

Project Scope of Work

The following items will be part of the scope of work for this project:

The Scope of Work shall include, but not be limited to, project management, coordination, design, preparing drawings, specifications, calculations, cost estimates, schedules, studies, and reports for:

- Architectural, civil, electrical, mechanical, plumbing, structural, landscape architectural, and transportation design for various Harbor Department commercial and public facilities;
- Contract and record documents;
- Applying and obtaining plan checks and permits;
- Autocad drafting;
- Grant and funding support;
- Engineering support during bid and construction;
- Equipment commissioning;
- Peer review;
- Technical training;
- Technical studies; and
- Property legal descriptions.

Harbor Department Engineering Guidelines: Consultant shall perform work in accordance with the Harbor Department's "Engineering Design Guidelines," and "Computer Aided Design (CAD) Manual" ("Guidelines").

Task 1 - Project Management and Coordination

Provide state-of-the-art project management services throughout the term of the Agreement. This project management effort shall be provided for the following processes: Project initiation, Project planning and scheduling, Project controls, Project execution, and Project administration and closing. Deal with issues, including, but not limited to, Project integration, Project scope development, Project management, cost management, quality assurance and control issues, human resource requirements, Project communications, and Project risk management.

Initiate, plan, execute, direct, control, and administer the Project by effectively organizing, staffing, directing, integrating, and coordinating the required Project Tasks and Subtasks. These services shall be performed in a professional fashion as per current project management principals, guidelines, and standards promoted by recognized project management organizations and institutions. This task includes the following:

Task 1.A - Suitability of Work and Consultant Cooperation

Furnish, in accordance with the agreed upon schedule, a complete, practical, economical design, plans, specifications, and estimates (if such plans and specifications are within the scope of Consultant's work; consultant shall follow Harbor Department's

cost estimate template), and related corrections and changes which are best suited for the contemplated construction, and ensure all work is completed in accordance with this Agreement and with sound engineering principles and is signed and sealed by a licensed Professional Engineer and/or Architect, as appropriate. Upon request of the Engineer, provide all calculations, data, charts, and other information of any type whatsoever which support its designs or other work performed pursuant to this Agreement. Consultant may not assert as a basis for refusing to provide such information that it is proprietary. Satisfy Engineer that design decisions are based on objective evaluation of the requirements of the facility owner and user, meet site-specific conditions, comply with Project construction cost budget, and minimize long-term operation and maintenance costs. Consultant is aware and agrees that the Harbor Department has the right to submit the Consultant's work product to independent design reviewers. Consultant agrees to fully cooperate with such reviewers if Harbor Department determines review is appropriate. Consultant's obligation to cooperate shall include the obligation to respond in an objective professional manner to requests for information, and, if expressly requested by Engineer, to enter into a dialogue with the reviewer regarding the comments of the reviewer on the work.

The Harbor Department's CAD Standards adopt Autodesk Applications such as AutoCAD, Civil 3D and Revit as the "Standard CAD Software". All submitted files must conform and comply with the latest version of the Harbor Department's CAD Standards outlined in the Harbor Department's CAD Manual. When submitting files on electronic media, the AutoCAD, Civil 3D (.dwg) or Revit (.rvt) drawing file version should be included. Drawings and data should be transferrable and able to integrate with other applications, such as Geographic Information Systems (GIS) (such as ESRI ArcGIS), PDF reviews (such as Bluebeam REVU), cost estimating applications and specification development.

Specifications shall be prepared using SpecLink Cloud and submitted in Portable Document Format.

Task 1.B - Quality Assurance/Quality Control Plan

In conjunction with the Project Management Plan (PMP), prepare a quality assurance/quality control plan (QA/QC Plan) for the Project within 30 days of issuance of the first Notice to Proceed under this Agreement. The QA/QC Plan shall be prepared in accordance with minimum requirements of the Harbor Department, recognized professional standards, and shall identify procedures for reviewing and checking computations, design drawings and other submittals specific to the design phase for both Consultant and Subconsultants. The plan shall also identify roles and responsibilities for implementing and monitoring quality control and quality assurance. As part of the Consultant's QA/QC Plan, Consultant Senior Staff shall perform independent review of all documents for completeness, technical accuracy, and coordination and code compliance at the end of each work phase prior to submittal of deliverables to Engineer.

Task 1.C - Prepare Project Schedule

Develop a computerized Critical Path Method (CPM) Schedule using Microsoft Project. This schedule shall be created in close coordination with the Engineer or Engineer's designee. The initial schedule shall be submitted 30 days after the issuance

of the first Notice to Proceed under this Agreement. The schedule shall initially focus on design phase activities, including significant milestones (such as tasks), permits, utility coordination and related Tasks, to allow for effective planning, monitoring and reporting throughout the Project. It shall combine activities related to cost, planning and design, reviews, delivery, and approvals and shall provide uniform guidance for planning, scheduling, budgeting, and coordination efforts. Updates to the schedule should coincide with the monthly Project Development Team (PDT) Meeting, where reporting shall take place.

Task 1.D - Monthly Progress Status Reports and Schedule Updates

Prepare monthly progress reports that include an update to the key milestone delivery schedule and percent completion of each task worked on during that period. Consultant shall maintain the CPM Schedule. The schedule will be reviewed in close coordination with Engineer. Each month a schedule shall be issued for Project progress meetings and other public meetings where Project status and the schedule may be an agenda item. The CPM Schedule shall also be updated each month to show progress.

Task 1.E - Project Development Team (PDT) Meetings

Attend monthly PDT meetings with Project stakeholders throughout the term of this Agreement. Consultant's Project Manager shall attend each meeting. It is anticipated that various other members of the Project team, including Subconsultants, may be required to attend the meetings. Prepare an agenda and distribute meeting minutes, as well as track design contract action items. Monthly progress reports shall be presented and discussed at this meeting.

Task 1.F - Subconsultant Administration

Administer all Subconsultants on this Project. All Subconsultant requests for information, questions, clarifications, and invoices shall be processed through the Consultant.

Task 1.G - Meetings, Permits, and Utility Coordination

Attend meetings, conferences, hearings and provide drawings, applications and exhibits necessary to obtain all required approvals, plan checks, permits, variances and utility services/modifications for the Project. Determine regulatory agency approvals, plan checks, permits and variances necessary for Project's design and construction unless the Engineer otherwise directs in writing. Prepare and deliver to Engineer, for review and comment, minutes of all meetings attended within three (3) working days after the meeting, whether or not Harbor Department is represented at said meetings, if the subject of such meeting is material to design of Project or if Engineer requests such meeting minutes.

NOTE: Project Management and Coordination services and costs are included within all major scope of services Tasks (Tasks 2.0 – 10.0) and so are not broken out separately as Task 1.0.

Task 1 – Deliverables

- QA/QC Plan (.doc and .pdf)
- Comment records (.xlsx)
- Project schedule updates (.pdf and .mpp)
- Project status reports (.pdf)
- Meeting minutes (.pdf)

Task 2 - Geotechnical Engineering Services

Investigate the soil and subsurface conditions at the project site, and provide geotechnical recommendations for design of the project. The geotechnical work shall include, but not necessarily be limited to the following:

A. Review and Analysis of Existing Information:

1. Collect and review existing geotechnical reports, boring logs and other geotechnical information from adjacent and nearby projects, as well as from previously performed geotechnical work in the Project area.
2. Review and represent the site geology on plan, section, and profiles. Summarize soil parameters as presented in existing data.
3. Inspect site to determine existing site conditions.

B. Field Investigation:

1. Develop a geotechnical work plan, including determination of the number of borings, cone penetration tests (CPT) or other data acquisition and testing required for design of the Project.
2. Submit a boring plan indicating the location and depths of all borings and CPTs for approval by Engineer prior to sampling. Boring plan shall indicate substructures in the vicinity of the proposed borings.
3. Detailed planning of field investigation:
 - a. Identify, notify, coordinate with, and obtain approvals as required: tenants, site occupants, utility owners, other stakeholders, agencies, departments, and other entities.

- b. Arrange for and schedule drillers.
 - c. Make preparations for sample handling, transportation, and testing.
 - d. Locate test borings.
 - e. Locate utilities and other onsite interferences and mark location on the ground.
 - f. Obtain necessary permits.
 - g. Schedule field staff.
 - h. Locate temporary storage area for soil drums.
4. Perform borings and other fieldwork as necessary for the surface and subsurface investigation. As initial surface and subsurface investigation is accomplished and data is reviewed, adjust boring depths, locations, and number of borings and CPTs using prudent engineering judgment and considering subsurface conditions and project requirements and as approved by Engineer. CPT data shall be obtained during borings.
 5. Borings in uncontaminated areas shall be backfilled with soil cuttings except CPTs will not be backfilled. Borings and CPTs in contaminated areas shall be backfilled with grout. Contaminated drilling spoils shall be left on-site in drums for disposal by others.

C. Laboratory Testing:

1. Perform laboratory testing to include, but not necessarily be limited to the following:
 - a. Index testing:
 - i. Moisture content/dry density
 - ii. Specific gravity
 - iii. Atterberg limits
 - iv. Sand equivalent
 - v. Sieve analysis
 - vi. Resistivity
 - b. Consolidation tests with time plot.
 - c. Soil Strength tests:
 - i. Triaxial compression
 - ii. Direct shear
 - iii. Standard penetration test
 - d. R-value or CBR tests.
 - e. Compaction tests.
 - f. Chemical analysis:

- i. pH
- ii. sulfates
- iii. chlorides

D. Prepare Soil Data Report:

1. Prepare narrative summary of the site soil conditions and soil parameters as developed from review of existing data, borings, and laboratory testing.
2. Prepare and draft boring logs using GINT program.
3. Prepare site soil plan, profile, and cross sections.
4. Prepare data report.

E. Geotechnical Analysis:

The geotechnical analysis shall be based on both the currently available geotechnical site information and the results of the new field investigation. The following items shall be addressed by the geotechnical analysis:

1. Provide seismic design requirements and recommendations based on Los Angeles Building Code criteria and considering the significance of the Palos Verdes Fault.
2. Foundation Analysis:
 - a. Develop recommendations for the foundations and/or bedding of structures, including retaining walls, vaults, storm drains and light poles considering local site conditions and recommended seismic requirements.
 - b. Prepare technical report.
3. Pavement Design:
 - a. Develop pavement section for roadway improvements based on adjoining property usage.
 - b. Provide R-values and CBRs of sub-grade for pavement design.
 - c. Prepare technical report.
4. General Grading:
 - a. Provide analyses and recommendations for the following:
 - i. Trench excavation, backfill and shoring.
 - ii. Site grading, fill placement and compaction.
 - iii. Subgrade preparation for foundations and footings of structures.
 - iv. Bedding requirements for utilities and substructures.

v. Dewatering.

5. Corrosive Potential:

- a. Determine soil corrosion potential and recommend protective measures for utilities and substructures.

F. Final and Draft reports:

The findings, conclusions and recommendations shall be discussed with the Harbor Department as they are developed. Upon completion of the work, submit five copies of the draft report containing the findings, conclusions and recommendations together with the supporting field and laboratory data for review by Harbor Department. Review and address Harbor Department's comments, and submit ten copies of the final report to Harbor Department.

G. Plans, Specifications, and Estimates Review:

Consult with designers during Preliminary and Final Designs as necessary to implement recommendations and review project plans, specifications and estimates for conformance with geotechnical recommendations.

Task 2 – Deliverables

- Meeting minutes;
- Boring plan;
- Obtain necessary permits;
- Soil data reports; and
- Draft and final geotechnical reports.

Task 3 - Conceptual Study and Report Phase

After issuance of the first written Notice to Proceed under this Agreement, perform Conceptual Study and Report for the Project. That work shall include, but not necessarily be limited to the following:

- A. Visit the site and become familiar with the Project area;
- B. Review available survey, coordinate control information and record plans and use this material to establish site boundaries, locations of existing facilities, utilities (including utilities below grade) and existing grades. Provide a list of additional surveys required, which will be performed by the Harbor Department's survey forces;

- C. Identify and analyze permits, approvals and requirements of local, state, and federal regulatory agencies, and coordinate with them as necessary for conformance with their requirements, rules and regulations;
- D. Coordinate work with adjacent projects, facilities and improvement;
- E. Develop detailed project design criteria and identify critical issues, opportunities and constraints. Prepare Design Criteria Manual to incorporate results of this work; and
- F. Prepare a report and documentation package presenting the results of the two (2) conceptual studies to clearly present the considerations involved and the alternative solutions available setting forth Consultant's findings, evaluations and recommendations. Each alternative shall include cost, schedule, and a list of risks: pros and cons.
- G. Provide a recommendation of preferred alternative that best achieves the project objective and design criteria.
- H. Document justification for the selection.

Task 3 – Deliverables

- Preliminary Conceptual Study (Design Criteria Manual)
- Final Conceptual Study report
- Architectural exhibits/artist renderings
- Preliminary architectural plans
- Landscaping exhibit(s)
- Structural exhibit(s)
- Mechanical/electrical/plumbing (MEP) exhibit(s)
- Grading and surfacing exhibit(s)
- Utility and substructure exhibit(s)
- Construction phasing
- Refined design imagery
- Preliminary project construction cost estimates
- Preliminary project design and construction schedules

Task 4 - Preliminary Design Phase (40% Construction Plans)

- A. Upon completion of the conceptual study and report phase, selection of a preferred alternative by Harbor Department, and issuance of a written Notice

to Proceed from the Engineer, or written provisional Notice to Proceed with individual elements, perform the preliminary (40%) design.

- B. Plans shall include typical sections and details and illustrate the architectural, civil, structural, electrical, mechanical, and other design aspects in sufficient detail to cover all matters, which will materially affect the essential features and cost of the Project.
- C. Prepare a preliminary list of required permits and approvals, including estimated durations.
- D. The preliminary design submittal shall include, but not necessarily be limited to the following for all facilities:
 - 1. Architectural Plans
 - 2. Site plan showing coordination and relationships with overall site development
 - 3. Construction phasing plan
 - 4. Removal plan
 - 5. Substructure plan
 - 6. Civil design
 - 7. Structural design
 - 8. Mechanical/HVAC Design
 - 9. Plumbing design
 - 10. Electrical design
 - 11. Storm drain plans and details
 - 12. Landscape and hardscape design
 - 13. Striping and signage plan
 - 14. Utility plan
 - 15. Site/Area lighting plan
 - 16. Rail plan
 - 17. Outline specifications for each discipline of work
 - 18. Updated project cost estimate and schedule
 - 19. Utility demand estimates
 - 20. Perform all appropriate code coordination and review with applicable local, state, and federal agencies

Task 4 – Deliverables

Deliverables from this phase will provide a general overview of the entire proposed development not necessarily attempting to group the plans by anticipated construction contract sets. The deliverables will include:

- Preliminary architectural plans
- Preliminary site plan
- Preliminary construction phasing plans

- Preliminary removal plan
- Preliminary substructure plan
- Preliminary civil plans
- Preliminary structural plans
- Preliminary mechanical/electrical/plumbing plans
- Preliminary utility plans
- Preliminary landscape and hardscape plan
- Preliminary signing & striping plans
- Preliminary site/area lighting plans
- Preliminary rail plans
- Preliminary construction cost estimate
- Preliminary construction schedule
- Associated reports and analysis work
- Outline of specifications

Task 5 - Eighty-percent Construction Documents (80% DESIGN)

- A. Upon issuance of written Notice(s) to Proceed from the Engineer, proceed with 80% design of Project. This procedure is the same for the Final design.
- B. Preparation of plans (both 80% QA/QC and 80% Review sets), specifications, and estimates in sufficient detail to provide the information necessary for competitive construction contract bidding for Project.
- C. All review comments provided in and during the Preliminary Design Phase (40% Construction Plans) shall be addressed and incorporated as necessary.
- D. Update the list of required permits and approvals, including estimated durations.
- E. Permits and approvals:
 1. Perform all appropriate code coordination and review with all applicable local, state, and federal agencies.
 2. Complete applications, including necessary documentation, to obtain all permits and approvals for Project other than those that are required to be obtained by contractor(s). These applications shall be submitted to Engineer for review and approval prior to filing with appropriate agencies.
 3. Permits/approvals for this project include but are not necessarily limited to the following:

- a. City of Los Angeles, Department of Building and Safety
 - b. City of Los Angeles, Department of Public Works
 - c. City of Los Angeles Fire Department
 - d. Federal Railroad Administration
 - e. California Public Utilities Commission
4. Changes in the plans, specifications, and estimates, including any changes required by a change in rules, regulations, or laws required to obtain final approval from said agencies shall be made by Consultant.
 5. Determine and obtain any other permits required by the local, state, and federal agencies for Project.

Task 5 – Deliverables

An 80% version of the following, grouped by contract set, will be provided to the Harbor Department at the end of this design phase.

- Architectural plans
- Site plan
- Construction phasing plan
- Removal plan
- Substructure plan
- Civil plans
- Structural plans
- Preliminary mechanical/electrical/plumbing plans
- Utility composite plan
- Landscape and hardscape plans
- Signage and striping plans
- Site/area lighting plans
- Rail plans
- Updated construction estimates itemized per the Bid Proposal Line Items
- Updated construction schedule
- Associated reports and analysis work
- Calculations
- Specifications

Task 6 - Final Design Documents (100% DESIGN)

- A. Upon issuance of a written Notice to Proceed from the Engineer, or written provisional Notice to Proceed with individual elements, prepare the Final Design submittal and respond to and incorporate all comments received from the Harbor Department and City Department of Building and Safety.

- B. All review comments provided in and during the 80% DESIGN shall be addressed, and incorporated as necessary.
- C. Provide status and updates to the list of required permits and approvals.

Plans (both 100% QA/QC and 100% Review sets), specifications, and estimates shall be stamped and signed by an architect or engineer appropriately licensed to practice in the State of California.
- D. Submit to Engineer all construction quantities as well as structural, civil, electrical, mechanical, and any other calculations used in the design of the Project.
- E. Submit a detailed estimate of the cost based on the bid items and provide
a
Class "A" estimate.
- F. Submit a proposed construction schedule in sufficient detail for use by Engineer in evaluating the adequacy of contractor's scheduling submittal.

Task 6 - Deliverables

Final versions of the following contract sets consisting of plans, specifications and estimates are anticipated:

- Architectural plans
- Site plans
- Construction phasing plan
- Removal plan
- Substructure plan
- Civil plans
- Structural plans
- Mechanical/electrical/plumbing plans
- Utility composite plan
- Landscape and hardscape plans
- Signage and striping plans
- Site/area lighting plan
- Rail plans
- Updated construction estimates itemized per the Bid Proposal Line Items
- Updated construction schedules
- Associated reports and analysis work
- Calculations

- Specifications

Task 7 - Signature Submittal

- A. Following review and incorporation of comments of Engineer, original plans, specifications, and estimates, stamped and signed by an engineer or architect appropriately licensed to practice in the State of California, shall be submitted for signature by Engineer.
- B. The original drawings and two vellums drawings, electronic CAD files, unbound original specification, and two copies of final cost estimate and schedule shall be submitted.
- C. Submit to Engineer all final construction quantities as well as structural, civil, electrical, mechanical, and any other calculations used in the design of the Project.
- D. Provide status and updates to the list of required permits and approvals.

Task 7 – Deliverables

- Original drawings
- Unbound original specifications
- Final cost estimate itemized per the Bid Proposal Line Items
- Final schedule
- Final quantities and calculations

Task 8 - Bidding Phase

Provide assistance to the Harbor Department during the contract(s) advertising and award process to include the following:

- A. Assistance in pre-qualifying potential bidders
- B. Attendance at pre-bid meetings
- C. Reviewing and providing responses to bidder inquiries
- D. Preparing and issuing addendums as needed.
- E. Assistance in reviewing bids

Task 9 - Design Services during Construction

Provide the following services in support of the Harbor Department's on-site construction management efforts.

A. Office Engineering:

1. Check detailed construction drawings, submittals, shop and erection drawings, and substitutions submitted by the project contractor for compliance with permits and plans, specifications, and estimates.
2. Review specific non-routing laboratory, shop, and mill test reports of materials and equipment as directed by the Harbor Department.
3. Address requests for information ("RFI's") from the project contractor and Building and Safety inspectors.
4. Prepare record (as-built) drawings on original plans as per the data supplied by the Project contractor via the Harbor Department's construction manager.

B. Field Engineering:

1. Make periodic visits to the site to observe the work in progress and provide appropriate reports, including attendance at selected weekly progress meetings.
2. Observe and report to the Harbor Department on any performance test required by the plans and specifications.
3. Attend final inspections of project's completed construction contracts.

C. Structural Observation:

Provide qualified personnel for observation of structural systems, for general conformance to the approved plans and specifications in conformance with all applicable codes.

This task includes a limited number of field trips at significant construction stages and at completion of the structural system. The structural systems include the lateral and/or gravity of load paths.

Task 9 - Deliverables

- Responses to RFIs
- Provide Clarifications
- Field reports and "punch lists"
- Reviewed shop drawings and submittals

- Prepare Record Drawings in accordance with Harbor Department's CAD Manual.

Task 10 – Facility Assessments

Inspect facilities including assessments of interior and exterior structural and mechanical, engineering, and plumbing (MEP) and prepare post-assessment report and recommendations. Consultant shall be Hazardous Waste Operations and Emergency Response (HAZWOPER) trained and utilize personal protective equipment when necessary.

Task 10 – Deliverables

- Post-assessment report and recommendations.

Task 11 - Additional Design Services

The work includes, but is not limited to, technical studies; analysis; conceptual – final designs; technical training; property legal descriptions; real estate maps; location site maps; and work to obtain property reservation/right of entry for work conducted on project site for surveys, geotechnical, and construction work; and other engineering services as directed by the Engineer that relate to the Project.