

PR-01 SCOPE OF WORK

1. GENERAL

The DESIGN BUILDER shall be responsible for the performance of design, pre-construction and construction services, including the furnishing of all labor, materials, supervision, tools, equipment, services, and incidentals necessary to prescribe and provide for the complete and finished performance and accomplishment, in every respect, of the entire contemplated work or improvements indicated by the contract documents relating to this particular project. The DESIGN BUILDER shall be required to prepare design documents, which are those documents including, plans, profiles, typical cross-sections, general cross- sections, elevations, schedules, details/diagrams, drawings, construction specifications, reports, calculations, records, studies and other documents which, collectively, are needed to adequately and completely depict and record DESIGN BUILDER's detailed design of the Project; and it shall be understood that the DESIGN BUILDER undertaking the execution of all or any part of such work or improvement will be required to construct, and complete the same in a thorough, satisfactory, and skillful manner in accordance with the provisions of the contract documents.

2. SCOPE OF WORK

- A. The project consists of multiple individual projects that either require design and construction by the DESIGN BUILDER or that will be at "Ready to Issue" permitting stage with permitting authorities prior to the DESIGN BUILDER's NTP and only require pre-construction and construction by the DESIGN BUILDER. The following lists the various projects, for more detailed information on the scope of each package, see Volume 2. The documents included in Volume 2 are criteria and scoping documents and are not designs warranted by LAWA.

Design/Build Criteria and Scoping Packages	
ID	Item Description
R26	Sepulveda Blvd CCTV Traffic Signal Improvements
R30	La Cienega Blvd / Century Blvd Intersection Improvements
U32	La Cienega 12" Water Line
R08	I-405/ La Cienega Blvd On-Ramp & Off-Ramp Modifications
R20/R25 C1A	New 98th Street- Civil Package 1A
R20/R25-C1B	New 98th Street- Civil Package 1B
R20/R25-C2	New 98th Street- Civil Package 2
R20/R25-U3	New 98th Street- 34.5 KV/4.8 KV Duct Bank
R20/R25-U6	New 98th Street- 108" Storm Drain
R48	VIP Tours Metro G Shuttle Temp Road
R49	CCTV Employee Lot South
U33	City of Inglewood Fiber Relocation
U34	RS-X Gap at Vicksburg Duct Bank

ID	Item Description
CTA01	Recycled Water Extension Project
CTA02	CTA Chilled Water & LT Hot Water Pipe Replacement
CTA03	CTA Domestic Water Pipe Replacement
CTA04	Fire Water T5.5
B10.A & B	LAMP Roadway Guide Signage Program (Phase One & Two)
R20/R25-U1	New 98th Street- Sewer
R20/R25-U2	New 98th Street- Charter Communication Undergrounding
R20/R25-U4	New 98th Street- 12" Domestic Water
R20/R25-U5	New 98th Street- Recycled Water
U24-C	Duct Bank Closure
U27	34.5KV Duct Bank
U30-P2	4.8KV Duct Bank (Phase Two)

B. Project's design and construction elements.

1. DESIGN BUILDER shall perform activities including, but not limited to the following:

- a. Design/Preconstruction Kick-Off Mtg.
- b. FAA 7460 Approval/Limitations
- c. Existing Conditions Survey
- d. Demolition Plan
- e. Stakeholder Management Plan
- f. Utility/Area Shutdown Plan
- g. Preliminary Design Alternatives
- h. Permit Plan
- i. Early Work Package Development
- j. Commissioning Activities (when appropriate)
- k. Coordination & Phasing Plans
- l. 60%/ 90%/ 100%/ RFCD (Release for Construction Documents) Plans
- m. Risk Management Assessment
- n. Schedule Reviews
- o. Constructability/Maintenance Review
- p. Safety Plan
- q. Traffic and Pedestrian Management Plan
- r. Noise Mitigation Plan
- s. Signage and Wayfinding Plan

- t. Weather Mitigation Plan
- u. Storm Water Protection Plan (SWPP) Plan
- v. Pothole Plan
- w. Utility and Area Shutdown Plan
- x. Evaluation of design footprints for real estate coordination
- y. Identifying projects that require Low Impact Development

C. Project Professional Services

1. Professional services may include but are not be limited to the following:

- a) Provide design services.
 - 1) Design Philosophy and Narrative (Executive Summary).
 - 2) Rough Order of Magnitude (ROM) Construction Cost Estimates.
 - 3) Schedule for Design.
 - 4) Impact to Authorities Having Jurisdiction (AHJ).
 - 5) Constructability Review.
- b) Provide field surveys.
- c) Perform geotechnical investigations.
- d) Perform utility investigations and provide potholing information.
- e) Perform assessments of existing conditions.
- f) Prepare construction documents.
- g) Coordinate work with other LAMP projects and contractors.
 - 1) In addition to the items listed above and as needed, the DESIGN BUILDER shall have the ability to subcontract with specialized firms for services, including but not limited to geotechnical, surveying, construction materials testing, archeology and paleontology monitoring, noise monitoring, biotic resource monitoring, water quality testing, hazardous waste testing and remediation, Maintenance of Traffic (MOT), Low Impact Development (LID), tree and avian surveys, street lighting, landscaping, value engineering and other services.
 - 2) For survey and utility investigative work, the DESIGN BUILDER shall utilize the services of a Professional Land Surveyor licensed in the State of California with subsurface utility engineering (SUE) experience and expertise in providing utility mapping, utility coordination, utility relocation and surveying services to map, locate and collect data associated with subsurface and overhead utilities.

2. Utility Relocations:

- a. The DESIGN BUILDER shall perform all design work, obtain required approvals and provide all materials necessary to construct the proposed utility relocations as described below. At completion of each utility relocation, the DESIGN BUILDER shall reconstruct the project site, and streets to restore its pre-existing condition. The following is a partial list and a general description of the utility work included in this RFP:
 - 1) Power Relocations: Design and construct new underground power ducts and vaults belonging to the LADWP power system in accordance with "Customer

Requirements” documents issued by LADWP.

- 2) Telecom Relocations: Coordinate with 3rd Party Agencies to design and construct new underground telecom ducts and vaults for utilities.
 - 3) Water Line Relocations: Design and construct new waterlines belonging to LADWP water system.
 - 4) Sewer Relocations: Design and construct new sewers belonging to the City of Los Angeles Bureau of Sanitation (BOS).
 - 5) Storm Drain Relocations: Design and construct new storm drain alignments belonging to the City of Los Angeles Bureau of Engineering (BOE), and County of Los Angeles Flood Control.
 - 6) Gas Line Relocations: Coordinate with the Gas Company to design and construct new gas lines as required.
 - 7) Street Light relocations: Coordinate with AHJ’s to design and construct street lights as required.
- b. Coordinate and facilitate the relocation and protection of existing utilities inclusive of electrical and telecommunication conduits, pull boxes, maintenance holes, vaults, duct banks, cable TV facilities, gas distribution lines, duct banks, water facilities, sewer and storm drains, and other utilities as indicated.
 - c. Contact information for known utility agencies and local jurisdictions is provided in order for the DESIGN BUILDER to coordinate the protection of in-place existing utilities and the relocation and rearrangement of other local utilities. The list is not inclusive of all agencies that may have jurisdiction.

Agency:	Name:	Phone Number:
AT&T-TCA	Byren Love	(310)518-4511
Bureau of Engineering (BOE)	Jim Burman	(213) 923-6375
Bureau of Sanitation (BOS)	Ching Loong	(323) 342-6075
Bureau of Street Services	Charles Strawter	(213) 847-0867
Bureau of Street Lighting	Paul Wang	(213) 847-1450
Dept. of Building and Safety	John Francia	(213) 482-0010
Caltrans	Tin Dinh, P.E.	(213) 897-0112
LADWP – Water Distribution	Mark Patterson	(213) 367-1219
LADWP – Recycled Water	Amy Web	(213) 367-1126
LADWP – Power	Wayne Hinkson	(213) 367-6002
Federal Aviation Administration (FAA)	Mike Ensign	(310) 925-9172
FAA Communications	Jimmy Huang	(310) 215-2052
LAWA Communications (IMTG)	Melodie Johnson	(424) 646-8104
LAX Fuel	Jim Moses	(310) 646-5915
	Doug Quast	(310) 646-4961

NOAA	Gary Strickland	(805) 988-6626
SCE – Communication	Nolan Lam	(310) 608-50-63
Southern California Gas Company	Luis Zamora	(310) 605-4156
MTA	Paul Whang	(213) 922-4705
LADOT	Fabio Arias	(213) 972-8685
Verizon Business	Dan Garden	(909) 421-3316
XO Communications	Matt Bergine	(949) 417-7841
Century link	Bryan Church	(503) 560-5590
Shutdown Control Center (SCC)	John Mitchell	(424) 646-5977
Airport Police Department (APD)	Emergency Hotline	(424) 646-7911
Airport Response Coordination Center (ARCC)	General Line	(424) 646-5292
Los Angeles County Flood Control District	General Line	(818) 896-0594
Los Angeles World Airports		
· Operations	Benjamin Chai	(424) 646-5461
· Shut Down Control Center	John Mitchell	(424) 646-7911
	Info Line	(855) 463-5252
· Environmental Planning Group	Robert D. Freeman Airport Environmental Manager II	(424) 646-6474
· Construction Activities and Logistics Management (CALM)	John Gruendl CALM Manager	(424) 6467448
South Coast Air Quality Management District	Thomas Liebel	(909) 396-2554
Federal Aviation Administration	Jimmy Huang	(310) 215-2052
Environmental Protection Agency		(415) 947-8700
U.S. Customs and Border Protection		(310) 215-2618
U.S. Citizenship and Naturalization Services		(800) 375-5283
U.S. Department of Agriculture	El Segundo Office	(323) 726-4600
U.S. Public Health Service		(888) 225-3302
TSA		(866) 289-9673
California Coastal Commission	Shannon Vaughn	(562) 590-5071
Cultural Affairs Commission		(213) 202-5500
Public Arts Commission	Felicia Filer Public Art Division Director	(213) 202-5547
Dig Alert		811

3. Temporary and Permanent Roadway Improvements:

- a. The DESIGN BUILDER shall perform all design work, obtain required approvals and provide all materials necessary to complete the proposed temporary and permanent roadway improvements, which may include traffic mitigation improvements and parking improvements as described below. The following is a partial list and a general description of the temporary and permanent roadwork included in this RFP:
 - 1) I-405 SB Off Ramp Improvements - Widen the I-405 SB off-ramp to increase lane capacity.
 - 2) New 98th Street from the I-405 SB off Ramp Improvements west to Bellanca Avenue.
 - 3) Modification of the intersection of La Cienega Boulevard and Century Boulevard.
 - 4) Provide CCTV cameras at seven (7) intersections along Sepulveda Boulevard.

4. Demolition of Existing Facilities:

- a. The DESIGN BUILDER shall perform all work associated with demolishing and hauling away existing structures and facilities. The DESIGN BUILDER will be responsible for assessing the existing conditions of each facility and/or structure before demolition and comply with any hazardous and environmental regulations resulting from the demolition operations.

3. GENERAL REQUIREMENTS OF THE SCOPE OF WORK

A. Design Build Scope of Work

1. Policies

- a. DESIGN BUILDER shall adhere to the following design policies in the development of all design documents and supporting documentation for which LAWA has authorization for approval. Design services shall be performed by a licensed California Professional Engineer. All submitted and approved drawings need to be stamped and signed by said licensee. DESIGN BUILDER shall be responsible for the development of design and construction documents, supporting documentation and coordination that comply with third party agency design policies for the purpose of securing approval by these agencies. At a minimum, DESIGN BUILDER's design activities and documents will provide the following:

1) Compatibility with Aviation Operations

- a) General: The DESIGN BUILDER's development of all project design documents for construction on the airport shall comply with applicable federal, state and city regulations and be consistent with accepted airport standards. Structures and facilities shall not pose a hazard to aircraft operations, interfere with established FAA ground or air control procedures, nor impede the safe flow of aircraft traffic. Construction safety and work plans shall be made with consideration and approval of the FAA where necessary and applicable. The DESIGN BUILDER shall identify the appropriate airport operations stakeholders to coordinate any required work or tasks to be performed on the Air Operations Area initially during the preconstruction stage and throughout construction.

2) Environmental Protection and Sustainability

- 1) Refer to PR-18 "Environmental" of the project requirements for environmental

project requirements.

3) Safety

- a) LAWA's safety objectives for this project are identified in PR-15 "Safety" of the project requirements.

4) Quality

- a) The DESIGN BUILDER must provide quality assurance and control for their design and construction activities on all projects. PR-13 will include requirements for the quality assurance quality control program.

5) Omissions

- a) If the construction documents are not complete as to any minor detail or required construction system or with regard to the manner of combining or installing of parts, materials, or equipment, but there exists accepted trade standard for good and workmanlike construction, such detail shall be deemed to have been implied by the requirements of the construction documents in accordance with such standard.
- b) "Minor Detail" shall include the concept of substantially identical components, where price of each such component is small even though aggregate cost or importance is substantial, and shall include a single component which is incidental, even though its cost or importance may be substantial.
- c) Quality and quantity of parts or material so supplied shall conform to trade standards and be compatible with type, composition, strength, size and profile of parts or materials otherwise set forth in the Construction Documents.

2. Planning, Design & Engineering Review & Coordination

- a. As part of the stakeholder management requirements, the DESIGN BUILDER shall conduct all activities necessary to interface and coordinate with other organizations and Third Party jurisdictional agencies to secure approval of the Construction Documents. DESIGN BUILDER shall identify the authorizing agency, or agencies, with jurisdictional authority for approval and coordinate on the behalf of LAWA to secure approval of the construction documents for each project. The DESIGN BUILDER is responsible for coordinating with adjacent LAMP projects; APM, ConRAC, ITFW, and also following agencies:
 - b) City of Los Angeles Department of Water & Power
 - c) Los Angeles City Council District 11
 - d) Los Angeles Department of Traffic (DOT)
 - e) City of Los Angeles Bureau of Engineering
 - f) City of Los Angeles Bureau of Street Lighting
 - g) City of Los Angeles Bureau of Street Services
 - h) City of Los Angeles Bureau of Sanitation
 - i) City of Los Angeles Bureau of Contract Administration
 - j) City of Los Angeles Department of Building and Safety
 - k) City of Los Angeles Fire Department
 - l) Los Angeles County Flood Control District

- m) Los Angeles County Public Works
 - n) City of Inglewood
 - o) Los Angeles World Airports
 - 1) Operations
 - 2) Shut Down Control Center
 - 3) Environmental Planning Group
 - 4) Construction Activities and Logistics Management (CALM)
 - 5) Information Management & Technology Group (IMTG)
 - 6) Airport Police Department (APD)
 - p) South Coast Air Quality Management District
 - q) Federal Aviation Administration
 - r) Environmental Protection Agency
 - s) U.S. Customs and Border Protection
 - t) U.S. Citizenship and Naturalization Services
 - u) U.S. Department of Agriculture
 - v) U.S. Public Health Service
 - w) Airport Tenants
 - x) Air Carriers
 - y) LAX Fuel System Management
 - z) Transportation Security Administration
 - aa) California Coastal Commission
 - bb) Cultural Affairs Commission
 - cc) Public Arts Commission
 - dd) Private utility providers
 - ee) Caltrans
3. Utility Locating and Marking
- a. The DESIGN BUILDER shall be aware of the utility locating and marking requirements for all construction contracts at LAWA as described in PR-16 "Surveying".
 - 1) The DESIGN BUILDER has responsibility to show the location of existing underground utilities on the design plans. DESIGN BUILDER will be required by LAWA to employ an underground utility locating firm to verify the location of subsurface utilities in support of the development of the design documents.
 - 2) The DESIGN BUILDER shall require the underground utility locating firm to mark the horizontal location and vertical depth of all utility lines that might be impacted by construction activities including but not limited to the following:
 - a) Electric power lines
 - b) Low voltage control and fiber optic lines

- c) Natural gas lines
 - d) Storm drains
 - e) Sanitary sewers
 - f) FAA communications, signal, and security lines and runway lighting lines
 - g) Water supply piping
 - h) Fuel and oil lines
- b. The DESIGN BUILDER shall provide utility coordination, which shall include but not be limited to coordinating with the utility owners, AHJ, property owners and other stakeholders as necessary. Utility coordination shall include all activities and priorities including: integration into the design/preconstruction team for technical input, identification of project constraints and risks, and associated schedule information. The DESIGN BUILDER shall construct field surveys in person to fully document all existing site conditions at the site(s) as part of a complete due diligence process. This process will complement the field surveys performed by the project surveyor and utility locator.
4. Pre-Design Meetings
- a. The activities of the design phase of each project task will be initiated by a pre-design/preconstruction meeting. Within two weeks of the date of the NTP, LAWA will hold a pre-design/preconstruction meeting. The purpose of the pre-design/preconstruction meeting is to introduce the participants of the project, to confirm and clarify project and design requirements, administrative procedures, restrictions and limitations, invoice/pay procedures, security procedures, safety requirements, quality requirements and to address the concerns of affected parties. The DESIGN BUILDER and LAWA will coordinate on the meeting participants and Third-Party jurisdictional stakeholders needed for attendance at the pre-design/preconstruction meeting.
- a) Stakeholder Management
- a) The DESIGN BUILDER shall create and implement a Stakeholder Management Plan that includes the processes required to identify the people, groups and organizations that could affect or be affected by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate strategies and tactics for effectively engaging stakeholders in a manner appropriate to the stakeholders' interest and involvement in the project.
 - b) The Stakeholder Management Plan will include the following sections:
 - I. Identification of Stakeholders – identify by name and title the people, groups, and organizations that have significant influence on project direction and its success or who are significantly impacted by the project.
 - II. Plan for Stakeholder Management – identify the strategies and mechanisms that will be used to achieve the needed support of stakeholders and minimize resistance.
 - III. Management of Stakeholder Engagement – outline the processes and steps that will be undertaken to carry out the planned strategies including any limitations, restrictions or risk.
 - IV. Control Stakeholder Engagement – describe the methods and efforts that will be used to monitor stakeholder engagement and alert the project team if problems surface.

- c) The DESIGN BUILDER shall submit a preliminary list of identified stakeholders and will work with LAWA to refine and add stakeholders throughout the project as needed.
 - b) Risk Management
 - a) The DESIGN BUILDER shall be responsible for and lead the risk management effort for the project. A formal Risk Management Plan shall be submitted identifying the DESIGN BUILDER's process for risk identification, assessment, qualification, quantification and responses. It should follow a methodology recognized in the industry as appropriate to the project scope.
 - b) The DESIGN BUILDER shall identify a staff member that will provide risk management services. Person will be responsible for implementation of the approved Risk Management Plan. Regular meetings shall be scheduled to update and improve the overall risk profile of the project. The DESIGN BUILDER shall be responsible for creating and maintaining the project risk register and associated documentation.
 - b. The participants of the pre-design meeting, in addition to representatives of LAWA, the DESIGN BUILDER and its design sub-consultants, normally include impacted airport stakeholders and other concerned Third Parties.
- B. Design Contract Management
- 1. Design Schedules
 - a. General: The DESIGN BUILDER shall prepare for each project or task a work schedule in Precedence Diagram Method (PDM), bar chart or other media as required by Contract. Within 30 calendar days of the NTP, the DESIGN BUILDER shall furnish the preliminary schedule to LAWA for the execution of its services. The schedule shall include milestones for submission dates, review periods and when and what LAWA-supplied data is to be furnished to the DESIGN BUILDER.
 - b. The final, agreed-upon design schedule is to be updated as a part of each design review submission. When, during the execution of design work, milestone dates of the design schedule appear to be in jeopardy, the DESIGN BUILDER shall be requested to explain the delay or potential delay and submit an alternative course of action to achieve schedule recovery. The DESIGN BUILDER shall identify actions and/or decisions required by LAWA or others that may adversely affect the schedule. LAWA uses Primavera software and prefers that DESIGN BUILDER prepared schedules are compatible. Each submittal should include schedule information on CD media.
 - 2. Progress Reporting
 - a. General: DESIGN BUILDER shall report on their progress during design according to the detailed requirements of the contract. This report cycle will be monthly. DESIGN BUILDER shall provide percentage complete status for the design documents against the LAWA approved work plan provided by the DESIGN BUILDER at the beginning of the contract. Concurrence by LAWA in the percentage complete status will be required for the approval of invoices submitted by the DESIGN BUILDER.
 - 3. Interfacing with Other Work
 - a. General: During the performance of its services, the DESIGN BUILDER shall thoroughly investigate what other existing conditions and current or future projects have a bearing on any part of work included in the DESIGN BUILDER's contract. The DESIGN BUILDER shall indicate in the Design Narrative all adjacent construction affecting the project and how adjacent construction may impact scope and schedule.

The DESIGN BUILDER shall assure LAWA that all elements of its design and construction work, including that of its subcontractors, are fully coordinated with other work.

- b. A revised tentative map(s) for all projects in the LAMP program is being updated to reflect changes in LAWA properties due to the development as the LAMP infrastructure design process evolves. The DESIGN BUILDER must become familiar with the status of these tentative map(s) and interact and exchange information with the LAMP surveyor team developing the map(s) as the individual design(s) progress toward AHJ approval.

C. Design Submittal Requirements

1. The DESIGN BUILDER shall determine if the required design stage submittals will satisfy all Third Party agreement requirements. The Developer shall be responsible for preparing additional submittals for Third Parties as necessary to prosecute the work. DESIGN BUILDER shall adhere to the latest Authority Having Jurisdiction (AHJ) CAD standards, design standards and design submittal requirements in effect at the Pre-Design meeting for the design documents. DESIGN BUILDER shall be responsible for producing design documents at the design stages necessary to secure the review and approval by all AHJs. If changes occur after AHJ approval, DESIGN BUILDER to secure necessary re-approvals by all applicable AHJs.
 - a. If not specifically outlined in each task identified in Volume 2 of the RFP, then the DESIGN BUILDER shall classify design submittals in accordance with the following minimum number of design stages:
 - 1) Preliminary Design (representing an approximate sixty (60) percent level of completion);
 - 2) Intermediate Design (representative an approximate ninety (90) percent level of completion); and
 - 3) Final Design (representing 100% level of completion).
 - 4) Release for Construction Documents (RFCD) shall be used by DESIGN BUILDER to construct the Work.
 - b. Preliminary Design (60% Review) Submittal: Upon receipt of LAWA's authorization to proceed with the design document development, the DESIGN BUILDER shall proceed with the execution of design development work. The objective of design development is to refine the design build criteria and scoping packages provided by LAWA and to define the final details, sizes, connections, material selections, and to resolve inter-disciplinary relationships. The 60% submittal shall include drawings, specifications, calculations, schedules, and the design narrative to the following levels of completeness.
 - 1) Drawings:
 - a) The drawings shall be in the final format of the contract documents and shall be presented in corresponding scale across all disciplines. Dimensioning shall be sufficient to define sizes of details, material thickness, equipment and fixture sizes, and comply with Third Party agency requirements. Drawings shall be in the format required by the agency having approval jurisdiction. The submittal generally comprises the following drawings:
 - I. Cover Sheet, List of Drawings, Legends and General Notes
 - II. Site Surveys and Boring Location Plans

III. Civil, Landscaping, and Utilities Plans and Details, and Schedules

IV. Measured Drawings of Existing Conditions and Demolition Plans

- b) If applicable, the submittal should also include drawings, specifications, and calculations of specialty work performed by the DESIGN BUILDER and its subcontractors. The DESIGN BUILDER shall furnish a complete list of drawings required for the construction documents.
 - c) Specifications: The 60% submittal shall include a breakdown of the project systems and components in accordance with the projects material and equipment specifications for the purposes of developing preliminary estimates and schedules.
- 2) Calculations: The calculations shall be sufficiently detailed to quantify individual elements of the systems defined during design development. Calculations shall be given for determination of sizes, grade/quality of materials, sizing and location of details and equipment.
 - 3) Schedule: In addition to an updated design schedule, the DESIGN BUILDER shall finalize the construction document production schedule and formulate and outline the anticipated construction schedule, including phasing of the work.
 - 4) Constructability Review: Prior to submittal of the 60% deliverables, the DESIGN BUILDER shall perform a formal constructability review. The constructability review is an independent and structured review of construction bid documents by the DESIGN BUILDER to make certain that the work requirements are clear, the documents are coordinated, and that they assist the DESIGN BUILDER in bidding, construction and project administration to result in reduced impacts to the project.
 - a) The constructability review shall be performed with the goal to prevent conflicts among documents – that is, conflicts between drawings and specifications, between drawings or between spec sections.
 - b) The DESIGN BUILDER shall identify a lead person to lead and coordinate the constructability review process. In addition to the preconstruction team, the DESIGN BUILDER shall solicit “fresh eyes” in the review of the documents. All reviewers shall be construction professionals with adequate experience and expertise.
 - c) The DESIGN BUILDER shall submit the finalized constructability review report upon completion of all back-checked comments from the DESIGN BUILDER’s design team to LAWA.
- c. Intermediate Design 90% Submittal: Upon receipt of LAWA’s authorization to proceed with the design work, the DESIGN BUILDER shall commence with preparation of the construction documents. The objective of the construction document phase is to refine and further develop the information from the 60% plans as necessary for the execution of the work. The construction documents comprise drawings, specifications, and contractual information that define in detail all materials, quantities, systems, interrelationships, work methods and limitations, and contractual requirements for the execution of the project. The construction documents must be completely coordinated with the procurement provisions, as well as the general and special conditions of the LAWA contract. The 90% submittal, as a minimum, shall comprise the following documents.
 - 1) Drawings: The drawings shall include all required sheets of the final construction working drawings defined by the drawing list, each at least to the 90% level of

completion, with sufficient information included for the preparation of a detailed cost estimate. For other drawing requirements please refer to PR-11.

- 2) Specifications:
 - a) The construction document (90% Review) Submittal shall include a breakdown of the project systems and components in accordance with the projects material and equipment specifications for the purposes of developing preliminary estimates and schedules.
- 3) Calculations: The DESIGN BUILDER shall furnish calculations for all disciplines, components and systems that are required to determine the final configuration of all parts of the project leading to satisfactory execution and completion of construction work.
- 4) Schedule: The DESIGN BUILDER shall furnish a revised design schedule and updated probable construction schedule, including consideration of all major systems and long-lead items. The probable construction schedule shall contain a level of detail necessary to identify individual portions of the work and the estimated construction critical path.
- 5) Long Lead Items List: During the 90% Submittal phase, the DESIGN BUILDER shall evaluate the requirements for long lead items by identifying the items and their quantities. The DESIGN BUILDER is required to coordinate the long lead items requirements with LAWA. Provide a list of all items that may be required to be purchased in advance by the contractor to meet the construction schedule.
- d. Final Design 100% Submittal: The 100% Submittal shall incorporate the comments and information gained from the 90% Submittal and is a comprehensive and complete pre-final construction contract document, suitable for public procurement and construction. The documents shall be essentially 100% complete, pending any work for only minor corrections to resolve discrepancies discovered during the 100% Submittal review.
 - 1) Drawings: The drawing set shall include all required construction working-drawing sheets completed to an essentially 100% level of completion.
 - 2) Specifications: Specifications shall be complete, comprehensive, and fully coordinated for disciplinary requirements with the working drawings, with the contract provisions, and the contract general and special conditions. The DESIGN BUILDER shall coordinate with LAWA procurement and contracts to ensure the contract provisions and the contract general and special conditions are projects specific. The specifications shall include the following contract requirements:
 - a) Supplemental Conditions
 - b) Division 01: General Requirements
 - c) Division 02 through Division 48 if applicable:
 - d) All other Technical Specification Sections including, where applicable, LAWA DCH, Caltrans design manual and the Green Book.
 - 3) Calculations: All calculations shall be finalized; incorporating all resolved comments and corrections of the 90% Submittal.
 - 4) Schedule: The DESIGN BUILDER shall furnish a finalized probable construction schedule for the overall times of procurement, fabrication, delivery, and installation of various systems of the projects, including consideration for phasing the construction work. The finalized probable construction schedule shall contain a

level of detail consistent with the requirements of the construction specification as edited by the DESIGN BUILDER and included in the construction documents. An electronic medium of compressed back up schedule information shall be provided on CD with each submittal. As part of the 100% submittal the DESIGN BUILDER shall include a draft of the schedule of construction submittals that lists all items, by specification section, that the construction contractor will have to submit for review and approval during the execution of the work. The DESIGN BUILDER shall also provide a record "as executed" design schedule, indicating all significant changes from the original design schedule agreed upon at the NTP.

- 5) Spare Parts and Long Lead Items List: At the 100% submittal phase, the DESIGN BUILDER shall have finalized the requirements for spare parts and long lead items.
- e. Release for Construction Documents (RFCD) Submittal
 - 1) Final Submittal
 - a) The RFCD submittal shall incorporate all resolved LAWA comments developed by the 100% review. All contract drawings shall be sealed and signed by a Registered Professional Engineer, a Registered Architect, or a Registered Land Surveyor licensed in the State of California as appropriate. Work that is performed by professionals or trades that do not require a professional registration in the State of California may be exempt from this requirement subject to prior written approval of the AHJ's. Deliverables shall include the following documents:
 - I. DESIGN BUILDER annotated responses to the design review comments from the 100% Submittal.
 - II. An original letter signed and sealed by the DESIGN BUILDER's Designer of Record and addressed to LAWA certifying that the design as submitted is in accordance with prevailing and applicable codes. Letter shall include a list of such codes used in the design.
 - III. Spare Parts and Long Lead Items List at the RFCD submittal phase, the DESIGN BUILDER of record shall have finalized the requirements for spare parts and long lead items.
 - IV. An original letter signed and sealed by the DESIGN BUILDER and addressed to LAWA providing a list of the "Special Inspections" required by the Building Code for the proposed work.
 - V. An original letter signed and sealed by the DESIGN BUILDER of record and addressed to LAWA for the temporary Support of Excavation System (SOE) when applicable.
 - VI. A complete list of all drawings submitted for final code review.
 - VII. The final construction submittal schedule, listing all submittals required of the DESIGN BUILDER by specification section.
 - VIII. The construction schedule, including phasing considerations.
 - 2) Final Construction Documents: The final construction Documents shall be comprehensive, clear and suitable for the purposes of procurement, contracting and construction, and shall incorporate the final, LAWA-approved procurement provisions, contract provisions, general and special conditions, conditions of the contract and general requirements.
 - 3) Certification Requirements: Final construction documents, including drawings,

specifications, and calculations shall be sealed and signed by the appropriate California Professional Registered Architect, Engineer-of-Record or Land Surveyor. Plans and specifications prepared for asbestos abatement, hazardous materials remediation, wetland delineation or other environmental activities shall be signed and sealed in accordance with all federal and state regulations.

- f. Refer to PR-11 "Design Management" for additional design stage submittal requirements.

D. Computer Aided Design Requirements

- 1. Project Submittals: All project submittals shall be provided in both electronic and hard copy format as required by the AHJs. The LAWA CAD standards define the requirements for all CAD documents delivered to LAWA (for projects on LAWA property). Some projects will require construction documentation in more than one CAD file standard.

E. Building Information Modeling Requirements

- 1. Project Submittals: All project submittals, reviews and approvals shall be provided in accordance with the most recent LAWA BIM Standard and the approved BIM Project Execution Plan. Refer to PR-21 for requirements.

F. Design Specification Requirements

- 1. General: Contract specifications shall use the most recent editions of specifications from the AHJs involved including at a minimum the Caltrans design manual and the Green Book. The DESIGN BUILDER shall select and edit all specification sections for specific project requirements. The DESIGN BUILDER shall coordinate procurement provisions and the technical specifications to ensure clear and compatible contract documents.
- 2. Applicability of Standards: The DESIGN BUILDER shall verify the applicability of standards that are referenced in the contract specifications. The DESIGN BUILDER shall provide LAWA with a summary list of all standards referenced and shall include detailed reference information in the specifications. This is required during both the design phase and the construction phase for each construction contract modification. The DESIGN BUILDER shall provide detailed requirements for testing and inspection for each item of work during all phases of construction, from submittals, through procurement, fabrication, installation, start-up, testing and balancing, and final acceptance for all technical specifications sections.
- 3. Contract Specifications: For each task, guide specifications may be added / modified to reflect the specific project requirements. A complete, comprehensive, customized set of contract specifications is required for each contract delivered. Specific specifications shall be issued for each task.
- 4. Local Construction Materials: When practical and appropriate, the DESIGN BUILDER shall investigate and specify the use of locally available construction materials, techniques, and building equipment.
- 5. Material Criteria: Contract specifications shall establish the basis of product and material criteria, applicability of codes and industry standards, references to technical publications, and all applicable industry standards.
- 6. Calculation Method: Contract specifications shall set forth the significance of calculation methods; technical data for computer programs used; and requirements for maintenance, service life, constructability, operations, and long-term durability.
- 7. Manuals: Contract specifications shall list and establish the basis of all manuals which need to be produced for the project and identify who will provide the manuals, including project

record drawings, the project record specifications, the project record calculations, materials and finishes manuals, equipment and systems manuals, and operations and maintenance manuals.

8. Paper: Contract Specifications shall be produced on 8.5 x 11 inch bond paper, with covers of card stock 110 lb. weight minimum.
9. Covers: Covers shall be properly titled, with project name and number.
10. Each Page: Each page of the contract specifications shall include the project title, LAWA-assigned project number, the specification section number, the page number, and the date, a sample of which shall be provided by LAWA.
11. Delivery: The DESIGN BUILDER shall deliver the contract specifications in the form of one unbound original, and one set of CD-ROM or DVDs, using the latest version of Microsoft Word for Windows.
12. Design Elements: When standard design elements, developed by agencies or organizations (LADWP, CALTRANS, FAA, BOE, etc.) independent of LAWA, are incorporated into the project design, all necessary information and details regarding these standard elements must be included in the project contract documents in the required format, and may not be included by reference only.
13. Standards and Codes: The DESIGN BUILDER shall have in their possession all standards and codes referenced in their contract documents. The DESIGN BUILDER shall be familiar with all standards and codes referenced in the various sections of the contract specifications.

G. Design Calculation Requirements

1. Preparation of Calculation: It is essential that design calculations be kept up to date and assembled in an orderly manner as the project progresses. Well-organized, annotated, edited, indexed, and cross-referenced calculations reflect good engineering practice. To produce calculations of this quality, the DESIGN BUILDER shall cite authoritative reference documents upon which the analysis is based. Careful documentation shall demonstrate the accuracy of the calculations. All calculations shall be signed, sealed, and dated by a professional architect or engineer registered in the State of California. Each calculation sheet shall be traceable to the originator, date and project title. Computer inputs shall be clearly identifiable, including date and project title. Structural calculations for construction permitting shall be submitted in accordance with the laws of the State of California.
2. Checking/Verification: All calculations shall be checked by the DESIGN BUILDER for completeness of material, compliance to criteria, validity of assumptions, accuracy of mathematical and numerical content, compliance with code, quality of engineering judgment, clarity of presentation, format, and adequacy of referencing to engineering publications and related documents. Each calculation sheet shall be initialed and dated by a licensed engineer(s) assigned as design checker(s) for that portion of the work. Final calculations shall be indexed, sealed and signed by the DESIGN BUILDER whose name appears on the design calculations index. To assure the preparation of neat, logical and complete calculations, and to accomplish review and checking within a reasonable time and with minimum effort, the following guidelines shall be observed:
 - a. Criteria: Establish the criteria for the design and record it at the beginning of calculations for each discipline, including all codes and standards, values and data including design live loads, foundation and soils parameters, design materials with properties and stresses, assumptions, and exceptions, including the source of this information, used as the basis for the calculations.

- b. Assumptions: Assumptions and design criteria shall be clearly stated prior to the presentation of the calculations.
 - c. Individual Calculations: Individual calculations to verify sizes, bolts, welds, etc., shall be provided with all details.
 - d. Sketches: Sketches used to describe the basis of calculations shall be drawn neatly and to approximate proportions.
 - e. Referenced Sources: Provide referenced sources.
 - f. Notes: Include all notes necessary to clarify the analysis and assumptions.
 - g. Sheets: Do not crowd sheets.
 - h. Measurements: Show all units of measurement abbreviations. Omissions of these abbreviations can lead to misunderstanding and errors.
 - i. Numbers: Show all numbers in all intermediate steps needed so that the end result can be checked.
 - j. Index and TOC: Provide an Index and Table of Contents.
3. Checklists: Refer to Appendix for specific checklists to be utilized in the development of calculations for a project.

4. WORK BY OTHERS

The DESIGN BUILDER shall cooperate and coordinate with other contractors as needed to assure the orderly progression of work in accordance with the contract documents. DESIGN BUILDER shall coordinate and provide site access to other contractors as required.

5. SUBMITTAL REVIEW PROCESS

- A. Refer to PR-11 for design submittal review process.
- B. Refer to PR-9 for the construction submittal review process.

END OF PR-01 SCOPE OF WORK