



## **LAWA STANDARDS FOR THE CONSTRUCTION CONTRACT**

- **00 00 00 Procurement and Contracting Requirements**
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### **00 00 00 PROCUREMENT AND CONTRACTING REQUIREMENTS**

#### **00 30 00 AVAILABLE INFORMATION**

##### 00 31 24 ENVIRONMENTAL ASSESSMENT INFORMATION

**California Environmental Quality Act (CEQA)** – All projects require a CEQA determination prior to LAWA issuing a Notice-To-Proceed. LAWA will determine whether the project is exempt from CEQA or require further evaluation in the form of an Initial Study, leading to the preparation of a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report.

CEQA Language summarizes the CEQA process and includes a list of projects and activities that are possibly exempt from CEQA. Please note that there are many exceptions where an exemption may not apply.

If a project is not exempt from CEQA, the applicant is responsible for having the CEQA documents prepared under the direction of LAWA Facilities Planning staff. This process takes a minimum of eight months for a Negative Declaration and one year for an Environmental Impact Report for the least complicated projects that are small in size and scope with no major environmental impacts. It is not uncommon for it to take longer to complete the CEQA process given the complexities of construction within an airport environment. As such, the applicant should be aware that a Notice-To-Proceed will not be issued until completion of this process and should plan accordingly.

See the Environmental standards for full CEQA explanation and discussion.

For historical information on Environmental Site Assessments and Investigations please contact the LAWA Environmental Services Division – Environmental Protection Section.

##### 00 31 26 EXISTING HAZARDOUS MATERIAL INFORMATION

For historical hazardous material survey information, such as Asbestos, Lead and PCB's in building construction, contact the LAWA Environmental Services Division – Environmental Protection Section.

### **00 40 00 PROCUREMENT FORMS AND SUPPLEMENTS**

### **00 50 00 CONTRACTING FORMS AND SUPPLEMENTS**

### **00 60 00 PROJECT FORMS**

#### **00 62 00 CERTIFICATES AND OTHER FORMS**

##### 00 62 16 CERTIFICATE OF INSURANCE FORM

**LAWA Insurance Requirements** – A current insurance certificate is required for every Contractor performing work on the premises of the Airport and any other entity requiring Security Badging. The insurance will need to be in place and the certificate available before applying for Security Badging.



The minimum coverage will be specified by LAWA's Risk Management Division - Insurance Compliance Services. That no contractor's vehicles or equipment shall have access to the airfield unless the proper liability insurance has been provided. It is the responsibility of the Tenant to require and verify that the Tenant's Contractor has adequate insurance coverage.

See LAWA's Tenant Project Approval Website at: [http://www.lawa.org/welcome\\_LAWA.aspx?id=4162](http://www.lawa.org/welcome_LAWA.aspx?id=4162) and see the Quick Links at the bottom of the page for LAWA Insurance Requireme

## 00 70 00 CONDITIONS OF THE CONTRACT

### 00 73 00 SUPPLEMENTARY CONDITIONS

#### 00 73 10 BOND REQUIREMENTS (ADDED)

**Bond Requirements** – LAWA Performance and Payment Bond Requirements - That before beginning work, the Tenant's general contractor shall secure a Labor and Material Payment Bond for private work in the amount of fifty percent (50%) of the construction contract price, as specified in Sections 3235 through 3241 of the Civil Code of the State of California. The Tenant, not the City of Los Angeles (LAWA), is to be the obligee under the bond. The original of said bond shall be filed for record with the Los Angeles County/San Bernardino County Recorder as provided by law. A conformed copy of the recorded bond must be approved as to form by the City Attorney prior to the Tenant's general contractor beginning work.

#### 00 73 19 HEALTH AND SAFETY REQUIREMENTS

**Safety** – The Airports Development Group (ADG) Construction Safety Policy Guidelines Manual has been developed by the Los Angeles World Airports (LAWA) to promote safety by assisting in minimizing the hazards and risks associated with the construction projects. In addition, the ADG Construction Safety Policy Guidelines Manual is directly incorporated into this Design and Construction Handbook. As such, LAWA expects the Contractor to place the highest importance and priority on safety, health and the protection of the environment during performance of work and abide by these policies. In addition, LAWA and its agents shall have the right, but not the obligation, to inspect the worksite and appropriate work records in order to ascertain Contractor and subcontractor compliance with safety and health requirements. However, neither the existence nor exercise of such right shall relieve the Contractor of its responsibility for monitoring its own and its subcontractor's compliance with the safety, health and environmental requirements of their contract and applicable laws, rules, regulations and statutes.

Each contractor working on LAWA property will incorporate LAWA ADG Safety Manual into its Injury and Illness Prevention Program (IIPP).

Each contractor working on LAWA property will provide LAWA with a copy of their IIPP for review.

#### 00 73 43 WAGE RATE REQUIREMENTS

**Prevailing Wage** – Construction, alternation, demolition, installation, repair or maintenance work performed on the LAWA's property *may require* payment of prevailing wages in accordance with federal or state prevailing wage and apprenticeship laws. The Tenant is obligated to make the determination as to whether prevailing wage laws are applicable, and shall be bound by and comply with all applicable provisions of the California Labor Code and federal, state and local laws related to labor. The Tenant shall indemnify and pay or reimburse the LAWA for any damages, penalties or fines (including, but not limited to, attorneys fees and costs of litigation) that the LAWA incurs, or pays, as a result of noncompliance with applicable prevailing wage laws in connection with such work.



## **00 90 00 REVISIONS, CLARIFICATIONS, AND MODIFICATIONS**

### **00 90 01 PROCUREMENT SUBSTITUTION PROCEDURES**

If a material substitution is requested by a contractor, this requires LAWA review and approval (see [Quick Links: To Request a Change or Exception](#)).



## **01 00 00 GENERAL REQUIREMENTS**

### **01 10 00 SUMMARY**

#### **01 12 00 MULTIPLE CONTRACT SUMMARY**

#### **01 14 00 WORK RESTRICTIONS**

The Applicant shall complete and dated plans and specifications (including traffic or noise control plans if applicable) of sufficient clarity to indicate the location, nature and extent of the work proposed and with sufficient detail to indicate that the proposed work conforms to the provisions of LAWA's Design & Construction Handbook, and other applicable laws, statutes, orders, and regulations.

Plans and specifications shall be prepared by an architect, engineer, or other design professional licensed in the State of California to practice as such and shall bear the seal of the design professional responsible for preparation of the plans and specifications. Submit eight (8) sets of construction documents along with two electronic copies. Designer shall provide full size prints if needed, otherwise 11 X 17 size will suffice.

#### **Project Phasing Documents**

- A. That the Applicant/Contractor shall coordinate, phase, sequence, and organize his or her work so as to minimize the inconvenience and disruption to the public, airport stakeholders, and other contractors. The Applicant/Contractor shall submit a Project Phasing Document, in AutoCAD DWG (vector format only), defining each specific work area (Phase) into which the overall project is divided as defined in the Graphics Standards. A Project Phasing Document is required for any project with one or more phases of work. An approved Project Phasing Document must be in place prior to issuance of a Notice to Proceed. The document shall be developed in accordance with the following criteria.
  - a. Written description of the work to be accomplished within each phase.
  - b. Breakdown the physical elements of the project in maximum thirty (30)-day increments, or less if required to accurately reflect the progression of work, sequenced in accordance with the project schedule.
  - c. Include dates for proposed work, daily work hours, and a written work plan for each phase.
  - d. The document shall be flexible in its ability to describe real-time updates and shall be updated as required to fully ensure stakeholders are fully informed of revisions as they occur.
  - e. The document shall be consistent with the overall Project Schedule.
- B. The description of each Phase shall address the following as a minimum.
  - a. Location of barricades, partitions, covered walkways, stairs, scaffolding, work platforms, etc. which are designed to separate construction activities from ongoing operational areas and mitigate disruptions to passenger and other stakeholder traffic flows. Approval must be obtained for Barricade and Enclosure Plans, temporary signage, and Scaffold and Messaging Concept. Please see "Additional Design Standards and Criteria" for a sample presentation. Full-size mock-ups of these systems may be required and agreed to prior to installation.
  - b. Security provisions
  - c. Emergency personnel provisions
  - d. Emergency evacuation routes
  - e. Egress analysis and Occupancy Load calculations for each phase of the construction



- f. Public and worker health and safety protection
  - g. Relocation and definition of temporary facilities required to maintain ongoing operations
  - h. Maintenance of fire/life safety systems
  - i. Construction restrictions during special events and holidays
  - j. Material stockpiling and staging
  - k. Locations and related work zones for worker/material handling equipment
  - l. Plan for rubbish removal, including location of trash bins
  - m. Modification and maintenance of existing systems during construction
  - n. Temporary signage/way-finding devices
  - o. Stakeholder relocations
  - p. Routes of temporary utilities, lines, and points of tie-in
  - q. Temporary facilities
  - r. Dust/dirt/debris mitigation
  - s. Construction Noise mitigation
- C. **Graphics Standards:** The **Site Logistics Plan** and the Project Phasing Document shall be submitted in AutoCAD DWG (vector format only) per LAWA CAD Standards. The Site Logistics file submittals are based upon location. For example, areas between terminals (alleyways) and up to the first perpendicular taxiway must be submitted in AutoCAD DWG (vector format only). Areas between the first perpendicular taxiway and entrance AOA gates/posts can be submitted in pdf format. The Site Logistics Plan and Project Phasing Document shall each be a separate deliverable and not incorporated into the Design Documents. Graphically denote changes by clouding "Labels" only.
- D. The **Site Logistics Plan** and the Project Phasing Document shall be submitted in AutoCAD DWG or shape file ("dwg" or shp") format per LAWA CAD Standards. Graphically denote changes by clouding "Labels" only. Reference attached drawing titled "Design and Construction Guidelines Graphics Example" for a graphic representation of these standards.
- E. **Updates:** The **Site Logistics Plan**, the Project Phasing Document and the Project Schedule shall be updated periodically as changes are identified and LAWA shall be notified immediately.

## 01 20 00 PRICE AND PAYMENT PROCEDURES

### 01 25 00 SUBSTITUTION PROCEDURES

#### **Contractor Product, Material, and Equipment Substitutions**

When requested by LAWA, submit request for substitution at least twenty (20) days prior to submitting product or system information for Airport Contact/Project Manager's approval.

Substitution request form shall be in CSI Form 13.1A or a different form as approved by LAWA. The form shall be accompanied by a statement, explaining why substitution is needed. The substitution should benefit LAWA and either require no extra cost or provide better product at the same cost. The statement should include at a minimum:



- A. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
- B. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
- C. Samples, where applicable or requested.
- D. Certificates and qualification data, where applicable or requested.
- E. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
- F. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
- G. Research reports evidencing compliance with building code in effect for Project, from LADBS.
- H. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
- I. Cost information, including a proposal of change, if any, in the Contract price.
- J. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
- K. Contractor's certification that all additional costs and impacts are included in the substitution request and that Contractor assumes full liability for all additional costs and impacts that may arise in the future as a result of the proposed substitution.
- L. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

### **Submittal Procedures**

- A. This section includes administrative and procedural requirements of the Contractor for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals. Prepare and submit Submittals for MEP, Communications, Security, etc.

**Deviations:** The Submittals shall clearly identify all deviations from the standards by either highlight, encircle, and/or itemize deviations on submittals.

## **01 30 00 ADMINISTRATIVE REQUIREMENTS**

### **01 31 00 PROJECT MANAGEMENT AND COORDINATION**

**Coordination and Logistical Management. (CALM)** The CALM Team's mission statement is to minimize construction-related impacts to passenger service and tenants. To facilitate this, CALM utilizes a GIS data base to capture project specific time and space particulars for all projects undertaken at Los Angeles International Airport. The Project particulars, which are referenced as the Logistical Work Plan, will include, but are not limited to; proposed schedule, estimated construction costs, site logistics plans and project phasing documents (graphical representation of the schedule). Each project is tracked from its inception at Concept Review through completion, to insure efficient sequencing of multiple projects competing for the same time and space resources. In accordance with the Design and Construction



Handbook, the applicant is responsible for submitting all necessary documentation in a timely manner to allow for a thorough review by the CALM Management Team. A “Notice to Proceed” for the project will not be granted until the Applicant’s submittals have been approved.

Below is an outline of the Process and required Submittals the Applicant must follow.

- **Concept Review:** As Identified on the Stage 1- Concept Review Form, the Applicant must submit an Estimated Project Cost, an Estimated Milestone Start Date, and Completion Date for the proposed construction project, physical location, and scope of the project. With this information, the CALM Team will be able to identify any conflicts, or impacts with time and space coordination. If the Applicants request conflicts, or impacts other proposed projects, the Applicant may be required to alter/or resubmit their Project Concept.
- **Schedule Changes:** Due to the large number of construction projects taking place, appropriate project sequencing is of critical importance to LAWA. Therefore, in accordance with the Concept Approval Letter, the Applicant shall notify the LAWA Project Manager of any cost/schedule changes, from what was provided on the Concept Review Form. Failure to notify the LAWA Project Manager of any schedule change, may adversely affect the Applicants ability to commence/complete the project.
- **Deliverables Pre-NTP:** Prior to the Applicant receiving a Notice to Proceed, (NTP), the Applicant shall have an approved Logistical Work Plan consisting of, but not limited to the following: Updated Construction Schedule, Site Logistics Plan, Temporary Barricade Plan (Section 01 56 23), Temporary Signage Plan (Section 01 58 00), Project Phasing Documents, Haul Routes (Section 01 35 43) and Construction Material Stock Piles (Section 01 35 43). To facilitate the submittal process of the required documents, the Site Logistics & Project Phasing Checklist (see: [QuickLinks](#)) is required to be completed and submitted with the Logistical Work Plan.
- **Deliverables After-NTP (Construction):** After NTP, and during all phases of construction, the Applicant, and the Applicant’s Contractor shall not deviate from the approved Logistical Work Plan. The Applicant must resubmit any changes to the Logistical Plan for approval, to the LAWA Project Manager. If the Applicant deviates from the approved plan, it will be considered “Unauthorized Work” (Section 01 43 00), and subject to remediation at the Applicant’s expense. *Please keep in mind that if the deviation from the approved plans causes an unsafe condition, impacts other Tenants, Customers, or other construction Projects, the Applicant and the Applicants Contractor are subject to a “Stop Work Notice” until the condition has been remedied.*

#### **Site Logistics Plan:**

As part of the Logistics Work Plan, the Applicant shall submit a proposed Site Logistics Plan, in AutoCAD DWG (vector format only), as defined by the Graphics Standards Section (01 14 00 C). A Site Logistics Plan, and a fully documented Logistical Work Plan Checklist, shall be approved by LAWA prior to issuance of a Notice to Proceed. At a minimum, the plan shall address the following information:

- A. Identify point of entrance locations and traffic routes for movement of the contractor’s equipment, materials and workers to the work.
- B. Incorporate Escort provisions including conformance with LAWA and TSA regulations regarding allowable number and handling of un-badged personnel.
- C. Define alterations to existing facilities/infrastructure
- D. Locate on plans, construction zone accommodation of vehicular and aircraft traffic including signage, traffic stripping, flagging, temporary closures, barricades, and detours
- E. Locate on plans, provisions and plans for worker parking.





- F. Locate on plans, the staging/laydown areas for construction equipment, trash/debris receptacles, and material storage and protection
- G. Locate on plans, temporary facilities including trailers, and dumpsters.
- H. Identify locations and related work zones for worker/material handling equipment such as cranes, and lifts.
- I. Provide emergency vehicle access provisions
- J. Provide emergency evacuation routes
- K. Provisions for protection of private and public properties, including leased properties on site, if applicable
- L. Identify security provisions
- M. Locate on plans, fencing and enclosure provisions
- N. Identify location of off-site, project-related facilities
- O. Identify on-site parking provisions if applicable.
- P. Emergency contacts posted on plan
- Q. Define work shifts and corresponding working hours
- R. Show routing of temporary utility lines and points of tie-ins
- S. Show provisions for reclamation of areas disturbed by the contractor
- T. Provide plans and actions taken to comply with environmental requirements and permits
- U. Identify the means for dust/dirt/debris mitigation
- V. Identify the means for construction noise mitigation
- W. Incorporate coordination and accommodation of stakeholders impacted by the work.
- X. Incorporate coordination with other contractors impacted by or impacting the work.

**Project Phasing Documents:**

- A. As part of the Logistics Work Plan, the Applicant shall coordinate, phase, sequence, and organize his or her work so as to minimize the inconvenience and disruption to the public, airport stakeholders, and other contractors. The Applicant shall submit a Project Phasing Document, in AutoCAD DWG (vector format only), defining each specific work area (Phase) into which the overall project is divided, as defined the graphics Standards section (01 14 00 C). A Project Phasing Document is required for any project with one or more phases of work. A Project Phasing Document and a fully documented Logistical Work Plan Checklist shall be approved by LAWA prior to issuance of a Notice to Proceed. The document shall be developed in accordance with the following criteria.
  - a. Written description of the work to be accomplished within each phase.
  - b. Breakdown the physical elements of the project in maximum thirty (30)-day increments, or less if required to accurately reflect the progression of work, sequenced in accordance with the project schedule. .
  - c. Include dates for proposed work, daily work hours, and Emergency 24 hour contact information for each phase.





- d. The document shall be flexible in its ability to describe real-time updates and shall be updated as required to fully ensure stakeholders are fully informed of revisions as they occur.
  - e. The document shall be consistent with the overall Project Schedule.
- B. The description of each Phase shall address the following as a minimum.
- a. Location of barricades, partitions, covered walkways, stairs, scaffolding, work platforms, etc. which are designed to separate construction activities from ongoing operational areas and mitigate disruptions to passenger and other stakeholder traffic flows. Please see “Additional Design Standards and Criteria” for a sample presentation. Full-size mock-ups of these systems may be required and agreed to prior to installation.
  - b. Identify security provisions
  - c. Identify emergency personnel provisions
  - d. Emergency evacuation routes
  - e. Identify egress analysis and Occupancy Load calculations for each phase of the construction
  - f. identify the means for public and worker health and safety protection
  - g. Identify any relocation and definition of temporary facilities required to maintain ongoing operations
  - h. State the means for maintenance of fire/life safety systems
  - i. State applicable construction restrictions during special events and holidays
  - j. identify locations for material stockpiling and staging
  - k. Identify Locations and related work zones for worker/material handling equipment
  - l. Identify the plan for rubbish removal, including location of trash bins
  - m. identify modification and maintenance of existing systems during construction
  - n. Identify temporary signage/way-finding needs and depict on drawings.
  - o. Identify Stakeholder relocations
  - p. Show routing of temporary utilities, lines, and points of tie-in
  - q. Identify temporary facilities
  - r. Identify means for dust/dirt/debris mitigation
  - s. Identify means for construction noise mitigation



01 31 09 OBSTRUCTIONS TO NAVIGATION (ADDED)

- A. Penetrations of the imaginary surfaces defined in Federal Aviation Regulation (FAR) Part 77 shall not be permitted without advance notification of, and approval by, the Engineer. It will be necessary for the Contractor to file FAA Form 7460-1 with the FAA to obtain approval prior for operation of equipment 15 feet or more in height, including but not limited to vehicles, cranes, or other construction equipment, structures, stockpiled materials, excavated earth, etc. It shall be the Contractor's sole responsibility to file this document. In accordance with Federal Regulation Title 14, Part 77 (14 CFR Part 77), notice must be provided at least 45 days before the start date of the proposed construction or alteration or the date an application for a construction permit is filed, whichever is earliest.
- B. When penetrations more than 15 feet above ground level (AGL) are unavoidable, they shall be brought to the attention of the Engineer, as far in advance as possible. Contractor shall comply with the provisions of FAA's Advisory Circular (AC) 70/7460-1, latest edition, in the marking and lighting of obstacles. In accordance with 14 CFR Part 77, notice must be provided at least 45 days before the start date of the proposed construction or alteration or the date an application for a construction permit is filed, whichever is earliest. No delays will be granted the Contractor for his failure to submit the necessary documents in a timely manner.

01 31 13.5 PROJECT COORDINATION – UTILITIES (ADDED)

**Utilities**

- A. Pursuant to Section 4216 of the Government Code, at least 2 working days prior to commencing any excavation, the Contractor will be required to contact the regional notification center (Underground Service Alert of Southern California) and obtain an inquiry identification number.
- B. The following includes a list, but is not limited to, of utility companies and representatives whose facilities may be impacted by this Project:

| <u>Agency/Company</u>                             | <u>Phone Number</u> |
|---|---------------------|
| City of L.A., Dept. of Water and Power -Water     | (213) 481-5411      |
| City of L.A., Dept. of Water and Power - Power    | (213) 367-4215      |
| Southern California Gas Company                   | (310) 605-4181      |
| SBC Regional Engineer Office (Los Angeles County) | (310) 847-1121      |

- C. The contractor shall employ ground penetrating radar, x-ray, or other non-destructive methods to identify utilities at proposed excavations, coring, and or selective demolition wherever that may occur in addition to utility company notification requirements. LAWA inspection (424) 646-6010 shall be notified prior to this activity occurring and shall review markings prior to coring. Employ all necessary safety precautions for the method used.

01 31 19.13 PRECONSTRUCTION MEETINGS

**Pre-Construction** – Upon approval of the project, the applicant, his design agents, and his contractor shall meet with LAWA staff for a pre-construction conference. At such time, principal aspects of coordination will be established: project schedule, coordination, inspections, as well as any other items of a timely nature to the project.

**Preconstruction Conference** – The Applicant must contact LAWA for the purpose of scheduling a pre-construction conference. The conference should include the Applicant, the Applicant's Contractor and the Contractor's major Subcontractors. The Contractor will be briefed on rules, regulations and procedures to be followed for construction projects on the Airport. The Contractor must submit an emergency phone list, any required submittals including safety submittals and a construction schedule. After posting the Construction Permit and placing approved construction documents at the project site, the Contractor may begin construction. Clarification shall be made between LAWA inspection and B&S



inspection. LAWA inspection is required before covering or concealing any electrical, plumbing, utility, mechanical, fire sprinkler, fire alarm or structural systems. Work may not progress beyond any point for which an inspection is required until the Contractor receives an approved inspection report for the inspected work.

Also included will be the required submittals of a project-specific safety plan, the Contractor's Illness and Injury Prevention Program (IIPP), Code of Safe Practices and any other applicable safety documentation requested. The project-specific, IIPP and Code of Safe Practices MUST be submitted at the pre-construction and other documentation as requested for acceptance.

#### 01 31 19.23 PROGRESS MEETINGS

##### **Weekly Progress Meetings**

The Tenant's authorized representative will schedule and administer weekly progress meetings. This meeting shall be open to all affected stakeholders as determined by LAWA. Progress meetings shall be at the job Site in office space provided by the Contractor. Minutes of each meeting are to be prepared by the Tenant's authorized representative on the project and shall be distributed to those in attendance. At a minimum, each meeting shall address the following items:

- Safety and security issues
- Quality Control issues and testing schedule
- Contractor activities – 3 week look ahead
- Schedule
- Submittals
- RFI's
- Change Orders

Issues shall be carried forward in the meeting minutes for one week following closeout before removing from the minutes. Attachments to the meeting minutes shall include the following:

- 3-week look-ahead schedule
- Full schedule update, if presented in the meeting
- Master Submittal Log
- Master RFI Log
- Master Change Order Proposal Log

Airport Contact will schedule and administer weekly progress meetings. Progress meetings shall be at the job Site in office space provided by the Contractor. Minutes of each meeting are to be prepared by the Construction Manager on the project and shall be distributed to those in attendance.

#### 01 33 00 SUBMITTAL PROCEDURES

##### 01 33 16 DESIGN DATA

**Basis of Design Manual** – Basis of Design (BOD)—The BOD is a narrative and analytical documentation prepared by the design team AE along with design submissions to explain how the owner's project requirements are met by the proposed design. It describes the technical approach used for systems selections, integration, and sequence of operations, focusing on design features critical to overall building performance. Most design projects require that various engineering calculations be performed and/or design criteria/material cut sheets be assembled that provide the basis for information on the construction plans and specifications. These values and calculations shall be assembled in a "Basis of Design Manual" for each project.



These written and graphic information documentation requirements will vary for each specific design discipline, including, but not limited to: performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers. The BOD should be approved in the design review phases before advancing the design effort to the next step.

01 33 29 SUSTAINABLE DESIGN REPORTING

**LAWA Sustainable Requirements** (see [QuickLinks: Sustainability, CalGreen, and LEED](#)).

## 01 35 00 SPECIAL PROCEDURES

01 35 13 SPECIAL PROJECT PROCEDURES

01 35 23 OWNER SAFETY REQUIREMENTS

Prior to commencing field construction, contractors will be required to submit a construction safety plan, for LAWA's review and approval. The LAWA approved safety plan shall be enforced strictly for the project to maintain a safe work environment. The safety plan shall include as a minimum the following items:

- A. Policy statement clearly stating the objective of the safety plan and the scope of the project
- B. Organization chart indicating the duties and responsibilities for the safety staff and the designated safety representative.
- C. Safety program shall describe the services and facilities to be available for non-recordable illnesses or injuries as well as recordable illnesses or injuries.
- D. The safety plan shall also set the procedures for all work site injury records and reports.
- E. The safety plan shall set the procedures for compliance with all applicable laws and contract requirements.

Any activities or condition found to be hazardous by LAWA shall be corrected "on the spot" and delay in the correction of a hazard to the life safety of any person may result in the closure by LAWA of the involved work site until the activity and/or condition is corrected. Should such condition cause an immediate safety threat, LAWA may close the work site immediately until the condition is corrected.

01 35 13.13 SPECIAL PROJECT PROCEDURES FOR AIRPORT FACILITIES

### **Damage to Existing Utilities and Improvements**

- A. Any utility or improvement that is damaged by the Contractor shall be immediately reported to LAWA and immediately repaired to a condition equal to, or better than, the condition they were in prior to such damage. Repair Work shall be continuous until the utility or improvement is placed back in service.
- B. All repairs to a damaged utility or shall be inspected and approved by an authorized representative of the utility or improvement LAWA before being concealed by backfill or other Work.



- C. In case of damage, which in the opinion of the Airport Contact threatens the safety of persons or property, the Contractor shall immediately make all repairs necessary for removal of the hazard. Should the Contractor fail to take prompt action to this end, the LAWA has the option to remove any hazard resulting from damages caused by the Contractor without waiving any other rights the LAWA may have, and costs shall be charged to the Contractor.

#### 01 35 43 ENVIRONMENTAL PROCEDURES

##### **Environmental Mitigation Requirements**

- A. This section covers construction related mitigation requirements that include, but is not limited to, traffic mitigation measures, air quality construction related measures, restrictions on construction material stockpiles, and other miscellaneous items, as included hereafter.
- B. The Applicant/Contractor shall implement and comply with these requirements in the performance of the work.
- C. Compliance with this section does not exempt the Contractor from compliance with other applicable permits, approvals, requirements, rules and regulations of other agencies with jurisdiction over the work of this contract.
- D. The Applicant/Contractor may be required to designate a person or persons to ensure the implementation of all components of the construction- related Environmental Mitigation Requirements through direct inspections, records review, and investigations of complaints
- E. All construction deliveries requiring lane closures shall receive prior approval from the Project Manager. Construction Notification of deliveries requiring lane closures shall be made in writing to the Project Manager (a minimum of 72 hours in advance) in order to allow for any modifications to approved traffic detour plans. The Contractor shall obtain delivery permits from all applicable local agencies 30 days prior to any delivery requiring a lane closure.
- F. No staging of construction traffic in residential areas will be allowed. Should traffic staging areas be required, the Contractor shall locate these areas away from residential development and shall comply with all local regulations.
- G. All construction deliveries of bulk materials such as aggregate, bulk cement, dirt, etc. to the project site, and hauling of materials from the project site, shall be scheduled during off peak hours to avoid the peak commuter traffic periods. The Contractor may be required to submit haul routes for all construction traffic, deliveries, and employee travel within 30 days from Notice to Proceed for approval by LAWA. Haul routes shall be located away from residential areas. Further, at LAX, construction trucks will not be allowed on:
- a) 104th Street between Hawthorne Boulevard and Inglewood Avenue;
  - b) Inglewood Avenue between Century Boulevard and Imperial Highway; and
  - c) Lennox Boulevard between Hawthorne Boulevard and Inglewood Ave.

Peak commuter traffic periods are between 7:00 a.m. to 9:00 a.m. and 4:30 p.m. to 6:30 p.m. Any and all deviations to this requirement shall be approved in writing by LAWA prior to actual site deliveries.

- H. To the extent possible, Contractor shall establish work hours that avoid peak commuter traffic periods as defined herein. Avoidance with peak commuter traffic shall be extended to include weekend and, when applicable, multiple work shifts.



- I. When requested by LAWA, the Applicant/Contractor shall ensure that all construction personnel attend a pre-construction orientation meeting to be conducted by the Contractor wherein personnel are advised on topics including the following: where to park, where staging areas are located, construction policies, and the environmental mitigation requirements herein. A copy of the Orientation Meeting Agenda and personnel sign-in sheet shall be submitted to LAWA after each orientation meeting.

#### **Construction Material Stockpiles Locations and Maintenance**

Stockpile locations will be off airport property unless otherwise approved by LAWA.

#### **Environmental Regulations.**

That you shall fulfill, as applicable, all requirements of environmental regulatory agencies, including but not limited to the federal and state Environmental Protection Agencies; the Certified Unified Program Agency (CUPA); the Air Quality Management District (AQMD); and the local ordinances as cited in the City's Municipal Code. Those requirements may include:

- A. Obtaining the proper permits for any construction, demolition, and/or remediation activities.
- B. Developing and providing, if required based on hazardous materials stored quantities, a business emergency/contingency plan.
- C. Filing a California Accidental Release Prevention Program form, and preparing and providing a risk management plan (RMP).
- D. Submitting the proper application and obtaining the proper permits for installation, operation or removal of aboveground storage tanks (AST's) and underground storage tanks (USTs).
- E. Filing a petroleum storage statement with the CUPA and developing and implementing a Spill Prevention Control and Countermeasures plan (SPCC) required of facilities which store over 1,320 gallons of petroleum products above.
- F. Filing and obtaining the proper treatment (Tier) permits if necessary.

Copies of the required permits, plans, reports and surveys shall be provided to Los Angeles World Airports, Airport Development Group prior to construction.

#### **Air Pollution Control**

The Applicant/Contractor shall not discharge smoke, dust equipment exhaust, or any other air contaminants into the atmosphere in such quantity as will violate any Federal, State or local regulations. The Applicant/Contractor shall also abate dust nuisance by cleaning, sweeping and spraying with water or other means as deemed necessary.

Obtain the proper permits or registrations from the governing agencies for construction, demolition, and/or renovation activities. These activities may include but are not limited to asbestos abatement, and the installation, testing, operation, or removal of mobile and/or stationary equipment.

#### **Dust Control**

- A. The Contractor will be responsible for removing from the Site and other public areas, excavated materials and debris resulting from the Work. Vehicles exiting the Site shall have all dirt clods and mud removed from their tires.
- B. The Contractor will contain dust and remove it from the Site at intervals sufficient to prevent contamination outside work limits and as directed by the Engineer. The Contractor shall use adequate watering techniques to alleviate accumulation of construction-generated dust.





- a. The Contractor will be responsible for containment of dust emission from all construction, transport, storage or handling activities, in accordance with South Coast Air Quality Management District (SCAQMD) Rule 403: Fugitive Dust.
  - b. The Contractor will be responsible for the continuous clean-up of all construction-related dirt on approach routes to the Site. Location of Trash Bins shall be included on laydown plans. These trash bins shall not impede normal operations of other tenants and airlines.
  - c. The Contractor shall furnish trash bins for all debris resulting from Construction. All debris shall be placed in trash bins daily. Forms or false work that is to be reused shall be stacked neatly as they are being removed. Forms and falsework that are not to be reused shall be disposed of immediately upon their removal.
  - d. The Contractor shall comply with California Vehicle Code 23114 which states in part that “A vehicle may not be driven or moved on any highway unless the vehicle is so constructed, covered, or loaded so as to prevent any of its contents or load other than clear water from dropping, sifting, leaking, blowing, spilling, or otherwise escaping from the vehicle.”
  - e. The Contractor shall comply with vehicle speed limits of 15 miles per hour while traveling on unpaved construction sites and maintain at least six (6) inches of freeboard on haul vehicles.
- C. When requested by LAWA, the Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles at least once each Working Day for the purpose of keeping paved areas acceptably clean wherever construction, including restoration, is incomplete.

#### **Air Quality**

- A. Contractor shall make every effort to reduce air pollutant emissions from construction traffic and equipment both on and off the airport. This includes, but is not limited to, use of construction equipment with “cleaner burning diesel” fuel and exhaust emission controls. The Contractor shall use alternative fuel or low emission vehicles to the maximum extent practicable.

#### **Non-Road Mobile Source Controls**

- A. The Contractor shall prohibit staging or parking of construction vehicles (including workers' vehicles) on streets adjacent to schools, daycare centers, and hospitals.
- B. The Contractor shall prohibit construction diesel vehicles or equipment from idling in excess of the idling restrictions as defined in CARB Vehicle Idling Rule. The Contractor shall advise drivers and operators of these requirements at the pre-construction orientation meeting, remind them on a daily basis, and post signs in appropriate places indicating the CARB Vehicle Idling Rule. Exemptions may be granted for safety-related and operational reasons, as defined in CARB or as approved by the Engineer. The Contractor and subcontractors shall have policies and procedures in place for compliance with the Vehicle Idling Rule.

#### **Stationary Point Source Controls**

- A. The Contractor shall specify a combination of electricity from power poles and electricity from portable diesel- or gasoline-fueled generators using “cleaner burning diesel” fuel and exhaust emission controls for his electrical energy requirements.
- B. The Contractor shall obtain approval of the Engineer for the use of internal combustion engine water pumps, power generators, air compressors and other related construction equipment when an option exists to utilize grid power or electric powered equipment.

#### **Noise Control**

- A. Noise generated from the Contractor's operations shall be controlled as required by LAWA.





- B. The Contractor shall comply with local sound control and noise level rules, regulations and ordinances which apply to the Work.

**Spill Prevention and Emergency Response Plan.**

- A. The Contractor shall prepare and submit a spill prevention and emergency response plan. The plan shall address implementation of measures to prevent sewage spills; procedures for spill control and containment, notifications, emergency response, cleanup, and spill and damage reporting.
- B. The plan shall account for all storm drain systems and water courses within the vicinity of the Work which could be affected by a sewage spill. Catch basins that could receive spilled sewage shall be identified. Unless otherwise specified in the Specifications, these catch basins shall be sealed prior to operating the bypass and pumping system. The Contractor shall remove all material used to seal the catch basins when the bypass and pumping system operations are complete.
- C. The Contractor shall be fully responsible for containing any sewage spillage, preventing any sewage from reaching a watercourse, recovery and legal disposal of any spilled sewage, any fines or penalties associated with the sewage spill imposed upon by LAWA and/or the Contractor by jurisdictional regulatory agencies, and any other expenses or liabilities related to the sewage spill.

**01 35 63 SUSTAINABILITY CERTIFICATION PROJECT REQUIREMENTS**

LAWA's Sustainable Airport Planning, Design and Construction Guidelines (LSAG) and included checklists currently are being revised to ensure consistency with the recent changes to the State building code and the Los Angeles Green Building Ordinance. Until the revisions are complete, LAWA's requirement to submit the LSAG checklists as part of the project approval process is suspended. The revised LSAG with updated checklists should be available in the near future.

**01 40 00 QUALITY REQUIREMENTS**

**Adjustments**

- A. Adjust operating products, systems, subsystems, and equipment to ensure smooth and unhindered operation.

The Contractor shall make all repairs and replacements promptly upon receipt of written order from LAWA.

**01 41 00 REGULATORY REQUIREMENTS (CODES, LAWS, RULES, FEES, AND PERMIT REQUIREMENTS)**

**Federal, State, Local Statutes, Codes, and Regulations**

This section provides an overview of the regulatory requirements and procedures for development work at LAX. Mentioned in this section are the codes and guidelines that the Designer is encouraged to become familiar with. This list is neither exhaustive nor all inclusive. The Designer is responsible to be aware of these and any other code regulations that apply to their specific project.

**LAWA is not a self-permitting agency.** The City of Los Angeles, Department of Building and Safety (LADBS) is the lead agency for plan check approvals for most building projects at LAX and VNY. The exceptions include, but are not limited to, airfield or special structures that are reviewed and approved through the FAA and roadway projects that fall under the City of Los Angeles Department of Transportation.

LADBS will determine other City or County agencies with jurisdiction over the project where review and sign-off is necessary to obtain final plan check approval and permit for construction. Examples include the City of Los Angeles Fire Department, the Disabled Access Division and for projects that involve food service facilities, the Los Angeles County Department of Public Health. In addition, depending on the scope of the project, review and approval may be required by Federal agencies such as the



Department of Homeland Security Transportation Security Administration, Customs and Border Protection and the Federal Aviation Administration.

## **01 43 00 QUALITY ASSURANCE**

### **QUALITY ASSURANCE**

#### **General**

- A. LAWA will inspect the work in accordance with the Tenant's LAWA approved Construction Documents and any other pertinent LAWA agreements.
- B. The Work is subject to inspection and approval by LAWA.
- C. The LAWA Engineer and Inspector shall be permitted access to all parts of the Work, including plants where materials or items are manufactured or fabricated. The presence of the Engineer or the Inspector shall not relieve the Contractor of the responsibility for the proper execution of the Work.
- D. The Contractor shall notify the Inspector before noon of the working day before inspection is required. Work shall be done only in the presence of the Inspector, unless otherwise authorized. Any work done without proper inspection will be subject to rejection. The Inspector and any authorized representatives shall at all times have access to the Work during its construction at shops and yards and while in storage, as well as to the Work site. The Contractor shall provide every reasonable facility for ascertaining that the materials and workmanship are in accordance with these Specifications. Inspection of the Work shall not relieve the Contractor of the obligation to fulfill all requirements of the Contract.
- E. The Inspector is authorized to determine the acceptability of materials and the quality of Work. The Inspector is authorized to sample and test all materials to be incorporated into the Work. The Inspector may delegate this authority to sample materials for construction to an approved public or private testing laboratory to perform any necessary tests.
- F. No Work shall be backfilled, buried, cast in concrete, hidden or otherwise covered until it has been inspected by the Inspector and other Agencies for which a permit is required. The Contractor shall notify the Inspector before noon of the working day before inspection is required. Tenant Inspection (424) 646-6010. The Contractor shall provide project title, inspector name, time inspection desired, work location, and description of work to be inspected. Should the Contractor attempt to cover or conceal any item of Work prior to its approval and acceptance, the Inspector may cause the activity to be stopped and require said Work to be exposed, if determined necessary by the Inspector, so that proper inspection may take place. All costs for exposing such Work, including premium costs resulting from alternate means of inspection, time delays, and impacts resulting on other portions of the Work, shall be borne by the Contractor. All costs of such delays, including its effect upon other portions of the Work, shall be borne by the Contractor. Where Work that was done without inspection cannot be uncovered, such as in concrete cast over reinforcing steel, all such Work shall be subject to demolition, removal, and reconstruction under proper inspection at the expense of the Contractor.

#### **Faulty and Unauthorized Work**

- A. Unauthorized work shall be remedied or removed and replaced by the Contractor in an acceptable manner, and no added compensation will be allowed for such removal, replacement, or remedial work. If the contractor chooses to propose repair of non-conforming work, a repair procedure is required for non-conforming work and shall be submitted to the Engineer for review and approval prior to any corrective action taking place. Work done beyond the areas indicated or established by LAWA's approved set of documents may be considered as unauthorized work. Work shall be remedied, removed or replaced at the Contractor's expense.



- B. Except as set forth in this Subsection or elsewhere in Project Specifications, all non-conforming Work and materials, in place or not, shall be removed immediately from the Site or corrected to conform to all requirements of the Contract Documents, by the Contractor, at the sole expense of the Contractor. If the contractor chooses to propose repair of non-conforming work, a repair procedure is required for non-conforming work and shall be submitted to the Engineer for review and approval prior to any corrective action taking place. If the Contractor fails to remove, replace, or correct any non-conforming Work or materials within seventy-two (72) hours of discovery, the Engineer may cause such Work or materials to be removed and replaced. Such removal and replacement shall be at the sole expense of the Contractor.
- C. If the Contractor shall join Work with any Work in place, and if such joint is not made in a skillful manner, then such joint or Work shall be deemed and construed to be faulty workmanship and such materials shall be deemed and construed to be defective materials.
- D. In case of a dispute between the Contractor and the Inspector, the latter is authorized to reject materials or suspend the Work until any questions at issue can be referred to and decided by the Engineer

#### **Materials and Workmanship**

- A. Workers and installers shall be skilled, trained and experienced in the necessary crafts and shall be completely familiar with the specific requirements and methods needed for proper performance and completion of the Work.
- B. Fabricators shall be licensed by the City of Los Angeles. All structural welding shall be performed by welders certified and licensed by the City of Los Angeles, Department of Building and Safety.
- C. No product containing asbestos shall be used for any purpose. When removing asbestos products, the Contractor shall comply with the requirements of Title 8, California Code of Regulations (CCR), General Industry Safety Orders and Construction Safety Orders.
- D. All references to specifications of national organizations and trade associations related to building industry such as, but not limited to, American Society for Testing and Materials, American Institute of Steel Construction, American Concrete Institute, Prestressed Concrete Institute, Post-Tensioning Institute, and the National Board of Fire Underwriters refer to the latest revision of such specifications except as otherwise noted at time of bid opening.
- E. All materials, parts, and equipment furnished by the Contractor in the Work shall be new, high grade, and free from defects. Used or secondhand materials, parts, and equipment may be used only if so specified in the contract documents.
- F. The quality of materials and workmanship shall be subject to approval by the Inspector. Materials and workmanship of quality not conforming to the requirements of the Specifications shall be considered defective and will be subject to rejection. Defective work or material, whether in place or not, shall be removed immediately from the Work site by the Contractor, at its expenses, when so directed by the Inspector.
- G. If the Contractor fails to replace any defective or damaged work or material after reasonable notice, the Engineer may cause such work or materials to be replaced. The replacement expense will be deducted from the amount to be paid to the Contractor.

#### **Protection of Work and Materials**

- A. The Contractor shall provide and maintain storage facilities and employ such measures as will preserve the specified quality of materials to be used in the Work. Stored materials shall be reasonably accessible for inspection. The Contractor shall also adequately protect new and existing work and all items of equipment for the duration of the Contract.



- B. The Contractor shall not, without LAWA's consent, assign, sell, mortgage, hypothecate, or remove equipment or materials which have been installed or delivered and which may be necessary for the completion of the Work.
- C. Access to Work and Materials. The Contractor shall provide access at any time to the Work and materials wherever same are stored, being fabricated, erected or installed, when requested to do so by a representative of the LAWA or other regulatory subdivisions having jurisdiction.
- D. Facilities and Labor. The Contractor shall provide sufficient, safe, and proper facilities and labor necessary to move, take and prepare samples for testing of materials, and shall move same for purposes of additional testing when ordered to do so by any of the LAWA's representatives.

### **SHOP Inspection Requirements**

An LADBS approved fabricator designation does not relieve the tenant/contractor from any of the following requirements.

#### **A. Coordinator**

All items identified in the technical specifications requiring shop inspection require shop inspection. At the 90% LAWA Project Approval Team plan review, the designer will provide a list of items to be fabricated. At the 90% review, LAWA inspection and or engineering will determine the need for shop inspection. All shop inspection will be performed by LAWA staff, regardless of location. No additional cost by the contractor will be incurred for this service unless otherwise noted in the contract. When shop inspection is required by the Engineer, a Notification of Fabrication form shall be submitted by the General Contractor or the Quality Control Manager to the Materials Control Coordinator.

- B. The General Contractor or the Quality Control Manager shall fax the Notification of Fabrication to the Materials Control Coordinator at (424) 646-9327 at least 48 hours in advance when the fabrication will take place within 50 miles of the project.
- C. The General Contractor or the Quality Control Manager shall fax the Notification of Fabrication to the Materials Control Coordinator at (424) 646-9327 at least 10 working days in advance when the fabrication will take place more than 50 miles from the project.
- D. The General Contractor or the Quality Control Manager shall fax the Notification of Fabrication to the Materials Control Coordinator at (424) 646-9327 at least 30 days in advance when the fabrication will take place outside of the continental United States.
- E. David Jackson is the Material Control Coordinator for all LAWA projects and can be reached at (424) 646-5755 or at [djackson@lawa.org](mailto:djackson@lawa.org).
- F. Notification of Fabrication form can be obtained by contacting David Jackson.
- G. Unless otherwise specified, inspection is required at the sources for asphalt concrete pavement mixtures, structural concrete, metal fabrication, metal casting, welding, concrete pipe manufacture, protective coating application, and similar shop or plant operations. Additional materials and fabricated items which require inspection at the source shall be as specified.
- H. Steel pipe in sizes less than 8 inches and vitrified clay and cast iron pipe in all sizes are acceptable upon certification as to compliance with the Specifications, subject to sampling and testing by LAWA. Shelf items mass produced unless noted otherwise in this contract are subject to inspection at the Work site only. Special items of equipment such as designed electrical panel boards, large pumps, sewage plant equipment, etc. are subject to inspection at the source including performance testing. Inspection at the source for other items shall be as specified.



- I. All materials and fabricated articles furnished by the Contractor are subject to inspection at their source, and no materials or fabricated articles shall be used in the Work until they have been inspected and accepted by the Materials Control Inspector. The Materials Control Inspector shall be permitted access to all parts of the Work, including shops where materials and fabricated articles are manufactured or fabricated.
- J. All materials and fabricated items shall be manufactured or fabricated from Shop Drawings that have been approved by the Engineer of Record. The Contractor shall ensure that legible copies of the approved submittals, shop drawings, approved mix designs, and the corresponding Contract Specifications are provided to its fabricators or suppliers, and that said documents are available to the Materials Control Inspector or Independent Inspection and/or Testing Laboratory (IITL) during the inspection. Shop inspection cannot and will not take place without noted documents.
- K. Any material or fabricated item that requires shop inspection and arrives at the Site without inspection by the Materials Control Inspector is subject to rejection by the Inspector and may be required to be removed from the Site by the Contractor at the Contractor's sole expense.
- L. Prior to shipment of any material or fabricated item, final inspection shall be performed by the Materials Control Inspector or IITL. Said inspection shall consist of a final visual inspection, identification, and tagging and/or stamping for release to the Project Site. Items received at the Site without the proper identification may be rejected and required to be removed from the Site.

#### **Test of Materials**

- A. Before incorporation into the Work, the Contractor shall submit samples of materials, as the Engineer may require, at no cost to LAWA. The Contractor, at its expense, shall deliver the materials for testing to the place and at the time designated by the Engineer. For Tenant Projects, the testing expense shall be borne by the Applicant.
- B. The Contractor shall notify the Engineer in writing, at least 15 days in advance, of its intention to use materials for which tests are specified, to allow sufficient time to perform the tests. The notice shall name the proposed supplier and source of material.
- C. If the notice of intent to use is sent before the materials are available for testing or inspection, or is sent so far in advance that the materials on hand at the time will not last but will be replaced by a new lot prior to use on the Work, it will be the Contractor's responsibility to re-notify the Engineer when samples which are representative may be obtained.
- D. Testing by the LAWA. In addition to any other inspection or Quality Assurance provisions that may be specified, the Engineer shall have the right to independently select, test, and analyze, at the expense of the LAWA, additional test specimens of any or all of the materials to be used. Whenever any portion of the Work fails to meet the requirements of the Contract Documents as shown by the results of independent testing or investigation by the Engineer, all costs of such independent inspection and investigation, and all costs of removal, correction, and reconstruction or repair of any such Work shall be borne by the Contractor.
- E. Testing by Approved Testing Laboratory. When the manufacturer, fabricator, or supplier provides the results of tests from samples taken at the mill, factory, or warehouse, the Engineer will accept the test reports provided the following conditions are met:
  - a. The Testing Laboratory was approved by the Engineer prior to performing the tests, and that all necessary certifications were valid at the time the tests were performed.
  - b. The tests were performed in conformance with the Contract Documents for the specified material or item.
  - c. The reports are made in the form of an affidavit, as specified below.
  - d. Tests performed by an approved Testing Laboratory are subject to be monitored by LAWA Inspectors.



- F. Whenever the approved Testing Laboratory takes samples of materials other than at the Site, the deliveries to the Site of materials represented by such samples shall be identified as specified for the specific material. The results of such tests shall be reported to the Materials Control Inspector in the form of affidavits attested to by the Testing Laboratory. Such affidavits shall furnish the following information with respect to the material sampled:
- a. Manufacturer's name and brand.
  - b. Place of sampling.
  - c. Sufficient information to identify the lot, group, bin, or silo from which the samples were taken.
  - d. Amount of material in the lot sampled.
  - e. Statement that the material has passed the requirements.
  - f. Signature and title of the person creating the affidavit and the date of execution of the affidavit.

#### **Certification**

- A. The Engineer may waive the materials testing requirements and accept the manufacturer's written certificate of compliance that the materials to be supplied meet those requirements. Materials test data may be required by the Engineer to be included with the submittal.
- B. A Certificate of Compliance in triplicate shall be furnished prior to the use of materials for which the Contract Documents require that such a certificate be furnished. The Engineer may permit the use of certain materials or assemblies prior to the sampling and testing if accompanied by a Certificate of Compliance. The certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and the Contractor, and shall state that the materials involved comply in all respects with the requirements of the specifications. A Certificate of Compliance shall be furnished with each lot of materials delivered to the work, and the lot so certified shall be clearly identified on the certificate. The form of the Certificate of Compliance and its disposition shall be as directed by the Engineer.
- C. Materials used on the basis of a Certificate of Compliance may be sampled and tested at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the Work which conforms to the requirements of the Contract Documents and such material not conforming to such requirements will be subject to rejection whether in place or not.
- D. The Engineer reserves the right to refuse to permit the use of material notwithstanding the submittal of a Certificate of Compliance.

#### **Trade Names or Equals**

- A. The Contractor may supply any of the materials specified or offer an equivalent. The Engineer will determine whether the material offered is equivalent to that specified. Adequate time shall be allowed for the Engineer to make this determination.
- B. A listing of materials is not intended to be comprehensive, or in order of preference. The Contractor may offer any material, process, or equipment considered to be equivalent to that indicated. The substantiation of offers shall be submitted as provided in the Contract Documents.
- C. The Contractor shall, at its expense, furnish data concerning items offered by it as equivalent to those specified. The Contractor shall have the material tested as required by the Engineer to determine that the quality, strength, physical, chemical, or other characteristics, including durability, finish, efficiency, dimensions, service, and suitability are such that the item will fulfill its intended function.





- D. Test methods shall be subject to the approval of the Engineer. Test results shall be reported promptly to the Engineer, who will evaluate the results and determine if the substitute item is equivalent. The Engineer's findings shall be final. Installation and use of a substitute item shall not be made until approved by the Engineer.
- E. If a substitute offered by the Contractor is not found to be equal to the specified material, the Contractor shall furnish and install the specified material.
- F. The specified Contract completion time shall not be affected by any circumstance developing from the provisions of this subsection.

#### **Weighing and Metering Equipment**

- A. Scales and metering equipment used for proportioning materials shall be inspected for accuracy and certified within the past 12 months by the State of California Bureau of Weights and Measures, by the County Director or Sealer of Weights and Measures, or by a scale mechanic registered with or licensed by the County
- B. The accuracy of the work of a scale service agency, except as stated herein, shall meet the standards of the Business and Professions Code and the Code of Regulations pertaining to weighing devices. A Certificate of Compliance shall be presented, prior to operation, to the Engineer for approval and shall be renewed whenever required.
- C. Scales shall be arranged so they may be read easily from the operator's platform or area. They shall indicate the true net weight without the application of any factor. The figures of the scales shall be clearly legible. Scales shall be accurate to within 1 percent when tested with the plant shut down. Weighing equipment shall be so insulated against vibration or moving of other operating equipment in the plant area that the error in weighing with the entire plant running will not exceed 2 percent for any setting or 1.5 percent for any batch.

#### **Final Inspection**

At the completion of Work, after completion of all corrections, the Inspector, Engineer, Designer, Architect, Construction & Maintenance, and Contractor may make a final inspection, as applicable. The Inspector will provide a Final Inspection Correction List itemizing all Work necessary to complete the Project as initially approved by LAWA.

#### **01 45 16.13 CONTRACTOR QUALITY CONTROL**

Prior to issuance of an NTP, contractors may be required to submit a Quality Control plan, for LAWA's review and approval. The quality plan shall include as a minimum the following:

- A. Statement of purpose and the policy for the quality control plan
- B. Organization chart designating the quality staff for the project
- C. All quality control process for the project including but not limited to:
  - a. All meetings associated with quality control including preparatory, mobilization and any other quality related meeting
  - b. All inspection processes and sign-off procedures including punch lists
  - c. Specialty inspections
  - d. Supplemental procedures to the quality plan
- D. All testing required for the project including any independent testing agencies and their processes
- E. Documentation for the process including but not limited to:
  - a. Quality control reports and project logs
  - b. Action item logs
  - c. All forms required for the quality plan
  - d. Agenda and meeting minutes for all quality related meetings.





## **01 50 00 TEMPORARY FACILITIES AND CONTROLS**

### **01 52 00 CONSTRUCTION FACILITIES**

#### **Contractor's Equipment and Facility**

- A. Contractors will be required to furnish and maintain all equipment and facilities as required for the proper execution of the work.
- B. Contractors will be required to restore the Operations and Storage Yard, if any is provided, and adjacent areas to their original condition prior to final acceptance of the Project, or at the discretion/option of LAWA, left in place at completion of the Project and Ownership shall thereupon be vested to the City.
- C. Equipment and materials shall be stored off the Project Site until they are to be used on the Work. All other operations of the Contractor shall be confined to the areas authorized or approved by the Airport Contact.

### **01 56 00 TEMPORARY BARRIERS AND ENCLOSURES**

#### **01 56 23 TEMPORARY BARRICADES**

#### **TEMPORARY BARRICADE AND ENCLOSURE STANDARDS**

##### **Construction Barricades and Enclosures**

- A. General Requirements
  - a. All construction activities within public areas are required to be secured with a LAWA approved barrier as described in this section. The barricade plan shall be a component of the Project Site Logistics Plan. The plan shall include directional/way-finding needs and probable location of any access doors for equipment and crews and fire watch windows where required.
  - b. The initial barricade plan is part of the Site Logistics Plan and is submitted to the LAWA Project Manager prior to installation of any enclosure or barrier. Further changes will be submitted to the LAWA Project Manager for review and approval prior to field changes, additions and/or removals.
  - c. The barricade plan shall be a component of Temporary Signage Standards.
  - d. The contractor must coordinate enclosures that encompass Automated External Defibrillators (AED), Fire Pull Boxes, Cameras, Fire Sprinklers, Pay Phones, and Exit Doors with the LAWA Project Manager at least one week in advance of barricade placement.
  - e. Barricades shall be fully installed and complete within 24 hours of initiating the installation. If more than 24 hours are required for large areas, provide a phasing plan for installation at least one week prior to installation. In some cases, the LAWA Project Manager may require temporary partition walls to be used during barricade construction.
  - f. Existing floor and carpet areas beneath panels and within barrier and enclosure areas shall be protected with Masonite-type board, polyethylene sheeting, cardboard, carpet or other suitable material.
  - g. A straight, clean and uniform appearance of all barricades shall be maintained at all times. Scuffed, dirty, punctured, or discolored barricades shall be cleaned, painted or replaced as required. Each barrier shall be inspected daily with repairs made immediately.
  - h. Provide for electrical power outlets for any advertising, safety and/or exit signs to be relocated from their existing locations in or on walls that would be covered by the temporary barricade.



- i. The Contractor shall construct barricades with the least possible obstruction and inconvenience to LAWA, its occupants and the public.
  - j. Existing signage and lighting systems in operation as the work proceeds shall be maintained unless otherwise approved by the LAWA Project Manager.
  - k. Barricades shall neatly adjoin existing walls. Existing finishes shall be protected prior to installation of partitions. Gaps between existing walls and enclosures shall be 1 ½ inches maximum. Provide braces as necessary to support enclosure, flush with surface of panels.
  - l. The LAWA Project Manager will notify the Contractor of any Airport approved graphics and messaging required for placement along the barricades and/or fencing during construction. Messaging and graphics shall be at the expense of the Contractor. The Contractor shall use the Airport approved Graphic Designer for all messaging and graphics.
  - m. No unapproved signage shall be affixed to the public side of doors, barricades or fence as stated in Temporary Signage Standards.
  - n. Per the Faulty and Unauthorized Work section, after NTP, and during all phases of construction, the Applicant and the Applicant's contractor must not deviate from the approved plan. The applicant shall resubmit any changes to the Barricade Plan for approval to the LAWA Project Manager. If Applicant deviates from the approved plan, it will be considered Unauthorized Work and subject to remediation at the Applicant's expense. *Please keep in mind that if the deviations from the approved plans cause an unsafe condition, impacts other Tenants, Customers, or other construction Projects, the Applicant and the Applicants Contractor are subject to a "Stop Work Notice" until the condition has been remedied.*
- B. Interior/Fixed Barricades
- a. Shall be constructed of metal studs with gypsum board affixed by means of drywall screws. When possible the barricades should reach and be even along the ceiling.
  - b. When floor to ceiling barricades are not feasible, the Airport Project Team shall review and approve polyethylene enclosures from the top of the gypsum wall to the ceiling to mitigate dust exposure to areas outside the work space. The use of Polyethylene shall be minimized except as required for dust control.
  - c. When floor to ceiling barricades are not feasible, the Airport Project Team shall review and approve the top finish of the gypsum wall. The top of the wall shall be level horizontally with a metal strip painted to match attached for an even finish.
  - d. The Airport Project Team may approve the use of polyethylene sheeting at the top of the barricade and continuously at the deck or soffit above the barricade. Polyethylene enclosures shall be white in color, fire retardant, and at least 6 mil thick. Fire rated white tape shall be used to continuously secure the sheeting. There shall be no wrinkles, holes, tears, patch work pieces, shredded sheets or gathered sections. Polyethylene enclosures shall be supported by framework and be capable of supporting .5 psf applied over the entire surface of each side, separately.
  - e. All joints shall be smooth and free from tool marks and ridges. A drywall primer prior to two coats of flat paint for a Level 4 finish is required.
  - f. Gypsum board paint color is to match adjacent, existing walls and approved by the Airport Project Team. Paint shall extend continuously to the next intersection in the wall for a uniform finish to the existing facility.
  - g. Barricades shall have 4-inch high vinyl base moldings, wall color to match adjacent and existing walls and molding color to match adjacent and existing moldings.



C. Exterior and Movable Barricades

- a. Exterior barricades shall be used for construction along the curbs and adjacent to buildings in public areas. Movable barricades shall be used when work areas require large open space during work hours for equipment and access such as escalator and elevator replacements.
- b. Fire retardant treated plywood fastened to either light gauge metal studs or 2-inch x 4-inch fire retardant treated timber studs with continuous level framing at top and bottom may be used at curbs and where the LAWA Project Manager deems appropriate.
- c. The face of the barricades shall be smooth and free from protrusions with edges and corners eased with no gaps. Nails, screws and other fasteners shall be installed flush with the face of the barricade.
- d. Paint on barricades shall match existing walls. Paint must be applied in 2 coats minimum. All vertical joints must be taped and painted. Barricades shall have 4-inch high vinyl base moldings, wall color to match adjacent and existing walls and base molding color to match adjacent existing moldings.
- e. Barricades shall be constructed with integral base or other devices to resist an overturning moment created by the force of 50 pounds per lineal foot applied horizontally at the height of 3 feet 6 inches perpendicular to the partition for the full length of the partition.

D. Doors

- a. All interior and exterior doors leading into construction areas and build outs must be self closing, self locking and open inward towards the construction area.
- b. Interior doors shall be a pair of pre-hung and of hollow or solid core with three hinges (1-1/2 pair) with levered lock set. Doors shall be painted and framed to prevent warping, and shall be mounted flush to the barricade walls.
- c. Exterior doors shall be a pair of pre-hung hollow or solid core doors or two four-foot wide plywood doors, optional to Contractor. One door leaf will be stationary with cane bolt or similar device to keep door closed when not in use. Operating second door shall have three hinges (1-1/2 pair) with levered lock set. Hardware should match existing hardware.
- d. All interior and exterior doors must remain locked at all times. When doors are open for delivery of materials, the entrance must be staffed to prevent public entry into the construction area. Acceptable locks include Cipher Locks and key boxes attached to the door. Hasp and locks shall not be used on interior or exterior doors or near the doors.
- e. Maintenance, cleaning, painting, patching or replacement of interior and exterior doors, door frames and hardware is required on a regular basis during the duration of the construction project.
- f. The interior and exterior door signage is a component of Temporary Signage Standards. No unapproved signage shall be affixed to the public side of the door.

E. Exterior Fencing

- a. Contractor fencing shall be used at exterior construction locations as approved by the LAWA Project Manager. A screened 4-foot chain link fence shall be secured along the top of concrete barriers, or with post buried in the ground and submitted for review and approval by the LAWA Project Manager.
- b. The screen shall be an 85% closed woven panel made from polypropylene with the color approved by the LAWA Project Manager. All edges will be grommets and tape. There shall be no wrinkles, holes, tears, patch work pieces, shredded sheets or gathered sections in the screen.



- c. Construction entrances shall be constructed of framed chain linked gates. The gate width shall be approved by the LAWA Project Manager. Gates shall be chained and locked at all times.
- d. Exterior fence signage is a component of Temporary Signage Standards. No unapproved signage shall be affixed to the public side of the fencing.

F. Other Barricades

- a. If approved by the LAWA Project Manager the following can be used on a temporary short term basis:
  - i. Stanchions with retractable barrier tape
  - ii. Bicycle Racks – Interlocking Steel Crowd Control Barriers
  - iii. Temporary Partition Walls
- b. Caution tape is not an approved barrier for Airport Construction and shall only be used in an emergency situation. If used, caution tape must be replaced within 24-hours with an Airport approved barricade. No orange cones or other, non-specified barricades are allowed within passenger areas of the Terminals and/or other public buildings.
- c. Barricades used on the airfield must have red flashers and comply with the FAA Specifications and be submitted for review and approval to Airport Operations.

01 56 33 TEMPORARY SECURITY BARRIERS

01 56 36 TEMPORARY SECURITY ENCLOSURES

01 57 23 TEMPORARY STORM WATER POLLUTION CONTROL

**Water Pollution Control**

- A. The Contractor shall conform to all applicable local, state and Federal regulations and laws pertaining to water pollution control. The Contractor shall conduct and schedule its operations in such a manner as to prevent water pollution.
  - a. "Water Pollution" shall mean an alteration of the quality of waters by fuels, oils, and other harmful materials. The alteration shall be to a degree that adversely affects such waters for beneficial uses, or facilities that serve such beneficial uses.
  - b. "Beneficial Uses" shall include, but not necessarily be limited to, domestic, municipal, agricultural, and industrial supply; power generation; recreation; esthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.
- B. When required, the Contractor shall obtain permits for erosion and water pollution control from the appropriate jurisdictional agency before the start of construction.
- C. Wet Weather Erosion Control Plan (WWECP) shall be prepared pursuant to Section 61.02 of the LAMC, whenever it appears that the construction Site will have grading during the rainy season (from October 15 to April 15). The Contractor shall submit a WWECP to the Engineer for approval within thirty (30) Days after the Notice to Proceed or get approval thirty (30) Days prior to the beginning of the rainy season, whichever is longer.
- D. Work shall be in compliance with the requirements of the National Pollutant Discharge Elimination System (NPDES) Permit for the City of Los Angeles (NPDES Permit No. CAS004001), including the Los Angeles Standard Urban Stormwater Mitigation Plan (SUSMP). Guidance on NPDES, SUSMP, and WWECP can be found on the City of Los Angeles' Stormwater website at <http://www.lastormwater.org>.



- E. The Contractor shall conform to the following requirements:
  - a. Sediments or other surface water quality pollutants shall not be discharged to a storm drain system or receiving waters.
  - b. Sediments and other surface water quality pollutants generated on the Work site shall be contained on the Work site using appropriate Best Management Practices (BMPs).
  - c. No construction-related materials, waste, spill, or residue shall be discharged from the Work site to streets, drainage facilities, receiving waters, or adjacent property by wind or runoff.
  - d. Non-storm water runoff from equipment, vehicle washing, or any other activity shall be contained within the Work site using appropriate BMPs.
  - e. Erosion shall be prevented. Erosion susceptible slopes, shall be covered, planted or otherwise protected in a way that prevents discharge from the Work site.

#### **Stormwater Discharges Associated with Construction Activity**

- A. The Contractor shall implement and maintain such BMPs as are relevant to the Work.
- B. The Contractor shall be responsible throughout the duration of the Contract for installing, constructing, inspecting, maintaining, removing and disposing of BMPs. Unless otherwise directed by LAWA, the Contractor shall be responsible for BMP implementation and maintenance throughout any temporary suspension of the Work.
- C. All projects, regardless of size, shall implement the following good housekeeping BMPs to reduce the discharge of pollutants from construction sites to the maximum extent practicable:
  - a. Eroded sediments and other pollutants must be retained on Site and may not be transported from the Site via sheet flow, swales, area drains, or natural drainage.
  - b. Stockpiles of earth and other construction-related materials must be protected from being transported from the Site by water.
  - c. Fuels, oils, solvents, and other toxic substances originating from the Contractor's operations shall not be allowed to enter the ground water or be placed where they will enter a live stream, channel, drain, or other water conveyance facility. Spills may not be washed into the live streams, channels, drains, or other water conveyance facilities.
  - d. Such features as drainage gutters, slope protection blankets, and retention basins shall be constructed concurrently with other Work and at the earliest practical time. The Contractor shall exercise care to preserve vegetation beyond the limits of construction.
  - e. Excess or waste concrete may not be washed into the public way or any drainage system. Provisions shall be made to retain concrete wastes on-site until it can be appropriately disposed of or recycled.
  - f. Trash and construction-related solid wastes must be deposited into a covered receptacle to prevent contamination of rainwater and dispersal by wind.
  - g. Sediments and other materials may not be tracked from the Site by vehicle traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the public ways. Accidental depositions must be swept up immediately and may not be washed down by rain or by any other means.
  - h. After the completion of the Work, the Site shall be cleared of debris and restored to a condition equal to or better than that existing before construction.



- D. The Contractor shall comply with the State Water Resources Control Board Order No. 2009-0009-DWQ (Construction Activities Storm Water General Permit). Contractor is to determine the Risk Level for the Site in accordance with State Water Resources Control Board Order No. 2009-0009-DWQ and determine which requirements are applicable.
- E. Compliance with State Water Resources Control Board Order No. 2009-0009-DWQ, may included, but is not limited to the following:
  - a. Register via the State Water Board's Storm Water Multi-Application & Reporting System (SMARTS) system, as coordinated through LAWA.
  - b. Prepare all Permit Registration Documents.
  - c. Have a credentialed preparer, as defined in State Water Resources Control Board Order No. 2009-0009-DWQ, develop a site-specific Storm Water Pollution Prevention Plan (SWPPP).
  - d. Submit SWPPP to LAWA Environmental Services Division for review and approval.
  - e. Implement the SWPPP in accordance with State Water Resources Control Board Order No. 2009-0009-DWQ requirements, including, but not limited to necessary and appropriate site monitoring, and filing of required reports and notifications via SMARTS (in consultation with LAWA).
  - f. Prepare a Notice of Termination (NOT) upon completion of said construction work, fulfill all post-construction requirements under State Water Resources Control Board Order No. 2009-0009-DWQ, and coordinate with LAWA the filing of the NOT via SMARTS.
- F. Failure to comply with State Water Resources Control Board Order No. 2009-0009-DWQ may subject discharges to penalties. Dischargers may become liable to pay up to \$10,000 a day pursuant to California Water Code section 13385, and another penalty of a minimum of \$1,000 pursuant to sections 13399.25-3399.43.
- G. Should the Contractor violate any of the provisions of this Subsection, or if pollution occurs in the work area for any reason, the Contractor shall immediately notify LAWA. In addition the Contractor shall, within 10 Days, submit written confirmation to LAWA describing the incident and corrective actions taken. Contractor is to comply with all discharge reporting requirements of Water Resources Control Board Order No. 2009-0009-DWQ. If pollution, for whatever reason, is detected by the Inspector/Engineer before notification by the Contractor, the required written confirmation shall also include any explanation of why the Contractor had not notified the Inspector.

### **Drainage Control**

The Contractor shall ensure that storm and drainage water does not pond due to the temporary blockage of exiting drainage facilities. To this end, the Contractor shall provide temporary methods that allow for the passage of storm and drainage water in a manner equivalent to the existing drainage system.

## **01 58 00 PROJECT IDENTIFICATION**

### **Temporary Signage Standards**

#### **A. General**

Temporary signs may be necessary to safely and efficiently move passengers through the airport environment during construction, which can at times create very complex navigational challenges. The Contractor shall provide all Temporary Signage which must be approved and produced prior to installation of barricades (Temporary Barricade Plan) when applicable. The primary goal of the temporary signs will be to maintain the integrity of the wayfinding system.

It is important to design and fabricate the temporary signs using the same design criteria as the permanent signs with the exception of fabrication materials and mounting methods. Color, font, type





size, nomenclature and message hierarchy should be maintained. This method allows for the signage system to maintain visual continuity, clear messaging, and a sense of permanence thus instilling confidence in the passengers as they find their way through the airport.

#### B. Material

##### Interior

- a. Sintra type PVC board, styrene or other like rigid material with rounded corners
- b. Matte vinyl applied directly to a painted smooth drywall finish

##### Exterior

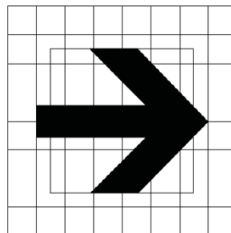
- c. Sintra, aluminum, dibond, or other like non-corrosive material with rounded corners
- d. Must be highly reflective in order to be read at night
- e. Must be able to withstand exposure to varying weather conditions

#### C. Font

- a. Interior - Helvetica Medium
- b. Exterior – Gothic Demi
- c. Size – A general guideline is 1 inch of letter height for 40 feet of viewing distance
- d. Spacing – Basic line spacing between words of a related message is 50% of the cap height of the letter. Basic line spacing between unrelated messages is 100% of the cap height of the letter.
- e. Uniform use of capitalization

#### D. Directional Arrows

- a. Right arrows are placed to the right of the right justified text.
- b. Left arrows are placed to the left of the left justified text.
- c. Use 90 degree arrows on axis with the decision point.
- d. Use U-Turn arrow for direction behind you.
- e. The use of 45 degree arrows should be avoided.
- f. Arrows should never point into text.



#### E. International Symbols

Consistency in placement and visual presentation of symbols creates the greatest level of recognition and shortens the time required to process the message. Symbols are placed on the sign after the message and before the arrow.





- a. Symbols must match those used on the permanent terminal signage
- b. Symbols must use the same height as the associated arrow
- c. Symbols are to be displayed with colored pictograms and box border with a white background

F. Messaging

For consistent order and placement of messages establish primary messaging versus secondary messaging. Hierarchy includes prioritizing what information to list at a given decision point in the route. What is the minimum amount of information necessary to move a passenger to the next decision point?

Primary messages are:

- Ticketing/Check-in
- Baggage Claim
- Gates
- Ground Transportation

Secondary messages are:

- Concessions
- Elevators
- Information
- Parking
- Restrooms

Placement of arrows, symbols and the message shall be consistent on all signs

G. Templates

- a. Templates containing the layout guidelines and artwork will be provided to each contractor prior to the start of construction.



- b. The LAWA Project Manager will notify the Contractor of any Airport approved graphics and messaging other than wayfinding required for placement along the barricades and/or fencing during construction. Messaging and graphics shall be at the expense of the Contractor. The Contractor shall use the Airport approved Graphic Designer for all messaging and graphics.



#### H. Mounting

- a. The recommended height from the bottom of the sign is 8 foot above the ground to the bottom of the sign. In very low ceiling conditions the minimum height per ADA standards is 6 foot and 8 inches.
- b. The recommended method for mounting signs to temporary construction walls is screws or industrial strength double stick tape adhered to the back of the sign or mounting vinyl directly onto a Gypsum board Level 4 finished temporary wall.
- c. Tape shall not be visible on or near the exterior of the sign.
- d. In order to protect existing facility walls when mounting signs the recommended method is application of blue painters tape to the surface followed by application of industrial strength double stick tape.

#### I. Sign Locations

##### Interior

Since every terminal and associated curbside has unique locations, architecture, configuration and geometry, it is difficult to prepare generic signing plans and recommendations. Viewer circulation patterns and natural lines of vision are the basis for determining the location of all signs. Additional signage may be required during construction due to phasing and construction activities.

##### Exterior

Signs may be mounted on the temporary construction fence, exterior walls, and freestanding posts. Careful consideration must be given to signs placed on fences along the side of roadways. Distractions to drivers cause a number of issues along the airport roadways. Additional signage may be required during construction due to phasing and construction activities.

#### J. Sign Frequency and Avoidance of Sign Clutter

Directional signs should be located at decision points and used as conformational signs if appropriate. Signing should be used primarily to direct traffic/pedestrians and identify items. Every direction must have a confirmation, so passengers know they have reached their destination.

#### K. Sign Holders

Sign holders may be used in cases where construction walls are not suitable for wayfinding signs.

##### Stanchion Sign Stand

- Stanchion sign shall be framed and firmly attached to the stanchion post top only
- Dimensions are 22 inches by 28 inches
- A minimum 1-inch edge margin shall be maintained around the copy

##### A-frame

- Exterior Only
- Exterior grade painted wood
- Sign must be made with reflective vinyl background with reflective border using engineering grade or diamond grade vinyl
- Sign must be mounted to a substrate such as sintra type PVC board or styrene
- Minimum dimensions are 3 feet wide by 4 feet high
- A-frame signs are subject to location placement review



#### L. Maintenance of Signs and Sign Holders

The contractor is responsible for maintaining all temporary construction signage for the duration of the project. Daily walks will be performed to inspect signs for the following:

- Cleanliness
- Damage
- Graffiti
- Validate location appropriateness

Sign holders must be inspected and maintained on a daily basis. Sign inspections shall consist of looking for and correcting the following:

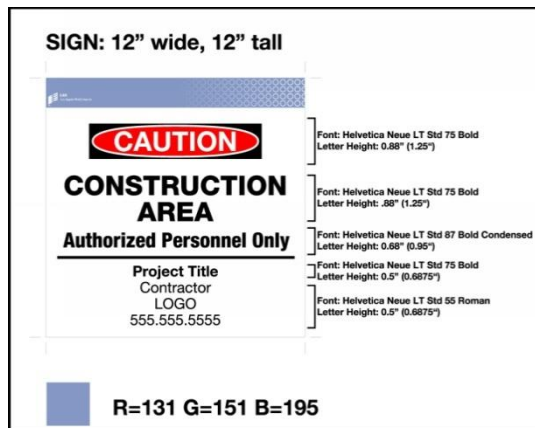
- Damage
- Firm attachment to base
- Placement
- Cleanliness

#### M. Contractor Signage

A project identification sign shall be placed on the Construction Doors in public areas. The sign shall have the following information:

- Construction area do not enter
- Personal protective equipment required
- Project name
- Contractor name
- Contractor phone number
- Contractor logo

A template shall be provided to the contractor prior to the start of construction.





N. Promotional Signs

Contractor and their sub-contractors shall not display company signs and logos in public areas.

O. Non-permitted Signs

The following signs and sign material are not permitted and may not be displayed on a temporary basis:

- Paper, poster or foam board signs
- Hand-written signs
- Paper banners
- Signs not approved by the LAWA Project Manager
- Vertical lettered signs

P. Sign Implementation Process

- a. 3-weeks prior to sign installation, contractor shall provide a sign and barricade (if applicable) plan and schedule to the LAWA Project Manager for review and approval. A Project Team site walk shall be completed to determine wayfinding needs.
- b. All sign drafts, plans and schedules shall be submitted to [TemporaryConstructionSignage@lawa.org](mailto:TemporaryConstructionSignage@lawa.org) for review and approval.
- c. Signs shall be manufactured prior to wall shifts to ensure wayfinding is in place as soon as the barricades have been installed.
- d. For single sign installations please complete a Construction Sign Form (see form below) and submit the draft of the sign along with photos of the location to [TemporaryConstructionSignage@lawa.org](mailto:TemporaryConstructionSignage@lawa.org) for review and approval.

Q. Non-conformance

- a. Per the Faulty and Unauthorized Work section, after NTP, and during all phases of construction, the Applicant and the Applicant's contractor must not deviate from the approved plan. The applicant shall resubmit any changes to the Barricade Plan for approval to the LAWA Project Manager. If Applicant deviates from the approved plan, it will be considered Unauthorized Work and subject to remediation at the Applicant's expense. All non-conforming signs will be removed by Airport Staff. *Please keep in mind that if the deviations from the approved plans cause an unsafe condition, impacts other Tenants, Customers, or other construction Projects, the Applicant and the Applicants Contractor are subject to a "Stop Work Notice" until the condition has been remedied.*



| Construction Sign Form   |                        |                        |
|--|------------------------|------------------------|
| Project Name:  |                        |                        |
| ADG PM:  | Ph:                    |                        |
| Date:  | Email:                 |                        |
| Applicant Contact:   | Ph:                    |                        |
| Barricade Change Date (if applicable):   |                        | Sign Due Date:         |
| Sign 1   | Sign 2                 | Sign 3                 |
| Size W: ___ x H: ___   | Size W: ___ x H: ___   | Size W: ___ x H: ___   |
| Indoor or Outdoor  | Indoor or Outdoor      | Indoor or Outdoor      |
| Single or Double Sided   | Single or Double Sided | Single or Double Sided |
| Message  |                        |                        |
|  |                        |                        |
| Sign Placement   |                        |                        |
|  |                        |                        |
| Sign Holder or Mounting Type   |                        |                        |
|  |                        |                        |
| All signs must be produced prior to movement or installation of barricades or facility closures. |                        |                        |
| A draft of all signs must be reviewed and approved prior to sign production                      |                        |                        |
| Send Sign Drafts to: <b>TemporaryConstructionSignage@lawa.org</b>                                |                        |                        |
| NOTES:   |                        |                        |
|  |                        |                        |
| Sign Draft Approved By:  |                        |                        |



## **01 60 00 PRODUCT REQUIREMENTS**

### **01 64 00 OWNER-FURNISHED PRODUCTS**

#### **LAWA FURNISHED MATERIALS**

##### **Materials Furnished by LAWA**

- A. Upon receiving material furnished by the LAWA for storage or installation in the Work, the Contractor shall give a signed receipt to the Airport Contact for the material delivered. Thereafter the Contractor shall be responsible for the care and necessary replacement of such material if damaged.
- B. If, as determined by LAWA, the material is not adequately protected by the Contractor, such material may be protected by the LAWA and the cost thereto be charged to the Contractor.
- C. Upon receiving such material, the Contractor shall inspect it, and should any damage, defects, or missing equipment or parts be found, the Contractor shall immediately notify LAWA in writing. By failing to notify LAWA, it shall be deemed that the Contractor has accepted such material as being free from said damage, defects, or missing equipment or parts, except for latent defects.

### **01 66 00 PRODUCT STORAGE AND HANDLING REQUIREMENTS**

#### **01 66 13 PRODUCT STORAGE AND HANDLING REQUIREMENTS FOR HAZARDOUS MATERIALS**

##### **Special Hazardous Substances and Processes**

- A. Special Hazardous Substances and Processes. Materials that contain hazardous substances or mixtures may be required on the Work. A Material Safety Data Sheet as described in Section 5194 of the California Code of Regulations shall be requested by the Contractor from the manufacturer of any hazardous products used. All hazardous wastes shall be removed from LAWA property within 90 days by a registered hauler to a licensed treatment, storage, or disposal facility.
- B. Except as otherwise permitted, the Contractor agrees to accept sole responsibility for full compliance with any and all applicable present and future rules, regulations, restrictions, ordinances, statutes, laws and/or other orders of any governmental entity regarding the use, storage, handling, distribution, processing and/or disposal of hazardous wastes, extremely hazardous wastes, hazardous substances, hazardous materials, hazardous chemicals, toxic chemicals, toxic substances, pollutants, contaminants, or other similarly regulated substances (hereinafter referred to as "hazardous substances") regardless of whether the obligation for such compliance or responsibility is placed on the owner of the land, on the owner of any improvements on the premises, on the user of the land, or on the user of the improvements. Said hazardous substances shall include, but shall not be limited to gasoline, aviation, diesel and jet fuels, lubricating oils and solvents.
- C. With the exception of the City's sole negligence, the Contractor agrees that any damages, penalties or fines levied on the City and/or the Contractor as a result of noncompliance with any of the above shall be the sole responsibility of the Contractor and, further, that the Contractor shall indemnify and pay and/or reimburse City for any damages, penalties or fines that City incurs, or pays, as a result of noncompliance with the above requirements.
- D. In the case of any hazardous substance spill, leak, discharge or improper storage on the premises, or contamination of same, by any person, the Contractor agrees to make, or cause to be made, any necessary repairs or corrective actions, as well as to clean up and remove any leakage, contamination or contaminated ground. In the case of any hazardous substance spill, leak, discharge or contamination by the Contractor, or by any of its employees, agents, servants, or subcontractors which affects other property of the City, or property(ies) of the City's tenant(s), the Contractor agrees to make, or cause to be made, any necessary repairs, or take corrective actions, to clean-up and remove any such spill, leakage or contamination.



- E. If the Contractor fails to repair, clean-up, properly dispose of, or take any other corrective action(s) as required, the City may (but shall not be required to) take all steps it deems reasonably necessary to properly repair, clean-up or otherwise correct the condition(s) resulting from the spill, leak or contamination. Any such repair, clean-up or corrective action(s) taken by the City shall be at Contractor's sole cost and expense, as well as shall any and all costs (including any administrative costs) which City incurs, or pays, as a result of any repair, clean-up or corrective action it takes.
- F. Contractor shall promptly supply City with copies of all notices, reports, correspondence and submissions made by the Contractor to any governmental entity regarding any hazardous substance spill, leak, discharge or clean-up, including all tests results.
- G. This section and the obligations herein shall survive the expiration or earlier termination of any other contractual relationship.

## **01 70 00 EXECUTION AND CLOSEOUT REQUIREMENTS**

01 71 33 PROTECTION OF ADJACENT CONSTRUCTION

01 71 33.10 PROTECTION OF ADJACENT CONSTRUCTION – UTILITIES (ADDED)

### **Utility Protection:**

- A. All utilities encountered during the execution of the Work shall be maintained continuously in service, unless other arrangements satisfactory to the utility, LAWA, and the Engineer are made. Utilities shall include, but not be limited to, all above or below ground conduit, pipes, wet wells, ducts, cables, and appurtenances associated with oil, gas, water, steam, irrigation, sewer, storm drain, wastewater, air, electrical, power, instrumentation, communication, telephone, TV, and lighting systems, whether or not owned by the City. All valves, switches, vaults, and meters shall be maintained readily accessible for emergency shutoff.
- B. Fire and police call boxes and conduits shall be protected by the Contractor. Should said facilities be damaged by the Contractor's operations, immediate notification shall be given to LAWA.
- C. When placing concrete around or contiguous to any non-metallic utility installation, the Contractor will be required to do one of the following:
  - Furnish and install a 50mm (2-inch) cushion of expansion joint material or other similar resilient material; or
  - Provide a sleeve or other opening which will result in a 50mm (2-inch) minimum-clear annular space between the concrete and the utility; or
  - Provide other acceptable means to prevent embedment in or bonding to the concrete.
- D. Where concrete is used for backfill or for structures which would result in embedment, or partial embedment, of a metallic utility installation; or where the coating, bedding or other cathodic protection system is exposed or damaged by the Contractor's operations, the Contractor shall notify the Airport Contact and arrange to secure the advice of the affected utility LAWA regarding the procedures required to maintain or restore the integrity of the system.
- E. Upon completion of the Work, the Contractor will remove all enclosures or protective coverings and leave the work area in a finished condition.





## **01 74 00 CLEANING AND WASTE MANAGEMENT**

### 01 74 23 FINAL CLEANING

#### **Final Cleaning**

- A. General cleaning is required during construction.
- B. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions. Do not use cleaning agents that are potentially hazardous to health or property or which might damage finish surfaces. Use cleaning products that meet Green Seal GS-37, or if GS-37 is not applicable, use products that comply with California Code of Regulations maximum allowable VOC levels.
- C. In addition to the requirements of the contract documents, complete the following cleaning operations before requesting LAWA Final Inspection.
  - a. Remove labels that are not permanent labels.
  - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
  - c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
  - d. Vacuum carpeted and soft surfaces, removing debris and excess nap. Shampoo if visible soil or stains exist.
  - e. Clean equipment and plumbing fixtures to a sanitary condition.
  - f. Clean exposed surfaces of grilles, registers, and diffusers.
  - g. Replace filters of operating mechanical equipment.
  - h. Clean ducts, blowers, and coils if units were operated without filters during construction or display contamination with particulate matter upon inspection.
  - i. Clean light fixtures and replace burned out lamps and bulbs. Replace defective or noisy ballasts and starters in fluorescent fixtures.
  - j. Remove debris and surface dust from limited access spaces, including, but not limited to the following: roofs, attics, plenums, shafts, trenches, equipment vaults, maintenance holes, gutters, downspouts, and drainage systems.
  - k. Wipe surfaces of mechanical and electrical equipment, elevator, escalator, moving walk, baggage handling, and similar equipment. Remove excess lubrication, paint, mortar droppings, and other foreign substances.
  - l. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
  - m. Clean the site, including Contractor's Operations and Storage Yard, of rubbish, litter and foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
  - n. Reinstall any cladding removed for the work.



- D. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on LAWA property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
- F. Where extra materials of value, which have become LAWA's property, remain after completion of associated Work, arrange for the removal, relocation, and or disposal of these materials as directed by LAWA.

**PEST CONTROL.** When directed by LAWA, engage an experienced, licensed exterminator to make final inspection and rid Project of rodents, insects, and other pests. Submit pest-control final inspection report and warranty to LAWA.

#### **01 76 00 PROTECTING INSTALLED CONSTRUCTION**

##### **Utility Protection:**

- A. All underground utility conduits shall have a minimum cover of eighteen (18) inches and shall have identifying detectable tape placed in the trench above the conduit. The detection tape shall be made of metalized foil laminated between two layers of inert plastic film, six (6) inches wide and a minimum of 4.5 mils thick, as described here:
  - a. Safety Red = Electric and lighting conduit and cables.
  - b. Safety Yellow = Gas, oil, steam, petroleum or gaseous materials.
  - c. Safety Orange = Telephone, alarm, or signal cables and conduit.
  - d. Safety Blue = Potable water or irrigation.
  - e. Safety Green = Sewer or drain lines.
- B. The detection tape shall be placed directly above and reasonably horizontal for the full length of the conduit. For conduits with less than four (4) feet of cover, install tape four (4) to eighteen (18) inches below the subgrade surface and at least twelve (12) inches above the conduit. For conduits with more than four (4) feet of cover, install tape at least three (3) feet above the conduit.
- C. Upon completion of the Work, the Contractor will remove all enclosures or protective coverings and leave the work area in a finished condition.

#### **01 77 00 CLOSEOUT PROCEDURES**

##### **Closeout Procedures**

##### **01 77 13 PRELIMINARY CLOSEOUT REVIEWS**

##### **List of Incomplete Items (Punchlist)**

- A. Thirty (30) days prior to the anticipated Project Completion, submit a list, in an electronic format approved by LAWA, either Microsoft Excel Spreadsheet with PDF or Microsoft Access Database with PDF. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside limits of construction. Use CSI Form 14.1A or other form acceptable to LAWA.
  - a. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor, unless otherwise acceptable to LAWA.



- b. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
- c. Include following information at top of each page:
  - i. Project name.
  - ii. Date.
  - iii. Name of Construction Manager and Designer/Architect.
  - iv. Name of Contractor.
  - v. Page number.

01 77 16 FINAL CLOSEOUT REVIEW

### **Final Inspection**

At the completion of Work, after completion of all corrections, the Inspector, Engineer, Designer, Architect, Construction & Maintenance, and Contractor may make a final inspection, as applicable. The Inspector will provide a Final Inspection Correction List itemizing all Work necessary to complete the Project satisfactorily.

Tenant/Contractor is to:

- A. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
- B. Submit certified copy of LAWA's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by LAWA. Certified copy of list shall state that each item has been completed or otherwise resolved for acceptance.
- C. Submit documentation of performance of Closeout Submittals as outlined in Section 01 78 00.
- D. In addition to submittals required in Section 01 78 00, submit final project photographs, damage or settlement surveys, property surveys, and similar final record information.

Additionally, for those portions to be maintained by LAWA, Tenant/Contractor is to:

- A. Advise LAWA of pending insurance changeover requirements.
- B. Obtain and submit releases permitting LAWA unrestricted use of Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
- C. Advise LAWA of changeover in heat and other utilities.
- D. Submit changeover information related to LAWA's occupancy, use, operation, and maintenance.
- E. Submit final meter readings for utilities, measured record of stored fuel, and similar data as of date of Substantial Completion or when LAWA took possession of and assumed responsibility for corresponding elements of Work.
- F. Make ready for landscape maintenance period (if applicable).
- G. Submit any specific testing data, warranties, maintenance agreements, final certifications and similar documents not addressed in Section 01 78 00.



## **01 78 00 CLOSEOUT SUBMITTALS**

### **CLOSEOUT SUBMITTALS**

#### **Project Record Documents**

- A. General: Comply with the requirements of the Contract Documents regarding submittal requirements.
- B. Summary: This subsection includes administrative and procedural requirements for Project Record Documents, including, but not limited to, the following:
  - a. Record Drawings
  - b. Record Specifications
  - c. Record Product Data
  - d. Record Samples
  - e. Miscellaneous Record Submittals
- C. Store Project Record Documents and samples in the field office, in a secure, fire-resistive location, apart from the documents used for construction. Maintain Project Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for LAWA reference during normal working hours.

#### **Record Drawings**

- A. Initial Submittal: Thirty days prior to Substantial Completion, submit one paper copy set and PDF electronic files of marked-up (in contrasting color) record prints and one set of plots from corrected record digital files. LAWA will indicate whether general scope of changes, additional information, and quality of drafting are acceptable.

Additional information is to include, but not be limited to, the following:

  - a. Note requests for information, change orders, alternate numbers, and similar information, where applicable.
  - b. Measured horizontal and vertical locations of underground substructures, utilities and appurtenances, referenced to permanent surface improvements.
  - c. Measured locations of substructures, internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  - d. When substructures are encased in concrete, the outside dimensions of the encasement shall also be given.
  - e. Field changes of dimension and detail.
  - f. Details not on original Contract Drawings.
  - g. Revisions to electrical circuitry and locations of electrical devices and equipment.
  - h. Where the plans are diagrammatic or lacking precise details, the Contractor shall produce dimensioned full-sized sheets.
  - i. In the case of those Drawings which depict the detail requirements for equipment to be assembled and wired in the factory, the Record Drawings shall be updated by indicating those portions which are superseded by final Shop Drawings.



- B. Record Digital Data Files: Immediately before inspection for Substantial Completion, review marked-up (in contrasting color) record prints with LAWA. When authorized, prepare a full set of corrected digital data files of the Contract Drawings as follows:
  - a. Format to be same digital data software program, version, and operating system as the original Contract Drawings.
  - b. LAWA will furnish one digital data set of the original Contract Drawings for use in recording information.
  - c. Annotated, indexed PDF electronic files with comment function enabled.
- C. Final Submittal: Upon approval of Initial Submittal, but not less than fifteen days after substantial completion, submit one paper copy set and PDF electronic files of marked-up (in contrasting color) record prints, one set of record digital data files, and three sets of record digital data file plots. Plot each drawing file, whether or not changes and/or additional information were recorded.
- D. Identify and date each record drawing; including the designation "PROJECT RECORD DRAWING" in a prominent location.
- E. Organize record prints and newly prepared record drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

#### **Record Specifications**

- A. Mark Specifications in contrasting color to indicate the actual product installation, where installation varies from that indicated in Specifications.
- B. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
- C. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
- D. Record the name of manufacturer, supplier, installer, and other information necessary to provide a record of selections made.
- E. Submit one paper copy and a set of annotated, indexed PDF electronic files of Project Specifications, including addenda and contract modifications.

#### **Record Product Data**

- A. Equipment Summary Data Forms shall be submitted to provide LAWA Construction and Maintenance with sufficient information to catalogue newly purchased equipment items installed. This information is used for inventory purposes as well as for equipment performance tracking purposes. Each item of equipment installed must be documented on one of two forms; Electrical Summary Data Form, or Equipment Summary Data Form. Additional requirements regarding submittal format, quantities, etc, are found elsewhere in the Contract Documents.
- B. Contractors choosing not to use the Forms may submit a revised Form for LAWA approval. At a minimum the following information must be included:
  - a. Equipment item (included industry-accepted nomenclature)
  - b. LAWA Equipment Identification Number, if applicable
  - c. Manufacturer, including Address, Email, Phone/Fax Numbers
  - d. Supplier (if different than Manufacturer), including Address, Email Phone/Fax Numbers
  - e. Equipment Serial Number(s)
  - f. Equipment Model Number



- g. Size
  - h. Capacity
  - i. Rated Output
  - j. Drive Motor Data (as appropriate).
- C. Equipment Summary Maintenance Forms shall be submitted to provide LAWA Construction and Maintenance with information sufficient to properly diagnose, troubleshoot, repair, check-out, and return an item of equipment to service. In addition, Maintenance information required to troubleshoot, repair, and return electrical/electronic equipment to service (including set point, derivatives, etc.) shall be included as required. The Maintenance Summary Form attached is intended to serve as a (minimum) guide to the information required per item of equipment. Additional requirements regarding submittal format, quantities, etc. are found elsewhere in this Specification.
- D. Contractors choosing not to use the Forms may submit a revised Form for LAWA approval. At a minimum the following information must be included:
- a. Equipment Item (include industry-accepted nomenclature)
  - b. LAWA Equipment Identification Number, if applicable
  - c. Manufacturer, including Address, Email, Phone/Fax Numbers
  - d. Equipment Serial Number(s)
  - e. Weight of Individual Components (over 100 pounds)
  - f. Nameplate Data (including voltage, horsepower, lubrication requirements, speed, etc.)
  - g. Manufacturer's Local Representative, including Address, Email, Phone/Fax Numbers
  - h. Maintenance Operation(s) Required. Listing shall include Maintenance Operation to be performed and frequency of said Maintenance Operation based on actual service conditions of installed equipment (i.e., type of duty, environmental factors). Reference shall be made to the appropriate section of the manufacturer's technical literature.
  - i. Lubricant List. List shall include a primary and two secondary manufacturer-approved lubricants.
  - j. Spare Parts and phone number of the recommended source of spare parts as detailed below.
- E. Submit one paper copy and a set of annotated, indexed PDF electronic files of each Form and/or submittal.

### **Record Samples**

Not more than 30 days prior to the date of Substantial Completion, the Contractor will meet at the Jobsite with LAWA to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to LAWA for record purposes. Comply with delivery to a storage area designated by LAWA.

### **Spare Parts and Tools**

- A. Submit a Recommended Spare Parts List to LAWA sixty (60) days prior to date certified for substantial Completion. This is to be a list from the manufacturer of the Recommended Spare Parts adequate to ensure two (2) continuous years of normal operation after expiration of the equipment warranty.
- B. The Recommended Spare Parts List shall include, but not be limited to, items requiring replacement under the following conditions:



- a. Wear, corrosion, or erosion during normal operation.
  - b. Failure which causes a shutdown of equipment or systems.
  - c. Damage or breakage during routine maintenance or inspections of equipment.
  - d. Custom or specially fabricated parts, and
- C. Long lead items.
- D. Approval of the individual equipment submittal does not constitute authorization to procure the Recommended Spare Parts.
- E. The Spare Parts supplier must be the manufacturer or a factory authorized representative of the manufacturer. The manufacturer will be responsible for any default of the representative that is not corrected by the representative in a timely and efficient manner. This responsibility includes replacing incorrect or defective parts, trouble shooting, and correcting problems that are traceable to the manufacturer's parts. The supplier shall provide, along with the Spare Parts List, a formal letter of certification from the manufacturer that the supplier is an authorized representative of the manufacturer.
- F. The supplier shall be a stocking facility of the manufacturer of the proposed parts, or the manufacturer must maintain a stocking facility of these parts on the West Coast, or the supplier can guarantee delivery of spare parts within seventy-two (72) hours.
- G. The Spare Parts list shall be in addition to any other lists required under any other sections of these Specifications. This list shall include but is not limited to the following:
- a. Current prices including delivery to the Jobsite.
  - b. Original Equipment Manufacturer (OEM) part numbers, which identify interchangeability.
  - c. Make and type of equipment as well as Model number.
  - d. Size.
  - e. Supplier's address and telephone number.
  - f. Address and phone number of local representative.
  - g. Address and phone number of servicing location.
  - h. Letter of certification from the manufacturer.
  - i. Materials.
  - j. Special tools, lubricants, and/or fuels.
  - k. Estimated delivery lead times.
  - l. Warranty: State terms of warranty of spare parts offered.
  - m. Cross-sectional, exploded view or assembly-type drawing with part numbers.
  - n. Manufacturer's price list catalog.
- H. Upon approval of the Spare Parts list, and no less than thirty (30) days prior to Substantial Completion, deliver tools, spare parts, extra materials, and similar items to location designated by LAWA.
- I. The Contractor shall be responsible for proper storage and protection of the Spare Parts until delivered to LAWA.
- J. Spare Parts should be supplied in the manufacturer's original packaging and shall be new and unused. A statement shall be included to clearly indicate that the Spare Parts are new and unused.





### Technical Manuals

- A. This section includes administrative and procedural requirements for preparing technical manuals, including the following:
- a. Documentation directory
  - b. Emergency manuals
  - c. Operation manuals for systems, subsystems, and equipment
  - d. Product maintenance manuals
  - e. Systems and equipment maintenance manuals.
- B. Definitions:
- System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- Subsystem: A portion of a system with characteristics similar to a system.
- C. Submit technical manuals as required in individual Technical Specification Sections and in the following format:
- a. PDF electronic file. Assemble each manual into a composite electronically-indexed file. Submit on digital media acceptable to LAWA.
    - i. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically-linked directory.
    - ii. Enable inserted reviewer comments on draft submittals.
    - iii. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
  - b. Four paper copies. Include a complete directory. Enclose title pages and directories in clear plastic sleeves. Bind in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2 by 11 inch paper with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversized sheets.
    - i. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary.
    - ii. Identify each binder on front and spine with title, project title, subject matter of contents, and indicate specification section number on bottom of spine. Indicate volume number for multiple volume sets.
    - iii. Dividers are to be heavy paper with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components included in the section on each divider, cross-referenced to specification section number and title of project manual.
    - iv. Provide protective sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
    - v. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.



- D. Timeliness of draft technical manual submittals is detailed in the other subsections. Before final payment, the Contractor shall prepare and deliver to LAWA, four (4) each printed and two (2) each electronic copies on compact discs (CDs) of the final technical manuals. The content of the manuals is detailed in the subsections below.
- E. The manuals shall be approved and stamped by the respective Subcontractors.
- F. Submit draft copy of each manual at least 30 days before commencing demonstration and training. LAWA will comment on whether general scope and content of manual are acceptable. Correct or modify each manual to comply with LAWA comments.
- G. Include a section in the directory for each of the following:
  - a. List of documents
  - b. List of systems – list alphabetically
  - c. List of equipment – list alphabetically
  - d. Table of Contents – include for emergency, operation, and maintenance manuals
- H. Where manuals contain manufacturer's standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in tabular format, identify each item using appropriate references from the Contract Documents.
- I. Prepare a separate manual that provides an organized reference to all technical manuals. This is called the Documentation Directory.
- J. In the Documentation Directory and in each technical manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."
- K. Enable bookmarking of individual documents based upon file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel upon opening file.

### **Emergency Instructions**

- A. Content: Organize manual into separate section for each of the following:
  - a. Type of emergency
  - b. Emergency instructions
  - c. Emergency procedures
- B. Type of emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
  - a. Fire
  - b. Flood
  - c. Gas leak
  - d. Water leak
  - e. Power failure



- f. Water outage
  - g. System, subsystem, or equipment failure
  - h. Chemical release or spill
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of operating personnel for notification of installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
- a. Instructions on stopping
  - b. Shutdown instructions for each type of emergency
  - c. Operating instructions for conditions outside normal operating limits
  - d. Required sequences for electric or electronic systems
  - e. Special operating instructions and procedures during emergency

### **Operational Instructions**

- A. Content: In addition to requirements of this Section, include operation data required in individual Specification Sections and the following information:
- a. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents
  - b. Performance and design criteria if Contractor is designated design responsibility
  - c. Operating standards
  - d. Operating procedures
  - e. Operating logs
  - f. Wiring diagrams
  - g. Control diagrams
  - h. Piped system diagrams
  - i. Precautions against improper use
  - j. License requirements including inspection and renewal dates
- B. Descriptions: Include the following:
- a. Product name and model number. Use designations for products indicated on Contract Documents
  - b. Manufacturer's name
  - c. Equipment identification with serial number of each component
  - d. Equipment function
  - e. Operating characteristics
  - f. Limiting conditions
  - g. Performance curves
  - h. Engineering data and tests



- i. Manufacturer's recommended tolerances and clearances
  - j. Complete internal and connection wiring diagrams. Circuit diagrams and schematics shall be down to component level
  - k. Complete programming procedures and ladder logic documentation for all computer controlled, programmable logic controllers and automated equipment
  - l. Approved isometric drawings of piping systems
  - m. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
- a. Startup procedures
  - b. Equipment or system break-in procedures
  - c. Routine and normal operating instructions
  - d. Instructions on stopping
  - e. Normal shutdown instructions
  - f. Seasonal and weekend operating instructions
  - g. Instructions regarding load changes
  - h. Recommended "turn-around" cycles
  - i. Required sequences for electric or electronic systems
  - j. All special operating instructions and procedures
  - k. Inspection procedures
- D. Systems and Subsystems: Include exploded views and schematics of each assembly.
- E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- F. Piped Systems: Diagram piping as installed and identify color-coding where required for identification.

### **Maintenance Instructions**

- A. Product Maintenance Manuals: Include each product, material, and finish
- a. Include the following as applicable:
    - i. Product name and model number
    - ii. Manufacturer's name
    - iii. Color, pattern, and texture
    - iv. Material and chemical composition
    - v. Reordering information for specially manufactured products.
  - b. Include manufacturer's written recommendations and the following:
    - i. Inspection procedures
    - ii. Types of cleaning agents to be used and methods of cleaning
    - iii. List of cleaning agents and methods of cleaning detrimental to product



- iv. Schedule for routine cleaning and maintenance
  - v. Repair instructions – include local sources of materials and related services
- B. Systems and Equipment Maintenance Manuals: For each system, subsystem, and piece of equipment not part of a system.
- a. Include manufacturer's maintenance documentation including the following for each component part or piece of equipment:
    - i. Standard maintenance instructions and bulletins
    - ii. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly
    - iii. Identification and nomenclature of parts and components
    - iv. Include service, calibration, and lubrication requirements and standard time allotments
    - v. Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies
    - vi. Include manufacturer forms for recording maintenance
  - b. List the following information and any items that detail essential maintenance procedures:
    - i. Test and inspection instructions
    - ii. Trouble-shooting guide
    - iii. Precautions against improper maintenance
    - iv. Disassembly; component removal, repair, and replacement; and reassembly instructions
    - v. Aligning, adjusting, and checking instructions
- C. The maintenance manual letters are to be on the front cover of the Maintenance Manuals.

### **Warranty Submittals**

- A. Submit written warranties to LAWA thirty (30) days prior to date certified for substantial Completion. If Certificate of Substantial Completion designates commencement date for warranties other than date of Substantial Completion for Work, or designated portion of Work, submit written warranties upon request of LAWA.
- B. When a designated portion of Work is completed and occupied or used by City, by separate agreement with Contractor during construction period, submit properly executed warranties to LAWA within fifteen (15) days of completion of that designated portion of work.
- C. When Contract Documents require Contractor, or Contractor and subcontractor, supplier or manufacturer to execute special warranty, prepare written document that contains appropriate terms and identification, ready for execution by required parties. Submit draft to LAWA, for approval prior to final execution.
- D. Refer to other sections for specific content requirements and particular requirements for submitting special warranties.
- E. Form of Submittal: At Final Completion compile two (2) copies of each required warranty properly executed by Contractor, or by Contractor, sub-Contractor, supplier, or manufacturer. Organize warranty documents into orderly sequence based on table of contents of Project Manual.



- F. Bind warranties in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2 by 11 inch paper.
  - a. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark tab to identify product or installation. Provide typed description of product or installation, including name of product, and name, address, and telephone number of Installer.
  - b. Identify each binder on front and spine with typed or printed title "WARRANTIES," project title or name, and name of Contractor.
  - c. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.
  - d. Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide a table of contents at the beginning of the document.
- G. Provide duplicate notarized copies of warranties in operation and maintenance manuals.
- H. Execute and assemble documents from subcontractors, suppliers, and manufacturers.
- I. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of warranty on the work that incorporates the products.
- J. When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.
- K. When work covered by warranty has failed and has been corrected, reinstate warranty by written endorsement. Reinstated warranty shall be equal to original warranty with equitable adjustment for depreciation.
- L. Upon determination that Work covered by warranty has failed, replace or repair Work to an acceptable condition complying with requirements of the Contract Documents.

### **Keying Schedule**

For those areas to be operated and maintained by LAWA, within 30 days of Substantial Completion, provide key schedule for review. Make final changeover of permanent locks and deliver keys to LAWA. Advise LAWA's personnel of changeover in security provisions."

01 78 39 PROJECT RECORD DOCUMENTS

Production and maintenance of project documentation shall comply with LAWA CADD Standards.

## **01 79 00 DEMONSTRATION AND TRAINING**

### **Demonstration and Training**

#### **Demonstration, Training, and Instructions**

- A. This section includes administrative and procedural requirements for instructing LAWA and tenant personnel, including the following:
  - a. Demonstration of operation of systems, subsystems, and equipment.
  - b. Development of training programs that will identify skills and knowledge necessary to safely and efficiently operate, adjust, and maintain the project.
  - c. Training in operation, adjustment, and maintenance of products, equipment and systems.



- B. All demonstration, training, and instructional sessions will be monitored and approved by LAWA. Any session or portion thereof deemed unsatisfactory, based on evaluation of the training shall be repeated by the manufacturer or manufacturer's representative at no additional cost to LAWA.
- C. When deemed appropriate by LAWA, field instruction to LAWA and/or tenant personnel designated to receive training may be acceptable as a training session. The instruction shall be provided by a field service technician qualified to perform corrective or preventive maintenance, troubleshooting, or related field services.
- D. Training shall be conducted so that home study will not be required. The training shall include courses, which combine classroom and field hands-on training that is structured and scheduled to facilitate trainee comprehension of the subject material. Courses shall be continuous, and the field training shall immediately follow the classroom instruction.
- E. LAWA reserves the right to videotape any and all training materials and presentations, except for proprietary material, and retain all rights for usage of such recorded material for future training sessions.
- F. Refer to Technical Specifications for specific requirements for demonstration, training, and instruction of operation adjustment, and maintenance of products, equipment, and systems as specified in other Sections.
- G. In addition to the requirements specified in other Sections, the Contractor must, at a minimum, perform the following tasks:

#### **Development of Program**

- A. With the exception of safety and overview training, training shall be divided into separate categories for operations training and maintenance training with maintenance training further broken down to specific crafts.
- B. No actual operations training of a piece of equipment will be permitted until the equipment is properly installed and is operational.
- C. Operations training shall be a prerequisite to the beneficial use of the facility or any portion thereof and be completed a minimum of one week prior to the beneficial use.
- D. Maintenance training shall occur after and within thirty (30) days of the beneficial use.

#### **Training Program Submittals**

- A. The Contractor shall provide the training submittals in the following order for review and approval by LAWA.
  - a. First Draft sixty (60) days prior to proposed instruction date.
  - b. Final Draft thirty (30) days prior to proposed instruction date.
- B. The "First Draft" of the training material shall, as a minimum, contain the following:
  - a. Instructional text that details the specific topics of training for the system. These topics are detailed below. All text must be complete. Incomplete sections, paragraphs, etc., shall not be acceptable.
  - b. Power Point, Media Player, and any other type of visual training aid that will be used in conjunction with the training plan.
  - c. Reference materials as detailed in the lesson plan (e.g. handout, manufacturer catalogues, brochures, and pamphlets). All material shall be reviewed by LAWA to determine applicability and functionality. Reference materials that do not pass this review shall be modified and resubmitted within two weeks for approval.





- d. No actual classroom or field training shall be scheduled unless this material is approved.
  - e. The Contractor shall not proceed to the "Final Draft" stage of training material until LAWA has approved the "First Draft".
- C. With the final draft of the training material, the Contractor shall submit a Training Agenda that provides the following information:
- a. Company name, address, and telephone number(s) for the vendor.
  - b. Name and telephone number(s) of the vendor training representative.
  - c. Duration of class (total hours).
  - d. Breakdown of class and duration in hours of each training activity.
  - e. Target audience (e.g. operators, maintenance personnel etc).
  - f. Audiovisual requirements.
- D. After the Contractor has received approval of the "Final Draft" of the training material and the training agenda from LAWA, only then can the actual training be scheduled. Contractor shall submit his proposed training schedule to LAWA for approval. The proposed training schedule shall be submitted a minimum of sixty (60) calendar days prior to the start of the training. If the proposed training schedule is approved, then it becomes the final training schedule.
- E. Any compensation that is paid to LAWA personnel as a result of class cancellations of classes that begin more than thirty (30) minutes after the scheduled start time shall be reimbursed to LAWA by the Contractor. An exception is when a class is canceled or delayed due to actions by LAWA. LAWA will monitor the starting times of scheduled classes.
- F. The review of the training material does not constitute its approval unless specifically stated so. The training material submittal shall contain, but not be limited to, the following:
- a. Sufficient background information on each instructor for various sessions shall be provided to allow evaluation of the proposed instructor's qualifications and his capability of training the specific discipline.
  - b. At the completion of the training, the Contractor shall forward to LAWA one complete electronic set of training materials and support material for each defined training category.

### **Demonstration**

- A. Four (4) weeks prior to date of occupancy, submit for LAWA's approval, a proposed outline of demonstration program including a schedule of proposed dates, times, length. Demonstration shall include, but not limited to, the following procedures:
- a. Start-up
  - b. Shutdown
  - c. Emergency Operations
  - d. Noise and vibration adjustments
  - e. Safety procedures
  - f. Economy and efficiency adjustments
  - g. Effective energy utilization
- B. Demonstrate products, systems, and equipment to LAWA-specified personnel two (2) weeks prior to date of occupancy.



- C. For each demonstration, submit list of participants in attendance.
- D. Provide two copies of video tape of each demonstration and instructions session.
- E. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- F. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- G. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at equipment location.
- H. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

### **Operational Training**

- A. Manufacturer supplied (VENDOR) equipment training for all major equipment and subsystems shall be provided.
- B. The VENDOR training shall be provided by qualified instructors of the equipment manufacturers, (i.e., equipment field startup technician or their representative), as approved by LAWA and may include both on and off-site training venues. Generally, manufacturer sales representatives will not be acceptable.
- C. Classroom training shall be structured to develop a basic understanding of the design, function and capabilities of the equipment and the interrelationship with the process. In addition, routine operational and preventive maintenance, safety considerations, responses to abnormalities and startup, shutdown and troubleshooting will be covered.
- D. Field training shall be scheduled to commence immediately following the classroom training and shall stress hands-on, performance based application of the classroom training.
- E. Equipment shall be started and relevant systems and components shall be demonstrated.
- F. Training schedule: The Contractor shall provide an operation and maintenance training schedule to be conducted immediately following vendor equipment startup of the equipment.

### **Maintenance Training**

- A. The maintenance training shall include the function, adjustment, repair, and replacement of all components related to the trainee's trade. Safety aspects shall also be stressed.
- B. The training shall include, but not be limited to, the following:
  - a. Preventive and corrective maintenance procedures, including replacement of parts; lubrication quantities, types, frequencies, and application points; and an estimate of time to perform such procedures.
  - b. Special tools, techniques, or procedures required for either preventive or corrective maintenance of equipment, or its auxiliary or support systems.
  - c. Procedures to perform adjustments required for alignment, wear and calibration for all preventive and corrective maintenance, and an estimate of time required to perform such procedures.
  - d. Assembly and disassembly procedures, including parts lists required for appropriate preventive and/or corrective maintenance.
  - e. Maintenance, overhauls, troubleshooting of equipment, and auxiliary or support systems.



- C. Models, "exploded" views, and/or audiovisual materials shall be used for this training. These materials shall be turned over to LAWA upon completion of training.
- D. Hands-on field training shall be provided, subject to the approval of LAWA."

## **01 80 00 PERFORMANCE REQUIREMENTS**

### **01 81 00 FACILITY PERFORMANCE REQUIREMENTS**

#### 01 81 13 SUSTAINABLE DESIGN REQUIREMENTS

**LAWA Sustainable Requirements** (see [QuickLinks: Sustainability, CalGreen, and LEED](#)).

## **01 90 00 LIFE CYCLE ACTIVITIES**

### **01 91 00 COMMISSIONING**

#### **ACTIVATION AND TURNOVER**

"The Design Engineer shall coordinate all of its efforts under this section with LAWA's designated Facility Activation Team. At a minimum, coordination meetings are to be held monthly for the six months prior to Substantial Completion and increase to weekly during the period two months prior. The activities outlined in Commissioning Sections are to be scheduled in concert with LAWA's Facility Activation Team Scheduler."

#### **COMMISSIONING**

##### **Fundamental Commissioning**

[NOTE: THE SECTION IS TO BE MODIFIED AS APPROPRIATE, FOR BASIC COMMISSIONING OF ANY SYSTEM OR BUILDING, THESE REQUIREMENTS ARE NOT INTENDED FOR LEED CERTIFICATION or CERTIFICATION UNDER CALGREEN.]

##### **General**

- A. This section includes administrative and procedural requirements as well as a detailed description of LAWA's basic commissioning process. This section supplements other Division 1 Commissioning Sections and applies to all Contract Sections that specify testing of components and systems.
- B. Basic Commissioning is intended to achieve the following objectives:
  - a. Verify that applicable equipment and systems are installed according to the manufacturer's recommendations and to industry accepted minimum standards and that they receive adequate operational checkout by installation contractors.
  - b. Verify and document proper performance of equipment and systems.
  - c. Verify that Operations and Maintenance (O&M) data is complete.
  - d. Verify that LAWA's operating and maintenance personnel are trained in accordance with the specifications.

##### **Definitions**

- A. Commissioning Process: A systematic process which verifies that the building systems perform interactively according to the Design Intent Document. The commissioning process coordinates system documentation, equipment startup, control system calibration, testing and balancing, performance testing and training.
- B. Commissioning Authority (CA): An entity contracted by the City that plans, schedules, and coordinates the Commissioning Team to implement the Commissioning Process.



- C. Commissioning Plan: A document that provides the structure, schedule, and coordination for the commissioning process.
- D. Design Intent Document: A written document that details functional requirements of the Project including expectations of how the Project will be used and operated. The Design Intent Document includes design goals, measurable performance criteria, success criteria, and supporting information.
- E. Functional Test (FT): A documented test of the dynamic functioning and operation of equipment and systems with the goal of verifying that the Design Intent is met. Test requirements are included in these specifications. Test procedures are developed and results documented by the Commissioning Authority. Test procedures are completed by the Contractor in the presence of LAWA's Facility Activation Team.
- F. Pre-functional Checklist (PC): A written checklist that includes checks and tests prerequisite to the equipment's Functional Test. Draft checklists are included in the specifications. The Commissioning Authority assists the Contractor in finalizing the checklists. The Checklists are completed by the Contractor and verified by the Commissioning Authority.
- G. LAWA Activation Team: LAWA's Facilities Management Group has identified a specific group of engineers, maintenance, and tenant staff who are responsible for ensuring that LAWA standards are met and that the project can be turned over to the owner for its immediate successful operation and maintenance.
- H. LAWA Commissioning Checklists: LAWA's Facilities Management Group utilizes standardized check lists for a variety of building systems and equipment. These check lists will be used by the Commissioning Authority in developing the FT and PC. These lists will also be used by LAWA's Facility Activation Team.

### **Meetings**

In order to comply with LAWA Basic Commissioning Requirements, the following meetings are to be held at a minimum. Refer to Contract Specifications for requirements specific to the project.

- A. At least one Pre-Commissioning Meeting to be held within 60 days of Construction Notice to Proceed: Conducted by LAWA during which the CA and the LAWA Activation Team reviews the commissioning process with the commissioning team members. Attendance is mandatory for the following team members:
  - a. Commissioning Authority
  - b. Contractor's Site Supervisor
  - c. Contractor's Project Scheduling personnel
  - d. Mechanical sub-contractor
  - e. Electrical sub-contractor
  - f. Air Balance sub-contractor
  - g. LAWA Construction and Maintenance representative
  - h. LAWA Activation Team representative
  - i. Inspector
- B. Coordination Meetings: Attend meetings throughout construction, scheduled by LAWA, to plan, coordinate, schedule future activities, and resolve problems.
- C. Start-up Plans: Work with the CA and the LAWA Activation Team to develop startup plans and startup documentation formats, including pre-functional checklists.



- D. Equipment Start-up: Utilize start-up plans to coordinate equipment start-up, manufacturers' testing, and other required testing to minimize duplication of work.
- E. Testing, Adjusting, and Balancing: Coordinate testing, adjusting, and balancing with the CA and the LAWA Activation Team so that they can witness the processes.
- F. Functional Testing: Coordinate functional testing with the CA and the LAWA Activation Team so that they can witness testing.
- G. Training: Coordinate training of LAWA and tenant staff with CA and the LAWA Activation Team so that they can verify that training is conducted per commissioning requirements.

### **Systems**

- A. The following systems will be commissioned:
  - a. Irrigation System and Controls
  - b. Building Envelope Systems
  - c. Roofing System, Exterior Insulation, Windows and Doors Installation
  - d. HVAC Systems and all integral equipment controls
  - e. Domestic Hot Water Heaters/Boilers Distribution System
  - f. Plumbing Fixtures Controls
  - g. Packaged Rooftop AC Units and Controls including fans, power exhausters, economizers, dampers, UVC lights, variable speed drives, heaters, humidifiers, CO2 sensors, and controls.
  - h. Split AC and Heat Pump Units: Including fans, dampers, UVC lights, variable speed drives, heaters, humidifiers, CO2 sensors, and controls.
  - i. Gas Fired Unit Heaters and Controls
  - j. HVAC Ducts and Duct Accessories
  - k. Exhaust Fans and Controls
  - l. Air Inlets and Outlets
  - m. Electrical Systems
  - n. Lighting System and Controls: Including sweep or scheduled lighting controls (weekday, weekend, and holiday schedules); lighting occupancy sensors, photo sensors and controllers (indoors and outdoors).
  - o. Building Service and Distribution.
  - p. Automatic Transfer Switches.
  - q. Fire Alarm and Detection System.
  - r. Emergency Generator (Generator will be tested with load bank connected at various percentages up to full KVA rating).
  - s. Uninterrupted power supply (UPS).
  - t. Automatic roll-up door and control.
  - u. Automatic door and gate operators and control

### **Testing**

- A. Complete the following prior to functional testing:



- a. Arrange for commissioning observations to be performed by the Commissioning Authority (CA) and LAWA Activation Team.
  - b. Complete and approve the Start-up Plan.
  - c. Correct deficiencies identified during start-up.
  - d. Record pretest set points.
- B. Perform functional testing after the test requirements listed above are completed.
- C. Perform functional testing under the observation of the CA and LAWA Activation Team who will record the results of the functional test procedures.
- D. Perform all specified tests according to approved testing procedures.
- E. Verify and test performance using actual conditions whenever possible.
- F. Simulate conditions by imposing an artificial load when it is not practical to test under actual conditions and when written approval for simulated conditions is received from LAWA. Before simulating conditions, calibrate testing instruments. Set and document simulated conditions and methods of simulation. After test, return settings to normal operating conditions.
- G. Alter set points when simulating conditions is not practical and when written approval to do so is received from LAWA.
- H. Overwrite sensor values with a signal generator when actual or simulated conditions and altering set points are not practical. Do not use the sensor to act as the signal generator to simulate conditions or overwrite values.
- I. The CA and LAWA Activation Team will review and approve functional testing results.
- J. Deficiencies found during testing shall be corrected by the Contractor and retested.
- K. Where there is a dispute over a deficiency, LAWA shall be the final authority.
- L. Problem Solving: The CA will recommend solutions to problems found; however, the burden of responsibility to solve, correct and retest problems is with the contractor and the design team.
- M. Costs for retesting beyond one retest will be the responsibility of the Contractor, if LAWA determines that the contractor is responsible for the deficiency. These costs shall include charges for the CA's time, LAWA Activation Team Members, Engineer and Inspector.
- N. For a deficiency identified during functional testing but not included in the approved Startup Plan: The CA and LAWA Activation Team will direct the retesting of the equipment once the deficiencies are corrected. Retesting will not be considered a reason for a claim of delay or for a time extension by the contractor.
- O. Unforeseen Deferred Tests: Checks or tests not completed due to the building structure, required occupancy condition, or other condition may be delayed upon approval of LAWA. These tests will be conducted in the same manner as the seasonal tests as soon as possible.
- P. Seasonal Testing: Complete seasonal testing (tests delayed until weather conditions are closer to the system's design conditions) during the warranty period, as part of this contract. The CA and LAWA Activation Team will coordinate this activity. Tests shall be executed, documented and deficiencies corrected by the appropriate Subs, with LAWA Activation Team and the CA witnessing.
- Q. The Contractor shall make adjustments to the Operations and Maintenance Data, as necessary.



## **02 00 00 EXISTING CONDITIONS**

### **02 20 00 ASSESSMENT**

#### **02 21 00 SURVEYS**

#### **02 22 00 EXISTING CONDITIONS ASSESSMENT**

##### 02 22 23 ACCESSIBILITY ASSESSMENT

An ADA assessment may be needed to determine extent of improvement required for specific project.

#### **02 24 00 ENVIRONMENTAL ASSESSMENT**

Environmental Assessments are to be performed to ASTM standards as well as the requirements of the applicable Federal/State and Local Environmental Agencies, and LAWA.

The agencies may include one or more of the following: EPA, Cal EPA (DTSC, SWRCB)

**For LAX and VNY** - LARWQCB, LAFD, SCAQMD, and LADOT

**For LA-ONT** – Santa Ana RWQCB, San Bernardino County Fire Department, SCAQMD

##### 02 24 23 CHEMICAL SAMPLING AND ANALYSIS OF SOILS

That you shall hire a consultant to have your facilities tested to satisfy the requirements of the Los Angeles Fire Department (LAFD), the Los Angeles County Fire Department, and the Regional Water Quality Control Board pertaining to federal, state, and local laws that regulate management of hazardous materials and soil and water contamination. The test shall include the following:

- a) Pressure-testing of fuel lines to determine if any leakage is occurring.
- b) Testing of your assigned area to determine if there is contamination of the soil and/or groundwater.
- c) Taking soil borings to determine the maximum depth of contamination if soil and/or groundwater contamination is present
- d) Hiring an engineering/contracting firm to determine a remedy or solution for soil and/or groundwater contamination and to develop plans for the hauling away of any hazardous material to the satisfaction of LAWA, LAFD, the Los Angeles County Fire Department, and Regional Water Quality Control Board if your leased area is contaminated.

#### **02 26 00 Hazardous Material Assessment.**

Prior to any renovation or demolition, conduct a hazardous materials survey for asbestos, lead paint, polychlorinated biphenyls (PCB's), mercury, and refrigerants according to federal, state and local requirements. Provide a copy of the survey to the Airport Development Group (ADG) Project Manager.

##### 02 26 23 ASBESTOS ASSESSMENT

AQMD Rule 1403 requires an asbestos survey report prior to **any** demolition or renovation.

<http://www.aqmd.gov/comply/asbestos/asbestos.html>

A copy of the survey report shall be submitted to LAWA's Airport Development Group prior to the start of construction.

## **02 40 00 DEMOLITION AND STRUCTURE MOVING**

### **Removal and Disposal of Structures and Obstructions**

All structures or obstructions which are not to remain in place or to be used in the new construction shall be removed as directed by the Airport Contact.





## **02 41 00 DEMOLITION**

02 41 13 SELECTIVE SITE DEMOLITION

02 41 13.23 UTILITY LINE REMOVAL

### **Removal/ Relocation of Utilities**

- A. The Contractor shall pull out all wire from an electrical duct bank that is being abandoned and disconnect same from servicing panel.
- B. Where the proper completion of the Work requires the temporary or permanent relocation and/or removal of an existing utility, relocation and replacement work shall be performed in a manner satisfactory to LAWA.

## **02 50 00 SITE REMEDIATION**

### **02 60 00 CONTAMINATED SITE MATERIAL REMOVAL**

#### **02 61 00 Removal of Asbestos, PCB's, and Organically Contaminated Soils**

**Hazardous Waste Disposal.** That disposal of all hazardous wastes shall be done in accordance with all applicable laws and ordinances. All hazardous wastes shall be removed from LAWA property within 90 days by a registered hauler to a licensed treatment, storage, or disposal facility.

#### **02 65 00 Underground Storage Tank Removal**

**Fire Department Permits.** That you shall fulfill all other requirements of the Los Angeles Fire Department (LAFD) in compliance with Section 1, Chapter V, Article 7, of the Los Angeles Municipal Code (Fire Protection and Prevention). This includes obtaining the required Division 4 and Division 5 permits for tank registration, installation, and/or removal and may also include requirements for submittal of a hazardous business plan, to obtain hazardous disclosure certificates, and for annual renewals which are administered by the Office of the City Clerk. Copies of the permits shall be provided to LAWA's Facilities Engineering and Technical Services Division prior to the start of construction. Evidence of a current business plan shall be filed with the Facilities Engineering and Technical Services Division within 30 days of tank installation.

That you shall hire a consultant to have your facilities tested to satisfy the requirements of the Los Angeles Fire Department (LAFD), the Los Angeles County Fire Department, and the Regional Water Quality Control Board pertaining to federal, state, and local laws that regulate management of hazardous materials and soil and water contamination. The test shall include the following:

- a) Pressure-testing of fuel lines to determine if any leakage is occurring.
- b) Testing of your assigned area to determine if there is contamination of the soil and/or groundwater.
- c) Taking soil borings to determine the maximum depth of contamination if soil and/or groundwater contamination is present
- d) Hiring an engineering/contracting firm to determine a remedy or solution for soil and/or groundwater contamination and to develop plans for the hauling away of any hazardous material to the satisfaction of LAWA, LAFD, the Los Angeles County Fire Department, and Regional Water Quality Control Board if your leased area is contaminated.

**Boring Logs/ Soil Reports.** That one set of the log of borings and soils reports shall be furnished to LAWA promptly upon completion of work.

**Soil Sampling.** That all soil sampling and analysis work shall be done in accordance with the requirements of the CUPA and the Regional Water Quality Control Board.



**Underground Tank Removal Checklist.** That your contractor shall complete and submit the underground storage tank removal report in accordance with CUPA and RWQCB requirements within 30 days of tank installation and/or removal.

## **02 80 00 FACILITY REMEDIATION**

### **02 81 00 Transportation and Disposal of Hazardous Materials**

**Hazardous Waste Disposal.** That disposal of all hazardous wastes shall be done in accordance with all applicable laws and ordinances. All hazardous wastes shall be removed from LAWA property within 90 days by a registered hauler to a licensed treatment, storage, or disposal facility.

### **02 82 00 Asbestos Remediation**

Damaged and/or impacted Asbestos Containing Materials (ACM) found during renovation and/or Demolition activity will require abatement by licensed contractors and air clearance monitoring in accordance with Agency regulations including EPA, CAL OSHA, South Coast Air Quality Management District and LAFD.

ACM may be present in building materials in Terminals 2 through 8 as well as other airport building constructed prior to the early 1980's. ACM usually does not represent a health risk in an undisturbed state. However, these materials could cause a health risk if damaged or disturbed. If ACM is present, Tenant/Concessionaire and Contractors shall implement procedures to contain these materials and control disturbance. Refer to the following websites for additional information.

**Note: AQMD requires 14 calendar day advance notification of asbestos remediation.**

<http://www.aqmd.gov/rules/reg/reg14/r1403.pdf>

[http://www.dtsc.ca.gov/PublicationsForms/upload/OAD\\_FS\\_Asbestos1.pdf](http://www.dtsc.ca.gov/PublicationsForms/upload/OAD_FS_Asbestos1.pdf)

<http://www.dir.ca.gov/dosh/asbestos.html>

<http://www.aqmd.gov/comply/asbestos/asbestos.html>

### **02 83 00 Lead Remediation**

Damaged and/or impacted Lead Based Paint (LPB) found during renovation and/or demolition activity will require abatement by licensed contractors in accordance with agency regulations including EPA, CAL OSHA, and County regulations. LBP may be present in building materials in Terminals 2 through 8 as well as other airport buildings constructed prior to the mid 1980's. LBP's usually does not represent a health risk in an undisturbed state. However, these materials could cause a health risk if damaged or disturbed. If LBP or ACM are present, Tenant/Concessionaires and Contractors shall implement procedures to contain these materials and control disturbance. Refer to the following websites for additional information.

<http://www.dir.ca.gov/samples/search/query.htm>

[http://www.dir.ca.gov/dosh/dosh\\_publications/lead-fct-sheet-rev.pdf](http://www.dir.ca.gov/dosh/dosh_publications/lead-fct-sheet-rev.pdf)

### **02 84 00 PCB Remediation**

Fluorescent light ballasts which are not labeled "No PCBs" should be disposed as PCB-containing waste prior to renovation or demolition activities that might impact these materials. PCB containing fluorescent light fixture ballasts may be present in Terminals 2 through 8. Additional information may be obtained from the California EPA, Department of Toxic Substances Control (DTSC). Refer to the following website for additional information.  
[http://www.dtsc.ca.gov/Schools/upload/SM\\_FS\\_PCB\\_Schools.pdf](http://www.dtsc.ca.gov/Schools/upload/SM_FS_PCB_Schools.pdf)



Fluorescent light tubes, which may contain mercury, must be disposed of as hazardous waste or special waste. Additional information may be obtained from the California EPA, Department of Toxic Substance Control (DTSC). Refer to the following website for additional information.

[http://www.dtsc.ca.gov/HazardousWaste/Mercury/upload/EA\\_FS\\_SB633-2.pdf](http://www.dtsc.ca.gov/HazardousWaste/Mercury/upload/EA_FS_SB633-2.pdf)

#### **02 86 00 Hazardous Waste Drum Handling**

**Hazardous Waste Disposal.** That disposal of all hazardous wastes shall be done in accordance with all applicable laws and ordinances. All hazardous wastes shall be removed from LAWA property within 90 days by a registered hauler to a licensed treatment, storage, or disposal facility.

**End.**