City Engineer | STD. NO. C-3A |
|---|---|---|---|

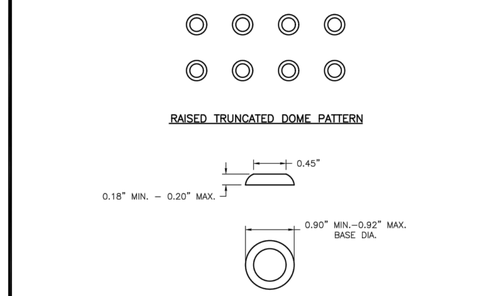



NOTES:

1. CONCRETE SHALL BE CLASS 2 IN ACCORDANCE WITH SECTION 16 OF THE CITY STANDARD SPECIFICATIONS.
2. A GUTTER IS REQUIRED. REFER TO PLANS AND CITY STD. NO. C-3 FOR CONSTRUCTION SPECIFICATIONS.
3. EXPANSION JOINTS ARE REQUIRED AT ENDS OF ALL CURB RETURNS.
4. IN LIEU OF CONTIGUOUS CURB/SIDEWALK SECTION, THE CONTRACTOR MAY USE DOWELS. DOWELS SHALL BE #3 SMOOTH BARS, 12 INCH LONG, SET 4 INCH INTO THE CURB AND 8 INCH INTO THE SIDEWALK AT 48 INCH C-C. AREA ALONG CURB, EXTENDING 2 FEET UNDER THE SIDEWALK SHALL BE TREATED THE SOIL STERILANT TO PREVENT WEED GROWTH BETWEEN CURB AND SIDEWALK.
5. RAMPS SHALL HAVE NO ABRUPT CHANGES IN ELEVATION OR ANGLE OF SLOPE.
6. SIDEWALK AND RAMP THICKNESS SHALL BE 4 INCHES. COMPACT 4 INCHES OF MOIST CLASS II AGGREGATE BASE MATERIALS TO 95% MINIMUM.

FILE: C-4A.DWG

| ALTERNATE ACCESS RAMP | Rev. | Date: 12/17/19 City Engineer | STD. NO. C-4A |
|---|---|---|---|

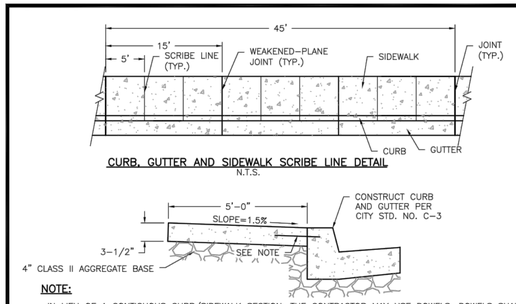



NOTES:

1. DETECTABLE WARNING SURFACE SHALL BE INSTALLED AT THE BOTTOM OF ALL CURB RAMPS.
2. DETECTABLE WARNING SURFACE SHALL BE THE FULL WIDTH OF RAMP AND SHALL BE A MINIMUM OF 36 INCH IN DEPTH.
3. DETECTABLE WARNING SURFACE SHALL BE PREMIXED "FEDERAL YELLOW" COLORED POLYMER COMPOSITE MATERIAL.
4. ALL DETECTABLE WARNING PANELS INSTALLED WITH NEW IMPROVEMENTS SHALL BE WET SET TYPE/CAST IN PLACE TYPE PANELS.
5. IN RETROFIT TYPE SITUATIONS ON EXISTING SURFACES THE CITY WILL ALLOW RETROFIT TYPE WARNING PANELS. PANELS SHALL BE GLUED AND BOLTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. BOTTOM OF PANELS SHALL BE FLUSH AGAINST THE ADJACENT CONCRETE SURFACE.

FILE: C-4D.DWG

| DETECTABLE WARNING SURFACE DETAIL | Rev. | Date: 12/17/19 City Engineer | STD. NO. C-4D |
|---|---|---|---|

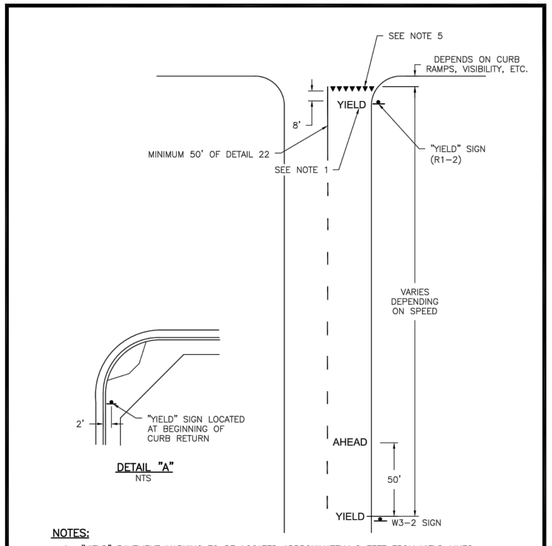



NOTES:

1. WHERE EXPANSIVE SOILS ARE ENCOUNTERED, AS SET FORTH IN THE STANDARD SPECIFICATIONS, 6 INCH OF IMPORTED SAND, COMPACTED TO 90% RELATIVE COMPACTION, SHALL BE PLACED UNDER THE CURB, GUTTER AND SIDEWALK.
2. IN THE AREA BETWEEN THE NEW CURB AND GUTTER AND THE EXISTING STREET SURFACE PROVIDE A MINIMUM OF 24 INCH TRANSITION PAVING AT A MINIMUM OF 2 INCH A.C. OVER 6 INCH A.B. OR MATCH EXISTING STREET SECTION.
3. THE AREA BETWEEN CURB AND SIDEWALK SHALL BE FILLED TO 0.10 FOOT BELOW TOP OF SURROUNDING CONCRETE WITH CLEAN TOP SOIL FREE OF DEBRIS.
4. SCRIBE LINE DETAIL APPLIES TO BOTH CONTIGUOUS AND NON-CONTIGUOUS PATTERNS.
5. CONCRETE SHALL BE CLASS 2 IN ACCORDANCE WITH SECTION 16 OF THE CITY STANDARD SPECIFICATIONS

FILE: C-5.DWG

| SIDEWALK LOCAL STREETS | Rev. | Date: 12/17/19 City Engineer | STD. NO. C-5 |
|---|---|---|---|

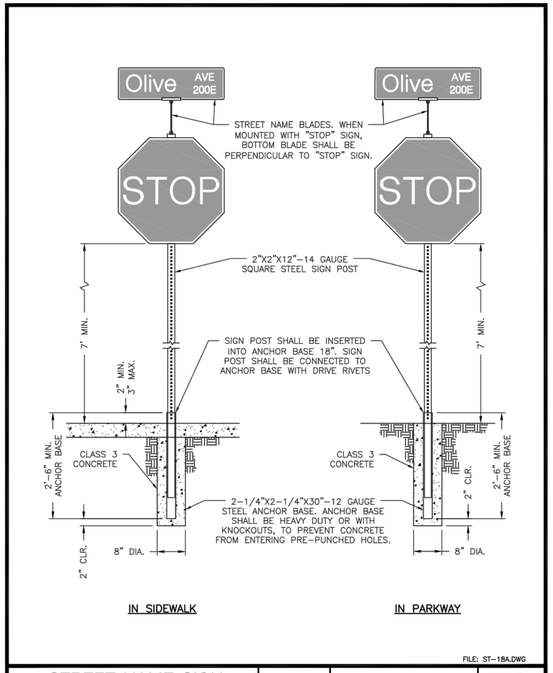



NOTES:

1. "YIELD" PAVEMENT MARKING TO BE LOCATED APPROXIMATELY 8 FEET FROM YIELD LINES.
2. USE "YIELD AHEAD" PAVEMENT MARKINGS AT SPECIFIED LOCATIONS AS APPROVED BY THE CITY ENGINEER (SUPPLEMENTAL TO W3-2 SIGNS).
3. YIELD SIGN IS NORMALLY LOCATED AS SHOWN IN DETAIL "A" OR AT A POINT OF OPTIMUM VISIBILITY. THE DISTANCE BETWEEN A YIELD SIGN AND YIELD LINE SHALL NOT EXCEED 50 FEET.
4. IF USED IN ADVANCE OF CROSSWALKS, YIELD LINES SHALL BE PLACED PER THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES GUIDELINES AND APPROVED BY THE CITY ENGINEER.
5. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE CURRENT CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

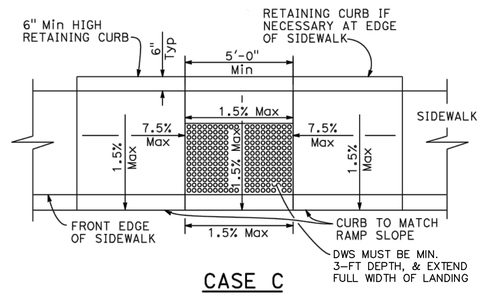
FILE: ST-14A.DWG

| YIELD PAVEMENT MARKINGS | Rev. | Date: 12/17/19 City Engineer | STD. NO. ST-14A |
|---|---|---|---|




FILE: ST-18A.DWG

| STREET NAME SIGN INSTALLATION WITH "STOP" (R1) SIGN | Rev. | Date: 12/17/19 City Engineer | STD. NO. ST-18A |
|---|---|---|---|




## ACCESSIBLE CURB RAMP DETAIL (N.T.S.)



REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER L. MUNIZ
88165
CIVIL
STATE OF CALIFORNIA
A&M CONSULTING ENGINEERS

ENGINEERING PLANS FOR:
BUSH STREET PEDESTRIAN SAFETY IMPROVEMENTS

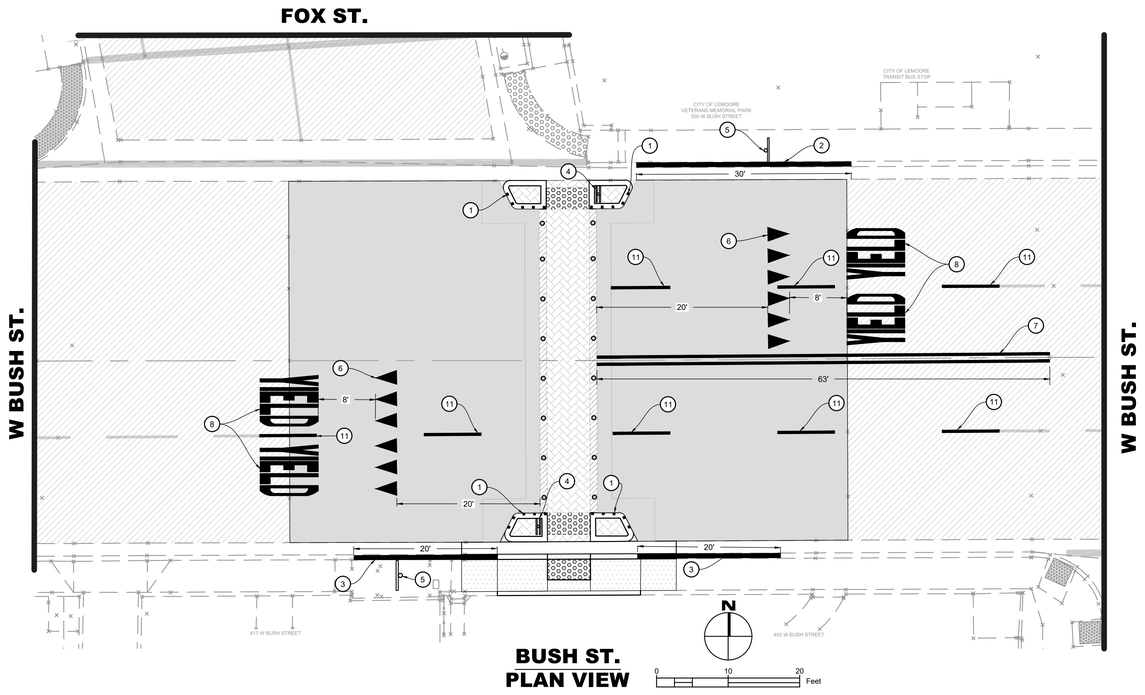
SHEET TITLE:
CITY DETAILS

REVISIONS
NO.

SCALE: AS SHOWN
JOB NO: 222-021
QA/QC: JA
FILE: 222_021_DETAILS.DWG
DATE: 6/26/2023

SHEET NO.
7
OF 8

811 Know what's below. Call 811 before you dig.




**BUSH ST.**
**PLAN VIEW**

## SIGNING, STRIPING & MARKINGS NOTES

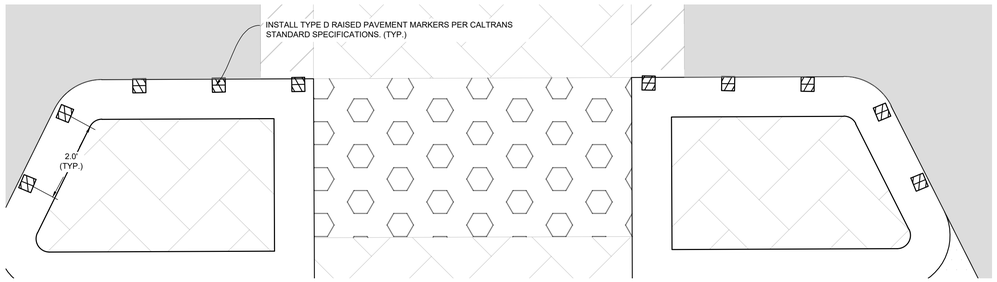
1. ALL WORK AND MATERIALS SHALL CONFORM TO CALTRANS STANDARD PLANS (2022 REVISED STANDARD PLAN RSP) AND THE LATEST EDITION OF THE CA 2014 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS MUTCD.
2. ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THIS SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM HIS OPERATIONS, WHETHER OR NOT SUCH FACILITIES ARE SHOWN ON THESE PLANS.
3. ALL EXISTING PAVEMENT STRIPING & MARKINGS SHALL BE REPAINTED WHEN DISTURBED BY IMPROVEMENTS, UNLESS SPECIFIED OTHERWISE.
4. MINOR VARIATIONS IN DIMENSIONS MAY BE ACCEPTED BY THE ENGINEER.
5. ALL PAVEMENT STRIPING SHALL BE THERMOPLASTIC PAINT, CONFORMING TO THE CALTRANS STD. SPECS FOR RETROREFLECTIVITY.

## CONTRACTOR STRIPING NOTES

1. ALL EXISTING PAVEMENT STRIPING & MARKINGS (CROSSWALKS, STOP BARS, STOP MARKING LEGENDS, CENTERLINE, ECT.) SHALL BE REPAINTED WHEN DISTURBED BY IMPROVEMENTS, UNLESS SPECIFIED OTHERWISE.

## KEYNOTE LEGEND

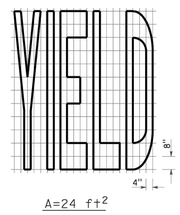
1. INSTALL RAISED REFLECTIVE MARKER ON CURB (TYP.), SEE RAISED MARKERS DETAIL ON THIS SHEET.
2. PAINT RED CURB 34 LF.
3. PAINT RED CURB 20 LF.
4. INSTALL TWO (2) NEW W11-2 (36" X 36") & W16-7P (24" X 12") SIGNS TO CREATE A "DOUBLE SIDED" SOLAR FLASHING SIGN, SEE SHEET 5.
5. INSTALL NEW R1-5 (36" X 36") SIGN WITH POST PER CITY STD DETAIL ST-18A, SEE SHEET 7.
6. PAINT WHITE YIELD LINE PER CITY STANDARD DETAIL ST-14A ON SHEET 7 AND PER YIELD LINE LAYOUT DETAIL ON THIS SHEET.
7. PAINT DETAIL 22 DOUBLE YELLOW CENTERLINE STRIPE, SEE SHEET 5.
8. PAINT WHITE "YIELD" MARKING, SEE YIELD LEGEND DETAIL ON THIS SHEET & PER CITY STD. DETAIL ST-14A SEE SHEET 7 FOR PLACEMENT.
9. PAINT WHITE "AHEAD" MARKING, SEE AHEAD LEGEND DETAIL ON THIS SHEET & PER CITY STD. DETAIL ST-14A SEE SHEET 7 FOR PLACEMENT.
10. INSTALL NEW W3-2 (30" X 30") SIGN WITH POST PER CITY STD DETAIL ST-18A, SEE SHEET 7.
11. PAINT DETAIL 8 WHITE LANE LINE STRIPE, SEE SHEET 5.




**RAISED MARKER DETAIL**
PLAN VIEW (N.T.S.)

NOTE

1. THE RAISED PAVEMENT MARKERS SHALL BE ATTACHED TO THE TOP OF THE CURB USING ADHESIVES PER CALTRANS STANDARD SPECIFICATIONS SECTIONS 81-3.02D AND 81.3.02E.
2. THE TOP AND FACE OF THE CURB SHALL BE PAINTED WITH YELLOW WATERBORNE PAINT AND APPLY GLASS BEADS FOR RETROREFLECTIVITY IN ACCORDANCE TO CALTRANS STANDARD SPECIFICATIONS.



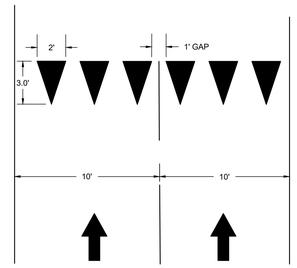

**YIELD LEGEND DETAIL**
**(N.T.S.)**

W3-2
30" X 30"

**YIELD AHEAD SIGN**
**(N.T.S.)**

NOTES:

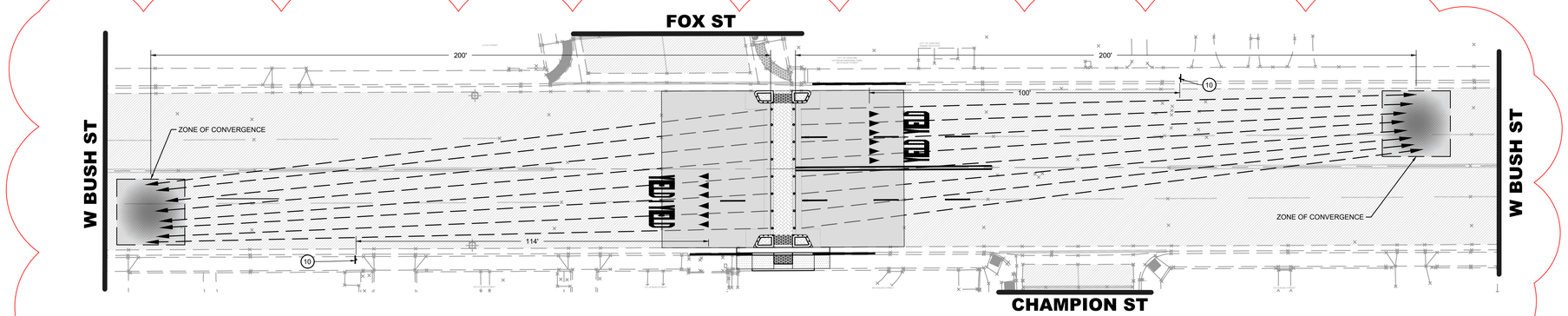
1. ALL LETTERS AND NUMBERS SHALL BE IN CONFORMANCE WITH THE STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS APPROVED BY DEPARTMENT OF TRANSPORTATION.
2. THE DESIGN DETAILS FOR VARIOUS WORDS ARE ALSO SHOWN IN DEPARTMENT OF TRANSPORTATION'S STANDARD PLANS.
3. CONTRACTOR MAY USE CITY STENCIL




NOTES:

1. TRIANGLE HEIGHT IS EQUAL TO 1.5 TIMES THE BASE DIMENSION.
2. TRIANGLES SHALL BE PAINTED WHITE.

**YIELD LINE LAYOUT DETAIL**
**(N.T.S.)**




**(TYPICAL) IRWL SIGNAL ALIGNMENT ON BUSH ST.**
**PLAN VIEW (N.T.S)**

Know what's below. Call 811 before you dig.



REGISTERED PROFESSIONAL ENGINEER
JOEL T. MAN V
88165
CIVIL
STATE OF CALIFORNIA

A&M CONSULTING ENGINEERS

ENGINEERING PLANS FOR:
BUSH STREET PEDESTRIAN SAFETY IMPROVEMENTS

SHEET TITLE:
SIGNING, STRIPING & MARKING PLAN

REVISIONS
NO. 1 REPLACE IN-ROAD LIGHT SYSTEM WITH RRFB SOLAR POWERED, RADIO, PUSH BUTTON ACTIVATED WARNING SYSTEM AT CROSSWALK ILLUMINATOR

SCALE: AS SHOWN
JOB NO: 222-021
DA/QC: JA
FILE: 222_021_SS&M.DWG
DATE: 6/26/2023

SHEET NO.
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OF 8