

**GENERAL NOTES:**

1. THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OR LICENSE AS SPECIFIED IN THE "NOTICE OF BIDDERS".
2. QUESTIONS REGARDING BIDDING PROCEDURES SHALL BE ADDRESSED TO:  
 SOLANO COMMUNITY COLLEGE DISTRICT  
 ATTN: MR. KARIM NASSAB  
 EMAIL: Karim.Nassab@solano.edu
3. NO ORAL INTERPRETATIONS OF BID DOCUMENTS WILL BE MADE BY DISTRICT STAFF. REQUESTS FOR INTERPRETATION SHALL BE MADE IN WRITING AT LEAST 7 WORKING DAYS BEFORE BID OPENING. INTERPRETATIONS BY THE DISTRICT WILL BE IN THE FORM OF AN ADDENDUM.
4. ALL CONSTRUCTION SHALL CONFORM TO THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION LATEST REVISED 2010 STANDARD PLANS AND SPECIFICATIONS DATED MAY 2006, THE LATEST EDITION OF THE CALIFORNIA MUTCD, THE CITY OF VACAVILLE STANDARD SPECIFICATIONS AND STANDARD DRAWINGS DATED SEPTEMBER 1990 AND AMENDMENTS THROUGH DATE OF BID OPENING AND THE PROJECT SPECIAL PROVISIONS.
5. THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
6. BEFORE EXCAVATING CALL U.S.A. UNDERGROUND SERVICE ALERT (800-642-2444) 48 HOURS BEFORE ALL PLANNED WORK OPERATIONS.
7. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND FIELD DIMENSIONS SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER PRIOR TO THE START OF ANY WORK.
8. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION STAKING. CONTRACTOR SHALL FURNISH AND PLACE CONSTRUCTION STAKES AND MARKS TO ESTABLISH THE LINE AND GRADES REQUIRED FOR COMPLETION OF WORK. STAKING MUST BE PERFORMED BY A LICENSED SURVEYOR OR REGISTERED CIVIL ENGINEER WITH THE AUTHORITY TO PERFORM LAND SURVEYING.

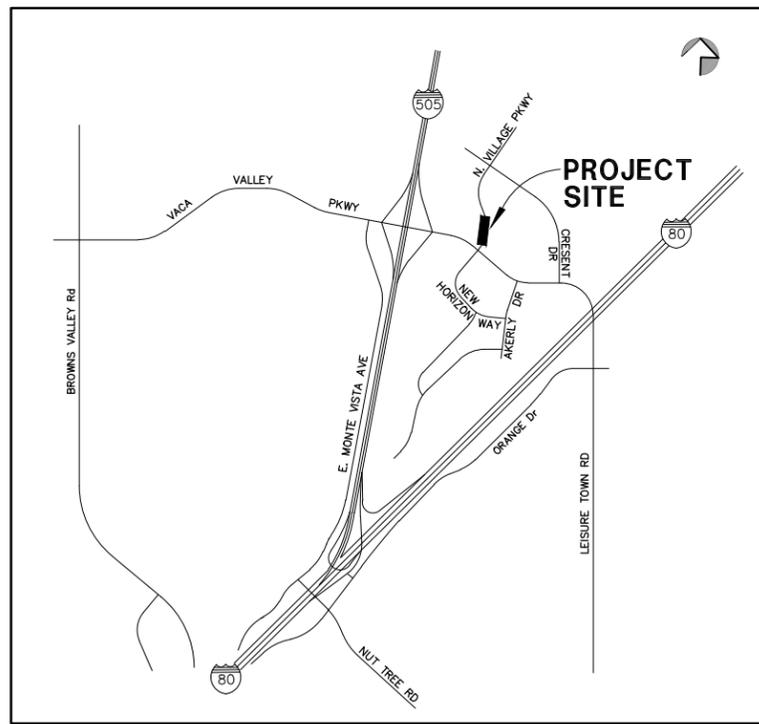
# CITY OF VACAVILLE DEPARTMENT OF PUBLIC WORKS

● VACAVILLE ● ● SOLANO COUNTY ● ● CALIFORNIA ●

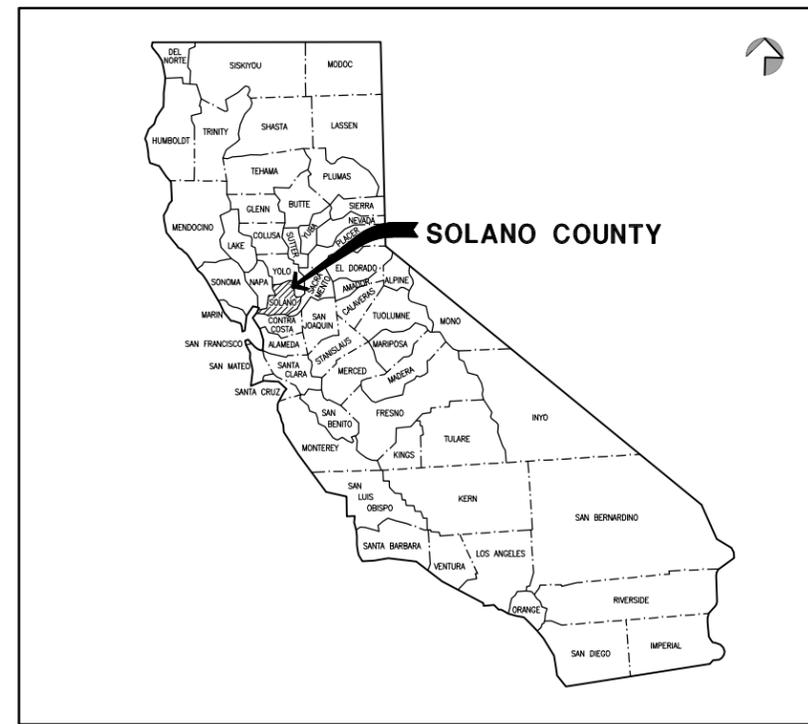
## PLANS FOR Vacaville Center Intersection Improvements Project FEBRUARY 2017

**SHEET INDEX:**

SHEET NO.	DESCRIPTION
1	(T) TITLE SHEET
2-5	(SSP) STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS
6	(D) DEMOLITION PLAN
7-8	(CD) CONSTRUCTION DETAILS
9	(SS) SIGNING AND STRIPING PLAN
10-12	(TS) TRAFFIC SIGNAL PLANS



VICINITY MAP



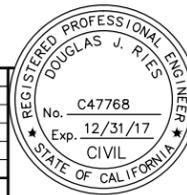
LOCATION MAP

**BID SET**  
Dated: 2-28-17



**Know what's below.  
Call before you dig.**  
Contractor shall call  
Underground Service Alert at  
811 two working days prior  
to excavation

NO.	DATE	DESCRIPTION	BY



APPROVED BY:  
SHAWN L. CUNNINGHAM, R.C.E. 51420  
DIRECTOR OF PUBLIC WORKS

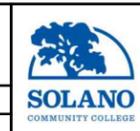
RECOMMENDED APPROVAL BY:  
TIMOTHY F. BURKE, R.C.E. 52989  
CITY ENGINEER

**omni means**  
ENGINEERS PLANNERS  
SACRAMENTO REGION  
943 Reserve Dr. #100  
Roseville, CA 95678  
(916) 782-8688  
also in:  
REDDING  
VISALIA  
WALNUT CREEK

DRAWN	By DTZ	Checked DJR
DESIGN	By DTZ	Checked DJR
QUANTITIES	By DTZ	Checked DJR

SCALE: HORIZONTAL: N.T.S. VERTICAL: ORIGINAL SCALE IS IN INCHES FOR REDUCED PLANS

**SOLANO COMMUNITY COLLEGE DISTRICT**



VACAVILLE CENTER INTERSECTION IMPROVEMENTS PROJECT				
TITLE SHEET				
				T-1
DWG File:	DISREGARD PRINTS BEARING EARLIER PLOT DATES	DATE PLOTTED	SHEET	OF
K:\PRJ\2056\2056T001.dwg		02/28/17	1	12

REFERENCE FILES:

2056T001.dwg 2/28/2017 1:12pm

CONSTRUCTION STANDARDS  
SECTION CS 4  
AGGREGATE BASE

**CS 4-01 GENERAL:** Furnishing, spreading and compacting aggregate base shall be conformance with Section 26, Aggregate Bases of the CALTRANS Standard Specifications except as amended by Section CS-4 Aggregate Base, of the City Standard Specifications and Standard Drawings.

**CS 4-02 ALLOWABLE MATERIALS:** Aggregate base material shall conform to Class 2 Aggregate Base, 3/4 inch maximum aggregate grading requirements, of the CALTRANS Standard Specifications

The Contractor shall provide to the Director of Public Works for review and approval an aggregate base submittal that substantiates that the material proposed to be delivered to the project complies with the Aggregate Grading and Quality Requirements specified in Section 26 of CALTRANS Standard Specifications for Class 2, 3/4 inch maximum aggregate grading.

CONSTRUCTION STANDARDS  
SECTION CS 5  
ASPHALT CONCRETE

**CS 5-01 GENERAL:** Furnishing, spreading and compacting Asphalt Concrete shall be in conformance with Section 39, "Asphalt Concrete" of the CALTRANS Standard Specifications except as amended by Section CS-5, "Asphalt Concrete", of the City Standard Specifications and Standard Drawings.

**CS 5-02 ALLOWABLE MATERIALS:**

**A.General:** Asphalt Concrete shall be Type A, Modified unless otherwise specified by the Project Plans or Special Provisions.

**B.Aggregate grading:** Aggregate used in Asphalt Concrete shall conform to the grading requirements of Section 39-2.02, "Aggregate," of the Standard Specifications, as modified herein.

1. Aggregate shall be a minimum of 85% machine aggregate with a minimum of two fractured faces.

2. Aggregate shall be 3/4 inch Maximum, Medium grading for streets with a Traffic Index greater than eight (8).

3. Aggregate shall be 1/2 inch Maximum, Medium grading for parking lots, bike paths, streets with a Traffic Index equal to or less than eight (8), and for overlays less than 2 1/4 inches in compacted thickness.

4. Aggregate shall be 3/8 inch Maximum grading for sports courts.

**C.Asphalt Binder:** Asphalt binder shall be Performance Grade 64-10 paving asphalt conforming to Section 92, "Asphalt," of the CALTRANS Standard Specifications unless otherwise specified on the Project Plans or Special Provisions.

**D.Air Voids:** The percentage of air voids in the mix design at the target asphalt binder content ("Target Oil Content") shall be between three (3) and five (5) percent.

**CS 5-03 MIX DESIGN:**

A.The Contractor shall provide the Asphalt Concrete mix design to the Director of Public Works at least ten (10) working days prior to start of work on the project for review and approval. The mix design must be approved prior to commencement of work.

The Asphalt Concrete mix design shall indicate the following:

1. Complete aggregate gradings with the percentage of aggregate passing each sieve size and that the aggregate is in conformance with paragraph CS5-02B.

2. Percent air voids for each percentage of asphalt binder used in the mix design determination.

3. Hveem Stability for each percentage of asphalt binder used in the mix design determination.

4. Compacted unit weight for each percentage of asphalt binder used in the mix design determination per CTM 308 "Method of Test Bulk Specific Gravity and Density of Bituminous Mixtures".

5. Laboratory Test Maximum Density at Target asphalt binder used in the mix design determination per CTM 375 "Determining the in Place Density and Relative Compaction of Asphalt Concrete".

6. Percent asphalt binder recommended for the Target Oil Content.

B.The Target Oil Content to be mixed with the aggregate for Asphalt Concrete shall be approved by the Director of Public Works based on data from California Test Method (CTM) 367, "Method for Determining Optimum Bitumen Content", provided by the Contractor.

**CS 5-04 PROPORTIONING AND MIX TOLERANCE:**

**A.Proportioning:** If the Contractor selects the batch mixing method, Asphalt Concrete shall be produced by the automatic batch mixing method as provided in Section 39-3.03A(2), "Automatic Proportioning," of the Standard Specifications.

**B.Mix Tolerance:** The maximum single point tolerance for binder content during placement of the Asphalt Concrete shall be plus or minus 0.45% from the Target Oil Content designated by the approved mix design unless the tolerance will create a mix that is outside the specifications for air voids and/or stability.

**CS 5-05SPREADING AND COMPACTING:**

**A.General:** Spreading and Compacting shall conform to Section 39-6 "Spreading and Compacting of the CALTRANS Standard Specifications except as amended herein. Asphalt Concrete shall be placed only when the atmospheric temperature is above 50 degrees F. Asphalt Concrete shall be spread at a mix temperature of not less than 260 degrees F. When placing Asphalt Concrete, large aggregate that migrates to the surface during any handwork shall be returned to the paver box, rather than scattered over the surface of the mat.

**B. Asphalt thickness less than 0.15 foot in thickness or widths less than 5 feet:** Asphalt Concrete placed in layers less than 0.15-foot in compacted thickness or widths of less than five (5) feet shall be spread and compacted with the equipment and by the methods specified in Section 39 of the CALTRANS Standard Specifications.

**C. Asphalt thickness of 0.15 foot in thickness and widths of 5 feet and greater:** Asphalt Concrete placed in layers of 0.15-foot and greater in compacted thickness and widths of five (5) feet and greater shall be spread and compacted with the equipment and by the methods specified in said Section 39, except as amended as follows:

1. The entire contents of Section 39-5.02, "Compacting Equipment," of the CALTRANS Standard Specifications are amended to read:

"39-5.02 Compacting Equipment - The Contractor shall furnish a sufficient number of rollers to obtain the compaction specified and surface finish required by these Specifications. Each roller shall have a separate operator. All rolling equipment shall be self-propelled and reversible. All rollers shall be equipped with pads and water systems, which prevent sticking of asphalt mixtures to the pneumatic or steel-tired wheels. A parting agent, which will not damage the asphalt mixture, as determined by the Inspector, may be used to aid in preventing the sticking of the mixture to the wheels. Other equipment, approved by the Inspector in accordance with CTM 113, "Method for Evaluating the Capabilities of Asphalt Concrete Compactors", may be substituted for 3-wheel or tandem rollers when used as specified in Section 39-6.03, "Compacting."

2. The entire contents of Section 39-6.03, "Compacting," of the CALTRANS Standard Specifications, is amended to read:

"39-6.03 Compacting - A pass shall be one movement of a roller in either direction. A coverage shall be as many passes as are necessary to cover the entire width being paved. Overlap between passes during any coverage, made to ensure compaction without displacement of material in accordance with industry accepted rolling practice, shall be considered to be part of the coverage being made and not part of a subsequent coverage. Each coverage shall be completed before subsequent coverage is started.

Rolling shall commence at the lower edge and shall progress toward the highest portion, except that when compacting layers which exceed 0.25-foot in compacted thickness, and if directed by the Inspector, rolling shall commence at the center and shall progress outward.

Rolling shall be performed so that cracking, shoving, or displacement is avoided.

Initial breakdown rolling shall commence as soon as practical following the spreading of the Asphalt Concrete.

Finish rolling or final compaction shall be completed while the temperature of the mixture is at or above 150° F. A vibratory roller may be used as the finish roller provided that it meets the requirements for a finish roller and is operated with the vibratory unit turned off.

Asphalt Concrete shall be finished to the lines, grades, and cross section shown on the Project Plans.

Asphalt Concrete shall be compacted to not less than 95.0 percent for a single test and not less than an average in place density of 96.0 percent relative compaction of the Laboratory Test Maximum Density as determined by, CTM 375 except as modified by these specifications.

In-place density of the Asphalt Concrete will be based on test results from a nuclear gauge and core samples taken in accordance with CTM 375, "Determining the in Place Density and Relative Compaction of Asphalt Concrete Pavement" except as modified below. The Inspector will determine when core sample testing shall be completed.

The materials testing laboratory will obtain random samples of the hot mix asphalt (HMA) material from behind the paving machine in accordance with CTM 125, "Methods for Sampling Highway Materials and Products in Roadway Structural Sections", to determine the Laboratory Test Maximum Density of the HMA mixture in accordance with CTM 308.

Asphalt Concrete compaction shall be accepted based upon passing tests taken from the nuclear gauge. In the event that the nuclear gauge testing presents failing results, then core samples will be the determination for the in place density and acceptance or rejection of the compaction.

When core testing is to be performed to determine the relative compaction after nuclear gauge testing has not produced passing tests, the materials testing laboratory will obtain four 4" diameter core specimens (or four 6" diameter core specimens) for determination of relative density of the completed pavement. The four cores shall represent each 500 ton lot in lieu of the sample frequency requirements specified in CTM 375.

Upon completion of the rolling operations, if requested by the Contractor and accepted by the Inspector, the Asphalt Concrete shall be cooled by applying water. Applying water shall conform to the provisions in Section 17, "Watering of the CALTRANS Standard Specifications".

The completed surfacing shall be thoroughly compacted, smooth and free from ruts, humps, depressions or irregularities. Any ridges, indentations or other objectionable marks left in the surface of the Asphalt Concrete by blading or other equipment shall be eliminated by rolling or other means approved by the Inspector. The use of any equipment that leaves ridges, indentations or other objectionable marks in the Asphalt Concrete shall be discontinued, and acceptable equipment shall be furnished by the Contractor.

When a straightedge 12 feet long is laid on the finished surface and parallel with the center line, the surface shall not vary more than 0.01-foot from the lower edge of the straightedge. The transverse slope of the finished surface shall be uniform to a degree such that no depressions greater than 0.02-foot are present when tested with a straightedge 12 feet long laid in a direction transverse to the center line and extending from edge to edge of a 12-foot traffic lane.

Pavement within 50 feet of an approach slab, or within 50 feet of a structure when no approach slab exists shall conform to the smoothness tolerances specified in Section 51-1.17, "Finishing Bridge Decks", of the CALTRANS Standard Specifications."

**CS 5-06 EXISTING PAVEMENT:**

A.Cut lines made on existing pavement, both longitudinally and transversely, for the placing of new structural section shall be straight and smooth.

B.Edge grinding (Cold Planing) shall be required where existing asphalt is to be overlaid. The edge grind shall match the depth of the Asphalt Concrete overlay along the length of the gutter lip and abutting pavement where the Asphalt Concrete pavement is proposed to conform to the existing pavement.

C.The surface edges that abut the proposed Asphalt Concrete shall be clean and free of dirt and dust prior to placing a tack coat. Asphalt emulsion shall be used as a tack coat or paint binder on new pavement that is to receive a second lift which is not placed within 24 hours of the first lift, or which has been exposed to traffic or other sources of contaminants, or on existing pavements that are to receive an Asphalt Concrete overlay, and also along exposed edges of abutting pavement and concrete curbs and gutters. A tack coat may also be required between subsequent layers of Asphalt Concrete placed by the contractor when ordered by the Director of Public Works. Asphalt emulsion shall conform to Section 92, "Asphalts", of the CALTRANS Standard Specifications.

D.Existing pavements to be overlaid with Asphalt Concrete shall include the installation of pavement reinforcing fabric in accordance with Section CS 7, "Geotextile Fabrics", of the City Standard Specifications.

**CS 5-07 MISCELLANEOUS PAVING REQUIREMENTS:**

A.The Contractor shall schedule paving operations such that at the end of each work shift, each layer of Asphalt Concrete is placed on all contiguous lanes and shoulders of a traveled way to be opened to public traffic.

B.At the end of each work shift, the distance between the ends of the layers of Asphalt Concrete on adjacent lanes shall not be greater than 10 feet nor less than five (5) feet. A drop-off of more than 0.15-foot will not be allowed at any time between adjacent lanes open to public traffic.

C.Additional Asphalt Concrete shall be placed along the transverse edge at the end of each lane and along the exposed longitudinal edges between adjacent lanes, hand raked, and compacted to form temporary conforms. Kraft paper, or other approved bond breaker, may be placed under the conform tapers to facilitate the removal of the taper when paving operations resume.

D.Additional Asphalt Concrete surfacing material shall be placed along the edge of the surfacing at private drives, hand raked, if necessary, and compacted to form smooth tapered conforms.

**CS 5-08 GRADING TOLERANCE:**

A.If the finished surface of the Asphalt Concrete does not meet the required surface tolerances, as specified in Section CS 5-05D, "Compacting", of the City Standard Specifications, the Contractor shall at its own expense, bring the pavement surface within tolerance by one of the following methods: The Inspector shall determine which method the Contractor is required to perform.

**1. Method A**

a. The Contractor shall Cold Plane the asphalt pavement to a minimum depth of 0.15 feet from specified finish surface (lateral limits shall be from edge of Asphalt Concrete to edge of Asphalt Concrete; longitudinal limits shall extend a minimum of 50 feet, starting from the outer edge of the tolerance area and extending outward, and as directed by the Inspector). All grindings shall be removed and disposed of in accordance with Section 7-1.13, "Disposal of Material Outside the Highway Right-of-Way," of the CALTRANS Standard Specifications.

b. The Contractor shall apply tack coat and place an overlay of Asphalt Concrete in accordance with the requirements of the City Standard Specifications.

c. The area to which paint binder has been applied shall be closed to public traffic. Care shall be taken to avoid tracking binder material onto existing pavement surfaces beyond the limits of construction.

**2. Method B**

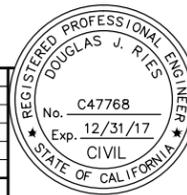
a. The Contractor shall groove and grind the Asphalt Concrete pavement in conformance with Section 42, "Groove and Grind Pavement", of the CALTRANS Standard Specifications.

b. The Contractor shall furnish and apply a fog seal on the pavement after the Inspector approves the groove and grind work. The fog seal shall conform to Section 37, "Bituminous Seals" of the CALTRANS Standard Specifications. The Inspector shall approve the grade of asphaltic emulsion to be used in the fog seal and the limits of installation.

c. The area to which the fog seal has been applied shall be closed to public traffic. Care shall be taken to avoid tracking the fog seal material onto existing pavement surfaces beyond the limits of construction.

REFERENCE FILES:

NO.	DATE	DESCRIPTION	BY



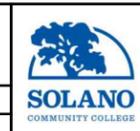
APPROVED BY:  
SHAWN L. CUNNINGHAM, R.C.E. 51420  
DIRECTOR OF PUBLIC WORKS

RECOMMENDED APPROVAL BY:  
TIMOTHY F. BURKE, R.C.E. 52989  
CITY ENGINEER



DRAWN	By DTZ	Checked DJR
DESIGN	By DTZ	Checked DJR
QUANTITIES	By DTZ	Checked DJR

SCALE: HORIZONTAL: N/A VERTICAL:  
ORIGINAL SCALE IS IN INCHES FOR REDUCED PLANS



**VACAVILLE CENTER INTERSECTION IMPROVEMENTS PROJECT**  
CITY STANDARD SPECIFICATIONS  
SSP-1

DWG File: K:\PRJ\2056\2056C002.dwg  
DISREGARD PRINTS BEARING EARLIER PLOT DATES → DATE PLOTTED: 02/28/17 SHEET: 2 OF 12

**BID SET**  
Dated: 2-28-17

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**SPECIAL PROVISIONS**

**THE CONTRACTOR SHALL CONFORM TO THE 2006 CALTRANS STANDARD SPECIFICATIONS, THE LATEST 2010 CALTRANS STANDARD PLANS, THE LATEST CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD), THE PROJECT PLANS AND THESE SPECIAL PROVISIONS.**

**SECTION 10 - CONSTRUCTION DETAILS**

**10-1.01 COOPERATION**

The Contractor's attention is directed to Sections 7-1.14, "Cooperation," and 8-1.10, "Utility and Non-Highway Facilities," of the Caltrans Standard Specifications, and these Special Provisions.UCSICON

Contractor must coordinate his work with various utility companies and outside forces that are required for the installation, programming and turn-on support for various electrical equipment specified in these Special Provisions that are involved with this Project and schedule his work to minimize construction delays and conflicts.

**10-1.02 TRAFFIC CONTROL SYSTEM**

The Contractor's attention is directed to Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications, and the provisions under "Maintaining Traffic" elsewhere in these Special Provisions.

When lane closures or sidewalk closures are required on City streets, Contractor shall submit lane closure/traffic control plans to the Engineer to review in advance of such closure. The City shall have a minimum of two working days to review and approve/reject the Plans. In the case that the Plans are rejected, a new two working day review period shall commence for each resubmittal. The Contractor shall not start lane closure work until he has received written approval of said plan. Street closures will not be allowed and all lanes of traffic must be open in each direction for every street affected by the Contractor's work, unless such lane closure plan has been approved by the Engineer.

The traffic control plan shall address traffic handling during lowering and raising of the various manholes and boxes. The provisions in this section will not relieve the Contractor from the responsibility to provide such additional devices or take such measures as may be necessary to comply with the provisions in Section 7-1.09, "Public Safety," of the Standard Specifications.

During traffic striping operations and pavement marker placement using bituminous adhesive, traffic shall be controlled, at the option of the Contractor, with either stationary or moving type lane closures. During all other operations, traffic shall be controlled with stationary type lane closures. The Contractor's attention is directed to the provisions in Section 84-1.04, "Protection From Damage," and Section 85-1.06, "Placement," of the Standard Specifications.

If any component in the traffic control system is displaced, or ceases to operate or function as specified, (from any cause, during the progress of the work) the Contractor shall immediately repair the component to its original condition or replace the component and shall restore the component to its original location.

**10-1.03 MAINTAINING TRAFFIC**

The Contractor's attention is directed to Sections 7-1.08, "Public Convenience," 7-1.09, "Public Safety," and 12, "Construction Area Traffic Control Devices," of the Standard Specifications. Nothing in these Special Provisions shall be construed as relieving the Contractor from the responsibilities specified in Section 7-1.09 of the Standard Specifications.

The minimum size specified for Type II flashing arrow signs in the table following the second paragraph of Section 12-3.03, "Flashing Arrow Signs," of the Standard Specifications is amended to read "36 inches by 72 inches".

The second and third paragraphs of Section 12-3.10, "Traffic Cones," of the Standard Specifications are amended to read:

*During the hours of darkness, traffic cones shall be affixed with reflective cone sleeves. The reflective sheeting of sleeves on the traffic cones shall be visible at 1,000 feet at night under illumination of legal high beam headlights, by persons with vision of or corrected to 20/20.*

Reflective cone sleeves shall conform to the following:

- 1. Removable flexible reflective cone sleeves shall be fabricated from the reflective sheeting specified in the Special Provisions, have a minimum height of 13 inches and shall be placed a maximum of 3 inches from the top of the cone. The sleeves shall not be in place during daylight hours.
2. Permanently affixed semitransparent reflective cone sleeves shall be fabricated from the semitransparent reflective sheeting specified in the Special Provisions, have a minimum height of 13 inches, and shall be placed a maximum of 3 inches from the top of the cone. Traffic cones with semitransparent reflective cone sleeves may be used during daylight hours.
3. Permanently affixed double band reflective cone sleeves shall have 2 white reflective bands. The top band shall be 6 inches in height, placed a maximum of 4 inches from the top of the cone. The lower band shall be 4 inches in height, placed 2 inches below the bottom of the top band. Traffic cones with double band reflective cone sleeves may be used during daylight hours.

The type of reflective cone sleeve used shall be at the option of the Contractor. Only one type of reflective cone sleeve shall be used on the project.

Lane closures shall conform to the provisions in the section of these Special Provisions entitled "Traffic Control System."

Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders, including any section closed to public traffic.

The Contractor shall notify local authorities of his intent to begin work at least five (5) days before work is begun. The Contractor shall cooperate with local authorities relative to handling traffic through the area and shall make his own arrangements relative to keeping the working area clear of parked vehicles.

Whenever vehicles or equipment are parked on the shoulder within six (6) feet of a traffic lane, the shoulder area shall be closed.

Lane closures shall be limited to the hours of 8:00 AM to 4:00 PM Monday through Friday excluding designated legal holidays. Requests for deviation from this plan must be submitted to the Engineer in writing and approved before being placed in the field.

**10-1.04 OBSTRUCTIONS**

The Contractor's attention is directed to Sections 8-1.10, "Utility and Non-Highway Facilities," and 15, "Existing Highway Facilities," of the Caltrans Standard Specifications and these Special Provisions, and these Special Provisions.

The Contractor's attention is directed to the existence of certain underground facilities that may require special precautions to be taken by the Contractor to protect the health, safety and welfare of workmen and of the public. Facilities requiring special precautions include, but are not limited to: conductors of petroleum products, oxygen, chlorine, and toxic or flammable gases; natural gas in pipelines greater than 6 inches in diameter or pipelines operating at pressures greater than 60 psi gauge; underground electric supply system conductors or cables, with potential to ground of more than 300 volts, either directly buried or in duct or conduit which do not have concentric grounded conductors or other effectively grounded metal shields or sheaths.

The Contractor's attention is directed to the existence of:

- 1. Underground utilities existing within the project limits including, but not limited to, electrical, gas, storm drainage, sanitary sewer and water lines.
2. Underground traffic signal conduits, traffic loops and signal interconnect cables
3. Solano Irrigation District pipelines located within and adjacent to the Project site.

The Contractor shall notify the Engineer and the appropriate regional notification center for operators of subsurface installations at least 2 working days, but not more than 14 calendar days, prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire or other structure. Regional notification centers include but are not limited to the following:

Table with 2 columns: Notification Center, Telephone Number. Row 1: Underground Service Alert-Northern California (USA), 1-800-642-2444

**10-1.05 SALVAGE EXISTING STREET LIGHTING**

Construction of improvements will require the removal of existing street lighting as shown on the Plans. Removal of existing street lighting shall conform to the provisions in Section 15, "Existing Highway Facilities," of the Caltrans Standard Specifications, these

Special Provisions, and the Project Plans.

Removal of existing street lighting shall include complete removal of the existing street light foundation and street light box. The existing excavations shall be backfilled with native material generated from the Project and compacted to 85% relative compaction.

Contractor shall salvage all existing street lighting equipment to be removed, as shown on the Project Plans. Equipment to be salvaged includes, but is not limited to streetlight standards, mast arms and lighting fixtures. Removal shall not damage the streetlight standards, mast arms and lighting fixtures.

The Contractor shall be required to supply all equipment necessary for loading, transporting and unloading the salvaged streetlight standards, mast arms and lighting fixtures to the City's Corporation Yard. Equipment to be salvaged shall be delivered to the City Corporation Yard located at 1001 Allison Drive, Vacaville CA. The Contractor shall provide the Engineer at least two working days prior to the delivery of any equipment.

Street lights shall not be removed until their use is no longer required. The Contractor shall notify the Engineer three working days before removal of existing street lighting.

Material to be removed (and not salvaged) under this section of the Special Provisions shall become the property of the Contractor and disposed of at the Contractor's expense outside of the limits of work as provided in Section 7-1.13, "Disposal of Material Outside the Highway Right Of Way," of the Caltrans Standard Specifications.

**10-1.06 REMOVE ROADSIDE SIGN**

Construction of the project will require removal of existing roadside signs at the locations shown on the Project Plans or in conflict with proposed improvements. New signs shall be reinstated in conformance with the details indicated on the Project Plans and Section 10-1.38, Roadside Signs".

Removal of roadside signs shall include complete removal of the existing foundation, sign and post.

Sign panels to be removed shall be salvaged and delivered to the City's Corporation Yard at 1001 Allison Drive. All other material removed under this section of the special provisions shall become the property of the Contractor and disposed of at the Contractor's expense outside of the limits of work as provided in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way", of the Standard Specifications.

**10-1.07 REMOVE PAVEMENT DELINEATION AND PAVEMENT MARKINGS**

Existing pavement delineation (stripes and markers) and pavement markings shown to be removed on the plans shall be removed by either sandblasting or by grinding.

The Contractor shall provide a Lead Compliance Plan in accordance with Title 8, California Code of Regulations, Section 1532.1, "Lead". Before submission to the Engineer, the Lead Compliance Plan shall be approved by an Industrial Hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene. The Plan shall be submitted to the Engineer at least seven (7) days prior to beginning removal of yellow thermoplastic.

Immediately following the removal of existing stripes, markers and markings, the Contractor shall clean and sweep roadways and on-site paved areas to eliminate all materials attributed to or involved with removal operations. All materials shall be removed from the roadway prior to the end of each working day or as directed by the Engineer. The Contractor shall not use water to flush down streets in place of street sweeping.

Where sandblasting or grinding is used for the removal of traffic stripes or pavement markings for removal of objectionable material, and such removal operation is being performed within ten (10) feet of a lane occupied by public traffic, the residue including dust shall be removed immediately after grinding or contact between the sand and the surface being treated. Such removal shall be by a vacuum attachment operating concurrently with the sandblasting operation, or by method approved by the Engineer.

Nothing in these Special Provisions shall relieve the Contractor from his responsibilities as provided in Section 7-1.09, "Public Safety," of the Caltrans Standard Specifications.

**10-1.08 TEMPORARY PAVEMENT DELINEATION**

Temporary pavement delineation shall be furnished, placed, maintained, and removed in accordance with the provisions in Section 12-3.01, "General," of the Caltrans Standard Specifications and these Special Provisions. Nothing in these Special Provisions shall be construed as to reduce the minimum standards specified in the latest California MUTCD or as relieving the Contractor from his responsibility, as provided in Section 7-1.09, "Public Safety," of the Standard Specifications.

Whenever the work causes obliteration of pavement delineation, temporary or permanent pavement delineation shall be in place prior to opening the traveled way to public traffic, unless otherwise approved by the Engineer. Lane line and centerline pavement delineation shall be provided at all times for traveled ways open to public traffic. In addition, crosswalks, stop bars/limit lines, pavement legends, arrows, and other markings designated by the Engineer, shall be in place prior to opening the roadway to public traffic.

All work necessary to establish satisfactory lines for temporary pavement delineation shall be performed by the Contractor. Surfaces on which temporary pavement delineation is to be applied shall be cleaned of all dirt and loose material, and shall be dry when the pavement delineation is applied. Temporary pavement delineation shall not be applied over existing pavement delineation or other temporary pavement delineation.

Temporary pavement delineation shall be maintained until replaced with permanent pavement delineation. Temporary pavement delineation shall be removed when, as determined by the Engineer, the temporary pavement delineation conflicts with the permanent pavement delineation or with a new traffic pattern for the area and is no longer required for the direction of public traffic. When temporary pavement delineation is required to be removed, all lines and marks used to establish the alignment of the temporary pavement delineation shall be removed.

Temporary pavement delineation shall consist of temporary reflective raised pavement markers placed on lane lines and centerlines at longitudinal intervals of not more than 24 feet apart, or 12 feet apart on radii, and reflective tape to establish obliterated pavement markings including, but not limited to, crosswalks, stop bars, pavement legends, and turn arrows. Temporary reflective raised pavement markers and temporary reflective tape shall be the same color as the lane line, centerline, or pavement marking the markers/tape replace.

Temporary stop bars and crosswalks shall be marked in one coat of traffic paint and supplemented with raised temporary markers placed every two (2) feet. The painted temporary stop bars and crosswalks shall be placed at their final location such that the permanent thermoplastic marking completely cover the temporary painted markings.

Temporary reflective raised pavement marker shall be, at the option of the Contractor, one of the materials listed in the Caltrans Authorized Material List.

Temporary reflective raised pavement markers shall be placed in accordance with the manufacturer's instructions. Temporary reflective raised pavement markers shall be cemented to the surfacing with the adhesive recommended by the manufacturer, except epoxy adhesive shall not be used to place temporary reflective raised pavement markers in areas where removal of the markers will be required.

Temporary pavement delineation shall be used for a maximum of fourteen (14) days on streets/lanes opened to public traffic. Where the final layer of surfacing is in place, the permanent pavement delineation shall be placed within fourteen (14) days after opening the lanes to public traffic.

When the Contractor's operations are such that temporary delineation will be in use on streets/lanes opened to public traffic for longer than the fourteen (14) days, the Contractor shall provide, at his/her expense, prior to the end of fourteen (14) days, additional pavement delineation. The additional temporary pavement delineation to be provided shall be equivalent to the pattern shown for permanent pavement delineation, as determined by the Engineer.

**10-1.09 THERMOPLASTIC PAVEMENT DELINEATION AND PAVEMENT MARKINGS**

Thermoplastic traffic stripes and pavement markings shall conform to the provisions in Section 84-1, "General," and 84-2, "Thermoplastic Traffic Stripes and Pavement Markings," of the Caltrans Standard Specifications and these Special Provisions.

The first paragraph of Section 84-2.02, "Materials", is amended to read:

*The thermoplastic material shall conform to State Specification PTH-02HYDRO or PTH-02ALKYD. Glass beads to be applied to the surface of the molten thermoplastic material shall conform to the requirements of State Specification 8010-004 (Type II).*

The seventh paragraph of Section 84-2.04, "Application," is amended to read:

*The thermoplastic material shall be applied by extrusion methods in a single uniform layer.*

Traffic stripes and pavement markings shall be thermoplastic, unless noted otherwise on the Project Plans. Pavement markings shall be placed at the locations indicated on the Project Plans and where described in these Special Provisions. Thermoplastic material for traffic stripes and pavement markings shall be applied at a minimum thickness of 0.070 inch.

Unless otherwise noted on the plans, all crosswalks for all legs of the intersection, as designated by the Project Plans shall receive new markings, even if only one existing leg in the intersection is disturbed. Prior to the replacement of additional crosswalk, markings to be replaced shall be removed in accordance with the Section titled, "Remove Pavement Delineation and Pavement Markings," of these Special Provisions.

Adjacent existing markings which do not coincide with new markings shall be removed. Removal of such markings shall be done the same day the proposed striping is installed. Removal of existing stripes and/or markings, where necessary, shall be as specified in the Section titled, "Remove Pavement Delineation and Pavement Markings," of these Special Provisions.

The Contractor shall notify the City a minimum of two working days in advance of the layout and cat-tracking of the proposed improvements. The Contractor shall notify the City Traffic Engineer Staff when a portion or all of the proposed striping/pavement markings have been laid out and ready for inspection. The City shall have a minimum of two working days to review and approve/reject the cat-tracking after the notification. A new two working day review period shall commence after each notification. Stop limit lines shall be installed a minimum of four (4) feet behind the prolongation of the curb faces of the intersecting street or before the accessible ramp, if one exists.

**10-1.10 PAVEMENT MARKERS**

Pavement Markers, reflective and non-reflective, shall be furnished and installed at the locations shown on the Project Plans and shall be in conformance with the Standard Plans and Section 85, "Pavement Markers," of the Caltrans Standard Specifications except as amended herein.

When bituminous adhesive is used for pavement marker placement, traffic control during placement operations shall conform to the requirements of the Section titled, "Traffic Control System," of these Special Provisions.

A blue raised retroreflective, bidirectional pavement marker shall be installed two (2) feet off the street centerline at each fire hydrant, on the fire hydrant side of the roadway.

The Contractor shall notify the Inspector a minimum of two working days prior to the day of layout and cat tracking of the proposed striping and pavement markings. The Contractor shall be responsible for layout and cat tracking of the proposed striping and pavement markings and shall notify the City Traffic Engineer Staff when a portion or all of the proposed striping/pavement markings have been laid out and ready for inspection. The City shall have a minimum of two working days to review and approve/reject the cat-tracking after the notification. A new two working day review period shall commence after each notification.

**10-1.11 ROADSIDE SIGNS**

Roadside signs shown on the Project Plans to be installed, shall be furnished and installed in accordance with Section 56,"Signs," of the Caltrans Standard Specifications, and these Special Provisions.

Roadside signs up to 30"x30" shown to be installed on a 2"x2", 12 ga. Square perforated galvanized steel tubing with breakaway post and base, and bottom of the sign shall be mounted a minimum of 7 feet above adjacent sidewalk or shoulder, unless otherwise noted on the Project Plans. Galvanized steel or aluminum caps are required on the top of the tubings.

All traffic signs shall be 0.080in thick aluminum. All regulatory signs shall have High Intensity Prismatic Reflective Sheeting with applied Protective Overlay Graffiti Film and are in accordance with the latest CA MUTCD. All other signs that do not have white background, procured to guide, warn or regulate traffic shall have retroreflective sheeting American Society for Testing and Materials D4956-13(ASTM) Type XI on the entire sign that include but not limited to background, borders, numerals, symbols, arrows, etc. and have applied Protective Overlay Graffiti Film. All new warning sign panels shall have a fluorescent yellow background.

Where shown on the Project Plans, certain signs may be fastened on streetlight poles as shown in the Project Plans, the bottom of the sign shall be mounted a minimum of 7 feet above the top of grade of adjacent sidewalk or shoulder. Signs shall be fastened to poles with appropriate band brackets.

Concrete footings for the roadside signs shall conform to the provisions in the section titled, "Minor Concrete," of these Special Provisions.

**10-1.12 MINOR CONCRETE**

Minor concrete shall include curb, gutter, sidewalk, accessible ramps, retaining curb, valley gutters, and median curbs and shall conform to the provisions in Section 73, "Concrete Curbs and Sidewalks," and Section 90-10, "Minor Concrete," of the Caltrans Standard Specifications, and these Special Provisions.

The reinforcement specified in Minor Concrete shall conform to Section 52, "Reinforcement," of the Caltrans Standard Specifications and shall be Grade 60.

The cement content for minor concrete shall be a minimum of 6 sacks of cement per cubic yard of concrete.

Coarse aggregate material shall conform to the grading requirements for (1" x No. 4) primary aggregate nominal size.

Where new concrete is to conform to existing concrete, the existing concrete shall be cut to a true line, at an existing score mark or deep joint, to the full depth of the existing concrete section with a power driven abrasive saw. The existing concrete shall be drilled to accept 9-inch long #4 rebar dowels installed every two feet. The dowels shall be embedded a minimum of 3 inches and maximum of 4 1/2 inches into the existing concrete.

Deep joints and score marks shall conform to the following requirements:

- 1. Deep joints shall be a minimum of 1 inch deep.
2. Score marks shall be 1/4 inch deep.
3. Deep joints and score marks for curb, gutter, sidewalk, driveways, and accessible ramps shall conform to the City Standard Drawings.
4. Deep joints for median curbs shall be installed a minimum of 1-inch deep through each face and the top of the curb evenly spaced at no more than 10 foot intervals.
5. Deep joints and score marks for curb, gutter, sidewalk, driveways, and accessible ramps shall conform to the Project Plans.
6. Deep joints for median curbs shall be installed a minimum of 1-inch deep through each face and the top of the curb evenly spaced at no more than 10 foot intervals.
7. Deep joints for concrete Maintenance Roads and all other concrete flat work shall conform to the following:
a. Transverse and longitudinal deep joints shall be evenly spaced at not less than 5-foot and no more than 10-foot intervals.
b. Score marks shall not be made unless otherwise required by the Project Plans.

The letter "S" shall be stamped over each sanitary sewer service and the letter "W" shall similarly be stamped over each water service. The letters shall be placed at the top of curb on vertical curb and on the top of the roll of the low profile curb.

The Contractor shall protect concrete in accordance with Section 90-8, "Protecting Concrete" of the Caltrans Standard Specifications and these Special Provisions. Additionally, the Contractor shall protect the surface of the concrete against all damage and markings both from pedestrian and other traffic. Appropriate traffic control barriers and signing shall be placed at the proper locations to protect the concrete and to maintain the safety for pedestrians and other traffic. Contractor's attention is directed to Section 10-1.16, "Traffic Control System" of these Special Provisions for additional information.

The Contractor shall test the gutter for water conveyance as soon as the surface of the concrete has sufficiently set to permit the introduction of a shallow stream of water without causing damage to the gutter surface. All flow line irregularities shall be corrected before the concrete has set.

It is the sole responsibility of the Contractor to ensure that the grading, forming and final finish for placement of concrete will result in improvements that comply with the slope and dimension requirements of these Special Provisions and the Project Plans. At his/her own expense, the Contractor shall remove and replace all concrete improvements that are not in conformance with these requirements.

The Contractor shall adjust to grade any utility boxes within minor concrete areas to the grade of the finished concrete surface. The Contractor shall also be responsible for cleaning and clearing concrete mortar from all utility boxes so that they are fully accessible upon completion of the installation.

**10-1.13 UNDERGROUND SYSTEMS**

**10-1.13A GENERAL**

All underground systems shall conform to the provisions in Section 70, "Miscellaneous Facilities," of the Caltrans Standard Specifications and these Special Provisions.

Work associated with underground systems shall include, but not be limited to, saw cutting of existing street asphalt, curb and gutter, sidewalks, etc. and placing the underground facilities in accordance with the Standard Specifications, the Project Plans, and these Special Provisions.

The Contractor's attention is directed to the Project Plans for the depth of existing asphalt concrete.

**10-1.13B CONFINED SPACES**

The Contractor is warned that the worksite may involve locations that exhibit confined space conditions such as trenches, pipelines, manholes, basins, and vaults. The Contractor shall comply with California Code of Regulations, Title 8, Division 1, Chap 4, Sub-Chap 7, Article 108, Section 5158 and any other applicable sections of the Code. At a minimum, all employees involved with a confined space entry shall be trained for such entry and shall be operating under specific written operating procedures prepared by the Contractor for such entry. The space shall be emptied, flushed, purged and protected from re-entry of hazardous substances. The air within the confined space shall be continually monitored and tested for contamination or oxygen deficiency/enrichment. Ventilation shall be provided if required to preserve a safe atmosphere. Provisions shall be made for ready entry into and exit from the confined space. Where appropriate, a retrieval system shall be in place and manned. Communication shall be maintained with employees entering the confined space. Ongoing surveillance of the surrounding area and operations shall be maintained by an employee dedicated to that specific task during confined space operations.

**SECTION 11 - ELECTRICAL**

**11-1.01 TRAFFIC SIGNAL SYSTEM**

**11-1.01A DESCRIPTION**

Installation of traffic signals, lighting, mast arms, and pole mounted signs and removal of existing traffic signal components, as shown on the Project Plans, shall conform to the provisions in Section 86, "Signals, Lighting and Electrical Systems," of the Caltrans Standard Specifications, Caltrans Standard Plans, and these Special Provisions.

All equipment shown on the Project Plans, specified in the Standard Specifications and these Special Provisions, shall be furnished by the Contractor.

The Contractor shall arrange and coordinate with the City Traffic Engineer and certified personnels that are required for various equipment turn-on support, as specified in these Special Provisions, to be present and ensure functionality of the Traffic Signal System at the time equipment is activated.

Traffic Signal work is to be performed at the following locations:

- 1. Intersections of North Village Parkway/Solano College and Vaca Valley Parkway/North Village Parkway/New Horizons Way.

**11-1.01B INSPECTION**

For installation of traffic signal systems the following items of work and equipment locations shall be specifically inspected by the Engineer. Contractor shall provide notification to the City a minimum of two working days prior to the actual inspection.

- 1. Layout and location of traffic signal pole foundations.

The Contractor shall be responsible to have the face of curb (including medians and islands) laid out horizontally and vertically and have utilities located prior to requesting inspection of pole foundations locations by the Engineer. Layout by the Contractor shall include providing stakes identifying the exact elevations of the final improvements and marking in paint - from curb return to curb return - the face of curb, back of walk and accessible ramp/crosswalk/ limit line. If pole foundations are located within an island, the entire island shall be marked in paint.

Prior to placing concrete, location, orientation, reinforcing steel, and bolts for the traffic signal pole foundations shall be verified by the Engineer. Contractor shall have lane lines temporarily cat tracked prior to inspection.

- 2. Layout and location of traffic signal controller pad.

Prior to placing concrete, size, location, orientation, reinforcing steel, and bolts for controller/service pad shall be verified by the Engineer.

- 3. Prior to aiming the video detection camera and programming the video detection zones, location, size and alignment shall be verified by the Engineer. Contractor shall have lane lines temporarily cat tracked and the leading edge of the detections zones marked on the pavement prior to this inspection.

- 4. Prior to backfilling trenches, grouting pull boxes, or otherwise concealing electrical conduit, size and connections of the conduit shall be verified by the Engineer.

- 5. Prior to activation of the system, size, type, location, splices, connections and general workmanship of all electrical conductors, controller cabinet wiring, and service pedestal wiring shall be inspected by the Engineer.

- 6. Prior to sawcutting loop detectors, location, size and alignment shall be verified by the Engineer. Contractor shall have lane lines temporarily cat tracked prior to this inspection.

**11-1.01C EXCAVATING AND BACKFILLING**

Excavating and backfilling shall conform to the provisions in Section 86-2.01, "Excavating and Backfilling" of the Caltrans Standard Specifications, the Project Plans and these Special Provisions.

Paragraph 2 of Section 86-2.01, "Excavating and Backfilling", of the Caltrans Standard Specifications shall be amended to read:

*"Unless otherwise permitted in writing by the Engineer, all surplus excavated material shall become the property of the Contractor and shall be removed and disposed of within the same day as the excavation, outside the highway right of way in accordance with the provisions in Section 7-1.13, "Disposal of Material Outside of the Highway Right of Way," of the Standard Specifications."*

**11-1.01D REMOVING EXISTING IMPROVEMENTS**

Paragraphs 2 and 3 of Section 86-2.02, "Removing and Replacing Improvement", of the Caltrans Standard Specifications shall be amended to read:

"Whenever a section of existing concrete sidewalk, curb, gutter, or driveway is broken, damaged, or removed for construction of new improvements, the entire section shall be removed to the nearest score or deep joint, and the concrete reconstructed in accordance with the provisions for Minor Concrete provided elsewhere in these Special Provisions.

When removing existing concrete or asphalt adjacent to concrete or asphalt to remain, the surface to concrete or asphalt to remain, the surface shall be sawcut to a depth sufficient to cut through the surface completely and along a neat, straight line prior to removal."

Material to be removed (and not salvaged) under this section of the Special Provisions shall become the property of the Contractor, and shall be disposed of outside of the limits of work as provided in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Caltrans Standard Specifications.

**11-1.01E FOUNDATIONS**

Traffic signal pole foundations shall conform to Section 86-2.03, "Foundations" of the Caltrans Standard Specifications, the Standard Plans, these Special Provisions, and the Project Plans.

Portland cement concrete for traffic signal pole foundations shall conform to the provisions of Section 10-1.32, "Minor Concrete" of these Special Provisions.

The traffic signal controller and electrical service shall be incorporated into one concrete pad in accordance with Standard Plans ES-3C and the Project Plans.

The base plate of type 1-B standards shall be flush with the finished grade. No sleeve nuts shall be used on Type 1-B standard.

The Contractor's attention is directed to Section 10-1.09, "Obstructions" of these Special Provisions. In areas of potential underground utility conflict where auguring may cause damage, hand digging of pole foundations shall be required.

**11-1.01F CONDUIT**

Electrical conduit shall conform to Section 86-2.05, "Conduit," of the Caltrans Standard Specifications, these Special Provisions, and the Project Plans.

**Material:**

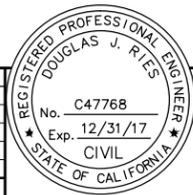
Section 86-2.05A, "Material," of the Caltrans Standard Specifications shall be amended to read:

BID SET
Dated: 2-28-17

811 logo with text: Know what's below. Call before you dig. Contractor shall call Underground Service Alert at 811 two working days prior to excavation

REFERENCE FILES:

Table with 4 columns: NO., DATE, DESCRIPTION, BY. Header row: REVISIONS



APPROVED BY: SHAWN L. CUNNINGHAM, R.C.E. 51240 DIRECTOR OF PUBLIC WORKS

RECOMMENDED APPROVAL BY: TIMOTHY F. BURKE, R.C.E. 52989 CITY ENGINEER



Table with 2 columns: DRAWN, DESIGN, QUANTITIES. Rows: DTZ, DTZ

"Conduit and conduit fittings shall be UL or ETL listed and shall conform to the following:

- A. Type 1. Hot-dip galvanized rigid steel conduit conforming to the requirements in UL Publication UL 6 for Rigid Metallic Conduit. The zinc coating will be tested in accordance with ASTM Designation: A239.
B. Type 3. Rigid non-metallic conduit conforming to the requirements in the UL Standard for Rigid Non-Metallic Conduit in UL Publication UL 651. Rigid non-metallic conduit shall be installed at underground locations only."

All conduit shown on the Project Plans shall be rigid, non-metallic Schedule 40 PVC, except as otherwise shown on the Project Plans or required by Section 86-2.05B, "Use," of the Caltrans Standard Specifications.

When a standard coupling cannot be used for coupling metal type conduit, a UL listed threaded union coupling, as specified in the third paragraph in Section 86-2.05C, "Installation," of the Caltrans Standard Specifications, a concrete-tight split coupling, or a concrete-tight set screw coupling may be used.

Trenching and Installation of Conduit:

Trench excavation, bedding and backfill shall be in accordance with "Underground Systems" of these Special Provisions and the details shown on the Project Plans.

Conduit shown on the Project Plans to be placed in the existing asphalt concrete roadway or where shown on the Project Plans to be located behind curbs may be installed in the street where appropriate, within 3 feet of and parallel to the face of curb, may be installed by Rockwheel Trenching.

When rigid non-metallic conduit is placed in a trench (not in pavement or under portland cement concrete sidewalk), after the bedding material is placed and the conduit installed, the trench shall be backfilled with slurry cement backfill containing not less than 282 lbs. of Portland cement per cubic yard to not less than 4 inches above the conduit before additional backfill material is placed.

Conduit shall not be installed at the back of the sidewalk, unless otherwise specified by the Engineer.

After conductors have been installed, the ends of conduits terminating in pull boxes, service enclosures, and controller cabinets shall be sealed with an approved type of sealing compound.

Where 6 or more 3 inch conduits enter a No. 6 pull box, the conduits shall enter at an angle not greater than 45-degrees from the horizontal.

11-1.01G PULL BOXES

Pull boxes shall be installed in accordance with Section 86-2.06 "Pull Boxes," of the Caltrans Standard Specifications, these Special Provisions, Caltrans Standard Plan ES-8, and the Project Plans.

All new traffic signal pull boxes adjacent to traffic signal mast arm poles shall be reinforced concrete, and shall be No. 6. All other new pull boxes shall be No. 5, unless otherwise noted on the Project Plans. Grout shall not be placed in the bottom of pull boxes, unless otherwise noted on the Project Plans.

Pull box covers for street lights shall be marked "Street Lighting." Pull box covers for City owned traffic signals, including signal interconnect, shall be marked "Traffic Signal." Pull box covers for PG&E shall be marked "PG&E".

All traffic signal pull box covers shall be secured by brass hold-down bolts.

All signal interconnect pull boxes and pull boxes with 4 or more conduits entering it, shall be No. 6.

11-1.01H CONDUCTORS AND WIRING

Conductors and wiring shall conform to the provisions of Sections 86-2.08, "Conductors," and 86-2.09, "Wiring," of the Caltrans Standard Specifications, these Special Provisions, and the Project Plans.

Splices shall be insulated using "Method B," as described in Section 86-2.09E.

Conductors shall be pulled into conduits by hand. The use of winches or other power actuated pulling equipment shall not be permitted.

Multiple Circuit Conductors:

Paragraph one of Section 86-2.08B, "Multiple Circuit Conductors," of the Caltrans Standard Specifications shall be amended to read: "Conductors for multiple circuits shall be UL or ETL listed and rated for 600 volt operation. The insulation for No. 14 and larger conductors shall be Type THW polyvinyl chloride."

Splice Insulation:

Paragraph six of Section 86-2.09E, "Splice Insulation," shall be amended to read:

"For 600 volt maximum circuits, the Contractor shall use the following splice insulation method: Insulate using a minimum of 2 thickness' of electrical insulating pad, composed of a laminate of 0.085 inch thickness of electrical grade polyvinyl chloride and 0.125 inch thickness of butyl splicing compound with removable line. Pads shall be applied to the splice in accordance with the manufacturer's recommendations. The applied pad shall be wrapped with polyvinyl chloride tape half lapped over the conductor insulation."

Wire nuts shall not be allowed on any splices.

Traffic Signal Interconnect Cable:

Traffic signal interconnect cable shall conform to the provisions of these Special Provisions and the Project Plans, and shall be installed and terminated in accordance with the manufacturers recommendations.

Traffic signal interconnect cable shall consist of No. 20-6 pairs of individual shielding, 300V, 60 degrees C. Conductors No. 20 Awg stranded tinned copper, insulation is 0.013" minimum color coded polypropylene individually shielded with aluminum/polyester foil and a No. 22 Awg stranded tinned copper wire incased in 0.040" minimum black high density polyethylene. Capacitance between conductors-30pf/ft between 1 conductor and balance of conductors connected to shield-55pf/ft. Suitable for traffic signal interconnect and data transmission.

Color Code:

- 1. Black paired with Red
2. Black paired with White
3. Black paired with Green
4. Black paired with Blue
5. Black paired with Yellow
6. Black paired with Brown

Application: Suitable for direct burial
Outdoor Uses
Signal interconnect and data transmission

Nom. O.D.: 0.450 inches
Approx. Weight: 112.0 lbs/100ft

Traffic signal interconnect cable shall not be spliced.

Pull boxes for interconnect cable shall be placed at 200 feet (maximum) intervals. There shall be a minimum of three (3) feet of slack in each pull box and six (6) feet at each controller cabinet.

11-1.01I SERVICE AND UPS SYSTEM

Electrical service shall be installed in accordance with Section 86-2.11, "Service," of the Caltrans Standard Specifications, these Special Provisions, and the Project Plans. The Contractor's attention is directed to the Section titled, "Cooperation" of these Special Provisions.

The Contractor shall furnish and install a Tesco 27/22 Battery Backup Special Combination Unit. (The unit shall be a Tesco padmount Type III- AF aluminum and painted Hi-Yo silver metered service enclosure 120/240 volt 1 phase 3 wire that includes the following:

- 100 AMP Meter Socket & Support Hardware
100/2 Circuit Breaker (Main Disconnect)
Surge Arrestor
30/1 Circuit Breaker (Street Lighting)
20/1 Circuit Breaker (Spare)
15/1 Circuit Breaker (IISNS)
20/1 Circuit Breaker (Sign)
50/1 Circuit Breaker (Signal)

- 15/1 Circuit Breaker (Controls)
2-35 AMP 1 Pole Lighting Contactors, 120V Coil Core Mortise Lock
Auto/Test Switch
Core Lock
LOT-Nameplates
Tesco Model 2000VA Battery Backup System with ambient temperature enclosure aluminum painted Hi-Yo silver complete with six (6) 24 volt batteries with genset, ATS, Core Lock and full LED operation.

SERVICE AND UPS SYSTEM

The following is a general description of the Service and UPS System:

Electrical Service:

Type III-AF Metered Service Enclosure 120/240 Volt 1 Phase 3 Wire To Include:

100 Amp Meter Socket and Support Hardware

100/2 Main Disconnect

Surge Arrestor

30/1 Circuit Breaker (Street Lighting)

20/1 Circuit Breaker (Spare)

15/1 Circuit Breaker (IISNS)

20/1 Circuit Breaker (Sign)

50/1 Circuit Breaker (Signal)

15/1 Circuit Breaker (Controls)

2-35 Amp 2 Pole Lighting Contactors, 120V Coil

Core Mortise Lock

Test Switch

Type III service equipment enclosure is aluminum

All overlapping exterior seams and doors meet the requirements for Type 3R enclosures specified in the NEMA Enclosure Standards.

The bottom of the lowest circuit breaker will be a minimum of 24 inches above the bottom of the service equipment enclosure.

UPS System General Specifications:

Input / Output Voltage (VAC) nominal 120

Input / Output Frequency (Hz) nominal 60

Input Current (A) 12.0

Input voltage Variation -23% to +17%

Output Power (VA) 2000

Active Output Power (watts) 1500

Voltage Waveform sine

Battery Run Time

Power required 1000 watts for 3 hours

Transfer time (ms) 2-4

Operating Temperature -35C to +55 C

Lightning / Surge Protection:

Passes ANSI/IEEE C.62.41/C.62.45 Cat A & B

Standard Features:

Generator Hookup to service cabinet

Transient voltage protection from damaging line spikes

Low harmonic AC sine wave output

Noise suppression, FCC Class A

Multiple mounting configurations

UL / CSA listed

Power Conditioning:

Intelligent Boost Operation increases output voltage 12% if input voltage falls between 17% to -23% of nominal.

Communication & Alarms:

Form C dry relay contacts close on low battery

RS-232 status port

LED indicator for online, on battery, low battery, overload & fault

The neutral conductor shall run from the service equipment enclosure to the controller cabinet without splicing to any other neutral conductor.

PG&E will provide service at the N. Village Parkway/Vacaville Center Drive intersection. Contractor shall furnish and install a 3-inch conduit run with pull tape, in accordance with PG&E's requirements, from the No. 2 pull box in front of the new Tesco 27/22 Battery Backup Special Combination Unit as shown on the Project Plans to the PG&E service location. All work involved for the 3-inch conduit run that include but not limited to the width and depth of trench, cover, bedding material, clearance, and all conduit risers/sweeps/bends etc., shall conform to PG&E requirements. Contractor shall coordinate with PG&E to pull conductors, make all final connections and schedule PG&E inspection for complete and operating system. If any work is covered up without approval or consent of PG&E and the Engineer, it must be uncovered for examination and satisfactorily reconstructed at the Contractor's expense, in compliance with the Project Plans and Specifications.

11-1.01J CONTROLLER ASSEMBLIES

Controller assemblies shall be installed in conformance with Section 86-3, "Controller Assemblies," of the Caltrans Standard Specifications, the Standard Plans, these Special Provisions, and the Project Plans.

The Contractor shall furnish and install a Safetran Hybrid 332 Rack Mounted (RM) Aluminum Cabinet (STCAB2885) as shown on the Project Plans, at the N. Village Parkway/Vacaville Center Drive intersection that includes all of the following manufacturer factory installed components.

- One (1) Standard 19" EIA Rack
Two (2) Corbin Door Locks with Keys
One (1) Drawer Mod Assy
One (1) Dual Fan Panel Assy
One (1) LED Cab Light Mod Front
One (1) LED Cab Light Mod Rear
Sixteen (16) Position Output Loadbay w/Programming Blocks
One (1) Power Distribution Assy

- One (1) Plug N Go Modular Power Bus
One (1) SDLC bus Assy w/ 7 SDLC Cables
One (1) 16ch 8-Position Detector Rack Assy Wired for Preemption - Detector Rack wired for 24VDC on pin B for preempt slots
One (1) Power Auxiliary Panel w/ACP340 Surge
One (1) 16 Channel Detector Loop Interface Panel
One (1) TS2 Rack Mount Cabinet Power Supply
One (1) MMU-16LEIP Rack Mount MMU - MMU Program Card Jumpers Factory Installed with the Proposed Intersection's Phasing Configurations
One (1) TrippLite RS-1215-RA Rackmount Power Strip
One (1) Interconnect Punch Down Block
One (1) Swingable Aux Equipment Panel
One (1) EVP Green Harness Terminal Block
Six (6) Flash Transfer Relays
Two (2) Flashers
Three (3) Half-Width BIUs
Sixteen (16) Dual Indicating Loadswitches
Sixteen (16) Loop Detector Cards - 2 Channels
Two (2) Detector Rack to Autoscope Input Harness
One (1) Econolite Cobalt Rack Mount Controller (COBRM21120110000) with 7" Touch Screen, Cobalt Touch Software, AC Power Cord, Data Key Slot and SD Card Slot with Data Key
One (1) Econolite Cobalt Wifi Adaptor Kit

In addition to the above-referenced items, the Contractor shall furnish and install the following network devices into the Safetran Hybrid 332 Rack Mounted (RM) Aluminum Cabinet. The Contractor shall coordinate and shall schedule and provide programming of the devices to be done on site by an authorized Actelis Network distributor's certified technician to enable its complete functionality with the City's existing Network System.

- One (1) Actelis Networks ML688 Ethernet Access Device (EAD)(ML688)
One (1) DSL Octal Cable 10ft (DSL Cable-8)
One (1) Actelis Networks Power Supply for ML50 & ML600 series switches, AC-DC Adapter (ML50/600-PS)
One (1) Actelis Networks Rack Mount Kit, 19" Rack for ML50 & 600 Series Switches (ML50/600 Rack Chassis)

In order for the construction of the new North Village Parkway and Solano College signalized intersection to connect to the City's existing traffic signal network conditions, the Contractor shall furnish and install the following to facilitate the continual network traffic between the intersections. The Contractor shall coordinate and shall schedule and provide programming of the devices to be done on site by an authorized Actelis Network distributor's certified technician to enable its full functionality with the City's existing Network System.

Vaca Valley Parkway and North Village Parkway/New Horizons Way Intersection:

- One (1) Actellis Networks ML688 Ethernet Access Device (EAD)
One (1) DSL Octal Cable (DSL Cable-8)
One (1) Actelis Networks Power Supply for ML50 & ML600 Series Switches (ML50/600-PS)
One (1) Actelis Networks Rack Mount Kit, 19" Rack for ML50 & 600 Series Switches (ML50/600 Rack)

The Contractor shall construct a 4 inch oversized controller cabinet foundation pad per Revised Standard Plan RSP ES-3C dated 4/15/16 to accommodate the controller cabinet and service cabinet as shown on the Project Plans. Controller cabinet and service cabinet shall be installed on 12-inch concrete pedestals above the concrete slab. The Contractor is responsible for installing the controller and service cabinets on said foundation, furnishing and installing anchor bolts, and making all field wiring connections to the terminal blocks in the controller cabinet. Installation of the pull boxes and conduits adjacent to the cabinet foundation will require sidewalk removal and shall conform to City Standard Drawing 3-10.

The Contractor shall coordinate and shall schedule and provide controller cabinet turn-on on site field support to be done by an authorized Safetran distributor's certified technician to enable its full functionality with the City's existing Network System. The said technician is required to be present during the signal activation.

11-1.01K VEHICLE SIGNAL FACES AND SIGNAL HEADS

Vehicle signal faces shall be installed in conformance with Section 86-4, "Traffic Signal Faces and Fittings," of the Caltrans Standard Specifications, and these Special Provisions and Project Plans.

All vehicle signal section lenses shall be glass.

All red, yellow, and green arrow and solid signal indications shall be 12" LED fixtures with non-screw type bases. They shall be fully compliant to the latest versions of the Institute of Transportation Engineer (ITE) specifications and shall carry a minimum of fifteen (15) years warranty from date of delivery. All red and yellow solid and arrow LED fixtures shall have tinted lens. All green solid and arrow LED fixtures shall have clear lens.

The manufacturer's name, serial number, manufactured date (minimum week and year), and other necessary identification must be permanently marked on the backside of the LED traffic signal lamp unit. All lamps manufactured must be affixed with an Intertek ETL Verified label or label from other third-party laboratory with NRTL status.

The first paragraph of Section 86-4.01B, "Signal Sections", of the Caltrans Standard Specifications shall be amended to read:

"Each signal section housing shall be either die-cast or permanent mold-cast aluminum conforming to ANSI Standard D-10.1."

Each signal section shall be provided with a full circle metal visor.

Backplates for signal heads shall be metal and lowered. Plastic backplates will not be accepted.

11-1.01L PEDESTRIAN SIGNAL FACES AND SIGNAL HEADS

Pedestrian signal faces shall conform to the provisions of Section 86-4.06, "Pedestrian Signal Faces," of the Standard Specifications, these Special Provisions, and the Project Plans.

Pedestrian signal heads shall be type GE GTI LED Pedestrian Signals, Model Number P57-CFF1-VLA.

Type SP-1-T pedestrian signal mountings shall have an upper and lower mounting bracket attached to the pedestrian signal housing in the same manner as that shown on the Standard Plans for a Type-SP-2-T mounting.

11-1.01M ACCESSIBLE PEDESTRIAN SIGNALS AND DETECTORS

Accessible pedestrian signals and detectors shall conform to Section 86 of the Standard Specifications, the latest CA MUTCD and these Special Provisions.

The Contractor shall furnish and install a Polara Engineering 2-Wire Accessible Pedestrian System in accordance with the manufacturer's recommendation for the N. Village Parkway/Vacaville Center Drive intersection. Equipment shall include the following:

- Six (6) Polara Navigator Push Button Station, 2-Wire, 9"x12" R10-3 HIP Retroreflective Sign, Braille, Special Voice Message, Yellow Housing with Ethernet/USB Port & Hardware (EN29VBI-V)
One (1) Polara Navigator Central Control Unit, 2-Wire with Ethernet & USB Ports. Includes Cabinet Cable Assembly and Field Wire Interface Board for Up to Sixteen (16) PPB Stations (Nav-CCU2EN)
Cabinet Control Hardware Kit with 12' cable (CCU2ZH-12)
One (1) Polara Navigator Hand-Held Wireless Infrared Configurator, Backlit LCD Menu-Driven Display, Membrane Keyboard, AA-Alkaline Batteries (Nav-EConfig)

The Contractor is responsible for the installation and programming of the Accessible Pedestrian Signals and Detectors at all signal pole locations and inside the controller cabinet as indicated on the Project Plans and in accordance with Manufacturer's recommendation to provide a fully functional system. Pedestrian push button posts shall conform to Section 86-02.04, "Standards, Steel Pedestals and Posts" of the Caltrans Standard Specifications and shall be constructed of a minimum 4-inch diameter standard pipe with pole caps.

11-1.01N VEHICLE DETECTORS

Installation of inductive loop detectors shall conform to the provisions in Section 86, "Electrical Systems", of the Standard Specifications, 2010 Caltrans Standard Plans, these Special Provisions and the Project Plans.

Inductive Loop Detectors:

The Contractor shall be responsible for laying out all detector loops as indicated on the Project Plans. Detector loops shall be centered within each lane. For installations that will serve lanes that are not parallel or concentric to existing lane line markings at the time of loop layout/installations, the Contractor shall accurately mark the future lane lines prior to pavement cutting. The Contractor shall notify the City Traffic Engineer to review the detector layout a minimum of two (2) working days prior to pavement cutting.

Loop wire shall be Type 2. Loop detector lead-in cable shall be Type B. Loop detectors shall be Type D and E and shall conform to the 2010 revised Caltrans Standard Plan RSP ES-5A and RSP ES-5B dated 4/15/16. Slot width shall be a maximum of 5/8 inch. Type D loop shall be installed with five (5) turns. For Type E circular detector loops, sides of the slot shall be vertical and the minimum radius of the slot entering and leaving the circular part of the loop shall be 1-1/2 inches. Pre-formed loop wire shall be stacked in the cuts and secured from floating. Loops shall be installed on the same day as which the loop slots are cut. This shall include placement of the loop conductor sealant. All loops shall be sealed with a hot-melt rubberized asphalt sealant. The depth of loop sealant above the top of the uppermost loop wire in the sawed slots shall be three (3) inches minimum at locations within five (5) feet from the edge of pavement or two (2) inches minimum of sealant coverage elsewhere. Splices shall be insulated by "Method B". Conductors shall be wrapped around projecting end of conduit in pull boxes. Cables shall be secured to the projecting end of conduit in pull boxes to prevent pulling of cables without removing the securing device.

11-1.01O VEHICLE PRE-EMPTION SYSTEM

Materials:

Contractor shall furnish and install the Emergency Vehicle Preemption and Transit Signal Priority System in conformance with these Special Provisions. The system equipment shall be "Opticom GPS System" manufactured by Global Traffic Technologies (GTT). The System includes the installation of the GPS and radio antenna on the traffic signal pole designated on the Project Plans, phase selector within the controller cabinet, and pre-emption cable connecting the equipment from the controller cabinet to the GPS radio unit. Installation shall be in accordance with these Special Provisions and manufacturer's instructions. Equipment shall include the following items:

- a) One (1) Model 764 Opticom 4-Channel MultiMode Phase Selectors
b) One (1) Model 3100 GPS Radio Unit (signal pole mount)
c) One (1) Model 768 Opticom Interface Panel for Model 760 Series Phase Selectors
d) Opticom Model 1070 GPS Installation Cable
e) Mounting hardware for one (1) Opticom Model 1010 GPS Radio Units (Nipples, 24" Risers, Terminal Compartments, Bolts, Washers and Nuts)

Installation:

The Contractor shall install the equipment in accordance with the manufacturer's recommendations, these Special Provisions and the Project Plans.

Conductors and wiring shall conform to the provisions of Sections 86-2.08, "Conductors," and 86-2.09, "Wiring," of the Standard Specifications, these Special Provisions, and the Project Plans.

The Contractor shall install Opticom Model 764 Multimode Phase Selector, Opticom Model 768 Auxiliary Interface Panel (AIP) and necessary connection wiring in the controller cabinet as shown in the Project Plans. The Contractor shall mount the new phase selector and interface panel in the controller cabinet and the preemption radio at location indicated on the Project Plans. The Contractor shall supply the harness and connect the new phase selector to the interface panel, pre-emption radio unit and the traffic signal controller as necessary for proper operation.

The Contractor shall route the radio/GPS cable from the radio mounting location as shown on the Plans to the traffic controller cabinet. The cable shall enter the radio/GPS unit through the nipple/pipe at the base of the unit that will be attached to a 24" riser. The Contractor shall side mount the riser with the radio/GPS unit into traffic signal pole in accordance with Revised Standard Plan RSP ES-4D dated 4/15/16. Top of the terminal compartment shall be fifteen inches below the top of the pole. The radio/GPS mounting shall be on the intersection side of the pole at 90 degrees to the luminaire mast arm. Connection between GPS radio unit and traffic signal pole shall be rain-tight/waterproof in a manner approved by the Engineer.

Pre-emption Opticom Model 1070 GPS cable shall be installed without splices in one length between the pre-emption detector and the phase selector equipment in the controller cabinet. The Contractor shall secure, terminate, and label the cable at each end and in every pull box. Pre-emption cable shall be installed with a minimum of 5 feet of slack in each pull box that the cable passes through. A minimum of 15 feet of slack is required for the pull box adjacent to the traffic signal controller cabinet. Conductors shall be pulled into conduits by hand. The use of winches or other power actuated pulling equipment shall not be permitted.

The Contractor shall label the emergency vehicle pre-emption channel and corresponding phases on the phase selector. The pre-emption channels and phases shall match the Project Plans.

The Contractor shall notify the City a minimum of two working days that the System is installed and ready to be programmed. Contractor shall coordinate with City staff to allow access to configure and program the newly installed System. City staff shall have a minimum of two working days to configure and program the new installed System and a minimum of five working days to test the system after programming before signal activation.

The Contractor shall notify the City a minimum of two working days that the System is installed and ready to be programmed. Contractor shall coordinate with City staff to allow access to configure and program the newly installed System. City staff shall have a minimum of two working days to configure and program the new installed System and a minimum of five working days to test the system after programming before signal activation.

The Contractor shall notify the City a minimum of two working days that the System is installed and ready to be programmed. Contractor shall coordinate with City staff to allow access to configure and program the newly installed System. City staff shall have a minimum of two working days to configure and program the new installed System and a minimum of five working days to test the system after programming before signal activation.

11-1.01P LED STREET LIGHTING SYSTEM

Luminaires shall consist of a "cobra head" shaped die cast aluminum housing with photoelectric control. Luminaires shall be installed on the luminaire arms in the proper orientation to produce the desired light pattern and shall be completely assembled and connected to the conductor. The operating voltage shall be 120 volts.

LED lamps shall be 120 volt, 72.72 watts and shall have an average rated life of 100,000 hours.

Street lighting systems shall be provided with a NEMA receptacle and photocell to allow photoelectric control.

The LED street light system shall be Cree BXSP-B-HT-2ME-B-40K-UL-SV-N-Q6.

11-1.01Q MAST ARM SIGNS

Mast arm signs shall conform to Section 56, "Signs", of the Standard Specifications, the Standard Plans, the Project Plans, and these Special Provisions. All signs, with the exception of white background signs, procured to guide, warn or to regulate traffic shall include retroreflective sheeting American Society for Testing and Materials D4956-13 (ASTM) Type XI.

Mast arm signs shall be attached to the mast arm of the traffic signal poles as shown on the Project Plans, unless otherwise noted. Mounting hardware for mast arm signs (clamps, safety chains, brackets, etc.) shall be as shown on the Standard Plans.

Regulatory signs shall be 0.080in thick aluminum, 36 inches high (unless otherwise noted on the Project Plans), with 3M High Intensity Prismatic (HIP) white, high-intensity reflective sheeting on one side, and with borders if required. Letters shall be in accordance with the Department of Transportation Specifications.

11-1.01R TRAFFIC SIGNAL POLES AND MAST ARMS

The Contractor shall furnish and install traffic signal poles and mast arms, including pole foundation bolts, in accordance with the 2006 Standard Specifications, the 2010 Standard Plans, the Project Plans, and these Special Provisions. The Contractor's attention is directed to "Inspections," of these Special Provisions for actual location of pole foundations.

Pedestrian push button posts shall conform to Section 86-02.04, "Standards, Steel Pedestals and Posts" of the Caltrans Standard Specifications and shall be constructed of a minimum 4-inch diameter standard pipe with pole caps.

Pedestrian push button posts shall conform to Section 86-02.04, "Standards, Steel Pedestals and Posts" of the Caltrans Standard Specifications and shall be constructed of a minimum 4-inch diameter standard pipe with pole caps.

11-1.01S STREET NAME SIGNS

Street Name Mast Arm Signs shall conform to Section 56, "Signs", of the Standard Specifications, the Standard Plans, the Project Plans, and these Special Provisions. All signs, with the exception of white background signs, procured to guide, warn or to regulate traffic shall include retroreflective sheeting American Society for Testing and Materials D4956-13 (ASTM) Type XI.



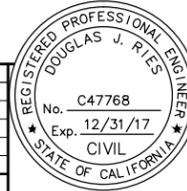
Know what's below. Call before you dig.

Contractor shall call Underground Service Alert at 811 two working days prior to excavation

BID SET
Dated: 2-28-17

REFERENCE FILES:

Table with 4 columns: NO., DATE, DESCRIPTION, BY. Contains revision information.



APPROVED BY: SHAWN L. CUNNINGHAM, R.C.E. 51420
DIRECTOR OF PUBLIC WORKS

RECOMMENDED APPROVAL BY: TIMOTHY F. BURKE, R.C.E. 52989
CITY ENGINEER



Table with columns: DRAWN, DESIGN, QUANTITIES, SCALE: HORIZONTAL: N/A, VERTICAL:

SOLANO COMMUNITY COLLEGE DISTRICT
0 1 2 3 4
ORIGINAL SCALE IS IN INCHES FOR REDUCED PLANS

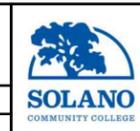


Table with columns: DWG File: K:\PRJ\2056\2056C002.dwg, DISREGARD PRINTS

Street name signs shall be furnished and installed by the Contractor performing the traffic signal installation at the locations shown on the Project Plans. Street name signs shall be attached to the mast arm of the traffic signal poles as shown on the Project Plans, unless otherwise noted.

Street name signs shall be Safeway SSGT (Safeway Sign Guide Tapered Sign) or approved equal with a substrate aluminum material that is 0.05" in thickness and with specified reflective sheeting on both sides without borders. The sign letters shall be White and background shall be Green. Formed letters shall be 8" high upper and 6" high lower case of the same reflectorized material. Font shall be FHWA Series E. Name message shall appear on both sides of each sign panel, unless otherwise noted on the Project Plans. Each sign shall be installed with Safeway mounting hardware EZB-1321 2-Stage Adjustable Bracket (13" to 21") with fasteners and EZB-8 Fixed (8") Bracket with fasteners or approved equal. The signs shall be 18" in height.

A stainless steel safety cable shall be used to secure the street name sign to the mast arm at a minimum of two (2) locations. The cable shall be threaded through the lower mounting assembly, underneath the 1/2 -inch stainless steel rod and looped over the signal mast arm. The cable shall be installed with 6 inches of slack.

**11-1.01T NUMBERING FOR ELECTRICAL EQUIPMENT**

The Contractor shall furnish and install PG&E numbers on the traffic signal poles as shown on the Project Plans and specified in these Special Provisions. Numbers shall be reflective white, self-adhesive decals, measuring 2 1/2" high by 2 1/4" wide, and shall be placed 9' above the pole base on the street side of the pole. The numbers to be used are indicated on the Project Plans.

Reflective numbers shall be applied to clean surface.

**11-1.01U TESTING**

The fourth paragraph in Section 86-2.14C, "Functional Testing," of the Caltrans Standard Specifications is amended to read:

*"The functional test for each new or modified system shall consist of not less than 7 days. If unsatisfactory performance of the system develops, the conditions shall be corrected and the test shall be repeated until 7 consecutive days of continuous operation is obtained."*

**11-1.01V TRAFFIC SIGNAL ACTIVATION**

Activation of the new traffic signals shall be the responsibility of the Contractor. The Contractor's electrical foreman shall be present at the time of activation of the traffic signal. City staff shall be notified a minimum of two (2) working days prior to the activation and must be present during that time.

The Contractor shall coordinate and schedule Safetran distributor's certified technician for turn-on on-site field support. The said technician is required to be present at the time of activation of the traffic signal.

Activation shall be limited to periods between the hours of 9:00a.m. and 3:00p.m., Tuesday through Thursday, excluding City Holidays, days before legal holidays, and/or during hours of peak traffic flow.

At least two working days before the scheduled activation, all testing shall be completed successfully, all defects and deficiencies corrected and all signs and pavement markings properly installed and approved.

All signals must remain covered until the day of the scheduled turn-on.

At some locations, the Engineer may require the traffic signal to be operated in flashing "ALL RED" for at least 24 hours before activation to normal operation.

**11-1.01W PHOTOELECTRIC CONTROLS**

Photoelectric controls shall conform to Section 86-6-07, "Photoelectric Controls," of the Caltrans Standard Specifications and these Special Provisions.

Photoelectric control shall be a Part 17 dual voltage photoelectric relay.

**11-1.01X COORDINATION WITH OTHERS**

The Contractor shall make all necessary arrangements with Pacific Gas & Electric for electrical service. Contractor shall call Underground Service Alert (USA) at 800-642-2444 a minimum of 48 hours before the start of work to have utilities (PG&E, television, telephone, and City water, sewer and storm drain) marked.

The Contractor shall coordinate work with various utilities and is responsible to adjust their schedule as needed to accommodate utility relocations and adjustments, including PG&E's work associated with the vault adjustment/replacement shown on plan sheets CD-1. This coordination and scheduling is considered part of the work and reflected in the Contractor's bid price.

**BID SET**  
Dated: 2-28-17

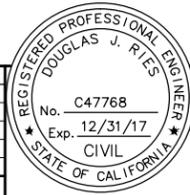


**Know what's below.  
Call before you dig.**

Contractor shall call Underground Service Alert at 811 two working days prior to excavation

REFERENCE FILES:

REVISIONS			
NO.	DATE	DESCRIPTION	BY



APPROVED BY:  
SHAWN L. CUNNINGHAM, R.C.E. 51420  
DIRECTOR OF PUBLIC WORKS

RECOMMENDED APPROVAL BY:  
TIMOTHY F. BURKE, R.C.E. 52989  
CITY ENGINEER

**omni means**  
ENGINEERS PLANNERS  
SACRAMENTO REGION  
943 Reserve Dr. #100  
Roseville, CA 95678  
(916) 792-8688  
also in:  
REDDING  
VISALIA  
WALNUT CREEK

DRAWN	By DTZ	Checked DJR
DESIGN	By DTZ	Checked DJR
QUANTITIES	By DTZ	Checked DJR
SCALE: HORIZONTAL: N/A	VERTICAL:	

**SOLANO COMMUNITY COLLEGE DISTRICT**

ORIGINAL SCALE IS IN INCHES FOR REDUCED PLANS



<b>VACAVILLE CENTER INTERSECTION IMPROVEMENTS PROJECT</b>			
<b>SPECIAL PROVISIONS FOR SIGNING, STRIPING AND TRAFFIC SIGNAL</b>			
			<b>SSP-4</b>
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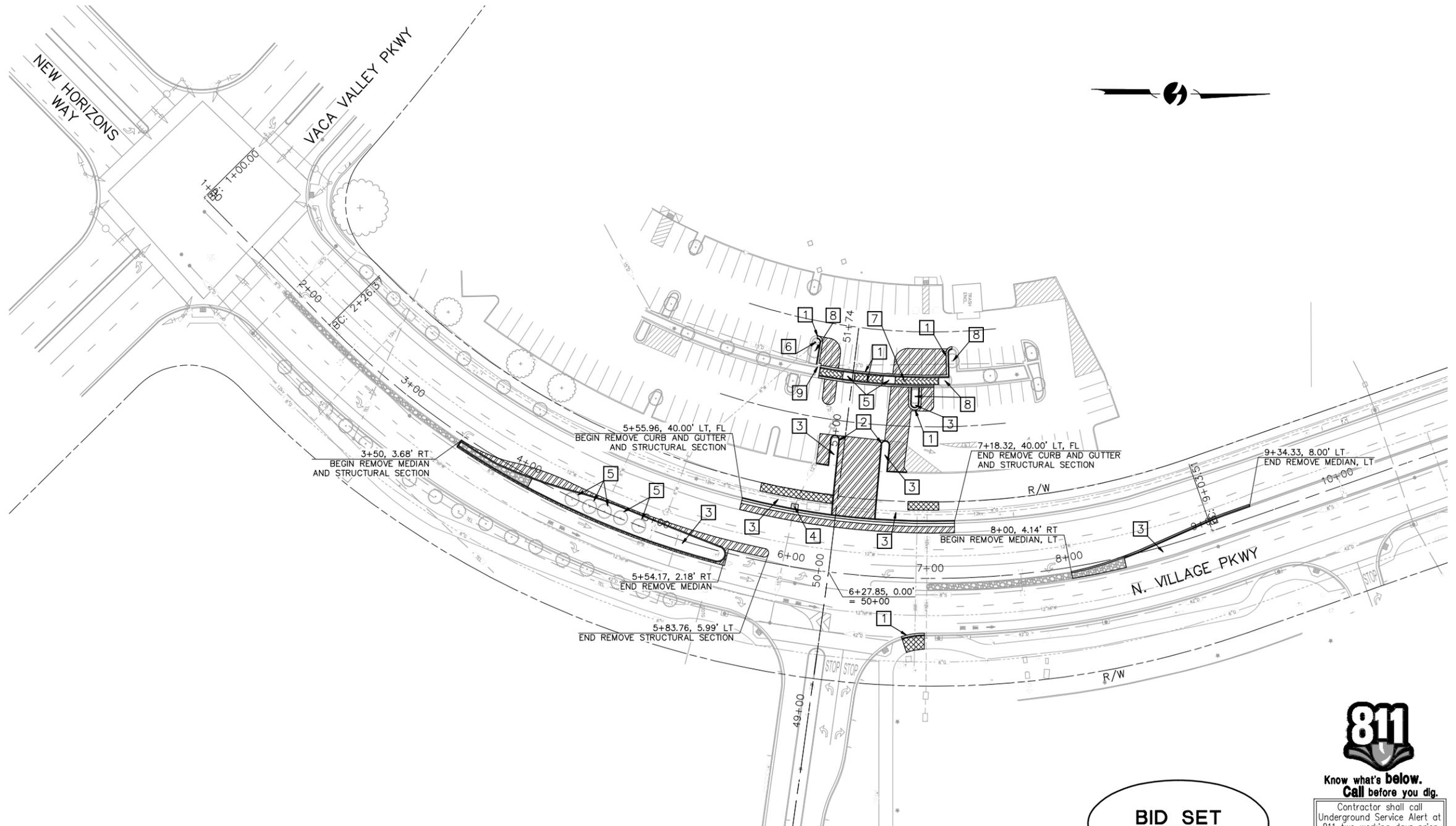
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**PROJECT NOTES (THIS SHEET ONLY):**

- 1 REMOVE EXISTING CURB AND GUTTER.
- 2 REMOVE EXISTING CURB.
- 3 REMOVE EXISTING LANDSCAPING, MODIFY EXISTING IRRIGATION AS NECESSARY.
- 4 REMOVE EXISTING DRAINAGE INLET.
- 5 REMOVE EXISTING TREE.
- 6 EXISTING FIRE HYDRANT TO REMAIN. PROTECT IN PLACE.
- 7 EXISTING SITE LIGHT TO REMAIN. PROTECT IN PLACE.
- 8 EXISTING TREE TO REMAIN. PROTECT IN PLACE.
- 9 EXISTING CURB INLET TO REMAIN. PROTECT IN PLACE.

**LEGEND**

-  REMOVE EXISTING ASPHALT CONCRETE FULL STRUCTURAL SECTION
-  REMOVE EXISTING PORTLAND CEMENT CONCRETE SIDEWALK
-  REMOVE EXISTING CONCRETE PAVERS.



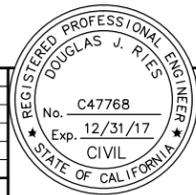
Contractor shall call Underground Service Alert at 811 two working days prior to excavation

**BID SET**  
Dated: 2-28-17

REFERENCE FILE: 2056DM001.dwg

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NO.	DATE	DESCRIPTION	BY



APPROVED BY:  
SHAWN L. CUNNINGHAM, R.C.E. 51420  
DIRECTOR OF PUBLIC WORKS

RECOMMENDED APPROVAL BY:  
TIMOTHY F. BURKE, R.C.E. 52989  
CITY ENGINEER



DRAWN By DTZ Checked DJR  
DESIGN By DTZ Checked DJR  
QUANTITIES By DTZ Checked DJR  
SCALE: HORIZONTAL: 1" = 40' VERTICAL:

**SOLANO COMMUNITY COLLEGE DISTRICT**



<b>VACAVILLE CENTER INTERSECTION IMPROVEMENTS PROJECT</b>			
<b>DEMOLITION PLAN</b>			
D-1			
DWG File: K:\PRJ\2056\2056DM001.dwg	DISREGARD PRINTS BEARING EARLIER PLOT DATES	DATE PLOTTED 02/28/17	SHEET OF 6 12

**PROJECT NOTES (THIS SHEET ONLY):**

- 1 CONSTRUCT ACCESSIBLE RAMP PER CITY STD DWG NO. 3-15C. INSTALL DETECTABLE WARNING SURFACE PER REVISED STATE STANDARD PLAN RSP A88A.
- 2 CONSTRUCT MEDIAN CURB AND COBBLE STONE MEDIAN TREATMENT. MATCH EXISTING COBBLE STONE MEDIAN TREATMENT.
- 3 INSTALL PEDESTRIAN BARRICADE PER CITY STD DWG NO. 3-17.
- 4 POTHOLE TO VERIFY EXACT LOCATION OF EXISTING UNDERGROUND PG&E ELECTRICAL AND GAS LINES. IF THERE IS A CONFLICT WITH THE PROPOSED STORM DRAIN LINE, COORDINATE WITH UTILITY COMPANY TO MOVE THEIR LINES AND/OR WITH THE CITY TO MOVE THE STORM DRAIN LINE, AS NEEDED. CONTACT PG&E 72 HOURS PRIOR TO POTHOLES NEAR THEIR FACILITIES SO THEY CAN BE ON-SITE.

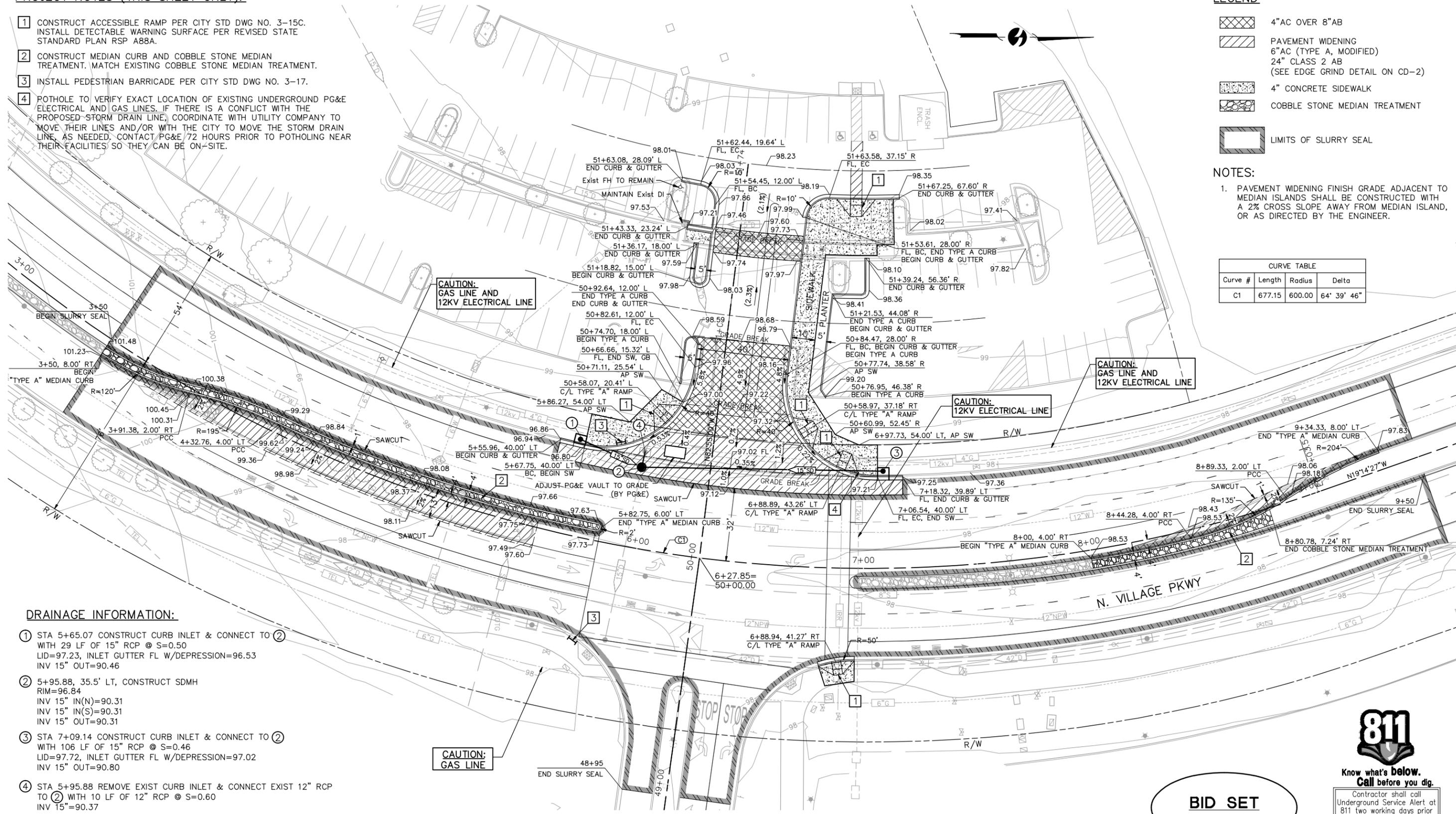
**LEGEND**

- 4" AC OVER 8" AB
- PAVEMENT WIDENING  
6" AC (TYPE A, MODIFIED)  
24" CLASS 2 AB  
(SEE EDGE GRIND DETAIL ON CD-2)
- 4" CONCRETE SIDEWALK
- COBBLE STONE MEDIAN TREATMENT
- LIMITS OF SLURRY SEAL

**NOTES:**

1. PAVEMENT WIDENING FINISH GRADE ADJACENT TO MEDIAN ISLANDS SHALL BE CONSTRUCTED WITH A 2% CROSS SLOPE AWAY FROM MEDIAN ISLAND, OR AS DIRECTED BY THE ENGINEER.

CURVE TABLE			
Curve #	Length	Radius	Delta
C1	677.15	600.00	64° 39' 46"



**DRAINAGE INFORMATION:**

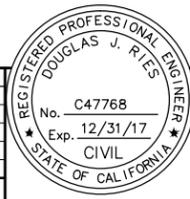
- 1 STA 5+65.07 CONSTRUCT CURB INLET & CONNECT TO 2 WITH 29 LF OF 15" RCP @ S=0.50  
LID=97.23, INLET GUTTER FL W/DEPRESSION=96.53  
INV 15" OUT=90.46
- 2 5+95.88, 35.5' LT, CONSTRUCT SDMH  
RIM=96.84  
INV 15" IN(N)=90.31  
INV 15" IN(S)=90.31  
INV 15" OUT=90.31
- 3 STA 7+09.14 CONSTRUCT CURB INLET & CONNECT TO 2 WITH 106 LF OF 15" RCP @ S=0.46  
LID=97.72, INLET GUTTER FL W/DEPRESSION=97.02  
INV 15" OUT=90.80
- 4 STA 5+95.88 REMOVE EXIST CURB INLET & CONNECT EXIST 12" RCP TO 2 WITH 10 LF OF 12" RCP @ S=0.60  
INV 15"=90.37

**BID SET**  
Dated: 2-28-17

**811**  
Know what's below.  
Call before you dig.  
Contractor shall call  
Underground Service Alert at  
811 two working days prior  
to excavation

REFERENCE FILES: 2056C001.dwg

NO.	DATE	DESCRIPTION	BY



APPROVED BY:  
SHAWN L. CUNNINGHAM, R.C.E. 51420  
DIRECTOR OF PUBLIC WORKS

RECOMMENDED APPROVAL BY:  
TIMOTHY F. BURKE, R.C.E. 52989  
CITY ENGINEER

**omni means**  
ENGINEERS PLANNERS  
SACRAMENTO REGION  
943 Reserve Dr. #100  
Roseville, CA 95678  
(916) 782-8688  
WALNUT CREEK

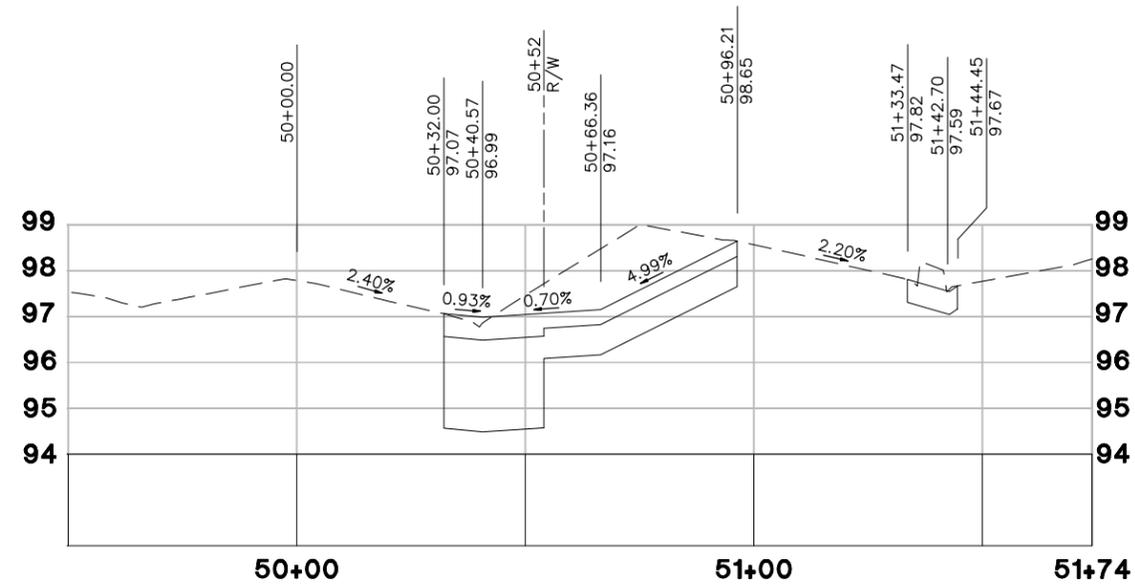
DRAWN By DTZ Checked DJR  
DESIGN By DTZ Checked DJR  
QUANTITIES By DTZ Checked DJR  
SCALE: HORIZONTAL: 1" = 20' VERTICAL:

**SOLANO COMMUNITY COLLEGE DISTRICT**

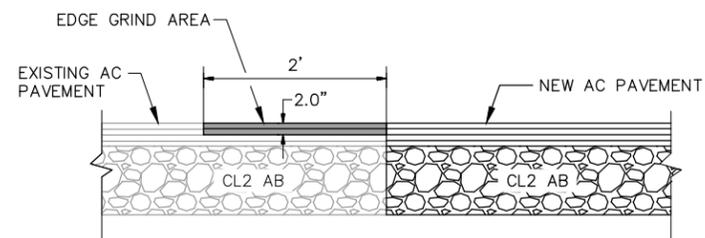


**VACAVILLE CENTER INTERSECTION IMPROVEMENTS PROJECT**  
CONSTRUCTION DETAILS  
CD-1  
DWG File: K:\PRJ\2056\2056C001.dwg  
DISREGARD PRINTS BEARING EARLIER PLOT DATES  
DATE PLOTTED: 02/28/17  
SHEET 7 OF 12

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DRIVEWAY PROFILE



EDGE GRIND DETAIL  
NOT TO SCALE

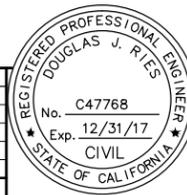
**BID SET**  
Dated: 2-28-17



Know what's below.  
Call before you dig.  
Contractor shall call  
Underground Service Alert at  
811 two working days prior  
to excavation

REFERENCE FILES:

NO.	DATE	DESCRIPTION	BY



APPROVED BY:  
SHAWN L. CUNNINGHAM, R.C.E. 51420  
DIRECTOR OF PUBLIC WORKS

RECOMMENDED APPROVAL BY:  
TIMOTHY F. BURKE, R.C.E. 52989  
CITY ENGINEER

**omni means**  
ENGINEERS PLANNERS  
SACRAMENTO REGION  
943 Reserve Dr. #100  
Roseville, CA 95678  
(916) 722-9688  
also in:  
REDDING  
VISALIA  
WALNUT CREEK

DRAWN By DTZ Checked DJR  
DESIGN By DTZ Checked DJR  
QUANTITIES By DTZ Checked DJR  
SCALE: HORIZONTAL: 1" = 20' VERTICAL:

SOLANO COMMUNITY COLLEGE DISTRICT



VACAVILLE CENTER INTERSECTION IMPROVEMENTS PROJECT  
CONSTRUCTION DETAILS  
CD-2  
DWG File: K:\PRJ\2056\2056C003.dwg  
DISREGARD PRINTS BEARING EARLIER PLOT DATES  
DATE PLOTTED: 02/28/17  
SHEET: 8 OF 12

2056C003.dwg 2/28/2017 1:20pm

**PROJECT NOTES (THIS SHEET ONLY):**

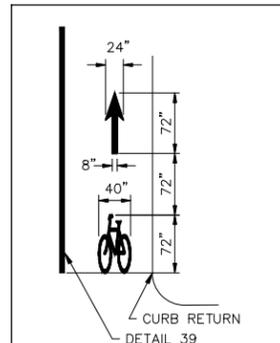
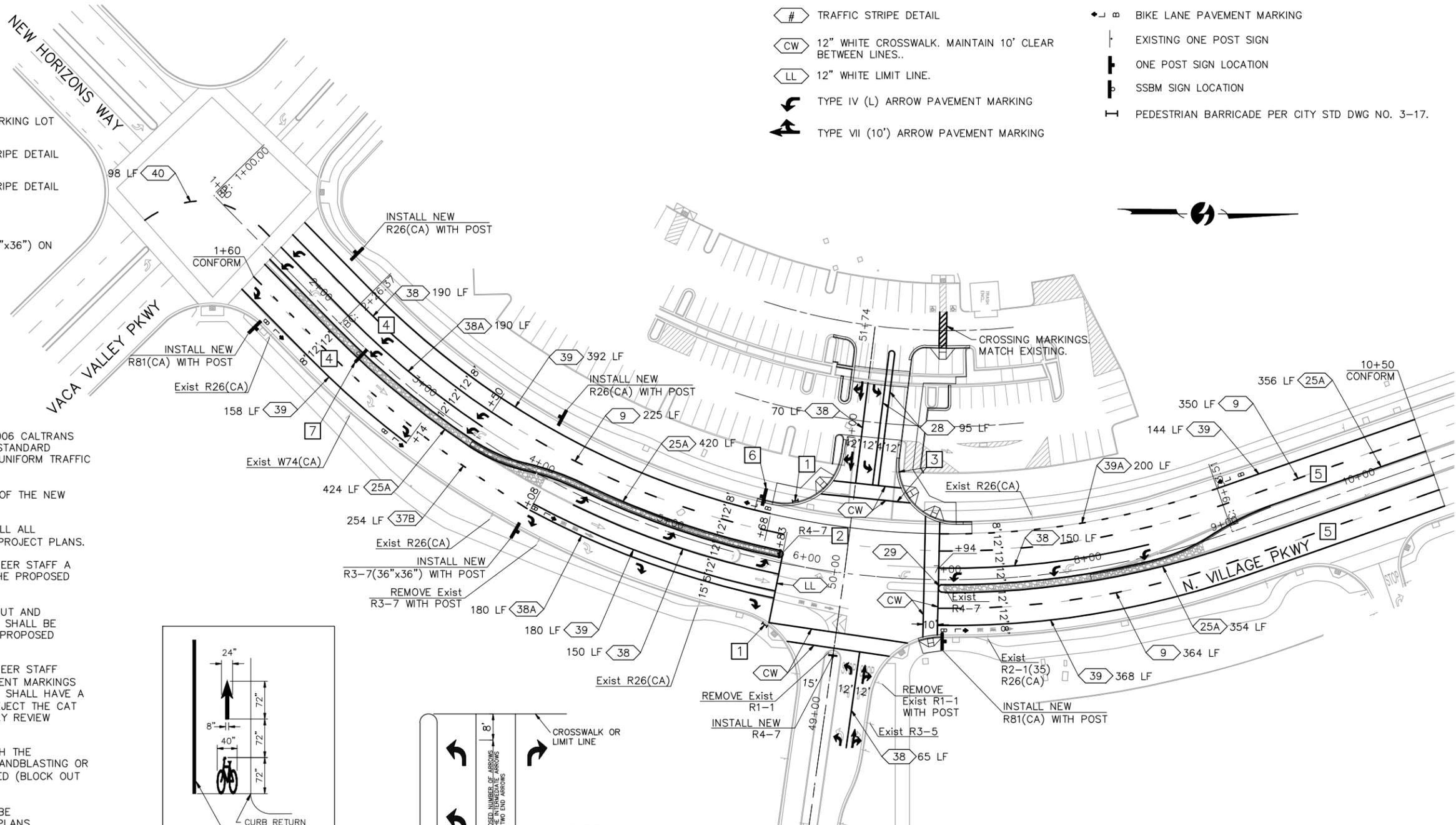
- 1 INSTALL R9-3bP SIGN ON PEDESTRIAN BARRICADE.
- 2 INSTALL NEW R4-7 SIGN (18"x30") APPROXIMATELY 4' FROM TIP OF MEDIAN ISLAND NOSE AT 45° FACING WESTBOUND DRIVEWAY TRAFFIC. BOTTOM OF SIGN SHALL BE 1 FOOT FROM TOP OF MEDIAN CONCRETE CURB.
- 3 RELOCATE TWO (2) EXISTING PRIVATE OWNER SIGNS (PARKING LOT RESTRICTIONS) AS DIRECTED BY THE ENGINEER.
- 4 INSTALL NEW TRAFFIC STRIPE DETAIL OVER EXISTING STRIPE DETAIL FROM STA 1+60 TO STA 3+50.
- 5 INSTALL NEW TRAFFIC STRIPE DETAIL OVER EXISTING STRIPE DETAIL FROM STA 9+50 TO STA 10+50.
- 6 INSTALL NEW R81(CA)(12"x8") AND R26(CA), WITH POST
- 7 INSTALL NEW W74(CA) "THRU TRAFFIC MERGE LEFT" (36"x36") ON STREET LIGHT POST (#C4324)

**GENERAL NOTES:**

1. ALL WORK SHALL CONFORM TO THE PROJECT PLANS, 2006 CALTRANS STANDARD SPECIFICATIONS, LATEST REVISED 2010 CALTRANS STANDARD PLANS, THE LATEST EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD) AND THE SPECIAL PROVISIONS.
2. ALL EXISTING PAVEMENT DELINEATION WITHIN THE LIMITS OF THE NEW PAVEMENT DELINEATION SHALL BE REMOVED.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL ALL STRIPING/PAVEMENT MARKINGS/MARKERS AS SHOWN ON THE PROJECT PLANS.
4. THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEER STAFF A MINIMUM OF TWO WORKING DAYS PRIOR TO THE LAYOUT OF THE PROPOSED STRIPING/PAVEMENT MARKINGS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND CAT-TRACKING OF ALL PROPOSED MARKINGS. CAT-TRACKING SHALL BE APPROVED BY THE CITY PRIOR TO THE INSTALLATION OF THE PROPOSED STRIPING.
6. THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEER STAFF WHEN A PORTION OR ALL OF THE PROPOSED STRIPING/PAVEMENT MARKINGS HAVE BEEN LAID OUT AND READY FOR INSPECTION. THE CITY SHALL HAVE A MINIMUM OF TWO WORKING DAYS TO REVIEW AND APPROVE/REJECT THE CAT TRACKING AFTER THE NOTIFICATION. A NEW TWO WORKING DAY REVIEW PERIOD SHALL COMMENCE AFTER EACH NOTIFICATION.
7. ALL STRIPING AND PAVEMENT MARKINGS IN CONFLICT WITH THE PROPOSED STRIPING AND MARKINGS SHALL BE REMOVED BY SANDBLASTING OR GRINDING THE SAME DAY THE PROPOSED STRIPING IS INSTALLED (BLOCK OUT LETTERS & SYMBOLS TO MAKE THEM NON-LEGIBLE).
8. ALL TRAFFIC STRIPING AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS NOTED OTHERWISE ON THE PROJECT PLANS.
9. STOP BARS SHALL BE 12" WHITE LINES INSTALLED AS SHOWN, UNLESS OTHERWISE NOTED.
10. THE CONTRACTOR SHALL INSTALL TEMPORARY REFLECTIVE, RAISED PAVEMENT MARKERS TO ESTABLISH LANE LINES AND PLACE TEMPORARY REFLECTIVE TAPE TO DELINEATE CROSSWALKS, TURN ARROWS, AND OTHER CRITICAL MARKINGS DESIGNATED BY THE ENGINEER PRIOR TO OPENING THE STREET TO PUBLIC TRAFFIC, IF INSTALLATION OF PERMANENT STRIPING/PAVEMENT MARKINGS IS NOT COMPLETE.
11. CONTRACTOR SHALL INSTALL DB MARKERS AT ALL FIRE HYDRANT LOCATIONS. A BLUE RAISED RETROREFLECTIVE BIDIRECTIONAL PAVEMENT MARKER SHALL BE INSTALLED 2 FEET OF THE STREET CENTERLINE OR MEDIAN CURB AT EACH FIRE HYDRANT, ON THE FIRE HYDRANT SIDE OF THE ROADWAY.

**LEGEND:**

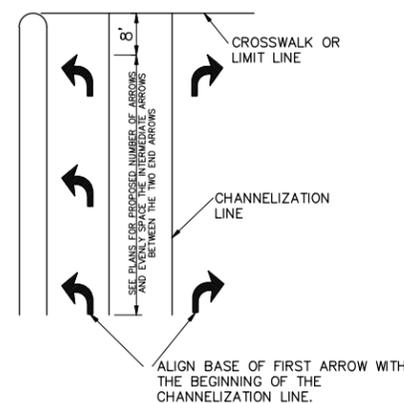
- # TRAFFIC STRIPE DETAIL
- CW 12" WHITE CROSSWALK. MAINTAIN 10' CLEAR BETWEEN LINES..
- LL 12" WHITE LIMIT LINE.
- ↩ TYPE IV (L) ARROW PAVEMENT MARKING
- ↶ TYPE VII (10') ARROW PAVEMENT MARKING
- ↻ BIKE LANE PAVEMENT MARKING
- ↑ EXISTING ONE POST SIGN
- ↑ ONE POST SIGN LOCATION
- ↑ SSBM SIGN LOCATION
- ↑ PEDESTRIAN BARRICADE PER CITY STD DWG NO. 3-17.



**NOTES**

1. BIKE LANE SYMBOL AND ARROW SHALL BE CENTERED WITHIN BIKE LANE.
2. BIKE LANE SYMBOL AND ARROW SHALL CONFORM TO A24C AND A24A OF THE CALTRANS STANDARD PLANS AND FIGURE 9C-3 OF THE LATEST CA MUTCD.

**BIKE LEGEND 9C-3**  
NOT TO SCALE



**TYPICAL DETAIL - PAVEMENT ARROWS**  
NOT TO SCALE

**BID SET**  
Dated: 2-28-17

**811**  
Know what's below.  
Call before you dig.  
Contractor shall call Underground Service Alert at 811 two working days prior to excavation

REFERENCE FILE: 2056P001.dwg

NO.	DATE	DESCRIPTION	BY

REGISTERED PROFESSIONAL ENGINEER  
DOUGLAS J. RIES  
No. C47768  
Exp. 12/31/17  
CIVIL  
STATE OF CALIFORNIA

REGISTERED CIVIL ENGINEER DATE  
PLANS APPROVAL DATE  
**omni • means**  
ENGINEERS PLANNERS

APPROVED BY:  
SHAWN L. CUNNINGHAM, R.C.E. 51420  
DIRECTOR OF PUBLIC WORKS

RECOMMENDED APPROVAL BY:  
TIMOTHY F. BURKE, R.C.E. 52989  
CITY ENGINEER

**omni • means**  
ENGINEERS PLANNERS  
SACRAMENTO REGION  
943 Reserve Dr. #100  
Roseville, CA 95678  
(916) 782-8688  
also in:  
REDDING  
VISALIA  
WALNUT CREEK

DRAWN	By DTZ	Checked DJR
DESIGN	By DTZ	Checked DJR
QUANTITIES	By DTZ	Checked DJR

**SOLANO COMMUNITY COLLEGE DISTRICT**  
SCALE: HORIZONTAL: 1" = 40' VERTICAL:  
ORIGINAL SCALE IS IN INCHES FOR REDUCED PLANS

**SOLANO**  
COMMUNITY COLLEGE

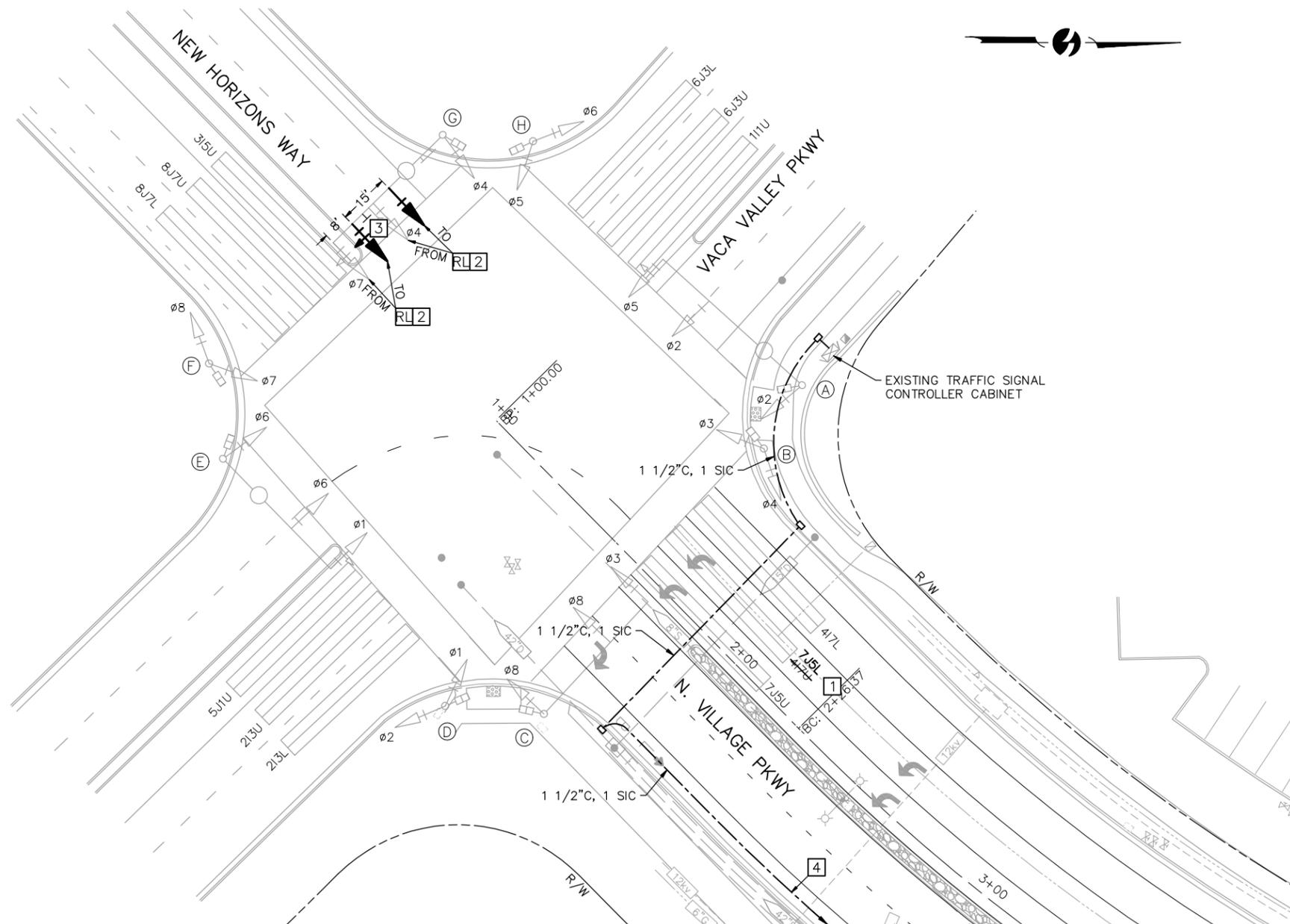
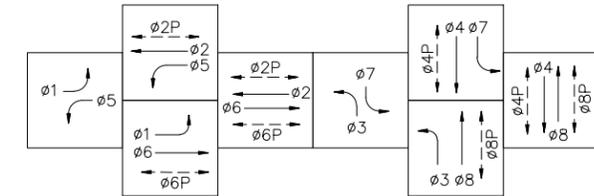
**VACAVILLE CENTER INTERSECTION IMPROVEMENTS PROJECT**  
SIGNING AND STRIPING PLAN  
SS-1  
DWG File: K:\PRJ\2056\2056P001.dwg  
DISREGARD PRINTS BEARING EARLIER PLOT DATES  
DATE PLOTTED: 02/28/17  
SHEET 9 OF 12

2056P001.dwg 2/28/2017 - 1:21pm

**PROJECT NOTES (THIS SHEET ONLY):**

- 1 REASSIGN EXISTING DETECTOR LOOP FROM 417U TO 7J5L.
- 2 INSTALL NEW TENON, RELOCATE EXISTING VEHICLE HEAD AS SHOWN. CAP EXISTING TENON PER ENGINEER.
- 3 INSTALL NEW R73-5 (CA) SIGN ON EXISTING MAST ARM.
- 4 INSTALL 1 1/2" C, 1 SIC TO SIGNAL CONTROLLER AT N. VILLAGE PKWY/VACAVILLE CENTER ENTRANCE, APPROXIMATELY 650' BETWEEN SIGNAL CONTROLLERS. INSTALL NO. 5 PULL BOXES EVERY 200' MINIMUM.

EXISTING POLE AND EQUIPMENT SCHEDULE										
STANDARD	VEH SIGNAL		MTG		PED SIGNAL		PPB		LED	REMARKS
	TYPE	SIG M.A.	LUM M.A.	MAST	POLE	MTG	ø	ARROW	LUMINAIRE	
(G)	29-5-100	45'	12'	MAS MAS	SV-1-T	SP-1-T	6	←	200W HPS	EVA PRE-EMPTION DETECTOR AND IISNS ON SIGNAL MAST ARM. PRE-EMPTION DETECTOR SIGN ON SIGNAL POLE.  1) RELOCATE EXISTING VEHICLE HEADS ON EXISTING MAST ARM AS SHOWN. INSTALL NEW R73-5(CA) SIGN ON SMA. 2) REMOVE EVA PRE-EMPTION DETECTOR AND ABANDON CONDUCTORS.
(A)(B)(C)(D)(E)(F)(H) NO WORK BEING PERFORMED ON THESE EXISTING POLES. POLE AND EQUIPMENT NOT SHOWN IN SCHEDULE.										



**GENERAL NOTES: (SHEETS TS-1 AND TS-2)**

1. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REVISION OF STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION 2010 STANDARD PLANS AND 2006 SPECIFICATIONS, THE LATEST EDITION OF THE CALIFORNIA MUTCD, THE CITY OF VACAVILLE STANDARD SPECIFICATIONS, STANDARD DRAWINGS DATED SEPTEMBER 1990 AND AMENDMENTS THROUGH DATE OF BID OPENING, AND THE PROJECT SPECIAL PROVISIONS.
2. BEFORE EXCAVATING CALL U.S.A. UNDERGROUND SERVICE ALERT (800-642-2444) 48 HOURS BEFORE ALL PLANNED WORK OPERATIONS.
3. APPROXIMATE LOCATIONS ARE GIVEN FOR EXISTING UTILITIES. THE CONTRACTOR ASSUMES THE RESPONSIBILITY FOR VERIFYING SUBSTRUCTURE LOCATIONS BY POT HOLING AND USE OF HAND TOOLS BEFORE TRENCHING.
4. THESE PLANS ARE ACCURATE FOR ELECTRICAL WORK ONLY. SIGNAL STANDARDS, CONTROLLER, AND PULL BOXES ARE SHOWN IN THEIR APPROXIMATE LOCATION. FINAL LOCATION OF SIGNAL POLES SHALL BE VERIFIED WITH THE CITY TRAFFIC ENGINEER IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS.
5. ALL RED, YELLOW AND GREEN ARROW AND SOLID SIGNAL INDICATIONS SHALL BE 12" L.E.D.
6. CONDUCTORS SHALL BE PULLED INTO CONDUITS BY HAND. THE USE OF WINCHES OR OTHER POWERED ACTUATED PULLING EQUIPMENT SHALL NOT BE PERMITTED.
7. ALL CONDUCTORS AND THEIR TERMINATORS SHALL BE CLEARLY MARKED.
8. PRIOR TO ORDERING TRAFFIC SIGNAL POLES, THE CONTRACTOR SHALL VERIFY THAT THE PROPOSED TRAFFIC SIGNAL POLE FOUNDATIONS DO NOT CONFLICT WITH ANY EXISTING UNDERGROUND UTILITIES. IF THERE IS A CONFLICT, CONTACT THE CITY ENGINEER, PRIOR TO ORDERING THE TRAFFIC SIGNAL POLES.
9. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
10. CONTRACTOR SHALL MAKE AN ON-SITE INSPECTION PRIOR TO BIDDING ON THIS PROJECT TO DETERMINE ANY AND ALL ITEMS NECESSARY TO PERFORM A COMPLETE AND ACCEPTABLE JOB. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL EQUIPMENT AND MATERIALS NECESSARY TO MAKE THE TRAFFIC SIGNAL SYSTEM COMPLETE AND OPERABLE.



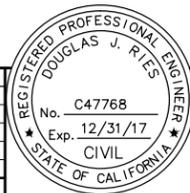
Know what's below.  
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Contractor shall call  
Underground Service Alert at  
811 two working days prior  
to excavation

**BID SET**  
Dated: 2-28-17

REFERENCE FILE: 2056E001.dwg

NO.	DATE	DESCRIPTION	BY



APPROVED BY:  
SHAWN L. CUNNINGHAM, R.C.E. 51420  
DIRECTOR OF PUBLIC WORKS

RECOMMENDED APPROVAL BY:  
TIMOTHY F. BURKE, R.C.E. 52989  
CITY ENGINEER



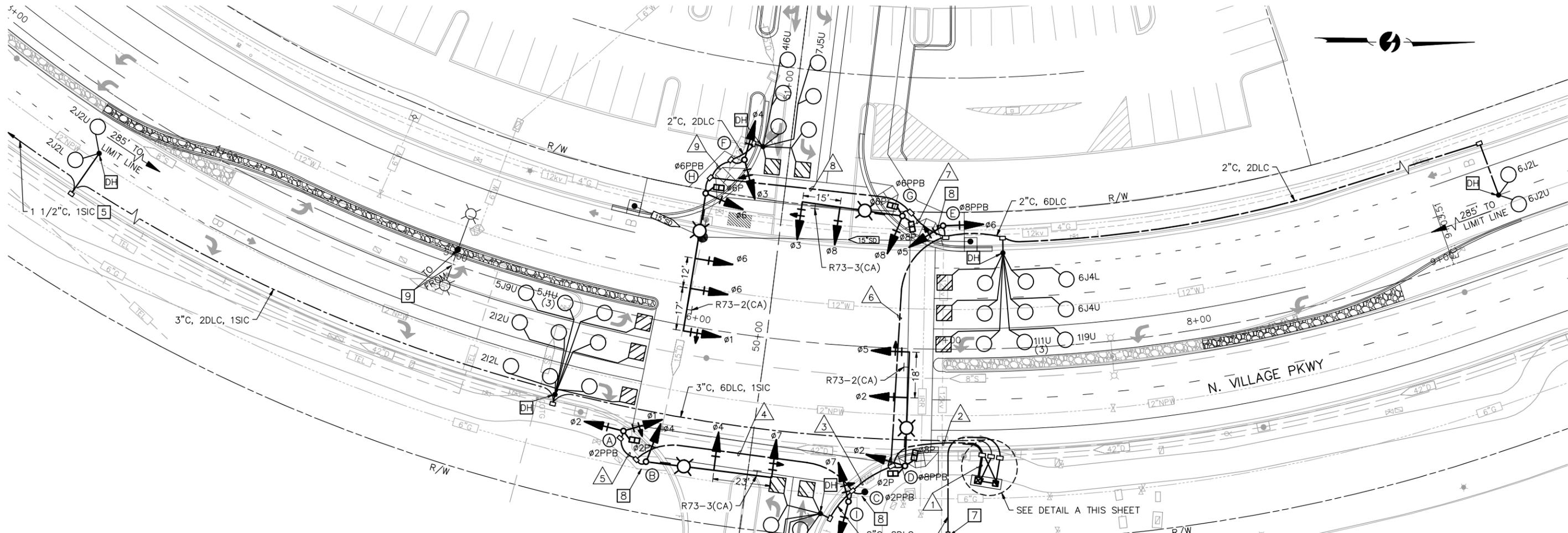
DRAWN By DTZ Checked DJR  
DESIGN By DTZ Checked DJR  
QUANTITIES By DTZ Checked DJR  
SCALE: HORIZONTAL: 1" = 20' VERTICAL:

SOLANO COMMUNITY COLLEGE DISTRICT



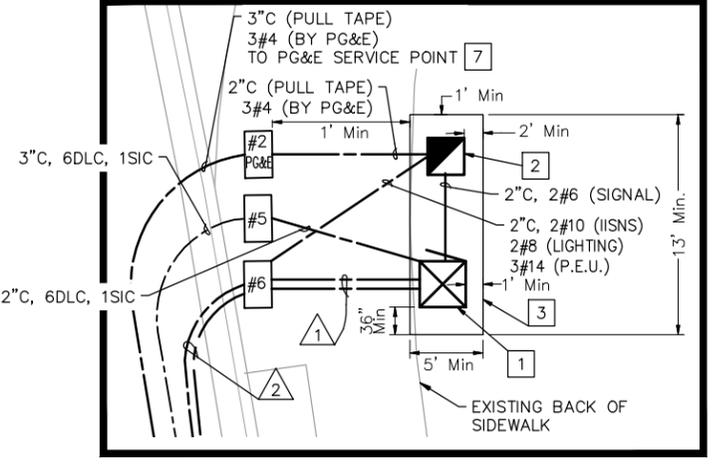
VACAVILLE CENTER INTERSECTION IMPROVEMENTS PROJECT  
TRAFFIC SIGNAL PLAN (MODIFY EXISTING) TS-1  
DWG File: K:\PRJ\2056\2056E001.dwg  
DISREGARD PRINTS BEARING EARLIER PLOT DATES  
DATE PLOTTED: 02/28/17  
SHEET 10 OF 12

2056E001.dwg 2/28/2017 1:23pm

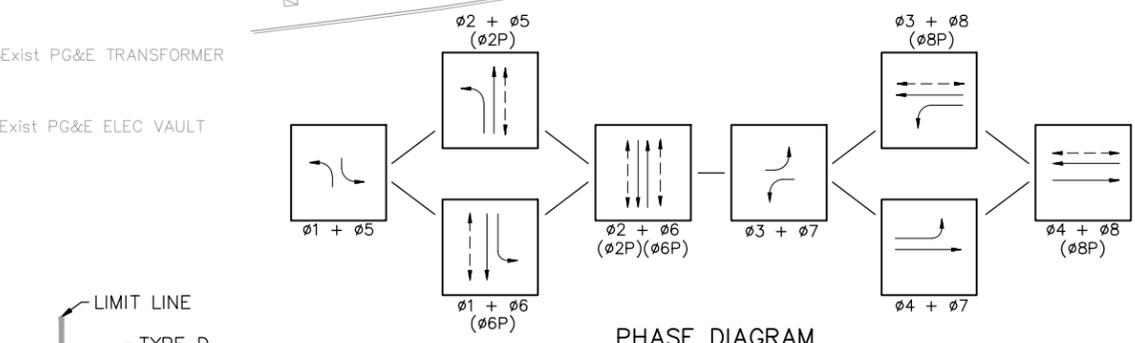


**PROJECT NOTES (THIS SHEET ONLY):**

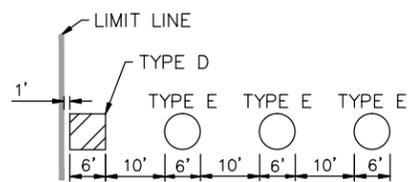
- 1 FURNISH AND INSTALL ECONOLITE SAFETRAN HYBRID 332 RACK MOUNTED CABINET, COBALT MOUNT CONTROLLER AND EQUIPMENT.
- 2 FURNISH AND INSTALL TESCO 27/22 BATTERY BACKUP SPECIAL COMBINATION SYSTEM.
- 3 CONSTRUCT A NEW FOUNDATION FOR THE CONTROLLER CABINET AND BATTERY BACKUP SYSTEM. THE PAD SHALL BE COMBINED AS ONE OVERSIZED FOUNDATION. EXISTING GROUND AND LANDSCAPING SHALL BE REMOVED TO A DEPTH SO THAT THE PAD SHALL MATCH THE EXISTING SIDEWALK GRADE. CONTROLLER AND SERVICE PEDESTAL SHALL BE ONE-FOOT ABOVE EXISTING GRADE. MODIFY IRRIGATION AND LANDSCAPING, AS NEEDED.
- 4 CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEER TO REVIEW THE DETECTOR LAYOUT A MINIMUM OF TWO(2) WORKING DAYS PRIOR TO DETECTOR INSTALLATION.
- 5 FURNISH AND INSTALL 1-1/2\"/>



**DETAIL A**  
NOT TO SCALE



**PHASE DIAGRAM**



**TYPICAL LOOP DETAIL**  
NOT TO SCALE

- 1) CENTER LOOPS IN CENTER OF LANE.
- 2) TYPE D LOOP TO BE WIRED IN SERIES WITH THREE TYPE E LOOPS CONNECTED IN PARALLEL.
- 3) TYPE D LOOP SHALL BE INSTALLED WITH FIVE TURNS.
- 4) LOOP INSTALLATION SHALL CONFORM TO 2010 REVISED STANDARD PLANS RSP ES-5A RSP AND ES-5B DATED 4-15-16.

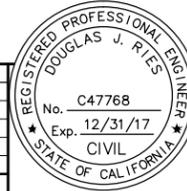
**BID SET**  
Dated: 2-28-17



Contractor shall call Underground Service Alert at 811 two working days prior to excavation

REFERENCE FILE: 2056E001.dwg

NO.	DATE	DESCRIPTION	BY



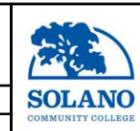
APPROVED BY:  
SHAWN L. CUNNINGHAM, R.C.E. 51420  
DIRECTOR OF PUBLIC WORKS

RECOMMENDED APPROVAL BY:  
TIMOTHY F. BURKE, R.C.E. 52989  
CITY ENGINEER



DRAWN By DTZ Checked DJR  
DESIGN By DTZ Checked DJR  
QUANTITIES By DTZ Checked DJR  
SCALE: HORIZONTAL: 1" = 20' VERTICAL:

**SOLANO COMMUNITY COLLEGE DISTRICT**



**VACAVILLE CENTER INTERSECTION IMPROVEMENTS PROJECT**  
TRAFFIC SIGNAL PLAN  
TS-2  
DWG File: K:\PRJ\2056\2056E001.dwg  
DISREGARD PRINTS BEARING EARLIER PLOT DATES  
DATE PLOTTED: 02/28/17  
SHEET 11 OF 12

2056E001.dwg 2/28/2017 - 1:23pm

POLE AND EQUIPMENT SCHEDULE										
STANDARD	TYPE	SIG M.A.	LUM M.A.	VEH SIGNAL		PED SIGNAL		PPB	LED	SPECIAL REQUIREMENTS
				Ø	MTG	Ø	MTG	Ø	ARROW	
(A)	1-B			1 2	TV-2-T	2	SP-1-T			FURNISH AND INSTALL AN 18"x18" R9-3. 7
(B)	29-5-100	50'	12'	7 4 4	MAS MAS SV-1-T			2	←	73W LED 1 3 7 8
(C)	PPB POST							2	→	6 7 8
(D)	26-4-100	45'	12'	5 2 2	MAS MAS SV-1-T	2,8	SP-2-T	8	→	73W LED FURNISH AND INSTALL A 36"x36" R73-2 AND SNS "Vacaville Center Dr" SIGN ON SMA. INSTALL P.E.U., GPS RADIO. 1 2 7 8
(E)	1-B			5 6	TV-2-T					7
(F)	1-B			3 4	TV-2-T			6	→	7 8
(G)	26-4-100	40'	12'	3 8 8	MAS MAS SV-1-T	6,8	SP-2-T	6	→	73W LED FURNISH AND INSTALL A 36"x36" R73-3 (CA) AND SNS "N. Village Pkwy" SIGNS ON SMA. 1 5 7 8
(H)	29-5-100	55'	12'	1 6 6 6	MAS MAS MAS SV-1-T	6	SP-1-T			73W LED FURNISH AND INSTALL AN 18"x18" R9-3 AND SNS "Vacaville Center Dr" SIGN ON SMA. 1 4 7
(I)	1-B			7 8	TV-2-T					7

**PROJECT NOTES (THIS SHEET ONLY):**

- 1 LUMINAIRE FIXTURES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AND SHALL BE LED AS MANUFACTURED BY CREE MODEL # BXSP-B-HT-2ME-B-40K-UL-SV-N-06.
- 2 FURNISH AND INSTALL 2 1/2" HIGH X 2 1/4" WIDE REFLECTIVE WHITE DECAL LABELED "71A" ON SIGNAL POLE.
- 3 FURNISH AND INSTALL 2 1/2" HIGH X 2 1/4" WIDE REFLECTIVE WHITE DECAL LABELED "71B" ON SIGNAL POLE.
- 4 FURNISH AND INSTALL 2 1/2" HIGH X 2 1/4" WIDE REFLECTIVE WHITE DECAL LABELED "71C" ON SIGNAL POLE.
- 5 FURNISH AND INSTALL 2 1/2" HIGH X 2 1/4" WIDE REFLECTIVE WHITE DECAL LABELED "71D" ON SIGNAL POLE.
- 6 FURNISH AND INSTALL NEW PPB POSTS 4' IN HEIGHT AND A MINIMUM 4" DIAMETER POST WITH CAPS.
- 7 FURNISH AND INSTALL NEW POLE AND EQUIPMENT.
- 8 FURNISH AND INSTALL POLARA ACCESSIBLE PEDESTRIAN SIGNALS AND DETECTORS.

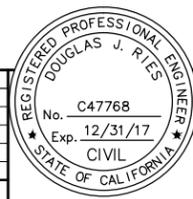
CONDUCTOR SCHEDULE										
AWG OR CABLE	CIRCUIT	CONDUIT RUN								
		1	2	3	4	5	6	7	8	9
#14	Ø1 SIGNALS	6	6	3	3	3	3	3	3	3
	Ø2 SIGNALS	3	3	3	3	3				
	Ø3 SIGNALS	3	3				3	3	3	3
	Ø4 SIGNALS	6	6	3	3		3	3	3	3
	Ø5 SIGNALS	3	3				3	3		
	Ø6 SIGNALS	3	3				3	3	3	3
	Ø7 SIGNALS	3	3	3	3					
	Ø8 SIGNALS	6	6	3			3	3		
	Ø2 PED	2	2	2	2	2				
	Ø6 PED	2	2				2	2	2	2
	Ø8 PED	2	2				2			
	Ø2 PPB	1	1	1	1					
	Ø6 PPB	1	1				1	1	1	1
	Ø8 PPB	1	1				1	1		
PPB COMMON	6	6	2	1		3	3	1	1	
PEU	3	3								
SPARES	3	3	3	3	3	3	3	3	3	
TOTAL #14		54	54	23	19	11	30	28	19	19
#8	LUMINAIRES	4	4	2	2		2	2	2	2
	SIGNAL COMMON	2	2	1	1	1	1	1	1	1
	TOTAL #8	6	6	3	3	1	3	3	3	3
DLC	111U	1	1				1			
	119U	1	1				1			
	212L									
	212U									
	2J2L									
	2J2U									
	315U	1	1	1						
	416U	1	1				1	1	1	
	5J1U									
	5J9U									
	6J2L	1	1				1			
	6J2U	1	1				1			
	6J4L	1	1				1			
	6J4U	1	1				1			
7J5U	1	1				1	1	1		
8J6U	1	1	1							
TOTAL DLC	10	10	2			8	2	2		
GPS OPTICOM CABLE	1	1								
CONDUIT SIZE (INCHES)	2-4"	2-4"	4"	3 1/2"	3 1/2"	4"	3 1/2"	3 1/2"	3 1/2"	

**NOTES:**

1. FURNISH AND INSTALL NEW CONDUIT AND CONDUCTORS.

REFERENCE FILE: 2056E001.dwg

NO.	DATE	DESCRIPTION	BY



APPROVED BY:  
SHAWN L. CUNNINGHAM, R.C.E. 51420  
DIRECTOR OF PUBLIC WORKS

RECOMMENDED APPROVAL BY:  
TIMOTHY F. BURKE, R.C.E. 52989  
CITY ENGINEER



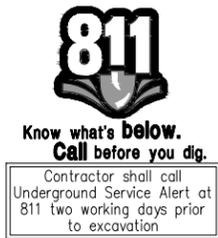
DRAWN By DTZ Checked DJR  
DESIGN By DTZ Checked DJR  
QUANTITIES By DTZ Checked DJR  
SCALE: HORIZONTAL: 1" = 20' VERTICAL:

SOLANO COMMUNITY COLLEGE DISTRICT  
ORIGINAL SCALE IS IN INCHES FOR REDUCED PLANS



VACAVILLE CENTER INTERSECTION IMPROVEMENTS PROJECT  
TRAFFIC SIGNAL PLAN  
TS-3  
DWG File: K:\PRJ\2056\2056E001.dwg  
DISREGARD PRINTS BEARING EARLIER PLOT DATES → DATE PLOTTED 02/28/17 SHEET 12 OF 12

**BID SET**  
Dated: 2-28-17



2056E001.dwg 2/28/2017 - 1:23pm