

**INVITATION FOR BIDS (IFB) 0-1933
BOOK 1 OF 2**

**HVAC AND ELECTRICAL UPGRADES AT SANTA ANA
REGIONAL TRANSPORTATION CENTER**



**ORANGE COUNTY TRANSPORTATION AUTHORITY
550 South Main Street
P.O. Box 14184
Orange, CA 92863-1584
(714) 560-6282**

Job Site(s):

**Santa Ana Regional Transportation Center (SARTC)
1000 East Santa Ana Blvd.
Santa Ana, CA 92701-2690**

Key IFB Dates

Issue Date:	December 27, 2010
Pre-Bid Conference/Site Visit:	January 5, 2011
Questions/Approved Equal Submittal:	January 12, 2011
Bid Submittal Date:	January 26, 2011

**U.S. Department of Transportation
FTA Project No. CA – 04 – 0078**

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December 27, 2010

AFFILIATED AGENCIES

*Orange County
Transit District*

*Local Transportation
Authority*

*Service Authority for
Freeway Emergencies*

*Consolidated Transportation
Service Agency*

*Congestion Management
Agency*

*Service Authority for
Abandoned Vehicles*

**SUBJECT: NOTICE INVITING SEALED BIDS
IFB 0-1933, "HVAC AND ELECTRICAL UPGRADES
AT SANTA ANA REGIONAL TRANSPORTATION
CENTER"**

Gentlemen/Ladies:

The Orange County Transportation Authority invites sealed bids for IFB 0-1933 for **HVAC AND ELECTRICAL UPGRADES AT SANTA ANA REGIONAL TRANSPORTATION CENTER**.

The description of this project is to provide HVAC and electrical upgrades at the Santa Ana Regional Transportation Center. The estimated cost for this project is approximately \$100,000.00.

Bids shall be submitted at or before 11:00 A.M., January 26, 2011.

Bids delivered in person or by a means other than the U.S. Postal Service shall be submitted to the following:

**Orange County Transportation Authority
Contracts Administration and Materials Management (Camm)
600 South Main Street, 4th Floor
Orange, California 92868
Attention: Grant Gager, Contract Administrator**

Or bids delivered using the U.S. Postal Service shall be addressed as follows:

**Orange County Transportation Authority
Contracts Administration and Materials Management (Camm)
550 South Main Street
P.O. Box 14184
Orange, California 92863-1584
Attention: Grant Gager, Contract Administrator**

Bids and amendments to bids received after the date and time specified above will be rejected by the Authority and returned to Bidders unopened.

Firms interested in obtaining a bid package may do so by downloading the Invitation for Bids (IFB) 0-1933 through Camm NET, the Authority's on-line

website. Firms may also obtain a copy of the IFB by: faxing a request to (714) 560-5792; by emailing a request to rfp_ifb_requests@octa.net; or by calling (714) 560-5922. Please include the following information in any request:

- Name of Firm
- Address
- Contact Person
- Telephone and Facsimile Number
- Invitation For Bids (IFB) 0-1933

The Authority has now entered the world of electronic purchasing. All firms interested in doing business with the Authority are required to register their business on-line at CAMM NET, the Authority's interactive website. The website can be found at www.octa.net. From the site menu, click on CAMM NET to register.

To receive all further information regarding this IFB 0-1933, firms must be registered on CAMM NET with at least one of the following commodity codes for this solicitation selected as part of the vendor's on-line registration profile:

Commodities for this solicitation are:

Category(s):

Construction
Construction
Construction

Commodity(s):

Electrical Contractor
HVAC Contractor
General Contractor

A pre-bid conference has been scheduled for **10:30 A.M., January 5, 2011**, at **Santa Ana Regional Transportation Center (Located at 1000 E. Santa Ana Boulevard, Santa Ana CA 92701), Suite 107**. Immediately following the pre-bid conference a job walk will be conducted. All prospective Bidders are strongly encouraged to attend.

The contract to be awarded is subject to a financial assistance contract between the Orange County Transportation Authority and the U.S. Department of Transportation. Therefore, all Bidders will be required to certify that they are not debarred, suspended or otherwise excluded from participating in federally assisted projects. All Bidders will be required to certify that they are not on the Comptroller General's List of Ineligible Contractors.

The successful Bidder will be required to comply with all applicable equal opportunity laws and regulations.

Award of this contract is subject to receipt of federal, state or local money.

Bidders shall ensure that in regard to this IFB, Disadvantaged Business Enterprises (DBE) will be afforded full opportunity to compete for subcontracting work and will not be discriminated against on the grounds of race, color, or national origin.

Sincerely,

A handwritten signature in black ink, appearing to read "GGager", with a stylized, cursive script.

Grant Gager, Contract Administrator
Contracts Administration and Materials Management

SECTION I

INSTRUCTIONS TO BIDDERS

SECTION I. INSTRUCTIONS TO BIDDERS

A. PRE-BID CONFERENCE/SITE VISIT

A pre-bid conference will be held at **10:30 A.M., January 5, 2011**, at **Santa Ana Regional Transportation Center (Located at 1000 E. Santa Ana Boulevard, Santa Ana CA 92701), Suite 107**. Immediately following the pre-bid conference a job walk will be conducted. All prospective Bidders are strongly encouraged to attend the pre-bid conference and the site visit.

By investigation of the work site, Bidder shall be satisfied as to the nature and location of the work and shall be fully informed as to all conditions and matters, which can in any way affect the work or the cost thereof.

B. EXAMINATION OF DOCUMENTS

By submitting a bid, the Bidder represents that it has thoroughly examined and become familiar with the work required and documents included under this IFB.

A Bid Booklet has been furnished as Book 2 of 2 of this IFB.

C. ADDENDA

The Authority reserves the right to revise the IFB documents. Such, if any, will be made by written addendum to this IFB. Any written addenda issued pertaining to this IFB shall be incorporated into the terms and conditions of any resulting Agreement. The Authority shall not be bound to any modifications to or deviations from the requirements set forth in this IFB as the result of oral instructions. Failure to acknowledge receipt of Addenda may cause the Bid to be deemed non-responsive to this IFB and be rejected.

D. AUTHORITY CONTACT

All correspondence and submissions in connection with this IFB should be directed to the following Contract Administrator:

Orange County Transportation Authority
Attention: Grant Gager, Contract Administrator
Contracts Administration and Materials Management
600 South Main Street
Orange, CA 92868 or

Orange County Transportation Authority
P.O. Box 14184
Orange, CA 92863-1584

E. CLARIFICATION OF SPECIFICATIONS AND APPROVED EQUALS

Specifications Review

Should a Bidder find discrepancies in, or omissions from, the drawings or specifications, or be in doubt as to their meaning, the Bidder shall notify the Authority in writing in accordance with item 3 ("Submitting Requests"), below. Should it be found that the point in question is not clearly and fully set forth, a written addendum clarifying the matter will be sent to all firms registered on CAMM NET under the commodity codes specified in the IFB.

Preference for Materials

In accordance with the California Public Contract Code Section 3400, reference to any equipment, material, article or patented process, by trade name, make, or catalog number, shall not be construed as limiting competition. In those cases where the specifications call for a designated material, product, or service by specific brand or trade name and there is only one brand or trade name listed, the item involves a unique or novel product application required to be used in the public interest or is the only brand or trade name known to the Authority.

Where the specifications or drawings identify any material, product or service by one or more brand names, whether or not "or equal" is added, and a Bidder wishes to propose the use of another item as being equal, approval shall be requested as set forth in below.

Submitting Requests

- a. All requests for approved equals, clarification of specifications, or questions must be put in writing and must be received by the Authority no later than 4:00 p.m., Pacific Standard Time, on January 12, 2011.
- b. Requests for approved equals, clarifications, questions must be clearly labeled, "Written Questions". The Authority is not responsible for failure to respond to a request that has not been labeled as such.
- c. Any of the following methods of delivering written questions are acceptable as long as the questions are received no later than the date and time specified above:
 - (1) U.S. Mail: Orange County Transportation Authority, 550 South Main Street, Orange, California 92868,

or

Orange County Transportation Authority
P.O. Box 14184, Orange, California 92863-1584.
 - (2) Personal Courier: Contracts Administration and Materials Management Department, 600 South Main Street, 4th Floor, Orange,

California, 92863.

- (3) Facsimile: The Authority's fax number is (714) 560-5792.
- (4) E-Mail: Grant Gager, Contract Administrator e-mail address is ***ggager@octa.net***

Any request for an approved equal or clarification of the specifications must be fully supported with technical data, test results, or other pertinent information as evidence that the substitute offered is equal to or better than the specification requirements. The burden of proof as to the equality, substitutability, and the compatibility of proposed alternates or equals shall be upon the Bidder, who shall furnish all necessary information at no cost to the Authority. The Authority shall be the sole judge as to the equality, substitutability and compatibility of the proposed alternatives or equals.

Authority Responses

Responses from the Authority will be posted on CAMM NET, the Authority's interactive website, no later than five calendar days before the scheduled date of bid opening. Bidders may download responses from CAMM NET at www.octa.net/cammnet, or request responses be sent via U.S. Mail by e-mailing or faxing the request to (714) 560-5792, ATTN: Grant Gager, Contract Administrator.

To receive e-mail notification of Authority responses when they are posted on CAMM NET, firms must be registered on CAMM NET with at least one of the following commodity codes for this solicitation selected as part of the vendor's on-line registration profile:

Commodities for this solicitation are:

<u>Category(s):</u>	<u>Commodity(s):</u>
Construction	Electrical Contractor
Construction	HVAC Contractor
Construction	General Contractor

Inquiries received after 4:00 P.M. on January 12, 2011, will not be responded to.

F. SUBMISSION OF BIDS

Date and Time

Bids must be submitted at or before 11:00 A.M., January 26, 2011.

Bids received after the time due will be rejected without consideration or evaluation.

Bids will be publicly opened in the Contracts Administration and Materials Management Department's office at the submission time indicated above.

Address

Bids delivered in person or by a means other than the U.S. Postal Service shall be submitted to the following:

**Orange County Transportation Authority
Contracts Administration and Materials Management (CAMM)
600 South Main Street, 4th Floor
Orange, California 92868
Attention: Grant Gager, Contract Administrator**

Bids delivered using the U.S. Postal Services shall be addressed as follows:

**Orange County Transportation Authority
Contracts Administration and Materials Management (CAMM)
550 South Main Street, P.O. Box 14184
Orange, California 92863-1584
Attention: Grant Gager, Contract Administrator**

Firms must obtain a visitor badge from the receptionist in the lobby of the 600 Building prior to delivering any information to CAMM.

Bid Booklet

Bids must be submitted on the forms provided in the Bid Booklet that accompanies this IFB. Bids shall include properly completed bidding forms.

Identification of Bids

The bid forms must be properly completed and enclosed in a sealed package clearly marked as follows:

**"BID FOR IFB 0-1933: HVAC AND ELECTRICAL UPGRADES AT SANTA ANA
REGIONAL TRANSPORTATION CENTER"**

Bidder shall be entirely responsible for any consequences, including disqualification of the Bid, resulting from any inadvertent opening of unsealed or improperly identified packages. It is the Bidder's sole responsibility to see that its bid is received as required.

G. PRE-CONTRACTUAL EXPENSES

The Authority shall not, in any event, be liable for any pre-contractual expenses incurred by any Bidder in preparation of its bid. Bidder shall not include any such

expenses as part of their bid.

Pre-contractual expenses are defined as expenses incurred by the Bidder in:

1. Preparing a bid in response to this IFB;
2. Submitting that bid to the Authority;
3. Negotiating with the Authority any matter related to this Bid; and
4. Any other expenses incurred by Bidder prior to date of award, if any, of the Agreement.

H. JOINT BIDS

Where two or more firms desire to submit a single bid in response to this IFB, they should do so on a prime-subcontractor basis rather than as a joint venture. The Authority intends to contract with a single firm and not with multiple firms doing business as a joint venture.

I. TAXES

Bids are subject to State and Local sales taxes. However, the Authority is exempt from the payment of Federal Excise and Transportation Taxes. Contractor is responsible for payment of all taxes for any goods, services, processes, and operations incidental to or involved in the contract.

J. BID SECURITY FORMS

Bids shall be accompanied by a certified or cashier's check, or an acceptable bid bond for an amount not less than ten percent (10%) of the bid, made payable to the order of the Orange County Transportation Authority. A corporate surety (not an individual surety), registered in the state of California and registered to do business in the county of Orange must issue bid bonds. Said check or bond shall be given as a guarantee that the Bidder will enter into a contract if awarded the work and in case of refusal or failure to enter into said contract, the check or bond, as the case may be, shall be forfeited to the Authority.

K. WITHDRAWAL OF BIDS

Bidders may withdraw its bid at any time prior to the time set for opening of bids by means of written request signed by the Bidder or its proper authorized representative. Such written request shall be delivered to the address in this IFB.

L. PREVAILING WAGES

This project is funded under a financial assistance contract by the U.S. Department of Transportation and is subject to all conditions of the Davis-Bacon

Act (40 U.S.C. 276a) and the Labor Code of the State of California commencing in Section 1770 et. seq. It is required that all mechanics and laborers employed or working at the site be paid not less than the current basic hourly rates of pay and fringe benefits. Wage schedules are available at the Authority's Offices or on the internet at www.dir.ca.gov/DLSR/statistics_research.html and www.access.gpo.gov/davisbacon/. Bidders shall utilize the relevant prevailing wage determinations in effect on the first advertisement date of the Notice Inviting Sealed Bids. In the event there are any differences between the minimum wage rates as determined by the United States Secretary of Labor and those determined by the State of California, the highest rate must be paid.

M. SUBCONTRACTORS AND ASSIGNMENTS

The successful Bidder shall perform work equivalent to **at least ten percent (10%) of the total amount of the construction work** at the site; and, perform the work on the site with its own staff.

Pursuant to the provisions of the California Public Contract Code Section 4104 every Bidder shall in the bid set forth:

1. The name and location of the place of business (address) of each subcontractor who will perform work or labor or render service to the Bidder in or about the work in an amount in excess of one-half of one percent of the Bidder's total bid; and
2. The portion of the work that will be done by each subcontractor. The Bidder shall list only one subcontractor for each portion of work as defined by the Bidder in its bid.
3. The dollar amount of the work which will be done by each such subcontractor.

Bidder shall complete Exhibit D-1 "List of Subcontractors" with the above requested information.

If the Bidder fails to specify a subcontractor for any portion of the work to be performed under the contract in excess of one-half of one percent of the Bidder's total bid, or if the Bidder specifies more than one (1) subcontractor for the same portion of the work to be performed under the contract in excess of one-half of one percent of the Bidder's total bid, the Bidder agrees to perform that portion. **The successful Bidder shall not, without the express written consent of the Authority, either:**

1. Substitute any person, firm, or corporation as subcontractor in place of the subcontractor designed in the original bid; or
2. Permit any subcontract to be assigned or transferred; or

3. Allow it to be performed by anyone other than the original subcontractor listed in the bid.

Each Bidder shall set forth in its bid the name and location of the place of business (address) of each subcontractor certified as a minority, woman or disabled veteran business enterprise who will perform work or labor or render service to the prime contractor in connection with the performance of the contract.

Bidder shall not assign any interest it may have in any Agreement with the Authority, nor shall Bidder assign any portion of the work under any such Agreement with a value in excess of one-half of one percent of Agreement price to be sub-contracted to any one other than these subcontractors listed in the "List of Subcontractors," except by prior written consent of Authority. Authority's consent to any assignment shall not be deemed to relieve Bidder of its obligations to fully comply with its obligations under its Agreement with the Authority. Bidder with its own forces shall perform minimum of 10% (calculated as a percentage of the total cost of the project) under this Agreement. Bidder shall also include in its subcontract agreements the provisions of its Agreement with Authority including the stipulation that each subcontractor shall maintain adequate insurance coverage compatible to the insurance coverage required of the Bidder.

N. DISADVANTAGED BUSINESS ENTERPRISE

This project is subject to Part 26, title 49, code of Federal regulations (CFR), entitled "Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs ("Regulations"). The Regulations in their entirety are incorporated herein by this reference. Bidders are to be fully informed respecting the DBE requirements and the Regulations. A copy of the Authority's DBE program for this project is included in this IFB.

The Authority has not established an overall DBE participation goal for this project. However, Bidders are encourage to utilize DBEs to the maximum extent possible.

O. BIDDER'S LICENSING REQUIREMENTS

In conformance with the current statutory requirements of Section 7028.15 of the Business and Professions Code of the State of California, regarding submission of a bid without a license, the Bidder shall provide as part of the bid the license number, class (or type), and date of expiration of the license.

Furthermore, the Bidder shall ensure that all subcontractors fully comply with the appropriate licensing requirements. The Bidder shall also certify that all information provided and representations made in the bid are true and correct, and made under penalty of perjury. Bidders shall provide this information on form D-1 presented in the IFB. Failure to provide the information on the

certification form or elsewhere as part of the bid shall render the Bidder nonresponsive to this solicitation and will result in the rejection of the bid.

P. PERMITS AND INSPECTION COSTS

The Contractor shall procure all permits and licenses; pay all charges, assessments and fees, as may be required by the ordinances and regulations of the public agencies having jurisdiction over the areas in which the work is located, and shall comply with all the terms and conditions thereof and with all lawful orders and regulations of each such public agency relating to construction operations under the jurisdiction of such agency.

Q. LIQUIDATED DAMAGES

In the event Bidder, after entering into an Agreement with the Authority, fails to complete the work within the time specified in the Agreement, the Bidder will be required to pay the Authority the amount of **\$500.00 per calendar day** of delay as agreed to liquidated damages.

R. PROTEST PROCEDURES

The Authority has on file a set of written protest procedures applicable to this solicitation that may be obtained by contacting the Contract Administrator responsible for this procurement. Any protest filed by a Bidder in connection with this IFB must be submitted in accordance with the Authority's written procedures.

S. AWARD

Any contract awarded as a result of this IFB, will be awarded to the lowest responsive and responsible Bidder and shall be on a lump sum basis, in accordance with the requirements of this IFB. The contract to be awarded is the Agreement presented in Part V of this IFB.

T. EXECUTION OF CONTRACT

The successful Bidder shall submit to the Authority the required contract bonds, "Guaranty", "Certificate of Lower-Tier Participants Regarding Debarment and Suspension" for each subcontractor, "Certificate of Restrictions on Lobbying", and acceptable insurance certificates within fifteen (15) days (excluding Saturdays, Sundays and legal holidays) after notification of contract award from the Authority. Failure to sign the contract and submit applicable bonds, "Guaranty", "Certificate of Lower-Tier Participants Regarding Debarment and Suspension" for each subcontractor, "Certificate of Restrictions on Lobbying", and acceptable insurance certificates within the specified time shall be just cause of the annulment of the award and the forfeiture of the Bid Bond. Transfers of contract, or of interest in contracts, are prohibited.

U. AUTHORITY'S RIGHTS

The Authority reserves the right, in its sole discretion, to:

The Authority reserves the right to accept or reject any and all bids, or any item or part thereof, or to waive any informalities or irregularities in bids.

The Authority reserves the right to withdraw or cancel this IFB at any time without prior notice. The Authority makes no representations that any contract will be awarded to any Bidder responding to this IFB.

Issue a new IFB for the project.

The Authority reserves the right to postpone the bid opening for its own convenience.

Each bid will be received with the understanding that acceptance by the Authority of the bid to provide the goods and services described herein shall constitute a contract between the Bidder and Authority which shall bind the Bidder on its part to furnish and deliver at the prices given and in accordance with conditions of said accepted bid and specifications.

Investigate the qualifications of any Bidder, and/or require additional evidence of qualifications to perform the work.

Bids received by Authority are considered public information and will be made available to the public if required to do so.

V. CONFLICT OF INTEREST

CONTRACTOR agrees to avoid organizational conflict of interest. An organizational conflict of interest means that due to other activities, relationships or contracts, the CONTRACTOR is unable, or potentially unable to render impartial assistance or advise the Authority; CONTRACTOR's objectivity in performing the work identified in the specifications is or might be otherwise impaired; or the CONTRACTOR has an unfair competitive advantage. CONTRACTOR is obligated to fully disclose to the AUTHORITY in writing and Conflict of Interest issues as soon as they are known to the CONTRACTOR. All disclosures must be disclosed at the time of bid submittal.

W. CODE OF CONDUCT

CONSULTANT agrees to comply with the AUTHORITY's Code of Conduct as it relates to Third-Party contracts which is hereby referenced and by this reference is incorporated herein. CONSULTANT agrees to include these requirements in all of its subcontracts.

SECTION II
INSTRUCTIONS TO BIDDING FORMS

SECTION II. INSTRUCTIONS TO BIDDING FORMS

The Bidder shall complete all the forms identified below, and contained in the Bid Booklet Book (Book 2 of 2) of this IFB. The Bid may not contain exceptions to, or deviations from, the requirements of this IFB.

A. BID FORM

The Bidder must complete the Bid Form. In addition to providing the lump sum bid, the Bidder affirms the Bid Form statements.

B. BID SECURITY FORM - BID BOND

The Bidder shall include the Bid Security Form and include the appropriate bid bond or cashier check with the bid.

C. INFORMATION REQUIRED OF BIDDER

Bidder must provide all the information requested in this form.

D. NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

The Bidder shall include the Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity provides notice to Bidder regarding the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications".

E. BIDDER'S CERTIFICATE OF COMPLIANCE - WORKERS' COMPENSATION INSURANCE

In conformance with current statutory requirements of Section 1860, et. seq., of the Labor Code of the State of California, Bidder shall execute the Bidder's Certificate of Compliance Regarding Workers' Compensation Insurance.

F. BIDDER'S CERTIFICATE OF COMPLIANCE - BUSINESS AND PROFESSIONS CODE SECTION 7028

Bidder shall execute the Bidder's Certificate Of Compliance Regarding State of California Business and Professions Code Section 7028.15.

G. LIST OF SUBCONTRACTORS FORM - EXHIBIT D-1

Bidder shall complete Exhibit D-1, which lists all subcontractors performing work in excess of ½ of 1% of the bid amount per the instructions set forth in Section I "Instructions to Bidders".

All electrical work will be considered specialty in nature. Any contractor and

his/her subcontractor proposing to perform this specialty work must possess a valid Class C-10 License prior to submission of bid.

H. PARTY AND PARTICIPANT DISCLOSURE FORMS

In conformance with the statutory requirements of the State of California Government Code Section 84308, part of the Political Reform Act and Title 2, California Code of Regulations 18438 through 18438.8, regarding campaign contributions to members of appointed Boards of Directors, Bidders are required to complete and sign the forms included in this IFB, and submit as part of the bid. Bidders are required to submit only one copy of the completed forms as part of its bid. The prime contractor and subcontractors must complete the form entitled "Party Disclosure Form". Lobbyists or agents representing the prime contractor in this procurement must complete the form entitled "Participant Disclosure Form". Reporting of campaign contributions is a requirement from the bid submittal date up and until the Authority's Board of Directors takes action. This date is currently scheduled for . This date is subject to change without prior notice.

I. BIDDER'S CERTIFICATE OF COMPLIANCE/NONCOMPLIANCE "BUY AMERICA"

Pursuant to 49 CFR Part 661, as amended by Section 337 of the Surface Transportation and Uniform Relocation Act of 1987, no federal funds authorized by the Urban Mass Transportation Act of 1964, as amended; 23 USC 103 (e)(4); and Section 14 of the National Capital Transportation Act of 1969 as amended; and which were obligated by the Federal Transit Administration (FTA) after January 6, 1983 shall be obligated by the Authority unless steel and manufacturers' products used in such articles are produced in the United States.

A contractor providing articles that do not meet the above provision must submit a written request to the Authority on behalf of the District, which may be forwarded, to FTA. FTA shall review the request for waiver and FTA may grant such a waiver if FTA determines that:

- (a) The application of the domestic preference requirements would be inconsistent with the public interest;
- (b) Materials are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
- (c) The inclusion of a domestic item or domestic material will increase the cost of the contract for the item or material by more than 25 percent.

FTA may grant a waiver in the case of the procurement of buses and other rolling stock (including train control, communications and traction power equipment), if the cost of components and subcomponents of such items which are produced in the United States is more than 60 percent for contracts entered into after April 1,

1992 with any supplier or contractor or any successor in interest or assignee which complied with the requirements of Section 165(b)(3) of the Surface Transportation Assistance Act of 1982 prior to April 2, 1987.

To determine costs of components or subcomponents for compliance with the Buy America Requirements, the Bidder is referred to the Federal Registers, Volume 56, No. 6, Dated January 9, 1991.

In order to demonstrate compliance with the Buy America Requirements, Bidder shall complete the Certificate of Compliance/Noncompliance included in this IFB. Failure to complete the certificate shall render a Bidder non-responsive to this solicitation and will result in the rejection of the bid.

J. LOBBYING

As a recipient of federal funds, the Authority is required to certify compliance with the influencing restrictions and efforts of Bidder to influence federal officials regarding specific procurements in excess of \$100,000.00 that must be disclosed pursuant to section 1352, Title 31, U.S. Code.

This IFB includes the following: a certification form entitled "Certification of Restrictions on Lobbying," the Office of Management and Budget (OMB) Standard Form LLL entitled "Disclosure of Lobbying Activities," and a document entitled "Limitation on Payments to Influence Certain Federal Transactions."

The successful Bidder to this solicitation will be required to complete and submit to the Authority, acting on behalf of the District, the certification form entitled "Certification of Restrictions on Lobbying" whether or not any lobbying efforts took place. If the successful Bidder did engage in lobbying activities, then OMB Standard Form LLL "Disclosure of Lobbying Activities" must also be completed and submitted to the Authority.

This form must be completed and submitted to the Contract Administrator responsible for this procurement within fifteen (15) days of award notice by the Authority. Failure to provide the completed and signed forms will result in cancellation of award.

K. DISADVANTAGED BUSINESS ENTERPRISE

Each Bidder must complete the following forms and submit with its bid:

1. Exhibit D-2, "DBE Race-Neutral Participation Listing"
2. Exhibit D-3, "Bidders List"

L. STATUS OF PAST AND PRESENT CONTRACT FORM

Bidder is required to complete and sign the form entitled "Status of Past and Present Contracts" provided in this IFB and submit as part of the proposal. Bidder shall list the status of past and present contracts where the firm has either

provided services as a prime contractor or a subcontractor during the past five (5) years and the contract has ended or will end in a termination, settlement, or litigation. A separate form must be completed for each contract. Bidder shall provide an accurate name and telephone number for each contract and indicate the term of the contract and the original contract value. If the contract was terminated, Bidder must list the reason for termination. Bidder must identify and state the status of any litigation, claims or settlement agreements related to any of the contracts. Each form must be signed by the Bidder confirming that the information provided is true and accurate. Bidder is required to submit one copy of the completed form(s) as part of its bid.



AFFILIATED AGENCIES

*Orange County
Transit District*

*Local Transportation
Authority*

*Service Authority for
Freeway Emergencies*

*Consolidated Transportation
Service Agency*

*Congestion Management
Agency*

*Service Authority for
Abandoned Vehicles*

BID FORM

ORANGE COUNTY TRANSPORTATION AUTHORITY

Attention: CAMM Department

550 South Main Street

P.O. Box 14184

Orange, California 92863-1584

Gentlemen/Ladies:

The undersigned hereby proposes to perform all work for which a contract may be awarded and to furnish any and all plant, labor, services, material, tools, equipment, supplies, transportation, utilities, and all other items and facilities necessary therefore as required in the **Invitation For Bids (IFB) 0-1933**, and to do everything required therein; and further proposes that, if this Bid is accepted, will contract in the form and manner stipulated to perform all the work in strict conformity therewith within the time limits set forth therein, and will accept as full payment therefore, the following price:

Description

**Total Lump Sum
Bid Amount**

_____ \$ _____

A cashier's check/certified check/bid bond (circle applicable term) properly made payable to ORANGE COUNTY TRANSPORTATION AUTHORITY, hereinafter designated as the Owner, for the sum of _____ Dollars (\$ _____) which amount is not less than ten percent (10%) of the total amount of this bid, is attached hereto and is given as a guarantee that the undersigned will execute the Agreement and furnish the required bonds, "Guaranty," Certificate of Lower-Tier Participants Regarding Debarment and Suspension, Certificate of Restriction on Lobbying, and Certificate of Insurance, if awarded the contract, and in case of failure to do so within the time provided, (a) the proceeds of said check shall be forfeited to the AUTHORITY; or (b) surety's liability to the AUTHORITY for forfeiture of the face amount of the bond shall be considered as established [circle (a) or (b)].

The undersigned hereby represents that:

1. He/She has thoroughly examined and become familiar with the work required and documents included under this IFB. The Bidder understands that the award of the contract, if it is awarded, will be based on the lowest total Bid submitted by a responsive and responsible Bidder, and further, that the amounts and the total on the Bid Form will be subject to verification by the Authority.
2. By investigation at the site of the work and otherwise, it is satisfied as to the nature and location of the work and is fully informed as to all conditions and matters, which can in any way affect the work or the cost thereof.
3. Bidder fully understands the scope of the work/specifications and has checked carefully all words and figures inserted in said Invitation For Bids and further understands that the Authority will in no way be responsible for any errors or omissions in the preparation of this Bid.
4. Bidder will execute the Agreement and furnish the required Performance and Payment Bonds, "Guaranty," "Certificate of Lower-Tier Participants Regarding Debarment and Suspension," "Certificate of Restrictions on Lobbying," and proof of insurance coverage within fifteen (15) days (excluding Saturdays, Sundays and legal holidays) after notice of acceptance of bid by the Authority; and further, that this bid may not be withdrawn for a period of 120 calendar days after the date set for the opening thereof, unless otherwise required by law. If any Bidder shall withdraw its bid within said period, the Bidder shall be liable under the provisions of the Bid Security, or the Bidder and the surety shall be liable under the Bid Bond, as the case may be.
5. Bidder hereby certifies that this bid is genuine and not a sham or collusive or made in the interest or in behalf of any person not herein named, and the undersigned has not directly or indirectly induced or solicited any other Bidder to put in a sham bid, or any other person, firm, or corporation to refrain from bidding; the undersigned has not in any manner sought by collusion to secure for himself an advantage over any other Bidder.
6. In conformance with current statutory requirements of Section 1860, et. seq., of the Labor Code of the State of California, the Bidder shall execute the document included in this IFB entitled "Bidder's Certificate of Compliance Regarding Workers' Compensation Insurance;" and
7. Bidder hereby further certifies that each, and every representations made in this Bid are true and correct and made under penalty of perjury.
8. Bidder shall permit the authorized representative of the Authority to inspect and audit all data and records of Bidder relating to this bid, and if awarded a contract resulting from this bid, shall permit such inspection and audit of all data and records of Bidder related to Bidder's performance of such contract.
9. Bidder does not employ anyone who is now, or for one (1) year immediately prior to

the date of this offer was, a director, officer, member, or employee of the Orange County Transportation Authority. The undersigned has not agreed to pay a fee contingent upon the award of a contract resulting from this bid to anyone who is now, or for one (1) year immediately prior to the date of this bid was, a director, officer, member, or employee of the Orange County Transportation Authority. No member of or delegate to the Congress of the United States shall be admitted to any share of the contract or to any benefit arising therefrom.

10. If awarded a contract resulting from this bid, Bidder shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age or national origin. The Bidder shall take affirmative action to ensure that applicants are employed, and that employees are treated during their employment, without regard to their race, religion, color, sex, age or national origin. Such actions shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
11. If awarded a contract resulting from this bid, Bidder will cooperate with the Authority in meeting commitments and goals with regard to the maximum utilization of DBE firms and will use its best efforts to ensure that DBE firms shall have the maximum practicable opportunity to compete for subcontract work under such contract.
12. Bid will be in effect for 120 calendar days after the bid closing date.

Now: In compliance with the **Invitation For Bids 0-1933**, the undersigned, with full cognizance thereof, hereby proposes to perform the entire work in strict compliance with all of the said requirements and provisions for the prices set forth herein upon which award of contract is made. The undersigned affirms that the information provided herein is true and accurate and that any misrepresentations are made under penalty of perjury.

Dated _____, 20__ Bidder _____

The above bid includes Signature _____

Addenda Nos. _____ Name _____

Title _____

Bidder's Authorized Representative _____

Title _____

Telephone No./ Fax No. _____

Email _____

Bidders post office address _____

Corporation organized under the laws of the State of _____

Contractor's License No. _____

Expiration Date of License _____

Surety or sureties _____

(CORPORATE SEAL)

BID SECURITY FORM
BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That, _____ as principal and Bidder and _____ as Surety, are held and firmly bound unto the Orange County Transportation Authority, of State of California, hereinafter referred to as "Authority," in the sum of _____ Dollars (\$ _____), to be paid to the said Authority, its successors, and assigns; for which payment, well and truly to be made, bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents, this amount being ten percent (10%) of the total amount of the Bid.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the certain bid of the above named _____ bounden _____ principal _____

for _____ at _____ as specifically set forth in documents entitled "**Invitation For Bids 0-1933**," shall not be withdrawn within a period of 120 calendar days after the date set for the opening of bids, (unless otherwise required by law, and notwithstanding the award of the contract to another Bidder), and that if said bid is accepted by the Authority through action of its legally constituted contracting authorities _____ and _____ if _____ the _____ above bounden _____ its heirs, executors, administrators, successors and assigns, shall execute a contract for such construction and deliver the required Performance and Payment Bonds, "Certificate of Lower-Tier Participants Regarding Debarment and Suspension," "Certificate of Restrictions on Lobbying," "Guaranty," and proof of insurance coverage within fifteen (15) days (not including Saturdays, Sundays and legal holidays) after notification of contract award from the Authority, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

IN WITNESS WHEREOF, we hereunto set our hands and seals this _____ day of _____, 20__.

(NOTE: The standard printed bond form of any bonding company acceptable to the Authority may be used in lieu of the foregoing approved sample bond form provided the security stipulations protecting the Authority are not in any way reduced by use of the security company's printed standard form.)

BID SECURITY FORM
CHECK TO ACCOMPANY BID

(NOTE: The following form shall be used in case check accompanies bid)

Accompanying this bid is a *Certified *Cashiers check payable to the order of Orange County Transportation Authority, hereinafter referred to as "Authority," for _____ dollars (\$_____), this amount being ten percent (10%) of the total amount of the Bid submitted in response to _____. The proceeds of this check shall become the property of said Authority provided this bid shall be accepted by the said Authority through action of its legally constituted contracting authorities and the undersigned shall fail to execute a contract and furnish the required "Guaranty" Form, "Certificate of Lower-Tier Participants Regarding Debarment and Suspension," "Certificate of Restrictions on Lobbying," Performance and Payment Bonds and proof of insurance coverage within fifteen (15) days (not including Saturdays, Sundays and legal holidays) after date of notification of contract award from the Authority. The proceeds of this check shall also become the property of the Authority if the undersigned Bidder withdraws the bid within the period of 120 days after the date set for the opening thereof, unless otherwise required by law, and notwithstanding the award of the contract to another Bidder. Otherwise, the check shall be returned to the undersigned.

 Bidder

* Circle applicable word

(NOTE: If the Bidder desires to use a bond instead of check, the Bid Bond form on the preceding page shall be executed and the sum of this bond shall be ten percent [10%] of the total amount of the bid.)

INFORMATION REQUIRED OF BIDDER

The Bidder is required to supply the following information. Additional sheets may be attached if necessary.

1. Name of Bidder, Firm or Corporation: _____
2. Business Address: _____
3. Telephone/Fax: () _____
4. Email: _____
5. Type of Firm - Individual, Partnership or Corporation: _____
6. Corporation organized under the laws of state of: _____
7. Contractor's License No.: _____ Years of Experience: _____
8. Expiration Date of License: _____
9. List the names and addresses of all owners of the firm or names and titles of all officers of the corporation:

10. Please list the following: a) All prior and current license numbers that the current owner(s) or officers possess or have possessed in the last five years and the current status of those license; b) any prior company names that the owner(s) had in operation during the previous five years.

Current Officers or Owners Name	Prior Company Names (During the last 5 years)	Prior and Current License Numbers	Status of License

Please note: If additional space is required to detail the information requested, please attach another page. All information requested must be included. Failure to identify all of the information, may result in your bid being found non-responsive and your bid being rejected.

11. List all construction projects (public and private) for which Bidder has provided general contractor services for the past three years:

Contract Type (Public or Private)	Project Description	Dates of Service	Total Cost	Name and Address of Owner	Contact Name and Phone Number

Please note: If additional space is required to detail the information requested, please attach another page. All information requested must be included. Failure to identify all of the information, may result in your bid being found non-responsive and your bid being rejected.

List the name, address and phone number of Superintendent for this project:

12. List all construction projects (public and private) for which Superintendent has provided services as a Superintendent for the past three years.

Contract Type (Public or Private)	Project Description	Dates of Service	Total Cost	Name and Address of Owner	Contact Name and Phone Number

Bidder hereby certifies that it:

_____ is a certified Disadvantaged Business Enterprise as defined herein.

_____ is not a Disadvantaged Business Enterprise as defined herein.

NOTE: If requested by the Authority, Bidder shall furnish a certified financial statement, financial data, or other information and references sufficiently comprehensive to permit an appraisal of its current financial condition.

I hereby certify the above is true and correct to the best of my belief.

Signature

Name

Title

Company Name

Telephone Number/Fax Number

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE
EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)**

1. The Bidders' attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

Timetable Goals for Minority Participation for Each Trade (11.9)

Goals for Female Participation in Each Trade (6.9)

These goals are applicable to all the Contractor's construction work (whether or not it is federal or federally assisted) performed in the covered area.

The Contractor's compliance with the Executive Order and the regulations in 41 C.F.R. Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 C.F.R. 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 C.F.R. Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" includes the County of Orange, California.

BIDDER'S CERTIFICATE OF COMPLIANCE
REGARDING
WORKERS' COMPENSATION INSURANCE

In conformance with current statutory requirements of Section 1860, et. seq., of the Labor Code of the State of California, the undersigned confirms the following certification:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that code and I will comply with such provisions before commencing the performance of the work of this Contract."

Bidder/Contractor: _____

Signature: _____

Name and Title: _____

Date: _____

BIDDER'S CERTIFICATE OF COMPLIANCE
REGARDING
STATE OF CALIFORNIA
BUSINESS AND PROFESSIONS CODE SECTION 7028.15

Contractor License Number: _____

Expiration Date of Contractor's License: _____

Each, every and all of the representations made by Bidder in the attached bid are true and correct.

Name of Contractor: _____

Signed: _____

Title: _____

Subscribed to and sworn before me, a Notary Public in and for the State of California, on _____, 20____.

Notary Public

My commission expires on:

_____, 20____
(NOTARY SEAL)

LIST OF SUBCONTRACTORS

List only the subcontractors, which will perform, work or labor or render services to the bidder in excess of one-half of one percent of the Bidder's total bid amount. Do not list alternative subcontractors for the same work. (Use additional sheets if necessary.)

Name Under Which Subcontractor is Licensed / License No.	City & State	Specific Description of Work to be Rendered	Type*	Dollar Amount
				\$
				\$
				\$
				\$
				\$
				\$
Total Subcontract Amount				\$

*Type
1. Subcontractor
2. Vendor / Supplier
3. Trucker
4. Broker

Bidders Name _____

PARTY DISCLOSURE FORM**Information Sheet****ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

The attached Party Disclosure Form must be completed by applicants for, or persons who are the subject of, any proceeding involving a license, permit, or other entitlement for use pending before the Board of Directors of the Orange County Transportation Authority or any of its affiliated agencies. (Please see next page for definitions of these terms.)

IMPORTANT NOTICE**Basic Provisions of Government Code Section 84308**

- A. If you are an applicant for, or the subject of, any proceeding involving a license, permit, or other entitlement for use, you are prohibited from making a campaign contribution of more than \$250 to any board member or his or her alternate. This prohibition begins on the date your application is filed or the proceeding is otherwise initiated, and the prohibition ends three months after a final decision is rendered by the Board of Directors. In addition, no board member or alternate may solicit or accept a campaign contribution of more than \$250 from you during this period.
- B. These prohibitions also apply to your agents, and, if you are a closely held corporation, to your majority shareholder as well. These prohibitions also apply to your subcontractor(s), joint venturer(s), and partner(s) in this proceeding. Also included are parent companies and subsidiary companies directed and controlled by you, and political action committees directed and controlled by you.
- C. You must file the attached disclosure form and disclose whether you or your agent(s) have in the aggregate contributed more than \$250 to any board member or his or her alternate during the 12-month period preceding the filing of the application or the initiation of the proceeding.
- D. If you or your agent have in the aggregate contributed more than \$250 to any individual board member or his/or her alternate during the 12 months preceding the decision on the application or proceeding, that board member or alternate must disqualify himself or herself from the decision. However, disqualification is not required if the board member or alternate returns the campaign contribution within 30 days from the time the director knows, or should have known, about both the contribution and the fact that you are a party in the proceeding. The Party Disclosure Form should be completed and filed with your proposal, or with the first written document you file or submit after the proceeding commences.

1. A proceeding involving "a license, permit, or other entitlement for use" includes all business, professional, trade and land use licenses and permits, and all other entitlements for use, including all entitlements for land use, all contracts (other than competitively bid, labor or personal employment contracts), and all franchises.
2. Your "agent" is someone who represents you in connection with a proceeding involving a license, permit or other entitlement for use. If an individual acting as an agent is also acting in his or her capacity as an employee or member of a law, architectural, engineering, consulting firm, or similar business entity, both the business entity and the individual are "agents."
3. To determine whether a campaign contribution of more than \$250 has been made by you, campaign contributions made by you within the preceding 12 months must be aggregated with those made by your agent within the preceding 12 months or the period of the agency, whichever is shorter. Contributions made by your majority shareholder (if a closely held corporation), your subcontractor(s), your joint venturer(s), and your partner(s) in this proceeding must also be included as part of the aggregation. Campaign contributions made to different directors or their alternates are not aggregated.
4. A list of the members and alternates of the Board of Directors is attached.

This notice summarizes the major requirements of Government Code Section 84308 of the Political Reform Act and 2 Cal. Adm. Code Sections 18438-18438.8.

ORANGE COUNTY TRANSPORTATION AUTHORITY
AND ITS AFFILIATED AGENCIES

To be completed only if campaign contributions have been made in the preceding 12 months.

Prime Firm's Name: _____

Party's Name: _____

Party's Address: _____

Street

City

State

Zip

Phone

Application or Proceeding

Title and Number: _____

Board Member(s) or Alternate(s) to whom you and/or your agent made campaign contributions and dates of contribution(s) in the preceding 12 months:

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Date: _____

Signature of Party and/or Agent _____

**ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

Board of Directors

Jerry Amante, Chairman

Don Bankhead, Director

Patricia Bates, Vice Chairman

Peter Buffa, Director

Bill Campbell, Director

Carolyn V. Cavecche, Director

Larry Crandall, Director

William H. Dalton, Director

Paul G. Glaab, Director

Don Hansen, Director

Peter Herzog, Director

John Moorlach, Director

Shawn Nelson, Director

Janet Nguyen, Director

Miguel Pulido, Director

Tom Tait, Director

Gregory T. Winterbottom, Director

PARTICIPANT DISCLOSURE FORM**Information Sheet****ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

The attached Participant Disclosure Form must be completed by participants in a proceeding involving a license, permit, or other entitlement for use. (Please see next page for definitions of these terms.)

IMPORTANT NOTICE

Basic Provisions of Government Code Section 84308

- A. If you are a participant in a proceeding involving a license, permit, or other entitlement for use, you are prohibited from making a campaign contribution of more than \$250 to any board member or his or her alternate. This prohibition begins on the date you begin to actively support or oppose an application for license, permit, or other entitlement for use pending before the Orange County Transportation Authority or any of its affiliated agencies, and continues until three months after a final decision is rendered on the application or proceeding by the Board of Directors.

No board member or alternate may solicit or accept a campaign contribution of more than \$250 from you and/or your agency during this period if the board member or alternate knows or has reason to know that you are a participant.

- B. The attached disclosure form must be filed if you or your agent have contributed more than \$250 to any board member or alternate for the Orange County Transportation Authority or any of its affiliated agencies during the 12-month period preceding the beginning of your active support or opposition. (The disclosure form will assist the board members in complying with the law.)
- C. If you or your agent have made a contribution of more than \$250 to any board member or alternate during the 12 months preceding the decision in the proceeding, that board member or alternate must disqualify himself or herself from the decision. However, disqualification is not required if the member or alternate returns the campaign contribution within 30 days from the time the director knows, or should have known, about both the contribution and the fact that you are a participant in the proceeding.

The Participant Disclosure Form should be completed and filed with the proposal submitted by a party, or should be completed and filed the first time that you lobby in person, testify in person before, or otherwise directly act to influence the vote of the board members of the Orange County Transportation Authority or any of its affiliated agencies.

1. An individual or entity is a "participant" in a proceeding involving an application for a license, permit or other entitlement for use if:
 - (a) The individual or entity is not an actual party to the proceeding, but does have a significant financial interest in the Orange County Transportation Authority's or one of its affiliated agencies' decision in the proceeding.

AND

- (b) The individual or entity, directly or through an agent, does any of the following:
 - (1) Communicates directly, either in person or in writing, with a board member or alternate of the Orange County Transportation Authority or any of its affiliated agencies for the purpose of influencing the member's vote on the proposal;
 - (2) Communicates with an employee of the Orange County Transportation Authority or any of its affiliated agencies for the purpose of influencing a member's vote on the proposal; or
 - (3) Testifies or makes an oral statement before the Board of Directors of the Orange County Transportation Authority or any of its affiliated agencies.
2. A proceeding involving "a license, permit, or other entitlement for use" includes all business, professional, trade and land use licenses and permits, and all other entitlements for use, including all entitlements for land use; all contracts (other than competitively bid, labor, or personal employment contracts) and all franchises.
3. Your "agent" is someone who represents you in connection with a proceeding involving a license, permit, or other entitlement for use. If an agent acting as an employee or member of a law, architectural, engineering, or consulting firm, or a similar business entity or corporation, both the business entity or corporation and the individual are agents.
4. To determine whether a campaign contribution of more than \$250 has been made by a participant or his or her agent, contributions made by the participant within the preceding 12 months shall be aggregated with those

made by the agent within the preceding 12 months or the period of the agency, whichever is shorter. Campaign contributions made to different members or alternates are not aggregated.

5. A list of the members and alternates of the Board of Directors is attached.

This notice summarizes the major requirements of Government Code Section 84308 and 2 Cal. Adm. Code Sections 18438-18438.8.

ORANGE COUNTY TRANSPORTATION AUTHORITY
AND ITS AFFILIATED AGENCIES

To be completed only if campaign contributions have been made in the preceding 12 months.

Prime Firm's Name: _____

Party's Name: _____

Party's Address: _____

Street

City

State

Zip

Phone

Application or Proceeding

Title and Number: _____

Board Member(s) or Alternate(s) to whom you and/or your agent made campaign contributions and dates of contribution(s) in the preceding 12 months:

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Date: _____

Signature of Party and/or Agent

**ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

Board of Directors

Jerry Amante, Chairman

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Peter Buffa, Director

Bill Campbell, Director

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Larry Crandall, Director

William H. Dalton, Director

Paul G. Glaab, Director

Don Hansen, Director

Peter Herzog, Director

John Moorlach, Director

Shawn Nelson, Director

Janet Nguyen, Director

Miguel Pulido, Director

Tom Tait, Director

Gregory T. Winterbottom, Director

BIDDER'S CERTIFICATE OF COMPLIANCE
REGARDING
"BUY AMERICA" REQUIREMENTS (SECTION 165(a))
FOR
STEEL, IRON, OR MANUFACTURED PRODUCTS

In order to demonstrate compliance with the Buy America Requirements (see Book 1, Section II, of this IFB for further explanation), Bidder shall complete only one of the two statements below:

The _____
 Firm name/principal

hereby certifies that it **will comply** with the requirements of Section 165(a) of the Surface Transportation Assistance Act of 1982 and the applicable regulations in 49 CFR Part 661.

 Signature

 Title

 Date

OR:

The _____
 Firm name/principal

hereby certifies that it **cannot comply** with the requirements of Section 165(a) of the Surface Transportation Assistance Act of 1982 but it may qualify for an exception to the requirement pursuant to Section 165(b)(2) or (b)(4) of the Surface Transportation Assistance Act and Regulations in 49 CFR Part 661.7.

 Signature

 Title

 Date

**CERTIFICATION OF
RESTRICTIONS ON LOBBYING**

I, _____, hereby certify on behalf (name of offeror) of
_____ that:
(Firm name)

1. No Federal appropriated funds have been paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds, other than Federal appropriated funds, have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit the attached Standard Form-LLL, "Disclosure of Lobbying Activities", in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in all subcontracts, and that all subcontractors shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance is placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Executed this _____ day of _____, 20__

By _____
(Signature of authorized official)

(Title of authorized official)

CERTIFICATION
LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN
FEDERAL TRANSACTIONS

A. DEFINITIONS

1. Authority, as used in this clause, means the Orange County Transportation Authority, acting on behalf of the Orange County Transit District.
2. Covered Federal action, as used in this clause, means any of the following Federal actions:
 - The awarding of any Federal contract.
 - The making of any Federal grant.
 - The making of any Federal loan.
 - The entering into of any cooperative agreement.
 - The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
3. Indian tribe and tribal organization, as used in this clause, have the meaning provided in Section 4 of the Indian self-determination and Education Assistance Act (25 U.S.C. 4508) and include Alaskan Natives.
4. Influencing or attempting to influence, as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.
5. Local government, as used in this clause, means a unit of government in a State and, if chartered, established, or other were recognized by a State for the performance of a governmental duty, including a local public AUTHORITY, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.
6. Officer or employee of an agency, as used in this clause, includes the following individuals who are employed by an agency:
 - (1) An individual who is appointed to a position in the Government under title 5, United States code, including a position under a temporary appointment.
 - A member of the uniformed services, as defined in the subsection 101(3), Title 37, United States Code.
 - A special Government employee, as defined in Section 202,

Title 18, United States Code.

- An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, Appendix 2.
7. Person, as used in this clause, means an individual, corporation, company, association, AUTHORITY, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization or any other Indian organization with respect to expenditures specifically permitted by other Federal law.
 8. Reasonable compensation, as used in this clause, means with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.
 9. Reasonable payment, as used in this clause means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.
 10. Recipient, as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.
 11. Regularly employed, as used in this clause, means, with respect to an officer or employee of a person requesting or receiving by such person for at least 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.
 12. State, as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and a multi-State regional or interstate entity having governmental duties and powers.

B. PROHIBITIONS

1. Section 1352 of Title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan or cooperative agreement from

using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or, the modification of any Federal contract, grant, loan, or cooperative agreement.

2. The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan or cooperative agreement.
3. The prohibitions of the Act do not apply under the following conditions:
 - a. Agency and legislative liaison by own employees.
 - (1) The prohibition on the use of appropriated funds, in subparagraph B.1. of this clause, does not apply in the case of payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.
 - (2) For purposes of paragraph B.3.a.(1) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.
 - (3) The following agency and legislative liaison activities are permitted any time where they are not related to a specific solicitation for any covered Federal action:
 - a. Discussing with an agency (including individual demonstrations) the qualities and characteristics of the person's products or services, conditions or terms of sale, and service capabilities.
 - b. Technical discussions and other activities regarding the application of adaptation of the person's products or services for an agency's use.
 - (4) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any

covered Federal action:

- a. Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;
- b. Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and,
- c. Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Public Law 95-507, and subsequent amendments.

(5) Only those services expressly authorized by paragraph B.3.a.(1) of this clause are permitted under this clause.

b. Professional and technical services

(1) The prohibition on the use of appropriated funds, in subparagraph B.1. of this clause, does not apply in the case of:

- a. A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as condition for receiving that Federal action.
- b. Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission or negotiation of any bid, proposal, or application or that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

- (2) For purposes of paragraph B.3.a.(1) of this clause, professional and technical services shall be limited to advise and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission, or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission, or negotiation of a covered Federal action.
- (3) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.
- (4) Only those services expressly authorized by paragraph B.3.a.(1) and (2) of this clause are permitted under this clause.
- (5) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

c. Disclosure

- (1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form OMB standard form LLL, Disclosure of Lobbying Activities, (Attachment to the bid package) if such person has made or had agreed to made any payment using non appropriated

funds (to include profits from any covered Federal action), which would be prohibited under subparagraph B.1. of this clause, if paid for with appropriated funds.

- (2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph II.A. of this clause. An event that materially affects the accuracy of the information reported includes:
 - a. A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or
 - b. A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or
 - c. A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.
- (3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.
- (4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the District at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

d. Agreement

The Contractor agrees not to make any payment prohibited by this clause.

e. Penalties

- (1) Any person who makes an expenditure prohibited under paragraph a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph d) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be

applicable.

- (2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure forms.

f. Cost Allowability:

Nothing in this clause is to be interpreted to make allowable or reasonable any costs, which will otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provisions.

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See attached disclosure form)

1. Type of Federal Action: ☐ a. contract ☐ b. grant ☐ c. cooperative agreement ☐ d. loan ☐ e. loan guarantee ☐ f. loan insurance	2. Status of Federal Action: ☐ a. bid/offer application ☐ b. initial award ☐ c. post-award	3. Report Type: ☐ a. initial filing ☐ b. material changes For Material Change Only: year _____ quarter _____ date of last report _____
4. Name and Address of Reporting Entity: ☐ Prime ☐ Subawardee Tier _____, if known: Congressional District, if known: _____		5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime: Congressional District, if known: _____
6. Federal Department/Agency: _____		7. Federal Program Name/Description: CFDA number, if applicable: _____
8. Federal Action Number, if known: _____		9. Award Amount, if known: \$ _____
10. a. Name and Address of Lobbying Entity (if individual, last name, first name, MI) (attach Continuation Sheet(s) SF - LLL - A if necessary)		b. Individuals Performing Services (including address if different from No 10a) (last name, first name, MI): (attach Continuation Sheet(s) SF - LLL - A if necessary)
11. Amount of Payment (check all that apply): \$ _____ ☐ actual ☐ planned	13. Type of Payment (check all that apply): ☐ a. retainer ☐ b. one-time fee ☐ c. commission ☐ d. contingent fee ☐ e. deferred ☐ f. other specify: _____	
12. Forum of Payment (check all that apply): ☐ a. cash ☐ b. in-kind; specify nature: _____ value: _____		
14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s) or Member(s) contracted for Payment indicated in Item, 11: (attach Continuation Sheet(s) SF-LLL-A if necessary)		
15. Continuation Sheet(s) SF-LLL-A attached: ☐ Yes ☐ No		
16. Information requested through this form is authorized by Code 31 U.S.C. Section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000.00 and not more than \$100,000.00 for each such failure.		Signature: _____ Print name: _____ Title: _____ Telephone No: _____ Date: _____
Federal Use Only		Authorized for Local Reproduction Standard Form - LLL

INSTRUCTIONS FOR COMPLETION OF SF-LLL DISCLOSURE OF LOBBYING ACTIVITIES

This DISCLOSURE FORMS SHALL BE COMPLETED BY the reporting entity, whether Subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be a prime or subawardee recipient. Identify the tier of the subawardee e.g., the first subawardee of the prime is the first tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee" then enter the full name, address city, state, and zip code of the prime Federal recipient. Include Congressional District.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency, name if known. For example, Department of Transportation, United State Coast Guard.
7. Enter the Federal program name for description of the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g. Request for Proposal (RFP) number, Invitation for Bid (IFB) number, grant announcement number, the contract, grant, or loan award number, the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state, and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.

(b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a.). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box (es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box (es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal officials. Identify the Federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) of Congress that were contacted.
15. Check whether or not a SF-LLL-A Continuation Sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Office of Management and Budget Paperwork Reduction Project (0348-0446), Washington, D.C. 20503.

DISCLOSURE OF LOBBYING ACTIVITIES CONTINUATION SHEET

Reporting Entity: _____ Page _____ of _____

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Standard Form - LLL - A

EXHIBIT D-2: DBE RACE-NEUTRAL PARTICIPATION LISTING

Bidder shall complete and submit **Exhibit D-2: “DBE Race-Neutral Participation Listing”** in a **sealed envelope** with the bid/proposal, but no later than 48 hours following bid opening or proposal due date and timeline. (NOTE: In the event of no race-neutral DBE participation, Bidder shall mark “None” under the column entitled “DBE Firm Name”.) The Bidder shall refer to **IFB Section IV.G: “DBE Crediting Provisions”** for guidelines relative to DBE participation crediting. (Additional sheets may be duplicated as necessary.)

The DBE information and content provided under Exhibit D-2: “DBE Race-Neutral Participation Listing” will not be considered in evaluating the bid/proposal or determining award of any contract.

DBE Firm Name*:	DBE Certification No. and Expiration Date:	Provide Complete Description of Work to be Performed: _____ _____ _____ _____		
Business Address:		Check Appropriate Box Describing		
Contact Person:		Subcontractor (100%)	Supplier (60%)	
Telephone:	Fax:	Regular Dealer (60%)	Broker	
License No., Classification and Expiration:		Manufacturer (100%)	Trucker	
Subcontract Amount:		Subcontractor/Supplier Activity:		

***DBE certification letter must be attached for each listed DBE firm. DBEs must be certified on the date bids/proposals are opened.**

**IFB 0-1933
EXHIBIT D-2**

DBE Firm Name*:	DBE Certification No. and Expiration Date:	Provide Complete Description of Work to be Performed: _____ _____ _____ _____		
Business Address:		Check Appropriate Box Describing		
Contact Person:		Subcontractor (100%)	Supplier (60%)	
Telephone:	Fax:	Regular Dealer (60%)	Broker	
License No., Classification and Expiration:		Manufacturer (100%)	Trucker	
Subcontract Amount:		Subcontractor/Supplier Activity:		

***DBE certification letter must be attached for each listed DBE firm. DBEs must be certified on the date bids/proposals are opened.**

**IFB 0-1933
EXHIBIT D-2**

DBE Firm Name*:	DBE Certification No. and Expiration Date:	Provide Complete Description of Work to be Performed: _____ _____ _____ _____		
Business Address:		Check Appropriate Box Describing		
Contact Person:		Subcontractor (100%)	Supplier (60%)	
Telephone:	Fax:	Regular Dealer (60%)	Broker	
License No., Classification and Expiration:		Manufacturer (100%)	Trucker	
Subcontract Amount:		Subcontractor/Supplier Activity:		

***DBE certification letter must be attached for each listed DBE firm. DBEs must be certified on the date bids/proposals are opened.**

Bidder/Offeror:	
Business Address:	
Contact Name:	Title:
Phone: ()	Fax: ()

Total Contract Amount:		\$	
DBE Race-Neutral Participation Value (% of Total Contract Value): <i>(NOTE: Mark "NONE" if no DBEs will be utilized.)</i>	%	DBE Race-Neutral Participation Dollar (\$ Value): <i>(NOTE: Mark "NONE" if no DBEs will be utilized.)</i>	\$

Signature of Authorized Representative

Printed Name

Date

Title

EXHIBIT D-3: BIDDERS LIST

Bidder: _____ **IFB NO.** _____

The Department of Transportation requires the AUTHORITY to create and maintain a "Bidders List" containing information about all firms (DBE and Non-DBE) that bid, propose or quote on the Authority's DOT-assisted contracts, in accordance with 49 CFR Part 26.11. The "Bidders List" is intended to be a count of all firms that are participating, or attempting to participate, on DOT-assisted contracts, whether successful or unsuccessful in their attempt to obtain a contract.

The Bidder/Offeror is to complete all requested information on **Exhibit __: Bidders List** for themselves and all subcontractors, and submit this information at the time of bid submission. However, if not elected to do so at the time of bid submission, Bidders/Offerors must submit such information at the request of the Authority within the prescribed timeline set forth in the solicitation. The AUTHORITY will utilize this information to assist in the AUTHORITY's overall annual DBE goal-setting process. ***The Bidders List content will not be considered in evaluating the bid or determining award of any contract.***

a. Prime Bidder's/Offeror's Information:	
Name of Prime's Firm:	b. Phone: ()
c. Firm Address:	d. Fax: ()
e.	f. E-mail:
Number of years in business:	Type of work/services/materials provided:
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year:
DBE Certification Eligibility (place an "X"):	☐ Less than \$1 million
	☐ Less than \$5 million
	☐ Less than \$10 million
	☐ Less than \$15 million
	☐ More than \$15 million
☐ African American ☐ Asian Pacific American ☐ Native American ☐ Woman ☐ Hispanic American ☐ Subcontinent Asian American ☐ Other	

g. Provide the following information for every subcontractor (DBE and non-DBE) included in this bid, proposal or quote.	
Name of Subcontractor's Firm:	h. Phone: ()
i. Firm Address:	j. Fax: ()
k.	l. E-mail:
Number of years in business:	Type of work/services/materials provided:
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year:
DBE Certification Eligibility (place an "X"):	☐ Less than \$1 million
	☐ Less than \$5 million
	☐ Less than \$10 million
	☐ Less than \$15 million
	☐ More than \$15 million
☐ African American ☐ Asian Pacific American ☐ Native American ☐ Woman ☐ Hispanic American ☐ Subcontinent Asian American ☐ Other	

m. Provide the following information for every subcontractor (DBE and non-DBE) included in this bid, proposal or quote.	
Name of Subcontractor's Firm:	n. Phone: ()
o. Firm Address:	p. Fax: ()
q.	r. E-mail:
Number of years in business:	Type of work/services/materials provided:
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year:
DBE Certification Eligibility (place an "X"):	☐ Less than \$1 million
	☐ Less than \$5 million
	☐ Less than \$10 million
	☐ Less than \$15 million
	☐ More than \$15 million
☐ African American ☐ Asian Pacific American ☐ Native American ☐ Woman ☐ Hispanic American ☐ Subcontinent Asian American	

☐ Other

s. Provide the following information for every subcontractor (DBE and non-DBE) included in this bid, proposal or quote.	
Name of Subcontractor's Firm:	t. Phone: ()
u. Firm Address:	v. Fax: ()
w.	x. E-mail:
Number of years in business:	Type of work/services/materials provided:
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year:
DBE Certification Eligibility (place an "X"):	☐ Less than \$1 million
	☐ Less than \$5 million
	☐ Less than \$10 million
	☐ Less than \$15 million
	☐ More than \$15 million
☐ African American ☐ Asian Pacific American ☐ Native American ☐ Woman ☐ Hispanic American ☐ Subcontinent Asian American ☐ Other	

If necessary, this Bidders List form can be duplicated to include all firms (DBE and non-DBE) that have submitted a bid, proposal or quote on this DOT-assisted project, whether successful or unsuccessful in their attempt to obtain a contract.

Failure of the Bidder to submit this required Bidders List form will deem the Bidder/ non-responsive.

Status of Past and Present Contracts

On the form provided below, Bidder shall list the status of past and present contracts where the firm has either provided services as a prime contractor or a subcontractor during the past five (5) years in which the contract has ended or will end in a termination, settlement or in legal action. A separate form must be completed for each contract. Bidder shall provide an accurate contact name and telephone number for each contract and indicate the term of the contract and the original contract value.

If the contract was terminated, list the reason for termination. Bidder must also identify and state the status of any litigation, claims or settlement agreements related to any of the identified contracts. Each form must be signed by an officer of the Bidder confirming that the information provided is true and accurate.

Project city/agency/other:	
Contact name:	Phone:
Project award date:	Original Contract Value:
Term of Contract:	
1) Status of contract:	
2) Identify claims/litigation or settlements associated with the contract:	

By signing this Form entitled "Status of Past and Present Contracts," I am affirming that all of the information provided is true and accurate.

Name _____
 Title _____

_____ Date

SECTION III

ADDITIONAL CONTRACTUAL EXHIBITS

SECTION III. ADDITIONAL CONTRACTUAL EXHIBITS

The following Exhibits will be attached to and incorporated into the signed Agreement resulting from this IFB.

A. PERFORMANCE BOND

The successful Bidder shall furnish at its own expense a Performance Bond (Exhibit E) satisfactory to the Authority in the amount of one hundred percent (100%) of the full amount of the contract as a guarantee of good faith on behalf of the Contractor that the terms of the contract, including all warranty provisions, shall be complied with in every particular.

The bond shall specifically provide that if the Contractor, or its subcontractor, fails to fully perform that the surety or sureties will pay for the same in an amount not exceeding the amount specified in the bond and in case suit is brought against the Authority, that the surety will undertake the defense of same.

B. PAYMENT BOND

The successful Bidder shall furnish a Payment Bond (Exhibit F) in the amount of one hundred percent (100%) of the full amount of the contract. Such bonds shall be in effect during the entire term of the contract and warranty and shall be issued by a corporate surety (not an individual surety) registered in the state of California and registered to do business in the county of Orange.

The bond shall specifically provide that if the Contractor fails to pay for amounts due under the Employment Insurance Act that the surety or sureties will pay for the same in an amount not exceeding the amount specified in the bond and in case suit is brought against the Authority, that the surety will undertake the defense of same.

Pursuant to California Civil Code 3247 and 3248, in conjunction with the Bond and Undertaking Law (Code of Civil Procedure sections 995.010, et. seq.), Bidders must provide the following information as part of their payment bond; a certificate of Authority from the Orange County Clerks Office indicating that the insurer has not been surrendered, revoked, canceled, annulled, or suspended or, in the event that it has, that renewed Authority has been granted.

C. GUARANTY

The successful Bidder shall also submit to the Authority the executed and notarized "Guaranty" form (Exhibit G) in this IFB.

All forms must be completed and submitted to the Contract Administrator responsible for this procurement within 15 days of award notice by the Authority. Failure to submit the completed and signed forms will result in cancellation of the award.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____
hereinafter referred to as "Contractor", as principal, and _____
as surety, are held and firmly bound unto the Orange County Transportation Authority,
State of California, in the sum _____
Dollars, (\$ _____ s), lawful money of the United States of America,
for the payment of which sum, well and truly to be made, we bind ourselves, jointly and
severally, firmly by these presents.

The condition of the foregoing obligation is such that,

WHEREAS, said Contractor has been awarded and is about to enter into the annexed
Agreement with the Orange County Transportation Authority for **HVAC AND
ELECTRICAL UPGRADES AT SANTA ANA REGIONAL TRANSPORTATION
CENTER** as specified in said Agreement, and is required to give this bond in connection
with the _____ execution thereof;

NOW THEREFORE, if the said Contractor shall well and truly do and perform all of the
covenants and obligations of said Agreement on his part to be done and performed at
the times and in the manner specified herein, then this obligation shall be null and void,
otherwise it shall be and remain in full force and effect; and in the event said Contractor
fails to fully perform all requirements in accordance with the terms and conditions of
said Agreement, then surety shall enforce performance by the Contractor or shall pay
the Orange County Transportation Authority for the same in an amount not exceeding
the amount specified in this bond; and, further, if in the event suit is brought upon this
bond then said surety shall pay the Orange County Transportation Authority for
reasonable attorneys' fees to be fixed by the court;

PROVIDED, that any changes in the work to be done, or the material to be furnished,
whether or not made pursuant to the terms of said contract, shall not in any way release
either the Contractor or the surety there under, nor shall any extensions of time granted
under the provisions of said contract release either the Contractor or the surety, and
notice of such changes or extensions of the contract is hereby waived by the surety.

WITNESS our hands this _____ day of _____, 20__.

(SEAL)

(Contractor)
By _____

Approved:

(Title)

(SEAL)

(Surety)
By _____

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____
hereinafter referred to as "Contractor", as principal, and _____
as surety, are held and firmly bound unto the ORANGE COUNTY TRANSPORTATION
AUTHORITY, State of California, in the 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, jointly and
severally, firmly by these presents.

The Condition of the foregoing obligation is such that,

WHEREAS, said Contractor has been awarded and is about to enter into the annexed
Agreement with the ORANGE COUNTY TRANSPORTATION AUTHORITY for the **HVAC
AND ELECTRICAL UPGRADES AT SANTA ANA REGIONAL TRANSPORTATION
CENTER** as specified in said Agreement, and is required under the terms of said
Agreement to give this bond in connection with the execution thereof;

NOW, THEREFORE, if said Contractor or a subcontractor fails to pay any of the persons
named in Section 3181 of the Civil Code of the State of California, or amounts due under
the Unemployment Insurance Code with respect to work or labor performed under the
contract, or for any amounts required to be deducted, withheld and paid over to the
Employment Development Department from the wages of employees of said Contractor
and subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with
respect to such work and labor, then said surety will pay for the same, in an amount not
exceeding the sum specified in this bond, 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 and all persons named in Section 3181 of the Civil Code of the State of California so
as to give a right of action to such persons or their assigns in any suit brought upon this
bond. This bond shall be subject to and include all of the provisions of Title 15 of Part 4 of
Division 3 of the Civil Code of California relating to Payment Bond for Public Works,
including but not confined to, Civil Code Sections 3225-3228, inclusive, and Sections
3247-3252, inclusive.

PROVIDED, that any changes in the work to be done or the material to be furnished,
whether or not made pursuant to the terms of said contract, shall not in any way release
either the Contractor or the surety thereunder, nor shall any extensions of time granted
under the provisions of said contract release either the Contractor or the surety, and notice
of such alterations or extensions of the contract is hereby waived by the surety.

WITNESS our hands this _____ day of _____, 20__.

(SEAL)

(Contractor)

By _____

(Title)

Approved:

(Surety)

(SEAL)

By _____

GUARANTY

The undersigned, as "Contractor," guarantees to the Orange County Transportation Authority that the materials furnished and the completed installation work, and the related work performed by the Contractor pursuant to Agreement No. C-0-1933 relative to **HVAC AND ELECTRICAL UPGRADES AT SANTA ANA REGIONAL TRANSPORTATION CENTER.**

- A. For a period of one (1) year from the date of completion, as evidenced by the date of final acceptance of the work by the Authority, the Contractor warrants to the Authority that work performed and materials furnished under this Contract conforms to the Contract requirements and shall be free from any defect in design, material or workmanship performed by the Contractor or its subcontractors or suppliers.
- B. Under this guaranty, the Contractor shall remedy at its own expense any such failure to conform or any such defect.
- C. Nothing in the above intends or implies that this warranty shall apply to work which has been abused or neglected by the Authority.
- D. This guaranty shall be in addition to the other guarantees and warranties specified in the Agreement and shall be enforceable concurrently with, or in lieu of, said other guarantees.

Should any of the materials or equipment prove defective or should the work as a whole prove defective, due to faulty workmanship, material furnished or methods of installation, or should the work or any part thereof fail to operate properly as originally intended and in accordance with the plans and specifications, due to any of the above causes, all within twelve (12) months after the date on which the work is accepted by the Authority, the undersigned agrees to reimburse the Authority, upon demand, for its expenses incurred in restoring any such equipment or materials replaced and the cost of removing and replacing any other work without cost to the Authority so that said work will function correctly as originally contemplated.

The Authority shall have the unqualified option to make any needed replacements or repairs itself or to have such replacements or repairs done by the undersigned. In the event the Authority elects to have said work performed by the undersigned, the undersigned agrees that the repairs shall be made and such materials as are necessary shall be furnished and installed within a reasonable time after the receipt of demand from the Authority. If the undersigned shall fail or refuse to comply with its obligations under this guaranty, the Authority shall be entitled to all costs and expenses, including attorneys' fees, reasonably incurred by reasons of the said failure or refusal.

Subscribed and sworn to before me	_____
	Name
this ____ day of _____, 20__	_____
	Title
Seal of Notary	_____
	Signature
_____	_____
Notary Public	Date

SECTION IV

RACE NEUTRAL DBE PROGRAM

RACE NEUTRAL DBE SOLICITATION PROVISIONS

I. DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION PROVISIONS

A. DBE Policy and Applicability

In accordance with federal financial assistance agreements with the U.S. Department of Transportation (U.S. DOT), the Orange County Transportation Authority (Authority) has adopted a Disadvantaged Business Enterprise (DBE) Policy and Program, in conformance with Title 49 CFR Part 26, "Participation by Disadvantaged Business Enterprises in Department of Transportation Programs".

This DOT-assisted project is subject to these stipulated regulations. In order to ensure that the Authority achieves its overall DBE Program goals and objectives, the Authority encourages the participation of small businesses, including DBEs as defined in 49 CFR 26, in the performance of contracts financed in whole or in part with U.S. DOT funds. Pursuant to the intent of these Regulations, it is also the policy of the Authority to:

- Fulfill the spirit and intent of the Federal DBE Program regulations published under U.S. DOT Title 49 CFR, Part 26, by ensuring that DBEs have equitable access to participate in all of Authority's DOT-assisted contracting opportunities.
- Ensure that DBEs can fairly compete for and perform on all DOT-assisted contracts and subcontracts.
- Ensure non-discrimination in the award and administration of Authority's DOT-assisted contracts.
- Create a level playing field on which DBEs can compete fairly for DOT-assisted contracts.
- Ensure that only firms that fully meet 49 CFR, Part 26 eligibility standards are permitted to participate as DBEs.
- Help remove barriers to the participation of DBEs in DOT-assisted contracts.
- Assist in the development of firms that can compete successfully in the marketplace outside the DBE Program.

Bidders shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of subcontracts.

Any terms used in this section that are defined in 49 CFR Part 26, or elsewhere in the Regulations, shall have the meaning set forth in the Regulations. In the event of any conflicts or inconsistencies between the Regulations and the Authority's DBE Program with respect to DOT-assisted contracts, the Regulations shall prevail.

B. Authority's New Race-Neutral DBE Policy Implementation Directives

Pursuant to recently released Race-Neutral DBE policy directives issued by the U.S. DOT in response to the Ninth Circuit U.S. Court of Appeals decision in *Western States Paving Co. v. Washington State Department of Transportation*, **the Authority has implemented a wholly Race-Neutral DBE Program.**

A Race-Neutral DBE Program is one that, while benefiting DBEs, is not solely focused on DBE firms. A Race-Neutral Program utilizes measures that can assist a wide variety of small businesses including DBEs, such as arranging solicitations, times for the presentation of bids, quantities, specifications, and delivery schedules in ways that facilitate DBE and other small business participation (e.g., unbundling large contracts to make them more accessible to small businesses, requiring or encouraging prime Contractors to subcontract portions of work that they might, otherwise, perform with their own forces). However, under a Race-Neutral DBE Program, the Authority may no longer advertise DOT-assisted contracts containing numeric race-conscious goals or require a Bidder to utilize DBEs as a condition of award. Race-neutral DBE participation includes any time a DBE obtains a prime contract through customary competitive procurement procedures or is awarded a subcontract on a prime contract that does not carry a DBE goal.

C. Definitions

The following definitions apply to the terms as used in these provisions:

- i. ***"Disadvantaged Business Enterprise (DBE)"*** means a small business concern: (a) which is at least 51 percent owned by one or more socially and economically disadvantaged individuals or, in the case of any publicly-owned business, at least 51 percent of the stock of which is owned by one or more socially and economically disadvantaged individuals; and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.
- ii. ***"Small Business Concern"*** means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto, except that a small business concern shall not include any concern or group of concerns controlled by the same socially and economically disadvantaged individual or individuals which has annual

average gross receipts in excess of \$19.57 million over the previous three fiscal years.

- iii. **"Socially and Economically Disadvantaged Individuals"** means those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who are Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, or Asian-Indian Americans, women and any other minorities or individuals found to be disadvantaged by the Small Business Administration pursuant to Section 8(a) of the Small Business Act, or by the Authority pursuant to 49 CFR part 26.65. Members of the following groups are presumed to be socially and economically disadvantaged:
 - a. "Black Americans," which includes persons having origins in any of the Black racial groups of Africa;
 - b. "Hispanic Americans," which includes persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
 - c. "Native Americans," which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;
 - d. "Asian-Pacific Americans," which includes persons whose origins are from Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust Territories of the Pacific, and the Northern Marianas;
 - e. "Asian-Indian Americans," which includes persons whose origins are from India, Pakistan, and Bangladesh; and
 - f. Women, regardless of ethnicity or race.
- iv. **"Owned and Controlled"** means a business: (a) which is at least 51 percent owned by one or more "Socially and Economically Disadvantaged Individuals" or, in the case of a publicly-owned business, at least 51 percent of the stock of which is owned by one or more "Socially and Economically Disadvantaged Individuals"; and (b) whose management and daily business operations are controlled by one or more such individuals.
- v. **"Manufacturer"** means a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the contractor.
- vi. **"Regular Dealer"** means a firm that owns, operates or maintains a store, warehouse, or other establishment in which the materials or supplies required

for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business. The firm must engage in, as its principal business, and in its own name, the purchase and sale of the product in question. A regular dealer in such bulk items as steel, cement, gravel, stone and petroleum products need not keep such products in stock if it owns or operates distribution equipment.

vii. ***"Other Socially and Economically Disadvantaged Individuals"*** means those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who, on a case-by-case basis, are determined by Small Business Administration or the Authority to meet the social and economic disadvantage criteria described below.

a. Social Disadvantage

- 1) The individual's social disadvantage must stem from his/her color, national origin, gender, physical handicap, long-term residence in an environment isolated from the mainstream of American society, or other similar cause beyond the individual's control.
- 2) The individual must demonstrate that he/she has personally suffered social disadvantage.
- 3) The individual's social disadvantage must be rooted in treatment, which he/she has experienced in American society, not in other countries.
- 4) The individual's social disadvantage must be chronic, longstanding and substantial, not fleeting or insignificant.
- 5) The individual's social disadvantage must have negatively affected his/her entry into and/or advancement in the business world.
- 6) A determination of social disadvantage must be made before proceeding to make a determination of economic disadvantage.

b. Economic Disadvantage

- 1) The individual's ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities, as compared to others in the same line of business and competitive market area that are not socially disadvantaged.
- 2) The following criteria will be considered when determining the degree of diminished credit and capital opportunities of a person claiming social and economic disadvantage:

With respect to the individual:

- availability of financing
- bonding capability
- availability of outside equity capital
- available markets

With respect to the individual and the business concern:

- • personal and business assets
- • personal and business net worth
- • personal and business income and profits
-

D. DBE Bid Submission Requirements

1. “DBE Race-Neutral Participation Listing” (Exhibit D-2)

If the Bidder is a DBE or intends to utilize DBE subcontractors and/or purchase goods or services from DBE vendors or DBE suppliers in the performance of this contract, the Bidder shall provide the following information for every DBE firm who will be proposed and/or listed to participate to facilitate capturing race-neutral DBE participation under this contract:

- a. The complete name and address of each DBE who will participate in the contract;
- b. A description of the work that each DBE will perform or provide;
- c. The dollar amount of the work to be performed or provided by the DBE;
- d. Valid DBE Certification eligibility status, in conformance with 49 CFR, Part 26;
- e. The Bidder shall also submit, for each DBE to perform under this contract, a written confirmation from the DBE acknowledging that it is participating in the contract for a specified value, including the corresponding scope of work (a subcontract agreement can serve in lieu of the written confirmation).

The “DBE Race-Neutral Participation Listing” information must be submitted on Exhibit D-2, in a sealed envelope, and should be included with the bid submittal; however, in the event that the referenced Exhibit is not included, the Exhibit shall be submitted to the Authority no later than 48 hours following bid opening for the Bidder to be deemed responsive.

In the event that the Bidder is not a DBE and/or does not intend to utilize DBEs in the performance of this contract, the Bidder shall indicate “None” under the column entitled “DBE Firm Name” of the “DBE Race-Neutral Participation Listing” (Exhibit D-2) and submit accordingly.

The “DBE Race-Neutral Participation Listing” form content will not be considered in evaluating the bid or determining award of any contract.

2. “Bidders List” (Exhibit D-3)

The U.S. Department of Transportation (DOT) requires the Authority to create and maintain a “Bidders List” containing information about all firms (DBE and non-DBE) that bid, propose or quote on the Authority’s DOT-assisted contracts, in accordance with 49 CFR Part 26.11, for use in the Authority’s overall annual DBE goal-setting process. Therefore, the Bidder shall provide the requested information for every firm who submitted a bid, proposal or quote, including the primary Bidder, whether successful or unsuccessful in their attempt to obtain a contract:

- a. Firm name;
- b. Firm address;
- c. Firm’s status as a DBE or non-DBE;
- d. Age of the firm;
- e. Type of services provided by the firm; and
- f. Range of annual gross receipts for the last year.

The “Bidders List” information must be submitted on **Exhibit D-3** and should be included with the bid submittal; however, in the event that the referenced Exhibit is not included, the Exhibit shall be submitted to the Authority no later than 48 hours following bid opening for the Bidder to be deemed responsive.

The “Bidders List” content will not be considered in evaluating the bid or determining award of any contract.

E. DBE Certification

The Authority requires all DBEs listed by Bidder for participation to be certified as eligible DBEs at the time of bid submission. Only participation by DBEs certified under the DOT regulations published under 49 CFR Part 26 may be credited towards race-neutral DBE participation. It is the responsibility of the Bidder to verify the DBE certification status of all listed DBEs.

The Authority is a Certifying Member Agency of the California Unified Certification Program (UCP). The Authority will accept DBE certification from other certifying member agencies of the UCP, which certify the eligibility of DBEs in accordance with 49 CFR Part 26.81. A listing of California UCP certifying member agencies is available from the UCP website, which can be accessed at <http://www.californiaucp.com>.

F. DBE Eligibility and Commercially Useful Function Standards

- i. A DBE must be a small business concern as defined pursuant to Section 3 of the U.S. Small Business Act and relevant regulations promulgated pursuant thereto.
- ii. A DBE may participate as a prime contractor, subcontractor, joint venture partner with a prime or subcontractor, vendor of material or supplies, or as a trucking company.
- iii. A DBE joint venture partner must be responsible for specific contract items of work, or clearly defined portions thereof. Responsibility means actually performing, managing and supervising the work with its own forces. The DBE joint venture partner must share in the capital contribution, control, management, risks and profits of the joint venture commensurate with its ownership interest.
- iv. A DBE must perform a commercially useful function in accordance with 49 CFR 26.55 (i.e., must be responsible for the execution of a distinct element of the work and must carry out its responsibility by actually performing, managing and supervising the work). A DBE should perform at least thirty percent (30%) of the total cost of its contract with its own workforce to presume it is performing a commercially useful function.
- v. DBEs must be certified by the California Unified Certification Program (CUCP). Listings of DBEs certified by the CUCP are available from the following sources:
 - a. The CUCP web site, which can be accessed at <http://www.californiaucp.com>; or the Caltrans "Civil Rights" web site at <http://www.dot.ca.gov/hq/bep>.
 - b. The CUCP DBE Directory, which may be obtained from the Department of Transportation, Material Operations Branch, Publication Distribution Unit, 1900 Royal Oaks Drive, Sacramento, California 95815; Telephone: (916) 445-3520.

G. DBE Crediting Provisions

- i. When a DBE is proposed to participate in the contract, either as a prime Contractor or Subcontractor, only the value of the work proposed to be performed by the DBE with its own forces may be counted towards race-neutral DBE participation. If the Contractor is a DBE joint venture participant, only the DBE proportionate interest in the joint venture shall be counted.
- ii. If a DBE intends to subcontract part of the work of its subcontract to a lower tier Subcontractor, the value of the subcontracted work may be counted toward race-neutral DBE participation only if the DBE Subcontractor is a

- certified DBE and actually performs the work with their own forces. Services subcontracted to a non-DBE firm may not be credited toward the prime Contractor's race-neutral DBE attainment.
- iii. Contractor is to calculate and credit participation by eligible DBE vendors of equipment, materials, and suppliers toward race-neutral DBE attainment, as follows:
 - a. Sixty percent (60%) of expenditure(s) for equipment, materials and supplies required under the Contract, obtained from a regular dealer; or
 - b. One hundred percent (100%) of expenditure(s) for equipment, materials and supplies required under the Contract, obtained from a DBE manufacturer.
 - iv. The following types of fees or commissions paid to DBE Subcontractors, Brokers, and Packagers may be credited toward the prime Contractor's race-neutral DBE attainment, provided that the fee or commission is reasonable, and not excessive, as compared with fees or commissions customarily allowed for similar work, including:
 - a. Fees and commissions charged for providing bona fide professional or technical services, or procurement of essential personnel, facilities, equipment, materials, or supplies required in the performance of the Contract;
 - b. Fees charged for delivery of material and supplies (excluding the cost of materials or supplies themselves) when the licensed hauler, trucker, or delivery service is not also the manufacturer of, or a regular dealer in, the material and supplies;
 - c. Fees and commissions charged for providing any insurance specifically required in the performance of the Contract.
 - v. Contractor may count the participation of DBE trucking companies toward race-neutral DBE attainment, as follows:
 - a. The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract.
 - b. The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.

- c. The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
 - d. The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
 - e. The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement. The DBE does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by a DBE.
 - f. For purposes of this paragraph, a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.
- vi. If the Contractor listed a non-certified DBE 1st tier Subcontractor to perform work on this contract, and the non-certified DBE subcontractor subcontracts a part of its work or purchases materials and/or supplies from a lower tier DBE certified Subcontractor or Vendor, the value of work performed by the lower tier DBE firm's own forces can be counted toward race-neutral DBE participation on the contract.

H. DBE "Frauds" and "Fronts"

Only legitimate DBEs are eligible to participate as DBEs in DOT-assisted contracts. Therefore, Bidders are hereby cautioned against knowingly and willfully using "fronts". The use of "fronts" and "pass through" subcontracts to non-disadvantaged firms constitute criminal violations. Further, any indication of fraud, waste, abuse or mismanagement of Federal funds should be immediately reported to the Office of Inspector General, U.S. Department of Transportation at the toll-free hotline: (800) 424-9071; or to the following field office: FTA Special Agent-in-Charge, 210 Mission Street, Room 2210, San Francisco, CA 94105-1839; Telephone: (415) 744-3133; Fax: (415) 744-2726.

SECTION V
AGREEMENT

1 **AGREEMENT NO. C-0-1933**

2 **BETWEEN**

3 **ORANGE COUNTY TRANSPORTATION AUTHORITY**

4 **AND**

5 _____
6 **THIS AGREEMENT** is effective this ____ day of _____, 2011, by and
7 between the Orange County Transportation Authority, 550 South Main Street, P.O. Box 14184, Orange,
8 CA 92863-1584, a public corporation of the state of California (hereinafter referred to as
9 "AUTHORITY"), and _____, (hereinafter referred to as
10 "CONTRACTOR").

11 **WITNESSETH:**

12 **WHEREAS**, AUTHORITY has determined that it requires HVAC and Electrical Upgrades at the
13 Santa Ana Regional Transportation Center; and

14 **WHEREAS**, said work cannot be performed by the regular employees of AUTHORITY; and

15 **WHEREAS**, CONTRACTOR has represented that it has the requisite personnel, experience,
16 material, and equipment and is otherwise qualified to perform such services; and

17 **WHEREAS**, CONTRACTOR wishes to perform these services;

18 **WHEREAS**, the AUTHORITY's Board of Directors approved this Agreement on _____.

19 **NOW, THEREFORE**, it is mutually understood and agreed by AUTHORITY and
20 CONTRACTOR as follows:

21 **ARTICLE 1. COMPLETE AGREEMENT**

22 A. This Agreement, including all exhibits and other documents incorporated herein and made
23 applicable by reference, constitutes the complete and exclusive statement of the terms and conditions
24 of the agreement between AUTHORITY and CONTRACTOR and it supersedes all prior
25 representations, understandings and communications. The invalidity in whole or in part of any term or
26 condition of this Agreement shall not affect the validity of other terms or conditions.

B. AUTHORITY's failure to insist in any one or more instances upon the performance of any terms or conditions of this Agreement shall not be construed as a waiver or relinquishment of AUTHORITY's right to such performance by CONTRACTOR or to future performance of such terms or conditions and CONTRACTOR's obligation in respect thereto shall continue in full force and effect. CONTRACTOR shall be responsible for having taken steps reasonably necessary to ascertain the nature and location of the work, and the general and local conditions, which can affect the work or the cost thereof. Any failure by CONTRACTOR to do so will not relieve it from responsibility for successfully performing the work without additional expense to AUTHORITY.

C. AUTHORITY assumes no responsibility for any understanding or representations concerning conditions made by any of its officers, employees or agents prior to the execution of this Agreement, unless such understanding or representations by AUTHORITY are expressly stated in this Agreement.

D. Time shall be of the essence hereunder; but CONTRACTOR shall perform work hereunder only to the minimum extent consistent with requirements herein.

E. Changes to any portion of this Agreement shall not be binding upon AUTHORITY except when specifically confirmed in writing by an authorized representative of AUTHORITY and issued in accordance with the provisions of this Agreement.

ARTICLE 2. AUTHORITY DESIGNEE

The Chief Executive Officer of AUTHORITY, or designee, shall have the authority to act for and exercise any of the rights of AUTHORITY as set forth in this Agreement.

ARTICLE 3. SCOPE OF WORK

CONTRACTOR shall provide all labor, equipment, materials and facilities necessary for all work related to at the AUTHORITY's in strict compliance with all the requirements specified herein and in Exhibit A, entitled "General Provisions"; Addendum No's ____ ; Exhibit B, entitled "Specifications"; Exhibit C, entitled "List of Drawings"; Exhibit D-1, entitled "List of Subcontractors"; Exhibit E, entitled "Performance Bond"; Exhibit F, entitled "Payment Bond"; and Exhibit G, entitled "Guaranty"; all of which

documents are attached to and, by this reference, incorporated in and made a part of this Agreement. By this reference, also incorporated in and made a part of this Agreement are all applicable provisions of IFB and all representations made by CONTRACTOR in its original bid to AUTHORITY, including, but not limited to, CONTRACTOR's certifications relative to Workers' Compensation Insurance, and compliance with Section 7028.15 of the State of California Business and Professions Code.

ARTICLE 4. DELIVERY / RECOVERY SCHEDULE

A. CONTRACTOR shall fully complete the herein above described work within One Hundred Fifty (150) calendar days from the effective date of written Notice to Proceed (NTP) issued by AUTHORITY. CONTRACTOR shall give AUTHORITY not less than seventy-two (72) hours advance notice of the start of any work. Within five (5) calendar days after said Notice, CONTRACTOR shall provide any construction schedules as may be requested by AUTHORITY.

B. If at any time, the critical path schedule reflects -30 or a greater negative number of days of total float, then CONTRACTOR, within ten days after CONTRACTOR first becomes aware of such schedule delay, shall prepare and submit to AUTHORITY for review and approval a Recovery Schedule demonstrating CONTRACTOR's proposed plan to regain lost schedule progress and to achieve the original contractual milestones in accordance with the Contract. AUTHORITY shall notify CONTRACTOR within ten days after receipt of each such Recovery Schedule whether the schedule is deemed accepted or rejected. Within five days after AUTHORITY's rejection of the schedule, CONTRACTOR will resubmit a revised Recovery Schedule incorporating AUTHORITY's comments. When AUTHORITY accepts CONTRACTOR's Recovery Schedule, CONTRACTOR shall, within five days after AUTHORITY's acceptance, incorporate and fully include such schedule into the Project Schedule and deliver it to AUTHORITY.

C. All costs incurred by CONTRACTOR in preparing, implementing and achieving the Recovery Schedule shall be borne by CONTRACTOR and shall not result in a change to the contract price.

D. In the event that CONTRACTOR fails to provide an acceptable Recovery Schedule within

30 days of CONTRACTOR's receipt of a notice to do so, CONTRACTOR shall have no right to receive progress payments until CONTRACTOR has prepared and AUTHORITY has approved such Recovery Schedule.

ARTICLE 5. START OF WORK

CONTRACTOR shall incur no costs, and shall not perform or furnish any work, services, materials or equipment under this Agreement, unless and until a written Notice to Proceed has been given to CONTRACTOR by AUTHORITY. Conditions precedent to AUTHORITY issuing said Notice to Proceed are CONTRACTOR furnishing the Exhibit E "Performance Bond," Exhibit F "Payment Bond," Exhibit G "Guaranty," "Certificate of Lower-Tier Participants Regarding Debarment and Suspension," and certificates of insurance as set forth in Article 11 hereunder. CONTRACTOR shall furnish said documents within fifteen (15) calendar days (excluding Saturdays, Sundays and legal holidays) after notification of contract award from AUTHORITY. Upon receipt of acceptable bonds, guaranty, and insurance certificates, AUTHORITY will within fifteen (15) working days thereafter issue the written Notice to Proceed.

ARTICLE 6. PAYMENT

A. For CONTRACTOR's full and complete performance of its obligations under this Agreement, and subject to the maximum cumulative payment obligation provision set forth in Article 8, AUTHORITY shall pay CONTRACTOR the firm fixed sum of _____ Dollars (\$____.00).

B. Progress payments and the final payment will be made by AUTHORITY to CONTRACTOR in accordance with the terms as set forth in Exhibit A, "General Provisions," under the "Progress Payments" and "Final Payment and Claims" sections therein. The acceptance by CONTRACTOR of AUTHORITY's final payment hereunder shall constitute a waiver of all claims against AUTHORITY under or arising out of this herein Agreement, as such may from time to time be amended.

C. Failure by AUTHORITY to pay amount in dispute shall not alleviate, diminish or modify in any respect the CONTRACTOR's obligation to achieve final acceptance of and all work in accordance with the contract documents, and CONTRACTOR shall not cease or slow down its performance under

1 this Agreement on account of any such amount in dispute. CONTRACTOR shall proceed as directed
2 by AUTHORITY pending resolution of dispute. Upon resolution of dispute, each party shall promptly
3 pay any amount owing.

4 **ARTICLE 7. PROMPT PAYMENT CLAUSE**

5 A. Upon receipt of payment by AUTHORITY, CONTRACTOR agrees to promptly pay each
6 subcontractor for the satisfactory work performed under this Agreement, no later than ten (10) calendar
7 days. CONTRACTOR agrees further to return retainage payments to each subcontractor within thirty
8 (30) calendar days after the subcontractor's work is satisfactorily completed. AUTHORITY reserves the
9 right to request the appropriate documentation from CONTRACTOR showing payment has been made
10 to the subcontractors. Any delay or postponement of payment from the above referenced time frames
11 may occur only for good cause following written approval by AUTHORITY. In accordance with Revised
12 §26.29 "Prompt Payment Provisions" (Federal Register - dated June 16, 2003) the AUTHORITY, at its
13 discretion may elect to utilize one of the following methods to comply with the prompt payment of
14 retainage requirement.

15 B. Failure to comply with this provision or delay in payment without prior written approval from
16 AUTHORITY will constitute noncompliance, which may result in appropriate administrative sanctions,
17 including, but not limited to a penalty of two (2%) percent of the invoice amount due per month for every
18 month that payment is not made.

19 C. These prompt payment provisions must be incorporated in all subcontract agreements
20 issued by CONTRACTOR under this Agreement. Each subcontract shall require the subcontractor to
21 make payments to sub-subcontractors and suppliers in a similar manner.

22 **ARTICLE 8. MAXIMUM OBLIGATION**

23 Notwithstanding any provisions of this Agreement to the contrary, AUTHORITY and
24 CONTRACTOR mutually agree that AUTHORITY's maximum cumulative payment obligation
25 hereunder (including obligation for CONTRACTOR 's profit), shall be _____ Dollars (\$____.00),
26 which shall include all amounts payable to CONTRACTOR for its subcontracts, leases, materials and

costs arising from, or due to termination of, this Agreement.

ARTICLE 9. NOTICES

All notices hereunder and communications regarding the interpretation of the terms of this Agreement, or changes thereto, shall be effected by delivery of said notices in person or by depositing said notices in the U.S. mail, registered or certified mail, returned receipt requested, postage prepaid and addressed as follows:

To CONTRACTOR:

To AUTHORITY:

Orange County Transportation Authority

550 South Main Street

P.O. Box 14184

Orange, CA 92863-1584

ATTENTION:

ATTENTION: Grant Gager, Contracts

Administrator

(714) 560 – 5743 ; ggager@octa.net

ARTICLE 10. INDEPENDENT CONTRACTOR

CONTRACTOR's relationship to AUTHORITY in the performance of this Agreement is that of an independent contractor. CONTRACTOR's personnel performing work under this Agreement shall at all times be under CONTRACTOR's exclusive direction and control and shall be employees of CONTRACTOR and not employees of AUTHORITY. CONTRACTOR shall pay all wages, salaries and other amounts due its employees in connection with this Agreement and shall be responsible for all reports and obligations respecting them, such as social security, income tax withholding, unemployment compensation, workers' compensation insurance, and similar matters.

ARTICLE 11. INSURANCE

A. CONTRACTOR shall procure and continuously maintain in full force and affect through contract completion, insurance coverages specified herein. Coverages shall not be subject to self-insurance provisions. CONTRACTOR shall provide the following insurance coverage:

1 1. Commercial General Liability, to include Products/Completed Operations,
2 Independent Contractors', Contractual Liability, and Personal Injury with a minimum limit of \$1,000,000
3 per occurrence and \$2,000,000.00 general aggregate.

4 2. Automobile Liability to include owned, hired and non-owned autos with a combined
5 single limit of \$1,000,000.00 each accident;

6 3. Workers' Compensation with limits as required by the State of California, including
7 waiver of subrogation, in favor of AUTHORITY, its officers, directors, employees and agents.

8 4. Employers' Liability with minimum limits of \$1,000,000.

9 B. Prior to commencement of any work hereof, CONTRACTOR shall furnish to AUTHORITY's
10 Contract Administrator broker-issued insurance certificate, including an insurance company issued
11 endorsement showing the required insurance coverages and further providing that:

12 1. AUTHORITY, its officers, directors, employees and agents must be named as
13 additional insured on Commercial General Liability and Automobile Liability certificates and on the
14 insurance policy endorsement with respect to performance hereunder; and

15 2. The coverage shall be primary and noncontributory as to any other insurance with
16 respect to performance hereunder; and

17 3. Thirty (30) days prior written notice of cancellation or material change be given to
18 AUTHORITY.

19 C. "Occurrence," as used herein, means any event or related exposure to conditions, which
20 result in bodily injury or property damage.

21 D. The Certificate of Insurance shall reference Agreement Number C-0-1933
22 ; and Grant Gager, Contracts Administrator.

23 E. Upon AUTHORITY's request, certified, true and exact copies of each of the insurance
24 policies shall be provided to AUTHORITY.

25 F. AUTHORITY shall notify CONTRACTOR in writing of any changes in the requirements to
26 insurance required to be provided by CONTRACTOR. Except as set forth in this Article, any additional

1 cost from such change shall be paid by AUTHORITY and any reduction in cost shall reduce the
2 contract price pursuant to a change order.

3 G. CONTRACTOR shall also include in each subcontract the stipulation that subcontractors
4 shall maintain coverage in the amounts required as provided in this Agreement.

5 **ARTICLE 12. BONDS**

6 A. By submitting Exhibit E, entitled "Performance Bond," and Exhibit F, entitled "Payment
7 Bond," CONTRACTOR shall satisfy AUTHORITY's requirements that CONTRACTOR deposit with
8 AUTHORITY bonds with values in the sum of percent of this Agreement's price to cover
9 CONTRACTOR's failure to fully perform hereunder and CONTRACTOR's failure to pay its labor
10 materialmen or failure to comply with Article 38 of this Agreement, in performing hereunder. If the
11 contract price is increased in connection with a Change Order, the AUTHORITY may, in its sole
12 discretion, require a corresponding increase in the amount of the Performance and Payment bonds or
13 new bonds covering the Change Order work.

14 B. Notwithstanding any other provision set forth in this Agreement, performance by a Surety or
15 Guarantor of any obligations of CONTRACTOR shall not relieve CONTRACTOR of any of its
16 obligations thereunder.

17 **ARTICLE 13. ORDER OF PRECEDENCE**

18 Conflicting provisions hereof, if any, shall prevail in the following descending order of
19 precedence: (1) the provisions of this Agreement, including its exhibits; (2) the provisions of
20 IFB including all Addendums; (3) the bid submitted to AUTHORITY by CONTRACTOR in response to
21 said IFB; and (4) any other documents, cited herein or incorporated by reference. In the event of
22 conflicting provisions of Exhibit B ("Specifications"), and Exhibit C ("List of Drawings"), Project
23 Specifications shall take precedence.

24 **ARTICLE 14. CHANGES**

25 A. By written notice or order, AUTHORITY may, from time to time, order work suspension
26 and/or make any change in the general scope of this Agreement, including, but not limited to, changes

1 in the drawings, specifications, schedules (either deceleratory or acceleratory) or any other particular of
2 the specifications or provisions of this Agreement. If any such work suspension or change causes an
3 increase or decrease in the price or time required for performance, CONTRACTOR shall promptly notify
4 AUTHORITY thereof and assert its claim for adjustment within ten (10) calendar days after the change
5 or work suspension is ordered, and an equitable adjustment shall be negotiated. However, nothing in
6 this clause shall excuse CONTRACTOR from proceeding immediately with the agreement as changed.
7 Changes will be made in accordance with the terms as set forth in Exhibit A, "General Provisions,"
8 paragraph F, Extra Work and Changes, by written Change Order.

9 B. No claims by CONTRACTOR for equitable adjustment hereunder shall be allowed if
10 asserted after final payment under this Agreement.

11 C. Any work done beyond the technical provisions specified in this Agreement, or any extra
12 work done without AUTHORITY's written authority, will be considered unauthorized work and will not be
13 paid for. Upon order of AUTHORITY's Engineer or its designee, unauthorized work shall be remedied,
14 removed or replaced at CONTRACTOR's expense.

15 **ARTICLE 15. MODIFICATION PROPOSALS-PRICE BREAKDOWN**

16 CONTRACTOR, in connection with any proposal it makes for an agreement modification, shall
17 furnish a price breakdown, itemized as required by AUTHORITY. Unless otherwise directed, the
18 breakdown shall be in sufficient detail to permit an analysis of all material, labor, equipment, subcontract
19 and overhead costs, as well as profit, and shall cover all work involved in the modification, whether such
20 work was deleted, added or changed. Any amount claimed for subcontracts shall be supported by a
21 similar price breakdown. In addition, if the proposal includes a time extension, a justification therefore
22 shall also be furnished. The proposal, together with the price breakdown and time extension
23 justification, shall be furnished by the date specified by AUTHORITY.

24 **ARTICLE 16. DISPUTES**

25 A. Except as otherwise provided in this Agreement, any dispute concerning a question of fact
26 arising under this Agreement which is not disposed of by supplemental agreement shall be decided by

1 AUTHORITY's Director, Contracts Administration and Materials Management (CAMM), who shall
2 reduce the decision to writing and mail or otherwise furnish a copy thereof to CONTRACTOR. The
3 decision of the Director, CAMM, shall be final and conclusive.

4 B. The provisions of this Article shall not be pleaded in any suit involving a question of fact
5 arising under this Agreement as limiting judicial review of any such decision to cases where fraud by
6 such official or his representative or board is alleged, provided, however, that any such decision shall
7 be final and conclusive unless the same is fraudulent or capricious or arbitrary or so grossly erroneous
8 as necessarily to imply bad faith or is not supported by substantial evidence. In connection with any
9 appeal proceeding under this Article, CONTRACTOR shall be afforded an opportunity to be heard and
10 to offer evidence in support of its appeal.

11 C. Pending final decision of a dispute hereunder, CONTRACTOR shall proceed diligently with
12 the performance of this Agreement and in accordance with the decision of AUTHORITY's Director,
13 CAMM. This "Disputes" clause does not preclude consideration of questions of law in connection with
14 decisions provided for above. Nothing in this Agreement, however, shall be construed as making final
15 the decision of any AUTHORITY official or representative on a question of law, which questions shall be
16 settled in accordance with the laws of the state of California.

17 **ARTICLE 17. TERMINATION FOR CONVENIENCE**

18 A. AUTHORITY may terminate this Agreement for its convenience at any time in whole or in
19 part, by giving CONTRACTOR written notice thereof. AUTHORITY shall terminate by delivering to
20 CONTRACTOR a written Notice of Termination for Convenience specifying the extent of termination
21 and its effective date. Upon termination, AUTHORITY shall pay CONTRACTOR its allowable costs
22 incurred to date of that portion terminated. The rights, duties and obligations of the parties shall be
23 construed in accordance with the applicable provisions of CFR Title 48, Chapter 1, Part 49, of the
24 Federal Acquisition Regulation (FAR) and specific subparts and other provisions thereof applicable to
25 termination for convenience. If AUTHORITY sees fit to terminate this Agreement for convenience, said
26 notice shall be given to CONTRACTOR in accordance with the provisions of the FAR referenced above

1 and Article 9, herein. Upon receipt of said notification, CONTRACTOR shall immediately proceed with
2 all obligations, regardless of any delay in determining or adjusting any amounts due under this Article,
3 and agrees to comply with all applicable provisions of the FAR pertaining to termination for
4 convenience.

5 B. AUTHORITY may terminate this Agreement for CONTRACTOR's default if a federal or state
6 proceeding for the relief of debtors is undertaken by or against CONTRACTOR, or if CONTRACTOR
7 makes an assignment for the benefit of creditors, or for cause if CONTRACTOR fails to perform in
8 accordance with the scope of work or breaches any term(s) or violates any provision(s) of this
9 Agreement and does not cure such breach or violation within ten (10) calendar days after written notice
10 thereof by AUTHORITY. CONTRACTOR shall be liable for any and all reasonable costs incurred by
11 AUTHORITY as a result of such default or breach including, but not limited to, reprocurement costs of
12 the same or similar services defaulted by CONTRACTOR under this Agreement. Such termination
13 shall comply with CFR Title 48, Chapter 1, Part 49, of the FAR.

14 **ARTICLE 18. TERMINATION FOR DEFAULT-DAMAGES FOR DELAY-TIME EXTENSIONS**

15 A. If CONTRACTOR refuses or fails to prosecute the work, or any separable part thereof, with
16 such diligence as will ensure its completion within the time specified in this Agreement, or any extension
17 thereof, or fails to complete said work within such time, AUTHORITY may, by written notice to
18 CONTRACTOR, terminate CONTRACTOR's right to proceed with the work or such part of the work as
19 to which there has been delay. In such event, AUTHORITY may take over the work and prosecute the
20 same to completion, by Agreement or otherwise, and may take possession of and utilize in completing
21 the work such materials, appliances and plant as may be on the site of the work and necessary
22 therefore. Whether or not CONTRACTOR's right to proceed with the work is terminated, it and its
23 sureties shall be liable for any damage to AUTHORITY resulting from its refusal or failure to complete
24 the work within the specified time.

25 B. If AUTHORITY so terminates CONTRACTOR's right to proceed, the resulting damage will
26 consist of such liquidated damages as set forth in the Article 37 in this Agreement entitled "Liquidated

1 Damages," until such reasonable time as may be required for final completion of the work together with
2 any increased costs occasioned AUTHORITY in completing the work. If AUTHORITY does not so
3 terminate CONTRACTOR's right to proceed, the resulting damage will consist of such liquidated
4 damages until the work is completed or accepted.

5 C. CONTRACTOR's right to proceed shall not be so terminated nor the CONTRACTOR
6 charged with resulting damage if:

7 1. The delay in completing the work arises from unforeseeable causes beyond the
8 control and without the fault or negligence of CONTRACTOR, including but not restricted to, acts of
9 God, acts of the public enemy, acts or omissions of AUTHORITY, acts of another CONTRACTOR in
10 the performance of an Agreement with AUTHORITY, fires, floods, epidemics, quarantine restrictions,
11 freight embargoes, unusually severe weather, or delays of subcontractors or suppliers arising from
12 unforeseeable causes beyond the control and without the fault or negligence of both CONTRACTOR
13 and such subcontractors or suppliers; and

14 2. CONTRACTOR, within ten (10) calendar days from the beginning of any such delay,
15 notifies AUTHORITY in writing of the causes of delay. AUTHORITY shall ascertain the facts and the
16 extent of the delay and extend the time for completing the work when, in its judgment, the findings of
17 fact justify such an extension, and its findings of fact shall be final and conclusive on the parties, subject
18 only to appeal as provided in the "Disputes" clause of this Agreement. Any such time extensions will
19 not become effective until approved by AUTHORITY's Engineer in writing. AUTHORITY's Engineer will
20 furnish CONTRACTOR a weekly statement showing the number of calendar days charged to the
21 Agreement for the preceding week, the number of calendar days of time extensions being considered
22 or approved, the number of calendar days originally specified for the completion of this Agreement and
23 the number of calendar days remaining to complete this Agreement, and the extended date for
24 completion thereof.

25 3. Should at any time extensions be included by AUTHORITY's Engineer on the
26 Weekly Statement of Contract Calendar Days, a change order covering the sum total of the time

1 extensions will be issued to CONTRACTOR at periodic intervals during the project.

2 D. If, after notice of termination of CONTRACTOR's right to proceed under the provisions of
3 this clause, it is determined for any reason that CONTRACTOR was not in default under the provisions
4 of this clause, or that the delay was excusable under the provisions of this clause, the rights and
5 obligations of the parties shall be the same as if the notice of termination had been issued pursuant to
6 Article 17, entitled "Termination for Convenience."

7 E. The rights and remedies of AUTHORITY provided in this clause are in addition to any other
8 rights and remedies provided by law or under this Agreement.

9 F. As used in paragraph C.1 of this Article, the term "subcontractors or suppliers," means
10 subcontractors or suppliers at any tier.

11 **ARTICLE 19. INDEMNIFICATION**

12 CONTRACTOR shall indemnify, defend and hold harmless AUTHORITY, its officers, directors,
13 employees and agents from and against any and all claims (including attorney's fees and reasonable
14 expenses for litigation or settlement) for any loss or damages, bodily injuries, including death, damage
15 to or loss of use of property caused by the negligent acts, omissions or willful misconduct of
16 CONTRACTOR, its officers, directors, employees, agents, subcontractors or suppliers, in connection
17 with or arising out of the performance of this Agreement.

18 **ARTICLE 20. ASSIGNMENTS AND SUBCONTRACTS**

19 A. Neither this Agreement nor any interest herein nor claim hereunder may be assigned by
20 CONTRACTOR either voluntarily or by operation of law. CONTRACTOR shall not have the right to
21 make any substitutions of any subcontractor listed in Exhibit D-1, entitled "List of Subcontractors,"
22 except in accordance with the provisions of the Subletting and Subcontractors Fair Practices Act, Public
23 Contract Code section 4100 et. seq. AUTHORITY's consent shall not be deemed to relieve
24 CONTRACTOR of its obligation to fully comply with the requirements of this Agreement.

25 B. CONTRACTOR shall be fully responsible to AUTHORITY for all acts and omissions of its
26 own employees, and of subcontractors and their employees. CONTRACTOR shall coordinate the work

performed by subcontractor.

C. AUTHORITY shall have the right, but not the obligation, to review the form of subcontract used by CONTRACTOR for the project and to require modifications thereto to conform to the requirements set forth herein.

ARTICLE 21. ACCESS TO RECORDS AND REPORTS

CONTRACTOR shall provide AUTHORITY, the U.S. Department of Transportation (DOT), the Comptroller General of the United States, or other agents of the AUTHORITY, such access to CONTRACTOR's accounting books, records, payroll documents and facilities of the CONTRACTOR which are directly pertinent to this Agreement for the purposes of examining, auditing and inspecting all accounting books, records, work data, documents and activities related hereto. CONTRACTOR shall maintain such books, records, data and documents in accordance with generally accepted accounting principles and shall clearly identify and make such items readily accessible to such parties during CONTRACTOR's performance hereunder and for a period of four (4) years from the date of final payment by AUTHORITY, except in the event of litigation or settlement of claims arising from the performance of this Agreement, in which case CONTRACTOR agrees to maintain same until AUTHORITY, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto. AUTHORITY's right to audit books and records directly related to this Agreement shall also extend to all first-tier subcontractors. CONTRACTOR shall permit any of the foregoing parties to reproduce documents by any means whatsoever or to copy excerpts and transcriptions as reasonably necessary.

ARTICLE 22. CONFLICT OF INTEREST

CONTRACTOR agrees to avoid organizational conflicts of interest. An organizational conflict of interest means that due to other activities, relationships or contracts, the CONTRACTOR is unable, or potentially unable to render impartial assistance or advice to the Authority; CONTRACTOR's objectivity in performing the work identified in the Scope of Work is or might be otherwise impaired; or the CONTRACTOR has an unfair competitive advantage. CONTRACTOR is obligated to fully disclose to

1 the AUTHORITY in writing Conflict of Interest issues as soon as they are known to the CONTRACTOR.
2 All disclosures must be submitted in writing to AUTHORITY pursuant to the Notice provision herein.
3 This disclosure requirement is for the entire term of this Agreement.

4 **ARTICLE 23. CODE OF CONDUCT**

5 CONTRACTOR agrees to comply with the AUTHORITY's Code of Conduct as it relates to
6 Third-Party contracts which is hereby referenced and by this reference is incorporated herein.
7 CONTRACTOR agrees to include these requirements in all of its subcontracts.

8 **ARTICLE 24. FEDERAL, STATE AND LOCAL LAWS**

9 CONTRACTOR warrants that in the performance of this Agreement it shall comply with all
10 applicable federal, state and local laws, statutes and ordinances and all lawful orders, rules and
11 regulations promulgated thereunder.

12 **ARTICLE 25. EQUAL EMPLOYMENT OPPORTUNITY**

13 In connection with its performance under this Agreement, CONTRACTOR agrees that it shall
14 not discriminate against any employee or applicant for employment because of race, religion, color, sex,
15 age or national origin. CONTRACTOR shall take affirmative action to ensure that applicants are
16 employed, and that employees are treated during their employment, without regard to their race,
17 religion, color, sex, age or national origin. Such actions shall include, but not be limited to, the following:
18 employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or
19 termination; rates of pay or other forms of compensation; and selection for training, including
20 apprenticeship.

21 **ARTICLE 26. FINISHED AND PRELIMINARY DATA**

22 A. All of CONTRACTOR's finished technical data, including but not limited to illustrations,
23 photographs, tapes, software, software design documents, including without limitation source code,
24 binary code, all media, technical documentation and user documentation, photoprints and other graphic
25 information required to be furnished under this Agreement, shall be AUTHORITY's property upon
26 payment and shall be furnished with unlimited rights and, as such, shall be free from proprietary

restriction except as elsewhere authorized in this Agreement. CONTRACTOR further agrees that it shall have no interest or claim to such finished, AUTHORITY-owned, technical data; furthermore, said data is subject to the provisions of the Freedom of Information Act, 5 USC 552.

B. It is expressly understood that any title to preliminary technical data is not passed to AUTHORITY but is retained by CONTRACTOR. Preliminary data includes roughs, visualizations, software design documents, layouts and comprehensives prepared by CONTRACTOR solely for the purpose of demonstrating an idea or message for AUTHORITY's acceptance before approval is given for preparation of finished artwork. Preliminary data title and right thereto shall be made available to AUTHORITY if CONTRACTOR causes AUTHORITY to exercise Article 17, and a price shall be negotiated for all preliminary data.

ARTICLE 27. CIVIL RIGHTS ASSURANCE

During the performance of this Agreement, CONTRACTOR, for itself, its assignees and successors in interest agree as follows:

A. Compliance with Regulations: CONTRACTOR shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this Agreement.

B. Nondiscrimination: CONTRACTOR, with regard to the work performed by it during the Agreement, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The CONTRACTOR shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Agreement covers a program set forth in Appendix B of the Regulations.

C. Solicitations for Subcontracts, Including Procurement of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the CONTRACTOR for work to be

performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the CONTRACTOR of the CONTRACTOR's obligations under this Agreement and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

D. Information and Reports: CONTRACTOR shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by the AUTHORITY to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a CONTRACTOR is in the exclusive possession of another who fails or refuses to furnish this information the CONTRACTOR shall so certify to the AUTHORITY as appropriate, and shall set forth what efforts it has made to obtain the information.

E. Sanctions for Noncompliance: In the event of the CONTRACTOR's noncompliance with nondiscrimination provisions of this Agreement, the AUTHORITY shall impose Agreement sanctions as it may determine to be appropriate, including, but not limited to:

1. Withholding of payments to the CONTRACTOR under the Agreement until the CONTRACTOR complies; and/or
2. Cancellation, termination, or suspension of the Agreement, in whole or in part.

F. Title VI of the Civil Rights Act: In determining the types of property or services to acquire, no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity receiving Federal financial assistance in violation of Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. Sections 2000d *et seq.* and DOT regulations, "Nondiscrimination in Federally Assisted Programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964," 49 CFR Part 21. In addition, FTA Circular 4702.1, "Title VI and Title VI-Dependent Guidelines for FTA Recipients," 05-13-07, provides FTA guidance and instructions for implementing DOT's Title VI regulations.

G. The Americans with Disabilities Act of 1990, as amended (ADA), 42 U.S.C. Sections 12101 *et seq.*, prohibits discrimination against qualified individuals with disabilities in all programs, activities, and services of public entities, as well as imposes specific requirements on public and private providers of transportation.

H. Incorporation of Provisions: CONTRACTOR shall include the provisions of paragraphs (A) through (H) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The CONTRACTOR shall take such action with respect to any subcontract or procurement as the AUTHORITY may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the CONTRACTOR may request the AUTHORITY to enter into such litigation to protect the interests of the AUTHORITY, and, in addition, the CONTRACTOR may request the United States to enter into such litigation to protect the interests of the United States.

ARTICLE 28. DISADVANTAGE BUSINESS ENTERPRISES

Race-Neutral DBE Participation

[INTERNAL NOTE: USE THE FOLLOWING LANGUAGE IF CONTRACTOR HAS PROPOSED TO UTILIZE DBES IN THE PERFORMANCE OF THE CONTRACT.]

At the time of contract execution, the Contractor committed to utilize DBE(s) in the performance of this DOT-assisted contract, and further agrees to ensure that DBE subcontractors listed on the ***“DBE Race-Neutral Participation Listing” (Exhibit D-2)*** perform work and/or supply materials in accordance with original commitments, unless otherwise directed and/or approved by the Authority prior to the Contractor effectuating any changes to its race-neutral DBE participation commitment(s) (*Refer to Subsection H: “Performance of DBE Subcontractors”*).

[INTERNAL NOTE: USE THE FOLLOWING LANGUAGE IF CONTRACTOR HAS NOT PROPOSED TO UTILIZE DBES IN THE PERFORMANCE OF THE CONTRACT.]

At the time of contract execution, the Contractor did not commit to utilize DBE(s) in the performance of this DOT-assisted contract. However, in the event DBE(s) are utilized in the performance of this contract, the Contractor shall comply with reporting requirements delineated under *Section E: “Race-Neutral DBE Submission and Ongoing Reporting Requirements (Post-Award)”*.

1 A. In accordance with federal financial assistance agreements with the U.S. Department of
2 Transportation (U.S. DOT), the Orange County Transportation Authority (Authority) has adopted a
3 Disadvantaged Business Enterprise (DBE) Policy and Program, in conformance with Title 49 CFR Part
4 26, "Participation by Disadvantaged Business Enterprises in Department of Transportation Programs".
5 The project is subject to these stipulated regulations. In order to ensure that the Authority achieves its
6 overall DBE Program goals and objectives, the Authority encourages the participation of DBEs as
7 defined in 49 CFR 26 in the performance of contracts financed in whole or in part with U.S. DOT funds.
8 Pursuant to the intent of these Regulations, it is also the policy of the Authority to:

9 1. Fulfill the spirit and intent of the Federal DBE Program regulations published under U.S.
10 DOT Title 49 CFR, Part 26, by ensuring that DBEs have equitable access to participate in all of
11 Authority's DOT-assisted contracting opportunities.

12 2. Ensure that DBEs can fairly compete for and perform on all DOT-assisted contracts and
13 subcontracts.

14 3. Ensure non-discrimination in the award and administration of AUTHORITY's DOT-
15 assisted contracts.

16 4. Create a level playing field on which DBEs can compete fairly for DOT-assisted contracts.

17 5. Ensure that only firms that fully meet 49 CFR, Part 26 eligibility standards are permitted to
18 participate as DBEs.

19 6. Help remove barriers to the participation of DBEs in DOT-assisted contracts.

20 7. Assist in the development of firms that can compete successfully in the marketplace outside
21 the DBE Program.

22 CONTRACTOR shall not discriminate on the basis of race, color, national origin, or sex in
23 the award and performance of subcontracts. Any terms used in this section, that is defined in 49 CFR
24 Part 26, or elsewhere in the Regulations, shall have the meaning set forth in the Regulations. In the
25 event of any conflicts or inconsistencies between the Regulations and the Authority's DBE Program
26 with respect to DOT-assisted contracts, the Regulations shall prevail.

B. AUTHORITY's New Race-Neutral DBE Policy Implementation Directives: Pursuant to recently released Race-Neutral DBE policy directives issued by the U.S. DOT in response to the Ninth Circuit U.S. Court of Appeals decision in *Western States Paving Co. v. Washington State Department of Transportation*, the Authority has implemented a wholly Race-Neutral DBE Program. A Race-Neutral DBE Program is one that, while benefiting DBEs, is not solely focused on DBE firms. Therefore, under a Race-Neutral DBE Program, AUTHORITY does not establish numeric race-conscious DBE participation goals on its DOT-assisted contracts. CONTRACTOR shall not be required to achieve a specific level of DBE participation as a condition of contract compliance in the performance of this DOT-assisted contract. However, CONTRACTOR shall adhere to race-neutral DBE participation commitment(s) made at the time of contract award.

C. Definitions: The following definitions apply to the terms as used in these provisions:

1. "Disadvantaged Business Enterprise (DBE)" means a small business concern: (a) which is at least 51 percent owned by one or more socially and economically disadvantaged individuals or, in the case of any publicly-owned business, at least 51 percent of the stock of which is owned by one or more socially and economically disadvantaged individuals; and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.

2. "Small Business Concern" means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto, except that a small business concern shall not include any concern or group of concerns controlled by the same socially and economically disadvantaged individual or individuals which has annual average gross receipts in excess of \$19.57 million over the previous three fiscal years.

3. "Socially and Economically Disadvantaged Individuals" means those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who are Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, or Asian-Indian Americans, women and any other minorities or individuals found to be disadvantaged by the Small Business Administration

1 pursuant to Section 8(a) of the Small Business Act, or by the Authority pursuant to 49 CFR part 26.65.

2 Members of the following groups are presumed to be socially and economically disadvantaged:

3 a. "Black Americans," which includes persons having origins in any of the Black racial
4 groups of Africa;

5 b. "Hispanic Americans," which includes persons of Mexican, Puerto Rican, Cuban,
6 Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;

7 c. "Native Americans," which includes persons who are American Indians, Eskimos,
8 Aleuts, or Native Hawaiians;

9 d. "Asian-Pacific Americans," which includes persons whose origins are from Japan,
10 China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust
11 Territories of the Pacific, and the Northern Marianas;

12 e. "Asian-Indian Americans," which includes persons whose origins are from India,
13 Pakistan, and Bangladesh; and

14 f. Women, regardless of ethnicity or race.

15 4. "Owned and Controlled" means a business: (a) which is at least 51 percent owned by
16 one or more "Socially and Economically Disadvantaged Individuals" or, in the case of a publicly-owned
17 business, at least 51 percent of the stock of which is owned by one or more "Socially and Economically
18 Disadvantaged Individuals"; and (b) whose management and daily business operations are controlled
19 by one or more such individuals.

20 5. "Manufacturer" means a firm that operates or maintains a factory or establishment that
21 produces on the premises the materials or supplies obtained by the contractor.

22 6. "Regular Dealer" means a firm that owns, operates or maintains a store, warehouse, or
23 other establishment in which the materials or supplies required for the performance of the contract are
24 bought, kept in stock, and regularly sold to the public in the usual course of business. The firm must
25 engage in, as its principal business, and in its own name, the purchase and sale of the product in
26

1 question. A regular dealer in such bulk items as steel, cement, gravel, stone and petroleum products
2 need not keep such products in stock if it owns or operates distribution equipment.

3 7. "Other Socially and Economically Disadvantaged Individuals" mean those individuals
4 who are citizens of the United States (or lawfully admitted permanent residents) and who, on a case-by-
5 case basis, are determined by Small Business Administration or AUTHORITY to meet the social and
6 economic disadvantage criteria described below.

7 a. Social Disadvantage: The individual's social disadvantage must stem from his/her
8 color, national origin, gender, physical handicap, long-term residence in an environment isolated from
9 the mainstream of American society, or other similar cause beyond the individual's control.

10 i. The individual must demonstrate that he/she has personally suffered social
11 disadvantage.

12 ii. The individual's social disadvantage must be rooted in treatment, which he/she
13 has experienced in American society, not in other countries.

14 iii The individual's social disadvantage must be chronic, longstanding and
15 substantial, not fleeting or insignificant.

16 iv. The individual's social disadvantage must have negatively affected his/her
17 entry into and/or advancement in the business world.

18 v. A determination of social disadvantage must be made before proceeding to
19 make a determination of economic disadvantage.

20 b. Economic Disadvantage

21 i. The individual's ability to compete in the free enterprise system has been
22 impaired due to diminished capital and credit opportunities, as compared to others in the same line of
23 business and competitive market area that are not socially disadvantaged.

24 ii. The following criteria will be considered when determining the degree of
25 diminished credit and capital opportunities of a person claiming social and economic disadvantage:

26 With respect to the individual:

- availability of financing
- bonding capability
- availability of outside equity capital
- available markets

With respect to the individual and the business concern:

- personal and business assets
- personal and business net worth
- personal and business income and profits

D. Race-Neutral DBE Submission and Ongoing Reporting Requirements (Post-Award)

Contractor shall complete and submit the following DBE exhibits (forms) at the times specified: "Monthly Race-Neutral DBE Subcontractors Paid Report Summary and Payment Verification" (Form 103). If CONTRACTOR is a DBE firm and/or has proposed to utilize DBE firms, CONTRACTOR will be required to complete and submit a Form 103 to AUTHORITY by the 10th of each month until completion of the contract to facilitate reporting of race-neutral DBE participation, following the first month of contract activity. CONTRACTOR shall report the total dollar value paid to DBEs for the applicable reporting period. CONTRACTOR shall also report the DBE's scope of work and the total subcontract value of commitment for each DBE reported. CONTRACTOR is advised not to report the participation of DBEs toward CONTRACTOR's race-neutral DBE attainment until the amount being counted has been paid to the DBE. Upon completion of the contract, CONTRACTOR will be required to prepare and submit to the Authority a "Race-Neutral DBE Subcontractors Paid Report Summary and Payment Verification" (Form 103) clearly marked "Final" to facilitate reporting and capturing actual DBE race-neutral attainments. CONTRACTOR shall complete and submit a Final Form 103 whether or not DBEs were utilized in the performance of the contract.

E. DBE Eligibility and Commercially Useful Function Standards: A DBE must be a small business concern as defined pursuant to Section 3 of the U.S. Small Business Act and relevant regulations promulgated pursuant thereto. A DBE may participate as a prime contractor, subcontractor,

joint venture partner with a prime or subcontractor, vendor of material or supplies, or as a trucking company. A DBE joint venture partner must be responsible for specific contract items of work, or clearly defined portions thereof. Responsibility means actually performing, managing and supervising the work with its own forces. The DBE joint venture partner must share in the capital contribution, control, management, risks and profits of the joint venture commensurate with its ownership interest. A DBE must perform a commercially useful function in accordance with 49 CFR 26.55 (i.e., must be responsible for the execution of a distinct element of the work and must carry out its responsibility by actually performing, managing and supervising the work). A DBE should perform at least thirty percent (30%) of the total cost of its contract with its own workforce to presume it is performing a commercially useful function. DBEs must be certified by the California Unified Certification Program (CUCP). Listings of DBEs certified by the CUCP are available from the following sources: The CUCP web site, which can be accessed at <http://www.californiaucp.com>; or the Caltrans "Civil Rights" web site at <http://www.dot.ca.gov/hq/bep>. The CUCP DBE Directory, which may be obtained from the Department of Transportation, Material Operations Branch, Publication Distribution Unit, 1900 Royal Oaks Drive, Sacramento, California 95815; Telephone: (916) 445-3520.

F. DBE Crediting Provisions: When a DBE is proposed to participate in the contract, either as a prime Contractor or Subcontractor, only the value of the work proposed to be performed by the DBE with its own forces may be counted towards race-neutral DBE participation. If CONTRACTOR is a DBE joint venture participant, only the DBE proportionate interest in the joint venture shall be counted. If a DBE intends to subcontract part of the work of its subcontract to a lower tier Subcontractor, the value of the subcontracted work may be counted toward race-neutral DBE participation only if the DBE Subcontractor is a certified DBE and actually performs the work with their own forces. Services subcontracted to a non-DBE firm may not be credited toward the prime Contractor's race-neutral DBE attainment. CONTRACTOR is to calculate and credit participation by eligible DBE vendors of equipment, materials, and suppliers toward race-neutral DBE attainment, as follows: Sixty percent (60%) of expenditure(s) for equipment, materials and supplies required under the Contract, obtained

from a regular dealer; or One hundred percent (100%) of expenditure(s) for equipment, materials and supplies required under the Contract, obtained from a DBE manufacturer. The following types of fees or commissions paid to DBE Subcontractors, Brokers, and Packagers may be credited toward the prime Contractor's race-neutral DBE attainment, provided that the fee or commission is reasonable, and not excessive, as compared with fees or commissions customarily allowed for similar work, including: Fees and commissions charged for providing bona fide professional or technical services, or procurement of essential personnel, facilities, equipment, materials, or supplies required in the performance of the Contract; Fees charged for delivery of material and supplies (excluding the cost of materials or supplies themselves) when the licensed hauler, trucker, or delivery service is not also the manufacturer of, or a regular dealer in, the material and supplies; Fees and commissions charged for providing any insurance specifically required in the performance of the Contract. CONTRACTOR may count the participation of DBE trucking companies toward race-neutral DBE attainment, as follows: The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract. The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the Contract. The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs. The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract. The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement. The DBE does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by a DBE. For purposes of this paragraph, a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease

gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE. If CONTRACTOR listed a non-certified DBE 1st tier subcontractor to perform work on this contract, and the non-certified DBE subcontractor subcontracts a part of its work or purchases materials and/or supplies from a lower tier DBE certified Subcontractor or Vendor, the value of work performed by the lower tier DBE firm's own forces can be counted toward race-neutral DBE participation on the contract.

G. Performance of DBE Subcontractors: DBE subcontractors listed by CONTRACTOR in its "DBE Race-Neutral Participation Listing" (Exhibit D-2) submitted at the time of bid shall perform the work and supply the materials for which they are listed, unless the Contractor has received prior written authorization from the Authority to perform the work with other forces or to obtain the materials from other sources. CONTRACTOR shall provide written notification to the AUTHORITY in a timely manner of any changes to its anticipated DBE participation. This notice should be provided prior to the commencement of that portion of the work.

H. Additional DBE Subcontractors: In the event CONTRACTOR identifies additional DBE subcontractors or suppliers not previously identified by CONTRACTOR for race-neutral DBE participation under the contract, CONTRACTOR shall notify the Authority by submitting the "Request for Additional DBE Firm" to enable CONTRACTOR to capture all race-neutral DBE participation. CONTRACTOR shall also submit, for each DBE identified after contract execution, a written confirmation from the DBE acknowledging that it is participating in the contract for a specified value, including the corresponding scope of work (a subcontract agreement can serve in lieu of the written confirmation).

I. DBE Certification Status: If a listed DBE subcontractor is decertified during the life of the project, the decertified subcontractor shall notify CONTRACTOR in writing with the date of decertification. If a non-DBE subcontractor becomes a certified DBE during the life of the project,

1 the DBE subcontractor shall notify CONTRACTOR in writing with the date of certification.
2 CONTRACTOR shall furnish the written documentation to AUTHORITY in a timely manner.

3 J. CONTRACTOR's Assurance Clause Regarding Non-Discrimination: In compliance
4 with State and Federal anti-discrimination laws, CONTRACTOR shall affirm that they will not
5 exclude or discriminate on the basis of race, color, national origin, or sex in consideration of contract
6 award opportunities. Further, CONTRACTOR shall affirm that they will consider, and utilize
7 subcontractors and vendors, in a manner consistent with non-discrimination objectives.

8 **ARTICLE 29. PRIVACY ACT**

9 CONTRACTOR shall comply with, and assures the compliance of its employees with, the
10 information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. §552a.
11 Among other things, CONTRACTOR agrees to obtain the express consent of the Federal Government
12 before CONTRACTOR or its employees operate a system of records on behalf of the Federal
13 Government. CONTRACTOR understands the requirements of the Privacy Act, including the civil and
14 criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply
15 with the terms of the Privacy Act may result in termination of the underlying Agreement.

16 **ARTICLE 30. OWNERSHIP OF REPORTS AND DOCUMENTS**

17 A. The originals of all letters, documents, reports and other products and data produced
18 under this Agreement shall be delivered to, and become the property of AUTHORITY. Copies may be
19 made for CONTRACTOR'S records but shall not be furnished to others without written authorization
20 from AUTHORITY. Such deliverables shall be deemed works made for hire and all rights in copyright
21 therein shall be retained by AUTHORITY.

22 B. All ideas, memoranda, specifications, plans, manufacturing, procedures, drawings,
23 descriptions, and all other written information submitted to CONTRACTOR in connection with the
24 performance of this Agreement shall not, without prior written approval of AUTHORITY, be used for any
25 purposes other than the performance under this Agreement, nor be disclosed to an entity not connected
26 with the performance of the project. CONTRACTOR shall comply with AUTHORITY's policies

1 regarding such material. Nothing furnished to CONTRACTOR, which is otherwise known to
2 CONTRACTOR or is or becomes generally known to the related industry shall be deemed confidential.
3 CONTRACTOR shall not use AUTHORITY's name, photographs of the project, or any other publicity
4 pertaining to the project in any professional publication, magazine, trade paper, newspaper, seminar or
5 other medium without the express written consent of AUTHORITY.

6 C. No copies, sketches, computer graphics or graphs, including graphic artwork, are to be
7 released by CONTRACTOR to any other person or agency except after prior written approval by
8 AUTHORITY, except as necessary for the performance of services under this Agreement. All press
9 releases, including graphic display information to be published in newspapers, magazines, etc., are to
10 be handled only by AUTHORITY unless otherwise agreed to by CONTRACTOR and AUTHORITY.

11 **ARTICLE 31. INCORPORATION OF FTA TERMS**

12 All contractual provisions required by DOT, whether or not expressly set forth in this document,
13 as set forth in FTA Circular 4220.1F, as amended, are hereby incorporated by reference. Anything to
14 the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of
15 a conflict with other provisions contained in this Agreement. CONTRACTOR shall not perform any act,
16 fail to perform any act, or refuse to comply with any AUTHORITY requests, which would cause
17 AUTHORITY to be in violation of the FTA terms and conditions.

18 **ARTICLE 32. FEDERAL CHANGES**

19 CONTRACTOR shall at all times comply with all applicable FTA regulations, policies,
20 procedures and directives, including without limitation those listed directly or by reference in the
21 agreement between the AUTHORITY and FTA , as they may be amended or promulgated from time to
22 time during this Agreement. CONTRACTOR's failure to comply shall constitute a material breach of
23 contract.

24 **ARTICLE 33. NO GOVERNMENT OBLIGATION TO THIRD PARTIES**

25 AUTHORITY and CONTRACTOR acknowledge and agree that, notwithstanding any
26 concurrence by the Federal Government in or approval of the solicitation or award of the underlying

Agreement, absent the express written consent by the Federal Government, the Federal Government is not a party to this Agreement and shall not be subject to any obligations or liabilities to the AUTHORITY, CONTRACTOR, or any other party (whether or not a party to this Agreement) pertaining to any matter resulting from the underlying Agreement. CONTRACTOR agrees to include this requirement in all of its subcontracts.

ARTICLE 34. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND ACTS

A. CONTRACTOR acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. §§3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this project. By execution of this Agreement, CONTRACTOR certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying Agreement of the FTA assisted project for which this Agreement's work is being performed. In addition to other penalties that may be applicable, CONTRACTOR acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose penalties of the Program Fraud Civil Remedies Act of 1986 on the CONTRACTOR to the extent the Federal Government deems appropriate.

B. CONTRACTOR also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under an agreement connected with a project that is financed in whole or part with Federal assistance awarded by FTA under the authority of 49 U.S.C. §5307 et seq., the Government reserves the right to impose the penalties of 18 U.S.C. §1001 and 49 U.S.C. §5307(n) (1) et seq. on the CONTRACTOR, to the extent the Federal Government deems appropriate. CONTRACTOR agrees to include this requirement in all of its subcontracts.

ARTICLE 35. CONVICT LABOR

In connection with the performance of work under this Agreement, CONTRACTOR agrees not

to employ any person undergoing sentence of imprisonment at hard labor. This does not include convicts who are on parole or probation.

ARTICLE 36. NOTICE OF LABOR DISPUTE

Whenever CONTRACTOR has knowledge that any actual or potential labor dispute may delay its performance under this Agreement, CONTRACTOR shall immediately notify and submit all relevant information to AUTHORITY. CONTRACTOR shall insert the substance of this entire clause in any subcontract hereunder as to which a labor dispute may delay performance under this Agreement. However, any subcontractor need give notice and information only to its next higher-tier subcontractor.

ARTICLE 37. LIQUIDATED DAMAGES

If CONTRACTOR fails to complete the work within the time specified in Article 4 of this Agreement, or any AUTHORITY authorized extension thereof, the actual damage to AUTHORITY for the delay will be difficult or impossible to determine. Therefore, in lieu of actual damages, CONTRACTOR shall pay to AUTHORITY as fixed, agreed-to liquidated damages for each calendar day of delay the sum of Five Hundred Dollars (\$500.00). Alternatively, AUTHORITY may terminate this Agreement in whole or in part as provided in Article 17 of this Agreement, and in that event, CONTRACTOR shall be liable, in addition to the excess costs provided in Article 17 of this Agreement, for such liquidated damages accruing until such time as AUTHORITY may reasonably obtain delivery or performance of similar supplies or services from a different source. CONTRACTOR shall not be charged with liquidated damages when the delay is determined to be excusable in accordance with Article 59 hereunder. AUTHORITY shall ascertain the facts and extent of the delay and shall extend the time for performance of the Agreement when in its judgment, the findings of fact justify an extension.

ARTICLE 38. WARRANTY

A. In addition to any other warranties set forth in this Agreement, whether expressed or implied, CONTRACTOR warrants that (1) all work performed under this Agreement conforms to the requirements herein and is free of any defect of equipment, material or design furnished, or workmanship performed by CONTRACTOR or any of its subcontractors or suppliers at any tier; (2) The

project shall fit for use for the intended function; and (3) all work shall meet all of the requirements of this Agreement. Such warranty shall continue for a period of one (1) year from AUTHORITY's acceptance as shown in Article 40 hereunder. Under this warranty, CONTRACTOR shall remedy at its own expense any such failure to conform or correct any such defect. In addition, CONTRACTOR shall remedy at its own expense any damage to AUTHORITY and/or DISTRICT owned or controlled real or personal property, when that damage is the result of CONTRACTOR's failure to conform to Agreement requirements or any such defect of equipment, material, workmanship or design. CONTRACTOR shall also restore any work damaged in fulfilling the terms of this clause. CONTRACTOR's warranty with respect to work repaired or replaced hereunder will run for one year from the date of such repair or replacement.

B. AUTHORITY shall notify CONTRACTOR in writing within a reasonable time after the discovery of any failure, defect or damage. CONTRACTOR has seven days from receipt of notice from AUTHORITY to respond to AUTHORITY's notification and indicate how CONTRACTOR will remedy the failure, defect, or damage. If AUTHORITY is not satisfied with the remedy proposed by CONTRACTOR, CONTRACTOR and AUTHORITY shall meet and mutually agree when and how CONTRACTOR shall remedy such violation. In the case of an emergency requiring immediate corrective action, CONTRACTOR shall implement such action, as it deems necessary and shall notify AUTHORITY in writing of the urgency of a decision and action taken. CONTRACTOR and AUTHORITY shall, then promptly meet in order to agree on a remedy. If CONTRACTOR and AUTHORITY fail to agree on the remedy within a five-day period, AUTHORITY, after notice to CONTRACTOR, shall have the right to perform or have performed by third parties the necessary remedy, and the costs thereof shall be borne by CONTRACTOR.

C. Should CONTRACTOR fail to remedy any failure, defect or damage described in paragraph A above within a reasonable time after receipt of notice thereof, AUTHORITY shall have the right to replace, repair or otherwise remedy such failure, defect or damage at CONTRACTOR's expense and CONTRACTOR shall be liable for all damages, including, but not limited to, actual or consequential

1 damages and cost of any suit to enforce AUTHORITY's rights hereunder, including reasonable
2 attorney's fees.

3 D. In addition to the other rights and remedies provided by this clause, all subcontractors,
4 manufacturers, and suppliers' warranties, expressed or implied, respecting any work and materials
5 furnished hereunder, shall, at the direction of AUTHORITY, be enforced by CONTRACTOR for the
6 benefit of AUTHORITY. In such case if CONTRACTOR's warranty under paragraph A above has
7 expired, any suit directed by AUTHORITY shall be at the expense of AUTHORITY. CONTRACTOR
8 shall obtain any warranties, which the subcontractors, manufacturers or suppliers would give in normal
9 commercial practice.

10 E. If directed by AUTHORITY, CONTRACTOR shall require any such warranties to be
11 executed in writing to AUTHORITY.

12 F. Notwithstanding any other provision of this clause, unless such a defect is caused by the
13 negligence of CONTRACTOR or its subcontractors or suppliers at any tier, CONTRACTOR shall not be
14 liable for the repair of any defects of material or design furnished by AUTHORITY nor for the repair of
15 any damage which results from any such defect in AUTHORITY furnished material or design.

16 G. The warranty specified herein shall not limit AUTHORITY's rights under the Inspection and
17 Acceptance clause of this Agreement with respect to latent defects, gross mistakes or fraud.

18 H. Defects in design or manufacture of equipment specified by AUTHORITY on a "brand name
19 and model" basis shall not be included in this warranty. CONTRACTOR shall require any
20 subcontractors, manufacturers or suppliers thereof to execute their warranties in writing directly to
21 AUTHORITY.

22 I. Any disagreement between AUTHORITY and CONTRACTOR relating to this section shall
23 be subject to dispute resolution in accordance with Article 16.

24 **ARTICLE 39. GENERAL WAGE RATES**

25 A. All laborers and mechanics employed by CONTRACTOR or subcontractor at any tier
26 working on the construction site, will be paid unconditionally and not less often than once a week and

without any subsequent deduction or rebate on any account (except such payroll deductions as are permitted or required by federal, state or local law, regulation or ordinance), the full amounts due at the time of payment computed at wage rates and per diem rate not less than the aggregate of the highest of the two basic hourly rates and rates of payments, contributions or costs for any fringe benefits contained in the current general prevailing wage rate(s) and per diem rate(s), established by the Director of the Department of Industrial Relations of the state of California, (as set forth in the Labor Code of the state of California, commencing at Section 1770 et. seq.), or as established by the Secretary of Labor (as set forth in Davis-Bacon Act, 40 U.S.C. 267a, et. seq.), regardless of any contractual relationship which may be alleged to exist between CONTRACTOR or subcontractor and their respective mechanics, laborers, journeypersons, workpersons, craftspersons or apprentices. Copies of the current General Prevailing Wage Determinations and Per Diem Rates are on file at AUTHORITY's offices and will be made available to CONTRACTOR upon request. CONTRACTOR shall post a copy thereof at each job site at which work hereunder is performed.

B. In addition to the foregoing, CONTRACTOR agrees to comply with all other provisions of the Labor Code of the state of California, the Federal Contract Work Hours and Safety Standards Act, (40 U.S.C. 327-333), and the Copeland regulations of the Secretary of Labor (29 CFR 3), which are incorporated herein by reference, pertaining to workers performing work hereunder including, but not limited to, those provisions for work hours, payroll records and apprenticeship employment and regulation program. CONTRACTOR agrees to insert or cause to be inserted the preceding clause in all subcontracts, which provide for workers to perform work hereunder regardless of the subcontractor tier.

ARTICLE 40. INSPECTION AND ACCEPTANCE

A. All work (which term includes but is not restricted to materials, equipment, workmanship, and manufacture and fabrication of components) shall be subject to inspection and test by AUTHORITY at all reasonable times and at all places prior to acceptance. Any such inspection and test is for the sole benefit of AUTHORITY and shall not relieve CONTRACTOR of the responsibility of providing quality control measures to assure that the work strictly complies with requirements of this Agreement.

1 No inspection or test by AUTHORITY or its representative shall be construed as constituting or implying
2 acceptance. Inspection or test shall not relieve CONTRACTOR of responsibility for damage to or loss
3 of the material prior to acceptance, nor in any way affect the continuing rights of AUTHORITY after
4 acceptance of the completed work under the terms of paragraph F of this Article, except as herein
5 above provided.

6 B. CONTRACTOR shall, without charge, replace any material or correct any workmanship
7 found by AUTHORITY not to conform to the requirements of this Agreement, unless in the public
8 interest AUTHORITY consents to accept such material or workmanship with an appropriate adjustment
9 in the price of this Agreement. CONTRACTOR shall promptly segregate and remove rejected material
10 from the premises.

11 C. CONTRACTOR shall furnish promptly, without additional charge, all facilities, labor,
12 equipment and material reasonably needed for performing such safe and convenient inspection and
13 test as may be required by AUTHORITY. All inspections and tests by AUTHORITY shall be performed
14 in such manner as to not unnecessarily delay the work. AUTHORITY reserves the right to charge to
15 CONTRACTOR any additional cost of inspection or test when material or workmanship is not ready at
16 the time specified by CONTRACTOR for inspection or test or when reinspection or retest is
17 necessitated by prior rejection.

18 D. If CONTRACTOR does not promptly replace rejected material or correct rejected
19 workmanship, AUTHORITY (1) may, by Agreement or otherwise, replace such material or correct such
20 workmanship and charge the cost thereof to CONTRACTOR, or (2) may terminate CONTRACTOR's
21 right to proceed in accordance with the clause of this Agreement entitled "Termination for Default."

22 E. Should it be considered necessary or advisable by AUTHORITY at any time before
23 acceptance of the entire work to make an examination of work already completed, by removing or
24 tearing out same, CONTRACTOR shall, on request, promptly furnish all necessary facilities, labor and
25 material. If such work is found to be defective or nonconforming in any material respect, due to the fault
26 of CONTRACTOR or its subcontractors, CONTRACTOR shall pay all costs of such examination and of

1 satisfactory reconstruction. If, however, such work is found to meet the requirements of this
2 Agreement, an equitable adjustment shall be made in the Agreement price to compensate
3 CONTRACTOR for the additional services involved in such examination and reconstruction and, if
4 completion of the work has been delayed thereby, it shall in addition, be granted a suitable extension of
5 time.

6 F. Unless otherwise provided in this Agreement, acceptance by AUTHORITY shall be made as
7 promptly as practicable after completion and inspection of all work required by this Agreement, or that
8 portion of the work that AUTHORITY determines can be accepted separately. Acceptance shall be final
9 and conclusive except as regards latent defects, fraud, or such gross mistakes as may amount to fraud
10 or as regards AUTHORITY's rights under the warranty provisions set forth herein.

11 **ARTICLE 41. MATERIAL AND WORKMANSHIP**

12 A. Unless otherwise specifically provided in this Agreement, all equipment, material, and
13 articles incorporated in the work covered by this Agreement are to be new and of the most suitable
14 grade for the purpose intended. Unless otherwise specifically provided in this Agreement, reference to
15 any equipment, material, article or patented process, by trade name, make or catalog number, shall be
16 regarded as establishing a standard of quality and shall not be construed as limiting competition, and
17 CONTRACTOR may, at its option, use any equipment, material, article or process which, in the
18 judgment of AUTHORITY, is equal to that named. CONTRACTOR shall furnish to AUTHORITY for its
19 approval the name of the manufacturer, the model number and other identifying data and information
20 respecting the performance, capacity, nature and rating of the machinery and mechanical and other
21 equipment, which CONTRACTOR contemplates incorporating in the work. When required by this
22 Agreement or when called for by AUTHORITY, CONTRACTOR shall furnish AUTHORITY, for
23 approval, full information concerning the material or articles, which it contemplates incorporating in the
24 work. When so directed, samples shall be submitted for approval at CONTRACTOR's expense, with all
25 shipping charges prepaid. Machinery, equipment, material and articles installed or used without
26 required approval shall be at the risk of subsequent rejection.

B. All work under this Agreement shall be performed in a skillful and workmanlike manner. Notwithstanding the provisions of Article 3 hereof, AUTHORITY may, in writing, require CONTRACTOR to remove from the work any employee AUTHORITY deems incompetent, careless or otherwise objectionable.

ARTICLE 42. NON-CONFORMING WORK

A. Nonconforming work rejected by AUTHORITY shall be removed and replaced so as to conform to the requirements of this Agreement, at CONTRACTOR's cost and without a time extension; and CONTRACTOR shall promptly take all action necessary to prevent similar deficiencies from occurring in the future. The fact that AUTHORITY may not have discovered the nonconforming Work shall not constitute an acceptance of such nonconforming Work. If CONTRACTOR fails to correct any nonconforming work within ten days of receipt of notice from AUTHORITY requesting correction, or if such nonconforming work cannot be corrected within ten days, and CONTRACTOR fails to (1) provide to AUTHORITY a schedule for correcting any such nonconforming work acceptable to AUTHORITY within such ten-day period, (2) commence such corrective work within such ten-day period and (3) thereafter diligently prosecute such correction in accordance with such approved schedule to completion, then AUTHORITY may cause the nonconforming work to be remedied or removed and replaced and may deduct the cost of doing so from any moneys due or to become due CONTRACTOR and/or obtain reimbursement from CONTRACTOR for such cost.

B. If AUTHORITY agrees to accept any Nonconforming Work without requiring it to be fully corrected, AUTHORITY shall be entitled to reimbursement of a portion of the Contract Price in an amount equal to the greater of the amount deemed appropriate by AUTHORITY to provide compensation for future maintenance and/or other costs relating to the Nonconforming Work, or 100% of CONTRACTOR's cost savings associated with its failure to perform the Work in accordance with Contract requirements. Such reimbursement shall be payable to AUTHORITY within ten days after CONTRACTOR's receipt of an invoice thereof. CONTRACTOR acknowledges and agrees that AUTHORITY shall have sole discretion regarding acceptance or rejection of Nonconforming Work and

that AUTHORITY shall have sole discretion with regard to the amount payable in connection therewith.

ARTICLE 43. CONTRACTOR INSPECTION SYSTEM

CONTRACTOR shall maintain an adequate inspection system and perform such inspections as will assure that the work performed under this Agreement conforms to the specified requirements, and shall maintain and make available to AUTHORITY adequate records of such inspections.

ARTICLE 44. SUPERINTENDENCE BY CONTRACTOR

CONTRACTOR, at all times during performance and until the work is completed and accepted, shall give its personal superintendence to the work or have on the work a competent superintendent, satisfactory to AUTHORITY and with authority to act for and on behalf of CONTRACTOR.

ARTICLE 45. OTHER CONTRACTS

AUTHORITY may undertake or award other agreements for additional work, and CONTRACTOR shall fully cooperate with such other CONTRACTOR's and AUTHORITY's employees and carefully fit its own work to such additional work as may be directed by AUTHORITY. CONTRACTOR shall not commit or permit any act, which will interfere with the performance of work by any other CONTRACTOR or by AUTHORITY.

ARTICLE 46. INSPECTION OF SITE

CONTRACTOR acknowledges that it has investigated and satisfied itself as to the conditions affecting the work including, but not restricted to, those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power and roads and uncertainties of weather, river stages, tides or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the work. CONTRACTOR further acknowledges that it has satisfied itself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by AUTHORITY, as well as from information presented by the drawings and specifications made a part of this Agreement. Any failure by CONTRACTOR to acquaint itself with the available information

will not relieve it from responsibility for the difficulty or cost of successfully performing the work. AUTHORITY assumes no responsibility for any conclusions or interpretations made by CONTRACTOR on the basis of the information made available by AUTHORITY.

ARTICLE 47. DIFFERING SITE CONDITIONS

A. CONTRACTOR shall immediately, and before such conditions are disturbed, notify AUTHORITY in writing of: (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this Agreement, or (2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Agreement. AUTHORITY will investigate the conditions within three business days of receipt of notification, and if it finds that such conditions do materially so differ and cause an increase or decrease in CONTRACTOR's cost of, or the time required for, performance of any part of the work under this Agreement, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the Agreement modified in writing accordingly.

B. No claim of CONTRACTOR under this Article shall be allowed unless CONTRACTOR has given the written notice required above; no claim by CONTRACTOR for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Agreement.

ARTICLE 48. SEISMIC SAFETY REQUIREMENTS

CONTRACTOR agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in DOT's Seismic Safety Regulations 49 CFR Part 41 and will certify to compliance to the extent required by the regulation. CONTRACTOR shall ensure that all work performed under this Agreement including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project.

ARTICLE 49. RECYCLED PRODUCTS

CONTRACTOR shall comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the

regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in subpart B of 40 CFR Part 247. CONTRACTOR agrees to include this requirement in all of its subcontracts.

ARTICLE 50. ENERGY CONSERVATION REQUIREMENTS

CONTRACTOR shall comply with mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy Conservation Act.

ARTICLE 51. CLEAN AIR

CONTRACTOR shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. CONTRACTOR shall report each violation to AUTHORITY, who will in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. CONTRACTOR agrees to include this requirement in each subcontract exceeding \$100,000.

ARTICLE 52. CLEAN WATER REQUIREMENTS

CONTRACTOR shall comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. CONTRACTOR shall report each violation to AUTHORITY and understands and agrees that the AUTHORITY who will in turn, report each violation as required to assure notification to FTA and appropriate EPA Regional Office. CONTRACTOR agrees to include this requirement in each subcontract exceeding \$100,000.

ARTICLE 53. TRANSPORTATION OF EQUIPMENT, MATERIALS OR COMMODITIES BY OCEAN VESSEL

A. CONTRACTOR shall utilize privately owned United States-flag commercial vessels to ship at least 50% of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners and tankers) involved, whenever shipping any equipment, materials or commodities pursuant to this section, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial

vessels.

B. CONTRACTOR shall furnish within twenty (20) working days following the date of loading for shipments originating within the United States, or within thirty (30) working days following the date of loading for shipping originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of lading in English for each shipment of cargo described in paragraph A of this Article to AUTHORITY (through the prime CONTRACTOR in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590, marked with appropriate identification of the project.

ARTICLE 54. OPERATIONS AND STORAGE AREAS

A. All operations of CONTRACTOR (including storage of materials and equipment) upon AUTHORITY and/or DISTRICT-owned premises shall be confined to areas authorized or approved by AUTHORITY. CONTRACTOR shall hold AUTHORITY and its officers and agents free and harmless from liability of any nature occasioned by CONTRACTOR's operations.

B. Temporary building (storage sheds, shops, offices, etc.) may be erected by CONTRACTOR with the written consent of AUTHORITY, and shall be built with labor and materials furnished by CONTRACTOR without expense to AUTHORITY. Such temporary buildings and utilities shall remain the property of CONTRACTOR and shall be removed by CONTRACTOR at its expense upon the completion of the work. With the written consent of AUTHORITY, such buildings and utilities may be abandoned and need not be removed.

C. CONTRACTOR shall, under regulations prescribed by AUTHORITY, use only established roadways or construct and use such temporary roadways as may be authorized by AUTHORITY. Where materials are transported in the prosecution of work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any federal, state or local law or regulation. When it is necessary to cross curbing or sidewalks, protection against damage shall be provided by CONTRACTOR and any damaged roads, curbing or sidewalks shall be repaired by, or at the expense of, CONTRACTOR.

ARTICLE 55. BUY AMERICA

A. CONTRACTOR is directed to the "Buy America" requirements of the Surface Transportation Assistance Act of 1982 (Section 165) and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) Sections 1041(a) and 1048(a) and the regulations adopted pursuant thereto. In conformance with the law and regulations, all manufacturing processes for steel and iron materials furnished for incorporation into the work on this Project shall occur in the United States; with the exception that pig iron and processed, pelletized and reduced iron ore manufactured outside of the United States may be used in domestic manufacturing process for such steel and iron materials. The application of coatings, such as epoxy coating, galvanizing, painting, and other coating that protects or enhances the value of steel or iron materials shall be considered a manufacturing process subject to the "Buy America" requirements.

B. A Certificate of Compliance, conforming to the provisions of this Article shall be furnished for steel and iron materials. The certificates, in addition to certifying that the materials comply with the specifications, shall specifically certify that all manufacturing processes for the materials occurred in the United States, except for the exceptions listed herein.

C. The requirements imposed by law and regulations do not prevent a minimal use of foreign steel and iron materials of the total combined cost of the materials used does not exceed one-tenth of one percent (0.1 percent) of the total contract cost or \$2,500, whichever is greater. CONTRACTOR shall furnish the AUTHORITY acceptable documentation of the quantity and value of the foreign steel and iron prior to incorporating the materials in the work.

ARTICLE 56. FLY AMERICA REQUIREMENTS

CONTRACTOR agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 CFR Part 301-10, which provide that recipients and subrecipient of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S. Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of

necessity, as defined by the Fly America Act. CONTRACTOR shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. CONTRACTOR agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

ARTICLE 57. PROTECTION OF VEGETATION, UTILITIES, IMPROVEMENTS

A. CONTRACTOR shall preserve and protect all existing vegetation such as trees, shrubs and grass on or adjacent to the site of work which is not to be removed and which does not unreasonably interfere with the construction work. Care will be taken in removing trees authorized for removal to avoid damage to vegetation to remain in place. Any limbs or branches of trees broken during such operations or by the careless operation of equipment, or by workmen, shall be trimmed with a clean cut and painted with an approved tree pruning compound as directed by AUTHORITY.

B. CONTRACTOR shall protect from damage all existing improvements or utilities at or near the site of the work, the location of which is made known to it, and will repair or restore any damage to such facilities resulting from failure to comply with the requirements of this Agreement or the failure to exercise reasonable care in the performance of the work. If CONTRACTOR fails or refuses to repair any such damage promptly, AUTHORITY may have the necessary work performed and charge the cost to CONTRACTOR.

ARTICLE 58. CLEANING UP

A. CONTRACTOR shall at all times keep the construction area, including storage areas used by it, free from accumulations of waste material or rubbish, and prior to completion of the work remove any rubbish from DISTRICT owned premises and all tools, scaffolding, equipment and materials not the property of AUTHORITY or DISTRICT. Upon completion of the construction, CONTRACTOR shall leave the work and premises in a clean, neat and workmanlike condition satisfactory to AUTHORITY.

B. After completion of all work on the project, and before making application for acceptance of

the work, CONTRACTOR shall clean the construction site, including all areas under the control of AUTHORITY or DISTRICT, that have been used by CONTRACTOR in connection with the work on the project and remove all debris, surplus material and equipment, and all temporary construction or facilities of whatever nature, unless otherwise approved by AUTHORITY. Final acceptance of the work by AUTHORITY will be withheld until CONTRACTOR has satisfactorily complied with the foregoing requirements for final cleanup of the project site.

C. Full compensation for conforming to the provisions in this Article, not otherwise provided for, shall be considered as included in price of this Agreement and no additional compensation will be allowed therefore.

ARTICLE 59. USE AND POSSESSION TO COMPLETION

AUTHORITY shall have the right to take possession of or use any completed or partially completed part of the work. Prior to such possession or use, AUTHORITY shall furnish CONTRACTOR an itemized list of work remaining to be performed or corrected on such portions of the project as are to be possessed or used by AUTHORITY, provided that failure to list any item of work shall not relieve CONTRACTOR of responsibility for compliance with the terms of this Agreement. Such possession or use shall not be deemed an acceptance of any work under this Agreement. While AUTHORITY has such possession or use, CONTRACTOR shall be relieved of the responsibility for the loss or damage to the work resulting from AUTHORITY's possession or use. If such prior possession or use by AUTHORITY delays the progress of the work or causes additional expense to CONTRACTOR, an equitable adjustment in the Agreement price or the time of completion will be made and the Agreement shall be modified in writing accordingly.

ARTICLE 60. PROHIBITED INTERESTS

A. CONTRACTOR covenants that, for the term of this Agreement, no director, officer or employee of AUTHORITY, during his/her tenure in office or for one (1) year thereafter, shall have any interest, direct or indirect, in this Agreement or the proceeds thereof.

B. No member of or delegates to the Congress of the United States shall have any interest,

direct or indirect, in this Agreement or the benefits thereof.

ARTICLE 61. FORCE MAJEURE

Either party shall be excused from performing its obligations under this Agreement during the time and to the extent that it is prevented from performing by an unforeseeable cause beyond its control, including but not limited to: any incidence of fire, flood; acts of God; commandeering of material, products, plants or facilities by the federal, state or local government; national fuel shortage; or a material act or omission by the other party; when satisfactory evidence of such cause is presented to the other party, and provided further that such nonperformance is unforeseeable, beyond the control and is not due to the fault or negligence of the party not performing.

ARTICLE 62. DEBARMENT AND SUSPENSION

This contract is a covered transaction for purposes of 49 CFR Part 29. As such, CONTRACTOR is required to verify that none of the contractor, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945.

CONTRACTOR is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into.

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This Agreement shall be made effective upon execution by both parties.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement No. C-0-1933
to be executed on the date first above written.

CONTRACTOR

ORANGE COUNTY TRANSPORTATION AUTHORITY

By _____

By _____

License No:

Will Kempton
Chief Executive Officer

APPROVED AS TO FORM:

By _____

Kennard R. Smart, Jr.
General Counsel

APPROVED:

By _____

Jim Beil, P.E.
Executive Director, Capital Programs

Date _____

REQUIRED FEDERAL CLAUSES

DEFINITIONS

The Orange County Transportation Authority, (hereinafter referred to as "AUTHORITY").
_____, (hereinafter referred to as "CONTRACTOR").

The following provisions apply to all purchases regardless of its value:

ARTICLE 1. FEDERAL CHANGES

CONTRACTOR shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the agreement between the AUTHORITY and FTA, as they may be amended or promulgated from time to time during this Agreement. CONTRACTOR's failure to comply shall constitute a material breach of contract.

ARTICLE 2. NO FEDERAL GOVERNMENT OBLIGATION TO THIRD PARTIES

AUTHORITY and CONTRACTOR acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying Agreement, absent the express written consent by the Federal Government, the Federal Government is not a party to this Agreement and shall not be subject to any obligations or liabilities to the AUTHORITY, CONTRACTOR, or any other party (whether or not a party to this Agreement) pertaining to any matter resulting from the underlying Agreement. CONTRACTOR agrees to include these requirements in all of its subcontracts.

ARTICLE 3. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS

A. CONTRACTOR acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. §§3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this project. Accordingly, by signing this Agreement, CONTRACTOR certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying Agreement of the FTA assisted project for which this Agreement's work is being performed. CONTRACTOR also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose penalties of the Program Fraud Civil Remedies Act of 1986 on the CONTRACTOR to the extent the Federal Government deems appropriate.

B. CONTRACTOR also acknowledges that if it makes, or causes to be made, a false,

fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under an agreement connected with a project that is financed in whole or part with Federal assistance awarded by FTA under the authority of 49 U.S.C. §5307 et seq., the Government reserves the right to impose the penalties of 18 U.S.C. §1001 and 49 U.S.C. §5307(n) (1) et seq. on the CONTRACTOR, to the extent the Federal Government deems appropriate. CONTRACTOR agrees to include this requirement in all of its subcontracts.

ARTICLE 4. CIVIL RIGHTS ASSURANCE

During the performance of this Agreement, CONTRACTOR, for itself, its assignees and successors in interest agree as follows:

A. Compliance with Regulations: CONTRACTOR shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this Agreement.

B. Nondiscrimination: CONTRACTOR, with regard to the work performed by it during the Agreement, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The CONTRACTOR shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Agreement covers a program set forth in Appendix B of the Regulations.

C. Solicitations for Subcontracts, Including Procurement of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the CONTRACTOR for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the CONTRACTOR of the CONTRACTOR's obligations under this Agreement and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

D. Information and Reports: CONTRACTOR shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by the AUTHORITY to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a CONTRACTOR is in the exclusive possession of another who fails or refuses to furnish this information the CONTRACTOR shall so certify to the AUTHORITY as appropriate, and shall set forth what efforts it has made to obtain the information.

E. Sanctions for Noncompliance: In the event of the CONTRACTOR's noncompliance with nondiscrimination provisions of this Agreement, the AUTHORITY shall impose Agreement sanctions as it may determine to be appropriate, including, but not limited to:

1. Withholding of payments to the CONTRACTOR under the Agreement until the CONTRACTOR complies; and/or

2. Cancellation, termination, or suspension of the Agreement, in whole or in part.

F. Title VI of the Civil Rights Act. In determining the types of property or services to acquire, no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity receiving Federal financial assistance in violation of Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. Sections 2000d et seq. and DOT regulations, "Nondiscrimination in Federally Assisted Programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964," 49 CFR Part 21. In

addition, FTA Circular 4702.1, "Title VI and Title VI-Dependent Guidelines for FTA Recipients," 05-13-07, provides FTA guidance and instructions for implementing DOT's Title VI regulations.

G. The Americans with Disabilities Act of 1990, as amended (ADA), 42 U.S.C. Sections 12101 *et seq.*, prohibits discrimination against qualified individuals with disabilities in all programs, activities, and services of public entities, as well as imposes specific requirements on public and private providers of transportation.

H. Incorporation of Provisions: CONTRACTOR shall include the provisions of paragraphs (A) through (H) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The CONTRACTOR shall take such action with respect to any subcontract or procurement as the AUTHORITY may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the CONTRACTOR may request the AUTHORITY to enter into such litigation to protect the interests of the AUTHORITY, and, in addition, the CONTRACTOR may request the United States to enter into such litigation to protect the interests of the United States.

ARTICLE 5. DISADVANTAGED BUSINESS ENTERPRISES

A. In accordance with federal financial assistance agreements with the U.S. Department of Transportation (U.S. DOT), the Orange County Transportation Authority (AUTHORITY) has adopted a Disadvantaged Business Enterprise (DBE) Policy and Program, in conformance with Title 49 CFR Part 26, "Participation by Disadvantaged Business Enterprises in Department of Transportation Programs". The project is subject to these stipulated regulations. In order to ensure that the Authority achieves its overall DBE Program goals and objectives, the Authority encourages the participation of DBEs as defined in 49 CFR 26 in the performance of contracts financed in whole or in part with U.S. DOT funds. Pursuant to the intent of these Regulations, it is also the policy of the Authority to:

1. Fulfill the spirit and intent of the Federal DBE Program regulations published under U.S. DOT Title 49 CFR, Part 26, by ensuring that DBEs have equitable access to participate in all of Authority's DOT-assisted contracting opportunities.

2. Ensure that DBEs can fairly compete for and perform on all DOT-assisted contracts and subcontracts.

3. Ensure non-discrimination in the award and administration of AUTHORITY's DOT-assisted contracts.

4. Create a level playing field on which DBEs can compete fairly for DOT-assisted contracts.

5. Ensure that only firms that fully meet 49 CFR, Part 26 eligibility standards are permitted to participate as DBEs.

6. Help remove barriers to the participation of DBEs in DOT-assisted contracts.

7. Assist in the development of firms that can compete successfully in the marketplace outside the DBE Program.

B. CONTRACTOR shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of subcontracts. Any terms used in this section that are defined in 49 CFR Part 26, or elsewhere in the Regulations, shall have the meaning set forth in the Regulations. In the event of any conflicts or inconsistencies between the Regulations and the Authority's DBE Program with respect to DOT-assisted contracts, the Regulations shall prevail.

C. AUTHORITY's New Race-Neutral DBE Policy Implementation Directives: Pursuant to recently released Race-Neutral DBE policy directives issued by the U.S. DOT in

response to the Ninth Circuit U.S. Court of Appeals decision in *Western States Paving Co. v. Washington State Department of Transportation*, the Authority has implemented a wholly Race-Neutral DBE Program.

A Race-Neutral DBE Program is one that, while benefiting DBEs, is not solely focused on DBE firms. Therefore, under a Race-Neutral DBE Program, AUTHORITY does not establish numeric race-conscious DBE participation goals on its DOT-assisted contracts. CONTRACTOR shall not be required to achieve a specific level of DBE participation as a condition of contract compliance in the performance of this DOT-assisted contract. However, CONTRACTOR shall adhere to race-neutral DBE participation commitment(s) made at the time of contract award.

D. Definitions: The following definitions apply to the terms as used in these provisions:

1. "Disadvantaged Business Enterprise (DBE)" means a small business concern: (a) which is at least 51 percent owned by one or more socially and economically disadvantaged individuals or, in the case of any publicly-owned business, at least 51 percent of the stock of which is owned by one or more socially and economically disadvantaged individuals; and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.

2. "Small Business Concern" means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto, except that a small business concern shall not include any concern or group of concerns controlled by the same socially and economically disadvantaged individual or individuals which has annual average gross receipts in excess of \$19.57 million over the previous three fiscal years.

3. "Socially and Economically Disadvantaged Individuals" means those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who are Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, or Asian-Indian Americans, women and any other minorities or individuals found to be disadvantaged by the Small Business Administration pursuant to Section 8(a) of the Small Business Act, or by the Authority pursuant to 49 CFR part 26.65. Members of the following groups are presumed to be socially and economically disadvantaged:

a. "Black Americans," which includes persons having origins in any of the Black racial groups of Africa;

b. "Hispanic Americans," which includes persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;

c. "Native Americans," which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;

d. "Asian-Pacific Americans," which includes persons whose origins are from Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust Territories of the Pacific, and the Northern Marianas;

e. "Asian-Indian Americans," which includes persons whose origins are from India, Pakistan, and Bangladesh; and

f. Women, regardless of ethnicity or race.

4. "Owned and Controlled" means a business: (a) which is at least 51 percent owned by one or more "Socially and Economically Disadvantaged Individuals" or, in the case of a publicly-owned business, at least 51 percent of the stock of which is owned by one or more "Socially and Economically Disadvantaged Individuals"; and (b) whose management and daily business operations are controlled by one or more such individuals.

5. "Manufacturer" means a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the CONTRACTOR.

6. "Regular Dealer" means a firm that owns, operates or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business. The firm must engage in, as its principal business, and in its own name, the purchase and sale of the product in question. A regular dealer in such bulk items as steel, cement, gravel, stone and petroleum products need not keep such products in stock if it owns or operates distribution equipment.

7. "Other Socially and Economically Disadvantaged Individuals" means those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who, on a case-by-case basis, are determined by Small Business Administration or AUTHORITY to meet the social and economic disadvantage criteria described below.

a. Social Disadvantage: The individual's social disadvantage must stem from his/her color, national origin, gender, physical handicap, long-term residence in an environment isolated from the mainstream of American society, or other similar cause beyond the individual's control.

i. The individual must demonstrate that he/she has personally suffered social disadvantage.

ii. The individual's social disadvantage must be rooted in treatment, which he/she has experienced in American society, not in other countries.

iii. The individual's social disadvantage must be chronic, longstanding and substantial, not fleeting or insignificant.

iv. The individual's social disadvantage must have negatively affected his/her entry into and/or advancement in the business world.

v. A determination of social disadvantage must be made before proceeding to make a determination of economic disadvantage.

b. Economic Disadvantage

i. The individual's ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities, as compared to others in the same line of business and competitive market area that are not socially disadvantaged.

ii. The following criteria will be considered when determining the degree of diminished credit and capital opportunities of a person claiming social and economic disadvantage:

With respect to the individual:

- availability of financing
- bonding capability
- availability of outside equity capital
- available markets

With respect to the individual and the business concern:

- personal and business assets
- personal and business net worth
- personal and business income and profits

E. Race-Neutral DBE Submission and Ongoing Reporting Requirements (Post-Award).

CONTRACTOR shall complete and submit the following DBE exhibits (forms) at the times specified: "Monthly Race-Neutral DBE Subcontractors Paid Report Summary and Payment Verification" (Form 103). If CONTRACTOR is a DBE firm and/or has proposed to utilize DBE firms, CONTRACTOR will be required to complete and submit a Form 103 to

AUTHORITY by the 10th of each month until completion of the contract to facilitate reporting of race-neutral DBE participation, following the first month of contract activity. CONTRACTOR shall report the total dollar value paid to DBEs for the applicable reporting period. CONTRACTOR shall also report the DBE's scope of work and the total subcontract value of commitment for each DBE reported. CONTRACTOR is advised not to report the participation of DBEs toward CONTRACTOR's race-neutral DBE attainment until the amount being counted has been paid to the DBE. Upon completion of the contract, CONTRACTOR will be required to prepare and submit to the Authority a "Race-Neutral DBE Subcontractors Paid Report Summary and Payment Verification" (Form 103) clearly marked "Final" to facilitate reporting and capturing actual DBE race-neutral attainments. CONTRACTOR shall complete and submit a Final Form 103 whether or not DBEs were utilized in the performance of the contract.

F. DBE Eligibility and Commercially Useful Function Standards: A DBE must be a small business concern as defined pursuant to Section 3 of the U.S. Small Business Act and relevant regulations promulgated pursuant thereto. A DBE may participate as a prime contractor, subcontractor, joint venture partner with a prime or subcontractor, CONTRACTOR of material or supplies, or as a trucking company. A DBE joint venture partner must be responsible for specific contract items of work, or clearly defined portions thereof. Responsibility means actually performing, managing and supervising the work with its own forces. The DBE joint venture partner must share in the capital contribution, control, management, risks and profits of the joint venture commensurate with its ownership interest. A DBE must perform a commercially useful function in accordance with 49 CFR 26.55 (i.e., must be responsible for the execution of a distinct element of the work and must carry out its responsibility by actually performing, managing and supervising the work). A DBE should perform at least thirty percent (30%) of the total cost of its contract with its own workforce to presume it is performing a commercially useful function. DBEs must be certified by the California Unified Certification Program (CUCP). Listings of DBEs certified by the CUCP are available from the following sources: The CUCP web site, which can be accessed at <http://www.californiaucp.com>; or the Caltrans "Civil Rights" web site at <http://www.dot.ca.gov/hq/bep>. The CUCP DBE Directory, which may be obtained from the Department of Transportation, Material Operations Branch, Publication Distribution Unit, 1900 Royal Oaks Drive, Sacramento, California 95815; Telephone: (916) 445-3520.

G. DBE Crediting Provisions: When a DBE is proposed to participate in the contract, either as a prime CONTRACTOR or Subcontractor, only the value of the work proposed to be performed by the DBE with its own forces may be counted towards race-neutral DBE participation. If CONTRACTOR is a DBE joint venture participant, only the DBE proportionate interest in the joint venture shall be counted. If a DBE intends to subcontract part of the work of its subcontract to a lower tier Subcontractor, the value of the subcontracted work may be counted toward race-neutral DBE participation only if the DBE Subcontractor is a certified DBE and actually performs the work with their own forces. Services subcontracted to a non-DBE firm may not be credited toward the prime Contractor's race-neutral DBE attainment. CONTRACTOR is to calculate and credit participation by eligible DBE CONTRACTORS of equipment, materials, and suppliers toward race-neutral DBE attainment, as follows: Sixty percent (60%) of expenditure(s) for equipment, materials and supplies required under the Contract, obtained from a regular dealer; or One hundred percent (100%) of expenditure(s) for equipment, materials and supplies required under the Contract, obtained from a DBE manufacturer. The following types of fees or commissions paid to DBE Subcontractors, Brokers, and Packagers may be credited toward the prime CONTRACTOR's race-neutral DBE attainment, provided that the fee or commission is reasonable, and not excessive, as compared with fees or commissions customarily allowed for similar work, including: Fees and commissions charged for providing bona fide professional or technical services, or procurement of essential personnel, facilities, equipment, materials, or

supplies required in the performance of the Contract; Fees charged for delivery of material and supplies (excluding the cost of materials or supplies themselves) when the licensed hauler, trucker, or delivery service is not also the manufacturer of, or a regular dealer in, the material and supplies; Fees and commissions charged for providing any insurance specifically required in the performance of the Contract. CONTRACTOR may count the participation of DBE trucking companies toward race-neutral DBE attainment, as follows: The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract. The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the Contract. The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs. The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract. The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement. The DBE does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by a DBE. For purposes of this paragraph, a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE. If CONTRACTOR listed a non-certified DBE 1st tier subcontractor to perform work on this contract, and the non-certified DBE subcontractor subcontracts a part of its work or purchases materials and/or supplies from a lower tier DBE certified Subcontractor or CONTRACTOR, the value of work performed by the lower tier DBE firm's own forces can be counted toward race-neutral DBE participation on the contract.

H. Performance of DBE Subcontractors: DBE subcontractors listed by CONTRACTOR in its "DBE Race-Neutral Participation Listing" (Exhibit D-2) submitted at the time of proposal submittal shall perform the work and supply the materials for which they are listed, unless the CONTRACTOR has received prior written authorization from the Authority to perform the work with other forces or to obtain the materials from other sources. CONTRACTOR shall provide written notification to the AUTHORITY in a timely manner of any changes to its anticipated DBE participation. This notice should be provided prior to the commencement of that portion of the work.

I. Additional DBE Subcontractors: In the event CONTRACTOR identifies additional DBE subcontractors or suppliers not previously identified by CONTRACTOR for race-neutral DBE participation under the contract, CONTRACTOR shall notify the Authority by submitting "Request for Additional DBE Firm" to enable CONTRACTOR to capture all race-neutral DBE participation. CONTRACTOR shall also submit, for each DBE identified after contract execution, a written confirmation from the DBE acknowledging that it is participating in the contract for a specified value, including the corresponding scope of work (a subcontract agreement can serve in lieu of the written confirmation).

J. DBE Certification Status: If a listed DBE subcontractor is decertified during the life of the project, the decertified subcontractor shall notify CONTRACTOR in writing with the date of decertification. If a non-DBE subcontractor becomes a certified DBE during the life of the project, the DBE subcontractor shall notify CONTRACTOR in writing with the date of certification. CONTRACTOR shall furnish the written documentation to AUTHORITY in a timely manner.

K. CONTRACTOR's Assurance Clause Regarding Non-Discrimination: In compliance with State and Federal anti-discrimination laws, CONTRACTOR shall affirm that they will not exclude or discriminate on the basis of race, color, national origin, or sex in consideration of contract award opportunities. Further, CONTRACTOR shall affirm that they will consider, and utilize subcontractors and CONTRACTORS, in a manner consistent with non-discrimination objectives.

ARTICLE 6. ACCESS TO RECORDS AND REPORTS

CONTRACTOR shall provide AUTHORITY, the U.S. Department of Transportation (DOT), the Comptroller General of the United States, or other agents of AUTHORITY, such access to CONTRACTOR's accounting books, records, payroll documents and facilities of the CONTRACTOR which are directly pertinent to this Agreement for the purposes of examining, auditing and inspecting all accounting books, records, work data, documents and activities related hereto. CONTRACTOR shall maintain such books, records; data and documents in accordance with generally accepted accounting principles and shall clearly identify and make such items readily accessible to such parties during CONTRACTOR's performance hereunder and for a period of four (4) years from the date of final payment by AUTHORITY. AUTHORITY's right to audit books and records directly related to this Agreement shall also extend to all first-tier subcontractors identified in this Agreement. CONTRACTOR shall permit any of the foregoing parties to reproduce documents by any means whatsoever or to copy excerpts and transcriptions as reasonably necessary.

ARTICLE 7. INCORPORATION OF FTA TERMS

All contractual provisions required by Department of Transportation (DOT), whether or not expressly set forth in this document, as set forth in Federal Transit Administration (FTA) Circular 4220.1F, as amended, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. CONTRACTOR shall not perform any act, fail to perform any act, or refuse to comply with any requests, which would cause AUTHORITY to be in violation of the FTA terms and conditions.

ARTICLE 8. ENERGY CONSERVATION REQUIREMENTS

CONTRACTOR shall comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy Conservation Act.

ARTICLE 9. FLY AMERICA REQUIREMENTS

CONTRACTOR agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 CFR Part 301-10, which provide that recipients and sub-recipient of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S. Government-financed international air travel and transportation

of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. CONTRACTOR shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. CONTRACTOR agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

ARTICLE 10. TRANSPORTATION OF EQUIPMENT, MATERIALS OR COMMODITIES BY OCEAN VESSEL

A. CONTRACTOR shall utilize privately owned United States-flag commercial vessels to ship at least 50% of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners and tankers) involved, whenever shipping any equipment, materials or commodities pursuant to this section, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

B. CONTRACTOR shall furnish within twenty (20) working days following the date of loading for shipments originating within the United States, or within thirty (30) working days following the date of loading for shipping originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of lading in English for each shipment of cargo described in paragraph A of this Article to AUTHORITY (through the prime CONTRACTOR in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590, marked with appropriate identification of the project.

ARTICLE 11. PROHIBITED INTERESTS

A. CONTRACTOR covenants that, for the term of this Agreement, no director, member, officer or employee of AUTHORITY during his/her tenure in office or for one (1) year thereafter, shall have any interest, direct or indirect, in this Agreement or the proceeds thereof.

B. No member of or delegate to, the Congress of the United States shall have any interest, direct or indirect, in this Agreement or to the benefits thereof.

ARTICLE 12. ALCOHOL AND DRUG POLICY

A. CONTRACTOR agrees to establish and implement an alcohol and drug program that complies with 41 U.S.C sections 701-707, (the Drug Free Workplace Act of 1988), which is attached to this Agreement as Exhibit B, and produce any documentation necessary to establish its compliance with sections 701-707.

B. Failure to comply with this Article may result in nonpayment or termination of this Agreement.

ARTICLE 13. PRIVACY ACT

CONTRACTOR shall comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. §552a. Among other things, CONTRACTOR agrees to obtain the express consent of the Federal Government before the CONTRACTOR or its employees operate a system of records on

behalf of the Federal Government. CONTRACTOR understands that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying Agreement.

ARTICLE 14. CONFLICT OF INTEREST

CONTRACTOR agrees to avoid organizational conflicts of interest. An organizational conflict of interest means that due to other activities, relationships or contracts, the CONTRACTOR is unable, or potentially unable to render impartial assistance or advice to the Authority; CONTRACTOR's objectivity in performing the work identified in the Scope of Work is or might be otherwise impaired; or the CONTRACTOR has an unfair competitive advantage. CONTRACTOR is obligated to fully disclose to the AUTHORITY in writing Conflict of Interest issues as soon as they are known to the CONTRACTOR. CONTRACTOR is obligated to fully disclose to the AUTHORITY in writing Conflict of Interest issues as soon as they are known to the CONTRACTOR. All disclosures must be submitted in writing to AUTHORITY pursuant to the Notice provision herein. This disclosure requirement is for the entire term of this Agreement.

ARTICLE 15. CODE OF CONDUCT

CONTRACTOR agrees to comply with the AUTHORITY's Code of Conduct as it relates to Third Party contracts which is hereby referenced and by this reference is incorporated herein. CONTRACTOR agrees to include these requirements in all of its subcontracts.

ARTICLE 16. PROTEST PROCEDURES

The Authority has on file a set of written protest procedures applicable to this solicitation that may be obtained by contacting the Contract Administrator/Buyer responsible for this procurement. Any protest filed by the CONTRACTOR in connection with this solicitation must be submitted in accordance with the Authority's written procedures.

The following additional provisions apply to all purchases over \$10,000

ARTICLE 17. TERMINATION

A. AUTHORITY may terminate this Agreement for its convenience at any time, in whole or part, by giving CONTRACTOR written notice thereof. Upon termination, AUTHORITY shall pay CONTRACTOR its allowable costs incurred to date of that portion terminated. Said termination shall be construed in accordance with the provisions of CFR Title 48, Chapter 1, Part

49, of the Federal Acquisition Regulation (FAR) and specific subparts and other provisions thereof applicable to termination for convenience. If AUTHORITY sees fit to terminate this Agreement for convenience, said notice shall be given to CONTRACTOR in accordance with the provisions of the FAR referenced above. Upon receipt of said notification, CONTRACTOR agrees to comply with all applicable provisions of the FAR pertaining to termination for convenience.

B. AUTHORITY may terminate this Agreement for CONTRACTOR's default if a federal or state proceeding for the relief of debtors is undertaken by or against CONTRACTOR, or if CONTRACTOR makes an assignment for the benefit of creditors, or for cause if CONTRACTOR fails to perform in accordance with the scope of work or breaches any term(s) or violates any provision(s) of this Agreement and does not cure such breach or violation within ten (10) calendar days after written notice thereof by AUTHORITY. CONTRACTOR shall be liable for any and all reasonable costs incurred by AUTHORITY as a result of such default or breach including, but not limited to, reprourement costs of the same or similar services defaulted by CONTRACTOR under this Agreement. Such termination shall comply with CFR Title 48, Chapter 1, Part 49, of the FAR.

ARTICLE 18. RECYCLED PRODUCTS

CONTRACTOR shall comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in subpart B of 40 CFR Part 247. CONTRACTOR agrees to include this requirement in all of its subcontracts.

The following additional provisions apply to all purchases over \$25,000

ARTICLE 19. DEBARMENT & SUSPENSION:

CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS - PRIMARY PARTICIPANT AND LOWER-TIER PARTICIPANTS

Unless otherwise permitted by law, any person or firm that is debarred, suspended, or voluntarily excluded, as defined in the Federal Transit Administration (FTA) Circular 2015.1, dated April 28, 1989, may not take part in any federally funded transaction, either as a participant or a principal, during the period of debarment, suspension, or voluntary exclusion. Accordingly, the Authority, acting on behalf of the District, may not enter into any transaction with such debarred, suspended, or voluntarily excluded persons or firms during such period.

A certification process has been established by 49 CFR Part 29, as a means to ensure that debarred suspended or voluntarily excluded persons or firms do not participate in Federally assisted projects. The inability to provide the required certification will not necessarily result in denial of participation in a covered transaction. A person or firm that is unable to provide a positive certification as required by this solicitation must submit a complete explanation attached to the certification. FTA will consider the certification and any accompanying explanation in determining whether or not to provide assistance for the project. Failure to furnish a certification or an explanation may disqualify that person or firm from participating in

the project.

The following additional provisions apply to all purchases over \$100,000:

ARTICLE 20. DISPUTES

A. Except as otherwise provided in this Agreement, any dispute concerning a question of fact arising under this Agreement which is not disposed of by supplemental agreement shall be decided by AUTHORITY's Director, Contracts Administration and Materials Management (CMM), who shall reduce the decision to writing and mail or otherwise furnish a copy thereof to CONTRACTOR. The decision of the Director, CMM, shall be final and conclusive.

B. The provisions of this Article shall not be pleaded in any suit involving a question of fact arising under this Agreement as limiting judicial review of any such decision to cases where fraud by such official or his representative or board is alleged, provided, however, that any such decision shall be final and conclusive unless the same is fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith or is not supported by substantial evidence. In connection with any appeal proceeding under this Article, CONTRACTOR shall be afforded an opportunity to be heard and to offer evidence in support of its appeal.

C. Pending final decision of a dispute hereunder, CONTRACTOR shall proceed diligently with the performance of this Agreement and in accordance with the decision of AUTHORITY's Director, CMM. This "Disputes" clause does not preclude consideration of questions of law in connection with decisions provided for above. Nothing in this Agreement, however, shall be construed as making final the decision of any AUTHORITY official or representative on a question of law, which questions shall be settled in accordance with the laws of the state of California.

ARTICLE 21. CLEAN WATER REQUIREMENTS

CONTRACTOR shall comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. CONTRACTOR shall report each violation to AUTHORITY and understands and agrees that the AUTHORITY will in turn, report each violation as required to assure notification to FTA and appropriate EPA Regional Office. CONTRACTOR agrees to include this requirement in all of its subcontracts.

ARTICLE 22. CLEAN AIR

CONTRACTOR shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. CONTRACTOR shall report each violation to AUTHORITY, who will in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. CONTRACTOR agrees to include this requirement in all of its subcontracts.

ARTICLE 23. LOBBYING

CONTRACTORS who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying". Each tier certifies to the above that it will not or has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

ARTICLE 24. BUY AMERICA

A. CONTRACTOR is directed to the "Buy America" requirements of the Surface Transportation Assistance Act of 1982 (Section 165) and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) Sections 1041(a) and 1048(a) and the regulations adopted pursuant thereto. In conformance with the law and regulations, all manufacturing processes for steel and iron materials furnished for incorporation into the work on this Project shall occur in the United States; with the exception that pig iron and processed, pelletized and reduced iron ore manufactured outside of the United States may be used in domestic manufacturing process for such steel and iron materials. The application of coatings, such as epoxy coating, galvanizing, painting, and other coating that protects or enhances the value of steel or iron materials shall be considered a manufacturing process subject to the "Buy America" requirements.

B. A Certificate of Compliance, conforming to the provisions of this Article shall be furnished for steel and iron materials. The certificates, in addition to certifying that the materials comply with the specifications, shall specifically certify that all manufacturing processes for the materials occurred in the United States, except for the exceptions listed herein.

C. The requirements imposed by law and regulations do not prevent a minimal use of foreign steel and iron materials of the total combined cost of the materials used does not exceed one-tenth of one percent (0.1 percent) of the total contract cost or \$2,500, whichever is greater. CONTRACTOR shall furnish the AUTHORITY acceptable documentation of the quantity and value of the foreign steel and iron prior to incorporating the materials in the work.

SECTION VI

GENERAL PROVISIONS - EXHIBIT A

SECTION VI GENERAL PROVISIONS

A. COST BREAKDOWN

Within 15 calendar days after "Notice to Proceed," the CONTRACTOR shall, upon request by the AUTHORITY, submit a cost breakdown of the lump sum Bid entered on the Bid Form for all construction work **HVAC AND ELECTRICAL UPGRADES AT SANTA ANA REGIONAL TRANSPORTATION CENTER**. This cost breakdown will form the basis for progress payments in accordance with these Specifications and shall show all of the major categories and subcategories of work and equipment requested by the AUTHORITY. Additionally, all cost shall be segregated between off-site and on-site costs. Mobilization costs shall not exceed 10% of total construction costs. Bonds and insurance costs will be identified as a separate line item. Such cost breakdown shall not be required if the AUTHORITY, at its sole discretion, elects to pay the CONTRACTOR in lump sum within thirty (30) calendar days of receipt of proper invoice following the CONTRACTOR's satisfactory completion and the AUTHORITY'S acceptance of all work.

B. PROGRESS PAYMENTS

1. The AUTHORITY, no later than the 25th day of each month, shall prepare a progress payment estimate based on the estimated percentage of completion of each Bid Item and on the CONTRACTOR's actually incurred allowable expenses on such Bid Items. The AUTHORITY will issue the progress payment, in the amount it deems appropriate, by approximately the 15th day of the following month.
2. For purposes of calculating the progress payments, AUTHORITY will use the cost breakdown submitted by the CONTRACTOR for each Bid Item at the start of this Agreement. In no event will the AUTHORITY make a progress payment that, when added to the prior progress payments, amounts to a sum more than the CONTRACTOR's actual aggregate incurred expenses, adjusted to include CONTRACTOR's overhead and profit as allocated to such incurred expenses.
3. The AUTHORITY will pay only 90% of each progress payment amount as determined above, retaining 10% as part security for the fulfillment of this Agreement by the CONTRACTOR. The AUTHORITY may, at its sole discretion, reduce this retention to 5% upon CONTRACTOR's completion of 50% of the work required by this Agreement.
4. The amount retained in accordance with paragraph B.3., hereinabove from the progress payments will be paid in full to the CONTRACTOR as part of the final payment upon CONTRACTOR's full completion of this Agreement, except that $\frac{1}{2}$ of 1% of this Agreement's total price shall be retained for one (1) year beyond the date of the Notice of Completion filed for this Agreement as partial security for fulfillment of the warranty obligations by the CONTRACTOR under this Agreement.

5. No progress payments will be made for materials not installed.
6. Progress payments made by AUTHORITY in no way shall be deemed or construed as acceptance by the AUTHORITY of work or waiver by the AUTHORITY of any rights hereunder.
7. The CONTRACTOR shall pay subcontractors, promptly upon receipt of each AUTHORITY progress payment, the respective amounts allowed the CONTRACTOR on account of the work performed by subcontractors, to the extent of each such subcontractor's interest therein. Such payments to subcontractors shall be based on estimates made pursuant to this Agreement. Any diversion by the CONTRACTOR of payments received for prosecution of a contract, or failure to reasonably account for the application or use of such payments, constitutes ground for termination of the CONTRACTOR's control over the work and for taking over the work, in addition to disciplinary action by the CONTRACTOR's State License Board. The subcontractor shall notify, in writing, the CONTRACTOR's State License Board and the AUTHORITY of any payment less than the amount or percentage approved for the class or item of work as set forth in this Agreement.
8. In addition to other amounts properly withheld under this Agreement, the AUTHORITY shall withhold all legally required sums for, but not necessarily limited to, stop notices, labor and tax liens, etc.

C. FINAL INSPECTION AND ACCEPTANCE

Promptly after Substantial Completion has occurred, CONTRACTOR shall perform all Punch List Work, if any, which was deferred for purposes of Project Completion, and shall satisfy all of its other contractual obligations under the contract documents.

When the CONTRACTOR determines that the work is fully completed, including satisfactory completion of all inspections, tests, and required documentation, Punch List and clean-up items, CONTRACTOR shall give the AUTHORITY a written request for Final Acceptance within ten (10) days thereafter, specifying that the work is completed and the date on which it was completed.

Within thirty (30) days after receipt of the request for Final Acceptance from CONTRACTOR, AUTHORITY will make a final inspection of the work and will either:

1. Reject the request for Final Acceptance, specifying the defective or uncompleted work; or
2. Issue a written Final Acceptance and record Notice of Completion with County Recorder.

Substantial Completion is defined herein as; In the opinion of the AUTHORITY, that Work or portion thereof that is sufficiently complete and in accordance with

the Contract, that it can be utilized by the AUTHORITY for the purpose for which it was intended. A determination of Substantial Completion does not waive, but may not require the prior completion of minor items, which do not impair the AUTHORITY'S ability to safely occupy and utilize the Work for its intended purpose.

D. CLAIMS

CONTRACTOR is required to submit a written claim within ten (10) days after the event or occurrence first giving rise to the potential claim, or in the event of a denial of a request for change by the AUTHORITY. All claims shall include a detailed factual statement; including names, dates and specific events that took place. In addition, all claims shall include supporting documents in support of the claim, a detailed analysis of a request for a time extension, if applicable, and a detailed breakdown of a request for additional compensation. A revised construction schedule shall also be included identifying the impact of the delays, including proposals to minimize any of the impacts.

AUTHORITY shall respond in writing to a claim within forty-five (45) days of receipt of claim. Within thirty (30) days of receipt of claim, AUTHORITY, if necessary, may request additional documentation in support of said claim. If additional documentation is requested, AUTHORITY shall respond in writing to the claim within fifteen (15) days after receipt of additional documentation.

Claims filed by the CONTRACTOR shall be in sufficient detail to enable the AUTHORITY to ascertain the basis and amount of said claims. The AUTHORITY will consider and determine the CONTRACTOR's claims, and it will be the responsibility of the CONTRACTOR to furnish within a reasonable time such further information and details as may be required by the AUTHORITY to determine the facts or contentions involved in its claims. Failure to submit such information and details will be sufficient cause for denying the claim.

Claims submitted by the CONTRACTOR shall be accompanied by a notarized certificate containing the language listed below. Failure to submit the notarized certificate will be cause for denying the claim.

Certificate

Under the penalty of law for perjury or falsification with specific reference to the California False Claims Act, Government Code Section 12650 et. Seq., the undersigned,

(Name)

(Title)

(Company)

herby certifies that the claim for the additional compensation and time, if any, made herein for the work on this Contract is a true statement of the actual cost incurred and time sough, and is fully documented and supported under the Contract between the parties

Dated: _____

Signature: _____

Subscribed and sworn before this _____ day of _____, 20 ____.

Notary Public

My Commission Expires: _____

E. FINAL PAYMENT

1. After the filing of the Notice of Completion, the AUTHORITY will make a proposed final estimate, in writing, of the total amount payable to the CONTRACTOR, including therein an itemization of said amount, segregated as to contract item quantities, extra work and any other basis for payment, and shall also show therein all deductions made or to be made for prior payments and amounts to be kept or retained under the provisions of the contract. All prior estimates and payments shall be subject to correction in the proposed final estimate. Within 15 days after proposed final estimate has been submitted, CONTRACTOR shall submit to the Authority written approval of proposed final estimate and/or a written statement of all claims of the contract. No claim will be considered that was not included in written statement of claims, nor will any claim be allowed unless the CONTRACTOR has previously complied with the notice and protest requirements.
2. On the CONTRACTOR's approval, or if he files no claim within stated period, AUTHORITY will issue a final written estimate, in accordance with the proposed

final estimate submitted to the CONTRACTOR; and 35 days after the date of filing the Notice of Completion AUTHORITY will pay the entire sum found to be due. Such final estimate and payment thereon shall be conclusive and binding against the CONTRACTOR on all questions relating to the amount of work done and the compensation payable therefore, except as otherwise provided.

3. If the CONTRACTOR within said period of 15 days files claims, AUTHORITY will issue a semi-final estimate in lieu of the final estimate submitted to the CONTRACTOR; and 35 days after the date of filing of the Notice of Completion, the AUTHORITY will pay the sum found to be due. Such semi-final estimate and payment thereon shall be conclusive and binding against the CONTRACTOR on all questions relating to the amount of work done and the compensation payable therefore, except insofar as affected by the claims filed within the time and in the manner required hereunder and except as otherwise provided.
4. Upon final determination of any outstanding claims, the AUTHORITY shall then make and issue a final estimate in writing and within 30 days thereafter, the AUTHORITY will pay the entire sum, if any, found due. Such final estimate shall be conclusive and binding against the CONTRACTOR on all questions relating to the amount of work done and the compensation payable therefore, except as otherwise provided.

F. EXTRA WORK AND CHANGES

1. New and unforeseen work, which in the judgment of the AUTHORITY is found necessary or desirable for the satisfactory completion of the work, will be classified as extra work, as well as work specifically designated as such in the plans or specifications. The CONTRACTOR shall do such extra work and furnish material and equipment therefore as directed by the Engineer in writing by a change order. No extra work will be paid for or allowed unless the same was done upon written change order of the Engineer and after all legal requirements have been complied with. The CONTRACTOR agrees that he will accept as full compensation for extra work, so ordered, an amount to be determined by one of the following methods:
 - a. A price mutually agreed upon in writing by the Engineer and CONTRACTOR (hereafter Agreed Price).
 - b. Force Account as hereafter provided.
2. It is mutually agreed that on the agreed price, the CONTRACTOR and subcontractor(s) shall add not more than a total markup of 20% to be divided between the CONTRACTOR and subcontractor(s) as full compensation for all other expenses including overhead, profit, bond, superintendence, insurance and small tools.
3. When extra work is to be paid for on a force account basis, compensation

will be determined as follows:

a. Materials

A sum equal to the actual cost to the CONTRACTOR of the materials furnished by him, as shown by paid receipts, plus not more than fifteen percent (15%). Only installed materials shall be paid for.

b. Labor

1. The actual wages paid as shown on the certified copies of Contractor's payroll, for all labor directly engaged in the work and including the cost of any compensation insurance paid for by the CONTRACTOR, subsistence and travel allowance aid to such workmen as required by collective bargaining agreements plus not more than twenty percent (20%).
2. To the actual wages as described in 1 above will be added a labor surcharge of not more than eleven percent (11%), and shall constitute full compensation for all other payments, including payments imposed by State and Federal laws.

c. Equipment

Equipment will be paid for as a rental charge whether owned by the CONTRACTOR or not, and said rental rates prevailing in the area for comparable equipment will be paid. To the direct costs of "Equipment Rental" will be added a not more than fifteen percent (15%) markup.

All extra work at Force Account shall be adjusted daily upon report sheets prepared by the Engineer, furnished to the CONTRACTOR and signed by both parties. Said daily reports shall thereafter be considered the true record of all extra work done. The decision of the Engineer as to whether extra work has in fact been performed shall be conclusive and binding upon both parties to the contract.

4. A contract change order approved by AUTHORITY may be issued to the CONTRACTOR at any time. Should the CONTRACTOR disagree with any terms or conditions set forth in the contract change order, the CONTRACTOR shall submit a written protest to the AUTHORITY within 15 days after the receipt of the contract change order. The protest shall state the points of disagreement and, if possible, the contract specification references, quantities and costs involved. If a written protest is not submitted within the above period, payment will be made as set forth in the approved contract change order and such payment shall constitute full compensation for all work included therein or required thereby. Such unprotested approved contract change orders will be considered as

executed contract change orders.

5. CONTRACTOR shall promptly notify the AUTHORITY in writing when it receives direction, instruction, interpretation or determination from any source other than the AUTHORITY or its designated representatives that may lead to or cause change in the work. Such written notification shall be given to the AUTHORITY before the CONTRACTOR acts on said direction, instruction, interpretation or determination.

G. ACCELERATION

1. AUTHORITY reserves the right to accelerate the work of the Contract at any time during its performance. In the event that the AUTHORITY directs acceleration, such directive will be given to the CONTRACTOR in writing. The CONTRACTOR shall keep cost and other Project records related to the acceleration directive separately from normal Project cost records and shall provide a written record of acceleration costs to the AUTHORITY on a daily basis.
2. In the event that the CONTRACTOR believes that some action or inaction on the part of the AUTHORITY constitutes an acceleration directive, the CONTRACTOR shall immediately notify the AUTHORITY in writing that the CONTRACTOR considers the actions or inactions an acceleration directive. This written notification shall detail the circumstances of the acceleration directive. The CONTRACTOR shall not accelerate their work efforts until the AUTHORITY responds to the written notification. If acceleration is then directed or required by the AUTHORITY, all cost records referred to in section (1) shall be maintained by the CONTRACTOR and provided to the AUTHORITY on a daily basis.
3. In order to recover additional costs due to acceleration, the CONTRACTOR must document that additional expenses were incurred and paid by the CONTRACTOR. Labor costs recoverable will only be overtime or shift premium costs or the cost of additional laborers brought to the site to accomplish the accelerated work effort. Equipment costs recoverable will only be the cost of added equipment mobilized to the site to accomplish the accelerated work effort.

H. VALUE ENGINEERING

AUTHORITY encourages the CONTRACTOR to submit Value Engineering Proposals (VEP's) whenever it identifies areas and/or instances in which improvements can be made, in order to avail the AUTHORITY of potential cost savings. CONTRACTOR and the AUTHORITY will share any savings in the manner described below.

A VEP applies to a Contractor developed and documented VEP that:

1. Requires a change to the contract.
2. Reduces the total contract price without impairing essential functions or characteristics of the work.
3. Results in an estimated total net savings to the AUTHORITY equal to or greater than \$1,000.

At a minimum, a VEP should include the following information:

1. A description of the existing contract requirements that are involved in the proposed change.
2. A description of the proposed change, and all specifications and/or plans necessary for the complete evaluation of the proposed change. Include a discussion of the differences between existing requirements and the proposed change, together with advantages and disadvantages of each changed item. All relevant back up documentation needs to be included to support proposed changes.
3. Cost estimate for existing contract requirements correlated to the contractors lump sum breakdown and the proposed changes in those requirements, including costs of development and implementation by the contractor.

CONTRACTOR shall submit the VEP to the AUTHORITY. At its sole discretion, AUTHORITY may accept, in whole or in part and by change order, any VEP submitted pursuant to this section. Until a change order is issued on a VEP, Contractor shall remain obligated to perform in accordance with the contract. The decision of the AUTHORITY as to the rejection or acceptance of a VEP shall be at the sole discretion of the AUTHORITY.

If a VEP, submitted by the CONTRACTOR pursuant to this section is accepted by the AUTHORITY, the total contract price shall be adjusted based upon a sharing of the net savings by the CONTRACTOR and the AUTHORITY (50% AUTHORITY, 50% Contractor). Contractor's profit shall not be reduced by application of the VEP.

Net savings are defined as gross savings less the Contractor's costs and less the AUTHORITY'S costs.

1. CONTRACTORS cost means reasonable costs incurred by the Contractor in preparing the VEP and making the change.
2. AUTHORITY'S costs means reasonable costs incurred by the AUTHORITY for evaluating and implementing the VEP.
3. CONTRACTOR is not entitled to share in either concurrent, collateral or future contract savings. Collateral savings are those measurable net

reductions in the AUTHORITY'S costs of operation that result from the VEP. Concurrent savings cover the reductions in the cost of performance of other contracts.

Contractor shall include appropriate VEP provisions in all subcontracts greater than \$25,000.

I. STOP NOTICES

The AUTHORITY, at its sole discretion, may, at any time, retain out of any amounts due the Contractor, sums sufficient to cover claims filed pursuant to Section 3196 et. seq. of the California Civil Code.

J. ORDER OF WORK

Contractor shall perform work hereunder at such places, and in such order or precedence, as may be determined necessary by the Engineer to expedite completion of the required work.

K. LABOR PROVISIONS

1. Prevailing Wages

Contractor shall comply with all applicable requirements of Division 2, Part 7, Chapter 1 of the Labor Code and all applicable federal requirements respecting prevailing wages. If there is a difference between the minimum wage rates predetermined by the Secretary of Labor and the wage rates determined by the Director of the Department of Industrial Relations (DIR) for similar classifications of labor, the Contractor and subcontractors shall not pay less than the higher wage rate. The DIR will not accept lower state wage rates not specifically included in the Federal minimum wage determination.

2. Minimum Wages

- c. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally, and not less often than once a week and without subsequent deduction or rebate on any account, the full amounts due at time of payment computed at wage rates not less than those specified in the General Wage Determinations referenced in this section regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics; and the wage determination decision shall be posted by the Contractor at the site of the work in a prominent place where it can be easily seen by the workers. For the purpose of this clause, contributions made or cost reasonably anticipated under the Labor Code of the State of California on behalf of laborers or mechanics are considered wages paid by such Laborers or mechanics. Also for the purpose of this clause, regular contributions made or costs incurred for more than a weekly period under plans, funds

or programs, but covering the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

- d. AUTHORITY shall require that any class of laborers or mechanics, including apprentices and trainees, which is not listed in the General Wage Determinations and which is to be employed under this Contract, shall be classified conformably to such wage determinations. In the event the AUTHORITY does not concur in the Contractor's proposed classification or reclassification of a particular class of laborers and mechanics (including apprentices and trainees) to be used, the question, accompanied by the recommendation of the AUTHORITY, shall be referred to the State Director of Industrial Relations for determination.
- e. AUTHORITY shall require, whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly wage and the Contractor is obligated to pay a cash equivalent of such a fringe benefit, an hourly cash equivalent thereof to be established. In the event the interested parties cannot agree upon cash equivalent of the fringe benefit, the questions, accompanied by the recommendation of the AUTHORITY, shall be referred to the State Director of Industrial Relations for determination.
- f. All disputes concerning the payment of wages or the classification of workers under this Agreement shall be promptly reported to the AUTHORITY.

3. Deductions

AUTHORITY may deduct from each progress payment and the Final Payment the following:

- a. Any AUTHORITY or third party claims or losses for which CONTRACTOR is responsible hereunder or any Liquidated Damages which have accrued as of the date of the application for payment;
- b. If a notice to stop payment is filed with AUTHORITY, due to the CONTRACTOR's failure to pay for labor or materials used in the work, money due for such labor or materials, plus the 25% prescribed by law, will be withheld from payment to the CONTRACTOR. In accordance with Section 3196 of the Civil Code, AUTHORITY may accept a bond by a corporate surety in lieu of withholding payment;
- c. Any sums expended by or owing to AUTHORITY as a result of CONTRACTOR's failure to maintain the as-built drawings;
- d. Any sums expended by AUTHORITY in performing any of the CONTRACTOR's obligations under the Contract which CONTRACTOR has

- failed to perform; and
- e. Any other sums which AUTHORITY is entitled to recover from CONTRACTOR under the terms of the CONTRACT.

The failure by AUTHORITY to deduct any of these sums from a progress payment shall not constitute a waiver of AUTHORITY's right to such sums.

All amounts owing by CONTRACTOR to AUTHORITY under the Contract shall earn interest from the date on which such amount is owing at the lesser of (i) 10% per annum or (ii) the maximum rate allowable under applicable Governmental Rules.

4. Payrolls and Basic Records

- a. Payrolls and basic records relating thereto will be maintained during the course of the work and preserved for a period of three (3) years thereafter for all laborers and mechanics working at the site of the work. Such records will contain the name, address and social security number of each such worker, the correct classification, rates of pay, daily and weekly number of hours worked, deductions made and actual wages paid.
- b. The Contractor will submit weekly a copy of all payrolls to the AUTHORITY as required in these "Labor Provisions." The copy shall be accompanied by a statement signed by the employer or its agent indicating that the payrolls are correct and complete, that the wage rates contained therein are not less than those determined by the State Director of Industrial Relations and that the classifications as set forth for each laborer or mechanic conform to the work performed. A submission of the "Weekly Statement of Compliance," which is required under this Contract, shall satisfy this requirement. The prime Contractor shall be responsible for the submission of copies of payrolls of all subcontractors. The Contractor will make the records required under the labor standard clauses of the contract available for the inspection by authorized representatives of the AUTHORITY, and will permit such representatives to interview employees during working hours on the job.

5. Apprentices and Trainees

- a. Apprentices: Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed and individually registered in a bona fide apprenticeship program as defined in section 1777.5 of the Labor Code of the State of California. The allowable ratio of apprentices to journeymen in any craft classification shall not be greater than the ratio permitted to the Contractor as to his entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate who is not registered or otherwise employed as stated above, shall be paid the wage rate determined by the State Director of Industrial Relations for the classification of work he actually performed. The

Contractor or subcontractor will be required to furnish to the AUTHORITY or the State Director of Industrial Relations written evidence of the registration of his program and apprentices as well as the appropriate ratios and wage rates (expressed in percentages of the journeyman's rate contained in the applicable wage determination).

- b. Trainees: Except as provided in 29 CFR 5.15, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to or individually registered in a program which has received prior approval, evidenced by formal certification, by the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training. The ratio of trainees to journeymen shall not be greater than that permitted under the plan approved by the Bureau of Apprenticeship and Training. Every trainee must be paid at not less than the rate specified in the approved program for his level of progress. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Bureau of Apprenticeship and Training shall be paid not less than the wage rate determined by the Secretary of Labor for the classification of work he actually performed. The Contractor or subcontractor will be required to furnish the contracting officer or a representative of the Wage-Hour Division of the U.S. Department of Labor written evidence of the certification of his program, the registration of the trainees, and the ratios and wage rates prescribed in that program. In the event the Bureau of Apprenticeship and Training withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- c. Equal Employment Opportunity: The utilization of apprentices and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR, Part 30.

6. Compliance With Copeland Regulations (29 CFR, Part 3)

The Contractor shall comply with the Copeland Regulations (29 CFR, Part 3) of the Secretary of Labor which are herein incorporated by reference.

7. Contract Termination; Debarment

A breach of item 1 through 6 may be grounds for termination of the contract, and for debarment as provided in 29 CFR 5.6.

8. Overtime Requirements

No Contractor or subcontractor contracting for any part of the contract

work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic in any work week in which he is employed on such work to work in excess of 8 hours a day or 40 hours in such work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 8 hours a day or 40 hours in such work week.

9. Violation; Liability for Unpaid Wages

Pursuant to section 1775 of the Labor Code of the State of California, in the event that any workman employed on this public works project is paid less than the amount specified in the General Prevailing Wage Determinations or less than is required, relative to overtime, the Contractor and any subcontractor responsible therefore shall be liable to the affected workman for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the State of California or the Authority for liquidated damages. Such liquidated damages shall be computed with respect to each individual workman found to be underpaid and shall be in the amount of \$50 per calendar day that a workman was underpaid.

10. Withholding for Liquidated Damages

The Authority may withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or subcontractor, such sums as may administratively be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for liquidated damages as provided in this section.

11. Final Labor Summary

The Contractor and each subcontractor shall furnish to the Authority, upon the completion of the contract, a summary of all employment, indicating for the completed project, the total hours worked and the total amount earned.

12. Final Certificate

Upon completion of the contract, the Contractor shall submit to the Authority, with the voucher for a final payment for any work performed under the contract, a concerning wages and classifications for laborers and mechanics, including apprentices and trainees employed on the project, in the following form:

The undersigned, Contractor on

(Contract No.)

hereby certifies that all laborers, mechanics, apprentices and trainees employed by the Contractor or by a subcontractor performing work under the contract on the project have been paid wages at rates not less than those required by the contract provisions, and that the work performed by each such laborer, mechanic, apprentice or trainee conformed to the classifications set forth in the contract or training program provisions applicable to the wage rate paid.

Signature and Title

13. Notice to the Authority of Labor Dispute

Whenever the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this contract, the Contractor shall immediately give notice thereof, including all relevant information with respect thereto, to the Authority.

14. Disputes Clause

- a. All disputes concerning the payment of prevailing wage rates or classifications shall be promptly reported to the Authority for its referral to DOT for decision or, at the option of the Authority, DOT referral to the Secretary of Labor. The decision of DOT or the Secretary of Labor, as the case may be, shall be final.
- b. All questions relating to the application or interpretation of the Copeland Act, the Contract Work Hours Standards Act, the Davis-Bacon Act, or Section 13 of the Act shall be sent to the Federal Transit Administration (FTA) for referral to the Secretary of Labor for ruling or interpretation, and such ruling or interpretation shall be final.

15. Convict Labor

In connection with the performance of work under this Contract, the Contractor agrees not to employ any person-undergoing sentence of imprisonment at hard labor. This does not include convicts who are on parole or probation.

16. Insertion in Subcontracts

The Contractor shall set forth in item 1 through 15 of this Section so that all of the provisions of this section will be inserted in all construction subcontracts of any tier, and such other clauses as the Government may by appropriate instructions require.

17. Certified Payrolls

- a. The Authority shall obtain from the Contractor and each subcontractor a certified copy of each weekly payroll within seven (7) days after the regular payroll date. Following a review by the Authority for compliance with State and Federal labor laws, the payroll copy shall be retained at the project site for later review by FTA.
- b. Contractor may use the Department of Labor Form WH-347, "Optional Payroll Form," which provides for all the necessary payroll information and certifications.
- c. If, on or before the 20th of the month, the Contractor has not submitted satisfactory payrolls covering its work and the work of all subcontractors for all payroll periods ending on or before the 6th of that month, such payrolls will be considered to be delinquent. Regardless of the number of delinquent payrolls, an amount equal to 10% (but not less than \$1,000 or more than \$10,000) shall be deducted from the estimate. Deductions will be made separately for each estimate period in which a new delinquency appears and will be continued until payrolls have been submitted.
- d. Contractors employing apprentices or trainees under approved programs shall include a notation on the first weekly certified payrolls submitted to the Authority that their employment is pursuant to an approved program and shall identify the program.

L. TIME EXTENSION/DELAYS

- 1. Contractor may be granted an extension of time for any portion of a delay in completion of the work due to acts of God, the public enemy, wars, civil unrest, fires, quarantine restrictions, or weather more severe than normal, providing that (1) the aforesaid causes were not foreseeable and did not result from an act or omission by the Contractor, (2) Contractor has taken reasonable precautions to prevent further delays owing to such causes, and (3) Contractor notifies AUTHORITY in writing of the cause(s) for the delay within ten (10) days from the beginning of any such delay. No claims for additional compensation or damages for the foregoing delays shall be allowed to the Contractor, and the extension of time provided for herein shall be the sole remedy of the Contractor on account of any such delays.
- 2. An extension of time will not be granted for a delay described in the above paragraph(s) caused by a shortage of materials, except if materials are furnished by AUTHORITY, unless the Contractor supplies the AUTHORITY

with documented proof that every effort to obtain the materials from all known sources that (a) such materials could have been obtained only at exorbitant prices or (b) the prices were entirely inconsistent with current rates, taking into account the quantities; and (c) such facts could not have been known or anticipated at the time the Notice To Proceed was issued. Contractor shall also submit proof, that the inability to obtain such materials when originally planned, did in fact, cause a delay in completion of the work that could not be compensated for by revising the sequence of its operations. Only the physical shortage of material will be considered as a basis for an extension of time.

3. An extension of time for weather more severe than normal shall be granted only to the extent the work is actually delayed as determined by the AUTHORITY. Normal is defined as the monthly average of the temperature and rainfall wherein the work was performed for the prior 20 years before the execution of the contract.
4. In the event Contractor is actually and necessarily delayed by an act or omission on the part of the AUTHORITY, as determined by the AUTHORITY, the Contractor shall notify the AUTHORITY in writing within five (5) days from the beginning of any such delay. The time for completion of the work may be extended at the sole discretion of the AUTHORITY.
5. Within 30 days after the last day of delay, Contractor shall provide AUTHORITY with detailed information concerning the circumstances of the delay, the number of days actually delayed, and the measures taken to minimize or prevent the delay. Failure to submit information shall be sufficient reason to deny the claim. AUTHORITY shall ascertain the facts and the extent of the delay; and provide the Contractor its written findings, which will be final and conclusive. Except for the additional compensation for herein and except as provided in Public Contract Code Section 7102, Contractor shall have no claim for damages or compensation for any delay or hindrance.
6. No extension of time will be granted for any AUTHORITY caused delay or delay as defined in which (a) the performance of work would have been concurrently delayed by Contractor induced causes, including but not limited to an act or omission of the Contractor, or (b) remedies are included or excluded by any other contract provision. Only the actual delay necessarily resulting from the causes specified in this Article shall be grounds for extension of time. Should the Contractor be delayed at any time for any period by two or more of the causes specified in this article, Contractor shall only be entitled to one time extension for the entire delay.
7. Any time extension granted to Contractor shall not release the Contractor or surety from its obligations. Work shall continue and be carried on in accordance with the contract provisions, unless formally suspended or terminated by the AUTHORITY.

M. NONDISCRIMINATION

During the performance of this Contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex or national origin. Such action shall include, but not be limited to employment; upgrading; demotion; transfer; recruitment or recruitment advertising; layoff; termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post, in conspicuous places available to the employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex or national origin.
3. The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this Section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations and relevant orders of the Secretary of Labor. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.
5. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations or orders, this Contract may be canceled, terminated or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts or Federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order, of the Secretary of Labor, or as otherwise provided by

law.

6. The Contractor will include the provisions of this Paragraph ("Nondiscrimination") in every subcontract or purchase order entered into under this Agreement unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.
7. No person employed on the work covered by this Agreement shall be discharged or in any way discriminated against because he has filed any complaints or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable hereunder to his employer.

N. TITLE VI OF THE CIVIL RIGHTS ACT OF 1964

Contractor agrees to comply with and ensure compliance by all subcontractors with all requirements of Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. §2000d; 49 U.S.C. §5332 and Department of Transportation Regulations, "Nondiscrimination in Federally-Assisted Programs of the Department of Transportation-Effectuation of Title VI of the Civil Rights Act," 49 CFR Part 21.

O. AFFIRMATIVE ACTION

Contractors and subcontractors holding a value of work of \$10,000 or more must submit a Monthly Employment Utilization Report (Form 257) to the Authority Engineer by the 5th of each month or sanctions shall be applied for late submittal, non-submittal and incomplete forms returned to the Contractor and resubmitted after the due date.

The Authority is required to submit the completed forms to FTA by the 10th of each month.

The reporting period shall be for each calendar month.

The report shall include the information requested for each Contractor's aggregate work force (for all workers on all projects within Orange County) and not just for workers on this project.

If the form is not received by the 5th of the month, a deduction of 10% (with a

minimum of \$1,000 and a maximum of \$10,000) will be withheld from the monthly estimate at the option of the Authority.

The Contractor shall designate an Equal Employment Officer for the project and notify the Authority in writing whom that person is prior to beginning of work. All workers shall also be informed who the EEO Officer is.

**P. STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER
11246)**

1. As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this Contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates AUTHORITY;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
 - d. "Minority" includes persons who are citizens or lawful permanent residents of the United States and are one of the following:
 1. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 2. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, Portuguese American or other Spanish culture or origin, regardless of race);
 3. Asian and Pacific Islanders (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent or the Pacific Islands);
 4. American Indians and Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification);
 5. Women regardless of ethnicity.

2. In order for the nonworking training hours of apprentices to be counted in meeting the goals, such apprentices must be employed by the Contractor during the apprenticeship period, and the Contractor must have made a commitment to employ the apprentices at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
3. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of disadvantaged and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organization's responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and disadvantaged or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a disadvantaged person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded

the Contractor's efforts to meet its obligations.

- e. Develop on-the-site-training opportunities and/or participate in training programs for the area which expressly include minority and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 3.b. above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractors' recruitment area and employment needs. Not later than one month prior to the date of the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the opening, screening, procedures and tests to be used in the selection

- process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of Contractor's work force.
 - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 C.F.R., Part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities, and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - m. Ensure that seniority practices, job classifications, working assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations or offers for subcontracts from disadvantaged and female construction contractors and suppliers, including circulation of solicitations, to disadvantaged and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
4. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (3. (a) through (p)). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 3. (a) through (p) of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work force participation, make a good faith effort to meet its individual goals and timetables, and can provide access to

documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's failure if such a group to fulfill an obligation, shall not be a defense for the Contractor's noncompliance.

5. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order 11246 if a specific minority group of women is underutilized.)
6. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.
7. The Contractor shall not enter into any subcontract with a person or firm debarred from Government contracts pursuant to Executive Order 11246.
8. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
9. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in item 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 C.F.R. 60-4.8.
10. The Contractor shall designate a responsible official to monitor all employment-related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation, if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper or laborer), dates of

changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree of existing records satisfy this requirement, Contractor shall not be required to maintain separate records.

11. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

Q. GOVERNMENT INSPECTIONS

The Authority or Federal Government representatives shall have access to the construction site and shall have the right to inspect all project works.

R. LICENSING, PERMITS AND INSPECTION COSTS

1. The CONTRACTOR warrants that it has all necessary licenses and permits required by the laws of the United States, State of California, the County of Orange, the Local Jurisdictions, and all other appropriate governmental agencies, and agrees to maintain these licenses and permits in effect for the duration of the Agreement. Further, CONTRACTOR warrants that its employees, agents, and contractors and subcontractors shall conduct themselves in compliance with such laws and licensure requirements including, without limitation, compliance with laws applicable to nondiscrimination, sexual harassment and ethical behavior throughout the duration of this Agreement. CONTRACTOR further warrants that it shall not retain or employ an unlicensed subcontractor to perform work on this Project. CONTRACTOR shall notify the AUTHORITY immediately and in writing of its employees', agents', contractors' or subcontractors' inability to obtain or maintain, irrespective of the pendency of any appeal, any such licenses, permits, approvals, certificates, waivers, and exemptions. Such inability shall be cause for termination of this Agreement.
2. CONTRACTOR shall procure all permits and licenses; pay all charges, assessments and fees, as may be required by the ordinances and regulations of the public agencies having jurisdiction over the areas in which the work is located, and shall comply with all the terms and conditions thereof and with all lawful orders and regulations of each such public agency relating to construction operations under the jurisdiction of such agency.

S. HAZARDOUS SUBSTANCES

1. CAL-OSHA Requirements

All flammable, corrosive, toxic or reactive materials being bid must have a complete CAL-OSHA Material Safety Data Sheet accompanying the

submitted bid.

2. Notice of Hazardous Substances

Title 8, California Code of Regulations, Section 5194 (e)(c), states that the employer must inform any contractor employers with employees working in the employer's workplace of the hazardous substances to which their employees may be exposed while performing their work. In compliance with this requirement, the Authority hereby gives notice to all Bidders that the following general categories of hazardous substances are present on the Authority's or Orange County Transit District's premises:

- a. adhesives, sealant, patching and coating products
- b. antifreeze, coolants
- c. cleaners, detergents
- d. paints, thinners, solvents
- e. pesticides, petroleum products (diesel and unleaded fuel, oil products)
- f. printing, photocopying materials
- g. propane welding materials/compressed gases (e.g., acetylene, oxygen, nitrogen)

More specific information may be obtained from the Authority's Safety and Benefits office at (714) 560-5854, and from Material Safety Data Sheets for individual products.

T. CHANGES IN FEDERAL LAWS AND REGULATIONS

Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Agreement between the Orange County Transportation Authority and FTA that funds any part of this Contract, as they may be amended or promulgated from time to time during the Contract. Contractor's failure to so comply shall constitute a material breach of contract.

U. MEDIA AND THE PUBLIC

Contractor shall immediately refer all inquiries from the news media or other public sources to the AUTHORITY'S Project Manager, or designated representative, relating to this project.

V. COORDINATION AND ACCESS

AUTHORITY may undertake or award other contracts for additional work at the project site. Contractor is responsible for coordinating its work with the work of other contractors as appropriate. The Contractor acknowledges that they do not have any exclusive access to the site or other work areas. AUTHORITY may require that certain facilities and areas be used concurrently by the Contractors

and others. Contractor shall cooperate fully with AUTHORITY contractors/consultants that may be performing work in the construction area.

W. UTILITIES RELATED DELAYS

If, due to interruptions caused by the undocumented utilities, Contractor sustains loss which could not have been avoided by the judicious handling of forces, equipment and plant, there shall be paid to the Contractor that amount that the AUTHORITY may find to be a fair and reasonable compensation for the part of the CONTRACTOR's actual loss, that, in the opinion of AUTHORITY was unavoidable, determined as follow: Compensation for idle time of equipment will be determined in the same manner as determinations are made for equipment used in the performance of extra work paid for on a force account basis, as provided in Section F. Extra Work and Changes, Item 3,c. Equipment with the following exceptions:

1. The utility related delay factor for each classification of equipment shown in the Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates will be applied to that equipment rental rate.
2. The time for which the compensation will be paid will be the actual normal working time during which the delay condition exists, but in no case will exceed 8 hours in any one day.
3. The days for which compensation will be paid will be the calendar days, excluding Saturdays, Sundays and legal holidays, during the existence of the delay, except that when the rented equipment can be returned or used elsewhere on the project, then no payment will be made for utilities related delays.

Actual loss shall be understood to include no items of expense other than idle time of equipment and necessary payments for idle time of workers, and cost of extra moving of equipment. Compensation for idle time of equipment will be determined as provided in this Section and compensation for idle time of workers will be determined as provided in Section F. Extra Work and Changes, Item 3, b. "Labor," and no markup will be added in either case for overhead and profit. The cost of extra moving of equipment will be paid for as extra work and changes as provided in Section F of General Provisions.

If performance of the Contractor's work is delayed as the result of the Utilities Related Delays, an extension of time determined pursuant to the provisions in Article 18. Termination for Default – Damages for Delay – Time Extensions will be granted.

X. UTILITIES AND SUBSURFACE STRUCTURES

CONTRACTOR shall protect from damage utility and other subsurface structures that are to remain in place, be installed, relocated or otherwise rearranged (as

used herein, rearranged includes installation, relocation, alteration or removal).

The right is reserved to the Authority, or their authorized agents, to enter upon the site for the purpose of making those changes that are necessary for the rearrangement of their facilities or for making necessary connections or repairs to their properties. CONTRACTOR shall cooperate with forces engaged in this work and shall conduct operations in such a manner as to avoid any unnecessary delay or hindrance to the work being performed by the other forces. Wherever necessary, the work of CONTRACTOR shall be coordinated with the rearrangement of utility or other non-highway facilities, and Contractor shall make arrangements with the owner of those facilities for the coordination of the work.

Attention is directed to the possible existence of underground main or trunk line facilities not indicated on the plans or in the special provisions and to the possibility that underground main or trunk lines may be in a location different from that which is indicated on the plans or in the special provisions. Contractor shall ascertain the exact location of underground main or trunk lines whose presence is indicated on the plans or in the special provisions, the location of their service laterals or other appurtenances, and of existing service lateral or appurtenances of any other underground facilities which can be inferred from the presence of visible facilities such as buildings, meters and junction boxes prior to doing work that may damage any of the facilities or interfere with their service.

If CONTRACTOR cannot locate an underground facility whose presence is indicated on the plans or in the special provisions, the Contractor shall so notify the AUTHORITY in writing. If the facility for which the notice is given is in a substantially different location from that indicated on the plans or in the special provisions, the additional cost of locating the facility will be paid for as extra work as provided in Section F.

If CONTRACTOR discovers underground main, trunk lines or other structures and utilities not indicated on the plans or in the special provisions, Contractor shall immediately give the AUTHORITY and the Utility Company written notification of the existence of those facilities. Such facilities shall be located and protected from damage as directed by the Authority, and the cost of that work will be paid for as extra work as provided in Section F. Contractor shall, if directed by the AUTHORITY repair any damage which may occur to the main or trunk lines. The cost of that repair work, not due to the failure of the Contractor to exercise reasonable care, will be paid for as extra work as provided in Section F. Damage due to Contractor's failure to exercise reasonable care shall be repaired at the Contractor's cost and expense.

Where it is determined by the AUTHORITY that the rearrangement of an underground facility is essential in order to accommodate the project work and the plans and specifications do not provide that the facility is to be rearranged, AUTHORITY will provide for the rearrangement of the facility by other forces or the rearrangement shall be performed by CONTRACTOR and will be paid for as

extra work as provided in Section F.

When ordered by the AUTHORITY in writing, CONTRACTOR shall rearrange any utility or other subsurface structures necessary to be rearranged as a part of the project work and that work will be paid for as extra work as provided in Section F.

Should Contractor desire to have any rearrangement made in any utility facility, or other improvement, for the Contractor's convenience in order to facilitate the Contractor's construction operations, which rearrangement is in addition to, or different from, the rearrangements indicated on the plans or in the special provisions, the Contractor shall make whatever arrangements are necessary with the owners of the utility or other subsurface structure for the rearrangement and bear all expenses in connection therewith.

Contractor shall immediately notify the AUTHORITY of any delays to the Contractor's operations as a direct result of underground utilities or other structures which were not indicated on the plans or in the special provisions or were located in a position substantially different from that indicated on the plans or in the special provisions, (other than delays in connection with rearrangements made to facilitate the Contractor's construction operations or delays due to a strike or labor dispute). These delays will be considered utilities related delays within the meaning of Section X., Utilities Related Delays and compensation for the delay will be determined in conformance with the provisions in Section M. Contractor shall be entitled to no other compensation for that delay.

Y. LOCATION OF UNDERGROUND FACILITIES (OFFSITE WORK ONLY)

Contractor is required to obtain digging permits prior to start of excavation by contacting the appropriate permitting agencies 15 calendar days in advance. For the Offsite work scan the construction site with electromagnetic or sonic equipment, and mark the surface of the ground where existing underground utilities are discovered. Verify the elevations of existing piping, utilities, and any type of underground obstruction not indicated or specified to be removed but indicated or discovered during scanning in locations to be traversed by piping, ducts, and other work to be installed. Verify elevations before installing new work closer than nearest manhole or other structure at which an adjustment in grade can be made. Perform potholing to confirm location of all the utilities along the construction alignment prior to start of the construction. The Contractor is responsible for all costs associated with these investigations including the cost of equipment, labor and materials required for any confined space entry.

Z. UNFORESEEN HAZARDOUS OR REGULATED MATERIALS

All known hazardous or regulated materials are indicated in the contract documents. If material that is not indicated in the contract documents is encountered that may be dangerous to human health upon disturbance during

construction operations, stop that portion of work and notify AUTHORITY immediately. Intent is to identify materials such as PCB, lead paint, mercury, petroleum products, and friable and non-friable asbestos. Within 14 calendar days, the AUTHORITY will determine if the material is hazardous. If the material is not hazardous or poses no danger, the AUTHORITY will direct Contractor to proceed without change. If the material is hazardous and handling of the material is necessary to accomplish the work, AUTHORITY will contract with a qualified environmental remediation/hazardous materials removal contractor for such remediation or removal as may be necessary. The remediation or removal will be performed in compliance with applicable State, Federal, and local environmental laws and regulations.

Contractor shall immediately notify the AUTHORITY of any delays to the Contractor's operations as a direct result of Unforeseen Hazardous and Regulated Materials. These delays will be considered utilities related delays within the meaning of Section W., Utilities Related Delays and compensation for the delay will be determined in conformance with the provisions in Section F. Contractor shall be entitled to no other compensation for that delay.

SECTION VII

PROJECT SPECIFICATIONS - EXHIBIT B

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SECTION 01045

CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Requirements and limitations for cutting and patching of Work.

1.2 RELATED SECTIONS

- A. Section 01010 - Summary of the Work:
- B. Section 01120 - Special Project Procedures: Additional general requirements for Project involving alterations to existing construction.
- C. Individual Product Specification Sections:
 - 1. Cutting and patching incidental to Work specified in the Section.
 - 2. Coordination with Work specified in other Sections for openings required to accommodate Work specified in those other Sections.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Primary Products: As required for original installation and to match surrounding construction.
- B. Product Substitution: For each proposed change in materials, submit request for substitution under provisions of Section 01600 - Product Requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examination, General: Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. After uncovering existing Work, inspect conditions affecting proper accomplishment of Work.
- C. Beginning of cutting or patching shall be interpreted to mean that existing

conditions were found by Contractor to be acceptable.

3.2 PREPARATION

- A. Temporary Supports: Provide devices and methods to protect other portions of Project from damage by providing temporary supports.

3.3 CUTTING AND PATCHING

- A. Cutting and Patching:
 - 1. Execute cutting, fitting, patching, excavation, and fill, to complete Work.
 - 2. Coordinate installation or application of products for integrated Work.
- B. Remedial Work: Remove and replace defective or non-conforming Work.

3.4 PERFORMANCE

- A. Cutting and Patching:
 - 1. Execute demolition, cutting and patching by methods to avoid damage to adjoining Work, and which will provide appropriate surfaces to receive final finishing.
 - 2. Saw cut asphalt concrete paving for smooth edges. Do not overcut corners.
 - 3. Contractor is required to take all precautions during construction to prevent damage to OCTA buses, property, Equipment, utilities, and OCTA personnel. All precautions are to taken per CAL-OSHA code to prevent accidents, and damage to adjacent OCTA property and appurtenances.
- B. Restoration:
 - 1. Restore Work with new Products as specified in individual Sections.
 - 2. Where affected or uncovered by construction work, Finish adjacent surfaces to condition before construction. Finish adjacent surfaces and background to condition before construction. Match material and paint and finish to nearest joint. Re-Paint all curbs, traffic striping, legends, parking stalls, numbers, and paving as existed before construction. Damage to adjacent or OCTA property shall be repaired to a condition as existed before construction.
- C. Finishing: Refinish (material and paint) surfaces to match adjacent and similar

finishes as used for the Project. (Match material and paint finish)

For continuous surfaces, refinish with material and paint to nearest intersection or natural break or joint. Replace equipment or appurtenances damaged due to demolition, cutting or patching work during construction. Provide material quality which existed before construction started

END OF SECTION 01045

SECTION 01120 SAFETY SPECIFICATIONS

PART I – GENERAL

1.0 GENERAL HEALTH, SAFETY & ENVIRONMENTAL REQUIREMENTS

- A. The Contractor, its sub-tier contractors, suppliers, and employees have the obligation to comply with all Authority health, safety and environmental compliance department (HSEC) requirements, as well as all federal, state, and local regulations pertaining to scope of work, contracts or agreements with the Authority including California Department of Transportation safety requirements and special provisions. Additionally, manufacturer requirements are considered incorporated by reference, as applicable, to this scope of work.
- B. Observance of repeated unsafe acts or conditions, serious violation of health and safety standards, non-conformance of Authority health, safety and environmental compliance department (HSEC) requirements, or disregard for the intent of these safety specifications to protect people and property, by Contractor may be reason for termination for cause, of agreements with the Authority, at the sole discretion of the Authority.
- C. The Authority HSEC requirements, and references contained within this scope of work shall not be considered all-inclusive as to the hazards that might be encountered. Safe work practices shall be pre-planned and performed, and safe conditions shall be maintained during the course of this work scope.
- D. The Contractor shall specifically acknowledge that it has primary responsibility to prevent and correct all health, safety and environmental hazards for which it and its employees, or its sub-tier contractors (and their employees) are responsible. The Contractor shall further acknowledge their expertise in recognition and prevention of hazards in the operations for which they are responsible, that the Authority may not have such expertise, and is relying upon the Contractor for such expertise. The Authority retains the right to notify the Contractor of potential hazards and request the Contractor to evaluate and, as necessary, to eliminate those hazards.
- E. The Contractor shall provide all necessary tools, equipment, and related safety protective devices to execute the scope of work in compliance with the Authority's HSEC requirements, California Code of Regulations (CCR) Title 8 Standards, and recognized safe work practices.
- F. The Contractor shall instruct all its employees, and all associated sub-contractors under contract with the Contractor who work on Authority projects in the following; recognition, identification, and avoidance of unsafe acts and/or conditions applicable to its work.

PART II – SPECIFIC REQUIREMENTS

2.0 While these safety specifications are intended to promote safe work practices, Contractors are reminded of their obligation to comply with all federal (CFR 1926 & 1910 Standards), state (CCR Title 8 Standards), local and municipal safety regulations, and Authority health, safety and environmental requirements applicable to their project scope. Failure to comply with these standards may be cause for termination of scope, contracts, or agreements with the Authority, at the sole discretion of the Authority.

2.1 REQUIRED DOCUMENTATION / REPORTING REQUIREMENTS

The Contractor at a minimum shall provide the following documents to the Authority's Project Manager. Items A through E below shall be submitted and accepted by the Authority's Project Manager prior to Contractor mobilization. Item F upon each occurrence, and items G through K, contractor shall verify the following documentation is in place, prior to and during contract scope, and make available to the Authority upon request within 72 hours.

A. Comprehensive Project Specific Safety Work Plan.

- a. The Contractor shall develop a site project plan that includes, but is not limited to: Permits, Evacuation, Emergency Plan, Safety Policy, Responsibilities, Scope and Construction Activity Details, Constructability Review, Contractor Coordination Process, Safe Work Methods, Hazard Identification & Risk Control, First Aid and Injury Management, Emergency Procedures, Public Protection, Authority and Contractor Site Rules, Incident Reporting and Investigation, Specialized Work or Licensing, Training and Orientation Requirements, Chemical Management, Safety Monitoring, Safety Meetings, Subcontractor Management, and Project Sign Off.
- b. The site specific safety plan shall include identification of known & potential hazards of Contractor's scope and the mitigation methods (i.e., execution plan). The safety plan shall compliment/mirror the line items of the schedule and identify the hazards, tools & equipment, and safe work methods for tasks listed on the schedule.

B. Company Safety Manual.

C. Certification of Compliance of Company's Injury Illness Prevention Program in accordance with California Code of Regulations (CCR) Title 8, Section 3203.

D. Policy or Certification of Compliance Company's Substance Abuse Prevention Policy.

E. The qualifications/certifications of assigned project competent person, and designated safety representative.

- F. Accident/Incident investigation report within 24 hours of event (immediate verbal notification to Authority Project Manager, followed by Written Report).

The following required documentation shall be provided to the Authority's Project Manager, upon request, within 72 hours.

- G. A copy of Contractor weekly site safety inspection report with status of corrections.
- H. Contractors and sub-tier Contractors competent person list (submit to Authority Project Manager monthly).
- I. Contractors and sub-tier contractors qualified equipment operators list (submit to Project Manager monthly).
- J. A monthly report that includes number of workers on project, a list of sub-tier contractors, work hours (month, year to date, & project cumulative) of each contractor, labor designation, OSHA Recordable injuries and illnesses segregated by medical treatment cases, restricted workday cases, number of restricted days, lost workday cases, and number of lost work days, and Recordable incident rate.

K. TRAINING DOCUMENTATION

To ensure that each employee is qualified to perform their assigned work, when applicable to scope work, contractor shall verify training documentation is in place, prior to and during contract scope, and make available to the Authority, upon request, within 72 hours. Training may be required by the Authority or CCR Title 8 (Cal/OSHA), and required for activity on Authority's property and/or Authority controlled projects.

2.2 HAZARD COMMUNICATION (§5194)

- A. Contractor shall comply with CCR Title 8, Section 5194, Hazard Communication Standard. Prior to use on Authority property and/or project work areas Contractor shall provide the Authority Project Manager copies of MSDS for all applicable products.
- B. All chemicals including paint, solvents, detergents and similar substances shall comply with South Coast Air Quality Management District (SCAQMD) rules 103, 1113, and 1171.

2.3 DESIGNATED SAFETY REPRESENTATIVE

- A. Before beginning on-site activities, the Contractor shall designate an on-site Safety Representative. This person shall be a competent or qualified individual as defined by the Occupational, Safety, and Health Administration (OSHA), familiar with applicable CCR Title 8 Standards, and has the authority to affect changes in work procedures that may have associated schedule and budget impacts.

- B. The Contractor's safety representative for Authority projects are subject to Acceptance by the Authority Project Manager. All contact information of the safety representative (name, phone, and fax and pager/cell phone number) shall be provided to the Authority Project Manager.
- C. QUALIFICATIONS – On capital programs, the Contractor shall submit the resume of the full time, qualified Safety Representative(s) who reports directly to the Contractor's Project Manager or Superintendent, and who is responsible for safety oversight for field operations on the project no later than ten (10) days after receipt of Notice to Proceed, and prior to mobilization. The Contractor's Safety Representative(s) shall have a minimum of five (5) years heavy construction experience in administering safety programs on heavy construction job sites, the last two of which have been administering safety in the construction discipline for which Contractor is contracting with the Authority. The Contractor's Safety Representative shall possess knowledge equal to a CIH, CSP, CHST or similar professional standing. The Contractor Safety Representatives(s) shall be on site during all operational hours. The Safety Representative(s) shall set up, carry forward and aggressively and effectively maintain the project specific safety program and IIPP covering all phases of the Work. If at any time the Contractor wishes to replace their Safety Representative(s), the Contractor must provide written notice thirty (30) days prior to change of personnel to the Authority. The Contractor shall take all precautions and follow all procedures for the safety of, and shall provide all protection to prevent injury to, all persons involved in any way in the Work and all other persons, including, without limitation, the employees, agents, guests, visitors, invitees and licensees of the Authority who may be involved. This requirement applies continuously and is not limited to normal working hours.

For facility modification construction projects, the Contractor shall submit the resume of the qualified Safety Representative who reports directly to the Contractor's Project Manager or Superintendent, and who is responsible for safety oversight for field operations on the project no later than ten (10) days after receipt of Notice to Proceed, and prior to mobilization. The Contractor's Safety Representative shall have, as a minimum, a 30 hour OSHA training certificate, five (5) years construction experience on construction job sites. The authority reserves the right to allow for an exception of these minimum qualification requirements for unforeseen circumstances, at the sole discretion of the Authority Project Manager and HSEC department.

1. Capital programs may include, but are not limited to, projects involving demolition and construction of; heavy construction, rail projects, highway projects, parking structures, fuel stations, building construction, bus base construction, and similar projects as deemed a Capital Program at the sole discretion by the Authority.
2. Facility modification construction projects may include, but are not limited to, projects involving demolition and construction of transportation centers and bus Base site and/or building modifications, equipment and/or building upgrades, and similar projects as deemed a Facility Modification Construction Project at the sole discretion by the Authority.

3. Competent Person means an individual who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees and/or property, and who has authorization to take prompt corrective measures to eliminate them.
 4. Qualified Person means one who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.
- D. The Contractor shall designate a competent person for each task, as required by Cal-OSHA standards or laws. The task competent person shall be responsible for the prevention of accidents. If the Authority or any public agency with jurisdiction notifies the Contractor of any claimed dangerous condition at the site that is within the Contractor's care, custody or control, the Contractor shall take immediate action to rectify the condition at no additional cost to the Authority. The Contractor shall be responsible for the payment of all fines levied against the Authority for deficiencies relating to the Contractor's supervision or conduct and/or control of the scope work.
- E. On facility modification construction projects, the Authority Project Manager reserves the right to require the Contractor to provide one full-time safety representative with qualifications as identified in item (C) above whenever the Contractor and its sub-tier contractors, suppliers, and vendors meets or exceeds 10 workers, or is warranted by the scope of work.
- F. On capital programs, the Authority Project Manager reserves the right to require the Contractor to provide one additional full-time safety representative with qualifications as identified in item (C) above whenever the Contractor and its sub-tier contractors, suppliers, and vendors meets or exceeds 50 workers, or is warranted by the scope of work.

2.4 SITE SAFETY ORIENTATION

The Contractor shall conduct and document a project site safety orientation for all Contractor personnel, sub-tier contractors, suppliers, vendors, and new employees assigned to the project prior to performing any work on Authority projects. The safety orientation at a minimum shall include, as applicable, Personal Protection Equipment (PPE) requirements, eye protection, ANSI class 2 reflective vests, designated smoking, eating, and parking areas, traffic speed limit and routing, cell phone policy, and barricade requirements. When required by scope, additional orientation shall include fall protection, energy isolation/lock-out/tag-out (LOTO), confined space, hot work permit, security requirements, and similar project safety requirements.

2.5 INCIDENT NOTIFICATION AND INVESTIGATION

- A. The Authority shall be promptly notified of any of the following types of incidents:

1. Damage to Authority property (or incidents involving third party property damage);
2. Reportable and/or Recordable injuries (as defined by the U. S. Occupational Safety and Health Administration);
3. Incidents impacting the environment, i.e. spills or releases on Authority property.

Notifications shall be made to Authority representatives, employees and/or agents. This includes incidents occurring to contractors, vendors, visitors, or members of the general public that arise from the performance of Authority contract work. A comprehensive investigation and written report shall be submitted to Authority's Project Manager within 24 hours of the incident.

- G. A serious injury or incident may require a formal incident review at the discretion of the Authority's Project Manager. The incident review shall be conducted within 7 calendar days of the incident. The serious incident presentation shall include action taken for the welfare of the injured, a status report of the injured, causation factors leading to the incident, a root cause analysis, and a detailed recovery plan that identifies corrective actions to prevent a similar incident, and actions to enhance safety awareness.
- H. A serious incident includes: An injury or illness to one or more employees, occurring in a place of employment or in connection with any employment, which requires inpatient hospitalization for a period in excess of twenty-four hours for other than medical observation, or in which an employee suffers the loss of any member of the body, or suffers any serious degree of physical disfigurement. In addition, property damage that causes disruption of operations, delay of work schedule, causes a serious injury, causes third party or other property damage, or requires emergency services is also considered a serious incident.

2.6 REGULAR INSPECTIONS & THIRD PARTY INSPECTIONS

- A. Frequent and regular inspections of the project jobsite shall be made by contractor safety representative, or another competent person designated by the Contractor. Unsafe acts and/or conditions noted during inspections shall be corrected immediately.
- B. The Contractor is advised that representatives of regulatory agencies (i.e., CAL-OSHA, EPA, SCAQMD, etc.), upon proper identification are entitled to access onto Authority property and projects. The Authority Project Manager shall be notified of their arrival as soon as possible.

2.7 VEHICLE AND ROADWAY SAFETY REQUIREMENTS

- A. The Contractor shall ensure that all Contractor vehicles, including those of its sub-tier contractors, suppliers, vendors and employees are parked in designated parking areas, are identified by company name and/or logo, and

comply with traffic routes, and posted traffic signs in areas other than the employee parking lots.

- B. Personal vehicles of the Contractor employees shall not be parked on the traveled way or shoulders including any section closed to public traffic, or areas of the community that may cause interference or complaints
- C. The Contractor shall comply with California Department of Transportation safety requirements and special provisions when working on highway projects.
- D. The Contractor shall conform to American Traffic Safety Services Association (Quality Standard for Work Zone Control Devices 1992).

2.8 LANGUAGE REQUIREMENTS

The Contractor for safety reasons shall ensure employees that do not read, or understand English, shall be within visual and hearing range of a bilingual supervisor or responsible designee at all times when on the Authority property or projects.

2.9 PERSONAL PROTECTIVE EQUIPMENT

Contractors, and all associated sub-tier contractors, vendors and suppliers are required to provide their own personal protective equipment (PPE), including eye, head, foot, and hand protection, respirators, reflective safety vests, and all other PPE required to perform their work safely on Authority projects.

- A. RESPIRATORS (§5144) - The required documentation for training and respirator use shall be provided to the Authority's Project Manager upon request within 72 hours. All compliance documentation as required by CCR Title 8 Standard, Section 5144, Respiratory Protective Equipment.
- B. EYE PROTECTION – The Authority requires eye protection on construction projects and work areas that meet ANSI Z-87.1 Standards.

2.10 AERIAL DEVICES (§3648)

Aerial devices are defined in CCR Title 8 as any vehicle-mounted or self-propelled device, telescoping extensible or articulating, or both, which is primarily designed to position personnel. If aerial devices are to be used, the required documentation in CCR Title 8 Standard, Section 3648 shall be provided to the Authority's Project Manager, upon request, within 72 hours.

2.11 CONFINED SPACE ENTRY (§5157)

Before any employee will be allowed to enter a confined space, the required documentation as required by CCR Title 8 Standard, Section 5157 shall be provided to the Authority's Project Manager, upon request, within 72 hours.

- A. RECOMMENDED: a copy of the most recent calibration record for each air monitoring unit, 3-gas monitor or “sniffer” to be used by the Entry Supervisor prior to entering permit-required confined spaces.

2.12 CRANES

- A. Crane activity shall comply with Standard 29 CFR 1910.550, CCR Title 8 Standards, manufacture’s recommendations and requirements, applicable American Society of Mechanical Engineers (ASME), and American National Standards Institute (ANSI) Standards. In addition, Contractor shall comply with the following requirements: Prior to using mobile cranes, the Contractor shall provide to the Authority Project Manager, items 1, 2 & 3 of the following documentation a minimum of seven (7) days prior to activity, and item 4 on each day of crane activity.

1. Cranes require a submittal of the annual certification, and copy of the cranes most recent quarterly inspection.
2. A copy of each crane operator’s qualification (NCCCO or equivalent) of company-authorized crane operators that have been properly trained in the equipment’s use and limitations. Operator certification as required by CCR Title 8 Standard, Section 5006.1.
3. A rigging plan is required for all lifts. Critical lifts require an engineered plan designed by a registered professional engineer licensed in the State of California.
4. Documented daily crane inspection report.

- B. Pick and carry with rubber tired cranes is forbidden on Authority projects.

- C. Only one (1) sling eye should be in a hook, for multiple slings a shackle shall be used to prevent separation of slings, and prevent stress on weak points of the hook.

D. Engineered Critical Lifts

A critical lifts is established where any one of the following conditions are created:

1. Where in the crane’s current configuration at any point during the lift, a gross load weight exceeds 75% of the capacity of the crane, or 85% of the capacity of the crane where tilt-up panels are erected.
2. A gross weight equal to, or greater than 10 tons.
3. Lifts over buildings, equipment, public roadways, structures, or power lines.

4. A single lift where two or more cranes are used, including tandem lifts and tailing cranes.
5. Lifts made in close proximity of power lines, as defined by CCR Title 8 voltage clearance specifications.
6. Lifts involving helicopters, and specialized or unique and complex rigging equipment.
7. Hoisting of suspended work platforms.
8. Static tower crane erection and dismantlement.
9. Making lifts below the ground level where the crane is positioned.
Note: Where the below the ground lift is minimal (evaluated by California registered professional engineer), a critical lift plan may not be required.

E. Critical Lift Plan

Where a critical lift will be performed, a written critical lift plan shall be submitted to the Authority Project Manager prior to commencing with the lift. The written plan shall include the following:

1. Crane manufacturer, capacity, and all specifications for the configuration to be used for the lift.
2. Load chart data for the crane to be used to make the lift. Total calculated weight of the load to be lifted including all rigging and other deductions consistent with the manufacturer's load chart.
3. Engineering data shall be provided on the hook assembly (manufacturer's certification or independent laboratory testing and load testing within the past 60 days), below-the hook rigging, and all specialized below-the-hook lifting devices.
4. Diagrams of the lift that provides geometrical conditions of the load, rigging, and all crane positions during the lift. The drawing shall provide the following:
 - A. Locations of all components to be lifted prior, during and after the lift is completed.
 - B. Radius points.
 - C. Swing patterns.

- D. In the event that the lift must be aborted, positions where the load may be safely landed.
 - E. Areas where any personnel, public, and vehicles must be evacuated during the lift.
- 5. Potential ground loading for each point of contact by the crane in selected locations in which the crane will perform the critical lift.
 - 6. Soil and subsurface data and information pertaining to the location on which the crane used for the critical lift will be positioned. This information shall be procured from an authoritative source such as a geotechnical engineer or a professional civil engineer registered in the state of California.

***Note:** This information may be available from the Authority for selected locations on some projects.*
 - 7. An engineer shall use the data provided in #5 and #6 above to verify and confirm the following:
 - A. That the soil and subsurface conditions are capable of supporting all loads imposed during the critical lift.
 - B. That the designs of cribbing and other supports used under the crane load points are appropriate to safely transfer such loads.
 - 8. Signature and stamp on the plan by a California registered professional engineer, evidencing review of the plan as meeting the requirements that all loads and load information and calculations contained in the plan are approved, acceptable and safe to perform.
 - 9. Operator qualifications.
 - 10. Method by which communication will be provided to the crane operator. (Designated signal person, two-way radio, hard wire phone system, etc.).
 - 11. A critical lift hazard analysis which identifies the particular hazards (including weather, wind, obstructions, etc.) associated with the lift and the means and methods to reduce, mitigate, or eliminate the hazards.
 - 12. Emergency action plan.
 - 13. Documentation of lift and pre-job meeting shall be conducted by Contractor's Project Manager.

The written plan shall be submitted 7 days prior to any critical lift for review by the Authority Project Manager and the Authority HSEC department. No critical lifts shall be conducted prior to such review.

F. OVERHEAD CRANES

Before using the Authority overhead cranes, each Contractor shall designate a limited number of employees to attend a training session on the use and limitations of overhead cranes with designated Authority personnel.

2.13 DEMOLITION OPERATIONS (§1734)

Before starting demolition activities the required documentation shall be provided to the Authority's Project Manager, upon request, within 72 hours. Contractor shall provide all compliance documentation, as required, by CCR Title 8 Standard, Article 31.

2.14 EXCAVATION OPERATIONS (§1541)

Before starting excavation activities more than 5 feet deep into which people shall enter, the required documentation shall be provided to the Authority's Project Manager upon request within 72 hours. All compliance documentation shall comply with the following CCR Title 8 Standard, Section 1541 requirements:

- A. A copy of the Contractor's Excavation Permit.
- B. Attention is directed to the applicable sections of the Labor Code concerning trench excavation safety plans, "Trench Safety." Excavation for any trench 5 feet or more in depth shall not begin until the Contractor has received approval from the Engineer of the Contractor's detailed plan for worker protection from the hazards of caving ground during the excavation of that trench and any design calculations used in the preparation of the detailed plan. Excavations 20 feet or greater shall be engineered and plan stamped by a California registered professional engineer.
- C. The detailed plan shall show the details of the design of shoring, bracing, sloping or other provisions to be made for worker protection during the excavation. No plan shall allow the use of shoring, sloping or a protective system less effective than that required by the Construction Safety Orders of the Division of Occupational Safety and Health. If the plan complies with the shoring system standards established by the Construction Safety Orders, the plan shall be submitted at least five (5) days before the Contractor intends to begin excavation for the trench.
- D. Excavations and trenches shall be inspected by a "Competent Person" daily and after every rainfall to determine if they are safe. Daily inspections shall be recorded. Documentation is to be kept on site and available for review upon request.
- E. Excavations are considered class 'C' soil unless documented testing in accordance with 29 CFR 1926.650 and the California Code of Regulations

(CCR) Title 8 Standards supports a class 'B' soil classification and is confirmed and stamped by a California registered professional engineer. In no case will excavations be classified as class 'A' soil.

2.15 FALL PROTECTION (§1669-1671)

The following standards are required when performing work on Authority property. The required documentation shall be provided to the Authority's Project Manager, upon request, within 72 hours.

- A. Fall protection is required for workers exposed to falls in excess of six (6) feet.
- B. When conventional fall protections methods are impractical or create a greater hazard, a written plan in conformance with CCR Title 8, Article 24, shall be submitted to the Authority a minimum of seven (7) days in advance of the scheduled activity.

2.16 FORKLIFTS, BACKHOES AND OTHER INDUSTRIAL TRACTORS (§3664)

CCR Title 8 defines backhoes as "industrial tractors". All compliance documentation shall be provided as required by CCR Title, Section 3664, Operating Rules. The following required documentation shall be provided to the Authority's Project Manager, upon request, within 72 hours:

- A. A copy of each operator's certificate or a list, of company-authorized industrial tractor operators that have been properly trained in the equipment's use and limitations. Please state which equipment, and model each operator has been authorized to operate (i.e. forklifts, backhoe, bulldozer, front-end loader, etc.).

2.17 HIGH VOLTAGE ELECTRICAL OPERATIONS (§2700-2974)

Any work on electrical equipment defined by OSHA as high-voltage, at or above 600 volts requires specialized training certifications and personal protective equipment. Before any high-voltage work commences, the Authority Project Manager must be notified and provide approval. The following required documentation shall be provided to the Authority's Project Manager, upon request, within 72 hours:

- A. A list of the name of the company-designated high voltage Qualified Electrical Worker(s).

2.18 POWDER-ACTUATED TOOLS (§1685)

Before using tools such as "Hilti guns" or other powder-actuated tools, the following required documentation shall be provided to the Authority's Project Manager, upon request, within 72 hours.

- A. A copy of each qualified person's valid operator card.

2.19 SCAFFOLDS (§1635.1-1677)

Scaffold erection shall be in compliance with CCR Title 8. All compliance documentation shall be provided as required by CCR Title 8, Sections 1635.1-1677. In addition, the following contractor shall comply with the following additional requirement.

- A. All scaffolds on Authority project shall be inspected by a competent person qualified for scaffolds in accordance with CCR Title 8 Standards.
- B. Contractor shall arrange for a third party inspection, at least quarterly, by a credentialed professional (insurance carrier, scaffold manufacturer representative, or similar) in addition to the contractors daily self inspections.
- C. A proper scaffold inspection and tagging system shall be maintained identifying compliance status (Example: Green/safe, Yellow/modified-fall protection required, Red/unsafe-do not use).
- D. Contractor shall have a fall protection plan that meets CCR Title 8 compliance for scaffold erectors, an erection/dismantling plan shall be submitted to Authority Project Manager for review prior to start of activity.
- E. Scaffold erection/dismantling shall install handrails beginning on the first level above ground erected, and erectors shall plan erection and dismantling in a manner to maximize handrail protection and minimize employees at unprotected areas.

2.20 WARNING SIGNS AND DEVICES

Signs, signals, and/or barricades shall be visible at all times when and where a hazard exists. Overhead tasks, roofing tasks, excavations, roadwork activity, demolition work, and other recognized hazards shall have guardrail protection, warning barricades, or similar protective measures acceptable to the Authority's Project Manager. Signs, signals, and/or barricades shall be removed when the hazard no longer exists.

2.21 STEEL ERECTION

Steel Erection scope activity shall comply with 29 CFR 1926.750, and CCR Title 8 Standards. In addition to OSHA Standards, Contractor shall comply with the following requirements.

- A. Erection planning should incorporate installation methods using aerial devices (man-lifts) and elevated work platforms (scissor lift) to minimize fall hazards of climbing steel where possible. A detailed written job safety analysis (JSA) shall identify installation methods, equipment, and control methods to minimize potential fall hazards.
- B. The Contractor shall not allow any employee to walk the steel unprotected from falls. Contractor employees must be tied-off and "coon" the beam until

safety cables are provided to which employees shall use 100% tie-off protection. Two lanyards are required to ensure 100% tie-off protection.

- C. A safe means of access to the level being worked shall be planned. Climbing and sliding down columns are not considered safe access and are forbidden on Authority projects.
- D. A qualified rigger shall inspect the rigging prior to each shift and each lift.
- E. Multiple lift rigging (Christmas Treeing) lifts are forbidden on Authority property and controlled projects.

2.22 AUDITS

- A. The Authority may, make periodic patrols of the Project Site as a part of its normal security and safety program. The Contractor shall not be relieved of its aforesaid responsibilities and the Authority shall not assume same, nor shall it be deemed to have assumed, any responsibility otherwise imposed upon the Contractor, as a result of safety patrols by the Authority.
- B. The Authority may audit the Contractor's safety program for health, safety and environmental compliance at various intervals of the project, at the sole discretion of the Authority. Elements may include, but are not limited to: OSHA injury & illness records and logs, Job Safety Analysis and safety plans, equipment operator licenses and training records, incident reports, meeting minutes, engineered plans, safety meeting records, crane and rigging plans, equipment inspection records, qualifications of and interviews with key Contractor management personnel, and other similar information. The Contractor shall support and cooperate with these audits at no additional compensation or schedule impacts with this contract.

2.23 FINES

The Contractor shall be responsible for the payment of all fines levied against the Authority for safety violations arising from or related to activities over which Contractor has responsibility per the Contract Documents.

2.24 COMPLIANCE COSTS

Compliance with Health, Safety and Environmental Compliance identified in these aforementioned Authority Safety Specifications shall be at the expense of the Contractor, and included in Bid Documents to the Authority for the Contractor's scope. The Authority shall incur no additional cost or schedule impacts by Contractor, for compliance with California Construction Safety Orders, CCR Title 8 Standards, Federal OSHA Standards, and the Authority Safety Specifications for the protection of persons and property.

END OF DOCUMENT

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative requirements for Submittals: shop drawings, product data and samples submittals.
- B. Submittals Schedule.
- C. Contractor's review of submittals.
- D. Architect's review of submittals.
- E. Product data submittals.
- F. Shop drawing submittals.
- G. Sample submittals.
- H. Maintenance and operation data submittals.

1.2 RELATED SECTIONS

- A. Section 01010 - Summary of the Work
- B. Section 01025 - Measurement and Payment: Supporting data submittals.
- C. Section 01035 - Contract Modification Procedures: Supporting data.
- D. Section 01200 - Project Meetings: Submittal status review at meetings.
- E. Section 01360 - Quality Control Submittals: Reports of field inspections and tests.
- F. Section 01400 - Quality Control: Test and inspection reports.
- G. Section 01700 - Contract Closeout: Submittals for occupancy, Acceptance and Final Payment.

1.3 DEFINITIONS

- A. Shop Drawings, Product Data and Samples: Instruments prepared and submitted by Contractor, for Contractor's benefit, to communicate to the Engineer the Contractor's understanding of the design intent, for review and comment by the Engineer on the conformance of the submitted information to the general intent of the design. Shop drawings, product data and samples are not Contract Documents.
- B. Shop Drawings: Drawings, diagrams, schedules and illustrations, with related notes, specially prepared for the Work of the Contract, to illustrate a portion of the Work.
- C. Product Data: Standard published information ("catalog cuts") and specially prepared data for the Work of the Contract, including standard illustrations, schedules, brochures, diagrams, performance charts, instructions and other information to illustrate a portion of the Work.
- D. Samples: Physical examples that demonstrate the materials, finishes, features, workmanship and other characteristics of a portion of the Work. Accepted samples shall serve as quality basis for evaluating the Work.
- E. Other Submittals: Asphalt Concrete Mix Design, Technical data, test reports, calculations, surveys, certifications, special warranties and guarantees, operation and maintenance data, extra stock and other submitted information and products shall not be considered to be Contract Documents but shall be information from Contractor to the Engineer to illustrate a portion of the Work for confirmation of understanding of design intent.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Administrative Requirements for Submittals: Submittals shall be made in accordance with requirements specified herein and in product Sections of the Specifications.
- B. Transmission of Submittals: Transmit all submittals through the Project Engineer, unless otherwise directed. Include all information specified below for identification of submittal and for monitoring of review process. The Engineer will provide sample Letter of Transmittal, if requested.
- C. Timing of Submittals: Make submittals at time of pre-construction meeting to allow shipping, handling and review by the Engineer and the Engineer's consultants. Allow three weeks for Consultant to review and approve submittals.
- D. Submittals Identification: Identify each submittal by Specification Section number followed by a number indicating sequential submittal for that Section. Re-

submittals shall use same number as original submittal, followed by a letter indicating sequential re-submittal. For example:

- 15700-1 First submittal for Section 15700 Air Conditioning Equipment
- 15700-2 Second submittal for Section 15700 –Air Conditioning Equipment.
- 15700-2-A Re-submittal of second submittal for Section 15700 Air Conditioning Equipment
- 15700-2-B Second re-submittal of second submittal for Section 15700 Air Conditioning Equipment

1. Title each submittal with Project name, the Authority's Project number, Submittal number, Sequence number of Submittal, Contractor's Project number and submission date.
 2. Identify each element on submittal by reference to Drawing sheet number, detail, schedule, number, assembly or equipment number, Specifications article and paragraph, and other pertinent information to clearly correlate submittal with Contract Drawings.
- E. Grouping of Submittals: Unless otherwise specifically permitted by the Engineer, make all submittals in groups containing all associated items. The Engineer may reject partial submittals as incomplete or hold them until related submittals are made.
- F. Unsolicited Submittals: Unsolicited submittals will be returned un-reviewed.
- G. Record Submittals: When record submittals are specified, submit three copies or sets only. Record submittals will not be reviewed but will be retained for historical and maintenance purposes.

1.5 SUBMITTAL SCHEDULE Submit at Pre-construction meeting

- A. Format: Prepare Submittal Schedule in a format comparable to and coordinated with Construction Schedule.
- B. Content: List all items specified to be submitted, indicating submittal number (see instructions above), submittal type (i.e., product data, shop drawings, samples, quality control reports, maintenance and operation data, etc.), scheduled date of submittal and date review should be complete in order to maintain construction on schedule.
- C. Administration:

1. Submit initial Submittal Schedule at time of pre-construction meeting.
2. After review and return by Engineer, resubmit Submittal Schedule within 7 days.

1.6 CONTRACTOR'S REVIEW OF SUBMITTALS

- A. Contractor's Review of Submittals: Prior to submission to the Engineer for review, Contractor shall review each submittal for completeness and conformance to specified requirements. Contractor shall stamp each submittal with a review action stamp and sign each copy certifying that:
1. Field measurements have been determined and verified.
 2. Field construction criteria have been verified.
 3. Catalog numbers and similar data are correct.
 4. Conformance with requirements of Contract Drawings and Specifications is confirmed.
 5. All deviations from requirements of Drawings and Specifications have been identified and noted, and product is available.
- B. Changes in Work: Changes in the Work shall not be authorized by submittals review actions. No review action, implicit or explicit, shall be interpreted to authorized changes in the Work. Changes shall only be authorized by separate written direction, in accordance with the Conditions of the Contract and Section 01035 - Contract Modification Procedures.

1.7 ENGINEERS REVIEW OF SUBMITTALS

- A. Engineers Review of Submittals: Submittals shall be a communication aid between Contractor and the Engineer by which interpretation of Contract Documents requirements may be confirmed in advance of construction. Reviews by the Engineer and the Engineer's consultants shall be only for general conformance with the design concept of the Project and general compliance with the information given in the Drawings and Specifications.
- B. Contract Requirements: Review actions by the Engineer and the Engineer's consultants shall not relieve the Contractor from compliance with requirements of the Drawings and Specifications. Changes shall only be authorized by separate written Change Order or Construction Change Authorization, in accordance with the Conditions of the Contract and Section 01035 - Contract Modification Procedures.

1.8 PRODUCT DATA SUBMITTALS

- A. Copies: Submit 5 copies, minimum, of original catalog pages or dry-process copies only, with applicable data highlighted and cross-referenced to Drawings and Specifications requirements.
- B. Modifications to Standard Product Data: Modify manufacturer's standard catalog data to indicate precise conditions of the Project. Comply with requirements as for shop drawings. Provide space for review action stamps and, if required by authorities having jurisdiction, license seal of the Engineer and Engineer's responsible design consultant, if applicable.

1.9 SHOP DRAWINGS SUBMITTALS

- A. Copies: Prepare shop drawings on sheet size of 17 inches by 22 inches, or smaller, a multiple of 8-1/2 inches by 11 inches. Submit one reproducible and one print, typically, except as noted in product Specifications Sections.
- B. Preparation: Shop drawings shall be original drawings prepared for submittal review, fabrication and execution of Work. Direct copies and modified reproductions of Contract Drawings will not be accepted for review. Provide space for review action stamps and, if required by authorities having jurisdiction, license seal of the Engineer and Engineer's responsible design consultant, if applicable.
- C. Coordination: Show all field dimensions and relationships to adjacent or critical features of Work.

1.10 SAMPLES SUBMITTALS

- A. Quantity: Submit minimum of three samples of each of color, texture and pattern. Submit one item only of actual assembly or product. Unless otherwise noted, full-size and complete samples will be returned and may be incorporated into field mock-ups and the Work.
- B. Samples: The Engineer will review and select material for Project only after all materials are received, so that materials may be properly coordinated.
- C. Copies: Submit actual samples. Photographic or printed reproductions will not be accepted.

1.11 OPERATION AND MAINTENANCE DATA SUBMITTALS

- A. Operation and Maintenance Data Submittals: Include operation and maintenance data submittals in Submittals Schedule specified above. Provide space for review action stamps and, if required by governing authorities having jurisdiction, license seal of Engineer and Engineer's design consultant, if applicable.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

Not applicable to this Section.

END OF SECTION 01340

SECTION 02221

DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section.
- B. Section Includes: Furnishing labor, materials and equipment necessary for demolition, dismantling, cutting and alterations as indicated, specified, or required for completion of the Work. Includes items such as the following:
 - 1. Protection of existing improvements to remain.
 - 2. Cleaning existing improvements to remain.
 - 3. Disconnecting and capping utilities.
 - 4. Removing debris, waste materials, and equipment.
 - 5. Removal of items for performance of the Work.
 - 6. Salvageable items to be retained by the Owner.
- C. Related Sections:
 - 1. Section 01005: Summary of the Work.
 - 2. Section 01045: Cutting and Patching
 - 3. Section 01500: Construction Facilities and Temporary Controls.
 - 4. Division 15: Mechanical
 - 5. Division 16: Electrical

1.02 SUBMITTALS

- A. Shop Drawings: Submit Shop Drawings indicating the extent of items and systems to be removed. Indicate items to be salvaged or items to be protected during demolition. Indicate locations of utility terminations and the extent of abandoned lines to be removed. Include details indicating methods and location of utility terminations.

1.03 QUALITY ASSURANCE

- A. Perform the Work of this section by workers skilled in the demolition of buildings and structures. Perform the Work of this section under direct superintendence at all times.
- B. Prior to commencement of Work, schedule a walkthrough with the Authority, to confirm Owner property items have been removed from scheduled Work areas. Identify and mark remaining property items and schedule their removal.
- C. Coordinate demolition for the correct sequence, limits, and methods. Schedule demolition Work to create least possible inconvenience to the public and facility operations.

1.04 PROJECT CONDITIONS

- A. Drawings may not indicate in detail all demolition Work to be performed. Examine existing conditions to determine the full extent of required demolition.
- B. Repair damage to existing improvements or damage due to excessive demolition.
- C. Provide all measures to avoid excessive damage from inadequate or improper means and methods, improper shoring, bracing or support.
- D. If conditions are encountered that varies from those indicated, promptly notify the Authority for clarification before proceeding.

PART 2 - PRODUCTS

2.01 HANDLING OF MATERIALS

- A. Items scheduled for salvage by the Owner shall be delivered to a location designated by the Authority. Items shall be cleaned, packaged and labeled for storage.
- B. Items scheduled for reuse shall be stored on the Project site and protected from damage, theft and other deleterious conditions.

PART 3 - EXECUTION

3.01 GENERAL

- A. Protection:
 - 1. Do not commence demolition until safety partitions, barricades, warning signs and other forms of protection are installed.
 - 2. Provide all safeguards, including warning signs, lights and barricades, for protection of workers, occupants, and the public.

- B. If, at any time, safety of existing construction appears to be endangered, take immediate measures to correct such conditions; cease operations and immediately notify the Authority.

3.02 DEMOLITION

- A. Do not throw or drop materials. Furnish ramps or chutes as required by the Work.
- B. Remove existing construction only to extent necessary for proper installation of Work and interfacing with existing construction. Cut back finished surfaces to straight, plumb or level lines as required for a smooth transition.
- C. Where openings are cut oversize or in improper locations, replace or repair to required condition.

3.03 CUTTING EXISTING CONCRETE

- A. Cutting of existing concrete shall be performed by skilled workers familiar with the requirements and space necessary for placing concrete. Perform concrete cutting with concrete cutting wheels and hand chisels. Do not damage concrete intended to remain.
- B. Extent of cutting of structural concrete shall be as indicated on Drawings. Cutting of non-structural concrete shall be as indicated on Drawings or as reviewed by the engineer. Replace concrete demolished in excess of amounts indicated.
- C. Prior to cutting or coring concrete, determine locations of hidden utilities or other existing improvements and provide necessary measures to protect them from damage.

3.04 REMOVAL OF EXISTING PLUMBING AND ELECTRICAL EQUIPMENT AND SERVICES

- A. Remove existing electrical equipment fixtures and services not indicated for reuse and not necessary for completion of the Work. Remove abandoned lines and cap unused portions of existing lines.

3.05 REMOVAL OF OTHER MATERIALS

- A. Masonry: Cut back to joint lines and remove mortar without damaging units to remain. Allow space for repairs to backing where applicable.
- B. Sheet Metal: Remove back to joint, lap, or connection. Secure loose and unfastened ends or edges and provide a watertight condition. Re-seal as required.
- C. Modular materials such as acoustical ceiling panels, resilient tile, or ceramic tile: Remove to a natural joint without leaving damaged or defective Work where joining new Work. After flooring removal, clean substrates to remove setting materials and adhesives.
- D. Gypsum Board: Remove to a panel joint line on a stud or support line.

- E. Plaster: Saw cut plaster on straight lines, leaving a minimum 2 inch width of firmly attached metal lath for installing new lath and plaster.
- F. Remove existing improvements not specifically indicated or required but necessary to perform Work. Cut to clean lines, allowing for installation of Work.

3.06 PATCHING

- A. Patch and/or repair materials to remain when damaged by the performance of the Work of this section. Finish material and appearance of patch and/or repair Work shall match existing.

3.07 CLEANING

- A. Clean existing materials to remain with appropriate tools and equipment.
- B. Protect existing improvements during cleaning operations.
- C. Debris shall be dampened by fog water spray prior to transporting by truck.
- D. Debris pick-up area shall be kept broom-clean and shall be washed daily with clean water.
- E. Remove waste and debris, other than items to be salvaged. Turn over salvaged items to Owner, or store and protect for reuse where required. Continuously clean up and remove items as demolition Work progresses.
- F. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 02316

EXCAVATING, BACKFILLING AND COMPACTING FOR PAVEMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section.
- B. Section Includes:
 - 1. Excavating, backfill, and compacting for paved areas.
 - 2. Installation of fill materials.
- C. Related Sections:
 - 1. Section 02765: Pavement Repair.

1.02 SYSTEM DESCRIPTION

- A. Import and Export of Earth Materials:
 - 1. Fees: Pay as required by authorities having jurisdiction over the area.
 - 2. Bonds: Post as required by authorities having jurisdiction over the area.
 - 3. Haul Routes and Restrictions: Comply with requirements of authorities having jurisdiction over the area.

1.03 SUBMITTALS

- A. Imported Soils: Obtain initial product Sample for testing in accordance with the terms of sub-section 3.05 of this section.

1.04 QUALITY ASSURANCE

- A. Comply with Standard Specifications for Public Works Construction, current edition, except as modified herein.

PART 2 - PRODUCTS

2.01 BASE MATERIALS

- A. Concrete Slabs On Grade: Provide "Crushed Aggregate Base " as specified in the Standard Specifications for Public Works Construction, Section 200: "Rock Materials," with $\frac{3}{4}$ inch maximum size aggregates. Provide 3 inch thick base, unless noted otherwise.

2.02 FILL AND BACKFILL MATERIALS

- A. Fill and backfill materials shall be previously excavated materials or imported fill material, free of clods and stones larger than 3 inches, foreign materials, vegetable growths, sod, expansive soils, rubbish and debris. Material shall conform to these specified requirements and related sections.
- B. Fill material exhibiting a wide variation in consistency and/or moisture content shall be blended and/or aerated to stabilize and upgrade the material.
- C. Imported Fill Material:
1. Provide suitable materials obtained from Project site excavations for earthwork and fill materials. If excavated materials are not of suitable quality or sufficient quantity, import additional materials as necessary.
 2. Imported fill shall be a granular material with sufficient binder to form a firm and stable unyielding subgrade and shall not have more than 60 percent of fines passing 200 mesh sieve. Material shall have a coefficient of expansion of not more than 2 percent from air dry to optimum moisture content and not more than 6 percent from air dry to saturation. Imported material shall be clean and free of rubbish, debris, and toxic or hazardous contaminants. Adobe or clay soils are not permitted.
- D. Other Fill Materials: Brick rubble and broken concrete originating from the Project site may be legally disposed of off the Project site or incorporated in fill.
- E. Permeable Backfill:
1. Provide permeable backfill material behind retaining structures consisting of gravel, crushed gravel, crushed rock, natural sands, manufactured sand, or combinations of these materials conforming to the following gradations:

Sieve Size:	Percentage Passing:
3/4 inch (19mm)	100
3/8 inch (10mm)	80-100
No. 100	0-8
No. 200	0-3
 2. Those portions of fill material passing a No. 4 sieve shall provide a sand equivalent of at least 60.
 3. Provided backing for weep-holes shall consist of 2 cu. ft. of aggregate in burlap sacks, securely tied. Aggregate shall conform to requirements for No. 3 concrete aggregate as specified in subsection 200-1.4 of the Standard Specifications for Public Works Construction.

4. Permeable Backfill Alternate Materials: Instead of the materials specified for retaining structures backfill, a drainage matting system such as Miradrain by Mirafi, Inc., or equal, may be provided if reviewed by the Engineer.

PART 3 - EXECUTION

3.01 SITE PREPARATION

- A. Clear the Project site as required.

3.02 PROTECTION

- A. Protect and guard excavations against danger to life, limb, and property as required by, but not limited to, OSHA regulations.
- B. Protect adjacent existing improvements including landscaping against damage.

3.03 EXISTING UTILITY LINES

- A. Protect existing utility lines from damage or displacement.
- B. Remove conduits or pipes not in service, exposed during Work, unless a minimum cover of 2 feet is provided. Remove concrete, clay or other non-metallic pipe over 8 inches in diameter, unless otherwise indicated.

3.04 EXCAVATION

- A. Unclassified Excavations: Comply with the Standard Specifications for Public Works Construction, Section 300: "Earthwork," except as modified herein.

3.05 FILL

- A. Unclassified Fill and Compaction: Comply with the Standard Specifications for Public Works Construction, Section 300: "Earthwork," except as modified herein.
- B. Provide fill materials as specified in Part 2 – Products. If excavated materials from the Project site are not of required quality or sufficient quantity, import additional materials as necessary.
- C. Initial sampling shall be performed before importing material to the Project site. Identify the location of the source site in addition to the address, name of the person and/or entity responsible for the source site. Obtain both the initial and additional samples from the identified site and shall submit all samples to the approved independent testing laboratory for testing.
- D. If the total quantity of import is determined to be greater than 1000 cubic yards of material, one sample shall be obtained and submitted for testing tested for each 250 cubic yards of imported material. If the total quantity of import is determined to be less than 1000 yards, one sample shall be obtained and submitted for testing for each 100 cubic yards of imported material.
- E. The independent approved testing laboratory shall perform the required tests and report results of all tests noting if the tested material passed or failed such tests

and shall furnish copies to the Authority, Contractor, and others as required. Report shall state tests were conducted under the responsible charge of a licensed State of California professional engineer and the material was tested in accordance with applicable provisions of the Contract Documents, Title 24, CCR. Upon completion of the Work of this section, the independent testing laboratory shall submit a verified report to the City as required by Title 24, CCR.

- F. Upon completion of import operations, provide the Authority a certification statement attesting that all imported material has been obtained from the identified source site.

3.06 INSTALLATION OF MATERIALS

- A. Fill or backfill materials shall be installed in horizontal layers of 6 inches, unless otherwise required. Each layer shall be evenly placed and moistened or aerated as necessary. Each layer of fill material shall cover the length and width of the area to be filled before the next layer of material is installed. Top surface of each layer shall be installed to an approximate level with a crown or crossfall of at least 1 in 50, but no more than 1 in 20. Provide adequate drainage at all times during construction of the Work of this section.

3.07 COMPACTING

- A. Each layer of fill material shall be compacted by tamping, sheepfoot rollers, or pneumatic-tired rollers to provide specified relative compaction. At inaccessible locations, provide specified compaction by manually held, operated and directed compaction equipment.
- B. Unless otherwise indicated, compact each layer of earth fill to a relative compaction of at least 90 percent.
- C. When fill materials, or a combination of fill materials, are encountered or provided which develop densely packed surfaces as a result of installation or compacting operations, scarify each compacted layer before installing the next succeeding layer.

3.08 TESTING

- A. Compaction: Test compaction in accordance with ASTM D 1557, Method C.

3.09 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

3.10 CLEANING

- A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 02765

PAVEMENT REPAIR

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section.
- B. Section Includes:
 - 1. Bituminous Surfacing Repair: Areas removed for utility trenches.
 - 2. Concrete Pavement Repair: Remove for utility trench
- C. Related Sections:
 - 1. Section 02316: Excavating, Backfilling and Compacting for Pavement.

1.02 SUBMITTALS

- A. Shop Drawings: Submit Shop Drawings indicating areas to be repaired.
- B. Product Data: Submit manufacturer's technical data for materials and products.

1.03 QUALITY ASSURANCE

- A. Comply with Standard Specifications for Public Works Construction, current edition.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Concrete, Mortar and Related Materials: Comply with applicable provisions of Standard Specifications for Public Works Construction, Section 201 - Concrete, Mortar and Related Materials:
 - 1. Concrete: 28-day compressive strength 2,500 psi, unless specified otherwise.
 - 2. Reinforcing Mesh: ASTM A 185, 4x4/W1.4 x W1.4 welded wire mesh.
 - 3. Expansion Joint Filler: Preformed expansion joint filler, bituminous type, complying with ASTM D 994.

2.02 BITUMINOUS MATERIALS

- A. Provide materials and products of the class, grade or type indicated, conforming to relevant provisions of Section 203 - Bituminous Materials of the latest Standard Specifications for Public Works Construction.

2.03 HEADERS AND STAKES

- A. Headers: Redwood, Construction Heart Grade, size 2 x 6, unless otherwise indicated on Drawings.
- B. Stakes: 2 x 4 redwood or 2 x 3 Douglas fir, Construction Grade.
- C. Nails: Common, galvanized, 12d minimum.

2.04 SLURRY

- A. Cement-sand slurry; minimum one sack of cement per cubic yard of mixture.

PART 3 - EXECUTION

3.01 PAVEMENT REMOVAL

- A. Remove bituminous and concrete pavement in accordance with applicable provisions of Section 300 - Earthwork of the Standard Specifications for Public Works Construction.
- B. Pavement Heaved By Roots: Remove pavement to limits of distortion and expose roots. Trim roots to provide at least 12 inches clearance to pavement.
- C. Remove protruding bituminous surfaces flush with the surrounding grade using a suitable tool or equipment so that adjacent finishes are not blackened.
- D. Remove raveled and depressed bituminous pavement to limits indicated or required.
- E. Saw cut existing improvements, trim holes and trenches in bituminous and concrete pavement to permit mechanical hand tampers to compact the fill.
- F. Remove broken concrete by saw cutting. If the required cut line is within 30 inches of a score or joint line or edge, cut and remove to the score, joint line, or edge.

3.02 EXCAVATING, BACKFILLING AND COMPACTING

- A. Conform to requirements in Section 02316: Excavating, Backfilling and Compacting for Pavement as required.
- B. Where subgrade or base is deemed to be unstable or otherwise unsuitable, excavate such materials to firm earth, and replace with a required material. Install and compact fill materials in accordance with the requirements of related Specification sections.

3.03 HEADERS

- A. Install headers along edge of bituminous surfacing abutting turf, earth, or planting area, unless indicated otherwise.
- B. Install headers so the bottom surface has continuous bearing on solid grade. Where excavation for headers is undercut, thoroughly tamp soil under the header. Compact backfill on both sides of header to the density of the adjacent undisturbed grade.
- C. Fasten headers in place with redwood or Douglas fir stakes of length necessary to extend into solid earth a minimum of 12 inches. Stakes shall be of sound material, neatly pointed, driven vertically, and securely nailed to headers. Space stakes, not to exceed 4 feet on centers with top of stakes set one inch below top of header. Provide a minimum of 2-12d galvanized common nails through each stake.
- D. Remove existing headers where new surfacing is installed adjacent to existing surfacing.
- E. Install temporary headers at transverse joints of paving where continuous paving operations are not maintained.
- F. Provide additional stakes and devices as required to fasten headers.

3.04 BASE COURSE

- A. Unless otherwise indicated, base course shall be crushed aggregate base, fine grade, 3 inches thick or equal to thickness of the existing base, whichever is greater.
- B. Fill grade and compact as specified in Section 02310: Grading.

3.05 RESURFACING

- A. Holes and Trenches: Remove loose dirt and backfill with cement-sand slurry allowing for surfacing one inch thicker than existing. Unless otherwise indicated on Drawings, resurface flush with existing adjoining pavement installing the same type of materials and section provided in existing improvements.
- B. Other Areas: Other surface improvements damaged or removed shall be cut to a neat even line and excavated one inch below the bottom of the existing pavement. Resurface by following the original grades and installing the same type of materials provided in existing improvements.
- C. Where bituminous surfacing abuts concrete, masonry, walks or paving, tamp joint smooth, if necessary, as described above to obtain a uniformly even joint, true to line and grade. Tamp and smooth materials before asphalt cools.

3.06 REPAIRING AND RESEALING EXISTING SURFACES

- A. Preparation of Surfaces: Prior to filling cracks, clean existing bituminous surfacing of loose and foreign materials and coat with a film of asphalt emulsion.
- B. Repair of Existing Surfacing:
 - 1. Fill cracks 1/2 inch wide and less with RS-1 emulsion and silica sand or other required material. Cracks larger than 1/2 inch wide shall be filled with Type C2 Asphalt Concrete as specified. Cracks shall be filled to the level of adjacent surfacing.
 - 2. Where low areas, holes, or depressions occur in existing surfacing, repair with emulsified asphalt. Install material, strike off the emulsified asphalt with a straightedge flush with adjoining surfacing. Finish with a steel trowel, and after dehydration, compact by rolling or tamping.
- C. Testing: Flood test entire area in presence of the Authority. Entire area tested shall be free of standing water or puddles.
- D. Surface Seal: After surface has been repaired and tested, install seal coat over entire area indicated.

3.07 CLEANING

- A. Remove all stains on the Project site and adjacent properties caused by or attributed to the Work of this section.
- B. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

3.08 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 09980

CONCRETE FLOOR SEALER

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section.
- B. Section Includes:
 - 1. Concrete floor sealer on concrete surfaces as indicated on Drawings.
 - 2. Bead blasting of existing concrete floor surfaces to receive sealer.

1.02 SUBMITTALS

- A. Samples: Submit one pint Sample of floor sealer.
- B. Product Data: Submit floor sealer manufacturer's technical data and installation instructions covering installation conditions of the Work of this section, with copies of code approvals.

1.03 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Concrete floor sealer shall be product of a manufacturer who has been regularly engaged in manufacture of material for at least 10 years and can provide references of at least 5 installations in which this material has been in satisfactory service for at least 3 years.
- B. Compliance with Regulations: Materials shall comply with the current rules and regulations of the local air quality management district, with the rules regarding volatile organic compounds, and with FDA rules and regulations for dangerous materials in sealers.

1.04 PRODUCT HANDLING

- A. Materials shall be delivered to Project site in manufacturer's unopened containers bearing manufacturer's labels with batch number and date of manufacture.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Thoro System Products, Miami FL.
- B. ProSoCo, Inc., Kansas City, KS.
- C. Or equal.

2.02 MATERIALS

- A. General: Sealer shall be water based, SCAQMD approved, clear urethane coating, designed for installation on interior and exterior traffic surfaces. Sealer shall be designed to penetrate the pore surface of the concrete and inhibit moisture migration.
- B. Sheen: Completed sealer shall have semi-gloss sheen, unless otherwise required.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine areas and conditions under which Work of this section will be applied. Do not proceed until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Bead blasting: Work includes bead blasting of surfaces as required for proper preparation of surfaces. Completely remove existing curing compounds, finishes, stains, oil, grease, bitumen, penetrated mastics and adhesives including primers, and substances deleterious to bond or connection of new materials, and expose clean sound surfaces. Employ wet bead blasting for interior surfaces and for exterior surfaces where required.
- B. Sealer application: Prepare surfaces in accordance with the coating manufacturers printed instructions. Remove contaminants including loose mortar, rust and other products of corrosion, disintegrated concrete, and other substances that could interfere with adhesion of the coating system to the substrate.

3.03 APPLICATION

- A. Install by experienced mechanics with methods and spray or roller equipment recommended by coating manufacturer, after surfaces to be treated are dry.
- B. Mix the 2 components and install floor sealer in accordance with manufacturer's recommendations. Install evenly over the surface in 2 coats at approximately 200 square feet per gallon per coat.
- C. Keep traffic from treated surfaces until the material is thoroughly dry.

3.04 CLEANING

- A. Remove rubbish, debris and waste material and legally dispose off the Project site.

3.05 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 15010

BASIC MECHANICAL REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes:
 - 1. This section provides the basic mechanical requirements that apply to the Work of Division 15.
- C. Related Sections:
 - 1. Division 16: Electrical.
- D. Coordination:
 - 1. Coordinate related Work of Division 15: Mechanical.
 - 2. Coordinate related Work of other divisions.
 - 3. Coordinate scheduling to minimize operational disruption of existing facilities.
- E. Ordinances and Regulatory Requirements:
 - 1. Current federal Safe Drinking Water Act (SDWA) regulations require the furnishing of lead-free pipe, solder, and flux in the installation or repair of plumbing in non-residential facilities connected to public drinking water systems. Under this regulation, solders and flux are considered lead-free when they contain 0.2 percent lead or less. Pipes and pipe fittings are considered lead-free when they contain 8.0 percent lead or less.
 - 2. Workmanship, materials, equipment, and installation shall comply with industry standards and code requirements. Where manufacturer's recommendations exceed industry standards, the manufacturer's recommendation shall establish the minimum standard. As a minimum, standards from the following organizations shall apply:
 - a. AMCA - Air Moving and Conditioning Association.
 - b. ANSI - American National Standards Institute.

- c. ASME - American Society of Mechanical Engineers.
 - (1) Code for Pressure Piping.
 - d. ARI - Air Conditioning Refrigeration Institute.
 - e. ASHRAE - American Society of Heating, Refrigerating and Air Conditioning Engineers.
 - f. ASTM - American Society for Testing and Materials.
 - (1) A-53 Specification for Welded and Seamless Pipe.
 - g. OSHA - Occupational Safety and Health Administration.
 - h. SMACNA - Sheet Metal and Air Conditioning Contractors National Association, Inc.
 - i. UL - Underwriters Laboratories.
3. Workmanship, materials, equipment, and installation shall comply with federal, state, and local codes including, but not limited to, the following:
- a. CBC, CMC, and CPC - latest edition as adopted by the City of Santa Ana, the County of Orange including amendments effective on the Effective Date of the Contract.
 - b. Division of Industrial Safety - electrical safety orders.
 - c. OSHA - Occupational Safety and Health Administration.
 - d. Department of Health.
4. Specifications or Drawings shall be not construed to permit deviation from the requirements of governing codes unless approval has been obtained from legally constituted authorities having jurisdiction, and the Engineer. The Contract Documents may contain more stringent requirements than those legally required.

F. Drawings and Specifications:

- 1. Contract Documents indicate extent and general arrangement of Work under Division 15. may require adjustments to provide maximum headroom, a neat arrangement to keep passageways and openings clear to provide accessibility and provisions for maintenance, and to meet code requirements.

2. Refer to Section 01040 Coordination to coordinate mechanical Work with Work of other Divisions.

G. Materials and Equipment:

1. Unless otherwise specified, materials and equipment shall be new, in good and clean condition. Equipment, materials, and components shall be of the make; type and model number noted on Drawings or specified. Pieces of equipment of the same type shall be by the same manufacturer.
2. Whenever an item is listed by a single proprietary name, with or without model number and type, it shall be for purpose of design only, to indicate characteristics and quality desired. Proprietary designation listed on Drawings, or listed first in Specifications, is used as a basis for design to establish a standard for quality and performance and space requirements.
3. For substitution of materials or products, refer to the General Conditions.

H. Submittals:

1. Provide submittals in accordance with Section 01360 and with specific requirements of Division 15, as applicable.
2. Submit the following:
 - a. A complete materials list of items to be furnished and installed under this Division.
 - b. Shop Drawings, as required.
 - c. Manufacturer's specifications and other Product Data required to demonstrate compliance with specified requirements.
 - d. Manufacturer's printed installation instructions
 - e. Catalogs.
 - f. Operating instructions.
3. When reviewed by the Engineer, the above information shall become the basis for inspecting and testing materials and actual installation procedures performed in the Work.
4. Shop Drawings: Submit one additional copy when control diagrams having line voltage connections are indicated. Shop Drawings shall be specifically

prepared for the Work of this Project, as required. Shop Drawings shall indicate at a minimum:

- a. Complete system layout of equipment, components, ductwork, and piping, indicating service clearances.
 - b. Schedule and description of equipment, ductwork, piping, fittings, valves, dampers, and controllers.
- I. Protection, Care and Cleaning: In addition to storage criteria of the General Conditions, , the following shall be provided:
1. Provide for the safety and good condition of materials and equipment until Substantial Completion. Protect materials and equipment from damage.
 2. Protect installed Work.
 3. Replacements: In case of damage, immediately provide repairs and/or replacements as required.
 4. Delivery and Storage: Deliver materials to Project site in their original unopened containers with labels intact and legible at time of delivery. Store in strict accordance with manufacturer's recommendations.
 5. Do not store plastic pipe or materials in direct sunlight.
 6. Protect covering for bearings, open connections to tanks, pipe coils, pumps, compressors and similar equipment.
 7. Interior of ductwork shall be maintained free of dirt, grit, dust, loose insulation, and other foreign materials.
 8. Air handling equipment shall not be operated until building is cleaned and air filters are installed.
 9. Fixtures, piping, finished brass or bronze, and equipment shall have grease, adhesive, labels, and foreign materials removed. Chromium, nickel plate, polished bronze or brass Work shall be polished. Glass shall be cleaned inside and out.
 10. Before initial start-up and again before Substantial Completion, piping shall be drained and flushed to completely remove grease and foreign matter. Pressure regulating assemblies, traps, strainers, boilers, flush valves, and similar items shall be thoroughly cleaned. Tag system with an information tag listing responsible party and date of element, before initial start-up and again before Substantial Completion. Compressed air, oil, and gas piping shall be

blown out with oil-free compressed air or inert gas. Refrigerant piping shall be cleaned.

J. Guarantees and Damage Responsibility:

1. Operation of mechanical system shall not produce operational sounds that can be heard outside of rooms enclosing apparatus or equipment.
2. Unit air conditioners and fans, and distribution systems shall be warranted by their manufacturers to operate without undue noise of more than 50 decibels on the A scale, measured 10 feet away from the unit unless otherwise specified. Perform adjustments or required corrective actions to meet these standards without reducing flow quantities specified in the Contract Documents.

K. Project Record Documents:

1. Comply with provisions of Section 01700: Contract Closeout.
2. Project Record Drawings: Provide a complete set mechanical and control system drawings in AutoCAD format, complete with external reference drawings, fonts, blocks and plotter pen color/line thickness settings on CD-ROM. Also submit one set of full size reproducible plots on vellum and 3 sets of prints.
3. Before Final Completion, deliver corrected and completed prints to the Authority. Delivery of project record documents to the Authority does not relinquish responsibility of furnishing required information omitted from project record documents.

L. Preliminary Operation:

1. The Authority may require any portion of mechanical Work to be operated before Substantial Completion. Such operation shall be in addition to regular tests, demonstrations and instructions required under the Contract Documents, and shall be performed as required.

M. Tests and Testing:

1. Tests shall be as required under the applicable sections of Division 15, including this section.
2. Additional tests may be required in the case of products, materials, and equipment if:

- a. Submitted items are altered, changed, or cannot be determined as exactly conforming to the Contract Documents.
 - b. Performance testing and results may also be required on certain items which are as specified, including fan performance.
3. Piping Tests:
 - a. Perform tests required to demonstrate that operation of mechanical systems and their parts are in accordance with Specifications covering each item or system, and furnish materials, instruments and equipment necessary to conduct such tests. Tests shall be performed in presence of the Authority and representatives of any governmental agency having jurisdiction. Work shall not be concealed or covered until required results are provided.
 - b. If required tests are not performed, Owner may provide in accordance with the Contract Documents.
 - c. Pressure gauges furnished in testing shall provide one-pound graduations; vacuum gauges shall provide one-inch mercury graduations. Air shall be bled from lines requiring hydrostatic or water tests.
 - d. Refrigerant piping may be tested with a halide detector or calibrated electronic testing equipment.
 - e. Repair of damage to pipes and their appurtenances or to any other structures resulting from or caused by these tests, shall be provided.
4. Pipe Testing Schedule:

<u>System Tested</u>	<u>Test Pressure (psig)</u>	<u>Test With:</u>
a. Refrigeration suction		
b. R-410a	250	Dry nitrogen
5. Equipment Performance Assurance Tests:
 - a. Before operating any equipment or systems, a thorough check shall be performed to determine that systems have been flushed and cleaned as required and that equipment has been properly installed, aligned, lubricated, and serviced. Factory instructions shall be checked to verify installations have been completed, recommended lubricants

have been installed in bearings. Particular care shall be furnished in lubricating bearings to avoid damage by over-lubrication and blowing out seals. Equipment shall also be checked for damage that may have occurred during shipment, after delivery, or during installation. Damaged equipment, products, and/or materials shall be replaced or repaired as required.

- b. Equipment Start-up Reports: For each equipment or system on which start-up is performed, submit 8 copies of the start-up report for review by the Authority.
 - 1. The start-up report shall include the manufacturer's standard start-up form completed and signed by the start-up technician.
 - c. Provide, maintain, and pay costs for equipment, instruments, and operating personnel as required for specified tests.
 - d. Provide electric energy for tests.
 - e. Final adjustment to equipment or systems shall meet specified performance requirements.
 - f. Equipment, systems, or Work deemed defective during testing shall be replaced and/or corrected as required. Test until satisfactory results are provided.
6. Specific Coordinated Plan for Test & Balance at Substantial Completion:
- a. Provide a narrative of the operational intent that clearly describes the function and sequence of operation of each component, equipment, or system installed. Instruct designated Owner personnel in the operation of the installed systems.
 - b. Before Substantial Completion, mechanical equipment and systems shall be operated and tested for a period of at least 5 consecutive days to demonstrate satisfactory overall operation of the installed systems. Tests shall include operation of air conditioning equipment and systems for a period of not less than two 8 hour periods at 90 percent of the full specified capacity.
 - c. Tests shall commence after preliminary adjustments to equipment and systems have been completed, and operating equipment has been checked and thoroughly lubricated.
 - d. Immediately before starting tests, air filter media shall be cleaned or renewed. Disposable type filters shall be replaced with new filters.

- e. Systems shall be adjusted to provide airflows indicated. Dampers shall be checked for proper settings and operation. Air inlet and leaving temperatures at coils shall be checked. Complete operational data including airflows, room temperatures, fan speeds, motor currents, plenum, and static pressures shall be tabulated.

N. Location:

- 1. Location of piping, apparatus, and equipment as indicated on Drawings is approximate and shall be altered to avoid obstructions, preserve headroom and provide free and clear openings and passageways.
- 2. Place equipment in locations and spaces indicated, disassemble and/or reassemble equipment as required by Project conditions.

O. Cutting, Notching and Backing:

- 1. Conform to California Building Code, Title 24, Part 2, Section 2320.A11.10, for notches and bored holes, for pipes and sleeves embedded in concrete.
- 2. Where pipes or ducts pass through, or are located within one inch of any construction element, install a resilient pad, 1/2 inch thick minimum, to prevent contact.
- 3. Furnish all necessary provisions for recesses, chases, accesses, and provide wood blocking and backing as necessary for proper reception and installation of mechanical Work.

P. Service Interruptions:

- 1. Schedule Work so there shall be no service interruptions of existing systems and/or systems during normal hours of operation of affected systems and/or facilities.
- 2. When service interruptions are mandatory, arrange in advance with the Authority as to time and date of such interruptions.
- 3. Systems, which are interrupted, shall be returned back into operation in such manner that they will function as originally intended.

Q. Operation and Maintenance Manuals:

- 1. General: Submit 2 copies of operation and maintenance manuals in required form and content and per the requirements in Section 01340. If no revisions are required, furnish one additional copy. If revisions are required, one copy

shall be returned with instructions for changes; perform such changes and return 3 copies of manuals. Manuals shall be bound in hardback, 3-ring, loose-leaf binders. Deliver manuals to the Authority. Submit an electronic copy of the entire manual in Adobe Acrobat (PDF file) format.

2. Contents of Manual:

- a. Title sheet with Project name, including names, addresses and telephone number of Contractor, installer, and related equipment suppliers.
- b. Manufacturer's operating instructions including, but not limited to, the following:
 - (1) Identification of components and controls.
 - (2) Pre-start checklist and start-up procedures.
 - (3) Normal operation settings and checklists.
 - (4) Pre-shut down checklist and shut down procedures.
 - (5) Trouble shooting checklist and guidelines.
 - (6) Recommendations for optimum performance.
 - (7) Warnings and safety precautions on improper or hazardous operational procedures or conditions
- c. Manufacturer's product data and parts and maintenance booklet for each item of equipment furnished under Division 15 that includes the following as a minimum:
 - (1) Manufacturer's model, identification and serial numbers.
 - (2) Exploded view of assembly drawings identifying each component or part with the relevant part number.
 - (3) Directory of manufacturer's representatives, service contractors and part distributors.
 - (4) Maintenance and trouble-shooting instructions, including schedule for preventive maintenance, periodic inspection and cleaning criteria.

- d. Project Record Drawings: Complete set of mechanical, plumbing, fire protection and control system drawings in 50 percent reduced print format shall be furnished with the manual. Submit the above record drawings on CD-ROM in AutoCAD format complete with external reference drawings, fonts, blocks, and plotter pen color/line thickness settings.
- e. Test and balance reports: Submit as specified in this section.
- f. Equipment and component identification chart complete with location, function, size, and model of each equipment or component with reference to the project record drawings.

R. Training of Owner Personnel:

- 1. Contract shall include the cost of training Owner operation and maintenance personnel in operating, adjusting, maintenance, trouble-shooting, and Project site repair of each component, equipment, or system provided under this Contract as indicated in each section of Division 15.
- 2. Operational and maintenance training shall be conducted on the Project site.
- 3. Upon completion of Owner training, a completion certificate indicating the nature of the training and a description of the systems, complete with equipment and component lists shall be issued to each trainee. The certificate should be issued in duplicate with one copy retained by the Authority.

END OF SECTION

SECTION 15050

BASIC MECHANICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes:
 - 1. This Section prescribes basic materials and methods generally common to the Work of Division 15.
- C. Related Sections:
 - 1. Section 15010: Basic Mechanical Requirements.
 - 2. Division 15: Mechanical.
 - 3. Division 16: Electrical.

1.02 SUBMITTALS

- A. Provide in accordance with Division 01, Section 15010 and specific requirements of each section of Division 15.

1.03 QUALITY ASSURANCE

- A. Standards: Comply with applicable national, state, and local codes and standards: ASTM, ASME, ANSI. Federal Specifications, AWWA, SISPI, NFPA, UL, CPC California Plumbing Code, CMC, AGA.
- B. Qualifications of Manufacturer: Products used in the Work of this section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production as reviewed by the Engineer.

1.04 COORDINATION

- A. Coordinate related Work in accordance with provisions of Section 01040: Coordination.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Provide the following products if they are indicated in the Contract Documents or if they are required for the proper installation, function or operation of equipment, systems or components indicated in the Contract Document.
- B. Provide the following products as a complete assembly with required accessories for a complete and functioning entity in compliance with governing codes and applicable standards as specified in Section 15010, manufacturer's instructions or as required.
 - 1. Omission of minor details in the Contract Documents does not waive and/or otherwise relinquish compliance with the above requirements.

2.02 MANUFACTURERS AND MATERIALS

- A. Liquid Level Gauge:

Refrigerant type, carbon steel with stainless steel trim or all forged steel construction, back-seating standard design. Upper and lower valve furnished with ball check valves; 1/2 inch diameter glass on center. Four 3/16 inch diameter gage glass guard rods or slotted steel guard.

Peneberthy Henry Conbraco

- B. Piping:

Piping shall be continuously and permanently marked with manufacturer's name, type of material, size, pressure rating, and the applicable ASTM, ANSI, UL, or NSF listing.

Seamless copper tubing, tempered drawn, Type M, ASTM B88 for condensate drain pipes and type L hard-drawn for refrigerant piping. See Section 15050 for additional information.

- C. Pipe Fittings:

Cast brass drainage fittings ASA B 16.23, ASTM 145-4B Provide with copper Seamless tube, Mueller Brass, Nibco, Stanley Flagg or Lee Brass.

- D. Pipe Isolators:

- 1. Absorption pad shall be not less than 1/2 inch thick, unloaded. Pad shall completely encompass pipe.

Stoneman,
Trisolator

Potter-Roemer,
PR-Isolator

2. Plastic cushion to form an insulating liner and eliminate metal to metal contact when securing copper tubes and pipes in air conditioning and refrigeration insulation preventing galvanic erosion.

Hydra-Zorb Cushion Clamps, or equal.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine areas and conditions under which Work of this section shall be performed. Correct conditions detrimental to proper and timely completion of Work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Provide all materials and equipment for the Work. Furnish and install necessary apparatus, parts, materials, and accessories.
- B. Pipe Installation:
 1. Install piping parallel to wall and provide an orderly grouping of proper workmanship.
 2. Piping shall clear obstructions, preserve headroom, provide openings and passageways clear, whether indicated or not. Verify the Work of other Divisions to avoid interference.
 3. If obstructions or the Work of other Divisions prevent installation of piping or equipment as indicated by the Drawings, perform minor deviations as required by the Engineer.
 4. Exposed polished or enameled connections from equipment shall be installed with no resulting tool marks or threads at fittings. Residue or exposed pipe compound shall be removed from exterior of pipe.
 5. Piping shall be concealed in chases, partitions, walls, and between floors, unless otherwise directed or specifically noted on Drawings. When penetrating wood studs, joists, and other wood members, provide such members with reinforcement steel straps of Kees Protecta-Plate, or equal.
 6. Piping subject to expansion or contraction shall be anchored in a manner, which permits strains to be evenly distributed. Swing joints or expansion

loops shall be installed. Seismic restraints shall be installed so as not to interfere with expansion and contraction of piping.

7. Immediately after lines have been installed, openings shall be capped or plugged to prevent entrance of foreign materials. Caps shall be left in place until removal is necessary for completion of installation.
8. Couplings shall not be installed except where required pipe runs between other fittings are longer than standard length of type of pipe being installed and except where their installation is specifically reviewed by the Engineer.

C. Pipe Sleeves and Plates:

1. Sleeves shall provide 1/2 inch clearance around pipes. Caps of deck type sleeves shall be removed just prior to installation of pipe. Area around sleeves shall be smooth and without high or low spots. Sleeves in walls shall not extend beyond exposed surface of wall. Sleeves in concrete floors and walls shall be securely fastened to forms to prevent movement while concrete is being placed.
2. Where pipes pass through waterproofed walls, floors, or floors on grade, caulk with lead and oakum between pipe and sleeve to provide a waterproof joint. Where earth is in contact with pipe on both sides of a wall or foundation, the waterproof joint is not required. Commercial rubber compression units may be furnished instead of caulked sleeves if reviewed by the Architect.

D. Pipe Joints and Connections:

1. Pipe and tubing shall be cut per IAPMO 1.S. Pipe shall have rough edges or burrs removed so that a smooth and unobstructed flow shall be provided.
2. Threaded Pipe: Joints in piping shall be installed according to the following service schedule:
 - a. Refrigerant and Soap Piping Litharage and glycerine, or Expando, or equal.
 - b. Cleanout Plugs No compound shall be used. After inspection and test, plugs shall be removed, cleaned, greased, and replaced.
 - c. All other services Furnish sealant, suitable and as reviewed by the Architect.
3. Threads on pipe shall be cut with sharp, clean, unblemished dies and shall conform to ASA B 2.1 for tapered pipe threads.

4. Joint compounds shall be smoothly placed on male thread and not in fittings. Threaded joints shall be installed tight with tongs or wrenches and caulking of any kind is not permitted. Failed joints shall be replaced with new materials. Installation of thread cement or caulking to repair a leaking joint is not permitted.
5. Sharp-toothed Stilson, or similar wrenches, is not permitted for the installation of brass pipe or other piping with similar finished surfaces.

E. Copper Tubing and Brass Pipe with Threadless Fittings:

1. Silver brazed joints shall be installed for non-ferrous metallic refrigerant piping, non-ferrous metallic condensate piping and for attaching fittings to non-ferrous metallic piping for any service.
2. Silver brazing alloy shall conform to ASTM B260, Class BCUP-5. Surfaces to be joined shall be free of oil, grease, and oxides. Socket of fitting and end of pipe shall be thoroughly cleaned with emery cloth and wiped to remove oxides. After cleaning and before assembly or heating, flux shall be installed to each joint surface and spread evenly. Heat shall be applied in accordance with instructions in the Copper Tube Handbook issued by Copper Development Associates. Joints constructed of rough bronze fittings shall be provided as recommended by manufacturer.
3. Do not overheat piping and fittings when installing silver brazing.
4. Joints in non-ferrous piping for services not covered above, shall be installed with solder composed of 95-5 tin-antimony, ASTM B32, Grade 5A. Surfaces to be joined shall be free of oil, grease, and oxides. Sockets of fitting and end of pipe shall be thoroughly cleaned with emery cloth to remove oxides. Solder flux shall be sparingly installed and solder added until joint is completely filled. Do not overheat. Excess solder, while plastic, shall be removed with a small brush in order to provide an uninterrupted fillet completely around joint. Random inspection of joints shall be conducted by the Authority to ensure joints are lead-free.

F. Hangers and Supports:

1. Piping shall be securely fastened to building structure by approved iron hangers, supports, guides, anchors, and sway braces to maintain pipe alignment to prevent sagging and to prevent noise or excessive strain on piping due to uncontrolled or seismic movement under operating conditions. Hangers shall be relocated as required to correct unsatisfactory conditions that may become evident when system is placed into operation. Equipment

shall be securely fastened to structure in accordance with seismic requirements..

2. Piping shall not be supported by wire, rope, wood, plumbers' tape, or other non-recognized devices.
3. Hangers and supports shall be designed to support weight of pipe, fittings, weight of fluid and weight of pipe insulation, and shall have a minimum factor of safety of 5, based on ultimate tensile strength of material installed.
4. Burning holes in beam flanges or other structural members is not permitted.
5. Pipe hangers on piping covered with low temperature insulation shall be installed on outside of insulation and not in contact with pipe unless otherwise detailed on Drawings. Insulation shall be protected by 18 gage galvanized steel shield, with a minimum length of 10 inches, installed completely around pipe covering between covering and hanger. Installing hangers directly on pipe and butting adjoining sections of insulation against hanger is permitted provided void and hanger rod are properly insulated and sealed so that no sweating occurs at hangers.
6. Hanger rods shall be fastened to structural steel members with suitable beam clamps. Clamps shall be Grinnell, Carpenter and Patterson, or Fee and Mason, as follows:
 - a. Grinnell I-beam, Figure 131, for maximum of 370 lbs.
7. Hanger rods shall be fastened to concrete inserts in concrete slabs or beams. Inserts shall be Grinnell, Carpenter and Patterson, or Fee and Mason, as follows:
 - a. Grinnell, Figure 285 for maximum of 400 lbs.
8. 3/8 inch hanger rod sizes inch for copper, iron, or steel pipe sizes 1/2 inch through 2 inches, 1/2 inch for pipe sizes 3 inches, 4 inches and 5 inches, 5/8 inch for pipe size 6 inches, and 3/4 inch for 8 inches and 10 inches pipe.
9. Pipe hangers shall be of same size, or nearest larger manufactured size available, as pipe or tubing on which they are being installed.
10. Hangers, clamps, and guides furnished for support of non-metallic pipe shall be padded with 1/8 inch thick rubber, neoprene, or soft resilient cloth.
11. Vertical Piping:

- a. Copper tubing sizes 1-1/4 inches and smaller shall be supported at intervals not more than 6 feet on center. Special provisions shall be installed for vertical lines subject to expansion and contraction caused by operating temperature differences.

12. Horizontal Piping:

- a. Insulated refrigerant piping and Condensate drain piping, may be supported with Grinnell figure 260 or figure 269 hangers with rods, turnbuckles and inserts suitable for above hangers.
- b. Maximum hanger and support spacing shall conform to following schedule for horizontal piping installed above grade.

HANGER AND SUPPORT SPACING SCHEDULE

<u>Type of Pipe</u>	<u>1-1/2" Pipe or Smaller</u>	<u>2" Pipe or Larger</u>
Copper Tubing	6'	10'

14. A hanger or support shall be installed close to the point of change in direction of a pipe run, in either a horizontal or vertical plane.

END OF SECTION

SECTION 15070

MECHANICAL SOUND, VIBRATION, AND SEISMIC CONTROL

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes: Reduction or elimination of excessive noise or vibration within building due to operation of equipment and piping as specified.
 - 1. Vibration isolators.
 - 2. Seismic restraint devices.
 - 3. Flexible ducts.
- C. Related Sections:
 - 1. Section 15700: Air Conditioning Equipment.

1.02 PERFORMANCE REQUIREMENTS

- A. Provide rooms and spaces with the maximum sound levels, in dbA corresponding to the Room Criteria (RC) or Noise Criteria (NC) as defined in the ASHRAE Applications Handbook.
- B. Performance Requirements:
 - 1. Aerodynamic and acoustic performance tests on equipment shall be conducted by an independent laboratory on a production unit.
 - 2. Submit results with submittals.
 - 3. Acoustically absorptive filler material shall be inorganic mineral or glass fiber and shall be resistant to vermin and moisture and shall meet 25/50 flame and smoke spread when tested in accordance with ASMT E 84.

1.03 VIBRATION ISOLATION AND SEISMIC RESTRAINTS

- A. Provide vibration isolators to eliminate or reduce the transmission of vibration noise to any part of building.

- B. Provide vibration isolators to mitigate vibration frequency and load imposed by equipment. Isolator units shall be furnished with adequate strength and flexibility to provide proper resiliency under equipment weight and load impact without permitting excessive movement when starting.
- C. Where fabricated vibration isolator units are indicated, furnish manufacturer's standard catalog products with printed loading ratings.
- D. Seismic Requirements:
 - 1. Refer to Guidelines for Seismic Restraints of Mechanical Systems published by SMACNA, for minimum seismic restraints required on mechanical components design and construction details.
 - 2. Provide seismic restraints for mechanical equipment or components specified. Where equipment is specified with proprietary names, design for seismic restraints is for first proprietary name listed.
 - 3. Provide restraints, bracing and anchorage as required for the mechanical equipment, electrical equipment and components specified in the Contract Documents. Restraints, bracing and anchorage shall be installed to resist the total design earthquake or wind loads in any direction in accordance with CBC Code and SMACNA guidelines.
 - 4. Provide restraints, bracing, and anchorage for the mechanical equipment and components.
 - 5. For flexibly mounted liquid filled pipe, comply with the following:
 - a. Provisions of the California Building Code for flexibly mounted equipment.
 - b. Provisions of VISCMA (Vibration Isolation and Seismic Control Manufacturer's Association) Seismic Control Device Installation, Best Practices Manuals.

1.04 SUBMITTALS

- A. Provide in accordance with Division 01.
 - 1. Catalog cuts and data sheets on specific vibration isolators, seismic restraints, and anchors demonstrating compliance with the Specifications.
 - 2. Shop Drawings for each piece of equipment including dimensions, structural member size, support point, vibration, and seismic restraints.

3. Written approval of frame design to be furnished by the equipment manufacturer or vibration isolator manufacturer.
4. Drawings indicating methods for suspension, support, seismic restraints, guides, etc., for piping, ductwork, etc.
5. Drawings indicating methods for isolation of pipes, ducts etc., piercing slabs, beams, etc.

1.05 QUALITY ASSURANCE

- A. Standards and Codes: Comply with applicable codes and standards having jurisdiction including, but not limited to:
 1. ASHRAE Systems Handbook.
 2. SMACNA Guidelines for Seismic Restraints of Mechanical Systems and Plumbing Piping Systems.
 3. CBC.
- B. Qualifications of Manufacturer and Installers: Comply with provisions as set forth in Section 15010: Basic Mechanical Requirements.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Furnish and install vibration dampers, sound isolation pads, flexible connections and similar equipment required to prevent sound of refrigerant flowing in pipes, vibration of motors, and motor operated equipment from being transmitted to building structure. Refrigerant lines shall be isolated from hangers, clamps and structural members by furnishing a commercially manufactured assembly of a hair felt or neoprene pad, cemented in a galvanized iron sleeve. Piping shall be isolated from vibrating equipment by furnishing sufficient turns to reduce or eliminate any vibration.
- B. Motor operated equipment shall be installed on anti-vibration units.
- C. Other equipment shall be installed on anti-vibration bases, pads, or hangers, unless specifically noted otherwise on Drawings.
 1. Unless specified otherwise, anti-vibration bases shall be Mason, M.W.Sausse, California Dynamics, Vibrex, or Korfund.

2.02 GENERAL PROPERTIES OF VIBRATION ISOLATORS.

- A. Shall be provided with markings so that, after adjustment, when carrying their load, deflection under load can be verified; thus determining that load is within proper range of device and that correct degree of vibration isolation is being provided according to the design.
- B. Isolators to operate in direct proportion to their load versus deflection curve. Load versus deflection curves shall be furnished by manufacturer and must be linear over a deflection range of 50 percent above design deflection.
- C. Wave motion through isolator shall be reduced to following extent: Isolation above resonant frequency shall follow theoretical prediction based upon an un-dampened single degree of freedom system with a minimum isolation of 50 decibels above 150 cycles per second.
- D. Vibration isolator spring diameters shall be no less than their deflected height. Furnish spring with a 50 percent overload safety factor.
- E. Unless otherwise indicated, equipment installed on vibration bases shall provide a minimum operating clearance of one inch between structural steel base and floor or support base. Provide flexible connectors in piping and flexible conduit in power wiring to minimize transmission of vibration.
- F. Isolators and springs exposed to weather shall be hot-dipped galvanized or powder coated after fabrication and before installation. Hot-dipped zinc coating shall be not less than 2 ounces per square foot by weight complying with ASTM A 123. In addition, provide limit stops to resist wind velocity.
- G. Provide and install, under this section of the Specifications, structural steel required to properly support equipment and steel required to support horizontal thrust arrestors.

2.03 ISOLATOR TYPES

- A. Type A: Steel Spring Isolators: Un-housed steel spring isolators, laterally stable and unrestrained. Design springs so that ratio of horizontal to vertical spring (stiffness) constant is between 0.9 and 1.3. Natural frequency of isolator must be $1/3$ to $1/4$ of driving frequency that is to be controlled. Isolators to provide a minimum additional travel to solid equal to 50 percent of rated deflection. Isolators shall be furnished with built-in leveling bolts complete with sound isolation pads type B. Static deflection as specified herein. Isolation pads shall be 50 percent wider than the outside diameter of the spring.
- B. Type B: Sound Isolation Pad: Provide under each spring isolator a sound isolation pad, utilizing high quality durable neoprene pad material, loaded to 40 psi. Build

sound pad up to 2 layers of 1/4 inch thick neoprene material; separate layers with a 16 gage galvanized sheet metal plate. Top layer shall provide a hardness of 40 durometers and the bottom layer shall be 40 durometers. Cold bond sound pads together and to isolator baseplate.

- C. Type C: Neoprene-in-Shear Isolators: Isolator shall be neoprene-in-shear type as recommended by manufacturer. Isolator shall provide a static deflection under rated load at 3/8 inch.

2.04 EQUIPMENT FRAMES

- A. Provide mounting frames and brackets to carry load of equipment without causing mechanical distortion or stress to the equipment.
- B. Type A Frame: Wide flange members, rigidized structural steel frame with brackets. Maximum allowable deflection at any point on load frame relative to unloaded frame shall be 0.005 inch. Members to be constructed of wide flange beams, with a depth of not less than 1/10 of length of span between isolators. Frame shall be Mason Industries type WF, M.W. Sausse type RMSB-W, or equal.
- C. Type B Frame: Channel members, rigidized structural steel frame with brackets. Frame to be constructed of channel steel with section depth equal to 1/10th length of longest structural member. Frame shall be Mason Industries type MSL, M.W. Sausse type RMSB_C, or equal.
- D. Type C Frame: Steel gusset or bracket welded or bolted directly to machine frame in order to accommodate isolator. Frame shall be Mason Industries type HSB, M.W. Sausse type RMSG, or equal.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install isolators as required for installation of mechanical components to prevent transmission of vibration noise to any part of building.
- B. Install isolators to suit imposed load and the vibration frequency to be absorbed. Isolator units shall furnish adequate strength and flexibility to exhibit proper resiliency under machine load and impact without permitting excessive movement when starting.
- C. Where commercial vibration isolator and seismic restraint units are specified, furnish manufacturer's standard catalog products with printed loading ratings, or provide substantiating calculations.

- D. Install vibration isolators and seismic restraints in accordance with manufacturer's printed installation instructions.
- E. Do not install any equipment, piping, etc., that makes rigid contact with building or its structural members, unless reviewed by the Engineer.
 - 1. Coordinate Work with other trades to avoid rigid contact with building.
 - 2. Correct, before installation, any conflict with other Work that would result in solid contact to equipment or piping due to inadequate space.
 - 3. Obtain inspection from the Authority for concealed Work before enclosure.
- F. Suspended Fan Coils: Suspend unit from overhead structure on steel spring and elastomer hanger isolators and support deflection under rated load of 3/8 inch or as indicated on drawing. Provide spring static deflection as follows:

Fan RPM	Min. Deflection
200 – 400	3 inches
400 – 700	2 inches
Above 700	1inches

- G. Seismic Restraints: Floor or pad mounted equipment, without vibration isolators, shall be bolted to floor or other support. Floor mounted equipment with vibration isolators shall be provided with lateral and vertical restraining devices on all sides of base to restrict displacement of equipment. On all sides of suspended equipment, provide bracing for rigid supports and provide aircraft cable restraints for resiliently supported equipment.

3.02 EXAMINATION

- A. Submit a written report to the Architect signed by the contractor indicating all devices are properly installed and are operating as specified or required by isolation manufacturer.

END OF SECTION

SECTION 15075

MECHANICAL IDENTIFICATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes: Provide marking and identification required on mechanical piping systems, ducts, controls, valves, apparatus, etc., as specified in this section or any related sections.
- C. Related Sections:
 - 1. Section 15050: Basic Mechanical Materials and Methods.
 - 2. Section 15700: Air Conditioning Equipment.

1.02 SUBMITTALS

- A. Submit in accordance with Division 01 and Sections 15010: Basic Mechanical Requirements.
- B. Submit Samples of materials.

1.03 QUALITY ASSURANCE

- A. Comply with provisions of Section 15010: Basic Mechanical Requirements.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Piping systems, controls, valves, apparatus, etc., except those that are installed in inaccessible locations in partitions, walls, and floors, and those installed directly below grade, shall be permanently identified.

2.02 INSTRUMENTS AND CONTROLS

- A. Identify panel-mounted instruments and controls with engraved bakelite nameplates permanently affixed to panel boards.

2.03 EQUIPMENT

- A. Identify each major piece of equipment with stenciled designation corresponding to its designation on the Drawings.

2.04 PIPELINES IDENTIFICATION

- A. Identify pipes by means of colored labels with directional flow arrows as indicated in schedule.
- B. Materials: Waterproof plastic cloth, all-temperature, self-adhering, or markers similar to Western Tel-A-Pipe, Type I, W.H. Bradley Co., or equal.
- C. Size: For pipes up to 3 inches diameter, 2-1/4 inches x 9 inches minimum, with 1/2 inch letters; for pipes over 3 inches diameter, 2-1/4 inches x 9 inches minimum, with 1-1/2 inch letters.
- D. Colors:
1. Backgrounds: As indicated in schedule.
 2. Letters: White on red background; black on all other backgrounds.
- E. Locations:
1. On accessible piping, whether insulated or not (including mechanical rooms, attic and ceiling spaces).
 2. At each pipe passage through wall or floor.
 3. At each change in direction.
- F. Application: Install on clean surfaces free of dust, grease, oil, or any material that will prevent proper adhesion. Replace non-adhering or curling labels with new labels, as required by the Authority.
1. Furnish spray adhesive on insulated pipes in addition to adhesive on marker.
 2. Finish exposed markers with one coat of lacquer.
- G. Schedule:

<u>Content of Pipe</u>	<u>Legend</u>	<u>Color</u>	<u>Note</u>
Indirect drain (Condensate drain)	Ind drain	G (1)	*

H. Notes on Schedule:

1. Symbol * indicates flow arrow required.
2. Symbol (1) indicates 2-1/4 inches x one inch yellow label with 1/2 inch letters reading UNSAFE WATER at one end of primary label.
3. Background colors: Symbol G indicates green background color. All letters shall be in black print.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Correct detrimental conditions prior to commencing the Work of this section. Install markers and identification tags as specified with materials and installation procedures recommended by manufacturer.

3.02 CLEANUP

- A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 15080

MECHANICAL INSULATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes: Insulation furnished and installed under this section shall meet minimum legal requirements of the Building Energy Efficiency Standards unless otherwise noted, for the following piping, and equipment:
 - 1. Condensate drain piping from air conditioning equipment.
 - 2. High and low temperature equipment.
 - 3. Refrigerant piping.
 - 4. Supply and return heating and cooling systems air ducts.
- C. Related Sections:
 - 1. Section 15010: Basic Mechanical Requirements.
 - 2. Section 15050: Basic Mechanical Materials and Methods.
 - 3. Section 15075: Mechanical Identification.
 - 4. Section 15700: Air Conditioning Equipment.

1.02 SUBMITTALS

- A. Submit in accordance with Division 01 and Section 15010: Basic Mechanical Requirements.
 - 1. Complete material list of items to be furnished and installed under this section.
 - 2. Manufacturer's specifications and other data required demonstrating compliance with the specified requirements.
 - 3. Shop Drawings, catalog cuts and manufacturer's data indicating insulation, jacketing, adhesives, and coating. Insulating materials shall be certified by

manufacturer to comply with the California Building Energy Efficiency Standards for insulating material.

4. Display Sample cutaway sections.
5. Manufacturer's recommended method of installation procedures, which will become part of this Specification section.

1.03 QUALITY ASSURANCE

- A. Qualifications of Manufacturer and Installer, Workmanship and Standard of Quality: Comply with provisions stated under Section 15010: Basic Mechanical Requirements and Section 15050: Basic Mechanical Materials and Methods.
- B. Insulation Work shall be in accordance with the State of California Building Energy Efficiency Standards, CBC, and California Mechanical Code.
- C. Test Ratings:
 1. Comply with provisions stated under Section 15010 with emphasis on ASTM E 84, NFPA 255, or UL 723. ASTM C 167, ASTM C 302, UL label or listing of satisfactory test results from the National Bureau of Standards, or a satisfactory certified test report from an acceptable testing laboratory. Approval by the State Fire Marshal is required.
 2. Furnish labels, legibly printed with the name of the manufacturer or listings indicate that fire hazard ratings do not exceed those specified for materials proposed for installation. Flame spread not more than 25 and smoke developed not exceeding 50.
 3. Tests shall be performed on each item individually when insulation, vapor barrier covering, wrapping materials, or adhesives are installed separately at the Project site.
 4. Test insulation, vapor barrier covering, wrapping materials and adhesives as an assembly when they are factory composite systems.

1.04 PRODUCT HANDLING

- A. Protection, Replacement, Delivery and Storage: Comply with provisions stated under Sections 15010: Basic Mechanical Requirements and 15050: Basic Mechanical Materials and Methods.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:

1. Insulating material shall be fire resistant, non-corrosive, shall not break, settle, sag, pack or disintegrate under vibration, nor absorb more than 1 percent moisture by weight.
2. Insulating material shall be furnished with thickness indicated in Table 1, and shall furnish thermal resistance to meet the California Mechanical Code and Building Energy efficiency Standards section 123 – Requirement for Pipe Insulation and Table 123-A
3. Asbestos in any quantity in insulating material is not permitted.
4. Provide insulation materials, adhesives, coatings, sealants, fitting covers, and other accessories with a fire hazard rating not to exceed 25 for flame spread, 25 for fuel contributed and 50 for smoke developed, except for materials listed as follows:
 - a. Nylon anchors for installing insulation to ducts or equipment.
 - b. Treated wood blocks.
5. Flame proofing treatments subject to moisture damage are not permitted.

B. Lagging Adhesives: Insulation finished with canvas shall be provided with laps adhered with Childers Chil-Seal CP50A/AHV2 or Foster's Sealfas 30-36, or equal. A finish coat of CP50A or 30-36 shall be installed to entire outer surface of lagging cloth at coverage specified by manufacturer.

C. Canvas Jackets: Furnish 6 oz. in accordance with square foot minimum, 48 x 48 thread count canvas jacketing.

D. Insulation Jackets:

1. Exterior insulation exposed to weather shall be weatherproofed with Childers aluminum jacketing, or equal. Jacketing shall be manufactured from 1100, 3105 or 5010 aluminum alloy with 3/16 inch corrugations. Smooth or embossed jackets may be permitted in special situations to match an existing installation. Jacketing shall be furnished with an integrally bonded moisture barrier over entire surface in contact with insulation. A minimum thickness of 0.016 aluminum jacketing is to be provided on ducts and piping. A minimum

thickness of 0.020 shall be provided on tanks, equipment, and heat exchangers.

2. Insulated elbows, of 90 degrees and 45 degrees, with a nominal pipe size of 1/2 inch to 8 inches shall be provided with Childers aluminum Ell-Jacs insulation covers, or equal, manufactured from 1100 aluminum alloy of 0.024 inch thickness. Insulated elbows with a nominal pipe size of 10 inches to 18 inches shall be provided with Childers 4-piece aluminum Ell-Jacs.

- E. Adhesives: Adhesives shall be acceptable to the State Fire Marshal. Name, type and method of installation shall be submitted for review. Acceptable products are stated under each category of insulation Work in following paragraphs:

2.02 COOLING PIPING SYSTEM INSULATION

- A. General: Insulate refrigerant piping.
- B. Materials: Insulation for Refrigerant piping and condensate drain piping shall be Foamed plastic pipe insulation, self-extinguishing type, ASTM C 534 Type 1 - tubular. Pipe insulation shall be one-piece preformed, flexible tubing type and provide a minimum K factor to meet table 123-A in 2008 Building Energy Efficiency Standard. Pipe insulation shall be Johns Manville Rubatex, Armstrong Armaflex II, or equal.

1. Locations Insulation Required:

<u>SERVICE</u>	<u>LOCATION</u>
Condensate drains from air conditioning equipment	Indoors at ceilings and in rooms
Refrigerant suction. Liquid line as required	All locations except underground

2. Adhesives:
 - a. Polystyrene adhesives: Childers Chil-Rene CP-96 or King Adhesive Co. 15-165.
 - b. Vapor barrier laps and penetrations: Furnish Childers Chil-Perm NF CP-32 or Epolux 660 on butt joints of foil-faced vapor barriers, and where pins and staples puncture facings.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Except as specified herein, install material in accordance with recommendations of manufacturer. Do not install insulation materials until tests specified in other sections are completed. Remove foreign material such as rust, scale, or dirt. Surfaces shall be clean and dry. Maintain insulation clean and dry at all times.
- B. On cold surfaces where a vapor barrier must be provided and maintained, insulation shall be installed with a continuous, unbroken moisture and vapor seal. Hangers, supports, anchors, or other projections that are fastened to cold surfaces shall be insulated and vapor sealed to prevent condensation.
- C. Surface finishes shall be extended in such a manner as to protect raw edges, ends, and surfaces of insulation.
- D. Pipe or duct insulation shall be continuous through walls, ceiling or floor openings, or sleeves; except where firestop or firesafing materials are required.
- E. Metal shields shall be installed between hangers or supports and the piping insulation. Rigid insulation inserts shall be installed between the pipe and the insulation shields. Inserts shall be of equal thickness to adjacent insulation and shall be vapor sealed accordingly.
- F. Insulation shall not be installed in the following locations unless otherwise noted:
 - 1. Over any label or stamp indicating make, approval, rating, inspection, or similar data, unless provision is made for identification and access to label or stamp.
 - 2. Sight glass (flow indicator).

3.02 INSTALLATION OF COOLING PIPING SYSTEM INSULATION

- A. General: Refrigerant piping and condensate drain lines, after having been tested, shall be cleaned and insulated.
- B. Application: Insulation on refrigerant suction lines and liquid lines, and air conditioner interior drain lines shall be jacketed with fire-resistant vapor barrier of laminated aluminum foil consisting of 2 plies with glass-yarn reinforcing. Jacket joints shall be lapped and sealed with an approved adhesive. Insulation shall be secured with aluminum bands not less than 0.005 inch thick by 3/4 inches wide, spaced not over 12 inches on centers, or as recommended by manufacturer.

1. Longitudinal Seams: Butt hinged sections of covering tightly together and seal down jacket flap with adhesive, Childers CP-82, Foster's 85-20, or equal, or with factory-applied, self-sealing lap with pressure-sensitive sealer protected with release paper.
2. End Joints: Wrap joint with a 3-inch wide (minimum) self-sealing tape.
3. Fittings and Valves: Fittings and valves shall be covered with same material of same thickness as pipe insulation, sealed with an approved, vapor-sealing tape or compound and covered with Zeston polyvinyl-chloride cover.
4. Pipe hangers shall be insulated or attached to pipe by an insulating insert, butted between adjoining insulation sections.

C. Additional Jackets:

1. Exposed Indoor Insulation: Cover with 26 gage galvanized sheet metal jacket to 8 feet above floors, except in mechanical equipment rooms and accessible pipe tunnels.
2. Exposed Outdoor Insulation: In addition to canvas or fiberglass cloth cover, provide 0.016 inch thick aluminum jacket with one inch wide aluminum bands and seals. Install appropriate jackets on valves and fittings.
3. Manholes and Handholes: Maintain accessible by beveling off permanent insulation around manhole and cover manhole plate with removable blanket.

3.03 CLEANUP

- A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

3.04 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 15700

AIR CONDITIONING EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes: Air conditioning and air handling equipment as indicated on Drawings and as specified. Air conditioning and air handling equipment shall include but not be limited to following:
 - 1. Split System Air Conditioning Units.
- C. Related Sections:
 - 1. Section 15010: Basic Mechanical Requirements.
 - 2. Section 15050: Basic Mechanical Materials and Methods.
 - 3. Section 15070: Mechanical Sound, Vibration and Seismic Control.

1.02 SUBMITTALS

- A. Provide in accordance with Division 01 and Section 15010: Basic Mechanical Requirements.

1.03 QUALITY ASSURANCE

- A. Systems shall be rated and certified in accordance with ARI Standards 210/240. Units shall be listed in the ARI directory as a matched set.
- B. Systems shall be listed with UL (Underwriters' Laboratories).
- C. Unit construction shall comply with ANSI/ASHRAE 15, latest revision, and with the NEC.
- D. Units shall be evaluated in accordance with UL standard 1995.
- E. Units shall be listed in the CEC directory.
- F. Unit cabinet shall be capable of withstanding 500--hour salt spray test per Federal Test Standard No. 141 (method 6061).

- G. Air-cooled condenser coils shall be leak tested at 573 psig.

1.04 OPERATION AND MAINTENANCE INSTRUCTIONS

- A. Provide Owner instructions on equipment operation and maintenance procedures, as indicated in Section 15010: Basic Mechanical Requirements.

PART 2 - PRODUCTS

2.01 EQUIPMENT

- A. Capacities of air conditioning and air handling equipment as indicated on Drawings are the net capacities actually required. Standard catalog ratings shall be adjusted to actual Project site environmental conditions.

2.02 DUCTLESS SPLIT SYSTEM

Outdoor air--cooled split system, condensing unit shall be suitable for on-the-ground, rooftop, or balcony mounting. Units shall consist of a scroll compressor, an air-cooled coil, propeller-type blow-through outdoor fan, accumulator, accuratur metering device, and control box. Unit shall discharge air horizontally as shown on the contract drawings. Unit shall function as the outdoor component of an air-to-air cooling only system. Units shall be used in a refrigeration circuit matched to duct-free cooling only fan coil units.

- A. Condensing Unit (CU-1):

Condensing unit shall be factory assembled, single piece, air-cooled outdoor unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, condenser coil, and the compressor.

1. Unit Cabinet:

- a. Unit cabinet shall be constructed of galvanized steel, bonderized and coated with a baked-enamel finish on inside and outside.
- b. Unit access panels shall be removable with minimal screws and shall provide full access to the compressor, fan, and control components.
- c. Outdoor compartment shall be isolated and have an acoustic lining to assure quiet operation.
- d. Compressor compartment shall be isolated to allow for diagnostic performance while the system is running.

2. Fans:

- a. Outdoor fans shall be direct-drive propeller type, and shall discharge air horizontally. Fans shall blow air through the outdoor coil.
 - b. Outdoor fan motors shall be totally-enclosed, single phase motors with class B insulation and permanently lubricated bearings. Motor shall be protected by internal thermal overload protection.
 - c. Shaft shall have inherent corrosion resistance.
 - d. Fan blades shall be metallic and shall be statically and dynamically balanced.
 - e. Outdoor fan openings shall be equipped with PVC coated metal protection grille over fan.
3. Compressor:
 - a. Compressor shall be fully hermetic scroll type.
 - b. Compressor shall be equipped with oil system, operating oil charge, and motor. Internal overloads shall protect the compressor from over-temperature and over-current.
 - c. Motor shall be NEMA rated class F, suitable for operation in a refrigerant atmosphere.
 - d. Compressor assembly shall be installed on vibration isolators.
 - e. Compressors shall be available in three phases.
4. Outdoor Coil:

Coil shall be constructed of aluminum fins mechanically bonded to seamless copper tubes, which are cleaned, dehydrated, and sealed.
5. Refrigeration Components:

Refrigerant circuit components shall include brass external liquid line service valve with service gage port connections, suction line service valve with service gage connection port, service gage port connections on compressor suction and discharge lines with Schrader type fittings with brass caps, accumulator, reversing valve.
6. Controls and Safeties:

Operating controls and safeties shall be factory selected, assembled, and tested. The minimum control functions shall include the following:

a. Controls:

- 1) A time delay control sequence is provided standard through the fan coil board.
- 2) Automatic outdoor-fan motor protections.

b. Safeties:

- 1) Diagnostics provided by matched indoor unit.
- 2) Compressor motor current and temperature overload protection.
- 3) Outdoor fan failure protection (High Pressure Switch).
- 4) Low Pressure Protection
- 5) Fusible plug to vent refrigerant safely in case of a fire.

7. Electrical Requirements:

- a. Shall operate on three phase, 60Hz power at voltage as shown on drawing.
- b. Unit electrical power shall be a single point connection.
- c. Unit control voltage to the indoor-fan coil shall be 24 VDC.
- d. All power and control wiring must be installed per NEC and all local electrical codes.

8. Refrigerant Lines Lengths:

Unit shall be capable of 200 ft maximum piping run. A maximum lift (fan coil above) or 65 ft, and a maximum drop (fan coil below) of 150 ft accessible will be required to achieve those lengths.

9. Special Features (Field Installed):

- a. Low-Ambient Kit: Control shall regulate fan-motor cycles in response to saturated condensing temperature of the unit. The control shall be capable of maintaining a condensing temperature of

100°F $\pm$ 10°F with outdoor temperatures to -20°F Installation of kit shall not require changing the outdoor fan motor.

- b. Crankcase Heater, Wind Baffle Kit, Stacking Kit, Wall Mounting Kit.

B. Fan-Coil Unit:

Unit shall be indoor, direct-expansion, ceiling-suspended fan coil. Fan coil shall be shipped complete with cooling coil, fan, fan motor, piping connectors, and ceiling mounting brackets.

1. Unit Cabinet:

- a. Unit cabinet shall be zinc-coated bonderized steel finished with a baked enamel paint.
- b. Inlet grilles shall be attractively styled, high impact polystyrene.
- c. Matching mounting brackets shall be provided.

2. Fans:

- a. Indoor fans shall be centrifugal blower type with air intake in the bottom rear of the unit and discharge in the front.
- b. Automatic, motor-driven horizontal air sweep shall be provided standard.

3. Coils:

- a. Indoor coils shall be copper tube with aluminum fins and galvanized steel tube sheets.
- b. Fins shall be bonded to the tubes by mechanical expansion.
- c. A drip pan under the coil shall have a drain connection for the hose attachment to remove condensate.

4. Motors:

Motors shall be a permanently lubricated ball bearing with inherent overload protection

5. Controls:

User interface with the unit shall be accomplished via a wired thermostat that shall have the following functions as a minimum:

- a. Automatic restart after power failure at the same operating conditions as at failure.
 - b. Thermostat control to enter set points and operating conditions.
 - c. Programmable fan speed control shall be user-selectable: high, medium, low, or automatic operation during all operating modes.
6. Filters: Unit shall have filter track with factory supplied, cleanable filter.
7. Electrical Requirements:
- a. Unit shall operate on three-phase, 60 cycle power as specified on the equipment schedule.
 - b. Unit electrical power shall be a single point connection.
 - c. Unit control voltage shall be 24-V All power and control wiring shall be installed per NEC and all local building codes.
 - d. Unit shall have low-voltage terminal block connections.
8. Internal Condensate Pump: The condensate pump shall remove condensate from the drain pan when gravity drainage cannot be used. The lift capability of the condensate pump shall be sufficient to overcome the friction loss and the vertical lift. Float control shall be in the condensate sump to shut the unit down in case of a pump malfunction.
9. Flat Stat Thermostat: The Flat Stat thermostat shall incorporate 3-speed control, programmability, backlight, locking keypad and a large LCD display that is mounted flush to the wall.

C. Manufacturers: Carrier, Mitsubishi or approved equal.

PART 3 - EXECUTION

3.01 GENERAL

- A. Examine areas under which Work of this Section will be performed. Correct conditions detrimental to proper and timely completion of Work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 EQUIPMENT DESIGN AND INSTALLATION

- A. Uniformity: Unless otherwise specified, equipment of same type or classification shall be product of same manufacturer.
- B. Application: Only provide equipment as reviewed by the Engineer.
- C. Equipment Installation: Equipment installation shall be in strict accordance with these Specifications, and installation instructions of manufacturers. Piping shall be installed in such a manner as not to place a strain on any of the equipment. Piping shall be graded, anchored, guided and supported, without low pockets.
 - 1. Install equipment in a neat and skillful manner, properly aligned, leveled, and adjusted for satisfactory operation.
 - 2. Install so connecting and disconnecting of piping and accessories can be readily accomplished, parts are readily accessible for inspection, service and repair. Space shall be provided to readily remove filters, coils, compressors and fan wheels. Access doors shall be hinged with cam lock door handles.

3.03 NOISE AND VIBRATION

- A. Operation of Equipment: Mechanical equipment and piping systems shall operate without exceeding specified noise and/or vibration levels.
- B. Corrective Measures: If specified noise and/or vibration levels are exceeded, provide necessary changes to reduce noise and/or vibration levels to within specified levels.

3.04 FLOOR-MOUNTED UNITS

- A. Floor-mounted, units shall be installed on a isolator with sound absorbing pad as shown on the drawings. Submit to OCTA for review.

3.05 FIELD TESTS AND INSPECTION

- A. General: Perform field inspections, field tests, and trial operations as specified in Section 15010: Basic Mechanical Requirements. Provide labor, equipment and incidentals required for testing. The Authority will witness field tests and trial operations as specified in Section 15010: Basic Mechanical Requirements.
- B. Equipment and Material: Equipment and material certified as being successfully tested by manufacturer, in accordance with referenced Specifications and standards, will not require re-testing before installation. Equipment and materials not tested at the place of manufacture will be tested before or after installation, as

applicable or necessary, to determine compliance with reference Specifications and standards.

- C. Start-Up and Operational Test: System shall be started up and initially operated with components operating. During this test, various strainers or filters shall be periodically cleaned until no further accumulation of foreign material occurs. Do not permit excessive loss of refrigerant while strainers are being cleaned. Adjust safety and automatic control instruments as required to provide proper operation and control sequence. Refer to Section 15010: Basic Mechanical Requirements.
- D. Extent of Field Tests: After installation and before completion, Work of this section shall be subjected to required field tests, including those specified here and in Section 15010: Basic Mechanical Requirements.
- E. Operation and Maintenance Data: Provide required operation and maintenance data as specified in Section 15010: Basic Mechanical Requirements.

3.06 REFRIGERANT PIPING

- A. Unless otherwise indicated, main liquid and suction lines from condensing unit to evaporator coil shall be of sizes specified by manufacturer.
- B. Refrigeration piping shall be refrigeration grade copper tubing, type L hard-drawn. Maintain entire system clean and dry during installation. Pipe shall be sealed until installed.
- C. Refrigeration lines, both hard-drawn and soft-drawn, shall be straight and free from kinks, restrictions or traps and horizontal runs shall be sloped towards compressor one inch to 10 feet wherever possible.
- D. Joints shall be installed with Silfos 15, Silvaloy 15, or equal, high melting point solder.
- E. Flare nuts required on suction lines shall be of the short forged or frost-proof type. All other fittings shall be standard sweat-soldered type. Elbows and return bends shall be long radius type.
- F. Refrigeration Piping: Joints shall be silver brazed and leak tested. Field fabricated lines shall be thoroughly flushed and cleaned before connection. Bleed nitrogen through lines during silver brazing, and cap and seal lines when not completed and connected to equipment.
- G. Sleeve penetrations of floors, walls and ceiling to allow for free motion of piping. Provide 24 gage galvanized iron pipe and chrome-plated escutcheon plates. Pack annular space between pipe and sleeve with incombustible material such as fiberglass and seal each end with mastic to provide a waterproof seal.

- H. Install insulated couplings at points of connection between dissimilar metals for cathodic protection. Insulate copper tubing from ferrous materials and hangers with 2-inch thickness of 3-inch wide strip, 10 mil. polyvinyl tape wrapped around pipe.
- I. Support piping by iron hangers and supports, per manufacturer's recommendations. Provide saddles to protect pipe insulation.
- J. Provide connections of copper and brass pipe and tubing with 95-5 tin/antimony, ASTM B 32, Grade 5A solder.
- K. Insulate refrigerant suction lines.
- L. On split heat pump systems, insulate both suction and liquid lines. For insulation materials, refer to Section 15080: Mechanical Insulation.

3.07 CLEANUP

- A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

3.08 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 16010

BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes: This section provides basic electrical requirements.
- C. Related Sections:
 - 1. Section 02316: Excavating, Backfilling, and Compacting for Pavement.
 - 2. Division 15: Mechanical.

1.02 BASIC ELECTRICAL REQUIREMENTS

- A. Quality Assurance:
 - 1. Workers possessing the skills and experience obtained in performing work of similar scope and complexity shall perform the Work of this Division.
 - 2. Refer to other sections of the Specifications for other qualification requirements.
- B. Drawings and Specifications Coordination:
 - 1. For purposes of clearness and legibility, Drawings are essentially diagrammatic and the size and location of equipment is indicated to scale whenever possible. Verify conditions, dimensions, indicated equipment sizes, and manufacturer's data and information as necessary to install the Work of this Division. Coordinate location and layout with other Work.
 - 2. Drawings indicate required size and points of termination of conduits, number and size of conductors, and diagrammatic routing of conduit. Install conduits with minimum number of bends to conform to structure, avoid obstructions, preserve headroom, keep openings and passageways clear, and comply with applicable code requirements.
 - 3. Routing of conduits may be changed provided that the length of any conduit run is not increased more than 10 percent of length indicated on the Drawings.
 - 4. Outlet locations shall be coordinated with architectural elements prior to start of construction. Locations indicated on the Drawings may be distorted for clarity.

5. Coordinate electrical Work with all other Work.
- C. Terminology:
1. UL: Underwriter's Laboratories Inc, Nationally Recognized Testing Laboratory (NRTL), or equal.
- D. Regulations: Work shall comply with the requirements of authorities having jurisdiction and the California Electrical and Building Codes. Material shall conform to regulations of the National Board of Fire Underwriters for electrical wiring and apparatus. Materials shall be new and listed by UL, or another NRTL.
- E. Structural Considerations for Conduit Routing:
1. Where special openings are required through walls, floors, footings, or other buildings elements, conform to CBC, Part 2, Title 24, Section 1906 A 3 for conduits and pipes embedded in concrete and Section 2320 A 11.10 for notches and bored holes in wood; notching, boring or cutting of structural steel are not permitted.
- F. Electrically Operated Equipment and Appliances:
1. Furnished Equipment and Appliances:
 - a. Work shall include furnishing and installing wiring enclosures for, and the complete connection of electrically operated equipment and appliances and electrical control devices which are specified to be furnished and installed in this or other sections of the Specifications, wiring enclosures shall be concealed except where exposed Work is indicated on the Drawings.
 - b. Connections shall be provided as necessary to install equipment ready for use. Equipment shall be tested for proper operation and, if motorized, for proper rotation. If outlets are of incorrect electrical characteristics or any specified equipment fails to operate properly, repair and/or replace the outlet and/or equipment.
 2. Equipment and Appliances Furnished by Others:
 - a. Connections to equipment furnished under this Division shall be part of the Work of this section. Work shall include internal wiring, installation, connection and adjustment of bolted drive motors in which the motor is supplied as a separate unit, and connections only for equipment furnished with factory installed internal wiring, except as further limited by Drawings and this Specification. Work shall include furnishing and installing suitable outlets, disconnecting devices, starters, push-button stations, selector switches, conduit, junction boxes, and wiring necessary for a complete electrical installation. Work shall also include furnishing and installing conduit

and boxes for HVAC control systems, furnished under Division 15. Devices and equipment furnished shall be of same type used elsewhere on the Work or as specified.

- b. Electrical equipment furnished under other sections, for installation and connection under Work of this section, will be delivered to the Project site ready for installation.
- c. Mechanical equipment furnished under other sections, and requiring electrical connection under this section, will be set in place as part of the Work of the section furnishing such equipment unless noted otherwise.
- d. Suitability and condition of equipment furnished under other sections shall be determined in advance of installation. Immediate notice of damage, unsuitability, or lack of parts shall be given to the entity providing such equipment.

G. Protection of Materials:

- 1. Protect materials and equipment from damage and provide adequate and proper storage facilities during progress of the Work. Damaged materials and/or equipment shall be replaced.

H. Cleaning:

- 1. Exposed parts of Work shall be left in a neat, clean, usable condition. Finished painted surfaces shall be unblemished and metal surfaces shall be polished.
- 2. Thoroughly clean parts of apparatus and equipment. Exposed parts to be painted shall be thoroughly cleaned of cement, plaster, and other materials. Remove grease and oil spots with solvent. Such surfaces shall be wiped and corners and cracks scraped out. Exposed rough metal shall be smooth, free of sharp edges, carefully steel brushed to remove rust and other spots, and left in proper condition to receive finish painting.
- 3. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Advise the Authority before starting the Work of this Division.

- B. Salvaged materials removed from buildings shall be removed from the Project site as required by the Authority.
- C. Trenches outside of barricade limits shall be backfilled and paved within 24 hours after being inspected by the Authority. Provide traffic plates during the time that trenches are open in traffic areas and in areas accessible to students and staff.
- D. Where existing structural walls are cored for new conduit runs, separation between cored holes shall be 3 inches edge to edge from new or existing holes. Contractor to verify location of structural steel, rebar, stress cabling, or similar prior to lay out.
- E. Electrical equipment shall be braced and anchored.

3.02 CLEANUP

- A. Remove rubbish, debris and waste materials and legally dispose off the Project site.

3.03 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 16050

BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes:
 - 1. Boxes, enclosures, keys and locks.
 - 2. Receptacles and switches.
 - 3. Identifications and signs.
- C. Related Sections:
 - 1. Section 16010: Basic Electrical Requirements.

PART 2 - PRODUCTS

2.01 BOXES, ENCLOSURES, KEYS AND LOCKS

- A. Outlet Boxes and Fittings:
 - 1. Outlet boxes installed in concealed Work shall be galvanized steel, pressed, or welded type, with knockouts.
 - 2. In exposed Work, where conduit runs change direction or size, outlet boxes and conduit fittings shall be cast metal with threaded hubs cast integral with box or fitting.
 - 3. Fittings shall be cast metal and non-corrosive. Ferrous metal fittings shall be cadmium-plated or zinc galvanized. Castings shall be true to pattern, smooth, straight, with even edges and corners, of uniform thickness of metal, and shall be free of cracks, gas holes, flaws, excessive shrinkage, and burnt-out sand.
 - 4. Covers for fittings shall be galvanized steel or non-corrosive aluminum and shall be designed for particular fitting installed.
 - 5. Light fixture outlets shall be 4-inch octagon, 4-inch square, 2-1/8 inches deep or larger, depending upon number of conductors or conduits therein. Plaster rings shall be furnished with round opening with 2 ears drilled 2-23/32 inches center to center.

6. For local device outlets provide 4-inch square 2-1/8 inch deep, boxes for single gang, 5-inch square boxes for two-gang, and special solid gang boxes with gang plaster ring for more than 2 switches.
7. Plaster rings shall be provided on flush-mounted outlet boxes except where otherwise indicated or specified. Plaster rings shall be same depth as finished surface. Install approved ring extension to obtain depth to finish surface.
8. Factory made knockout seals shall be installed to seal box knockouts, which are not intact.
9. Where flexible conduit is extended from flush outlet boxes, provide and install weatherproof universal box extension adapters.

B. Junction and Pull boxes:

1. Junction and pull boxes, in addition to those indicated, shall only be used in compliance with codes, recognized standards, and Contract Documents.
2. Interior and non-weatherproof boxes shall be constructed of blue or galvanized steel with ample laps, spot welded, and shall be rigid under torsion and deflecting forces. Boxes shall be furnished with auxiliary angle iron framing where necessary to ensure rigidity.
3. Covers shall be fastened to box with a sufficient number of brass machine screws to ensure continuous contact all around. Flush type boxes shall be drilled and tapped for cover screws if boxes are not installed plumb. Surfaces of pull and junction boxes and covers shall be labeled in black marker ink designating system, panelboard and circuit designation contained in box. In exposed Work, designation shall be installed on inside of pullbox or junction box cover.
4. Weatherproof NEMA 3R pull and junction boxes shall conform to foregoing for interior boxes with following modifications:
 - a. Cover of flush mounting boxes shall be furnished with a weather-tight gasket cemented to, and trimmed even with, cover all around.
 - b. Surface or semi-flush mounting pull and junction boxes shall be UL, or another Nationally Recognized Testing Laboratory (NRTL) listed as rain-tight and shall be furnished complete with threaded conduit hubs.
 - c. Exposed portions of boxes shall be galvanized and finished with one prime coat and one coat of baked-on gray enamel, unless already furnished with factory baked-on finish.
5. Junction and pull boxes shall be rigidly fastened to structure and shall not depend on conduits for support.
6. Underground Concrete Pull Boxes:

- a. Pre-cast concrete pull boxes. Concrete pull boxes shall be traffic type, reinforced for H-20 wheel loading, pre-cast concrete. Pull boxes with inside dimensions of 2 feet x 3 feet x 3 feet deep shall consist of a base section, top ring, and cover. Base section shall be furnished with 2 knockouts measuring 10 inch x 10 inch in each 3 feet side, and one 20 inch x 20 inch knockout in each 2-foot side. Pull boxes with inside dimension 4 feet x 4 feet x 4 feet deep shall consist of a base section, midsection, topping, and cover. Base section shall be furnished with 2 knockouts measuring 8 inches x 16 inches on each of 2 opposite sides, and one 20 inch x 20 inch knockout on each of other 2 opposite sides. Pull boxes shall be furnished with a minimum of 6-inch diameter sump knockout and one inch diameter ground rod knockout. In pull boxes, furnish and install cable racks on walls. Racks shall be furnished with 3 porcelain cable holders on vertical steel mounting bars. Pull boxes shall be furnished with 3/4 inch diameter pull irons. Covers shall be traffic-type consisting of steel safety plate bolted to frame. Covers shall be marked as electrical, power, or signal as required. Pull boxes shall be as manufactured by Quickset, or equal.
 - b. Provide end bells in duct entrances. Terminate each metal conduit with insulated bushing provided with a grounding terminal.
 - c. Install pulling irons on opposite walls and below horizontal centerlines of ducts and bricked-up openings, and in bottom. Install pulling irons with each end hooked around a reinforcing bar.
 - d. Remove floor drain knockout and provide a depth of 24 inches of crushed rock below box extending a minimum of 12 inches beyond on all sides.
 - e. Permanently and effectively ground metal equipment cases, cable racks, and similar items in pull boxes to site grounding electrode system. Provide grounding conductor in compliance with CEC Article 250.
 - f. Provide 6-inch deep sand base under pull boxes.
 - g. Identify power and signal cables by tagging in manholes and pull boxes. Tie securely to cables with nylon cord.
 - h. Top of steel plate shall provide a minimum coefficient of static friction of 0.5 for either wet or dry locations, when tested for any shoe sole material. Test shall comply with ASTM D 1047 or F 489 or F 609 standards. Submit manufacturer's test results for Architect's review as part of materials and equipment submittals.
7. Underground utility boxes shall be reinforced concrete with non-setting shoulders to prevent settlement following installation. Boxes shall be furnished with cast iron cover with finger hole, size as indicated on Drawings. Utility boxes shall be as manufactured by Quickset, or equal.

C. Keys and Locks:

1. Provide 2 keys with furnished door locks, including cabinet door locks and switchboard locks, 2 keys for lock switches on switchboards or control panels, and 2 keys with interlocks or other furnished lock switches. Deliver keys to the Authority.
2. Locks shall be keyed to Corbin No. 60 keys for access to operate equipment and Corbin 70 keys for service access. Special keys and locks shall only be provided where specified.

2.02 IDENTIFICATION AND SIGNS

A. Identification Plates:

1. Provide identification plates for the following unless otherwise specified, for switchboards, unit substations, motor control centers, control panels, push-button stations, time switches, contactors, motor starters, motor switches, panelboards, and terminal cabinets.
2. Identification plates shall be of plastic stock and shall adequately describe function, voltage and phase of identified equipment. Where identification plates are detailed or described on Drawings, inscription and size of letters shall be as indicated. For lighting and power panels, identification plates shall indicate panel designation, voltage, and phase of panel. For terminal cabinets, identification plates shall indicate system contained in terminal cabinet.
3. Identification plates shall be black-and-white nameplate stock of bakelite with characters cut through black exposing white. Plates shall be furnished with beveled edges and shall be securely fastened in place with No. 4 Phillips-head, cadmium-plated steel, self-tapping screws. Characters shall be 3/16 inch high, unless otherwise indicated.

B. Markings:

1. Install identification markings to surface-mounted starters, switches, disconnect switches, contactors, and other devices controlling motors and appliances. Provide abbreviations required along with an identifying number. Markings to be provided with locking type stencils using paint of a contrasting color. Figures shall be 3/8 inch high unless otherwise indicated. Dymo Industries Inc., self-sticking plastic labels, with embossed characters made with a typewriter may be installed instead of stencils and paint; p-touch self adhesive plastic, or Brother P-Touch self sticking laminated plastic labels may be installed.

PART 3 - EXECUTION

3.01 INSTALLATION AND SUPPORT OF BOXES

- A. Install outlet boxes flush with finished surface of wall or ceiling. Install plumb and securely fastened to structure, independent of conduit. Except where otherwise

indicated, provide factory-fabricated bar hangers to support outlet boxes. When installation is performed in fire rated walls, maintain the wall's rating integrity by means of approved fire stop methods.

- B. Outlet boxes installed in suspended or furred ceilings with steel runner or furring channels shall be supported, except where otherwise indicated, by a Unistrut P-4000 channel spanning main ceiling runner channels. Each box shall be supported from its channel by a 3/8 inch 16 threaded steel rod with a Unistrut P-4008 nut and a Tomic No. 711-B Adapta-Stud. Rod shall be tightened to a jamb fit with channel and its nut. Box shall be locked to rod by means of a 1/2 inch locknut on stud and a 3/8 inch 16 hex nut locking stud to rod.

3.02 COVER PLATES

- A. Provide a plate on each switch, plug, pilot light, data, interphone, public telephone, and television outlet, and on existing and reset outlets where so indicated or required. Plates shall be of stainless steel unless otherwise specified.
- B. Flush wiring device and signal system outlets indicated to be blank covered, shall be covered with blank stainless steel plates. Flush lighting outlets to be blanked shall be covered with Wiremold 5736 steel covers, or equal, painted to match surrounding finish. Provide stainless steel covers to blank indicated or required surface-mounted outlets.
- C. In the following cases, and at required locations. Switch and receptacle plates shall be engraved with the device(s), or fixtures being controlled, or as indicated:
 - 1. Three-gang and larger gang switches in locations other than classrooms.
 - 2. Lock switches.
 - 3. Pilot switches.
 - 4. Switches so located that operator cannot see fixtures, or items of equipment controlled while his hand is on the switch.
 - 5. Switches not in same room with fixtures or items of unit heaters, air curtains, fly fans, etc.
- D. Designations shall be as indicated on Drawings or as specified by Architect,

3.03 IDENTIFICATION OF CIRCUITS AND EQUIPMENT

- A. Provide descriptive nameplates or tags permanently attached to switchboards, motor control centers, transformers, panelboards, circuit breakers, disconnect switches, starters, pushbutton control stations and other apparatus installed for operation or control of circuits, appliances, fire alarm control panel(s), fire alarm annunciator(s), power supplies, terminal cabinets, energy management control units, and Information technology system backbone and distribution equipment points. .

- B. Provide nameplates of engraved laminated plastic, or etched metal. Submit Shop Drawings denoting dimensions and format to Architect before installation. Fasten to equipment with escutcheon pins, rivets, self-tapping screws, or machine screws. Self-adhering or adhesive backed nameplates are not permitted.
- C. Fasten tags to feeder wiring in conduits at every point where runs are broken or terminated, including pull wires in empty conduits. Indicate circuit, phase, and function. Tag branch circuits in panel boards and motor control centers. Tags may be manufactured of pressure-sensitive plastic or embossed self-attached stainless steel or brass ribbon.
- D. Provide circuit identification cards and cardholders in all panel boards. Cardholders shall consist of metal frame retaining a clear plastic cover permanently attached to inside of panel door. List of circuits shall be typewritten on a card. Circuit description shall include name or number of circuit, area and connected load.
- E. Junction and pull boxes shall have covers stenciled with box number when indicated on Drawings, or circuit numbers according to panel schedules. Data shall be lettered in a conspicuous manner with a color contrasting with finish.
- F. Name shall be correctly engraved, with a legend indicating function or areas, when required by codes or indicated on Drawings.

3.04 PROTECTION

- A. Protect Work of this section until Substantial Completion.

3.05 CLEANUP

- A. Remove rubbish, debris, and waste materials and legally dispose of off Project site.

END OF SECTION

SECTION 16060

GROUNDING AND BONDING

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes: Provide and install grounding system as indicated or required.
- C. Related Sections:
 - 1. Refer to related sections for their system grounding requirements.
 - 2. Section 16010: Basic Electrical Requirements.

1.02 QUALITY ASSURANCE

- A. Reference Standards:
 - 1. IEEE 142 Green Book.
 - 2. Underwriter's Laboratories (UL).
 - 3. California Electrical Code.
 - 4. Building Industry Consultant Services International (BICSI) (Signal).
 - 5. EIA/TIA (Signal and power).
 - 6. Nationally Recognized Testing Laboratory (NRTL) or equal.

1.03 SYSTEM DESCRIPTION

- A. Metallic objects on the Project site that enclose electrical conductors, or that are likely to be energized by electrical currents, shall be effectively grounded.
- B. Metal equipment parts, such as enclosures, raceways, and equipment grounding conductors, and earth grounding electrodes shall be solidly joined together into a continuous electrically conductive system.
- C. Metallic systems shall be effectively bonded to the main grounding electrode system.
- D. A separately derived AC source shall be grounded to the equipment grounding conductor, and to separate "made" electrode of building grounding electrode system.
- E. Electrical continuity to ground metal raceways and enclosures shall be provided by a green insulated grounding conductor of required size within each raceway connected to isolated metallic raceways, or enclosures at each end. Each flexible conduit over 6 feet in length shall be provided with a green insulated grounding conductor of required size.

- F. Cold water, or other utility piping systems, shall not be utilized as grounding electrodes due to the installation of insulating couplings and non-metallic pipe in such installations. Existing grounding system shall be extended.
- G. Non-current carrying metal parts of equipment enclosures, signal and power conduits, switchboard and panelboard enclosures, motor frames, equipment cabinets, and metal frames of buildings shall be permanently and effectively grounded. Provide a CEC sized grounding conductor in every raceway.
- I. Neutral of separately derived systems shall be grounded as follows:
 - 1. Equipment and conduit grounding conductors shall be bonded to a single grounding point.

1.04 SUBMITTALS

- A. Provide in accordance with Division 01.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Furnished yard boxes shall be precast concrete and shall be approximately 14 inches wide by 19 inches long by 12 inches deep or larger, if necessary to obtain required clearances. Boxes shall be furnished with bolt-down, checkered, cast iron covers and cast iron frames cast into boxes. Yard boxes shall be Brooks 36, or equal.
- B. "Made" electrodes shall be copper-clad steel ground rods, minimum 3/4 inch diameter by 10 feet long.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Grounding rods shall be driven to a depth of not less than 8 feet.
- B. Grounding electrodes shall provide a resistance to ground of not more than 25 ohms.
- C. When installing grounding rods, if resistance to ground exceeds 25 ohms, 2 or more rods connected in parallel, or coupled together shall be provided to meet grounding resistance requirements.
- D. Ground rods shall be separated from one another by not less than 10 feet.
- E. Parallel grounding rods shall be connected together with recognized fittings and grounding conductors.

3.02 TESTING

- A. Provide the services of an approved independent testing laboratory to test grounding resistance of "made" electrodes, ground rods, bonding of building steel, water pipes, gas pipes and other utility piping. Tests shall be performed as follows:

1. Visually and mechanically examine ground system connections for completeness and adequacy.
 2. Perform fall of potential tests on each ground rod or ground electrode where suitable locations are available per IEEE Standard No. 81, Section 8.2.1.2. Where suitable locations are not available, measurements will be referenced to a known dead earth or reference ground.
 3. Perform the two point method test per IEEE No. 81, Section 8.2.1.1 to determine ground resistance between ground rod and building steel, and utility piping - such as water, gas and panelboard grounds. Metal railings at building entrances and at handicapped ramps shall also be tested.
 4. Test shall be performed in the presence of the Authority.
- B. Submit 3 copies of test results to the Authority. Test results shall be submitted on an official form from the independent testing laboratory recording Project location, test engineer, test conditions, test equipment data, ground system layout or diagram, and final test results.

3.03 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

3.04 CLEANUP

- A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 16120

LOW-VOLTAGE WIRES (600 VOLT AC)

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes: Low-voltage wire, splices, terminations and installation.

1.02 SUBMITTALS

- A. Provide in accordance with Division 01.

PART 2 - PRODUCTS

2.01 WIRES

- A. Wires shall be single conductor type THHN / THWN insulated with polyvinyl chloride and covered with a protective sheath of nylon, rated at 600 volts. Wires may be operated at 90 degrees C. maximum continuous conductor temperature in dry locations, and 75 degrees C. in wet locations and shall be listed by UL Standard 83 for thermoplastic insulated wires, listed by Underwriter's Laboratories (UL) for installation in accordance with Article 310 of the California Electrical Code (CEC). Conductors shall be solid copper for 12 AWG and smaller conductors, and stranded copper for 10 AWG and larger conductors. Conductors shall be insulated with PVC and sheathed with nylon. Wires shall be identified by surface markings indicating manufacturer's identification, conductor size and metal, voltage rating, UL symbol, type designations and optional rating. Indentations for lettering is not permitted. Wires shall be tested in accordance with the requirements of UL standard for types THWN, or THHN.
- B. Conductors shall be solid Class B or stranded Class C, annealed uncoated copper in accordance with UL standards, or another Nationally Recognized Testing Laboratory (NRTL).

2.02 STANDARDS

- A. THWN/THHN wires shall comply with the following standards:
 - 1. UL 83 for thermoplastic insulated wires.
 - 2. UL 1063 for machine tool wires and cables.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Wires shall not be installed until debris and moisture is removed from conduits, boxes, and cabinets. Wires stored at site shall be protected from physical damage until they are installed.
- B. Wire-pulling compounds furnished as lubricants for installation of conductors in raceways shall be compounds approved and listed by UL, NRTL, or equal. Oil, grease, graphite, or similar substances are not permitted. Pulling of 2 AWG or larger conductors shall be performed with a cable pull machine. Any runs shorter than 50 feet are exempt. When pulling conductors, do not exceed manufacturer's recommended tension values
- C. The Authority will observe installation of feeder cables. Notify the Authority not less than 2 working days in advance of the proposed time of feeder installation.
- D. At outlets for light, power, and signal equipment, pigtail splices with 8-inch circuit conductor leads for connection to fixtures, equipment, and devices.
- E. Pressure cable connectors, pre-insulated Scotchlok, 3M, or equal, Y, R or B spring-loaded twist-on type, may be furnished in splicing number 8 AWG or smaller wires for wiring systems; except public address and telephone systems.
- F. All Joints, splices, taps, and connections to switchboard neutral, bonding or grounding conductors, conductors to ground busses, and transformer connections for wires 6 gauge and larger shall be performed with high-pressure cable connectors approved for installation with copper conductors. Connectors shall be insulated with heavy wall heat shrink WCSM, or cold-applied roll-on sleeve RVS. Insulation level shall be a minimum of 600V and joints, splices, and taps shall be qualified to ANSI C 119.2, UL, NRTL, or equal listed mechanical pressure connections.
- G. Connection of any bonding or grounding conductors shall be securely bolted together with corrosion-resistant plated carbon steel, minimum grade 5 machine screws secured with constant pressure-type locking devices.
- H. Wire in switchboards, panel cabinets, pull boxes, and other cabinets except public address, shall be neatly grouped and tied in bundles with nylon ties at 10-inch intervals. In switchboards, panels and terminal blocks, wires shall be fanned out to terminals. If bundles are longer than 24 inches, a maximum of 9 current carrying conductors may be bundled together.
- I. Install conductor lengths with a minimum length within the wiring space. Conductors must be long enough to reach the terminal location in a manner that avoids strain on the connecting lug.
- J. Maintain the conductor required bending radius.

- K. Neutral conductors larger than 6 gauge, which are not color identified throughout their entire length, shall be taped, painted white or natural gray, or taped white where they appear in switchboards, cabinet, gutters or pull boxes. Neutral conductors 6 gauge and smaller shall be white color identified throughout their entire length.
- L. Wiring systems shall be free from short circuits and grounds, other than required grounds. Provide the services of an approved independent testing laboratory to test feeder insulation resistance. The tests to be performed are as follows:
 - 1. With a megger insulation tester, perform the time-resistance method to test feeders and branch circuit wires. Tests must be conducted with wire disconnected at each end in order to test the wire itself. A second test must be conducted with the wire connected at each end and the circuit breakers or switches in the closed positions.
 - 2. Tests shall be performed in presence of the Authority.
 - 3. Insulation resistance shall not be less than 100 mega-ohms.

3.02 COLOR CODES

A. General Wiring:

- 1. Color code conductor insulation as follows:

SYSTEM VOLTAGE		
Conductor	208Y/120	480Y/277
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White or Gray	White with colored stripe

Neutrals shall be colored-distinguished if circuits of two voltage systems are used in the same raceway.

- 2. For phase and neutral conductors 6 gauge or larger, permanent plastic-colored tape may be furnished to mark conductor end instead of coded insulation. Tape shall cover not less than 2 inches of conductor insulation within enclosure.

3.03 FEEDER IDENTIFICATION

- A. Feeder wires and cables shall be identified at each point the conduit run is broken by a cabinet, box, gutter, etc. Where terminal ends are available, identification shall be by means of heat shrink wire markers, which provide terminal strain relief. Markers shall be Brady Perma-Sleeve, or equal. Identification in other areas shall be by

means of wrap-around tape markers Brady Perma-Code or equal. Markers shall include feeder designation, size, and description.

3.04 TAPE AND SPLICE KITS

- A. Splices, joints, and connectors joining conductors in dry and wet locations shall be covered with insulation equivalent to that provided on conductors. Free ends of conductors connected to energized sources shall be taped. Voids in irregular connectors shall be filled with insulating compound before taping. Thermoplastic insulating tape approved by UL, NRTL, or equal for installation as sole insulation of splices shall be furnished and shall be installed according to manufacturer's printed specifications.

3.05 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

3.06 CLEANUP

- A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 16130

RACEWAYS, FITTINGS AND SUPPORTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes:
 - 1. Raceways and wire ways
 - 2. Conduit installation.
 - 3. Underground requirements.
- C. Related Sections:
 - 1. Section 16010: Basic Electrical Requirements.
 - 2. Section 16050: Basic Electrical Materials and Methods
- D. Applicable Standards and Codes
 - 1. EIA/TIA 569 Standards.
 - 2. National American Standards Institute (ANSI)
 - 3. National Electrical Manufacturer's Association (NEMA)
 - 4. Nationally Recognized Testing Laboratory (NRTL)
 - 5. California Electrical Code (CEC)
 - 6. Uniform Building Code (UBC)
 - 7. Underwriters Laboratory (UL)

1.02 SUBMITTALS

- A. Materials List: Provide in accordance with Division 01.

PART 2 - PRODUCTS

2.01 RACEWAYS

- A. Conduit Materials:
 - 1. Metallic conduit, and tubing shall be manufactured under the supervision of an UL, or another NRTL factory inspection and label service program. Each 10-foot length of conduit and tubing shall bear the UL or another NRTL label and manufacturer's name.
 - 2. Rigid metallic conduit shall be rigid steel, heavy wall, mild steel, zinc-coated, with an inside and outside protective coating manufactured in accordance with ANSI C 80.1. Couplings, elbows, bends, condulets, bushings and other

fittings shall be the same materials and finish as the rigid metallic conduit. Fittings, connectors, and couplings shall be threaded type, manufactured in accordance with ANSI C 80.1 and UL 6.

3. Electrical metallic tubing shall be steel tubing, zinc-coated with a protective enamel coating inside, manufactured in accordance with NEMA C 80.3. Fittings, couplings, and connectors shall be gland compression type, set screw couplings and connectors are not permitted. All parts shall be manufactured in accordance with NEMA C80.3 and UL 6A Electrical metallic tubing is designated hereinafter as EMT. Steel and rain tight fittings shall be approved and listed for the intended application.
 4. Flexible steel conduit shall be of flexible interlocking strip construction with continuous zinc coating on strips, manufactured in accordance with UL 1..
 - a. Connectors and couplings shall be required fittings of the type, which threads into convolutions of flexible conduit.
 5. Liquid-tight flexible metal conduit shall be galvanized heavy wall, flexible locked steel strip construction, UV rated, with smooth moisture and oil-proof, abrasion-resistant, extruded plastic jacket. Connectors shall be as required for installation with liquid-tight flexible conduit and shall be installed to provide a liquid-tight connection.
 6. Non-metallic conduit shall be rigid PVC electrical conduit extruded to schedule 40 dimensions of Type II. Grade 1 high impact, polyvinyl chloride, sweeps, couplings, reducers and terminating fittings shall be listed under the UL, or another NRTL, and shall bear the manufacturer's listed marking.
 7. Metal Clad (MC) cable system is not allowed.
- B. Sleeves for Conduits: Sleeves shall be adjustable type, of 26 gage galvanized iron, Adjust-to Crete Co. Adjust-to-Crete, or Jet Line Products Inc. Jet-Line, or equal.
- C. Where conduit enters a building through a concrete foundation below grade, or ground water level, or where it is necessary to seal around a conduit where it passes through a concrete floor or wall, provide O-Z/Gedney Type FSK Thru Wall and Floor Seal, or equal.
- D. Wireways shall be 16 gage galvanized steel enclosed hinge/screw wiring troughs, surface metal raceway, wireway, and auxiliary gutter designed to enclose electrical wiring. Wireway fittings shall be furnished with removable covers and sides to permit complete installation of conductors throughout the entire wireway run. Cover shall be furnished with keyhole slots to accept captive screws locking the cover securely closed. Wireways shall be UL or another NRTL listed, and shall be Square D Type LDG NEMA-1 enclosure for interior applications, or Type RD NEMA-3R enclosure for exterior applications, or equal by Cooper B-line, Hoffman, Wire Guard, or Circle AW.

- E. Penetration in Fire-Rated Structures: Provide 3M, or equal, caulk and fire barriers for installing fire-rated seals around penetrations through floors, walls, and elevator shafts. Fire stop system must be UL, or another NRTL listed, and classified for through-penetration applications of metallic conduits and busways.
- F. Pull Wires: Install 1/8 inch polypropylene cords in empty or spare conduits.

PART 3 - EXECUTION

3.01 CONDUIT INSTALLATION

- A. General Requirements:
 - 1. Provide complete and continuous systems of rigid metallic conduit, outlet boxes, junction boxes, fittings and cabinets for systems of electrical wiring including lighting, power, and signal systems, except as otherwise specified.
 - 2. EMT may be installed in interior concealed applications and in areas approved by owner. EMT shall not be installed in concrete, directly buried underground, outdoors, in boiler rooms, elevator pits, or where subject to damage.
 - 3. Within buildings, flexible steel conduit may be installed instead of rigid steel conduit where permitted by code. Flexible steel conduit shall not be installed for conduit installations longer than 50 feet (inclusive of fittings and boxes), in concealed ceilings or walls, and where conduit size is 1-1/2 inches or greater.
 - 4. Liquid-tight flexible steel conduit shall only be installed, except where otherwise specified, for final connection of motor terminal boxes, shop equipment, cafeteria equipment, HVAC equipment and other equipment, or for frequent interchange, and shall be of sufficient length, not exceeding 36 inches, to permit full travel or adjustment of motor on its base. Liquid-tight flexible conduit shall not be used for equipment not requiring adjustment or frequent interchange.
 - 5. Connectors for flexible metal conduit shall be made of steel, and of the types which threads into convolutions of conduit. Connectors for watertight flexible metal conduit shall be as required for installation and shall be installed to provide a watertight connection.
 - 6. Exposed conduit shall be installed vertically and horizontally following the general configuration of the equipment, using cast threaded hub conduit fittings where required and shall be clamped to equipment with suitable iron brackets and one hole pipe strap.
 - 7. If connection is from a flush wall-mounted junction box, install an approved extension box.
 - 8. Underground feeder distribution conduits for systems may be non-metallic conduit instead of rigid conduit except where otherwise specified or indicated.
 - 9. Conduit shall be concealed unless otherwise indicated. Conduits exposed to view, except those in attic spaces and under buildings, shall be installed

parallel or at right angles to structural members, walls, or lines of building. Conduits shall be installed to clear access openings.

10. Bends or offsets will not be permitted unless absolutely necessary. Radius of each conduit bend or offset shall be as required by ordinance. Bends and offsets shall be performed with standard industry tools and equipment or may be factory fabricated bends or elbows complying with requirements for radius of bend specified. Heating of metallic conduit to facilitate bending is not permitted.
11. Running threads are not permitted. Provide conduit unions where union joints are necessary. Conduit shall be maintained at least 6 inches from covering of hot water and steam pipes and 18 inches from flues and breechings. Open ends of conduits shall be sealed with permitted conduit seals during construction of buildings and during installation of underground systems.
12. Where conduits are terminated in groups at panelboards, switchboards, and signal cabinets, etc., provide templates or spacers to fasten conduits in proper position and to preserve alignment.
13. Where auxiliary supports, saddles, brackets, etc., are required to meet special conditions, they shall be fastened rigid and secure before conduit is attached.
14. Conduit in ceiling spaces, stud walls, and under floors, shall be supported with factory fabricated pipe straps or shall be suspended with pipe hangers or pipe racks. Pipe straps shall be attached to and shall fasten conduit tight at point of support against ceiling and floor joists, rafters, and wall studs, or 2-inch x 4-inch headers fitted between joists or wall studs.
15. Conduits installed on exposed steel trusses and rafters shall be fastened with factory fabricated conduit straps or clamps, which shall fasten conduit tight against supporting member at point of support.
16. Pipe hangers for individual conduits shall be factory fabricated. Steel rods shall be 3/8 inch for 2-inch conduit hangers and smaller and shall be 1/2 inch for 2-1/2 inch conduit hangers and larger.
17. Pipe racks for groups of parallel conduits and for supporting total weights not exceeding 500 pounds shall be trapeze type and shall consist of a cross channel, Steel City Kindorf B-900, Unistrut P-1000, or equal, suspended with a 3/8 inch minimum diameter steel rod at each end. Rods shall be fastened with nuts, top and bottom to cross-channel and with square washers on top of channel. Conduits shall be clamped to top for cross-channel with conduit clamps, Steel City Kindorf C-105 or Unistrut P-1111 through P-1124. Conduits shall not be stacked one on top of another, but a maximum of 2 tiers may be on same rack providing an additional cross-channel is installed. Where a pipe rack is to be longer than 24 inches, or if the supported weight exceeds 500 pounds, submit Shop Drawings of installation to the Architect for review.

18. Conduits suspended on rods more than 2 feet long shall be rigidly braced to prevent horizontal motion or swaying. Installation shall meet zone 4 seismic requirements.
19. Factory fabricated pipe straps shall be one or 2-hole formed galvanized clamps, heavy-duty type, except where otherwise specified.
20. Hangers, straps, rods, or pipe supports under concrete shall be attached to inserts with approved concrete anchors. Under wood, install bolts, lag bolts, or lag screws; under steel joists or trusses, install beam clamps. Contractor shall submit size of anchors, bolts, screws, and installation method to Architect for approval prior to start of any work.
21. Conduits shall be supported at intervals required by code, but not to exceed 10 feet. One inch and smaller exposed conduits shall be fastened with one-hole malleable iron straps. Perforated straps and plumber's tape is not permitted for the support of conduits.
22. Conduits stubbed up through a roof or an arcade shall be flashed with a waterproof flashing. Refer to Division 07 for additional requirements.
23. Bushings and locknuts for rigid steel conduit shall be steel threaded insulating type. Setscrew bushings are not permitted.
24. Flex conduits shall be cut square and not at an angle.
25. Routing of conduits may be changed providing length of any conduit run is not increased more than 10 percent of the length indicated on Drawings.

B. Underground Requirements:

1. Underground conduits and raceways shall be buried to a depth of not less than 24 inches below finished grade to top of the conduit, unless otherwise specified.
2. Assemble sections of conduit with required fittings. Cut ends of conduit shall be reamed to remove rough edges. Joints in conduits shall be provided liquid-tight. Bends at risers shall be completely below surface where possible.
3. Conduits and raceways in a common trench shall be separated by at least 3 inches. Electrical power and/or lighting conduit runs installed in a common trench with conduits containing signal system wiring shall maintain a separation of a minimum of 6 inches from signal system conduits and raceways.
4. Non-metallic conduit installations shall comply with following additional requirements. Joints in PVC conduit shall be sealed by means of required solvent-weld cement supplied by conduit manufacturer. Non-metallic conduit bends and deflections shall comply with requirements of applicable electrical code, except that minimum radius of any bend or offset for conduits sized from 1/2 inch to 1-1/2 inches inclusive shall not be less than 24 inches. Bends at risers and risers shall be PVC-coated rigid steel conduit. Radius of curve of bends or offsets in non-metallic conduit for public telephone system

shall be not less than 10 times trade size of conduit, unless otherwise specifically permitted.

5. Furnish and install a 6-inch wide, polyethylene, red underground barrier type 12 inches above full length of concrete reading, "CAUTION ELECTRIC LINE BURIED BELOW".
 6. Protect inside of conduit and raceway from dirt and rubbish during construction by capping openings.
 7. All underground conduits and raceways shall be swabbed prior to wire pull.
- C. Concrete Walls and Floors: Provide sleeves where conduits pierce concrete walls, and floors, except floor slabs on grade. Sleeves shall provide 1/2 inch clearance around conduits. Sleeves shall not extend beyond exposed surfaces of concrete and shall be securely fastened to forms. Where conduits pass through walls below grade, caulk with required sealant and backer materials between conduit and sleeve to provide a watertight joint. Sealant shall be as indicated in Section 07920: Joint Sealants.

3.03 PROTECTION

- A. A. Protect the Work of this section until Substantial Completion.

3.04 CLEANUP

- A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 16230

EMERGENCY GENERATORS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes: Provide a factory built, prototype tested, production tested, field tested, complete and operable emergency/standby electric generating system, including devices and equipment specified herein, indicated on Drawings, and as required for the intended service. Materials and equipment shall be new and current, delivered to the Project site completely wired, tested, and ready for installation.
- C. Related Sections:
 - 1. Section 16010: Basic Electrical Requirements.
 - 2. Section 16050: Basic Electrical Materials and Methods.
 - 3. Section 16415: Automatic Load Transfer Switches.

1.02 DESIGN REQUIREMENTS

- A. Engine-generator sets are rated as indicated on Drawings.
- B. Engine-generator control consoles resiliently mounted on generating sets shall include complete engine start/stop controls and monitoring systems.
- C. Starting batteries with battery chargers for engine-generator sets.
- D. Mounted and loose accessories, control devices, and other equipment as specified herein or as indicated on Drawings.
- E. Such other components, accessories, parts, tests, documents, and services, as needed to meet performance requirements of this Specification.
- F. Electric generating system must meet requirements of NFPA 110 including design specifications, prototype tests, one-step full-load pickup, installation and testing.

1.03 SUBMITTALS

- A. Provide in accordance with Division 01.

- B. Shop Drawings: Submit a control diagram and submit a materials list for system.
- C. Project Data: Catalog cuts, technical data, and manufacturer's specifications.
- D. Service Manuals: Submit 5 copies of service manuals including the following:
 - 1. A detailed explanation of the operation of the system.
 - 2. Instructions for routine maintenance.
 - 3. Detailed instructions for repair of major components of the system.
 - 4. Pictorial parts list and part numbers.
 - 5. Pictorial and schematic electrical drawings of wiring systems, including operating and safety devices, control panels, annunciators, and major components.
 - 6. Installation instructions for system components.
 - 7. Final test report.
 - 8. One reproducible set of project record drawings of the system exactly as it was installed including exact location of components.

1.04 QUALITY ASSURANCE

- A. Qualifications of Manufacturer: Equipment, including engine-generator sets shall be manufactured by a single manufacturer regularly engaged in production of engine-generator sets for a minimum of 10 years. Electric generating system described herein, including these components shall be factory-built, factory-tested, and shipped by single manufacturer, so there is one source of supply and responsibility for warranty, parts, and service. Manufacturer shall provide a local representative who can provide factory-trained servicemen, required stock of replacement parts, and technical assistance.
- B. Complete standby electric power system, including 1800 r/min. engine-generator set and transfer switch furnished with set exerciser, and running time meter, shall be warranted by the manufacturer for a period of 5 years or 1,500 operating hours, whichever occurs first. Multiple warranties for individual components are not permitted. Satisfactory warranty documents must be provided and shall be detailed in available warranty documents.

PART 2 - PRODUCTS

2.01 ENGINES

- A. General: System shall include engine-generator sets rated for the 30KW, and 38KVA, at 0.8 PF, 3-phase, 4-wire, and 480/277volts on a continuous standby basis, as indicated on Drawings. Engine-generator sets shall be installed on heavy-duty steel bases to maintain proper alignment between components. Sets shall incorporate vibration isolators of type and quantity specified by set manufacturer, whether mounted internally or externally to set.
- B. Diesel Engines: Where indicated on Drawings, diesel engines shall meet the following requirements:
 - 1. Engine shall be stationary, liquid-cooled, diesel for use with number 2 diesel fuel. Design shall be 4-cycle, number of cylinders as determined by the engine manufacturer, turbocharged and intercooled where required by engine manufacturer. Engine shall be certified by engine manufacturer as capable of developing rated BHP at 1800 r/min., and driving a generator yielding a 30KW rating as specified herein. Engine shall be capable of driving generator of this rating on a continuous standby basis for duration of normal utility source interruptions per SAE J1349 conditions. Fuel injection and valves shall not require adjustment while in service.
 - 2. Engine equipment shall include following:
 - a. An electric starter, as required.
 - b. Positive displacement, mechanical full pressure lubrication oil pump, full flow lubrication oil filters with replaceable elements and dipstick oil level indicator.
 - c. Fuel filter with replaceable element, and an engine driven, mechanical positive displacement fuel pump, mounted on engine. Replaceable dry element air cleaner.
 - d. Engine speed isochronous electronic governing system to control generator frequency within plus or minus 0.25 percent of rated frequency under steady state load conditions, and capable of parallel operation with load sharing controls.
 - e. Engine protection devices shall be furnished with sensing elements located on engine to initiate following preliminary alarms and engine shutdowns:
 - (1) Low coolant temperature alarm.

- (2) Pre-warning for low lubrication oil pressure alarm.
- (3) Pre-warning for high coolant temperature alarm.
- (4) Low lubrication oil pressure shutdown.
- (5) High coolant temperature shutdown.
- (6) Overspeed shutdown.
- (7) Overcrank lockout.
- (8) Low fuel.
- f. Provide low coolant level shutdown, which shall activate high engine temperature lamp and shutdown.
- g. Engine starter battery charging alternator with solid-state voltage regulator.
- h. Engine mounted thermostatically controlled water jacket heaters for each engine to aid in quick starting.

C. Engine Cooling Systems:

- 1. Engine shall be radiator cooled by engine mounted radiator system including belt-driven pusher fan, coolant pump, and thermostat temperature control. Performance of components shall be as required by set manufacturer
- 2. Provide 50 percent ethylene glycol antifreeze solution to fill engine cooling system

D. Engine Exhaust Systems:

- 1. Exhaust mufflers shall be provided for each engine of size as recommended by manufacturer. Mufflers shall be of critical Hospital type and shall be installed so its weight is not supported by engine.
- 2. Flexible exhaust connections shall be provided as required for connection between engine exhaust manifolds and exhaust line, in compliance with applicable codes and regulations.

3. Provide an exhaust condensation trap with manual drain valve to trap and drain off exhaust condensation and to prevent condensation from entering engine.
4. Provide a suitable rain cap at stack outlet. Provide necessary flanges and special fittings for proper installation.
5. Mount and install exhaust components as indicated on Drawings and as required to comply with applicable codes and regulations. Components shall be properly sized to assure proper operation without excessive backpressure when installed as indicated on Drawings. Provide provisions as required for pipe expansion and contraction.
6. Where outdoor housings are provided, exhaust mufflers shall be mounted outside housing.

E. Engine Fuel Systems:

1. Provide 12-hour sub-base tank, gages, valves, tank filler fittings, tank vent fittings, tank float and necessary items as indicated on Drawings to comply with all applicable codes and regulations with specific reference to 2007 California Fire Code section 3404.2.9.6 as follows: Normal and Emergency Venting; Flame arresters; Secondary containment ; Overfill Prevention; Information Signs; Fill Pipe Connections; Spill Containers; and Antisiphon devices.

Fuel sub-base tank and fuel accessories shall be new. Sub-base tank shall be of double-walled construction and located underneath skid base of engine-generator set.

2. A low fuel supply sensing device shall be installed on fuel tank. Sensing device shall be adjusted to signal low fuel level when tank contains less than a 3-hour supply. The 3-hour supply level shall be as recommended by manufacturer of engine-generator set.
3. A fuel-in-rupture basin alarm shall be provided with contacts available for annunciation.

2.02 GENERATORS

- A. Generators shall be single-bearing, self-aligning, 4-pole, synchronous type, revolving field, with amortisseur windings, with direct drive centrifugal blower for proper cooling and minimum noise, with temperature compensated solid-state voltage regulator, with brushless rotating rectifier exciter system. Brushes will not be

allowed. Generator shall be directly connected to engine flywheel housing and driven through a flexible coupling to insure permanent alignment; gear driven generators are not permitted under this Specification. Insulation shall meet NEMA standards for Class F. Maximum temperature rise shall not exceed 100 degrees C. at 40 degrees C. ambient. Generator design shall prevent potentially damaging shaft currents.

- B. Voltage regulator shall be solid-state design and shall function by controlling exciter magnetic field between stator and rotor to provide no load to full load regulation of rated voltage within plus or minus 2 percent during steady-state conditions. Engine-generator set and regulator must sustain at least 90 percent of no-load voltage for 10 seconds with 250 percent of rated load at near zero power factor connected to its terminals.
- C. Voltage regulator shall be insensitive to severe load induced waveshape distortion from SCR or thyristor circuits such as those used in battery charging (UPS) and motor speed control equipment.
- D. A rheostat shall provide a minimum of plus or minus 5 percent voltage adjustment from rated value.
- E. Generator, exciter and voltage regulator shall be designed and manufactured by engine-generator set manufacturer so that characteristics shall be matched to torque curve of prime mover.
- R. Exciter shall be 3-phase, full-wave, rectified, with heavy-duty silicon diodes mounted on common rotor shaft and sized for maximum motor starting loads. Systems utilizing 3 wire solid-state control elements, such as transistors or SCR's rotating on rotor are not permitted.
- G. Generator design shall be of self-protecting type, as demonstrated by prototype short-circuit test as described herein. All other generator performance criteria shall meet that of specified equipment.

2.03 ENGINE-GENERATOR SET CONTROLS

- A. Provide a lighted, unit-mounted control module that is factory built, wired, tested, and shock-mounted by generator manufacturer. Control module shall be installed on generator end of set. Control wires between generator set and transfer switches shall be provided with termination identification on both ends. Identification shall be provided for each device or function and shall be silk-screened white on a black background.

B. Engine-generator set controls shall be provided with the following for each unit:

1. Gauges and Meters: Oil pressure gauge, coolant temperature gauge, charge rate ammeter and running time meter.
2. Manual Selector Switch: Run-stop-remote.
3. Remote, 2-wire, 12-volt DC controls start/stop terminals.
4. Manual Reset Field Circuit Breaker.
5. Automatic engine shut down for following fault conditions:
 - a. Overcrank.
 - b. Overspeed.
 - c. Low lube oil pressure.
 - d. High engine temperature.
6. Indicator lamps shall be permitted to signal following functions:
 - a. Overcrank: Indicates starter has been locked out because cranking time was excessive.
 - b. Overspeed: Indicates engine has shut down because of excessive r/min.
 - c. High engine temperature: Indicates engine has shut down because of critically high temperature.
 - d. Low oil pressure: Indicates engine has shutdown because of critically low oil pressure.
 - e. Pre-high engine temperature: Indicates engine temperature is marginally high.
 - f. Pre-low oil pressure: Indicates oil pressure is marginally low.
 - g. Low engine temperature: Indicates engine temperature is marginally low for starting.
 - h. Switch off (flashing): Indicates control switch is in stop position.
 - i. Low fuel: Indicates fuel supply is marginally low.

- j. Provide 2 additional fault condition lamps to be designated later.
- 7. Provide a fault reset switch to clear fault indications and allow restarting of engine after shutdown faults. Control design shall be such that fault indication shall remain until reset. Fault indicator memory shall not be dependent on presence of either AC or DC voltage and shall retain fault status memory even through complete removal and replacement of starting batteries. Fault reset function shall operate only when run-stop-remote switch is in the stop position.
- 8. Provide a locking screwdriver type potentiometer (electronic governor) shall be provided to adjust speed plus or minus 2 percent from rated value.
- 9. Provide AC voltmeter, 90 degree scale, 2-1/2 inch flange, 2 percent switchboard meter.
- 10. Provide AC ammeter, 90 degree scale, 2-1/2 inch flange, 2 percent switchboard meter.
- 11. Provide frequency meter 45-65 Hz, 90 degree scale, 2-1/2 inch flange, plus or minus 0.6 Hz panel meter.
- 12. Provide 4-position AC meters phase selector switch to read line current and voltage in each phase with off position.
- 13. Provide manual reset exciter field circuit breaker.

2.04 AUXILIARY EQUIPMENT

- A. Starting Batteries: Furnish 2 batteries for each engine installed in battery racks within engine-generator set skidbase.
- B. Battery Chargers: Voltage regulated battery chargers shall be provided for engine-generator sets. Chargers shall be furnished with float, taper, and equalize charge settings. Charger power shall be supplied from normal source; provide circuits as required.
- C. Vibration Isolators: Each engine-generator set shall be installed on vibration isolators external to set skidbase.
- D. Remote Audible Annunciators: Provide remote audible annunciator for engine-generator set with light emitting diode (LED) indicators. Mount in equipment room adjacent to new panels. Annunciators shall include the following:
 - 1. Control Switch not in Auto Position.

2. Overcrank.
 3. Low Lube Oil Pressure.
 4. High Coolant Temperature.
 5. Low Coolant Temperature.
 6. Overspeed.
 7. Low Fuel Tank Main Tank.
 8. High Coolant Temperature Pre-Alarm.
 9. Low Lube Oil Pressure Pre-Alarm.
- E. Enclosure: Each engine-generator set shall be installed in a weatherproof, sound damping enclosure to protect the entire equipment set from exposure to the weather; enclosure shall have lockable doors on sides to allow equipment servicing and maintenance. Enclosure shall be the Manufacturer's standard equipment, designed for the generator set.

PART 3 - EXECUTION

3.01 TESTING

- A. Perform 3 separate series of tests as follows:
1. Factory Prototype Model Tests: Electric generating system consisting of prime mover, generator, governor, coupling and controls must have been tested as complete unit on representative engineering prototype model as required by NFPA 110. Tests, being potentially damaging to the equipment tested, must not be performed on equipment to be sold, but on separate prototype models as specified by NFPA 110, Paragraph 3-2.1 thru 3-2.1.2 and their accomplishment certified by means of documentation of tests accompanying submittal data. These tests shall include:
 - a. Maximum power level (maximum KW).
 - b. Maximum motor starting capacity (maximum KVA and voltage dip recovery within 7 cycles of applied load).
 - c. Structural soundness (short-circuit and endurance tests).

- d. Torsiograph analysis: Manufacturer of engine-generator set shall verify that engine-generator combination, as configured, is free from harmful torsional stresses. Analysis shall include correlation of empirical data from tests on a representative prototype unit. Empirical data must include spectrum analysis of torsional transducer output within critical speed range of engine-generator set. Results of this analysis shall be made available to Architect on request. Calculations based on engine and generator separately are not permitted.
 - e. Engine-generator cooling air requirements.
 - f. Transient response and steady-state speed control and voltage regulation.
 - g. Generator temperature rise per NEMA MGI-22.40.
 - h. Harmonic analysis and voltage waveform deviation per MIL-STD-705B, method 601.4.
 - i. Three-phase short-circuit test for mechanical and electrical strength. With system operating at rated volts, amps, power factor, and speed, generator terminals must be short circuited 10 times on all 3 phase for a duration of 30 seconds. Engine-generator set must build up and perform normally without manual interventions of any kind such as resetting or circuit breakers or other tripping devices when short circuit is removed.
 - j. Failure mode test for voltage regulator: With engine-generator set operating at no load, rated speed and voltage, AC sensing circuit to regulator must be disconnected for a period of at least one hour. Engine-generator set must be fully operative after test, and without evidence of damage.
 - k. Endurance testing is required to detect and correct potential electrical and mechanical problems associated with typical operation.
 - l. Paralleling test: For paralleling applications manufacturer shall have performed and certified that engine-generator sets can withstand 180 degrees out-of-phase paralleling from full rated voltage and speed without sustaining any mechanical or electrical damage.
2. Factory Production Model Tests: Before shipment of equipment, engine-generator sets shall be tested under rated loads and power factor for performance and proper functioning of control and interfacing circuits. Testing at unity power factor, and the KVAR for motor starting and regulation loads varies with power factor. Tests shall include:

- a. Single step load pickup per NFPA 110, Paragraph 5-13.2.6.
 - b. Transient and voltage dip responses and steady state voltage and speed (frequency) checks.
 - c. Fuel consumption (no-load, 1/4 load, 1/2 load, 3/4 load, and full load).
 - d. Generator temperature rise by resistance method.
 - e. Architect has the option of witnessing these tests. A summary of test results shall be submitted to the IOR.
3. Field Tests After Installation:
- a. Complete installation shall be initially started and observed for operational compliance by factory-trained representatives of engine-generator set manufacturer. Engine lubrication oil and as recommended by manufacturer for operation under environmental conditions specified, shall be provided by engine-generator sets supplier.
 - b. Upon completion of initial start-up and system checkout, supplier of system shall perform a field test, with Architect and IOR notified in advance, to demonstrate load carrying capability and voltage and frequency stability.
 - c. With emergency load at normal operating level, a power failure is initiated by opening switches or breakers supplying normal power to building or facility. Records shall be maintained throughout tests of time-of-day, coolant temperature, cranking time until prime mover starts and runs, time required to come up to operating speed, voltage and frequency overshoot, time required to achieve steady-state condition with switches transferred to emergency position, voltage, frequency, current, oil pressure, ambient air temperature, kilowatts, power factor, battery charger rate at 5 minute intervals for first 15 minutes, and at 15 minute intervals thereafter. Continue this load test for 2 hours observing and recording load changes and resultant effect on voltage and frequency. Return to normal power, record time delay on re-transfer for each switch (set for 15 minutes minimum) and time delay on prime mover cooldown period and shutdown. If system loads are not available when the unit is ready for testing, a load bank presenting full rated load for the unit shall be provided at no additional cost for this testing.

- d. Upon completion of above test, allow prime mover to cool for 5 minutes. Then apply full rated load (nameplate KW) consisting of building load supplemented by a load bank if required. Unity power factor is suitable for Project site testing; provided that rated load tests at power factor have been performed by manufacturer before shipment. This full-load pickup shall be in one step immediately upon reaching rated r/min.
- e. After testing is completed and prior to turnover to owner, verify oil and coolant levels to be at nominal levels and fill fuel tank.

3.02 TRAINING

- A. Before Substantial Completion, provide the services of a manufacturer's representative on the Project site to instruct persons designated by the Owner in the operation and maintenance of the system. Instruction time shall not be less than 1 day.

3.03 SERVICE CONTRACT

- A. Provide an agreement whereby the system will be inspected and tested by manufacturer in accordance with NFPA 110 emergency and standby power systems. Testing shall be conducted by a local factory trained technician who will, upon completion of testing, provide the Owner with written records of visual inspections and testing. This agreement shall be in effect for a period of 2 years after Substantial Completion of the Work. Cost of service contract shall be included as a part of this Contract.

3.04 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

3.05 CLEANUP

- A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 16270

LOW-VOLTAGE TRANSFORMERS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes: Transformers as specified and as indicated on the Drawings.
- C. Related Sections:
 - 1. Section 16050: Basic Electrical Materials and Methods.
 - 2. Section 16120: Low Voltage Wires (600 Volts AC)

1.02 DESIGN REQUIREMENTS

- A. Transformers, Dry Type: Distribution transformers shall be constructed and tested in accordance with ANSI, NEMA and IEEE Standards, and shall be wound with copper conductors. Performance of transformers shall meet or exceed ANSI, NEMA and IEEE published criteria. Distribution transformers rated 15 KVA and larger, except K-rated transformers, shall meet or exceed the latest requirements of the California Energy Commission Appliance Efficiency Regulations.
- B. Transformers shall be self-cooled type with 220 degrees C. insulation and a maximum temperature rise of 150 degrees C. under continuous full load conditions with an ambient of 40 degrees C.
- C. Transformers shall be furnished with four 2.50 percent (2 above and 2 below normal voltage) taps. Windings shall be of fire-resistant type, designed for natural convection cooling through normal air circulation.
- D. Core mounting frames and enclosures shall be of welded and bolted construction with sufficient mechanical strength and rigidity to withstand shipping, installation, and short circuit stresses.
- E. Enclosure cover plates shall be sheet steel, captive bolted to enclosure framework. Enclosure shall provide suitable ventilating openings with rodent-proof screens, NEMA 1 enclosure. Enclosure shall be provided with lifting lugs and jacking plates as required.
- F. Transformers shall be furnished complete with mounting channels and mounting bolts. Metal parts, excepting cores and core mounting frames shall be furnished clean, rust-proofed, and provided with a coat of an inert primer.
- G. Transformers up to 35 KVA shall be no more than 40 decibels. Transformers 36 KVA or more shall be a minimum of 5 decibels below NEMA standards per unit. Transformers shall be provided with vibration dampers consisting of Korfund

spring loaded shock mounts and Elastorib sheeting. Size and number of shock mounts shall be in accordance with manufacturer's recommendations.

1.03 SUBMITTALS

- A. Provide in accordance with Division 01.
- B. Shop Drawings: Include make, catalog number, dimensions, finish, type, insulation class, design temperature, and taps provided. Include regulation at 80 percent and 100 percent of full load, no-load loss, full-load loss, percent efficiency, percent impedance, noise level and continuous capacity rating. Provide a connection schematic.
- C. Test Reports:
 - 1. No-Load Losses.
 - 2. Total Losses.
 - 3. Applied Voltage.
 - 4. Temperature Rise.
 - 5. Induced Voltage.
 - 6. Sound Level.
 - 7. Impulse Test.

PART 2 - PRODUCTS

2.01 EQUIPMENT

- A. Transformers shall be Square D, General Electric, MGM or owner approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Transformer core frame shall be installed level on shock absorbing pads within enclosure. Comply with CBC zone 4 seismic requirements.
- B. Mounting bolts on floor mounted transformers shall be extended into pads only and shall not be in direct contact with building structural members.
- C. Flexible jumpers shall be installed for grounding continuity from enclosure to conduits or bus ducts where required.
- D. Install transformer ventilation openings not closer than 6 inches from wall surfaces.

3.02 VOLTAGE CHECK

- A. Set taps on transformers to provide satisfactory operating voltages with present loads energized, including new loads and existing loads. A check shall be performed in the presence of the Authority at a panel fed from each transformer, which is farthest from transformer. Voltages at transformers ranging from 118 to

122 volts inclusive, for 120 volt systems and proportionately equivalent for higher voltage systems are permitted.

- B. Provide instruments and accessories required to perform checks. Voltmeters shall be accurate within .075 percent or one percent and shall have scales permitting voltage readings to be performed on upper half of scale. Calibration of the meters shall be observed by the Authority.
- C. Adjust transformer taps under full load operating conditions, to provide normal operating voltages at the loads.

3.03 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

3.04 CLEANUP

- A. Remove rubbish, debris and waste materials and legally dispose of off Project site.

END OF SECTION

SECTION 16415

AUTOMATIC LOAD TRANSFER SWITCHES

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes: Provide complete and operable automatic load transfer switches, including devices and equipment specified herein, indicated on Drawings, or required for service. Materials and equipment shall be delivered to the Project site completely wired, tested, and ready for installation.
- C. Related Sections:
 - 1. Section 16010: Basic Electrical Requirements.
 - 2. Section 16050: Basic Electrical Materials and Methods.
 - 3. Section 16230: Emergency Generators.

1.02 DESIGN REQUIREMENTS

- A. Transfer switches shall be designed, built, tested, furnished and warranted by manufacturer for installation with emergency generator specified under Section 16230: Emergency Generators. The transfer switch manufacturer shall have been regularly engaged in production of the products of this section for 10 years in accordance with Underwriter's Laboratories (UL) Standard 1008. Transfer switches shall comply with NFPA 110 and NEMA ICS 2-447 requirements.

1.03 SUBMITTALS

- A. Provide in accordance with Division 01.
- B. Submit literature containing diagrams, parts lists and descriptions as required to install, operate and perform normal maintenance on equipment.
- C. Materials List: Submit a materials list for system with catalog cuts, technical data and manufacturer's specifications.
- D. Installation Instructions: Submit manufacturer's written installation instructions, including recommendations for handling, protection and storage.

1.04 QUALITY ASSURANCE

- A. Equipment shall be manufactured by a single manufacturer who has been regularly engaged in the production of automatic load transfer switches. Transfer switches shall be factory built, factory tested, and shipped by this single manufacturer, so there is one source of supply and responsibility for warranty, parts, and service. Manufacturer shall have a local representative who can provide factory trained technicians, required stock of replacement parts, and technical assistance.
- B. Equipment as described herein is that as manufactured by Onan. Equipment furnished shall be an or equal to that specified herein, including quality, operation, and function.

1.05 WARRANTY

- A. Manufacturer shall provide a 5 year material warranty.

PART 2 - PRODUCTS

2.01 AUTOMATIC TRANSFER SWITCHES

- A. Transfer switches shall be UL, or other Nationally Recognized Testing Laboratory listed Transfer switches shall be suitable for installation on emergency and legally required standby systems, in accordance with ANSI-C1 and NFPA-99, rated for total system load. These loads shall include motors, electrical discharge lamps, resistive loads, and tungsten lamps as described in Section 1 of UL Standard 1008 .
- B. Transfer switches shall be 60 Hz with a switched neutral pole. Refer to Drawings for locations of transfer switches, number of phases, voltage, and ampere ratings. Neutral pole shall be of same design and have same values of steady state, close and withstand ratings of phase poles. Neutral pole shall be mounted on common shaft with phase poles and shall switch simultaneously with phase poles.
- C. Transfer switches shall be rated to carry 100 percent of their rated current continuously when in an enclosure. Transfer switches shall be rated for continuous operation in ambient temperatures of -40 degrees C. to 67 degrees C.
- D. Transfer switches shall be over center operation, double-throw construction, positively electrically and mechanically interlocked by a mechanical beam to prevent simultaneous closing (for break-before-make operation), and mechanically held in both normal and emergency positions. Interlocked circuit breaker arrangements are not permitted.
- E. Transfer switches shall be quick-break, quick-make operation. Transfer switches shall provide a center programmed transition for manual switching. Transfer switches shall be as required for manual operation under full load by integral mounted, permanently attached, high dielectric, manually operated handles.

- F. Electrical operating means shall be a direct-acting, constant force in both directions, bi-directional linear induction motor to provide minimum friction, straight-line switch action. Motor shall be attached directly to switching mechanism without use of gears, cams, or other complex mechanical linkage methods. Transfer switches shall not contain integral over-current devices in main power circuit, including molded case circuit breakers or fuses. Transfer switch electrical actuator shall have an independent disconnect means to disable electrical operation during manual switching.
- G. Manual operating handles and controls, other than key-operated switches, shall be accessible to authorized personnel only by opening key-locking cabinet door.
- H. Transfer switches shall have transparent protective covers to protect operating personnel during manual operation, and to allow an operator to visually determine that main contacts are open or closed.
- I. Transfer switches shall be furnished with one single-pole double-throw (SPDT), 480 volts auxiliary switch on both normal and emergency-sides, operated by transfer switch. Auxiliary switches shall be factory wired to easy access terminal blocks and may be utilized to monitor transfer switch positions for controlling indicator lamps or other peripheral equipment.
- J. Controls shall be installed in a separate smaller cabinet mounted on inside of main cabinet door.
- K. Control circuit disconnect plugs shall be provided to de-energize control circuits to avoid hazards of electrical shock to personnel while making adjustments.
- L. Electric control, under-voltage and time delay modules, shall be a printed circuit board for ease of service. Solid-state under-voltage sensors shall simultaneously monitor all phases of normal and emergency power sources to provide field adjustable range sensors for specific applications. Voltage pickup settings shall be adjustable from a minimum of 85 percent to a maximum of 100 percent of nominal voltage. Voltage dropout settings shall be of temperature compensated type, for maximum deviation over temperature range of -32 degrees C. to 79 degrees C. Voltage Sensors shall allow for adjustment to sense partial loss of voltage on any phase of normal or emergency power source, even where motor feedback voltages exist.
- M. Over-voltage and frequency sensing control, over-voltage and frequency sensing module, shall be a printed circuit board for ease of service. Solid-state over-voltage sensors shall simultaneously monitor all phases of normal and emergency power sources to provide field-adjustable ranges of voltage pickup and dropout and time delays.
- N. Relay control, normal source phase loss relays, shall be conventional plug-in industrial control electromechanically, non-adjustable, normal source loss relays, plus time delays as follows.

1. Start: adjustable, 0.5 to 5.0 seconds.
 2. Re-Transfer: adjustable, 3.0 to 30 minutes.
 3. Stop: non-adjustable, 5 minutes.
 4. Transfer: non-adjustable, 0.5 seconds.
- O. Controls shall signal emergency power system to start upon signal from normal source voltage sensors. Solid-state time delay start shall avoid nuisance engine-generator set start-ups on momentary voltage dips or interruptions.
- P. Transfer switch shall transfer load to emergency power system after engine-generator set reaches proper voltage and frequency and has stabilized.
- Q. Transfer switch shall control engine-generator set to allow set to start and transfer load within 10 seconds after a normal source power failure.
- R. Transfer switch shall retransfer load to normal source after normal source power is restored, allowing normal source to stabilize before re-transfer.
- S. Controls shall signal engine-generator set to stop after load re-transfer to normal source, but shall maintain availability of emergency source in event that normal source fails shortly after re-transfer. Controls shall allow engine-generator set to run unloaded for a cool-down period prior to shutdown.
- T. Controls shall provide an automatic re-transfer of load from emergency source to normal source if emergency source fails when normal source is available.
- U. Transfer switch operating power for transfer and re-transfer shall be obtained from source to which load is being transferred.
- V. Controls shall provide built-in control mode status indicators, consisting of light-emitting diodes (LED) to indicate a sequence of functions such as following:
1. Source 1 OK.
 2. 2-Wire Run.
 3. Source 2 OK.
 4. Timing for Transfer.
 5. Transfer Command.
 6. Timing for Re-Transfer.
 7. Re-Transfer Command.

8. Timing for Stop.
 - W. Indicators shall allow operator to determine that controls are properly sequencing and shall assist in determining sequence of any malfunctions that might occur.
 - X. Main cabinet front door mounted controls and indicator lamps shall consist of oil-tight, neon position indicator lamps and key-operated test and selector switches to provide the following functions:
 1. Test Switches:
 - a. Test: Simulated normal source power loss to control unit for testing engine-generator set capability, including transfer of load if so furnished. Control system shall provide for system test without load transfer when specified.
 - b. Normal: Normal operating position, also restoring system to standby operation and, if load was transferred, re-transfers load from emergency to normal source after test and time delays.
 - c. Re-transfer: Spring-loaded momentary position of switch, which overrides re-transfer time delay to cause immediate return to normal source after a test or actual power outage.
 2. Position Indicator Lamp Colors:
 - a. Normal: White.
 - b. Emergency: Amber.
 - c. Normal source available: Green.
 - d. Emergency source available: Red.
 - Y. Provide exercise clock to set day-of-week with one week dial minimum, time-of-day, and duration-of-time of engine-generator set exercise. A period with or without load selector switch shall be provided.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install automatic load transfer switches as indicated on Drawings and in accordance with installation instructions.

3.02 TESTING

- A. To provide proven reliability of system, transfer switches shall be completely tested as follows:
1. Transfer switches supplied shall be UL, or other NRTL listed in accordance with Standard 1008.
 - a. Transfer switches shall have minimum withstand and closing ratings (RMS symmetrical amperes) as required for the available fault currents shown on drawings. These ratings shall be obtained without contact welding. These fault current ratings shall be verified by UL witnessed test on representative test samples and shall be the ratings listed in the UL listing or component recognition procedures for the transfer switches supplied.
 - b. Where the line side over-current protection is provided by molded case circuit breakers at 480 VAC or less, the circuit breakers shall be of the type specified by the manufacturer with the maximum size not exceeding the maximum ratings listed in the UL listing or component recognition procedures for transfer switches supplied.
 - c. Where the line side over-current protection is provided by current limiting fuses, the fuses shall be UL, or other NRTL, Class RK1, RK5, J or L (with fuse sizes not larger than the maximum ratings listed in the UL listing or component recognition procedures for transfer switches supplied), and the transfer switches withstand and closing rating shall be suitable for 200,000 amperes available fault current.
 2. RMS symmetrical fault current ratings shall be verified by UL, or other NRTL witnessed tests on representative test samples. WCR tests shall be performed with over-current protective devices located external to transfer switch. Tests conducted with over-current protective devices internal to transfer switch, in such a manner that transfer switch interrupts current rather than withstanding current, are not acceptable under this definition of withstand.
 3. A manufacturer's representative shall conduct a complete system operational test at the Project site, in presence of the Authority, after installation

3.03 TRAINING

- A. Before Substantial Completion, provide the services of a representative of the transfer system manufacturer to instruct designated Owner personnel in the operation and maintenance of system. Instruction time shall be not less than 1 day.

- B. Coordinate training with Authority and area electrical supervisor to arrange a 4 hour minimum training session, a minimum of 4 sets of manuals and training literature shall be made available for M&O personnel.
- C. A training guide shall be included as part of project's final deliverables and close out package.

3.04 AS-BUILT DOCUMENTATION

- A. Submit service manuals including the following:
 - 1. Detailed explanation of the operation of the system.
 - 2. Instructions for routine maintenance.
 - 3. Detailed instructions for repair of major components of the system.
 - 4. Pictorial parts list and part numbers.
 - 5. Pictorial and schematic electrical drawings of wiring systems, including operating and safety devices, and major components.
 - 6. Installation instructions for system components.
 - 7. Final test report.
 - 8. Reproducible set of record drawings showing the system exactly as it was installed including exact location of components.

3.05 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

3.06 CLEANUP

- A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 16445 PANELBOARDS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of Division 01 apply to this section
- B. Section Includes: Lighting and power distribution facilities, including panelboards.
- C. Related Sections:
 - 1. Section 16010: Basic Electrical Requirements.
 - 2. Section 16050: Basic Electrical Materials and Methods.

1.02 SUBMITTALS

- A. Provide in accordance with Division 01.
- B. Shop Drawings: Include a front elevation indicating cabinet dimensions, make, location and capacity of equipment, size of gutters, type of mounting, finish, and catalog number of locks. General layout of internal devices, wiring drawings with wire numbers and device connections, vendor cut sheets of devices in enclosure and bill of materials listing description, manufacturer, part number, and quantity of items shall be included.
- C. Installation Instructions: Submit manufacturer's written installation instructions.

1.03 DESIGN REQUIREMENTS

- A. Panelboards:
 - 1. Panelboards shall be wall-mounted, enclosed safety type with 277/480 volt, 4-wire or 120/208 volt, 4-wire solid neutral mains as indicated on Drawings or specified. 2. Single pole branches shall be molded case, thermal magnetic circuit breakers with inverse time delay, trip free, quick-make, quick-break mechanism and silver alloy contacts. Circuit breakers shall be fully rated, with ampere rating marked on handle and shall indicate on/off and tripped positions. Ground fault interrupters shall be incorporated into circuit breakers where indicated. They shall be listed by UL, or other NRTL as ground fault devices. Provide appropriate lug kit of sufficient size to accommodate the feeders.
 - 2. Two- and 3-pole branches shall be enclosed, and shall be thermal magnetic circuit breakers with inverse time delay, tamper-proof, ambient compensated, single handle, internal common trip, and quick-make, quick-break mechanism with silver alloy contacts. Circuit breakers shall be fully rated or as otherwise indicated on the Drawings.
 - 3. Main and branch circuit breakers shall be enclosed, thermal magnetic type with inverse time delay, single handle common trip, quick-make, quick-break

mechanism, corrosion-resistant bearings and silver alloy contacts. Ampere frame size and trip rating shall be as indicated on Drawings.

4. Circuit breakers shall be fully rated and of one-piece, bolt-on type and shall meet short-circuit interrupting capacity requirements indicated on Drawings. Series rated circuit breaker combinations are not acceptable
 5. Internal connections shall be fabricated with plated copper bus bars and the busses shall extend for full length of space available for branch circuit breakers. Feeder cable connectors shall be installed at point of feeder entrance. Terminals shall be furnished with copper conductors. Panelboards fed by conductors having over-current protection greater than 200 amperes shall be protected on supply side by over-current devices having a rating not greater than that of panelboards. Copper bussing shall be fully rated. Heat rated bussing is not acceptable
 6. Except where otherwise indicated, circuit breakers shall be in 2 vertical rows connected to bus bars in a distributed phase arrangement. Two-pole branches shall be balanced on busses. Single pole branches shall be numbered adjacent to its circuit breaker, with odd numbers on left and even numbers on right.
 7. Specified circuit breaker spaces shall be furnished with hardware required for future installation of circuit breakers.
- B. Surge Suppressors: Where indicated on Drawings, provide transient voltage surge suppressors as an integral part of panelboards. Panelboards shall be complete with 200 percent rated copper neutral bus, ground bus and isolated ground bus in addition to requirements of this section. Surge suppressors shall be as follows:
1. Surge Capacity:
 - a. Line-to-neutral for wye systems: 80 KA.
 - b. Line-to-ground: 80 KA.
 - c. Neutral-to-ground: 80 KA, 3-phase wye.
 - d. Line-to-neutral plus line-to-ground: 160 KA.
 2. UL 1449 2nd Edition Suppressed Voltage Rating for 208/120 Wye System:
 - a. Line-to-neutral: 400 volts.
 - b. Line-to-ground: 400 volts.
 - c. Neutral-to-ground: 400 volts.
 - d. Maximum continuous over-voltage: 150 volts.
 3. EMI/RFI High-Frequency Noise Power Filter (Characteristics):
 - a. 100 KHz at 44 dB.
 - b. 100 MHz at 44 dB.
 - c. 10 MHz at 44 dB.

- d. 100 MHz at 444 dB.
- 4. MOVs shall be thermally protected for low current faults and shall be fused with surge-rated fuses. The surge-rated surge current passes and clears the circuit safely if the surge capacity is exceeded. Enhanced diagnostics shall continuously monitor the unit's status and shall include LEDs to signal a reduction in surge capacity or the loss of a suppression circuit. An audible alarm, with test and silence features, shall be furnished in diagnostic package.
- 5. Each phase or the entire unit shall be replaceable and have bolted-on, tin-plated copper connections. Unit to have UL witnessed fault current rating of 65,000 symmetrical amperes.
- 6. Surge suppression units shall comply with the following:
 - a. UL certified.
 - b. UL 1283.
 - c. UL 1449 2nd Edition.
 - d. IEEE C 62.45.
 - e. IEEE C 62.41.
 - f. Nationally Recognized Testing Laboratory (NRTL) or equal
- C. Panelboard Cabinets:
 - 1. Panelboard cabinets shall be code gage galvanized steel or blue steel; fronts, doors, and trims shall be code gage furniture steel. Cabinets shall be furnished with at least 6-inch high gutters at top and bottom where feeder cable size exceeds 4 gage or where feeder cable passes through cabinet vertically. Cabinets shall be furnished with top and bottom gutters sized as required by inspection department having jurisdiction, but never less than 6 inches where more than one feeder enters top or bottom of cabinets. Side gutters shall not be less than 4 inches wide. Width of cabinets shall be 20 inches, unless otherwise indicated on Drawings.
 - 2. Doors shall be cut true, shall accurately fit opening and finish smooth across joints. Rabbits shall be inside. Hinges shall be entirely concealed except for barrels and pins. Hinge flanges shall be welded to door and trim. Doors shall be equipped with flush type, spring-latching, Corbin locks for metal doors, keyed to Corbin No. 60 keys. Panels shall be Keyed alike.
 - 3. Provide and install panelboard manufacturer's permanent circuit number kit option.
 - 4. Self-tapping screws and bolts not permitted.
- D. Panelboard Schedule: Provide a neatly typewritten schedule with number or name of room or area, or load served by each panelboard circuit. Room numbers or names shall be determined at the Project site and shall not necessarily be those indicated on the Drawings. Schedule shall also indicate panel designation, voltage

and phase, building and distribution panel or switchboard from which it is fed. Schedule shall be installed in a frame under transparent plastic 1/32 inch thick on inside of each panelboard cabinet door.

- E. Panelboard Standards: Panelboards shall be UL, or other NRTL listed and labeled. Panelboards shall meet latest revisions of following standards:
 - 1. California Electric Code, Article 384.
 - 2. UL 67, Panelboards.
 - 3. UL 50, Cabinets and Boxes.
 - 4. UL 943, GFCI.
 - 5. UL 489, Molded Case Circuit Breakers.
 - 6. NEMA PB1.
 - 7. Federal Specifications W-P- 115C and WC-375B.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Panelboards shall be manufactured by W.A. Benjamin, General Electric, Cutler Hammer, Square D or equal.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Panelboards shall be located so they are readily accessible and not exposed to physical damage.
- B. Panelboard locations shall provide sufficient working space around panels to comply with the California Electrical Code.
- C. Panelboards shall be securely fastened to structure and mounted on surface by at least 4 points.
- D. Unused openings in cabinets shall be effectively closed as required by the manufacturer.
- E. Cabinets shall be grounded as specified in Article 250 of the California Electrical Code.
- F. Conduits shall be installed so as to prevent moisture or water from entering and accumulating within the enclosure.
- G. Lugs shall be suitable and listed for installation with the conductor being connected.
- H. Conductor lengths shall be maintained to a minimum within the wiring gutter space. Conductors shall be long enough to reach the terminal location in a manner that avoids strain on the connecting lugs.

- I. Maintain the required bending radius of conductors inside the cabinet.
- J. Clean the cabinet of foreign material such as cement, plaster, and paint.
- K. Distribute and arrange conductors neatly in the wiring gutters.
- L. Use the manufacturer's torque values to tighten lugs.
- M. Before energizing panelboards, the following steps shall be taken:
 - 1. Retighten connections to the manufacturer's torque specifications. Verify that required connections have been provided.
 - 2. Remove shipping blocks from component devices and panelboard interiors.
 - 3. Manually exercise circuit breakers to verify they operate freely.
 - 4. Remove debris from panelboard interior.
- N. Follow manufacturer's instructions for installation.

3.02 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

3.03 CLEANUP

- A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION VIII

LIST OF DRAWINGS - EXHIBIT C

LIST OF DRAWINGS

By this reference, the following drawings are incorporated in this Invitation For Bids:

DRAWING NUMBER	DRAWING NAME
M-1	HVAC EQUIPMENT SCHEDULE, LEGEND & ABBREVIATIONS
M-2	HVAC FLOOR PLANS
M-3	HVAC DETAILS
M-4	HVAC DETAILS
E-1	LEGEND, ABBREVIATIONS, GENERAL NOTES & DIAGRAM
E-2	ELECTRICAL FLOOR PLANS
E-3	ELECTRICAL SITE PLAN
E-4	MISCELLANEOUS DETAILS

AIR-COOLED OUTDOOR CONDENSING UNIT SCHEDULE

SYMBOL	QUANTITY	LOCATION	SERVED	MANUFACTURER	MODEL NO.	EER	SEER	OUTDOOR EAT (°F)	COOLING CAPACITY (BTU/HR)	SENSIBLE COOLING CAPACITY (BTU/HR)	COMPRESSOR DATA				CONDENSER FAN DATA			UNIT ELECTRICAL DATA			REFRIGERANT DATA			WEIGHTED SOUND POWER (dBA)	OPERATING WEIGHT, LBS
											QTY	TYPE	FLA	LRA	QTY	HP	FLA	VOLT/PH/HZ	MCA	MOCP	TYPE	RS LINE	RL LINE		
	1	2ND FLOOR BALCONY	FC-1	CARRIER	38HDR060	11.5	13.0	95	54,860	43,070	1	SCROLL	7.8	52	1	1/4	0.8	460/3/60	10.6	15	R-410A	1 1/8"O.D.	3/8"O.D.	72	306

INDOOR FAN COIL UNIT SCHEDULE

SYMBOL	QUANTITY	LOCATION	SERVED	MANUFACTURER	MODEL NO.	SUPPLY AIR (CFM)	COOLING COIL EAT (°F DB / °F WB)	UNIT ELECTRICAL DATA				REFRIGERANT DATA			WEIGHTED SOUND POWER (dBA)	OPERATING WEIGHT (LBS)	REMARKS
								VOLT/PH/HZ	FLA	MCA	MOCP	TYPE	RS LINE	RL LINE			
	1	(E) VSS EQUIPMENT ROOM	VSS EQUIPMENT ROOM	CARRIER	40QAC060	1,600	72 / 60	208/1/60	2.6	3.3	15	R-410A	1 1/8"ø	3/8"ø	70.1	179	CONDENSATE DRAIN, PUMP, ROOM THERMOSTAT & FAN COIL UNIT MOUNTING KIT SHALL BE PROVIDED BY UNIT MANUFACTURER.

LEGEND AND SYMBOLS

SYMBOL

DESCRIPTION



DETAIL : TOP - DETAIL NUMBER
REFERENCE : BOTTOM - DRAWING NUMBER



THERMOSTAT



TOP - EQUIPMENT IDENTIFICATION
BOTTOM - EQUIPMENT NUMBER



CEILING
SUPPLY DIFFUSER

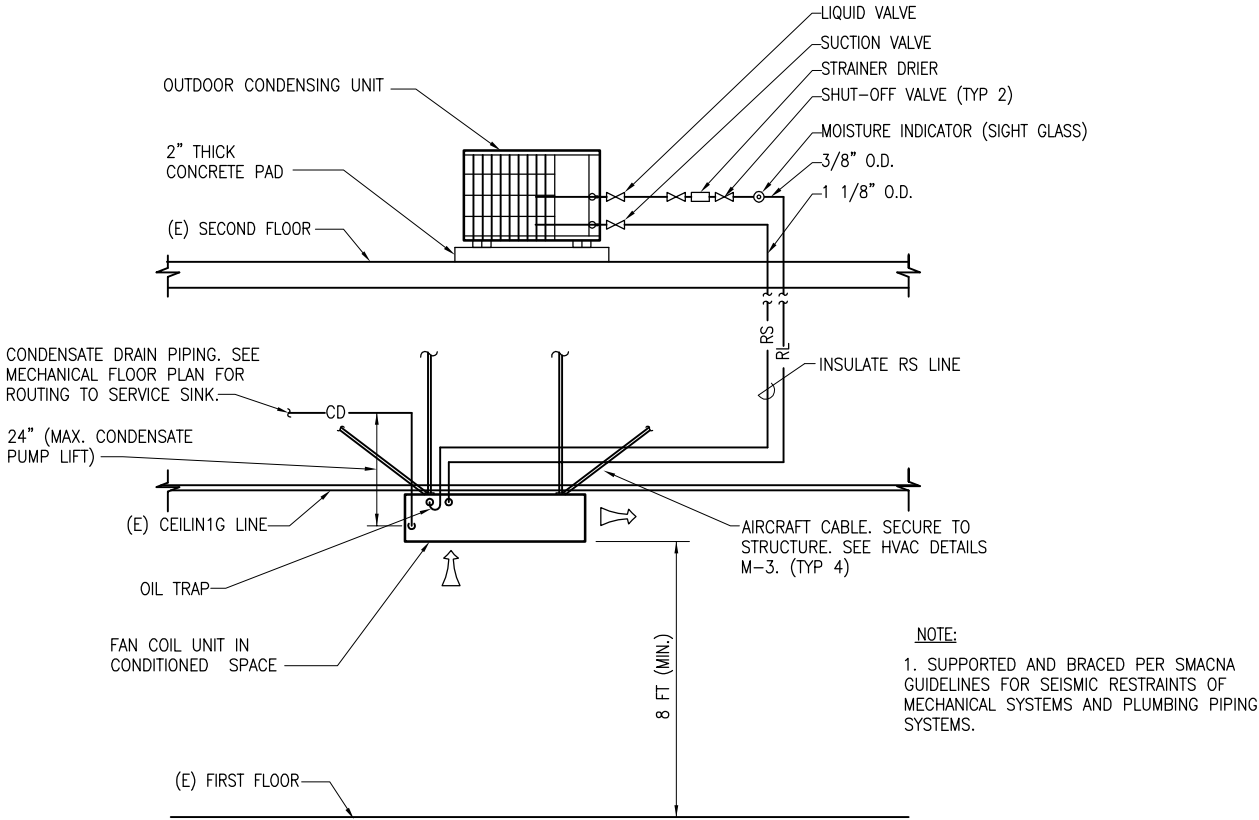


CEILING
RETURN GRILLE

ABBREVIATIONS

ABV ABOVE
AFF ABOVE FINISHED FLOOR
AMP AMPHERE
AP ACCESS PANEL
BEL BELOW
BHP BRAKE HORSEPOWER
BTU BRITISH THERMAL UNIT
CAP. CAPACITY
CD CONDENSATE DRAIN
CFH CUBIC FEET PER HOUR
CFM CUBIC FEET PER MINUTE
CLG. CEILING
CONN. CONNECTION
CU CONDENSING UNIT
DB DRY BULB
dB DECIBEL
DIA. DIAMETER
DN DOWN
(E) EXISTING
EAT ENTERING AIR TEMPERATURE
EER ENERGY EFFICIENCY RATIO
ESP EXTERNAL STATIC PRESSURE
FC FAN COIL OR FLEXIBLE CONN.
FLA FULL LOAD AMPHERE
FLR FLOOR
FT FEET
H HEIGHT
HP HORSEPOWER
HR HOUR
HZ HERTZ
IN. INCHES
IN. WC. INCH WATER COLUMN
LBS POUNDS
LRA LOCKED ROTOR AMPHERE

MAX. MAXIMUM
MCA MINIMUM CIRCUIT AMPACITY
MIN. MINIMUM
MOCP MAXIMUM OVERCURRENT PROTECTION
(N) NEW
NC NORMALLY CLOSED
NK NECK
NO. NUMBER
N.O. NORMALLY OPEN
NOM. NOMINAL
NTS NOT TO SCALE
O.D. OUTSIDE DIAMETER
PD PRESSURE DROP
PH PHASE
PSI POUNDS PER SQUARE INCH
QTY QUANTITY
RA RETURN AIR
RL REFRIGERANT LIQUID LINE
RS REFRIGERANT SUCTION LINE
RPM REVOLUTION PER MINUTE
SA SUPPLY AIR
SEER SEASONAL ENERGY EFFICIENCY RATIO
SHT SHEET
SQ. FT. SQUARE FEET
SP STATIC PRESSURE
TEMP. TEMPERATURE
TYP. TYPICAL
UNO UNLESS NOTES OTHERWISE
W OVERALL WIDTH
WB WET BULB
WG WATER GAUGE
W/ WITH
WT WEIGHT



TYPICAL SPLIT SYSTEM AIR CONDITIONING DETAIL

SCALE:N.T.S.



S:\IT-XXNI-NNNN-ROO.DGN

FILE NO.:

M-1

REVISIONS

NUMBER	DATE	INITIALS	DESCRIPTION	APPROVED	INSTALLED
1	12/13/10	ADN	ISSUE FOR BID		

REFERENCES

BENCHMARK NO.:	XX-XXX-XX	ELEV.:	NNN.NN' NAVD'YY
BENCHMARK DESCRIPTION			



STV Incorporated
ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS
1055 WEST 7th STREET., SUITE 3150
LOS ANGELES, CA. 90017-2577



PREPARED UNDER THE SUPERVISION OF:			DATE
V. ISARADHARM			
DESIGNED: GO			09/23/10
DRAWN: GO			09/23/10
CHECKED: VI			MM/YYYY
RECOMMENDED:			MM/YYYY
RECOMMENDED FOR CONSTRUCTION:			MM/YYYY
DEPUTY CITY ENGINEER			MM/YYYY
RCE NO.:			36060

HVAC EQUIPMENT SCHEDULE, LEGEND & ABBREVIATIONS

HVAC/ELECTRICAL SYSTEMS FOR
VIDEO EQUIPMENT ROOM

ORANGE COUNTY TRANSPORTATION AUTHORITY

SHEET 2 OF 9

Underground Service Alert
of Southern California



CALL: TOLL FREE 1-800-422-4133
TWO WORKING DAYS
BEFORE YOU DIG

NOTICE TO CONTRACTOR

PURSUANT TO ASSEMBLY BILL 3019 NO EXCAVATION
PERMIT IS VALID UNLESS THE CONTRACTOR CONTACTS
AND OBTAINS AN INQUIRY I.D. NUMBER FROM "UNDER-
GROUND SERVICE ALERT" (1-800-422-4133) AT LEAST
TWO WORKING DAYS PRIOR TO COMMENCING EXCAVATION.

PROJECT NO.YY-NNNN-C: PROJECT TITLE PROJECT LIMITS

SIT-XXN-NNN-ROO-DGN

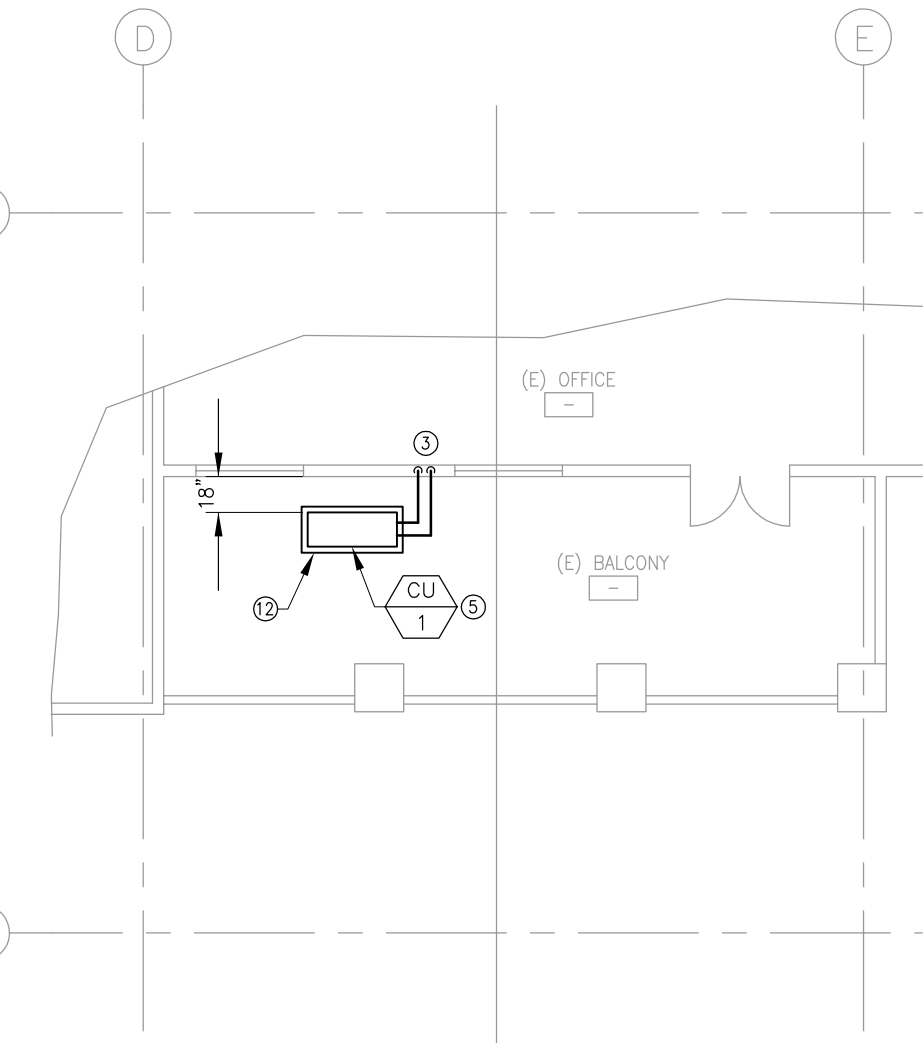
FILE NO.:

M-2

HVAC PARTIAL SECOND FLOOR (BALCONY) PLAN 2

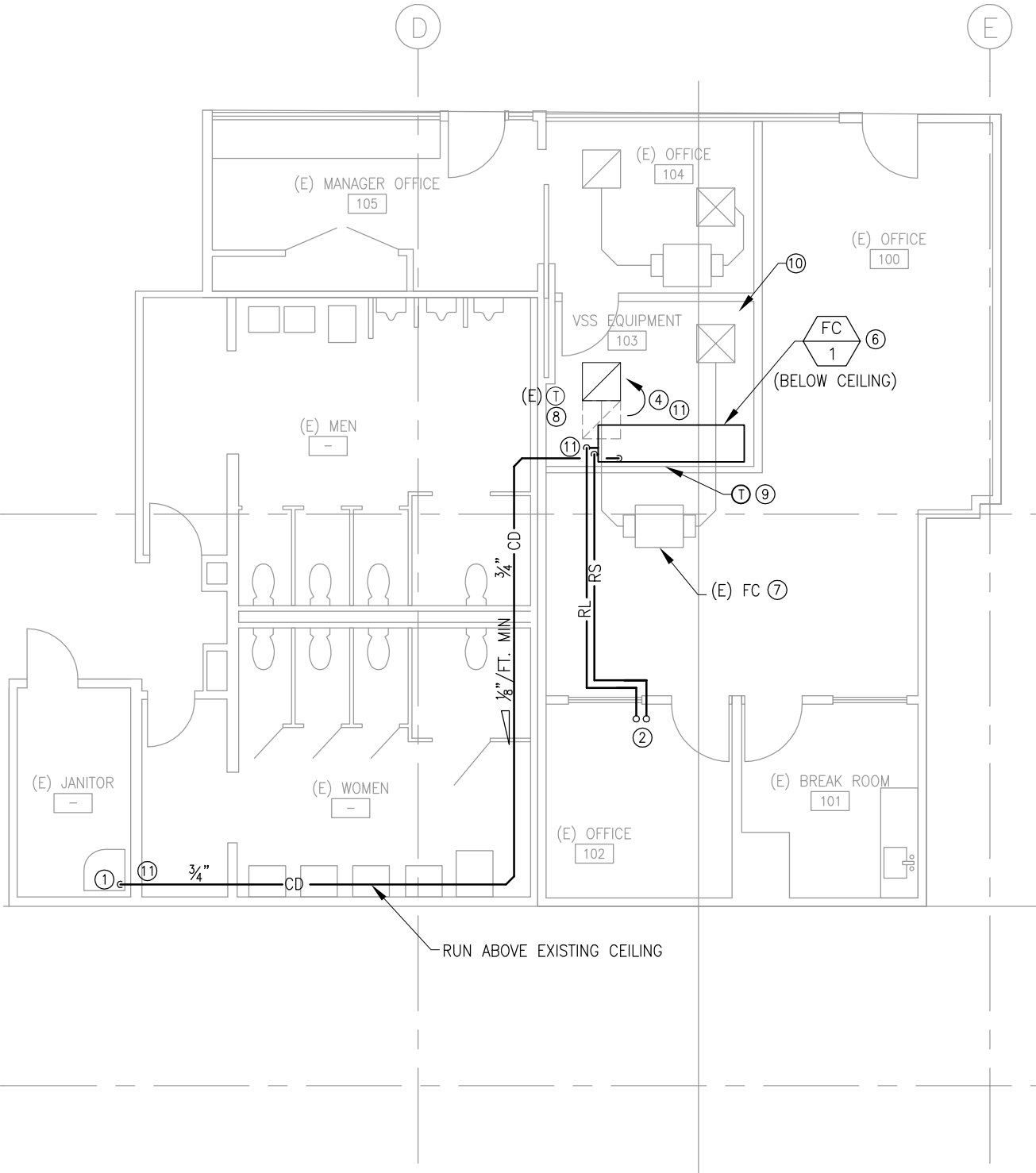
SCALE: 1/4"=1'-0"

M-2



CONTROLS:

SET THERMOSTAT FOR NEW FC-1 AT 72°F (ADJUSTABLE) OR AS REQUIRED BY VSS EQUIPMENT MANUFACTURER. UNIT SHALL OPERATE 24 HOURS CONTINUOUSLY. SET EXISTING ROOM THERMOSTAT 2°F HIGHER OR 74°F AND ONLY OPERATE EXISTING FAN-COIL WHEN CHILLED WATER IS AVAILABLE DURING OCCUPIED CYCLE.



HVAC PARTIAL FIRST FLOOR PLAN 1

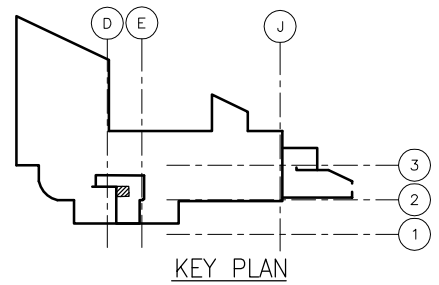
SCALE: 1/4"=1'-0"

M-2



KEYNOTES (THIS SHEET ONLY):

- 3/4" DIA. CONDENSATE DRAIN DN TO BE TERMINATED AT 3" ABOVE (E) SERVICE SINK.
- 1 1/8" O.D. REFRIGERANT SUCTION AND 3/8" O.D. LIQUID PIPES UP TO NEW CU-1 ON SECOND FLOOR BALCONY.
- 1 1/8" O.D. REFRIGERANT SUCTION AND 3/8" O.D. LIQUID PIPES DOWN IN WALL TO FIRST FLOOR CEILING SPACE. PATCH & PAINT WALL AS REQUIRED TO MATCH EXISTING.
- RELOCATE EXISTING RETURN GRILLE TO MISS THEN NEW INSTALLED FC-1. PROVIDE NEW FLEXIBLE DUCT OF SAME SIZE AND MATERIAL AS REQUIRED. PATCH & PAINT WALL AS REQUIRED TO MATCH EXISTING.
- INSTALL NEW CU-1 ON NEW CONCRETE PAD WITH NEW VIBRATION ISOLATORS. SEE DETAILS ON DRAWING M-4.
- SUSPEND FAN-COIL UNIT FC-1 AT THE UNDERSIDE OF THE CEILING USING MOUNTING BRACKET PROVIDED BY FAN-COIL UNIT MANUFACTURER. INSTALL FC-1 PER MANUFACTURER'S INSTRUCTION IN THE INSTALLATION MANUAL. PROVIDE ADDITIONAL STEEL MEMBER OR ATTACHMENT AS NEEDED. SEE DETAILS ON DRAWING M-1 & M-3.
- EXISTING FAN-COIL UNIT TO REMAIN.
- EXISTING ROOM THERMOSTAT TO REMAIN. SET ROOM TEMPERATURE AT 74°F.
- NEW ROOM THERMOSTAT FOR NEW FAN-COIL UNIT FC-1, SET TEMPERATURE AT 72°F. MOUNTED AT 4'-6" ABOVE FINISHED FLOOR.
- REMOVE EXISTING CARPET TILES AND ADHESIVE. CLEAN FLOOR WITH ADHESIVE CLEANER TO BARE CONCRETE. PATCH ALL CHIPS AND IMPERFECTIONS WITH CONCRETE FLOOR PATCH COMPOUND. SEAL CONCRETE FLOOR WITH CONCRETE SEALER.
- EXISTING CEILING MAY HAVE TO BE REMOVED FOR INSTALLATION OF NEW FAN-COIL UNIT, REFRIGERANT LINES & CONDENSATE DRAIN PIPE. REPLACE OR RE-INSTALL DAMAGE CEILING TO MATCH EXISTING.
- NEW 2" THICK CONCRETE HOUSE KEEPING PAD, 3000 PSI LIGHT WEIGHT CONCRETE WITH WIRE MESH, 6 X 6 X 3/8". CLEAN & ROUGH EXISTING CONCRETE SURFACE PRIOR TO INSTALLATION OF NEW CONCRETE.



GRAPHIC SCALE



SCALE: 1/4"=1'-0"

Underground Service Alert
of Southern California



CALL: TOLL FREE 1-800-422-4133
TWO WORKING DAYS
BEFORE YOU DIG

NOTICE TO CONTRACTOR

PURSUANT TO ASSEMBLY BILL 3019 NO EXCAVATION PERMIT IS VALID UNLESS THE CONTRACTOR CONTACTS AND OBTAINS AN INQUIRY I.D. NUMBER FROM "UNDERGROUND SERVICE ALERT" (1-800-422-4133) AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING EXCAVATION.

HVAC FLOOR PLANS
HVAC/ELECTRICAL SYSTEMS FOR
VIDEO EQUIPMENT ROOM

ORANGE COUNTY TRANSPORTATION AUTHORITY

SHEET 3 OF 9



STV Incorporated
ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS
1055 WEST 7th STREET., SUITE 3150
LOS ANGELES, CA. 90017-2577



PREPARED UNDER THE SUPERVISION OF:

V. ISARADHARM

DATE

09/23/10

DESIGNED: GO DRAWN: GO CHECKED: VI

RECOMMENDED:

RECOMMENDED FOR CONSTRUCTION:

DEPUTY CITY ENGINEER

RCE NO.:

36060

MM/YYYY

MM/YYYY

MM/YYYY

MM/YYYY

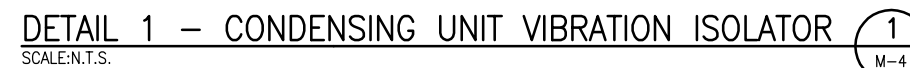
PROJECT NO.	YY	NNNN-C:	PROJECT TITLE	PROJECT LIMITS



DETAIL 2 - CONDENSING UNIT VIBRATION ISOLATOR RAIL

SCALE:N.T.S.

2
M-4



SHEET 5 OF 9

PROJECT NO.	YY-NNNN-C	PROJECT TITLE	PROJECT LIMITS

FILE NO. :



LEGEND, ABBREVIATIONS, GENERAL NOTES & DIAGRAM

SHEET 6 OF 9

- ① PROVIDE NEW CIRCUIT BREAKER IN EXISTING 480V MAIN BOARD AVAILABLE SPACE. AIC RATING TO MATCH EXISTING. FIELD VERIFY EXACT LOCATION PRIOR TO INSTALLATION.
- ② PROVIDE SIGNAGE INDICATING THE PHYSICAL LOCATION OF THE STANDBY SYSTEM POWER SOURCE IN ACCORDANCE WITH CEC SECTION 225.37.

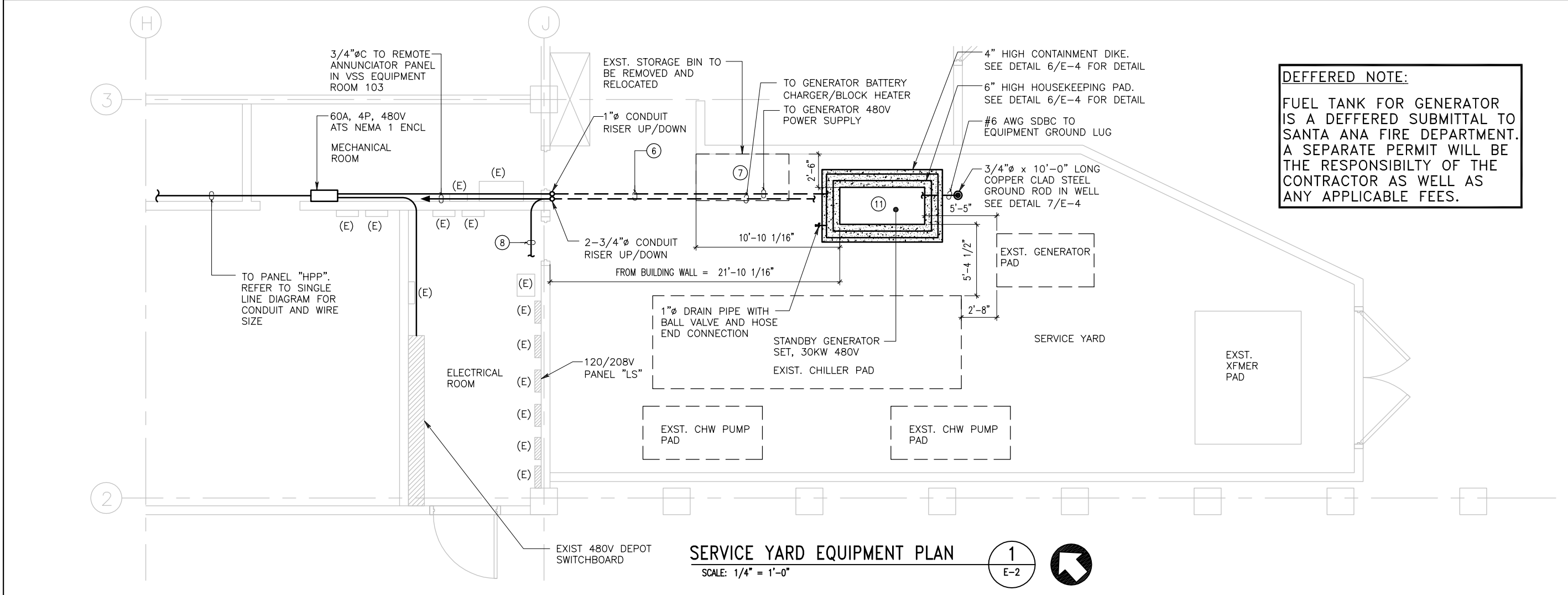
Underground Service Alert



CALL: TOLL FREE 1-800-422-4133
TWO WORKING DAYS
BEFORE YOU DIG

NOTICE TO CONTRACTOR

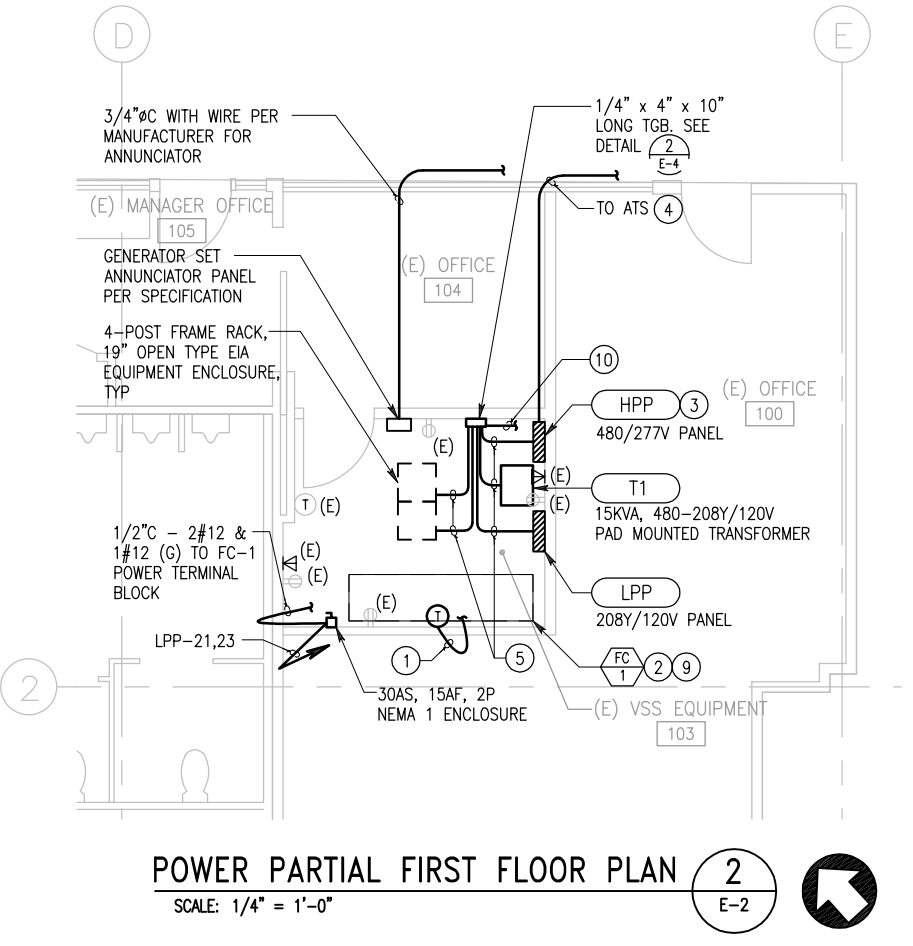
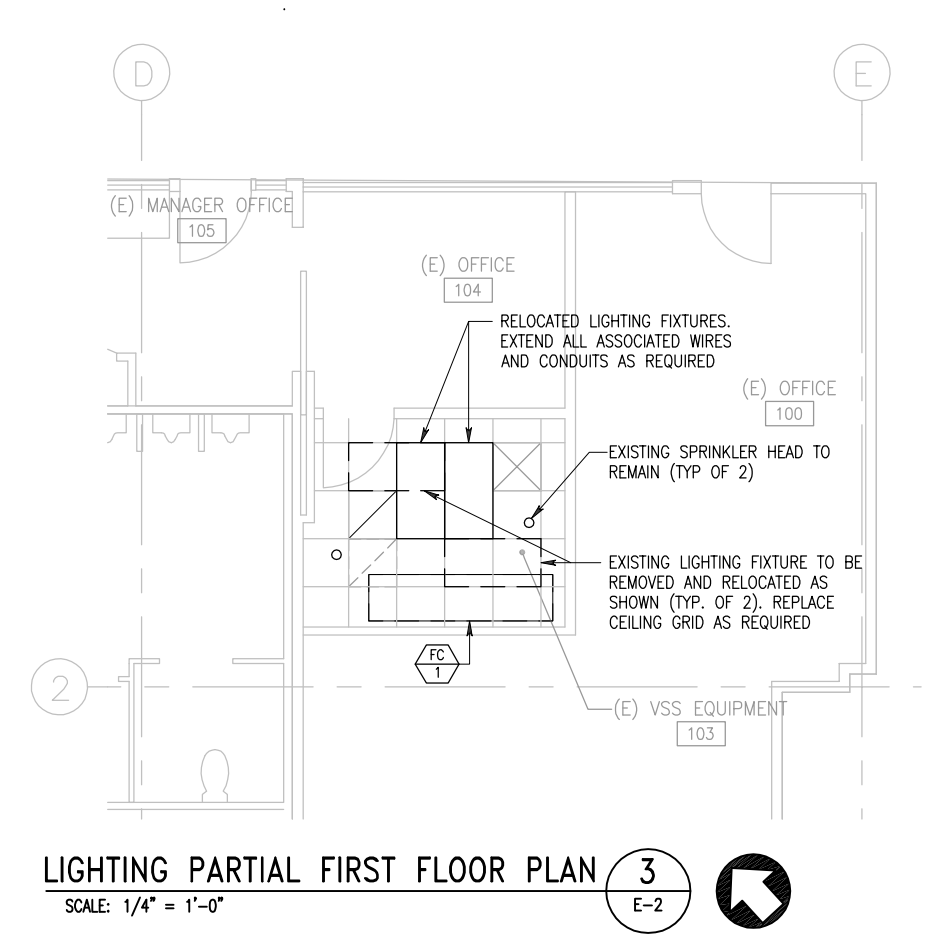
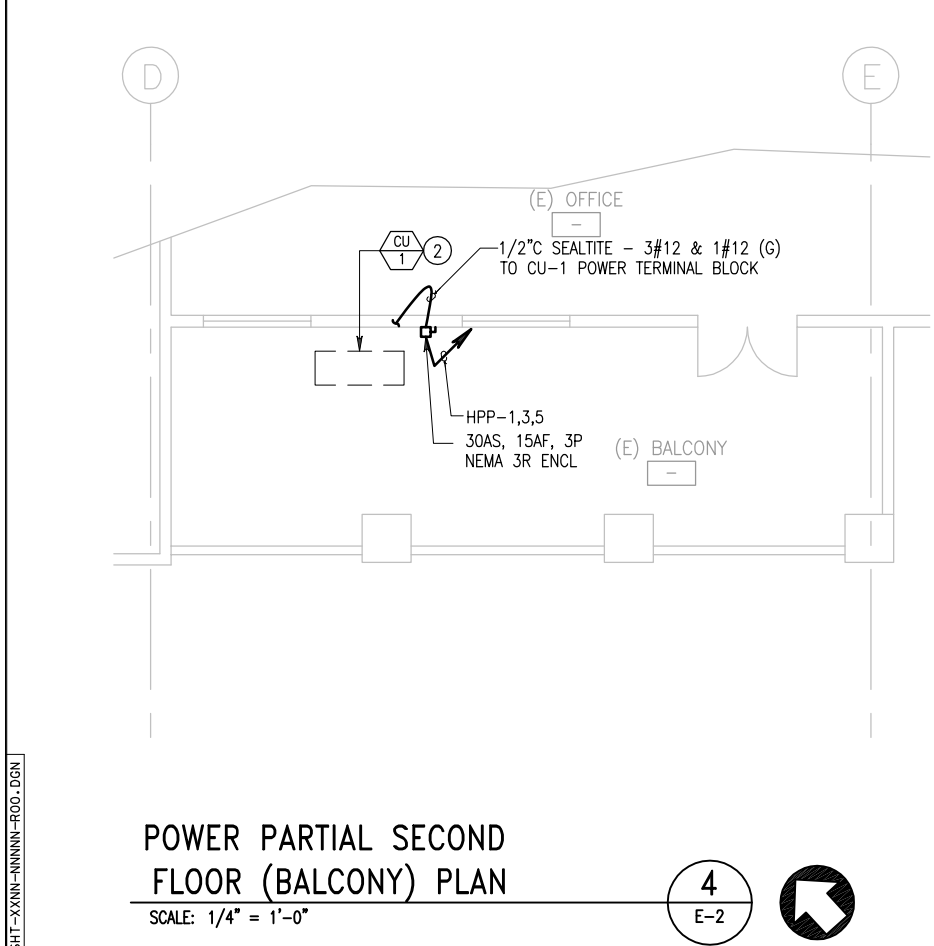
PURSUANT TO ASSEMBLY BILL 3019 NO EXCAVATION PERMIT IS VALID UNLESS THE CONTRACTOR CONTACTS AND OBTAINS AN INQUIRY I.D. NUMBER FROM "UNDERGROUND SERVICE ALERT" (1-800-422-4133) AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING EXCAVATION



DEFERRED NOTE:

FUEL TANK FOR GENERATOR IS A DEFERRED SUBMITTAL TO SANTA ANA FIRE DEPARTMENT. A SEPARATE PERMIT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AS WELL AS ANY APPLICABLE FEES.

- KEYNOTES (THIS SHEET ONLY):**
- 1/2"ØC. WITH PULL WIRE (WIRING BY CONTROL VENDOR) TO FC-1. FIELD VERIFY EXACT CONDUIT ROUTING.
 - REFER TO HVAC DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN, TYPICAL.
 - ALL ELECTRICAL EQUIPMENT SHOWN SHALL BE NEW UNLESS OTHERWISE NOTED AS EXISTING, TYPICAL.
 - REFER TO DRAWINGS 1/E-2 AND E-3 FOR CONTINUATION.
 - #6AWG GREEN GROUND WIRE BONDED TO RESPECTIVE PANEL EQUIPMENT GROUND BUS.
 - SAWCUT EXISTING FLOOR SLAB AND RUN 1"Ø AND (2) 3/4"Ø SCHEDULE 40 PVC BURIED 12" BELOW GRADE OR SUFFICIENT DEPTH TO CONCEAL BEND. CONTRACTOR SHALL USE EXTREME CAUTION WHEN TRENCHING, BACKFILLING, COMPACTION AND PATCHING OF CONCRETE/ASPHALT AS REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER AND APPROVED REPAIR OF ANY AND ALL FEATURES DISTURBED.
 - COORDINATE WITH OWNER REPRESENTATIVE FOR RELOCATION OF THIS EQUIPMENT PRIOR TO START OF WORK.
 - TO EXISTING 120/208V PANEL "LS" SPARE AVAILABLE CIRCUIT. USE 1-20A, 2P CB FOR BLOCK HEATER AND 1-20A, 1P FOR BATTERY CHARGER CIRCUIT. COORDINATE WITH GENERATOR MANUFACTURER FOR ADDITIONAL INFORMATION PRIOR TO ROUGH-IN.
 - CONTRACTOR SHALL CONNECT FIELD WIRING TO CONDENSATE PUMP PER UNIT MANUFACTURER INSTALLATION INSTRUCTION.
 - ROUTE #3/Ø SDBC TO EXISTING ELECTRICAL ROOM AND BOND TO THE EXISTING 480V MAIN SWITCHBOARD GROUND BUS. FIELD VERIFY EXACT ROUTING. REFER TO 1 E-2 FOR LOCATION.
 - THE GENERATOR INSTALLATION SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS WITH SPECIFIC REFERENCE TO 2007 CALIFORNIA FIRE CODE SECTION 3404.2.9.6 AS FOLLOWS:
a. NORMAL AND EMERGENCY VENTING
b. SECONDARY CONTAINMENT
c. OVERFILL PREVENTION
d. INFORMATION SIGNS
e. FILL PIPE CONNECTIONS
f. SPILL CONTAINERS
g. ANTISIPHON DEVICES



KEY PLAN

GRAPHIC SCALE

4 2 0 4 8

SCALE IN FEET

SCALE: 1/4"=1'-0"

Underground Service Alert of Southern California

CALL: TOLL FREE 1-800-422-4133

TWO WORKING DAYS BEFORE YOU DIG

NOTICE TO CONTRACTOR

PURSUANT TO ASSEMBLY BILL 3019 NO EXCAVATION PERMIT IS VALID UNLESS THE CONTRACTOR CONTACTS AND OBTAINS AN INQUIRY I.D. NUMBER FROM "UNDERGROUND SERVICE ALERT" (1-800-422-4133) AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING EXCAVATION.

E-2	REVISIONS						REFERENCES	
	NUMBER	DATE	INITIALS	DESCRIPTION	APPROVED	INSTALLED	BENCHMARK NO.: XX-XXX-XX	ELEV.: NNN.NN' NAVD'YY
	1	12/13/10	ADN	ISSUE FOR BID			BENCHMARK DESCRIPTION	
CONSTRUCTION COMPLETED:								

STV Incorporated
ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS
1055 WEST 7th STREET., SUITE 3150
LOS ANGELES, CA. 90017-2577

PREPARED UNDER THE SUPERVISION OF:
R. FEE
DESIGNED: AN
DRAWN: AN
CHECKED: RF
RECOMMENDED:
RECOMMENDED FOR CONSTRUCTION:
DEPUTY CITY ENGINEER
RCE NO.: 36060

DATE
09/23/10
09/23/10
MM/YYYY
MM/YYYY
MM/YYYY

ELECTRICAL FLOOR PLANS
HVAC/ELECTRICAL SYSTEMS FOR
VIDEO EQUIPMENT ROOM

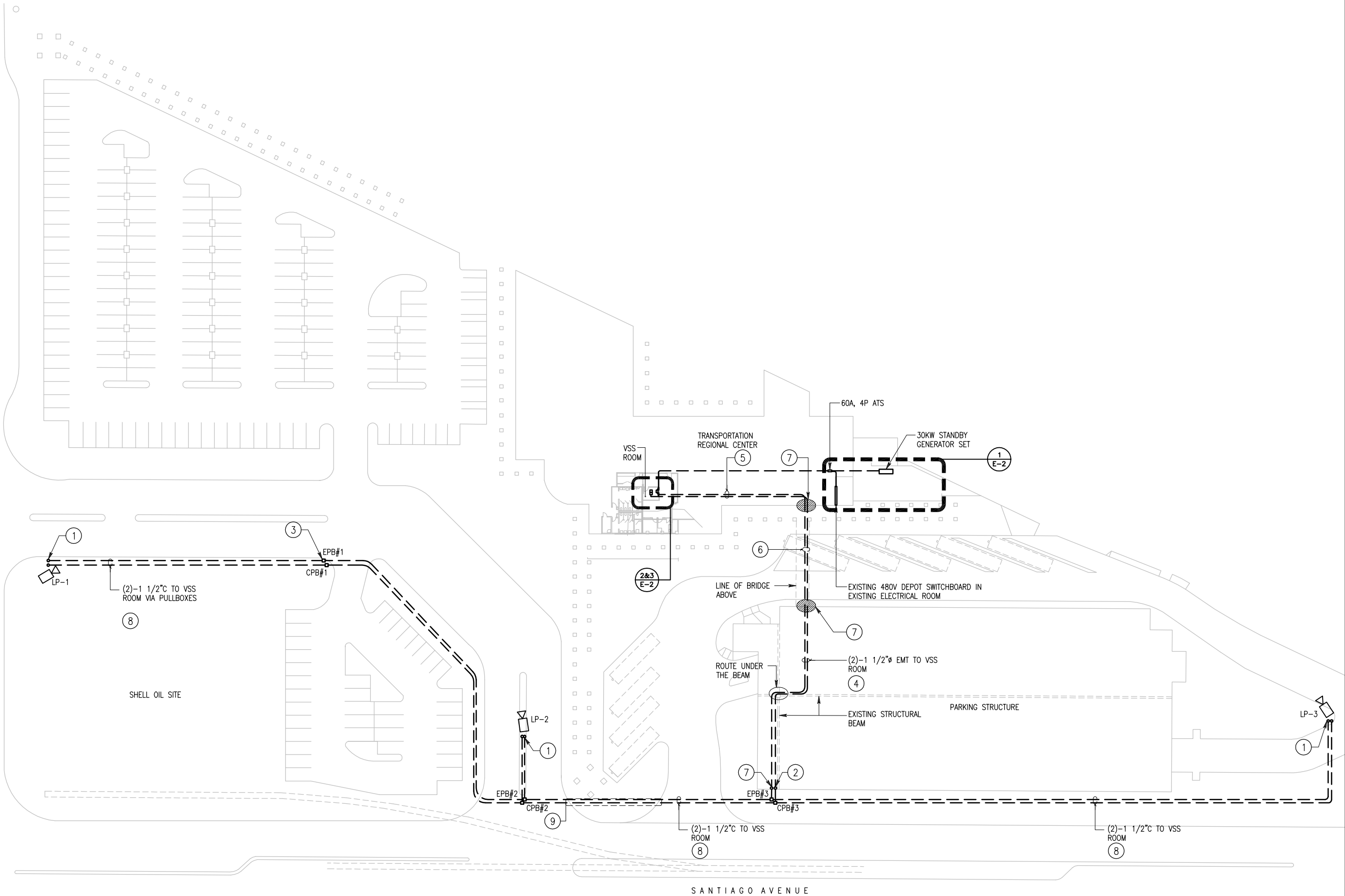
ORANGE COUNTY TRANSPORTATION AUTHORITY

SHEET 7 OF 9

FILE NO.: SIT-XXN1-NNNN-ROO.DGN

PROJECT NO.YY-NNNN-C: PROJECT TITLE PROJECT LIMITS

ESANTA ANA BOULEVARD



KEYNOTES (THIS SHEET ONLY):

- STUB-UP 6" ABOVE GRADE AND CAP. (CCTV CAMERA BY OTHERS)
- 1 1/2" Ø IMC CONDUITS STUB-UP VIA EXISTING BUILDING WALL AND ROUTED ABOVE CEILING SPACE TO VSS ROOM. FIELD VERIFY EXACT CONDUIT ROUTING PRIOR TO ROUGH-IN. SEE 3 FOR CONDUIT TRANSITION DETAIL.
- CONCRETE UNDERGROUND PULL BOX, SIMILAR TO JENSEN PRECAST PRODUCT NO. 3 1/2 OR EQUAL, TYP. SEE 5 FOR DETAIL.
- ROUTE CONDUITS ABOVE CEILING SPACE OF PARKING STRUCTURE AND SHALL BE SECURELY FASTENED IN PLACE WITH UNISTRUT AND STRAP AT LEAST 10'-0" MAXIMUM OC.
- ROUTE IMC CONDUITS ABOVE CEILING SPACE OF TRANSPORTATION CENTER AND SHALL BE SECURELY FASTENED IN PLACE AT LEAST 10'-0" MAXIMUM OC AND STUB DOWN TO THE RESPECTIVE EQUIPMENT WITHIN THE VSS ROOM.
- ROUTE EXPOSED IMC CONDUITS BELOW FLOOR SLAB OF EXISTING OVERHEAD BRIDGE AND SHALL BE SECURELY FASTENED IN PLACE WITH UNISTRUT AND STRAP AT LEAST 10'-0" MAXIMUM OC. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT A NEAT APPEARANCE.
- WHERE CONDUIT PENETRATION AND OPENINGS IN CONCRETE FLOOR OR MASONRY WALLS OCCURS, A 2" CLEAR DISTANCE FROM THE EDGE/BOTTOM OF THE WALL TO THE CONDUIT SHALL BE MAINTAINED PRIOR TO PERFORMING CORING, SAWCUTTING, PATCHING AND REFINISHING OF WALLS AND SURFACES WHEREVER IT IS NECESSARY TO PENETRATE. OPENINGS SHALL BE SEALED WITH AN APPROVED METHOD TO MEET THE FIRE RATING OF THE PARTICULAR WALL, FLOOR OR CEILING. SEE 1 FOR DETAIL.
- SCHEDULE 40 PVC CONDUITS ROUTED UNDERGROUND BURIED 24" MEASURED FROM THE TOP OF CONDUIT TO THE FINISH GRADE.
- CAREFULLY REMOVE EXISTING TILES AND REINSTALL TO ITS ORIGINAL FORM AFTER CONDUIT INSTALLATION.

GRAPHIC SCALE

1/32"=1'-0" 0 16' 32' 64'

Underground Service Alert
of Southern California



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ELECTRICAL SITE PLAN

SCALE: 1/32" = 1'-0"

1
E-3



SIT-XXN-NNN-ROO.DGN

FILE NO.:

E-3

REVISIONS

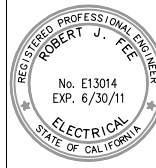
NUMBER	DATE	INITIALS	DESCRIPTION	APPROVED	INSTALLED
1	12/13/10	ADN	ISSUE FOR BID		

REFERENCES

BENCHMARK NO.:	XX-XX-XX	ELEV.:	NNN.NN' NAVD'YY
BENCHMARK DESCRIPTION			
CONSTRUCTION COMPLETED:			



STV Incorporated
ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS
1055 WEST 7th STREET., SUITE 3150
LOS ANGELES, CA. 90017-2577



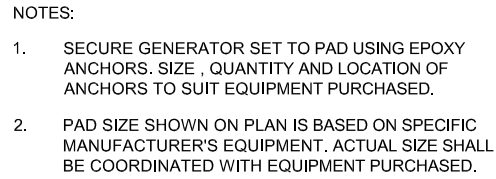
PREPARED UNDER THE SUPERVISION OF:			DATE
R. FEE	RCE NO.:		09/23/10
DESIGNED: AN	DRAWN: AN	CHECKED: RF	09/23/10
RECOMMENDED:			MM/YYYY
RECOMMENDED FOR CONSTRUCTION:			MM/YYYY
DEPUTY CITY ENGINEER	RCE NO.:	36060	MM/YYYY

ELECTRICAL SITE PLAN
HVAC/ELECTRICAL SYSTEMS FOR
VIDEO EQUIPMENT ROOM

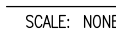
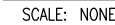
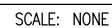
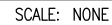
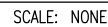
ORANGE COUNTY TRANSPORTATION AUTHORITY

SHEET 8 OF 9

PROJECT NO.YY-NNN-C: PROJECT TITLE PROJECT LIMITS



SCALE: NONE



ORANGE COUNTY TRANSPORTATION AUTHORITY

**BID BOOKLET
INVITATION FOR BID (IFB) 0-1933
BOOK 2 OF 2**

**HVAC AND ELECTRICAL UPGRADES AT SANTA ANA
REGIONAL TRANSPORTATION CENTER**



**ORANGE COUNTY TRANSPORTATION AUTHORITY
550 South Main Street
P.O. Box 14184
Orange, CA 92863-1584
(714) 560-6282**

Job Site(s):

**Santa Ana Regional Transportation Center (SARTC)
1000 East Santa Ana Blvd.
Santa Ana, CA 92701-2690**

Key IFB Dates

Issue Date:	December 27, 2010
Pre-Bid Conference/Site Visit:	January 5, 2011
Questions/Approved Equal Submittal:	January 12, 2011
Bid Submittal Date:	January 26, 2011

**U.S. Department of Transportation
FTA Project No. CA – 04 – 0078**



AFFILIATED AGENCIES

Orange County
Transit District

Local Transportation
Authority

Service Authority for
Freeway Emergencies

Consolidated Transportation
Service Agency

Congestion Management
Agency

Service Authority for
Abandoned Vehicles

BID FORM

ORANGE COUNTY TRANSPORTATION AUTHORITY
Attention: CAMM Department
550 South Main Street
P.O. Box 14184
Orange, California 92863-1584

Gentlemen/Ladies:

The undersigned hereby proposes to perform all work for which a contract may be awarded and to furnish any and all plant, labor, services, material, tools, equipment, supplies, transportation, utilities, and all other items and facilities necessary therefore as required in the **Invitation For Bids (IFB) 0-1933**, and to do everything required therein; and further proposes that, if this Bid is accepted, will contract in the form and manner stipulated to perform all the work in strict conformity therewith within the time limits set forth therein, and will accept as full payment therefore, the following price:

<u>Description</u>	<u>Total Lump Sum Bid Amount</u>
_____	\$ _____

A cashier's check/certified check/bid bond (circle applicable term) properly made payable to ORANGE COUNTY TRANSPORTATION AUTHORITY, hereinafter designated as the Owner, for the sum of _____ Dollars (\$ _____) which amount is not less than ten percent (10%) of the total amount of this bid, is attached hereto and is given as a guarantee that the undersigned will execute the Agreement and furnish the required bonds, "Guaranty," Certificate of Lower-Tier Participants Regarding Debarment and Suspension, Certificate of Restriction on Lobbying, and Certificate of Insurance, if awarded the contract, and in case of failure to do so within the time provided, (a) the proceeds of said check shall be forfeited to the AUTHORITY; or (b) surety's liability to the AUTHORITY for forfeiture of the face amount of the bond shall be considered as established [circle (a) or (b)].

The undersigned hereby represents that:

1. He/She has thoroughly examined and become familiar with the work required and documents included under this IFB. The Bidder understands that the award of the contract, if it is awarded, will be based on the lowest total Bid submitted by a responsive and responsible Bidder, and further, that the amounts and the total on the Bid Form will be subject to verification by the Authority.
2. By investigation at the site of the work and otherwise it is satisfied as to the nature and location of the work and is fully informed as to all conditions and matters which can in any way affect the work or the cost thereof.
3. Bidder fully understands the scope of the work/specifications and has checked carefully all words and figures inserted in said Invitation For Bids and further understands that the Authority will in no way be responsible for any errors or omissions in the preparation of this Bid.
4. Bidder will execute the Agreement and furnish the required Performance and Payment Bonds, "Guaranty," "Certificate of Lower-Tier Participants Regarding Debarment and Suspension," "Certificate of Restrictions on Lobbying," and proof of insurance coverage within fifteen (15) days (excluding Saturdays, Sundays and legal holidays) after notice of acceptance of bid by the Authority; and further, that this bid may not be withdrawn for a period of 120 calendar days after the date set for the opening thereof, unless otherwise required by law. If any Bidder shall withdraw its bid within said period, the Bidder shall be liable under the provisions of the Bid Security, or the Bidder and the surety shall be liable under the Bid Bond, as the case may be.
5. Bidder hereby certifies that this bid is genuine and not a sham or collusive or made in the interest or in behalf of any person not herein named, and the undersigned has not directly or indirectly induced or solicited any other Bidder to put in a sham bid, or any other person, firm, or corporation to refrain from bidding; the undersigned has not in any manner sought by collusion to secure for himself an advantage over any other Bidder.
6. In conformance with current statutory requirements of Section 1860, et. seq., of the Labor Code of the State of California, the Bidder shall execute the document included in this IFB entitled "Bidder's Certificate of Compliance Regarding Workers' Compensation Insurance;" and
7. Bidder hereby further certifies that each, every and all representations made in this Bid are true and correct and made under penalty of perjury.
8. Bidder shall permit the authorized representative of the Authority to inspect and audit all data and records of Bidder relating to this bid, and if awarded a contract resulting from this bid, shall permit such inspection and audit of all data and records of Bidder related to Bidder's performance

of such contract.

9. Bidder does not employ anyone who is now, or for one (1) year immediately prior to the date of this offer was, a director, officer, member, or employee of the Orange County Transportation Authority. The undersigned has not agreed to pay a fee contingent upon the award of a contract resulting from this bid to anyone who is now, or for one (1) year immediately prior to the date of this bid was, a director, officer, member, or employee of the Orange County Transportation Authority. No member of or delegate to the Congress of the United States shall be admitted to any share of the contract or to any benefit arising there from.
10. If awarded a contract resulting from this bid, Bidder shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age or national origin. The Bidder shall take affirmative action to ensure that applicants are employed, and that employees are treated during their employment, without regard to their race, religion, color, sex, age or national origin. Such actions shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
11. If awarded a contract resulting from this bid, Bidder will cooperate with the Authority in meeting commitments and goals with regard to the maximum utilization of DBE firms and will use its best efforts to ensure that DBE firms shall have the maximum practicable opportunity to compete for sub-contract work under such contract.
12. Bid will be in effect for 120 calendar days after the bid closing date.

Now: In compliance with the **Invitation For Bids 0-1933**, the undersigned, with full cognizance thereof, hereby proposes to perform the entire work in strict compliance with all of the said requirements and provisions for the prices set forth herein upon which award of contract is made. The undersigned affirms that the information provided herein is true and accurate and that any misrepresentations are made under penalty of perjury.

Dated _____, 20__ Bidder _____

The above bid includes Signature _____

Addenda Nos. _____ Name _____

Title _____

Bidder's Authorized Representative _____

Title _____

Email _____

Telephone No./Fax No. _____

Bidders post office address _____

Corporation organized under the laws of the State of _____

Contractor's License No. _____

Expiration Date of License _____

Surety or sureties _____

(CORPORATE SEAL)

BID SECURITY FORM
BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That, _____ as principal and Bidder and _____ as Surety, are held and firmly bound unto the Orange County Transportation Authority, of State of California, hereinafter referred to as "Authority," in the sum of _____ Dollars (\$ _____), to be paid to the said Authority, its successors, and assigns; for which payment, well and truly to be made, bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents, this amount being ten percent (10%) of the total amount of the Bid.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the certain bid of the above named _____ bounden _____ principal _____

for _____ at _____ as specifically set forth in documents entitled "**Invitation For Bids 0-1933**," shall not be withdrawn within a period of 120 calendar days after the date set for the opening of bids, (unless otherwise required by law, and notwithstanding the award of the contract to another Bidder), and that if said bid is accepted by the Authority through action of its legally constituted contracting authorities _____ and _____ if _____ the _____ above bounden _____ its heirs, executors, administrators, successors and assigns, shall execute a contract for such construction and deliver the required Performance and Payment Bonds, "Certificate of Lower-Tier Participants Regarding Debarment and Suspension," "Certificate of Restrictions on Lobbying," "Guaranty," and proof of insurance coverage within fifteen (15) days (not including Saturdays, Sundays and legal holidays) after notification of contract award from the Authority, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

IN WITNESS WHEREOF, we hereunto set our hands and seals this _____ day of _____, 20__.

(NOTE: The standard printed bond form of any bonding company acceptable to the Authority may be used in lieu of the foregoing approved sample bond form provided the security stipulations protecting the Authority are not in any way reduced by use of the security company's printed standard form.)

BID SECURITY FORM
CHECK TO ACCOMPANY BID

(NOTE: The following form shall be used in case check accompanies bid)

Accompanying this bid is a *Certified *Cashiers check payable to the order of Orange County Transportation Authority, hereinafter referred to as "Authority," for _____ dollars (\$_____), this amount being ten percent (10%) of the total amount of the Bid submitted in response to _____. The proceeds of this check shall become the property of said Authority provided this bid shall be accepted by the said Authority through action of its legally constituted contracting authorities and the undersigned shall fail to execute a contract and furnish the required "Guaranty" Form, "Certificate of Lower-Tier Participants Regarding Debarment and Suspension," "Certificate of Restrictions on Lobbying," Performance and Payment Bonds and proof of insurance coverage within fifteen (15) days (not including Saturdays, Sundays and legal holidays) after date of notification of contract award from the Authority. The proceeds of this check shall also become the property of the Authority if the undersigned Bidder withdraws the bid within the period of 120 days after the date set for the opening thereof, unless otherwise required by law, and notwithstanding the award of the contract to another Bidder. Otherwise, the check shall be returned to the undersigned.

 Bidder

* Circle applicable word

(NOTE: If the Bidder desires to use a bond instead of check, the Bid Bond form on the preceding page shall be executed and the sum of this bond shall be ten percent [10%] of the total amount of the bid.)

INFORMATION REQUIRED OF BIDDER

The Bidder is required to supply the following information. Additional sheets may be attached if necessary.

1. Name of Bidder, Firm or Corporation: _____
2. Business Address: _____
3. Telephone/Fax: () _____
4. _____
5. Type of Firm - Individual, Partnership or Corporation: _____
6. Corporation organized under the laws of state of: _____
7. Contractor's License No.: _____ Years of Experience: _____
8. Expiration Date of License: _____
9. List the names and addresses of all owners of the firm or names and titles of all officers of the corporation:

9. Please list the following: a) All prior and current license numbers that the current owner(s) or officers possess or have possessed in the last five years and the current status of those license; b) any prior company names that the owner(s) had in operation during the previous five years.

Current Officers or Owners Name	Prior Company Names (During the last 5 years)	Prior and Current License Numbers	Status of License

Please note: If additional space is required to detail the information requested, please attach another page. All information requested must be included. Failure to identify all of the information, may result in your bid being found non-responsive and your bid being rejected

10. List all construction projects (public and private) for which Bidder has provided general contractor services for the past three years:

Contract Type (Public or Private)	Project Description	Dates of Service	Total Cost	Name and Address of Owner	Contact Name and Phone Number

11. List the name, address and phone number of Superintendent for this project:

12. List all construction projects (public and private) for which Superintendent has provided services as a Superintendent for the past three years.

Contract Type (Public or Private)	Project Description	Dates of Service	Total Cost	Name and Address of Owner	Contact Name and Phone Number

Please note: If additional space is required to detail the information requested, please attach another page. All information requested must be included. Failure to identify all of the information, may result in your bid being found non-responsive and your bid being rejected
Bidder hereby certifies that it:

_____ is a Disadvantaged Business Enterprise as defined herein.

_____ is not a Disadvantaged Business Enterprise as defined herein.

NOTE: If requested by the Authority, Bidder shall furnish a certified financial statement, financial data, or other information and references sufficiently comprehensive to permit an appraisal of its current financial condition.

I hereby certify the above is true and correct to the best of my belief.

Signature

Name

Title

Company Name

Telephone Number

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE
EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)**

1. The Bidders' attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

Timetable Goals for Minority Participation for Each Trade (11.9)

Goals for Female Participation in Each Trade (6.9)

These goals are applicable to all the Contractor's construction work (whether or not it is federal or federally assisted) performed in the covered area.

The Contractor's compliance with the Executive Order and the regulations in 41 C.F.R. Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 C.F.R. 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 C.F.R. Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" includes County of Orange, California.

BIDDER'S CERTIFICATE OF COMPLIANCE
REGARDING
WORKERS' COMPENSATION INSURANCE

In conformance with current statutory requirements of Section 1860, et. seq., of the Labor Code of the State of California, the undersigned confirms the following certification:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that code and I will comply with such provisions before commencing the performance of the work of this Contract."

Bidder/Contractor: _____

Signature: _____

Name and Title: _____

Date: _____

BIDDER'S CERTIFICATE OF COMPLIANCE
REGARDING
STATE OF CALIFORNIA
BUSINESS AND PROFESSIONS CODE SECTION 7028.15

Contractor License Number: _____

Expiration Date of Contractor's License: _____

Each, every and all of the representations made by Bidder in the attached bid are true and correct.

Name of Contractor: _____

Signed: _____

Title: _____

Subscribed to and sworn before me, a Notary Public in and for the State of California, on _____, 20__.

Notary Public

My commission expires on:

_____, 20__
(NOTARY SEAL)

LIST OF SUBCONTRACTORS

List only the subcontractors, which will perform, work or labor or render services to the bidder in excess of one-half of one percent of the bidder's total bid amount. Do not list alternative subcontractors for the same work. (Use additional sheets if necessary.)

Name Under Which Subcontractor is Licensed	City & State	Specific Description of Work to be Rendered	Type*	Dollar Amount
				\$
				\$
				\$
				\$
				\$
				\$
TOTAL SUBCONTRACTED AMOUNT				\$

Bidders Name _____

*Type
1. Subcontractor
2. Vendor/Supplier
3. Trucker
4. Broker

PARTY DISCLOSURE FORM**Information Sheet****ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

The attached Party Disclosure Form must be completed by applicants for, or persons who are the subject of, any proceeding involving a license, permit, or other entitlement for use pending before the Board of Directors of the Orange County Transportation Authority or any of its affiliated agencies. (Please see next page for definitions of these terms.)

IMPORTANT NOTICE**Basic Provisions of Government Code Section 84308**

- A. If you are an applicant for, or the subject of, any proceeding involving a license, permit, or other entitlement for use, you are prohibited from making a campaign contribution of more than \$250 to any board member or his or her alternate. This prohibition begins on the date your application is filed or the proceeding is otherwise initiated, and the prohibition ends three months after a final decision is rendered by the Board of Directors. In addition, no board member or alternate may solicit or accept a campaign contribution of more than \$250 from you during this period.
- B. These prohibitions also apply to your agents, and, if you are a closely held corporation, to your majority shareholder as well. These prohibitions also apply to your subcontractor(s), joint venturer(s), and partner(s) in this proceeding. Also included are parent companies and subsidiary companies directed and controlled by you, and political action committees directed and controlled by you.
- C. You must file the attached disclosure form and disclose whether you or your agent(s) have in the aggregate contributed more than \$250 to any board member or his or her alternate during the 12-month period preceding the filing of the application or the initiation of the proceeding.
- D. If you or your agent have in the aggregate contributed more than \$250 to any individual board member or his/or her alternate during the 12 months preceding the decision on the application or proceeding, that board member or alternate must disqualify himself or herself from the decision. However, disqualification is not required if the board member or alternate returns the campaign contribution within 30 days from the time the director knows, or should have known, about both the contribution and the fact that you are a party in the proceeding. The Party Disclosure Form should be completed and filed with your proposal, or with the first written document you file or submit after the proceeding commences.

1. A proceeding involving "a license, permit, or other entitlement for use" includes all business, professional, trade and land use licenses and permits, and all other entitlements for use, including all entitlements for land use, all contracts (other than competitively bid, labor or personal employment contracts), and all franchises.
2. Your "agent" is someone who represents you in connection with a proceeding involving a license, permit or other entitlement for use. If an individual acting as an agent is also acting in his or her capacity as an employee or member of a law, architectural, engineering, consulting firm, or similar business entity, both the business entity and the individual are "agents."
3. To determine whether a campaign contribution of more than \$250 has been made by you, campaign contributions made by you within the preceding 12 months must be aggregated with those made by your agent within the preceding 12 months or the period of the agency, whichever is shorter. Contributions made by your majority shareholder (if a closely held corporation), your subcontractor(s), your joint venturer(s), and your partner(s) in this proceeding must also be included as part of the aggregation. Campaign contributions made to different directors or their alternates are not aggregated.
4. A list of the members and alternates of the Board of Directors is attached.

This notice summarizes the major requirements of Government Code Section 84308 of the Political Reform Act and 2 Cal. Adm. Code Sections 18438-18438.8.

ORANGE COUNTY TRANSPORTATION AUTHORITY
AND ITS AFFILIATED AGENCIES

To be completed only if campaign contributions have been made in the preceding 12 months.

Party's Name: _____

Party's Address: _____
Street

City

State Zip Phone

Application or Proceeding
Title and Number: _____

Board Member(s) or Alternate(s) to whom you and/or your agent made campaign contributions and dates of contribution(s) in the preceding 12 months:

Name of Member: _____
Name of Contributor (if other than Party): _____
Date(s): _____
Amount(s): _____

Name of Member: _____
Name of Contributor (if other than Party): _____
Date(s): _____
Amount(s): _____

Name of Member: _____
Name of Contributor (if other than Party): _____
Date(s): _____
Amount(s): _____

Date: _____
Signature of Party and/or Agent

**ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

Board of Directors

Jerry Amante, Chairman

Don Bankhead, Director

Patricia Bates, Vice Chairman

Peter Buffa, Director

Bill Campbell, Director

Carolyn V. Cavecche, Director

Larry Crandall, Director

William H. Dalton, Director

Paul G. Glaab, Director

Don Hansen, Director

Peter Herzog, Director

John Moorlach, Director

Shawn Nelson, Director

Janet Nguyen, Director

Miguel Pulido, Director

Tom Tait, Director

Gregory T. Winterbottom, Director

PARTICIPANT DISCLOSURE FORM**Information Sheet****ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

The attached Participant Disclosure Form must be completed by participants in a proceeding involving a license, permit, or other entitlement for use. (Please see next page for definitions of these terms.)

IMPORTANT NOTICE

Basic Provisions of Government Code Section 84308

- A. If you are a participant in a proceeding involving a license, permit, or other entitlement for use, you are prohibited from making a campaign contribution of more than \$250 to any board member or his or her alternate. This prohibition begins on the date you begin to actively support or oppose an application for license, permit, or other entitlement for use pending before the Orange County Transportation Authority or any of its affiliated agencies, and continues until three months after a final decision is rendered on the application or proceeding by the Board of Directors.

No board member or alternate may solicit or accept a campaign contribution of more than \$250 from you and/or your agency during this period if the board member or alternate knows or has reason to know that you are a participant.

- B. The attached disclosure form must be filed if you or your agent have contributed more than \$250 to any board member or alternate for the Orange County Transportation Authority or any of its affiliated agencies during the 12-month period preceding the beginning of your active support or opposition. (The disclosure form will assist the board members in complying with the law.)
- C. If you or your agent have made a contribution of more than \$250 to any board member or alternate during the 12 months preceding the decision in the proceeding, that board member or alternate must disqualify himself or herself from the decision. However, disqualification is not required if the member or alternate returns the campaign contribution within 30 days from the time the director knows, or should have known, about both the contribution and the fact that you are a participant in the proceeding.

The Participant Disclosure Form should be completed and filed with the proposal submitted by a party, or should be completed and filed the first time that you lobby in person, testify in person before, or otherwise directly act to influence the vote of the board members of the Orange County Transportation Authority or any of its affiliated agencies.

1. An individual or entity is a "participant" in a proceeding involving an application for a license, permit or other entitlement for use if:
 - a. The individual or entity is not an actual party to the proceeding, but does have a significant financial interest in the Orange County Transportation Authority's or one of its affiliated agencies' decision in the proceeding.

AND

- b. The individual or entity, directly or through an agent, does any of the following:
 - (1) Communicates directly, either in person or in writing, with a board member or alternate of the Orange County Transportation Authority or any of its affiliated agencies for the purpose of influencing the member's vote on the proposal;
 - c. Communicates with an employee of the Orange County Transportation Authority or any of its affiliated agencies for the purpose of influencing a member's vote on the proposal; or
 - d. Testifies or makes an oral statement before the Board of Directors of the Orange County Transportation Authority or any of its affiliated agencies.
2. A proceeding involving "a license, permit, or other entitlement for use" includes all business, professional, trade and land use licenses and permits, and all other entitlements for use, including all entitlements for land use; all contracts (other than competitively bid, labor, or personal employment contracts) and all franchises.
3. Your "agent" is someone who represents you in connection with a proceeding involving a license, permit, or other entitlement for use. If an agent acting as an employee or member of a law, architectural, engineering, or consulting firm, or a similar business entity or corporation, both the business entity or corporation and the individual are agents.
4. To determine whether a campaign contribution of more than \$250 has been made by a participant or his or her agent, contributions made by the participant within the preceding 12 months shall be aggregated with those made by the agent within the preceding 12 months or the period of the

agency, whichever is shorter. Campaign contributions made to different members or alternates are not aggregated.

5. A list of the members and alternates of the Board of Directors is attached.

This notice summarizes the major requirements of Government Code Section 84308 and 2 Cal. Adm. Code Sections 18438-18438.8.

ORANGE COUNTY TRANSPORTATION AUTHORITY
AND ITS AFFILIATED AGENCIES

To be completed only if campaign contributions have been made in the preceding 12 months.

Party's Name: _____

Party's Address: _____
Street

City

State Zip Phone

Application or Proceeding
Title and Number: _____

Board Member(s) or Alternate(s) to whom you and/or your agent made campaign contributions and dates of contribution(s) in the preceding 12 months:

Name of Member: _____
Name of Contributor (if other than Party): _____
Date(s): _____
Amount(s): _____

Name of Member: _____
Name of Contributor (if other than Party): _____
Date(s): _____
Amount(s): _____

Name of Member: _____
Name of Contributor (if other than Party): _____
Date(s): _____
Amount(s): _____

Date: _____
Signature of Party and/or Agent

**ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

Board of Directors

Jerry Amante, Chairman

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Don Hansen, Director

Peter Herzog, Director

John Moorlach, Director

Shawn Nelson, Director

Janet Nguyen, Director

Miguel Pulido, Director

Tom Tait, Director

Gregory T. Winterbottom, Director

**BIDDER'S CERTIFICATION REGARDING
INELIGIBLE FOREIGN CONTRACTORS AND SUBCONTRACTORS**

_____, (Company name) hereby certifies that it is not an ineligible foreign contractor and that it does not intend to utilize on this project any ineligible foreign subcontractors as defined in paragraph I, "Bidder's Certification of Compliance" - Ineligible Foreign Contractors and Subcontractors of Section II "INSTRUCTIONS TO BIDDING FORMS" of this IFB.

Signature: _____

Name: _____

Title: _____

Date: _____

BIDDER'S CERTIFICATE OF NONCOMPLIANCE
REGARDING
"BUY AMERICA" REQUIREMENTS (SECTION 165(A))
FOR
STEEL, IRON, OR MANUFACTURED PRODUCTS

In order to demonstrate compliance with the Buy America Requirements (see Book 1, Section II, of this IFB for further explanation), Bidder shall complete only one of the two statements below:

The _____ Firm name/principal hereby certifies that it will comply with the requirements of Section 165(a) of the Surface Transportation Assistance Act of 1982 and the applicable regulations in 49 CFR Part 661.	_____ Signature _____ Title _____ Date
--	---

Or:

The _____ Firm name/principal hereby certifies that it cannot comply with the requirements of Section 165(a) of the Surface Transportation Assistance Act of 1982 but it may qualify for an exception to the requirement pursuant to Section 165(b)(2) or (b)(4) of the Surface Transportation Assistance Act and Regulations in 49 CFR Part 661.7.	_____ Signature _____ Title _____ Date
---	---

CERTIFICATION
LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN
FEDERAL TRANSACTIONS

A. DEFINITIONS

1. Authority, as used in this clause, means the Orange County Transportation Authority, acting on behalf of the Orange County Transit District.
2. Covered Federal action, as used in this clause, means any of the following Federal actions:
3. The awarding of any Federal contract.
4. The making of any Federal grant.
5. The making of any Federal loan.
6. The entering into of any cooperative agreement.
7. The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
8. Indian tribe and tribal organization, as used in this clause, have the meaning provided in Section 4 of the Indian self-determination and Education Assistance Act (25 U.S.C. 4508) and include Alaskan Natives.
9. Influencing or attempting to influence, as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.
10. Local government, as used in this clause, means a unit of government in a State and, if chartered, established, or other were recognized by a State for the performance of a governmental duty, including a local public AUTHORITY, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.
11. Officer or employee of an agency, as used in this clause, includes the following individuals who are employed by an agency:
 - a. An individual who is appointed to a position in the Government under title 5, United States code, including a position under a temporary appointment.
 - a. A member of the uniformed services, as defined in the

subsection 101(3), Title 37, United States Code.

- b. A special Government employee, as defined in Section 202, Title 18, United States Code.
 - c. An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, Appendix 2.
12. Person, as used in this clause, means an individual, corporation, company, association, AUTHORITY, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization or any other Indian organization with respect to expenditures specifically permitted by other Federal law.
 13. Reasonable compensation, as used in this clause, means with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.
 14. Reasonable payment, as used in this clause means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.
 15. Recipient, as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.
 16. Regularly employed, as used in this clause, means, with respect to an officer or employee of a person requesting or receiving by such person for at least 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.
 17. State, as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and a multi-State regional or interstate entity having governmental duties and powers.

B. PROHIBITIONS

1. Section 1352 of Title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or, the modification of any Federal contract, grant, loan, or cooperative agreement.
2. The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan or cooperative agreement.
3. The prohibitions of the Act do not apply under the following conditions:
 - a. Agency and legislative liaison by own employees.
 1. The prohibition on the use of appropriated funds, in subparagraph B.1. of this clause, does not apply in the case of payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.
 2. For purposes of paragraph B.3.a.(1) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.
 3. The following agency and legislative liaison activities are permitted any time where they are not related to a specific solicitation for any covered Federal action:
 4. Discussing with an agency (including individual demonstrations) the qualities and characteristics of the person's products or services, conditions or terms of sale, and service capabilities.
 5. Technical discussions and other activities regarding the application of adaptation of the person's products or services for an agency's use.
 6. The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal

action:

7. Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;
8. Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and,
9. Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Public Law 95-507, and subsequent amendments.
10. Only those services expressly authorized by paragraph B.3.a.(1) of this clause are permitted under this clause.
11. Professional and technical services
12. The prohibition on the use of appropriated funds, in subparagraph B.1. of this clause, does not apply in the case of:
13. A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as condition for receiving that Federal action.
14. Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission or negotiation of any bid, proposal, or application or that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.
15. For purposes of paragraph B.3.a.(1) of this clause, professional and technical services shall be limited to advise and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal is allowable. Similarly, technical advice provided by an

engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission, or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission, or negotiation of a covered Federal action.

16. Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.
17. Only those services expressly authorized by paragraph B.3.a.(1) and (2) of this clause are permitted under this clause.
18. The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

b. Disclosure

1. The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form OMB standard form LLL, Disclosure of Lobbying Activities, (Attachment to the bid package) if such person has made or had agreed to made any payment using non appropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph B.1. of this clause, if paid for with appropriated funds.
2. The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph II.A. of

this clause. An event that materially affects the accuracy of the information reported includes:

3. A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or
4. A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or
5. A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.
6. The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.
7. All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the District at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

c. Agreement

The Contractor agrees not to make any payment prohibited by this clause.

d. Penalties

1. Any person who makes an expenditure prohibited under paragraph a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph d) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.
2. Contractors may relay without liability on the representation made by their subcontractors in the certification and disclosure forms.

e. Cost Allowability:

Nothing in this clause is to be interpreted to make allowable or reasonable any costs, which will otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provisions.

**CERTIFICATION OF
RESTRICTIONS ON LOBBYING**

I, _____, hereby certify on behalf (name of offeror) of
_____ that:
(Firm name)

1. No Federal appropriated funds have been paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds, other than Federal appropriated funds, have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit the attached Standard Form-LLL, "Disclosure of Lobbying Activities", in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in all subcontracts, and that all subcontractors shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance is placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Executed this _____ day of _____, 20__

By _____
(Signature of authorized official)

(Title of authorized official)

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See attached disclosure form.)

1. Type of Federal Action: ☐ a. contract ☐ b. grant ☐ c. cooperative agreement ☐ d. loan ☐ e. loan guarantee ☐ f. loan insurance	2. Status of Federal Action: ☐ a. bid/offer application ☐ b. initial award ☐ c. post-award	3. Report Type: ☐ a. initial filing ☐ b. material changes For Material Change Only: year _____ quarter _____ date of last report _____
4. Name and Address of Reporting Entity: ☐ Prime ☐ Subawardee Tier _____, if known: Congressional District, if known: _____		5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime: Congressional District, if known: _____
6. Federal Department/Agency:	7. Federal Program Name/Description: CFDA number, if applicable: _____	
8. Federal Action Number, if known:	9. Award Amount, if known: \$ _____	
10. a. Name and Address of Lobbying Entity (if individual, last name, first name, MI)		b. Individuals Performing Services (including address if different from No 10a) (last name, first name, MI):
(attach Continuation Sheet(s) SF - LLL - A if necessary)		
11. Amount of Payment (check all that apply): \$ _____ ☐ actual ☐ planned	13. Type of Payment (check all that apply): ☐ a. retainer ☐ b. one-time fee ☐ c. commission ☐ d. contingent fee ☐ e. deferred ☐ f. other specify: _____	
12. Forum of Payment (check all that apply): ☐ a. cash ☐ b. in-kind; specify nature: _____ value: _____		
14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s) or Member(s) contracted for Payment indicated in Item, 11: (attach Continuation Sheet(s) SF-LLL-A if necessary)		
15. Continuation Sheet(s) SF-LLL-A attached: ☐ Yes ☐ No		
16. Information requested through this form is authorized by Code 31 U.S.C. Section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000.00 and not more than \$100,000.00 for each such failure.		Signature: _____ Print name: _____ Title: _____ Telephone No: _____ Date: _____
Federal Use Only		Authorized for Local Reproduction Standard Form - LLL

INSTRUCTIONS FOR COMPLETION OF SF-LLL DISCLOSURE OF LOBBYING ACTIVITIES

This DISCLOSURE FORMS SHALL BE COMPLETED BY the reporting entity, whether Subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be a prime or subaward recipient. Identify the tier of the subawardee e.g., the first subawardee of the prime is the first tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee" then enter the full name, address city, state, and zip code of the prime Federal recipient. Include Congressional District.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency, name if known. For example, Department of Transportation, United State Coast Guard.
7. Enter the Federal program name for description of the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g. Request for Proposal (RFP) number, Invitation for Bid (IFB) number, grant announcement number, the contract, grant, or loan award number, the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state, and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.

(b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a.). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box (es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box (es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal officials. Identify the Federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) of Congress that were contacted.
15. Check whether or not a SF-LLL-A Continuation Sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Office of Management and Budget Paperwork Reduction Project (0348-0446), Washington, D.C. 20503.

DISCLOSURE OF LOBBYING ACTIVITIES CONTINUATION SHEET

Reporting Entity: _____ Page _____ of _____

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Standard Form - LLL - A

EXHIBIT D-2: DBE RACE-NEUTRAL PARTICIPATION LISTING

Bidder shall complete and submit **Exhibit D-2: “DBE Race-Neutral Participation Listing”** in a **sealed envelope** with the bid/proposal, but no later than 48 hours following bid opening or proposal due date and timeline. (NOTE: In the event of no race-neutral DBE participation, Bidder shall mark “None” under the column entitled “DBE Firm Name”.) The Bidder shall refer to **IFB Section IV.G: “DBE Crediting Provisions”** for guidelines relative to DBE participation crediting. (Additional sheets may be duplicated as necessary.)

The DBE information and content provided under Exhibit D-2: “DBE Race-Neutral Participation Listing” will not be considered in evaluating the bid/proposal or determining award of any contract.

DBE Firm Name*:	DBE Certification No. and Expiration Date:	Provide Complete Description of Work to be Performed: _____ _____ _____ _____		
Business Address:		Check Appropriate Box Describing		
Contact Person:		Subcontractor (100%)	Supplier (60%)	
Telephone:	Fax:	Regular Dealer (60%)	Broker	
License No., Classification and Expiration:		Manufacturer (100%)	Trucker	
Subcontract Amount:		Subcontractor/Supplier Activity:		

***DBE certification letter must be attached for each listed DBE firm. DBEs must be certified on the date bids/proposals are opened.**

DBE Firm Name*:	DBE Certification No. and Expiration Date:	Provide Complete Description of Work to be Performed: _____ _____ _____ _____		
Business Address:		Check Appropriate Box Describing		
Contact Person:		Subcontractor (100%)	Supplier (60%)	
Telephone:	Fax:	Regular Dealer (60%)	Broker	
License No., Classification and Expiration:		Manufacturer (100%)	Trucker	
Subcontract Amount:		Subcontractor/Supplier Activity:		

***DBE certification letter must be attached for each listed DBE firm. DBEs must be certified on the date bids/proposals are opened.**

DBE Firm Name*:	DBE Certification No. and Expiration Date:	Provide Complete Description of Work to be Performed: _____ _____ _____ _____			
Business Address:		Check Appropriate Box Describing			
Contact Person:		Subcontractor (100%)		Supplier (60%)	
Telephone:	Fax:	Regular Dealer (60%)		Broker	
License No., Classification and Expiration:		Manufacturer (100%)		Trucker	
Subcontract Amount:		Subcontractor/Supplier Activity:			

***DBE certification letter must be attached for each listed DBE firm. DBEs must be certified on the date bids/proposals are opened.**

Bidder/Offeror:	
Business Address:	
Contact Name:	Title:
Phone: ()	Fax: ()

Total Contract Amount:	\$		
DBE Race-Neutral Participation Value (% of Total Contract Value): <i>(NOTE: Mark "NONE" if no DBEs will be utilized.)</i>	%	DBE Race-Neutral Participation Dollar (\$) Value: <i>(NOTE: Mark "NONE" if no DBEs will be utilized.)</i>	\$

Signature of Authorized Representative	Printed Name
Date	Title

EXHIBIT D-3: BIDDERS LIST

Bidder/Offeror: _____ **IFB No.:** _____

The Department of Transportation requires the AUTHORITY to create and maintain a "Bidders List" containing information about all firms (DBE and Non-DBE) that bid, propose or quote on the Authority's DOT-assisted contracts, in accordance with 49 CFR Part 26.11. The "Bidders List" is intended to be a count of all firms that are participating, or attempting to participate, on DOT-assisted contracts, whether successful or unsuccessful in their attempt to obtain a contract.

The Bidder is to complete all requested information on ***Exhibit D-3: Bidders List*** for themselves and all subcontractors, and submit this information at the time of bid submission. However, if not elected to do so at the time of bid submission, Bidders must submit such information at the request of the Authority within the prescribed timeline set forth in the solicitation. The AUTHORITY will utilize this information to assist in the AUTHORITY's overall annual DBE goal-setting process. ***The Bidders List content will not be considered in evaluating the bid/proposal or determining award of any contract.***

Prime Bidder's/Offeror's Information	
Name of Prime's Firm:	Phone: ()
Firm Address:	Fax: ()
	E-mail:
	Type of work/services/materials provided:
Number of years in business:	
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year.
DBE Certification Eligibility:	☐ Less than \$1 million
	☐ Less than \$5 million
	☐ Less than \$10 million
	☐ Less than \$15 million
	☐ More than \$15 million
☐ African American ☐ Asian Pacific American ☐ Native American ☐ Woman ☐ Hispanic American ☐ Subcontinent Asian American ☐ Other	

Provide the following information for every subcontractor (DBE and non-DBE) included in this bid, proposal or quote.	
Name of Sub's Firm:	Phone: ()
Firm Address:	Fax: ()
	E-mail:
	Type of work/services/materials provided:
Number of years in business:	
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year.
DBE Certification Eligibility: ☐ African American ☐ Asian Pacific American ☐ Native American ☐ Woman ☐ Hispanic American ☐ Subcontinent Asian ☐ Other American	☐ Less than \$1 million
	☐ Less than \$5 million
	☐ Less than \$10 million
	☐ Less than \$15 million
	☐ More than \$15 million

Provide the following information for every subcontractor (DBE and non-DBE) included in this bid, proposal or quote.	
Name of Sub's Firm:	Phone: ()
Firm Address:	Fax: ()
	E-mail:
	Type of work/services/materials provided:
Number of years in business:	
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year.
DBE Certification Eligibility: ☐ African American ☐ Asian Pacific American ☐ Native American ☐ Woman ☐ Hispanic American ☐ Subcontinent Asian ☐ Other American	☐ Less than \$1 million
	☐ Less than \$5 million
	☐ Less than \$10 million
	☐ Less than \$15 million
	☐ More than \$15 million

Provide the following information for every subcontractor (DBE and non-DBE) included in this bid, proposal or quote.	
Name of Sub's Firm:	Phone: ()
Firm Address:	Fax: ()
	E-mail:
	Type of work/services/materials provided:
Number of years in business:	
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year.
DBE Certification Eligibility: ☐ African American ☐ Asian Pacific American ☐ Native American ☐ Woman ☐ Hispanic American ☐ Subcontinent Asian American ☐ Other	☐ Less than \$1 million
	☐ Less than \$5 million
	☐ Less than \$10 million
	☐ Less than \$15 million
	☐ More than \$15 million

If necessary, this Bidders List form can be duplicated to include all firms (DBE and non-DBE) that have submitted a bid, proposal or quote on this DOT-assisted project, whether successful or unsuccessful in their attempt to obtain a contract.

Failure of the Bidder/Offeror to submit this required Bidders List form will deem the Bidder/Offeror non-responsive.

Status of Past and Present Contracts

On the form provided below, Offeror shall list the status of past and present contracts where the firm has either provided services as a prime contractor or a subcontractor during the past five (5) years in which the contract has ended or will end in a termination, settlement or in legal action. A separate form must be completed for each contract. Offeror shall provide an accurate contact name and telephone number for each contract and indicate the term of the contract and the original contract value.

If the contract was terminated, list the reason for termination. Offeror must also identify and state the status of any litigation, claims or settlement agreements related to any of the identified contracts. Each form must be signed by an officer of the Offeror confirming that the information provided is true and accurate.

Project city/agency/other:	
Contact name:	Phone:
Project award date:	Original Contract Value:
Term of Contract:	
1) Status of contract:	
2) Identify claims/litigation or settlements associated with the contract:	

By signing this Form entitled "Status of Past and Present Contracts," I am affirming that all of the information provided is true and accurate.

Name _____
 Title _____

_____ Date