

DRAFT REQUEST FOR PROPOSALS (RFP) 5-4320

# DESIGN-BUILD OF HYDROGEN FUELING STATION AND FACILITY MODIFICATIONS AT GARDEN GROVE BUS BASE



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

## Key RFP Dates

Issue Date:	December 1, 2025
Pre-Proposal Conference Date:	December 3, 2025
Question Submittal Date:	December 10, 2025
Proposal Submittal Date:	January 7, 2026
Interview Date:	February 10, 2026

## **TABLE OF CONTENTS**

<b>SECTION I: INSTRUCTIONS TO OFFERORS .....</b>	<b>1</b>
<b>SECTION II: ADDITIONAL CONTRACTUAL EXHIBITS.....</b>	<b>16</b>
<b>SECTION III: PROPOSAL CONTENT .....</b>	<b>19</b>
<b>SECTION IV: EVALUATION AND AWARD .....</b>	<b>28</b>
<b>EXHIBIT A: SCOPE OF WORK.....</b>	<b>33</b>
<b>EXHIBIT B: SCOPE OF WORK ATTACHMENTS.....</b>	<b>34</b>
<b>EXHIBIT C: PROPOSED AGREEMENT .....</b>	<b>35</b>
<b>EXHIBIT D: GENERAL PROVISIONS .....</b>	<b>36</b>
<b>EXHIBIT E: COST &amp; PRICE FORM.....</b>	<b>37</b>
<b>EXHIBIT F: SAFETY SPECIFICATIONS .....</b>	<b>38</b>
<b>EXHIBIT G: PERFORMANCE BOND .....</b>	<b>39</b>
<b>EXHIBIT H: PAYMENT BOND.....</b>	<b>40</b>
<b>EXHIBIT I: GUARANTY .....</b>	<b>41</b>
<b>EXHIBIT J: CCO FORM .....</b>	<b>42</b>
<b>EXHIBIT K: FORMS.....</b>	<b>43</b>



December 1, 2025

**NOTICE OF REQUEST FOR PROPOSALS**

**(RFP): 5-4320: “DESIGN-BUILD OF HYDROGEN FUELING STATION AND FACILITY MODIFICATIONS AT GARDEN GROVE BUS BASE”**

**TO: ALL OFFERORS**

**FROM: ORANGE COUNTY TRANSPORTATION AUTHORITY**

The Orange County Transportation Authority (Authority) invites proposals from the short-listed design-build teams to **design, construct and deliver a turnkey hydrogen fueling station and facility modifications at the Garden Grove Bus Base (Project).**

The budget for this project is \$26.5 million dollars for a 24-month term for construction with an 18-month term for operations during training and transition period after completion and acceptance of the Project.

Offerors will be required to hold a valid State of California Class A General Engineering contractor license and either hold a valid State of California C-10 specialty license or subcontract to a valid State of California C-10 specialty licensed subcontractor.

The Authority has completed the evaluation of the Statement of Qualifications (SOQ) received in response to Request for Qualifications (RFQ) 5-4319 for this Project. This RFP is being issued to those design-build teams that were short-listed based on the Authority’s evaluation of the SOQs.

**To prevent potential conflicts of interest, the following prohibitions apply to this solicitation:**

The prime consultant and all subconsultants (at any tier), regardless of the level of service provided by said subcontractor(s), awarded this contract to design and build a turnkey hydrogen fueling station at the Garden Grove Bus Base are precluded from participating in the future **construction management services contract for this Project.**

**Please note that by submitting a Proposal, Offeror certifies that it is not subject to any Ukraine/Russia-related economic sanctions imposed by the State of California or the United States Government including, but not limited to, Presidential Executive Order Nos. 13660, 13661, 13662, 13685, and 14065. Any individual or entity that is the subject of any Ukraine/Russia-related economic sanction is not eligible to submit a Proposal. In submitting a Proposal, all Offerors agree to comply with all economic sanctions imposed by the State or U.S. Government.**

Proposals must be submitted at or before 2:00 p.m., on January 7, 2026.

Proposals 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  
600 South Main Street, (Lobby Receptionist)  
Orange, California 92868  
Attention: Megan Bornman, Senior Contract Administrator**

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

**Orange County Transportation Authority  
Contracts Administration and Materials Management  
P.O. Box 14184  
Orange, California 92863-1584  
Attention: Megan Bornman, Senior Contract Administrator**

Proposals and amendments to proposals received after the date and time specified above will be returned to the Offerors unopened.

Note: The Authority utilizes a third-party delivery service therefore, Offerors should anticipate a 48-hour delay in delivery of proposals mailed to the P.O. Box listed above. Proposals are considered received once time-stamped at the Authority's physical address.

All firms interested in doing business with the Authority are required to register their business on-line at OpenGov. The website can be found at <https://opengov.com/>. From the site menu, click on OpenGov to register.

A pre-proposal conference will be held on December 3, 2026, at 9:00 a.m. at the Authority's Administrative Office, 550 South Main Street, Orange, CA 92868 in Conference Room 09.



Participation via teleconference will also be available. Prospective Offerors may join or call-in using the following credentials:

- LINK
- Call-in Number:
- Conference ID:

A copy of the pre-proposal conference presentation slides and registration sheet(s) will be issued via addendum prior to the date of the pre-proposal conference.

Immediately following the pre-proposal conference, a job walk will be conducted at 11790 Cardinal Circle, Garden Grove, CA 92843.

All prospective Offerors are encouraged to attend the pre-proposal conference, and the job walk.

**Please review “Bus Base Visit Protocol” in Section I. “Instructions to Offerors”, Paragraph C.**

The Authority has established February 10, 2026, as the date to conduct interviews. All prospective Offerors will be asked to keep this date available.

Offerors are encouraged to subcontract with small businesses to the maximum extent possible.

All Offerors will be required to comply with all applicable equal opportunity laws and regulations.

The award of this contract is subject to receipt of federal, state and/or local funds adequate to carry out the provisions of the proposed agreement including the identified Scope of Work.

**SECTION I: INSTRUCTIONS TO OFFERORS**

## **SECTION I. INSTRUCTIONS TO OFFERORS**

### **A. DEFINITIONS**

The following terms used in this document shall have the meanings shown below:

<b>Term</b>	<b>Definition</b>
Design-Build	A project delivery process in which both the design and construction of a project are procured from a single entity.
Offeror	Entity submitting an SOQ in response to this solicitation.
Design-Build Entity	A corporation, limited liability company, partnership, joint venture or other legal entity that is able to provide appropriately licensed contracting, architectural, and engineering services as needed pursuant to a design-build contract.
Design-Build Team	The Design-Build Entity itself and the individuals and other entities identified by the Design-Build Entity as members of its team. Members shall include the General Contractor and, if utilized, the Principal Engineering Firm and other Design Firms.
Design-Builder	Lead entity within the design-build entity, responsible for managing the entire project.
Principal Engineering Firm	The firm that will be responsible for the primary design of the Project.
General Contractor	The firm that will be responsible for constructing the Project.
Other Design Firms	Firm(s) that will participate in the design of the Project.

### **B. PRE-PROPOSAL CONFERENCE**

A pre-proposal conference will be held on December 3, 2026, at 9:00 a.m. at the Authority's Administrative Office, 550 South Main Street, Orange, CA 92868 in Conference Room 09.

Participation via teleconference will also be available. Prospective Offerors may join or call-in using the following credentials:

- LINK
- Call-in Number:
- Conference ID:

A copy of the pre-proposal conference presentation slides and registration sheet(s) will be issued via addendum prior to the date of the pre-proposal conference.

Immediately following the pre-proposal conference, a job walk will be conducted at 11790 Cardinal Circle, Garden Grove, CA 92843.

All prospective Offerors are encouraged to attend the pre-proposal conference, and the job walk.

By investigation of the work site, Offerors shall be satisfied as to the nature and location of the work and shall be fully informed as to the conditions and matters, which can in any way affect the work or the cost thereof. Prospective Offerors should familiarize themselves with Authority safety rules that pedestrians must wear approved safety vests.

**Please review the “Bus Base Visit Protocol”, below.**

**C. BUS BASE VISIT PROTOCOL**

The Authority has a core value of Safety for all employees, visitors, and the public for all transit related operations, therefore Bus Base Rules are established to prevent incidents and injury.

The Authority's Maintenance bases require proper personal protective equipment (PPE) while at the bus base maintenance areas.

Basic PPE includes:

1. ANSI Class 2 Reflective Vest
2. Proper clothing foot ware (i.e., no open toe shoes, sandals, high heel shoes, etc.)
3. Proper eye protection as required

All Contractors (proposed bidders, visitors, etc.) upon arrival shall report into the base Maintenance Shift Supervisor, with the appropriate OCTA employee escort. Each person shall:

1. Sign in
2. Obtain a briefing of potential hazards and emergency procedures
3. Cell Phones are only allowed inside a building

All job walk visitors shall stay within the group and be attentive to instructions for a safe visit.

Upon completion of the visit each person shall sign out with the Maintenance Shift Supervisor prior to leaving the property.

**D. EXAMINATION OF PROPOSAL DOCUMENTS**

By submitting a proposal, Offeror represents that it has thoroughly examined and become familiar with the work required under this RFP and that it is capable of performing quality work to achieve the Authority's objectives.

**E. ADDENDA**

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

**F. AUTHORITY CONTACT**

All communication and/or contacts with Authority staff regarding this RFP are to be directed to the following Contract Administrator:

Megan Bornman, Senior Contract Administrator  
Contracts Administration and Materials Management Department  
600 South Main Street  
P.O. Box 14184  
Orange, CA 92863-1584  
Phone: 714.560. 5064, Fax: 888.404.6282  
Email: mbornman@octa.net

Commencing on the date of the issuance of this RFP and continuing until award of the contract or cancellation of this RFP, no offeror, subcontractor, lobbyist or agent hired by the offeror shall have any contact or communications regarding this RFP with any Authority's staff; member of the evaluation committee for this RFP; or any contractor or consultant involved with the procurement, other than the Contract Administrator named above or unless expressly permitted by this RFP. Contact includes face-to-face, telephone, electronic mail (e-mail) or formal written communication. Any offeror, subcontractor, lobbyist or agent hired by the offeror that engages in such prohibited communications may result in disqualification of the offeror at the sole discretion of the Authority.

**G. CLARIFICATIONS****1. Examination of Documents**

Should an Offeror require clarifications of this RFP, the Offeror shall notify the Authority in writing in accordance with Section G.3. below. Should it be found that the point in question is not clearly and fully set forth, the Authority will issue a written addendum clarifying the matter which will be sent to all short-listed firms.

**2. 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 the bidder wishes to propose the use of another item as being equal, approval shall be requested as set forth in below.

**3. Submitting Requests**

- a. All questions, including questions that could not be specifically answered at the pre-proposal conference must be put in writing and received via e-mail at mbornman@octa.net no later than 5:00 p.m., on December 10, 2025.
- b. Requests for clarifications, questions and comments must be clearly labeled, "Written Questions RFP 5-4320" in the subject line of the e-mail. The Authority is not responsible for failure to respond to a request that has not been labeled as such.

**4. Authority Responses**

Responses from the Authority will be provided to the short-listed firms, no later than December 17, 2025. Responses will be sent via email.

Inquiries received after 5:00 p.m. on December 10, 2025 will not be responded to.

## H. SUBMISSION OF PROPOSALS

### 1. Date and Time

Proposals must be received in the Authority's office at or before 2:00 p.m. on January 7, 2026.

Proposals received after the above-specified date and time will be returned to Offerors unopened.

### 2. Address

Proposals 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, (Lobby Receptionist)  
Orange, California 92868  
Attention: Megan Bornman, Senior Contract Administrator**

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

**Orange County Transportation Authority  
Contracts Administration and Materials Management (Camm)  
P.O. Box 14184  
Orange, California 92863-1584  
Attention: Megan Bornman, Senior Contract Administrator**

Note: The Authority utilizes a third-party delivery service therefore, Offerors should anticipate a 48-hour delay in delivery of proposals mailed to the P.O. Box listed above. Proposals are considered received once time-stamped at the Authority's physical address.

### 3. Identification of Technical Proposals

Offeror shall submit one (1) original hard copy of its technical proposal in a sealed package, by the date and time as required above in H.1., and addressed as shown above in H.2. The outer envelope must show the Offeror's name and address and clearly marked as follows:

**RFP 5-4320, "Design-Build of Hydrogen Fueling Station and Facility Modifications at Garden Grove Bus Base" – Technical Proposal**

In addition to the above, Offerors shall also include one (1) electronic copy

of the technical proposal in “PDF” format, on a flash drive.

#### **4. Identification of Price Proposals**

Offeror shall submit one (1) original hard copy of its price proposal in a **separate sealed package**, by the date and time as required above in H.1., addressed as shown above in H.2. The outer envelope must show the Offeror’s name and address and clearly marked as follows:

**RFP 5-4320, “Design-Build of Hydrogen Fueling Station and Facility Modifications at Garden Grove Bus Base” – Price Proposal**

In addition to the above, Offerors shall also include one (1) electronic copy of the price proposal in “PDF” format, on a flash drive.

#### **5. Acceptance of Proposals**

- a. The Authority reserves the right to accept or reject any and all proposals, or any item or part thereof, or to waive any informalities or irregularities in proposals.
- b. The Authority reserves the right to withdraw or cancel this RFP at any time without prior notice and the Authority makes no representations that any contract will be awarded to any Offeror responding to this RFP.
- c. The Authority reserves the right to issue a new RFP for the project.
- d. The Authority reserves the right to postpone proposal openings for its own convenience.
- e. Each proposal will be received with the understanding that acceptance by the Authority of the proposal to provide the services described herein shall constitute a contract between the Offeror and Authority which shall bind the Offeror on its part to furnish and deliver at the prices given and in accordance with conditions of said accepted proposal and specifications.
- f. The Authority reserves the right to investigate the qualifications of any Offeror, and/or require additional evidence of qualifications to perform the work.
- g. Submitted proposals are not to be copyrighted.



**I. PRE-CONTRACTUAL EXPENSES**

The Authority shall not, in any event, be liable for any pre-contractual expenses incurred by Offeror in the preparation of its proposal. Offeror shall not include any such expenses as part of its proposal.

Pre-contractual expenses are defined as expenses incurred by Offeror in:

1. Preparing its proposal in response to this RFP;
2. Submitting that proposal to the Authority;
3. Negotiating with the Authority any matter related to this proposal; or
4. Any other expenses incurred by Offeror prior to date of award, if any, of the Agreement.

**J. JOINT OFFERS**

Where two or more firms desire to submit a single proposal in response to this RFP, they should form a Design-Build Entity. Members of the Design-Build Entity shall include the General Contractor and, if utilized in the design of the project, all electrical, mechanical, and plumbing contractors. The Authority intends to contract with the Design-Build Entity awarded a contract for this Project.

**K. OBLIGATION TO KEEP PROJECT TEAM INTACT**

Offerors are advised that all firms and key personnel identified in the SOQ shall remain on the Design-Build Team for the duration of the procurement process and execution of the Project. If extraordinary circumstances require a change, it must be submitted in writing to Authority. Authority, at its sole discretion, will determine whether to authorize a change, recognizing that certain circumstances (such as death or termination of employment) may occur that are beyond the Design-Build Team's control. Unauthorized changes to the Design-Build Team at any time during the procurement process may result in elimination of the Offeror from further consideration.

**L. TAXES**

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

**M. PREVAILING WAGES**

The Labor Code of the State of California commencing in Section 1770 et. seq. requires 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:

[http://www.dir.ca.gov/OPRL/statistics\\_research.html](http://www.dir.ca.gov/OPRL/statistics_research.html)

Bidders shall utilize the relevant prevailing wage determinations in effect on the first advertisement date of the Notice Inviting Sealed Bids.

This Agreement is subject to compliance monitoring and enforcement by the Department of Industrial Relations. The Department of Industrial Relations shall monitor and enforce compliance with applicable prevailing wage requirements for this Agreement. The reporting requirements may be found at <https://www.dir.ca.gov/Public-Works/Contractors.html>. Bidder is responsible for complying with all requirements of the Department of Industrial Relations, including filing electronic payroll reports.

A contractor or subcontractor will not be qualified to bid on, be listed in a bid proposal, or engage in the performance of any contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5. A contractor or subcontractor will be exempt from this requirement pursuant to Labor Code Section 1771.1(a) if it submits a bid authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

A contractor or subcontractor will not be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5.

A bid submitted by a contractor or subcontractor will not be accepted or entered into without proof of the contractor or subcontractor's current registration to perform public work pursuant to Labor Code Section 1725.5.

#### **N. 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 protests filed by an Offeror in connection with this RFP must be submitted in accordance with the Authority's written procedures.

#### **O. WITHDRAWAL OF PROPOSAL**

Offerors may withdraw its proposal at any time prior to the time set for opening of proposals by means of written request signed by the Offeror or its proper authorized representative. Such written request shall be delivered to the Contracts Administrator at the address noted in the cover notice of this RFP.

**P. CONTRACT TYPE**

It is anticipated that the Agreement resulting from this solicitation, if awarded, will be a firm-fixed price, lump-sum design-build contract.

**Q. EXECUTION OF CONTRACT**

The successful offeror shall submit to the Authority the required contract bonds, "Guaranty" and acceptable insurance certificates within ten (10) calendar days after notification of contract award from the Authority. Failure to sign the contract and submit applicable bonds, "Guaranty", and acceptable insurance certificates within the specified time shall be cause to cancel the award and the forfeiture of the Proposal Bond. Transfers of contract, or of interest in contracts, are prohibited.

**R. CONFLICT OF INTEREST**

All Offerors responding to this RFP must avoid organizational conflicts of interest which would restrict full and open competition in this procurement. An organizational conflict of interest means that due to other activities, relationships or contracts, an Offeror is unable, or potentially unable to render impartial assistance or advice to the Authority; an Offeror's objectivity in performing the work identified in the Scope of Work is or might be otherwise impaired; or an Offeror has an unfair competitive advantage. Conflict of Interest issues must be fully disclosed in the Offeror's proposal.

All Offerors must disclose in their proposal and immediately throughout the course of the evaluation process if they have hired or retained an advocate to lobby Authority staff or the Board of Directors on their behalf.

Offerors hired to perform services for the Authority are prohibited from concurrently acting as an advocate for another firm who is competing for a contract with the Authority, either as a prime or subcontractor.

**S. PROHIBITION**

The following prohibition applies to this procurement:

The prime consultant/contractor and all subconsultants (at any tier), regardless of the level of service provided by said subcontractor(s), awarded this contract to design and build a turnkey hydrogen fueling station at the Garden Grove Bus Base are precluded from participating in the future **construction management services contract for this Project**.

**T. CODE OF CONDUCT**

All Offerors agree 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. All Offerors agree to include these requirements in all of its subcontracts.

#### **U. OWNERSHIP OF RECORDS/PUBLIC RECORDS ACT**

All proposals and documents submitted in response to this RFP shall become the property of the Authority and a matter of public record pursuant to the California Public Records Act, Government Code sections 7920.000 et seq. (the "Act"). Offerors should familiarize themselves with the provisions of the Act requiring disclosure of public information. Offerors are discouraged from marking their proposal documents as "confidential" or "proprietary."

If a Proposal does include "confidential" or "proprietary" markings and the Authority receives a request pursuant to the Act, the Authority will endeavor (but cannot guarantee) to notify the Offeror of such a request. In order to protect any information submitted within a Proposal, the Offeror must pursue, at its sole cost and expense, any and all appropriate legal action necessary to maintain the confidentiality of such information. The Authority generally does not consider pricing information, subcontractor lists, or key personnel, including resumes, as being exempt from disclosure under the Act. In no event shall the Authority or any of its officers, directors, employees, agents, representatives, or consultants be liable to an Offeror for the disclosure of any materials or information submitted in response to the RFP or by failing to notify a Offeror of a request seeking its Proposal. The Authority reserves the right to make an independent decision to disclose records and material.

Notwithstanding the above, all information regarding proposal responses may be held as confidential until such time as the evaluation has been completed; an award has been made by the Board of Directors or Authority Staff, as appropriate; and the contract has been fully negotiated.

#### **V. STATEMENT OF ECONOMIC INTERESTS**

The awarded Offeror (including designated employees and subconsultants) may be required to file Statements of Economic Interests (Form 700) in accordance with the Political Reform Act (Government Code section 81000 et seq.). This applies to individuals who make, participate in making, or act in a staff capacity for making governmental decisions. The AUTHORITY determines which individuals are required to file a Form 700, and if such determination is made, the individuals must file Form 700s with the AUTHORITY's Clerk of the Board no later than 30 days after the execution of the Agreement, annually thereafter for the duration of the Agreement, and within 30 days of termination of the Agreement.

#### **W. EXCEPTIONS/DEVIATIONS**

State any technical and/or contractual exceptions and/or deviations from the requirements of this RFP, including the Authority's technical requirements and

contractual terms and conditions set forth in the Scope of Work (Exhibit A) and Proposed Agreement (Exhibit C), using the form entitled "Proposal Exceptions and/or Deviations" included in this RFP. This Proposal Exceptions and/or Deviations form must be included in the original proposal submitted by the Offeror. If no technical or contractual exceptions and/or deviations are submitted as part of the original proposal, Offerors are deemed to have accepted the Authority's technical requirements and contractual terms and conditions set forth in the Scope of Work (Exhibit A) and Proposed Agreement (Exhibit C). Offerors will not be allowed to submit the Proposal Exceptions and/or Deviations form or any technical and/or contractual exceptions after the proposal submittal date identified in the RFP. Exceptions and/or deviations submitted after the proposal submittal date will not be reviewed by Authority.

All exceptions and/or deviations will be reviewed by the Authority and will be assigned a "pass" or "fail" status. Exceptions and deviations that "pass" do not mean that the Authority has accepted the change but that it is a potential negotiable issue. Exceptions and deviations that receive a "fail" status means that the requested change is not something that the Authority would consider a potential negotiable issue. Offerors that receive a "fail" status on their exceptions and/or deviations will be notified by the Authority and will be allowed to retract the exception and/or deviation and continue in the evaluation process. Any exceptions and/or deviation that receive a "fail" status and the Offeror cannot or does not retract the requested change may result in the firm being eliminated from further evaluation.

#### **X. PROPOSAL SECURITY FORM**

Proposals shall be accompanied by a certified or cashier's check, or an acceptable proposal bond for an amount not less than ten percent (10%) of the total price proposal, 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 Offeror 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.

#### **Y. BOND REQUIREMENTS**

The Design-Build Entity awarded the contract will be required to deliver to Authority performance and payment bonds on forms acceptable to Authority in the full amount of the estimated contract costs to guarantee the faithful performance and payments. For the purposes of providing performance and payment bonds, the estimated contract cost for this Project is 100% of the Project value. Authority reserves the right to reject any bond if, in the opinion of Authority, the Surety's acknowledgment is not in the form as prescribed by law. Authority reserves the right to negotiate the bonding level requirements.

## Z. SUBCONTRACTORS AND ASSIGNMENTS

The successful Offeror 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 Offeror shall in the proposal set forth:

1. The name, business address, and California contractor license number of each subcontractor who will perform work or labor or render service to the Offeror in or about the work in an amount in excess of one-half of one percent (1/2 of 1 %) of the Offeror's total proposal amount; and
2. The portion of the work that will be done by each subcontractor. The Offeror shall list only one subcontractor for each portion of work as defined by the Offeror in its proposal.
3. The dollar amount of the work, which will be done by each such subcontractor. Offeror shall complete Form D "List of Subcontractors" with the above requested information.

If a subcontractor's California contractor license number is submitted incorrectly in the proposal, it will not be grounds for filing a protest or grounds for considering the proposal nonresponsive if the corrected subcontractor's California contractor license number is submitted to the Authority within 24 hours after the proposal opening.

Offeror acknowledges and agrees to comply with all applicable statutes and regulations regarding the listing and substitution of subcontractors, including, but not limited to, Public Contract Code Sections 4100, et seq., and Section 22164.

Each Offeror shall set forth in its proposal the name and location of the place of business address of each subcontractor who will perform work or labor or render service to the prime contractor in connection with the performance of the contract.

Offeror shall not assign any interest it may have in any Agreement with the Authority, nor shall Offeror assign any portion of the work under any such Agreement with a value in excess of one-half of one percent (1/2 of 1%) of Agreement price to be sub-contracted to any one other than these subcontractors listed in Form D in the "List of Subcontractors," except by prior written consent of Authority. Authority's consent to any assignment shall not be deemed to relieve Offeror of its obligations to fully comply with its obligations under its Agreement with the Authority. Offeror with its own forces shall perform minimum of ten percent (10%) calculated as a percentage of the total cost of the project under this Agreement. Offeror 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.

**AA. OFFEROR'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 Offeror shall provide as part of the proposal a valid State of California license number, class or type and date of expiration.

Furthermore, the Offeror shall ensure that all subcontractors fully comply with the appropriate licensing requirements. The Offeror shall also certify that all information provided and representations made in the proposal are true and correct, and made under penalty of perjury. Offerors shall provide this information on Form D, "List of Subcontractors" presented in the RFP. Failure to provide the information on the certification form or elsewhere as part of the Offeror shall render the Offeror nonresponsive to this solicitation and will result in the rejection of the proposal.

**BB. PERMITS AND INSPECTION COSTS**

Successful Offeror 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.

**CC. LIQUIDATED DAMAGES**

In the event Offeror, after entering into an Agreement with the Authority, fails to complete the work within the time specified in the Agreement, the Offeror will be required to pay the Authority the amount of **\$600 per calendar day** of delay as agreed to liquidated damages.

**SECTION II: ADDITIONAL CONTRACTUAL EXHIBITS**



## **SECTION II. ADDITIONAL CONTRACTUAL EXHIBITS**

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

### **A. SAFETY**

The complete safety requirements for this RFP are included in Exhibit F, Safety Specifications. The Offeror will be required to demonstrate compliance with all requirements of the Safety Specifications after Notice to Proceed but prior to mobilization. These requirements include, but are not limited to, an onsite Health Safety and Environmental (HSE) representative to be present at all times during construction. The representative must have a current Board of Certified Safety Professionals (BCSP) certification and a minimum of five years of experience enforcing HSE compliance. BCSP certification requirements may be found at: <https://www.bcsp.org/Safety-Certifications>.

### **B. PERFORMANCE BOND**

The successful Offeror shall furnish at its own expense a Performance Bond (Exhibit G) 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 Offeror that the terms of the contract, including all warranty provisions, shall be complied with in every particular. The bond shall be issued by a corporation surety (not an individual surety) required in the state of California and registered to do business in the county of Orange. The bond shall not be issued from a corporation surety that requires a funds control, funds disbursement, or funds administration company for the issuance of the performance bond.

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.

### **C. PAYMENT BOND**

The successful bidder shall furnish a Payment Bond (Exhibit H) satisfactory to the Authority 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 directly 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 not be issued from a corporation surety that requires a funds control, funds disbursement, or funds administration company for the issuance of the performance bond.

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 sections 9550 through 9554, 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.

**D. GUARANTY**

The successful Offeror shall also submit to the Authority the executed and notarized Guaranty form (Exhibit I) in this RFP.

All forms must be completed and submitted to the Contract Administrator responsible for this procurement within ten (10) calendar days of award notice by the Authority. Failure to submit the completed and signed forms will result in cancellation of the award.

**E. CONTRACT CHANGE ORDER**

The Authority's Contract Change Order form (Exhibit J) will be attached to and incorporated into the signed Agreement resulting from this RFP.

**SECTION III: PROPOSAL CONTENT**

**SECTION III. PROPOSAL CONTENT****A. PROPOSAL FORMAT AND CONTENT****1. Format**

Proposals should be typed with a standard 12-point font, double-spaced, and submitted in 8 1/2" x 11" format. Charts and schedules may be included in 11" x 17" format. Proposals should not include any unnecessarily elaborate or promotional materials. Proposals should not exceed seventy-five (75) pages in length, excluding any appendices, resumes, or forms.

**2. Letter of Transmittal**

The Letter of Transmittal shall be addressed to Megan Bornman, Senior Contract Administrator and must, at a minimum, contain the following:

- a. Identification of Offeror that will have contractual responsibility with the Authority. Identification shall include legal name of Offeror, corporate address, telephone and fax number, and email address. Include name, title, address, email address, and telephone number of the contact person identified during period of proposal evaluation.
- b. Identification of all proposed Design-Build Team members including:
  - (1) Legal name of company and address;
  - (2) Contact person's name, address, phone number, and email address;
  - (3) State of California contractors license number, if applicable;
  - (4) Department of Industrial Relations (DIR) registration number, if applicable; and
  - (5) Relationship to Offeror, if applicable.
- c. Acknowledgement of receipt of all RFP addenda, if any.
- d. A statement to the effect that the proposal shall remain valid for a period of not less than 120 days from the date of submittal.
- e. Signature of a person authorized to bind Offeror to the terms of the proposal.
- f. Signed statement attesting that all information submitted with the proposal is true and correct.

### 3. Technical Proposal

#### a. Qualifications, Related Experience and References of Offeror

This section of the proposal should establish the ability of Offeror to satisfactorily perform the required work by reasons of: experience in performing work of a similar nature; demonstrated competence in the services to be provided; strength and stability of the Offeror; staffing capability; work load; record of meeting schedules on similar projects; and supportive client references.

Offeror to:

- (1) Provide the business form of Offeror and any entities that will have joint and several liability under the Contract or will provide a guaranty (including any joint venture agreement, partnership agreement, operating agreement, articles of incorporation, bylaws or equivalent documents). If there were any material changes to the makeup of the Design-Build Entity or other information submitted as a part of the SOQ, Offeror shall identify that in this section.
- (2) The Offeror to provide a letter signed by each of its team (joint venture) members indicating that each member accepts joint and several liability for the obligations of the Offeror.
- (3) Provide a brief profile of the Design-Build Team participants, including the types of services offered; the year founded; form of the organization (corporation, partnership, sole proprietorship); number, size and location of offices; and number of employees.
- (4) Describe the Design-Build Team's experience in performing work of a similar nature to that solicited in this RFP, and highlight the participation in such work by the key personnel proposed for assignment to this project.
- (5) Identify subcontractors by company name, address, contact person, telephone number, email, and project function. Describe Offeror's experience working with each subcontractor.
- (6) Identify all firms hired or retained to provide lobbying or advocating services on behalf of the Offeror by company name, address, contact person, telephone number and email address. This information is required to be provided by the Offeror immediately during the evaluation process, if a lobbyist or advocate is hired or retained.

- (7) Provide as a minimum three (3) references for each Design-Build Team participant for the projects cited as related experience. Offeror to furnish the name, title, address, telephone number, and email address of the person(s) at the client organization who is most knowledgeable about the work performed. Offeror may also supply references from other work not cited in this section as related experience. Authority's preference is references from outside the Design-Build Entity.

**b. Proposed Staffing and Project Organization**

This section of the proposal should establish the method, which will be used by the Offeror to manage the project as well as identify key personnel assigned.

Offeror to:

- (1) Identify key personnel proposed to perform the work in the specified tasks and include major areas of subcontract work. Include the person's name, current location, proposed position for this project, current assignment, level of commitment to that assignment, availability for this assignment and how long each person has been with the firm.
- (2) Furnish brief resumes (not more than two [2] pages each) for proposed key personnel that includes education, experience, and applicable professional credentials.
- (3) Describe the Offeror's general management, including roles, responsibilities, and interrelationships among design, construction, and quality personnel, as well as identified Subcontractors.
- (4) Organizational chart(s) showing:
  - (a) The "chain of command" identifying those responsible for performing the major functions and their reporting relationships.
  - (b) The reporting relationships and responsibilities of the Design-Build Team and any other firms.
  - (c) The reporting relationships and responsibilities of all Key Personnel.
- (5) Include a statement that key personnel will be available to the extent proposed for the duration of the project acknowledging

that no person designated as "key" to the project shall be removed or replaced without the prior written concurrence of the Authority.

**c. Technical and Project Delivery Approach**

Offeror should provide a narrative, which addresses the Scope of Work, and shows Offeror's understanding of Authority's needs and requirements.

Offeror to:

- (1) Describe the approach to completing the tasks specified in the Scope of Work. The technical and project delivery approach shall be of such detail to demonstrate the Offeror's ability to accomplish the project objectives and overall schedule. Offeror shall include narrative descriptions of the following:
  - (a) Design Management: Provide a comprehensive strategy for design which includes design review, utility conflict resolution, and the securing of third party approvals.
  - (b) Mobilization Strategy: Methodology being planned to mobilize for the Project, including timing, location(s), staffing requirements, and OCTA obligations.
  - (c) Construction Staging: A description of the Proposer's approach to the construction staging and sequencing of the Project.
  - (d) Risk Mitigation: Methodology and strategy being planned to mitigate various risk elements as identified by the Proposer on the Project.
  - (e) Safety Plan: The safety plan shall include a description of the roles and responsibilities of the safety personnel during the design and construction phases of the Project including and provide an implementation strategy to meet safety commitments and requirements during the design and construction of the Project.
  - (f) Quality Management Plan: Identify methods that Offeror will use to ensure quality control as well as budget and schedule control for the project. The Quality Management Plan shall provide a description of Offeror's plan and approach to quality management

during all stages of the Project. The Quality Management Plan shall outline the systems that will be employed to ensure that the work is executed.

- (2) Offeror to provide a preliminary baseline schedule.
- (3) Offeror to provide the proposed design of the facility.
- (4) Identify any special issues or problems that are likely to be encountered in this project and how the Offeror would propose to address them.
- (5) Offeror to include a narrative describing unique aspects and innovations included in the Offeror's design solutions that will benefit the project.

#### **4. Price Proposal**

In a separate sealed envelope, the Offeror shall submit proposed pricing to provide the required services described in Exhibit A, Scope of Work.

The price proposal shall include:

- (a) Price Summary Sheet: The Offeror shall complete the "Price Summary Sheet" form included with this RFP (Exhibit E). It is anticipated that the Authority will issue a firm-fixed-price contract specifying firm-fixed-prices for individual tasks.
- (b) Proposal Bond: As described in Section I, Instructions to Offerors, paragraph X entitled "Proposal Security Form".
- (c) List of Subcontractors: As described Section I, Instructions to Offerors, paragraph Z entitled "Subcontractors and Assignments".

#### **5. Appendices**

Information considered by Offeror to be pertinent to this project and which has not been specifically solicited in any of the aforementioned sections may be placed in a separate appendix section. Offerors are cautioned, however, that this does not constitute an invitation to submit large amounts of extraneous materials. Appendices should be relevant and brief.



## B. FORMS

### 1. Form A - Required Forms Checklist

The Authority has prepared a checklist as a reminder of the documents required to be submitted with the Proposal.

### 2. Form B - Proposal Exceptions and/or Deviations Form

Offerors shall complete the form entitled "Proposal Exceptions and/or Deviations" provided in this RFP and submit it as part of the original proposal. For each exception and/or deviation, a new form should be used, identifying the exception and/or deviation and the rationale for requesting the change. Exceptions and/or deviations submitted after the proposal submittal date will not be reviewed nor considered by the Authority.

### 3. Form C - Proposal Bond

The Offeror shall include the Proposal Bond with the price proposal in separate sealed envelope.

### 4. Form D - List of Subcontractors Form

Bidder shall complete Form D, which lists all subcontractors performing work in excess of one-half of one percent ( $\frac{1}{2}$  of 1%) of the bid amount per the instructions set forth in Section I "Instructions to Bidders".

### 5. Form E - Campaign Contribution Disclosure Form

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 Board of Directors, Offeror is required to complete and sign the Campaign Contribution Disclosure Form provided in this RFP and submit as part of the proposal.

This form **must** be completed regardless of whether a campaign contribution has been made or not and regardless of the amount of the contribution and submitted as a part of its proposal.

The prime contractor, subconsultants, lobbyists and agents are required to report all campaign contributions made from the proposal submittal date up to and until the Board of Directors makes a selection.

Offeror is required to report any campaign contributions made by the prime contractor, subconsultants, lobbyists and agents after the proposal submittal date, and up to the anticipated Board of Directors selection. The

offeror shall use the campaign contribution form for any additional reporting. The forms must be submitted at least 15 calendar days prior to the Transit Committee date on June 12, 2025 and sent via e-mail to the Contract Administrator.

**6. Form F - Status of Past and Present Contracts Form**

Offeror shall complete and sign the form entitled "Status of Past and Present Contracts" provided in this RFP and submit as part of its proposal. Offeror shall identify the status of past and present contracts where the firm has either provided services as a prime vendor or a subcontractor during the past five (5) years in which the contract has been the subject of or may be involved in litigation with the contracting authority. This includes, but is not limited to, claims, settlement agreements, arbitrations, administrative proceedings, and investigations arising out of the contract. Offeror shall have an ongoing obligation to update the Authority with any changes to the identified contracts and any new litigation, claims, settlement agreements, arbitrations, administrative proceedings, or investigations that arise subsequent to the submission of Offeror's proposal.

A separate form must be completed for each identified contract. Each form must be signed by the Offeror confirming that the information provided is true and accurate. Offeror is required to submit one copy of the completed form(s) as part of its proposals and it should be included in only the original proposal.

**7. Form G – Offeror'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, Offeror shall execute the Offeror's Certificate of Compliance Regarding Workers' Compensation Insurance.

**8. Form H – Offeror's Certificate of Compliance – Business and Professions Code Section 7028**

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

**9. Form I - Certification of Non-Collusion**

This form requires the Offeror to certify that the bid is not collusive or a sham. This form is to be signed, dated.

**10. Form J – Iran Contracting Certification**

This form requires the Offeror to certify that the Offeror is not engaged in specified investment activities in the energy sector of Iran. (Required if the price proposal is equal to or greater than \$1,000,000).

DRAFT

**SECTION IV: EVALUATION AND AWARD**

## SECTION IV. EVALUATION AND AWARD

### A. RESPONSIVENESS EVALUATION

Upon receipt, the technical proposals will be reviewed by Authority to determine conformance to the RFP instructions regarding organization, format and responsiveness to the requirements set forth in the RFP.

The Authority reserves the right to waive minor informalities, irregularities, and apparent clerical mistakes that are unrelated to the substantive content of the Proposals at the Authority's sole discretion

### B. EVALUATION OF TECHNICAL AND PRICE PROPOSALS

Evaluation of the technical proposals will be completed before the price proposals are opened. After the technical proposals and price proposals are scored, the Total Proposal Score (TPS) will be determined for each proposal based on the formula set forth in Section IV, paragraph C "Best-Value Determination", below.

### C. BEST-VALUE DETERMINATION

The best-value determination will be based on a 100 point scale. The technical score will represent up to 70 points of the total score and the price score will represent up to 30 points of the total score. The determination of apparent best value shall be based on the highest TPS, computed based upon the following formula:

$\text{Total Proposal Score (max 100 points)} = \text{Technical Score (max 70 points)} + \text{Price score (max 30 points)}$
--

The <b>technical score</b> will be based on the following formula:	
$\text{Technical score} = (\text{Technical} / \text{Highest Technical}) * 70$	
Technical = Offeror's technical proposal score	Highest Technical = Highest technical proposal score submitted by any offeror

The <b>price score</b> will be based on the following formula:	
$\text{Price score} = (\text{Lowest Price} / \text{Price}) * 30$	
Lowest Price = Lowest proposal price submitted by any Offeror	Price = Offeror's proposal price

**D. EVALUATION CRITERIA – TECHNICAL PROPOSAL**

The Authority will evaluate the technical proposals received based on the following criteria:

**1. Qualifications of the Offeror 35%**

Technical experience in performing work of a closely similar nature; strength and stability of the Design-Build Team; strength, stability, experience and technical competence of subcontractors; assessment by client references.

**2. Staffing and Project Organization 30%**

Qualifications of project staff, particularly key personnel and especially the Project Manager; key personnel's level of involvement in performing related work cited in "Qualifications of the Firm" section; logic of project organization; effectiveness of management organization, structure and responsibilities; adequacy of labor commitment; concurrence in the restrictions on changes in key personnel.

**3. Technical and Project Delivery Approach 35%**

Depth of Offeror's understanding of Authority's requirements and overall quality of technical and project delivery approach; effectiveness of the general and design management approach and proposed facility design plan, mobilization strategy, construction staging, risk mitigation, the safety plan, and quality management plan; reasonableness of proposed baseline schedule; utility of suggested technical or procedural innovations.

**E. EVALUATION CRITERIA - PRICE PROPOSAL**

The Authority will open the price proposals once the evaluations of the Technical Proposals are complete.

The Authority will review and determine the price score. The Offeror's total cost and price score shall be compared to the lowest responsive proposal price submitted by any Offeror. The lowest responsive price will receive the total weighted value for this criterion (30 points) and the other proposals will be scored based on the formula in Paragraph B of this section.

**F. EVALUATION PROCEDURE**

An evaluation committee will be appointed to review all proposals received for this RFP. The committee is comprised of Authority staff and may include outside personnel. The committee members will evaluate the technical proposals using criteria identified in Section IV, paragraph D "Evaluation Criteria – Technical Proposal".

During the evaluation period, the Authority may interview some or all of the Offerors. The Authority has established April 8, 2025, as the date to conduct interviews. All prospective Offerors are asked to keep this date available. No other interview dates will be provided, therefore, if an Offeror is unable to attend the interview on this date, its proposal may be eliminated from further discussion. The interview may consist of a short presentation by the Offeror after which the evaluation committee will ask questions related to the Offeror's proposal and qualifications.

Offerors may be asked to submit a Best and Final Offer (BAFO). In the BAFO request, the Offerors may be asked to provide additional information, confirm or clarify issues and submit a final price proposal. A deadline for submission will be stipulated.

At the conclusion of the evaluation process, the evaluation committee will recommend to the Transit Committee, the Offeror with the highest TPS. The Transit Committee will review the evaluation committee's recommendation and forward its recommendation to the Board of Directors for final action.

**G. AWARD**

The Authority's Board of Directors will consider the selection of the firm(s) recommended by the Transit Committee.

The Authority may also negotiate contract terms with the selected Offeror prior to award, and expressly reserves the right to negotiate with several Offerors simultaneously and, thereafter, to award a contract to the Offeror offering the most favorable terms to the Authority.

Offeror acknowledges that the Authority's Board of Directors reserves the right to award this contract in its sole and absolute discretion to any Offeror to this RFP regardless of the evaluation committee's recommendation or recommendation of a Transit Committee.

The Authority reserves the right to award its total requirements to one Offeror or to apportion those requirements among several Offerors as the Authority may deem to be in its best interest. In addition, negotiations may or may not be conducted with Offerors; therefore, the proposal submitted should contain Offeror's most favorable terms and conditions, since the selection and award may be made without discussion with any Offeror.

The selected Offeror will be required to submit to the Authority's Accounting department a current IRS W-9 form prior to commencing work.

**H. NOTIFICATION OF AWARD AND DEBRIEFING**

Offerors who submit a proposal in response to this RFP shall be notified via e-mail of the contract award. Such notification shall be made within three (3) business days of the date the contract is awarded.

Offerors who were not awarded the contract may obtain a debriefing. Unsuccessful Offerors, who wish to be debriefed, must request the debriefing in writing or electronic mail and the Authority must receive it within three (3) business days of notification of the contract award.

DRAFT



**EXHIBIT A: SCOPE OF WORK**

# **SCOPE OF WORK**

**DESIGN-BUILD SERVICES  
FOR**

**HYDROGEN FUELING STATION AND  
FACILITY MODIFICATIONS**

**AT GARDEN GROVE BUS BASE**

**11790 CARDINAL CIRCLE, GARDEN GROVE CA 92843**

## **SCOPE OF WORK TASKS**

### **INTRODUCTION AND PROJECT DESCRIPTION**

The Orange County Transportation Authority (OCTA or AUTHORITY) owns, operates, and maintains the Garden Grove Bus Base located at 11790 Cardinal Circle, Garden Grove, CA 92843.

The AUTHORITY is seeking a qualified DESIGN-BUILD ENTITY (DESIGN-BUILD TEAM) to design, construct, and deliver a turnkey code-compliant Hydrogen Fueling Station and Facility Modifications (PROJECT) at Garden Grove Bus Base. PROJECT preliminary plans are included herein as Attachment A. DESIGN-BUILD TEAM shall complete the design of the PROJECT, and obtain all required approvals from authorities having jurisdiction prior to proceeding with construction. DESIGN-BUILD TEAM shall deliver the PROJECT fully commissioned and ready for use; having met all performance requirements through demonstrated performance testing. There is no scope split, the AUTHORITY shall not perform any work on the PROJECT.

The AUTHORITY requires hydrogen fueling for up to 100 fuel cell electric buses (FCEBs), with total daily fuel consumption of up to 3,000 kilograms. At the time of completion of station delivery and during the transition and training period, the AUTHORITY requires hydrogen fueling for up to 50 FCEBs, with total daily fuel consumption of up to 1,500 kilograms. The AUTHORITY requires that the hydrogen fueling station design be scalable to accommodate up to 150 FCEBs in the future with a total daily fuel consumption of up to 4,500 kilograms.

PROJECT requirements include new hydrogen equipment and appurtenances generally consisting of a liquid hydrogen storage tank, two (2) hydrogen fuel dispensers, and all other hydrogen equipment and components required for the turnkey code-compliant Hydrogen Fueling Station. The liquid hydrogen storage tank shall be a 25,000-gallon tank with a service platform. The liquid hydrogen storage tank shall be manufactured and delivered completely equipped with a refrigerated controlled storage system (controlled cold liquid hydrogen storage) or approved system that will address anticipated hydrogen fuel loss during transfer, storage, pump priming, and other process. The hydrogen fuel dispensers shall be able to completely fuel a FCEB with the required fill quantity of 30 kilograms in under 10 minutes. Each dispenser shall be capable of simultaneously fueling FCEBs in back-to-back rapid succession during an 8-hour time window; hydrogen fuel dispensers shall be configured to fuel separate FCEBs simultaneously without one operating hydrogen fuel dispenser compromising the fueling performance of the other operating hydrogen fuel dispenser.

PROJECT requirements include a dedicated electrical service power feed and new electrical service equipment to support the hydrogen fueling station and all related items.

Electrical service equipment generally consists of an SCE-compliant 1,600A 480V-3P meter switchboard with 480/208Y-120V transformer and 208Y-120V panelboard, and standby generator with automatic transfer switch. SCE-furnished and installed equipment are limited to a new transformer, new PME switch, and 12kV medium voltage primary power feed line to its electrical equipment.

PROJECT requirements include a FCEB defueling area equipped with a hydrogen defueling hose and vent stack.

PROJECT requirements include a mobile hydrogen fueling trailer area equipped with a dedicated 300A 480V-3P electrical service cabinet to accommodate contingent mobile hydrogen fueling operations.

PROJECT requirements include a maintenance platform to service OCTA bus fleet. The maintenance platform shall provide access to bus rooftop for maintenance and inspection purposes within the maintenance building.

PROJECT requirements include soil compaction grouting for hydrogen fueling station and electrical equipment areas to improve underlying soils. Earthwork generally consisting of excavation, trenching, grading, and related work as required for delivery of the PROJECT. Reinforced concrete consisting of elevated slab for hydrogen fueling station and electrical equipment areas, equipment footings/foundations or pads to support and level up hydrogen fueling station and electrical service equipment; reinforced concrete pavement and flatwork related to trenching and new construction are required for delivery of the PROJECT. Fencing, sliding gates, masonry (CMU) walls, and steel bollards are required to enclose hydrogen fueling station and electrical equipment areas for safety and security purposes. Video surveillance system (VSS) cameras, LED area lighting, signage, painted striping and marking in areas generally related to new construction area also required for safety and security purposes. PROJECT requirements include all demolition work to deliver the PROJECT, and demolished material and equipment shall be legally disposed offsite.

New hydrogen detection systems and emergency shutdown system related to new equipment and other new construction are required and shall be integrated to existing systems. Battery backup systems are required for all electrical controls equipment including hydrogen gas and flame detection, VSS cameras, LED area lighting, and other similar equipment; battery backup systems shall have required capacity to furnish bridging power during transition to standby generator power, to avoid hydrogen fueling station alarm events, at time of grid power outages. New data communications equipment and related work to facilitate and monitor all new systems associated with the hydrogen fueling station and dispenser performance are required and shall be integrated to existing systems.

PROJECT requirements include facility modifications generally consisting of work at existing maintenance facilities including the fuel building, maintenance building, brake check building, canopy detail area, vehicle test station canopy, tire shop area that are affected by the introduction of hydrogen system to the property. PROJECT facility modifications requirements include addition of new hydrogen flame detection systems, hydrogen gas detection systems, early warning systems, and all related items including integration into existing detection and alarm systems. Installation of new emergency shutdown devices and all related items including integration into existing emergency shutdown systems are also required. Installation of indoor and outdoor signage, detection horn/strobe light assemblies, multi-color beacon light arrays at maintenance facilities are also required. PROJECT facility modifications requirements include upgrades to explosion-proof systems and components for existing VSS cameras, LED area lighting, and all related items.

PROJECT requirements include startup and commissioning of the hydrogen fueling station, hydrogen fuel dispensers and other equipment systems. Hydrogen purity testing to ensure fuel meets quality standards is required. Back-to-back performance testing to demonstrate the hydrogen fueling station's ability to refuel FCEB's per PROJECT requirements.

#### PROJECT SCOPE OVERVIEW

DESIGN-BUILD TEAM shall review entire Scope of Work herein, and shall determine work/services they will offer related to the delivery of a turnkey code-compliant Hydrogen PROJECT; DESIGN-BUILD TEAM shall define the extent of work they are offering within their technical proposal, and include pricing for such work within their price proposal. DESIGN-BUILD TEAM are encouraged to offer enhancements and/or technical innovations related to the Scope of Work herein, without having to deviate from requirements and specifications herein; any technical deviations and/or exceptions from requirements herein shall be addressed accordingly, as required within Section I. Instructions to Offerors of the RFP package.

DESIGN-BUILD TEAM shall be responsible for all work related to completing final design, permitting and approvals, equipment/material sourcing, construction/installation, inspections, testing, startup and commissioning, project closeout, and demonstrated performance testing, and other work, as required to deliver the completed PROJECT.

DESIGN-BUILD TEAM shall provide training to ensure that all relevant OCTA staff and first responders are fully trained on all safety systems, and the safe and successful operations of the hydrogen fueling station.

DESIGN-BUILD TEAM shall provide fuel supply services and operations during training and transition period of 18 months after completion and acceptance of the PROJECT.

DESIGN-BUILD TEAM shall commence work immediately upon receiving the Notice To Proceed (NTP). DESIGN-BUILD TEAM shall use diligence in completing the work in accordance with the Project Schedule.

DESIGN-BUILD TEAM shall furnish all services, supervision, labor, materials, supplies, tools, and equipment to provide a complete and finished product, unless noted otherwise. All materials, equipment, and any other related items to be constructed/installed shall be new.

In case of conflict, ambiguities, discrepancies, or errors or omissions among any of the items of work, DESIGN-BUILD TEAM shall submit the matters to the AUTHORITY for clarification. Any work affected by such conflicts, ambiguities, discrepancies, or errors or omissions which is performed by DESIGN-BUILD TEAM prior to clarification by the AUTHORITY shall be at DESIGN-BUILD TEAM's risk. Such conflicts, ambiguities, discrepancies, or errors or omissions among the references shall not give rise to a claim by DESIGN-BUILD TEAM for extra work unless DESIGN-BUILD TEAM can demonstrate that it has incurred additional expenses as a result thereof.

### **Task 1: Project Administration, Project Management, and Project Control**

**DESIGN-BUILD TEAM shall review Task 1 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Project Administration, Project Management, and Project Control that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

#### **1.1. Project Administration, Coordination, Meetings, and Progress Reports**

##### **Project Administration and Coordination**

DESIGN-BUILD TEAM shall provide overall project administration of the contract such as work assignments, meetings, invoices, and project progress reports. DESIGN-BUILD TEAM shall provide directions and overall supervision, including coordination with their subcontractors/subconsultants and vendors throughout the duration of the executed contract between OCTA and DESIGN-BUILD TEAM.

Deliverables:

- Monthly Invoices – PDF file distribution via email.

## Project Meetings

DESIGN-BUILD TEAM shall participate in the following meetings:

- Project Kickoff Meeting: OCTA shall coordinate and conduct kickoff meeting. This meeting shall be held soon after issuance of the NTP, and at a minimum shall review PROJECT objectives and requirements, establish the communication plan and protocols, key delivery dates, and address other items as necessary to ensure successful PROJECT initiation. This meeting is anticipated to be held at OCTA Garden Grove Bus Base or OCTA Headquarters in City of Orange; this meeting is anticipated to have a duration of one (1) hour. This meeting shall require attendance of OCTA representatives, DESIGN-BUILD TEAM's Project Manager and appropriate key personnel.
- Project Status Meetings: DESIGN-BUILD TEAM shall coordinate and conduct Project Status Meetings throughout the duration of the PROJECT; these meetings are anticipated to be held on a weekly basis, and shall be held at least once every two weeks. During these meetings, DESIGN-BUILD TEAM at a minimum shall provide the following: a project status update, three-week look-ahead schedule, project design and/or construction issue(s) along with corresponding proposed corrective action(s), new and outstanding action items, and other related items. Meetings during design phase are anticipated to be held at OCTA Headquarters in City of Orange, while meetings during construction phase are anticipated to be held at OCTA Garden Grove Bus Base; each meeting is anticipated to have a duration of one (1) hour. Meetings at a minimum shall require attendance of OCTA representatives and DESIGN-BUILD TEAM's Project Manager; meetings during construction phase shall also require attendance of DESIGN-BUILD TEAM's Project Superintendent.
- Project Design Presentations: DESIGN-BUILD TEAM shall coordinate and conduct Project Design Presentations/Meetings, which at a minimum shall be conducted in conjunction with review of 30%, 60%, and 90% design. DESIGN-BUILD TEAM shall present and discuss to OCTA design packages, including drawings, specifications, and other project documents. Presentations are anticipated to be held at OCTA Headquarters in City of Orange; each presentation is anticipated to have a duration of two (2) hours. Presentations shall require attendance of OCTA representatives, DESIGN-BUILD TEAM's Project Manager and appropriate design team members.
- Project Pre-Construction Meeting: OCTA shall coordinate and conduct a pre-construction meeting. This meeting shall be held at least one (1) week prior to anticipated construction mobilization. This meeting at a minimum shall review use of the premises, work restrictions and permitted working hours, responsibility for temporary facilities and controls, procedures for disruptions and shutdowns, construction waste management and recycling,

staging and storage areas, health safety & environmental (HSE) compliance, inspections, and address other items deemed necessary prior to construction mobilization. This meeting shall be held at OCTA Garden Grove Bus Base and is anticipated to have a duration of one (1) hour. This meeting shall require attendance of OCTA representatives and DESIGN-BUILD TEAM's Project Manager, Project Superintendent, and Project HSE Representative, as required within Task 1.3 of this Scope of Work.

DESIGN-BUILD TEAM shall prepare and electronically distribute a meeting agenda, a minimum of two (2) working days prior to each meeting. A hard copy of meeting agenda per each attendee and one sign-in sheet shall be distributed at each meeting. DESIGN-BUILD TEAM shall prepare all meeting materials, handouts, and presentation as required.

DESIGN-BUILD TEAM shall prepare and distribute to all attendees meeting minutes within three (3) working days of the meeting.

**Deliverables:**

- Meeting agendas – PDF file distribution via email, and hard copies per requirement.
- Meeting sign-in sheets – One (1) hard copy for each meeting.
- Materials, handouts exhibit roll plots, boards, and presentations for each meeting (as required) – PDF file distribution via email.
- Meeting minutes – PDF file distribution via email.

**Project Progress Reports**

DESIGN-BUILD TEAM shall prepare a Project Progress Report, on a monthly basis, and submit to OCTA no later than the tenth (10<sup>th</sup>) calendar day of the month following the month being reported. Project Progress Reports shall consist of a written narrative and a Monthly Updated Project Schedule, in conjunction with Task 1.2 of this Scope of Work, and shall reflect physical percent complete, such as the number of drawings of deliverables completed or estimated progress toward completion. Progress Payments will be based upon percent complete of the major tasks identified.

The narrative portion of Project Progress Reports shall describe the overall progress of the work, discuss significant issues(s) along with corresponding proposed corrective action(s), and show status of outstanding action items. Project Progress Reports shall include updates on delivery of PROJECT milestones and deliverables, a Monthly Updated Project Schedule, and percent complete detail for each task, particularly those worked during the reporting period.



Deliverables:

- Project Progress Reports – PDF file distribution via email.

## **1.2. Project Schedule**

The Project Schedule shall reflect PROJECT related design, construction, training, performance testing, closeout, and other services, which shall all be completed and accepted within a period of twenty-four (24) months; DESIGN-BUILD TEAM's fuel supply services and operations during training and transition period of eighteen (18) months after completion and acceptance of PROJECT shall also be reflected by the Project Schedule.

The following list of tasks, as specified herein this Scope of Work, shall be utilized in developing the Project Schedule:

- Task 1: Project Administration, Project Management, and Project Control
- Task 2: Authorities Having Jurisdiction, Design Criteria, Codes, Regulations, Standards, Hazard Analysis, Safety Requirements, and Project Site Conditions
- Task 3: Architectural & Engineering Design
- Task 4: Hydrogen Fueling Station Construction – Mobilization, Demolition, and Soil Compaction Grouting
- Task 5: Hydrogen Fueling Station Construction – Dedicated Electrical Power Feed and Electrical Service Equipment
- Task 6: Hydrogen Fueling Station Construction – Hydrogen Storage and Fueling Equipment
- Task 7: Hydrogen Fueling Station Construction – Masonry Walls, Elevated Concrete Slab, Fencing, Sliding Gates, and Safety Bollards
- Task 8: Hydrogen Fueling Station Construction – LED Area Lighting, Video Surveillance System (VSS) Cameras, Signage, Paint Striping and Markings
- Task 9: Hydrogen Fueling Station Construction – Hydrogen Detection Systems, Emergency Shutdown Systems, and Battery Backup Systems
- Task 10: Hydrogen Fueling Station Construction – Maintenance Platform
- Task 11: Facility Modifications – Hydrogen Detection Systems, Emergency Shutdown Systems, Battery Backup Systems, Ventilation Systems, LED Area Lighting, VSS Cameras, and Signage
- Task 12: Inspections, Tests, Startup and Commissioning
- Task 13: Training – Safety, Operations, and First Responder
- Task 14: Back-to-Back Performance Testing and Performance Data
- Task 15: Project Closeout Package
- Task 16: All Other Work
- Task 17: Operations during Training and Transition Period

- Task 18: Fuel Supply Services

The Project Schedule shall be in conformance with terms of executed contract between OCTA and DESIGN-BUILD TEAM.

The Project Schedule shall reflect order sequence, interdependence of significant tasks, various levels of reviews for submittals, and critical path of PROJECT. The Project Schedule shall include:

- Delivery of PROJECT milestones and deliverables.
- Reviews of PROJECT deliverables by OCTA, City of Garden Grove, and other AHJ.
- Work items of agencies and other third parties that may affect or be affected by DESIGN-BUILD TEAM's activities.

DESIGN-BUILD TEAM shall submit to OCTA a Draft Project Schedule within seven (7) calendar days of NTP, which shall be based on the schedule provided by DESIGN-BUILD TEAM in their proposal, as required within Section III. Proposal Content of the RFP package. DESIGN-BUILD TEAM shall allow a minimum of seven (7) calendar days for OCTA review process. DESIGN-BUILD TEAM shall address the comments and submit to OCTA for acceptance the revised Final Project Schedule within seven (7) calendar days from receipt of OCTA comments.

DESIGN-BUILD TEAM shall provide a Monthly Updated Project Schedule as part of Project Progress Reports, as required within Task 1.1 of this Scope of Work, which shall be utilized to compare actual progress against the Final Project Schedule. If at any point DESIGN-BUILD TEAM falls more than a month behind the final Project Schedule, DESIGN-BUILD TEAM shall propose a recovery plan/schedule to OCTA for consideration.

Deliverables:

- Draft Project Schedule – PDF file distribution via email.
- Final Project Schedule – PDF file distribution via email.

### **1.3. Project Key Personnel**

As required within Section III. Proposal Content of the RFP package, DESIGN-BUILD TEAM shall identify key personnel related to the PROJECT. At a minimum, roles of Project Manager, Project Superintendent, and Project Health, Safety, and Environmental (HSE) Representative shall be designated by DESIGN-BUILD TEAM to facilitate work throughout all different phases of the PROJECT.

### Project Manager

DESIGN-BUILD TEAM shall designate a responsible person as Project Manager to manage, oversee, and delegate all authorized work. Project Manager is expected to be the direct responsible charge throughout all phases of the PROJECT. Project Manager is anticipated to visit the site daily during construction, to verify the work is proceeding per approved project documents.

### Project Superintendent

DESIGN-BUILD TEAM shall designate a responsible person as Project Superintendent who is in direct responsible charge of the work at the PROJECT site. Project Superintendent must be present, at all times, at the PROJECT site when construction is in progress.

### Project Health, Safety, and Environmental (HSE) Representative

As required within Exhibit F. Safety Specifications of the RFP package, DESIGN-BUILD TEAM shall designate a qualified Project/On-Site HSE Representative; resume of proposed Project HSE Representative shall be provided to OCTA for review and approval, at least thirty (30) calendar days prior to the Pre-Construction Meeting, as required within Task 1.1 of this Scope of Work. Approved Project HSE Representative must be present at the PROJECT site, at all times, when construction is in progress. DESIGN-BUILD TEAM's designated Project HSE Representative is a key position and shall attend the Pre-Construction Meeting.

#### Deliverables:

- Project HSE Representative's Resume – PDF file distribution via email.

## **1.4. Quality Management Plan (QMP), Quality Assurance/Quality Control (QA/QC)**

DESIGN-BUILD TEAM shall implement and maintain its Quality Management Plan (QMP), as required within Section III. Proposal Content of the RFP package; QMP shall be in effect during the performance of DESIGN-BUILD TEAM's services, throughout the duration of the executed contract between OCTA and DESIGN-BUILD TEAM. QMP is anticipated to provide comprehensive quality control (QC) processes and procedures that outline the checking procedures to be performed on preparation of reports, calculations, drawings, specifications, reviews and management systems, and quality assurance (QA) for internal surveillances and audits, including any subcontractors/subconsultants, to maintain product quality, schedule, and budget adherence.

QMP shall clearly identify the name and title of DESIGN-BUILD TEAM's QA/QC Manager and personnel performing the QA/QC for this project.

DESIGN-BUILD TEAM shall certify each deliverable as being prepared and checked in accordance with the DESIGN-BUILD TEAM's QMP and have been found to meet the quality objectives set forth therein. DESIGN-BUILD TEAM QA/QC certification shall be in writing on a form furnished by OCTA and shall be signed by DESIGN-BUILD TEAM's QA/QC Manager and DESIGN-BUILD TEAM's Project Manager. Deliverables received by OCTA without DESIGN-BUILD TEAM QA/QC certification may be returned without review by OCTA.

DESIGN-BUILD TEAM shall expect that City of Garden Grove, other Authorities Having Jurisdictions (AHJ), and third parties affected by the PROJECT construction may request to review deliverables submitted by DESIGN-BUILD TEAM during the PROJECT; however, review of deliverables by these parties does not relieve DESIGN-BUILD TEAM's responsibility of maintaining QA/QC and meeting all applicable federal/state/local agencies' standards, procedures, and requirements.

Deliverables:

- QA/QC certification for each submittal – PDF file distribution and hard copy per requirement.

## **1.5. All Other Work**

All Other Work related to Task 1: Project Administration, Project Management, and Project Control that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 1.1 through Task 1.4 of this Scope of Work.

- All Other Work, related to Task 1: Project Administration, Project Management, and Project Control, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 1.5 of this Scope of Work or another appropriate existing task of this Scope of Work.

## **Task 2: Authorities Having Jurisdiction, Design Criteria, Codes, Regulations, Standards, Hazard Analysis, Safety Requirements, and Project Site Conditions**

**DESIGN-BUILD TEAM** shall review Task 2 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Authorities Having Jurisdiction, Design Criteria, Codes, Regulations, Hazard Analysis, Safety Requirements, and Project Site Conditions that have been excluded but will be offered by **DESIGN-BUILD TEAM**; the extent of additional work that **DESIGN-BUILD TEAM** is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.

### **2.1. Authorities Having Jurisdiction**

Authorities Having Jurisdiction (AHJ) related to the PROJECT includes, but not limited to, the following:

- State of California
- City of Garden Grove
- Orange County Fire Authority (OCFA)
  - Responsible for fire protection services for the City of Garden Grove
- Orange County Healthcare Agency (OCHA)
  - Serves as local Certified Unified Program Agency (CUPA)
    - Hazardous Material Disclosure (HMD)
    - Business Emergency Plan (BEP)
    - Hazardous Waste (HW)
    - Underground Storage Tank (UST)
    - Aboveground Storage Tank (AST)
    - California Accidental Release Prevention (CalARP)
- Southern California Air Quality Management District (SCAQMD)
- Regional Water Quality Control Board (RWQCB)
- Southern California Edison (SCE)
- Other Utility Companies
- Federal Transit Administration (FTA)

#### **AHJ Coordination – General Summary**

**DESIGN-BUILD TEAM** shall coordinate, cooperate, and/or consult with OCTA and AHJ throughout the duration of the PROJECT. **DESIGN-BUILD TEAM** shall include OCTA to all communications with AHJ. **DESIGN-BUILD TEAM** shall ensure the PROJECT's design and construction are in compliance with all procedures and requirements of OCTA and AHJ.

DESIGN-BUILD TEAM shall coordinate with City of Garden Grove and all other utility companies to secure all utilities required to support the PROJECT and to determine if utility lines impacted by the PROJECT, if any, requires relocation. DESIGN-BUILD TEAM shall collect, verify, and map existing conditions available; DESIGN-BUILD TEAM shall perform potholing related to existing utilities within PROJECT limits, if necessary, for confirmation and determination of any needs of relocations. All utility related work required to deliver the PROJECT shall be provided by DESIGN-BUILD TEAM.

- Per Attachment A: Project Preliminary Plans, hydrogen storage equipment area associated with liquid hydrogen storage tank will be situated near multiple SCE pole-mounted transformers, along Cardinal Circle; these transformers may impact the PROJECT due to potential arching event and presence of gaseous hydrogen coming off vent stacks in the general vicinity. DESIGN-BUILD TEAM shall coordinate and consult with SCE, which shall include discussion for potential installation of non-conductive fiberglass barriers or other work to prevent electric arcs from traveling towards the gaseous hydrogen vent stacks and other hydrogen equipment.

Project Plan Check: DESIGN-BUILD TEAM shall identify all plan check requirements, obtain plan check approval, and pay for all plan check fees to City of Garden Grove and other AHJ, in conjunction with Tasks 3.1 through 3.4 of this Scope of Work. DESIGN-BUILD TEAM shall provide OCTA with information related to all plan check requirements, timeline to secure plan check approval, and plan check fees from City of Garden Grove and other AHJ.

Project Permitting: DESIGN-BUILD TEAM shall identify all required permits and their requirements, obtain all permits, and pay for all permit related fees to City of Garden Grove and other AHJ, in conjunction with Task 4.1 of this Scope of Work. DESIGN-BUILD TEAM shall also obtain and include/pay costs for City of Garden Grove business licenses.

**Deliverables:**

- Project Plan Check Approval – PDF file distribution via email.
- Project Construction Permit and Other Permits (if any) – PDF file distribution via email.
- Project related communications by DESIGN-BUILD TEAM with all AHJ, that may impact the PROJECT – PDF file distribution via email.

## Dedicated Electrical Power Feed/Service Coordination

DESIGN-BUILD TEAM shall coordinate with SCE the delivery of a dedicated electrical power feed/service to support the hydrogen fueling station. OCTA will assist to the extent required as the owner-occupant of the site address.

- OCTA shall be the customer of record with SCE.
- OCTA has initiated application for SCE's Rule 16 electrical power service option. Upon request, OCTA shall provide DESIGN-BUILD TEAM with communications to date with SCE related to the dedicated electrical power service application.

DESIGN-BUILD TEAM shall pay for all SCE-related fees associated with the design and construction of the PROJECT.

Deliverables:

- Project related communications by DESIGN-BUILD TEAM with SCE, that may impact the PROJECT – PDF file distribution via email.
- Draft SCE Service Plan – PDF file distribution via email.
- Final SCE Service Approval – PDF file distribution via email.

## **2.2. Design Criteria, Codes, Regulations, Standards**

The PROJECT at a minimum shall be designed and constructed in accordance to codes, regulations, and standards listed below. All applicable codes, regulations, and standards shall be the most recent versions, as published by issuing organization at time of contract award.

- California Building Code (CBC), California Electrical Code (CEC), California Mechanical Code (CMC), California Fire Code (CFC)
- National Fire Protection Association (NFPA) 2, NFPA 30A, NFPA 52, NFPA 55, NFPA 70
- Society of Automotive Engineers (SAE)
- American Society of Mechanical Engineers (ASME)
- American National Standards Institute (ANSI)
- Compressed Gas Association (CGA) G-5.5
- All codes, regulations, and standards adopted by reference within the above list.

Applicable codes, regulations, and standards adopted by OCTA and all appropriate AHJ shall govern minimum requirements for this PROJECT. Where codes, regulations, and standards conflict with the contract documents, these conflicts shall be brought to the immediate attention of OCTA.

### SAE Standards

The hydrogen fueling station and hydrogen supplies shall be compliant with SAE J2601-2 (2023) fueling protocol, SAE J2799 FCEB to station communications, and SAE J2719 fuel quality standards.

In order to ensure that the fuel meets quality standards, DESIGN-BUILD TEAM shall conduct fuel purity testing related to the commissioning phase of the PROJECT, as required within Task 12.1 of this Scope of Work, and prior to filling any of OCTA's FCEBs.

### Ventilation Requirements

Per NFPA 2, mechanical exhaust or fixed natural ventilation shall be at a rate of not less than 1 scf/min/ft<sup>2</sup> of floor area. Ventilation requirement of 5 air changes per hour (ACH) is anticipated at the maintenance building, fuel building, and other applicable maintenance facilities; DESIGN-BUILD TEAM shall verify requirement per all applicable codes.

DESIGN-BUILD TEAM shall provide services to furnish a Testing, Adjusting, and Balancing (TAB) Report for ventilation systems at the maintenance building, fuel building, and other applicable maintenance facilities.

#### Deliverables:

- TAB Report – PDF file distribution via email.

### Noise Ordinance

DESIGN-BUILD TEAM shall ensure compliance with all applicable local noise ordinances. If necessary or requested by City of Garden Grove or other AHJ, DESIGN-BUILD TEAM shall provide noise measurement data at DESIGN-BUILD TEAM's expense.

### Storm Water Management

DESIGN-BUILD TEAM shall prevent and/or mitigate potential chemical releases, erosion and sedimentation impacts associated with storm water runoff. DESIGN-BUILD TEAM shall comply with all applicable federal/state/local agencies' standards, procedures, and requirements, which may include provisions related to Storm Water Pollution Prevention Plan (SWPPP) and Best Management Practices (BMP).



### **2.3. Hazard Analysis, Safety Requirements**

#### Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS)

DESIGN-BUILD TEAM shall prepare Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS), pursuant to CFC Sections 5001.5.1 and 5001.5.2, respectively; HMMP and HMIS shall be submitted to OCTA and OCFA for acceptance.

Deliverables:

- HMMP – PDF file distribution via email.
- HMIS – PDF file distribution via email.

#### Process Safety Management (PSM) Requirements of CAL/OSHA

DESIGN-BUILD TEAM is responsible for ensuring compliance with the Cal/OSHA §5189, Process Safety Management (PSM) of Acutely Hazardous Materials standards. All compliance activities shall be documented as required by the regulations.

PSM elements including Process Safety Information, Process Hazard Analysis, Pre-Startup Safety Review, Safe Operating Procedures, and the Mechanical Integrity procedures shall be provided by DESIGN-BUILD TEAM to OCTA prior to the system being fully commissioned and made ready for fueling FCEBs.

- DESIGN-BUILD TEAM to conduct Hazard Analysis per NFPA 2 (Hydrogen Technologies Code). Extent, detail, and effort of Hazard Analysis at a minimum shall be consistent with industry specific HAZOP or HAZID best practices. Format shall consist of initial meeting(s), followed by formal report and recommendations. DESIGN-BUILD TEAM to seek a qualified third-party facilitator to manage and conduct Hazard Analysis. DESIGN-BUILD TEAM to ensure all recommendations are concluded, as a prerequisite to commissioning and startup.
- DESIGN-BUILD TEAM shall conduct a Pre-Startup Safety Review prior to introducing hazardous materials on-site (e.g., hydrogen gas or liquid), which includes field verification of critical process documentation (e.g., P&ID) against as-built conditions.

DESIGN-BUILD TEAM shall provide all documentation related to Cal/OSHA §5189 PSM Requirements. Waiver or exemption of the applicability of Cal/OSHA §5189 PSM Requirements will not be granted by OCTA.

DESIGN-BUILD TEAM shall serve as the system expert and shall provide training and certification, in conjunction with Task 13.1 of this Scope of Work, to OCTA staff in compliance with §5189(g) <https://www.dir.ca.gov/title8/5189.html>.

Deliverables:

- Cal/OSHA §5189 PSM Requirements Documentation – PDF file distribution via email.

Emergency Response Plan (ERP)

DESIGN-BUILD TEAM shall develop and prepare an Emergency Response Plan (ERP) to address response protocols for any potential emergency situations related to the hydrogen fueling station. ERP shall be submitted to OCTA for approval prior to the introduction of hydrogen at Garden Grove Bus Base.

- ERP shall include a map showing the location of all hydrogen storage and fueling equipment, visual and audible alarms, and emergency shutdown systems, as well as the distances to these equipment from the entry driveway and nearby structures.
- DESIGN-BUILD TEAM shall include response protocols for any emergency situations that may occur during operations services of the hydrogen fueling station, in conjunction with Task 17.1 of this Scope of Work.
- DESIGN-BUILD TEAM shall coordinate with OCTA to incorporate the hydrogen fueling station related ERP into current ERP at Garden Grove Bus Base.

Deliverables:

- Emergency Response Plan – PDF file distribution via email and three (3) hard copies.

OCTA Level 3 Health, Safety, and Environmental (HSE) Specifications

DESIGN-BUILD TEAM shall comply with all OCTA Health, Safety and Environmental requirements, as required within Exhibit F. Safety Specifications of the RFP package, and all other requirements set forth by terms of the executed contract between OCTA and DESIGN-BUILD TEAM..

Deliverables:

- All required submittals per OCTA Level 3 HSE Specifications – PDF file distribution via email.

## **2.4. Project Site Conditions**

### Project Site Evaluation/Review

DESIGN-BUILD TEAM shall collect and review existing data and information relevant to the PROJECT, including available public records from City of Garden Grove and other AHJ. Upon request, OCTA shall provide available as-built documentation and any other similar items that may impact the PROJECT.

- All record information provided by OCTA is for reference only. DESIGN-BUILD TEAM.

DESIGN-BUILD TEAM shall conduct site visit(s) to field verify all existing conditions at the PROJECT site that may affect the design and construction of the PROJECT; site visits shall be coordinated by DESIGN-BUILD TEAM in a timely manner with OCTA. DESIGN-BUILD TEAM shall prepare a Site Visit Report, for each site visit, which shall include photos and descriptions detailing existing conditions and site observations; Site Visit Reports shall be submitted to OCTA within three (3) working days after site visit.

- Existing improvements observed during site visits are to be taken into consideration for design, engineering, and construction impacts. Relocation, demolition, or modification of existing improvements which can be identified visually are to be considered within scope.

Deliverables:

- Site Visit Report – PDF file distribution via email.

### Survey and Mapping

Please refer to Attachment A: Project Preliminary Plans, which includes a Topographic Site Plan (2024) consisting of survey and mapping information related to the project site.

### Geotechnical Engineering

Please refer to Attachment B: Project Geotechnical Report for a project-specific geotechnical investigation recently performed at the project site (2024). DESIGN-BUILD TEAM shall review the provided geotechnical report, which provides recommendations related to geologic and geotechnical matters, foundations, and shall be considered in the design and construction of the PROJECT; additionally, recommendations related to soil compaction grouting for the PROJECT are provided.

## **2.5. All Other Work**

All Other Work related to Task 2: Authorities Having Jurisdiction, Design Criteria, Codes, Regulations, Standards, Hazard Analysis, Safety Requirements, and Project Site Conditions that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 2.1 through Task 2.4 of this Scope of Work.

- All Other Work, related to Task 2: Authorities Having Jurisdiction, Design Criteria, Codes, Regulations, Standards, Hazard Analysis, Safety Requirements, and Project Site Conditions, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 2.5 of this Scope of Work or another appropriate existing task of this Scope of Work.

### **Task 3: Architectural & Engineering Design**

**DESIGN-BUILD TEAM** shall review Task 3 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Architectural & Engineering Design that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.

#### **Project Information, Requirements, and Specifications**

PROJECT preliminary plans are included herein as Attachment A. DESIGN-BUILD TEAM shall complete the design of the PROJECT, and obtain all required approvals from authorities having jurisdiction prior to proceeding with construction.

In conjunction with PROJECT preliminary plans, Tables 1 through 3 below provides project related information, requirements, and specifications.

<b><i>Table 1: Fuel Cell Electric Bus Specifications (100 Buses in Fleet)</i></b>		
<b>Characteristic</b>	<b>Specification</b>	<b>Notes</b>
Volume of Hydrogen Stored, per Bus	56.5 cu. ft. 1,600 L	
Mass Stored, per Bus	37.5 kg	Nominal Working Pressure (NWP) at 35 MPa and 15 °C
Fill Pressure, per Bus	38 MPa	Settled pressure at 35 MPa
Usable Mass, per Bus	36 kg	95% to 96%
Number of Cylinders, per Bus	5	320 L each
Cylinder Type Category	Type 4	
Daily Fuel Consumption, per Bus	30 kg	
Fleet Daily Fuel Consumption (100 Buses)	Up to 3,000 kg	
Fleet Annual Fuel Consumption (100 Buses)	Up to 1,095,000 kg	
Fueling Receptacle/Fill Port	TN5 and TN1	Primary bus fill port is TN5 (high flow), although bus also has a secondary fill port TN1; a data cable is required (in lieu of infrared ring), serving both fill ports (data cable monitors temperature).

*Note: Values within Table 1 above are estimates; actual performance shall depend on actual bus characteristics and ambient conditions.*

<b>Table 2: Hydrogen Fueling Station Requirements</b>		
<b>Characteristic</b>	<b>Specification</b>	<b>Notes</b>
Hydrogen Supply	Liquid	Delivered to facility
Liquid Hydrogen Storage	25,000 gallon capacity (liquid hydrogen storage tank)	Tank shall be equipped with a refrigerated controlled storage system (controlled cold liquid hydrogen storage) or approved system that will address anticipated hydrogen fuel loss during transfer, storage, pump priming, and other process.
Usable Hydrogen Supply		Percentage of storage capacity
High-Pressure Gaseous Storage		(Quantity, kg.)
High-Pressure Storage Vessels		(Quantity, number of vessels)
High-Pressure Storage Maximum Pressure		(Bar) ASME Standard
Hydrogen Dispenser	Two (2)	SAE J2601-2 (2023) H35-HD Fast-fill; dispensers shall be capable to fill simultaneously
Hydrogen Dispenser Make and Model		
Hydrogen Dispenser Accuracy	+/- 3% or better	
Hydrogen Dispenser Nozzle	TK25	Compatible with TN5 bus fill port (high flow)
Communication Fill		
Grounding System		
Pump(s)/Compressor(s)		(Quantity) Equipment shall provide redundancy
Pump/Compressor Make and Model		
Pump/Compressor Flowrate		(Kg/hr)
Pump/Compressor Inlet Pressure		(Bar)
Pump/Compressor Capacity		(Kg/hr)

*Note: Hydrogen Fueling Station requirements and specifications are noted within Table 2 above. DESIGN-BUILD TEAM shall complete Table 2 above by filling in specifications, not provided within the table, that are required to deliver the PROJECT. DESIGN-BUILD TEAM shall specify missing information within Table 2 above in their proposed design of the PROJECT, as required within Section III. Proposal Content of the RFP package.*

<b>Table 3: Fueling Performance Requirements</b>		
<b>Characteristic</b>	<b>Requirement</b>	<b>Notes</b>
Fueling Time per Bus	Under 10 minutes	
Bus fills per hour, per dispenser	6 Buses filled per hour, back-to-back fueling in rapid succession	Average Fill Quantity: 30 kg, per bus
State of Charge (SOC)	> 95% SOC at settled pressure	Target is 350 Bar at settled pressure
Bus Fueling Time Window	6:00 pm to 2:00 am	

As required within Section III. Proposal Content of the RFP package, DESIGN-BUILD TEAM's proposed design of the PROJECT shall be provided in their proposal. In conjunction with PROJECT preliminary plans, the following requirements and specifications shall be incorporated in the design of a turnkey code-compliant PROJECT:

- Demolition and Soil Compaction Grouting related work shall be provided by DESIGN-BUILD TEAM.
  - All demolition, removal, and related work required to allow delivery of a completed PROJECT shall be provided by DESIGN-BUILD TEAM.
    - Demolition of existing 8-ft-high masonry wall and existing sliding gate along the northern property line, to allow for subsequent construction; demolition of related wall and gate items such as foundations, adjacent flatwork, and other items.
    - Demolition of existing concrete pavements and related items, to allow for subsequent construction; existing concrete pavements are generally 10-in thick.
    - Demolition of all other existing items, necessary to allow for subsequent construction; such items related to, but not limited to, existing concrete flatwork and existing light poles.
    - Demolition work shall be in compliance with City of Garden Grove and other AHJ requirements.
    - All construction and demolition debris shall be removed from the site and legally disposed offsite.
  - Soil compaction grouting and related work shall be provided by DESIGN-BUILD TEAM.
    - Soil compaction grouting and related work is required to address liquefaction hazard at the PROJECT site.
    - Soil compaction grouting and related work shall be in compliance with Attachment B: Project Geotechnical Report requirements and recommendations.
- Dedicated Electrical Power Feed and Electrical Service Equipment related work shall be provided by DESIGN-BUILD TEAM, with the exception of related work to be provided by SCE.
  - SCE-furnished and installed equipment will generally be limited to a new transformer, new PME switch, and 12kV medium voltage primary power feed lines to its electrical equipment.
    - All work outside of SCE's scope of work related to the dedicated electrical service shall be provided by DESIGN-BUILD TEAM.

- Dedicated electrical service equipment and related work are required to support the hydrogen fueling station; dedicated 800A 480V-3P meter switchboard, with 480/208Y-120V transformer and 208Y/120V-3P-4W panelboard, shall be provided by DESIGN-BUILD TEAM.
  - Equipment shall be compliant with SCE requirements.
- Dedicated standby generator and related work are required to support the hydrogen fueling station with backup power; dedicated 500 kW 480V-3P diesel-powered standby generator with automatic transfer switch (ATS) shall be provided by DESIGN-BUILD TEAM.
  - Standby generator shall be SCAQMD Tier 4 generator and shall meet SCAQMD requirements.
- All Conduits and Conductors/Wirings related to dedicated electrical power feed and electrical service equipment shall be provided by DESIGN-BUILD TEAM.
  - All conduits (underground and aboveground) shall run as directly as possible and shall be secured.
  - All conduits shall be protected from damage by movement of the ground and shall be protected from corrosion.
  - Conductors/wiring shall be of copper material.
- All earthwork related to dedicated electrical power feed and electrical service equipment shall be provided by DESIGN-BUILD TEAM.
  - Earthwork shall include excavation/trenching, grading, backfill, and all other related work.
  - Earthwork shall be in compliance with Attachment B: Project Geotechnical Report, City of Garden Grove, and other AHJ requirements and recommendations.
- All new concrete work related to dedicated electrical power feed and electrical service equipment shall be provided by DESIGN-BUILD TEAM.
  - New concrete work related to equipment footings/foundations or pads to support and level up electrical service equipment.
    - Equipment footing or pad areas shall be designed in a manner to ensure no pooling or trapping of stormwater or condensation occurs. Correction of such improvements shall be considered within scope.
  - New concrete work shall be in compliance with City of Garden Grove and other AHJ requirements; new concrete work shall be properly reinforced.
- Hydrogen Storage and Fueling Equipment related work shall be provided by DESIGN-BUILD TEAM.
  - Non-propriety equipment and components are preferred by OCTA and shall be considered by DESIGN-BUILD TEAM in their design; non-propriety equipment and components are preferred due to benefits related to maintenance and repairs, including material availability.



- One (1) Liquid Hydrogen Storage Tank shall be provided by DESIGN-BUILD TEAM.
  - Liquid hydrogen storage tank shall have a 25,000-gallon capacity; a tank service platform shall be included and equipped with railings and access steps at two directions.
  - Liquid hydrogen storage tank shall be manufactured and delivered completely equipped with a refrigerated controlled storage system (controlled cold liquid hydrogen storage) or approved system that will address anticipated hydrogen fuel loss during transfer, storage, pump priming, and other process.
  - The interface between the liquid hydrogen storage tank and the delivery trailer shall be adaptable to accept fuel supply from multiple competing fuel suppliers.
- Two (2) Hydrogen Fuel Dispensers shall be provided by DESIGN-BUILD TEAM.
  - Hydrogen fuel dispensers shall be pressure class H35 (35 MPa NWP) with a maximum operating pressure of 43.8 MPa, in accordance with SAE J2601-2 (2023). Hydrogen fuel dispensers shall be equipped with a TK25 nozzle.
  - Hydrogen fuel dispensers shall have simultaneous fueling capabilities.
- Piping Bundles and Hydrogen Storage and Fueling Equipment Piping shall be provided by DESIGN-BUILD TEAM.
  - Piping bundles shall include all related components from hydrogen storage equipment area associated with liquid hydrogen storage tank to the fuel building for hydrogen dispensing equipment.
  - Hydrogen storage and fueling equipment piping and tubing shall include all related components to allow for fully operational hydrogen fueling station.
- All Other Hydrogen Storage and Fueling Equipment and Components required shall be provided by DESIGN-BUILD TEAM.
  - All other hydrogen equipment and components required for the turnkey code-compliant hydrogen fueling station shall be provided by DESIGN-BUILD TEAM, which may include but not limited to pumps/compressors, vaporizers, gaseous storage vessels, priority control unit/valve panel, control and power container, inert gas/nitrogen purge tank, precooling system.
  - Redundancy of equipment shall be considered by DESIGN-BUILD TEAM, with the intent to minimized downtime resulting from malfunctioning hydrogen storage and fueling equipment.
- Defueling Area shall be provided by DESIGN-BUILD TEAM.
  - Defueling area shall be designed as a designated space to defuel hydrogen from a FCEB without directly venting to the atmosphere.
  - Defueling area shall have a minimum area of 15-feet by 40-feet.

- Defueling area shall be equipped with a defueling hose, nozzle panel, and vent stack. Defueling hose shall be of sufficient length to easily connect to a bus defuel receptacle.
- Defueling area shall be equipped with a pressure regulator to monitor and control the pressure flow.
- Defueling area shall meet City of Garden Grove and other AHJ requirements, including clearances and sign requirements.
- Mobile Hydrogen Fueling Trailer Area shall be provided by DESIGN-BUILD TEAM.
  - Mobile hydrogen fueling trailer area shall be designed as a designated space capable of supporting mobile hydrogen fueling trailers. Mobile hydrogen fueling trailers, which are self-contained trailers (typically 1,000 kg) that includes dispenser(s), hydrogen detection systems, and related items are anticipated for future use and to be designed accordingly.
  - Mobile hydrogen fueling trailer area shall be equipped with an electrical NEMA 3R cabinet, which will house 300A 480V-3P circuit breaker, receptacle, grounding terminal, 30-foot long power cord with plugs on both ends, to accommodate contingent mobile hydrogen fueling operations.
- Data Communications related to hydrogen fueling station equipment shall be provided by DESIGN-BUILD TEAM.
  - DESIGN-BUILD TEAM shall establish and acquire data communication lines related to the hydrogen fueling station equipment requirements, including verification and evaluation of existing local data/internet main point of entry (MPOE) at Garden Grove Bus Base maintenance building.
  - Wireless data communication connections shall be considered, if such connection can be proven to be better value and/or better reliability.
  - OCTA uses an industry standard system (Fleetwatch) to collect fueling data on each bus, as the bus is fueled and serviced; DESIGN-BUILD TEAM shall integrate the hydrogen fuel dispensers and control systems with the Fleetwatch system. DESIGN-BUILD TEAM shall coordinate with OCTA's Fleetwatch system vendor (S&A Systems, Inc.) for requirements to integrate system with the hydrogen fuel dispensers.
    - Fleetwatch system vendor contact information are as follows:  
S&A Systems, Inc., Rockwall, Texas.  
Web: [www.fleetwatch.com](http://www.fleetwatch.com)  
Phone: 972 722 1009. Email: [support@fleetwatch.com](mailto:support@fleetwatch.com)
    - Although no additional hardware related to the Fleetwatch system are anticipated, DESIGN-BUILD TEAM shall confirm with vendor and shall supply all equipment/components required to allow Fleetwatch system to be functional with the

hydrogen fuel dispensers (in an effort to capture fuel quantity dispensed) as a turnkey system.

- DESIGN-BUILD TEAM shall provide and integrate Supervisory Control and Data Acquisition (SCADA) systems, or other means for remote monitoring of fueling system operation; materials and/or equipment necessary to achieve such work shall be included.
- All Other Utility Infrastructure, Utility Piping, Conduits, and Conductors/ Wirings related to hydrogen storage and fueling equipment shall be provided by DESIGN-BUILD TEAM.
  - All utility related work required to provide utility service for the hydrogen fueling station shall be provided by DESIGN-BUILD TEAM.
  - Service water hose bibs and related work to support the hydrogen fueling station shall be appropriately located in the general vicinity of hydrogen storage equipment area, and in the general vicinity of defueling and mobile hydrogen fueling trailer areas.
  - All piping and conduits (underground and aboveground) shall run as directly as possible and shall be secured.
  - All piping and conduits shall be protected from damage by movement of the ground and shall be protected from corrosion.
  - Aboveground piping and conduits on the exterior of buildings shall be concealed in an aesthetical manner, as approved by OCTA. All exposed piping and conduits, excluding stainless steel tubing, shall be painted to match adjacent surfaces.
  - Conductors/wiring shall be of copper material.
- All earthwork related to hydrogen storage and fueling equipment shall be provided by DESIGN-BUILD TEAM.
  - Earthwork shall include excavation/trenching, grading, backfill, and all other related work.
  - Earthwork shall be in compliance with Attachment B: Project Geotechnical Report, City of Garden Grove, and other AHJ requirements and recommendations.
- All new concrete work related to hydrogen storage and fueling equipment shall be provided by DESIGN-BUILD TEAM.
  - New concrete work related to equipment footings/foundations or pads to support and level up hydrogen storage and fueling equipment, pavements and flatwork related to trenching.
    - Equipment footing or pad areas shall be designed in a manner to ensure no pooling or trapping of stormwater or condensation occurs. Correction of such improvements shall be considered within scope.
  - New concrete pavements and flatwork at a minimum shall match existing concrete improvements, including steel reinforcement requirements.
  - New concrete work shall be in compliance with City of Garden Grove and other AHJ requirements; new concrete work shall be properly reinforced.

- Masonry Walls, Elevated Concrete Slab, Fencing, Sliding Gates, and Safety Bollards related work shall be provided by DESIGN-BUILD TEAM.
  - Fire-Rated Walls shall be provided by DESIGN-BUILD TEAM.
    - 2-hour fire-rated masonry wall, 15-ft in height, shall be designed along the northern property line, associated with the electrical equipment area, the hydrogen storage equipment area, the defueling area, and the mobile hydrogen fueling trailer area.
    - 2-hour fire-rated masonry walls, 10-ft in height, shall be designed between electrical equipment area and hydrogen storage equipment area, and along the southern perimeter of electrical equipment area.
    - Fire-rated walls shall be in compliance with NFPA and other regulatory codes.
  - Fencing and Sliding Gates shall be provided by DESIGN-BUILD TEAM.
    - Fencing and sliding gates, with a lock and key system, shall be designed along the perimeter of the hydrogen storage equipment areas, in areas not occupied by fire-rated walls.
    - Fencing and a sliding gate, with a lock and key system, shall be designed along the perimeter of the electrical equipment area, in areas not occupied by fire-rated walls.
    - Fencing and sliding gates shall be designed to enclose hydrogen storage equipment areas, to restrict access to authorized personnel only.
    - DESIGN-BUILD TEAM shall reference the following fencing system as the basis of design: ClearVu Invisible Wall or approved equal (<https://www.cochraneglobal.com/clearvu-invisible-wall/>)
    - New sliding gate along the northern property line shall be designed to replace existing sliding gate.
      - New sliding gate shall be of like-kind material and system to the existing sliding gate system being replaced, which shall be subject for review and approval by OCTA.
  - Safety bollards shall be provided by DESIGN-BUILD TEAM.
    - Safety bollards shall be appropriately located, generally along new fencing enclosures related to the electrical equipment area and the hydrogen storage equipment areas.
    - Safety bollards shall be 6-inch in diameter and spaced 4-feet center-to-center. Safety bollards shall be of steel pipe material and protected from corrosion.
    - Removable safety bollards shall be designed along sliding gate locations.
  - All earthwork related to masonry walls, elevated concrete slab, fencing, sliding gates, and safety bollards shall be provided by DESIGN-BUILD TEAM.
    - Earthwork shall include excavation/trenching, grading, backfill, and all other related work.

- Earthwork shall be in compliance with Attachment B: Project Geotechnical Report, City of Garden Grove, and other AHJ requirements and recommendations.
- All new concrete work related to masonry walls, elevated concrete slab, fencing, sliding gates, and safety bollards shall be provided by DESIGN-BUILD TEAM.
  - New concrete work related to elevated slab for the entire hydrogen storage and fueling equipment and electrical equipment areas.
    - Elevated slab areas shall be designed in a manner to ensure no pooling or trapping of stormwater or condensation occurs. Correction of such improvements shall be considered within scope.
    - Elevated slab area related to the hydrogen storage and fueling equipment shall have an in-slab drainage gutter system, with the intent to catch condensate coming off liquid hydrogen piping/tubing and equipment; the in-slab drainage gutter system shall include a drain pipe with an accessible shut-off valve, which shall be connected to existing storm drain.
  - New concrete work related to foundations for the support of masonry walls, fencing, sliding gates, and safety bollards.
    - New asphaltic concrete work related to new masonry wall along the northern property line.
  - New concrete work shall be in compliance with City of Garden Grove and other AHJ requirements; new concrete work shall be properly reinforced.
- LED Area Lighting, Video Surveillance System (VSS) Cameras, Signage, Paint Striping and Markings shall be provided by DESIGN-BUILD TEAM.
  - Explosion-proof LED area lighting shall be provided by DESIGN-BUILD TEAM.
    - Explosion-proof LED area lighting shall be designed to support hydrogen fueling station areas and related electrical equipment area.
    - Minimum lamination at any point within hydrogen fueling station areas are 5-ft-candles, with a minimum of 10-ft-candles available at any accessible equipment or electrical panel access points.
  - Explosion-proof VSS cameras shall be provided by DESIGN-BUILD TEAM.
    - Explosion-proof VSS cameras shall be designed to oversee all of the hydrogen fueling station areas, the electrical equipment area, and the maintenance platform area (at the maintenance building).
    - VSS cameras shall be located/situated in a manner to capture all required areas.
    - VSS cameras shall have capability of identifying vehicle license plates and facial recognition.
  - Signage shall be provided by DESIGN-BUILD TEAM.
    - Signage shall include safety and warning signs for hydrogen fueling station areas and related electrical equipment area.

- Signage shall be in compliance with NFPA and other regulatory codes.
  - Signs shall be made of UV-resistant material, all-weather material.
- Paint Striping and Markings shall be provided by DESIGN-BUILD TEAM.
  - Paint striping and markings shall be designed for hydrogen fueling station areas and related electrical equipment area to clearly identify walkway areas, restricted/hazard areas, loading areas, and parking areas.
  - Perimeter and edges of all elevated work surface shall be painted for safety purposes.
- Data Communications related to VSS cameras shall be provided by DESIGN-BUILD TEAM.
  - DESIGN-BUILD TEAM shall establish and acquire data communication lines related to VSS cameras requirements.
  - Wireless data communication connections shall be considered, if such connection can be proven to be better value and/or better reliability.
- All Conduits and Conductors/Wirings related to LED area lighting and VSS cameras shall be provided by DESIGN-BUILD TEAM.
  - All conduits (underground and aboveground) shall run as directly as possible and shall be secured.
  - All conduits shall be protected from damage by movement of the ground and shall be protected from corrosion.
  - Conductors/wiring shall be of copper material.
- All earthwork related to LED area lighting shall be provided by DESIGN-BUILD TEAM.
  - Earthwork shall include excavation/trenching, backfill, and all other related work.
  - Earthwork shall be in compliance with Attachment B: Project Geotechnical Report, City of Garden Grove, and other AHJ requirements and recommendations.
- All new concrete work related to LED area lighting shall be provided by DESIGN-BUILD TEAM.
  - New concrete work related to foundations for the support of LED area lighting.
  - New concrete work shall be in compliance with City of Garden Grove and other AHJ requirements; new concrete work shall be properly reinforced.
- Hydrogen Detection Systems, Emergency Shutdown Systems, and Battery Backup Systems shall be provided by DESIGN-BUILD TEAM.
  - Hydrogen detection systems shall be provided by DESIGN-BUILD TEAM.
    - Hydrogen detection systems shall be designed in order to accommodate the use of the hydrogen fueling station and FCEBs.
    - Hydrogen detection systems at a minimum shall include gas detectors, flame detectors, alarms, control panel, detection horn/strobe light assemblies, multi-color beacon light arrays for hydrogen

storage and fueling equipment areas and shall all be strategically located at the hydrogen fueling station areas.

- Gas detectors and flame detectors that are triggered falsely or in error shall be corrected by DESIGN-BUILD TEAM; repeated falsely triggered devices shall be replaced with an alternate approved device as a means of eliminating false alarms.
  - Hydrogen detection systems shall be compatible with the use of the existing methane detection systems. Hydrogen detection system shall be integrated with existing detection/alarm systems; integration of systems shall be performed in a manner that shall allow OCTA to clearly identify what is being detected (hydrogen or methane) during a detection/alarm event.
- Emergency Shutdown (ESD) System shall be provided by DESIGN-BUILD TEAM.
  - ESD system shall be designed to stop/restrict fueling operations when activated.
  - ESD system at a minimum shall include ESD buttons and control/monitoring panels.
  - ESD buttons at a minimum shall be located at both hydrogen dispensers and within the enclosed hydrogen storage equipment area associated with liquid hydrogen storage tank. ESD buttons shall be integrated into existing ESD systems at the property. Final locations of ESD buttons shall be approved by OCTA and AHJ.
    - ESD buttons shall immediately stop all fueling operations related to the hydrogen fueling station when activated.
    - ESD buttons at each hydrogen dispenser location shall stop all fueling operations within the fuel building, including CNG.
    - ESD buttons within the enclosed hydrogen storage equipment area associated with liquid hydrogen storage tank shall stop all fueling operations related to the hydrogen fueling station, including both hydrogen dispensers, but not CNG or other fueling within the fuel building.
  - ESD panels for control and monitoring shall be located at the supervisor's office (maintenance building) and at the fuel building.
    - ESD panels shall have capability to reset the ESD systems after a trigger.
- Battery backup systems shall be provided by DESIGN-BUILD TEAM.
  - Battery backup systems shall have required capacity to furnish bridging power during transition to standby generator power, to avoid hydrogen fueling station alarm events, at time of grid power outages.
  - Battery backup system shall be designed for all electrical controls equipment, gas and flame detectors, VSS cameras, LED area lighting, and other related equipment associated with the hydrogen fueling station that shall have backup battery power to ensure continued operation should there be a loss of grid power.

- Data Communications related to hydrogen detection systems and ESD system shall be provided by DESIGN-BUILD TEAM.
  - DESIGN-BUILD TEAM shall establish and acquire data communication lines related to hydrogen detection systems and ESD system requirements.
  - Wireless data communication connection shall be considered, if such connection can be proven to be better value and/or better reliability.
- All Conduits and Conductors/Wirings related to hydrogen detection systems, ESD system, and battery backup systems shall be provided by DESIGN-BUILD TEAM.
  - All conduits (underground and aboveground) shall run as directly as possible and shall be secured.
  - All conduits shall be protected from damage by movement of the ground and shall be protected from corrosion.
  - Conductors/wiring shall be of copper material.
- Maintenance Platform shall be provided by DESIGN-BUILD TEAM.
  - Maintenance platform shall allow access to bus rooftop for maintenance and inspection purposes, and shall be located within the maintenance building.
    - DESIGN-BUILD TEAM shall reference the following platform system as the basis of design: The ZEvolve Access System or approved equal (<https://www.spikamfg.com/industry/mass-transit>) .
    - The maintenance platform shall comply with CBC and other regulatory codes, including design considerations related to seismic anchoring and bracing.
- Facility Modifications required work shall be provided by DESIGN-BUILD TEAM and generally consists of work at existing maintenance facilities including the fuel building, maintenance building, brake check building, canopy detail area, vehicle test station canopy, tire shop area that affected by the introduction of hydrogen system to the property.
  - Hydrogen detection systems shall be provided by DESIGN-BUILD TEAM.
    - New hydrogen detection systems at a minimum shall include gas detectors, flame detectors, alarms, control panel, detection horn/strobe light assemblies, multi-color beacon light arrays at the appropriate maintenance facilities.
      - Gas detectors and flame detectors that are triggered falsely or in error shall be corrected by DESIGN-BUILD TEAM; repeated falsely triggered devices shall be replaced with an alternate approved device as a means of eliminating false alarms.
    - New hydrogen detection systems shall be compatible with the use of FCEBs and the existing methane detection systems. New hydrogen detection system shall be integrated with existing detection/alarm systems; integration of systems shall be performed in a manner that shall allow OCTA to clearly identify what is being detected (hydrogen or methane) during a detection/alarm event.



- New hydrogen detection systems shall also include early warning systems that shall alert staff of potential issue.
  - Early warning systems shall include infrared thermal sensors to scan temperature of bus roofs for excessive heat due to overheating batteries, and/or sensors to detect lithium off-gassing. Early warning systems shall be integrated with existing detection/alarm systems.
- Emergency Shutdown (ESD) System shall be provided by DESIGN-BUILD TEAM.
  - ESD system shall be designed to stop/restrict fueling operations when activated.
  - ESD system at a minimum shall include ESD buttons and control/monitoring panels. New ESD system shall be integrated into existing ESD systems at the property.
  - ESD buttons shall be located at the appropriate maintenance facilities, due to introduction of hydrogen system. Final locations of ESD buttons shall be approved by OCTA and AHJ.
  - ESD panels for control and monitoring shall be located at the supervisor's office (maintenance building) and at the fuel building; such panels are same related to hydrogen dispensers and within the enclosed hydrogen equipment area, as described herein.
    - ESD panels shall have capability to reset the ESD systems after a trigger.
    - Integrated ESD panels shall have capability to control and monitor new and existing systems.
- Battery backup systems shall be provided by DESIGN-BUILD TEAM.
  - Battery backup systems shall have required capacity to furnish bridging power during transition to standby generator power, to avoid hydrogen fueling station alarm events, at time of grid power outages.
  - Battery backup system shall be designed for all electrical controls equipment, gas and flame detectors, VSS cameras, LED area lighting, and other related equipment associated with the hydrogen fueling station that shall have backup battery power to ensure continued operation should there be a loss of grid power.
- Removal of existing non-explosion proof area lighting and replacement with new explosion-proof LED area lighting at the appropriate maintenance facilities, due to introduction of hydrogen system, shall be provided DESIGN-BUILD TEAM.
  - Minimum lamination at any point within hydrogen fueling station areas are 5-ft-candles, with a minimum of 10-ft-candles available at any accessible equipment or electrical panel access points.

- Removal of existing non-explosion proof VSS cameras and replacement with new explosion-proof VSS cameras at Garden Grove Base shall be provided DESIGN-BUILD TEAM.
  - New VSS cameras shall be of like-kind equipment to the existing cameras being replaced, which shall be subject for review and approval by OCTA.
- New signage and related items due to introduction of hydrogen system at maintenance facilities shall be provided DESIGN-BUILD TEAM.
  - Signage shall be shall include safety and warning signs.
  - Signage shall be in compliance with NFPA and other regulatory codes.
  - Signs shall be made of UV-resistant material, all-weather material.
- Data Communications related to hydrogen detection systems, ESD system, LED area lighting, and VSS cameras shall be provided by DESIGN-BUILD TEAM.
  - DESIGN-BUILD TEAM shall establish and acquire data communication lines related to hydrogen detection systems, ESD system, LED area lighting, and VSS cameras requirements.
  - Wireless data communication connection shall be considered, if such connection can be proven to be better value and/or better reliability.
- All Electrical Service Infrastructure, Conduits, and Conductors/Wirings related to hydrogen detection systems, ESD system, and battery backup systems, LED area lighting, and VSS cameras shall be provided by DESIGN-BUILD TEAM.
  - All upgrades/modifications to existing electrical service required for fully operational code-compliant systems, as a result of hydrogen fueling station and facility modifications related work.
  - All conduits (underground and aboveground) shall run as directly as possible and shall be secured.
  - All conduits shall be protected from damage by movement of the ground and shall be protected from corrosion.
  - Conductors/wiring shall be of copper material.
- Ventilation Systems related work due to introduction of hydrogen system at maintenance facilities shall be provided DESIGN-BUILD TEAM.
  - All upgrades/modifications related to ventilation systems required for fully operational code-compliant systems, due to introduction of hydrogen system, shall be provided by DESIGN-BUILD TEAM.
- All removal related work, necessary to allow for subsequent installation related work, shall be provided DESIGN-BUILD TEAM.
- Feasibility for future expansion (or scalability) of the hydrogen fueling station is required, and shall be considered as part of DESIGN-BUILD TEAM's design.
  - Although the hydrogen fueling station is required to provide fueling for up to 100 FCEBS with daily fuel consumption of up to 3,000 kilograms, with consideration of future expansion, the hydrogen fueling station's final design shall be scalable through practical upgrades and/or modifications to

accommodate up to 150 FCEBS with daily fuel consumption of up to 4,500 kilograms.

- DESIGN-BUILD TEAM shall provide conceptual design(s) for future expansion of the hydrogen fueling station, which shall include details on required upgrades and/or modifications related to electrical infrastructure and equipment, hydrogen storage and fueling equipment, facility modification, and all other work.
  - Conceptual design for future expansion shall be included by the DESIGN-BUILD TEAM along with the proposed design of the PROJECT, as required within Section III. Proposal Content of this RFP package.

### Design Package

DESIGN-BUILD TEAM shall develop Design Package utilizing information, requirements, and specifications provided herein this Scope of Work, including Attachment A: Project Preliminary Plans. Final Design Package shall include but not limited to plans/drawings, specifications, supporting design calculations, and all other related documentations required to construct and deliver a code-compliant Hydrogen Fueling Station and Facility Modifications at Garden Grove Bus Base. DESIGN-BUILD TEAM shall prepare and submit to OCTA appropriate Design Package at completion of 30% Design, 60% Design, 90% Design, and 100% Design phases, as required within Tasks 3.1 through Task 3.4 of this Scope of Work. concurrence

Final Design Package shall include civil, architectural, structural, mechanical, plumbing, and electrical drawings; at a minimum, drawing sheets shall consist of the following details and information: site plans, demolition plan, grading plan, soil compaction grouting, site survey, equipment plan including bill of materials, equipment staging area, elevations, foundation plan, anchoring details/plan, new electrical service site plan, single line diagram, load schedule, panel schedule, conduit and conductor routing plan, grounding plan, lighting plan, Title 24 compliance forms, piping and instrumentation diagram (P&ID), piping plan including bill of materials, maintenance platform details. Final Design Package drawings, calculations, and other applicable documents requiring the seal of a Professional Engineer registered in the State of California shall be stamped accordingly.

### **3.1. 30% Design Phase**

DESIGN-BUILD TEAM shall identify all permits and approvals required for PROJECT. DESIGN-BUILD TEAM shall provide OCTA with information related to all applicable permits, City of Garden Grove and other AHJ (addresses, contacts, phone numbers), application forms, instructions, permit fees, and estimates of time to secure each permit or approval, as required within Task 2.1 of this Scope of Work. DESIGN-BUILD TEAM shall communicate and coordinate with OCTA, City of Garden Grove, and other AHJ to obtain all information and requirements that

will affect the design of PROJECT, as well as information and requirements needed to ensure that all required permits and approvals will be secured by DESIGN-BUILD TEAM.

DESIGN-BUILD TEAM shall prepare 30% Design Package consisting of appropriate drawings and recommendations that shall layout major design elements of PROJECT, which shall be in compliance with City of Garden Grove and other AHJ requirements and codes, necessary for plan check approvals and other approvals required.

DESIGN-BUILD TEAM shall submit 30% Design Package to OCTA for review and comments. DESIGN-BUILD TEAM shall allow OCTA a minimum of fourteen (14) calendar days to review and provide review comments; all of OCTA's comments shall be addressed in 60% Design Package.

DESIGN-BUILD TEAM shall meet with OCTA to present and discuss 30% Design, as required within Task 1.1 of this Scope of Work, before proceeding with 60% Design Phase thereafter.

**Deliverables:**

- 30% Design Package – PDF file distribution via email and/or approved electronic shared folder.
- 30% Design Presentation Slides – PDF and/or native files distribution via email and/or approved electronic shared folder.
- 30% Design Drawings (half-size) – Three (3) hard copies.

### **3.2. 60% Design Phase**

DESIGN-BUILD TEAM shall prepare 60% Design Package consisting of drawings, specifications, and other applicable documents. The 60% Design Drawings shall include civil, architectural, structural, mechanical, plumbing, and electrical drawings prepared using AutoCAD software. The 60% Design Specifications shall consist of all draft technical specifications to support the drawings, identify material, indicate inspection and testing requirements, and ensure a quality project; technical specifications shall be developed in Construction Specifications Institute (CSI) format using Microsoft Word software. All drawings and specifications shall be detailed to a degree ready for plan check and construction, except the designed features that are unresolved by OCTA, City of Garden Grove, and/or other AHJ.

DESIGN-BUILD TEAM shall submit 60% Design Package to OCTA for review and comments. DESIGN-BUILD TEAM shall allow OCTA a minimum of fourteen (14)

calendar days to review and provide review comments; all of OCTA's comments shall be addressed in 90% Design Package.

DESIGN-BUILD TEAM shall meet with OCTA to present and discuss 60% Design, as required within Task 1.1 of this Scope of Work, before proceeding with 90% Design Phase thereafter.

**Deliverables:**

- 60% Design Package – PDF file distribution via email and/or approved electronic shared folder.
- 60% Design Presentation Slides – PDF and/or native files distribution via email and/or approved electronic shared folder.
- 60% Design Drawings (half-size) – Three (3) hard copies
- 60% Design Specifications – Two (2) hard copies.

### **3.3. 90% Design Phase**

DESIGN-BUILD TEAM shall prepare 90% Design Package consisting of final drawings, final specifications, supporting design calculations, and other applicable documents. The 90% Design Drawings shall be final and complete. The 90% Design Specifications shall consist of all final technical specifications and Division 1 specifications. The 90% Design Package shall be complete and final, consistent with contemporary professional standards, setting forth in detail the requirements for the construction of PROJECT. All drawings and specifications shall be complete, detailed, and ready for plan check and construction.

DESIGN-BUILD TEAM shall submit 90% Design Package to OCTA for review and comments. DESIGN-BUILD TEAM shall allow OCTA a minimum of fourteen (14) calendar days to review and provide review comments. After addressing all of OCTA's comments on 90% Design Package, DESIGN-BUILD TEAM shall submit all applicable 90% Design Package documents to City of Garden Grove and other AHJ for plan check review. DESIGN-BUILD TEAM shall obtain plan check approval, as well as pay for all plan check fees, to City of Garden Grove and other AHJ, as required within Task 2.1 of this Scope of Work. DESIGN-BUILD TEAM shall submit to OCTA a duplicate copy of 90% Design Package documents submitted to City of Garden Grove and other AHJ for plan check at the time of submittal.

DESIGN-BUILD TEAM shall meet with OCTA to present and discuss 90% Design, as required within Task 1.1 of this Scope of Work.

Deliverables:

- 90% Design Package – PDF file distribution via email and/or approved electronic shared folder.
- 90% Design Presentation Slides – PDF and/or native files distribution via email and/or approved electronic shared folder.
- 90% Design Drawings (half-size) – Three (3) hard copies
- 90% Design Specifications – Two (2) hard copies.
- Design Calculations – One (1) hard copy.
- Duplicate copy of All Plan Check Submittal Packages – PDF file distribution via email and/or approved electronic shared folder.

### **3.4. 100% Design Phase**

DESIGN-BUILD TEAM shall address all City of Garden Grove and other AHJ plan check comments. All plan check fees, including any resubmittals, shall be the responsibility of DESIGN-BUILD TEAM, as required within Task 2.1 of this Scope of Work.

After addressing all plan check comments from City of Garden Grove and other AHJ, DESIGN-BUILD TEAM shall prepare 100% (Final) Design Package consisting of approved final drawings and final specifications, and other applicable documents. The Final Design Package shall include in a list of DESIGN-BUILD TEAM's submittals for equipment, materials, products, shop drawings, and procedures required to be reviewed for conformance with the drawings and specifications prior to manufacturing/installation. The Final Design Package shall have all required quality control (QC) and design reviews completed and resolved as necessary; final specifications shall be reconciled against the quantities and approved final drawings.

DESIGN-BUILD TEAM shall submit 100% Design Package to OCTA for review and comments. DESIGN-BUILD TEAM shall allow OCTA a minimum of seven (7) calendar days to review and provide review comments. DESIGN-BUILD TEAM shall address all comments and resubmit for approval the Final Design Package ready for construction within seven (7) calendar days upon receipt of OCTA's comments.

Deliverables:

- 100% Design Package – PDF file distribution via email and/or approved electronic shared folder.
- 100% Design Drawings (full-size) – One (1) hard copy
- 100% Design Drawings (half-size) – Three (3) hard copies
- 100% Design Specifications – Two (2) hard copies.

### **3.5. All Other Work**

All Other Work related to Task 3: Architectural & Engineering Design that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 3.1 through Task 3.4 of this Scope of Work.

- All Other Work, related to Task 3: Architectural & Engineering Design, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 3.5 of this Scope of Work or another appropriate existing task of this Scope of Work.

### **Task 4: Hydrogen Fueling Station Construction – Mobilization, Demolition, and Soil Compaction Grouting**

PROJECT information, requirements, and/or specifications related to Hydrogen Fueling Station Construction – Mobilization, Demolition and Soil Compaction Grouting are provided within Task 3: Architectural & Engineering Design of this Scope of Work and/or Attachment A: Project Preliminary Plans for reference.

**DESIGN-BUILD TEAM shall review Task 4 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Hydrogen Fueling Station Construction – Demolition, Earthwork, Soil Compaction Grouting, and Concrete Placement that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

#### **4.1. Site Coordination and Mobilization**

Prior to start of construction, DESIGN-BUILD TEAM shall obtain construction permits and all other permits required by City of Garden Grove and other AHJ; DESIGN-BUILD TEAM shall provide OCTA with copies of all permits obtained, as required within Task 2.1 of this Scope of Work, prior to starting work covered by the permit.

Prior to start of construction at an area, DESIGN-BUILD TEAM shall coordinate with OCTA to ensure that the area is clear of obstructions that will prohibit construction.

- Any work related to clearing construction areas of obstructions, due to lack of coordination or late request/notice by DESIGN-BUILD TEAM, shall be the responsibility of DESIGN-BUILD TEAM; any request less than five (5) working days, provided to OCTA, are deemed as a late request.

- All equipment, vehicles, storages, and debris required to be cleared from construction areas for a “broom-clean” condition, shall be removed by OCTA if requested by DESIGN-BUILD TEAM in a timely manner.
  - DESIGN-BUILD TEAM shall ensure that all vehicles using a construction area have been removed and all rights of others to this area extinguished, prior to construction at this area.
- DESIGN-BUILD TEAM shall remove any and all existing aboveground improvements within construction areas, which constitute as an obstruction, leaving these areas in an unobstructed condition. DESIGN-BUILD TEAM shall determine if there are any existing underground equipment or other obstructions within construction areas. Existing aboveground and underground improvements that are approved for removal shall be removed by DESIGN-BUILD TEAM, as required within Task 4 of this Scope of Work.
  - If not clearly defined herein this Scope of Work and/or Attachment A: Project Preliminary Plans, DESIGN-BUILD TEAM shall confirm with OCTA in writing removal of existing improvements; if DESIGN-BUILD TEAM removes an existing improvement without OCTA’s written approval, such improvement can be subject of replacement by DESIGN-BUILD TEAM at no additional cost to OCTA.

DESIGN-BUILD TEAM shall coordinate and comply with OCTA’s requirements for critical operating areas, including but not limited to: pedestrian and vehicular access routes, maintenance access, loading areas, that shall be maintained during construction. Permitted locations to stage and store materials shall be coordinated with OCTA and approval shall be obtained in writing. DESIGN-BUILD TEAM shall indicate how access to the site shall be maintained without impacting normal bus maintenance and/or operations.

- DESIGN-BUILD TEAM shall restore all temporary staging areas to original condition prior to completion of the PROJECT.

DESIGN-BUILD TEAM shall provide personnel, equipment, temporary facilities, construction materials, tools, and supplies at the construction site at the time they are scheduled to be required. DESIGN-BUILD TEAM shall locate equipment appropriately close to the area of construction for which it will be used.

- DESIGN-BUILD TEAM shall provide temporary fencing to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage during construction; barricades and other types of alternative protective barriers are not permitted, unless approved in writing by OCTA.

DESIGN-BUILD TEAM shall install pollution control and/or erosion control features required by permits for construction. These features shall be maintained throughout the duration of construction and removed at completion of construction.



At completion of construction, DESIGN-BUILD TEAM shall demobilize by removing all equipment, temporary facilities, construction tools, apparatus, equipment, unused materials and supplies, and personnel from the construction site; DESIGN-BUILD TEAM shall leave the worksite in a clean and satisfactory condition as approved by OCTA.

#### **4.2. Demolition**

DESIGN-BUILD TEAM shall perform all demolition, removal, and related work required to allow delivery of a completed PROJECT.

DESIGN-BUILD TEAM shall perform demolition work along the northern property line related to existing masonry wall, sliding gate, and related items, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall perform demolition work related to existing concrete pavements, existing concrete flatwork, existing light poles, and related items, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall perform legal disposal/removal work related to all construction and demolition debris, as described herein this Scope of Work.

#### **4.3. Soil Compaction Grouting**

DESIGN-BUILD TEAM shall deliver soil compaction grouting and related work, in compliance with Attachment B: Project Geotechnical Report requirements and recommendations.

#### **4.4. All Other Work**

All Other Work related to Task 4: Hydrogen Fueling Station Construction – Mobilization, Demolition, and Soil Compaction Grouting that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 4.1 through Task 4.3 of this Scope of Work.

- All Other Work, related to Task 4: Hydrogen Fueling Station Construction – Mobilization, Demolition, and Soil Compaction Grouting, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 4.4 of this Scope of Work or another appropriate existing task of this Scope of Work.

## **Task 5: Hydrogen Fueling Station Construction – Dedicated Electrical Power Feed and Electrical Service Equipment**

PROJECT information, requirements, and/or specifications related to Hydrogen Fueling Station Construction – Dedicated Electrical Power Feed and Electrical Service Equipment are provided within Task 3: Architectural & Engineering Design of this Scope of Work and/or Attachment A: Project Preliminary Plans for reference.

**DESIGN-BUILD TEAM shall review Task 5 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Hydrogen Fueling Station Construction – Dedicated Electrical Power Feed and Electrical Service Equipment that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

### **SCE-furnished Dedicated Electrical Power Feed and Service Equipment**

A dedicated 12kV primary electrical power feed and service equipment, consisting of a new transformer, a new PME switch, and related items, will be furnished by SCE and provide dedicated electrical power feed/service for the hydrogen fueling station.

- The hydrogen fueling station intends to utilize SCE's Rule 16 electrical service option, as required within Task 2.1 of this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install all work, outside of SCE's scope of work required per SCE's Rule 16, related to construction of electrical service, to provide dedicated electrical service for the hydrogen fueling station.

#### **5.1. Meter Switchboard**

DESIGN-BUILD TEAM shall furnish and install a dedicated SCE-compliant meter switchboard with transformer and panelboard, and related items to support the hydrogen fueling station, as described herein this Scope of Work.

#### **5.2. Standby Generator with Automatic Transfer Switch**

DESIGN-BUILD TEAM shall furnish and install a diesel-powered standby generator with automatic transfer switch, and related items to serve backup power for the hydrogen fueling station, as described herein this Scope of Work.

### **5.3. Conduits and Conductors/Wirings**

DESIGN-BUILD TEAM shall furnish and install all required conduits, conductors/wiring, grounding, and related items, as described herein this Scope of Work. DESIGN-BUILD TEAM shall include all required work that will allow for fully operational equipment/systems associated with dedicated electrical power feed and electrical service equipment, as required herein Task 5 of this Scope of Work.

### **5.4. Earthwork**

DESIGN-BUILD TEAM shall perform all earthwork and related work associated with dedicated electrical power feed and electrical service equipment, as required herein Task 5 of this Scope of Work; earthwork shall include excavation/trenching, grading, backfill, and all other related work.

### **5.5. Concrete Placement**

DESIGN-BUILD TEAM shall perform all concrete placement and related work associated with dedicated electrical power feed and electrical service equipment, as required herein Task 5 of this Scope of Work.

DESIGN-BUILD TEAM shall construct new concrete related to equipment footings/foundations or pads to support and level up electrical service equipment, and related items, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall construct new concrete related to pavements, resulting from utility trenching and other work, as described herein this Scope of Work.

### **5.6. All Other Work**

All Other Work related to Task 5: Hydrogen Fueling Station Construction – Dedicated Electrical Power Feed and Electrical Service Equipment that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 5.1 through Task 5.5 of this Scope of Work.

- All Other Work, related to Task 5: Hydrogen Fueling Station Construction – Dedicated Electrical Power Feed and Electrical Service Equipment, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 5.6 of this Scope of Work or another appropriate existing task of this Scope of Work.

## **Task 6: Hydrogen Fueling Station Construction – Hydrogen Storage and Fueling Equipment**

PROJECT information, requirements, and/or specifications related to Hydrogen Fueling Station Construction – Hydrogen Storage and Fueling Equipment are provided within Task 3: Architectural & Engineering Design of this Scope of Work and/or Attachment A: Project Preliminary Plans for reference.

**DESIGN-BUILD TEAM** shall review Task 6 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Hydrogen Fueling Station Construction – Hydrogen Storage and Fueling Equipment that have been excluded but will be offered by **DESIGN-BUILD TEAM**; the extent of additional work that **DESIGN-BUILD TEAM** is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.

### **6.1. Liquid Hydrogen Storage Tank**

DESIGN-BUILD TEAM shall furnish and install a 25,000-gallon liquid hydrogen storage tank and related items, within designated hydrogen storage equipment area, as described herein this Scope of Work. DESIGN-BUILD TEAM shall furnish and install tank service platform and related items, related to the liquid hydrogen storage tank, as described herein this Scope of Work.

### **6.2. Hydrogen Fuel Dispensers**

DESIGN-BUILD TEAM shall furnish and install two (2) hydrogen fuel dispensers with fueling nozzle and related items, within the fuel building as described herein this Scope of Work.

### **6.3. Piping Bundles and Hydrogen Storage and Fueling Equipment Piping**

DESIGN-BUILD TEAM shall furnish and install piping bundles and related items, from the hydrogen storage equipment area associated with liquid hydrogen storage tank to the fuel building, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install hydrogen storage and fueling equipment piping and related items, to allow for fully operational hydrogen fueling station, as described herein this Scope of Work.

#### **6.4. All Other Hydrogen Storage and Fueling Equipment**

DESIGN-BUILD TEAM shall furnish and install all other hydrogen equipment and components required for the turnkey code-compliant Hydrogen Fueling Station, as described herein this Scope of Work; other hydrogen equipment and components may include but not limited to pumps/compressors, vaporizers, gaseous storage vessels, priority control unit/valve panel, control and power container, inert gas/nitrogen purge tank, precooling system.

#### **6.5. Defueling Area**

DESIGN-BUILD TEAM shall provide a designated defueling area, to defuel hydrogen from a FCEB without directly venting to the atmosphere, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install defueling hose, nozzle panel, vent stack, pressure regulator, and related items, within the defueling area, as described herein this Scope of Work.

#### **6.6. Mobile Hydrogen Fueling Trailer Area**

DESIGN-BUILD TEAM shall provide a designated mobile hydrogen fueling trailer area, a space capable of supporting mobile hydrogen fueling trailers, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install a NEMA 3R electrical cabinet with power service, receptacle, grounding terminal, power cord, and related items, within the mobile hydrogen fueling trailer area, as described herein this Scope of Work.

#### **6.7. Data Communications**

DESIGN-BUILD TEAM shall furnish and install all required items, as described herein this Scope of Work. DESIGN-BUILD TEAM shall include all required work that will facilitate new data/internet service to support and allow for fully operational equipment/systems associated with hydrogen storage and fueling equipment, as required herein Task 6 of this Scope of Work.

DESIGN-BUILD TEAM shall furnish, install, and integrate Fleetwatch system and related items, to collect fueling data for each hydrogen fuel dispenser at the fuel building, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish, install, and integrate data communication system and related items, to provide a means for remote monitoring of fueling system operation, as described herein this Scope of Work.

**6.8. All Other Utility Infrastructure, Utility Piping, Conduits, and Conductors/Wirings**

DESIGN-BUILD TEAM shall furnish and install all other utility infrastructure and related items, to provide necessary utility service(s) for the hydrogen fueling station, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install all required utility piping, conduits, conductors/wiring, grounding, and related items, as described herein this Scope of Work. DESIGN-BUILD TEAM shall include all required work that will allow for fully operational equipment/systems associated with hydrogen storage and fueling equipment, as required herein Task 6 of this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install service water hose bibs with hose and related items, to support the hydrogen storage equipment area and to support the defueling and mobile hydrogen fueling trailer areas, as described herein this Scope of Work.

**6.9. Earthwork**

DESIGN-BUILD TEAM shall perform all earthwork and related work associated with hydrogen storage and fueling equipment, as required herein Task 6 of this Scope of Work.

**6.10. Concrete Placement**

DESIGN-BUILD TEAM shall perform all concrete placement and related work associated with hydrogen storage and fueling equipment, as required herein Task 6 of this Scope of Work.

DESIGN-BUILD TEAM shall construct new concrete related equipment footings/foundations or pads to support and level up hydrogen storage and fueling equipment, and related items, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall construct new concrete related to pavements and flatwork, resulting from utility trenching and other work, as described herein this Scope of Work.

## **6.11. All Other Work**

All Other Work related to Task 6: Hydrogen Fueling Station Construction – Hydrogen Storage and Fueling Equipment that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 6.1 through Task 6.10 of this Scope of Work.

- All Other Work, related to Task 6: Hydrogen Fueling Station Construction – Hydrogen Storage and Fueling Equipment, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 6.11 of this Scope of Work or another appropriate existing task of this Scope of Work.

## **Task 7: Hydrogen Fueling Station Construction – Masonry Walls, Elevated Concrete Slab, Fencing, Sliding Gates, and Safety Bollards**

PROJECT information, requirements, and/or specifications related to Hydrogen Fueling Station Construction – Masonry Walls, Elevated Concrete Slab, Fencing, Sliding Gates, and Safety Bollards are provided within Task 3: Architectural & Engineering Design of this Scope of Work and/or Attachment A: Project Preliminary Plans for reference.

**DESIGN-BUILD TEAM shall review Task 7 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Hydrogen Fueling Station Construction – Masonry Walls, Elevated Concrete Slab, Fencing, Sliding Gates, and Safety Bollards that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

### **7.1. Masonry Walls**

DESIGN-BUILD TEAM shall construct a fire-rated masonry wall and related items, along the northern property line and adjacent to the electrical equipment area, the hydrogen storage equipment area, the defueling area, and the mobile hydrogen fueling trailer area, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall construct a fire-rated masonry wall and related items, between the electrical equipment area and the hydrogen storage equipment area, and along the southern perimeter of electrical equipment area, as described herein this Scope of Work.

## **7.2. Elevated Concrete Slab**

DESIGN-BUILD TEAM shall construct new concrete related to elevated slab related to the hydrogen storage equipment area and the electrical equipment area, as described herein this Scope of Work. DESIGN-BUILD TEAM shall construct in-slab drainage gutter system and related items, as described herein this Scope of Work.

## **7.3. Fencing and Sliding Gates**

DESIGN-BUILD TEAM shall furnish and install fencing, sliding gates with a lock and key system, and related items, to enclose the hydrogen storage equipment areas, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install fencing, sliding gate with a lock and key system, and related items, to enclose the electrical equipment area, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install sliding gate and related items, as a replacement gate along the northern property line, as described herein this Scope of Work.

## **7.4. Safety Bollards**

DESIGN-BUILD TEAM shall furnish and install safety bollards and related items, to secure the hydrogen storage equipment areas, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install safety bollards and related items, to secure the electrical equipment area, as described herein this Scope of Work.

## **7.5. Earthwork**

DESIGN-BUILD TEAM shall perform all earthwork and related work associated with masonry walls, elevated concrete slab, fencing, sliding gates, and safety bollards, as required herein Task 7 of this Scope of Work; earthwork shall include excavation, trenching, grading, backfill, import, export, and all other related work.

## **7.6. Concrete Placement**

DESIGN-BUILD TEAM shall perform all concrete placement and related work associated with masonry walls, fencing, sliding gates, and safety bollards, as required herein Task 7 of this Scope of Work.



DESIGN-BUILD TEAM shall construct new concrete related to foundations for the support of masonry walls, fencing, sliding gates, safety bollards, and related items, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall construct new asphaltic concrete patchwork related to the new fire-rated masonry wall along the northern property line, as described herein this Scope of Work.

#### **7.7. All Other Work**

All Other Work related to Task 7: Hydrogen Fueling Station Construction – Masonry Walls, Elevated Concrete Slab, Fencing, Sliding Gates, and Safety Bollards that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 7.1 through Task 7.6 of this Scope of Work.

- All Other Work, related to Task 7: Hydrogen Fueling Station Construction – Masonry Walls, Elevated Concrete Slab, Fencing, Sliding Gates, and Safety Bollards, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 7.7 of this Scope of Work or another appropriate existing task of this Scope of Work.

#### **Task 8: Hydrogen Fueling Station Construction – LED Area Lighting, Video Surveillance System (VSS) Cameras, Signage, Paint Striping and Markings**

PROJECT information, requirements, and/or specifications related to Hydrogen Fueling Station Construction – LED Area Lighting, VSS Cameras, Signage, Paint Striping and Markings are provided within Task 3: Architectural & Engineering Design of this Scope of Work and/or Attachment A: Project Preliminary Plans for reference.

**DESIGN-BUILD TEAM shall review Task 8 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Hydrogen Fueling Station Construction – LED Area Lighting, VSS Cameras, Signage, Paint Striping and Markings that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

#### **8.1. LED Area Lighting**

DESIGN-BUILD TEAM shall furnish and install new explosion-proof LED area lighting and related items, to support the hydrogen storage equipment areas and defueling area, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install new explosion-proof LED area lighting and related items, to support the electrical equipment area, as described herein this Scope of Work.

## **8.2. Video Surveillance System (VSS) Cameras**

DESIGN-BUILD TEAM shall furnish and install new explosion-proof VSS cameras and related items, to oversee the hydrogen storage equipment areas and defueling area, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install new explosion-proof VSS cameras and related items, to oversee the electrical equipment area, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install new explosion-proof VSS cameras and related items, to oversee the maintenance platform area, as described herein this Scope of Work.

## **8.3. Signage**

DESIGN-BUILD TEAM shall furnish and install safety and warning signs, and related items, to provide caution of appropriate hazards at hydrogen fueling station areas, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install safety and warning signs, and related items, to provide caution of appropriate hazards at the electrical equipment area, as described herein this Scope of Work.

## **8.4. Paint Striping and Markings**

DESIGN-BUILD TEAM shall furnish and apply paint and related items, to delineate areas with striping and markings at the hydrogen fueling station areas and related electrical equipment area, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and apply paint and related items, to provide painted perimeter and edges of elevated work surfaces for safety purposes at the hydrogen fueling station areas and related electrical equipment area, as described herein this Scope of Work

## **8.5. Data Communications**

DESIGN-BUILD TEAM shall furnish and install all required items, as described herein this Scope of Work. DESIGN-BUILD TEAM shall include all required work that will facilitate new data/internet service to support and allow for fully operational equipment/systems associated with VSS cameras, as required herein Task 8 of this Scope of Work.

## **8.6. Conduits and Conductors/Wirings**

DESIGN-BUILD TEAM shall furnish and install all required conduits, conductors/wiring, grounding, and related items, as described herein this Scope of Work. DESIGN-BUILD TEAM shall include all required work that will allow for fully operational equipment/systems associated with LED area lighting and VSS cameras, as required herein Task 8 of this Scope of Work.

## **8.7. Earthwork**

DESIGN-BUILD TEAM shall perform all earthwork and related work associated with LED area lighting, as required herein Task 8 of this Scope of Work; earthwork shall include excavation/trenching, backfill, and all other related work.

## **8.8. Concrete Placement**

DESIGN-BUILD TEAM shall perform all concrete placement and related work associated with LED area lighting, as required herein Task 8 of this Scope of Work.

DESIGN-BUILD TEAM shall construct new concrete related to foundations for the support LED area lighting and related items, as described herein this Scope of Work.

## **8.9. All Other Work**

All Other Work related to Task 8: Hydrogen Fueling Station Construction – LED Area Lighting, Video Surveillance System (VSS) Cameras, Signage, Paint Striping and Markings that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 8.1 through Task 8.8 of this Scope of Work.

- All Other Work, related to Task 8: Hydrogen Fueling Station Construction – LED Area Lighting, VSS Cameras, Signage, Paint Striping and Markings, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 8.9 of this Scope of Work or another appropriate existing task of this Scope of Work.

## **Task 9: Hydrogen Fueling Station Construction – Hydrogen Detection Systems, Emergency Shutdown Systems, and Battery Backup Systems**

PROJECT information, requirements, and/or specifications related to Hydrogen Fueling Station Construction – Hydrogen Detection Systems, Emergency Shutdown Systems, and Battery Backup Systems are provided within Task 3: Architectural & Engineering Design of this Scope of Work and/or Attachment A: Project Preliminary Plans for reference.

**DESIGN-BUILD TEAM shall review Task 9 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Hydrogen Fueling Station Construction – Hydrogen Detection Systems, Emergency Shutdown Systems, and Battery Backup Systems that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

### **9.1. Hydrogen Detection Systems**

DESIGN-BUILD TEAM shall furnish, install, and integrate new hydrogen detection systems and related items, to accommodate the use of the hydrogen fueling station and FCEBs, as described herein this Scope of Work.

- DESIGN-BUILD TEAM shall furnish and install new hydrogen gas detectors and hydrogen flame detectors, and related items, at the hydrogen fueling station areas.
- In addition to new hydrogen gas detectors and hydrogen flame detectors, DESIGN-BUILD TEAM shall furnish and install new alarms, control panel, detection horn/strobe light assemblies, multi-color beacon light arrays for hydrogen fueling station areas and shall all be strategically located.
- DESIGN-BUILD TEAM shall integrate new hydrogen detection system with existing detection/alarm systems.

### **9.2. Emergency Shutdown Systems**

DESIGN-BUILD TEAM shall furnish, install, and integrate new emergency shutdown (ESD) system and related items, to stop/restrict fueling operations when activated, as described herein this Scope of Work.

- DESIGN-BUILD TEAM shall furnish and install new ESD buttons and related items, at the hydrogen storage equipment area associated with liquid hydrogen storage tank.
- DESIGN-BUILD TEAM shall furnish, install, and integrate new ESD buttons, and related items, for the two (2) hydrogen fuel dispenser locations.

- DESIGN-BUILD TEAM shall furnish and install new ESD panels and related items, at the supervisor's office (maintenance building) and at the fuel building.

### **9.3. Battery Backup Systems**

DESIGN-BUILD TEAM shall furnish and install new battery backup system and related items, to furnish bridging power and avoid hydrogen fueling station alarm events during transition to standby generator power at time of grid power outages, for all required equipment and components associated with the hydrogen fueling station, as described herein this Scope of Work.

### **9.4. Data Communications**

DESIGN-BUILD TEAM shall furnish and install all required items, as described herein this Scope of Work. DESIGN-BUILD TEAM shall include all required work that will facilitate new data/internet service to support and allow for fully operational equipment/systems associated with hydrogen detection systems and emergency shutdown systems, as required herein Task 9 of this Scope of Work.

### **9.5. Conduits and Conductors/Wirings**

DESIGN-BUILD TEAM shall furnish and install all required conduits, conductors/wiring, grounding, and related items, as described herein this Scope of Work. DESIGN-BUILD TEAM shall include all required work that will allow for fully operational equipment/systems associated with hydrogen detection systems, emergency shutdown systems, and battery backup systems, as required herein Task 9 of this Scope of Work.

### **9.6. All Other Work**

All Other Work related to Task 9: Hydrogen Fueling Station Construction – Hydrogen Detection Systems, Emergency Shutdown Systems, and Battery Backup Systems that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 9.1 through Task 9.5 of this Scope of Work.

- All Other Work, related to Task 9: Hydrogen Fueling Station Construction – Hydrogen Detection Systems, Emergency Shutdown Systems, and Battery Backup Systems, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 9.6 of this Scope of Work or another appropriate existing task of this Scope of Work.

## **Task 10: Hydrogen Fueling Station Construction – Maintenance Platform**

PROJECT information, requirements, and/or specifications related to Hydrogen Fueling Station Construction – Maintenance Platform are provided within Task 3: Architectural & Engineering Design of this Scope of Work and/or Attachment A: Project Preliminary Plans for reference.

**DESIGN-BUILD TEAM shall review Task 10 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Hydrogen Fueling Station Construction – Maintenance Platform that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

### **10.1. Maintenance Platform**

DESIGN-BUILD TEAM shall furnish and install a maintenance platform and related items, to allow access to bus rooftop for maintenance and inspection purposes within the maintenance building, as described herein this Scope of Work.

### **10.2. All Other Work**

All Other Work related to Task 10: Hydrogen Fueling Station Construction – Maintenance Platform that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 10.1 of this Scope of Work.

- All Other Work, related to Task 10: Hydrogen Fueling Station Construction – Maintenance Platform, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 10.2 of this Scope of Work or another appropriate existing task of this Scope of Work.

## **Task 11: Facility Modifications – Hydrogen Detection Systems, Emergency Shutdown Systems, Battery Backup Systems, Ventilation Systems, LED Area Lighting, VSS Cameras, and, Signage**

PROJECT information, requirements, and/or specifications related to Facility Modifications – Hydrogen Detection Systems, Emergency Shutdown Systems, Battery Backup Systems, Ventilation Systems, LED Area Lighting, VSS Cameras, and Signage are provided within Task 3: Architectural & Engineering Design of this Scope of Work and/or Attachment A: Project Preliminary Plans for reference.

**DESIGN-BUILD TEAM shall review Task 11 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Facility Modifications – Hydrogen Detection Systems, Emergency Shutdown Systems, Battery Backup Systems, Ventilation Systems, LED Area Lighting, VSS Cameras, and Signage that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

### **11.1. Hydrogen Detection Systems**

DESIGN-BUILD TEAM shall furnish, install, and integrate new hydrogen detection systems and related items, at the appropriate maintenance facilities due to introduction of hydrogen system, as described herein this Scope of Work.

- DESIGN-BUILD TEAM shall furnish, install, and integrate new hydrogen detection systems including hydrogen gas detectors, hydrogen flame detectors, alarms, control panel, detection horn/strobe light assemblies, multi-color beacon light arrays, and related items.
- DESIGN-BUILD TEAM shall integrate new hydrogen detection system with existing detection/alarm systems.

DESIGN-BUILD TEAM shall furnish, install, and integrate early warning systems (hydrogen detection system) and related items, at the maintenance building to scan temperature of bus roof for excessive heat and/or detect lithium off-gassing, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install all materials related to any required upgrades/modification to existing electrical service, as a result of new hydrogen detection systems related facility modifications.

### **11.2. Emergency Shutdown Systems**

DESIGN-BUILD TEAM shall furnish, install, and integrate new ESD system and related items, at the appropriate maintenance facilities due to introduction of hydrogen system, as described herein this Scope of Work.

- DESIGN-BUILD TEAM shall furnish, install, and integrate new ESD buttons and related items with existing ESD system.
- DESIGN-BUILD TEAM shall integrate new ESD panels and related items, to control and monitor new and existing ESD system, at the supervisor's office (maintenance building) and at the fuel building.

DESIGN-BUILD TEAM shall furnish and install all materials related to any required upgrades/modification to existing electrical service, as a result of ESD systems related facility modifications.

### **11.3. Battery Backup Systems**

DESIGN-BUILD TEAM shall furnish and install new battery backup system and related items, to furnish bridging power and avoid hydrogen fueling station alarm events during transition to standby generator power at time of grid power outages, for all required equipment and components at the appropriate maintenance facilities, as described herein this Scope of Work.

### **11.4. Ventilation Systems**

DESIGN-BUILD TEAM shall furnish and install all materials related to any required upgrades/modification to existing ventilation systems at the appropriate maintenance facilities due to introduction of hydrogen system, as described herein this Scope of Work.

### **11.5. LED Area Lighting**

Where affected by introduction of hydrogen system, DESIGN-BUILD TEAM shall remove existing non-explosion-proof area lighting and/or related items; furnish and install new explosion-proof LED area lighting and related items, at the appropriate maintenance facilities, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install all materials related to any required upgrades/modification to existing electrical service, as a result of LED area lighting related facility modifications this Scope of Work.

### **11.6. Video Surveillance System (VSS) Cameras**

Where affected by introduction of hydrogen system, DESIGN-BUILD TEAM shall remove existing non-explosion-proof VSS cameras and/or related items; furnish and install new explosion-proof VSS cameras and related items, at Garden Grove Bus Base, as described herein this Scope of Work.

DESIGN-BUILD TEAM shall furnish and install all materials related to any required upgrades/modification to existing electrical service, as a result of VSS cameras related facility modifications this Scope of Work.



### **11.7. Signage**

DESIGN-BUILD TEAM shall furnish and install safety and warning signs, and related items, to provide caution of appropriate hazards at the appropriate maintenance facilities due to introduction of hydrogen system, as described herein this Scope of Work.

### **11.8. Data Communications**

DESIGN-BUILD TEAM shall furnish and install all required items, as described herein this Scope of Work. DESIGN-BUILD TEAM shall include all required work that will facilitate new data/internet service to support and allow for fully operational equipment/systems associated with hydrogen detection systems, emergency shutdown systems, and VSS cameras, as required herein Task 11 of this Scope of Work.

### **11.9. Conduits and Conductors/Wirings**

DESIGN-BUILD TEAM shall furnish and install all required conduits, conductors/wiring, grounding, and related items, as described herein this Scope of Work. DESIGN-BUILD TEAM shall include all required work that will allow for fully operational equipment/systems associated with hydrogen detection systems, emergency shutdown systems, and battery backup systems, LED area lighting, and VSS cameras, as required herein Task 11 of this Scope of Work.

### **11.10. All Other Work**

All Other Work related to Task 11: Facility Modifications – Hydrogen Detection Systems, Emergency Shutdown Systems, Battery Backup Systems, Ventilation Systems, LED Area Lighting, VSS Cameras, and Signage that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 11.1 through Task 11.9 of this Scope of Work.

- All Other Work, related to Task 11: Facility Modifications – Hydrogen Detection Systems, Emergency Shutdown Systems, Battery Backup Systems, Ventilation Systems, LED Area Lighting, VSS Cameras, and Signage, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 11.10 of this Scope of Work or another appropriate existing task of this Scope of Work.

## **Task 12: Inspections, Tests, Startup and Commissioning**

**DESIGN-BUILD TEAM shall review Task 12 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Inspections, Tests, Startup and Commissioning that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

### **12.1. Inspections and Tests, prior to or during Startup and Commissioning**

DESIGN-BUILD TEAM shall provide evidence that PROJECT requirements, as described herein and other applicable documents, have been met to the satisfaction of all appropriate AHJ and OCTA. DESIGN-BUILD TEAM shall coordinate and ensure that all inspections and tests are performed to determine that PROJECT is in compliance with requirements. DESIGN-BUILD TEAM shall secure appropriate documentation for all inspections and tests performed, and provide OCTA with copies of all inspections and tests documentation, as required for acceptance of PROJECT. DESIGN-BUILD TEAM shall pay for all inspections and tests, and related documentations, required to deliver a turnkey code-compliant PROJECT.

Inspections and tests shall be based on recommendations by OCTA, DESIGN-BUILD TEAM, manufacturer and vendor of PROJECT equipment/components and systems, and inspections and tests specified herein. Neither inspections, witnessing of tests, nor waiving of any such procedure by OCTA shall release DESIGN-BUILD TEAM or PROJECT related manufacturers and vendors from full responsibility for compliance with equipment, materials and functional requirements according to specifications.

DESIGN-BUILD TEAM shall test all equipment/components and systems, including but not limited to liquid hydrogen storage tank, hydrogen fuel dispensers, pumps/compressors, vaporizers, gaseous storage vessels, control systems, and high-pressure lines, hydrogen detection systems, emergency shutdown systems. Equipment operation, systems operation, and hydrogen fueling station calibration shall be tested and adjusted by DESIGN-BUILD TEAM.

#### **Piping/Tubing Testing and Inspections**

Inspections and testing related to hydrogen piping/tubing shall be in accordance with ANSI/ASME B31.3. DESIGN-BUILD TEAM shall retain a qualified third-party

testing firm to perform all testing required under ANSI/ASME B31.3, which shall include but not limited to pressure testing and leak testing.

Inspections and quality control shall be provided to ensure that interior sections of hydrogen piping/tubing are thoroughly cleaned out, purged, and/or deburred prior to startup and commissioning; such as measures are to be taken to prevent piping contaminants from damaging hydrogen equipment or FCEBs.

Deliverables:

- Test Results/Documentation – PDF file distribution via email.
- Inspection Reports/Documentation – PDF file distribution via email.

### Purity Testing

DESIGN-BUILD TEAM shall conduct fuel purity testing during the commissioning phase of the PROJECT and prior to filling any of OCTA's FCEBs, in order to ensure that the fuel meets quality standards. Purity testing shall check for particulates, CO, and hydration levels, as well as other contaminants; additional tests are required following any repairs that have the potential of introducing contaminants to the closed system. Fuel quality shall meet SAE J2719 fuel quality standard for hydrogen.

Deliverables:

- Test Results/Documentation – PDF file distribution via email.

## **12.2. Startup and Commissioning**

DESIGN-BUILD TEAM shall be responsible for organizing and coordinating startup and commissioning activities related to the hydrogen fueling station. Commissioning shall confirm that the hydrogen fueling station meets fueling performance, as described herein.

- Commissioning and related testing shall demonstrate that the installed hydrogen fuel dispensers are each capable of fueling a FCEB (fuel cell electric buses), with a required fill quantity of 30 kg, under 10 minutes; additionally, each installed dispenser shall demonstrate capability of fueling FCEBs in back-to-back rapid succession during an 8-hour time window.
- Commissioning and related testing shall demonstrate that the installed hydrogen fuel dispensers are capable of fueling separate FCEBs simultaneously, without an operating hydrogen fuel dispenser compromising the fueling performance of another operating hydrogen fuel dispenser.

- Commissioning and related testing shall demonstrate that the installed hydrogen fuel dispensers are calibrated to record quantity of fuel dispensed to within plus or minus three percent (+/- 3%) accuracy or better.
- Commissioning and related testing shall demonstrate the successful operation of all data monitoring services, emergency shutdown system, and any other related items. OCTA personnel may observe any testing in progress.

### Commissioning Plan

DESIGN-BUILD TEAM shall prepare and provide OCTA with a detailed Commissioning Plan for the hydrogen fueling station, which at a minimum shall identify the steps, tasks, responsibilities, and schedule of entire commissioning process of the hydrogen fueling station. DESIGN-BUILD TEAM shall include in the Commissioning Plan a list of activities to be performed by a third-party vendor during installation that would require technical support, and provide details on DESIGN-BUILD TEAM's approach on providing technical support for these activities.

A Draft Commissioning Plan shall be submitted to OCTA for review and comments at least sixty (60) calendar days prior to startup and commissioning process. DESIGN-BUILD TEAM shall allow a minimum of seven (7) calendar days for OCTA review process; DESIGN-BUILD TEAM shall address the comments and submit to OCTA for acceptance the revised Final Commissioning Plan within seven (7) calendar days from receipt of OCTA comments.

#### Deliverables:

- Draft Commissioning Plan – PDF file distribution via email.
- Final Commissioning Plan – PDF file distribution via email and two (2) hard copies.

### Commissioning Daily Field Reports and Logs

DESIGN-BUILD TEAM shall submit written Daily Field Reports and Logs to OCTA during commissioning of the hydrogen fueling station, which at a minimum shall include the following:

- PROJECT Name
- Date, Field Staff's Name and Signature
- Description of Activities Performed and Status of Activities
- Start time and end time of activities performed
- Listing of all Incidents and Unusual System Performance Issues, if any
- Subsequent Actions Taken/Performed to Address Incidents and Unusual System Performance Issues, if any

Deliverables:

- Commissioning Daily Field Reports and Logs – PDF file distribution via email and one (1) hard copy per day.

### **12.3. All Other Work**

All Other Work related to Task 12: Inspections, Tests, Startup and Commissioning that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 12.1 and Task 12.2 of this Scope of Work.

- All Other Work, related to Task 12: Inspections, Tests, Startup and Commissioning, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 12.3 of this Scope of Work or another appropriate existing task of this Scope of Work.

### **Task 13: Training – Safety, Operations, and First Responder**

**DESIGN-BUILD TEAM shall review Task 13 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Training – Safety, Operations, and First Responder that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

#### **13.1. Training – Safety, Operations, and First Responder**

DESIGN-BUILD TEAM shall be responsible for organizing and coordinating training courses, to ensure that all relevant OCTA staff and local first responders are fully trained on all safety systems, and the safe and successful operations of the hydrogen fueling station. DESIGN-BUILD TEAM shall conduct several training courses over a four-week period, which shall include a minimum of 40 hours of training, unless otherwise agreed upon by OCTA and DESIGN-BUILD TEAM. All necessary materials and equipment to facilitate the training courses shall be provided by DESIGN-BUILD TEAM. The following training courses shall be provided by DESIGN-BUILD TEAM:

- Operations Training
- Safety Training
- First Responder Training

DESIGN-BUILD TEAM shall serve as the system expert and shall provide training and certification to OCTA staff in compliance with Cal/OSHA §5189(g).

Training courses shall be provided in both classroom setting and hands-on/field setting. Training courses shall include but not limited to the following:

- Equipment specific training/exercises.
- Use of hydrogen fuel dispensers with fuel management systems.
- Manual and automatic operation of pumps/compressors, all other applicable hydrogen equipment, electrical switchboard, control unit/valve panel, hydrogen detection systems; to include all shutdowns, indicator lights, alarms, and resets, as needed.
- Defueling operation.
- Emergency shutdown systems operation.
- Emergency response to address hydrogen leaking, hydrogen equipment malfunction, or other potential emergency related to the hydrogen fueling station; such training shall be provided and coordinated with first responders.

The training course instructor shall be capable of training approximately 10 course attendees simultaneously in each course.

DESIGN-BUILD TEAM shall provide OCTA with two (2) 4-hour refresher training courses; a refresher training course shall be coordinated and provided approximately nine (9) months after completion of initial training courses, and the other refresher training course shall be coordinated and provided within sixty (60) calendar days before end of training and transition period, as described herein.

#### Training Plan

DESIGN-BUILD TEAM shall prepare and provide a Training Plan, which shall outline the following details: description of training courses, training course length, recommended attendees and timing.

A Draft Training Plan shall be submitted to OCTA for review and comments at least sixty (60) calendar days prior to startup and commissioning process. DESIGN-BUILD TEAM shall allow a minimum of seven (7) calendar days for OCTA review process; DESIGN-BUILD TEAM shall address the comments and submit to OCTA for acceptance the revised Final Training Plan within seven (7) calendar days from receipt of OCTA comments. Based on recommendations from the Final Training Plan, DESIGN-BUILD TEAM shall schedule training courses' time and location, after coordinating availability of all required parties.

#### Deliverables:

- Draft Training Plan – PDF file distribution via email.
- Final Training Plan – PDF file distribution via email and one (1) hard copy.

## Training Manual

DESIGN-BUILD TEAM shall prepare and provide copies of Training Manual consisting of training course materials, to be utilized as a reference by attendees of training courses. DESIGN-BUILD TEAM shall provide at a minimum twenty-five (25) bound copies of Training Manual, which shall be distributed during the training courses.

DESIGN-BUILD TEAM shall electronically submit Training Manual to OCTA, at least seventy (7) calendar days prior to the initial training course.

### Deliverables:

- Training Manual – PDF file distribution via email and hard copies per requirement.

## Quick Reference Guide of Emergency Response Plan

DESIGN-BUILD TEAM shall prepare and submit an Emergency Response Plan (ERP), as required in Task 2.3 of this Scope of Work. DESIGN-BUILD TEAM shall prepare and provide copies of a quick reference guide related to the approved ERP, with the intent of distributing to first responders to place in their trucks/engines; the guide shall include a map showing the location of all hydrogen storage and fueling equipment, visual and audible alarms, and emergency shutdown systems, as well as the distances to these equipment from the entry driveway and nearby structures. DESIGN-BUILD TEAM shall provide at a minimum five (5) hard copies of Quick Reference Guide of ERP, which shall be distributed during the training courses.

DESIGN-BUILD TEAM shall electronically submit the Quick Reference Guide of ERP to OCTA, at least seventy (7) calendar days prior to the initial training course.

### Deliverables:

- Quick Reference Guide of ERP – PDF file distribution via email.

## **13.2. All Other Work**

All Other Work related to Task 13: Training – Safety, Operations, and First Responder that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 13.1 of this Scope of Work.

- All Other Work, related to Task 13: Training – Safety, Operations, and First Responder, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 13.2 of this Scope of Work or another appropriate existing task of this Scope of Work.

## **Task 14: Back-to-Back Performance Testing and Performance Data**

**DESIGN-BUILD TEAM shall review Task 14 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Back-to-Back Performance Testing and Performance Data that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

### **14.1. Back-to-Back Performance Testing**

DESIGN-BUILD TEAM shall conduct Back-to-Back Performance Testing no later than thirty (30) calendar days after the hydrogen fueling station is fully commissioned. DESIGN-BUILD TEAM shall provide OCTA with advance notice of Back-to-Back Performance Testing activities to minimize disruptions to normal bus maintenance and/or operations.

Back-to-Back Performance Testing shall demonstrate the hydrogen fueling station's ability to refuel Fuel Cell Electric Buses (FCEBs) with the following testing criteria and requirements:

- Testing duration shall be performed for approx. 2 hours (or 120 minutes).
- Two (2) hydrogen fuel dispensers shall be utilized simultaneously during testing.
- Eighteen (18) FCEBs shall be utilized during testing.
- Each FCEB shall be refueled under 10 minutes.
- Each FCEB shall be refueled with a fill quantity of 30 kg (or demonstrate an average fill rate of 3.0 kg/min or greater).
- A minimum of 95% SOC of each FCEB at settled pressure shall be achieved.
- Nine (9) FCEBs shall be refueled back-to-back in rapid succession by one (1) hydrogen fuel dispenser, within the approx. 2-hour time window.

Back-to-Back Performance Testing shall also include activation and demonstration of all safety shutdown systems and demonstration that data monitoring system(s) are operating and accurately capturing required data. DESIGN-BUILD TEAM shall allow OCTA unimpeded access to all data from the Back-to-Back Performance Testing. DESIGN-BUILD TEAM shall provide a Back-to-Back Performance Testing Report within seven (7) calendar days of performance testing completion. Back-to-Back Performance Testing Report at a minimum shall include the following:

- Summary of test plan and any deviations



- Summary table of each fill event with:
  - PROJECT Name
  - Name and Signature of Representative Performing Test
  - FCEB Identification
  - Start/Stop Date-Time
  - Start/Stop Hose Pressure
  - Start/Stop Hose Temperature
  - Start/Stop Tank Pressure
  - Start/Stop Storage Bank Pressures
  - End of Fill SOC
  - Fill Quantity (kg dispensed)
  - Station Energy Consumption
  - Mean Ambient Temperature
  - Any alarms/faults encountered listed for each fill
- End of fill SOC calculation details
- Any root cause analysis required if test not passed

Deliverables:

- Back-to-Back Performance Testing Report – PDF file distribution via email.

#### **14.2. Performance Data**

DESIGN-BUILD TEAM shall provide OCTA with fueling data and information to help evaluate the hydrogen fueling station performance on a continuous basis, which shall begin from the date hydrogen fueling station is fully commissioned and end on the date training and transition period of 18 months concludes, as described herein.

- OCTA uses an industry standard system (Fleetwatch) to collect fueling data on each bus, as the bus is fueled and serviced; DESIGN-BUILD TEAM shall integrate the hydrogen fuel dispensers and the Fleetwatch system, as required within Tasks 3 and 6.7 of this Scope of Work.
- DESIGN-BUILD TEAM shall provide OCTA with a log template consisting of performance metrics that will be utilized by DESIGN-BUILD TEAM to log fueling activities and related data, which will be compared with data obtained from the Fleetwatch system.
- DESIGN-BUILD TEAM shall provide OCTA with a log template that will be utilized by DESIGN-BUILD TEAM to record/track information related to evaluation of the hydrogen fueling station performance, including hydrogen fueling station incidents and status.
- DESIGN-BUILD TEAM shall provide OCTA with templates for Daily Reports, Weekly Summary Reports, and Monthly Summary Reports that shall exhibit performance data on a regular basis.

- Logs and reporting templates provided shall be reviewed and approved by OCTA prior to utilization. Logs and reporting templates shall be submitted to OCTA for review and comments at least seven (7) calendar days prior to startup and commissioning process.
- DESIGN-BUILD TEAM shall provide at a minimum the following requirements related to performance metrics, data collection frequency, and reporting:
  - Hydrogen Fuel Dispensing Operations – Daily information/data shall be collected for each fueled FCEB, and shall be presented within Daily Reports and Monthly Summary Reports, using the following metrics:
    - PROJECT Name
    - Fueler's Name and Signature
    - FCEB Identification
    - Start/Stop Date-Time
    - Start/Stop Hose Pressure
    - Start/Stop Hose Temperature
    - Start/Stop Tank Pressure
    - Start/Stop Storage Bank Pressures
    - End of Fill SOC
    - Fill Quantity (kg dispensed)
    - Mean Ambient Temperature
    - Any alarms/faults encountered listed for each fill
  - Energy Consumption – Daily information/data related to energy consumption shall be collected, and shall be presented within Daily Reports and Monthly Summary Reports, for the following items:
    - Hydrogen Fueling Station (kWh)
    - Hydrogen Fuel Dispensers (kWh/kg)
    - Pumps/compressors (kWh/kg)
  - Fuel Delivery – Information/data shall be collected for every fuel delivery, and shall be presented within Daily Reports, Weekly Summary Reports, and Monthly Summary Report, using the following metrics:
    - Quantity of Fuel Delivered (kg)
    - Cost of Fuel Delivered
  - Hydrogen Fueling Station Incidents and Status – Information/data related to random/irregular hydrogen fueling station incidents and status, shall be presented within Daily Reports and Monthly Summary Report; Information/data that includes but not limited to description, start/stop date-time, action taken, fueling disruption (yes or no), reporter name and signature shall be collected for the following hydrogen fueling station incidents and status:

- Availability – Hours Station is available to fill, with required 95% minimum SOC at settled pressure
- Unavailability – Hours Station is not available to fill
- Equipment Repairs or Maintenance – Scheduled or Unscheduled
- Safety Incidents
- Unusual System Performance Issues
- Power Issues
- Other Incident/Issues
- Fueling accuracy shall be within + or – 3% to effectively measure fuel dispensed, in order for OCTA to calculate vehicle fuel economy.

**Deliverables:**

- Log Templates – PDF file distribution via email.
- Report Templates – PDF file distribution via email.
- Daily, Weekly, and Monthly Performance Data Summary Reports – PDF file distribution via email.

### **14.3. All Other Work**

All Other Work related to Task 14: Back-to-Back Performance Testing and Performance Data that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 14.1 and Task 14.2 of this Scope of Work.

- All Other Work, related to Task 14: Back-to-Back Performance Testing and Performance Data, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 14.3 of this Scope of Work or another appropriate existing task of this Scope of Work.

### **Task 15: Project Closeout Package**

**DESIGN-BUILD TEAM shall review Task 15 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Project Closeout Package that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

#### **15.1. Project Closeout Package**

DESIGN-BUILD TEAM shall provide OCTA with complete Project Closeout Package, as described herein. The content of the Project Closeout Package shall

be precise and accurate to final as-built conditions; at a minimum, package shall include the following:

- As-Built Drawings Package
- As-Built Specifications Package
- Shop Drawings Package
- Equipment Documentation
  - Product Data Sheets
  - General Arrangement Drawings
  - Foundation, Anchoring, and Lifting Plans/Procedures
  - Mechanical and Electrical Termination List and Diagrams
  - Operations and Maintenance Manual
- Emergency Response Plan (ERP)
- Hazardous Materials Management Plan and Hazardous Materials Inventory Statement
- Process Safety Management (PSM) Requirements Documentation
- Testing, Adjusting, and Balancing (TAB) Report for Ventilation System at Maintenance Facilities
- All Warranty Documentation
- QA/QC Documentation
  - All City of Garden Grove, Other AHJ, Deputy and Periodic Inspections related documents
  - Certificate of Compliance and Test Report Submittals – certificates and reports as specified, as required by manufacturers for warranty and guarantee purposes, and as required by AHJ
- Permit Sign-Off
  - Copy of Final City of Garden Grove Building Inspection Record Card
- Punch List
  - Completed and signed off

Project Closeout Package shall be reviewed and approved by OCTA for completeness, consistency, and content. PROJECT completion and acceptance shall include determination that DESIGN-BUILD TEAM has satisfied the following PROJECT requirements: startup and commissioning of the hydrogen fueling station, back-to-back performance testing, facility modifications related work, punch list, final cleanup, and approved project closeout package.

**Deliverables:**

- Draft Project Closeout Package – PDF file distribution via email and/or approved electronic shared folder.
- Final Project Closeout Package – PDF file distribution via email and/or approved electronic shared folder, and one (1) hard copy in addition to As-Built Drawings and Specifications requirements herein.

### As-Built Drawings, As-Built Specifications, and Design Calculations

DESIGN-BUILD TEAM shall prepare As-Built Drawings based on the information available after construction is completed. As-Built Information shall be assembled and placed on the Original Drawings by DESIGN-BUILD TEAM, as the final revision to the drawings. DESIGN-BUILD TEAM shall also assemble As-Built Specifications and Design Calculations.

DESIGN-BUILD TEAM shall submit a Draft As-Built Drawings, Specifications, and Design Calculations to OCTA for verification on the completeness. DESIGN-BUILD TEAM shall incorporate any changes required by OCTA into the Final As-Built Drawings, Specifications, and Design Calculations within seven (7) calendar days upon receipts of OCTA's comments.

As-Built Drawing files in AutoCAD, version 2018 or newer, DWG format with all X-ref files fully loaded, include all applicable plot files.

#### Deliverables:

- Draft As-Built Drawings – PDF file distribution via email and/or approved electronic shared folder.
- Final As-Built Drawings – PDF and native (AutoCAD) files distribution via email and/or approved electronic shared folder, one (1) hard copy of full-size drawings, and one (1) hard copy of half-size drawings.
- Draft As-Built Specifications – PDF file distribution via email and/or approved electronic shared folder.
- Final As-Built Specifications – PDF file distribution via email and/or approved electronic shared folder, and one (1) hard copy.
- Design Calculations – PDF file distribution via email and/or approved electronic shared folder.

### Warranty

DESIGN-BUILD TEAM shall provide a minimum three-year warranty on all major equipment/components and systems of the PROJECT, including but not limited to liquid hydrogen storage tank, hydrogen fuel dispensers, pumps/compressors, vaporizers, gaseous storage vessels, hydrogen detection systems, emergency shutdown systems; warranty shall also apply to the entire hydrogen fueling station to ensure that it is able to fuel buses after commissioning.

#### Deliverables:

- All Warranty Documentation PDF file distribution via email and/or approved electronic shared folder, and two (2) hard copies.

### Punch List

DESIGN-BUILD TEAM shall request and coordinate an initial contract closeout review, not earlier than fourteen (14) days prior to anticipated substantial completion date. OCTA and DESIGN-BUILD TEAM shall conduct a walk-through of PROJECT, to physically observe installed/constructed work, materials, and equipment. OCTA shall prepare a Punch List as a result of physical observations, inspections and tests, performance demonstrations, and other related items. DESIGN-BUILD TEAM shall complete all items on the Punch List, and signed off by OCTA.

### **15.2. All Other Work**

All Other Work related to Task 15: Project Closeout Package that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 15.1 of this Scope of Work.

- All Other Work, related to Task 15: Project Closeout Package, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 15.2 of this Scope of Work or another appropriate existing task of this Scope of Work.

### **Task 16: All Other Work**

DESIGN-BUILD TEAM shall review entire Scope of Work, and shall determine work/services that have been excluded, if any, but is offered by DESIGN-BUILD TEAM; the extent of additional work to be offered shall be defined by DESIGN-BUILD TEAM within their technical proposal, and include pricing for such work within their price proposal.

All Other Work, that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 1 through Task 15 of this Scope of Work; DESIGN-BUILD TEAM shall define All Other Work that are offered by DESIGN-BUILD TEAM, if any, in their proposal and include the associated prices in their pricing proposal.

- All Other Work, as defined by DESIGN-BUILD TEAM in their proposal, that are offered by DESIGN-BUILD TEAM shall be amended to Task 16 of this Scope of Work, unless such work belongs within an existing task (within Task 1 through Task 15 of this Scope of Work) of which such work shall be amended to that appropriate task.

## **Task 17: Operations during Training and Transition Period**

**DESIGN-BUILD TEAM shall review Task 17 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Operations during Training and Transition Period that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

### **17.1. Operations during Training and Transition Period**

DESIGN-BUILD TEAM shall provide services related to hydrogen fueling station operations during a training and transition period of 18 months after completion and acceptance of the PROJECT.

DESIGN-BUILD TEAM shall provide OCTA with response protocols for any emergency situations that may occur during operations services of the hydrogen fueling station, which shall be incorporated into the Emergency Response Plan, as required within Task 2.3 of this Scope of Work.

#### **Operations Services Plan**

DESIGN-BUILD TEAM shall provide OCTA with an Operations Services Plan that will describe in detail their services, including response times, to minimize the downtime of the hydrogen fueling station for both scheduled and unscheduled preventative maintenance, repairs, and related services; DESIGN-BUILD TEAM shall include the following parameters within their Operations Services Plan:

- DESIGN-BUILD TEAM is expected to be available to receive reports of malfunction 24 hours a day, every day of the year.
- In the event of a malfunctioning equipment/component or system related to hydrogen fueling station, DESIGN-BUILD TEAM must respond and have qualified personnel (representative of the original equipment manufacturer (OEM) and/or qualified technician) dispatched on-site, at Garden Grove Bus Base, to address the event/problem in conjunction with the following requirements:
  - For critical services, DESIGN-BUILD TEAM must respond and have qualified personnel report on-site within 2 hours of receiving report/notice of issue from OCTA; critical services are required to address critical service problems which prevents bus fueling, disables a safety system, causes a hydrogen gas leak, or that otherwise impact the ability of buses to meet scheduled rollout.

- For non-critical services, DESIGN-BUILD TEAM must respond and have qualified personnel report on-site within 24 hours of receiving report/notice of issue from OCTA; non-critical services are required to address non-critical service problems which do not meet the criteria of critical service problems specified or that otherwise do not impact the ability of buses to meet scheduled rollout.
  - The malfunctioning equipment/component or system shall be properly functioning within 24 hours of receiving report/notice of issue from OCTA.
- DESIGN-BUILD TEAM shall provide their protocol of dispatching OEM representatives to address malfunctioning equipment or system related to hydrogen fueling station at Garden Grove Bus Base; the protocol should clearly identify measures, if any, intended to minimize disruptions/impacts to normal bus and maintenance operations during the event of OEM representative's failure to appear in a timely manner.
- If during the warranty period, any repair, replacement, or modification on a hydrogen storage and fueling equipment/component, made necessary by defective design, materials, or workmanship is not completed within 24 hours, the warranty period for the entire system shall be extended by the number of days equal to the delay period.
- The hydrogen fueling station shall not be taken offline for more than 24 hours without DESIGN-BUILD TEAM providing an alternate fueling solution.
- DESIGN-BUILD TEAM shall provide all services, as required, to keep the hydrogen fueling station fully functional, including all labor, consumables, repair, rebuild, and replacement costs. DESIGN-BUILD TEAM shall provide all preventative maintenance for the hydrogen fueling station by experienced and qualified personnel with necessary tools and equipment; preventative maintenance shall include all weekly, monthly, and annual service, as required and recommended by the manufacturers of the equipment/components and systems provided by DESIGN-BUILD TEAM.
- DESIGN-BUILD TEAM shall not schedule preventive maintenance of the hydrogen fueling station during daily bus fueling time window, from 6:00 pm to 2:00 am; if practical, scheduled repairs of the hydrogen fueling station should be avoided during daily bus fueling time window.
- DESIGN-BUILD TEAM shall provide services related to controlling, handling, storing, and disposing of all hazardous byproducts and waste that are generated as a result of operations activities at the hydrogen fueling station; services shall be performed in compliance with all federal, state and local laws and regulations, including any licensing requirements.
- DESIGN-BUILD TEAM shall include services related to bi-annual purity testing requirement; DESIGN-BUILD TEAM shall meet SAE J2719 fuel quality standard for hydrogen.



- DESIGN-BUILD TEAM shall maintain records of all scheduled and unscheduled repairs and preventative maintenance performed at the hydrogen fueling station, and shall be submitted to OCTA every three (3) months; similarly, DESIGN-BUILD TEAM shall maintain and submit to OCTA records/reports on any failures, accidents, and other significant events related to the hydrogen fueling station.
- DESIGN-BUILD TEAM shall provide OCTA with a complete set of updated operations and maintenance manual and updated as-built drawings at the conclusion of the 18-month period of operations services.

Draft Operations Services Plan shall be submitted to OCTA for review and comments at least thirty (30) calendar days prior to startup and commissioning process. DESIGN-BUILD TEAM shall allow a minimum of seven (7) calendar days for OCTA review process; DESIGN-BUILD TEAM shall address the comments and submit to OCTA for acceptance the revised Final Operations Services Plan within seven (7) calendar days from receipt of OCTA comments.

**Deliverables:**

- Draft Operations Services Plan – PDF file distribution via email.
- Final Operations Services Plan – PDF file distribution via email and one (1) hard copy.

**Operations and Maintenance Manual**

DESIGN-BUILD TEAM shall prepare and provide copies of complete set of Operations and Maintenance Manual generally consisting of equipment/component and system description, operating procedures, maintenance guidelines, safety protocols, emergency protocols, troubleshooting instructions, manufacturer specifications, parts lists, parts bulletins, warranty information, and other relevant technical details and information for all major equipment/components and systems of the hydrogen fueling station and related items.

- Operations and Maintenance Manual shall incorporate all major equipment/components and systems consisting of liquid hydrogen storage tank, hydrogen fuel dispenser and hose, hydrogen detection systems, early warning systems, emergency shutdown systems; Operations and Maintenance Manual shall also incorporate other major hydrogen equipment, which may consist but not limited to pumps/compressors, vaporizers, gaseous storage vessels, priority control unit/valve panel, and precooling system.
- Operations and Maintenance Manual shall incorporate all major equipment/components and systems related to electrical service equipment and standby generator.

- Operations and Maintenance Manual shall incorporate all major components and systems related to defueling area and mobile hydrogen trailer area.

Operations and Maintenance Manual shall identify and list parts and/or systems that are expected to be replaced under the 18-month period of operations services. Operations and Maintenance Manual shall include Recommended Spare Parts List (RSPL) for all listed equipment/components.

DESIGN-BUILD TEAM shall electronically submit Operations and Maintenance Manual to OCTA, at least fourteen (14) calendar days prior to startup and commissioning process; DESIGN-BUILD TEAM shall also provide OCTA with three (3) bound copies of Operations and Maintenance Manual prior to startup and commissioning process.

DESIGN-BUILD TEAM shall provide OCTA with Updated Operations and Maintenance Manual incorporating equipment/components or systems that are replaced or added, and that are not listed in the original Operations and Maintenance Manual. DESIGN-BUILD TEAM shall electronically submit Updated Operations and Maintenance Manual to OCTA throughout the 18-month period of operations services; DESIGN-BUILD TEAM also provide OCTA with three (3) hard copies of replaced or added pages related to the Updated Operations and Maintenance Manual.

Deliverables:

- Operations and Maintenance Manual – PDF file distribution via email and/or approved electronic shared folder, and hard copies per requirement.
- Updated Operations and Maintenance Manual – PDF file distribution via email and/or approved electronic shared folder, and hard copies per requirement.

Hydrogen Fueling Station Access

Operations services related to the hydrogen fueling stations shall be performed according to parameters/guidelines of Operations Service Plans, as required within Task 17.1 of this Scope of Work; preventive maintenance of the hydrogen fueling station shall not be scheduled during daily bus fueling time window, from 6:00 pm to 2:00 am.

DESIGN-BUILD TEAM shall permit trained OCTA personnel to enter all portions of the hydrogen fueling station to perform routine or emergency inspections and take routine or emergency readings; OCTA personnel shall also be able to follow

and observe DESIGN-BUILD TEAM's technicians during their normal services/duties at the hydrogen fueling station.

## **17.2. All Other Work**

All Other Work related to Task 17: Operations during Training and Transition Period that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 17.1 of this Scope of Work.

- All Other Work, related to Task 17: Operations during Training and Transition Period, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 17.2 of this Scope of Work or another appropriate existing task of this Scope of Work.

## **Task 18: Fuel Supply Services**

**DESIGN-BUILD TEAM shall review Task 18 of this Scope of Work herein, in conjunction with appropriate information and requirements within this entire Scope of Work, and shall determine work/services related to Fuel Supply Services that have been excluded but will be offered by DESIGN-BUILD TEAM; the extent of additional work that DESIGN-BUILD TEAM is offering shall be defined within their technical proposal, and include pricing for such work within their price proposal.**

### **18.1. Fuel Supply during Training and Transition Period**

DESIGN-BUILD TEAM shall sell to OCTA and OCTA shall buy from DESIGN-BUILD TEAM the fuel supply (liquid hydrogen) during training and transition period of 18 months after completion and acceptance of the PROJECT. Fuel supply transaction shall be based on agreed upon milestones, deliverables, and payments in accordance with associated costs and pricing from DESIGN-BUILD TEAM's price proposal; fuel supply pricing shall be based on a total daily fuel consumption of 1,500 kilograms for 18 months

DESIGN-BUILD TEAM shall provide OCTA with a narrative of their plan/approach related to supplying liquid hydrogen for the hydrogen fueling station; DESIGN-BUILD TEAM at a minimum shall address the following:

- Provide information related to source of the Fuel Supply.
- Provide information related to Backup Fuel Supply, Hydrogen Quality, Renewable Hydrogen, as required within Task 18.1 of this Scope of Work.
  - How will the 33% renewable hydrogen content requirement be achieved/provided by DESIGN-BUILD TEAM? If there is a potential for more renewable hydrogen content, preferably 100% renewable hydrogen content, how can this be achieved by DESIGN-BUILD TEAM in the future?

- Provide information related to carbon intensity of the Fuel Supply and how this compares to industry.
- Provide information related to delivery frequency of liquid hydrogen to the hydrogen fueling station, and measures that shall be taken to minimize delivery frequency, if any.
- DESIGN-BUILD TEAM shall provide OCTA with information related to fuel supply costs and pricing, including applicable cost index.

#### Backup Fuel Supply

DESIGN-BUILD TEAM shall develop a plan to provide backup supply of hydrogen fuel to reduce the risk of not being able to fuel OCTA's bus fleet for more than 24 hours, during the critical daily bus fueling time window, from 6:00 pm to 2:00 am.

#### Hydrogen Quality

DESIGN-BUILD TEAM shall provide hydrogen fuel that meets SAE J2719 fuel quality standard for hydrogen.

#### Renewable Hydrogen

DESIGN-BUILD TEAM shall provide renewable hydrogen as prescribed for fueling stations receiving state funds included in the California Code, Health and Safety Code Section 43869. No less than 33.3 percent of the hydrogen dispensed by the fueling station, or more as may be required by California statutes, shall be made from eligible renewable energy resources as defined in Section 399.12 of the Public Utilities Code.

DESIGN-BUILD TEAM shall report renewable fuel dispensed through CARB's Low Carbon Fuel Standard program (<https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard>).

#### Low Carbon Fuel Standards (LCFS) Credits

DESIGN-BUILD TEAM irrevocably assigns and transfers to OCTA all of DESIGN-BUILD TEAM's right, title and interest in and to any and all environmental attributes, credits or benefits of any kind associated with or arising out of the (consumption or dispensing) of electricity/hydrogen as vehicle fuel or operation of equipment necessary to generate environmental credits, including, without limitation, low carbon fuel standard credits, renewable identification numbers, greenhouse gas emission reduction recognition in any form, verified emission reductions, offsets, allowances, credits, avoided compliance costs, emission rights and authorizations under any law or regulation, or any emission reduction registry,

trading system, or reporting or reduction program for greenhouse gas emissions that is established, certified, maintained, or recognized by any international, governmental, or nongovernmental authority.

#### Hydrogen Fueling Station Access

Delivery of hydrogen fuel supply may be delivered seven (7) days a week, between the hours of 5:00 am and 6:00 pm.

### **18.2. All Other Work**

All Other Work related to Task 18: Fuel Supply Services that are offered by DESIGN-BUILD TEAM, but are not clearly defined within Task 18.1 of this Scope of Work.

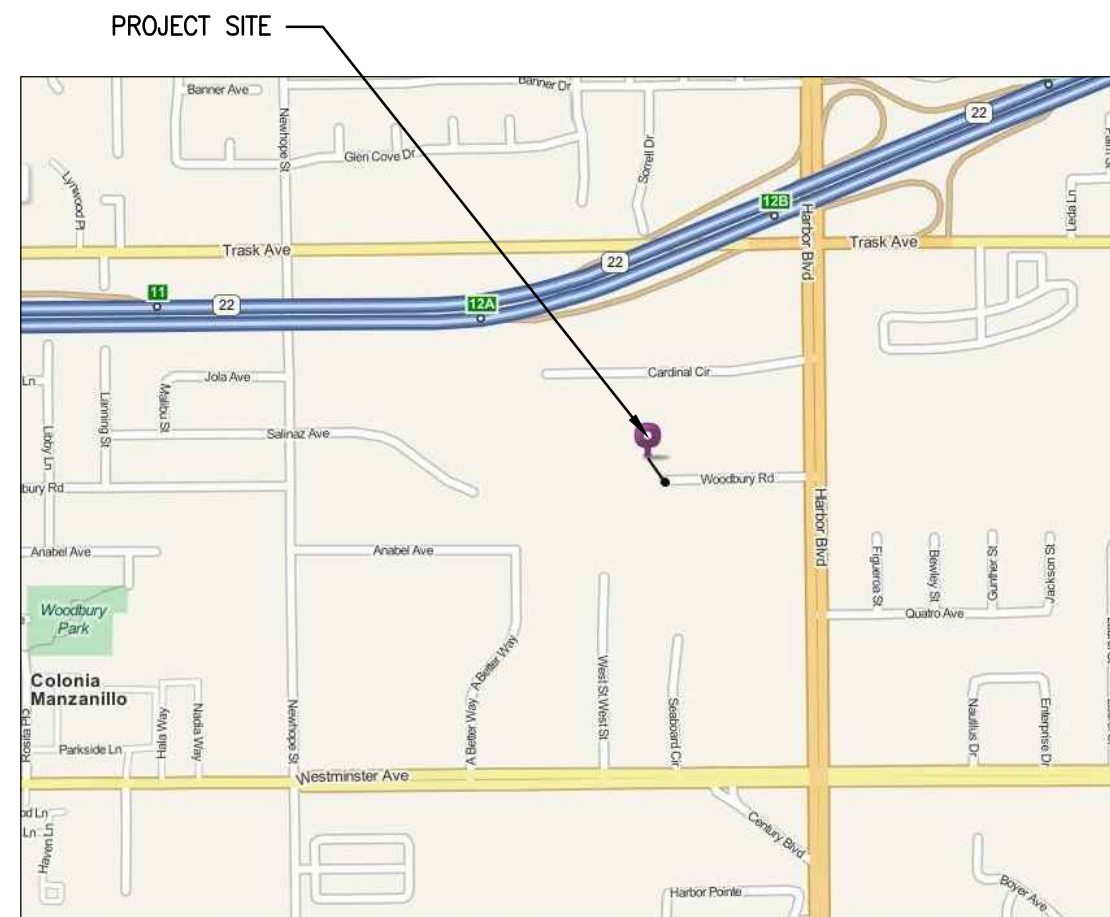
- All Other Work, related to Task 18: Fuel Supply Services, as defined to be offered by DESIGN-BUILD TEAM in their proposal shall be amended to either Task 18.2 of this Scope of Work or another appropriate existing task of this Scope of Work.

**EXHIBIT B: SCOPE OF WORK ATTACHMENTS**



ORANGE COUNTY  
TRANSPORTATION  
AUTHORITY

### VICINITY MAP



## PROJECT INFORMATION

OWNER:	ORANGE COUNTY TRANSPORTATION AUTHORITY (OCTA)
SITE ADDRESS:	17900 CARDINAL CIRCLE, GARDEN GROVE, CA 92843
FACILITY USE:	BUS MAINTENANCE
ZONE:	INDUSTRIAL
REFERENCE:	-
BUILDING FOOT PRINT:	N/A
ALLOWABLE FLOOR AREA:	N/A
TYPE OF CONSTRUCTION:	N/A
SPRINKLERS REQUIREMENT:	N/A
HAZARD MATERIAL:	NO HAZARDOUS MATERIAL IS STORED NEARBY

OWNER  
ORANGE COUNTY TRANSPORTATION AUTHORITY (OCTA)  
550 S. MAIN STREET  
ORANGE, CA 92868

**CONSULTING ENGINEERS**  
DAHL, TAYLOR & ASSOCIATES  
2960 DAIMLER STREET  
SANTA ANA, CA 92705

## CODES AND STANDARDS

2022 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.

2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R.

2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R.

2022 CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24 C.C.R.

2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24. C.C.R.

2022 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 C.C.R.

2022 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R.

2022 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.

3000 INTERNATIONAL GREEN BUILDING STANDARDS CODE (10/07/2015)

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN CODE), TITLE 24 C.C.R.

2020 NPT 7-2	HYDROGEN TECHNOLOGIES CODE

CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS.

ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THESE CODES AND ALL APPLICABLE LOCAL ORDINANCES. WHERE RFP DOCUMENTS EXCEED THESE REQUIREMENTS WITHOUT VIOLATING CODE AND REGULATION REQUIREMENTS, RFP DOCUMENTS SHALL TAKE PRECEDENCE. WHERE CODES CONFLICT, THE MORE STRINGENT SHALL APPLY.

## OFFERORS PROPOSAL NOTES

1. THE DRAWINGS AS PROVIDED WERE PREPARED FOR A DESIGN-BUILD PROPOSAL REQUEST.
2. THE OFFERORS PROPOSING ON THIS PROJECT SHALL VERIFY EXISTING SITE CONDITIONS AND REVIEW THE ENTIRE RFP X-XXXX IN PREPARATION OF THEIR RESPONSES TO RFP X-XXXX.
3. DESIGN-BUILD TEAM WILL BE RESPONSIBLE FOR THE SCOPE OF WORK AS DESCRIBED IN THE ENTIRE RFP X-XXXX AND WILL BE RESPONSIBLE TO COORDINATE ALL TRADES.

## SCOPE OF WORK

DETAILED SCOPE OF WORK IS INCLUDED AS EXHIBIT "A" OF RFP X-XXXX. OFFERORS SHALL THOROUGHLY REVIEW EXHIBIT "A" SCOPE OF WORK, IN CONJUNCTION WITH THESE PRELIMINARY PLANS, FOR PROJECT RELATED INFORMATION, REQUIREMENTS, AND SPECIFICATIONS.

SCOPE OF WORK SHALL INCLUDE DESIGN, CONSTRUCTION, AND DELIVERY OF A TURNKEY CODE-COMPLIANT HYDROGEN FUELING STATION AND FACILITY MODIFICATIONS AT GARDEN GROVE BUS BASE. HYDROGEN FUELING STATION IS REQUIRED TO ACCOMMODATE FOR A TOTAL DAILY FUEL CONSUMPTION OF UP TO 3,000 KILOGRAMS, AND SHALL BE SCALABLE TO ACCOMMODATE FOR A TOTAL DAILY FUEL CONSUMPTION OF UP TO 4,500 KILOGRAMS IN THE FUTURE. FACILITY MODIFICATIONS ARE REQUIRED AT EXISTING MAINTENANCE FACILITIES THAT ARE AFFECTED BY THE INTRODUCTION OF HYDROGEN SYSTEM TO THE PROPERTY.

SCOPE OF WORK SHALL INCLUDE INSPECTIONS AND TESTING, STARTUP AND COMMISSIONING, TRAINING, AND PERFORMANCE TESTING TO DEMONSTRATE THAT PERFORMANCE REQUIREMENTS ARE MET.

SCOPE OF WORK SHALL INCLUDE FUEL SUPPLY SERVICES AND OPERATIONS SERVICES DURING TRAINING AND TRANSITION PERIOD.

PLEASE REFER TO RFP X-XXXX DOCUMENTS FOR OVERALL REQUIREMENTS.

## DRAWING INDEX

**SHEET**

## DESCRIPTION

1	GG-T001	TITLE SHEET, DRAWINGS INDEX, SCOPE OF WORK, PROJECT LOCATION AND VICINITY MAP
2	GG-C100	TOPOGRAPHIC SITE PLAN
3	GG-FS100	SITE PLAN
4	GG-FS101	DEMOLITION PLAN FOR LH2 EQUIPMENT AREA
5	GG-FS102	LIQUID HYDROGEN (LH2) STORAGE & FUELING FACILITIES PLANS
6	GG-FS103	HC-50 CHILLER EQUIPMENT AND CONCRETE FOUNDATION PLANS AT FUELING & VACUUM BUILDING
7	GG-FS104	MAINTENANCE PLATFORM TO SERVICE BUS FLEETS AT MAINTENANCE BUILDING
8	GG-FS105	LIQUID HYDROGEN (LH2) EQUIPMENT CONCRETE FOUNDATION PLAN
9	GG-FS106	HAZARDOUS ZONES PLAN AND ELEVATION
10	GG-FS107	ELECTRICAL UTILITY CONDUIT AND EQUIPMENT PLAN

## PROJECT LOCATION



TITLE SHEET, DRAWINGS INDEX, SCOPE OF WORK,  
PROJECT LOCATION AND VICINITY MAP

**Project**  
DESIGN-BUILD SERVICES FOR HYDROGEN FUELING STATION AND  
FACILITY MODIFICATIONS AT GARDEN GROVE BUS BASE  
11790 CARDINAL CIRCLE, GARDEN GROVE, CA

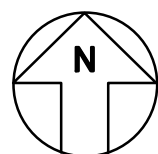
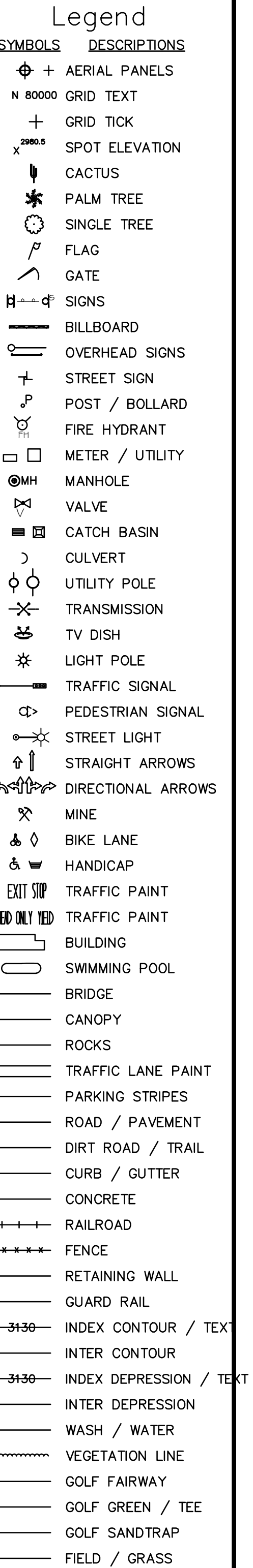
#	1.24.3
GN BY:	SDV
N BY:	TMP
CKED BY:	QV
	08-18-2025
E	AS NOTED
T	

GG-T001

South Main Street  
Orange, CA 92668  
4/560/OCTA

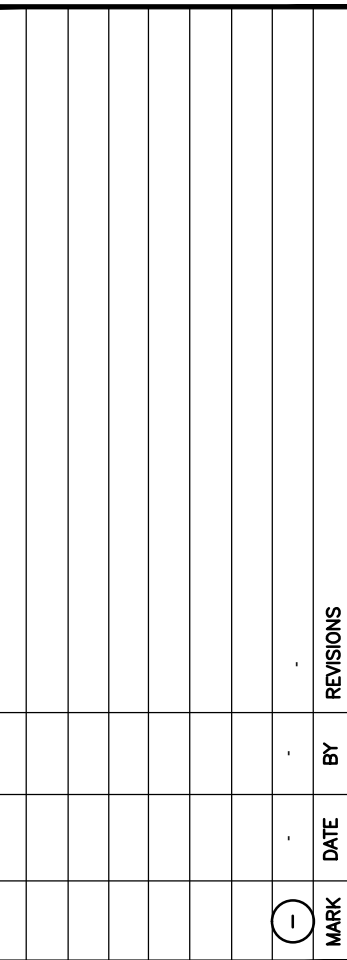






SCALE  
1"=80'-0"

1



## TOPOGRAPHIC SITE PLAN

# Sheet Title

**Project**  
DESIGN-BUILD SERVICES FOR HYDROGEN FUELING STATION AND  
FACILITY MODIFICATIONS AT GARDEN GROVE BUS BASE  
11790 CARDINAL CIRCLE, GARDEN GROVE, CA

JOB #	1.24.3
DESIGN BY:	SDV
DRAWN BY:	TMP
CHECKED BY:	QV
DATE	08-18-2025
SCALE	AS NOTED
SHEET	

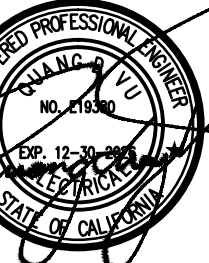
GG-C100

550 South Main Street  
Orange, CA 92668  
714/560/OCTA



## PRELIMINARY DOCUMENTS



[illegible]

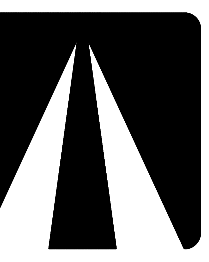
**Sheet Title**  
DEMOLITION PLANS FOR LH2 EQUIPMENT AREA AND UG UTILITIES

**Project**  
DESIGN-BUILD SERVICES FOR HYDROGEN FUELING STATION AND  
FACILITY MODIFICATIONS AT GARDEN GROVE BUS BASE  
11790 CARDINAL CIRCLE, GARDEN GROVE, CA

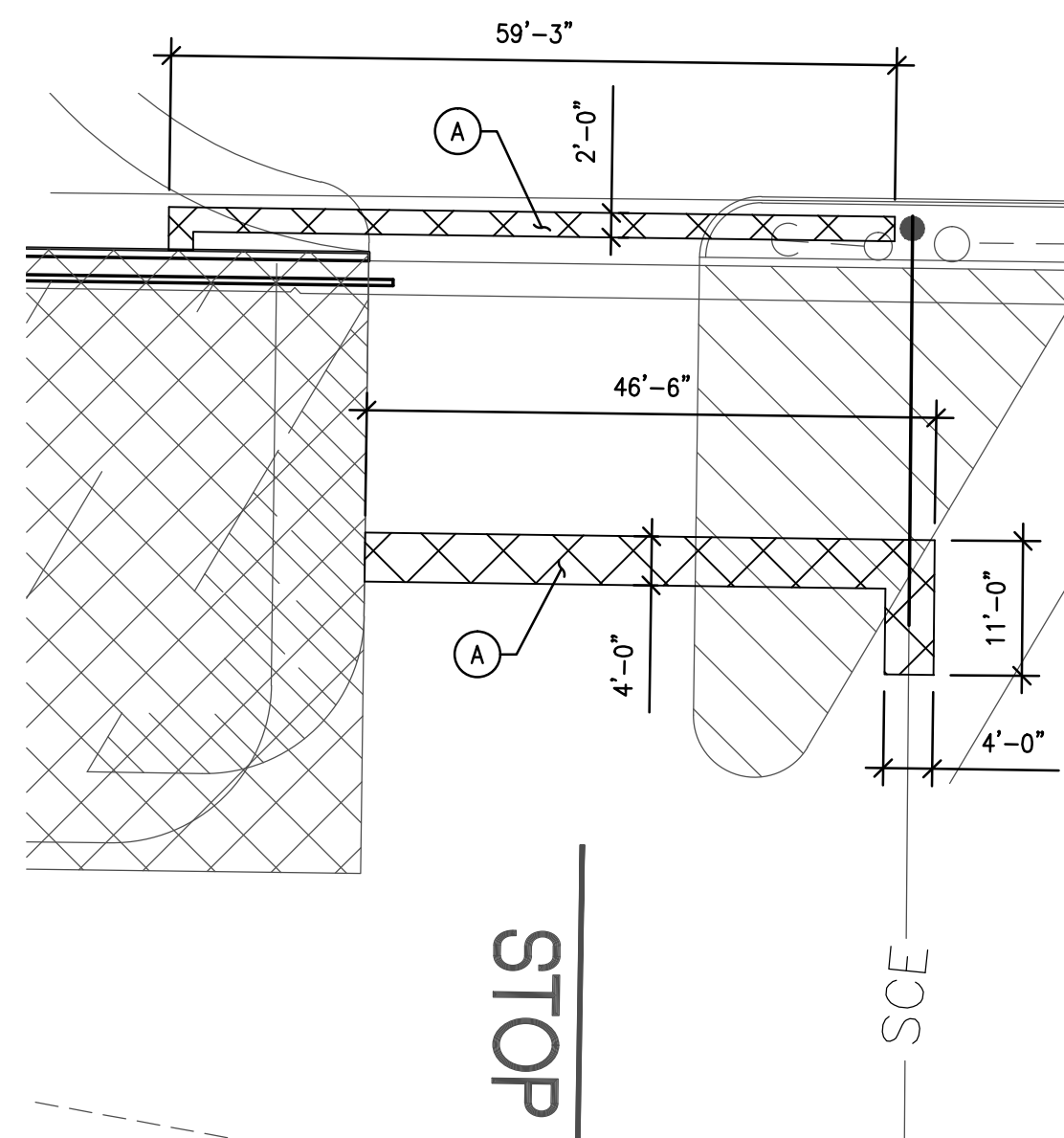
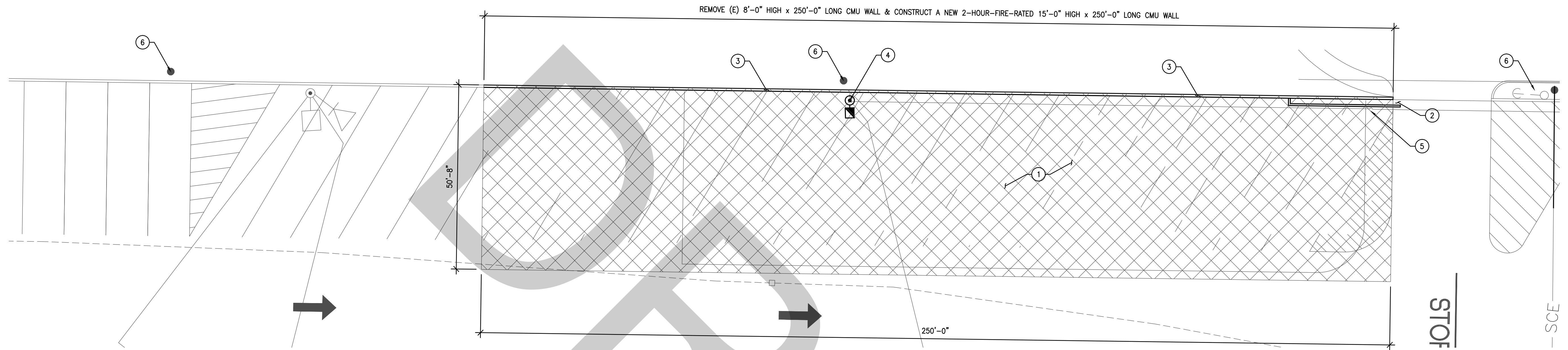
DB #	1.24.3
DESIGN BY:	SDV
DRAWN BY:	TMP
CHECKED BY:	QV
DATE	08-18-2025
SCALE	AS NOTED

GG-FS101

550 South Main Street  
Orange, CA 92668  
714/560/OCTA



# OC TA



### DEMOLITION KEY NOTES:

- ① NEW HYDROGEN (H2) FUELING STATION AREA REQUIRES SAW CUTTING, CONCRETE PAVEMENT REMOVAL, GROUND EXCAVATION, AND SOIL COMPACTION GROUTING FOR CONSTRUCTION OF NEW CONCRETE FOUNDATIONS, PADS, PIERS, AND DRAINAGE . PROTECT SURROUNDING CONCRETE PAVEMENT FROM DAMAGE DURING CONSTRUCTION.
- ② EXISTING AUTOMATED STEEL GATE TO BE REMOVED AND REPLACED WITH NEW AUTOMATED ELECTRIC SLIDING STEEL GATE.
- ③ REMOVE EXISTING 250'-0" LONG x 8'-0" HIGH CMU WALL FOR CONSTRUCTION OF NEW 15' HIGH 2-HOUR FIRE-RATED CMU WALL IN COMPLIANCE WITH 2022 CBC, ASCE 7-16, AND NFPA 2 FOR LIQUID HYDROGEN STORAGE AND FUELING FACILITIES.
- ④ REMOVE EXISTING LIGHT POLE, FOUNDATION, AND WIRING AND INSTALL A NEW REPLACEMENT LIGHT POLE, LED FIXTURES, FOUNDATION, AND WIRING AT A DIFFERENT LOCATION AND IN COMPLIANCE WITH NFPA 70 NATIONAL ELECTRICAL CODE (NEC) CLASS 1 DIVISION 2.
- ⑤ EXISTING LIGHT POLE, FOUNDATION, AND WIRING TO BE REMOVED AND REPLACED WITH NEW LIGHT POLE COMPLIANT WITH NEC CLASS 1 DIVISION 2.
- ⑥ COORDINATE WITH SOUTHERN CALIFORNIA EDISON (SCE) FOR REMOVAL AND REPLACEMENT OF AN EXISTING LIGHT FIXTURE ON THE SCE POWER POLE WITH NEW LED FIXTURES COMPLIANT WITH NFPA 70 CLASS 1 DIVISION 2. PROTECT SCE POWER POLE, EQUIPMENT, AND WIRES IN PLACE.

DEMOLITION KEY NOTES:

- (A) AREA SAW CUTTING, AC PAVEMENT REMOVAL, EXCAVATION, TRENCHING, BACKFILLING, 95% SOIL COMPACTION, AND CONCRETE PAVEMENT PATCHING TO MATCH EXISTING CONCRETE PAVEMENT FOR INSTALLATION OF UNDERGROUND CONDUITS.



DEMOLITION PLAN FOR UNDERGROUND UTILITIES

SCALE  
1"=15'-0"

DEMOLITION PLAN FOR LIQUID HYDROGEN (LH2) EQUIPMENT AREA

SCALE

$1'' = 15' - 0''$

1

PRELIMINARY DOCUMENTS



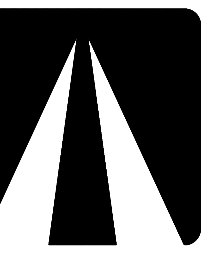
[illegible]

Sheet title	Project
HC-50 CHILLER EQUIPMENT AND CONCRETE FOUNDATION PLANS AT FUELING & VACUUM BUILDING	DESIGN-BUILD SERVICES FOR HYDROGEN FUELING STATION AND FACILITY MODIFICATIONS AT GARDEN GROVE BUS BASE

DB #	1.24.3
DESIGN BY:	SDV
DRAWN BY:	TMP
CHECKED BY:	QV
DATE	08-18-2025
SCALE	AS NOTED

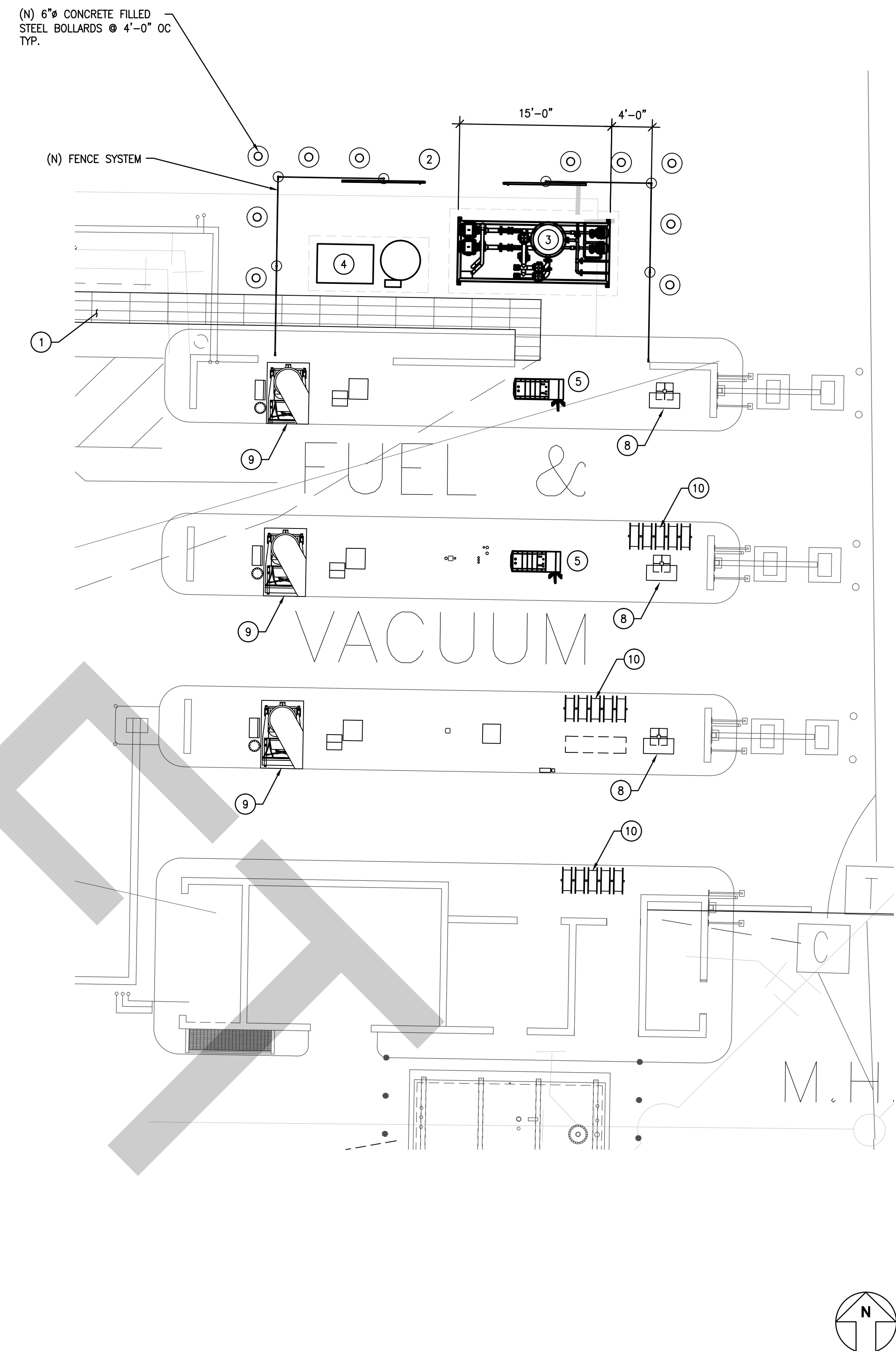
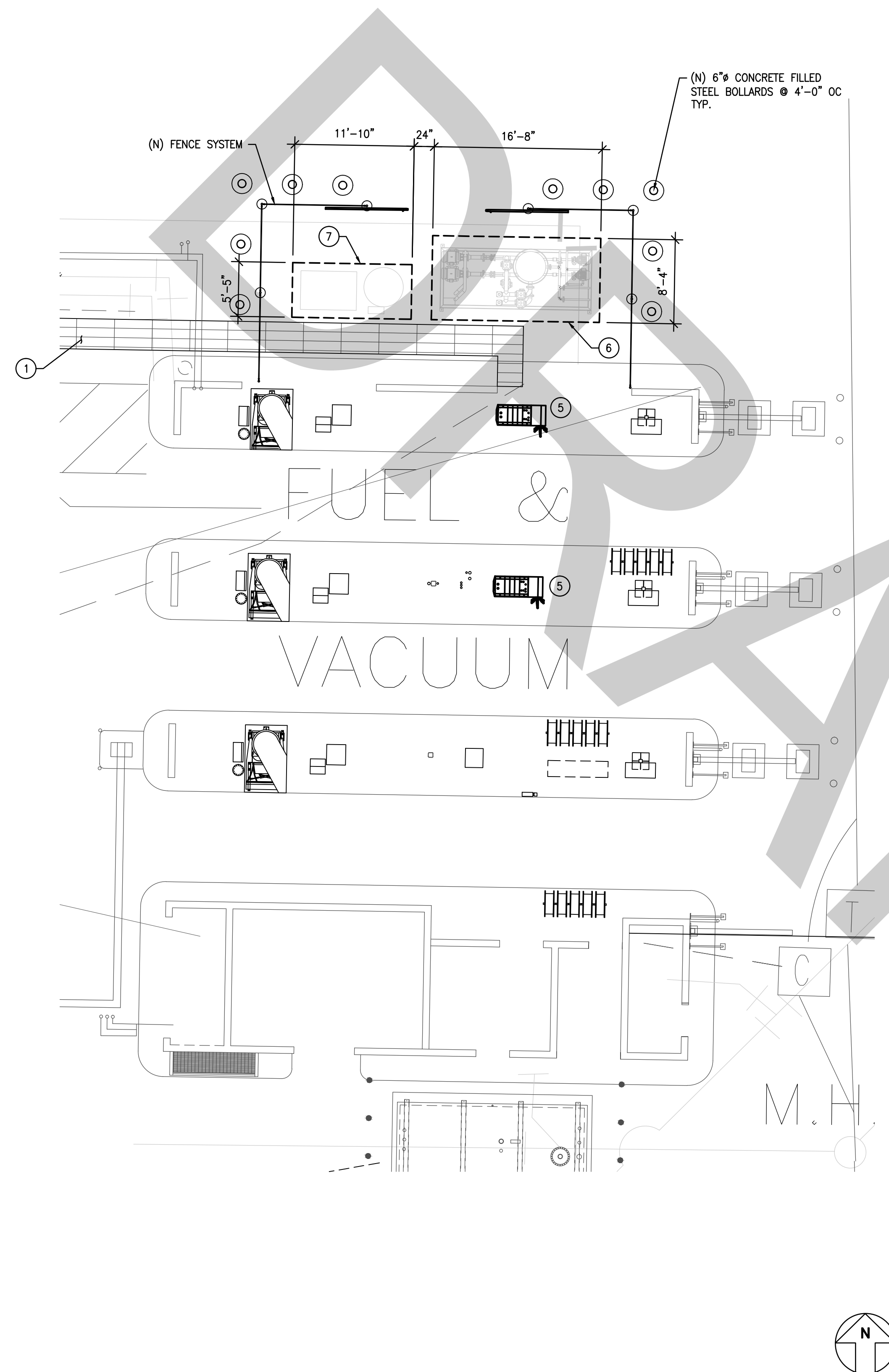
GG-FS10

550 South Main Street  
Orange, CA 92668  
714/560/OCTA



# DC TA

- ① TRENCH FOR UNDERGROUND PIPES AND ELECTRICAL CONDUITS.
- ② (2) 8'-0" WIDE SLIDING FENCE GATES.
- ③ HC-50 HEAT EXCHANGER & PUMP PACKAGE.
- ④ HC-50 CHILLER & COOLING TOWER PACKAGE.
- ⑤ 350 / 700 BAR GASEOUS HYDROGEN (GH2) DISPENSER TO BE SO INSTALLED THAT IT IS PROTECTED FROM MECHANICAL DAMAGE AND IS VISIBLE FOR INSPECTION. PROVIDE CONCRETE FOUNDATION AND SEISMIC ANCHORAGE IN COMPLIANCE WITH 2022 CBC, ASCE 7-16, AND NFPA 2.
- ⑥ HC-50 HEAT EXCHANGER (HX) & PUMP PACKAGE RAISED FOUNDATION.
- ⑦ HC-50 CHILLER & COOLING TOWER PACKAGE RAISED FOUNDATION.
- ⑧ EXISTING CNG TRANSIT DISPENSER.
- ⑨ EXISTING VACUUM MACHINE.
- ⑩ EXISTING HOSE REEL.



EQUIPMENT KEY NOTES

SCALE  
NONE

3 FUELING & VACUUM BUILDING PLAN – NEW EQUIPMENT FOUNDATION

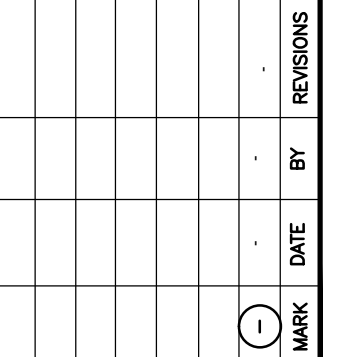
SCALE  
1/8"=1'-0"

FUELING &amp; VACUUM BUILDING PLAN – NEW EQUIPMENT

SCALE  
1/8"=1'-0"

1

PRELIMINARY DOCUMENTS

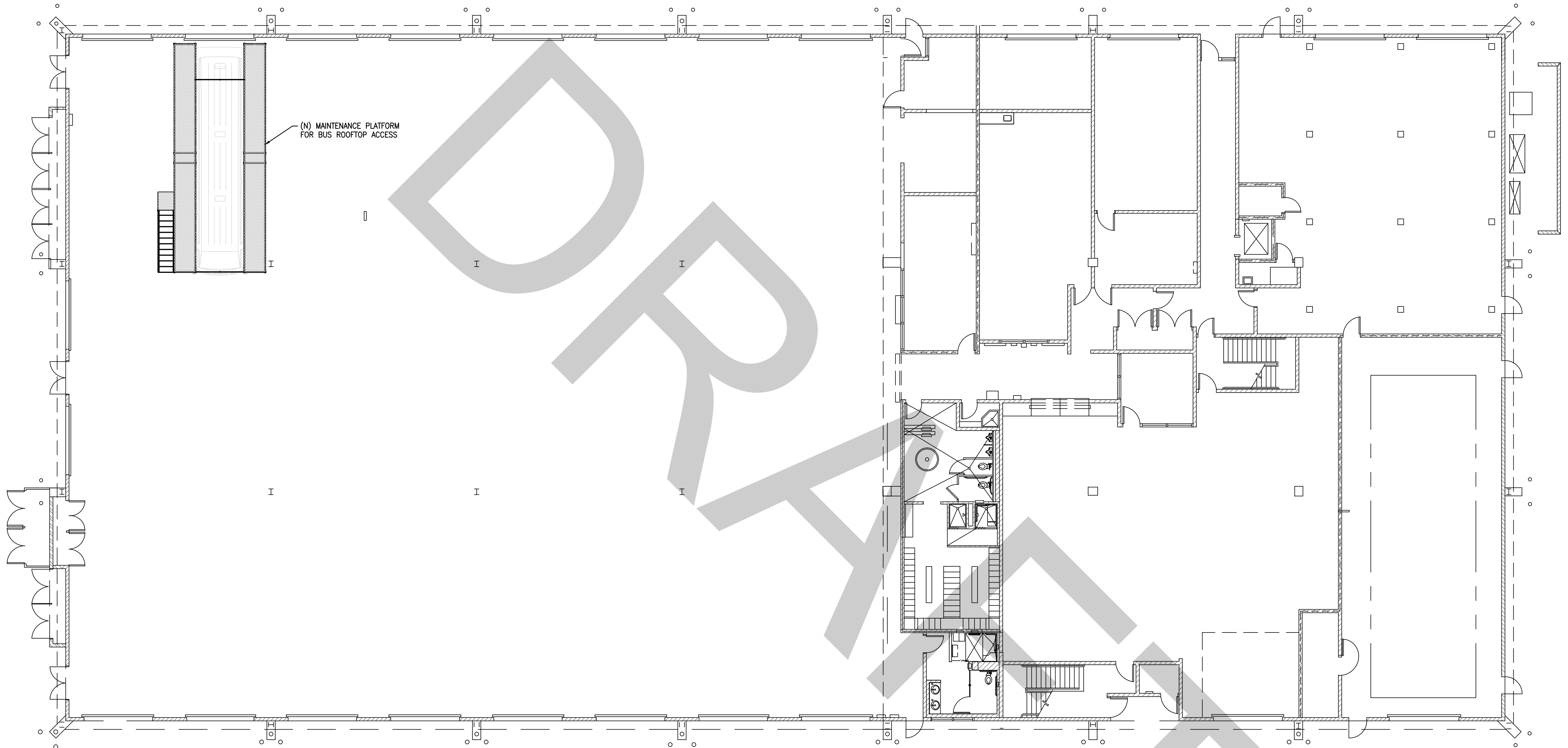


**Project**  
DESIGN-BUILD SERVICES FOR HYDROGEN FUELING STATION AND  
FACILITY MODIFICATIONS AT GARDEN GROVE BUS BASE  
11790 CARDINAL CIRCLE, GARDEN GROVE, CA

#	1.24.3
GN BY:	SDV
N BY:	TMP
CKED BY:	QV
	08-18-2025
E	AS NOTED

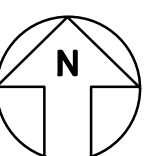
**G-FS104**

South Main Street  
nge, CA 92668  
4/560/OCTA



NOTES:

1. NEW MAINTENANCE PLATFORM SHALL BE SEISMICALLY ANCHORED AND BRACED TO COMPLY WITH 2022 CALIFORNIA BUILDING CODE (CBC).
2. RELOCATE EXISTING COMPONENTS AND EQUIPMENT THAT OBSTRUCT INSTALLATION OF NEW MAINTENANCE PLATFORM WHICH SHALL PROVIDE ACCESS TO BUS ROOFTOP.
3. INSTALL A NEW INFRARED THERMAL SENSING SYSTEM TO SCAN TEMPERATURE ON BUS ROOF AREA, NOTIFY OCCUPANTS VIA WARNING BEACON LIGHTS, AND INTERLOCK WITH THE EXISTING FIRE ALARM SYSTEM AND THE NEW HYDROGEN GAS DETECTION AND ALARM SYSTEM FOR NOTIFICATION IN THE EVENT OF EXCESSIVE TEMPERATURE CAUSED BY FAILURE AND MAL-FUNCTION OF ENERGY STORAGE BATTERIES AND HYDROGEN GAS STORAGE VESSELS.



MAINTENANCE BUILDING PLAN – NEW BUS ROOFTOP ACCESS MAINTENANCE PLATFORM

SCALE  
1"=10'-0"

1)

PRELIMINARY DOCUMENTS





DAHL, TAYLOR & ASSOCIATES  
CONSULTING ENGINEERS  
2960 DAWLER STREET  
SANTA ANA, CALIFORNIA 92705  
TEL: # (949) 254-8016  
qu@dhltaylor.com



MARK DATE BY REVISIONS

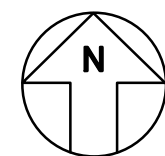
Sheet Title  
LIQUID HYDROGEN (LH2) EQUIPMENT CONCRETE FOUNDATION PLAN

Project  
DESIGN-BUILD SERVICES FOR HYDROGEN FUELING STATION AND  
FACILITY MODIFICATIONS AT GARDEN GROVE BUS BASE  
11790 CARDINAL CIRCLE, GARDEN GROVE, CA

JOB # 1.24.3  
DESIGN BY: SDV  
DRAWN BY: TMP  
CHECKED BY: QV  
DATE 08-18-2025  
SCALE AS NOTED

SHEET  
GG-FS105

550 South Main Street  
Orange, CA 92668  
714/560/OCTA



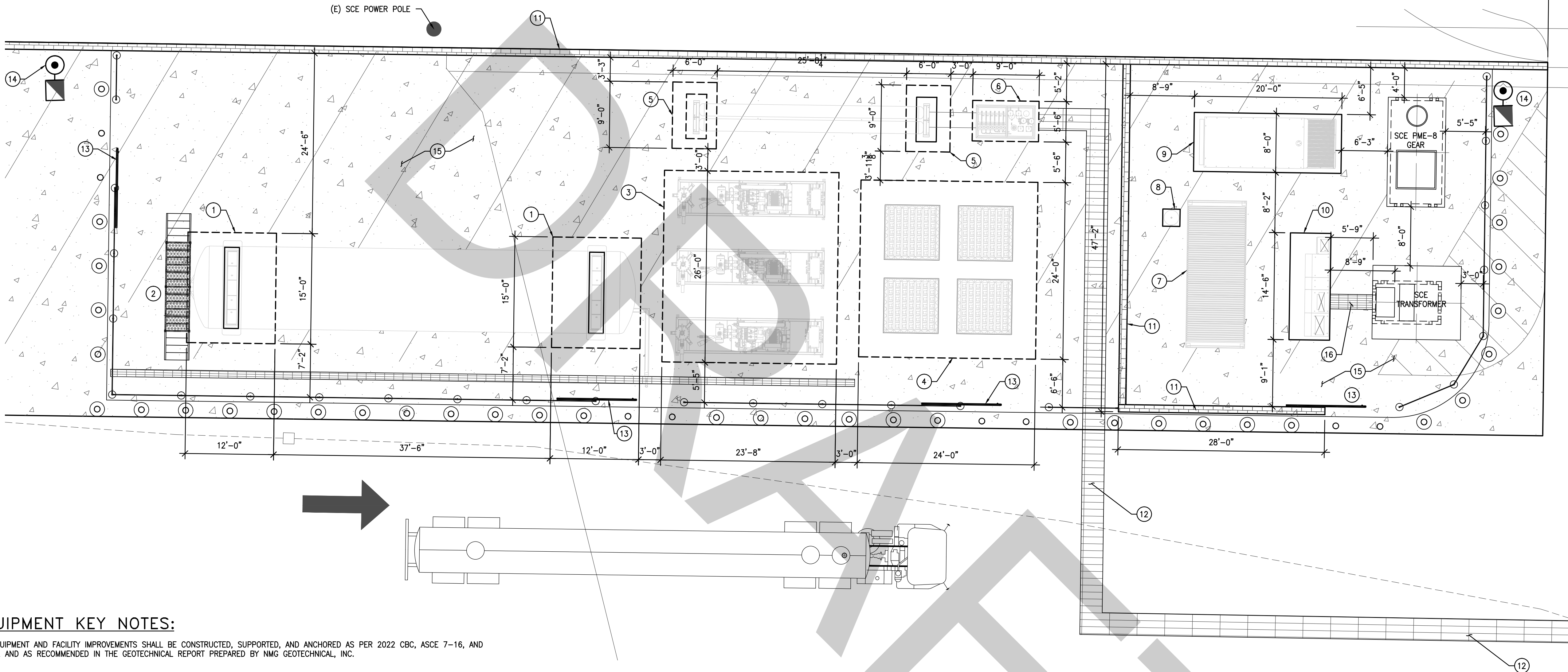
SCALE  
1/8"=1'-0"

1

LIQUID HYDROGEN (LH2) EQUIPMENT CONCRETE FOUNDATION PLAN

PRELIMINARY DOCUMENTS

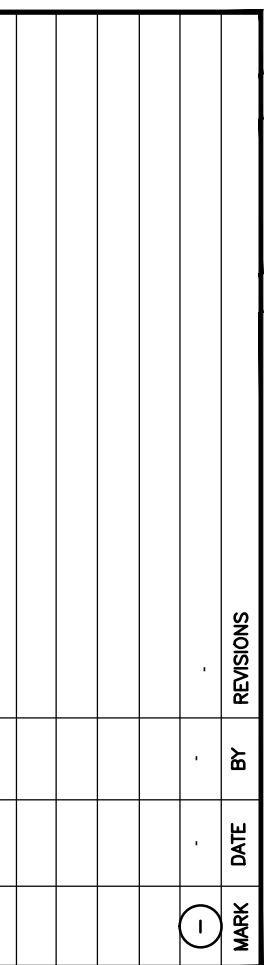
REMOVE (E) 8'-0" HIGH x 250'-0" LONG CMU WALL & CONSTRUCT A NEW 2-HOUR-FIRE-RATED 15'-0" HIGH x 250'-0" LONG CMU WALL



EQUIPMENT KEY NOTES:

ALL EQUIPMENT AND FACILITY IMPROVEMENTS SHALL BE CONSTRUCTED, SUPPORTED, AND ANCHORED AS PER 2022 CBC, ASCE 7-16, AND NFPA 2 AND AS RECOMMENDED IN THE GEOTECHNICAL REPORT PREPARED BY NMG GEOTECHNICAL, INC.

- ① 25,000 GALLON LIQUID HYDROGEN (LH2) STORAGE TANK FOUNDATION.
- ② LIQUID HYDROGEN (LH2) STORAGE TANK SERVICE PLATFORM.
- ③ LH2 PUMP AND COLD CAPTURE HEAT EXCHANGER (CC-HEX) FOUNDATION.
- ④ AMBIENT VAPORIZER FOUNDATION.
- ⑤ GASEOUS HYDROGEN (GH2) STORAGE VESSEL FOUNDATION.
- ⑥ PRIORITY CONTROL UNIT FOUNDATION.
- ⑦ CONTROL AND POWER CONTAINER.
- ⑧ NITROGEN PURGE TANK FOUNDATION.
- ⑨ 500 KW STANDBY POWER DIESEL GENERATOR FOUNDATION.
- ⑩ 800A METER SWITCHBOARD FOUNDATION.
- ⑪ 10" HIGH 2-HR FIRE RATED CMU WALL WITH GRADE BEAM & CAISSON PILES WITHIN OCTA PROPERTY. REPAIR AND PATCH NEIGHBORING PAVEMENT. COORDINATE WITH ADJACENT PROPERTY OWNERS ON CONSTRUCTION SITE REQUIREMENTS, SAFETY, AND SECURITY.
- ⑫ TRENCH FOR UNDERGROUND PIPES AND ELECTRICAL CONDUITS.
- ⑬ 12'-0" WIDE SLIDING FENCE SYSTEM GATE.
- ⑭ NEW ELECTRICAL CLASS 1 DIVISION 1 LIGHT POLE FOUNDATION.
- ⑮ RAISED CONCRETE SLAB AT APPROXIMATELY 6" HIGHER THAN THE EXISTING CONCRETE PAVEMENT. TOP OF EQUIPMENT MOUNTING FOUNDATIONS SHALL BE LEVEL AND 2" AT MINIMUM HIGHER THAN THE RAISED CONCRETE SLAB TO FACILITATE PROPER DRAINAGE. DESIGN CONCRETE FOUNDATIONS FOR ANCHORING EQUIPMENT AND SUPPORTING CMU WALL IN COMPLIANCE WITH 2022 CBC AND ASCE 7-16.
- ⑯ CAST-IN-PLACE CONCRETE UTILITY TRENCH, 24" WIDE x 36" DEEP x 6" WALL WITH 8" ROUND DRAIN HOLE, 18"x18"x18" GRAVEL DRY-WELL, 3/8" THICK GALVANIZED STEEL DIAMOND PLATE, UNISTRUT TRACK, S.S. SPRING NUTS, AND 3/8"x1.5" ZINC-COATED FLAT HEAD SLOTTED MACHINE SCREWS. COORDINATE WITH SCE FOR LOCATION.

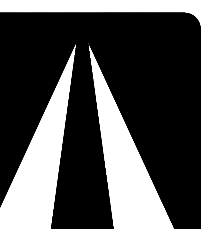


**ct**  
**IGN-BUILD SERVICES FOR HYDROGEN FUELING STATION AND**  
**FACILITY MODIFICATIONS AT GARDEN GROVE BUS BASE**  
**11790 CARDINAL CIRCLE, GARDEN GROVE, CA**

1.24.3
SDV
TMP
QV
08-18-2025
AS NOTED

**G-FS106**

h Main Street  
CA 92668  
/OCTA





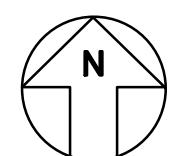
# DOCTA



- ① 25,000 GALLON LIQUID HYDROGEN (LH2) STORAGE TANK WITH PROVISIONS AND PERTINENT EQUIPMENT TO ATTAIN NEAR-ZERO LOSS OPERATION DURING FILLING / TRANSFER, BLOWBY, COOLING, PUMP PRIMING, STORAGE, AND OTHER PROCESSES.
- ② LH2 BOOST & PISTON PUMPS AND COLD CAPTURE HEAT EXCHANGERS (CC-HEX).
- ③ AMBIENT VAPORIZERS / HEAT EXCHANGERS (HEX).
- ④ STACKED LOW & MEDIUM PRESSURE GASEOUS HYDROGEN (GH2) STORAGE VESSELS.
- ⑤ PRIORITY CONTROL UNIT.
- ⑥ CLASS 1 DIV 2 POLE LIGHTS IN THE ENTIRE HYDROGEN EQUIPMENT FACILITIES.



-  CLASS 1, DIVISION 1, GROUP B
-  CLASS 1, DIVISION 2, GROUP B



### ELECTRICAL HAZARDOUS ZONES ELEVATION

ELECTRICAL HAZARDOUS ZONES PLAN AND ELEVATION

SCALE

---

$1/8" = 1' - 0"$

1

PRELIMINARY DOCUMENTS







August 16, 2024

Project No. 19175-02  
OCTA Agreement No. C-0-2113 CTO03

To: Dahl, Taylor & Associates, Inc.  
Consulting Engineers  
2960 Daimler Street  
Santa Ana, CA 92705-5824

Attention: Mr. Quang Vu

Subject: Geotechnical Report of Exploration for Design and Construction of Hydrogen Storage and Fueling Facilities and Facility Modifications at OCTA Garden Grove Bus Base, 11790 Cardinal Circle, Garden Grove, California

In accordance with your request and authorization, NMG Geotechnical, Inc. (NMG) has performed a geotechnical design study for the subject proposed Orange County Transit Authority (OCTA) project at the existing bus maintenance facility in Garden Grove. This report summarizes our findings, conclusions and recommendations for the design and construction of the project.

The geotechnical exploration and study performed included a review of background information including prior geotechnical studies, field reconnaissance, concrete coring to advance two cone penetrometer soundings (CPT), and geotechnical analysis of the collected data in order to provide preliminary recommendations for design and construction of the project.

In summary, the proposed project is feasible provided the primary geotechnical constraint of liquefaction is mitigated. We estimate total liquefaction related settlement on the order of 4 inches with a high potential for associated surface manifestations of liquefaction such as sand boils and loss of bearing capacity in the event of the design earthquake. From past fueling facility projects by OCTA where significant liquefaction was present, we understand that OCTA has elected to mitigate such liquefaction with ground improvement technology. From the CPT exploration and analysis, the following mitigation alternatives are determined for the Garden Grove site:

<i><b>Ground Improvement Zone</b></i>	<i><b>Resulting Total Remaining Settlement</b></i>	<i><b>Differential Settlement Over a 40-Foot Span</b></i>
5 to 10 feet	3 inches	1.5 inch
5 to 25 feet	2 inches	1 inch
5 to 35 feet	1 inch	½ inch

Due to the critical nature of the fueling facility, we recommend the treatment zone of sufficient depth to limit the total settlement to 1 inch or less. Foundations should be designed accordingly. Per our consultations with a ground improvement contractor, methods which require taller equipment masts will not be feasible due to the proximity of existing overhead power lines (electrical arcing hazard). Therefore, the most viable option will be compaction grouting. That method also will generate less quantities of soil spoils and result in the least amount of disruption



of bus facility operation. Static load settlements are expected to be relatively minor with the site conditions and will be mitigated if structures are designed for the above seismic settlements.

If you have any questions regarding this report, please contact us. We appreciate the opportunity to provide our services.

Respectfully submitted,

NMG GEOTECHNICAL, INC.



William Goodman, CEG  
Principal Geologist



Ted Miyake, RCE 44864  
Principal Engineer

TM/WG/ad

Email Distribution: Addressee  
Mr. Stephen Vu, Dahl Taylor and Associates



## TABLE OF CONTENTS

Section	Page
1.0 INTRODUCTION .....	1
1.1 Scope of Services .....	1
1.2 Site Location and Existing Conditions .....	1
1.3 Site History and Prior Geotechnical Studies .....	2
1.4 Proposed Hydrogen Fueling Station .....	2
1.5 Field Investigation .....	2
1.6 Laboratory Testing .....	3
2.0 GEOTECHNICAL FINDINGS .....	4
2.1 Geologic Conditions and Seismicity .....	4
2.2 Groundwater .....	4
2.3 Soil Conditions and Engineering Properties .....	4
2.4 Liquefaction Potential .....	5
2.5 Settlement Potential .....	6
3.0 CONCLUSIONS AND PRELIMINARY RECOMMENDATIONS .....	7
3.1 Conclusions .....	7
3.2 Site Preparation and Earthwork .....	7
3.2.1 Site Preparation .....	7
3.2.2 Fill Placement .....	7
3.3 Settlement Potential and Ground Improvement .....	7
3.4 Foundation and Slab Design Guidelines .....	8
3.4.1 Allowable Bearing Capacity and Other Parameters .....	8
3.4.2 Slabs-on-Grade .....	9
3.5 Seismic Design .....	10
3.6 Lateral Earth Pressures for Retaining Structures .....	11
3.7 Pavements .....	11
3.7.1 Vehicular Pavements .....	11
3.7.2 Non-vehicular Pavement .....	12
3.8 Soil Corrosivity and Cement Type .....	12
3.9 Pipelines, Trench Excavations, and Backfill .....	12
3.9.1 Excavations .....	12
3.9.2 Bedding and Backfills .....	13
3.10 Surface Drainage .....	13
3.11 Additional Geotechnical Review and Evaluation .....	14
3.12 Observation and Testing During Site Preparation and Construction .....	14
4.0 LIMITATIONS .....	15

## TABLE OF CONTENTS (Cont'd)

Figure 1 – Site Location Map

Figure 2 – Seismic Hazard Zones Map

Figure 3 – CPT and Boring Location Map

### Appendices

Appendix A – References

Appendix B – CPT Logs and Boring Logs by Others

Appendix C – Summary of Laboratory Test Results by Others

Appendix D – Seismic Analysis

Appendix E – Liquefaction Analysis

## **1.0 INTRODUCTION**

### **1.1 Scope of Services**

The purpose of our geotechnical study was to evaluate the existing site and subsurface conditions in light of the proposed project at the subject site in order to provide recommendations for design and construction. Our study and this report are based upon our review of the preliminary project planning information provided by Dahl Taylor and OCTA.

Our scope of work included the following:

- Review of background information, including historic aerial photos, groundwater data, and readily available geotechnical reports from online, in-house, and OCTA archives.
- Site visit to evaluate the existing conditions and accessibility for CPT rig.
- Marking of CPT probe locations and notifying Underground Service Alert; use of geophysics to locate pavement reinforcement and buried utilities; and meeting with OCTA bus base staff for approval of pavement coring and exploration locations.
- Pavement coring of two locations for hand-auger borings to approximately 5 feet below existing ground surface (bgs).
- Two CPT soundings at the cored pavement locations to approximately 60 feet bgs.
- Compilation of laboratory testing and boring data from prior geotechnical studies of the site.
- Geotechnical and geological analysis, including soil and groundwater characterization; foundation and slab-on-grade design parameters; seismic parameters; lateral earth pressures; and recommendations for site preparation and excavations/trenches.
- Geotechnical analysis of liquefaction potential and preliminary recommendations for remedial ground improvement alternatives.
- Preparation of this geotechnical report summarizing our findings and providing our conclusions and recommendations.

Our scope of services did not include evaluation of environmental issues (potential soil and groundwater contaminants, onsite hazardous materials, etc.)

### **1.2 Site Location and Existing Conditions**

The project site is an existing OCTA bus maintenance facility located at 11790 Cardinal Circle, in the city of Garden Grove, California. The site is occupied by several structures including an administrative building and facilities for bus washing, maintenance and fueling. Various storage containers and other equipment is also onsite. The remainder of the site is paved with concrete. Where cored by NMG and others, the PCC pavement thickness is on the order of 8 inches thick. Ground penetrating radar scans at the two CPT locations indicated steel reinforcement bar spaced at approximately 16 to 18 inches on center in both directions.

### **1.3 Site History and Prior Geotechnical Studies**

The original bus maintenance facility site was investigated in 1975, and the original construction was finished sometime thereafter (completed in a 1987 aerial photo). Prior to that, the site was used for agriculture and was vacant as the surrounding area began to be developed for commercial and industrial use.

A number of reports of past studies were acquired and reviewed for our study, including the original 1975 geotechnical design reports for bus facility by Soils International. These studies included numerous bucket-auger borings, soil sampling and laboratory testing with recommendations for site grading and structure design and construction. NMG conducted two studies of the site in 1994 and 2015 for minor improvements to the bus wash facility. Ninyo and Moore conducted a study for the CNG fuel station at the east side of the site in 2007. Another study was performed for pavement improvements by Group Delta in 2014. These reports are listed in Appendix A. Boring logs and laboratory data from these studies relevant to the site are included in Appendices B and C, respectively.

### **1.4 Proposed Hydrogen Fueling Station**

The planned hydrogen fueling equipment will include storage equipment located in an area of existing bus parking at the north central portion of the site. We understand that the equipment in that area, including a 25,000-gallon storage tank (full weight of 10 tons) will be constructed on individual spread foundations. The existing concrete pavement will be removed for the storage equipment area.

The hydrogen fuel dispensing equipment is planned some distance from the storage area at an existing fuel and service building. Piping from the storage area to the dispensers will require cutting of the existing pavement for underground installation. The proposed storage and dispensing locations are shown on the CPT and Boring Location Map, Figure 3.

### **1.5 Field Investigation**

The subsurface CPT exploration was conducted on June 28, 2024, by Kehoe Testing and Engineering, Inc. Prior to testing, the CPT-1 and CPT-2 locations were reported to DigAlert, surveyed with ground penetrating radar and cleared with OCTA staff. The pavement was cored and the first five feet of soil was excavated with a hand-auger in order confirm there were no utilities that might be damaged by the CPT probe. The CPTs were advanced 60 feet bgs.

The CPTs use an integrated electronic cone system that measures and records tip resistance, sleeve friction, and friction ratio parameters at 5-cm depth intervals. As expected from prior boring data, the CPT verified alluvial materials with soil behavior types consisting of heterogeneous layers of sands, silts, silty sands, and sandy silts with lesser amounts of clays. The CPT data provided detailed subsurface profile information and is the state of the practice for analyzing liquefaction potential and associated impacts including settlement, surface manifestations, and lateral ground spreading. The CPT data was used with the adjacent boring information and laboratory test data to develop a consistent interpretation of the subsurface conditions.

With the abundance of prior borings and laboratory testing, no additional soil sampling and testing was conducted for this study.

## **1.6 Laboratory Testing**

Prior soil testing by others included the tests listed below. The laboratory test results are presented in Appendix C. In-situ moisture and dry density results are also included on the geotechnical boring logs (Appendix B).

- In-situ moisture content and dry density;
- Maximum density and optimum moisture content;
- Grain-size distribution (sieve and/or hydrometer);
- Atterberg Limits;
- Consolidation settlement and collapse;
- Direct shear;
- Expansion index;
- Corrosivity and soluble sulfates, and
- R-value.

## **2.0 GEOTECHNICAL FINDINGS**

### **2.1 Geologic Conditions and Seismicity**

The subject OCTA facility lies within the County of Orange portion of the southern part of the Central Block of the Los Angeles Basin (CGS, 1997). The site is underlain by thousands of feet of marine and non-marine sedimentary deposits. The upper deposits are Holocene and Quaternary age alluvial soils consisting predominantly of interlayered sands, silts and clays. No known active faults cross the bus maintenance facility. The nearest active faults to the site are the San Juan Hills Blind Thrust Fault (approximately 4.8 miles southeast) and the Newport-Inglewood Fault (approximately 7.8 miles southwest). Seismic parameters including maximum moment magnitude are presented in Section 3.5. The site is not located within a State of California mapped Alquist-Priolo fault zone but is within a mapped liquefaction hazard zone (CDMG, 1998).

### **2.2 Groundwater**

Historic high groundwater at the site is estimated to be on the order of 7.0 feet below ground surface (bgs) from groundwater maps published by the State (CGS, 2008). Exploration at the site in 2014 to 11.5 feet bgs did not encounter groundwater (Group Delta, 2014). In 2007 groundwater was reported at 17.5 feet bgs (Ninyo and Moore, 2007).

### **2.3 Soil Conditions and Engineering Properties**

Site studies indicate the upper few feet of soil is artificial fill. Subsurface explorations and soil testing classify the alluvial soils below as primarily medium dense to dense silty sands and sands (Unified Soil Classifications of SM, SP, ML) and lesser layers of low plasticity clays (CL). Grain size analyses indicate minor clay contents (less than 10 percent) in the soils in the upper 15 feet. Soil moisture contents in the upper 10 feet when the site was vacant with bare ground were reported as predominantly less than 5 percent (Soils International, 1975a) while the later studies after the site was developed reported moisture contents as high as 18 percent.

Shear strengths reported and assumed by others ranged from 25 to 32 degrees for internal friction angle with varying cohesion. Based on our study a design value of 28 degrees with nominal cohesion was assumed for this project.

The near surface soils are generally non-plastic with very low expansion potential and relatively high R-values ranging from 52 to 67.

Soil corrosivity testing indicates close to neutral pH, low chloride, low soluble sulfate contents, and electrical resistivities in the non-corrosive range (Ninyo and Moore, 2007).

Laboratory test results for engineering properties of site soils are included in Appendix C.

## 2.4 Liquefaction Potential

Our field investigation and laboratory testing were performed in part to evaluate the subsurface soils for liquefaction potential. The California Geological Survey has developed seismic hazard maps as a part of the Seismic Hazards Mapping Act of 1991. The subject site is shown on Figure 2 as being mapped within a zone of liquefaction potential (CDMG, 1997a). Liquefaction is a phenomenon in which earthquake-induced cyclic stresses generate excess pore water pressure in low density (loose), saturated, sandy soils and soft silts below the water table. This causes a loss of shear strength and, in many cases, ground settlement. Liquefaction is generally thought to be a problem in earthquake-prone areas where conditions that promote liquefaction are present in the upper 50 feet of earth.

For liquefaction to occur, all the following four conditions must be present:

- There must be severe ground shaking, such as occurs during a strong earthquake.
- The soil material must be saturated or nearly saturated, generally below the water table.
- The corrected normalized standard penetration test (SPT) blow counts ( $N_1$ ) or the CPT tip resistance ( $Q$ ) must be relatively low.
- The soil material must be granular (usually sands or silts) with, at most, only low plasticity. Clayey soils and silts of relatively high plasticity are generally not subject to liquefaction.

Our liquefaction potential assessment was performed using the computer program CLiq Version 2.2.0.18 developed by Geologismiki, which provides results and plots of the calculations. The liquefaction potential analysis is performed using the Robertson method (T.L. Youd, et al., 1996). The program provides the basic CPT data interpretation through to final plots of factor-of-safety, liquefaction potential index, and post-earthquake displacements, including vertical settlement.

The liquefaction analysis assumed a design earthquake magnitude of 7.26 ( $M_w$ ) and a peak ground acceleration (PGA) of 0.63g, as determined in our site seismicity analysis discussed in Sections 2.1 and 3.6. A design groundwater depth of 7.0 feet was used for the analysis as discussed in Section 2.2.

Our analysis indicated a significant liquefaction potential at the subject site, with overall probability and risk for liquefaction from low to high. The calculated liquefaction settlement in the upper 50 feet in both CPT-1 and CPT-2 was 4 inches. Ninyo and Moore (2007) calculated liquefaction settlement for the CNG fuel station of 6 inches. However, their analysis was based on boring data alone and did not include CPT data, which today is considered more accurate.

Potential surface manifestations such as sand boils and loss of bearing capacity caused by liquefaction is a function of the thickness of the non-liquefiable surface cover (consisting of the reworked onsite materials plus design fill) over the thickness of the underlying liquefiable layers. Based on the generalized subsurface profile and our overall liquefaction evaluation, the site has a potential for ground surface damage caused by liquefaction. Because of the relatively small



improvement area with an existing paved site, lateral spread analysis was not performed for this study.

The liquefiable layers included thin sandy lenses less than a foot thick but were predominantly layers that were 2 to 4 feet thick. Numerous liquefiable layers are distributed relatively evenly from 5 to 45 feet. In other words, there were no large zones of liquefiable and non-liquefiable layers in that soil column. Three of the four inches of estimated total settlement is predicted to take place in the upper 30 to 35 feet of soil.

The liquefaction analysis summaries are included in Appendix D.

## **2.5 Settlement Potential**

The seismic settlements of 3 to 4 inches due to potential liquefaction are likely to govern structural design. The design liquefaction settlement values with various levels of mitigation are provided in Section 3.4, Ground Improvement. Consistent with the findings of prior studies, total static and differential settlements should not exceed 1 inch and ½ inch over a 40-foot span respectively. The resulting ground pressure beneath the 10-ton storage tank should be relatively low with a reasonably sized spread foundation. With the sandy site soil, a significant percentage of the static settlement will occur during construction.

### **3.0 CONCLUSIONS AND PRELIMINARY RECOMMENDATIONS**

#### **3.1 Conclusions**

Based on the results of our study and our understanding of the proposed project, the subject hydrogen fueling improvements planned at the site are feasible, provided the recommendations herein are implemented for design and construction.

The primary geotechnical constraint at the site requiring design mitigation is the usual seismic ground shaking from nearby active faults and the resulting potential liquefaction.

The following recommendations are preliminary and are subject to review/revision once structural loads and plans are finalized and if unexpected soil conditions are encountered during construction. The recommendations are also considered minimum and may be superseded by more stringent requirements of others.

#### **3.2 Site Preparation and Earthwork**

##### **3.2.1 Site Preparation**

Following demolition and disposal of the existing concrete in the storage equipment area and establishment of design subgrades, the upper 12 inches of soil should be scarified, moisture conditioned as needed, and compacted with heavy equipment. If lighter compaction equipment such as "whackers" or small vibratory plates are used, the upper six inches below design grades should be removed. The bottom 6 inches should be scarified and compacted prior to placement and compacting of the final 6-inch lift. Areas where existing utilities or other buried structures are removed should be backfilled with compacted and certified fill.

##### **3.2.2 Fill Placement**

Import soils are not expected for the subject project. Onsite materials that are relatively free of deleterious material should be suitable for use as compacted fill. Fill materials should be at or slightly above optimum moisture content per ASTM D1557. Relative minimum compaction of fills below foundations and non-vehicular pavements should be 90 percent per ASTM D1557. For PCC pavements constructed directly on soil subgrade, the subgrade should have a minimum relative compaction of 95 percent.

#### **3.3 Settlement Potential and Ground Improvement**

Ground improvement to mitigate the potential liquefaction hazards of settlement and loss of bearing capacity are recommended for the proposed project. The following table provides the recommended design values of settlement depending on the depth of ground improvement. An analysis of the cost of ground improvement and resulting foundation cost may dictate the selected depth of ground improvement.

<i><b>Ground Improvement Zone</b></i>	<i><b>Resulting Total Remaining Settlement</b></i>	<i><b>Differential Settlement Over a 40-Foot Span</b></i>
5 to 10 feet	3 inches	1.5 inch
5 to 25 feet	2 inches	1 inch
5 to 35 feet	1 inch	½ inch

Due to the critical nature of the fueling facility, we recommend the treatment zone to a sufficient depth to limit the total settlement to 1 inch or less. Foundations should be designed accordingly. Per our consultations with a ground improvement contractor, ground improvement methods such as deep soil mixing and stone columns that require taller equipment masts will not be feasible due to the proximity of existing overhead power lines (electrical arcing hazard). Therefore, the most viable method will be compaction grouting. That method also will generate less quantities of soil spoils and result in the least amount of disruption of bus facility operation. Static load settlements are expected to be relatively minor with the site conditions and will be mitigated if structures are designed for a total seismic settlement of 1 inch with a differential settlement of ½ inch over a 40-foot span.

### **3.4 Foundation and Slab Design Guidelines**

The following foundation recommendations are provided for onsite soils (no imported soil) with the assumption that the recommendations included in Section 3.2 are implemented during preparation of the site. The geotechnical parameters and recommendations provided are intended for the design of the footings, slab, and foundation system of the proposed structures. The design of shallow footings and slab-on-grade foundations may require collaboration between the geotechnical and structural engineers based on the anticipated structural loading conditions and considering the requirements of the 2022 CBC. The allowable bearing values are for native soils without ground improvements. Much higher bear values may be used for foundations on improved ground. Those values will require selection of the improvement method and would be provided by the specialty contractor's engineer.

#### **3.4.1 Allowable Bearing Capacity and Other Parameters**

The recommended net allowable bearing capacity for a 2-foot-square footing embedded 18 inches below adjacent grade is 1,800 psf. For other sized continuous and isolated footings, including retaining walls the following formula may be used:

$$q_{all} = 700 D + 200 B + 350 \leq 4,000 \text{ psf, where:}$$

D = embedment depth of footing, in feet

B = width of footing, in feet

The following parameters may be used for design of foundation and slabs on grade:

- Soil unit weight = 120 pcf
- Coefficient of Friction = 0.35
- Passive resistance = 330 psf
- Mat foundation subgrade modulus ( $k_v$ ) of 150 pci
- For mats of a specific width B, use subgrade modulus:  $k_b = k_v[(B+1)/2B]^2$

The dead load of concrete below adjacent grades (buried concrete foundations) may be neglected. The allowable bearing pressure and friction coefficient may be increased by one-third for wind and seismic loading. Full design values may be assumed when combining passive and frictional lateral resistances.

### **3.4.2 Slabs-on-Grade**

Slabs-on-grade at this site may be construction directly on competent native soil. Structural slabs-on-grade design is the purview of the structural engineer.

Vehicular pavement recommendations are provided in Section 3.8, Pavements.

### 3.5 Seismic Design

The following table summarizes the seismic design criteria for the subject site. The seismic design parameters are developed in accordance with 2022 CBC and ASCE 7-16, including Supplement Nos. 1 through 3.

<i><b>Selected Seismic Design Parameters from 2022 CBC/ASCE 7-16</b></i>	<i><b>Seismic Design Values</b></i>	<i><b>Reference</b></i>
Latitude	33.7651 North	
Longitude	117.9250 West	
Controlling Seismic Source	Compton Fault	USGS, 2024
Distance to Controlling Seismic Source	6.9 Miles (11.2 km)	USGS, 2024
<b>Site Class</b> per Table 20.3-1 of ASCE 7-16	D	
<b>S<sub>s</sub></b> , Spectral Acceleration for Short Periods	1.35 g	SEA/OSHPD, 2024
<b>S<sub>1</sub></b> , Spectral Accelerations for 1-Second Periods	0.48 g	SEA/OSHPD, 2024
<b>F<sub>a</sub></b> , Site Coefficient, Table 11.4-1 of ASCE 7-16	1.0	SEA/OSHPD, 2024
<b>F<sub>v</sub></b> , Site Coefficient, Table 11.4-2 of ASCE 7-16	1.82	
<b>S<sub>DS</sub></b> , Design Spectral Response Acceleration at Short Periods from Equation 11.4-3 of ASCE 7-16	0.90 g	SEA/OSHPD, 2024
<b>S<sub>D1</sub></b> , Design Spectral Response Acceleration at 1-Second Period from Equation 11.4-4 of ASCE 7-16	0.87 g*	
<b>T<sub>s</sub></b> , <b>S<sub>D1</sub></b> / <b>S<sub>DS</sub></b> , Section 11.4.6 of ASCE 7-16	0.97 sec*	
<b>T<sub>L</sub></b> , Long-Period Transition Period	8 sec	SEA/OSHPD, 2024
<b>PGAM</b> , Peak Ground Acceleration Corrected for Site Class Effects from Equation 11.8-1 of ASCE 7-16	0.63 g	SEA/OSHPD, 2024
<b>Seismic Design Category</b> , Section 11.6 of ASCE 7-16	D	

\*These values have been increased by 50% as outlined in Supplement No. 3 of ASCE 7-16 Chapter 11.4.8.

### 3.6 Lateral Earth Pressures for Retaining Structures

Recommendations for lateral earth pressures for retaining walls and structures (if any) with approved onsite drained soils are listed below. These parameters are based on a soil internal friction angle of 28 degrees and soil unit weight of 120 pcf.

<b>Lateral Earth Pressures</b>	
<b>Equivalent Fluid Pressure (psf/ft.)</b>	
<i>Conditions</i>	<i>Level</i>
Active	43
At Rest	64
Passive	330

Retaining structures/walls may also need to be designed for additional lateral loads if other structures are planned within a 1H:1V projection.

Drainage behind retaining walls should also be provided for wall retaining more than 30 inches of soil (net difference in grades in front of wall and behind wall).

To design an unrestrained retaining wall, such as a cantilever wall, the active earth pressure may be used. For a restrained retaining wall, the at-rest pressure should be used. Passive pressure is used to compute lateral soils resistance developed against lateral structural movement. The passive pressures provided above may be increased by one-third for wind and seismic loads. Passive resistance is taken into account only if it is ensured that the soil against embedded structure will remain intact with time.

For sliding resistance, the friction coefficient of 0.35 may be used at the concrete and soil interface. The coefficient of friction may be increased by one-third for wind and seismic loads. The retaining walls may also need to be designed for additional lateral loads if other structures or walls are planned within a 1H:1V projection. Full design values may be assumed when combining passive and frictional resistances.

Seismic lateral earth pressure does not apply to walls retaining less than, or equal to, 6 feet of soil (2022 CBC Section 1803.5.12). No significant retaining walls are anticipated for this project.

### 3.7 Pavements

#### 3.7.1 Vehicular Pavements

At minimum, new vehicular pavements should match the existing concrete pavements which are on the order of 8 inches thick, reinforced with No. 4 rebar at 18 inches on-center in both directions. This section has performed well at the site owing to the design and the excellent subgrade soils.

Repairs to saw cut concrete pavement should match the existing thicknesses. Slip dowels equivalent to No. 4 reinforcing bar should be provided at repair joints embedded a minimum of 6 inches on both sides of the joint and spaced at 18 inches on center.

### **3.7.2 Non-vehicular Pavement**

Non-structural, non-vehicular PCC pavements should be a minimum of 4 inches thick. Steel reinforcement is not considered necessary due to the non-expansive nature of site soils.

Should asphalt paving be selected for non-vehicular areas in the storage equipment area, a minimum thickness of 4 inches of asphalt concrete (AC) over native subgrade is recommended. AC pavement should be constructed in accordance with Standard Specifications for Public Works Construction (Green Book) specifications.

Subgrades for the pavements constructed on native subgrade should be prepared and compacted as recommended in Section 3.3.2 (95 percent relative compaction).

Decomposed granite (DG) material for non-vehicular spaces should be placed in accordance with the product specifications and compacted to a minimum of 90 percent.

### **3.8 Soil Corrosivity and Cement Type**

Soil at the site is considered "non-corrosive" with respect to metals in contact with it.

Concrete mix requirements for structural concrete may be based on the "S0" exposure class of Table 19.3.2.1 in ACI-318-14 that lists the appropriate type of cement, maximum water-cement ratio, and minimum concrete compressive strength. The chloride levels within the soils are classified as Class C0 (negligible).

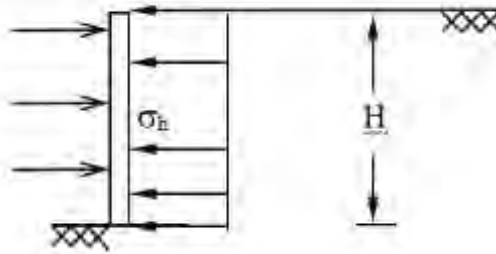
### **3.9 Pipelines, Trench Excavations, and Backfill**

Utility and pipeline trenches parallel to existing structures should not be located below a 1:1 projection down from structural foundation bottoms within 10 lateral feet of the edge of such footings. Exceptions may be reviewed and accepted by a geotechnical consultant.

#### **3.9.1 Excavations**

Excavations should conform to the latest edition of OSHA requirements (shoring or layback of trench or excavation walls). The compacted near-surface soils across most of the site are anticipated to be classified as Type B for CalOSHA trenching and shoring requirements. Excavations deeper than approximately 4 feet below existing ground surface may encounter friable, running sands and should be classified as Type C soils. Any soil with groundwater should also be considered Type C.

The published OSHA shoring design systems may be used for conventional shoring excavations less than 20 feet in depth. Soil loadings are provided below that do not include the effects of the additional loads from other surcharges. The geotechnical consultant should review the conditions during the deeper excavation and installation of shoring. Care should be taken at all times by personnel and/or equipment operators working adjacent to the excavations.



Where  $\sigma_h = 28H$

### Temporary Shoring Earth Pressure

#### 3.9.2 Bedding and Backfills

Trench bottoms for pipe and conduit should expose competent soil. Bedding and pipe zone materials (shading) should be relatively clean sands with a sand equivalent of 30 or greater. Open graded gravel is not recommended due to the fine sands and silts that will surround the sand.

Native granular soils should generally be suitable for use as trench backfill. Backfill materials should be compacted to a minimum relative compaction of 90 percent (per ASTM D1557). We recommend that moisture content of native backfill to be over optimum moisture content. Native soils that are found to be wet will require reprocessing (e.g., mixing or drying) to achieve the uniform moisture content. Select backfill may be used in lieu of native soils. Sands with a sand equivalent of 30 or greater may be placed as backfill and water jetted for densification.

Special bedding material may be required for trenches that encounter wet and soft soils at pipe depth. Recommendations provided after observing field conditions may include removal and replacement of the soft soil with more competent material and/or geofabric reinforcement of the bottom and pipe bedding.

#### 3.10 Surface Drainage

Surface drainage should be carefully taken into consideration during design and construction. Positive surface drainage should be provided to direct surface water and storm runoff away from structures and other improvements to suitable drainage devices. Ponding of water adjacent to the structures and equipment areas should not be allowed. Paved areas should be provided with adequate drainage devices, gradients, and curbing to prevent run-off flowing from paved areas onto adjacent unpaved areas.



### **3.11 Additional Geotechnical Review and Evaluation**

Future improvement plans including underground piping and utilities, and the equipment foundation plans should be reviewed and accepted by the geotechnical consultant upon completion to verify that the assumptions for design and the construction details are consistent with the conclusions and recommendations in this report.

### **3.12 Observation and Testing During Site Preparation and Construction**

The findings, conclusions and recommendations in this report are based upon interpretation of data and data points having limited spatial extent. Anticipated geotechnical conditions should be verified during site preparation, any grading and construction. At minimum, geotechnical observation and testing should be conducted during construction at the following stages:

- During site preparation, clearing and demolition, prior to site processing;
- During backfill of excavations after removal of existing structures, improvements, and utility pipelines;
- During earthwork operations, including remedial removals (if any are required) and fill placement;
- During excavation, backfilling and installation of utilities and pipelines;
- Upon completion of any foundation excavations, prior to placement of reinforcement and concrete;
- During slab and hardscape subgrade preparation prior to pavement construction;
- During construction of structural pavement sections;
- During construction of retaining walls, including subdrains (if any); and,
- When any unusual soil conditions are encountered.

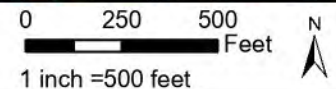
## 4.0 LIMITATIONS

This report has been prepared for the exclusive use of our client, Dahl Taylor and Associates, and the project owner, OCTA, within the specific scope of services requested by them for the subject hydrogen fueling improvements at the subject site. This report or its contents should not be used or relied upon for other projects or purposes or by other parties without the written consent of NMG, our client, and OCTA and the involvement of a geotechnical professional. The means and methods used by NMG for this study are based on local geotechnical standards of practice, care, and requirements of governing agencies. No warranty or guarantee, express or implied is given.

The findings, conclusions, and recommendations herein are professional opinions based on interpretations and inferences made from geologic and engineering data from specific locations and depths, observed or collected at a given time. By nature, geologic conditions can vary from point to point, can be very different in between points, and can also change over time. Our conclusions and recommendations are subject to verification and/or modification during excavation and construction when more subsurface conditions are exposed.

NMG's expertise and scope of services did not include assessment of potential subsurface environmental contaminants or environmental health hazards.

P:\2019\19175-02 Dahl Taylor OCTA GG Bus Base Hydrogen\Drafting\GIS\19175-02 Site location map.aprx



## SITE LOCATION MAP

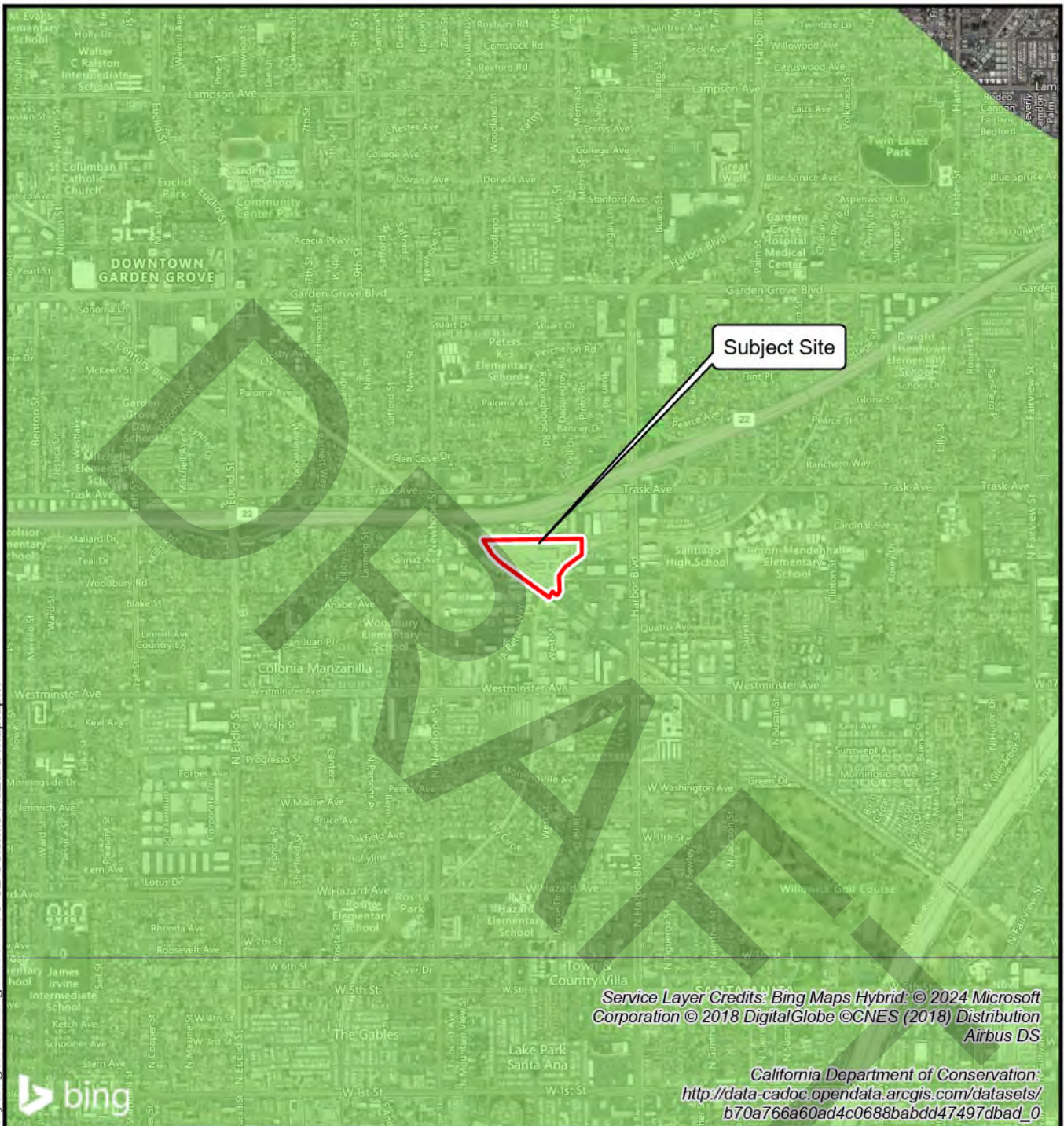
OCTA GARDEN GROVE BUS MAINTENANCE FACILITY  
11790 CARDINAL CIRCLE  
CITY OF GARDEN GROVE, CALIFORNIA

Project Number: 19175-02 By: TM  
Project Name: Dahl Taylor/OCTA G.G.  
Date: 8/6/2024 Figure 1





P:\2019\19175-02 Dahl Taylor OCTA G.G. Bus Base Hydrogen\Drafting\GIS\19175-02 Seismic Hazard map.aprx



### Legend

- Liquefaction Zones
- Earthquake-Induced Landslide Zones

0 1,000 2,000 Feet  
1 inch = 2,000 feet



## SEISMIC HAZARDS MAP

Base: California Geological Survey, Earthquake Zones of Required Investigation, Tustin Quadrangle  
Dated: January 17, 2001

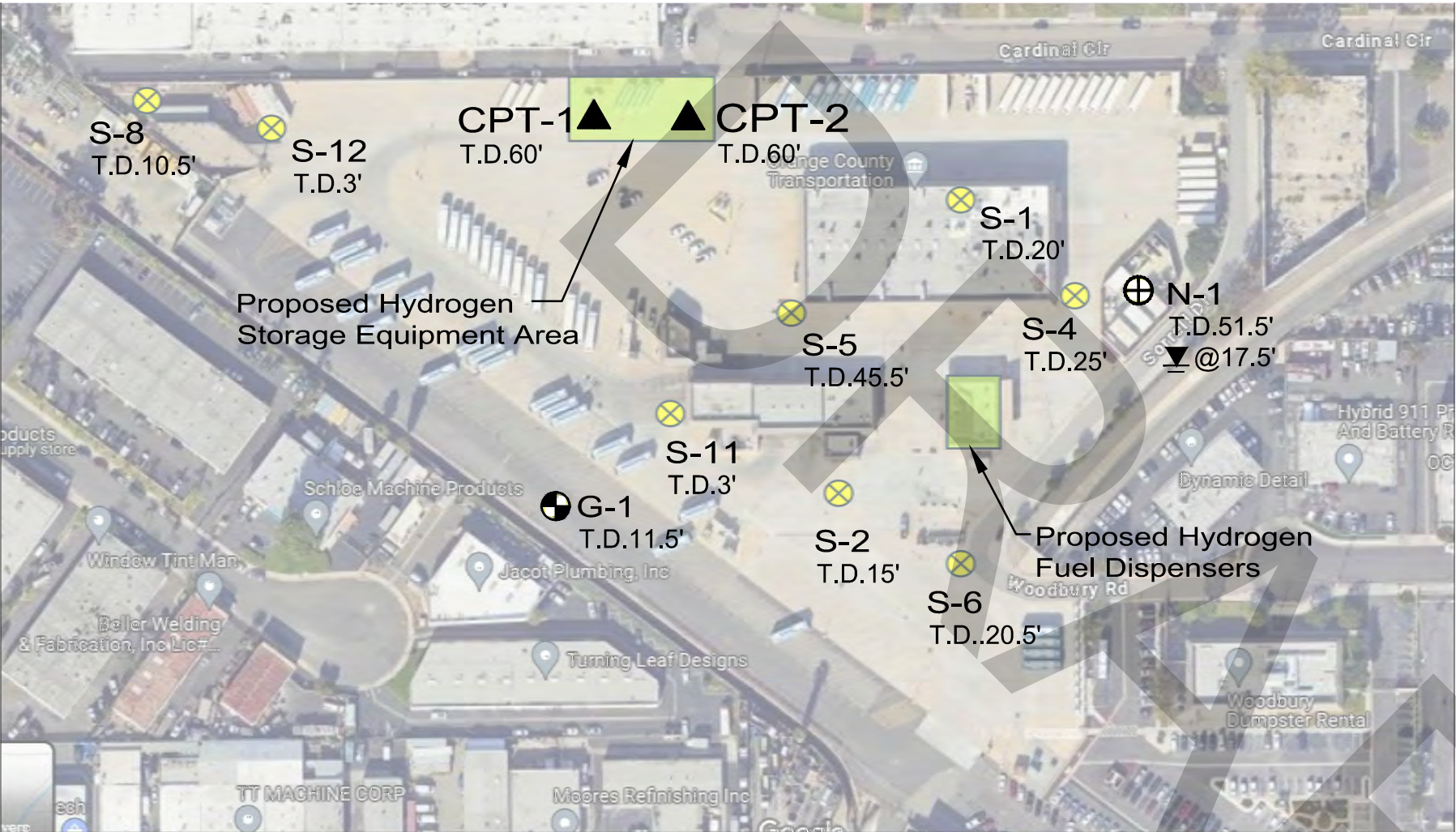
OCTA GARDEN GROVE BUS MAINTENANCE FACILITY  
11790 CARDINAL CIRCLE  
CITY OF GARDEN GROVE, CALIFORNIA

Project Number: 19175-02 By: TM  
Project Name: Dahl Taylor/OCTA G.G.  
Date: 8/6/2024 Figure 2





Drawing: P:\2019\19175-02 Dahl Taylor OCTA G.G. Bus Base Hydrogen (Drafting)\MIP\19175-02 Boring Location Mapping  
Layout: Layout1  
Last Saved: Tue Aug 06, 2024 - 1:39pm  
Last Plotted: Tue Aug 06, 2024 - 2:39pm  
By: mrodriguez



LEGEND

ALL LOCATIONS ARE APPROXIMATE

- ▲ CPT-2**  
T.D. 60'  
CONE PENETROMETER TEST BY NMG THIS STUDY  
SHOWING TOTAL DEPTH
- ⊕ G-1**  
T.D. 11.5'  
BORING BY GROUP DELTA (2014)  
SHOWING TOTAL DEPTH
- ⊕ N-1**  
T.D. 51.5'  
@17.5'  
BORING BY NINYO AND MOORE (2007)  
SHOWING TOTAL DEPTH AND DEPTH TO  
GROUNDWATER
- ⊗ S-12**  
T.D. 25'  
BORING BY SOILS INTERNATIONAL INC. (1975)  
SHOWING TOTAL DEPTH

BASE MAP : GOOGLE MAPS 2024

Not to Scale

CPT AND BORING LOCATION MAP

OCTA GARDEN GROVE BUS MAINTENANCE FACILITY  
11790 CARDINAL CIRCLE  
CITY OF GARDEN GROVE, CALIFORNIA

Project Number: 19175-02 BY: TM  
Project Name: Dahl Taylor/OCTA G.G.  
Date: 8/6/2024 Figure 3

NMG  
Geotechnical, Inc.

# APPENDIX A

## APPENDIX A

### REFERENCES

- California Geological Survey (CGS), 2008, Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117, Originally Adopted March 13, 1997, Revised and Readopted September 11, 2008.
- California Geological Survey (CGS), 2010, Fault Activity Map of California and Adjacent Areas (Scale 1: 750,000), Geologic Data Map No. 6, Compiled and Interpreted by Charles W. Jennings and William A. Bryant.
- California Geological Survey (CGS), 2001, Earthquake Zones of Required Investigation, 7.5 Minute Tustin Quadrangle, found at <http://data-cadoc.opendata.arcgis.com/datasets>.
- Group Delta Consultants, Inc., 2014, Geotechnical Investigation Asphalt Pavement Repairs Garden Grove Base and Fullerton Park & Ride Task Order No. 5 (OCTA Agreement No. C-9-0858), Garden Grove and Fullerton, California, GDC Project No. IR 526-05, dated April 9, 2014.
- Hayward Baker, 2018, Work Plan for Compaction Grouting, Hydrogen Fueling Center, Santa Ana, California, dated November 12, 2018.
- Historic Aerial by NETRonline, 2024, [www.historicaerials.com](http://www.historicaerials.com), accessed August 5, 2024.
- Ninyo & Moore, Inc., 2007, Geotechnical Evaluation CNG Facility OCTA Garden Grove Base, Orange County, California, Project No. 208232001A, dated December 18, 2007.
- NMG Geotechnical, Inc., 1994, Geotechnical Review of Proposed Improvements to Orange County Transit Authority (OCTA) Garden Grove Bus Maintenance Facility, Garden Grove, California, Project No. 94072-1, dated October 31, 1994
- NMG Geotechnical, Inc., 2015, Geotechnical Evaluation and Design Parameters for Proposed Canopy Structure, Orange County Transit Authority (OCTA), Garden Grove Base, 11790 Cardinal Circle, City of Garden Grove, California, Project No. 14093-01, dated April 3, 2015
- Petra Geosciences, Inc., 2018, Alternative Foundation Design Evaluation and Recommendations for Proposed Hydrogen Equipment Storage Arrangement Pad, 4301 West MacArthur Boulevard, Santa Ana, California, J.N. 18-266, dated October 16, 2018.
- P.K. Robertson, 2009a, Interpretation of Cone Penetration Tests – a unified approach, Canadian Geotechnical Journal, Vol. 46, No. 11, pp 1337-1355.
- P.K. Robertson, 2009b, "Performance based earthquake design using the CPT," Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009.

## **APPENDIX A**

### **REFERENCES (Cont'd)**

- Soils International, Inc., 1975a, OCTD Maintenance and Administration Facility, Cardinal Circle and Harbor Boulevard, Garden Grove, California, Project Number S-0040-F1, dated June 27, 1975.
- Soils International, Inc., 1975b, Addendum Report, Proposed OCTD Maintenance and Administration Facility, Project Number S-0040-F1, Garden Grove, California, dated July 28, 1975.
- Structural Engineers Association/Office of Statewide Health Planning and Development, 2024, U.S. Seismic Design Maps, web site address: <https://seismicmaps.org/>; date accessed: July 15, 2024.
- U.S. Geological Survey, 2024, Unified Hazard Tool, NSHM 2014 Dynamic Deaggregation Program; web site address: <https://earthquake.usgs.gov/hazards/interactive/>; date accessed: July 15, 2024.
- W.A. Bryant, and E.W. Hart, (CGS), 2007, Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps, Special Publication 42, Interim Revision 2007.
- Youd, T.L., Idriss, I.M., Andrus, R.D., Arango, I., Castro, G., Christian, J.T., Dobry, R., Finn, W.D.L., Harder, L.F., Hynes, M.E., Ishihara, K., Koester, J., Liao, S., Marcuson III, W.F., Martin, G.R., Mitchell, J.K., Moriwaki, Y., Power, M.S., Robertson P.K., Seed, R., and Stokoe, K.H., Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshop on Evaluation of Liquefaction Resistance of Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 127, October, pp 817-833.



## APPENDIX B

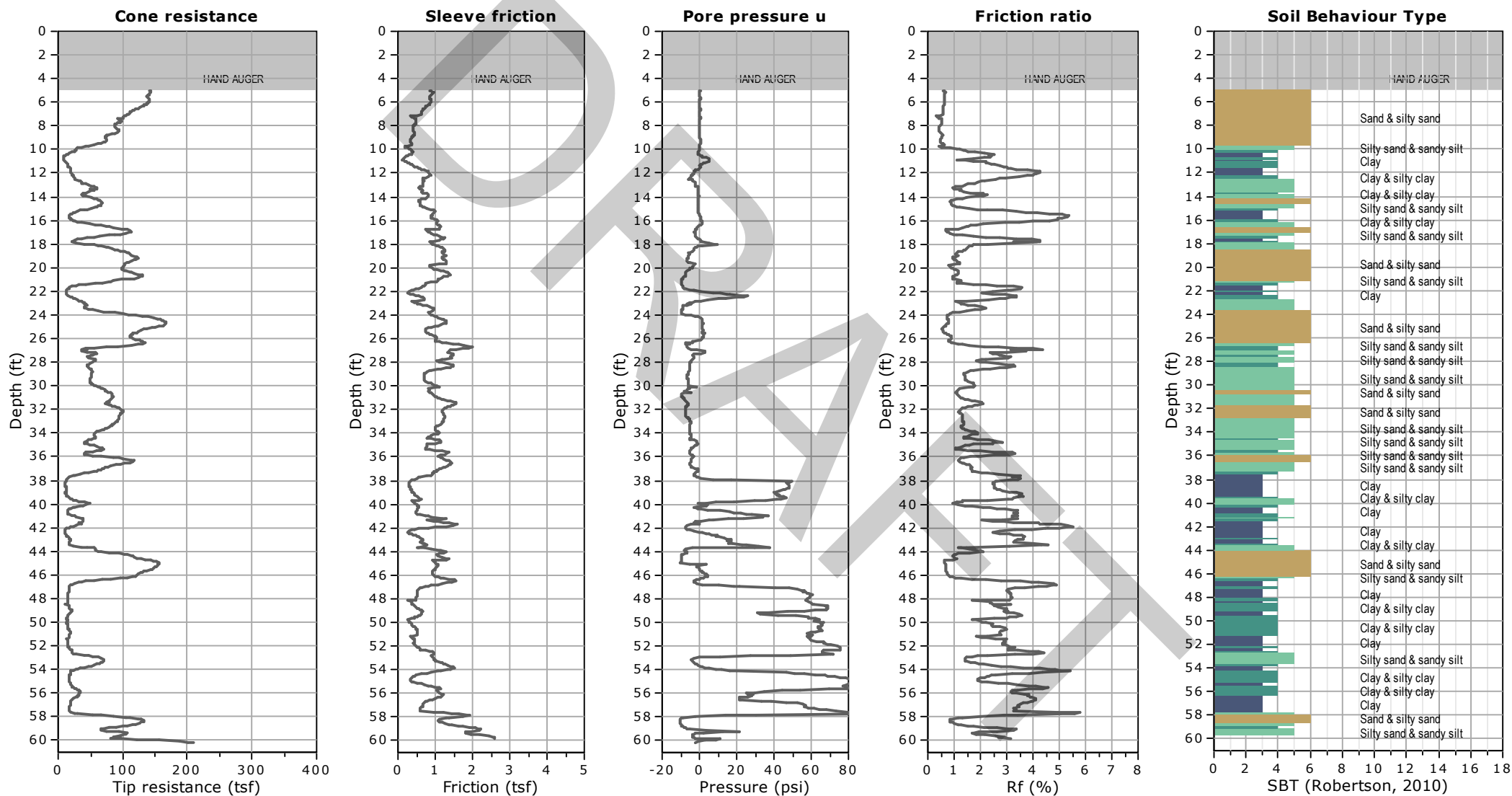


Project: NMG Geotechnical / OCTA Garden Grove Bus Base

Location: 11790 Cardinal Cir, Garden Grove, CA

CPT-1

Total depth: 60.18 ft, Date: 6/28/2024

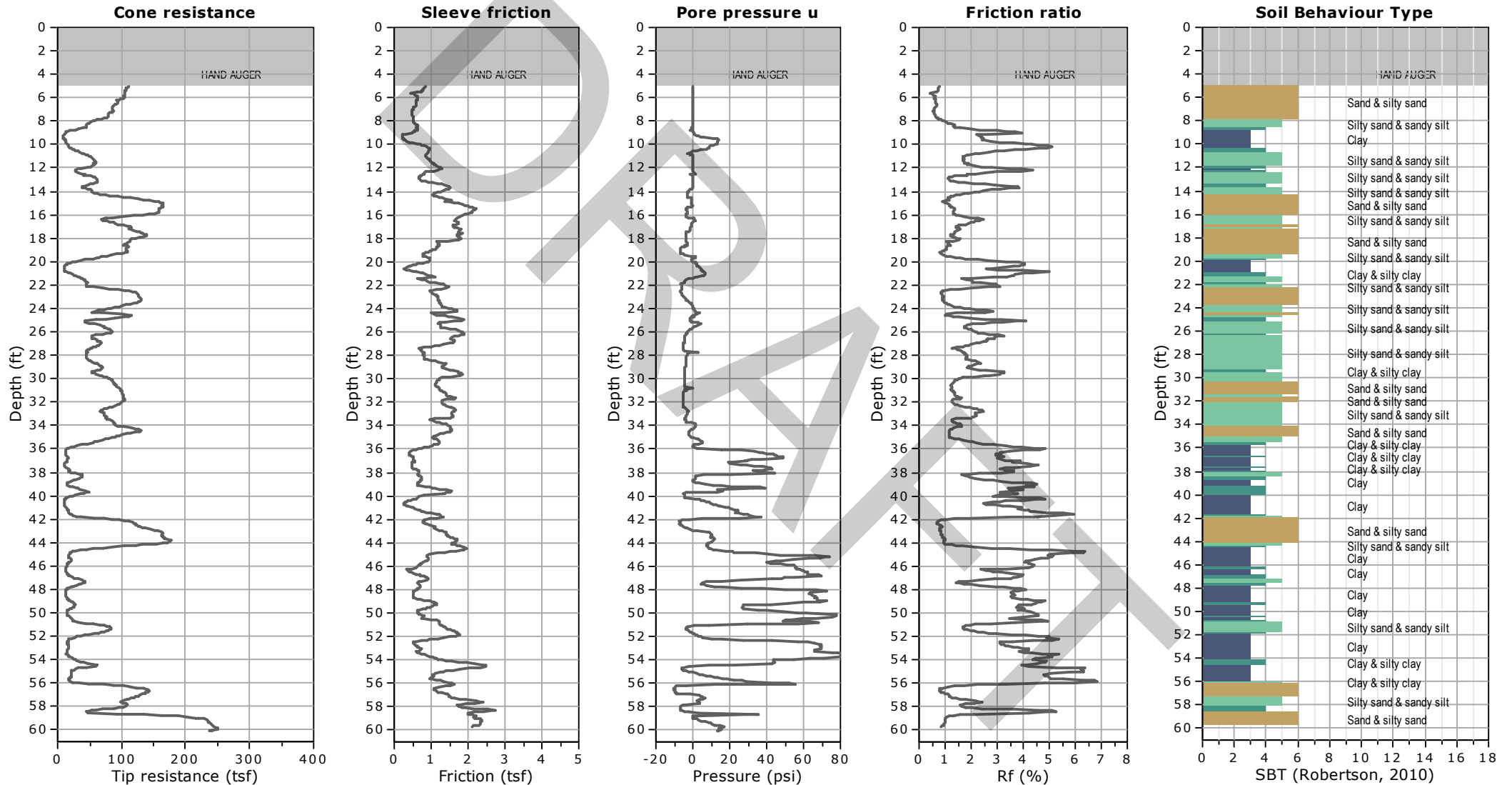




Project: NMG Geotechnical / OCTA Garden Grove Bus Base  
Location: 11790 Cardinal Cir, Garden Grove, CA

CPT-2

Total depth: 60.11 ft, Date: 6/28/2024



## **BORING LOGS BY OTHERS**

GDC LOG BORING 2011 IR 526 PHASE 5 - GARDEN GROVE AND FULLERTON.GPJ GDCLOG.GDT 4/7/14

BORING RECORD										PROJECT NAME AC Repair Phase 5 - Garden Grove and Fullerton				PROJECT NUMBER IR 526		HOLE ID <b>A-14-001</b>	
SITE LOCATION Garden Grove, Fullerton, CA										START 3/14/2014		FINISH 3/14/2014		SHEET NO. 1 of 1			
DRILLING COMPANY ABC Drilling			DRILL RIG CME 75			DRILLING METHOD Hollow Stem Auger				LOGGED BY Terry		CHECKED BY Sathis					
HAMMER TYPE (WEIGHT/DROP) Automatic, (140#, 30")			HAMMER EFFICIENCY (ERI) 74			BORING DIA. (in) 8		TOTAL DEPTH (ft) 11.5		GROUND ELEV (ft) NA		DEPTH/ELEV. GW (ft) NE / na					
DRIVE SAMPLER TYPE(S) & SIZE (ID) SPT (1.4"), CAL (2.4")						NOTES N60* = 1.23 Nspt = 0.83 Ncal						DURING DRILLING NE / na					
DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	SPT N <sub>60</sub>	RECOVERY (%)	RQD (%)	MOISTURE (%)	DRY DENSITY (pcf)	ATTERBERG LIMITS (LL:PI)	OTHER TESTS	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION		
			B-1												ASPHALT (4 to 5 inches)		
			R-2-1	10 16 19	35	29			13.2	105					Silty SAND (SM); medium dense; dark gray; moist; mostly fine SAND; trace coarse SAND; some fines; few fine to coarse GRAVEL; nonplastic.  Light brown.		
5			B-3 R-4-1	5 8 12	20	17			4.0	94					Poorly-Graded SAND with SILT (SP-SM); medium dense; light brown; moist; mostly fine SAND; few fines; nonplastic.		
10			R-5-1	3 3 7	10	8			18.4	108					Sandy lean CLAY (CL); stiff to very stiff; brown; moist; mostly fines; some fine SAND; medium plasticity; PP=2.0.		
															Bottom of borehole at 11.5 feet. Boring terminated at planned depth.		
15															This Boring Record was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).		
20																	

**GROUP DELTA CONSULTANTS, INC.**  
32 Mauchly, Suite B  
Irvine, CA 92618

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

**FIGURE**

**A-2**

GDC LOG BORING 2011 IR 526 PHASE 5 - GARDEN GROVE AND FULLERTON.GPJ GDCLOG.GDT 4/7/14

<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <h1 style="margin: 0;">BORING RECORD</h1> </div> <div style="width: 35%;"> <p><b>PROJECT NAME</b> AC Repair Phase 5 - Garden Grove and Fullerton</p> </div> <div style="width: 20%;"> <p><b>PROJECT NUMBER</b> IR 526</p> </div> <div style="width: 15%;"> <p><b>HOLE ID</b> <b>A-14-002</b></p> </div> </div>										<p><b>SITE LOCATION</b> Garden Grove, Fullerton, CA</p>		<p><b>START</b> 3/14/2014</p>	<p><b>FINISH</b> 3/14/2014</p>	<p><b>SHEET NO.</b> 1 of 1</p>	
<p><b>DRILLING COMPANY</b> ABC Drilling</p>		<p><b>DRILL RIG</b> CME 75</p>	<p><b>DRILLING METHOD</b> Hollow Stem Auger</p>		<p><b>LOGGED BY</b> Terry</p>	<p><b>CHECKED BY</b> Sathis</p>									
<p><b>HAMMER TYPE (WEIGHT/DROP)</b> Automatic, (140#, 30")</p>		<p><b>HAMMER EFFICIENCY (ERI)</b> 74</p>	<p><b>BORING DIA. (in)</b> 8</p>	<p><b>TOTAL DEPTH (ft)</b> 11.5</p>	<p><b>GROUND ELEV (ft)</b> NA</p>	<p><b>DEPTH/ELEV. GW (ft)</b> NE / na</p>									
<p><b>DRIVE SAMPLER TYPE(S) &amp; SIZE (ID)</b> SPT (1.4"), CAL (2.4")</p>			<p><b>NOTES</b> N60* = 1.23 Nspt = 0.83 Ncal</p>			<p><b>DURING DRILLING</b> NE / na</p>									
DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	SPT N <sub>60</sub>	RECOVERY (%)	ROD (%)	MOISTURE (%)	DRY DENSITY (pcf)	ATTERBERG LIMITS (LL:PI)	OTHER TESTS	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
			B-1												ASPHALT (3 inches)
			R-2-1	10 13 17	30	25			5.9	106					AGGREGATE BASE (7 inches)
5			B-3	5 8 11	19	16			2.9	96					Poorly-Graded SAND with SILT (SP-SM); medium dense; light brown; moist; mostly fine SAND; trace fine GRAVEL; nonplastic.
			R-4-1												88% SAND; 11% fines; 1% GRAVEL
															Few medium SAND; no GRAVEL.
10			R-5-1	5 8 12	20	17			10.5	90					Silty SAND (SM); medium dense; light brown; moist; mostly fine SAND; little fines; nonplastic.
															Bottom of borehole at 11.5 feet. Boring terminated at planned depth.
15															<p>This Boring Record was prepared in accordance with the Caltrans Soil &amp; Rock Logging, Classification, and Presentation Manual (2010).</p>
20															

**GROUP DELTA CONSULTANTS, INC.**  
32 Mauchly, Suite B  
Irvine, CA 92618

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

**FIGURE**  
**A-3**

GDC LOG BORING 2011 IR 526 PHASE 5 - GARDEN GROVE AND FULLERTON.GPJ GDCLOG.GDT 4/7/14

<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <h1 style="margin: 0;">BORING RECORD</h1> </div> <div style="width: 35%;"> <p><b>PROJECT NAME</b> AC Repair Phase 5 - Garden Grove and Fullerton</p> </div> <div style="width: 20%;"> <p><b>PROJECT NUMBER</b> IR 526</p> </div> <div style="width: 15%;"> <p><b>HOLE ID</b> <b>A-14-003</b></p> </div> </div>										<p><b>SITE LOCATION</b> Garden Grove, Fullerton, CA</p>		<p><b>START</b> 3/14/2014</p>	<p><b>FINISH</b> 3/14/2014</p>	<p><b>SHEET NO.</b> 1 of 1</p>	
<p><b>DRILLING COMPANY</b> ABC Drilling</p>		<p><b>DRILL RIG</b> CME 75</p>	<p><b>DRILLING METHOD</b> Hollow Stem Auger</p>		<p><b>LOGGED BY</b> Terry</p>	<p><b>CHECKED BY</b> Sathis</p>									
<p><b>HAMMER TYPE (WEIGHT/DROP)</b> Automatic, (140#, 30")</p>		<p><b>HAMMER EFFICIENCY (ERI)</b> 74</p>	<p><b>BORING DIA. (in)</b> 8</p>	<p><b>TOTAL DEPTH (ft)</b> 11.5</p>	<p><b>GROUND ELEV (ft)</b> NA</p>	<p><b>DEPTH/ELEV. GW (ft)</b> ∇ NE / na</p>									
<p><b>DRIVE SAMPLER TYPE(S) &amp; SIZE (ID)</b> SPT (1.4"), CAL (2.4")</p>			<p><b>NOTES</b> N60* = 1.23 Nspt = 0.83 Ncal</p>			<p><b>AFTER DRILLING</b> ∇ NE / na</p>									
DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	SPT N <sub>60</sub>	RECOVERY (%)	ROD (%)	MOISTURE (%)	DRY DENSITY (pcf)	ATTERBERG LIMITS (LL:PI)	OTHER TESTS	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
															<p>ASPHALT (2.5 to 3 inches)</p> <p>AGGREGATE BASE (6.5 inches)</p> <p>Silty SAND (SM); medium dense; light brown; moist; mostly fine SAND; few medium SAND; trace coarse SAND; little fines; nonplastic.</p>
5		B-1 R-2-1		7 10 11	21	17									
		R-3-1		6 8 10	18	15									<p>Poorly-Graded SAND with SILT (SP-SM); medium dense; light brown; moist; mostly fine to medium SAND; trace coarse SAND; few fines; nonplastic.</p>
10		R-4-1		3 8 15	23	19									<p>Bottom of borehole at 11.5 feet. Boring terminated at planned depth.</p> <p>This Boring Record was prepared in accordance with the Caltrans Soil &amp; Rock Logging, Classification, and Presentation Manual (2010).</p>
15															
20															

**GROUP DELTA CONSULTANTS, INC.**  
32 Mauchly, Suite B  
Irvine, CA 92618

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

**FIGURE**  
**A-4**

**ADDENDUM NO. 2 ATTACHMENT B**

DATE DRILLED 8/20/07 BORING NO. B-1

GROUND ELEVATION 85' ± (MSL) SHEET 1 OF 3

METHOD OF DRILLING 8" Hollow-Stem Auger (Martin Drilling Company)

DRIVE WEIGHT 140 lbs. (Auto. Trip Hammer) DROP 30"

SAMPLED BY JRS LOGGED BY JRS REVIEWED BY CAP

**DESCRIPTION/INTERPRETATION****PORTLAND CEMENT CONCRETE:**

Approximately 8 1/2 inches thick.

SP

**AGGREGATE BASE:**

Brown, dry to damp, medium dense, fine to coarse SAND; little to some gravel; approximately 6 1/2 inches thick.

ML

**FILL:**

Medium to dark brown, damp, medium dense, very fine sandy SILT.

SP

**ALLUVIUM:**

Light brown, dry, medium dense, fine to medium SAND.

SM

Brown, damp, loose, silty very fine to fine SAND.

Moist; medium dense.

@17.3': Groundwater encountered during drilling.

Saturated.

**Ninyo & Moore****BORING LOG**CNG Facility, OCTA Garden Grove Base  
Orange County, CaliforniaPROJECT NO.  
207232001ADATE  
12/07FIGURE  
A-1



## ADDENDUM NO. 2 ATTACHMENT B

DATE DRILLED 3/20/07 BORING NO. B-1

GROUND ELEVATION 85' ± (MSL) SHEET 2 OF 3

METHOD OF DRILLING 8" Hollow-Stem Auger (Martini Drilling Company)

DRIVE WEIGHT 140 lbs. (Auto. Trip Hammer) DROP 30"

SAMPLED BY JRS LOGGED BY JRS REVIEWED BY CAP

DESCRIPTION/INTERPRETATION

DEPTH (feet)	SAMPLES Bulk Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.
20		53	18.6	103.1		SP
25		37				
30		16	25.0	101.8		
35		10				ML
40						

ALLUVIUM: (Continued)  
Light brown, saturated, dense, fine to medium SAND.

Very dense.

Brown; medium dense; very fine sandy clay lense.

Brown, saturated, medium dense, sandy SILT.

**Ninyo & Moore**

## BORING LOG

CNG Facility, OCTA Garden Grove Base  
Orange County, California

PROJECT NO.  
207232001A

DATE  
12/07

FIGURE  
A-2

## ADDENDUM NO. 2 ATTACHMENT B

DATE DRILLED 8/20/07 BORING NO. B-1

GROUND ELEVATION 85' ± (MSL) SHEET 3 OF 3

METHOD OF DRILLING 8" Hollow-Stem Auger (Martin Drilling Company)

DRIVE WEIGHT 140 lbs. (Auto. Trip Hammer) DROP 30"

SAMPLED BY JRS LOGGED BY JRS REVIEWED BY CAP

DESCRIPTION/INTERPRETATION

DEPTH (feet)	Bulk Driven	SAMPLES	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.
40			17	24.1	102.3		SM
45			13				
50			11	22.3	101.8		MH
55							
60							

ALLUVIUM: (Continued)  
Brown, saturated, medium dense, silty fine SAND; few clay.

Grayish brown, saturated, stiff, clayey SILT; trace coarse sand.

Total Depth = 51.5 feet.

Groundwater encountered during drilling at approximately 17.3 feet.

Backfilled with bentonite and capped with quick-set concrete on 8/20/07.

Note:

Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.

**Ninyo & Moore**

**BORING LOG**

CNG Facility, OCTA Garden Grove Base  
Orange County, California

PROJECT NO.  
207232001A

DATE  
12/07

FIGURE  
A-3

# LOG OF BORING Nº 1

DATE DRILLED 6-18-73

DRILLING EQUIPMENT Bucket Auger

DRIVING WEIGHT 1650 lbs. - 12" drop

SURFACE ELEVATION 98.9

Depth in Feet	Samples	Blows per foot	SOILS CLASSIFICATION	COLOR	MOISTURE	CONSISTENCY	DRY UNIT WEIGHT LB. PER CU. FT.	SHEAR RESISTANCE @ ANTICIPATED PRESSURE - KIPS PER SQUARE FOOT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
								●	1	2	3	4	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
								MOISTURE CONTENT - % DRY WEIGHT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
▲	10	20	30	40	50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
2			FILL: Sand, very fine, slight silty	gray	dry	mod																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

OCTD Administration and Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-F1

PLATE

B

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS



# LOG OF BORING Nº 2

DATE DRILLED 6/18/73

DRILLING EQUIPMENT Bucket Auger

DRIVING WEIGHT 1650 lbs. - 12" drop

SURFACE ELEVATION 98.9

Depth in Feet	Samples	Blows per foot	SOILS CLASSIFICATION	COLOR	MOISTURE	CONSISTENCY	DRY UNIT WEIGHT LB. PER CU. FT.	SHEAR RESISTANCE @ ANTICIPATED PRESSURE - KIPS PER SQUARE FOOT									
								● 1 2 3 4 5					▲ 10 20 30 40 50				
			FILL: Sand, fine, sl. silty			gray	dry	loose									
			SAND, very fine to fine, slight silty			brwn	damp	mod comp									
5			fine, clean			pale gray brwn	dry										
6									98								
							moist										
			fine, sl. silty			olive		comp									
10			very fine, silty			gray			108								
			very fine to fine, slight silty														
			fine, clean			pale gray brwn											
15			fine, sl. silty														
			End @ 15.0 ft.														
20																	
25																	

OCTD Administration and Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-F1

PLATE

C

**SOILS INTERNATIONAL**

CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS



# LOG OF BORING Nº 4

DATE DRILLED 6/5/75

DRILLING EQUIPMENT Bucket Auger

DRIVING WEIGHT 1350 lbs. - 12" drop

SURFACE ELEVATION 99.4

Depth in Feet	Samples	Blows per foot	SOILS CLASSIFICATION	COLOR	MOISTURE	CONSISTENCY	DRY UNIT WEIGHT LB. PER CU. FT.	SHEAR RESISTANCE @ ANTICIPATED PRESSURE - KIPS PER SQUARE FOOT									
								● 1 2 3 4 5					MOISTURE CONTENT - % DRY WEIGHT ▲ 10 20 30 40 50				
3			SAND, very fine to fine, silty, porous		light gray brwn	dry	loose	87	●	▲							
6			fine, clean		tan		mod comp	96	●	▲							
6								96	▲	●							
			fine, silty		gray	moist											
			fine, clean		brwn												
10	3		very fine to fine, silty					108	●	▲							
			fine, silty														
			fine, clean			very moist											
15	2		very fine to fine, very silty		dark gray brwn			92	●		▲						
			very fine to fine, silty		gray	wet											
20	4					Grd. water											
			fine to medium, sl. silty to clean				comp										
25	21							104			●	▲					

End @ 25.0 ft.

OCTD Administration and Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-F1

PLATE

E

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS



# LOG OF BORING Nº 5

DATE DRILLED 6/4/75

DRILLING EQUIPMENT Bucket Auger

DRIVING WEIGHT 1350 lbs. - 12" drop

SURFACE ELEVATION 98.7

Depth in Feet	Samples Blows per foot	SOILS CLASSIFICATION	COLOR	MOISTURE	CONSISTENCY	DRY UNIT WEIGHT LB. PER CU. FT.	SHEAR RESISTANCE @ ANTICIPATED PRESSURE - KIPS PER SQUARE FOOT									
							● 1 2 3 4 5					▲ 10 20 30 40 50				
							MOISTURE CONTENT - % DRY WEIGHT									
	3	SAND, very fine to fine silty porous	gray		dry	loose	85	●	●							
	4	fine, clean	tan			mod comp	95	▲	●							
5	5		gray				100	▲	●							
		fine, silty to slight silty	brwn		moist											
			gray				104	●		▲						
10	2															
		very fine to fine, very silty			very moist to wet		97	●		▲						
15	6															
		fine, clean														
						▽ Grd. water										
20	3	very fine to fine silty	olive gray				104	●		▲						
		fine to medium, clean	gray			comp										
25	21						106			▲						

Cont. on Plate G

OCTD Administration and Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-F1

PLATE F

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS



# LOG OF BORING N<sup>o</sup> 5 cont.

DATE DRILLED 6/4/75

DRILLING EQUIPMENT Bucket Auger

DRIVING WEIGHT 1350 lbs. - 12" drop

SURFACE ELEVATION 98.7

Depth in Feet	Samples	Blows per foot	SOILS CLASSIFICATION	COLOR	MOISTURE	CONSISTENCY	DRY UNIT WEIGHT LB. PER CU. FT.	SHEAR RESISTANCE @ ANTICIPATED PRESSURE - KIPS PER SQUARE FOOT											
								● 1 2 3 4 5					▲ 10 20 30 40 50						
								MOISTURE CONTENT - % DRY WEIGHT											
			SAND, fine to medium, clean			gray	Sat.	comp											
			very fine to fine, silty			dark gray													
			SILT, sandy, clayey			olive		firm											
28			SAND, very fine, very silty			gray		comp	97		●		▲						
30			fine, clean																
			very fine, silty																
35	2		SILT, sandy, clayey, occasional sand lenses					firm	90		●		▲						
40	3																		
			SAND, fine, silty					comp	95		●		▲						
			fine, clean																
45	14		SILT, sandy						99		●		▲						
			End @ 45.5 ft.																

OCTD Administration and Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-F1

PLATE

G

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS



# LOG OF BORING Nº 6

DATE DRILLED 6/4/75

DRILLING EQUIPMENT Bucket Auger

DRIVING WEIGHT 1350 lbs. - 12" drop

SURFACE ELEVATION 99.3

Depth in Feet	Samples	Blows per foot	SOILS CLASSIFICATION	COLOR	MOISTURE	CONSISTENCY	DRY UNIT WEIGHT LB. PER CU. FT.	SHEAR RESISTANCE @ ANTICIPATED PRESSURE - KIPS PER SQUARE FOOT						
								●	1	2	3	4	5	
								MOISTURE CONTENT - % DRY WEIGHT						
▲	10	20	30	40	50									
1			SAND, very fine to fine, silty, porous	gray	dry	loose	91	●		▲				
			fine, sl. silty			mod	97	●	▲					
5			fine, clean	tan		comp								
6							97	▲	●					
			very fine to fine, silty	gray brwn	moist									
10				gray			104		●	▲				
			fine, clean		very moist									
15			SILT, clayey, sandy	olive brwn		mod	84		●			▲		
			SAND, very fine to fine, silty	olive gray		soft								
			fine, clean	light gray		comp								
20					▽									
					Grd. water		106			●	▲			
			End @ 20.5 ft.											
25														

OCTD Administrative and Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-F1

PLATE

H

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS



# LOG OF BORING Nº 8

DATE DRILLED 6/4/75

DRILLING EQUIPMENT Bucket Auger

DRIVING WEIGHT 1350 lbs. - 12" drop

SURFACE ELEVATION 100.1

Depth in Feet	Samples Blows per foot	SOILS CLASSIFICATION	COLOR	MOISTURE	CONSISTENCY	DRY UNIT WEIGHT LB. PER CU. FT.	SHEAR RESISTANCE @ ANTICIPATED PRESSURE - KIPS PER SQUARE FOOT	
							● 1 2 3 4 5	▲ 10 20 30 40 50
3		SAND, fine, silty fine, clean	gray tan	dry	mod loose	102	▲ ●	
4		fine to medium, clean			mod comp	96	● ▲	
6		fine to coarse, clean, scat. pea gravel				104	▲ ●	
10	5	fine to medium, clean				101	▲ ●	
End @ 10.5 ft.								
15								
20								
25								

OCTD Administration and Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-F1

PLATE

K

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS



# LOG OF BORING Nº 11 & 12

DATE DRILLED 6/4/75

DRILLING EQUIPMENT Bucket Auger

DRIVING WEIGHT 1350 lbs. - 12" drop

SURFACE ELEVATION

Depth in Feet	Samples Blows per foot	SOILS CLASSIFICATION	COLOR	MOISTURE	CONSISTENCY	DRY UNIT WEIGHT LB. PER CU. FT.	SHEAR RESISTANCE @ ANTICIPATED PRESSURE - KIPS PER SQUARE FOOT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
							●	1	2	3	4	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
							MOISTURE CONTENT - % DRY WEIGHT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
							▲	10	20	30	40	50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

OCTD Administration & Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-F1

PLATE

M

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS

DRAFT

## APPENDIX C

**LAB BY OTHERS**

Boring No.	Sample No.	Depth (ft)	Sample Type	Geologic Unit	USCS Group Symbol	SPT N*60 (blows/ft)	Undrained Shear Strength, Su (ksf)			Moisture Content (%)	Dry Unit Weight (pcf)	Total Unit Wt (pcf)	Atterberg Limits			Grain Size Distribution (%) by dry weight			Other Tests
							Pocket Pen.	Mini Vane	UU Test				LL	PL	PI	Gravel	Sand	Fines	
A-14-001	B-1	0.3	BULK		SM														R
A-14-001	R-2	2.5	MC		SM	29													
A-14-001	R-2-1	3.8	MC		SM					13.2	105	119				0	66	34	PA
A-14-001	B-3	4.5	BULK		SP-SM														
A-14-001	R-4	5.0	MC		SP-SM	17													
A-14-001	R-4-1	6.3	MC		SP-SM					4.0	94	98							
A-14-001	R-5	10.0	MC		CL	8													
A-14-001	R-5-1	11.3	MC		CL		2.0			18.4	108	128							
A-14-002	B-1	0.8	BULK		SM														R
A-14-002	R-2	2.5	MC		SM	25													
A-14-002	R-2-1	3.8	MC		SP-SM					5.9	106	112				1	88	11	PA
A-14-002	B-3	4.5	BULK		SP-SM														
A-14-002	R-4	5.0	MC		SP-SM	16													
A-14-002	R-4-1	6.3	MC		SP-SM					2.9	96	99							
A-14-002	R-5	10.0	MC		SM	17													
A-14-002	R-5-1	11.3	MC		SM					10.5	90	99							
A-14-003	B-1	0.8	BULK		SM														
A-14-003	R-2	2.5	MC		SM	17													
A-14-003	R-2-1	3.8	MC		SM														
A-14-003	R-3	5.0	MC		SP-SM	15													
A-14-003	R-3-1	6.3	MC		SP-SM														
A-14-003	R-4	10.0	MC		SP-SM	19													
A-14-003	R-4-1	11.3	MC		SP-SM														



**GROUP DELTA CONSULTANTS, INC.**

32 Mauchly, Suite B  
Irvine, California 92618  
Voice: (949) 450-2100 Fax: (949) 450-2108  
[www.GroupDelta.com](http://www.GroupDelta.com)

**TABLE B-1: Summary of Laboratory Results**

Project: AC Repair Phase 5 - Garden Grove and Fullerton  
Location: Garden Grove, Fullerton, CA  
Number: IR 526

# RESISTANCE VALUE

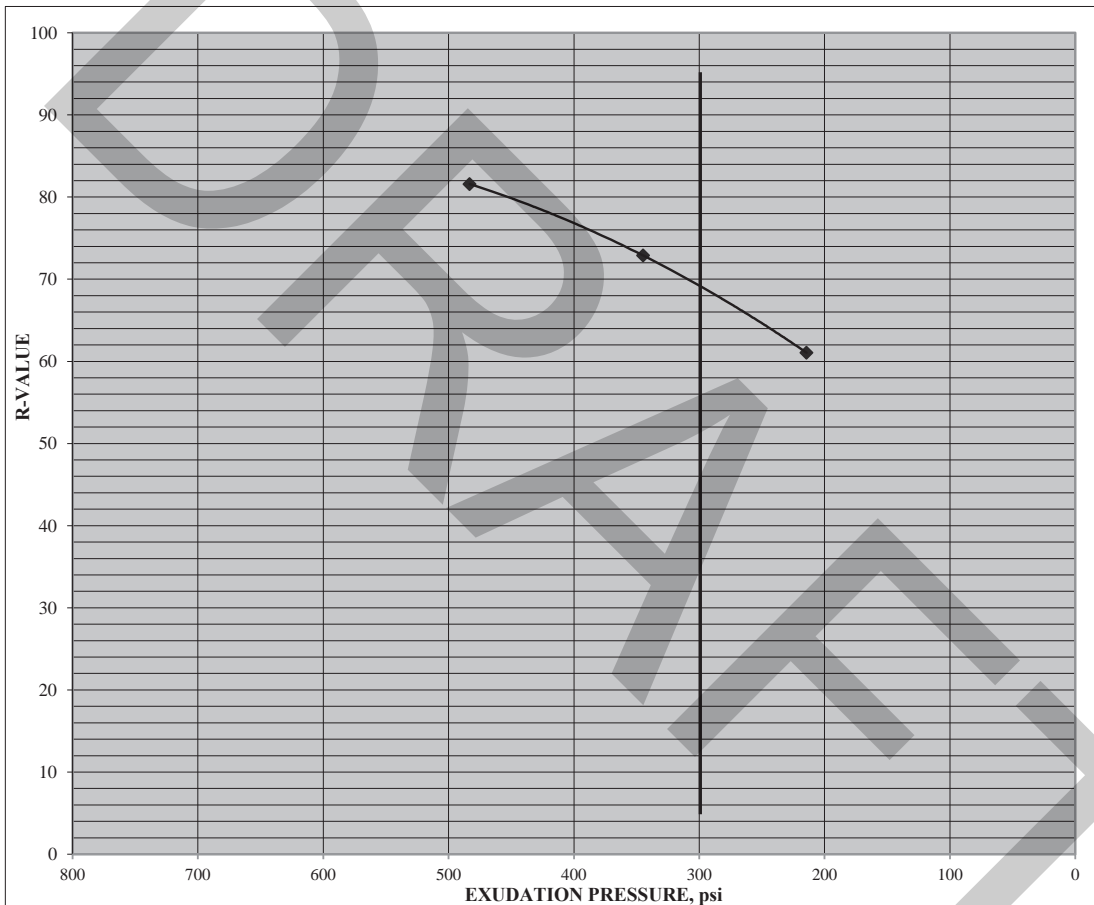
**Project Name:** STV OCTA - Garden Grove Base

**Project No.:** IR526 Phase 5

**Sample No.:** A-14-001 @ 1' to 5'

**Material Description:** Dark gray to light brown, Silty Sand

**Report Date:** 3/27/2014



Specimen No.	A	B	C
Moisture at Test, %	10.9	11.4	12.0
Dry Unit Weight at Test, pcf	122.6	123.7	123.8
Expansion Pressure, psf	0	0	0
Exudation Pressure, psi	483	345	214
Resistance Value	82	73	61

<b>R - VALUE AT 300 PSI EXUDATION PRESSURE</b>	<b>69</b>
--	-----------

Test Procedure: CTM 301 / ASTM D2844

Figure B-1

# RESISTANCE VALUE

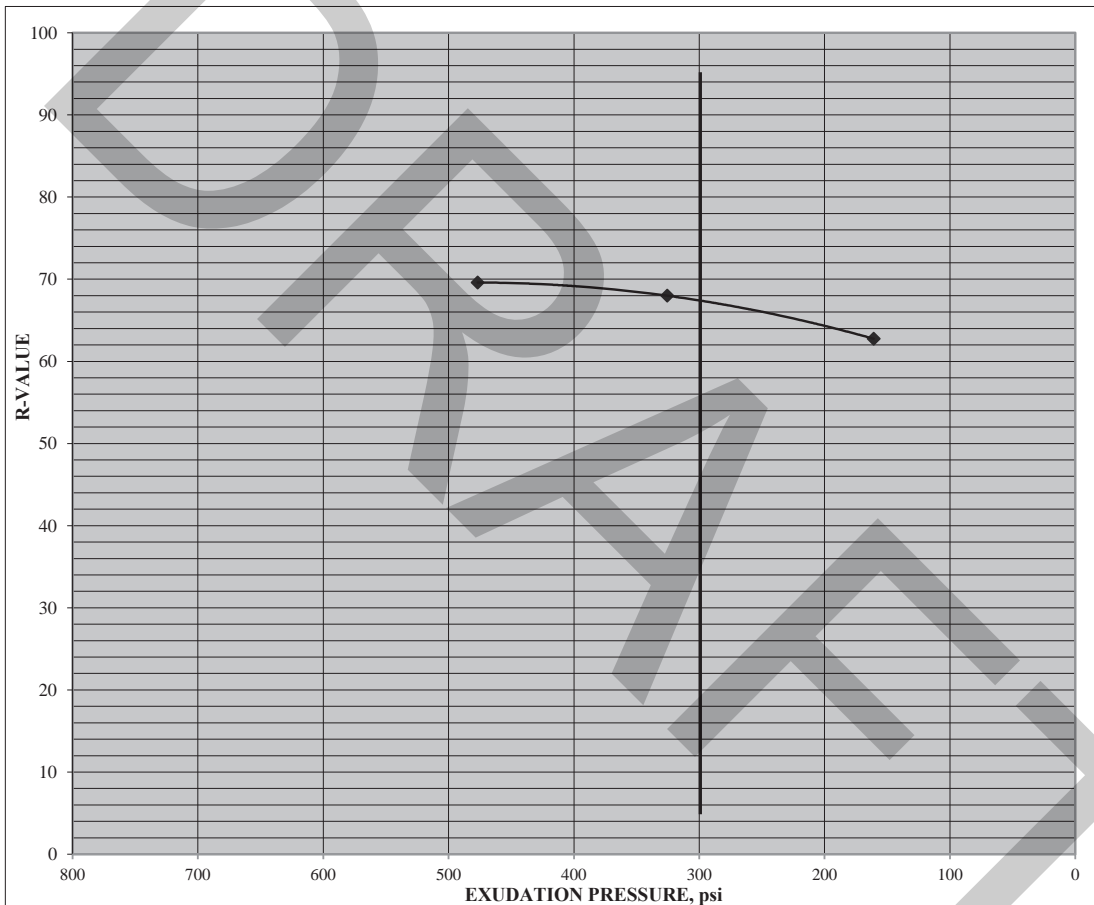
**Project Name:** STV OCTA - Fullerton Park & Ride

**Project No.:** IR526 Phase 5

**Sample No.:** A-14-002 @ 1' to 5'

**Material Description:** Light brown, Poorly-Graded Sand with Silt

**Report Date:** 3/27/2014



Specimen No.	A	B	C
Moisture at Test, %	10.1	10.6	11.1
Dry Unit Weight at Test, pcf	126.5	127.1	126.4
Expansion Pressure, psf	0	0	0
Exudation Pressure, psi	477	326	161
Resistance Value	70	68	63

<b>R - VALUE AT 300 PSI EXUDATION PRESSURE</b>	<b>67</b>
--	-----------

Test Procedure: CTM 301 / ASTM D2844

Figure B-2

SAMPLE LOCATION	SAMPLE DEPTH (FT)	DESCRIPTION	PERCENT PASSING NO. 4	PERCENT PASSING NO. 200	USCS (TOTAL SAMPLE)
B-1	10.0-11.5	Silty SAND	100	36	SM
B-1	15.0-16.5	Silty SAND	100	43	SM
B-1	20.0-21.5	Poorly Graded SAND	100	5	SP
B-1	35.0-36.5	Sandy SILT	100	73	ML
B-1	40.0-41.5	Silty SAND	100	31	SM

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 1140-00

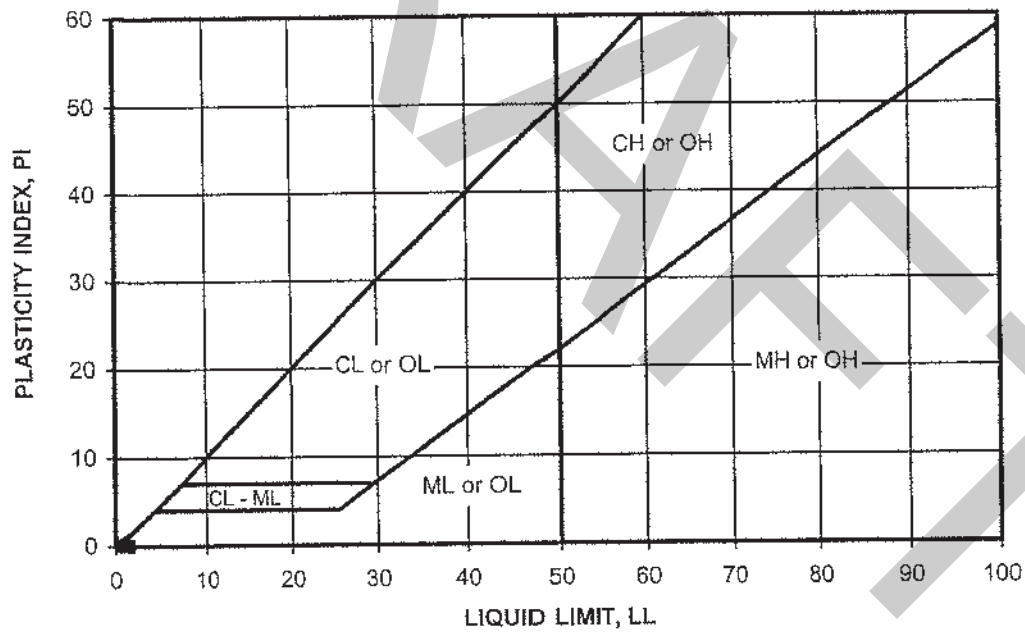
<b>Ninyo &amp; Moore</b>		<b>NO. 200 SIEVE ANALYSIS</b>	<b>FIGURE</b>  <b>B-1</b>
PROJECT NO.	DATE	CNG Facility OCTA Garden Grove Base Orange County, California	
207232001A	12/07		



## ADDENDUM NO. 2 ATTACHMENT B

SYMBOL	LOCATION	DEPTH (FT)	LIQUID LIMIT, LL	PLASTIC LIMIT, PL	PLASTICITY INDEX, PI	USCS CLASSIFICATION (Fraction Finer Than No. 40 Sieve)	USCS (Entire Sample)
●	B-1	15.0-16.5	-	-	-	NP	SM
■	B-1	35.0-36.5	-	-	-	NP	ML
◆	B-1	40.0-41.5	-	-	-	NP	SM

NP - INDICATES NON-PLASTIC



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318-05

**Ninyo & Moore****ATTERBERG LIMITS TEST RESULTS**

FIGURE

PROJECT NO.

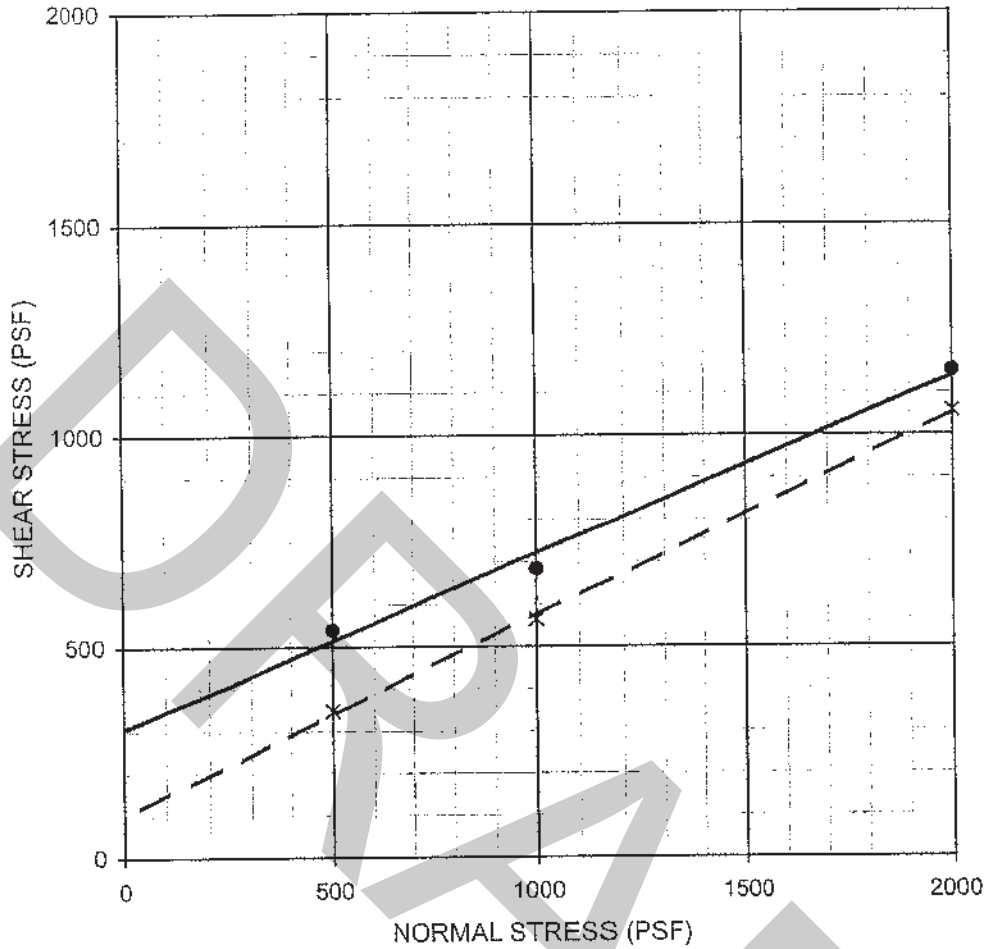
DATE

207232001A

12/07

CNG Facility  
 OCTA Garden Grove Base  
 Orange County, California

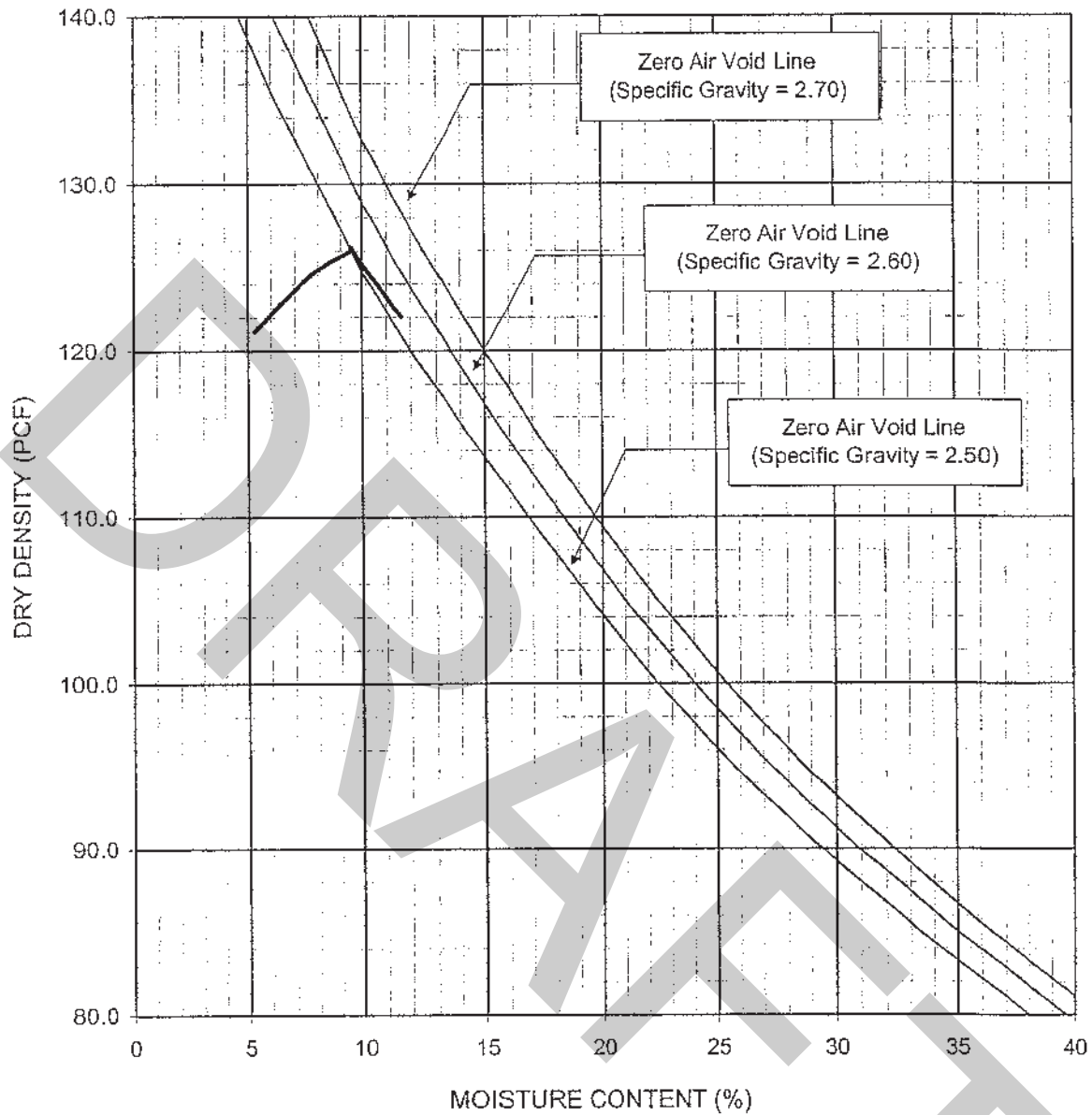
**B-2**



Description	Symbol	Sample Location	Depth (ft)	Shear Strength	Cohesion, c (psf)	Friction Angle, $\phi$ (degrees)	Soil Type
Sandy SILT	—●—	B-1	1.3-4.0	Peak	306	23	ML
Sandy SILT	- - X - -	B-1	1.3-4.0	Ultimate	102	25	ML

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 3080-04 ON A SAMPLE REMOLDED TO 90 PERCENT RELATIVE COMPACTION

<b>Ningo &amp; Moore</b>		DIRECT SHEAR TEST RESULTS	FIGURE  <b>B-3</b>
PROJECT NO.	DATE	CNG Facility OCTA Garden Grove Base Orange County, California	
207232001A	12/07		



Sample Location	Depth (ft)	Soil Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
B-1	1.3-4.0	Medium to Dark Brown Sandy SILT	126.0	9.5
Dry Density and Moisture Content Values Corrected for Oversize (ASTM D 4718-87)				

PERFORMED IN GENERAL ACCORDANCE WITH

☒ ASTM D 1557-02☐ ASTM D 698-00aMETHOD ☒ A ☐ B ☐ C**Ninyo & Moore****PROCTOR DENSITY TEST RESULTS**

FIGURE

**B-4**

PROJECT NO.

DATE

207232001A

12/07

CNG Facility  
 OCTA Garden Grove Base  
 Orange County, California

SAMPLE LOCATION	SAMPLE DEPTH (FT)	pH <sup>1</sup>	RESISTIVITY <sup>1</sup> (Ohm-cm)	SULFATE CONTENT <sup>2</sup>		CHLORIDE CONTENT <sup>3</sup> (ppm)
				(ppm)	(%)	
B-1	1.3-4.0	8.8	3,550	60	0.006	65

<sup>1</sup> PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 643

<sup>2</sup> PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 417

<sup>3</sup> PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 422

<b>Ninyo &amp; Moore</b>		<b>CORROSIVITY TEST RESULTS</b>	FIGURE
PROJECT NO.	DATE	CNG Facility OCTA Garden Grove Base Orange County, California	<b>B-5</b>
207232001A	12/07		

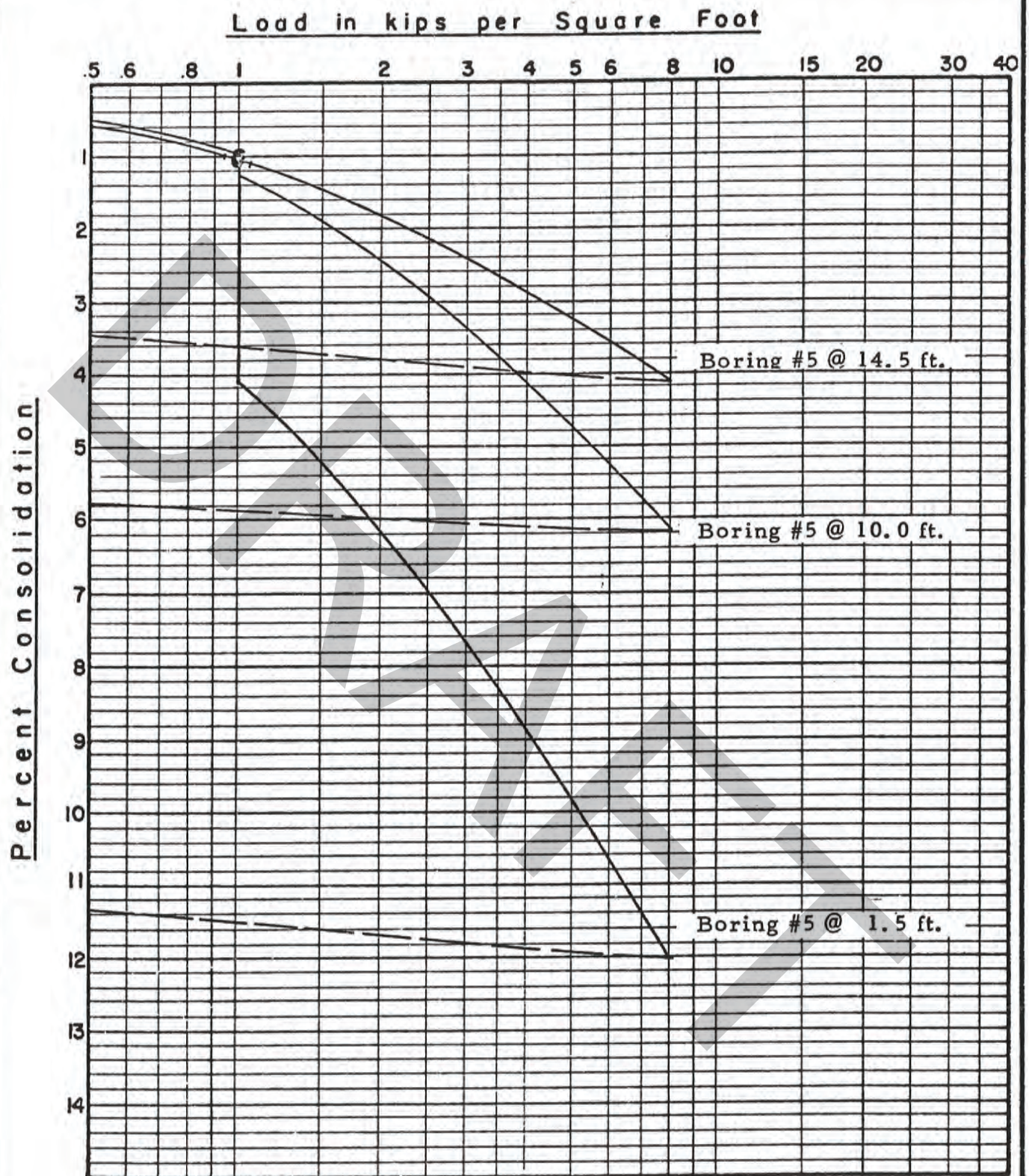
SAMPLE LOCATION	SAMPLE DEPTH (FT)	SOIL TYPE	SAND EQUIVALENT
B-1	1.3-4.0	ML	13

PERFORMED IN GENERAL ACCORDANCE WITH AASHTO T176/CT 217

<b>Ninyo &amp; Moore</b>		<b>SAND EQUIVALENT VALUE</b>	FIGURE <b>B-6</b>
PROJECT NO.	DATE		
207232001A	12/07	CNG Facility OCTA Garden Grove Base Orange County, California	



# CONSOLIDATION TESTS



OCTD Administration and Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-FI

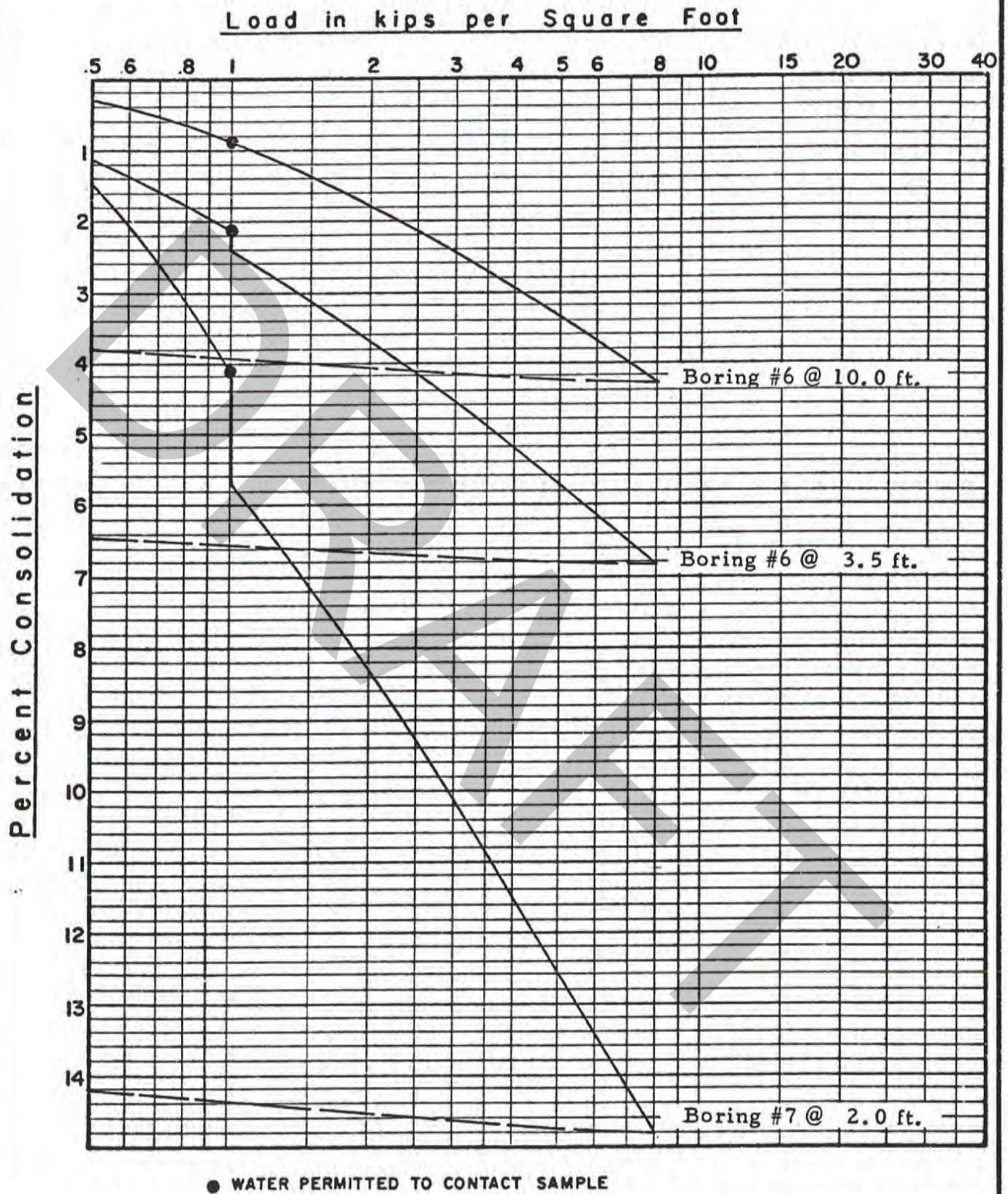
PLATE

N

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS



# CONSOLIDATION TESTS



OCTD Administration and Maintenance  
Facilities, Garden Grove, California

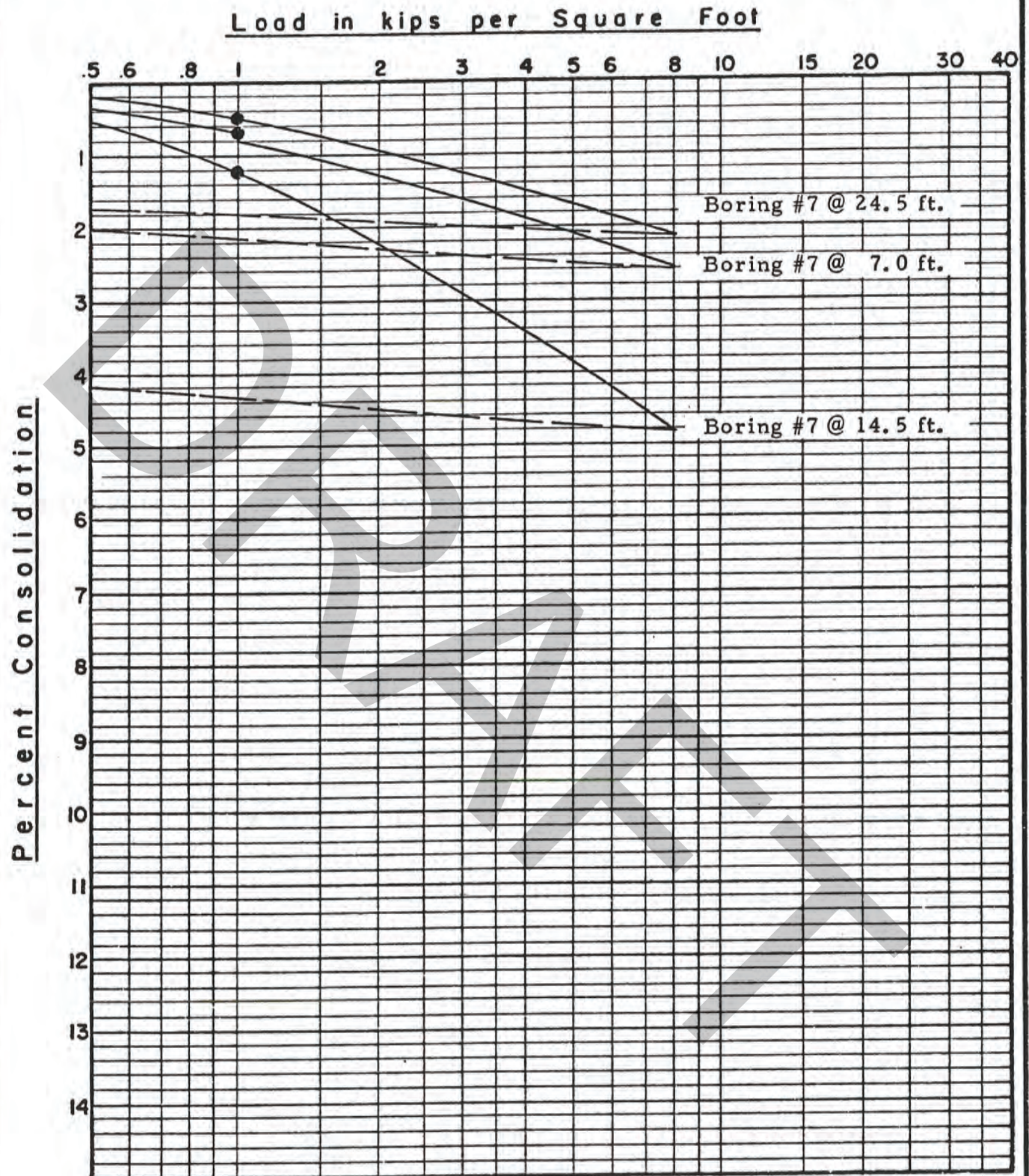
PROJECT No. S-0040-FI

PLATE 0

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS



# CONSOLIDATION TESTS



● WATER PERMITTED TO CONTACT SAMPLE

OCTD Administration and Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-FI

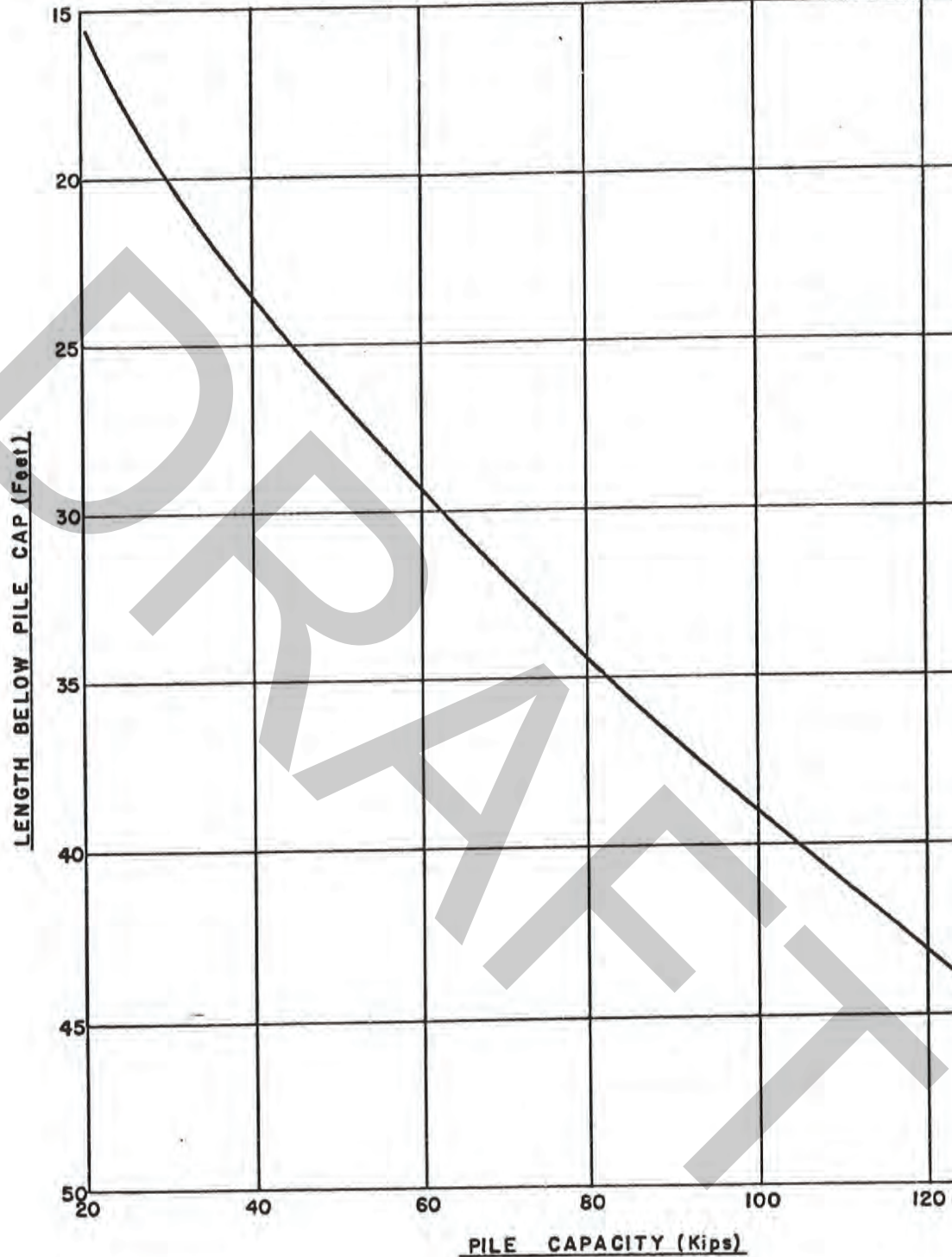
PLATE

P

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS



# PILE CAPACI. /



Note: Above design curve is for an 18-inch diameter straight shaft pile. For other pile diameters apply a direct proportion.

OCTD Administrative and Maintenance  
Facilities, Garden Grove, California

PROJECT No.	S-0040-F1
PLATE	Q

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS

# PILE EFFICIENCY CHART

$$E = 1 - \frac{d}{smn\pi} \left[ (n-1)m + (m-1)n + \sqrt{2} (m-1)(n-1) \right]$$

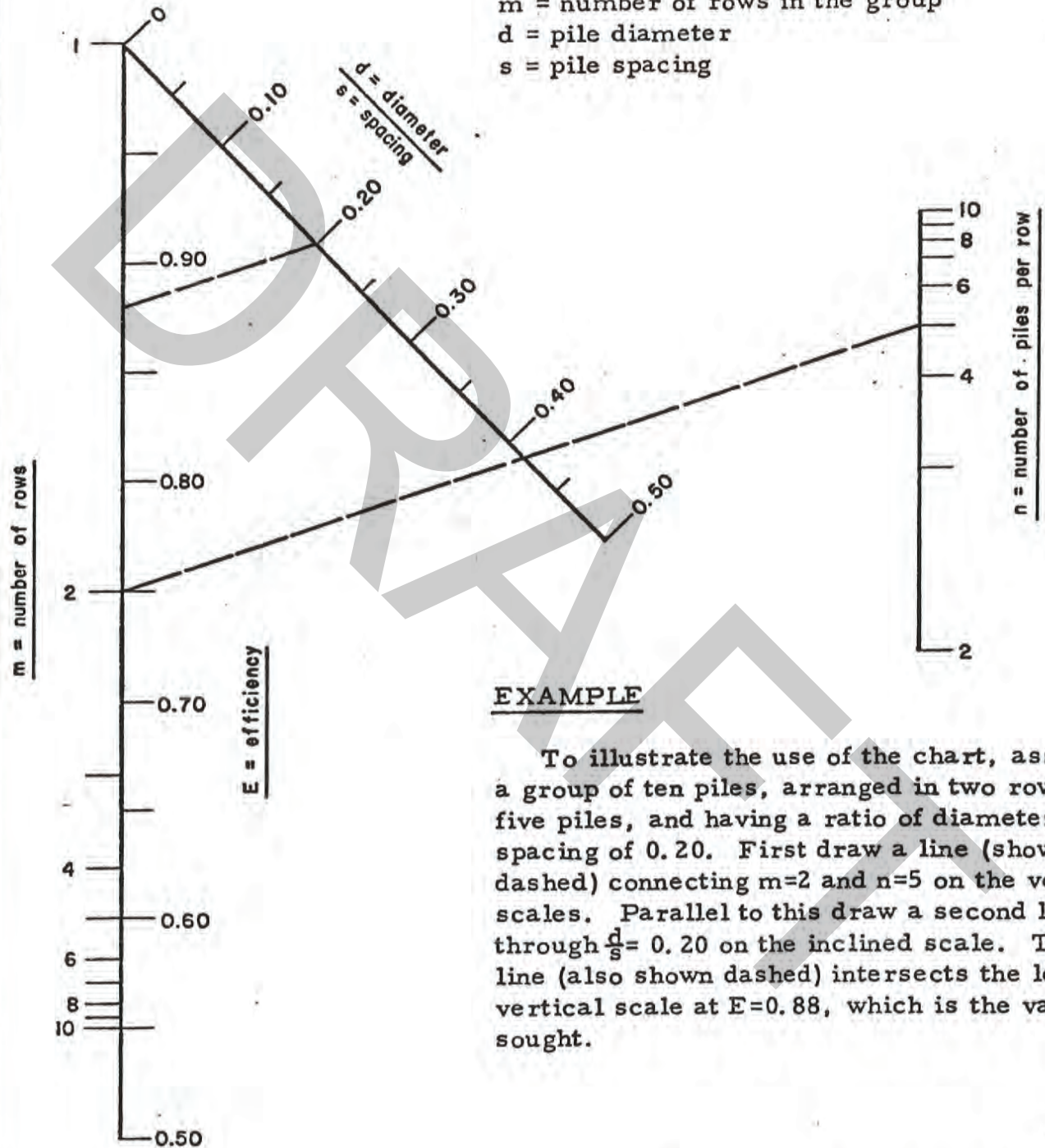
$E$  = efficiency of a pile in the group, relative to its single pile value

$n$  = number of piles in each row

$m$  = number of rows in the group

$d$  = pile diameter

$s$  = pile spacing



## EXAMPLE

To illustrate the use of the chart, assume a group of ten piles, arranged in two rows of five piles, and having a ratio of diameter to spacing of 0.20. First draw a line (shown dashed) connecting  $m=2$  and  $n=5$  on the vertical scales. Parallel to this draw a second line through  $d/s = 0.20$  on the inclined scale. This line (also shown dashed) intersects the left vertical scale at  $E=0.88$ , which is the value sought.

OCTD Administrative and Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-F1

PLATE

R

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS



# LATERAL PILE DF GN

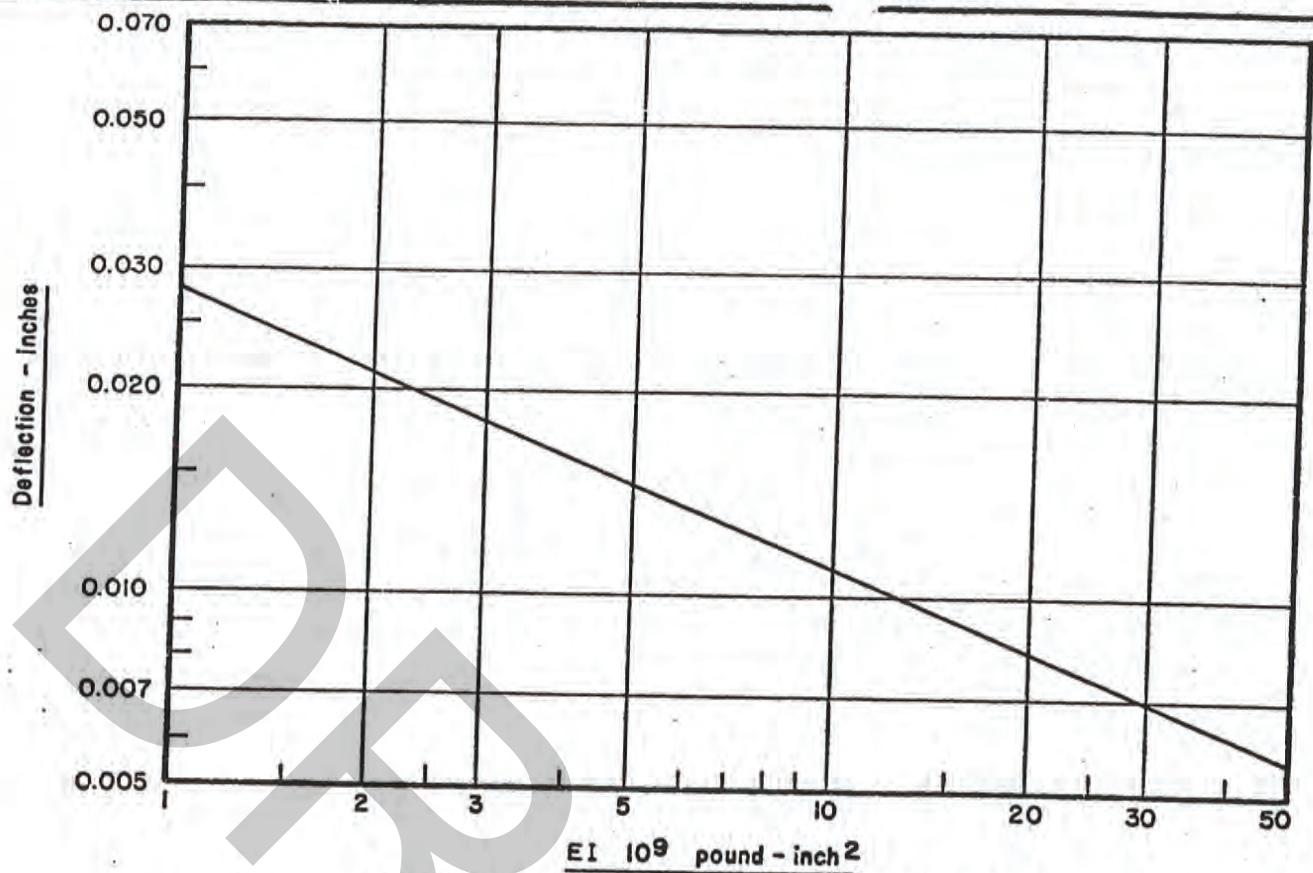


Fig. 1: Maximum Deflection for One-Kip Lateral Load

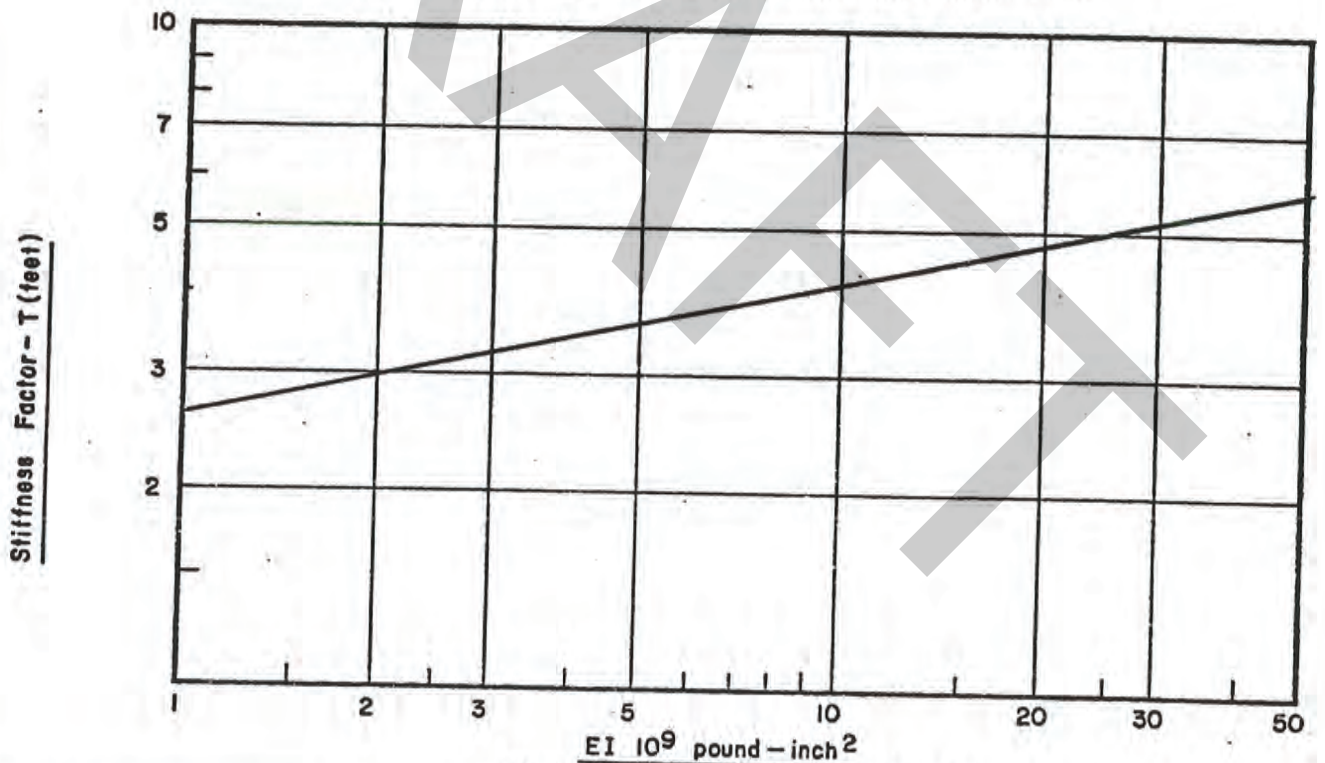


Fig. 2: Relative Stiffness Factor "T"

OCTD Administrative and Maintenance  
Facilities, Garden Grove, California

PROJECT No. S-0040-F1

PLATE S

**SOILS INTERNATIONAL**  
CONSULTING FOUNDATION ENGINEERS & ENGINEERING GEOLOGISTS

## LIQUEFACTION ANALYSIS REPORT

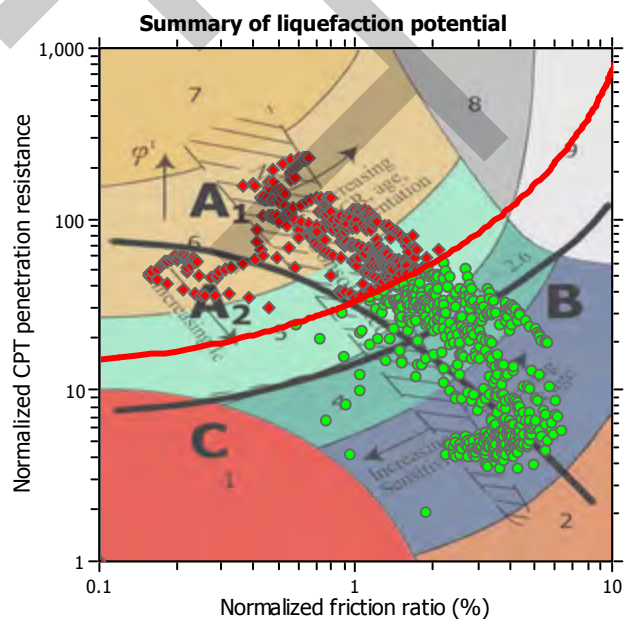
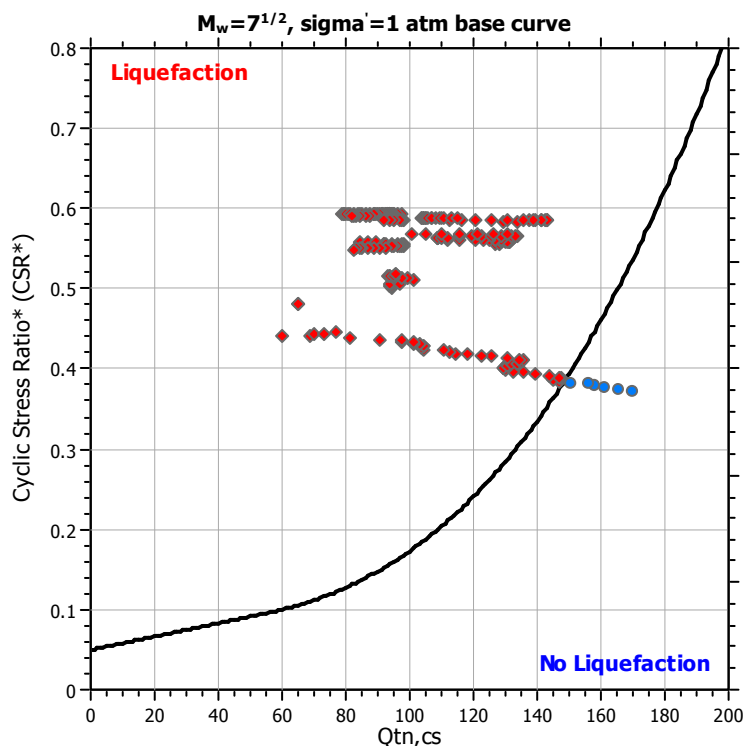
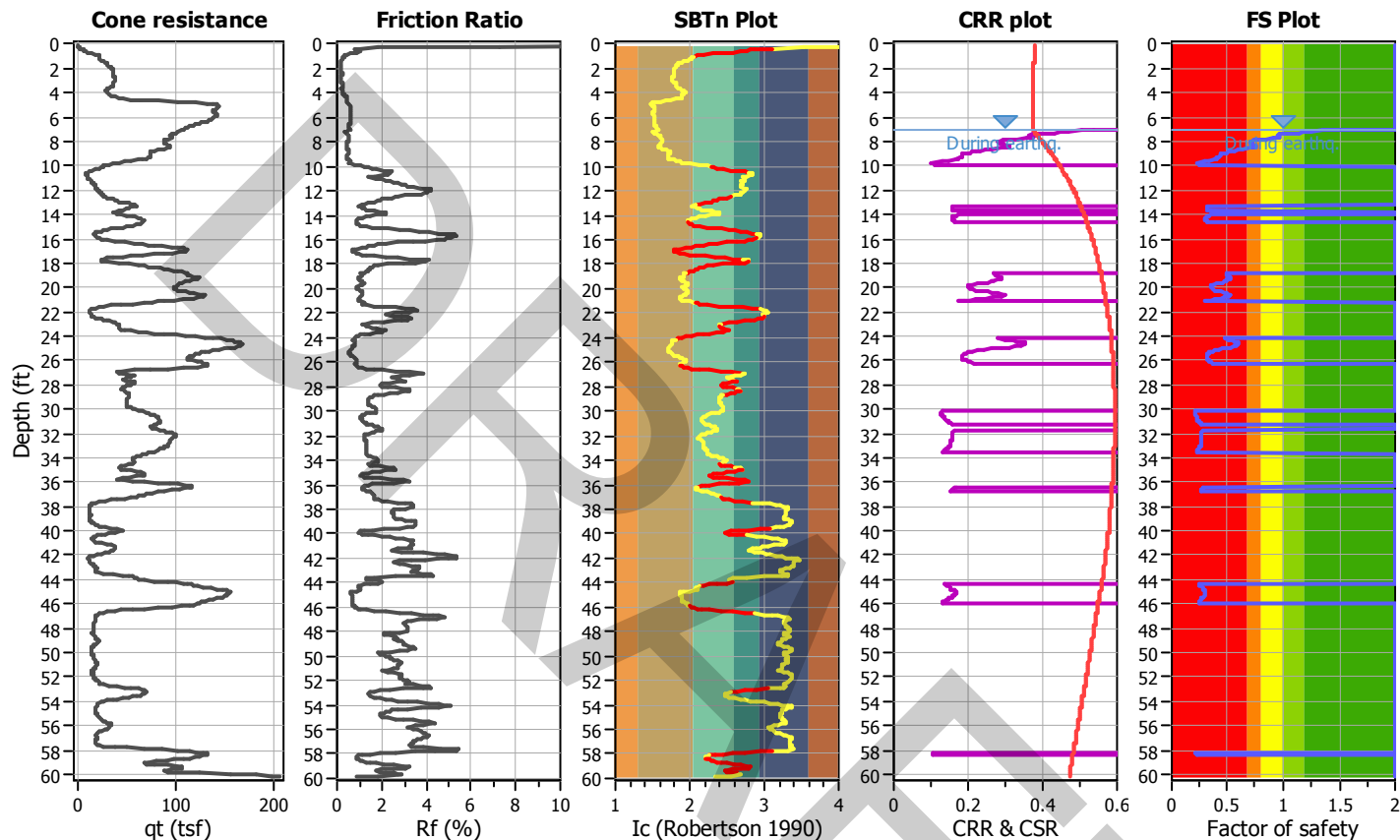
**Project title :** 19175-02 Dahl Taylor/OCTA GG Bus Base

**Location :** Garden Grove, CA

**CPT file :** CPT-1

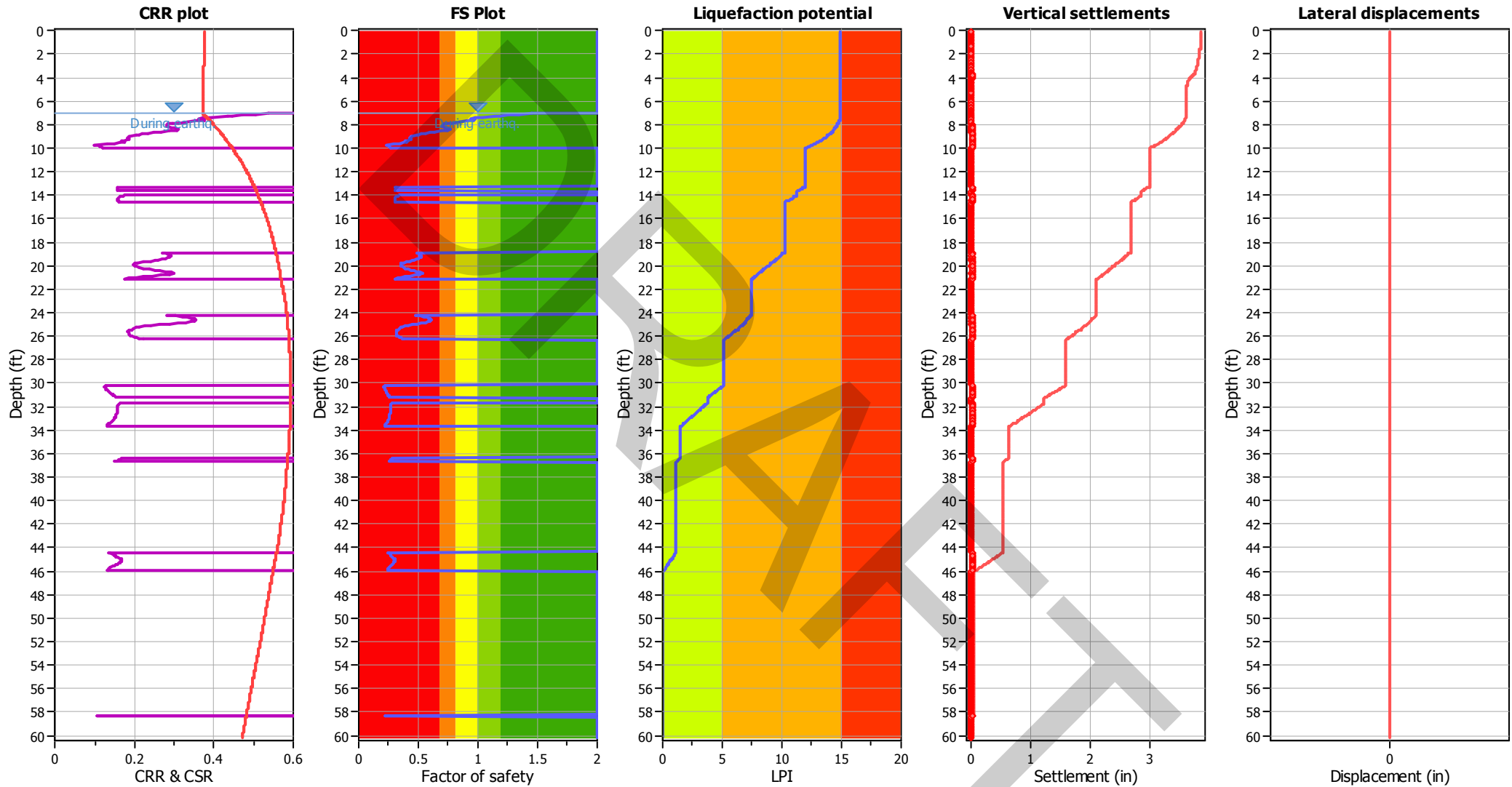
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	60.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	7.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	7.26	Ic cut-off value:	2.30	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	$K_g$ applied:	No	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
 Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.30	K <sub>o</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.26	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.63	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	60.00 ft	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk



Figure 10 consists of three plots related to CPT penetration resistance and liquefaction.

- Left Plot:** Normalized CPT penetration resistance (log scale, 1 to 1,000) vs. Normalized friction ratio (%) (log scale, 0.1 to 10). The plot is divided into regions A1, A2, B, and C. Region A1 is labeled "Increasing  $\phi'$ " and "Increasing R. age, cementation". Region A2 is labeled "Increasing  $c$ ". Region B is labeled "Increasing Sensitivity". Region C is labeled "1".
- Middle Plot:** Cyclic Stress Ratio\* (CSR\*) (log scale, 0 to 0.8) vs.  $Q_{tn,cs}$  (linear scale, 0 to 200). The plot shows a boundary between "Liquefaction" (red diamonds) and "No Liquefaction" (blue circles).
- Right Plot:** Thickness of liquefiable sand layer,  $H_2$  (m) (linear scale, 0.0 to 12.0) vs. Thickness of surface layer,  $H_1$  (m) (linear scale, 0 to 10). The plot shows a boundary between "Liquefaction - induced sand damage" (dashed line) and "No Liquefaction" (solid line). The plot is labeled "Analysis PGA: 0.63". A point labeled "CPT-1 (14.84)" is marked on the boundary. The plot also shows "Max. acc.  $\approx 200 \text{ gal}$ ", "Max. acc.  $\approx 300 \text{ gal}$ ", and "Max. acc.  $\approx 400-500 \text{ gal}$ ".

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.30	K <sub>o</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.26	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.63	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	60.00 ft	Fill height:	N/A	Limit depth:	N/A



## LIQUEFACTION ANALYSIS REPORT

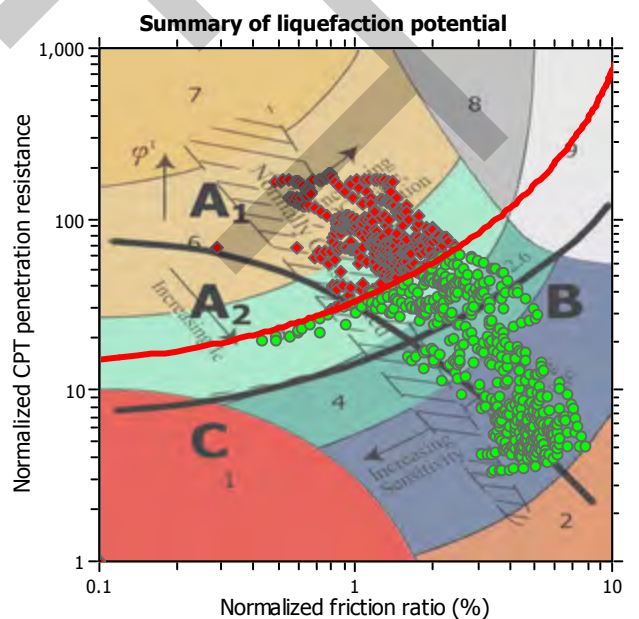
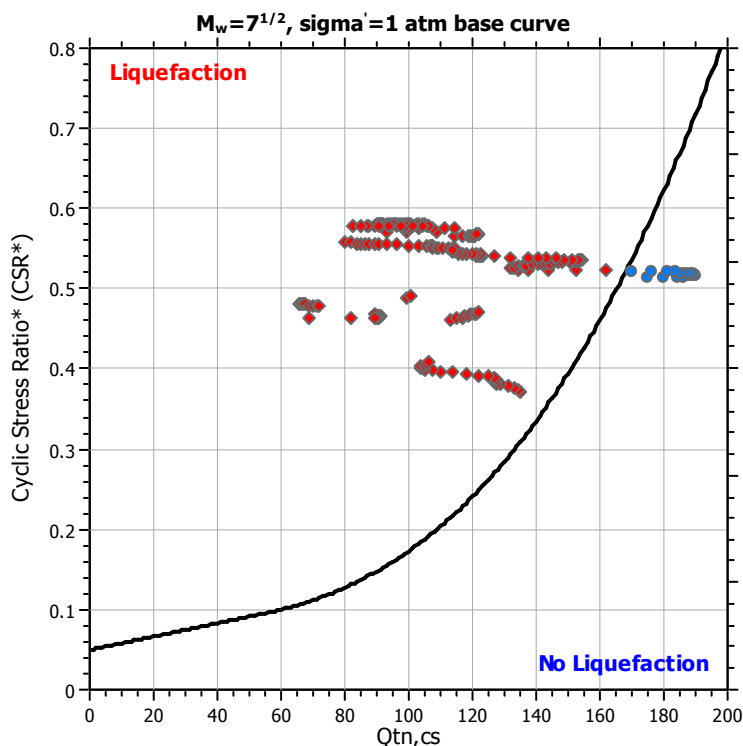
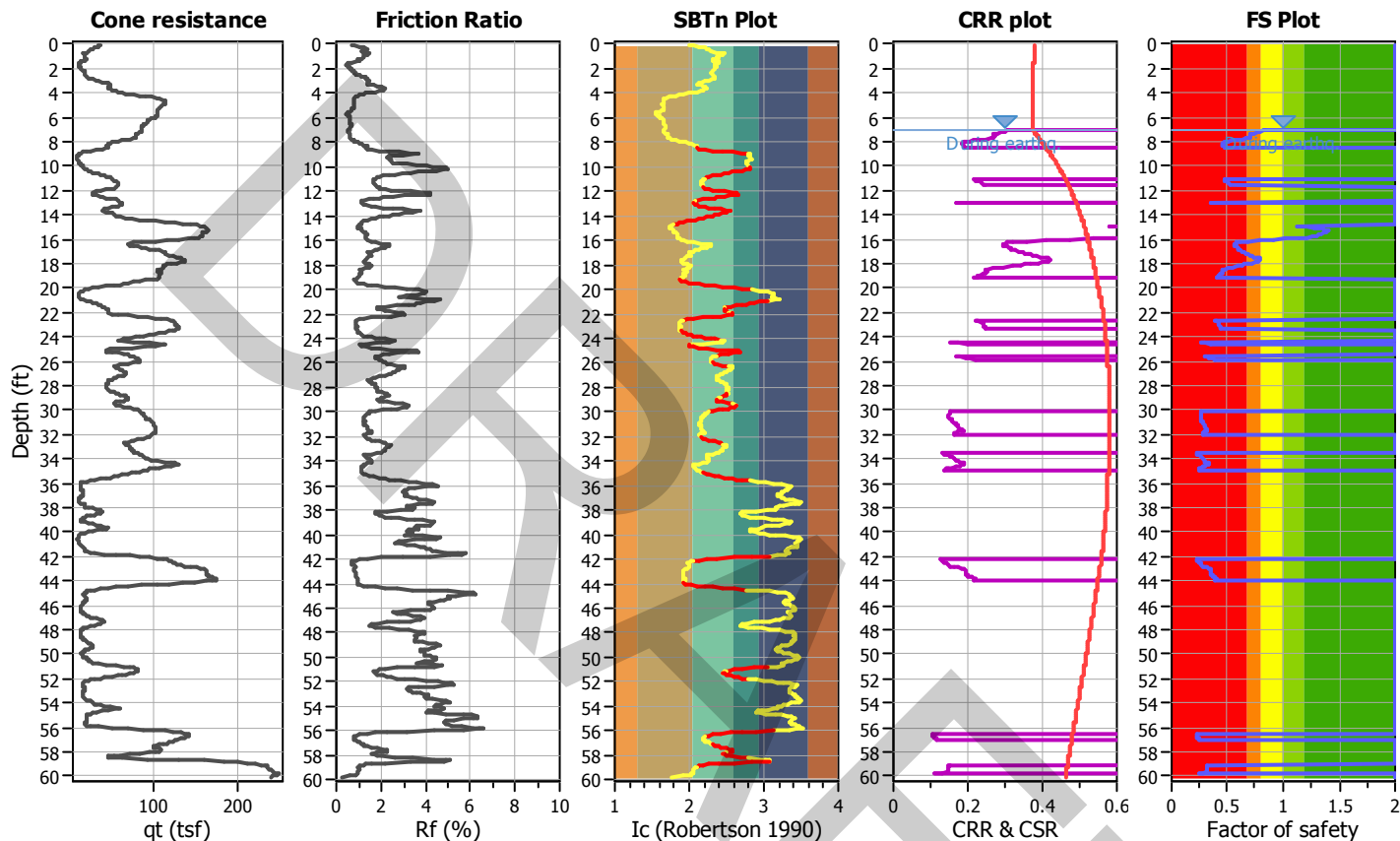
**Project title :** 19175-02 Dahl Taylor/OCTA GG Bus Base

**Location :** Garden Grove, CA

**CPT file :** CPT-2

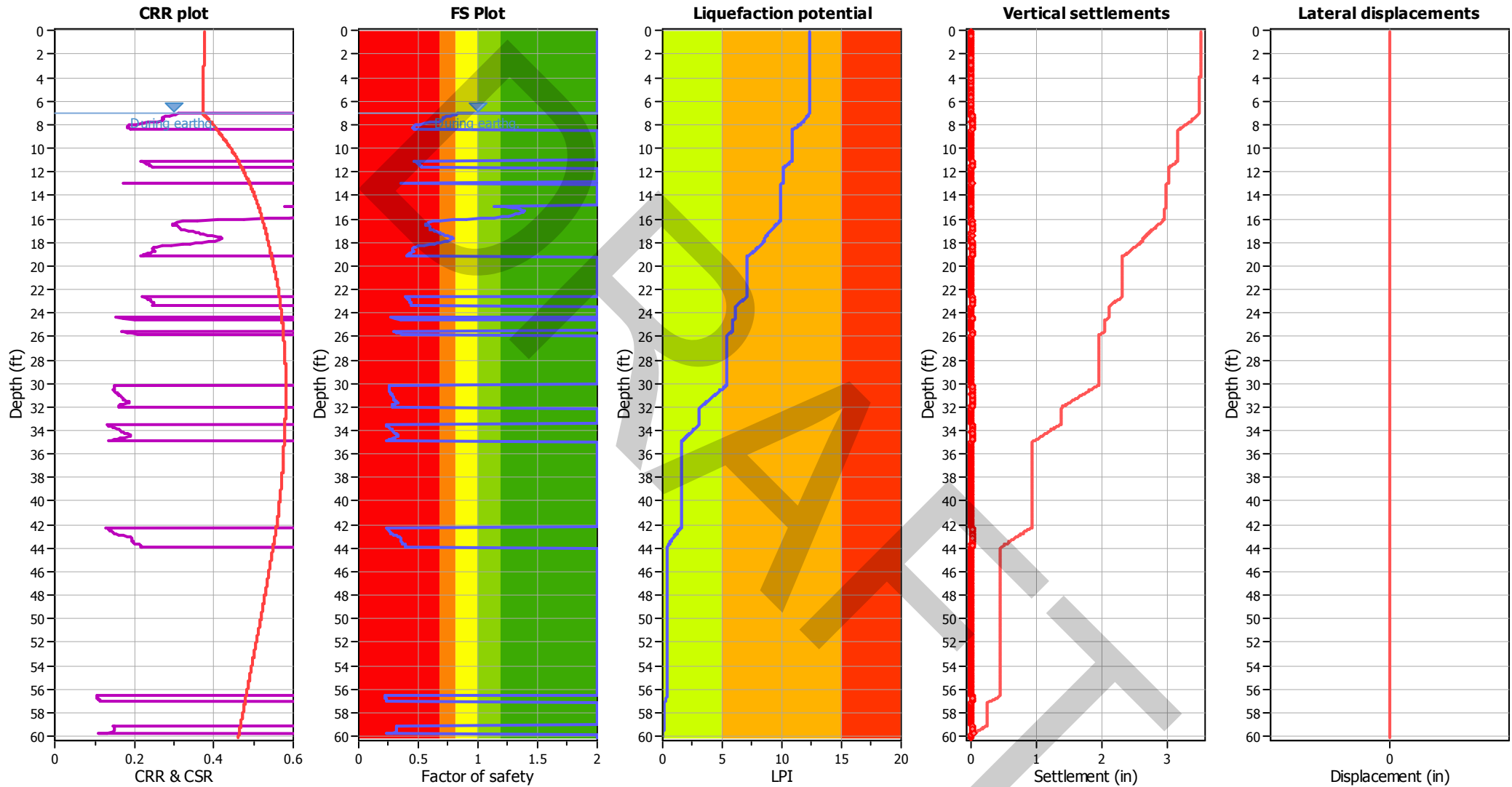
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	60.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	7.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	7.26	Ic cut-off value:	2.30	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	$K_0$ applied:	No	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
 Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.30	K <sub>0</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.26	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.63	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	60.00 ft	Fill height:	N/A	Limit depth:	N/A

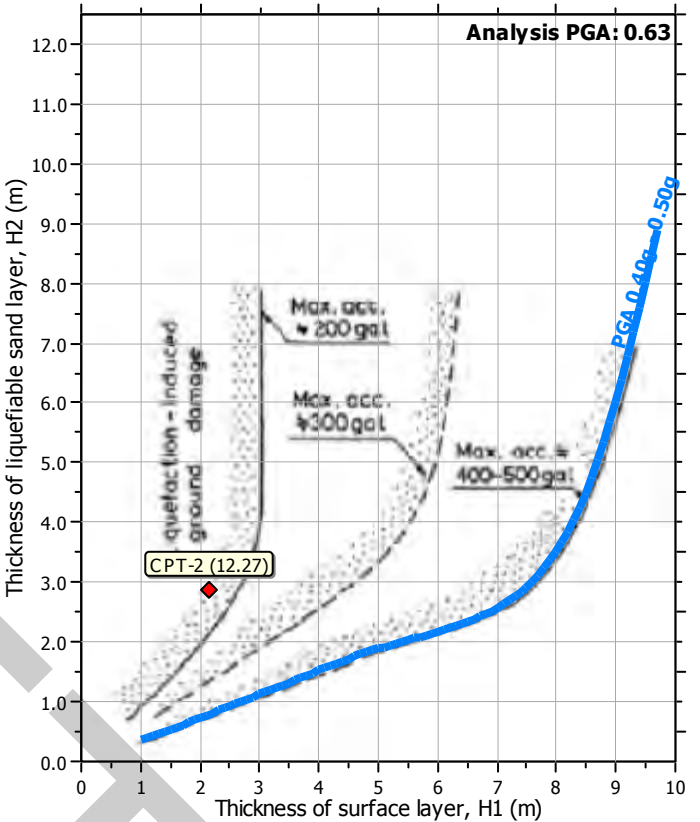
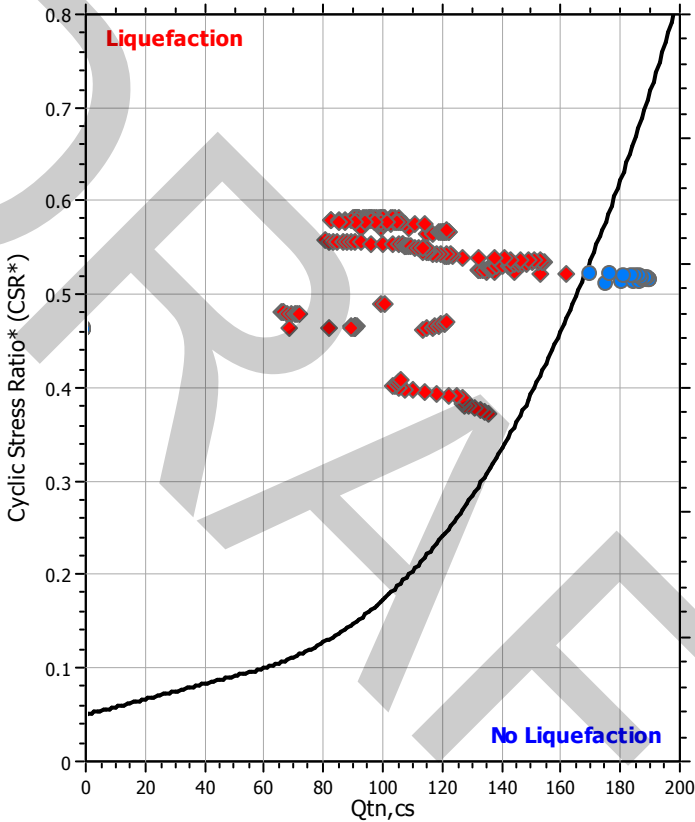
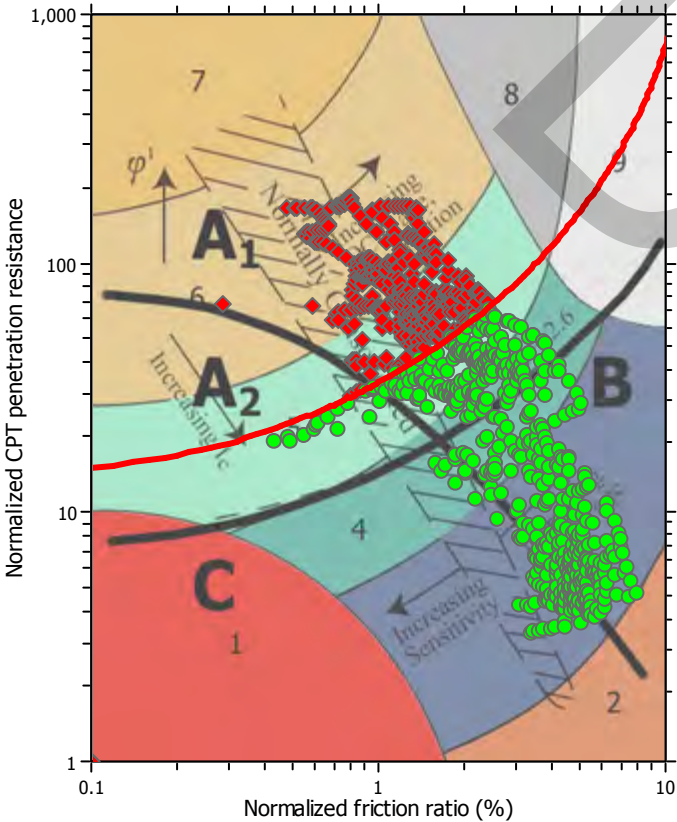
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk

Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	7.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.30	K <sub>o</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.26	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.63	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	60.00 ft	Fill height:	N/A	Limit depth:	N/A

USGS web services were down for some period of time and as a result this tool wasn't operational, resulting in *timeout* error.  
USGS web services are now operational so this tool should work as expected.



Latitude, Longitude: 33.7651, -117.9250



Date	7/15/2024, 5:05:17 PM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
$S_S$	1.347	$MCE_R$ ground motion. (for 0.2 second period)
$S_1$	0.479	$MCE_R$ ground motion. (for 1.0s period)
$S_{MS}$	1.347	Site-modified spectral acceleration value
$S_{M1}$	null -See Section 11.4.8	Site-modified spectral acceleration value
$S_{DS}$	0.898	Numeric seismic design value at 0.2 second SA
$S_{D1}$	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
$F_a$	1	Site amplification factor at 0.2 second
$F_v$	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.573	$MCE_G$ peak ground acceleration
$F_{PGA}$	1.1	Site amplification factor at PGA
$PGA_M$	0.631	Site modified peak ground acceleration
$T_L$	8	Long-period transition period in seconds
$S_{sRT}$	1.347	Probabilistic risk-targeted ground motion. (0.2 second)
$S_{sUH}$	1.461	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
$S_{sD}$	1.984	Factored deterministic acceleration value. (0.2 second)
$S_{1RT}$	0.479	Probabilistic risk-targeted ground motion. (1.0 second)
$S_{1UH}$	0.52	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
$S_{1D}$	0.681	Factored deterministic acceleration value. (1.0 second)
$PGAd$	0.812	Factored deterministic acceleration value. (Peak Ground Acceleration)
$PGA_{UH}$	0.573	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
$C_{RS}$	0.922	Mapped value of the risk coefficient at short periods

Type	Value	Description
C <sub>R1</sub>	0.921	Mapped value of the risk coefficient at a period of 1 s
C <sub>V</sub>	1.369	Vertical coefficient

DRAFT

## DISCLAIMER

While the information presented on this website is believed to be correct, SEAOC / OSHPD and its sponsors and contributors assume no responsibility or liability for its accuracy. The material presented in this web application should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. SEAOC / OSHPD do not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the seismic data provided by this website. Users of the information from this website assume all liability arising from such use. Use of the output of this website does not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the search results of this website.

DRAFT

# Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the [U.S. Seismic Design Maps web tools](#) (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Please also see the new [USGS Earthquake Hazard Toolbox](#) for access to the most recent NSHMs for the conterminous U.S. and Hawaii.

## ^ Input

### Edition

Dynamic: Conterminous U.S. 2014 (u... ▼

### Spectral Period

Peak Ground Acceleration ▼

### Latitude

Decimal degrees

33.7651

### Time Horizon

Return period in years

2475

### Longitude

Decimal degrees, negative values for western longitudes

-117.925

### Site Class

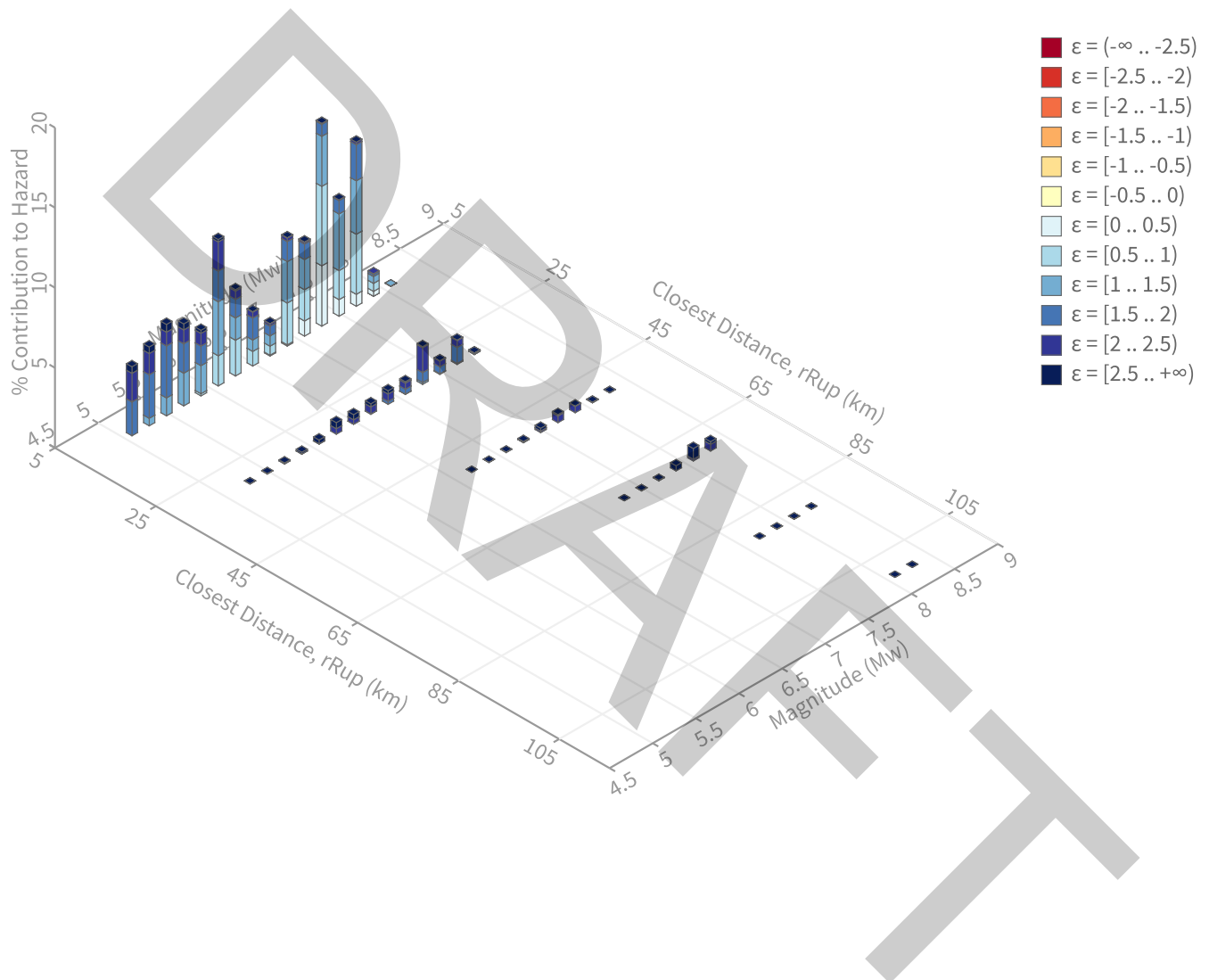
259 m/s (Site class D) ▼



## Deaggregation

### Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs  
Exceedance rate: 0.0004040404 yr<sup>-1</sup>  
PGA ground motion: 0.66225019 g

Recovered targets

Return period: 2993.8693 yrs  
Exceedance rate: 0.00033401592 yr<sup>-1</sup>

Totals

Binned: 100 %  
Residual: 0 %  
Trace: 0.06 %

Mean (over all sources)

m: 6.69  
r: 13.28 km  
ε<sub>0</sub>: 1.41 σ

Mode (largest m-r bin)

m: 7.3  
r: 10.68 km  
ε<sub>0</sub>: 0.79 σ  
Contribution: 12.65 %

Mode (largest m-r-ε<sub>0</sub> bin)

m: 7.3  
r: 10.33 km  
ε<sub>0</sub>: 0.69 σ  
Contribution: 4.96 %


Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km  
m: min = 4.4, max = 9.4, Δ = 0.2  
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

- ε0: [-∞ .. -2.5)
- ε1: [-2.5 .. -2.0)
- ε2: [-2.0 .. -1.5)
- ε3: [-1.5 .. -1.0)
- ε4: [-1.0 .. -0.5)
- ε5: [-0.5 .. 0.0)
- ε6: [0.0 .. 0.5)
- ε7: [0.5 .. 1.0)
- ε8: [1.0 .. 1.5)
- ε9: [1.5 .. 2.0)
- ε10: [2.0 .. 2.5)
- ε11: [2.5 .. +∞]

## Deaggregation Contributors

Source Set  Source	Type	r	m	$\epsilon_0$	lon	lat	az	%
UC33brAvg_FM32	System							31.83
Compton [0]		11.17	7.26	0.64	118.043°W	33.702°N	237.53	6.16
Anaheim [0]		5.38	6.69	0.72	117.943°W	33.780°N	315.69	3.77
San Joaquin Hills [0]		10.58	7.21	1.19	117.934°W	33.674°N	184.75	3.58
Newport-Inglewood alt 2 [1]		11.81	7.49	1.18	118.001°W	33.681°N	216.88	3.41
Puente Hills (Coyote Hills) [0]		14.80	7.32	1.47	117.922°W	33.893°N	1.03	2.10
Whittier alt 2 [3]		19.89	7.62	1.64	117.838°W	33.928°N	23.89	1.83
Peralta Hills [1]		10.66	7.34	1.20	117.885°W	33.854°N	20.43	1.63
Richfield [1]		14.39	6.46	1.94	117.870°W	33.882°N	21.33	1.39
Yorba Linda [0]		10.99	7.57	0.65	117.889°W	33.858°N	17.94	1.29
Palos Verdes [7]		28.25	7.46	2.12	118.179°W	33.624°N	236.39	1.27
UC33brAvg_FM31	System							29.62
Compton [0]		11.17	7.21	0.65	118.043°W	33.702°N	237.53	5.83
Newport-Inglewood alt 1 [1]		11.91	7.46	1.19	117.995°W	33.676°N	213.40	3.79
Anaheim [0]		5.38	6.67	0.73	117.943°W	33.780°N	315.69	3.78
San Joaquin Hills [0]		10.58	7.55	1.02	117.934°W	33.674°N	184.75	3.06
Whittier alt 1 [4]		19.95	7.56	1.67	117.833°W	33.927°N	25.13	2.36
Peralta Hills [1]		10.66	7.01	1.42	117.885°W	33.854°N	20.43	1.73
Yorba Linda [0]		10.99	7.44	0.65	117.889°W	33.858°N	17.94	1.31
Palos Verdes [7]		28.25	7.30	2.22	118.179°W	33.624°N	236.39	1.13
UC33brAvg_FM31 (opt)	Grid							19.35
PointSourceFinite: -117.925, 33.833		8.71	5.72	1.63	117.925°W	33.833°N	0.00	3.52
PointSourceFinite: -117.925, 33.833		8.71	5.72	1.63	117.925°W	33.833°N	0.00	3.52
PointSourceFinite: -117.925, 33.806		6.61	5.74	1.32	117.925°W	33.806°N	0.00	3.31
PointSourceFinite: -117.925, 33.806		6.61	5.74	1.32	117.925°W	33.806°N	0.00	3.31
UC33brAvg_FM32 (opt)	Grid							19.20
PointSourceFinite: -117.925, 33.833		8.74	5.71	1.64	117.925°W	33.833°N	0.00	3.43
PointSourceFinite: -117.925, 33.833		8.74	5.71	1.64	117.925°W	33.833°N	0.00	3.43
PointSourceFinite: -117.925, 33.806		6.62	5.74	1.32	117.925°W	33.806°N	0.00	3.23
PointSourceFinite: -117.925, 33.806		6.62	5.74	1.32	117.925°W	33.806°N	0.00	3.23

**EXHIBIT C: PROPOSED AGREEMENT**

1 **PROPOSED AGREEMENT NO. C-5-4320**

2 **BETWEEN**

3 **ORANGE COUNTY TRANSPORTATION AUTHORITY**

4 **AND**

5  
6 **THIS AGREEMENT** is effective as of this \_\_\_\_ day of \_\_\_\_\_, 20\_\_  
7 ("Effective Date"), by and between the Orange County Transportation Authority, 550 South Main Street,  
8 P.O. Box 14184, Orange, CA 92863-1584, a public corporation of the State of California (hereinafter  
9 referred to as "AUTHORITY"), and , , , (hereinafter referred to as "DESIGN-BUILDER").

10 **WITNESSETH:**

11 **WHEREAS**, AUTHORITY has determined that it requires the design and construction of a  
12 hydrogen fueling station and facility modifications at the Garden Grove Bus Base; and

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

14 **WHEREAS**, DESIGN-BUILDER has represented that it has the requisite personnel and  
15 experience, and is capable of performing such services; and

16 **WHEREAS**, DESIGN-BUILDER wishes to perform these services; and

17 **WHEREAS**, the AUTHORITY's Board of Directors authorized this Agreement on \_\_\_\_\_;

18 **NOW, THEREFORE**, it is mutually understood and agreed by AUTHORITY and DESIGN-  
19 BUILDER as follows:

20 **ARTICLE 1. COMPLETE AGREEMENT**

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

26 /

1 B. AUTHORITY's failure to insist in any one or more instances upon the performance of any  
2 terms or conditions of this Agreement shall not be construed as a waiver or relinquishment of  
3 AUTHORITY's right to such performance by DESIGN-BUILDER or to future performance of such terms  
4 or conditions and DESIGN-BUILDER obligation in respect thereto shall continue in full force and effect.  
5 Changes to any portion of this Agreement shall not be binding upon AUTHORITY except when  
6 specifically confirmed in writing by an authorized representative of AUTHORITY by way of a written  
7 Amendment to this Agreement and issued in accordance with the provisions of this Agreement.

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

11 D. Time shall be of the essence hereunder; but DESIGN-BUILDER shall perform work hereunder  
12 only to the minimum extent consistent with requirements herein.

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

16 **ARTICLE 2. AUTHORITY DESIGNEE**

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

19 **ARTICLE 3. SCOPE OF WORK**

20 A. DESIGN-BUILDER shall provide all labor, equipment, materials and facilities necessary for  
21 all work related to at the AUTHORITY's in strict compliance with all the requirements specified herein  
22 and in:

23 Exhibit A, entitled "General Provisions";

24 Addendum No's ;

25 Exhibit B, entitled "Scope of Work";

26 Exhibit C, entitled "Preliminary Plans";



Exhibit D, entitled "List of Subcontractors";

Exhibit E, entitled "Performance Bond";

Exhibit F, entitled "Payment Bond";

Exhibit G, entitled "Guaranty";

Exhibit H, entitled "Safety Specifications" and

Exhibit I, entitled "Contract Change Order";

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 DESIGN-BUILDER in its original bid to AUTHORITY, including, but not limited to, DESIGN-BUILDER's certifications relative to Workers' Compensation Insurance, and compliance with Section 7028.15 of the State of California Business and Professions Code.

B. DESIGN-BUILDER shall provide the personnel listed below to perform the above-specified services, which persons are hereby designated as key personnel under this Agreement.

**Names**

**Functions**

C. No person named in paragraph B of this Article, or his/her successor approved by AUTHORITY, shall be removed or replaced by DESIGN-BUILDER, nor shall his/her agreed-upon function or level of commitment hereunder be changed, without the prior written consent of AUTHORITY. Should the services of any key person become no longer available to DESIGN-BUILDER, the resume and qualifications of the proposed replacement shall be submitted to AUTHORITY for approval as soon as possible, but in no event later than seven (7) calendar days prior to the departure of the incumbent key person, unless DESIGN-BUILDER is not provided with such notice by the departing employee.

1 AUTHORITY shall respond to DESIGN-BUILDER within seven (7) calendar days following receipt of  
2 these qualifications concerning acceptance of the candidate for replacement.

3 **ARTICLE 4. DELIVERY / RECOVERY SCHEDULE**

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

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

20 C. All costs incurred by DESIGN-BUILDER in preparing, implementing and achieving the  
21 Recovery Schedule shall be borne by DESIGN-BUILDER and shall not result in a change to the contract  
22 price.

23 D. In the event that DESIGN-BUILDER fails to provide an acceptable Recovery Schedule within  
24 30 days of DESIGN-BUILDER's receipt of a notice to do so, DESIGN-BUILDER shall have no right to  
25 receive progress payments until DESIGN-BUILDER has prepared and AUTHORITY has approved such  
26 Recovery Schedule.

**ARTICLE 5. START OF WORK**

DESIGN-BUILDER 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 DESIGN-BUILDER by AUTHORITY. Conditions precedent to AUTHORITY issuing said Notice to Proceed are DESIGN-BUILDER furnishing the Exhibit E "Performance Bond," Exhibit F "Payment Bond," Exhibit G "Guaranty," and certificates of insurance as set forth in Article 10 hereunder. DESIGN-BUILDER shall furnish said documents within ten (10) calendar days after notification of contract award from AUTHORITY. Upon receipt of acceptable bonds, guaranty, and insurance certificates, AUTHORITY will within ten (10) working days thereafter issue the written Notice to Proceed.

**ARTICLE 6. PAYMENT**

A. For DESIGN-BUILDER's full and complete performance of its obligations under this Agreement, and subject to the maximum cumulative payment obligation provision set forth in Article 7, AUTHORITY shall pay DESIGN-BUILDER the firm fixed sum of \_\_\_\_ Dollars (\$ .00) for Tasks 1- 17.

B. Payment for Task 18 "Fuel Supply Services" will be made in accordance with the index formula as shown on Exhibit E, "Price Summary Sheet." DESIGN-BUILDER shall submit supporting documentation and calculation for the delivered price of hydrogen fuel submitted in its invoice.

C. Progress payments and the final payment will be made by AUTHORITY to DESIGN-BUILDER 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 DESIGN-BUILDER 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.

D. Failure by AUTHORITY to pay amount in dispute shall not alleviate, diminish or modify in any respect the DESIGN-BUILDER's obligation to achieve final acceptance of and all work in accordance with the contract documents, and DESIGN-BUILDER shall not cease or slow down its performance under this Agreement on account of any such amount in dispute. DESIGN-BUILDER shall proceed as directed by AUTHORITY pending resolution of dispute. Upon resolution of dispute, each party shall promptly pay

any amount owing.

E. Allowances (Tasks 19 and 20) are to be paid for based on Force Account. No work under allowance categories shall commence unless authorized in writing by the Engineer. Any costs which exceed, or are less than, the bid allowance amount, shall require an adjustment to the maximum cumulative payment obligation amount by Contract Change Order.

#### **ARTICLE 7. MAXIMUM OBLIGATION**

Notwithstanding any provisions of this Agreement to the contrary, AUTHORITY and DESIGN-BUILDER mutually agree that AUTHORITY's maximum cumulative payment obligation hereunder (including obligation for DESIGN-BUILDER's profit), shall be \_\_\_\_\_ Dollars (\$ .00), which shall include all amounts payable to DESIGN-BUILDER for its subcontracts, leases, materials and costs arising from, or due to termination of, this Agreement.

#### **ARTICLE 8. 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 DESIGN-BUILDER:		To AUTHORITY:	
		Orange County Transportation Authority	
		550 South Main Street	
		P.O. Box 14184	
		Orange, CA 92863-1584	
ATTENTION:		ATTENTION:	Megan Bornman
Title:		Title:	Senior Contract Administrator
Phone:		Phone: (714) 560 - 5064	
Email:		Email: <a href="mailto:mbornman@octa.net">mbornman@octa.net</a>	
		Cc: Eric Torres, Project Manager	

	<p>Phone: (714) 560 – 5345</p> <p>Email: etorres1@octa.net</p>
--	--

**ARTICLE 9. INDEPENDENT CONTRACTOR**

A. DESIGN-BUILDER's relationship to AUTHORITY in the performance of this Agreement is that of an independent contractor. DESIGN-BUILDER's personnel performing services under this Agreement shall at all times be under DESIGN-BUILDER's exclusive direction and control and shall be employees of DESIGN-BUILDER and not employees of AUTHORITY. DESIGN-BUILDER 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 and similar matters.

B. Should DESIGN-BUILDER's personnel or a state or federal agency allege claims against AUTHORITY involving the status of AUTHORITY as employer, joint or otherwise, of said personnel, or allegations involving any other independent contractor misclassification issues, DESIGN-BUILDER shall defend and indemnify AUTHORITY in relation to any allegations made.

**ARTICLE 10. INSURANCE**

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

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

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

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

E. Builders All Risk policy or course of construction including earthquake and flood coverage

1 with minimum limits of \$(project amount);

2 F. Employers' Liability with minimum limits of \$1,000,000;

3 G. Professional Liability with minimum limits of \$2,000,000 per occurrence and \$4,000,000  
4 general aggregate;

5 /

6 H. Pollution Liability with minimum limits of \$2,000,000 per occurrence and \$4,000,000 general  
7 aggregate;

8 I. Prior to commencement of any work hereof, DESIGN-BUILDER shall furnish to  
9 AUTHORITY's Contract Administrator broker-issued insurance certificate showing the required insurance  
10 coverages and further providing that:

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

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

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

18 K. In addition, DESIGN-BUILDER shall provide insurance policy blanket endorsement.

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

21 M. DESIGN-BUILDER shall submit required insurance certificates to AUTHORITY's insurance  
22 tracking contractor, InsureTrack. DESIGN-BUILDER shall respond directly to InsurTrack's request for  
23 updated insurance certificates and other insurance-related matters by email to [octa@instracking.com](mailto:octa@instracking.com)

24 N. DESGIN-BUILDER shall include on the face of the certificate of insurance, the following  
25 information:

26 1. The Agreement Number C-5-4320 and, the Contract Administrator's Name, Megan

1 Bornman.

2 2. For Certificate Holder: The Orange County Transportation Authority, its officers,  
3 directors, employers and agents, c/o InsureTrack, P.O. Box 60840 Las Vegas, NV 89160.

4 O. Upon AUTHORITY's request, certified, true and exact copies of each of the insurance policies  
5 shall be provided to AUTHORITY.

6 P. AUTHORITY shall notify DESIGN-BUILDER in writing of any changes in the requirements to  
7 insurance required to be provided by DESIGN-BUILDER. Except as set forth in this Article, any additional  
8 cost from such change shall be paid by AUTHORITY and any reduction in cost shall reduce the contract  
9 price pursuant to a change order.

10 Q. DESIGN-BUILDER shall also include in each subcontract the stipulation that subcontractors  
11 shall maintain coverage in the amounts required as provided in this Agreement.

12 R. DESIGN-BUILDER shall be required to immediately notify AUTHORITY of any modifications  
13 or cancellation of any required insurance policies.

14 **ARTICLE 11. BONDS**

15 A. By submitting Exhibit E, entitled "Performance Bond," and Exhibit F, entitled "Payment Bond,"  
16 DESIGN-BUILDER shall satisfy AUTHORITY's requirements that DESIGN-BUILDER deposit with  
17 AUTHORITY bonds with values in the sum of 100 percent of this Agreement's price to cover DESIGN-  
18 BUILDER's failure to fully perform hereunder and DESIGN-BUILDER's failure to pay its labor, material or  
19 failure to comply with Article 33 of this Agreement, in performing hereunder. If the contract price is  
20 increased in connection with a Change Order, the AUTHORITY may, in its sole discretion, require a  
21 corresponding increase in the amount of the Performance and Payment bonds or new bonds covering  
22 the Change Order work.

23 B. DESIGN-BUILDER's parent companies are the guarantors of the DESIGN-BUILDER's  
24 obligations under this Agreement. The guarantees provided by such Guarantors, in the form attached as  
25 Exhibit G, assure performance of the DESIGN-BUILDER's obligations under this Agreement and shall  
26 be maintained in full force and effect throughout the duration of the Agreement.



C. Notwithstanding any other provision set forth in this Agreement, performance by a Surety or Guarantor of any obligations of DESIGN-BUILDER shall not relieve DESIGN-BUILDER of any of its obligations thereunder.

/

/

**ARTICLE 12. ORDER OF PRECEDENCE**

Conflicting provisions hereof, if any, shall prevail in the following descending order of precedence: (1) the provisions of this Agreement, including all exhibits; (2) the provisions of RFP5-4320; (3) DESIGN-BUILDER's technical proposal dated , DESIGN-BUILDER's price proposal dated , and (4) all other documents, if any, cited herein or incorporated by reference.

**ARTICLE 13. CHANGES**

A. By written notice or order, AUTHORITY may, from time to time, order work suspension and/or make any change in the general scope of this Agreement, including, but not limited to, changes in the drawings, specifications, schedules (either deceleratory or acceleratory) or any other particular of the specifications or provisions of this Agreement. If any such work suspension or change causes an increase or decrease in the price or time required for performance, DESIGN-BUILDER shall promptly notify AUTHORITY thereof and assert its claim for adjustment within ten (10) calendar days after the change or work suspension is ordered, and an equitable adjustment shall be negotiated. However, nothing in this clause shall excuse DESIGN-BUILDER from proceeding immediately with the Agreement as changed. Changes will be made in accordance with the terms as set forth in Exhibit A, "General Provisions," paragraph F, Extra Work and Changes, by written Change Order.

B. No claims by DESIGN-BUILDER for equitable adjustment hereunder shall be allowed if asserted after final payment under this Agreement.

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

removed or replaced at DESIGN-BUILDER's expense.

**ARTICLE 14. MODIFICATION PROPOSALS-PRICE BREAKDOWN**

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

**ARTICLE 15. DISPUTES**

A. Except as otherwise provided in this Agreement, when a dispute arises between DESIGN-BUILDER and AUTHORITY, the project managers shall meet to resolve the issue. If project managers do not reach a resolution, the dispute will be decided by AUTHORITY's Director of Contracts Administration and Materials Management (CAMM), who shall reduce the decision to writing and mail or otherwise furnish a copy thereof to DESIGN-BUILDER. The decision of the Director, CAMM, shall be the final and conclusive administrative decision.

B. Pending final decision of a dispute hereunder, DESIGN-BUILDER shall proceed diligently with the performance of this Agreement and in accordance with the decision of AUTHORITY's Director, CAMM. 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 16. TERMINATION FOR CONVENIENCE**

A. AUTHORITY may terminate this Agreement for its convenience at any time in whole or in part, by giving DESIGN-BUILDER written notice thereof. AUTHORITY shall terminate by delivering to DESIGN-BUILDER a written Notice of Termination for Convenience specifying the extent of termination

and its effective date. Upon termination, AUTHORITY shall pay DESIGN-BUILDER its allowable costs incurred to date of that portion terminated. The rights, duties and obligations of the parties shall be construed in accordance with the applicable 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 DESIGN-BUILDER in accordance with the provisions of the FAR referenced above and Article 8, herein. Upon receipt of said notification, DESIGN-BUILDER shall immediately proceed with all obligations, regardless of any delay in determining or adjusting any amounts due under this Article, and agrees to comply with all applicable provisions of the FAR pertaining to termination for convenience.

**ARTICLE 17. TERMINATION FOR DEFAULT-DAMAGES FOR DELAY-TIME EXTENSIONS**

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

B. If AUTHORITY so terminates DESIGN-BUILDER's right to proceed, the resulting damage will consist of such liquidated damages as set forth in the Article 31 in this Agreement entitled "Liquidated Damages," until such reasonable time as may be required for final completion of the work together with any increased costs occasioned AUTHORITY in completing the work. If AUTHORITY does not so terminate DESIGN-BUILDER's right to proceed, the resulting damage will consist of such liquidated damages until the work is completed or accepted.

1 C. DESIGN-BUILDER's right to proceed shall not be so terminated nor the DESIGN-BUILDER  
2 charged with resulting damage if:

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

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

21 3. Should at any time extensions be included by AUTHORITY's Engineer on the Weekly  
22 Statement of Contract Calendar Days, a change order covering the sum total of the time extensions will  
23 be issued to DESIGN-BUILDER at periodic intervals during the project.

24 D. If, after notice of termination of DESIGN-BUILDER's right to proceed under the provisions of  
25 this clause, it is determined for any reason that DESIGN-BUILDER was not in default under the provisions  
26 of this clause, or that the delay was excusable under the provisions of this clause, the rights and

1 obligations of the parties shall be the same as if the notice of termination had been issued pursuant to  
2 Article 16, entitled "Termination for Convenience."

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

5 /

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

8 **ARTICLE 18. INDEMNIFICATION**

9 A. DESIGN-BUILDER shall indemnify, defend and hold harmless AUTHORITY, its  
10 officers, directors, employees and agents (indemnities) from and against any and all claims (including  
11 attorneys' fees and reasonable expenses for litigation or settlement) for any loss or  
12 damages, bodily injuries, including death, damage to or loss of use of property caused by the negligent  
13 acts, omissions or willful misconduct by DESIGN-BUILDER, its officers,  
14 directors, employees, agents, subconsultants or suppliers in connection with or arising out of the  
15 performance of this Agreement.

16 B. DESIGN-BUILDER shall indemnify, defend, and hold harmless AUTHORITY, its officers,  
17 directors, employees and agents from and against any and all claims (including attorneys' fees and  
18 reasonable expenses for litigation or settlement) for any loss, costs, penalties, fines, damages, bodily  
19 injuries, including death, damage to or loss of use of property, arising out of, resulting from, or in  
20 connection with the performance of DESIGN-BUILDER, its officers, directors, employees, agents,  
21 subcontractors or suppliers under the Agreement. Notwithstanding the foregoing, such obligation to  
22 defend, hold harmless, and indemnify AUTHORITY, its officers, directors, employees and agents shall  
23 not apply to such claims or liabilities arising from the sole or active negligence or willful misconduct of  
24 AUTHORITY.

25 C. Notwithstanding the foregoing, to the extent that DESIGN-BUILDER'S duty to indemnify  
26 arises out of a claim to which Civil Code section 2782.8 would apply, DESIGN-BUILDER shall indemnify

and defend the Indemnitees to the maximum extent permitted by Civil Code section 2782.8.

**ARTICLE 19. ASSIGNMENTS AND SUBCONTRACTS**

A. Neither this Agreement nor any interest herein nor claim hereunder may be assigned by DESIGN-BUILDER either voluntarily or by operation of law, nor may all or any part of this Agreement be subcontracted by DESIGN-BUILDER, without the prior written consent of AUTHORITY. Consent by AUTHORITY shall not be deemed to relieve DESIGN-BUILDER of its obligations to comply fully with all terms and conditions of this Agreement.

B. DESIGN-BUILDER shall be fully responsible to AUTHORITY for all acts and omissions of its own employees, and of subcontractors and their employees. DESIGN-BUILDER 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 DESIGN-BUILDER for the project and to require modifications thereto to conform to the requirements set forth herein.

D. AUTHORITY hereby consents to DESIGN-BUILDER's subcontracting of portions of the Scope of Work to the parties identified below for the functions described in DESIGN-BUILDER's proposal. DESIGN-BUILDER shall include in the subcontract agreement the stipulation that DESIGN-BUILDER, not AUTHORITY, is solely responsible for payment to the subcontractor for the amounts owing and that the subcontractor shall have no claim, and shall take no action, against AUTHORITY, its officers, directors, employees or sureties for nonpayment by DESIGN-BUILDER.

<u>Subcontractor Name/Address</u>	<u>Subcontractor Amounts</u>

**ARTICLE 20. AUDIT AND INSPECTION OF RECORDS**

DESIGN-BUILDER shall provide AUTHORITY, or other agents of the AUTHORITY, such access to DESIGN-BUILDER's accounting books, records, payroll documents and facilities of the DESIGN-

BUILDER 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. DESIGN-BUILDER 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 DESIGN-BUILDER'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 DESIGN-BUILDER 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. DESIGN-BUILDER shall permit any of the foregoing parties to reproduce documents by any means whatsoever or to copy excerpts and transcriptions as reasonably necessary.

**ARTICLE 21. FEDERAL, STATE AND LOCAL LAWS**

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

**ARTICLE 22. EQUAL EMPLOYMENT OPPORTUNITY**

In connection with its performance under this Agreement, DESIGN-BUILDER shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age or national origin. DESIGN-BUILDER 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.

**ARTICLE 23. PRIVACY ACT**

DESIGN-BUILDER shall comply with, and assures the compliance of its employees with, the



1 information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. §552a.  
2 Among other things, DESIGN-BUILDER agrees to obtain the express consent of the Federal Government  
3 before DESIGN-BUILDER or its employees operate a system of records on behalf of the Federal  
4 Government. DESIGN-BUILDER understands the requirements of the Privacy Act, including the civil and  
5 criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply  
6 with the terms of the Privacy Act may result in termination of the underlying Agreement.

7 **ARTICLE 24. PROHIBITED INTERESTS**

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

11 **ARTICLE 25. OWNERSHIP OF REPORTS AND DOCUMENTS**

12 A. The originals of all letters, documents, reports and other products and data produced under  
13 this Agreement shall be delivered to, and become the property of AUTHORITY. Copies may be made  
14 for DESIGN-BUILDER's records but shall not be furnished to others without written authorization from  
15 AUTHORITY. Such deliverables shall be deemed works made for hire and all rights in copyright therein  
16 shall be retained by AUTHORITY.

17 B. All ideas, memoranda, specifications, plans, manufacturing, procedures, drawings,  
18 descriptions, and all other written information submitted to DESIGN-BUILDER in connection with the  
19 performance of this Agreement shall not, without prior written approval of AUTHORITY, be used for any  
20 purposes other than the performance for this project, nor be disclosed to an entity not connected with the  
21 performance of the project. DESIGN-BUILDER shall comply with AUTHORITY's policies regarding such  
22 material. Nothing furnished to DESIGN-BUILDER, which is otherwise known to DESIGN-BUILDER or  
23 becomes generally known to the related industry shall be deemed confidential. DESIGN-BUILDER shall  
24 not use AUTHORITY's name, photographs of the project, or any other publicity pertaining to the project  
25 in any professional publication, magazine, trade paper, newspaper, seminar or other medium without the  
26 express written consent of AUTHORITY.

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

**ARTICLE 26. PATENT AND COPYRIGHT INFRINGEMENT**

A. In lieu of any other warranty by AUTHORITY or DESIGN-BUILDER against patent or copyright infringement, statutory or otherwise, it is agreed that DESIGN-BUILDER shall defend at its expense any claim or suit against AUTHORITY on account of any allegation that any item furnished under this Agreement or the normal use or sale thereof arising out of the performance of this Agreement, infringes upon any presently existing U.S. letters patent or copyright and DESIGN-BUILDER shall pay all costs and damages finally awarded in any such suit or claim, provided that DESIGN-BUILDER is promptly notified in writing of the suit or claim and given authority, information and assistance at DESIGN-BUILDER's expense for the defense of same. However, DESIGN-BUILDER will not indemnify AUTHORITY if the suit or claim results from: (1) AUTHORITY's alteration of a deliverable, such that said deliverable in its altered form infringes upon any presently existing U.S. letters patent or copyright; or (2) the use of a deliverable in combination with other material not provided by DESIGN-BUILDER when such use in combination infringes upon an existing U.S. letters patent or copyright.

B. DESIGN-BUILDER shall have sole control of the defense of any such claim or suit and all negotiations for settlement thereof. DESIGN-BUILDER shall not be obligated to indemnify AUTHORITY under any settlement made without DESIGN-BUILDER's consent or in the event AUTHORITY fails to cooperate fully in the defense of any suit or claim, provided, however, that said defense shall be at DESIGN-BUILDER's expense. If the use or sale of said item is enjoined as a result of such suit or claim, DESIGN-BUILDER, at no expense to AUTHORITY, shall obtain for AUTHORITY the right to use and sell said item, or shall substitute an equivalent item acceptable to AUTHORITY and extend this patent and copyright indemnity thereto.

**ARTICLE 27. REQUIREMENTS FOR REGISTRATION OF DESIGNERS**

All design and engineering work furnished by DESIGN-BUILDER shall be performed by or under the supervision of persons licensed to practice architecture, engineering or surveying (as applicable) in the State of California, by personnel who are careful, skilled, experienced and competent in their respective trades or professions, who are professionally qualified to perform the work in accordance with the contract documents and who shall assume professional responsibility for the accuracy and completeness of the design documents and construction documents prepared or checked by them.

**ARTICLE 28. FINISHED AND PRELIMINARY DATA**

A. All of DESIGN-BUILDER's finished technical data, including but not limited to illustrations, photographs, tapes, software, software design documents, including without limitation source code, binary code, all media, technical documentation and user documentation, photoprints and other graphic information required to be furnished under this Agreement, shall be AUTHORITY's property upon payment and shall be furnished with unlimited rights and, as such, shall be free from proprietary restriction except as elsewhere authorized in this Agreement. DESIGN-BUILDER 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 DESIGN-BUILDER. Preliminary data includes roughs, visualizations, software design documents, layouts and comprehensives prepared by DESIGN-BUILDER 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 DESIGN-BUILDER causes AUTHORITY to exercise ARTICLE 13, and a price shall be negotiated for all preliminary data.

**ARTICLE 29. CONVICT LABOR**

In connection with the performance of work under this Agreement, DESIGN-BUILDER 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 30. NOTICE OF LABOR DISPUTE**

Whenever DESIGN-BUILDER has knowledge that any actual or potential labor dispute may delay its performance under this Agreement, DESIGN-BUILDER shall immediately notify and submit all relevant information to AUTHORITY. DESIGN-BUILDER 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 31. LIQUIDATED DAMAGES**

If DESIGN-BUILDER 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, DESIGN-BUILDER shall pay to AUTHORITY as fixed, agreed-to liquidated damages for each calendar day of delay the sum of Six Hundred Dollars (\$600.00). Alternatively, AUTHORITY may terminate this Agreement in whole or in part as provided in Article 16 of this Agreement, and in that event, DESIGN-BUILDER shall be liable, in addition to the excess costs provided in Article 16 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. DESIGN-BUILDER shall not be charged with liquidated damages when the delay is determined to be excusable in accordance with Article 45 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 32. WARRANTY**

A. In addition to any other warranties set forth in this Agreement, whether expressed or implied, DESIGN-BUILDER warrants that (1) all work performed and all equipment and material provided under this Agreement by DESIGN-BUILDER or any of its subcontractors or suppliers at any tier, conforms to the requirements herein and is free of any defects; (2) equipment furnished by DESIGN-BUILDER or any of its subcontractors or suppliers at any tier, shall be of modern design, in good working condition and fit

1 for use of its intended purpose; and (3) all work shall meet all of the requirements of this Agreement.  
2 Such warranty shall continue for a period of one (1) year from AUTHORITY's acceptance as shown in  
3 Article 34 hereunder. Under this warranty, DESIGN-BUILDER shall remedy at its own expense any such  
4 failure to conform or correct any such defect. In addition, DESIGN-BUILDER shall remedy at its own  
5 expense any damage to AUTHORITY owned or controlled real or personal property, when that damage  
6 is the result of DESIGN-BUILDER's failure to conform to Agreement requirements or any such defect of  
7 equipment, material, workmanship or design. DESIGN-BUILDER shall also restore any work damaged  
8 in fulfilling the terms of this clause. DESIGN-BUILDER's warranty with respect to work repaired or  
9 replaced hereunder will run for one year from the date of such repair or replacement.

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

22 C. Should DESIGN-BUILDER fail to remedy any failure, defect or damage described in  
23 paragraph A above within a reasonable time after receipt of notice thereof, AUTHORITY shall have the  
24 right to replace, repair or otherwise remedy such failure, defect or damage at DESIGN-BUILDER's  
25 expense and DESIGN-BUILDER shall be liable for all damages, including, but not limited to, actual or  
26 consequential damages and cost of any suit to enforce AUTHORITY's rights hereunder, including

1 reasonable attorney's fees.

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

9 E. If directed by AUTHORITY, DESIGN-BUILDER shall require any such warranties to be  
10 executed in writing to AUTHORITY.

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

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

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

21 I. Any disagreement between AUTHORITY and DESIGN-BUILDER relating to this section shall  
22 be subject to dispute resolution in accordance with Article 15.

23 **ARTICLE 33. GENERAL WAGE RATES**

24 A. DESIGN-BUILDER warrants that all mechanics, laborers, journeypersons, workpersons,  
25 craftspersons or apprentices employed by DESIGN-BUILDER or subcontractor at any tier for any work  
26 hereunder, shall be paid unconditionally and not less often than once a week and without any subsequent

1 deduction or rebate on any account (except such payroll deductions as are permitted or required by  
2 federal, state or local law, regulation or ordinance), the full amounts due at the time of payment, computed  
3 at a wage rate and per diem rate not less than the aggregate of the highest of the two basic hourly rates  
4 and rates of payments, contributions or costs for any fringe benefits contained in the current general  
5 prevailing wage rate(s) and per diem rate(s), established by the Director of the Department of Industrial  
6 Relations of the State of California, (as set forth in the Labor Code of the State of California, commencing  
7 at Section 1770 et. seq.), or as established by the Secretary of Labor (as set forth in Davis-Bacon Act, 40  
8 U.S.C. 267a, et. seq.), regardless of any contractual relationship which may be alleged to exist between  
9 DESIGN-BUILDER or subcontractor and their respective mechanics, laborers, journeypersons,  
10 workpersons, craftspersons or apprentices. Copies of the current General Prevailing Wage  
11 Determinations and Per Diem Rates are on file at AUTHORITY's offices and will be made available to  
12 DESIGN-BUILDER upon request. DESIGN-BUILDER shall post a copy thereof at each job site at which  
13 work hereunder is performed.

14 B. In addition to the foregoing, DESIGN-BUILDER agrees to comply with all other provisions of  
15 the Labor Code of the State of California, which is incorporated herein by reference, pertaining to workers  
16 performing work hereunder including, but not limited to, those provisions for work hours, payroll records  
17 and apprenticeship employment and regulation program. DESIGN-BUILDER agrees to insert or cause  
18 to be inserted the preceding clause in all subcontracts which provide for workers to perform work  
19 hereunder regardless of the subcontractor tier.

20 **ARTICLE 34. INSPECTION AND ACCEPTANCE**

21 A. All work (which term includes but is not restricted to materials, equipment, workmanship, and  
22 manufacture and fabrication of components) shall be subject to inspection and test by AUTHORITY at all  
23 reasonable times and at all places prior to acceptance. Any such inspection and test is for the sole benefit  
24 of AUTHORITY and shall not relieve DESIGN-BUILDER of the responsibility of providing quality control  
25 measures to assure that the work strictly complies with requirements of this Agreement. No inspection  
26 or test by AUTHORITY or its representative shall be construed as constituting or implying acceptance.



1 Inspection or test shall not relieve DESIGN-BUILDER of responsibility for damage to or loss of the  
2 material prior to acceptance, nor in any way affect the continuing rights of AUTHORITY after acceptance  
3 of the completed work under the terms of paragraph F of this Article, except as herein above provided.

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

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

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

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

1 Agreement, an equitable adjustment shall be made in the Agreement price to compensate DESIGN-  
2 BUILDER for the additional services involved in such examination and reconstruction and, if completion  
3 of the work has been delayed thereby, it shall in addition, be granted a suitable extension of time.

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

9 **ARTICLE 35. MATERIAL AND WORKMANSHIP**

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

25 B. All work under this Agreement shall be performed in a skillful and workmanlike manner.  
26 Notwithstanding the provisions of Article 3 hereof, AUTHORITY may, in writing, require DESIGN-

BUILDER to remove from the work any employee AUTHORITY deems incompetent, careless or otherwise objectionable.

**ARTICLE 36. 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 DESIGN-BUILDER's cost and without a time extension; and DESIGN-BUILDER 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 DESIGN-BUILDER 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 DESIGN-BUILDER 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 DESIGN-BUILDER and/or obtain reimbursement from DESIGN-BUILDER 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 DESIGN-BUILDER'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 DESIGN-BUILDER's receipt of an invoice thereof. DESIGN-BUILDER 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 37. CONTRACTOR INSPECTION SYSTEM**

DESIGN-BUILDER 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 38. SUPERINTENDENCE BY CONTRACTOR**

DESIGN-BUILDER, 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 DESIGN-BUILDER.

**ARTICLE 39. OTHER CONTRACTS**

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

**ARTICLE 40. INSPECTION OF SITE**

DESIGN-BUILDER 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. DESIGN-BUILDER 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 DESIGN-BUILDER to acquaint itself with the available information will not

1 relieve it from responsibility for the difficulty or cost of successfully performing the work. AUTHORITY  
2 assumes no responsibility for any conclusions or interpretations made by DESIGN-BUILDER on the basis  
3 of the information made available by AUTHORITY.

4 /

5 /

6 **ARTICLE 41. DIFFERING SITE CONDITIONS**

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

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

19 **ARTICLE 42. OPERATIONS AND STORAGE AREAS**

20 A. All operations of DESIGN-BUILDER (including storage of materials and equipment) on  
21 AUTHORITY owned premises shall be confined to areas authorized or approved by AUTHORITY.  
22 DESIGN-BUILDER shall hold AUTHORITY and its officers and agents free and harmless from liability of  
23 any nature occasioned by DESIGN-BUILDER's operations.

24 B. Temporary building (storage sheds, shops, offices, etc.) may be erected by DESIGN-  
25 BUILDER with the written consent of AUTHORITY, and shall be built with labor and materials furnished  
26 by DESIGN-BUILDER without expense to AUTHORITY. Such temporary buildings and utilities shall

1 remain the property of DESIGN-BUILDER and shall be removed by DESIGN-BUILDER at its expense  
2 upon the completion of the work. With the written consent of AUTHORITY, such buildings and utilities  
3 may be abandoned and need not be removed.

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

11 **ARTICLE 43. PROTECTION OF VEGETATION, UTILITIES, IMPROVEMENTS**

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

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

24 **ARTICLE 44. CLEANING UP**

25 A. DESIGN-BUILDER shall at all times keep the construction area, including storage areas used  
26 by it, free from accumulations of waste material or rubbish, and prior to completion of the work remove

1 any rubbish from AUTHORITY owned premises and all tools, scaffolding, equipment and materials not  
2 the property of AUTHORITY. Upon completion of the construction, DESIGN-BUILDER shall leave the  
3 work and premises in a clean, neat and workmanlike condition satisfactory to AUTHORITY.

4 B. After completion of all work on the project, and before making application for acceptance of  
5 the work, DESIGN-BUILDER shall clean the construction site, including all areas under the control of  
6 AUTHORITY, that have been used by DESIGN-BUILDER in connection with the work on the project and  
7 remove all debris, surplus material and equipment, and all temporary construction or facilities of whatever  
8 nature, unless otherwise approved by AUTHORITY. Final acceptance of the work by AUTHORITY will  
9 be withheld until DESIGN-BUILDER has satisfactorily complied with the foregoing requirements for final  
10 cleanup of the project site.

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

14 **ARTICLE 45. USE AND POSSESSION TO COMPLETION**

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

26 **ARTICLE 46. CONTRACTOR PURCHASED EQUIPMENT**



1           A. If during the course of this Agreement, additional equipment is required, which will be paid for  
2 by the AUTHORITY, DESIGN-BUILDER must request prior written authorization from the AUTHORITY's  
3 project manager before making any purchase. As part of this purchase request, DESIGN-BUILDER shall  
4 provide a justification for the necessity of the equipment or supply and submit copies of three (3)  
5 competitive quotations. If competitive quotations are not obtained, DESIGN-BUILDER must provide the  
6 justification for the sole source.

7           B. DESIGN-BUILDER shall maintain an inventory record for each piece of equipment purchased  
8 that will be paid for by the AUTHORITY. The inventory record shall include the date acquired, total cost,  
9 serial number, model identification, and any other information or description necessary to identify said  
10 equipment or supply. A copy of the inventory record shall be submitted to the AUTHORITY upon request.

11           C. At the expiration or termination of this Agreement, DESIGN-BUILDER may keep the  
12 equipment and credit AUTHORITY in an amount equal to its fair market value. Fair market value shall be  
13 determined, at DESIGN-BUILDER's expense, on the basis of an independent appraisal. DESIGN-  
14 BUILDER may sell the equipment at the best price obtainable and credit AUTHORITY in an amount equal  
15 to the sales price. If the equipment is to be sold, then the terms and conditions of the sale must be  
16 approved in advance by AUTHORITY's project manager.

17           D. Any subconsultant agreement entered into as a result of this Agreement shall contain all  
18 provisions of this clause.

19           **ARTICLE 47. CONFLICT OF INTEREST**

20           A. DESIGN-BUILDER agrees to avoid organizational conflicts of interest. An organizational  
21 conflict of interest means that due to other activities, relationships or contracts, the DESIGN-BUILDER is  
22 unable, or potentially unable to render impartial assistance or advice to the AUTHORITY; DESIGN-  
23 BUILDER's objectivity in performing the work identified in the Scope of Work is or might be otherwise  
24 impaired; or the DESIGN-BUILDER has an unfair competitive advantage. DESIGN-BUILDER is  
25 obligated to fully disclose to the AUTHORITY in writing Conflict of Interest issues as soon as they are  
26 known to the DESIGN-BUILDER. All disclosures must be submitted in writing to AUTHORITY pursuant

1 to the Notice provision herein. This disclosure requirement is for the entire term of this Agreement.

2 B. If the AUTHORITY determines that DESIGN-BUILDER, its employees, or subconsultants are  
3 subject to disclosure requirements under the Political Reform Act (Government Code section 81000 et  
4 seq.), DESIGN-BUILDER and its required employees and subconsultants shall complete and file  
5 Statements of Economic Interest (Form 700) with the AUTHORITY's Clerk of the Board disclosing all  
6 required financial interests.

7 **ARTICLE 48. CODE OF CONDUCT**

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

11 **ARTICLE 49. PROHIBITION ON PROVIDING ADVOCACY SERVICES**

12 DESIGN-BUILDER and all subconsultants performing work under this Agreement, shall be  
13 prohibited from concurrently representing or lobbying for any other party competing for a contract with  
14 AUTHORITY, either as a prime consultant or subconsultant. Failure to refrain from such  
15 representation may result in termination of this Agreement.

16 **ARTICLE 50. HEALTH AND SAFETY REQUIREMENTS**

17 DESIGN-BUILDER shall comply with all requirements set forth in Exhibit H, Level 3 Safety  
18 Specifications. As used therein, "Contractor" shall mean "Consultant," and "Subcontractor" shall mean  
19 "Sub-consultant."

20 **ARTICLE 51. LIMITATION ON GOVERNMENTAL DECISIONS**

21 DESIGN-BUILDER shall not make, participate in making, or use its position to influence any  
22 governmental decisions as defined by the Political Reform Act, Government Code section 8100 et seq.,  
23 and the implementing regulations in Title 2 of the California Code of Regulations section 18110 et seq.  
24 DESIGN-BUILDER's personnel performing services under this Agreement shall not authorize or direct  
25 any actions, votes, appoint any person, obligate, or commit AUTHORITY to any course of action or enter  
26 into any contractual agreement on behalf of AUTHORITY. In addition, DESIGN-BUILDER's personnel

shall not provide information, an opinion, or a recommendation for the purpose of affecting a decision without significant intervening substantive review by AUTHORITY personnel, counsel, and management.

**ARTICLE 52. 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. The parties agree that government imposition of tariffs shall not constitute an act of God or otherwise be considered a force majeure event.

**IN WITNESS WHEREOF**, the parties hereto have caused this Agreement No. C-5-4320 to be executed as of the date of the last signature below.

**DESIGN-BUILDER**

**ORANGE COUNTY TRANSPORTATION AUTHORITY**

By: \_\_\_\_\_

By: \_\_\_\_\_  
Darrell E. Johnson  
Chief Executive Officer

**APPROVED AS TO FORM:**

By: \_\_\_\_\_  
James M. Donich  
General Counsel

**APPROVED:**

By: \_\_\_\_\_

James G. Beil, P.E.

Executive Director, Capital Programs

DRAFT

**EXHIBIT D: GENERAL PROVISIONS**

## **GENERAL PROVISIONS**

### **A. COST BREAKDOWN**

Within fifteen (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. 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 costs shall be segregated between off-site and on-site costs. Mobilization costs shall not exceed ten percent (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 twenty-fifth (25<sup>th</sup>) day of each month, shall prepare a progress payment estimate based on the estimated percentage of completion of each Bid Item, with the exception of fuel which will be calculated in accordance with Exhibit E, Price Summary Sheet, 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 fifteenth (15<sup>th</sup>) 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 ninety-five percent (95%) of each progress payment amount as determined above, retaining five percent (5%) as part security for the fulfillment of this Agreement by the Contractor, subject to Public Contract Code 22300.
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 one half of one percent ( $\frac{1}{2}$  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**

A "Claim" that falls within the definition of Public Contract Code Section 9204 (hereafter, "Section 9204"), as may be amended, means a separate demand by Contractor, sent by registered mail or certified mail with return receipt requested, for one or more of the following: (a) a time extension, including, without limitation, for relief from damages or penalties for delay assessed by Authority; (b) payment by Authority of money or damages arising from work done by, or on behalf of, the Contractor and payment for which is not otherwise expressly provided or to which Contractor is not otherwise entitled; and/or (c) payment of an amount that is disputed by the Authority.

It is important that the Authority be promptly notified of any potential claims so that it can timely and reasonably investigate the merits of the Claim when the events giving rise to the Claim are current and, when appropriate, make timely adjustments in the work in response thereto. Contractor shall submit to Authority a Notice of Claim within fifteen (15) calendar days after receipt of or the discovery of information, or the occurrence of an event, or any actions of Authority or its agents, that Contractor believes may result in a Claim. The Notice of Claim shall state the reason(s) for the Claim and the nature of the additional costs or delay that Contractor believes it will incur. Such Notice shall be submitted prior to the submission of the Claim documentation described below. If a Notice of Claim is not submitted within the fifteen (15) day period, it shall be deemed waived.

The Authority and Contractor agree to attempt to informally resolve any disputes which may give rise to a Claim in accordance with the dispute resolution process set forth under the Agreement and these General Provisions. Within twenty (20) calendar days, or any mutually agreeable extension thereof, from the date the Notice of Claim is received by Authority, the parties shall commence the dispute resolution process set forth in the Agreement. Contractor shall provide a representative at the meeting who has authority to resolve the claim on the Contractor's behalf. If a resolution is not reached and the Authority and Contractor have not, in writing, mutually agreed to continue with informal efforts at resolution, Contractor shall file a Claim within thirty (30) calendar days after the informal resolution process has concluded, or such Claim shall be deemed waived.

The Authority and the Contractor shall process the Claim in accordance with Section 9204 and the requirements set forth herein.

**1. Claim Requirements.**

- a. Any submittal intended by the Contractor to be evaluated by Authority as a Claim shall be entitled "Claim" and sent to Authority by registered mail or certified mail with return receipt requested. The Contractor may present a Claim on behalf of a subcontractor or a lower tier subcontractor meeting the requirements of Section 9204(d)(5).
- b. All Claims shall be submitted by the Contractor within thirty (30) calendar days after the conclusion of the informal resolution process discussed above; however, this timeframe may be extended unilaterally by Authority in writing. Any Claim not submitted within the specified thirty (30) calendar days, or as otherwise authorized by Authority, shall be deemed untimely and waived.
- c. All Claims shall include reasonable documentation in support, including a detailed factual statement that sets forth names, dates, and specific events that took place. In addition, supporting documents shall include 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.
- d. Claims filed by the Contractor shall be in sufficient detail and contain adequate supporting documentation 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 sufficient information and details will be cause for Authority to deny the Claim and/or find the Claim untimely and, therefore, waived. If the Claim is silent regarding entitlement to extra time, the Contractor shall be entitled to no extra time in connection with the Claim. If the Claim is silent regarding additional compensation, the Contractor shall be entitled to no additional compensation in connection with the Claim.
- e. No Claims shall be filed later than the date of final payment.
- f. All Claims and any amendments thereto shall include the fully executed certification set forth below. Any Claim submitted without a fully executed certification shall be rejected by Authority and returned to the Contractor.

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 \_\_\_\_\_, 202\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

**2. Claim Review**

Within forty-five (45) calendar days of receipt of the Claim, or any extension thereof agreed upon by the Authority and the Contractor, the Authority will conduct a reasonable review of the Claim and provide the Contractor with a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Payment of any undisputed portion of the Claim shall be made within sixty (60) calendar days after the Authority issues its written statement. If the Authority does not provide a written statement within the time specified, the Claim shall be deemed rejected.

### **3. Claim Settlement Conference**

If the Contractor disputes the Authority's written statement or if the Claim is deemed rejected, the Contractor may demand in writing, by registered or certified mail to the Authority, return receipt requested, an informal conference to meet and confer in an effort to settle the disputed portion of any Claim. Within thirty (30) calendar days of receipt of such written demand, the Authority shall schedule a meet and confer conference. Such conference shall be attended by an officer or principle of the Contractor who has the authority to resolve the Claim on the Contractors' behalf.

If any portion of the Claim remains in dispute after the conference, the Authority shall, within ten (10) business days of the conclusion of the conference, provide the Contractor with a written statement identifying any portion that remains in dispute and any portion that is undisputed. Payment of any undisputed portion shall be made within sixty (60) calendar days after the Authority issues its written statement.

Any remaining disputed portion shall be submitted to nonbinding mediation, unless the Contractor and Authority waive the mediation upon mutual written agreement. Mediation includes any nonbinding process, including, but not limited to, a neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. The Authority and the Contractor will share in the costs of mediation equally in accordance with Section 9204.

Within ten (10) business days after issuance of the Authority's written statement, the Authority and Contractor shall select a mutually-agreeable mediator. If the parties cannot agree to a mediator, the Authority and Contractor will each select a mediator who will then select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Authority and Contractor will each bear its own fees and costs for its respective mediator in connection with the selection of the neutral mediator.

Claims which are not resolved through this Claims settlement process shall be resolved in accordance with the laws of the State of California.

### **E. FINAL PAYMENT**

1. After the filing of the Notice of Completion, (or acceptance of the Project), 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 fifteen (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 thirty-five (35) days after the date of filing the Notice of Completion (or acceptance) 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 fifteen (15) days files claims, Authority will issue a semi-final estimate in lieu of the final estimate submitted to the Contractor; and thirty-five (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 thirty (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 any extra work or changes in the 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.

All compensation for extra work or changes in the work will be provided through a written change order. Nothing herein shall excuse the Contractor from proceeding with the work as otherwise directed by the Agreement.

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 seventeen percent (17%), and shall constitute full compensation for all other payments, including payments imposed by State and Federal laws.

c. Equipment

1. 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.
2. 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. EXTENDED FIELD OFFICE OVERHEAD COSTS**

1. Within thirty (30) days after receipt of the Notice to Proceed, the Contractor shall submit a written statement to the Authority detailing its field office overhead costs which are time related. The Authority will review this cost submittal and reach a written agreement with the Contractor on a daily field office overhead cost rate which shall be issued as an agreed upon Change Order. The daily rate agreed to in this Change Order will be applicable throughout the duration of the Contract. No field office costs will be paid until such agreement is reached between the Authority and the Contractor and the Change Order concerning this daily rate is executed by both parties.
2. The individual cost components of the daily field office overhead rate shall represent costs which increase as a direct result of any time extension caused solely and exclusively by an act of the Authority. This listing may include such cost items as on-site project management, supervision, engineering and clerical salaries; on-site office utilities and rent; on-site company vehicles and their operating expenses; and site maintenance and security expenses. Field office overhead costs which are unaffected by increased time shall not be allowable costs in calculating the daily field office overhead rate. These non-time related costs include, but are not limited to, acquisition and installation of stationary equipment; temporary construction facilities; utilities and office furnishings (unless



such items are rented or leased); the preparation of the site including clearing, grubbing, grading and fencing; mobilization and demobilization costs; and the costs of permits, bonds and insurance coverage for the project.

3. The individual wage cost components used to calculate the daily field office overhead rate shall be supported by actual employee payroll records, not salary ranges or estimates. Hourly rates for management, supervisory, engineering and clerical employees shall be based upon 2,080 work hours per year and shall not include allowances for holidays, vacation or sick time. However, the daily field office overhead rate shall only reflect the actual on-site time required in the field office. All other field office overhead cost components shall be evidenced by records demonstrating actual field office costs incurred by the Contractor.
4. The daily field office overhead rate shall be multiplied by the number of days the Contract is delayed or extended by Change Order and shall be added to the agreed upon Change Order cost. The days of delay shall be those caused solely by action of the Authority and documented by a time impact analysis prepared and submitted by the Contractor. In the event of a deductive Change Order is issued which reduces time under the Contract, the daily field office overhead rate shall be added to the deductive amount. No allowance for overhead costs and no profit allowance shall be added to the extended field office overhead cost.

#### **H. 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 Subsection H.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.

## **I. 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.

#### **J. 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 9358 et seq. of the California Civil Code.

#### **K. 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.

#### **L. LABOR PROVISIONS**

##### **1. Prevailing Wages**

Contractor shall comply with all applicable requirements of Division 2, Part 7, Chapter 1 of the Labor Code respecting prevailing wages.

##### **2. Minimum Wages**

- a. 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 amount of wages and bona fide fringe benefits (Or cash equivalents thereof) 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.

- b. Authority shall require that any class of laborers or mechanics, including helpers, 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. The Authority will approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met: (1) the work to be performed by the classification requested is not performed by a classification in the wage determination; and (2) the classification is utilized in the area by the construction industry; and (3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination. If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Authority agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the Authority to the Administrator of the Wage and Hour Division, U.S. Department of Labor. The Administrator will approve, modify, or disapprove every additional classification action within thirty (30) days from receipt and so advise the Authority or will notify the Authority within the thirty (30)-day period that additional time is necessary.
- c. 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. The wage rate (including fringe benefits where appropriate) determined pursuant to this subsection shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.
- d. 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.
- e. If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or

mechanic the amount of costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon written request of Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under this plan or program.

- 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 9358 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.

- f. The amount of the accrued payments or advances as many be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the Contract, the Authority may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

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) ten percent (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, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the rations and wage rates prescribed in the applicable programs.
- b. 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 each laborer or mechanic (including helpers, apprentices, and trainees) have been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; 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).

**6. Contract Termination; Debarment**

A breach of Subsections 1 through 5 above may be grounds for termination of the Contract, and for debarment.

**7. 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 eight (8) hours a day or forty



(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 eight (8) hours a day or forty (40) hours in such work week.

**8. 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.

**9. 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.

**10. 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.

**11. 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 certification 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

**12. 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.

**13. Compliance with Davis-Bacon and Related Act requirements**

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference.

**14. Certification of Eligibility**

By entering into this Agreement, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1). No part of this Contract shall be subcontracted to any person or firm ineligible for award of a government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1). The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. Section 1001.

**15. Insertion in Subcontracts**

The Contractor shall set forth in all subcontracts Subsections 1 through 13 above 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.

**16. Certified Payroll Records**

- 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 labor laws, the payroll copy shall be retained at the project site for later review by the DIR or State agencies.
- 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 twentieth (20<sup>th</sup>) 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 sixty (6<sup>th</sup>) of that month, such payrolls will be considered to be delinquent. Regardless of the number of delinquent payrolls, an amount equal to ten percent (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 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.

**M. TIME EXTENSION/DELAYS**

- a. 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.

- b. 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.
- c. 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 twenty (20) years before the execution of the Contract.
- d. 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.
- e. Within thirty (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.
- f. 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.

- g. 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.

## **N. 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. 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.
5. The Contractor will include the provisions of this Paragraph ("Nondiscrimination") in every subcontract or purchase order entered into under this Agreement
6. 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.

**O. 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.

**P. CONFLICT OF INTEREST**

All Contractors responding to this Invitation For Bids must avoid organizational conflicts of interest which would restrict full and open competition in this procurement. An organizational conflict of interest means that due to other activities, relationships or contracts, a Contractor is unable, or potentially unable to render impartial assistance or advice to the Authority; a Contractor's objectivity in performing the work identified in the specifications is or might be otherwise impaired; or a Contractor has an unfair competitive advantage. Contractor is obligated to fully disclose to the Authority in writing any conflict of interest issues as soon as they are known. All disclosures must be disclosed at the time of bid submittal.

**Q. CODE OF CONDUCT**

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

**R. GOVERNMENT INSPECTIONS**

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

**S. 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 maintains 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.

## **T. HAZARDOUS SUBSTANCES**

### **1. CAL-OSHA Requirements**

All flammable, corrosive, toxic, or reactive materials being bid must have a complete CAL-OSHA Safety Data Sheet (SDS) accompanying the submitted bid.

### **2. South Coast Air Quality Management District (SCAQMD)**

All materials (paints, coatings, inks, solvents, and adhesives) shall comply with the volatile organic compounds (VOC) content requirements of the applicable SCAQMD rules.

### **3. 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 premises:

- Adhesives, sealant, patching, and coating products
- Antifreezes, coolants
- Cleaners, detergents
- Paints, thinners, solvents
- Pesticides, Petroleum products (diesel and unleaded fuel, oil products)
- Printing, photocopying materials
- 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 Safety Data Sheets (SDS) for individual products.

**4. Hazardous Waste Labels**

Containers containing hazardous substances must be labeled with the following information:

- Identity of hazardous substance-chemical name, not manufacturer or trade name;
- Appropriate health warning relative to health and physical hazard; and
- Name and address of manufacturer or other responsible party.

All containers containing hazardous substances may be rejected unless containers are properly labeled. Containers of 55 gallons or larger must have either weather resistant labels or the information should be painted directly on the containers.

**U. CHANGES IN LAWS AND REGULATIONS**

CONTRACTOR shall at all times comply with all applicable state and local regulations, policies, procedures and directives, including without limitation those listed directly or by reference in this Agreement. CONTRACTOR's failure to so comply shall constitute a material breach of Contract.

**V. 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.

**W. 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.

**X. 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 eight (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.

## **Y. 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.

**Z. 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.

**AA. 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 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.

**BB. TRENCHING AND EXCAVATIONS**

In the event the Contractor is required to dig any trench or excavation that extends deeper than four (4) feet below the surface in order to perform the work authorized under the Agreement, Contractor agrees to promptly notify the Authority in writing and before further disturbing the site, if any, of the conditions set forth below are discovered:

1. Materials that the Contractor believes may be hazardous waste, as defined in Section 25117 of the Health and Safety Code that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with the provisions of existing law.
2. Subsurface or latent physical conditions at the site differing from those indicated by information about the site made available to bidders prior to the deadline for submitting bids.
3. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Agreement.

The Authority will promptly investigate the conditions, and if it determines that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work shall issue a Change Order under the procedures described in the Agreement.

In the event that a dispute arises between the Authority and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by the Agreement, but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

**EXHIBIT E: COST & PRICE FORM**

**REQUEST FOR PROPOSALS (RFP) 5-4320**

Enter below the proposed price for each of the work phases described in the Scope of Work, Exhibit A. Prices shall include direct costs, indirect costs, and profits. The Authority's intention is to award a lump-sum design-build contract.

**Description**

**Price**

Task 1: Project Administration, Project Management, and Project Control

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

Task 2: Authorities Having Jurisdiction, Design Criteria, Codes, Regulations, Standards, Hazard Analysis, Safety Requirements, and Project Site Conditions

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

Task 3: Architectural & Engineering Design

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

Task 4: Construction – Site Coordination and Mobilization

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

Task 5: Construction – Demolition, Earthwork, Soil Compaction Grouting, and Concrete Placement

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

Task 6: Construction – Dedicated Electrical Power Feed and Electrical Service Equipment

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

Task 7: Construction – Hydrogen Equipment

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

Task 8: Construction – Fire-Rated Walls, Fencing, Sliding Gates, and Safety Bollards

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

Task 9: Construction – LED Area Lighting, Video Surveillance System (VSS) Cameras, Signage, Paint Striping and Markings

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

Task 10: Construction – Hydrogen Detection Systems, Emergency Shutdown Systems, and Battery Backup Systems

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

Task 11: Construction – Maintenance Platform

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

Task 12: Inspections, Tests, Startup and Commissioning

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

Task 13: Training – Safety, Operations, and First Responder

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

Task 14: Back-to-Back Performance Testing and Performance Data

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

Task 15: Project Closeout Package	\$ _____
Task 16: Operations during Training and Transition Period	\$ _____
Task 17: All Other Work	\$ _____
Task 18: Fuel Supply Services*	\$ _____
Task 19: Allowance – Project Permit Fees	\$ 150,000.00
Task 20: Allowance – SCE Fees	\$ 150,000.00
<b>Total Price</b>	\$ _____

\* Not-to-exceed amount.

1. I acknowledge receipt of RFP 5-4320 and Addenda No.(s) \_\_\_\_\_
2. This offer shall remain firm for \_\_\_\_\_ days from the date of proposal  
(Minimum 120)

COMPANY NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

TELEPHONE \_\_\_\_\_

FACSIMILE # \_\_\_\_\_

EMAIL ADDRESS \_\_\_\_\_

SIGNATURE OF PERSON  
AUTHORIZED TO BIND OFFEROR \_\_\_\_\_

NAME AND TITLE OF PERSON  
AUTHORIZED TO BIND OFFEROR \_\_\_\_\_

DATE SIGNED \_\_\_\_\_

**EXHIBIT F: SAFETY SPECIFICATIONS**



## **LEVEL 3 HEALTH, SAFETY AND ENVIRONMENTAL (HSE) SPECIFICATIONS**

### **REQUIRED HSE SUBMITTAL SUMMARY**

The contractor shall submit copies of the items listed below for contract scope work on OCTA projects and property. Copies shall be provided prior to contractor's mobilization onto OCTA projects and property. Contractor shall provide compliant written Health, Safety & Environmental (HSE) submittals within 30 days of the contract notice to proceed.

HSE submittals shall comply with the 1988 Drug Free Workplace Act, or the Department of Transportation (DOT), or the Federal Transportation Administration (FTA) requirements (according to OCTA procurement funding guidelines) and comply with the California Code of Regulations (CCR) Title 8 regulatory standards.

Contractor's established written programs/plans shall comply with CCR Title 8 regulatory standards. All HSE related programs/plans submitted to OCTA for acceptance shall be prepared and submitted by a qualified HSE professional who is recognized by an organization of industry standard (i.e., CSP, CIH, CHST, CHMM, etc.) and is experienced in developing compliant written HSE programs. The site safety HSE representative shall participate in the HSE submittal process.

1. Contractor shall provide a copy of Company's Injury Illness Prevention Program in accordance with CCR Title 8, Section 3203.
2. Contractor shall provide a copy of their Company HSE Policy/Procedure Manual, in compliance with CCR Title 8 Standards for awarded scope.
3. Contractor shall provide a copy of their Policy or Substance Abuse Prevention Program.
4. Contractor shall provide a copy of their Hazard Communication Program and SDS Management Program in compliance with CCR Title 8, Section 5194, Hazard Communication Standard.
5. On-Site HSE Representative:  
On Facility Modification Projects, The Contractor shall submit a resume of the designated on-site qualified HSE Representative. The HSE Representative shall possess a current certification from the Board of Certified Safety Professionals (BCSP), plus five (5) years construction or scope agreement HSE experience enforcing HSE compliance on heavy or industrial construction project sites, the last two years of which have been administering HSE in the construction or scope discipline for which the Contractor is contracting with the Authority. The designated HSE Representative shall participate in all HSE related submittals through completion of scope.

On Capital Programs, The Contractor's on-site qualified HSE Representative shall be a Certified Safety Professional (CSP) with current standing from the Board of Certified Safety Professionals (BCSP) or a Construction Health and Safety Technician (CHST) with current standing from the (BCSP) or a Certified Industrial Hygienist (CIH) with current standing from the American Board of Industrial Hygiene (ABIH), or an equal professional HSE Certificate of standing from The

National Examination Board in Occupational Safety and Health (NEBOSH), that is acceptable to the Authority. The Contractor's on-site HSE Representative(s) shall provide a resume and have a minimum of seven (7) years heavy construction experience in administering HSE programs on heavy construction project sites, the last two years of which have been administering HSE in the construction/scope discipline for which Contractor is contracting with the Authority.

6. A Detailed Site Specific HSE Work Implementation Plan:

This plan shall be prepared and submitted by a recognized HSE professional experienced in developing compliant written HSE programs. Indicate the methods and procedures, and include the sequence of tasks as listed on the project schedule, include the hazards, tools and equipment, and the safe work practices to mitigate the hazards in a format acceptable OCTA. Specify safety measures in accordance with applicable Cal/OSHA standards, South Coast Air Quality Management District (SCAQMD) rules, National Fire Protection Association (NFPA), National Electric Code (NEC), American National Standards Institute (ANSI) codes and regulations, job hazard analysis, policies, procedures, HSE training requirements and known and potential hazards of Contractor's scope. Plans shall be prepared as specified above, and may require if necessary a professional engineer licensed to practice in the state of California, when so required by the provisions of the California Board for Professional Engineer and Surveyors.

## **PART I – GENERAL**

### **1.0 GENERAL HEALTH, SAFETY AND ENVIRONMENTAL REQUIREMENTS**

- A. The Contractor, its subcontractors, suppliers, and employees have the obligation to comply with all Authority health, safety and environmental compliance department (HSEC) requirements of this safety specification, project site requirements, and bus yard safety rules, as well as all federal, state, and local regulations pertaining to scope of work 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 unsafe acts or conditions, serious violation of health and safety standards, non-conformance of Authority HSEC requirements, or disregard for the intent of these safety specifications to protect people and property, by Contractor may be reason for termination of scope or 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 subcontractors (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, CCR Title 8 Standards, and recognized safe work practices.
- F. The Contractor shall instruct all its employees, and all associated subcontractors under contract with the Contractor who works 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 (Code of Federal Regulations (CFR) Sections 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 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 for items G through K, contractor shall verify the following documentation is in place, prior to and during contract scope and make the same available to the Authority upon request within 72 hours.

Contractor's established written programs/plans shall comply with CCR Title 8 regulatory standards. All new programs/plans shall be prepared and submitted by a qualified HSE professional who is recognized by an organization of industry standard (i.e., CSP, CIH, CHST, STS, CHMM, etc.) and is experienced in developing compliant written HSE programs. The site safety HSE representative shall participate in the scope submittal process.

- A. A Comprehensive Project Specific Health, Safety, and Environmental (HSE) Work Plan.
  - a. The Contractor shall develop a site project plan that may include, but is not limited to: Permits, Evacuation, Emergency Plan, Roles and 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, and Subcontractor Management.

- b. A Detailed Site Specific HSE Implementation Plan: This plan shall be prepared and submitted by a recognized HSE professional (current BCSP Certification in good standing, i.e., CSP, CHST, OHST) experienced in developing compliant written HSE programs, acceptable to OCTA. Indicate the methods and procedures, and include the sequence of tasks as listed on the project schedule, include the hazards, tools and equipment, and the safe work practices to mitigate the hazards in a format acceptable OCTA. Specify safety measures in accordance with applicable Cal/OSHA standards, SCAQMD rules, NFPA, NEC, ANSI codes and regulations, job hazard analysis, policies, procedures, HSE training requirements and known and potential hazards of Contractor's scope. Plans shall be prepared as specified above, and may require if necessary a professional engineer licensed to practice in the state of California, when so required by the provisions of the California Board for Professional Engineer and Surveyors.
  - B. Contractor shall provide a copy of their Company HSE Policy/Procedure Manual, in compliance with CCR Title 8 Standards for awarded scope.
  - C. Contractor shall provide a copy of Company's Injury Illness Prevention Program in accordance with CCR Title 8, Section 3203.
  - D. Contractor shall provide a copy of their Policy or Substance Abuse Prevention Program that complies with the 1988 Drug Free Workplace Act.
  - E. Contractor shall provide the resume and qualifications/certifications of assigned project designated Onsite HSE Representative for this scope as identified in section 2.3 of this specification.
  - 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 Authority request, within 72 hours.
- G. A copy of Contractor weekly site safety inspection report with status of corrections, upon request, within 72 hours.
  - H. Contractor shall provide a copy of the Contractors and subcontractors competent person list (submit to Authority Project Manager, upon Authority request, within 72 hours).

- I. Contractors and subcontractors training records for qualified equipment operators, electrical worker certification (NFPA 70E), confined space training, HAZWOPER training, and similar personnel safety training certificates as applicable to the agreement scope and as requested by the OCTA Project Manager and/or HSEC department, upon Authority request, within 72 hours and prior to starting or during the scope activity (submit to Project Manager).
- J. A monthly report that includes number of workers on project, a list of subcontractors, 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. Contractor shall provide to the Authority, upon request, within 72 hours.

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 Standards and required for activity on Authority's property and/or Authority projects. Contractor shall provide to Authority, upon request, within 72 hours.

2.2 HAZARD COMMUNICATION (CCR Title 8, Section 5194)

- A. Contractor shall comply with CCR Title 8, Section 5194 Hazard Communication Standard. Prior to chemical use on Authority property and/or project work areas the Contractor shall provide to the Authority Project Manager copies of Safety Data Sheet (SDS) for all applicable products used, if any.
- B. All chemicals including paint, solvents, detergents and similar substances shall comply with SCAQMD Rules 103, 1113, and 1171.

2.3 DESIGNATED HEALTH, SAFETY, ENVIRONMENTAL (HSE) REPRESENTATIVE

- A. Before beginning on-site activities, the Contractor shall designate an On-site HSE 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 cost, schedule and budget impacts.
- B. The Contractor's on-site qualified HSE Representative for all Authority projects is subject to acceptance by the Authority Project Manager and the HSEC Department Manager. All contact information of the On-site HSE Representative (name, phone, and fax and pager/cell phone number) shall be provided to the Authority Project Manager.

**QUALIFICATIONS – On Capital Programs**, the Contractor shall submit a resume of the full time, on-site qualified HSE Representative(s) who reports directly to the Contractor's Project Manager or Superintendent, and who is responsible for HSE 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 On-site HSE Representative(s) shall have a minimum of seven (7) years heavy construction experience in administering HSE programs on heavy construction project sites, the last two years of which have been administering HSE in the construction discipline for which Contractor is contracting with the Authority. The Contractor's On-site HSE Representative shall be a Certified Safety Professional (CSP) with current standing from the Board of Certified Safety Professionals (BCSP), or a Construction Health and Safety Technician (CHST) with current standing from the BCSP or a Certified Industrial Hygienist (CIH) with current standing from the American Board of Industrial Hygiene (ABIH), or an equal professional HSE Certificate of standing from The National Examination Board in Occupational Safety and Health (NEBOSH), that is acceptable to the Authority. The Contractor's On-site HSE Representatives(s) shall be on site during all operational hours. The On-site HSE 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 On-site HSE 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 scope 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. The designated HSE Representative shall participate in all HSE related submittals. The Authority reserves the right to allow for an exception to modify these minimum qualification requirements for unforeseen circumstances, at the sole discretion of the Authority Project Manager and HSEC Department Manager.

**On Facility Modification Projects**, the Contractor shall submit a resume of the full time qualified on-site HSE 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 On-Site HSE Representative shall hold a current certification from the BCSP, plus five (5) years construction or scope HSE experience enforcing HSE compliance on heavy construction or industrial construction project sites, the last two years of which have been administering HSE in the construction or scope discipline for which Contractor is contracting with the Authority. The Contractor's On-site HSE Representative(s) shall be on site during all operational hours. The designated HSE Representative shall participate in all HSE related submittals. The Authority reserves the right to allow for an exception and to modify these minimum qualification requirements for unforeseen circumstances, at the sole discretion of the Authority Project Manager and HSEC Department Manager.

1. Capital Programs may include, but are not limited to, projects involving demolition and construction of; heavy construction, rail projects, highway projects, parking lots and structures, fuel stations, building construction, facility modifications, bus base construction, EPA/DTSC remediation, AQMD air or soil monitoring, fuel tank removal or modification, major bus base modifications, handling potential hazardous waste projects, and similar projects as deemed a Capital Program at the sole discretion by the Authority.
  2. Facility Modification Projects may include, but are not limited to, projects involving minor demolition and construction or improvement projects for transportation centers, bus base sites and/or building modifications, equipment and/or building upgrades, and similar projects as deemed a Facility Modification Project at the sole discretion by the Authority.
  3. Competent Individual 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 Individual means an individual who by possession of a recognized degree, certificate, certification or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, the work, or the project.
- C. The Contractor shall designate a Competent Individual for each task, as required by Cal-OSHA standards or laws. The task Competent Individual 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 agreement.
- D. On Facility Modification Projects, the Authority Project Manager reserves the right to require the Contractor to provide one additional full-time safety representative with qualifications as identified in section 2.3 (C), above whenever the number of individuals from the Contractor, its subcontractors, suppliers, and vendors meets or exceeds 15 workers, there are multiple scope work sites, or as warranted by the scope of work at the sole discretion by the Authority.
- E. On Capital Programs, the Authority's Project Manager reserves the right to require the Contractor to provide one additional full-time safety representative with qualifications as identified in item 2.3 (C) above whenever the number of individuals from the Contractor, its subcontractors, suppliers, and vendors meets or exceeds 50 workers, or is warranted by the scope of work.

## **2.4 SITE HSE ORIENTATION**

The Contractor shall conduct and document a project site safety orientation for all Contractor personnel, subcontractors, suppliers, vendors, and new employees assigned to the project prior to performing any work on Authority projects, a copy of the HSE orientation attendance list shall be provided to the Authority Project Manager. 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.
- B. 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. An initial immediate verbal notification, followed by a written incident investigation report shall be submitted to Authority's Project Manager within 24 hours of the incident.

A final written incident investigative report shall be submitted within seven (7) calendar days, and include the following information. The current status of anyone injured, photos of the incident area, detailed description of what happened, the contributing factors that led to the incident occurrence, a copy of the company policy or procedure associated with the incident and evaluation of effectiveness, copy of the task planning documentation, and the corrective action initiated to prevent recurrence. This information shall be considered the minimum elements required for a comprehensive incident report acceptable to OCTA.

- C. A Serious Injury, Serious Incident, OSHA Recordable Injury / Illness, or Significant Near Miss shall require a formal incident review at the discretion of the Authority's Project Manager. The incident review shall be conducted within seven (7) calendar days of the incident. This review shall require a senior executive from the Contractors' organization to participate in the presentation. 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.

1. Serious Injury: 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.
2. Serious Incident: includes property damage of \$500.00 or more, an incident requiring emergency services (local fire, paramedics and ambulance response), news media or OCTA media relations response, and/or incidents involving other agencies (Cal/OSHA, EPA, AQMD, DTSC, etc.) notification or representation.
3. OSHA Recordable Injury / Illness: includes an injury / illness resulting in medical treatment beyond First Aid, an injury / illness which requires restricted duty, or an injury / illness resulting in days away from work.
4. Significant Near Miss Incident: includes incidents where no property was damaged and no personal injury sustained, but where, given a slight shift in time or position, damage and/or injury easily could have occurred.

## 2.6 REGULAR INSPECTIONS & THIRD PARTY INSPECTIONS

- A. Frequent and regular inspections of the project jobsite shall be made by the Contractor's On-site HSE Representative, or another Competent Individual 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 ENVIRONMENTAL REQUIREMENTS

- A. The Contractor shall comply with Federal, State, county, municipal, and other local laws and regulations pertaining to the environment, including noise, aesthetics, air quality, water quality, contaminated soils, hazardous waste, storm water, and resources of archaeological significance. Expense of compliance with these laws and regulations is considered included in the agreement. Contractor shall provide water used for dust control, or for pre-wetting areas to be paved, as required; no payment will be made by OCTA for this water.
- B. The Contractor shall prevent pollution of storm drains, rivers, streams, irrigation ditches, and reservoirs with sediment or other harmful materials. Fuels, oils,

- bitumen, calcium chloride, cement, or other contaminants that would contribute to water pollution shall not be dumped into or placed where they will leach into storm drains, rivers, streams, irrigation ditches, or reservoirs. If operating equipment in streambeds or in and around open waters, protect the quality of ground water, wetlands, and surface waters.
- C. The Contractor shall protect adjacent properties and water resources from erosion and sediment damage throughout the duration of the contract. Contractor shall comply with applicable NPDES permits and Storm Water Pollution Prevention Plan (SWPPP) requirements.
- D. Contractor shall comply with all applicable EPA, Cal EPA, Cal Recycle, DTSC, SCAQMD, local, state, county and city standards, rules and regulations for hazardous and special waste handling, recycling and/ disposal. At a minimum, Contractor shall ensure compliance where applicable with SCAQMD Rule 1166, CCR Title 8, Section 5192, 29 CFR Subpart 1910.120, 49 CFR Part 172, Subpart H, 40 CFR Subpart 265.16 and CCR Title 22 Section 6625.16. Contractor shall provide OCTA a schedule of all hazardous waste and special or industrial waste disposal dates in advance of transport date. Only authorized OCTA personnel shall sign manifests for OCTA generated wastes. Contractor shall ensure that only current registered transporters are used for disposal of hazardous waste and industrial wastes. The Contractor shall obtain approval from OCTA for the disposal site locations in advance of scheduled transport date.
- E. If the Contractor encounters on the site material reasonably believed to be asbestos, polychlorinated biphenyl (PCB) or other Hazardous Substance (as defined in California Health and Safety Code, and all regulations pursuant thereto) which has not been rendered harmless, the Contractor shall immediately stop work in that area affected and report the condition to the Authority in writing. The work in the affected area shall not thereafter be resumed except by written agreement of the Authority and Contractor if in fact the material is asbestos or polychlorinated biphenyl (PCB) or other hazardous substance and has not been rendered harmless. The work in the affected area shall be resumed in the absence of asbestos or polychlorinated biphenyl (PCB) or other hazardous substance, or when it has been rendered harmless, by written agreement of the Authority and the Contractor, or in accordance with a final determination by an Environmental Consultant employed by the Authority.
- F. The Contractor shall not permit any hazardous substances to be brought onto or stored at the Project Site or used in the construction of the work, except for specified materials and commonly used construction materials for which there are no reasonable substitutes. All such materials shall be handled in accordance with all manufacturers' guidelines, warnings and recommendations and in full compliance with all applicable laws. All notices required to be given with respect to such materials shall be given by the Contractor. The Contractor shall not intentionally release or dispose of hazardous substances at the Project Site or into the soil, drains, surface or ground water, or air, nor shall the Contractor allow any Sub-Contractor, subcontractor or supplier or any other person for whose acts the Contractor or any subcontractor, vendor or supplier may be liable, to do so. For purposes of Contract Documents, "hazardous

substance” means any substance or material which has been determined or during the time of performance of the work is determined to be capable of posing a risk of injury to health, safety, property or the environment by any federal, state or local governmental authority.

## **2.8 VEHICLE AND ROADWAY SAFETY REQUIREMENTS**

- A. The Contractor shall ensure that all Contractor vehicles, including those of its subcontractors, 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 belonging to 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).

## **2.9 LANGUAGE REQUIREMENTS**

For safety reasons, the Contractor 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.

## **2.10 PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING**

Contractors, and all associated subcontractors, 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 (CCR Title 8, Section 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, 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.
- C. BUS BASE – Minimum PPE required includes but is not limited to; Eye protection, class 2 reflective vest, steel toe or construction type footwear that meets ANSI Z41 1991 are recommended.

- D. CONSTRUCTION PROJECTS - Minimum PPE required includes but is not limited to; hard hat, eye protection, hand protection, class 2 reflective vest, safety toe footwear that meets ANSI Z41 1991 are recommended.
- E. HARD HATS: Approved hard hat that meet ANSI Z89. 1 (latest revision). Hard hats should be affixed with the company/agency logo and/or name. The bill shall be worn forward. Metal hard hats and cowboy style are forbidden on Authority projects.
- F. FOOTWEAR: Enclosed leather that covers the ankles, such as a construction type boot. Employees shall not wear casual dress shoes, open toe, sneakers, sandals, canvas-type shoes, or other shoes that have thin soles or heels that are higher than normal in construction work areas. Safety toe footwear that meets ANSI Z41 1991 are recommended on construction sites and in operating facilities.
- G. CLOTHING/SHIRTS: minimum or waist length shirts with sleeves (4" minimum).
- H. CLOTHING/TROUSERS: Cover the entire leg. If flare-legged trousers are worn, the trouser bottoms must be tied to prevent catching. No sweat pants, or trousers with holes.

#### 2.11 AERIAL DEVICES (CCR Title 8, Section 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, Section 3648 shall be provided to the Authority's Project Manager, upon request, within 72 hours.

#### 2.12 CONFINED SPACE ENTRY (CCR Title 8, Section 5157)

Before any employee will be allowed to enter a confined space, the required documentation as required by CCR Title 8, 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.

#### 2.13 CRANES

- A. Crane activity shall comply with 29 CFR 1926.550, CCR Title 8 Standards, manufacture's recommendations and requirements, applicable American Society of Mechanical Engineers (ASME), and 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 I,

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, 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. Contractor shall provide the name and qualifications of each "Qualified Rigger" as defined by OSHA.
  5. Rigging scope activity shall comply with 29 CFR Subparts 1926.250, 1929.753 and CCR Title 8 Standards.
  6. All rigging equipment shall be free from defects, in good operating condition and maintained in a safe condition.
  7. Rigging equipment shall be inspected by a designated, competent employee prior to initial use on the project, prior to each use, and documented inspections performed regularly. Records shall be kept on jobsite of each of these inspections by contractor and be made available to the Authority upon request within 72 hours.
  8. 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.
  9. Contractor shall prepare a documented daily crane inspection report.
- B. Pick and carry with rubber tired cranes is forbidden on Authority projects.

C. Engineered Critical Lifts

A critical lift 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.
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.

#### **D. 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.

#### **E. 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.

#### **2.14 DEMOLITION OPERATIONS (CCR Title 8, Section 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 Article 31.

- A. The Contractor shall be responsible for visiting and examining the project site to assess and personally determine the extent of demolition, associated work, debris removal, disposal and general work to be done under this section.
- B. The Contractor shall take possession of all demolished materials, except as noted otherwise in the Contract Documents, and be responsible for disposing of them in accordance with applicable laws and regulations. On-site burning or burial of demolition materials will not be permitted.
- C. Provide continuous noise and dust abatement as required, preventing disturbances and nuisances to the public, workers, and the occupants of adjacent premises and the surrounding areas. Dampen areas affected by demolition operation as necessary to prevent dust nuisance.
- D. Site demolition plan: Indicate methods, procedures, equipment, and structures to be employed. Specify safety measures in accordance with applicable codes including signs, barriers, and temporary walkways. Plans shall be prepared by a qualified person (CSP, CIH, CHST, CHMM, etc.), or as necessary by a professional engineer licensed to practice in the State of California, when so required by the provisions of the California Board for Professional Engineer and Surveyors.
- E. Equipment, haul routes, and disposal sites to be used in the demolition and disposal work. Copy of manifests showing delivery of disposed materials in accordance with the plan and permit conditions. Certification that all demolished materials removed from the site have been disposed of in accordance with applicable laws and regulations.

#### **2.15 EXCAVATION OPERATIONS (CCR Title 8, Section 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, 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 Subpart P, Section 1926.650 and 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.

#### 2.16 FALL PROTECTION (CCR Title 8, Sections 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.

#### 2.17 FORKLIFTS, BACKHOES AND OTHER INDUSTRIAL TRACTORS (CCR Title 8, Section 3664)

CCR Title 8 defines backhoes as "industrial tractors". All compliance documentation shall be provided as required by CCR Title 8, Section 3664. 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.).

## **2.18 ELECTRICAL OPERATIONS**

### **HIGH VOLTAGE (CCR Title 8, Sections 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 must provide approval. The following required NFPA 70E certification and a certificate of training from a recognized organization of a two day high voltage safety training course shall be provided to the Authority's Project Manager, upon request, within 72 hours:

- A. A list of the name(s) of the company-designated high voltage Qualified Electrical Worker(s)

### **LOW VOLTAGE (CCR Title 8, Sections 2299-2599)**

Only qualified persons shall work on electrical equipment or systems.

- A. Electrical Certification of Training; Contractor employees working on or around electrical panels, wiring, motors, electrical energy sources or similar electrical devices shall have attended a NFPA 70E, Electrical Safety Course and provide to the OCTA Project Manager a copy of employees' NFPA 70E qualification certificate of training for each employee assigned to electrical tasks on OCTA property or projects.

## **2.19 POWDER-ACTUATED TOOLS (CCR Title 8, Section 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.

## **2.20 SCAFFOLDS (CCR Title 8, Sections 1635.1-1677)**

Scaffold erection shall be in compliance with CCR Title 8 Standards. All compliance documentation shall be provided as required by CCR Title 8, Sections 1635.1-1677. In addition, the Contractor shall comply with the following additional requirements.

- 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 Standards 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.

## **2.21 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.

## **2.22 STEEL ERECTION**

Steel Erection scope activity shall comply with 29 CFR Subpart R, Section 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.

## **2.23 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 HSE 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.

## **2.24 RAILWAY SAFETY PRECAUTIONS**

- A. Work on operating railways shall be in compliance with 49 CFR, Part 214, CCR Title 8 Standards, and the Southern California Regional Rail Authority (SCRRA).
- B. New construction rail projects require that all employers and contractors are responsible to assure employees are trained and understand on-track safety procedures, and follow roadway worker rules identified in 49 CFR, Part 214, CCR Title 8, SCRRA, the California Department of Transportation (CalTrans), and OCTA HSE Construction Management Requirements (i.e., item E references).
- C. Minimum PPE for workers include hard hat, safety glasses, orange (i.e., rail company approved color) class 2 reflective vest, safety toe footwear that meets ANSI Z41 1991 (lace-up type over the ankle) and hearing protection (on person and worn as necessary).

## **2.25 FINES**

The Contractor shall be responsible for the payment of all fines levied against the Authority for HSE violations arising from or related to activities over which Contractor has responsibility per the contract..

## **2.26 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.

## 2.27 REFERENCES

- A. CCR Title 8 Standards (Cal/OSHA)
- B. CFR Including 1910 and 1926 Standards
- C. NFPA, NEC, ANSI, NIOSH Standards
- D. USACE Construction Quality Management Manuel (EM-385-1-1)
- E. Construction Industry Institute (CII)
- F. OCTA Construction Management Procedures Manual
- G. OCTA Yard Safety Rules

END OF DOCUMENT

**EXHIBIT G: PERFORMANCE BOND**

**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, (\$ \_\_\_\_\_), 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 **RFP 5-4320,**  
**"Design-Build of the Hydrogen Fueling Station and Facility Modifications at Garden**  
**Grove Bus Base,"** as specified in said Agreement, which is incorporated herein to this  
bond by reference, and is required under the terms of said Agreement 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 \_\_\_\_\_, 202\_.

(SEAL)

\_\_\_\_\_  
(Contractor)

By \_\_\_\_\_

Approved:

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

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

\_\_\_\_\_  
(Surety)

By \_\_\_\_\_

**EXHIBIT H: PAYMENT BOND**



**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 \_\_\_\_\_  
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 **RFP 5-4320, "Design-Build of the Hydrogen Fueling Station and Facility Modifications at Garden Grove Bus Base,"** as specified in said Agreement, which is incorporated herein to this bond by reference, 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 9100 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 all persons named in Section 9100 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 3 of Part 64 of Division 4 of the Civil Code of California relating to Payment Bond for Public Works, including but not confined to, Civil Code Sections 8150 – 8154, inclusive and Sections 9550 - 9566, 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.

**PAYMENT BOND, PAGE 2**

**WITNESS** our hands this \_\_\_\_\_ day of \_\_\_\_\_, 202\_.

(SEAL)

\_\_\_\_\_  
(Contractor)

By \_\_\_\_\_

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

Approved:

\_\_\_\_\_  
(Surety)

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

By \_\_\_\_\_

**EXHIBIT I: GUARANTY**

**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-5-4320, "Design-Build of the Hydrogen Fueling Station and Facility Modifications at Garden Grove Bus Base"**.

- 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. Notwithstanding the foregoing, Contractor shall not be liable for any defects of design, material or equipment provided by Authority.
- 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.

**GUARANTY, PAGE 2**

Subscribed and sworn to before me

\_\_\_\_\_  
Name

this \_\_\_\_ day of \_\_\_\_\_, 202\_\_

\_\_\_\_\_  
Title

Seal of Notary

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
Date

DRAFT

**EXHIBIT J: CCO FORM**



# CONTRACT CHANGE ORDER

DATE:

PROJECT	OCTA NO	CONTRACT NO.	SUPPL NO.	CHANGE REQUESTED BY:
			N/A	<input type="checkbox"/> OWNER <input type="checkbox"/> CONTRACTOR
TO:		ACCOUNT CODE		OTHER ID
TITLE:				

You are hereby directed to make the herein described changes from the plans and specifications or do the following work not included in the plans and specifications on this contract. NOTE: This change order is not effective until approved by the Orange County Transportation Authority's Manager of Contracts Administration and Materials Management or in the case of change orders in excess of \$210,000.00 the Orange County Transportation Authority's Chief Executive Officer. Describe work to be performed, estimate of quantities, and prices to be paid. Segregate between additional work at contract price, agreed price, and force account. Unless otherwise stated, rates for rental equipment cover only such time as equipment is actually used and no allowance will be made for idle time.

## Change Work Description:

### MODIFICATIONS DUE TO THIS CHANGE ORDER:

TIME: 0 CALENDAR DAYS

PRICE: \$0.00

☐ INCREASE ☐ DECREASE

APPROVAL RECOMMENDED BY:

RESIDENT ENGINEER

DATE

APPROVAL RECOMMENDED BY:

PROJECT MANAGER

DATE

APPROVAL RECOMMENDED BY:

DIRECTOR OF RAIL PROGRAMS

DATE

APPROVAL RECOMMENDED BY:

EXECUTIVE DIRECTOR OF CAPITAL PROGRAMS

DATE

APPROVAL RECOMMENDED BY:

GENERAL COUNSEL

DATE

APPROVED BY:

CONTRACTS ADMINISTRATION AND MATERIALS MANAGEMENT

DATE

APPROVED BY:

CHIEF EXECUTIVE OFFICER

DATE

We, the Undersigned Contractor, have given careful consideration to the change and hereby agree that we will provide all equipment, furnish all materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will therefore accept as full payment the prices shown above. Additionally, we agreed that the compensation (time and cost) set forth in this Change Order comprises the total compensation due the Contractor, and all the Subcontractors and all Suppliers, for the work or change defined in this Change Order, including all impact on any unchanged work. By signing this Change Order, the Contractor acknowledges and agrees, on behalf of themselves, all Subcontractors and all Suppliers, that the stipulated compensation includes payment for all work contained in this Change Order, plus all payments for interruption of schedules, extended overhead costs, delay, and all impact, ripple effect or cumulative impact on all other work under the Contract. The signing of this Change Order shall indicate that the Change Order constitutes the total equitable adjustment owed to the Contractor, all Subcontractors and all Suppliers, and the Contractor agrees to waive all rights, without exception or reservation of any kind whatsoever, to file any further claim or request for equitable adjustment of any type, for any reasonably foreseeable cause that shall arise out of or as a result of this Change Order or the impact of this Change Order on the remainder of the work under this Contract.

ACCEPTED BY:

CONTRACTOR

DATE

NAME

TITLE

If the Contractor does not sign acceptance of this order, their attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.

DRAFT

**EXHIBIT K: FORMS**



**PROPOSAL DOCUMENT SUBMISSION CHECKLIST**

**RFP NO. 5-4320**

*Design-Build of the Hydrogen Fueling Station and Facility Modifications at Garden Grove Bus Base*

The Orange County Transportation Authority has prepared this checklist as a reminder of the documents required to be submitted with the proposal.

**THE FOLLOWING DOCUMENTS MUST BE SUBMITTED WITH THE TECHNICAL PROPOSAL:**

	<b>Proposal Exceptions and/or Deviations (Form B)</b> <i>Any exceptions and/or deviations to the technical or contractual requirements should be submitted. A new form should be used for each exception and/or deviation</i>
	<b>Campaign Contributions Disclosure Form (Form E)</b> <i>Form to be completed by all members of the design-build team regardless of whether a campaign contribution has been made or not</i>
	<b>Status of Past and Present Contracts Form (Form F)</b> <i>Signed, dated</i>
	<b>Offeror's Certificate of Compliance Regarding Workers Compensation Insurance (Form G)</b> <i>Signed and dated</i>
	<b>Offeror's Certificate of Compliance Regarding State of California Business and Professions Code Section 7028.15 (Form H)</b> <i>Signed, dated, notarized</i>
	<b>Non-Collusion Declaration Form (Form I)</b> <i>Signed, dated</i>
	<b>Iran Contracting Certification (Form J)</b> <i>Signed, dated</i>

**THE FOLLOWING DOCUMENTS MUST BE SUBMITTED WITH THE PRICE PROPOSAL:**

	<b>Proposal Bond Form (Form C) - <u>Proposal Bond</u> or <u>Check</u> (circle one)</b> <i>Correct RFP number, signed, dated, notarized (proposal bond)</i>
	<b>List of Subcontractors (Form D)</b> <i>License Number- address/ name should match that associated with License # on CSLB website, DIR Registration Number, Description of work (one subcontractor for each portion), Dollar amount and Bidders name at bottom of form</i>

**THE FOLLOWING ARE REQUIRED AT THE TIME OF CONTRACT AWARD:**

	<b>Performance Bond</b> <i>In the amount of one hundred percent of the full amount of the contract</i>
	<b>Payment Bond</b> <i>In the amount of one hundred percent of the full amount of the contract</i>
	<b>Guaranty</b> <i>Executed and notarized</i>
	<b>Insurance Certificate</b> <i>Must meet the requirements set forth in the proposed Agreement</i>

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Print Name and Title

\_\_\_\_\_  
Firm Name

\_\_\_\_\_  
Date

**PROPOSAL EXCEPTIONS AND/OR DEVIATIONS**

The following form shall be completed for each technical and/or contractual exception or deviation that is submitted by Offeror for review and consideration by Authority. The exception and/or deviation must be clearly stated along with the rationale for requesting the exception and/or deviation. If no technical or contractual exceptions or deviations are submitted as part of the original proposal, Offerors are deemed to have accepted Authority's technical requirements and contractual terms and conditions set forth in the Scope of Work (Exhibit A) and Proposed Agreement (Exhibit B). Offerors will not be allowed to submit this form or any contractual exceptions and/or deviation after the proposal submittal date identified in the RFP. Exceptions and/or deviations submitted after the proposal submittal date will not be reviewed by Authority.

Offeror: \_\_\_\_\_

RFP No.: \_\_\_\_\_ RFP Title: \_\_\_\_\_

Deviation or Exception No. : \_\_\_\_\_

Check one:

- Scope of Work (Technical) \_\_\_\_\_
- Proposed Agreement (Contractual) \_\_\_\_\_

Reference Section/Exhibit: \_\_\_\_\_ Page/Article No. \_\_\_\_\_

Complete Description of Deviation or Exception:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Rationale for Requesting Deviation or Exception:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Area Below Reserved for Authority Use Only:


**PROPOSAL SECURITY FORM**  
**PROPOSAL BOND**

**KNOW ALL MEN BY THESE PRESENTS:**

That, \_\_\_\_\_ as principal and Offeror 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 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 the Orange County \_\_\_\_\_ Transportation Authority's \_\_\_\_\_ as specifically set forth in documents entitled **RFP 5-4320, "Design-Build of Hydrogen Fueling Station and Facility Modifications at Garden Grove Bus Base"**, 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 Offeror), and that if said proposal 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, "Guaranty," and proof of insurance coverage within ten (10) calendar days 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 \_\_\_\_\_, 202\_\_.

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 company's printed standard form contains all of the security stipulations that protect the Authority in the above bond form.

**LIST OF SUBCONTRACTORS (EXHIBIT D)**

List only the subcontractors, which will perform work or labor or render services to the offeror in excess of one-half of one percent (1/2 of 1%) of the offeror's total bid amount. Do not list alternative subcontractors for the same work. (Use additional sheets if necessary.)

<b>Name &amp; Address Under Which Subcontractor is Licensed</b>	<b>License Number</b>	<b>DIR Registration No.</b>	<b>Specific Description of Work to be Rendered</b>	<b>Small Business Y/N</b>	<b>Type</b>	<b>Dollar Amount</b>
						\$
						\$
						\$
						\$
						\$
						\$
<b>TOTAL VALUE OF SUBCONTRACTED WORK</b>						\$

Offeror's Name \_\_\_\_\_

**CAMPAIGN CONTRIBUTION DISCLOSURE FORM**

**Information Sheet**

**ORANGE COUNTY TRANSPORTATION AUTHORITY**

The attached Campaign Contribution 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 OCTA 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 \$500 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 12 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 \$500 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 \$500 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 \$500 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 Campaign Contribution 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 other contracts specified in Government Code Section 84308), 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 \$500 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 California Code of Regulations, Title 2 Sections 18438-18438.8.

ORANGE COUNTY TRANSPORTATION AUTHORITY  
CAMPAIGN CONTRIBUTION DISCLOSURE FORM

RFP Number: \_\_\_\_\_ RFP Title: \_\_\_\_\_

Was a campaign contribution made to any OCTA Board Member within the preceding 12 months, regardless of dollar amount of the contribution by either the proposing firm, proposed subconsultants and/or agent/lobbyist? Yes \_\_\_\_\_ No \_\_\_\_\_

**If no**, please sign and date below.

**If yes**, please provide the following information:

Prime Contractor Firm Name: \_\_\_\_\_

Contributor or Contributor Firm's Name: \_\_\_\_\_

Contributor or Contributor Firm's Address: \_\_\_\_\_

Is Contributor:

- |   |           |          |
|---|-----------|----------|
| <input type="radio"/> The Prime Contractor  | Yes _____ | No _____ |
| <input type="radio"/> Subconsultant   | Yes _____ | No _____ |
| <input type="radio"/> Agent/Lobbyist hired by Prime<br>to represent the Prime in this RFP | Yes _____ | No _____ |

Note: Under the State of California Government Code section 84308 and California Code of Regulations, Title 2, Section 18438, campaign contributions made by the Prime Contractor and the Prime Contractor's agent/lobbyist who is representing the Prime Contractor in this RFP must be aggregated together to determine the total campaign contribution made by the Prime Contractor.

Identify the Board Member(s) to whom you, your subconsultants, and/or agent/lobbyist made campaign contributions, the name of the contributor, the dates of contribution(s) in the preceding 12 months and dollar amount of the contribution. Each date must include the exact month, day, and year of the contribution.

Name of Board Member: \_\_\_\_\_

Name of Contributor: \_\_\_\_\_

Date(s) of Contribution(s): \_\_\_\_\_

Amount(s): \_\_\_\_\_

Name of Board Member: \_\_\_\_\_

Name of Contributor: \_\_\_\_\_

Date(s) of Contribution(s): \_\_\_\_\_

Amount(s): \_\_\_\_\_

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

\_\_\_\_\_  
Signature of Contributor

\_\_\_\_\_  
Print Firm Name

\_\_\_\_\_  
Print Name of Contributor



**ORANGE COUNTY TRANSPORTATION AUTHORITY  
AND AFFILIATED AGENCIES**

**Board of Directors**

**Doug Chaffee, Chair**

**Jamey Federico, Vice Chair**

**Valerie Amezcua, Director**

**Mike Carroll, Director**

**Jon Dumitru, Director**

**Katrina Foley, Director**

**Patrick Harper, Director**

**Michael Hennessey, Director**

**Fred Jung, Director**

**Stephanie Klopfenstein, Director**

**Carlos Leon, Director**

**Janet Nguyen, Director**

**Tam Nguyen, Director**

**Vicente Sarmiento, Director**

**John Stephens, Director**

**Mark Tettermer, Director**

**Donald Wagner, Director**

**STATUS OF PAST AND PRESENT CONTRACTS FORM**

On the form provided below, Offeror/Bidder shall list the status of past and present contracts where the firm has either provided services as a prime vendor or a subcontractor during the past five (5) years in which the contract has been the subject of or may be involved in litigation with the contracting authority. This includes, but is not limited to, claims, settlement agreements, arbitrations, administrative proceedings, and investigations arising out of the contract.

A separate form must be completed for each contract. Offeror/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. Offeror/Bidder shall also provide a brief summary and the current status of the litigation, claims, settlement agreements, arbitrations, administrative proceedings, or investigations. If the contract was terminated, list the reason for termination.

Offeror/Bidder shall have an ongoing obligation to update the Authority with any changes to the identified contracts and any new litigation, claims, settlement agreements, arbitrations, administrative proceedings, or investigations that arise subsequent to the submission of the bid. Each form must be signed by an officer of the Offeror/Bidder confirming that the information provided is true and accurate.

<b>Project city/agency/other:</b>	
<b>Contact Name:</b>	<b>Phone:</b>
<b>Project Award Date:</b>	<b>Original Contract Value:</b>
<b>Term of Contract:</b>	
<b>(1) Litigation, claims, settlements, arbitrations, or investigations associated with contract:</b>	
<b>(2) Summary and Status of contract:</b>	
<b>(3) Summary and Status of action identified in (1):</b>	
<b>(4) Reason for termination, if applicable:</b>	

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

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

**OFFEROR'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."

Name of Offeror/Contractor: \_\_\_\_\_

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

Title: \_\_\_\_\_

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

**OFFEROR'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 Offeror in the attached bid are true and correct.

Name of Offeror/Contractor: \_\_\_\_\_

Signed: \_\_\_\_\_

Title: \_\_\_\_\_

Subscribed to and sworn before me, a Notary Public in and for the State of California, on \_\_\_\_\_, 202\_\_.

\_\_\_\_\_  
Notary Public

My commission expires on:

\_\_\_\_\_, 202\_\_.

(NOTARY SEAL)

**Non-Collusion Declaration to be  
Executed by Offeror and Submitted with Proposal**

To the Orange County Transportation Authority  
The undersigned declares:

I am the \_\_\_\_\_ of \_\_\_\_\_, the party making the foregoing bid. In accordance with Title 23 United States Code Section 112 and Public Contract Code Section, 7106 the offeror declares that the bid is not made in the interest of, or on the behalf of, any undisclosed person, partnership, company, association, organization or corporation. The bid is genuine and not collusive or sham. The offeror has not directly or indirectly induced or solicited any other offeror to put in a false or sham bid, or that anyone shall refrain from bidding. The offeror has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the offeror or any other offeror, or to fix any overhead, profit, or cost element of the bid price, or of that of any offeror, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract. All statements contained in the bid are true. The offeror has not, directly, or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

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

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

Name of Offeror: \_\_\_\_\_

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

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

**IRAN CONTRACTING ACT CERTIFICATION**

(California Public Contract Code Sections 2200, *et seq.*)

The Iran Contracting Act of 2010 (PCC Sections 2200-2208), prohibits offerors who are engaged in investment activities in the energy sector of Iran from bidding on, submitting proposals for, or entering into or renewing contracts with public entities for goods or services of one million dollars (\$1,000,000) or more. At the time of submitting a bid, each offeror must certify that the offeror is not identified on the Department of General Services list of ineligible persons pursuant to PCC Section 2203(b). Each offeror is also required to certify that the offeror is not engaged in investment activities in violation of the Iran Contracting Act of 2010.

A offeror who is engaged in investment activities in the energy sector of Iran is defined as:

1. A person providing goods or services of twenty million dollars (\$20,000,000) or more in the energy sector of Iran, including a person that provides oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran; or
2. A person that is a financial institution that extends twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that person will use the credit to provide goods or services in the energy sector in Iran and is identified on a list created pursuant to PCC Section 2203(b).

A offeror is not required to certify that it is engaged in investment activities in the energy sector of Iran if the offeror is exempt from the certification under PCC Section 2203(c) or (d). If the offeror is exempt from the certification requirement, the offeror will be required to provide documentation demonstrating the exemption.

To comply with the Iran Contracting Act of 2010, the offeror shall complete **one** of the options below. Please note: under PCC Section 2205, false certification of this form may result in civil penalties of \$250,000 or twice the amount of the contract for which false certification was made, termination of the contract, and/or ineligibility to bid on contracts for a period of three years.

**Option No. 1: Certification**

I, the official named below, certify I am duly authorized to execute this certification on behalf of the vendor/financial institution identified below, and the vendor/financial institution identified below, and any subcontractor who will perform work or labor or render services to the vendor identified below, is not on the current Department of General Services list identifying persons engaged in investment activities in the energy sector of Iran, and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person/vendor, for 45 days or more, if that other person/vendor will use the credit to provide goods or services in the energy sector in Iran and is identified on the current Department of General Services list identifying persons engaged in investment activities in the energy sector of Iran.

Vendor/Financial Institution: \_\_\_\_\_

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

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

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

**Option No. 2: Exemption**

Pursuant to PCC Section 2203(c) and (d), a public entity may permit a offeror or financial institution engaged in investment activities in Iran, on a case-by-case basis, to be eligible for, or to bid on, submit proposals for, or enter into or renew a contract with a public entity for goods or services of one million dollars (\$1,000,000) or more. If the offeror, financial institution, or any subcontractor who will perform work or labor or render services to the offeror has obtained an exemption from the certification requirement, please complete and sign below and attach the documentation demonstrating the exemption approval.

Vendor/Financial Institution: \_\_\_\_\_

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

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

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

**Option No. 3: Non-Applicability**

Pursuant to PCC Section 2203(b), a offeror or financial institution engaged in investment activities in Iran may not be eligible for, or to bid on, submit proposals for, or enter into or renew a contract with a public entity for goods or services of one million dollars (\$1,000,000) or more. If the contract is not for goods or services of one million dollars (\$1,000,000) or more, please sign below indicating that the contract is not for goods or services of one million dollars (\$1,000,000) or more and thus offeror is not required to certify and does not meet the exemption.

Vendor/Financial Institution: \_\_\_\_\_

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

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

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