Metro Gold Line Foothill Extension Construction Authority

REQUEST FOR PROPOSALS (RFP) C3005
POMONA TO MONTCLAIR
DESIGN AND ENGINEERING SERVICES

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Addendum 1 **Issued July 18, 2025**
Addendum 2 **Issued August 22, 2025**

KEY DATES

RFP Issued:	**June 26, 2025**
Last Day for Submitting Written Questions:	**September 15, 2025**
Last Day Anticipated to Respond to Questions:	**September 24, 2025**
Last Day to Receive Proposals:	**October 15, 2025**
Interview Date:	**October 29, 2025**
Board Award of Contract (anticipated):	**November 13, 2025**

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SUBJECT: **NOTICE OF REQUEST FOR PROPOSALS**

RFP C3005: **METRO GOLD LINE FOOTHILL EXTENSION CONSTRUCTION AUTHORITY POMONA TO MONTCLAIR DESIGN AND ENGINEERING SERVICES**

The Metro Gold Line Foothill Extension Construction Authority hereby invites Proposals from qualified firms or teams to provide design and engineering services for the Project, as more particularly described in Appendix 2. The Authority intends to build the Project through a construction manager at risk ("CMAR") project delivery method.

Proposals must be received by the Authority at or before 11 a.m., Pacific Time on the date indicated on the cover page of this RFP as the last day to receive Proposals. Any Proposal received after the date and time specified above will be rejected, considered nonresponsive, and returned to the Proposer unopened.

Parties interested in obtaining a copy of this RFP may do so by visiting the Authority's website at http://www.foothillgoldline.org.

All Proposers shall comply with all the provisions of this RFP.

DEFINITIONS

(a) Authority – The Metro Gold Line Foothill Extension Construction Authority.

(b) Board Member – Any one of the voting or non-voting members of the Authority's Board of Directors.

(c) Consultant – The Proposer selected to perform the Services pursuant to this RFP.

(d) Contract – The agreement resulting from this RFP, if awarded, based on the form of contract attached hereto as Appendix 3, including the Scope of Services, attached hereto as Appendix 2, and the Supplemental Contract Documents (Attachment 2 to the Scope of Services) but not including the Reference Documents.

(e) Key Personnel – The Project Manager and other individuals identified by Proposer in its Proposal pursuant to Section 2.1.3.2(a).

(f) Project – The extension of the Metro Gold Line Foothill Extension light rail transit from the City of Pomona to the City of Montclair.

(g) Proposal – The written response to this RFP submitted by a Proposer.

(h) Proposer – Firm or team (including subcontractors) that submits a Proposal in response to this RFP.

(i) Reference Documents – The documents provided in Appendix 4.

(j) RFP – This Request for Proposals, including all attachments and appendices, and the Reference Documents.

(k) Services – The services solicited in this RFP as more particularly set forth in Appendix 2.

INTERPRETATION

In this RFP, where appropriate: the singular includes the plural and vice versa; references to statutes or regulations include all statutory or regulatory provisions consolidating, amending or replacing the statute or regulation referenced; and the words "including," "includes" and "include" shall be deemed to be followed by the words "without limitation". Words such as "herein," "hereof" and "hereunder" shall refer to the entire document in which they are contained and not to any particular provision or section; words not otherwise defined that have well-known technical or construction industry meanings are used in accordance with such recognized meanings; references to persons or entities include their respective permitted successors and assigns and, in the case of governmental entities, any such governmental entity succeeding to their respective functions and capacities; and words of any gender used herein shall include each other gender where appropriate.

1.0 INSTRUCTIONS TO PROPOSERS

1.1 EXAMINATION OF RFP DOCUMENTS

By submitting a Proposal, the Proposer represents that it has thoroughly examined and become familiar with the Services and the form of contract attached hereto as Appendix 3, and that it is capable of (a) performing the Services within the established schedule, and (b) executing the Contract as described in Section 3.5.

1.2 POINT OF CONTACT

The Authority's Chief Contracting Officer and In-House Counsel, Mitchell S. Purcell, Esq., or his designee, will be the sole contact for the prospective Proposers during the procurement process. He will coordinate all managerial, administrative, and technical processes and decisions. Mr. Purcell is located at 406 East Huntington Drive, Suite 202, Monrovia, CA 91016. His e-mail address is mpurcell@foothillgoldline.org.

1.3 ADDENDA / CLARIFICATIONS

1.3.1 Addenda

The Authority may at any time modify conditions or requirements of this RFP by issuance of addenda. The Authority shall make any changes to the requirements of this RFP by written addenda only and nothing included in a written response pursuant to Section 1.3.2 or at any other time shall change or qualify in any way any of the provisions in this RFP. The Authority will not be bound by, and Proposers shall not rely on, any oral communications or representations or any written communications except to the extent set forth in an addendum to this RFP and not superseded by a later addendum to this RFP. **Proposers are responsible for checking the Authority's website for addenda, questions and responses, and other important information.**

1.3.2 Questions and Requests for Clarification

If a Proposer has questions about this RFP or requires any clarifications, the Proposer shall notify the Authority in writing in accordance with this Section. All questions and requests for clarification must be received by the Authority **at or before 11 a.m., Pacific Time** on the date indicated on the cover page of this RFP as the last day for submitting written questions. All questions and requests for clarification shall be in writing, clearly labeled "Written Questions," and emailed to Mitchell S. Purcell, Esq., Chief Contracting Officer & In-House Counsel at mpurcell@foothillgoldline.org with the email subject line "RFP C3005 - Written Questions." The Authority shall not be responsible for failure to respond to a question or request for clarification that has not been properly labeled.

Summaries of the inquiries and responses may be posted without attribution on the Authority's website at www.foothillgoldline.org. The Authority does not anticipate issuing any responses to inquiries after the date set forth on the cover page of this RFP as the last day anticipated to respond to written questions. The responses will not be considered part of this RFP or the Contract but may be relevant in resolving any ambiguities in this RFP or the Contract. Inquiries resulting in any modifications to this RFP will be documented in addenda.

1.4 SUBMISSION OF PROPOSALS

1.4.1 Date and Time

Proposals must be received at or before 11 a.m., Pacific Time on the date set forth on the cover page of this RFP as the last day to receive Proposals. Any Proposals received after the above-specified time will be rejected, considered nonresponsive, and returned to the corresponding Proposers unopened.

1.4.2 Address

Proposals shall be addressed as follows:

METRO GOLD LINE FOOTHILL EXTENSION
CONSTRUCTION AUTHORITY
Attention: Mitchell S. Purcell, Esq.
Chief Contracting Officer & In-House Counsel
406 East Huntington Drive, Suite 202
Monrovia, CA 91016

1.4.3 Submission of Proposals

The Proposer shall submit an **original, five copies and one electronic copy** of its Proposal in a sealed package, *excluding its costs of services* as required by Section 2.2, addressed as shown above, bearing the Proposer's name and address and clearly marked as follows:

Request for Proposals (RFP) C3005:
Pomona to Montclair Design and Engineering Services
Proposal Documents

The Proposer shall submit an **original, three copies and one electronic copy** of its costs of services as required by Section 2.2 in a separately sealed package, addressed as shown above, bearing the Proposer's name and address and clearly marked as follows:

Request for Proposals (RFP) C3005:
Pomona to Montclair Design and Engineering Services

Costs of Services

The electronic copies shall be provided on a flash drive in a format that is easily readable and searchable by a common desktop computer with standard software installed, such as Adobe Acrobat.

1.4.4 Acceptance of Proposals

All Proposals are valid for a period of 180 days after the date indicated on the cover page of this RFP as the last day to receive Proposals, unless the Proposer agrees to extend the validity period.

The Authority reserves the right to accept or reject any and all Proposals, or any item or part thereof, and to waive any deficiencies, informalities or irregularities in Proposals or other submittals, as applicable.

The Authority reserves the right to withdraw this RFP at any time without prior notice, and the Authority makes no representations that any contract will be awarded to any Proposer responding to this RFP. The Authority reserves the right to postpone for its own convenience the date for receipt of the Proposals and to modify any aspect of the schedule.

1.4.5 Disqualification from Future RFPs

The Authority reserves the right to disqualify any Proposer from future RFPs for an undetermined amount of time for failure to accept a contract and/or unsatisfactory performance.

1.5 PRE-CONTRACTUAL EXPENSES

The Authority shall not pay or reimburse Proposers for any pre-contractual expenses incurred by Proposers, including:

(a) Expenses incurred in connection with:

(i) Preparing a Proposal in response to this RFP;

(ii) Submitting a Proposal to the Authority; and

(iii) Negotiating with the Authority on any matter related to this RFP or a Proposal; and

(b) Any other expenses incurred by Proposer prior to the date of execution of the Contract and the issuance of a notice to proceed pursuant thereto.

1.6 [NOT USED]

1.7 PROPERTY OF THE AUTHORITY

Subject to Section 1.12, all documents submitted by the Proposer in response to this RFP shall become the property of the Authority and will not be returned to the Proposer.

1.8 LENGTH OF CONTRACT; NOTICE TO PROCEED

The Authority anticipates awarding the Contract for a term corresponding to two phases of Services. The first phase, which includes design Services, is expected to last approximately 24 months. The notice to proceed for the first phase is anticipated to authorize design for the portion of the Project in Los Angeles County and the Authority will have the option to issue a notice to proceed to authorize design for the portion of the Project in San Bernardino County as described in the Contract. The second phase, which includes the provision of design support during construction as described in Appendix 2, is expected to last approximately 48 months. The duration of each phase is subject to change based on schedules received from Proposers as well as other factors and may overlap. The Authority will authorize Services as funds are available. The Authority may extend the Contract by amendment.

1.9 PROTEST PROCEDURES

This Section 1.9 sets forth the exclusive protest remedies available with respect to this RFP. Each Proposer, by submitting its Proposal, expressly recognizes the limitation on its rights to protest contained herein, expressly waives all other rights and remedies and agrees that the decision on any protest, as provided herein, shall be final and conclusive unless wholly arbitrary. These provisions are included in this RFP expressly in consideration for such waiver and agreement by the Proposers. Such waiver and agreement by each Proposer is also consideration to each other Proposer for making the same waiver and agreement.

1.9.1 Protests Regarding RFP or Procurement Process

A Proposer may protest the terms of this RFP or the procurement process prior to the Proposal due date on the grounds that (a) a material provision in this RFP is ambiguous; (b) any aspect of the procurement process is contrary to legal requirements applicable to this procurement; or (c) this RFP exceeds, in whole or in part, the authority of the Authority. Protests regarding this RFP shall be filed only after the Proposer has informally discussed the nature and basis of the protest with the Authority in an effort to remove the grounds for protest.

Protests regarding this RFP or the procurement process shall completely and succinctly state the grounds for protest and shall include all factual and legal documentation in sufficient detail to establish the merits of the protest.

Protests regarding this RFP or the procurement process shall be filed by hand delivery to the CEO at Metro Gold Line Foothill Extension Construction Authority, 406 E. Huntington Drive, Suite 202, Monrovia, California 91016, as soon as the basis for protest is known to the Proposer, but in no event later than 10 business days before the Proposal due date, provided that protests regarding an addendum shall be filed no later than five business days after the addendum is issued. The Proposer is responsible for obtaining proof of delivery.

No hearing will be held on the protest, but the CEO, or his designee, whose decision shall be final and conclusive, shall decide it, on the basis of the written submissions. The CEO, or his designee, will distribute copies of the protest to the other Proposers and may, but need not, request other Proposers to submit statements or arguments regarding the protest and may, in his or her sole discretion, discuss the protest with the protestant. The Authority shall issue a written decision responding to each substantive issue raised in any protest to each Proposer. If necessary to correct any error, omission or ambiguity identified by the protest, the Authority will make appropriate revisions to this RFP by issuing addenda. The failure of a Proposer to raise a ground for a protest regarding this RFP or the procurement process shall preclude consideration of that ground in any protest of a selection unless such ground was not and could not have been known to the Proposer in time to protest prior to the final date for such protests. The Authority may extend the Proposal due date, if necessary, to address any such protest issues. The Authority's decision shall be final.

1.9.2 Protests Regarding Award

Protests regarding any award of the Contract shall be decided in accordance with the Authority's Administrative Code, relevant excerpts from which are attached hereto as Appendix 1.

1.10 RULES OF CONTACT

During the procurement period commencing on the date indicated on the cover page of this RFP as the date this RFP is issued, and continuing until execution of the Contract or cancellation of this procurement: (a) no Proposer including team members may communicate with another Proposer including team members through their employees, members, or agents except that subcontractors that are shared between two or more Proposers may communicate with their respective team members so long as those Proposers establish a protocol to ensure that the subcontractor will not act as a conduit of information between the Proposers; (b) unless otherwise authorized by the Authority's point of contact, a Proposer may contact the Authority only through the Authority's point of contact; and (c) no employee, member, or agent of any firm shall have any *ex parte* communications regarding this RFP with any member of the Authority's Board of Directors or staff, its advisors, agents, or any of its contractors or consultants involved with the

procurement, except for communications expressly permitted by this RFP. Any firm engaging in such prohibited communications may be disqualified at the sole discretion of the Authority. The foregoing shall not preclude any firm from participating in public meetings of the Authority's Board of Directors or formal interview with the Authority as described herein.

1.11 REFERENCE DOCUMENTS

The Reference Documents are not mandatory or binding and the Proposer is not entitled to rely on the Reference Documents. The Authority does not represent or warrant that the Reference Documents are complete, accurate or in conformity with the requirements of the RFP or Contract. The Proposer shall use, or not use, the Reference Documents at its sole risk and liability. The Authority shall not be responsible or liable for any Proposer action or forbearance in reliance on the Reference Documents.

1.12 PUBLIC RECORDS ACT

All records, documents, drawings, plans, specifications, and other material relating to the conduct of Authority business, including materials submitted by Proposers, are subject to disclosure if requested by a member of the public pursuant to the California Public Records Act (Government Code Section 6250 et seq.), and any other laws and regulations applicable to the disclosure of documents submitted under this RFP. The Authority's use and disclosure of its records are governed by such laws.

After the announcement of a recommended award, all Proposals received in response to this RFP will be subject to public disclosure. There are a very limited number of exemptions to this disclosure requirement. Under the California Constitution, these exceptions are narrowly construed in favor of disclosure. If a Proposer asserts that there are portion(s) of the Proposal which are exempt from disclosure under the Public Records Act, the Proposer must mark it as such and state the specific provision in the Public Records Act which provides the asserted exemption as well as the factual basis for claiming the exemption. For example, if a Proposer submits trade secret information, the Proposer must plainly mark the information as "Trade Secret" and refer to the appropriate section of the Public Records Act which provides the exemption, as well as provide the factual basis for claiming the exemption. Blanket, all-inclusive identifications by designation of whole pages or sections as containing proprietary information, trade secrets or confidential commercial or financial information is not permitted and shall be deemed invalid. The specific proprietary information, trade secrets or confidential commercial and financial information must be clearly identified as such.

If the Authority receives a request for information that a Proposer has marked as exempt from disclosure under the Public Records Act as described above, the Authority will provide the Proposer who submitted such information with reasonable notice to seek protection from disclosure by a court of competent jurisdiction. Under no circumstances, however, will the Authority be responsible or liable to the Proposer, submitting party, or

any other party for the disclosure of any such materials, whether the disclosure is deemed required by law, by an order of court, or occurs through inadvertence, mistake, or negligence on the part of the Authority or its officers, employees, contractors, or consultants. If the Authority chooses to withhold records from disclosure at the Proposer's request and an action is brought against the Authority to compel disclosure, the Proposer shall pay all attorney fees and litigation costs associated with defending that action, including without limitation, the Authority's and the prevailing plaintiff's attorney fees and litigation costs.

The Authority will not advise a Proposer or any other submitting party as to the nature or content of documents entitled to protection from disclosure under the California Public Records Act or other applicable laws, as to the interpretation of the California Public Records Act, or as to the definition of trade secret. The Proposer and any other submitting party shall be solely responsible for all determinations made by it under applicable laws, and for clearly and prominently marking each and every page or sheet of materials as described above. Each Proposer and any other submitting party is advised to contact its own legal counsel concerning the California Public Records Act, other applicable laws and their application to the Proposer's or any other submitting party's own circumstances.

In the event of litigation concerning the disclosure of any material submitted by the Proposer, the Authority's sole involvement will be as a stakeholder retaining the material until otherwise ordered by a court; and the Proposer shall be responsible for otherwise prosecuting or defending any action concerning the materials at its sole expense and risk. The Proposer shall reimburse the Authority for any expenses or costs of any kind that it incurs in connection with any such litigation.

2.0 PROPOSAL CONTENTS AND FORMS

2.1 FORMAT AND CONTENT

2.1.1 Presentation and Content

Proposals shall be typed and single-spaced with a minimum 11-point font on 8 ½ x 11-size paper using a single method of fastening; fonts on tables, graphics, captions, callouts and similar graphical text must be legible but may be smaller than 11-point. Proposals shall not exceed 50 pages in length, excluding resumes, forms, conflict of interest responses, the information called for in Section 2.1.3.3(c), and CPM schedule as described below. In addition, a maximum of fifteen 11 x 17-size sheets of paper may be used. Proposers are in no way obligated to use the maximum number of pages. Proposal pages shall be sequentially numbered. Proposals should not include any unnecessarily elaborate or promotional material. Lengthy narratives are discouraged.

Each Proposal must include:

(a) A letter of transmittal, as described in Section 2.1.2;

(b) The three sections described in Section 2.1.3, comprised of:

  (i) Section 1 – Qualifications, Related Experience, and Financial Stability;

  (ii) Section 2 – Staffing and Personnel / Team Organization; and

  (iii) Section 3 – Project Understanding, Plan, and Approach;

(c) The costs of services, as described in Section 2.2 (submitted separately in accordance with Section 1.4.3);

(d) The relationships disclosure described in Section 2.3; and

(e) The required forms (Attachments A through D), as described in Section 2.4.

2.1.2 Letter of Transmittal

The letter of transmittal shall be addressed to the Chief Contracting Officer & In-House Counsel and must, at a minimum, include the following:

(a) Identification of the Proposer, including full legal name, address, and telephone number;

(b) Proposed working relationship between the Proposer and subconsultants (with full legal names), if applicable;

(c) Acknowledgement of receipt of all RFP addenda, if any (if none, so state);

(d) Acknowledgement of receipt of all Proposer inquiries and Authority responses, if any (if none, so state);

(e) Name, title, address, email, and telephone number of the contact person for the Proposer's Proposal;

(f) A statement indicating that the Proposal shall remain valid for a period of not less than 180 days from the date of submittal; and

(g) The signature of the person authorized to bind the Proposer to the terms of the Proposal.

2.1.3 Proposal

Generally: Appendix 2 identifies the deliverables and tasks required for this RFP. The Proposal must identify the Proposer's approach to performing the Services in the most cost effective and efficient manner.

Specifically: A Proposer must include the following four sections in its Proposal to be considered responsive:

2.1.3.1 Section 1 - Qualifications, Related Experience, and Financial Stability

The Proposer shall:

(a) Provide a brief profile of the Proposer emphasizing the Proposer's qualifications and competence to perform the Services, including the types of services offered; the year founded; form of the organization; number, size, and location of offices; and number of employees.

(b) Describe the Proposer's experience in performing services of a similar nature to that solicited in this RFP and highlight the participation in such services by the Project Manager and other Key Personnel proposed for assignment to the Services. The Proposer shall describe experience that includes, at a minimum (NOTE: if a subconsultant is providing a particular service relevant to the experience required below, identify the subconsultant, describe the service they will provide, and describe such subconsultant's experience):

(i) Experience working with one or more public agencies that regularly handle projects larger than $100 million;

(ii) Experience working with public transit agencies on long linear projects across multiple jurisdictions;

(iii) Experience working on CMAR, design-build or progressive design-build projects;

(iv) Experience (at least five years) with designing fixed facilities of light rail systems, including drainage, track, and stations;

(v) Experience (at least five years) with designing systems of light rail systems;

(vi) Experience (at least five years) with designing Metrolink systems and fixed facilities, including train control, track and stations;

(vii) Experience as a State of California Registered Land Surveyor providing property boundary survey (field/office) and aerial mapping and orthographic projections; and

(viii) Experience in the development of utility rearrangement drawings.

(c) (i) Identify subconsultants, if any, by company name (full legal name), address, contact person, telephone number, the specialty area they will be involved in, and any other relevant information, and (ii) describe the Proposer's experience in working with each subconsultant.

(d) Provide a minimum of three references from projects cited as related experience (one of which must be from a public agency). The Proposer shall furnish the name, title, address, and telephone number of the person(s) at the client organization who is most knowledgeable about the services performed. Additionally, the Proposer may supply references from other services not cited in this section as related experience.

(e) Provide a general description and evidence of the Proposer's financial condition and ability to manage the financial demands of performing the Services; and identify any conditions (*e.g.,* bankruptcy, pending litigation, planned office closures, impending merger) that may impede the Proposer's ability to perform the Services. The Proposer shall include any relevant information regarding current and/or projected workload.

2.1.3.2 Section 2 – Staffing and Personnel / Team Organization

This section of the Proposal should highlight the Proposer's management, technical team, and organization. The Proposer shall:

(a) Identify the Project Manager, with primary responsibility for all Services, and the other Key Personnel for the Key Personnel positions identified in Appendix 2 and include major areas of subcontract Services, if any.

In addition to the above, provide a matrix showing the individuals proposed to perform the Services, including which individuals have lead responsibility

for each area of the Services, their company affiliation, the specific task(s) for which they are being proposed, and their availability (hours per week).

(b) Provide a description of the experience, education, and applicable professional credentials of the Project Manager and other Key Personnel, including a detailed description of their involvement in any experience described in Section 2.1.3.1.

(c) Furnish brief resumes (not more than two pages each) for the proposed Project Manager and other Key Personnel.

(d) Include a personnel / team organization chart (and description, if needed) which clearly delineates communication and reporting relationships between the Project Manager and other Key Personnel, including subconsultants.

(e) Include a statement that the proposed Project Manager and other Key Personnel will be available for the workload proposed for the term of Contract and acknowledging that Key Personnel shall not be removed, replaced and/or materially less available than indicated in the Proposal without the prior written concurrence of the Authority.

2.1.3.3 Section 3 - Project Understanding, Plan, and Approach

The Proposer shall provide a project work plan in the form of a detailed narrative that (1) addresses both its management and technical approach to performing the Services in the most cost-effective manner and (2) shows the Proposer's understanding of the needs and requirements of the Authority in this RFP. As part of its project work plan, the Proposer shall include the following:

(a) The Proposer's understanding of the Services and the Project, including the Proposer's Project Manager including the availability of such individual to perform his/her responsibilities.

(b) The Proposer's approach for managing the Services, including the individuals within the Proposer's organization who will have lead responsibility for each task; and the availability of such individuals to perform their responsibilities.

(c) The Proposer's approach for completing the Services, including a description of each task and subtask required to complete each phase of the Services. The Proposer shall include the labor hours associated with each task and subtask required to perform the Services (*without reference to costs and in addition to any information included in the costs of services*) and identification of which individuals within the Proposer's organization, including their company affiliation, will have specific responsibility for them. To the extent the Proposer believes that tasks and subtasks not included in the Services should be part of the Services, the Proposer shall identify the

tasks and assign labor hours to accomplish those tasks (*without reference to costs and in addition to any information included in the costs of services*). The Proposer shall identify which single individual within the Proposer's organization will have lead responsibility for the Services and indicate the availability of such individual to perform his/her responsibilities.

(d) A Critical Path Method (CPM) schedule identifying the timeframes and sequence for each of the tasks and deliverables identified in Appendix 2 as well as a plan demonstrating the Proposer's capability to meet such a schedule.

2.2 COSTS OF SERVICES

The Proposer shall submit in a separately sealed package as described in Section 1.4.3:

(a) For the Services, a matrix showing total cost by phase, task and subtask by month, separately including any tasks and subtasks not included in the Services that the Proposer believes should be part of the Services.

(b) A completed Attachment E (*Bit Item List*) with proposed pricing. All pricing for the Services shall be inclusive of all of Proposer's profit and overhead and all costs that might be expended in pursuit of performing the Services, including, but not limited to, any equipment, labor, materials, payroll, overhead and administrative costs, travel and living expenses, licenses, insurance, incidentals, and any other fees or expenses expended or incurred when necessary for the performance of the Services.

(c) The hourly rates as shown on Table 2.2(b) shall be used to calculate the milestone amounts and changes to such milestone amounts for any additional services, should additional services be requested by the Authority. All hourly rates shall be fully-loaded and inclusive of all expenses that will be charged to the Authority, including, but not limited to, hourly rates for labor, software costs, software maintenance costs, implementation fees, shipping, insurance, communications, documentation reproduction, and all expenses, such as travel, meal reimbursement, hotel per diems, and taxes.

Table 2.2(b) Services Hourly Rates	
Project Manager	$[●]
[Other Key Personnel]	$[●]
[●]	$[●]
[●]	$[●]

(d) For the Services, a full set of Form 60s in the form set forth as Exhibit D to the Contract.

(e) The information provided pursuant to this Section 2.2 shall not be part of the evaluation and shall be subject to negotiation before award.

2.3 CONFLICT OF INTEREST

The Proposer shall disclose any relationships between any employee or other person connected with the Proposer and its team members and any employee or other person connected with the Authority, through family, business or other relationships. If the Proposer has no such relationships, respond by indicating no such relationships exist.

By submitting a Proposal, Proposer is certifying that at the time of the submission of the Proposal, Proposer and its team members have no contractual or other relationships which would create any actual or perceived conflict of interest, except as disclosed above in its relationships disclosure and on its Organizational Conflicts of Interest Disclosure Statement (Attachment A). Proposer further certifies that, if awarded the Contract, Proposer, its team members, and any employees of the foregoing shall not acquire any other contractual relationships during the term of the Contract which would create such a conflict.

The Authority will evaluate actual or perceived conflicts on a case-by-case basis. The Authority shall, at its sole discretion, determine whether a conflict of interest exists and qualify or disqualify firms or teams accordingly.

2.4 REQUIRED FORMS

(a) The Proposer, on behalf of its entire team, must complete and submit the form entitled “Organizational Conflicts of Interest Disclosure Statement” provided as Attachment A.

(b) In conformance with the statutory requirements of the State of California Government Code Sections 84308 and 87100, part of Political Reform Act and Title 2, California Code of Regulations 18438 through 18438.8 and California Public Utilities Code 132410, regarding campaign contributions and gifts to members of appointed Boards of Directors and governing bodies and staff members, Proposer and each team member must complete and submit the forms provided as Attachments B and C.

(c) Proposer and each team member must complete and submit the form entitled “Iran Contracting Certification” provided as Attachment D.

(d) See Section 2.2(b) regarding submittal of the form entitled “Bid Item List” provided as Attachment E.

3.0 EVALUATION AND AWARD

3.1 EVALUATION PROCEDURE

An evaluation team, including Authority staff, and may include outside agency representatives and/or representatives from local cities and municipalities, will evaluate the Proposals based on responsiveness and the criteria set forth in Section 3.2 and will evaluate the interviews based on the criteria set forth in Section 3.3.

The Authority will score the Proposals as follows:

Total Proposal Score (maximum 150 points) = Proposal Score (maximum 100 points) + Interview Score (maximum 50 points)

The evaluators in applying the evaluation criteria to the Proposals may consider additional sub-criteria beyond those listed and information outside of a Proposal otherwise available to the evaluators.

The Authority may engage in communications with the Proposers after receipt of Proposals, allowing Proposers to provide clarifications to their Proposals. This process will be initiated by delivery of a written request from the Authority to the Proposer identifying the information needed and a date and time by which the information must be provided. The Proposer shall provide the requested information in writing by the date and time indicated. If the requested information is not timely received, the Proposer's Proposal score may be adversely affected and/or the Proposal may be declared nonresponsive.

During the evaluation period, the Authority shall conduct interviews with some or all of the firms or teams. The date indicated on the cover page of this RFP as the Interview Date has been established as the date on which interviews will be conducted. All Proposers are advised to keep this date available. If the Proposer is unable to attend the interview on the date of its scheduled interview, its Proposal may be eliminated from further consideration.

Based on the evaluation team's review and scoring of the Proposals and the interviews, and without review of the costs of services separately submitted by Proposers, the evaluation team will rank the highest scoring Proposer first, the next highest scoring Proposer second, and so on and so forth.

If the Proposer or anyone representing the Proposer offers or gives any advantage, gratuity, bonus, discount, bribe, or loan of any sort to the Authority, including agents or anyone representing the Authority at any time during the procurement process, the Authority shall immediately disqualify the Proposer and the Proposer shall not be entitled to any payment.

Subject to Section 1.12, the Authority reserves the right to disclose information contained in Proposal to the public.

Practices which might result in unlawful activity, including rebates, kickbacks, or other unlawful consideration, are strictly prohibited under this RFP.

3.2 PROPOSAL EVALUATION CRITERIA

The evaluation criteria, listed below, are described in terms of the evaluation factors along with a maximum score indicated in parenthesis:

3.2.1 Qualifications, Competence, Related Experience, and Financial Stability (40 points)

Proposers (and their team members, as applicable) will be evaluated as to whether and to what degree they (a) are qualified and competent to perform the Services, (b) have substantial and positive experience performing services as described in Section 2.1.3.1(b), including experience working with one or more public agencies that regularly handle projects larger than $100M, (c) provide references that support their qualifications, competency, and experience and (d) are financially stable and able to handle the financial demands of performing the Services.

3.2.2 Staffing and Personnel / Team Organization (40 points)

Proposers (and their team members, as applicable) will be evaluated as to whether and to what degree they present (a) a well-qualified and experienced Project Manager and other Key Personnel, particularly as it relates to conducting services similar to the Services, including experience working with one or more public agencies that regularly handle projects larger than $100M, (b) a Project Manager and other Key Personnel deeply involved with any experience discussed in Section 2.1.3.1(b), (c) a clear and logical personnel / team organization, and (d) a statement agreeing to the restrictions on changes in Key Personnel set forth in Section 2.1.3.2(e).

3.2.3 Project Understanding, Plan, and Approach (20 points)

Proposers (and their team members, as applicable) will be evaluated as to whether and to what degree they (a) convey a clear understanding of the Services, (b) set forth an efficient, complete, and effective approach to performing the Services, (c) reflect a strong understanding and approach to each task and subtask required to complete the Services, including any recommended tasks not included in the Services, (d) a reasonable labor hours commitment and indication of availability, and (e) propose a realistic schedule identifying a timeline for deliverables which meets or beats project deadlines along with a plan demonstrating the capability to meet such a schedule.

3.3 INTERVIEW EVALUATION CRITERIA

After the Proposals have been evaluated, the Authority will interview each responsive Proposer. The interview will consist of a presentation by the Proposer addressing (i) how the Proposer plans to work with the Authority on the Project, (ii) how the Proposer team is organized, and (iii) the Proposer's Project understanding, plan, and approach. The

presentation will be followed by a round of questions by the interviewers and closing remarks by the Proposer. The Authority will provide additional details regarding the interviews prior to the interviews.

The Interview Score will be based on the following:

(a) The effectiveness of the Proposer's plan to work with the Authority (maximum of 5 points);

(b) The effectiveness of the Proposer's organization (maximum of 10 points);

(c) The Proposer's Project understanding, plan, and approach (maximum of 15 points); and

(d) The Proposer's responses to questions (maximum of 20 points).

3.4 CONTRACT AWARD

After the evaluation procedure described in Section 3.1 has been completed, the separately sealed costs of services from each Proposer will be opened and reviewed. The Authority will notify the highest ranked Proposer that it is the number one ranked Proposer and, within 14 days of delivery of such notice, will begin negotiations with such Proposer, including aspects of the Proposal that will be incorporated into the Contract. The Authority will notify the Proposer if the Authority requires more time before the start of negotiations. Prior to the start of negotiations, the Authority will provide the Proposer with written instructions for the negotiations to allow the negotiations to proceed in an orderly fashion. In the event the Authority is unable to conclude negotiations with the Proposer ranked number one, the Authority will terminate negotiations with such Proposer and conduct negotiations with the second ranked Proposer, and so on and so forth. If the Authority successfully concludes negotiations with a Proposer, the Authority may make a recommendation for award of the Contract to the Authority's Board of Directors. Any decision to commence negotiations and the extent and nature of such negotiations are at the Authority's sole discretion. The Authority's Board of Directors will be responsible for making the decision of whether to award the Contract to such Proposer.

Prior to the negotiations and/or award of the Contract, the selected Proposer team members may be required to submit to a pre-award audit of their financial records to confirm claims of financial stability, determine allowable overhead rates, and ascertain the capacity of the firm's accounting systems to meet the internal controls necessary to account for state and local funds from various transportation sources.

The Authority reserves the sole right to determine whether or not a consultant will be selected and a contract awarded as a result of this RFP. The Authority may cancel this procurement, commence a new procurement for part or all of the Project, or issue an addendum at any time. Issuance of this RFP does not guarantee that a contract for the Services will be awarded.

The Proposal shall not limit, modify or alter the Authority's ability to approve all submittals and plans under the Contract (where such approvals are indicated or required).

3.5 EXECUTION OF CONTRACT

By submitting its Proposal, each Proposer commits to enter into the Contract, without negotiation or variation, except to fill in blanks. Following award and the conclusion of negotiations, if any, the Authority will finalize the Contract by filling in blanks, correcting any errors, and including other necessary information. The Authority will notify the Proposer if more than 45 days after award and conclusion of negotiations, if any, are necessary to complete the Contract. Within five business days after delivery by the Authority to the successful Proposer of the execution Contract, the successful Proposer shall deliver to the Authority the following:

(a) Signed Contract (5 executed duplicate originals);

(b) Insurance certificates showing compliance with coverages required in the Contract in a form satisfactory to the Authority as well as any other evidence showing such required coverages as may be requested by the Authority;

(c) Evidence as to the authority of the signatories to the Contract; and

(d) Evidence of any required licensing (for instance, professional registration information for the Proposer's officer, director, employee or agent in responsible charge).

Failure to comply with the above may result in termination of negotiations and/or cancellation of award, in which case, the Authority may (but is not obligated to) proceed to negotiate with the next highest ranked Proposer in accordance with Section 3.4.

The Contract shall not be effective until it has been signed by both the Proposer and the Authority.

3.6 NOTIFICATION OF AWARD AND DEBRIEFING

Each Proposer that submits a Proposal shall be notified in writing regarding the Proposer that was awarded the Contract (if any). Such notification shall be made within 14 working days after the Contract award is made.

Proposers that were not awarded the Contract may obtain an explanation and/or response concerning the strengths and weaknesses of their Proposals. Unsuccessful Proposers that wish to be debriefed must request the debriefing in writing, and the Authority must receive the request within three working days of their notification of the Contract award to another Proposer.

4.0 EQUAL EMPLOYMENT OPPORTUNITY AND SMALL BUSINESS ENTERPRISE

4.1 POLICY

It is the policy of the Authority that Small Business Enterprises (SBEs) shall have a significant opportunity to participate in the performance of contracts. A firm is considered an SBE if it is certified as an SBE (i) by the California Department of General Services ("DGS"), the Los Angeles County Metropolitan Transportation Authority, or the City of Los Angeles; or (ii) by another recognized body acceptable to the Authority whose certification processes generally provide for a business size consistent with 13 CFR Part 121, a quality of SBE ownership that is real and substantial, and ownership discretion and control indicating true independence and discretion of the SBE. The Proposer shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age or national origin.

4.2 EQUAL OPPORTUNITY OBLIGATION OF THE PROPOSER

In connection with its proposed performance under this RFP, the Proposer shall not discriminate against any employee or applicant for employment, or harass or allow harassment of any employee because of race, religion, color, sex, age or national origin. The Proposer shall 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 are not 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.

4.3 LABOR COMPLIANCE

Consultant shall be required to submit timecards for the applicable period with their invoices for all staff and subconsultants.

ATTACHMENTS

ATTACHMENT A	**Organizational Conflicts of Interest Disclosure Statement**
ATTACHMENT B	**Campaign Contribution Disclosure Form**
ATTACHMENT C	**Gift Disclosure Form**
ATTACHMENT D	**Iran Contracting Certification**
ATTACHMENT E	**Bid Item List**

ATTACHMENT A – ORGANIZATIONAL CONFLICTS OF INTEREST DISCLOSURE STATEMENT

METRO GOLD LINE FOOTHILL EXTENSION CONSTRUCTION AUTHORITY

1. Policy

An organizational conflict of interest means that because of other activities, relationships, or contracts, a Proposer or one of its team members (each a "consultant") is unable, or potentially unable, to render impartial assistance or advice to the Authority; a consultant's objectivity in performing the contract services is or might be otherwise impaired; or a consultant has an unfair competitive advantage.

2. Disclosure

In the space provided below, and on supplemental sheets as necessary, identify all relevant facts relating to past, present or planned interest(s) of the Proposer and its team members which may result, or could be viewed as, an organizational conflict of interest in connection with this RFP.

_____

_____

_____

_____

_____

_____

_____

_____

3. Explanation

In the space below, and on supplemental sheets as necessary, identify steps that have been or will be taken to avoid or mitigate any organizational conflicts of interest described herein.

_____

_____

_____

_____

_____

4. Certification

The undersigned hereby certifies that, to the best of his or her knowledge and belief, no interest exists that is required to be disclosed in this Organizational Conflicts of Interest Disclosure Statement, other than as disclosed above.

_____
Signature

_____
Name

_____
Title

_____
Proposer Name

ATTACHMENT B – CAMPAIGN CONTRIBUTION DISCLOSURE

METRO GOLD LINE FOOTHILL EXTENSION CONSTRUCTION AUTHORITY

Campaign Contribution Disclosure Information Sheet

The attached Campaign Contribution Disclosure Form must be completed by any person submitting a statement of qualifications, proposal or bid to enter into a contract or subcontract with the Metro Gold Line Foothill Extension Construction Authority (the "Authority"). If no such contributions have been made, such person shall sign and so indicate on the form.

Important Notice

The basic provisions of Government Code Section 84308, 2 Cal. Adm. Code Section 18438.8 and Public Utilities Code Section 132410 as applicable to contractors, prospective contractors and subcontractors are as follows:

I. If you are a contractor with or a prospective contractor or subcontractor with the Authority you are prohibited from making a campaign contribution of more than $500 to any Board Member or his or her alternate or other officer of the Authority. This prohibition begins on the date the Authority releases documents requesting statements of qualifications ("RFQ"), requests for proposals ("RFP") or invitations for bid ("IFB") and ends 12 months after the Board of Directors awards the contract. In addition, no Board Member or alternate or Authority officer may solicit or accept a campaign contribution of more than $500 from you during this period.

II. 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 the contract. Also included are parent companies and subsidiary companies directed and controlled by you, and political action committees directed and controlled by you.

III. You and your subcontractors must file the attached disclosure form and disclose whether you or your agent(s) have contributed more than $500 to any Board Member or his or her alternate or any other Authority officer during the 24 month period preceding the release of the RFQ, RFP or IFB.

IV. To determine whether a campaign contribution of more than $500 has been made by you, campaign contributions made by you within the preceding 24 months must be aggregated with those made by your majority shareholder (if a closely held corporation), your subcontractor(s), your joint venture(s), and your partner(s) in the proceeding. Campaign contributions made to different Members of the Board of Directors or their alternates or different Authority officers are not aggregated.

V. If you or your agent have contributed more than $500 to any individual Board Member or his/or her alternate or other Authority officer during the 24 months preceding the decision to award the contract, that Board Member or alternate or other Authority officer must disqualify himself or herself from the decision. However, disqualification is not required if the Board Member or alternate or other Authority officer returns the campaign contribution within 30 days from the time the recipient knows, or should have known, about both the contribution and the fact that you have indicated a desire to enter into a contract with the Authority.

VI. The Campaign Disclosure Form shall be completed and filed with your statement of qualification, proposal and bid.

A list of the Board Members and alternates and other Authority officers is attached.

This notice summarizes the major requirements of Government Code Section 84308 of the Political Reform Act, 2 Cal. Adm. Code Sections 18438.8 and Public Utilities Code Section 132410. You should consult these statutes and regulations for specific information.

CAMPAIGN CONTRIBUTION DISCLOSURE FORM

Contractor's or Subcontractor's Name:_____

Contractor's or Subcontractor's Address:_____

Contract Title:_____

Board Member(s) or Alternate(s) or other officer(s) to whom campaign contributions were made and dates of contribution(s) in the preceding 24 months (if none, please so state):

Name of Recipient of Contribution:_____

Name of Contributor (if other than Party):_____

Date(s):_____

Amount(s):_____

Name of Recipient of Contribution:_____

Name of Contributor (if other than Party):_____

Date(s):_____

Amount(s):_____

Name of Recipient of Contribution:_____

Name of Contributor (if other than Party):_____

Date(s):_____

Amount(s):_____

Date:_____ _____

Signature of Party and/or Agent

[Add additional sheets as necessary.]

AUTHORITY BOARD OF DIRECTORS	AUTHORITY BOARD ALTERNATES

Ed Reece	Larry Spicer
Mendell Thompson	Paul Leon
Tim Sandoval	N/A
Tim Hepburn	Bill Ruh
Gene Masuda	N/A
Daniel Evans	N/A
Alan Wapner	John Dutrey
Marlon Regisford	Dan Kopulsky

ATTACHMENT C – GIFT DISCLOSURE

METRO GOLD LINE FOOTHILL EXTENSION CONSTRUCTION AUTHORITY

Gift Disclosure Information Sheet

The attached Gift Disclosure Form must be completed by contractors, potential contractors and their subcontractors submitting a statement of qualifications, proposal or bid to enter into a contract or subcontract with the Metro Gold Line Foothill Extension Construction Authority (the "Authority"). If no such gifts have been made, such contractor, potential contractor or subcontractor shall sign and so indicate on the form.

Important Notice

Basic Provisions of Government Code Section 87100 and Public Utilities Code Section 132410:

I. Board members and their alternates and all Authority employees ("employees") of the Authority are prohibited from accepting gifts valued at more than $10 from contractors, subcontractors or potential contractors with the Authority.

II. All contractors, potential contractors and subcontractors with the Authority must file the attached disclosure form and disclose whether they have in the aggregate contributed $10 or more to any Board member or his or her alternate or any employee during the 12 month period preceding the date of submission of a response to a statement of qualifications, request for proposals or invitation for bid.

III. Board members and alternates must disqualify themselves from decisions to award a contract which will have a material financial effect on a donor of a gift of more than $10 in the preceding 12 months.

IV. A list of Board Members and their alternatives and Authority employees is attached.

V. The Gift Disclosure Form shall be completed and filed with each response to a request for a statement of qualifications, request for proposals or invitation to bid.

VI. This information sheet summarizes the provisions of Government Code Section 87100 and Public Utilities Code Section 132410. You should consult these statues for more specific information.

GIFT DISCLOSURE FORM

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

Donor's Name: _____

Donor's Address: _____

Proposed or Current Contract: _____

Board Member(s) or Alternate(s) or staff member to whom you and/or your agent made gifts in excess of $10 in the prior 12 months (if none, please so state).

Name of Recipient: _____

Date(s): _____

Amount(s): _____

Name of Person Making Gift (if other than Party): _____

Donor's Name: _____

Donor's Address: _____

Proposed or Current Contract: _____

Board Member(s) or Alternate(s) or staff member to whom you and/or your agent made gifts in excess of $10 in the prior 12 months.

Name of Recipient: _____

Date(s): _____

Amount(s): _____

Name of Person Making Gift (if other than Party): _____

Date: _____

_____

Signature of Contractor, Potential Contractor or Subcontractor

[Add additional sheets as necessary.]

AUTHORITY BOARD OF DIRECTORS	AUTHORITY BOARD ALTERNATES
Ed Reece	Larry Spicer
Mendell Thompson	Paul Leon
Tim Sandoval	N/A
Tim Hepburn	Bill Ruh
Gene Masuda	N/A
Daniel Evans	N/A
Alan Wapner	John Dutrey
Marlon Regisford	Dan Kopulsky

ATTACHMENT D – IRAN CONTRACTING CERTIFICATION

Section 2200 et seq. of the California Public Contract Code prohibits a person from submitting a proposal for a contract with a public entity for goods and services of $1,000,000 or more if that person is identified on a list created by the Department of General Services pursuant to Section 2203(b) of the California Public Contract Code. The list will include persons providing goods or services of $20,000,000 or more in the energy sector of Iran and financial institutions that extend $20,000,000 or more in credit to a person that will use the credit to provide goods or services in the energy sector in Iran. Department of General Services is required to provide notification to each person that it intends to include on the list at least 90 days before adding the person to the list.

In accordance with Section 2204 of the California Public Contract Code, the undersigned hereby certifies that:

- ☐ It is not identified on a list created pursuant to Section 2203(b) of the California Public Contract Code as a person engaging in investment activities in Iran described in Section 2202.5(a), or as a person described in Section 2202.5(b), as applicable; or

- ☐ It is on such a list but has received permission pursuant to Section 2203(c) or (d) to submit a proposal in response to RFP.

Note: Providing a false certification may result in civil penalties and sanctions.

Date: _____

Entity: _____

Signature: _____

Title: _____

ATTACHMENT E – BID ITEM LIST

#	BID ITEMS	AMOUNT
DESIGN DEVELOPMENT		
LOS ANGELES COUNTY		
1.	Mobilization	$2,000,000
2.	Submittals (e.g., design, monthly reports, and programmatic plans)	
3.	Overhead	
Total for Los Angeles County Design Development		
SAN BERNARDINO COUNTY		
4.	Mobilization	$500,000
5.	Submittals (e.g., design, monthly reports, and programmatic plans)	
6.	Overhead	
Total for San Bernardino County Design Development		
TOTAL FOR DESIGN DEVELOPMENT		
FINAL DESIGN		
LOS ANGELES COUNTY		
7.	Submittals (e.g., design, monthly reports, and programmatic plans)	
8.	Overhead	
Total for Los Angeles County Final Design		
SAN BERNARDINO COUNTY		
9.	Submittals (e.g., design, monthly reports, and programmatic plans)	
10.	Overhead	
Total for San Bernardino County Final Design		
TOTAL FOR FINAL DESIGN		

DESIGN SERVICES DURING CONSTRUCTION		
11.	Los Angeles County Design Services During Construction	
12.	San Bernardino County Design Services During Construction	
TOTAL FOR DESIGN SERVICES DURING CONSTRUCTION		
TOTAL		

1. **Each mobilization payment is six equal monthly payments**
2. **Milestone payments for each design submittal at each percent complete (30% (when applicable), 60%, 85%, 100%, AFC) to be paid when approved**
3. **Milestone payments for each programmatic plan submittal to be paid when approved**
4. **Monthly overhead cost for the management of the project to be paid on an equal monthly amount or based on manpower curve**
5. **Design services during construction to be paid on an equal monthly amount or based on manpower curve**
6. **Overhead for Design Development for Los Angeles County may not exceed 10% of the Total Los Angeles County for Design Development.**
7. **Overhead for Design Development for San Bernardino County may not exceed 10% of the Total San Bernardino County for Design Development.**
8. **Overhead for Final Design for Los Angeles County may not exceed 10% of the Total Los Angeles County for Final Design.**
9. **Overhead for Final Design for San Bernardino County may not exceed 10% of the Total San Bernardino County for Final Design.**
10. **The Services will include San Bernardino County only if Authority exercises the Montclair Design Option.**

Submitted By: _____Date:_____

Authorized Signature

On Behalf of: _____

Proposer's Name

APPENDIX 1

Administrative Code Excerpts

METRO GOLD LINE FOOTHILL EXTENSION CONSTRUCTION AUTHORITY
ADMINISTRATIVE CODE
TITLE III, CHAPTER 2, SECTION 10, AMENDED AS OF MARCH 23, 2016

SECTION 10: PROTEST PROCEDURES

A. A party that has timely submitted a bid or proposal in response to any procurement of the Authority may file a Protest objecting to the award of a contract.

B. In order for a protest to be considered properly and timely filed, the protest must:

1. Be filed in writing with the Chief Executive Officer of the Authority, within five (5) calendar days after publication of the written recommendation for award.

2. Be filed by an actual bidder or proposer responding to the procurement. No other party has standing to protest.

3. Identify the specific procurement number involved.

4. Identify the specific recommended action or decision being protested.

5. Specify in detail the grounds of the protest, the facts supporting the protest and the status of the protester.

6. Include all relevant supporting documentation with the protest at the time of submittal.

If a protest does not comply with each and all of the above six (6) requirements, the protest will not be considered and will be returned to the protester.

C. The Chief Executive Officer of the Authority will attempt to resolve a properly filed protest or perform additional fact-finding. If the Chief Executive Officer is able to resolve the protest at this stage, a letter confirming resolution shall be sent to the protester. If the Chief Executive Officer is unable to resolve the protest within five (5) calendar days from receipt, he/she will establish an independent team to evaluate the merits of the protest. The Chief Executive Officer will review the recommendation of the evaluation team and notify the protester in writing of the decision on whether or not to deny the protest.

D. If the Chief Executive Officer's decision is to deny the protest, the contract shall be recommended to the Board for award, or executed, if previously awarded by the Board subject to resolution of the protest. If the Chief Executive Officer's decision is to uphold the protest, a recommendation will be made to the Board to reject all proposals or bids, cancel the Request for Proposals or Invitation for Bids and solicit new proposals or bids, or award the contract to another proposer.

APPENDIX 2

Scope of Services

[*See Attached*]

Metro Gold Line Foothill Extension Construction Authority

REQUEST FOR PROPOSALS (RFP) C3005
POMONA TO MONTCLAIR
DESIGN AND ENGINEERING SERVICES

406 East Huntington Drive, Suite 202
Monrovia, California 91016
Phone (626) 471-9050
Fax (626) 471-9049
http://www.foothillextension.org

APPENDIX 2- SCOPE OF SERVICES

Addendum 2
August 22, 2025

Table of Contents

Scope of Services (SOS)

i. Project Summary

The SOS (Services) includes the engineering and design of all Project elements in order to provide the Authority with a fully coordinated and complete design for the extension of the A line to Montclair. The Project includes approximately 3.3 miles of double light rail main track; tail tracks beyond the interlocking east of the Montclair platform; new LRT bridges; improvements to existing culverts; retaining walls and sound walls; embankment improvements; drainage and storm water improvements; two at-grade LRT passenger stations; modifications to existing parking lots; intermodal interfaces; station public art; traction electrification system comprised of traction power supply substations (TPSS) and overhead contact system (OCS); grade crossings and adjacent roadway/traffic signal improvements; Utility work; station equipment; wayside equipment; communications systems; light rail train control/signal system; approximately 0.8 miles of freight rail track and signal system upgrades; approximately 1.7 miles of Metrolink commuter rail track relocation and corresponding signal system modifications, including data for the modification of the existing positive train control (PTC) system on the Metrolink Corridor (modifications to be completed by SCRRA) and a wireless crossing nearside station stop system (WCNSS); a new Claremont Metrolink platform; pedestrian undercrossing; landscaping; signage; and all related appurtenances, accessories, and subsystems. A general overview of the Project alignment is provided below:

Pomona Station to Freight/Metrolink Tie-in (Segment 1)

This segment of the alignment is approximately 1.2 miles of LRT track and 0.8 miles of freight track and includes an LRT grade separation at Garey Avenue, one freight at-grade crossing at Towne Avenue, as well as an LRT/freight flyover at Towne Avenue. This segment of the alignment contains an existing freight mainline track and an existing siding, both of which are to remain active and in compliance with all FRA and CPUC requirements during the entire Project. The Metrolink commuter rail tracks are immediately to the south of the LRT tracks in this segment and are not to be disturbed with the exception of improvements to the grade crossing at Towne Avenue and the WCNSS.

Freight/Metrolink Tie-in to Montclair (Segment 2)

This segment of the alignment is approximately 2.1 miles, runs mainly at-grade, and includes three LRT at-grade crossings at Cambridge Avenue, College Avenue, and Claremont Boulevard; two LRT grade separations, one at Indian Hill Boulevard and a second at Monte Vista Avenue; LRT crossing at San Antonio Wash; four freight/Metrolink commuter rail at-grade crossings at Cambridge Avenue, Indian Hill Boulevard, College Avenue, and Claremont Boulevard. This segment of the alignment contains an existing freight/Metrolink commuter rail track which shall be relocated and remain active and in compliance with all FRA and CPUC requirements during the entire Project.

This segment of the Project has two center platform LRT stations, one in Claremont (west of College Avenue) and one in Montclair (east of Monte Vista Avenue at the existing Transit Center). The Claremont LRT and Montclair LRT stations shall have at-grade pedestrian connections from both ends of the platform.

A new Metrolink station shall be constructed approximately 800 feet east of College Avenue with a pedestrian undercrossing that connects the parking facility to the north and accommodates a future connection to the recreational area to the south. The joint Claremont LRT and Metrolink parking facility shall consist of a parking structure (to be designed and built by others) located east of College Avenue and north of the LRT tracks as well as modifications to the existing Claremont Metrolink parking lot to provide approximately 46 new parking spaces on the east end with ramps and stairs to the pedestrian undercrossing to the new Metrolink platform.

The existing Montclair Transit Center parking lot shall be reconfigured to allow space for the new LRT platform, reconfiguration of the bus loop, new bus layover on Richton, and expansion of the surface parking to achieve a minimum of 1600 stalls. A pedestrian connection between the LRT and the existing Metrolink north platform shall be included. The existing transit shelters in the Project area shall be removed and replaced with new transit shelters, with the exception of one existing shelter which shall be relocated for the Metrolink ticket vending machines (TVMs). The Metrolink TVMs shall be also relocated to the shelter. An LRT operator layover building shall be provided. The existing Metrolink platform on the south shall be accessed via the extension of the pedestrian undercrossing beneath the LRT tail tracks.

ii. Adjacent Projects

The Consultant shall be responsible for coordination with other project(s) adjacent to the Project including other Authority projects. The Consultant shall review Authority and other projects planned and ensure that the affected projects are fully coordinated, and the design does not preclude requirements of the affected projects. If Consultant discovers any part of the other party's work will affect Consultant or if Consultant's design would affect the other improvements/projects, Consultant shall notify the Authority within one week of such discovery. Consultant shall check and be fully familiar with the following projects' design and construction and other documents as provided by the Authority from time to time:

- Claremont Parking Facility Project: the Claremont parking facility will be awarded to a follow-on contractor under a separate procurement approximately three years after NTP of this Contract. The limits of design and construction will be adjacent and separate from this Contract.
- Golden State Water: proposed waterlines across the railroad right-of-way at College Avenue and Claremont Boulevard.
- Adjacent Developer at San Antonio Wash: A high-density residential development project, the Marlowe Development by Trammel Crowe, is proposed on the west side of the San Antonio Wash and immediately north of the Project right-of-way. The development is an approximate 10-acre site consisting of fourteen multi-story residential buildings, four single story amenity buildings and a park/open space area.
- Claremont Santa Fe St adjacent development: A high-density residential development project, is proposed between Bucknell Avenue and Indian Hill Boulevard, immediately south of the railroad right-of-way.

iii. Interfacing Projects

The Project interfaces with Authority's Claremont Parking Facility Project. The Consultant shall coordinate with the Authority Claremont Parking Facility project team including their consultants and CMAR. Interfaces with the Authority Claremont Parking Facility project must be fully incorporated in the design.

Authority Construction Manager at Risk (CMAR) Contractor

Authority will select a CMAR contractor to provide services with respect to the construction of the Project. The Consultant shall coordinate with the CMAR, including participating in design development working group meetings with the CMAR and reviewing and resolving comments submitted by the CMAR.

iv. Project Delivery

Phases of the Services

The Services will be delivered in three phases: design development, Final Design and design services during construction. This phased approach will ensure maximum coordination with CMAR and give ample opportunity to develop cost savings measures and innovation during the Final Design.

During the design development phase the Consultant will mobilize to the project office, prepare and submit programmatic plans, conduct a workshop, familiarize itself with the project, develop required type selection reports and advance the utilities and drainage design to at least 30%. During the design development phase, the Consultant will support the CMAR evaluation of the design and contribute to the following efforts:

- Value engineering
- Design innovation
- Constructability review
- Risk analysis
- Identification of cost drivers and options to reduce costs
- Review of Metrolink relocation construction phasing and options and necessary actions to obtain approval of modifications

At the end of the design development phase, it is expected that the design packaging and design milestones will be finalized.

Once the design development phase is completed, the Final Design phase will begin. The Final Design involves advancing the design to 60%, 85%, 100%, and AFC. The 60% and 85% design packages will support the development of construction cost estimates after the 60% and 85% design submittals. During this phase it is expected that the work packages for the construction of the project will be negotiated and contracted for construction.

Once the Final Design is completed, the Consultant will begin design services during construction (DSDC) and testing support.

Design Packaging

During the design phase discussed above, the design packaging will be finalized with the input from the CMAR. Until such time as the design packaging is finalized, the preliminary design packaging is as follows:

60% Submittal

- One package (similar to ACE)

85%, 100%, AFC Submittals

- Packages for cities
- Package for Freight
- Package for Metrolink
- LRT

However, at all times, there needs to be separate design packages for Los Angeles County and San Bernadino County.

Schedule

A tentative schedule for the project is as follows:

Design Development Phase:

- Advance to 30% design: NTP to NTP+4 Months
- Project review with CMAR and Consultant: NTP+4 Months to NTP+ 8 Months

Final Design Phase:

- Advance to 60% design and begin initial CMAR pricing: NTP+ 8 Months to NTP+12 Months
- Advance to 85% design and begin final CMAR pricing: NTP+12 Months to NTP+16 Months
- Advance to 100% and AFC design, negotiate CMAR price: NTP+16 Months to NTP+24 Months

Design Services During Construction Phase:

- Design Services During Construction: NTP+24 Months to NTP+72 Months

Montclair Design Option

The design shall terminate near the Claremont station as shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings unless the Montclair Design Option is exercised. If the Montclair Design Option is exercised, the design shall terminate near the Montclair station as shown in Supplemental Contract Document 23- Montclair Option Advanced Conceptual Engineering Drawings (ACE).

SECTION 1.0 Project Management and Administration

Consultant shall regularly report the status of the project budget, work effort, progress and schedule. Consultant shall establish and chair a weekly progress meeting as described in Section 1.4. Consultant shall use systems that are compatible with already established Authority systems, policies, software, procedures, and practices. Reports must be straightforward, easy to read and understandable, logically organized and structured to provide the relevant and important information. The team's project management system shall feature safeguards for the early identification of issues and their effective resolution.

Section 1.1 Project Management Plan

Consultant shall develop a Project Management Plan (PMP) for the management of the Services, including a system for project control with necessary procedures for conducting the Services and managing resources, communications, budget, schedule, reporting project status and progress, document control, quality assurance/quality control and administration. Consultant shall provide qualified individuals to perform the SOS, including qualified individuals with experience of freight rail and SCRRA commuter rail. The Key Personnel shall not be removed and/or replaced without written authorization from Authority. The Project Manager shall be the primary point of contact with Authority and is responsible for reacting in a timely manner to correct or adjust project activities which are diverting from the adopted scope, schedule or quality. The Project Manager shall report the corrective measures to Authority for review and approval.

Where any of the Services required by this Contract is subcontracted, the Project Manager shall direct and monitor the subconsultant's work activities regarding conformance with established contract criteria and design directives and design/control quality program requirements. The Project Manager shall manage subconsultants to established budget; monitor progress and costs and prepare monthly progress reports on these matters; and conduct progress and coordination meetings weekly, or as may be requested by Authority.

Consultant shall submit a PMP to Authority for review within thirty (30) days after Notice to Proceed (NTP). Revisions to the PMP shall be due within fourteen (14) days after receipt of Authority comments.

Section 1.2 Project Controls

Consultant shall provide project control services for managing the Project with respect to Contract cost and schedule. The overall project control system to be established shall provide a standard framework for defining the Services, assigning work responsibility, establishing budgets, controlling and forecasting costs, and summarizing the monthly Contract status. Consultant shall conform to the Authority-approved policies and procedures.

Section 1.2.1 Project Schedule

Consultant shall develop, maintain and monitor the design schedule (Schedule) for the Services. Prior to submitting a draft Schedule, Consultant shall conduct the design workshop discussed in Section 2.1.3. The Schedule shall be submitted to Authority for review forty-five (45) days after NTP, with revisions to the Schedule due within fourteen (14) days after receipt of Authority's comments.

The Schedule shall be accompanied by a complete schedule basis and assumptions document that describes the general approach used to develop logic and durations as well as assumptions

regarding the basis of design. The Schedule shall be developed using Primavera P6 Professional.

Once the initial Schedule is approved, it shall be recorded as the "Baseline Schedule" and shall be submitted to Authority electronically in the ".XER" format. This Schedule shall then be updated monthly and shall be submitted at the progress meetings and shall correspond with the outcome of the progress meetings. Each updated Schedule shall be measured against the approved Baseline Schedule. Each subsequent Schedule submission shall follow the same format and is subject to Authority review and approval. Consultant shall submit a recovery schedule in the event the Project milestone deliverables are not met. The project scheduling software shall provide the necessary tools to meet Authority requirements and to ultimately support future options of this Contract.

The schedule prepared for the Services is required to take into account review periods and comment resolution related to design reviews by Authority, Third Parties, other external stakeholders, and CMAR.

Section 1.2.2 Work Breakdown Structure

Consultant shall develop a Work Breakdown Structure (WBS) that identifies the major end products resulting from the authorized Services based on the workshop described in *Section 2.1.3*. The WBS shall clearly identify, and correlate tasks and subtasks established by the SOS and PIP and shall be the basis for all project control and related reporting activities. The WBS shall subdivide work tasks into defined components and sub-components until the lowest elements represent manageable work packages assignable for control to a single operating unit for the Consultant. Coverage by WBS shall include packages of work to be performed by the Consultant, Authority staff and other Consultants of Authority who may become involved in the Project as directed by Authority. The Consultant shall submit the proposed WBS to Authority for review within thirty (30) days after NTP with revisions due within seven (7) days after receipt of Authority comments.

The WBS is to be defined and described in a Project-level "WBS Dictionary" to be prepared by the Consultant and submitted to Authority. Consultant must include hierarchical diagrams as well as narrative scope descriptions for each component level of the WBS and also a WBS organizational matrix. At a minimum, the WBS must include the work packages, discipline level, and original scope.

Section 1.2.3 Cost

Consultant shall develop a payment schedule in accordance with the established WBS and the PIP consistent with the Pricing Sheet attached to the Contract as Exhibit F. The payment schedule shall be established at a detailed level to include all drawings/deliverables, calculations, and other pertinent submittals for each discipline as well as project management and design management activities. The payment schedule shall clearly allocate costs between Los Angeles County and San Bernardino County. The payment schedule shall clearly divide the costs into the design development phase, Final Design phase and design services during construction phase. Consultant shall submit a payment schedule to Authority for review and approval within thirty (30) days after NTP. Consultant shall obtain Authority approval of revisions to the payment schedule to address contract changes. The payment schedule shall include a payment for mobilization, milestone payments for each design submittal at each percent complete (30% (when applicable), 60%, 85%, 100%, AFC), milestone payments for each programmatic plan submittal, and monthly overhead cost for the management of the project. Authority approval of the payment schedule is required prior to payment of any invoice.

Section 1.3 Progress Meetings

The Project Manager shall chair weekly progress meetings to track project activities and coordinate Key Personnel to meet milestones for the Services. Initially, meetings shall be held once a week to establish the PIP and other management information systems. Upon Authority approval, meetings shall transition to a biweekly schedule for the duration of the Contract. It is expected that the Consultant shall co-locate with the Authority project team. All meetings are to be hybrid (virtual and/or in-person), unless Authority directs that a meeting shall be in-person.

The Project Manager shall be in close communication with Authority's project manager, removing the need for more frequent meetings. For each progress meeting, Consultant shall prepare meeting agendas, meeting minutes, and a 30-day look-ahead calendar and distribute all meeting preparation materials electronically to the Authority project team at least one (1) working day prior to each progress meeting. Draft meeting minutes shall be submitted to Authority for review within two (2) working days of the meeting. Final meeting minutes shall be due within two (2) working days after receipt of Authority comments. All meeting materials must be approved by Authority prior to distribution. The progress meetings shall highlight specific sections and issues which may affect the project schedule, quality of work, and or budget.

Section 1.4 Progress Reporting and Invoicing

Section 1.4.1 Monthly Project Status Report & Payment Invoice

The Consultant shall submit a monthly progress report that conforms to Authority guidelines and is consistent with the Consultant's PIP (Monthly Progress Report). The report shall be submitted the first week of each month for the preceding month. The progress narrative shall document progress from the first day through the last day of the month. Monthly Progress Reports shall be submitted electronically in a format acceptable to Authority. The items to be presented in the Monthly Progress Report are as follows:

- Project schedule describing the percentage of each task/deliverable/milestone completed
- Project completion forecast monthly update
- Management issues, including status and action items, and any corrective actions (if necessary)
- A statement of resolution or action for resolution of identified problems that were encountered during the month
- 30-day look ahead calendar
- Monthly invoice (to be submitted with the monthly progress report)

Section 1.5 Quality Management

The Consultant shall implement an effective quality management program to ensure that the Consultant develops design documents to meet Authority's needs and requirements (Quality Management Program). The Consultant shall develop and submit within thirty (30) days of NTP for Authority review and acceptance a quality management plan and procedures covering all the Consultant's technical activities and coordination with Authority's quality program. The quality management plan and documented procedures shall meet, at a minimum, the applicable requirements of ISO 9001 describing the controls to be implemented by the Consultant to verify that design documents meet design criteria, standards, and other Contract requirements.

The Consultant's organization shall include a qualified Project Quality Manager to ensure the implementation of the Quality Management Program. The Project Quality Manager shall be

responsible for all project quality management functions, including internal design activities and external subconsultant design activities. The Consultant shall establish and maintain procedures to control and verify the design of all project elements covered by this Contract to ensure that the design criteria, the owner-specified requirements, and the requirements of the relevant regulatory agencies and other Third Parties are met. Design control includes ensuring that 1) design requirements are identified and met, 2) design planning is performed, 3) design interfaces are effectively managed, including design verification activities and interdisciplinary coordination is identified and verified, and 4) design changes are controlled. The requirements of the Quality Management Plan shall also apply to subconsultants. At a minimum, documented procedures shall be prepared by the Consultant for each: design planning/scheduling, managing design inputs or requirements, design verification, design review, interdisciplinary coordination, managing design changes, and technical or quality control checking of design outputs/documents prior to each milestone submission. Audits shall be conducted by the Consultant to verify that the design quality management plan is effectively implemented by the Consultant and subconsultants.

Section 1.6 Project Management and Administration Deliverables

- Project Management Plan
- Baseline Schedule
- Monthly updates to the Schedule
- Work Breakdown Structure
- Payment schedule
- Develop and distribute meeting materials
- Develop and distribute meeting minutes
- Monthly Progress Reports with Monthly Invoices
- Quality Management Plan

SECTION 2.0 Design Management

Section 2.1 Design Management Plan

The Consultant shall develop and maintain a Design Management Plan (DMP) which shall be appropriately cross referenced to the Project Management Plan and Quality Assurance Plan. The DMP shall contain the Interface Management Plan, Configuration Management Plan and Building Information Modeling (BIM) Implementation Plan as described below.

The DMP shall clearly define:

- Consultant’s approach to managing the design and firm roles and responsibilities including the management of subconsultants
- Consultant’s approach to coordinating with the CMAR to ensure timely identification, discussion, and resolution of design issues and comments received from the CMAR to the design
- Required Third Party design reviews and approvals
- Design schedule
- List of submittals and the submittal review process
- Design procedures for the documentation and approval of design changes at all stages of the Project

- Requirements of other active interfacing projects
- Process for internal design checks, certifications, and reviews
- Process for requests for deviations from Metro, SCRRA, or Third Party standards
- Quantity and content of design documentation and submittals to Third Parties

Consultant shall submit DMP forty-five (45) days after NTP. Consultant shall submit revisions to DMP as needed.

Section 2.1.1 Coordination with the CMAR

Authority intends to perform construction of the Project utilizing the Construction Manager at Risk (CMAR) delivery method. CMAR is an integrated approach to planning, design, and construction.

The Consultant shall work collaboratively with Authority and the CMAR. The CMAR shall be responsive to Requests for Information (RFIs) from the Consultant, perform design reviews of each design submission, and attend the Consultant's technical design meetings.

At each design submission the Consultant shall receive from the CMAR written comments regarding design and constructability issues, interface issues, work packaging, site condition surveys, construction impact reduction strategies, maintenance of traffic, cost, schedule and staging of the work. The Consultant shall resolve the mutually agreed upon CMAR comments prior to the next subsequent submission.

The Consultant shall expect the CMAR to:

- attend and actively participate in technical meetings with the Consultant, Authority, Metro, SCRRA, and other Third Parties.
- provide constructability reviews and feedback to Authority and the Consultant to identify opportunities to improve the design and to bring the best value to Authority through cost savings and schedule savings innovation.
- attend and actively participate in risk management working groups and risk workshops, led by Authority to assist with identifying, quantifying and implementing risk avoidance and mitigation strategies. The CMAR shall participate in the preparation, modification and maintenance of the Risk Register and shall continuously provide feedback on Project risk as the Final Design progresses.

The Consultant shall coordinate and work collaboratively with the CMAR, at all times, to optimize the design, improve quality, manage costs and schedule, and mitigate risk for the Project and to progress delivery of the Project, including:

- attending and actively participating in the design workshop and technical meetings, including ensuring that the applicable subconsultants attend.
- making proper allowance in the schedules and plans for the CMAR's and any other interfacing contractor's work.
- reviewing schedules and plans provided by a CMAR or any other interfacing contractor to confirm that they adequately allow for the performance of the Services.
- reviewing and resolving the mutually agreed upon CMAR comments to the design Services performed by the Consultant.
- collaborating with the CMAR on interface issues.
- being responsive to RFIs from the CMAR.
- coordinating and cooperating with the CMAR with respect to Third Party liaison and

coordination necessary to the performance of both the Services and the interfacing contractor's work.

- notifying Authority of any interface or sequence of activities under a CMAR's or other interfacing contractor's work that may affect the progress of the Services or the schedule for the delivery of the Project overall.
- doing everything reasonably necessary or reasonably directed by Authority, to ensure the effective coordination of the design and construction of the elements included under the SOS.

The Consultant shall include in the DMP their approach to coordinating and collaborating with the CMAR.

Section 2.1.2 Subconsultant Coordination

Where design work has been subcontracted by the Consultant, the Consultant shall direct and monitor the subconsultant's work activities with regards to conformance with established contract criteria and design directives, design/control quality program requirements and the coordination and interfacing requirements. The Consultant shall manage subconsultants to established budget; monitor progress and costs. The Consultant shall include in the DMP their approach to managing all subconsultant design activities.

Section 2.1.3 Design Workshop

Consultant shall conduct a design workshop to present its design understanding/approach and provide detailed information relative to the design of the items identified below. The workshop shall be held in two, four-hour segments over two consecutive days. The first segment shall cover the civil aspects, including trackwork. The second segment shall cover the Systems, as well as architecture and all other elements not previously covered. The design workshop shall be scheduled to occur 30 days after Notice to Proceed or earlier if Consultant believes the design team has a strong understanding of the Project. The primary purpose of the design workshop is to ensure the Project is being designed and coordinated in accordance with the Authority's concepts and to inform the Authority of design solutions for the Project requirements.

Section 2.1.4 Technical Meetings

The Consultant shall hold weekly discipline (separately, for: civil/trackwork, drainage, utilities, structures, stations/landscaping, and systems) and inter-discipline design meetings in coordination with the Authority to progress the Final Design. Specific focused design meetings will be held on an as-needed basis to identify/resolve open issues. A schedule of regularly held design meetings shall be included in the DMP.

The Consultant shall ensure the participation of representatives of all necessary functions, disciplines and parties concerned with the element of review and the stage being reviewed. Those representatives responsible for discipline design and inter-disciplinary integration/coordination are required to attend all periodic design review meetings. Authority (and representatives of Authority's other applicable contractors or consultants, including the CMAR) may attend and participate in all periodic design review meetings and shall receive agendas, notices, and meeting minutes regarding such meetings.

The Consultant shall submit the agenda and subject matter documents, which at a minimum shall include those design documents specifically identified for review during the periodic design review meeting, to Authority a minimum of 2 days before the meeting.

Within 2 days after the date of each periodic design review meeting, the Consultant shall submit meeting minutes to Authority detailing all issues raised during the periodic design review meeting, and their resolution or ongoing status.

Section 2.1.5 Design Submittals and Reviews

Design submittals are required at: 30% (as required by Section 3.9 and 3.25), 60%, 85%, 100% and AFC. Design packages shall include plans, calculations, and specifications. Plans, calculations and specifications shall be signed and sealed by the Engineer of Record.

For each design submittal at 30% (as noted above), 60%, 85%, 100%, and AFC, Consultant shall specifically highlight, check, and bring to the attention of Authority, the CMAR, any changes to the Plans, calculations, and specifications presented under the preceding design submittal(s).

After Consultant submits plans and technical specifications; Authority Metro, SCRRA and the CMAR shall have a thirty (30) day period to review and provide comments. Cities and other Third Parties have a forty-five (45) day review period or as otherwise noted in their respective Third Party Agreement (refer to Supplemental Contract Document 7- Third Party Agreements in Attachment 2).

Consultant shall provide responses to review comments within fifteen (15) days of receipt. After each design submittal and review (60%, 85% and 100%), an initial comment resolution meeting shall be scheduled by Consultant with Authority, to review and discuss Consultant's responses to the Authority and Third Party review comments and to determine the review comments to be incorporated into the Design Documents. After completion of the aforementioned initial comment resolution meeting, the Consultant shall schedule a joint comment resolution meeting with Authority and each Third Party to review and discuss Consultant's responses to the Third Party comments and to determine the review comments to be incorporated into the Design Documents. More than one joint comment resolution meeting per design submittal may be necessary in order to discuss all design review submittal review comments. The Consultant shall provide a comment review matrix with Consultant's responses, to each participant, a minimum of 48 hours in advance of each comment resolution meeting. The resolution of comments shall be incorporated into each subsequent submittal.

With each milestone submittal Consultant shall provide a matrix of any and all comments and unresolved design issues and provide an accounting of resolutions that have been agreed to by Authority. Authority shall provide a comment matrix template for Consultant's use.

The Consultant shall be subject to the individual submittal review/approval process of each Third Party. The Consultant shall provide Authority with written confirmation from each Third Party confirming that their comments have been resolved prior to each subsequent Third Party submission.

Consultant shall submit project deliverables electronically in the following formats:

- Drawing files in Bluebeam PDF (searchable, scaled, non-scanned wherever possible) 11x17 page format
- E-mail, letters, spreadsheets, and charts in Microsoft Office format (Outlook, Word, Excel, PowerPoint) and Bluebeam PDF (searchable, non-scanned wherever possible)
- Other documents, pictures, graphs, and like items, in Bluebeam PDF (searchable, non-scanned wherever possible) format (.tif or .jpeg as an alternative)
- Submittal reviews shall be done using Bluebeam

Authority has deployed e-Builder (Trimble Unity Construct) to facilitate tracking, administration and management reporting. Consultant shall prepare and manage project documents, including but not limited to, all management plans, submittals, change proposals, schedules, meeting

minutes, reports, and other required deliverables in the document being printed in searchable (non-scanned wherever possible) Bluebeam PDF format.

Consultant shall submit documents to Authority using e-Builder (Trimble Unity Construct). Consultant shall be provided with instructions and training for submitting documents through e-Builder (Trimble Unity Construct). All printed material submitted must have a corresponding electronic file submitted to this folder as a controlled document.

Section 2.2 Digital Project Delivery

The Consultant shall develop a Building Information Modeling (BIM) Implementation Plan for the Project and submit to Authority as part of the DMP. The Consultant shall implement BIM for design of civil, architectural, structural, utilities, mechanical, electrical and systems elements of the Project. The Consultant and its subconsultants shall use BIM on the same platform and standard with effective interoperability.

The BIM Implementation Plan shall include the following information:

- BIM Manager and BIM coordinators for each discipline
- BIM and 3D Models used for defining different Project elements
    - File format, file structure and file-naming and object-naming conventions
    - Conventions for defining critical dimensions, critical Model content, and nomenclature of the 'families' structure for the Project
- Project BIM data management tool and file collaboration system, such as Autodesk Vault or ProjectWise, and use of for managing BIM and 3D content
- Software used and measures for interoperability of software with different platforms and applications
- Data security
- Design - Quality Control and Clash Detection procedures

All 2D drawings must be produced from 3D models unless specifically defined in the Consultant's BIM Implementation Plan and approved by Authority.

Consultant must submit a list of software they intend to use for the Project in the BIM Implementation Plan for acceptance by Authority. Any updates to this software list shall require a revision to the BIM Implementation Plan, and re-submittal to Authority for acceptance.

Authority approved software includes:

- Bentley
    - MicroStation CONNECT Edition (or latest)
    - OpenRoads Designer (or latest)
    - Bentley BIM
- Autodesk
    - AutoCAD 2019 (or latest)
    - Revit (Arch, Struct, MEP) 2019 (or latest)
    - Civil 3D

Consultant shall use clash detection software, such as Navisworks. Consultant shall perform an intra- disciplinary and inter-disciplinary clash detection to resolve conflicts prior to each submittal.

All deliverables shall be produced in accordance with the MRDC CADD Standards Revision 3: 09/12/2020 or latest edition, except that all CADD files must be submitted in both MicroStation

CONNECT Edition (or latest) and AutoCAD 2019 (or latest).

The Consultant acknowledges that all CADD files may be used by the CMAR for quantities and pricing purposes.

Section 2.3 Interface

Consultant must develop and implement an Interface Management Plan (IMP) that describes Consultant's approach to Interface Management. The IMP must include detailed processes and actions to be taken for the fulfillment of the requirements, including generally, information as to who, what, when, where, and how for each action or process and must include detailed, measurable commitments. Consultant's IMP must describe interface processes necessary to identify, address, verify and validate interface compatibility and functionality.

Consultant's IMP must identify and manage interfaces that occur between the Project's various design disciplines, this Project and other interfacing projects, , between Consultant and Third Parties (such as utilities and municipalities), between Consultant and the CMAR, and between Consultant and Authority.

Consultant must manage Interfaces so that all elements designed by Consultant for the Project can be integrated together effectively to provide a system that meets the interface and integration requirements of the Project.

Interfaces must be identified and managed such that traces are maintained between the interface and the related requirement, associated drawings, schedule activity, or risk item.

Section 2.4 Configuration Management

Consultant shall provide a Configuration Management Plan (CMP) that defines the Consultants responsibilities, interfaces and processes for performing document control, drawing management, change control, and document close-out. Consultant shall coordinate the CMP development with Authority.

Consultant shall develop a master list of submittals which includes verifying and identifying additional submittal requirements and determining the date on which each submittal is required in conformity with schedules specified in this SOS. Within 45 days after issuance of Notice to Proceed, Consultant shall furnish a master list of submittals, indicating whether each submittal within the master list of submittals is for review and Approval by the Authority or For Record Only, and with corresponding submittal dates which match milestones listed in the Schedule, as applicable, and allow for review and Approval, as applicable, by the Authority and applicable Third Parties. Consultant shall submit monthly updates to the master list of submittals to the Authority for review and Approval.

Consultant shall include the following submittals in the master list of submittals:

- Program management plans
- Design Documents
- As-built drawings
- Engineering calculations – Signed and stamped by the Designer of Record who is an engineer registered in the State of California for the involved discipline. Have calculations, required by Specifications sections, prepared on 8 ½ -inch by 11-inch sheets. When calculations accompany drawings in a submittal, the body of the calculations must contain cross-referencing to the individual drawing to which the page of the calculations pertain.
- Schedules
- For all submittals requiring Third Party coordination, Consultant shall send submittals directly to, resolve all comments directly with, and obtain Approvals directly from Third Parties, when

required, with the exception of Metro. The Authority will distribute submittals to Metro and provide consolidated comments to Consultant. Consultant shall provide a copy to the Authority of any submittals sent directly to Third Parties.

Section 2.4.1 Authority's Review

Consultant shall submit all submittal items to the Authority with a clear indication if the item is for Approval or For Record Only. The Authority will withhold Approval of submittals that depend on other submittals not yet submitted or not yet "Approved" or "Approved as Noted."

The Authority will review the submittals for general conformity with the Contract requirements and respond with Approval status. The Authority's submittal responses shall have the following meanings:

- Approved shall mean that every illustration and description appears to conform to the respective requirements of the Contract requirements; fabrication, assembly, manufacture, installation, application and erection of the illustrated and described product may proceed; the submittal is Approved and need not be resubmitted.
- Approved as Noted shall mean that the submittal and its contents appear to conform to the respective requirements of the Contract requirements for that submittal after revisions are made to the areas noted in recognition of the reviewer's comments. Submittals so marked must be resubmitted unless otherwise indicated.
- Approved for Construction shall mean that every illustration and description appears to conform to the respective requirements of the Contract requirements; fabrication, assembly, manufacture, installation, application and erection of the illustrated and described product may proceed; the submittal is Approved for Construction and need not be resubmitted.
- Rejected, Revise and Resubmit shall mean that the submittal is deficient to a degree that the reviewer cannot review the submittal with a reasonable degree of effort and/or the submittal needs significant revision, and is to be corrected and resubmitted, within 30 days for review.
- For Record Only shall mean that the submittal was not reviewed for Approval and was received for information only. The Authority may, however, use the submittal to verify or monitor Consultant's Services and/or progress.

Submittals requiring the Authority's Approval will receive said Approval, Approval as Noted, or rejection. Submittals not requiring the Authority's Approval may receive the Authority's comments, if any, within 30 days of receipt. For submittals not requiring Approval, absence of the Authority's comments shall not be the basis for Consultant's lack of release or lack of any other action required to maintain the Schedule. Review of a separate item will not constitute review of an assembly in which the item functions.

Any marking by the Authority shall not relieve Consultant of the obligation to fully satisfy all of the requirements of the Contract or be interpreted as a directive to perform any work that is not already called for in the Contract.

If a submittal is marked Rejected, Revise and Resubmit, no time that elapsed as part of the review of that submittal shall be credited against the time period to review the resubmitted submittal. The Authority may withhold payments for Rejected, Revise and Resubmit submittals.

Changes to any Authority Approved or Approved as Noted submittals will not be permitted unless those changes have been Approved by the Authority.

Section 2.5 Design Criteria and Standards

Consultant shall perform design and engineering work in compliance with Applicable Law, Governmental Approvals, and the latest version applicable at the date of Consultant's Proposal

submission of:

- Metro Rail Design Criteria, Metro Fire Life Safety Criteria, Metro Rail Standard and Directive Drawings, Metro Standard Specifications, and all documents contained in Metro Requirements
- Southern California Regional Rail Authority (SCRRA) Design Criteria and Standards, and all documents contained in Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2)
- Federal Railroad Administration (FRA) Requirements
- Caltrans Standard Specifications and Standard Plans
- City (Pomona, Claremont and Montclair) requirements
- California Public Utilities Commission (CPUC) General Orders (GO) and requirements,
- Los Angeles County requirements
- San Bernardino County requirements
- Utility owner requirements including those requirements in Supplemental Contract Document 12- Preliminary Impacts to Certain MWD Facilities (refer to Attachment 2)
- The Aluminum Association, Aluminum Construction Manual, particularly Section 3, Table 1
- American Association of State Highway and Transportation Officials (AASHTO), especially "Standard Specifications for Highway Bridges", "Manual of Foundation Investigations", "Guide Specifications for Horizontally Curved Highway Bridges", and "Guide Specifications for Seismic Design of Highway Bridges"
- AASHTO LRFD Bridge Design Specifications and Caltrans amendments
- American Concrete Institute (ACI), relevant design/construction code publications including ACI 301: "Specifications for Structural Concrete Buildings" and ACI 318: "Building Code Requirements for Structural Concrete"
- American Institute of Steel Construction (AISC), "Manual of Steel Construction" "Specification for Structural Steel Buildings", and relevant design/construction code publications
- United States Department of Transportation Americans with Disabilities Act (ADA) Standards for Transportation Facilities
- Architectural and Transportation Barriers Compliance Board Accessibility Guidelines for Transportation Vehicles and Accessibility Guidelines for Buildings and Facilities
- ADA Accessibility Guidelines for Transportation Vehicles and Accessibility Guidelines for Buildings and Facilities
- California Disabled Accessibility Guidebook (CalDAG) Specifications
- American National Standards Institute (ANSI) Standards, including: A117.1, C37.06, C37.16, C37.17, C80.3, S1.4, S1.11, S2.4, S2.10, Z97.1, and Z535
- American Public Transit Association (APTA), "Transit Security, Guidelines Manual" and "Guidelines for the Design of Rapid Transit Facilities"
- American Railway Engineering and Maintenance of Way Association (AREMA), "Manual for Railway Engineering"
- American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), especially "ASHRAE Handbook"
- American Society of Quality Control Engineers; C1, Q9000, Q9001, Q9003, and Q9004

- American Society for Testing and Materials (ASTM), especially A36, A615, A325, A588, A615, B33, B172, B174, C150, C542, D256, D635, D648, D1044, D3675, E119, E162, E648, and E662
- American Welding Society, (AWS) current design and construction standards and specifications, and welder certification requirements
- Air Conditioning and Refrigeration Institute (ARI), "Directory of Certified Applied Air Conditioning Products"
- Federal Communications Commission (FCC) Rules and Regulations, particularly Parts 15, and 90
- Code of Federal Regulations (CFR) including 49 CFR part 200s
- Federal Emergency Management Agency (FEMA) National Flood Insurance Program, Code of Federal Regulations, Parts 59 through 79, Title 44, Emergency, Management and Assistance, Chapter 1
- Federal Highway Administration (FHWA) requirements and standards, including:
    - Highway Capacity Manual
    - Manual on Uniform Traffic Control Devices (CA-MUTCD)
    - Standard Alphabets
    - Standard Highway Signs
    - Traffic Control Devices Handbook
- Institute of Electrical and Electronic Engineers (IEEE) Standards, including: No. C2, C37.04, C37.09, C37.11, C37.13, C37.14, C37.20, C37.100, C57.12.01, 11, 32, 80, 141, 142, 241, 242, 383, 446, 610.12, and 730
- International Building Code (IBC), published by the International Code Council (ICC)
- California Building Code (CBC), published by the California Building Standards Commission
- California Fire Code, published by the ICC
- County of Los Angeles Fire Department requirements
- County of San Bernardino Fire Department requirements
- California Mechanical Code, published by the International Association of Plumbing and Mechanical Officials (IAPMO)
- California Plumbing Code, published by the IAPMO
- The Greenbook Standard Specifications for Public Works Construction, published by the American Public Works Association (APWA)
- International Standards Organization (ISO), including: ISO 2631, 3095, 3381, 4866, 9000-9004
- National Electrical Manufacturers Association (NEMA), including: RI9, SG4, TR1, WC70, WC71, WC74
- National Fire Protection Association (NFPA), including: NFPA 12A, 14, 70 (National Electrical Code), 72, 101, 130, 253, 780
- Occupational Safety and Health Administration (OSHA), including: 2206, Part 1910; 2207, Part 1926
- Steel Structures Painting Council (SSPC), relevant publications
- Underwriters Laboratories (UL) Standards, including: 1, 96, 797, 813, 891

- Uniform Federal Accessibility Standards (UFAS), FED-STD-795, 42 U.S.C. 4151-4157
- Uniform Plumbing Code
- U.S. Department of Commerce, Weather Bureau (National Weather Service)
- U.S. Department of Defense, Military Standards: MIL-STD-464, MIL-STD-882
- Design criteria included in this SOS

Where published standards do not exist, the design shall follow good industry practice and standard industry design guidelines including the recommendations contained in the American Railway Engineering and Maintenance of Way (AREMA) Manual of Railway Engineering.

The Consultant shall be responsible for obtaining all Governmental Approvals except those associated with Supplemental Contract Document 6- Environmental Documents and Supplemental Contract Document 8- California Public Utilities Commission Grade Crossing Applications and Extensions (refer to Attachment 2).

Section 2.5.1 Deviations to Design Criteria

During preliminary design of the Project, certain deviations to design criteria were Approved by the applicable jurisdiction. Refer to Supplemental Contract Document 4- Approved Deviations to Design Criteria in Attachment 2.

Consultant shall submit to the Authority additional requests for deviations to the design criteria of Metro, SCRRA, Caltrans, Fire Life Safety, Utility owners, Cities, and other applicable Governmental Persons. Deviations will only be considered in extreme cases where no other alternative will satisfy the requirement. The Authority will review these requests from Consultant and provide a response within five Working Days as to Approval or disapproval of the request. Once approved by Authority, the Authority will then submit the request for deviation to the applicable Governmental Person.

Consultant shall submit a list of all Approved deviations to the design criteria to the Authority for review and Approval at each design submittal stage, including previously Approved deviations that Consultant has implemented into its Final Design.

Section 2.6 Safety and Security

Section 2.6.1 Safety and Security Management

Consultant shall be responsible for implementation of the Safety and Security Certification Plan (SSCP) (refer to Attachment 2, Supplemental Contract Document 17) into the design of the Project and achieving design certification of the Project design to the Authority, Metro and the California Public Utilities Commission (CPUC). As defined in the SSCP, Consultant shall implement a comprehensive safety certification program including support to certification of construction and testing. Revisions to the SSCP shall be in accordance with GO-164 and Approved by the Authority, Metro, and CPUC. Consultant shall support the Safety and Security Certification Review Team (SSCRT) as described in the SSCP.

Section 2.6.2 Preliminary Hazard Analysis

Consultant shall be responsible for addressing the mitigations described in Supplemental Contract Document 20- Preliminary Hazard Analysis (refer to Attachment 2). Consultant shall update the PHA as necessary to ensure hazard identification and mitigation resulting from Project changes, new systems, and safety concerns. Revisions to the PHA shall be Approved by the Authority.

Section 2.6.3 Threat and Vulnerability Analysis and Resolution

Consultant shall be responsible for addressing the mitigations described in Supplemental

Contract Document 21- Preliminary Threat and Vulnerability Assessment (TVA) (refer to Attachment 2). Since the TVA contains sensitive security information (SSI), the TVA requires a password for access which shall be provided to Consultant upon request. Consultant shall update the TVA as necessary, or annually at a minimum, to ensure threat and vulnerability identification and mitigation resulting from Project changes, new systems, and safety concerns. Revisions to the TVA shall be Approved by the Authority.

Section 2.6.4 Fire/Life Safety and Security

The Consultant shall coordinate with the Fire/Life Safety and Security (FLSS) Committee for review of design work in-progress including the review of any proposed exceptions to criteria. The Consultant should recognize the goals of such design reviews are: (1) to identify fire/life safety and security issues impacting the design early in the design process so that cost-effective alternative solutions can be developed during the design phase of the Project, and (2) to verify that the design of the Project is compliant with the fire/life safety and security design criteria.

Consultant shall include components as detailed in the Supplemental Contract Document 13- Fire/Life Safety and Security Committee (FLSSC) Emergency Plan (refer to Attachment 2). The FLSSC Emergency Plan identifies the locations for ETS (blue light stations), access/egress locations, alignment access staircase locations, and standpipe and fire hydrant locations. Where standpipe is located in proximity to a staircase, the vertical run of the standpipe and its supports shall be integrated with the staircase structure. Any revisions to the FLSSC Emergency Plan's content shall be Approved by the Authority and FLSSC.

Section 2.7 Third Party Coordination

The Consultant shall implement an effective Third Party coordination program to ensure constant coordination and communication with Third Parties, including: Metro, SCRRA, Caltrans, Cities, Los Angeles County, Utility owners, and other Governmental Persons.

The Consultant shall designate a utilities Third Party coordinator for coordination with Utility owners, and a separate Third Party coordinator for coordination with cities, and other Third Parties. The non-utilities Third Party coordinator role may be split between the design manager and/or various design leads, whoever is most qualified to be the point of contact for the Consultant when working with the Third Parties.

Consultant shall identify all the known utilities, operating authorities and Governmental Persons associated with this Project. The Consultant shall establish and hold monthly coordination meetings with the identified third parties to coordinate, review and resolve design issues. Frequency of coordination meetings may be decreased or increased as needed based on Project demand, and as approved by the Authority. Consultant shall be responsible for scheduling the meetings, providing agendas a minimum of three (3) days before each meeting, preparing and providing/issuing meeting minutes for each meeting. Draft meeting minutes shall be provided to Authority for review and comment within two days following the meeting, after addressing Authority's comments, if any, Consultant shall issue the minutes to all meeting participants.

Consultant shall address all permitting/Governmental Approval requirements and identify all permitting Third Party agencies regarding plan checks, Utility connections, fire protection, right of entry, and other permits required for the design and construction of the project.

Consultant shall coordinate and work with Authority and the CMAR to create design packages to support obtaining required permits as described in Section 3 and any required construction permits for the Services.

Consultant shall provide Authority with a minimum of three (3) day advance notice of any meetings to be held with a Third Party or Governmental Person with respect to the Services. Authority may

request to include the CMAR to attend any such meetings, at the Authority's discretion.

Consultant shall notify Authority immediately (and in any case within three Days) upon becoming aware of any delay in obtaining, extending or renewing a Governmental Approval or any delay in the provision of comments by a Third Party.

Consultant shall submit a Third Party coordination plan for review within sixty (60) days after NTP. The final Third Party coordination plan shall be due within fourteen (14) days after receipt of Authority's comment. The Third Party coordination plan shall at minimum address the following:

- Identifying all applicable Third Parties for the Project
- Contacts for each Third Party, and assigned Third Party coordinator for the Consultant
- Permits and approvals requirements for each Third Party, including which elements of the project requires review and approval by a certain Utility owner.

Refer to Utilities Section 3.3 for additional requirements and responsibilities of the utility Third Party coordinator.

Section 2.8 Public Outreach

The Consultant shall cooperate and support the CMAR public outreach program. The Consultant shall prepare, as required, descriptions of technical work; related maps, plans, sketches and other graphics; display boards; projection slides; photographs and other such informational materials. As may be requested by Authority, the Consultant's Architecture/ Stations Lead shall attend public and association meetings held in connection with the community involvement and public information programs and assist Authority representatives.

For any Consultant field operations, Consultant shall follow the Supplemental Contract Document 5- Authority's Public Outreach Requirements (refer to Attachment 2).

Section 2.9 Risk Management

The Authority Risk Management Program Plan (RMP) shall be administered through the Authority. Risk Management is a collaborative process involving all project participants and is integral to the CMAR process.

The Consultant shall assist Authority in administrating the requirements of the RMP. The Consultant shall be required to participate in the Authority lead development of the Project Risk Register (Risk Register). The Risk Register shall identify and evaluate, in terms of probability of occurrence and cost and schedule impact, potential project risk events, relative to design and construction, along with risk responses and control strategies. The Consultant shall assist Authority in reviewing and updating the Risk Register at appropriate stages of project development throughout the Project. The Consultant shall assist Authority in quantitative risk analysis to establish cost and schedule contingencies needed to cover the potentially adverse effects of risk events and other unknowns.

Risk workshops shall be led by Authority. The Consultant shall participate in risk workshops along with, the CMAR, and other stakeholders to identify risks, assign probability, schedule, and cost impacts of for the project. A workshop shall be held following each milestone design submission and pricing milestone.

Authority shall establish and keep an up-to-date risk matrix identifying potential risks to the project budget and/or schedule. Such risks include right-of-way acquisitions, Utility Adjustments, pricing and/or availability of construction materials, project stakeholder coordination, and constructability issues. The risk matrix shall clearly identify the risk, assess the probability of occurrence, and

assign a value for cost and/or schedule delay. A mitigation strategy shall be developed and implemented to reduce the impact of each risk identified. The risk matrix shall be reviewed at each risk workshop.

Section 2.10 Design Management Deliverables

- Design Management Plan
- BIM Implementation Plan, BIM Standards and Procedures to be included as part of DMP
- BIM Model, 3D files (including CADD files) and electronic files at 60%, 85%, 100% submittals
- Constructability/BIM clash detection report at 85% and 100% submittals
- IMP shall be included as part of DMP
- CMP shall be included as part of DMP
- Approved deviations/Request for Special Design Considerations or Third Party deviations
- Revisions to Safety and Security Certification Plan
- Design Certification
- Updates to PHA Report
- Updates to TVA Report
- Conduct over-the-shoulder meetings during the development of the design
- Revisions to FLSS Emergency Plan
- Third Party Coordination Plan
- Meeting Exhibits and Handouts, as requested
- Meeting attendance, as requested
- Participate in risk workshops following each milestone design submittal and pricing milestone
- Review and provide input (identification of risks, probability of occurrence/costs/schedule impacts, risk control strategies) to the Risk Register

SECTION 3.0 Engineering Design

Consultant shall prepare engineering design including plans, calculations, technical specifications, and reports for the Project including:

- Survey
- Utility relocations and protection improvements
- Utility services
- Geotechnical investigations and analysis
- Environmental mitigation measures
- LRT and freight/Metrolink commuter rail track and trackway
- Roadway improvements
- Grade crossings
- Structures
- Drainage
- Fencing
- Traffic signals and street lighting
- LRT and Metrolink stations
- Layover facility
- Signage and striping
- “Art in Transit” program
- Parking facilities
- Landscaping
- Pedestrian and bus interface enhancements
- Bike access and parking
- Corrosion control and grounding
- Traction electrification
- Emergency trip stations
- Emergency access stairs
- Overhead contact system
- Signaling/train control for LRT/FRT/Metrolink
- Uninterruptable power supply
- Communications
- SCADA

Authority requires milestone design submittals at 60%, 85%, 100% and AFC completion unless otherwise noted under the following sections.

Consultant is responsible for providing the Authority with a complete design with all deliverables required by Authority and all Third Parties to allow the CMAR to proceed with construction.

Section 3.1 Project Site Reconnaissance

The accuracy of the existing conditions related to this Scope of Services has not been validated. It is the responsibility of the Consultant to verify all existing conditions.

Consultant shall perform field survey along the property line of the railroad right-of-way to determine edge conditions and identify any encroachments in the railroad right-of-way. Consultant shall provide a list of encroachments within sixty (60) days of NTP. Consultant shall also identify any problematic edge/join conditions that need to be addressed during design. Authority will review and determine which encroachments may remain in place, and the Project designed around.

Access to Authority railroad and/or Metro trackway requires appropriate railroad Safety training. Consultant personnel requiring site access are required to attend and receive the applicable railroad Safety certification prior to accessing the Project site.

Section 3.2 Survey and Alignment

Section 3.2.1 Survey

The Advanced Conceptual Engineering Drawings are based on the NAD 1983, California State Plane, Zone 5, 2007 epoch datum and NAVD 1988 with the 2005 Los Angeles County adjustment datum. Consultant shall develop up-to-date aerial photogrammetry/topography for the alignment and perform any surveying (aerial and/or ground) necessary to determine existing condition and required to complete the design. All design shall be based on the new survey data.

Section 3.2.2 Alignment

Consultant shall develop the vertical and horizontal alignment of both the SCRRA Corridor tracks and LRT track design along with all roadway improvements. Separate vertical profiles for LRT Track 1 and Track 2 shall be developed in LRT curves where track superelevation is greater than two inches so as to keep the center emergency walkway cross slope no greater than two percent.

Consultant should pay special attention to the design of the track alignment to avoid impact to the existing Golden State Water tanks and wells located east of College Avenue, including surcharge loads and construction activities.

Section 3.2.3 Right-of-Way

The Right of Way for the Project at the stations, parking lots, and along the trackway is shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2). Consultant shall fit all fixed facilities and operating systems within the Right of Way. Supplemental Contract Document 9- Record of Survey (refer to Attachment 2) defines the portion of the historic Atchison, Topeka and Santa Fe (ATSF) railroad right of way included as part of the Right of Way up to the County boundary. Consultant shall provide a Record of Survey for the Project railroad Right of Way in San Bernardino County.

Any other permanent property acquisition and permanent easements (e.g., grade crossings or bungalows) deemed required by Consultant for the Project, shall be identified and submitted as part of the 60% design submittal, with justification for need, to Authority for review and Approval.

For Authority-provided Right of Way that lists the anticipated availability date as “Approved Legal Description plus 300 days” (refer to Supplemental Contract Document 10- Property Acquisition Matrix (refer to Attachment 2)), Consultant shall submit the following with its first design submittal:

- Exhibits defining the property including the limits of acquisition with square footage
- Assessor's identification number
- Existing property line location
- Owner information
- Existing improvements located within the area in question

After Authority Approves Consultant's first design submittal, Consultant shall provide a California Registered Surveyor signed legal description and plat, to be used for the acquisition of each property identified in Supplemental Contract Document 10- Property Acquisition Matrix (refer to Attachment 2), to the Authority for its Approval.

Section 3.3 Utilities

The Authority has performed preliminary investigations of existing Utilities and has provided composite existing Utility drawings that are included in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2). It is important to note that only mainline Utility systems are shown in the composite existing Utility drawings, private services including utilities to and for the railroad operation are not necessarily shown.

Consultant shall identify and verify all Utilities, including private Utility services, within the work limits of the Project or otherwise impacted by the Project. Consultant shall determine the actual extent of Utility Work necessary for the Project and provide design to resolve all Utility conflicts on the Project, including Relocations and/or protections that will be required.

Section 3.3.1 Utility Surveys and Assessment

The Consultant shall review the composite existing Utility drawings along with the information collected as part of Authority's Utility investigation program and perform site/field inspections and walks to verify their understanding of the potentially affected utility. The Consultant shall work with each Utility owner to verify that the utility information (including: type, material, size, location, and depth) is complete and correct, and to determine if any additional information is available.

The Consultant shall update the composite Utility drawings to reflect additional information collected during the site investigations and reviews with Utility owners. As part of this plan, the Consultant shall identify where potholes and field surveys are required to support design. Utility pothole and field survey selected locations shall take into consideration that the railroad right-of-way is an active corridor and right-of-entry will be required where there is a potential to foul the track. The Consultant shall include and perform the aforementioned Utility potholes and field surveys as part of this contract.

The Consultant shall prepare and maintain a Utility evaluation report/log, assessing the expected impact to each Utility, whether the Utility will not be impacted and can be left in place, relocation will be required, or protection improvements required. This report shall be maintained and updated throughout the duration of the Project and provided to the Authority with each Utility design plan submittal, and when requested by the Authority.

This updated composite Utility plan, with proposed pothole and field survey locations, and the initial Utility evaluation report shall be submitted to Authority for review within 120 days of NTP. Consultant shall meet with Authority to review the pothole and survey plan and the evaluation report, prior to performing the potholes.

Section 3.3.2 Utility Coordination and Design

Consultant shall review, evaluate, coordinate and manage all design Utility modifications, including Relocations and Protections, required for the Project to: eliminate conflicts, meet Project design requirements and comply with standards and requirements of the Utility owner and jurisdictional Governmental Entities.

Consultant shall design all Utility modifications, including relocations and protection improvement protections, required for the Project, except for the certain Utility owners who will design their own Utility modification, refer to Supplemental Contract Document 11- Utility Contacts and Relocation Responsibilities (refer to Attachment 2). Those noted as Project Consultant responsible for design is within the scope of this contract, those noted by the name of the utility owner, will be designed by the Utility owner.

For Utilities that are designed by the Utility owner (or by others), the Consultant shall:

- Work with Utility owner to determine if the Utility can be protected in place with no modification required, protection improvements required, or relocation is required.
- If Utility work is required, the Consultant shall notify the Utility owner of the conflict/issue, provide design parameters and Project requirements to the Utility owner, and work with Utility owner to determine the Utility modification required to meet the requirements of the Project and jurisdictional Governmental Persons.
- If relocation is required, the Consultant shall work with the Utility owner to identify a relocation window for the realignment of such Utility, to meet vertical and horizontal clearance from existing and other proposed improvements of the Project.
- verify that all such Utility work as designed by others is compatible with, and interfaces properly with the Project and complies with the contract requirements.
- Consultant shall review Utility owner's design for conformance with Project's needs and requirements.
- Consultant shall incorporate such Utility work designed by others into the Project Utility drawings with reference to the Utility owner's plans.

Consultant's Utility Third Party coordinator shall develop and maintain a Utilities modification log to coordinate and track the design and construction schedule of the Utility owner.

Consultant shall coordinate, design and manage all new Utility services required for the Project, including: water, sewer, communications, and power services for TPSS, traffic signals, lighting, railroad equipment and all other services. Consultant's utility Third Party coordinator shall maintain a new Utility services tracking log to manage the coordination, design and installation of the new service request from identification of need to the activation of service.

Section 3.4 Geotechnical Investigations and Analysis

The Consultant shall provide geotechnical design services to support a Final Design level of completion for the Project including bridges, pedestrian undercrossings, retaining walls, sound walls, at-grade track and stations, TPSS sites (including soil resistivity), infiltration sites, overhead catenary system, parking lots, Utility protection and relocation, and miscellaneous foundations.

Consultant shall conduct a program of borings, test pits, and geotechnical investigations to provide the basis for the various structural foundation designs and Project infrastructure.

Consultant's geotechnical program shall include the testing of the groundwater and soil samples for the presence of hazardous substances. If hazardous substances are identified, Consultant shall take the appropriate action and notify the Authority. Consultant shall select and design foundations that avoid or minimize the excavation or exposing of contaminated substances. Any foundation design that requires the excavation of contaminated substances shall be submitted to the Authority for review and Approval.

Consultant shall:

- Review the existing geotechnical data provided in Supplemental Contract Document 19- Geotechnical Reports (refer to Attachment 2), evaluate the requirements of the Services, and perform any additional geotechnical explorations, analyses, and laboratory testing that are necessary to supplement the existing data. Where differences occur in the bridge layout shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2) and Geotechnical Reports, the data shown in the ACE Drawings shall be used by Consultant for the layout of the bridge structures.
- Prior to conducting boring explorations in the field, submit a boring plan to the Authority and applicable Third Parties for review and Approval. The plan shall include the number, location, depths of borings, types of borings, and soils tests, and testing frequency.
- Prepare a preliminary foundation report (PFR) and a foundation report (FR) for each structure in conformance with Supplemental Contract Document 2- Metro Requirements and Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2). Earth retaining systems foundation reports shall also conform to the latest edition of Caltrans Foundation Report for Earth Retaining Systems, January 2021. The foundation reports shall address the following topics: scope of work, project description, field exploration, laboratory testing, site geology and subsurface conditions, groundwater conditions, geologic profiles and engineering parameters, seismic study, fault rupture study, liquefaction evaluation, scour evaluation, corrosion evaluation, foundation recommendations, approach fill earthwork, settlement, slope stability analyses, and construction considerations. Calculations shall be included in the appendix of the report.
- Provide drawings showing locations of the geotechnical investigations, including soil borings, test pits, geophysical surveys, and CPT locations, and prepare boring logs and log of test boring (LOTB) sheets.
- Provide recommendations for shoring and falsework foundations during construction.
- Prepare draft geotechnical reports and final geotechnical reports summarizing the geology, geologic hazards, subsurface and groundwater conditions, seismicity (seismic site class, peak ground acceleration, design response spectra, faults, liquefaction potential, and probabilistic seismic hazard analysis, as applicable), results of additional field and laboratory testing, logs of test borings or pits, methane gas, hydrogen sulfide gas, and hazardous waste and/or contaminated media. The reports shall include geotechnical design and construction recommendations for structures and facilities including earth pressures, surcharge loads, seismic design parameters, foundations, bearing capacity and settlement evaluations, stability of retaining structures, pavement design for roadways, excavations and support, slopes, fill materials, groundwater control, corrosion protection,

geotechnical instrumentation and monitoring, and other items as required for the design of the Project. Calculations shall be included in the appendix of the report.

Section 3.5 Environmental

The Consultant design must comply with the Mitigation Monitoring and Report Program (MMRP) documented in the Final EIR.

Section 3.5.1 Mitigation Measures

During the preparation of the design, the Consultant shall conduct periodic environmental reviews to determine if mitigation measures identified in the EIR and other commitments are incorporated into the Project. The Consultant shall identify if any environmental permits/agreements are required and coordinate additional actions or conditions specified by these permits/agreements into the design.

The Consultant shall employ a system of tracking each mitigation measure or task and to track the completion of these commitments during design.

The Mitigation Monitoring and Reporting Program (MMRP) shall be used to track the completion of these commitments.

Section 3.5.2 Mitigation Measures Not Part of Scope

The following mitigation measures were included in the environmental document but are not warranted or have already been performed by others and therefore are not included in the design.

- Fulton Road/Bonita Avenue: signalization of intersection is not warranted.
- Garey Avenue/Bonita Avenue: modification of the existing traffic signal system to be protected/permitted in the east/west direction.
- Garey Avenue and Bonita Avenue: interconnect the existing traffic signal at Garey Avenue and Bonita Avenue to the railroad signal system to allow for preemption when trains are present.
- Garey Avenue/Bonita Avenue: reconfiguration of the intersection to provide two exclusive left-turn lanes on the northbound approach.

Section 3.5.3 Traffic and Transportation Mitigation Improvements

Consultant shall design the traffic and transportation mitigation improvements identified below. Design of said improvements shall comply with ADA requirements, City requirements, jurisdictional Utility standards, and other Governmental Rules.

- City of Pomona: Garey Avenue crossing: provide methods (WCNSS) for inhibiting Metrolink grade crossing activations while a Metrolink commuter rail train is berthing in the platform. Such methods shall provide for operation of express trains and overall safe grade crossing operation.
- City of Claremont:
    - College Avenue/First Avenue: Consultant shall signalize the intersection.

Section 3.6 Track

The trackway design shall incorporate all operating, maintenance and service functions related

to the Project. The trackway shall be designed so that all equipment and structures meet or exceed the LRT and freight/Metrolink commuter rail clearance requirements. Consultant shall design all track components.

Section 3.6.1 Clearance Requirements

A minimum separation of 30 feet between the LRT and Freight Corridor tracks is required, except in the following locations where a 30-foot track separation was preliminarily determined to be unattainable, as shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2):

- Pomona station to Towne Avenue and from Sta. 1905+ to Sta. 1971+.

A minimum separation of 30 feet between the at-grade LRT and Metrolink Corridor tracks is required, except from Sta. 1971+ to Sta. 2084+, where a 30-foot track separation was preliminarily determined to be unattainable as shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2). In areas of less than 30-foot track separation the design shall include an intertrack fence/K-rail where the top of fence is 5 feet above the ballast and include a Wayside Intrusion Detections System (WIDS).

Consultant design shall include signs in areas of reduced clearances, including OCS poles, wayside intrusion detection locations, bridges, station locations, and drainage facilities.

Section 3.6.2 Geometry

The alignment, profile, and typical sections are contained in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2). Consultant shall verify the applicability of the design shown and it is expected that Consultant shall make revisions and refinements as the design progresses.

Consultant shall submit schematic plans of the trackway depicting pertinent features including ballasted/direct fixation locations and locations of special trackwork and type. The trackwork plans shall also include details of trackwork and special trackwork design of the entire Project.

Section 3.6.3 LRT Emergency Walkway

Consultant shall design a continuous emergency walkway along the entire LRT trackway as shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2) and in accordance with all applicable requirements. Emergency walkways shall be clear of obstructions including tripping hazards, OCS poles, support beams/wires, switches, foundations, signs, and electrical boxes/vaults. Emergency walkways shall be provided from the platform exits to the designated point of safety. Emergency walkways from stations shall be paved, striped, signed, and illuminated. Consultant shall coordinate emergency walkways with the Authority as part of the trackway design review.

Section 3.6.4 Freight (FRT)/Metrolink Commuter Rail Emergency Walkway

Consultant shall provide walkways per Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2).

Section 3.6.5 LRT Track and Trackway

Consultant shall design the LRT trackway in accordance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2). Consultant is responsible for providing the design of all aspects of the trackway, including a track drainage system, sub-ballast and ballast material, conduits/duct banks, and OCS pole foundations. The trackway design and the location of

equipment and appurtenances, including conduit, duct banks and drainage elements, shall be subject to the review and Approval of the Authority. Consultant shall ensure that the design of the trackwork is properly coordinated with other systems and fixed facility elements for both LRT and SCRRA Corridor.

The LRT trackway shall be classified as follows: exclusive from east of Fulton Road to west of Cambridge Avenue and semi-exclusive for the remainder of the Project.

The present LRT fleet has a mixture of speed capabilities. The P3010 vehicles are capable of 65 mph and the remainder of the existing fleet shall be capable of the 65 mph speed once retrofitted with the necessary train control equipment. Consultant shall design the horizontal and vertical LRT alignment to 65 mph, unless otherwise noted. The superelevation applied to the horizontal curves shall be 55 mph in ballasted sections and 65 mph in direct fixation sections. Any location, either horizontally or vertically, that cannot meet the 65 mph design speed shall be identified by Consultant to the Authority. The Authority has already received geometric related design deviations. Refer to Supplemental Contract Document 4- Approved Deviations to Design Criteria in Attachment 2.

Consultant shall prepare track charts showing the staging of LRT rail segments, with LRT rail stationing, describing the proposed location and description of rail for all tracks.

Vibration mitigation shall be provided at locations indicated in Tables 3-1 and 3-2 below. The station limits identified in Tables 3-1 and 3-2 are approximate. The exact station shall be determined by Consultant relative to grade crossings, bridge interfaces, and other features that are to be designed by Consultant.

Table 3-1: Vibration Mitigation Locations – LRT Tracks

City	Eng. Station		Length	Mitigation Type
	Start	End	(ft)	
Claremont	1975+50	1980+50	500	1” Ballast Mat or 12” TDA
Claremont	1981+25	1985+00	375	1” Ballast Mat or 12” TDA
Claremont	1985+00	1990+00	500	2” Ballast Mat - See below
Claremont	1990+00	1996+00	600	1” Ballast Mat or 12” TDA
Claremont	2014+00	2017+25	325	1” Ballast Mat or 12” TDA
Claremont	2047+00	2050+50	325	1” Ballast Mat or 12” TDA

Table 3-2: Vibration Mitigation Locations – Metrolink Commuter Rail Tracks

City	Eng. Station		Length	Mitigation Type
	Start	End	(ft)	
Claremont	1737+75	1742+25	450	1” Ballast Mat or 12” TDA

Claremont	1745+50	1751+50	600	1" Ballast Mat or 12" TDA
Claremont	1777+25	1782+00	475	1" Ballast Mat or 12" TDA
Notes:				
Consultant shall place mitigation under both near and far freight/Metrolink commuter rail tracks.				

Section 3.6.6 Freight/Metrolink Commuter Rail Track and Trackway

All freight/Metrolink commuter rail tracks shall be designed in accordance with Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2). The freight/Metrolink commuter rail trackway is defined as that portion of the Project which has been prepared to support the freight/Metrolink commuter rail track and its appurtenant structures. The freight/Metrolink commuter rail trackway includes the portion of Right of Way at the inter-track fence between the adjacent light rail track and the limit of the Right of Way on the freight/Metrolink commuter rail side, and includes the sub-ballast, sub-grade, slopes of cuts and fills, retaining and sound walls, and the drainage systems for diverting or carrying water away from the track structure.

Consultant shall design duct banks to run longitudinally along the outside of tracks. These, as well as conduits crossing under the tracks, must be kept clear of the clearance envelope, and in all cases must be below the surface of the sub-grade. Where manholes, pull boxes, or conduit stub-ups come to the surface, encroachment within the clearance envelope shall be minimized. In no case shall the duct banks be permitted to adversely affect the drainage system.

Consultant shall submit new track charts (in SCRRA format) showing all pertinent information of freight/Metrolink commuter rail segments, with freight/Metrolink commuter rail stationing, describing the proposed location and description of rail for all freight/Metrolink commuter rail tracks.

Design shall include refurbishing the at-grade track crossings of the Metrolink commuter rail tracks at Towne Avenue. Refurbishment shall include new ballast, ties, rail and crossing panels set as close as practicable to the existing roadway grade with new hot mix asphalt (HMA) transitions from the existing roadway to the new panels.

The Consultant shall include emergency guardrail on the Freight and commuter rail track immediately adjacent to the LRT grade separation retaining walls. The guardrail shall extend 50 feet beyond the end of wall.

Section 3.7 Roadway Improvements and Traffic Analysis

Consultant shall design all required roadway improvements as shown in the Supplemental Contract Document 8- California Public Utilities Commission Grade Crossing Applications and Extensions (refer to Attachment 2) and as required by applicable Governmental Persons. Consultant design shall incorporate the elements specified below in accordance with all applicable design requirements. Consultant shall perform traffic engineering studies, including collection of traffic data to develop the items specified below:

- Roadway and intersection geometry and alignment including vertical and horizontal curves, stopping sight distance, vertical sight clearance of traffic signals at grade separations based on driver eye height of SU design vehicle, and passing sight distance and sight triangles

- Location, angle, and length of crossing
- Approach grade and speeds
- Pedestrian traffic volumes and characteristics
- Vehicle traffic volumes/counts, classification, and turning movements
- Light rail/freight/Metrolink commuter rail traffic volumes, frequency, preemption circuit type, and operating characteristics
- Vehicular queue lengths and dissipation rates
- Sight distance measured from the signalized intersection (pre-signal) to stop bar at crossing entrance gate(s)
- Operational characteristics of stop-controlled intersections, signalized intersections, and associated control equipment
- Develop a comprehensive traffic study, including modelling, of the Indian Hill corridor from Arrow Highway to Harrison Street.

Section 3.8 Grade Crossings

Consultant shall follow grade-crossing standards required by CPUC, SCRRA, FRA, Metro, and applicable Governmental Persons. Grade crossings shall be designed in accordance with approved California Public Utilities Commission (CPUC) crossing applications, USDOT Railroad-Highway Grade Crossing Handbook (RR Handbook), the California Manual on Uniform Traffic Control Devices (CA-MUTCD), and applicable Governmental Rules for the safe passage of vehicles and pedestrians during all grade crossing work. Consultant shall, to the greatest extent practical, adhere to the CPUC-approved crossing design for the location and type of crossing safety equipment, as shown in Supplemental Contract Document 8- California Public Utilities Commission Grade Crossing Applications and Extensions (refer to Attachment 2). Consultant shall coordinate with the Authority and agencies responsible for operating the railroad, roadway and traffic signals at each affected intersection or crossing for integration of the type, location, phasing, and timing of the signals, preemption, methods of detecting vehicular traffic, temporary traffic controls, and of interfacing the controls at each location with new/existing traffic signals. All traffic signal systems shall be designed by Consultant in accordance with Governmental Rules and the requirements of the CPUC, applicable Cities, County, AREMA, CA-MUTCD, FRA, and other applicable references listed in this Scope of Services. Modifications of the crossing safety equipment to the CPUC-approved grade crossing designs shall require Approval from CPUC and the Authority.

Consultant shall design the grade crossings (two, three, or four tracks) in a single plane and establish the rail profiles accordingly. Care shall be taken to provide the best ride quality for the full width of the highway surface at all grade crossings. Where there are multiple sets of tracks (e.g., Towne Avenue), the area between the sets of tracks shall be designed to meet all applicable criteria and provide the best vehicular ride quality as shown in the approved Supplemental Contract Document 8- California Public Utilities Commission Grade Crossing Applications and Extensions (refer to Attachment 2).

All grade crossings with traffic signals/train control interconnection shall be designed by Consultant such that the signal timing does not allow vehicles to stop on or between the tracks and intersection or pedestrians to be truncated in crosswalks.

Certain designs contained in the approved CPUC Grade Crossing Applications and Extensions

have been further refined since the applications were submitted to the CPUC and are included in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2). Consultant shall use the ACE Drawing configuration as the starting point for the grade crossing Final Design.

Section 3.9 Structures

Section 3.9.1 General

The Consultant shall provide structural design services to support a Final Design level of completion for all the structures included in the Project including bridges, retaining walls, pedestrian undercrossing, sound walls, stations, fencing; foundations for system components, traffic signals, lighting, signage, artwork, drainage structures, protection of utilities, and miscellaneous structures.

The structural design shall include the effects of the trackway-vehicle interaction, fatigue, soil-structure interaction, and construction factors; and shall provide maintenance features that comply with the Authority and applicable third-party requirements.

Consultant shall evaluate all existing structures, including drainage structures, for structural adequacy if the existing loading is modified by the Project improvements. Consultant shall design any necessary improvements to protect existing structures as required by the facility owner and applicable Governmental Persons.

All structures shall be designed in accordance with the geotechnical recommendations.

Consultant shall prepare structural design calculations, a set of structural plans and specifications for all structures.

Section 3.9.2 Bridges

The Advanced Conceptual Engineering Drawings include advanced conceptual general plan sheets for LRT bridge structures. Type selection (30% design) is not required for these bridge structures provided that the superstructure and substructure types shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2) are not altered. Type selection is required for all altered bridge structures and for bridge structures not covered in the ACE Drawings, including the Montclair Metrolink station pedestrian undercrossing. Type selection is not required for the Claremont Metrolink station pedestrian undercrossing provided that the undercrossing structure is a cast-in-place concrete structure as shown in the ACE Drawings.

Consultant shall provide independent checking and independent design check calculations for all bridges and pedestrian undercrossings. The independent check must be prepared by a licensed professional engineer registered in the State of California who has not been involved with the project and who has equal or better qualifications than the design engineer. The plans at the 60% submittal stage shall define the major elements of the structures. This shall allow the independent checker to use the 60% plans to conduct their task. Discrepancies and resolutions to the independent checker's findings shall be documented in writing and submitted to the Authority. The independent checker shall only use the plans to conduct their calculations, check the completeness of the plans, and verify that items have been addressed in the specifications.

At Towne Ave LRT bridge, CPUC has granted an exemption from the 22'-6" height requirement in GO-26D to allow a temporary false-work structure during construction at a minimum height of 20' above the highest freight rail. Reference CPUC Resolution SX-154.

Consultant shall provide the Authority all necessary support, design, and submittals required to acquire the Approval of 408 permit from USACE for the construction of the LRT San Antonio Wash Bridge. Refer to the Supplemental Contract Document 22- Water-Related Permit Information for the 1602 permit and the draft 408 permit application package.

Section 3.9.3 Retaining Walls

The approximate locations of some of the Project retaining structures are indicated in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2). Consultant shall determine the exact limits of all the Project retaining structures and consider the most effective structure type. The types of wall allowed to be used are A) reinforced cast-in-place (CIP) concrete with custom pattern, B) mechanically stabilized earth (MSE) with custom pattern and five feet by five feet minimum panel size, and C) T-Wall with custom pattern and five feet by five feet minimum panel size.

Retaining structures for LRT bridge approaches shall be the same type on either side of the LRT guideway embankment. Retaining structures located south of the SCRRA main track 2 shall be Type A.

Type Selection (30% design) is required for all non-standard retaining walls. Standard retaining walls shall follow Caltrans Standard Plans and/or Standard Plans for Public Works Construction "Greenbook".

Section 3.9.4 Sound Walls

Consultant shall be responsible for providing sound wall design as required in this Section. Sound wall locations and heights are shown in the table below. Sound walls shall be precast concrete post and panel with a formed architectural finish on the exterior face of the walls and a tined finish on the interior (facing trackway) – see Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2) for finish pattern. Post holes shall be augered (diameter and depth determined by Consultant).

Sound walls, when within 250 feet of the highway/pedestrian grade crossing, the top of wall shall be 3'-6" above finished surface.

Sound walls shall be required at the ends of TPSS #9 (Cambridge Avenue) to shield the neighbor from the noise of the air conditioning units.

Sound walls shall be installed per Table 3-3 below. The stations identified in the table below are approximate. Consultant shall place walls at intersections and grade crossings immediately behind the sidewalk.

Table 3-3: Sound Barrier Locations, Dimensions and Material/Finish

City	Wall No.[1]	Direction[2]	Eng. Station		Length	Placement Location[3]	Height Above Top-of-Rail[4, 5] (ft)
			Start	End	(ft)		
Pomona	1	WB	1919+00	1926+00	700	10' from NT	4
Pomona	2	WB	1934+00	1947+00	1,300	10' from NT	4

Pomona	3	WB	1955+00	1962+00	700	8' from NT	4
Pomona	4	EB	1927+00	1933+25	625	ROW (on ret wall)	4
Pomona	5	EB	1937+50	1948+50	1,100	ROW (on ret wall)	4
Claremont	1	WB	1975+0	1980+50	550	ROW (on ret wall)	6
Claremont	2a	EB	2032+75	2040+25	750	ROW (on ret wall)	8
Claremont	2b	EB	2040+25	2045+00	475	12.5' from SCRRA	8
Montclair	1	WB	2054+00	2056+55	255	ROW	6
Montclair	2	WB	2058+85	2065+50	665	ROW	6
Notes:							
* Notwithstanding the heights noted above, sound walls located at the property line shall be a minimum of 8 feet high on the private property side.							
[1] Walls have been re-numbered since the 2013 Final EIR due to design and analysis refinements.							
[2] EB = towards Montclair (south side of tracks); WB = towards Azusa (north side of tracks)							
[3] ROW = right-of-way property line; NT = light rail near track; SCRRA = Metrolink trains; ret wall = top of retaining wall is the base of the sound wall							
[4] Wall heights listed are the effective heights, which must be reduced to a height of 3'6" at any location within 250ft of an at-grade crossing.							
[5] These values are estimated ranges for wall heights. Actual height shall be determined by ground elevation and required height above top-of rail at any given point.							

Section 3.10 Civil Design

Consultant shall be responsible for designing all civil elements of the Project, including the required traffic control devices, signs and pavement markings, pavement, and curb and gutter, per Governmental Rules and the criteria set forth in this section.

Section 3.10.1 Drainage

Consultant shall design the LRT trackway and SCRRA Corridor trackway as separate drainage systems to allow for independent treatment, access, and maintenance. Additionally, all offsite drainage entering the Right of Way shall be incorporated into the drainage design. Any existing on-site drainage discharging to adjacent private property shall be redirected to remain within the Authority right-of-way and incorporated into the drainage design.

The Authority has received deviations from Metro and SCRRA to modify the slope of the subgrade/sub-ballast. Refer to Supplemental Contract Document 4- Approved Deviations to Design Criteria in Attachment 2. The crown of the subgrade/sub-ballast shall be located at the inter-track fence.

Consultant shall design drainage facilities outside the Right of Way in accordance with the design standards and requirements of the Governmental Person and other Governmental Rules.

Consultant shall design water quality BMPs to meet the requirements of the Governmental Person for the areas impacted by the Project. Where off-site drainage is to mix with Project runoff, a separate test location must be provided for testing of the storm water runoff from the off-site drainage areas.

At grade crossings, the upslope drainage facility shall be designed for zero bypass based on a 50-year storm frequency/intensity. In cases where the receiving systems have insufficient capacity, Consultant shall first evaluate redirection options including infiltration basins within the Right of Way and document how the Right of Way is protected from the 50-year storm frequency/ intensity at the grade crossing. Following this evaluation, if downstream relief measures or the construction of retention facilities (outside the Right of Way) are still required, such relief measures and retention facilities shall be considered on a case-by-case basis with the respective jurisdictions. All retention and infiltration facilities shall require soil borings that identify the depth of the permeable layer and applicable infiltration rate. Consultant will address storm runoff not collected by typical curb-side drainage structures in the drainage design.

Consultant shall design the replacement of the stormwater facility at the south end of the Montclair city parking lot west of Monte Vista Avenue in the vicinity of Sta. 2065+.

Section 3.10.2 Stormwater Quality Management

Consultant shall submit low impact development (LID) and/or standard urban storm water mitigation plan (SUSMP) reports as part of the H&H reports, noted in the section above, to the Authority and Governmental Person of the receiving system for review and Approval.

Section 3.10.3 Fencing

Consultant shall design the entire Right of Way to be secured by fencing, except at grade crossings and where the sound wall is immediately adjacent to the Right of Way line. In locations where retaining walls are required immediately adjacent to the Right of Way line, the fence shall be affixed to the top of the wall with an offset to place the fence fabric at the face of wall. Consultant shall provide all design for fencing including along the Right of Way and access areas, inter-track (on K-rail where required), along the Right of Way in the LRT and Metrolink station areas, TPSS sites and where OCS protection is required. Fences that are to be provided in areas outside the Right of Way shall be replaced in-kind, unless otherwise noted.

Section 3.10.4 Traffic Signals and Street Lighting

Consultant shall design traffic signal systems including all signs, signals, markings, and illumination devices required to facilitate safe and efficient operation of roadway traffic. These devices and associated systems and practices shall employ the basic considerations of design, placement, operation, maintenance, and uniformity generally used for traffic control devices as described in the California Manual of Uniform Traffic Control Devices (CA-MUTCD) and approved in California Public Utilities Commission (CPUC) grade crossing applications. Further, traffic signal devices and grade crossing warning devices shall regulate, warn, and guide roadway vehicles and pedestrians at each grade crossing safely and efficiently. Preliminary traffic signal phasing diagrams are presented in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2). Consultant shall finalize the phasing, prepare timing sheets and coordinate with applicable Governmental Persons, Cities, and other applicable Third Parties for Approval.

The design shall include traffic signals identified in Table 3-4 below. For all traffic signals design, Consultant design shall include traffic signal systems with accessible/audible pedestrian signal (APS) pushbuttons, video detection, yellow reflective tape on the outer edge of the traffic signal background, a new 16-phase advanced transportation controller (ATC) traffic signal controller with radio receiver equipment for remote monitoring/control, and battery backup in the controller cabinet. Traffic signal systems shall be designed per CA-MUTCD, ACE Drawings, and Supplemental Contract Document 8- California Public Utilities Commission Grade Crossing Applications and Extensions (refer to Attachment 2), Governmental Rules, and other applicable requirements.

Table 3-4: Traffic Signal Systems

CITY	INTERSECTION	TYPE	REMARKS
Claremont	Indian Hill Boulevard/ First Street	Existing[1]	Add northbound pre-signal and northbound backup prevention loop detectors. Include new 16-phase controller per requirements above. Extend traffic signal inter-connection resulting from expanded traffic study on Indian Hill Boulevard from Arrow Highway to Harrison Street.
Claremont	College Avenue/ First Street	New[1]	Including northbound backup prevention loop detectors
Claremont	College Avenue/ north of crossing	New[1]	Include pedestrian signal and pre-signal at grade crossing
Claremont	First Street/ transit parking/Columbia	New	Separate phase for bus lane
Claremont	Claremont Boulevard/ 1st Street	Existing	Add northbound backup prevention loop detectors. Verify existing traffic signal controller capability to accommodate loops.
Claremont	Claremont Boulevard/ Arrow Highway	Existing	Add southbound backup prevention loop detectors. Verify existing traffic signal controller capability to accommodate loops.

CITY	INTERSECTION	TYPE	REMARKS
Montclair	Richton Street/ Montclair Transit Center/	Modify	Locate signals to accommodate new lane configuration. Include video detection in lieu of pavement loops.

[1]Interconnect with grade crossing equipment

Interconnection conduit shall be designed to hold both a fiber optic cable and copper wire cable.

At existing intersections where traffic signal modifications are required, any existing subsystem (including CCTV, emergency vehicle pre-emption, wireless communication) shall be integrated and incorporated as part of the traffic signal design.

The design shall include:

- Bicycle detection at those signalized intersections with identified bike lanes. Bicycle detection is not required at rail grade crossings.
- Advanced pedestrian pre-emption as necessary at the traffic signals along Indian Hill Boulevard and along College Avenue.
- Underground fiber optic communication system to connect the existing traffic signal controller in the northwest corner of First Street/Indian Hill Boulevard to the new controllers at First Street/College Avenue and First Street/Columbia Avenue. The Indian Hill Boulevard to College Avenue cable route shall be from the existing controller to the north side of the Right of Way, then parallel and immediately adjacent to the Right of Way to the new controller at College Avenue/First Street. The College Avenue/First Street to Columbia Avenue/First Street cable route shall be in the City right of way.
- Traffic control signs in accordance with the CA-MUTCD and the standards of the CPUC.
- Speed limit signs that reflect the limiting design speed (either horizontal or vertical) of the crossing roadway.
- Traffic markings in accordance with the CA-MUTCD, CPUC, SCRRA, applicable Governmental Persons, Cities, and other applicable Third Parties.
- Cat tracks at all signalized intersections to guide motorists from turning lanes to receiving lanes.

When an existing traffic signal pole and mast arm is impacted by the Project, Consultant shall design new traffic signal poles and mast arms, including relocation or installation of additional equipment. Traffic signal poles and mast arms shall be designed to a minimum 100 mph wind load or greater in accordance with Governmental Rules. Existing traffic signal poles and mast arms can be re-used and relocated if wind rated to 100 mph and Approved by the applicable Governmental Persons.

Consultant shall provide structural calculations for all new traffic signal poles and foundations and existing traffic signal poles and foundations that shall have additional equipment added to the pole or mast arm, whether protected in place or relocated.

Consultant design shall replace existing street lights outside the Right of Way that are impacted by the Project with new lighting in accordance with the requirements of applicable Governmental Persons. When the addition of new street lights is necessary to meet required street illumination requirements, Consultant shall do so in accordance with applicable Governmental Persons

Section 3.11 LRT Stations

Consultant shall progress the station designs in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2) in compliance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2) and in consultation with the Authority. Consultant shall provide all architectural, structural, civil, drainage, mechanical, electrical, lighting, communication, train control, plumbing, signage, and landscape designs for the stations. Consultant shall include the provisions for the universal fare equipment as well as all ancillary components.

Section 3.11.1 Station Design

Station designs shall include station foundations and platform structures, entry/exit ramps, platform boarding and ticketing area canopies, ticket vending enclosures, communications equipment furniture, signage/graphics, connections to the trackway emergency walkways, artwork, lighting, railings, pedestrian grade crossing gates, map cases, CCTV, ADA tactile warning tile and directional bar tile, and associated equipment and facilities. The space under the platform and adjacent ticket areas shall be open and fully accessible via the under-platform ventilation grates.

Freestanding assemblies, including transformers and equipment enclosures shall be off the platform, away from public view and public access. Station electrical, systems, and communications housings shall be located in one location for easier access by the appropriate parties, and away from public viewing and access.

Section 3.11.2 Terminus Station Layover Facility

Consultant shall design a terminus station layover facility as shown in the Advanced Conceptual Engineering Drawings and in accordance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2). The location and layout of the terminus station layover facility shall not be altered without the Approval of the Authority and applicable jurisdictional agency. The terminus station layover facility shall be a secured/enclosed facility and a minimum of 12 feet by 40 feet with consideration for access doors on each end. Layover room shall be constructed with similar building materials as the layover facility at the Pomona station. Architectural design shall be developed by Consultant's architect and Approved by the Authority. The design shall provide for a fully functioning layover facility.

Consultant shall provide all architectural, structural, civil, mechanical, electrical, lighting, communication, plumbing, and signage, designs for the terminus station layover facility.

Section 3.11.3 Authority "Art in Transit" Program

Each station shall have a unique artwork component(s) that shall be provided by the Authority-designated station artist (refer to Supplemental Contract Document 14- Advanced Artwork Concepts in Attachment 2. Some of the artwork shall require Consultant-provided design of structural support materials and lighting. Consultant shall be responsible for the implementation of the "Art in Transit" program as follows:

- The artists and Consultant shall work together to achieve a cohesive station design that incorporates art and baseline elements into a unique design that identifies the station as a destination.
- The artists' designs shall be included at each level of design submittal to ensure maintenance and operational issues are properly evaluated.
- Artwork elements shall be designed so that they can be easily removed for maintenance and repair.

Table 3-5 Artists' Contact Information

Station	Artist
Claremont	Joyce Kohl 3706 S Weymouth Avenue San Pedro, CA 90731 626-319-2841 kohlmorse@gmail.com
Montclair	Ruth Ann Anderson / Mailing Address 11612 Lancaster Road Portland OR 97219 213-595-3529 moonlght@pacbell.netraa1399@icloud.com

Section 3.11.4 Parking Facilities

The Consultant shall design the modifications and improvements at the Claremont and Montclair parking lots as shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2). The Claremont parking facility shall follow Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2) in consultation with the Authority. The Montclair parking facility shall not be operated by Metro and therefore need not comply with Metro's requirements. The Authority has obtained conceptual approval of the modifications and improvements at the Montclair parking facility (refer to Supplemental Contract Document 18- Caltrans Project Study Report/Project Report in Attachment 2). The Montclair parking facility shall comply with Caltrans requirements and standards including Supplemental Contract Document 15- Caltrans Mobility Hub Design Guide and Park and Ride Resource Guide (refer to Attachment 2).

Consultant shall provide all the civil, architectural, structural, electrical, lighting, communication, and signage designs.

The eastern portion of the Claremont parking lot shall be modified to include a new parking lot

with a minimum of 46 parking stalls, a concrete paved drop-off/pick-up lane and a ramp and stair system down to the pedestrian undercrossing. The eastern parking lot shall be entirely new construction with the entire pavement section, including base, removed and replaced.

The Montclair parking facility consists of a series of surface parking lots at the Montclair Transit Center. The parking facility shall be modified and yield a minimum of 1600 parking spaces, including the required minimum number of ADA stalls near the light rail station, Metrolink station, and bus loop area. Consultant shall design a bike connection with sharrow markings to the Pacific Electric trail. The existing development, building and grass field, south of Richton Street and north of the bus loop, shall be replaced with a surface parking lot. This new surface parking lot area shall be serviced from Utility services separate from the existing parking lots and transit plaza areas. Richton Street shall be modified, including asphalt pavement, curb returns and ramps, crosswalks, sidewalks, landscaping, and striping. The existing bus loop shall be rearranged in accordance with Governmental Rules and relocated. Existing bus stop pole signs shall be replaced so that each bus bay has a pole mounted sign with bus line number and information. Consultant shall design all aspects of the parking lots as well as all ancillary components necessary for the operation of the Project.

The Consultant design shall include:

- Automated license plate recognition (ALPR) system at the Columbia Avenue vehicular ingress and egress location of the Claremont parking lot,
- Two payment kiosks at the Claremont parking lot,
- A parking guidance system (PGS) at the Claremont parking lot. The PGS shall include an electronic sign located at the Columbia Avenue entrance point to the parking facility showing the number of vacant parking spaces for the lot such that users can identify the number of spaces available without having to enter the lot. The system shall be compatible such that the future Claremont Parking Facility Project can be tied into this parking guidance system and sign to account for all the stalls in between the two projects,
- 30 electric vehicle (EV) charging stations at the Montclair parking facility in accordance with Governmental Persons having jurisdiction,
- A new and separate electrical service for the EV chargers which shall be owned and maintained by the City of Montclair.

Section 3.11.5 Landscaping

Consultant shall employ the services of a landscape architect registered in the State of California to provide the landscape and irrigation design throughout the Project as shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2). Consultant shall develop planting plans and details using a recommended plant palette. Also, identify where existing landscaping need repairs and restoration after completion of the Project, such as existing parking facilities. Provide landscaping as a screen to Project structures and operations from their surroundings and integrate it with the mitigation measures defined in the environmental document. Aesthetically integrate the Project into the surrounding community.

Section 3.11.6 Pedestrian Enhancements

The pedestrian enhancement areas are connections from the station platform to the parking facilities, including plazas, promenades, and other public areas. Consultant shall design pedestrian enhancements shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2) including:

- Hardscape
- Benches
- Trash receptacles
- Decorative railing at stations

Section 3.11.7 Bus Interface Enhancements

Consultant shall design new bus stops with shelters, including bus pads, at the Montclair Transit Center as shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2) and in accordance with applicable Governmental Rules. Each shelter shall include a standard Metro stainless steel bench and trash receptacle.

Section 3.11.8 Bike Access and Parking

The Consultant shall provide for safe access to and from stations by bicycle, including wayfinding signage on shared pedestrian/bike paths. The Consultant shall design the following bike parking facilities, at each station in accordance with applicable Governmental Rules:

- Bike racks
- Bike shelter including lighting, electrically controlled access with intrusion detection, tiered Dero Decker “EZ-Lift” bike racks, CCTV, emergency telephone, and signage per Metro bike hub requirement

Section 3.11.9 First Mile Last Mile

The Consultant shall coordinate pedestrian, bike, and bus interfaces at the station areas and other locations throughout the Project with Metro’s planning, design, and construction of “First Mile / Last Mile” elements for the Project.

Section 3.11.10 Mechanical and Plumbing

The Consultant shall design the HVAC systems, domestic water needs at the stations and the source of water, sewer lines/connections and preliminary equipment physical size.

Section 3.11.11 Electrical

The Consultant shall verify the space and applicable code clearance requirements for the station electrical equipment and cabinets. The electrical design shall incorporate Metro’s requirements applicable codes and standards for: conduits and ductbank for the project Utility services, medium-voltage conduits including pull points, station control and communication conduits, and electrical, mechanical equipment calculations including lighting photometric and includes the verification of backlight/uplight/glare (BUG) along the alignment for both full/normal and emergency egress illumination.

The Consultant shall design the mainline ductbank that interconnects the systems equipment up

to the station interface manholes. This includes train control, traction electrification, and communications conduits.

Section 3.12 Metrolink Stations

Section 3.12.1 Claremont Metrolink Station

Consultant shall design all elements of the Claremont Metrolink station as well as all ancillary components including such items as electrical, train control, and communications equipment necessary for the operation of the Project in accordance with Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2).

Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings (refer to Attachment 2) include architectural, electrical, and structural drawings that have been advanced to approximately 60 percent level of completion. Consultant shall verify the designs shown in the ACE drawings with the other design disciplines and the Project requirements, including preparing all the required calculations. Consultant shall provide all the architectural, structural, civil, mechanical, electrical, lighting, communication, plumbing, and signage designs for the Claremont Metrolink Station.

The Claremont Metrolink station shall include station foundation and platform structures, pedestrian undercrossing with security gates, entry/exit ramps and stairs, ADA mini high block, detectable warning tile and directional bar tile, canopies, guardrails and handrails, drainage, benches, trash receptacles, hose bibs, communications equipment, furniture, signage graphics, lighting, railings, map cases, fare system equipment (supplied and installed by others), pedestrian undercrossing with a ticket vending machine (TVM) area, CCTV (including in the pedestrian undercrossing), and miscellaneous equipment and facilities.

Consultant shall design a knock-out panel on the south side of the pedestrian undercrossing to accommodate the future design and construction of pedestrian access ramps to the undercrossing.

Freestanding assemblies, including transformers and equipment enclosures shall be off the platform, away from public view and public access. Station electrical, systems, and communications housings shall be located in one location for easier access by the appropriate parties, and away from public viewing and access.

Section 3.12.2 Montclair Metrolink Station

Consultant shall design all provisions necessary for the relocation of the existing Metrolink station TVMs, passenger information phones, ticket validators, and any other impacts to the Metrolink station due to the LRT system. Consultant shall design a retaining wall along the north edge of the existing north platform in order to build the new LRT tracks. A decorative railing shall be included on top of the retaining wall.

The station modifications include:

- Extension of the existing pedestrian undercrossing
- Grade crossing connection to LRT platform
- Relocation of one existing Metrolink station ticketing canopy and three existing TVMs. Canopy to include lighting and one passenger information panel (PIP)

- Relocation of the existing Metrolink kiosks, passenger information phones, and ticket validators

Section 3.12.3 Mechanical and Plumbing

The Consultant shall design the domestic water/sewer needs at the stations and the source of water.

Section 3.12.4 Electrical

The Consultant shall verify the space and applicable code clearance requirements for the station electrical equipment and cabinets. The electrical design shall incorporate SCRRA's requirements, applicable codes and standards for conduits and ductbank for the project Utility services, calculations including lighting photometrics.

Section 3.13 Corrosion Control and Grounding

The Consultant shall conduct a geotechnical program to test soil samples for pH, resistivity, chlorides, and sulfates during their design phase program of the Project. Soils tests shall be conducted on 25 percent of the borings, or every 500 feet, whichever is more frequent and at all TPSS sites. The Consultant shall include corrosion control plans, provided by Systems Consultant, within the appropriate Project drawings.

Consultant shall coordinate corrosion control and grounding with all Utility owners, and with the mechanical, civil, structural, electrical, trackwork, traction power, overhead contact system, environmental, geotechnical, architectural, train control, and communications subsystems throughout the design, installation, and start-up processes of the Project. Corrosion control, substation, and Project grounding designs, bonding design, and lightning protection requirements shall be coordinated, and their designs shall be compatible with relevant safety requirements. Consultant shall develop a detailed coordination program that includes plans/guidelines for testing, corrosion protection, and stray current identification and control.

Consultant shall coordinate its designs with corrosion control measures provided by others for structures owned by others to resolve design conflicts and minimize adverse impacts and interference. Consultant shall coordinate with all owners of other structures or real property and keep the Authority informed.

Consultant design shall prevent corrosion of structures from soil and water conditions. Where failure would affect safety or interrupt continuity of operation, Consultant shall provide corrosion control provisions for all facilities regardless of location or type of construction material. Consultant shall identify the structures that could be affected by soil and water corrosion. Consultant shall protect metal structures using corrosion control techniques such as coating, electrical isolation, electrical continuity, and cathodic protection.

Consultant design shall minimize the corrosion impact of stray currents from DC traction power systems on the trackway and associated structures and on adjacent structures owned by others. The Project structures, which could be affected by stray currents, shall be identified by Consultant, and designs provided to minimize the impact of these stray currents.

The traction power distribution system shall operate without direct electrical connections between the power system return and ground.

Consultant shall provide stray current corrosion prevention systems based on studies conducted

by Consultant that predict the magnitude of anticipated stray currents and in accordance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).

Consultant design shall include test facilities on all electrically bonded Project structures to measure and monitor stray currents. Corrosion control shall include test facilities for individual protected structures. Consultant shall develop detailed description of the test facilities for various structures.

Grounding and corrosion control requirements must not conflict. Complementary grounding and corrosion control systems shall include proper location of insulation points and timely operation of grounding mechanisms.

Grounding protection systems for TPSS, wayside equipment cases and bungalows, passenger stations, and aerial structures shall be concealed and shall:

- Protect passengers, Project operators, maintainers, and personnel against hazardous voltages.
- Provide a ground path for lightning surges and fault currents.
- Ensure integrity of corrosion control systems.
- Meet the most stringent grounding code requirements applicable to the Project.

Grounding for TPSSs shall consist of a ground bus connected to ground rods and conductors interconnected to form a low-resistance grid mat with maximum ground resistance of five ohms.

Grounding for passenger stations and other Project buildings shall consist of a ground mat under each facility composed of a buried grid-and-rod system.

Each grounding point for aerial structures shall consist of a ground electrode with rods and conductors at each end of the structure.

Section 3.14 Traction Electrification

Consultant shall design the required systems, equipment, facilities, and all other appurtenances to deliver a complete, safe, operational traction power and electrification system of proven design. This Project includes the provision of nominal 810 VDC overhead contact system that provides traction power to Metro-provided LRVs throughout the entire A Line Glendora to Pomona mainline alignment.

Consultant is required to assess the preliminary load flow study performed by the Authority and include any necessary adjustments/improvements in order to provide service in accordance with the Contract requirements. Consultant shall submit a final load flow study report to the Authority for review and Approval. The following parameters shall be used for preparation of the final load flow study report:

- TPSS full load voltage (at 100% load): 810 VDC
- LRV current limit at pantograph: 1292 Amps
- The voltages shall remain within the limits of IEC60850 for a 750 VDC system

A preliminary traction power short circuit and protection settings report (TPPSR) and arc flash analysis shall be submitted to the Authority for review and Approval.

Consultant shall coordinate with the respective Utility owners to ensure that Utility power is provided in accordance with the Project requirements Each TPSS shall be supplied by a three-phase, 60-hertz power circuit from the serving Utility. Per Supplemental Contract Document 2-

Metro Requirements (refer to Attachment 2), adjacent TPSSs shall be supplied from separate utility substations or from separate buses of the same utility substation, as practically possible.

Consultant shall provide remote control and monitoring of substations via the existing light rail supervisory control and data acquisition (SCADA) system. All SCADA connections shall be via fiber optic cable to the communications facility. Interface design and provisions shall be in accordance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).

If necessary, in order to provide an integrated system (e.g., for transfer trip and ETS), Consultant shall design the modification of the cabling system at the existing Garey TPSS.

Section 3.15 Emergency Trip Stations (ETS)

Wayside emergency trip stations (ETS, also referenced as blue light stations) include an emergency telephone, power diagram, and pushbutton and shall be located in accordance with Supplemental Contract Document 13- Fire/Life Safety and Security Committee Emergency Plan (refer to Attachment 2) and installed in accordance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2) and NFPA 130. Substation ETS are known as ETS-Fire (ETS-F) and shall be in accordance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2). ETS designations shall follow the numbering scheme for the existing Metro A Line.

Section 3.16 Overhead Contact System

Consultant shall design the OCS in accordance with the State of California Public Utilities Commission (CPUC) General Orders (class T circuitry, grade C construction). In no case can exceptions be taken to the General Orders without prior Authority and CPUC Approval. As necessary to provide an integrated system, Consultant shall modify the existing Metro A Line OCS system, subject to Authority Approval.

Consultant shall develop design provisions for supplemental aerial auxiliary feeder based on the load flow study performed by Consultant, without sacrificing performance or appearance of the OCS system. Use of auxiliary feeder is subject to Metro Approval. Underground parallel feeders shall not be allowed.

The OCS design shall accommodate the following LRT vehicles to be supplied by Metro: P-2000, and P-2020 for pantograph over truck design; P-2550, P-3010 for pantograph mid body design.

Consultant shall support CMAR's development of a system cutover plan, detailing how the existing OCS system shall be modified and connected to the Project. The plan shall detail what, and for how long, existing Metro A Line systems shall have to be taken out of service and discuss impacts to current Metro A Line operations. The plan shall ensure that at no time, without Metro's Operations Department prior written authorization, more than one of the existing tail tracks shall be de-energized or otherwise unusable for the storage of three-car trains. The plan shall be submitted at least six months prior to commencing any work on existing Metro equipment.

Section 3.16.1 Sectionalization

The OCS shall be electrically sectionalized, consistent with the location of the TPSS, the track layout, the signal system and interlocking scheme, and the system operations plan. The sectionalization shall allow sections of the OCS to be de-energized for maintenance and emergency purposes. The sectionalization shall allow the cross-over utilization with three car turn-backs to be operational when OCS isolation is required.

The OCS catenary shall be sectionalized by means of insulated overlaps at all TPSSs including Garey TPSS. OCS at Garey TPSS needs to be redesigned from existing configuration to the insulated overlap. At universal crossovers, mechanical section insulators may be used at crossovers only and not on the main line tracks. At double crossovers, mechanical section insulators may be used at crossovers and main line tracks. Airbreaks are not allowed in the system.

Consultant design shall include lockable manually-operated disconnects at crossovers and for TPSS bypass. Consultant shall comply with CPUC General Order 143, Rule 10.07.

In the tail track area east of the Montclair Station, the catenary system shall be sectionalized by using the mechanical section insulators.

Section 3.17 Signaling/Train Control

Consultant shall design all new signal system elements for the Project, which shall include replacement of and addition to the existing signal system elements for the SCRRA Corridor rail operations, in conjunction with relocating and reconfiguring the SCRRA Corridor rail alignment and tracks. This shall include all temporary design for equipment, cable, and installation required to keep all systems and subsystems of the in-service signal system functioning as required by the FRA and CPUC for train moves at timetable speed on the Freight Corridor and Metrolink Corridor without interruption. These systems and subsystems shall include all wayside equipment, including grade crossings, wayside signals, switches, hotbox/dragging detectors, traffic signals and traffic signal controllers, power services, control points, positive train control (PTC) (where applicable) and wireless crossing nearside station stop system (WCNSS)(where applicable). Except for the interconnect as required at the shared grade crossings, to the maximum extent possible signal system elements for the LRT alignment and the SCRRA Corridor shall be separate and independent; this includes power source and power distribution.

Signal equipment shall be arranged in accordance with Supplemental Contract Document 2- Metro Requirements and Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2) and such that maintenance can be easily performed and clearances between equipment and between rows of equipment and walls are in compliance with NEC and Cal-OSHA requirements.

All train control cases, bungalows, grade crossing equipment, and SCRRA wayside signals shall be set a minimum of 12 feet from the centerline of the nearest track and a minimum of four feet to any fencing. Consultant shall ensure the fencing or gates are not in conflict with the generator plug or HVAC unit. All bungalows and cases shall be set out as far from the centerline of track as possible within the Right of Way while maintaining these requirements.

All cable and wire installations shall be continuous. Cable or wire splices shall not be allowed.

Consultant shall prepare double line, single line train control/signal system alignment drawings and route and aspect charts for the Project that are consistent in format with the existing Metro A Line.

A separate set of double line and single line train control/signal system alignment drawings shall be provided for:

- The entire LRT alignment which shall include any portion of the existing Metro A Line where wayside equipment will be deleted, added, or relocated in conjunction with the Project.

- The entire Freight Corridor within the Project limits and extending to any portion of the existing alignment where wayside equipment will be deleted, added, or relocated in conjunction with the Project.
- The entire Metrolink Corridor within the Project limits and extending to any portion of the existing alignment where wayside equipment will be deleted, added, or relocated in conjunction with the Project.

A cable schedule and conduit fill ratios shall be provided for all LRT and SCRRA Corridor train control duct banks.

Section 3.17.1 Light Rail Transit (LRT)

Consultant shall be responsible for the design of all train control elements for the LRT which shall include mainline train control and grade crossing warning designs and installations, as specified herein and in Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).

The LRT signal system shall be of proven design and shall provide a design (non-interference) headway for normal and reverse direction operations. Consultant shall submit calculations/simulation results demonstrating compliance with headway and other operating requirements to the Authority for review and Approval.

The LRT signal system shall provide specific interfaces for extending the line from the current Metro A Line terminus at Pomona Station and specific interfaces with SCRRA at shared grade crossings.

In conjunction with the existing car-borne light rail vehicle (LRV) equipment, the LRT signal system shall provide continuous overspeed protection via automatic train protection (ATP) speed commands (cab signal) over the entire mainline alignment. The mainline train control system shall prevent unsafe operation with respect to other trains, interlocking conditions, civil speed limits, and grade crossings. The interface between the existing Metro A Line signal system and the Project shall be seamless.

Run time: To the maximum extent practicable, run time for the operating line shall be minimized via the block design layout.

- Provisions shall be provided for a station skip stop as indicated below:
    - Station skip stop shall require a request from the ROC or LCP at nearest interlocking to the station. One request would accommodate both tracks in both directions to eliminate confusion of multiple requests (i.e., each track in each direction). Separate controls to locations controlling cab through the platform shall be required. Skip stop request and set indications shall be provided for each track.
    - The ROC request would activate the extended station skip stop approaches providing full Advanced Pedestrian Pre-emption (APP)/Advanced Pre-emption Time (APT)/Warning Time (WT) at 10mph through the platform. Cab signals shall be enforced using the civil braking criteria and requirements as defined in Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).
    - Once the event is over, the ROC would need to cancel the request to go back to normal operations.
    - In the event of a Microprocessor reset, station skip stop shall not be stored and shall

revert back to the most restrictive state (i.e., normal operations).

- An independent alarm shall be activated on the ROC controllers console and the nearest LCP once the request is sent as a reminder that the request was sent and station skip stop is activated.
- If the train is within the pre-emption or extended approach the request shall be ignored, and normal operations shall be maintained. Similar logic shall apply when this operation is attempted to be cancelled from the ROC or the nearest LCP with approaches occupied.
- Requirements indicated shall apply to all crossings in which the preemption/crossing approach extends through the limits of the platform or blow down timers are used to bring a train to a stop at the end of the platform and are dependent on station dwell times.
    - Under normal operating conditions when a station skip stop is not in place as indicated in above at nearside crossings where activation of gates is delayed for dwell time at the station, speed downgrades or stops at the station shall be enforced by cab signals using the civil braking criteria and requirements as defined in Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).

Directional stick logic for grade crossings, LRT or FRT override, and crossing “RAISE” pushbuttons shall be checked in the cab signal logic. Cab signal downgrades shall be in compliance with the safe braking requirements in Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).

Consultant shall design a train-to-wayside communication (TWC) system at all immediate approaches to wayside signals, where auto-routing extends to the limits of a platform the ability to cancel and re-request the auto routed signal shall be provided, any time the limits to an interlocking are in close proximity of the station (within 1500 feet) or where a preemption or crossing approach extends through an interlocking into the limits of a station platform, and at the terminus station for calling turn-back routes from the terminal platform back onto the mainline to either track from either track. Loops must accommodate two and three car trains at their outbound berthing position.

Consultant’s design shall include train detection as specified in Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2) and such that berthing in each station platform is defined. Any “dead sections” of detection, including those at insulated joints, shall not exceed three feet.

Route setting shall be provided as identified in Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2) for control of train movement through the signalized sections. With the exception of cab speed dial down controls, all controls and indications provided by the local control panels (LCP) shall also be available for the ROC. Additional ROC controls such as automatic selection and ROC control shall also be required.

In addition to Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2), Consultant shall design the following:

- Bumping post signals at the end of line tail tracks.
- Light-out detection shall be provided for all interlocking signals and motorman signals. Lamp checks shall be active on all signal LED units regardless of the aspect displayed. A lamp-out condition on a permissive signal aspect (G, Y, FG or FY) shall downgrade to flashing red aspect and cab codes shall downgrade for signal at stop. A lamp-out condition on a red signal aspect or lunar motorman signal shall result in a dark signal. Lamp-out

conditions shall be indicated to the ROC and the zone LCP.

Consultant's design shall provide two section release of approach stick relay (ASR) for each route within an interlocking and ensure that only track circuits within the established route shall release the ASR. Consultant design shall also provide circuits and logic that will prevent the ASR from being released in the event of a module, power, or equipment failure.

Track switches shall be Model M23-A or Ansaldo STS Model M-3 low clearance, switch machine with mechanical circuit controller (MCC) as required for clearance.

Consultant shall design impedance bonds and running rail continuity as well as cross bonding sufficient to comply with the traction electrification system requirements, and as required per Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).

Power for signal enclosures at station sites may be distributed from the station electrical facilities. For signal bungalows and cases not near stations, power shall be provided from a local utility source via separate power drops for the LRT and freight/Metrolink commuter rail signal systems. Power service pedestals shall be placed within 100 feet of the bungalow for which it is providing power. Pedestals shall be easily accessible for the Utility owner to read, test, and inspect without requiring authorization to enter the rail right of way.

A single LRT bungalow shall be provided at all grade crossings and interlockings. Montclair south interlocking bungalow shall also incorporate the south pedestrian crossing. Montclair north interlocking bungalow shall also incorporate the pedestrian crossings at the north end of the platform on Tracks 1 and 2, as shown in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings.

Vehicular accessibility and parking shall be provided directly to each enclosure, within 20 feet of the enclosure, from the nearest roadway. Access to an enclosure via hi-rail vehicles is not an acceptable form of vehicular access.

A parking pad large enough to support a four-door utility maintenance truck shall be provided for each enclosure within twenty feet of the enclosure.

Access to the track from each enclosure shall be provided within thirty feet of each enclosure.

All train control enclosures shall be equipped with a weatherproof external socket and required power transfer equipment for the connection of a mobile generator. For each supply voltage generator receptacle sockets and cables shall match those already in service at the existing Glendora to Pomona Metro A Line. Provisions shall be provided for a generator pad immediately next to each enclosure. The generator pad shall be easily accessible from the roadway. The generator pad shall be large enough to accommodate a generator mounted on a fourteen-foot trailer and within twenty feet of the enclosure. The furthest point of the generator to the generator plug on the bungalow shall not exceed twenty-five feet. Where these requirements cannot be met, a manual transfer switch shall be installed between the bungalow and the generator parking pad. All conduit, cabling and transfer switch shall comply with all applicable Contract requirements.

Preliminary and approximate locations and sizes of train control enclosures and vehicle access are shown in proximity to the interlockings and at grade crossings in Supplemental Contract Document 1- Advanced Conceptual Engineering (ACE) Drawings. In coordination with the Authority, Consultant shall determine the final sizes and locations of each enclosure, as well as

vehicle and Right of Way access.

HVAC, generator plugs, intrusion detection systems, and standard electric locks will not be required for enclosures used for the sole purpose of trackside equipment.

Bottom of train control enclosure elevations shall be six inches above back of sidewalk at grade crossing locations, six inches above top of tie in mid-block locations and six inches above final grade at Montclair Terminus. All bungalow/case installations shall be immediately back filled and compacted to 85% at a minimum depth of three and a half feet of native soil around all bungalow/case foundations and underneath the bungalow/case.

The wayside signals for the interlockings at the railroad north and south ends of the Montclair platform shall be placed at the ends of the platform for their respective interlockings. Each signal shall incorporate the pedestrian crossing at the respective ends of the platform. The pedestrian crossings shall function as follows:

- Northbound into the platform, the south pedestrian crossing shall function normally providing a minimum of 20 seconds of warning time.
- Northbound into either tail track, the northbound signals shall only be allowed to clear when the respective platform track circuit is occupied. The signal clearing shall be delayed to provide a minimum of 20 seconds of warning time for the respective pedestrian crossing.
- For southbound moves out of either tail track, provide a minimum of 20 seconds warning time for the north pedestrian crossings. If the tail track is unoccupied, the signal shall clear immediately.
- For southbound moves out of the Track 2 platform track, the southbound signal clearing shall be delayed until a minimum of 20 seconds warning time is provided at the south pedestrian crossing. If the approach circuit to the south crossing is unoccupied, the signal shall clear immediately provided a minimum of 20 seconds can be achieved for a southbound train out of the tail tracks.

Turn-back and Terminal Mode Operation shall include the following:

- Pomona Station:

  For normal operations provide fleeting for the 2N and 4S signals as well as the 12N signal. Modify all impacted circuits and logic, including the control lines and advanced preemption/crossing approaches as required for the Pomona station pedestrian crossings and the grade crossings west of the Pomona Station platform for through moves at maximum authorized speed while maintaining all applicable contract requirements.

  Provide controls and indications from the ROC and the Pomona Interlocking LCP for a Temporary Terminal Mode (TTM). While in TTM, the 12N and 12S signals shall be used as hold out signals. At the insulated joints on Track 2 Stationing 1909+30, design a 14N/14S back-to-back hold out signal. Hold out signals shall have the ability to be controlled from the ROC, the Pomona Interlocking LCP or TWC Loops at the north end of Pomona Station, and in immediate approach to the 12S and 14S signals. The 14S signal shall also have auto-routing capabilities while in normal operation or TTM as permissible by conditions ahead. When TTM is selected by the ROC or the Pomona Interlocking LCP, provide auto-routing into Track 2 as the preferred route. If Track 2 is occupied, out of service or a southbound holding signal is cleared, trains shall be routed to Track 1 assuming all permissive conditions apply. Straight through moves on Track 1 or Track 2 shall function as modified for normal operations as mentioned above. Turnback moves shall operate per Phase 2B

operating conditions for all signals, cab speeds, grade crossings and pedestrian crossings.

Station skip stop capabilities shall also be provided as previously indicated.

- Montclair:
  AUTOMATIC MODE – Track 2 shall be the preferred track. Provide the ability to select each station platform out of service. Trains shall be automatically routed into alternating platforms dependent on track occupancy or platform out of service; TWC routing capabilities shall be provided at both ends of the platform. Operator shall be able, via TWC, to request that the departing signal be cleared for the train to proceed from two and three car trains at their outbound berthing position. Crossing start/stop capabilities shall be incorporated into the signal clearing and canceling at both ends of the platform.

Consultant shall design automatic routing when the interlocking is placed in automatic mode via LCP, or from ROC via SCADA.

All grade crossing design, equipment, circuits, and testing shall comply with FRA, CPUC, and AREMA requirements and recommendations in all respects. Consultant shall comply with the approved CPUC crossing applications.

Grade crossing equipment shall be designed to provide adequate access for maintenance personnel.

Back lights shall not be designed on the exit gate's mast or median gate masts unless specified on the approved CPUC drawings.

Where pedestrian gates are designed, a separate gate mechanism shall be designed. The pedestrian gate shall have a bell and adequate flashers as determined in the approved CPUC drawings

Consultant's design shall include the flashing lights and sign arrangement on each entrance gate, exit gate, pedestrian gate, cantilever, and flasher. Each sign and flashing light unit must be oriented in such a manner that each lane, sidewalk, cross street, and driveway is covered with an unobstructed view at 400ft for oncoming traffic. All signs and flashing lights shall be in compliance with FRA, CPUC, CA-MUTCD, and AREMA rules and regulations. Jury arms shall not be used as a design tool to work around traffic signal poles, signage or any other potential flasher obstruction. Consultant shall also be responsible for the design and installation of bollards or guardrails in areas that the gate, cantilever, flasher, pedestrian gate, or signal may be damaged by oncoming traffic or vehicles making turns;

Consultant shall ensure gate, flasher, or cantilever placement is not in conflict with overhead or underground utilities or structures. Design shall ensure gates can raise vertically without interference.

Design shall ensure gate arm lengths do not exceed 34 feet from centerline of gate mast for LRT or freight/Metrolink commuter rail.

All LRT pedestrian flashers and gates at the Metro station platforms shall have animated "look both ways" signs

Grade crossing preemption, activation, gate, exit gate, flashing light, and bell operations shall follow FRA, CPUC, and AREMA requirements and recommendations. Separate advanced

pedestrian preemption, vehicular preemption and crossing activations shall be required as applicable for grade crossings with traffic signal interfaces;

The freight/Metrolink commuter rail and LRT crossing activation shall be indicated to the LRT SCADA.

Warning, advanced pedestrian preemption, and advanced vehicular preemption times shall be Approved by the Authority and applicable Governmental Persons. The calculation of the exact warning time shall be done for each crossing according to the AREMA Signal Manual, Part 3.3.10, unless otherwise specified by the governing grade crossing agreement. The minimum warning time for LRT shall be 28 seconds. At certain grade crossings with traffic signal interfaces the warning time and/or grade crossing approach shall be extended for advanced pedestrian preemption and vehicular preemption purposes.

The exit gate(s) shall operate in dynamic exit gate operating mode (EGOM), a mode of operation where the exit gate operation is based on presence of vehicles within the minimum track clearance distance (MTCD).

At grade crossings with traffic preemption, the interconnect circuits between the grade crossing controller and the highway traffic controller shall be designed and installed as identified in AREMA 16.30.10, and shall include at a minimum advanced pedestrian preemption, advanced preemption, crossing activation, gate down, island occupancy, supervisory and health monitoring circuits.

On LRT tracks where preemption and/or crossing starts extend beyond a wayside signal and the signal is requested while a train is on the approach, the signal clearing shall be delayed to ensure full preemption and warning times are provided. The interlocking signal shall remain at “STOP” until the expiration of the full advance preemption if an LRV is on the approach prior to a route being established. Activation of the grade crossing warning system and the pedestrian or traffic preemption circuits simultaneously or truncation of pedestrians shall not be allowed.

Anti-pumping features shall be provided (second train logic) between LRT tracks as well as between each LRT to freight/Metrolink commuter rail and freight/Metrolink commuter rail to LRT tracks for all crossings, and as required per AREMA recommendations. For crossings with preemption, the anti-pumping feature shall extend out through the vehicular preemption approach.

On LRT tracks for all crossings without preemption, an extended approach shall be provided in lieu of the preemption approach.

Consultant shall design the operation of the grade-crossing bells to be silenced for LRT trains after all gate arms have descended and shall remain silenced while horizontal and ascending for the grade crossings listed in Table 3-6 below. For freight/Metrolink commuter rail trains, Consultant shall design the operation of the crossing bells to activate with a freight or Metrolink commuter rail train on the approach. If an LRT train is already on the approach and the gates are horizontal with the bells silenced, the bells shall activate on both sides of the crossing once the freight or Metrolink commuter rail train initiates a crossing approach. Consultant shall provide provisions consistent with the existing Metro A Line, Glendora to Pomona segment, to disable this feature by use of a jumper to allow the bells to ring with either an SCRRA or LRT train on the approach.

Table 3-6 – Crossings subject to Noise Mitigations (Pending CPUC approval)				
No.	**EXISTING RAILROAD CROSSING #**	**DOT #**	**STREET**	**CITY**
1	101SG – 32.40	026730Y	Cambridge Ave	Claremont
2	101SG – 33.16	026179F	College Ave	Claremont
3	101SG – 33.68	026178Y	Claremont Blvd	Claremont
4	N/A	N/A	Claremont Station LRT Pedestrian Gate West	Claremont
5	N/A	N/A	Claremont Station LRT Pedestrian Gate East	Claremont
6	N/A	N/A	Montclair Station LRT Pedestrian Gate West	Montclair
7	N/A	N/Asa	Montclair Station LRT Pedestrian Gate East	Montclair

At grade crossings by both the LRT and freight/Metrolink commuter rail train detection and activation circuits shall be housed separately in their respective LRT and SCRRA equipment enclosures.

LRT crossing bungalows shall be located on the LRT field side of the tracks and the SCRRA crossing bungalows shall be located on the SCRRA field side of the tracks. Bungalows shall not be placed between the tracks. The LRT bungalow shall directly control all LRT gates/flashers, while the SCRRA crossing bungalow shall directly control all SCRRA gates/flashers.

Traffic signal interface for both rail systems shall be sent from the LRT bungalow to the city traffic controller.

A point-to-point serial data link shall be provided between the LRT primary crossing controller unit and the SCRRA primary crossing controller unit via a shielded RS-422/485 cable.

At the Pomona station/interlocking, Consultant shall design the removal of the tail tracks at the north end of Pomona station in order to build the LRT grade separation for Garey Ave grade crossing. Consultant's design shall modify the existing train control system to optimize terminus operations and headways into the Pomona terminus while these construction activities take place.

All interlocking signals shall provide a red signal violation any time a train proceeds through a signal displaying a "STOP" indication. At each interlocking signal an independent overlay circuit shall be provided to ensure overrun detection is provided for every possible route in every direction. The red signal violation shall provide an overrun indication to the LCP and the ROC. The red signal violation system shall provide a failure indication to the ROC in the event of an equipment failure.

Broken gate indication for each entrance and exit gate. Provide an indication for pedestrian gate positioning (pedestrian gate "UP" and "DOWN").

Indication of grade crossing activation call, XR down, XR up, or release. Signal, switch, and exit

inhibit block controls and indications. Cab signal speed dial down indications. Station skip stop control and indications from the ROC and the LCP and provide a failure indication for failures with train control equipment that could potentially affect the operation of trains. Types of equipment failures shall include: train detection, train control, interlocking, wayside equipment, TWC loops, vital links, microprocessor modules, overrun detection, grade crossing warning, vehicle detector loops, traffic controller failure, battery chargers, AC power, DC power, AC ground, DC ground, HVAC, and any other systems equipment failures that may affect train operations.

The following submittals shall be submitted to the Authority and applicable Third Parties for review and Approval: block layout report and control line drawings, signal layout and interlocking design including detailed duct bank drawings, general arrangement, detailed scale plan showing all signal equipment locations, documentation showing design parameters, reliability and availability calculations, interface control documentation.

Consultant shall design for future expansion and additions a 20 percent spare count for all multi-conductor cables with a minimum of two spares per cable.

Section 3.17.2 SCRRA Corridor Railroad

The existing SCRRA Corridor signal system shall be relocated and reconfigured as part of the design. Functionally, the existing signal installations along the Project alignment shall be replaced and upgraded; technology upgrades, where necessary, shall be provided in accordance with current Federal Railroad Administration (FRA) requirements, California Public Utility Commission (CPUC) General Orders and Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2), and in conjunction with freight/Metrolink commuter rail operations parallel to the electrified LRT tracks.

The SCRRA Corridor consists of two corridors, the Freight Corridor and Metrolink Corridor, each operating under two different modes of operation. The Freight Corridor operates under an automatic block signal (ABS) system under Rule 6.28 Other than Main Track and a maximum timetable speed of 10 mph. The Metrolink Corridor operates under centralized traffic control (CTC) and PTC signal systems with a maximum train speed of 79 mph. Consultant shall survey the existing SCRRA Corridor signal systems and establish the specific equipment replacement and upgrade requirements.

Consultant's design shall protect in place all existing signal equipment until such time that the permanent facilities are constructed so that the freight/Metrolink service is not interrupted throughout the duration of the Project.

Signal design and installation shall be in accordance with Supplemental Contract Document 3-SCRRA Requirements (refer to Attachment 2) and all applicable FRA, CPUC, and AREMA rules and regulations.

Signal design for the SCRRA Corridor shall be performed by a signal design firm that is approved to do so by SCRRA (refer to Master Cooperative Agreement between SCRRA and Authority included in Supplemental Contract Document 7- Third Party Agreements (refer to Attachment 2)).

Wireless crossing nearside station stop (WCNSS) system shall be designed, installed, and integrated into the CTC and PTC systems to prevent grade crossings from Garey Avenue to Claremont Boulevard from activating while a train is berthing in the platform. Such methods shall provide for operation of express trains and overall safe grade crossing operation.

Grade crossing indications of activation by the freight/Metrolink commuter rail system shall be provided to Metro's ROC via the LRT SCADA system. Gate release as well as each gate position indications shall also be provided to ROC.

Anti-pumping features shall be provided (second train logic) between LRT tracks as well as between LRT to freight/Metrolink commuter rail and freight/Metrolink commuter rail to LRT tracks for all crossings, as required per AREMA recommendations. For crossings with preemption, the anti-pumping feature shall extend out through the vehicular preemption approach.

The freight corridor shall Interface with the existing system west of CP Cambridge. Modify the existing signal system, including grade crossing warning systems, in support of Project phasing.

The Metrolink corridor design such as realignment of tracks will affect the grade crossing warning systems, the centralized traffic control (CTC) system and the PTC system. All systems and subsystems of the signal system will need to be designed for installation and testing in conjunction with the phasing of the Project.

Station sites shall be evaluated to determine if the location causes train operations to be affected by the "Train Delayed Within a Block" rule (General Code of Operating Rules (GCOR) 9.9). If delayed block would result, the Consultant shall modify the signal system to avoid such a delay. This is usually accomplished by adding signals or re-spacing automatic block signals;

Design within the SCRRA Corridor shall include:

- All temporary design on both the Freight Corridor and Metrolink Corridor as required by Project construction phasing. This shall include design for all temporary equipment, bungalows/cases and cable.
- Phased replacement of the signal system and updates to the PTC system as the freight/Metrolink commuter rail track is relocated. On the Metrolink Corridor the existing grade crossing/communication cable shall be relocated as a first priority. Design shall replace cable from end termination point to end termination point. Cable or wire splices are not allowed. All final bungalows and associated design shall be available prior to road closures.
- Integration of final grade crossing preemption and activation circuits into the upgraded grade crossing systems.
- Replacement of existing equipment as well as the installation of all new and temporary equipment, as required.
- Grade crossings shall be placed back into service at the end of each workday. When roads are closed for any construction activities, the road shall not be re-opened until the grade crossing warning system is fully functional as required per FRA, CPUC, and Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2).

The signal system design shall detect all trains, locomotives, freight cars, and any other rail vehicle present, except hi-rail or maintenance of way vehicles that do not provide continuous shunting. The minimum effective length of a track circuit shall be longer than the maximum inner wheel-base of all vehicles and cars used on this track. Train detection shall be immunized from the effects of DC traction current. Immunization shall extend beyond the end of the LRT tracks in Montclair. For mainline track circuit blocks, Consultant shall design for Electro Code" coded track circuits.

Broken rail detection shall be provided throughout the mainline in accordance with 49 CFR

236.51. A broken rail shall de-energize the associated track circuit.

Power for signal bungalows shall be provided from a local Utility source via a separate power drop from that for the LRT signal system. In case of failure of the primary power source, internal backup power supply shall be provided to ensure safe train operation. Power service pedestals shall be placed within 100 feet of the bungalow for which it is providing power. Pedestals shall be easily accessible for the utility provider to read, test, and inspect without requiring authorization to enter the rail right of way. Signal system power supplies shall not be used for any purpose other than power to signal equipment

Gate, flasher, signal masts, cantilever signal masts, and all concrete or steel signal foundations shall be in accordance with SCRRA standards and AREMA recommendations for these structures in addition to Governmental Rules.

Bungalows shall be provided for all SCRRA train control housed equipment, including grade crossing and pedestrian crossing equipment. Special consideration shall be provided at grade crossings to ensure that the bottom of the bungalow is not more than six inches above or below the back of sidewalk.

Consultant shall design all other necessary modifications to the existing SCRRA Corridor signal system.

All termination shunts shall be of the frequency selectable type.

Train control testing shall be comprised of three levels: factory acceptance testing (FAT), local field acceptance testing (LFAT) and dynamic testing. Consultant shall witness the FAT. Consultant shall develop a complete LFAT and SIT of the train control system and subsystems, including the tie-in to the existing system.

Section 3.18 Uninterruptable Power Supply (UPS)

The Consultant shall design the UPS for the Project including the stations, alignment lighting, train control, traction power, and communications facilities. The Consultant shall identify vital and non-vital loads, interface philosophy with vital loads and alarms as required, inputs on HVAC, and room locations.

Section 3.19 Communications

Consult shall design a complete communications system for the Project, including a cable transmission system (CTS), a closed circuit television (CCTV) system, a telephone system, a fire alarm system, a facilities intrusion detection/controlled access (IDS) system, a wayside intrusion detection system (WIDS), a public address (PA) system/variable message sign (VMS) system which are part of the transit passenger information system (TPIS), provisions for interfaces with the existing supervisory control and data acquisition (SCADA) system, fire alarm control panel at ROC (FACP), provisions for interfaces with the Metro-furnished universal fare system (UFS), radio system, and all other associated provisions and interfaces as required at Metro's rail operations control (ROC).

Due to the physical location of the Project, Consultant shall undertake design precautions to ensure that the outdoor TPIS VMS signage is protected and operational even during harsh environmental conditions. The environmental conditions experienced in the Project area are more extreme than those in the City of Los Angeles and areas west of the Project and thus require additional environmental considerations for the outdoor TPIS VMS signage design. The

environmental conditions to be considered and designed for include at a minimum heat (both direct and indirect), direct sunlight (cabinet and screen), rain (weatherproof), wind (Santa Ana winds), and ultraviolet light.

Consultant shall design fencing for both the communications bungalow and the electrical bungalow when routine access would require track allocation.

Only stations communications systems and equipment, including CTS, CCTV, TPIS, UFS, SCADA, IDS, WIDS, and FACP shall be placed in the communications bungalows located at the station sites.

Where existing Metrolink stations are impacted by the Project, Consultant design shall restore and upgrade as required, all communications functionality of the Metrolink stations in accordance with Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2) and all applicable Governmental Rules.

Section 3.19.1 Claremont Parking Facility Project Communications Interface Improvements

Consultant shall design a complete communications systems and support equipment, including all cabling, and equipment, housing infrastructure (including Utility power and equipment) for the Claremont Parking Facility Project.

Section 3.19.2 Cable Transmission System (CTS)

Consultant shall assume all responsibility for designing and designating all necessary equipment to provide all required voice and/or data communications circuits and their attendant services. Consultant shall list all necessary items including racks, chassis, cards, power supplies, cabling, cabling ties, and splice trays required for the complete and proper operation of the systems supported by the CTS.

The CTS design shall consist of network devices such as network switches and other CTS-connected network devices operating via single mode fiber optics cabling configured in a ring fault-tolerant structure. The fiber optic ring structure that was originally provided under the A line project shall be continued in the following configuration:

- Continuation of a dual, counter-rotating ring architecture with dedicated transmit and receive fiber strands.
- Connection of Claremont and Montclair communications bungalow's CTS to the Pomona communications bungalow CTS.
- Modification of the current CTS configuration to accommodate these additional Claremont and Montclair CTS nodes.

The current CTS utilizes Fujitsu S100 equipment from the Pomona communications bungalow to ROC. This CTS connection and the new communications bungalows (Claremont and Montclair) are considered an extension to the existing LRT CTS rings.

The new CTS nodes provided in the new communications bungalows shall be interfaced to the two existing Fujitsu s100 CTS nodes that are located in the Pomona communications bungalow. These new CTS nodes shall be managed by the existing Fujitsu management system. Two CTS nodes are to be supplied per communications bungalow.

The rail network which consists of CCTV, fire alarms, TPIS, WIDS, and SCADA and any other related systems, and the enterprise network which consists of telephone and access control and any other related systems, shall be aggregated on their own independent networks prior to connection to the actual communications bungalow CTS. These two independent networks shall

be implemented at all communications bungalows, train control bungalows, layover room, and TPSSs.

The Consultant shall consider the coordination, the configuration, the provisioning, the integration, and the cutover with Metro as this CTS extension will be made to a live CTS system used for revenue operations.

Authority-approved cutover and backout plans shall be produced. Communications for the SCADA RTUs shall utilize dual redundant dedicated ethernet service port(s) on the new CTS nodes.

Consultant shall submit for review and approval detailed bandwidth calculations and verify the capacity of the ring is still within the 220 percent spare capacity required to serve the Project, including communications to the ROC, to provide for future expansion and line extension.

The Cisco network switch implementation, which is another part of the CTS, shall support the following protocols, security, and redundancy items:

- Dynamic trunking protocol (DTP)
- Open shortest path first (OSPF v4 and v6)
- Enhanced interior gateway routing protocol (EIGRP v4 and v6)
- Border gateway protocol (BGPv4)
- Rapid spanning tree protocol (RSTP)
- Auto media-dependent interface crossover (MDIX)
- Cisco StackWise-480
- Cisco StackPower connections
- Routing information protocols RIPv1, RIPv2, and RIPng
- Advanced quality of service
- Class of service
- TACAS+ and RADIUS
- Bridge protocol data unit (BPDU)
- Spanning tree root guard (STRG)
- Internet group management protocol (IGMP) filtering
- Dynamic address resolution protocol (ARP)
- The appropriate software and hardware licenses shall be supplied for each CTS node and network switch to support remote management and provisioning.

Consultant design shall provide for redundant power supplies for the CTS. The overall system design shall have a reliability of 160,000 hours based on mean time between failures (MTBF). Bit error rate within the entire system shall not exceed one bit in 10 billion.

Consultant shall provide procedures on how to perform a transmission test of all copper cables and fiber optic communications strands. Consultant shall further provide written documentation of the results as to how the CTS requirements will be met.

The CTS system shall be designed to provide communications for stations to the ROC as well as communications between stations.

These CTS connected network devices are to be connected via single mode fiber optic cabling along the Project alignment. The new CTS nodes shall be connected to the Pomona CTS by four (4) fibers consisting of two (2) transmit and two (2) receive in each of the two (2) 144 fiber optic cables, for a total of eight fiber optic strands. The eight fiber optic strands shall provide two counter-rotating rings. The fiber optic cables shall be armored fiber optic cable installed in an

innerduct, armored micro-fiber optic cable installed in an innerduct, or micro-fiber optic cable installed in an armored innerduct. These fiber configurations provide enhanced protection against cable cuts, rodent protection, and provide for alternative path resiliency.

Due to fiber cable signal losses, additional CTS regeneration nodes may need to be added at the existing Pomona communications bungalow.

Consultant shall submit a CTS design considering fiber and connector loss calculations, including fiber connections from the Montclair LRT station communications bungalow station and the Claremont LRT communications bungalow to the Pomona station communications bungalow. The CTS design shall incorporate a mini mum loss margin of six dB to account for system aging and future splice losses.

In the preliminary submittal of the design and loss calculations, Consultant may make assumptions (detailed in a written report) regarding losses on existing fiber along the proposed path.

The final report, to be submitted as part of the Final Design submittal for the CTS, shall incorporate all findings, designs, and equipment so as to provide a complete and comprehensive CTS design.

Each CTS node shall contain sufficient bandwidth, LAN inputs, and other interfaces as required to serve the communications ethernet link requirements such as bandwidth and quality of service between the stations' and parking facilities' associated communications systems, and the ROC.

Two fast ethernet (100 Base T Minimum) data channels shall be provided from each station to the ROC for use by the fare collection (TVM/fare gate) system.

The existing Metro A Line is dispatched from ROC at 2000 East Imperial Highway, Los Angeles, CA 90059. The ROC will be prepared by Metro to accommodate the Project. The existing CTS ethernet nodes located at ROC shall provide redundant SCADA connectivity as well as ethernet connectivity to CCTV, IDS, WIDS, TPIS, telephone, and UFS.

Section 3.19.3 Telephone System

Consultant shall provide a voice over internet protocol (VoIP) telephone system design in accordance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2). The VoIP telephone system shall function as a single, unitary phone system that provides seamless operations to the telephone system users and the design shall include the following:

- A Cisco unified communications manager VoIP telephone system that is compatible, interoperable, and integrated with the existing Cisco unified call manager system (VoIP) at Metro.
- Sufficient quantities of VoIP hardware and software Interface to the Metro CTS system that provides the primary method of carrying VoIP traffic to Metro's Cisco unified call managers servers located at the ROC and Metro's headquarters building.
- Interface to the public switched telephone network (PSTN) via foreign exchange office/subscriber (FXO/FXS) analog circuits as a backup path to the Metro CTS system in case of failure of the CTS.

Consultant shall provide a network-based Cisco VoIP telephone system design with Cisco's unified communications manager with the current software Metro is utilizing to maintain compatibility with Metro's existing Cisco VoIP phone system.

Consultant shall design and designate all Cisco VoIP telephone system servers, gateways, and other network support equipment as required for a complete and functional VoIP system.

Consultant design shall provide the following to support the Cisco VoIP telephone system:

- AC power
- UPS backup power (minimum four hours)
- 19-inch rack (42Us minimum equipped with vertical and horizontal wire management)
- Power to all components in the system must be protected to ensure operation even during a power outage. This includes network components such as ethernet switches, gateways, routers, and servers as well as telephone instruments

The telephone system shall interface with existing Metro telephone systems via the Metro A Line LRT cable transmission system (CTS) and SCADA for ETEL line status monitoring and alarm indications.

In accordance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2), Administrative telephones (ATELs), Emergency Telephones (ETELs), Gate Call Points (GCPs), Elevator Telephones (LTELs), Maintenance Telephones (MTELs) shall be provided.

Section 3.19.4 Transit Passenger Information System (TPIS)

Consultant shall design the transit passenger information system (TPIS) in accordance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2). The design shall consist of integrated public address (PA) and variable message sign (VMS) visual announcement devices including LEDs and LCDs installed at each of the passenger station paid and unpaid areas. The TPIS shall be designed to only allow authorized personnel to originate both live and prerecorded announcements to patrons and staff within stations. The TPIS prerecorded voice announcements shall be coordinated with stored, preset text messages displayed on the VMS to provide video and audio synchronization as part of ADA requirements.

Operational control of the TPIS including PA and VMS will be performed from ROC. ROC operators will have a graphical user interface to provide a seamless integration and functional operation between the PA and VMS subsystems of the TPIS system.

At each station, the TPIS shall interface with the train control system to automatically activate dynamic train arrival/destination and other selected messages. The TPIS station control unit (SCU) shall communicate with the ROC through CTS. Additionally, the TPIS shall report status/alarms locally to the supervisory control and data acquisition (SCADA) programmable logic control (PLC), which in turn reports to the ROC SCADA. The TPIS system equipment at the stations shall be powered from the UPS system.

Ambient noise sensors shall be part of the design to sense ambient noise conditions at each station platform and at unpaid areas, if located remotely from the platform(s).

A minimum set of two side-by-side, double-sided weatherproof LED VMS, one set per station end, shall be a part of the TPIS design for each station platform.

The station control unit (SCU) design shall be a stored software processor device, internal to the integrated TPIS. The station equipment design shall incorporate storage and playback for not less than 256 audio prerecorded messages of 30 seconds duration each, along with storage of corresponding text messages for the signs.

Consultant shall provide a TPIS design, including PA and VMS, that is compatible and can interface with the existing TPIS at the ROC.

Section 3.19.5 Closed Circuit Television (CCTV) System

Consultant shall design a CCTV system in accordance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2). Consultant design shall interface with, and provide a

CCTV system compatible with, Metro's CCTV control and viewing system at the ROC.

Consultant shall perform a comprehensive coverage analysis to ensure that CCTV coverage of stations, station and plaza public areas, parking facilities, station entrance ramps, and pedestrian undercrossings are met. This coverage analysis shall also show each CCTV camera coverage area and how the composite CCTV camera coverage will meet the coverage requirements. Consultant shall submit this coverage analysis in the interim design package (60 percent).

CCTV cameras shall be designed for each communication bungalows, traction power supply substations, interlocking bungalows, and combined crossing/interlocking bungalows. CCTV cameras shall be installed inside of the bungalows/TPSS. CCTV cameras are not required at grade crossing bungalows.

CCTV cameras shall not be provided at any bridges except for Towne Avenue bridge per Supplemental Contract Document 4- Approved Deviations to Design Criteria (refer to Attachment 2).

For the Claremont Metrolink Station, Consultant shall design a CCTV system in both the station area and the pedestrian undercrossing in accordance with Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2). Consultant shall verify the existing wireless communication link to the Claremont Police Department headquarters is operable with the new CCTV system.

For the Montclair pedestrian undercrossing (PUC), Consultant design shall provide additional CCTV camera coverage for the extended PUC under the LRT tail track in accordance with Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2). The new cameras shall be incorporated into the existing CCTV system. Consultant shall verify the existing wireless communication link to the Montclair Police Department headquarters at Monte Vista Avenue / Arrow Highway Avenue provides appropriate display at the Police Department.

Section 3.19.6 Supervisory Control and Data Acquisition System (SCADA)

Consultant shall design the SCADA system with remote terminal units (RTUs) to interface with the existing Metro SCADA system.

RTUs shall be provided at passenger stations, TPSS, future parking facilities, and communications equipment bungalows, as well as any additional RTU equipment necessary to implement all of the SCADA interface requirements defined in the Contract. The RTUs shall interface with the Metro SCADA computers located at the ROC via the CTS.

All SCADA, RTU, and programmable logic control (PLC) traffic shall pass through approved firewalls for transmission to ROC.

Section 3.19.7 Fire Alarm System

Consultant shall design a fire detection system including fire alarm control panels (FACP), powers supplies, battery chargers, standby batteries, signal initiating devices, alarm devices, and all accessories required. The fire detection system shall comply with the International Building Code, and with the requirements set forth by the California state fire marshal (CSFM) office; NFPA 72; Proprietary Supervising Station Systems with California Amendments; NFPA 130, Standard for Fixed Guideway Transit and Passenger Rail; and Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).

The FACP shall perform the following functions:

- Supervise and monitor all intelligent addressable detectors and modules for normal, trouble,

and alarm conditions.

- Supervise all initiating train control and notification circuits.
- Detect activation of any initiating devices and indicate the location of the alarm condition. Operate all notification appliances and auxiliary devices.
- Visually and audibly annunciate any trouble, supervisory, or alarm condition on the FACP and at the ROC.
- Automatically perform self-diagnostic testing and initiation of alarms, identifying and locating any faults within the systems.

Consultant shall use fire detection devices that including smoke detectors (photoelectric and ionization), heat detectors (combination rate-of-rise and fixed-temperature), monitor modules, control modules, devices installed in bungalows or stand-alone buildings, isolation modules, and manual pull stations.

Ionization or photoelectric area smoke detectors shall be provided for communications bungalows, auxiliary power rooms, and train control bungalows.

In addition, combination rate-of-rise and fixed temperature heat detectors shall be provided in accordance with applicable Governmental Rules.

Section 3.19.8 Facilities Intrusion Detection System

Consultant shall design an Intrusion Detection System (IDS). The intrusion detection system design shall include, at a minimum, communications bungalows and enclosures, electrical bungalows, TPSSs, train control enclosures, emergency access gates, and wayside grade crossing cases and wayside equipment cases.

Section 3.19.9 Wayside Intrusion Detection System

As described in Supplemental Contract Document 20- Preliminary Hazard Analysis (refer to Attachment 2) (PHA), Consultant shall design a wayside intrusion detection system (WIDS) where the track centers between freight and LRT are less than 30 feet and track centers between Metrolink commuter rail and LRT are less than 30 feet. WIDS is not required where an LRT grade separation is adjacent to at-grade freight/Metrolink commuter rail tracks or on the Right of Way perimeter fence.

The WIDS design shall be submitted to the Authority for review and Approval and shall meet the following requirements:

- The system shall be designed in sections of the alignment that have less than 30-foot centerline LRT-to-freight and less than 30-foot centerline LRT-to-Metrolink commuter rail track separation.
- The system shall be designed so that the optimal zone distance, not to exceed 1,300 feet, is utilized to detect and report alignment encroachment of LRTs, freight/Metrolink commuter rail trains, or maintenance vehicles.
- The system shall be capable of detecting a freight/Metrolink commuter rail train or maintenance vehicle encroachment onto the LRT alignment.
- The system shall be capable of detecting an LRV or maintenance vehicle encroachment onto the freight/Metrolink commuter rail alignment.
- The system shall provide interface capability with the LRT SCADA systems for the functions required.
- The detection sensors shall be redundant to allow for system operation if a single sensor

fails, upon which an alarm shall be transmitted to ROC via SCADA.

- The system shall be maintainable, such that individual components can be easily replaced.
- Prior to acceptance, the system shall be proven reliable to avoid false activations and failures.
- Testing shall be performed on the system that will simulate encroachment, sensor failure(s), controller failure, and power failure, that verify the alarm(s).
- The system shall require minimal maintenance, sealed from the environment, protected from vandalism, and minimize time to repair and place back into service.
- The system vendor shall be capable of providing technical support.
- Training shall be provided for system software, interface, testing, and troubleshooting.

Section 3.19.10 Universal Fare System Interface

Equipment for Metro's universal fare system (UFS) includes ticket vending machines (TVM) and fare gates. At each station, Consultant shall design provisions for UFS implementation, as specified in Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).

Section 3.19.11 Communications Power Supply

Consultant design shall provide power for communications equipment from a local Utility source. In addition, Consultant design shall provide uninterruptible power supply (UPS) or battery backup to support communications systems for a minimum of four hours in the event of loss of primary power. All communications subsystems shall be powered from UPS or float battery power supplies.

The UPS systems shall be connected to the SCADA system to implement the controls and indications defined in Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).

Section 3.19.12 Metro Radio System

Consultant design shall provide radio support elements as a part of the Project radio system.

The first radio support element includes designing, providing, installing, and testing of very high frequency (VHF) and ultra-high frequency (UHF) radio equipment which shall be installed in certain enclosures/bungalows along the Project alignment should coverage inside of those enclosures not meet the Metro –98 dBm signal level.

The second radio support element includes designing, providing, installing, and testing a VHF/UHF distributed antenna system (DAS) as required if the radio frequency (RF) coverage and probability is insufficient at the parking structure built by others, including interior rooms.

Any base stations installed shall be monitored for proper operations such as power out and reflected power via Metro's radio monitoring system.

Consultant shall design all necessary radio equipment for ancillary and service enclosures/ bungalows such as TPSSs, communications bungalows, train control bungalows and enclosures, electrical bungalows, and the terminus station layover facility.

All future parking structures and interior rooms shall provide at a minimum 95 percent coverage and 95 percent probability for the Metro-designated VHF and UHF radio channels. To ensure this requirement is met, Consultant shall perform a VHF and UHF radio coverage study at the parking structures built by others, including interior rooms, utilizing currently calibrated RF measurement equipment.

If any of the parking structures or their respective interior rooms are found to have insufficient radio coverage of the Metro-designated VHF and UHF radio channels, a DAS shall be designed to provide sufficient radio coverage per Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).

Consultant design shall have the provisions for the installation of two four-inch conduits with weatherheads and an antenna-mounting structure at the top of the highest point of a Project facility at the terminus station site to the main communications bungalow of that station.

Section 3.19.13 SCRRA PTC Microwave Path Obstruction

SCRRA's Pomona to Montclair microwave system supports SCRRA's positive train control (PTC) system which is a critical safety system and controls SCRRA's train operations/ movement. A microwave interference study was performed and found that certain Metro A Line Project elements did interfere with the first fresnel zone of SCRRA's Pomona to Montclair microwave system. It was determined that the impact was not of significant enough magnitude to require an alternative path.

At each stage of the design process (i.e., 60%, 85%, 100%), Consultant shall include an analysis of this microwave path to ensure that any changes made to the proposed physical locations of the new Project elements do not impact the microwave path. If any interference is found, Consultant shall provide a design to provide the services provided by the obstructed microwave path.

Section 3.20 Duct Banks and Conduits

The Consultant shall design a duct bank and conduit system (DBCS) for required Project cable routing. Direct burial of cable or wire shall not be acceptable anywhere on the Project. The Consultant's design shall require CMAR to plug all conduits immediately after installation.

Section 3.20.1 DBCS Configuration (LRT)

The Consultant shall design a main trunk line of conduit arrays along the entire alignment of the Project designed for maximum utilization for cable runs. At a minimum, the main trunk line shall provide the required cable-carrying capacity for:

- The fiber optic trunk cable and other cables for communications between each station and rail operations control (ROC).
- A redundant fiber optic cable for the cable transmission system alternative path from Montclair station through Claremont station to the Pomona LRT communications bungalow.
- Train control line circuits and other train control cables between enclosures.
- Communications-to-TPSS connections.
- TPSS-to-remote-ETS connections.
- Bungalow-to-wayside-case connections.
- Bungalow-to-ground equipment connections.
- A one-inch conduit shall be required for tracer wire installations. The one-inch conduit shall be installed at the top portion of the duct bank nearest to the surface.
- TPSS-to-TPSS connections, including transfer trip.

The Consultant shall design spare conduits as indicated below:

- Two, four-inch conduits for the entire length of the Project.
- Two, four-inch lateral conduits from the nearest main duct bank manhole to each train control or communications room, bungalow, or case.

- One, four-inch conduit along with the interconnect to the SCRRA bungalow at each grade crossing.
- One inner-duct for the entire length of the Project.
- One two-inch fiber optic conduit from the nearest main duct bank manhole to each train control or communications room, bungalow, or case.
- Two, four-inch conduits at cross-bonds.
- A minimum of three, four-inch conduits from each communications bungalow to the interface point of the future parking facilities built by others.

The Consultant shall design secondary duct banks or individual conduit runs as required with appropriate number of spares and cable-carrying capacity between:

- Each station communications bungalow and associated station platform(s).
- Traction power feed and return between the TPSSs and the overhead contact system (OCS) and rail, respectively.
- Interconnect conduits to traffic signal control cases.
- The main trunk line or equipment housing and ground equipment (local runs).
- Interconnect conduits to SCRRA equipment, bungalows/huts, and cases, as required.

Where duct bank routing is required within Caltrans or other Third Party Right of Way, Consultant shall obtain Caltrans or other Third Party Approval of the design prior to construction.

Section 3.20.2 Specific Requirements for the LRT DBCS

The DBCS shall conform to National Electric Code (NEC) requirements, including minimum separation provisions or distance between communication conduits and low-voltage and high-voltage/power conduits.

The Consultant shall design pull boxes, manholes, or vaults at maximum intervals of 1000 feet or as pull calculations have so determined and at the following locations:

- Where cable-turning is required.
- At each end of bridges or other structures where a transition occurs.
- At the transition from the existing Metro A Line main trunk cable routing system.
- At each side of a grade crossing.
- In close proximity to each train control or communications housing (within 100 feet).
- At the line termination of the Project DBCS main trunk line.

Duct bank construction shall include conduits and conduit spacer scheme all encased with a minimum of three inches of concrete, as necessary to ensure adequate loading capability.

The DBCS shall meet applicable requirements of CPUC GO-128. To the maximum extent practicable, the main trunk line of the DBCS shall be designed between the tracks.

The DBCS system shall be shown in the background on the composite existing Utility drawings.

Pull box locations shall not be located in pedestrian pathways.

Section 3.20.3 DBCS Configuration (Freight/Metrolink Commuter Rail)

The Consultant shall design a main trunk line of conduit arrays along some sections of the Freight Corridor and along the alignment of the Metrolink Corridor as required for each corridor by the

final block design. Each corridor's main trunk line shall be designed for maximum utilization for cable runs. At a minimum, the main trunk line shall provide the required cable-carrying capacity on the Freight Corridor or Metrolink Corridor, as applicable, for:

- Grade crossing line circuits and all other train control circuits between enclosures.
- Control circuits between freight/Metrolink commuter rail and LRT bungalows or cases at grade crossings or as required.
- Wireless crossing nearside station stop system from Garey Ave to CP Vista.
- One spare four-inch conduit in addition to the required two spare four-inch conduits through each grade crossing for future positive train control (PTC) fiber optic cable installation. The spare conduits shall run from manhole to manhole and be capped off. This applies to both the Freight Corridor and the Metrolink Corridor.

Section 3.20.4 Specific Requirements for the Freight/Metrolink Commuter Rail DBCS

The Consultant shall design a DBCS that complies with Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2) and NEC requirements, including minimum separation provisions or distance between communications conduits and low-voltage and high-voltage/power conduits.

The Consultant shall design the replacement of any existing duct bank and/or direct burial cable, including SCRRA train control, fiber optic, and Sprint fiber optic cabling where there is a conflict with any Project elements, including track alignment, structure, bridge, bungalow, grade crossing equipment, and signal equipment. The Consultant shall review the entire SCRRA Corridor and determine where conflicts exist. The design shall include conduit replacement from end cable termination point to end cable termination point unless otherwise Approved by the Authority.

The Consultant design shall not use existing SCRRA spare conduits unless provisions are provided to replace spare conduits and as Approved by the Authority.

Between the existing Garey Avenue SCRRA train control grade crossing bungalow and the SCRRA "CP Vista" train control bungalow, the Consultant shall design the SCRRA train control duct bank on the south side of SCRRA Track 2 between Towne Avenue and CP Vista.

The Consultant shall design manholes and laterals as required by Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2), and Sprint requirements. Separate manholes shall be provided for SCRRA and Sprint. Consultant shall design three additional four-inch conduits in addition to the relocated conduit for one future SCRRA fiber conduit and two SCRRA spare conduits.

Section 3.21 Signage and Graphics

Section 3.21.1 LRT Stations

The Consultant shall design all necessary signage at each station, including informational, emergency, graphics, wayfinding, trailblazing, and regulatory signage. The Consultant shall subcontract with an experienced environmental graphic designer to develop the signage layout and documents.

Section 3.21.2 Metrolink Stations

The Consultant shall design platform signage and wayfinding signage at the relocated Claremont Metrolink station and wayfinding signage associated with the modification to the entrance of the Montclair station in accordance with Supplemental Contract Document 3- SCRRA Requirements

(refer to Attachment 2).

The design shall include intermodal wayfinding signage that guides LRT passengers to Metrolink commuter rail stations and vice versa.

Section 3.21.3 Parking

The Consultant shall design all necessary signage at the Claremont and Montclair parking lots, including informational, emergency, graphics, wayfinding, trailblazing, and regulatory signage and the following:

- One Metro Tack at each A Line station parking facility entrance.
- Eight station/parking trailblazing signs in each City. Consultant shall coordinate with each City on the location of these signs.
- Wayfinding signage at vehicular and pedestrian decision-making points shall include directions to LRT platforms, Metrolink platforms, bike parking, Pacific Electric Bike Trail, and local streets.

Section 3.21.4 Wayside Metro Operational Signage

The Consultant shall design all required operational signage along the trackway including the following (refer Supplemental Contract Document 2- Metro Requirements for additional signage requirements):

- Limited clearance signage.
- Maintenance and vehicle operations, such as: power zone, speed signs, reduced sight distance, train control block boundaries, station stopping points, storage track stopping points, mile markers (to 1/10th of a mile), grade crossing malfunction notification, signal enclosure identification, interlocking and switch zones, as delineated in Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2).
- Other public, passenger, and operations and maintenance personnel safety and warnings, including no trespassing signs.
- Identification of communications device locations along the trackway.

Section 3.21.5 Wayside SCRRA Operational Signage

The Consultant shall design all required operational signage along the trackway including the following:

- Fixed signs, as necessary and applicable, shall be placed to inform train engineers about speed restrictions and their release, industry sidings, track mileage, yard limits, conditional stops, switching limits, restricted wayside worker access, begin centralized traffic control (CTC), end CTC, and sidings in accordance with SCRRA and FRA requirements.
- Signs shall be placed to warn all train engineers of the approach to public crossings, and shall indicate the need to use audible warning of train approach.
- FRA/CPUC-required emergency notification signs (ENS) at crossings, including those displaying emergency telephone numbers, shall be provided.
- At bridges and culverts.

Refer to Supplemental Contract Document 3- SCRRA Requirements (refer to Attachment 2) for additional signage requirements.

Section 3.21.6 Traction Power Supply Substations

Consultant shall design all necessary signage for the traction power supply substation (TPSS) sites, in accordance with Supplemental Contract Document 2- Metro Requirements (refer to Attachment 2) and all applicable Governmental Rules, including street address numbers, no trespassing, restricted access, and emergency access signs with milepost stationing.

All switches, circuit breakers, and other control devices associated with the traction electrification system shall be located or marked to clearly indicate the apparatus, equipment, or areas served by them. Permanent and conspicuous "HIGH VOLTAGE" warning signs shall be posted on all doors, gates, and covers of enclosures that provide access to conductors, equipment, and apparatus that are energized to high voltages, in accordance with CPUC GO-143.

Section 3.22 Specifications

The Consultant shall prepare the Project technical specifications, for each engineering discipline, using Metro, SCRRA or other Governmental Person specifications. Final Project specific specifications shall be signed and sealed by a Professional Engineer certified in the State of California.

Section 3.23 Value Engineering

Within two months after the design workshop in Section 2.1.3, Consultant shall perform an internal value engineering review and provide a report to the Authority identifying potential value engineering opportunities.

The Consultant shall actively participate in value engineering working group meetings with the CMAR and Authority and shall collaborate and coordinate with the CMAR and Authority to identify and evaluate value engineering opportunities.

Value engineering shall not include first/last mile improvements nor design elements that support first/last mile connectivity, per Metro Board FLM Policy (May 2016).

Section 3.24 Presentation Materials Renderings & Illustrative Graphics

As may be requested, Consultant shall provide full size (30"x42"), high- resolution (300dpi or better), JPEG-format electronic files of color renderings that illustrate grade crossings in plan and perspective views, portions of the guideway, and each station in plan, section, elevation, and perspective views of the overall site in context with a bird's eye view, at ground level approaching the station, at the station entry, and on the platform.

Section 3.25 Engineering Design Deliverables

Project Site Reconnaissance (Section 3.1)

- Survey along property line
- Railroad right-of-way Encroachment list
- Railroad Safety training certification

Survey and Alignment (Section 3.2)

- Vertical and horizontal alignment of both the SCRRA Corridor track and LRT track
- Separate vertical profiles for LRT Track 1 and Track 2
- Additional survey required to advance the design aerial photogrammetry/topography and/or ground survey tied to Project Control
- Record of Survey of Project railroad ROW in San Bernardino County

- track and LRT track For each property acquisition:
    - Exhibits defining the property including the limits of acquisition with square footage
    - Assessor's identification number
    - Existing property line location
    - Owner information
    - Existing improvements located within the area in question
    - Legal description and plat

Utilities (Section 3.3)

- Updated Composite Utility drawings, with proposed utility pothole and field survey locations.
- Initial Utility evaluation report
- Utility design: 30%, 60%, 85%, 100%, AFC design packages
- Reviews of Third Party designs
- Utility evaluation report
- Third Party Utility owners modification log
- New Services tracking log

Geotechnical Investigations and Analysis (Section 3.4)

- Boring Plan at NTP+30 days, Geotechnical Design Reports at 60% (including a draft preliminary foundation report (PFR) for each structure and a draft preliminary geotechnical design report for miscellaneous items and other minor structures not covered by PFRs
- Geotechnical Design Reports at 85%, 100% (including a foundation report for each structure and a final geotechnical design report for miscellaneous items and other minor structures not covered by the foundation reports)
- Geotechnical site investigation work plan including health and safety plan

Environmental (Section 3.5)

- A program for the periodic review of environmental requirements
- Environmental requirements (ECR/permits) incorporated in the design

Track (Section 3.6)

- Updated alignment, profile and typical sections
- Schematic plans of the trackway
- 60%/85%/100%/AFC LRT Track Plan and Profile drawings, cross-sections, typical sections, track charts, and special trackwork details
- 60%/85%/100%/AFC Freight/Metrolink Commuter Rail Track Plan and Profile drawings, cross-sections, typical sections, track charts, and special trackwork details

Roadway Improvements and Traffic Analysis (Section 3.7)

- 60%, 85%, 100%, AFC street improvements (including signing and striping) plan and profiles with geometry data
- 60%, 85%, 100%, AFC street improvements typical details and typical sections
- 60%, 85%, 100%, AFC Intersection layout plans, including streets crossing tracks and traffic signals
- Traffic Engineering Report by intersection

Grade Crossings (Section 3.8)

- 60%, 85%, 100% and AFC plans for the grade crossings

Structures (Section 3.9)

- Structural plans at 30% (Type Selection) when required per sections 3.9.2 and 3.9.3
- Structural plans at 60%, 85%, 100%, and AFC
- Structural calculations at 85%, 100%, and AFC
- Independent structural calculations at 85%, 100%, and AFC when required per sections 3.9.2 and 3.9.3

Civil Design (Section 3.10)

- Drainage plans/profiles/details for both light rail and freight/Metrolink commuter rail at 30%, 60%, 85%, 100%, AFC for the drainage modifications
- Preliminary Hydrologic/Hydraulic (H&H) reports for each track segment
- Final H&H reports for each track segment
- 60%, 85%, 100%, AFC plans for the fencing
- Street signing, lighting, and traffic signal plans at 60%, 85%, 100% and AFC as required by the applicable cities along the corridor
- Structural calculations for traffic signal poles and foundations

LRT Stations (Section 3.11)

- Station architectural, structural, civil, mechanical, electrical, communication, plumbing, signage, landscape, irrigation plans (60%, 85%, 100%, and AFC) including all the supporting calculations.
- Station exiting calculations, which includes the fare collection equipment
- Terminus Station Layover Facility architectural, structural, civil, mechanical, electrical, communication, plumbing, signage plans (60%, 85%, 100%, and AFC) including all the supporting calculations.
- Incorporate artists' designs into Project drawings, as required
- Parking facility civil, architectural, structural, electrical, lighting, communication, and signage plans including supporting calculations (60%, 85%, 100%, AFC).
- The Claremont parking facility design package shall be separate from the Montclair parking facilities design package/submittal.
- Electrical drawings with site/power/lighting/grounding plans, one-line diagrams, conduit and cable schedules, details and supporting power (short circuit/arc-flash) and lighting photometric calculations (60%, 85%, 100%, AFC)

Metrolink Stations (Section 3.12)

- Station architectural, structural, civil, mechanical, electrical, lighting, communication, plumbing, and signage plans including supporting calculations (60%, 85%, 100%, and AFC)
- Electrical drawings with site/power/lighting/grounding plans, one-line diagrams, conduit and cable schedules, details and supporting power (short circuit/arc-flash) and lighting photometric calculations (60%, 85%, 100%, AFC)

Corrosion Control and Grounding (Section 3.13)

- Corrosion Control and Grounding Program Plan

- Corrosion control and grounding plans (60%, 85%, 100%, AFC)

Traction Electrification (Section 3.14)

- Load Flow Study, TPS building and equipment plans (60%, 85%, 100%, AFC)
- Traction power site plans for each location (60%, 85%, 100%, AFC)

Emergency Trip Stations (ETS) (Section 3.15)

- ETS signage, equipment, circuit diagrams, and installation details (60%, 85%, 100%, AFC)

Overhead Contact System (Section 3.16)

- OCS Plans including supporting calculations (60%/85%/100%/AFC)

Signaling/Train Control (Section 3.17)

- Site plans for wayside bungalows and cases (60%, 85%, 100%, AFC)
- Signaling/train control plans (60%, 85%, 100%, AFC)

Uninterruptable Power Supply (UPS) (Section 3.18)

- UPS plans for stations and alignment (60%, 85%, 100%, AFC)
- UPS plans for system facilities – train control, traction power, communications (60%, 85%, 100%, AFC)

Communications (Section 3.19)

- Communications systems overall design (60%, 85%, 100%, AFC)

Duct Banks and Conduits (Section 3.20)

- Duct bank plans and details for the entire alignment (60%, 85%, 100%, AFC)
- Conduit plans and details for each station site, interlocking, and grade crossing (60%, 85%, 100%, AFC)

Signage and Graphics (Section 3.21)

- Station signage and graphic package (60%, 85%, 100%, and AFC)
- Parking signage and graphic package (60%, 85%, 100%, and AFC)
- Alignment signage and graphic package (60%, 85%, 100%, and AFC)

Specifications (Section 3.22)

- 85% – Pre-Final Project Specific Technical specifications for each engineering discipline
- 100% – Final Project Specific Technical specifications for each engineering discipline
- AFC Project Specific Technical specifications for each engineering discipline

Value Engineering (Section 3.23)

- Identify potential value engineering opportunities

Presentation Materials Renderings & Illustrative Graphics (Section 3.24)

- Full size JPEG-format electronic files of color renderings that illustrate at-grade crossings and/or portions of the guideway in plan and perspective views

- Full size JPEG-format electronic files of color renderings that illustrate stations in plan, section, elevation, and perspective views of the overall site in context with a bird's eye view, at ground level approaching the station, at the station entry, and on the platform.

SECTION 4.0 Support Services for CMAR Pricing Proposal

Consultant shall provide support to Authority during the CMAR pricing process for the scope as described in Section 3; review requests for changes to technical documents; respond to contractor questions, prepare technical documents for addenda; prepare materials for presentation to the Authority Board.

Authority may request Consultant to prepare revised technical documents, including additional design work, drawings, specifications, and other technical document revisions as required.

Section 4.1 Support Services for CMAR Deliverables

- Respond to contractor questions
- Prepare revised technical documents, including additional design work, drawings, specifications and other technical document revisions as required

SECTION 5.0 Design Services During Construction

The role of the Consultant during construction of facilities and systems by a construction contractor is to provide support to Authority.

The Design Manager for design services during the construction phase shall be the primary point of contact during construction and shall be required to attend the preconstruction conference as well as the weekly and specialty construction meetings and regular site visits to provide design support.

Section 5.1 General Field Support

Consultant shall provide field support to CMAR including the following:

- Site observations: When directed by Authority, Consultant shall provide on-site field engineering and observations by various engineering disciplines to review work in the field and provide design input to resolve field issues.
- Geotechnical inspections: The Consultant shall perform and document geotechnical inspections required per the geotechnical and foundation reports.
- Consultant shall participate in walks including for certifications, punch lists, and start-up commissioning.

Section 5.2 Testing Support

Other than required for freight/Metrolink, Consultant shall review test procedures developed by CMAR and witness all FAT, LFAT, and SIT testing.

Section 5.3 Construction Progress Meetings

Consultant shall attend construction progress meetings, as requested by Authority.

Section 5.4 Document Management

Consultant shall continue maintaining to the satisfaction of Authority a computer-based system to record, control, and manage submittals, Requests for Information (RFIs), requests for deviations to design criteria, change notices, change orders, meeting minutes, and correspondence.

Consultant shall provide the design documentation requested by Authority, the CMAR or the other interfacing contractor for close-out of the Project, including as-built drawings and associated CADD files to satisfy close-out requirements for Authority, Metro, SCRRA, SBCTA, Caltrans, each Governmental Person and the other Third Party. Consultant shall submit a close-out plan for Authority's review and approval upon request by Authority.

Section 5.5 Requests for Information (RFIs)

Consultant shall provide comprehensive written responses within specified timeframes to the RFIs submitted to the Consultant for review. For the purpose of performing its review obligations, the Consultant shall employ and engage only personnel who are professionally qualified to conduct meaningful reviews of RFIs. Response to the RFIs shall be signed by the Consultant's designated Engineer of Record.

Section 5.65 Shop-Drawing/Submittal Review

In coordination with the Authority, Consultant shall lead the shop drawing review and approval process. When these involve Third Parties, Consultant shall coordinate review with Authority and

Third Parties.

Section 5.7 Change Notices/Change Orders

As may be requested by Authority, Consultant shall review and support procedures for change notices and change orders. Consultant shall prepare scope of services descriptions for design changes for Authority initiated changes. The support may also include revising the design or providing technical evaluation of (a) change notices/change orders in coordination with the Authority; or (b) change requests originated by the CMAR.

SECTION 6.0 Abbreviations and Definitions

Term	Abbreviation / Definition
Advanced Conceptual Engineering Drawings (ACE Drawings)	Means the preliminary engineering covering major design features of the Services provided in the “Supplemental Incorporated Documents.”
ADA	Americans with Disabilities Act.
Approved for Construction or AFC	means a Final Design Document that is approved by Authority and any applicable Third Parties, that has been signed and sealed by the Engineer of Record responsible for that Final Design Document, that has satisfied all other conditions to be ready for construction, and that has been approved by the Consultant and notated as "Approved for Construction".
AREMA	American Railway Engineering and Maintenance of Way.
Authority	Metro Gold Line Foothill Extension Construction Authority
Baseline Schedule	see Section 1.3.1
BIM Implementation Plan	see Section 2.2.
Claremont Parking Facility Project	means the project for the Claremont parking facilities not included in the Project.
CMAR	Construction Manager at Risk
Configuration Management Plan or CMP	see Section 2.4.
CPUC	California Public Utilities Commission.
Design Documents	means all drawings (including plans, elevations, sections, details and diagrams), Project Specifications, reports, calculations, records and submittals necessary for design of the Project in accordance with the Contract, following final review thereof by Authority and others as required by the Contract.

Term	Abbreviation / Definition
Design Management Plan or DMP	see Section 2.1.
Engineer of Record	means a professional engineer or registered architect engaged who: (a) is properly licensed in California, and (b) is in responsible charge of the design work and design documents (or of designated parts of the design work and design documents), with full legal and professional responsibility for the design work (or parts thereof), including responsibility for providing signed and sealed design documents for the design work (or parts thereof).
EIR	Environmental Impact Report.
Freight Corridor	means the segment of the alignment from the beginning of the Project to control point (CP) Cambridge where freight service occurs within the Right of Way and limited to the area between the inter-track fence or inter-track soundwall and Right of Way line.
Final Design or Final Design Documents	mean the complete AFC drawings, including plans, profiles, cross-sections, notes, elevations, typical sections, details and diagrams, design criteria, specifications, reports, studies, calculations, electronic files, records, and submittals prepared by the Consultant (and signed and sealed by the Engineer of Record).
Interface Management Plan or IMP	see Section 2.3.
LRT	Light rail transit.
LRT Components	means the LRT components installed or constructed, or to be installed or constructed.
Metrolink Corridor	means the segment of the alignment from control point (CP) Cambridge to the end of the Project where Metrolink commuter rail and freight service occurs within the Right of Way and limited to the area between the inter-track fence or inter-track soundwall and Right of Way line.
Monthly Progress Report	see Section 1.5.1.

Term	Abbreviation / Definition
MRDC	means the "Metro Rail Design Criteria" included in Supplemental Contract Document 2- Metro Requirements in Attachment 2 to this SOS.
MRDC CADD Standards Revision 3: 09/12/2020	means the "Metro Rail Design Criteria CADD Standards Revision 3 dated 09/12/2020" included in Supplemental Contract Document 2- Metro Requirements in Attachment 2 to this SOS.
NTP or Notice to Proceed	means the written directive from Authority to Consultant authorizing Consultant to begin prosecution of the Services as specified therein.
PFR	Preliminary Foundation Report.
PIP	Project Implementation Plan.
PHA	Preliminary Hazardous Analysis (refer to Supplemental Contract Document 20- Preliminary Hazard Analysis in Attachment 2.
PMP	Project Management Plan.
Protection-in-Place	means any temporary measure, permanent installation, or activity undertaken to avoid damaging a Utility which does not involve removing or relocating that Utility, including staking the location of a Utility, avoidance of a Utility's location by construction equipment, installing steel plating or concrete slabs, encasement in concrete, temporarily de-energizing power lines, installing physical barriers, and temporarily lifting power lines without cutting them but excluding any temporary relocation.
Quality Management Program	see Section 1.6.
Relocation	means the necessary removal, rearrangement, abandonment, or Protection-in-Place (including provision for temporary services, as necessary) of any or all Utilities, in order to accommodate or permit construction on the Project.
RFI or Request for Information	means a written notice clearly marked "Request for Information" detailing any request for clarification or information with respect to the Services, the Contract, or the Project.

Appendix 2- Scope of Services

Term	Abbreviation / Definition
Risk Register	see Section 2.10.
RMP	Authority Risk Management Program Plan.
Schedule	see Section 1.3.1.
Scope of Services or SOS	see Section i.
SCRRA Corridor	means the Freight Corridor and Metrolink Corridor combined.
Third Party	means a Governmental Person, Utility company, BNSF or other railroad, or other entity that contracts with Authority by means of a cooperative agreement, Utility services agreement, or other similar agreement or that otherwise has approval rights regarding the design, construction, reconstruction, rearrangement, or improvement of facilities owned or controlled by the Third Party, to facilitate the Project.
TPSS	Traction power substation.
TVA	Threat and Vulnerability Analysis (refer to Supplemental Contract Document 21- Preliminary Threat and Vulnerability Assessment in Attachment 2.
UPS	Uninterruptable Power Supply.
Utility	means a privately, publicly, or cooperatively owned line, facility, or system (including municipal or government lines, facilities, and systems) for transmitting or distributing communications, cable television, power, electricity, gas, oil, crude products, water, steam, waste, or any other similar item, including any fire or police signal system as well as streetlights associated with any publicly-owned roadways. The necessary appurtenances to each Utility facility shall be considered part of such Utility.

Term	Abbreviation / Definition
Utility Adjustment	means each Relocation (temporary or permanent), abandonment, Protection-in-Place, removal (of previously abandoned Utilities as well as of newly abandoned Utilities), replacement, reinstallation, rearrangements, or modification of existing Utilities necessary to effect a condition equal to the existing Utility facilities and excluding any betterments. The work involving Utility Adjustments for each crossing of the right-of-way by a Utility that crosses the right-of-way more than once shall be considered a separate Utility Adjustment. For any Utility installed longitudinally within the right-of-way, the work for a Utility Adjustment for each continuous segment of that Utility located within the right-of-way shall be considered a separate Utility Adjustment.
WBS	Work Breakdown Schedule.

Attachment 1 – Key Personnel

The following table provides a high-level role description and qualifications for the listed Key Personnel functions required to be assigned to perform the SOS. The primary functions and duties of each Key Personnel function described below is in addition to the other functions and duties described in this SOS or otherwise under the Contract.

1.0 PROJECT MANAGER

Primary Functions/ Duties	The Project Manager shall: • have responsibility for execution of the Services in accordance with the requirements of this Contract. • be the primary point of contact for all management, financing and contractual issues arising under this Contract. • maintain liaison with Authority representatives to ensure proper and timely involvement, as well as maintain a professional and business-like relationship with Authority staff throughout the life of the Contract. • allocate resources in a timely manner. • manage Contract budget and prepare reports as required. • control and monitor all costs. • understand and support all aspects of the Contract.
Minimum Qualifications/ Experience	• Approximately fifteen years' experience managing transportation infrastructure projects of similar size and complexity, including approximately five years' experience in managing rail transit projects. • Experience interfacing with local jurisdictions in California and familiarity with CPUC rules and regulations (highly desirable). • Bachelor's Degree in Engineering, Construction Project Management, or other related field. • Possess organizational, technical and team-building skills to manage and coordinate multidisciplinary teams. • Professional registration in the State of California as an engineer, architect, or project management professional.

2.0 DESIGN MANAGER

Primary Functions/ Duties	The Design Manager: • Shall have responsibility for coordinating the individual design disciplines and for ensuring that the overall Project design is completed, and requirements of the technical specifications and other design criteria are met. • May also serve as the Engineer of Record, provided that the individual meets all the requirements of the Engineer of Record (set out in Section 6.0 above). • Lead coordination with SCRRA/BNSF to ensure that all design aspects of the Project that require approvals from SCRRA/BNSF are obtained in a timely manner.
Minimum Qualifications/ Experience	• Approximately fifteen years' experience managing the design of transportation infrastructure projects of similar size and complexity, including approximately five years' experience in managing the design of light rail transit projects. • Continuous design management responsibility, including management of design services during design and construction on at least one rail transit project delivered using alternative delivery methods. • Experience interfacing with federal, California and local jurisdictions and familiarity with CPUC rules and regulations. • Bachelor's Degree in Engineering, Construction Project Management, or other related field. • Licensed Professional Engineer in the State of California.

3.0 CIVIL LEAD

Primary Functions/ Duties	The Civil Lead: • Shall have responsibility for coordinating the individual various civil design sub-disciplines (drainage, track, alignment, structures, etc.) and for ensuring that the overall civil design is completed, and requirements of the technical specifications and other design criteria are met. • May also serve as the Engineer of Record for the civil design, provided that the individual meets all the requirements of the Engineer of Record (set out in Section 6.0 above).

Minimum Qualifications/ Experience	• Approximately ten years' experience managing the design of transportation infrastructure projects of similar size and complexity, including approximately five years' experience with both Metro and SCRRA design criteria, standards and specifications. • Experience interfacing with federal, California and local jurisdictions and familiarity with CPUC rules and regulations. • Bachelor's Degree in Engineering, Construction Project Management, or other related field. • Licensed Professional Engineer in the State of California.

4.0 STRUCTURES LEAD

Primary Functions/ Duties	The Structures Lead: • Shall have responsibility to oversee the structural design, structural plans, and technical specifications. Coordinate the structures design with the various civil design disciplines, architectural, mechanical, electrical, plumbing, and systems. Ensure that the structural design is integrated into the project, and requirements of the design criteria ,codes, and geotechnical recommendations are incorporated in the plans and technical specifications. • May also serve as the Engineer of Record for the structural design, provided that the individual meets all the requirements of the Engineer of Record (set out in Section 6.0 above).
Minimum Qualifications/ Experience	• Approximately ten years' experience managing the structural design of transportation infrastructure projects of similar size and complexity in California, including approximately five years' experience in managing the design of light rail transit projects. • Experience with Metro, California Building Codes, SCRRA Design Criteria, AASHTO LRFD Bridge Design Specifications, and Caltrans Seismic Design Criteria. • Experience as the engineer of record for the design of light rail bridges, retaining walls, at-grade transit stations, drainage structures, and utilities protection. Experienced in providing structural engineering support services during construction of transit projects. • Bachelor's Degree in Engineering, Construction Project Management, or other related field. • Licensed Professional Structural Engineer in the State of California.

5.0 TRACK LEAD

Primary Functions/ Duties	The Track Lead: • Shall have responsibility to oversee the trackwork and special trackwork design and coordinate the design with the various civil design disciplines and for ensuring that the overall track design is completed, and requirements of the technical specifications and other design criteria are met. • May also serve as the Engineer of Record for track design, provided that the individual meets all the requirements of the Engineer of Record (set out in Section 6.0 above).
Minimum Qualifications/ Experience	• Approximately ten years' experience preparing the track design of transportation infrastructure projects of similar size and complexity, including approximately five years' experience with both Metro and SCRRA design criteria, standards and specifications. • Experience interfacing with federal, California and local jurisdictions and familiarity with CPUC rules and regulations. • Bachelor's Degree in Engineering, Construction Project Management, or other related field. • Licensed Professional Civil Engineer in the State of California.

6.0 ARCHITECTURE / STATIONS LEAD

Primary Functions/ Duties	The Architecture / Stations Lead: • Shall have responsibility for overseeing the development of the architectural design, architectural drawings, and technical specifications, and ensure that the architectural design meets all project requirements. • Shall have the responsibility of coordinating the architectural design with the various project design disciplines including civil, structural, mechanical, electrical, plumbing, and systems, to ensure that the architectural design is integrated into the project. • Shall have the responsibility for coordinating the various architectural design sub-disciplines including landscape, signage, lighting, and artwork, so that the elements of the sub-disciplines are seamlessly integrated into the architectural design. • May also serve as the Engineer of Record for the architectural design, provided that the individual meets all the requirements of the Engineer of Record (set out in Section 6.0 above).

Minimum Qualifications/ Experience	• Approximately ten years' experience managing the design of transportation infrastructure projects of similar size and complexity, including approximately five years' experience with both Metro and SCRRA design criteria, standards and specifications. • Bachelor's Degree in Engineering, Construction Project Management, or other related field. • Licensed Professional Architect in the State of California. • Experience interfacing with federal, California and local jurisdictions and familiarity with CPUC rules and regulations is desirable.

7.0 DRAINAGE LEAD

Primary Functions/ Duties	The Drainage Lead: • Shall have responsibility to oversee the hydrology/hydraulic and water quality design and coordinate the design with the various civil design disciplines and for ensuring that the overall drainage design is completed, and requirements of the technical specifications and other design criteria are met. • May also serve as the Engineer of Record for the drainage design, provided that the individual meets all the requirements of the Engineer of Record (set out in Section 6.0 above).
Minimum Qualifications/ Experience	• Approximately ten years' experience preparing the hydrologic/hydraulic and water quality design of transportation infrastructure projects of similar size and complexity, including approximately five years' experience with both Metro, SCRRA, and County/Local requirements. • Experience interfacing with California and local jurisdictions rules and regulations. • Bachelor's Degree in Engineering, Construction Project Management, or other related field. • Licensed Professional Civil Engineer in the State of California.

8.0 SYSTEMS LEAD

Primary Functions/ Duties	The Systems Lead: • Coordinate and oversee the preparation of technical specifications and engineering drawings for systems disciplines such as Traction Power, Overhead Catenary System, Train Control and Communication. Coordinate and interface with the Authority, Metro and SCRRA teams during design process to

	ensure conformance with project requirements. • Develop technical reports such as load flow simulations, block design, headway, and operational analysis reports. • Prepare forms of correspondence, including letters, notices, and design reviews that apply to systems disciplines. • Ensure safety certification of design including completion design conformance checklists and support for the SSCRT
Minimum Qualifications/ Experience	• Experience in management of systems engineering/design in the LRT projects. • Bachelor's Degree in Engineering, Construction Project Management, or other related field. • Licensed Professional Civil Engineer in the State of California.

9.0 SCRRA SIGNAL SYSTEM LEAD

Primary Functions/ Duties	The Signal System Lead: • Shall be responsible for the complete design of all signal system aspects on the Metrolink and FRT corridors. This shall include all signal system modifications, grade crossing updates, PTC and WCNSS system updates in support of project phasing as well as Final Design. • Support FRA coordination meetings and comply with CFR 246 program
Minimum Qualifications/ Experience	• Must be employed by an approved SCRRA design firm (refer to Attachment 2, Document 16- Approved SCRRA Train Control Design Firms). • Must have a minimum of 10 years of experience in freight/commuter rail signal and PTC systems. • Bachelor's Degree in Engineering, Construction Project Management, or other related field.

10.0 LRT TRAIN CONTROL LEAD

Primary Functions/ Duties	The LRT Train Control Lead: • Shall be responsible for the complete design of all train control aspects on the LRT alignment. This shall include all train control modifications, grade crossing updates and tie-in to the existing terminus at Pomona station.

Minimum Qualifications/ Experience	• The LRT train control design manager have a minimum of 10 years of experience in light rail train control systems. • Bachelor's Degree in Engineering, Construction Project Management, or other related field.

11.0 UTILITY THIRD PARTY COORDINATOR

Primary Functions/ Duties	The Utility Third Party Coordinator shall: • coordinate with public/private Utilities for all design services and works necessary to support Project needs, construction and operation activities. • coordinate the preparation of engineering plans, drawings, specifications, procedures, and schedules necessary for Utility rearrangement, modifications, and restoration work with Authority Project teams, as well as City, County, State, and Utility Agencies and any other relevant Third Parties. • develop technical reports, feasibility studies, economic analyses, and other forms of correspondence, including letters, notices, and design reviews that apply to Project Utility service requirements, Utility rearrangement configurations and construction permitting.
Minimum Qualifications/ Experience	• Bachelor's Degree in Engineering, Construction Project Management, or other related field. • California Professional Engineering registration (desirable). • Experience in working with Third Party Utility owners.

Attachment 2 – Supplemental Contract Documents

See link below for supplemental Contract Documents:

1. Advanced Conceptual Engineering (ACE) Drawings
2. Metro Requirements
3. SCRRA Requirements
4. Approved Deviations to Design Criteria
5. Authority's Public Outreach Requirements
6. Environmental Documents
7. Third Party Agreements
8. California Public Utilities Commission Grade Crossing Applications and Extensions
9. Record of Survey
10. Property Acquisition Matrix
11. Utility Contacts and Relocation Responsibilities
12. Preliminary Impacts to Certain MWD Facilities
13. Fire/Life Safety and Security Committee Emergency Plan
14. Advanced Artwork Concepts
15. Caltrans Mobility Hub Design Guide and Park and Ride Resource Guide
16. Approved SCRRA Train Control Design Firms
17. Safety and Security Certification Plan
18. Caltrans Project Study Report/Project Report
19. Geotechnical Reports
20. Preliminary Hazard Analysis (PHA)
21. Preliminary Threat and Vulnerability Assessment (TVA)
22. Water-Related Permit Information
23. Montclair Option Advanced Conceptual Engineering Drawings (ACE)

Contract Documents

Addendum 2 Contract Documents

APPENDIX 3

Form of Pomona to Montclair Design and Engineering Services Contract

[*See Attached*]

REQUEST FOR PROPOSALS (RFP) C3005
POMONA TO MONTCLAIR
DESIGN AND ENGINEERING SERVICES

APPENDIX 3- FORM OF CONTRACT

CONSULTING SERVICES AGREEMENT
FOR POMONA TO MONTCLAIR DESIGN AND ENGINEERING SERVICES

CONTRACT NO. 3005

Table of Contents

This Consulting Services Contract (this "Contract") is dated [_____], 2025 (the "Effective Date") and is between the Metro Gold Line Foothill Extension Construction Authority ("Authority") and [_____] ("Consultant").

R E C I T A L S

A. Authority is a public entity created by the California State Legislature pursuant to Section 132400 of the Public Utilities Code for the purpose of developing the Metro Gold Line light rail project, extending from Union Station in the City of Los Angeles to Sierra Madre Villa Boulevard in the City of Pasadena ("Phase 1"), and an extension of said line to the City of Montclair ("Phase 2").

B. Phase 2 is being developed in two phases. The first phase ("Phase 2A") extended the Phase 1 terminus from the Sierra Madre Villa Station in City of Pasadena approximately 11.5 miles to Citrus Avenue near the boundary of the City of Azusa and the City of Glendora. The second phase ("Phase 2B") extends the Phase 2A terminus to Montclair Station.

C. Phase 2B is being developed in two sub-phases. The first sub-phase ("Phase 2B1") extends the line from the City of Glendora to the City of Pomona and is currently underway. The second sub-phase of Phase 2B (the "Project") is intended to extend the line from the Phase 2B1 terminus to Montclair Station.

D. In order to complete the Project, Authority wishes to procure a consultant to provide the services described in this Contract, including the scope of services attached as Exhibit A (*Scope of Services*).

E. On June 26, 2025, Authority issued the Request for Proposals (RFP C3005) for the Services (as amended, "RFP").

F. In response to the RFP, Consultant submitted a proposal to Authority on [ ], 2025. Pursuant to the evaluation process set forth in the RFP, Authority selected Consultant for award of this Contract.

G. On [_____], 2025, Authority's Board of Directors awarded this Contract to Consultant.

NOW, THEREFORE, for good and valuable consideration, the sufficiency of which each party acknowledges, the parties hereby agree as follows:

1. Definitions.

For purposes of this Contract, the following definitions apply:

"Applicable Law" means any federal, state, or local statute, law, regulation, code, ordinance, rule, standard, judgment, order, executive order, decree, directive, guideline, policy requirement, or other governmental restriction or any similar form of decision of or determination by, or any interpretation or administration of any of the foregoing by, any

court or Governmental Person, which is applicable to this Contract or the Services or any relevant person, whether taking effect before or after the Effective Date. An Applicable Law, when cited in this Contract, shall be as amended unless expressly provided to the contrary. Applicable Law excludes Governmental Approvals, customs, duties, and tariffs.

"Authority" has the meaning in the first paragraph.

"Authority Data" has the meaning in Section 12(a)(1).

"Authority Representative" has the meaning in Section 6 (*Representatives*).

"Change" has the meaning in Section 22(a).

"Cities" shall mean the Cities of Pomona, Claremont, and Montclair, as applicable.

"Consultant" has the meaning in the first paragraph.

"Consultant Representative" has the meaning in Section 6 (*Representatives*).

"Contract" has the meaning in the first paragraph and does not include the Reference Documents.

"day" means calendar day unless otherwise indicated.

"Effective Date" has the meaning in the first paragraph.

"Event of Default" has the meaning in Section 27(b)(1).

"Force Majeure Event" means an event beyond the control of, and without the fault or negligence of, the non-performing party.

"Governmental Approvals" means any approval, authorization, certification, consent, decision, exemption, filing, lease, license, permit, bond requirement, registration, or ruling, issued or required by any Governmental Person having subject matter jurisdiction by Applicable Law or consent of Authority, required for performance of the Services or a part of it.

"Governmental Person" means any federal, state, local or foreign government and any political subdivision or any governmental, quasi-governmental, judicial, public or statutory instrumentality, administrative agency, authority, body or entity other than Authority.

"Indemnified Parties" has the meaning in Section 10(a) (*Indemnification*)

"Key Personnel" means the personnel identified in Exhibit C (*Key Personnel*).

"Metro" means Los Angeles County Metropolitan Transportation Authority.

"Milestone" means each payment item set forth on the Payment Schedule.

"Milestone Price" mean each price set forth on the Payment Schedule.

"Montclair Design Option" has the meaning in Section 3(d).

"Payment Schedule" means the approved payment schedule described in Section 1.2.3 of Exhibit A (*Scope of Services*).

"Project" has the meaning in Recital C, as more particularly described in Exhibit A (*Scope of Services*).

"Reference Documents" means the documents identified in Appendix 4 of the RFP.

"RFP" has the meaning in Recital E.

"Services" means the services described in this Contract, including the scope of services attached as Exhibit A (*Scope of Services*), within Los Angeles County, subject to expansion if Authority exercises the Montclair Design Option as described in Section 3(d).

"Termination Date" has the meaning in Section 2 (*Term*).

2. Term. This Contract shall commence on the Effective Date and terminate at 11:59 P.M. on [_____] (the "Termination Date"), unless terminated earlier in accordance with the terms of this Contract. The parties to this Contract may extend this Contract by mutual written consent.

3. Scope of Services; Commencement of Services; Montclair Design Option; Force Majeure.

a. Consultant shall perform the Services in a manner reasonably satisfactory to Authority and consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions.

b. Consultant shall complete its performance of the Services by or before the Termination Date and in accordance with the schedule requirements set forth in Exhibit A (*Scope of Services*).

c. Consultant shall not commence performance of the Services unless Authority issues one or more written notices to proceed for such Services. If Consultant begins work before issuance of a notice to proceed therefor, that work will be at Consultant's risk and expense.

d. Authority may, in its sole discretion, at any time within 90 days after the Effective Date, expand the Services to San Bernardino County by providing a

written notice to proceed therefor (the "Montclair Design Option"). If Authority exercises the Montclair Design Option, "Services" means the services described in this Contract, including the scope of services attached as Exhibit A (*Scope of Services*), within Los Angeles County and San Bernardino County.

e. Notwithstanding anything to the contrary herein, Authority has no obligation to issue a notice of proceed for any Services.

f. Except as otherwise approved by Authority, Consultant shall, at its sole expense, furnish all facilities and equipment that may be required for furnishing the Services.

g. As a condition precedent for Authority or Consultant to obtain relief for a Force Majeure Event under this Contract, the non-performing party shall, within 10 days after the occurrence of the Force Majeure Event impacting performance under this Contract, give written notice to the other party, with supporting documentation, describing the circumstances in detail preventing continued performance under this Contract, the relief sought, and the efforts being made to resume performance under this Contract. The other party shall be entitled to dispute the claim of a Force Majeure Event in accordance with Section 29 (*Dispute Resolution*).

h. If a Force Majeure Event occurs:

(1) The non-performing party shall not be considered in default of this Contract for delays or failure to perform caused by the Force Majeure Event;

(2) The non-performing party's sole remedy will be (i) suspension of obligations directly related to the Force Majeure Event, and (ii) an extension of time for performance of its obligations under this Contract directly caused by such Force Majeure Event to the extent such event causes a delay to the performance of such obligations; and

(3) The non-performing party shall use its best efforts to minimize any schedule or cost impact resulting from the Force Majeure Event.

4. Compensation.

a. Authority shall pay Consultant for Services on a lump sum basis as follows:

(1) Upon issuance of a notice to proceed for the Design Development phase in Los Angeles County, Consultant shall be entitled to invoice for mobilization in the amount of $2,000,000 in six equal monthly payments. Upon issuance of a notice to proceed for the Design Development phase in San Bernardino County (if any), Consultant shall be entitled to invoice for mobilization in the amount of $500,000 in six equal monthly payments.

(2) During the Design Development and Final Design phases, Consultant shall be entitled to invoice for each design submittal and for each programmatic plan submittal upon Authority's approval of the submittal in the amount of the applicable Milestone Price set forth on the Payment Schedule.

(3) During the Design Development and Final Design phases, Consultant shall be entitled to invoice for the applicable monthly overhead amount with respect to Los Angeles County and with respect to San Bernardino County in the applicable amount set forth on the Payment Schedule.

(4) During the Construction phase, Consultant shall be entitled to invoice for the Services with respect to Los Angeles County and with respect to San Bernardino County in the applicable monthly amount set forth on the Payment Schedule.

(5) Each Milestone Price is inclusive of all of Consultant's profit and overhead and all costs that might be expended in pursuit of performing the Services, including, but not limited to, any equipment, labor, materials, payroll, overhead and administrative costs, travel and living expenses, licenses, insurance, incidentals, and any other fees or expenses expended or incurred when necessary for the performance of the Services.

b. Loaded hourly rates indicated in Exhibit B (*Hourly Rates*) or otherwise paid pursuant to this Contract shall compensate Consultant and subconsultants for, and include within them, any general and administrative expenses as well as any other appropriate indirect costs.

Prior to submitting the first invoice, Consultant shall submit a completed Form 60 in the form of Exhibit E (*Form of Form 60*) approved by Authority for Consultant and each subconsultant.

Payment under this Contract is based on the Milestone Prices. The Milestone Prices are based on the hourly rates provided in Exhibit B (*Hourly Rates*). Such hourly rates will also be used to determine any changes to the Milestone Prices due to Changes.

c. Consultant agrees that its right to receive each payment pursuant to this Contract is contingent upon Authority's approval of all applicable deliverables (if any) required for the applicable Milestone under this Contract. Should Authority not approve any or all such deliverables, Consultant shall revise the deliverables to Authority's approval at no additional expense to Authority. Authority shall have the right to withhold, in its sole discretion, any payment until Authority approves all applicable deliverables.

5. Method of Payment. Authority shall pay undisputed portions of invoices within 30 days after receipt of a proper invoice. Consultant shall not submit more than one invoice per calendar month. Each invoice shall be submitted with the monthly

progress report, as described in Exhibit A (*Scope of Services*) and shall include the following:

a. The Contract Number (C3005);

b. Each Milestone completed during the invoice period, whether the Milestone relates to the portion of the Project located in Los Angeles County or the portion of the Project located in San Bernardino County, the Milestone Price, and supporting documentation to show that the Milestone is 100 percent complete; and

c. A change control log of proposed, pending, and executed Changes to the Services.

Consultant shall send all invoices to the Finance Department at Authority's address set forth in Section 30 (*Notices*).

Consultant is responsible for the accuracy and adequacy of its billing statements. If Authority raises any questions or concerns regarding Consultant's billing statements, Consultant shall confer directly with Authority to resolve the questions and concerns to the satisfaction of Authority.

6. Representatives.

a. For the purposes of this Contract, Authority's representative shall be Authority's Chief Executive Officer or his designee (the "Authority Representative"). It shall be Consultant's responsibility to ensure that the Authority Representative is kept informed of the progress of the performance of the Services, and Consultant shall refer any decisions that must be made by Authority to the Authority Representative. Unless otherwise specified herein, any approval of Authority required hereunder shall mean the written approval of the Authority Representative.

b. For the purposes of this Contract, Consultant's representative shall be [_____] (the "Consultant Representative"). The Consultant Representative shall be authorized to act on Consultant's behalf with respect to the Services and make all decisions in connection therewith.

7. Personnel.

a. Consultant represents that it has secured, or shall secure, at its own expense, all personnel required to perform the Services. All personnel engaged in performing the Services shall be qualified to perform such Services.

b. Consultant shall be solely responsible for the satisfactory work performance of all personnel performing the Services, and compliance with all performance standards set forth in this Contract or otherwise reasonably required by Authority, appropriate governmental agencies and Applicable Laws.

c. Consultant shall be responsible for payment of all employees' and subconsultants' wages and benefits.

d. Consultant has been selected to perform the Services, in part, because of the skills and expertise of the Key Personnel. Substitution or replacement of Key Personnel is not allowed except with Authority's prior approval.

e. Authority reserves the right, in its sole discretion, to require Consultant to remove any person from performing the Services. If Authority, in its sole discretion, desires the removal of a person from performing the Services, Consultant shall remove such person immediately upon receiving notice of such from Authority.

8. Subconsultants.

a. Consultant shall not use or pay any subconsultant to perform any of the Services without Authority's prior approval unless the subconsultant is identified in Exhibit D (*Subconsultants*) and has submitted a completed Form 60 approved by Authority in the form of Exhibit E (*Form of Form 60*).

b. Consultant may not replace any subconsultants identified in Exhibit D (*Subconsultants*) without Authority's prior approval.

c. Authority reserves the right, in its sole discretion, to require Consultant to remove any subconsultant from performing the Services. If Authority, in its sole discretion, desires the removal of a subconsultant assigned by Consultant to perform the Services, Consultant shall remove such subconsultant immediately upon receiving such notice from Authority.

d. Any agreements between Consultant and subconsultants, entered into as a result of this Contract, shall contain all of the provisions in this Contract applicable to subconsultants. Upon Authority's request, Consultant shall provide copies of all agreements with subconsultants to Authority. Authority's approval of subcontracts shall in no way relieve Consultant of any of its responsibilities and obligations under this Contract.

9. Independent Contractor.

a. Consultant is, and shall at all times remain as to Authority, a wholly independent contractor. Consultant shall have no power to incur any debt, obligation, or liability on behalf of Authority or otherwise act on behalf of Authority as an agent. Neither Authority nor any of its agents shall have control over the conduct of Consultant or any of Consultant's employees, except as set forth in this Contract. Consultant shall not, at any time, or in any manner, represent that it or any of its agents or employees are in any manner agents or employees of Authority.

b. Consultant agrees to pay all required taxes on amounts paid to Consultant under this Contract, and to indemnify, defend, and hold Authority harmless from any and all taxes, assessments, penalties, and interest asserted against Authority

by reason of the independent contractor relationship created by this Contract. In the event that Authority is audited by any federal or State of California agency regarding the independent contractor status of Consultant and the audit in any way fails to sustain the validity of a wholly independent contractor relationship between Authority and Consultant, then Consultant agrees to reimburse Authority for all costs, including, but not limited to, accounting and attorney's fees, arising out of such audit and any appeals relating thereto.

c. Consultant shall fully comply with the workers' compensation law regarding Consultant and Consultant's employees. Consultant shall indemnify, defend, and hold Authority harmless from any failure of Consultant to comply with applicable workers' compensation laws. Authority shall have the right to offset against the amount of any fees due to Consultant under this Contract any amount due to Authority from Consultant as a result of Consultant's failure to promptly pay to Authority any reimbursement or indemnification arising under this Section 9.

d. If Consultant is a joint venture, each member of Consultant shall be jointly and severally responsible for all Consultant obligations under this Contract.

10. Indemnification.

a. To the fullest extent permitted by law, Consultant shall indemnify, defend and hold harmless Authority (both in its own capacity and as Trustee), Metro (both in its own capacity and as Settlor), San Bernardino County Transportation Authority (SBCTA), Caltrans, Southern California Regional Rail Authority (SCRRA), BNSF Railway Company, and the Cities (and the respective members, directors, officers, employees and agents of the aforementioned entities) and their successors and assigns and their shareholders, officers, directors, agents and employees (collectively referred to as the "Indemnified Parties") from and against all liabilities, including, but not limited to, claims, suits, causes of actions, losses, expenses, and attorneys' fees brought in law or equity, arising from the Services: (i) on account of bodily injury, death or property damage or loss to any individual or entity, including, but not limited to, employees or officials of Consultant, excluding injury or death of persons or damages to or loss of property that was caused by the sole negligence or willful misconduct of the party to be indemnified; and (ii) in connection with actual or asserted infringement, improper appropriation, or use of trade secrets, proprietary information, copyrights, or patents.

b. With respect to any services performed by a design professional as defined in Civil Code section 2782.8, such indemnities shall apply only to the extent permitted by Civil Code section 2782.8.

c. Consultant agrees to obtain executed indemnity agreements with provisions identical to those set forth in this Section 10 from each and every subconsultant or any other person or entity involved by, for, with or on behalf of Consultant in the performance of this Contract. In the event Consultant fails to obtain

such indemnity obligations from others as required here, Consultant agrees to be fully responsible according to the terms of this Section 10.

d. The provisions set forth in this Section 10 shall survive the termination of this Contract or final payment hereunder. This obligation to indemnify, defend and hold harmless is in addition to any other rights or remedies that the Indemnified Parties may have under the law. Failure of Authority to monitor compliance with these requirements imposes no additional obligations on Authority and will in no way act as a waiver of any rights hereunder.

e. In the event of any claim or demand made against an Indemnified Party which is entitled to be indemnified hereunder, Authority may, in its sole discretion, reserve, retain or apply any monies due to Consultant under this Contract for purposes of resolving such claims; provided, however, Authority may release such monies if Consultant provides Authority with sufficient assurance of protection of the Indemnified Party's interests. Authority shall, in its sole discretion, determine whether such assurances are sufficient.

f. Consultant's duty to defend Indemnified Parties is separate and independent of Consultant's indemnity obligations, is triggered by the assertion of any claim within the scope of Consultant's indemnity obligations above and shall apply prior to and regardless of whether or not the issue of Consultant's indemnity obligation has been determined.

11. Insurance.

a. General Insurance Conditions. Consultant shall maintain project specific and/or practice insurance policies with limits that shall include the insurance coverages set forth in this Section 11. Consultant shall continuously keep in force the insurance coverage during the term of this Contract, or such longer or shorter time as may be specifically provided in this Section 11. Consultant shall name the Indemnified Parties as named insureds or additional insureds as identified in this Section 11. The insurance provided hereunder shall be available for the benefit of Authority and Consultant with respect to covered claims but shall not be interpreted to relieve Consultant of any obligations in this Contract. Consultant shall be responsible for monitoring subconsultant compliance with the insurance requirements in this Section 11. Consultant is responsible for determining if any subconsultant needs to purchase insurance not otherwise listed in this Section 11, and to monitor subconsultant compliance in those situations. Consultant shall ensure that subconsultants maintain commercially reasonable limits of insurance for the period required under the Contract. Consultant shall ensure subconsultants are providing the insurance policies described below and shall require subconsultants to add Indemnified Parties as named insureds or additional insureds and to provide indemnification to the same extent that Consultant provides. Except for any Railroad Protective Liability Policies issued, if any, all other policies, whether for Consultant or a subconsultant, shall explicitly waive subrogation rights against the Indemnified Parties and shall include "pay on behalf of" coverage for the Indemnified Parties when insured, or additional insured.

All insurance required hereunder shall be procured from insurance or indemnity companies with an A.M. Best Co. financial strength rating of A- or better and financial size rating of Class VII or better and authorized or approved to do business in the State of California or as otherwise approved by Authority in its sole discretion. All limits of liability set forth below are in U.S. dollars.

b. Commercial General Liability Insurance. Consultant shall provide practice, or project-specific commercial general liability ("CGL") coverage. The CGL policy shall include coverage for bodily injury, property damage, personal injury and advertising injury written on an occurrence form that shall be no less comprehensive and no more restrictive than the coverage provided by Insurance Services Office form CG 00 01 04 13 or equivalent with exclusions only as are typical for a project of this magnitude as shall be determined by Authority. Such insurance shall include, by its terms or appropriate endorsements, coverage for damages on account of bodily injury, broad form property damage, fire legal liability, personal injury, blanket contractual, independent contractors, premises operations, products and completed operations, and hazards commonly referred to as "x" (explosion), "c" (collapse) and "u" (underground) exposures, and cross liability or severability of interests. The policy or policies shall be endorsed to state that the exclusions for railroads (except where the Site is more than 50 feet from any railroad, including tracks, bridges, trestles, roadbeds, terminals, underpasses or crossings) shall be removed using CG 24 17 10, or equivalent.

The CGL insurance coverage shall have a minimum limit of $15 million combined single limit of liability for bodily injury, property damage and personal injury per occurrence, $15 million general annual aggregate and $15 million products/completed operations aggregate. The required limits can be satisfied by a combination of a primary policy and an excess or umbrella policy. Consultant may provide this CGL insurance coverage via a practice policy provided the total available insurance under the CGL practice policy, including excess and umbrella limits, is not less than $15 million per occurrence and in the annual aggregate. Consultant shall be the named insured and each of the Indemnified Parties shall be an additional insured to the CGL policy starting at policy inception as to any insured loss or liability arising out of or in any way related to the Project or right of way, including with respect to liability arising out of the acts or omissions of Consultant or subconsultant. All endorsements adding named insureds or additional insureds to the CGL policy shall be on form 20 10 (12 19) and 20 37 (12 19) which shall provide named and additional insureds with coverage for "completed operations." The products and completed operations coverage, only, shall be in effect for a minimum of 3 years following the issuance of the first notice to proceed. Consultant shall annually provide certificates of insurance to evidence that it has at least $15 million in available aggregate CGL coverage. Consultant shall ensure that each subconsultant maintains commercially reasonable limits of CGL insurance, but not less than a minimum limit of $2 million combined single limit of liability for bodily injury, property damage and personal injury per occurrence, $2 million general annual aggregate and $2 million products/completed operations aggregate. The required limits for subconsultant CGL insurance can be satisfied by a combination of a primary policy and an excess or umbrella policy. Consultant shall provide this CGL insurance coverage via project-specific policies.

c. Workers Compensation and Employer's Liability Insurance. Consultant shall provide a Workers' Compensation insurance policy with statutory limits in conformance with the laws of the State of California, and Employer's Liability insurance (for bodily injury or disease) with minimum limits of $5 million per accident for bodily injury by accident, $5 million per employee for bodily injury by disease, and $5 million policy limit for bodily injury by disease. Consultant shall maintain such insurance until one year following the term of this Contract. The required limits can be satisfied by a combination of a primary policy and an excess or umbrella policy. The Indemnified Parties shall be additional insureds on the employer's liability insurance policy. Subconsultants are required to provide evidence that they maintain Workers' Compensation insurance and $1 million in Employer's Liability insurance. The Workers' Compensation policies for the Consultant and subconsultants shall contain the following endorsements:

i. A voluntary compensation endorsement;

ii. An alternative employer endorsement, or equivalent; and

iii. An endorsement extending coverage to operations in all states on an "if any" basis.

d. Automobile Liability Insurance. Consultant shall provide commercial automobile liability insurance covering the ownership, maintenance or use of all owned/leased, non-owned and hired vehicles used in the performance of the Work; including loading and unloading, with limits of $5 million combined single limit for bodily injury and property damage liability. Such coverage shall be maintained for vehicles used in the performance of any Services. Coverage shall be provided on Insurance Services Office form number CA 001 (Ed. 7/97) or equivalent. The required limits can be satisfied by a combination of a primary policy and an excess policy or umbrella policy. Consultant shall ensure that the coverages provided by their CGL and/or umbrella/excess policies will respond to claims in excess of any subconsultant automobile policies provided or in the event there is a failure of any subconsultant to provide such policies to the extent that Consultant or any Indemnified Party becomes legally liable. The automobile liability insurance policy shall be endorsed to include Motor Carrier Act Endorsement-Hazardous materials clean up (MCS-90 and CA 99 48), if necessary. The Indemnified Parties shall be additional insureds on the Automobile Liability Insurance policy. Consultant shall ensure that each subconsultant maintains commercially reasonable limits of automobile insurance, but not less than $2 million combined single limit for bodily injury and property damage for owned/leased, non-owned and hired vehicles used in the performance of the Services.

e. Professional Liability Insurance. Consultant may either (a) purchase a project-specific professional liability policy of $25 million per claim and in the aggregate in the name of Consultant, or (b) Consultant shall be added to Consultant's or its parent's (if Consultant is other than the parent company) professional liability practice policies by endorsement with a minimum $35 million limit. If Consultant chooses to provide a professional liability practice policy, Consultant must at the outset

of the Services and annually thereafter provide evidence that there is in excess of $25 million in coverage available. Consultant's professional liability insurance policy(ies) shall cover any negligent act, error or omission arising out of design, engineering, project/construction management, and any other professional activities with respect to the Project, including coverage for acts or omissions by Consultant. These policy(ies) shall have a retroactive date consistent with the inception of design, engineering, and/or project/construction management activities, and no later than the date on which the RFP was issued. The policy shall have a 10-year extended reporting period (ERP) from the date of substantial completion of the Project with respect to events which occurred but were not reported during the term of the policy, if available, but the total term of the policy (policy term plus ERP) shall be no less than 10 years. Consultant shall ensure that each professional services subconsultant maintains commercially reasonable professional liability insurance limits, but not less than $5 million per claim and in the aggregate.

f. Premiums, Deductibles and Self-Insured Retentions. Consultant shall be responsible for payment of premiums for all insurance required in this Contract. The Indemnified Parties have no obligation to pay any premium. Consultant further agrees that for each claim, suit or action made against insurance provided hereunder, with respect to all matters for which Consultant is responsible hereunder, Consultant shall be solely responsible for all deductibles, self-insured retentions and amounts in excess of the coverage provided, as if all coverages were purchased with deductibles making the first named insured responsible for all deductible payments of any other insured or additional insured, except to the extent Authority is required to indemnify Consultant for such amounts. Any deductibles or self-insured retentions over $1,000,000 must be declared by Consultant and approved by Authority. With respect to all matters for which Authority is responsible hereunder, Authority shall remain fully responsible for all deductibles, retentions or amounts in excess of the coverage provided, except to the extent Consultant is required to indemnify Authority for such amounts. All policies required in this Contract, except the Professional Liability Policy(ies) shall be written using deductibles rather than self-insured retentions unless approved at Authority's sole discretion.

g. Verification of Coverage and Duration. Concurrently with Consultant's execution hereof or on such later date on which coverage is required to be provided hereunder, Consultant shall deliver to Authority a certificate of insurance with respect to each policy required to be provided by Consultant under this Contract. Consultant shall also deliver to Authority a certificate of insurance with respect to each policy obtained by a subconsultant that provides coverage related to the Project. The required certificates must be either personally and manually signed by the authorized representative of the insurance company shown on the certificate or signed by electronic signature in accordance with industry standard electronic versions of the Acord certificate. Authority shall have no duty to pay or perform under this Contract until such certificate(s), in compliance with all requirements of this Contract, have been provided. Upon Authority's request, certified, true and exact duplicate copies of each insurance policy (including renewal policies) required under this Contract shall be provided to Authority.

h. Renewal Policies. Consultant shall promptly deliver to Authority a certificate of insurance with respect to each renewal policy, including subconsultant policies, as necessary to demonstrate the maintenance of the required insurance coverage for the terms specified herein. Such certificate shall be delivered to Authority more than 30 days prior to the expiration date of any policy. Evidence of payment of all premiums shall be supplied to Authority more than 30 days following the inception or renewal of any policy. If requested by Authority from time to time, certified duplicate copies of the renewal policy shall also be provided.

i. Primary and Non-Contributory Insurance for Additional Insureds. For claims covered by the insurance specified herein, said insurance coverage shall be primary insurance with respect to the additional insureds, and their respective members, directors, officers, employees, agents and consultants, and shall specify that coverage continues notwithstanding expiration or termination of this Contract. Any insurance or self-insurance beyond that specified in this Contract that is maintained by an additional insured, or their members, directors, officers, employees, agents and consultants shall be excess of such insurance and shall not contribute with it.

j. Claim Reporting by Named Insured. Any failure on the part of a named insured to comply with reporting provisions or other conditions of the policies, any action or inaction of a named insured or others, any foreclosure relating to the Project or any change in ownership of all or any portion of the Project shall not affect coverage provided to the Indemnified Parties, and any other insureds or additional insureds (and their respective members, directors, officers, employees, agents and consultants).

k. Insurance Severability. The insurance shall apply separately to each insured and additional insured against whom a claim is made, or suit is brought, except with respect to the limits of the insurer's liability.

l. Insurance Policy Termination. Each policy shall be endorsed to state that coverage shall not be suspended, voided, canceled, materially modified or reduced in coverage or in limits except after 30 days prior written notice has been given to the Indemnified Parties, provided, however, that Consultant must get only Authority approval for modifications or reductions in coverage that will reduce limits or negatively impact the scope of coverage required by this Contract. Such endorsement shall not include any limitation of liability of the insurer for failure to provide such notice.

m. Occurrence Based Insurance. Each policy shall provide coverage on an "occurrence" basis and not a "claims made" basis (with the exception of professional liability insurance) and no policy issued on an occurrence basis shall have any sunset clause requiring reporting within a specified period of time.

n. Waivers of Subrogation. Authority and Consultant waive all rights against each other, against each of their agents, members, directors, officers, employees, agents and consultants, the Indemnified Parties, and against subconsultants and their respective members, directors, officers, employees, agents

and consultants for any claims to the extent covered by insurance obtained pursuant to this Contract, also excepting such rights as they may have to the proceeds of such insurance. Consultant shall require all subconsultants to provide similar waivers in writing each in favor of Authority, Consultant, and the Indemnified Parties. Each policy, including Workers' Compensation, but excluding railroad protective liability (if any) shall include a waiver of any right of subrogation against all insured, additional insureds and Indemnified Parties (and their respective members, directors, officers, employees, agents and consultants).

o. Insurance Changes. Authority shall notify Consultant in writing of any changes in the requirements applicable to insurance required to be provided by Consultant as part of a Change. Any additional cost from such changes shall be paid by Authority upon demonstrated evidence such as insurance carrier provided invoice or similar acceptable instrument that authenticates such cost. Any reduction in cost shall reduce the applicable Milestone Prices.

p. Recourse Against Indemnified Parties. There shall be no recourse against Authority, Metro, SCRRA, Caltrans or any Indemnified Party for payment of premiums or other amounts with respect to the insurance required to be provided by Consultant hereunder, except for deductibles payable by Authority as specified herein.

q. Insurance Shall Not Limit Indemnities. The insurance coverage provided hereunder by Consultant shall support but is not intended to limit Consultant's indemnification obligations under this Contract, nor do the indemnity obligations limit the rights of the insured parties to the coverage afforded by their insured status.

r. Claim Responsibilities. Unless otherwise directed by Authority in writing, Consultant shall be responsible for reporting and processing all potential claims under this Contract against the insurance required to be provided under this Contract. Consultant agrees to report timely to the insurer(s) any and all matters which may give rise to an insurance claim and to promptly and diligently pursue any and all insurance claims on behalf of Authority, whether for defense or indemnity or both. Authority agrees to promptly notify Consultant of Authority's incidents, potential claims, and matters which may give rise to an insurance claim by Authority, to tender its defense or the claim to Consultant, and to cooperate with Consultant as necessary for Consultant to fulfill its duties hereunder.

s. Insurance Prior to Work Commencement. Consultant shall not commence the Services until it has obtained the insurance required under this Contract, has furnished original certificates of insurance evidencing the required coverage as required under clause (g) above and such insurance has been approved by Authority, nor shall Consultant allow any subconsultant to commence work under its subcontract until the subconsultant has obtained and showed proof of compliance with the minimum insurance requirements.

t. Consultant Failure to Provide Insurance. If Consultant or any subconsultant fails to provide and maintain insurance as required herein, then Authority

shall have the right but not the obligation, to purchase such insurance or to suspend Consultant's right to proceed until proper evidence of insurance is provided. Any amounts paid by Authority shall, at Authority's sole option, be deducted from amounts payable to Consultant or reimbursed by Consultant upon demand. Nothing herein shall preclude Authority from exercising its rights and remedies under other remedies in this Contract because of the failure of Consultant or any subconsultant to satisfy the obligations of this Contract.

If on account of Consultant's or subconsultant's failure to comply with the provisions of this Contract, Authority is adjudged to be a co-insurer or otherwise held responsible for all or any portion of a judgment, loss or settlement (through admission or stipulation by Consultant or court decision) that would have been covered by insurance but for non-compliance with this Contract, then any loss or damage it shall sustain by reason thereof shall be borne by Consultant, and Consultant shall immediately pay the same to Authority, upon receipt of written demand therefor and evidence of such loss or damage.

u. Disclaimer. Consultant and each subconsultant shall have the responsibility to make sure that their insurance programs fit their needs to a commercially reasonable standard, and it is their responsibility to arrange for and secure any insurance coverage which they deem advisable, whether or not specified herein.

Authority makes no representation or warranty that the coverage, limits of liability or other terms specified for the insurance policies to be carried pursuant to this Contract are adequate to protect Consultant against its undertakings under this Contract or its liability to any third party or preclude Authority from taking any actions as are available to it under this Contract or otherwise at law. Authority shall not be limited to the amount of the insurance premium not paid in the proof of any damages it may claim against Consultant arising out of or by reason of failure of Consultant to provide and keep in force the insurance policies required by and on the terms of this Contract, but Authority shall instead be entitled to recover the full amount of damages available.

12. Confidentiality; Public Records Act.

a. Confidentiality.

(1) Consultant shall maintain the strict confidentiality of all data, documents, records and information received from, prepared for, or collected on behalf of, Authority ("Authority Data") in accordance with Applicable Laws. Consultant shall comply with all requirements, guidelines, policies and procedures that Authority promulgates and issues during the term of this Contract concerning information technology security and the protection of records and information, including Authority policies.

(2) Consultant may only use Authority Data to perform the Services and for no other purposes.

(3) Unless authorized or directed by Authority in writing, Consultant shall not, at any time, directly or indirectly, appropriate, disclose or divulge any Authority Data to any person not then employed by Consultant, or to any other entity.

(4) Access to Authority information, materials, and Authority Data shall be restricted only to Consultant's personnel who need the information, materials, and/or Authority Data to perform their duties in the performance of this Contract. Consultant shall inform all of its officers, directors, agents, and employees providing Services of the confidentiality provisions of this Contract. Consultant must require that any personnel of Consultant, with whom Consultant needs to disclose or disseminate information or Authority Data, in whole or in part, sign and adhere to the provisions of this Section 12. Nothing in this Section 12 shall allow Consultant to disclose or disseminate Authority Data without the prior written consent of Authority, and Consultant shall deliver to Authority signed confidentiality agreements with personnel prior to any authorized disclosure and dissemination.

b. Public Records Act.

(1) Consultant acknowledges and agrees that all records, documents, drawings, plans, specifications and other materials in Authority's possession, including materials submitted by Consultant, are subject to the provisions of the California Public Records Act (Government Code sections 6250 et seq.). Consultant shall be solely responsible for all determinations made by it under such Act, and for clearly and prominently marking each and every page or sheet of materials with "Trade Secret" or "Confidential" as it determines to be appropriate. Consultant is advised to contact legal counsel concerning such Act and its application to Consultant.

(2) If any of the materials submitted by Consultant to Authority are clearly and prominently labeled "Trade Secret" or "Confidential" by Consultant, Authority will endeavor to advise Consultant of any request for the disclosure of such materials prior to making any such disclosure. Under no circumstances, however, will Authority be responsible or liable to Consultant or any other person or entity for the disclosure of any such labeled materials, whether the disclosure is required by law, by court order or occurs through inadvertence, mistake or negligence on the part of Authority.

(3) In the event of litigation concerning the disclosure of any material submitted by Consultant to Authority, Authority's sole involvement will be as a stakeholder retaining the material until otherwise ordered by a court, and Consultant shall be fully responsible for otherwise prosecuting or defending any action concerning the materials at its sole cost and risk.

13. Ownership of Materials.

a. Upon payment therefor, all work product created, prepared, produced, authored, edited, amended, conceived or reduced to practice, or otherwise

developed by or on behalf of Consultant, individually or jointly with others, in connection with or as a result of performing the Services (collectively, "Work Product") as well as any and all rights in and to copyrights (including moral rights), trademarks (and related goodwill), patents, improvements, derivatives, and rights and claims related to the foregoing rights (collectively, "Intellectual Property Rights") shall be the sole and exclusive property of Authority.

b. To the extent permitted by law, all Work Product consisting of copyrightable subject matter is "work made for hire" as defined in the Copyright Act of 1976 (17 U.S.C. § 101) as amended, and such copyrights are therefore owned by Authority. Consultant hereby irrevocably assigns and transfers to Authority, in perpetuity, for no additional consideration, all right, title and interest in and to all Work Product and Intellectual Property Rights relating thereto.

c. Consultant represents and warrants that all Work Product shall be Consultant's original work or Consultant shall have the right to incorporate any third party work, licenses, or rights into the Work Product, and the Work Product shall not infringe, misappropriate, or otherwise violate any Intellectual Property Rights or other proprietary or contractual rights of any person or entity. If Consultant uses any personnel or third party to perform any of the Services, Consultant shall have and maintain in effect enforceable, written agreements with all such personnel or third parties that contain provisions that enable Consultant to comply with this Section and the other terms of this Contract relating thereto, including without limitation, provisions that irrevocably assign, upon creation, all Work Product and Intellectual Property Rights therein to Authority.

d. Subject to the rights, title and licenses granted to Authority in Sections 13(a) through (c), Consultant retains all rights to the intellectual property of Consultant that may be used in the performance of the Services to produce the Work Product, including processes, algorithms, software, and know-how (collectively, "Consultant Materials"), except Consultant grants an unrestricted, perpetual, non-royalty license to Authority for all Consultant Materials that are required for Authority use or enforcement of the rights, title and licenses granted to Authority pursuant to Sections 13(a) through (c).

14. Conflict of Interest.

a. Consultant represents and warrants that it presently has no conflict of interest, including organizational conflicts of interest, and shall not acquire any such interest, direct or indirect. No person having any such interest shall be employed by or be associated with Consultant. Furthermore, Consultant shall avoid the appearance of having any such interest.

a. Consultant shall not give or receive any compensation, monetary or otherwise, to or from the ultimate vendor(s) of any hardware or software or other such equipment to Authority as a result of the performance of the Services.

b. Consultant has not committed or caused, and will not commit or cause, a violation of Government Code section 1090 et seq., 84308 or 87100 et seq., 2 California Administrative Code sections 18438.1 through 18438.8 or Public Utilities Code section 132410, in connection with this Contract.

c. Consultant's obligations under this Section 14 shall survive the termination of this Contract.

15. Licensing and Taxes.

a. Consultant shall, at its sole expense, obtain and maintain during the term of this Contract all necessary licenses, permits and certificates required by law for the performance of the Services.

b. Consultant is liable for any and all taxes as a result of the performance of the Services.

16. Financial Condition. Within 30 days of the first year anniversary of the Effective Date, and each year thereafter throughout the term of this Contract, Consultant shall submit to Authority such financial information as may be appropriate to establish to the satisfaction of Authority that Consultant is in at least as sound a financial position as Consultant was prior to executing this Contract. Authority shall return all financial statements and documentation submitted by Consultant after review and shall not retain the financial information.

17. Non-Discrimination and Equal Employment Opportunity.

a. Consultant shall not discriminate against any employee or applicant for employment, or harass or allow harassment of any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, reproductive health decisionmaking, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or veteran or military status. Such actions shall include, but are not limited to the following: employment, upgrading, promotion, demotion, transfers, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including, but not limited to, apprenticeship.

a. Consultant shall, in all solicitations or advertisements for employees placed by, or on behalf of Consultant, state either that it is an equal opportunity employer or that all qualified applicants will receive consideration for employment without regard to race, color, creed, religion, sex, marital status, national origin, ancestry, age, physical disability, mental disability, medical condition, family care leave, or sexual orientation.

b. Consultant shall comply with the provisions of the California Fair Employment and Housing Act (Cal. Gov. Code, § 12900 *et seq.*) and the applicable regulations promulgated thereunder (Cal. Code Regs., tit. 2, § 7285.0 *et seq.*).

c. Consultant shall permit access to all records of employment, employment advertisements, application forms, and other pertinent employment data and records by the California Fair Employment and Housing Commission, or any other agency designated by the State of California, for the purpose of investigating compliance with Section 17(a).

d. Consultant shall cause Sections 17(a) and (b) to be inserted in all agreements with subconsultants entered into as a result of this Contract, except agreements for standard commercial supplies or raw materials.

18. Small Business Enterprises.

a. It is the policy of Authority that Small Business Enterprises ("SBEs") shall have a significant opportunity to participate in the performance of contracts.

b. A firm is considered an SBE if it is certified as an SBE (i) by the California Department of General Services, Metro, or the City of Los Angeles or (ii) by another recognized body acceptable to Authority whose certification processes generally provide for a business size consistent with 13 CFR Part 121, a quality of SBE ownership that is real and substantial, and ownership discretion and control indicating true independence and discretion of the SBE.

19. Compliance with Living Wage Policy. Consultant acknowledges having received and reviewed a copy of Authority's "Living Wage Policy," Chapter 8 of Title III of Authority's Administrative Code, which is incorporated herein by this reference as though fully set forth herein. Consultant's violation of the Living Wage Policy shall entitle Authority, at its option, to impose any of the following penalties on Consultant:

a. For failure to pay the minimum wages and overtime required by the Living Wage Policy, double back pay for all time worked during which the violation continued;

b. For failure to pay medical benefits required by the Living Wage Policy, double the difference between the minimum wage required herein without benefits and such minimum wages required herein with benefits, during the period of the violation;

c. For failure to allow an employee to take requested compensated or uncompensated time off as required by the Living Wage Policy, damages in an amount equivalent to that employee's wages for the time off requested and not received, or, at the employee's election, additional compensated time off in an amount equivalent to the time off requested and not received;

d. Termination of this Contract; and

e. Other legal remedies that may be available.

20. Compliance with Laws. In the performance of the Services, Consultant shall abide by and comply with any and all Applicable Laws.

21. Prompt Payment Clause.

a. Consultant shall pay each subconsultant (if any) for Services performed under this Contract no later than 10 days from the receipt of each payment Consultant receives from Authority.

b. Failure to comply with this Section 21 or delay in payment without Authority's prior approval shall constitute noncompliance, which may result in appropriate administrative sanctions, including, but not limited to, a penalty of two percent of the invoice amount due per month for every month that payment is not made.

c. These prompt payment provisions must be incorporated in all subconsultant agreements entered into as a result of this Contract.

22. Changes.

a. Authority may, from time to time, require changes to the Services. Authority will notify Consultant of any such change by written notice. From time to time, Consultant may also request changes to the Services for Authority's consideration, which Authority may accept in its sole discretion. Each such change required by Authority or requested by Consultant is referred to herein as a "Change."

b. For each Change, Consultant must submit to Authority in writing: (1) a description of the proposed Change and the reasons for the Change; (2) the total compensation amount to be paid to Consultant for the Change, with a breakdown of tasks and costs, including any reduction in costs resulting from the Change; and (3) the expected impact of the Change on the schedule and the required time extension, if any.

c. For a Change required by Authority, Consultant shall submit the information set forth in Section 22(b) no later than 15 days after receipt of Authority's notice.

d. Authority may commence negotiations with Consultant for a mutually agreeable change in the Services, compensation and/or time of performance, and amend this Contract accordingly.

e. Consultant shall have no obligation to perform a Change, and shall not be entitled to compensation or additional time for Services performed pursuant to a Change, prior to the execution of an associated Contract amendment by both parties.

f. Consultant shall not suspend performance of this Contract during the negotiation of any Change, except as may be directed by Authority pursuant to Section 28 (*Suspension*).

23. Accounting Requirements. Consultant and its subconsultants shall establish and maintain an accounting system and records that properly accumulate and segregate incurred costs for the portion of the Project located in Los Angeles County and the portion of the Project located in San Bernardino County. The accounting system shall conform to the Generally Accepted Accounting Principles ("GAAP") and cost principles set forth in Titles 48 and 49 of the Code of Federal Regulations, enable the determination of incurred costs at interim points of completion, and provide support for reimbursement payment vouchers or invoices.

24. Records Retention and Access to Records. Consultant and its subconsultants (if any) shall maintain all books, documents, papers, records, accounting records and other evidence pertaining to the performance of this Contract. Consultant and its subconsultants shall maintain and make such materials available for Authority's inspection, excerpting and/or audit at their respective offices at all reasonable times during the term of this Contract and for three years from the date of final payment to Consultant and its subconsultants under this Contract. Consultant shall make such materials available and grant access to the following entities and their respective designees: Authority, Metro, the California State Auditor, the State of California, and any other entity designated by Authority. Copies thereof shall be furnished by Consultant if requested. In accordance with Section 8546.7 of the Government Code, this Contract shall be subject to the examination and audit of the California State Auditor, at the request of Authority or as part of any audit of Authority, for a period of three years after final payment to Consultant under this Contract.

25. Assignment. Consultant shall not assign or attempt to assign any portion of this Contract without the prior approval of Authority. Contractor's assignment or attempt to assign any portion of this Contract without the prior approval of Authority shall be void.

26. Non-Waiver of Terms, Rights and Remedies. Waiver by either party to this Contract of any one or more of the conditions of performance under this Contract shall not be a waiver of any other condition of performance under this Contract. In no event shall the making by Authority of any payment to Consultant constitute or be construed as a waiver by Authority of any breach of covenant, or any default which may then exist on the part of Consultant, and the making of any such payment by Authority shall in no way impair or prejudice any right or remedy available to Authority with regard to such breach or default.

27. Termination; Default.

a. Termination for Convenience. Authority may terminate this Contract for convenience at any time, in whole or in part, upon written notice to Consultant. The effective date of termination shall be the date specified in the notice of termination. Upon the effective date of termination, Consultant shall discontinue performing all Services and shall preserve Services in progress and completed work product. Consultant shall turn over such work product in accordance with Authority's instructions. In the event of termination by Authority, Consultant shall be paid for any

Services performed prior to the effective date of termination and, upon prior Authority approval, as supported by documentation submitted to Authority satisfactory in form and content to Authority, the reasonable out-of-pocket cost of preserving the Services and any other reasonable out-of-pocket cost incidental to the termination. Consultant shall not be paid for any Services performed after the effective date of termination. In no event will Consultant be entitled to any prospective profits or any damages because of termination.

a. Default.

(1) Consultant shall be in default under this Contract upon the occurrence of any of the following (each, an "Event of Default"):

(i) Consultant files a petition in bankruptcy;

(ii) Consultant makes a general assignment for the benefit of creditors;

(iii) A petition in bankruptcy is filed against Consultant;

(iv) A receiver is appointed on account of Consultant's insolvency; or

(v) Consultant breaches its performance of any obligation to be performed by it under this Contract and fails to cure such beach within five days following written notice of the breach. Authority may, in its sole discretion, grant a longer cure period if the breach requires additional time to cure, Consultant has provided an acceptable cure plan to Authority, and Consultant diligently commences and continues such cure according to the approved plan.

(2) Upon the occurrence of any Event of Default, Authority may, without prejudice to any other rights or remedies Authority may have:

(i) Hold in abeyance further payments to Consultant;

(ii) Suspend the performance of all or any portion of the Services by Consultant or subconsultants related to such Event of Default until such failure is remedied, as set forth in Section 28 (Suspension); and/or

(iii) Terminate this Contract, in whole or in part, by written notice to Consultant specifying the date of termination. Upon the effective date of termination, Consultant shall discontinue performing all Services and shall preserve Services in progress and

completed work product. Consultant shall turn over such work product in accordance with Authority's instructions.

Consultant shall be liable to Authority for all loss, cost, expense, damage, and liability resulting from an Event of Default.

(3) A waiver by Authority of one Event of Default will not be considered to be a waiver of any subsequent Event of Default, nor be deemed to waive, amend, or modify any term of this Contract.

(4) In the event Authority terminates this Contract for cause, Consultant will not receive any further payment. If the unpaid amounts otherwise due to Consultant exceed all of Authority's costs to complete the Services, then Consultant will be paid for the Services it performed through the date of termination only, subject to Authority's rights of offset and back charges. If such costs to complete the Services exceed the unpaid amounts otherwise due Consultant, then Consultant shall immediately pay the difference to Authority upon demand. Authority's costs to complete the Services include all additional costs incurred by reason of such termination and completion, including costs associated with Authority's personnel, attorneys' fees, insurance, administrative expenses, and services for architectural, engineering, and project management. Authority shall not compensate Consultant for its costs in terminating this Contract or any cancellation charges owed to third parties, and Consultant may not recover any other cost, damage, or expense.

(5) In the event a termination for cause is determined to have been made wrongfully or without cause, then the termination will be treated as a termination for convenience pursuant to Section 27(b) and Consultant will have no greater rights than it would have had if a termination for convenience had been effected in the first instance. No other loss, cost, damage, expense of Consultant may be claimed, requested or recovered.

28. Suspension. Authority may, at any time by delivering a written notice to Consultant, order Consultant to suspend all or any part of the Services for the convenience of Authority, related to an Event of Default, or for work stoppages beyond the control of Authority and Consultant. Upon receiving any suspension notice, Consultant shall promptly suspend further performance of the Services to the extent specified, and during the period of such suspension shall properly care for and protect all work in progress. Promptly following Consultant's receipt of a notice from Authority lifting the suspension, Consultant shall resume performance as specified in the notice.

29. Dispute Resolution.

a. Unless Authority and Consultant otherwise agree in writing, all disputes between Authority and Consultant regarding the interpretation of this Contract or the performance by a party hereunder shall be subject to the dispute resolution procedures set forth in this Section 29 as a condition precedent to the initiation of legal

or equitable proceedings pursuant to Section 29(g). Unless otherwise directed by Authority, Consultant shall continue performance under this Contract while matters in dispute are being resolved.

b. Authority and Consultant shall notify the other party in writing within 10 days after the first observance of any dispute. Upon notification of a dispute, including the relevant facts, chronology of relevant events and correspondence, specific provisions of the Contract relevant to the dispute, the relief sought, and supporting documentation, Authority and Consultant shall meet within 10 days of such notification to attempt to resolve the dispute.

c. If attempts to resolve the dispute by Authority and Consultant as described in Section 29(b) are unsuccessful, Authority's CEO shall designate an Authority representative to help resolve the dispute. Within 15 days after the identification of the representative, Authority and Consultant shall each prepare and submit to the representative a position paper setting forth the material factual and legal basis for its respective position, and the relief sought by the Party submitting the dispute. At the same time, Authority and Consultant shall each submit any documentary evidence to support its position.

d. Within 15 days after the representative's receipt of the position papers, the representative shall issue a written decision regarding the dispute and reasons in support of the decision.

e. Within 10 days after the representative issues its written decision, either party may seek review of the decision by submitting a written appeal to Authority's CEO. If neither party timely files a written appeal, the representative's decision shall be deemed final and binding, and the parties shall act in accordance with such decision. If either party timely files a written appeal with the CEO, the CEO will review the position papers and may, but is not required to, provide the parties with an opportunity to provide additional oral and/or written arguments in support of their respective positions. No later than 15 days after the date on which the CEO receives the written appeal, the CEO shall issue a written decision setting forth a resolution to the dispute and reasons in support of the decision. This time frame may be extended by the CEO if the CEO requests additional oral and/or written argument.

f. For all disputes that remain unresolved following the dispute resolution procedures set forth in Sections 29(a) – (e), the Parties shall submit the Dispute to a neutral evaluator at JAMS for a neutral evaluation and have the dispute evaluated by the neutral evaluator within 30 days. Each Party shall bear 50% of the cost of the neutral evaluation costs.

g. If the Parties are unable to resolve a dispute through the dispute resolution procedures set forth in Sections 29(a) – (f), either party may seek judicial relief. The venue of any proceeding for the litigation of any such unresolved disputes shall be the County of Los Angeles, California.

h. The duties and obligations imposed by this Contract shall be in addition to any duties and obligations otherwise imposed by law. No act or failure to act by Authority or Consultant shall constitute a waiver of any duty or obligation imposed by this Contract, nor shall any such act or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

30. Notices. Any notices required by this Contract ("Notices") shall be in writing and (a) delivered personally, (b) sent by certified mail, return receipt requested, (c) sent by a recognized overnight mail or courier service, with delivery receipt requested, or (d) sent by email communication with receipt confirmed by telephone or electronic acknowledgement of receipt. Any such Notices shall be sent to the following addresses (or to such other address as may from time to time be specified in writing by such person):

Authority:

Metro Gold Line Foothill Extension Construction Authority
406 East Huntington Drive, Suite 202
Monrovia, CA 91016
(626) 471-9050
(626) 471-9049 (facsimile)
mpurcell@foothillgoldline.org
ATTN: Mitchell S. Purcell, Esq.
Chief Contracting Officer & In-House Counsel

Consultant:

[_____]
ATTN: [Insert name of Consultant Representative]

Notices shall be deemed received when actually received in the office of the addressee (or by the addressee if personally delivered) or when delivery is refused, as shown on the receipt of the U. S. Postal Service, private carrier, or other person making the delivery. Notices delivered by email communication shall be deemed received when actual receipt at the email address of the addressee is confirmed. Notwithstanding the foregoing, Notices received after 5:00 p.m. (Pacific Time) shall be deemed received on the first business day following delivery.

31. Representations and Warranties. Consultant represents, warrants, covenants to Authority:

a. Consultant is duly organized, validly existing and in good standing under the laws of the state of its organization and in every other state in which it conducts business.

b. Consultant has all requisite licenses, permits, certifications, power and authority to carry on its business as presently conducted, to enter into this Contract,

and to perform the Services. The consummation of the transactions contemplated by this Contract will not violate, nor be in conflict with, any provisions of the charter, bylaws or governing documents of Consultant, or any agreements or instrument to which Consultant is a party or by which Consultant is bound, or any judgment, decree, order, statute, rule or regulation applicable to Consultant.

c. Consultant and all subconsultants (if any) are qualified and able to perform the Services in accordance with the standard set forth in Section 3(a) (*Scope of Services; Commencement of Services*).

d. The execution, delivery and performance of this Contract by Consultant and the consummation of the transactions contemplated by this Contract have been duly and validly authorized.

e. This Contract has been duly executed and delivered on behalf of Consultant, and all documents and instruments required hereunder to be executed and delivered by Consultant have likewise been duly executed and delivered. This Contract does, and such documents and instruments will, constitute legal, valid and binding obligations of Consultant in accordance with their terms.

32. Miscellaneous

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

b. This Contract may be executed in any number of counterparts, each of which shall be deemed to be the original, and all of which together shall constitute one and the same instrument. This Contract may be executed by a party's signature transmitted by facsimile or scanned into a digital format and emailed, and copies of this Contract executed and delivered by means of faxed or emailed signatures shall have the same force and effect as copies hereof executed and delivered with original signatures.

c. This Contract contains the entire understanding of Authority and Consultant with respect to the subject matter of this Contract and supersedes all prior agreements, understandings, statements, representations, and negotiations, in each case oral or written, between the parties with respect to the subject matter of this Contract. All previous proposals, offers, and other communications, written or oral, relative to this Contract, are superseded except to the extent that they have been incorporated into this Contract. This Contract may be amended only by a written instrument signed by Consultant and Authority.

d. There are no third-party beneficiaries of this Contract. This Contract is made and entered into for the sole protection and benefit of the parties hereto, and no other person or entity is or is considered to be a direct or indirect beneficiary of, or has any direct or indirect cause of action or claim in connection with this Contract.

e. If any clause, provision, section, or part of this Contract is ruled invalid or unenforceable by a court of competent jurisdiction, the invalidity or unenforceability of any such clause, provision, section, or part shall not affect the validity or enforceability of the balance of this Contract, which shall be construed and enforced as if this Contract did not contain such invalid or unenforceable clause, provision, section, or part.

f. Time is hereby expressly declared to be of the essence of this Contract and of each and every provision hereof; and each and every provision hereof is hereby declared to be and made a material, essential, and necessary part of this Contract.

g. All exhibits referred to in this Contract are incorporated herein by this reference.

h. Authority has provided the Reference Documents to Consultant. Reference Documents are for information only and are not mandatory or binding on Consultant. Authority does not represent, warrant, or guarantee that the Reference Documents: (1) are accurate, complete or fit for purpose; (2) are in conformity with the requirements of this Contract, Governmental Approvals, or Applicable Laws: (3) contain accurate or reliable cost estimates; or (4) contain all of the information that is in Authority's possession or power, relevant, or material in connection with the Project. Authority shall not be responsible or liable in any respect for any causes of action, claims or losses by Consultant by reason of any use of information, opinions or recommendations contained in, any conclusions Consultant may draw from, or any action or forbearance in reliance on, the Reference Documents.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties have executed this Contract as of the date first written above.

"Authority"

METRO GOLD LINE FOOTHILL EXTENSION CONSTRUCTION AUTHORITY

By: _____
Habib F. Balian
Chief Executive Officer

Date: _____

Approved as to form:

Nossaman LLP

By: _____

"Consultant"

[_____]

By: _____

Name: _____

Title: _____

Date: _____

EXHIBIT A

SCOPE OF SERVICES

[*Insert Scope of Services and Schedule*]

EXHIBIT B

HOURLY RATES

Project Manager	$[●]
[Other Key Personnel]	$[●]
[●]	$[●]
[●]	$[●]

EXHIBIT C

KEY PERSONNEL

Key Personnel Position	Name and Contact Information
Project Manager	
[Other Key Personnel]	
[●]	
[●]	

Exhibit D

SUBCONSULTANTS

[*Insert from Proposal*]

EXHIBIT E

FORM OF FORM 60

(See attached)

FORM 60

Contract Pricing Proposal (Services)	"Form 60"	Page _____ of _____
Name of Proposer:	Division(s) Location(s) where services are to be performed:	
Home Office Address:	Contract #	
Services to be performed:	Total Amount of Proposal	

Detailed Description of Cost Elements

1. Direct Labor	Est Hours	Rate/Hour	Est. Cost ($)	Total Est. Cost
Total Direct Labor				
2. Labor Overhead	OH Rate(%)	x Base =	Est. Cost	
Total Labor Overhead				
3. Travel*			Est. Cost	
a. Transportation				
b. Per Diem or Subsistence				
Total Travel				
4. Subcontractors/Suppliers**			Est. Cost	
Total Subcontractors/Suppliers				
5. Other Direct Costs*				
Total Direct Cost and Overhead				
6. General & Admin. Expense (_____% of Item Nos; _____)				
7. Fee (10% of Direct Labor + Overhead + 3% Subs)				
Total Estimated Cost and Fee				

* Itemize on second page of "Form 60"

** Attach "Form 60" for all proposed subcontractors

EXHIBIT F

BID ITEM LIST

[*to be attached as negotiated with executed Contract*]

APPENDIX 4

Reference Documents

1. RFP C3001 General Requirements
2. RFP C3001 Performance Specifications
3. Construction Phasing Plan for SCRRA and FRT Track Construction
4. Station Artwork Maintenance and Conservation Form
5. Preliminary Traction Power Load Flow Study Report
6. TVM Quantity Analysis Report
7. LRT Station Exit Calculations
8. Claremont Parking Facility Project Documents
9. Foothill Extension Between Car Barrier Berthing Marker
10. Development Adjacent to San Antonio Wash
11. Golden State Water Proposed Waterline Crossings at College Avenue and Claremont Boulevard
12. Metro A Line (Glendora to Pomona Segment) Station and Parking Signage Shop Drawings and Bike Parking Signage Shop Drawings
13. Microwave Interference Study
14. City Design Criteria and Guidelines Matrix
15. Utility As-Builts
16. San Antonio Wash As-Builts
17. Freight and Metrolink As-Builts
18. Additional SCRRA Information
19. P2550 LRV Characteristics
20. P3010 LRV Characteristics
21. TPIS/VMS Reference Drawings
22. Fire Flow Information
23. Authority Documents (Legislation, Admin Code, Business and Travel Policy)
24. City Street Cut Moratorium Information
25. Grade Crossing Bell Specifications and Test Guidelines
26. Typical RTU Chassis Drawings
27. License Agreements
28. Typical LRT VoIP Telephone System Block Diagram
29. FTA Level Boarding Waiver
30. BNSF Clearance Modification Approval
31. Electronic Files for ACE Drawings
32. Metro Parking Masterplan
33. Pothole and Manhole Documents
34. Potential Future Special Events

35. Will Serve Letters
36. Montclair Metrolink Station Accessibility Improvement Plans
37. Montclair Transit Center As-Builts
38. Metro Track Allocation User Guide
39. Radio System White Paper
40. Metro Requests for Information (RFI's)
41. TPSS SCE Circuit Reports

Copies here: Reference Documents

Addendum 2- Reference Documents