

**COUNTY OF RIVERSIDE PURCHASING AND FLEET SERVICES  
PUBLIC WORKS (Projects Over \$25,000)**

**Bid Submission Address:**  
Purchasing and Fleet Services  
2980 Washington Street  
Riverside, CA 92504-4647  
Telephone: (951) 955-4937  
**Return bid to address above:**

**Request for Bids # TLARC-575**

Bid Issue Date: 10/11/2017  
Job Walk Date: N/A  
Bid Closing Date: 11/1/2017  
on or before 1:30 P.M. Pacific Time

**PUBLIC WORKS  
NOTICE INVITING BIDS**

1. The **COUNTY OF RIVERSIDE**, herein called County, invites sealed bids for:  
**Licensed contractors to provide Materials and Labor for the Installation of Type “E” Modified Vehicle/Bicycle, Type D Modified Bicycle Inductive Detector Loops and ES-5D-Type A Stub-Outs. See Attachment 2 & 3, County Standard 1203 and Standard Plan RSP – SD Diagrams.**

The Contractor shall furnish all labor, materials, parts, equipment, tools, supervision, services, transportation, waste disposal, facilities and other required items necessary to complete the following work in strict accordance with all of the Contract Documents:

SITE: THROUGHOUT RIVERSIDE COUNTY

ESTIMATED PROJECT COST: \$ 100,000.00

2. **CONTRACT DOCUMENTS** - Each bid shall be in accordance with all of the Contract Documents.
- a. **DRAWINGS:** The following drawings and plans are applicable to this project and made part of the Contract Documents:
1. Technical Specifications and Drawings: Attachments 1, 2, 3, 4, 5 noted on pages 25, 27, 28, 29, 34 included in this RFB
- b. **GENERAL CONDITIONS:** The General Conditions applicable to the work are included in this RFB as Exhibit A.
- c. **PURCHASING WEBSITE:** Addenda, registration and other information related to the RFB are available at [www.purchasing.co.riverside.ca.us](http://www.purchasing.co.riverside.ca.us)
3. **LICENSE REQUIRED** - The following license is required for this project: **C-10 Electrical**.
4. Any contact with County personnel regarding this procurement, other than the Purchasing Procurement Contract Specialist identified in this RFB, may result in disqualification of your bid.

5. **TIMELINES** -

1. <b>Release of Request for Bids:</b>	<b><u>Date: October 11, 2017</u></b>
2. <b>Deadline For Submission Of Questions:</b> Email: ( <a href="mailto:henryrobles@rivco.org">henryrobles@rivco.org</a> ) (E-mail preferred) or Fax: 951-955-8324 It is the responsibility of the bidder to confirm transmission of correspondence.	<b><u>Date: October 25, 2017</u></b>  <b><u>Time: No later than 1:30 p.m.</u></b> Must be in the form of an Email
3. <b>Deadline For Bids:</b>	<b><u>Date: November 1, 2017</u></b> on or before 1:30 PM Pacific time

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**Return bid to address above:**

1. **BID SUBMITTAL** - Bid Bond (pages 8 and 9) must be submitted along with the Bid Forms (pages 4 through 7) and Agreement Forms (pages 10 and 11). The bid shall be delivered (no e-mail delivery) to County Purchasing and Fleet Services at the address stated below on or before 1:30 p.m. on the closing date. The RFB number, title, and closing date and time shall appear on both the envelope and the bid cover sheet. Under no circumstances will a bid be accepted after the closing date and time.

**BIDS SHALL BE DELIVERED TO:**

**COUNTY OF RIVERSIDE  
PURCHASING AND FLEET SERVICES  
2980 Washington Street  
Riverside, CA 92504-4947**

2. **UNIFORM PUBLIC CONSTRUCTION COST ACCOUNTING ACT** - The County has adopted the Uniform Public Construction Cost Accounting Act (Public Contract Code Section 22000 et seq.) pursuant to County Ordinance No. 757. The County through its Purchasing Agent may bid and award a contract pursuant to the procedures stated in the Act. The Purchasing Agent's current maximum authority under the Act is \$175,000 for a single contract. All applicable public works requirements still apply.

3. **PREVAILING WAGES AND LABOR CODE REQUIREMENTS** –

This is a public works project subject to compliance monitoring and enforcement by the California Department of Industrial Relations. The awarded bidder shall comply with all applicable provisions of the California State Labor Code regarding prevailing wages, Department of Industrial Relations Division of Apprenticeship Standards Labor and other requirements, including but not limited to Labor Code Sections 1771.4, 1773.1, 1774, 1775 and 1776.

County Purchasing and Fleet Services has obtained the most recent determination of general prevailing rates of per diem wages applicable to the work, and for holiday and overtime work, including employer payments for health and welfare, pension, vacation, and similar purposes; and this will be made available to any bidder upon request. This information can also be obtained at the California State Department of Industrial Relations, 464 West Fourth St., San Bernardino.

The awarded bidder shall post job site notices as prescribed by regulation. Contractor or subcontractor shall furnish records specified in Labor Code Section 1776 to the Labor Commissioner.

Pursuant to Labor Code Section 1771.1, any contractor submitting a bid, or subcontractor listed on the Bid Form, must be currently registered with the Department of Industrial Relations and qualified to perform public work pursuant to Labor Code Section 1725.5. No contractor or subcontractor will be awarded without proof of current D.I.R. registration.

4. The awarded bidder must hold the required California license, in good standing with the Contractor State License Board, at the time of submitting its bid and continuously thereafter until project completion. A subcontractor may possess the required license only if allowed by applicable law. Licensure statements are made under penalty of perjury.
5. The awarded bidder will be required to furnish performance and payment bonds and insurance documents in accordance with the requirements stated in this RFB.

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**INSTRUCTIONS TO BIDDERS**

1. **CONTRACTOR REGISTRATION** – The awarded bidder shall register all of its current information with the County's online database at [www.purchasing.co.riverside.ca.us](http://www.purchasing.co.riverside.ca.us), including W-9 and IRS 147C forms; or update its information if already registered. It is suggested that all bidders register in the County database so their information will be available for future consideration.
2. **PRICES/NOTATIONS** - All prices/notations must be typewritten or written in ink. No erasures permitted. Mistakes shall be crossed out, corrections made adjacent and initialed by person signing document. Each item shall be bid separately. All signatures must be by an authorized representative of bidder.
3. **PRICING/TERMS/TAX** - All pricing shall be bid F.O.B. destination, including applicable tax, permits, and licenses. The County pays California sales tax and is exempt from Federal excise tax. The Contractor shall pay all taxes related to the work. In the event of an extension error, the unit price shall prevail.
4. **ADDENDA TO RFB** - The County reserves the right to issue such addenda to the RFB as it may desire at any time prior to the time for receiving bids. The number and date of each addendum shall be listed on each bid in the space provided.
5. **COUNTY RESERVATION OF RIGHTS** - The County reserves the right to reject any or all bids, to waive any discrepancy, technicality or informalities in a bid or in the bidding process, and to make the award in any manner determined by the County to be most advantageous to the County.
6. **WITHDRAWAL OF BID** - A bid may be withdrawn only prior to the bid closing date and time. No bidder may withdraw or modify its bid for a period of sixty (60) calendar days after the bid closing date.
7. **INTERPRETATION OF THE BID DOCUMENTS** - Discrepancies in and omissions from any of the Contract Documents, questions as to their meaning or uncertainties that might cause disputes, shall immediately be brought to the attention of the County by the bidder. Any interpretation of the terms of the Contract Documents will be made only by written addenda issued by the County and available at [www.purchasing.co.riverside.ca.us](http://www.purchasing.co.riverside.ca.us). The County will not be responsible for any other explanations or interpretations.
8. **ADDITIONAL INFORMATION** – Prior to award, the County reserves the right to require additional information from a bidder, including but not limited to information regarding the bidder's financial responsibility or other information the County determines is necessary to ascertain whether the bid is in fact the lowest responsible and responsive bid submitted
9. **AWARD OF CONTRACT** - The bid shall be awarded upon issuance of a County purchase order, which shall include the Contract Documents by reference or attachment.

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**BID FORM**  
Page 1 of 4

The bidder, having carefully examined the proposed site and all of the Contract Documents, proposes and agrees to furnish all tools, equipment, services, apparatus, facilities, transportation, labor and materials necessary to complete the project as outlined in this RFB in strict conformity with all of the Contract Documents.

The bidder acknowledges receipt of the following addenda:

Addendum No. _____	Date: _____
Addendum No. _____	Date: _____
Addendum No. _____	Date: _____

**BID SUMMARY**

- |   |          |
|---|----------|
| 1. Cost to install 6'x10' Type "E" Modified Loop (Cost per Loop)                  | \$ _____ |
| 2. Cost to install 6'x12' Type "E" Modified Loop (Cost per Loop)                  | \$ _____ |
| 3. Cost to install 6'x6' Type "E" Modified Loop (Cost per Loop)                   | \$ _____ |
| 4. Cost to install Bicycle Lane Type "E" Modified Loop (Cost per Loop)            | \$ _____ |
| 5. Cost to install 6'x6' Type "D" Modified (Cost per Loop)                        | \$ _____ |
| 6. Cost to install ES-5D-Type A Stub-Out Conduit Size 1"C Minimum 1 or 2 pair     | \$ _____ |
| 7. Cost to install ES-5D-Type A Stub-Out Conduit Size 1-1/2"C Minimum 3 or 4 pair | \$ _____ |
| 8. Cost to install ES-5D-Type A Stub-Out Conduit Size 2"C Minimum 5 or more       | \$ _____ |

**BASE BID**

The undersigned agrees to perform all work required for this project for the sum of: \$ \_\_\_\_\_

Cost per Loop shall be all-inclusive (parts, labor, materials, tools, rentals, equipment, disposal, transportation, and supervision)

Sum quoted includes all applicable taxes, permits, licenses, insurance and bond costs, if any, and all other cost incidental to the resultant contract.

The following percentage information must also be provided for the Base Bid (though it will not be used in awarding the contract):

Labor: \_\_\_\_\_% Materials: \_\_\_\_\_% Other: \_\_\_\_\_% All three must total 100%.

**PAYMENT TERMS**

Check one:

\_\_\_\_\_ Lump sum payment at project completion

\_\_\_\_\_ Progress payments (as stated in General Conditions)

If prompt payment discount offered (for example, 1% Net 15) please describe: \_\_\_\_\_



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**BID FORM**  
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**AWARD OF CONTRACT**

The bidder understands that a contract is formed upon the acceptance of its bid by the County. The bidder agrees it will promptly execute and deliver to County the Agreement together with the required Payment and Performance Bonds and insurance documents.

**BID GUARANTEE**

The enclosed certified or cashier's check or bid bond on the provided form, made payable to the County in the amount of ten percent (10%) of the total bid, is hereby given as a guarantee that the bidder will execute and deliver the Agreement and required bonds if awarded the contract. In the event that the bidder fails or refuses to execute and deliver said documents, such check or bond is to be charged with the costs of the damages experienced by the County as a result of such failure or refusal.

Name of Bidder:

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Type of Organization:

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Signature:

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Name and Title:

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Address of Bidder:

---

Telephone No.:

Email:

---

Contractor's License No.:

Classification:

Expires:

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DIR Registration No.:

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**BID FORM**  
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**TO BE SUBMITTED WITH BID  
NON-COLLUSION DECLARATION**  
(Public Contract Code Section 7106)

The undersigned declares:

I am the \_\_\_\_\_ of \_\_\_\_\_, the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder.

All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted its bid price of any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on \_\_\_\_\_ [date], at \_\_\_\_\_ [city], \_\_\_\_\_ [State].

\_\_\_\_\_  
[Signature of Declarant]

\_\_\_\_\_  
[Printed Name of Person Signing]

\_\_\_\_\_  
[Name of Bidder]

\_\_\_\_\_  
[Office or Title]

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**BID BOND**  
Page 1 of 2

(Public Work – Public Contract Code Section 20129 (a))

WHEREAS, The undersigned \_\_\_\_\_ (“Principal”) is herewith submitting to the County of Riverside (“County”) a Bid dated \_\_\_\_\_ 20\_\_\_\_, in the amount of \_\_\_\_\_ \$ \_\_\_\_\_) for the award by County to Principal of a contract (“Contract”) for the following: Installation of Type E Vehicle, Type D Modified Bike Inductive Detector Loops and ES-5D-Type A Stub-Outs.

WHEREAS, Principal is obligated as a condition of said Bid to submit security pursuant to Public Contract Code Section 20129 (a) in the amount of ten percent (10%) of the Bid Amount, which security may be in the form of a Bid Bond issued by an admitted surety insurer pursuant to Code of Civil Procedure Section 995.120 (“Admitted Surety”);

NOW THEREFORE, the Principal and \_\_\_\_\_ (“Surety”), an Admitted Surety, are held and firmly bound unto the County in the penal sum of \_\_\_\_\_ (\$ \_\_\_\_\_) for the payment of which sum in lawful money of the United States, well and truly to be made, we, Principal and Surety, bind ourselves, our executors, administrators, successors, heirs and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that if Principal is awarded the Contract upon such Bid and thereafter within the period of time specified in County’s bidding documents governing the bidding process applicable to such Bid (“Bidding Documents”) enters into the Contract with County on the terms and conditions required by the Bidding Documents and furnishes the performance and payment bonds, evidence of insurance and other documents that Principal is required to submit under the terms of the Bidding Documents, then this obligation shall be null and void; otherwise, it shall remain in full force and effect and the sum guaranteed by this bond shall, at the option of County, be forfeited to County to pay all losses and damages suffered by County as a result thereof and permitted by applicable law, including, without limitation, the difference between the Bid Amount and amount for which the County may legally contract with another party to perform the Work (if such latter amount be greater than the Bid Amount), costs of publication, and all other losses and damages suffered by County (including, without limitation, those associated with delay to the Project); provided, however, that Surety’s liability shall not exceed the penal amount of this bond.

Surety, for value received, hereby agrees that no change, extension of time, alteration or addition to the terms of the Contract or the Bidding Documents, or to the work to be performed thereunder, nor any withdrawal of the Bid in a manner not permitted by the requirements of the Bidding Documents shall in any way impair or affect Surety’s obligation under this bond, and Surety does hereby waive notice of any such changes, extensions of time, alterations or additions.



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**BID BOND**  
Page 2 of 2

In the event any legal proceeding or arbitration is brought upon this bond by County and judgment or award is entered in favor of County as the prevailing party, Surety shall pay all costs and attorney's fees incurred by the County.

IN WITNESS WHEREOF the undersigned parties have executed this instrument under their several seals this day of \_\_\_\_\_, 20\_\_\_\_, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

**Affix Seal if Corporation**

\_\_\_\_\_  
**(Firm Name – Principal)**

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
**(Business Address)**

**By** \_\_\_\_\_  
**(Original Signature)**

\_\_\_\_\_  
**(Title)**

\_\_\_\_\_  
**(Corporation Name – Surety)**

**Affix Corporate Seal**

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
**(Business Address)**

**By** \_\_\_\_\_  
**(Original Signature)**  
**ATTORNEY-IN-FACT**

**Note: Notary acknowledgment for Surety's signature and Surety's Power of Attorney must be included or attached**

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**AGREEMENT**

Page 1 of 2

THIS AGREEMENT, entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_, by and between \_\_\_\_\_, hereinafter called the "Contractor," and the County of Riverside, hereinafter called "County."

The parties mutually agree as follows:

CONTRACT DOCUMENTS: The complete contract includes all of the Contract Documents which are intended to be complimentary.

The Contract Documents include: Notice Inviting Bids; Instructions to Bidders; Bid Form; the Request for Bids ("RFB"), including Attachment A and Attachment B, any addenda or other documents attached to or incorporated into the RFB; this Agreement; all project bonds; all applicable plans, specifications and drawings; and approved change orders.

STATEMENT OF WORK: The Contractor agrees to furnish all labor, materials, parts, equipment, tools, supervision, services, transportation, waste disposal, facilities and other required items necessary to complete the Installation, Repair and Maintenance of Type E Vehicle and Type D Modified Bike Inductive Detector Loops, in strict accordance with all of the Contract Documents.

TIME FOR COMPLETION: The work shall be commenced on a date to be specified in a written order from the County and shall be completed within (20) following the date specified in County's written order.

COMPENSATION TO BE PAID TO CONTRACTOR: The County agrees to pay and the Contractor agrees to accept in full consideration for the performance of all the work the sum of;

\$(\_\_\_\_\_).

Pursuant to Labor Code Section 1861, the Contractor gives the following certification: "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of work of this contract."

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**AGREEMENT FORM**  
Page 2 of 2

Contractor's legal type of organization: \_\_\_\_\_

List names of all persons who have authority to bind the Contractor:

\_\_\_\_\_

\_\_\_\_\_

**AGREED:**

Firm Name:			
Address:			
Contractor's License No.		Expires:	
DIR Registration No:			
Signature:	Date:		
Name and Title:			

COUNTY OF RIVERSIDE

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

Date: \_\_\_\_\_

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**PAYMENT BOND**

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(Public Work - Civil Code Sections 9550 et seq.)

WHEREAS, the County of Riverside ("County") on \_\_\_\_\_, 20\_\_\_\_, has awarded Construction Contract Number: BID # TLARC-575 ("Contract") to the undersigned \_\_\_\_\_, as Principal ("Principal") to perform the work ("Work") for the following project; Installation of Type E Vehicle, Type D Modified Bike Inductive Detector Loops and ES-5D-Type A Stub-Outs.

WHEREAS, said Principal is required by the Contract and/or by Division 3, Part IV, Title XV, Chapter 7 (commencing at Section 9550) of the California Civil Code to furnish a payment bond in connection with the Contract;

NOW THEREFORE, we, the Principal and \_\_\_\_\_ ("Surety"), an admitted surety insurer pursuant to Code of Civil Procedure, Section 995.120, are held and firmly bound unto County in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), this amount being not less than one hundred percent (100%) of the total sum payable by County under the Contract at the time the Contract is awarded by County to the Principal, lawful money of the United States of America, for the payment of which sum well and truly to be made, we, Principal and Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if Principal, its heirs, executors, administrators, successors, or assigns approved by County, or its subcontractors, of any contracting tier, shall fail to pay any person or persons named in California Civil Code, Section 9554, then Surety will pay for the same, in or to an amount not exceeding the penal amount hereinabove set forth, and also will pay to the prevailing party if suit is brought upon this bond, reasonable attorney's fees as provided in California Civil Code, Section 9564.

Surety, for value received, agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the Work to be performed thereunder, nor any rescission or attempted rescission of the Contract or this bond, nor any conditions precedent or subsequent in the bond or Contract attempting to limit the right of recovery of any claimant otherwise entitled to recover under the Contract or this bond shall in any way impair or affect Surety's obligation under this bond, and Surety does hereby waive notice of any such changes, extensions of time, alterations or additions.

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Surety is not released from liability to those for whose benefit this bond has been given, by reason of any breach of the Contract by County or Principal.

Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, joint and severally, or against any one or more of them or against less than all of them, without impairing County's rights against the others.

**Affix Seal if Corporation**

\_\_\_\_\_  
**(Firm Name – Principal)**

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
**(Business Address)**

**By** \_\_\_\_\_  
**(Original Signature)**

\_\_\_\_\_  
**(Title)**

\_\_\_\_\_  
**(Corporation Name – Surety)**

**Affix Corporate Seal**

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
**(Business Address)**

**By** \_\_\_\_\_  
**(Signature – Attached Notary's Acknowledgment)**

\_\_\_\_\_  
**ATTORNEY-IN-FACT**  
**(Title-Attach Power of Attorney)**

Note: Notary acknowledgment of signatures of Bidder and Surety, and Surety's Power of Attorney, must be included or attached.

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**PERFORMANCE BOND**  
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(Public Work – Public Contract Code Section 20129 (b))

WHEREAS, the County of Riverside ("County") on \_\_\_\_\_, 20\_\_\_\_, has awarded Construction Contract Number: TLARC-575 ("Contract") to the undersigned, as Principal ("Principal") to perform the work ("Work") for the following project; Installation of Type E Vehicle, Type D Modified Bike Inductive Detector Loops and ES-5D-Type A Stub-Outs, which Contract is by this reference hereby incorporated herein and made a part hereof;

WHEREAS, said Principal is required by the Contract and/or by California Public Contract Code, Section 20129 (b) to furnish a performance bond for the faithful performance of the Contract;

NOW THEREFORE, we, the Principal and \_\_\_\_\_ ("Surety"), an admitted surety insurer pursuant to Code of Civil Procedure, Section 995.120, are held and firmly bound unto County in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), this amount being not less than one hundred percent (100%) of the total sum payable by County under the Contract at the time the Contract is awarded by County to the Principal, lawful money of the United States of America, for the payment of which sum well and truly to be made, we, Principal and Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if Principal, its heirs, executors, administrators, successors or assigns approved by County, shall in all things stand to and abide by and well and truly keep and perform all the undertakings, terms, covenants, conditions and agreements in the Contract, including, without limitation, all obligations during the original term and any extensions thereof as may be granted by County, with or without notice to Surety thereof (including, without limitation, the obligation for Principal to pay liquidated damages), all obligations during the period of any warranties and guarantees required under the Contract and all other obligations otherwise arising under the terms of the Contract (such as, but not limited to, obligations of indemnification), all within the time and in the manner therein designated in all respects according to their true intent and meaning, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

**COUNTY OF RIVERSIDE PURCHASING AND FLEET SERVICES  
PUBLIC WORKS (Projects Over \$25,000)**

**Bid Submission Address:**  
Purchasing and Fleet Services  
2980 Washington Street  
Riverside, CA 92504-4647  
Telephone: (951) 955-4937  
**Return bid to address above:**

**Request for Bids # TLARC-575**  
  
Bid Issue Date: 10/11/2017  
Job Walk Date: N/A  
Bid Closing Date: 11/1/2017  
on or before 1:30 P.M. Pacific Time

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**PERFORMANCE BOND**

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Whenever Principal shall be, and is declared by County to be, in default under the Contract, the Surety shall promptly either remedy the default, or, if the Contract is terminated by County or the Principal's performance of the Work is discontinued, Surety shall promptly complete the Contract through its agents or independent contractors, subject to acceptance of such agents or independent contractors by County as hereinafter set forth, in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract (including, without limitation, all obligations with respect to payment of liquidated damages) less the "Balance of the Contract Price" (as hereinafter defined); subject to the penal amount of this bond as set forth above. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable to Principal by County under the Contract and any modifications thereto, less the amount previously paid by County to the Principal and less amounts that County is authorized to withhold under the terms of the Contract.

If County determines that completion of the Contract by Surety or its agents or independent contractors must be performed by a lowest responsible bidder selected pursuant to a competitive bidding process, then Surety shall comply with such processes in accordance with the requirements of County and applicable laws. Unless otherwise approved by County, in the exercise of its sole and absolute discretion, Surety shall not utilize Principal in completing performance of the Work.

No right of action shall accrue on this bond to or for the use of any person or entity other than County or its successors or assigns.

In the event any legal proceeding or arbitration is brought upon this bond by County and judgment or award is entered in favor of County as the prevailing party, Surety shall pay all costs and attorney's fees incurred by the County.

Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

Surety, for value received, agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder, shall in any way impair or affect Surety's obligation under this bond, and Surety does hereby waive notice of any such changes, extensions of time, alterations or additions.

Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, joint and severally, or against any one or more of them or against less than all of them, without impairing County's rights against the others.

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**PERFORMANCE BOND**  
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**Affix Seal if Corporation**

\_\_\_\_\_  
**(Firm Name – Principal)**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
**(Business Address)**

**By**  
\_\_\_\_\_  
**(Original Signature)**

\_\_\_\_\_  
**(Title)**

\_\_\_\_\_  
**(Corporation Name – Surety)**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
**(Business Address)**

**By**  
\_\_\_\_\_  
**(Signature – Attached Notary’s Acknowledgment)**

**Affix Corporate Seal**

\_\_\_\_\_  
**ATTORNEY-IN-FACT**  
**(Title-Attach Power of Attorney)**

Note: Notary acknowledgment of signatures of Bidder and Surety, and Surety’s Power of Attorney, must be included or attached.



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**EXHIBIT A**

**GENERAL CONDITIONS**

1. **SITE EXAMINATION** – Prior to submitting its bid, the Contractor shall be responsible for having ascertained all relevant local conditions such as location accessibility conditions under which the work is to be performed.
2. **NO ORAL AGREEMENTS** - No oral agreement or conversation with any officer, agent, or employee of the County, either before or after execution of the Agreement shall affect or modify any of the terms or obligations contained in the Contract Documents. Any changes to the Contract Documents must be in writing and signed by the authorized County representative.
3. **APPLICABLE LAWS AND REGULATIONS** - The Contractor shall comply with all laws, ordinances and regulations applicable to the work. This includes all environmental regulations. If the Contractor ascertains at any time that requirements of this work are at variance with applicable law, ordinances, regulations or building code requirements, he shall promptly notify the County; and shall not proceed with the work in question, until the County has had an opportunity to determine the responsibility for the variance.
4. **LICENSES AND PERMITS** - The Contractor, acting in the name of the County, shall obtain and pay in full for all licenses, permits, inspections, inspection certificates and similar documents required to be obtained from any authority having jurisdiction over any part of the work. The Contractor may be required to submit all of these documents to the County.
5. **ACCESS TO THE WORK** - The County and its representatives shall have access at all times to the work for purposes of inspection or other matters; and the Contractor shall provide proper facilities for such access.
6. **CONTRACTOR WORK HOURS AND SCHEDULING** - No work of any kind shall be performed on the project site outside of the regularly established working hours without the knowledge and prior written approval of the County.

Full cooperation between the Contractor and the County Project Manager, or his/her staff, will be necessary to complete project properly and on time. The Contractor shall provide the County Project Manager with a daily schedule of activities so the County Manager can plan accordingly.

7. **INSPECTION OF THE WORK** - All material and workmanship shall be subject to inspection, examination, and test by the County at any and all times during manufacture and/or construction and at any and all places where such manufacture and/or construction are carried on. The County shall have the right to reject defective material and workmanship or require its correction. If the work is to be specially tested or approved, the Contractor shall give the County sufficient advance notice of its readiness for inspection and the date fixed for such inspection. If any work should be covered, without proper inspection and without approval or consent of the County, it shall be uncovered for examination at the Contractor's expense.
8. **INSPECTOR (Clerk of the Works)** - The County may employ an inspector, who will act as a direct representative of the County, and who shall provide full-time and continuous personal supervision and inspection of the work. Such supervision and inspection shall not, in any way, relieve the Contractor from responsibility for full compliance with all of the terms and conditions of the Contract Documents, nor be construed to lessen to any degree, the Contractor's responsibility for providing efficient and capable superintendence as required. The inspector is not authorized to make changes in the Contract Documents, nor shall his/her approval of work and methods relieve the Contractor of responsibility for the correction of subsequently discovered defects.
9. **ARCHITECT** – If there is a Project Architect he/she shall have general supervision and control of the work in all phases. The Architect shall determine the amount, quality, acceptability and fitness of all parts of the work, interpret

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the specifications, drawings, and all other Contract Documents, and decide all questions pertaining to the work and shall be the final arbitrator thereof. The Architect shall have authority to stop the work whenever, in his opinion, the terms and conditions are not being fulfilled or the work is not being executed in a proper manner. The Architect shall be the final authority in determining the amount of work satisfactorily completed and the amount of money due during the progress of construction.

10. **SEQUENCE OF THE WORK** - Prior to starting construction, the Contractor shall submit to the County, for approval, a work schedule which shall show the estimated dates that Contractor plans to be working. The County reserves the right to alter the Contractor's schedule to prevent excessive public nuisance or to expedite construction of specific items. No portion of the work will begin without giving two working days prior written notice to the County. The Contractor is advised that most County facilities function between 8:00 a.m. and 5:00 p.m., Monday thru Friday, and that certain inconveniences will be encountered by Contractor. The work shall be planned and executed so that these are kept to a minimum. As the work is approaching 90% completion, a preliminary punch list shall be made and corrections done. Before the final inspection, a final punch list shall be developed, and all corrections made and recorded, before the final walk through is made by the County. Any defects, deficiencies found in the material, equipment, workmanship, or project completion, shall be replaced, repaired or finished before final payment.
11. **SUBCONTRACTS** - The Contractor shall be responsible for the coordination of the trades, subcontractors and material suppliers engaged upon the work. Nothing contained shall be construed as creating a contractual relationship between any subcontractor and the County. The Contractor shall cause appropriate provisions to be inserted in all subcontracts to bind subcontractors to the Contractor on the same terms of the Contract Documents as the Contractor is bound to the County. The County reserves the right to approve all subcontractors prior to award of the Agreement.
12. **EMPLOYEES** – Prior to start of the work, the Contractor shall provide County with the names and driver license numbers of all Contractor or subcontractor employees who will work at the project site. The County may conduct a background check if it determines that to be appropriate. The Contractor will dismiss from the work any employee for which the County has a reasonable belief should not be working at the project, due to personal or other reasons.
13. **SUPERVISION BY CONTRACTOR** - The Contractor shall keep on the work continuously a competent superintendent and assistant who shall be satisfactory to the County. The superintendent shall be qualified to represent the Contractor during all times when the Contractor is not present; and all orders or directions issued to the superintendent by the County shall be as binding as if given to the Contractor personally. Both the Contractor and the superintendent shall cooperate to provide efficient and complete supervision over all phases of the work. The supervision of the County shall not lessen the responsibility of the Contractor to furnish supervision, nor shall it relieve the Contractor of responsibility for the correction of subsequently discovered defects.
14. **DETAIL DRAWINGS AND INSTRUCTIONS** - The County will furnish to the Contractor, with reasonable promptness, such further detailed explanations, instructions and drawings as may be necessary for the proper execution of the work. In giving such additional instructions, the County shall have the authority to make minor changes in the work not involving extra cost, and not inconsistent with the intent of the Contract Documents. The Contractor shall not proceed with any portion of the work unless Contractor is in possession of plans and information necessary for proper execution of the work. The execution of the work by Contractor, as specially detailed or explained, without a written change order signed by the County, shall constitute acceptance by the Contractor of such information as being in conformity with the Contract Documents and without additional cost to County.
15. **DRAWINGS, PLANS AND SPECIFICATIONS** - The Contractor shall keep on the work site a copy of the drawings, plans and specifications, in good condition, which shall always be available to the County.

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- 16. DELAYS AND EXTENSION OF TIME** - If the Contractor is delayed at any time in the progress of the work by any causes beyond the Contractor's control, and which could not have been reasonably anticipated, the time of completion may be extended for such time as the County may decide. If this occurs, prompt claim shall be made by Contractor to the County in writing. Normal seasonal rainfall shall not be considered reason for a time extension.
- 17. CHANGES IN THE WORK** - The County, upon agreement with the Contractor, may order extra work or make changes by altering, adding to, or deducting from the work, the Agreement sum being adjusted accordingly. The Contractor shall not be authorized to comply with such orders without previously obtaining written authority therefore from the County. All such work shall be executed under the conditions of the Agreement, except that any claims for extension of time caused thereby shall be adjusted at the time of ordering such change. The Contractor shall furnish an itemized breakdown of the quantities and prices used in computing the value of any change that may be ordered. If in the opinion of the Contractor any instructions, or notices issued by County involve extra cost above the original contract price, Contractor shall immediately give the County written notice to that effect before proceeding with the work involved. The execution of work without prior submission of such written notice shall constitute the Contractor's acceptance of the work as being within the original contract price.
- 18. COUNTY'S RIGHT TO TERMINATE THE CONTRACT** - If the Contractor should be adjudged as bankrupt, or if Contractor should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, or if Contractor should persistently or repeatedly refuse or fail to supply enough properly skilled workers or proper materials, or if Contractor should fail to make prompt payment to subcontractors or for materials or labor, or persistently disregard laws, ordinances or the instructions of the County, or otherwise committed a material breach of the Contract, then the County, may, after giving the Contractor 10 days written notice, terminate the Agreement and take possession of the premises and of all materials, tools and appliances and finish the work by whatever means County may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work, such excess shall be paid to the Contractor. If such expense shall exceed the unpaid balance, the Contractor shall pay the difference to the County. If the construction of the project herein is damaged, which damage is determined to have been proximately caused by an "Act of God" in excess of 5% of the contract amount, provided that the work damaged is built in accordance with applicable building standards and the Contract Documents, then the County may terminate the Agreement.
- 19. PAYMENTS WITHHELD** - The County may withhold or nullify the whole or part of any request for payment as may be necessary to protect the County from loss on account of: defective work; claims filed or reasonable evidence indicating probable filing of claims; failure of the Contractor to make payments properly to subcontractors or for material or labor; a reasonable doubt that the work can be completed for the balance then unpaid; damage to another contractor or default of the Contractor under the terms of the Agreement.
- 20. CONTRACTOR AND SUBCONTRACTOR INSURANCE** - The Contractor shall not commence work until it has obtained all the required insurance and satisfactory proof of such insurance has been submitted to the County and said insurance has been approved to and approved by the County. Except for worker's compensation insurance, the County shall be named as an additional insured and be furnished 30 days written notice prior to cancellation. The Contractor shall not allow any subcontractor to commence work on its subcontract until the insurance required of the subcontractor has been obtained. Insurance carriers must be California admitted, with a minimum of AM Best Rating of A:V (5).
- A. Worker's Compensation Insurance. The Contractor shall procure and maintain during the life of this contract, worker's compensation insurance for all its employees engaged in the work. The Contractor shall require the subcontractor to provide worker's compensation insurance for all its employees to be engaged in the work, unless such employees are covered by the Contractor's worker's compensation insurance.

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- B. Contractor's Public Liability and Property Damage Insurance. The Contractor shall procure and shall maintain, during the life of its contract, Contractor's Public Liability Insurance in an amount not less than \$1,000,000 combined single limit coverage.
- C. Subcontractor's Public Liability and Property Damage Insurance. The Contractor shall require each subcontractor to procure and maintain, during the life of its subcontract public liability and property damage Insurance with minimum limits equal to one- half the amounts required of the Contractor.
- D. Scope of Insurance and Special Hazards. The insurance required under subparagraphs B and C hereof shall provide adequate protection for the Contractor and its subcontractors against damage claims which may arise from operations under this contract, whether such operations be by the insured or by anyone directly or indirectly employed by him and, also against any special hazards which may be encountered in the performance of this contract as such hazards are specified in the Contract Documents.
- E. Fire Insurance. The Contractor shall have in effect and maintain fire insurance, with extended coverage endorsements, upon the work to 100% of the insurable value thereof, including items of labor and materials (whether in or adjacent to the structure), materials in place or to be used as part of the permanent construction (including surplus materials), protective fences, temporary structures, miscellaneous materials and supplies incidental to the work. Contractor shall keep each structure fully insured, without additional cost to the County, until final inspection and acceptance of all work.

**21. METHOD OF PAYMENT** – Unless otherwise stated, payments to the Contractor shall be made monthly and upon final completion of construction as follows: The Contractor shall present a payment request statement to the County on the first day of each calendar month, or upon final completion of the work showing the percentage of the work completed. The statement shall include the value of all labor expended upon and materials incorporated into the work. It shall also include the value of materials to be incorporated into the work which have been delivered and satisfactorily stored on the site, as determined and approved by the County. Payment shall be made to the Contractor by the County upon presentation to the County of a signed certificate issued by the Contractor in the amount of 90% of the value of the labor expended upon and materials incorporated into the work and 75% of the value of the materials delivered and satisfactorily stored upon the site. Said payments shall be based upon the total Agreement price and only such labor and materials therein required. The final 10% of the contract price shall be paid 35 days after the recording of the Notice of Completion. Upon receipt of a payment request, the County shall review the request as soon as practicable for the purpose of determining that the payment request is proper. A returned request for payment shall be accompanied by a document setting forth the reasons why the payment request is not proper.

**22. WAGES AND HOURS** - The County in accordance with the Labor Code has determined that the minimum wages paid on this project shall not be less than those set forth in the Notice Inviting Bids. Any class of laborers and mechanics (including apprentices) not listed in the schedule which will be employed on this work, shall be classified or reclassified, conformable to the schedule. While the wage rates shown are the minimum rates required to be paid, this is not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to local labor conditions and prospective changes or adjustments of wage rates. No increase in the price shall be allowed or authorized on account of the payment of wage rates in excess of those required. The Contractor shall post at appropriate conspicuous points at the site of the project a schedule showing all determined minimum wage rates for the various classes of laborers and mechanics to be engaged in the work and all deduction, if any, required by law to be made from unpaid wages actually earned by the laborers and mechanics engaged.

Certified payroll is required. The Contractor and every subcontractor shall keep an accurate record showing the name, occupation, actual hours worked, and actual per diem wages paid to each worker employed in connection with the work. The records shall be kept open at all reasonable hours to the inspection of the County and the Division of Labor Law Enforcement.

**23. APPRENTICEABLE OCCUPATIONS** - The Contractor shall be responsible for compliance with all applicable Labor Code requirements, including but not limited to Section 1777.5 for all apprentice-able occupations on projects

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involving \$30,000 or more.

24. **DEPOSIT OF SECURITY** - In accordance with Public Contract Code Section 22300 and other applicable law, the Contractor may substitute securities for any monies withheld to insure performance of the work.
25. **COMPLETION OF WORK** - The Contractor shall promptly notify the County when construction is complete, to enable the County to make its final inspection to confirm if the work is completed.
26. **CORRECTION OF WORK AFTER FINAL PAYMENT AND WARRANTY** - Neither the final certificate, final payment, or any provision in the Contract Documents shall relieve the Contractor of responsibility for faulty materials or workmanship, and Contractor shall remedy any defects and pay for any damage to other work resulting therefrom, which may be discovered up to one year after recording of the Notice of Completion. The County shall give notice of observed defects with reasonable promptness, and the Contractor shall proceed to remedy such defects immediately (generally within two weeks unless there are extenuating circumstances) upon receiving such notification. Contractor shall pay for any extra cost incurred by the County related to warranty work.
27. **SUBSTITUTIONS OF MATERIALS AND EQUIPMENT** - Materials and equipment, including specially designated makes, must be furnished as specified except when equals are approved by the County in advance in writing
28. **BRAND OR TRADE NAME, SUBSTITUTION OF "EQUALS"** - Whenever any material, product, thing or service is specified by brand or trade name, the specified name shall be deemed to be followed by the words "or equal" (except where the product is designated to match others in use on a particular public improvement; either completed or in the course of completion). As a part of its bid any bidder may include a request for a substitution of an item "equal" to or specified by brand or trade name. Within 35 calendar days after award of the Agreement, the Contractor may submit to the County data substantiating such a request; otherwise the request shall be deemed to have been withdrawn. Such submission shall include data showing the equality, the reasons for making the request, and the difference, if any, in cost to the Contractor. The County shall promptly investigate the request and make decision as to equality of the requested substitute. Unless the request is granted by the County, the substitution shall not be permitted. No changes in the Agreement price will be allowed.
29. **MATERIALS, WORKMANSHIP** - All materials used by Contractor, unless otherwise specified, shall be new, of the types and grades specified, and the Contractor shall, if requested, furnish evidence satisfactory to the County that such is the case. All workmanship shall be of the best quality and all workmen shall be suitably skilled in the work which they perform.
30. **DEFECTIVE WORK AND MATERIALS** - The Contractor shall promptly remove from the work all materials determined by the County as failing to conform to the requirements of the Contract Documents, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute its work in accordance with the requirements and without additional cost to the County. If the County deems it ineffective to correct work not in accordance with the requirements, the difference in value together with a fair allowance for reduced value shall be deducted from the sum to be paid the Contractor.
31. **CLIMATIC CONDITIONS** - The Contractor shall provide and maintain heat, fuel, materials, and services necessary to protect all work and materials against change or damage from extreme heat, cold, dry winds, or dampers.
32. **CONTRACTOR'S TITLE TO MATERIALS** - No materials or supplies for the work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that it has good title to all materials and supplies for which it accepts partial payment.

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- 33. EMERGENCIES** - In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor shall take all necessary and proper steps to prevent any threatened loss or injury. If practicable, the Contractor shall communicate with the County and shall be guided by the directions and advice of the County. If the character of the emergency is such as to require action with such short limits of time, then the Contractor shall act independently and upon its own responsibility, subject to the direction of the County as soon as it may become practicable.
- 34. PROTECTION OF WORK AND PROPERTY** - The Contractor shall at all times safely guard the County's property from injury or loss. Contractor shall at all times safely guard and protect its own work and property from damage.
- 35. SAFETY AND ACCIDENT PREVENTION** - Precaution shall be exercised at all times for the protection of persons, including employees, and property. The Contractor shall be solely responsible for the condition of the premises at which the work is performed and for the safety of all persons and property on site during the work, during working and all other hours. The safety provisions of all applicable laws, building and construction codes shall be observed. The Contractor shall maintain sufficient safeguards, such as railings, temporary walks, lights, and similar items to protect against the occurrence of accidents, injuries, damage or hurt to any person or property and shall also be responsible for all liability or damage for failure to comply. The County shall have the right to stop the work at any time because of any condition it deems may be unsafe.
- 36. COMPUTING CHANGE ORDERS:**
- A. **LABOR:** The costs of labor will be the actual cost for wages prevailing locally for each craft or type of workers at the time the extra work is done, plus employer payments of payroll taxes, and insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from Federal, State, or local laws as well as assessment or benefits required by lawful collective bargaining agreements. The use of a labor classification which would increase the extra work costs will not be permitted unless the Contractor establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for the equipment rental.
  - B. **MATERIALS:** The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available and delivered to the job site in the quantities involved, plus sales tax freight and delivery.
  - C. **TOOL AND EQUIPMENT USE:** No payment will be made for the use of tools which have a replacement value of \$100.00 or less. Regardless of ownership, the rates to be used in determining equipment use costs shall not exceed listed rates prevailing locally at equipment rental agencies, or distributors, at the time the work is performed.
  - D. **OVERHEAD, PROFIT, AND OTHER CHARGES:** The mark-up for overhead and profit on work added to the contract shall be according to the following schedule:
    - 1. For work performed by the Contractor's forces, the added cost for overhead and profit shall not exceed (15%) of the net cost of the work.
    - 2. For work performed by the subcontractor, the cost for combined overhead and profit of both the Contractor and the subcontractor shall not exceed (20%) of the net cost of the subcontractors work. For work performed by a subcontractor, or any lower tier of subcontractor, the cost for combined overhead and profit of the prime contractor, shall not exceed (25%) of the net cost of the subcontractor's work.
    - 3. "Net Cost" is defined as consisting of costs of labor, materials, and equipment use only. The cost of applicable insurance and bond premium will be reimbursed at cost only, without mark-up.
- 37. SEPARATE CONTRACTS** - The County reserves the right to award other contracts in connection with the project, which may proceed simultaneously with the execution of this project. The Contractor shall coordinate operations with those of other contractors.

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- 38. COUNTY'S RIGHT TO DO WORK** - Should the Contractor, at any time during the process of the work, fail or refuse to furnish enough materials and/or workers to properly prosecute the work, the County, after giving 10 days written notice to the Contractor may, without prejudice to any other rights, proceed to furnish the materials and workers necessary to proceed with and/or complete the work, and may deduct such cost, together with reasonable expenses from any amounts then due or which may become due to the Contractor.
- 39. USE OF PREMISES AND CLEANING** - The Contractor shall at all times maintain the entire premises under its control in an orderly and clean condition. The Contractor shall at all times protect floors, walls and other surfaces by appropriate means. The Contractor shall safely store its apparatus, materials, supplies and equipment in such a neat manner, in an area designated by the County. The Contractor shall frequently clean up during each work day all refuse, rubbish, scrap materials, dust and other resulting from Contractor's operation, so that the site shall continuously present a neat, orderly and workmanlike appearance. All indoor area shall be vacuumed clean of all dust or other materials at the end of each work day. Before final payment, Contractor shall: remove all surplus material, false-work, temporary structures and fences, including foundations, and debris of every nature resulting from its operations and put the site in a neat orderly condition; thoroughly clean and leave reasonably dust-free all finished surfaces on the interior of all buildings; and wash and polish all glass, including the removal of all paint spatters and other defacements. The Contractor shall not use any County trash dumpsters or other County trash disposal means. The Contractor shall supply its own method to remove trash or debris from the work site and to a legal dump site.
- 40. OCCUPANCY BY THE OWNER** - The County shall have the right to occupy the building or use the improvements prior to the completion of the entire work, and such occupancy or use shall not operate as an acceptance of any part of the work.
- 41. LIENS** - The Contractor agrees that, at any time upon request from the County, Contractor will submit a sworn statement setting forth the work performed or material furnished by subcontractors and material suppliers, and the amount due and to become due to each, and that before the final payment the Contractor will submit to the County a complete set of documents showing what payments have been made for materials and labor used in connection with the work.
- 42. ASSIGNMENT OF CLAIMS** - In submitting a bid the Contractor or any subcontractor or supplier do offer and agree to assign to the County all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 {commencing with Section 16700} of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the Agreement. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties.
- 43. INDEMNIFICATION** – The County shall indemnify and hold harmless County (including its agencies, districts, officers, and employees) from any liability, damage, action or claim based upon or arising out of Contractor's work, including the work of Contractor's subcontractors. The Contractor shall defend the County at its sole expense, including all cost and legal fees, in any action for which indemnification is required.
- 44. PATENTS, ROYALTIES AND TAXES** - The Contractor shall hold the County harmless from liability of any nature, including costs and expenses, for or on account of any patented or unpatented article, appliance, or device protected by patent used in the performance of the work; and shall defend the County against all suits or claims for infringement of any intellectual property right.
- 45. NON-DISCRIMINATION** – The Contractor shall, in accordance with applicable laws, not discriminate against any person related to employment or services for the work because of race, color, religion, national origin, ancestry, sex, age, sexual orientation, marital status, AIDS or disability.

**COUNTY OF RIVERSIDE PURCHASING AND FLEET SERVICES  
PUBLIC WORKS (Projects Over \$25,000)**

---

**Bid Submission Address:**  
Purchasing and Fleet Services  
2980 Washington Street  
Riverside, CA 92504-4647  
Telephone: (951) 955-4937  
**Return bid to address above:**

**Request for Bids # TLARC-575**

Bid Issue Date: 10/11/2017  
Job Walk Date: N/A  
Bid Closing Date: 11/1/2017  
on or before 1:30 P.M. Pacific Time

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- 46. ASSIGNMENTS** - The Contractor shall not assign the whole or any part of this Agreement without the written consent of the County and all sureties executing bonds on behalf of the Contractor in connection with the work.
- 47. NO WAIVER - Failure** on the part of the County to require exact, full and complete compliance with any of the Contract Documents requirements shall not be construed in any manner changing the terms or preventing the County from enforcement of the Contract Documents.
- 48. PUBLIC WORKS PROJECT CLAIMS RESOLUTION** – The Contractor is referred to Public Contract Code Sections 20104 – 20104.6 for mandatory claims resolution procedures applicable to public works projects for claims of \$375,000 or less. Claims must be in writing and filed before the date of final payment. Specific deadlines are stated for exchange of documents between the parties; and mandatory “meet and confer” conferences are required.



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**ATTACHMENT 1  
East and West Riverside County Areas**

Technical Specifications for Labor and Materials to Install Type E Vehicle and Type D Modified Bike Inductive Loop Detectors and ES-5D-Type A Stub-Outs.

1. **SCOPE OF WORK:** Contractor shall furnish all parts, labor, materials, tools, rentals, equipment, disposal, transportation, and supervision necessary to provide material and install detector loops (attachment 2) and ES-5D-Type A Stub-Out (attachment 3). Contractor shall saw cut and install Type E Modified Standard and Type D Modified Bicycle Inductive Detector Loops and ES-5D-Type A Stub-Outs with a minimum call out of 10 each at various locations throughout Riverside County as needed and approved by County project manager, including but not limited to traffic control as specified in strict accordance with this Attachment 1 and the specifications in Attachments 2 through 5.
  
2. **GENERAL**
  - 2.1 All Work shall be performed during daylight hours only.
  - 2.2 Traffic control shall be performed in accordance with Attachment 3 "Special Provisions for Traffic Control System" page 29 through 31
  - 2.3 Signals, Lighting, and Electrical Systems shall be performed in accordance with Attachment 5 (Caltrans Standard Specifications Section 86 Signals, Lighting and Electrical Systems, dated May 2006).
  
- Notes:
  - Certified Payroll is required on this project if contractor's cumulative projects throughout the year exceed \$25,000.
  - Contractor shall comply with all Federal, State, and Local, rules and regulations that in any manner affect the work. Special attention is called, but not limited to, the Local environmental ordinances. Ignorance on the part of the bidder will in no way relieve him/her from responsibility of compliance with all said laws, ordinances, rules, and regulations
  
3. **QUALITY ASSURANCE:**
  - 3.1 The Contractor shall use an adequate number of skilled workmen who are thoroughly trained and experienced in the necessary craft and who are completely familiar with the specified requirements and the methods needed for proper performance of all work contained in these specifications.
  - 3.2. The Contractor shall provide new materials consisting of the highest quality and workmanship in every detail.
  - 3.3 The Contractor shall be solely and completely responsible for the condition of the premises on which the work is performed and for safety of all persons and property on the site during performance of the contract. This requirement shall not be limited to normal working hours, but shall apply continuously throughout the project.
  
4. **SCHEDULING:**
  - 4.1 Work to be performed during regular business hours, Monday-Friday 9:00AM to 4:00PM.
  - 4.2 The Contractor is advised that certain inconveniences may be encountered. Complete cooperation between the Contractor and the on-site County Project Manager as well as the County Project Manager will be necessary to expedite the work with the least amount of interference or delay.

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- 4.3 The awarded Contractor is to provide the onsite County Project Manager with daily schedule of activities so that the necessary arrangements and precautions can be made with the patients in the construction areas.
  - 4.4 Upon Notice to Proceed, the project shall be completed within thirty calendar days unless otherwise specified in writing and accepted by the County Project Manager.

**5. SAFETY AND SPECIAL REQUIREMENTS:**

- 5.1 The successful contractor will be required to provide the names, driver license numbers of all employees who will be working in this facility to allow the County to conduct a local background check.

**6. CLEAN-UP:**

- 6.1 The work area shall be kept clean at all times during construction. Protect floors and all adjacent surfaces by use of drop cloths and other means. All cutting, dust, and other debris shall be removed periodically during the workday so as not to be tracked into other areas of the building or create a hazard to foot traffic. At the end of the workday all unused materials shall be stacked in a neat and orderly manner and located in an area designated by the County Project Manager out of the path of others, unless otherwise specified in writing. All indoor areas of construction shall be vacuumed clean of all dust at the completion of each workday. The County Project Manager can at any time stop the job for any condition that he/ she may deem unsafe.
- 6.2 The County of Riverside dumpster(s) shall not be used by the Contractor. Contractors shall supply their own dumpster(s) and lawfully transport all trash and debris generated by the project off the County Riverside property to an appropriate dumpsite.

**7. WARRANTIES:**

- 7.1 All warranty work shall be completed within two (2) weeks of written notice by the County.
- 7.2 Workmanship: A one-year unconditional warranty shall be in effect from the contractor.

**COUNTY OF RIVERSIDE PURCHASING AND FLEET SERVICES  
PUBLIC WORKS (Projects Over \$25,000)**

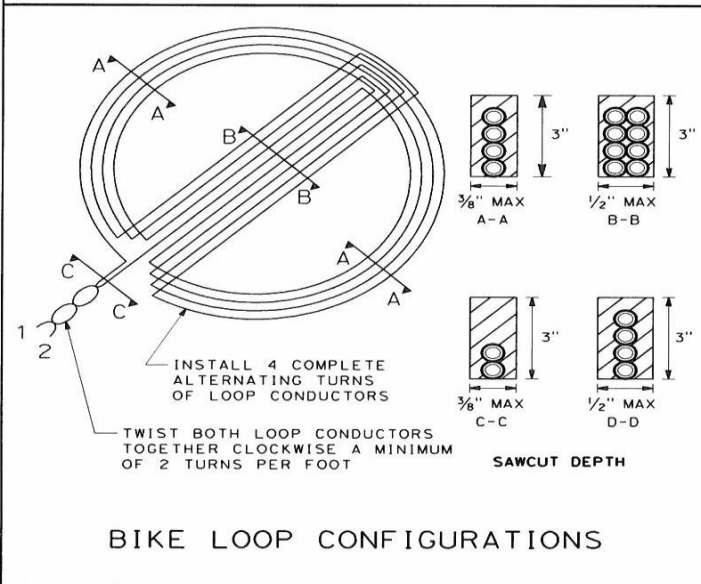
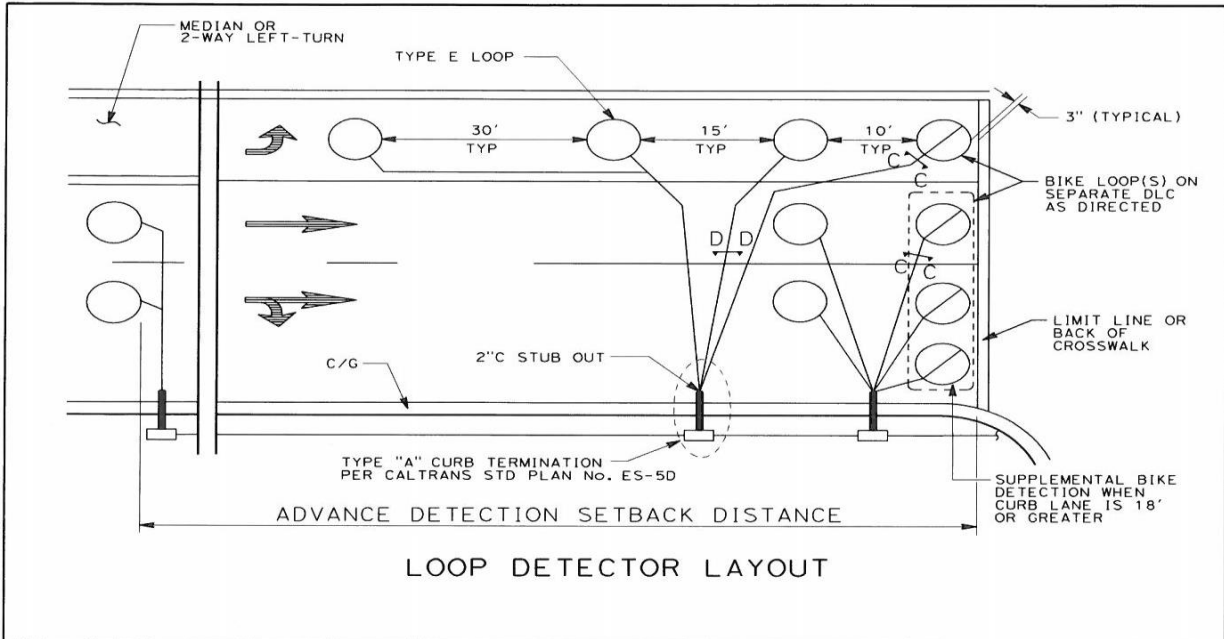
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**ATTACHMENT 2**

**County Standard 1203 Detector Loop Layout**



SPEED	SETBACK*
25 MPH	105'
30 MPH	140'
35 MPH	185'
40 MPH	230'
45 MPH	285'
50 MPH	345'
55 MPH	405'
60 MPH	475'

\*DISTANCE PER CA MUTCD

APPROVED BY: \_\_\_\_\_ DATE \_\_\_\_\_

PATRICIA ROMO  
DIRECTOR OF TRANSPORTATION

REVISIONS	REV	BY:	APR'D	DATE	REV	BY:	APR'D	DATE



COUNTY OF RIVERSIDE

**LOOP DETECTOR  
DETAILS**

NO SCALE

STANDARD No. **1203**

**COUNTY OF RIVERSIDE PURCHASING AND FLEET SERVICES  
PUBLIC WORKS (Projects Over \$25,000)**

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**ATTACHMENT 3**

**County Standard ES-5D-Type A Stub-Outs**

All Rights Reserved

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
	RIVERSIDE			11	11

October 30, 2015  
PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF REPRODUCED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED \_\_\_\_\_

**NOTES:**

- Bushings shall be used at end of conduit.
- Tape detector conductors or cables 3" each side of bushings.
- Install duct seal compound to each end of termination conduit before installing sealant.
- Round all sharp edges where detector conductors or cables have to pass.
- End of conduit shall be 3 1/8" below roadway surface.
- Conduit size      Loop conductors  
1" C minimum      1 to 2 pairs  
1 1/2" C minimum    3 to 4 pairs  
2" C minimum      5 or more pairs
- Splice detector conductors or cables to detector lead-in-cable.
- Location of detector hand hole when shown on plans.
- When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2'-0" into the shoulder pavement.
- 3/4" C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
- 1/2" Minimum between top of conduit and pavement surface.
- Sawcut shall not exceed 1" in width and 1/8" longer than conduit to be installed.
- Conductors with 1/2" minimum slack inside conduit.
- Inductive loop detector saw slot.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(CURB AND SHOULDER TERMINATION,  
TRENCH, AND HANDHOLE DETAILS)**  
NO SCALE  
RSP ES-5D DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-5D DATED JULY 19, 2013 AND  
STANDARD PLAN ES-5D DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.  
**REVISED STANDARD PLAN RSP ES-5D**

- Bushings shall be used at end of conduit.
- Tape detector conductors or cables 3" each side of bushings.
- Install duct seal compound to each of termination conduit before installing sealant.
- Round all sharp edges where detector conductors or cables have to pass.
- End of conduit shall be 3 1/8" below roadway surface.
- Conduit size      Loop Conductors  
1" C minimum      1 to 2 pairs  
1 1/2" C minimum    3 to 4 pairs  
2" C minimum      5 or more pairs
- Splice detector conductors or cables to detector lead-in-cable.
- Location of detector hand hole when shown on plans.
- When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2' - 0" into the shoulder pavement.
- 3/4" C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
- 1/2" Minimum between top of conduit and pavement surface.
- Sawcut shall not exceed 1" in width and 1/8" longer than conduit to be installed.
- Conductors with 1/2" minimum slack inside conduit.
- Inductive loop detector saw slot (reference).

2010 REVISED STANDARD PLAN RSP ES-5D

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**ATTACHMENT 4**



**STANDARD SPECIFICATIONS**

**STATE OF CALIFORNIA BUSINESS, TRANSPORTATION AND HOUSING AGENCY DEPARTMENT OF  
TRANSPORTATION**

**MAY 2006**

**SECTION 86 SIGNALS, LIGHTING AND ELECTRICAL SYSTEMS**

**1.0 DESCRIPTION:**

- 1.1 In general, this project consists of providing and installing inductive loop detectors at various traffic signal locations within the County of Riverside.

**2.0 SPECIFICATIONS:**

- 2.1 This project shall conform to the requirements of the May 2006 edition of the Standard Specifications and Standard Plans as issued by the State of California Department of Transportation.

**3.0 DISPOSAL OF EXCESS EXCAVATION OR MATERIALS:**

- 3.1 Excess earth excavation, pavement grindings and other excess materials resulting from construction operations shall be disposed of by the Contractor outside of the highway right of way, as provided in Section 7-1.13 of the Caltrans Standard Specifications Section 86 Signals, Lighting and Electrical Systems, dated May 2006.
- 3.2 The second paragraph of Section 7-1.13 of the Caltrans Standard Specifications Section 86 Signals, Lighting and Electrical Systems, dated May 2006 is modified to read as follows:
- 3.2 When any material is to be disposed of outside the highway right of way, and the County of Riverside has not made arrangements for the disposal of such material, the Contractor shall first obtain written authorization from the property owner on whose property the disposal is to be made and he shall file with the Engineer said authorization or a certified copy thereof together with a written release from the property owner absolving the County of Riverside from any and all responsibility in connection with the disposal of material on said property. If the disposal of materials is to be made at an established disposal facility that is available for public use, the Contractor shall retain all authorizations and receipts from said disposal facility and shall provide copies to the Engineer upon request.

**4.0 TRAFFIC CONTROL SYSTEM:**

- 4.1 Contractor shall prepare construction staging and traffic control plans for review and approval by the Transportation Department.
- 4.2 Proposed plans shall be submitted by the Contractor for review and approval by the Transportation Department at least two weeks prior to the start of construction. The construction staging and traffic control plans shall be prepared, signed and stamped by a Civil Engineer or Traffic Engineer who is registered as such in the State of California, unless otherwise specifically allowed by the Engineer. The Contractor shall revise and implement the plans as directed by the Construction Engineer. Construction

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shall not begin until the Engineer provides Contractor with County approval of the plans.

- 4.3 Construction staging and traffic control plans shall be in accordance with the appropriate standards and specifications for construction staging, detour roads, traffic control, including the State of California Highway Design Manual, the manual on Uniform Traffic Control Devices 2006 .Edition, the corresponding California Supplement, and subsequent modifications as adopted by the State of California Department of Transportation, Standard Plans and. Standard Specifications, and the Work Area Traffic Control Handbook (WATCH), as published by Building News, Inc. Any requests for deviation from the established design standards or specifications are to be submitted to the Construction Engineer for review and approval prior to submission of the required plans.
- 4.4 All existing traffic control signs and street name signs shall be maintained in visible locations as directed by the Engineer.
- 4.5 No detours will be provided, unless specifically allowed herein. The Contractor will be required to conduct his operations in such a manner that traffic will be permitted to pass through the work area with as little delay as possible.
- 4.6 All warning lights, signs, flares, barricades and other facilities, for the sole convenience and direction of public traffic shall be furnished and maintained by the Contractor. All traffic control devices shall conform to and be placed in accordance with the Manual on Uniform Traffic Control Devices 2006 Edition, the corresponding California Supplement, and subsequent modifications as adopted by the State of California Department of Transportation.
- 4.7 All construction signs shall be either covered or removed when not required by the nature of the work or if no present hazard to the motorist exists.
- 4.8 The Contractor shall notify the appropriate regional notification center for operators of subsurface installations at least two (2) working days, but not more than 14 calendar days, prior to commencing excavation for construction area sign posts. The regional notification centers include, but not limited to, the following:

Notification Center	Telephone Number
Underground Service Alert- Southern California (USA)	1-800-422-4133

- 4.9 Excavations required to install construction area signs shall be performed by hand methods without the use of power equipment, except that power equipment may be used if it is determined there are no utility facilities in the area of the proposed post holes.
- 4.10 No payment for extra work will be allowed for work performed as specified in Section 12-2.02 (Flagging Costs) of the Standard Specifications. Flagging costs will be borne entirely by the Contractor.
- 4.12 Dust control shall conform to the provision of Section 10 of the Standard Specifications except that no extra work will be allowed when the Engineer orders the application of water for the purpose of controlling dust caused by public traffic as provided for in the last paragraph of Section 10.
- 4.13 The Contractor shall be responsible to distribute an information letter pertaining to the planned work to

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all affected residences and businesses, at least one week prior to commencing work adjacent to those residences and .businesses. It shall be the responsibility of the Contractor to design the information letter, obtain design approval from the Engineer, print sufficient copies, and distribute the letter. The Transportation Department logo shall be included on the letter. A computer file of the logo may be obtained from the Engineer in .WPG, .DXF, .DGN or .DWG format. The letter shall be similar to the sample provided by the Engineer, and shall include a project description, the scope of work, the anticipated construction schedule, and other information as appropriate.

- 4.14 The Contractor shall post temporary no parking signs on affected streets 24 hours prior to work on those streets. The temporary no parking signs shall state the anticipated dates and hours of work on those streets.
- 4.15 Payment - Full compensation, except as otherwise provided herein, for conforming to the requirements of this article, including furnishing, installing and maintaining all traffic control devices shown on the construction staging and traffic control plans, shall be included in the unit price bid for pavement markers.

**5.0 Detectors:**

- 5.1 Detectors shall conform to the Provisions in section 86-5, "Detectors" of the Caltrans Standard Specifications Section 86 Signals, Lighting and Electrical Systems, dated May 2006.
- 5.2 Loop wire shall be type "2"
- 5.3 Loop detector lead-in cable shall be type "B".
- 5.4 Detector curb terminations shall be in accordance with Standard Plans ES-5B, and shall be type "A". Detectors shall be type "E" unless otherwise indicated on the construction plan or as directed by the County Engineer.
- 5.5 All loops shall be tested sequentially by three methods:  
5.5.1 Megger (measured by Megaohms)  
5.5.2 Resistance (in ohms)  
5.5.3 Inductance (measured in microhenries)
- 5.6 Loop sealant shall be the hot-melt rubberized asphalt sealant type, unless otherwise directed by the County engineer.
- 5.7 Loop conductors and sealant shall be installed on the same day the loop slots are cut.
- 5.8 Inductive loop detectors shall be provided and installed, at various traffic signal locations within the County of Riverside.
- 5.9 Payment for installing inductive loop detectors will be at the unit price bid and shall include full compensation for furnishing all supervision, labor, materials, tools; equipment, all traffic control and no additional compensation will be allowed therefore.

**6.0 OBSTRUCTIONS:**

- 6.0 Attention is directed to Sections 8-1.10, "Utility and Non-Highway Facilities", and 15, "Existing Highway Facilities" of the Caltrans Standard Specifications Section 86 Signals, Lighting and Electrical Systems,

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dated May 2006.

- 6.1 Existing utility and privately owned facilities shall be protected in accordance with Section 7-1.11 of the Caltrans Standard Specifications Section 86 Signals, Lighting and Electrical Systems, dated May 2006, "Preservation of Property" and these Special Provisions. The Contractor is also responsible to protect those facilities that are to be relocated by others, prior to or during construction, and shall protect those facilities in both their existing and their ultimate locations. The Contractor shall cooperate with owners and their Contractors of utility and privately owned facilities, for the relocation of said facilities, in accordance with Section 7-1.14, "Cooperation" of the Caltrans Standard Specifications Section 86 Signals, Lighting and Electrical Systems, dated May 2006.
- 6.2 All water valves, gas valves, sewer manholes, survey monuments, survey markers and any other utility appurtenances shall be protected in place. Full compensation for such protection shall be considered as included in the various bid items.
- 6.3 The Contractor's attention is directed to the existence of certain underground facilities that may require special precautions be taken by the Contractor to protect the health, safety and welfare of workmen and 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 pipe lines greater than 6 inches in diameter or, pipe lines operating at pressures greater than 60 PSI ( gage ); underground electric supply system conductors or cables either directly buried or in duct or conduit which do not have concentric neutral conductors or other effectively grounded metal shields or sheaths; and underground electrical conductors with potential to ground of more than 300 volts. The Contractor shall notify the Engineer at least twenty-four hours prior to performing any work in the vicinity of such facilities.
- 6.4 Attention is directed to the requirements of Government Code Sections 4216-4216.9 pertaining to existing utility facilities.
- 6.5 The Contractor shall assume that every house, building and lot within the project limits has utility service pipes and conductors (laterals), and that utility main and trunk facilities exist within the project limits. The Contractor shall determine if it is warranted to determine the exact location of these utility service laterals and existing main lines, unless directed by the Engineer to pot-hole at specific locations, or as otherwise required herein.
- 6.6 The Contractor will not be directly reimbursed for determining the exact location of the utility main lines or services laterals but shall include any compensation for this work in the contract price paid for the various items of work. Any damage to existing main lines or service laterals for which pot-holing was not performed shall be considered damage due to not using reasonable care and the damage shall be repaired at the Contractor's expense.
- 6.7 The Contractor shall conduct his operations with the assumption that underground utility facilities exist within the project limits. The Contractor shall exercise caution and best construction practices for safety and for protection of underground facilities. The approximate locations of underground utility facilities, as shown on the plans, are based on information provided by the respective owners, listed below. The Contractor shall also utilize the markings of the regional notification center (Underground Service Alert), and above-ground utility appurtenances to determine the existence and approximate location of underground utilities.



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- 6.8 No excavation shall be made within four (4) feet of any underground utilities, as listed below, unless and until such utilities have been positively located as to horizontal and vertical position. This requirement applies to all underground electric, natural gas, toxic or flammable gas, chlorine, oxygen or petroleum facilities.
- 6.9 Forty-eight hours prior to beginning construction, the Contractor shall notify the following agencies:
- Underground Service Alert 800-422-4133
  - Southern California Edison Company 909-930-8497
  - Southern California Gas Company 909-335-7561
  - Santa Ana Watershed Project Authority 951-354-4220
  - Kinder Morgan Energy Partners, L.P. 714-560-4600
- 6.10 Full compensation for all costs, including labor, equipment, materials and incidentals, required to comply with the requirements of this section shall be considered as included in the various items of work, and no additional compensation will be allowed therefor.

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**ATTACHMENT 5**



**STANDARD SPECIFICATIONS**

**STATE OF CALIFORNIA BUSINESS, TRANSPORTATION AND HOUSING AGENCY DEPARTMENT OF  
TRANSPORTATION**

**MAY 2006**

**SECTION 86 SIGNALS, LIGHTING AND ELECTRICAL SYSTEMS**

- 1 Each detector shall provide vehicle detection without readjustment from -1 8°C to 71°C.
- 2 Units shall use printed circuit boards designed to facilitate identification of components. This shall be done by either part identification markings or by providing a pictorial diagram showing physical location and identification of each component. Each printed circuit board shall have the following minimum quality requirements: NEMA FR.-4 glass cloth base epoxy resin board, 1/16 inch minimum thickness, organic solder masking and gold plated contacts.
- 3 Intercomponent wiring shall be copper track with a minimum weight of 2 ounces per square foot. Printed circuit design shall be such that components may be removed and replaced without permanent damage to boards or tracks.
- 4 Splices shall conform to the provisions in Section 86-2.09, "Wiring."

**86-5.01A Inductive Loop Detectors**

- Inductive loop detectors shall conform to the following:

**86-5.01IA (1) General**

- The term "inductive loop detector" applies to a complete installation consisting of a loop or group of loops installed in the roadway, as shown on the plans, lead-in cable and a sensor unit with power supply installed in a controller cabinet.

**86-5.01A (2) (Blank)**

**86-5.01A (3) Sensor Unit Construction**

- "Card" type sensor units shall conform to the requirements in "Traffic Signal Control Equipment Specifications," issued by the Department, and to all addenda thereto current at the time of project advertising. Shelf mounted sensor units shall conform to the requirements in Section 11 of the NEMA Standards Publication No. TS 1.
- Capacitors or inductors necessary for loop tuning shall not be mounted external to the sensor unit.

**86-5.01A (4) Construction Materials**

- Conductor for each inductive loop detector shall be continuous and un-spliced and shall conform to one of the following:
  - A. Type 1 loop wire shall be Type RHW-USE neoprene-jacketed or Type USE cross-linked polyethylene insulated, No. 12, stranded copper wire. The minimum insulation thickness at any point shall be 40 mils.
  - B. Type 2 loop wire shall consist of a conductor inside of plastic tubing. The conductor shall be Type THWN or Type XHHW, No. 14, stranded copper wire. The tubing shall be polyethylene or vinyl, rated for use at 105°C, and shall be resistant to oil and gasoline. The tubing shall have a maximum outside diameter of 0.27-inch and a minimum wall thickness of 0.028-inch. The conductors shall not be spliced inside the tubing.

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- Conductors for loop detector lead-in cable shall be two No.16 (19 x 29) stranded tinned copper. Loop detector lead-in cable shall conform to the calculated cross sectional area of ASTM Designation: B 286, Table 1. The lead-in cable shall conform to one of the following:
  - A. Type B lead-in cable shall be insulated with 20 mils of high-density polyethylene. The conductors shall be twisted together with at least 2 turns per foot and the twisted pair shall be protected with a copper or aluminum polyester shield. A No. 20, minimum, copper drain wire shall be provided and connected to the equipment ground within the cabinet. The cable shall be provided with a high-density polyethylene or high-density polypropylene e outer jacket with a nominal thickness of 32 mils. An amorphous interior moisture penetration barrier of no hydroscopic polyethylene or polypropylene fillers shall be provided.
  - B. Type C lead-in cable shall conform to the requirements in International Municipal Signal Association (IMSA) Specification No. 50-2. A No. 20, minimum, copper drain wire shall be provided and connected to the equipment ground within the cabinet.

**86-5.01A(5) Installation Details**

- Installation and tests shall conform to the details and notes shown on the plans.
- Unless shown otherwise, each loop shall consist of 3 turns of conductor as specified in Section 86-5.01A (4), "Construction Materials."
- Slots cut in the pavement shall be washed clean, blown out and thoroughly dried before installing conductors. Residue resulting from slot cutting operations shall not be permitted to flow across shoulders or lanes occupied by public traffic and shall be removed from the pavement surface by vacuuming or other approved method before any residue flows off of the pavement surface. Residue from slot cutting operations shall be disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13.
- After conductors are installed in the slots cut in the pavement, the slots shall be filled with sealant to within 1/g inch of the pavement surface. The sealant shall be at least one inch thick above the top conductor in the saw cut before setting; surplus sealant shall be removed from the adjacent road surfaces without the use of solvents.
- The sealant for filling slots shall conform to one of the following:

**Elastomeric Sealant**

- Elastomeric sealant shall be a polyurethane material of a composition that will, within its stated shelf life, cure only in the presence of moisture. Sealant shall be suitable for use in both asphalt concrete and Portland cement concrete.
- The cured sealant shall have the following performance characteristics:

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Specification	ASTM	Requirement
Hardness (indentation) at 25°C & 50% relative humidity. (Type A Model 1700 only)	D224-0 Rex.	65-85
Tensile Strength: pulled at 508 mm per minute	D 412 Die C	3.45 MPa, min.
Elongation: pulled at 508 mm per minute	D 412 Die C	400% min.
Flex at -40°C: 0.6-mm Free Film Bend (180°) over 13-mm Mandrel	-	No cracks
Weathering Resistance: Weatherometer 350 h cured 7 days at 25°C @ 50% relative humidity	822	Slight Chalking
Salt Spray Resistance: 28 days at 38°C with 5% NaCl, Die & pulled at 508 mm minute	B 117	3.45 MPa, min. tensile 400% min. elongation
Dielectric Constant over a temperature range of -30°C to 50°C	D 150	Less than 25% change

**Asphaltic Emulsion Sealant**

- Asphaltic emulsion sealant shall conform to the requirements in State Specification 8040-41A-15 and shall be used only for filling slots in asphalt concrete pavement. This material shall not be used in slots which exceed 5/8 inch in width or where the slope causes the material to run from the slot. The material shall not be thinned in excess of the manufacturer's recommendations and shall not be placed when the air temperature is less than 7°C.

**Hot-Melt Rubberized Asphalt Sealant**

- Hot-melt rubberized asphalt shall be in solid form at room temperature and fluid at an application temperature of 190°C to 205°C. Fumes from the material shall be non-toxic. Sealant shall be suitable for use in both asphalt concrete and Portland cement concrete.
- Performance characteristics of the cured hot-melt rubberized asphalt shall be as follows:

Soecification	ASTM Desionation	Re-0uirement
Cone Penetration, 25°C, 150g, 5 s	D 5329, Sec. 6	3.5 mm, max.
Flow 60°C	D 5329 Sec. 8	Smm max.
Resilience 25°C	D 5329, Sec. 12	25%, min.
Softening Point	0 36	82°C, min.
Ductility, 25°C 50 mm/min	D 113	300 mm, min.
Flash Point, COC, °C	D 92	288°C min.
Viscosity, Brookfield Thennosel, No.27 Spindle, 20 rom 190°C	D 4402	2.5-3.5 Pa's

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- The hot-melt rubberized asphalt shall be melted in a jacketed, double boiler type melting unit. Temperature of the heat transfer medium shall not exceed 245°C.
- Application of the hot-melt sealant shall be made with a pressure feed applicator or pour pot. Sealant shall be applied when the pavement surface temperature is greater than 4°C.
- Hot-melt sealant shall be packaged in containers clearly marked "Detector Loop Sealant" and specifying the batch and lot number of the manufacturer.
- Loop conductors shall be installed without splices and shall terminate in the nearest pull box. In addition to the requirements for splices in detector circuits, the open end of cable jackets or tubing shall be sealed in a manner similar to the splicing requirements to prevent the entrance of water. The loops shall be joined in the pull box in combination of series and parallel so that optimum sensitivity is obtained at the sensor unit. Final splices between loops and lead-in cable shall not be made until the operation of the loops under actual traffic conditions is approved by the Engineer.
- All loop conductors for each direction of travel for the same phase of a traffic signal system, in the same pull box, shall be spliced to a detector lead-in cable which shall be run from the pull box adjacent to the loop detector to a sensor unit mounted in the controller cabinet.
- All loop conductors for traffic monitoring shall terminate in a pull box or terminal strip in the traffic monitor station cabinet when a cabinet of that type is installed.
- Conductors for inductive loop traffic signal and traffic monitoring installations shall be identified and banded, in pairs, by lane, in the pull box adjacent to the loops and near the termination of the conductors in the controller or traffic monitoring station cabinet. Bands shall conform to the provisions in Section 86-2.09, "Wiring."
- If asphalt concrete surfacing is to be placed, the loop conductors shall be installed prior to placing the uppermost layer of asphalt concrete. The conductors shall be installed, as shown on the plans, in the compacted layer of asphalt concrete immediately below the uppermost layer. Installation details shall be as shown on the plans, except the sealant shall fill the slot flush to the surface.

**86-5.01B (Blank)**

**86-5.01C Magnetic Detectors**

- Magnetic detectors shall conform to the following:

**86-5.01C (1) General**

- The term "magnetic detector" applies to a complete installation consisting of a sensing element or group of sensing elements installed in the roadway as shown on the plans, lead-in cable and an amplifier with integral power supply installed in a controller cabinet.
- Each magnetic detector amplifier shall be a low noise, high gain amplifier designed for use with all types of magnetic detector sensing units as used by the State of California. Sensitivity of units shall be readily adjustable by a knob on the front panel. An indicator light shall be provided to indicate detector operation.
- The sensing elements shall be no larger than 2 1/4 inches in diameter and shall contain no moving parts or transistors. The element casing shall be constructed of non-ferrous materials suitable for use in the environment in which it will operate, and shall be sealed to prevent the entrance of moisture. The element shall be shaped to facilitate pushing into conduit and shall not have any sharp edges along its length. The overall length of the sensing element shall not exceed 21 inches.
- Magnetic detector sensing elements and amplifiers to be installed at any one intersection or any one traffic count station shall be of the same make and type.

**86-5.01C (2) Performance Characteristics**

- Each magnetic detector shall be capable of being activated by a voltage induced in the coil of the sensing element by the passage of a vehicle at any speed from 3 mph to 80 mph. Any vehicle passing within 18 inches of either end of the sensing element shall provide an output closure.

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**86-5.01C (3) Amplifier Unit Construction**

- Each amplifier shall be provided with an integral power supply.
- Each amplifier shall be designed to provide ease of maintenance with all electronic components readily accessible.
- All input and output circuits for each amplifier shall enter via a single MS connector, circuitry for which shall be as shown in the following table:

Connector Circuitry For Magnetic Detector Amplifiers	
MS Connector Circuit	18-8 Pin
Magnetic Detector (-)	A
Magnetic Detector (+)	B
120 V, (ac+)	C
Chassis Ground	D
Detector Common	E
Output N.O.	F
Output N.C.	G
Grounded Conductor (ac-)	H

- All controls, indicator lights, fuse holders and connectors shall be mounted on the front panel of the amplifier.

**86-5.01C (4) Construction Materials**

- The cable from the pull box adjacent to the magnetic detector sensing element to the field tennina1s in the controller cabinet shall be the type specified for inductive loop detectors.

**86-5.01C (5) Installation Details**

- Magnetic detector sensing elements shall be installed within 3-inch, Type 3 conduit, as directed by the Engineer.
- Conduit shall extend across the full width of the traveled way (pull box to pull box) as shown on the plans. Bottom of conduit shall be placed 12-inches below top of pavement.

**86-5.01D Removing or Abandoning Existing Pressure-Sensitive Detectors**

- When a foundation for a pressure-sensitive vehicle detector is to be removed, the hole left by removing the detector frame and foundation shall be filled with minor concrete, except the roadway surface shall be reconstructed with material to match existing surfacing. Minor concrete shall conform to the provisions in Section 90-10, "Minor Concrete," except that the concrete shall contain not less than 420 pounds of cement per cubic yard for asphalt concrete surfaced roadways, and not less than 590 pounds of cement per cubic yard for Portland cement concrete surfaced roadways.
- When a foundation for a pressure-sensitive vehicle detector is to be abandoned, the top of the foundation, anchor bolts, frame and conduits shall be removed to a depth of not less than 6 inches below the surface of existing pavement. The resulting hole shall be backfilled with material to match existing surfacing.