

SECTION 009110

PROJECT KICKOFF AND DESIGN COMPLETION

PART 1 GENERAL

1.1 SUMMARY

This document includes post-award requirements for project kickoff and developing, submitting and finalizing the design.

1.2 REFERENCES

Not Used

1.3 DEFINITIONS

1.3.1 Design Documents

Documents which typically includes design drawings, design analyses (basis of design and calculations), product data, design specifications, construction CPM schedule and construction phasing plan, and traffic control plan.

1.4 CRITERIA

The Design Criteria is described in the Owner's program and Bridging Documents included in the Contract Documents of this project.

1.5 NOT USED

1.6 PERFORMANCE DRAWINGS (BRIDGING DOCUMENTS)

Performance Drawings for use on the project are provided as attachments to this contract. Designs and information shown on the performance drawings shall be considered conceptual and may contain a combination of performance and prescriptive requirements that are intended for use in preparing the final design and construction documents. However, the designs and information indicated in the performance drawings shall be considered to be performance criteria, unless specifically noted otherwise. Variations will be permitted from the performance drawings in preparing the design so long as aesthetic, functional, and/or other prescriptive requirements shown are not affected. Variations to performance criteria, as may be permitted, shall become the responsibility of the Design-Builder, without additional compensation.

1.7 PERFORMANCE SPECIFICATIONS

Performance specifications furnished with the RFP shall be used to develop the Design and Construction Documents. Performance specifications contain requirements for materials, products, and systems and criteria for verifying compliance. References quoted in performance specifications shall be understood to be the dated version of the reference in effect as of the contract award date.

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1.8 ORDER OF PRECEDENCE

Acceptance of the proposal documents in making the contract award shall not be construed as a waiver to the RFP requirements. In the event of a conflict between the RFP, the proposal, and the final design, the interpretation most favorable to the Owner shall prevail.

1.9 MEETINGS

1.9.1 Post Award Kickoff (PAK) Meeting

Within 10 calendar days after contract award, prior to commencing work, and at a specific time and place to be determined by the Owner. PAK meeting details will be provided to the Design-Builder with the Notice of Award.

The goals of this meeting are:

- a) Integrate the Design-Builder and all Owner representatives into the project team.
- b) Achieve consensus from the project team on any issues and concerns on the Design-Builder's technical proposal.
- c) Establish and explain policies and procedures for completion of a successful project.
- d) Establish clear lines of communication and points of contact for Owner and Design-Builder team members.

The following Design-Builder key personnel shall attend the PAK: Project Manager, design staff, Superintendent and QC Manager. Optional attendees include: Principal, Assistant Project Manager, major subcontractors and specialized supplemental QC personnel.

The Design-Builder shall present and submit for approval a Design CPM Schedule to allow attendees to prepare for key milestone events. The Design-Builder shall lead discussions to develop an understanding of the accepted technical proposal and conduct a working session to develop the approved construction documents.

1.9.2 Partnering

The Owner encourages a cohesive partnership between the Owner and the Design-Builder. This partnership shall be structured to draw on the strengths of each organization to identify and achieve common goals. The objectives are effective and efficient contract performance intended to achieve completion on schedule and in accordance with sound engineering and construction practices. Design-Builder key personnel shall attend a one day "formal partnering" session with key Owner personnel. Design-Builder key personnel are the design A-E, Project Manager, Construction Superintendent, QC Manager, major subcontractors (mechanical, electrical, etc.), and specialized QC personnel. The Design-Builder shall organize and sponsor the session. The initial session will be held following the PAK meeting. Follow-up sessions, as necessary, shall be held throughout the contract, with the same participants.

1.9.3 Design Review Meetings

After Owner review of each Required Design Submittal (see paragraph 1.15 "Design Submittals") has been completed, meet with the Owner to discuss review comments for the specific design submittal.

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The Design review meetings shall include discussion and finalization of the construction phasing plan and the Baseline Network Analysis Schedule as described in Sections 01321 and Traffic Control Plan as described in Section 01500, Subsection 1.8.2.

1.10 DESIGN DRAWINGS

The Owner desires to streamline the procurement process by encouraging the Design-Builder to prepare project-specific drawings during the design phase in lieu of traditional generic procurement level drawings. An example would be to produce design submittals that are more like shop drawing submittals so that after final design approval, submittals are minimized. The goals of this strategy are:

- a. Avoid duplication of information and design effort,
- b. Improve coordination through early collaboration of designers and subcontractors, and
- c. Speed construction by reducing the need to submit and review shop drawings after construction has begun.

Therefore, the Design-Builder is encouraged to prepare and submit with the design documents appropriate connection, fabrication, layout, and product-specific drawings customized for the project and stamped by licensed professionals as appropriate.

1.10.1 Drawings Format

Prepare, organize, and present design drawings in the manner described in the Industry standards. Design drawings shall be complete, accurate, and explicit enough to show compliance with requirements and to permit construction. Drawings shall be prepared using imperial dimensioning. Each drawing shall bear the seal and signature of the registered Civil Engineer or professional engineer or Architect who prepared the design for the specific technical field. Prepare computer-aided design (CAD) drawings "DWG" file format. All drawings shall be totally functional with all reference drawings intact. The folder shall also include electronic copies of the drawing files in Adobe pdf format. Generate pdf drawing files using a pdf page size that corresponds to the original document sheet size and a pdf print resolution that results in clear detail of all drawing features. File names shall correspond to the CAD file name, but with the standard ".pdf" file extension. Provide a text file listing all information shown below.

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1.10.2 Drawings Required

As a minimum, prepare design drawings to incorporate the types of drawings needed by each design discipline in the detail required by the performance specification sections furnished with the RFP 2021-CIP 01.

1.11 SPECIFICATIONS AND MANUFACTURER'S DATA SHEETS

The Owner desires to streamline the procurement process by encouraging final product and material selections during the design phase in lieu of prescriptive construction specifications. Submit

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manufacturer's data sheets for materials, equipment, fixtures, devices, and systems that will be provided, clearly marked to indicate the exact item(s) to be included in the construction. Prepare prescriptive construction specifications only for materials, products, or installation instructions that cannot be adequately described with manufacturer's data sheets. For each design submittal, consolidate specifications and manufacturer's data sheets into one comprehensive Product Data and Specifications manual organized by Construction Specifications Institute (CSI) 16 Division Master Format using Specintact. Submit specifications in MS Word format.

1.11.1 Division 01 Specifications

The Division 01 specification sections shall remain part of this contract without change unless a contract modification is issued by the Owner.

1.11.2 Construction Submittal Register

Prepare a submittal register that lists (in table format) submittals requiring Owner approval. Include submittal description, applicable specification section, and paragraph number, and planned submission date. Coordinate planned submission dates with network analysis schedule required by Sections 01321.

1.12 SUSTAINABLE DESIGN

This facility shall be designed and constructed in an environmentally responsible manner, utilizing sustainable design concepts, systems and materials to the maximum extent practical, to provide a facility that meets the following goals:

- a. Energy efficient;
- b. Reduces or eliminates toxic and harmful substances;
- c. Efficiency in resource and materials utilization;
- d. Use of recycled content materials, including EPA designated products;
- e. Minimizes waste products during both the construction and operation of the facility;
- f. Promotes O&M practices that reduce or eliminate harmful effects on people and the natural environment;

1.12.1 EPA Designated Products

EPA designated products contain materials recovered from the solid waste stream. First preference is to use EPA designated products if they are competitively priced, available in a reasonable time frame, and meet performance standards. The intent is to conserve resources and reduce solid waste by developing markets for recycled products and encouraging manufacturers to produce quality recycled content products at competitive prices. Accordingly, the Design-Builder shall use products that meet or exceed the EPA guideline standards to the maximum practicable extent in the performance of the contract. For a list of EPA designated products and a list of manufacturers and suppliers of EPA designated products see <http://www.epa.gov/cpg/products.htm>

Commented [1]: Is this accurate - "EPA designated products" contain materials recovered from the solid waste stream? I didn't know that.

Is the term "EPA designated products" sufficient to describe what we mean? In other words, do all "EPA designated products" contain recovered materials?

Commented [ID2]: Yes.

1.13 DESIGN ANALYSES

Perform design analyses verifying the basis of design and calculations for each design discipline. The design analyses shall be a presentation of facts to demonstrate that the concept of the project is fully understood and the design is based on sound engineering principles. The design analyses for each discipline shall be provided with each design package and shall include:

- a. A basis of design consisting of:
 - (1) A developed introductory description of the project concept that addresses the salient points of the design;
 - (2) An orderly and comprehensive documentation of criteria and rationale for system selection; and
 - (3) The identification of any necessary licenses and permits that are anticipated to be required as a part of the design and/or construction process.
- b. Calculations as needed to support the design.

Also include a Section titled "Sustainable Design" that documents the sustainable features of the project. The sustainable design section shall include the following:

- (1) List of EPA designated products specified for use in the project. Provide justification for any designated products that are used in this project but do not meet or exceed EPA guidelines for recovered content.
- (2) Other information necessary to describe the sustainable features of the project and their benefits.

1.13.1 Format

The basis of design for each design discipline shall include a cover page indicating the project title and location, contract number, table of contents, and tabbed separations for quick reference. Each design analyses shall be prepared on 213 x 275 mm (8.5 x 11 inch) white paper and be bound in separate volumes for each design discipline. Multiple volumes for individual disciplines, appropriately numbered, may be provided when needed.

1.13.2 Calculations

Calculations for each design discipline shall include a cover page, a table of contents, a summary of criteria, the project title and location, and contract number. Calculation pages shall be legible and photo-ready. Cite criteria from which calculations, rationale, and formulas are extracted by publication number, title, edition and page number. The cover page of calculations shall also include the names of the persons originating and checking the calculations. The person checking the calculations shall be a registered professional engineer (or other appropriate design discipline) other than the originator. In addition, the signature and seal of the designer responsible for the work shall be placed on the cover page of the calculations for the respective design discipline.

Computer printouts, if used, shall be identified similar to the calculations and may be referenced as an appendix or attachment to the design analyses. Identify the computer program name, source, and version. Schematic models used for computer input shall also be provided.

1.15 DESIGN SUBMITTALS

There are two categories of design submittal packages –

- a. Early Start Design Submittal Packages for construction activities that the Design-Builder may consider beginning prior to the acceptance of the Final Design and
- b. Required Design and Construction documents Submittal Packages that are comprehensive, multi-discipline packages.

1.15.1 Early Start Design Submittal Packages

Early Start Design Submittal Packages should be limited to project elements that can be shown to impact the critical path of the Network Analysis Schedule per Section 01321, requiring construction to begin prior to the Owner acceptance of the Final Design. An Early Start Design Submittal Package shall include all Design Analyses, Calculations, Drawings, Specifications and product data required to fully describe the project element for Owner review. Early Start Design Submittal Packages may be proposed by the Design-Builder as part of the Design CPM Schedule that is presented and discussed during the Post Award Kickoff (PAK) Meeting. Project elements that may be submitted as Early Start Design Submittal Packages shall be organized into a submittal package that can be reviewed and accepted by the Owner without being contingent upon subsequent design submittals.

1.15.2 Required Design Submittal Packages

The following design submittal packages are required and shall be identified and scheduled in the design CPM schedule. These submittal packages shall be consolidated, multi-discipline design submittals that include all project elements and Early Start Design Submittal Packages.

Each design submittal shall include a written response to all the review comments provided by the Owner on the prior submittals.

- a. Not Used.
- b. In-progress Construction Documents (50%). Provide design analyses, calculations, manufacturer product data, details, specifications and drawings for all disciplines representing a stage of design that is essentially 50% complete in all aspects and details. Also, include a preliminary construction CPM schedule and Construction staging and Phasing Plan.
- c. 100% Construction Documents . Incorporate comments from all previous design submittal packages. Provide updated design analyses, calculations, full-size drawings, specifications, and manufacturer's data sheets. The submittal shall include consolidated specifications and manufacturer's data sheets organized by Construction Specifications Institute (CSI) 16 Division Master Format, and a complete set of fully developed and detailed design drawings organized by discipline. Also include a construction CPM schedule and Construction staging and Phasing Plan per Part 3, Section 01321, and Schedule of Prices per Part 3, Section 01200 and traffic control plan per Part 3, Section 01500.
- d. Final Construction Documents. Incorporate comments from the 100% submittal review and submit copies and original design documents, construction CPM schedule and Construction staging and Phasing Plan, schedule of prices, and Traffic Control Plan. The final design submittal shall serve as the record design for the project. All materials,

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products and equipment represented by specific manufacturer catalog cuts and product data shall be for the exact item or product intended to be used in construction.

1.15.3 Design Certification

- a. Provide certification signed by an authorized personnel of the Design-Builder's company attesting the Design meets the specified requirements. The certification shall accompany each submittal package.
- b. Not Used
- c. Electronic data provided by the Design-Builder must be virus free.

1.15.4 Copies of Construction Documents

Submit to the Owner electronic copies of each design submittal package for review including response to review comments.

1.15.5 Original Construction Documents

Provide the following original documents electronically; design certifications; originals of specifications and manufacturer's data sheets; original design analyses, original construction CPM schedule and Construction staging and Phasing Plan, original schedule of prices and original Traffic Control Plan complete in all respects and with accepted changes incorporated as a result of review comments, to the Owner. Include along with this submission written responses to each review comment.

The electronic submittal shall be both in the native and .pdf format. For requirements for drawings and specifications see Section 1.10 and 1.11. or as directed by the Owner.

1.15.6 Final Construction Documents

The Final design, when accepted by the Owner, shall become part of the contract. Changes to accepted design submittal packages including the final design, require prior acceptance or approval by the Owner. Owner review or acceptance of design submittal packages including the final design shall not be construed as a waiver from requirements where those requirements may have been erroneously expressed or omitted from the Design-Builder prepared design documents, unless such variations have been specifically noted by the Design-Builder and accepted in writing by the Owner. These documents shall define the construction for this project.

1.15.7 As-built drawings

After construction has been completed, provide to the Owner the Final Design/Construction Documents that incorporates as-built construction. Electronic submittal to be in AutoCAD and Adobe pdf formats. All drawings shall be totally functional with all reference drawings intact. Generate pdf drawing files using a pdf page size that corresponds to the original document sheet size and a pdf print resolution that results in clear detail of all drawing features. File names shall correspond to the CAD file name, but with the standard ".pdf" file extension. Provide a text file listing all information shown below.

CAD FILE NAME.	CAD REFERENCE NAME.	SHEET NO.	DWG NO.	SHEET TITLE
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Interim as-built red-lined drawings depicting work progress shall be submitted along with each construction progress payment application per Part 3, Section 01200 Price and Payment Procedures.

1.16 SCHEDULING CONSTRAINTS

1.16.1 Owner Review Time for the Design

The Design-Builder's Design CPM schedule shall include Owner review time (from receipt of submittal to return of comments to Design-Builder) for the Design as follows: 50% Construction Documents Submittal Package review 14 days; 100% Construction Documents review 20 days; Final Construction Documents review 14 days. The review meeting for Required Design Submittals will be held within 5 days after return of comments to the Design-Builder.

1.16.2 Construction prior to Final Design Acceptance

Construction work cannot be started on any definable feature of work until Owner acceptance of design, permit approval, and a written authorization to commence with the specific construction is received from the Owner.

--End of Section--

SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

1.1 REFERENCES

RFP – Attachment D – Bridging Documents

Contract Article 1 entitled “Scope of Work”

1.2 WORK COVERED BY DESIGN-BUILD RFP

1.2.1 Project Description

The description below is a brief overview of the project background and the Scope of Work for the Phase-1 CIP Project. Details of the program are shown and/or described in the documents attached to the RFP RFP 2021-CIP 01 and included as part of the RFP’s Attachment D - Bridging Documents. The building is a 3-story structure constructed in 2003/2004 for office building use. The total building area is approximately 50,800 gross square feet (GSF) that include an additional 2,700 GSF of outdoor terrace space located on the 3rd floor. The first floor contains a Multi-Purpose Room (MPR), four meeting rooms, and a childcare center (tenant leased space) with an outdoor playground. The second and third floors contain offices and cubicles. The Project includes building infrastructure upgrades consisting of mechanical system upgrades with rooftop equipment, electrical power and lighting, plumbing system, and new low voltage system. Specifically, Phase 1 project includes, but is not limited to, the following main items:

1. Roofing Replacement and Thermal and Moisture protection
2. Building Envelope Repair including widow repair
3. COVID Related Building Re-entry
 - 3.a Plastic Shields
 - 3.b Restroom Plumbing Fixture Automation and plumbing works
 - 3.c Restroom Vanity Counters and plumbing works
 - 3.d Automated Drinking Fountains and plumbing works
 - 3.e Door Automation and related works and hardware
4. HVAC Replacement & Upgrade (including MERV-16 filters) , related connecting ducting and control system and mechanical works.
5. Solar Panels (with structural supports) and related electrical work to tie in to the existing electrical panel and meter.
6. Emergency Power Generation & Power Distribution
7. First Floor Multipurpose Conference (MPR) Room and adjacent Commissioner’s Conference Room AV (Audio Visual) upgrades : Rough-ins, cabling works, all related infrastructure works as needed including equipment, devices, screens, accessories, etc. as needed to finish and operate are included in this RFP complete – no exclusions)
8. IT Server Room -Infrastructural upgrade including cooling units, emergency power.
9. Network Redesign and IT Hardware Upgrade (includes but not limited to what is described as a brief overview in Scope of work – Attachment A, Item #9 of RFP 2021-CIP 01) :
 - 9.a Rough-ins, cabling works, all related infrastructure works as needed and coordination with Owner’s 3rd party (who will “Supply and Install” IT hardware equipment) are included and required in this RFP.
 - 9.b Network and IT Hardware equipment of this item – “Supply and Install” are excluded (Not required as part of this RFP).

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- 10. Fire suppression system (dry and water delayed) for IT Server room (3rd floor IT room only)
- 11. Exterior improvements (e.g., new generator room and trash enclosure).

1.2.2 Location

The approximate work location is indicated in the Overview of this RFP 2021-CIP 01 and contract documents.

1.3 EXISTING WORK

This section requires protection of existing vegetation, structures, equipment, utilities, and improvements:

- a. Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain.
- b. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Owner. At the completion of operations, existing work shall be in a condition equal to or better than that which existed before new work started.

1.4 LOCATION OF UNDERGROUND FACILITIES (If required/needed in this Contract)

Obtain digging permits as required prior to start of excavation. Scan the construction site with electromagnetic or sonic equipment, and mark the surface of the ground where existing underground utilities are discovered. Verify the elevations of existing piping, utilities, and any type of underground obstruction not indicated or specified to be removed but indicated or discovered during scanning in locations to be traversed by piping, ducts, and other work to be installed. Verify elevations before installing new work closer than nearest manhole or other structure at which an adjustment in grade can be made. Perform toning where indicated or shown by the Owner.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

--End of Section--

SECTION 01 14 00

WORK RESTRICTIONS

PART 1 GENERAL

1.1 SUBMITTALS

Submit the following in accordance with Section 013300, "Submittal Procedures:"

SD-01 Preconstruction Submittals

Parking authorization; G

Design-Builder regulations including COVID-19 protocol; G

Transportation of personnel, materials, and equipment; G

1.2 SPECIAL SCHEDULING REQUIREMENTS

- a. The Design-Builder shall conduct his operation in accordance with the Construction Phasing Plan approved by the Owner
- b. Have materials, equipment, and personnel required to perform the work at the site prior to the commencement of the work. Specific items of work to which this requirement applies include:
 - (1) All HVAC related works.
 - (2) All solar panels related works.
 - (3) AV and Technology related works.
- c. The Design-Builder shall conduct his operations so as to cause the least possible interference with normal operations of the Activity.
- d. Permission to interrupt any Activity and/or utility service shall be requested in writing a minimum of 15 days prior to the desired date of interruption.
- e. The work under this contract requires special attention to the scheduling and conduct of the work in connection with existing operations. Identify on the construction schedule each factor which constitutes a potential interruption to operations. As of January 3rd, 2022, the Owner intends to fully reoccupy the entire building; any work scheduled on/after said date would require coordination with the Owner. The Design-Builder shall accommodate for this transition in its work plan and schedule.

1.3 DESIGN-BUILDER ACCESS AND USE OF PREMISES

1.3.1 Activity Regulations

Ensure that Design-Builder personnel employed on the project become familiar with and obey project regulations, including safety, fire, traffic, and security regulations. Keep within the limits

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of the work and avenues of ingress and egress. Ingress and egress of Design-Builder vehicles at the project are limited to the approval by the Owner and the Los Angeles Union Station – Metro. To minimize traffic congestion, delivery of materials shall be during the working hours of 7:00 am to 3:00 pm and not beyond the outside of peak traffic hours in the Union Station campus unless otherwise approved by the Owner. Wear hard hats in designated areas. Do not enter any restricted areas unless required to do so and until cleared for such entry. The Design-Builder equipment shall be conspicuously marked for identification.

1.3.1.1 Employee List

The Design-Builder shall provide to the Owner, in writing, the names of two designated representatives authorized to request personnel and vehicle passes for employees and subcontractor's employees prior to commencement of work under this contract. The Design-Builder shall adhere to the requirements of the Owner and the Los Angeles Union Station – Metro for the life of the contract. The Design-Builder shall ask for a copy of these requirements at the preconstruction.

Ensure that Design-Builder personnel employed on the site become familiar with and obey the Owner and the Los Angeles Union Station – Metro regulations. Wear hard hats in designated areas. Do not enter any restricted areas unless required to do so and until cleared for such entry. The Design-Builder's equipment shall be conspicuously marked for identification. Comply with the following conditions:

- a. Restrict employees/representatives to the work site and control travel directly to and from the work site.
- b. Restore all traffic/parking/security signs and markings, including space numbers, designations, and lines, to their original form if such signs/markings are defaced or deleted during construction/repair.
- c. Be responsible for control and security of Design-Builder-owned equipment and materials at the work site. Report immediately missing/lost/stolen property to the Owner.
- d. Not Used.
- e. Not Used.

1.3.4 Working Hours

Regular working hours shall consist of an 8-1/2 hour period established by the Design-Builder between 7 a.m. and 3:30 p.m., Monday through Friday, excluding Owner holidays. **Exceptions are subject to Owner approval.**

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1.3.5 Work Outside Regular Hours

Work outside regular working hours requires Owner approval. Make application ~~1-5, 10 days~~ prior to such work to allow arrangements to be made by the Owner for inspecting the work in progress, giving the specific dates, hours, location, type of work to be performed, contract number, and project title. Based on the justification provided, the Owner may approve work outside regular hours. During periods of darkness, the different parts of the work shall be lighted in a manner safe for the workers. Make utility cutovers after normal working hours or on Saturdays, Sundays, and Government holidays unless directed otherwise.

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1.3.6 Occupied areas/floors

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The Design-Builder shall be working around areas/floors which are occupied. Do not enter the areas/floors(s) without prior approval of the Owner.

1.3.7 Utility Cutovers and Interruptions

- a. Make utility cutovers and interruptions after normal working hours or on Saturdays, Sundays, and Government holidays. Conform to procedures required in the paragraph "Work Outside Regular Hours."
- b. Ensure that new utility lines are complete, except for the connection, before interrupting existing service.
- c. Interruption to water, sanitary sewer, storm sewer, telephone service, electric service, air conditioning, heating, fire alarm, compressed air, and loop fire water main shall be considered utility cutovers pursuant to the paragraph entitled "Work Outside Regular Hours."
- d. Operation of Building Utilities: The Design-Builder shall not operate nor disturb the setting of control devices in the Building utilities system, including HVAC, water, and electrical, internet, IT, etc. The Owner will operate the control devices as required for normal conduct of the work. The Design-Builder shall notify the Owner giving reasonable advance notice when such operation is required.

1.4 SECURITY REQUIREMENTS

Design-Builder personnel shall be required to obtain personnel identification badges. The Design-Builder shall submit, in triplicate, a list of his subcontractors and the work each is to perform. On this listing shall appear the names of the key personnel of the Design-Builder and subcontractors. The key personnel shall be responsible for identifying other Design-Builder and subcontractor personnel for the purpose of obtaining identification badges. Immediately after award, the Design-Builder shall submit a letter to the Owner with the following information for each employee: Company name, employee's name, **last four digits of the** Social Security number, height, and weight. Also, indicate the names of persons authorized to vouch for additional employees requiring badges.

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- a. The Owner's Facilities Front Desk staff will issue an identification badge upon completion of part A of the activity pass application form. This outlines proper procedures and instructions to be followed when issuing activity badges and vehicles passes to Design-Builders. The following procedures may apply:

- (1) Design-Builder shall submit to the Owner, an access list of all personnel who will be working on the contract job. All personnel are required to submit to a background check. We would issue a badge upon completion of a successful background check.
- (2) The Owner requires a **two day (48 hours) week notice** ~~(by Wednesday the week prior)~~ to notify the specific personnel and timeframe that personnel need access to the Building. The Owner will review the request and will grant approval to the personnel entering the building. The Owner will confirm with the Design-Builder that all personnel are approved. The Owner will then send the COVID-19 Building Questionnaire that all personnel will have to review and self-attest the responses.

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- (3) The Design-Builder personnel will submit a COVID-19 Building Questionnaire, shall present a valid picture ID/State Issued ID/State Issued Driver's License that the Security Guard can compare against the access list which will be kept until the duration in the building, and sign in the sign in sheet.
- (4) The Design-Builder personnel shall present a valid picture ID that the Owner can compare against the access list.
- (5) Owner has access to an adjacent parking lot that can be used for a construction staging area. Owner would require **that five of the 23 parking spaces and one of the two ADA spaces be** ~~5 parking spaces and 1 ADA space~~ made available during the construction period.
- (6) Owner also, have red zone parking in front of the building for temporary parking to drop off and/or deliver equipment. Parking permits can be requested daily by our Front Desk and Security.
- (7) Replacement of a lost or stolen pass will be granted after the applicant completes a signed statement outlining the circumstances. The applicant will be verified against a valid access list. Any lost badge will be required of a \$20 replacement fee.

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1.4.1. Areas Not Covered by Contract

Design-Builder personnel will not be permitted to enter Owner spaces and areas not covered by this contract except on prior approval of the site. Coordinate action with the Owner to obtain such entry approval.

1.4.2 Onsite Office

- a. Owner will allow the Design-Builder to use an area of approximately 5,500 – 6,000 square feet of interior vacant space on the building's First Floor for its offices and approximately 3,000 square feet of outdoor space formerly used as a playground for light weight material storage. The Design-Builder shall coordinate with the Owner and submit his layout plan and schedule for approval prior to the usage of said areas.
- b. Equipment markings. Equipment owned or rented by the company shall have the company name painted or stenciled on the equipment in a conspicuous location. Rented equipment is to be conspicuously marked with a tag showing who rented the equipment.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

--End of Section--

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 REFERENCES

The following Articles and Public Contract Codes govern this Section:

Contract Article 5 entitled “Contract Time”

Contract Article 7 entitled “Procedure for Payment”

General Conditions Article 6 entitled “Payment”

1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

Schedule of values; G

1.3 SCHEDULE OF VALUES

1.3.1 Data Required

Unless required by the Owner upon execution of this Agreement, within ten (10) days of execution of the Agreement, Design-Builder shall submit for Owner’s review and approval a schedule of values for all of the Work. See 6.1 Schedule of Values in Article 6 entitled “Payment” in the General Conditions. The schedule of values shall include but not limited to (Construction Contract Bid Items listed in but not limited to Attachment G – Schedule A - Price Proposal Form- in the RFP 2021-CIP 01 and per Section 01110) as a report from the NAS Schedule, Section 01321. Provide a detailed breakdown of the contract price, for each of the various kinds of work, and extended prices therefore.

1.3.2 Schedule Instructions

Payments will not be made until the Schedule of Values has been submitted to and accepted by the Owner. The schedule of values shall identify and breakdown the cost for each item of the scope of work.

1.4 CONTRACT MODIFICATIONS

In accordance with General Conditions Article 9 entitled “Changes to the Contract Price and Time”

1.5 CONTRACTOR'S INVOICE AND CONTRACT PERFORMANCE STATEMENT

1.5.1 Content of Invoice

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Requests for payment will be processed in accordance with the Contract Article 7 entitled "Procedure For Payment".

- a. The Contractor's invoice certified by Design-Builder QC Manager, on the form furnished by the Owner for this purpose, showing in summary form, the basis for arriving at the amount of the invoice. Submit original electronically and copies, unless otherwise required by the Owner.
- b. The Contract Performance Statement on the form furnished by the Owner for this purpose, showing in detail, the estimated cost, percentage of completion, and value of completed performance for each of the construction categories stated in this contract. Submit original electronically and the draft, unless otherwise required by the Owner.
- c. Updated construction and equipment delivery schedules (electronically), unless otherwise required by the Owner. Updated network mathematical analysis (electronically), unless otherwise required by the Owner.
- d. In conjunction with contract Article 5 entitled "Contract Time", Interim redline as-built of all the work completed as of the cutoff date for the invoice. The submittal of interim redline as-built is a condition precedent for payment of the invoice.
- e. In conjunction with Contract clause 7.3 "Final Payment" in Article 7 entitled " Procedure For Payment" , and with Contract Article 5 entitled " Contract Time", Final invoice shall be accompanied by Final Release Form per provision 6.7.2 of the General Conditions. If the Design-Builder is incorporated, the release shall contain the corporate seal. An authorized representative of the corporation shall sign the release and the corporate secretary shall certify the release.

1.5.2 Payment Application of Invoices

- a. All invoices shall be forwarded electronically.
- b. Invoices not completed in accordance with contract requirements will be returned to the Contractor for correction of the deficiencies.
- c. Final invoices not accompanied by Final Release Form will be considered incomplete and will be returned to the Contractor.

1.6 PAYMENTS TO THE DESIGN-BUILDER

Payments will be made on submission of itemized requests by the Design-Builder which comply with but not limited to the requirements of this section (unless otherwise noted in the Contract Documents), and will be subject to reduction for overpayments or increase for underpayments made on previous payments to the Design-Builder.

- a. Basis for Owner's consideration to allow progress payment for material delivered on the site (but not installed) and for completed preparatory work: Materials that will not be paid for prior to installation include, but are not limited to, bulk quantities such as nails, fasteners, conduits, gypsum board, etc. In the request for progress payment, such items shall be specifically identified in the Design-Builder's estimates of work submitted for the Owner's approval in accordance with paragraph entitled "Schedule of Values" above. At the time of invoicing, the amount billed shall be supported by documents establishing its value.

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1.6.1 Obligation of Owner's Payments

The obligation of the Owner to make payments required under the provisions of this contract will, at the discretion of the Owner, be subject to reductions and/or suspensions permitted under the Contract Documents and the Public Contract Code:

- a. Reasonable deductions due to defects in material or workmanship;
- b. Claims which the Owner may have against the Design-Builder under or in connection with this contract;
- c. Unless otherwise adjusted, repayment to the Contract upon demand for overpayments made to the Contractor; and
- d. Failure to provide up-to-date drawings not current pursuant to General Conditions Article 2 entitled "Design-Builder's Services and Responsibilities."

1.6.2 Payment for Materials Offsite

Not Used

1.6.3 Payment for Materials OnSite

A partial payment at the Owner's sole discretion may be made for materials delivered to the site but not yet incorporated into the construction. Materials on-site shall be listed as a separate item on the Contract Performance Statement. The value of the materials shall be supported by the Schedule of Values, verified supplier-invoiced and Design-Builder – purchased value and proof of payment for the acceptable materials delivered to the site, or stored subject to the control of the Design-Builder but identified as the property of the Owner. A separate list of all materials being invoiced shall be submitted with the invoice in the following format:

MATERIAL ON	MATERIAL	MATERIAL	MATERIAL
SITE LAST	RECEIVED	CONSUMED	ON
ITEM PERIOD +	THIS PERIOD -	THIS PERIOD =	SITE

The Design-Builder must make any materials stored offsite secured and accessible to the Owner to verify invoiced value and shall deliver these materials to the Owner upon request.

1.7 EQUITABLE ADJUSTMENTS: WAIVER AND RELEASE OF CLAIMS

In conjunction with the General Conditions Article 10 entitled "Contract Adjustments and Disputes":

- a. Whenever the Design-Builder submits a claim for equitable adjustment under any clause of this Contract which provides for equitable adjustment of the Contract, such claim shall include all types of adjustments in the total amounts to which the clause entitles the Design-Builder, including, but not limited to, adjustments arising out of delays or disruptions or both caused by such change.
- b. Except as the parties may otherwise expressly agree, the Design-Builder shall be deemed to have waived (1) any adjustments to which it otherwise might be entitled under the clause where such claim fails to request such adjustments, and (2) any increase in the amount of equitable adjustments additional to those requested in its claim.

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- c. The Design-Builder agrees that, if required by the Owner, he will execute a release, in form and substance satisfactory to the Owner, as part of the supplemental agreement setting forth the aforesaid equitable adjustment. The Design-Builder further agrees that such release shall discharge the Owner, its officers, Consultants, agents and employees, from any further claims, including but not limited to, further claims arising out of delays or disruptions or both caused by the aforesaid change.

1.8 CHANGES ESTIMATES

In making all equitable adjustments under Article 9 of the General Conditions entitled “Changes to the Contract Price and Time” compensation for additions will be based upon estimated costs at the time the work is performed and credit for deductions will be based upon estimated costs at the time the Contract was made. In arriving at the amount of the change in price, if any, allowance may be made for profit overhead and general expenses, and other items approved by Owner.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

--End of Section--

SECTION 01 31 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 REFERENCES

1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

List of contact personnel; G

View location map; G

Progress and completion slides; G

Insurance; G

Personnel list; G

Vehicle list; G

Statement of Acknowledgement Form

1.3 NOT USED

1.4 NOT USED

1.5 NOT USED

1.6 DESIGN-BUILDER PERSONNEL REQUIREMENTS

1.6.1 Subcontractors and Personnel

Furnish a list of contact personnel of the Design-Builder and subcontractors including addresses and telephone numbers for use in the event of an emergency. As changes occur and additional information becomes available, correct and change the information contained in previous lists.

1.6.2 Identification Badges

Identification badges, if required, will be furnished without charge. Application for and use of badges will be as directed. Immediately report instances of lost or stolen badges to the Owner.

1.6.3 Contractor Personnel Requirements

Failure to obtain entry approval will not affect the contract price or time of completion.

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1.6.3.1 Passes

Submit request for personnel and vehicle passes together. Include the Certificate of Insurance for Contractor and Subcontractor(s) and the Statement of Acknowledgement Form with the submittal. Passes will normally be issued within 10 days.

1.6.3.2 Control

Maintain strict accountability over passes. Immediately report to the source of issue, passes missing or lost and the circumstances. If the Design-Builder has another active contract or one commencing immediately, employees' names may be transferred from one contract to the other. Final payment will not be effected until employees are transferred to another contract or the records are cleared. Furnish a signed letter, countersigned by the source of issue, stating that passes have been turned in.

1.7 SUPERVISION

Have at least one qualified supervisor capable of reading, writing, and conversing fluently in the English language on the job site during working hours. In addition, if a Quality Control (QC) representative is required on the contract, then that individual shall also have fluent English communication skills.

1.8 PRECONSTRUCTION CONFERENCE

At the final design completion, but prior to commencement of any work at the site, meet with the Owner to discuss and develop a mutual understanding relative to the administration of the value engineering and safety program, preparation of the schedule of values, shop drawings, and other submittals, scheduling programming, and prosecution of the work. Major subcontractors who will engage in the work shall also attend.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

--End of Section--

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Submittal Register

Submittal register database and submittal management program shall be delivered to the Owner by the Contractor at the Pre-Construction Meeting. Register database will have the following fields completed, to the extent that will be required by the Owner during subsequent usage.

Column (c): Lists specification section in which submittal is required.

Column (d): Lists each submittal description (SD No. and type, e.g., SD-04 Drawings) required in each specification section.

Column (e): Lists one principal paragraph in the specification section and/or contract documents where a material or product is specified. This listing is only to facilitate locating submitted requirements. Do not consider entries in column (e) as limiting project requirements.

Column (f): Indicate approving authority for each submittal. A "G" indicates approval by Owner; a blank indicates approval by the Design-Builder QC manager.

1.2 DEFINITIONS

1.2.1 Submittal

Shop drawings, product data, samples, and administrative submittals presented for review and approval.

1.2.2 Types of Submittals

All submittals are classified as indicated in paragraph "Submittal Descriptions (SD)". Submittals also are grouped as follows:

- a. Shop drawings: As used in this section, drawings, schedules, diagrams, and other data prepared specifically for this contract, by contractor or through contractor by way of subcontractor, manufacturer, supplier, distributor, or other lower tier contractor, to illustrate portion of work.
- b. Product data: Preprinted material such as illustrations, standard schedules, performance charts, instructions, brochures, diagrams, manufacturer's descriptive literature, catalog data, and other data to illustrate portion of work, but not prepared exclusively for this contract.
- c. Samples: Physical examples of products, materials, equipment, assemblies, or workmanship that are physically identical to portion of work, illustrating portion of work or establishing standards for evaluating appearance of finished work or both.

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- d. Administrative submittals: Data presented for reviews and approval to ensure that administrative requirements of project are adequately met but not to ensure directly that work is in accordance with the design concept and in compliance with contract documents.

1.3 SUBMITTAL IDENTIFICATION (SD)

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals

- Certificates of insurance.
- Surety bonds.
- List of proposed subcontractors.
- List of proposed products.
- Construction Progress Schedule.
- Submittal schedule.
- Schedule of values.
- Health and safety plan.
- Work plan.
- Quality control plan.
- Environmental protection plan.

SD-02 Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the contractor for integrating the product or system into the project.

Drawings prepared by or for the contractor to show how multiple systems and interdisciplinary work will be coordinated.

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

Calculations, mix designs, analyses or other data pertaining to a part of work.

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SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must have been within three years of date of contract award for the project.)

Report which includes findings of a test required to be performed by the Design-Builder on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports

Daily checklists

Final acceptance test and operational test procedure

SD-07 Certificates

Statements signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

Confined space entry permits.

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.

SD-09 Manufacturer's Field Reports

Documentation of the testing and verification actions taken by manufacturer

Factory test reports.

SD-10 Operation and Maintenance Data

Data intended to be incorporated in operations and maintenance manuals.

SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

As-built drawings.

As-built schedule

Special warranties.

Posted operating instructions.

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Maintenance/Operating Manuals

Training plan.

1.3.1 Approving Authority

Person authorized to approve submittal.

1.3.2 Work

As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce construction and materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.4 SUBMITTALS

Submit the following in accordance with the requirements of this section.

SD-01 Preconstruction Submittals

Submittal register; G

Certificates of insurance.

Surety bonds.

Lists of proposed subcontractors

List of proposed products.

Construction Progress Schedule.

Submittal schedule.

Schedule of values.

Health and safety plan.

Work plan.

Quality control plan

Environmental protection plan.

1.5 USE OF SUBMITTAL REGISTER

Prepare and maintain submittal register as the work progresses. Use electronic submittal register program in the format approved by the Owner. Do not change data which is output in columns (c), (d), (e), and (f) as delivered by the Owner; retain data which is output in columns (a), (g), (h), and (i) as approved.

1.5.1 Submittal Register

Submit submittal register as an electronic database. Submit with quality control plan and project schedule required by Section 01450A, "Quality Control" and Section 01321, "Network Analysis Schedules (NAS)." Do not change data in columns (c), (d), (e), and (f) provided at the preconstruction meeting. Verify that all submittals required for the project are listed and add missing submittals. Complete the following on the register database

Column (a) Activity Number: Activity number from the project schedule.

Column (g) Contractor Submit Date: Scheduled date for approving authority to receive submittals.

Column (h) Contractor Approval Date: Date contractor needs approval of submittal.

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Column (i) Contractor Material: Date that contractor needs material delivered to contractor control.

1.5.2 Design-Builder Use of Submittal Register

Update the following fields in the submittal register program or equivalent fields in program utilized by Design-Builder.

Column (b) Transmittal Number: Contractor assigned list of consecutive numbers.

Column (j) Action Code (k): Date of action used to record contractor's review when forwarding submittals to QC.

Column (l) List date of submittal transmission.

Column (q) List date approval received.

1.5.3 Approving Authority Use of Submittal Register

Update the following fields in the submittal register program or equivalent fields in program utilized by contractor.

Column (b).

Column (l) List date of submittal receipt.

Column (m) through (p).

Column (q) List date returned to contractor.

1.5.4 Contractor Action Code and Action Code

Entries used will be as follows (others may be prescribed by Transmittal Form):

NR - Not Received

AN - Accepted as noted

A - Accepted

RR - Rejected, Revise, and Resubmit

1.5.5 Copies Delivered to the Owner

Deliver one copy of submitted register updated by contractor to Owner with each invoice request. Deliver in electronic format, unless a paper copy is requested by Owner.

1.6 PROCEDURES FOR SUBMITTALS

1.6.1 Reviewing, Certifying, Approving Authority

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Design-Builder QC organization shall be responsible for reviewing and certifying that submittals are in compliance with contract requirements. Approving authority on submittals is Design-Builder QC manager unless otherwise specified for specific submittal. At each "Submittal" paragraph in individual specification sections, a notation "G," following a submittal item, indicates Owner is approving authority for that submittal item.

1.6.2 Constraints

- a. Submittals listed or specified in this contract shall conform to provisions of this section, unless explicitly stated otherwise.
- b. Submittals shall be complete for each definable feature of work; components of definable feature interrelated as a system shall be submitted at same time.
- c. When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, submittal will be returned without review.
- d. Acceptance of a separate material, product, or component does not imply acceptance of assembly in which item functions.

1.6.3 Scheduling

- a. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential requirements to resubmit.
- b. Except as specified otherwise, allow review period, beginning with receipt by reviewing authority that includes at least 5 working days for submittals for the design-Builder QC manager approval and 10 working days for submittals for Owner review. Period of review for submittals with Owner review begins when Owner receives submittal from QC organization. Period of review for each resubmittal is the same as for initial submittal.
- c. For submittals requiring review by fire protection engineer, allow review period, beginning when Owner receives submittal from QC organization, of 20 working days for return of submittal to the contractor. Period of review for each resubmittal is the same as for initial submittal.

1.6.4 Variations

Variations from contract requirements require Owner approval pursuant to Contract Article 6 entitled "Contract Price" and General Conditions of Contract article 9 entitled "Changes to the Contract Price and Time" and will be considered where advantageous to Owner.

1.6.4.1 Considering Variations

Discussion with Owner prior to submission, will help ensure functional and quality requirements are met and minimize rejections and resubmittals. When contemplating a variation which results in lower cost, consider submission of the variation as a Value Engineering Change Proposal (VECP).

1.6.4.2 Proposing Variations

When proposing variation, deliver written request to the Owner, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to Owner. If lower

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cost is a benefit, also include an estimate of the cost-saving. In addition to the documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

1.6.4.3 Warranting That Variations Are Compatible

When delivering a variation for approval, Design-Builder warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

1.6.4.4 Review Schedule Is Modified

In addition to normal submittal review period, a period of 10 working days will be allowed for consideration by the Owner of submittals with variations.

1.6.5 Design-Builder's Responsibilities

- a. Determine and verify field measurements, materials, field construction criteria; review each submittal; and check and coordinate each submittal with requirements of the work and contract documents.
- b. Transmit submittals to QC organization in accordance with schedule on approved Submittal Register, and to prevent delays in the work, delays to Owner, or delays to separate contractors.
- c. Advise Owner of variation, as required by paragraph entitled "Variations."
- d. Correct and resubmit submittal as directed by reviewing authority. When resubmitting disapproved transmittals or transmittals noted for resubmittal, the contractor shall provide copy of that previously submitted transmittal including all reviewer comments for use by approving authority. Direct specific attention in writing or on resubmitted submittal, to revisions not requested by reviewing authority on previous submissions.
- e. Not Used
- f. Complete work which must be accomplished as basis of a submittal in time to allow submittal to occur as scheduled.
- g. Ensure no work has begun until submittals for that work have been returned as "accepted," or "accepted as noted", except to the extent that a portion of work must be accomplished as basis of submittal.

1.6.6 QC Organization Responsibilities

The responsibilities of the Design-Builder QC Organization, pursuant to the General Conditions Article 2 entitled "Design-Builder's Services and Responsibilities," include but are not limited to the following:

- a. Note date on which submittal was received from Design-Builder on each submittal.
- b. Review each submittal; and check and coordinate each submittal with requirements of work and contract documents.
- c. Review submittals for conformance with project design concepts and compliance with contract documents.

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- d. Act on submittals, determining appropriate action based on QC organization's review of submittal.
 - (1) When Design-Builder QC manager is approving authority, take appropriate action on submittal from the possible actions defined in paragraph entitled, "Actions Possible."
 - (2) When Owner is approving authority or when variation has been proposed, forward submittal to Owner with certifying statement or return submittal marked "not reviewed" or "revise and resubmit" as appropriate. The QC organization's review of submittal determines appropriate action.

e. Ensure that material is clearly legible.

f. Stamp each sheet of each submittal with QC certifying statement or approving statement, except that data submitted in bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only.

- (1) When approving authority is Owner, QC organization will certify submittals forwarded to Owner with the following certifying statement:

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with Contract Number _____, is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is submitted for Owner approval.

Certified by Design-Builder Submittal Reviewer _____, Date _____
(Signature when applicable)

Certified by Design-Builder QC manager _____, Date _____"
(Signature)

- (2) When approving authority is Design-Builder QC manager, the QC manager will use the following approval statement when returning submittals to contractor as "Approved" or "Approved as Noted."

"I hereby certify that the (material) (equipment) (article) shown and marked in this submittal and proposed to be incorporated with Contract Number _____, is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is _____ approved for use.

Certified by Design-Builder Submittal Reviewer _____, Date _____
(Signature when applicable)

Approved by Design-Builder QC manager _____, Date _____"
(Signature)

- g. Sign certifying statement or approval statement. The person signing certifying statements shall be QC organization member designated in the approved QC plan. The signatures shall be in original ink. Stamped signatures are not acceptable unless otherwise approved by Owner.
- h. Update submittal register database as submittal actions occur and maintain the submittal register at project site until final acceptance of all work by the Owner.
- i. Retain a copy of approved submittals at project site, including contractor's copy of approved samples.

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1.6.7 The Owner's Responsibilities

When approving authority is the Owner, the Owner will:

- a. Note date on which submittal was received from QC manager, on each submittal for which the Owner is approving authority.
- b. Review submittals for acceptance within scheduling period specified and only for conformance with project design concepts and compliance with contract documents.
- c. Identify returned submittals with one of the actions defined in paragraph entitled "Actions Possible" and with markings appropriate for action indicated.

1.6.8 Actions Possible

Submittals will be returned with one of the following notations:

- a. Submittals marked "not reviewed" will indicate submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and approved by contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by contractor or for being incomplete, with appropriate action, coordination, or change.
- b. Submittals marked "accepted" "accepted as submitted" authorize Design-Builder to proceed with work covered.
- c. Submittals marked "accepted as noted" or "accepted except as noted; resubmission not required" authorize Design-Builder to proceed with work as noted provided contractor takes no exception to the notations.
- d. Submittals marked "revise and resubmit" or "rejected" indicate submittal is incomplete or does not comply with design concept or requirements of the contract documents and shall be resubmitted with appropriate changes. No work shall proceed for this item until resubmittal is approved.

1.7 FORMAT OF SUBMITTALS

1.7.1 Transmittal Form

Transmit each submittal, except sample installations and sample panels, to office of approving authority. Transmit submittals with transmittal form prescribed by Owner and standard for project. The transmittal form shall identify contractor, indicate date of submittal, and include information prescribed by transmittal form and required in paragraph entitled "Identifying Submittals." Process transmittal forms to record actions regarding sample panels and sample installations.

1.7.2 Identifying Submittals

Identify submittals, except sample panel and sample installation, with the following information permanently adhered to or noted on each separate component of each submittal and noted on transmittal form. Mark each copy of each submittal identically, with the following:

- a. Project title and location.

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- b. Construction contract number.
- c. Section number of the specification section by which submittal is required.
- d. Submittal description (SD) number of each component of submittal.
- e. When a resubmission, add alphabetic suffix on submittal description, for example, SD-10A, to indicate resubmission.
- f. Name, address, and telephone number of subcontractor, supplier, manufacturer and any other second-tier contractor associated with submittal.
- g. Product identification and location in project.

1.7.3 Format for Product Data

- a. Present product data submittals for each section as a complete, bound volume. Include table of contents, listing page, and catalog item numbers for product data.
- b. Indicate, by prominent notation, each product submitted; indicate specification section number and paragraph number to which it pertains.
- c. Supplement product data with material prepared for project to satisfy submittal requirements for which product data does not exist. Identify this material as developed specifically for project.
- d. Provide product data in imperial dimensions. Where product data are included in preprinted catalogues with inch-pound units only, submit metric dimensions on separate sheet.

1.7.4 Format for Shop Drawings

- a. Shop drawings shall not be less than 8 ½ x 11 in, nor more than 46.8 x 33.1 in.
- b. Present 8 ½ x 11 in sized shop drawings as part of the bound volume for submittals required by section. Present larger drawings in sets.
- c. Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph entitled "Identifying Submittals."
- d. Dimension drawings, except diagrams and schematic drawings; prepare drawings demonstrating interface with other trades to scale. Shop drawing dimensions shall be the same unit of measure as indicated on the contract drawings. Identify materials and products for work shown.

1.7.5 Format of Samples

- a. Furnish samples in sizes below, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately same size as specified:
 - (1) Sample of Equipment or Device: Full size.
 - (2) Sample of Materials Less Than 2 x 3 in: Built up to 8 ½ x 11 in
 - (3) Sample of Materials Exceeding 8 ½ x 11 in: Cut down to 8 ½ x 11 in and adequate to indicate color, texture, and material variations.
 - (4) Not used.

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- (5) Sample of Non-Solid Materials: 750 ml. Examples of non-solid materials are sand and paint.
- (6) Color Selection Samples: 2 x 4 in
- (7) Not Used
- (8) Not Used
- b. Not Used
- c. Not Used
- d. Not Used
- e. When color, texture or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

1.7.6 Format of Administrative Submittals

- a. When submittal includes a document which is to be used in project or become part of project record, other than as a submittal, do not apply Design-Builder's approval stamp to document, but to a separate sheet accompanying document.
- b. Operation and Maintenance Manual Data: Submit in accordance with Section 017810, "Operation and Maintenance Data." Include components required in that section and the various technical sections.
- c. Provide all dimensions in administrative submittals in imperial. Where data are included in preprinted material with inch-pound units only, submit metric dimensions on separate sheet.

1.8 QUANTITY OF SUBMITTALS

1.8.1 Number of Copies of Product Data

- a. Submit an electronic copy and as needed hard copies(if required) of submittals of product data requiring review and acceptance only by Design-Builder QC organization and an electronic copy and as needed hard copies(if required by Owner) of product data requiring review and acceptance by Owner. Submit two copies of submittals of product data for operation and maintenance manuals.

1.8.2 Number of Copies of Shop Drawings

Submit shop drawings in compliance with quantity requirements specified for product data.

1.8.3 Number of Samples

- a. Submit two samples, or two sets of samples showing range of variation, of each required item. One approved sample or set of samples will be retained by approving authority and one will be returned to contractor.
- b. Submit one sample panel. Include components listed in technical section or as directed.
- c. Submit one sample installation, where directed.
- d. Submit one sample of non-solid materials.

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1.8.4 Number of Copies of Administrative Submittals

- a. Unless otherwise specified, submit administrative submittals compliance with quantity requirements specified for product data.
- b. Submit administrative submittals required under "SD-10 Operation and Maintenance Data" to conform to Section 017810, "Operation and Maintenance Data."

1.9 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.9.1 Owner Approved

Owner approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Owner. Within the terms Specifications and Drawings for Construction, they are considered to be "shop drawings."

1.9.2 Information Only

All submittals not requiring Owner approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.10 APPROVED SUBMITTALS

The Owner's acceptance or approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Acceptance or Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been accepted or approved by the Owner, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.11 REJECTED SUBMITTALS

The Design-Builder shall make all corrections required by the Owner and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Design-Builder considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with Article 9 in the General Conditions entitled "Changes to the Contract Price and Tim shall be given promptly to the Owner.

1.12 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

1.13 GENERAL

The Contractor shall make submittals as required by the specifications. The Owner may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the Design-Builder licensed Architect/Engineer (A/E) and/or CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Owner acceptance or approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.14 SUBMITTAL REGISTER

The Design-Builder shall submit a sample of the submittal register in the preconstruction for approval. The Design-Builder QC Organization shall prepare and maintain the Submittal Register for the life of this contract.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

--End of Section--

SECTION 01 32 10

NETWORK ANALYSIS SCHEDULES (NAS)

PART 1 GENERAL

1.1 DESCRIPTION

Within (see 2.1.3 in the General Conditions Article 2 “Design-Builder’s Services and Responsibilities) days after award, provide a detailed design schedule, along with a milestone construction schedule. Submit the complete network analysis system (NAS) construction schedule with 100% design submittal. The NAS shall consist of the network analysis schedule (diagram), mathematical analysis, and associated reports. The scheduling of construction shall be the responsibility of the Design-Builder. Submission of progress and revision data will be used to measure work progress, aid to evaluate time extensions, and provide basis of all progress payments. The Critical Path Method (CPM) of network calculation shall be used to generate the project schedule and will utilize the Precedence Diagram technique to satisfy both time and cost applications. All progress payment amounts will be derived from and tied to the cost-loaded schedule activities.

The schedule shall include a Design and Construction Phasing Plan. Such Plan shall identify all potential interruptions to utilities and activity operations

1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

Standard Activity Coding Dictionary

Network Analysis Schedule; G

Accepted Network Analysis Schedule; G

Construction Phasing Plan

SD-07 Certificates

Monthly Network Analysis Updates; G

SD-11 Closeout Submittals

1.3 SCHEDULE ACCEPTANCE

Review comments made by the Owner on the Design-Builder's construction schedule will not relieve the Design-Builder from compliance with requirements of the Contract Documents. The Design-Builder is responsible for scheduling, sequencing, and prosecuting the Work to comply with the requirements of the Contract Documents. Owner acceptance extends only to the activities of the Design-Builder's schedule that the Owner has been assigned responsibility for and agrees it is responsible. The Owner will also review for contract imposed schedule constraints and conformance, and cost loading of the CPM activities. Comments offered on other parts of the schedule which the Design-Builder is assigned responsibility are offered as a courtesy and are not conditions of Owner acceptance; but are for the general conformance with established industry schedule concepts.

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1.3.1 Schedule Acceptance Prior to Start of Work

The Accepted Network described in the paragraph entitled "Accepted Network Analysis Schedule" must be submitted and accepted by the Owner before the Design-Builder will be allowed to start work.(see 2.1.3 in the General Conditions Article 2)

1.3.2 Acceptance

- a. When the Accepted Network Analysis Schedule is submitted and accepted by the Owner, it will be considered the "Baseline CPM Schedule". The Baseline CPM Schedule will then be used by the Design-Builder for planning, organizing, and directing the work; reporting progress; and requesting payment for work accomplished. The schedule will be updated monthly by the Design-Builder and submitted monthly with the progress pay request to reflect the current status of the work. The submittal and acceptance of the Accepted Network Analysis Schedule and accurate updated schedules accompanying the pay requests are both conditions precedent to processing pay requests. Only design milestone payments will be paid prior to acceptance of construction Baseline CPM schedule.
- b. Submittal of the Network, and subsequent schedule updates, will be understood to be the Design-Builder's representation that the submitted schedule meets all of the requirements of the Contract Documents, accurately reflects the work accomplished, and that Work will be executed in the sequence indicated on the submitted schedule.

1.4 SOFTWARE

The scheduling software that will be utilized by the Owner on this project is Primavera Project Planner (P6) by Primavera Systems, Inc, unless otherwise approved by the Owner. If the Design-Builder chooses to use an equally capable program, the Design-Builder shall convert all data into Primavera Machine Readable Format (Excel, etc.) prior to submission of all schedule inputs, included but not limited to the initial schedule, monthly updates, and changes to the schedule. It is the responsibility of the Design-Builder to ensure all data elements and logic required by this specification are kept intact during the conversion to Primavera. If scheduling software other than Primavera is being used, provide a licensed copy of the Design-Builder's scheduling software and data if needed. The software will be the most current version available and will be compatible with all MS-Windows operating systems. The scheduling software package shall contain all user manuals normally provided by the software distributor. If the Design-Builder upgrades their software during the course of the contract, the upgrade shall also be provided to the Owner if required. The software will remain the property of the Owner.

1.4.1 Software Training (If requested by Owner)

If software other than Primavera is used by the Design-Builder, provide schedule software training for two Owner personnel, if required. A firm accredited by the scheduling software manufacturer, as their authorized trainer, shall conduct the training. The training shall last a minimum of 24 hours per individual. Provide course material the training firm typically distributes at their software classes. Provide all necessary materials and equipment to conduct the training. The Design-Builder shall provide training within 10 working days after notification to the Design-Builder, by the Owner. Unless agreed to by the Owner, the training site shall be at the Owner's offices.

1.5 QUALIFICATIONS

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The Design-Builder shall designate a Scheduler that will be responsible for the development, preparation, and maintenance of an accurate, computerized Network Analysis Schedule. The Scheduler shall have previously developed, created and maintained previous computerized schedules of similar size and complexity of this contract. A resume outlining the qualifications of the scheduler shall be submitted for acceptance to the Owner. If at a later date, the Owner considers the Design-Builder's Scheduler to be incompetent or objectionable, the Design-Builder will propose a new Scheduler, meeting the qualification requirements. Payments will not be processed until an acceptable Scheduler is provided.

1.6 NETWORK SYSTEM FORMAT

The system shall consist of time scaled logic diagrams accompanying mathematical analyses and specified reports.

1.6.1 Diagrams

Show the order and interdependence of activities and the sequence in which the work is to be accomplished as planned. The basic concept of a network analysis diagram will be followed to show how the start of a given activity is dependent on the completion of preceding activities and how its completion restricts or restrains the start of following activities. Diagrams shall be organized by Work Phase and sorted by Early Start Date and will show a continuous flow from left to right with no logic (relationship lines) from right to left. With the exception of the Project Start and Project Completion milestone activities, no activities will be open-ended; each activity will have predecessor and successor ties. The diagram shall clearly show the activities of the critical path. No onsite construction activity shall have a duration in excess of 20 working days. Once an activity exists on the schedule it may not be deleted and must remain in the logic. No more than 20 percent of the activities may be critical or near critical. Critical will be defined as having zero days of Total Float. "Near critical" will be defined as having Total Float in the range of 1 to 14 days. Show the following information on the diagrams for each activity:

- a. Activity/Event Number
- b. Activity Description
- c. Original Duration in work days
- d. Actual Duration in Work Days
- e. Early Start Date
- f. Early Finish Date
- g. Total Float (or Slack)
- h. Responsibility Code

Provide network diagrams on ANSI E sheets. Updated diagrams shall show the date of the latest revision.

1.6.2 Quantity and Numbering of Activities

Numbering shall be assigned so that, in general, predecessor activity numbers are smaller numerically than the successor activity numbers. Skip numbering shall be used on the network to

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allow insertion of additional activities for contract modifications and logic changes. Types of activities included in the schedule are specified below.

1.6.2.1 Procurement Activities

Tasks related to the procurement of material or equipment shall be included as separate activities in the project schedule. As a minimum, separate procurement activities shall be provided for every specification section. If the Design-Builder intends on using Just-In-Time (JIT) delivery methods, the schedule will show each JIT delivery with relationship tie to the Construction Activity specifically for the JIT delivery. Material and equipment for which payment will be requested in advance of installation shall be cost-loaded with the procurement costs. All activities within a procurement process/cycle will have a unique identifier in the activity code to show their relationships and will extend to the related construction activities (i.e., Work Category).

If the Owner's action on any submittal is "Rejected" or "Revise and Resubmit", a new series of Procurement Activities will be inserted into the schedule. Predecessor for the new submittal preparation activity will be the original acceptance activity and the successor of the new acceptance activity will be the fabrication/delivery activity for the equipment or material.

1.6.2.2 Owner Activities

Owner and other agency activities that could impact progress shall be clearly identified. Owner activities include, but are not limited to; Owner accepted submittal reviews, Owner conducted inspections/tests, utility outages, Notice(s) to Proceed and delivery of Owner Furnished Material/Equipment. Show activities indicating Owner furnished materials and equipment utilizing delivery dates; Owner activities will be driven by calendars that reflect Saturdays, Sundays and all Federal Holidays as non-work days.

1.6.2.3 Construction Activities

Construction activities shall include, but are not limited to: Tasks related to mobilization/demobilization; the installation of temporary or permanent work by tradesman; testing and inspections of installed work by technicians, inspectors or engineers; start-up and testing of equipment; commissioning of building and related systems; scheduling of specified manufacturer's representatives; final clean-up; training to be provided; and administrative tasks necessary to start, proceed with, accomplish or finalize the contract. Design-Builder activities will be driven by calendars that reflect Saturdays, Sundays and all Federal Holidays as non-work days.

1.6.2.4 Anticipated Weather Delays

Schedule activity duration(s) shall be formulated with allowance for normal adverse weather conditions. Any activity duration which could be impacted by normally anticipated adverse weather (precipitation, high or low temperature, wind, etc.), due to the time period which the Design-Builder has scheduled the work, shall include an adjustment to include the anticipated weather delay. The Design-Builder shall anticipate delay by comparing the contractually imposed environmental restrictions in the Contract Documents to the National Oceanic and Atmospheric Association's (NOAA) historical monthly averages for the NOAA location closest to the project site. The number of anticipated adverse weather delays allocated to an activity will be reflected in the activity's calendar. A lost workday, due to weather conditions, is defined as a day in which the Design-Builder's workforce cannot work 50 percent or more of the day. The Design-Builder shall immediately notify the Owner when a lost day has occurred due to weather and will record on the Daily Reports, the occurrence of adverse weather and resultant impact to the normally scheduled

work. If the number of actual adverse weather delay days exceeds the number of days anticipated, the Owner will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days and issue a modification in accordance with the contract clauses.

1.6.2.5 Activity Properties

Schedule activities will have the following properties:

- a. **Standard Activity Coding Dictionary:** The Design-Builder shall submit a coding scheme for Schedule Activity Numbers that shall be used throughout the project. The coding scheme submitted shall list the values for each activity code category and translate those values into project specific designations. Code length shall not exceed 10 characters. Once accepted, the coding scheme will be used for the duration of the project.
- b. **Activity Description:** Each activity shall have a narrative description consisting of a Verb or work function (e.g., form, pour, excavate), an Object (e.g., slab, footing, underfloor plumbing), and Area (e.g., 3rd floor).
- c. **Work Phase:** All activities shall be identified in the project schedule by the phase of work in which the activity occurs. Activities shall not be contained in more than one Work Phase.
- d. **Work Category:** All Activities shall be identified in the project schedule according to the work category which best describes the activity. Examples of work categories are procurement, Owner, and construction activities that are all related to a single Definable Feature of Work. Activities shall not be contained in more than one Work Category.
- e. **Responsibility Code:** All activities in the project schedule shall be identified with the party responsible to perform the task. Responsibility includes, but is not limited to; the prime Design-Builder, subcontracting firm, or Owner agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by a responsibility code. For example, a responsibility code value, "ELEC", may be identified as "Electrical Sub Design-Builder."
- f. **CSI Code:** All activities in the project schedule shall be identified with its respective 6-digit Specification Section number. Activities shall not belong to more than one Section number. If an activity does not have an applicable CSI Code, (such as "Mobilize"), the code will be "000000".
- g. **Drawing Code:** All activities in the project schedule shall be identified with its respective project drawing code. The drawing code is the Sheet Number on the primary project drawing, which indicates the work to be performed. Activities shall not belong to more than one Drawing Code. Examples of Drawing Codes are "C-10", "C.10" or "C10". The code system will allow organizing all activities by drawing code in alpha and numeric order. If an activity does not have an applicable Drawing Code (such as "Mobilize"), the code will be "000000".
- h. **Modification Code:** The Modification Code shall identify activities that are modified or added by contract modification. Activities shall not belong to more than one Modification Code. The Owner will assign the modification number, which will be shown on the. Use a shortened version of the modification number for the code (e.g., A00010 = 010).
- i. **Request for Equitable Adjustment (REA) or Claim Code:** Activities that are modified or added, as a result of a Design-Builder's REA or Claim shall be identified by a code generated by the Design-Builder. Activities shall not belong to more than one REA or Claim Code.

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- j. The Three Phases of Control (Preparatory, Initial, and Follow-up): For each Definable Feature of Work identified in the Design-Builder's Quality Control Plan, include an activity for the Preparatory Phase. The Initial Phase and Follow-up Phase will be represented by the Construction Activities in the schedule.
- k. Project Milestone Dates: Dates shall be shown on the diagram for the start of the project, any contract required interim start and completion dates, contract completion date, and other significant milestones.
- l. Scheduled Project Duration: The schedule duration shall extend from notice-to-proceed to the contract completion date.
- m. Project Start Date Milestones: The schedule shall start no earlier than the contract award date and the project duration (Day 1) will start on the Notice-to-Proceed (NTP) date. The Design-Builder shall include as the first activity in the schedule, an activity named "Contract Award" and another activity on the NTP date named "Start Project". Both activities will be zero duration, with constrained start dates equal to the contract award and NTP dates.
- n. Constraint of Last Activity Milestone: The Design-Builder shall include as the last activity in the project schedule, an activity named "End Project". The "End Project" activity shall be zero duration with a mandatory finish constraint equal to the contract completion date for the project. Calculation of project updates shall be such that if the finish of the last activity falls after the contract completion date, then the float calculation shall reflect negative float on the critical path.
- o. Early Project Completion: In the event the Design-Builder's project schedule shows completion of the project prior to the contract completion date, the Design-Builder shall include an activity named "Design-Builder Early Completion". The activity shall be a zero duration milestone with an unconstrained date representing the Design-Builder's Early Completion date.
- p. Substantial Completion: If the Design-Builder elects to include an activity for Substantial Completion, then it is agreed that Substantial Completion will be the point in time that the Owner considers the project is complete and ready for its intended use. The activity will be named "Substantial Completion". The activity shall be a zero duration milestone with an unconstrained date representing the Design-Builder's Substantial Completion date.
- q. Phase Start Milestone: The Design-Builder shall include as the first activity for a project phase, an activity named "Start Phase X", where "X" identifies the phase of work. The "Start Phase X" activity shall be zero duration with an unconstrained start date equal to the date of the Phase NTP. This unconstrained start date is not a release from contractually required start dates, but is left unconstrained to allow the schedule logic to calculate without hindrance.
- r. End Phase Milestone: The Design-Builder shall include as the last activity in a project phase, an activity named "End Phase X" where "X" identifies the phase of work. The "End Phase X" activity shall be zero duration with an unconstrained late finish date equal to the contract phase completion date. This unconstrained completion date is not a release from contractually required finish dates but is left unconstrained to allow the schedule logic to calculate without hindrance.
- s. Early Phase Completion: If the Design-Builder expects to finish prior to the contract phase completion date, the milestone will show an early finish date equal to the Design-Builder's early finish date. The name of the activity will be "Early Phase Completion" and will be

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zero duration with an unconstrained date representing the Design-Builder's early phase completion date.

- t. **Summary Activities:** The Design-Builder shall include special activities that are a summary of a chain of activities. The start of the activity will be the start date of the first activity in the chain and the finish date will be the finish date of the last activity in the chain. Generalized work sequences, Categories of Work and all Phase of Work activity chains will be summarized.
- u. **Activity/Event Constraints:** Date/time constraint(s), other than those required by the contract, will not be allowed unless accepted by the Owner.
- v. **Leads and Lags:** Leads or lags will not be used when the creation of an activity will perform the same function (e.g., concrete cure time). Lag durations contained in the project schedule shall not have a negative value. The use of any lead or lag will be explained in the Narrative Report.
- w. **Default Progress Data Disallowed:** Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in the CPM scheduling software system. Actual Start and Actual Finish dates on the CPM schedule shall match the dates provided from Design-Builder Quality Control and Production Reports. These reports will be the sole basis for updating the schedule. Work activities will be updated by actual work progression rather than being cash flow driven. The updating of the percent complete and the remaining duration of any activity shall be independent functions; program features that calculate one of these parameters from the other shall be disabled. Out-of-Sequence progress (if applicable) shall be handled through Retained Logic, not the Default Option of Progress Override. Actual labor and equipment hours used on activities will be derived from the daily reports.

1.6.3 Mathematical Analysis

The network diagram mathematical analysis shall include a tabulation of each activity shown on the detailed network diagrams. Provide the following information as a minimum for each activity:

- a. Activity/Event number
- b. Activity/Event description
- c. Estimated duration of activities (by work days)
- d. Earliest start date (by calendar date)
- e. Earliest finish date (by calendar date)
- f. Actual start date (by calendar date)
- g. Actual finish date (by calendar date)
- h. Latest start date (by calendar date)
- i. Latest finish date (by calendar date)
- j. Total float or slack
- k. Material/Equipment costs will be assigned to their respective Procurement Activities (i.e., the delivery activity). Costs for installation of the material/equipment (labor, construction equipment, and temporary materials) will be assigned to their respective Construction Activities. The value of inspection/testing activities will not be less than 10 percent of the

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total costs for Procurement and Construction Activities. Evenly disperse overhead and profit to each activity over the duration of the project.

- l. Responsibility code (including prime Design-Builder, subcontractors, suppliers, Owner, or other party responsible for accomplishment of an activity.)
- m. Area Code
- n. Manpower required (crew size) - If required by Owner
- o. Percentage of activity duration completed
- p. Design-Builder's earnings based on accepted work-in-place.

The program or means used in making the mathematical computation shall be capable of compiling the total value of completed and partially completed activities. The program shall also be capable of accepting revised completion dates as modified by approved time extensions and recompilation of tabulation dates/costs and float accordingly. The total of all cost loaded activities; including costs for material and equipment delivered for installation on the project, and manpower and construction equipment loaded construction activities, shall total to 100 percent of the value of the contract.

1.6.4 Additional Requirements

In addition to the tabulation of activities, in the Paragraph entitled "Mathematical Analysis", include the following data (if requested by Owner):

- a. Not Used.
- b. Equipment loading schedule: Include a description of the major items of construction equipment planned for each construction activity on the project. The description shall include the year, make, model, and capacity. If no equipment is required for an activity, then the activity shall be identified as using zero equipment per day.

1.6.5 Required Reports (unless otherwise agreed with the Owner)

The following reports will be made available in the schedule submittals and in each updated schedule submission provided on disk by the Design-Builder:

- a. By the preceding event number from lowest to highest and then in the order of the following activity number (Activity Identification Report) showing the current status of all activities.
- b. By the amount of total float, from lowest to highest and then in order of [activity number] [early start date] (Total Float or Slack Report) showing all incomplete activities.
- c. By latest allowable start dates and then in order of activity numbers (Late Start Report).
- d. Earned Value Report listing all activities having a budget amount and cost. A compilation of total earnings on the project from the notice to proceed to the most recent monthly progress payment request and the difference between the previous request amount and the current payment request amount. Sort report first by resource and then by activity.
- e. By earliest allowable start dates and then in order of activity number (Early Start Report).
- f. By tasks scheduled to start and finish by the end of the next pay period (30-Day Look Ahead).

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- g. With each updated schedule submission, provide a computer generated Log Report using a recognized schedule comparison software listing all changes made between the previous schedule and current updated schedule. Identify the name of the previous schedule and name of the current schedule being compared. This report will as a minimum show changes for: Added & Deleted Activities, Original Durations, Remaining Durations, Activity Percent Complete, Total Float (or Slack), Free Float, Calendars, Descriptions, Constraints (added, deleted or changed), Actual Starts/Finishes, Added/Deleted Resources, Resource Quantities, Costs, Resource Percents, Added/Deleted Relations, Changed Relation Lags, Changed Driving Relations, and Changed Critical Status.
- h. By the activity number from lowest to highest, showing preceding and succeeding activity numbers for each activity (Predecessor/Successor Report), and showing the current status of each activity.
- i. Not Used.
- j. Equipment usage report and histogram: With each update schedule, a planned early and planned late versus actual equipment resource histogram will be provided. This histogram shall be based upon and shall be in agreement with the equipment allocation accepted on the Accepted Network Analysis Schedule (planned) and the Monthly Network Update (actual). Included in the report will be a tabular report that will list equipment (by make and model) to the activities that were worked on during the construction period.

1.7 SUBMISSION AND ACCEPTANCE

1.7.1 Preliminary Meeting

Prior to preparing the schedule, the Owner, Design-Builder and major subcontractors shall participate in a preliminary meeting to discuss the proposed schedule and requirements of this section prior to submission of the network. The definition of a "major subcontractors" is one that exceeds 5 percent of the contract value.

1.7.2 Network Analysis Schedule

Submit the complete network system, consisting of the network mathematical analysis and network diagrams with the 100% Design Submittal. Submit electronically to the Owner a diagram described in the paragraph entitled "Diagrams", the required reports listed in the paragraph entitled "Required Reports", the analysis described in the paragraph entitled "Mathematical Analysis", and information required by the paragraph entitled "Additional Requirements". As part of this submittal, provide the Project Name format (and Project Group Name if used) that will be used by the Design-Builder to identify initial schedule submittals, updates, fragnets, changes, etc.

1.7.3 Review and Evaluation

After the Owner's review, the Design-Builder shall meet with the Owner to discuss the review and evaluation of the NAS submittal. Revisions necessary as a result of this review shall be resubmitted for acceptance within 3 calendar days after the meeting.

1.7.4 Accepted Network Analysis Schedule

Once review comments are resolved and the network has been accepted by the Owner, the Design-Builder shall within 3 calendar days furnish electronically:

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- a. The network diagrams.
- b. The required reports listed in paragraph entitled "Required Reports".
- c. The "Mathematical Analysis".
- d. The Cash Flow Report indicating the cash flow based upon both the early and late start schedules.
- e. Each major subcontractor's statement certifying their concurrence with the Design-Builder's Accepted Network Analysis Schedule. Each certifying statement will be made on the subcontractor's letterhead.

For major revisions, updates or changes to the network diagrams, once accepted by the Owner, the Design-Builder shall submit these same diagrams and reports.

1.7.5 Monthly Network Analysis Updates

At monthly intervals the Design-Builder, Owner representatives will meet to jointly update the project schedule and agree on percentage of payment for each activity progressed during the update period. The purpose of the meeting is to determine progress payment amounts for each activity, allow all parties to evaluate project status at the data date, provide a complete and accurate update of procurement and construction progress, create an historical record of the project and establish prediction of completion date(s) based upon current status. The Design-Builder is responsible to gather all supporting documentation propose the update data for the schedule and record the meeting minutes. All progress payment amounts will be derived from and tied to the cost-loaded schedule activities. Submit at monthly intervals a report of the actual construction progress by updating the required reports, the time scaled logic diagram, and mathematical analysis. Meeting to update the schedule and the submission of an error free, acceptable updated schedule to the Owner is a condition precedent to the processing of the Design-Builder's pay request. As a minimum, the following actions will be accomplished during the meeting:

- a. Identify activities started and completed during the previous period and enter the Actual Start and Actual Finish dates.
- b. Show estimated duration (in workdays) to complete each activity started but not completed (remaining duration).
- c. Indicate percentage of cost payable for each activity.
- d. Reflect changes in the network diagram. All changes (i.e., duration changes, logic changes, new logic, conformed change orders, new activities, changes due to Conformed Modifications, changes in work sequence, etc.) shall be recorded and a note added to the activity log field. The log shall include as a minimum, the date and reason for the change, and description of the change.
- e. Submit electronically a Narrative Report describing: 1) Progress made in each area of the project; 2) Changes in the following: activities, original durations, logic interdependencies, milestones, planned sequence of operations, critical path, and resource and loading; 3) Pending items and status thereof, including permits, change orders, and time extensions; 4) Status of Contract Completion Date and interim milestones; 5) Current and anticipated delays (describe cause of the delay and corrective action(s)); and 6) Description of current and future schedule problem areas. Each entry in the narrative report will cite the respective Activity ID and Activity Description.
- f. Submit electronically the required reports listed in paragraph entitled "Required Reports".

- g. Submit electronically of the Update Meeting minutes.

1.7.6 As-Built Schedule

As a condition precedent to the release of retention, the last update of the schedule submitted shall be identified by the Design-Builder as the "As-Built Schedule". The As Built shall reflect the exact manner in which the project was actually constructed (including actual start and finish dates, activities, sequences, and logic) and shall be certified by the Design-Builder's Project Manager and Construction Scheduled as being a true reflection of the way the project was actually constructed. If more than one person filled the position(s) during the course of the project, each person will provide certification for the period of time they were responsible.

1.8 CONTRACT MODIFICATION

When a contract modification to the work is required, submit proposed revisions to the network with a fragnet and a cost proposal for each proposed change. All modifications shall be incorporated into the network analysis system as separately identifiable activities broken down and inserted appropriately on the first update following issuance of a directive to proceed with the change. Submit one copy of the Total Float Report, Log Report and a copy of the proposed Time Impact Analysis electronically, with the cost proposal. Unless the Owner requests otherwise, only conformed contract modification fragnets will be added into the subsequent monthly updates. All revisions to the current baseline schedule activities that are necessary to further refine the schedule so that the changed work activities can be logically tied to the schedule shall be made. Financial data shall not be incorporated into the schedule until the contract modification is signed by the Owner.

1.8.1 Time Impact Analysis:

Time Impact Analysis shall be used by the Owner in determining if a time extension or reduction to the contract milestone date(s) is justified. The Design-Builder shall provide a Time Impact Analysis to the Owner for any proposed contract change or as support for a Value Engineering Proposal, Claim or Request for Equitable Adjustment by the Design-Builder.

- a. The Design-Builder shall submit a Time Impact Analysis (TIA) illustrating the influence of each change or delay on the Contract Completion Date or milestones. Unless the Owner requests an interim update to the schedule, the current monthly updated schedule accepted by the Owner shall be used to display the impacts of the change. Unless requested by the Owner, no other non-conformed changes will be incorporated into the schedule being used to justify the change impact.
- b. Each TIA shall include a Fragmentary Network (fragnet) demonstrating how the Design-Builder proposes to incorporate the impact into the Project Schedule. A fragnet is defined as the sequence of new activities and/or activity revisions, logic relationships and resource changes that are proposed to be added to the existing schedule to demonstrate the influence of impacts to the schedule. The fragnet shall identify the predecessors to the new activities and demonstrate the impacts to successor activities. Include a narrative report describing the effects of new activities and relationships to interim and contract completion dates, with each TIA.
- c. Following the Design-Builder's receipt of a contract modification on a Standard Form signed by the Owner; all changes in the fragnet used to determine impacts, shall be incorporated into the schedule. Changes will occur during the next monthly schedule update meeting.

1.8.2 No Reservation-Of-Rights

All direct costs, indirect costs, and time extensions will be negotiated and made full, equitable and final at the time of modification issuance.

1.9 CHANGES TO THE NETWORK ANALYSIS SCHEDULE

If changes in the method of operating and scheduling are desired, the Owner shall be notified in writing stating the reasons for the change. If the Owner considers these changes to be of a major nature, the Design-Builder may be required to revise and submit for acceptance, without additional cost to the Owner, the network diagrams and required sorts. A change may be considered of a major nature if the estimated time required or actually used for an activity or the network logic is varied from the original plan to a degree that there is a reasonable doubt as to the effect on the contract completion date(s) [or phase completion dates]. Changes that affect activities with adequate float time shall be considered a major change when their cumulative effect could extend the contract completion date.

1.10 FLOAT

Use of float suppression techniques, such as; preferential sequencing (arranging critical path through activities more susceptible to Owner caused delay), special lead/lag logic restraints, zero total or free float constraints, extended activity times, or imposing constraint dates other than as required by the contract, shall be cause for rejection of the project schedule or its updates. The use of Resource Leveling (or similar software features) used for the purpose of artificially adjusting activity durations to consume float and influence the critical path is expressly prohibited.

1.10.1 Definitions of Float or Slack

Free Float is the length of time the start of an activity can be delayed without delaying the start of a successor activity. Total Float is the length of time along a given network path that the actual start and finish of activity(s) can be delayed without delaying the project completion date. Project Float is the length of time between the Design-Builder's Early Completion (or Substantial Completion) and the Contract Completion Date.

1.10.2 Ownership of Float

Float available in the schedule, at any time shall not be considered for the exclusive use of either the Owner or the Design-Builder. During the course of contract execution, any float generated due to the efficiencies of either party is not for the sole use of the party generating the float; rather it is a shared commodity to be reasonably used by either party. Efficiencies gained as a result of favorable weather within a calendar month, where the number of days of normally anticipated weather is less than expected, will also contribute to the reserve of float. A schedule showing work completing in less time than the Contract time, and accepted by the Owner, will be considered to have Project Float. Project Float will be a resource available to both the Owner and the Design-Builder. No time extensions will be granted nor delay damages paid unless a delay occurs which impacts the Project's critical path, consumes all available float or contingency time, and extends the work beyond the Contract Completion Date.

1.10.3 Negative Float

Negative float will not be a basis for requesting time extensions. Any extension of time will be addressed in accordance with the Paragraph "Time Extensions". Scheduled completion date(s) that extend beyond the contract [or phase] completion date(s) (evidenced by negative float) may be used in computations for assessment of payment withholdings. The use of this computation is not to be construed as a means of acceleration.

1.11 TIME EXTENSIONS

Extension of time for performance required under the clauses entitled "Changes to the Contract Price and Time," "Differing Site Conditions," "Default (Fixed-Price Construction)" or "Suspension of Work" will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total float or slack along the network paths involved at the time Notice to Proceed was issued for the change. The Design-Builder acknowledges and agrees that delays in activities which, according to the network analysis schedule, does not in fact actually affect any milestone completion dates or the contract completion date shown on the CPM network at the time of delay, will not be a basis for a contract extension. Submit time extension requests with a Time Impact Analysis and three copies of the Total Float (or Slack) Report, Narrative Report and Log Report.

1.12 MONTHLY COORDINATION MEETING

In conjunction with receipt of the Monthly Network Update submission, a coordination meeting will be held each month [on site] [in the Owner's conference room or virtually] to discuss the report. The Design-Builder shall make a presentation of the previously submitted and current Monthly Network Update to the Owner so as to provide an overview of the project's schedule and provide an opportunity to discuss items of coordination.

1.13 BIWEEKLY WORK SCHEDULE

To provide a more detailed day-to-day planning of upcoming work, the Design-Builder shall prepare and issue detailed work plans that coordinate with and supplement the above defined network analysis. The work plans shall be keyed to the CPM activity numbers and shall be submitted each week and shall show the projects activities that will occur during the following two-week interval. Additionally, the critical path activities are to be identified on the Biweekly Work Plan. The detail work plans are to be bar chart type schedules prepared by the Design-Builder in sufficient detail to define the work to be accomplished, the crews, construction tools and equipment to be used during the current and next two-week interval. The bar charts shall be formatted to allow reproduction on 8 1/2 by 11 sheets. Electronic copy of the bar chart schedules shall be delivered to the Owner not less than 3 work hours prior to the start of the weekly coordination meeting.

1.14 WEEKLY COORDINATION MEETING

In conjunction with the receipt of the Bi-Weekly Work Schedule, a coordination meeting will be held each week on site to discuss the work schedule. The Design-Builder shall make a presentation of the previously submitted and current Bi-Weekly Work Schedule to the Owner so as to provide an overview of the project's schedule and provide an opportunity to discuss items of coordination. Consideration of materials, crews, and equipment shall be addressed to ascertain their respective availability. The meeting shall identify actions necessary to provide adherence to the Bi-Weekly Work Schedule and the overall network for the project defined above. The Design-Builder will take meeting minutes. All meeting minute entries will be keyed to the schedule activity number(s) being addressed. Within one day of the meeting, the Design-Builder will provide a draft copy of

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the meeting minutes to the Owner for review and comment. Final copies of the minutes containing the comments provided by the Owner, will be issued within 3 days of the meeting.

1.15 CORRESPONDENCE AND TEST REPORTS

All correspondence (e.g., letters, Requests for Information (RFIs), e-mails, meeting minutes, Production and QC Daily Reports, material delivery tickets, photographs, etc.) shall reference the Schedule Activity Number(s) that are being addressed. All test reports (e.g., concrete, soil compaction, weld, pressure, etc.) shall reference the Schedule Activity Number(s) that are being addressed.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

--End of Section--

SECTION 01 45 00

QUALITY CONTROL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A880 (1995) Criteria for Use in Evaluation of Testing Laboratories and Organization for Examination and Inspection of Steel, Stainless Steel, and Related Alloys

ASTM C1077 (1998) Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation

Los Angeles County Public Works Building & Safety Response Regarding COVID-19

[Occupational Safety and Health Administration](#)

1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

Quality Control (QC) plan; G

Submit a QC plan within 5 calendar days after receipt of Notice of Award.

The QC Plan shall include a preliminary submittal of the list of definable features of work that shall cover the first 90 days of construction.

Submit the completed list of definable features of work in conjunction with the Accepted Network Analysis Schedule.

Any acceptance by the Owner of the QC Plan shall be considered to be "accepted as noted, resubmittal required" and will be in effect only until the completed list of definable features of work is received and accepted. If the completed list of definable features of work and accepted network schedule is not received within the time indicated in the paragraph entitled "Accepted Network Analysis Schedule" of Section 013210 "Network Analysis Schedules," the QC Plan will become rejected and all work, except for the work authorized in the paragraph entitled "Preliminary Work Authorized Prior to acceptance," will stop.

1.3 INFORMATION FOR THE OWNER

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The Design-Builder shall deliver the following reports to the Owner. The report forms will consist of the Design-Builder Production Report, Design-Builder Production Report (Continuation Sheet), Contractor Quality Control Report, Design-Builder Quality Control Report (Continuation Sheet), Preparatory Phase Checklist, Initial Phase Checklist, Rework Items List, and Testing Plan and Log. Referenced below may be in formats customarily used by the Contractor, Testing Laboratories, etc. and will contain the information required by this specification.

- a. Design-Builder Quality Control Report; electronically, by 10:00 AM the next working day after each day that work is performed.
- b. Design-Builder Production Report: electronically, by 10:00 AM the next working day after each day that work is performed, attached to the Contractor Quality Control Report.
- c. Preparatory Phase Checklist: electronically, original attached to the original Design-Builder Quality Control Report.
- d. Initial Phase Checklist: Original attached to the original Design-Builder Quality Control Report
- e. QC specialist Reports: electronically, originals and 1 copy, by 10:00 AM the next working day after each day that work is performed, attached to the Design-Builder Quality Control Report.
- f. Field Test Reports: electronically, within 2 working days after the test is performed, attached to the Design-Builder Quality Control Report.
- g. Monthly Summary Report of Tests: electronically, attached to the Design-Builder Quality Control Report.
- h. Testing Plan and Log, electronically, at the end of each month.
- i. Rework Items List: electronically, by the last working day of the month.
- j. QC Meeting Minutes: electronically, within 2 working days after the meeting.
- k. QC Certifications: As required by the paragraph entitled "QC Certifications."

1.4 QC PROGRAM REQUIREMENTS

Establish and maintain a QC program as described in this section. The QC program consists of a QC Organization, a QC Plan, a QC Plan Meeting, a Coordination and Mutual Understanding Meeting, QC meetings, three phases of control, submittal review and acceptance, testing, completion inspections, and QC certifications and documentation necessary to provide materials, equipment, workmanship, fabrication, construction and operations which comply with the requirements of this Contract. The QC program shall cover on-site and off-site work and shall be keyed to the work sequence. No work or testing may be performed unless the Design-Builder QC Manager is on the work site. The QC Manager shall report to an officer of the firm and shall not be subordinate to the Project Superintendent or the Project Manager. The QC Manager, Project Superintendent and Project Manager must work together effectively. Although the Quality Control Manager is the primary individual responsible for quality control, all three individuals will be held responsible for the quality of work on the job. The project superintendent will be held responsible for the quality of production.

1.4.1 Preliminary Work Authorized Prior to Acceptance

The only work that is authorized to proceed prior to the acceptance of the QC Plan is mobilization to establish field offices, temporary utilities, and surveying.

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1.4.2 Acceptance

Acceptance of the QC Plan is required prior to the start of construction. The Owner reserves the right to require changes in the QC Plan and operations as necessary, including removal of personnel, to ensure the specified quality of work. The Owner reserves the right to interview any member of the QC organization at any time in order to verify the submitted qualifications. All QC organization personnel shall be subject to acceptance by the Owner. The Owner may require the removal of any individual for non-compliance with quality requirements specified in the contract.

1.4.3 Notification of Changes

Notify the Owner, in writing, of any proposed change, including changes in the QC organization personnel, a minimum of seven calendar days prior to a proposed change. Proposed changes shall be subject to acceptance by the Owner.

1.5 QC ORGANIZATION

1.5.1 QC Manager

1.5.1.1 Duties

Provide a QC Manager at the work site to implement and manage the QC program. The only duties and responsibilities of the QC Manager are to manage and implement the QC program on this contract. The QC Manager shall not be designated as the safety competent person. The QC Manager is required to attend the QC Plan Meeting, attend the Coordination and Mutual Understanding Meeting, conduct the QC meetings, perform the three phases of control, perform submittal review and acceptance, ensure testing is performed and provide QC certifications and documentation required in this contract. The QC Manager is responsible for managing and coordinating the three phases of control and documentation performed by the QC specialists, Testing Laboratory personnel and any other inspection and testing personnel required by this Contract.

1.5.1.2 Qualifications

An individual with a minimum of 10 years' experience as a superintendent, inspector, QC Manager, project manager, project engineer or construction manager on similar size and type construction contracts which included the major trades that are part of this Contract. The individual must be familiar with the requirements of -I the Public works and OSHA, and have experience in the areas of safety compliance.

1.5.1.3 Construction Quality Management Training

In addition to the above experience and education requirements, the QC Manager shall have completed the course entitled "Construction Quality Management for Contractors." If the QC Manager does not have a current certification, they shall obtain the CQM course certification within 90 days of award.

1.5.2 Alternate QC Manager Duties and Qualifications

Designate an alternate for the QC Manager at the work site to serve in the event of the designated QC Manager's absence. The period of absence may not exceed two weeks at one time, and not

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more than 30 workdays during a calendar year. The qualification requirements for the Alternate QC Manager shall be the same as for the QC manager.

1.5.3 QC Specialists Duties and Qualifications

Provide a separate QC specialist at the work site for each of the areas of responsibilities, specified below, who shall assist and report to the QC Manager and who may perform production related duties but must be allowed sufficient time to perform their assigned quality control duties. QC specialists are required to attend the Coordination and Mutual Understanding Meeting, QC meetings, and be physically present at the construction site to perform the three phases of control and prepare documentation for each definable feature of work in their area of responsibility. Submit qualifications of the QC Specialists for each discipline for approval of the Owner.

1.5.4 Submittal Reviewers Duties and Qualifications

Provide Submittal Reviewers, other than the QC Manager, qualified in the disciplines being reviewed, to review and certify that the submittals meet the requirements of this Contract prior to certification or approval by the QC Manager. Submit qualifications of the Submittal Reviewers for each discipline for approval of the Owner.

1.5.5 QC Assistant

Provide an Administrative Assistant at the work site until the work has been accepted. The primary duty shall be to assist the QC Manager in processing and maintaining files for submittals, preparing and publishing reports and meeting minutes. After primary duties are accomplished, other duties may be assigned provided the duties do not interfere with primary duties.

1.6 QUALITY CONTROL (QC) PLAN

1.6.1 Requirements

Provide, for acceptance by the Owner, a QC plan submitted electronically and (if required) in a 3-ring binder with pages numbered sequentially that covers both on-site and off-site work and includes the following:

- a. A table of contents listing the major sections identified with tabs in the following order:
 - I. QC ORGANIZATION
 - II. NAMES AND QUALIFICATIONS
 - III. DUTIES, RESPONSIBILITY AND AUTHORITY OF QC PERSONNEL
 - IV. OUTSIDE ORGANIZATIONS
 - V. APPOINTMENT LETTERS
 - VI. SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER
 - VII. TESTING LABORATORY INFORMATION
 - VIII. TESTING PLAN AND LOG
 - IX. PROCEDURES TO COMPLETE REWORK ITEMS
 - X. DOCUMENTATION PROCEDURES
 - XI. LIST OF DEFINABLE FEATURES
 - XII. PROCEDURES FOR PERFORMING THE THREE PHASES OF CONTROL
 - XIII. PERSONNEL MATRIX
 - XIV. PROCEDURES FOR COMPLETION INSPECTION
- b. A chart showing the QC organizational structure.

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- c. Names and qualifications, in resume format, for each person in the QC organization. Include the CQM course certifications for the QC Manager and Alternate QC Manager as required by the paragraphs entitled "Construction Quality Management Training" and "Alternate QC Manager Duties and Qualifications".
- d. Duties, responsibilities and authorities of each person in the QC organization.
- e. A listing of outside organizations such as, architectural and consulting engineering firms that will be employed by the Contractor and a description of the services these firms will provide.
- f. Letters signed by an authorized personnel of the firm appointing the QC Manager and Alternate QC Manager and stating that they are responsible for implementing and managing the QC program as described in this contract. Include in this letter the responsibility of the QC Manager and Alternate QC Manager to implement and manage the three phases of quality control, and their authority to stop work which is not in compliance with the contract. The QC Manager shall issue letters of direction to all other QC specialists outlining their duties, authorities, and responsibilities. Copies of the letters shall be included in the QC plan.
- g. Procedures for reviewing, approving and managing submittals. Provide the names of the persons in the QC organization authorized to review and certify submittals prior to acceptance. Provide the initial submittal of the Submittal Register as specified in section entitled "Submittal Procedures."
- h. Testing laboratory information required by the paragraphs entitled "Accreditation Requirements" or "Construction Materials Testing Laboratory Requirements", as applicable.
- i. A Testing Plan and Log that includes the tests required, referenced by the specification paragraph number requiring the test, the frequency, and the person responsible for each test.
- j. Procedures to identify, record, track and complete rework items.
- k. Documentation procedures, including proposed report formats.
- l. List of definable features of work. A definable feature of work (DFOW) is a task which is separate and distinct from other tasks, has the same control requirements and work crews. The list shall be cross-referenced to the contractor's Construction Schedule and the specification sections. For projects requiring a Progress Chart, the list of definable features of work shall include but not be limited to all items of work on the schedule. For projects requiring a Network Analysis Schedule, the list of definable features of work shall include but not be limited to all critical path activities.
- m. Procedures for Performing the Three Phases of Control. For each DFOW, provide the DFOW's Preparatory and Initial Phase Checklists. Each list shall include a breakdown of quality checks that will be used when performing the quality control functions, inspections, and tests required by the contract documents. The Preparatory and Initial Phases and meetings shall be conducted with a view towards obtaining quality construction by planning ahead and identifying potential problems for each definable feature of work.
- n. A personnel matrix showing for each section of the specification who will review and approve submittals, who will perform and document the three phases of control, and who will perform and document the testing.

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- o. Procedures for Identifying and Documenting the Completion Inspection process. Include in these procedures the responsible party for punch out inspection, prefinal inspection, and final acceptance inspection.

1.7 QC PLAN MEETING

Prior to submission of the QC plan, meet with the Owner to discuss the QC plan requirements of this Contract. The purpose of this meeting is to develop a mutual understanding of the QC plan requirements prior to plan development and submission.

1.8 COORDINATION AND MUTUAL UNDERSTANDING MEETING

After submission of the QC Plan, and prior to the start of construction, meet with the Owner to present the QC program required by this Contract. The purpose of this meeting is to develop a mutual understanding of the QC details, including documentation, administration for on-site and off-site work, and the coordination of the Design-Builder's management, production and QC personnel. At the meeting, the Design-Builder's will be required to explain in detail how three phases of control will be implemented for each definable feature of work. As a minimum, the Design-Builder's personnel required to attend shall include an authorized personnel of the firm, the project manager, project superintendent, QC Manager, Alternate QC Manager, QC specialists, Design-Builder A/E, and subcontractor representatives. Each subcontractor who will be assigned QC responsibilities shall have a principal of the firm at the meeting. Minutes of the meeting will be prepared by the Design-Builder's QC Manager and signed by the Design-Builder, the A/E and the Owner. A copy of the signed minutes shall be provided to all attendees by the Contractor. Repeat the coordination and mutual understanding meeting when a new QC Manager is appointed.

1.9 QC MEETINGS

After the start of construction, the QC Manager shall conduct weekly QC meetings at the work site with the project superintendent and QC specialists. The QC Manager shall prepare the minutes of the meeting and provide a copy to the Owner within 2 working days after the meeting. The Owner may attend these meetings. The QC Manager shall notify the Owner at least 48 hours in advance of each meeting. As a minimum, the following shall be accomplished at each meeting:

- a. Review the minutes of the previous meeting;
- b. Review the schedule and the status of work:
 - (1) Work or testing accomplished since last meeting
 - (2) Rework items identified since last meeting
 - (3) Rework items completed since last meeting;
- c. Review the status of submittals:
 - (1) Submittals reviewed and accepted since last meeting
 - (2) Submittals required in the near future;
- d. Review the work to be accomplished in the next 2 weeks and documentation required:
 - (1) Establish completion dates for rework items

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- (2) Update the schedule showing planned and actual dates of the preparatory, initial and follow-up phases, including testing and any other inspection required by this contract
- (3) Discuss construction methods and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each definable feature of work
- (4) Discuss status of off-site work or testing
- (5) Documentation required;
- (6) Discuss upcoming Activity Hazard Analyses (if found during construction):
- e. Resolve QC and production problems:
 - (1) Assist in resolving Request for Information issues; and
- f. Address items that may require revising the QC plan:
 - (1) Changes in QC organization personnel
 - (2) Changes in procedures.
- g. Review health – COVID 19 and safety plan

1.10 THREE PHASES OF CONTROL

The Three Phases of Control shall adequately cover both on-site and off-site work and shall include the following for each definable feature of work.

1.10.1 Preparatory Phase

Notify the Owner at least 2 work days in advance of each preparatory phase. This phase shall include a meeting conducted by the QC Manager and attended by the QC specialists, the superintendent, and the foreman responsible for the definable feature. Document the results of the preparatory phase actions in the daily Contractor Quality Control Report and in the Preparatory Phase Checklist. Perform the following prior to beginning work on each definable feature of work:

- a. Review each paragraph of the applicable specification sections;
- b. Review the Contract drawings;
- c. Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required;
- d. Review the testing plan and ensure that provisions have been made to provide the required QC testing;
- e. Examine the work area to ensure that the required preliminary work has been completed;
- f. Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data;
- g. Discuss construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each definable feature of work; and

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- h. Review the safety plan and appropriate activity hazard analysis to ensure that applicable safety requirements are met, and that required Material Safety Data Sheets (MSDS) are submitted.

1.10.2 Initial Phase

Notify the Owner at least 2 work days in advance of each initial phase. When construction crews are ready to start work on a definable feature of work, conduct the initial phase with the QC Specialists, the superintendent, and the foreman responsible for that definable feature of work. Observe the initial segment of the definable feature of work to ensure that the work complies with Contract requirements. Document the results of the initial phase in the daily Contractor Quality Control Report and in the Initial Phase Checklist. Repeat the initial phase for each new crew to work on-site, or when acceptable levels of specified quality are not being met. Perform the following for each definable feature of work:

- a. Establish the quality of workmanship required;
- b. Resolve conflicts;
- c. Ensure that testing is performed by the approved laboratory, and
- d. Check work procedures for compliance with the Safety Plan and the appropriate activity hazard analysis (if found during construction) to ensure that applicable safety requirements are met.

1.10.3 Follow-Up Phase

Perform the following for on-going work daily, or more frequently as necessary until the completion of each definable feature of work and document in the daily Design-Builder's Quality Control Report:

- a. Ensure the work is in compliance with Contract requirements;
- b. Maintain the quality of workmanship required;
- c. Ensure that testing is performed by the approved laboratory;
- d. Ensure that rework items are being corrected; and
- e. Perform safety inspections.

1.10.4 Additional Preparatory and Initial Phases

Additional Preparatory and Initial Phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable QC organization, if there are changes in the on-site production supervision or work crew, if work on a definable feature is resumed after substantial period of inactivity, or if other problems develop.

1.10.5 Notification of Three Phases of Control for Off-Site Work

Notify the Owner at least two weeks prior to the start of the preparatory and initial phases.

1.11 SUBMITTAL REVIEW AND ACCEPTANCE

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Procedures for submission, review and acceptance of submittals are described in section entitled "Submittal Procedures."

1.12 TESTING

Except as stated otherwise in the specification sections, perform sampling and testing required under this Contract.

1.12.1 Not Used

1.12.2 Construction Materials Testing Laboratory Requirements

Provide an independent construction materials testing laboratory accredited by an acceptable laboratory accreditation authority to perform sampling and tests required by this Contract. Testing laboratories that have obtained accreditation by an acceptable laboratory accreditation authority listed in the paragraph entitled "Laboratory Accreditation Authorities" submit to the Owner, a copy of the Certificate of Accreditation and Scope of Accreditation. The scope of the laboratory's accreditation shall include the test methods required by the Contract. For testing laboratories that have not yet obtained accreditation by an acceptable laboratory accreditation authority listed in the paragraph entitled "Laboratory Accreditation Authorities" submit an acknowledgment letter from one of the laboratory accreditation authorities indicating that the application for accreditation has been received and the accreditation process has started, and submit to the Owner for acceptance, certified statements, signed by an official of the testing laboratory attesting that the proposed laboratory, meets or conforms to the ASTM standards listed below as appropriate to the testing field.

- a. Laboratories engaged in testing of construction materials shall meet the requirements of ASTM E329.
- b. Laboratories engaged in testing of concrete and concrete aggregates shall meet the requirements of ASTM C1077.
- c. Not Used
- d. Not Used
- e. Laboratories engaged in inspection and testing of steel, stainless steel, and related alloys will be evaluated according to ASTM A880.
- f. Not Used
- g. Laboratories engaged in Hazardous Materials Testing shall meet the requirements of OSHA and EPA. (If required)

1.12.3 Laboratory Accreditation Authorities

Laboratory Accreditation Authorities are the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology and the American Association for Laboratory Accreditation (A2LA) program and the Washington Association of Building Officials (WABO) (Approval authority for WABO is limited to projects within Washington State), and as accepted by the Owner.

Furnish to the Owner, a copy of the Certificate of Accreditation and Scope of Accreditation. The scope of the laboratory's accreditation shall include the test methods required by the Contract.

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1.12.4 Capability Check

The Owner retains the right to check laboratory equipment in the proposed laboratory and the laboratory technician's testing procedures, techniques, and other items pertinent to testing, for compliance with the standards set forth in this Contract.

1.12.5 Test Results

Cite applicable Contract requirements, tests or analytical procedures used. Provide actual results and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. If the item fails to conform, notify Owner immediately. Conspicuously stamp the cover sheet for each report in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results shall be signed by a testing laboratory representative authorized to sign certified test reports. Furnish the signed reports, certifications, and other documentation to the Owner via the QC Manager. Furnish a summary report of field tests at the end of each month. Attach a copy of the summary report to the last daily Design-Builder Quality Control Report of each month.

1.12.6 Test Reports and Monthly Summary Report of Tests

The QC Manager shall furnish the signed reports, certifications, and a summary report of field tests at the end of each month to the Owner. Attach a copy of the summary report to the last daily Design-Builder Quality Control Report of each month.

1.13 QC CERTIFICATIONS

1.13.1 Design-Builder Quality Control Report Certification

Each Design-Builder Quality Control Report shall contain the following statement: "On behalf of the Design-Builder, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report."

1.13.2 Invoice Certification

Furnish a certificate to the Owner with each payment request, signed by the QC Manager, attesting that as-built drawings are current and attesting that the work for which payment is requested, including stored material, is in compliance with contract requirements.

1.13.3 Completion Certification

Upon completion of work under this Contract, the Design-Builder QC Manager shall furnish a certificate to the Owner attesting that "the work has been completed, inspected, tested and is in compliance with the Contract."

1.14 COMPLETION INSPECTIONS

1.14.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Contract Article 5 entitled "Contract Time," or stated elsewhere in the specifications, the QC Manager shall conduct an inspection of the work and develop a "punch list" of items which do

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not conform to the approved drawings and specifications. Include in the punch list any remaining items on the "Rework Items List" which were not corrected prior to the Punch-Out Inspection. The punch list shall include the estimated date by which the deficiencies will be corrected. A copy of the punch list shall be provided to the Owner. The Design-Builder QC Manager or its QC team shall make follow-on inspections to ascertain that all deficiencies have been corrected. Once this is accomplished the Design-Builder shall notify the Owner that the facility is ready for the Owner "Pre-Final Inspection."

1.14.2 Pre-Final Inspection

The Owner will perform this inspection to verify that the facility is complete and ready to be occupied. An Owner "Pre-Final Punch List" may be developed as a result of this inspection. The Design-Builder QC Manager shall ensure that all items on this list are corrected prior to notifying the Owner that a "Final" inspection with the customer can be scheduled. Any items noted on the "Pre-Final" inspection shall be corrected in timely manner and shall be accomplished before the contract completion date for the work or any particular increment thereof if the project is divided into increments by separate completion dates.

1.14.3 Final Acceptance Inspection

The Design-Builder QC Manager, the QC specialists, the superintendent or other primary Design-Builder management personnel, and the Owner's representative will be in attendance at this inspection. Additional Owner personnel may be in attendance. The final acceptance inspection will be formally scheduled by the Owner based upon results of the "Pre-Final" inspection. Notice shall be given to the Owner at least 14 days prior to the final inspection stating that all specific items previously identified to the Design-Builder as being unacceptable, along with all the remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Owner to bill the Design-Builder for the Owner's additional inspection cost in accordance with the Contract Clause entitled "Inspection of Construction."

1.15 DOCUMENTATION

Maintain current and complete records of on-site and off-site QC program operations and activities.

1.15.1 Contractor Production Report

Reports are required for each day that work is performed and shall be attached to the Design-Builder Quality Control Report prepared for the same day. Account for each calendar day throughout the life of the Contract. The reporting of work shall be identified by terminology consistent with the construction schedule. Contractor Production Reports are to be prepared, signed and dated by the project superintendent and shall contain the following information:

- a. Date of report, report number, name of contractor, Contract number, title and location of Contract and superintendent present.
- b. Weather conditions in the morning and in the afternoon including maximum and minimum temperatures.
- c. Identify work performed by corresponding Schedule Activity No., PC#, Modification No., etc.

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- d. A list of Contractor and subcontractor personnel on the work site, their trades, employer, work location, description of work performed, hours worked by trade, daily total work hours on work site this date (incl hours on continuation sheets), and total work hours from start of construction.
- e. A list of job safety actions taken and safety inspections conducted. Indicate that safety requirements have been met including the results on the following:
 - (1) Was a job safety meeting held this date? (If YES, attach a copy of the meeting minutes.)
 - (2) Were there any lost time accidents this date? (If YES, attach a copy of the completed OSHA report.)
 - (3) Was crane/man-lift/trenching/scaffold/high electrical/high work/hazmat work done? (If YES, attach a statement or checklist showing inspection performed.)
 - (4) Was hazardous material/waste released into the environment? (If YES, attach a description of incident and proposed action.)
- f. Identify Schedule Activity No. related to safety action and list safety actions taken today and safety inspections conducted.
- g. Identify Schedule Activity No., Submittal # and list equipment/material received each day that is incorporated into the job.
- h. Not Used
- i. Include a "remarks" section in this report which will contain pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective actions taken, delays encountered and a record of visitors to the work site. For each remark given, identify the Schedule Activity No. that is associated with the remark.

1.15.1.1 Contractor Production Report (Continuation Sheet)

Additional space required to contain daily information on the Design-Builder Production Report will be placed on its Continuation Sheet(s). An unlimited number of Continuation Sheets may be added as necessary and attached to the Production Report.

1.15.2 Contractor Quality Control Report

Reports are required for each day that work is performed and for every seven consecutive calendar days of no-work and on the last day of a no-work period. Account for each calendar day throughout the life of the Contract. The reporting of work shall be identified by terminology consistent with the construction schedule. Design-Builder Quality Control Reports are to be prepared, signed and dated by the Design-Builder QC Manager and shall contain the following information:

- a. Date of report, report number, Contract Number, and Contract Title.
- b. Indicate if Preparatory Phase work was performed today (Yes/No checkboxes).
- c. If Preparatory Phase work was performed today (including on-site and off-site work), identify its Schedule Activity No. and Definable Feature of Work. The Index # is a cross reference to the Preparatory Phase Checklist. An example of the Index # is: 0025-P01, where "0025" is the Design-Builder Quality Control Report Number, "P" indicates

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Preparatory Phase, and "01" is the Preparatory Phase Checklist number(s) for this date. Each entry in this section must be accompanied with a corresponding Preparatory Phase Checklist.

- d. Indicate if Initial Phase work was performed today (Yes/No checkboxes).
- e. If Initial Phase work was performed today (including on-site and off-site work), identify its Schedule Activity No. and Definable Feature of Work. The Index # is a cross reference to the Initial Phase Checklist. An example of the Index # is: 0025-I01, where "0025" is the Design-Builder Quality Control Report Number, "I" indicates Initial Phase, and "01" is the Initial Phase Checklist number(s) for this date. Each entry in this section must be accompanied with a corresponding Initial Phase Checklist.
- f. Results of the Follow-up Phase inspections held today (including on-site and off-site work), including Schedule Activity No., the location of the definable feature of work, Specification Sections, etc. Indicate in the report for this definable feature of work that the work complies with the Contract as approved in the Initial Phase, work complies with safety requirements, and that required testing has been performed and include a list of who performed the tests.
- g. List the rework items identified, but not corrected by close of business; along with its associated Schedule Activity Number.
- h. List the rework items corrected from the rework items list along with the corrective action taken and its associated Schedule Activity Number.
- i. Include a "remarks" section in this report which will contain pertinent information including directions received, quality control problem areas, deviations from the QC plan, construction deficiencies encountered, QC meetings held, acknowledgement that as-built drawings have been updated, corrective direction given by the Design-Builder QC Organization and corrective action taken by the Design-Builder. For each remark given, identify the Schedule Activity No. that is associated with the remark.
- j. Design-Builder Quality Control Report certification, signature and date.

1.15.2.1 Design-Builder Quality Control Report (Continuation Sheet)

Additional space required to contain daily information on the Design-Builder Quality Control Report will be placed on its Continuation Sheet(s). An unlimited number of Continuation Sheets may be added as necessary and attached to the Design-Builder Quality Control Report.

1.15.3 Preparatory Phase Checklist

Each Definable Feature of Work that is in the Preparatory Phase shall have this checklist filled out for it. The checklist shall be identified by terminology consistent with the construction schedule. Attach this checklist to the Contractor Quality Control Report of the same date.

- a. Specification Section, date of report, and Contract number shall be filled out. Duplicate this information in the header of the second page of the report.
- b. Definable Feature of Work, Schedule Activity No. and Index # entry and format will match entry in the Preparatory Phase section of the Contractor Quality Control Report. Duplicate this information in the header of the second page of the report.
- c. Personnel Present: Indicate the number of hours of advance notice that was given to the Owner Representative and indicate (Yes/No checkboxes) whether or not the Owner Rep

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was notified. Indicate the Names of Preparatory Phase Meeting attendees, their position and company/Owner they are with.

- d. Submittals: Indicate if submittals have been accepted (Yes/No checkboxes), if no indicate what has not been submitted. Are materials on hand (Yes/No checkboxes) and if not, what items are missing. Check delivered material/equipment against accepted submittals and comment as required.
- e. Material Storage: Indicate if materials/equipment is stored properly (Yes/No checkboxes) and if not, what action is/was taken.
- f. Specifications: Review and comment on Specification Paragraphs that describe the material/equipment, procedure for accomplishing the work and clarify any differences.
- g. Preliminary Work & Permits: Ensure preliminary work is in accordance with the contract documents and necessary permits are on file, if not, describe the action taken.
- h. Testing: Identify who performs tests, the frequency, and where tests are to occur. Review the testing plan, report abnormalities, and if the test facilities have been approved.
- i. Safety: Indicate if the activity hazard analysis has been approved (Yes/No checkboxes).
- j. Meeting Comments: Note comments and remarks during the Preparatory Phase Meeting that was not addressed in previous sections of this checklist.
- k. Other Items or Remarks: Note any other remarks or items that were a result of the Preparatory Phase.
- l. QC Manager will sign and date the checklist.

1.15.4 Initial Phase Checklist

Each Definable Feature of Work that is in the Initial Phase shall have this checklist filled out for it. The checklist shall be identified by terminology consistent with the construction schedule. Attach this checklist to the Design-Builder Quality Control Report of the same date.

- a. Specification Section, date of report, and Contract number shall be entered.
- b. Definable Feature of Work, Schedule Activity No. and Index # entry and format will match entry in the Initial Phase section of the Design-Builder Quality Control Report.
- c. Personnel Present: Indicate the number of hours of advance notice that was given to the Owner Representative and indicate (Yes/No checkboxes) whether or not the Owner Rep was notified. Indicate the Names of Initial Phase Meeting attendees, their position and company/Owner they are with.
- d. Procedure Compliance: Comment on compliance with procedures identified at Preparatory Phase of Control and assurance that work is in accordance with plans, specifications and submittals.
- e. Preliminary Work: Ensure preliminary work being placed is in compliance and if not, what action is/was taken.
- f. Workmanship: Identify where initial work is located; if a sample panel is required (Yes/No checkboxes); is the initial work the sample (Yes/No checkboxes); and if Yes, describe the panel location and precautions taken to preserve the sample.
- g. Resolution: Comment on any differences and the resolutions reached.
- h. Check Safety: Comment on the safety review of the job conditions.

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- i. Other: Note any other remarks or items that were a result of the Initial Phase.
- j. Design-Builder QC Manager will sign and date the checklist.

1.15.5 Quality Control Validation

Establish and maintain the following in a series of 3 ring binders. Binders shall be divided and tabbed as shown below. These binders shall be readily available to the Owner's Quality Assurance Team during all business hours.

- a. All completed Preparatory and Initial Phase Checklists, arranged by specification section.
- b. All milestone inspections, arranged by Activity/Event Number.
- c. A current up-to-date copy of the Testing and Plan Log with supporting field test reports, arranged by specification section.
- d. Copies of all contract modifications, arranged in numerical order. Also include documentation that modified work was accomplished.
- e. A current up-to-date copy of the Rework Items List.
- f. Maintain up-to-date copies of all punch lists issued by the QC Staff on the Design-Builder and Sub-Contractors and all punch lists issued by the Owner.

1.15.6 Reports from the QC Specialist(s)

Reports are required for each day that work is performed in their area of responsibility. QC specialist reports shall include the same documentation requirements as the Design-Builder Quality Control Report for their area of responsibility. QC specialist reports are to be prepared, signed and dated by the QC specialists and shall be attached to the Design-Builder Quality Control Report prepared for the same day.

1.15.7 Testing Plan and Log

As tests are performed, the Design-Builder QC Manager shall record on the "Testing Plan and Log" the date the test was conducted, the date the test results were forwarded to the Owner, remarks and acknowledgement that an accredited or Owner approved testing laboratory was used. Attach a copy of the updated "Testing Plan and Log" to the last daily Contractor Quality Control Report of each month.

1.15.8 Rework Items List

The Design-Builder QC Manager shall maintain a list of work that does not comply with the Contract, identifying what items need to be reworked, the date the item was originally discovered, the date the item will be corrected by, and the date the item was corrected. There is no requirement to report a rework item that is corrected the same day it is discovered. Attach a copy of the "Rework Items List" to the last daily Contractor Quality Control Report of each month. The Contractor shall be responsible for including on this list items needing rework including those identified by the Owner.

1.15.9 As-Built Drawings

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The Design-Builder QC Manager is required to ensure the as-built drawings, required by Section 01770N "Closeout Procedures," are kept current on a daily basis and marked to show deviations which have been made from the Contract drawings. Ensure each deviation has been identified with the appropriate modifying documentation (e.g., PC No., Modification No., Request for Information No., etc.). The QC Manager or QC specialist assigned to an area of responsibility shall initial each deviation and each revision. Upon completion of work, the QC Manager shall furnish a certificate attesting to the accuracy of the as-built drawings prior to submission to the Owner.

1.15.10 Report Forms

The following forms, are acceptable for providing the information required by the paragraph entitled "Documentation." While use of these specific formats are not required, any other format used shall contain the same information:

- a. Contractor Quality Control Report w/ continuation sheet(s).
- b. Contractor Production Report w/ continuation sheet(s).
- c. Preparatory Phase Checklist.
- d. Initial Phase Checklist.
- e. Testing Plan and Log.
- f. Rework Items List.

1.16 NOTIFICATION ON NON-COMPLIANCE

The Owner will notify the Design-Builder of any detected non-compliance with the foregoing requirements. The Design-Builder shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Design-Builder at the work site, shall be deemed sufficient for the purpose of notification. If the Design-Builder fails or refuses to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time for excess costs or damages by the Design-Builder.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

--End of Section--

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70(1999) National Electrical Code

NFPA 241(1996) Safeguarding Construction, Alteration, and Demolition Operations

1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

Traffic control plan; G

Construction site plan; G

1.3 CONSTRUCTION SITE PLAN

With 100% Design Submittal and prior to construction submit a site plan showing the locations of temporary facilities including layouts and details, equipment and material storage area (onsite and offsite), and access and haul routes used for this contract. Show locations of safety and construction fences, site trailers, construction entrances, trash dumpsters, temporary sanitary facilities, and worker parking areas.

1.4 Not Used

1.5 TEMPORARY UTILITIES

Reasonable amounts of the utilities will be made available to the Design-Builder at the prevailing rates for electricity and potable water. Such costs related to the utility usage shall be computed at a base rate \$0.75/sf per month. Owner shall present Design-Builder a quarterly billing for utility use.

1.6 Not Used

1.7 Not Used

1.8.2 Special Restrictions Regarding Access of Vehicles and Parking

1.8.2.1 Traffic Control Plan

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If during the performance of work, it is necessary to modify vehicular traffic patterns at any locations, provide a Traffic Control Plan detailing the proposed controls to traffic movement for acceptance of the Owner. The plan shall be in accordance with State and local regulations. Make all notifications and obtain any permits required for modification to traffic movements outside project's jurisdiction. Provide cones, signs, barricades, lights, or other traffic control devices and personnel required to control traffic.

Submit the Traffic Control Plan with the 100% Construction Documents Submittal.

1.8.2.2 Interruption of Vehicular Traffic

Notify the Owner at least ~~15~~ **10** days prior to the proposed traffic interruption at any location per the accepted Traffic Control Plan. Any deviation from the accepted plan must be accepted by the Owner.

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1.9 STORAGE AREAS (Unless otherwise noted per the LA Union Station Covenants, Conditions & Restrictions (CC&Rs))

Design-Builder shall be responsible for security of his property. The General Conditions provision 2.8 in Article 2 entitled "Design-Builder's Responsibility for Project Safety" and the following apply:

1.9.1 Storage Size and Location

The open sites available for the office traffic and storage shall be confined to those indicated on the drawings and accepted by the Owner.

1.9.2 Storage in Existing Buildings

The Design-Builder shall be working around existing buildings; and, the storage of material will not be allowed in buildings, unless otherwise approved by the Owner. The Owner will allow the Design-Builder to use an area on the First floor for offices and light weight material storage. The Design-Builder shall coordinate with the Owner and submit a layout plan of said area for approval.

1.10 TEMPORARY SANITARY FACILITIES

Design-Builder may use the existing restrooms of the area allocated by the Owner (refer to subsection 1.4.2 in SECTION 01 14 00 entitled "Work Restrictions"). Owner shall require the Design-Builder to utilize Owner designated janitorial company to clean and maintain the onsite offices and storage areas. Such costs associated with the daily cleanup and maintenance shall be at the Design-Builder's sole cost and expense. The base rate for such services shall be at \$0.75/sf per month. In the event that extra cleanup is needed or emergency cleanup, the actual cost shall be billed separately to Design-Builder. Owner shall present Design-Builder a monthly billing for janitorial expense.

1.11 TEMPORARY IMPROVEMENTS

Temporary improvements shall be in compliance with the Los Angeles City code and be installed after obtaining necessary permits from appropriate City Departments and other agencies.

1.11.1 Maintenance of Temporary Facilities

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Paint in accordance with Owner's standards and maintain the temporary facilities. Failure to do so will be sufficient reason to require their removal.

1.111.1 ~~Trailer Sign~~

~~A sign shall be mounted on the trailer or storage building that shows the company name, phone number, and emergency phone number.~~

PART 2 PRODUCTS

2.1 Not Used.

PART 3 EXECUTION

3.1 TEMPORARY PHYSICAL CONTROLS

3.1.1 Not Used

3.1.1.1 Temporary Barricades

Design-Builder shall provide for barricading around all work areas including open excavation to prevent access by unauthorized persons.

3.1.1.2 Fencing

Enclose the Contractor lay-down area with a 2400 mm high chain link fence and gates with brown, UV light resistant, plastic fabric mesh netting (similar to tennis court or other screening). Remove the fence upon completion and acceptance of the work.

3.1.1.3 Signs

Place warning signs at the construction area perimeter. It is required that all points of entry shall have signs designating the construction site as a hard hat area.

3.1.1.4 Traffic Work

Not Used.

3.2 TEMPORARY WIRING

Not Used.

3.3 Not Used.

3.4 Not Used.

--End of Section--

SECTION 01 52 50

SAFETY REQUIREMENTS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.14 (1991) Construction and Demolition Operations - Requirements for Safety Belts, Harnesses, Lanyards and Lifelines for Construction and Demolition Use

ANSI Z359.1 (1992) Safety Requirements for Personal Fall Arrest Systems

ASME INTERNATIONAL (ASME)

ASME B30.5 (1994) Mobile Cranes

ASME B30.22 (1993) Articulating Boom Cranes

LA Unions Station – Metro : Covenants, Conditions & Restrictions (CC&Rs)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10 (1995) Portable Fire Extinguishers

NFPA 70 (1999) National Electrical Code

NFPA 241 (1996) Safeguarding Construction, Alteration, and Demolition Operations

1.2 DEFINITIONS

- a. Certified Industrial Hygienist. An industrial hygienist is an individual who is certified by the American Board of Industrial Hygiene.
- b. Certified Safety Professional. A safety manager, safety specialist, or safety engineer that has passed the CSP exam administered by the Board of Certified Safety Professionals.
- c. Competent Person. A competent person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- d. Not Used.
- e. First Aid. First aid is any one-time treatment, and any follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care, even though provided by a physician or registered professional personnel.
- f. Not Used

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- g. **Lost Workdays.** The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or part of his normal assignment during all or any part of the workday or shift; because of the occupational injury or illness.
- h. **Medical Treatment.** Medical treatment includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered personnel.
- i. **Multi-employer work site (MEWS).** A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. This Contract considers the Design-Builder to be the "controlling authority" for all work site safety and health of the subcontractors.
- j. **Operating Envelope.** There is an "operating envelope" around any crane, and inside the envelope are the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).
- k. **Qualified Person.** One who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work or the project.
- l. **Recordable Occupational Injuries or Illnesses.** Any occupational injuries or illnesses which result in:
 - (1) Fatalities, regardless of the time between the injury and death, or the length of the illness; or
 - (2) Lost Workday Cases, other than fatalities, that result in lost workdays, or
 - (3) Non-Fatal Cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve: loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses which are reported to the employer but are not classified as fatalities or lost workday cases.
- m. **Safety Officer.** The superintendent or other qualified or competent person who is responsible for the on-site safety required for the project. The Design-Builder quality control person cannot be the safety officer, even though the QC has safety inspection responsibilities as part of the QC duties.
- n. **Serious Accidents.** Any work-related incident, which results in, a fatality, in-patient hospitalization of three or more employees, or property damage in excess of \$200,000.
- o. **Significant Accident.** Any contractor accident which involves falls of 1.2 m or more, electrical accidents, confined space accidents, diving accidents, equipment accidents, crane accident or fire accidents, which, result in property damage of \$10,000 or more, but less than \$200,000; or when fire department or emergency medical treatment (EMT) assistance is required.

1.3 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-07 Certificates

Design-Build Services for the First 5 LA Capital Improvement Project (CIP) – Phase 1

Accident Prevention Plan (APP); G

Activity Hazard Analysis (AHA); G (If found during construction)

Health and Safety Plan (HASP); G

SD-11 Closeout Submittals

Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

Crane Reports

Crane Critical Lift Plan

Certificate of Compliance

1.4 QUALITY ASSURANCE

1.4.1 Qualifications

a. Qualifications of Safety Officer:

- (1) Ability to manage the on-site Design-Builder safety program through appropriate management controls.
- (2) Ability to identify hazards and have the capability to expend resources necessary to abate the hazards.
- (3) Must have worked on similar types of projects that are equal to or exceed the scope of the project assigned with the same responsibilities.
- (4) Shall, as a minimum, have attended an OSHA training qualification class including at least 10 hours of classroom instruction.

b. Qualifications of Qualified Person. The qualified person shall be capable (by education and specialized training) of anticipating, recognizing, and evaluating employee exposure to hazardous substances or other unsafe conditions. This person shall be capable of specifying necessary control and protective action to ensure worker safety.

c. Qualification of Crane Operators. Crane operators shall be certified by an accredited crane operator testing organization, such as the National Commission for the Certification of Crane Operators (NCCCO)

1.4.2 Meetings

1.4.2.1 Preconstruction Conference

The safety officer shall attend the preconstruction conference.

1.4.2.2 Meeting on Work Procedures

- a. Meet with Owner to discuss work procedures and safety precautions required. Ensure the participation of the Design-Builder's superintendent, the quality control.
- b. Meet with Owner to discuss work procedures and safety precautions required by the HASP. Ensure the participation of the contractor's superintendent, the quality control.

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1.4.2.3 Weekly Safety Meetings

Hold weekly at the project site. Attach minutes showing contract title, signatures of attendees and a list of topics discussed to the QC Contractor Quality Control daily report.

1.4.2.4 Work Phase Meetings

The appropriate AHA (if required) shall be reviewed and attendance documented by the Design-Builder at the preparatory, initial, and follow-up phases of quality control inspection.

1.4.2.5 New Employee Indoctrination

New employees will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

1.4.3 Certifications

1.4.3.1 Accident Prevention Plan (APP)

Submit the APP at least 5 calendar days prior to start of work at the job site. Make the APP site specific. Notice To Proceed will be given after Owner finds the APP acceptable.

1.4.3.2 Activity Hazard Analysis (AHA)

If required.

1.4.3.3 Not Used

1.4.4 Reports

1.4.4.1 Crane Reports

Submit crane inspection reports required as specified herein with Daily Reports of Inspections.

1.4.4.2 Not Used

1.4.4.3 Certificate of Compliance

The Design-Builder shall provide a Certificate of Compliance for each crane entering the property/LA Union Station-Metro under this contract. Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the contractor citing which OSHA regulations are applicable) These certifications shall be posted on the crane.

1.5 ACCIDENT PREVENTION PLAN (APP)

Prepare the APP in accordance with the required and advisory provisions, some of which are listed below.

1.5.1 Contents of the Accident Prevention Plan

- a. Name and safety related qualifications of safety officer (including training and any certifications).

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- b. Qualifications of competent and of qualified persons.
- c. Identity of the individual who will complete exposure data (hours worked); accident investigations, reports and logs; and immediate notification of accidents to include subcontractors.
- d. Emergency response plan.
- e. Not Used
- f. Hazardous Material Use. Provisions to deal with hazardous materials, pursuant to the General Conditions Article 4 entitled "Hazardous Conditions"
- g. General Background Checks for all Design-Builder Employees and Subcontractors
- h. Not Used
- i. Alcohol and Drug Abuse Plan
 - (1) Describe plan for random checks and testing with pre-employment screening in accordance with the DFAR Clause subpart 252.223-7004, "Drug Free Work Force."
 - (2) Description of the on-site prevention program
- j. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 1.8 m. A qualified person shall prepare the plan. The plan shall include fall protection and prevention systems, equipment and methods employed, responsibilities, rescue and escape equipment and operations, training requirements, and monitoring methods.
- k. Not Used
- l. Lead Abatement Plan. The safety and health aspects of lead-based paint removal, prepared in accordance with Section 13283N, "Removal and Disposal of Lead Containing Paint".
- m. Asbestos Abatement Plan. The safety and health aspects prepared in accordance with Section 13281N, "Engineering Control of Asbestos Containing Materials"
- n. Site Demolition Plan. The safety and health aspects prepared in accordance with Section 02220N, "Site Demolition" and referenced sources. Include engineering survey as applicable.
- o. Not Used
- p. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g., fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.
- q. Severe Weather Plan. Procedures of ceasing on-site operations during lightning or upon reaching maximum allowed wind velocities.
- r. Emergency Lighting and Power Systems Plan (e.g., periodic testing of batteries for emergency lighting.)

1.5.2 Not Used

1.6 Not Used

1.7 HEALTH AND SAFETY PLAN (HASP)

Prepare as required

1.7.1 Qualified Personnel

Retain a Certified Industrial Hygienist (CIH) or a Certified Safety Professional (CSP) to prepare the HASP, conduct activity hazard analyses, and prepare detailed plan for demolition, removal, and disposal of materials.

1.7.2 Contents

In addition to the requirements of COE EM-385-1-1, Table 28-1, the HASP must include:

- a. Location, size, and details of control areas.
- b. Location and details of decontamination systems.
- c. Interface of trades involved in the construction.
- d. Sequencing of work.
- e. Disposal plan.
- f. Sampling protocols.
- g. Testing labs.
- h. Protective equipment.
- i. Pollution control.

1.8 DRUG PREVENTION PROGRAM

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employees either use illegal drugs or consume alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine or saliva specimens and test injured employee's influence. A copy of the test shall be made available to the Owner upon request.

1.9 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

1.9.1 Scaffolds

Delineate the fall protection requirements necessary during the erection and dismantling operation of scaffolds used on the project in the Fall Protection and Prevention (FP&P) plan and activity hazard analysis for the phase of work.

1.9.2 Training

Institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, Contractor shall provide training for each employee who might be exposed to fall hazards.

1.10 DUTIES OF THE SAFETY OFFICER

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- a. Ensure construction hazards are identified and corrected.
- b. Maintain applicable safety reference material on the job site.
- c. Maintain a log of safety inspections performed.
- d. Attend the pre-construction conference as required.
- e. Identify hazardous conditions and take corrective action. Failure to do so will result in a dismissal from the site, with a work stoppage pending approval of suitable replacement personnel.

1.11 DISPLAY OF SAFETY INFORMATION

Display the following information in clear view of the on-site construction personnel:

- a. Map denoting the route to the nearest emergency care facility with emergency phone numbers.
- b. Not Used
- c. Not Used
- d. A sign indicating the number of hours worked since last lost workday accident.

1.12 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturers' manuals.

1.13 Not Used

1.14 EMERGENCY MEDICAL TREATMENT

Design-Builder will arrange for their own emergency medical treatment. Owner has no responsibility to provide emergency medical treatment.

1.15 SITE CONDITIONS

1.15.1 The Design-Builder shall take into consideration that this Contract is within LA Union Station

1.16 REPORTS

1.16.1 Accident Reports

- a. For recordable occupational injuries and illnesses, the Design-Builder shall conduct an accident investigation to establish the root cause(s) of the accident, and provide to the Owner within 5 calendar days of the accident.

1.16.2 Notification

Notify the Owner as soon as practical, but not later than four hours, of any accident meeting the definition of Recordable Occupational Injuries or Illnesses or Significant Accidents. Information shall include contractor name; contract title; type of contract; name of activity, installation or

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location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; and brief description of accident (to include type of construction equipment used, PPE used, etc.).

1.16.3 Not Used

1.16.4 OSHA Citations and Violations

Provide the Owner with a copy of each OSHA citation, OSHA report and Design-Builder response. Correct violations and citations promptly and provide written corrective actions to the Owner.

1.16.5 Crane Notification

Notify the Owner at least 15 days prior to bringing any crane equipment on-site so that the Owner may discuss (if needed) or arrange for any additional quality assurance spot checks necessary by the Los Angeles County Metropolitan Transportation Authority.

1.17 HOT WORK

Prior to performing "Hot Work" (welding, etc.) or operating other flame-producing devices, the Design-Builder shall request a written permit from the Fire Division. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. The Design-Builder will provide at least two (@2) twenty (20) pound extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity.

- a. Oil painting materials (paint, brushes, empty paint cans, etc.), and all flammable liquids shall be removed from the building at quitting time. All painting materials and flammable liquids shall be stored outside in a suitable metal locker or box and will require re-submittal with non-hazardous materials.
- b. Accumulation of trays, paper, shavings, sawdust, boxes and other packing materials shall be removed from the building at the close of each workday and such material disposed of in the proper containers located away from the building.
- c. The storage of combustible supplies shall be a safe distance from structures.
- d. Area outside of building undergoing work shall be cleaned of trash, paper, or other discarded combustibles at the close of each workday.
- e. All portable electric devices (saws, sanders, compressors, extension cord, lights, etc.) shall be disconnected at the close of each workday. When possible, the main electric switch in the building shall be deactivated.
- f. When starting work in building or areas, Design-Builder shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Division phone number. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE OWNER IMMEDIATELY.

PART 2 PRODUCTS

2.1 FALL PROTECTION ANCHORAGE

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If required, Fall protection anchorage, conforming to ANSI Z359.1, will be left in place and so identified for continued customer use.

2.2 Not Used

PART 3 EXECUTION

3.1 CONSTRUCTION

Comply with, NFPA 241, the accident prevention plan, the activity hazard analysis and other related submittals and activity fire and safety regulations.

3.1.1 Not Used

3.1.2 Unforeseen Hazardous Material (Refer to Article 4 in the General Conditions entitled "Hazardous Conditions and Differing Site Conditions")

3.2 PRE-OUTAGE COORDINATION MEETING

When the Owner intends to occupy any area of the Building, the Design-Builder is required to apply for utility outages a minimum of 15 days in advance. As a minimum, the request should include the location of the outage, utilities being effected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved and prior to beginning work on the utility system requiring shut down, the Design-Builder shall attend a pre-outage coordination meeting with the Owner to review the scope of work and the lock out/tag out procedures for worker protection. No work will be performed on energized electrical equipment unless proven impassable. Working equipment "hot" must be considered the last option.

3.3 PERSONNEL PROTECTION

3.3.1 Hazardous Noise

Provide hazardous noise signs, and hearing protection, wherever equipment and work procedures produce sound-pressure levels greater than 85 dBA steady state or 140 dBA impulse, regardless of the duration of the exposure. Design-Builder is required to coordinate with the Owner and obtain approval before scheduling and executing high levels of dBA operations.

3.3.2 Fall Protection

Enforce use of the fall protection device designated for each specific work activity in the FP&P plan and/or AHA all times when an employee is on a surface 1.8 m or more above lower levels. Personal fall arrest systems are required when working from an articulating or extendible boom, scissor lifts, swing stages, or suspended platform. Fall protection must comply with ANSI A10.14.

3.3.2.1 Personal Fall Arrest Device

Personal fall arrest device equipment, systems, subsystems, and components shall meet ANSI Z359.1, "Safety Requirements for Personal Fall Arrest Systems". Only a full-body harness with a shock absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest device. Body belts may only be used as a positioning device system such as steel reinforcing assembly and in

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conjunction with another fall arrest system. Harnesses shall have a fall arrest attachment, which is a connector, affixed to the body support (usually a D-ring) and specifically designated for attachment to the rest of the system. Only double locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber.

3.3.3 MCAS Requirements

All personnel who enter the construction site will wear mandatory personal protective equipment (PPE) at all times. All personnel shall also comply with PPE postings of shops both inside and outside the construction site. PPE shall be governed in all other areas by the nature of the work the employee is performing. They will also have personal hearing protection on their person at all times in designated noise hazardous areas or when performing noise hazardous tasks. Mandatory PPE includes:

- a. Hard Hat
- b. Safety Glasses
- c. Safety Toed Shoes

3.4 SCAFFOLDING

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Stair towers or ladders built into scaffold systems in accordance with OSHA are required for work platforms greater than 6 m in height. Design-Builder shall ensure that employees that are qualified perform scaffold erection. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection plan. Minimum platform size shall be based on the platform not being greater in height than three times the dimension of the smallest width dimension for rolling scaffold. Some Baker type scaffolding has been found not to meet these requirements. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Outrigger brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base.

3.5 EQUIPMENT

3.5.1 Material Handling Equipment

- a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.
- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturers printed instructions.

3.5.2 Weight Handling Equipment

- a. Cranes must be equipped with:
 - (1) Load Indicating Devices (LIDs) and a Boom Angle or Radius Indicator,

- (2) or Load-Moment Indicating Devices (LMIs).
- (3) Anti-two-block prevention devices.
- (4) Boom Hoist Hydraulic Relief Valve, Disconnect, or Shutoff (stops hoist when boom reaches a predetermined high angle).
- (5) Boom Length Indicator (for telescoping booms).
- (6) Device to prevent uncontrolled lowering of a telescoping hydraulic boom.
- (7) Device to prevent uncontrolled retraction of a telescoping hydraulic boom.
- b. The Design-Builder shall notify the Owner, in advance, of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated.
- c. The Design-Builder shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturers recommended procedures.
- d. The Design-Builder shall comply with ASME B30.22 for articulating boom cranes.
- e. The presence of Owner's safety and health inspectors (if any) does not relieve the Design-Builder of an obligation to comply with all applicable safety regulations. The Owner will investigate all complaints of unsafe or unhealthful working conditions received in writing from Design-Builder employees, or any assigned personnel on site.
- f. Each load shall be rigged/attached independently to the hook/master-link in such a fashion that the load cannot slide or otherwise become detached. Christmas-tree lifting (multiple rigged materials) is not allowed.
- g. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of ASME B30.5 or ASME B30.22 as applicable.
- h. Crane supported work platforms shall only be used in extreme conditions if the Design-Builder proves that using any other access to the work location would provide a greater hazard to the workers. Personnel shall not be lifted with a live hoist or friction crane.
- i. A fire extinguisher having a minimum rating of 10BC and a minimum nominal capacity of 5lb of extinguishing agent shall be available at all operator stations or cabs of cranes. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.
- j. All employees shall be kept clear of loads about to be lifted and of suspended loads.
- k. A weight handling equipment operator shall not leave his position at the controls while a load is suspended.
- l. A Contractor Crane Operation Checklist shall be used by the CQC representative during oversight of contractor crane operations.
- m. Only contractor crane operators who have met the requirements of local and state requirements shall be authorized to operate the crane.
- n. Cribbing shall be utilized by the Design-Builder when performing lifts on outriggers.
- o. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

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- p. A physical barricade must be positioned to prevent personnel from entering the tail swing area of the crane.
- q. A substantial and durable rating chart containing legible letters and figures shall be provided with each crane and securely mounted onto the crane cab in a location allowing easy reading by the operator while seated in the control station.
- r. Certification records which include the date of inspection, signature of the person performing the inspection along with the serial number or other identifier of the crane which was inspected. This record will always be available for review by Owner personnel.
- s. Written reports listing the load test procedures utilized along with any repairs or alterations performed on the crane will be available for review by the contracting officer personnel.
- t. Contractor shall certify that all of the crane operators have been trained not to bypass safety devices (e.g., anti-two block devices) during lifting operations.

3.6 Not Used

3.7 ELECTRICAL

3.7.1 Conduct of Electrical Work

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cable intended to be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Owner for identification. The Owner will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cutting remotely. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Design-Builder to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. Insulating blankets, hearing protection, and switching suits may be required, depending on the specific job and as delineated in the Design-Builder AHA.

3.7.2 Portable Extension Cords

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered.

3.8 Not Used

3.9 Not Used

3.10 HOUSEKEEPING

3.10.1 Clean-up

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All debris in work areas shall be cleaned up daily or more frequently as necessary. Construction debris may be temporarily located in an approved location; however garbage accumulation must be removed each day.

3.10.2 Dust Control

In addition to the dust control measures required elsewhere in the contract documents dry cutting of brick or masonry shall be prohibited. Wet cutting must address control of water runoff.

3.11 ACCIDENT SCENE PRESERVATION

For serious accidents, and accidents involving weight handling equipment, ensure the accident site is secured and evidence is protected remaining undisturbed until released by the Owner.

3.12 FIELD QUALITY CONTROL

3.12.1 Inspections

Include safety inspection as a part of the daily Quality Control inspections required in Section 014500, "Quality Control".

3.13 FLAMMABLE AND COMBUSTIBLE LIQUID HANDLING AND STORAGE

3.13.1 Safety Gas Containers

Handling of flammable and combustible liquids shall be in safety containers with flame arresters, with not more than 19 L capacity, having a spring-closing lid and spout cover and designed to safely relieve internal pressures under fire exposures. Flammable and combustible Liquids shall be stored in separate NFPA approved storage cabinets 15 m away from any sources of ignition with suitable NO SMOKING OR OPEN FLAME signs posted in all such areas.

--End of Section--

SECTION 01 57 50

TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards
40 CFR 112	Oil Pollution Prevention
40 CFR 122.26	EPA National Pollutant Discharge Elimination System Permit Regulations
40 CFR 241	Guidelines for Disposal of Solid Waste
40 CFR 243	Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste
40 CFR 260	Hazardous Waste Management Systems: General (If found during construction)
40 CFR 261	Identification and Listing of Hazardous Waste (If found during construction)
40 CFR 263	Transporters of Hazardous Waste (If found during construction)
40 CFR 264	Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities(If found during construction)
40 CFR 265	Interim Status Standard for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 266	Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities(If found during construction)
40 CFR 268	Land Disposal Restrictions
40 CFR 270	EPA Administrated Permit Programs: The Hazardous Waste Permit Program
40 CFR 271	Requirements for Authorization of State Hazardous Waste Programs
40 CFR 272	Approved State Hazardous Waste Management Programs
40 CFR 273	Universal Waste Management
40 CFR 279	Used Oil Regulations
40 CFR 280	Owners and Operators of Underground Storage Tanks
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan
40 CFR 355	Emergency Planning and Notification
40 CFR 716	Health and Safety Data Reporting
49 CFR 173	Shipments and Packaging

49 CFR 178 Packaging

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA SW-846 (1996) Evaluating Solid Waste (Physical/Chemical Methods)

RCRA California Resource Conservation and Recovery Act

1.2 DEFINITIONS

1.2.1 Sediment

Soil and other debris that have eroded and have been transported by runoff water or wind.

1.2.2 Solid Waste

Garbage, refuse, debris, sludge, or other discharged material (except hazardous waste as defined in paragraph entitled "Hazardous Waste" or hazardous debris as defined in paragraph entitled "Hazardous Debris"), including solid, liquid, semisolid, or contained gaseous materials resulting from domestic, industrial, commercial, mining, or agricultural operations. Material not regulated as solid waste are: nuclear source or byproduct materials regulated under the Federal Atomic Energy Act of 1954 as amended; suspended or dissolved materials in domestic sewage effluent or irrigation return flows, or other regulated point source discharges; regulated air emissions; and fluids or wastes associated with natural gas or crude oil exploration or production.

- a. Green waste: The vegetative matter from landscaping, land clearing and grubbing, including, but not limited to, grass, bushes, scrubs, small trees and saplings, tree stumps and plant roots. Marketable trees, grasses and plants that are indicated to remain, be re-located, or be re-used are not included.
- b. Surplus soil: Existing soil that is in excess of what is required for this work, including aggregates intended, but not used, for on-site mixing of concrete, mortars and paving. Contaminated soil meeting the definition of hazardous material or hazardous waste is not included.
- c. Inert construction and demolition debris: Broken or removed concrete, masonry, and rock asphalt paving; ceramics; roofing paper and shingles. Inert materials may not be re-enforced with or contain ferrous wire, rods, accessories and weldments.
- d. Wood: Dimension and non-dimension lumber, plywood, chipboard, hardboard. Treated and/or painted wood that meets the definition of lead contaminated or lead based contaminated paint is not included.
- e. Scrap metal: Scrap and excess ferrous and non-ferrous metals such as re-enforcing steel, structural shapes, pipe and wire that are recovered or collected and disposed of as scrap. Scrap metal meeting the definition of hazardous material or hazardous waste is not included.
- f. Paint cans: Metal cans that are empty of paints, solvents, thinners and adhesives. If permitted by the paint can label, a thin dry film may remain in the can.
- g. Recyclable: Materials, equipment and assemblies such as doors, windows, door and window frames, plumbing fixtures, glazing and mirrors that are recovered and sold as recyclable. Metal meeting the definition of lead contaminated or lead based paint

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contaminated may not be included as recyclable if sold to a scrap metal company. Paint cans may not be included as recyclable if sold to a scrap metal company.

1.2.3 Debris

Non-hazardous solid material generated during the construction, demolition, or renovation of a structure which exceeds 60 mm particle size that is: a manufactured object; plant or animal matter; or natural geologic material (e.g., cobbles and boulders). A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if the mixture is comprised primarily of debris by volume, based on visual inspection.

1.2.4 Hazardous Debris

As defined in paragraph entitled "Debris" of this section, debris containing listed hazardous waste (either on the debris surface, or in its interstices, such as pore structure) per 40 CFR 261; or debris that exhibits a characteristic of hazardous waste per 40 CFR 261.

1.2.5 Chemical Wastes

This includes salts, acids, alkalis, herbicides, pesticides, and organic chemicals.

1.2.6 Garbage

Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

1.2.7 Hazardous Waste

Hazardous waste as defined in 40 CFR 261 or as defined by applicable State and local regulations.

1.2.8 Oily Waste

Petroleum products and bituminous materials.

1.2.9 Regulated Waste

Those solid waste that have specific additional Federal, state, or local controls for handling, storage, or disposal.

1.2.10 Class I Ozone Depleting Substance (ODS)

Class I ODS is defined in Section 602(a) of The Clean Air Act and includes the following chemicals:

chlorofluorocarbon-11 (CFC-11)	chlorofluorocarbon-213 (CFC-213)
chlorofluorocarbon-12 (CFC-12)	chlorofluorocarbon-214 (CFC-214)
chlorofluorocarbon-13 (CFC-13)	chlorofluorocarbon-215 (CFC-215)
chlorofluorocarbon-111 (CFC-111)	chlorofluorocarbon-216 (CFC-216)
chlorofluorocarbon-112 (CFC-112)	chlorofluorocarbon-217 (CFC-217)
chlorofluorocarbon-113 (CFC-113)	halon-1211
chlorofluorocarbon-114 (CFC-114)	halon-1301
chlorofluorocarbon-115 (CFC-115)	halon-2402
chlorofluorocarbon-211 (CFC-211)	carbon tetrachloride

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chlorofluorocarbon-212 (CFC-212) methyl chloroform

1.2.11 Hazardous Materials

Any material that is regulated as a hazardous material in accordance with 49 CFR 173, requires a Material Safety Data Sheet (MSDS) in accordance with 29 CFR 1910.1200, or which during end use, treatment, handling, storage, transportation or disposal meets or has components which meet or have the potential to meet the definition of a Hazardous Waste in accordance with 40 CFR 261. Throughout this specification, hazardous material includes hazardous chemicals.

1.3 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

Environmental protection plan; G

Storage Inventory Form; G

Dirt and dust control plan; G

SD-06 Test Reports

Laboratory analysis

SD-11 Closeout Submittals

Some of the records listed below are also required as part of other submittals. For the "Records" submittal, maintain on-site a separate three-ring Environmental Records binder and submit at the completion of the project. Make separate parts to the binder corresponding to each of the applicable sub items listed below.

Preconstruction survey

Solid waste disposal permit

Waste determination documentation

Disposal documentation for hazardous and regulated waste

Design-Builder 40 CFR employee training records

Regulatory notification

Solid waste disposal report

Design-Builder Hazardous Material Inventory Log; G

1.4 DIRT AND DUST CONTROL PLAN

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Submit truck and material haul routes along with a plan for controlling dirt, debris, and dust on base roadways. As a minimum, identify in the plan the sub Design-Builder and equipment for cleaning along the haul route and measures to reduce dirt, dust, and debris from roadways.

1.5 LABORATORY ANALYSIS

Submit a copy of a laboratory analysis of solid waste and debris with the potential of becoming classified as a hazardous waste (i.e., abrasive/sand blasting debris, etc.).

1.6 REPORTS

1.6.1 Preconstruction Survey

Perform a preconstruction survey of the project site with the Owner, and take photographs showing existing environmental conditions in and adjacent to the site. Submit a report for the record.

1.6.2 Solid Waste Disposal Permit

Submit one copy of a State and local permit or license showing such agencies' approval of the disposal plan before transporting wastes off Owner's property.

1.6.3 Waste Determination Documentation

The Design-Builder shall complete a Waste Determination form (provided at the pre-construction conference) for all Design-Builder derived wastes to be generated. The waste determination must be based upon either a constituent listing from the manufacturer used in conjunction with consideration of the process by which the waste was generated, or laboratory analysis (Material Safety Data Sheets (MSDS) by themselves are not adequate). All support documentation must be attached to the Waste Determination form. As a minimum, a Waste Determination form must be provided for the following wastes (this listing is not all inclusive): oil and latex based painting and caulking products, solvents, adhesives, aerosols, petroleum products, and all containers of the original materials.

1.6.4 Disposal Documentation for Hazardous and Regulated Waste

Submit a copy of the applicable EPA and State permit(s), manifest(s), or license(s) for transportation, treatment, storage, and disposal of hazardous and regulated waste by permitted facilities.

1.6.5 Design-Builder 40 CFR Employee Training Records

Prepare and maintain employee training records throughout the term of the contract meeting applicable 40 CFR requirements. The Design-Builder shall ensure every employee completes a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures compliance with Federal, State and local regulatory requirements. The Design-Builder shall provide a Position Description for each employee, by sub Design-Builder, based on the Davis-Bacon Wage Rate designation or other equivalent method, evaluating the employee's association with hazardous and regulated wastes. Submit these training records to the Owner at the conclusion of the project, unless otherwise directed.

1.6.6 Regulatory Notification

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The Design-Builder is responsible for all regulatory notification requirements in accordance with Federal, State and local regulations. The Design-Builder shall forward copies to the Owner prior to commencement of work activities. Typically, regulatory notifications must be provided for the following (this listing is not all inclusive): demolition, renovation, remediation of controlled substances (asbestos, hazardous waste, lead paint).

1.6.7 Not Used

1.6.8 Solid Waste Disposal Report

Monthly the Design-Builder shall submit a solid waste disposal report to the Owner. For each waste, the report shall state the classification (using the definitions provided in this section), amount, location, and name of the business receiving the solid waste. The Design-Builder shall include copies of the waste handling facilities' weight tickets, receipts, bills of sale, and other sales documentation. In lieu of sales documentation, the Design-Builder may submit a statement indicating the disposal location for the solid waste which is signed by an authorized of the Design-Builder firm authorized to legally obligate or bind the firm. The sales documentation or Design-Builder certification shall include the receiver's tax identification number and business, EPA or State registration number, along with the receiver's delivery and business addresses and telephone numbers. For each solid waste retained by the Design-Builder for his own use, the Design-Builder shall submit on the solid waste disposal report the information previously described in this paragraph. Prices paid or received shall not be reported to the Owner unless required by other provisions or specifications of this Contract or public law.

1.7 Not Used

1.8 ENVIRONMENTAL PROTECTION REQUIREMENTS

Provide and maintain, during the life of the contract, environmental protection as defined. Plan for and provide environmental protective measures to control pollution that develops during normal construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Comply with Federal, State, and local regulations pertaining to the environment, including water, air, solid waste, hazardous waste and substances, oily substances, and noise pollution.

Environmental Brief: Attend an environmental brief to be included in the preconstruction meeting. Provide the following information: types, quantities, and use of hazardous materials that will be brought onto the activity; types and quantities of wastes that may be generated during the contract.

1.8.1 Not Used

1.8.2 Licenses and Permits

For all permits, whether or not required by the permit, the Design-Builder is responsible to perform quality control inspections of the work in progress, and to submit notifications and certifications to the applicable regulatory agency, via the Owner, that the work conforms to the contract and permit requirements. The inspections and certifications shall be provided through the services of a Professional Engineer, registered in the State of California. As a part of the quality control plan, which is required to be submitted for approval by the quality control section, provide a sub item containing the name, P.E. registration number, address, and telephone number of the professional engineer(s) who will be performing the inspections and certifications for each permit listed above.

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1.8.3 Design-Builder Liabilities for Environmental Protection

The Design-Builder is advised that this project is subject to Federal, State, and local regulatory agency inspections to review compliance with environmental laws and regulations. The Design-Builder shall fully cooperate with any representative from any Federal, State, or local regulatory agency who may visit the job site and shall provide immediate notification to the Owner, who shall accompany them on any subsequent site inspections. The Design-Builder shall complete, maintain, and make available to the Owner or regulatory agency personnel all documentation relating to environmental compliance under applicable Federal, State, and local laws and regulations. The Design-Builder shall immediately notify the Owner if a Notice of Violation (NOV) is issued to the Design-Builder.

The Design-Builder shall be responsible for all damages to persons or property resulting from Design-Builder fault or negligence as well as for the payment of any civil fines or penalties which may be assessed by any Federal, State, or local regulatory agency as a result of the Design-Builder's or any sub Design-Builder's violation of any applicable Federal, State or local environmental law or regulation. Should a Notice of Violation (NOV), Notice of Noncompliance (NON), Notice of Deficiency (NOD), or similar regulatory agency notice be issued to the Owner as facility owner/operator on account of the actions or inactions of the Design-Builder or one of its sub Design-Builders in the performance of work under this contract, the Design-Builder shall fully cooperate with the Owner in defending against regulatory assessment of any civil fines or penalties arising out of such actions or inactions.

1.9 Not Used

1.10 Not Used

1.10.1 Not Used

1.11 UNFORESEEN HAZARDOUS OR REGULATED MATERIAL

All known hazardous or regulated materials are indicated in the contract documents. If material that is not indicated in the contract documents is encountered that may be dangerous to human health upon disturbance during construction operations, stop that portion of work and notify the Owner immediately. Intent is to identify materials such as PCB, lead paint, mercury, petroleum products, and friable and nonfriable asbestos. (Refer to Article 4 in the General Conditions entitled "Hazardous Conditions and Differing Site Conditions")

1.12 DESIGN-BUILDER HAZARDOUS MATERIAL INVENTORY LOG

Submit the "Design-Builder Hazardous Material Inventory Log" which provides information required by (EPCRA Sections 312 and 313) along with corresponding Material Safety Data Sheets (MSDS) to the Owner at the start and at the end of construction (30 days from final acceptance), and update during the life of the contract. Documentation for any spills/releases, environmental reports or off-site transfers may be requested by the Owner.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 Not Used

3.1.2.2 Oily and Hazardous Substances

Prevent oil or hazardous substances from entering the ground, drainage areas, or navigable waters. In accordance with 40 CFR 112, surround all temporary fuel oil or petroleum storage tanks with a temporary berm or containment of sufficient size and strength to contain the contents of the tanks, plus 10 percent freeboard for precipitation. The berm shall be impervious to oil for 72 hours and be constructed so that any discharge will not permeate, drain, infiltrate, or otherwise escape before cleanup occurs.

3.1.2.3 Not Used

3.4 CONTROL AND DISPOSAL OF SOLID WASTES

Pick up solid wastes, and place in covered containers which are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site or other areas when handling and disposing of wastes. At project completion, leave the areas clean. Recycling is encouraged and can be coordinated with the Owner and the activity recycling coordinator. Remove all solid waste (including non-hazardous debris) from Owner property and dispose off-site at an approved landfill. Solid waste disposal off-site must comply with most stringent local, State, and Federal requirements including 40 CFR 241, 40 CFR 243, and 40 CFR 258.

3.4.1 Dumpsters

Equip dumpsters with a secure cover and paint the standard base color. Keep cover closed at all times, except when being loaded with trash and debris. Locate dumpsters behind the construction fence or out of the public view. Empty site dumpsters at least once a week, or as needed to keep the site free of debris and trash. If necessary, provide 208 liter trash containers painted the darker base color to collect debris in the construction site area. Locate the trash containers behind the construction fence or out of the public view. Empty trash containers at least once a day. For large demolitions, large dumpsters without lids are acceptable but should not have debris higher than the sides before emptying.

3.5 CONTROL AND DISPOSAL OF HAZARDOUS WASTES

3.5.1 Hazardous Waste/Debris Management

The Design-Builder shall identify all construction activities which will generate hazardous waste/debris. The Design-Builder must provide a documented waste determination for all resultant waste streams. Hazardous waste/debris shall be identified, labeled, handled, stored, and disposed of in accordance with all Federal, State, and local regulations including 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, and 40 CFR 268. Hazardous waste shall also be managed in accordance with the approved Hazardous Waste Management Section of the Environmental Protection Plan. Store hazardous wastes in approved containers in accordance with 49 CFR 173 and 49 CFR 178. No hazardous waste shall be brought onto Owner and Metro property. Provide to the Owner a copy of waste determination documentation for any solid waste streams that have any potential to be hazardous waste or contain any chemical constituents listed in 40 CFR 372-SUBPART D. For hazardous wastes spills, verbally notify the Owner immediately.

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3.5.1.1 Attach a waste determination form. Allow ten working days for processing this request.

3.5.1.2 Not Used

3.5.1.3 Asbestos Certification(If found during construction)

- a. Asbestos containing material: Items, components, or materials which are specified to be worked on under this contract may involve asbestos. Other materials especially thermal insulation, in the general work area may contain asbestos. All thermal insulation, in all work areas should be considered to be asbestos unless positively identified by conspicuous tags or previous laboratory analysis certifying asbestos free. The Design-Builder shall not remove or perform work on any such materials without the prior approval of the Owner. The Design-Builder shall not engage in any activity, which would remove or damage such materials of cause the generation of fibers from such materials. The Design-Builder shall immediately stop all work which would generate further damage to the material, evacuate the potential asbestos exposed area, and notify the Owner for resolution of the situation prior to resuming normal work activities in the affected area.

3.5.1.4 Hazardous Waste Disposal (If found during construction)

Control of stored waste, packaging, sampling, analysis, and disposal shall be determined by the details in the contract. The requirements for jobs in the following paragraphs shall be used as the guidelines for disposal of any hazardous waste generated.

(a) Responsibilities for Design-Builder's Disposal

Any generation of WHM/HW requiring Design-Builder disposal of solid waste or liquid.

- a. The Design-Builder agrees to provide all service necessary for the final treatment/disposal of the hazardous material/waste in accordance with all local, State and Federal laws and regulations, and the terms and conditions of the contract within sixty (60) days after the materials have been generated. These services shall include all necessary personnel, labor, transportation, packaging, detailed analysis (if required for disposal, and/or transportation, including manifesting or completing waste profile sheets, equipment, and the compilation of all documentation is required).
- b. Contain all waste in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, 40 CFR 268, 40 CFR 270, 40 CFR 272, 40 CFR 273, 40 CFR 279, 40 CFR 280, and 40 CFR 761.
- c. Control and turn in all hazardous waste requiring disposal in accordance with Base's Environmental Management Division requirements.
- d. Obtaining a representative sample of the material generated for each job done to provide waste stream determination.
- e. Analyzing for each sample taken and providing analytical results to the Owner. Provide two copies of the results.
- f. Determine the DOT proper shipping names for all waste (each container requiring disposal) and shall demonstrate how this determination is developed and supported by the sampling and analysis requirements contained herein to the Contracting Officer for Code 106's review.

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Interim Waste Generation Site for Design-Builder Disposal of WHM/HW

The Design-Builder shall request approval of the Owner for an area suitable for packaging WHN/HW requiring disposal. The Design-Builder shall comply with the requirements of the Base's Environmental Management Division. The area will be barricaded and a sign identifying as follows:

Signage- "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT"

With additional custody sign indicating:

- (1) Site # xxxxx
- (2) Controlled by xxxxxx
- Call Mr./Ms. xxxxxx _____ at xxxxxx

Barricade Type: Yellow and black three 75 mm plastic tape. Corner barricades shall be provided by the Owner.

Design-Builder Disposal Turn-In Requirements

For any waste hazardous materials or hazardous waste generated which requires the Design-Builder to dispose of, the following conditions must be complied with:

- a. Call the Owner designated representative and provide the following information:
 - (1) Your name and company
 - (2) Service/contract number
 - (3) Telephone number where you can be reached
 - (4) Material requiring disposal
 - (5) Location of material
 - (6) Volume of material in each container

3.5.2 Pollution Prevention/Hazardous Waste Minimization

The Design-Builder shall actively pursue minimizing the use of hazardous materials and the generation of hazardous waste while on-base. The Hazardous Waste Management Section of the Environmental Protection Plan shall include the Design-Builder's procedures for pollution prevention/ hazardous waste minimization. For preparing this part of the plan, the Design-Builder may consult the activity Environmental Office for suggestions and to obtain a copy of the installation's pollution prevention/hazardous waste minimization plan for reference material. If no written plan exists, the Design-Builder may obtain information by contacting the Owner. The Design-Builder shall describe the types of the hazardous materials expected to be used in the construction when requesting information.

3.5.3 Hazardous Material Control

The Design-Builder shall include hazardous material control procedures in the Safety Plan. The procedures shall address and ensure the proper handling of hazardous materials, including the appropriate transportation requirements. The Design-Builder shall submit a MSDS and estimated quantities to be used for each hazardous material to the Owner prior to bringing the material on base. Typical materials requiring MSDS and quantity reporting include, but are not limited to, oil and latex based painting and caulking products, solvents, adhesives, aerosol, and petroleum

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products. At the end of the project, the Design-Builder shall provide the Owner with the maximum quantity of each material that was present at the site at any one time, the dates the material was present, the amount of each material that was used during the project, and how the material was used. The Design-Builder shall also ensure that hazardous materials are utilized in a manner that will minimize the amount of hazardous waste that is generated. The Design-Builder shall ensure that all containers of hazardous materials have NFPA labels or their equivalent. Copies of the MSDS for hazardous materials shall be kept on site at all times and provided to the Owner at the end of the project. The Design-Builder shall certify that all hazardous materials removed from the site are hazardous materials and do not meet the definition of hazardous waste per 40 CFR 261.

3.5.4 Petroleum Products

Conduct the fueling and lubricating of equipment and motor vehicles in a manner that protects against spills and evaporation. All used oil generated on site shall be managed in accordance with 40 CFR 279. The Design-Builder shall determine if any used oil generated while on-site exhibits a characteristic of hazardous waste. In addition, used oil containing 1000 parts per million of solvents will be considered a hazardous waste and disposed of at Design-Builder's expense. Used oil mixed with a hazardous waste will also be considered a hazardous waste. All hazardous waste will be managed in accordance with the paragraph entitled Hazardous Waste/Debris Management of this section and shall be managed in accordance with the approved Environmental Protection Plan.

3.5.5 Releases/Spills of Oil and Hazardous Substances

Take precautions to prevent releases/spills of oil and hazardous substances. In the event of any releases of oil and hazardous substances, chemicals, or gases; immediately (within 15 minutes) notify the Base or Activity Fire Department, the activity's Command Duty Officer, and the Owner. The Design-Builder is responsible for verbal and written notifications as required by the federal 40 CFR 355, State, and local regulations. Spill response shall be in accordance with 40 CFR 300 and applicable State and local regulations. Contain and clean up these spills without cost to the Owner. If Owner assistance is requested or required, the Design-Builder shall reimburse the Owner for such assistance. Provide copies of the written notification and documentation that a verbal notification was made within 20 days.

3.6 DUST CONTROL

Keep dust down at all times, including during nonworking periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming will not be permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing will be permitted only for cleaning non-particulate debris such as steel reinforcing bars. Only wet cutting will be permitted for cutting concrete blocks, concrete, and bituminous concrete. Do not unnecessarily shake bags of cement, concrete mortar, or plaster.

3.7 Not Used

3.7.1 Not Used

3.7.2 Not Used

3.8 NOISE

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Make the maximum use of low-noise emission products, as certified by the EPA. B

--End of Section--

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 SUBMITTALS

Submit the following in accordance with Section 013300, "Submittal Procedures."

SD-10 Operation and Maintenance Data

Equipment/product warranty list

Submit Data Package 5 in accordance with Section 017810, "Operation and Maintenance Data."

SD-11 Closeout Submittals

As-built drawings; G

Record of materials; G

Utility as-built drawings; G

Equipment/product warranty tag; G

Valves identification plan; G

Monthly project waste summary report; G

Hazardous material reporting; G

1.2 As-Built Records and Drawings

Submit within ten working days after each system is in place, but no later than five working days before final inspection.

1.3 Monthly Project Waste Summary Report (If required)

1.3.1 Hazardous Material Reporting (If found during construction)

Submit hazardous material reporting information which includes actual quantities of hazardous materials stored and used during the project as specified in EFA Northwest regional Section 01525N, "Safety Requirements".

1.4 Not used

1.5 PROJECT RECORD DOCUMENTS

1.5.1 As-Built Drawings

1.5.2 Valves Identification Plan (If required)

Furnish as-built valves identification plan with a certification that the unique identification number for all the valves match the tags attached to the valves.

1.5.3 As-Built Record of Materials

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Furnish a record of materials.

Where several manufacturers' brands, types, or classes of the item listed have been used in the project, designate specific areas where each item was used. Designations shall be keyed to the areas and spaces depicted on the contract drawing. Furnish the record of materials used in the following format:

MATERIALS DESIGNATION	SPECIFICATION	MANUFACTURER (MANUFACTURER'S DESIGNATION)	MATERIALS USED	WHERE USED
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1.6 EQUIPMENT/PRODUCT WARRANTIES

1.6.1 Equipment/Product Warranty List

Furnish to the Owner a bound and indexed notebook containing written warranties for equipment/products furnished under the contract, and prepare a complete listing of such equipment/products. The equipment/products list shall state the specification section applicable to the equipment/product, duration of the warranty therefor, start date of the warranty, ending date of the warranty, and the point of contact for fulfillment of the warranty. The warranty period shall begin on the same date as project acceptance and shall continue for the full product warranty period. Execute the full list and deliver to the Owner prior to final acceptance of the facility.

1.6.2 Equipment Warranty Tags and Guarantor's Local Representative

Furnish with each warranty the name, address, and telephone number of the guarantor's representative nearest to the location where the equipment and appliances are installed. The guarantor's representative, upon request of the station representative, shall honor the warranty during the warranty period, and shall provide the services prescribed by the terms of the warranty. At the time of installation, tag each item of warranted equipment with a durable, oil- and water-resistant tag approved by the Owner. Attach tag with copper wire and spray with a clear silicone waterproof coating. Leave the date of acceptance and QC's signature blank until project is accepted for beneficial occupancy. Tag shall show the following information:

EQUIPMENT/PRODUCT WARRANTY TAG

Type of Equipment/Product _____
Warranty Period _____ From _____ To _____
Contract No. _____
Inspector's Signature _____ Date Accepted _____

Construction Contractor:
Name: _____
Address: _____
Telephone: _____

Warranty Contact: _____
Name: _____

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Address: _____
Telephone: _____

STATION PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE

1.7 CLEANUP

Clean all construction caused debris from the construction site. Sweep paved areas and rake clean landscaped areas. Remove waste and surplus materials, rubbish and construction facilities from the site.

- a. Replace trees, shrubs and vegetation

1.7.1 Extraordinary Cleanup Requirements

The cleanup requirements apply: reseed grass areas and replace trees, shrubs and flowers as required.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

--End of Section--

SECTION 01 78 10

OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.1 SUBMISSION OF OPERATION AND MAINTENANCE DATA

Submit Operation and Maintenance (O&M) Data/Manuals which are specifically applicable to this contract and a complete and concise depiction of the provided equipment or product. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 013300, "Submittal Procedures."

1.1.1 Quantity

Submit two sets and one electronic copy of the O&M information for each system, and its components, assemblies, subassemblies, attachments, and accessories.

1.1.2 Package Quality

Documents must be fully legible. Poor quality copies and material with hole punches obliterating the text or drawings will not be accepted.

1.1.3 Package Content

Data package content shall be as shown in the paragraph titled "Schedule of Operation and Maintenance Data Packages." For each product, system, or component piece of equipment requiring submission of O&M Data, submit the Data Package specified in the individual technical section.

1.1.4 Delivery

Submit O&M Data Manuals to the Owner for review and acceptance; submit data specified for a given item within 15 calendar days after the item is delivered to the contract site.

- a. In the event the Design-Builder fails to deliver O&M Data/Manuals within the time limits set forth above, the Owner may withhold from progress payments 50 percent of the price of the item with which such O&M Data/Manuals are associated.

1.1.5 Changes to Submittals

Manufacturer-originated changes or revisions to submitted data shall be furnished by the Design-Builder if a component of an item is so affected subsequent to acceptance of the O&M Data. Changes, additions, or revisions required by the Owner for final acceptance of submitted data, shall be submitted by the Design-Builder within 30 calendar days of the notification of this change requirement.

1.2 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

1.2.1 Operating Instructions

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Include specific instructions, procedures, and illustrations for the following phases of operation:

1.2.1.1 Safety Precautions

List personnel hazards and equipment or product safety precautions for all operating conditions.

1.2.1.5 Operator Service Requirements

Include instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and gage reading recording.

1.2.1.6 Environmental Conditions

Include a list of environmental conditions (temperature, humidity, and other relevant data) which are best suited for each product or piece of equipment and describe conditions under which equipment should not be allowed to run.

1.2.2 Preventive Maintenance

Include the following information for preventive and scheduled maintenance to minimize corrective maintenance and repair.

1.2.2.1 Lubrication Data

Include lubrication data, other than instructions for lubrication in accordance with paragraph titled "Operator Service Requirements":

- a. A table showing recommended lubricants for specific temperature ranges and applications;
- b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities; and
- c. A lubrication schedule showing service interval frequency.

1.2.2.2 Preventive Maintenance Plan and Schedule

Include manufacturer's schedule for routine preventive maintenance, inspections, tests and adjustments required to ensure proper and economical operation and to minimize corrective maintenance and repair. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

1.2.3 Corrective Maintenance (Repair)

Include manufacturer's recommendations on procedures and instructions for correcting problems and making repairs.

1.2.3.1 Troubleshooting Guides and Diagnostic Techniques

Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or

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inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

1.2.3.2 Wiring Diagrams and Control Diagrams

Wiring diagrams and control diagrams shall be point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation numbering.

1.2.3.3 Maintenance and Repair Procedures

Include instructions and list tools required to restore product or equipment to proper condition or operating standards.

1.2.3.4 Removal and Replacement Instructions

Include step-by-step procedures and list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Instructions shall include a combination of text and illustrations.

1.2.3.5 Spare Parts and Supply Lists

Include lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead time to obtain.

1.2.4 Corrective Maintenance Work-Hours

Include manufacturer's projection of corrective maintenance work-hours including craft requirements by type of craft. Corrective maintenance that requires participation of the equipment manufacturer shall be identified and tabulated separately.

1.2.5 Appendices

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

1.2.6 Parts Identification

Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing shall show the index, reference, or key number which will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies. Parts data may cover more than one model or series of equipment, components, assemblies,

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subassemblies, attachments, or accessories, such as a master parts catalog, in accordance with the manufacturer's standard commercial practice.

1.2.6.1 Warranty Information

List and explain the various warranties and include the servicing and technical precautions prescribed by the manufacturers or contract documents to keep warranties in force. Include warranty information for primary components such as the compressor of air conditioning system.

1.2.6.2 Personnel Training Requirements

Provide information available from the manufacturers to use in training designated personnel to operate and maintain the equipment and systems properly.

1.2.4.4 Testing Equipment and Special Tool Information

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.

1.2.4.5 Design-Builder Information

Provide a list that includes the name, address, and telephone number of the Design-Builder and each subcontractor installing the product or equipment. Include local representatives and service organizations most convenient to the project site. Provide the name, address, and telephone number of the product or equipment manufacturers.

1.3 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Furnish the O&M Data Packages specified in individual technical sections. The required information for each O&M Data Package is as follows:

1.3.1 Data Package

- a. Safety precautions
- b. Operator prestart
- c. Environmental conditions
- d. Preventive maintenance plan and schedule
- e. Troubleshooting guides and diagnostic techniques
- f. Wiring and control diagrams
- g. Maintenance and repair procedures
- h. Spare parts and supply list
- i. Testing equipment and special tools
- j. Warranty information
- k. Contractor information

PART 2 PRODUCTS

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Not used.

PART 3 EXECUTION

Not used.

--End of Section--