

## 2020 Design and Construction Handbook Technical Changes

Section	Title	Specification	PDF Page No.	Change
2.01	Notes to Sponsor		19	Included references to Update Wayfinding and Signage Standards
3.01	Notes to Design Team		37	Included references to Wayfinding and Signage Standards
			37	Included references to BIM Requirements
3.05A	Mechanical Design Requirements		64 - 65	<b>Section 1.3(O):</b> Added Air Handling Unit filter sequence requirement for HVAC Packaged Roof Top Units and Central Station Air Handling Units.
			57	<b>Section 1.3(A):</b> Added requirement for submittal of BIM drawing/modeling for HVAC Graphics in the Terminal Building multilevel scheme.
3.06A	Electrical design Requirements		73	<b>Section 1.3(A)(1):</b> New Terminal buildings to require automatic switchgear with prioritized load shedding
			75	<b>Section 1.3(G)(2):</b> New Terminal buildings to require POC for temporary 2 MW generator.
			75	<b>Section 1.3(G)(3):</b> New requirement for emergency power systems telemetry to ensure system availability & readiness
			81	<b>Section 1.9(D):</b> New switchboards over 800A to require PQ Measurement window
			81-82	<b>Section 1.9(E)1&amp;2:</b> Power Quality testing & commissioning now required for terminals & buildings
			81-82	<b>Section 1.9(E)1&amp;2:</b> NEW DCH guide SPEC equipment used to parallel generators
			83-84	<b>Section 1.11(C)1&amp;4:</b> Added requirement for EVSE to comply with LEED & utilize an Energy Management System (EMS).
3.07A	Plumbing Design Requirements		89	<b>Section 1.3(A):</b> Added language requiring video inspection of waste and storm before and after construction.
3.08A	Fire Protection Design Requirements		103	<b>Section 1.4 (B):</b> Added requirement for new sprinkler heads to match existing (standard response) sprinkler heads within the same compartment per code.
3.08B	Fire Protection Equipment Quick Reference		105	Revised manufacturers to match the specifications that had already been revised in previous DCH version.
3.09	Submetering Requirements		108	<b>Table 1.0:</b> Clarify requirements to indicate TOTAL LOAD MEASUREMENT is individually required for certain systems
				Changed the title from Airport Art Lighting Requirements to incorporate additional changes.

3.10	LAWA Art Program Requirements		109-116	Incorporation of guidelines for design, fabrication and installation of art display walls, display cases, and dedicated infrastructure such as power and data.	
				Updated materials and load specifications for display case and wall design.	
			109-116	Incorporated milestones requiring Art Program design approval of art site prior to 60% and 90 / 100% architectural design submittal.	
3.15	IT Design Requirements		137	<b>Section 1.2(A)(4):</b> Updated type of chain link dividers to be used when required.	
3.19	Asset Naming Requirements		183, 184	<b>Sections 1.1 and 1.3(7):</b> Revised requiring coordination with AMD to establish asset names for renovation projects.	
			185-194	<b>Table 1.2:</b> Classifications were updated	
3.20	FMCS Design Requirements		195-198	Changed location from Chapter 9.11 to 3.20 with updated information for designers and contractors.	
4.01	General Requirements	01 32 00 - Construction Progress Documentation	213	Added language requiring a submittal log to ensure all documents are received on closeout.	
			01 35 33 - Environmental Procedures	216-217	<b>Section 1.5:</b> Revised to include additional measures for dust control, including signage, vehicle monitoring, reclaimed water for construction activities, etc.
				218	<b>Section 1.8 (A):</b> Added requirement to use grid-based electric power, where feasible.
			01 78 00 - Closeout Submittals	237	Updated requirements for O&M deliverables.
				242, 239, 247	Added language to specify 3D model deliverables.
		08 11 13 - Hollow Metal Doors	307	<b>Section 2.3(A)(4):</b> Revised to reflect a reduction in size to the allowable tolerance for door reveal around jamb from "no more than 3/16" to "plus of minus 1/32".	
			308	<b>Section 2.3(A)(4):</b> Added items 9. Door kick plates must be installed on all hollow metal doors with exit devices.	
			308	<b>Section 2.3(A)(4):</b> Added item 10. All Perimeter and stairwell doors must have vision lights (Standard LAWA size of 6" x 27").	
			312	<b>Section 2.6(B):</b> Revise note to modify storefront door stiles from 6" to "6 to 8". Revise size of top rail from 6" to 8". Revised size of mid rail from 6" to 8". Added the following note, "Exit device to be centered in the mid rail."	
			312	<b>Section 2.7(C)(2):</b> Added note 2. "Hollow metal doors that require internal stiffening will require additional hinge welding and backing beyond standard tack welding. Also, door frames to have additional 7 gauge hinge welded backing to accommodate for additional weight. Hollow metal doors shall not be steel stiffened internals, for safety of maintenance."	
			313	<b>Section 3.1(A):</b> Added new notes. "All doors and frames shall be ordered job and project specific. Doors and frame modifications shall not be performed in the field without LAWA's consent. Modifications to existing or new doors or door frames that are fire rated must be re-certified by an approved UL certified entity."	
			313	<b>Section 3.1(B)(1):</b> Added new notes. "Frame cross-sight not to exceed 3/16" in 84" for proper door and lock function."	

4.08	Openings	08 11 19 - Stainless Steel Doors And Frames	320	<b>Section 2.4(A):</b> Added note 15 "Door reveals to be 1/8" plus or minus 1/32" no more, no less."
		08 42 29 - Sliding Automatic Entrances	341	<b>Section 3.2(A):</b> Added notes "All doors and frames shall be ordered job and project specific. Doors and frame modifications shall not be performed in the field without LAWA's consent. Modifications to existing or new doors or door frames that are fire rated must be re-certified by an approved UL certified entity."
		08 71 00 - Door Hardware	348-349	<b>Section 2.1:</b> Modified hardware schedules to add the word "wide" after 36" for all hinged door types. Also added the words " wide or larger than 84" tall" for all hinged door types with 4 hinges.
			353	<b>Section 2.7:</b> Added note 14. "Concealed door closures including floor/door or frames are prohibited."
			353	<b>Section 2.8(B):</b> Added notes "Kick plates on double doors shall be mounted ½" from edge where two doors meet."
			353	<b>Section 2.8:</b> Added note C. "C. Custodial rooms, hopper rooms, and restroom doors me be provided with a "top-cap"."
			353	<b>Section 2.9(D)(1):</b> Revised to eliminate the use of wall mounted door stops on all doors except toilet partitions.
			353	<b>Section 2.9(D):</b> Added note 3. "The use of door limiting arms that are surface mounted and not mortised into door and frame is prohibited."
			354	<b>Section 2.9(E):</b> Added note 4. "4. Exterior doors must contain sweeps to protect against vermin and weather."
			354	<b>Section 2.9(F):</b> Added note 5. "5. Exterior door thresholds shall slope down and away from door to the outside and must be caulked to substrate."
			354	<b>Section 2.9(5):</b> Added note I
			354	<b>Section 2.9(5):</b> Added note J
			354	<b>Section 2.9(5):</b> Added note K
			355	<b>Section 3.2 B:</b> Added notes "All doors and frames shall be ordered job and project specific. Doors and frame modifications shall not be performed in the field without LAWA's consent. Modifications to existing or new doors or door frames that are fire rated must be re-certified by an approved UL certified entity."
			356	<b>Section 3.2:</b> Added note F. Grinding of any door hardware strike plate is prohibited.
			356	<b>Section 3.2:</b> Added note G . All elevator vestibule doors that are fire rated must be installed with Magnetic hold-open devices.
			4.09	Finishes
09 30 00 - Tiling	375	<b>Section 2.2(B)(1)(c):</b> Replaced obsolete model with current model for waterproofing.		

		09 67 00 - Fluid Applied Flooring	429-432	Added the option for electronic testing by a third party QC entity.
4.10	Specialties	10 44 13 - Fire Extinguisher Cabinets	478	<b>Section 2.2(I)(2)(a):</b> Updated Application Process and Lettering to comply with LAFD requirements.
			478	<b>Section 2.3(A):</b> Required cabinets to be constructed without locks per LAFD requirements.
4.14	Elevators, Escalators, and Moving Walkways	14 31 00 - Escalators	567	<b>Section 2.2(D):</b> Updated thickness of glass to 10 mm with anti-shatter construction. Indicated all glass escalators shall be protected at the base with guard / curb at upper and lower landings.
			573	<b>Section 2.3(G)(8):</b> Provided guard specs to protect the glass escalator at the upper and lower landings and to not impede required clearances.
4.22	Plumbing	22 05 29 - Hanger & Supports for Plumbing Piping & Equipment	678	<b>Section 2.5(D):</b> Added to include preformed deck sleeves
		22 11 00 - Facility Water Distribution	734	<b>Section 2.1(A)(2)(a):</b> Corrected the ASTM standard for flux to ASTM B813.
		22 40 00- Plumbing Fixtures	797	<b>Section 2.8:</b> Removed the word recessed to comply with industry as there are no push button and recessed bottle filling stations available. Provided clarity to maintain refrigeration of drinking fountains and bottle filling stations.
4.23	HVAC	23 57 00 - Heat Exchangers for HVAC	986	<b>Section 1.2(A):</b> Removed the requirement for a Research Report or approval Letter from LADBS.
		23 05 13 - Common Motor Requirements for HVAC Equipment	826	<b>Section 2.3(G):</b> Added requirement to provide shaft grounding device to bearings in this specification to match existing DCH Guide Spec 23 74 13 Indoor/ Outdoor Central Station AHU requirements.
		23 36 00 Air Terminal Units	964, 965	<b>Section 2.1 (I) and 2.2 (G.5):</b> Added voltage requirement to maintain 120 V for all terminal air units.
		23 81 23 - Computer Room Air Conditioners	1069, 1070	<b>Section 2.1(P):</b> Updated ASTM standard reference for acid salt spray test for the coating of the condenser coils.
		23 81 26 - Split System Air Conditioners (Ducted)	1074	<b>Section 2.3(D):</b> Updated ASTM standard reference for acid salt spray test for the coating of the condenser coils.
		23 81 27 - Ductless Split System Air Conditioners	1078	<b>Section 2.3(D):</b> Updated ASTM standard reference for acid salt spray test for the coating of the condenser coils.
		26 05 19 - LV POWER CONDUCTORS	1171	<b>Section 3.3 (A) &amp; (B):</b> Only continuous color (WHITE/GRAY) for GROUNDED CONDUCTOR insulation
			1171	Corrects code LAWA language that is not code compliant for identification of grounded conductor
		26 05 27 - GROUNDING & BONDING	1172	Added requirement for MAIN elec rooms to have main grounding bus bar
		26 05 54 -IDENTIFICATION FOR ELECTRICAL SYSTEMS	1207	<b>Sections 2.1(F):</b> Electrical sub meters to require nameplates
			1208	<b>Section 2.6(A):</b> Brass Tags for grounding electrodes
		26 05 73 - SHORT CIRCUIT STUDY	1212	<b>Section 1.2(A)(5):</b> Provide LAWA original "native" files used for modeling short circuit & analysis
			1214	<b>Section 1.3(E):</b> Short circuit & overcurrent protection study to be signed by PE

4.26	Division 26	26 05 73 - ENCLOSED BUSWAYS	1212, 1214	Sections 1.2 (A)(5) & 1.3(E)(7): Provide original files for Arc Flash & Short Circuit Studies
				Sections 1.2 (A)(5) & 1.3(E)(7): Provide LAWA original "native" files used for modeling short circuit & analysis
		26 08 00 - Electrical Commissioning	1217	Section 1.1(A)(9): New Terminal buildings to require automatic switchgear with prioritized load shedding
				Section 1.1(A)(10): NEW DCH guide SPEC equipment used to parallel generators
				Section 1.1(A)(25): Power Quality testing & commissioning now required for terminals & buildings
				Section 3.2: New Terminal buildings to require automatic switchgear with prioritized load shedding
				Section 3.3: NEW DCH guide SPEC equipment used to parallel generators
				Section 3.4: Power Quality testing & commissioning now required for terminals & buildings
		26 23 00 - METAL ENCLOSED DRAWOUT SWITCHGEAR-LV	1299, 1307, 1308, 1309, 1310	Sections 1.1, 2.8A, 2.9D, 2.14, 3.1(D)(1), 3.4: New Terminal buildings to require automatic switchgear with prioritized load shedding
		26 23 13 - GENERATOR PARALLELING SWITCHGEAR	1312-1343	NEW DCH guide SPEC equipment used to parallel generators
		26 25 00 - ENCLOSED BUSWAYS	1359	Section 2.2(D)(1): Clarify sizing requirements for enclosed busway neutral & grounds
		26 32 13 - ENGINE GENERATORS	1392	Section 1.3(B): Submittals to include GENSET sizing software report & native files.
			1392	Section 1.3(B): Generator submittals to include detailed sizing report
		26 51 00 - Interior Lighting	1426	Section 2.2: Indicated Light Loss Factors (LLF) representative of LED's
4.27	Division 27 - Telecommunications	27 21 00 - Local Area Network	1531	Section 1.1: This section provide general summary update of Cisco latest approved network devices for switches, firewall, uplink modules for bandwidth requirement, and power supplies specifications
			1532-1533	Section 1.1 (I) Under NOTE (2) Add the requirement for network switch ports and network setting of devices connected to LAWA network shall be assigned by LAWA Network Staff. All IP address assignments shall comply with LAWA IP addressing scheme
			1535	Section 1.4 (A) (2): Change the description of switch line card from blades and add/modify new uplink modules to the list
			1537-38	Section 2.1 (A-E): Like Section 1.1, provide detail description of Cisco latest approved network devices for switches, firewall, uplink modules for bandwidth requirement, and power supplies specifications
			1538	Section 2.4: Provide update of Cisco latest approved distribution switch model and related line cards from C6800 to C9600.
			1546	Section 1.3(B) (4): Added the submission of Wireless Riser diagram.
		Section 1.3(B) (6): Added the submission of proposed Wi-Fi system, AP locations, bandwidth(s) requirement and usage to LAWA for approval.		
		Section 1.3(B) (7): Added the submission of floor plans with heat maps overlaid that show the results of predicative analysis modeling to indicate areas of coverage and extrapolated signal strength for LAWA review and approval. The heat map files shall be in Ekahau's ".esx" format.		

		27 21 33 - WIRELESS COMMUNICATION SYSTEM – WI FI	1547	Section 1.5(B): Added the list of current approved Wi-Fi equipment
			1549	Section 2.1(C): Specified the design and placement of the APs
			1550	Section 2.2(A): Defined locations at ultra high density definition
				Section 2.3(A): Defined locations at high density definition
				Section 2.4(A): Defined locations at medium density definition
				Section 2.5(A): Defined locations at low density definition
			1553-1554	Part 4: Defined requirement for the equipment and installation of Bluetooth Low Energy (BLE) Beacons in the terminals and/or LAWA facilities.
			1556	Section 5.5(C): Defined requirement for the connection of Ethernet network patch cable to the APs.
7.02(A)	Sustainability		1942	Section 1.2(A)(6): Added emissions requirements for equipment I vehicles used during construction
			1943	Section 1.2 (C): Added aircraft parking requirements for power and air
			1945	Section 1.3(A)(1)(d): Added requirement to design large buildings to be compatible with reclaimed water
			1942-1945	Revised links and contact information
7.02(C)	LID		1957-1958	Removed SUSMP as it has been taken over by LID and included clarification on LID requirements at LAWA.
8.12	Asset Data E-Form		-	Additional Classifications added
9.13	LAX Terminal Core and Façade Design Requirements		2 , 39, 43-48, 50, 58	Clarification notes added throughout the document.
			25 & 28	Added call outs on faced type elevation referencing note 8 at the departure and arrival storefront glazing systems.
			27	Facade/glass/ metal panel type pages consolidated for clarity, revised MT-02 paint color number and name, added notes 8 & 9, added call outs on faced type elevation referencing note 8 at the departure and arrival storefront glazing systems.
			42	Façade type II detail tags added
			49	Frit pattern updated (previously issued as v4 addendum)
			61	New page added on escalator for clarity
			70,72,73	Finish material revised
9.14	LAX Terminal Wayfinding Requirements - CHANGE TO "LAWA WAYFINDING & SIGNAGE STANDARDS"		All	Addition of Comprehensive Signage Standards - AND CHANGE TITLE TO "LAWA WAYFINDING & SIGNAGE STANDARDS" (LAX tenant signage standard to be updated next DCH)
9.17	Asset Data Dictionary		All	Additional Classifications added
		LAWA BIM Standards Procedure	-	Removed and Replaced with How to Guide
		Vol 1-LAWA BIM Overview	-	Removed and Replaced with How to Guide.
			-	Moved "LAWA Utility As-Built Survey Standards" to LAWA BIM Standards and became VOL 1-LAWA Survey Standards.
			-	Split the document into two sections. Section A: Survey Data Capture (for land surveying, Lidar scanning etc.) and Section B: Survey Data Capture for Utilities

10.01	BIM, Data, and Drawings Requirements	LAWA Utility As-Built Survey Standards	4	Added Section 2 LAWA Survey. Includes Survey Point naming, Survey Deliverables for Cogo Points and Permanent Survey Markers.
			8 & 9	Added Section 3 Topo Survey Civil 3D Delivery guidelines and Section 4 basic requirements for Lidar deliverables.
		Vol 2- BIM Requirements	1	An Overview was added to introduce the LAWA BIM Execution Plan and LAWA LOD Matrix
			-	Sections 4-9 were rearranged and simplified to provide clarity and continuity.
			13-16	Added new requirements to Civil 3D modeling in Section 6.
			13-14	Section 6.9 was added to standardize a naming convention for Utility data collected by the design teams.
			17	Section 10 Delivering CADD Data to LAWA was updated to describe where to upload CAD files and at what frequency. In addition, section 10 was moved to Section 8.
			21	Section 10.6 (in the new version) was added to describe design collaboration requirements in LAWA's BIM 360 for every new project.
			22	Specifies numbering convention for drawing sheets.
			26	Instructs designers to name equipment in the Revit model following the LAWA FMUG FSC_ID convention
			34-36	Adds LAWA-specific Quality Control procedure for models using the LAWA Model Checker
			All	Language trimmed for brevity
		Vol 3- LAWA BXP	12	"BIM and Facility Data Requirements" Section was added to specify cBIM requirements.
			All	Language trimmed for brevity
10.02	IT Data and Drawing Requirements	zip files / templates		Replaced zip files with GIS_TTLBlock_template.zip. and Titleblock-AllSizes.zip.