

## ATTACHMENT No. 2

Plans and Specifications for the Walnut Street and Fern Street Traffic Signal Project.  
Project Number: 213501

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**County of Humboldt • Department of Public Works**  
**1106 Second Street • Eureka • CA • 95501 • (707) 445-7652**



## **SPECIAL PROVISIONS**

NOTICE TO CONTRACTORS,  
PROPOSAL AND CONTRACT

FOR

**WALNUT STREET (3J300) AND FERN STREET (3K210)  
TRAFFIC SIGNAL PROJECT**

**PROJECT NO.: RPL- 5904 (107)  
CONTRACT NO.: 213501**

**90 WORKING DAYS**

FOR USE WITH Standard Specifications dated 2010,  
Standard Plans dated 2010, Prevailing Wage Rates,  
Labor Surcharge and Equipment Rental Rates

**BIDS OPEN: SEPTEMBER 13, 2016 AT 2:00 PM**

Clerk of the Board's Office  
Humboldt County Courthouse  
825 Fifth Street, Suite 111  
Eureka, CA 95501

SPECIAL PROVISIONS

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PROJECT**

**PROJECT NO.: RPL- 5904 (107)**  
**CONTRACT NO.: 213501**

Prepared by

County of Humboldt  
Department of Public Works  
1106 Second Street  
Eureka, CA 95501

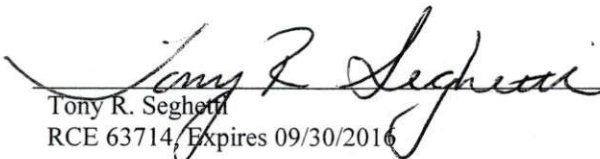
**Recommended:**

  
\_\_\_\_\_  
Jeffrey A. Ball  
RCE 70631, Expires 06/30/2017

7-18-2016  
Date



**Approved:**

  
\_\_\_\_\_  
Tony R. Seghetti  
RCE 63714, Expires 09/30/2016

7/18/16  
Date



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## Standard Plans List

The standard plan sheets applicable to this Contract include those listed below. The applicable revised standard plans (RSP) listed below are included in the project plans.

### ABBREVIATIONS, LINES, SYMBOLS AND LEGEND

|      |                                  |
|------|----------------------------------|
| A10A | Abbreviations (Sheet 1 of 2)     |
| A10B | Abbreviations (Sheet 2 of 2)     |
| A10C | Lines and Symbols (Sheet 1 of 3) |
| A10D | Lines and Symbols (Sheet 2 of 3) |
| A10E | Lines and Symbols (Sheet 3 of 3) |

### PAVEMENT MARKERS, TRAFFIC LINES, AND PAVEMENT MARKINGS

|      |                                                     |
|------|-----------------------------------------------------|
| A20A | Pavement Markers and Traffic Lines, Typical Details |
| A20B | Pavement Markers and Traffic Lines, Typical Details |
| A20C | Pavement Markers and Traffic Lines, Typical Details |
| A20D | Pavement Markers and Traffic Lines, Typical Details |
| A24A | Pavement Markings - Arrows                          |
| A24B | Pavement Markings - Arrows and Symbols              |
| A24C | Pavement Markings - Symbols and Numerals            |
| A24D | Pavement Markings - Words                           |
| A24E | Pavement Markings - Words and Crosswalks            |

### EXCAVATION AND BACKFILL

|      |                                                 |
|------|-------------------------------------------------|
| A62A | Excavation and Backfill - Miscellaneous Details |
|------|-------------------------------------------------|

### CURBS, DRIVEWAYS, DIKES, CURB RAMPS AND ACCESSIBLE PARKING

|      |                       |
|------|-----------------------|
| A87A | Curbs and Driveways   |
| A87B | Hot Mix Asphalt Dikes |
| A88A | Curb Ramp Details     |

### TEMPORARY CRASH CUSHIONS, RAILING AND TRAFFIC SCREEN

|     |                                                                           |
|-----|---------------------------------------------------------------------------|
| T1A | Temporary Crash Cushion, Sand Filled (Unidirectional)                     |
| T1B | Temporary Crash Cushion, Sand Filled (Bidirectional)                      |
| T2  | Temporary Crash Cushion, Sand Filled (Shoulder Installations)             |
| T3A | Temporary Railing (Type K)                                                |
| T3B | Temporary Railing (Type K)                                                |
| T13 | Traffic Control System for Lane Closure on Two Lane Conventional Highways |

### TEMPORARY WATER POLLUTION CONTROL

|     |                                                                                 |
|-----|---------------------------------------------------------------------------------|
| T52 | Temporary Water Pollution Control Details (Temporary Straw Bale Barrier)        |
| T53 | Temporary Water Pollution Control Details (Temporary Cover)                     |
| T59 | Temporary Water Pollution Control Details (Temporary Concrete Washout Facility) |

### ELECTRICAL SYSTEMS - LEGEND, NOTES AND ABBREVIATIONS

|       |                                                      |
|-------|------------------------------------------------------|
| ES-1A | Electrical Systems (Legend, Notes and Abbreviations) |
| ES-1B | Electrical Systems (Legend, Notes and Abbreviations) |
| ES-1C | Electrical Systems (Legend, Notes and Abbreviations) |



COUNTY OF HUMBOLDT  
DEPARTMENT OF PUBLIC WORKS

**NOTICE TO BIDDERS**

Sealed proposals will be received by (and all bids should be mailed or delivered to) the

**Clerk of the Board Office**  
**SEALED BID for (Project Name)**  
Humboldt County Courthouse  
825 Fifth Street, Suite 111  
Eureka, California, 95501

until 2:00 PM, **TUESDAY, SEPTEMBER 13, 2016**, at which time they will be publicly opened and read by the Engineer at a public meeting in the Office of the Clerk of the Board of Supervisors, Humboldt County Courthouse, Eureka, California, for performing work as follows:

**WALNUT STREET (3J300) AND FERN STREET (3K210) TRAFFIC SIGNAL  
PROJECT**  
**PROJECT NO.: RPL- 5904 (107)**  
**CONTRACT NO.: 213501**

Bids are required for the entire work as described herein:

The work to be done consists, in general, of, traffic control, removing asphalt concrete, removing concrete, placing hot mix asphalt and minor concrete, constructing electrical systems for signals and lighting, and placing thermoplastic striping and pavement marking. Bidders are advised that the work must be completed within **90 working days**. The Engineer's base bid estimate for this work is: **\$313,030**.

Plans, Special Provisions (not including documents included by reference) and Proposal Forms may be obtained by prospective Bidders upon **ADVANCE** payment of a non-refundable printing and service charge in the amount of **\$15.00**. All checks shall be made payable to COUNTY OF HUMBOLDT and should be mailed along with the request for Plans to the Humboldt County Department of Public Works, 1106 Second Street, Eureka, California, 95501.

Telephone: (707) 445-7652 Requests for plans, planholder list or project estimate  
(707) 445-7377 Engineering division, questions regarding plans or specs  
(707) 445-7409 Fax transmissions

Plans and Special Provisions reference the Caltrans Standard Specifications and Standard Plans dated 2010.

The successful Bidder shall furnish a Payment Bond and a Performance Bond.

The Contractor shall possess a **CLASS "A"** Contractors License at the time this contract is awarded.

This contract is subject to state contract nondiscrimination and compliance requirements pursuant to Government Code, Section 12990. .

Pursuant to Section 1773 of the Labor Code, the general prevailing wage rates in the county, or counties, in which the work is to be done have been determined by the Director of the California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates for this project, available at County of Humboldt, 1106 2<sup>nd</sup> Street, Eureka, CA. 95501 and available from the California Department of Industrial Relations' Internet web site at <http://www.dir.ca.gov>.

KATHY HAYES

Clerk of the Board of Supervisors  
County of Humboldt, State of California

DATED: \_\_\_\_\_





COUNTY OF HUMBOLDT  
DEPARTMENT OF PUBLIC WORKS

**SPECIAL PROVISIONS  
FOR**

**WALNUT STREET (3J300) AND FERN STREET (3K210) TRAFFIC SIGNAL  
PROJECT  
PROJECT NO.: RPL- 5904 (107)  
CONTRACT NO.: 213501**

**DIVISION I GENERAL PROVISIONS**

**1 GENERAL**

*Add to section 1-1.01:*

The work embraced herein shall be done in accordance with the **STANDARD SPECIFICATIONS dated 2010**, and the **STANDARD PLANS dated 2010**, and revisions thereto, of the State of California, Department of Transportation insofar as the same may apply and in accordance with the following special provisions. In case of conflict between the Standard Specifications and these special provisions, the special provisions shall take precedence over and be used in lieu of such conflicting portions.

*Add to section 1-1.07A:*

Whenever the following terms are used in the Standard Specifications, the following County departments or persons shall be intended and substituted therefore:

**STATE:** County of Humboldt, a political subdivision of the State of California.

**DEPARTMENT, DIRECTOR:** Humboldt County Department of Public Works.

**ENGINEER:** The Director of Public Works of Humboldt County or his authorized agent working within the scope of his authority.

**LABORATORY:** Materials and Testing Laboratory of the Humboldt County Department of Public Works.



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## 2 BIDDING

*Add to section 2-1.06A:*

Plans, Special Provisions (not including documents included by reference) and Proposal Forms may be viewed by prospective Bidders at the Humboldt County Department of Public Works, 1106 Second Street, Eureka California.

Plans, Special Provisions and Supplemental Project Information may be viewed on the County of Humboldt web site: [www.co.humboldt.ca.us](http://www.co.humboldt.ca.us). Current Revised Standard Specifications are available for review at the Department of Public Works, 1106 Second Street, Eureka, or on Caltrans web page of the Office Engineer/ Engineering. (<http://www.dot.ca.gov/hq/esc/oe/standards.php>)

Note that Plans, Special Provisions, and Proposal Forms posted on the County's web site are for **informational purposes only and may not be substituted for any bid document.** Only those bid documents purchased from the Department of Public Works at 1106 Second Street, Eureka, California, 95501 may be used to submit a bid.

*Add to section 2-1.33C:*

The form "Subcontractor List" is included in the Proposal Section of these special provisions.

*Add to section 2-1.34:*

The form "Bidder's Security" will be found following the signature page of the Proposal.

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## 3 CONTRACT AWARD AND EXECUTION

*Replace the first sentence of section 3-1.04 with the following:*

Bid Protest: Any bid protest must be in writing and must be received by the Department Director at 1106 Second Street, Eureka, CA, 95501 (Fax: (707) 445-7409), before 5:00 p.m. no later than three (3) working days following bid opening (the "Bid Protest Deadline") and must comply with the following requirements:

1. Only a bidder who has actually submitted a Bid Proposal is eligible to submit a bid protest against another bidder. Subcontractors are not eligible to submit bid protests. A bidder may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest.

2. The bid protest must contain a complete statement of the basis for the protest and all supporting documentation. Material submitted after the Bid Protest Deadline will not be considered. The protest must refer to the specific portion or portions of the Contract Documents upon which the protest is based. The protest must include the name, address and telephone number of the person representing the protesting bidder if different from the protesting bidder.

3. A copy of the protest and all supporting documents must also be transmitted by fax or by e-mail, by or before the Bid Protest Deadline, to the protested bidder and any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest.



4. The protested bidder may submit a written response to the protest, provided the response is received by the Department Director before 5:00 p.m., within two (2) working days after the Bid Protest Deadline or after receipt of the bid protest, whichever is sooner (the "Response Deadline"). The response must include all supporting documentation. Material submitted after the Response Deadline will not be considered. The response must include the name, address and telephone number of the person representing the protested bidder if different from the protested bidder.

5. The procedure and time limits set forth in this section are mandatory and are the bidder's sole and exclusive remedy in the event of bid protest. The bidder's failure to comply with these procedures shall constitute a waiver of any right to further pursue a bid protest, including filing a Government Code Claim or initiation of legal proceedings.

Any addenda or bulletins issued during the time of bidding, or forming a part of the documents issued to the Bidder for the preparation of his bid, shall be covered in the bid, and shall become a part of the Agreement.

No person, firm, or corporation shall be allowed to make or file, or be interested in, more than one bid for the same work, unless alternate bids are called for. A person, firm, or corporation who has submitted a subproposal to a Bidder, or who has quoted prices on materials to a Bidder, is not thereby disqualified from submitting a subproposal or quoting prices to other Bidders.

*Replace section 3-1.05:*

The successful Bidder, simultaneously with the execution of the Agreement, will be required to furnish a **Payment Bond** in an amount equal to **one hundred (100%) percent** of the contract price, and a faithful **Performance Bond** in an amount equal to **one hundred (100%)** of the contract price; said Bonds shall be secured from a surety company satisfactory to the Humboldt County Board of Supervisors. The Payment Bond shall comply with Section 3248 of the Civil Code of the State of California. The Payment Bond and the faithful Performance Bond shall each be in a form which is satisfactory to the County Counsel of the County of Humboldt. A copy of an acceptable format is attached to the Agreement forms included in the proposal section of these specifications.

*Replace section 3-1.07:*

I. THIS CONTRACT/AGREEMENT SHALL NOT BE EXECUTED BY COUNTY and the CONTRACTOR is not entitled to any rights, unless certificates of insurance, or other sufficient proof that the following provisions have been complied with, and such certificate(s) are filed with the Clerk of the Humboldt County Board of Supervisors.

II. Without limiting Contractor's indemnification provided herein, Contractor shall and shall require any of its subcontractors to take out and maintain, throughout the period of this Agreement, the following policies of insurance placed with insurers with a current A.M. Bests rating of no less than A:VII or its equivalent against injury/death to persons or damage to property which may arise from or in connection with the activities hereunder of Contractor, its agents, employees or subcontractors:

A. Comprehensive or Commercial General Liability Insurance at least as broad as Insurance Services Office Commercial General Liability coverage (occurrence from CG 0001), in an amount of \$1,000,000 per occurrence. If work involves explosive, underground or collapse risks, XCU must be included. If a general aggregate limit is used, either the general aggregate limit shall apply separately to this project or the general aggregate shall be twice the required occurrence limit. Said policy shall contain, or be endorsed with, the following provisions:



(1) The County, its officers, employees and agents, are covered as additional insured for liability arising out of the operations performed by or on behalf of Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the County, its officers, agents, and employees.

(2) The policy shall not be canceled or materially reduced in coverage without thirty (30) days prior written notice (10 days for non-payment of the premium) to County by certified mail.

(3) The inclusion of more than one insured shall not operate to impair the rights of one insured against another insured, and the coverage afforded shall apply as though separate policies had been issued to each insured, but the inclusion of more than one insured shall not operate to increase the limits of the insurer's liability.

(4) For claims related to this project, the Contractor's insurance is primary coverage to the County, and any insurance or self-insurance programs maintained by the County are excess to Contractor's insurance and will not be called upon to contribute with it.

(5) Any failure to comply with reporting or other provisions of the parties, including breach of warranties, shall not affect coverage provided to County, its officers, employees, and agents.

B. Automobile liability insurance with coverage at least as broad as Insurance Services Office form CA 0001 06092, Code 1 (any auto), for vehicles used in the performance of this Agreement with minimum coverage of not less than \$1,000,000 per accident combined single limit (CSL). Such policy shall contain or be endorsed with the provision that coverage shall not be canceled or materially reduced in coverage without thirty(30) days prior written notice (10 days for non-payment of premium) to County by certified mail.

C. Workers' Compensation insurance meeting statutory limits of the California Labor Code which policy shall contain or be endorsed to contain a waiver of subrogation against County, its officers, agents, and employees and provide for thirty (30) days prior written notice in the event of cancellation.

D. Contractor shall furnish County with certificates and original endorsements effecting the required coverage prior to execution of this Agreement by County. The endorsements shall be on forms as approved by the County's Risk Manager or County Counsel. Any deductible or self-insured retention over \$100,000 shall be disclosed to and approved by County. If Contractor does not keep all required policies in full force and effect, County may, in addition to other remedies under this Agreement, take out the necessary insurance, and Contractor agrees to pay the cost of said insurance.

The County may elect to treat a failure to maintain the requisite insurances as a breach of contract/agreement and terminate the contract/agreement as provided herein.

III. Contractor shall indemnify and hold harmless County and its Board, officers, officials, employees, and volunteers from and against all claims, damages, losses, and expenses including attorney fees arising out of the performance of the work described herein, caused in whole or in part by any negligent act or omission by the contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, except where caused by the active negligence, sole negligence, or willful misconduct of the County.

*Replace paragraph 4, section 3-1.18:*

The form of Agreement which the successful Bidder, as Contractor, will be required to execute, is included in the contract documents and should be carefully examined by the bidder. The agreement and bonds will be





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## 6 CONTROL OF MATERIALS

*Add to section 6-2.03:*

The Contractor shall notify the Engineer not less than 48 hours before County-furnished material is to be picked up by the Contractor. A full description of the material and the time the material will be picked up shall be provided.

## 7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

*Add to section 7-1.02K(1):*

A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

*Add to section 7-1.02K(2) paragraph 2:*

The general prevailing wage rates determined by the Director of Industrial Relations, for the county or counties in which the work is to be done, are available at the Humboldt County Department of Public Works, 1106 Second Street, Eureka CA 95501. These wage rates are not included in the Special Provision, Notice to Bidder's, Proposal and Contract Book for the project. Changes, if any, to the general prevailing wage rates will be available at the same location.

*Add to section 7-1.02L:*

### **7-1.02L(3) Noncollusion**

In conformance with Public Contract Code Section 7106, a Noncollusion Affidavit is included in the Proposal. Signing the Proposal shall also constitute signature of the Noncollusion Affidavit.

*Add to section 7-1.02M(3):*

Material from mining operations furnished for this project shall only come from sites in compliance with the Surface Mining and Reclamation Act of 1975 (SMARA) or sites not subject to SMARA. Contractor shall provide County with documentation establishing compliance with SMARA or exemption from SMARA.

The requirements of this section shall apply to materials furnished for the project, except for acquisition of materials in conformance with the provisions in section 4-1.04, "Use of Materials Found on the Job Site," of the Standard Specifications.

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## 8 PROSECUTION AND PROGRESS

*Replace section 8-1.04B, paragraph 1:*

The Contractor shall begin work within fifteen calendar days after the contract has been executed by the Board of Supervisors of the County of Humboldt, provided he has received a written "Notice to Proceed" from the Engineer in accordance with Section 4 of the contract Agreement.

*Replace section 8-1.05, paragraph 2:*

Said work shall be diligently prosecuted to completion before the expiration of:

## 90 WORKING DAYS

Tabulation of working days shall begin on the fifteenth calendar day after execution of the contract by the Board of Supervisors of the County of Humboldt. If said fifteenth calendar day falls on a Saturday, Sunday, or legal Holiday, then the first working day for beginning tabulation will be the first working day prior to said Saturday, Sunday or Holiday.

*Replace section 8-1.10A, paragraph 1:*

The County of Humboldt specifies liquidated damages (Pub Cont Code § 10226). Liquidated damages, if any, accrue starting on the 1st day after the expiration of the working days through the day of Contract acceptance except as specified in sections 8-1.10B and 8-1.10C.

Neither the Contract, nor any moneys due or to become due under the Contract, may be assigned by the Contractor without the prior consent of the Contractor's surety or sureties, unless such surety or sureties have waived their right to notice of assignment. The performance of the Contract may not be assigned without prior written consent of the County of Humboldt.

[illegible]

## 9 PAYMENT

*Add to section 9-1.03:*

A prime contractor or subcontractor shall pay to any subcontractor not later 10 days of receipt of each progress payment in accordance with the provision in Section 7108.5 of the California Business and Professions Code concerning prompt payment to subcontractors. The 10-days is applicable unless a longer period is agreed to in writing. Any delay or postponement of payment over 30 days may take place only for good cause and with the agency's prior written approval. Any violation of Section 7108.5 shall subject the violating contractor or subcontractor to the penalties, sanctions, and other remedies of that Section. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies, otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor, deficient subcontractor performance, and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

*Replace section 9-1.16F:*

No retainage will be held by the agency from progress payments due to the prime contractor. Prime contractors and subcontractors are prohibited from holding retainage from subcontractors. Any delay or

postponement of payment may take place only for good cause and with the agency's prior written approval. Any violation of these provisions shall subject the violating contractor or subcontractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the California Business and Professions Code. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies, otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor, deficient subcontractor performance, and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors

*Replace section 9-1.17B:*

After Contract acceptance by the Board of Supervisors of the County of Humboldt, the Department pays you based on the Engineer-prepared estimate that includes withholds and the balance due after deduction of previous payments.

[illegible]



## DIVISION II GENERAL CONSTRUCTION

### 12 TEMPORARY TRAFFIC CONTROL

*Replace section 12-5:*

#### 12-5 TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE

##### 12-5.01 GENERAL

Section 12-5 includes specifications for closing traffic lanes with stationary lane closures on 2-lane, 2-way highways. The traffic control system for a lane closure must comply with the details shown.

Traffic control system includes signs.

##### 12-5.03 CONSTRUCTION

###### 12-5.03A General

During traffic striping and pavement marker placement using bituminous adhesive, control traffic with a stationary or a moving lane closure. During other activities, control traffic with stationary lane closures.

Whenever components of the traffic control system are displaced or cease to operate or function as specified from any cause, immediately repair the components to the original condition or replace the components and restore the components to the original location.

The Contractor shall notify the appropriate regional notification center for operators of subsurface installations at least 2 business days, but not more than 14 days, prior to commencing excavation for construction area sign posts. The regional notification centers include, but are not limited to, the following:

| Notification Center       | Telephone Number      |
|---------------------------|-----------------------|
| Underground Service Alert | 811<br>1-800-227-2600 |

###### 12-5.03B Stationary Lane Closures

For a stationary lane closure made only for the work period, remove the components of the traffic control system from the traveled way and shoulder, except for portable delineators placed along open trenches or excavation adjacent to the traveled way at the end of each work period. You may store the components at selected central locations designated by the Engineer within the limits of the highway.

Flagging shall conform to the provisions in Section 12-1, "General," of the Standard Specifications, except that the provision in Section 12-1.03, "Flagging Costs," providing for flagging costs to be borne equally by the State and the Contractor will not apply. All flagging costs will be borne totally by the Contractor. If it is determined by the Engineer that the amount of flagging is insufficient for the traffic conditions, all work involving public traffic shall be halted until the Contractor provides the necessary flagging.

#### **12-5.04 PAYMENT**

The contract lump sum price paid for Traffic Control System includes full compensation for furnishing all labor (including all flagging costs), materials, tools, equipment and incidentals, and for doing all the work involved in placing, removing, storing, maintaining, moving to new locations, replacing, and disposing of the components of the traffic control system, and any other equipment and labor required, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The adjustment provisions in Section 4-1.05, "Changes and Extra Work," of the Standard Specifications, shall not apply to the item of traffic control system. Adjustments in compensation for traffic control system will be made only for increased or decreased traffic control system required by changes ordered by the Engineer and will be made on the basis of the cost of the increased or decreased traffic control necessary. Such adjustment will be made on a force account basis as provided in Section 9-1.04, "Force Account," of the Standard Specifications for increased work, and estimated on the same basis in the case of decreased work.

Traffic control system required by work classified as extra work, as provided in Section 4-1.05 of the Standard Specifications, will be paid for as Extra Work.



[illegible]

*Insert into section 13-1.01:*

Preliminary calculations by the Engineer indicate that the project's disturbed soil area is 0.37 acres not including stockpile or Contractor's staging area.

[illegible][illegible]

## 19 EARTHWORK

*Add to section 19-1.01A:*

Earthwork activities include developing a water supply, clearing and grubbing, and finishing the roadway. Comply with sections 17-2, 16, and 22.

*Replace paragraphs 3 and 4 of Section 19-2.03B with:*

Surplus excavated material shall become the property of the Contractor and shall be disposed of outside the highway right of way in accordance with the provisions in Section 5-1.20B(4) of the Standard Specifications.

[illegible]

## 39 HOT MIX ASPHALT

*Add to section 39-1.01:*

Produce and place HMA Type A under the METHOD construction process.

*Add to section 39-1.02C:*

Asphalt binder used in HMA Type A must be PG 64-16.

*Add to section 39-1.02E:*

Aggregate used in HMA Type A must comply with the 1/2-inch HMA Types A and B gradation.

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## **DIVISION IX TRAFFIC CONTROL FACILITIES**

### **86 ELECTRICAL SYSTEMS**

#### **TRAFFIC SIGNAL INSTALLATION**

**Add to the end of the 1st paragraph of the RSS for section 86-1.01:**

This work is shown on plan sheets 5 and 6 of 8. All work shall conform to the 2010 Caltrans Standard Plans and Standard Specifications and these special provisions.

#### **STANDARDS, POLES, STEEL PEDESTALS, AND POSTS**

Traffic signal work must be performed at the intersection of Walnut Street and Fern Street.

**Add to section 86-2.04A:**

Where the side tenon detail at the end of the signal mast arm is shown, you may substitute the applicable tip tenon detail.

The sign mounting hardware must be furnished and installed at the locations shown.

Furnish and install non-illuminated street name signs on signal mast arms using a minimum 3/4 by 0.020-inch round edge stainless steel strap and saddle bracket. Wrap the strap at least twice around the mast arm, tighten, and secure with a 3/4-inch stainless strap seal. Level the sign panel and tighten the hardware securely.

#### **CONDUIT**

**Add to section 86-2.05A:**

Conduit installed underground must be Type 1 or Type 3.

**Add to section 86-2.05B:**

The conduit in a foundation and between a foundation and the nearest pull box must be Type 1 or Type 3.

**Add to section 86-2.05C:**

If a standard coupling cannot be used for joining Type 1 conduit, use a UL-listed threaded union coupling under section 86-2.05C, a concrete-tight split coupling, or a concrete-tight set screw coupling.

If Type 3 conduit is placed in a trench, not in the pavement or under concrete sidewalk, after the bedding material is placed and the conduit is installed, backfill the trench to not less than 4 inches above the conduit



with minor concrete under section 90-2, except the concrete must contain not less than 421 pounds of cementitious material per cubic yard. Backfill the remaining trench to finished grade with backfill material.

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

At other locations where conduit is required to be installed under pavement and if a delay to vehicles will not exceed 5 minutes, conduit may be installed by the trenching in pavement method unless otherwise noted on the plans.

The final 2 feet of conduit entering a pull box in a reinforced concrete structure may be Type 4.

### **PULL BOXES**

**Replace the 3rd paragraph in section 86-2.06A(2) of the RSS for section 86-2.06 with:**

In a ground or sidewalk area, embed the bottom of a pull box in crushed rock.

**Replace "Reserved" in section 86-2.06B of the RSS for section 86-2.06 with:**

#### **86-2.06B(1) General**

##### **86-2.06B(1)(a) Summary**

Section 86-2.06B includes specifications for installing non-traffic-rated pull boxes.

##### **86-2.06B(1)(b) Submittals**

Before shipping pull boxes to the job site, submit a list of materials used to fabricate the pull boxes to the Engineer. Include:

1. Contract number
2. Manufacturer's name
3. Manufacturer's installation instructions
4. Your contact information

Submit reports for pull boxes from an NRTL-accredited laboratory.

Before installing a pull box and cover, submit the manufacturer's replacement warranty for them.

#### **86-2.06B(1)(c) Quality Control and Assurance**

##### **86-2.06B(1)(c)(i) Functional Testing**

The pull box and cover must be tested under ANSI/SCTE 77, "Specification for Underground Enclosure Integrity."

##### **86-2.06B(1)(c)(ii) Warranty**

Provide a 2-year manufacturer's replacement warranty for the pull box and cover. The warranty period starts on the date of Contract acceptance.

#### **86-2.06B(2) Materials**

The pull box and cover must comply with ANSI/SCTE 77, "Specification for Underground Enclosure Integrity," for tier 22 load rating and must be gray or brown.

Each pull box cover must have an electronic marker cast inside.

A pull box extension must be made of the same material as the pull box and attached to the box to maintain the minimum combined depths.

Include recesses for a hanger if a transformer or other device must be placed in a pull box.

The bolts, nuts, and washers must be a captive design.

The captive bolt must be capable of withstanding a torque from 55 to 60 ft-lb and a minimum pull-out strength of 750 lb. Perform the test with the cover in place and the bolts torqued. The pull box and cover must not be damaged while performing the test.

Hardware must be stainless steel with 18 percent chromium and 8 percent nickel content.

Galvanize ferrous metal parts under section 75-1.05.

The manufacturer's instructions must include:

1. Quantity and size of entries that can be made without degrading the strength of the pull box below the tier 22 load rating
2. Locations where side entries cannot be made
3. Acceptable method for creating the entry

The tier 22 load rating must be labeled or stenciled by the manufacturer on the inside and outside of the pull box and on the underside of the cover.

### **86-2.06B(3) Construction**

Do not install a pull box in curb ramps or driveways.

A pull box for a post or a pole standard must be located within 5 feet of the standard. Place the pull box adjacent to the back of the curb or edge of the shoulder. If this is impractical, place the pull box in a suitable, protected, and accessible location.

## **CONDUCTORS AND CABLES**

**Replace the 1st paragraph of section 86-2.09E with:**

Splices must be insulated by "Method B." or "Heat-shrink tubing."

**Delete the 6th and 7th paragraphs of section 86-2.09E.**

**Delete the 8th paragraph of section 86-2.09E.**

## **SERVICE**

**Add to section 86-2.11A:**

Continuous welding of exterior seams in service equipment enclosures is not required.

Circuit breakers must be the cable-in/cable-out type mounted on non-energized clips. All circuit breakers must be mounted vertically with the up position of the handle being the "ON" position.

Each service must be provided with up to 2 main circuit breakers that will disconnect ungrounded service entrance conductors. Where the "Main" circuit breaker consists of 2 circuit breakers as described, each of the circuit breakers must have a minimum interrupting capacity of 10,000 A, rms.



**Replace item 9 in the list in the 5th paragraph of section 86-2.11A with:**

Circuit breakers used as service disconnect equipment must have a minimum interrupting capacity of 42,000 A, rms, for 120/240 V(ac) services and 30,000 A, rms, for 480 V(ac) services.

**Replace 7th and 8th paragraphs of section 86-2.11A with:**

Service equipment enclosures must be the aluminum type.

**NUMBERING ELECTRICAL EQUIPMENT**

**Replace section 86-2.18 with:**

The placement of numbers on electrical equipment will be done by others.

**Replace 1st paragraph of section 86-2.18 with:**

Place numbers on the equipment as ordered.

**CONTROLLER ASSEMBLIES**

**Delete 2nd sentence of 3rd paragraph of section 86-2.18.**

**Replace the 1st paragraph of section 86-3.02A(1) with:**

The Model 170E controller assembly, including a Model 170E controller unit with 412C PROM module and C-8 software, a Model 332L cabinet, and all wiring and equipment to provide the operation as shown on the plans, shall be furnished and installed by the Contractor. All components shall be listed in the Caltrans Qualified Product List and shall comply with TEES. The controller cabinet shall conform to the provisions of Section 86-3.04 of the Standard Specifications.

The controller unit shall be bench tested for 7 days (minimum) until 7 contiguous days of satisfactory operation are achieved. Bench testing shall be completed with the same chip and software that will be delivered to the site. A letter from the controller unit manufacturer or company performing the bench testing certifying successful completion of bench testing shall be shipped to the intersection with the controller unit.

After successful completion of bench testing, deliver the controller assembly to the City of Eureka traffic signal shop at 1120 F Street, Eureka, CA 95501 for installation of traffic signal timing. Allow up to seven working days for installation. Pick up the controller assembly after completion of testing and deliver it to the project site.

Provide 1 each spare Model 170E controller unit. In addition to the extra load switches and detector sensor units noted on the plans, provide 2 each spare load switches and 2 each spare detector sensor units. Payment for spare parts shall be included in the lump sum item paid for the traffic signal installation.

**Replace the 1st paragraph of section 86-3.01B with:**

This work includes installing a battery backup system. Comply with TEES.

**Add to section 86-3.02A(2):**

Submit the manufacturer's warranty documentation before installing the batteries.

**Add to section 86-3.02A(3):**

Batteries must have a 5-year manufacturer's warranty against defects in materials and workmanship. The warranty period starts on the date of Contract acceptance. Provide replacement batteries within 5 business days after notification of failed batteries.

**Add to section 86-3.02B:**

The external cabinet must be capable of housing:

1. Four batteries
2. Inverter/charger unit
3. Power transfer relay
4. Manually-operated bypass switch
5. Required control panels
6. Wiring and harnesses

The external cabinet must be ventilated by using louvered vents, a filter, and a thermostatically controlled fan. The fan must be AC-operated from the same line output as the Model 332L cabinet. Provide 10 feet of connected hookup wire and a 2-position terminal block on the fan panel.

The external cabinet must include all bolts, washers, nuts, and cabinet-to-cabinet coupler fittings necessary for mounting it to the Model 332L cabinet.

**Replace the RSS for section 86-3.02B with:**

The couplings for the external cabinet and Model 332L cabinet must include a conduit for power connections between the 2 cabinets. Couplings must include:

1. 2-inch nylon-insulated steel chase nipple
2. 2-inch sealing, steel locknut
3. 2-inch nylon-insulated steel bushing

**Replace the paragraph in section 86-3.02C with:**

Mount the external cabinet to either the left or right side of the Model 332L cabinet. The typical side-mounting location of the external cabinet is flush with the bottom of the Model 332L cabinet and approximately equidistant from the edges of the front and rear doors.

**VEHICLE SIGNAL FACES**

**Replace section 86-4.01D(1)(c)(ii) with:**

**86-4.01D(1)(c)(ii) Warranty**

The manufacturer must provide a written warranty against defects in materials and workmanship for LED signal modules for a minimum period of 48 months after installation of LED signal modules. Replacement LED signal modules must be provided within 15 days after receipt of failed LED modules at your expense.

**Add to section 86-4.01D(2)(a):**

LED signal module must be manufactured for 12-inch circular, 8-inch circular, arrow, U-turn, bicycle, and lane control sections.

Provide 3 each spare LED signal modules, one of each color. Payment shall be included in the lump sum item paid for the traffic signal installation.



## **PEDESTRIAN SIGNAL FACES**

**Replace section 86-4.03H with:**

### **86-4.03H LED Countdown Pedestrian Signal Face Modules**

#### **86-4.03H(1) General**

##### **86-4.03H(1)(a) Summary**

Section 86-4.03H includes specifications for installing a LED countdown PSF module into a standard Type A pedestrian signal housing. Comply with TEES.

##### **86-4.03H(1)(b) Definitions**

Not Used

##### **86-4.03H(1)(c) Submittals**

Before shipping LED countdown PSF modules to the job site, submit all modules and the following items to METS:

1. Delivery form with Contract number and contact information
2. Installation manual and schematic wiring diagram
3. Product information, including manufacturer's name and month and year of manufacture
4. List of model, lot, and serial numbers

Submit documentation of the manufacturer's production QA, including test data showing the modules comply with the following requirements:

1. Luminous intensity as shown in the table titled "Luminance Values."
2. Power factor after burn-in.
3. Test current flow measurements in amperes after burn-in. The measured values must comply with the design qualification figures. Record the measured ampere values with rated voltage on the product labels.

Submit the manufacturer's warranty before installing LED countdown PSF modules.

##### **86-4.03H(1)(d) Quality Control and Assurance**

##### **86-4.03H(1)(d)(i) General**

The Engineer rejects a module if a visual inspection reveals any of the following defects:

1. Exterior physical damage
2. Assembly anomalies
3. Scratches
4. Abrasions
5. Cracks
6. Chips
7. Discoloration
8. Other surface defects

Comply with testing requirements for electrical material and equipment under section 86-2.14.

##### **86-4.03H(1)(d)(ii) Warranty**

Provide a 5-year manufacturer's replacement warranty against defects or failures. The warranty period starts on the date of Contract acceptance. Furnish replacement parts within 15 days after

notification of a failed module. The County does not pay for replacement modules.

#### **86-4.03H(2) Materials**

A LED countdown PSF module must:

1. Use LED as the light source.
2. Be made of material complying with ASTM D 3935.
3. Be designed to mount behind or to replace face plates of a standard Type A housing as specified in the ITE publication *Equipment and Material Standards*, chapter 3, "Pedestrian Traffic Control Signal Indications," and the *California MUTCD*.
4. Have a minimum power consumption of 10 W for the "Upraised Hand."
5. Have internal components supported such that they withstand mechanical shock and vibration from high winds and other sources.
6. Use the required color and be the ultra-bright type rated for 100,000 hours of continuous operation for a temperature range from -40 to +74 degrees C.
7. Have replaceable signal lamp optical units.
8. Fit into the housing of a pedestrian signal section without modification.
9. Be a single, self-contained device that does not require on-site assembly for installation.
10. Have the following information permanently marked on the back of the module:
  - 10.1. Manufacturer's name
  - 10.2. Trademark
  - 10.3. Model number
  - 10.4. Serial number
  - 10.5. Lot number
  - 10.6. Month and year of manufacture
  - 10.7. Required operating characteristics, including:
    - 10.7.1. Rated voltage
    - 10.7.2. Power consumption
    - 10.7.3. Volt-ampere
    - 10.7.4. Power factor
11. Have prominent and permanent vertical markings for accurate indexing and orientation within the signal housing if a specific mounting orientation is required. Markings must be a minimum of 1 inch in height and include an up arrow and the word "up" or "top."

The circuit board and the power supply must be contained inside of the LED countdown PSF module. The circuit board must comply with TEES, chapter 1, section 6.

The enclosure containing the power supply or the electronic components of the module, except the lens, must be made of UL 94 V-0 flame-retardant material.

Each symbol must be at least 9 inches high and 5-1/4 inches wide. The lens' signal output for the "Walking Person" and "Upraised Hand" symbols and the countdown display must not exceed a ratio of 5 to 1 for the highest and lowest luminance values. The symbols must comply with ITE publication *Equipment and Material Standards*, chapter 3, "Pedestrian Traffic Control Signal Indications," and the *California MUTCD*. The 2-digit countdown timer, "Upraised Hand," and "Walking Person" indications must be electronically isolated from each other. The 3 indications must not share a power supply or interconnect circuitry.

The module must maintain an average luminance value for at least 5 years of continuous signal operation for a temperature range from -40 to +74 degrees C.



The module must operate over the specified ambient temperature and voltage range and be readable both day and night at distances up to the full width of the area to be crossed. Upon initial testing at 25 degrees C, the module must have at least the luminance values shown in the following table:

| <b>Luminance Values</b>                     |           |
|---------------------------------------------|-----------|
| PSF module symbol                           | Luminance |
| "Upraised Hand" and 2-digit countdown timer | 1,094 fL  |
| "Walking Person"                            | 1,547 fL  |

The color output of the module must comply with chromaticity requirements in section 5.3 of ITE publication *Equipment and Material Standards* chapter 3, "Pedestrian Traffic Control Signal Indications."

When operating over a temperature range from -40 to +74 degrees C, the measured chromaticity coordinates of the module must comply with the following requirements for 5 years after Contract acceptance:

| <b>Chromaticity Standards (CIE Chart)</b>                        |                                                                                                                              |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| "Upraised Hand" and 2-digit countdown timer<br>(portland orange) | $0.600 \leq X \leq 0.659$<br>Y: Not greater than 0.390 or less than 0.331 or less than $0.990 - X$                           |
| "Walking Person" (lunar white)                                   | X: Not less than 0.280 or greater than 0.400<br>Y: Not less than $0.0483 + 0.7917 * X$ or greater than $0.0983 + 0.7917 * X$ |

The module must not exceed the power consumption requirements shown in the following table:

| <b>Maximum Power Consumption Requirements</b> |          |          |
|-----------------------------------------------|----------|----------|
| PSF module display                            | At 24 °C | At 74 °C |
| "Upraised Hand"                               | 10.0 W   | 12.0 W   |
| "Walking Person"                              | 9.0 W    | 12.0 W   |
| 2-digit countdown timer                       | 6.0 W    | 8.0 W    |

The wiring and terminal block must comply with section 13.02 of ITE publication *Equipment and Material Standards*, chapter 2, "Vehicle Traffic Control Signal Heads." The PSF module must have spade lugs and 3 secured, jacketed copper wires that comply with NEC and are:

1. Color coded
2. 3 feet long
3. 600 V(ac)
4. 20 AWG minimum stranded
5. Rated for service at +105 degrees C

The module must operate:

1. At a frequency of  $60 \pm 3$  Hz over a voltage range from 95 to 135 V(ac) without flicker perceptible to the unaided eye. Fluctuations of the line voltage must have no visible effect on the luminous intensity of the indications. The rated voltage for measurements must be 120 V(ac).

2. With currently-used County controller assemblies, including solid-state load switches, flashers, and conflict monitors. Comply with TEES, chapters 3 and 6. If an alternating current of 20 mA or less is applied to the unit, the voltage read across the 2 leads must not exceed 15 V(ac).
3. With a smart control and regulation mode that exhibits countdown displays automatically adjusted to the traffic controller's programmed intervals.

The countdown PSF module must operate during the pedestrian change interval. The module must begin counting down when the flashing "Upraised Hand" interval turns on, counting down to 0 and turning off when the steady "Upraised Hand" interval turns on.

The module's on-board circuitry must:

1. Include voltage surge protection to withstand high-repetition noise transients. The voltage surge protection must comply with NEMA Standard TS, section 2.1.6.
2. Comply with Class A emission limits for electronic noise under 47 CFR 15, subpart B.

The module must provide a power factor of 0.90 or greater.

The total harmonic distortion from a current and voltage induced in an alternating-current power line by a PSF module must not exceed 20 percent at an operating temperature of 25 degrees C.

The module's circuitry must prevent light emission perceptible to the unaided eye when a voltage of 50 V(ac) or less is applied to the unit.

When power is applied to the module, light emission must occur within 90 ms.

#### **86-4.03H(3) Construction**

Use LED countdown PSF modules from the same manufacturer.

Install the module in a standard Type A pedestrian signal housing. Special tools must not be required for installing the modules.

The installation of the module into the pedestrian signal face must require only the removal of the lens, reflector, and existing LED module.

#### **86-4.03H(4) Payment**

Provide 1 each spare LED countdown PSF module. Payment shall be included in the lump sum item paid for the traffic signal installation.

### **VEHICLE DETECTORS**

#### **Add to section 86-5.01A(1):**

Loop wire must be Type 2.

Loop detector lead-in cable must be Type C.

Slots must be filled with asphaltic emulsion sealant or hot-melt rubberized asphalt sealant.

You may use a Type E loop where a Type A or a Type B loop is shown.

For Type E detector loops, sides of the slot must be vertical and the minimum radius of the slot entering and leaving the circular part of the loop must be 1-1/2 inches. Slot width must be a maximum of 5/8 inch. Loop wire for circular loops must be Type 2. Slots of circular loops must be filled with elastomeric sealant or hot-melt rubberized asphalt sealant.



The depth of the loop sealant above the top of the uppermost loop wire in the sawed slots must be 2 inches, minimum.

Fill slots in concrete with elastomeric, hot-melt rubberized asphalt or epoxy sealant for loop detectors.

## **EMERGENCY VEHICLE DETECTION SYSTEM**

**Replace "Reserved" in section 86-5.01D with:**

### **86-5.01D(1) General**

Each traffic signal must have an emergency vehicle detector system that must comply with the details shown and the special provisions.

Each emergency vehicle detector system must consist of an optical detector/discriminator assembly or assemblies located at the traffic signal, a test emitter, and an optical emitter assembly or assemblies located on the appropriate vehicle that will be furnished by others.

Emitter assemblies are not required for this project except units for testing purposes to demonstrate that the systems perform as specified. Tests must be conducted in the presence of the Engineer as described in section 86-5.01D(4) during the signal test period. The Engineer must be provided a minimum of 2 business days notice before performing the tests.

Each system must allow detection of 2 classes of authorized vehicles. Class I (mass transit) vehicles must be detected at ranges of up to 1,000 feet from the optical detector. Class II (emergency) vehicles must be detected at ranges up to 1,800 feet from the optical detector.

Class I signals (those emitted by Class I vehicles) must be distinguished from Class II signals (those emitted by Class II vehicles) on the basis of the modulation frequency of the light from the respective emitter. The modulation frequency for Class I signal emitters must be  $9.639 \text{ Hz} \pm 0.110 \text{ Hz}$ . The modulation frequency for Class II signal emitters must be  $14.035 \text{ Hz} \pm 0.250 \text{ Hz}$ .

A system must establish a priority of Class II vehicle signals over Class I vehicle signals and must comply with the requirements in section 25352 of the California Vehicle Code. The system furnished shall be fully compatible with other systems operating in Humboldt County or the City of Eureka.

### **86-5.01D(2) Emitter Assembly**

#### **86-5.01D(2)(a) General**

One hand held emitter assembly shall be provided for testing purposes. The test emitter shall be from the same manufacturer as the system. The test emitter shall remain the property of the County on completion of the work.

#### **86-5.01D(3)(b) Optical Detector**

Each optical detector must be a waterproof unit capable of receiving optical energy from 2 horizontal directions.

The reception angle for each photocell assembly must be a maximum of 8 degrees in all directions about the aiming axis of the assembly. Measurements of reception angle will be taken at a range of 1,000 feet for a Type I emitter and at a range of 1,800 feet for a Type II emitter.

Internal circuitry must be solid state and electrical power must be provided by the associated discriminator module.



Each optical detector must be contained in a housing, which must include 2 photocell assemblies, an electronic assembly and a base. The base must have an opening to allow mounting on a mast arm or a vertical pipe nipple, or suspension from a span wire. The mounting opening must have female threads for 3/4 inch conduit. A cable entrance must be provided which must have male threads and gasketing to allow a waterproof cable connection. Each detector must have weight of less than 2.5 pounds and must present a maximum wind load area of 36 square inches. The housing must be provided with weep holes to allow drainage of condensed moisture.

Each optical detector must be installed, wired and aimed as specified by the manufacturer.

#### **86-5.01D(3)(c) Cable**

Optical detector cable (EV-C) must comply with the requirements of IPCEA-S-61-402/NEMA WC 5, section 7.4, 600-V (ac) control cable, 75 degrees C, Type B, and the following:

1. The cable must contain 3 conductors, each of which must be No. 20 (7 x 28) stranded, tinned copper with low-density polyethylene insulation. Minimum average insulation thickness must be 25 mils. Insulation of individual conductors must be color coded: 1-yellow, 1-blue, 1-orange.
2. The shield must be either tinned copper braid or aluminized polyester film with a nominal 20 percent overlap. Where film is used, a No. 20 (7 x 28) stranded, tinned, bare drain wire must be placed between the insulated conductors and the shield and in contact with the conductive surface of the shield.
3. The jacket must be black polyvinyl chloride with minimum ratings of 600 V (ac) and 80 degrees C and a minimum average thickness of 43 mils. The jacket must be marked as required by IPCEA/NEMA.
4. The finished outside diameter of the cable must not exceed 0.35-inch.
5. The capacitance, as measured between any conductor and the other conductors and the shield, must not exceed 48 pf per foot at 1000 Hz.
6. The cable run between each detector and the controller cabinet must be continuous without splices or must be spliced only as directed by the detector manufacturer.

#### **86-5.01D(3)(d) Discriminator Module**

Each discriminator module must be designed to be compatible and usable with a Model 170E/2070E controller unit and to be mounted in the input file of a Model 332L or Model 336L controller cabinet, and must comply with the requirements in chapter 1 of TEES.

Each discriminator module must be capable of operating 2 channels, each of which must provide an independent output for each separate input.

Each discriminator module, when used with its associated detectors, must perform the following:

1. Receive Class I signals at a range of up to 1,000 feet and Class II signals at a range of up to 1,800 feet.
2. Decode the signals, on the basis of frequency, at  $9.639 \text{ Hz} \pm 0.119 \text{ Hz}$  for Class I signals and  $14.035 \text{ Hz} \pm 0.255 \text{ Hz}$  for Class II signals.
3. Establish the validity of received signals on the basis of frequency and length of time received. A signal must be considered valid only when received for more than 0.50-second. No combination of Class I signals must be recognized as a Class II signal regardless of the number of signals being received, up to a maximum of 10 signals. Once a valid signal has been recognized, the effect must be held by the module in the event of temporary loss of the signal for a period adjustable from 4.5 seconds to 11 seconds in at least 2 steps at  $5 \text{ seconds} \pm 0.5 \text{ second}$  and  $10 \text{ seconds} \pm 0.5 \text{ second}$ .
4. Provide an output for each channel that will result in a "low" or grounded condition of the appropriate input of a Model 170E controller unit. For Class I signals the output must be a  $6.25 \text{ Hz} \pm 0.1 \text{ percent}$ , rectangular waveform with a 50 percent duty cycle. For Class II signals the output must be steady.



Each discriminator module must receive electric power from the controller cabinet at either 24 V (dc) or 120 V (ac).

Each channel together with the channel's associated detectors must draw not more than 100 mA at 24 V (dc) or more than 100 mA at 120 V (ac). Electric power, 1 detector input for each channel and 1 output for each channel must terminate at the printed circuit board edge connector pins shown in the following table:

**Board Edge Connector Pin Assignment**

|   |                           |   |                      |
|---|---------------------------|---|----------------------|
| A | DC ground                 |   |                      |
| B | +24 V (dc)                | P | (NC)                 |
| C | (NC)                      |   |                      |
| D | Detector input, Channel A | R | (NC)                 |
| E | +24V (dc) to detectors    | S | (NC)                 |
| F | Channel A output (C)      | T | (NC)                 |
|   |                           | U | (NC)                 |
| H | Channel A output (E)      | V | (NC)                 |
| J | Detector input, Channel B | W | Channel B output (C) |
| K | DC ground to detectors    | X | Channel B output (E) |
| L | Chassis ground            | Y | (NC)                 |
| M | AC-                       | Z | (NC)                 |
| N | AC+                       |   |                      |

(C) Collector, slotted for keying

(E) Emitter, slotted for keying

(NC) Not connected, cannot be used by manufacturer for any purpose.

Two auxiliary inputs for each channel must enter each module through the front panel connector. Pin assignment for the connector must be as follows:

1. Auxiliary detector 1 input, Channel A
2. Auxiliary detector 2 input, Channel A
3. Auxiliary detector 1 input, Channel B
4. Auxiliary detector 2 input, Channel B

Each channel output must be an optically isolated NPN open collector transistor capable of sinking 50 mA at 30 V (ac) and must be compatible with the Model 170E controller unit inputs.

Each discriminator module must be provided with means of preventing transients received by the detector from affecting the Model 170E/2070E controller assembly.

Each discriminator module must have a single connector board and must occupy 1 slot width of the input file. The front panel of each module must have a handle to facilitate withdrawal and the following controls and indicators for each channel:

1. Three separate range adjustments each for both Class I and Class II signals.
2. A 3-position, center-off, momentary contact switch, 1 position (down) labeled for test operation of Class I signals, and 1 position (up) labeled for test operation of Class II signals.

3. A "signal" indication and a "call" indication each for Class I and for Class II signals. The "signal" indication denotes that a signal above the threshold level has been received. A "call" indication denotes that a steady, validly coded signal has been received. These 2 indications may be accomplished with a single indication lamp; "signal" being denoted by a flashing indication and "call" with a steady indication.

In addition, the front panel must be provided with a single circular, bayonet-captured, multi-pin connector for 2 auxiliary detector inputs for each channel. Connector must be a mechanical configuration complying with the requirements in Military Specification MIL-C-26482 with 10-4 insert arrangement, consisting of the following:

1. Wall mounting receptacle, with gold plated pins.
2. Plug with gold plated sockets, cable clamp and strain relief that must provide for a right angle turn within 2-1/2 inches maximum from the front panel surface of the discriminator module.

### 86-5.01D(3)(e) Cabinet Wiring

The Model 332L cabinet has provisions for connections between the optical detectors, the discriminator module and the Model 170E/2070E controller unit.

Wiring for a Model 332L cabinet must comply with the following:

1. Slots 12 and 13 of input file "J" have each been wired to accept a 2-channel module.
2. Field wiring for the primary detectors, except 24-V (dc) power, must terminate on either terminal board TB-9 in the controller cabinet or on the rear of input file "J," depending on cabinet configuration. Where TB-9 is used, position assignments must be as shown in the following table:

| Position | Assignment                                       |
|----------|--------------------------------------------------|
| 4        | Channel A detector input, 1st module (Slot J-12) |
| 5        | Channel B detector input, 1st module (Slot J-12) |
| 7        | Channel A detector input, 2nd module (Slot J-13) |
| 8        | Channel B detector input, 2nd module (Slot J-13) |

The 24-V (dc) cabinet power will be available at Position 1 of terminal board TB-1 in the controller cabinet.

Field wiring for the auxiliary detectors must terminate on terminal board TB-O in the controller cabinet.

Position assignments are as shown in the following table:

| For module 1 (J-12) |                                      | For module 2 (J-13) |                                      |
|---------------------|--------------------------------------|---------------------|--------------------------------------|
| Position            | Assignment                           | Position            | Assignment                           |
| 1                   | +24V (dc) from (J-12E)               | 7                   | +24V (dc) from (J-13E)               |
| 2                   | Detector ground From (J-12K)         | 8                   | Detector ground from (J-13K)         |
| 3                   | Channel A auxiliary detector input 1 | 9                   | Channel A auxiliary detector input 1 |
| 4                   | Channel A auxiliary detector input 2 | 10                  | Channel A auxiliary detector input 2 |
| 5                   | Channel B auxiliary detector input 1 | 11                  | Channel B auxiliary detector input 1 |
| 6                   | Channel B auxiliary detector input 2 | 12                  | Channel B auxiliary detector input 2 |



#### **86-5.01D(4) System Operation**

The Contractor must demonstrate that the components of each system are compatible and will perform satisfactorily as a system. Satisfactory performance must be determined using the following test procedure during the functional test period:

1. Each system to be used for testing must consist of an optical emitter assembly, an optical detector, an optical detector cable and a discriminator module.
2. The discriminator modules must be installed in the proper input file slot of the Model 170E/2070E controller assembly.
3. Two tests must be conducted: 1 using a Class I signal emitter and a distance of 1,000 feet between the emitter and the detector, the other using a Class II signal emitter and a distance of 1,800 feet between the emitter and the detector. Range adjustments on the module must be set to "Maximum" for each test.
4. Each test must be conducted for a period of 1 hour, during which the emitter must be operated for 30 cycles, each consisting of a 1 minute "on" interval and a 1 minute "off" interval. During the total test period, the emitter signal must cause the proper response from the Model 170E controller unit during each "on" interval and there must be no improper operation of either the Model 170E/2070E controller unit or the monitor during each "off" interval.

#### **Replace the 1st sentence of the 1st paragraph of the RSS for section 86-5.02 with:**

The housing for a push button assembly must be made of (1) die-cast aluminum, (2) permanent mold-cast aluminum, or (3) UV-stabilized, self-extinguishing structural plastic. The plastic housing must have a color throughout that matches color no. 17038, 27038, or 37038 of FED-STD-595.

The housing for a push button assembly must be made of UV-stabilized, self-extinguishing structural plastic. The plastic housing must have a color throughout that matches color no. 17038, 27038, or 37038 of FED-STD-595.

#### **PEDESTRIAN PUSH BUTTON ASSEMBLIES**

#### **Replace "Reserved" in section 86-5.03 of the RSS with:**

##### **86-5.03A General**

##### **86-5.03A(1) Summary**

Section 86-5.03 includes specifications for installing accessible pedestrian signals (APS). Comply with TEES.

##### **86-5.03A(2) Definitions**

**accessible pedestrian signal:** Accessible pedestrian signal as defined in the *California MUTCD*.

**accessible walk indication:** Activated audible and vibrotactile action during the walk interval.

**ambient sound level:** Background sound level in dB at a given location.

**ambient sound sensing microphone:** Microphone that measures the ambient sound level in dB and automatically adjusts the APS speaker's volume.

**APS assembly:** Assembly that includes a pushbutton to actuate the APS components.

**audible speech walk message:** Audible prerecorded message that communicates to pedestrians which street has the walk interval.

**programming mechanism:** Device to program the APS' operation.

**pushbutton information message:** Pushbutton information message as defined in the *California MUTCD*.

**pushbutton locator tone:** Pushbutton locator tone as defined in the *California MUTCD*.

**vibrotactile pedestrian device:** Vibrotactile pedestrian device as defined in the *California MUTCD*.

### **86-5.03A(3) Submittals**

Before shipping the APS units to the job site, submit the units with the following to METS:

1. Delivery form including Contract number and your contact information
2. Manufacturer's name
3. Model, lot, and serial numbers
4. Month and year of manufacture
5. Wiring diagram
6. Product data
7. Programming mechanism if not integral to the APS

Submit 1 each APS user and operator manuals for each signalized location as informational submittals. Each manual must have a master item index that includes:

1. Descriptions of the APS and its associated equipment and cables
2. Illustrative block diagrams
3. Manufacturer's contact information
4. Technical data specifications
5. Parts list, descriptions, and settings
6. Fault diagnostic and repair procedures
7. Preventative maintenance procedures for maintaining APS performance parameters

Submit the manufacturer's warranty documentation as an informational submittal before installing the APS.

Submit a record of completed field tests, the APS' final configuration, audible sound level and threshold, and a list of all parameter settings.

### **86-5.03A(4) Quality Control and Assurance**

#### **86-5.03A(4)(a) General**

The APS must be compatible with the Model 170E/2070L controller assembly.

The power to the APS must be connected to the pedestrian signal's terminal blocks.

#### **86-5.03A(4)(b) Functional Testing**

Perform 2 field tests on the APS: (1) when traffic is noisy during peak traffic hours and (2) when traffic is quiet during off-peak hours. Notify the Engineer 15 days before testing the APS.



### **86-5.03A(4)(c) Warranty**

The APS must have a 2-year manufacturer's warranty against any defects or failures. The 2-year warranty period starts at Contract acceptance. Deliver a replacement within 10 days after you receive notification of a failed APS. The County does not pay for the replacement. Deliver the replacement to the County Engineering office at 1106 Second Street, Eureka, CA 95501, (707) 445-7421.

### **86-5.03A(4)(d) Training**

Provide a minimum of one hour of training by a certified manufacturer's representative for up to three County employees selected by the Engineer. The training must include instruction in installing, programming, adjusting, calibrating, and maintaining the APS.

Furnish materials and equipment for the training.

### **86-5.03B Materials**

The housing for the APS assembly must be made of corrosion-resistant material. Theftproof bolts used for mounting the APS housing to the standard must be stainless steel with a chromium content of 17 percent and a nickel content of 8 percent.

The color of metallic housing must match color no. 33538 of FED-STD-595.

The color of plastic housing must match color no. 17038, 27038, or 37038 of FED-STD-595.

The APS assembly must be rainproof and shockproof in any weather condition.

The APS assembly must include:

1. Pushbutton actuator with a minimum diameter of 2 inches. If a mechanical switch is used, it must have:
  - 1.1. Operating force of 3.5 lb
  - 1.2. Maximum pretravel of 5/64 inch
  - 1.3. Minimum overtravel of 1/32 inch
  - 1.4. Differential travel from 0.002 to 0.04 inch
2. Vibrotactile device on the pushbutton or on the arrow.
3. Enclosure with an ambient-sound-level-sensing microphone and weatherproof speaker. The enclosure must:
  - 3.1. Weigh less than 7 lb.
  - 3.2. Measure less than 16 by 6 by 5 inches.
  - 3.3. Fit the Caltrans standard.
  - 3.4. Have a wiring hole with a diameter not exceeding 1-1/8 inches.
  - 3.5. Be attached to the pole with 2 screws with a diameter from 1/4 to 3/8 inch suitable for use in tapped holes. The clear space between any 2 holes in the post must be at least twice the diameter of the larger hole.
4. Pushbutton sign.

The APS speakers and electronic equipment must be installed inside the APS assembly's enclosure. The speaker grills must be located on the surface of the enclosure.

Speakers must not interfere with the housing or its mounting hardware.



The conductor cable between the APS assembly and the pedestrian signal head must be a no. 9, 20-conductor cable complying with MIL-W-16878D. The wiring must comply with section 13.02 of ITE publication *Equipment and Material Standards* chapter 2, "Vehicle Traffic Control Signal Heads," and be NEC rated for service at +105 degrees C.

The APS must:

1. Include a mechanism for enabling and disabling its operation.
2. Have electronic switches, a potentiometer, or a handheld device for controlling and programming the volume level and messaging. Deliver any handheld programming device to the Engineer.
2. Provide information using:
  - 2.1 Audible speech message that plays when the pushbutton is actuated. The message must include the name of the street to be crossed. The APS must have at least 5 audible message options. The Engineer selects the message. The message must have a percussive tone consisting of multiple frequencies with a dominant component of 880 Hz. If the tone is selected as the message, it must repeat 8 to 10 ticks per second.
  - 2.2. Pushbutton locator tone that clicks or beeps. The pushbutton must produce the locator tone at an interval of 1 tone per second. Each tone must have a maximum duration of 0.15 second. The tone volume must adjust in response to the ambient sound level and be audible up to 12 feet from the pushbutton or to the building line, whichever is less.
3. Have a pushbutton that remains functional during an APS failure.

For signalized intersections, the APS must:

1. Have a pushbutton that when actuated activates the pedestrian walk signal's timing during an APS failure.
2. Provide information using:
  - 2.1. Audible speech walk message. The message must be activated from the beginning of the walk interval and repeated for its duration. An example of the message is "Peachtree. Walk sign is on to cross Peachtree."
  - 2.2. Pushbutton information message that provides the name of the street to be crossed. The message must play when the pushbutton is actuated. An example of the message is "Wait to cross Howard at Grand. Wait."
3. Have a functional pushbutton that activates the pedestrian walk signal whenever actuated, even if the audible speech walk message, the pushbutton information message, the pushbutton locator tone, and the vibrating surface features are disabled.

For unsignalized pedestrian crossings, the APS must have an audible speech message such as "Peachtree. Cross with caution."

#### **86-5.03C Construction**

Arrange to have a manufacturer's representative at the job site when the APS is installed, modified, connected, or reconnected. The APS must not interfere with the controller assembly, the signal installation on signal standards, the pedestrian signal heads, or the terminal compartment blocks. The APS electronic control equipment must reside inside the APS assembly and the standard pedestrian signal head.

You are responsible for the compatibility of the components and for making the necessary calibration adjustments to deliver the performance specified. Furnish the equipment and hardware, and then set up, calibrate, and verify the performance of the APS.



Point arrows on the pushbutton signs in the same direction as the corresponding crosswalk. Attach the sign to the APS assembly.

Upon successful installation of the APS, disable the APS function if it is not required immediately.

Do not install an APS on a standard smaller than Type 1.

#### **86-5.03D Payment**

Provide 1 each spare APS pushbutton assembly. Payment shall be included in the lump sum item paid for the traffic signal installation.

### **LIGHTING**

**Replace section 86-6.02 with:**

#### **86-6.02 LED LUMINAIRES**

##### **86-6.02A General**

##### **86-6.02A(1) Summary**

Section 86-6.02 includes specifications for installing LED luminaires.

##### **86-6.02A(2) Definitions**

**CALiPER:** Commercially Available LED Product Evaluation and Reporting. A U.S. DOE program that individually tests and provides unbiased information on the performance of commercially-available LED luminaires and lights.

**correlated color temperature:** Absolute temperature in kelvin of a blackbody whose chromaticity most nearly resembles that of the light source.

**house side lumens:** Lumens from a luminaire directed to light up areas between the fixture and the pole, such as sidewalks at intersection or areas off the shoulders on freeways.

**International Electrotechnical Commission (IEC):** Organization that prepares and publishes international standards for all electrical, electronic, and related technologies.

**junction temperature:** Temperature of the electronic junction of the LED device. The junction temperature is critical in determining photometric performance, estimating operational life, and preventing catastrophic failure of the LED.

**L70:** Extrapolated life in hours of the luminaire when the luminous output depreciates 30 percent from initial values.

**LM-79:** Test method from the Illumination Engineering Society of North America specifying test conditions, measurements, and report format for testing solid state lighting devices, including LED luminaires.

**LM-80:** Test method from the Illumination Engineering Society of North America specifying test conditions, measurements, and report format for testing and estimating the long-term performance of LEDs for general lighting purposes.

**National Voluntary Laboratory Accreditation Program (NVLAP):** U.S. DOE program that accredits independent testing laboratories.

**power factor:** Ratio of the real power component to the complex power component.

**street side lumens:** Lumens from a luminaire directed to light up areas between the fixture and the roadway, such as traveled ways and freeway lanes.

**surge protection device (SPD):** Subsystem or component that protects the unit against short-duration voltage and current surges.

**total harmonic distortion:** Ratio of the rms value of the sum of the squared individual harmonic amplitudes to the rms value of the fundamental frequency of a complex waveform.

### **86-6.02A(3) Submittals**

Each individual luminaire shall go through manufacturer's testing. Include the manufacturer's test data. luminaires must be listed on the Caltrans Qualified Product List.

Product submittals must include:

1. LED luminaire checklist.
2. Product specification sheets, including:
  - 2.1. Maximum power in watts.
  - 2.2. Maximum designed junction temperature.
  - 2.3. Heat sink area in square inches.
  - 2.4. Designed junction to ambient thermal resistance calculation with thermal resistance components clearly defined.
  - 2.5. L70 in hours when extrapolated for the average nighttime operating temperature.
3. LM-79 and LM-80 compliant test reports from a CALiPER-qualified or NVLAP-approved testing laboratory for the specific model submitted.
4. Photometric file based on LM-79 test report.
5. Initial and depreciated isofootcandle diagrams showing the specified minimum illuminance for the particular application. The diagrams must be calibrated to feet and show a 40 by 40 foot grid. The diagrams must be calibrated to the mounting height specified for that particular application. The depreciated isofootcandle diagrams must be calculated at the minimum operational life.
6. Test report showing SPD performance as tested under ANSI/IEEE C62.41.2 and ANSI/IEEE C62.45.
7. Test report showing mechanical vibration test results as tested under California Test 611 or equal.
8. Data sheets from the LED manufacturer that include information on life expectancy based on junction temperature.
9. Data sheets from the power supply manufacturer that include life expectancy information.

Submit documentation of a production QA performed by the luminaire manufacturer that:

1. Ensures the minimum specified performance level
2. Includes a documented process for resolving problems

Submit the QA documentation as an informational submittal.

Submit the manufacturer's warranty documentation as an informational submittal before installing LED luminaires.

### **86-6.02A(4) Quality Control and Assurance**

#### **86-6.02A(4)(a) General**

Fit 1 sample luminaire with a thermistor or thermocouple temperature sensor. A temperature sensor must be mounted on the:



1. LED solder pad as close to the LED as possible
2. Power supply case
3. Light bar or modular system as close to the center of the module as possible

Other configurations must have at least 5 sensors per luminaire. The Engineer provides advice on sensor location. Thermocouples must be either Type K or C. Thermistors must be a negative-temperature-coefficient type with a nominal resistance of 20 k $\Omega$ . Use the appropriate thermocouple wire. The leads must be a minimum of 6 feet. Submit documentation with the test unit describing the type of sensor used.

Before performing any testing, energize the sample luminaires for a minimum of 24 hours at 100 percent on-time duty cycle and a temperature of +70 degrees F.

Depreciate the luminaire lighting's performance for the minimum operating life by using the LED manufacturer's data or the data from the LM-80 test report, whichever results in a higher lumen depreciation.

Failure of the luminaire that renders the unit noncompliant with section 86-6.02 specifications is cause for rejection.

#### **86-6.02A(4)(b) Warranty**

Provide a 7-year manufacturer's warranty against any defects or failures. The warranty period begins on the date of Contract acceptance. Furnish a replacement luminaire within 10 days after receipt of the failed luminaire. The County does not pay for the replacement. Deliver replacement luminaires to the County Engineering office at 1106 Second Street, Eureka, CA 95501, (707) 445-7421.

#### **86-6.02B Materials**

##### **86-6.02B(1) General**

Luminaires must be the product(s) specified on the plans or equivalent product conforming to these provisions.

The luminaire must include an assembly that uses LEDs as the light source. The assembly must include a housing, an LED array, and an electronic driver. The luminaire must:

1. Be UL listed under UL 1598 for luminaires in wet locations or an equivalent standard from a recognized testing laboratory
2. Have a minimum operational life of 63,000 hours
3. Operate at an average operating time of 11.5 hours per night
4. Be designed to operate at an average nighttime operating temperature of 70 degrees F
5. Have an operating temperature range from -40 to +130 degrees F
6. Be defined by the following applications:

| Application | Replaces                                                                     |
|-------------|------------------------------------------------------------------------------|
| Roadway 1   | 200 W high-pressure sodium luminaire mounted at 34 ft                        |
| Roadway 2   | 310 W high-pressure sodium luminaire mounted at 40 ft                        |
| Roadway 3   | 310 W high-pressure sodium luminaire mounted at 40 ft with back side control |
| Roadway 4   | 400 W high-pressure sodium luminaire mounted at 40 ft                        |

The individual LEDs must be connected such that a catastrophic loss or a failure of 1 LED does not result in the loss of more than 20 percent of the luminous output of the luminaire.

#### **86-6.02B(2) Luminaire Identification**

Each luminaire must have the following identification permanently marked inside the unit and outside of its packaging box:

1. Manufacturer's name
2. Trademark
3. Model number
4. Serial number
5. Month and year of manufacture
6. Lot number
7. Contract number
8. Rated voltage
9. Rated wattage
10. Rated power in VA

#### **86-6.02B(3) Electrical Requirements**

The luminaire must operate from a  $60 \pm 3$  Hz AC power source. The fluctuations of line voltage must have no visible effect on the luminous output. The operating voltage may range from 120 to 480 V(ac). The luminaire must operate over the entire voltage range or the voltage range must be selected from either of the following options:

1. Luminaire must operate over a voltage range of 95 to 277 V(ac). The operating voltages for this option are 120 V(ac) and 240 V(ac).
2. Luminaire must operate over a voltage range of 347 to 480 V(ac). The operating voltage for this option is 480 V(ac).

The power factor of the luminaire must be 0.90 or greater. The total harmonic distortion, current, and voltage induced into an AC power line by a luminaire must not exceed 20 percent. The maximum power consumption allowed for the luminaire must be as shown in the following table:

| Application | Maximum consumption<br>(watts) |
|-------------|--------------------------------|
| Roadway 1   | 165                            |
| Roadway 2   | 235                            |
| Roadway 3   | 235                            |
| Roadway 4   | 300                            |

#### **86-6.02B(4) Surge Suppression and Electromagnetic Interference**

The luminaire's on-board circuitry must include an SPD to withstand high repetition noise transients caused by utility line switching, nearby lightning strikes, and other interferences. The SPD must protect the luminaire from damage and failure due to transient voltages and currents as defined in Tables 1 and 4 of ANSI/IEEE C64.41.2 for location category C-High. The SPD must comply with UL 1449. The SPD must be tested under ANSI/IEEE C62.45 based on ANSI/IEEE C62.41.2 definitions for standard and optional waveforms for location category C-High.



21. The luminaires and associated on-board circuitry must comply with the Class A emission limits under 47 CFR 15, subpart B, for the emission of electronic noise.

#### 86-6.02B(5) Compatibility

The luminaire must be operationally compatible with lighting control systems and photoelectric controls furnished under this contract.

#### 86-6.02B(6) Photometric Requirements

The luminaire must maintain a minimum illuminance level throughout the minimum operating life. The L70 of the luminaire must be the minimum operating life or greater. The measurements must be calibrated to standard photopic calibrations. The minimum maintained illuminance values measured at a point must be as shown in the following table:

| Application | Mounting height<br>(ft) | Minimum maintained illuminance<br>(fc) | Light pattern figure<br>(isofootcandle curve)                                                                                                                                                                                                                                                                                                       |
|-------------|-------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Roadway 1   | 34                      | 0.15                                   | Pattern defined by an ellipse with the equation:<br>$\frac{x^2}{(82)^2} + \frac{(y - 20)^2}{(52)^2} = 1$ where:<br>$x$ = direction longitudinal to the roadway<br>$y$ = direction transverse to the roadway and the luminaire is offset from the center of the pattern by 20 feet to the house side of the pattern.                                 |
| Roadway 2   | 40                      | 0.2                                    | Pattern defined by an ellipse with the equation:<br>$\frac{x^2}{(82)^2} + \frac{(y - 20)^2}{(52)^2} = 1$ where:<br>$x$ = direction longitudinal to the roadway<br>$y$ = direction transverse to the roadway and the luminaire is offset from the center of the pattern by 20 feet to the house side of the pattern.                                 |
| Roadway 3   | 40                      | 0.2                                    | Pattern defined by an ellipse with the equation:<br>$\frac{x^2}{(82)^2} + \frac{(y - 20)^2}{(52)^2} = 1$ for $y \geq 0$ (street side)<br>where:<br>$x$ = direction longitudinal to the roadway<br>$y$ = direction transverse to the roadway and the luminaire is offset from the center of the pattern by 20 feet to the house side of the pattern. |

|           |    |     |                                                                                                                                                                                                                                                                                                                                                          |
|-----------|----|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Roadway 4 | 40 | 0.2 | <p>Pattern defined by an ellipse with the equation:</p> $\frac{x^2}{(92)^2} + \frac{(y - 23)^2}{(55)^2} = 1$ <p>where:<br/> <math>x</math> = direction longitudinal to the roadway<br/> <math>y</math> = direction transverse to the roadway and the luminaire is offset from the center of the pattern by 23 feet to the house side of the pattern.</p> |
|-----------|----|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The luminaire must have a correlated color temperature range from 3,500 to 6,500 K. The color rendering index must be 65 or greater.

The luminaire must not allow more than:

1. 10 percent of the rated lumens to project above 80 degrees from vertical
2. 2.5 percent of the rated lumens to project above 90 degrees from vertical

#### **86-6.02B(7) Thermal Management**

The passive thermal management of the heat generated by the LEDs must have enough capacity to ensure proper operation of the luminaire over the minimum operation life. The LED maximum junction temperature for the minimum operation life must not exceed 221 degrees F.

The junction-to-ambient thermal resistance must be 95 degrees F per watt or less. The use of fans or other mechanical devices is not allowed. The heat sink material must be aluminum or other material of equal or lower thermal resistance.

The luminaire must contain circuitry that automatically reduces the power to the LEDs so the maximum junction temperature is not exceeded when the ambient outside temperature is 100 degrees F or greater.

#### **86-6.02B(8) Physical and Mechanical Requirements**

The luminaire must:

1. Be a single, self-contained device not requiring job-site assembly for installation
2. Have an integral power supply
3. Weigh no more than 35 lb
4. Have a maximum-effective projected area of 1.4 sq ft when viewed from either side or end
5. Have a housing color that matches color number from 26152 to 26440, from 36231 to 36375, or 36440 of FED-STD-595.

The housing must be fabricated from materials designed to withstand a 3,000-hour salt spray test under ASTM B 117. All aluminum used in housings and brackets must be made of a marine-grade alloy with less than 0.2 percent copper. All exposed aluminum must be anodized.

Each refractor or lens must be made from UV-inhibited high-impact plastic such as acrylic or polycarbonate or heat- and impact-resistant glass and be resistant to scratching. Polymeric materials except lenses of enclosures containing either the power supply or electronic components of the luminaire must be made of UL94VO flame retardant materials. The housing's paint must comply with section 86-2.16. A chromate conversion undercoating must be used underneath a thermoplastic polyester powder coat.



Provide each housing with a slip fitter capable of mounting on a 2-inch pipe tenon. This slip fitter must fit on mast arms with outside diameters from 1-5/8 to 2-3/8 inches. The slip fitter must be capable of being adjusted a minimum of  $\pm 5$  degrees from the axis of the tenon in a minimum of 5 steps: +5, +2.5, 0, -2.5, -5. The clamping brackets of the slip fitter must not bottom out on the housing bosses when adjusted within the designed angular range. No part of the slip fitter's mounting brackets must develop a permanent set in excess of 1/32 inch when the bracket's two or four 3/8-inch-diameter cap screws are tightened to 10 ft-lb. Two sets of cap screws may be furnished to allow the slip fitter to be mounted on the pipe tenon in the acceptable range without the cap screws bottoming out in the threaded holes. The cap screws and the clamping brackets must be made of corrosion-resistant materials or treated to prevent galvanic reactions and be compatible with the luminaire housing and the mast arm.

The LED luminaire must be assembled and manufactured such that its internal components are adequately supported to withstand mechanical shock and vibration from high winds and other sources. When tested under California Test 611, the luminaire to be mounted horizontally on the mast arm must be capable of withstanding the following cyclic loading for a minimum of 2 million cycles without failure of any luminaire part:

#### **Cyclic Loading**

| Plane                   | Power supply | Minimum peak acceleration level                             |
|-------------------------|--------------|-------------------------------------------------------------|
| Vertical                | Installed    | 3.0 g peak-to-peak sinusoidal loading (same as 1.5 g peak)  |
| Horizontal <sup>a</sup> | Installed    | 1.5 g peak-to-peak sinusoidal loading (same as 0.75 g peak) |

<sup>a</sup>Perpendicular to the direction of the mast arm

The housing must be designed to prevent the buildup of water on top of the housing. Exposed heat sink fins must be oriented to allow water to freely run off of the luminaire and carry dust and other accumulated debris away from the unit. The optical assembly of the luminaire must be protected against dust and moisture intrusion to at least an ANSI/IEC rating of IP66. The power supply enclosure must be protected to at least an ANSI/IEC rating of IP43.

Furnish each mounted luminaire with an ANSI C136.10-compliant, locking-type photocontrol receptacle and a raintight shorting cap. The receptacle must comply with section 86-6.11A.

Furnish each mounted luminaire with an ANSI C136.41-compliant, locking-type photocontrol receptacle with dimming connections and a raintight shorting cap. The receptacle must comply with section 86-6.11A.

When the components are mounted on a down-opening door, the door must be hinged and secured to the luminaire housing separately from the refractor or flat lens frame. The door must be secured to the housing such that accidental opening is prevented. A safety cable must mechanically connect the door to the housing.

Field wires connected to the luminaire must terminate on a barrier-type terminal block secured to the housing. The terminal screws must be captive and equipped with wire grips for conductors up to no. 6. Each terminal position must be clearly identified.

The power supply must be rated for outdoor operation and have at least an ANSI/IEC rating of IP65.

The power supply must be rated for a minimum operational life equal to the minimum operational life of the luminaire or greater.

The power supply case temperature must have a self rise of 77 degrees F or less above ambient temperature in free air with no additional heat sinks.

The power supply must have 2 leads to accept standard 0-10 V(dc). The dimming control must be compatible with IEC 60929. If the control leads are open or the analog control signal is lost, the circuit must default to 100-percent power.

Conductors and terminals must be identified.

**86-6.02C Construction**

Not Used

**86-6.02D Payment**

Not Used

**PAYMENT**

**Add to section 86-8.01:**

Payment for traffic signal installation work shall be included in the payment for traffic signals.

In addition to the work shown on the plans, the Contractor shall furnish and deliver the following spare parts to the County Engineering office at 1106 Second Street, Eureka, CA 95501, (707) 445-7421:

- 1 Each – LED Countdown PSF Module
- 1 Each – APS Pushbutton assembly
- 3 Each – LED 12" Signal Modules, one of each color
- 1 Each – Model 170E Controller unit, with 412C PROM module but no software
- 2 Each – Load Switches
- 2 Each – Detector Sensor Units

Spare parts shall be from the same manufacturer as equipment installed at the Walnut/Fern intersection. Payment for spare parts shall be included in the lump sum price paid for traffic signals.



**PROPOSAL**  
**TO**  
**THE COUNTY OF HUMBOLDT**  
**FOR**

**WALNUT STREET (3J300) AND FERN STREET (3K210) TRAFFIC SIGNAL  
PROJECT**

**PROJECT NO.: RPL- 5904 (107)**

**CONTRACT NO.: 213501**

Name of Bidder: \_\_\_\_\_  
(Name must be exactly as it appears [or will appear] on Contractor's license)

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone No.: \_\_\_\_\_

Place of Residence: \_\_\_\_\_

The work for which this proposal is submitted is for construction in accordance with the special provisions (including the payment of not less than the State general prevailing wage rates or Federal minimum wage rates), the project plans described above, including any addenda thereto, the contract annexed hereto and also in accordance with the California Department of Transportation Standard Plans dated **2010**, the Standard Specifications dated **2010**, and the Labor Surcharge and Equipment Rental Rates in effect at the time the work is performed.

Bids are to be submitted for the entire work. The amount of the bid for comparison purposes will be the total of all items of the base bid or base bid plus additive(s) if the additive(s) is awarded.

The bidder shall set forth for each unit basis item of work a unit price and a total for the item, and for each lump sum item a total for the item, all in clearly legible figures in the respective spaces provided for that purpose. In the case of unit basis items, the amount set forth under the "Item Total" column shall be the product of the unit price bid and the estimated quantity for the item.

In case of discrepancy between the unit price and the total set forth for a unit basis item, the unit price shall prevail, except as provided in (a) or (b), as follows:

- (a) If the amount set forth as a unit price is unreadable or otherwise unclear, or is omitted, or is the same as the amount as the entry in the item total column, then the amount set forth in the item total column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price;
- (b) (Decimal Errors) If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentagewise the unit price or item total in the County of Humboldt's Final Estimate of cost.



If both the unit price and the item total are unreadable or otherwise unclear, or are omitted, the bid may be deemed irregular. Likewise if the item total for a lump sum item is unreadable or otherwise unclear, or is omitted, the bid may be deemed irregular unless the project being bid has only a single item and a clear, readable total bid is provided.

Symbols such as commas and dollar signs will be ignored and have no mathematical significance in establishing any unit price or item total or lump sums. Written unit prices, item totals and lump sums will be interpreted according to the number of digits and, if applicable, decimal placement. Cents symbols also have no significance in establishing any unit price or item total since all figures are assumed to be expressed in dollars and/or decimal fractions of a dollar. Bids on lump sum items shall be item totals only; if any unit price for a lump sum item is included in a bid and it differs from the item total, the items total shall prevail.

The foregoing provisions for the resolution of specific irregularities cannot be so comprehensive as to cover every omission, inconsistency, error or other irregularity which may occur in a bid. Any situation not specifically provided for will be determined in the discretion of the County of Humboldt, and that discretion will be exercised in the manner deemed by the County of Humboldt to best protect the public interest in the prompt and economical completion of the work. The decision of the County of Humboldt respecting the amount of a bid, or the existence or treatment of an irregularity in a bid, shall be final.

If this proposal shall be accepted and the undersigned shall fail to enter into the contract and furnish the 2 bonds in the sums required by the State Contract Act, with surety satisfactory to the County of Humboldt, within 8 days, not including Saturdays, Sundays and legal holidays, after the bidder has received notice from the County of Humboldt that the contract has been awarded, the County of Humboldt may, at its option, determine that the bidder has abandoned the contract, and thereupon this proposal and the acceptance thereof shall be null and void and the forfeiture of the security accompanying this proposal shall operate and the same shall be the property of the County of Humboldt.

The undersigned, as bidder, declares that the only persons or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm, or corporation; that he has carefully examined the location of the proposed work, the annexed proposed form of contract, and the plans therein referred to; and he proposes, and agrees if this proposal is accepted, that he will contract with the County of Humboldt, in the form of the copy of the contract annexed hereto, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the contract, in the manner and time therein prescribed, and according to the requirements of the Engineer as therein set forth, and that he will take in full payment therefor the following prices, to wit:



**BID FORM (EXHIBIT A)**  
**WALNUT STREET (3J300) AND FERN STREET (3K210) TRAFFIC SIGNAL**  
**PROJECT**  
**PROJECT NO.: RPL- 5904 (107)**  
**CONTRACT NO.: 213501**

| ITEM NO. | ITEM CODE | ITEM DESCRIPTION                            | UNIT | QUANTITY | UNIT PRICE | TOTAL |
|----------|-----------|---------------------------------------------|------|----------|------------|-------|
| 1        | 120090    | Construction Area Signs                     | EA   | 8        |            |       |
| 2        | 120100    | Traffic Control System                      | LS   | 1        |            |       |
| 3        | 130100    | Job Site Management                         | LS   | 1        |            |       |
| 4        | 130200    | Prepare Water Pollution Control Program     | LS   | 1        |            |       |
| 5        | 130900    | Temporary Concrete Washout (Portable)       | LS   | 1        |            |       |
| 6        | 150714    | Remove Thermoplastic Traffic Stripe         | LF   | 200      |            |       |
| 7        | 150715    | Remove Thermoplastic Pavement Marking       | SR   | 610      |            |       |
| 8        | 150857    | Remove Asphalt Concrete Surfacing           | SF   | 6,900    |            |       |
| 9        | 153239    | Remove Concrete (Curb, Gutter and Sidewalk) | CY   | 18       |            |       |
| 10       | 390130    | Hot Mix Asphalt                             | Ton  | 135      |            |       |
| 11       | 394073    | Place Hot Mix Asphalt Dike (Type A)         | LF   | 26       |            |       |
| 12       | 731502    | Minor Concrete (Miscellaneous Construction) | CY   | 23       |            |       |
| 13       | 731656    | Curb Ramp Detectable Warning Surface        | SF   | 60       |            |       |
| 14       | 840501    | S Thermoplastic Traffic Stripe              | LF   | 970      |            |       |
| 15       | 840515    | S Thermoplastic Pavement Marking            | SF   | 915      |            |       |
| 16       | 860201    | S Signal and Lighting                       | LS   | 1        |            |       |
| 17       | 869050    | Guard Posts                                 | EA   | 2        |            |       |
| 18       | 999990    | Mobilization                                | LS   | 1        |            |       |

NOTE: ITEM CODE LETTER DESIGNATION; S=SPECIALITY ITEM, F=FINAL PAY QUANTITY

**TOTAL BASE BID**

ACKNOWLEDGEMENT OF ADDENDA

ADDENDUM NO.

INITIAL

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

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

\_\_\_\_\_  
 (Bidder's Signature)

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

## PROPOSAL SIGNATURE PAGE

Accompanying this proposal is \_\_\_\_\_

(NOTICE: INSERT THE WORDS "CASH (\$\_\_\_)", "CASHIER'S CHECK",  
"CERTIFIED CHECK", OR "BIDDERS'S BOND", AS THE CASE MAY BE.)

in the amount of at least **TEN PERCENT (10%)** of the total bid.

The names of all persons interested in the foregoing proposal as Principals are as follows:

\_\_\_\_\_

(NOTE: If a Bidder or other interested person is a Corporation, state the legal name of the corporation, also names of the president, secretary, treasurer, and manager thereof; if a Co-partnership, state the true name of the firm, also state the names of all individual copartners composing the firm; if the Bidder or other interested person is an Individual, state the first and last names in full.)

Licensed in accordance with an act providing for the registration of Contractors,

**LICENSE NO.** \_\_\_\_\_ **Classification(s)** \_\_\_\_\_

Note: It is optional to provide your contractors license number at this time. You are not required to provide your contractors license number until the time that the contract is to be awarded.

By my signature on this proposal I certify, under penalty of perjury under the laws of the State of California, that the foregoing questionnaire and statements of Public Contract Code Sections 10162, 10232 and 10285.1 are true and correct and that the bidder has complied with the requirements of Section 8103 of the Fair Employment and Housing Commission Regulations (Chapter 5, Title 2 of the California Administrative Code). By my signature on this proposal I further certify, under penalty of perjury under the laws of the State of California and the United States of America, that the Noncollusion Affidavit required by Title 23 United States Code, Section 112 and Public Contract Code Section 7106; and the Title 49 Code of Federal Regulations, Part 29 Debarment and Suspension Certification are true and correct.

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



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

*Signature and Title of Bidder*

Bidder's Business Address \_\_\_\_\_

\_\_\_\_\_

Place of Residence \_\_\_\_\_



**BIDDER'S BOND**  
COUNTY OF HUMBOLDT, DEPARTMENT OF PUBLIC WORKS

**WALNUT STREET (3J300) AND FERN STREET (3K210) TRAFFIC SIGNAL PROJECT**  
**PROJECT NO.: RPL- 5904 (107)**  
**CONTRACT NO.: 213501**

for which bids are to be opened on **TUESDAY**, SEPTEMBER 13, 2016, at 2:00 PM, in the Office of the Clerk of the Board, Humboldt County Courthouse, in Eureka, California.

**Know all men by these presents:** That we \_\_\_\_\_

\_\_\_\_\_, as **PRINCIPAL**,

and \_\_\_\_\_,

as **SURETY**, are held and firmly bound unto the County of Humboldt in the penal sum of **TEN PERCENT (10%) OF THE TOTAL AMOUNT OF THE BID** of the **PRINCIPAL** named above, submitted by said **PRINCIPAL** to the County of Humboldt for the work described above, for the payment of which sum is lawful money of the United States, well and truly to be made, to the Director of the Department to which said bid was submitted, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents. In no case shall the liability of the **SURETY** hereunder exceed the sum of:

\$ \_\_\_\_\_

**THE CONDITION OF THIS OBLIGATION IS SUCH**, that whereas the **PRINCIPAL** has submitted the above mentioned bid to the County of Humboldt, as aforesaid, for the construction as specifically described above,

**NOW, THEREFORE**, if the aforesaid **PRINCIPAL** is awarded the contract, and within the time and manner required under the Specifications, after the prescribed forms are presented to him for signature, enters into a written contract, in the prescribed form, in accordance with the bid, and files two bonds with the Department, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by law, then this obligation shall be null and void; otherwise, it shall be and remain in full force and virtue.

**IN WITNESS WHEREOF**, we have hereunto set our hands and seals on this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_(seal)

\_\_\_\_\_(seal)

**PRINCIPAL**

\_\_\_\_\_(seal)

\_\_\_\_\_(seal)

**SURETY**

Address: \_\_\_\_\_

Note: Signatures of those executing for **SURETY** must be properly acknowledged.

## CONTRACTOR'S CERTIFICATE REGARDING WORKER'S COMPENSATION

### Labor Code Section 3700.

"Every employer except the State and all political subdivisions or institutions thereof, shall secure the payment of compensation in one or more of the foregoing ways:

- A. By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this State.
- B. By securing from the Director of Industrial Relations a certificate of consent of self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his employees."

I am aware of the provisions of Section 3700 of the Labor Code which requires 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 that I will comply with such provisions before commencing the performance of the work of this contract.

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(In accordance with Article 5 [commencing at Section 1860 ], Chapter 1 , Part 7 , Division 2 , of the Labor Code, the above certificate must be signed and filed with the awarding body prior to commencing any work under this contract. )



## LIST OF SUBCONTRACTORS

**PROJECT NO.: RPL- 5904 (107)**

The bidder shall list all subcontractors in accordance with Section 2-1.33C of the Standard Specifications. **Photocopy this form for additional firms.**

| Firm Name/<br>Address/<br>City, State, ZIP | Phone/<br>Fax      | Interested<br>in Bidding<br>on:                                                                  | Description of Portion of Work to be Performed |
|--------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------|
| <i>Name</i>                                | <i>Phone</i>       | Airport (FAA)<br>funded work:<br><input type="checkbox"/> YES<br><input type="checkbox"/> NO     |                                                |
|                                            |                    |                                                                                                  |                                                |
| <i>Address</i>                             | <i>Fax</i>         | Highway<br>(FHWA)<br>funded work:<br><input type="checkbox"/> YES<br><input type="checkbox"/> NO |                                                |
|                                            |                    |                                                                                                  |                                                |
| <i>City State ZIP</i>                      | <i>License No.</i> |                                                                                                  |                                                |
|                                            |                    |                                                                                                  |                                                |
| <i>Name</i>                                | <i>Phone</i>       | Airport (FAA)<br>funded work:<br><input type="checkbox"/> YES<br><input type="checkbox"/> NO     |                                                |
|                                            |                    |                                                                                                  |                                                |
| <i>Address</i>                             | <i>Fax</i>         | Highway<br>(FHWA)<br>funded work:<br><input type="checkbox"/> YES<br><input type="checkbox"/> NO |                                                |
|                                            |                    |                                                                                                  |                                                |
| <i>City State ZIP</i>                      | <i>License No.</i> |                                                                                                  |                                                |
|                                            |                    |                                                                                                  |                                                |
| <i>Name</i>                                | <i>Phone</i>       | Airport (FAA)<br>funded work:<br><input type="checkbox"/> YES<br><input type="checkbox"/> NO     |                                                |
|                                            |                    |                                                                                                  |                                                |
| <i>Address</i>                             | <i>Fax</i>         | Highway<br>(FHWA)<br>funded work:<br><input type="checkbox"/> YES<br><input type="checkbox"/> NO |                                                |
|                                            |                    |                                                                                                  |                                                |
| <i>City State ZIP</i>                      | <i>License No.</i> |                                                                                                  |                                                |
|                                            |                    |                                                                                                  |                                                |
| <i>Name</i>                                | <i>Phone</i>       | Airport (FAA)<br>funded work:<br><input type="checkbox"/> YES<br><input type="checkbox"/> NO     |                                                |
|                                            |                    |                                                                                                  |                                                |
| <i>Address</i>                             | <i>Fax</i>         | Highway<br>(FHWA)<br>funded work:<br><input type="checkbox"/> YES<br><input type="checkbox"/> NO |                                                |
|                                            |                    |                                                                                                  |                                                |
| <i>City State ZIP</i>                      | <i>License No.</i> |                                                                                                  |                                                |
|                                            |                    |                                                                                                  |                                                |

### **PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT**

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder has \_\_\_\_, has not \_\_\_\_ been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

### **PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE**

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a Federal, State or local government project because of a violation of law or a safety regulation?

YES ☐ NO ☐

If the answer is yes, explain the circumstances in the following space.

### **PUBLIC CONTRACT CODE SECTION 10232 STATEMENT**

In accordance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a Federal court has been issued against the Contractor within the immediately preceding two year period because of the Contractor's failure to comply with an order of a Federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

NOTE : The above statement and questionnaire constitute part of the Proposal, and signature on the signature portion of this Proposal shall constitute signature of this statement and questionnaire.



## DEBARMENT AND SUSPENSION CERTIFICATION

### TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, manager:

- is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;
- has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;
- does not have a proposed debarment pending; and
- has not been indicted, convicted, or had a civil judgement rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions.

The above certification is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Certification.

*(THE BIDDER'S EXECUTION ON THE SIGNATURE PORTION OF THIS PROPOSAL SHALL ALSO CONSTITUTE AN ENDORSEMENT AND EXECUTION OF THOSE CERTIFICATIONS WHICH ARE A PART OF THIS PROPOSAL)*

### **EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION**

The bidder\_\_\_\_\_, proposed subcontractor\_\_\_\_\_, hereby certifies that he has \_\_\_\_\_, has not\_\_\_\_\_, participated in a previous contract or subcontract subject to the equal opportunity clauses, as required by Executive Orders 10925, 11114, or 11246, and that, where required, he has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

**Note:** The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.



**NONCOLLUSION AFFIDAVIT**  
(Title 23 United States Code Section 112 and  
Public Contract Code Section 7106)

To the COUNTY OF HUMBOLDT, DEPARTMENT OF PUBLIC WORKS:

In accordance with Title 23 United States Code Section 112 and Public Contract Code 7106 the bidder declares that the bid is not made in the interest of, or on behalf of any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and 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; that the bidder has nor 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, or to secure any advantage against the public body awarding the contract or anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

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NOTE: The above Noncollusion Affidavit is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Noncollusion Affidavit.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

## AGREEMENT

This is an AGREEMENT made and entered into this \_\_\_\_\_ day  
of \_\_\_\_\_, 20\_\_, by and between the County of Humboldt, a  
political subdivision of the State of California (hereinafter referred to as COUNTY)  
and \_\_\_\_\_,  
a corporation organized and existing under the laws of the State of California;  
hereinafter referred to as "CONTRACTOR".

County and Contractor for the consideration hereinafter named agree as follows:

### Section 1 - SCOPE OF WORK

Contractor shall furnish all Labor, Tools and Materials and perform all the work for the:

**WALNUT STREET (3J300) AND FERN STREET (3K210) TRAFFIC SIGNAL PROJECT**  
**PROJECT NO.: RPL- 5904 (107)**  
**CONTRACT NO.: 213501**

in accordance with the contract documents referred to in Section 3 of this Agreement.

### Section 2 - CONTRACT PRICE

County shall pay, and Contractor shall accept Contractor's Bid Prices, as shown on EXHIBIT "A" attached hereto and made a part hereof, as full compensation for furnishing all materials and for doing all the work contemplated and embraced in this Agreement; also for all loss or damage, arising out of the work aforesaid, or from the actions of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by County, and for all risks of every description connected with the work; also for all expenses incurred by or in consequence of the suspension or discontinuance of the work and for well and faithfully completing the work, and the whole thereof, in the manner and according to the Plans and Specifications, and the requirements of the Engineer.



### **Section 3 - CONTRACT DOCUMENTS**

The complete contract between the parties hereto shall consist of the following, hereinafter referred to as the CONTRACT DOCUMENTS:

- Notice to Contractors
- Plans and Drawings
- Bid Form
- Bidder's Bond
- Performance Bond
- Payment Bond
- This Agreement
- Special Provisions

And, as published by the Department of Transportation, State of California, except as modified by the Special Provisions:

- Standard Plans - dated 2010
- Standard Specifications - dated 2010
- Equipment Rental Rates in effect at the time the work is performed

And, as published by the California Department of Industrial Relations, and the California Business, Transportation and Housing Agency,

- General Prevailing Wage Rates
- Labor and Surcharge Rates

And any addenda to any of the above documents, all of which are on file in the office of the Director of Public Works of the County of Humboldt. Each of said CONTRACT DOCUMENTS is incorporated and made a part of this Agreement by the reference contained in this Section.

All rights and obligations of the County and the Contractor are fully set forth and described in the Contract Documents. All of the above named documents are intended to be complimentary, so that any work called for in one, and mentioned in the other is to be performed and executed the same as if mentioned in all said documents.

### **Section 4 - BEGINNING OF WORK**

Following receipt and full execution and approval of the Contract Documents, and posting of the requisite Bonds as called for therein, the COUNTY will issue a "Notice to Proceed". Under no circumstances shall the CONTRACTOR enter upon the site of work until receipt of the "Notice to Proceed", or unless so authorized in writing by the COUNTY.

### **Section 5 - TIME OF COMPLETION**

The work called for in this Agreement shall be commenced within fifteen (15) days of the date of execution of the contract by COUNTY and shall be fully completed within a period of 90 working days beginning on the fifteenth calendar day after the date of said approval of contract.

## **Section 6 - PREVAILING WAGE**

Copies of the prevailing wage rates of per diem wages are on file in the Humboldt County Public Works office at 1106 Second Street, Eureka, California and are available to any interested person on request.

## **Section 7 - WORKERS' COMPENSATION**

By my signature hereunder, as CONTRACTOR, I certify that I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' 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 the work of this contract.

## **Section 8 - COMPLIANCE WITH LAWS**

The Contractor agrees to comply with all local, state, and federal laws and regulations, including but not limited to the Americans With Disabilities Act. The Contractor further agrees to comply with any applicable federal, state or local licensing standards, any applicable accrediting standards, and any other applicable standards or criteria established locally or by the state or federal governments.

This agreement shall be governed by and construed in accordance with the laws of the State of California.

## **Section 9 - NOTICES**

All notices shall be in writing and delivered in person or transmitted by mail. Notices required to be given to the COUNTY shall be addressed as follows:

Humboldt County Department of Public Works  
1106 Second Street, Eureka, California, 95501

Notices required to be given to CONTRACTOR shall be addressed as follows:

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IN WITNESS WHEREOF, The parties hereto have entered into this Agreement as of the date first above set forth.

COUNTY OF HUMBOLDT

(SEAL) BY \_\_\_\_\_  
Chairman, Board of Supervisors  
of the County of Humboldt,  
State of California

ATTEST:

KATHY HAYES  
Clerk of the Board of Supervisors  
of the County of Humboldt,  
State of California

BY \_\_\_\_\_  
Clerk of the Board

CONTRACTOR

BY \_\_\_\_\_

TITLE \_\_\_\_\_

BY \_\_\_\_\_

TITLE \_\_\_\_\_

(Two Signatures Required For Corporation)

APPROVED AS TO FORM:

BY \_\_\_\_\_  
Deputy County Counsel

INSURANCE CERTIFICATES REVIEWED  
AND APPROVED:

BY \_\_\_\_\_  
Risk Manager

## PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, the County of Humboldt, by its order made \_\_\_\_\_,  
20\_\_\_\_, has awarded to \_\_\_\_\_  
hereinafter designated as the "Principal," a contract for the work described as follows:

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

NOW, THEREFORE, we the Principal and \_\_\_\_\_,  
\_\_\_\_\_, Surety, are held and firmly bound unto the  
County of Humboldt in the penal sum of \_\_\_\_\_  
Dollars (\$ \_\_\_\_\_), lawful money of the United States of America for the payment of which  
sum well and truly to be made, we 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 said Principal, his or its subcontractors,  
heirs, executors, administrators, successors, or assigns, shall fail to pay any of the persons named in Section  
3181 of the Civil Code, or amounts due under the Unemployment Insurance Code, with respect to work or labor  
performed by claimant, or for any amounts required to be deducted, withheld, and paid over to the Franchise Tax  
Board from the wages of employees of the Contractor and his subcontractors pursuant to Section 18806 of the  
Revenue and Taxation Code with respect to such work and labor as required by Sections 3247 et seq. of the  
Civil Code of California, then said Surety will pay for the same, in or to an amount not exceeding the amount  
hereinafter set forth, and also will pay in case suit is brought upon this bond, such reasonable attorney's fees, as  
shall be fixed by the court, awarded and taxed as in the above-mentioned statutes provided.

AND, the said Surety, for value received, hereby stipulates and agrees that no change, extension of time,  
alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications  
accompanying the same shall in any wise affect its obligations on this bond, and it does hereby waive notice of  
any such change, extension of time, alteration or addition to the terms of the contract, or to the work, or to the  
specifications.

IN WITNESS WHEREOF, this instrument has been duly executed by Principal and Surety above named, on  
the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

\_\_\_\_\_  
PRINCIPAL

BY \_\_\_\_\_

\_\_\_\_\_  
SURETY

BY \_\_\_\_\_

Attorney-in-fact



## PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_, hereinafter called Principal, and  
( Corporation , Partnership , or Individual )

\_\_\_\_\_  
Name of Surety)

\_\_\_\_\_  
( Address of Surety )

hereinafter called Surety, are held and firmly bound unto \_\_\_\_\_

\_\_\_\_\_  
( Name of Owner )

\_\_\_\_\_  
( Address of Owner )

hereinafter called Owner , in the penal sum of \_\_\_\_\_

\_\_\_\_\_ Dollars , \$ \_\_\_\_\_

in lawful money of the United States, for the Payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, a copy of which is hereto attached and made a part hereof for the construction of :

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

NOW , THEREFORE , if the Principal shall well , truly and faithfully perform its duties, all of the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED , FURTHER , that the said surety, for value received hereby stipulate and agrees that no change, extension of time, alteration or addition to the specifications accompanying the same shall in any wise affect its obligation on this BOND , and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED , FURTHER , that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF , this instrument is executed in \_\_\_\_ counterparts, one of which shall  
(number)  
be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_ , 20 \_\_\_\_.

ATTEST :

|                                          |                           |
|------------------------------------------|---------------------------|
| _____<br>(Principal) Secretary<br>(SEAL) | BY _____<br>Principal (s) |
|------------------------------------------|---------------------------|

|                                    |                  |
|------------------------------------|------------------|
| _____<br>(Witness as to Principal) | _____<br>Address |
| _____<br>Address                   | _____<br>Surety  |

ATTEST :

\_\_\_\_\_  
(SEAL)

|                                 |                                  |
|---------------------------------|----------------------------------|
| _____<br>(Witness as to Surety) | BY _____<br>Attorney - in - Fact |
| _____<br>Address                | _____<br>Address                 |

NOTE : Date of BOND must not be prior to date of contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT : Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.



## Van Scyoc, Chelsey

---

**From:** Rabago, Robert  
**Sent:** Wednesday, July 20, 2016 11:05 AM  
**To:** Van Scyoc, Chelsey  
**Subject:** RE: Pamplin - Serenity Club - Sept 9-10

Hi Chelsey,

Please accept this email as confirmation of acceptance.

Thank you,

Robert Rabago CEAS I Risk Analyst II  
Human Resources I County of Humboldt  
825 Fifth Street, Rm. 131 I Eureka, CA. 95501  
☎ 707-268-3666 | 📠 707-268-2546  
✉ [rrabago@co.humboldt.ca.us](mailto:rrabago@co.humboldt.ca.us)

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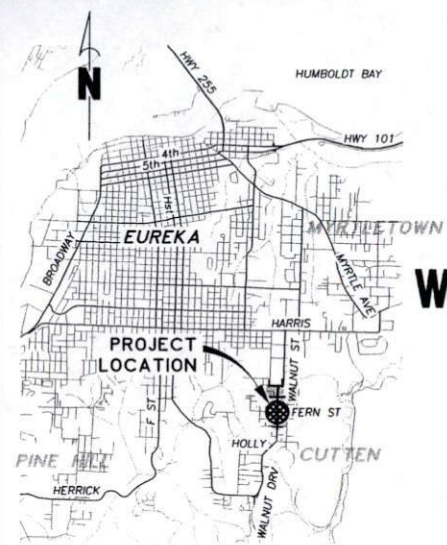
**From:** Van Scyoc, Chelsey  
**Sent:** Wednesday, July 20, 2016 10:43 AM  
**To:** Rabago, Robert <RRabago@co.humboldt.ca.us>  
**Cc:** Vizgaudis, Kelly <KVizgaudis@co.humboldt.ca.us>  
**Subject:** Pamplin - Serenity Club - Sept 9-10

Hello Robert,

Please see attached the Receipts, Deposit Slip, and Insurance Certificate for the Serenity Club (Rose Broussard). This is for Pamplin Grove – September 9 and 10, 2016. Please let me know if this is satisfactory for the event, or if you need more information.

Thank you,  
Chelsey

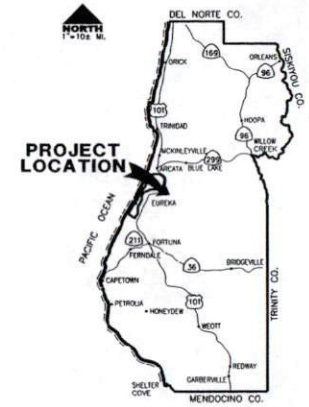
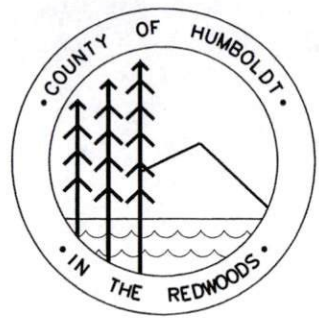
*Chelsey Van Scyoc*  
*Fiscal Assistant*  
*Humboldt County Public Works*  
*1106 Second Street*  
*Eureka, CA 95501*  
*(707) 445-7652*



**VICINITY MAP**  
NOT TO SCALE

# COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS

## PROJECT PLANS FOR CONSTRUCTION OF WALNUT STREET (3J300) AND FERN STREET (3K210) TRAFFIC SIGNAL PROJECT PROJECT NO. RPL 5904 (107) CONTRACT NO. 213501



**LOCATION MAP**  
SCALE: 1"=10± MILE

**INDEX OF SHEETS**

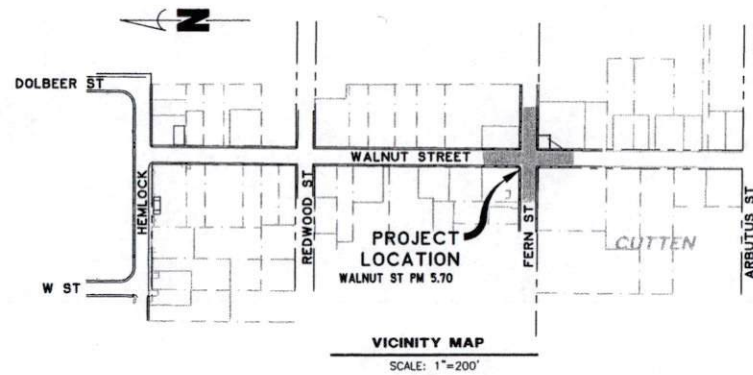
- 1 COVER SHEET, SHEET INDEX AND DETAILS
- 2 CONSTRUCTION AREA SIGNS, QUANTITIES, AND DETAILS
- 3 WALNUT STREET & FERN STREET INTERSECTION SITE PLAN & TYPICAL SECTIONS
- 4 WALNUT STREET & FERN STREET CURB RAMP DETAILS
- 5 TRAFFIC SIGNAL INSTALLATION
- 6 TRAFFIC SIGNAL INSTALLATION
- 7 SIGN, STRIPING, & MARKING PLAN
- 8 CURB RAMP DETAILS AND SECTIONS
- 9 ADA COMPLIANCE

**NOTES**

THE CONTRACTOR SHALL HAVE A CLASS "A" OR "C33" LICENSE FOR THIS PROJECT.  
REFERENCE TO CALTRANS STANDARD PLANS AND SPECIFICATIONS DATED 2010

**DESIGN DESIGNATION**

ADT (2009) = 11,168 WALNUT ST; 2,996 FERN ST  
DESIGN SPEED: V=25 MPH (POSTED)



**RECOMMENDED**

*Jeffrey A. Ball* 7-18-2016  
JEFFREY A. BALL NO. 70631 DATE  
RCE 63174 EXP. 6/30/2017



**APPROVED**

*Tony R. Seghetti* 7/18/16  
TONY R. SEGHETTI NO. 63714 DATE  
RCE 63174 EXP. 9/30/2016



|                        |                   |                      |
|------------------------|-------------------|----------------------|
| ORIGINAL LOW BID PRICE | CONSTRUCTED BY    | RESIDENT ENGINEER    |
|                        | PROJECT COMPLETED | CONSTRUCTION COST \$ |



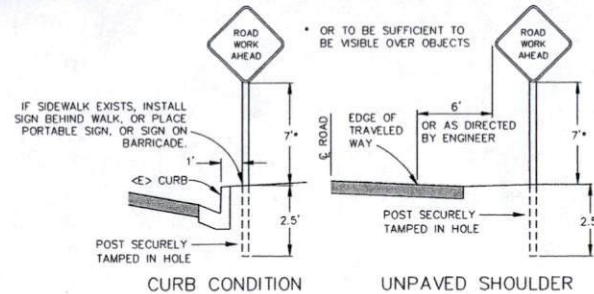


DATE IS ONE BOLD ON ORIGINAL DRAWING  
IF NOT ONE BOLD ON THIS SHEET, ADJUST SCALES ACCORDINGLY

ROAD NAME: FERN STREET AND WALNUT STREET  
ROAD NO.: 36210 & 32300  
PROJECT NO.: RPL 5954(107)  
CONTRACT NO.: 213501  
DRAWING FILE NAME: L:\PROJECTS\213501 FERN SIGNAL\G2502.DWG  
PLOT DATE: 7/16/2016

MILE POST: 5.79 (WALNUT ST)  
CA NO.: 01-9245916  
PPWD: 01-2258  
DESIGNED BY: JAB  
DRAWN BY: JAB  
REVIEWED BY: JLB  
APPROVED BY: ARS

DESIGN SECTION  
ROBERT L. BURNETT  
COUNTY OF HUMBOLDT  
DEPARTMENT OF PUBLIC WORKS  
WALNUT AND FERN STREET TRAFFIC SIGNAL  
CONSTRUCTION AREA SIGNS, QUANTITIES,  
SURVEY CONTROL AND DETAILS



**URBAN CONSTRUCTION AREA SIGN**  
- NOT TO SCALE -

**NOTES**

- 1) SIGNS SHALL BE PLACED AS SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
- 2) FINAL PLACEMENT OF SIGNS SHALL BE APPROVED BY RESIDENT ENGINEER.
- 3) ADDITIONAL PORTABLE SIGNS SHALL BE USED AS REQUIRED FOR OTHER ROADSIDE WORK.
- 4) SEE STANDARD PLAN T13 FOR TRAFFIC CONTROL SYSTEM.
- 5) IN ADDITION TO CONSTRUCTION AREA SIGNS AND WHEN DIRECTED BY THE RESIDENT ENGINEER, THE CONTRACTOR SHALL UTILIZE FLAGMEN AS NECESSARY TO DIRECT TRAFFIC.
- 6) DISTANCE TO W20-1 AND G20-2 MAY BE EXTENDED TO ENCOMPASS SITES WITHIN ONE MILE OF EACH OTHER.
- 7) DO NOT CORE INTO EXISTING CONCRETE SIDEWALKS

**CONSTRUCTION AREA SIGN SUMMARY**

| SIGN TYPE | QTY | DESCRIPTION     | SIZE      | REMARKS              | POST SIZE | NUMBER OF POSTS |
|-----------|-----|-----------------|-----------|----------------------|-----------|-----------------|
| W20-1     | 4   | ROAD WORK AHEAD | 48" x 48" | VISIBLE AT ALL TIMES | 4"x4"     | 1               |
| G20-2     | 4   | END ROAD WORK   | 42" x 18" | VISIBLE AT ALL TIMES | 4"x4"     | 1               |

**SURVEY CONTROL COORDINATES**

| PT# | NORTH.  | EAST.    | ELEV.  | DESCRIPTION                     |
|-----|---------|----------|--------|---------------------------------|
| 15  | 9452.36 | 20003.05 | 192.15 | tdbrsspinmon                    |
| 16  | 8736.38 | 19996.86 | 201.72 | tdbrsspinne8365&8951            |
| 17  | 8743.88 | 19136.94 | 191.32 | td2"humcobrsscplwithholfern_vst |
| 18  | 8712.48 | 19949.39 | 201.49 | sell+incurb-southsidefern       |
| 19  | 8886.60 | 19968.15 | 199.40 | td3/4"tdbrsstobrkne             |

**MONUMENT PRESERVATION TABLE - WALNUT/ HEMLOCK**

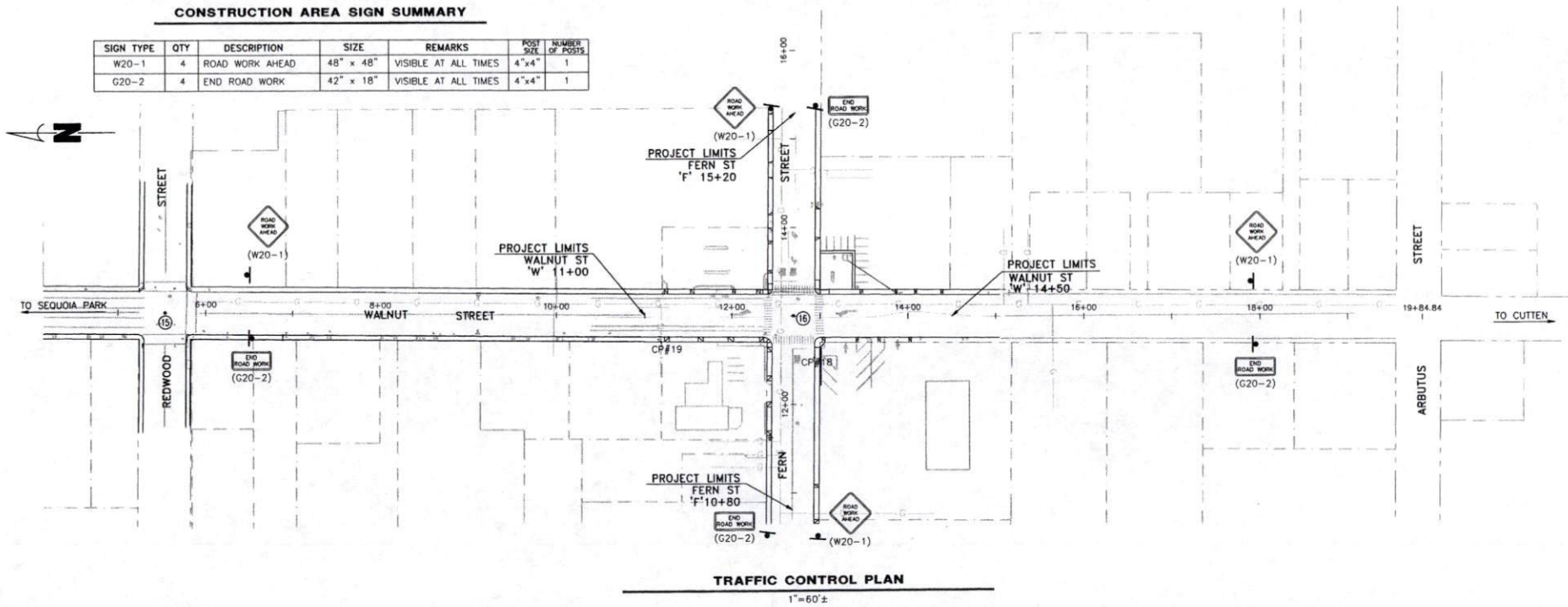
| STATION/OFFSET       | DESCRIPTION | TRAFFIC BOX | REMARKS             |
|----------------------|-------------|-------------|---------------------|
| 15 W' 5+53.86/0.0    | MON. WELL   | YES         | CL REDWOOD & WALNUT |
| 16 W' 12+69.80/-0.06 | MON. WELL   | YES         | CL FERN & WALNUT    |

VERTICAL DATUM: CP14(175 CITY) NEW CITY OF EUREKA DATUM, M.L.L.W. ELEV=183.80  
HORIZONTAL DATUM: BASIS OF BEARING IS BOOK 9 SURVEYS, PAGE 79.  
RIGHT OF WAY: SEE SURVEYOR'S WORKMAP

**QUANTITIES**

| ITEM NO. | ITEM CODE | ITEM DESCRIPTION                            | UNIT | QUANTITY |
|----------|-----------|---------------------------------------------|------|----------|
| 1        | 120090    | Construction Area Signs                     | EA   | 8        |
| 2        | 120100    | Traffic Control System                      | LS   | 1        |
| 3        | 130100    | Job Site Management                         | LS   | 1        |
| 4        | 130200    | Prepare Water Pollution Control Program     | LS   | 1        |
| 5        | 130900    | Temporary Concrete Washout (Portable)       | LS   | 1        |
| 6        | 150714    | Remove Thermoplastic Traffic Stripe         | LF   | 200      |
| 7        | 150715    | Remove Thermoplastic Pavement Marking       | SR   | 810      |
| 8        | 150857    | Remove Asphalt Concrete Surfacing           | SF   | 6,900    |
| 9        | 153239    | Remove Concrete (Curb, Gutter and Sidewalk) | CY   | 18       |
| 10       | 390130    | Hot Mix Asphalt                             | Ton  | 135      |
| 11       | 394073    | Place Hot Mix Asphalt Dike (Type A)         | LF   | 26       |
| 12       | 731502    | Minor Concrete (Miscellaneous Construction) | CY   | 23       |
| 13       | 731656    | Curb Ramp Detectable Warning Surface        | SF   | 60       |
| 14       | 840501    | Thermoplastic Traffic Stripe                | LF   | 970      |
| 15       | 840515    | Thermoplastic Pavement Marking              | SF   | 915      |
| 16       | 860201    | Signal and Lighting                         | LS   | 1        |
| 17       | 860500    | Guard Posts                                 | EA   | 2        |
| 18       | 999990    | Mobilization                                | LS   | 1        |

NOTE: ITEM CODE LETTER DESIGNATION: S=SPECIALTY ITEM, F=FINAL PAY QUANTITY



**TRAFFIC CONTROL PLAN**  
1"=60'±



ROAD NAME: FERN STREET AND WALNUT STREET  
ROAD NO.: 36210 & 30000  
PROJECT NO.: RPL 3804(107)  
CONTRACT NO.: 213501  
DRAWING FILE NAME: L:\PROJECTS\213501 FERN SIGNAL\CDWG03.DWG  
PLOT DATE: 7/18/2016

WILE POST: 5.70 (WALNUT ST)  
EA NO.: 01-924916  
PPNO: 01-2258

DESIGN SECTION  
ROBERT L. BURNETT  
DESIGNED BY: JAB  
DRAWN BY: JAB  
REVIEWED BY: RLB  
APPROVED BY: ARS

COUNTY OF HUMBOLDT  
DEPARTMENT OF PUBLIC WORKS  
WALNUT AND FERN STREET TRAFFIC SIGNAL  
WALNUT STREET & FERN STREET  
INTERSECTION SITE PLAN & TYPICAL SECTIONS

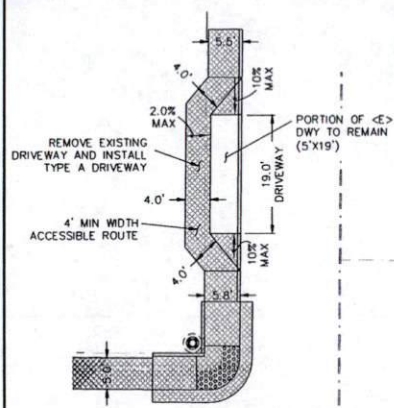
SHEET  
3  
OF  
9

HATCHED AREAS INDICATE  
CONCRETE IMPROVEMENTS.  
(CURB RAMP, DRIVEWAY,  
SIDEWALK)

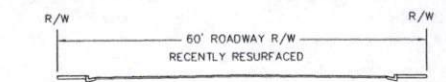
EXISTING STRIPING SHOWN

SCALE: 1"=20'

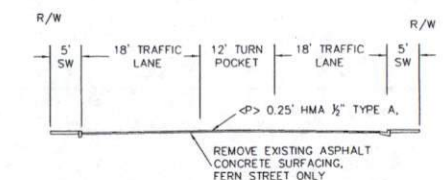
CURB RAMP DETAILS  
SEE SHEETS 4 & B



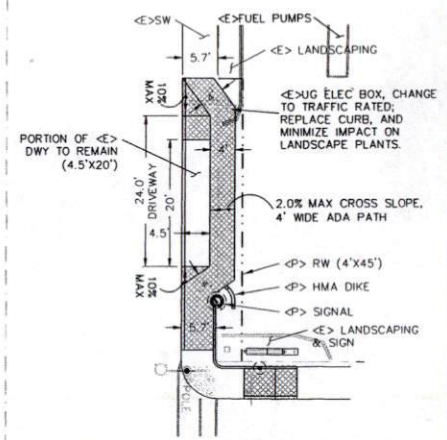
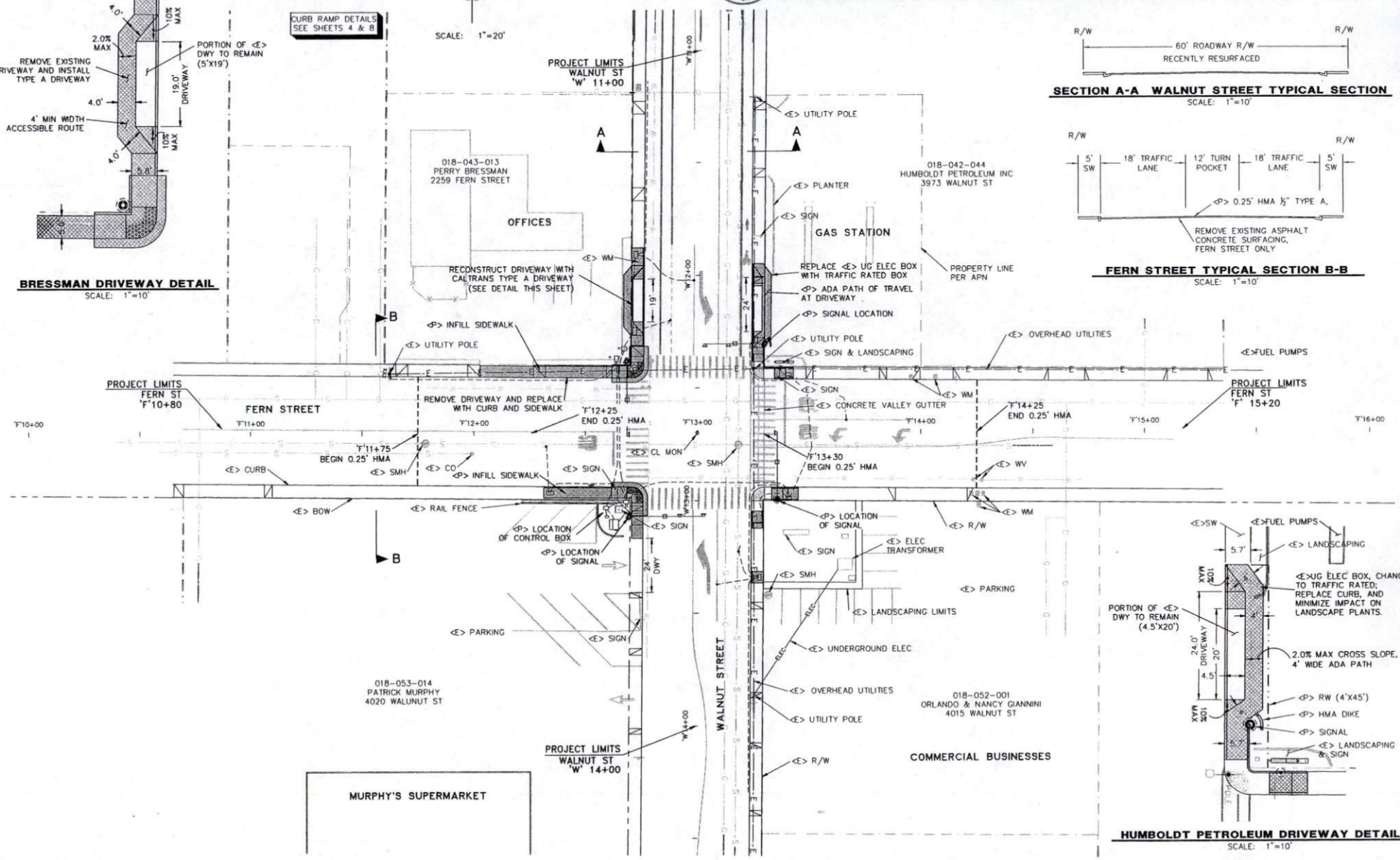
**BRESSMAN DRIVEWAY DETAIL**  
SCALE: 1"=10'



**SECTION A-A WALNUT STREET TYPICAL SECTION**  
SCALE: 1"=10'



**FERN STREET TYPICAL SECTION B-B**  
SCALE: 1"=10'

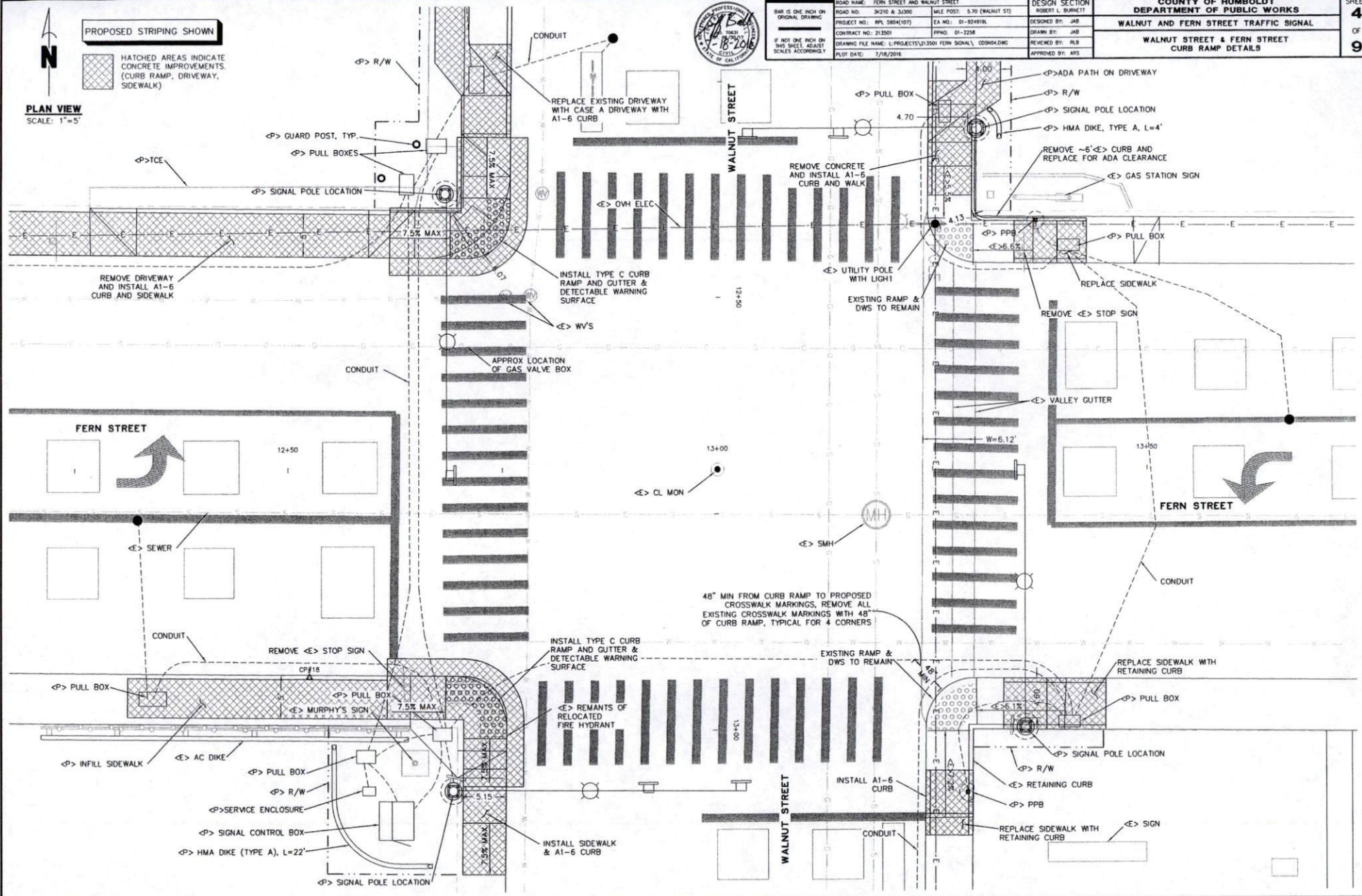


**HUMBOLDT PETROLEUM DRIVEWAY DETAIL**  
SCALE: 1"=10'



 HATCHED AREAS INDICATE CONCRETE IMPROVEMENTS. (CURB RAMP, DRIVEWAY, SIDEWALK)

**PLAN VIEW**  
SCALE: 1"=5'





|                                                               |                                   |
|---------------------------------------------------------------|-----------------------------------|
| ROAD NAME: FERN STREET AND WALNUT STREET                      | DESIGN SECTION: ROBERT L. BURRITT |
| ROAD NO.: 36210 & 33300                                       | DATE: 01-22-2016                  |
| PROJECT NO.: RPL 5504(107)                                    | EA NO.: 01-924918L                |
| CONTRACT NO.: 213501                                          | PPNO.: 01-2258                    |
| DRAWING FILE NAME: L:\PROJECTS\213501 FERN SIGNAL\CD\0505.DWG | DESIGNED BY: SF                   |
| PLOT DATE: 7/18/2016                                          | DRAWN BY: RLP                     |
|                                                               | CHECKED BY: RLB                   |
|                                                               | APPROVED BY: ARS                  |

|                                                                                           |
|-------------------------------------------------------------------------------------------|
| COUNTY OF HUMBOLDT<br>DEPARTMENT OF PUBLIC WORKS<br>WALNUT AND FERN STREET TRAFFIC SIGNAL |
| TRAFFIC SIGNAL INSTALLATION                                                               |

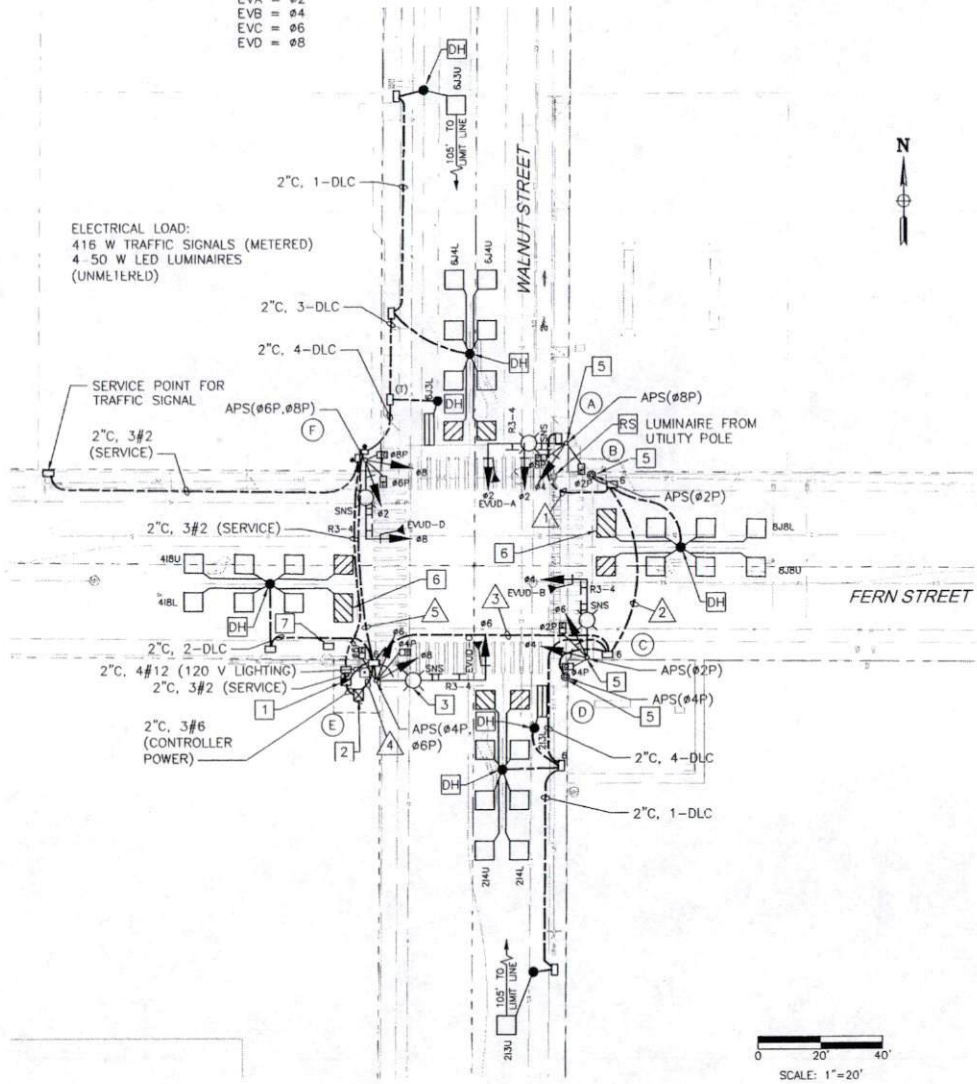
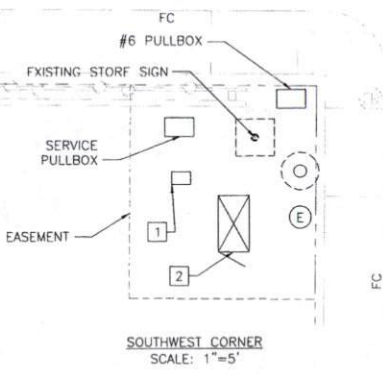
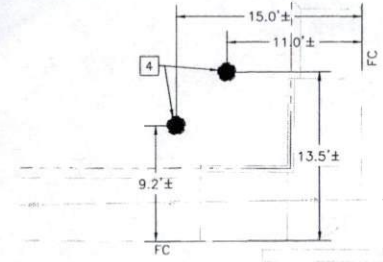
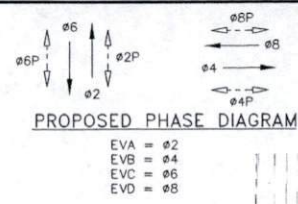
SHEET  
5  
OF  
9

PLANS PREPARED BY



Whitlock & Weinberger  
Transportation, Inc.  
410 Mendocino Avenue, Suite 201  
Santa Rosa, CA 95401  
(707) 542-9500 Fax: (707) 542-9590

BY: *Steven M. Fitzsimons*  
STEVEN M. FITZSIMONS DATE: 2/22/2016



**PROJECT NOTES (THIS SHEET ONLY)**

- 1 FURNISH AND INSTALL TYPE III-AF SERVICE ENCLOSURE, PER CALTRANS RSP ES-20. FURNISH ITEMS 1-8, 10, 15-18, 20, AND 22-23 AND TYPE 5 PEC.
- 2 FURNISH AND INSTALL MODEL 170E CONTROLLER ASSEMBLY IN MODEL 332L CABINET WITH BATTERY BACKUP SYSTEM, PER SPECIAL PROVISIONS. INSTALL NEW ACCESSIBLE PEDESTRIAN SIGNAL (APS) SYSTEM CENTRAL CONTROL UNIT PER MANUFACTURER'S REQUIREMENTS. CABINET SHALL BE EQUIPPED WITH ALL COMPONENTS NECESSARY FOR 8-PHASE OPERATION, INCLUDING FOUR DETECTORS FOR EACH THROUGH PHASE.
- 3 LED FIXTURE SHALL BE CREE XSP B2WEA 40K, 50W, TYPE 2, OR APPROVED EQUAL PROVIDING ROADWAY 1 DISTRIBUTION SHOWN ON RSP ES-10A. (TYP.)
- 4 36" HIGH GUARD POST. ALL OTHER DIMENSIONS PER DETAIL B, CSP ES-7Q.
- 5 POLE SHALL BE INSTALLED SO THE BASE PLATE IS FLUSH WITH THE VERTICAL CURB AT THE BACK OF THE SIDEWALK RAMP.
- 6 6'x10' STOP BAR LOOP.
- 7 2" C, PULL ROPE. #5 PB LID SHALL BE MARKED "SIGNAL INTERCONNECT"

**GENERAL NOTES**

1. WORK ON THESE PLANS SHALL CONFORM TO THE 2010 CALTRANS STANDARD PLANS (CSP), STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
2. LOCATIONS OF CONTROLLER, STANDARDS, CONDUITS, PULL BOXES AND OTHER EQUIPMENT ARE APPROXIMATE AND WILL BE MARKED IN THE FIELD, PRIOR TO INSTALLATION, BY CONTRACTOR AND APPROVED BY THE ENGINEER.
3. ALL UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY OVERHEAD AND UNDERGROUND CLEARANCE WITH P.G.&E., AT&T, AND OTHER AFFECTED UTILITIES PRIOR TO THE START OF WORK.
4. ALL NEW PULL BOXES SHALL BE NO. 5 UNLESS OTHERWISE NOTED.
5. ALL SIGNAL HEADS SHALL HAVE 12" LED SIGNAL INDICATIONS, WITH BACKPLATES AND TUNNEL VISORS.
6. THE CONDUCTOR SCHEDULE IS A GUIDE FOR THE CONDUCTORS REQUIRED FOR THE TRAFFIC SIGNAL. THE CONTRACTOR SHALL PROVIDE CONDUCTORS SHOWN IN THE CONDUCTOR SCHEDULE AND ALL CONDUCTORS NECESSARY FOR THE OPERATION OF THE TRAFFIC SIGNAL.
7. CONDUIT INSTALLATION ACROSS ROADWAYS SHALL BE BY DIRECTIONAL DRILLING METHODS UNLESS OTHERWISE NOTED. CONDUIT INSTALLATION ALONG FERN STREET BY THE TRENCHING-IN-PAVEMENT-METHOD WILL BE PERMITTED IF TRENCHING AND BACKFILL ARE COMPLETED BEFORE THE FINAL LIFT OF A.C. IS PLACED.
8. CONTRACTOR SHALL CONTACT PG&E TO OBTAIN SERVICE POINT FOR THE NEW TRAFFIC SIGNAL SYSTEM AND POLE NUMBERS FOR ALL LUMINAIRE POLES PRIOR TO START OF WORK.
9. CONTRACTOR SHALL FURNISH SPARE PARTS FOR SOME SIGNAL COMPONENTS, SEE SPECIAL PROVISIONS.

**LEGEND**

- COUNTDOWN PEDESTRIAN SIGNAL HEAD
- FC FACE OF CURB
- SEE CALTRANS STANDARD PLANS 2010 (CSP) FOR ALL OTHER SYMBOLS AND DETAILS

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY



PLANS PREPARED BY:

W-Trans

Whitlock & Weinberger Transportation, Inc.

490 Mendocino Avenue, Suite 201

Santa Rosa, CA 95401

(707) 542-9500 Fax: (707) 542-9590

BY: *Steven M. Fitzsimons*

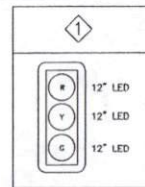
DATE: 2/22/2016

| CONDUCTOR TABLE        |                 |      |    |    |      |    |
|------------------------|-----------------|------|----|----|------|----|
| AWG                    | CIRCUIT         | RUNS |    |    |      |    |
|                        |                 | 1    | 2  | 3  | 4    | 5  |
| No. 14                 | #2              | 3    | 3  | 3  | 6    | 3  |
|                        | #4              | 3    | 3  | 3  | 3    |    |
|                        | #6              |      |    | 3  | 6    |    |
|                        | #8              |      |    |    | 6    | 3  |
|                        | #2P             | 2    | 2  | 2  | 2    |    |
|                        | #4P             |      |    | 2  | 4    |    |
|                        | #6P             |      |    |    | 4    | 2  |
|                        | #8P             | 2    | 2  | 2  | 4    | 2  |
|                        | APS(#2P)        |      | 2  | 2  | 2    |    |
|                        | APS(#4P)        |      |    | 2  | 4    |    |
|                        | APS(#6P)        |      |    |    | 4    | 2  |
|                        | APS(#8P)        | 2    | 2  | 2  | 4    | 2  |
|                        | PEU             |      |    |    | 3    |    |
|                        | SPARES          | 3    | 3  | 3  | 6    | 3  |
| No. 10                 | TOTAL No. 14    | 15   | 17 | 24 | 58   | 17 |
|                        | LIGHTING (120V) | 2    | 2  | 2  |      | 2  |
| No. 8                  | TOTAL No.10     | 2    | 2  | 2  | -    | 2  |
|                        | SIGNAL NEUTRAL  | 1    | 1  | 1  | 2    | 1  |
| DLC                    | TOTAL No. 8     | 1    | 1  | 1  | 2    | 1  |
|                        | 213U/213L       | 2    | 2  | 2  | 2    |    |
|                        | 214U/214L       | 2    | 2  | 2  | 2    |    |
|                        | 418U/418L       |      |    |    | 2    |    |
|                        | 6J3U/6J3L       |      |    |    | 2    | 2  |
|                        | 6J4U/6J4L       |      |    |    | 2    | 2  |
|                        | 8J8U/8J8L       |      | 2  | 2  | 2    |    |
|                        | TOTAL DLC       | 4    | 6  | 6  | 12   | 4  |
| EVU CABLE              | EV-A            |      |    | 1  | 1    |    |
|                        | EV-B            | 1    | 1  | 1  | 1    |    |
|                        | EV-C            |      |    |    | 1    |    |
|                        | EV-D            |      |    |    | 1    | 1  |
|                        | TOTAL EV CABLES | 1    | 1  | 2  | 4    | 1  |
| CONDUIT SIZE (INCHES)  |                 | 3"   | 3" | 3" | 2-3" | 3" |
| CONDUIT FILL (PERCENT) |                 | 11   | 13 | 16 | 17   | 11 |

| POLE AND EQUIPMENT SCHEDULE |                |     |     |          |        |        |        |        |        |            |        |          |            |                     |                                                                                  |
|-----------------------------|----------------|-----|-----|----------|--------|--------|--------|--------|--------|------------|--------|----------|------------|---------------------|----------------------------------------------------------------------------------|
| No.                         | STANDARD       |     |     | VEH SIG  |        |        |        |        |        | PED SIGNAL |        | APS      |            | LED LUMINAIRE       | SPECIAL REQUIREMENTS                                                             |
|                             | Type           | SMA | LMA | Mast Arm |        |        | Pole   |        |        | MTG        | ø      | ARROW    |            |                     |                                                                                  |
|                             |                |     |     | MTG      | ø      | CFG    | MTG    | ø      | CFG    |            |        |          |            |                     |                                                                                  |
| (A)                         | 19-4-100       | 25' | 12' | MAT MAS  | 2<br>2 | 1<br>1 | SV-1-T | 4      | 1      | 2P<br>8P   | SP-2-T | 8P       | <--        | CREE 50,<br>TYPE 2* | SNS "Fern St", R3 4, EVUD                                                        |
| (B)                         | 1-B<br>(5'-0") |     |     |          |        |        |        |        |        |            |        | 2        | -->        |                     | FOUNDATION SHALL BE 2'ø AND 2' DEEP.                                             |
| (C)                         | 19-4-100       | 25' | 12' | MAT      | 4      | 1      | SV-2-T | 4<br>6 | 1<br>1 | 2P<br>4P   | SP-2-T | 2P       | <--        | CREE 50,<br>TYPE 2* | SNS "Walnut St", R3-4, EVUD                                                      |
| (D)                         | 1-B<br>(5'-0") |     |     |          |        |        |        |        |        |            |        | 4        | -->        |                     | FOUNDATION SHALL BE 2'ø AND 2' DEEP.                                             |
| (E)                         | 24-4-100       | 35' | 12' | MAT      | 6      | 1      | SV-2-T | 6<br>8 | 1<br>1 | 4P<br>6P   | SP-2-T | 4P<br>6P | <--<br>--> | CREE 50,<br>TYPE 2* | SNS "Fern St", R3-4, EVUD. PROVIDE<br>TENON WITH RAIN-TIGHT CAP AT F=14".<br>PEU |
| (F)                         | 19-4-100       | 25' | 12' | MAT      | 8      | 1      | SV-2-T | 2<br>8 | 1<br>1 | 6P<br>8P   | SP-2-T | 6P<br>8P | <--<br>--> | CREE 50,<br>TYPE 2* | SNS "Walnut St", R3-4, EVUD                                                      |
| (G)                         |                |     |     |          |        |        |        |        |        |            |        |          |            |                     |                                                                                  |
| (H)                         |                |     |     |          |        |        |        |        |        |            |        |          |            |                     |                                                                                  |

\* LED STREETLIGHT FIXTURE SHALL BE CREE XSP B2MEA 40K, 50W, TYPE 2, OR APPROVED EQUAL PROVIDING ROADWAY 1 DISTRIBUTION ON RSP ES-10A.

SIGNAL HEAD CONFIGURATION NUMBERS



# STRIPING LEGEND

- 21 DETAIL 21 DOUBLE YELLOW 4"
- 38A DETAIL 38A CHANNELIZING LINE 8" WHITE LINE
- 39A DETAIL 39A BIKE LANE 6" INTERSECTION LINE

END OF STRIPE DETAIL

SCALE: 1"=20'

N

018-043-013  
PERRY BRESSMAN  
2259 FERN STREET

018-042-044  
HUMBOLDT PETROLEUM INC  
3973 WALNUT ST

REMOVE <E> DETAIL 39, L=50'  
RED CURB MARKING, L=30'  
EXISTING 38A  
EXISTING 39A  
EXISTING 27B  
BIKE LOOP DETECTOR SYMBOL  
INSTALL 12" LIMIT LINE, L=26'

EXISTING TYPE III ARROW TO REMAIN

REMOVE "STOP" SIGN WHEN  
SIGNAL IS OPERATIONAL

REMOVE  
1  
L=95'

FERN STREET

10+80 STRIPING CONFORM  
11+75 HMA CONFORM

RED CURB  
MARKING, L=110'

REMOVE "STOP" MARKING  
REMOVE "STOP" SIGN WHEN  
SIGNAL IS OPERATIONAL

4" WHITE ON  
HMA DIKE L=10'

018-053-014  
PATRICK MURPHY  
4020 WALNUT ST

WALNUT STREET

14+00

018-052-001  
ORLANDO & NANCY GIANNINI  
4015 WALNUT ST

EXISTING 38A

EXISTING 21

EXISTING TYPE III ARROW TO REMAIN

13+30 HMA CONFORM

13+00

12+30

12+00

11+00

10+80

11+75

12+00

12+25

12+75

13+00

13+30

14+00

14+25

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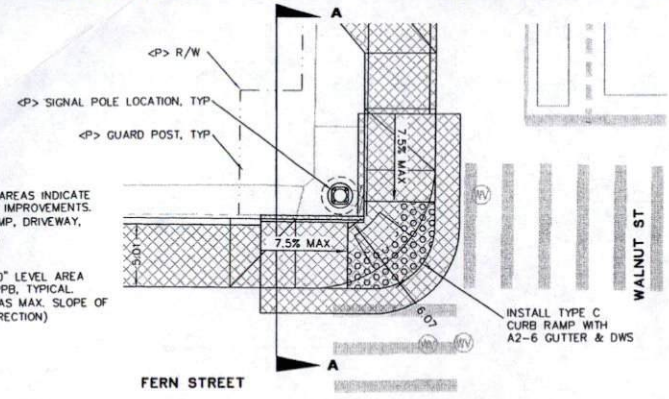


|                                                              |                    |                                                               |                       |
|--------------------------------------------------------------|--------------------|---------------------------------------------------------------|-----------------------|
| ROAD NAME: FERN STREET AND WALNUT STREET                     | DESIGN SECTION     | COUNTY OF HUMBOLDT<br>DEPARTMENT OF PUBLIC WORKS              | SHEET<br>8<br>OF<br>9 |
| ROAD NO.: 34210 & 34300                                      | DESIGNED BY: JAB   | WALNUT AND FERN STREET TRAFFIC SIGNAL                         |                       |
| PROJECT NO.: RPL 5804(107)                                   | EA NO.: 01-924919L |                                                               |                       |
| CONTRACT NO.: 213501                                         | PPNG: 01-2258      |                                                               |                       |
| DRAWING FILE NAME: L:\PROJECTS\213501 FERN SIGNAL\CD\SHS.DWG | DRAWN BY: RAB      | WALNUT STREET & FERN STREET<br>CURB RAMP DETAILS AND SECTIONS |                       |
| PLOT DATE: 7/18/2018                                         | REVIEWED BY: RLB   |                                                               |                       |
|                                                              | APPROVED BY: AMS   |                                                               |                       |

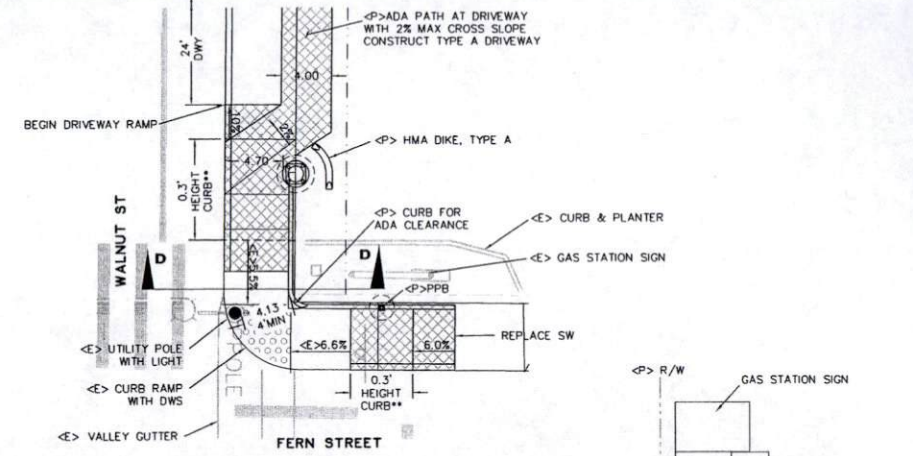
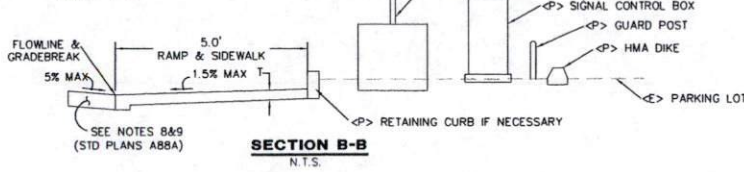
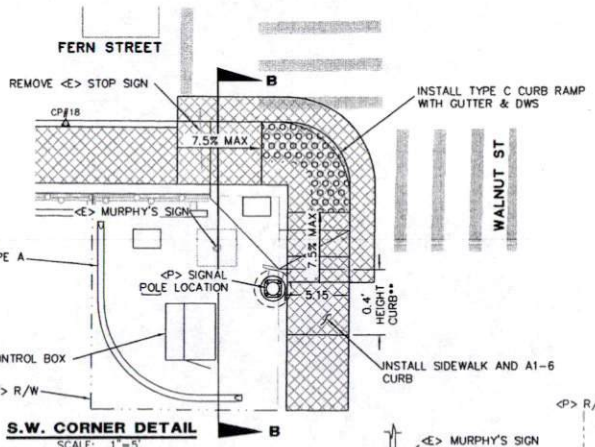
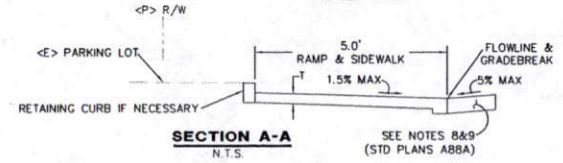
**PLAN VIEW**  
SCALE: 1"=5'

HATCHED AREAS INDICATE  
CONCRETE IMPROVEMENTS.  
(CURB RAMP, DRIVEWAY,  
SIDEWALK)

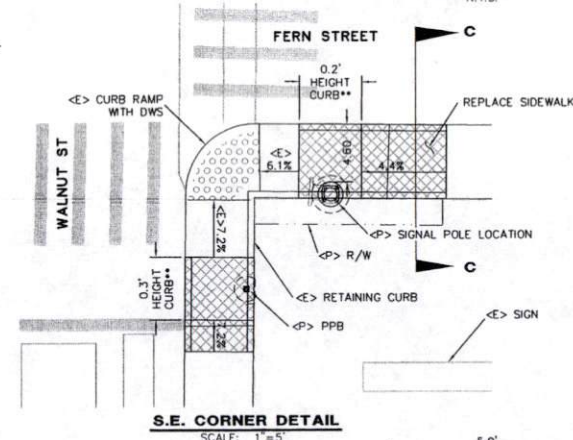
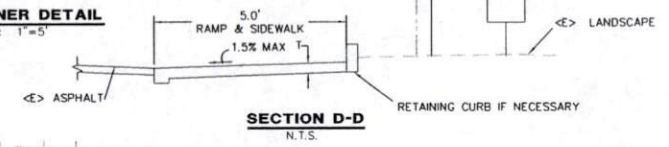
\*\* PROVIDE 48"x60" LEVEL AREA  
ADJACENT TO PPB, TYPICAL.  
(LEVEL AREA HAS MAX. SLOPE OF  
1.5% IN ANY DIRECTION)



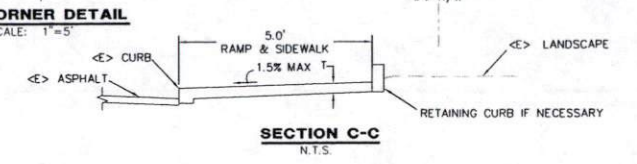
**N.W. CORNER DETAIL**  
SCALE: 1"=5'



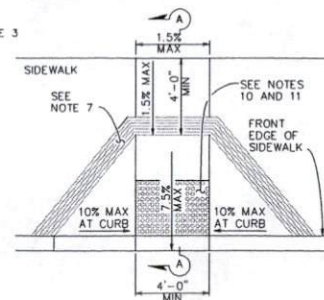
**N.E. CORNER DETAIL**  
SCALE: 1"=5'



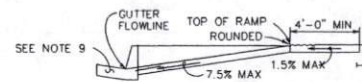
**S.E. CORNER DETAIL**  
SCALE: 1"=5'



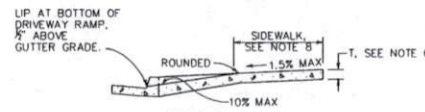




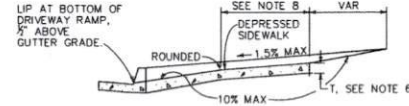
### CASE A



**SECTION A-A**



TYPICAL DRIVEWAY, SIDEWALK NOT DEPRESSED

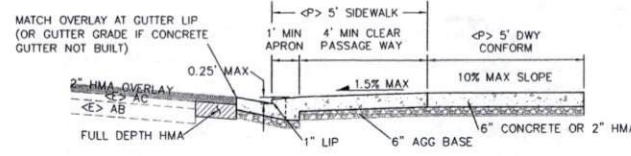


### CASE B

#### DRIVEWAY WITH DEPRESSED SIDEWALK

## SECTIONS

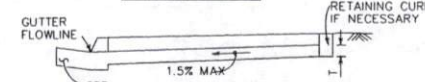
## SECTIONS



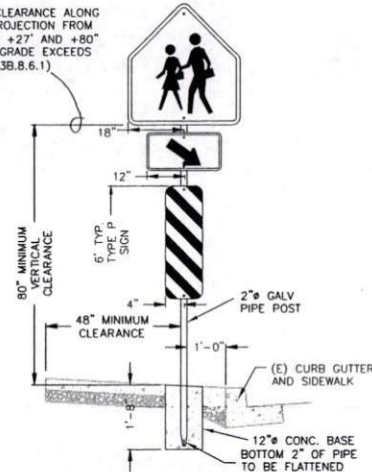
## CASE "C" DRIVEWAY SECTION

**CASE 'C' DWY DETAIL**

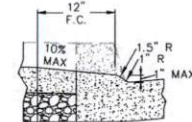
NOT TO SCALE



PROVIDE 80" CLEARANCE ALONG  
WALKWAY IF PROJECTION FROM  
POST BETWEEN +27' AND +80'  
ABOVE FINISH GRADE EXCEEDS  
12". (CBC 1133B.8.6.1)



NOT TO SCALE



- 1) AS SITE CONDITIONS DICTATE, CASE A THROUGH CASE C CURB RAMPS MAY BE USED FOR CORNER INSTALLATIONS SIMILAR TO THOSE SHOWN IN DETAIL A AND DETAIL B. THE CASE C CURB RAMPS USED IN DETAIL A DO NOT HAVE TO BE THE SAME CASE A THROUGH CASE C CURB RAMPS ALSO MAY BE USED AT MID BLOCK LOCATIONS TO THE SITE CONDITIONS DICTATE.
- 2) IF DISTANCE FROM CURB TO BACK OF SIDEWALK IS TOO SHORT TO ACCOMMODATE RAMP AND 4'-0" PLATFORM (LANDING) AS SHOWN IN CASE A, THE SIDEWALK MAY BE DERESSED LONGITUIONALLY AS IN CASE B, OR C OR MAY BE WIDENED AS IN CASE D.
- 3) WHEN RAMP IS LOCATED IN CENTER OF CURB RETURN, CROSSWALK CONFIGURATION MUST BE SIMILAR TO THAT SHOWN FOR DETAIL B.
- 4) AS SITE CONDITIONS DICTATE, THE RETAINING CURB SIDE AND THE FLARED SIDE OF THE CASE G RAMP SHALL BE CONSTRUCTED IN REVERSED POSITION.
- 5) IF LOCATED ON A CURVE, THE SIDES OF THE RAMP NEED NOT BE PARALLEL, BUT THE MINIMUM WIDTH OF THE RAMP SHALL BE 4'-0".
- 6) SLOPE OF RAMP FLARES VARY UNIFORMLY FROM A MAXIMUM OF 10% AT CURB TO CONFORM WITH LONGITUDINAL SIDEWALK SLOPE ADJACENT TO TOP OF THE RAMP, EXCEPT IN CASE C AND CASE F.
- 7) ~~THE CURB RAMP SHALL BE OUTLINED WITH A 1'-0" WIDE BORDER WITH 1/4" GROOVES APPROXIMATELY 1/8" ON CENTER.~~
- 8) TRANSITIONS FROM RAMPS AND LANDING TO WALKS, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
- 9) MAXIMUM SLOPES OF ADJOINING GUTTERS, THE ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP OR ACCESSIBLE RIDEWAY SHALL NOT EXCEED 2 PERCENT WITHIN 4'-0" OF THE TOP AND 5 PERCENT WITHIN 4'-0" OF THE BOTTOM OF THE CURB RAMP.
- 10) CURB RAMPS SHALL HAVE A DETECTABLE WARNING SURFACE THAT EXTENDS THE FULL WIDTH AND 3'-0" DEPTH OF THE RAMP.
- 11) THE EDGE OF THE DETECTABLE WARNING SURFACE NEAREST THE STREET SHALL BE BETWEEN 6" AND 8" FROM THE GUTTER FLOWLINE.
- 12) SIDEWALK AND RAMP THICKNESS, "T", SHALL BE 3/4" MINIMUM.
- 13) UTILITY PULL BOXES, MANHOLES, VAULTS AND ALL OTHER UTILITY FACILITIES WITHIN THE BOUNDARIES OF THE CURB RAMP WILL BE RELOCATED OR ADJUSTED TO GRADE BY THE CONTRACTOR PRIOR TO, OR IN CONJUNCTION WITH, CURB RAMP CONSTRUCTION.
- 14) FOR RETROFIT CONDITIONS, REMOVAL AND REPLACEMENT OF CURB APRON WILL BE AT THE CONTRACTOR'S OPTION, UNLESS OTHERWISE SHOWN ON PROJECT PLANS.
- 15) FOR DETAILS OF GROOVING USED WITH CASE CM CURB RAMP, SEE REVISED STANDARD PLAN RSP AB3A.
- 16) FOR DETAILS OF DETECTABLE WARNING SURFACES, SEE REVISED STANDARD PLAN RSP AB3A.
- 17) FOR ADDITIONAL CURB RAMP DETAILS, SEE REVISED STANDARD PLAN RSP AB3A.
- 18) SEWER LATERAL CLEANOUTS TO BE ADJUSTED TO GRADE BEHIND SIDEWALK BY CONTRACTOR.
- 19) ALL WATER & SEWER WORK DONE ON THIS PROJECT WILL COMPLY TO MCSO STANDARDS
- 20) RAISE MYS, C/O'S, & VALVE CAN TO GRADE

- 1.) CASE A DRIVEWAY SECTION TYPICALLY APPLIES
- 2.) USE CASE B DRIVEWAY SECTION WHEN RAMP SLOPES WOULD EXCEED 10% IN CASE A.
- 3.) USE CASE B DRIVEWAY SECTION WHEN SIDEWALK CROSS SLOPE WOULD EXCEED 2% IN CASE A.
- 4.)  $x = 5'-0"$  EXCEPT FOR CURB HEIGHTS OVER 10" WHERE 4:1 SLOPES SHALL BE USED ON CURB SLOPE.
- 5.) X IS A VARIABLE WHEN SIDEWALK IS LOCATED WHERE WHEELCHAIRS MAY TRAVERSE THE SURFACE. SLOPES SHALL NOT EXCEED 8.33%.
- 6.) SIDEWALK AND RAMP THICKNESS "T" AT DRIVEWAY SHALL BE 6" FOR RESIDENTIAL AND 6" FOR COMMERCIAL WITH REBAR.
- 7.) DIFFERENCE IN SLOPE OF THE DRIVEWAY RAMP AND THE SLOPE OF A LINE BETWEEN THE GUTTER AND A POINT ON THE DRIVEWAY 5'-0" FROM GUTTER LINE SHALL NOT EXCEED 15% REDUCE DRIVEWAY RAMP SLOPE, NOT GUTTER SLOPE, WHERE REQUIRED.
- 8.) MINIMUM WIDTH OF CLEAR PASSAGEWAY FOR SIDEWALK SHALL BE 4'-0".
- 9.) RETAINING CURBS AND ACQUISITION OF CONSTRUCTION EASEMENT MAY BE NECESSARY FOR NARROW SIDEWALKS OR CURB HEIGHTS IN EXCESS OF 6".
- 10.) ACROSS THE PEDESTRIAN ROUTE AT CURB RAMP LOCATIONS, THE GUTTER PAN SLOPE SHALL NOT EXCEED 1" OF DEPTH FOR EACH 2'-0" OF WIDTH.