

SPECIAL PROVISIONS

INTERSECTION IMPROVEMENTS AT ALMADEN EXPRESSWAY AND CAMDEN AVENUE

COUNTY STANDARD SPECIFICATIONS: MAY 2000

STATE STANDARD SPECIFICATIONS: 2018

BID OPENING DATE: JULY 21, 2022

<http://www.sccgov.org/portal/site/rda/>

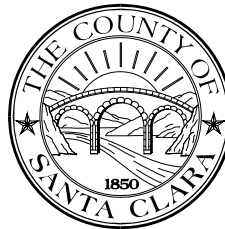


DocuSigned by:

Christine Li

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Christine Li
Associate Civil Engineer
County of Santa Clara
Roads and Airports Department



DocuSigned by:

Harry Freitas

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Harry Freitas
Director
County of Santa Clara
Roads and Airports Department



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SECTION 100 - NOTICE TO BIDDERS

Notice is hereby given that sealed bids will be received by the County of Santa Clara’s (“County” or “Owner”) Clerk of the Board of Supervisors, County Government Center, 70 West Hedding Street, East Wing, 10th Floor, San Jose, California, 95110, before 2:00 p.m. on

the day of July 21, 2022 For the Project Intersection Improvements at Almaden Expressway and Camden Avenue

The Work consists of Providing temporary traffic control system, supplying of labor, materials, and equipment as required for median removal, median construction, “pork-chop” median removal and curb return modifications, roadway widening, adjusting utility covers to new finish grades, construct new curb, gutter & sidewalk, construct new ADA curb ramps, removing all existing Striping, installing HMA overlay and microsurfacing, provide signage and striping improvements, storm drainage modifications, traffic signal modifications, install pedestrian sensors, install streetlights at the intersection of Almaden Expressway and Camden Ave, and other details of work not mentioned above that are required by the Project Plans, County Standard Specifications and these Special Provisions.

100-01 TIME OF COMPLETION

The time limit for the completion of Work is 120 working days commencing on the first charged day, which will be approximately 30-45 days following the Notice of Award by the County of Santa Clara.

Liquidated damages shall be assessed in the amount of \$ 2,500 for each calendar day the Work remains incomplete beyond the time limit for completion.

Owner may withhold liquidated damages from payments as such damages accrue, or in Owner’s discretion, withhold liquidated damages from any payments due, or that may become due under the Contract, including retention and final payment (California Government Code Section 53069.85).

100-02 BID PLANS AND SPECIAL PROVISIONS

Bid Plans and Special Provisions may be obtained from Periscope: <https://www.periscopeholdings.com/s2g>

All Questions regarding the Bid Plans and Special Provisions go to: <https://www.periscopeholdings.com/s2g>

A copy of the County of Santa Clara Standard Specifications and Standard Details may be obtained at <https://countyroads.sccgov.org/do-business-us/published-standards-specifications-documents-and-forms>

100-03 PROJECT ENGINEER

The County of Santa Clara Roads & Airports Department's Project Engineer for this Project is
Christine Li , P.E.

100-04 CONTRACTOR LICENSE

The Contractor shall possess a Class A License.

If a Bidder does not possess the required Contractor License(s) at the time the Bid is submitted (per Business and Professions Code section 7028.15), the Bid shall be considered non-responsive and shall be rejected by Owner. Owner may enforce the required forfeiture of the Bidder's Bond.

The Bidder and any subcontractors must be licensed by the Contractors State License Board of the State of California, and contractor and subcontractor information as shown on Bid Forms 2A & 2B shall be supplied in accordance with Public Contract Code section 4104.

100-05 STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS REGISTRATION

No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the State of California Department of Industrial Relations pursuant to Labor Code section 1725.5 (with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)).

No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

Failure of contractor to timely supply missing information shall be cause for rejection of bid.

100-06 PRE-BID OPENING CONFERENCE

There is no Pre-Bid Opening Conference for this Project.

100-07 BID SUBMITTAL

- Bidder’s original signature(s) must appear on all Bid Forms and on the original Bidder’s Bond.
- Bidder’s Bond: Each Bid must be accompanied by a Bidder’s Bond, cash, or a certified cashier’s check, in the sum of not less than 10% of the total aggregate of the Bid, including all additives and/or all alternate bid items. The original Bid Bond must be provided by an admitted Surety insurer, authorized to issue Surety bonds in the State of California, and it must execute the Bid Bond. The check or bond shall be made payable “County of Santa Clara”.
- Bid Forms must be completed in ink, completely filled out, and submitted on the forms furnished as part of the Bid Documents. Faxed Bids or alteration to any Bid Form will not be considered by Owner. If the Bid amount or other material information is changed, the change must be initialed.
- All Bids must be addressed to the Office of the Clerk of the Board for the County of Santa Clara, and shall bear the title or name of the project as it appears on the Bid Documents.
- All Bids mailed or express delivered shall be in a sealed envelope inside the mailing envelope. The outside of both the outer mailing envelope and the inner sealed envelope shall be clearly printed “BID PROPOSAL – DO NOT OPEN” in large letters on the front and back.
- Sealed bids will be received by the County of Santa Clara’s Clerk of the Board of Supervisors, located at County Government Center, 70 West Hedding Street, East Wing, 10th Floor, San Jose, California, 95110.

100-08 BID OPENING & BASIS OF AWARD

Bids will be publicly opened and read by the Clerk of the Board of Supervisors at the time and place indicated above. A report of the results will be made by the Clerk of the Board of Supervisors at a publicly noticed regular or special meeting of the Board of Supervisors. The anticipated date of the meeting will be announced at the Bid opening.

The basis of award of the Contract shall be as stated on Bid Form 1 – Bid Proposal.

100-09 BID RIGGING

The US Department of Transportation (“DOT”) provides a toll-free hotline to report bid rigging activities. Use the hotline to report bid rigging, bidder collusion, and other fraudulent activities. The hotline number is (800) 424-9071. The service is available 24 hours 7days a week and is confidential and anonymous. The hotline is part of the DOT’s effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General.

100-10 BID ACCEPTANCE / REJECTION

The acceptance of Bid for award is subject to approval by the County of Santa Clara Board of Supervisors. The County of Santa Clara Board of Supervisors reserves the right to reject any and/or all Bids, or to waive any minor irregularities or discrepancies in the Bids.

A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Public Contract Code section 4104, or engage in the performance of any contract for public work, as defined in Chapter 1, Public Works of Part 7, Division 2 of California Labor Code, unless they are currently registered and qualified to perform public work pursuant to California Labor Code 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 of the California Labor Code at the time the contract is awarded.

All other factors being equal, tied Bids will be determined by the Bidder who submitted their Bid first, as shown on the date and time stamps on the Bids. If date and time stamps are not available, the tied Bids will be determined by the flip of a coin in the presence of Bidders and witnesses.

100-11 SUBSTITUTIONS

Contractor may offer any material, process, article, or equipment that is substantially equal or better in every respect to that so indicated or specified; provided, however, that if the material, process, article, or equipment offered by Contractor is not, in the opinion of Owner's Project Engineer, substantially equal or better in respect to that specified, then Contractor must furnish that material, process, article, or equipment specified or one that in the opinion of Owner's Project Engineer is substantially equal or better in every respect.

Proposals for alternative material(s), process, article(s), or equipment must be submitted in writing during a period starting with the Notice to Proceed and ending 35 days later, in accordance with the requirements of Section 6.09 "Trade Names and Alternatives" of the County of Santa Clara Roads & Airports Department Standard Specifications, amended as stated in Section 106 of these Special Provisions.

100-12 BONDS AND INSURANCE

The successful Bidder shall deliver a signed Payment Bond, Performance Bond, Certificates of Insurance, and Special Endorsements to the Clerk of the Board of Supervisors for approval before Owner will issue a Notice to Proceed with the Work. No contractual relationship shall exist between the parties until all bonds and insurance coverages have been approved by Owner's Project Engineer.

100-13 SUBSTITUTION OF SECURITIES

Pursuant to Section 9.06 “Substitution of Securities” of the County of Santa Clara Roads & Airports Department Standard Specifications, the Contractor may substitute securities for any money withheld from progress payments, using the Escrow Agreement form provided in Section 112 “Contract Forms” of these Special Provisions.

100-14 PREVAILING WAGE REQUIREMENT

Contractor’s attention is directed to Section 7.07 “Prevailing Wage & Payroll Records” of the County of Santa Clara Roads & Airports Department Standard Specifications.

Pursuant to Section 7.07 “Prevailing Wage & Payroll Records” of the County of Santa Clara Roads & Airports Department Standard Specifications, workers employed in the Work must be paid at the rates at least equal to the prevailing wage rates last adopted by the Director of the California Department of Industrial Relations, which rates are on file at the Office of the Clerk of the Board of Supervisors, and copies of which are available to any interested parties on request. The rates are also available on the State of California Department of Industrial Relations website at California Department of Industrial Relations Home Page <https://www.dir.ca.gov/>.

100-15 PRESERVATION OF CULTURAL RESOURCES

- The Work site is deemed “Archeologically Sensitive” and the provisions relating to preservation of cultural resources in Section 8.14 “Preservation of Cultural Resources” of the County of Santa Clara Roads & Airports Department Standard Specifications shall apply.
- The Work site has not been deemed “Archeologically Sensitive.”

100-16 ADDITIVE AND/OR DEDUCTIVE BID ITEMS

This invitation to bid includes additive and/or deductive bid items. Pursuant to Public Contract Code section 20103.8, additive and/or deductive bids will factor into the award of the contract as follows.

The lowest Bid will be the lowest Bid price on the base Contract without consideration of the prices on the additive or deductive Bid items.

100-17 (NOT USED)

SECTION 101 - PLANS AND SPECIFICATIONS

The Project shall be constructed and administered in accordance with the Contract Documents issued for this Project. The Contract Documents consist of the Special Provisions, Plans, County Standard Specifications, County Standard Details, State Standard Specifications, State Standard Plans, and any Addendum or written modification to any of the foregoing. (For definition of "Plans," "County Standard Specifications," and "State Standard Specifications" see Section 1 of the County Standard Specifications as approved May 2000, including any applicable amendments).

The State Standard Specifications applicable to this Project are Sections 9 through 96 inclusive of the State Standard Specifications dated 2018, and its amendments as approved by the State of California, Department of Transportation ("Caltrans"). The required version of the State Standard Specifications and State Standard Plans to be used on this Project is indicated below.

Attention of the Bidder is directed to Section 106(A)(10) of these Special Provisions, which amends Section 5.19 "Coordination, Interpretation and Order of Precedence of Contract Documents" of the County Standard Specifications.

Attention of the Bidder is also directed to Section 110, "Technical Specifications" of these Special Provisions and Section 106 "Amendments to County Standard Details and Specifications", which include modifications and/or additions to the County Standard Specifications, that are particular to this Project.

STANDARD SPECIFICATIONS

COUNTY STANDARD SPECIFICATIONS DATED MAY 2000. Electronic version of the County-issued Amendments to County Standard Specifications is available online for download from County's website at <https://countyroads.sccgov.org/do-business-us/published-standards-specifications-documents-and-forms>. A hard copy of the Amendments is available at the Permit Counter of the County of Santa Clara Department of Roads & Airports located at 101 Skyport Drive, San Jose, California 95110, for walk-in review by Bidders. Amendments with the latest issue date up to the Bid Opening date shall apply to the Project.

STATE STANDARD SPECIFICATIONS DATED 2018. Electronic version of the Caltrans-issued Amendments to State Standard Specifications is available online for download from: Caltrans website at <https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications>

STANDARD PLANS

COUNTY STANDARD DETAILS MANUAL DATED SEPTEMBER 1997. Electronic version of the County-issued Amendments to County Standard Specifications is available online for download from County's website at <https://countyroads.sccgov.org/do-business-us/published-standards-specifications-documents-and-forms>. A hard copy of the Amendments is available at the Permit Counter of the County of Santa Clara Department of Roads & Airports located at 101 Skyport Drive, San Jose, California 95110, for walk-in review by Bidders. Amendments with the latest issue date up to the Bid Opening date shall apply to the Project.

STATE STANDARD PLANS DATED 2018. Electronic version of the Caltrans-issued Amendments to State Standard Plans is available online for download from: Caltrans website at <https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications>

SECTION 102 - BID REQUIREMENTS AND PROCEDURES

102-01 BID FORMS

Bidder’s attention is directed to Section 2 “Bid Requirements and Conditions” of the County Standard Specifications, and these Special Provisions.

In order for a Bidder to receive consideration of their Bid, each of the Bid Forms contained in Section 111, “Bid Forms”, shall be completed, and the forms’ language must not be changed.

Bidder’s original signature(s) must appear on all of the following listed Bid Forms and on the Bidder’s Bond:

BID FORM 1	BID PROPOSAL
BID FORM 2A	CERTIFICATION OF SUBCONTRACTING LIMITATIONS
BID FORM 2B	DESIGNATION OF SUBCONTRACTORS
BID FORM 3	STATEMENT REGARDING VIOLATION OF LAW OR SAFETY REGULATION
BID FORM 4	DESIGNATION OF INSURANCE AND BONDING COMPANIES
BID FORM 5	EQUAL OPPORTUNITY REQUIREMENTS
BID FORM 6	NONCOLLUSION AFFIDAVIT
BID FORM 7	STOP PAYMENT NOTICE INFORMATION
BID FORM 8	BIDDER’S BOND
BID FORM 9	AGREEMENT TO BE BOUND & SANTA CLARA COUNTY PROJECT LABOR AGREEMENT

102-02 BID PROTEST AND PROCEDURES

It is the policy of the County that contractors have a process in which they can protest the bid of another contractor, or to challenge steps taken during a solicitation process that the Bidder believes constitutes an abuse of discretion by the County or misconduct or impropriety by County officials or evaluation team members.

Attention is directed to the following bid protest procedures. The decision resulting from the established protest process shall be the final decision of the County.

PROTEST PROCEDURES FOR PUBLIC WORKS

- A. This protest procedure applies to all public works procurements, whether Invitation to Bid, Request for Proposals, Prequalification, or other form of competitive procurement, formal or informal. The words “bid” and “bidder” shall be interchangeable with “proposal and “proposer” respectively, as appropriate for the specific procurement.

- B. Only a person or entity who has submitted a bid is eligible to lodge a protest. Bid protests will not be accepted from non-bidders, including, but not limited to, subcontractors, subconsultants, or other third parties. A bidder may also not rely on the protest submitted by another bidder, but instead must timely pursue its own protest

- C. Protest Regarding the Legal Sufficiency of Procurement Documents and Process. Any protest (including supporting documentation) relating to the legal sufficiency of the procurement documents or the procurement solicitation process must be emailed so that it is received by the Owner's Project Manager identified in the procurement documents before 5:00 p.m. of the 5th business day after the release of the solicitation. Any protest not received by the deadline, or sent to any person other than Owner's Project Manager, may be rejected or dismissed in Owner's sole discretion. The protest must be in writing and state the specific legal authority establishing the deficiency in the procurement documents or procurement solicitation process. Any bidder who fails to submit a timely protest subject to this provision shall be deemed to have waived any such protest. Owner may respond by any reasonable means, including, without limitation, by issuing an addendum, issuing a letter to the protester, or canceling the procurement.

- D. Protest of Owner Rejection of Bid as Non-Responsive or Bidder as Non-Responsible. If Owner determines that the apparent lowest bid(s) are non-responsive or the lowest bidder(s) are non-responsible (after conducting a non-responsibility hearing or bidder waiving any objection to a non-responsibility determination), Owner shall reject the bid. Owner will notify the bidder in writing that the bid has been rejected, and state the basis for the rejection. The rejected bidder may protest Owner's decision. The protest must be in writing and emailed to Owner's Project Manager before 5:00 p.m. within 5 business days of the issuance of the rejection

- E. Protest Regarding Award
 - 1. The Owner's Project Manager or designee will send an email or otherwise provide an announcement to all bidders informing each of the bid(s) that was/were selected or deemed to be a finalist. The announcement may take any reasonable form in the Owner's discretion, including, but not limited to, providing an email to bidders, and/or posting results on Periscope or other similar electronic bidding platform utilized by the County
 - 2. The written protest and all supporting documentation must be emailed to the Owner's Project Manager listed in the procurement documents so that it is received before 5:00 p.m. on the 5th business day after the announcement in the preceding section. Owner will not consider, and immediately dismiss, bid protests that are lodged before Owner issues the notice of intent to award, or notice of finalist(s). Any protest not received by the deadline, or sent to any person other than the Owner's Project Manager, may be rejected or dismissed by Owner in Owner's sole discretion.

F. For all protests, a protest received on or after 5:00 p.m. shall be considered received as of the next business day. A business day does not include weekends or County observed holidays

G. Contents of Protest:

1. All protests lodged, regardless of basis, must conform to the following content requirements.
2. The protest must be in writing. The following must be written on the cover or subject line of the protest: "Protest Relating to [SOLICITATION NUMBER]." The written protest must contain the following information:
 - a. the name, street address, electronic mail address, and telephone and facsimile number of the protester;
 - b. signature of the protester or its representative;
 - c. clearly-stated grounds for the protest and supporting information that forms the basis of the protest, including the specific portions of the bid documents, plans, specification, bid proposal, and/or applicable law or regulation that was not complied with;
 - d. copies of all relevant documents; and,
 - e. the form of relief requested.

Protests should be concise and logically arranged. All documents submitted by the protester are public records subject to disclosure under the California Public Records Act.

3. The protester may not present any additional grounds or arguments after submission, unless requested by Owner. All protest documents shall be public records.
4. If a protest contends there was an error made by Owner officials or evaluation team members, a difference of opinion regarding the scoring or points to be awarded to a proposal in any or all categories does not constitute for protest purposes an error, an abuse of discretion or process, or misconduct

H. Protest Resolution Process

1. Upon receipt of a timely protest, the department will attempt to informally resolve the protest. This will include providing a copy of the protest to the protested bidder, and request a response within a time frame set by Owner, typically 5 calendar days.
2. The director of the department or its designee overseeing the procurement will render its final decision in writing. The director or designee may, consistent with applicable law and in its sole discretion, use any available resources and information to resolve the protest. The director or designee has the discretion to contact the protester, protested bidder, schedule a meeting, or conduct an informal hearing

I. Protest Remedies

1. In accordance with applicable law, Owner has no obligation to delay or otherwise postpone an award of contract based on a bidder's protest.
2. The remedies available pursuant to these procedures may include, but are not limited to, the reevaluation or the cancellation of a solicitation. However, no remedy may require Owner to execute a contract with any entity, which authority is solely reserved for the Board of Supervisors or an official with appropriate delegated authority.
3. The procedures and time limits set forth herein are mandatory and are each bidder's sole and exclusively remedy in the event of a protest. A bidder's failure to timely complete the procedures set forth herein shall be deemed a failure to exhaust administrative remedies. Failure to exhaust administrative remedies, or failure to comply with the protest procedures, shall constitute a waiver of any right to further pursue a bid protest, including the filing of any claim or legal proceedings

SECTION 103 – EQUAL EMPLOYMENT OPPORTUNITY AND WORKING ENVIRONMENT REQUIREMENTS

103-01 EQUAL EMPLOYMENT OPPORTUNITY

Contractor's attention is directed to the County Standard Specifications Section 7.01, "Compliance with Laws and Regulations", in totality and Section 7.02, "Contractor's Licensing Laws", and Section 7.03, "Equal Opportunity Requirements".

103-02 WORKING ENVIRONMENT

Contractor shall ensure and maintain a working environment free of personal harassment and intimidation as set forth in County Standard Specifications section 5.15, "Working Environment" and as amended January 7, 2011.

In the event that the Contractor and/or its workforces fail to comply with this provision, Contractor and/or Contractor's workforces may be subject, but not limited, to the requirements stated in the following County Standard Specifications Sections:

- 5.14, "Character of Workers" and as amended dated January 7, 2011;
- 8.05, "Temporary Suspension of Work";
- 8.08, "Termination of Control";
- 9.08, "Progress Payments"; and
- Such other remedies as are provided in these Contract Documents or as allowed by law.

103-03 COUNTY NO-SMOKING POLICY

Contractor and its employees, agents, and subcontractors, shall comply with County's No Smoking Policy, as set forth in the Board of Supervisors Policy Manual section 3.47 (as amended from time to time), which among other things, prohibits smoking: (1) at the Santa Clara Valley Medical Center Campus and all County-owned and operated health facilities, (2) within 30 feet surrounding County-owned buildings and County leased buildings, and (3) in all County vehicles. Contractor is advised to review Section 3.47 at <https://www.sccgov.org/sites/scc/gov/CountyPolicies/Board-Policy-3.47-No-Smoking-Policy.pdf>.

103-04 FOOD AND BEVERAGE STANDARDS

Except in the event of an emergency or medical necessity, the following nutritional standards shall apply to any foods and/or beverages purchased by Contractor with County funds for County-sponsored meetings or events.

If food is to be provided, healthier food options shall be offered. "Healthier food options" include (1) fruits, vegetables, whole grains, and low fat and low-calorie foods; (2) minimally processed foods without added sugar

and with low sodium; (3) foods prepared using healthy cooking techniques; and (4) foods with less than 0.5 grams of trans fat per serving. Whenever possible, Contractor shall (1) offer seasonal and local produce; (2) serve fruit instead of sugary, high calorie desserts; (3) attempt to accommodate special, dietary and cultural needs; and (4) post nutritional information and/or a list of ingredients for items served. If meals are to be provided, a vegetarian option shall be provided, and Contractor should consider providing a vegan option. If pre-packaged snack foods are provided, the items shall contain: (1) no more than 35% of calories from fat, unless the snack food items consist solely of nuts or seeds; (2) no more than 10% of calories from saturated fat; (3) zero trans fat; (4) no more than 35% of total weight from sugar and caloric sweeteners, except for fruits and vegetables with no added sweeteners or fats; and (5) no more than 360 mg of sodium per serving.

If beverages are to be provided, beverages that meet the County's nutritional criteria are (1) water with no caloric sweeteners; (2) unsweetened coffee or tea, provided that sugar and sugar substitutes may be provided as condiments; (3) unsweetened, unflavored, reduced fat (either nonfat or 1% low fat) dairy milk; (4) plant-derived milk (e.g., soy milk, rice milk, and almond milk) with no more than 130 calories per 8 ounce serving; (5) 100% fruit or vegetable juice (limited to a maximum of 8 ounces per container); and, (6) other low-calorie beverages (including tea and/or diet soda) that do not exceed 40 calories per 8 ounce serving. Sugar-sweetened beverages shall not be provided.

SECTION 104 – PRECONSTRUCTION REQUIREMENTS**104-01 GENERAL REQUIREMENTS**

Attention is directed to the provisions in Sections 3.03.03, “Submittals for all Contracts prior to Contractor Performing Work”, and 8.03, “Beginning of Work”, of the County Standard Specifications, as well as these Special Provisions.

Following the approval of bonds and insurance coverages and the execution of the Agreement, Owner will issue a Notice to Proceed with the Work. Contractor cannot occupy the right-of-way before the Notice to Proceed has been issued by the Roads and Airports Department.

The Bidder to whom the Contract is awarded by Owner shall, prior to beginning of Work, submit to the Project Engineer the compliance material information required in the County Standard Specifications section, 3.03 “Execution of Contract.” Payment may be withheld on all work performed prior to submittal of the aforementioned compliance material.

Contractor shall furnish the Project Engineer with a statement from the vendor that the order for long lead time items required for this Contract has been received and accepted by said vendor, and said statement shall be furnished within ten (10) calendar days after the date of the Notice to Proceed.

Owner will not be liable for any damages suffered by Contractor as the result of a labor dispute (including one involving public employees) which prevents Owner from performing any of its obligations set forth in these Contract Documents. Contractor shall within five (5) calendar days from the beginning of any delay notify Owner in writing of the cause of the delay. Owner will ascertain the facts and the extent of the delay, and extend the time for completing the Work when, in the Owner’s judgment, the findings of facts justify such an extension. Owner’s finding of fact thereon shall be final and conclusive on the parties hereto.

104-02 MANDATORY PRE-CONSTRUCTION CONFERENCE

Prior to the issuance of the Notice to Proceed, a mandatory pre-construction conference will be held at the Roads & Airports Department, 101 Skyport Drive, San Jose, California, 95110, for the purpose of discussing with Contractor the scope of Work, Contract drawings, Specifications, existing conditions, materials to be ordered, equipment to be used, and all essential matters pertaining to the prosecution of and the satisfactory completion of the Project as required. Contractor’s representatives at this conference shall include Subcontractors’ superintendents for the Work.

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SECTION 105 – GENERAL CONDITIONS

105-01 FINAL PAY QUANTITY ITEMS

Attention is directed to the provisions in Section 9.01, "Measurement and Final Pay Quantities", of the County of Santa Clara Standard Specifications. Items of Work that are "Final Pay Quantity Items" are designated with "F" on Bid Schedule in Section 111 – Bid Forms.

105-02 SPECIALTY ITEMS OF WORK

Attention is directed to the provisions in Section 8.01, "Subcontracting" of the County Standard Specifications. Items of Work that are "Specialty Items" are designated with "S" on Bid Schedule in Section 111 – Bid Forms.

105-03 ENGINEER'S FACILITIES

Engineer's Facilities are not required for this Contract.

Engineer's Facilities are required for this Contract in accordance with the following:

- Contractor shall provide adequate office facilities, including a private telephone in these facilities for the sole and exclusive use of the Project Engineer and/or Project Inspector at the site of the Work. The Engineer's Facilities shall consist of a building or portable field office-type trailer with the minimum following area:

On projects awarded by the Owner between:	Surface Area:
\$0.00 and \$50,000	120 square feet
\$50,000.01 and \$500,000	160 square feet
\$500,000.01 and \$1,000,000	300 square feet
\$1,000,000.01 and OVER	450 square feet

This facility shall not be less than 10' wide, with ceiling height not less than 8' high, and shall contain a desk, table and/or counter for use in viewing plans. Adequate chairs, heat, light, ventilation, drinking water and toilet facilities shall be provided by Contractor. All telephone calls pertaining to the Work made by the Project Engineer or Project Inspector from the telephone provided for their use shall be made at Contractor's expense. The facilities called for herein shall be provided at the beginning of the Project and shall be maintained until Acceptance by the Owner.

The above facilities shall be located and installed, including hook-up of all required utilities, as agreed by the Project Inspector.

- Payment for Engineer's Facilities when not included in the Contract as a separate pay item shall be considered as included as part of the "Mobilization" pay item. When the Contract does not include a contract pay item for "Mobilization" as specified above, full compensation for the necessary Engineer's Facilities as required above shall be considered as included in the prices paid for the various Contract items of work involved. No additional compensation or Contract time shall be allowed for this Work.

105-04 INDEMNITY, INSURANCE AND BOND REQUIREMENTS

Contractor shall provide insurance coverages as specified below. Contractor's attention is directed to Section 105-04.02.D.3.a, hereinbelow regarding the additional insured endorsement(s) requirement. Additional public entity(ies) identified below shall be named on the applicable coverages as additional insured(s). County may, at any time and in its sole discretion, require Contractor to procure additional insured endorsement(s) for Public Entities during the course of the Work under the Contract.

City of San Jose

**INSURANCE REQUIREMENTS FOR
CONSTRUCTION CONTRACTS BETWEEN \$2,000,000 AND \$5,000,000**

105-04.01 INDEMNITY

To the fullest extent allowed by law, the Contractor shall indemnify, defend, and hold harmless the County of Santa Clara (hereinafter "County"), its officers, agents and employees from any claim, liability, loss, injury or damage arising out of, or in connection with, performance of this Agreement by Contractor and/or its agents, employees or sub-contractors, excepting only loss, injury or damage caused by the sole negligence or willful misconduct of personnel employed by the County. It is the intent of the parties to this Agreement to provide the broadest possible coverage for the County. The Contractor shall reimburse the County for all costs, attorneys' fees, expenses and liabilities incurred with respect to any litigation in which the Contractor contests its obligation to indemnify, defend and/or hold harmless the County under this Agreement and does not prevail in that contest.

105-04.02 INSURANCE

Without limiting the Contractor's indemnification of the County, the Contractor shall provide and maintain at its own expense, during the term of this Agreement, or as may be further required herein, the following insurance coverages and provisions:

A. Evidence of Coverage

Prior to commencement of this Agreement, the Contractor shall provide a Certificate of Insurance certifying that coverage as required herein has been obtained. Individual endorsements executed by the insurance carrier must accompany the certificate. In addition, a certified copy of the policy or policies shall be provided by the Contractor upon request.

This verification of coverage shall be sent to the requesting County department, unless otherwise directed. The Contractor shall not receive a Notice to Proceed with the work under the Agreement until it has obtained all insurance required and such insurance has been approved by the County. This approval of insurance shall neither relieve nor decrease the liability of the Contractor.

B. Qualifying Insurers

1. All coverages, except surety, shall be issued by companies which hold a current policy holder's alphabetic and financial size category rating of not less than A- V, according to the current Best's Key Rating Guide or a company of equal financial stability that is approved by the County's Insurance Manager.

2. When surety bonds are required, they shall be issued by companies that meet the following minimum requirements:

1. A California admitted surety with either a current A.M. Best rating of A IV or a current Standard and Poors (S&P) rating of A.

OR

2. An admitted surety insurer which complies with the provisions of the Code of Civil Procedure, Section 995.660*.

OR

3. In lieu of 1 & 2, a company of equal financial size and stability that is approved by the County's Insurance Manager

* California Code of Civil Procedure Section 995.660 in summary, states that an admitted surety must provide: 1) the original, or a certified copy of instrument authorizing the person who executed the bond to do so, within 10 calendar days of receipt of a request to submit the instrument; 2) a certified copy of the Certificate of Authority issued by the Insurance Commissioner, within 10 calendar days of receipt of a request to submit the copy; 3) a certificate from County Clerk of Santa Clara County that Certificate of Authority has not been surrendered, revoked, canceled, annulled or suspended, within 10 calendar days of receipt of the certificate; 4) copies of the surety's most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10, within 10 calendar days of receipt of a request to submit the statements.

C. Notice of Cancellation

All coverage as required herein shall not be canceled or changed so as to no longer meet the specified County insurance requirements without 30 days' prior written notice of such cancellation or change being delivered to the County of Santa Clara or their designated agent.

D. Insurance Required

1. Commercial General Liability Insurance - for bodily injury (including death) and property damage which provides limits as follows:

- a. Each occurrence - \$2,000,000
- b. General aggregate - \$4,000,000
- c. Products/Completed Operations aggregate ** - \$4,000,000
- d. Personal Injury - \$2,000,000

A minimum of 50% of each of the aggregate limits must remain available at all times unless coverage is project specific.

2. General liability coverage shall include:
 - a. Premises and Operations
 - b. **Products/Completed Operations with limits of four million dollars (\$4,000,000) per aggregate to be maintained for three (3) years following acceptance of the work by the County.
 - c. Contractual Liability expressly including liability assumed under this Agreement. If the Contractor is working within fifty (50) feet of a railroad or light rail operation, any exclusion as to performance of operations within the vicinity of any railroad bridge, trestle, track, roadbed, tunnel, underpass or crossway shall be deleted, or a railroad protective policy provided.
 - d. Personal Injury liability
 - e. Owners' and Contractors' Protective liability
 - f. Severability of interest
 - g. Explosion, Collapse, and Underground Hazards (X, C and U)
 - h. Broad Form Property Damage liability

3. General liability coverage shall include the following endorsements, copies of which shall be provided to the County:
 - a. **Additional Insured Endorsement**, which shall read:

“County of Santa Clara, and members of the Board of Supervisors of the County of Santa Clara, and the officers, agents, and employees of the County of Santa Clara, individually and collectively, as additional insureds.”

Insurance afforded by the additional insured endorsement shall apply as primary insurance, and other insurance maintained by the County of Santa Clara, its officers, agents, and employees shall be excess only and not contributing with insurance provided under this policy. Public Entities may also be added to the additional insured endorsement as applicable and the contractor shall be notified by the contracting department of these requirements.

b. Contractual Liability Endorsement:

Insurance afforded by this policy shall apply to liability assumed by the insured under written contract with the County of Santa Clara.

c. X C & U (Explosion, Collapse and Underground) Endorsement:

Insurance afforded by this policy shall provide X, C and U Hazards coverage.

4. Claims Made Coverage

If coverage is written on a claims made basis, the Certificate of Insurance shall clearly state so. In addition to coverage requirements above, such policy shall provide that:

- a. Policy retroactive date coincides with or precedes the Contractor's start of work (including subsequent policies purchased as renewals or replacements).
- b. Contractor will make every effort to maintain similar insurance during the required extended period of coverage following project completion, including the requirement of adding all additional insureds.
- c. If insurance is terminated for any reason, Contractor agrees to purchase an extended reporting provision of at least two years to report claims arising from work performed in connection with this Agreement or Permit.
- d. Policy allows for reporting of circumstances or incidents that might give rise to future claims.

5. Automobile Liability Insurance

For bodily injury (including death) and property damage which provides total limits of not less than one million dollars (\$1,000,000) combined single limit per occurrence applicable to all owned, non-owned and hired vehicles.

6. Workers' Compensation and Employer's Liability Insurance

- a. Statutory California Workers' Compensation coverage including broad form all-states coverage.
- b. Employer's Liability coverage for not less than one million dollars (\$1,000,000) per occurrence.

7. Contractors' Pollution Liability

Contractor shall provide Contractor's Pollution Liability coverage including bodily injury, personal injury, and property damage from a pollution event resulting from the Work, operations or completed operations of the Project with limits not less than \$1,000,000.00 per claim or per occurrence and \$1,000,000.00 aggregate limits, including claim expenses and defense, written on a claims made or occurrence basis for the Project inclusive of the term of construction and a ten (10) year completed operations period, including coverage for mold. If the Work involves the removal of asbestos, the removal/ replacement of underground tanks and/or the removal of toxic chemicals and substances, Contractor or Subcontractor performing such Work shall provide the appropriate pollution coverage, with limits of no less than \$1,000,000.00 per claim or per occurrence.

8. Contractors' Equipment Insurance

On an "all risk" basis covering equipment owned, leased, or used by the Contractor. If the total value of equipment is less than \$100,000 Contractor may self-insure this exposure. If total equipment value is \$100,000 or more, insurance is required. Such insurance shall include an insurer's waiver of subrogation in favor of the County. Contractor shall hold harmless the County for any loss or damage to the Contractor's equipment. This coverage may be waived by the Insurance Manager, but the Contractor hereby releases and holds harmless the County for any loss or damages to its equipment.

9. Builder's Risk Insurance

The County shall provide Builder's Risk insurance (first party property insurance) on an all risk basis including flood with a limit of no less than the full replacement value of the work, and covering the work and all materials incorporated therein, and insuring the interests of the County, Contractor, and subcontractors. Insurance shall contain insurer's waiver of subrogation in favor of the Contractor and subcontractors. The Contractor shall be responsible for the first \$50,000 of any loss. The County's provision of Builder's risk insurance is an economic convenience to the County, and does not change or revise the Contractor's responsibility for the Work until County Acceptance, including but not limited to, losses that may exceed the insurance limits. Contractor may secure additional insurance, in Contractor's sole and absolute discretion, and Contractor must include the cost of such insurance in Contractor's bid.

E. Special Provisions

The following provisions shall apply to this Agreement:

1. The foregoing requirements as to the types and limits of insurance coverage to be maintained by the Contractor and any approval of said insurance by the County or its insurance consultant(s) are not intended to and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by the Contractor pursuant to this Agreement, including but not limited to the provisions concerning indemnification.
2. The County acknowledges that some insurance requirements contained in this Agreement may be fulfilled by self-insurance on the part of the Contractor. However, this shall not in any way limit liabilities assumed by the Contractor under this Agreement. Any self-insurance shall be approved in writing by the County upon satisfactory evidence of financial capacity. Contractors obligation hereunder may be satisfied in whole or in part by adequately funded self-insurance programs or self-insurance retentions.
3. Should any of the work under this Agreement be sublet, the Contractor shall require each of its subcontractors of any tier to carry the aforementioned coverages, or Contractor may insure subcontractors under its own policies.
4. The County reserves the right to withhold payments to the Contractor in the event of material noncompliance with the insurance requirements outlined above.

F. Bond Requirements

1. Contract Bonds - Prior to execution of the Contract, Contractor shall file with the County on the approved forms, the two surety bonds in the amounts and for the purposes noted below, duly executed by a reputable surety company satisfactory to County, and Contractor shall pay all premiums and costs thereof and incidental thereto.

Each bond shall be signed by both Contractor and the sureties.

- a. The "payment bond for public works" shall be in an amount of one hundred percent (100%) of the Contract price, as determined from the prices in the bid form, and shall insure to the benefit of persons performing labor or furnishing materials in connection with the work of the proposed Contract. This bond shall be maintained in full force and effect until all work under the Contract is completed and accepted by the County, and until all claims for materials and labor have been paid.

- b. The "performance bond" shall be in an amount of one hundred percent (100%) of the Contract price as determined from the prices in the bid form, and shall insure the faithful performance by Contractor of all work under the Contract. It shall also insure the replacing of, or making acceptable, any defective materials or faulty workmanship.

Should any surety or sureties be deemed unsatisfactory at any time by the County notice will be given Contractor to that effect and Contractor shall forthwith substitute a new surety or sureties satisfactory to the County. No further payment shall be deemed due or will be made under the Contract until the new sureties qualify and are accepted by the County.

All alterations, time extensions, extra and additional work, and other changes authorized by the Specifications, or any part of the Contract, may be made without securing consent of the surety or sureties on the contract bonds

2. Fidelity Bonds – Required only if contractor will be receiving advanced funds or payments. Before receiving compensation under this Agreement, Contractor will furnish County with evidence that all officials, employees, and agents handling or having access to funds received or disbursed under this Agreement, or authorized to sign or countersign checks, are covered by a BLANKET FIDELITY BOND in an amount of AT LEAST fifteen percent (15%) of the maximum financial obligation of the County cited herein. If such bond is canceled or reduced, Contractor will notify County immediately, and County may withhold further payment to Contractor until proper coverage has been obtained. Failure to give such notice may be cause for termination of this Agreement, at the option of County.

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105-05 PERMITS

Contractor’s attention is directed to Section 7.19, “Permits and Fees” of the County Standard Specifications and Section 108 herein for any applicable Railroad Relations & Insurance requirements. Any permit(s) obtained by the Roads & Airports Department shall not relieve Contractor from obtaining all necessary permits and licenses, providing necessary notices, and complying with all laws, ordinances, rules, and regulations relating to the Work.

Owner has obtained permits, licenses, or other authorizations applicable to the Work. Contractor shall comply with the provisions of those listed permits, licenses, and other authorizations. The following Owner-obtained permits are included as designated below:

- CALIFORNIA DEPARTMENT OF FISH AND GAME
- SANTA CLARA VALLEY WATER DISTRICT
- CALTRANS
- ARMY CORPS OF ENGINEERS
- CITY(IES) OF _____
- REGIONAL WATER QUALITY CONTROL BOARD
- UTILITIES: _____
- OTHER(S): _____

105-06 PROMPT PAYMENT TO SUBCONTRACTORS

Pursuant to Business & Professions Code section 7108.5(a), Contractor shall pay to any subcontractor, not later than 7 days after receipt of each progress payment, unless otherwise agreed to in writing, the respective amounts allowed Contractor on account of the Work performed by the subcontractors, to the extent of each subcontractor's interest therein. In the event that there is a good faith dispute over all or any portion of the amount due on a progress payment from Contractor to a subcontractor, Contractor may withhold no more than 150 percent of the disputed amount.

Regarding withholding of retention, pursuant to Public Contract Code section 7107(d), within 7 days from the time that all or any portion of the retention proceeds are received by Contractor, Contractor shall pay each of its subcontractors from whom retention has been withheld, each subcontractor's share of the retention received. However, if a retention payment received by Contractor is specifically designated for a particular subcontractor, payment of the retention shall be made to the designated subcontractor, if the payment is consistent with the terms of the subcontract. Pursuant to Public Contract Code section 7107(e), Contractor

may withhold from a subcontractor its portion of the retention proceeds if a bona fide dispute exists between the subcontractor and Contractor. The amount withheld from the retention payment shall not exceed 150 percent of the estimated value of the disputed amount

SECTION 106 – AMENDMENTS TO COUNTY STANDARD DETAILS AND STANDARD SPECIFICATIONS

The County Standard Details Manual dated September 1997 contains amended, deleted, and new standard details. The County Standard Details Manual was most recently amended on June 30, 2014. The County Standard Details Manual and updates can be obtained from the County of Santa Clara Roads & Airports Department website at <https://countyroads.sccgov.org/do-business-us/published-standards-specifications-documents-and-forms>

The County Standard Specifications, dated May 15, 2000 contains amended, deleted, and new standard specifications. The Standard Specifications and its amendments dated January 7, 2011, delineate the requirements for projects constructed for Santa Clara County Department of Roads and Airports projects. These updates can be obtained from the County of Santa Clara Roads & Airports Department website at <https://countyroads.sccgov.org/do-business-us/published-standards-specifications-documents-and-forms>

The Contractor shall be familiar with and comply will all County Standards Details and Specifications, as well as corresponding amendments specified herein. To the extent there are any conflicts between these Special Provisions and either the County Standard Details and Specifications, these Special Provisions shall control.

A. Updates to County Standard Specifications, Dated May 15, 2000

1. Section 1.02, "Definitions," is amended as follows:
 - a. "Manual of Traffic Controls" is amended to read as follows: The current manual entitled "California Manual on Uniform Traffic Control Devices (CA MUTCD)" approved and issued by the State of California, Department of Transportation.
 - b. "Minor Contract" is amended to read as follows: Contract awarded and accepted by the Purchasing Agent and administered under the Uniform Public Construction Cost Accounting Act, which qualifies as one of the following categories:
 - (1) Project awarded for no more than \$75,000;
 - (2) Emergency project pursuant to County Ordinance Code section A43-82.
2. Section 2.05 - Reserved
3. Section 2.12, "Relief of Bidders," is amended to read as follows: Attention is directed to the provisions of California Public Contract Code sections 5100 through 5110, inclusive, which set forth criteria and procedures for relief of Bidders, and for authorizing Contract award.

4. Section 4.04.03, "Resolution of Construction Claims (Claims for \$375,000) or Below," is amended as follows:
 - a. Public Contract Code section (b)(1) is amended to read as follows: "Public work" has the same meaning as in Sections 3100 and 3106 of the Civil Code, except that "public work" does not include any work or improvement contracted for by the state or the Regents of the University of California.
 - b. Public Contract Code section 20104.4 section (b)(1) is amended to read as follows: If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act (Title 4 (commencing with Section 2016.010) of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.
5. Section 4.04.05, "Decisions on Protests and Claims," is amended to read as follows: Protests and claims of Contractor arising under the Contract will be decided by Owner, who will furnish the decisions to Contractor in writing.
6. Section 4.04.06, "Negotiations," is amended to read as follows: Negotiations on disputed work or claims are for settlement purposes only and not binding."
7. Section 4.04.07, "Mediation," Subsection D, "Selection of Mediator," is amended to read as follows: Upon receipt of a Request for Mediation, and provided that Owner and Contractor have both agreed to voluntary mediation, within fourteen (14) days, the parties will meet and confer to select an appropriate Mediator agreeable to all parties.
8. Section 4.04.12, "Public Contract Code Section 9204 Claims Resolution Process for Public Works Projects," shall be added, and state as follows:
 - a. Pursuant to Public Contract Code section 9204(c), for purposes of this section:
 - (1) "Claim" means a separate demand by a contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:
 - (a) A time extension, including, without limitation, for relief from damages or penalties for delay assessed by a public entity under a contract for a public works project.
 - (b) Payment by the public entity of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public works project and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled.
 - (c) Payment of an amount that is disputed by the public entity.

- (2) "Contractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who has entered into a direct contract with a public entity for a public works project.
 - (3) (A) "Public entity" means, without limitation, except as provided in subparagraph (B), a state agency, department, office, division, bureau, board, or commission, the California State University, the University of California, a city, including a charter city, county, including a charter county, city and county, including a charter city and county, district, special district, public authority, political subdivision, public corporation, or nonprofit transit corporation wholly owned by a public agency and formed to carry out the purposes of the public agency
 - (4) "Public works project" means the erection, construction, alteration, repair, or improvement of any public structure, building, road, or other public improvement of any kind.
 - (5) "Subcontractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who either is in direct contract with a contractor or is a lower tier subcontractor.
- b. Pursuant to Public Contract Code section 9204(d)
- (1) (A) Upon receipt of a claim pursuant to this section, the public entity to which the claim applies shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the claimant a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, a public entity and a contractor may, by mutual agreement, extend the time period provided in this subdivision; (B) The claimant shall furnish reasonable documentation to support the claim; (C) If the public entity needs approval from its governing body to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the public entity shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the claimant a written statement identifying the disputed portion and the undisputed portion; (D) Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. If the public entity fails to issue a written statement, paragraph (3) shall apply.
 - (2) (A) If the claimant disputes the public entity's written response, or if the public entity fails to respond to a claim issued pursuant to this section within the time prescribed, the claimant may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt

requested, the public entity shall schedule a meet and confer conference within 30 days for settlement of the dispute; (B) Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the public entity shall provide the claimant a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. Any disputed portion of the claim, as identified by the contractor in writing, shall be submitted to nonbinding mediation, with the public entity and the claimant sharing the associated costs equally. The public entity and claimant shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section; (C) For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section; (D) Unless otherwise agreed to by the public entity and the contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced; (E) This section does not preclude a public entity from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under this section does not resolve the parties' dispute.

- (3) Failure by the public entity to respond to a claim from a contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A claim that is denied by reason of the public entity's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of the claimant.
- (4) Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.
- (5) If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a public entity because privity of contract does not exist, the contractor may present to the public entity a claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on their own behalf or on behalf of a lower tier subcontractor,

that the contractor present a claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the claim be presented to the public entity shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, the contractor shall notify the subcontractor in writing as to whether the contractor presented the claim to the public entity and, if the original contractor did not present the claim, provide the subcontractor with a statement of the reasons for not having done so.

- c. Pursuant to Public Contract Code section 9204(f): A waiver of the rights granted by this section is void and contrary to public policy, provided, however, that (1) upon receipt of a claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable; and (2) a public entity may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the provisions of this section, so long as the contractual provisions do not conflict with or otherwise impair the timeframes and procedures set forth in this section.
9. Section 4.05, "As-Built Record Construction Plans," is amended so that Subsection (2) reads as follows: For Projects with Plans developed by Consultants, including encroachment permit type projects, one (1) set of Mylar reproducible as-built record plans, along with an electronic copy containing PDF and AutoCAD files of same, showing all approved changes made during construction, shall be furnished to the County prior to acceptance of the Work or sign-off of the permit by the County. As-built record plans shall be signed by the Consultant's Engineer.
 10. Section 5.19, "Coordination, Interpretation and Order of Precedence of Contract Documents," is amended to set forth the following order of precedence: (1) Construction Agreement; (2) Special Provisions; (3) Project Plans; (4) County Standard Details; (5) County Standard Specifications; (6) State Standard Plans; (7) State Standard Specifications.
 11. Section 7.03, "Equal Opportunity Requirements," is amended to read as follows: No party contracting with the County will discriminate against any subcontractor, employee, or applicant for employment, because of age, race, color, national origin, ancestry, religion, sex, gender, sexual orientation, mental disability, physical disability, medical condition, political beliefs, organizational affiliations, or marital status with respect to recruitment, selection for training including apprenticeship, hiring, employment, assignment, promotion, layoff, rates of pay or other forms of compensation. It is further the policy of the County that no party contracting with the County may discriminate in the provision of services under the contract because of age, race, color, national origin, ancestry, religion, sex, gender, sexual orientation, mental disability, physical disability, medical condition, political beliefs, organizational affiliations, or marital status. It is the policy of the County that parties contracting with the County must comply with all applicable federal, state, and local pay equity laws, including, but not limited to, the Federal Equal Pay Act, Title VII of the Civil Rights Act of 1964, the California Fair Pay Act, and the California Fair Employment and Housing Act. A potential contractor that has submitted a formal bid to provide goods and/or services to the County may be disqualified if

the potential contractor has been found, by a court, arbitrator, arbitral panel, or a final administrative action of an investigatory government agency, to have violated applicable pay equity laws in the five years prior to the submission of a bid to provide goods and/or services. A current contractor found by a court, arbitrator, arbitral panel, or final administrative action of an investigatory government agency to have violated applicable pay equity laws, in the five years prior to or during the term of the contract with the County, may be in material breach of its contract with the County if the violation is not fully disclosed and/or satisfied per County guidelines and contract requirements. Such breach may serve as a basis for contract termination and/or any other remedies available under law, including a stipulated remediation plan. Pay equity violations disclosed by a contractor or potential contractor will be assessed on a case-by-case basis in light of the totality of the circumstances, including whether the violation is serious, repeated, willful, and/or pervasive, the size of the contractor, and any mitigating factors.

12. Section 7.09, "Workers' Safety Provisions," is amended as follows:
 - a. Labor Code section 6500 is amended to read as follows: (a) For those employments or places of employment that by their nature involve a substantial risk of injury, the division shall require the issuance of a permit prior to the initiation of any practices, work, method, operation, or process of employment. The permit requirement of this section is limited to employment or places of employment that are any of the following: (1) Construction of trenches or excavations that are five feet or deeper and into which a person is required to descend; (2) The construction of any building, structure, falsework, or scaffolding more than three stories high or the equivalent height; (3) The demolition of any building, structure, falsework, or scaffold more than three stories high or the equivalent height; (4) The underground use of diesel engines in work in mines and tunnels.
 - b. Labor Code section 6705 is amended to read as follows: No contract for public works involving an estimated expenditure in excess of twenty-five thousand dollars (\$25,000), for the excavation of any trench or trenches five feet or more in depth, shall be awarded unless it contains a clause requiring submission by the contractor and acceptance by the awarding body or by a registered civil or structural engineer, employed by the awarding body, to whom authority to accept has been delegated, in advance of excavation, of a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer.
13. Section 7.14, "Sound Control Requirements," is amended to refer to County Ordinance Code section B11-152, "Exterior Noise Limits," and Section B11-154, "Prohibits Acts," subsection (6), "Construction/Demolition."
14. Section 7.17.01, "Pesticides," is amended to include reference to County Ordinance Code, Division B28, "Integrated Pest Management and Pesticide Use."

15. Section 9.08 , “Progress Payments,” is amended to read as follows:
- a. Contractor shall be paid for the actual field accepted quantities for the various items of Work in accordance with the provisions below. However, the total payment shall not exceed the total Contract amount.
 - b. On or before the day immediately following the end of each payment period, Owner shall prepare and forward to Contractor an estimated progress payment in writing of the total amount of Work done and the acceptable materials on hand. Payment for the Work shall be based on a four-week period.
 - c. Materials on hand are:
 - (1) Acceptable materials furnished and delivered by Contractor to the Work site but not yet used; or,
 - (2) Acceptable materials furnished and stored in a location that is subject to or under the control of Owner for use in the performance of the Contract during the payment period.
 - d. The amount of any material to be considered in making an estimate will in no case exceed the amount thereof which has been reported by Contractor to the Project Engineer on Owner-furnished forms properly filled out and executed, including accompanying documentation as therein required, less the amount of the material incorporated in the work to the time of the estimate. Only materials to be incorporated in the Work will be considered. The estimated value of the material established by the Project Engineer will in no case exceed the Contract price for the item of Work for which the material is furnished.
 - e. Owner will retain five (5) percent of such estimated value of the Work done, and five (5) percent of the value of the materials so estimated to have been furnished and delivered and unused or furnished and stored as aforesaid as part security for the fulfillment of the Contract by Contractor. Owner will pay to Contractor, while carrying on the Work, the balance not retained, as aforesaid, after deducting therefrom all previous payments and all sums to be kept or retained under the provisions of the Contract and applicable laws.
 - f. No such estimate or payment shall be construed to be an acceptance of any defective work or improper materials.
 - g. After 50% completion of the Work, if the Board of Supervisors finds that satisfactory progress has been made in accordance with the approved schedule of operations, Owner may make any of the remaining progress payments in full, without retention, for actual Work completed
 - h. In addition to any remedy authorized by law, so much of the money due Contractor under and by virtue of the Contract as shall be considered necessary by Owner may be retained by Owner until disposition has been made of such suits or claims for damages as aforesaid.
 - i. Work completed in place as estimated shall be an estimate only, and no inaccuracy or error in said estimates shall operate to release Contractor or any Surety from damages arising from such Work or from enforcing each and every provision of the Contract.

Owner shall have the right subsequently to correct any error made in any estimate for payment.

- j. No such estimate or payment shall be required to be made when, in the judgment of the Project Engineer, the Work is not proceeding in accordance with the provisions of the Contract; or when in his or her judgment the total value of the Work done since the last estimate amounts to less than \$500.

B. Updates to Amendments to County Standard Details and Standard Specifications, Dated January 7, 2011

1. Section 9.07, "Stop Notices," is amended to read as follows: "Owner will comply with California Civil Code Title 3, Chapter 4, Section 9350 et seq. regarding stop payment notices. All preliminary and stop payment notices shall be sent to the attention and address indicated on the 'Stop Payment Notice Information' set forth in the Bid Forms section of the Project's Special Provisions."

SECTION 107 – MATERIALS**107-01 PREQUALIFIED AND TESTED SIGNING AND DELINEATION MATERIALS**

Owner has adopted the Caltrans' trade name list of approved prequalified and tested signing and delineation materials and products for use on this Project. Approval of prequalified and tested products and materials shall not preclude the Project Engineer from sampling and testing any of the signing and delineation materials or products at any time.

The current trade name list is available on Caltrans website at:

<https://dot.ca.gov/programs/engineering-services/authorized-materials-lists>

This list of approved prequalified and tested signing and delineation materials and products covers materials and products that shall be used in the Work. A Certificate of Compliance shall be furnished as specified in Section 6.11, "Certificates of Compliance" of the County Standard Specifications for signing and delineation materials and products. Said Certificate shall also certify that the signing and delineation material or product conforms to the prequalified testing and approval of Caltrans, Division of Traffic Operations, and was manufactured in accordance with the approved quality control program.

Materials and products will be considered for addition to said approved prequalified and tested list if the manufacturer of the material or product submits to Caltrans, Division of Traffic Operations, a sample of the material or product. The sample shall be sufficient to permit performance of all required tests. Approval of such materials or products will be dependent upon a determination as to compliance with the specifications and any test that Caltrans may elect to perform.

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SECTION 108 – RAILROAD RELATIONS AND INSURANCE

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SECTION 109 – DESCRIPTION OF WORK

These Special Provisions cover the supplying of labor, materials, and equipment as required for Intersection Improvements at Almaden Expressway and Camden Avenue.

Work shall include:

- Traffic Control System
- Stormwater Pollution Prevention Plan (SWPPP)
- Mobilization
- Potholing
- Tree removal
- Remove Existing Portland Cement Concrete (PCC)
- Remove Striping, Markings, and Markers
- Roadway Excavation for Widening and Pavement Repair
- Hot Mix Asphalt (HMA) Type A for Repair and Overlay
- Microsurfacing
- PCC Curb, Curb & Gutter/Sidewalk/Driveway
- Pedestrian Curb Ramps
- Adjust Existing Manhole/Monument/Water Valves to Grade
- Modify Drainage Inlet (DI)
- Thermoplastic Pavement Striping/Marking and Pavement Markers
- Paint Existing Curb
- Re-phase the Intersection from 6-phase to 8-phase operation
- Install Pull Boxes, Underground Conduit, and Wiring
- Replace Traffic Signal Controller and Service Cabinets
- Relocate Existing Battery Back-up System
- Replace Traffic Signal Poles
- Upgrade Pedestrian Push Buttons
- Install Pedestrian Sensors
- Install Street Lights
- Signing and Striping Modifications.
- All other Items of Work not mentioned above that are required by Plans, County Standard Specifications and these Special Provisions

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SECTION 110 - TECHNICAL SPECIFICATIONS & FURTHER CONDITIONS

The Technical Specifications contained herein have been prepared by or under the direction of the following registered person(s) (California Business and Professions Code section 6735).

HIGHWAY



CHRISTINE LI
REGISTERED CIVIL ENGINEER

6/21/2022



ELECTRICAL



DAVID BOYD
REGISTERED CIVIL ENGINEER

6/17/22



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110-01 ORDER OF WORK

Order of work shall conform to the provisions in Section 5.05 "Order of Work" of the County Standard Specifications and these Technical Specifications.

Work will be implemented in logical and sequenced segments.

Contractor shall prepare a digital video recording of the construction area prior to beginning Work. This video shall be an existing condition record of the job site. The video recording shall be done jointly by the Contractor and the Project Engineer and Project Inspector, and a copy of the video shall be furnished to the Project Inspector at the beginning of the Work.

Within 10 day of Contract execution, the Contractor shall contact USA (Underground Service Alert) to have the location of all utilities marked. Promptly after utility markings are completed, the Contractor shall then be responsible for locating and marking the positions of all signal standards and pull boxes. The Project Engineer will assist the Contractor in locating the above items. The Contractor shall coordinate the layout with the utility company representatives to avoid utility conflicts.

Location identified as potential conflicts with existing utilities, the Contractor shall promptly "pothole" to find the exact location of the utilities before excavation. See Section 110-12.06 "Potholing" for additional potholing utilities requirement and payment.

All final locations of poles shall be determined and approved by the Project Engineer BEFORE any construction. The Contractor shall provide all work described herein including potholing of utilities within 3 days of receiving the location approval from the Project Engineer.

Prior to beginning work, 1) on a particular storm drain line, the Contractor shall pothole all utilities that cross the entire storm drain line unless otherwise directed by the Engineer. The Contractor shall notify the Project Engineer if the utility clearance to any proposed storm drain is less than six inches so that modifications to the storm drain design can be made to minimize utility relocations; 2) on the proposed signal pole foundation, the Contractor shall pothole all utilities are in the vicinity of the proposed foundation. The Contractor shall notify the Project Engineer if the utility clearance to any proposed foundation is less than three feet so that modifications to the signal facility design can be made to minimize utility relocations.

Contractor shall manufacture and install two (2) Project Funding Signs prior to beginning construction. The size and format of the Project Funding Signs are specified in in Section 110-06.07, "Project Information Sign". The Project Inspector will determine the location of the Project Funding Signs in the field. The signs will be removed and delivered to the County East Yard after all construction activities are completed. All sign manufacturing, installation, removal, and salvaging costs shall be the responsibility of Contractor and shall be considered as included in the Work.

Construction area signs and devices shall be in place prior to beginning of the work.

Contractor shall obtain encroachment permit in a timely manner prior to commencing work from City of San Jose.

County inspector shall be present during in-roadway loop cable installation. Additionally, contractor shall notify County inspector upon the completion of loop installation at existing signalized intersections. County TEO personnel will do the final connection of the detector lead-in cables (DLC) inside the controller cabinet after they are terminated inside the controller cabinet, labeled, and merged by Contractor. County TEO personnel shall perform the final test upon connection of the DLCs inside the controller cabinet to verify the loop performance. Contractor shall be responsible for defective loops and DLCs due to material or workmanship or damage to the loops and DLCs caused by its pavement grinding and resurfacing operations. At newly signalized intersections, the Contractor shall allow sufficient time for testing, repairs, and retesting prior to coordinating the activation date of the traffic signal. County will perform testing within 5 working days of written notification.

Contractor will also conduct all fiber optic cable work along Almaden Expressway (i.e.: SMFO cable, conduit, and pull boxes) in such a manner as to minimize downtime of fiber optic communication operations.

Measurement and Payment –Full compensation for conforming to this Section shall be considered as included in various contract bid items of work and no separate payment will be made therefor, unless otherwise specified elsewhere in these Special Provisions.

110-02 SUBMITTALS

Unless otherwise specified or directed by the Project Engineer, all Contract Bid items are subject to the submittal requirements of this Section and are supplemented by the submittal requirements of the specifications for each Bid item. Requirements and procedures for preparing and transmitting submittals to the Project Engineer shall conform to the provisions of County Standard Specifications section 4.06 “Submittal for Materials and Equipment; Section 5, “Control of Work,” Section 6 “Control of Materials”, Section 86.01.04 “Submittals in relation “Signals, Lighting, Traffic Communication & Other Electrical Systems”, and these Special Provisions as follows:

- A. Submittals shall be accompanied by an electronic “Submittal Cover Letter” form properly filled out. Forms will be furnished by the Project Engineer.
- B. The Contractor shall submit the submittals electronically using Virtual Project Manager.
- C. The Contractor shall prepare such working and shop drawings as required by the Engineer for the performance of the work. Such drawings shall be prepared on a reproducible sheet measuring 22 inches by 34 inches, unless otherwise approved by the Engineer. Each drawing shall have the following information:
 1. Contract number and name,
 2. Number and title of drawing,
 3. Date of drawing or revision,
 4. Name of Contractor and Subcontractor submitting drawing,
 5. Clear identification of contents and location of work, and
 6. Referenced special provisions
- D. The Contractor shall furnish all submittals, including drawings and schedules sufficiently in advance of construction requirements to permit no less than five (5) working days for review and appropriate action by the Project Engineer.

- E. If any submittal shows any variation from the Contract requirements, such variations shall be described in a supplemental letter of submittal, attached to the submittal form.
- F. Re-submittals will be handled in the same manner as first submittals.

Measurement and Payment – Full compensation for conforming to this Section shall be considered as included in various contract bid items of work and no separate payment will be made therefor, unless otherwise specified elsewhere in these Special Provisions.

110-03 SUPERINTENDENT AND MEETINGS

Attention is directed to Section 5.06 “Superintendent” of the County Standard Specifications.

Weekly project meetings between the Project Engineer, Project Inspector and Contractor are mandatory. In addition, a comprehensive walk-through site meeting is also mandatory. The time and location of these meetings will be established at the Pre-Construction Conference Meeting.

All subcontractors are required to attend weekly project meetings if they are working on a controlling item of Work and/or if their submittals are not approved

Measurement and Payment – Full compensation for conforming to this Section shall be considered as included in various contract bid items of work and no separate payment will be made therefor, unless otherwise specified elsewhere in these Special Provisions.

110-04 AS-BUILT RECORD CONSTRUCTION PLANS

In addition to the requirements of the County Standard Specifications section 4.05, “As-Built Record Construction Plans,” the following shall apply:

Contractor shall maintain one set of current and accurate redlined construction plans. Upon completion of the Work, and prior to Acceptance of the Project, this redlined set of plans shall be certified by the Inspector, and delivered to Project Engineer.

Measurement and Payment - Full compensation for this work shall be considered as included in the Contract prices paid for the various contract bid items of work, and no separate payment will be made therefor.

110-05 PROGRESS SCHEDULE

Attention is directed to the provisions in Section 8.04 "Progress Schedule" of the County Standard Specifications, and these Special Provisions.

- A. Procedures for Preparation of Project Schedule

The construction procedures shall represent a practical plan to complete the Work within the Contract time

1. A schedule extending beyond the expiration of Contract time will not be acceptable and shall be considered a material breach of the Contract.
2. Contractor agrees that if the Contractor's initial Project Bar Chart schedule duration is less than the time allowed by the Contract for the completion of the Work, the Contract completion time may be shortened to equal the Contractor's Bar Chart schedule duration by a Change Order, at no cost to Owner, provided the Owner is in agreement with the schedule.
3. A schedule showing the Work completed in less than the Contract time may be found by the Project Engineer to be impractical. A schedule found to be impractical for this, or any other reason shall be revised by Contractor and resubmitted for approval by the Project Engineer.
4. A schedule showing the Work completed in less than the Contract time, which is found to be practical by Project Engineer, shall be considered to have float, as defined in Section 1.02 "Definitions", of the County Standard Specifications.
5. The construction schedule shall clearly show the sequence and interdependence of construction activities, and shall specifically list specifically:
 - a. The start and completion of all items of Work, their major components, and interim milestone completion dates. The construction schedule shall also clearly show:
 - (1) Activities for procurement, delivery, installation and completion of each major piece of equipment, materials and other supplies, including:
 - (a) Time for submittals, resubmittals, and reviews;
 - (b) Time for fabrication and delivery of manufactured products for the Work; and,
 - (c) The interdependence of procurement and construction activities.
6. The construction schedule shall also:
 - a. Be in sufficient detail to assure adequate planning and execution of the Work. Activities should range in duration from three to fifteen working days each. See sample schedule for reference on next page;
 - b. Be suitable, in the judgment of Project Engineer, to allow monitoring and evaluation of progress in the performance of the Work, and,
 - c. Show a clearly defined critical path for the entire completion of Work.
7. Contractor's submittal of the construction schedule shall be understood to be the Contractor's representation that the schedule meets the requirements of the Contract Documents and that the Work will be executed in the sequence indicated in the schedule.

TECHNICAL SPECIFICATIONS & FURTHER CONDITIONS

SECTION 110

County of Santa Clara
Roads and Airports Department

PROPOSED SCHEDULE
THREE WEEKS LOOK AHEAD

Project Limit: XXX/Capitol

(NOTE: THIS SCHEDULE IS A SAMPLE DOCUMENT ONLY)

RESPONSIBILITY	ACTIVITY DESCRIPTION	X – Day Work: N – Night Work																				
		JULY																				
		S	M	T	W	Th	F	Sa	S	M	T	W	Th	F	Sa	S	M	T	W	Th	F	Sa
8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
	NB off to EB Capitol																					
ABC Construction	Install Construction Area Signs & Detour Signs		x	x	x	x																
EYZ	install BMP's								x	x	x											
F88	Staking						x			x	x	x	x									
JKM	ESA Fence									x	x											
	NB on to WB Capitol																					
CXS	Temp Delineation								n													
EYZ	Install Krail and Crash Cushions										n											
Heimex	Clear and Grub												x	x								
EYZ	roadway ex detour 1 and 2																x	x				
EYZ	storm drain sys 39																		x	x	x	
SME	electrical									n	n						n	n				

B. Review, Update and Revisions

Project Engineer will review and return Contractor's schedule with comments within five (5) working days. Contractor shall make all corrections to the schedule requested by Project Engineer and resubmit for re-review and acceptance by Project Engineer. If the Contractor does not agree with the Project Engineer's comments, the following procedure shall be followed:

1. Contractor shall continue to proceed with the Work per Project Engineer's comments.
2. Within three (3) working days of receipt of Project Engineer's comments, Contractor shall provide Project Engineer with written notice indicating the concerns and or disagreement. Contractor's response received after the specified deadline shall not be considered by Project Engineer, and Project Engineer's comments shall be deemed as accepted by Contractor.
3. Within seven (7) working days of the receipt of Contractor's notice, Project Engineer will meet with the Contractor for a resolution. If a resolution is reached, Contractor shall submit within three (3) working days from the resolution meeting date the schedule with all agreed upon changes.
4. If no resolution is reached, Project Engineer will provide notice to Contractor stating Project Engineer's determination within seven (7) working days from the day of the meeting. Contractor shall abide by the Project Engineer's determination.

Project Engineer will use Contractor's bar chart to analyze and update the schedule, whereby the following shall apply:

1. Contractor shall be responsible for the accuracy of the information contained in the bar chart and subsequent updates of the schedule. Contractor will be allowed three (3) working days to confirm the accuracy of any data.
2. Once a month or as deemed necessary by Project Engineer, Contractor shall participate with Project Engineer in a schedule review to update activity progress.
3. Any change in Contractor's planned sequence or timing of the Work shall be accompanied by a written revision to the affected portion of the bar chart drawing by Contractor, so that the bar chart may be changed accordingly.
4. If, according to the current updated bar chart schedule, Contractor is five (5) working days or more behind the Contract completion date or any interim milestone, considering all granted time extensions, Contractor shall submit a revised schedule showing a workable plan to complete the Project on time.
5. Scheduling of Change or Extra Work Orders is the responsibility of Contractor. Contractor shall revise the schedule drawing to incorporate all activities involved in completing the change or extra work order and submit it to Project Engineer for review. Only with express approval by Project Engineer, an individual Change or Extra Work Order that costs less than \$10,000 may not need to be scheduled, unless the Change or Extra Work Order affects the Contract critical path.

6. If Project Engineer finds Contractor is entitled to an extension of any completion date under the provisions of the Contract, Project Engineer's determination of the total number of days extension will be based upon the current analysis of the schedule and upon data relevant to the extension.
7. Delays to non-critical activities (those with float) may not be the basis for a time extension. Non-critical activities are those activities which, when delayed, do not affect the Contract completion date.

C. Weekly Schedule

Contractor shall prepare and deliver to Project Engineer at the weekly progress meetings a weekly schedule of activities. The weekly schedule of activities shall cover the period of the following three weeks.

The schedule shall be prepared in form of a bar chart identifying anticipated activities, to the satisfaction of Project Engineer

1. The schedule shall be no smaller than 8 1/2 -inches by 14-inches.
2. Black or dark blue ink shall be used to draw the schedule.
3. Six (6) hard copies and one (1) electronic copy shall be provided to Project Engineer.

Measurement and Payment – The contract lump sum price paid for Progress Schedule includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals for conforming to the provisions of this Section and no separate payment will be made therefor.

110-06 TRAFFIC CONTROL SYSTEM AND/OR TEMPORARY ROADWAY LANE CLOSURE REQUIREMENTS

Contractor must provide temporary traffic control system for project worksite during construction. Temporary traffic control system applies to all Work whether or not lane closure is required and must be in accordance with County Standard Specifications section 7.22, "Public Convenience and Public Safety", and Section 12, "Construction Area Traffic Control Devices", California Manual on Uniform Traffic Control Devices For Streets & Highways (CA MUTCD), and the following.

During the entire construction of the Work, Contractor must maintain the intersection signal operations at the same level prior to construction. Any degradation to the signal operations or delay to a signal phase caused by a temporary loss of detection of more than 24 hours will not be permitted, and Contractor shall provide a temporary signal detection system as specified herein below.

110-06.01 TRAFFIC CONTROL SYSTEM

Traffic control system includes all work, including furnishing and installing equipment and materials, necessary to provide a safe condition to the traveling public through the construction area.

Contractor to:

- A. Prepare and submit a traffic control plan to Project Engineer for review and acceptance a minimum of ten (10) working days prior to performing any Work affecting the traffic flow. No Work shall be permitted until the traffic control plan is accepted by Project Engineer. The following minimum provisions must be considered in developing the traffic control plan:
1. Details for but not limited to proposed staging concepts, construction area signage, temporary pedestrian access, traffic control systems to facilitate staging and pedestrian access in compliance with maintaining traffic requirements in section 12 and Section 12-4.04 of the State Standard Specifications.
 2. Number and placement of all construction-related traffic control signs must comply with CA MUTCD and be specified on the traffic control plan.
 3. Barricades must be provided with industry-approved flashers and its placement as provided on the approved traffic control plan or as directed by Project Engineer, must be maintained at all times until the Work is completed and the barricaded location is deemed safe to open for the general public.
 4. Operations of traffic lanes and traffic communications/signals must be maintained without interruption to the maximum extent possible as per Section 86.01.06, "Maintaining Existing and/or Temporary Electrical Systems and Traffic Communication Systems", of the County Standard Specifications.
 5. Temporary signal shutdown is limited to the hours between 9:00 AM and 3:00 PM unless approved otherwise by Project Engineer. Uniformed traffic control officers must be provided for traffic control for the duration of signal shutdown as specified hereinbelow.
- B. Coordinate with Project Inspector or contact County Signal & Electrical Operations at 408-494-2700 (for off/non-working hours), a minimum of 48 hours prior to commencing Work affecting traffic signal operations or traffic communication system.
- C. Obtain at least 2 uniformed traffic control officers to provide traffic control at signalized intersection requiring temporary signal shutdown. For expressway with carpool lanes, Contractor must first request the local California Highway Patrol (CHP) for the traffic control services. If CHP cannot provide its personnel for the service, Contractor may then contact the local enforcement agency having jurisdiction over the affected intersection for its personnel to perform the traffic control service. For expressway without carpool lanes and other roads, Contractor must contact the local enforcement agency having jurisdiction over the affected intersection for its personnel to perform the traffic control service. In the event that the local enforcement agency cannot provide its personnel upon request by Contractor, and with the approval of the said local enforcement agency and Project Engineer, Contractor may provide its own traffic control personnel
- D. Contractor's personnel performing the traffic control tasks must be properly trained and equipped in accordance with the guidelines and requirements set by the CA MUTCD, Part 6. Temporary Traffic Control Chapter 6E, Flagger Control. All flaggers must be equipped with 2-way radios to conduct traffic control of all one-lane-traffic operations.
- E. Set up and maintain a safe work area, including mitigate immediately any conditions or operations that may create an unsafe environment to the traveling public by providing adequate flaggers, traffic control devices, advance warning signage, and any other necessary measures when field conditions dictate or directed by Project Engineer. Contractor's failure to comply with these requirements shall cause the Work to be suspended in accordance with the provisions in Section

8.05, "Temporary Suspension of Work", of the County Standard Specifications until a Contractor-prepared mitigation plan is submitted and accepted by Project Engineer.

- F. Provide during construction temporary vehicle detection to maintain the signal operations at the pre-construction level when existing vehicle detection becomes dysfunctional for more than 24 hours and/or a traffic lane shift occurs during construction. At locations where traffic lanes are relocated, temporary traffic signal heads shall be provided by Contractor to conform to the relocated lane configuration. The temporary detection shall be compatible with the existing traffic controller and detection system currently operated at the intersection, and may be video, microwave, wireless technology or an inductive loop. The selected type shall be submitted and approved by Project Engineer before any work that may affect the existing vehicle detectors. The temporary detection system using technology other than inductive loop will be removed upon completion of the work and transferred to Owner's ownership in good and working conditions. Equipment damaged in Contractor's possession must be repaired or replaced and certified as working by the equipment manufacturer prior to acceptance by Owner.
- G. Existing pedestrian access facilities shall be maintained through construction areas within the right of way. Pedestrian and bicycle traffic control and safety shall be included in submitted traffic control plans. Where relocated or disturbed by construction, pedestrian walkways shall be provided with surfacing of HMA, portland cement concrete or timber. Surface shall be skid resistant and free of irregularities. Keep room for bikes or use W79A sign, included in these Special Provisions, after C20 in advance sign series Contractor shall provide one working flasher for each barricade and shall insure that each flasher is maintained in working condition while in use. Contractor shall not remove the barricades in the street at any given location until the HMA patching adjacent to the gutter has been done and the hazard to bicyclist and motorist no longer exists.
- H. Provide temporary striping and pavement markings at all phasing during construction.
- I. Contractor shall notify, in writing, both the County and residents/workers/property owners of his intent to begin work at least 5 days and 3 days respectively prior to construction. Notification to residents/property owners shall be in the form of fliers.
- J. Type 1 barricades with one flashing light on top of each barricade shall be placed to delineate construction areas. Flashers shall be turned on before dark and contractor shall ensure that each flasher is maintained the operational while in use.
- K. "Road Work Ahead" (W20-1) on four(4) approaches to the work area and four (4) "End Road Work" (G20-2) shall be installed stationary for the duration of project on all cross streets. When work is done, all signs shall be removed and be delivered to the County East Yard at 1505 Schallenberger Road, San Jose, Ca 95131.

Measurement and Payment - Compensation for the work on Traffic Control System is made on a lump sum basis as indicated on the Bid Schedule. It includes full compensation for furnishing all labor, materials, equipment such as traffic control devices (i.e., construction area signs, flashing beacons, flaggers, cones, barricades, channelizers, crash cushions, etc...), and incidentals that are required to establish a safe work area in compliance with the latest regulations and standards as specified hereinabove. Also, other traffic control related expenses such as uniformed traffic control officers or Contractor-furnished traffic control personnel; Type III barricades with mounted signs, temporary delineators, and placing, removing, storing, maintaining, and relocating of temporary traffic control

devices are considered to be included in the price paid for Traffic Control System and no additional payment is to be made.

The contract lump sum price paid for Temporary Striping and Pavement Markings shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing, installing and removing the temporary striping and pavement markings.

Full compensation for preparing, submitting, revising and re-submitting traffic control plans for approval shall be considered as included in the contract lump sum price paid for traffic control system and no separate payment will be made therefor.

The Contractor is not entitled to any compensation for the suspension of work resulting from the failure of providing a safe work area to the traveling public as specified hereinabove.

110-06.02 TEMPORARY PEDESTRIAN ACCESS ROUTE

Temporary pedestrian access route (TPAR) shall conform to Section 12-4.04, "Temporary Pedestrian Access Routes" of the State Standard Specifications, and plan sheets T30, T31, T32, T33, and T34, "Temporary Pedestrian Access Routes" of the State Standard Plans, and these Special Provisions.

Means of passage of pedestrian traffic around and through the work area shall be provided at all times. Whenever possible work should be done in a manner that does not create a need to detour pedestrian from existing pedestrian routes. At least one (1) continuous walkway along one (1) side of the street shall be available at all times. The temporary pedestrian access route shall be surfaced with asphalt concrete, Portland cement concrete (PCC), or timber and shall be accessible by wheelchair. The surface must be skid resistant and free of irregularities.

Contractor shall prepare plans of TPAR and submit at least two weeks before construction for Engineer's review and approval. The plan shall be prepared (or under direction of), sealed and signed by an engineer who is registered as a civil engineer in the state of California.

Contractor shall provide temporary traffic control devices to protect pedestrian from traffic and construction equipment. Contractor is responsible for maintaining the pedestrian access in good condition.

Measurement and Payment: The contract lump sum price paid for Temporary Pedestrian Access Route shall include full compensation for furnishing all labor, material, tools, equipment, and incidentals for preparing drawings, constructing, maintaining, and removing temporary pedestrian access route as shown on the plans, as specified in these Special Provisions, and as directed by the Engineer, and no additional compensation shall be allowed therefore.

110-06.03 PORTABLE CHANGEABLE MESSAGE SIGN

Portable Changeable Message Signs must conform to Section 12 "Temporary Traffic Control" of the State Standard Specifications.

Typically place these portable changeable message signs, one in advance of the first warning sign for each stationary lane closure and the second one near the beginning of the lane shift and/or detour. Exact messaging and locations must be approved by the Engineer. Contractor shall make message changes to the boards as required by the project engineer throughout the duration of project. PCMS shall conform to Section 12-3.32 of the State Standard Specifications.

Replace Section 12-3.32D with: Payment for furnishing, placing, operating, modifying messages, maintaining portable changeable message signs, transporting changeable message signs from location to location, removing, and repairing or replacing defective or damaged portable changeable message signs is included in the price paid per each for Portable Changeable Message Sign.

Measurement and Payment: The contract unit price paid for each Portable Changeable Message Sign shall include use of Portable Changeable Message Sign for duration of the project. It shall cover payment for furnishing, placing, operating, modifying messages, maintaining portable changeable message signs, transporting changeable message signs from location to location, removing, and repairing or replacing defective or damaged portable changeable message signs and no additional payment is to be made.

110-06.04 TYPE III BARRICADE-STAGE CONSTRUCTION PLANS

Type III barricades shall conform to the provisions Section 12-3.10, "Barricades," of the State Standard Specifications.

Measurement and Payment – Full compensation for furnishing, installing, maintaining, and removing Type III barricades including construction area signs and marker panels on barricades shall be considered as included in the contract lump sum price paid for traffic control system and no separate payment will be made therefor.

110-06.05 WATER-FILLED BARRIER

Water-filled barrier are made of medium density polyethylene filled with water in orange and white color and has minimum of 32" height. These barriers shall be tested and performed in an acceptable manner in accordance with NCHRP 350.

Install the barrier per manufacturer recommendation. These unit shall be pinned together with steel rod inserted through lugs formed into the end of each segment. Offset the approach end of barrier a minimum of 15 feet from the edge of an open traffic lane. Install the barrier on a skew toward the edge of the traffic lane of not more than 1 foot transversely to 10 feet longitudinally with respect to the edge of traffic lane. If the 15-foot minimum offset cannot be achieved, the barrier must be installed on the 10 to 1 skew to obtain the maximum available offset between the approach end of the railing and the edge of the traffic lane, and an array of temporary crash cushion modules must be installed at the approached end of the barrier.

Measurement and Payment – Full compensation for furnishing, installing, maintaining and removing water-filled barrier and temporary crash cushion modules are included in the contract lump sum price paid for Temporary Pedestrian Access Route, and no additional compensation will be allowed.

110-06.06 ROADWAY LANE CLOSURE

Temporary traffic control for roadway lane closure shall conform to the requirements of the CA MUTCD, Part 6, Temporary Traffic Control”, Caltrans Standard Plans listed below are applicable to different types of facility and are provided for guidance to Contractor to develop its temporary traffic control plan for the worksite area:

- T10 “Traffic Control System for Lane Closure on Freeways and Expressways,”
- T11 “Traffic Control System for Lane Closure on Multilane Conventional Highways,”
- T13 “Traffic Control System for Lane Closure on Two Lane Conventional Highways,”
- T14 “Traffic Control System for Ramp Closure,” and
- T15 and T-16 “Traffic Control System for Moving Lane Closure on Multilane Highways.”

A. CLOSURE SCHEDULE

The following is the approved work hours for:

Almaden Expressway and
Camden Avenue

- | | |
|---|---|
| <ul style="list-style-type: none"> • Weekdays (Northbound or Westbound): • Weekdays (Southbound or Eastbound): • Weekends: | <p><u>9:00 AM – 3:00 PM</u></p> <p><u>9:00 AM – 3:00 PM</u></p> <p><u>Subject to approval by the Engineer. See below.</u></p> |
|---|---|

Submit proposed weekend closure plans including hours of lane closures for approval by the Engineer. Submit weekend closure plans a minimum of 5 working days in advance of proposed weekend work.

If a Subcontractor is providing Traffic Control, the Subcontractor shall have a **Class C31 license** for implementing construction area lane closure and traffic control measures.

No roadway lane closure is permitted before and after the hours specified above.

No roadway lane closure setup and removal activities are permitted before and after the times specified above.

No overnight roadway lane closure is permitted.

Access to and from Almaden Expressway should always be maintained at all side streets.

During weekday hours, consecutive/adjacent left-turns shall not be closed. Where an intersection left-turn lane is closed, the upstream and downstream intersections must not restrict turn movements.

Subject to the approval of the Project Engineer, weekend work may be allowed at locations where weekday traffic and work hour traffic is heavy and likely to be impacted by the construction operations. Weekend work should be requested by the contractor one week in advance and shall

be approved by the Project Engineer in advance of the closure. There shall be no additional cost to the County if Contractor decides to work on weekend unless directed by the County to do so.

B. CLOSURE AND CONTINGENCY PLANS

A detailed roadway lane closure plan must be prepared and submitted to the Project Engineer for review and acceptance a minimum of 10 working days prior to the planned closure at the job site for any work requiring lane closure. The closure plan must include as a minimum the following information:

1. Date(s) of closure and beginning and end times of closure, including time requiring for the closure set-up and removal,
2. A proposed traffic control plan for the closure implementation,
3. Description of work elements with estimated timeline to be performed within the specified closure duration, and
4. A separate contingency plan to be implemented in the event that unexpected field conditions or causes, beyond the control of or not created by Contractor or its subcontractors, material suppliers, require the duration of closure to exceed the time specified. The contingency plan must include a traffic detour plan with placement of additional advance warning signs, alternative route and detour signs to notify the traveling public approaching the work area of lane closure and traffic delay.

The accepted closure and contingency plans are subject to be modified by the Project Engineer during its implementation if found necessary to minimize traffic delay and improve the safety of the traveling public. Lane Closure Request Form shall be submitted with the closure plan. See sample request form for reference on next page.

TECHNICAL SPECIFICATIONS & FURTHER CONDITIONS

SECTION 110

County of Santa Clara
Roads and Airports Department

LANE CLOSURE REQUEST FORM
(NOTE: THIS IS A SAMPLE DOCUMENT ONLY)

Project Limit: _____

CONSTRUCTION OFFICE: Field trailer on	WEEK OF:	THROUGH:
PROJECT NAME:	PROJECT NUMBER:	CONTRACT NUMBER:
RADIO CALL NUMBER:	PHONE NUMBER:	FAX NUMBER:

DATE	ROUTE	LOCATION										LIMITS	START	END	LANE CLOSURE NUMBER	
		DIRECTION	LANE CLOSED						RAMP							
		NB,SB,EB,WB	1	2	3	4	5	6	LS	RS	ON	OFF	POST MILE, INTERCHANGE			
	Lawrence	NB or WB	X								X		Hwy 101	12am	4am	

COMMENTS:	
SENT TO PUBLIC INFORMATION BY: XYZ CONTRACTOR	DATE: 7-5-2018

C. EARLY CLOSURE AND LATE REOPENING OF CLOSURE

No early closure is permitted as specified hereinabove. If a closure is set up or in place prior to the specified time, Work will be suspended in accordance with the provisions in Section 8.05, "Temporary Suspension of Work", of the County Standard Specifications.

If a closure is not reopened to public traffic by the specified time and without a pre-approved contingency plan as specified hereinabove, Work will be suspended in accordance with the provisions in Section 8.05, "Temporary Suspension of Work" of the County Standard Specifications. Contractor must remove all closures and return the work area affected by the closure to a safe condition for the traveling public. No further closures are to be made until Project Engineer has accepted a Contractor-submitted work plan that ensures that future closures will be reopened to public traffic at the specified time. Project Engineer will have three (3) business days upon receipt of the work plan to accept or reject Contractor's proposed work plan.

For each 10-minute interval, or fraction thereof past the time specified to reopen the closure, Owner will deduct the amount per interval shown below from monies due or that may become due Contractor under the Contract.

Type of Facility	Route or Segment	Period	Damages/interval (\$)
Expressway	Almaden Expressway	1st half hour	\$500 / 10 minutes
		2nd half hour	\$1000/ 10 minutes
		Over 1 hour	\$2000/ 10 minutes
Side Street	(All side streets within the project limits)	1st half hour	\$500/ 10 minutes
		2nd half hour	\$1000 / 10 minutes
		Over 1 hour	\$ 2000 / 10 minutes

D. MEASUREMENT AND PAYMENT

Full compensation for compliance with this section is included in the contract lump sum price paid for Traffic Control System, and no separate payment will be made therefor.

The Contractor is not entitled to any compensation for the suspension of work including the cost of reopening closed lanes resulting from the early closure and late reopening of closure as specified hereinabove.

110-06.07 PROJECT INFORMATION SIGN

Before any major physical construction work readily visible to expressway users is started on this contract, the Contractor shall furnish and erect two (2) Type 1 Project Information signs at the locations designated by the Engineer.

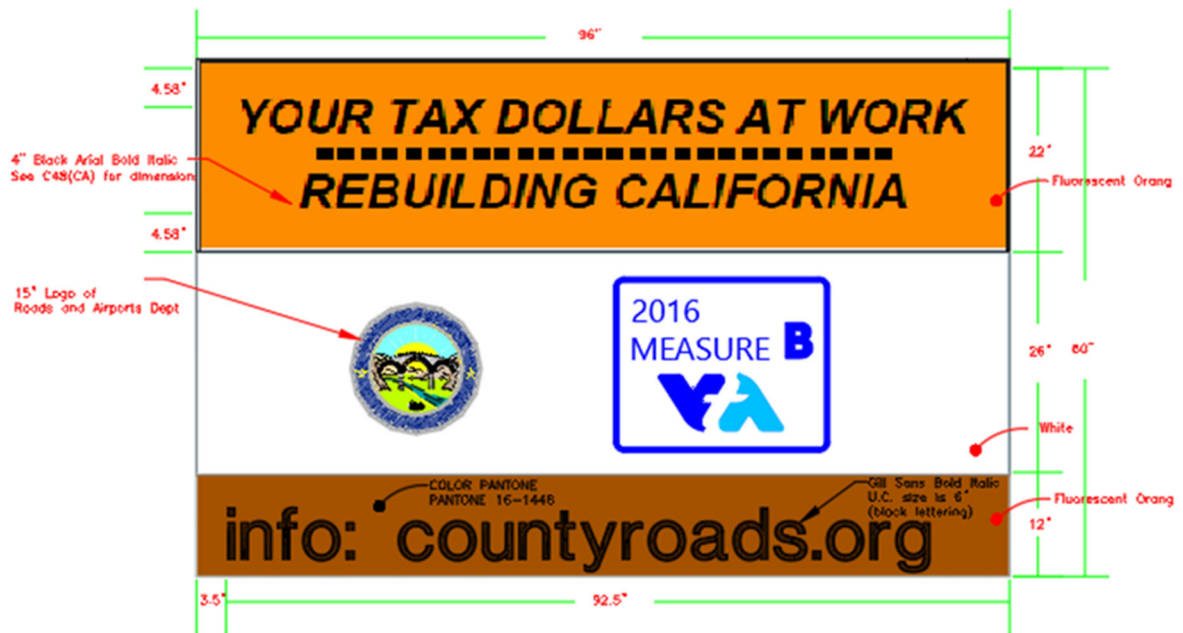
The signs shall be installed on 6"x6" wood posts and shall be stationary-mounted signs in accordance with Section 12-3.11, "Construction Area Signs", of the State Standard Specification. The bottom of the sign panel must be at least 7 feet above the edge of the traveled way.

The sign letters, border and the logos shall conform to the colors, sizes and details as shown on the plan, and shall be on a white background (non-reflective). All logos shall be in reflective color except for black.

The content to be used on the Project Information Sign will be furnished by the Engineer. A sign proof shall be submitted to the Engineer for review and approval prior to fabrication. The signs shall be in place and in operation a minimum of ten (10) working days prior to the commencement of work.

The signs shall be kept clean and in good condition and shall be repaired or replaced by the Contractor if ordered by the Engineer

Upon the completion of work, the signs shall be removed and salvaged by the contractor. Salvaged material shall remain the property of the County, and shall be cleaned, packaged, bundled, tagged, and hauled to the Santa Clara County East Yard at 1505 Schallenberger Road, San Jose, CA 95131.



Measurement and Payment:

The contract unit price paid for Project Information Sign shall include full compensation for excavation, backfill, minor concrete, furnishing, erecting, maintaining, removing, disposing and delivery of the project construction signs and no additional compensation will be allowed therefor.

110-07 STORMWATER POLLUTION PREVENTION PLAN

County, as the Owner of the Project site(s) where the subject construction activity is to occur, is responsible for preventing and/or mitigating potential chemical release, erosion, and sedimentation impacts associated with storm water runoff that will discharge to a municipal separate storm drain system.

The Contractor shall develop a Storm Water Pollution Prevention Plan (SWPPP) for implementation during construction. The SWPPP must be approved by Project Engineer prior to the start of construction. The SWPPP identifies appropriate storm water pollution prevention and treatment measures or Best Management Practices (BMPs) to reduce pollutants in storm water discharges from the Project's construction site and the contractor's material and equipment laydown/staging site in connection with construction activities. Prior to commencing any field work, Contractor shall review the SWPPP in the Contract Documents with Project Engineer. Once the SWPPP is accepted by Project Engineer, Contractor shall implement the provisions of the SWPPP, maintain and update the plan, as deemed necessary by Project Engineer, as required by applicable local stormwater discharge regulations and with the approval of Project Engineer, throughout the construction phase. A copy of the SWPPP shall be made readily available onsite throughout the construction period and shall include name and telephone number of the contractor-designated personnel responsible for the SWPPP activities. The Contractor shall include the following items in the SWPPP:

1. Records (logs) of stormwater pollution prevention training for all contractor employees.
2. Schedule of construction with associated deployment of BMPs pertinent for each phase and stage of work.
3. Year-round sediment control measures for all active and inactive areas. Sediment control measures must be provided at a minimum along the perimeter of disturbed areas, vehicle access points, storm drain inlets, and within sediment control basins (if applicable). Effective erosion controls within inactive areas (not worked on for 14 days or longer).
4. Run on and run off control measures.
5. A log for the date and description of all SWPPP amendments made by the Contractor.
6. Potential Sources of Non-Visible Pollutants.
7. Source Control Measures, "Good Housekeeping", and Non-Stormwater Management:
 - a. Solid and Demolition Waste Management: Show waste containers on the SWPP map. Provide designated waste collection areas and containers on site away from streets, gutters, storm drains, and waterways, and arrange for regular disposal. Waste containers must be watertight and covered at all times except when waste is deposited. Refer to Erosion & Sediment Control Field Manual (4th Edition or latest), page C3.
 - b. Hazardous Waste Management: Describe measures for proper handling and disposal of hazardous wastes by a licensed hazardous waste material hauler. Hazardous wastes should be stored and properly labeled in sealed containers constructed of suitable materials. Refer to Erosion & Sediment Control Field Manual (4th Edition or latest), pages C-5 to C-6.
 - c. Spill Prevention and Control: Describe measures for proper storage areas for liquid and solid materials, including chemicals and hazardous substances, away from streets,

- gutters, storm drains, and waterways. Spill control materials must be kept on site where readily accessible. Spills must be cleaned up immediately and contaminated soil disposed properly. Refer to Erosion & Sediment Control Field Manual (4th Edition or latest), pages C-7 to C-8, C-13 to C-14.
- d. Vehicle and Construction Equipment Service and Storage: An area shall be designated for the maintenance and shown on a map in the SWPPP, where on-site maintenance is required, and storage of equipment that is protected from stormwater run-on and runoff. Measures shall be provided to capture any waste oils, lubricants, or other potential pollutants and these wastes shall be properly disposed of off-site. Fueling and major maintenance/repair, and washing shall be conducted off-site whenever feasible. Refer to Erosion & Sediment Control Field Manual (4th Edition or latest), page C9.
 - e. Material Delivery, Handling and Storage: In general, materials should not be stockpiled on site. Where temporary stockpiles are necessary and approved by the Project Engineer, they shall be shown on the SWPPP map, covered with secured plastic sheeting or tarp and located in designated areas near construction entrances and away from drainage paths and waterways. Barriers shall be provided around storage areas where materials are potentially in contact with runoff. Refer to Erosion & Sediment Control Field Manual (4th Edition or latest), pages C-11 to C-12.
 - f. Handling and Disposal of Concrete and Cement: When concrete trucks and equipment are washed on-site, concrete wastewater shall be contained in designated containers or in a temporary lined and watertight pit where wasted concrete can harden for later removal. If possible, have concrete contractor remove concrete wash water from site. In no case shall fresh concrete be washed into the road right-of-way. Refer to Erosion & Sediment Control Field Manual (4th Edition or latest), pages C-15 to C-16.
 - g. Pavement Construction Management: Describe measures to prevent or reduce the discharge of pollutants from paving operations, using measures to prevent run-on and runoff pollution and properly disposing of wastes. Avoid paving in the wet season and reschedule paving when rain is in the forecast. Residue from saw-cutting shall be vacuumed for proper disposal. Refer to Erosion & Sediment Control Field Manual (4th Edition or latest), pages C-17 to C-18.
 - h. Contaminated Soil and Water Management: Inspections to identify contaminated soils should occur prior to construction and at regular intervals during construction. Remediating contaminated soil should occur promptly after identification and be specific to the contaminant identified, which may include hazardous waste removal. Refer to Erosion & Sediment Control Field Manual (4th Edition or latest), pages C-19 to C-20.
 - i. Sanitary/Septic Water Management: Show sanitary facilities on the SWPPP map. Temporary sanitary facilities should be located away from drainage paths, waterways, and traffic areas. Only licensed sanitary and septic waste haulers should be used. Secondary containment should be provided for all sanitary facilities. Refer to Erosion & Sediment Control Field Manual (4th Edition or latest), page C-21.
8. Any/all other items necessary for compliance with applicable requirements within the Bay Area Municipal Regional Permit (MRP) or other similar local construction site stormwater discharge regulations.

The Contractor shall refer to the following manuals in developing and proposing any change to the SWPPP:

- Guidelines for Construction Projects prepared by California Regional Water Quality Control Board, and
- Erosion and Sediment Control Field Manual (4th Edition) prepared by the California Regional Water Quality Control Board, and
- Storm Water Best Management Practice Handbook for Construction Activity (November 2009 or latest edition) prepared by California Storm Water Quality Association (available by subscription at <https://www.casqa.org/casqastore/entity/tabid/169/c-4-best-management-practice-bmp-handbooks.aspx>.)

The Contractor is advised that the acceptance of the SWPPP by Project Engineer does not relieve Contractor or Subcontractor(s) of their responsibility to comply with other State, County and Local governmental requirements, including those for storm water management or non-point source runoff controls. Contractor shall amend the SWPPP as initially approved if, during construction, conditions (such as change in construction operations, construction staging modification, change in site conditions, or offsite drainage impacts) occur that affect the ability of the Contractor to implement the plan effectively or the ability of the plan to meet the objectives for water pollution control. Contractor shall implement any amendments to the SWPPP issued by Project Engineer and incorporate the SWPPP amendments into the on-site documents. No additional compensation will be allowed for changes to the SWPPP that are required by Project Engineer to maintain compliance with the provisions of the County's municipal NPDES permit.

The Contractor shall procure, install and maintain in good condition a graduated cylinder rain gage at the construction site during the construction period in wet season from October 1st through April 30th for recording of rainfall amount by Project Inspector. The rain gage design shall be configured as a graduated cylinder placed inside a second cylinder so that if the water overflows from the graduated cylinder the outside container will store it for later measurement. The cylinder shall be marked in mm and measure up to at least 50 mm (1.98 in) of rainfall. Each horizontal line on the cylinder shall be not less than 0.2 mm (0.007 in).

Full compensation for furnishing all labor, materials, tools, equipment and incidentals required for developing, modifying, implementing, and maintaining Contractor-prepared SWPPP, in compliance with requirements of this Section, complete in place, and as directed by the Project Engineer, will be included in the lump sum bid price for Storm Water Pollution Prevention Plan indicated on the Bid Schedule.

Measurement and Payment: Full compensation for furnishing all labor, materials, tools, equipment and incidentals required for developing, modifying, implementing, and maintaining Contractor-prepared SWPPP, in compliance with requirements of this Section, complete in place, and as directed by the Project Engineer, will be included in the lump sum bid price for Storm Water Pollution Prevention Plan indicated on the Bid Schedule.

110-08 UNDERGROUND OBSTRUCTIONS

Attention is directed to the provisions in Section 8.11, "Utility and Other Facilities," and Section 15, "Existing Highway Facilities," of the County Standard Specifications as well as these Special Provisions.

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

_____ Notification Center	Telephone
Underground Service Alert-Northern California (USA)	811 or 1-800-642-2444

Measurement and Payment: Full compensation for conforming to the requirements of this section, not otherwise provided for, shall be considered as included in the prices paid for the various Contract items of Work involved and no additional compensation will be allowed therefor.

110-09 CONSTRUCTION LAY-DOWN OR STAGING AREA

Contractor’s attention is directed to Section 106, “Amendments to County Standard Specifications”, of these Special Provisions regarding the amended County Standard Specifications Section 5.07.02, “Project Real Site Property” for construction lay-down or staging area for use by Contractor.

Measurement and Payment - Full compensation for conforming to the provisions of this Section will be considered as included in the prices paid for the various items of work and no separate payment will be made therefor.

110-10 PROTECTION OF EXISTING LANDSCAPE AND TREES

This Project involves excavation work under the drip line of existing trees, or where substantial tree branch trimming for vertical or horizontal clearances is required.

Contractor must retain a certified arborist to provide oversight and technical assistance to Contractor’s personnel performing excavation or any work adjacent to or that encroaches into an area of existing landscape and trees. Upon award of the Contract, Contractor must submit to the Project Engineer for review and acceptance the name and certification credential of an arborist to be used by the Contractor.

Measurement and Payment: Full compensation for this Work shall be considered as included in the Contract prices paid for the various items of Work, and no additional compensation shall be allowed therefor.

110-10.01 MIGRATORY BIRD TREATY ACT

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of state and federal laws. The federal MBTA (42 USC §703-712) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. Section 3503.5 of the California Fish and Game code states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.”

Contractor must work closely with the **Contractor-retained** arborist and must follow the requirements specified as follows:

- 1) Conduct all vegetation clearing (including shrubs and bushes) outside of the migratory nesting season. To avoid impacts to nesting habitat, the removal of potential nest trees will be limited to only those for necessary to construct the proposed project. If clearing of any vegetation must take place, during the nesting season (March 1 to August 31), a qualified biologist must survey the vegetation to be removed for nesting migratory birds. If no active nests are found, tree removal may proceed. If active nests are found, California Department of fish and game (CDFG) shall be notified, and the tree shall not be removed until the nest is no longer active, as determined by a CDFG-approved biologist. For activities that occur outside the breeding bird season such surveys would not be required. If no nesting birds are identified during preconstruction surveys then no further action is required.

- 2) Two biological surveys for nesting migratory birds shall be conducted, at least one week apart, with the second survey occurring no more than 48 hours prior to beginning tree removal. The qualified biologist shall survey for nesting birds adjacent to the construction site to determine whether the activities taking place have the potential to disturb or otherwise harm nesting birds. If an active nest is located within 50-foot area, a buffer zone shall be established by the biologist and confirmed by the appropriate resource agency. No construction activities shall take place within a 50-foot radius of the active nest (or another distance determined during consultation with CDFG).

A qualified biologist shall prepare a written report of the survey. The written report shall include methods and results of the survey as well as photo documentation and maps.

County Standard Specification Section 8.14 “Preservation of Cultural Resources” outlines the procedures to be followed by the Contractor in the event of discovery of potential biological and cultural resources, and hazards and hazardous materials during construction.

Measurement and Payment: The contract lump sum price paid for Pre-Construction Nesting Bird Survey includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in nesting bird surveys, including preparing a written report, complete in place, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

110-11 ROADWAY EXCAVATION, HANDLING AND DISPOSAL OF SOIL

The County has performed soil tests within the Project’s site limits for:

1. Semi Volatile Organics (EPA 2270C)
2. Diesel Range Organics, Gasoline and Oil (EPA 8015B)
3. CAM 17 Metals (EPA 6010, 7471A)
4. Volatile Organic Compounds (EPA 8260B)
5. Organochlorine Pesticides/PCB’s (EPA 8081A, 8082)

A copy of each of the lab test reports is incorporated at the end of Section 110 – Technical Specifications & Further Conditions for Bidder’s information and use in developing bid proposals.

Wet materials are not accepted by commercial landfill facilities and must be properly deposited at an approved site for dry-out before disposal. The Department Environmental Health and Safety Compliance

Specialist may be contacted for recommendation on available sites for temporary storage of wet materials. Contractor is responsible to remove materials from temporary storage and dispose the accordingly.

Measurement and Payment

The contract price paid per cubic yard for Roadway Excavation, Handling and disposal of Soil shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in soil excavation, including, but not limited to, removing, preparing, transporting, handling, and disposing off-site soil and excavated materials, complete in place, as shown on the plans, as specified in the Standard Specifications and these Special Provisions.

110-12 ROADWAY IMPROVEMENTS OR STRUCTURE IMPROVEMENTS

110-12.01 LINES & GRADES

Construction staking that is required for the improvements to be constructed to lines and grades as shown on the Project Plans and these Special Provisions shall conform to Section 5.08 Lines and Grades of the County Standard Specifications as amended in Section 107 – Amendments to County Standard Details and Standard Specifications of these Special Provisions.

The County will furnish to the Contractor one set of control stakes. Once set, the maintenance of the integrity of said stakes becomes the responsibility of the Contractor. Additional sets of said stakes only will be furnished at the expense of the Contractor. All reference staking, location and layout work required for construction purposes and preservation of the stakes, except the staking specified below, shall be performed by the Contractor at his expense.

When making the survey request, the Contractor shall stipulate at that time the particular stakes required, giving specific location or limiting station, kind of stakes, offsets, and other pertinent information.

It shall be the responsibility of the Contractor, in requesting survey services, to properly coordinate said requests with his construction activities so as to prevent inefficient scheduling of County survey crews.

Contractor shall provide the Project Inspector with 48-hour advance notice of completion of sub-grade, aggregate sub-base, and aggregate base installation so finished grades may be checked.

Measurement and Payment: Full compensation for conforming to provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

110-12.02 MOBILIZATION

Mobilization shall conform to the provisions in Section 11, "Mobilization," of the County Standard Specifications.

Progress Schedule preparation/updates and video recording shall be included as part of mobilization.

Measurement and Payment: The contract lump sum price paid for Mobilization shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in mobilization as specified in the County Standard Specifications, including progress schedule, video recording and no additional payment will be allowed therefor.

110-12.03 PRESERVATION AND RESTORATION OF PROPERTY

Preservation and restoration of property shall conform to Section 7.37, "Protection and Restoration of Property" and Section 7.38, "Responsibility for Damage" of the County Standard Specifications, and Section 5-1.36, "Property and Facility Preservation" of the State Standard Specifications.

Contractor shall completely remove all utility paint markings at project completion. Removal shall be by use of the high water pressure method only.

Measurement and Payment: Full compensation for preservation and restoration of property including removing utility paint markings shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

110-12.04 PRESERVATION OF EXISTING FACILITIES

Preservation of existing trees shall conform to Section 5-1.36, "Property and Facility Preservation" of the State Standard Specifications and Section 8.13, "Tree Preservation and Removal" of the County Standard Specifications.

Contractor shall protect and preserve the existing irrigation and landscaping area within and outside the improvement areas. Excessive cutting of roots is prohibited. Any damaged tree, grass, or irrigation facilities due to Contractor's operation shall be replaced in kind at Contractor's cost.

Measurement and Payment: Full compensation for conforming to this section is considered as included in the contract prices paid various items of work involved and no separate compensation shall be allowed therefore.

110-12.05 COOPERATION

Work associated with cooperation shall conform to Section 7.21, "Cooperation," and Section 8.11, "Utilities and Other Facilities" of the County Standard Specifications and these Special Provisions.

Contractor shall coordinate and cooperate with others working in the project limit of work, including but not limited to utility facilities or facility owners, the City and residents.

Measurement and Payment: Full compensation for cooperation by the Contractor shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed.

110-12.06 POTHOLING

This section specifies the requirements for performing all operations necessary to excavate, expose, and verify the location of existing utility mains and laterals which may conflict with the proposed facilities as shown on the plans. In particular, these locations are in areas of proposed signal facility, storm drain line, curb, curb & gutter, and sidewalk.

Such facilities for potholing may include, but not limited to, public- and/or private-owned: gas lines, electrical lines, communication lines, storm and sanitary sewer lines, water mains and laterals, fiber optic lines, street traffic lights line, etc.

Potholing can be vacuum excavation and/or hand dig.

The Contractor shall notify USA and all utility companies, which have underground facilities within the limits of work two (2) working days before beginning any excavation work and have them locate and mark those facilities. The Contractor shall notify the County three (3) working days before beginning any excavations.

The Contractor shall submit a plan for actual count of pothole location for approval by the County, showing conflict utilities to be potholed. This plan shall include a tentative schedule for potholing activities. The Contractor shall submit a report for each pothole. Reports shall clearly show all necessary details, including: (a) Sketch showing the location, date, top elevation or depth, conditions encountered clearance to other utility lines within the pothole location, type and size of utility lines, and person in charge of potholing; (b) Utility and County staff notified; (c) Contractor shall place a witness stake at each pothole. Each stake shall be uniquely numbered then located by survey horizontal project coordinates. In this pothole report, the Contractor shall provide a description and vertical cut from grade to top of utilities for each corresponding stake, and (d) Backfill of potholes shall conform to the provisions in Section 19 "Earthwork" of the County and State Standard Specifications.

Measurement and Payment: The contract unit price paid each for Potholing shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in Potholing including backfill, compact, restore surface (local soil material or HMA/concrete if on HMA pavement/PCC surface), off-haul all spoils, USA coordination, and traffic control plan and no additional payment will be allowed therefor.

110-12.07 EXISTING HIGHWAY FACILITIES

Existing highway facilities shall conform to Section 15, "Existing Highway Facilities" of the County and Section 15, "Existing Facilities", of the State Standard Specifications, Contract Plans and these Special Provisions.

In removing items designated for removal, preservation, or relocation, Contractor shall exercise extreme caution to protect these existing facilities. The Contractor shall provide adequate support to existing utilities during excavation work. Any damages to existing items shall be brought to the attention of the County immediately and shall be repaired to the satisfaction of the County at Contractor's expense.

Attention is directed to Section 8.11, "Utilities and Other Facilities" of the County Standard Specifications for existing underground facilities that conflict with new improvements.

Measurement and Payment: Full compensation for conforming to provisions in this section, not otherwise specified in these special provisions, except Section 8.11, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore. Compensation for work involved as specified in Section 8.11 shall be paid for as described under the said section of the County Standard Specifications.

110-12.08 DUST CONTROL

Dust control shall conform to the provisions of Section 10, "Dust Control" and Section 17 "Watering" of the County Standard Specifications.

Measurement and Payment: Full compensation for Dust Control shall be considered as included in other items of work and no additional compensation will be allowed therefore.

110-12.09 CLEARING AND GRUBBING

Clearing and grubbing shall conform to the provisions in Section 16, "Clearing and Grubbing", of the County and Section 17-2, "Clearing and Grubbing", of the State Standard Specifications, these Special Provisions and the Contract Plans.

Clearing and grubbing shall consist of removing all natural and artificial objectionable materials from the right of way in construction areas, road approaches, material sites within the right of way, and such other areas as shown in the plans.

Excess material shall become the property of the Contractor. It shall be disposed of outside of the road right of way.

The Contractor shall protect existing landscaping and irrigation, from injury or damage resulting from the Contractor's operations. If existing irrigation system is within the new PCC sidewalk/driveway approach/curb ramps or on the County or City' Right-of-Way, the Contractor shall relocate existing irrigation components at the back of new sidewalk on the property owner's R/W so that the water is confined to the property owner's landscaped area only. In case there is no place to relocate inside private property, Contractor shall remove the irrigation system. The Contractor shall replace in kind, at no cost to the County, any landscaping or irrigation damaged.

Vegetation encroaching within the pavement area shall be removed and cleared within one foot behind existing curb, asphalt concrete dike or sidewalk or two feet behind edge of pavement. All existing vegetation outside the areas to be cleared and grubbed shall be protected from injury or damage resulting from contractor's operations.

Clearing and grubbing shall include "power brooming" material from roadside and existing drainage facilities to prepare for improvements and proper pavement drainage.

All Clearing and Grubbing activities controlled by the Contractor, except cleanup or other required work, shall be confined within the limit of the construction area. Nothing herein shall be construed as relieving the Contractor of his responsibility for final cleanup of the highway as provided in the Section 22, "Clean-up," of the County Standard Specifications and Section 22, "Finishing Roadway" of the State Standard Specifications.

Measurement and Payment: The contract lump sum price paid for Clearing and Grubbing shall include full compensation for furnishing all labor, materials, tools, equipment, transportation and incidental required for all clearing and grubbing of the project site, disposal of removed or surplus materials outside the project limits, returning removed materials to County, and for doing all the work involved in clearing and grubbing, complete in place, as shown on the plans, as specified in State Specifications and these Special Provisions.

110-12.10 REMOVAL OF TRAFFIC STRIPES, PAVEMENT MARKINGS, & MARKERS

110-12.10.01 REMOVE TRAFFIC STRIPES, PAVEMENT MARKINGS, & MARKERS

Removal of traffic stripes, pavement markings and pavement markers shall conform to Section 84-9.03A, "General", of the State Standard Specifications, the details shown on the plans, and these special provisions. All thermoplastic materials shall be removed.

Traffic stripes, legends and pavement markings shall be removed by sandblasting, grinding, or as directed by the Engineer. No painting over existing markings will be allowed. Striping removal process and removal of pavement markers shall not materially damage the surface or the texture of the pavement.

Where blast cleaning is used for the removal of painted traffic stripes and pavement markings or for removal of objectionable material, and such removal operation is being performed within 10 feet of a lane occupied by public traffic, the residue including dust shall be removed immediately after contact between the sand and the surface being created. Such removal shall be by vacuum attachment operating concurrently with the blast cleaning operation.

Wherever the Contractor's operations obliterate pavement delineation (lane lines), such pavement delineation shall be replaced by either permanent or temporary delineation before opening the traveled way to public traffic.

110-12.10.02 REMOVAL AND HANDLING OF YELLOW PAINTED TRAFFIC STRIPES

Waste from the removal of yellow painted traffic stripes may contain lead chromate. Yellow paint traffic stripe exists within project limits. Residue produced when yellow paint is removed may contain lead and chromium in concentrations that exceed thresholds established by the California Health and Safety Code and the Environmental Protection Agency and may produce an inhalation hazard from toxic fumes when heated or when ground into an airborne particulate. The removed yellow paint shall be disposed of at a Class 1 or a Class 2 disposal facility permitted by the California Department of Toxic Substances Control in conformance with the requirements of the disposal facility operator within 30 days after accumulating 100 kg of residue and dust. The Contractor, at his sole cost, shall make necessary arrangements to have the yellow paint residue

tested as required by the disposal facility and these Special Provisions. Testing shall include, at a minimum:

1. Total Lead and Chromium by EPA Method 7000 series and
2. Soluble Lead and Chromium by California Waste Extraction Test, and
3. Soluble Lead and Chromium by the Toxic Characteristic Leaching Procedure (TCLP).

The Contractor shall submit the name and location of the disposal facility and analytical laboratory along with the testing requirements to the Engineer not less than 7 days prior to the start of removal of yellow painted traffic stripe. The analytical laboratory shall be certified by the California Department of Health Services Environmental Laboratory Accreditation Program. Test results shall be provided to the Engineer for review by the County’s Environmental Health and Safety Compliance Specialist prior to signing a waste profile as requested by the disposal facility, and prior to allowing removal of the waste from the site.

The Contractor shall prepare a project specific Lead Compliance Plan to prevent or minimize worker exposure to lead while handling removed yellow paint residue. The Lead Compliance Plan requirements are as follows:

Lead Compliance Plan

Submit a lead compliance plan:

1. That documents the project’s compliance program to prevent or minimize worker exposure to lead.
2. Including the items listed in 8 CA Code of Regulations § 1532.1(e)(2)(B)
3. Signed and sealed by a Certified Industrial Hygienist (CIH)

Before starting any activity that presents the potential for lead exposure to employees who have no prior training, provide a safety training program to these employees that complies with 8 CA Code of Regulations § 1532.1 and the lead compliance plan. Provide the training records.

Submit copies of air monitoring or job site inspection reports made by or under the direction of the CIH under 8 CA Code of Regulations § 1532.1

The Lead Compliance Plan shall also be used for the removal, storage, and disposal of removed leaded paint.

The Lead Compliance Plan shall be submitted to the Engineer at least 7 days prior to beginning removal of yellow paint.

Where grinding or other methods approved by the Engineer are used to remove yellow painted traffic stripe, the removed residue, including dust, shall be contained and collected immediately. Sweeping equipment shall not be used. Collection shall be by a high efficiency particulate air (HEPA) filter equipped vacuum attachment operated concurrently with the removal operations or other equally effective methods approved by the Engineer. The Contractor shall submit a written work plan for the removal, storage, and disposal of yellow painted traffic stripe to the Engineer for approval by the County’s Environmental Health and Safety Compliance Specialist not less than 7 days prior to the start of the removal operations. Removal operations shall not be started until the Engineer and Environmental Health and Safety Compliance Specialist have approved the work plan.

The removed yellow painted traffic stripe residue shall be stored and labeled as Hazardous Waste in covered containers. Hazardous Waste labels shall conform to the provisions of Title 22, California Code of Regulations, Sections 66262.31 and 66262.32. Labels shall be marked with the

date when the waste was generated (“accumulation start date”), the words "Hazardous Waste", the composition (i.e., “asphalt grindings with lead and chromium-based paint”) and physical state of the waste (“solid”), the hazardous property ("toxic") the name and address of the generator of the waste (County of Santa Clara – Roads & Airports Dept., 101 Skyport Drive), and the California waste code (181). The containers shall be of a type approved by the United States Department of Transportation for the transportation and temporary storage of the removed residue. The containers shall be handled so that no spillage will occur. The containers shall be stored in a secured enclosure at a location within the project limits until disposal, as approved by the Engineer.

If the yellow painted traffic stripe residue is determined to be a Hazardous Waste, a uniform Hazardous Waste Manifest shall be used for transportation, and the transporter shall be registered with the California Department of Toxic Substances Control. The County’s Environmental Health and Safety Compliance Specialist or Environmental Health & Safety Analyst will sign all manifests as the generator within 2 working days of receiving sample test results and approving the test methods. EPA ID Number will be provided by the Department Environmental Health and Safety Compliance Specialist.

The Contractor shall assume that the yellow paint removed is not regulated under the Federal Resource Conservation and Recovery Act (RCRA). Additional disposal costs for removal of residue regulated under RCRA, as determined by test results, will be paid for as extra work as provided in Section 4.07, "Extra Work," of the County Standard Specifications.

Nothing in these Special Provisions shall relieve the Contractor of the Contractor's responsibilities as specified in Section 7.22.02, "Public Safety," of the County Standard Specifications.

Measurement and Payment: The contract lump sum price paid for Traffic Striping Removal shall include full compensation for furnishing all labor, materials, tools, equipment, and for doing all the work involved in removing traffic stripes and pavement markings, complete in place, including removal of raised pavement markers, development of and compliance with the Lead Compliance Plan, and disposal of removed markings and markers, as shown on the plans, as specified in State Specifications and these Special Provisions.

Full compensation for temporary delineation is included in the contract lump sum price paid for Traffic Control System, and no additional compensation will be allowed.

110-12.11 REMOVE TREE

Contractor shall remove and dispose trees identified on the plans for removal. Tree removal shall include the stumps and the top 18 inches of tree roots below finish grade. Contractor shall dispose removed items in a manner as specified in Section 17-2.03D “Disposal of Materials”, of the State Standard Specifications.

After grinding of stumps all organic wood chips remaining shall be removed to a depth of 2’. Roots deeper than 2’ in depth AND 1” or smaller may be left in place. Backfill holes resulting from stump removal to finished grade or subgrade with clean earthy material obtained from adjacent areas. Compact as specified elsewhere in these Special Provisions and as shown on the plans depending on its location. Tree roots underneath sound walls or extending outside road rights of way need not be removed.

No permit will be issued for trees to be removed on County of Santa Clara's Right-of-Way. The approved Legislative File (by the Board of Supervisors before advertisement) is the documentation that the tree removal is approved.

Adjacent areas shall be left with a neat and finished appearance. No accumulation of flammable material shall remain on or adjacent to the site. The hole resulting from stump removal shall be refilled and compacted with aggregate base or base rock before constructing sidewalk/curb & gutter over it.

Measurement and Payment: The contract unit price paid per each Remove Tree shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in removing and disposing trees, stumps and roots, and backfilling holes from stump removal, as specified in these Special Provisions and as directed by the County, and no additional compensation shall be allowed therefor.

110-12.12 REMOVE EXISTING PORTLAND CEMENT CONCRETE (PCC)

Any Portland cement concrete (PCC) structures designated on the plans to be removed, shall be removed in accordance with the provisions in Section 15-1.03B, "Removing Concrete," of the State Standard Specifications and these Special Provisions. Disposed material shall be done in accordance with the provisions in Sections 7.18, "Disposal of Material Outside the Highway Right-of-Way" of the County's Standard Specifications.

Remove existing concrete includes all excavation, removal and disposal of sidewalk, driveway approach, curb, curb and gutter, pedestrian curb ramp, island paving, and textured concrete island paving shown to be removed on the project plans. In areas where adjacent concrete is to remain in place, Contractor shall sawcut the concrete structure to a full depth with a power driven saw at the scoremark prior to removal of the concrete structure without causing any damages to the existing portion designated to remain in place.

Where no joint exists between concrete to be removed and concrete to remain in place, the concrete shall be saw cut in a neat line to the concrete full depth with a power-driven saw before concrete is removed.

If there is vegetation or landscaping (including irrigation systems) near these PCC structures, the Contractor shall protect existing landscaping and irrigation from injury or damage resulting from the Contractor's operations. If existing irrigation system is within the new PCC sidewalk/driveway approach/curb ramps or on the County or City Right-of-Way, the Contractor shall relocate existing irrigation components at the back of new sidewalk on the property owner's R/W so that the water is confined to the property owner's landscaped area only. In case there is no place to relocate inside private property, Contractor shall remove the irrigation system. The Contractor shall replace in kind, at no cost to the County, any landscaping or irrigation damaged.

Removed materials shall become the property of contractor and shall be disposed outside the County right-of-way and shall conform to Section 7.18, "Disposal of Material Outside the Highway Right-Of-Way," of the County Standard Specifications. The disposal site shall be the responsibility of the Contractor.

Measurement and Payment - The contract unit price paid per lineal foot for Remove Curb shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removing curb, including, but not limited to, excavation, saw cutting, moving, spreading and compacting suitable excavated materials, preparing, transporting, handling, and disposing off-site unused and unsuitable excavated materials, complete in place, protecting vegetation/landscaping or relocation of irrigations system, as shown on the plans, as specified in the Standard Specifications and these Special Provisions. No additional compensation will be allowed therefor.

The contract unit price paid per lineal foot for Remove Curb & Gutter shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removing curb and gutter, including, but not limited to, excavation, saw cutting, moving, spreading and compacting suitable excavated materials, preparing, transporting, handling, and disposing off-site unused and unsuitable excavated materials, complete in place, protecting vegetation/landscaping or relocation of irrigations system, as shown on the plans, as specified in the Standard Specifications and these Special Provisions. No additional compensation will be allowed therefor.

The contract unit price paid per square foot for Remove Concrete Pork Chop/Median shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removing concrete pork chop/median, including, but not limited to, excavation, saw cutting, moving, spreading and compacting suitable excavated materials, preparing, transporting, handling, and disposing off-site unused and unsuitable excavated materials, complete in place, protecting vegetation/landscaping or relocation of irrigations system, as shown on the plans, as specified in the Standard Specifications and these Special Provisions. No additional compensation will be allowed therefor.

The contract unit price paid per square foot for Remove Sidewalk shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removing sidewalk, removing curb ramp, and removing driveway approach, including, but not limited to, excavation, saw cutting, moving, spreading and compacting suitable excavated materials, preparing, transporting, handling, and disposing off-site unused and unsuitable excavated materials, complete in place, protecting vegetation/landscaping or relocation of irrigations system, as shown on the plans, as specified in the Standard Specifications and these Special Provisions. No additional compensation will be allowed therefor.

110-12.13 REMOVE ROADSIDE SIGNS

Remove roadside signs shall conform to Section 82-9, "Existing Roadside Signs and Markers," of the State Standard Specifications and these Special Provisions.

The Contractor is to salvage the metal sign panels, bundle them, and deliver to the County corporation yard. Notify the Engineer a minimum of 2 working days in advance of planned delivery to the following County corporation yard:

Santa Clara County East Yard
 1505 Schallenberger Road
 San Jose, CA 95131

Measurement and Payment - The contract unit price paid per each for Remove Roadside Sign includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in removing roadside signs, complete in place, including removing foundation and backfilling, salvaging and delivery sign panels, and proper handling and disposal of wood sign posts and metal posts, as shown on the plans, as specified in the Standard Specifications and these Special Provisions. No additional compensation will be allowed therefor.

110-12.14 RELOCATE ROADSIDE SIGNS

Relocating roadside signs shall conform to Section 82-9, "Existing Roadside Signs and Markers," of the State Standard Specifications and these Special Provisions.

As shown on the plans, the Contractor shall relocate existing roadside signs as directed by the Project Engineer. The roadside sign shall be mounted on a new post or mounted on signal or street light poles as shown on the project plans.

If the sign is relocated within the sidewalk area, the sign post shall be 2" galvanized pipe and installed in conformance with County Standard Detail B/14. If the sign is relocated outside the sidewalk, the sign post shall be treated wood and installed in conformance with State Standard Plan RS2.

Measurement and Payment: The contract unit price paid per each for Relocate Roadside Sign includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in relocating roadside signs, complete in place, including proper handling and disposal of wood sign posts or metal posts, as shown on the plans, as specified in the Standard Specifications and these Special Provisions. No additional compensation will be allowed therefor.

110-12.15 EARTHWORK

110-12.15.01 ROADWAY EXCAVATION

Roadway excavation shall conform to the provisions of Section 19, "Earthwork," of the County Standard Specifications and State Standard Specifications, Sections 7.18, "Disposal of Material Outside the Highway Right-of-Way" of the County Standard Specifications and these Special Provisions.

Existing asphalt concrete shall be sawcut along the removal limits as shown on the plans. The existing asphalt concrete thickness is unknown. If the asphalt concrete is thicker than 15", the entire section of asphalt concrete shall be removed and fill material shall be placed to the grading plane and compacted to a relative compaction of at least 95 percent. The additional work of removing asphalt concrete more than 15" of total thickness and placing fill material will be paid as extra work as provided in Section 9, "Measurement and Payment," of the County Standard Specifications.

Excavated materials that will not be used for fill material shall become the property of contractor and shall be disposed outside the public road rights-of-way. Disposal of material shall conform to Section 7.18, "Disposal of Material Outside the Highway Right-Of-Way," of the County Standard Specifications. The disposal site shall be the responsibility of the Contractor.

The Contractor must retain enough select clean excavated earthy material for use as subgrade and backing for sidewalk and embankment fills, as shown on the plans. The material shall be relatively free of rocks with no rocks greater than 1" within 6" of finished grade of exposed unpaved surfaces. Material not necessary for construction of the work site shall become the property of the Contractor and disposed of off-site.

Should the Contractor fail to retain enough select material to meet the project needs and therefore need to import material, that material will be furnished solely at the expense of the Contractor, and no separate payment will be made therefor.

After pavement excavation, the existing undisturbed base or earthy subgrade material shall be well watered and compacted by mechanical means to 95% at a minimum 6" deep, excepting areas to remain bare earth, or to the maximum amount practical given excavation size and equipment appropriate for the task. Excavated section shall be filled with compacted Type A hot mix asphalt (HMA) as specified elsewhere in these special provisions.

Overly wet base material shall be scarified and allowed to dry as required to allow compaction. Where subgrade materials are unsuitable for use, Page 13, "Unsuitable Material," of the State Standard Specification shall apply.

Measurement and Payment - The contract price paid per cubic yard for Roadway Excavation shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in roadway excavation including excavating and removing existing asphalt concrete pavement, disposal of excavated materials, recompacting subgrade areas; and sawcutting, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

The contract price paid for excavation for removal of existing curb, curb & gutter, sidewalk, and concrete median, and construction of new curb, curb & gutter, median, and sidewalk shall be paid for as part of those particular improvements, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Full compensation for soil removal and disposal is included in the contract unit price paid for Roadway Excavation, Handling and Disposal of Soil, and no additional compensation will be allowed.

Roadway Excavation is a final pay item.

110-12.15.02 TRENCH EXCAVATION AND BACKFILL

Trench Excavation and Backfill shall conform to the provisions in Section 19.03, "Structural Excavation and Backfill", Section 7.04 "Trench Safety", and Section 7.09 "Workers Safety Provisions" of the County Standard Specifications and Section 19-3, "Structure Excavation and Backfill" of the State Standard Specifications, County Standard Details Manual for Trench Restoration and these Special Provisions.

Contractor shall prepare individual Traffic Control Plans for County's approval, as specified in "Traffic Control System" section of these Technical Specifications, for trench excavation work. Contractor shall also conform to the requirements of CalOSHA for any excavation depth of 5 feet or more. As required by CalOSHA, Contractor shall be required to submit a shoring plan and calculation signed by a civil engineer registered with the State of California for review and approval by the County Prior to commencing any excavation work.

Trench excavation shall include modifying existing curb inlet to storm drain manhole or replacement of existing inlet, and other excavation designated on the plans or in the Technical Specification as trench excavation. The trench backfill shall consist of furnishing, placing and compacting bedding and backfill material around and on top of drainage facilities or other items specified on the Plans or in the Technical Specification to the lines designated on the Plans or specified or directed by the County.

The trench shall be excavated to a depth and width required to allow for placement of bedding material as shown on County Standard Details Manual and as specified on the Plans. Bedding material shall provide a uniform and continuous bearing and support.

Any part of the trench excavated below the specified grade shall be backfilled with approved material as specified in Section 19-3.06, "Structural Backfill" and thoroughly compacted as specified in Section 19-5, "Compaction" of the State Standard Specifications and the County Standard Details Manual. The finished grade of the bedding material shall be prepared accurately by means of hand tools.

Surplus excavated material or items identified for removal shall become the property of the Contractor and shall be disposal of outside the limits of work as specified in Section 7.18 of the County Standard Specifications.

Measurement and Payment - The contract lump sum paid for Trench Safety includes full compensation for trench shoring and excavation plan and calculation, excavation permit, conforming to the requirement of CalOSHA and for doing all work involved in furnishing and installing trench safety protection systems, complete in place, as necessary to provide safety and convenience to the general public, as specified in the Standard Specifications and these Special Provisions. No additional compensation will be allowed therefor.

Full compensation for trench excavation and backfills including bedding material and compaction, aggregate base, and pavement replacement shall be considered as included in the contract prices paid for various items of work requiring trench excavation and backfills and no additional compensation will be allowed therefor.

110-12.16 (NOT USED)

110-12.17 COLD PLANE ASPHALT CONCRETE CONFORM

Cold Plane Asphalt Conforms shall conform to County Standard Specifications Section 42, "Groove and Grind Pavement," Section 39-3.04 "Cold Planing Asphalt Concrete Pavement" of the State Standard Specifications, details shown on the plans, and these Special Provisions.

The surface area of asphalt concrete pavement to be cold planed shall conform to the details on the project plans.

Conform at cross streets shall be sawcut prior to planing, in order to provide clean square cut.

When cold planing in the area of traffic detection loops, care shall be taken to not damage the loops and handholes. Damaged loops shall be replaced.

The contractor shall verify within the area of cold planing if there are covered or unmarked manholes or other steel utility boxes before planing.

Ground material shall become the property of the contractor and shall be disposed outside the County Property and shall conform to Section 7.18, "Disposal of Material Outside the Highway Right-Of-Way," of the County Standard Specifications. The disposal site shall be the responsibility of the Contractor.

Where areas of transverse planing and longitudinal planing other than those along the lip of curb are to be open to traffic before the overlay is placed, a temporary commercial quality asphalt concrete taper shall be placed before the conform is open to traffic. Temporary asphalt concrete tapers shall be spread and compacted to produce a smooth riding surface. Temporary tapers shall be completely removed, including removing all loose material from the surface, before placing the permanent surfacing.

Measurement and Payment: The contract price paid per square yard for Cold Plane Asphalt Concrete Conforms shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in cold planing the existing asphalt concrete pavement, including planing in front and around existing inlets, manhole and utility box detection, removing the residue including furnishing water for washing pavement, sawcutting, placing and removing temporary asphalt concrete tapers, as shown on the plans, and as specified in these Special Provisions.

110-12.18 MICROSURFACING TYPE II

Microsurfacing is a mixture of polymer-modified asphalt emulsion, mineral aggregate, mineral filler, water, and other additives, properly proportioned, mixed and spread on a paved surface in accordance with these specifications.

The mix is to be a quick-traffic system, meaning that it will accept traffic after a short period of time.

Trucks shall maintain current approved overweight permits in said trucks. The contractor shall obtain an extra legal load permit from the County and applicable cities for microsurfacing vehicles. Contractor shall place a copy of the permit in all applicable vehicles used. The extra-legal load permit shall contain a waiver of the reducible load requirements in the City of San Jose "General Regulations & Conditions for Extra Legal Load Permits"

Prior to any paving operations, there shall be a pre-Microsurface Overlay meeting 10 days before starting microsurfacing work with the Engineer, Inspector, Materials Lab staff and Contractor's Representative to discuss pavement scope and strategies.

The roadway shall not be striped before 5 calendar days of microsurfacing curing, but shall be striped within 10 calendar days after the completion of paving. Liquidated damages, at the specified rate, shall apply to each day of delay beyond this date unless otherwise approved by the Engineer.

All flexible temporary markers, "floppies", shall be cut flush with pavement no later than during final striping. Floppies may need to be removed sooner if in conflict with more visible cat-tracking.

SUBMITTALS

At least 10 days before starting micro-surfacing, submit a mix design and a mix design report of laboratory tests performed for the micro-surfacing materials. A representative of your laboratory performing the mix design and tests must sign the report. The Engineer reviews and approves the submittal before you start micro-surfacing.

Do not substitute materials after the mix design is approved unless the substitute materials are laboratory-tested and you submit a new mix design and report. Do not use substitute materials until the Engineer approves the mix design for those materials.

Submit a Certificate of Compliance with each emulsion shipment as specified for asphaltic emulsion in Section 94-1.01C, "Submittals," of the State Standard Specifications.

Before micro-surfacing activities start, submit the name of a person authorized to communicate with the Engineer about days when unsuitable weather conditions prevent micro-surfacing.

EMULSIFIED ASPHALT

The emulsified asphalt and asphalt residue shall be ASTM D2397 and Quick Setting Asphaltic Emulsion Requirements Table in Section 94 of State Standard Specifications for CQS1h and these Technical Specifications. The cement mixing test shall be waived for this emulsion

Emulsion shall be stored in an uncontaminated (clean) container. Said clean containers shall be locked. If an uncontaminated container is unavailable Emulsion shall be stored in clean trucks.

The polymer material shall be milled or blended into the asphalt or emulsifier solution prior to the emulsification process.

The minimum amount and type of polymer modifier shall be determined by the laboratory performing the mix design. The minimum amount required will be based on asphalt weight content and will be certified by the emulsion supplier. A three percent (3%) polymer solids, based on asphalt weight, is considered minimum.

The five-day (5) settlement test may be waived, provided job stored emulsion is used within thirty-six (36) hours from the time of the shipment, or the stored material has had additional emulsion blended into it prior to use.

When tested according to the following tests, the emulsion shall meet the requirements of ASTM D2397 and the following:

QUALITY CHARACTERISTIC	TEST METHOD	REQUIREMENT
Tests on emulsion:		
Saybolt Furol Viscosity at 25 °C (Saybolt Furol seconds)	AASHTO T 59	15–90
Sieve test (%)	AASHTO T 59	0.30
Storage stability, 1 day (max, %)	AASHTO T 59	0–1
*Settlement, 5 days (max, %)	ASTM D244	5
Residue by evaporation (min, %)	California Test 331	62
Tests on residue by evaporation:		
Penetration at 25 °C	AASHTO T 49	40–90
Softening point (min, °C)	AASHTO T 53	57

*Settlement test on emulsion is not required if used within 48 hours of shipment.

Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it is the same as that used in the mix design.

AGGREGATE

The mineral aggregate used shall be Type II and grade specified for the particular use of the microsurfacing. The aggregate shall be a manufactured crushed stone. Aggregate shall be 100% crushed gravel with no round particles and shall be free of lumps, oversize particles, vegetable matter and other deleterious substances. To assure the material is totally crushed, 100 percent of the parent aggregate will be larger than the largest stone in the gradation to be used. Aggregate can be black, gray or light colored. Black aggregate shall be volcanic in origin.

When tested according to the following tests, black colored aggregate should meet these minimum requirements:

AASHTO TEST NO.	ASTM TEST NO.	CTM	QUALITY	SPECIFICATION
AASHTO T176	ASTM D2419	CT217	Sand Equivalent	70 Minimum
AASHTO T210	ASTM D3744	CT229	Durability Index	65 Minimum
AASHTO T104	ASTM C88	CT214	Soundness	15% Maximum using Na_2SO_4 or 25% Maximum using $MgSO_4$
AASHTO T96	ASTM C131	CT211	Abrasion Resistance	30% Maximum

NOTE: Black aggregate only used if specifically called out in the Bid Schedule.

When tested according to the following tests, non-black colored aggregate should meet these minimum requirements:

AASHTO TEST NO.	ASTM TEST NO.	CTM	QUALITY	SPECIFICATION
AASHTO T176	ASTM D2419	CT217	Sand Equivalent	65 Minimum
AASHTO T210	ASTM D3744	CT229	Durability Index	65 Minimum
AASHTO T104	ASTM C88	CT214	Soundness	15% Maximum using Na_2SO_4 or 25% Maximum using $MgSO_4$
AASHTO T96	ASTM C131	CT211	Abrasion Resistance	35% Maximum

The abrasion test is to be run on the parent aggregate. The aggregate should meet state-approved polishing values. Proven performance may justify the use of aggregates that may not pass all of the above tests. No single aggregate grading or Sand Equivalent test shall represent more than 300 tons or one day's production, whichever is smaller.

GRADING

Aggregate shall have a jobsite stockpile for gradation testing.

Aggregate must meet the SSS Sec 37-3.02A. The target (mix design) aggregate gradation (including the mineral filler) shall be within the following bands.

SIEVE SIZE	TYPE II PERCENT PASSING	STOCKPILE TOLERANCE
3/8 (9.5 mm)	100	-
# 4 (4.75 mm)	94 - 100	±5%
# 8 (2.36 mm)	65 - 90	±5%

# 16	(1.18 mm)	40 - 70	±5%
# 30	(600 µm)	25 - 50	±5%
#200	(75 µm)	5 - 15	±2%

Aggregate must be rock dust or sand such as plaster sand. Aggregate larger than the no. 50 sieve must be 100 percent crushed rock. Aggregate must be free from vegetable matter, deleterious substances, caked or clay lumps, and oversized particles. The job mix (target) gradation shall be within the gradation band for the desired type. After the target gradation has been submitted (this should be the gradation that the mix design is based on), then the percent passing each sieve shall not vary by more than the stockpile tolerance shown in the above table for each individual sieve, and still remain within the gradation band. The percent passing shall not go from the high end to the low end of the range for any two consecutive screens.

The aggregate will be accepted at the job location stockpile or when loading into the support units for delivery to the lay-down machine. No single aggregate grading or Sand Equivalent test shall represent more than 300 tones or one day’s production, whichever is smaller. The stockpile shall be accepted based on gradation tests according to California Test 202. If the test shows the material to be out, the contractor will be given the choice to either remove the material or blend other aggregate with the stockpiled material to bring it into specification. Materials used in blending must meet the quality tests before blending and must be blended in a manner to produce a consistent gradation. If blending is used, it will require that a new mix design be performed.

Screening shall be required at the stockpile prior to delivery to the paving machine if there are any problems created by having oversize material in the mix.

MINERAL FILLER

Mineral filler, if required, shall be Portland cement of any combination of Type I, II or III cement that is free from lumps. It may be accepted upon visual inspection. The type and amount of mineral filler needed shall be determined by a laboratory mix design and will be considered as part of the aggregate gradation. An increase or decrease of less than one percent (1%) may be permitted when the microsurfacing is being placed if it is found to be necessary for better consistency or set times.

WATER

The water shall be potable and free of harmful soluble salts or reactive chemicals and any other contaminants.

ADDITIVES

Additives may be added to the emulsion mix or any of the component materials to provide the control of the quick-traffic properties. They must be included as part of the mix design and be compatible with the other components of the mix.

MIX DESIGN

The contractor shall submit to the Engineer for approval a complete mix design prepared and certified by a laboratory which has experience in designing microsurfacing. Compatibility of the aggregate, polymer-modified emulsion, mineral filler, and other additives shall be verified by the mix design. The mix design shall be made with the same aggregate gradation that the contractor will provide on the project. After the mix design has been approved, no substitution will be permitted, unless approved by the Engineer.

Recommended tests and values are as follows:

ISSA TEST NO.	DESCRIPTION	SPECIFICATION
ISSA TB-139	Wet Cohesion @ 30 Minutes Minimum (Set) @ 60 Minutes Minimum (Traffic)	12 kg-cm Minimum 20 kg-cm Minimum or Near Spin
ISSA TB109	Excess Asphalt by LWT Sand Adhesion	50 g/ft ² Maximum (538 g/m ² Maximum)
ISSA TB-114	Wet Stripping	Pass (90% Minimum)
ISSA TB-100	Wet-Track Abrasion Loss One-hour Soak Six-day Soak	50 g/ft ² (538 g/m ²) Max. 75 g/ft ² (807 g/m ²) Max.

The wet-track abrasion tests are used to determine the minimum asphalt content and resistance to stripping. Some systems require longer times for the asphalt to adhere to the stone. In these systems, a modified Marshall Stability Test (ISSA TB-148) or Hveem Cohesimeter Test (ASTM D 1560) has been used to confirm asphalt content.

ISSA TEST NO.	DESCRIPTION	SPECIFICATION
ISSA TB-147	Lateral Displacement Specific Gravity after 1,000 Cycles of 25 Pounds (11.34 kg)	5% Maximum 2.10 Maximum
ISSA TB-144	Classification Compatibility	11 Grade Points Minimum (AAA, BAA)
ISSA TB-113	<u>Mix Time @ 77°F (25°C)</u>	Controllable to 120 Seconds Minimum

The mixing test is used to predict how long the material can be mixed in the machines before it begins to break. It is more for information to be used by the contractor than for quality of the end product.

The mixing test and set-time test should be checked at the highest temperatures expected during construction.

The mix design should report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect). The report must clearly show the proportions of aggregate, mineral filler (minimum and maximum), water (minimum and maximum), additive usage, and polymer-modified asphalt emulsion based on the dry weight of the aggregate.

All the component materials used in the mix design shall be representative of the materials proposed by the contractor to be used on the project.

The percentages of each individual material required shall be shown in the laboratory report. Adjustments may be required during construction, based on field conditions. The Engineer will give final approval for all such adjustments.

COMPONENT MATERIALS	LIMITS
Residual Asphalt	5.5 to 10.5% (5) by dry weight of aggregate
Mineral Filler	0.0 to 3% by dry weight of aggregate
Polymer-Based Modifier	Minimum of 3% solids based on bitumen weight content
Additives	As needed
Water	As required to produce proper mix consistency

RATE OF APPLICATION

The Micro-surfacing mixture shall be of the proper consistency at all times, so as to provide the application rate required by the surface condition. The average single application rate for Type II, as measured by the County, shall be **15 lb/sy(+/-1 lb/sy)**

EQUIPMENT

The contractor shall be responsible for providing adequate additional equipment to ensure planned production rate is met in the event there is a breakdown or rejection of equipment.

All equipment, tools, and machines used in the performance of this work shall be maintained in satisfactory working condition at all times to ensure a high-quality product.

Suitable surface preparation equipment, traffic control equipment, hand tools, and any other support and safety equipment shall be provided by the contractor as necessary to perform the work.

MIXING EQUIPMENT

The machine shall be specifically designed and manufactured to lay Microsurfacing. The material shall be mixed by an automatic-sequenced, self-propelled Microsurfacing mixing machine, which shall be a continuous-flow mixing unit able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral filler, control setting additive, and water to a revolving multi-blade, double-shafted mixer and to discharge the mixed product on a continuous-flow basis. The machine shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral filler, control additive and water to maintain an adequate supply to the proportioning controls. On major highways, the machine may be required to be a self-loading machine capable of loading materials while continuing to lay microsurfacing, thereby minimizing construction joints. If used, the self-loading machine shall be equipped to allow the operator to have full control of the forward and reverse speeds during applications of the microsurfacing material and be equipped with opposite-side driver stations to assist in alignment. The self-loading device, opposite-side driver stations, and forward and reverse speed controls shall be original equipment manufacturer design.

Truck mounted mixer-spreaders must proportion micro-surfacing materials by volume and mix them in continuous pugmill mixers. Before starting mixing and spreading activities, demonstrate:

1. Rotating and reciprocating equipment are covered with metal guards.
2. Indicators work and are visible while walking alongside the truck mounted mixer-spreader.
3. Low-flow and no-flow devices work.
4. The aggregate feeder's drive shaft is equipped with a revolution counter that reads to the nearest 0.10 of a revolution.

Aggregate feeders must be connected directly to the drive on the emulsion pump. Truck mounted mixer-spreaders must display identifying numbers at least 3 inches in height on the front and rear of the truck. The emulsion storage tank must have a thermometer at the pump suction level measuring the MSE temperature to within 10 °F accuracy.

The belt feeder delivering aggregate to the pugmill must have a device monitoring the aggregate depth. The device must automatically shut down the power to the belt feeder if the aggregate depth is less than the target depth. If the aggregate delivery belt is not an integral part of the drive chain, a second device must detect belt movement by monitoring revolutions of the belt feeder. This second device must automatically shut down power to the belt feeder if movement is interrupted. For both devices, shutdown may be delayed 3 seconds from sensing to allow for normal fluctuations.

PROPORTIONING DEVICES

Individual volume or weight controls for proportioning each material to be added to the mix (i.e. aggregate, mineral filler, emulsified asphalt, additive, and water) shall be provided and properly marked. These proportioning devices are used in material calibration and determining the material output at any time.

SPREADING EQUIPMENT

The mixture shall be agitated and spread uniformly in the surfacing box by means of twin-shafted paddles or spiral augers fixed in the spreader box. A front seal shall be provided to insure no loss of the mixture at the road contact point. The rear seal shall act as a final strike-off and shall be adjustable. The spreader box and rear strike-off shall be so designed and operated that a uniform consistency is achieved to produce a free flow of material to the rear strike-off. The spreader box shall have suitable means provided to side shift the box to compensate for variations in the pavement geometry.

The spreader box must have a series of strike-off devices at its rear.
The leading strike-off device must be:

1. Fabricated of a suitable material such as steel or stiff rubber
2. Designed to maintain close contact with the pavement during spreading
3. Capable of obtaining the specified thickness
4. Capable of being adjusted to the various pavement cross sections

The final strike-off device must be:

1. Fabricated of flexible material that produces a uniform texture in the finished surface
2. Cleaned daily and changed if longitudinal scouring occurs in the micro-surfacing

A rubber tired roller shall be used to compact all microsurfacing areas.

SECONDARY STRIKE-OFF

A secondary strike-off shall be provided to improve surface texture. The secondary strike-off shall have the same adjustments as the spreader box.

CALIBRATION

Each mixing unit to be used in the performance of the work shall be calibrated in the presence of the Engineer prior to construction with project specific material. No machine will be allowed to work on the project until the

calibration has been completed and accepted by the County. Calibration sheet is to be kept in every truck so certified.

On a daily basis during microsurfacing placement, gate settings for each truck used are to be recorded and approved by both the project inspector and the contractor’s foreman, noting truck, time and any changes from previous setting

Periodic calibration checks (“Spot Checks”) may be made by the Engineer at random intervals and is required to ensure machine project performance and compliance. Any truck found to have defective material measurement devices shall not be used on the job until it is repaired and recalibrated. Also, if a spot check shows a truck to be out of tolerance by 10% or more, the truck shall not be used until it is recalibrated. Spot check testing is not used for Payment purposes.

Spot Check Method: for 1 complete truck load of mix, the actual area placed is measured and noted. The amount of material placed is noted, as indicated on that trucks measurement devices (e.g. number of turns of auger). The resulting pounds per area for Type II shall be 15 lb/sy(+/-1 lb/sy). Frequency shall be one test performed per truck per day

WEATHER LIMITATIONS

Micro-surfacing shall only be placed if both the pavement and air temperatures are at least 50 degrees F and rising. Do not place micro-surfacing if either the pavement or air temperature is below 50 degrees F and falling. The expected high temperature must be at least 65 degrees F within 24 hours after placement. Do not place micro-surfacing if rain is imminent or the air temperature is expected to be below 36 degrees F within 24 hours after placement.

TRAFFIC CONTROL

All traffic control devices shall be in accordance with State and Federal requirements and, further, shall conform to the requirements of the Manual on Uniform Traffic Control Devices and in “Traffic Control” in these Technical Specifications. Suitable methods shall be used by the contractor to protect the Microsurfacing from damage from all types of vehicular traffic. Opening to traffic does not constitute acceptance of the work.

An approved traffic control plan will be required for any microsurfacing work. Night work and weekends are highly recommended and encouraged because of the high traffic volume at this location, and will be required if multiple lanes are closed. For any intersection work occurring within the 9 a.m. to 3 p.m. time window, a Special Traffic Control Plan shall be submitted and approved to ensure that cross traffic is not obstructed for more than 2 consecutive traffic cycles. Work may resume after cross traffic is cleared to current traffic conditions. Consecutive intersections may not be closed simultaneously. See Section “Traffic Control” of these Technical Specifications for additional traffic control plan information.

To facilitate the quicker placement of traffic, Contractor may use additional cement to accelerate microsurface curing. Sanding will not be allowed

SURFACE PREPARATION

The complete street surface shall be power swept & vacuumed from curb face to curb face prior to application of microsurfacing. Contractor shall provide cleaning methods necessary to remove all dirt and loose material from the pavement. The application of microsurfacing shall not proceed until the inspector has approved the street sweeping. Vacuum Broom sweepers (mobile or equivalent) shall be furnished by the Contractor for this portion

of the work. If water is used, cracks shall be allowed to dry thoroughly before applying microsurfacing. No dry aggregate, either spilled from the lay-down machine or existing on the road, will be permitted to remain.

Pavement markings shall be ground-off and pavement markers (permanent and temporary) removed prior to the application of microsurfacing as per section 110-13.09 "Remove Traffic Stripes, Pavement Markings, & Markers" of these Special Provisions.

All materials so gathered shall be properly disposed of off site at the expense of the Contractor. Contractor shall also remove all dirt and plant material growing in the street or the interface of the asphalt surface with the lip of P.C.C. gutter prior to placing microsurfacing.

Immediately preceding the microsurfacing application, the Contractor shall cover all grates, slotted manholes, and other appurtenances on the pavement that would allow the entry of the micro; cover all closed manhole covers, water and gas valve box covers, monuments, monument boxes, etc., with a heavy plastic bag. Locations of manholes, valves and other utility or service entrance shall be recorded both on the plans and on the street curb prior to surfacing. The Contractor shall uncover all covered grates and manholes prior to opening the street to traffic and within 72 hours after the surfacing application. Any stray micro on other appurtenances shall be broken loose and removed from the street. Install rubber floppy markers on existing centerline striping, stop limit lines, and crosswalks.

TACK COAT

Normally, tack coat is not required unless the surface to be covered is extremely dry and raveled or is concrete or brick. If required, the tack coat should consist of one part emulsified asphalt/three parts water and should be applied with a standard distributor. The emulsified asphalt should be SS or CSS grade. The distributor shall be capable of applying the dilution evenly at a rate of 0.05 to 0.10 gal/yd². The tack coat shall be allowed to cure sufficiently before the application of Microsurfacing. If a tack coat is to be required, as determined by the Engineer, it must be paid as part of the Supplemental Work.

APPLICATION

When required by local conditions, the surface shall be pre-wetted by fogging ahead of the spreader box. The rate of application of the fog spray shall be adjusted during the day to suit temperatures, surface texture, humidity, and dryness of the pavement.

Using the approved mix design, proportion the micro-surfacing materials by volume. Field conditions may require adjustments during construction. Obtain the Engineer's approval before adjusting proportions. A belt feeder with an adjustable cutoff gate must proportion aggregate. The gate opening height must be determinable. For the aggregate belt feeder, the delivery rate for any individual check run must not deviate more than 2 percent from the average of the rates of 3 runs of at least 3 tons each. Proportion the emulsion using a positive displacement pump. For the emulsion pump, the delivery rate for any individual check run must not deviate more than 2 percent from the average of the rates of 3 runs of at least 300 gallons each.

The microsurfacing shall be of the desired consistency upon leaving the mixer. A sufficient amount of material shall be carried in all parts of the spreader at all times so that a complete coverage is obtained. Overloading of the spreader shall be avoided. No lumping, balling, or unmixed aggregate shall be permitted.

Microsurfacing application shall be stopped to allow sufficient time for curing, installation of temporary or permanent pavement delineation and removal all traffic control before the end of working hours. The expressway shall be completely opened to traffic at the end of working hours, as specified in Section, "Traffic Control," in these Special Provisions.

Microsurfacing around manhole cover and utility cover shall be squeegeed flush with the rim or feathered out around the cover.

Gutter spill shall be cleaned immediately.

Microsurfacing shall be applied within one foot of either side of railroad tracks, but not within track area.

Within twenty five (25) feet before and after commercial driveways and intersections, contractor shall add extra cement as a curing accelerant to the mix to prevent damage from traffic. Sanding will not be allowed.

A rubber tired roller shall be used to compact all microsurfacing areas twice before end of shift and/or before opening to traffic.

No streaks, such as those caused by dragging oversized aggregate, shall be left in the finished surface. If excess streaking develops, the job will be stopped until the contractor proves to the Engineer that the situation has been corrected. Excessive streaking is defined as more than four drag marks greater than one-half (1/2) inch wide (12.7 mm) and four inches (4) long (101 mm), or one inch (1) wide (25.4 mm) and three (3) inches long (76.2 mm), in any 29.9 yd² (25 m²) area. No transverse ripples or longitudinal streaks of one-fourth (1/4) inch in depth (6.4 mm) will be permitted, when measured by placing a ten (10) foot (3 m) straight edge over the surface. The straight-edge measuring device shall be provided by the contractor and available for each day of operation. The Engineer will determine areas to be checked in the presence of the contractor. All areas found to be in need of correction, shall be repaired within 48 hours. All work associated with straight-edge checking and repair work, as necessary, shall be at the Contractor's expense and no additional compensation is allowed.

TEST STRIP

The Contractor shall construct a test strip, within the project limits, for evaluation by the Engineer. The test strip shall be a minimum of 750 ft long, shall replicate the full production placement of microsurfacing, and shall consist of the application courses specified. The test strip shall be constructed at the same time of day or night that the full production of microsurfacing will be placed.

JOINTS

No excess buildup, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transverse joints. The contractor shall provide suitable-width spreading equipment to produce a minimum number of longitudinal joints throughout the project. When possible, longitudinal joints shall be placed on lane lines. Half passes and odd-width passes will be used only in minimum amounts. If half passes are used, they shall not be the last pass of any paved area. A maximum of three (3) inches (76.2 mm) shall be allowed for overlap of longitudinal lane line joints. Also, the joint shall have no more than a one-fourth (1/4) inch (6.4 mm) difference in elevation when measured by placing a ten (10) foot (3 m) straight edge over the joint and measuring the elevation drop-off. The straight-edge measuring device shall be provided by the contractor and available for each day of operation. The Engineer will determine areas to be checked in the presence of the contractor. All areas found to be in need of correction, shall be repaired within 48 hours. All work associated with straight-edge checking and repair work, as necessary, shall be at the contractor's expense and no additional compensation is allowed.

MIX STABILITY

The Microsurfacing shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess water or emulsion and free of segregation of the emulsion and aggregate fines from the coarser

aggregate. Under no circumstances shall water be sprayed directly into the lay-down box while laying micro-surfacing material.

HANDWORK

Areas which cannot be reached with the mixing machine shall be surfaced using hand squeegees to provide complete and uniform coverage. If necessary, the area to be handworked shall be lightly dampened prior to mix placement. Care shall be exercised to leave no unsightly appearance from handwork. The same type of finish as applied by the spreader box shall be required.

LINES

Care shall be taken to ensure straight lines along curbs and shoulders. No runoff on these areas will be permitted. Lines at intersections will be kept straight to provide a good appearance. If necessary, a suitable material will be used to mask off the end of streets to provide straight lines. Edge lines shall not vary by more than ± 2 inches horizontal variance in any 96 feet of length.

CLEAN-UP

All areas, where microsurfacing material is placed outside the limits shown on the plans, shall have the Microsurfacing mix removed as specified by the Engineer. The contractor shall, on a daily basis, remove any areas of over-placement and/or debris associated with the performance of the work.

If bleeding, raveling, or delamination of the new microsurfacing occurs, the Contractor shall make repairs by any method approved by the Engineer. The Contractor shall not be relieved from maintenance, and final contract payment will not be made, until repairs have been completed. Microsurfacing shall be removed by a profile grinder and a full lane width pass of microsurfacing shall be applied in full compliance with these Technical Specifications.

MEASUREMENT AND PAYMENT

Payment for Microsurfacing, Type II shall be made at the unit price bid per square yard. The area to be paid is based on the final actual area placed, as measured by the Project Inspector. The price shall be full compensation for all furnishing, preparation; mixing and applying of these materials; and for all labor, equipment, tools, test designs, compliance testing, cleaning, sweeping, sand blotters, repairs, signs, and incidentals necessary to complete the job as specified herein.

Payment for water, additives and mineral filler used in the micro-surfacing mixture shall be considered as included in the payment for micro-surfacing and no separate payment will be made therefor.

110-12.19 HOT MIX ASPHALT (HMA)

110-12.19-1.0 GENERAL

Section 39 of the 2018 State Standard Specifications, details shown on the plans, and these Special Provisions includes specifications for performing asphalt concrete work.

110-12.19-2.0 HOT MIX ASPHALT (OVERLAY)

110-12.19-2.01 GENERAL

Section 111-12.19-2.01 includes general specifications for producing and placing hot mix asphalt per the 2018 State Standard Specifications. The County includes modifications to the State Standard specifications which are generally summarized as:

- Asphalt Binder: 64-10
- Aggregate Size: 1/2"
- Gyrations (no. of gyrations): Ndesign =85.0
- Voids in mineral aggregate (min, %) ^b
- Gradation: MS-2 Asphalt Mixture Volumetrics=

No. 4	15.5–18.5
3/8-inch	14.5–17.5
1/2-inch	13.5–16.5

Dust Proportions: MS-2 Asphalt Mixture Volumetrics= 0.6–1.3

And other information as stated herein the Hot Mix Asphalt (overlay) technical provisions not listed above.

110-12.19-2.01A GENERAL

110-12.19-2.01A(1) SUMMARY

Section 111-12.19-2.01 includes general specifications for producing and placing hot mix asphalt. HMA includes one or more of the following Types:

1. HMA Type A -Modified

If liquid antistrip (LAS) is required for HMA, WMA technology may be used as substitution for LAS at the discretion of the Engineer. WMA technologies must be on the Caltrans Authorized Material List for WMA authorized technologies.

Wherever reference is made to the following test methods, the latest year of publication for these test methods shall be used as shown in the following table:

TEST METHOD	DESCRIPTION
AASHTO M 17	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
AASHTO M 323	Standard Specification for Superpave Volumetric Mix Design
AASHTO R 30	Standard Practice for Mixture Conditioning of HMA
AASHTO R 59	Recovery of Asphalt from Solution by Abson Method

AASHTO T 27	Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates
AASHTO T30	Standard Method of Test for Mechanical Analysis of Extracted Aggregate
AASHTO T 49	Standard Method of Test for Penetration of Bituminous Materials
AASHTO T 59	Standard Method of Test for Emulsified Asphalts
AASHTO T 96	Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
AASHTO T 164	Standard Method of Test for Quantitative Extraction of Asphalt Binder from Hot Mix Asphalt (HMA)
AASHTO T 176	Standard Method of Test for Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test
AASHTO T 209	Standard Method of Test for Theoretical Maximum Specific Gravity and Density of Hot Mix Asphalt (HMA)
AASHTO T 269	Standard Method of Test for Percent Air Voids in Compacted Dense and Open Asphalt Mixtures
AASHTO T 275	Standard Method of Test for Bulk Specific Gravity of Compacted Hot Mix Asphalt (HMA) Using Paraffin-Coated Specimens
AASHTO T 283	Standard Method of Test for Resistance of Compacted Asphalt Mixtures to Moisture-Induced Damage
AASHTO T 304	Standard Method of Test for Uncompacted Void Content of Fine Aggregate
AASHTO T 308	Standard Method of Test for Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method
AASHTO T 312	Standard Method of Test for Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyrotory Compactor
AASHTO T 313	Standard Method of Test for Determining the Flexural Creep Stiffness of Asphalt Binder Using the Bending Beam Rheometer (BBR)
AASHTO T 315	Standard Method of Test for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)
AASHTO T 324/ CTM 389	Standard Method of Test for Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA)
AASHTO T 329	Standard Method of Test for Moisture Content of Asphalt Mixtures by Oven Method
AASHTO T 335	Standard Method of Test for Determining the Percentage of Fracture in Coarse Aggregate
ASTM D36/D36M	Standard Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)
ASTM D92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
ASTM D217	Standard Test Method for Cone Penetration of Lubricating Grease
ASTM D297	Standard Test Methods for Rubber Products – Chemical Analysis
ASTM D445	Standard Test Method for Kinematic Viscosity of Transparent and Opaque
ASTM D1856	Standard Test Method for Recovery of Asphalt from Solution by Absorption Method
ASTM D2074	Standard Test Methods for Total, Primary, Secondary, and Tertiary Amine Values of Fatty Amines by Alternative Indicator Method
ASTM D2995	Standard Practice for Estimating Application Rate and Residual Application Rate of Bituminous Distributors

ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D5329	Standard Test Methods for Sealants and Fillers, Hot-Applied, for Joints and Cracks in Asphalt Pavements and Portland Cement Concrete Pavements
ASTM D7741/D7741M	Standard Test Method for Measurement of Apparent Viscosity of Asphalt-Rubber or Other Asphalt Binders by Using a Rotational Handheld Viscometer
Asphalt Institute MS-2	Asphalt Mix Design Methods

111-12.19-2.01A(2) DEFINITIONS

Binder replacement: Binder from RAP expressed as a percent of the total binder in the mix.

Coarse aggregate: Aggregate retained on a no. 4 sieve.

Department: County of Santa Clara

Fine aggregate: Aggregate passing a no. 4 sieve.

Leveling course: Thin layer of HMA used to correct minor variations in the longitudinal and transverse profile of the pavement before placement of other pavement layers.

Miscellaneous areas: Areas outside the traveled way and shoulders such as:

1. Median areas not including inside shoulders
2. Island areas
3. Sidewalks
4. Gutters
5. Ditches
6. Overside drains
7. Aprons at ends of drainage structures

Reclaimed Asphalt Pavement (RAP): removed and/or reprocessed pavement materials containing asphalt and aggregates

Warm Mix Asphalt (WMA): HMA produced using a warm mix asphalt technology produced at a temperature from 240 to 325 degrees F.

Processed RAP: RAP that has been fractionated

Supplemental fine aggregate: Mineral filler consisting of rock dust, slag dust, hydrated lime, hydraulic cement, or any combination of these and complying with AASHTO M 17.

110-12.19-2.01A(3) SUBMITTALS

110-12.19-2.01A(3)(a) GENERAL

Reserved

110-12.19-2.01A(3)(b) JOB MIX FORMULA

110-12.19-2.01A(3)(b)(i) GENERAL

Except for the HMA to be used in miscellaneous areas and dikes, submit your proposed JMF for each type of HMA to be used. The JMF must be submitted on the Caltrans Contractor Job Mix Formula Proposal form (CEM 3511) along with:

1. Mix design documentation on Caltrans Contractor Hot Mix Asphalt Design Data form (CEM3512) dated within 12 months of submittal
2. SDS for:
 - Asphalt binder
 - Supplemental fine aggregate except fines from dust collectors
 - Antistrip additives

The Caltrans Contractor Hot Mix Asphalt Design Data form (CEM 3512) must identify the AASHTO resource accredited lab responsible for the mix design and show documentation on aggregate quality.

Submit a new JMF if you change any of the following:

1. Target asphalt binder percentage greater than ± 0.2 percent
2. Asphalt binder supplier
3. Combined aggregate gradation
4. Aggregate sources
5. Liquid antistrip producer or dosage
6. Any material in the JMF except lime supplier and source
7. Average binder content in a new processed RAP stockpile by more than ± 2.00 percent from the average RAP binder content reported on the Caltrans Contractor Hot Mix Asphalt Design Data form (CEM 3512).
8. Average maximum specific gravity in a new processed RAP stockpile by more than ± 0.060 from the average maximum specific gravity value reported on your Caltrans Contractor Hot Mix Asphalt Design Data form (CEM 3512).

Allow the Engineer 5 business days from a complete JMF submittal for document review of the aggregate qualities, mix design, and JMF. The Engineer notifies you if the proposed JMF submittal is accepted.

If your JMF fails verification testing, submit an adjusted JMF based on your testing. The adjusted JMF must include a new Caltrans Contractor Job Mix Formula Proposal form (CEM 3511), Caltrans Contractor Hot Mix Asphalt Design Data form (CEM 3512), and the results of the failed verification testing.

You may submit an adjusted aggregate gradation TV on a Caltrans Contractor Job Mix Formula Proposal form (CEM 3511) before production start-up testing. Aggregate gradation TV must be within the TV limits specified.

110-12.19-2.01A(3)(b)(ii) JOB MIX FORMULA RENEWAL

You may request a JMF renewal by submitting:

1. Proposed JMF on a Caltrans Contractor Job Mix Formula Proposal form (CEM 3511)
2. Previously verified JMF documented on a Caltrans Hot Mix Asphalt Verification within 12 months
3. Mix design documentation on a Caltrans Contractor Hot Mix Asphalt Design Data form (CEM3512) used for the previously verified JMF.

110-12.19-2.01A(3)(b)(iii) JOB MIX FORMULA MODIFICATION

For an authorized JMF, submit a modified JMF if you change any of the following:

1. Asphalt binder supplier
2. Liquid antistrip producer
3. Liquid antistrip dosage

You may change any of the above items only once during the Contract.

Submit your modified JMF request at least 15 days before production. Each modified JMF submittal must include:

1. Proposed modified JMF on Caltrans Contractor Job Mix Formula Proposal form (CEM 3511), marked **MODIFIED**
2. Mix design records on Caltrans Contractor Hot Mix Asphalt Design Data form (CEM 3512) for the authorized JMF to be modified
3. Test results for the modified JMF in compliance with the mix design specifications. Perform tests at the mix design OBC as shown on the Contractor Asphalt Mix Design Data form (CEM 3512).

With an accepted modified JMF submittal, the Engineer verifies each modified JMF within 10 days of receiving all verification samples.

110-12.19-2.01A(3)(c) QUALITY CONTROL PLAN

This section applies to HMA Type A -Modified. With your proposed JMF submittal, submit a QC plan for HMA. Allow 5 business days for review of the QC plan.

The QC plan must describe the organization and procedures for:

1. Controlling HMA quality characteristics
2. Taking samples, including sampling locations
3. Establishing, implementing, and maintaining QC
4. Determining when corrective actions are needed
5. Implementing corrective actions
6. Using methods and materials for backfilling core locations

The QC plan must address the elements affecting HMA quality, including:

1. Aggregates
2. Asphalt binder
3. Additives
4. Production
5. Paving

If you change QC procedures, personnel, or sample testing locations, submit a QC plan supplement before implementing the proposed change. Allow 3 business days for review of the QC plan supplement.

110-12.19-2.01A(3)(d) TEST RESULTS

If requested by the Engineer, submit all QC test results, except AASHTO T 324 (Modified), within 3 business days of production.

If requested by the Engineer, for tests performed under AASHTO T 324 (Modified), submit test data and 1 tested sample set within 5 business days of sampling.

110-12.19-2.01A(3)(e) RESERVED

110-12.19-2.01A(3)(f) LIQUID ANTISTRIP TREATMENT

If liquid antistrip treatment is used, submit the following with your proposed JMF submittal:

1. Certificate of compliance for each liquid antistrip shipment. On each certificate of compliance, include:
 - 1.1. Your signature and printed name
 - 1.2. Shipment number
 - 1.3. Material type
 - 1.4. Material specific gravity
 - 1.5. Manufacturer
 - 1.6. Consignee
 - 1.7. Destination
 - 1.8. Quantity
 - 1.9. Contact or purchase order number
 - 1.10. Shipment date

2. Proposed proportions for the liquid antistrip

At the end of each day’s production shift, submit production data in electronic and printed media. Present data on electronic media in a tab delimited format. Use line feed carriage return with 1 separate record per line for each production data set. Allow enough fields for the specified data. Include data titles at least once per report. For each HMA mixing plant type, submit the following information in the order specified:

1. For batch plant mixing:
 - Production date
 - Time of batch completion
 - Mix size and type
 - Each ingredient's weight
 - Asphalt binder content as a percentage of the total weight of mix
 - Liquid antistrip content as a percentage of the asphalt binder weight

2. For continuous mixing plant:
 - Production date
 - Data capture time
 - Mix size and type
 - Flow rate of wet aggregate collected directly from the aggregate weigh belt
 - Aggregate moisture content as a percentage of the dry aggregate weight
 - Flow rate of asphalt binder collected from the asphalt binder meter
 - Flow rate of liquid antistrip collected from the liquid antistrip meter
 - Asphalt binder content as a percentage of the total weight of mix calculated from:
 - Aggregate weigh belt output
 - Aggregate moisture input
 - Asphalt binder meter output
 - Liquid antistrip content as a percentage of the asphalt binder weight calculated from:
 - Asphalt binder meter output

- Liquid antistrip meter output

110-12.19-2.01A(3)(g) RESERVED

110-12.19-2.01A(3)(h) WARM MIX ASPHALT TECHNOLOGY

If a WMA technology is used, submit the following with your proposed JMF submittal:

1. SDS for the WMA technology
2. For water injection foam technology:
 - Name of technology
 - Proposed foaming water content
 - Proposed HMA production temperature range
 - Certification from binder supplier stating no antifoaming agent is used
3. For additive technology:
 - Name of technology
 - Percent admixture by weight of binder and percent admixture by total weight of HMA as recommended by the manufacturer
 - Methodology for inclusion of admixture in laboratory-produced HMA
 - Proposed HMA production temperature range

Collect and hold WMA Production data for the duration of the Contract. The snapshot of production data must include the following:

1. Production date
2. Production location
3. Time of day the data is captured
4. HMA mix Type being produced and target binder rate
5. HMA additive Type, brand, and target rate
6. Temperature of the binder and HMA mixture
7. For a continuous mixing plant, the rate of flow of the dry aggregate calculated from the wet aggregate flow rate as determined by the conveyor scale
8. For a continuous mixing plant, the rate of flow of the asphalt meter
9. For a continuous mixing plant, the rate of flow of HMA additive meter
10. For batch plant mixing, actual batch weights of all ingredients
11. Dry aggregate to binder ratio calculated from metered ingredient output
12. Dry aggregate to HMA additive ratio calculated from metered output

At the request of the Engineer, submit electronic and printed media from the HMA plant process controller. Present data on electronic media in comma-separated values or tab-separated values format. The captured data for the ingredients represented by the production snapshot must have allowances for sufficient fields to satisfy the amount of data required by these specifications and include data titles at least once per report.

110-12.19-2.01A(3)(i) SAMPLES

You shall collect acceptance samples.

Samples shall be taken in the presence of the Engineer or Engineer’s authorized representative. Split the Engineer acceptance samples into at least 4 parts. The Engineer retains 3 parts and you keep 1 part.

110-12.19-2.01A(4) QUALITY ASSURANCE**110-12.19-2.01A(4)(a) GENERAL**

Take samples under California Test 125.

AASHTO T 324 (Modified) is AASHTO T 324 with the following modified requirements:

1. Target air voids must equal 7.0 ± 1.0 percent for **Type A -Modified** specimens (6.0 – 8.0 percentrange).
2. The average air voids for the specimens in each set shall be approximately equal to each other.
3. Compact specimens in accordance with AASHTO T 312 to a thickness of 60 ± 1 mm.
4. One test will consist of four test specimens with two specimens per wheel track. The maximum rutdepth for each wheel track at the specified number of passes is averaged to obtain a single test result.
5. Insert the cut specimens in the molds with the gyratory ram side facing down.
6. Maximum machine shut off rut depth for the test shall be set at 20 mm.
7. Set the maximum number of passes to the specified number of passes in the contract specifications.
8. Test temperature must be set at:
 - 113 ± 2 degrees F (45 ± 1 degrees C) for PG 58
 - 122 ± 2 degrees F (50 ± 1 degrees C) for PG 64
 - 131 ± 2 degrees F (55 ± 1 degrees C) for PG 70 and above
9. Measurements for impression must be taken at every 100 passes along the total length of the sample
10. The end of the test shall be when the specified number of passes is achieved or when the maximum rut depth of 20 mm is achieved in either sample set.
11. Samples must not be submerged longer than 60 ± 5 minutes prior to starting the test. This includes the 45-minute condition time.

110-12.19-2.01A(4)(b) JOB MIX FORMULA VERIFICATION

The Engineer verifies the JMF from samples taken from HMA produced by the plant to be used. The production set point at the plant must be within ± 0.2 from the asphalt binder percentage TV shown in your Caltrans Contractor Job Mix Formula Proposal form (CEM 3511). Notify the Engineer at least 2 business days before sampling materials.

Samples may be taken from a different project including a non-Department project if you make arrangements for the Engineer or the Engineer's authorized representative to be present during sampling. Samples may be taken during the production start-up evaluation, however, do not continue production until the mix is verified and approved.

In the Engineer's or Engineer's authorized representative's presence and from the same production run, you take samples of:

1. Aggregates. Coarse, fine, and supplemental fine aggregates must be taken from the combined cold-feed belt or the hot bins. If lime treatment is required, samples must be taken from individual stockpiles before lime treatment. Samples must be at least 120 lb. for each coarse aggregate, 80 lb. for each fine aggregate, and 10 lb. for each Type of supplemental fine aggregate. For hot-bin samples, the Department combines these aggregate samples to verify the TV submitted on a Caltrans Contractor Job Mix Formula Proposal form (CEM 3511).

2. Asphalt binder. Take at least two 1qt samples. Each sample must be in a cylindrical-shaped can with an open top and friction lid. If the asphalt binder is modified or rubberized, the asphalt binder must be sampled with the components blended in the proportions to be used.
3. RAP. Samples must be at least 50 lb. from each fractionated stockpile used or 100 lb. from the belt.
4. Plant-produced HMA. The HMA samples must be at least 250 lb.

For aggregate, RAP, and HMA, split the samples into at least 4 parts and label their containers. Submit 3 parts to the Engineer and keep 1 part. The Engineer retains 1 part of the samples to be used in the event of dispute resolution.

After acceptance of the JMF submittal, the Engineer verifies each proposed JMF within 20 days of receiving all verification samples.

For JMF verification, the Engineer tests the following for compliance with the specifications:

1. Aggregate quality
2. Aggregate gradation
3. HMA quality characteristics for Department acceptance

To verify the HMA for air voids, voids in mineral aggregate (VMA), and dust proportion, the Engineer uses an average of 3 briquettes. The Engineer tests plant-produced material.

If the Engineer's test results on plant-produced samples do not show compliance with the specifications, the Engineer notifies you. Adjust your JMF based on your testing unless the Engineer authorizes reverification without adjustments. JMF adjustments may include a change in:

1. Asphalt binder content TV up to ± 0.20 percent from the OBC value submitted on the Caltrans Contractor Hot Mix Asphalt Design Data form (CEM 3512)
2. Aggregate gradation TV within the TV limits specified in the aggregate gradation table

You may adjust the JMF only once due to a failed verification test. A verified JMF is valid for 12 months.

110-12.19-2.01A(4)(c) JOB MIX FORMULA AUTHORIZATION

You may start HMA production if:

1. Engineer's review of the JMF shows compliance with the specifications
2. The Contractor provides a verified JMF
3. The Contractor QC plan has been reviewed and approved, if applicable (HMA Type A -Modified) .

110-12.19-2.01A(4)(d) JOB MIX FORMULA RENEWAL

For a JMF renewal and upon request, in the Engineer's or Engineer's authorized representative's presence and from the same production run, you take samples of:

1. Aggregates. Coarse, fine, and supplemental fine aggregates must be taken from the combined cold-feed belt or the hot bins. If lime treatment is required, samples must be taken from individual stockpiles before lime treatment. Samples must be at least 120 lb for each coarse

aggregate, 80 lb for each fine aggregate, and 10 lb for each type of supplemental fines. For hot-bin samples, the Department combines these aggregate samples to verify the TV submitted on a Caltrans Contractor Job Mix Formula Proposal form (CEM 3511).

2. Asphalt binder. Take at least two 1 qt samples. Each sample must be in a cylindrical-shaped can with an open top and friction lid. If the asphalt binder is modified or rubberized, the asphalt binder must be sampled with the components blended in the proportions to be used.
3. RAP. RAP samples must be at least 50 lb from each fractionated stockpile.
4. Plant-produced HMA. The HMA samples must be at least 250 lb.

Notify the Engineer at least 2 business days before sampling materials. For aggregate, RAP, and HMA, split samples into at least 4 parts. Submit 3 parts to the Engineer and use 1 part for your testing. The Engineer retains 1 part of the sample to be used in the event of dispute resolution.

Allow the Engineer 5 business days from a complete JMF reverification submittal for document review of the aggregate qualities, mix design, and JMF.

The most recent aggregate quality test results within the past 24 months may be used for verification of JMF renewal or upon request, the Engineer may perform aggregate quality tests for verification of JMF renewal.

The Engineer verifies the JMF for renewal under section 110-12.19-2.01A(4)(b) except:

1. Engineer keeps the samples.
2. Department tests samples of materials obtained from the HMA production unit after you submit test results that comply with the mix design specifications.
3. After completion of the JMF verification renewal document review, the Engineer verifies each proposed JMF within 20 days of receiving the verification renewal samples.
4. You may not adjust the JMF due to a failed verification.

110-12.19-2.01A(4)(e) RESERVED

110-12.19-2.01A(4)(f) CERTIFICATIONS

110-12.19-2.01A(4)(f)(i) GENERAL

Laboratories testing aggregate and HMA qualities used to prepare the mix design and JMF must be accredited through the AASHTO resource program, and/or Caltrans' Independent Assurance Program, or be approved by the Engineer.

110-12.19-2.01A(4)(f)(ii) HOT MIX ASPHALT PLANTS

Before production, the HMA plant must have a current qualification under Caltrans' Material Plant Quality Program or be approved by the Engineer.

110-12.19-2.01A(4)(g) RESERVED

110-12.19-2.01A(4)(h) QUALITY CONTROL

110-12.19-2.01A(4)(h)(i) GENERAL

QC test results must comply with the specifications for Department acceptance.

Prepare 3 briquettes for air void content and voids in mineral aggregate determination. Report the average of 3 tests for air void content and voids in mineral aggregate.

Except for smoothness, if 2 consecutive QC test results or any 3 QC test results for 1 day's production donot comply with the materials specifications:

1. Stop HMA production
2. Notify the Engineer
3. Take corrective action
4. Demonstrate compliance with the specifications before resuming production and placement

For QC tests performed under AASHTO T 27, results are considered 1 QC test regardless of number of sieves out of compliance.

Do not resume production and placement until the Engineer authorizes your corrective action proposal.

110-12.19-2.01A(4)(h)(ii) RESERVED

110-12.19-2.01A(4)(h)(iii) AGGREGATES

110-12.19-2.01A(4)(h)(iii)(A) GENERAL

Reserved

110-12.19-2.01A(4)(h)(iii)(B) RESERVED

110-12.19-2.01A(4)(h)(iv) LIQUID ANTISTRIP TREATMENT

For continuous mixing or batch-plant mixing, sample asphalt binder before adding liquid antistrip.

110-12.19-2.01A(4)(h)(v) PRODUCTION START UP EVALUATION

For projects greater than or equal to 2,500 tons, you and the Engineer evaluate HMA production and placement at production start-up.

Within the first 750 tons produced on the 1st day of HMA production, in the Engineer's or Engineer's authorized representative's presence, and from the same production run, you take samples of:

1. Aggregates
2. Asphalt binder
3. RAP
4. HMA
5. Additives

Sample aggregates from the combined cold-feed belt or hot bin. Take RAP samples from the RAP system.

For aggregates, RAP, and HMA, split the samples into at least 4 parts and label their containers. Submit 3 parts to the Engineer and keep 1 part. The Engineer retains 1 part of the samples to be used in the event of dispute resolution.

You and the Engineer must test the samples and report test results, except for AASHTO T 324 (Modified), if required, within 5 business days of sampling. For AASHTO T324 (Modified), report test results within 15 days of sampling. If you proceed before receipt of the test results, the Engineer may consider the HMA placed to be represented by these test results.

AASHTO T324 (Modified) is not required if production start-up evaluation is within 45 days of the date the Hot Mix Asphalt Verification form is signed.

If production stops for more than 60 days, perform a production start-up evaluation. If production stops for more than 30 days but less than 60 days, perform a reduced production start-up evaluation. Reduced production start-up evaluation is production start-up evaluation without AASHTO T324 (Modified).
If production start-up evaluation fails, do not begin production.

110-12.19-2.01A(4)(h)(vi) HOT MIX ASPHALT DENSITY

During HMA placement, determine HMA density using a density gauge. A non-nuclear gauge may be used in accordance with ASTM D7113.

For projects greater than 1,500 tons, on the 1st day of production, develop a correlation factor between cores and density gauges under California Test 375.

Replace California Test 375 Part 2B Paragraph 2 with “Follow the procedure described in Part 3 of this test method to establish a minimum of five random test site locations on the test strip”.

Cores may be 4-inch or 6-inch diameter and, if requested, must be taken in the presence of the Engineer or Engineer’s authorized representative. Test cores per AASHTO T 275, Method A. In-place core density shall represent final result.

Test for in-place density using a density gauge, which has been correlated as noted in the preceding paragraph. Test at random locations you select and include the test results in your QC production test reports. Lots for density testing must not exceed 250 tons with a minimum of 3 locations per lot.

At the request of the Engineer, provide your QC production test reports for in-place density using a density gauge within 24 hours of a request.

110-12.19-2.01A(4)(h)(vii) - 111-12.19-2.01A(4)(h)(viii) RESERVED

110-12.19-2.01A(4)(h)(ix) PAVEMENT SMOOTHNESS

For HMA pavement within 3 feet from and parallel to the construction joint formed between curbs, gutters, or existing pavement, test pavement smoothness using a 12-foot straightedge.

110-12.19-2.01A(4)(i) ENGINEER ACCEPTANCE

110-12.19-2.01A(4)(i)(i) GENERAL

You shall collect acceptance samples. Samples shall be taken in the presence of the Engineer or Engineer’s authorized representative. Split the Engineer acceptance samples into at least 4 parts. Engineer retains 3 parts and you keep 1 part. The Engineer retains 1 part of the samples to be used in the event of dispute resolution.

HMA samples for AASHTO T 324 (Modified) shall be taken from any of the following locations:

1. Plant
2. Truck
3. Windrow (plant or jobsite)
4. Mat behind the paver

HMA samples for all other tests shall be taken from any of the following locations:

1. Plant
2. Truck
3. Windrow (plant or jobsite)
4. Mat behind the paver

To obtain workability of the HMA sample for splitting, the Engineer reheats each sample of HMA mixture not more than 2 cycles. Each reheat cycle is performed by placing the loose mixture in a mechanical forced-draft oven for 2 hours or less after the sample reaches 230 degrees F.

The Engineer conditions each at-the-plant sample of HMA mixture when composite aggregate absorption factor is greater than 2.0 percent as indicated by the JMF in compliance with sections 7.1.1, 7.1.2, 7.1.3, and 7.1.4 of AASHTO R 30.

No single test result may represent more than 750 tons or one day's production, whichever is less, except AASHTO T 324 (Modified).

Except for smoothness, if 2 consecutive Department acceptance test results or any 3 Department acceptance test results for 1 day's production do not comply with the specifications:

1. Stop HMA production
2. Take corrective action
3. Demonstrate compliance with the specifications before resuming production and placement

For Department acceptance tests performed under AASHTO T 27, results are considered 1 Department acceptance test regardless of the number of sieves out of compliance.

The Engineer accepts HMA based on:

1. JMF compliance, applicable material tolerances,
2. In-Place Core Density (if required),
3. Pavement smoothness
4. Visual inspection

110-12.19-2.01A(4)(i)(ii) IN PLACE DENSITY

Except for HMA pavement placed using method compaction, the Engineer tests the density core you take from each 250 tons of HMA. If acceptance by cores, you must take the cores in accordance with California Test 375, Part 3B and/or approved by the Engineer. The Engineer determines the density of the cores you take in accordance with AASHTO T 275, Method A.

You must provide accurate documentation of the location of each core taken. The document shall be clear to allow the Engineer to easily locate the sample location in the field.

Cores taken for gauge calibration may be used as acceptance cores for density.

If a density core is damaged, replace it with a density core taken within 1 foot longitudinally from the original density core. Relocate any density core located within 1 foot of a rumble strip to 1 foot transversely away from the rumble strip.

The Engineer determines the percent of theoretical maximum density for each density result by taking the density result and dividing by the theoretical maximum density. Test results shall not be rounded to the nearest 1.0%; instead, test results shall be reported to the nearest 0.1%. The theoretical maximum density shall be in accordance with AASHTO T 209 and shall be representative of the subplot in which the cores are taken.

Each lift of HMA is tested independently.

If the percent of theoretical maximum density does not comply with the specifications, the Engineer may accept the HMA and take a payment deduction or remove and replace as shown in the following table:

Reduced Payment Factors for Percent of Theoretical Maximum Density

HMA Percent of Theoretical Maximum Density	HMA Type A - Modified Reduced Payment Factor	HMA Percent of Theoretical Maximum Density	HMA Type A - Modified Reduced Payment Factor
91.0	0.0000	97.0	0.0000
90.9	0.0125	97.1	0.0125
90.8	0.0250	97.2	0.0250
90.7	0.0375	97.3	0.0375
90.6	0.0500	97.4	0.0500
90.5	0.0625	97.5	0.0625
90.4	0.0750	97.6	0.0750
90.3	0.0875	97.7	0.0875
90.2	0.1000	97.8	0.1000
90.1	0.1125	97.9	0.1125
90.0	0.1250	98.0	0.1250
89.9	0.1375	98.1	0.1375
89.8	0.1500	98.2	0.1500
89.7	0.1625	98.3	0.1625
89.6	0.1750	98.4	0.1750
89.5	0.1875	98.5	0.1875
89.4	0.2000	98.6	0.2000
89.3	0.2125	98.7	0.2125
89.2	0.2250	98.8	0.2250
89.1	0.2375	98.9	0.2375
89.0	0.2500	99.0	0.2500
<89.0	Remove & replace	>99.0	Remove & replace

110-12.19-2.01A(4)(i)(iii) PAVEMENT SMOOTHNESS

110-12.19-2.01A(4)(i)(iii)(A) GENERAL

110-12.19-2.01A(4)(i)(iii)(B) STRAIGHTEDGE

The HMA pavement top layer must not vary from the lower edge of a 12-foot long straightedge:

1. More than 0.01 foot when the straight edge is laid parallel with the centerline
2. More than 0.02 foot when the straightedge is laid perpendicular to the centerline and extends from edge to edge of a traffic lane
3. More than 0.02 foot when the straightedge is laid within 24 feet of a pavement conform

110-12.19-2.01A(4)(i)(iii)(C) PROFILOGRAPH

Under California Test 526, determine the zero (null) blanking band Profile Index (PI0) and must-grinds on the top layer of HMA pavement. Take 2 profiles within each traffic lane, 3 feet from and parallel with the edge of each lane.

A must-grind is a deviation of 0.3 inch or more in a length of 25 feet. You must correct must-grinds. Profile pavement in the Engineer's or Engineer's authorized representative's presence. Choose the time of profiling.

On tangents and horizontal curves with a centerline radius of curvature 2,000 feet or more, the PI0 must be at most 2.5 inches per 0.1-mile section.

On horizontal curves with a centerline radius of curvature between 1,000 feet and 2,000 feet including pavement within the super-elevation transitions, the PI0 must be at most 5 inches per 0.1-mile section.

Before the Engineer accepts HMA pavement for smoothness, submit written final profilograms.

Submit 1 electronic copy of profile information in Microsoft Excel and 1 electronic copy of longitudinal pavement profiles in ".erd" format or other ProVAL compatible format to the Engineer and to:

The following HMA pavement areas do not require a PI0. You must measure these areas with a 12-foot straightedge and determine must-grinds with a profilograph:

1. New HMA with a total thickness less than 0.25 foot
2. HMA sections of turn lanes and collector lanes that are less than 1,500 feet in length

The following HMA pavement areas do not require a PI0. You must measure these areas with a 12-foot straightedge:

1. Horizontal curves with a centerline radius of curvature less than 1,000 feet including pavement within the super-elevation transitions of those curves
2. Within 12 feet of a transverse joint separating the pavement from:
 - 2.1. Existing pavement not constructed under the same project
 - 2.2. A bridge deck or approach slab
3. Exit ramp termini, truck weigh stations, and weigh-in-motion areas
4. If steep grades and super-elevation rates greater than 6 percent are present on:
 - 4.1. Ramps
 - 4.2. Connectors
5. Turn lanes
6. Areas within 15 feet of manholes or drainage transitions
7. Acceleration and deceleration lanes for at-grade intersections
8. Shoulders and miscellaneous areas
9. HMA pavement within 3 feet from and parallel to the construction joints formed between curbs, gutters, or existing pavement.

110-12.19-2.01A(4)(i)(iv) DISPUTE RESOLUTION

You and the Engineer must work together to avoid potential conflicts and to resolve disputes regarding test result discrepancies. You and the Engineer may only dispute each other's test results if one party's test results pass and the other party's test results fail.

You must notify the Engineer if you plan to a dispute test results within 3 business days of receiving the Engineer's test results. Submit your test results and copies of paperwork including worksheets used to

determine the disputed test result within 3 business days of notifying the Engineer of your plan to dispute test results.

You and the Engineer shall mutually agree on an independent third party (ITP) to perform referee testing. Before the ITP participates in a dispute resolution, it must be qualified under the AASHTO resource program and the Caltrans Independent Assurance Program. The ITP personnel performing the tests shall be competent and possess the necessary certifications to provide referee testing. The ITP must have no prior direct involvement with this Contract.

If the Engineer’s portion of the split acceptance samples is not available, you and the Engineer shall mutually agree on available material representing the disputed test result for the ITP to use.

For a dispute involving core density, the ITP performs referee testing based on cores.

The entire dispute resolution process **shall not exceed 20 business days** from the day you notified your plan to dispute the test results (includes selection of an ITP for referee testing). Reduced payment or remove and replace will be enforced at the discretion of the Engineer for dispute resolutions exceeding 20 business days.

If the ITP determines the Engineer’s test results are valid, the Engineer deducts ITP’s testing costs from payments. If the ITP determines your test results are valid, the Engineer pays the ITP’s testing costs.

110-12.19-2.01B MATERIALS

110-12.19-2.01B(1) GENERAL

Reserved

110-12.19-2.01B(2) MIX DESIGN

110-12.19-2.01B(2)(a) GENERAL

The HMA mix design must comply with the Superpave HMA mix design method as described in the latest edition of *MS-2 Asphalt Mix Design Methods* by the Asphalt Institute.

The Caltrans Contractor Hot Mix Asphalt Design Data form (CEM 3512) must show documentation on aggregate quality.

110-12.19-2.01B(2)(b) HOT MIX ASPHALT TREATMENTS

If the proposed JMF indicates that the HMA is being treated with liquid antistripping, then testing the untreated HMA under AASHTO T 324 is not required.

110-12.19-2.01B(2)(c) WARM MIX ASPHALT TECHNOLOGY

For HMA with WMA additive technology, produce HMA mix samples for your mix design using your methodology for inclusion of WMA admixture in laboratory-produced HMA. Cure the samples in a forced-air draft oven at 275 degrees F for 4 hours ± 10 minutes.

For WMA water injection foam technology, the use of foamed asphalt for mix design is not required.

110-12.19-2.01B(3) ASPHALT BINDER

Asphalt binder must comply with section 92 of the 2018 State Standard Specifications.

The Binder Type A -Modified on this project shall be: 64-10 OR Equivalent.

110-12.19-2.01B(4) AGGREGATES

110-12.19-2.01B(4)(a) GENERAL

Aggregates must be clean and free from deleterious substances.

The aggregates for a leveling course must comply with the gradation specifications for HMA in section 111-12.19-2.02B.

110-12.19-2.01B(4)(b) AGGREGATE GRADATIONS

Aggregate gradation must be determined before the addition of asphalt binder and must include supplemental fine aggregates. Test for aggregate gradation under AASHTO T 27. Do not wash the coarse aggregate. Wash the fine aggregate only. Use a mechanical sieve shaker. Aggregate shaking time must not exceed 10 minutes for each coarse and fine aggregate portion.

Choose a TV within the TV limits shown in the tables titled "Aggregate Gradations." Gradations are based on nominal maximum aggregate size.

110-12.19-2.01B(5) LIQUID ANTISTRIP TREATMENT

Liquid antistrip must be from 0.25 to 1.0 percent by weight of asphalt binder. Do not use liquid antistrip as a substitute for asphalt binder.

Liquid antistrip total amine value must be 325 minimum when tested under ASTM D2074. Use only 1 liquid antistrip Type or brand at a time. Do not mix liquid antistrip types or brands. Store and mix liquid antistrip under the manufacturer's instructions.

Warm mix technology may be used as substitute for liquid antistrip treatment at the approval of the Engineer.

110-12.19-2.01B(6)–111-12.19-2.01B(7) RESERVED

110-12.19-2.01B(8) HOT MIX ASPHALT PRODUCTION

110-12.19-2.01B(8)(a) GENERAL

Do not start HMA production before authorization of JMF.

The HMA plant must have a current qualification under the Caltrans Material Plant Quality Program or be approved by the Engineer.

Proportion aggregate by hot or cold-feed control.

Aggregate temperature must not be more than 375 degrees F when mixed with the asphalt binder. Asphalt binder temperature must be from 275 to 375 degrees F when mixed with aggregate.

Mix HMA ingredients into a homogeneous mixture of coated aggregates. HMA must be produced at the temperatures shown in the following table:

HMA Production Temperatures	
HMA compaction	Temperature (°F)
HMA	
Density based Method	≤ 325 305–325
HMA with WMA technology	
Density based Method	240–325 260–325

If you stop production for more than 30 days but less than 60 days, a production start-up evaluation, without AASHTO 324, is required.

If you stop production for 60 days or more, a production start-up evaluation is required. The Engineer may require AASHOT 324.

110-12.19-2.01B(8)(b) LIQUID ANTISTRIP

If 3 consecutive sets of recorded production data show that the actual delivered liquid antistrip weight is more than ±1 percent of the authorized mix design liquid antistrip weight, stop production and take corrective action.

If a set of recorded production data shows that the actual delivered liquid antistrip weight is more than ±2 percent of the authorized mix design liquid antistrip weight, stop production. If the liquid antistrip weight exceeds 1.2 percent of the asphalt binder weight, do not use the HMA represented by that data.

The continuous mixing plant controller proportioning the HMA must produce a production data log. The log must consist of a series of data sets captured at 10-minute intervals throughout daily production. The data must be a production activity register and not a summation. The material represented by the data is the quantity produced 5 minutes before and 5 minutes after the capture time. For the duration of the Contract, the collected data must be stored by the plant controller or a computer memory at the plant.

The Engineer orders proportioning activities stopped for any of the following reasons:

1. You fail to submit data
2. You submit incomplete, untimely, or incorrectly formatted data

3. You fail to take corrective actions
4. You take late or unsuccessful corrective actions
5. You fail to stop production when proportioning tolerances are exceeded
6. You use malfunctioning or failed proportioning devices

If you stop production, notify the Engineer of any corrective actions taken before resuming.

110-12.19-2.01B(8)(c) WARM MIX ASPHALT TECHNOLOGY

Proportion all ingredients by weight. The HMA plant process controller must be the sole source of ingredient proportioning control and be fully interfaced with all scales and meters used in the production process. The addition of the HMA additive must be controlled by the plant process controller.

Liquid ingredient additive, including a normally dry ingredient made liquid, must be proportioned with a mass flow meter at continuous mixing plants. Use a mass flow meter or a container scale to proportion liquid additives at batch mixing plants.

Continuous mixing plants using HMA additives must comply with the following:

1. Dry ingredient additives for continuous production must be proportioned with a conveyor scale or a loss-in-weight meter.
2. HMA plant process controller and ingredient measuring systems must be capable of varying all ingredient-feed rates proportionate with the dry aggregate delivery at all production rates and rate changes.
3. Liquid HMA additive must enter the production stream with the binder. Dry HMA additive must enter the production stream at or before the mixing area.
4. If dry HMA additives are used at continuous mixing HMA plants, bag-house dust systems must return all captured material to the mix. This requirement is waived for lime-treated aggregates.
5. HMA additive must be proportioned to within ± 0.3 percent of the target additive rate.

Batch mixing plants using HMA additives must comply with the following:

1. Metered HMA additive must be placed in an intermediate holding vessel before being added to the stream of asphalt binder as it enters the pugmill.
2. If a container scale is used, weigh additive before combining with asphalt binder. Keep the container scale separate from other ingredient proportioning. The container scale capacity must be no more than twice the volume of the maximum additive batch size. The container scale's graduations must be smaller than the proportioning tolerance or 0.001 times the container scale capacity.
3. Dry HMA additive proportioning devices must be separate from metering devices for the aggregates and asphalt binder. Proportion dry HMA additive directly into the pugmill, or place in an intermediate holding vessel to be added to the pugmill at the appropriate time in the batch cycle. Dry ingredients for batch production must be proportioned with a hopper scale.
4. Zero tolerance for the HMA additive batch scale is ± 0.5 percent of the target additive weight. The indicated HMA additive batch scale weight may vary from the preselected weight setting by up to ± 1.0 percent of the target additive weight.

110-12.19-2.01B(9) GEOSYNTHETIC PAVEMENT INTERLAYER

Not used.

110-12.19-2.01B(10) TACK COAT

Tack coat must comply with the specifications for asphaltic emulsion or asphalt binder. Choose the Type and grade of emulsion or binder.

110-12.19-2.01B(11) MISCELLANEOUS AREAS AND DIKES

Not used.

110-12.19-2.01C CONSTRUCTION

110-12.19-2.01C(1) GENERAL

Do not place HMA on wet pavement or frozen surface.

You may deposit HMA in a windrow and load it in the paver if:

1. Paver is equipped with a hopper that automatically feeds the screed
2. Loading equipment can pick up the windrowed material and deposit it in the paver hopper without damaging base material
3. Activities for depositing, pickup, loading, and paving are continuous
4. For method compaction:
 - The temperature of the HMA and the HMA produced with WMA water injection technology in the windrow does not fall below 260 degrees F
 - The temperature of the HMA produced using WMA additive technology in the windrow does not fall below 250 degrees F

You may place HMA in 1 or more layers on areas less than 5 feet wide and outside the traveled way, including shoulders. You may use mechanical equipment other than a paver for these areas. The equipment must produce uniform smoothness and texture.

HMA handled, spread, or windrowed must not stain the finished surface of any improvement, including pavement.

Do not use petroleum products such as kerosene or diesel fuel to release HMA from trucks, spreaders, shovels, rakes, or compactors.

HMA must be free of:

1. Segregation
2. Coarse or fine aggregate pockets
3. Hardened lumps
4. Marks
5. Tearing
6. Irregular texture

Complete finish rolling activities before the pavement surface temperature is:

1. Below 150 degrees F for HMA with unmodified binder
2. Below 140 degrees F for HMA with modified binder

110-12.19-2.01C(2) SPREADING AND COMPACTING EQUIPMENT

110-12.19-2.01C(2)(a) GENERAL

Paving equipment for spreading must be:

1. Self-propelled
2. Mechanical
3. Equipped with a screed or strike-off assembly that can distribute HMA the full width of a trafficlane
4. Equipped with a full-width compacting device
5. Equipped with automatic screed controls and sensing devices that control the thickness, longitudinal grade, and transverse screed slope.

The screed must be heated and produce a uniform HMA surface texture without tearing, shoving, or gouging.

The paver must not leave marks such as ridges and indentations unless you can eliminate them by rolling. Rollers must be equipped with a system that prevents HMA from sticking to the wheels. You may use a parting agent that does not damage the HMA or impede the bonding of layers.

In areas inaccessible to spreading and compacting equipment:

1. Spread the HMA by any means to obtain the specified lines, grades, and cross sections
2. Use a pneumatic tamper, plate compactor, or equivalent to achieve thorough compaction

110-12.19-2.01C(2)(b) MATERIAL TRANSFER VEHICLE

If a material transfer vehicle is specified, the material transfer vehicle must have sufficient capacity to prevent stopping the paver and must be capable of:

1. Either receiving HMA directly from trucks or using a windrow pickup head to load it from awindrow deposited on the roadway surface
2. Remixing the HMA with augers before transferring into the paver's receiving hopper or feed system
3. Transferring HMA directly into the paver's receiving hopper or feed system

110-12.19-2.01C(2)(c) METHOD COMPACTION EQUIPMENT

For method compaction, each paver spreading HMA must be followed by at least one of each of the following 3 Types of rollers:

1. Breakdown roller must be a vibratory roller specifically designed to compact HMA. The roller must be capable of at least 2,500 vibrations per minute and must be equipped with amplitude and frequency controls. The roller's gross static weight must be at least 7.5 tons.
2. Intermediate roller must be an oscillating-Type pneumatic-tired roller at least 4 feet wide. Pneumatic tires must be of equal size, diameter, Type, and ply. The tires must be inflated to 60 psi minimum and maintained so that the air pressure does not vary more than 5 psi.
3. Finishing roller must be a steel-tired, 2-axle tandem roller. The roller's gross static weight must be at least 7.5 tons.

Each roller must have a separate operator. Rollers must be self-propelled and reversible. Any deviation from the above requirements must be approved in writing by the Engineer.

110-12.19-2.01C(3) SURFACE PREPARATION

110-12.19-2.01C(3)(a) GENERAL

Before placing HMA, remove loose paving particles, dirt, and other extraneous material by any means including flushing and sweeping.

110-12.19-2.01C(3)(b) SUBGRADE

Prepare subgrade to receive HMA under the sections for the material involved. Subgrade must be free of loose and extraneous material.

110-12.19-2.01C(3)(c) - 111-12.19-2.01C(3)(e) RESERVED

110-12.19-2.01C(3)(f) TACK COAT

Apply a tack coat:

1. To existing pavement including planed surfaces
2. Between HMA layers
3. To vertical surfaces of:
 - Curbs
 - Gutters
 - Construction joints

Equipment for the application of tack coat must comply with section 37-1.03B of the 2018 Caltrans Standard Specification.

Before placing HMA, apply a tack coat in 1 application at the minimum residual rate shown in the following table for the condition of the underlying surface:

Tack Coat Application Rates for HMA

HMA over:	Minimum residual rates (gal/sq yd)		
	CSS1/CSS1h, SS1/SS1h and QS1h/CQS1h asphaltic emulsion	and CRS1/CRS2, RS1/RS2 and QS1/CQS1 asphaltic emulsion	Asphalt binder and PMRS2/PMCRS2 and PMRS2h/PMCRS2h
New HMA (between layers)	0.02	0.03	0.02
Concrete pavement and existing asphalt concrete surfacing	0.03	0.04	0.03
Planed pavement	0.05	0.06	0.04

*Note: If a stress absorbing membrane interlayer as specified in section 37-2.05 is applied, the tack coat application rates for new HMA apply. *(Not used this project).

Notify the Engineer if you dilute asphaltic emulsion with water. The weight ratio of added water to asphaltic emulsion must not exceed 1 to 1.

Measure added water either by weight or volume under section 9-1.02 or use water meters from water districts, cities, or counties. If you measure water by volume, apply a conversion factor to determine the correct weight.

With each dilution, submit:

2. Weight ratio of water to bituminous material in the original asphaltic emulsion
3. Weight of asphaltic emulsion before diluting
4. Weight of added water
5. Final dilution weight ratio of water to asphaltic emulsion

Apply a tack coat to vertical surfaces with a residual rate that will thoroughly coat the vertical face without running off.

If authorized, you may:

1. Change tack coat rates
2. Omit tack coat between layers of new HMA during the same work shift if:
 - No dust, dirt, or extraneous material is present
 - Surface is at least 140 degrees F

Immediately in advance of placing HMA, apply additional tack coat to damaged areas or where loose or extraneous material is removed.

Close areas receiving tack coat to traffic. Do not allow the tracking of tack coat onto pavement surfaces beyond the job site.

If you use an asphalt binder for tack coat, the asphalt binder temperature must be from 285 to 350 degrees F when applied.

110-12.19-2.01C(3)(g) GEOSYNTHETIC PAVEMENT INTERLAYER

Not used

110-12.19-2.01C(4) LONGITUDINAL JOINTS

110-12.19-2.01C(4)(a) GENERAL

Longitudinal joints in the top layer must match lane lines. Alternate the longitudinal joint offsets in the lower layers at least 0.5 foot from each side of the lane line. Other longitudinal joint placement patterns are allowed if authorized.

A vertical longitudinal joint of more than 0.15 foot is not allowed at any time between adjacent lanes open to traffic.

For an HMA thickness of 0.15 foot or less, the distance between the ends of the adjacent surfaced lanes at the end of each day's work must not be greater than can be completed in the following day of normal paving.

For an HMA thickness greater than 0.15 foot, you must place HMA on adjacent traveled way lanes or shoulder such that at the end of each work shift the distance between the ends of HMA layers on adjacent lanes is from 5 to 10 feet. Place additional HMA along the transverse edge at each lane's end and along the exposed longitudinal edges between adjacent lanes. Hand rake and compact the additional HMA to form temporary conforms. You may place kraft paper or other authorized release agent under the conform tapers to facilitate the taper removal when paving activities resume.

If placing HMA against the edge of existing pavement, saw cut or grind the pavement straight and vertical along the joint and remove extraneous material.

110-12.19-2.01C(4)(b) TAPERED NOTCHED WEDGE

For divided highways with an HMA lift thickness greater than 0.15 foot, you may construct a 1-foot wide tapered notched wedge joint as a longitudinal joint between adjacent lanes open to traffic. A vertical notch of 0.75 inch maximum must be placed at the top and bottom of the tapered wedge.

The tapered notched wedge must keep its shape while exposed to traffic. Pave the adjacent lane within 1 day.

Construct the tapered portion of the tapered notched wedge with an authorized strike-off device. The strike-off device must provide a uniform slope and must not restrict the main screed of the paver.

You may use a device attached to the screed to construct longitudinal joints that will form a tapered notched wedge in a single pass. The tapered notched wedge must be compacted to a minimum of 91 percent compaction.

110-12.19-2.01C(5) PAVEMENT EDGE TREATMENTS

Construct edge treatment on the HMA pavement as shown.

Where a tapered edge is required, use the same Type of HMA used for the adjacent lane or shoulder.

The edge of roadway where the tapered edge is to be placed must have a solid base, free of debris such as loose material, grass, weeds, or mud. Grade the areas to receive the tapered edge as required.

The tapered edge must be placed monolithic with the adjacent lane or shoulder and must be shaped and compacted with a device attached to the paver.

The device must be capable of shaping and compacting HMA to the required cross section as shown. Compaction must be accomplished by constraining the HMA to reduce the cross sectional area by 10 to 15 percent. The device must produce a uniform surface texture without tearing, shoving, or gouging and must not leave marks such as ridges and indentations. The device must be capable of transitioning to crossroads, driveways, and obstructions.

For the tapered edge, the angle of the slope must not deviate by more than ± 5 degrees from the angle shown. Measure the angle from the plane of the adjacent finished pavement surface.

If paving is done in multiple lifts, the tapered edge must be placed with each lift. Short sections of hand work are allowed to construct tapered edge transitions.

110-12.19-2.01C(6) WIDENING EXISTING PAVEMENT

If widening existing pavement, construct new pavement structure to match the elevation of the existing pavement's edge before placing HMA over the existing pavement.

110-12.19-2.01C(7) SHOULDERS, MEDIANS, AND OTHER ROAD CONNECTIONS

Until the adjoining through lane's top layer has been paved, do not pave the top layer of:

1. Shoulders
2. Tapers
3. Transitions
4. Road connections
5. Driveways
6. Curve widenings
7. Chain control lanes
8. Turnouts
9. Turn pockets

If the number of lanes changes, pave each through lane's top layer before paving a tapering lane's top layer. Simultaneous to paving a through lane's top layer, you may pave an adjoining area's top layer, including shoulders. Do not operate spreading equipment on any area's top layer until completing final compaction.

If shoulders or median borders are shown, pave shoulders and median borders adjacent to the lane before opening a lane to traffic.

If shoulder conform tapers are shown, place conform tapers concurrently with the adjacent lane's paving.

If a driveway or a road connection is shown, place additional HMA along the pavement's edge to conform to road connections and driveways. Hand rake, if necessary, and compact the additional HMA to form a smooth conform taper.

110-12.19-2.01C(8) LEVELING

Section 110-12.19-2.01C(8) applies if a bid item for hot mix asphalt (leveling) is shown on the Bid Item List.

Fill and level irregularities and ruts with HMA before spreading HMA over the base, existing surfaces, or bridge decks. You may use mechanical equipment other than a paver for these areas. The equipment must produce uniform smoothness and texture. HMA used to change an existing surface's cross slope or profile is not paid for as hot mix asphalt (leveling). Compact using the method process unless otherwise specified in the special provisions.

110-12.19-2.01C(9) MISCELLANEOUS AREAS AND DIKES

Not used.

110-12.19-2.01C(10)–111-12.19-2.01C(14) RESERVED

110-12.19-2.01C(15) COMPACTION

110-12.19-2.01C(15)(a) GENERAL

Rolling must leave the completed surface compacted and smooth without tearing, checking, cracking, or shoving.

If a vibratory roller is used as a finish roller, turn the vibrator off.

Do not open new HMA pavement to traffic until its mid depth temperature is below 160 degrees F.

If the surface to be paved is both in sunlight and shade, pavement surface temperatures are taken in the shade.

110-12.19-2.01C(15)(b) METHOD COMPACTION

Use method compaction for any of the following conditions:

1. HMA pavement thickness shown is less than 0.15 foot (1.8 inches)
2. Replace asphalt concrete surfacing (**digouts**)
3. Leveling courses
4. Areas the Engineer determines conventional compaction and compaction measurement methods are impeded

HMA compaction coverage is the number of passes needed to cover the paving width. A pass is 1 roller's movement parallel to the paving in either direction. Overlapping passes are part of the coverage being made and are not a subsequent coverage. Do not start a coverage until completing the prior coverage.

Method compaction must consist of performing:

1. Breakdown compaction of each layer with 3 coverages using a vibratory roller. The speed of the vibratory roller in miles per hour must not exceed the vibrations per minute divided by 1,000. If the HMA layer thickness is less than 0.08 foot, turn the vibrator off.
2. Intermediate compaction of each layer of HMA with 3 coverages using a pneumatic-tired roller

- ata speed not to exceed 5 mph.
- 3. Finish compaction of HMA with 1 coverage using a steel-tired roller.

Start rolling at the lower edge and progress toward the highest part.

The Engineer may order fewer coverages if the layer thickness of HMA is less than 0.15 foot. The compacted lift thickness must not exceed 0.25 foot.

Any deviation from the above requirements must be approved in writing by the Engineer.

110-12.19-2.01C(15)(c)–111-12.19-2.01C(15)(e) RESERVED

110-12.19-2.01C(16) SMOOTHNESS CORRECTIONS

If the pavement surface does not comply with section 111-12.19-2.01A(4)(i)(iii), grind the pavement to within specified tolerances, remove and replace the pavement, or place an overlay of HMA. Do not start corrective work until your method is authorized.

Do not use equipment with carbide cutting teeth to grind the pavement unless authorized. Smoothness corrections must leave at least 75 percent of the specified HMA thickness. If ordered, core the pavement at the locations selected by the Engineer. Remove and replace deficient pavement areas where the overlay thickness is less than 75 percent of the thickness specified.

Corrected HMA pavement areas must be uniform rectangles, half the lane width, with edges:

- 1. Parallel to and along the nearest HMA pavement edge or lane line
- 2. Perpendicular to the pavement centerline

Measure the corrected HMA pavement surface as specified in 111-12.19-2.01A(4)(i)(iii) Pavement Smoothness and correct the pavement to within specified tolerances.

If a must-grind area or straight edged pavement cannot be corrected to within specified tolerances, remove and replace the pavement. Retest the corrected area with the straightedge.

On ground areas not to be overlaid with OGFC, apply a fog seal under section 37-4.

110-12.19-2.01C(17) RESERVED

110-12.19-2.01D PAYMENT

The Department does not adjust the unit price for an increase or decrease in the tack coat quantity.

The payment quantity for HMA of the Type shown on the Bid Item List is measured based on the combined mixture weight. If recorded batch weights are printed automatically, the bid item for HMA is measured by using the printed batch weights, provided:

- 1. Total aggregate and supplemental fine aggregate weight per batch is printed. If supplemental fine aggregate is weighed cumulatively with the aggregate, the total aggregate batch weight must include the supplemental fine aggregate weight.
- 2. Total virgin asphalt binder weight per batch is printed.

3. Each truckload's zero tolerance weight is printed before weighing the first batch and after weighing the last batch.
4. Time, date, mix number, load number and truck identification is correlated with a load slip.
5. Copy of the recorded batch weights is certified by a licensed weigh master and submitted.

The payment quantity for place hot mix asphalt is the area measured for the in- place compacted area. Work necessary to conform to unadjustable utilities is deemed included in the unit price.

The Engineer does not adjust the unit price for an increase or decrease in the prepaving grinding day quantity.

The contract price paid per Ton for “Hot Mix Asphalt, Pavement Overlay” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in the complete installation of HMA for roadway pavement overlay, including site preparation, furnishing, placing, spreading and compacting; providing temporary traffic control and street sweeper; complete in place as shown on the plans and as specified in these Special Provisions, and no additional compensation will be allowed therefor.

The contract price paid per Ton for Tack Coat shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in the complete application of Tack Coat, including site preparation; furnishing, placing, and applying tack coats, paint, and asphalt binders; complete in place as shown on the plans and as specified in these Special Provisions, and no additional compensation will be allowed therefor.

110-12.19-2.02 HOT MIX ASPHALT TYPE A -MODIFIED

110-12.19-2.02A GENERAL

110-12.19-2.02A(1) SUMMARY

Section 111-12.19-2.02 includes specifications for producing and placing HMA Type A -Modified

If authorized by the Engineer, you may produce HMA Type A -Modified using authorized Caltrans approved WMA technology. If liquid antistripping (LAS) is specified for HMA Type A -Modified, WMA technology may be used as substitution for LAS at the approval of the Engineer.

110-12.19-2.02A(2) RESERVED

110-12.19-2.02A(3) SUBMITTALS

110-12.19-2.02A(3)(a) GENERAL

Reserved

110-12.19-2.02A(3)(b) JOB MIX FORMULA

The JMF must be based on the Superpave HMA mix design method as described in the latest edition of MS-2 *Asphalt Mix Design Methods* by the Asphalt Institute as modified herein.

110-12.19-2.02A(3)(c) RECLAIMED ASPHALT PAVEMENT

Submit QC test results for RAP gradation with the combined aggregate gradation within 2 business days of taking RAP samples during HMA production.

110-12.19-2.02A(3)(d)–111-12.19-2.02A(3)(f) RESERVED

110-12.19-2.02A(4) QUALITY ASSURANCE

110-12.19-2.02A(4)(a) GENERAL

Reserved

110-12.19-2.02A(4)(b) QUALITY CONTROL

110-12.19-2.02A(4)(b)(i) GENERAL

Reserved

110-12.19-2.02A(4)(b)(ii) AGGREGATES

Test the quality characteristics of aggregates under the test methods and frequencies shown in the following table:

Aggregate Testing Frequencies		
Quality characteristic	Test method	Minimum testing frequency
Gradation ^a	AASHTO T 27	1 per 750 tons or 1 per project, whichever is greater.
Sand equivalent ^{b, c}	AASHTO T 176	
Moisture content ^d	AASHTO T 255	
Crushed particles	AASHTO T 335	Production start-up, 1 per 10,000 tons or 1 per project, whichever is greater.
Los Angeles Rattler	AASHTO T 96	
Flat and elongated particles	ASTM D4791	

^a If RAP is used, test the combined aggregate gradation under California Test 384.

^b Reported value must be the average of 3 tests from a single sample.

c Use of a sand reading indicator is required as shown in AASHTO T176, Figure 1. Section 4.7, "Manual Shaker," 7.1.2, "Alternate Method No. 2," and 8.4.3, "Hand Method," do not apply.

Prepare the stock solution as specified in section 4.8.1, "Stock solution with formaldehyde," except omit the addition of formaldehyde.

d Test at continuous mixing plants only. If RAP is used, test the RAP moisture content at continuous mixing plant and batch mixing plant.

For lime treated aggregate, test aggregate before treatment and test for gradation and moisture content during HMA production.

110-12.19-2.02A(4)(b)(iii) RECLAIMED ASPHALT PAVEMENT

Sample and test processed RAP at a minimum frequency of 1 sample per 1,000 tons with a minimum of 6 samples per fractionated stockpile. If the fractionated stockpile has not been augmented, the 3 RAP samples taken and tested for mix design can be part of this minimum sample requirement. If a processed RAP stockpile is augmented, sample and test processed RAP quality characteristics at a minimum frequency of 1 sample per 500 tons of augmented RAP.

When tested under AASHTO T 308, the uncorrected binder content of the combined RAP sample must be within ± 2.00 percent of the average uncorrected asphalt binder content reported on page 4 of your Contractor Hot Mix Asphalt Design Data form (CEM 3512). If a new processed RAP stockpile is required, the average uncorrected binder content of the new processed RAP stockpile tested under AASHTO T 308 must be within ± 2.00 percent of the average uncorrected binder content reported on page 4 of your Contractor Hot Mix Asphalt Design Data form (CEM 3512). Same ignition oven shall be used to determine the uncorrected asphalt binder content reported on page 4 of your Contractor Hot Mix Asphalt Design Data form (CEM 3512).

The combined RAP sample when tested under AASHTO T 209 must be within ± 0.06 of the average maximum specific gravity reported on your Caltrans Contractor Hot Mix Asphalt Design Data form (CEM 3512).

During HMA production, sample RAP daily and perform QC testing for:

- 2 Aggregate gradation using correlation factors from California Test 384 submitted with the job mix formula.
- 3 Moisture content under AASHTO T255 for continuous mix plants only.

110-12.19-2.02A(4)(b)(iv)–111-12.19-2.02A(4)(b)(viii) RESERVED

110-12.19-2.02A(4)(b)(ix) HOT MIX ASPHALT PRODUCTION

Test the quality characteristics of HMA under the test methods and frequencies shown in the following table:

Minimum Contractor Quality Control HMA Testing

Quality characteristic	Test method	Minimum testing frequency (HMA Type A - Modified)
Asphalt binder content	AASHTO T 308 Method A	Production start-up, and 1 per 1,500 tons, or 1 per project, whichever is greater
HMA moisture content	AASHTO T 329	1 per paving day
Air void content	AASHTO T 269	Production start-up, and 1 per 3,000 tons or 1 every 5 paving days, whichever is greater
Theoretical maximum specific gravity	AASHTO T 209 Method A	Production start-up, and 1 per 750 tons, or 1 per project, whichever is greater
Voids in mineral aggregate	MS-2 Asphalt Mixture Volumetrics	Production start-up, and 1 for every 9,000 tons, or 1 per project whichever is greater
Hamburg Wheel Track	AASHTO T 324 (Modified)/CTM 389	Production start-up, and 1 for every 9,000 tons, or 1 per project, whichever is greater

Note: Refer to section 111-12.19-2.01A(4)(h)(v) for all production start-up sampling.

110-12.19-2.02A(4)(c)–111-12.19-2.02A(4)(d) RESERVED

110-12.19-2.02A(4)(e) ENGINEER ACCEPTANCE

The Engineer accepts HMA based on compliance with: Aggregate quality requirements shown in the following table:

Aggregate Quality Requirements

Quality characteristic	Test method	Requirement Type A - Modified
Aggregate gradation ^a	AASHTO T 27	JMF TV ± Tolerance
Percent of crushed particles Coarse aggregate (min, %) One-fractured face	AASHTO T 335	95
Two-fractured faces		90
Fine aggregate (min, %) (Passing No. 4 sieve and retained on No. 8 sieve.) One fractured face		70
Los Angeles Rattler (max, %) Loss at 100 Rev. Loss at 500 Rev.	AASHTO T 96	12 40
Sand equivalent (min.) ^{b c}	AASHTO T 176	47
Flat and elongated particles (max, % by weight at 5:1)	ASTM D4791	10
Non-manufactured sand, (max, %) ^d	-	10

^a The Engineer determines combined aggregate gradations containing RAP under California Test 384. The Engineer uses the correlation factor from the Contractor Hot Mix Asphalt Design Data form (CEM 3512) and mathematically combines the virgin and corrected RAP aggregate gradations at the correct proportions to obtain the combined gradation.

^b Reported value must be the average of 3 tests from a single sample.

^c Use of a sand reading indicator is required as shown in AASHTO T 176, Figure 1. Sections 4.7, "Manual Shaker," 7.1.2, "Alternate Method No. 2," and 8.4.3, "Hand Method," do not apply. Prepare the stock solution as specified in section 4.8.1, "Stock solution with formaldehyde," except omit the addition of formaldehyde

^d Manufactured sand is fine aggregate produced by crushing rock or gravel.

1. If RAP is used, RAP quality requirements shown in the following table:

Reclaimed Asphalt Pavement Quality

Quality characteristic	Test method	Requirement
Uncorrected binder content (% within the average value reported ^a)	AASHTO T 308	±2.00
Specific gravity (within the average value reported ^b)	AASHTO T 209	±0.06

^a Average uncorrected binder content of three ignition oven tests performed at JMF verification. Engineer must use the same ignition oven used to determine the average uncorrected binder content at JMF verification.

^b Average maximum specific gravity reported on page 4 of Contractor Hot Mix Asphalt Design form (CEM 3512).

2. In-place HMA quality requirements shown in the following table:

HMA Acceptance In-Place

Quality characteristic	Test method	Type A - Modified
Asphalt binder content (%)	AASHTOT 308 Method A	JMF ± 0.50
HMA moisture content (max, %)	AASHTOT 329	1
Air voids content at Ndesign (%) , ^b	AASHTOT 269	4.0 ± 1.5
Voids in mineral aggregate on plant-produced HMA (min, %) ^a Gradation: No. 4 3/8-inch 1/2-inch 3/4-inch	MS-2 Asphalt Mixture Volumetrics ^c	15.5–18.5
		14.5–17.5
		13.5–16.5
		12.5–15.5
Dust proportion	MS-2 Asphalt Mixture Volumetrics	0.6-1.3
Density of core (% of max theoretical density) ^{e, f}	California Test 375	91.0–97.0
Hamburg wheel track (min number of passes at 0.5-inch rut depth) ^g Binder grade: PG 58 PG 64 PG 70 PG 76 or higher	AASHTO T 324 (Modified)/ CTM 389	10,000
		15,000
		20,000
		25,000

^a Prepare 3 briquettes. Report the average of 3 tests.

^b The Engineer determines the bulk specific gravity of each lab-compacted briquette under AASHTO T 275, Method A, and theoretical maximum specific gravity under AASHTO T 209, Method A.

^c Determine bulk specific gravity under AASHTO T 275, Method A.

^e The Engineer determines percent of theoretical maximum density under California Test 375 except the Engineer uses:

1. AASHTO T 275 Method A to determine in-place density of each density core or as determined by the non-destructive methodology as noted in section 111-12.19-1.01D(8)(f)
2. AASHTO T 209, Method A to determine theoretical maximum density instead of calculating test maximum density

^f The Engineer determines theoretical maximum density under AASHTO T 209, Method A.

110-12.19-2.02B MATERIALS

110-12.19-2.02B(2) HOT MIX ASPHALT MIX DESIGN

The mix design for HMA must comply with the requirements shown in the following table:

HMA Mix Design Requirements

Quality characteristic	Test method	Type A -Modified
Air voids content (%)	AASHTO T 269 ^{a b}	Ninitial > 8.0 Ndesign = 4.0 Nmax > 2.0
Gyrations compaction (no. of gyrations)	AASHTO T 312	Ninitial = 8 Ndesign = 85.0 Nmax = 130
Voids in mineral aggregate (min, %) ^b Gradation: No. 4 3/8-inch 1/2-inch 3/4-inch	MS-2 Asphalt Mixture Volumetrics	16.5–19.5 15.5–18.5 14.5–17.5 13.5–16.5
Dust proportion	MS-2 Asphalt Mixture Volumetrics	0.6–1.3
Hamburg wheel track ^d (min number of passes at 0.5-inch rut depth) Binder grade: PG 58 PG 64 PG 70 PG 76 or higher	AASHTO T 324 (Modified) ^{c/} CTM 389	10,000 15,000 20,000 25,000

^a Calculate the air voids content of each specimen using AASHTO T 275, Method A, to determine bulk specific gravity. Use AASHTO T 209, Method A to determine theoretical maximum specific gravity.

Use a pycnometer and digital manometer when performing AASHTO T 209.

^b Measure bulk specific gravity using AASHTO T 275, Method A.

^c Test plant-produced HMA sample

For HMA mixtures using RAP, the maximum allowed binder replacement is 15.0 percent in the upper 0.2 foot exclusive of OGFC and 25.0 percent below. The binder replacement is calculated as a percentage of the approved JMF target asphalt binder content.

For HMA with a binder replacement greater than 15.0 percent of your specified OBC and less than or equal to 25.0 percent of OBC, you must use a performance graded asphalt binder grade with upper and lower temperature classifications reduced by 6 degrees C from the specified PG binder grade.

110-12.19-2.02B(3) ASPHALT BINDER

Asphalt binder must comply with section 92 of the 2018 State Standard Specifications.

The Binder Type A -Modified on this project shall be: 64-10 OR Equivalent

110-12.19-2.02B(4) AGGREGATES

The aggregate for HMA Type A -Modified must comply with the 1/2-inch grading.

110-12.19-2.02B(4)(a) GENERAL

Before the addition of asphalt binder and lime treatment, the aggregates must comply with the requirements shown in the following table:

Aggregate Quality Requirements

Quality characteristic	Test method	Requirement Type A -Modified
Aggregate gradation ^a	AASHTO T 27	JMF TV ± Tolerance
Percent of crushed particles	AASHTO T 335	95
Coarse aggregate (min, %)		
One-fractured face		
Two-fractured faces		
Fine aggregate (min, %)	70	
(Passing No. 4 sieve and retained on No. 8 sieve.)		
One fractured face		
Los Angeles Rattler (max, %) Loss at 100 Rev.	AASHTO T 96	12
Loss at 500 Rev.		
		40
Sand equivalent (min.) ^{b,c}	AASHTO T 176	47
Flat and elongated particles (max, % by weight at5:1)	ASTM D4791	10
Nonmanufactured sand, (max, %) ^d	-	10

^aThe Engineer determines combined aggregate gradations containing RAP under California Test 384.

^b Reported value must be the average of 3 tests from a single sample.

^c Use of a sand reading indicator is required as shown in AASHTO T 176, Figure 1. Sections 4.7, "Manual Shaker," 7.1.2, "Alternate Method No. 2," and 8.4.3, "Hand Method," do not apply. Prepare the stock solution as specified in section 4.8.1, "Stock solution with formaldehyde," except omit the addition of formaldehyde.

^d Manufactured sand is fine aggregate produced by crushing rock or gravel.

110-12.19-2.02B(4)(b) AGGREGATE SIZE AND GRADATIONS

Unless otherwise indicated in contract documents the ratio of HMA lift thickness to nominal maximum aggregate size must be a minimum of 3:1. If the aggregate gradations for HMA is not specified must comply with the requirements shown in the following table:

Aggregate Gradation Requirements

HMA pavement thickness shown	Gradation
0.10 foot	3/8 inch
Greater than 0.10 to less than 0.25 foot	1/2 inch or 3/4 inch
0.25 foot or greater	3/4 inch

Aggregate gradation must be within the TV limits for the specified sieve size shown in the following tables:

Aggregate Gradations for HMA (Percentage Passing)

3/4 inch

Sieve size	Target value limit	Allowable tolerance
1"	100	--
3/4"	90-100	TV±5
1/2"	<90	TV±6
No.8	23-49	TV±5
No.200	2.0-8.0	TV±2.0

1/2 inch

Sieve size	Target value limit	Allowable tolerance
3/4"	100	--
1/2"	90-100	TV±5
3/8"	<90	TV±5
No.8	28-58	TV±5
No.200	2.0-10.0	TV±2.0

3/8 inch

Sieve size	Target value limit	Allowable tolerance
1/2"	100	--
3/8"	90-100	TV±5
No.4	<90	TV±5
No.8	32-67	TV±5
No.200	2.0-10.0	TV±2.0

110-12.19-2.02B(5) RECLAIMED ASPHALT PAVEMENT

Provide enough space at your plant for complying with all RAP handling requirements. Provide a clean, graded base, well drained area for stockpiles.

If RAP is from multiple sources, blend the RAP thoroughly and completely before fractionating.

For RAP substitution greater than 15 percent of the aggregate blend, fractionate RAP stockpiles into 2 sizes, a coarse fraction RAP retained on 3/8-inch sieve and a fine fraction RAP passing 3/8-inch sieve.

For RAP substitution of 15 percent of the aggregate blend or less, fractionation is not required. The RAP fractionation must comply with the requirements shown in the following table:

RAP Stockpile Fractionation Gradation Requirements

Size	Test method	Requirement
Coarse (% passing the 1-inch sieve)	California Test 202 ^a	100
Fine (% passing the 3/8-inch sieve)	California Test 202 ^a	98–100

^a Maximum mechanical shaking time is 10 minutes.

You may use the coarse fractionated stockpile, the fine fractionated stockpile, or a combination of the coarse and fine fractionated stockpiles.

Isolate the RAP stockpiles from other materials. Store RAP in conical or longitudinal stockpiles. RAP must not be agglomerated or be allowed to congeal in large stockpiles.

110-12.19-2.02B(6)–111-12.19-2.02B(10) RESERVED

110-12.19-2.02B(11) HOT MIX ASPHALT PRODUCTION

If RAP is used, the asphalt plant must automatically adjust the virgin asphalt binder to account for RAP percentage and RAP binder.

During production, you may adjust hot-or cold-feed proportion controls for virgin aggregate and RAP. RAP must be within ±3 of RAP percentage described in your Caltrans Contractor Job Mix Formula Proposal form (CEM 3511) without exceeding 25 percent.

110-12.19-2.02C CONSTRUCTION

Where the pavement thickness shown is equal to or greater than 0.30 foot, you may place HMA in multiple lifts not less than 0.15 foot each. If placing HMA in multiple lifts:

1. Aggregate gradation must comply with the requirements shown in the following table:

Aggregate Gradation Requirements

HMA lift thickness	Gradation
0.15 to less than 0.25 foot	1/2 or 3/4 inch
0.25 foot or greater	3/4 inch

2. Apply a tack coat before placing a subsequent lift
3. The Engineer evaluates each HMA lift individually for compliance

If the ambient air temperature is below 60 degrees F, cover the loads in trucks with tarpaulins. If the time for HMA discharge to truck at the HMA plant until transfer to paver's hopper is 90 minutes or greater and if the ambient air temperature is below 70 degrees F, cover the loads in trucks with tarpaulins, unless the time from discharging to the truck until transfer to the paver's hopper or the pavement surface is less than 30 minutes. The tarpaulins must completely cover the exposed load until you transfer the mixture to the paver's hopper or the pavement surface.

Spread HMA at the ambient air and surface temperatures shown in the following table:

Minimum Ambient Air and Surface Temperatures

Lift thickness (feet)	Ambient air (°F)		Surface (°F)	
	Unmodified asphalt binder	Modified asphalt binder	Unmodified asphalt binder	Modified asphalt binder
HMA and HMA produced with WMA water injection technology				
<0.15	55	50	60	55
≥0.15	45	45	50	50
HMA produced with WMA additive technology				
<0.15	45	45	50	45
≥0.15	40	40	40	40

For method compaction, the maximum lift thickness must be 0.25 foot.

For HMA and HMA produced with water-injection technology placed under method compaction, if the asphalt binder is:

1. Unmodified, complete:
 - 1st coverage of breakdown compaction before the surface temperature drops below 250degrees F
 - Breakdown and intermediate compaction before the surface temperature drops below 190degrees F
 - Finish compaction before the surface temperature drops below 150 degrees F

2. Modified, complete:
 - 1st coverage of breakdown compaction before the surface temperature drops below 240degrees F
 - Breakdown and intermediate compaction before the surface temperature drops below 180degrees F

Finish compaction before the surface temperature drops below 140 degrees F.

For HMA produced with WMA additive technology placed under method compaction, if the asphalt binder is:

1. Unmodified, complete:
 - 1st coverage of breakdown compaction before the surface temperature drops below 240degrees F
 - Breakdown and intermediate compaction before the surface temperature drops below 190degrees F
 - Finish compaction before the surface temperature drops below 140 degrees F
 - You may continue static rolling below 140 degrees F to remove roller marks.

2. Modified, complete:
 - 1st coverage of breakdown compaction before the surface temperature drops below 230degrees F
 - Breakdown and intermediate compaction before the surface temperature drops below 170degrees F
 - Finish compaction before the surface temperature drops below 130 degrees F
 - You may continue static rolling below 130 degrees F to remove roller marks.

You may cool HMA with water when rolling activities are complete if authorized.

110-12.19-2.02D PAYMENT

See Section 110-12.19-2.01D.

110-12.19-3.0 MINOR HOT MIX ASPHALT

This work includes producing and placing minor hot mix asphalt (HMA) for placement in miscellaneous areas and shall conform to the provisions of Section 39-2.01B(11), Section 39-2.01C(9), and Section 39-2.07 of the 2018 State Standard Specifications, the details shown on the plans, and these Special Provisions.

Asphalt Binder

The grade of asphalt binder mixed with aggregate for minor HMA shall be PG 64-10.

Aggregate

The aggregate for minor HMA shall comply with the 1/2-inch maximum grading.

Tack Coat

A tack coat shall be applied to the existing pavement as specified in Section 39-2.01C(3)(f) "Tack Coat" of the 2018 State Standard Specifications.

Measurement and Payments:

The contract price paid per ton for the Minor Hot Mix Asphalt shall include full compensation for furnishing all labor, tools, equipment, and incidentals, and for doing all the work involved in placing minor HMA, complete in place, including preparation of the area to receive the minor HMA, as shown on the plans, as specified in these Special Provisions, and as directed by the Engineer.

110-12.20 AGGREGATE CUSHION UNDER ALL PCC

Aggregate cushion shall be 4 inches Class 2 aggregate base in conformance with Section 26, "Aggregate Bases", of the County and State Standard Specifications, the Project Plans, and these Special Provisions.

Aggregate may include or consist of material processed from reclaimed asphalt concrete, Portland cement concrete, lean concrete base, cement treated base, or a combination of any of these materials. Aggregate incorporating reclaimed material shall still conform to the applicable grading and quality requirements.

Measurement and Payment: Full compensation for furnishing and installing aggregate cushion under all PCC is included in other applicable items of work that require aggregate cushion and no additional compensation is allowed therefor.

110-12.21 PCC CURB, CURB & GUTTER

PCC Curb & Gutter shall be A2 and B2 and PCC Curb shall be B3 per State Standard Plan A87A and County Standard Detail B/13 and conform to the provisions in Section 73, "Concrete Curbs & Sidewalks", of the County and State Standard Specifications, the Project Plans and these Special Provisions.

Concrete shall be Class 3 with cementitious material content of at least 505 lbs/yd³ with a maximum aggregate of 3/8". Minimum design strength shall be 3,000 psi. PCC shall conform to Section 90 "Concrete" of the State Standard Specifications.

The new curb and gutter shall match and conform to the adjacent existing curb and gutter. Where new curb & gutter shall conform to existing curb & gutter, a #4 dowel shall be drilled and epoxied into the existing concrete along the joint at 24 inches on center. The holes shall be drilled by methods that will not shatter or damage the concrete adjacent to the holes.

Existing pavement to be removed for curb and gutter conforms shall be sawcut to attain a clean straight edge and shall be in conformance with details shown on the project plans, and these Special Provisions.

Subgrade for curb and gutter shall be compacted to 95% relative compaction. Aggregate cushion shall conform to Section 110-12.20, "Aggregate Cushion", of these Special Provisions.

Locations for PCC A2, B2, and B3 are shown on the project plans.

Measurement and Payment: The contract price bid per linear foot for "PCC Curb" and "PCC Curb & Gutter" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and all costs associated with the construction of PCC Curb and PCC Curb & Gutter, complete in place as shown on the plans and as specified in these Special Provisions, including over excavation, root removal on areas near trees, compaction, aggregate base cushion, rebar or dowel, sawcutting, and no additional payment shall be made therefor.

Payment for excavation associated with the removal of existing curb & gutter and excavation for the installation of curb and gutter shall be included in "Remove Existing PCC" specified elsewhere in these Special Provisions.

110-12.22 PCC MEDIAN NOSE

PCC Median Nose shall conform to the provisions in Section 73, "Concrete Curbs & Sidewalks", of the County and the State Standard Specifications, the Project Plans, and these Special Provisions.

Concrete shall be Class 3 with cementitious material content of at least 505 lbs/yd³ with a maximum aggregate of 3/8". Minimum design strength shall be 3,000 psi. PCC shall conform to Section 90 "Concrete" of the State Standard Specifications.

The new median nose paving shall conform to the new top of curb.

Measurement and Payment: The contract price bid per square foot for "PCC Median Nose" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and all costs associated with the construction of PCC Median Nose, complete in place as shown on the plans and as specified in these Special Provisions, including over excavation, aggregate base cushion, compaction, rebar (dowel), sawcutting, and no additional payment shall be made therefor.

110-12.23 PCC SIDEWALK

PCC Sidewalk shall conform to the provisions in Section 73, "Concrete Curbs & Sidewalks", of the County and the State Standard Specifications, the Project Plans, and these Special Provisions.

Concrete shall be Class 3 with cementitious material content of at least 505 lbs/yd³ with a maximum aggregate of 3/8". Minimum design strength shall be 3,000 psi. PCC shall conform to Section 90 "Concrete" of the State Standard Specifications.

The new sidewalk shall match and conform to the adjacent existing sidewalk and curb and gutter. Where new sidewalk shall conform to existing sidewalk, a #4 dowel shall be drilled and epoxied into the existing concrete along the joint at 24 inches on center with 6" deep by 14" wide PCC key. Where new sidewalk shall conform to existing curb and gutter, a #4 dowel shall be drilled and epoxied into the existing concrete along the joint at 36 inches on center. The holes shall be drilled by methods that will not shatter or damage the concrete adjacent to the holes.

Subgrade for sidewalk shall be compacted to 90% relative compaction. Aggregate cushion shall conform to Section 110-12.20, "Aggregate Cushion", of these Special Provisions.

Measurement and Payment: The contract price bid per square foot for "PCC Sidewalk" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and all costs associated with the construction of PCC Sidewalk, complete in place as shown on the plans and as specified in these Special Provisions, including over excavation, aggregate base cushion, compaction, rebar (dowel), PCC sidewalk key, sawcutting, and no additional payment shall be made therefor.

110-12.24 PEDESTRIAN CURB RAMP

Pedestrian Curb Ramps shall conform to the provisions in Section 73, "Concrete Curbs & Sidewalks", of the County and State Standard Specifications, State Standard Plans A88A and A88B, the Project Plans, and these Special Provisions.

Pedestrian Curb Ramp covers the installation in compliance with the Americans with Disabilities Act (ADA).

Concrete shall be Class 3 with cementitious material content of at least 505 lbs/yd³ with a maximum aggregate of 3/8". Minimum design strength shall be 3,000 psi. PCC shall conform to Section 90, "Concrete", of the State Standard Specifications. The Contractor shall submit the concrete mix proportions for the Engineer's review and approval.

Detectable warning surfaces (Raised Truncated Domes) shall be **black** truncated dome panels similar to existing truncated domes installed along Almaden Expressway.

Measurement and Payment: The unit price bid for each Pedestrian Curb Ramp shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and all costs associated with the construction/installation of ADA compliant PCC pedestrian ramps on curb, complete in place as shown on the plans and as specified in these Special Provisions, including placement of aggregate base cushion, detectable warning surface, and no additional payment shall be made therefor.

110-12.25 PCC DRIVEWAY

PCC Driveway shall conform to the provisions in Section 73, "Concrete Curbs & Sidewalks", of the County and the State Standard Specifications, County Standard Detail Drawing #B/7, the Project Plans, and these Special Provisions.

Concrete shall be Class 3 with cementitious material content of at least 505 lbs/yd³ with a maximum aggregate of 3/8". Minimum design strength shall be 3,000 psi. PCC shall conform to Section 90, "Concrete", of the State

Standard Specifications. The Contractor shall submit the concrete mix proportions for the Engineer’s review and approval.

Measurement and Payment: The unit price bid per square foot for “PCC Driveway” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and all costs associated with the construction of PCC Driveway, complete in place as shown on the plans and as specified in these Special Provisions, including over excavation, aggregate base cushion, compaction, rebar (dowel), sawcutting, and no additional payment shall be made therefor.

110-12.26 ADJUST EXISTING MANHOLE TO GRADE

Adjust existing manholes to grade shall conform to the provisions of Section 15, “Existing Highway Facilities,” Section 70.01.01, “Adjustment of Existing Manholes to Grade,” of the County Standard Specifications, Section 71-5.03B, “Frames, Cover, Grates and Manholes” of the State Standard Specifications, County Standard Detail C/9A, “Manhole & Valve Adjustment”, the project plans and these Special Provisions.

Prior to paving, all utility access points within the paved portion of the roadway shall be marked with appropriately colored paint. Contractor shall mark a reference point outside the paving area for relocating the manhole after paving. Utility representatives will confirm the utility locations prior to final paving.

Measurement and Payment: The contract price paid for each Adjust Existing Manhole to Grade shall include full compensation for furnishing all labor, materials, tools and equipment, and for doing all the work involved in adjusting manhole’s frames and covers, including temporary covers, and locating and marking utility access points, and no additional payment will be allowed.

110-12.27 ADJUST EXISTING VALVE BOX TO GRADE

Adjust Existing Valve Box to Grade shall conform to the provisions of Section 15, “Existing Highway Facilities,” Section 20-2.01B(7), “Valve Boxes & Covers,” of the State Standard Specifications, County Standard Detail C/9A, “Manhole & Valve Adjustment”, and these special provisions.

Prior to paving, all utility access points and boxes within the paved portion of the roadway shall be marked with appropriately colored paint. Contractor shall mark a reference point outside the paving area for relocating the monument and/or water boxes after paving. Utility representatives will confirm the utility locations prior to final paving.

Measurement and Payment: The contract price for each Adjust Existing Valve Box to Grade shall include full compensation for furnishing all labor, materials, tools and equipment, and for doing all the work involved in adjusting valve box, including temporary covers, and locating and marking utility access points, and no additional payment will be allowed.

110-12.28 CONVERT EXISTING DRAIN INLET TO MANHOLE

Contractor shall modify existing drain inlet as indicated on Project Plans. Modify of existing drain inlet shall conform to the provisions of Section 71-4, “Modify Drainage Structures”, and Section 71-5, “Adjust Drainage Structures”, of the State Standard Specifications and these Special Provisions. The modified drain inlet is to remain an eccentric manhole consistent with County Standard Detail C/6, the Project Plans, and these Special Provisions.

Measurement and Payment: The contract price for each Convert Existing Drain Inlet to Manhole shall include full compensation for furnishing all labor, materials, tools and equipment, and for doing all the work involved in

modifying the drain inlet, including temporary covers, and locating and marking utility access points, and no additional payment will be allowed.

110-12.29 REMOVE EXISTING DRAIN INLET AND PIPE

Removal of existing storm drain inlet shall conform to Section 15, "Existing Facilities," and Section 71-2, "Remove Drainage Facilities" of the State Standard Specifications, the Project Plans, and these Special Provisions.

Work consists of demolishing existing storm drain inlet and cutting and removing a section of the existing storm drain line to connect to the new storm drain line and new inlet. The new inlets shall conform to the specification for constructing new inlets including new metal frame and grate, as specified elsewhere in these Special Provisions.

Measurement and Payment - The contract unit price paid per each for Remove Storm Drain Inlet shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved in removing catch basin, including cutting and removing portion of storm drain line, plugging existing storm drain lines as necessary, and restoring excavated area, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

110-12.30 FURNISH AND INSTALL DRAIN INLET

Type "D" inlets shall be cast-in-place conforming to County Standard Details Drawing # C/11 and to provisions in Section 51-7, "Minor Structures," of the State Standard Specifications, the Project Plans, and these Special Provisions.

Measurement and Payment – The contract unit price paid per each for Type "D" Inlet includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved in installing drainage inlet, complete in place, including metal frame and grate, excavation, backfill, and compaction, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

The curb with modified gutter transitions on each side of Type D inlet as shown on County Standard Detail # C/11 is measured and paid for as Minor Concrete (County Type A2-6 Curb and Gutter).

110-12.31 HIGH DENSITY POLYETHYLENE PIPE

High density polyethylene pipe (HDPE) shall conform to Section 64, "Plastic Pipe," of the State Standard Specifications and these Special Provisions.

HDPE must be Type S corrugated polyethylene pipe.

Measurement and Payment - The contract unit price paid per linear foot for 12" High Density Polyethylene Pipe includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in installing 12" HDPE pipe, complete in place, including saw cutting existing paving, structure excavation and structure backfill, hot mix asphalt trench paving, connecting new pipe to new and existing facilities including concrete collars and reinforcement, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

110-12.32 ROADSIDE SIGN

Roadside Signs shall conform to the provisions of Section 56 of the County Standard Specifications, Section 82 of the State Standard Specifications, the State Standard Plans, the latest edition of CA MUTCD, as shown in the Project Plans, and these Special Provisions.

If the sign is installed within the sidewalk area, the sign post shall be 2" galvanized pipe and installed in conformance with County Standard Detail B/14. If the sign is relocated outside the sidewalk, the sign post shall be treated wood and installed in conformance with State Standard Plan RS2.

The type and kind of signs are identified on the plans Contractor shall fabricate, furnish and install new roadside sign at location specified on the plans. The fabrication and installation of the roadside sign shall conform to CA MUTCD and State Standard Plans, Specifications and Sign Specifications. Contractor shall furnish and install new posts and concrete foundation.

Measurement and Payment: The contract price paid for each Roadside Sign shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in fabricating and installing new roadside sign panels including sawcutting, mounting accessories, furnishing and installing post and concrete foundation as shown on the plans and State Standard Plans, as specified in the CA MUTCD and these Special Provisions, and as directed by the County, and no additional payment will be allowed.

The contract unit price paid per each for Roadside Sign (on Signal Pole or Street Light) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in installing roadside sign on signal pole or street light, complete in place, including proper furnishing hardware for mounting sign on signal pole, as shown on the plans and State Standard Plans, as specified in the CA MUTCD and these Special Provisions, and as directed by the County, and no additional payment will be allowed.

110-12.33 TEMPORARY PAVEMENT DELINEATION

Whenever the work causes obliteration of pavement delineation, temporary or permanent pavement delineation shall be in place prior to opening the traveled way to public traffic. Lane line, centerline or edge line pavement delineation and markings shall be provided at all times for traveled ways open to public traffic.

Temporary pavement delineation shall be either temporary pavement markers or removable traffic stripe tapes at contractor option. Temporary pavement delineation shall be removed prior to placing permanent pavement striping.

The Contractor shall perform the work necessary to establish the alignment of temporary pavement delineation, including required lines or marks. Surfaces to receive temporary pavement delineation shall be dry and free of dirt and loose material. Temporary pavement delineation shall not be applied over existing pavement delineation or other temporary pavement delineation. Temporary pavement delineation shall be maintained until superseded or replaced with a new pattern of temporary pavement delineation or permanent pavement delineation.

Temporary lane line or centerline delineation consisting entirely of temporary pavement markers shall be placed on longitudinal intervals of not more than 24 feet. Temporary pavement markers for left edge lines shall be placed at longitudinal intervals of not more than 6 feet. The temporary pavement markers shall be the same color as the lane line or centerline the pavement markers replace.

Temporary pavement delineation shall be furnished, placed, maintained, and removed in conformance with the provisions in Section 12-3.01, "General," of the State Standard Specifications and these Special Provisions. Nothing in these special provisions shall be construed as reducing the minimum standards specified in the Manual

of Traffic Controls published by the Department or as relieving the Contractor from the responsibilities specified in Section 7.22.02, "Public Safety," of the County Standard Specifications.

Measurement and Payment: Full compensation for furnishing, placing, maintaining, and removing temporary pavement delineation and markings, including underlying adhesive, layout (dribble) lines to establish alignment, for temporary lane line and centerline delineation, shall be considered as included in the contract price paid for Traffic Control System and no separate payment will be allowed therefor.

110-12.34 THERMOPLASTIC PAVEMENT STRIPE

This section shall apply to all thermoplastic traffic stripes, regardless of width, continuous or broken.

Thermoplastic traffic stripes shall conform to the provisions in Section 84 "Traffic Stripes and Pavement Markings," of the County Standard Specifications and Section 84-2 "Traffic Stripes and Pavement Markings" of the State Standard Specifications, 2018 State Standard Plans revised 11/19/20, CA MUTCD, the plans and these Special Provisions.

New thermoplastic traffic stripes (all types, widths) shall replace the existing stripes, as shown on the striping plans or as directed by the County. These are Details 12, 22, 25, 36, 36A, 36B, 37, 38, 38B, 39, 39A, 40, and 41. Contractor shall provide a submittal indicating materials, installation procedures and method for traffic stripes. Installation shall be by way of extrusion.

The pigment, glass beads, and filler additive shall be well dispersed in the binder before application to the pavement. Heated thermoplastic material shall not emit fumes that are toxic or injurious to persons or property, and shall comply with all applicable air pollution control rules and regulations.

Glass Beads

Glass beads applied to paint must comply with State Specification 8010-004. Glass beads applied to molten thermoplastic material must be Type 2 beads complying with AASHTO M 247. The glass beads must have a coating that promotes adhesion of the beads to thermoplastic. At least 75 percent of the beads by count must be true spheres that are colorless and do not exhibit dark spots, air inclusions, or surface scratches when viewed under 20X magnification. Each lot of glass beads used in pavement markings must contain less than 200 ppm each of arsenic and lead when tested under EPA Test Methods 3052 and 6010B or 6010C.

Enhanced Wet-Night Visibility

A thermoplastic traffic stripe or pavement marking with enhanced wet-night visibility consists of a single uniform layer of thermoplastic and 2 layers of glass beads.

The 1st layer of glass beads must be on the Authorized Material List for high-performance glass beads. The color of the glass beads must match the color of the stripe or marking to which they are being applied. The 2nd layer of glass beads must comply with AASHTO M 247, Type 2. The glass beads used in both layers must be surface treated for use with thermoplastic under the bead manufacturer's instructions. Within 14 days of applying a thermoplastic traffic stripe or pavement marking with enhanced wet-night visibility, the retroreflectivity must be a minimum of 700 mcd·m⁻²·lx⁻¹ for white stripes and markings and 500 mcd·m⁻²·lx⁻¹ for yellow stripes and markings when measured under ASTM E1710.

Aside from regular glass beads, 3M Reflective Elements (microcrystalline beads) shall be added to improve or increase reflectivity and visibility of pavement markings. Contact information for 3M Reflective Elements: 3M Traffic Safety and Security Division, 3M Center Bldg 0235-03-A-09 St Paul, MN 55144-10000 at phone **1-800-553-**

1380. Color varies from white and yellow crystalline beads. Use white for white marking/stripping and yellow for yellow marking/stripping

Quality Control

This section shall conform to the provisions in Section 84-2.01D "Quality Assurance" of the State Standard Specifications.

The Engineer shall check and approve the cat tracks before striping. The Engineer shall have a minimum 48 hours to approve. Contractor shall be responsible for the cat tracking operations.

Contractor shall reinstall traffic stripes at the transition between new and existing pavement to ensure the pavement striping is continuous and consistent.

Thermoplastic materials shall be tested prior to use or the manufacturer shall provide the Engineer with a Certificate of Compliance in accordance with the provisions of Section 6.11, "Certificates of Compliance," of the County Standard Specifications.

The roadway shall not be striped before 5 calendar days of pavement curing, but shall be striped within 10 calendar days after the completion of paving. Liquidated damages, at the specified rate, shall apply to each day of delay beyond this date unless approved otherwise by the Engineer.

Measurement and Payment: The contract price paid per linear foot for Thermoplastic Traffic Stripe (all types shown in the project plans, widths and color) shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work involved in furnishing and installing various types of thermoplastic traffic stripes complete in place , including pavement markers, cat tracks, dribble lines, 3M Reflective Elements (microcrystalline beads) and layout work, conforming to State Standard Plans, County and State Standard Specifications, details and requirements as shown on the plans and as specified in these Special Provisions, as directed by the County, and no additional compensation shall be allowed therefore.

Payment for temporary traffic stripes for channelization during construction (temporary pavement delineation) shall be considered as included in the contract price paid for Traffic Control and no additional compensation shall be allowed therefore.

110-12.35 THERMOPLASTIC PAVEMENT MARKING

Thermoplastic pavement markings shall conform to the provisions in Section 84 "Traffic Stripes and Pavement Markings," of the County Standard Specifications and Section 84-2 "Traffic Stripes and Pavement Markings" of the State Standard Specifications, State Standard Plans, CA MUTCD, the plans and these Special Provisions.

Pavement markings shall include 12" cross-walk, 12" stop bar, arrows, speed limits, bicycle logo and all other symbols or markings painted on the pavement as shown on the plans. Installation shall be by way of extrusion.

The pigment, glass beads, and filler additive shall be well dispersed in the binder before application to the pavement. Heated thermoplastic material shall not emit fumes that are toxic or injurious to persons or property, and shall comply with all applicable air pollution control rules and regulations.

The completed pavement markings shall have clean and well-defined edges without running or deformation, and shall conform to the dimensions shown in these Special Provisions.

Glass Beads

Glass beads applied to paint must comply with State Specification 8010-004. Glass beads applied to molten thermoplastic material must be Type 2 beads complying with AASHTO M 247. The glass beads must have a coating that promotes adhesion of the beads to thermoplastic. At least 75 percent of the beads by count must be true spheres that are colorless and do not exhibit dark spots, air inclusions, or surface scratches when viewed under 20X magnification. Each lot of glass beads used in pavement markings must contain less than 200 ppm each of arsenic and lead when tested under EPA Test Methods 3052 and 6010B or 6010C.

Enhanced Wet-Night Visibility

A thermoplastic traffic stripe or pavement marking with enhanced wet-night visibility consists of a single uniform layer of thermoplastic and 2 layers of glass beads.

The 1st layer of glass beads must be on the Authorized Material List for high-performance glass beads. The color of the glass beads must match the color of the stripe or marking to which they are being applied. The 2nd layer of glass beads must comply with AASHTO M 247, Type 2. The glass beads used in both layers must be surface treated for use with thermoplastic under the bead manufacturer's instructions. Within 14 days of applying a thermoplastic traffic stripe or pavement marking with enhanced wet-night visibility, the retroreflectivity must be a minimum of 700 mcd·m⁻²·lx⁻¹ for white stripes and markings and 500 mcd·m⁻²·lx⁻¹ for yellow stripes and markings when measured under ASTM E1710.

Aside from regular glass beads, 3M Reflective Elements (microcrystalline beads) shall be added to improve or increase reflectivity and visibility of pavement markings. Contact information for 3M Reflective Elements: 3M Traffic Safety and Security Division, 3M Center Bldg 0235-03-A-09 St Paul, MN 55144-10000 at phone **1-800-553-1380**. Color varies from white and yellow crystalline beads. Use white for white marking/stripping and yellow for yellow marking/stripping

Quality Control

This section shall conform to the provisions in Section 84-2.01D "Quality Assurance" of the State Standard Specifications.

The Engineer shall check and approve the cat tracks before striping. The Engineer shall have a minimum 48 hours to approve. Contractor shall be responsible for the cat tracking operations.

Contractor shall reinstall traffic stripes at the transition between new and existing pavement to ensure the pavement striping is continuous and consistent.

Thermoplastic materials shall be tested prior to use or the manufacturer shall provide the Engineer with a Certificate of Compliance in accordance with the provisions of Section 6.11, "Certificates of Compliance," of the County Standard Specifications.

Work shall consist of replacing existing pavement markings, crosswalks and stop bars, where pavement is resurfaced, or at other locations as directed by the Engineer.

Time requirements as set out in "Thermoplastic Traffic Stripes," shall also apply to thermoplastic pavement markings.

Thermoplastic pavement markings, stop bars and crosswalks shall be measured by the square feet for the area covered by each marking unit. Stop bars and crosswalks shall be 12 inches wide as per State Std. Plan A24E.

Measurement and Payment: The contract prices paid per square foot for Thermoplastic Pavement Marking shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, including cat-tracks(layout) and 3M Reflective Elements (microcrystalline beads), complete in place as shown on the plans, as specified in these special provisions, and as directed by the Engineer, and no additional payment will be made therefor.

Payment for temporary traffic stripes for channelization during construction (temporary pavement delineation) shall be considered as included in the contract price paid for Traffic Control and no additional compensation shall be allowed therefore.

110-12.36 PAINT ISLAND CURB NOSE

Paint Island Curb Nose shall conform to the provisions in Section 91, "Paint" of the County Standard Specifications, Sections 84-2.02C "Paint" and 84-2.02D "Glass Beads" of the State Standards Specifications and these Special Provisions.

Paint color shall be yellow for median island curbs. It shall be applied in two coats along the top and face of curb. Glass beads applied to paint must comply with State Specification 8010-004.

Measurement and Payment: The contract prices paid per Square Foot for Pain Island Curb Nose shall include full compensation for furnishing all labor, tools, equipment, and incidentals, and for doing all the work doing all the work involved in preparing the curb surface and applying the paint to the curb surface with glass beads as shown on the plans, and as specified in these Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefore.

110-12.37 THEROPLASTIC GREEN BIKE LANE (SJ1 & SJ2)

Any contractor performing work pertaining to this section shall possess a class C32 license.

Thermoplastic traffic stripes shall conform to the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the County Standard Specifications, the project plans, and these special provisions. Glass beads shall comply with State Specification 8010-004. Pavement markers shall conform to the provisions of Section 85, "Pavement Markers," of the County Standard Specifications, and these Special Provisions.

The Engineer shall check and approve the cat tracks before striping. Contractor shall be responsible for the cat tracking operations.

The Green Pavement Enhancement (GPE) is a Skid/Slip resistant preformed thermoplastic pavement material. The GPE shall be composed of materials impervious to degradation by motor fuels, lubricants, etc., in conjunction with aggregates, pigments, binders, and anti-skid/anti-slip elements uniformly distributed throughout the material. The preformed thermoplastic material shall conform to AASHTO designation M249, with the exception of the relevant differences due to the material being non-reflective, and being of a color different from white or yellow - Green.

1. The material shall be a resilient preformed thermoplastic product containing intermix of anti-skid/anti-slip elements and where the top surface contains anti-skid/anti-slip elements. These anti-skid/anti-slip elements must have a minimum hardness of 8 (Mohs scale).
2. The material shall be resistant to the detrimental effects of motor fuels, antifreeze, lubricants, hydraulic fluids, etc.

- 3. The material shall be capable of being applied on bituminous and/or Portland cement concrete pavements by the use of a handheld heat torch, infrared heater, or a blue-flame radiant heater.
- 4. The material shall be capable of being applied to asphalt and portland cement concrete surfaces without preheating the application surface to a specific temperature. The material shall be capable of being affixed to green concrete (concrete that has set but not appreciably hardened). The material shall not require the portland cement concrete application areas to be cured or dried out.

(8)

- 5. The material shall be capable of conforming to pavement contours, breaks and faults through the action of traffic at normal pavement temperatures.
- 6. Pigment: The color of the pavement marking material shall be accordance with FHWA Memorandum dated April 15, 2011: Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes (IA-14). The final shade will be determined and approved by the Engineer.

a. Daytime chromaticity coordinates for the color used for green colored pavement shall be as follows:

1		2		3		4	
X	y	X	y	x	y	x	y
0.230	0.754	0.266	0.500	0.367	0.500	0.444	0.555

b. Nighttime chromaticity coordinates for the color used for green colored pavement shall be as follows:

1		2		3		4	
X	y	X	y	x	y	x	y
0.230	0.754	0.336	0.540	0.450	0.500	0.479	0.520

c. The pigment system shall not contain heavy metals or any carcinogen, as defined in 29 CFR 1910.1200 in amounts exceeding permissible limits as specified in relevant Federal Regulations.

- 7. Skid Resistance: The surface of the preformed thermoplastic material shall contain factory applied anti-skid elements with a minimum hardness of 8 (Mohs scale). Upon application the material shall provide a minimum skid resistance value of 60 BPN when tested according to ASTM E 303.
- 8. Slip Resistance: The surface of the preformed thermoplastic material shall contain anti-skid elements with a minimum hardness of 8 (Mohs scale). Upon application the material shall provide a minimum static coefficient of friction of 0.6 when tested according to ASTM C 1028 (wet and dry), and a minimum static coefficient of friction of 0.6 when tested according to ASTM D 2047.
- 9. Thickness: The material shall be supplied at a minimum thickness of 90 mil (2.29 mm).
- 10. Environmental Resistance: The material shall be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to oil and gasoline.

The pigment, glass beads, and filler additive shall be well dispersed in the binder before application to the pavement. Heated thermoplastic material shall not emit fumes that are toxic or injurious to persons or property, and shall comply with all applicable air pollution control rules and regulations.

The completed pavement markings shall have clean and well-defined edges without running or deformation, and shall conform to the dimensions shown in the State Standard Plans.

Thermoplastic materials shall be tested prior to use or the manufacturer shall provide the Engineer with a Certificate of Compliance in accordance with the provisions of Section 6.11, "Certificates of Compliance," of the Standard Specifications.

Time requirements as set out in "Thermoplastic Traffic Stripes," in these Special Provisions shall also apply to thermoplastic pavement markings.

SJ1 and SJ2 striping details are shown on the project plans. SJ1 shall be measured per lineal foot. SJ2 shall be measured as Each for the area covered by each 4' long marking unit.

Measurement and Payment: The contract bid unit prices paid for Thermoplastic Traffic Stripe Det SJ1 and SJ2 shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, including Pavement Markers, glass beads, cat tracks, dribble lines, and layout work, complete in place as shown on the plans, as specified in these Special Provisions, and as directed by the Engineer, and no additional allowance will be made.

110-12.38 COLORED CONCRETE SURFACE

Colored Concrete Surface shall conform to the provisions in Section 73, "Concrete Curbs & Sidewalks", of the County and the State Standard Specifications, the Project Plans, and these Special Provisions.

Concrete shall be Class 3 with cementitious material content of at least 505 lbs/yd³ with a maximum aggregate of 3/8". Minimum design strength shall be 3,000 psi. PCC shall conform to Section 90 "Concrete" of the State Standard Specifications.

The colored concrete surface shall match and conform to the adjacent new sidewalk and curb and gutter. Where new colored concrete surface shall conform to existing curb, a #4 dowel shall be drilled and epoxied into the existing curb along the joint at 36 inches on center. The holes shall be drilled by methods that will not shatter or damage the concrete adjacent to the holes.

Colored paving shall be of brick red color and stamped concrete paving. Submit color cards for review and approval.

Subgrade for colored concrete surface shall be compacted to 90% relative compaction. Aggregate cushion shall conform to Section 110-12.20, "Aggregate Cushion", of these Special Provisions.

Measurement and Payment: The contract price bid per square foot for Colored Concrete Surface shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and all costs associated with the construction of Colored Concrete Surface, complete in place as shown on the plans and as specified in these Special Provisions, including over excavation, aggregate base cushion, color admixtures, compaction, rebar (dowel), sawcutting, and no additional payment shall be made therefor.

110-12.39 MULCH

The mulch shall conform to the provisions in Section 20-5.03E(2)(b), "Tree Bark Mulch" of State Standard Specifications, the Project Plans, and these Special Provisions. Mulch to be dark brown in color. Submit 2 cubic foot mulch sample with the mulch source shown on the bag to review.

Install a 2-inch layer of mulch at the area between back of sidewalk or curb and existing landscaping as shown on project plans

Sheet mulching: Corrugated paper sheet permeable to air and water. Landmaster Biodegradable Paper Mulch or equal.

Measurement and Payment: The contract lump sum price for Mulch shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and all costs associated with installing mulch, complete in place as shown on the plans and as specified in these Special Provisions, including over excavation, sheet mulching, and no additional payment shall be made therefor.

110-13 TRAFFIC SIGNAL, COMMUNICATION AND HIGHWAY LIGHTING SYSTEMS

All electrical work as specified in this Section 110-13 shall be performed by certified electrician per California Contractors State License Board Rules and Regulations.

The Contractor shall provide all material, equipment, and labor necessary for the traffic signals and traffic signal systems, all associated hardware and equipment, and all appurtenant work to provide a functional installation/modification, complete in place and operable, as shown on the Drawings and as specified herein. The cost for necessary items not specifically called out in these specifications and/or the bid schedule shall be considered as included in the prices paid for the various items of Work and no additional compensation will be allowed therefore.

The furnishing and installation of traffic signal equipment and highway safety lighting shall conform to Sections 86 of the County Standard Specifications, County Standard Details Manual, the latest State Standard Specifications and Plans, the details shown on the Project Plans, and these Special Provisions.

Contractor’s attention is directed to the following sections in the County Standard Specifications:

- Section 86.02.01 “Mobility-Impaired Access Provisions,”
- Section 86.02.02 “Excavating and Backfilling”, and
- Section 86.02.03 “Removing and Replacing Existing Improvements”.

Equipment shop and field testing shall conform to Section 86.02.13, “Testing,” of the County Standard Specifications.

110-13.01 ABBREVIATIONS AND GLOSSARY

Abbreviations:

AGC:	Automatic gain control
BNC:	Bayonet Navy Connector
CCTV:	Closed Circuit Television
EIA:	Electronics Industries Association
F/O, FO:	Fiber optic
Hz:	Hertz
NEMA:	National Electrical Manufacturers Association
NTSC:	National Television Standards Committee
OD:	Outside Diameter
PDA:	Power Distribution Assembly
PTZ:	Pan/Tilt/Zoom
SM:	Single Mode
SMFO:	Single Mode Fiber Optic
ST:	Type of fiber optic cable connector

TIA: Telecommunications Industries Association
TMC: Traffic Management Center

Glossary:

Channel--(1) An information path between a discrete input and a discrete output. (2) One single input to a multiplexer or output from a demultiplexer.

Closed Circuit Television Assembly--Camera, lens, environmental enclosure, and necessary connectors, cables, and power supply.

Connector--A mechanical device used to provide a means for attaching to and decoupling from a transmitter, receiver, or another fiber (such as on a patch panel).

Coupler--A coupler is a device which transfers light from two fibers to one fiber and vice versa, where the two fibers are carrying light in opposite directions.

Jumper Cable --A short fiber optic cable that has connectors installed on both ends.

Link--A passive section of the system, the ends of which are to be connected to active components. A link may include splices and couplers.

Mux/Demux – Multiplexer/demultiplexer

110-13.02 EQUIPMENT LIST AND DRAWINGS

Equipment lists and drawings shall be prepared in accordance with the requirements of the applicable County Standard Specifications, County Standard Details, the Contract Plans and these Technical Specifications. Attention is directed to Section 86.01.04 of the County Standard Specifications and the following:

A maintenance manual shall be furnished for all equipment, and vehicle detector sensor units, control units, and amplifiers. The maintenance manual and operation manual may be combined into one manual. The maintenance manual or combined maintenance and operation manual shall be submitted at the time the equipment is delivered for testing or, if ordered by the Project Inspector, prior to purchase. The maintenance manual shall include, but need not be limited to, the following items:

- A. Specifications
- B. Design characteristics
- C. General operation theory
- D. Function of all controls
- E. Trouble shooting procedure (diagnostic routine)
- F. Block circuit diagram
- G. Geographical layout of components
- H. Schematic diagrams
- I. List of replaceable component parts with stock numbers

Measurement and Payment - Full compensation for conforming to the provisions of this Section shall be considered as included in the prices paid for the various items of Work and no additional compensation will be allowed therefore.

110-13.03 WARRANTIES, GUARANTEES, AND INSTRUCTION SHEETS

All Equipment furnished by the Contractor shall be guaranteed to the County, by the manufacturers, for a period of not less than one (1) year following the date of acceptance of the installation of such equipment unless specified otherwise. If any part (or parts) is found to be defective in materials or workmanship within the one year period and it is determined by the Engineer or by an authorized manufacturer's representative that said part (or parts) cannot be repaired on the site, the manufacturer shall provide a replacement part (or parts) of equal kind and/or

type during the repair period, and shall be responsible for the removal, handling, repair or replacement, and reinstallation of the part (or parts) until such time as the traffic signal and/or street lighting equipment is functioning as specified and as intended herein; the repair period shall be made upon notification.

The one (1) year guarantee on the repaired or replaced parts shall again commence with the date of acceptance by the County.

Measurement and Payment - Full compensation for conforming to the provisions of this Section shall be considered as included in the prices paid for the various items of Work and no additional compensation will be allowed therefore.

110-13.04 MAINTAINING EXISTING AND TEMPORARY ELECTRICAL SYSTEMS AND TRAFFIC COMMUNICATIONS SYSTEMS

Maintaining existing and temporary electrical systems and traffic communications systems shall be performed in accordance with the requirements of the applicable County Standard Specifications, County Standard Details, the Contract Plans and these Special Provisions.

Contractor shall ensure that the existing and temporary traffic signal and/or communications facilities are in operational condition until the transfer of existing system to new system.

Contractor shall take precaution not to damage any existing traffic signal and communications facilities that are to remain in place and operational during and post construction. Damage to the signal and communications facilities due to Contractor’s operation shall be repaired or replaced at the Contractor’s cost in accordance with CSS Section 86.01.06 “Maintaining Existing and/or Temporary Electrical Systems and Traffic Communications Systems.”

Traffic signal system shutdowns shall be limited to periods allowed for lane closures listed or specified in Section 110-06 "Traffic Control System and/or Temporary Roadway Lane Closure Requirements" of these Special Provisions. Signal operations including the signal detection system must remain in operational during construction and an approved detection method must be provided as specified in Section 110-06 of these Special Provisions if the existing detection system becomes non-operational as a whole or in part due to construction activities.

110-13.04.1 Maintaining Temporary Video Detection

Functioning detection for all movements and approaches shall be provided during construction. Existing vehicle detection cameras are in place at each approach of this intersection. Contractor can utilize these cameras where existing or new in-ground loops are not functioning. Existing temporary video detection cameras are Iteris Vantage Next with Vantage Vector.

Contractor shall be responsible for maintaining temporary video detection system throughout the entire duration of construction.

Upon completion of the work, the Contractor shall remove the temporary video detection equipment and deliver to the County East Yard located at 1505 Schallenberger Road, San Jose, California 95131.

Measurement and Payment - The contract lump sum price paid for Maintaining Temporary Video Detection includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all

work involved in maintaining and removing the temporary video detection system, delivering video detections system to County upon completion of the work, including all wire splicing and terminations, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

110-13.05 EQUIPMENT TESTING

Equipment shop and field testing shall conform to Section 86.02.13, "Testing," of the County Standard Specification.

Measurement and Payment - Full compensation for conforming to the provisions of this Section shall be considered as included in the prices paid for the various items of Work and no additional compensation will be allowed therefore.

110-13.06 COOPERATION

Contractor's attention is directed to Section 7.21, "Cooperation," of the County Standard Specifications in the event of construction activities by other contractor(s) within or adjacent to the limits of the Work.

Measurement and Payment - Full compensation for conforming to the provisions of this Section, shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

110-13.07 FOUNDATIONS

Foundations shall conform to Section 86.02.04, "Foundations," of the County Standard Specifications, Revised State Standard Plans number RSP ES-7B (for Type 1-B standard), and applicable Standard Plans (for signal/lighting standards) of the State Standard Plans and Project Plans. Foundations for the Type III-AF service equipment enclosure shall conform to the details in the County Standard Details and Project Plans.

The drilling of foundation hole and placement of cast-in-place concrete shall conform to Section 49-3, "Cast-In-Place Concrete Piles," of the State Standard Specifications. For piles with a diameter of 30 inches or greater, concrete shall be vibrated from the bottom of the reinforcement cage to the top of the pile. For piles with a diameter of less than 30 inches, concrete shall be vibrated in the upper 15 feet of the pile. Conduit in foundation to the nearest pull box shall be 3 inch PVC.

When potential conflict with underground utilities is anticipated and with the approval of the Engineer, exploratory hole shall be dug. The cost of this work will be included in the prices for the various other items requiring the work.

Measurement and Payment – The contract unit price paid per each for Pole Foundation (various types for signal poles) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved constructing foundations (type as described on the bid list), complete in place, including furnishing and installing conduit in the foundation to nearest pull box, all conduit terminations, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

Measurement and payment for controller cabinet foundation, service cabinet foundation, and battery backup system cabinet foundation shall be paid for as included in sections 110-13.16, 110-13.21, and 110-13.22 of these Special Provisions.

110-13.08 STANDARDS, STEEL PEDESTALS AND POSTS

New standards shall be installed as shown on the Contract Plans. See Section 110-13.31 "County-Furnished Materials" for list of standards furnished by County.

Traffic signal and safety lighting standards shall be furnished and installed in conformance with these Technical Specifications, Section 86.02.05 "Standards, Steel Pedestals and Posts" of the County Standard Specifications, County Standard Details Manual, the applicable State Standard Plans (for standards as specified on the project plans), and the following.

Traffic signal poles shall be set back from face of curb no less than 30 inches to face of standard or pole; and the base plate shall be installed parallel to the stop bar unless otherwise specified by the Engineer.

Contractor shall submit shop drawings for all signal and lighting standards and the Steel Certified Test Reports (e.g. Mill Test) for review by the Engineer. County will not accept any signal standard not meeting the requirements of this provision.

Foundations shall conform to Section 86.02.04 "Foundations" of the County Standard Specifications.

Measurement and Payment – The contract unit price paid per each for Signal Pole (various types) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in installing Signal Poles (type as described on the bid list), complete in place, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

110-13.09 CONDUIT

New conduit shall be furnished and installed of the type and at locations shown on the Contract Plans to provide additional capacity where existing conduit runs are full, or to where no conduit currently exists. In instances where a four-conduit bundle is to be installed, then orange, gray, red and black colored conduits shall be furnished and installed. Conduit work shall be performed in accordance with the requirements of the applicable County Standard Specifications, County Standard Details, the Contract Plans and these Technical Specifications. Attention is directed to Section 86.02.06 of the County Standard Specifications and the following.

Unless other specified, all conduit installed under this Contract shall be Schedule 80 PVC, HDPE, or galvanized rigid steel. PVC conduit shall be manufactured in accordance with NEMA TC-2-1998 standards. HDPE conduit shall be manufactured in accordance with NEMA TC 7-2000 standards. Conduit under roadway pavement shall be a minimum of three (3) inch diameter unless where a four or three-conduit bundles is to be installed.

A four-conduit bundle for traffic signal improvements will consist of 3 x 3 inch conduits and 1 x 3 or 4 inch conduit (for traffic signal conductors, size shown on the plans) installed in the same bore or trench. A three-conduit bundle will consist of 3 x 3 inch conduits installed in the same bore or trench. A four-conduit bundle for fiber optic improvements will consist of 4 x 3-inch conduits installed in the same bore or trench.

Conduits shall be color coded as shown on sheet E-4 of the Project Plans and as described by the following:

- Empty – BLACK Color
- Traffic Signal and Lighting – RED Color
- ITS cables (camera, cat 6) – ORANGE Color
- DLCs – GRAY Color

The directional boring method shall be used for the installation of conduit except where short conduit runs are required and right-of-way is limited for setting up boring equipment, then open-trenching shall be permitted subject

to approval by the County Engineer. When trenching in pavement is allowed, the conduit installation shall meet the trench in pavement requirements of Section 86-2.05 of the State Standard Specifications.

In the event if the County deems the existing conduit as unusable, contractor shall replace the existing conduit with new conduit of like size. The replaced conduit shall be considered and paid for as new.

Conduit shall be installed at depths as specified in Section 86.02.06C "Installation" of the County Standard Specifications, except that conduits installed within the paved or unpaved median, shall be at a minimum depth of 36 inches below finished grades. Placement of conduit on top of roadway pavement within the paved median island will not be permitted unless so specified on the project plans or in these Technical Specifications.

Where conduit is left empty or with no metallic conductors, it shall have one (1) #8 AWG, THW stranded copper locating wire. The insulating jacket of the wire shall be green. Where bundles of multiple conduits are installed in the same bore or trench, the locating wire may be installed in only one conduit. It shall then be installed in one of the empty conduits.

Conduit shall be able to withstand 95% soil compaction without collapsing.

Conduit and condulets used to penetrate the base of a controller cabinet, and conduit used for external connections to new NEMA enclosures to be mounted on the side of existing controller cabinets, shall be galvanized rigid steel.

Contractor may elect, at his option and expense, to install new conduit in lieu of installing new wiring in existing conduits. Any additional wiring or connections required shall also be at the Contractor's expense. Prior to exercising this option at any location, the Contractor shall advise the Engineer in writing of his intent.

At locations of pull box, pole foundation, cabinet foundation, conduit ends shall be terminated as specified on the Project Plans and in Section 86.02.06C, "Installation," of the County Standard Specifications. In concrete structures, including pole and cabinet foundations, galvanized rigid steel conduit shall be used.

Measurement and Payment - Conduit shall be measured on a linear foot basis, measured straight-line from pull box to pull box or from pull box to cabinet/enclosure, furnished and installed in place. Installation of the four-conduit bundle or three-conduit bundle shall be considered as one unit of conduit and measured on a linear-foot basis, straight-line from pull box to pull box, furnished and installed completed in place.

The contract unit price paid per lineal foot for Conduit includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing Conduit (type and size as shown on the contract plans and as described in these Technical Specifications), complete in place, including conduit dividers, all conduit terminations, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

The contract unit price paid per each for Connect New Conduit to Existing Conduit or Existing Pull Box includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in connecting new conduit to existing conduit or pull box (type and size as shown on the contract plans), complete in place, including all conduit terminations, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

110-13.10 CONDUIT DIVIDERS

Conduit dividers shall be installed in new or existing conduit to receive new fiber optic cable as shown on plans. Conduit dividers shall be Maxcell by TVC Communications or approved equal. Dividers shall be installed as follows:

- In existing, occupied conduits sized 2 inch or 3 inch, furnish and install a 2 inch one-cell divider.
- In new conduit sized 2 inch, furnish and install a 2 inch one-cell divider.
- In new conduit sized 3 inch, furnish and install a 3 inch one-cell divider.

Dividers shall be installed according to the manufacturer’s recommendations. At locations where the divider can be installed without damaging existing conductors, removal or reinstallation of existing conductors is not required. In this case, use a fiberglass rodder to install Maxcell if there is not an existing pull rope. A fiberglass blow tape may be used instead if approved by the Project Engineer. Under no circumstances shall a metal fish tape be used to install Maxcell in conduits with existing conductors. At other locations, installation shall conform to the requirements for conductor installation, as specified in Section 89.02.09B of the County Standard Specifications, except that slack will not be required in pull boxes and labeling shall be done through use of individually colored pull tapes or ropes in empty cells.

The Contractor shall be responsible for any damage to existing cable as a result of Contractor’s operations. In addition, the Contractor is responsible for documenting and reconnecting existing cable and wiring as found, and ensuring that it is left fully functional after new cables are installed.

The Contractor may elect to inspect and conduct tests of existing cable prior to removal, in the presence of the Project Engineer, to record the operational condition of existing wires. The Contractor will not be held responsible for any cable damage found, documented, and noted by the Project Engineer, as part of the pre-removal inspection and testing.

Measurement and Payment – Full compensation for furnishing and installing CONDUIT DIVIDERS shall be considered as included in the contract price paid for CONDUIT as shown on project plans, and no separate payment will be allowed therefor.

110-13.11 PULL BOXES

Pull boxes shall be No. 5 unless indicated otherwise on the Project Plans and shall conform to Section 86.02.07, “Pull Boxes,” of the County Standard Specifications and County Standard Details Manual E/8. Pull box cover marking shall conform to Section 86.02.07B “Cover Marking” of the County Standard Specifications except that the identification shall be “COUNTY”, followed by the correct designation, such as “TRAFFIC SIGNAL”. Pull box cover shall be a locking type.

Pull box material and installation shall conform to the applicable County Standard Specifications and County Standard Details, except as amended by these Contract Documents. Attention is directed to Section 86.02.07, “Pull Boxes,” of the County Standard Specifications and the requirements for stub modification shown in the Contract Documents, and described herein.

Pull boxes shall be located behind the curb or at the locations shown on the plans. Pull boxes shall not be installed in travel way unless specified otherwise, in which case pull boxes and lids shall be rated for H-20 traffic load application and approved by the Project Engineer.

Pull boxes shall be grouted at the bottom per details in the Contract Documents.

Where existing pull boxes are specified in the Contract Documents to be replaced with larger pull boxes, existing conduit stub-outs in these pull boxes shall be cut back to provide stub-ups of 1 inch minimum to 2 inch maximum in length. Ground bushings shall be installed on metallic conduits and end bells on PVC conduits. All conduit entries into pull boxes shall be 45° sweeps and shall conform to County Standard Specification 86.02.06C.

All N40 pull boxes shall be installed with a 12-inch extension.

All fiber optic pull boxes, including #6 communication pull boxes, shall be installed with extension as shown on County Standard Detail E/8.

Fiber optic pull boxes shall be furnished and installed in accordance with Section 86.02.07 of the County Standard Specifications, except as amended by these Contract Documents and the details as shown in the Contract plans. The Contractor shall provide a rack and hook assembly along the interior of both long sides of fiber optic pull boxes. Use rack and hooks that are designed for attaching coiled cabling and splice closures weighing as much as 100 lbs.

The depth of the rack shall not be less than 14 inches and shall be positioned on the side wall of the pull box and extension such that there is at least 4 inches clearance from the top and bottom.

Contractor shall clean all pull boxes (new and existing) entered for installation of conduit or wire of all dirt and debris. All pull box lids damaged by Contractor operations shall be replaced at his expense. The wiring in these pull boxes shall be neatly bundled, recoiled and reinstalled in the pull box.

All pull boxes shall have locking lids. All pull box lids shall be Fibrelyte, if available, or approved equal.

Measurement and Payment – The contract unit price paid per each for Pull Box (various sizes) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing Pull Boxes (type as described on the bid list), complete in place, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

110-13.12 CONDUCTORS AND WIRING

GENERAL

Conductors shall conform to Section 86.02.08 "Conductors and Cables" of the County Standard Specifications.

Splicing existing or new DLCs will not be allowed.

Wiring shall include all work as specified, including furnishing all necessary materials, equipment and labor for:

- Removing existing conductors and cables specified for reuse;
- Cleaning of existing conduits;
- Installing, connecting, and splicing new and existing conductors and cables in conduits, pull boxes, terminal compartments, traffic and pedestrian signal facilities, lighting facilities, service cabinets, and controller cabinets;
- Labeling all conductors; and
- Bonding and grounding electrical facilities.

Where existing conductors and cables are specified to be reused on the project plans, Contractor shall exercise care in the removal of and protect the cables from damage. The reinstallation of these cables into the conduit shall be expedited.

All conductors in pull boxes and cabinets shall be tagged and labeled in accordance with the requirements per E/44 of the County Standard Details Manual for new installation or modification to existing wiring.

In addition to fiber optic cable, various conductors and wiring are needed for connections including those to CCTV cameras, loop detectors, pedestrian sensors, bicycle detectors, service points and enclosures. The Contractor shall furnish and install the conductors and wiring indicated in the Contract plans.

Conductors and wiring work shall be performed in accordance with the requirements of the applicable County Standard Specifications, County Standard Details, the Contract Plans and these Technical Specifications. Attention is directed to Section 86.02.08, "Conductors and Cables," and Section 86.02.09, "Wiring," of the County Standard Specifications.

Fire preemption cable shall conform to the requirements of the existing Opticom preemption system.

CABLING FOR CCTV CAMERAS

CCTV Cable:

The Contractor shall furnish and install LAN-Trak OSP outside plant cable or approved equal. Cable shall have TIA/EIA-568-C.2 Category 6 electrical performance. Cables shall be designed for exposure to the elements. Jacket shall be black UV-resistant polyethylene, with craft-friendly semi-dry flooding material that cleans easily from the cable core.

Specifications:

Cable Type	4 Pair, 24 AWG, Duct/Aerial Lashed
Jacket Diameter	.261 inches
Weight	36 lbs/M
Min. Bend Radius	2.75 inches

Cable and power conductors shall be used at all intersections where new video cameras are being installed.

All CCTV cabling shall be tagged to indicate which camera it serves. The Contractor shall contact the Project Engineer for camera addressing. The Contractor shall test the cables for continuity prior to and after installation.

All cables shall be rated for outdoor, underground, dry and wet installation and be provided with appropriate strain relieved plug type connectors for connection to leads extending from the camera assembly.

The installation of the cabling may require that a hole be drilled into the camera supporting structure. Prior to drilling this hole, the existing wiring inside the pole or mast arm shall be removed or protected such that it is not damage by the drilling operation. The edges of the drilled hole shall be smoothed. The Contractor shall install a watertight gland nut in this hole that securely holds the wiring.

The Contractor shall install the cable between the camera and the pole entrance such that it forms a drip loop to prevent water from flowing down the cable into the hole.

Camera video, power, and control cables shall be installed in the pole, conduit, and cabinets or side-mounted equipment enclosures. All cable runs shall be continuous and shall run without splices between the camera

assembly and the cabinet. Cable ends shall be kept sealed at all times during installation using an approved cable end cap. Tape shall not be used to seal the cable end. The cable end shall remain sealed until connectors are installed. All terminations and cable connectors shall be installed per manufacturer specifications. The minimum bending radius of the cable, as established by the cable manufacturer, shall not be exceeded at any time. Where cables enter into an equipment cabinet, a minimum of two meters of cable slack shall be provided in the cabinet. Where cables enter into a side-mounted equipment enclosure, a minimum of two meters of cable slack shall be provided in the pull box nearest to the side-mounted equipment enclosure.

All cables shall be:

- installed without damaging the conductors or insulation;
- installed without kinks;
- installed with sufficient slack for equipment movement;
- have a watertight, strain relieved plug type connection to the camera housing.

Detailed requirements for installation of new wiring in conduits with existing wiring are stated elsewhere herein. These methods and provisions shall be followed by the Contractor.

The Contractor shall make all connections of this wiring to the camera assembly, the video transmission device and power.

Measurement and Payment – The contract lump sum paid for CONDUCTORS AND WIRING includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing Conductor and Wiring, complete in place, including all wire splicing and terminations, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

110-13.13 FIBER-OPTIC CABLE

Work under this item shall include the removal of existing fiber optic cable from existing conduit, furnishing and installing new cable through new and existing conduit and pull boxes, splicing and termination of fiber optic cable as shown on the plans.

Work under this item shall comply with the following Sections of the of the County Standard Specifications:

- Furnish and Install 12 Strand SMFO and 96 Strand SMFO (Trunkline) Fiber Optic Cable – Sections 86.02.08F and 86.02.09C
- Splicing and Splicing Insulation – Section 86.02.09E(2)
- Fiber Optic cable testing – Section 86.02.13D

New/existing fiber optic cable (12 Strand SMFO Cable (Branch)) shall be spliced/re-spliced at the locations shown on the contract plans by the Contractor. Where shown on the Contract Plans, fiber optic cable shall be pulled out of existing conduits and reinstalled through new and/or existing conduits, and spliced and terminated by the Contractor.

INSTALLATION OF FIBER OPTIC CABLE

Installation procedures shall be in conformance with the procedures specified by the cable manufacturer for the specific cable being installed, Section 86.02.09C of the of the County Standard Specifications, and Section 110-

13.09 "Conduit", and Section 110-13.10 "Conduit Dividers", and Section 110-13.12 "Conductors and Wiring" of these Technical Specifications.

All cable installation work shall be carried out in accordance and consistent with the highest standards of quality and craftsmanship in the communication industry with regard to the electrical and mechanical integrity of the connections; the finished appearance of the installation; as well as the accuracy and completeness of the documentation.

The Contractor shall make a physical survey of the project site for the purpose of establishing the exact cable routing and cutting lengths prior to the commencement of any fiber optic work or committing any fiber optic materials. The Contractor shall submit a cable routing plan that shows the locations of all splices. The fiber shall only be spliced at the locations shown on the plans unless otherwise approved by the Engineer.

All work areas shall be clean and orderly at the completion of work and at times required by the Engineer during the progress of work.

If the fiber cable reel is left outside overnight during installation, the Contractor must provide security for the cable.

Prior to the removal and re-installation of the fiber optic cables, the Contractor shall prepare and submit a detailed, written installation plan to the Project Engineer for approval. At a minimum, the installation plan shall address the following:

- Assignment of activities
- Data forms for testing
- Equipment and supplies to be used
- Identification of potential problem areas
- Identification of safety issues
- Installation methods
- Traffic control plans

The Contractor shall monitor the supply reel during removal and re-installation to prevent violation of the bend radius due to back wrapping, improper winding of the cable on the reel, or loosening of the cable on the reel. At all times, the Contractor shall use the proper tools and techniques for the installation of fiber optic cable. A fiber optic cable lubricant, compatible with the jacket material of the cable, shall be utilized during the installation into the conduit. The figure 8 technique shall be used for storing cable at intermediate locations when dividing long pulls into several shorter pulls. Service loops shall be provided in pull boxes and splice vaults as shown on the plans and in accordance with the County Standard Specifications. Cable utilizing water-blocking gels shall be capped to prevent the gel from flowing out of the cable. Fibers and buffer tubes shall be protected at all times to prevent accidental damage or breakage.

SPLICING AND CONNECTORIZING OF FIBER OPTIC CABLE

The Contractor shall make splices and terminate branch cable at locations shown in the Contract Documents, as approved by the Engineer and conform to Sections 86.02.09D, "Connectors and Terminals," and 86.02.09E, "Splicing and Splicing Insulation," of the of the County Standard Specifications.

The Contractor shall make all splices as shown on the plans in accordance with the splicing details. Where trunkline splices are called for in the Contract Documents to join two lengths of 96-strand cable, the Contractor shall splice each strand of the cable. Trunkline splicing shall be performed to provide continuity between similar

strands (e.g. splice strand 1 of upstream cable to strand 1 of downstream cable). Splices shall be made as shown on the fiber splice diagram in the Contract Documents. Intermediate splices may be made for convenience to connect cable segments between designated splice locations, but no such splices shall be less than 1,000 meters (approximately 3300 feet) apart without the approval of the Engineer. The Contractor must receive approval from the Project Engineer before performing any splices that are not indicated in the Contract Documents. The Contractor shall furnish and install an additional fiber optic pull box and underground splice closure if directed by the Engineer at intermediate splice locations if not already shown in the Contract Documents, and the costs of any such intermediate splices, pull boxes, or splice closures shall be paid for at the bid prices for the applicable items of work.

Lateral splicing shall be made to splice the 96-strand trunk cable to the 12-strand drop cables at the individual field devices. Splices shall be made as shown on the fiber splice diagram in the Contract Documents.

All fiber strands terminating at cabinets shall be spliced to and terminated with a connectorized pigtail.

The F/O cable splices shall be the fusion type and shall not exceed 0.05 dB loss per splice. Splice losses shall be measured and recorded by the splicing equipment. This measurement shall not be used in lieu of OTDR testing of the fiber. All splices shall be tested in accordance with the requirements of the following subsection of these specifications.

Splices shall be housed in a splice tray in a splice enclosure and in underground splice closures or fiber termination units as shown in the Contract Documents. All splices shall be protected with a thermal shrink sleeve. The Contractor shall perform all outdoor splices within a tent, truck or trailer. If the Contractor wishes to use another type of facility for splicing, it must be approved by the Engineer on a day by day basis.

Cable routed through a fiber optic splice pull box without being spliced shall have a minimum amount of cable (per the Contract Documents) left coiled within that pull box to accommodate future splicing. Cable shall be coiled in all other pull boxes and cabinets per the Contract Documents. Different lengths of coiled cable shall be provided where shown in the Contract Documents or as specified in the County Standard Specifications.

Only those fibers that are to be spliced shall be removed from the cable and buffer tubes. All other fibers shall remain in their tubes and shall be suitably protected. The Contractor shall seal all cables where the cable jacket is removed. The cable shall be sealed per the cable manufacturer's recommendation with an approved blocking material.

Contractor shall submit to the Engineer for approval the resumes with references of people who will be performing splices. Splices shall be performed only by experienced personnel with experience including successful completion of no less than 2000 fusion splices. Only those individuals approved by the Engineer shall be allowed to make fiber optic splices.

Prior to splicing or connectorizing the fiber optic cable, the cable shall be prepared in accordance with the method described below:

- Remove jacket without damaging buffer tubes.
- Expose fibers without damaging by removing buffer tube with purpose built tool.
- Clean fibers and buffer tubes using a solvent designed to remove all water blocking gel from each exposed fiber.
- Solvent must not remove any color from individual fibers or buffer tubes and must not be harmful to the MDPE cable jacket.

- Cleave tools shall be used during splicing to cut the individual fibers as close to a perfect 90 degree angle as possible, thus allowing the highest core to core alignment and therefore the lowest dB splice loss. The manufacturers of cleave tools have established "end angle" cleave averages that are based on a minimum of 150 cuts utilizing a minimum of 10 cutters. Based on these test results, the County shall allow cleave tools that have minimum end angle averages as follows: Less than 0.70 degree average with no cut of the 150 cleaves exceeding 1.5 degree. Prior to the splicing of any fiber cable, the Contractor shall submit to the Project Inspector the part number and manufacturer of the cleave tool along with an "end angle" distribution chart that demonstrates the actual 150 cut end angles.

SPLICE AND CABLE LOGGING OF FIBER OPTIC CABLE

The Contractor shall keep accurate detailed records of each splice and each splice location. These records shall include the date each splice was made, the name of the splicer, splice location, splice loss, fiber and tube color codes, splice tray number and position of the fiber within the tray. For each splice closure, the Contractor shall provide the Engineer with a chart indicating the source and destination of every fiber spliced in that enclosure, and indicating the tray and position within each tray. This also applies to fibers terminated at patch panels.

To log the fiber routes, terminations and splices, the Contractor shall use a series of numbers and letters to describe the cable, tube, fiber and location of the termination or splice. The following naming convention shall be used as a guide to developing your documentation:

TOS-Intersection Name-Hub Location-Sequential #

Segment Name-# Strands

Buffer Tube Color-Strand Color

FIBER OPTIC PIGTAILS

Contractor shall furnish and install fiber optic pigtails at the end of all fiber strands terminating at cabinets and communications hubs that meet the following requirements:

- 250 μm buffering of each fiber
- 900 μm buffering of each fiber applied after the initial 250μm buffering
- Maximum factory measured insertion loss of 0.5 dB per EIA/TIA 455-171
- Less than 0.2 dB loss when subjected to EIA/TIA-455-1B, 300 cycles, 1.1 lbs (0.5 kg)
- Minimum tensile strength of 35 lbf (154 N).
- ST connectors on one end, factory terminated with strain relief. All connector bodies shall be metallic and all ferrules shall be ceramic.

Contractor shall match the color of single fiber pigtails with the color of the fiber that it is spliced to. Alternatively, single fiber pigtails may be routed through colored fan-out tubing that matches the fiber that it is spliced to. Pigtails shall be of a suitable length to be routed from fiber splice trays to the fiber termination panels. Contractor shall adhere to manufacturer recommended installation and minimum bend radius requirements. After installation, all connectors shall be cleaned with alcohol wipes and a compressed cleaning gas.

FIBER OPTIC CABLE TESTING

The Contractor shall test the existing fiber optic cable prior to disconnection and removal of the cable (before), and then Contractor shall test the cable after the reinstallation and re-splicing process (after) to ensure that cable performance after installation is essentially equal to its performance before removal. The Contractor shall test fiber optic cable per the requirements of County Standard Specifications Section 86.02.13D. Test results shall be furnished to the County in a neatly bound, printed format. Electronic submittal to the Project Engineer on floppy disk or compact disc (CD) shall also be required.

The Contractor shall be responsible for formulating and developing test procedures and forms for approval by the County in conformance with ANSI/TIA/EIA 526-7 "Measurement of Optical Power Loss of Installed Single-mode Fiber Cable Plant." All tests shall be performed with light wavelengths at 1310 nm and 1550 nm. Test forms shall contain at least the following basic information: type of test performed, type of equipment used (including name and model number), results of calibration check, location of test equipment used, technician(s) performing the test, date of tests, wavelength(s) tested, cable ID reference, buffer tube color, reference reading, fiber number, direction of reading/attenuation, and any general notes or remarks the technician(s) determine to be pertinent to this process. The test forms shall include the required power level reading required in each strand of cable, for the before and after conditions, based on the following equations:

1. For 1310 nm: $\text{Max loss} = 0.4L + 0.2N + 0.5C + K$
2. For 1550 nm: $\text{Max loss} = 0.3L + 0.05N + 0.5C + K$; where:
 - L = actual optical path length in km
 - N = number of splices in optical path
 - C = number of connectors
 - K = 3 dB (a constant for optical point discontinuities)

All results shall be submitted in printed form on 216 mm x 279 mm paper in a suitable binder organized by cable and strand number. Each binder shall have a cover sheet indicating which cable(s) were tested, the operator's name, the reviewer's name, the type of test performed, and the date(s) of the test. Cover sheets for the final test results shall bear the reviewer's signature, the date, and a statement indicating that the installation complies with the requirements of this section.

All traces shall bear the signature or initials of the Contractor's representative who has reviewed the traces. The Contractor shall place a check mark on all traces that satisfy the requirements identified herein. For intermediate test results, the Contractor shall highlight any discrepancies that may exist and place a post-it flag on the subject page. The page shall bear a short description of the proposed corrective action (e.g., re-splice).

Records of all factory inspections and tests shall be maintained by the County and made available at the request of the Contractor with 20 working days advance notice.

As-built data sheets shall be prepared by the Contractor and submitted to the County for its maintenance and troubleshooting activities. Three copies of the as-built data sheets shall be provided to the Project Engineer and shall also include the following information:

- Insertion loss measurements
- OTDR measurements
- Wavelength
- Spectral width
- Equipment used (manufacturer, model number, and serial number)

- Direction of test

In addition, the Contractor shall perform a continuity test following the installation of all pigtails and termination devices. The Contractor shall connect the light source to the connectorized fiber and shall connect a power meter to the other end of the fiber. The Contractor shall turn the light source on and off at a rate of approximately once per second for three cycles. The individual observing the power meter shall record the response of the meter. The response shall be "OK" if the Contractor's individual notes the meter responding to each of the three cycles. Any other responses, such as no cycles, less than three cycles, or more than three cycles shall require a "BAD" response. For each "BAD" response, the Contractor shall submit to the County a statement summarizing the response noted on the power meter and shall correct all "BAD" responses. After making corrections to the cable, the strobe test shall be re-conducted. A tone modulated light source may also be used, in place of the three-cycle method, to conduct this test. Continuity tests shall be performed in both directions for all fibers terminated on both ends.

FIBER CONDUIT PROTECTION MARKER

The fiber conduit protection marker shall be comprised of a construction poster, warning tape, and conduit marker. Each is specified below.

The Contractor shall furnish and display at poster in the vicinity of all conduits intended to contain fiber-optic cable. All such conduits shall be identified with temporary markers during construction. Warning tape shall be used for all new conduit installed by trenching. All conduit and pull boxes containing fiber-optic cable shall be identified with permanent markers within two weeks of installation of fiber-optic conduit.

CONSTRUCTION POSTER OF FIBER OPTIC CABLE

The Contractor shall display a poster in the vicinity of all conduits containing and/or intending to contain fiber-optic cable that highlights the locations of buried conduits. This poster shall be displayed during all relevant construction phasing. The poster shall list the General Contractor, a phone number for contacting the General Contractor, and "Santa Clara County Foothill Expressway Operational Improvement Project". The poster shall help construction crews avoid causing accidental damage to buried conduits. It shall serve as a warning to the general public that fiber conduit is buried in the area. The poster shall be easily installable, visible, and safe. The poster material shall be such that it will not result in sparks, fire, or explosion when struck.

TEMPORARY MARKERS FOR FIBER OPTIC CABLE

Temporary markers shall be installed along the conduit path immediately after the installation of fiber-optic cable into new or existing conduit to warn construction crews of the presence of fiber-optic cable.

In paved areas, temporary marking shall consist of bright orange spray paint along the conduit path and the lettering "F/O" no more than 30 meters (100 feet) apart from each other. Spray paint shall be approved for outdoor marking. Spray paint shall be removed by water blasting or other approved method within 5 working days from installation of permanent markers.

In unpaved areas, temporary markers shall be installed above the conduit and spaced no more than 100 feet apart from each other. These markers shall be clearly visible from a distance, and shall be bright orange in accordance with the APWA national color code. Temporary markers shall be Line Mark ® Flags by Smi-Carr or approved equivalent. It is the Contractor's responsibility to ensure that all temporary markers are placed correctly and in an upright position by the end of each work shift.

1. Warning Tape

When conduit is installed using the trenching technique, a continuous warning tape marker shall be installed throughout the length of the underground conduit intended to contain fiber-optic cable. The marker shall be located at a depth of 330 mm (13 inches) below the ground surface and 600 mm (24 inches) above the conduit level. The tape marker shall be 75 mm (3 inches) width, 4 mils thick, bright orange in color (in accordance with the APWA national color code), stretchable (detectable as optional), and appropriately labeled for fiber cable application. The tape shall be permanently imprinted with a black, environmentally safe ink with an appropriate legend to define the fiber-optic cable line that it protects. The tape shall be suitable for direct burial and prolonged exposure to the elements normally encountered in the earth's soils. It shall be made of material with a similar life expectancy as the conduit.

PERMANENT MARKERS OF FIBER OPTIC CABLE

Regardless of the method of installation, all new and existing conduit containing fiber-optic cable shall be marked with permanent fiber-optic markers. All permanent markers shall be bright orange in color, formulated for all-weather, extended use above ground, and shall retain their color after installation, to the satisfaction of the Project Inspector. Details regarding the layout and lettering of permanent markers can be found in the Project Standard Details sheets. Permanent markers shall be installed no later than two weeks after the installation of fiber-optic conduit system.

Permanent fiber-optic cable markers shall be installed at each pull box containing fiber-optic cabling and within 1.5 feet along the fiber-optic cable conduit path, spaced no more than 600 feet apart from each other. Permanent markers shall be installed at every junction where the conduit path changes more than 30 degrees. Where the conduit crosses any roadway, light-rail track, railroad tracks, or bridge structures, permanent markers shall be installed on both sides of the crossing.

In unpaved areas, permanent markers shall be flexible line marker (Flexpost by William Frick and Company or approved equivalent). These markers shall be 4 feet in length and installed approximately 1 foot underground.

All pull boxes containing fiber-optic cable in paved or unpaved areas shall be marked with a permanent marker, which shall be Duracast® das Curb Markers by das Manufacturing or approved equivalent. The marker shall be circular in shape, 4 inches (103 mm) diameter, and made from high-impact plastic, bright reflective material with UV resistant coatings and imprinting. Markers shall be mounted to the top of pullbox lids. The markers shall have non-skid surfaces, and shall have secured with epoxy cement or adequate approved anchorage to prevent removal of the marker.

Measurement and Payment – The contract lump sum paid for removing and reinstalling existing FIBER OPTIC CABLE, and furnishing and installing new FIBER OPTIC CABLE shall include removing, storing, reinstalling, splicing, connectorizing, terminating, labeling & markers, including permanent markers of fiber optic cable, and for doing all work involved in removing and reinstalling existing, furnishing and installing new Fiber Optic Cable, complete in place, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

110-13.14 FIBER OPTIC CABLE SPLICE CLOSURES

Work under this item shall include furnishing and installing fiber optic splice enclosures at those locations as shown in the Contract Documents. The splice enclosure shall be Tyco "Raychem" enclosure, or equivalent, which accommodates up to 144 splices per enclosure. The enclosure shall include a three-section end plate with six pre-molded cable entry ports; 4 ports for up to 7/8" OD cables and 2 ports for up to 3/4" OD cables.

The work performed under this item shall conform to the section 86.02.09G, Splice Enclosures, of the of the County Standard Specifications and these specifications.

Following splicing, ensure that the underground splice closures are sealed watertight and secure them to the rack and hook assembly in such a manner that the front end cap of the closure is 150 mm (6") lower than the opposite end.

Neatly and separately coil each slack fiber optic cable in fiber optic pull boxes and secure each coil to the hook and rack assembly. See Contract Documents for splice pull box and splice closure installation details.

Each splice enclosure, fiber termination panel and fiber termination unit will be labeled in accordance with the naming convention listed in the Fiber Optic Cable section of these Technical Specifications.

Measurement and Payment – The contract unit price paid per each for Fiber Optic Splice Enclosure includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing Fiber Optic Splice Enclosure, complete in place, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

110-13.15 BONDING AND GROUNDING

Bonding and grounding shall conform to Section 86.02.10, "Bonding and Grounding," of the County Standard Specifications.

Measurement and Payment - Full compensation for conforming to the provisions of this Section shall be considered as included in the prices paid for the various items of Work and no additional compensation will be allowed therefore.

110-13.16 SERVICE

County has applied for the service relocation from PG&E. Contractor shall coordinate with PG&E for electrical service disconnection / reconnection and inspection.

Electrical service installation shall conform to Section 86.02.11, "Service," of the County Standard Specifications (See Amendments dated January 7, 2011) and the State Standard Specifications, County Standard Plans and these Special Provisions.

New Type III-AF service enclosure and foundation shall be installed as shown on the plans and on the County Standard Plans.

Measurement and Payment - Type III-AF Service Enclosure & Equipment will be measured as each unit furnished and installed complete in place. Payment shall be made at the unit price per Furnish and Install Type III-AF Service Enclosure, including cabinet foundation, which price shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals required for furnishing and installing the service cabinet and no additional allowance will be made. Service connection fee will be paid by Santa Clara County.

110-13.17 CLOSED CIRUCIT TELEVISION (CCTV) CAMERA SYSTEM

GENERAL

The Contractor shall install County-furnished CCTV equipment, including: camera, mounting hardware, lenses, and. and any additional equipment required for a complete and operational CCTV assembly. Contractor shall furnish and install all new cabling as necessary to provide a fully operational CCTV system.

The CCTV assembly shall be installed such that the camera viewing coverage is optimized as directed by the Project Inspector.

MATERIALS

As part of the relocation process, Contractor shall furnish any CCTV appurtenances necessary to mount the cameras on the new traffic signal poles, as well as new cabling necessary to connect to the CCTV system in the controller cabinet.

INSTALLATION

The Contractor shall install the CCTV assemblies at those locations as shown in the Contract Documents. Where necessary, pole mounting adapters shall be electrically bonded to the camera pole. The camera assembly shall be electrically bonded to the pole mounting adapter. Refer to Section 110-13.12, "Conductors and Wiring", for additional cable installation requirements.

The Contractor shall install and fully adjust the camera with the associated lens, power supplies, housings, and pan/tilt and dome units (if applicable), and furnish and install all necessary cabling, etc., to make the assembly completely operational.

The Contractor shall firmly attach the camera to the housing. The Contractor shall exercise care to tighten the camera mount within the torque limits specified by the camera manufacturer.

The Contractor shall properly terminate all of the electrical cables to the camera and firmly attach them.

The camera shall be mounted in the housing within 0.24 inches of the optical window. This distance is measured with the lens attached and adjusted to its maximum physical length.

The Contractor shall mount the camera in the housing such that the lens is centered in the optical window.

Positioning and Configuration of Fixed Camera Equipment

Cameras and other video sources where possible, shall use the electrical power supply 60 Hz signal for synchronization. After installation, the Contractor shall adjust the phase setting to synchronize all cameras, and other video sources where possible.

There shall be no image roll when different cameras are sequentially switched to the same monitor.

When cameras are initially installed, they shall be aimed to view one leg of the intersection at which they are installed. The intersection leg to be viewed shall be as designated by the Engineer. The initial aiming of cameras shall allow viewing of the stop line for approaching traffic and part of the intersection itself in the foreground, and the approaching and departing roadway (to the horizon if possible) in the background. The Contractor shall enable the Engineer to interactively view the camera image and choose the view for the first camera installed, and thereafter shall use that experience to aim other cameras similarly.

After all cameras are installed and central equipment is operational, the Contractor shall arrange an interactive session with the Engineer to fine tune the aiming and other adjustments at cameras, including the stop points and presets for moveable cameras. This session shall enable the Engineer to observe the image at the control room while being in verbal communication with the Contractor at the camera. The means of verbal communication shall be provided by the Contractor. The Contractor shall make adjustments as directed by the Engineer. The Engineer will continue to observe the image while adjustments are made and will direct further adjustments as needed to achieve the desired view and picture quality. A representative of the Contractor shall accompany the Engineer in the control room during this procedure.

Camera aiming adjustments may involve rotation of the entire camera mounting around the supporting pole or arm and small longitudinal movements along the pole or arm within the limits of the attached cables, in addition to adjustments within the mounting hardware. Contractor shall ensure the camera lens and enclosure glass are left clean.

Testing

All equipment shall be tested at the camera locations and the TOC during both daytime and nighttime to verify proper operations and ensure picture quality. The testing shall be conducted in conformance with these Specifications.

The Contractor shall arrange to have a signal technician, qualified to work on the CCTV Camera System and employed by the CCTV Camera System manufacturer or his representative, present at time the equipment is turned on.

The Contractor shall successfully complete the Camera Cable Test and Local Operations Test as described below.

Camera Cable Test:

The Contractor shall perform the following Camera Cable Test. The Contractor shall furnish all equipment, appliances, and labor necessary to test the installed camera cable between the camera assembly and the cabinet. The Contractor shall perform the following tests before any connections are made:

1. Perform continuity test on the camera cable. Camera cable must not exhibit any discontinuities such as opens, shorts, crimps, or defects.
2. Perform continuity tests on the stranded conductors element of the camera cable using a meter having a minimum input resistance of 20,000 ohms per volt. Show that each conductor has a resistance of not more than 16 ohms per 300 meters of conductor.
3. Measure the insulation resistance between the conductors and between each conductor, ground, and shielding using a meggar. The resistance must be "infinity". All resistance testing is to be performed after final termination and cable installation, but prior to connection of any electronics or field devices.
4. Should any cable fail to meet these parameters, or should any testing reveal defects in the cable, the Contractor will replace the cable, then retest new cable as specified above.
5. Submit copies of the test results, including any unsuccessful and subsequently successful tests to "The Engineer" prior to any field operations testing.

Local Field Operations Test:

The Contractor shall perform the Local Field Operations Test at the CCTV field site, as follows. The Contractor shall test the cameras before the relocation process and after the relocation process, to ensure that the camera performance remains at similar or improved levels. After all camera hardware, power supply, and connecting cabling has been installed, demonstrate the following:

1. Verify physical construction has been completed in accordance with the Contract Documents and specifications.
2. Inspect quality and tightness of ground and surge protector connections.
3. Check power supply voltages and output.
4. Connect devices to power source.
5. Verify the installation of specified cables and connections between camera, pan/tilt unit, camera control receiver, and video/data transmission equipment.

- 6. Set the camera control address.
- 7. Verify presence and quality of video image locally with laptop computer (assisted by County technician).
- 8. Test local operation of all CCTV equipment, by exercising the pan, tilt, zoom, focus, iris opening, and manual iris control selection and operation, low pressure alarm (if present), pre-set positioning, and power on/off functions while observing the video picture on a laptop computer and assisted by a County technician. The County will provide software to the Contractor for testing of the CCTV unit. The Contractor will furnish all other test equipment.
- 9. Demonstration of camera sensitivity at low light levels to match existing camera performance prior to relocation.
- 10. Demonstration of pan/tilt speed and extent of movement to match existing camera performance prior to relocation.
- 11. Measurements of video signal level at the communications interface.
- 12. Verify proper voltage of power supply.
- 13. Submit copies of the test results, including any unsuccessful and subsequently successful tests to the Project Engineer prior to any field operations testing.

Measurement and Payment – The contract lump sum paid for Install Closed Circuit Television (CCTV) Camera System shall include installing, splicing, testing, and for doing all work involved in installing CCTV Camera System, complete in place, including all new wiring, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

110-13.18 LABELING REQUIREMENTS

GENERAL

All signal conductors, detector lead-in cables, video and fiber optic cables, connectors, jumper cables and fiber terminations shall be labeled as part of the equipment installation process. Labeling shall consist of phenolic tags on cables and connectors and labels on Fiber Termination Panels and Fiber Termination Units.

Fiber Optic Cable Labeling Requirements

All fiber optic cables shall be labeled in pull boxes, splice vaults and communications hubs with a cable tag approved by the Project Engineer.

The labels will be an orange weather resistant tag and are required inside every pull box.

The labeling format for County owned cables is:

Project Name-Expressway-# Strands-Sequential #
Segment Name (for trunk line) or Intersection (for lateral)
Agency Name
Contact Phone #

The County of Santa Clara will assign the sequential number. The Contractor shall supply labels. For example, the 96-strand fiber optic cable running along the Almaden Expressway at Camden Avenue would be labeled as follows:

TOS-ALMADEN-96-1
XXXXXXXX
County of Santa Clara

(408) 494-2700

Intersection Enclosure/Cabinet Labeling Requirements

- Both ends of the CAT 6 cable connecting each camera to the fiber optic switch.
- Fiber optic cable in the fiber termination panel (FTP). Each FTP port shall be numbered and a table created showing the port number, assigned fiber strand and a brief description of the port's use (ex. Video to the Hub, Unconnected, etc.). This table shall be placed in the enclosure/cabinet for reference by Santa Clara County maintenance personnel.

Measurement and Payment - Full compensation for LABELING REQUIREMENTS shall be considered as included in the prices paid for the various items of Work and no additional compensation will be allowed therefore.

110-13.19 HUB INTEGRATION

The Contractor shall make all necessary connections to provide a complete and operational system. This includes the installation, connection and testing of all communication equipment as described in Section 110-13.13, "Fiber-Optic Cable" and Section 110-13.46, "Fiber Optic Cable Splice Closures", and the testing described in Section 110-13.20, "System Testing". Specifically, at the Almaden Hub, the Contractor is responsible for producing video signals from each camera and testing all video and data connections that are to be relocated at the Project Intersections.

Measurement and Payment – The contract lump sum paid for Hub Integration shall include testing all CCTV camera systems and fiber optic cables that are relocated and reconnected as part of this project, ensuring that the systems work properly as they did prior to disconnection/relocation, and for doing all work as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

110-13.20 SYSTEM TESTING

To verify complete system operations the Contractor shall perform a communications subsystem test and system communications test.

Communications Subsystem Test

The communications subsystem test will verify the intersection to hub communications. This test shall not be conducted until the following conditions are met:

- All field CCTV cameras have been installed and passed their local operations test.
- All fiber optic cable has been installed, spliced, terminated and tested.
- All intersection to hub communications equipment has been installed and all terminations have been made.

The Contractor shall conduct, pass, and document a test to demonstrate the functionality of the CCTV camera sites, and master controllers from their respective communications hubs. The test shall be performed at the communication hub, and shall include the following elements. The test shall be conducted on the output of the fiber switch located in the TOC.

1. Operation of all pan/tilt camera assemblies, i.e., exercising the pan, tilt, zoom, focus, and iris functions, while observing the video picture monitor.

2. Verification of acceptable quality video images, and that video images output from the intersection fiber switch to Hub fiber switch conform to NTSC standards. For the fixed cameras, the test shall be conducted with all cameras at the intersection connected to the fiber switch at the intersection and transmitting video images to the Hub fiber switch. For locations that have master signal controllers, the master controller shall also be connected to the fiber switch at the intersection and two-way data shall be transmitted between the communication hub and the master traffic signal controller during the test.
3. Verification of valid data communications between the communication hub and the master controller. In addition, by using a laptop computer, the Contractor shall poll the master controller. This test shall be conducted while all fixed cameras at the intersection are also connected to the fiber switch at the intersection and transmitting video images. Polling of the master controller shall be conducted for at least 15 minutes with 99.9% valid polls required for acceptance.

The Contractor shall notify the County at least 48 hours prior to conducting the subsystem test. The Contractor shall document results of all tests on forms to be developed by the Contractor. The documentation shall specify the camera or controller tested, the results of the test and any corrective action that was necessary.

Communications System Test

The system communications test will verify the complete system communications from the TOC, through the communications hubs to the field devices. This test shall not be conducted until:

- All field CCTV and PTZ cameras have been installed and passed their local operations test
- All fiber optic cable has been installed, spliced, terminated and tested
- All intersection to hub communications equipment has been installed and all terminations have been made.
- All communications subsystem tests have been successfully completed.

The Contractor shall conduct, pass, and document a test to demonstrate the functionality of the CCTV camera sites, and master controllers from the TOC. All field equipment shall be connected to the communications network and transmitting video/data during the test. The test shall be performed at the TOC, and shall include the following elements.

1. Operation of all pan/tilt camera assemblies, i.e., exercising the pan, tilt, zoom, focus, and iris functions, while observing the video picture a monitor. The test shall verify that all commands are received and executed in real-time with no delay that will impact system operations.
2. Verification of acceptable quality video images, and that video images output from the fiber switch at the TOC conform to NTSC standards.
3. Verification of valid data communications between the communication hub and the master controller. In addition, by using a laptop computer, the Contractor shall poll and upload/download data to the master controller. Polling of the master controller or other acceptable method approved by the Engineer shall be conducted for at least 15 minutes with 99.9% valid polls required for acceptance.

The Contractor shall furnish all equipment necessary to conduct the communications subsystem test. The County will provide diagnostic programs for communicating to the master controllers and the pan/tilt CCTV cameras.

The Contractor shall notify the County at least 48 hours prior to conducting the subsystem test. The Contractor shall document results of all tests on forms to be developed by the Contractor. The documentation shall specify the camera or controller tested, the results of the test and any corrective action that was necessary.

Measurement and Payment – Full compensation for conforming to this Section shall be considered as included in various contract bid items of work and no separate payment will be made therefor, unless otherwise specified elsewhere in these Special Provisions.

110-13.21 CONTROLLER ASSEMBLIES

Contractor shall install County-furnished Controller Assemblies as specified on the Project Plans and in Section 86.03, “Controller Assemblies,” of the County Standard Specifications (See Amendments dated January 7, 2011). The new Controller Assembly shall be installed at the intersection of Almaden Expressway and Camden Avenue.

Measurement and Payment – The contract unit price paid per each for Install County-Furnished Controller Assembly includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in installing new Controller Assembly, complete in place, including foundation, conduit terminations and connection of conductors, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

110-13.22 RELOCATE EXISTING BATTERY BACKUP SYSTEM AND INSTALL NEW FOUNDATION

Contractor shall relocate existing Battery Backup System and install new foundation as specified on the Project Plans and in Section 86.10, “Battery Backup System,” of the County Standard Specifications (See Amendments dated January 7, 2011).

Measurement and Payment – The contract unit price paid per each for Relocate Existing Battery Backup System and Install New Foundation includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in relocating existing Battery Backup System, complete in place, including foundation, conduit terminations and connection of conductors, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

110-13.23 TRAFFIC SIGNAL FACES AND FITTINGS

GENERAL

The Contractor shall furnish and install signal heads and hardware as specified in these Project Plans and in section 86.04, “Traffic Signal Faces and Fittings,” of the County Standard Specifications and as amended by Section 107 of these Special Provisions.

Traffic signal faces and fittings shall conform to the details on the Project Plans, Section 86.04, “Traffic Signal Faces and Fittings,” of the County Standard Specifications and as amended by Section 107 of these Special Provisions and the following:

- All signal heads shall be installed with aluminum backplates and visors, all with black homogeneous color.
- All signal head shall have LED indications manufactured by GE Ecolux, Leotek or approved equal.
- A yellow retroreflective strip with a minimum width of 1-inch and a maximum width of 3 inches may be placed along the perimeter of the face of a signal backplate to project a rectangle appearance at night. Backplates with reflective borders manufactured by McCain, 3M 3930 Series High Intensity Prismatic Reflective Sheeting, general specifications Aluminum: 0.050” thick, non-louvered and powder coated. Retroreflective Tape Specifications Type: Series 3930, color: Yellow (standard) and Width 2-inches.

Upon installation, contractor shall temporarily mask all signal indication with an approved tape until the signal system is turned on for operation, at which time Contractor shall remove it.

New vehicle signal faces and signal heads shall be installed as shown in the Contract Documents. The work in this Section shall be performed in accordance with the requirements of the applicable County Standard Specifications, County Standard Details and the Contract Documents.

Signal Head Mounting Hardware

The Contractor shall furnish and install signal mounting hardware.

Signal head mounting hardware shall have adequate length on their component to accommodate the backplates and permit adjustment of the signal head for proper alignment.

Mounting hardware for pole top and side installation, and mastarm tenon installation shall conform to State Standard Plans ES-4A and RSP ES-4E, and County Standard Details Manual E/42 for County Signal Standard Type SCC 29-6-100.

Measurement and Payment – The contract unit price paid per each for Traffic Signal Faces and Fittings includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing traffic signal faces and fittings, complete in place, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

110-13.24 PEDESTRIAN SIGNALS

Pedestrian signal head shall be furnished and installed as specified on the Project Plans and in Section 86.02.01, “Mobility-Impaired Access Provisions,” and Section 86.04.05B, “LED Countdown Pedestrian Signal Module,” of the County Standard Specifications (See Amendments dated January 7, 2011).

Where new traffic signal standards are required in the Contract Documents, pedestrian signal heads shall be furnished with LED type. LED pedestrian signal heads shall have a Portland orange “UPRAISED HAND” and lunar white “WALKING PERSON” capable of fitting into the standard Type A signal housing and replacing incandescent lamps, meeting the requirements of GE’s Ecolux or approved equal.

Measurement and Payment – The contract unit price paid per each for Pedestrian Signals includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing pedestrian signal faces and fittings, complete in place, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

110-13.25 PEDESTRIAN PUSH BUTTONS

New pedestrian push buttons shall conform to the requirements of section 86.04.04B of the County Standard Specifications, latest MUTCD Section 4E, and these Special Provisions. The placard size for the APS units shall be 9”x12”.

Pedestrian push button shall be Campell APS Guardian Wave.

Measurement and Payment – The contract unit price paid per each for Pedestrian Push Button includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing pedestrian push buttons, complete in place, including push button sign/plaque with arrow as shown on the plans, as specified in the Standard Specifications and these Special Provisions , and as directed by the Engineer.

110-13.26 PEDESTRIAN SENSORS

Contractor shall furnish and install pedestrian motion sensors for crosswalk occupancy detection. Sensors shall be MS SEDCO SmartWalk XM or approved equal and meet the following specifications:

- Operating Frequency: 24.125 GHz
- Detection Method: Microprocessor analyzed Doppler microwave
- Detection Pattern: Adjustable with cover off
- Detection Angle: Adjustable
- Detection Mode: Selectable: approach only, depart-only or bi-directional motion
- Call Extension Time: 0.1 to 5 seconds
- Power Requirements: 12 to 24 V AC or DC + or – 10%
- Power Consumption: 1W maximum
- Relay Output: Form C, rated at 1 Amp @ 24V DC (N.O. and N.C.)
- Output Power: 5mW typical, 2mW minimum
- Relay Contact Ratings: 0.5A:50V AC-1A:24V DC
- Operating Temperature: -22 degrees F to 158 degrees F
- Physical Dimensions: 4"W x 4"H x 7"L
- Enclosure: Powder coated aluminum
- Weight: 4 lbs.

Two pedestrian motion sensors shall be installed per crosswalk (one at each end) crossing Almaden Expressway at Camden Avenue. Contractor shall follow manufacturer’s installation instructions to complete installation.

Pedestrian Sensors and cabling shall be installed per County standard plan E/54, manufacturer’s recommendation, and as directed by the Engineer.

After all pedestrian sensors are installed per the Contract Plan, and equipment is operational, the Contractor shall arrange an interactive session with the project inspector to fine tune the aiming and other settings as recommended by the manufacturer. The Contractor shall make adjustments as directed by the inspector. The project inspector will continue to observe the operation of the pedestrian sensor while adjustments are made and will direct further adjustments as needed. A representative of the Contractor shall accompany the project inspector during this procedure.

Measurement and Payment – The contract unit price paid per each for Pedestrian Sensors includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing, installing, and fine tuning pedestrian Sensors, complete in place, as shown on the plans, as specified in these Special Provisions, and as directed by the Engineer.

110-13.27 LOOP DETECTION SYSTEM (IN PAVEMENT)

GENERAL

Loop Detection System shall conform to Section 86.05, “Detectors,” of the County Standard Specifications, County Standard Details Manual, Section 87-1.03V, “Detectors,” of the State Standard Specifications, the Contract Plans, and these Special Provisions.

Contractor shall remove and replace any detector loops and/or detector handholes shown on the plans to remain that are removed or damaged by pavement repair operations. For areas that are to be excavated, contractor shall

notify USA and County Traffic Electrical and Operations Department to field ID location of existing loop locations prior to any excavation.

Any detector handholes within resurfacing area shall be protected and remain exposed after all pavement repair operations are complete.

Contractor shall furnish and install new detector loops and sensor units as shown in the Contract Documents to supplement stop bar detection and for system loops.

Detector work shall be performed in accordance with the requirements of the applicable County Standard Specifications, County Standard Details, and the Contract Documents. Attention is directed to County Standard Specification 86.05.04 and County Standard Detail E/5A.

The Engineer shall approve new traffic detector loops layout and home runs prior installation.

The Contractor shall test all individual loops and all DLC prior to and after splicing in the presence of the project Inspector. The Contractor shall test loop sensitivity with either an approved lightweight motorcycle or an Engineer-approved wind wand.

New detector sensor units shall conform to the requirements of Section 86.05.01 of the County Standard Specifications except units shall be 4-channel units. At all locations, new one-slot detector units shall be installed in existing detector racks and shall be fully compatible with existing equipment. Where racks do not contain adequate slots for the new units, existing 2-channel units shall be replaced with new 4-channel units.

INDUCTIVE VEHICLE LOOPS

All new detector loops shall be Type B per Caltrans Revised Standard Plan RSP ES-5B except for loops closest to the stop bar. All new stop bar loops shall be Caltrans Type D per the Caltrans Revised Standard Plan RSP ES-5B.

The installation of inductive loops shall conform to Section 86.05.04, "Detector Loop Installation," of the County Standard Specifications and Standard Detail E/5A of the County Standard Details Manual.

Residue resulting from slot cutting operations shall not be permitted to flow across shoulders or lanes opened to public traffic. It shall be contained by an approved method during the slot cutting operation and removed immediately upon completion of the cutting operations. Discharge of the residue into the storm drainage system is not permitted.

Detector loop conductor shall be Type 2 loop wire. Lead-in cable shall be Type B. Detector handholes shall be Type A.

The Engineer shall approve new traffic and bike detector loops layout and home runs prior to installation.

Where pavement markings for stop bar/crosswalk and lane stripes are relocated or obliterated, County Survey will identify and mark the center points of the inductive loops and centerlines of the stop bar and lane/shoulder stripes. County Signal Inspector will verify and approve the marked locations of these facilities prior to loop cutting of pavement by Contractor.

The Contractor shall test all individual loops prior to and after splicing in the presence of the County Inspector. The Contractor shall test loop sensitivity with either an approved lightweight motorcycle or an Engineer-approved wind wand.

Any existing defective loop replacement as approved by the Engineer shall be done as extra work. Replacement of loop performed by the Contractor without meeting the requirements as specified in this section or due to damage by the Contractor's operation shall be at Contractor's expense.

INDUCTIVE BICYCLE LOOPS

All inductive bicycle loops shall be modified Caltrans Type D (3' x 3') loops.

The Engineer shall approve new bicycle detector loop layouts and home runs prior to installation. The Contractor shall work with the County Signal Inspector to verify the locations of existing vehicle loops and homeruns. This will help to prevent damage to existing loops when sawcutting for new bicycle loops is taking place.

Residue resulting from slot cutting operations shall not be permitted to flow across shoulders or lanes opened to public traffic. It shall be contained by an approved method during the slot cutting operation and removed immediately upon completion of the cutting operations. Discharge of the residue into the storm drainage system is not permitted.

New detector cards shall conform to the requirements of Section 86.05.01 of the County Standard Specifications except they shall be 4-channel units.

DETECTOR HANDHOLES

Detector handholes shall conform to Standard Detail E/5A of the County Standard Details Manual and shall be located as indicated on the project plans.

DETECTOR CABLE

Detector loop conductors and lead-in cables shall conform to Section 86.05.03, "Detector Loop Materials," of the County Standard Specifications and the following:

- Detector loop conductors shall have the required information per NEC, Article 310-11 marked on the surface of the conductor insulating jacket. The identification on the tubing is optional.
- Detector lead-in cable shall be labeled and terminated inside the controller cabinet.

Where existing loops require new DLC, the Contractor shall test all existing loops individually and all DLCs prior to disconnecting in the presence of the Project Inspector with method approved by the Project Engineer. The Contractor shall test loop sensitivity with either an approved lightweight motorcycle or an Engineer-approved wind wand. If existing loops and/or DLCs are found defective, the Project Engineer shall be notified for a corrective action. Existing DLC will be used where it tests as serviceable.

If no additional DLC is required in existing conduit runs, the Contractor shall test the existing DLC in the presence of the Project Inspector. If the test shows the DLC to be acceptable, they must be re-used.

All new DLCs shall be Type "B" and loop wires shall be Type 2.

Measurement and Payment – The contract unit price paid per each for Detector Loop (6x6), Bike Detector Loop (3x3), and Detector Handhole includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing detector loops and handholes, complete in place, including detector sensor units, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

Detector wires and lead-in cable shall be considered as included in the lump sum price for Conductors and Wiring, and no additional payment shall be allowed therefor.

110-13.28 LIGHTING

Lighting (luminaire and photoelectric control) shall conform to Section 86.06, "Lighting," of the County of Santa Clara Standard Specifications, Section 86.06, Section 87, "Lighting Systems," of the State Standard Specifications, and the following.

110-13.28.01 LUMINAIRES

The Contractor shall furnish and install (at all locations as indicated on the plans) LED Luminaires as depicted on the Caltrans Prequalified Product List, available on Caltrans website. Luminaires must be Light Emitting Diode (LED) and must be equal to 200W or as approved by the County Engineer.

All items described within the specifications must be new, unused, and of the manufacturer's latest design and model unless otherwise specified. All Standard Equipment must be provided. All necessary parts not mentioned, but needed for operation of the items specified must be supplied.

The fixture shall be slim with a low profile design that minimizes wind load requirements. Fixture is constructed from rugged extruded aluminum and cast aluminum components. LED drivers are mounted in the cast aluminum housing which is suitable for wet listed operation (per UL 1508 requirements). Finish includes an E-coat epoxy primer with an ultra-durable powder topcoat providing excellent resistance to corrosion and ultraviolet degradation and abrasion.

1. Luminaire Efficiency – allow for thermal and optical losses - efficiency should be determined on a delivered lumens per watt basis for comparison at each luminaire drive current required.
 Initial delivered lumens per watt minimums required with independent testing lab verification:
 - 60 Lumens per watt (L/W) at 350mA drive current
 - 50 Lumens per watt (L/W) at 525mA drive current
 - 45 Lumens per watt (L/W) at 700mA drive current
2. Depreciation
 - Average Delivered Lumens – Average delivered lumens over 50,000 hours of operation should be a minimum of 95% of initial delivered lumens.
 - LED's in the luminaire shall be rated for "life" in hours as defined by IESNA standards.
 - Average delivered lumens for 350 mA drive current shall be 70% of initial delivered lumens after > 150,000 hours of operation at 15 C ambient
 - Average delivered lumens for 525 mA drive current shall be 70% of initial delivered lumens after 117,000 hours of operation at 15 C ambient (does not apply to 40, 50 and 60 LED product)
 - Average delivered lumens for 700 mA drive current shall be 70% of initial delivered lumens after 65,000 hours of operation at 15 C ambient (does not apply to 50 and 60 LED product)
3. Light Distribution – Specify light Distribution required and IESNA luminaire Classification (LCS). Fixture should have FVH and BVH values of equal to or less than 0.5%, and UP of 0%. The LCS values are intended to replace previous "Full Cutoff" designation which is no longer printed on test reports per IES TM-15-07 standard. Luminaire should have independent photometric test reports and be Dark sky compliant.
4. Maximum System wattage (including driver loss) –
 LED wattage only not accepted.
Provide calculation of delivered lumens/total wattage with bid.

If LED lumens/watt increase between the time of specification and the time product of ordering you will either get more light for the same energy or be able to reduce the wattage to obtain the same delivered lumens.

5. Color Temperature and CRI – 6000K +/- 500 color temp, 75 CRI.
6. Warranty – 5years on the LEDs, 5 years on the driver, 10 years on the paint finish of the fixture. (Pole warranty listed separately)
7. Electrical Safety – wet listed in the US and Canada, UL, ROHS and EMI, Class 1 rated luminaire
8. Driver Specifications
 - A. Electronic
 - B. Voltage range (120 – 277V) +/- 10%, (347-480V) +/-10% optional
 - C. Current .350 Adc (+/- 5%), .525 Adc (+/-5%), .700 Adc (+/-5%)
 - D. Frequency 50/60 Hz
 - E. Power Factor >90% at full load
 - F. THD < 20% at full load
 - G. Load Regulation: +/- 1% from no load to full load
 - H. Output ripple < 10%
 - I. Output should be isolated
 - J. Case temperature: rated for -40 through +80 C
 - K. Fully encased and potted
 - L. Overheat protection, self-limited short circuit protection and overload protected
 - M. Primary Fused
 - N. Life rating not less than 100,000 hours
9. Mechanical / Other
 - A. Tool-less entry
 - B. Utilizes terminal block for power input suitable for #6 AWG wire
 - C. Designed to mount on 1.25" IP and / or 2" IP horizontal tenon and is adjustable +/-5 degrees to allow for fixture leveling
 - D. Bubble leveling
10. Factory installed options
 - A. Button Photocell
 - B. IP66 Rating
 - C. Fuse
 - D. NEMA photo control receptacle
 - E. Backlight Cut-Off
11. Provide the Following information with the bid Proposal:
 - A. Literature
 - B. Detailed Manufacturer's Specifications
 - C. Test Reports

Measurement and Payment – The contract unit price paid per each for Luminaires includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing luminaires, complete in place, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

110-13.28.02 PHOTOELECTRIC CONTROLS

Photoelectric control shall conform to Section 86.06.02 "Photoelectric Controls" of the County Standard Specifications.

Measurement and Payment – The contract unit price paid per each Photoelectric Control (PEC) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing photoelectric cell unit for signal lighting, including conductors, complete in place, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and no additional compensation shall be allowed therefor.

110-13.29 ABANDONING, REMOVING, REINSTALLING AND/OR SALVAGING ELECTRICAL EQUIPMENT

Work pertaining to this section shall conform to Section 86.07, "Removing, Reinstalling or Salvaging Signal/Electrical Equipment and Facilities," of the County Standard Specifications as amended by the following:

- Equipment specified for removal and reuse shall be maintained and stored by the Contractor. Any damage to the equipment shall be repaired or replaced by the Contractor at no additional cost to the County.

The Contractor shall deliver the Salvaged materials to the following locations for storage. Contractor shall notify TOC 48 hours in advance of the delivery date.

**Santa Clara County TOC
1505 Schallenberger Road
San Jose, CA 95131**

Measurement and Payment – The contract lump sum price paid for ABANDONING, REMOVING, REINSTALLING AND/OR SALVAGING ELECTRICAL/SIGNAL EQUIPMENT includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in abandoning, removing, reinstalling and/or salvaging electrical/signal equipment, complete in place, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

110-13.30 RED LIGHT VIOLATOR DETECTION UNIT

Red light enforcer units shall be installed to help law enforcement agency detect red light violations at signalized intersections. Units shall be installed as indicated on the plans.

The enforcer unit shall be adjustable, for multiple viewing angles. It shall also be visible from at least 200 feet, and the light source shall be LED.

Enforcer unit shall include a blue light, unless another color is requested by the County.

Enforcer unit shall be installed on signal head or signal pole, as directed by the County. Orientation of the enforcer unit shall be reviewed and approved by the County prior to acceptance.

Enforcer unit shall be part number M65229, manufactured by McCain, or approved equal.

Prior to acceptance of the project, manufacturers' warranties and guaranties furnished for materials used in the work, and instruction sheets and parts lists supplied with materials, shall be delivered by the Contractor to the Engineer.

Measurement and Payment – The contract unit price paid per each Red Light Detector includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing red light detector, complete in place, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

110-13.31 COUNTY-FURNISHED MATERIALS

County-furnished materials shall conform to Section 86.09 “County-furnished Materials & Equipment” of County Standard Specifications and these Technical Specifications. Installation will be as per plans and as detailed in these Special Provisions.

Miscellaneous hardware, such as spade connectors, electrical tape, and cable ties required to complete the installation will be supplied by the contractor as part of cost of installations.

The Contractor shall pick up all County-furnished equipment at the County of Santa Clara’s East Yard located at **1505 Schallenberger Road, San Jose, California 95131**. Unless otherwise specified elsewhere in these Technical Specifications, Contractor shall provide a minimum 3-day advance notice prior to the pickup date. The following equipment will be furnished by the County in accordance to Section 86.09 of the County Standard Specifications.

The Contractor shall sign a receipt, listing all material furnished by the County. All material provided by the County shall be transported, and stored if necessary, with care appropriate for microprocessor electronic equipment. It shall be the Contractor’s responsibility to inspect, examine, assemble and perform protest for all material furnished by the County. It shall be the Contractors responsibility from the time of pick up until the new equipment is in operation according to plan, to repair or replace any material damaged during delivery or during installations.

The following materials will be furnished by the County:

- One (1) Fully Loaded Type P controller cabinet assemblies with anchor bolts
- Anchor bolts for relocated BBS unit cabinet
- Four (4) CCTV cameras with mounting hardware
- Two (2) Type SCC 29-6-100 signal standard with anchor bolts
- Two (2) Type SCC 26-6-100 signal standards with anchor bolts
- Four (4) Type 15TS standard with anchor bolts
- Four (4) Type 15 standard with anchor bolts

The Contractor shall assume full responsibility for County furnished materials once it has been picked-up. The Contractor shall thoroughly inspect all of the materials before handling and confirm that all items are received in good condition and note, in writing, any damage on the bill of lading. Testing of County furnished equipment prior to taking possession will be permitted at the Contractor’s option.

Measurement and Payment - Full compensation for conforming to the provisions of this section will be considered as included in the prices paid for the various items of work to install, complete in place, which shall include transportation from the pickup source to the locations, storage, all miscellaneous electrical hardware, tools and work incidental thereto, and no additional compensation will be allowed, therefore.

110-13.32 LABELING

All conductors and cables in pull boxes and cabinets are to be tagged and labeled in accordance with the requirements per E/44 of the County Standard Details Manual for new installation or modification to existing wiring.

Measurement and Payment - Full compensation for this Work shall be considered as included in the Contract price for Wiring as indicated on the Bid Schedule, and no additional compensation will be allowed, therefore.

110-13.33 RELOCATE EXISTING BLUETOOTH EQUIPMENT

Contractor shall relocate existing Bluetooth Equipment as specified on the Project Plans.

Measurement and Payment – The contract unit price paid per each for Relocate Existing Bluetooth Equipment for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in relocating existing Bluetooth Equipment, complete in place, including connection of conductors, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.






110-14 SUPPLEMENTAL WORK

Supplemental Work shall be as defined in Section 1.02 “Definitions” and shall comply with Section 4.07 “Extra Work” of the County Standard Specifications.

Attachment A

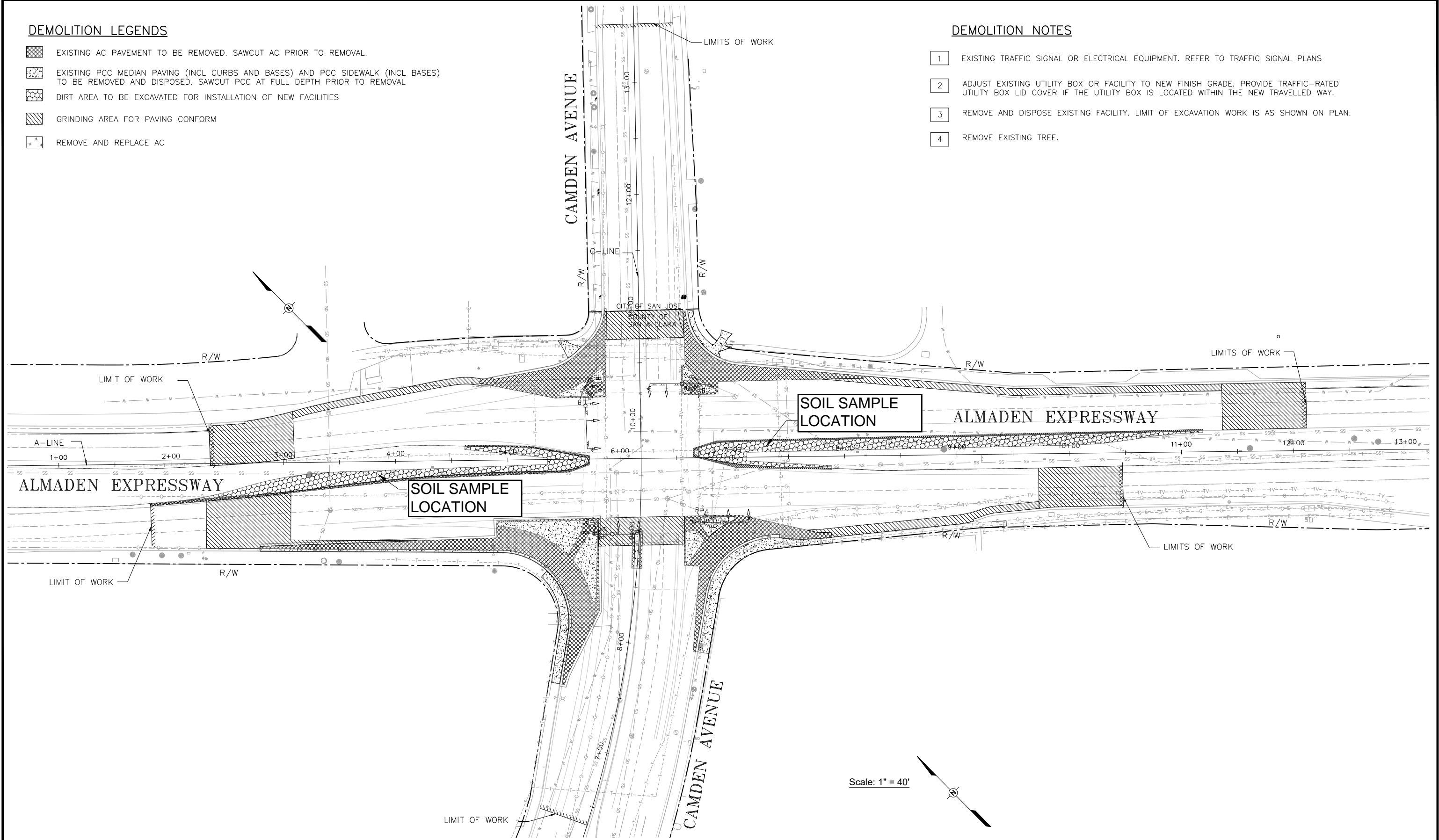
Soil Testing Sample Location Map and Reports

DEMOLITION LEGENDS

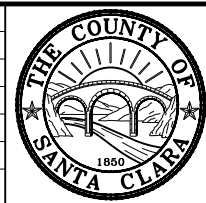
-  EXISTING AC PAVEMENT TO BE REMOVED. SAWCUT AC PRIOR TO REMOVAL.
-  EXISTING PCC MEDIAN PAVING (INCL CURBS AND BASES) AND PCC SIDEWALK (INCL BASES) TO BE REMOVED AND DISPOSED. SAWCUT PCC AT FULL DEPTH PRIOR TO REMOVAL
-  DIRT AREA TO BE EXCAVATED FOR INSTALLATION OF NEW FACILITIES
-  GRINDING AREA FOR PAVING CONFORM
-  REMOVE AND REPLACE AC

DEMOLITION NOTES

- 1 EXISTING TRAFFIC SIGNAL OR ELECTRICAL EQUIPMENT. REFER TO TRAFFIC SIGNAL PLANS
- 2 ADJUST EXISTING UTILITY BOX OR FACILITY TO NEW FINISH GRADE. PROVIDE TRAFFIC-RATED UTILITY BOX LID COVER IF THE UTILITY BOX IS LOCATED WITHIN THE NEW TRAVELLED WAY.
- 3 REMOVE AND DISPOSE EXISTING FACILITY. LIMIT OF EXCAVATION WORK IS AS SHOWN ON PLAN.
- 4 REMOVE EXISTING TREE.



NO.	REVISIONS	BY	DATE	APP'D



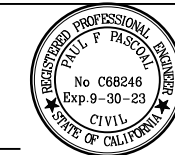
COUNTY OF SANTA CLARA ROADS AND AIRPORTS DEPARTMENT

DESIGNED: CL 10-2021
 DRAWN: PP 10-2021
 CHECKED: 10-2021

SUBMITTED: CHRISTINE LI
 ASSOCIATE CIVIL ENGINEER



APPROVED: PAUL PASCOAL
 SENIOR CIVIL ENGINEER



INTERSECTION IMPROVEMENTS AT ALMADEN EXPRESSWAY AND CAMDEN AVENUE		DRAWING No. DE-1
SOIL SAMPLE LOCATION MAP		SHT No. 7 OF 24
WORK ORDER No. C3399	ADVERTISEMENT DATE:	CONTRACT No.
AS SHOWN		

ANALYTICAL REPORT

Eurofins Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-87748-1

Client Project/Site: Almaden Expressway and Camden Avenue

For:

County of Santa Clara
2310 N. First Street
San Jose, California 95131-1040

Attn: Chris Ellsbury



Authorized for release by:
5/19/2022 5:26:18 PM

Criselda Caparas, Project Manager I
(925)484-1919
Criselda.Caparas@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-87748-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-87748-1

Job ID: 320-87748-1

Laboratory: Eurofins Sacramento

Narrative

Job Narrative
320-87748-1

Comments

No additional comments.

Receipt

The sample was received on 5/11/2022 2:02 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 17.0° C.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Detection Summary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-87748-1

Client Sample ID: AECA05112022

Lab Sample ID: 320-87748-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	4.1		0.10		mg/L	10		6010B	STLC Citrate
Chromium	0.33		0.10		mg/L	10		6010B	STLC Citrate

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This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

Client Sample Results

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-87748-1

Client Sample ID: AECA05112022

Lab Sample ID: 320-87748-1

Date Collected: 05/11/22 10:50

Matrix: Solid

Date Received: 05/11/22 14:02

Method: 6010B - Metals (ICP) - STLC Citrate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	4.1		0.10		mg/L			05/17/22 17:16	10
Chromium	0.33		0.10		mg/L			05/17/22 17:16	10

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QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-87748-1

Method: 6010B - Metals (ICP)

Lab Sample ID: LB 320-587506/1-A ^10
Matrix: Solid
Analysis Batch: 588135

Client Sample ID: Method Blank
Prep Type: STLC Citrate

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.10		mg/L			05/16/22 12:23	10
Chromium	ND		0.10		mg/L			05/16/22 12:23	10

Lab Sample ID: LCS 320-587506/2-A ^10
Matrix: Solid
Analysis Batch: 588135

Client Sample ID: Lab Control Sample
Prep Type: STLC Citrate

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	1.00	0.953		mg/L		95	75 - 125
Chromium	1.00	0.987		mg/L		99	75 - 125

Lab Sample ID: LCSD 320-587506/3-A
Matrix: Solid
Analysis Batch: 588135

Client Sample ID: Lab Control Sample Dup
Prep Type: STLC Citrate

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lead	1.00	0.973		mg/L		97	75 - 125	2	20
Chromium	1.00	1.01		mg/L		101	75 - 125	2	20

QC Association Summary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-87748-1

Metals

Leach Batch: 587506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-87748-1	AECA05112022	STLC Citrate	Solid	CA WET Citrate	
LB 320-587506/1-A ^10	Method Blank	STLC Citrate	Solid	CA WET Citrate	
LCS 320-587506/2-A ^10	Lab Control Sample	STLC Citrate	Solid	CA WET Citrate	
LCSD 320-587506/3-A	Lab Control Sample Dup	STLC Citrate	Solid	CA WET Citrate	

Analysis Batch: 588135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 320-587506/1-A ^10	Method Blank	STLC Citrate	Solid	6010B	587506
LCS 320-587506/2-A ^10	Lab Control Sample	STLC Citrate	Solid	6010B	587506
LCSD 320-587506/3-A	Lab Control Sample Dup	STLC Citrate	Solid	6010B	587506

Analysis Batch: 588490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-87748-1	AECA05112022	STLC Citrate	Solid	6010B	587506



Lab Chronicle

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-87748-1

Client Sample ID: AECA05112022

Lab Sample ID: 320-87748-1

Date Collected: 05/11/22 10:50

Matrix: Solid

Date Received: 05/11/22 14:02

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
STLC Citrate	Leach	CA WET Citrate			49.98 g	500 mL	587506	05/13/22 13:20	GSH	TAL SAC
STLC Citrate	Analysis	6010B		10			588490	05/17/22 17:16	SP	TAL SAC

Laboratory References:

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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Accreditation/Certification Summary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-87748-1

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2897	01-31-23

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Method Summary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-87748-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL SAC
CA WET Citrate	California - Waste Extraction Test with Citrate Leach	CA-WET	TAL SAC

Protocol References:

CA-WET = California Waste Extraction Test, from Title 22

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



Sample Summary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-87748-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-87748-1	AECA05112022	Solid	05/11/22 10:50	05/11/22 14:02

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Chain of Custody Record
320-87748

Client Contact Santa Clara County Roads and Airports Department 101 Skyport Drive San Jose, CA 95110 (408) 690-9190 (408) 297-0530 Project Name: Almaden Expressway and Camden Avenue Site: Almaden Expressway and Camden Avenue Intersection P O # CW2227585 (Service Agreement #)		Project Manager: Christine Li Tel/Fax:		Site Contact: Chris Ellsbury Lab Contact:		Date: May 11, 2022 Carrier:		COC No: _____ of _____ COCs	
Analysis Turnaround Time Calendar (C) or Work Days (W) 10 work days TAT if different from Below _____ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Sample Date 5/11/2022 10:50		Sample Type soil		Matrix soil		# of Cont. 1	
Sample Identification AECA05112022		Sample Date 5/11/2022 10:50		Sample Type soil		Matrix soil		# of Cont. 1	
Filtered Sample STLC for Lead (Pb) <input checked="" type="checkbox"/> STLC for Chromium (Cr) <input checked="" type="checkbox"/>									
Sample Specific Notes:									
Preservation Used. 1= Ice, 2= HCl, 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other _____ Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown									
Special Instructions/QC Requirements & Comments:									
Relinquished by: <i>Chen</i>		Company: SCL R&A		Received by: <i>Seem Mude</i>		Company: <i>ELFSS</i>		Date/Time: 5/11/2022	
Relinquished by:		Company:		Received by:		Company:		Date/Time:	
Relinquished by:		Company:		Received by:		Company:		Date/Time:	



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Chain of Custody Record



Client Information (Sub Contract Lab) Company: Eurofins Environment Testing Northern Ca Address: 880 Riverside Parkway, West Sacramento, CA, 95605 Phone: 916-373-5600(Tel) 916-372-1059(Fax) Email:		Lab PM: Caparas, Criselda E-Mail: Criselda.Caparas@et.eurofins.com State of Origin: California		Carrier Tracking No(s): 320-269697-1 Page: Page 1 of 1 Job #: 320-87748-1	
Due Date Requested: 5/18/2022 TAT Requested (days):		Accreditations Required (See note): State Program - California		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Project Name: Almaden Expressway and Camden Avenue Site:		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> X Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> X 6010/BCA_WET_CIT_180 (MOD) STLC Chromium, Lead		Analysis Requested	
Sample Identification - Client ID (Lab ID) AECA05112022 (320-87748-1)		Sample Date: 5/11/22 Sample Time: 10:50 Pacific		Matrix (W=Water, S=solid, O=Organic, A=Air) Preservation Code: Solid	
Total Number of Containers: 1		Special Instructions/Note:		Special Instructions/Note:	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northern California, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northern California, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northern California, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northern California, LLC.

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
 Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: _____ Date/Time: 5/11/22 1630 Company: PTA-SU
 Relinquished by: _____ Date/Time: 5-11-22 1840 Company: DCS
 Relinquished by: _____ Date/Time: _____ Company: _____
 Custody Seals Intact: Yes No
 Custody Seal No.: 3.40
 Cooler Temperature(s) °C and Other Remarks: 3.40

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months
 Special Instructions/QC Requirements:



Login Sample Receipt Checklist

Client: County of Santa Clara

Job Number: 320-87748-1

Login Number: 87748

List Source: Eurofins Sacramento

List Number: 1

Creator: Mullen, Joan

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: County of Santa Clara

Job Number: 320-87748-1

Login Number: 87748

List Source: Eurofins Sacramento

List Number: 2

Creator: Pratali, Sandra A

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-85904-1

Client Project/Site: Almaden Expressway and Camden Avenue

For:

County of Santa Clara
2310 N. First Street
San Jose, California 95131-1040

Attn: Chris Ellsbury



Authorized for release by:
4/6/2022 6:02:33 PM

Criselda Caparas, Project Manager I
(925)484-1919
Criselda.Caparas@et.eurofinsus.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Job ID: 320-85904-1

Laboratory: Eurofins Sacramento

Narrative

Job Narrative 320-85904-1

Comments

No additional comments.

Receipt

The sample was received on 3/18/2022 12:04 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 14.4° C.

GC/MS VOA

Method 8260B: Internal standard (ISTD) response for Dioxane-d8 for the following sample in analytical batch 320-576882 was outside acceptance criteria: (LCS 320-576882/8). This ISTD does not correspond to any of the requested target compounds reported from this analytical batch; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270C: The following sample was diluted due to the nature of the sample matrix: AECA03182022 (320-85904-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method 8015B: The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: AECA03182022 (320-85904-1).

Method 8015B: The matrix spike duplicate (MSD) recoveries for preparation batch 320-577016 and analytical batch 320-577884 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8081A: The following sample was diluted due to the nature of the sample matrix: AECA03182022 (320-85904-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 320-575573 and analytical batch 320-576089 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 7471A: The following sample was diluted to bring the concentration of target analyte within the calibration range: AECA03182022 (320-85904-1). Elevated reporting limits (RLs) are provided.

Method 7471A: The matrix spike / matrix spike duplicate (MS/MSD) recovery and precision for preparation batch 320-577323 and analytical batch 320-577505 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recovery and precision were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Client Sample ID: AECA03182022

Lab Sample ID: 320-85904-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	5.7		0.98		mg/Kg	1		8015B	Silica Gel Cleanup
Motor Oil Range Organics [C24-C36]	49	F1	4.9		mg/Kg	1		8015B	Silica Gel Cleanup
Arsenic	6.4		2.0		mg/Kg	1		6010B	Total/NA
Barium	150		0.99		mg/Kg	1		6010B	Total/NA
Beryllium	0.88		0.20		mg/Kg	1		6010B	Total/NA
Cadmium	0.35		0.20		mg/Kg	1		6010B	Total/NA
Cobalt	15		0.50		mg/Kg	1		6010B	Total/NA
Chromium	81		0.50		mg/Kg	1		6010B	Total/NA
Copper	41		1.5		mg/Kg	1		6010B	Total/NA
Nickel	120		0.99		mg/Kg	1		6010B	Total/NA
Lead	180		0.99		mg/Kg	1		6010B	Total/NA
Antimony	22	F1	2.0		mg/Kg	1		6010B	Total/NA
Vanadium	47		0.50		mg/Kg	1		6010B	Total/NA
Zinc	130	F1	2.0		mg/Kg	1		6010B	Total/NA
Mercury	1.3	F2	0.21		mg/Kg	5		7471A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

Client Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Client Sample ID: AECA03182022

Lab Sample ID: 320-85904-1

Date Collected: 03/18/22 10:00

Matrix: Solid

Date Received: 03/18/22 12:04

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C4-C12	ND		0.49		mg/Kg		03/21/22 09:24	03/31/22 12:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 131				03/21/22 09:24	03/31/22 12:34	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		9.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Acetone	ND		20		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Benzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Dichlorobromomethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Bromobenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Chlorobromomethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Bromoform	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Bromomethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
2-Butanone (MEK)	ND		9.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
n-Butylbenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
sec-Butylbenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
tert-Butylbenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Carbon disulfide	ND		9.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Carbon tetrachloride	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Chlorobenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Chloroethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Chloroform	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Chloromethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
2-Chlorotoluene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
4-Chlorotoluene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Chlorodibromomethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,2-Dichlorobenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,3-Dichlorobenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,4-Dichlorobenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,3-Dichloropropane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,1-Dichloropropene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,2-Dibromo-3-Chloropropane	ND		9.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Ethylene Dibromide	ND		9.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Dibromomethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Dichlorodifluoromethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,1-Dichloroethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,2-Dichloroethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,1-Dichloroethene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
cis-1,2-Dichloroethene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
trans-1,2-Dichloroethene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,2-Dichloropropane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
cis-1,3-Dichloropropene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
trans-1,3-Dichloropropene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Ethylbenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Hexachlorobutadiene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
2-Hexanone	ND		9.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Isopropylbenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1

Eurofins Sacramento

Client Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Client Sample ID: AECA03182022

Lab Sample ID: 320-85904-1

Date Collected: 03/18/22 10:00

Matrix: Solid

Date Received: 03/18/22 12:04

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Methylene Chloride	ND		9.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
4-Methyl-2-pentanone (MIBK)	ND		9.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Naphthalene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
N-Propylbenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Styrene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,1,1,2-Tetrachloroethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,1,2,2-Tetrachloroethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Tetrachloroethene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Toluene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,2,3-Trichlorobenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,2,4-Trichlorobenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,1,1-Trichloroethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,1,2-Trichloroethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Trichloroethene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Trichlorofluoromethane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,2,3-Trichloropropane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		9.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,2,4-Trimethylbenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
1,3,5-Trimethylbenzene	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Vinyl acetate	ND		9.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Vinyl chloride	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
Xylenes, Total	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1
2,2-Dichloropropane	ND		4.9		ug/Kg		03/21/22 09:24	03/31/22 12:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		63 - 143	03/21/22 09:24	03/31/22 12:34	1
Dibromofluoromethane (Surr)	103		55 - 129	03/21/22 09:24	03/31/22 12:34	1
1,2-Dichloroethane-d4 (Surr)	102		32 - 156	03/21/22 09:24	03/31/22 12:34	1
Toluene-d8 (Surr)	102		63 - 138	03/21/22 09:24	03/31/22 12:34	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
1,2-Dichlorobenzene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
1,3-Dichlorobenzene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
1,4-Dichlorobenzene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2,4,5-Trichlorophenol	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2,4,6-Trichlorophenol	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2,4-Dichlorophenol	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2,4-Dimethylphenol	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2,4-Dinitrophenol	ND		32000		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2,4-Dinitrotoluene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2,6-Dinitrotoluene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2-Chloronaphthalene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2-Chlorophenol	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2-Methylnaphthalene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2-Methylphenol	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2-Nitroaniline	ND		32000		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2-Nitrophenol	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20

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Client Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Client Sample ID: AECA03182022

Lab Sample ID: 320-85904-1

Date Collected: 03/18/22 10:00

Matrix: Solid

Date Received: 03/18/22 12:04

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	ND		32000		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
3-Nitroaniline	ND		32000		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
2-Methyl-4,6-dinitrophenol	ND		32000		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
4-Bromophenyl phenyl ether	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
4-Chloro-3-methylphenol	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
4-Chloroaniline	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
4-Chlorophenyl phenyl ether	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
4-Nitroaniline	ND		32000		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
4-Nitrophenol	ND		32000		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Acenaphthene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Acenaphthylene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Anthracene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Azobenzene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Benzo[a]anthracene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Benzo[a]pyrene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Benzo[b]fluoranthene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Benzo[g,h,i]perylene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Benzo[k]fluoranthene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Benzoic acid	ND		32000		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Benzyl alcohol	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Bis(2-chloroethoxy)methane	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Bis (2-chloroethyl) ether	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Bis(2-ethylhexyl) phthalate	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Butyl benzyl phthalate	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Chrysene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Dibenz(a,h)anthracene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Dibenzofuran	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Diethyl phthalate	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Dimethyl phthalate	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Di-n-butyl phthalate	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Di-n-octyl phthalate	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Fluoranthene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Fluorene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Hexachlorobenzene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Hexachlorobutadiene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Hexachlorocyclopentadiene	ND		32000		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Hexachloroethane	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Indeno[1,2,3-cd]pyrene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Isophorone	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Naphthalene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Nitrobenzene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
N-Nitrosodi-n-propylamine	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
N-Nitrosodiphenylamine	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Pentachlorophenol	ND		32000		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Phenanthrene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Phenol	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Pyrene	ND		6500		ug/Kg		03/31/22 13:50	04/01/22 18:46	20
Pyridine	ND		13000		ug/Kg		03/31/22 13:50	04/01/22 18:46	20

Client Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Client Sample ID: AECA03182022

Lab Sample ID: 320-85904-1

Date Collected: 03/18/22 10:00

Matrix: Solid

Date Received: 03/18/22 12:04

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	63		60 - 120	03/31/22 13:50	04/01/22 18:46	20
2-Fluorophenol	65		53 - 113	03/31/22 13:50	04/01/22 18:46	20
Nitrobenzene-d5	58		54 - 114	03/31/22 13:50	04/01/22 18:46	20
Phenol-d5	61		54 - 114	03/31/22 13:50	04/01/22 18:46	20
Terphenyl-d14	73		66 - 126	03/31/22 13:50	04/01/22 18:46	20

Method: 8015B - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	5.7		0.98		mg/Kg		03/31/22 13:59	04/05/22 22:47	1
Motor Oil Range Organics [C24-C36]	49	F1	4.9		mg/Kg		03/31/22 13:59	04/05/22 22:47	1

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Dieldrin	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Endrin aldehyde	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Endrin	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Endrin ketone	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
cis-Chlordane	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Heptachlor	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Heptachlor epoxide	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
4,4'-DDT	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
4,4'-DDE	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
4,4'-DDD	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Endosulfan I	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Endosulfan II	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
BHC, .alpha.-	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
beta-BHC	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
gamma-BHC (Lindane)	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
delta-BHC	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Endosulfan sulfate	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Methoxychlor	ND		17		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Toxaphene	ND		330		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
Chlordane (technical)	ND		99		ug/Kg		03/31/22 14:06	04/01/22 19:11	5
trans-Chlordane	ND		8.4		ug/Kg		03/31/22 14:06	04/01/22 19:11	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	81		47 - 107	03/31/22 14:06	04/01/22 19:11	5
Tetrachloro-m-xylene	83		47 - 107	03/31/22 14:06	04/01/22 19:11	5
DCB Decachlorobiphenyl	92		46 - 109	03/31/22 14:06	04/01/22 19:11	5
DCB Decachlorobiphenyl	96		46 - 109	03/31/22 14:06	04/01/22 19:11	5

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:46	1
PCB-1221	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:46	1
PCB-1232	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:46	1
PCB-1242	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:46	1
PCB-1248	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:46	1
PCB-1254	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:46	1

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Client Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Client Sample ID: AECA03182022

Lab Sample ID: 320-85904-1

Date Collected: 03/18/22 10:00

Matrix: Solid

Date Received: 03/18/22 12:04

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1260	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:46	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	75		56 - 114				03/31/22 14:14	04/04/22 15:46	1
DCB Decachlorobiphenyl	65		52 - 138				03/31/22 14:14	04/04/22 15:46	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.50		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Arsenic	6.4		2.0		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Barium	150		0.99		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Beryllium	0.88		0.20		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Cadmium	0.35		0.20		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Cobalt	15		0.50		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Chromium	81		0.50		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Copper	41		1.5		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Molybdenum	ND		2.0		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Nickel	120		0.99		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Lead	180		0.99		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Selenium	ND		2.0		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Antimony	22	F1	2.0		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Thallium	ND		2.0		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Vanadium	47		0.50		mg/Kg		03/24/22 15:35	03/25/22 11:58	1
Zinc	130	F1	2.0		mg/Kg		03/24/22 15:35	03/25/22 11:58	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	1.3	F2	0.21		mg/Kg		04/02/22 15:00	04/03/22 14:19	5

Surrogate Summary

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB (63-143)	DBFM (55-129)	DCA (32-156)	TOL (63-138)
320-85904-1	AECA03182022	92	103	102	102
LCS 320-576882/8	Lab Control Sample	95	101	93	104
LCSD 320-576882/9	Lab Control Sample Dup	97	101	95	104
MB 320-576882/11	Method Blank	94	103	94	102

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (70-131)
320-85904-1	AECA03182022	92
LCS 320-576883/5	Lab Control Sample	96
LCSD 320-576883/6	Lab Control Sample Dup	95
MB 320-576883/11	Method Blank	94

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		TBP (60-120)	2FP (53-113)	NBZ (54-114)	PHL (54-114)	TPHL (66-126)
320-85904-1	AECA03182022	63	65	58	61	73
LCS 320-577011/2-A	Lab Control Sample	88	80	84	80	88
MB 320-577011/1-A	Method Blank	68	72	68	75	85

Surrogate Legend

TBP = 2,4,6-Tribromophenol

2FP = 2-Fluorophenol

NBZ = Nitrobenzene-d5

PHL = Phenol-d5

TPHL = Terphenyl-d14

Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TCX1 (47-107)	TCX2 (47-107)	DCBP1 (46-109)	DCBP2 (46-109)
320-85904-1	AECA03182022	81	83	92	96
LCS 320-577018/2-A	Lab Control Sample	77		87	
LCS 320-577018/3-A	Lab Control Sample	83		88	
MB 320-577018/1-A	Method Blank	77	78	85	90

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Surrogate Summary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (56-114)	DCBP1 (52-138)
320-85904-1	AECA03182022	75	65
LCS 320-577020/2-A	Lab Control Sample	88	92
MB 320-577020/1-A	Method Blank	86	86

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 320-576882/11
Matrix: Solid
Analysis Batch: 576882

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		10		ug/Kg			03/31/22 11:51	1
Acetone	ND		20		ug/Kg			03/31/22 11:51	1
Benzene	ND		5.0		ug/Kg			03/31/22 11:51	1
Dichlorobromomethane	ND		5.0		ug/Kg			03/31/22 11:51	1
Bromobenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
Chlorobromomethane	ND		5.0		ug/Kg			03/31/22 11:51	1
Bromoform	ND		5.0		ug/Kg			03/31/22 11:51	1
Bromomethane	ND		5.0		ug/Kg			03/31/22 11:51	1
2-Butanone (MEK)	ND		10		ug/Kg			03/31/22 11:51	1
n-Butylbenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
sec-Butylbenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
tert-Butylbenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
Carbon disulfide	ND		10		ug/Kg			03/31/22 11:51	1
Carbon tetrachloride	ND		5.0		ug/Kg			03/31/22 11:51	1
Chlorobenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
Chloroethane	ND		5.0		ug/Kg			03/31/22 11:51	1
Chloroform	ND		5.0		ug/Kg			03/31/22 11:51	1
Chloromethane	ND		5.0		ug/Kg			03/31/22 11:51	1
2-Chlorotoluene	ND		5.0		ug/Kg			03/31/22 11:51	1
4-Chlorotoluene	ND		5.0		ug/Kg			03/31/22 11:51	1
Chlorodibromomethane	ND		5.0		ug/Kg			03/31/22 11:51	1
1,2-Dichlorobenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
1,3-Dichlorobenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
1,4-Dichlorobenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
1,3-Dichloropropane	ND		5.0		ug/Kg			03/31/22 11:51	1
1,1-Dichloropropene	ND		5.0		ug/Kg			03/31/22 11:51	1
1,2-Dibromo-3-Chloropropane	ND		10		ug/Kg			03/31/22 11:51	1
Ethylene Dibromide	ND		10		ug/Kg			03/31/22 11:51	1
Dibromomethane	ND		5.0		ug/Kg			03/31/22 11:51	1
Dichlorodifluoromethane	ND		5.0		ug/Kg			03/31/22 11:51	1
1,1-Dichloroethane	ND		5.0		ug/Kg			03/31/22 11:51	1
1,2-Dichloroethane	ND		5.0		ug/Kg			03/31/22 11:51	1
1,1-Dichloroethene	ND		5.0		ug/Kg			03/31/22 11:51	1
cis-1,2-Dichloroethene	ND		5.0		ug/Kg			03/31/22 11:51	1
trans-1,2-Dichloroethene	ND		5.0		ug/Kg			03/31/22 11:51	1
1,2-Dichloropropane	ND		5.0		ug/Kg			03/31/22 11:51	1
cis-1,3-Dichloropropene	ND		5.0		ug/Kg			03/31/22 11:51	1
trans-1,3-Dichloropropene	ND		5.0		ug/Kg			03/31/22 11:51	1
Ethylbenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
Hexachlorobutadiene	ND		5.0		ug/Kg			03/31/22 11:51	1
2-Hexanone	ND		10		ug/Kg			03/31/22 11:51	1
Isopropylbenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
4-Isopropyltoluene	ND		5.0		ug/Kg			03/31/22 11:51	1
Methylene Chloride	ND		10		ug/Kg			03/31/22 11:51	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/Kg			03/31/22 11:51	1
Naphthalene	ND		5.0		ug/Kg			03/31/22 11:51	1
N-Propylbenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
Styrene	ND		5.0		ug/Kg			03/31/22 11:51	1

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QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 320-576882/11
Matrix: Solid
Analysis Batch: 576882

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0		ug/Kg			03/31/22 11:51	1
1,1,2,2-Tetrachloroethane	ND		5.0		ug/Kg			03/31/22 11:51	1
Tetrachloroethene	ND		5.0		ug/Kg			03/31/22 11:51	1
Toluene	ND		5.0		ug/Kg			03/31/22 11:51	1
1,2,3-Trichlorobenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
1,2,4-Trichlorobenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
1,1,1-Trichloroethane	ND		5.0		ug/Kg			03/31/22 11:51	1
1,1,2-Trichloroethane	ND		5.0		ug/Kg			03/31/22 11:51	1
Trichloroethene	ND		5.0		ug/Kg			03/31/22 11:51	1
Trichlorofluoromethane	ND		5.0		ug/Kg			03/31/22 11:51	1
1,2,3-Trichloropropane	ND		5.0		ug/Kg			03/31/22 11:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10		ug/Kg			03/31/22 11:51	1
1,2,4-Trimethylbenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
1,3,5-Trimethylbenzene	ND		5.0		ug/Kg			03/31/22 11:51	1
Vinyl acetate	ND		10		ug/Kg			03/31/22 11:51	1
Vinyl chloride	ND		5.0		ug/Kg			03/31/22 11:51	1
Xylenes, Total	ND		5.0		ug/Kg			03/31/22 11:51	1
2,2-Dichloropropane	ND		5.0		ug/Kg			03/31/22 11:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		63 - 143		03/31/22 11:51	1
Dibromofluoromethane (Surr)	103		55 - 129		03/31/22 11:51	1
1,2-Dichloroethane-d4 (Surr)	94		32 - 156		03/31/22 11:51	1
Toluene-d8 (Surr)	102		63 - 138		03/31/22 11:51	1

Lab Sample ID: LCS 320-576882/8
Matrix: Solid
Analysis Batch: 576882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methyl tert-butyl ether	50.0	46.9		ug/Kg		94	66 - 146
Acetone	125	126		ug/Kg		101	64 - 128
Benzene	50.0	48.0		ug/Kg		96	78 - 128
Dichlorobromomethane	50.0	50.0		ug/Kg		100	80 - 137
Bromobenzene	50.0	47.8		ug/Kg		96	67 - 132
Chlorobromomethane	50.0	52.0		ug/Kg		104	80 - 127
Bromoform	50.0	46.5		ug/Kg		93	80 - 136
Bromomethane	50.0	49.6		ug/Kg		99	48 - 164
2-Butanone (MEK)	125	133		ug/Kg		107	71 - 142
n-Butylbenzene	50.0	43.5		ug/Kg		87	68 - 136
sec-Butylbenzene	50.0	43.0		ug/Kg		86	68 - 131
tert-Butylbenzene	50.0	44.1		ug/Kg		88	67 - 131
Carbon disulfide	50.0	43.4		ug/Kg		87	52 - 145
Carbon tetrachloride	50.0	41.4		ug/Kg		83	62 - 154
Chlorobenzene	50.0	47.4		ug/Kg		95	74 - 125
Chloroethane	50.0	47.4		ug/Kg		95	54 - 148
Chloroform	50.0	48.9		ug/Kg		98	78 - 135
Chloromethane	50.0	49.0		ug/Kg		98	60 - 141

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QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 320-576882/8
Matrix: Solid
Analysis Batch: 576882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Chlorotoluene	50.0	44.2		ug/Kg		88	64 - 127
4-Chlorotoluene	50.0	44.9		ug/Kg		90	67 - 128
Chlorodibromomethane	50.0	48.2		ug/Kg		96	80 - 133
1,2-Dichlorobenzene	50.0	47.1		ug/Kg		94	68 - 121
1,3-Dichlorobenzene	50.0	46.3		ug/Kg		93	64 - 126
1,4-Dichlorobenzene	50.0	46.1		ug/Kg		92	65 - 124
1,3-Dichloropropane	50.0	50.4		ug/Kg		101	80 - 123
1,1-Dichloropropene	50.0	43.0		ug/Kg		86	76 - 132
1,2-Dibromo-3-Chloropropane	50.0	37.7		ug/Kg		75	75 - 137
Ethylene Dibromide	50.0	48.4		ug/Kg		97	80 - 124
Dibromomethane	50.0	50.7		ug/Kg		101	80 - 129
Dichlorodifluoromethane	50.0	36.3		ug/Kg		73	60 - 130
1,1-Dichloroethane	50.0	48.6		ug/Kg		97	76 - 134
1,2-Dichloroethane	50.0	49.0		ug/Kg		98	66 - 150
1,1-Dichloroethene	50.0	44.0		ug/Kg		88	66 - 136
cis-1,2-Dichloroethene	50.0	50.3		ug/Kg		101	74 - 131
trans-1,2-Dichloroethene	50.0	46.6		ug/Kg		93	67 - 135
1,2-Dichloropropane	50.0	52.6		ug/Kg		105	80 - 129
cis-1,3-Dichloropropene	50.0	51.1		ug/Kg		102	80 - 134
trans-1,3-Dichloropropene	50.0	51.1		ug/Kg		102	80 - 148
Ethylbenzene	50.0	45.2		ug/Kg		90	72 - 125
Hexachlorobutadiene	50.0	44.7		ug/Kg		89	52 - 140
2-Hexanone	125	140		ug/Kg		112	78 - 143
Isopropylbenzene	50.0	43.8		ug/Kg		88	69 - 137
4-Isopropyltoluene	50.0	43.5		ug/Kg		87	64 - 137
Methylene Chloride	50.0	52.7		ug/Kg		105	77 - 125
4-Methyl-2-pentanone (MIBK)	125	136		ug/Kg		108	79 - 150
Naphthalene	50.0	46.5		ug/Kg		93	53 - 140
N-Propylbenzene	50.0	43.7		ug/Kg		87	63 - 128
Styrene	50.0	49.6		ug/Kg		99	79 - 128
1,1,1,2-Tetrachloroethane	50.0	49.2		ug/Kg		98	77 - 134
1,1,1,2,2-Tetrachloroethane	50.0	45.8		ug/Kg		92	71 - 134
Tetrachloroethene	50.0	42.2		ug/Kg		84	65 - 135
Toluene	50.0	45.7		ug/Kg		91	80 - 124
1,2,3-Trichlorobenzene	50.0	50.0		ug/Kg		100	54 - 140
1,2,4-Trichlorobenzene	50.0	49.1		ug/Kg		98	48 - 145
1,1,1-Trichloroethane	50.0	41.9		ug/Kg		84	67 - 150
1,1,2-Trichloroethane	50.0	49.5		ug/Kg		99	80 - 128
Trichloroethene	50.0	45.4		ug/Kg		91	80 - 126
Trichlorofluoromethane	50.0	39.8		ug/Kg		80	43 - 158
1,2,3-Trichloropropane	50.0	43.7		ug/Kg		87	71 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	41.9		ug/Kg		84	62 - 138
1,2,4-Trimethylbenzene	50.0	44.4		ug/Kg		89	64 - 137
1,3,5-Trimethylbenzene	50.0	44.8		ug/Kg		90	66 - 135
Vinyl acetate	50.0	49.6		ug/Kg		99	39 - 160
Vinyl chloride	50.0	44.9		ug/Kg		90	67 - 127
m-Xylene & p-Xylene	50.0	45.3		ug/Kg		91	73 - 128
o-Xylene	50.0	46.5		ug/Kg		93	76 - 127

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QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 320-576882/8
Matrix: Solid
Analysis Batch: 576882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,2-Dichloropropane	50.0	44.4		ug/Kg		89	69 - 153

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		63 - 143
Dibromofluoromethane (Surr)	101		55 - 129
1,2-Dichloroethane-d4 (Surr)	93		32 - 156
Toluene-d8 (Surr)	104		63 - 138

Lab Sample ID: LCSD 320-576882/9
Matrix: Solid
Analysis Batch: 576882

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl tert-butyl ether	50.0	50.8		ug/Kg		102	66 - 146	8	45
Acetone	125	147		ug/Kg		118	64 - 128	16	36
Benzene	50.0	49.5		ug/Kg		99	78 - 128	3	37
Dichlorobromomethane	50.0	52.1		ug/Kg		104	80 - 137	4	37
Bromobenzene	50.0	48.8		ug/Kg		98	67 - 132	2	40
Chlorobromomethane	50.0	53.6		ug/Kg		107	80 - 127	3	36
Bromoform	50.0	49.2		ug/Kg		98	80 - 136	6	45
Bromomethane	50.0	50.8		ug/Kg		102	48 - 164	2	38
2-Butanone (MEK)	125	136		ug/Kg		109	71 - 142	2	44
n-Butylbenzene	50.0	45.1		ug/Kg		90	68 - 136	4	37
sec-Butylbenzene	50.0	43.9		ug/Kg		88	68 - 131	2	40
tert-Butylbenzene	50.0	45.0		ug/Kg		90	67 - 131	2	42
Carbon disulfide	50.0	43.6		ug/Kg		87	52 - 145	1	46
Carbon tetrachloride	50.0	42.0		ug/Kg		84	62 - 154	1	43
Chlorobenzene	50.0	49.0		ug/Kg		98	74 - 125	3	38
Chloroethane	50.0	48.2		ug/Kg		96	54 - 148	2	34
Chloroform	50.0	49.9		ug/Kg		100	78 - 135	2	23
Chloromethane	50.0	47.7		ug/Kg		95	60 - 141	3	36
2-Chlorotoluene	50.0	45.4		ug/Kg		91	64 - 127	3	41
4-Chlorotoluene	50.0	45.8		ug/Kg		92	67 - 128	2	40
Chlorodibromomethane	50.0	50.1		ug/Kg		100	80 - 133	4	24
1,2-Dichlorobenzene	50.0	49.8		ug/Kg		100	68 - 121	6	28
1,3-Dichlorobenzene	50.0	48.1		ug/Kg		96	64 - 126	4	41
1,4-Dichlorobenzene	50.0	48.0		ug/Kg		96	65 - 124	4	38
1,3-Dichloropropane	50.0	52.1		ug/Kg		104	80 - 123	3	39
1,1-Dichloropropene	50.0	44.5		ug/Kg		89	76 - 132	3	38
1,2-Dibromo-3-Chloropropane	50.0	42.5		ug/Kg		85	75 - 137	12	48
Ethylene Dibromide	50.0	50.6		ug/Kg		101	80 - 124	4	39
Dibromomethane	50.0	53.6		ug/Kg		107	80 - 129	5	37
Dichlorodifluoromethane	50.0	36.1		ug/Kg		72	60 - 130	1	46
1,1-Dichloroethane	50.0	49.3		ug/Kg		99	76 - 134	1	24
1,2-Dichloroethane	50.0	51.2		ug/Kg		102	66 - 150	4	36
1,1-Dichloroethene	50.0	44.6		ug/Kg		89	66 - 136	1	42
cis-1,2-Dichloroethene	50.0	51.3		ug/Kg		103	74 - 131	2	37
trans-1,2-Dichloroethene	50.0	47.3		ug/Kg		95	67 - 135	2	37

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QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 320-576882/9
Matrix: Solid
Analysis Batch: 576882

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichloropropane	50.0	54.7		ug/Kg		109	80 - 129	4	38
cis-1,3-Dichloropropene	50.0	54.6		ug/Kg		109	80 - 134	7	39
trans-1,3-Dichloropropene	50.0	55.5		ug/Kg		111	80 - 148	8	42
Ethylbenzene	50.0	46.2		ug/Kg		92	72 - 125	2	41
Hexachlorobutadiene	50.0	46.6		ug/Kg		93	52 - 140	4	38
2-Hexanone	125	147		ug/Kg		117	78 - 143	4	73
Isopropylbenzene	50.0	45.5		ug/Kg		91	69 - 137	4	41
4-Isopropyltoluene	50.0	44.3		ug/Kg		89	64 - 137	2	40
Methylene Chloride	50.0	53.6		ug/Kg		107	77 - 125	2	25
4-Methyl-2-pentanone (MIBK)	125	143		ug/Kg		114	79 - 150	5	48
Naphthalene	50.0	52.6		ug/Kg		105	53 - 140	12	46
N-Propylbenzene	50.0	44.2		ug/Kg		88	63 - 128	1	42
Styrene	50.0	52.3		ug/Kg		105	79 - 128	5	40
1,1,1,2-Tetrachloroethane	50.0	50.4		ug/Kg		101	77 - 134	2	25
1,1,1,2-Tetrachloroethane	50.0	49.6		ug/Kg		99	71 - 134	8	31
Tetrachloroethene	50.0	43.6		ug/Kg		87	65 - 135	3	39
Toluene	50.0	46.8		ug/Kg		94	80 - 124	2	39
1,2,3-Trichlorobenzene	50.0	53.9		ug/Kg		108	54 - 140	7	42
1,2,4-Trichlorobenzene	50.0	53.0		ug/Kg		106	48 - 145	8	39
1,1,1-Trichloroethane	50.0	43.4		ug/Kg		87	67 - 150	4	43
1,1,2-Trichloroethane	50.0	52.6		ug/Kg		105	80 - 128	6	41
Trichloroethene	50.0	46.7		ug/Kg		93	80 - 126	3	40
Trichlorofluoromethane	50.0	39.9		ug/Kg		80	43 - 158	0	32
1,2,3-Trichloropropane	50.0	46.0		ug/Kg		92	71 - 132	5	41
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	42.0		ug/Kg		84	62 - 138	0	22
1,2,4-Trimethylbenzene	50.0	46.1		ug/Kg		92	64 - 137	4	41
1,3,5-Trimethylbenzene	50.0	45.4		ug/Kg		91	66 - 135	1	42
Vinyl acetate	50.0	53.5		ug/Kg		107	39 - 160	8	50
Vinyl chloride	50.0	44.9		ug/Kg		90	67 - 127	0	37
m-Xylene & p-Xylene	50.0	46.2		ug/Kg		92	73 - 128	2	40
o-Xylene	50.0	47.9		ug/Kg		96	76 - 127	3	40
2,2-Dichloropropane	50.0	45.1		ug/Kg		90	69 - 153	2	47

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		63 - 143
Dibromofluoromethane (Surr)	101		55 - 129
1,2-Dichloroethane-d4 (Surr)	95		32 - 156
Toluene-d8 (Surr)	104		63 - 138

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 320-576883/11
Matrix: Solid
Analysis Batch: 576883

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C4-C12	ND		0.50		mg/Kg			03/31/22 11:51	1

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QC Sample Results

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 320-576883/11
Matrix: Solid
Analysis Batch: 576883

Client Sample ID: Method Blank
Prep Type: Total/NA

<i>Surrogate</i>	<i>%Recovery</i>	<i>MB MB Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
4-Bromofluorobenzene (Surr)	94		70 - 131		03/31/22 11:51	1

Lab Sample ID: LCS 320-576883/5
Matrix: Solid
Analysis Batch: 576883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS LCS Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
Gasoline Range Organics (GRO)-C4-C12	1.00	0.882		mg/Kg		88	79 - 123

<i>Surrogate</i>	<i>%Recovery</i>	<i>LCS LCS Qualifier</i>	<i>Limits</i>
4-Bromofluorobenzene (Surr)	96		70 - 131

Lab Sample ID: LCSD 320-576883/6
Matrix: Solid
Analysis Batch: 576883

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

<i>Analyte</i>	<i>Spike Added</i>	<i>LCSD LCSD Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
Gasoline Range Organics (GRO)-C4-C12	1.00	0.893		mg/Kg		89	79 - 123	1	30

<i>Surrogate</i>	<i>%Recovery</i>	<i>LCSD LCSD Qualifier</i>	<i>Limits</i>
4-Bromofluorobenzene (Surr)	95		70 - 131

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 320-577011/1-A
Matrix: Solid
Analysis Batch: 577272

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 577011

<i>Analyte</i>	<i>MB MB Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2,4-Trichlorobenzene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
1,2-Dichlorobenzene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
1,3-Dichlorobenzene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
1,4-Dichlorobenzene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2,4,5-Trichlorophenol	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2,4,6-Trichlorophenol	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2,4-Dichlorophenol	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2,4-Dimethylphenol	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2,4-Dinitrophenol	ND		1600		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2,4-Dinitrotoluene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2,6-Dinitrotoluene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2-Chloronaphthalene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2-Chlorophenol	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2-Methylnaphthalene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2-Methylphenol	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2-Nitroaniline	ND		1600		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2-Nitrophenol	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
3,3'-Dichlorobenzidine	ND		1600		ug/Kg		03/31/22 13:50	04/01/22 17:56	1

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QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 320-577011/1-A
Matrix: Solid
Analysis Batch: 577272

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 577011

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
3-Nitroaniline	ND		1600		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
2-Methyl-4,6-dinitrophenol	ND		1600		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
4-Bromophenyl phenyl ether	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
4-Chloro-3-methylphenol	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
4-Chloroaniline	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
4-Chlorophenyl phenyl ether	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
4-Nitroaniline	ND		1600		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
4-Nitrophenol	ND		1600		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Acenaphthene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Acenaphthylene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Anthracene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Azobenzene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Benzo[a]anthracene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Benzo[a]pyrene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Benzo[b]fluoranthene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Benzo[g,h,i]perylene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Benzo[k]fluoranthene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Benzoic acid	ND		1600		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Benzyl alcohol	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Bis(2-chloroethoxy)methane	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Bis (2-chloroethyl) ether	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Bis(2-ethylhexyl) phthalate	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Butyl benzyl phthalate	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Chrysene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Dibenz(a,h)anthracene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Dibenzofuran	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Diethyl phthalate	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Dimethyl phthalate	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Di-n-butyl phthalate	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Di-n-octyl phthalate	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Fluoranthene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Fluorene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Hexachlorobenzene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Hexachlorobutadiene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Hexachlorocyclopentadiene	ND		1600		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Hexachloroethane	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Indeno[1,2,3-cd]pyrene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Isophorone	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Naphthalene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Nitrobenzene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
N-Nitrosodi-n-propylamine	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
N-Nitrosodiphenylamine	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Pentachlorophenol	ND		1600		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Phenanthrene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Phenol	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Pyrene	ND		330		ug/Kg		03/31/22 13:50	04/01/22 17:56	1
Pyridine	ND		660		ug/Kg		03/31/22 13:50	04/01/22 17:56	1

QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 320-577011/1-A
Matrix: Solid
Analysis Batch: 577272

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 577011

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol	68		60 - 120	03/31/22 13:50	04/01/22 17:56	1
2-Fluorophenol	72		53 - 113	03/31/22 13:50	04/01/22 17:56	1
Nitrobenzene-d5	68		54 - 114	03/31/22 13:50	04/01/22 17:56	1
Phenol-d5	75		54 - 114	03/31/22 13:50	04/01/22 17:56	1
Terphenyl-d14	85		66 - 126	03/31/22 13:50	04/01/22 17:56	1

Lab Sample ID: LCS 320-577011/2-A
Matrix: Solid
Analysis Batch: 577272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 577011

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2,4-Trichlorobenzene	3330	2530		ug/Kg		76	45 - 105
1,2-Dichlorobenzene	3330	2410		ug/Kg		72	44 - 104
1,3-Dichlorobenzene	3330	2370		ug/Kg		71	42 - 102
1,4-Dichlorobenzene	3330	2360		ug/Kg		71	44 - 104
2,4,5-Trichlorophenol	3330	2950		ug/Kg		88	58 - 118
2,4,6-Trichlorophenol	3330	2880		ug/Kg		86	57 - 117
2,4-Dichlorophenol	3330	2710		ug/Kg		81	56 - 116
2,4-Dimethylphenol	3330	2700		ug/Kg		81	53 - 113
2,4-Dinitrophenol	6670	3290		ug/Kg		49	10 - 100
2,4-Dinitrotoluene	3330	3030		ug/Kg		91	61 - 121
2,6-Dinitrotoluene	3330	2980		ug/Kg		89	60 - 120
2-Chloronaphthalene	3330	2670		ug/Kg		80	47 - 107
2-Chlorophenol	3330	2610		ug/Kg		78	50 - 110
2-Methylnaphthalene	3330	2580		ug/Kg		77	48 - 108
2-Methylphenol	3330	2630		ug/Kg		79	53 - 113
2-Nitroaniline	3330	3080		ug/Kg		92	60 - 120
2-Nitrophenol	3330	2670		ug/Kg		80	55 - 115
3,3'-Dichlorobenzidine	3330	1860		ug/Kg		56	33 - 93
3-Nitroaniline	3330	2130		ug/Kg		64	38 - 98
2-Methyl-4,6-dinitrophenol	6670	4460		ug/Kg		67	33 - 107
4-Bromophenyl phenyl ether	3330	2850		ug/Kg		86	57 - 117
4-Chloro-3-methylphenol	3330	2960		ug/Kg		89	61 - 121
4-Chloroaniline	3330	1790		ug/Kg		54	29 - 89
4-Chlorophenyl phenyl ether	3330	2840		ug/Kg		85	52 - 112
4-Nitroaniline	3330	2910		ug/Kg		87	57 - 117
4-Nitrophenol	6670	5970		ug/Kg		90	57 - 117
Acenaphthene	3330	2720		ug/Kg		81	48 - 108
Acenaphthylene	3330	2680		ug/Kg		80	50 - 110
Anthracene	3330	2910		ug/Kg		87	55 - 115
Azobenzene	3330	2880		ug/Kg		87	54 - 114
Benzo[a]anthracene	3330	2890		ug/Kg		87	62 - 122
Benzo[a]pyrene	3330	3030		ug/Kg		91	67 - 127
Benzo[b]fluoranthene	3330	3060		ug/Kg		92	64 - 124
Benzo[g,h,i]perylene	3330	3060		ug/Kg		92	64 - 124
Benzo[k]fluoranthene	3330	3050		ug/Kg		91	64 - 124
Benzoic acid	6670	5420		ug/Kg		81	10 - 121
Benzyl alcohol	3330	2650		ug/Kg		80	53 - 113

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QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 320-577011/2-A
Matrix: Solid
Analysis Batch: 577272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 577011

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bis(2-chloroethoxy)methane	3330	2560		ug/Kg		77	50 - 110
Bis (2-chloroethyl) ether	3330	2520		ug/Kg		76	47 - 107
Bis(2-ethylhexyl) phthalate	3330	3070		ug/Kg		92	66 - 126
Butyl benzyl phthalate	3330	3010		ug/Kg		90	66 - 126
Chrysene	3330	2880		ug/Kg		86	59 - 119
Dibenz(a,h)anthracene	3330	3070		ug/Kg		92	64 - 124
Dibenzofuran	3330	2750		ug/Kg		83	50 - 110
Diethyl phthalate	3330	2910		ug/Kg		87	54 - 114
Dimethyl phthalate	3330	2880		ug/Kg		86	53 - 113
Di-n-butyl phthalate	3330	3020		ug/Kg		91	61 - 121
Di-n-octyl phthalate	3330	3100		ug/Kg		93	66 - 126
Fluoranthene	3330	2910		ug/Kg		87	57 - 117
Fluorene	3330	2840		ug/Kg		85	51 - 111
Hexachlorobenzene	3330	2830		ug/Kg		85	60 - 120
Hexachlorobutadiene	3330	2480		ug/Kg		74	46 - 106
Hexachlorocyclopentadiene	3330	2560		ug/Kg		77	41 - 101
Hexachloroethane	3330	2410		ug/Kg		72	44 - 104
Indeno[1,2,3-cd]pyrene	3330	3060		ug/Kg		92	65 - 125
Isophorone	3330	2630		ug/Kg		79	50 - 110
Naphthalene	3330	2500		ug/Kg		75	44 - 104
Nitrobenzene	3330	2580		ug/Kg		78	50 - 110
N-Nitrosodi-n-propylamine	3330	2650		ug/Kg		79	50 - 110
N-Nitrosodiphenylamine	3330	2880		ug/Kg		86	55 - 115
Pentachlorophenol	6670	5380		ug/Kg		81	57 - 117
Phenanthrene	3330	2820		ug/Kg		84	53 - 113
Phenol	3330	2600		ug/Kg		78	53 - 113
Pyrene	3330	2920		ug/Kg		88	62 - 122
Pyridine	6670	3330		ug/Kg		50	28 - 88

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	88		60 - 120
2-Fluorophenol	80		53 - 113
Nitrobenzene-d5	84		54 - 114
Phenol-d5	80		54 - 114
Terphenyl-d14	88		66 - 126

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 320-577016/1-A
Matrix: Solid
Analysis Batch: 577884

Client Sample ID: Method Blank
Prep Type: Silica Gel Cleanup
Prep Batch: 577016

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		1.0		mg/Kg		03/31/22 13:59	04/05/22 21:50	1
Motor Oil Range Organics [C24-C36]	ND		5.0		mg/Kg		03/31/22 13:59	04/05/22 21:50	1

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QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 320-577016/2-A
Matrix: Solid
Analysis Batch: 577884

Client Sample ID: Lab Control Sample
Prep Type: Silica Gel Cleanup
Prep Batch: 577016

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10-C28]	10.0	9.61		mg/Kg		96	57 - 132

Lab Sample ID: 320-85904-1 MS
Matrix: Solid
Analysis Batch: 577884

Client Sample ID: AECA03182022
Prep Type: Silica Gel Cleanup
Prep Batch: 577016

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10-C28]	5.7		9.92	15.5		mg/Kg		99	57 - 132

Lab Sample ID: 320-85904-1 MSD
Matrix: Solid
Analysis Batch: 577884

Client Sample ID: AECA03182022
Prep Type: Silica Gel Cleanup
Prep Batch: 577016

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	5.7		9.74	16.8		mg/Kg		114	57 - 132	8	30

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 320-577018/1-A
Matrix: Solid
Analysis Batch: 577308

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 577018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Dieldrin	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Endrin aldehyde	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Endrin	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Endrin ketone	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
cis-Chlordane	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Heptachlor	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Heptachlor epoxide	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
4,4'-DDT	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
4,4'-DDE	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
4,4'-DDD	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Endosulfan I	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Endosulfan II	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
BHC, .alpha.-	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
beta-BHC	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
gamma-BHC (Lindane)	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
delta-BHC	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Endosulfan sulfate	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Methoxychlor	ND		3.4		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Toxaphene	ND		67		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
Chlordane (technical)	ND		20		ug/Kg		03/31/22 14:06	04/01/22 18:14	1
trans-Chlordane	ND		1.7		ug/Kg		03/31/22 14:06	04/01/22 18:14	1

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QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 320-577018/1-A
Matrix: Solid
Analysis Batch: 577308

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 577018

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	77		47 - 107	03/31/22 14:06	04/01/22 18:14	1
Tetrachloro-m-xylene	78		47 - 107	03/31/22 14:06	04/01/22 18:14	1
DCB Decachlorobiphenyl	85		46 - 109	03/31/22 14:06	04/01/22 18:14	1
DCB Decachlorobiphenyl	90		46 - 109	03/31/22 14:06	04/01/22 18:14	1

Lab Sample ID: LCS 320-577018/2-A
Matrix: Solid
Analysis Batch: 577308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 577018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dieldrin	16.7	13.4		ug/Kg		80	54 - 117
Endrin aldehyde	16.7	14.7		ug/Kg		88	40 - 100
Endrin	16.7	16.4		ug/Kg		98	58 - 115
Endrin ketone	16.7	15.2		ug/Kg		91	51 - 118
cis-Chlordane	16.7	12.0		ug/Kg		72	54 - 113
Heptachlor	16.7	12.1		ug/Kg		73	50 - 118
Heptachlor epoxide	16.7	14.2		ug/Kg		85	56 - 113
4,4'-DDT	16.7	15.1		ug/Kg		91	53 - 128
4,4'-DDE	16.7	14.6		ug/Kg		87	58 - 115
4,4'-DDD	16.7	13.2		ug/Kg		79	53 - 117
Endosulfan I	16.7	8.80		ug/Kg		53	42 - 118
Endosulfan II	16.7	12.3		ug/Kg		74	48 - 118
BHC, .alpha.-	16.7	12.0		ug/Kg		72	54 - 111
beta-BHC	16.7	14.5		ug/Kg		87	53 - 115
gamma-BHC (Lindane)	16.7	12.2		ug/Kg		73	54 - 112
delta-BHC	16.7	11.0		ug/Kg		66	39 - 124
Endosulfan sulfate	16.7	15.1		ug/Kg		90	51 - 113
Methoxychlor	16.7	16.2		ug/Kg		97	52 - 123
trans-Chlordane	16.7	11.7		ug/Kg		70	55 - 114

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	77		47 - 107
DCB Decachlorobiphenyl	87		46 - 109

Lab Sample ID: LCS 320-577018/3-A
Matrix: Solid
Analysis Batch: 577308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 577018

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	83		47 - 107
DCB Decachlorobiphenyl	88		46 - 109

QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 320-577020/1-A
Matrix: Solid
Analysis Batch: 577682

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 577020

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-1016	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:06	1
PCB-1221	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:06	1
PCB-1232	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:06	1
PCB-1242	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:06	1
PCB-1248	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:06	1
PCB-1254	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:06	1
PCB-1260	ND		33		ug/Kg		03/31/22 14:14	04/04/22 15:06	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	86		56 - 114	03/31/22 14:14	04/04/22 15:06	1
DCB Decachlorobiphenyl	86		52 - 138	03/31/22 14:14	04/04/22 15:06	1

Lab Sample ID: LCS 320-577020/2-A
Matrix: Solid
Analysis Batch: 577682

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 577020

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
PCB-1016	66.7	64.0		ug/Kg		96	58 - 124
PCB-1260	66.7	63.9		ug/Kg		96	55 - 138

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	88		56 - 114
DCB Decachlorobiphenyl	92		52 - 138

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 320-575573/1-A
Matrix: Solid
Analysis Batch: 576089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 575573

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silver	ND		0.50		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Arsenic	ND		2.0		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Barium	ND		1.0		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Beryllium	ND		0.20		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Cadmium	ND		0.20		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Cobalt	ND		0.50		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Chromium	ND		0.50		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Copper	ND		1.5		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Molybdenum	ND		2.0		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Nickel	ND		1.0		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Lead	ND		1.0		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Selenium	ND		2.0		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Antimony	ND		2.0		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Thallium	ND		2.0		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Vanadium	ND		0.50		mg/Kg		03/24/22 15:35	03/25/22 11:50	1
Zinc	ND		2.0		mg/Kg		03/24/22 15:35	03/25/22 11:50	1

Eurofins Sacramento

QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 320-575573/2-A
Matrix: Solid
Analysis Batch: 576089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 575573

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	5.05	4.63		mg/Kg		92	80 - 120
Arsenic	50.0	45.2		mg/Kg		90	80 - 120
Barium	50.0	46.7		mg/Kg		93	80 - 120
Beryllium	25.0	24.0		mg/Kg		96	80 - 120
Cadmium	25.0	23.9		mg/Kg		96	80 - 120
Cobalt	25.0	22.2		mg/Kg		89	80 - 120
Chromium	25.0	23.4		mg/Kg		94	80 - 120
Copper	25.0	24.1		mg/Kg		96	80 - 120
Molybdenum	24.9	23.5		mg/Kg		94	80 - 120
Nickel	25.0	24.1		mg/Kg		97	80 - 120
Lead	25.0	23.9		mg/Kg		95	80 - 120
Selenium	50.0	43.2		mg/Kg		86	80 - 120
Antimony	50.0	48.1		mg/Kg		96	80 - 120
Thallium	50.0	46.1		mg/Kg		92	80 - 120
Vanadium	25.0	23.2		mg/Kg		93	80 - 120
Zinc	49.9	44.8		mg/Kg		90	80 - 120

Lab Sample ID: 320-85904-1 MS
Matrix: Solid
Analysis Batch: 576089

Client Sample ID: AECA03182022
Prep Type: Total/NA
Prep Batch: 575573

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	ND		5.00	4.81		mg/Kg		92	80 - 120
Arsenic	6.4		49.5	50.6		mg/Kg		89	80 - 120
Barium	150		49.5	204		mg/Kg		109	80 - 120
Beryllium	0.88		24.8	24.0		mg/Kg		94	80 - 120
Cadmium	0.35		24.8	22.8		mg/Kg		91	80 - 120
Cobalt	15		24.8	36.3		mg/Kg		84	80 - 120
Chromium	81		24.8	104		mg/Kg		93	80 - 120
Copper	41		24.8	64.8		mg/Kg		98	80 - 120
Molybdenum	ND		24.6	22.2		mg/Kg		90	80 - 120
Nickel	120		24.8	146	4	mg/Kg		104	80 - 120
Lead	180		24.8	168	4	mg/Kg		-32	80 - 120
Selenium	ND		49.5	41.7		mg/Kg		84	80 - 120
Antimony	22	F1	49.5	40.4	F1	mg/Kg		37	80 - 120
Thallium	ND		49.5	42.9		mg/Kg		87	80 - 120
Vanadium	47		24.8	71.5		mg/Kg		98	80 - 120
Zinc	130	F1	49.4	154	F1	mg/Kg		50	80 - 120

Lab Sample ID: 320-85904-1 MSD
Matrix: Solid
Analysis Batch: 576089

Client Sample ID: AECA03182022
Prep Type: Total/NA
Prep Batch: 575573

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Silver	ND		4.95	4.78		mg/Kg		92	80 - 120	1	35
Arsenic	6.4		49.0	50.7		mg/Kg		90	80 - 120	0	35
Barium	150		49.0	208		mg/Kg		116	80 - 120	1	35
Beryllium	0.88		24.5	24.0		mg/Kg		94	80 - 120	0	35
Cadmium	0.35		24.5	22.7		mg/Kg		91	80 - 120	0	35

Eurofins Sacramento

QC Sample Results

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 320-85904-1 MSD
 Matrix: Solid
 Analysis Batch: 576089

Client Sample ID: AECA03182022
 Prep Type: Total/NA
 Prep Batch: 575573

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
Cobalt	15		24.5	36.8		mg/Kg		87	80 - 120	1	35	
Chromium	81		24.5	106		mg/Kg		103	80 - 120	2	35	
Copper	41		24.5	65.8		mg/Kg		103	80 - 120	2	35	
Molybdenum	ND		24.4	21.9		mg/Kg		90	80 - 120	1	35	
Nickel	120		24.5	144	4	mg/Kg		98	80 - 120	1	35	
Lead	180		24.5	232	4	mg/Kg		228	80 - 120	32	35	
Selenium	ND		49.0	41.3		mg/Kg		84	80 - 120	1	35	
Antimony	22	F1	49.0	40.6	F1	mg/Kg		38	80 - 120	1	35	
Thallium	ND		49.0	42.2		mg/Kg		86	80 - 120	2	35	
Vanadium	47		24.5	75.9		mg/Kg		117	80 - 120	6	35	
Zinc	130	F1	48.9	163	F1	mg/Kg		68	80 - 120	5	35	

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 320-577323/11-A
 Matrix: Solid
 Analysis Batch: 577505

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 577323

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.040		mg/Kg		04/02/22 15:00	04/03/22 12:38	1

Lab Sample ID: LCS 320-577323/12-A
 Matrix: Solid
 Analysis Batch: 577505

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 577323

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec	
		Result	Qualifier				Limits	RPD
Mercury	0.167	0.165		mg/Kg		99	86 - 114	

Lab Sample ID: LCSD 320-577323/13-A
 Matrix: Solid
 Analysis Batch: 577505

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 577323

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec		RPD	Limit
		Result	Qualifier				Limits	RPD		
Mercury	0.167	0.164		mg/Kg		98	86 - 114	1	17	

Lab Sample ID: 320-85904-1 MS
 Matrix: Solid
 Analysis Batch: 577505

Client Sample ID: AECA03182022
 Prep Type: Total/NA
 Prep Batch: 577323

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec	
				Result	Qualifier				Limits	RPD
Mercury	1.3	F2	0.175	1.90	4	mg/Kg		314	86 - 114	

Lab Sample ID: 320-85904-1 MSD
 Matrix: Solid
 Analysis Batch: 577505

Client Sample ID: AECA03182022
 Prep Type: Total/NA
 Prep Batch: 577323

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
Mercury	1.3	F2	0.175	1.51	4 F2	mg/Kg		96	86 - 114	22	17	

Eurofins Sacramento

QC Association Summary

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

GC/MS VOA

Prep Batch: 574569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	5030B	

Analysis Batch: 576882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	8260B	574569
MB 320-576882/11	Method Blank	Total/NA	Solid	8260B	
LCS 320-576882/8	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 320-576882/9	Lab Control Sample Dup	Total/NA	Solid	8260B	

Analysis Batch: 576883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	8260B/CA_LUFT MS	574569
MB 320-576883/11	Method Blank	Total/NA	Solid	8260B/CA_LUFT MS	
LCS 320-576883/5	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	
LCSD 320-576883/6	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	

GC/MS Semi VOA

Prep Batch: 577011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	3550B	
MB 320-577011/1-A	Method Blank	Total/NA	Solid	3550B	
LCS 320-577011/2-A	Lab Control Sample	Total/NA	Solid	3550B	

Analysis Batch: 577272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	8270C	577011
MB 320-577011/1-A	Method Blank	Total/NA	Solid	8270C	577011
LCS 320-577011/2-A	Lab Control Sample	Total/NA	Solid	8270C	577011

GC Semi VOA

Prep Batch: 577016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Silica Gel Cleanup	Solid	3550B	
MB 320-577016/1-A	Method Blank	Silica Gel Cleanup	Solid	3550B	
LCS 320-577016/2-A	Lab Control Sample	Silica Gel Cleanup	Solid	3550B	
320-85904-1 MS	AECA03182022	Silica Gel Cleanup	Solid	3550B	
320-85904-1 MSD	AECA03182022	Silica Gel Cleanup	Solid	3550B	

Prep Batch: 577018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	3546	
MB 320-577018/1-A	Method Blank	Total/NA	Solid	3546	
LCS 320-577018/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 320-577018/3-A	Lab Control Sample	Total/NA	Solid	3546	

Eurofins Sacramento

QC Association Summary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

GC Semi VOA

Prep Batch: 577020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	3546	
MB 320-577020/1-A	Method Blank	Total/NA	Solid	3546	
LCS 320-577020/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 577308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	8081A	577018
MB 320-577018/1-A	Method Blank	Total/NA	Solid	8081A	577018
LCS 320-577018/2-A	Lab Control Sample	Total/NA	Solid	8081A	577018
LCS 320-577018/3-A	Lab Control Sample	Total/NA	Solid	8081A	577018

Analysis Batch: 577682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	8082	577020
MB 320-577020/1-A	Method Blank	Total/NA	Solid	8082	577020
LCS 320-577020/2-A	Lab Control Sample	Total/NA	Solid	8082	577020

Analysis Batch: 577884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Silica Gel Cleanup	Solid	8015B	577016
MB 320-577016/1-A	Method Blank	Silica Gel Cleanup	Solid	8015B	577016
LCS 320-577016/2-A	Lab Control Sample	Silica Gel Cleanup	Solid	8015B	577016
320-85904-1 MS	AECA03182022	Silica Gel Cleanup	Solid	8015B	577016
320-85904-1 MSD	AECA03182022	Silica Gel Cleanup	Solid	8015B	577016

Metals

Prep Batch: 575573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	3050B	
MB 320-575573/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 320-575573/2-A	Lab Control Sample	Total/NA	Solid	3050B	
320-85904-1 MS	AECA03182022	Total/NA	Solid	3050B	
320-85904-1 MSD	AECA03182022	Total/NA	Solid	3050B	

Analysis Batch: 576089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	6010B	575573
MB 320-575573/1-A	Method Blank	Total/NA	Solid	6010B	575573
LCS 320-575573/2-A	Lab Control Sample	Total/NA	Solid	6010B	575573
320-85904-1 MS	AECA03182022	Total/NA	Solid	6010B	575573
320-85904-1 MSD	AECA03182022	Total/NA	Solid	6010B	575573

Prep Batch: 577323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	7471A	
MB 320-577323/11-A	Method Blank	Total/NA	Solid	7471A	
LCS 320-577323/12-A	Lab Control Sample	Total/NA	Solid	7471A	
LCSD 320-577323/13-A	Lab Control Sample Dup	Total/NA	Solid	7471A	
320-85904-1 MS	AECA03182022	Total/NA	Solid	7471A	
320-85904-1 MSD	AECA03182022	Total/NA	Solid	7471A	

Eurofins Sacramento

QC Association Summary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Metals

Analysis Batch: 577505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-85904-1	AECA03182022	Total/NA	Solid	7471A	577323
MB 320-577323/11-A	Method Blank	Total/NA	Solid	7471A	577323
LCS 320-577323/12-A	Lab Control Sample	Total/NA	Solid	7471A	577323
LCSD 320-577323/13-A	Lab Control Sample Dup	Total/NA	Solid	7471A	577323
320-85904-1 MS	AECA03182022	Total/NA	Solid	7471A	577323
320-85904-1 MSD	AECA03182022	Total/NA	Solid	7471A	577323

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Lab Chronicle

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Client Sample ID: AECA03182022

Lab Sample ID: 320-85904-1

Date Collected: 03/18/22 10:00

Matrix: Solid

Date Received: 03/18/22 12:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			00005.07 g	5 mL	574569	03/21/22 09:24	JRM	TAL SAC
Total/NA	Analysis	8260B		1	5 mL	5 mL	576882	03/31/22 12:34	AP1	TAL SAC
Total/NA	Prep	5030B			00005.07 g	5 mL	574569	03/21/22 09:24	JRM	TAL SAC
Total/NA	Analysis	8260B/CA_LUFTMS		1	5 mL	5 mL	576883	03/31/22 12:34	AP1	TAL SAC
Total/NA	Prep	3550B			30.37 g	1 mL	577011	03/31/22 13:50	SJ	TAL SAC
Total/NA	Analysis	8270C		20			577272	04/01/22 18:46	Y1S	TAL SAC
Silica Gel Cleanup	Prep	3550B			30.69 g	3 mL	577016	03/31/22 13:59	NGK	TAL SAC
Silica Gel Cleanup	Analysis	8015B		1			577884	04/05/22 22:47	K1D	TAL SAC
Total/NA	Prep	3546			15.20 g	5 mL	577018	03/31/22 14:06	PT	TAL SAC
Total/NA	Analysis	8081A		5			577308	04/01/22 19:11	K1D	TAL SAC
Total/NA	Prep	3546			15.20 g	5 mL	577020	03/31/22 14:14	PT	TAL SAC
Total/NA	Analysis	8082		1			577682	04/04/22 15:46	K1D	TAL SAC
Total/NA	Prep	3050B			1.01 g	100 mL	575573	03/24/22 15:35	JP	TAL SAC
Total/NA	Analysis	6010B		1			576089	03/25/22 11:58	SP	TAL SAC
Total/NA	Prep	7471A			0.57 g	50 mL	577323	04/02/22 15:00	DPM	TAL SAC
Total/NA	Analysis	7471A		5			577505	04/03/22 14:19	DPM	TAL SAC

Laboratory References:

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: County of Santa Clara
 Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Laboratory: Eurofins Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	2897	01-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8081A	3546	Solid	cis-Chlordane
8081A	3546	Solid	trans-Chlordane
8260B	5030B	Solid	1,1,2-Trichloro-1,2,2-trifluoroethane
8260B	5030B	Solid	1,1-Dichloropropene
8260B	5030B	Solid	1,2,3-Trichlorobenzene
8260B	5030B	Solid	1,2,4-Trimethylbenzene
8260B	5030B	Solid	1,2-Dibromo-3-Chloropropane
8260B	5030B	Solid	1,3,5-Trimethylbenzene
8260B	5030B	Solid	1,3-Dichloropropane
8260B	5030B	Solid	2,2-Dichloropropane
8260B	5030B	Solid	2-Butanone (MEK)
8260B	5030B	Solid	2-Chlorotoluene
8260B	5030B	Solid	2-Hexanone
8260B	5030B	Solid	4-Isopropyltoluene
8260B	5030B	Solid	Acetone
8260B	5030B	Solid	Isopropylbenzene
8260B	5030B	Solid	Vinyl acetate
8270C	3550B	Solid	1,2,4-Trichlorobenzene
8270C	3550B	Solid	2,4,5-Trichlorophenol
8270C	3550B	Solid	2,4,6-Trichlorophenol
8270C	3550B	Solid	2-Methyl-4,6-dinitrophenol
8270C	3550B	Solid	2-Methylphenol
8270C	3550B	Solid	Azobenzene
8270C	3550B	Solid	Hexachlorobenzene
8270C	3550B	Solid	Hexachlorobutadiene
8270C	3550B	Solid	Hexachlorocyclopentadiene
8270C	3550B	Solid	Hexachloroethane
8270C	3550B	Solid	Phenanthrene
8270C	3550B	Solid	Phenol
8270C	3550B	Solid	Pyrene
8270C	3550B	Solid	Pyridine

Method Summary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAC
8260B/CA_LUFTM S	Volatile Organic Compounds by GC/MS	SW846	TAL SAC
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAC
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL SAC
8081A	Organochlorine Pesticides (GC)	SW846	TAL SAC
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL SAC
6010B	Metals (ICP)	SW846	TAL SAC
7471A	Mercury (CVAA)	SW846	TAL SAC
3050B	Preparation, Metals	SW846	TAL SAC
3546	Microwave Extraction	SW846	TAL SAC
3550B	Ultrasonic Extraction	SW846	TAL SAC
5030B	Purge and Trap	SW846	TAL SAC
7471A	Preparation, Mercury	SW846	TAL SAC

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: County of Santa Clara
Project/Site: Almaden Expressway and Camden Avenue

Job ID: 320-85904-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-85904-1	AECA03182022	Solid	03/18/22 10:00	03/18/22 12:04

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Chain of Custody Record
320-85904

Client Contact Santa Clara County Roads and Airports Department 101 Skyport Drive San Jose, CA 95110 (408) 690-9190 (408) 297-0530 Project Name: Almaden Expressway and Camden Avenue Site: Almaden Expressway and Camden Avenue Intersection P O # CW2227585 (Service Agreement #)		Project Manager: Christine Li Tel/Fax: _____		Site Contact: Chris Ellsbury Lab Contact: _____		Date: March 18, 2022 Carrier: _____	
Analysis Turnaround Time Calendar (C) or Work Days (W) <u>10 work days</u> TAT if different from Below <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Sample Date: 3/18/2022 Sample Time: 06:00 Sample Type: soil Matrix: soil # of Cont: 2		Filtered Sample CAM 17 TTLC VOCs SVOCs Pesticides PCBs TPH m/diesel (with SG cleanup) TPH-Gasoline pH Ignitibility		Sample Specific Notes: IF Lead or Chromium TTLC exceeds 50 mg/kg then run STLC. If Pb or Cr TTLC exceeds 100 mg/kg then run then run TCLP. If Ni TTLC exceeds 200 mg/kg then run STLC.	
 320 85904 Chain of Custody							
Preservation Used. 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/>							
Special Instructions/QC Requirements & Comments. If Lead or Chromium TTLC exceeds 50 mg/kg then run STLC. If Pb or Cr TTLC exceeds 100 mg/kg then run TCLP. If Ni TTLC exceeds 200 mg/kg then run STLC.							
Relinquished by: 		Company: SEC B + A		Received by: 		Company: ETASO	
Relinquished by: _____		Date/Time: 3/19/22 12:01		Received by: _____		Date/Time: 3-18-22 1204	
Relinquished by: _____		Date/Time: _____		Received by: _____		Date/Time: _____	



Login Sample Receipt Checklist

Client: County of Santa Clara

Job Number: 320-85904-1

Login Number: 85904

List Source: Eurofins Sacramento

List Number: 1

Creator: Mullen, Joan

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

SECTION 111

BID FORMS

Bid Form No.:	Title
1	Bid Proposal
2A	Certification Of Subcontracting Limitations And Designation Of Subcontractors
2B	Certification Of Subcontracting Limitations And Designation Of Subcontractors
3	Statement Regarding Violation of Law Or Safety Regulation
4	Designation of Insurance And Bonding Companies
5	Equal Opportunity Requirements
6	Non-Collusion Affidavit
7	Stop Notice Information
8	Bidder's Bond
9	<i>Agreement To Be Bound (PLA for projects over \$2M)</i>

PLEASE NOTE: These forms are designed to contain essential information concerning the Bidder and the Bid, and must be completed such that they can be read. If any of the completed forms are illegible, the County may, at its option, declare the entire bid unresponsive. PLEASE PRINT LEGIBLY.

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BID FORM 1 - BID PROPOSAL

FROM:

NAME OF BIDDER: _____

MAILING ADDRESS: _____

PHONE: _____ FAX: _____

BIDDER CONTACT NAME: _____

EMAIL ADDRESS: _____

(Provide email address and name of person to contact regarding bids)

TO: The County of Santa Clara, herein called Owner:

- 1. Pursuant to and in compliance with the Notice to Bidders and the Contract Documents relating to **Intersection Improvements at Almaden Expressway and Camden Avenue**

the undersigned Bidder, having become thoroughly familiar with the terms and conditions of the Contract Documents and with the local conditions affecting the performance and the costs of the Work at the place where the Work is to be done and having fully inspected the Work site in all particulars, hereby proposes and agrees to fully perform the Work within the Contract time stated and in strict accordance with the Contract Documents, including providing any and all labor and materials, and performing all the Work required to construct and to complete said Work in accordance with the requirements of the Contract Documents for the following sum of money as indicated on the Schedule of Quantities and Prices, Total Base Bid Price (Sum of Bid Items 1 through 87 Inclusive).

- 2. Accompanying this Bid Proposal is _____ (insert word "cash," "cashier's check," "certified check," or "Bidder's Bond" as the case may be) an amount equal to at least ten percent (10%) of the total of the Bid including all Additive and Alternative Items. A Total Dollar Value of \$_____

3. **ADDENDA**

No Addenda received.

Addenda received as listed below:

Acknowledged receipt of each Addendum must be included with the Bid. Failure to acknowledge receipt of all Addenda may cause the Bid to be considered non-responsive.

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

4. BID SCHEDULE

CONTRACTOR'S NAME:						
INTERSECTION IMPROVEMENTS AT ALMADEN EXP AND CAMDEN AVE BID SCHEDULE						
Bid Item No. (F/S)	REF	Bid Item Description	Units	Qty	Unit Price	Bid Item Total
1	110-05	Progress Schedule (Critical Path Method)	1	LS		
2	110-12.02	Mobilization	1	LS		
3	S 110-06.01	Traffic Control System	1	LS		
4	S 110-06.02	Pedestrian Safety	1	LS		
5	110-06.03	Portable Changeable Message Signs	4	EA		
6	110-06.07	Project Information Signs	2	EA		
7	S 110-07	SWPPP	1	LS		
8	S 110-10.01	Pre-Construction Nesting Bird Survey	1	LS		
9	110-11	Roadway Excavation, Handling and disposal of Soil	410	CY		
10	110-12.06	Potholing	25	EA		
11	110-12.09	Clearing and Grubbing	1	LS		
12	S 110-12.10	Traffic Striping Removal	1	LS		
13	110-12.11	Remove Tree	2	EA		
14	110-12.12	Remove Curb	1869	LF		
15	110-12.12	Remove Curb & Gutter	872	LF		
16	110-12.12	Remove Concrete Pork chop/Median	3230	SF		
17	110-12.12	Remove Sidewalk	2168	SF		
18	110-12.13	Remove Roadside Sign	5	EA		
19	110-12.14	Relocate Roadside Sign	2	EA		
20	F 110-12.15	Roadway Excavation	720	CY		
21	110-12.17	Cold Plane Asphalt Conform	2031	SY		
22	110-12.18	Microsurfacing, Type II	5100	SY		
23	110-12.19	Hot Mix Asphalt	2828	TON		
24	110-12.21	PCC Curb and Gutter	1007	LF		
25	110-12.21	PCC Curb	936	LF		
26	110-12.22	PCC Median Nose	160	SF		
27	110-12.23	PCC Sidewalk	2367	SF		
28	110-12.24	Pedestrian Curb Ramp (with detectable warning surface)	4	EA		
29	110-12.25	PCC Driveway	400	SF		
30	110-12.38	Colored Concrete Surface	900	SF		
31	110-12.26	Adjust Manhole to Grade	6	EA		
32	110-12.27	Adjust Valve Box to Grade	6	EA		

CONTINUED ON NEXT PAGE ⇨

CONTRACTOR'S NAME:							
INTERSECTION IMPROVEMENTS AT ALMADEN EXP AND CAMDEN AVE BID SCHEDULE							
Bid Item No. (F/S)	REF	Bid Item Description	Units	Qty	Unit Price	Bid Item Total	
33		110-12.28	Convert DI to Manhole	1	EA		
34		110-12.29	Remove DI and Pipe	2	EA		
35		110-12.30	Furnish and Install (F&I) DI	3	EA		
36		110-12.31	F&I 12" HDPE	10	LF		
37		110-12.32	F&I Roadside Sign (on Signal Pole or Street Light)	6	EA		
38		110-12.32	F&I Roadside Sign	7	EA		
39	S	110-12.34	Thermoplastic Striping - Detail 9	350	LF		
40	S	110-12.34	Thermoplastic Striping - Detail 12	1800	LF		
41	S	110-12.34	Thermoplastic Striping - Detail 22	355	LF		
42	S	110-12.34	Thermoplastic Striping - Detail 25	800	LF		
43	S	110-12.34	Thermoplastic Striping - Detail 37B	725	LF		
44	S	110-12.34	Thermoplastic Striping - Detail 38	1500	LF		
45	S	110-12.34	Thermoplastic Striping - Detail 39	1400	LF		
46	S	110-12.34	Thermoplastic Striping - Detail 39A	250	LF		
47	S	110-12.34	Thermoplastic Striping - Detail 40	550	LF		
48	S	110-12.34	Thermoplastic Striping - 6" Stripe	500	LF		
49	S	110-12.35	Thermoplastic Striping - 12" Stripe	1830	SF		
50	s	110-12.35	Thermoplastic Pavement Marking	2500	SF		
51	S	110-12.36	Paint Island Curb Nose	30	SF		
52	S	110-12.37	Thermoplastic Striping - Detail SJ1	330	LF		
53	S	110-12.37	Thermoplastic Striping - Detail SJ2	39	EA		
54		110-12.39	Mulch	1	LS		
55	S	110-06.01	F&I [Street Name Sign] (On Signal Pole)	4	EA		
56	S	110-13.04.1	Maintaining Temporary Video Detection	1	LS		
57	S	110-13.08	F&I Ped Post and Post Foundation	1	EA		
58	S	110-13.07	Pole Foundation (Type 15TS)	4	EA		
59	S	110-13.07	Pole Foundation (Type 15)	4	EA		
60	S	110-13.07	Pole Foundation (Type SCC 29-6-100)	2	EA		
61	S	110-13.07	Pole Foundation (Type SCC 26-6-100)	2	EA		
62	S	110-13.08	Install County-Furnished (ICF) Pole (Type 15TS)	4	EA		
63	S	110-13.08	ICF Pole (Type 15)	4	EA		
64	S	110-13.08	ICF Pole (Type SCC 29-6-100)	2	EA		
65	S	110-13.08	ICF Pole (Type SCC 29-6-100)	2	EA		

CONTINUED ON NEXT PAGE ⇨

CONTRACTOR'S NAME:							
INTERSECTION IMPROVEMENTS AT ALMADEN EXP AND CAMDEN AVE BID SCHEDULE							
Bid Item No. (F/S)	REF	Bid Item Description	Units	Qty	Unit Price	Bid Item Total	
66	S	110-13.09	F&I Conduit (4-3" Schedule 80 HDPE bundle)	935	LF		
67	S	110-13.09	F&I Conduit (2" Schedule 80 Conduit for the streetlights)	800	LF		
68	S	110-13.07	BBS Foundation	1	EA		
69	S	110-13.11	F&I Pull Box #5	10	EA		
70	S	110-13.11	F&I PGE Box	1	EA		
71	S	110-13.11	F&I Pull Box #N40E	8	EA		
72	S	110-13.11	F&I Pull Box #N48E	2	EA		
73	S	110-13.12	F&I Conductors and Wiring	1	LS		
74	S	110-13.13	Fiber Optic Cable	1	LS		
75	S	110-13.14	Fiber Optic Splice Enclosure	1	EA		
76	S	110-13.17	ICF CCTV Camera System	1	LS		
77	S	110-13.21	ICF Controller Assembly	1	EA		
78	S	110-13.10	F&I Type III-AF Service Enclosure & Equipment	1	EA		
79	S	110-13.22	Relocate Battery Backup System	1	EA		
80	S	110-13.23	F&I Traffic Signal Faces and Fittings	26	EA		
81	S	110-13.24	F&I Pedestrian Signals	8	EA		
82	S	110-13.25	F&I Pedestrian Push Button (Type APS, including plaque)	8	EA		
83	S	110-13.26	F&I Pedestrian Sensors	8	EA		
84	S	110-13.27	F&I Detector Loop (6x6)	54	EA		
85	S	110-13.27	F&I Detector Loop (3x3)	4	EA		
86	S	110-13.27	F&I Detector Handhole	8	EA		
87	S	110-13.28.01	F&I Luminaires	12	EA		
88	S	110-13.28.02	F&I Photoelectric Control	1	EA		
89	S	110-13.29	Abandoning, Removing, Reinstalling and/or Salvaging Electrical/Signal Equipment	1	LS		
90	S	110-13.30	F&I Red Light indicator	8	EA		
91	S	110-13.33	Relocate Bluetooth Equipment	1	LS		
92		110-12.14.02	Trench Safety	1	LS		
93		110-14	Supplemental Work	250000	EA	\$1.00	
TOTAL CONTRACT PRICE FOR ITEMS 1 THROUGH 93 ABOVE:						\$	
Write in Total Amount in Words Above							
NOTES: When shown, (F) denotes "Final Pay Quantity Item" and (S) denotes "Specialty Item."							

5. The names of all persons interested in the foregoing Bid as principals are as follows:

NOTES:

- If Bidder or other interested person is a corporation, state legal name of corporation, the State where incorporated, and names of the president and secretary thereof;
- If a partnership, state name of the firm, and names of all individual partners composing firm;
- If Bidder or other interested person is an individual, state first and last names in full.

6. California Contractor's license number is: _____ Expiration date: _____
 Class: _____

NOTES:

- If Bidder is a corporation, the legal name of the corporation shall be set forth below together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation;
- If Bidder is a partnership, the name of the firm shall be set forth below together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership; and
- If Bidder is an individual, the Bidder shall sign below.

BIDDER'S SIGNATURE: _____	DATE: _____
BIDDER'S NAME (PRINT): _____	
TITLE (PRINT): _____	

BASIS FOR AWARD OF CONTRACT

1. A Contract, without additive and/or deductive Bid items, will be awarded to the "Responsible bidder" submitting the lowest responsive Base Bid (as may be corrected in accordance with paragraph 5 below). For a contract using additive and/or deductive Bid items, Public Contract Code section 20103.8 prescribes how additive and/or deductive Bid items are to be considered in awarding a public contract. Absent a statement in this section stating how additive and/or deductive items are to be considered, pursuant to Public Contract Code section 20103.8, the lowest bid shall be the lowest bid price on the base contract without consideration of the prices on the additive or deductive items. In the event of tie bids, the Bid that was submitted earlier, as reflected by the date and time stamp affixed to the Bid at the time of its submission, will be selected.
2. "Responsible bidder" (per Public Contract Code section 1103) is a bidder who has demonstrated the attribute of trustworthiness, as well as quality, fitness, capacity, and experience to satisfactorily perform the public works contract.
3. Owner reserves the right to reject this Bid (see Section 100-10, "Bid Acceptance/Rejection", of these Special Provisions). This Bid shall remain open and shall not be withdrawn for a period of sixty (60) days from the date prescribed for its opening.
4. If written notice of the acceptance of this Bid is mailed or delivered personally to the Bidder within sixty (60) days after the date set for the opening of this Bid, or at any time thereafter before it is withdrawn, the undersigned Bidder shall execute and deliver the Agreement contained in the Contract Documents to Owner in accordance with this Bid as accepted. The Bidder shall also furnish and deliver to Owner the Performance Bond, Payment Bond for Public Works as specified, Contractor's Certification of Worker's Compensation, and proof of insurance coverages as required by these Special Provisions, all within twenty (20) days after the date of the Notice of Award. The contract Bonds and Insurance shall be satisfactory to, and on the forms approved by Owner. Notice of Award and requests for additional information will be addressed to the Bidder at the address set forth above.
5. Wherever in this Bid Proposal an amount is stated in both words and figures, in case of discrepancy between words and figures, the words shall prevail. If all or any portion of this Bid Proposal is required to be given in unit prices and totals and a discrepancy exists between any such unit prices and totals so given, **the unit prices shall prevail** in computing the extensions for the totals shown on the Bid Schedule, and for purposes of computation of payments for increased or decreased quantities of actual authorized work performed in the completion of the Contract. If the Bid Proposal contains an arithmetical error in the computation of unit price extensions (summation of bid item totals), **Owner will correct and revise the total Base Bid price accordingly. Owner will not make any changes in the totals shown on the Bid Schedule for "lump sum."**

BID FORM 2A - CERTIFICATION OF SUBCONTRACTING LIMITATIONS & DESIGNATION OF SUBCONTRACTORS

Pursuant to the California Subletting and Subcontracting Fair Practices Act, Public Contract Code sections 4100 *et seq.* ("Subcontractor Listing Law"), **Bidder shall completely fill in the form on the next page (Bid Form 2B) for each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work in an amount in excess of one-half of one percent of the prime contractor's total bid**, or in the case of bids or offers for construction of streets or highways, including bridges, in excess of one-half of one percent of the prime contractor's total bid or ten thousand dollars (\$10,000.00), whichever is greater.

If more than one subcontractor is listed for the same kind of Work, state the portion of Work each subcontractor will perform. If a bidder fails to specify a subcontractor as required hereunder or if a bidder specifies more than one subcontractor for the same portion of work, the bidder agrees that bidder shall, and is fully qualified to, perform that portion of the work itself. "Subcontractor" means a contractor, within the meaning of Business and Professions Code section 7026, who contracts directly with the Bidder, performing work or labor or render service to the Bidder.

Failure to list required information may result in bid determined to be non-responsive. Bidder shall list all Subcontractors, their Place of Business (physical address), California contractor's license number issued by the Contractors State License Board, California Department of Industrial Relations Contractor's Registration Number (DIR), and Description, Bid Item Numbers, and Dollar values of the subcontractor(s)' Work. "Specialty" Item of Work subcontractors shall be so designated.

Contractor hereby certifies that it shall perform with its own organization Contract Work amounting to **not less than 50%** of the original total Contract price, excluding the Supplemental Work allowance and any designated "Specialty Item," (*) both of which may be deducted from the original Contract price before computing the amount of Work required to be performed by the Contractor with its own organization. Bidder's failure to list a subcontractor for any portion of the Work in excess of one-half of one percent of Bidder's total Base Bid signifies that Bidder will self-perform that portion of the Work with its own forces.

BIDDER: _____	BIDDER'S DIR #: _____
BIDDER'S SIGNATURE: _____	DATE: _____
BIDDER'S NAME (PRINT): _____	
TITLE (PRINT): _____	

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BID FORM 2B - CERTIFICATION OF SUBCONTRACTING LIMITATIONS & DESIGNATION OF SUBCONTRACTORS

Subcontractor's Name, Business Address, CA Contractor's License Number, and DIR Registration Number, and Email Address	Bid Item Number And description	Specialty Item of work (Yes/No)	Percentage and Dollar Value of portion of work per bid item
Company Name: Business Address: License Number: DIR Number: Email:			% / \$ % / \$ % / \$ % / \$ % / \$ % / \$ % / \$
Company Name: Business Address: License Number: DIR Number: Email:			% / \$ % / \$ % / \$ % / \$ % / \$ % / \$ % / \$
Company Name: Business Address: License Number: DIR Number: Email:			% / \$ % / \$ % / \$ % / \$ % / \$ % / \$ % / \$

BIDDER'S SIGNATURE: _____	DATE: _____
BIDDER'S NAME (PRINT): _____	
TITLE (PRINT): _____	

NOTE: 1. To list additional Subcontractors, submit completed copies of this Bid Form 2B as needed; fill in the number of additional pages in the space provided: **This Bid Package includes _____ page(s) of Bid Form 2B**

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BID FORM 3 - STATEMENT REGARDING VIOLATION OF LAW OR SAFETY REGULATION

Has the Bidder, or any officer of the Bidder, or any employee of the Bidder, who may have 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 safety regulation:

YES _____ NO _____

If your answer is YES, explain the circumstances.

A Bid may be rejected on the basis of a Bidder, any officer of such Bidder, or any employee of such Bidder who has a proprietary interest in such Bidder, having been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local project because of a violation of law or a safety regulation.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

BIDDER'S SIGNATURE: _____	DATE: _____
BIDDER'S NAME (PRINT): _____	
TITLE (PRINT): _____	

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BID FORM 4 - DESIGNATION OF INSURANCE AND BONDING COMPANIES

DESIGNATION OF INSURANCE COMPANY(IES) AND AGENT OR BROKER

The following insurance company(ies) and agent or broker will provide policies of insurance or insurance certificates as are required by the Contract Documents:

Insurance Company(ies) (providing coverages): _____

Admitted in California: YES _____ NO _____

Agent or Broker: _____

Street: _____

City: _____ State: _____ Zip: _____

Phone: _____

DESIGNATION OF BONDING COMPANY AND AGENT OR BROKER

The following surety company and agent or broker will provide Payment and Performance Bonds as are required by the Contract Documents:

Surety Company (providing Bonds): _____

Admitted in California: YES _____ NO _____

Agent or Broker: _____

Street: _____

City: _____ State: _____ Zip: _____

Phone: _____

NOTE: Bonding company must be admitted in the State of California.

BIDDER'S SIGNATURE: _____	DATE: _____
BIDDER'S NAME (PRINT): _____	
TITLE (PRINT): _____	

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BID FORM 5 - EQUAL OPPORTUNITY REQUIREMENTS

In connection with the performance of Work under this Contract, Contractor agrees as follows:

1. The County of Santa Clara is an equal opportunity employer. Contractor shall comply with all applicable federal, state, and local laws and regulations including Santa Clara County’s equal opportunity requirements. Such laws include but are not limited to the following:
 - Title VII of the Civil Rights Act of 1964 as amended;
 - Americans with Disabilities Act of 1990;
 - The Age Discrimination in Employment Act of 1967
 - The Rehabilitation Act of 1973 (sections 503 and 504);
 - The Equal Pay Act of 1963;
 - California Fair Employment and Housing Act (Government Code section 12900 *et seq.*);
 - California Labor Code sections 1101, 1102, and 1197.5; and
 - The Genetic Information Nondiscrimination Act of 2008.

In addition to the foregoing, Contractor shall not discriminate against any subcontractor, employee, or applicant for employment because of age, race, color, national origin, ancestry, religion, sex, gender identity, gender expression, sexual orientation, mental disability, physical disability, medical condition, political belief, organizational affiliation, or marital status in the recruitment, selection for training (including but not limited to apprenticeship), hiring, employment, assignment, promotion, layoff, rates of pay or other forms of compensation. Nor shall Contractor discriminate in the provision of services provided under this contract because of age, race, color, national origin, ancestry, religion, sex, gender identity, gender expression, sexual orientation, mental disability, physical disability, medical condition, political beliefs, organizational affiliations, or marital status.

Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the awarding authority setting forth these requirements.

2. The Contractor herein certifies that:
 - Paragraph 1 set forth above shall be included in all subcontracts.
 - Contractor shall notify all employees and all sources of employee referrals, (including unions, employment agencies, advertisements, department of employment) of the required compliance with Paragraph 1 above.

The undersigned, in submitting Bid for performing the following Work by Contract, hereby certifies that it will comply with the Equal Opportunity Requirements.

BIDDER’S SIGNATURE: _____	DATE: _____
BIDDER’S NAME (PRINT): _____	
TITLE (PRINT): _____	

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BID FORM 6 - NONCOLLUSION AFFIDAVIT

In accordance with Public Contract Code section 7106, **Noncollusion Declaration To Be Executed By Bidder And Submitted With Bid**

The undersigned declares:

I am the (Title) _____ Of (Company) _____

The party making the foregoing Bid.

The Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The Bid is genuine and not collusive or sham. The Bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham Bid. The Bidder has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham Bid, or to refrain from bidding. The Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the Bid price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the Bid price, or of that of any other Bidder. All statements contain in the Bid are true. 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, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham Bid, and has not paid, and will not pay, any person or entity for such purpose.

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

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____, at _____, _____.
Date City State

BIDDER'S PRINCIPAL SIGNATURE: _____

BIDDER'S PRINCIPAL NAME (PRINT): _____

BIDDER'S PRINCIPAL TITLE (PRINT): _____

CONTINUED ON NEXT PAGE ⇨

The following form of acknowledgment should be used. If any other form of acknowledgment is used, there must be submitted a certified copy of unrevoked resolution of authority for the attorney-in-fact.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document

STATE OF CALIFORNIA
COUNTY OF SANTA CLARA

On _____ before me, _____
personally appeared _____
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are
subscribed to the within instrument and acknowledged to me that he/she/they executed the same in
his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s),
or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.
(Seal)

Notary Public for the State of California

BID FORM 7 - STOP NOTICE INFORMATION

The following is provided for the information of contractors, subcontractors and suppliers of labor, materials, equipment, and services under County Public Works contracts, and is not intended as legal advice. Advice of legal counsel should be obtained to ensure compliance with legal requirements relating to public works stop notices.

WHERE TO FILE: All original stop notices and preliminary 20 day notices (if required) must be filed with the County of Santa Clara, Clerk of the Board of Supervisors, located at 70 West Hedding Street, East Wing, 10th Floor, San Jose, California 95110.

STOP NOTICE CONTENTS: See Civil Code sections 8100 *et seq.* and 9352. Written notice, signed and verified by the claimant and including information such as the kind of labor, equipment, materials or services provided or agreed to be provided by the claimant; the name of the person/entity to or for whom the same was done or provided; the amount in value of that already done or provided and an estimate of the total amount to be provided.

WHO MAY SERVE STOP NOTICE: See California Civil Code section 9100. All persons who have not been paid in full and who have provided work for a public works contract for a work of improvement, if the work is authorized by a direct contractor, subcontractor, architect, project manager, or other person having charge of all or part of the public works contract; laborers, and; persons described in Public Contract Code section 4107.7.

HOW THE STOP NOTICE IS SERVED: See California Civil Code sections 8106 *et seq.* and 9354. Served by personal service, registered mail, or certified mail.

TIME FOR SERVICE: See Civil Code section 9356. Stop payment notices must be served before the expiration of: 30 days after recording of a Notice of Completion (also known as "Notice of Acceptance") or Notice of Cessation, if such notice is recorded. If no such notice is recorded, 90 days after actual completion or cessation.

NOTICE OF COMPLETION: See California Civil Code §9362. Provided that a stop notice claimant has paid to the Clerk of the Road Department the sum of \$2.00 at the time of filing a stop notice, the Fiscal Officer shall provide that claimant with a copy of the recorded Notice of Completion or after the cessation of labor has been deemed a completion of a public work, or after the acceptance of completion, whichever is later, by personal service or registered or certified mail.

NOTICE OF RECORDING: See Civil Code section 9362. Provided that a stop payment notice claimant has paid to the Clerk of the Board of Supervisors the sum of \$10.00 at the time of filing a stop notice, the County shall provide that claimant with notice of the filing of a Notice of Completion or Cessation, or completion by acceptance or cessation, by personal service, or registered or certified mail.

RELEASE OF STOP PAYMENT NOTICE: See Civil Code sections 8120 et seq., 9400 et seq., and 9364. A stop payment notice can be released if the original contractor files a corporate surety bond with the Clerk of the Board of Supervisors, in the amount of 125% of the stop notice claim. Alternatively, the original contractor may file an affidavit pursuant to Civil Code sections 9400 through 9402, stating objections to the validity of the stop payment notice. A counter-affidavit may be filed by the claimant pursuant to **Civil Code section 9406**, and a summary legal proceeding may be held pursuant to **Civil Code section 9408 et seq.**, to determine the validity of the stop payment notice. If no counter-affidavit is filed, the stop payment notice funds shall be released. Alternatively, the stop payment notice claimant may file a release in a form which substantially complies with Civil Code sections 8132 through 8138.

STOP PAYMENT NOTICE LAWSUIT: See Civil Code sections 9500 through 9510. These sections provide that a stop payment notice is perfected only by the filing of a lawsuit. A lawsuit must be filed no sooner than 10 days after service of a stop notice, and no later than 90 days after the expiration of the time for filing stop payment notices. Notice of suit must be given to the Clerk of the Board of Supervisors within 5 days after commencement. The court has the discretionary right to dismiss the lawsuit if it is not brought to trial within 2 years.

I HEREBY ACKNOWLEDGE THAT I HAVE RECEIVED AND READ THE ABOVE STOP PAYMENT NOTICE INFORMATION AND IF I AM AWARDED THIS CONTRACT, I AGREE TO INCLUDE A COPY OF THIS BID FORM IN ALL SUBCONTRACTS AND CONTRACTS FOR LABOR, MATERIALS, EQUIPMENT, AND SERVICES THAT I ENTER INTO FOR THIS PROJECT.

BIDDER'S SIGNATURE: _____	DATE: _____
BIDDER'S NAME (PRINT): _____	
TITLE (PRINT): _____	

BID FORM 8 - BIDDER'S BOND

WHEREAS, we, _____ as Principal,
and _____ as Surety,

are held and firmly bound unto the County of Santa Clara, a political subdivision of the State of California (hereinafter called the "County"), in the penal sum of TEN PERCENT (10%) of the total aggregate amount of the Bid, including all additives and/or all alternate bid items, of the Principal above named, submitted by said Principal to County for the Work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such that a Bid to County for certain construction specifically described as follows:

for which Bids are to be opened on _____, 20 _____ has been submitted by Principal to County:

NOW, THEREFORE, if the aforesaid Principal shall not withdraw said Bid within the period specified therein after the opening of the same, or, if no period be specified, within sixty (60) days after said opening, and shall within the period specified therefore, or if no period be specified, within twenty (20) days after the prescribed forms are presented to Principal for signature, enter into a written Contract with the County, in the prescribed form, in accordance with the Bid as accepted, and file the two Bonds with the County, one to guarantee faithful Performance and the other to guarantee Payment for labor and materials, as required by law, or in the event of the withdrawal of said Bid within the period specified or the failure to enter into such contract and give such Bonds within the time specified, if the Principal shall pay County the difference between the amount specified in said Bid and the amount for which the County may procure the required Work and/or supplies, if the latter amount be in excess of the former, together with all costs incurred by the County in again calling for bids, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

Surety for value received, hereby stipulates and agrees that no change, extension of time, alterations, or addition to the terms of the contract on the call for Bids, or to the Work to be performed thereunder, or the specifications accompanying the same, shall in any way affect its obligation under this Bond, and it does, hereby, waive notice of any such change, extension of time, alteration, or addition to the terms of specifications.

In the event suit is brought upon this Bond by the County of Santa Clara and judgment is recovered, Surety shall pay all costs incurred by the County of Santa Clara in such suit, including a reasonable attorney's fee to be fixed by the court in accordance with applicable statutory law.

IN WITNESS WHEREOF, we have hereunto set our hands and seals on this _____ day of _____, 20____.

PRINCIPAL:

SURETY:

Signature

Signature

Name

Name

Title

Title

Address

Address

CONTINUED ON NEXT PAGE ⇨

NOTE TO SURETY COMPANY:

The following form of acknowledgment should be used. If any other form of acknowledgment is used, there must be submitted a certified copy of unrevoked resolution of authority for the attorney-in-fact.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document

SURETY COMPANY ATTORNEY-IN-FACT

STATE OF CALIFORNIA
COUNTY OF SANTA CLARA

On _____ before me, _____ personally appeared,
known to me to be the duly authorized Attorney-in-Fact of the corporate Surety named in the within instrument, known to me to be authorized to execute that instrument on behalf of said corporation; known to me to be the person whose name is subscribed to such instrument, as the Attorney-in-Fact of said corporation, and acknowledge to me that he (she) subscribed the name of said corporation thereto as Surety, and his (her) own name as Attorney-in-Fact and that said corporation executed the same.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal
(Seal)

Notary Public for the State of California with principal office in Santa Clara County.

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BID FORM 9 – AGREEMENT TO BE BOUND**SANTA CLARA COUNTY
COUNTYWIDE PROJECT LABOR AGREEMENT**

This Agreement is entered into this 24 day of January, 2017, by and between the County of Santa Clara (hereinafter, the "County"), together with contractors and subcontractors of all tiers, who shall become signatory to this Agreement by signing the "Agreement To Be Bound" (Addendum A) (all of whom are referred to herein as "Contractor(s)/Employer(s)"), and the Santa Clara and San Benito Counties Building & Construction Trades Council ("Council") and its affiliated local Unions that have executed this Agreement (all of whom are referred to collectively as "Union" or "Unions").

The purpose of this Agreement is to promote efficiency of construction operations during the County's Construction Project ("Project") as defined herein, and to provide for peaceful settlement of labor disputes and grievances without strikes or lockouts, thereby promoting the County's interest in assuring the timely and economical completion of the Project. The County and the Council may mutually agree in writing to add components and projects to be covered under this Agreement.

WHEREAS, the timely and successful completion of the Project is of the utmost importance to the County to meet the needs of the County and to avoid increased costs resulting from delays in construction; and

WHEREAS, large numbers of workers of various skills will be required in the performance of the construction work, including those to be represented by the Unions signatory to this Agreement and employed by contractors and subcontractors who are also signatory to this Agreement; and

WHEREAS, it is recognized that on a project of this magnitude with multiple contractors and bargaining units on the job site at the same time over an extended period of time, the potential for work disruption is substantial, without an overriding commitment to maintain continuity of work; and

WHEREAS, the interests of the County, the Unions, the Contractor(s)/ Employer(s) and the public would be best served if the construction work proceeded in an orderly manner without disruption because of strikes, sympathy strikes, work stoppages, picketing, lockouts, slowdowns or other interferences with work; and

WHEREAS, the Contractor(s)/Employer(s) and the Unions desire to mutually establish and stabilize wages, hours and working conditions for the workers employed on the Project by the Contractor/Employer(s), and further, to encourage close cooperation among the Contractor/Employer(s) and the Union(s) so that a satisfactory, continuous and harmonious relationship will exist among the parties to this Agreement; and

WHEREAS, the parties agree that one of the primary purposes of this Agreement is to avoid the tensions that might arise on the Project if Union and non-union workers of different employers were to work side by side on the Project, thereby leading to labor disputes that could delay completion of the Project; and

WHEREAS, the Agreement is not intended to replace, interfere with, abrogate, diminish or modify existing local or national collective bargaining agreements in effect during the duration of the Project, insofar as a legally binding agreement exists between the Contractor(s)/Employer(s) and the affected Union(s), except to the extent that the provisions of this Agreement are inconsistent with said collective bargaining agreements, in which event, the provisions of this Agreement shall prevail; and

WHEREAS, the contracts for construction work on the Project will be awarded in accordance with the applicable provisions of the Public Contract Code and other applicable California law; and

WHEREAS, the County has the absolute right to select the lowest responsive and responsible bidder for the award of the construction contract on the Project; and

WHEREAS, the County places high priority upon the development of comprehensive programs for the recruitment, training and employment of traditionally underrepresented and targeted workers, and recognizing the ability of local pre-apprenticeship and apprenticeship programs to provide meaningful and sustainable careers in the building and construction industry; and

WHEREAS, the parties to this Agreement pledge their full good faith and trust to work towards a mutually satisfactory completion of the Project; and

WHEREAS, the County of Santa Clara has previously entered into project labor agreements with the Unions for prior projects and has experienced positive benefits with its relationship with the Unions. The County Board of Supervisors has approved the use of this Agreement.

NOW, THEREFORE, IT IS AGREED BETWEEN AND AMONG THE PARTIES HERETO, AS FOLLOWS:

ARTICLE 1 DEFINITIONS

1.1 "Agreement" means this Project Labor Agreement.

1.2 "Agreement to be Bound" means the agreement (attached hereto and incorporated herein as Addendum A) which shall be executed by each and every Contractor(s)/Employer(s) as a condition of performing Project Work.

1.3 "Completion" means that point at which there is Final Acceptance by the County of a Construction Contract. For this definition of "Completion," "Final Acceptance" shall mean that point in time at which the engineer for the County has determined upon final inspection that the work has been completed in all respects and all required contract documents, contract drawings, warranties, certificates, manuals and data have been submitted and training completed in accordance with the contract documents and the County has executed a written acceptance of the work

1.4 "Construction Contract" means the public works or improvement contract(s) (including design-bid, design-build, lease-leaseback or other contract under which construction of the Project is done) awarded by the County that are necessary to complete the Project.

1.5 "Contractor(s)/Employer(s)" or "Contractor(s)" or "Employer(s)" means any individual, firm, partnership or corporation, or combination thereof, including joint ventures, that is an independent business enterprise, and their successors and assigns, that enters into a contract with the County with respect to the construction of any part of the Project, under contract terms and conditions approved by the County and which incorporate this Agreement, and any of its contractors or subcontractors of any tier.

1.6 "Council" means the Santa Clara and San Benito Counties Building & Construction Trades Council.

1.7 "County" means Santa Clara County, its authorized employees, agents, and administrative staff.

1.8 "Master Agreement" or "Schedule A" means the Master Collective Bargaining Agreement of each craft Union signatory hereto, copies of which shall be provided to the County upon request.

1.9 "Project" means all County construction projects funded in whole or in part with County funds and approved by the Board of Supervisors in accordance with the County's Public Works Contracts Board Policy 5.7. The County and the Council may mutually agree in writing to add additional components to the Project's Scope of Work to be covered under this PLA.

1.10 "Project Manager" means the person(s) or business entity(ies) designated by the County to oversee all phases of construction on the Project and to oversee the implementation of this Agreement and who works under the guidance of the County's Authorized Representative.

1.11 "Union" or "Unions" means the Santa Clara and San Benito Counties Building & Construction Trades Council, AFL-CIO, ("the Council") and any affiliated Union signatory to this Agreement, acting on their own behalf and on behalf of their respective affiliates and member organizations, whose names are subscribed hereto and who have through their officers executed this Agreement ("Signatory Unions").

ARTICLE 2 SCOPE OF AGREEMENT

2.1 Parties: The Agreement shall apply to and is limited to all Contractor(s)/ Employer(s) performing or subcontracting work under the Construction Contract(s) on the Project (including subcontractors at any tier), the County, the Council and its affiliated Unions signatory to this Agreement.

2.2 Applicability: The Agreement shall govern all Construction Contracts awarded on County Projects in accordance with the County Public Works Contracts Board Policy 5.7. For the purposes of this Agreement, the Construction Contract shall be considered complete as set forth in Section 1.3, except when the County's authorized representative directs a Contractor to engage in repairs, warranty work, or modifications as required under the Construction Contract with the County.

2.3 Covered Work: This Agreement covers, without limitation, all on-site site preparation, surveying, construction, alteration, demolition, installation, improvement, painting or repair of buildings, structures and other works, and related activities for the Project that is within the craft jurisdiction of one of the Unions and which is directly or indirectly part of the Project, including, without limitation to the following examples, geotechnical and exploratory drilling, temporary HVAC, landscaping and temporary fencing, pipelines (including those in linear corridors built to serve the project), pumps, pump stations, and modular furniture installation. On-site work includes work done for the Project in temporary yards, dedicated sites, or areas adjacent to the Project, and at any on-site or off-site batch plant constructed solely to supply materials to the Project. This scope of work includes all soils and materials testing and inspection where such testing and inspection is a classification in which a prevailing wage determination has been published.

2.3.1 This Agreement shall apply to any start-up, calibration, commissioning, performance testing, repair, and operational revisions to systems and/or subsystems performed for the Project after completion unless it is performed by County employees.

2.3.2 This Agreement covers all on-site fabrication work over which the County or Contractor(s)/Employer(s) possess the right of control (including work done for the Project in any temporary yard or area established for the Project.). Additionally, this Agreement covers any off-site work, including fabrication necessary for the Project defined herein, that is covered by a current Schedule A Agreement or local addenda to a National Agreement of the applicable Union(s) that is in effect as of the execution date of this Agreement.

2.3.3. The furnishing of supplies, equipment or materials which are stockpiled for later use shall not be covered by this Agreement. However, construction trucking work, such as the delivery of ready-mix, asphalt, aggregate, sand or other fill or material which are incorporated into the construction process as well as the off-hauling of debris and excess fill, material and/or mud, shall be covered by the terms and conditions of this Agreement. Contractor/Employer(s), including brokers, of persons providing construction trucking work shall provide certified payroll records to the County within ten (10) days of written request or as required by bid specifications.

2.3.4 Work covered by this Agreement within the following craft jurisdictions shall be performed under the terms of their National Agreements as follows: the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, and the National Agreement of Elevator Constructors, and any instrument calibration work and loop checking shall be performed under the terms of the UA/IBEW Joint National Agreement for Instrument and Control Technicians, with the exception that Articles IV, XIII and XIV of this Agreement shall apply to such work.

2.4 Exclusions. The following shall be excluded from the scope of this Agreement:

2.4.1 The Agreement shall not apply to a Contractor(s)/Employer's non-construction craft employees, including but not limited to executives, managerial employees, engineering employees and supervisors above the level of General Foreman (except those covered by existing Master Agreements), staff engineers or other professional engineers, administrative and management personnel.

2.4.2 This Agreement shall not apply to any work performed on or near or leading to the site of work covered by this Agreement that is undertaken by state, city or other governmental bodies or their contractors; or by public or private utilities or their contractors.

2.4.3 This Agreement shall not apply to off-site maintenance of leased equipment and on-site supervision of such work.

2.4.4 The County shall not be required to comply with this Agreement for any work performed with its own forces as permitted by the Public Contract Code.

2.5 Award of Contracts: It is understood and agreed that the County shall have the right to select any qualified bidder for the award of the Construction Contract(s) under this Agreement. The bidder need only be willing, ready and able to execute and comply with this Agreement. It is further agreed that this Agreement shall be included in all invitations to bid or solicitations for proposals from contractors or subcontractors for work on the Project that are issued on or after the effective date of this Agreement. A copy of all invitations to bid shall be provided at time of issuance to the Council.

ARTICLE 3 EFFECT OF AGREEMENT

3.1 By executing the Agreement, the Unions and the County agree to be bound by each and all of the provisions of the Agreement.

3.2 By accepting the award of work under a Construction Contract for the Project, whether as contractor or subcontractor, the Contractor/Employer agrees to be bound by each and every provision of the Agreement and agrees that it will evidence its acceptance prior to the commencement of work by executing the Agreement To Be Bound in the form attached hereto as Addendum A.

3.3 At the time that any Contractor/Employer enters into a subcontract with any subcontractor providing for the performance of work under a Construction Contract, the Contractor/Employer shall provide a copy of this Agreement, as it may from time to time be modified, to said subcontractor and shall require the subcontractor as a condition of accepting an award of a construction subcontract to agree in writing, by executing the Agreement To Be Bound, to be bound by each and every provision of this Agreement prior to the commencement of work. The obligations of a contractor may not be evaded by subcontracting.

3.4 This Agreement shall only be binding on the signatory parties hereto and their successors and assigns and shall not apply to the parents, affiliates, subsidiaries, or other ventures of any such party. Each Contractor/Employer shall alone be liable and responsible for its own individual acts and conduct and for any breach or alleged breach of this Agreement. Any dispute between the Union(s) and the Contractor/Employer respecting compliance with the terms of the Agreement shall not affect the rights, liabilities, obligations and duties between the signatory Union(s) and other Contractor(s)/Employer(s) party to this Agreement.

3.5 It is mutually agreed by the parties that any liability by a signatory Union to this Agreement shall be several and not joint. Any alleged breach of this Agreement by a signatory Union shall not affect the rights, liabilities, obligations and duties between the signatory Contractor(s)/Employer(s) and the other Union(s) party to this Agreement.

3.6 The provisions of this Agreement, including Schedules A's, which are incorporated herein by reference, shall apply to the work covered by this Agreement, notwithstanding the provisions of any other local, area and/or national agreements which may conflict with or differ from the terms of this Agreement. Where a subject covered by the provisions of this Agreement is also covered by a Schedule A, to the extent there is inconsistency, the provisions of this Agreement shall prevail. Where a subject is covered by the provisions of a Schedule A and is not covered by this Agreement, the provisions of the Schedule A shall prevail.

ARTICLE 4 WORK STOPPAGES, STRIKES, SYMPATHY STRIKES AND LOCKOUTS

4.1 The Unions, County and Contractor(s)/Employer(s) covered by the Agreement agree that for the duration of the Project:

4.1.1 There shall be no strikes, sympathy strikes, work stoppages, picketing, hand billing or otherwise advising the public that a labor dispute exists, or slowdowns of any kind, for any reason, by the Unions or employees employed on the Project, at the job site of the Project or at any other facility of County because of a dispute on the Project. Disputes arising between the Unions and Contractor(s)/Employer(s) on other County projects are not governed by the terms of the Agreement or this Article.

4.1.2 There shall be no lockout of any kind by a Contractor/Employer of workers employed on the Project.

4.1.3 If a master collective bargaining agreement expires before the Contractor/Employer completes the performance of work under the Construction Contract and the Union or Contractor/Employer gives notice of demands for a new or modified master collective bargaining agreement, the Union agrees that it will not strike on work covered under this Agreement and the Union and the Contractor/Employer agree that the expired master collective bargaining agreement shall continue in full force and effect for work covered under this Agreement until a new or modified master collective bargaining agreement is reached. If the new or modified master collective bargaining agreement provides that any terms of the master collective bargaining agreement shall be retroactive, the Contractor/ Employer agrees to comply with any retroactive terms of the new or modified master collective bargaining agreement which are applicable to employees who were employed on the projects during the interim, with retroactive payment due within seven (7) days of the effective date of the modified Master Agreement.

4.1.4 In the very rare case of nonpayment of wages or trust fund contributions on the Project, the Union shall give the County and the Contractor/Employer(s) three (3) business days' written notice when nonpayment of trust fund contributions has occurred and two (2) business day's written notice when nonpayment of wages has occurred or when paychecks being tendered to a financial institution normally recognized to honor such paychecks will not honor such paycheck as a result of insufficient funds, of the intent to withhold labor from the Contractor/Employer(s)' or their subcontractor's workforce, during which time the Contractor/Employer shall have the opportunity to correct the default. In this instance, a Union's withholding of labor (but not picketing) from a Contractor/Employer who has failed to pay its fringe benefit contributions or failed to meet its weekly

payroll shall not be considered a violation of this Article. The County or the prime Contractor may elect to issue joint checks for the disputed delinquencies. Upon written notification to the Union(s) of this election by the County or the prime Contractor, the Union(s) shall promptly order all employees to return to work, or, if within the 72-hour or 48-hour notice period as applicable, shall not withhold labor from Contractor(s) with which the Union(s) have a dispute over, respectively, payroll or trust fund contributions. If the Union does not receive copies of the joint checks within three business days of notification, the Union may resume withholding of labor without further notice. The Union(s) and subject Contractor(s) agree to use their best efforts to resolve any dispute over wage or trust fund contributions in a prompt and expeditious manner in order to minimize any disruption of work of the subject Contractor(s), and the County shall have the right to participate in such efforts. This section 4.1.4 shall not be invoked for a single inadvertent error in the amount of the payment to an individual employee.

4.1.5 If the County contends that any Union has violated this Article, it will notify in writing the Senior Executive of the Council and the Senior Executive of the Union, setting forth the facts alleged to violate the Article, prior to instituting the expedited arbitration procedure set forth below. The Council will immediately use his/her best efforts to cause the cessation of any violation of this Article. The leadership of the Union will immediately inform the membership of their obligations under this Article.

4.2 Expedited Arbitration: Any party to this Agreement shall institute the following procedure, prior to initiating any other action at law or equity, when a breach of this Article is alleged to have occurred:

4.2.1 A party invoking this procedure shall notify Robert Hirsch, as the permanent arbitrator, or Barry Winograd, as the alternate arbitrator under this procedure. In the event that the permanent arbitrator is unavailable at any time, the alternate will be contacted. If neither is available, then a selection shall be made from the list of arbitrators in Article 12.2. Notice to the arbitrator shall be by the most expeditious means available, with notices by facsimile, email or telephone to the County and the party alleged to be in violation, and to the Council and involved local Union if a Union is alleged to be in violation.

4.2.2 Upon receipt of said notice, the County will contact the designated arbitrator named above or his alternate who will attempt to convene a hearing within twenty-four (24) hours if it is contended that the violation still exists.

4.2.3 The arbitrator shall notify the parties by facsimile, email or telephone of the place and time for the hearing. Said hearing shall be completed in one session, which, with appropriate recesses at the arbitrator's discretion, shall not exceed twenty-four (24) hours unless otherwise agreed upon by all parties. A failure of any party to attend said hearings shall not delay the hearing of evidence or the issuance of an award by the arbitrator.

4.2.4 The sole issue at the hearing shall be whether or not a violation of Article IV, Section 4.1 of the Agreement has occurred. The arbitrator shall have no authority to consider any matter of justification, explanation or mitigation of such violation or to award damages, which issue is reserved for court proceedings, if any. The award shall be issued in writing within three (3) hours after the close of the hearing, and may be issued without a written opinion. If any party desires a written opinion, one

shall be issued within fifteen (15) days, but its issuance shall not delay compliance with or enforcement of the award. The arbitrator may order cessation of the violation of this Article and other appropriate relief and such award shall be served on all parties by hand or registered mail upon issuance. If the Arbitrator determines that a violation of this Article has occurred, the breaching party shall, within eight hours of receipt of the decision, take all steps necessary to immediately cease such activities and return to work. Should a party found in violation of this Article fail to comply with an Arbitrator's award to cease the violation by the beginning of the next regularly scheduled shift following the expiration of the eight hour period after receipt of the Arbitrator's decision, the party in violation shall pay to the affected party as liquidated damages the sum of ten thousand dollars (\$10,000.00) per shift for which it failed to comply, or portion thereof, until such violation is ceased. The Arbitrator shall retain jurisdiction to resolve any disputes regarding the liquidated damages claimed under this section.

4.2.5 Such award may be enforced by any Court of competent jurisdiction upon the filing of this Agreement and all other relevant documents referred to above in the following manner. Written notice of the filing of such enforcement proceedings shall be given to the other party. In the proceeding to obtain a temporary order enforcing the arbitrator's award as issued under Section 4.3(4) of this Article, all parties waive the right to a hearing and agree that such proceedings may be ex parte. Such agreement does not waive any party's right to participate in a hearing for a final order or enforcement. The Court's order or orders enforcing the arbitrator's award shall be served on all parties by hand or delivered by certified mail.

4.2.6 Any rights created by statute or law governing arbitration proceedings inconsistent with the above procedure, or which interfere with compliance, are waived by the parties.

4.2.7 The fees and expenses of the arbitrator shall be divided equally between the party instituting the arbitration proceedings provided in this Article and the party alleged to be in breach of its obligation under this Article.

ARTICLE 5 PRE-CONSTRUCTION CONFERENCE

5.1 Timing: Upon request of the County or the Council, the Project Manager shall convene and conduct a pre-job conference with the Unions and with representatives of all involved Contractors/Employers, who shall be prepared to announce craft assignments and to discuss in detail the scope of work and other issues as set forth below, at a location mutually agreeable to the Council at least 14 calendar days prior to:

- (a) The commencement of any Project Work, and
- (b) The commencement of Project Work on each subsequently awarded Construction Contract.

5.2 The conference shall be attended by a representative of each participating Contractor and each affected Union and the Council and County may attend at their discretion.

5.3 Pre-Job Conference: The pre-job conference will consist of:

- (a) A listing of each Contractor's scope of work;
- (b) The craft assignments;

- (c) The estimated number of craft workers required to perform the work;
- (d) Transportation arrangements;
- (e) The estimated start and completion dates of the work; and
- (f) Discussion of pre-fabricated materials.

5.4 Joint Administrative Committee: This Agreement is intended to provide close cooperation between management and labor. To that end, the County and Council shall each designate two representatives to serve on a Joint Administrative Committee ("JAC"), each of whom may designate an alternate. JAC members may invite participation by a Contractor or Union as needed. The Committee shall meet periodically, at the request of any member, to review progress on the Project, and to discuss matters of general concern, such as safety and security. It is intended that the committee serve as a forum to foster communication between management and labor, and to assist the Unions and the Contractors to complete the Project in an economic and efficient manner without interruption, delays or work stoppages. The Committee shall have no authority to review grievances or disputes involving this Agreement, which are subject to the applicable grievance procedure.

ARTICLE 6 NO DISCRIMINATION

6.1 The Contractor(s)/Employer(s) and Unions agree to comply with all anti-discrimination provisions of federal, state and local law, to protect employees and applicants for employment, on the Project.

ARTICLE 7 UNION SECURITY

7.1 The Contractor(s)/Employer(s) recognize the Union(s) as the sole bargaining representative of all craft employees working within the scope of this Agreement.

7.2 All employees who are employed by Contractor(s)/Employer(s) to work on the Project will be required to become members and maintain membership in the appropriate Union on or before 8 days of consecutive or cumulative employment on the Project. Membership under this section shall be satisfied by the tendering of periodic dues and fees uniformly required to the extent allowed by the law.

7.3 Authorized representatives of the Unions shall have access to the Projects whenever work covered by this Agreement is being, has been, or will be performed on the Project.

ARTICLE 8 REFERRAL

8.1 Contractor(s)/Employer(s) performing construction work on the Project described in the Agreement shall, in filling craft job requirements, utilize and be bound by the registration facilities and referral systems established or authorized by the Unions signatory hereto. The Contractor/Employer(s) shall have the right to reject any applicant referred by the Union(s), in accordance with the applicable Master Agreement.

8.2 The Contractor(s) shall have the unqualified right to select and hire directly all supervisors above the level of general foreman it considers necessary and desirable, without such persons being referred by the Union(s).

8.3. In the event that referral facilities maintained by the Union(s) are unable to fill the requisition of a Contractor/Employer for employees within a forty-eight (48) hour period (Saturdays, Sundays and Holidays excluded) after such requisition is made by the Contractor/Employer(s), the Contractor/Employer(s) shall be free to obtain workers from any source. A Contractor who hires any workers to perform covered work on the Project pursuant to this Section shall immediately provide the appropriate Union with the name and address of such employee(s) and shall immediately refer such employee(s) to the appropriate Union to satisfy the requirements of Article VII of this Agreement.

8.4. Targeted Hiring: In order to increase construction job opportunities for the traditionally underrepresented and targeted workers, the parties agree to comply with the Targeted Hiring Agreement, Addendum B.

ARTICLE 9 WAGES AND BENEFITS

9.1 All Contractor(s)/Employer(s) agree to pay contributions to the vacation, pension and other form of deferred compensation plan, apprenticeship, worker protection and assistance, and health benefit funds established by the applicable Master Agreement for each hour worked on the Project in the amounts designated in the Master Agreements of the appropriate local Unions.

9.2 By signing this Agreement, the Contractor(s)/Employer(s) adopt and agree to be bound by the written terms of the legally established Trust Agreements, as described in section 9.1, and which may from time to time be amended, specifying the detailed basis on which payments are to be made into, and benefits paid out of, such Trust Funds. The Contractors authorize the parties to such local trust agreements to appoint trustees and successor trustees to administer the trust funds and hereby ratify and accept the trustees so appointed as if made by the Contractor(s). The Contractor(s) agrees to execute a separate Subscription Agreement(s) for Trust Funds when such Trust Fund(s) requires such document(s).

9.3 Wages, Hours, Terms and Conditions of Employment: The wages, hours and other terms and conditions of employment on the Project shall be governed by the Master Agreement of the respective crafts, to the extent such Master Agreement is not inconsistent with this Agreement. Where a subject is covered by the Master Agreement and not covered by this Agreement, the Master Agreement will prevail. When a subject is covered by both the Master Agreement and this Agreement, to the extent there is any inconsistency, this Agreement will prevail.

9.4 Holidays: The holidays shall be as set forth in the applicable Master Agreement.

ARTICLE 10 APPRENTICES

10.1 Recognizing the need to develop adequate numbers of competent workers in the construction industry, the Contractor/Employer(s) shall employ apprentices from California State-approved Joint Apprenticeship Programs in the respective crafts to perform such work as is within their capabilities and which is customarily performed by the craft in which they are indentured.

10.2 The apprentice ratios will be in compliance with the applicable provision of the California Labor Code and Prevailing Wage Rate Determination.

10.3 Consistent with the Master Agreements, there shall be no restrictions on the utilization of apprentices in performing the work of their craft provided they are properly supervised.

ARTICLE 11 HELMETS TO HARDHATS

11.1 The Contractor(s)/Employer(s) and the Unions recognize a desire to facilitate the entry into the building and construction trades of veterans who are interested in careers in the building and construction industry. The Contractor(s)/ Employer(s) and Unions agree to utilize the services of the Center for Military Recruitment, Assessment and Veterans Employment (hereinafter "Center) and the Center's "Helmets to Hardhats" program to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs as identified by the parties.

11.2 The Unions and Contractor(s)/Employer(s) agree to coordinate with the Center to participate in an integrated database of veterans interested in working on the Project and of apprenticeship and employment opportunities for this Project. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

ARTICLE 12 COMPLIANCE

12.1 It shall be the responsibility of the Contractor(s)/Employer(s) and Unions to investigate and monitor compliance with the provisions of the Agreement contained in Article 9. Nothing in this Agreement shall be construed to interfere with or supersede the usual and customary legal remedies available to the Unions and/or employee benefit Trust Funds to collect delinquent Trust Fund contributions from Contractor(s)/ Employer(s) on the Project. To the extent required by law, the County shall monitor and enforce compliance with the prevailing wage requirements of the state, and the Contractors/Employers' compliance with this Agreement.

ARTICLE 13 GRIEVANCE ARBITRATION PROCEDURE

13.1 Project Labor Disputes: All Project labor disputes involving the application or interpretation of the Master Collective Bargaining Agreement to which a signatory Contractor/Employer and a signatory Union are parties, and all disputes involving employee discipline and/or discharge, shall be resolved pursuant to the resolution procedures of the Master Collective Bargaining Agreement. Consistent with the Schedule A agreements, no employee working on the Project shall be disciplined or dismissed without just cause. All disputes relating to the interpretation or application of this Agreement shall be subject to resolution by the Grievance arbitration procedures set forth herein.

13.2 No grievance shall be recognized unless the grieving party (Local Union or District Council, on its own behalf, or on behalf of an employee whom it represents, or a Contractor/Employer on its own behalf) provides notice in writing to the party with whom it has a dispute within seven (7) calendar days after becoming aware of the dispute but in no event more than thirty (30) calendar days after it reasonably should have become aware of the event giving rise to the dispute. Timelines may be extended by mutual agreement of the parties.

13.3 Grievances shall be settled according to the following procedures:

Step 1: Within seven (7) calendar days after the receipt of the written notice of the grievance, the Business Representative of the involved Local Union or District Council, or his/her designee, or the representative of the employee, and the representative of the involved Contractor/Employer shall confer and attempt to resolve the grievance.

Step 2: In the event that the representatives are unable to resolve the dispute within seven (7) calendar days of the Step (1) meeting, the Union and the Contractor involved shall meet within seven (7) calendar days thereafter to arrive at a satisfactory settlement thereof. The Union(s) shall notify its International Union representative(s), which shall advise both parties if it intends on participating in a Step 2 meeting. Meeting minutes shall be kept by the Contractor. In the event that these representatives are unable to resolve the dispute, either involved party may submit the grievance in writing within seven (7) calendar days to the Business Manager(s) of the affected Union(s) involved, a Labor Relations or managerial representative of the Contractor/Employer involved, and the Project Manager for discussion and resolution.

Step 3: If the grievance is not settled in Step 2, either party may request the dispute be submitted to arbitration or the time may be extended by mutual consent of the parties. Within seven (7) calendar days after referral of a dispute to Step 3, the representatives shall choose a mutually agreed upon arbitrator for final and binding arbitration. An arbitrator shall be selected by the alternate striking method from the list of seven (7)) below. The order of striking names from the list of arbitrators shall be determined by a coin toss, the winner of which shall decide whether they wish to strike first or second.

- 1. William Riker
- 2. Morris Davis
- 3. William Engler
- 4. Tom Angelo
- 5. Alexander Cohn
- 6. Robert Hirsch
- 7. Barry Winograd

13.4 The decision of the Arbitrator shall be final and binding on all parties. The Arbitrator shall have no authority to change, amend, add to or detract from any of the provisions of the Agreement. The expense of the Arbitrator shall be borne equally by both parties. The Arbitrator shall arrange for a hearing on the earliest

available date from the date of his/her selection. A decision shall be given to the parties within five (5) calendar days after completion of the hearing unless such time is extended by mutual agreement. A written opinion may be requested by a party from the presiding arbitrator.

13.5 The time limits specified in any step of the Grievance Procedure may be extended by mutual agreement of the parties. However, failure to process a grievance, or failure to respond in writing within the time limits provided above, without an agreed upon extension of time, shall be deemed a waiver of such grievance without prejudice, or without precedent to the processing of and/or resolution of like or similar grievances or disputes.

13.6 In order to encourage the resolution of disputes and grievances at Steps 1 and 2 of this Grievance Procedure, the parties agree that such settlements shall not be precedent setting.

13.7 Retention: At the time a grievance is submitted under this Agreement or any Master Agreement, the Union(s) may request that the County withhold and retain an amount from what is due and owing to the Contractor(s) against whom the grievance is filed, sufficient to cover the damages alleged in the grievance, should the Union(s) prevail. The amount shall be retained by the County until such time as the underlying grievance giving rise to the retention is withdrawn, settled, or otherwise resolved, and the retained amount shall be paid to whomever the parties to the grievance shall decide, or to whomever an Arbitrator shall so order.

13.8 Should any of the arbitrators listed in Article 4 or above no longer work as a labor arbitrator, the County and the Council shall mutually agree to a replacement.

ARTICLE 14 WORK ASSIGNMENTS AND JURISDICTIONAL DISPUTES

14.1 The assignment of Covered Work will be solely the responsibility of the Employer performing the work involved; and such work assignments will be in accordance with the Plan for the Settlement of the Jurisdictional Disputes in the Construction Industry (the "Plan") or any successor Plan.

14.2 All jurisdictional disputes on this Project between or among the building and construction trades Unions and the Employers parties to this Agreement, shall be settled and adjusted according to the present Plan established by the Building and Construction Trades Department or any other plan or method of procedure that may be adopted in the future by the Building and Construction Trades Department. Decisions rendered shall be final, binding and conclusive on the Employers and Unions parties to this Agreement.

14.3 If a dispute arising under this Article involves the Northern California Carpenters Regional Council or any of its subordinate bodies, an Arbitrator shall be chosen by the procedures specified in Article V, Section 5, of the Plan from a list composed of John Kagel, Thomas Angelo, Robert Hirsch, and Thomas Pagan, and the Arbitrator's hearing on the dispute shall be held at the offices of the California State Building and Construction Trades Council in Sacramento, California, within 14 days of the selection of the Arbitrator. All other procedures shall be as specified in the Plan.

14.4 All jurisdictional disputes shall be resolved without the occurrence of any strike, work stoppage, or slow-down of any nature, and the Employer's assignment shall be adhered to until the dispute is

resolved. Individual employees violating this section shall be subject to immediate discharge. Each Employer will conduct a pre-job conference with the Council prior to commencing work. The Prime Employer and the County will be advised in advance of all such conferences and may participate if they wish. Pre-job conferences for different Employers may be held together.

**ARTICLE 15
MANAGEMENT RIGHTS**

15.1 Consistent with the Master Labor Agreements, the Contractor/Employer(s) shall retain full and exclusive authority for the management of their operations, including the right to direct their work force in their sole discretion. No rules, customs or practices shall be permitted or observed which limit or restrict production, or limit or restrict the working efforts of employees, except that lawful manning provisions in the Master Agreement shall be recognized.

**ARTICLE 16
DRUG & ALCOHOL TESTING**

16.1 The use, sale, transfer, purchase and/or possession of a controlled substance, alcohol and/or firearms at any time during the work day is prohibited.

16.2 Drug and alcohol testing shall be conducted in accordance with the Substance Abuse Prevention Policies set forth in each applicable Schedule A.

**ARTICLE 17
SAVINGS CLAUSE**

17.1 The parties agree that in the event any article, provision, clause, sentence or word of the Agreement is determined to be illegal or void as being in contravention of any applicable law, by a court of competent jurisdiction, the remainder of the Agreement shall remain in full force and effect. The parties further agree that if any article, provision, clause, sentence or word of the Agreement is determined to be illegal or void, by a court of competent jurisdiction, the parties shall substitute, by mutual agreement, in its place and stead, an article, provision, clause, sentence or word which will meet the objections to its validity and which will be in accordance with the intent and purpose of the article, provision, clause, sentence or word in question.

17.2 The parties also agree that in the event that a decision of a court of competent jurisdiction materially alters the terms of the Agreement such that the intent of the parties is defeated, then the entire Agreement shall be null and void.

17.3 If a court of competent jurisdiction determines that all or part of the Agreement is invalid and/or enjoins the County from complying with all or part of its provisions and the County accordingly determines that the Agreement will not be required as part of an award to a Contractor/Employer, the Unions will no longer be bound by the provisions of Article 4.

**ARTICLE 18
TERM**

18.1 The Agreement shall be included in the Bid Documents as a condition of the award of all Construction Contracts for the Project.

18.2 This Agreement shall become effective on the day it is executed by the County and the Council. This Agreement shall apply to each individual Project approved by the Board of Supervisors pursuant to Public Works Contracts Board Policy 5.7 and shall remain in full force and effect until the completion of each individually approved Project in accordance with sections 1.3 and 2.2. Any mutually agreed to substantive changes to the Agreement shall be set forth in writing and shall not be effective unless and until approved by the County Board of Supervisors, the Council and the applicable Unions.

18.3 The County and the Council agree to meet and confer annually, subsequent to approval of this Project Labor Agreement by the County, regarding the status of and experience with the Project covered by the Agreement and any future projects that may be considered for coverage by this Agreement.

**ARTICLE 19
TERM**

19.1 The Agreement may be executed in counterparts, such that original signatures may appear on separate pages, and when bound together all necessary signatures shall constitute an original. Faxed or emailed PDF signature pages transmitted to other parties to this Agreement shall be deemed equivalent or original signatures.

19.2 Each of the persons signing this Agreement represents and warrants that such person has been duly authorized to sign this Agreement on behalf of the party indicated, and each of the parties signing this Agreement warrants and represents that such party is legally authorized and entitled to enter into this Agreement.

19.3 The parties acknowledge that this is a negotiated agreement, that they have had the opportunity to have this Agreement reviewed by their respective legal counsel, and that the terms and conditions of this Agreement are not to be construed against any party on the basis of such party's draftsmanship thereof.

19.4 The section headings contained in this Agreement are inserted for convenience only and shall not affect in any way the meaning or interpretation of this Agreement. All defined terms used in this Agreement shall be deemed to refer to the singular and/or plural, in each instance as the context and/or particular facts may require.

SANTA CLARA COUNTY
By:  Date: JAN 24 2017
Dave Cortese, President
Board of Supervisors

SANTA CLARA AND SAN BENITO COUNTIES
BUILDING & CONSTRUCTION TRADES COUNCIL
By:  Date: _____
Josue Garcia, CEO

Signed and certified a copy of this document
Attest:

Approved as to Form and Legality


Megan Doyle
Clerk of the Board of Supervisors



Nancy J. Clark
Lead Deputy County Counsel

UNION SIGNATURES


ASBESTOS WORKERS LOCAL 16


BOILERMAKERS LOCAL UNION 549

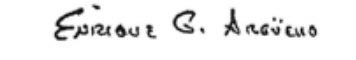

BAE LOCAL UNION 3


IBEW LOCAL 332


ELEVATOR CONSTRUCTORS LOCAL UNION 8


I.U.P.A.T. DISTRICT COUNCIL 16


IRON WORKERS LOCAL 377


LABORERS LOCAL UNION 270


OPERATING ENGINEERS LOCAL 3


OPERATIVE PLASTERERS AND CEMENT MASON LOCAL UNION 400



PLASTERERS LOCAL UNION 300


ROOFERS LOCAL UNION 95


UNITED ASSOCIATION, PLUMBERS & PIPEFITTERS LOCAL UNION 355


UNITED ASSOCIATION, PLUMBERS & PIPEFITTERS LOCAL UNION 393


UNITED ASSOCIATION, SPRINKLER FITTERS LOCAL UNION 483


SHEET METAL WORKERS INTERNATIONAL UNION LOCAL 104


SIGN, DISPLAY AND ALLIED CRAFTS LOCAL UNION 510


NORTHERN CALIFORNIA CARPENTERS REGIONAL COUNCIL, FOR ITSELF AND ITS AFFILIATES


LABORERS LOCAL UNION 67


TEAMSTERS LOCAL UNION 287

**ADDENDUM A:
Agreement To Be Bound**

MIKE WASSERMAN
President of the Board of Supervisors, County of Santa Clara
70 West Hedding Street
East Wing, 10th Floor
San Jose, CA 95110

Re: Santa Clara County Project Labor Agreement.

Dear Mr. Mike Wasserman

The undersigned party confirms that it agrees to be a party to and bound by the Santa Clara County Project Labor Agreement as such Agreement may, from time to time, be amended by the parties or interpreted pursuant to its terms.

By executing this **Agreement to Be Bound**, the undersigned party subscribes to, adopts and agrees to be bound by the written terms of the legally established trust agreements as set forth in Article 9.1, as they may from time to time be amended, specifying the detailed basis upon which contributions are to be made into, and benefits made out of, such trust funds and ratifies and accepts the trustees appointed by the parties to such trust funds. The undersigned party agrees to execute a separate Subscription Agreement(s) for Trust Funds when such Trust Fund(s) requires such document(s).

Such obligation to be a party to and bound by this Agreement shall extend to all work covered by the Santa Clara County Project Labor Agreement undertaken by the undersigned party. The undersigned party shall require all of its subcontractors, of whatever tier, to become similarly bound for all their work within the scope of this Agreement by signing an identical Agreement To Be Bound.

This letter shall constitute a subscription agreement, to the extent of the terms of the letter.

CONTRACTOR/SUBCONTRACTOR:

Project Contract Number:

California State License Number:

or Motor Carrier (CA) Permit Number

DIR Public Works Registration #

Name and Signature of Authorized Person:

(Print Name)

(Title)

(Signature)

(Date)

Addendum B

Targeted Hiring Agreement

Purpose. The Parties to the Santa Clara County Project Labor Agreement ("the Agreement") recognize the mutual needs and public interest in: (1) increasing training and career opportunities for underrepresented and targeted individuals in the construction trades through apprenticeship and pre-apprenticeship programs and (2) developing a pipeline to ensure the continued availability of a skilled, qualified and readily available construction workforce for this and future construction Projects. Furthermore, the Santa Clara & San Benito Counties Building Trades Council ("Council") with other parties, is signatory to the Santa Clara County Construction Careers Collaborative MOU, which is working to establish a coordinated Santa Clara County pre-apprenticeship program to serve as a pipeline for youth and jobseekers into apprenticeship. In furtherance of these goals, the Parties agree to enter into this Targeted Hiring Agreement ("THA") and to participate in the Santa Clara County Community Workforce Pipeline ("the Pipeline").

I. Definitions.

All capitalized terms not defined in the THA are as defined in the Agreement.

Approved Pre-Apprenticeship Program. An Approved Pre-Apprenticeship Program (Program) means the Santa Clara County Trades Orientation Program or an equivalent structured, MC-3 certified pre-apprenticeship program, or Union-sponsored program that: (1) serves Underrepresented Workers, , and (2) that is sponsored by Council-approved community outreach (CBO) groups, affiliates or by Local, State, Regional or National Building Trades Councils.

Community Workforce Coordinator. The Community Workforce Coordinator means the work2future Workforce Investment Board, or another entity as determined by mutual written agreement of the Council and the County. The Community Workforce Coordinator is responsible for maintaining an up-to-date list of Targeted Workers who are available for work with their current contact information, and will provide this list to any of the Parties upon request.

Covered Contractor. A Covered Contractor means a contractor performing \$250,000 or more of Covered Work on a Project. A Covered Contractor is subject to the Workforce Goal. If a contractor performs less than \$250,000 of Covered Work on a Project, that contractor is not subject to the Workforce Goal, but may nonetheless participate voluntarily in the Workforce Goal.

Underrepresented Worker. An Underrepresented Worker is an individual who, prior to commencing work on a Project is at least one of the following: (1) is currently homeless;(2) is currently receiving public assistance;(3) is currently participating in a reentry program (4) has been continuously unemployed for the previous one year;(5) has been emancipated from the foster care system;(6) is a veteran of the U.S. military; or (7) is an at-risk youth.

Targeted Worker. A Targeted Worker is an individual who has completed an Approved Pre-Apprenticeship Program.

II. Hiring /Employment Obligations.

Consistent with the Master Labor Agreements, hiring hall procedures, and the Joint Apprenticeship Training Committee ("JATC") rules, standards and

procedures, Covered Contractors shall make good faith efforts to meet the following Workforce Goal related to hiring and employment of workers on the Project:

Workforce Goal. Consistent with the requirements of California Labor Code §§ 1776, 1777.5 and 1777.6, each Covered Contractor shall make good faith efforts to reach the goal of employing 1 or more Targeted Worker(s) as First Year Apprentice(s) for at least 25% of the Covered Contractor's apprentice hours on the Project, unless the Contractor demonstrates to the Community Workforce Coordinator that the Targeted Worker(s) worked the maximum feasible hours, or shows other good cause.

- a) Nothing in this THA requires a Covered Contractor either to hire a particular individual or to retain a particular individual in employment. In the event that a Targeted Worker is hired by a Covered Contractor but does not complete the requisite 100 hours of employment, that Covered Contractor shall make good faith efforts to meet the "Alternate Method to Satisfy Workforce Goal" set forth in Part III of the THA.
- b) A Targeted Worker may be assigned to work on the Project or on another jobsite at the employer's discretion, provided that the worker is assigned to the same job classification that would apply to a Targeted Worker on the Project.
- c) The Community Workforce Coordinator, upon request, will refer names of qualified, available, and willing Targeted Workers to the Union and Covered Contractors.
- e) The Unions agree to cooperate with Covered Contractor(s) in providing apprentices as requested. All apprentices shall be properly supervised and paid in accordance with provisions contained within the Master Labor Agreements.
- f) In the event that the Community Workforce Coordinator is unable to refer sufficient qualified, available, and willing Targeted Workers, this section shall not apply until such time as qualified and willing Targeted Workers are available for hire.
- g) The Unions also agree to cooperate with Santa Clara County and community-based organizations designated by mutual agreement of the County and the Council in conducting outreach activities to recruit and refer Underrepresented Worker applicants to Approved Pre-Apprenticeship Programs for which they are qualified or qualifiable.
- h) The Covered Contractor agrees to maintain electronic records documenting employment of and hours worked by Targeted Worker(s), and to provide such records to the General Contractor, the County, or the Community Workforce Coordinator upon request.

III. Alternate Method to Satisfy Workforce Goal.

- (a) Covered Contractors who fail to make good faith efforts to meet the Workforce Goal, may also satisfy the Goal by demonstrating that they have accomplished all of the following subject to any Master Labor Agreements, hiring hall procedures, JATC rules and procedures, and standards approved by the Division of Apprenticeship Standards, Department of Industrial Relations, State of California.

- 1) Employ at least one (1) entry-level apprentice on the Project (or for equivalent work on another jobsite, provided that the apprentice is assigned to the same job classification the apprentice would have performed on the Project).
- 2) Through written requests made using a Craft Request Form, offer the Community Workforce Coordinator the first opportunity to provide qualified, available, and willing individuals for employment consideration on entry-level apprentice positions.
- 3) Using a Craft Request Form, request construction trades Unions to dispatch qualified, willing, and available individuals referred by the Community Workforce Coordinator by name when feasible.
- 4) To contact and provide the following information to the Community Workforce Coordinator for all entry-level apprentice job openings on the project in a timely manner when requested:
 - a) description of the job, including the trade and any job requirements for applicants, such as specific qualifications or skills;
 - b) person's name and telephone number at the Covered Contractor's business who will be responsible for answering questions regarding the job opening; and
 - c) description of how applicants should apply for the job

IV. Consequences of Non-Compliance: County and the Council shall oversee compliance monitoring of the THA through the MOU with Working Partnerships and the JAC shall consider allegations of non-compliance by a Covered Contractor with the THA. If there is a determination by the JAC that a Covered Contractor has: (1) failed to make good faith efforts to meet the Workforce Pipeline Goal set forth in Part II of the THA, and (2) failed to demonstrate that they have satisfied the Alternate Method as set forth in Part III of the THA, the issue will be referred to the grievance procedure as provided in Article 13 of the Agreement. At any time during the process of compliance review, the JAC shall have the authority to reach a resolution with the Covered Contractor.

V. Implementation. The JAC shall help monitor and implement the THA. The Community Workforce Coordinator shall provide the JAC with an annual report and interim reports as requested on the number of registrants by targeted and underrepresented groups, the retained rates in the Program and other key performance indicators of success.

SECTION 112

CONTRACT FORMS

Contract Form No.:	Title
1	Construction Agreement
2	Performance Bond*
3	Payment Bond*
4	Escrow Agreement For Security Deposits In Lieu Of Retention
5	Sample of Certificate Of Insurance (Exhibit B-1/ B-1A)
6	Sample Contractor's Certification Of Worker's Compensation

* Form must be acknowledged by a Notary

RETURN ALL CONTRACT FORMS TO:
County of Santa Clara
Roads And Airports Department
101 Skyport Drive
San Jose, CA 95110
(408) 573 – 2400
Fax (408) 441-0276

PLEASE NOTE: It is not necessary to complete these forms to bid on this project; however, in the event the Bidder is awarded the Contract he/she/they shall be required to execute all Contract Forms.

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CONTRACT FORM 1 – CONSTRUCTION CONTRACT

THIS IS AN AGREEMENT between the County of Santa Clara “Owner” and

_____ “Contractor”.
(Insert Contractor’s name)

Owner and Contractor agree as follows:

ARTICLE I - SCOPE OF WORK

Contractor shall furnish all materials and perform all of the work for

_____ *(Insert project title)*

_____ in accordance with the Contract Documents.

ARTICLE 2 - CONTRACT PRICE

As full compensation for furnishing all materials and performing all the Work contemplated and encompassed by this Agreement; for all loss and/or damage, arising out of the Work aforesaid, or from 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 Owner; for all risks of every description connected with the Work; and for all expenses incurred by or in consequence of the suspension or discontinuance of Work thereof, in the manner and according to the Contract Documents, Owner shall pay the amount specified by Contractor on the Bid Form as follows:

_____ *(Insert award sum)*

less any unearned Supplemental Work allowance.

ARTICLE 3 - CONTRACT DOCUMENTS

All rights and obligations of Owner and Contractor are fully set forth and described in the Contract Documents. All parts of the Contract Documents are intended to be correlated so that any Work called for in one part and not mentioned in the other; or vice versa, is to be executed the same as if mentioned in all Contract Documents. The Contract Documents, include this Construction Agreement, Performance Bond, Payment Bond, Insurance Certificate(s), Additional Insured Endorsement, Workers Compensation Certificate, Plans, Technical Specifications, General Specifications, Special Provisions, Bid Schedule, Substitutions and all Contract Change Orders and/or Work Orders, are incorporated herein by reference as though set forth in full. Attention is directed to Section 106(A)(10) of these Special Provisions, which amends Section 5.19, “Coordination, Interpretation, and Order of Precedence of Contract Documents”, of the County Standard Specifications.

Formation of a Contract between the parties requires accomplishment of the following: (1) execution of this Agreement by Contractor; (2) submission by Contractor and acceptance by Owner of the required Contract

Bonds, Contractor's certification regarding Worker's Compensation, and insurance coverages and documents; (3) execution of this Agreement by Owner. No Contract is formed until these three elements have been accomplished to the satisfaction of the Owner.

ARTICLE 4 - BEGINNING OF WORK

Following acceptance of Contract Bonds, Contractor's certification regarding Worker's Compensation (Contract Form 6 - Contractor's Certification Regarding Worker's Compensation), insurance coverages and documents, and execution of this Agreement by both parties, Owner's Authorized Representative will issue a Notice to Proceed with the Work that will state the first day charged to the Contract Time.

ARTICLE 5 - TIME OF COMPLETION

The first day charged shall be within 45 days following the date of the Notice of Award, and all work shall be fully completed within the time limit set forth in the Notice to Bidders.

ARTICLE 6 - PREVAILING WAGES

The statement of prevailing wages appearing in the State Labor Surcharge and Equipment Rental Rates and State General Prevailing Wage Rates is hereby specifically referred to and by this reference is made a part of this Construction Agreement. A copy of the State General Prevailing Wage Rates dated 08-22-2021 is on file with the Clerk of the Board of Supervisors. It is further expressly agreed by and between the parties hereto that should there be any conflict between the terms of this Construction Agreement and the Bid or proposal of said Contractor, then this instrument shall control and nothing herein shall be considered as an acceptance of said terms of said proposal conflicting herewith.

ARTICLE 7 – COMPLIANCE WITH ALL LAWS

- (1) Compliance with All Laws. Contractor shall comply with all applicable Federal, State, and local laws, regulations, rules, and policies (collectively, "Laws"), including but not limited to the non-discrimination, equal opportunity, and wage and hour Laws referenced in the paragraphs below.
- (2) Compliance with Wage and Hour Laws. Contractor shall comply with all applicable wage and hour Laws, which may include but are not limited to, the Federal Fair Labor Standards Act, the California Labor Code, and, if applicable, any local minimum wage, prevailing wage, or living wage Laws.
- (3) Definitions. For purposes of this Subsection, the following definitions shall apply. A "Final Judgment" shall mean a judgment, decision, determination, or order (a) which is issued by a court of law, an investigatory government agency authorized by law to enforce an applicable Law, an arbiter, or arbitration panel and (b) for which all appeals have been exhausted or the time period to appeal has expired. For pay equity Laws, relevant investigatory government agencies include the federal Equal Employment Opportunity Commission, the California Division of Labor Standards Enforcement, and the California Department of Fair Employment and Housing. Violation of a pay equity Law shall mean unlawful discrimination in compensation on the basis of an individual's sex, gender, gender identity, gender expression, sexual orientation, race, color, ethnicity, or national origin under Title VII of the Civil Rights Act of 1964 as amended, the Equal Pay Act of 1963, California Fair Employment and Housing Act, or California Labor Code section 1197 .5, as

applicable. For wage and hour Laws, relevant investigatory government agencies include the federal Department of Labor, the California Division of Labor Standards Enforcement, and the City of San Jose's Office of Equality Assurance.

- (4) **Prior Judgments, Decisions or Orders against Contractor:** By signing this Construction Agreement, Contractor affirms that it has disclosed any final judgments that (A) were issued in the five years prior to executing this Agreement by a court, an investigatory government agency, arbiter, or arbitration panel and (B) found that Contractor violated an applicable wage and hour law or pay equity law. Contractor further affirms that it has satisfied and complied with - or has reached Agreement with the County regarding the manner in which it will satisfy - any such final judgments
- (5) **Violations of Wage and Hour Laws or Pay Equity Laws During Term of Contract.** If at any time during the term of this Construction Agreement, Contractor receives a Final Judgment rendered against it for violation of an applicable wage and hour Law or pay equity Law, then Contractor shall promptly satisfy and comply with any such Final Judgment. Contractor shall inform the Office of the County Executive-Office of Countywide Contracting Management (OCCM) of any relevant Final Judgment against it within 30 days of the Final Judgment becoming final or of learning of the Final Judgment, whichever is later. Contractor shall also provide any documentary evidence of compliance with the Final Judgment within 5 days of satisfying the Final Judgment. Any notice required by this paragraph shall be addressed to the Office of the County Executive-OCCM at 70 West - Hedding Street, East Wing, 11th Floor, San José, CA 95110. Notice provisions in this paragraph are separate from any other notice provisions in this Agreement and, accordingly, only notice provided to the Office of the County Executive- OCCM satisfies the notice requirements in this paragraph.
- (6) **Material Breach.** Failure to comply with any part of this Subsection shall constitute a material breach of this Construction Agreement. In the event of such a breach, the County may, in its discretion, exercise any or all remedies available under this Agreement and at law. County may, among other things, take any or all of the following actions:
 - (i) Suspend or terminate any or all parts of this Construction Agreement.
 - (ii) Withhold payment to Contractor until full satisfaction of a Final Judgment concerning violation of an applicable wage and hour Law or pay equity Law.
 - (iii) Offer Contractor an opportunity to cure the breach.
- (7) **Subcontractors.** Contractor shall impose all of the requirements set forth in this Subsection on any subcontractors permitted to perform work under this Construction Agreement. This includes ensuring that any subcontractor receiving a Final Judgment for violation of an applicable Law promptly satisfies and complies with such Final Judgment.

ARTICLE 8 - CONTRACTOR'S LICENSE

Contractors are required by law to be licensed and regulated by the Contractors' State License Board. Any questions concerning contractor licensing must be referred to the Registrar of the Contractors' State License Board Tel. (800-321-CSLB) whose address is:

Contractors' State License Board
9821 Business Park Drive
Sacramento, CA 95827

IN WITNESS WHEREOF, two identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the County and Contractor respectively, as of the _____ day of _____, 20__.

CONTRACTOR

(Signature) _____	Contractor's License No _____
(Printed Name) _____	License Class: _____
Title: _____	License Expiration Date: _____
Address: _____	Contractor's DIR No. _____

COUNTY OF SANTA CLARA

Signed and certified that a copy of this document has been delivered by electronic or other means to the President, Board of Supervisors.

ATTEST:

MIKE WASSERMAN
President, Board of Supervisors

TIFFANY LENNEAR
Clerk of the Board of Supervisors

(If this Agreement is signed outside of the State of California, a notarized acknowledgement is required.)

APPROVED AS TO FORM AND LEGALITY: _____
Christopher Cheleden, Lead Deputy County Counsel DATE

CONTRACT FORM 2 - PERFORMANCE BOND

WHEREAS, the Board of Supervisors of the County of Santa Clara, State of California, and _____ hereinafter designated as "Principal" have entered into an Agreement for the furnishing of all materials, labor, services, and equipment necessary, convenient, and proper to:

pursuant to the said Agreement dated _____, 20 _____, and all of the documents attached thereto and incorporated by reference including Plans and Specifications for construction, becoming a part of said Agreement, are hereby referred to and made a part hereof; and,

WHEREAS, said Principal is required according to the terms of said Agreement and applicable California State law, to furnish a Bond for the faithful Performance of said Agreement.

NOW, THEREFORE, we, the undersigned Principal and (Name of Surety) _____ as Surety, are held and firmly bound unto the County of Santa Clara ("Owner") in the penal sum of:

_____ Dollars (\$ _____), lawful money of the United States of America, to be paid to Owner or its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

- A. **THE CONDITION OF THIS OBLIGATION IS SUCH**, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by Owner, shall promptly and faithfully perform the covenants, conditions, and agreements of the Agreement (including all Contract Documents) during the original term and any extensions thereof as may be granted by Owner, with or without notice to Surety, and during the period of any guarantees or warranties required under the Agreement (including all Contract Documents), and shall also promptly and faithfully perform all the covenants, conditions, and agreements of any alteration of the Agreement made as therein provided, notice of which alterations to Surety being hereby waived, on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless Owner as stipulated in the Agreement (including all Contract Documents), then this obligation shall become and be null and void; otherwise it shall be and remain in full force and effect.
- B. No extension of time, change, alteration, modification, deletion, or addition to the Agreement, or of the work required thereunder, or work or actions by Owner to mitigate the damages resulting from any breach in performance by Contractor, or work or actions to protect the work or property, shall release or exonerate Surety on this bond or in any way affect the obligation of this bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition, work, or actions

- C. Whenever Principal shall be and declared by Owner in default under the Contract, Surety shall promptly remedy the default, or shall promptly, and in no event later than forty-five (45) days from receipt of such notice or thirty days (30) days following the effective date of a termination of Contractor's right to proceed for default, elect and commence performance of one of the following options:
1. Undertake performance and completion of the Contract, through its agents or independent Contractors (but having qualifications and experience meeting contract requirements in the reasonable judgment of Owner), to perform and complete the Agreement (subject to all Contract Documents) in accordance with its terms and conditions, and to pay and perform all obligations of Principal under the Contract, including without limitation, all obligations with respect to warranties, guarantees, indemnities, and the payment of liquidated damages; or,
 2. Obtain a bid or bids for completing the Agreement (subject to all Contract Documents) in accordance with its terms and conditions, and, upon determination by Owner of the lowest responsible bidder, arrange for a contract between such bidder and Owner and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Sum remaining on the date of effectiveness of such termination, and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages;
- D. Surety's total obligations hereunder shall not exceed the amount set forth above as the Penal Sum. The term "balance of the Contract Sum," as used in this paragraph, shall mean the total amount payable by Owner to the Principal under the Contract and any amendments thereto, less the amount paid by Owner to Principal.
- E. Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Agreement, and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing Owner's rights against the others.
- F. Surety may not use Contractor to complete the Agreement absent Owner's consent. Owner shall have the right, in its sole discretion, to continue the work of the Agreement (subject to all Contract Documents), following a default and/or termination, as necessary to prevent risks of personal injury, property damage, or delay to the Project pending Surety's election described above.
- G. No right of action shall accrue on this bond to or for the use of any person or corporation other than Owner or its successors or assigns.
- H. Surety shall join in any proceedings brought under the Agreement upon Owner's demand, and shall be bound by any judgment. Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below. Notices and elections may be sent by overnight mail, confirmed by email, in addition to methods required by the Agreement

The Surety, by the execution of this Bond, represents and warrants that this Bond has also been duly executed by the Principal with proper authority, and the Surety hereby waives any defense which it might have to reason of any failure by the Principal to execute or properly execute this Bond.

IN WITNESS WHEREOF two identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named on the

_____ day of _____, 20__.

PRINCIPAL:

SURETY:

Signature

Signature

Name

Name

Title

Title

Address

Address

CONTINUED ON NEXT PAGE ⇨

NOTE TO SURETY COMPANY:

The following form of acknowledgment should be used. If any other form of acknowledgment is used, there must be submitted a certified copy of unrevoked resolution of authority for the attorney-in-fact.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document

SURETY COMPANY ATTORNEY-IN-FACT

STATE OF CALIFORNIA
COUNTY OF SANTA CLARA

On _____ before me, _____ personally appeared,

known to me to be the duly authorized Attorney-in-Fact of the corporate Surety named in the within instrument, known to me to be authorized to execute that instrument on behalf of said corporation; known to me to be the person whose name is subscribed to such instrument, as the Attorney-in-Fact of said corporation, and acknowledge to me that he (she) subscribed the name of said corporation thereto as Surety, and his (her) own name as Attorney-in-Fact and that said corporation executed the same.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

(Seal)

Notary Public for the State of California with principal office in Santa Clara County.

**Original Acknowledgment by Attorney-in-Fact must be attached.
Original corporate seals of Principal and Surety must be attached.**

CONTRACT FORM 3 - PAYMENT BOND

WHEREAS, the Board of Supervisors of the County of Santa Clara, State of California, and _____

hereinafter designated as "Principal" have entered into an Agreement for the furnishing of all materials, labor, services, and equipment necessary, convenient, and proper to:

_____ pursuant to the said Agreement dated _____, 20____ and all of the documents attached thereto and incorporated by reference, becoming a part of said Agreement, are hereby referred to and made a part hereof; and

WHEREAS, said Principal is required by Section 8152, Chapter 4 (Bonds), of Title 1 (Works of Improvement Generally), of Part 6 (Works of Improvement) of Division 4 (General Provisions) and Section 9550, Chapter 5 (Payment Bond), of Title 3 (Public Work of Improvement), of Part 6 (Works of Improvement) of Division 4 (General Provisions), of the California Civil Code to furnish a Bond in connection with said Agreement:

NOW THEREFORE, we, the Principal and _____ as Surety, are held and firmly bound unto the County of Santa Clara 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 and successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, its Subcontractors, heirs, executors, administrators, successors or assigns shall fail to pay any of the persons named in Section 9100 of the California Civil Code, any amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, any prevailing wages due, and penalties incurred pursuant to Sections 1774, 1775, 1813, and 1815 of the California Labor Code, any amounts required to be deducted or withheld from the wages of employees of the Principal and its Subcontractors for payment to the United States Government and/or to the State Franchise Tax Board with respect to such work and labor, the Surety will pay for the same in an amount not exceeding the total sum hereinabove specified, and also, in case suit is brought upon this Bond, a reasonable attorney's fee to be fixed by the court. This Bond shall inure to the benefit of any of the persons named in Section 9100 of the California Civil Code, so as to give the right of action to such persons or their assigns in any suit brought upon this Bond.

It is further stipulated and agreed that the Surety on this Bond shall not be exonerated or released from the obligation of this Bond by any change, extension of time for performance, addition, deletion, alteration, or

modification in, to, or any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described or pertaining to or relating to the furnishing of labor, materials, or equipment therefor, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme or work of improvement herein above described, nor by any rescission or attempted rescission of the contract, agreement, or Bond, nor by any conditions precedent or subsequent in the Bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the Bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the Bond, and that this Bond be construed most strongly against the Surety and in favor of all persons for whose benefit such Bond is given, and under no circumstances shall Surety be released from its obligations hereunder by reason of any breach of contract between the County of Santa Clara and said Principal or on the part of any obligee named in such Bond, but the sole conditions of recovery shall be that claimant is a person described in Section 9100 of the California Civil Code, and has not been paid the full amount of its claim, and that Surety does hereby waive notice of any such change, extension of time, addition, deletion, alteration, or modification herein mentioned.

The Surety, by the execution of this Bond, represents and warrants that this Bond has also been duly executed by the Principal with proper authority, and the Surety hereby waives any defense which it might have to reason of any failure by the Principal to execute or properly execute this Bond.

IN WITNESS WHEREOF two identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named on the

_____ day of _____, 20__.

PRINCIPAL:

SURETY:

Signature

Signature

Name

Name

Title

Title

Address

Address

CONTINUED ON NEXT PAGE ⇨

NOTE TO SURETY COMPANY:

The following form of acknowledgment should be used. If any other form of acknowledgment is used, there must be submitted a certified copy of unrevoked resolution of authority for the attorney-in-fact.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document

SURETY COMPANY ATTORNEY-IN-FACT

STATE OF CALIFORNIA
COUNTY OF SANTA CLARA

On _____ before me, _____ personally appeared,

known to me to be the duly authorized Attorney-in-Fact of the corporate Surety named in the within instrument, known to me to be authorized to execute that instrument on behalf of said corporation; known to me to be the person whose name is subscribed to such instrument, as the Attorney-in-Fact of said corporation, and acknowledge to me that he (she) subscribed the name of said corporation thereto as Surety, and his (her) own name as Attorney-in-Fact and that said corporation executed the same.

I certify under penalty of perjury under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

(Seal)

Notary Public for the State of California with principal office in Santa Clara County.

**Original acknowledgment by Attorney-in-Fact must be attached.
Original corporate seals of Principal and Surety must be attached.**

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CONTRACT FORM 4 - ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into _____ day of _____, 20____ by and between: THE COUNTY OF SANTA CLARA whose address is 101 Skyport Drive, San Jose, CA 95110, hereinafter called "Owner", and

_____ whose address is _____ hereinafter called "Contractor", and

_____ whose address is _____ hereinafter called "Escrow Agent".

For the consideration hereafter set forth, Owner, Contractor, and Escrow Agent agree as follows:

- 1. Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by Owner pursuant to the Construction Agreement entered between the Owner and Contractor for Intersection Improvements at Almaden Exp and Camden Ave Bid Schedule

_____ in the amount of \$_____ dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the Owner shall make payment of the retention earnings directly to the Escrow Agent at the expense of the Contractor. When the Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the Owner within 10 days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the Owner and Contractor. Securities shall be held in the name of _____, and shall be designated the Contractor as the beneficial owner.

- 2. Owner shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that Escrow Agent holds securities in the form and amount specified above.
- 3. When the Owner makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of Contractor until the time that the escrow created under this contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the Owner pays the Escrow Agent directly.
- 4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the Owner. These expenses and payment terms shall be determined by the Owner, Contractor, and Escrow Agent.

- 5. The interest earned on the securities or money market accounts held in escrow and all interest earned on the interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to Owner.
- 6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from Owner to Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.
- 7. Owner shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven days' written notice to Escrow Agent from the Owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by Owner.
- 8. Upon receipt of written notification from the Owner certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of all fees and charges.
- 9. Escrow Agent shall rely on the written notifications from the Owner and the Contractor pursuant to Sections (5) through (8), inclusive, of this Agreement, and the Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.
- 10. The names of the persons who are authorized to give written notice or to receive written notice on behalf of the Owner and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of Owner:

On behalf of Contractor:

On behalf of Escrow Agent:

Signature

Signature

Signature

Name

Name

Name

Title

Title

Title

Address

Address

Address

CONTINUED ON NEXT PAGE ⇨

At the time the Escrow Account is opened, Owner and Contractor shall deliver to Escrow Agent a fully executed counterpart of this Escrow Agreement.

IN WITNESS WHEREOF, the parties have executed this Escrow Agreement by their proper officers on the date first set forth above.

OWNER:

CONTRACTOR:

Signature

Signature

Name

Name

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CONTRACT FORM 5 – SAMPLE CERTIFICATE OF INSURANCE (EXHIBIT B-1)

Description:		Date:			
<p>This certificate is issued as a matter of information only and confers no rights upon the certified policyholder, and does not amend, extend or alter the coverage afforded by the policies. This is to certify that the policies of insurance listed below have been issued to the insured named below for the policy period indicated, notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions, and conditions of such policies.</p>					
PRODUCER:		Contact Name			
		PHONE (A/C, No Ext):	FAX (A/C, No):		
		Email Address:			
		COMPANIES/ INSURERS AFFORDING COVERAGE			
INSURED		Company A			
		Company B			
		Company C			
		Company D			
Co. Ltr	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
	GENERAL LIABILITY <input type="checkbox"/> Commercial General Liability <input type="checkbox"/> Claims Made <input type="checkbox"/> Occur <input type="checkbox"/> Owner's & Cont. Prot. <input type="checkbox"/> _____				GENERAL AGGREGATE \$ _____ PROD-COMP/OP AGG. \$ _____ PERS & ADV INJURY \$ _____ EACH OCCURRENCE \$ _____ FIRE DAMAGE \$ _____ (Any one fire) MED. EXPENSE \$ _____ (Any one person)
	AUTOMOBILE LIABILITY <input type="checkbox"/> Any Auto <input type="checkbox"/> All Owned Autos <input type="checkbox"/> Scheduled Autos <input type="checkbox"/> Hired Autos <input type="checkbox"/> Non-Owned Autos				COMBINEDSINGLE LIMIT \$ _____ BODILY INJURY \$ _____ (Per Person) BODILY INJURY \$ _____ (Per Accident) PROPERTY DAMAGE \$ _____
	GARAGE LIABILITY <input type="checkbox"/> Any Auto				AUTO ONLY- EA. ACC. \$ _____ <u>OTHER THAN AUTO ONLY:</u> EACH ACCIDENT \$ _____ AGGREGATE \$ _____
	EXCESS LIABILITY <input type="checkbox"/> Umbrella Form <input type="checkbox"/> Other Than Umbrella Form				EACH OCCURRENCE \$ _____ AGGREGATE \$ _____
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY The proprietor/partners/executive officers are <input type="checkbox"/> Incl. <input type="checkbox"/> Excl.				<u>STATUTORY LIMITS</u> EACH ACCIDENT \$ _____ DISEASE- POLICY LIMIT \$ _____ DISEASE-EA. EMPLOYEE \$ _____
	OTHER				
CERTIFICATE HOLDER County of Santa Clara Roads & Airports Department 101 Skyport Drive San Jose, CA 95110-1302		DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS			
		AUTHORIZED REPRESENTATIVE			

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CONTRACT FORM 6 - CONTRACTOR'S CERTIFICATION OF WORKER'S COMPENSATION

Contract with the County of Santa Clara for the construction of:

PROJECT TITLE: _____

PROJECT NO.: _____

Labor Code section 3700 states in part:

Every employer except the state shall secure the payment of compensation in one or more of the following 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 on consent to self-insure either as an individual employer, or as one employer in a group of employers, 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 or her employees ...

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work of this Contract.

Date: _____

By: _____
(Contractor)

(Official Title)

(Labor Code section 1861 requires that this Contractor certification must be signed and filed by the Contractor with the public agency prior to performing any Work. Contractor must return this signed certification along with Contract Form 1 – Contract Agreement.)

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