

EXHIBIT "B"

Scope of Work

Harbor Department Engineering Guidelines: Consultant acknowledges receipt, review and understanding of the City's Harbor Department's "Engineering Design Guidelines," and Computer Aided Design "CAD Manual" ("Guidelines") and shall perform this Scope of Work in accordance with Guidelines. Within ten (10) days of this Agreement's effective date, Consultant shall notify Engineer in writing of any terms, criteria, or procedures contained in the Guidelines which Consultant does not intend to use in performing the Scope of Work. Engineer shall provide a written response to any such comments received from Consultant, which shall be binding for purposes of this Agreement.

Task 1. Project Management and Coordination

Consultant shall 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, project administration, and project closeout. Consultant shall address 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.

Consultant shall 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 manner as per current project management principles, guidelines, and standards promoted by recognized project management organizations and institutions. This task includes the following:

Task 1.A Project Management Plan

Consultant shall provide a detailed project management plan (PMP) including information on coordination with appropriate agencies to ensure timely completion of the Plans, Specifications (using the SpecLink software and submitted in SpecLink format), and Estimates (PS&E) packages. This plan shall include a schedule for milestone completion and an hourly breakdown for each task and subtask. The PMP shall be delivered within 30 days of the first Notice to Proceed issued under the Agreement.

Task 1.B Deliverables

Consultant shall produce the original work product and ten copies or exact reproductions thereof of all deliverables submitted to the Harbor Department. Deliverables may include, but are not limited to, drawings and/or plans, specifications,

estimates, reports, records, reference material, data, charts, documents, renderings, computations, computer tapes or disks, and other items of any type whatsoever, whether in the form of writing, figures, delineation or electronic data prepared or compiled in connection with this Agreement.

1. Drawings produced by Consultant shall conform to the best standards of the profession in which the generator of the drawings practices. Information shall be organized in a logical, systematic manner, using the necessary number of drawings required to maintain clarity and completeness. Drawings and specifications shall fully delineate the work to be done and materials required. Dimensions, diagrams, descriptions, cross sections, and details shall demonstrate adequacy of design for review, permitting, bidding, and construction.
2. Reports shall be prepared on a word processor and hard copy submittals shall be on 8-1/2" X 11" size white paper unless otherwise approved by Engineer. Specifications shall be prepared using SpecLink software and submitted in SpecLink format. Specification hard copy submittals shall be on 8-1/2" X 11" size white paper unless otherwise approved by Engineer. Submittals shall be bound, except any final submittal intended solely for reproduction by City shall be unbound. Pages shall be numbered in the lower margin. Reports shall include a title page and table of contents with lists of exhibits, plates and appendices. Information shall be presented in a clear, logical, and organized manner which will facilitate review by the reader. Reports and studies shall be submitted in draft or preliminary form for review prior to the final submittal. Specifications shall be prepared in conformance with the format of the Construction Specifications Institute, unless Engineer otherwise directs.
3. Unless otherwise directed in writing, Consultant shall submit all deliverables, such as reports, drawings, specifications, designs, calculations, schedules and all work necessary to produce its deliverables, in an electronic format (AutoCad and/or PDF) acceptable to Engineer in addition to the hard copies. Consultant shall assure at the start of Project that its proposed method of electronic submittal to City is consistent with City's computer hardware, networking and software systems, including layering of information and the attachment of data files to the drawings. Pertinent data gathered during the course of the work will be entered into an electronic database (if required) acceptable to Engineer. In conjunction with the submittal of computer-generated calculations, Consultant shall document the appropriateness of the selected software to the task and clearly describe the input/output and default elements of the software and their relation to the Project.
4. Unless Engineer otherwise directs in writing, the drawings are to be electronically generated on a CAD (Computer Aided Design) system equal to or compatible by translation with the City's AutoCAD system. To enable drawing elements to be manipulated and translations to be efficient, all CAD-

generated drawings shall be developed as dimensionally and geometrically precise models (to three decimal places) of the work depicted. For a CAD system other than AutoCAD, a translated representative sample (one sheet minimum of each discipline) must be included with each submittal. Consultant shall conform to the drafting standards, layering and symbology of City. Consultant will be apprised by City of its layering and symbology requirements prior to the start of work.

5. Signature and record drawing submittals shall be in electronic format as approved by Engineer as well as the original reproducible vellum. Each original drawing sheet shall be stamped and signed by an engineer or architect appropriately licensed to practice in the State of California.

Task 1.C Suitability of Work and Consultant Cooperation

Consultant shall 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), 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. Consultant shall, 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. Consultant shall 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 of and agrees that the City has the right to submit the Consultant's work product to independent design reviewers. Consultant agrees to fully cooperate with such reviewers if City 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.

Task 1.D Quality Control/Quality Assurance Plan

In conjunction with the PMP, the Consultant shall also prepare a quality control/quality assurance plan (QC/QA Plan) for the Project, within 30 days of issuance of the first Notice to Proceed under this Agreement. The QC/QA Plan shall be prepared in accordance with minimum requirements of City's 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 QC/QA 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.E Prepare Project Schedule

Consultant shall develop a computerized critical path method schedule (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, 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.F Monthly Progress Status Reports and Schedule Updates

Consultant shall 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.G Project Development Team (PDT) Meetings

Consultant shall attend monthly PDT meetings with Project stakeholders throughout the term of this Agreement, when assigned a task. Consultant's Project Manager shall attend each meeting. It is anticipated that various other members of the Project team, including Subconsultants, shall attend the meetings, as needed. Consultant shall 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.H Subconsultant Administration

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

Task 1.1 Meetings, Permits, and Utility Coordination

Consultant shall 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. Consultant shall determine regulatory agency approvals, plan checks, permits and variances necessary for Project's design and construction unless the Engineer otherwise directs in writing. Consultant shall 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 City 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 2 Geotechnical Engineering Services

Consultant shall 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. Following review of available geotechnical information, Consultant shall 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. Arrange for and schedule drillers;

- b. Make preparations for sample handling, transportation, and testing;
 - c. Locate test borings;
 - d. Locate utilities and other onsite interferences and mark location on the ground;
 - e. Obtain necessary permits; and
 - f. Schedule field staff.
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, Consultant shall adjust boring depths, locations, and number of borings and CPTs using prudent engineering judgment and considering subsurface conditions and project requirements 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; and
 - vi. Resistivity.
 - b. Consolidation tests with time plot.
 - c. Soil Strength test:
 - i. Triaxial compression;
 - ii. Direct shear; and
 - iii. Standard penetration test
 - d. R-value or CBR tests.
 - e. Compaction tests.
 - f. Chemical analysis:
 - i. pH;
 - ii. sulfates; and
 - 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, loading platforms, access trestles, catwalks, mooring and berthing dolphins, fenders, utilities, bulkhead walls, dredging, 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 California Bearing Ratios 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; and
 - 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 City as they are developed. Upon completion of the work, Consultant shall submit five copies of the draft report containing the findings, conclusions, and recommendations with the supporting field and laboratory data for review by City. Consultant shall review and address City's comments, and submit ten copies of the final report to City.

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, Consultant shall 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 City'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 improvements;
- 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 conceptual studies to clearly present the considerations involved and the alternative solutions available setting forth Consultant's findings, evaluations and recommendations. Document and recommend one preferred plan that best achieves the Project design criteria.

Task 3 Deliverables

- Preliminary Conceptual Study (Design Criteria Manual);
- Final Conceptual Study report;
- Mechanical/electrical exhibit(s);
- Utility and substructure exhibit(s);
- Construction phasing;
- Structural layouts;
- Preliminary Project construction cost estimates; and
- 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 City, and issuance of a written Notice to Proceed from the Engineer, or written provisional Notice to Proceed with individual elements, Consultant shall perform the preliminary (40%) design.
- B. Plans shall include typical sections and details and illustrate the architectural, civil, structural, electrical and mechanical design aspects in sufficient detail to cover all matters, which will materially affect the essential features and cost of the Project.
- C. The preliminary design submittal shall include, but not necessarily be limited to, the following for all facilities:
 - 1. Site plan showing coordination and relationships with overall site development;
 - 2. Removal plan;
 - 3. Substructure plan;
 - 4. Civil design;

5. Structural design;
6. Mechanical design;
7. Plumbing design;
8. Electrical design;
9. Storm drain plans and details;
10. Utility plan;
11. Site/Area lighting plan;
12. Outline specifications for each discipline of work;
13. Updated Project cost estimate and schedule;
14. Utility demand estimates; and
15. 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 site plan;
- Preliminary removal plan;
- Preliminary substructure plan;
- Preliminary civil plans;
- Preliminary structural plans;
- Preliminary mechanical/electrical/plumbing plans;
- Preliminary utility plans;
- Preliminary utility demand estimates;
- Preliminary site/area lighting plans;
- Preliminary construction cost estimate;
- Preliminary construction schedule;
- Associated reports and analysis work; and
- 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 Contract Documents in sufficient detail to provide the information necessary for competitive construction contract bidding for Project. Plans shall include typical sections and details and illustrate the civil, structural, electrical and mechanical design aspects in sufficient detail to cover all matters, which will materially affect the essential features and cost of the Project.

- C. Attend progress meetings at the Port and prepare meeting minutes.
- D. Perform a QA/QC review of the plans, specifications, and construction cost estimate.
- E. 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.
- F. Coordinate the basis of design with tenant for the unloading platform, access trestle, walkways, berthing dolphins, and landside mooring anchors prior to finalizing structural and foundation support for topside equipment (loading arms, towers, monitors, alarms/sirens, lighting etc. locations).
- G. Develop plans and specifications that are compatible with the tenant's "Top Side Equipment Plans and associated Specifications." The plans and specifications shall include, but are not limited, to the following:
 - 1. Coordinate with the tenant for the "topside" design to prepare equipment connection design.
 - 2. Provide equipment pedestals and/or structural support details for loading arms, towers, monitors, sirens/alarms poles, lighting fixtures, ladders, security cameras, etc. where needed on the unloading platform, breasting dolphins, landside mooring anchors, and walkways.
 - 3. Provide electrical details to accommodate all equipment on loading platform, berthing dolphins, landside mooring anchors, and walkways (loading arms, towers, monitors, alarms/sirens, lighting etc.).
 - 4. Provide for electrical conduits to new berthing dolphins and landside mooring anchors.
- H. Permits and approvals:
 - 1. Perform all appropriate code coordination and review with all applicable local, state, and federal agencies.
 - 2. Consultant shall 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 Fire Department;
 - c. US Army Corps of Engineers Permit
 - d. California Regional Water Quality Control Board Permit
 - e. California Coastal Commission Coastal Development Permit; and
 - f. California State Lands 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. Consultant shall 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 City at the end of this design phase.

- Site plan;
- Construction phasing plan;
- Removal plan;
- Substructure plan;
- Civil plans;
- Structural plans;
- Preliminary mechanical/electrical/plumbing plans;
- Utility composite plan;
- Site/area lighting plans;
- Updated construction estimates;
- Updated construction schedule;
- Updated utility demand schedule;
- Associated reports and analysis work;
- Calculations;
- Specifications; and
- Permit applications, as necessary.

Task 6 Final Design Documents (100% DESIGN)

- A. Upon issuance of a written Notice to Proceed from the Engineer, Consultant shall address and incorporate all Port comments received from the 80% Design review. Consultant shall prepare a concise summary of responses to those comments and a discussion of the resolution of issues raised by the

Port's comments as well as making all necessary corrections and revisions after consensus is reached with the Port.

- B. Plans, specifications, and estimates shall be stamped and signed by an architect or engineer appropriately licensed to practice in the State of California.
- C. Coordinate Work with adjacent projects, facilities and improvements.
- 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. Cost Estimate shall include cost associated with Construction Phasing.
- F. Submit a proposed construction schedule in sufficient detail for use by Engineer in evaluating the adequacy of contractor's scheduling submittal.
- G. Prepare 100% design plans based on the approved 80% Design including all required analyses, calculations, design detailing and AutoCAD work prepared to Port CAD standards.

Task 6 Deliverables

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

- Site plans;
- Construction phasing plan;
- Removal plan;
- Substructure plan;
- Civil plans;
- Structural plans;
- Mechanical/electrical/plumbing plans;
- Utility composite plan;
- Site/area lighting plan;
- Updated construction estimates;
- Updated construction schedules;
- Utility demand schedule;
- Associated reports and analysis work;
- Calculations;

- Specifications; and
- Permit applications, as necessary.

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.

Task 7 Deliverables

- Original drawings;
- Unbound original specifications;
- Final cost estimate;
- Final schedule; and
- Final quantities and calculations.

Task 8 Bidding Phase

Consultant will provide assistance to the City 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. Assistance in reviewing responses to bidder inquiries;
- D. Assistance with preparing addendums as needed; and
- E. Assistance in reviewing bids.

Task 9 Design Services during Construction

Consultant shall provide the following services in support of the City 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-routine laboratory, shop, and mill test reports of materials and equipment as directed by the City.
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 City'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 City on any performance test required by the plans and specifications.
3. Attend final inspections of Project's completed construction contracts.

C. Structural Observation:

Consultant shall 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;
- Field reports and "punch lists";
- Reviewed shop drawings and submittals; and
- Record drawings.

Task 10 Additional Design Services

This work includes, but is not limited to, technical studies, analyses, conceptual – final designs, and other engineering services as directed by the Engineer that relate to the Project.

Due to business conditions, the scope of services for this Project is subject to change. Negotiations between the Department and potential firms will address final scope of services, fees, compensation, and other relevant issues. Upon completion of negotiations, the agreement will be submitted to the Board of Harbor Commissioners for approval. Upon approval by the Board of Harbor Commissioners, the Consultant shall begin work only after negotiation of a Project Directive and when the Chief Harbor Engineer issues a Notice to Proceed.