



John Wayne Airport Construction Standards

Version 1.2

August 2019

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1. Construction Standards Overview

The John Wayne Airport (JWA) Construction Standards (CS) apply to all construction projects at JWA and properties associated with JWA, whether implemented by JWA, the County of Orange, tenants, or concessions.

1.1. Purpose

JWA strives to maintain safe and pleasant operating facilities during any development. This requires all projects to maintain clean, safe, and, when working around our guests, hidden work sites that do not attract attention from the general public, media, and staff. In addition, Contractors must meet JWA quality standards detailed in this document and must implement necessary standard practices during development to provide JWA with quality final products. This document provides direction in performing work at JWA while fulfilling the aforementioned requirements. JWA may, at any time, alter the requirements of this document based upon the requirements of each project. Requests for Exceptions from specific requirements of this document shall be formally submitted to JWA for approval.

1.2. Acronyms and Abbreviations

A/E	Architect/Engineer
Airport	John Wayne Airport
AOA	Airport Operations Area
BIM	Building Information Model
CAD	Computer Aided Design
CBC	California Building Code
CEP	Construction Execution Plan
CM	Construction Manager
CS	Construction Standards
FAA	Federal Aviation Administration
FIS	Federal Inspection Station
IDF	Intermediate Distribution Frame
JWA	John Wayne Airport
LSR	Location Shutdown Request
MDF	Main Distribution Frame
NOC	Notice of Completion
PIC	Project Implementation Criteria
PM	Project Manager
PPE	Personal Protective Equipment
QA	Quality Assurance
QC	Quality Control
QCP	Quality Control Plan
RFI	Request for Information
SIDA	Secure Identification Area
TSA	Transportation Security Administration
USR	Utility Shutdown Request

1.3. Feedback and Inquiries

All questions and comments related to these standards should be addressed in writing and directed to:

Leo Tang
County of Orange
John Wayne Airport
3160 Airway Avenue
Costa Mesa, CA 92626
LTang@ocair.com

2. General

2.1. Applicability

The Construction Standards apply to any and all projects occurring at JWA, including those executed by County of Orange, JWA, tenants, concessions, and non-occupying vendors (e.g. artists constructing art pieces, advertising vendors installing advertising systems, etc.).

2.2. Revisions to the Construction Standards

JWA is open to feedback regarding the Construction Standards. In some cases, exceptions may be required in order to accommodate special conditions and in other cases, the standards may be lacking sufficient requirements to properly maintain quality and the appropriate guest experience. JWA welcomes adoption of new techniques, criteria, procedures, and any other requirements. As such, the Construction Standards may be revised from time to time without prior notice to enhance safety, utility, and quality. Contractors are required to conform to all revisions.

Document Revision Reference Table		
Version	Change Notes	Effective Date
1.0	Internal review version	July 1, 2019
1.1	Internal revision	July 17, 2019
1.2	First release	August 29, 2019

2.3. Code Compliance

JWA facilities, such as the terminals, parking structures, and fire station, are designed to California Building Code (CBC) essential facilities standards as a risk category IV structure with an importance factor of 1.5.

All projects must comply with the most current applicable codes, standards, regulations, and ordinances in place at the commencement of construction. These codes and regulatory agencies include, but are not limited to:

- Americans with Disabilities Act
- California Building Code
- CalTrans
- Code of Federal Regulations
- County of Orange Ordinances
- Federal Aviation Administration
- JWA Standards, including Tenant Guidelines, CAD Standards, and BIM Standards
- National Fire Protection Association
- Occupational Safety and Health Administration of the United States

- U.S. Environmental Protection Agency
- U.S. Department of Fish and Wildlife

Projects found to be non-compliant with code will be cited and Contractors will be required to remediate non-compliant conditions. Contractor will be responsible for all costs incurred by JWA caused by non-compliance. Amounts required to remediate non-compliant conditions will also be withheld from Payment Applications until issues are resolved, inspections are completed, and approvals are received from JWA.

3. Construction Standards

3.1. General Standards and Prohibitions

- Powder actuated fasteners are prohibited at JWA.
- Elevators may not be utilized to move equipment between levels.
- All personnel must comply with Federal, State, and Local regulations for airport security. Tools that are transported and utilized in the sterile areas can only be left in sterile areas if secured inside locked tool boxes and chests located within secured (i.e. locked) work areas.
- Contractors must provide their own equipment, office furnishings, and supplies for personnel, including computers, cell phones, radios, hot spots, and other equipment necessary for work. Connectivity will not be provided by JWA. Upon completion of project, Contractor shall vacate premises and remove all furnishings, equipment, and supplies.
- Only non-combustible material (i.e. no timber/wood) shall be used for both non-structural or structural elements, unless otherwise specifically approved by JWA. If approved by JWA, such materials shall only be for non-structural elements and must be fire retardant treated.
- When dissimilar metals are in contact (e.g. aluminum and steel), dielectric separators/barriers along with bi-metal fasteners and connections shall be provided to avoid galvanic corrosion.
- Vertical non-structural and structural elements within the airport facilities shall satisfy the drift or displacement requirements stipulated within the current and adopted governing codes for the State of California, but not more than L/240 or 1% of the non-structural and structural element height.
- All equipment and components designated as seismic systems that are subject to the requirements of ASCE 7-10 13.2.2 or are specifically identified to remain operable after the design earthquake shall require special seismic certification.

3.2. General Scheduling

JWA has ongoing, separate projects that may be underway during the implementation of this project. It will be the responsibility of the Contractor to coordinate with JWA and schedule work so as not to interfere with the implementation of other projects. Any overlapping work shall be coordinated with JWA.

The Contractor shall plan for limited work during peak travel times in the Project Schedule. These include Thanksgiving, Christmas / New Year Holidays.

The Contractor is responsible for scheduling weekly construction progress meetings with all involved stakeholders.

3.3. General Work Hours Within Terminal Complex

In addition to work hours contained in the GENERAL REQUIREMENTS, the following hours apply to the Terminal complex:

- Daytime working hours within the terminals for work that does not disturb guests and/or hinder airline/tenant/concession operations (e.g. work that includes loud noises, dust, disruption of use, odors, visual exposure to work, or any other nuisance) may be between 5:01 AM to 10:59 PM with JWA approval.
- Night time working hours within the terminals and for the airfield shall be between 11:00 PM and 5:00 AM, unless otherwise approved by JWA.
- Utility cutovers and interruptions shall be performed between 11:00 PM and 4:00 AM.
- Work not conforming to the above working hours requires approval by the JWA representative(s). Provide written request 14 calendar days prior to such work to allow for arrangements to be made.
- Work outside of public areas can generally occur during all hours, but is subject to the availability of staff and approval by JWA.
- Demolition and any work that is noisy, dusty or produces odor / fumes must be completed during night hours only. Other, quieter work can be done within work sites with Temporary Construction Barriers during the daytime, subject to approval by JWA.

3.4. General Disruptions

In all cases, the concessions (i.e. vendors) and tenants (i.e. airlines, JWA, TSA, CBP) must remain in operation. If work is required within tenant and concession spaces, Contractor must propose plan to keep concessions and tenants in operation via temporary relocation or rearrangement of the space, subject to approval by JWA and affected parties. Tenants will be responsible for own FF&E and merchandise, but associated costs incurred are the responsibility of the Contractor.

Restrooms and exits must remain accessible, unless they are subjects of the work required. If restrooms and exits are taken out of service by the work, Contractor must provide temporary signage to direct guest traffic to the nearest available alternative(s).

3.5. Housekeeping

Contractor shall clean-up after each shift. Clean-up shall be an ongoing activity. Contractor will be responsible to ensure that dust and dirt does not affect all areas outside of the work area, and will protect the areas using Visqueen or other methods.

3.6. Traffic Control

Contractor shall be responsible for traffic control, including all materials and equipment necessary, and must submit Traffic Control Plan(s) for review and approval by JWA where work interferes with JWA roadways.

3.7. Laydown, Staging, and Parking

General laydown, staging, and parking will be made available based on current availability. Sites are shown in **Exhibit A**. The primary site for trailers, laydown (for receipt, storage, and partial assembly of bulk materials and equipment), and parking is located at the vacant surface lot south of Parking C. Access is available via Airport Way to Cargo Access. If additional parking is necessary, Contractor must request for additional Contractors will be required to submit plan(s) detailing expected usage, time periods, and approximate footprint of sites required. parking areas. Contractor shall be responsible for busing personnel between parking and work areas. Contractors will be required to submit plan(s) detailing expected usage, time periods, and approximate footprint of sites required.

Additional, sterile side staging sites will be provided, if available, in areas between gates where space and operations will accommodate necessary short-term storage. Contractor must submit plans showing spaces and time periods required. Adjacent laydown spaces may not be utilized unless a gate exists between them and are subject to availability. Due to the limited availability of space within the sterile area, Contractors should only plan to utilize a few of the sterile side staging sites for multiple nearby work areas (e.g. one staging area for three nearby work areas).

Use of laydown/staging sites requires that the Contractor does not hinder normal airline and airport operations without approval, does not block Ground Service Equipment, chargers, panels, doors, other means of egress, and does not pose a risk to personnel, nearby equipment, and the facility.

Contractor shall furnish and install temporary fencing on k-rail with a total combined height of 8' and with gates to enclose laydown and staging areas. Contractor shall not hold JWA liable for any theft, losses, or damages that occur in laydown and staging areas.

Materials, equipment, and trailer deliveries to sterile work areas shall occur through the Paularino Gate or Loop Gate (upon request only for large items such as trailers). Upon request and approval, the Cargo Access Gate may be utilized if security personnel are present. Delivery drivers and vehicle identification will be required for access. Only Contractor personnel who are authorized to drive in sterile areas will be allowed to transport materials, equipment, and personnel. In addition, Contractors must ensure compliance with insurance requirements for all vehicles accessing the sterile area.

All laydown, staging, and parking areas must be kept clean at all times. Production of Foreign Object Debris from these sites may result in damages to aircraft and property. Contractor will be liable for all damages that occur.

3.8. Access to Restricted Areas and to Construction Sites

All personnel will be required to procure JWA Secure Identification Area (SIDA) badges in order to be on site when working in sterile areas and areas that require badge access. Personnel unable to pass background checks and/or the SIDA testing process are subject to termination from the project. While Contractor personnel will be given majority access to the JWA site, some areas require special access requests and/or JWA escort in order to enter. These areas include electrical, security, information technology (IT) infrastructure distribution, Transportation Security Agency (TSA) Explosives Detection System (EDS), security closets, and Customs and Border Protection (CBP) areas.

Some areas of JWA are accessible only by utilizing a physical key. In such cases, Contractor must submit a letter to the JWA Project Manager requesting key checkout access for specific personnel. When access to keys is granted, Contractor may check out keys from the OC Sheriff's on-site office in the Terminal A Administration Offices area. An official picture identification card will be required as collateral when checking out keys.

Requests for access to TSA and CBP areas may include a secondary screening process that will require a Location Access/Shutdown Request (LASR) form that details the reason for access, dates and times of access, and additional information from personnel (provided in a separate, secure document). CBP will require all personnel to submit the following information for review:

- Full legal name
- Date of Birth
- Ethnicity
- Social Security Number

The required information shall be submitted in a secured password protected format (i.e. password protected Word document) to the JWA Project Manager, who will then coordinate review with CBP.

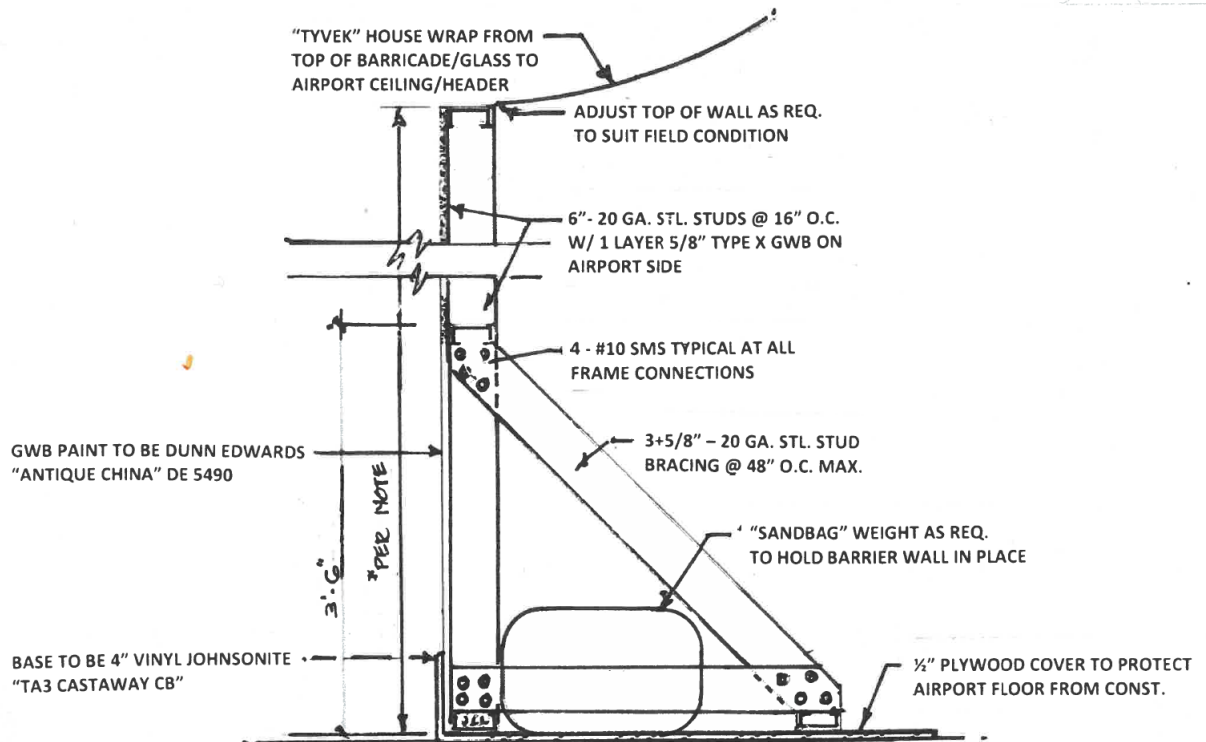
Requests for access may require up to three (3) weeks, depending on the amount of personnel requiring access and any issues that may result from the secondary screening process. Please process requests in as few requests as possible, as supplemental requests may be rejected by TSA and CBP.

JWA reserves the right to enter construction sites or storage areas at any time. Ensure that all access information is provided to the JWA PM and CM and updates are given when locks or codes

are changed. All personnel visiting construction sites will be required to adhere to Personal Protective Equipment (PPE) requirements.

3.9. Temporary Construction Barriers

Temporary construction barriers (TCB) are required when working in operational public areas and shall have a “permanent” appearance and must be built to conform to the JWA Tenant Guidelines and the following requirements:



- **Wall Construction:** Level 4 drywall finish, 5/8" Type X GWB, 6" vertical studs and 3+5/8" bracing – 20GA. Provide carpet (backing side up) at underside of wall and supports to prevent scratching floors.
- **Wall Color:** Dunn Edwards "Antique China" DE 5490, or equivalent with approval by JWA. Two coats.
- **Wall Base:** 4" Vinyl Base Johnsonite "TA3 Castaway CB"
- **Wall Alternatives:** JWA will consider prefabricated barrier panels such as McCain Walls
- **Wall Height:** Height subject to minimal existing obstruction from 6'-11" above finished floor to a maximum bottom of slab 9'-6" above finished floor. Top of TCB shall be 8'-0" in consultation with JWA Facilities according to the field conditions/specific location.
- **Doors:** A single oversized solid core wood door that swings into the work area. Other types and quantities of doors to be reviewed and approved by JWA.
- **Door Frame:** Standard hollow metal
- **Door Hinges:** 1+1/2 pair butts; 4+1/2" x 4" per door
- **Door Passage set:** Best Lock 9K37W15DS3626 9K Series
- **Padlock Hasp:** Sized for No. 5 Masterlock Padlock

- **Padlock & Key:** Provided by JWA
- **Accessories:** 1+1/2" metal astragal, full height of door and floor center pin.
- **Interference with existing conditions:** Any signage and wall mounted fixtures affected by TCBs must be relocated and/or duplicated onto TCB walls or to other appropriate locations in close proximity to the original location to retain original function and compliance with applicable codes. Ground mounted fixtures, furniture, or other items affected must be relocated outside of the TCBs to locations that allow for continued use or to areas approved by JWA.
- **Lighting:** The interiors of enclosed work areas shall have lighting, fire protection systems, ventilation and exhaust systems for removal of smoke/dust during work. If existing lighting is blocked by the enclosed work areas, the Contractor must provide lighting to supplement the area lacking sufficient lighting.
- **Artwork, Graphics, and Logos:** No artwork, graphics, nor contractor logos will be allowed except as approved by JWA.
- **ADA and Life Safety Compliance:** ADA requirements and egress paths shall not be impacted by these work enclosures.
- **Protection of Flooring:** All flooring surfaces, especially marble and carpet within work areas, as well as construction access paths, shall be protected to prevent marring and for distribution of concentrated loading from the TCB and its supports.
- **Installation:** Installation of TCBs must be coordinated with JWA. 10 working day advance notification is required, including submission of plans showing TCB configuration, locations, phasing, relocations of existing fixtures/signs/equipment, and any other pertinent details. All work, including material delivery and installation, must occur during night hours only.
- **Removal:** TCBs must be removed at the completion of construction and sites must be walked with JWA for determination of necessary repairs.

3.10. Scaffolding

Scaffolding systems must be designed and stamped by a structural engineer, and shall be erected by a licensed subcontractor and in accordance to ANSI/ASSE, OSHA and other standards in accordance with the General Requirements.

All flooring surfaces, especially marble and carpet within work areas, as well as construction access paths, shall be protected to prevent marring and for distribution of concentrated loading from hard wheeled equipment and from scaffold legs/bases.

Access to certain scaffold systems may also be required to be logged for entry and exit of each personnel.

3.11. Utility and Location Shutdowns

Utility shutdowns require filing of a Utility Shutdown Request (USR) form (**Exhibit B**) at a minimum of 14 working days prior to the shutdown. Dates and times of shutdowns will require review and approval by stakeholders prior to commencement.

Location shutdowns (any area currently in use that must prohibit access due to work) require filing of a Location Access/Shutdown Request (LASR) form (**Exhibit C**) at a minimum of 14 working days

prior to the shutdown. Dates and times of shutdowns will require review and approval by stakeholders prior to commencement.

Any utility or location shutdowns within the CBP Federal Inspection Facility (FIS) will require filing of forms at a minimum of 21 calendar days prior to the shutdowns. Dates and times of shutdowns will require review and approval by stakeholders prior to commencement. In addition, CBP will require all personnel to submit personnel information for review as mention under part 45 of this document.

The HVAC system must remain in balance if soffits are opened for work. Air handlers cannot be shut down unless they are part of the work.

A Fire Watch is required whenever fire protection systems must be taken out of service for any length of time. Contractor shall provide a shutdown schedule with a USR to JWA. Following approval by JWA, JWA Maintenance will manage all shutdown procedures, with joint coordination with the Contractor.

Escalators and elevator shutdowns shall be coordinated with JWA's maintenance schedule, if feasible. Shutdowns will require a LASR that depict escalators and elevators that will be shut down, time periods, paths to alternate means of conveyance, and a temporary signage plan to redirect guest traffic to alternate means of conveyance.

3.12. Baggage Handling System Conflicts

It will be the responsibility of Contractor to remove and replace or work around existing baggage handling conveyors.

Conveyor belts may be shut down for a time with porters to move bags to adjacent takeaway. Contractor shall be responsible for all associated costs.

Shutdowns will require a LASR highlighting sections of the belt that need to be shut down, time periods for each section, and baggage portering paths.

3.13. Hot Work & Welding

Hot work permits (**Exhibit D**) will be required for all hot work, including but not limited to welding, grinding, cutting, and brazing.

Hot work shall not be performed when the sprinkler system is down in the same zone.

The Contractor's Safety Officer shall submit the hot work plan with the JWA required Project Specific Safety Plan in accordance with the GENERAL REQUIREMENTS.

No work shall be started without signed-off approval by JWA.

All welding shall be done by welders qualified by American Welding Society (AWS) and certified by certified testing agencies. Welder certifications and Welding Procedure Specification (WPS) must be reviewed and approved by the Engineer of Record, and provided to JWA for conformance review. In addition, the following welding requirements must be followed:

- 100% fire watch will be required on both levels where welding is occurring and deck is open.
- Individuals on fire watch will have radio communication; at no time shall fire watch be off duty, not even on breaks.
- Smoke sensors shall be utilized for indoor welding and exterior welding in close proximity to building smoke detectors.
- Fire stopping shall be put in place on openings between levels when not working.
- Ensure access with security badge for responsible parties in emergencies.
- Report all potential safety hazards to on-site JWA Safety.
- Combustibles are prohibited in area of work.
- At the end of hot work, area shall be moistened with water and actively monitored for 30 minutes.
- Welding work shall be enclosed for the safety of guests, staff, and other nearby personnel.
- Work shall be scheduled so as not to disrupt pedestrian traffic in adjacent areas at the same time.

3.14. Work in Confined Spaces

Confined spaces are spaces that personnel may enter and perform work, but has limited means for entry and egress, and is not designated for continuous occupancy.

Prior to any work in confined spaces, the Contractor must determine if a space has a potential to contain hazards capable of causing serious injury or death. If no such potential exists, the Contractor may proceed with work without a Confined Space Permit (**Exhibit E**). If a space where work must occur contains any of the following characteristics, a Confined Space Permit must be submitted to JWA 14 business days prior to the commencement of work:

- The space contains or may potentially contain a hazardous atmosphere.
- The space contains materials that may entrap, engulf, or suffocate personnel.
- The space is configured in such a manner that personnel may be trapped or asphyxiated by inwardly converging walls or by floors which slope downward and taper to smaller cross sections.
- The space contains any recognized serious safety or health hazard.

3.15. Coring, Trenching & Excavations

Prior to coring, trenching, and excavations, the Contractor is responsible for and is required to use an independent utility locating service to locate all utilities within the impacted area(s). The independent utility locating service shall provide certification that it has located all utilities in the impacted area(s) and the Contractor must depict all discovered utilities accurately on

Redlines/As-built plans for submission to JWA for review and approval prior to commencement of coring, trenching, or excavations. In addition, for utilities requiring external agency notification, coordination, and approvals, the Contractor must provide proof of notification, coordination, and reviews by external agencies.

Contractors must protect and maintain services for all existing utilities during the progress of the work and shall be fully responsible for any and all damages to utilities and facilities during the course of the work. Contractors shall provide sufficient available on-call specialty Contractors to repair any damages that may occur prior to the commencement of daily daytime operations. If repairs cannot be completed by this time, on-site JWA or JWA representatives must be notified immediately and the Contractor shall be fully responsible for any and all claims that are a result of the damages.

In addition, the following apply:

- No coring of any kind through existing non-structural or structural elements (e.g. slabs, beams, columns, etc.) shall occur without approval from JWA. For all cored penetrations that are approved by JWA, these coring locations must be clearly identified on the drawings with dimensions, size, etc. As-built drawings can be provided upon request for reference. Using non-destructive methods (e.g. ground penetrating radar (GPR), x-ray, etc.), locate and identify all existing reinforcing, post tensioned tendons, etc. within the structural element to avoid cutting, damaging, or chipping the existing structural elements.
- For new post installed anchorage (e.g. mechanical or chemical anchorages, etc.) into existing concrete, via non-destructive methods, locate and identify all existing reinforcing, post tensioned tendons, etc. prior to post installation of the new anchorage to ensure that the new anchorage does not cut, damage, or chip the existing structural elements.

3.16. Damage During Construction

Contractor is responsible for investigation of any surface and its associated subsurface prior to establishing penetrations, including but not limited to coring, drilling, saw cutting, and jack hammering.

Contractors will be financially responsible for and must repair, to the satisfaction of JWA and to current JWA and code standards, all damage to existing property, equipment, and materials, including but not limited to finishes, structure, pavement, roads, bridges, utilities, raceways, furniture, millwork, signage, lights, electronics, and any other projects impacted by its work. Damages that occur with utilities and systems must be reported and repaired immediately. Contractor is responsible and liable for all injury to persons and damage to property resulting from their operation.

Reporting of damage and incidents must be made to the JWA PM and CM prior to undertaking repairs. Any associated costs incurred by JWA shall be reimbursed by the Contractor.

3.17. Other Agency Coordination

Contractor is responsible for coordinating, determining, completing, and submitting required other agency forms during the course of the work, including FAA Form 7460 for penetration of imaginary surfaces by the work, FAA Form 5370 for Construction Progress and Inspections, WH-347 for Contractor's Payroll on Federally aided contracts, SF-1445 for Davis-Bacon compliance, and any other necessary forms.

3.18. Quality

Quality is a primary criteria of acceptance for all projects and must be continuously maintained during projects. Strict conformance with bid documents is required of all projects. Contractors are required to maintain a quality control program, which must be detailed in a Quality Control Plan (QCP) that is submitted to JWA for review and approval. If work is contained behind walls without interior access, the work must pass inspection prior to closing of walls. Failure to do so will require demolition of walls and finishes to complete inspections at no additional cost to JWA. Any portion of projects found to be non-compliant with code and non-conforming with the project documents will require remediation at no additional cost to JWA. In addition, Contractors will be responsible for reimbursing JWA for all costs incurred due to repeat of work and inspections.

To achieve excellence and a successful outcome on a project, it is essential that all projects at JWA meet or exceed our standards. Most unsuccessful projects attempt to only address schedule and cost without realizing that quality is what drives both schedule and cost. After all, if tasks only need to be completed once and if the owner can accept work product without issue, a Contractor has just saved both time and money that would otherwise be spent fixing problems. Below is the general flow of Quality Control and Assurance on a project:

- Evaluate the work environment to understand the level of quality JWA expects. In addition, discuss with JWA what the expectations are prior to creating the QCP.
- Create a feasible QCP that addresses JWA's requirements, but is also truly possible to complete with construction work processes.
- Establish an understanding with field personnel and continuously remind them of the quality requirements.
- Provide sufficient superintendence and quality control throughout the project. Do not allow flawed work to continue with hope that the client will not identify the flaws. JWA utilizes three layers of Quality Assurance, including field observation by third-party inspectors, field supervision by Construction Managers, and punch list creation by multiple stakeholders. Some flaws may require Contractors to demolish the entire field of work in order to remedy the root cause.
- When code inspections and repairs are complete, Contractors are allowed to request an initial Quality Assurance Inspection with the Construction Manager. This inspection will allow

Contractors to identify and remedy issues in relation to the Contract Documents, scope, and other Agreement obligations prior to meeting with the Owner. When the Construction Manager deems the Quality Assurance Inspection complete, the Contractor may request an Owner's Punch List Inspection. If there is no Construction Manager on a project, Contractors may proceed to directly to the Owner's Punch List Inspection.

- Prior to commencing an Owner's Punch List Inspection, Contractors must have already remedied any issues identified in stages prior. If the Owner identifies three or more issues, the Owner's Punch List Inspection is immediately cancelled and returned to Quality Assurance Inspection or to the Contractor for remediation. Do not confuse the Quality Assurance Inspection with the Owner's Punch List Inspection. The two inspections are not interchangeable. Any issues identified during the Owner's Punch List Inspection may override any acceptance of items from prior inspections.
- Quality Assurance (QA) is not Quality Control (QC). JWA's QA inspections are utilized to assure Contractors have complied with the documents, with codes, and with standards on a Contractor's quality of work that includes QC by the Contractor. Contractors will be subject to reimbursing JWA for additional costs incurred when work is found to be non-compliant or where repeat inspections are required.
- Owner's Punch List issues must be tracked using location information, quantities, a detailed description, and pictures of the issue and their remedies. This information must be logged and turned over to JWA at the completion of the project. Once the Owner's Punch List is completed and all issues have been found to be corrected, JWA will issue a Notice of Completion.
- Keep field Redline/As-built plans and specifications current with all RFIs, Change Orders, field orders, and any other alterations from the Bid Set on a daily basis. Redline/As-built plans and specifications may be audited at any time by JWA. Contractors are required to bring Redlines to code inspections and Owner's Punch Walks, and they must be verified to be accurate prior to enclosing spaces. Failure to do so will result in demolishing enclosures and finishes in order to field verify changes at Contractor's cost, and will also result in short pays of invoices. Failure to rectify any issues will result a total contract amount reduction of up to 3%. Keeping Redlines current will also assist with more timely completion of Record documents.
- After Notice of Completion is filed, the Contractor has 30 calendar days to complete and turnover all Redline/As-built documents, Record documents, Operations & Maintenance Manuals, Warranties, attic stock, keys, and any other items required by contract. Failure to correct issues found on these documents or failure to turnover any of the required documents will constitute a forfeiture of up to 3% of the total agreement amount by the Contractor.

3.19. Redlines/As-builts and Record Documents

Redline/As-built Plans are defined as field verified plans that have been redlined/marked to reflect all changes affecting the plans used for bidding, including but not limited to changes made by submittals, Requests for Information, Change Orders, field orders, general repairs and relocations, and discrepancies from the Permit Set discovered in the field. Redline Plans must be

accurate, show actual routing, show actual sizing, show dimensions, and other relevant details information necessary to discern where things reside, what they are, what they are connected to, and quantities. Redline Plans that contain only clouds and indications of what documents affect specific areas are strictly prohibited.

Redline/As-built Specifications are defined as specifications which are redlined/marked to reflect all changes affecting the specifications used for bidding, including but not limited to changes made by submittals, Requests for Information, Change Orders, field orders, general repairs and relocations, and discrepancies from the Permit Set discovered in the field. Redline Specifications must indicate final products utilized, including but not limited to manufacturers, model numbers, and pertinent changes to submittals, warranties, operation & maintenance manuals, control sequences, and specific product requirements.

Contractors are required to keep Redline/As-built Plans in ARCH E1 size (30"x42") and Specifications in Letter size (8.5"x11") current and accurate on a weekly basis (subject to audit by JWA, CM, and/or JWA representative), prior to closing spaces, and prior to any inspections.

Site conditions not reflected on Redline Plans and Specifications prior to enclosing areas will require demolition of the enclosed area, field verification of all work complete, revisions to the Redline Plans and Specifications, and restoration of any demolished areas in accordance with documents and/or to match existing conditions (in compliance with current JWA and code standards) at Contractor's expense.

Record Plans are defined as field verified plans shown in their final state that reflect all changes affecting the plans used for bidding, including but not limited to changes made by submittals, Requests for Information, Change Orders, field orders, general repairs and relocations, and discrepancies from the Permit Set discovered in the field. Record Plans must be accurate, show actual routing, show actual sizing, show dimensions, and other relevant details information necessary to discern where things reside, what they are, what they are connected to, sizes, and quantities. Record Plans do not show redlines/markings that indicate where conditions have changed from the plans used for bidding, but should materially be identical to the Redline/As-built Plans in terms of the final disposition of the work site.

Record Specifications are defined as specifications which reflect all changes in their final state affecting the specifications used for bidding, including but not limited to changes made by submittals, Requests for Information, Change Orders, field orders, general repairs and relocations, and discrepancies from the Permit Set discovered in the field. Record Specifications must indicate final products utilized, including but not limited to manufacturers, model numbers, and pertinent changes to submittals, warranties, operation & maintenance manuals, control sequences, and specific product requirements. Record Specifications do not show redlines/markings that indicate where conditions have changed from the specifications used for bidding, but should materially be identical to the Redline Specifications in terms of the final representation of site conditions.

Contractors are responsible for compiling subcontractor Redline/As-built Plans, Redline/As-built Specifications into merged plan sets and specification books for turnover to JWA. Architect-Engineers are responsible for creating Record Plans and Record Specifications from Redline Documents provided by the Contractor for turnover to JWA. In the case of Design-Build, the Design-Builder is responsible both Redline/As-built Documents and Record Documents.

Turnover of Redline/As-built Plans and Specifications to JWA, including any fabrication drawings and other detailed plans used on this project, is required in PDF format (full scale, no compression, full color). PDF format Redline/As-built Plans and Specifications must be uploaded to Oracle Primavera Unifier and submitted through the Submittals process once inspections are completed, and provided to JWA on a USB drive at the completion of the project. Hard copies of Redline/As-built Plans and Specifications must also be turned over to JWA at the completion of the project. Turnover of redline/as-built documents is required when all field work (including change orders) is complete. Accuracy of the documents will be audited at turnover and failure to provide accurate documents will result in penalties explained below.

One (1) hard copy set of Record Plans in ARCH E1 (30"x42") and Record Specifications in Letter (8.5"x11") is required at the completion of the project. In addition, two (2) USB drives containing PDF (for plans and specifications), DWG formats (for plans only), and RVT and IFC formats (for BIM, if applicable) of the Record documents and of the models is required at the completion of the project. Lastly, PDFs, DWGs, RVTs, IFCs, and any other electronic format of these documents must be uploaded to Oracle Primavera Unifier and submitted through the Submittals process.

3% of the total contract amount must be assigned to a Work Breakdown Structure (WBS) line for completion and turnover of the Redline/As-built documents, Record documents (for Architect-Engineers and Design-Builders), Operation & Maintenance Manuals, Warranties, attic stock, keys, and any other items required per the documents. Lack of compliance with the standards and turnover of Redline documents, As-built/Record documents, Operation & Maintenance Manuals, Warranties, attic stock, keys, and any other items required per the documents will result in a short pay of 3% of the requested gross invoice amount for the month where infractions have occurred. The short pay amount will continue to be withheld from payments until infractions have been resolved. If infractions are unresolved 30 calendar days after the completion of construction, Contractor, Architect-Engineer, and/or Design-Builder will forfeit 3% of the total contract amount.

3.20. Hand Over of Attic Stock, Keys, Materials, Equipment and other Assets

Before project acceptance, Contractors are required to hand over all required attic stock, additional stock, equipment, tools, and any other items as required in the project Specifications, Change Orders, and other documents.

All keys for locks installed, including but not limited to keys for access panels, lock cores, equipment, hose bibs, and devices, are required to be turned over with identification tags that identify what the keys unlock with a general description, location(s) where the keys may be utilized (including room numbers), unique identifiers differentiating similar items (e.g. different sizes of access panels, any permanent markings, brands and/or models of equipment), and any other useful information.

Materials, equipment, devices, and other assets must have identifying labels or tags that identify the manufacturer, model name, model number, color/style, location(s) of use (including room numbers), sizes, corresponding tags used on plans/schedules, and any other identifying attributes.

A corresponding transmittal detailing the hand over items, including items being handed over, aforementioned attributes, quantities, date of hand over, person(s) providing the items, person(s) receiving the items, and specification section or other documentation identifying requirement (if applicable). Completed (signed) transmittals must then be sent to JWA utilizing the Transmittals to JWA business process on Oracle Primavera Unifier.

4. Exhibits

Exhibit A – JWA Laydown/Staging/Parking Site Plan (Online version also available at: <https://bit.ly/2NXhLSW>)

Exhibit B – Location Access/Shutdown Request (LASR)

Exhibit C – Utility Shutdown Request (USR)

Exhibit D – Hot Work Permit

Exhibit E – Confined Space Permit